Project Report Appendices

The following section contains the appendices as listed in the Neches Basin, Texas 2016 LiDAR Project Report.

Appendix D

GPS/IMU Processing Statistics Flight Logs

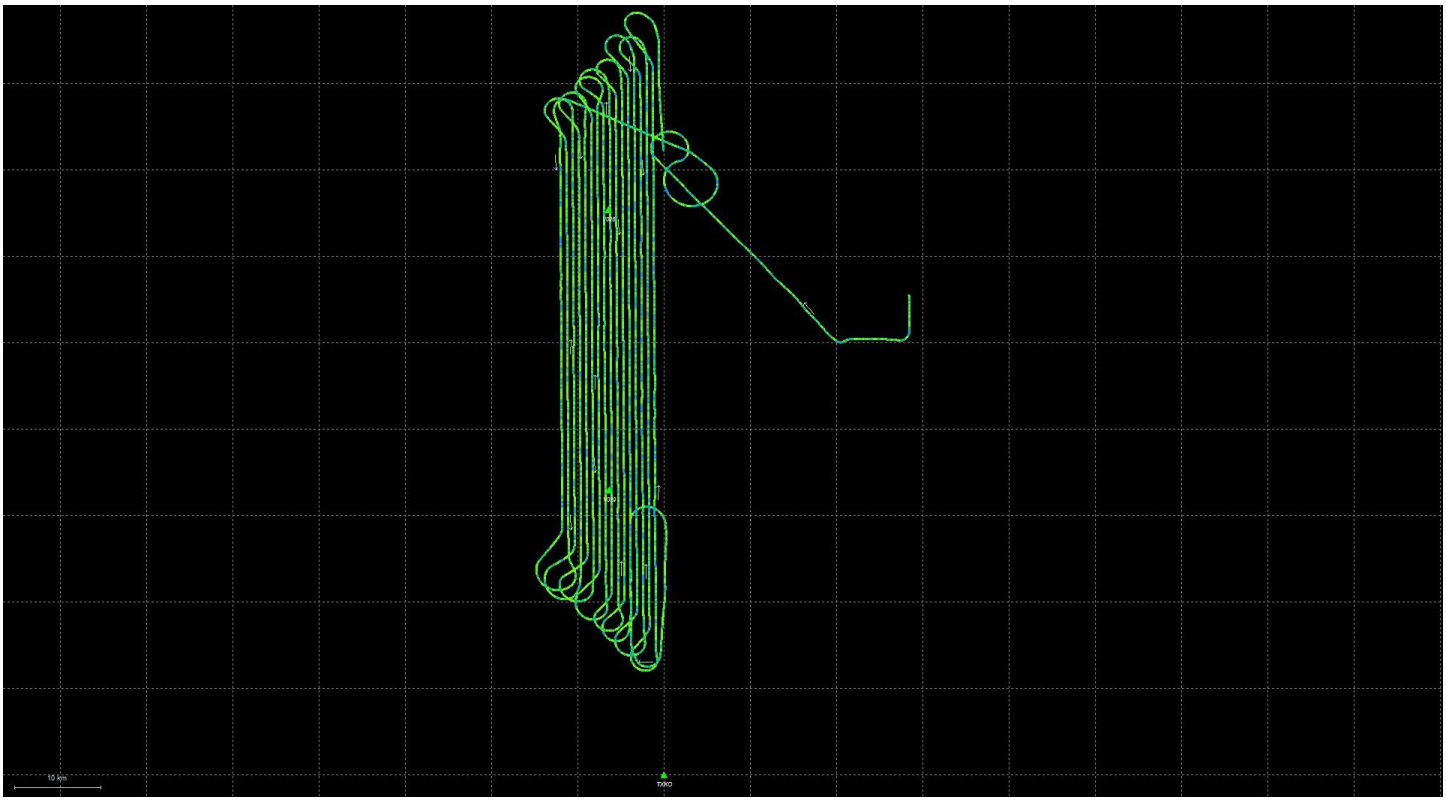
There were 64 total lifts for the 2017 portion of the project. Graph reports generated from processing software and flight logs are found on the following pages.

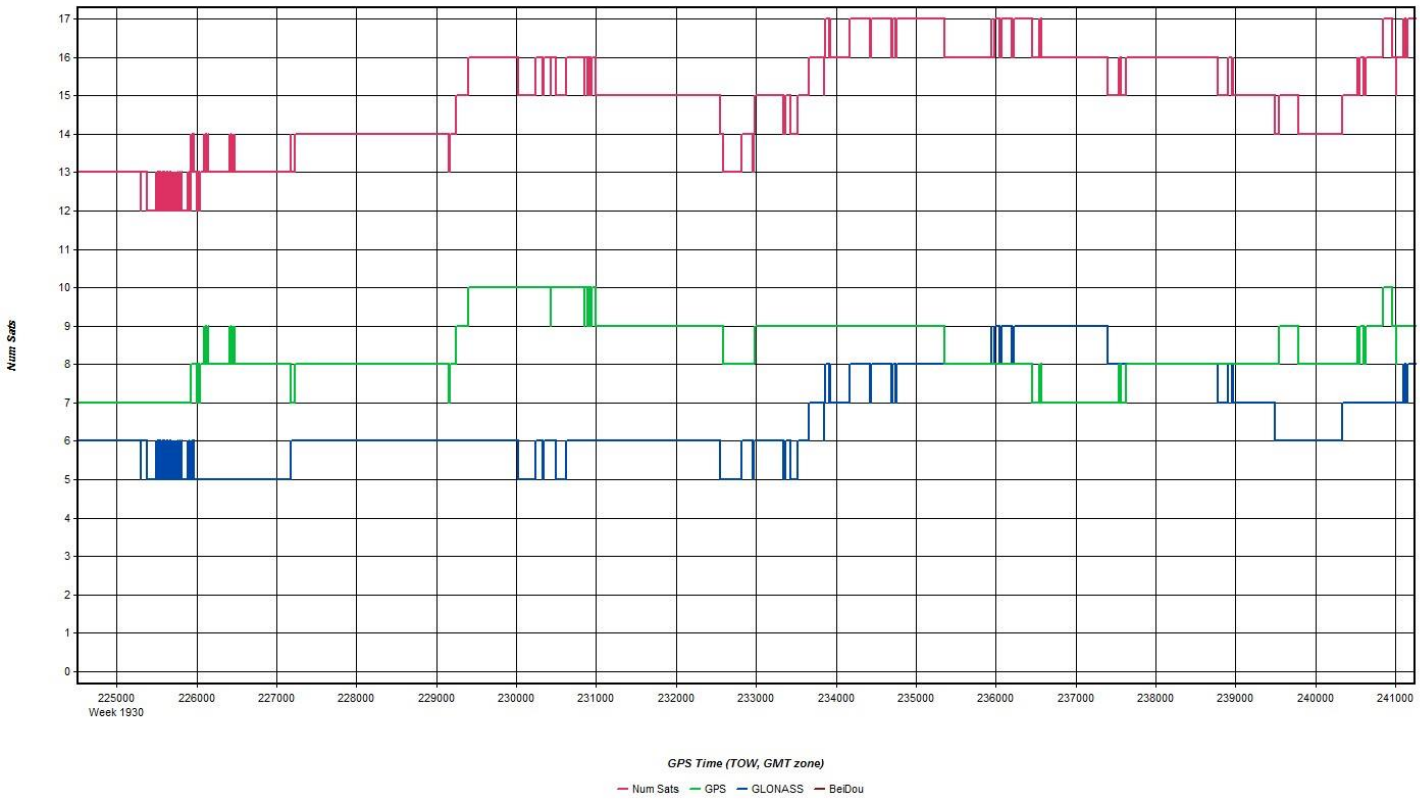
Jan 3, 2017-A (N246MP, SN8146) 3
Flight Log 11
Jan 3, 2017-B (N246MP, SN8146) 12
Flight Log 20
Jan 7, 2017-A (N246MP, SN8146) 21
Flight Log 29
Jan 7, 2017-A (N812TB, SN7178) 30
Jan 8, 2017-A (N246MP, SN8146) 38
Flight Log 46
Jan 8, 2017-A (N812TB, SN7178) 47
Flight Log 56
Jan 8, 2017-B (N246MP, SN8146) 57
Jan 8, 2017-B (N812TB, SN7178) 65
Flight Log 73
Jan 8, 2017-C (N246MP, SN8146) 74
Flight Log 82
Jan 14, 2017-A (N246MP, SN8146) 83
Flight Log 91
Jan 14, 2017-A (N812TB, SN7178) 92
Flight Log 100
Jan 14, 2017-B (N246MP, SN8146) 101
Flight Log 102
Jan 27, 2017-A (N208NR, SN8239) 103 Jan 27, 2017-B (N208NR, SN8239) 111
Jan 28, 2017-A (N812TB, SN7178) 119
Flight Log 127
Jan 28, 2017-A (N208NR, SN8239) 128
Jan 28, 2017-A (N812TB, SN7178) 136
Flight Log 145
Jan 28, 2017-B (N812TB, SN7178) 146
Flight Log 154
Jan 29, 2017-A (N812TB, SN7178) 155
Flight Log 164
Jan 29, 2017-A (N208NR, SN8239) 166
Jan 29, 2017-A (N812TB, SN7178) 174
Flight Log 182
Jan 29, 2017-B (N812TB, SN7178) 183
Flight Log 191
Jan 30, 2017-A (N812TB, SN7178) 192
Flight Log 201
Jan 30, 2017-A (N208NR, SN8239) 203
Jan 30, 2017-A (N812TB, SN7178) 211
Flight Log 220
Jan 30, 2017-B (N208NR, SN8239) 221 Jan 30, 2017-B (N812TB, SN7178) 229
Flight Log 237
Jan 30, 2017-C (N208NR, SN8239) 238
Jan 31, 2017-A (N812TB, SN7178)246
Flight Log 254
Jan 31, 2017-A (N812TB, SN7178)255
Flight Log 263
Jan 31, 2017-B (N812TB, SN7178) 264
Flight Log 273
Feb 8, 2017-A (N246MP, SN8227) 274
Flight Log 282
Flight Log 283
Feb 8, 2017-A (SN7229) 284
Flight Log 292
Feb 8, 2017-B (N246MP, SN8227) 295
Flight Log 302
Feb 8, 2017-B (N812TB, SN7178) 303
Flight Log 311
Feb 9, 2017-A (N246MP, SN8227) 312
Flight Log 321
Feb 9, 2017-A (N812TB, SN7178) 322
Flight Log 330
Feb 9, 2017-A (SN7229) 331
Flight Log 339
Feb 9, 2017-B (N246MP, SN8227) 340
Flight Log 349
Feb 9, 2017-B (N812TB, SN7178) 350
Flight Log 359
Feb 9, 2017-B (SN7229) 360
Flight Log 368
Feb 9, 2017-C (N246MP, SN8227) 369
Flight Log 377
Feb 10, 2017-A (N246MP, SN8227) 378
Flight Log 387
Feb 15, 2017-A (N812TB, SN7178) 388
Flight Log 397

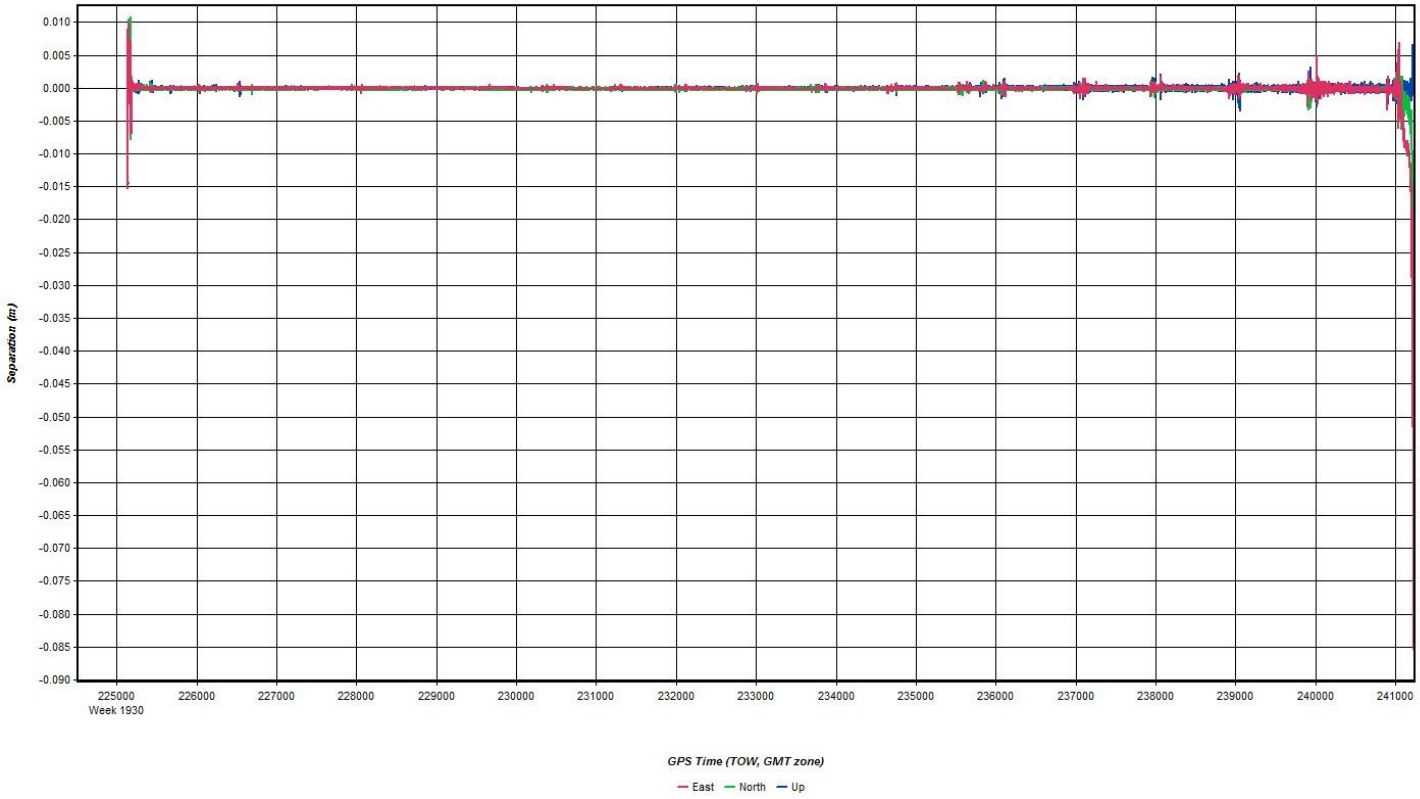
Feb 15, 2017-A (SN7229) 398
Flight Log 406
Feb 15, 2017-B (N246MP, SN8227) 407
Flight Log 417
Feb 16, 2017-A (N246MP, SN8227) 418
Flight Log 425
Feb 16, 2017-A (N73TM, SN7178) 426
Flight Log 434

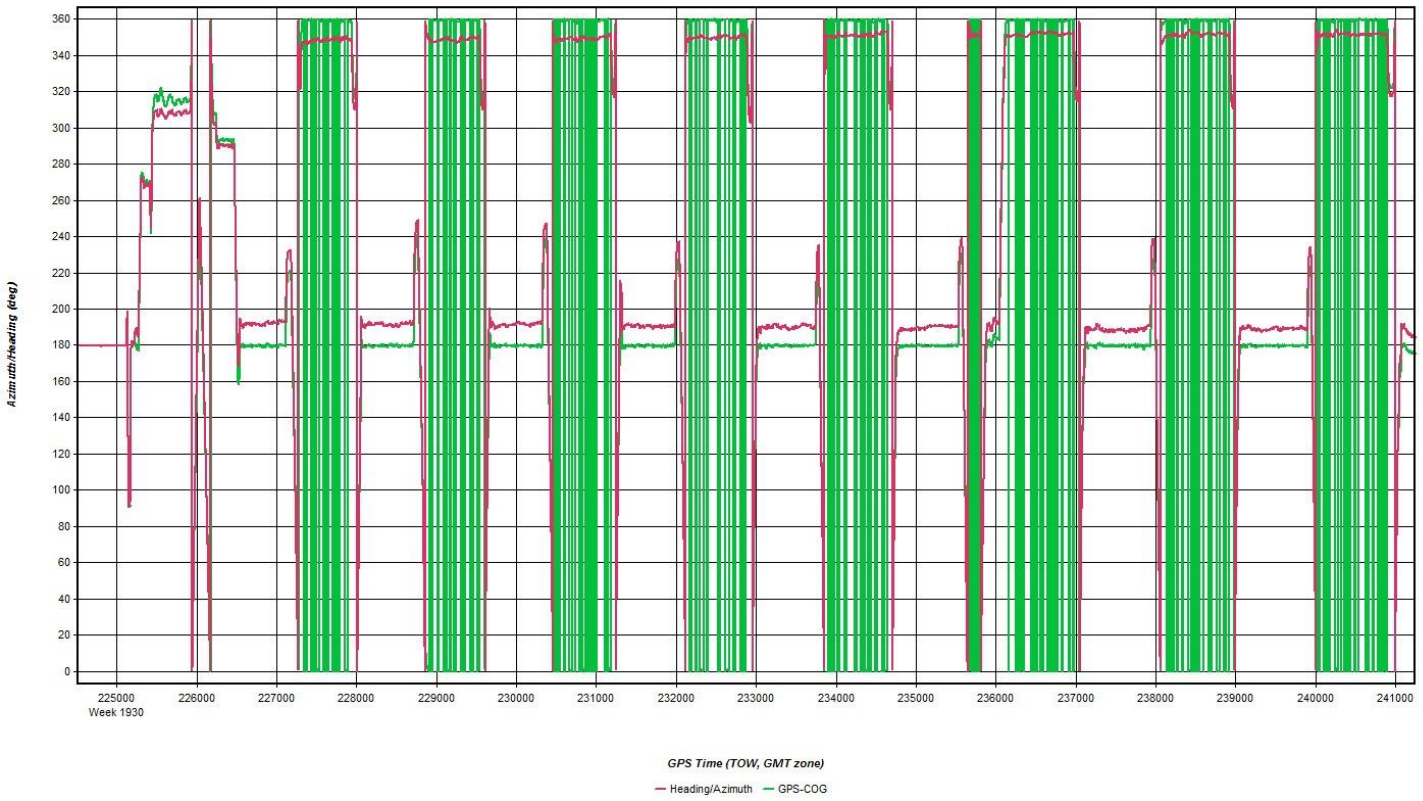
Feb 16, 2017-A (N246MP, SN8227) 435
Flight Log 443
Feb 16, 2017-A (N812TB, SN7178) 444
Flight Log 453
Feb 16, 2017-B (N246MP, SN8227) 454
Flight Log 462
Feb 16, 2017-B (N73TM, SN7178) 463
Flight Log 472
Feb 17, 2017-A (N73TM, SN7178) 473
Flight Log 481
Feb 18, 2017-A (N73TM, SN7178) 482
Flight Log 490
Feb 18, 2017-A (SN7229) 491
Flight Log 499
Feb 18, 2017-B (N73TM, SN7178) 500
Flight Log 507
Feb 22, 2017-A (N246MP, SN8227) 508
Flight Log 517
Feb 22, 2017-A (SN7229) 519
Flight Log 526
Feb 22, 2017-B (N246MP, SN8227) 527
Flight Log 536
Feb 23, 2017-A (N246MP, SN8227)537
Flight Log 547
Feb 23, 2017-A (N73TM, SN7178) 549
Flight Log 557
Feb 23, 2017-A (SN7229) 558
Flight Log 565
Feb 23, 2017-B (N246MP, SN8227) 566
Flight Log 575
Feb 24, 2017-A (N246MP, SN8227) 576
Flight Log 586
Feb 25, 2017-A (N246MP, SN8227)587
Flight Log 596

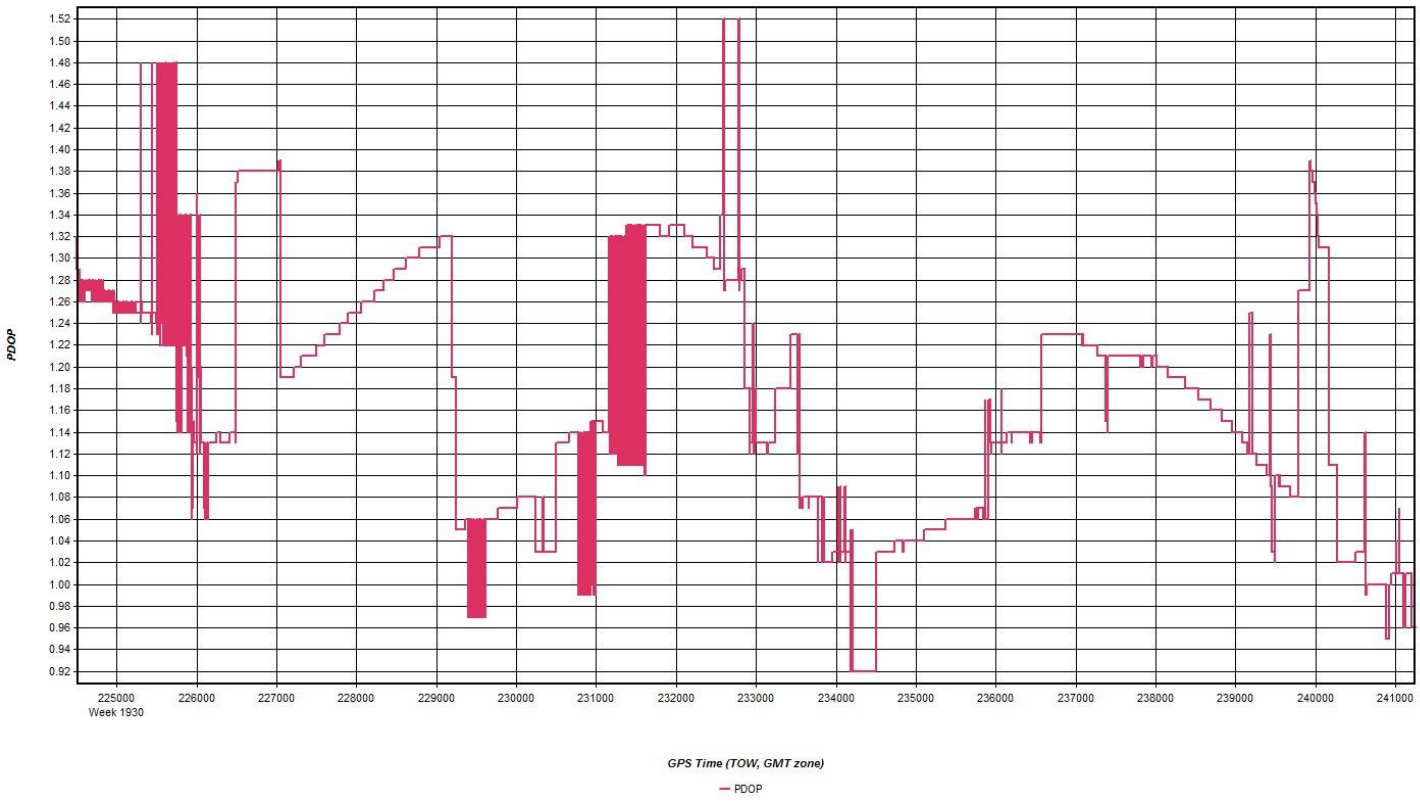
Jan 3, 2017-A (N246MP, SN8146)

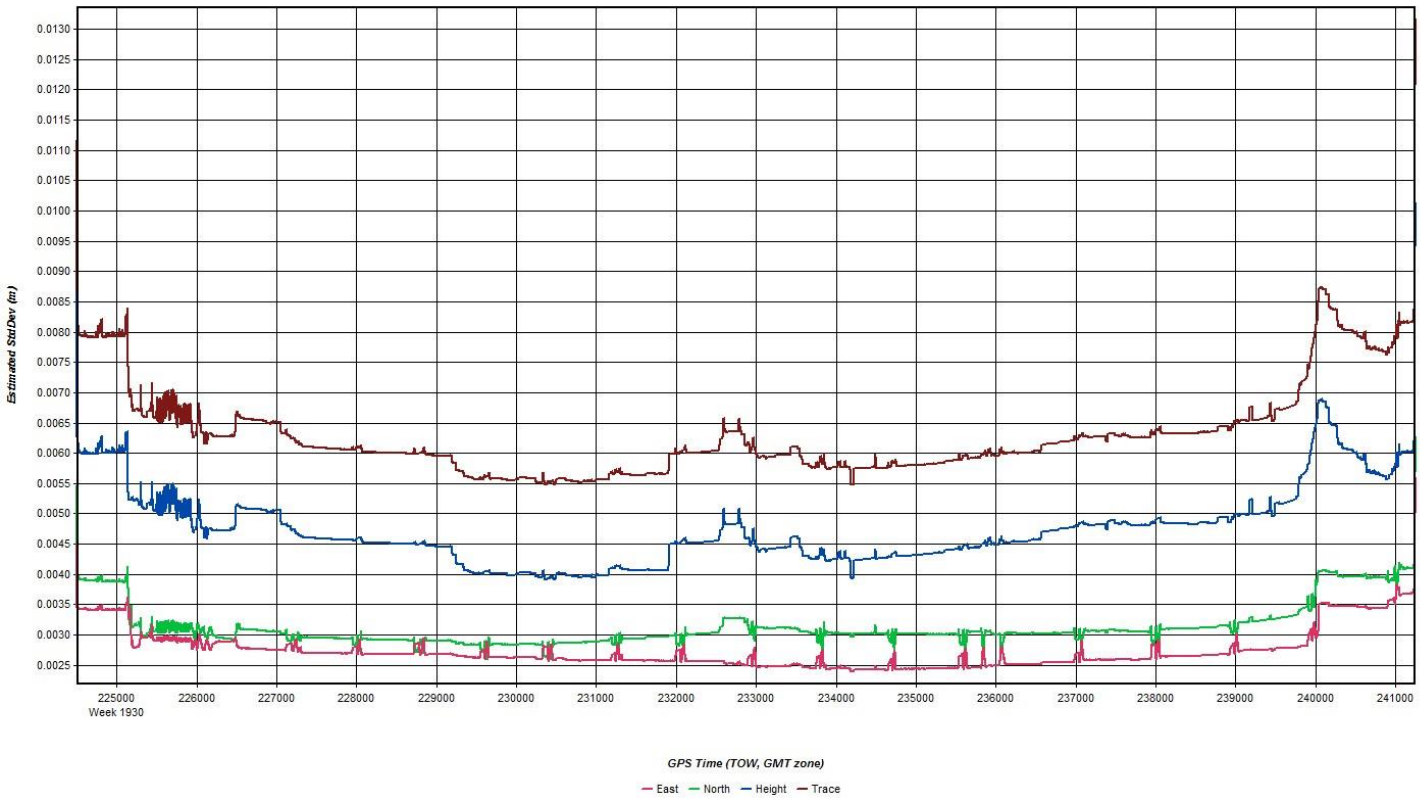


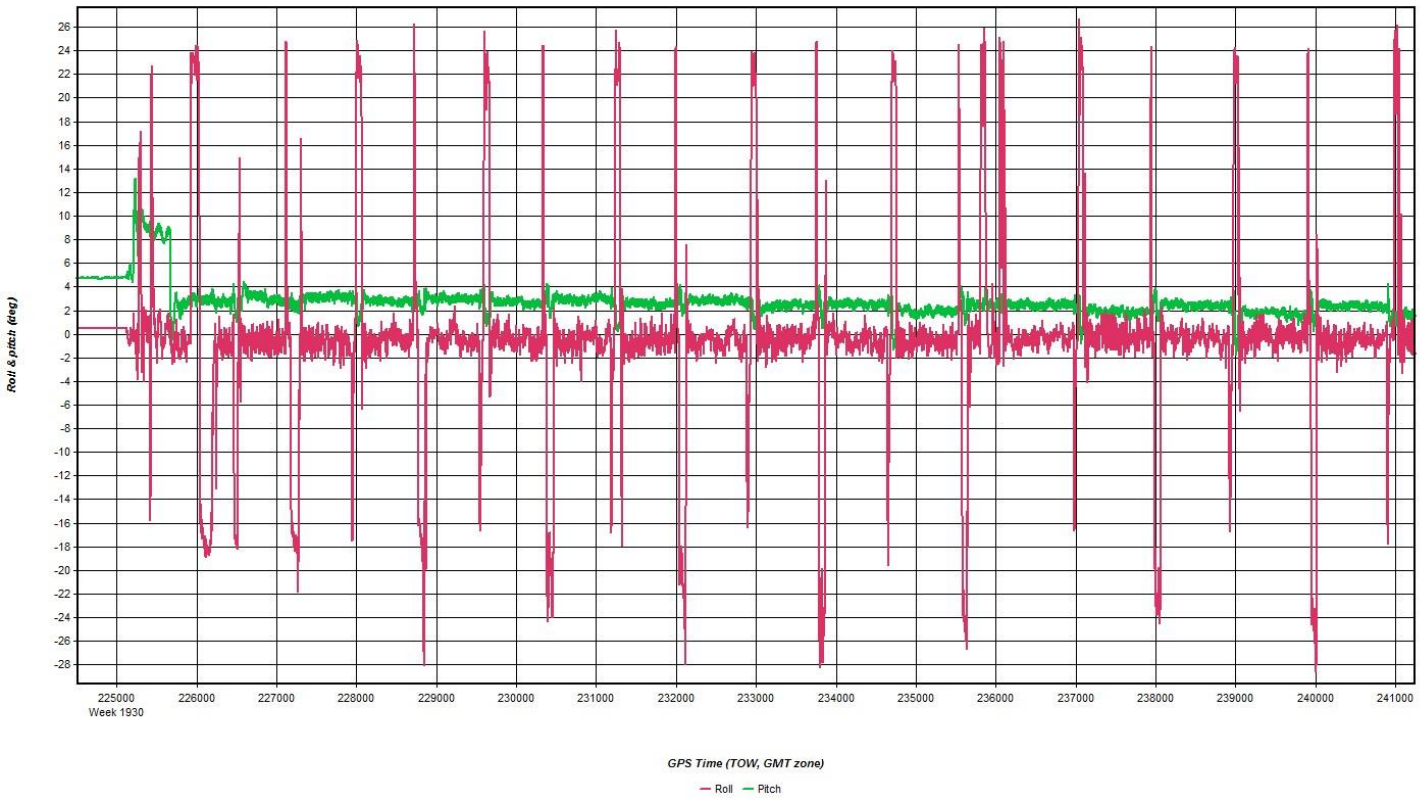

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

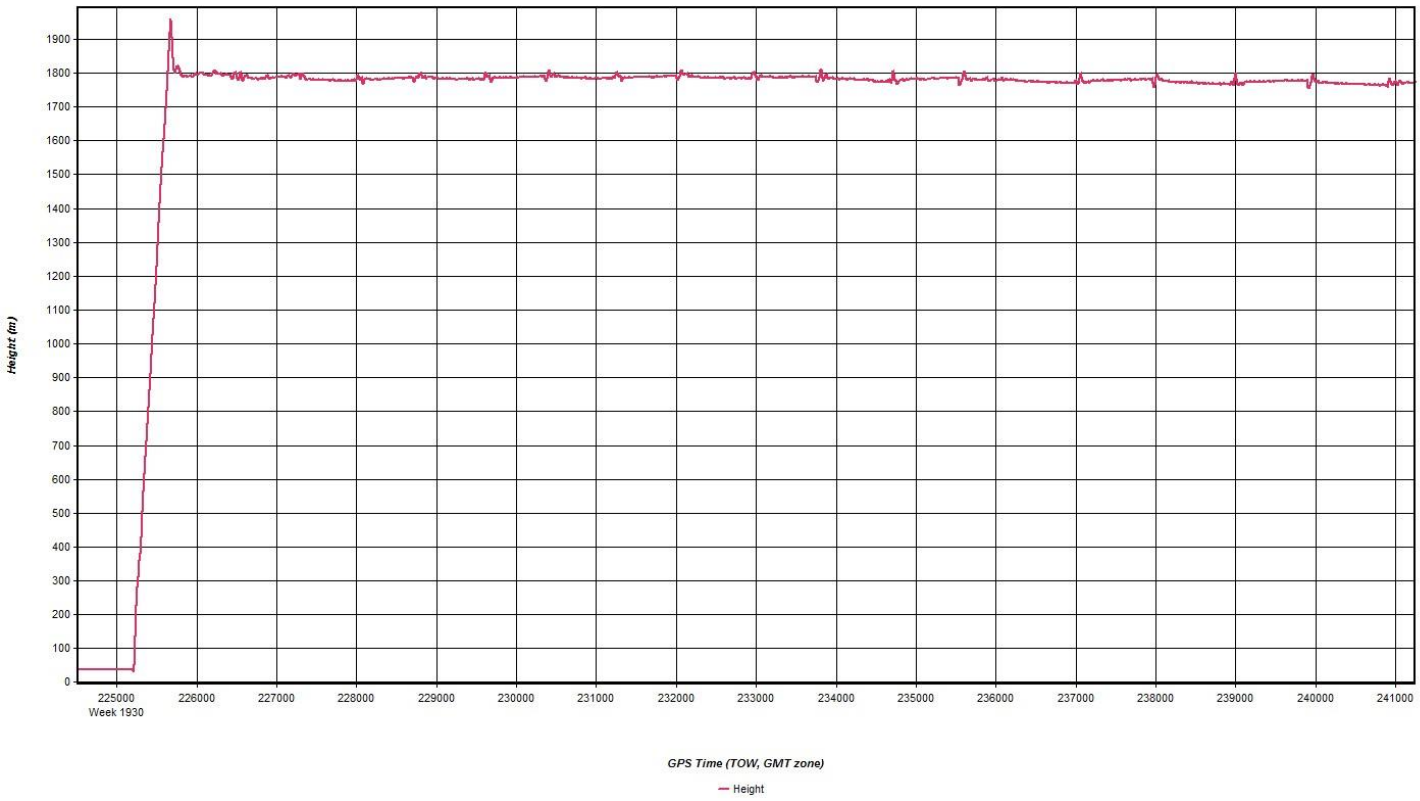

Separation (m)
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
-0.075
-0.080
-0.085
-0.090
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
East
North
Up

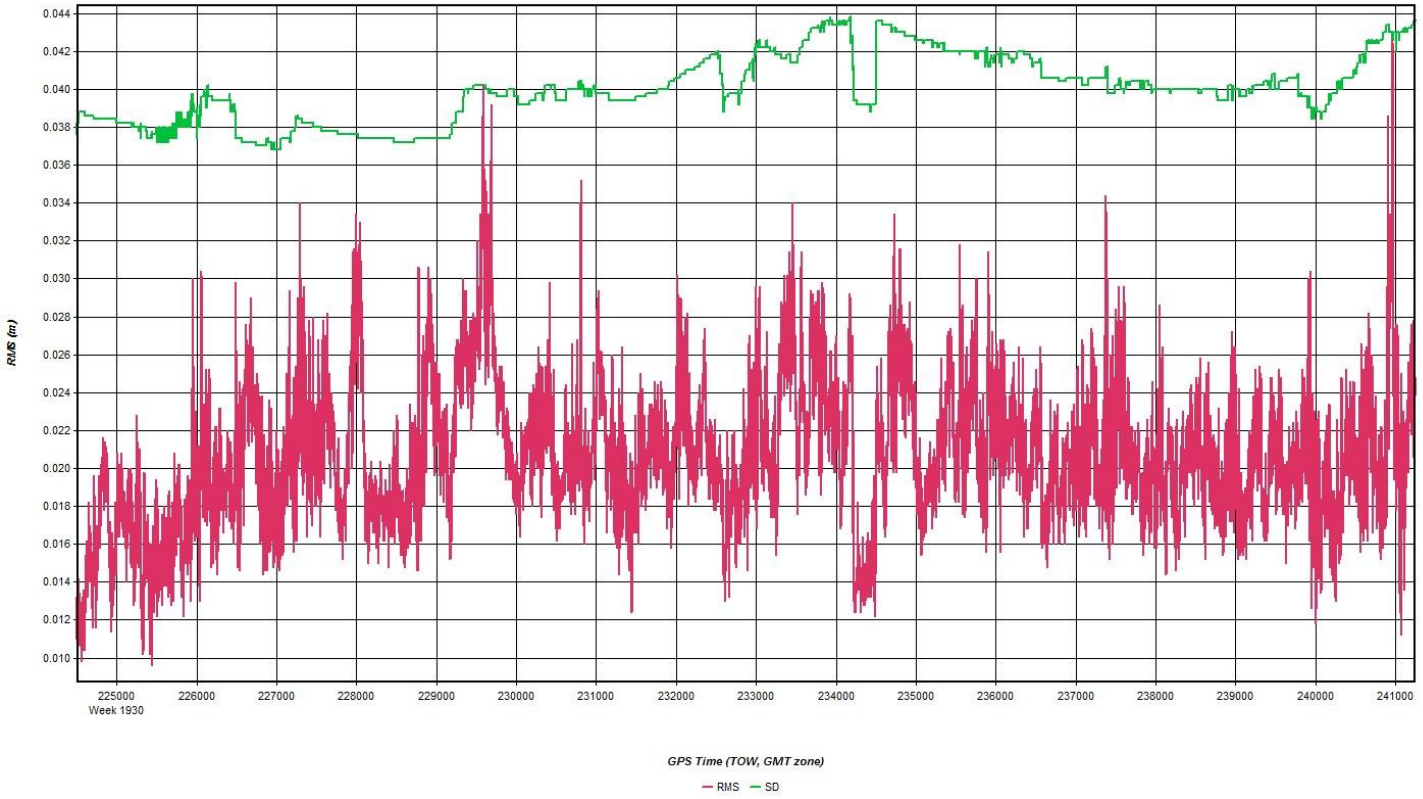

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

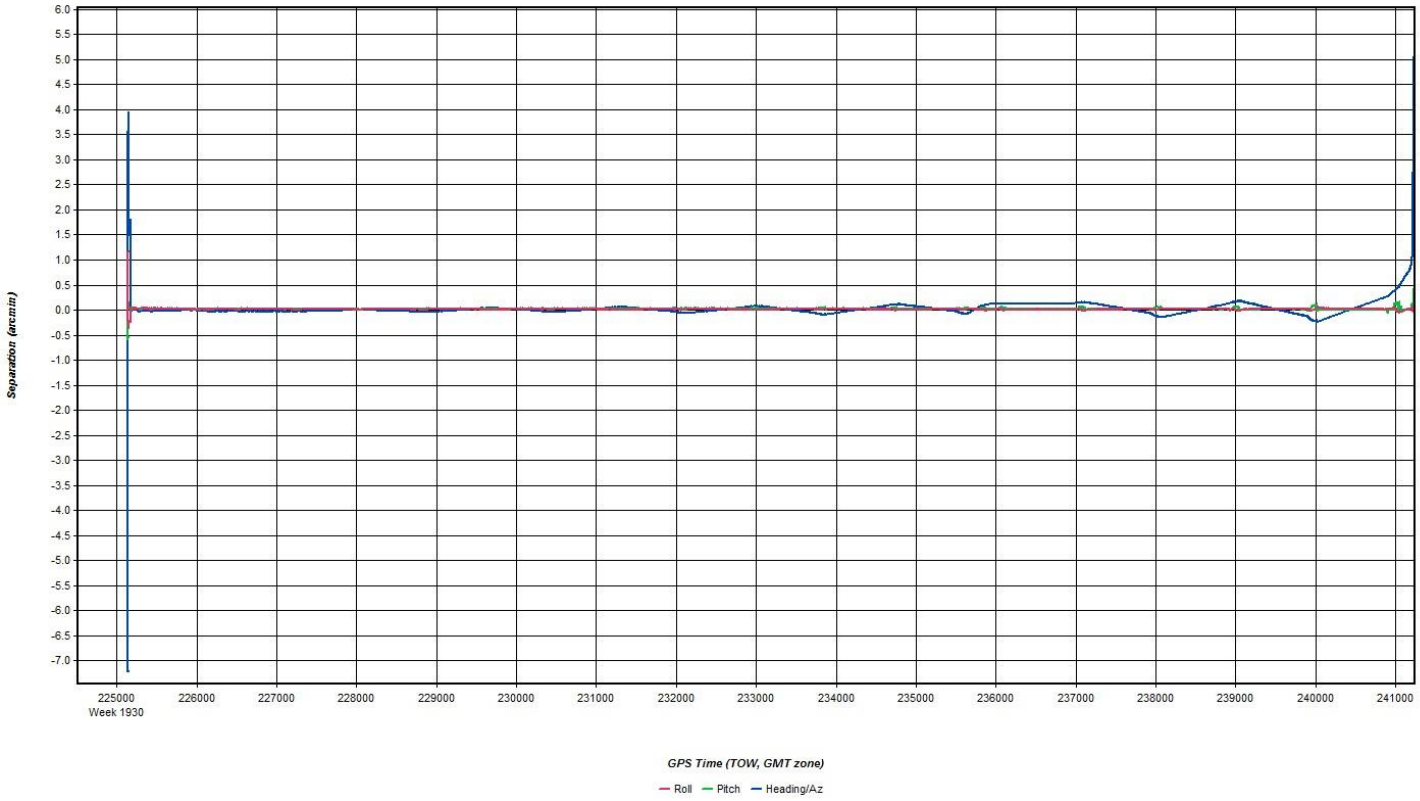

PDOP
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
PDOP

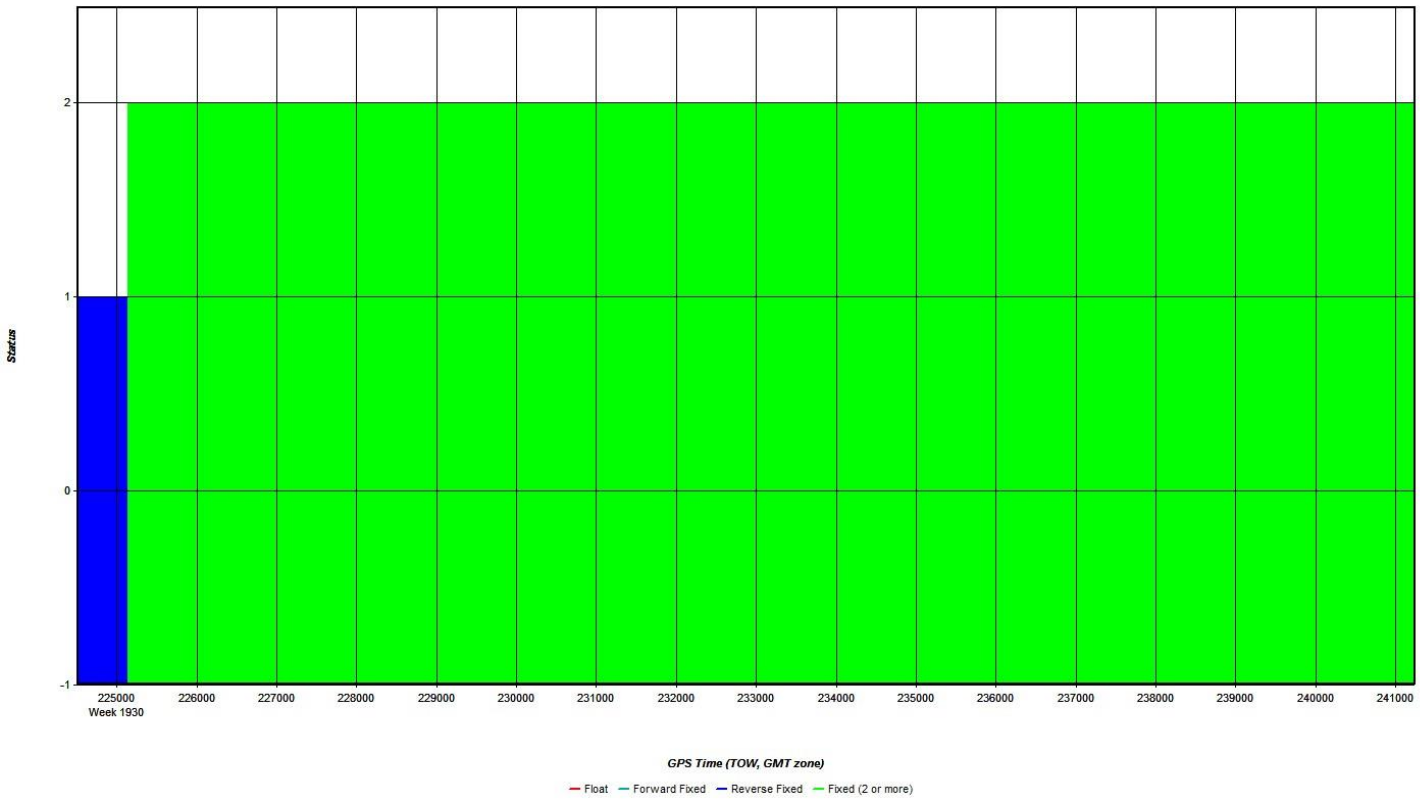

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

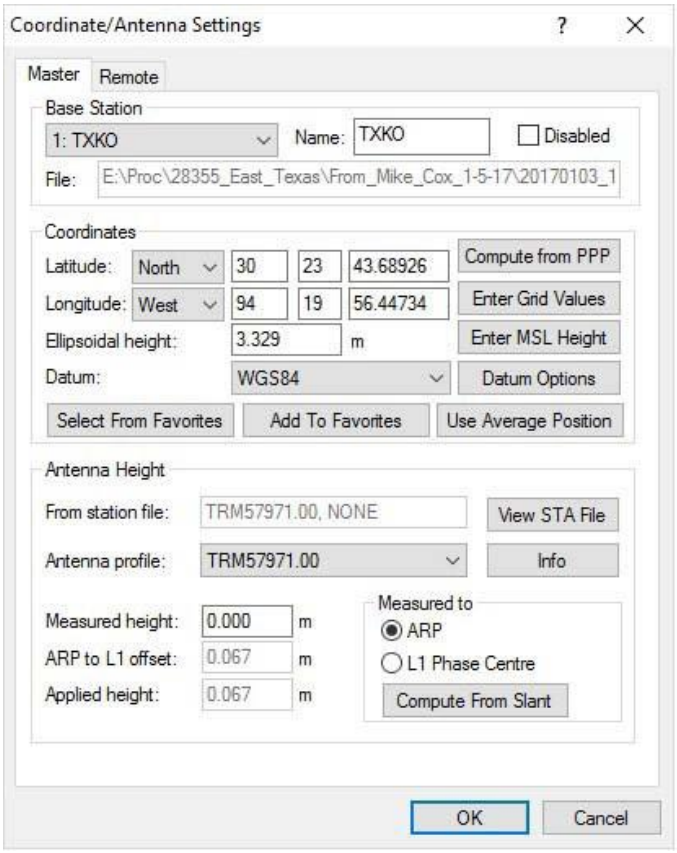

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
Roll
Pitch

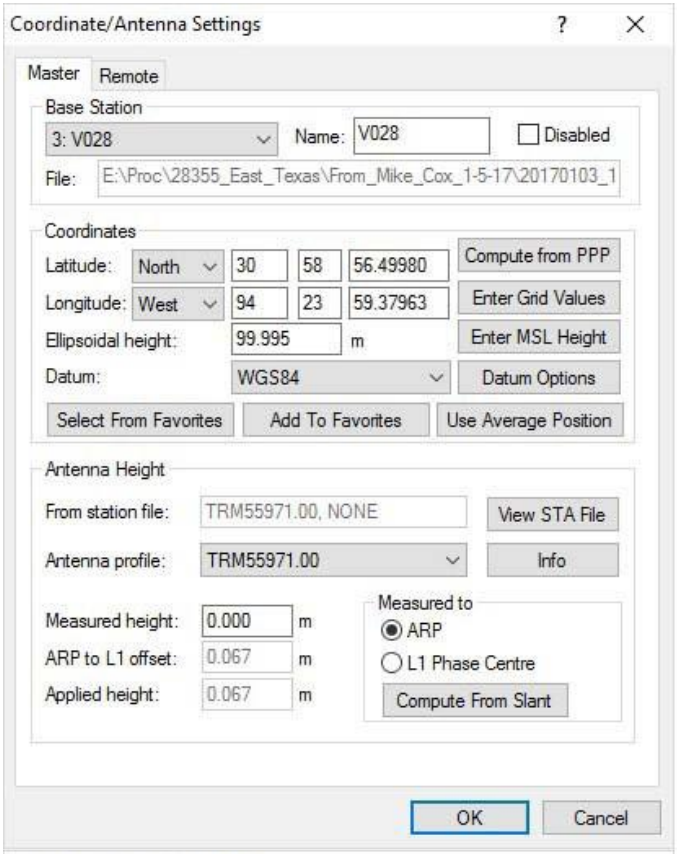

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
Height

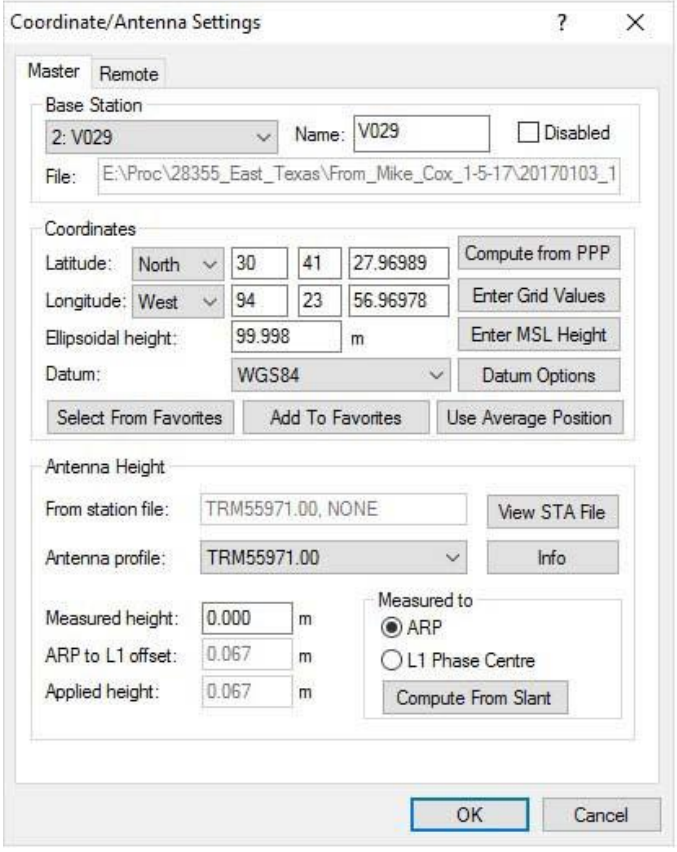

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
-6.5
-7.0
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

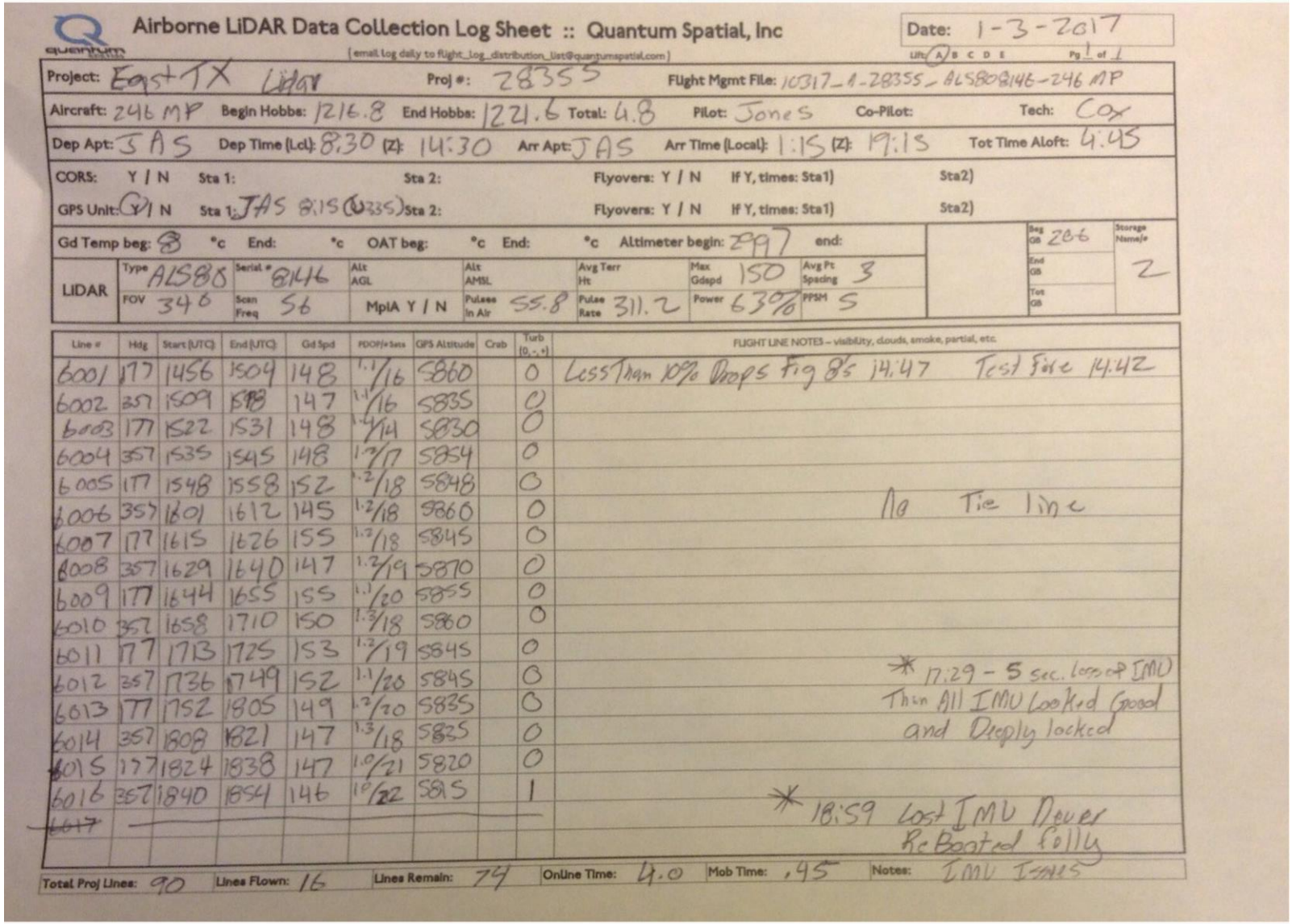

Status
2
1
0
-1
225000
Week 1930
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name:
TXKO
Disabled
File:
E:\Proc\28355_East_Texas\From_Mike_Cox_1-5-17\20170103_1
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V028
Name: V028
Disabled
File: E:\Proc\28355_East_Texas\From_Mike_Cox_1-5-17\20170103_1
Coordinates
Latitude: North 30 58 56.49980
Longitude: West 94 23 59.37963
Ellipsoidal height: 99.995 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V029
Name: V029
Disabled
File: E:\Proc\28355_East_Texas\From_Mike_Cox_1-5-17\20170103_1
Coordinates
Latitude: North 30 41 27.96989
Longitude: West 94 23 56.96978
Ellipsoidal height: 99.998 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-3-2017

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Lift: A / B C D E Pg 1 of 1

Project: East TX Lidar Proj #: 28355 Flight Mgmt File: 10317_1-28355_ALS80-146-246 MP

Aircraft: 246 MP Begin Hobbs: 1216.8 End Hobbs: 1221.6 Total: 4.8 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: JAS Dep Time (Lcl): 8:30 (Z): 14:30 Arr Apt: JAS Arr Time (Local): 1:15 (Z): 19:15 Tot Time Aloft: 4:45

CORS: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: JAS 8:15 (1335) Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 8 °c End: °c OAT beg: °c End: °c Altimeter begin: 2997 end:

Beg GB 206 Storage Name/# 2

End GB

Tot GB

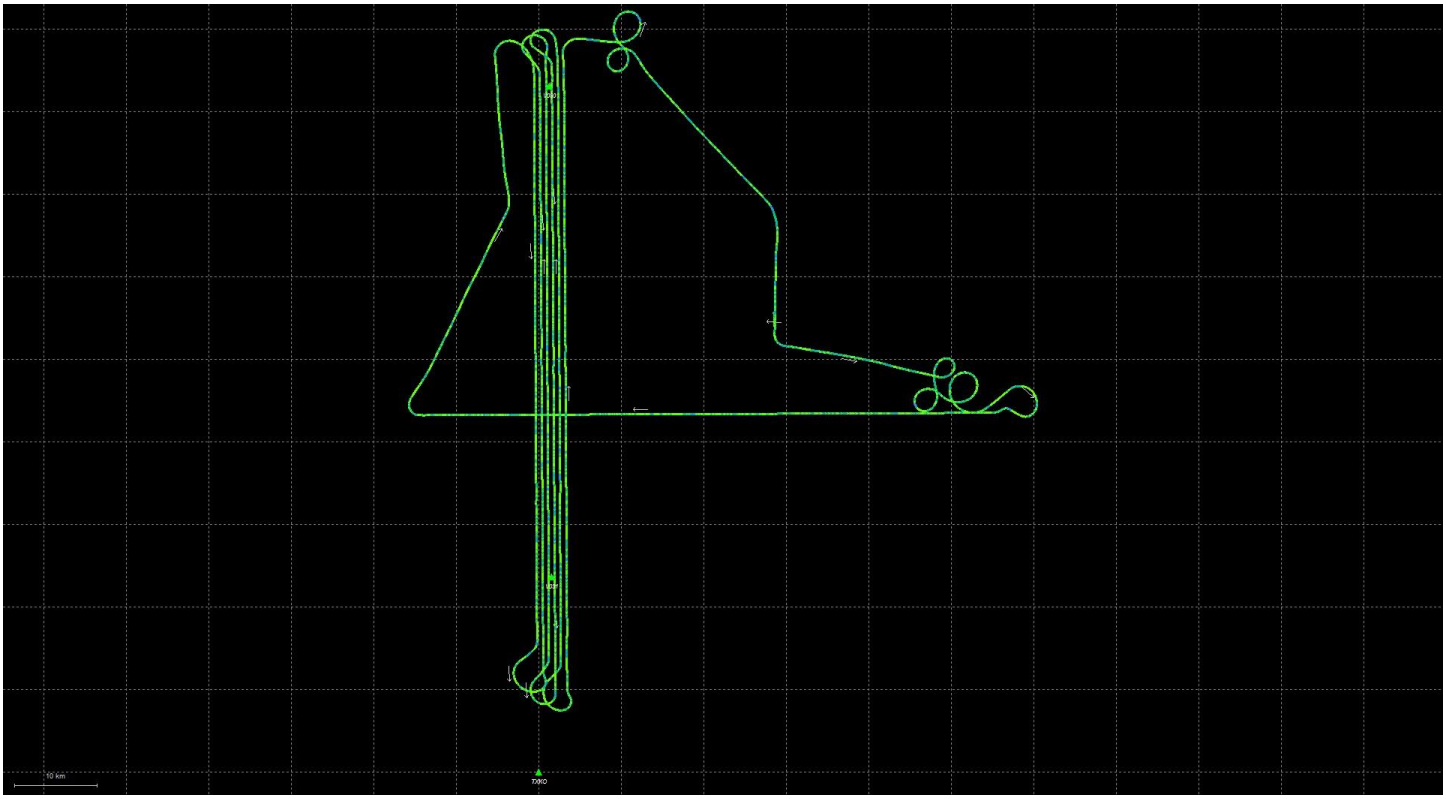
LIDAR: Type ALS80 Serial # 8146 Alt AGL Alt AMSL Avg Terr Ht Max Gdspd 150 Avg Pt Spacing 3

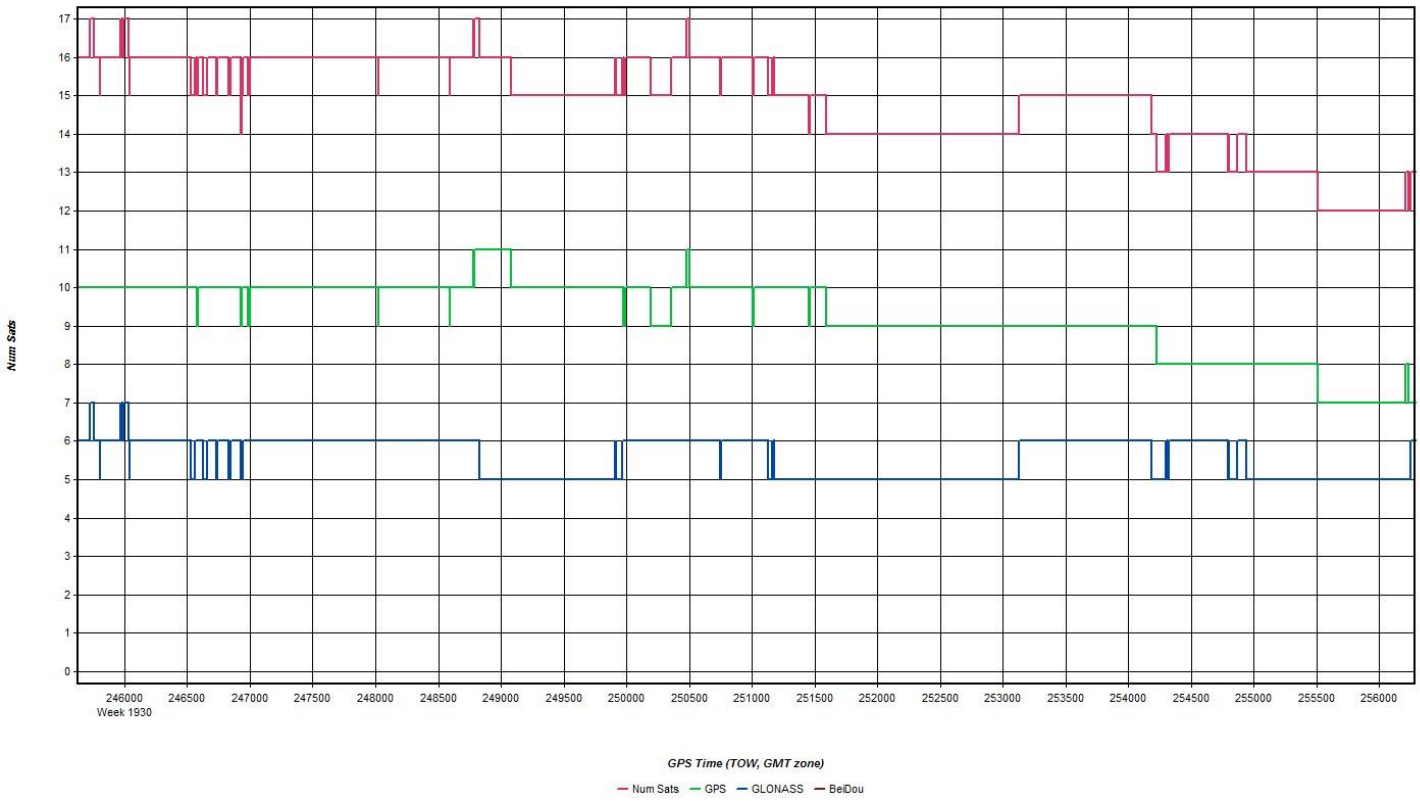
FOV 34.6 Scan Freq 56 MpIA Y / N Pulses in Air 55.8 Pulse Rate 311.2 Power 63% PPSM 5

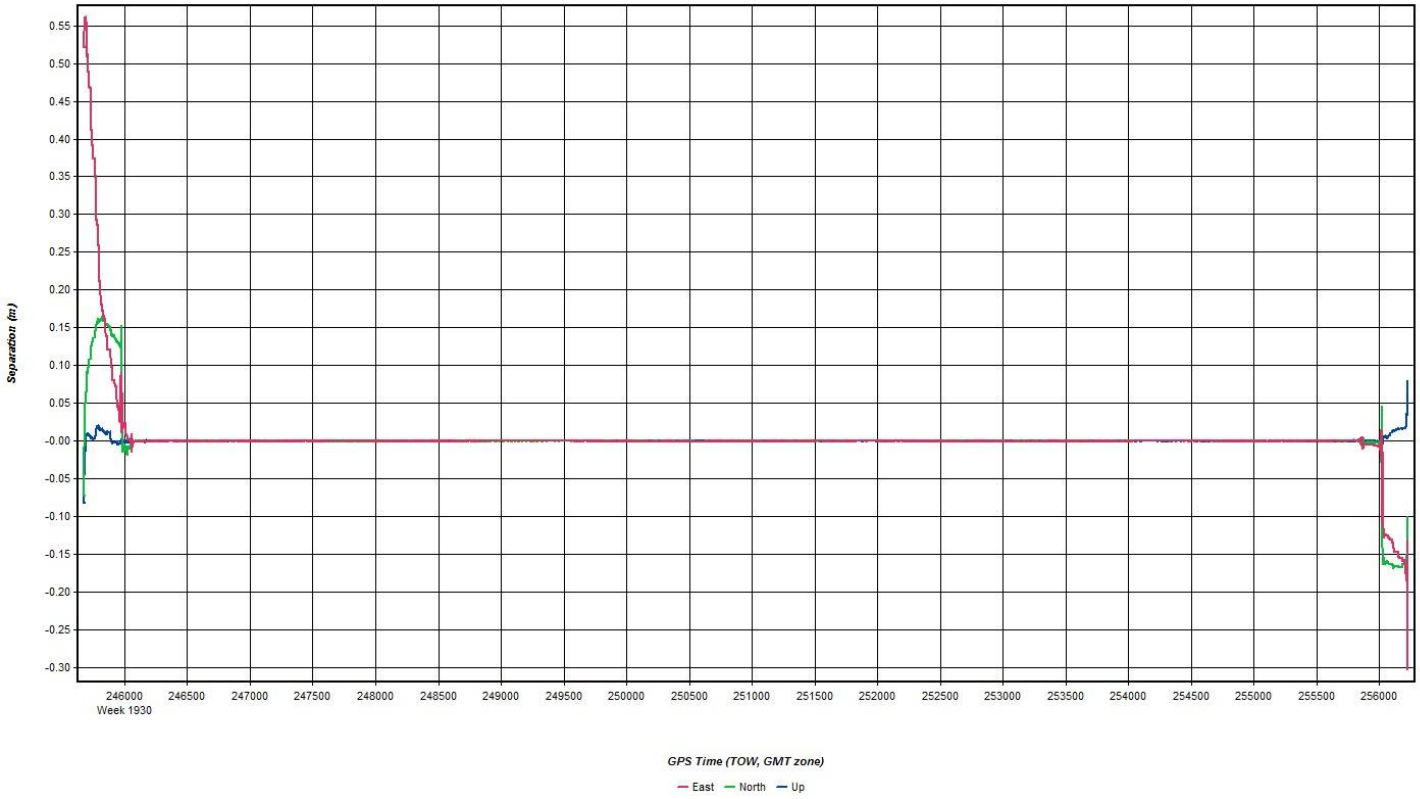
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6001	177	1456	1504	148	1.1/16	5860		0	Less Than 10% Drops Fig 8's 14:47 Test Fire 14:42
6002	357	1509	1518	147	1.1/16	5835		0	
6003	177	1522	1531	148	1.1/14	5830		0	
6004	357	1535	1545	148	1.2/17	5854		0	
6005	177	1548	1558	152	1.2/18	5848		0	
6006	357	1601	1612	145	1.2/18	5860		0	No Tie line
6007	177	1615	1626	155	1.2/18	5845		0	
6008	357	1629	1640	147	1.2/19	5870		0	
6009	177	1644	1655	155	1.1/20	5855		0	
6010	357	1658	1710	150	1.2/18	5860		0	
6011	177	1713	1725	153	1.2/19	5845		0	
6012	357	1736	1749	152	1.1/20	5845		0	* 17:29 - 5 sec. Loss of IMU Then All IMU Looked Good and Deeply locked
6013	177	1752	1805	149	1.2/20	5835		0	
6014	357	1808	1821	147	1.3/18	5825		0	
6015	177	1824	1838	147	1.0/21	5820		0	
6016	357	1840	1854	146	1.0/22	5815		1	* 18:59 Lost IMU Never Re Booted Fully
~~6017~~									

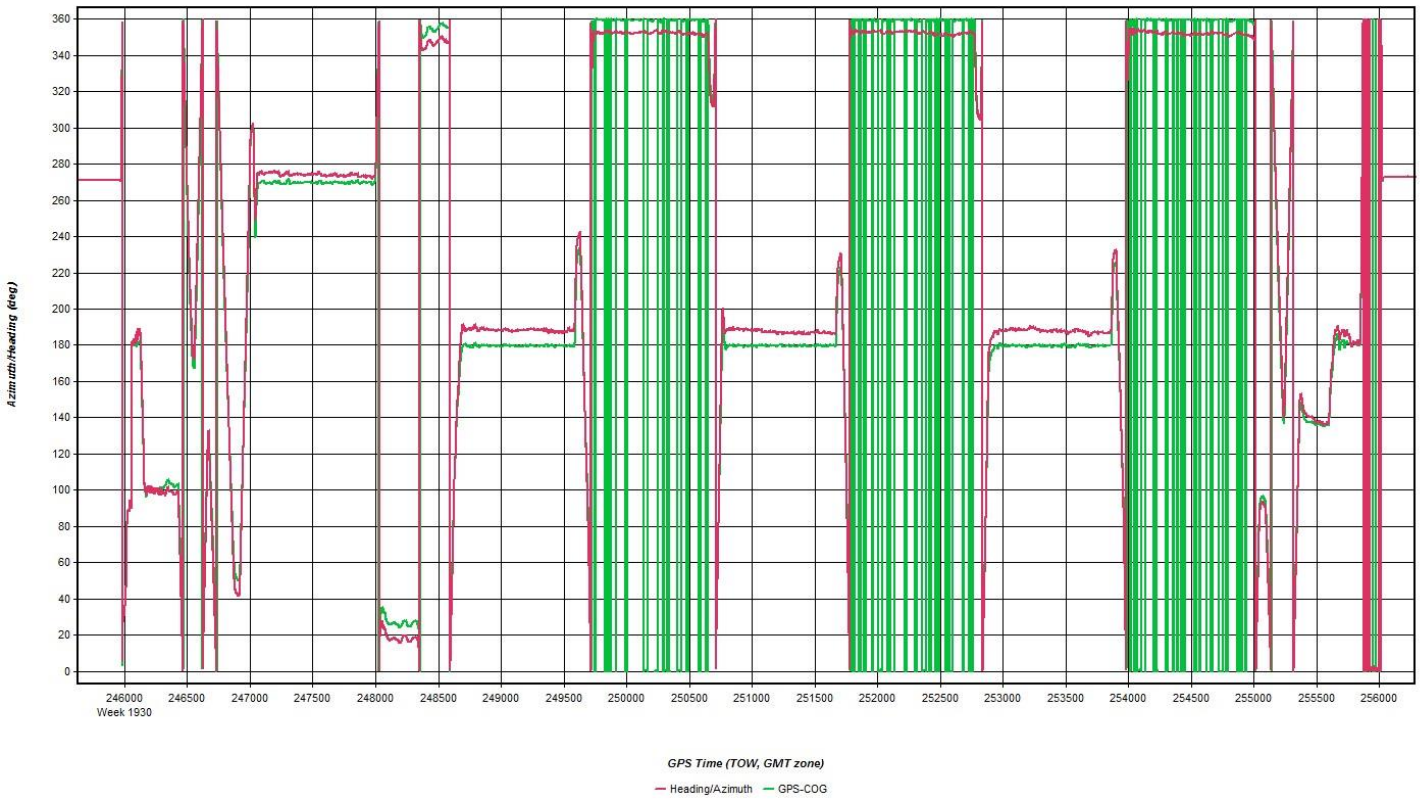
Total Proj Lines: 90 Lines Flown: 16 Lines Remain: 74 OnLine Time: 4.0 Mob Time: .45 Notes: IMU Issues

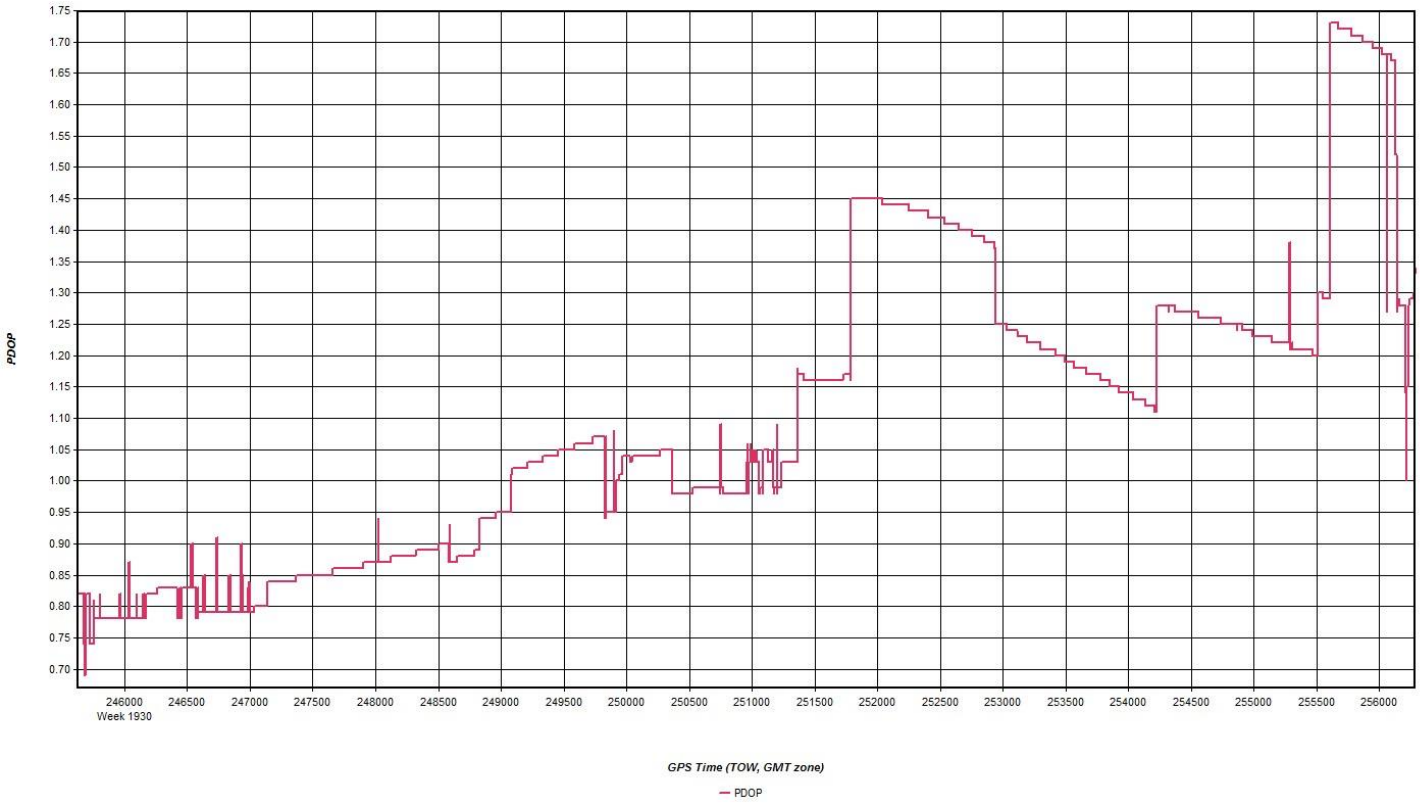
Jan 3, 2017-B (N246MP, SN8146)

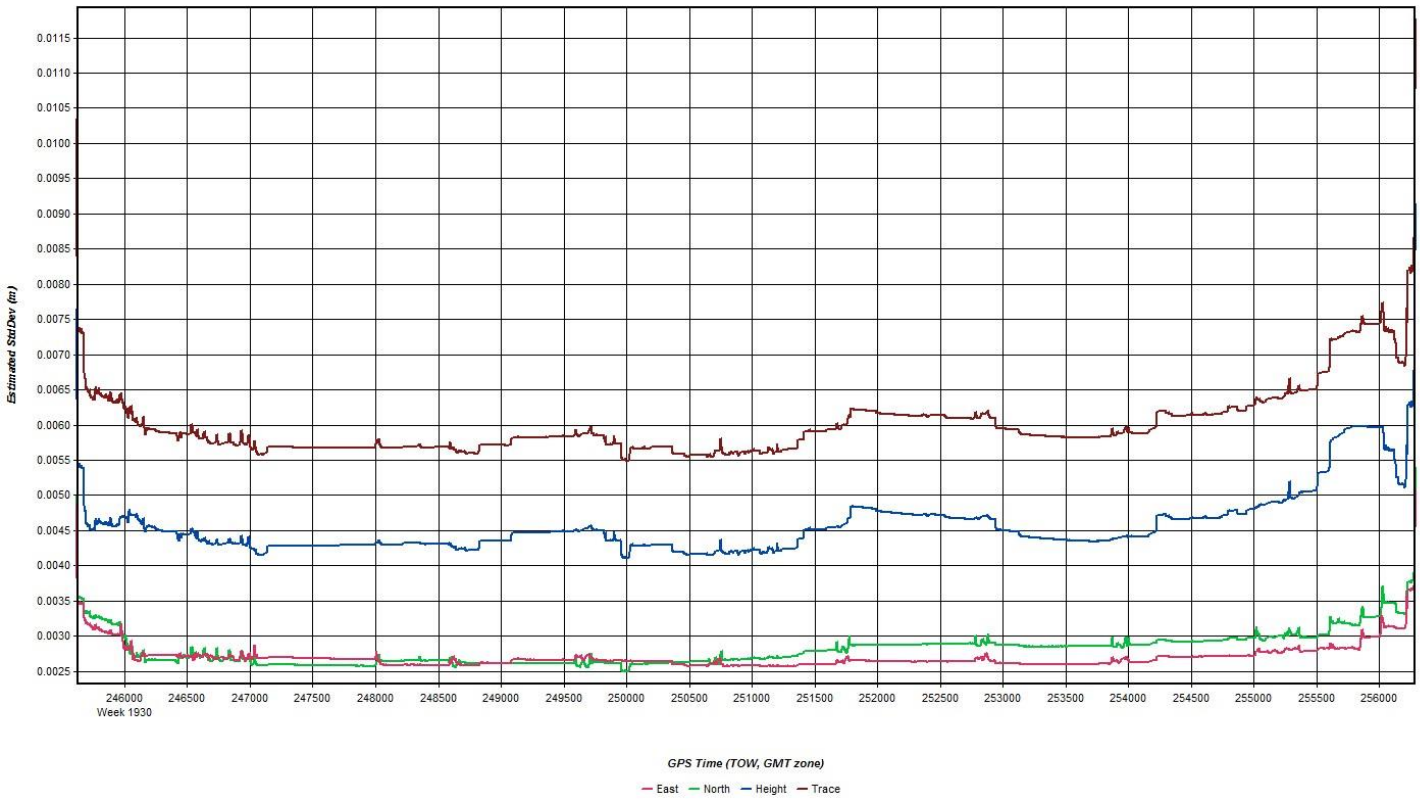


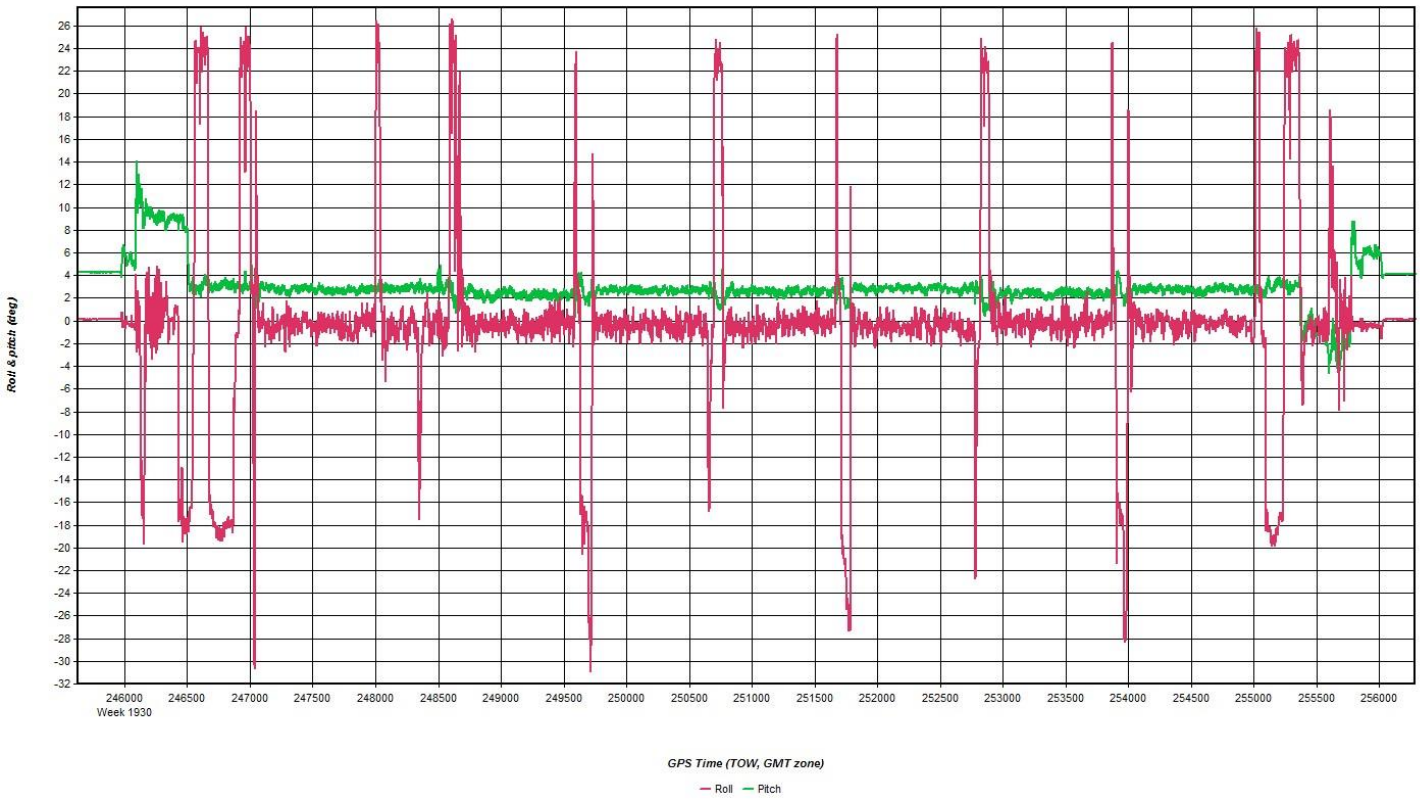

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

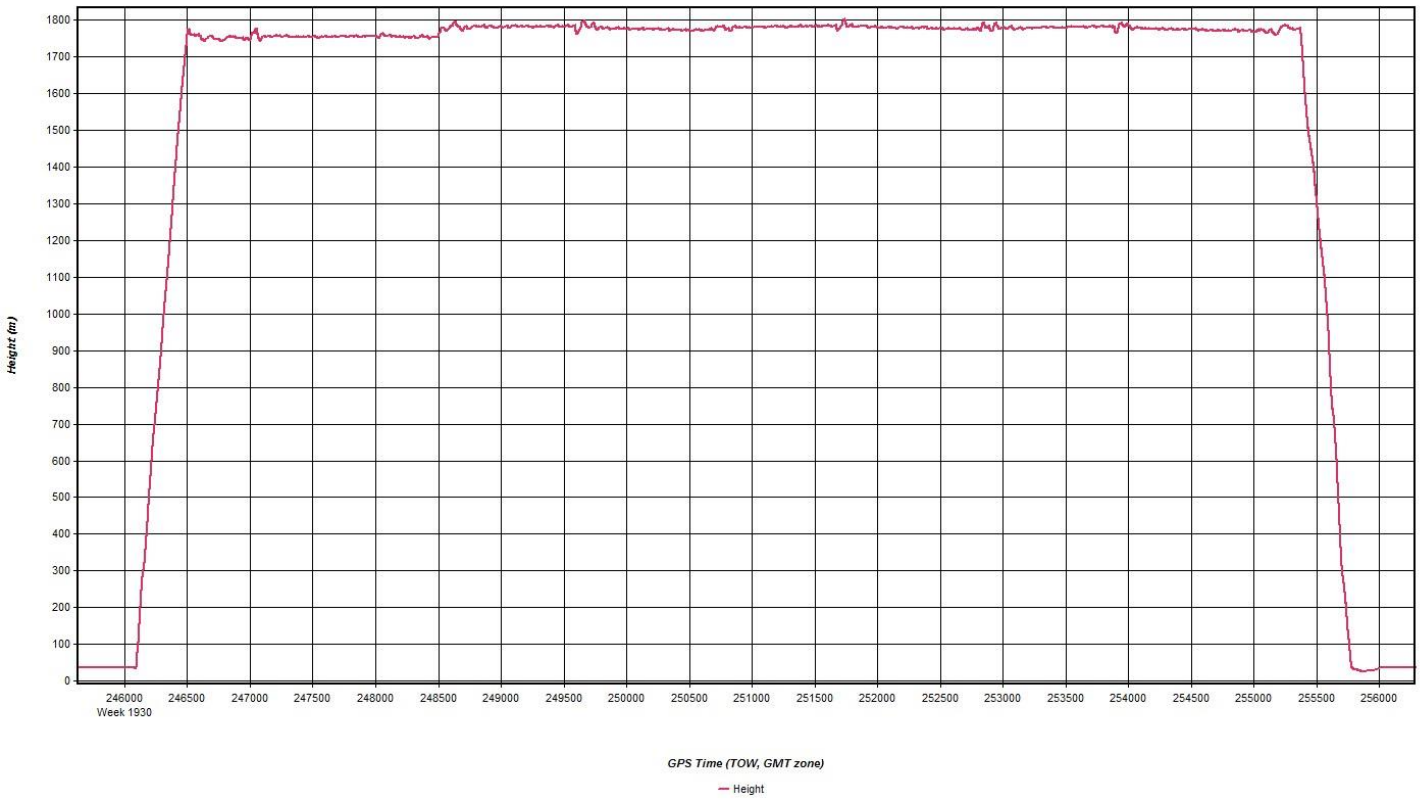

Separation (m)
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
East
North
Up

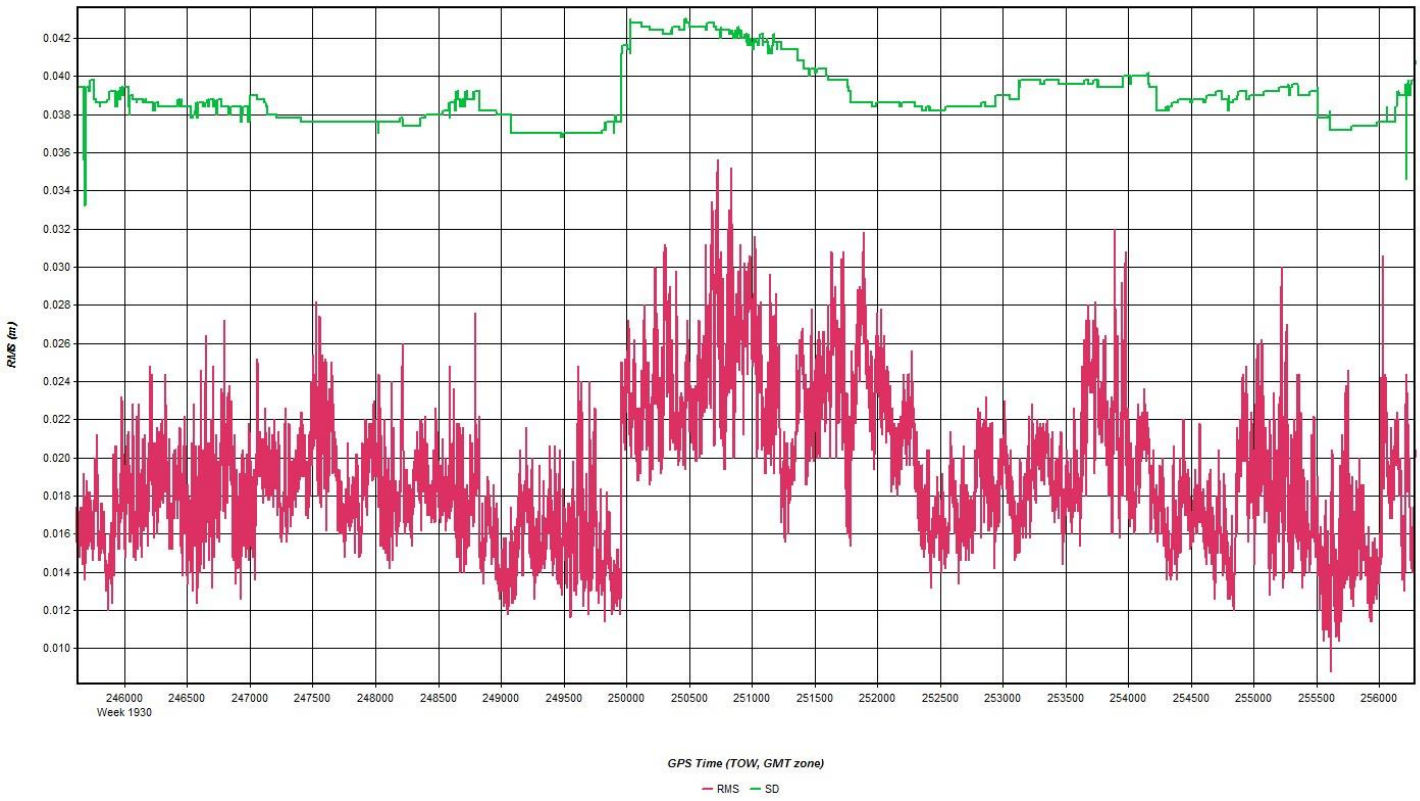

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

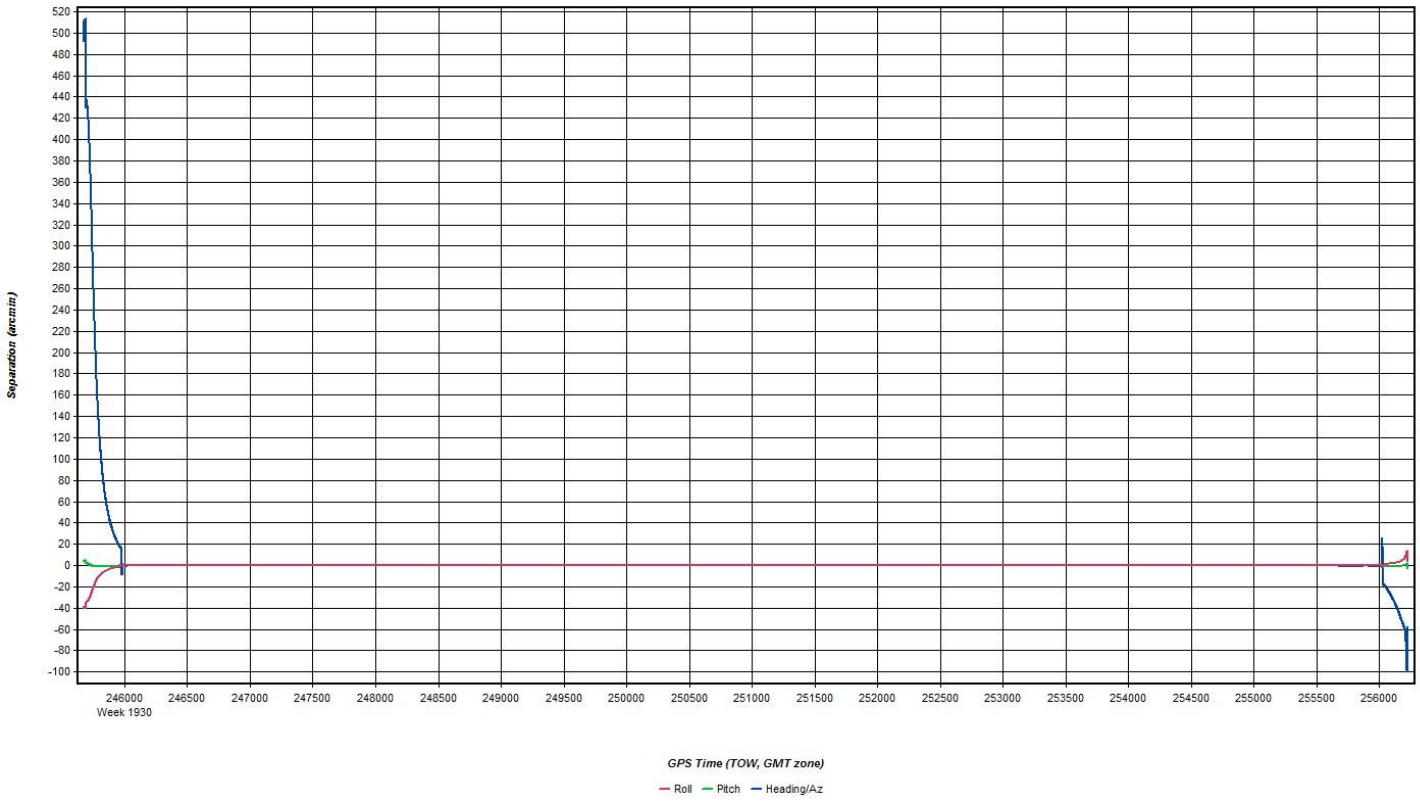

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
PDOP

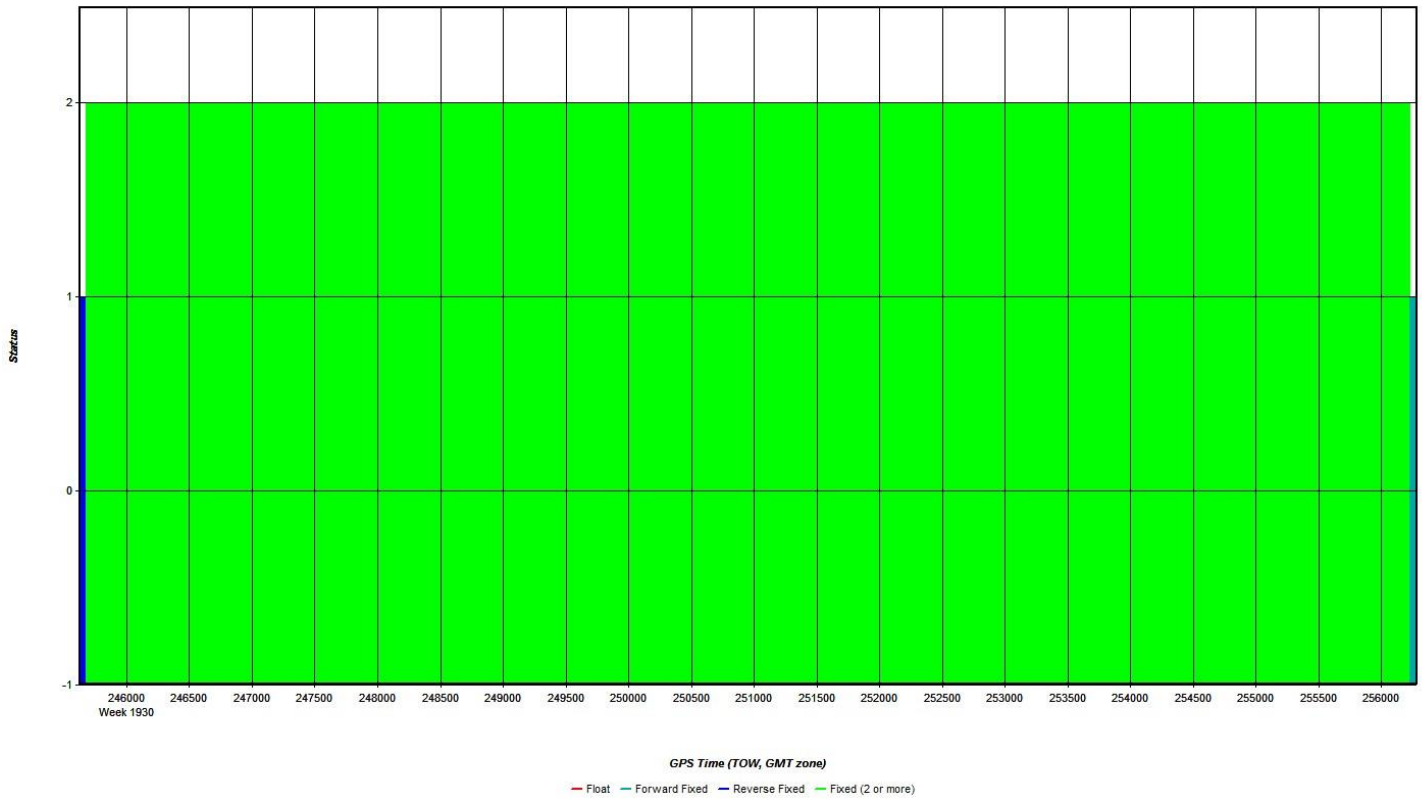

Estimated StdDev (m)
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

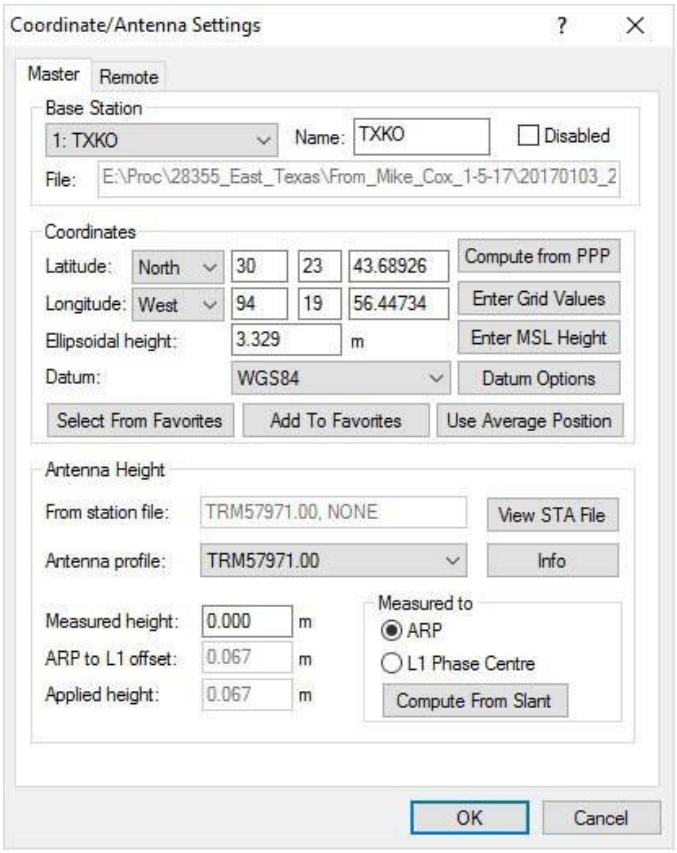

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
Roll
Pitch

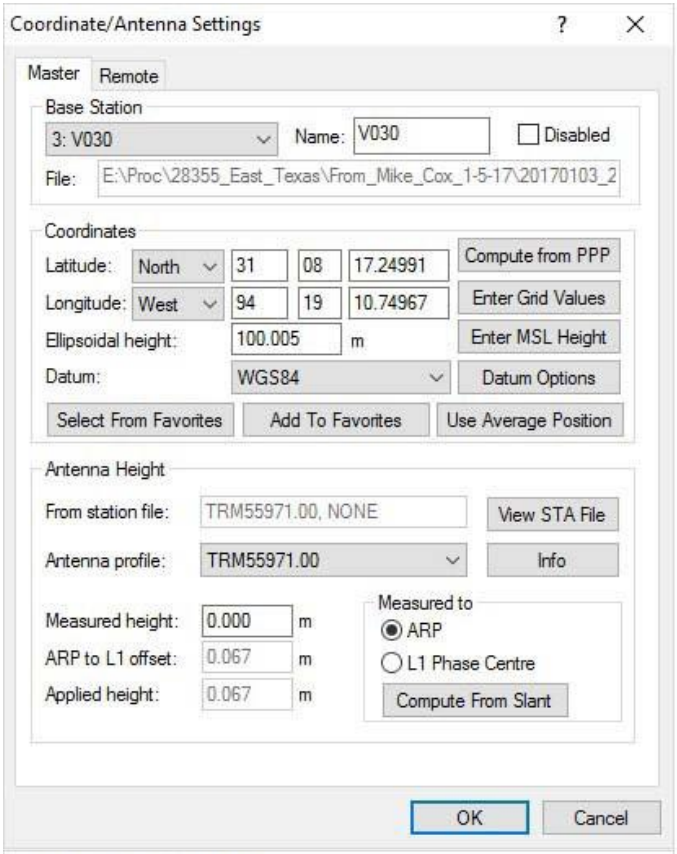

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
Height

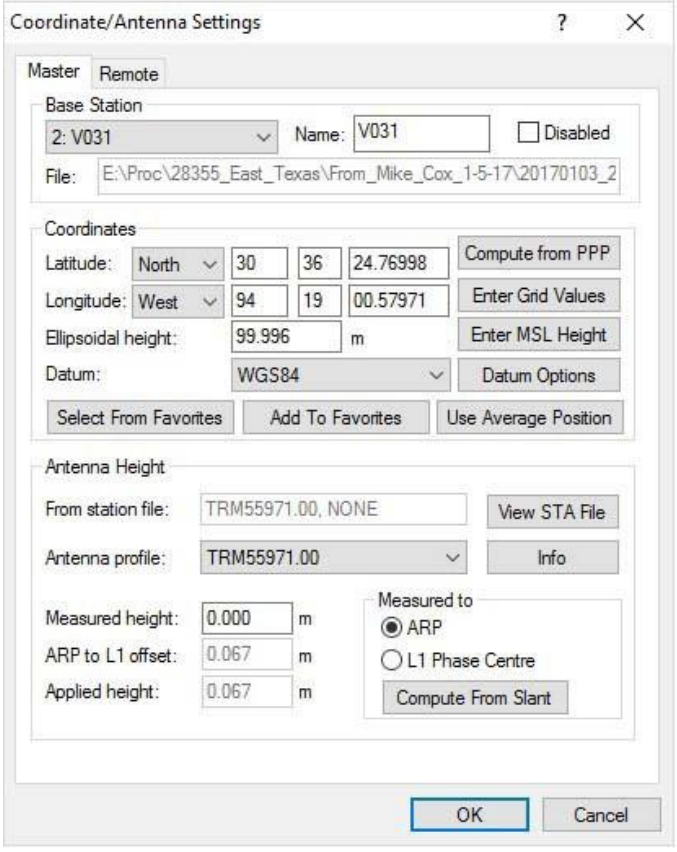

RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
520
500
480
460
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
246000
Week 1930
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name:
TXKO
Disabled
File:
E:\Proc\28355_East_Texas\From_Mike_Cox_1-5-17\20170103_2
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V030
Name: V030
Disabled
File: E:\Proc\28355_East_Texas\From_Mike_Cox_1-5-17\20170103_2
Coordinates
Latitude: North 31 08 17.24991
Longitude: West 94 19 10.74967
Ellipsoidal height: 100.005 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V031
Name: V031
Disabled
File: E:\Proc\28355_East_Texas\From_Mike_Cox_1-5-17\20170103_2
Coordinates
Latitude: North 30 36 24.76998
Longitude: West 94 19 00.57971
Ellipsoidal height: 99.996 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-3-2017

Project: Gal TX Lidar Proj #: 28355 Flight Plan# File: 6117_B_28355_AL20161216_246MP

Aircraft: 246MP Begin Hobbs: 1271.6 End Hobbs: 1224.3 Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: JAS Dep Time (Lcl): 7:12:42 20:12:42 Arr Apt: JAS Arr Time (Local): 5:00 (Z) 23:00 Tot Time Aloft:

CORS: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: (D) N Sta 1: (0235) JAS Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Std Temp beg: °C End: °C OAT beg: °C End: °C Altimeter begin: end:

	Type	Serial #	Int	Avg Terr Elv	Pulse Rate	Fov	Avg Ft Spacing	Beg Hr	End Hr
LiDAR	ALS80	8146		311.2	55.8	30	3		
	Scan Freq 0	Scan Ang 56	NpiA Y / N	Pulses in Air 6578	PRR 3				

Line #	Mag	Start (UTC)	End (UTC)	Old Rpd	Roll (+/-)	Alt AGL	GPS Altitude	Crab	Turb (0-3)	FLIGHT LINE NOTES - visibility, clouds, smoke, permit, etc.
6091	288	2357	2052	145	1.1/17	5705			0	
6017	177	2105	2119	141	1.3/17	5825			0	Lost Main RZ Dept
6018	87	2122	2137	150	1.3/18	5823			1	
6019	177	2140	2154	155	1.2/17	5840			1	
6020	357	2157	2212	148	1.1/17	5840			1	
6021	177	2215	2230	153	1.3/16	5838			0	
6022	87	2231	2249	150	1.3/16	5820			0	

* 22:33 Lost GPS 5 sec's Then All IMU Looked Good and Displayed

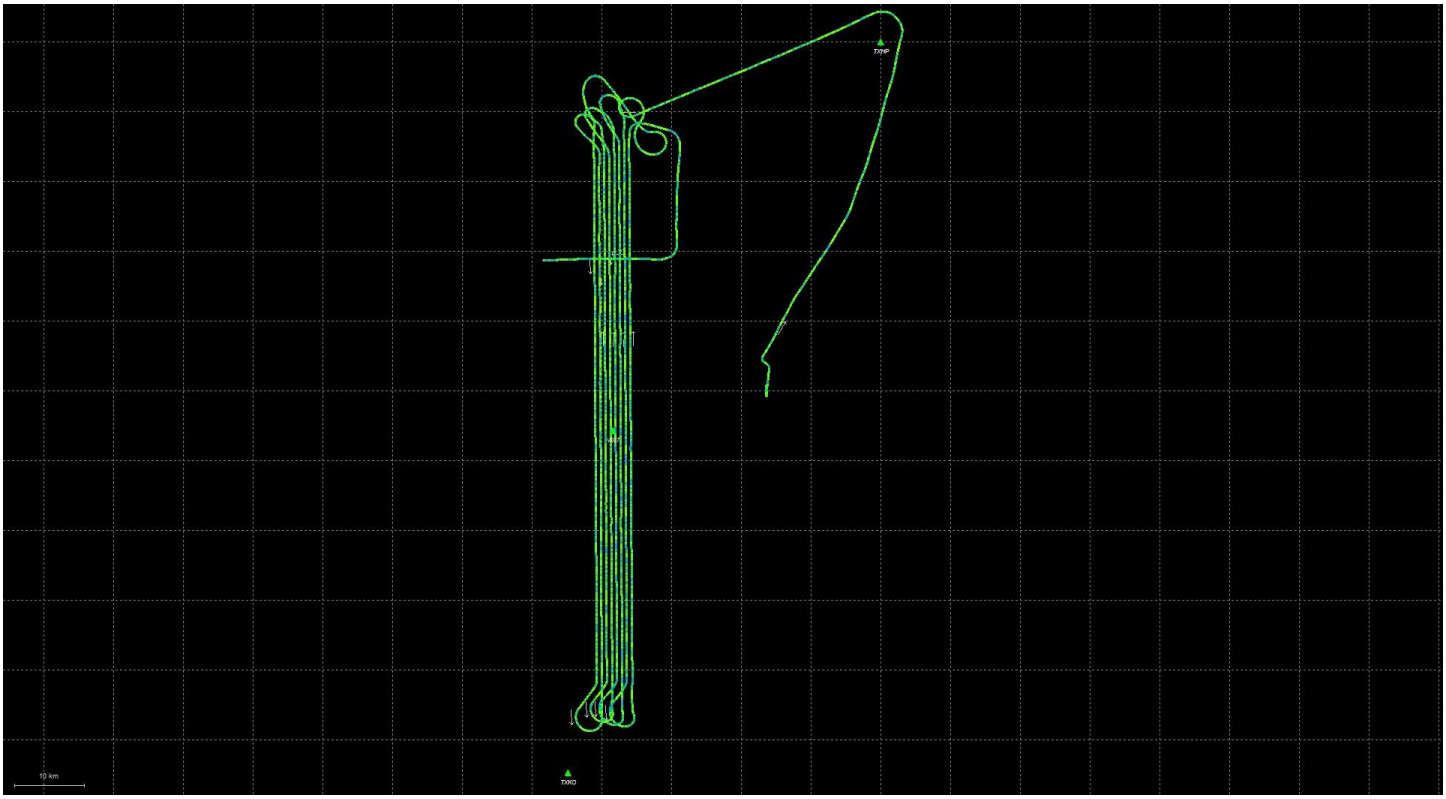
Tie Line \ 5:08 20:31 Test Fire 2020

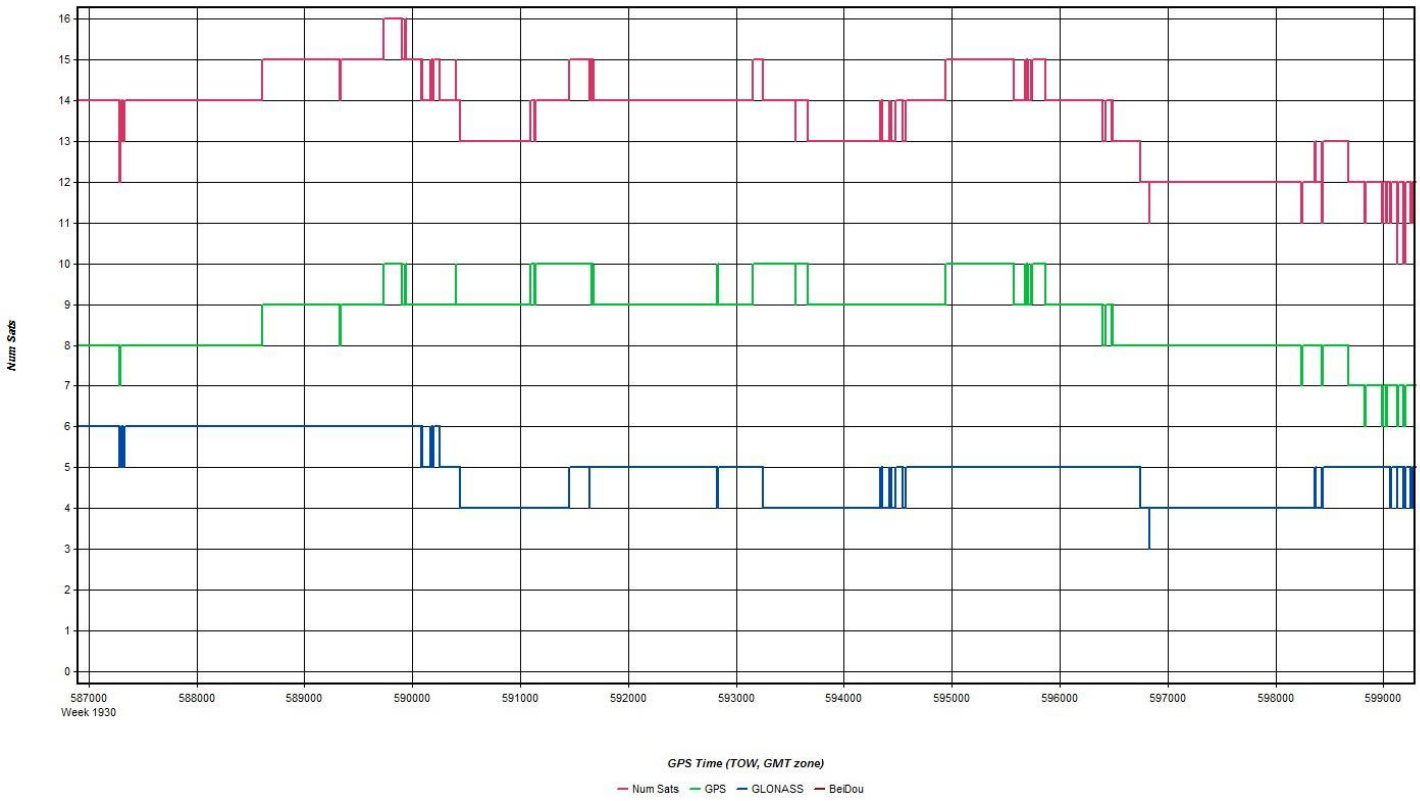
Eg 8's 22:53

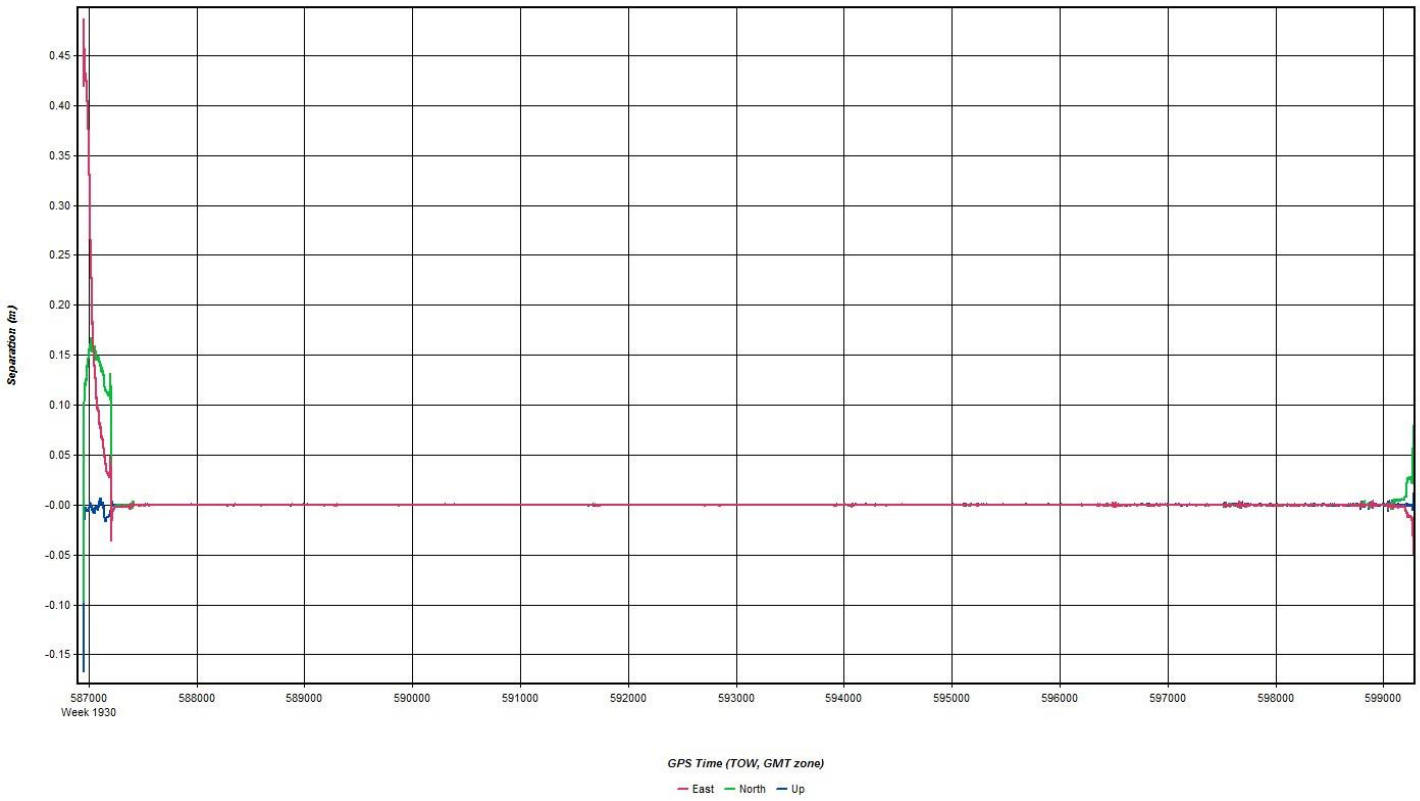
- 5. Min qed -

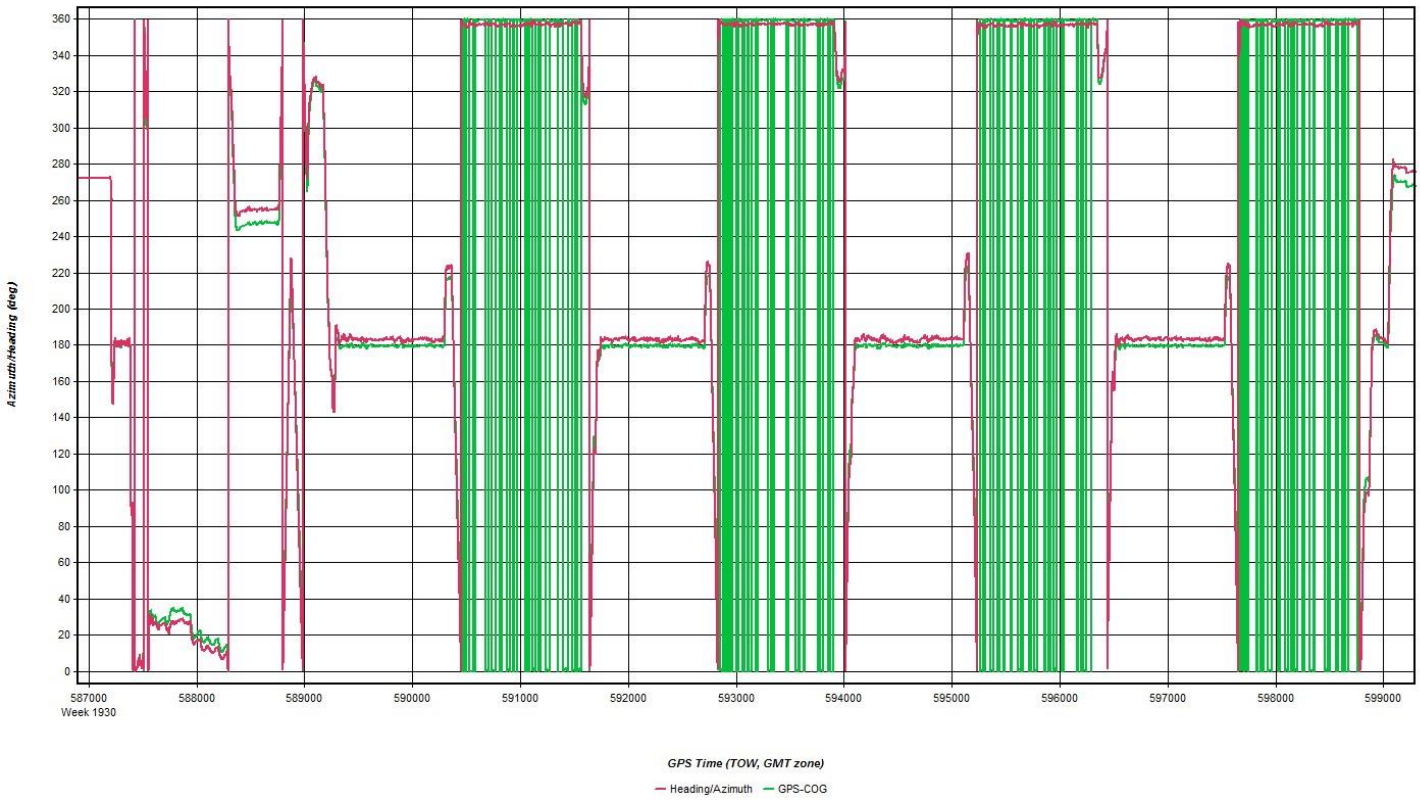
Total Proj Lines: 40 Lines Flown: 7 Lines Remain: 47 Online Time: 2.15 Nob Time: .30 Notes: IMU Issues

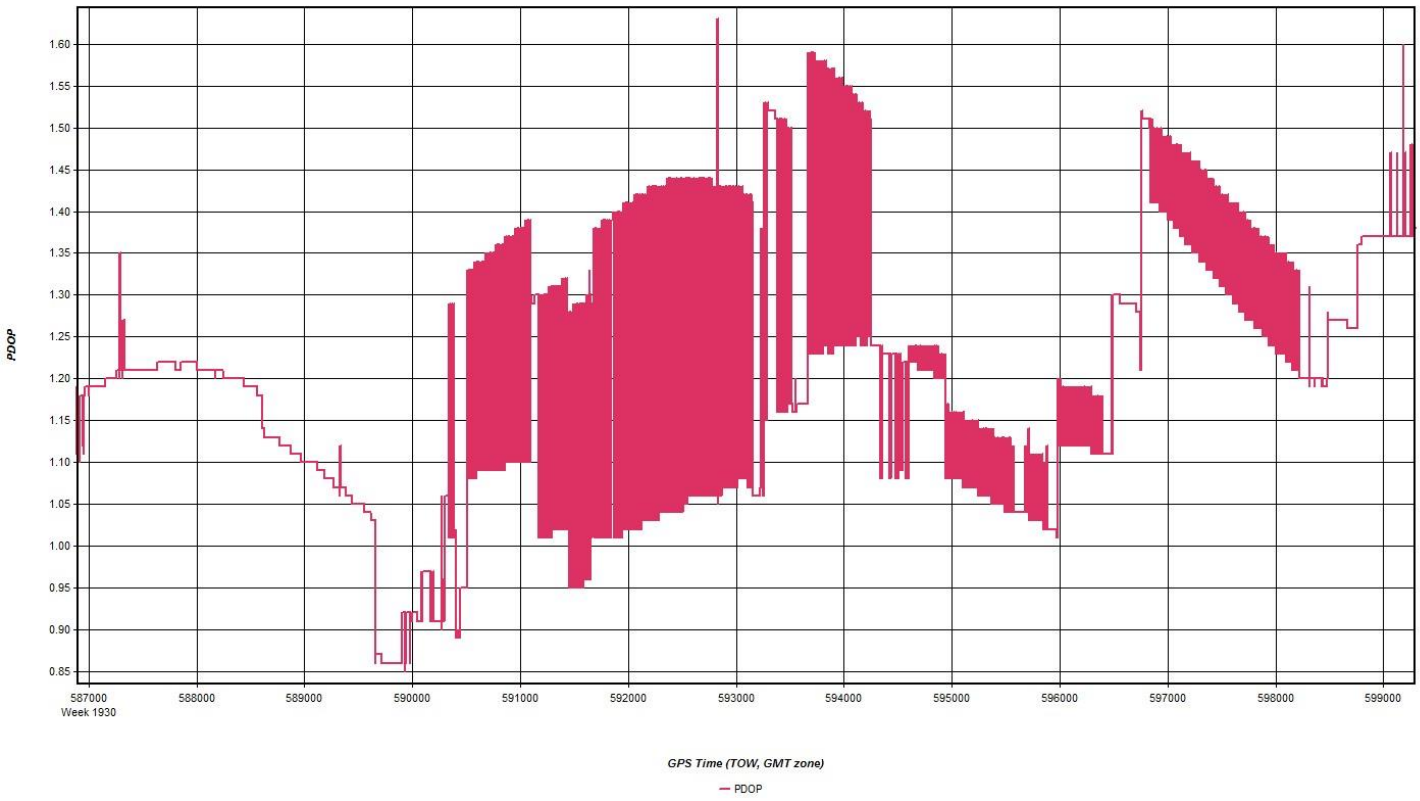
Jan 7, 2017-A (N246MP, SN8146)

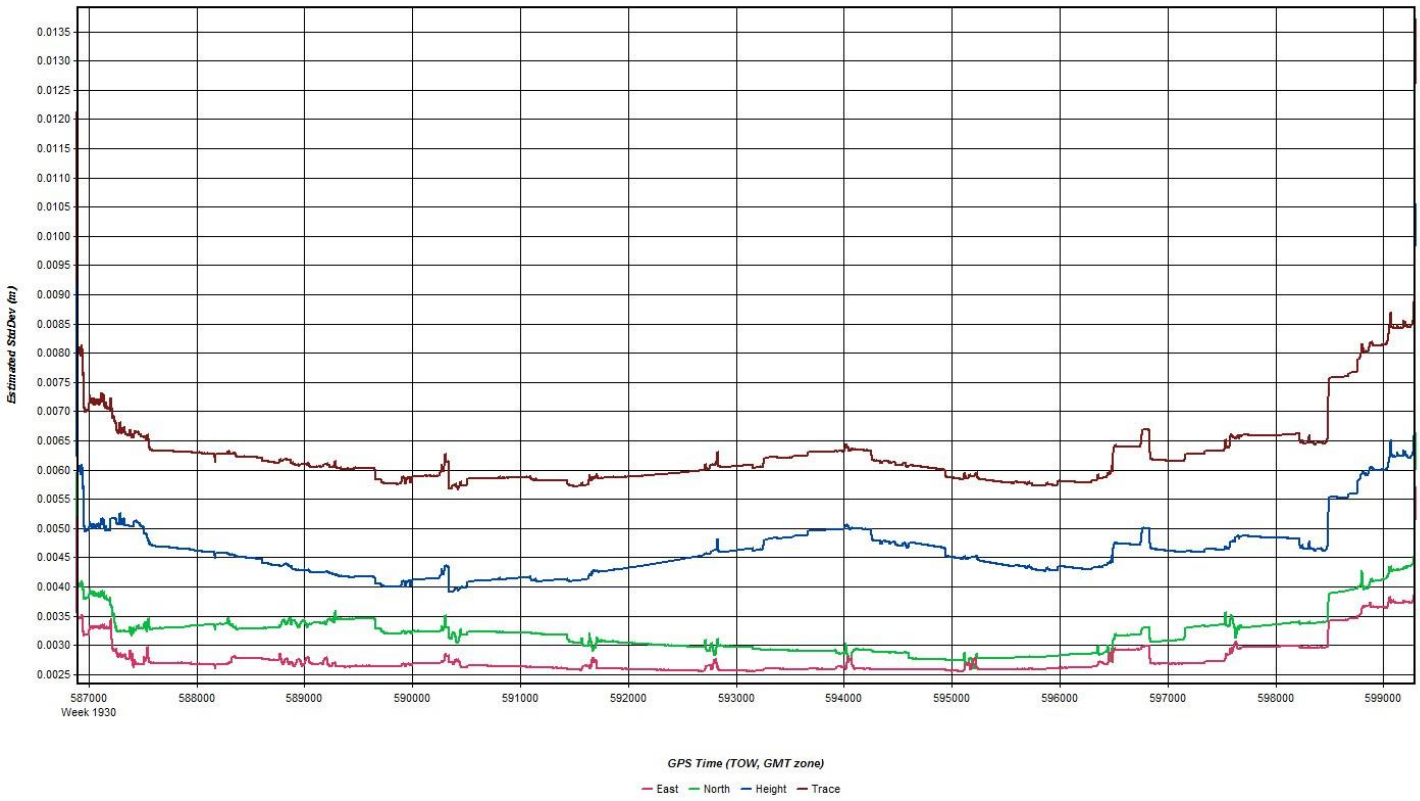


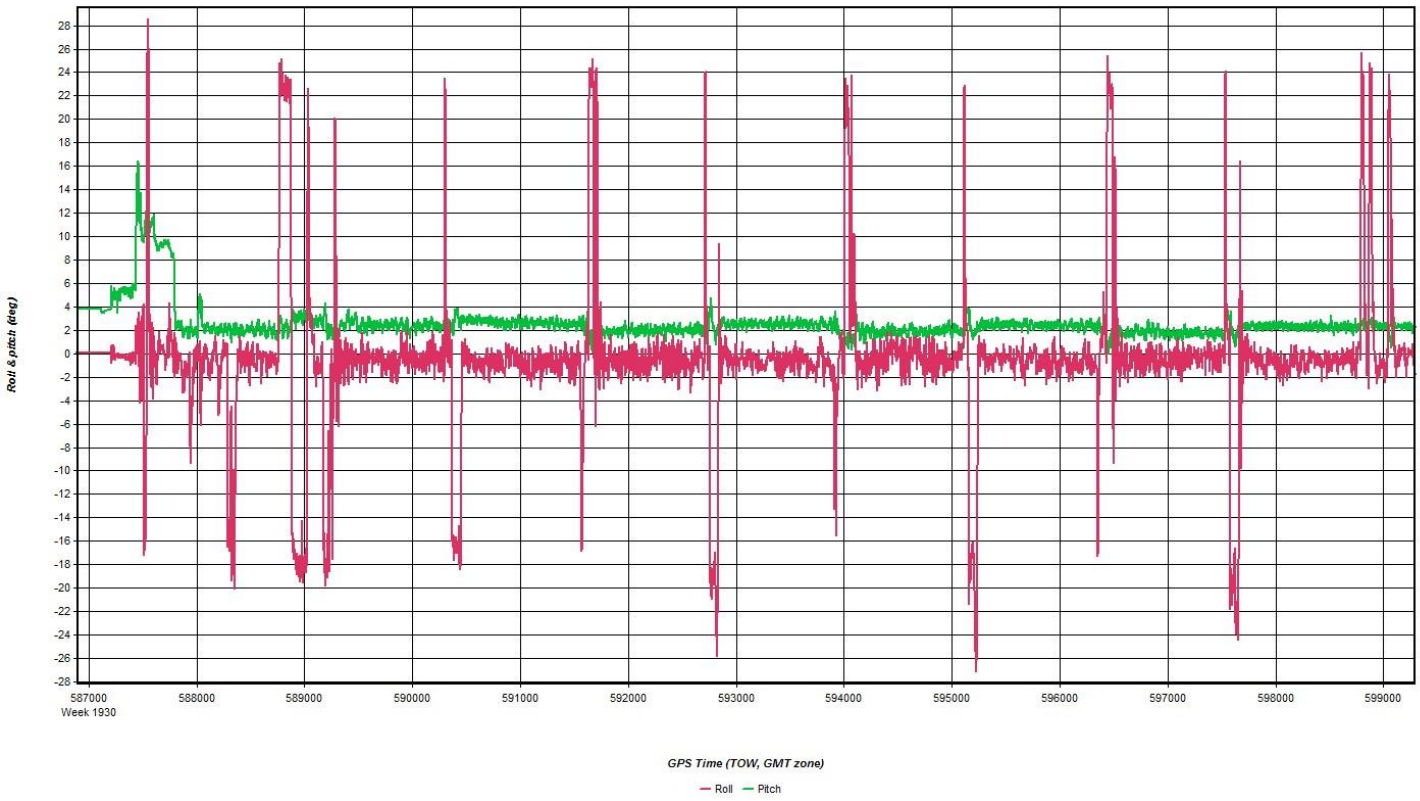

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

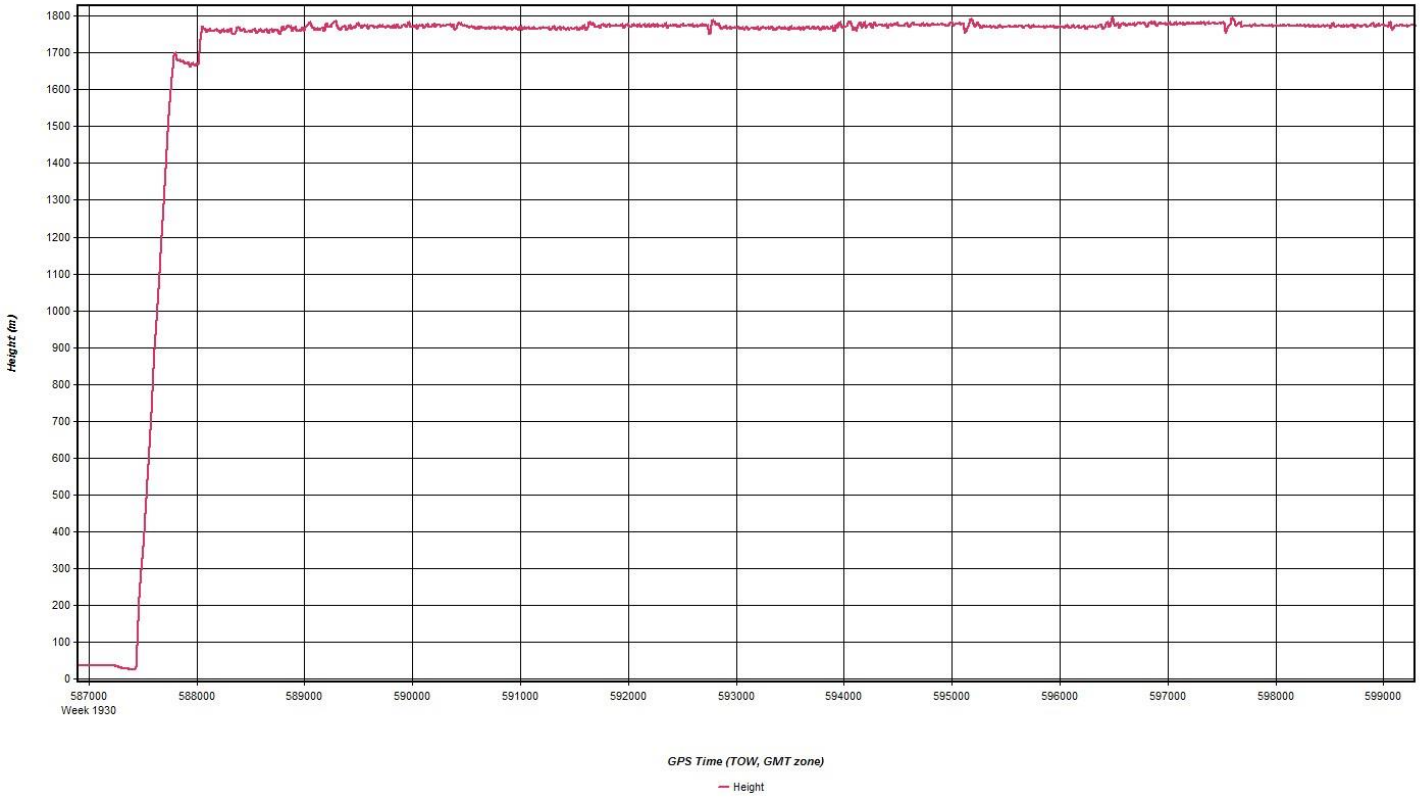

Separation (m)
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
East
North
Up

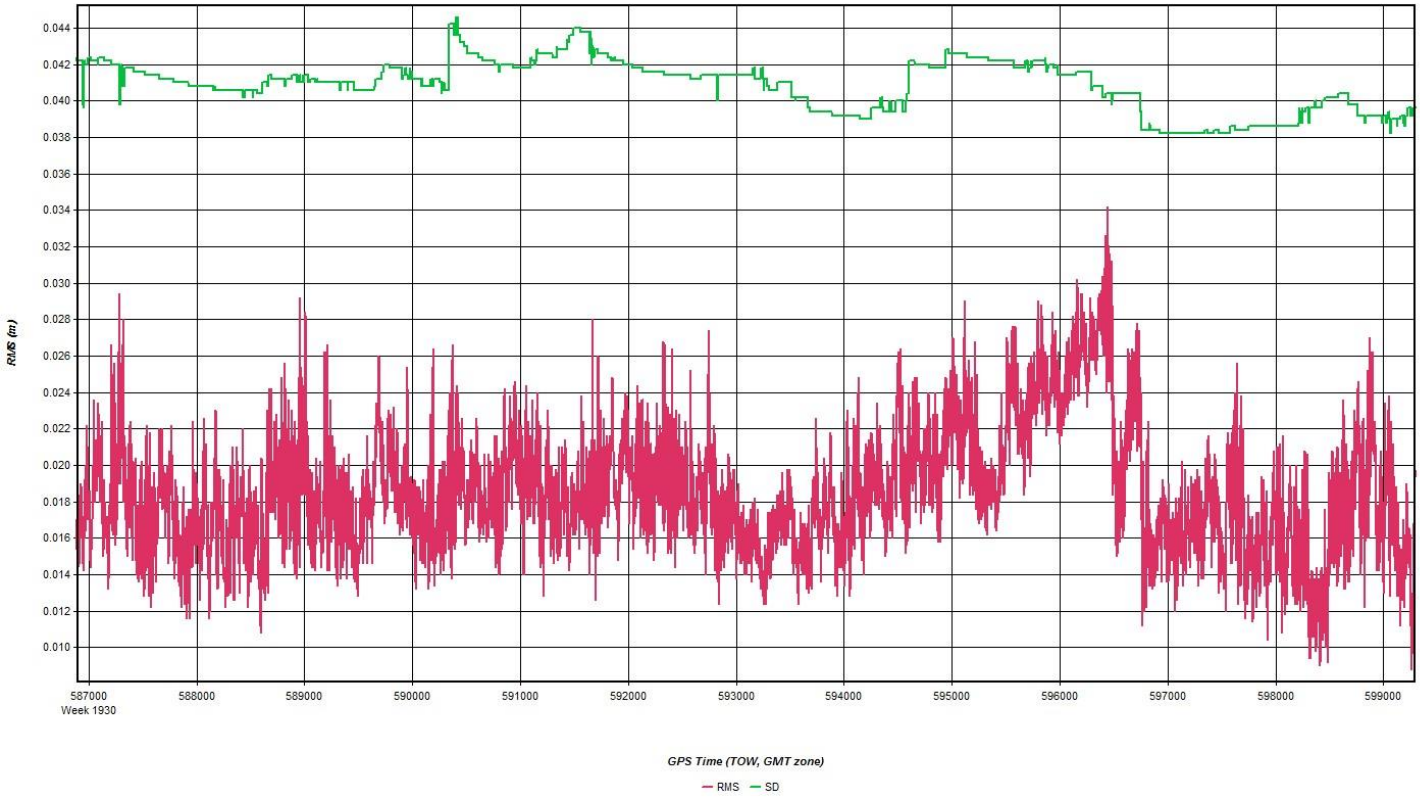

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

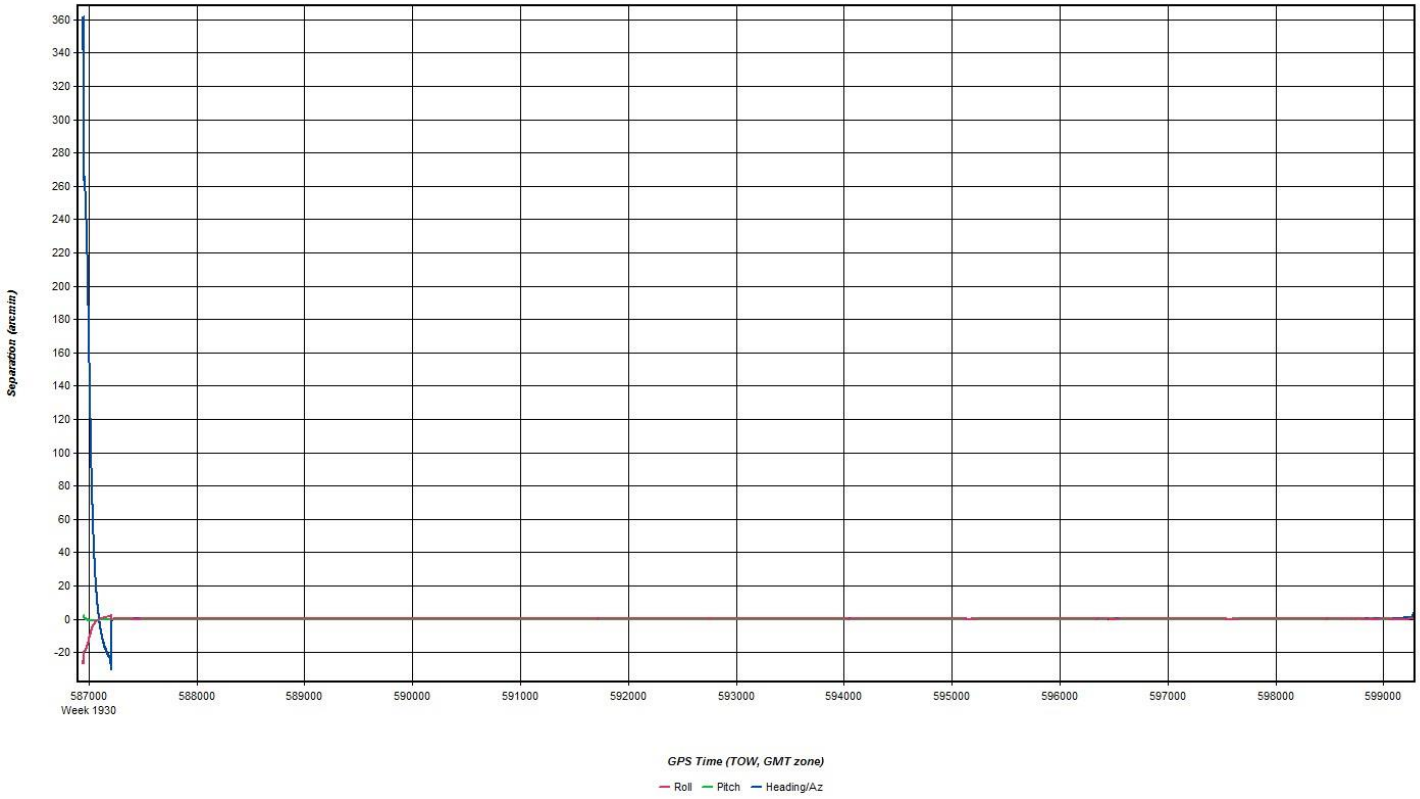

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
PDOP

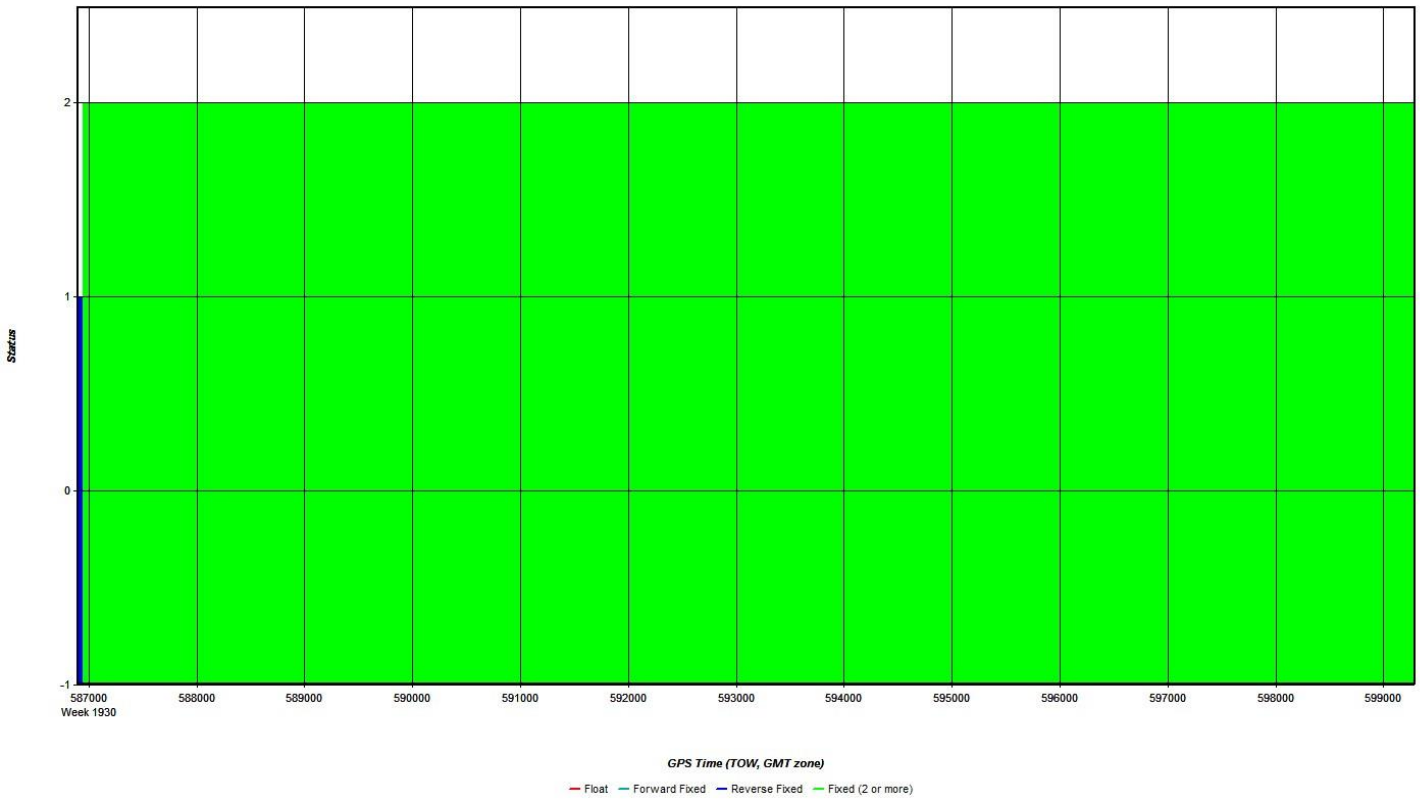

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

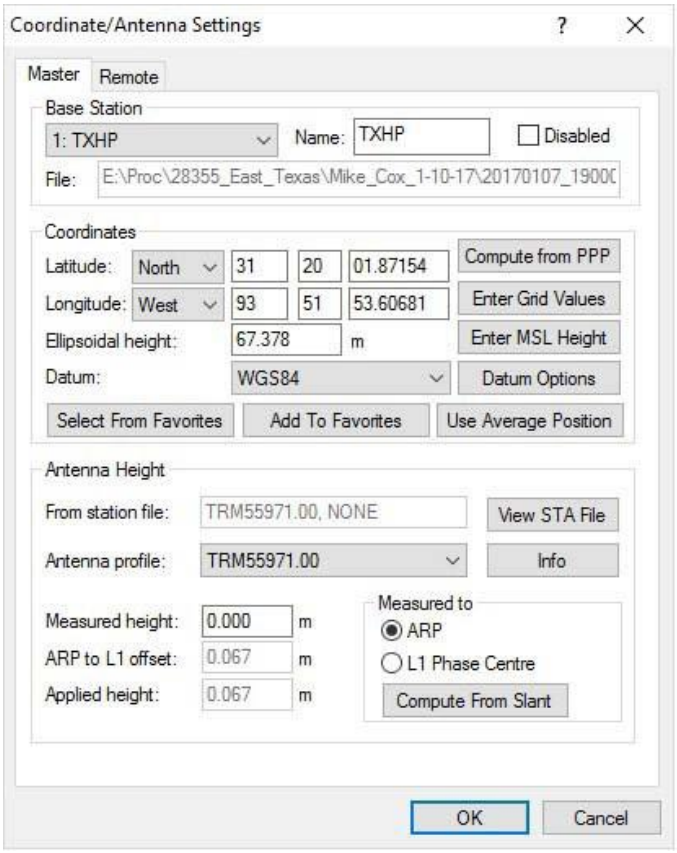

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Roll
Pitch

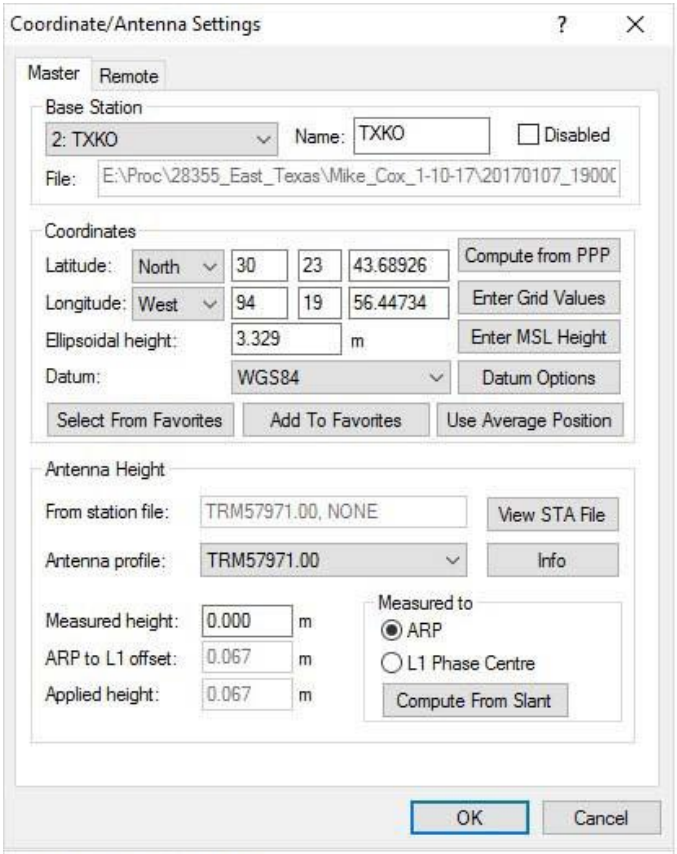

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Height

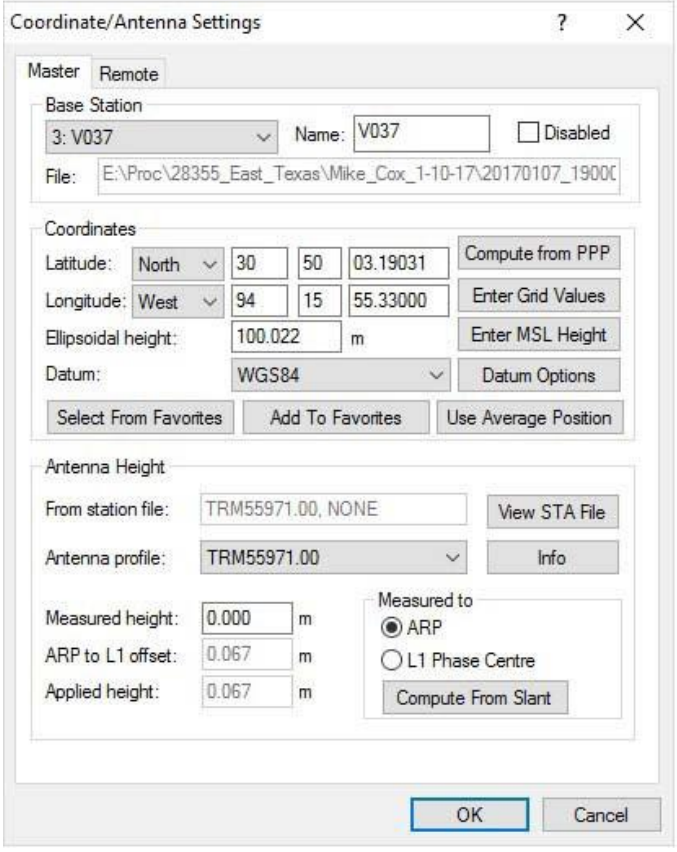

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

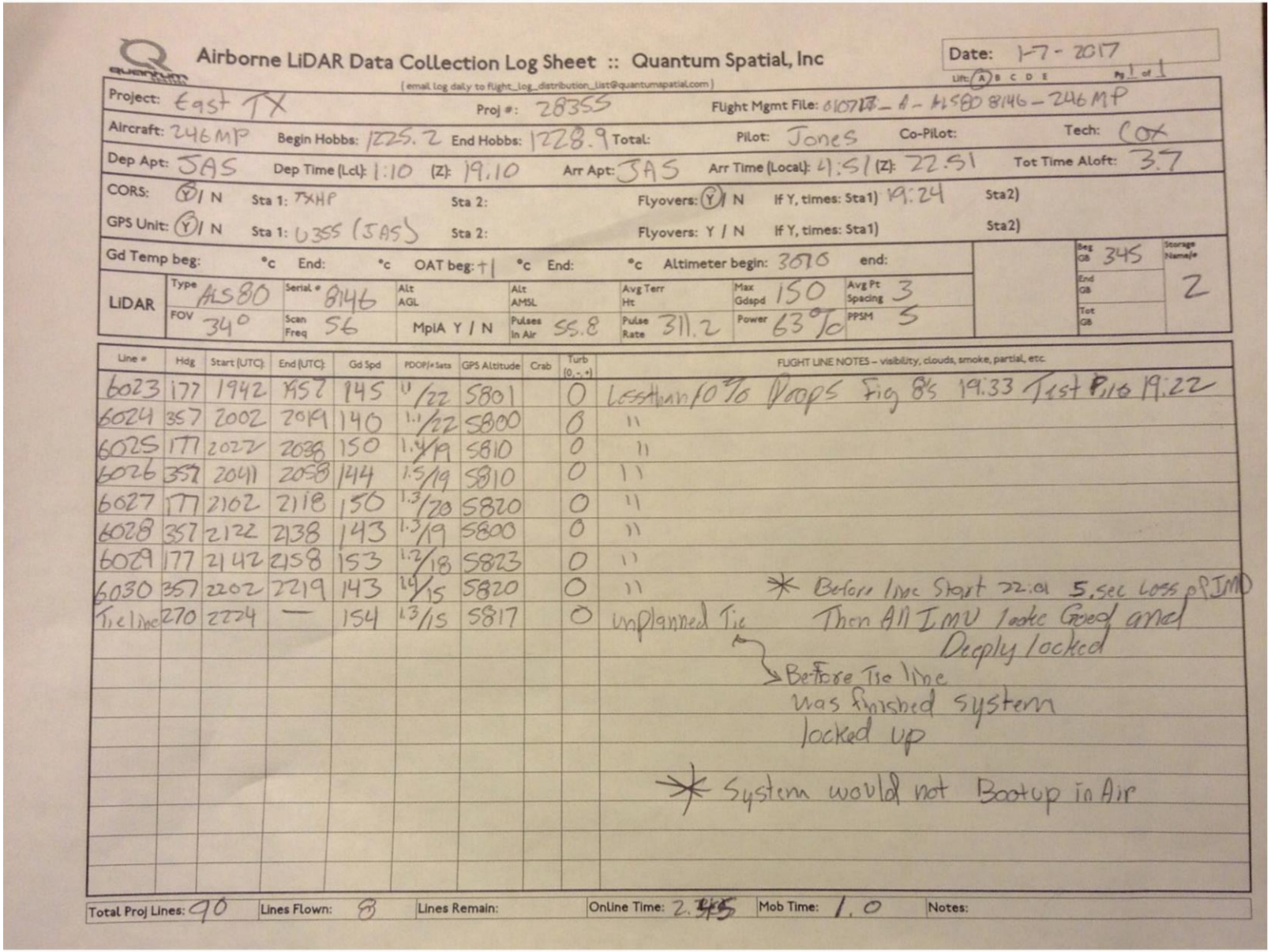

Status
2
1
0
-1
587000
Week 1930
588000
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXHP
Name:
TXHP
Disabled
File:
E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170107_1900(
Coordinates
Latitude:
North
31
20
01.87154
Compute from PPP
Longitude:
West
93
51
53.60681
Enter Grid Values
Ellipsoidal height:
67.378
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM55971.00, NONE
View STA File
Antenna profile:
TRM55971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170107_1900(
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V037
Name: V037
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170107_1900(
Coordinates
Latitude: North 30 50 03.19031
Longitude: West 94 15 55.33000
Ellipsoidal height: 100.022 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-7-2017

(email log daily to flight_log_distribution_list@quantumspatial.com)

Lift: (A) B C D E — Pg 1 of 1

Project: East TX — Proj #: 28355 — Flight Mgmt File: 010717_A_ALS80 8146_246MP

Aircraft: 246MP — Begin Hobbs: 1225.2 — End Hobbs: 1228.9 — Total: — Pilot: Jones — Co-Pilot: — Tech: Cox

Dep Apt: JAS — Dep Time (Lcl): 1:10 (Z): 19.10 — Arr Apt: JAS — Arr Time (Local): 4:51 (Z): 22.51 — Tot Time Aloft: 3.7

CORS: (Y) / N — Sta 1: TXHP — Sta 2: — Flyovers: (Y) / N — If Y, times: Sta1) 19:24 — Sta2)

GPS Unit: (Y) / N — Sta 1: U355 (JAS) — Sta 2: — Flyovers: Y / N — If Y, times: Sta1) — Sta2)

Gd Temp beg: °c End: °c OAT beg: †| °c End: °c Altimeter begin: 3010 end:

Beg GB: 345 — End GB: — Tot GB: — Storage Name/# 2

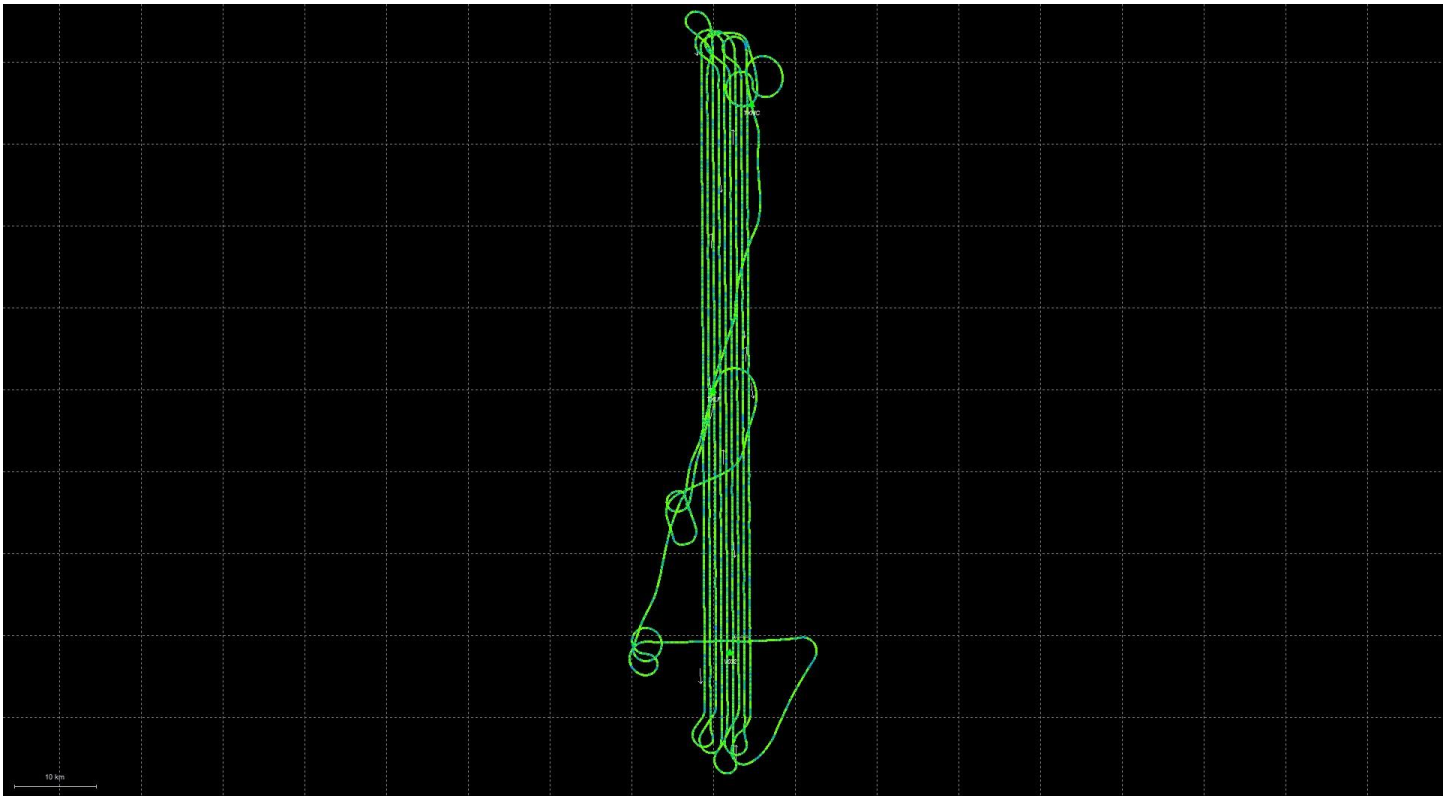
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8146				150	3
	FOV	Scan Freq	MpiA Y / N	Pulses In Air	Pulse Rate	Power	PPSM
	34°	56		55.8	311.2	63%	5

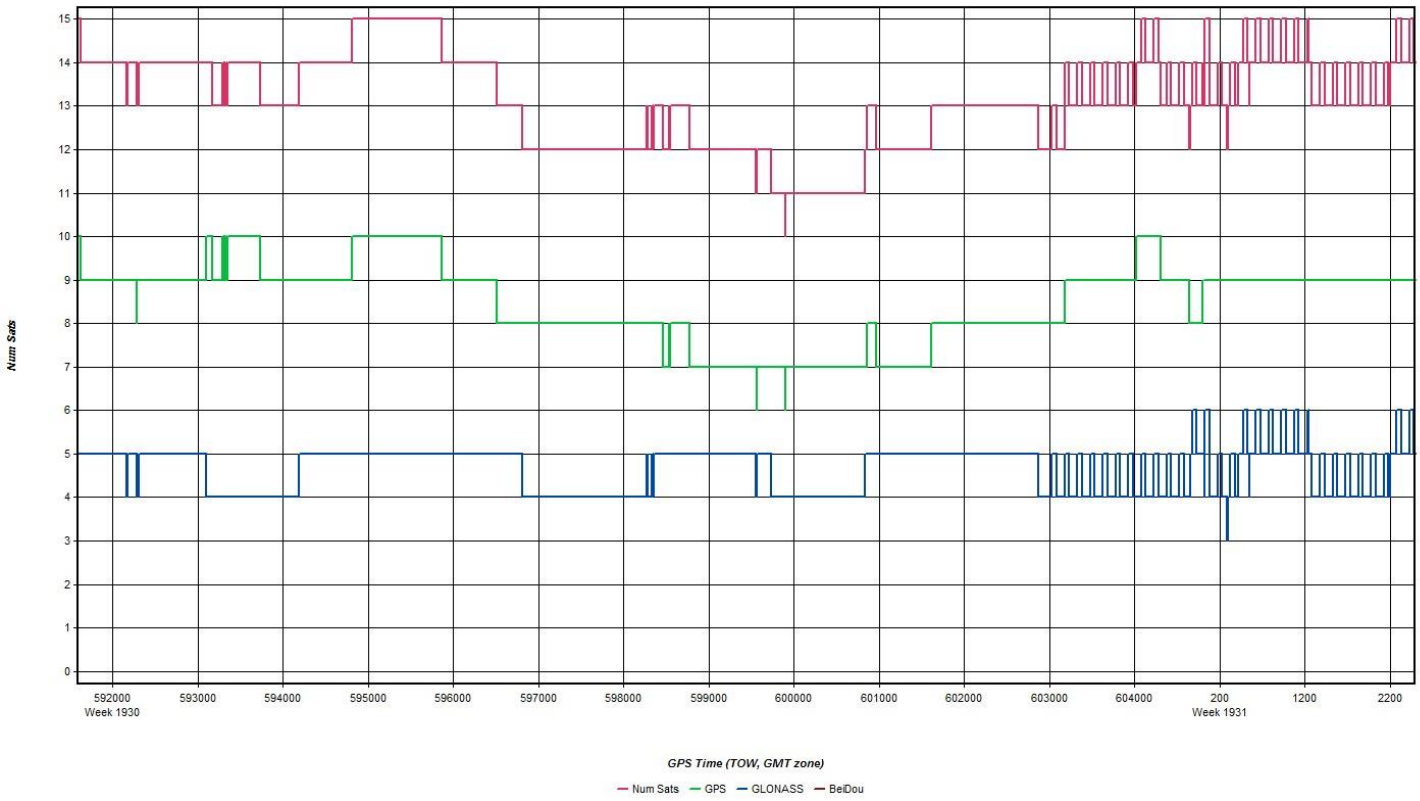
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6023	177	1942	1957	145	1.1/22	5801		0	Less than 10% Loops Fig 8's 19.33 Test Pilot 19.22
6024	357	2002	2019	140	1.1/22	5800		0	"
6025	177	2022	2038	150	1.4/19	5810		0	"
6026	357	2041	2058	144	1.5/19	5810		0	"
6027	177	2102	2118	150	1.3/20	5820		0	"
6028	357	2122	2138	143	1.3/19	5800		0	"
6029	177	2142	2158	153	1.2/18	5823		0	"
6030	357	2202	2219	143	1.4/15	5820		0	" * Before line Start 22:01 5 sec Loss of IMU
Tie line	270	2224	—	154	1.3/15	5817		0	Unplanned Tie → Before Tie line was finished system locked up Then All IMU looks Good and Deeply locked

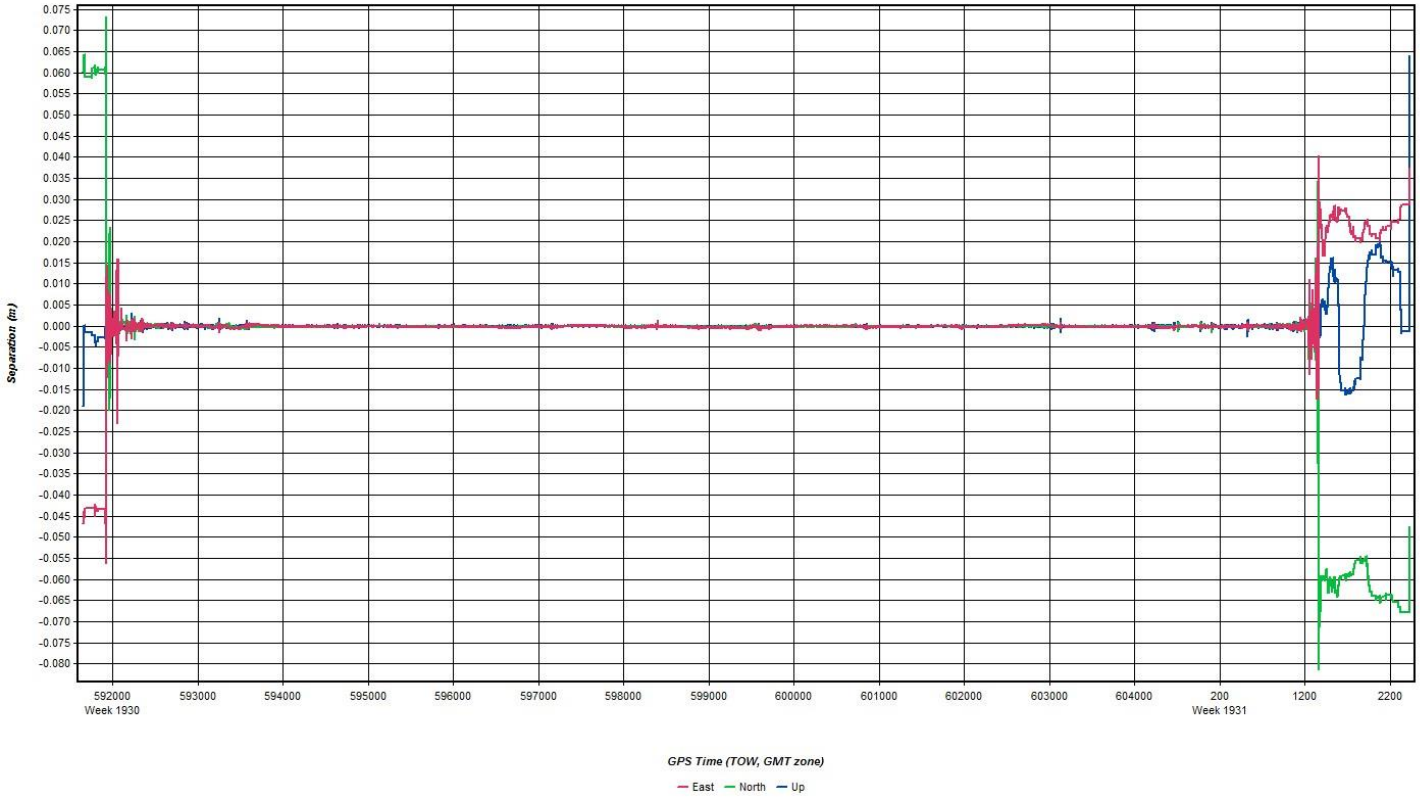
* System would not Bootup in Air

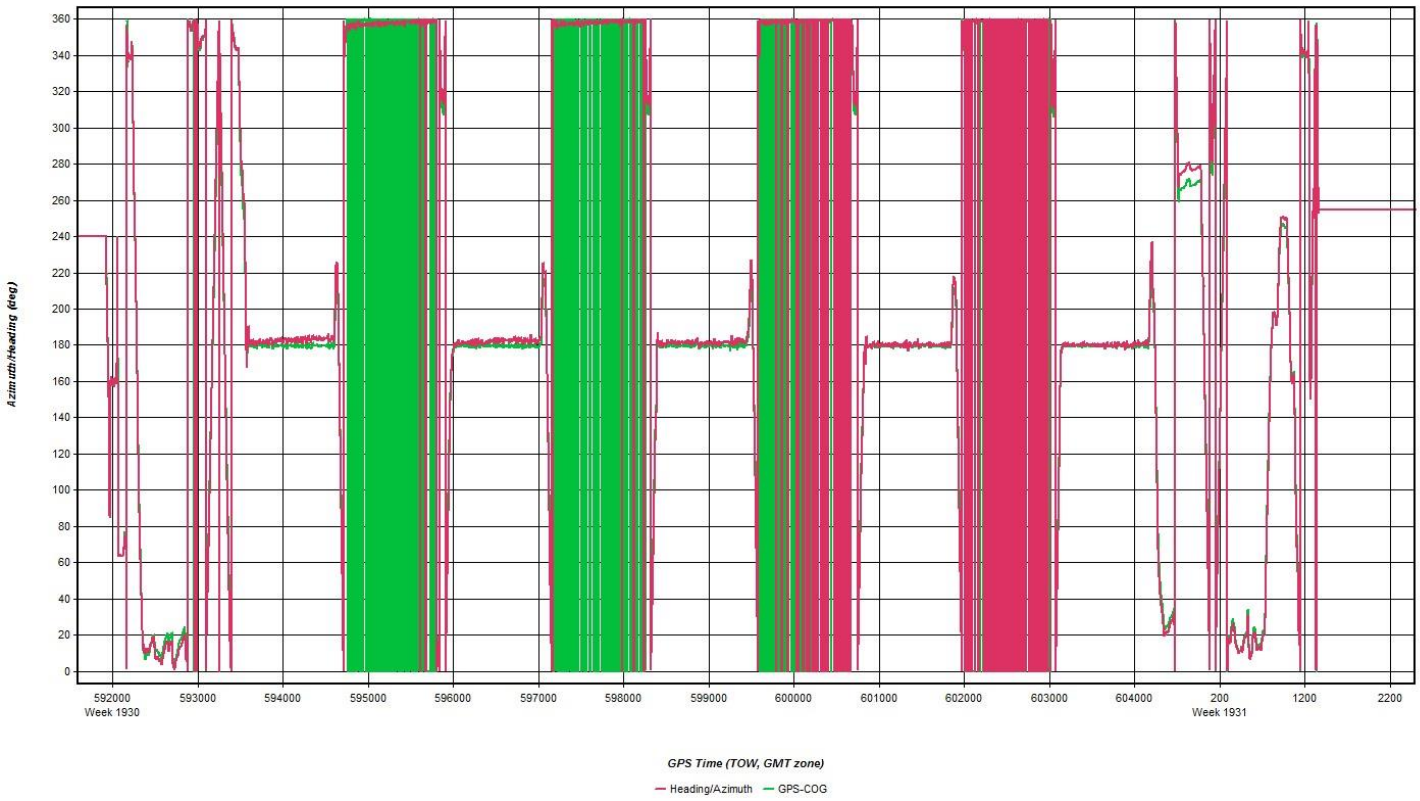
Total Proj Lines: 90 — Lines Flown: 8 — Lines Remain: — Online Time: 2.~~45~~ — Mob Time: 1.0 — Notes:

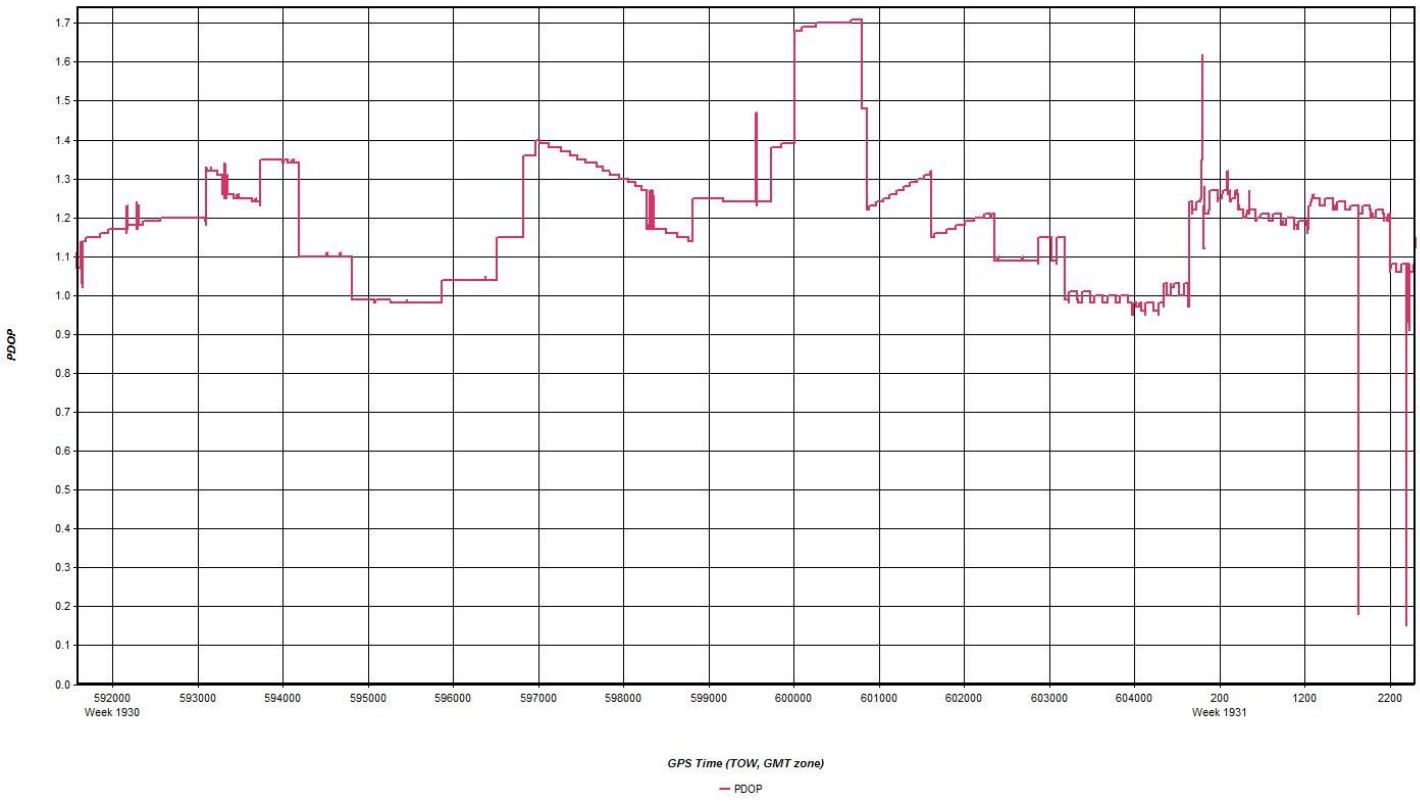
Jan 7, 2017-A (N812TB, SN7178)

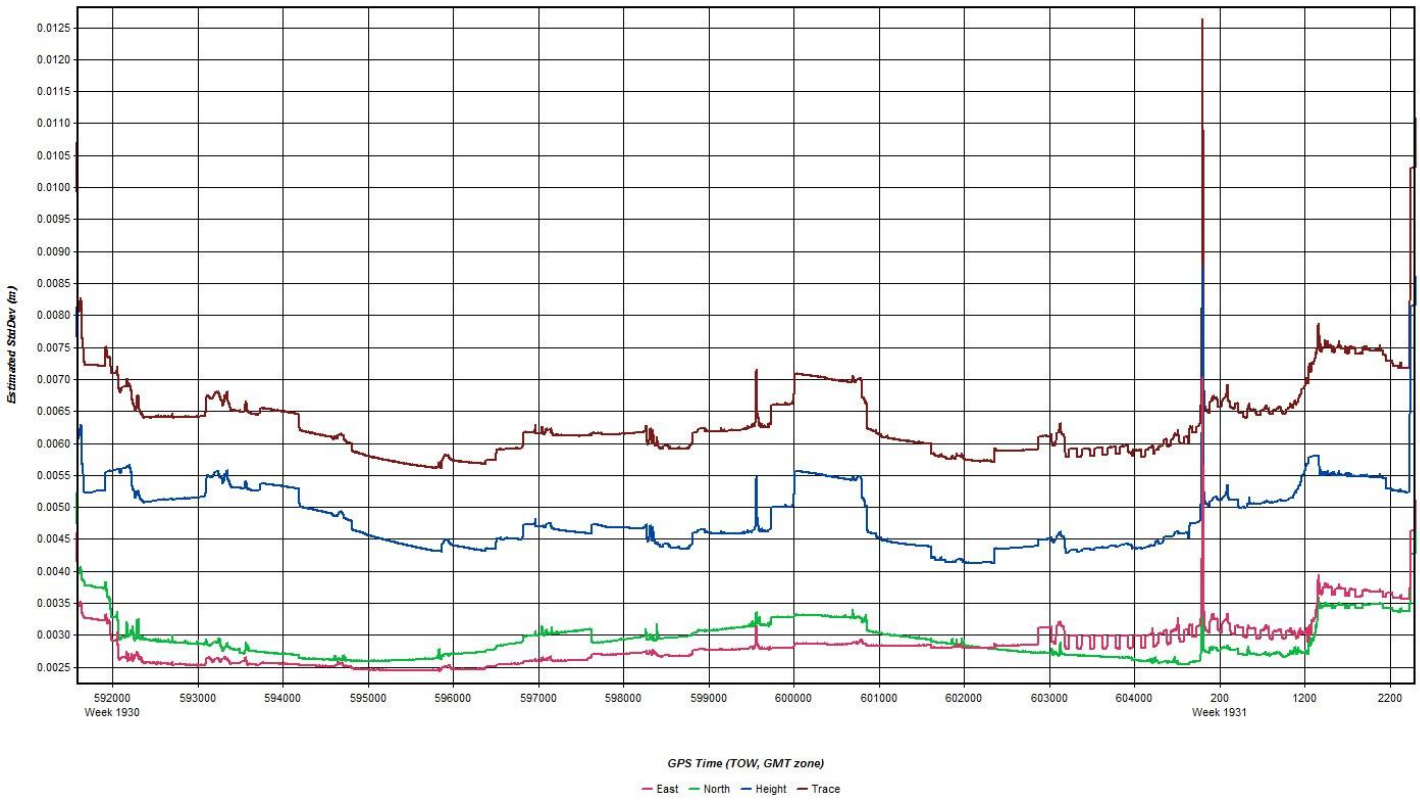


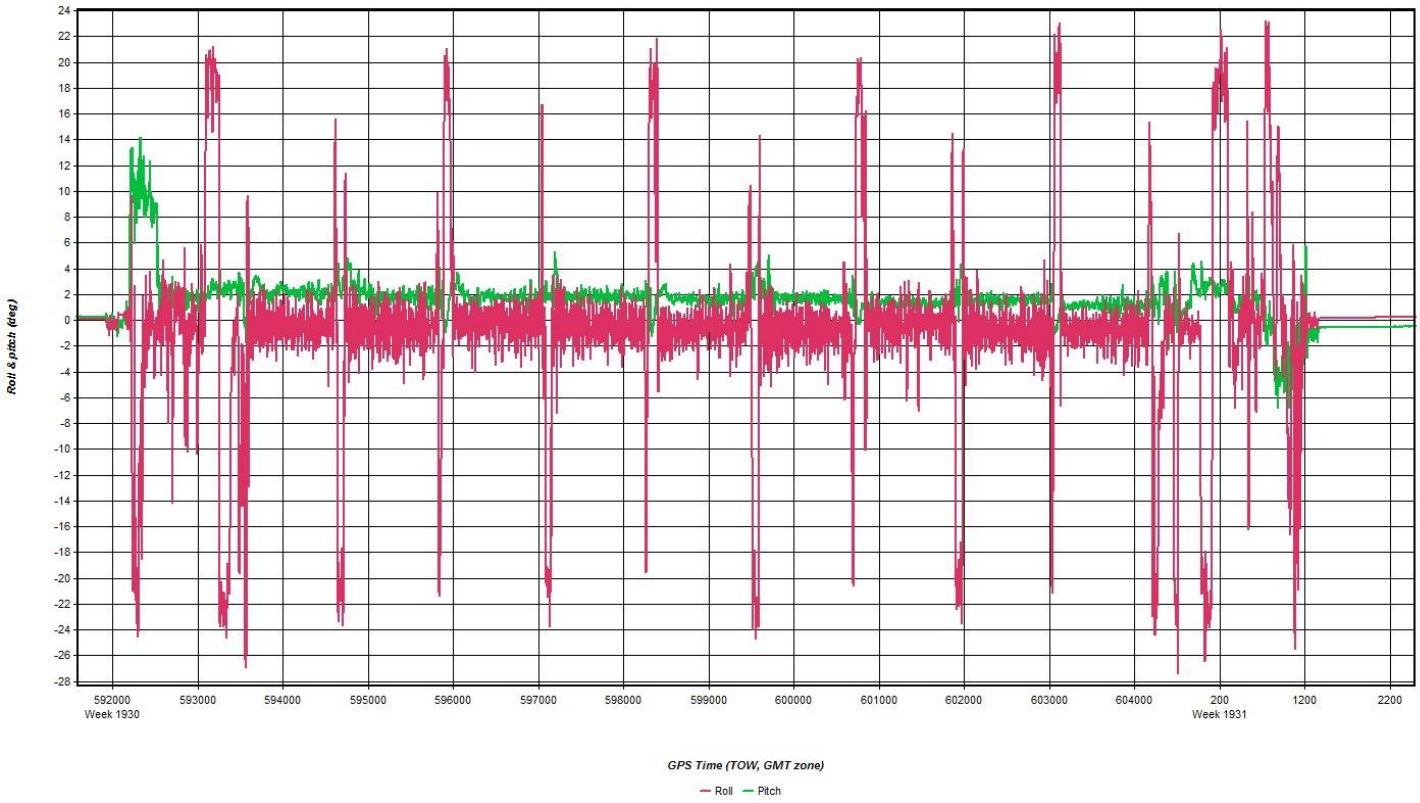

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

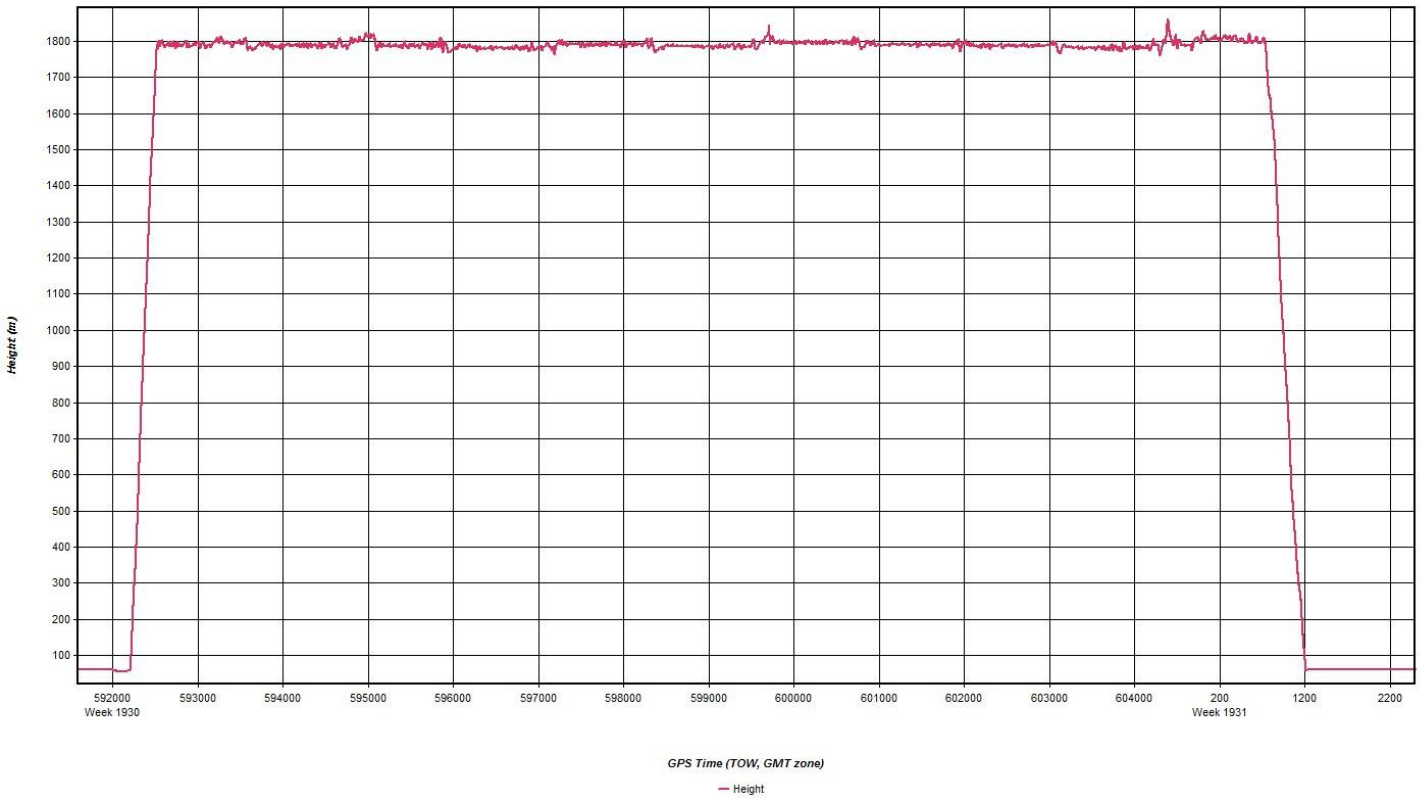

Separation (m)
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
-0.075
-0.080
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
East
North
Up

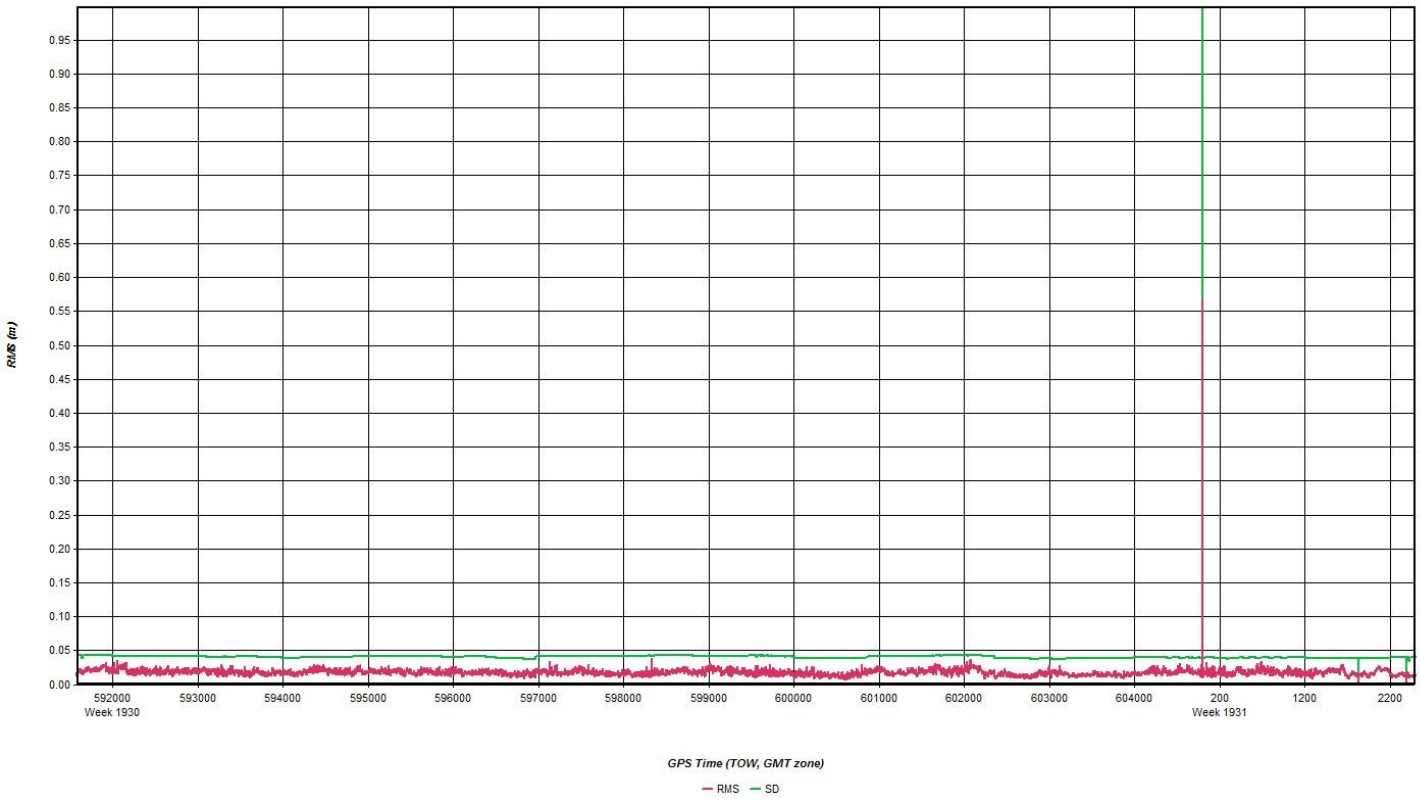

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

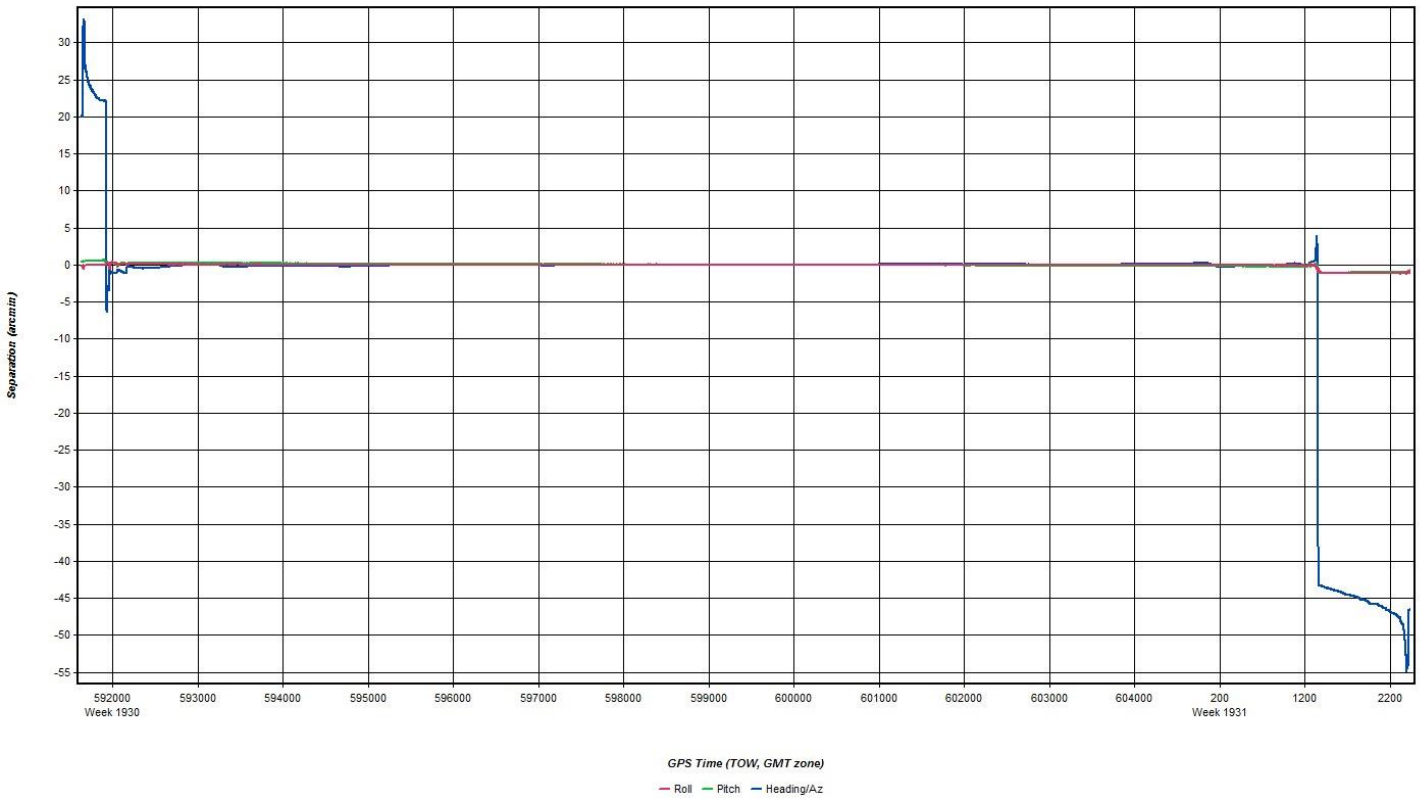

PDOP
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
PDOP

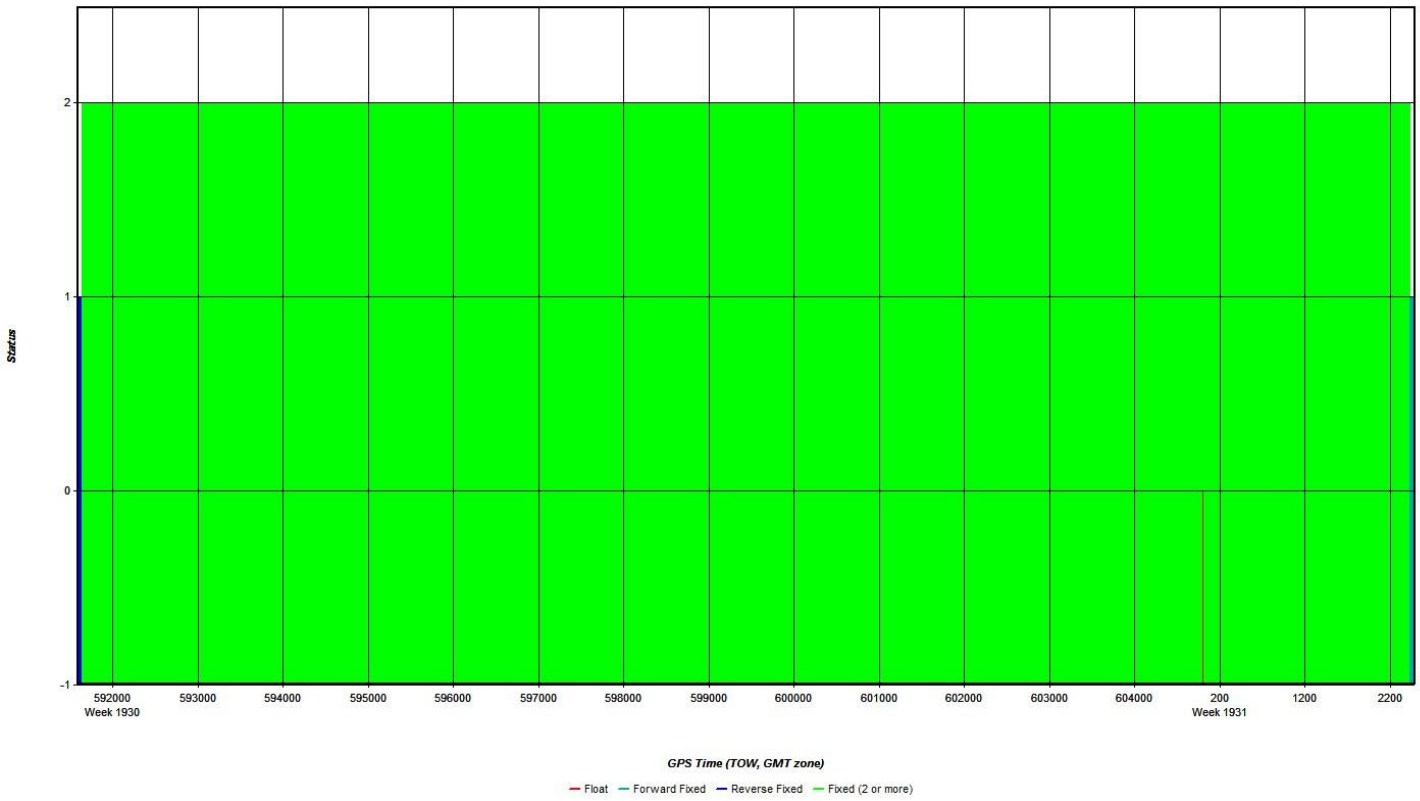

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
East
North
Height
Trace

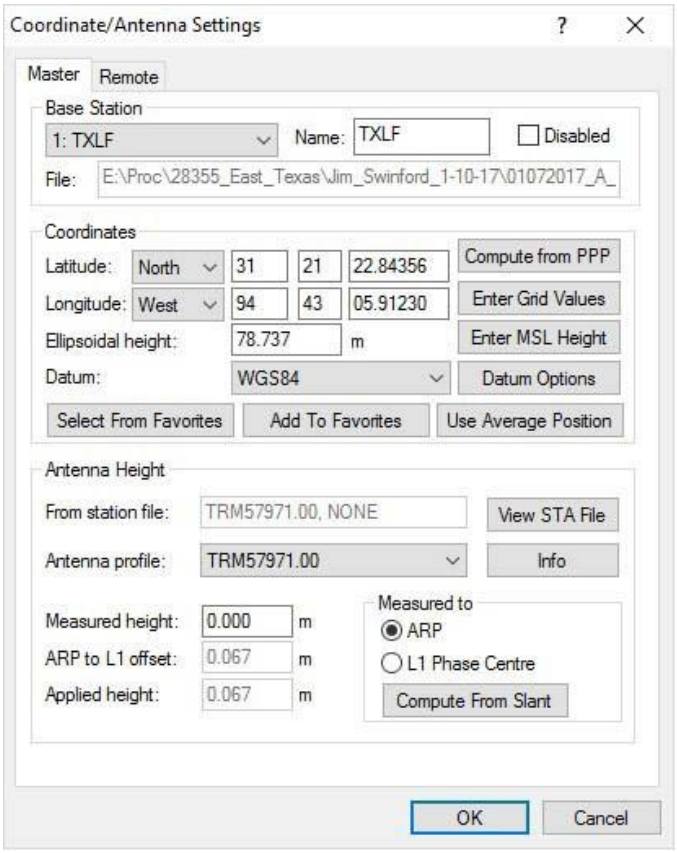

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
Roll
Pitch

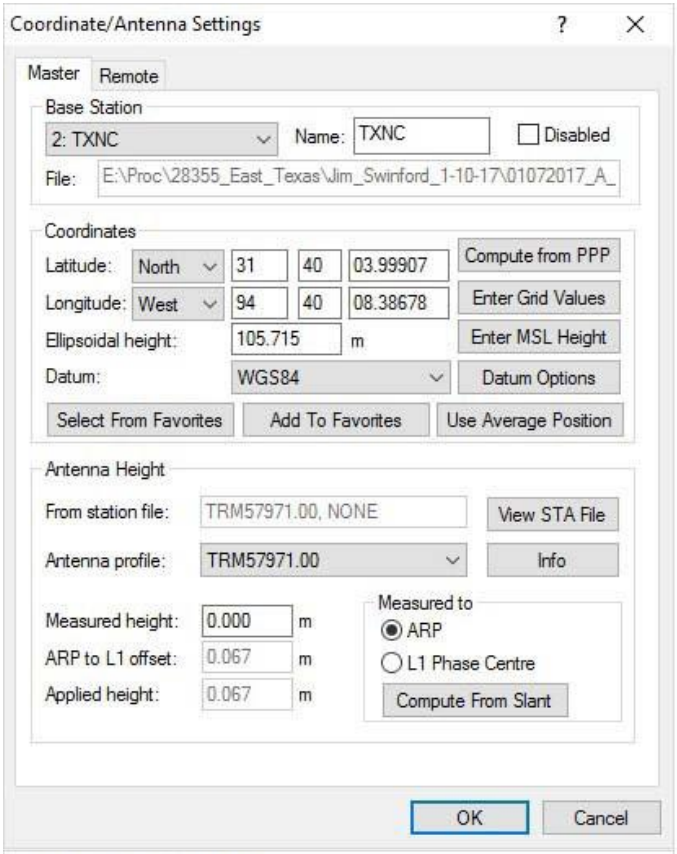

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
Height

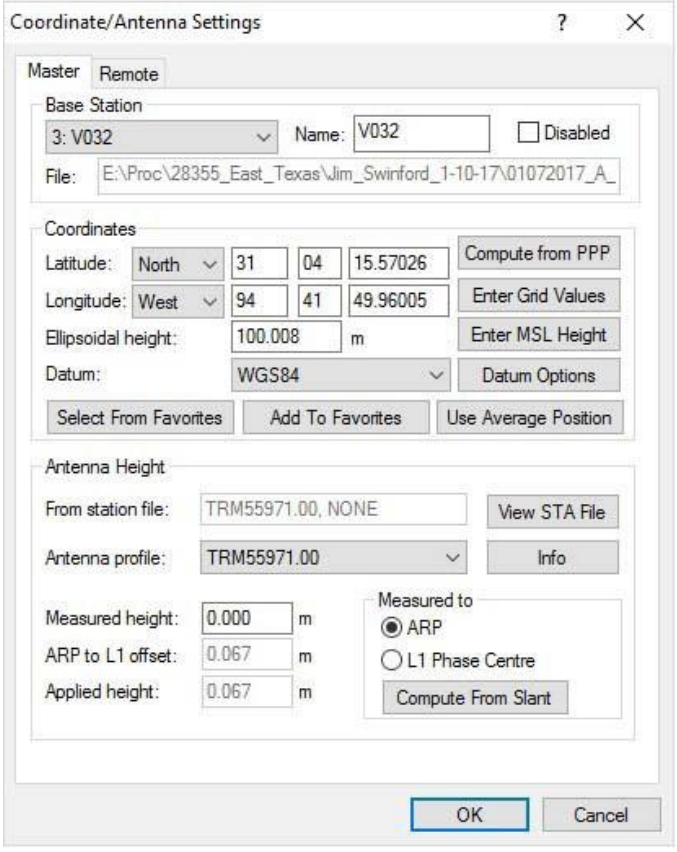

RMS (m)
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

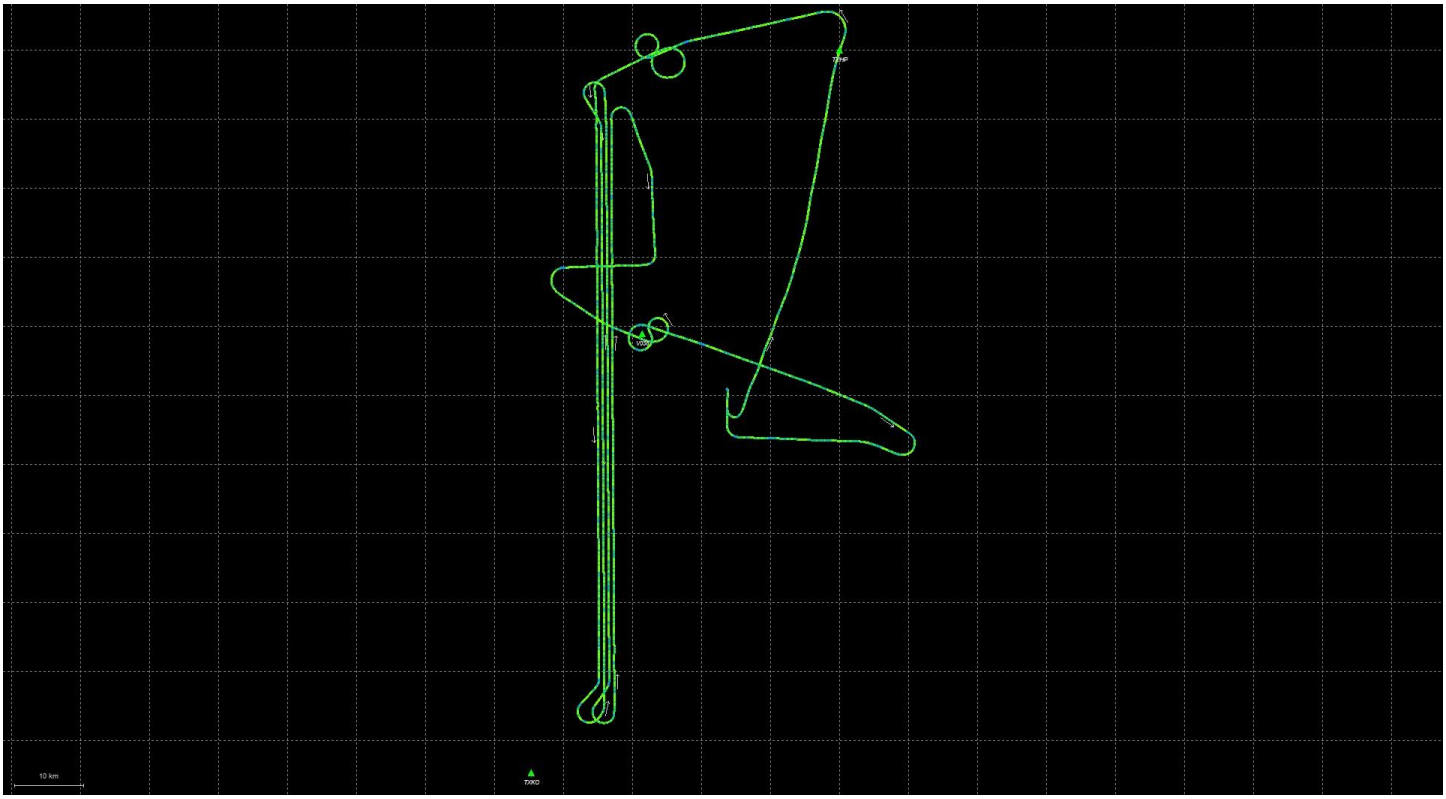

Status
2
1
0
-1
592000
Week 1930
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
604000
200
Week 1931
1200
2200
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

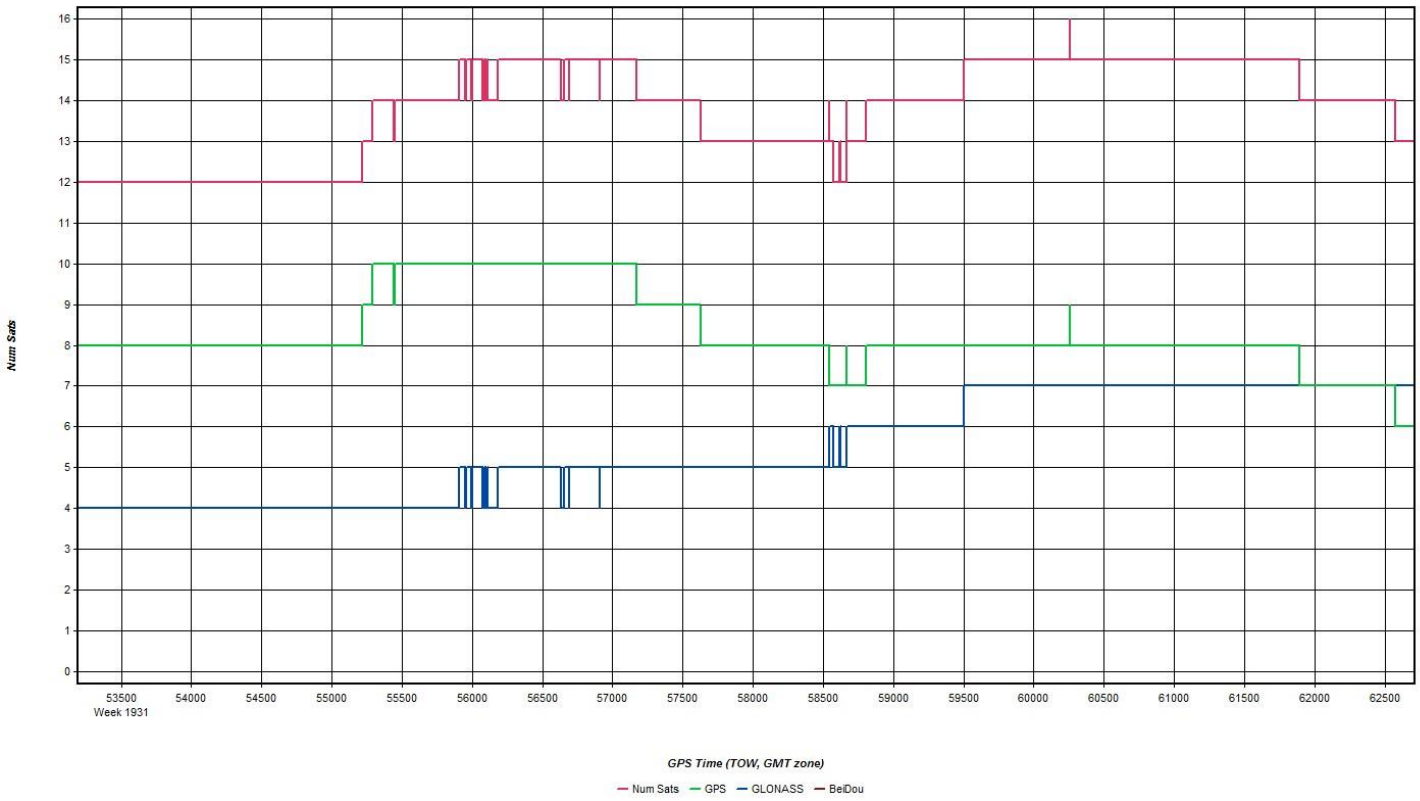

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLF
Name:
TXLF
Disabled
File:
E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01072017_A_
Coordinates
Latitude:
North
31
21
22.84356
Compute from PPP
Longitude:
West
94
43
05.91230
Enter Grid Values
Ellipsoidal height:
78.737
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

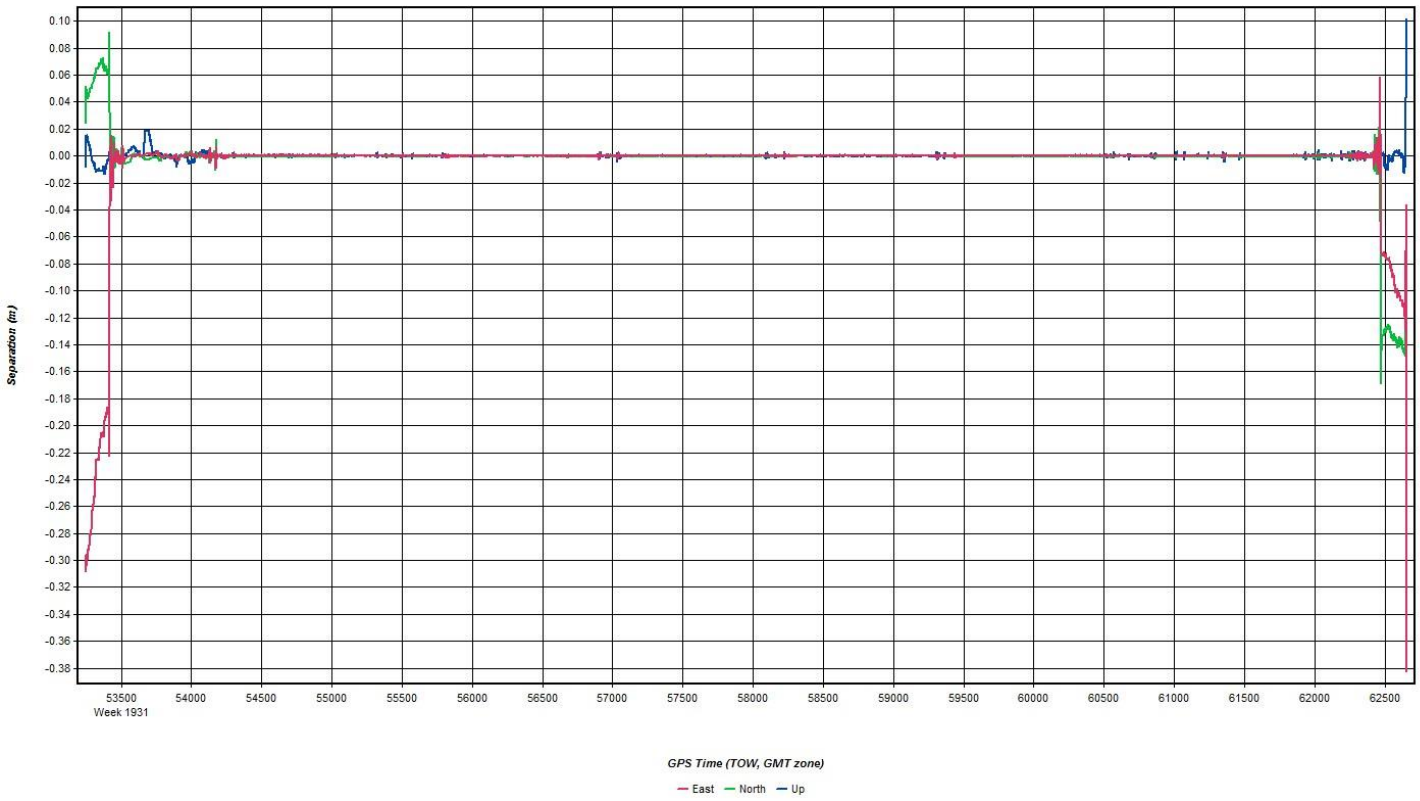

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXNC
Name: TXNC
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01072017_A_
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

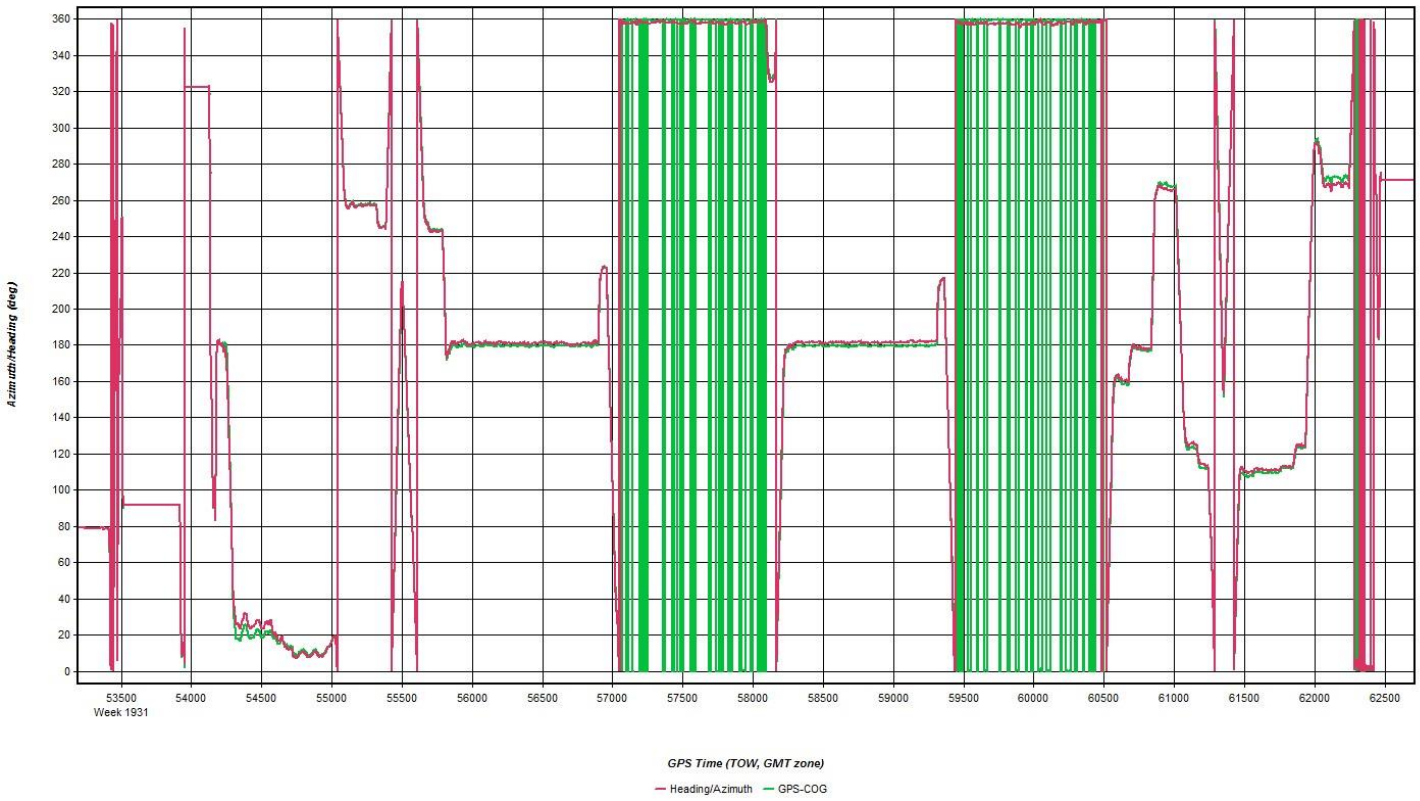

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V032
Name: V032
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01072017_A_
Coordinates
Latitude: North 31 04 15.57026
Longitude: West 94 41 49.96005
Ellipsoidal height: 100.008 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

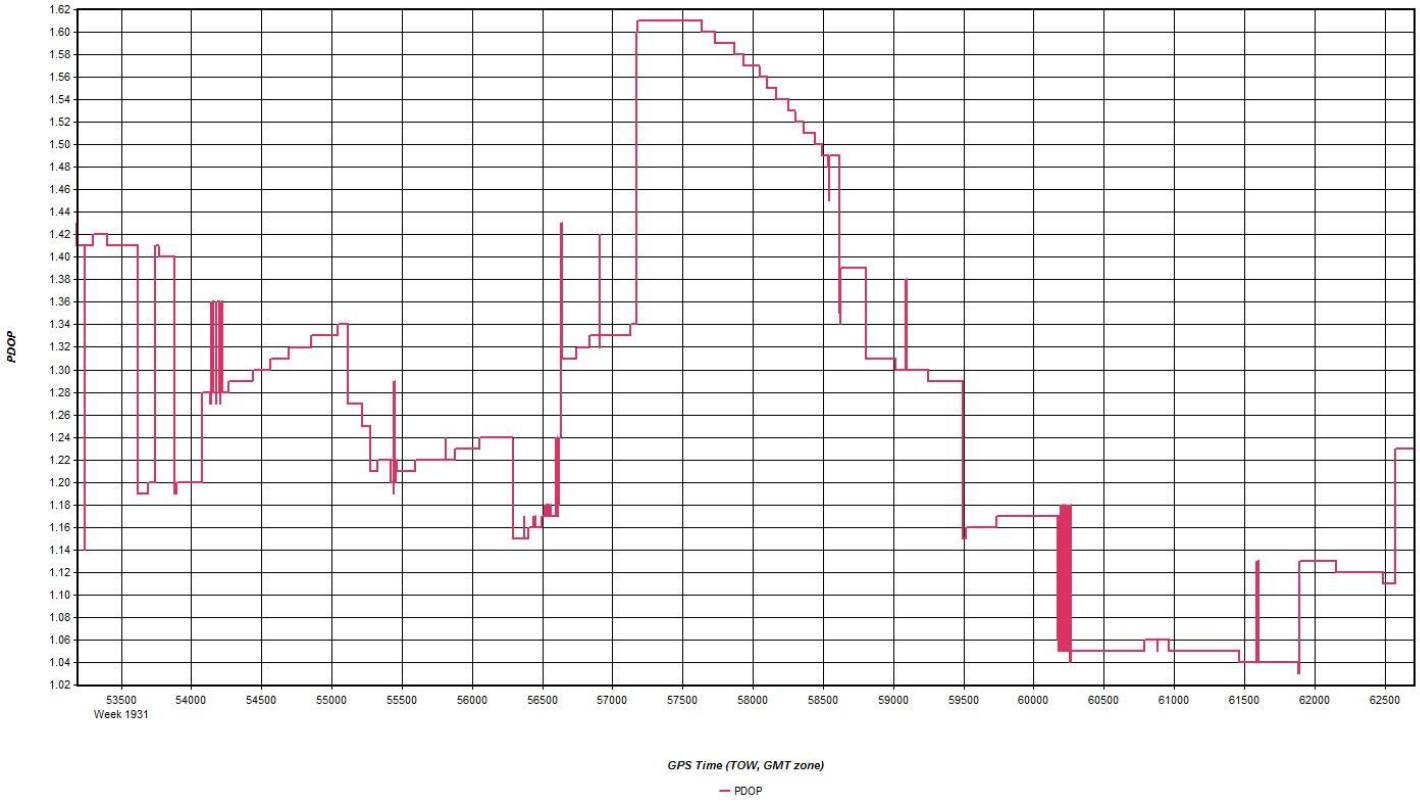
Jan 8, 2017-A (N246MP, SN8146)

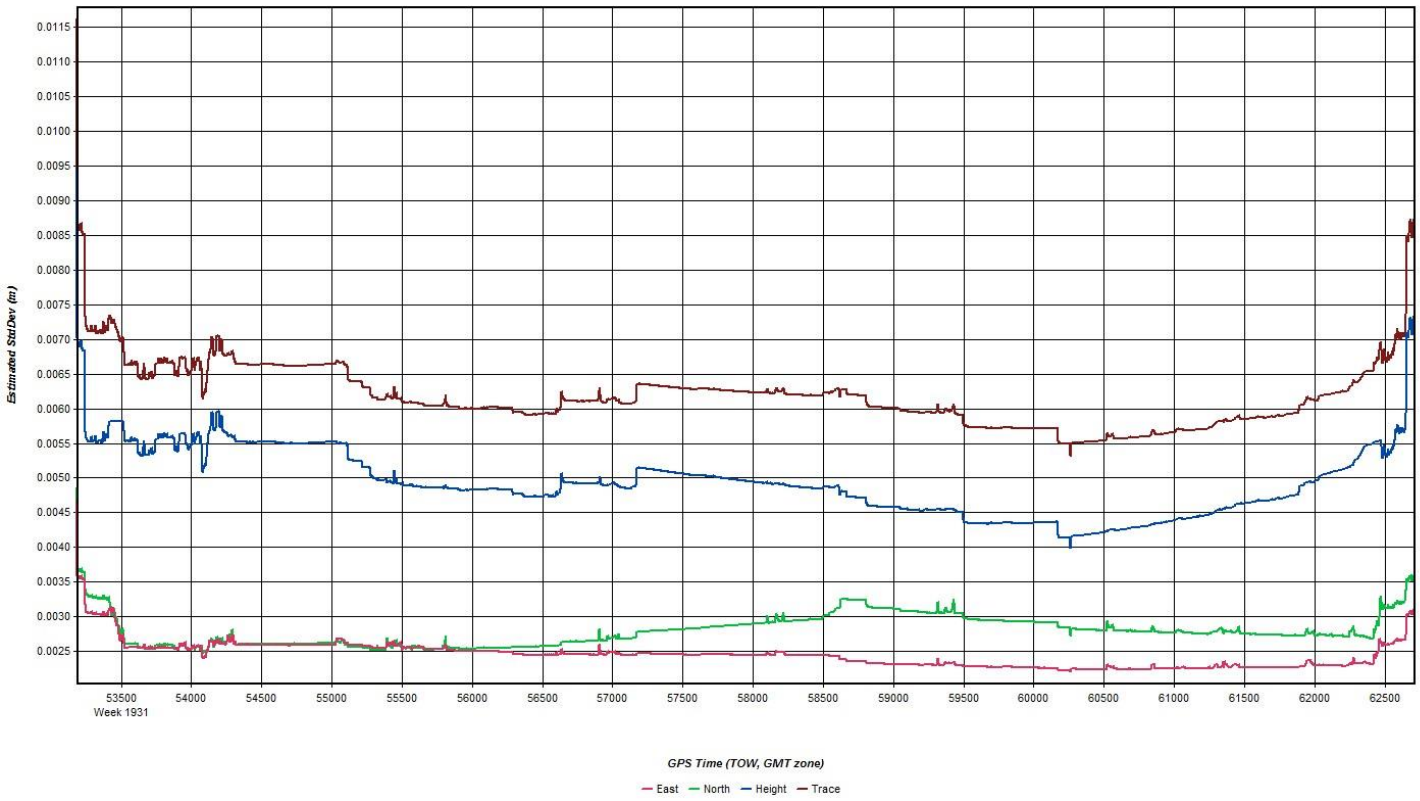


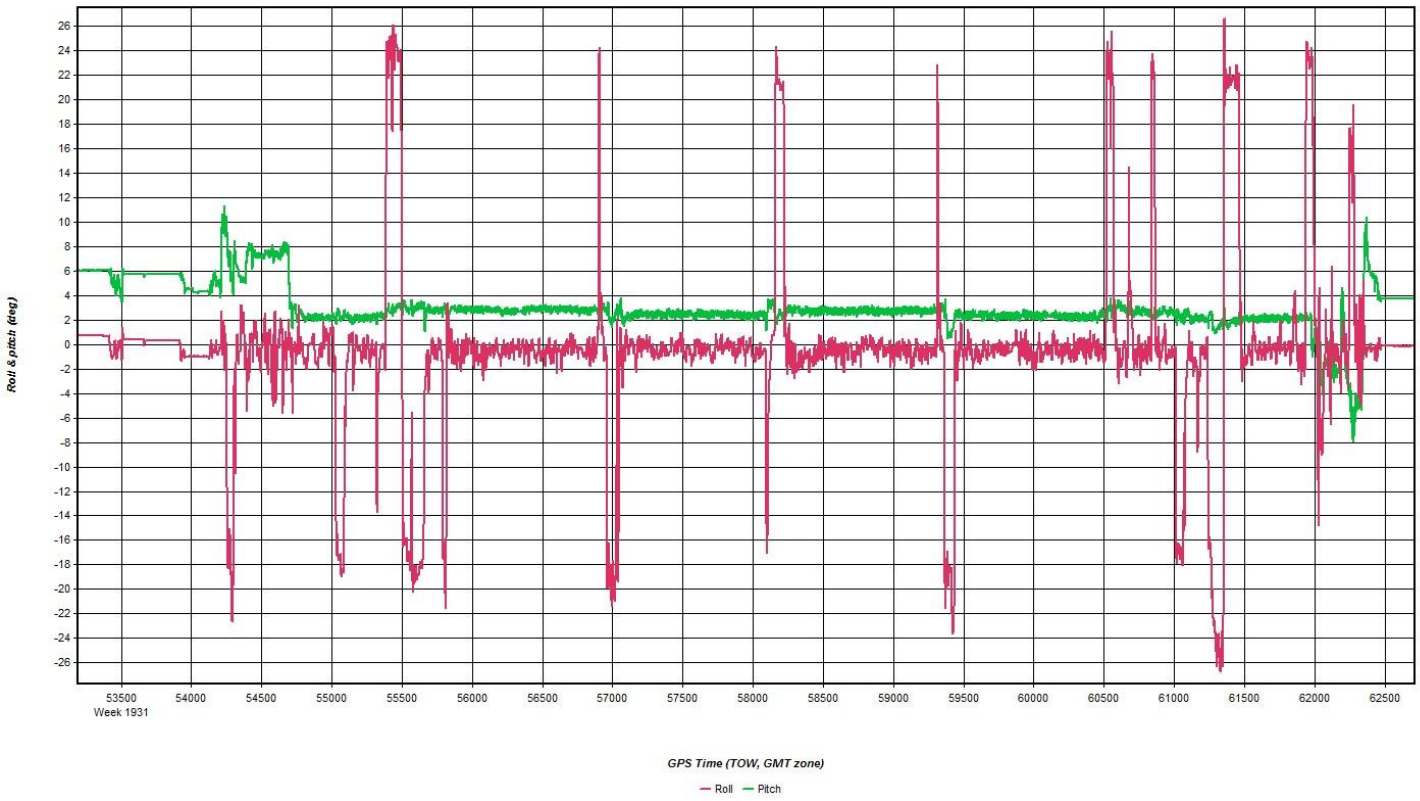

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

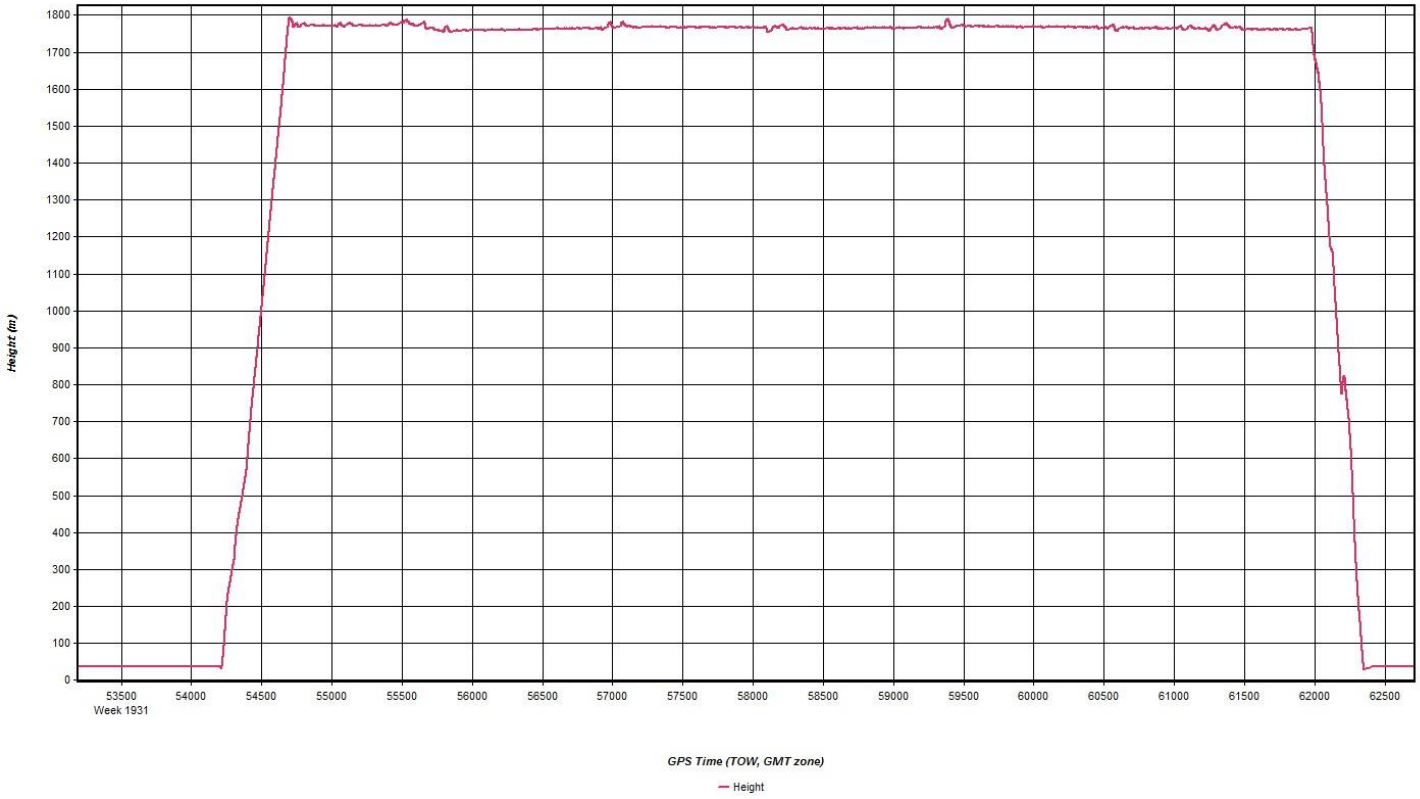

Separation (m)
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
East
North
Up

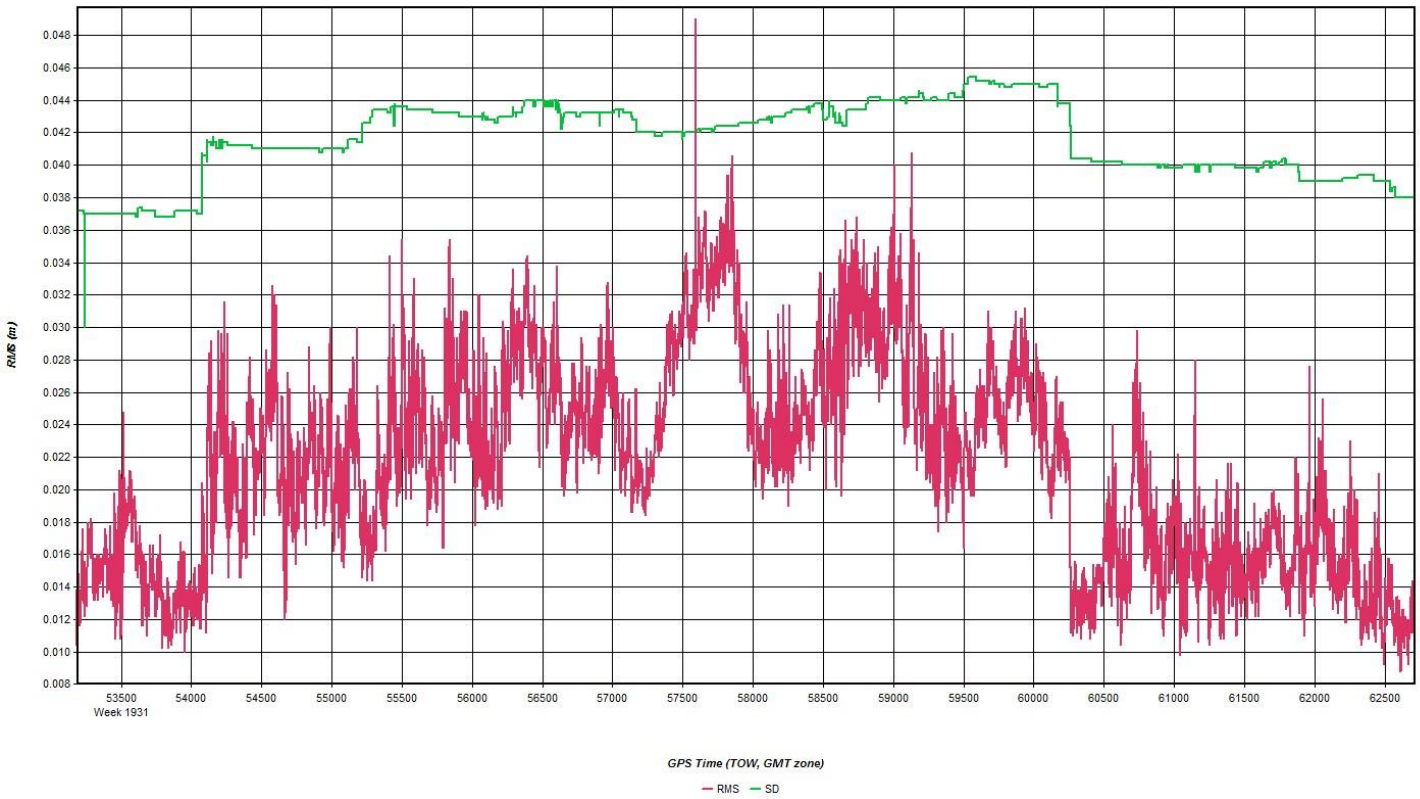

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

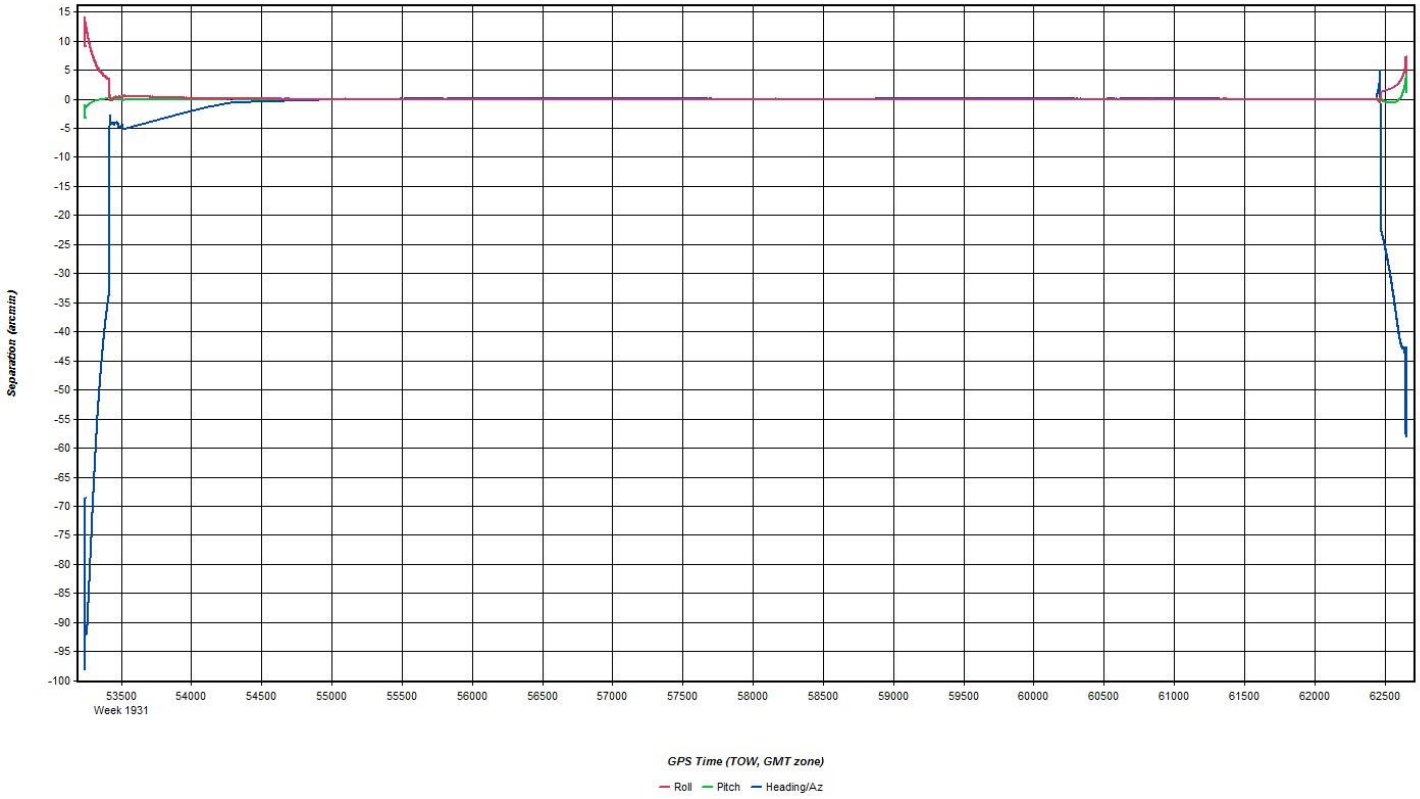

PDOP
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
PDOP

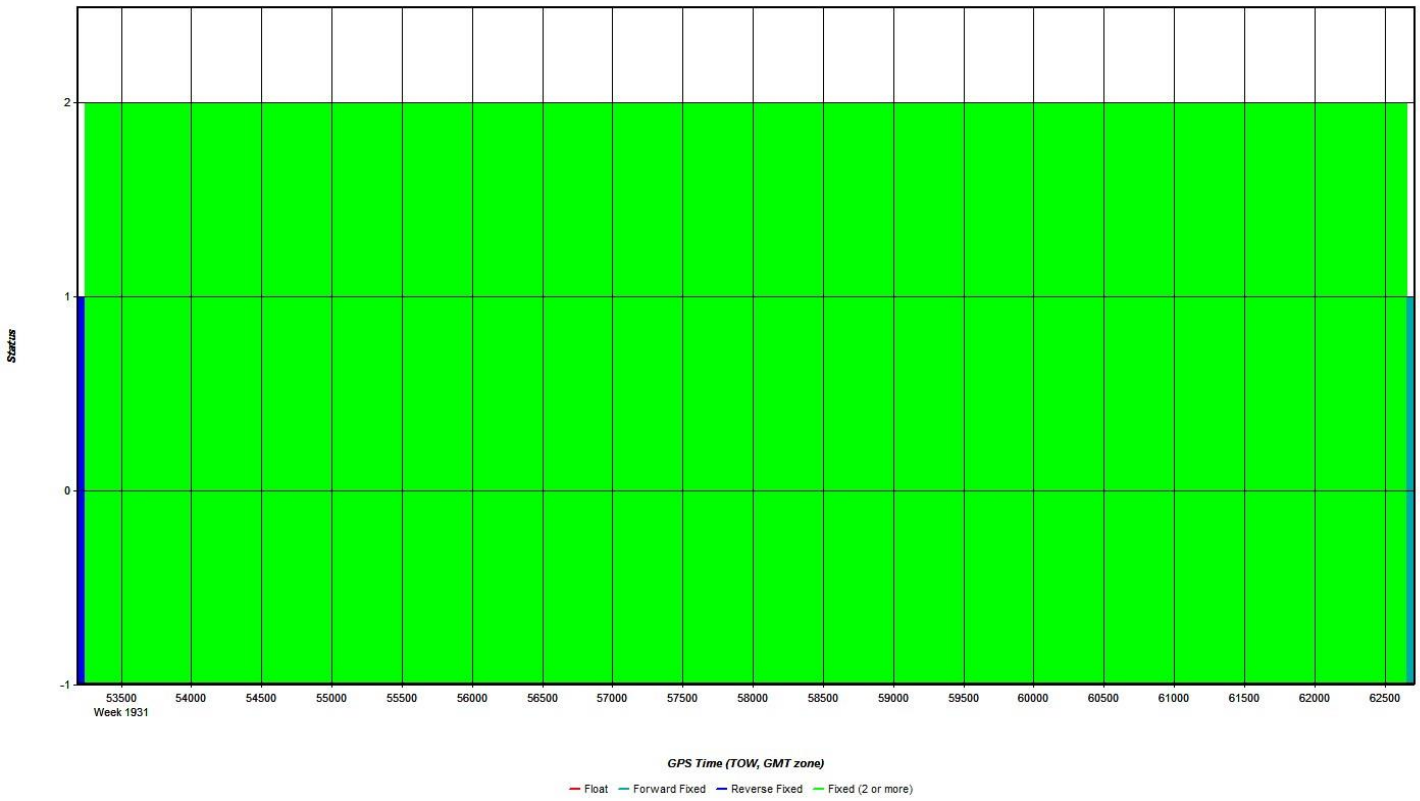

Estimated StdDev (m)
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

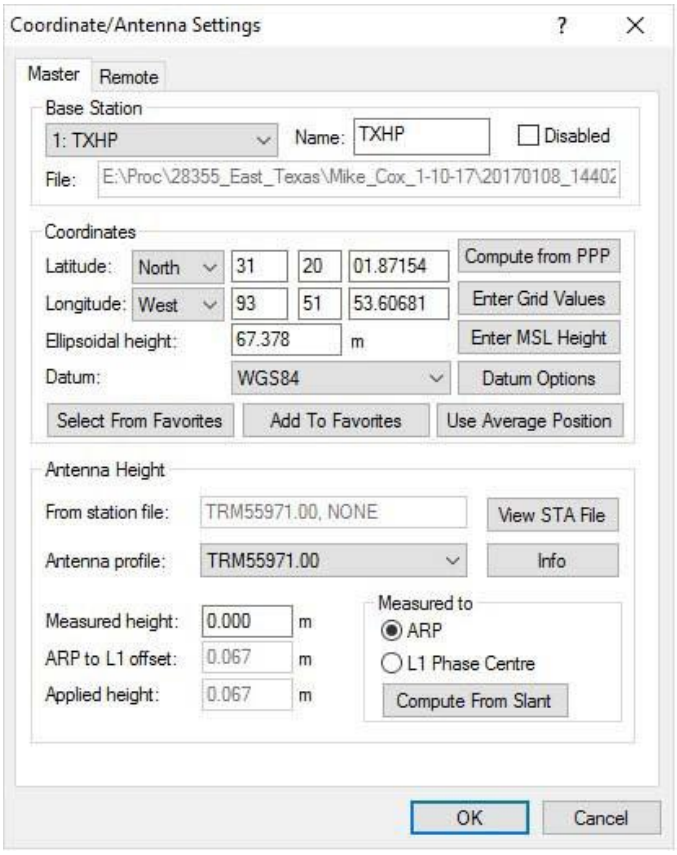

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
Roll
Pitch

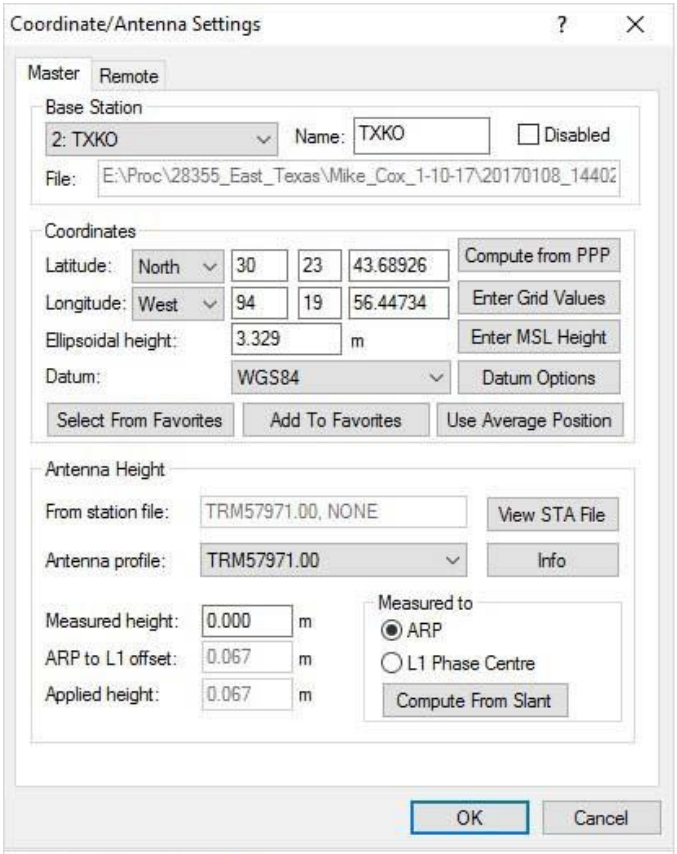

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
Height

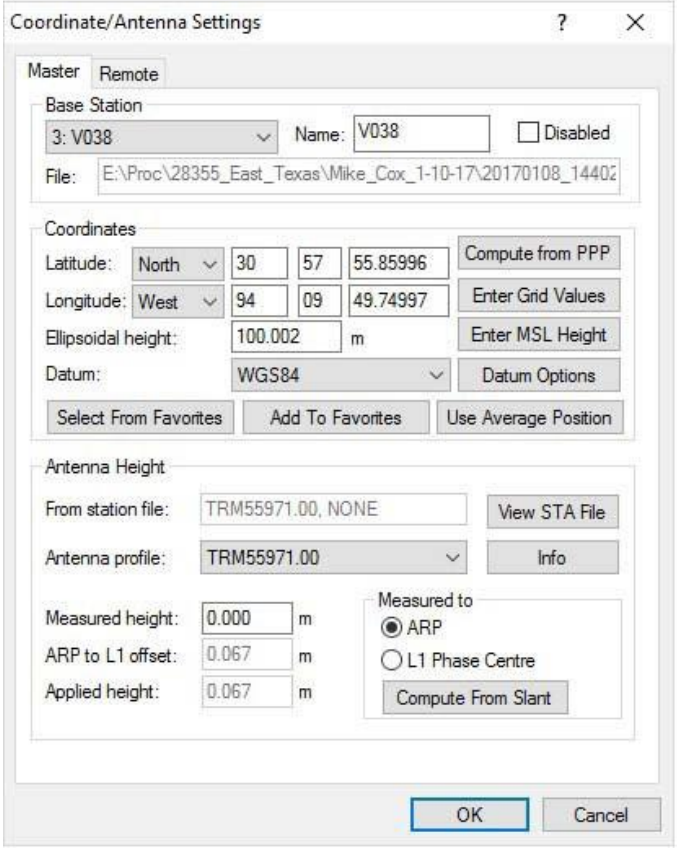

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90
-95
-100
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

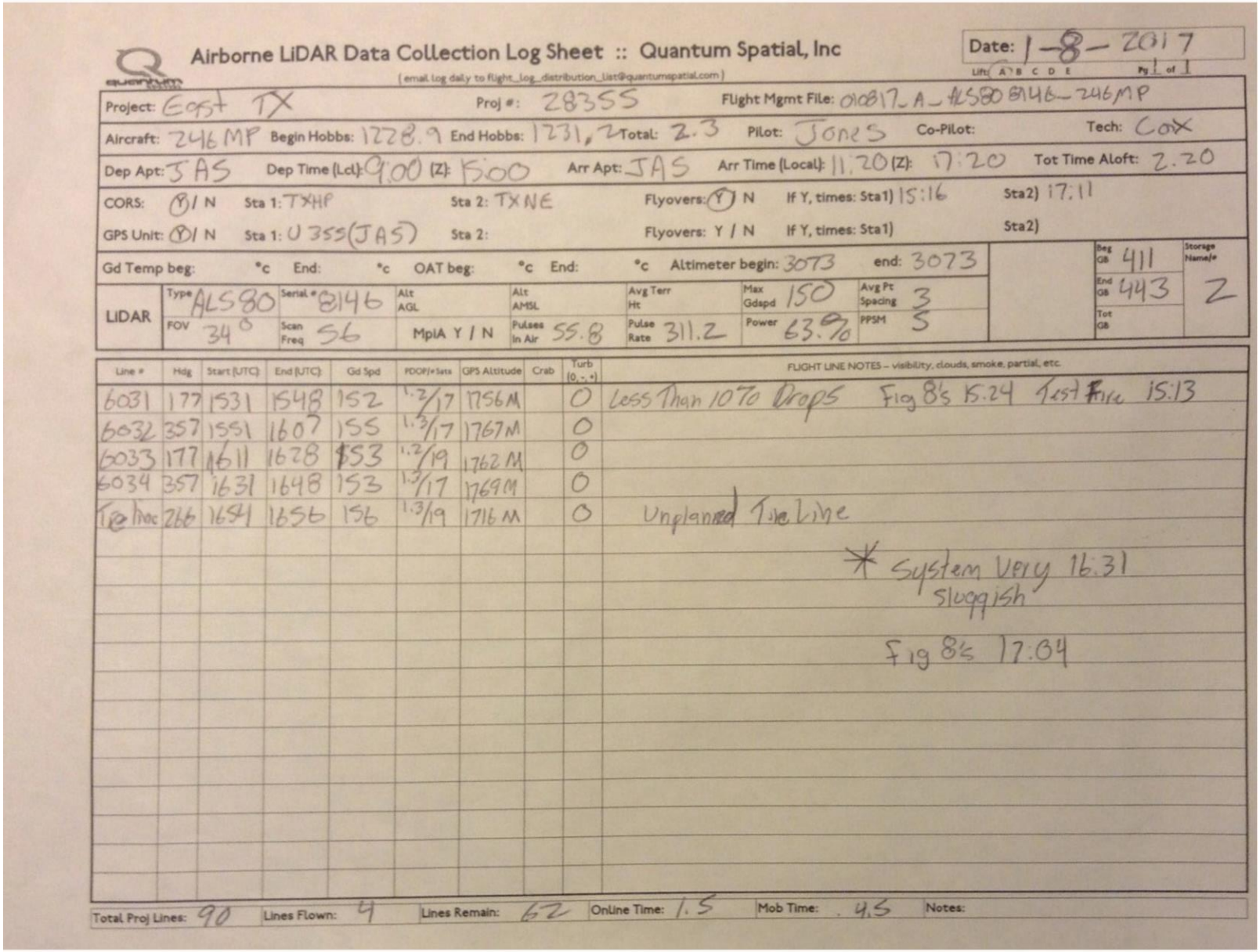

Status
2
1
0
-1
53500
Week 1931
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500
59000
59500
60000
60500
61000
61500
62000
62500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXHP
Name: TXHP
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108_1440
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108_1440
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V038
Name: V038
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108_1440
Coordinates
Latitude: North 30 57 55.85996
Longitude: West 94 09 49.74997
Ellipsoidal height: 100.002 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-8-2017 Lift: A B C D E Pg 1 of 1

Project: East TX Proj #: 28355 Flight Mgmt File: 010817_A_ALS80_0146_246MP

Aircraft: 246MP Begin Hobbs: 1228.9 End Hobbs: 1231.2 Total: 2.3 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: JAS Dep Time (Lcl): 9:00 (Z): 15:00 Arr Apt: JAS Arr Time (Local): 11:20 (Z): 17:20 Tot Time Aloft: 2.20

CORS: (Y) / N Sta 1: TXHF Sta 2: TXNE Flyovers: (Y) N If Y, times: Sta1) 15:16 Sta2) 17:11

GPS Unit: (Y) / N Sta 1: U355(JAS) Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 3073 end: 3073

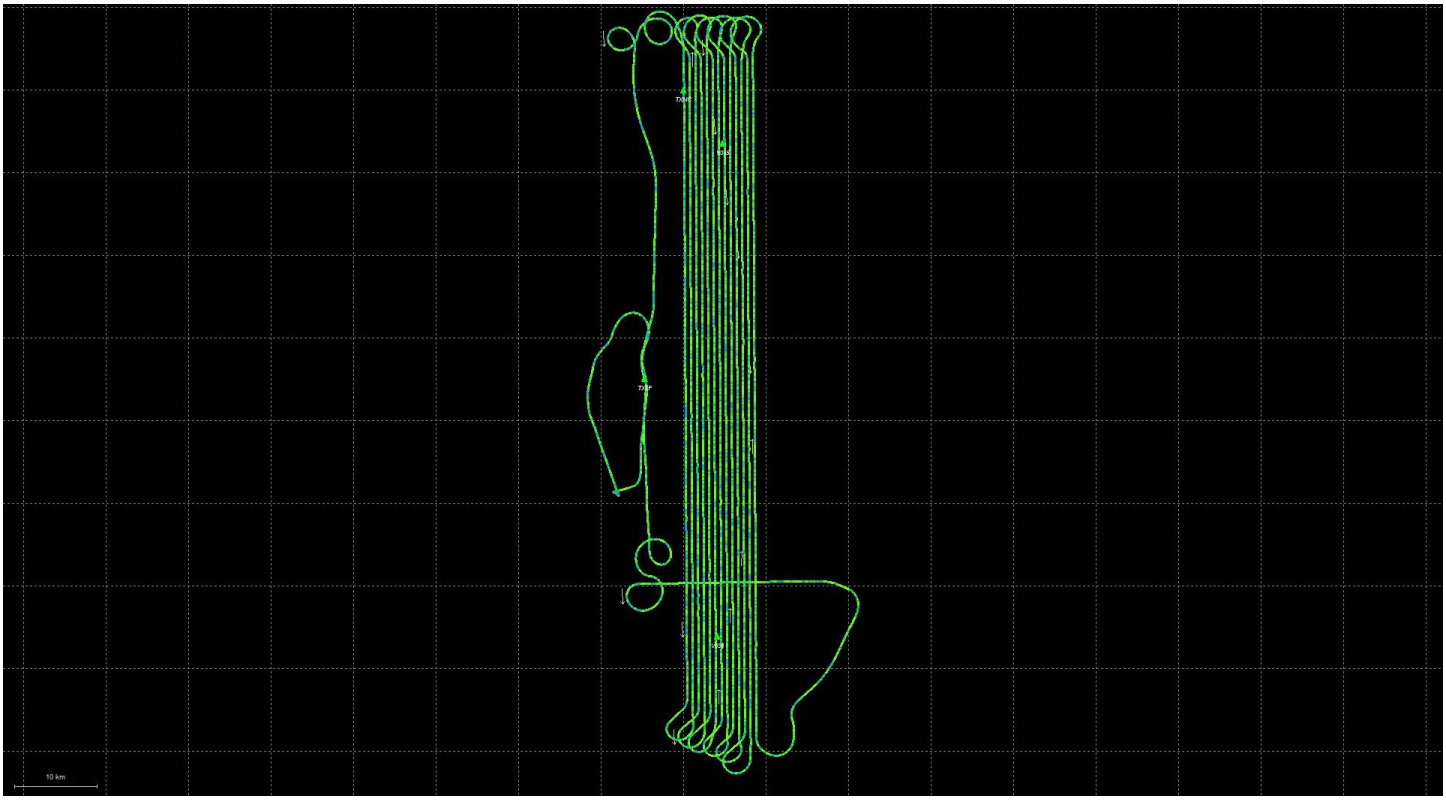
LiDAR	Type: ALS80	Serial #: 0146	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd: 150	Avg Pt Spacing: 3
	FOV: 34°	Scan Freq: 56	MpiA Y / N	Pulses In Air: 55.8	Pulse Rate: 311.2	Power: 63.9%	PPSM: 5

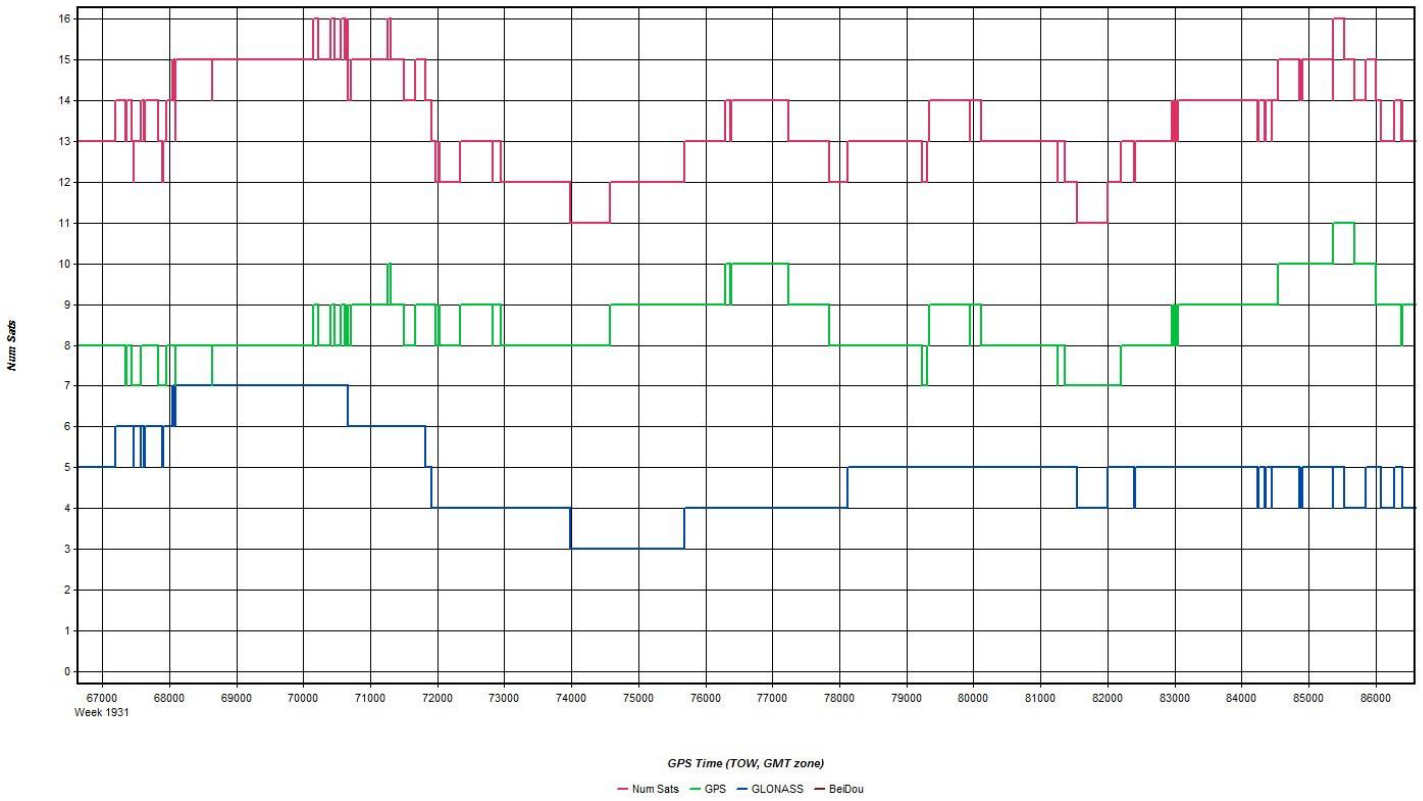
Beg GB: 411 End GB: 443 Tot GB: Storage Name/#: 2

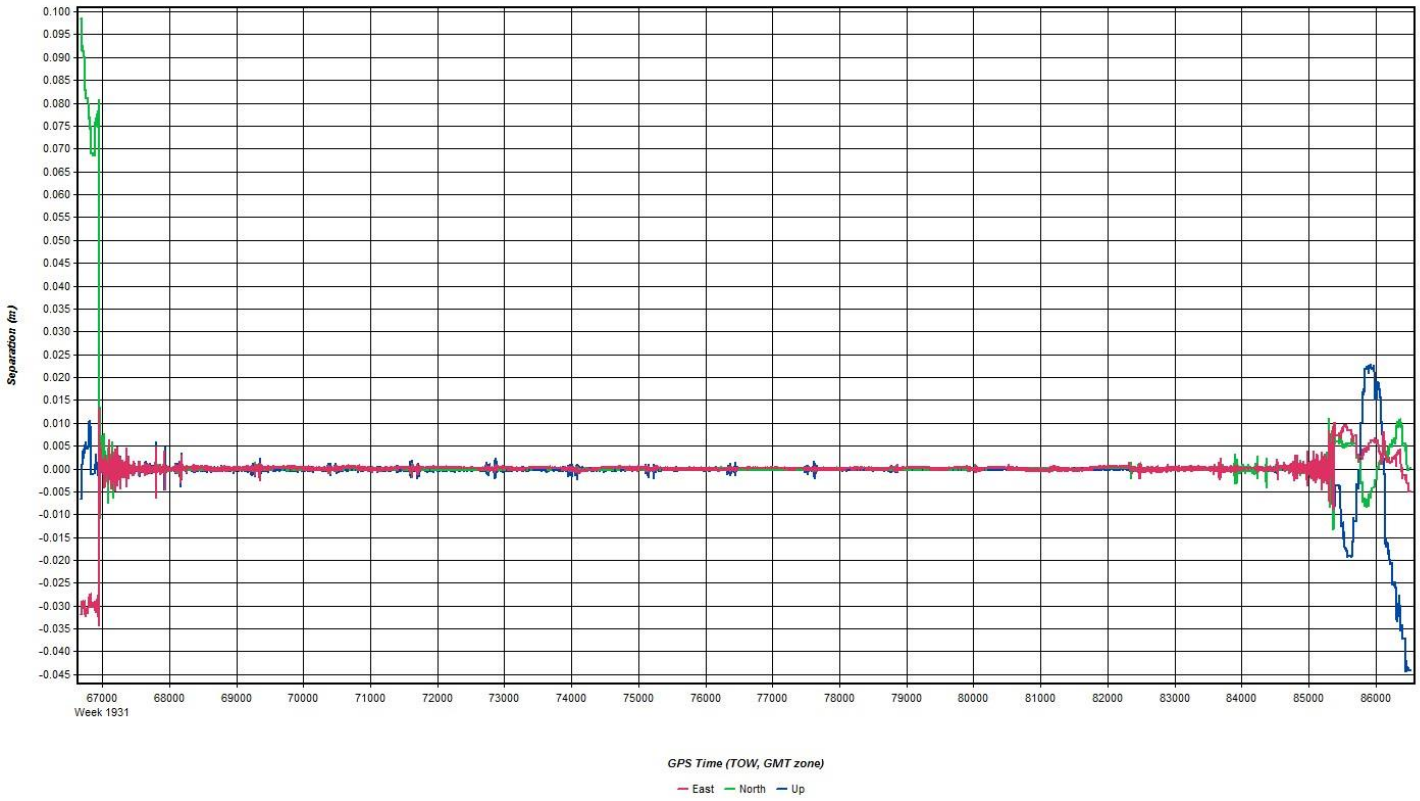
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6031	177	1531	1548	152	1.3/17	1756M		0	Less Than 10 To Drops Fig 8's 15:24 Test Fire 15:13
6032	357	1551	1607	155	1.3/17	1767M		0	
6033	177	1611	1628	153	1.2/19	1762M		0	
6034	357	1631	1648	153	1.3/17	1769M		0	
Turn	266	1654	1656	156	1.3/19	1716M		0	Unplanned Turn Line
									* System Very Sluggish 16:31
									Fig 8's 17:04

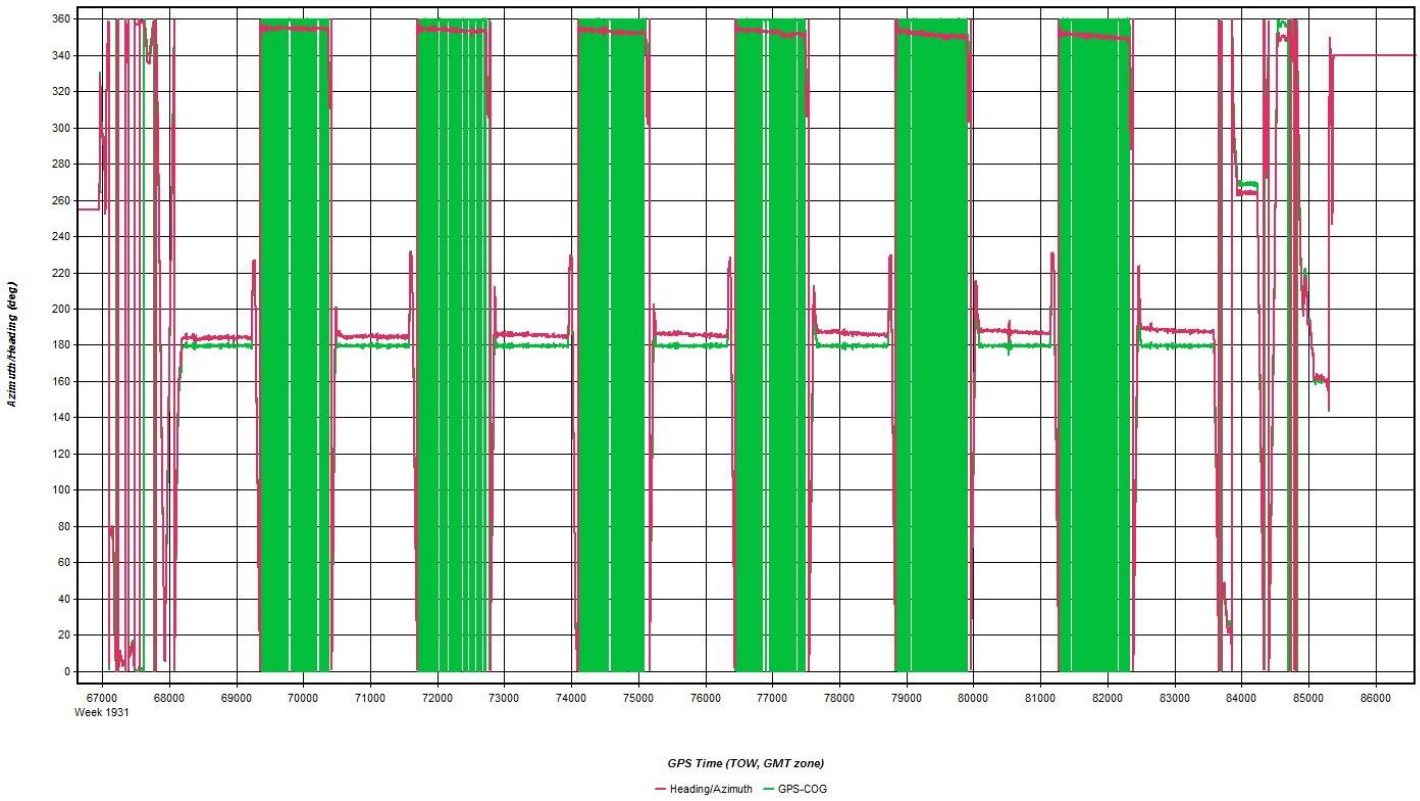
Total Proj Lines: 90 Lines Flown: 4 Lines Remain: 62 OnLine Time: 1.5 Mob Time: 4.5 Notes:

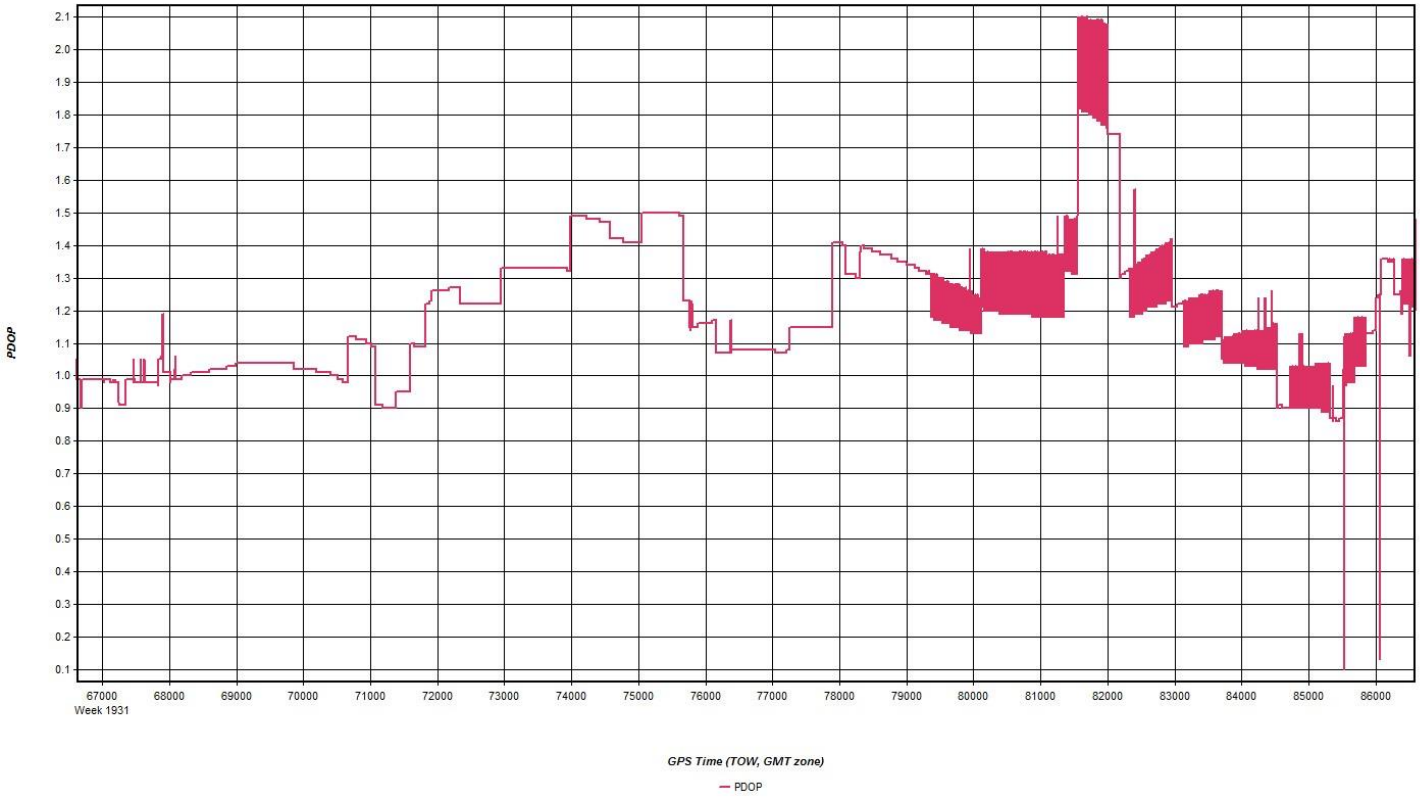
Jan 8, 2017-A (N812TB, SN7178)

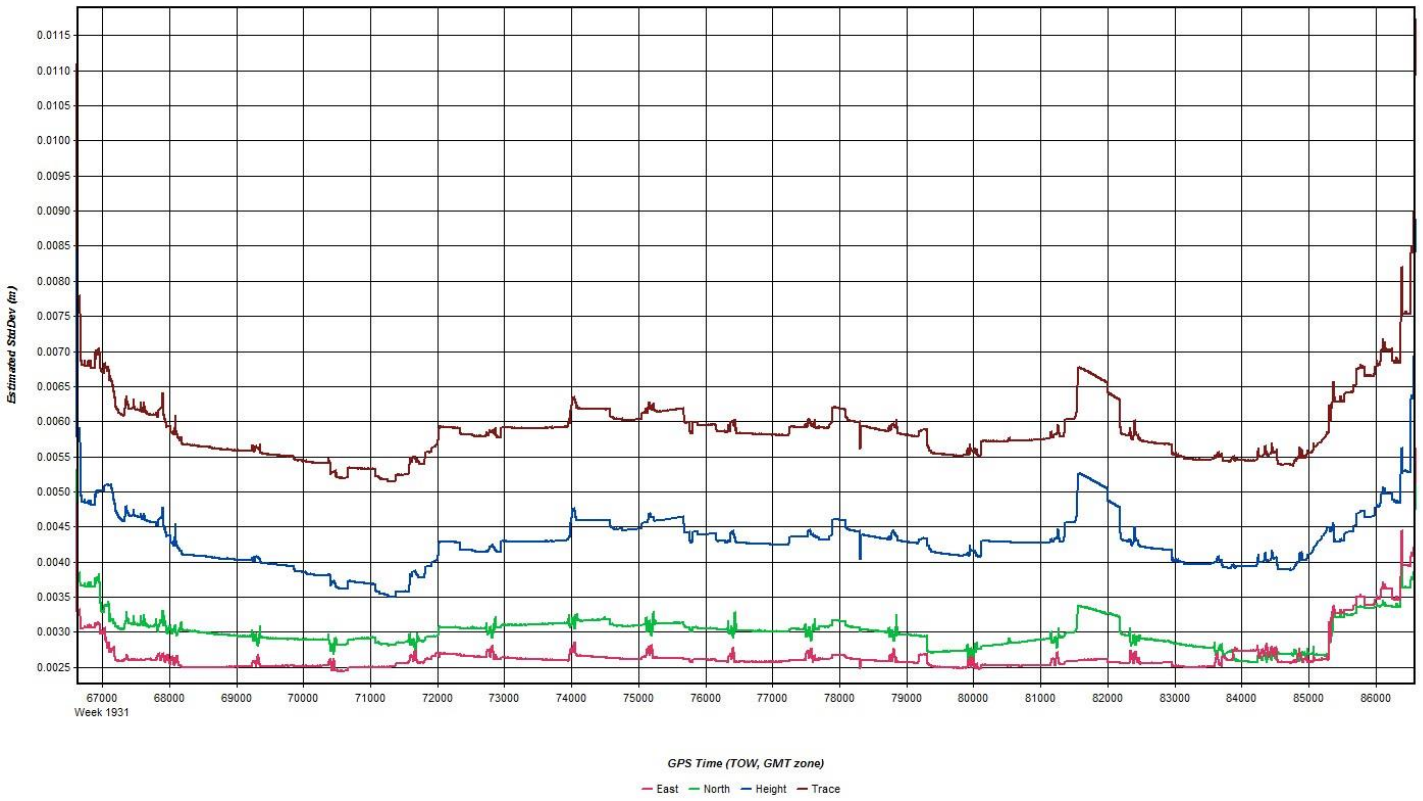


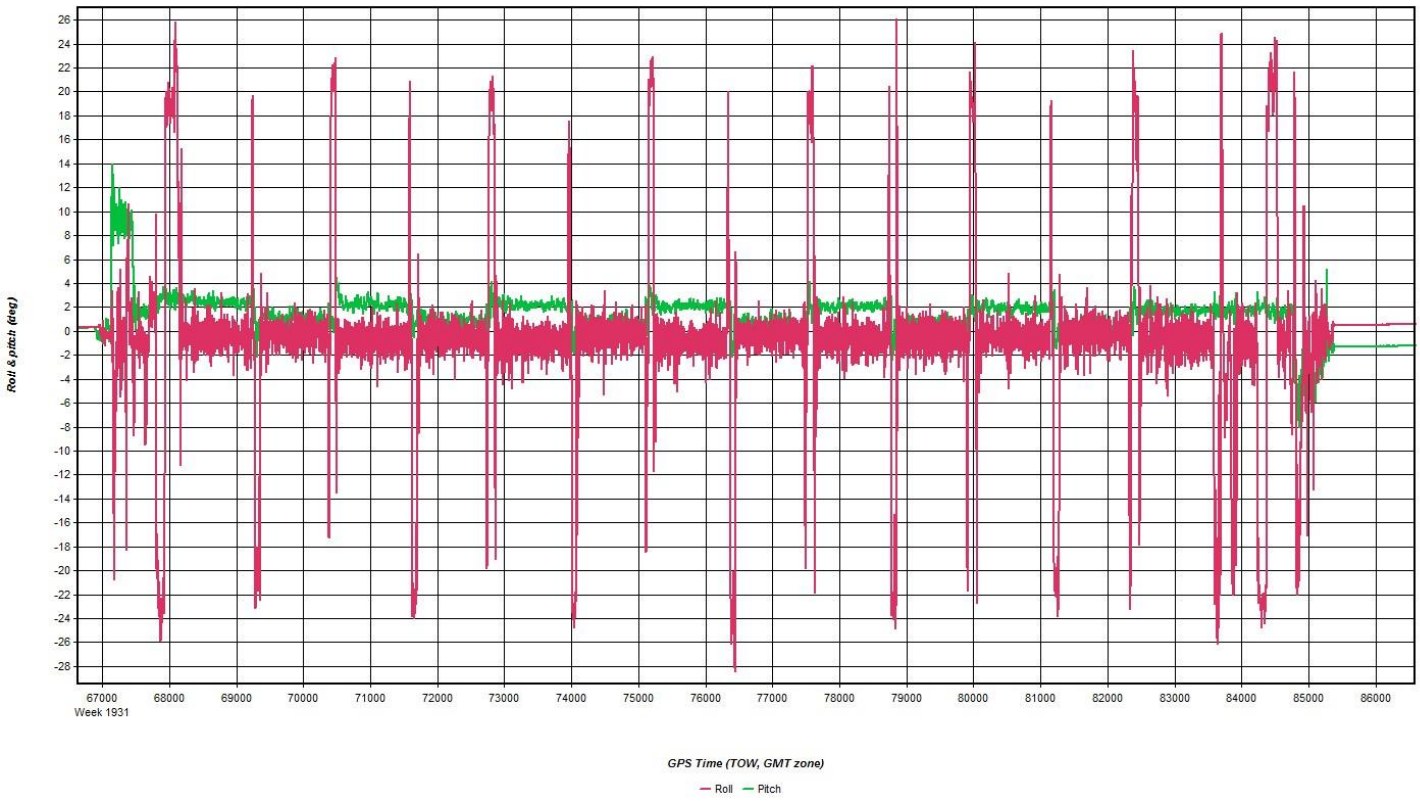

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

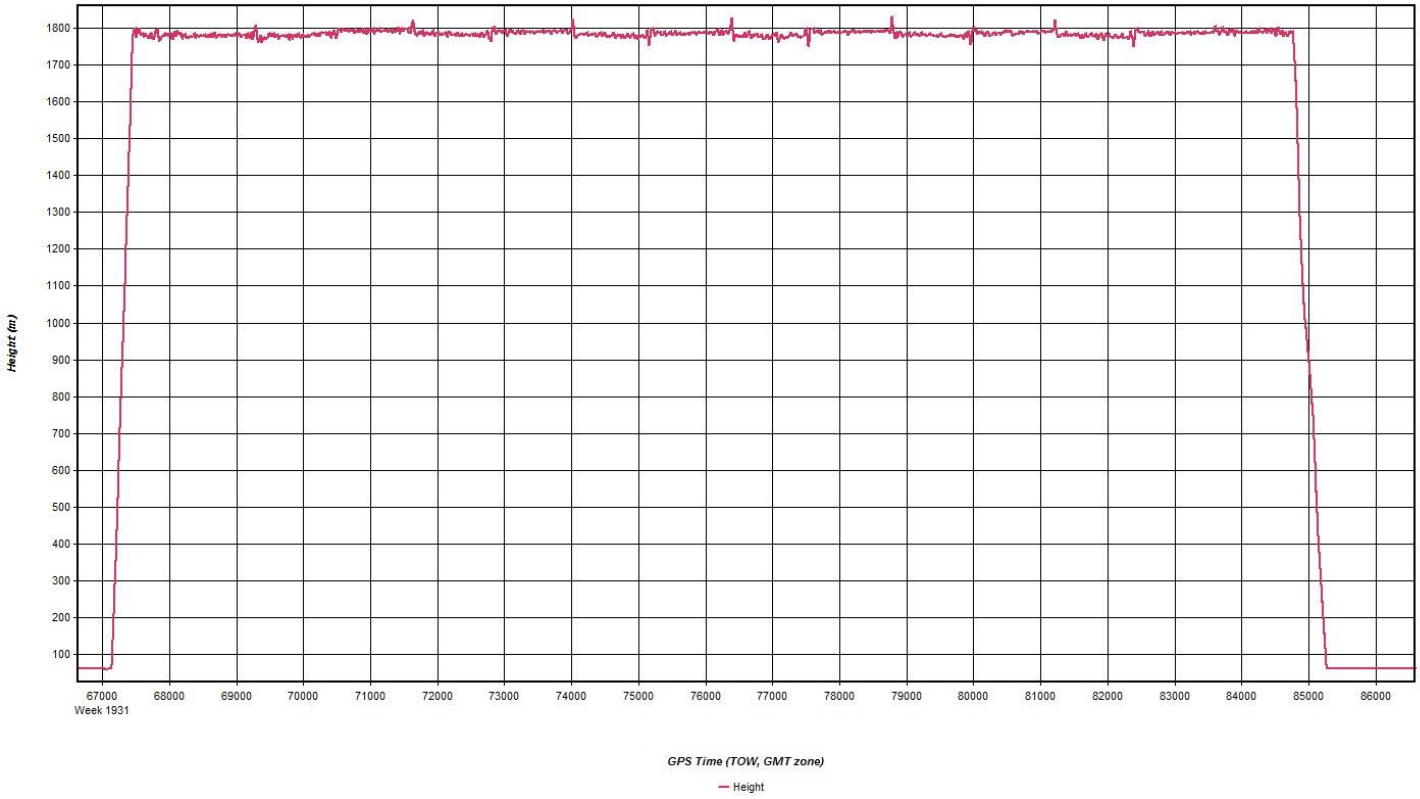

Separation (m)
0.100
0.095
0.090
0.085
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
East
North
Up

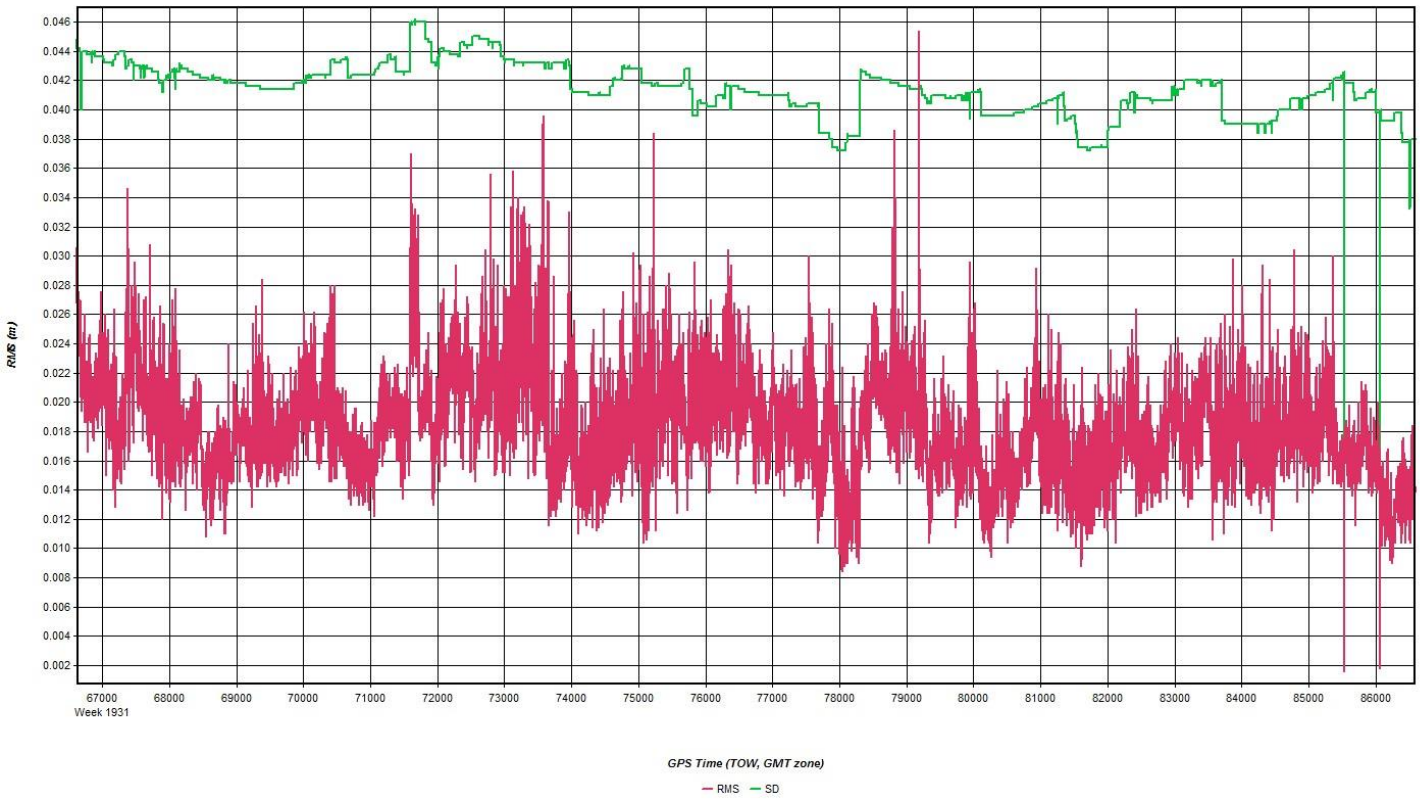

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

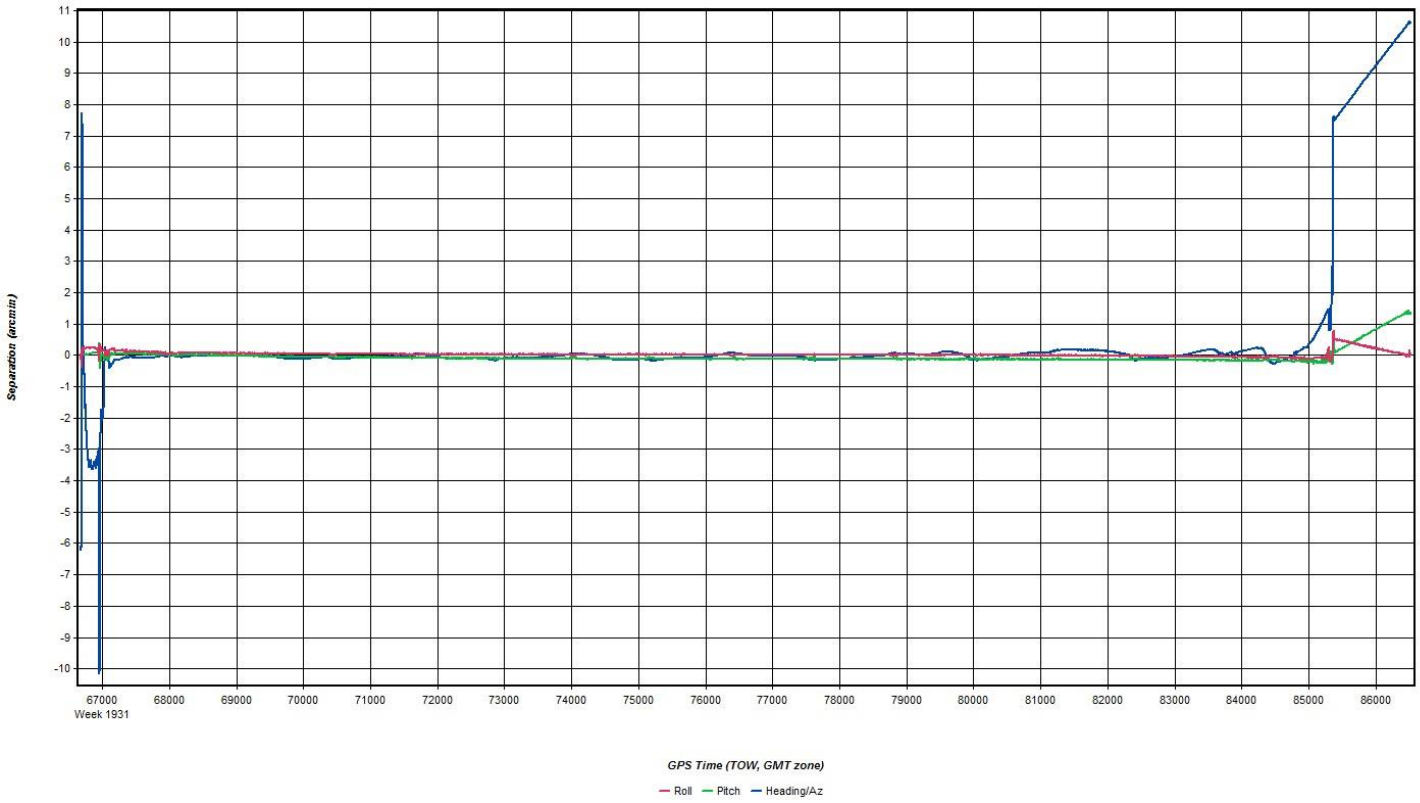

PDOP
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
PDOP

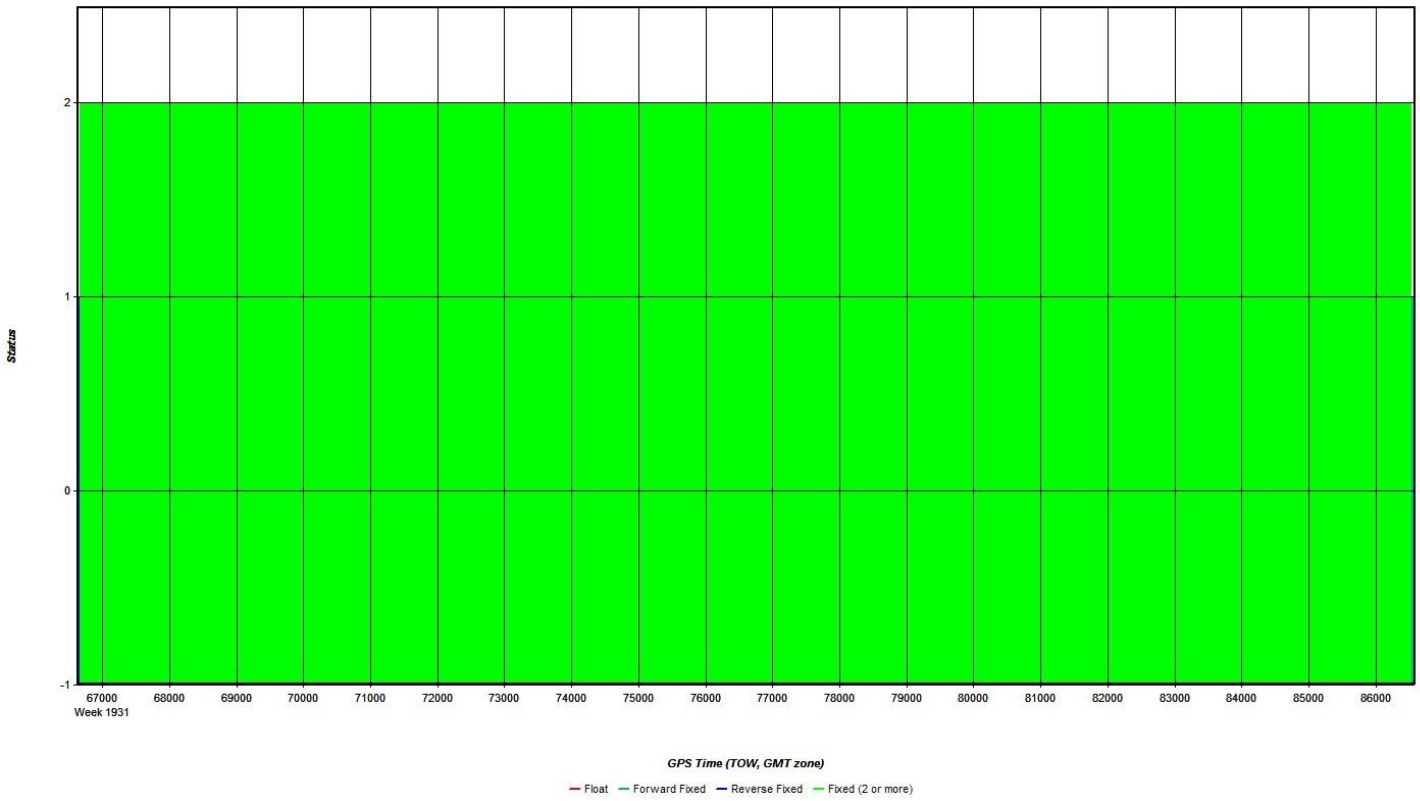

Estimated StdDev (m)
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

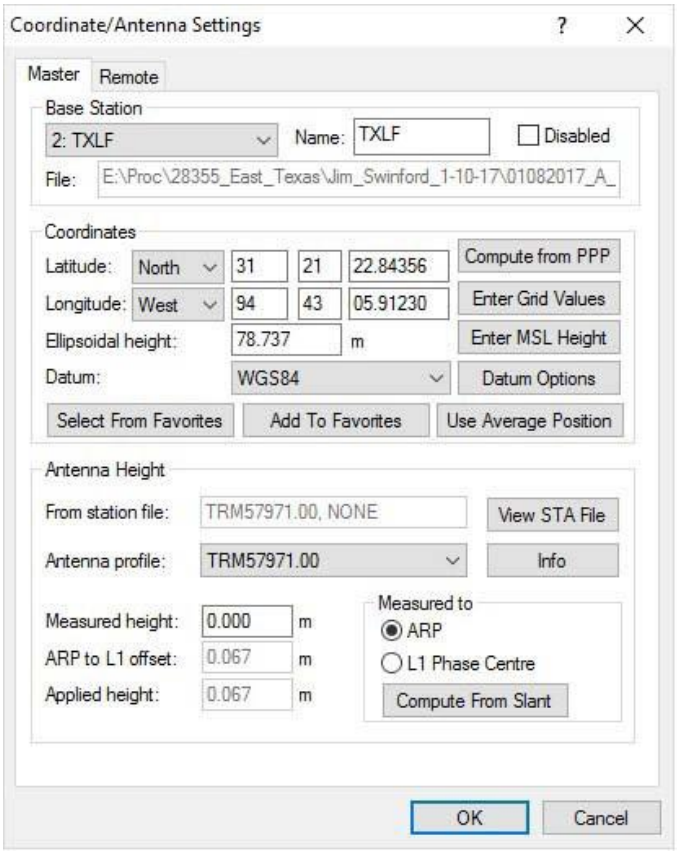

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
Roll
Pitch

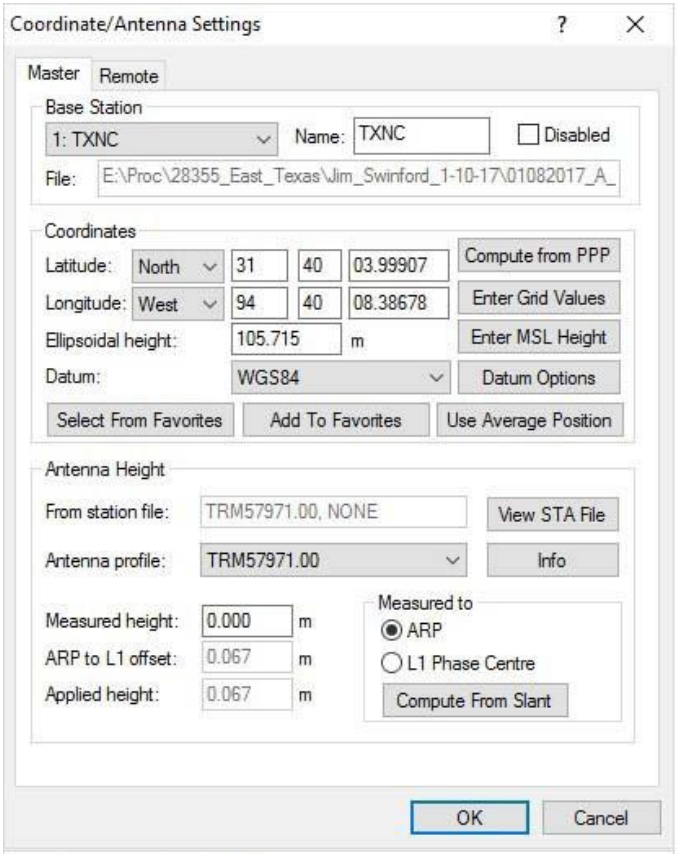

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
Height

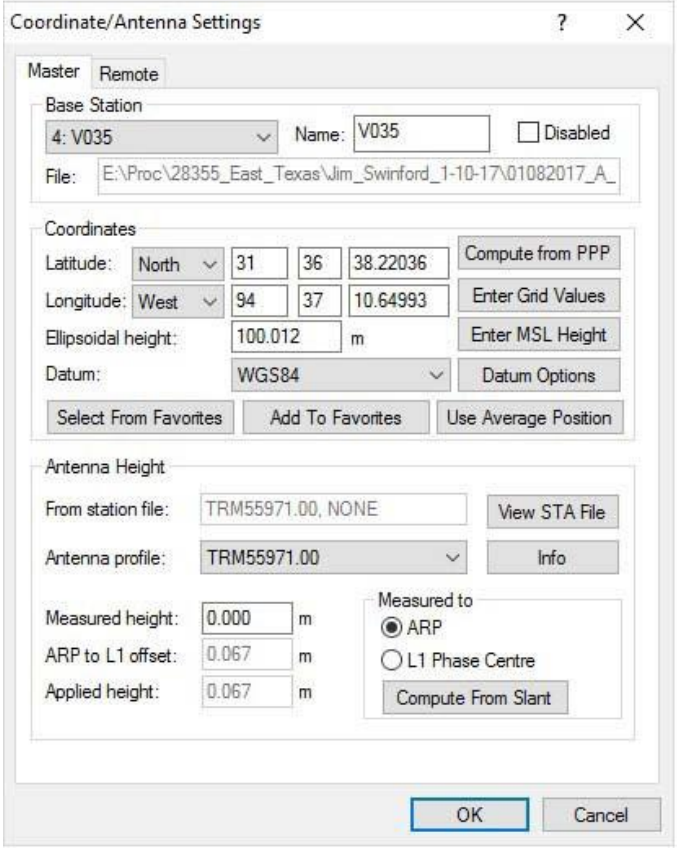

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
RMS
SD

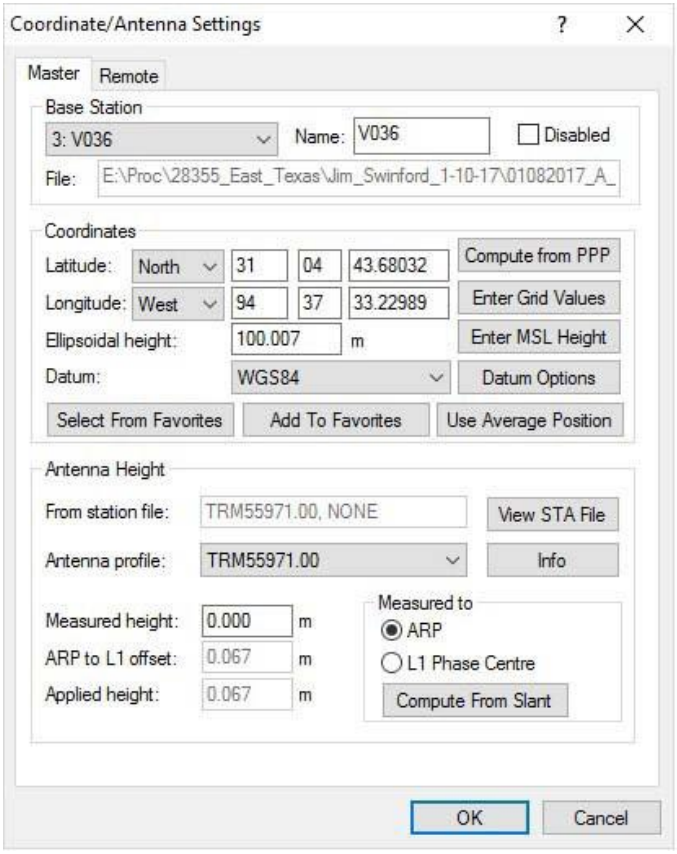

Separation (arcmin)
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
67000
Week 1931
68000
69000
70000
71000
72000
73000
74000
75000
76000
77000
78000
79000
80000
81000
82000
83000
84000
85000
86000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXLF
Name:
TXLF
Disabled
File:
E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01082017_A_
Coordinates
Latitude:
North
31
21
22.84356
Compute from PPP
Longitude:
West
94
43
05.91230
Enter Grid Values
Ellipsoidal height:
78.737
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXNC
Name: TXNC
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01082017_A_
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V035
Name: V035
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01082017_A_
Coordinates
Latitude: North 31 36 38.22036
Longitude: West 94 37 10.64993
Ellipsoidal height: 100.012 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V036
Name: V036
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01082017_A_
Coordinates
Latitude: North 31 04 43.68032
Longitude: West 94 37 33.22989
Ellipsoidal height: 100.007 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 01/08/2017 Lift: (A) B C D E Pg 1 of _

Project: EAST TX. _3pt 5pp Proj #: 28355 Flight Mgmt File:

Aircraft: N 812 TB Begin Hobbs: 4240.7 End Hobbs: 4245.7 Total: Pilot: D. WAGNER Co-Pilot: Tech: J. SWINFORD

Dep Apt: KLFK Dep Time (Lcl): 12:30 (Z): 18:30 Arr Apt: KLFK Arr Time (Local): 5:45 (Z): 23:45 Tot Time Aloft: 5.0

CORS: (Y) / N Sta 1: TXLF Sta 2: Flyovers: (Y) / N If Y, times: Sta1) 18:42 Sta2)

GPS Unit: (Y) / N Sta 1: 14:30 Sta 2: Flyovers: Y / N If Y, times: Sta1) 23:32 Sta2)

Gd Temp beg: °c End: °c OAT beg: / °c End: °c Altimeter begin: 3064 end:

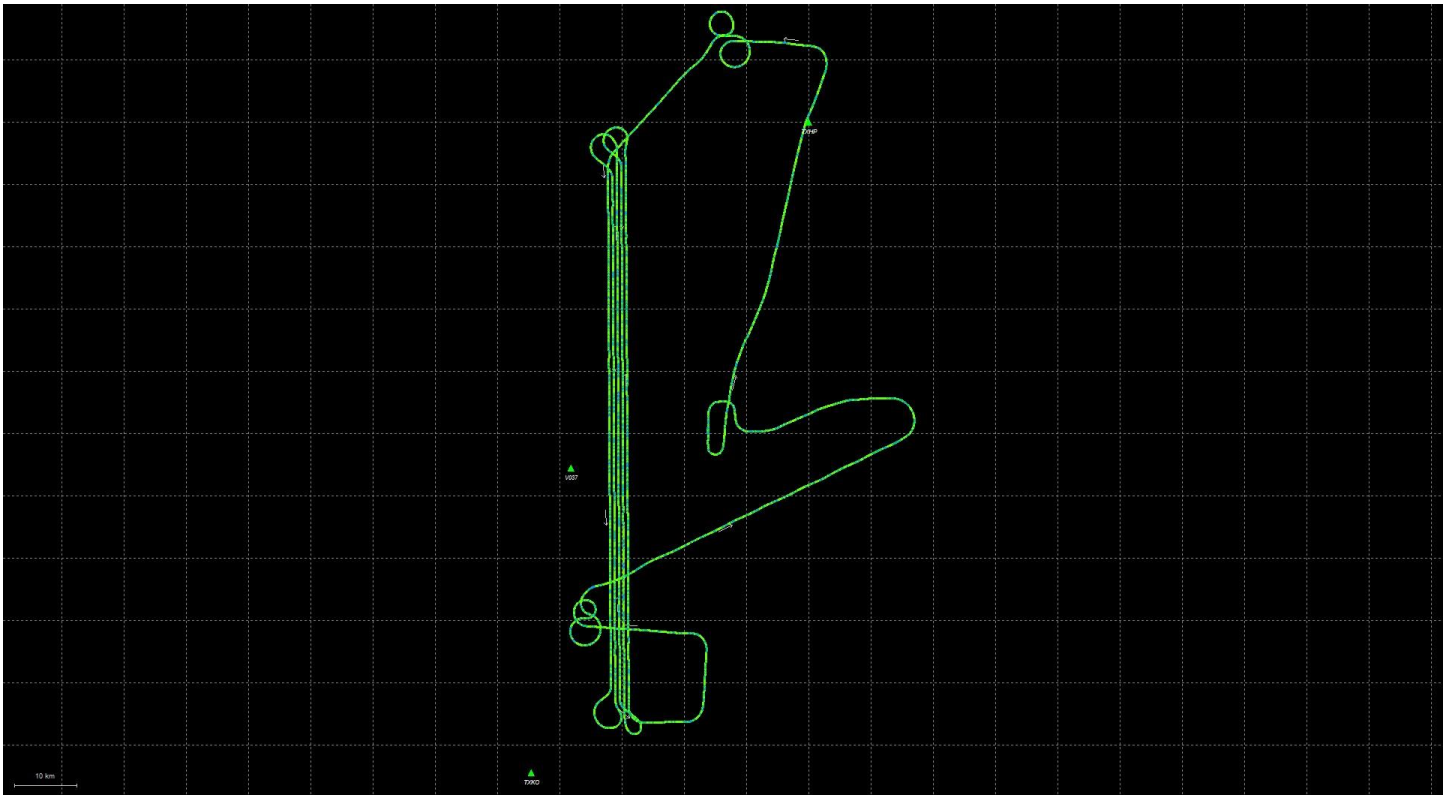
LiDAR	Type ALS 70	Serial # 7178	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd 150	Avg Pt Spacing
	FOV 34°	Scan Freq 57Hz	MpIA Y / N	Pulses In Air	Pulse Rate	Power 100%	PPSM

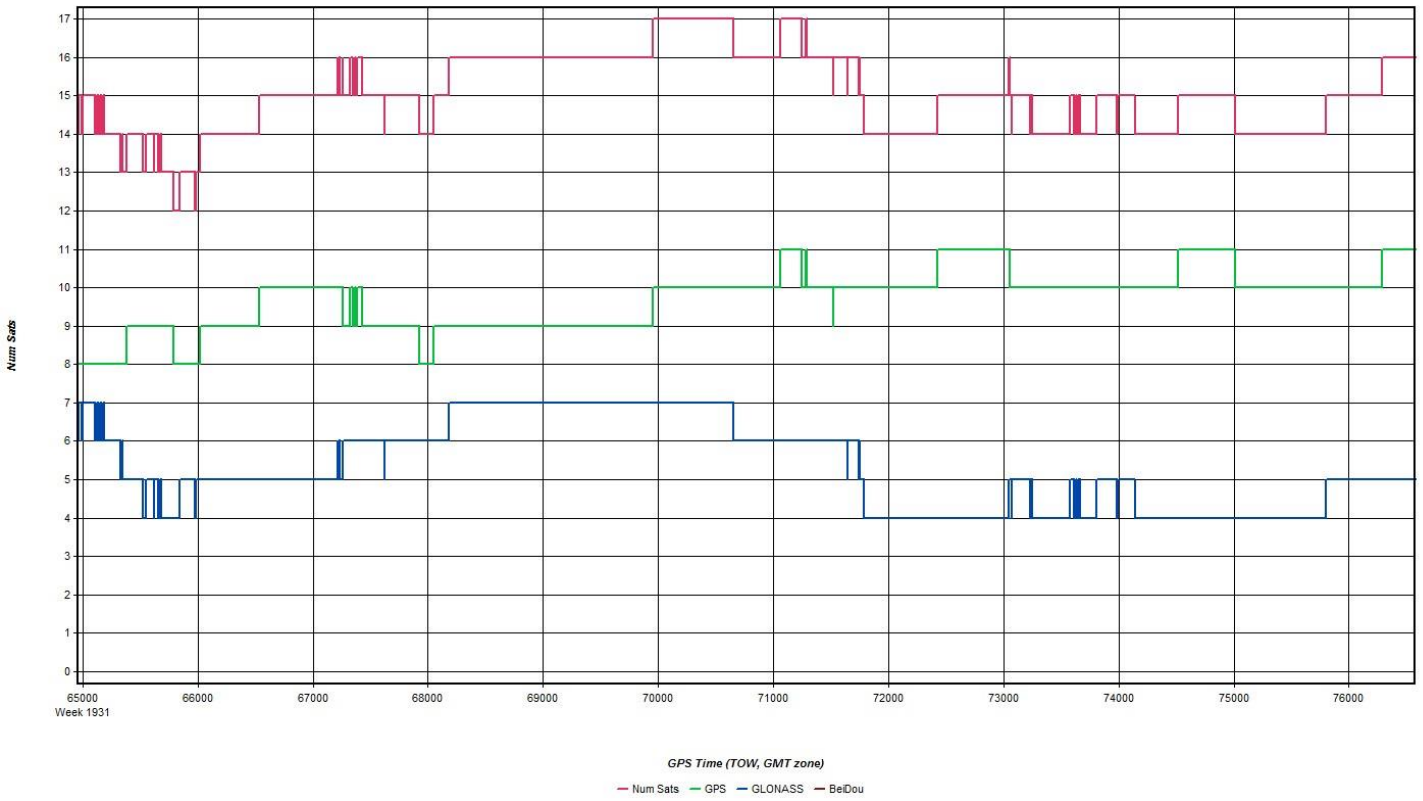
Beg GB	End GB	Tot GB	Storage Name/#
392	292	100	SSD 4

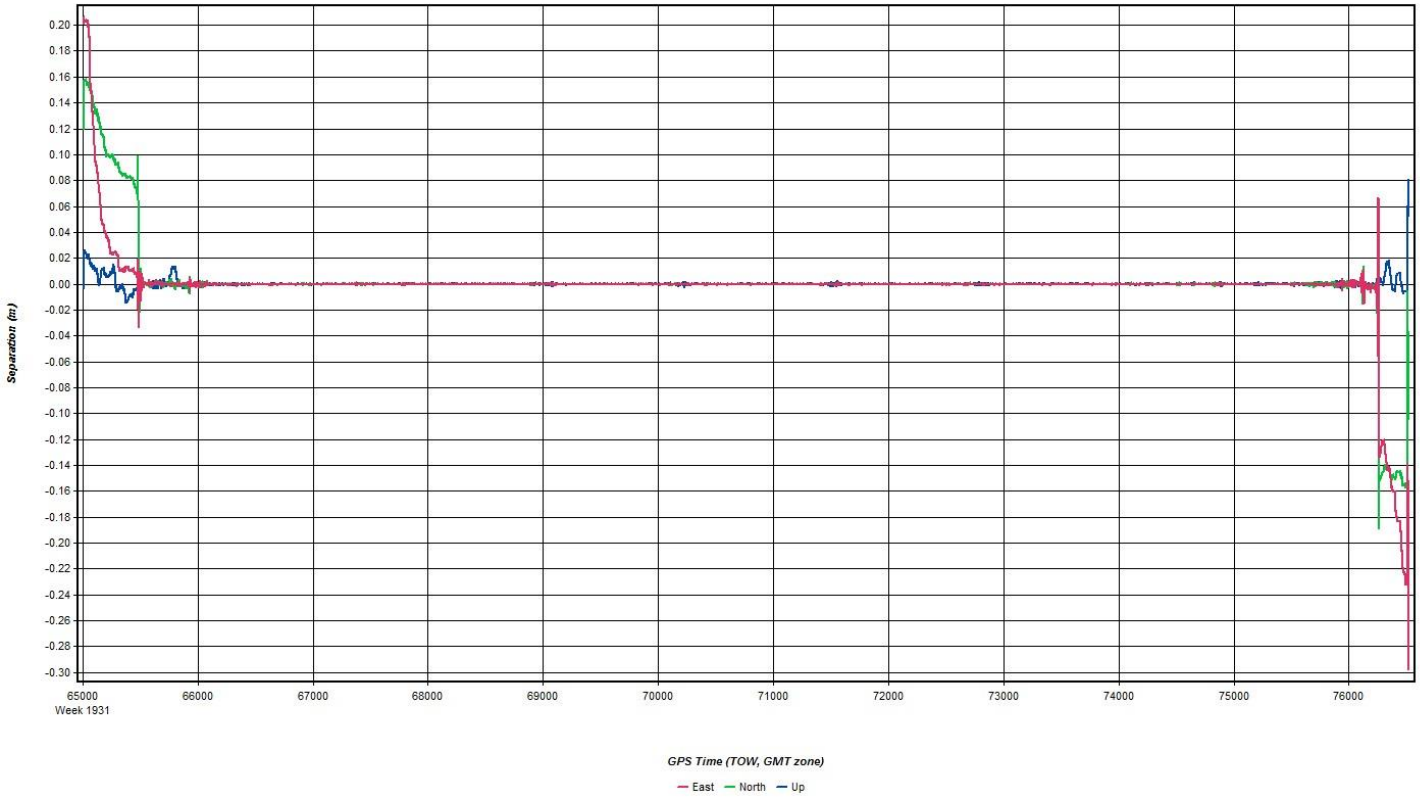
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
3068	180	18:57	19:13	140	1.1/19	5850	0	0	FIG 8 @ 18:53
3069	360	19:17	19:33	145	1.2/18	5875	0	0	
3070	180	19:37	19:53	145	1.0/19	5875	0	0	
3071	360	19:57	20:11	152	1.0/19	5850	0	0	
3072	180	20:15	20:33	144	1.3/16	5850	0	0	
3073	360	20:37	20:53	150	1.3/16	5850	0	0	
3074	180	20:57	21:13	145	1.2/17	5850	0	0	
3075	360	21:15	21:32	149	1.1/17	5875	0	0	
3076	180	21:35	21:52	145	1.1/17	5875	0	0	
3077	360	21:55	22:12	152	1.5/14	5850	0	0	
3078	180	22:15	22:32	146	1.4/14	5875	0	0	
3079	360	22:35	22:52	155	1.2/15	5850	0	0	
3080	180	22:55	23:12	145	1.3/14	5850	0	0	
X-FLT	270	23:19	23:24	143	1.2/15	5875	0	0	LINE 3116 OVER AREA FOR LINES FLOWN / FIG 8 @ 23:27

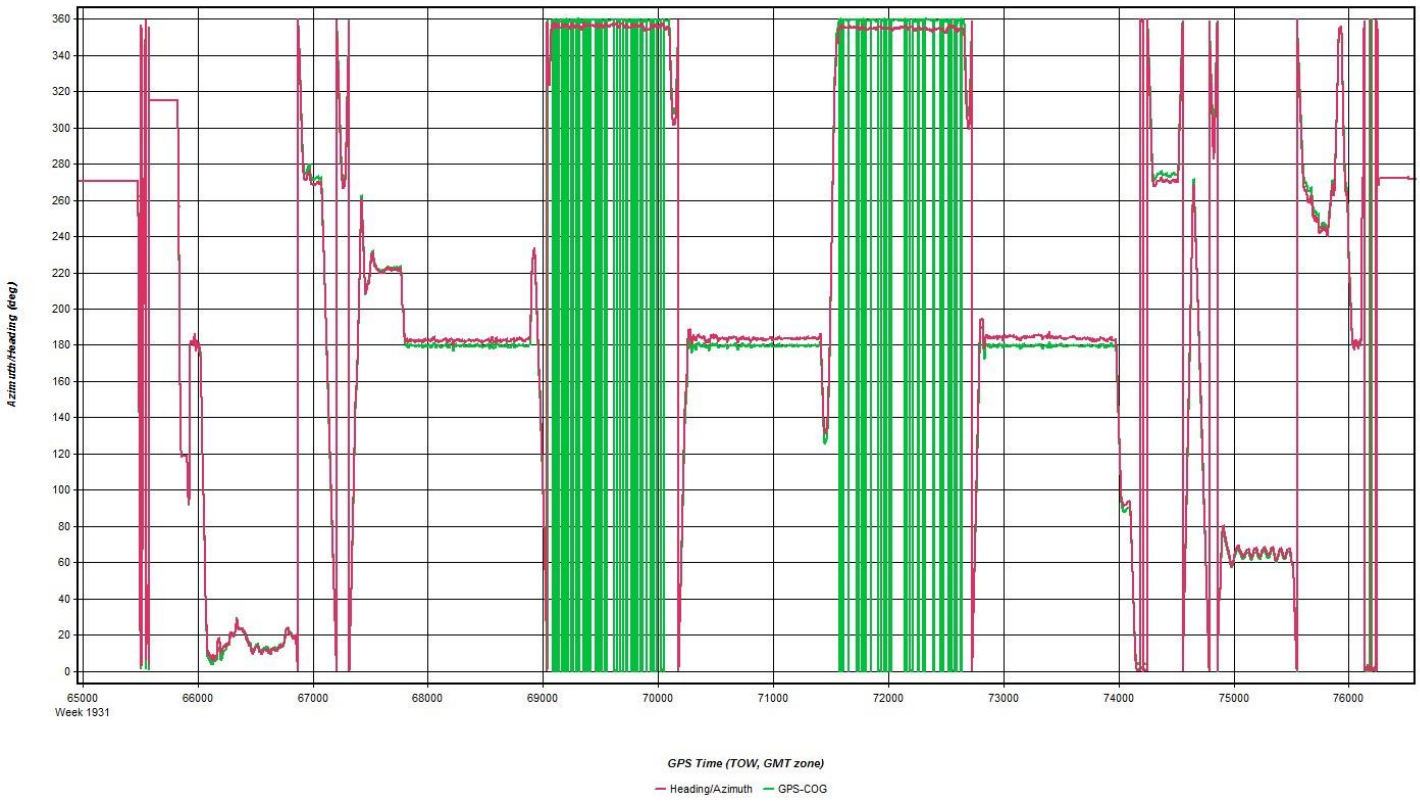
Total Proj Lines: Lines Flown: 13 Lines Remain: Online Time: 4.5 Mob Time: .5 Notes:

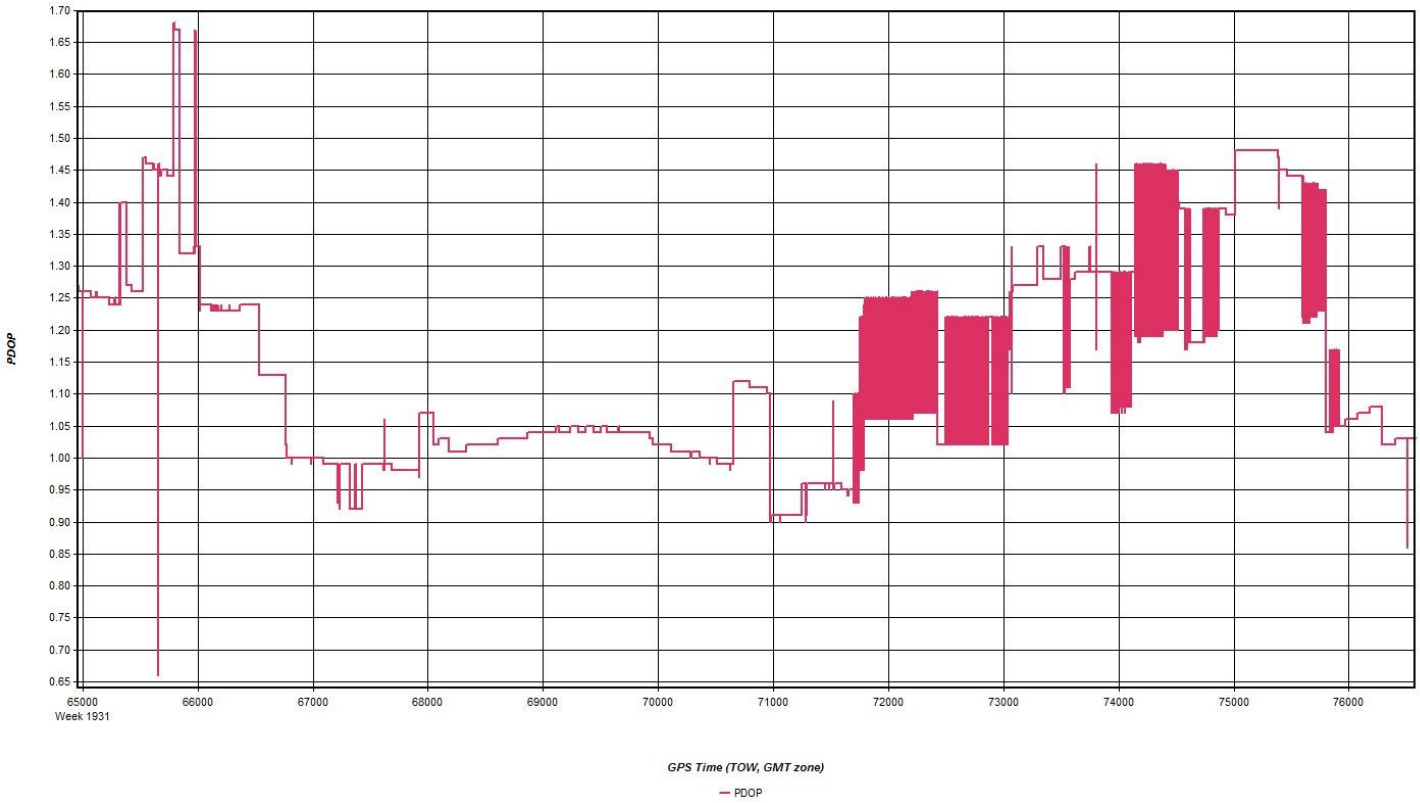
Jan 8, 2017-B (N246MP, SN8146)

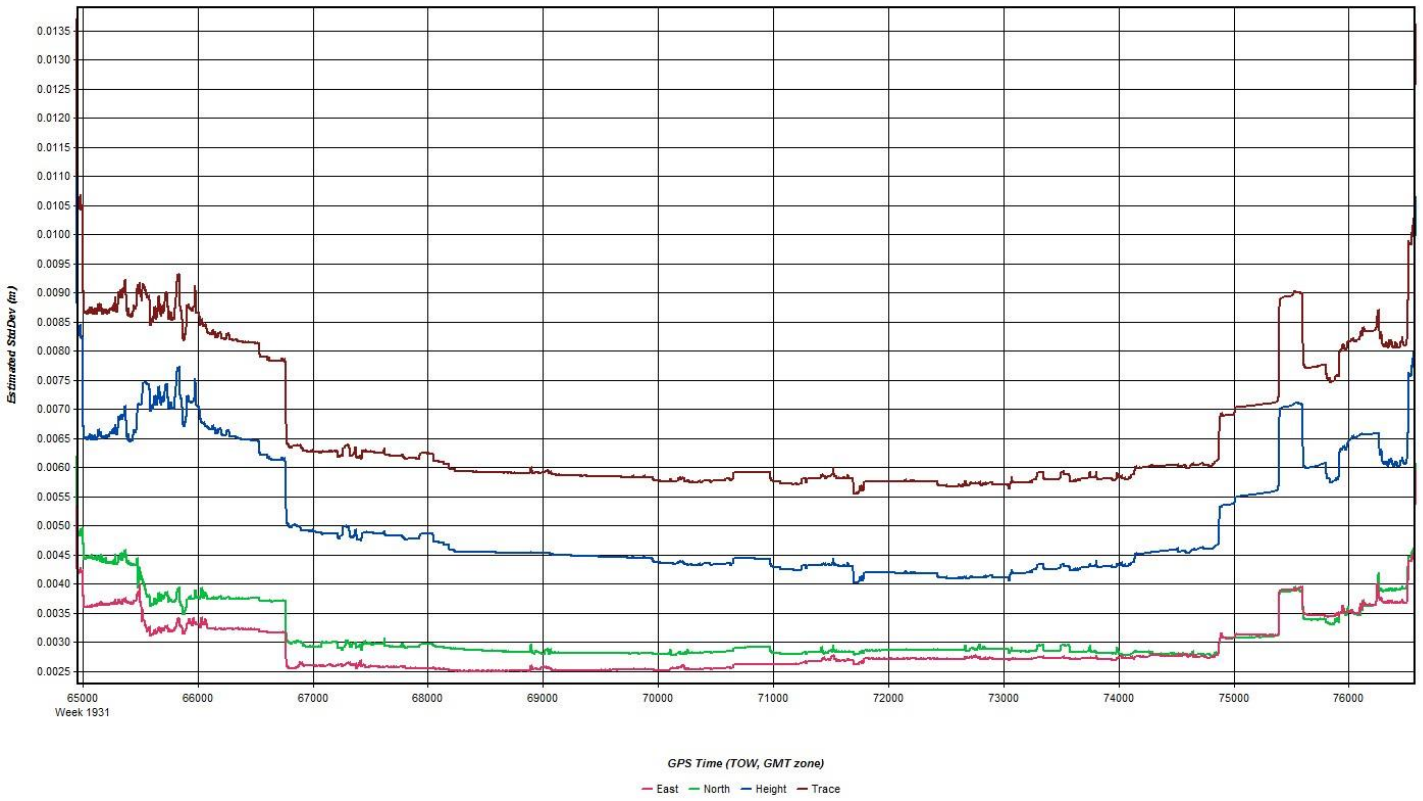


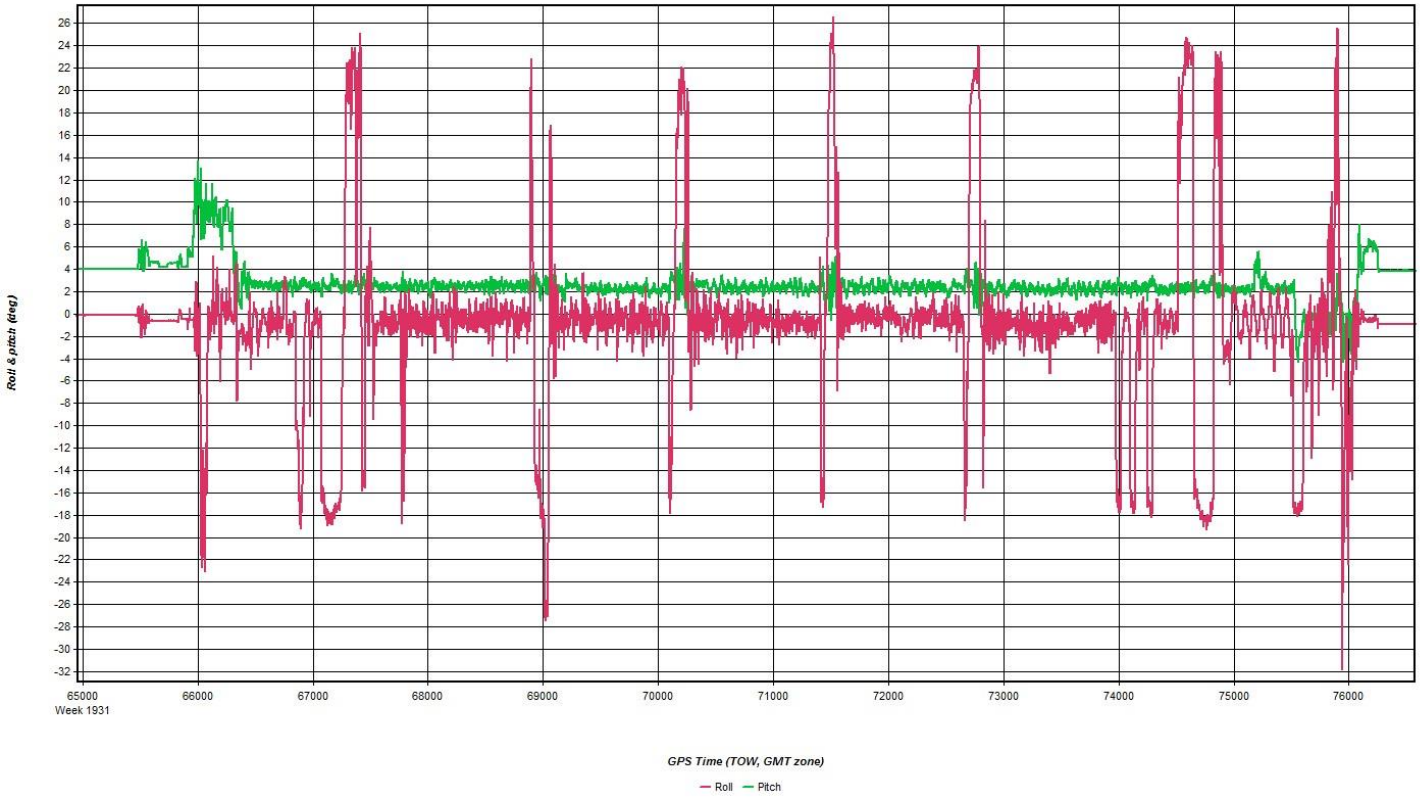

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

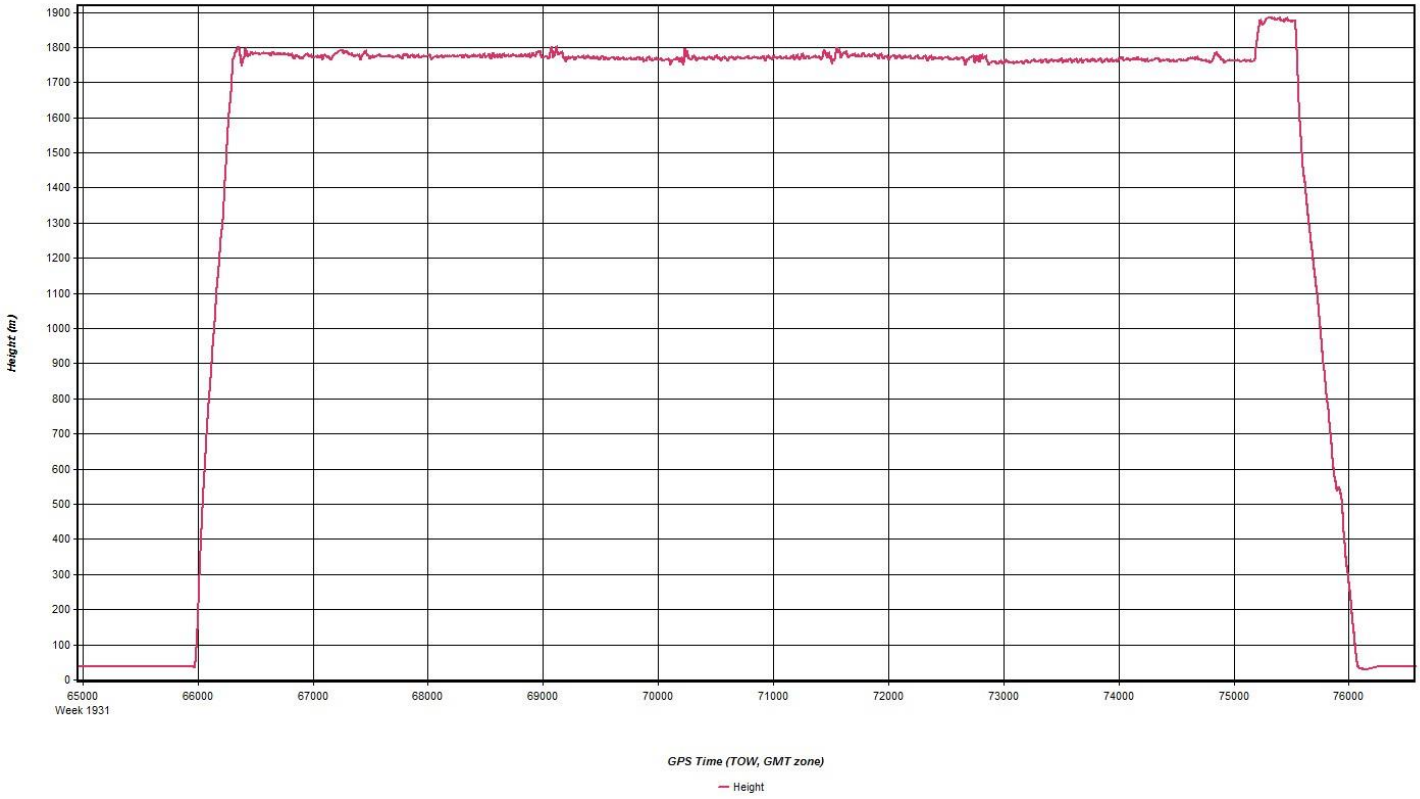

Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
East
North
Up

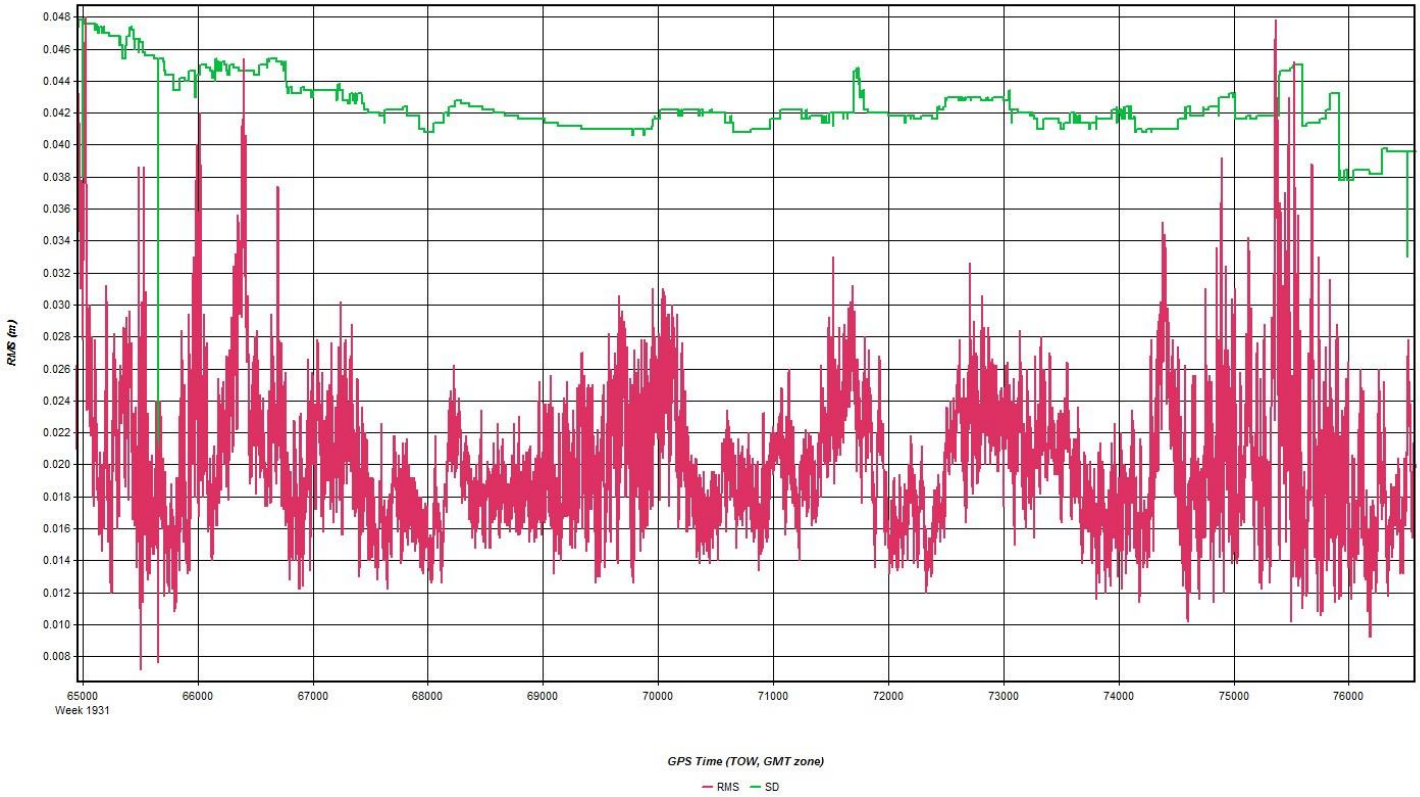

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
PDOP

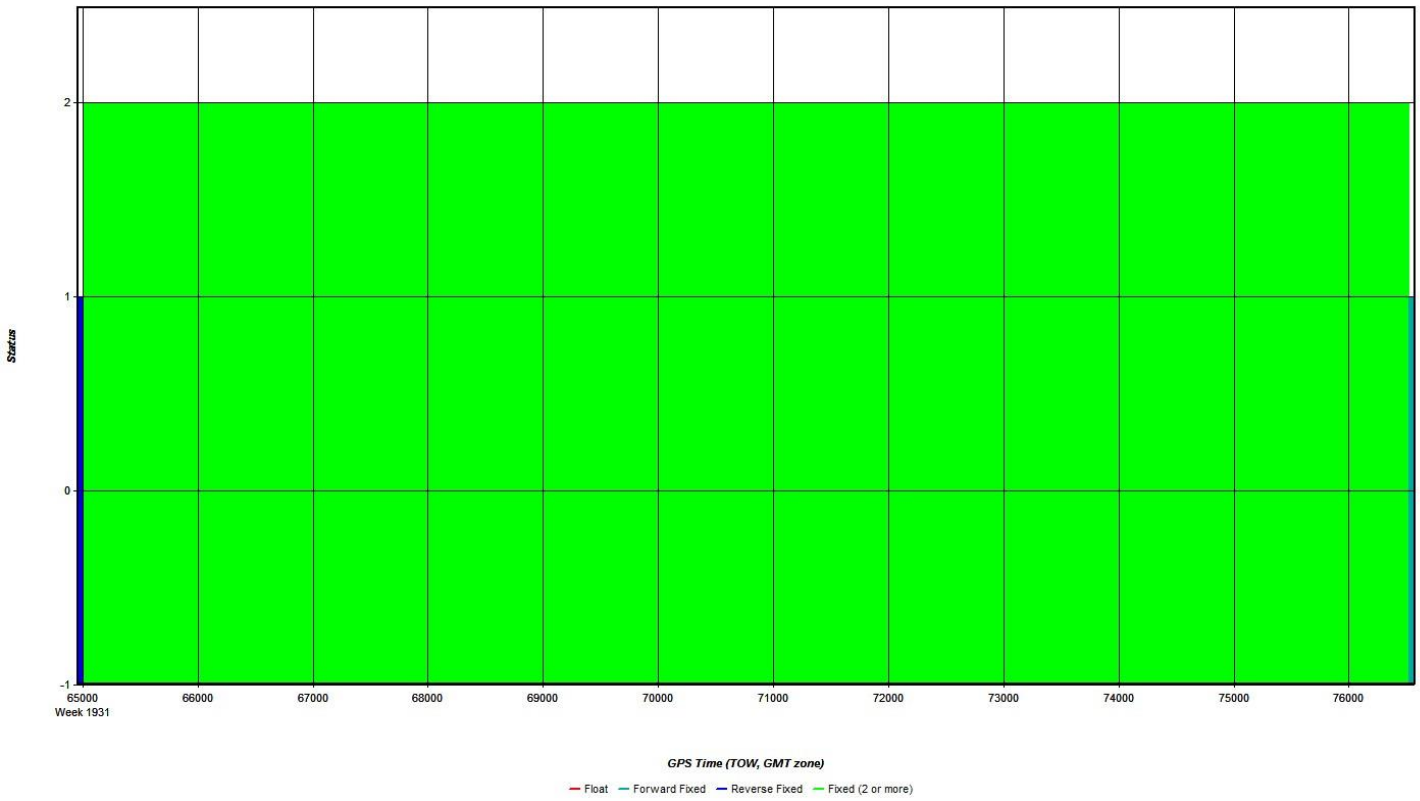

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

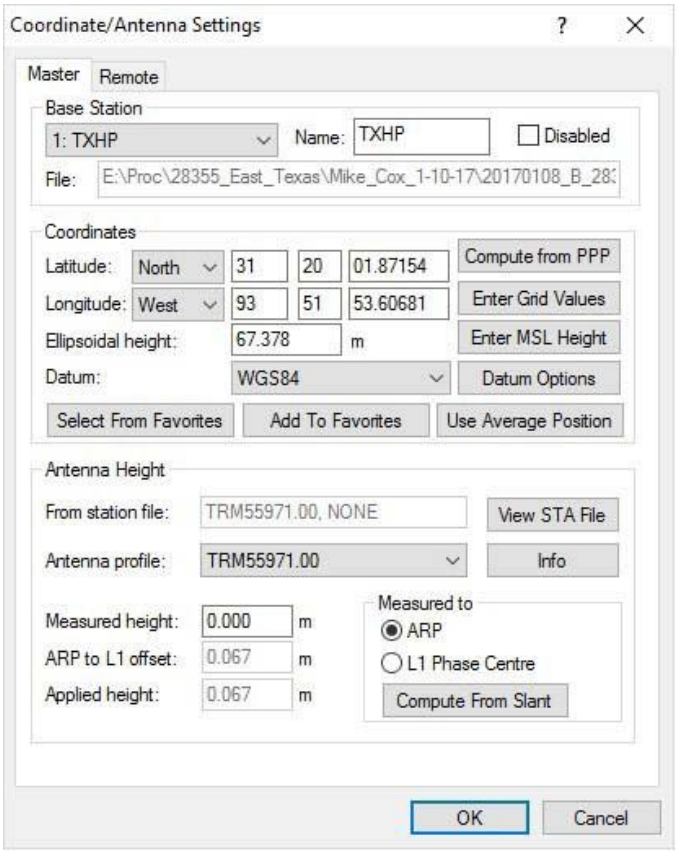

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Roll
Pitch

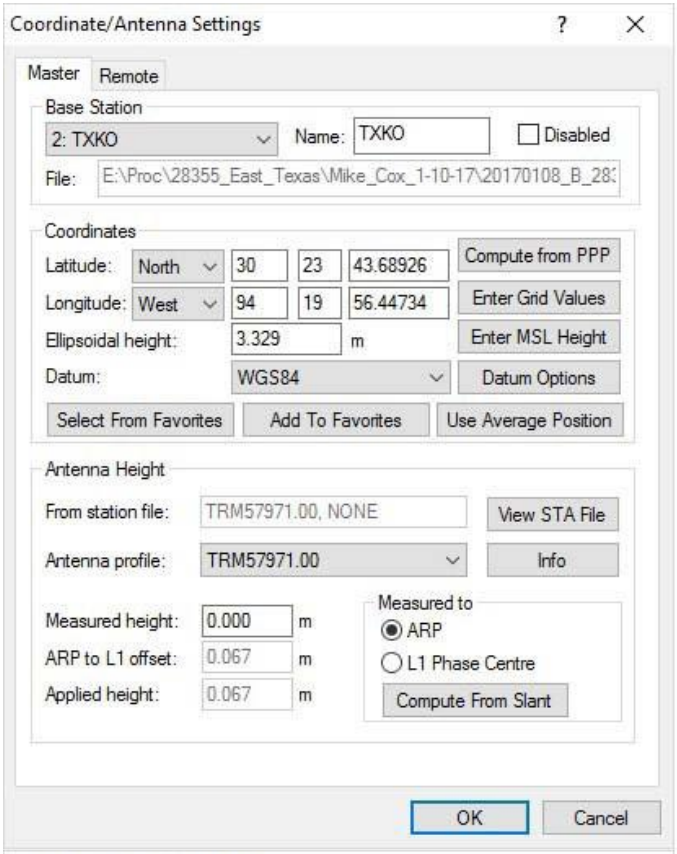

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Height

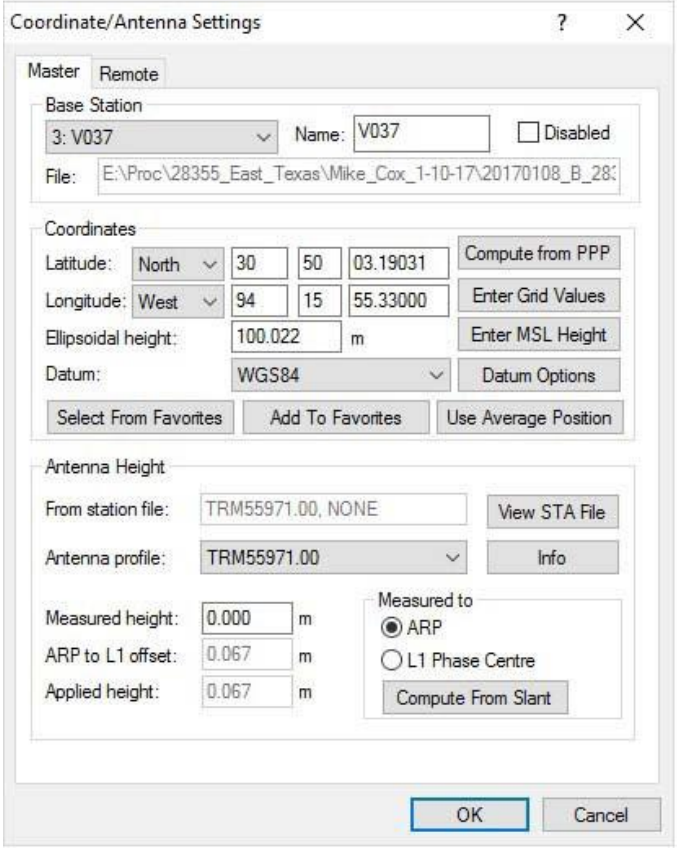

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

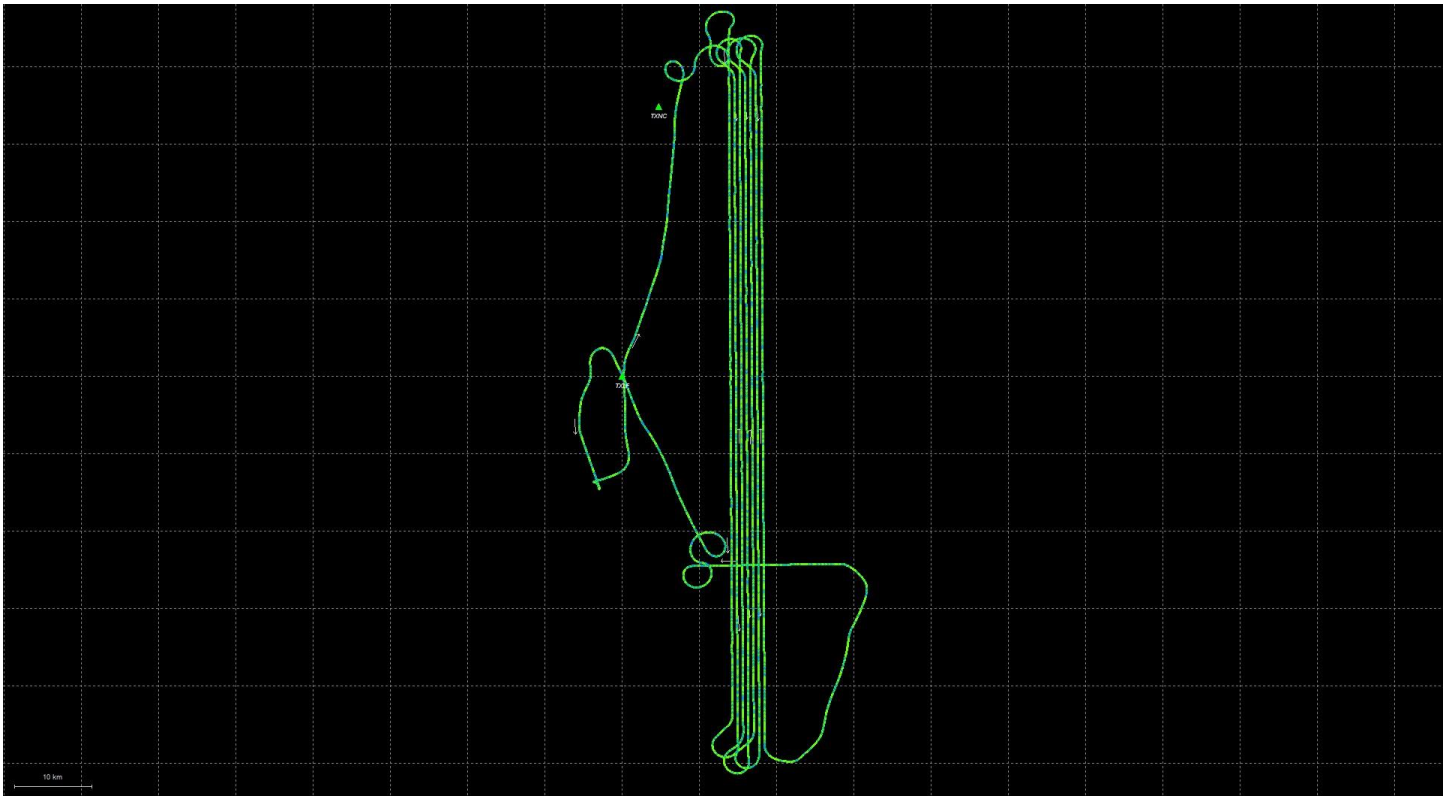

Status
2
1
0
-1
65000
Week 1931
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

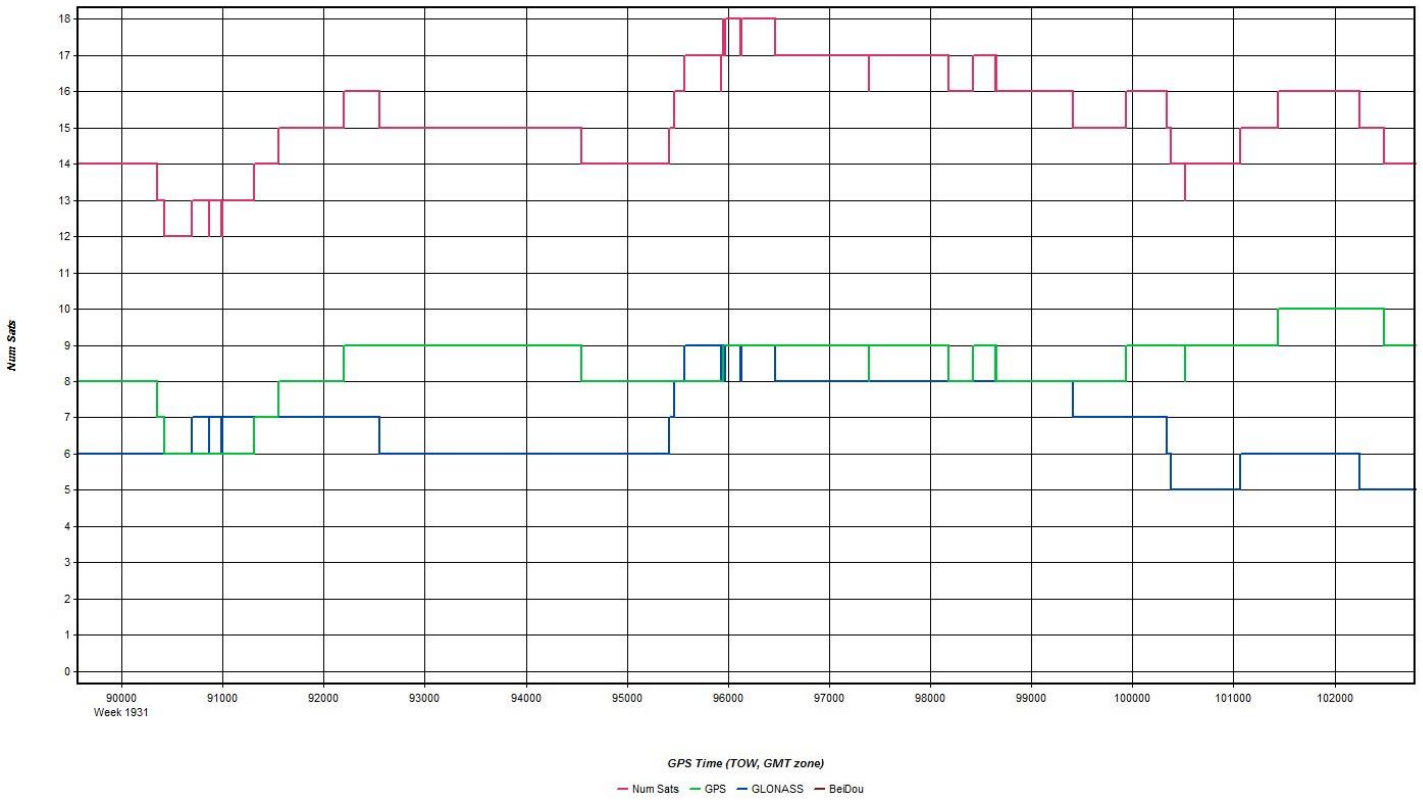

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXHP
Name:
TXHP
Disabled
File:
E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108_B_28
Coordinates
Latitude:
North
31
20
01.87154
Compute from PPP
Longitude:
West
93
51
53.60681
Enter Grid Values
Ellipsoidal height:
67.378
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM55971.00, NONE
View STA File
Antenna profile:
TRM55971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

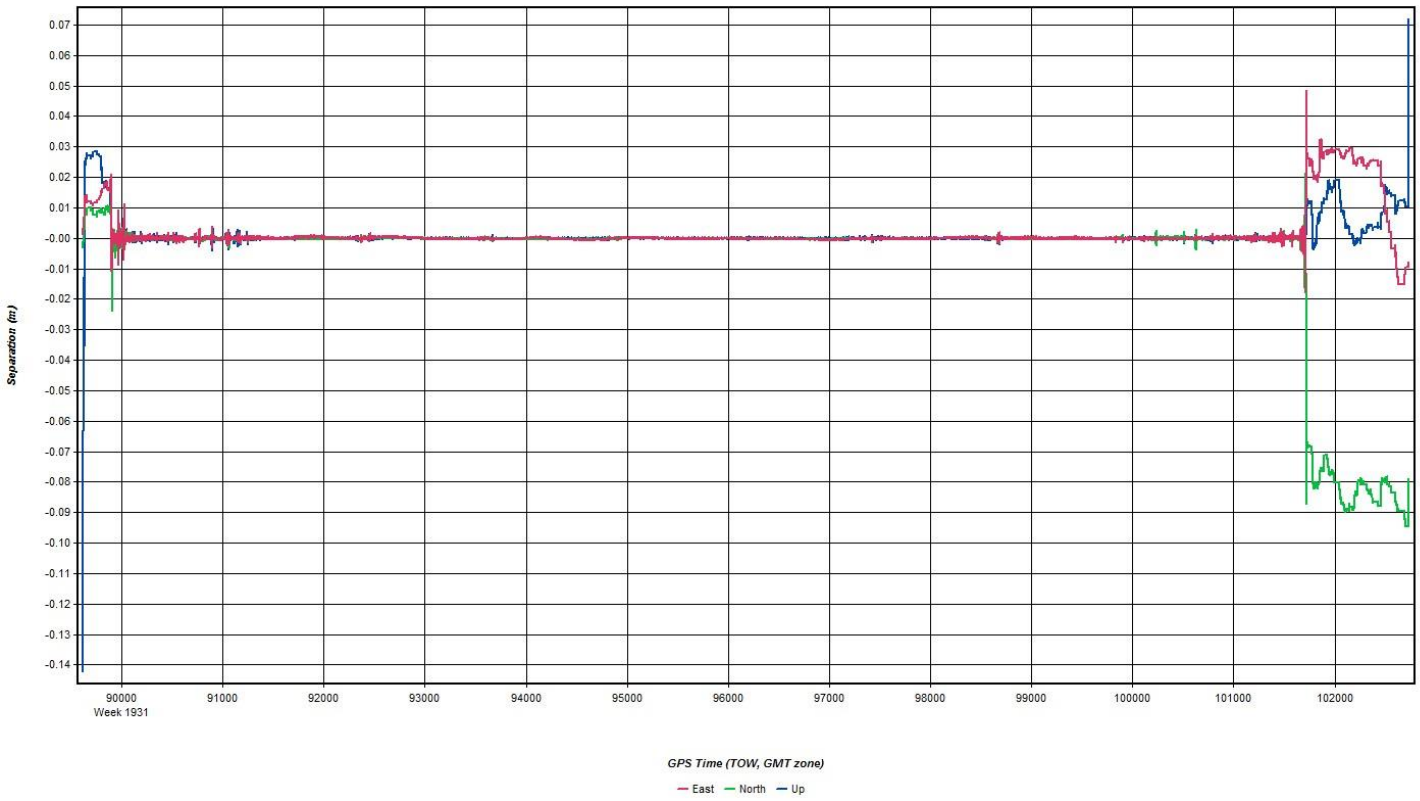

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108_B_28
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

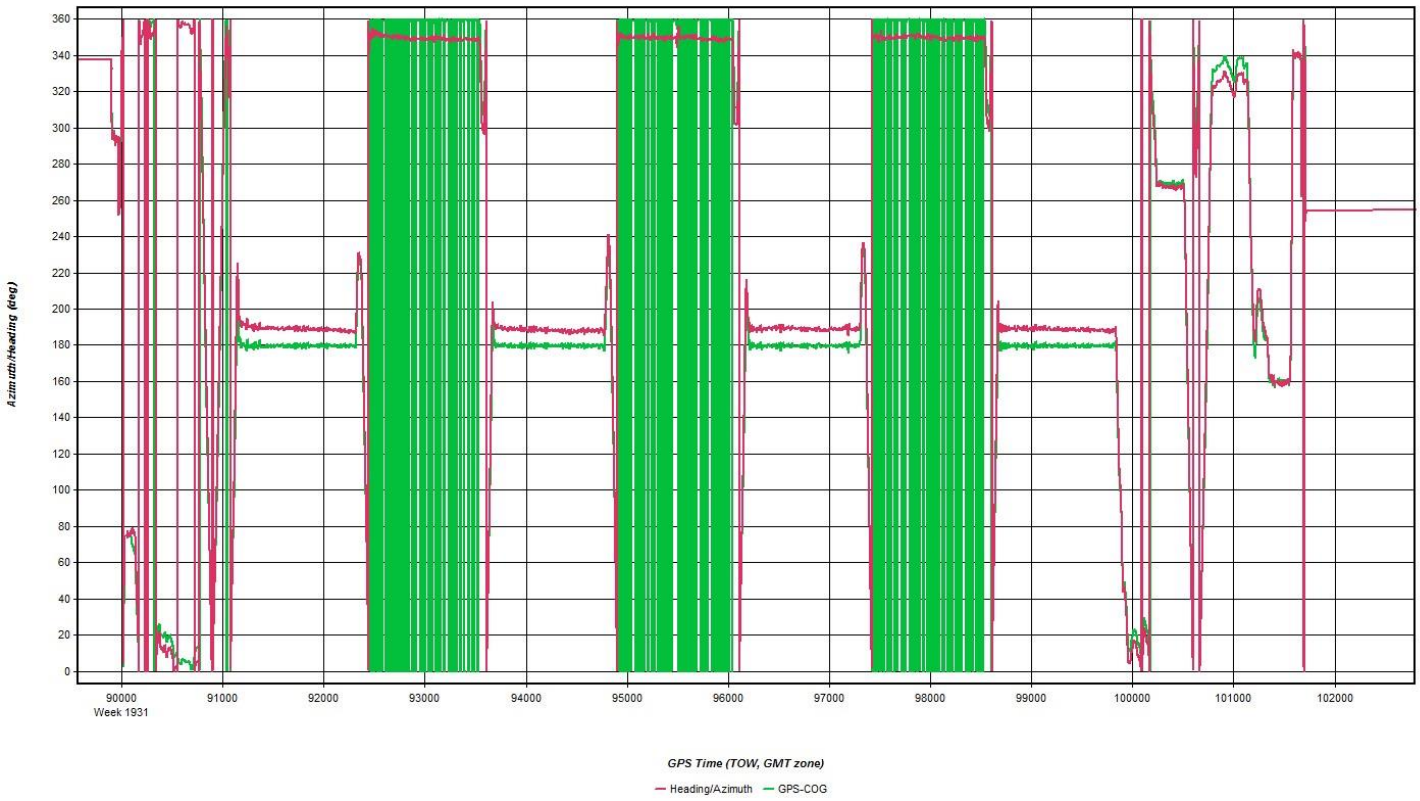

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V037
Name: V037
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108_B_28
Coordinates
Latitude: North 30 50 03.19031
Longitude: West 94 15 55.33000
Ellipsoidal height: 100.022 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

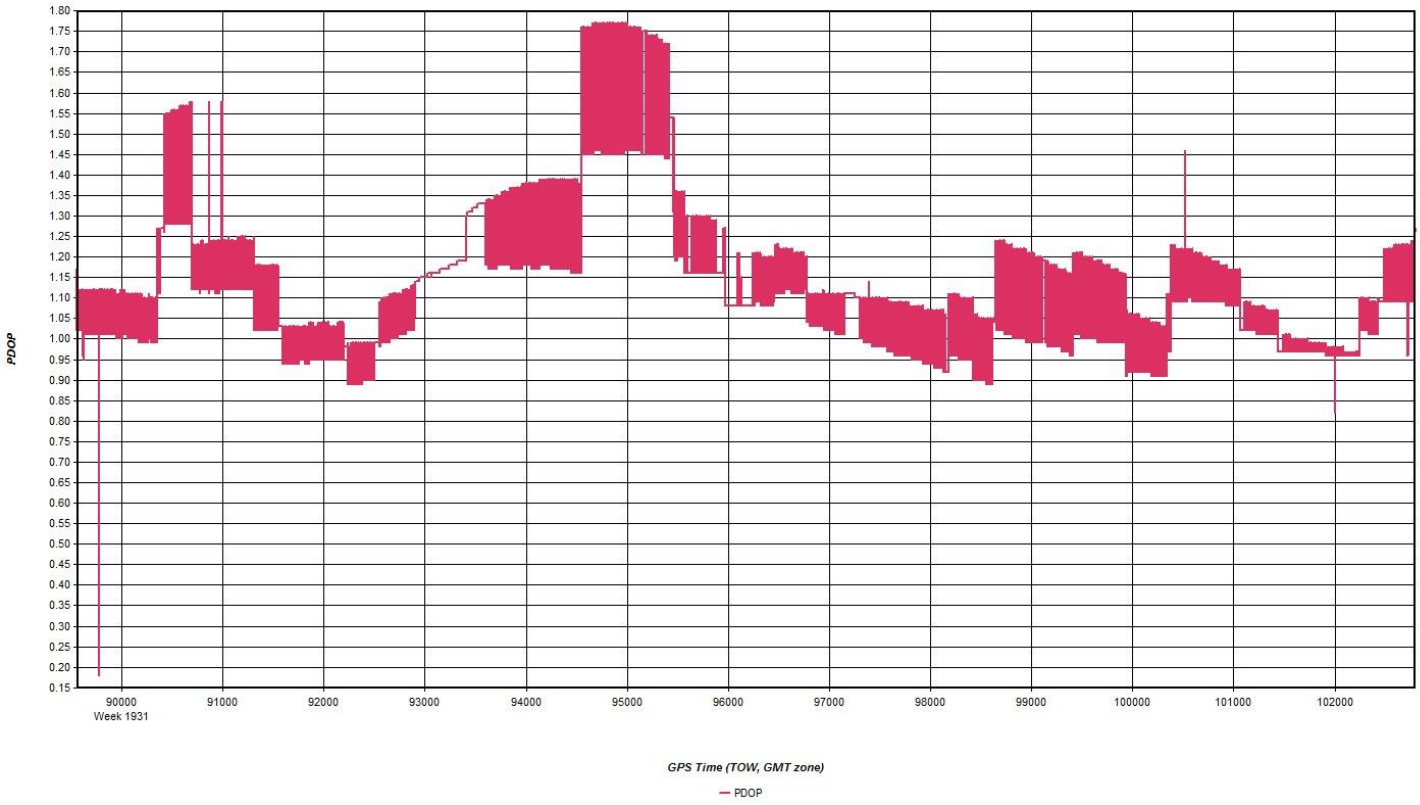
Jan 8, 2017-B (N812TB, SN7178)

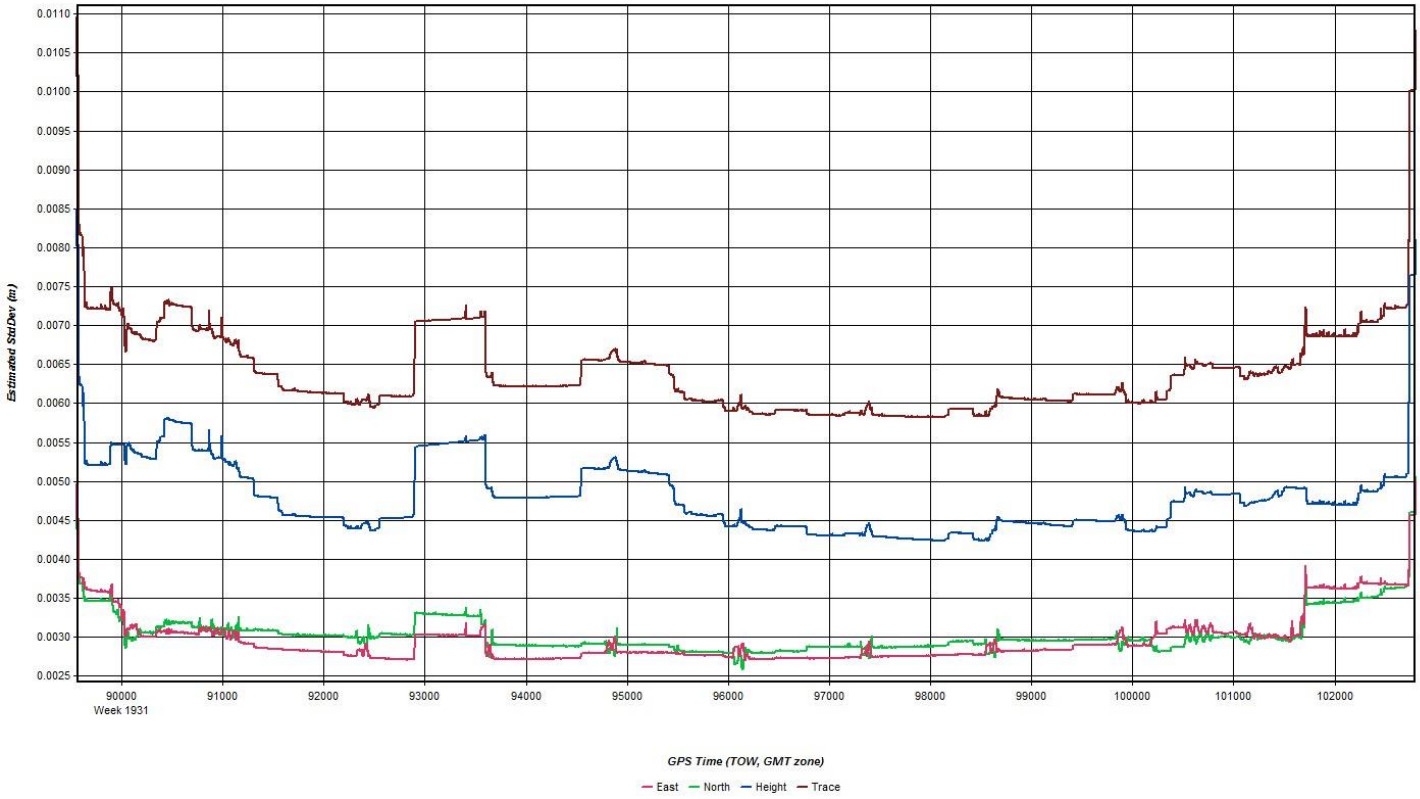


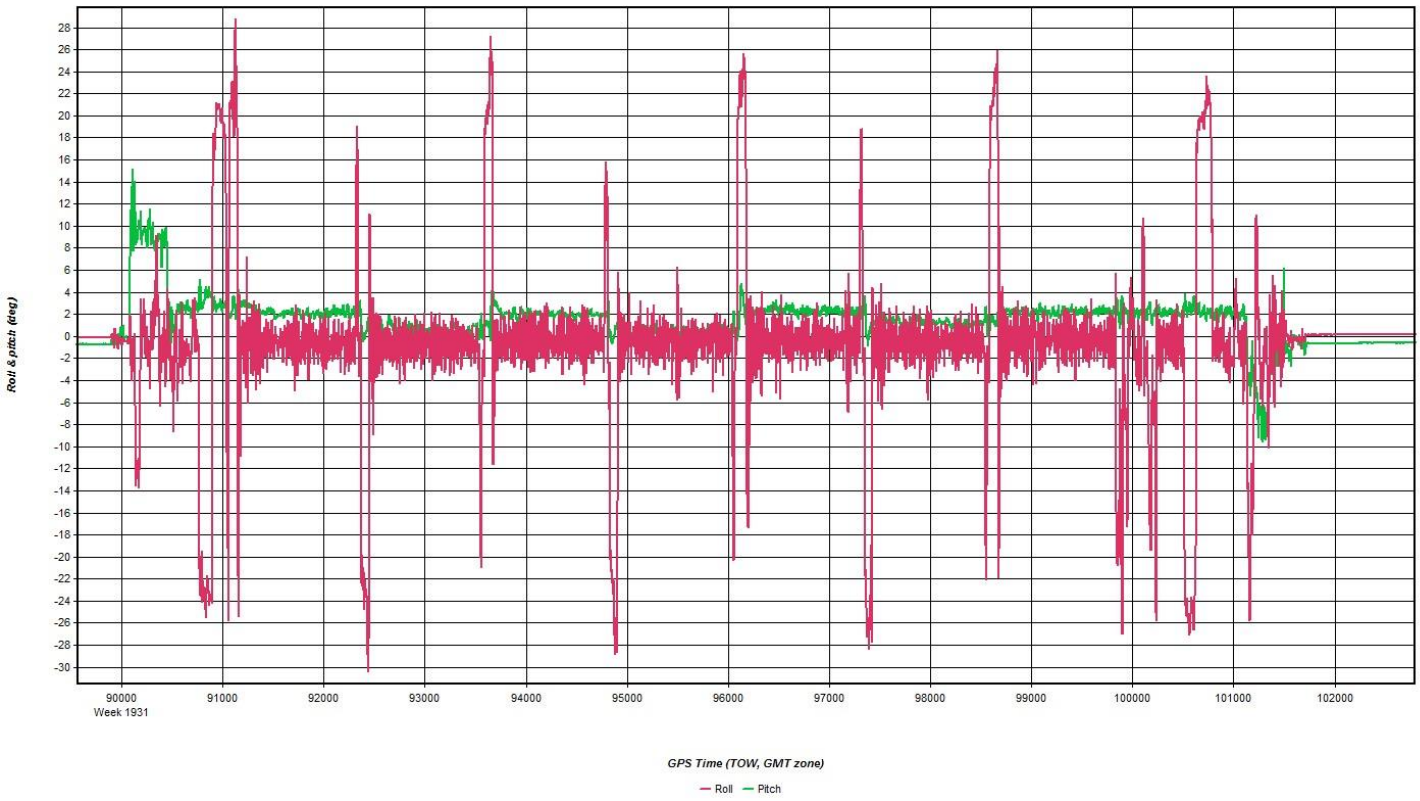

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

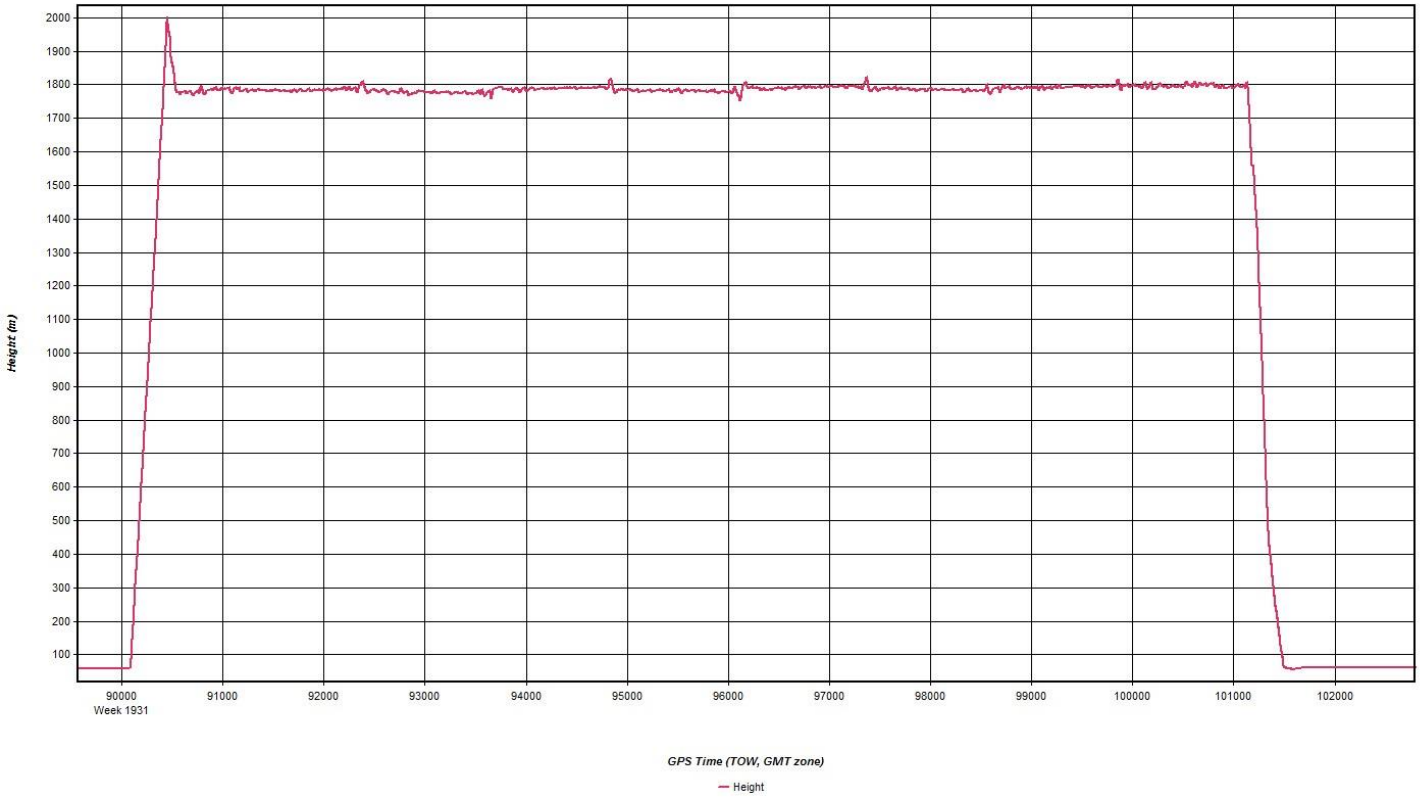

Separation (m)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
-0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
-0.10
-0.11
-0.12
-0.13
-0.14
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
East
North
Up

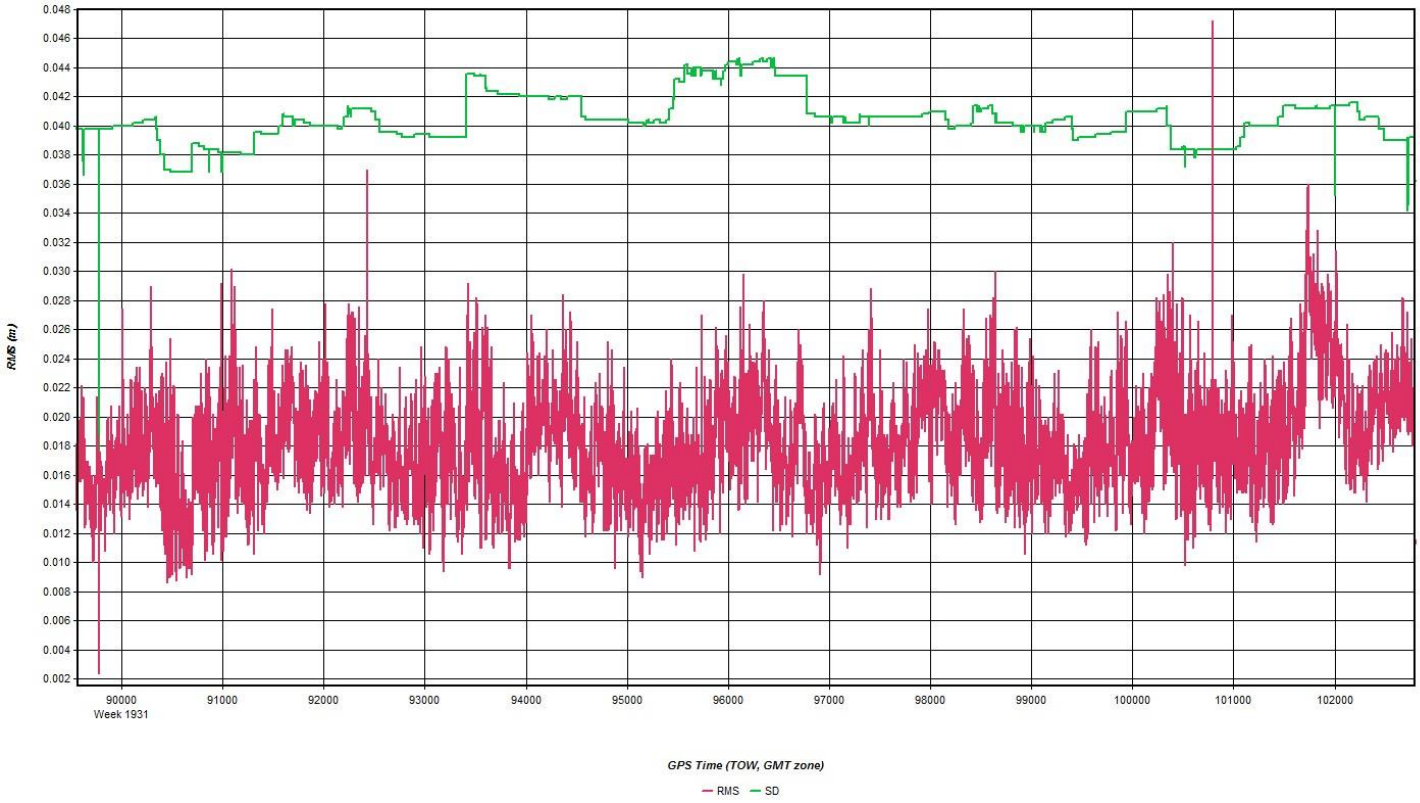

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

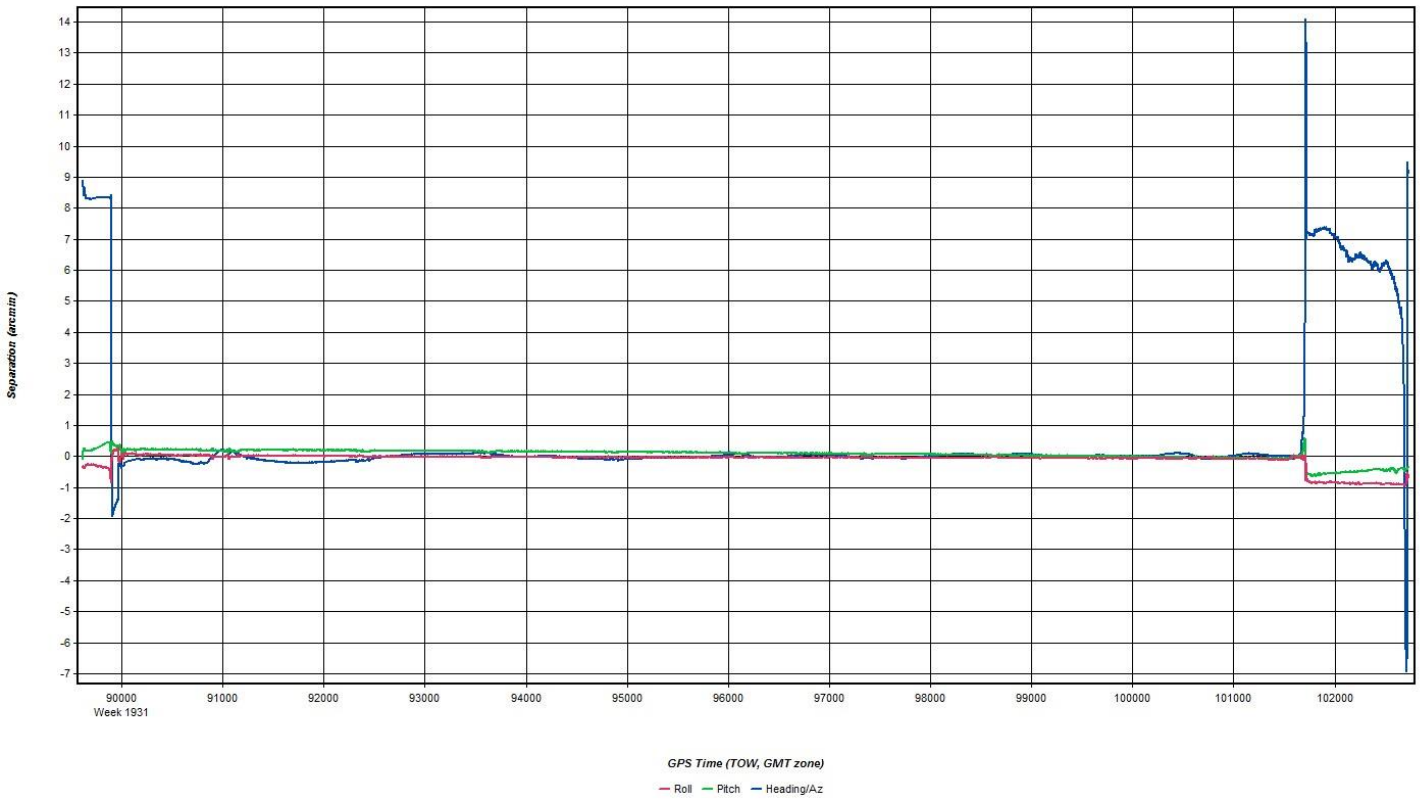

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
PDOP

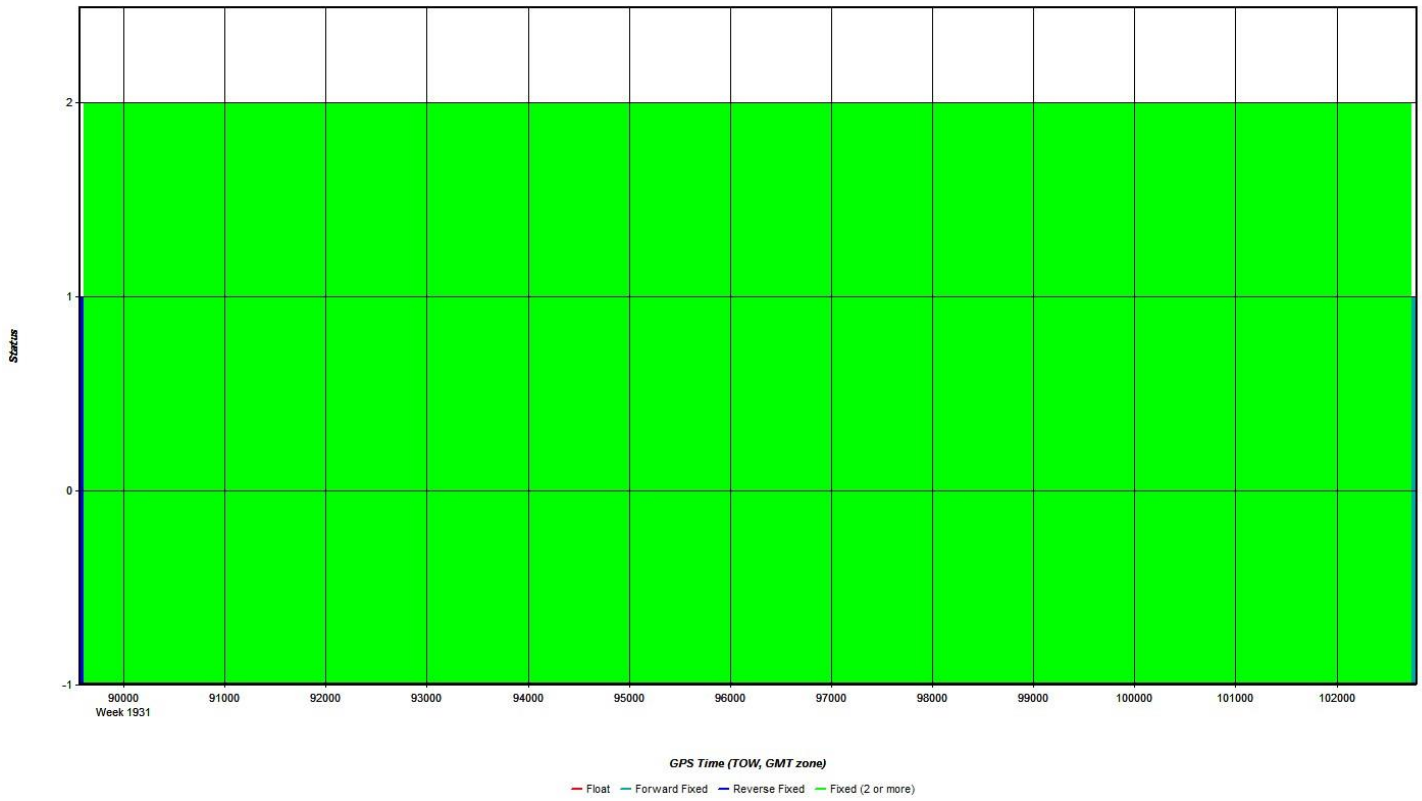

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

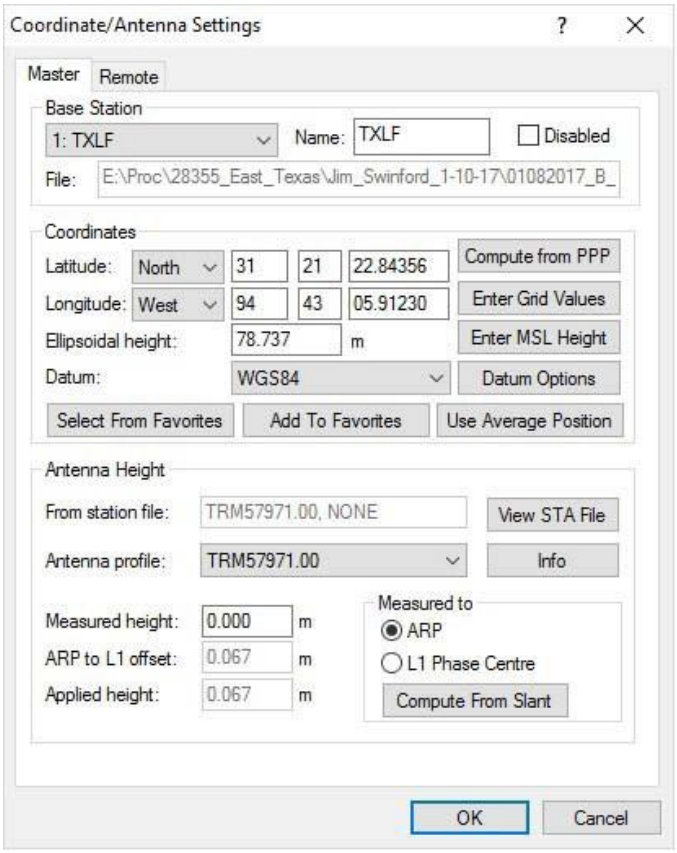

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
Roll
Pitch

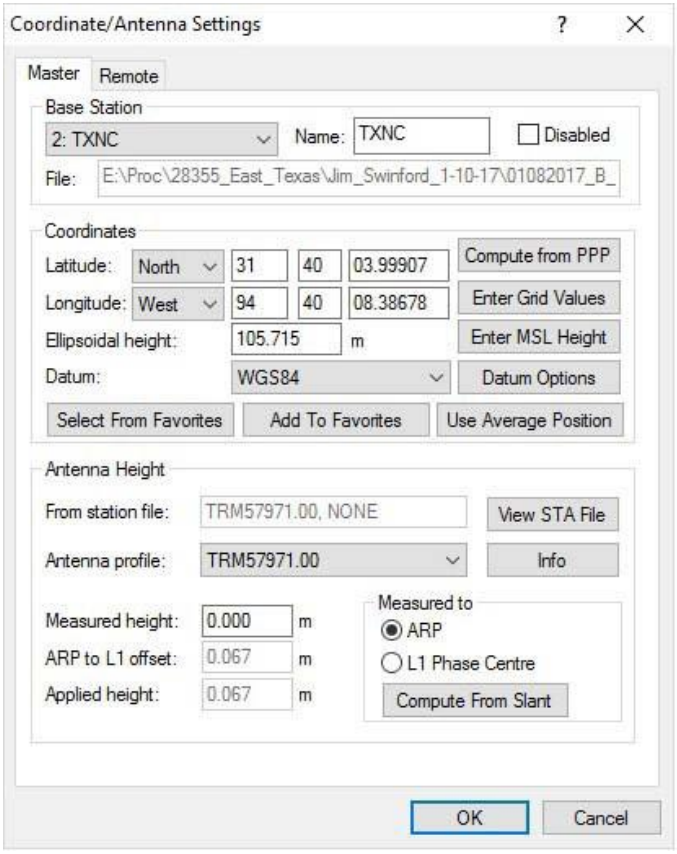

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
90000
Week 1931
91000
92000
93000
94000
95000
96000
97000
98000
99000
100000
101000
102000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLF
Name: TXLF
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01082017_B_
Coordinates
Latitude: North 31 21 22.84356
Longitude: West 94 43 05.91230
Ellipsoidal height: 78.737 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXNC
Name: TXNC
Disabled
File: E:\Proc\28355_East_Texas\Jim_Swinford_1-10-17\01082017_B_
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 01/08/2017

Lift: A (B) C D E Pg 1 of _

Project: USGS EAST TX. 3pt5pp Proj #: 28355 Flight Mgmt File:

Aircraft: N812TB Begin Hobbs: 4245.7 End Hobbs: 4248.8 Total: Pilot: D. WAGNER Co-Pilot: Tech: J. SWINFORD

Dep Apt: KLFK Dep Time (Lcl): 6:55 (Z): 00:55 Arr Apt: KLFK Arr Time (Local): 10:25 (Z): 04:25 Tot Time Aloft: 3.1

CORS: (Y) / N Sta 1: TXLF Sta 2: Flyovers: (Y) / N If Y, times: Sta1) 01:05 04:05 Sta2)

GPS Unit: (Y) / N Sta 1: 00:52 Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 4 °c End: °c OAT beg: °c End: °c Altimeter begin: 3055 end:

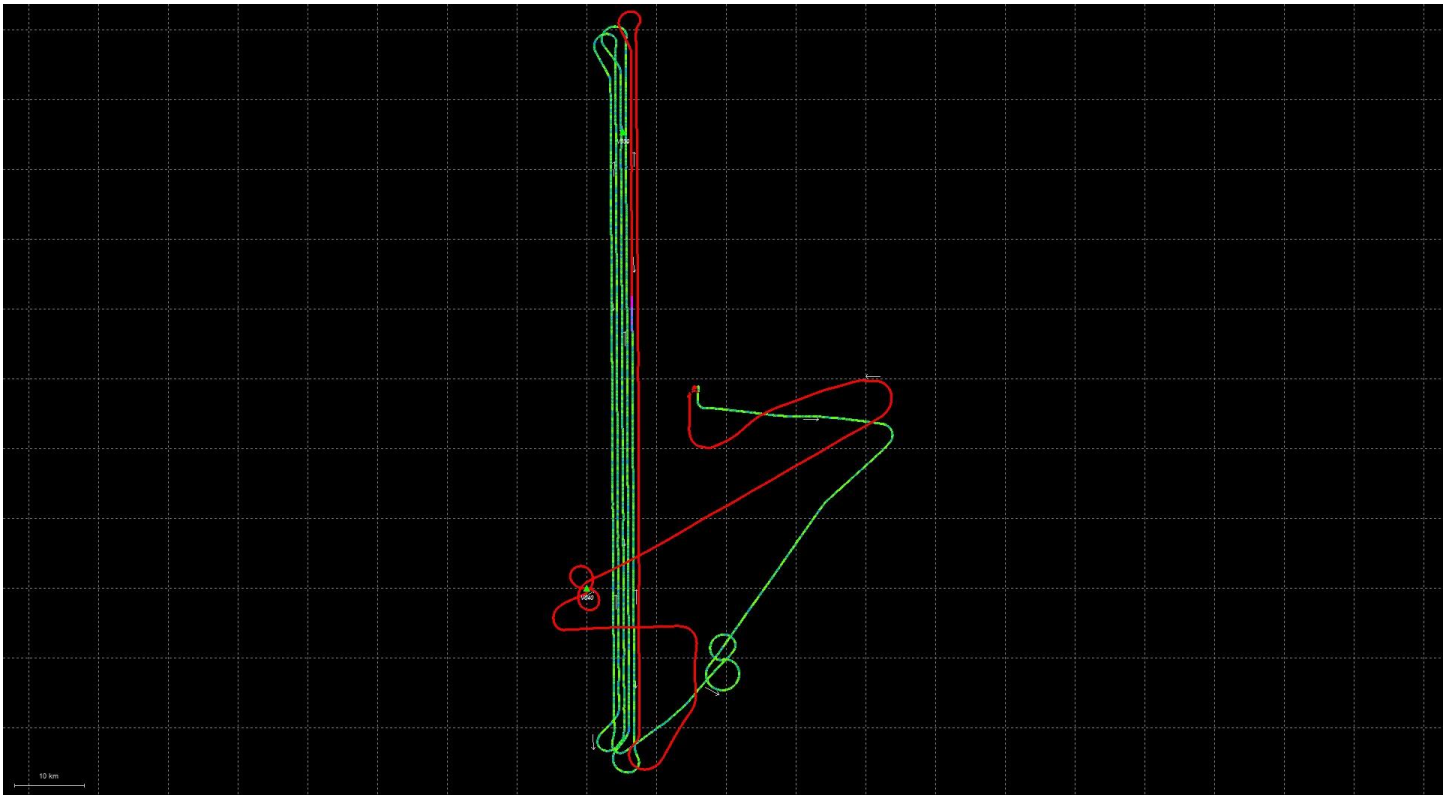
LiDAR	Type ALS 70	Serial # 7178	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd 150	Avg Pt Spacing
	FOV 34°	Scan Freq 57Hz	MpIA Y / N	Pulses In Air	Pulse Rate	Power 100%	PPSM

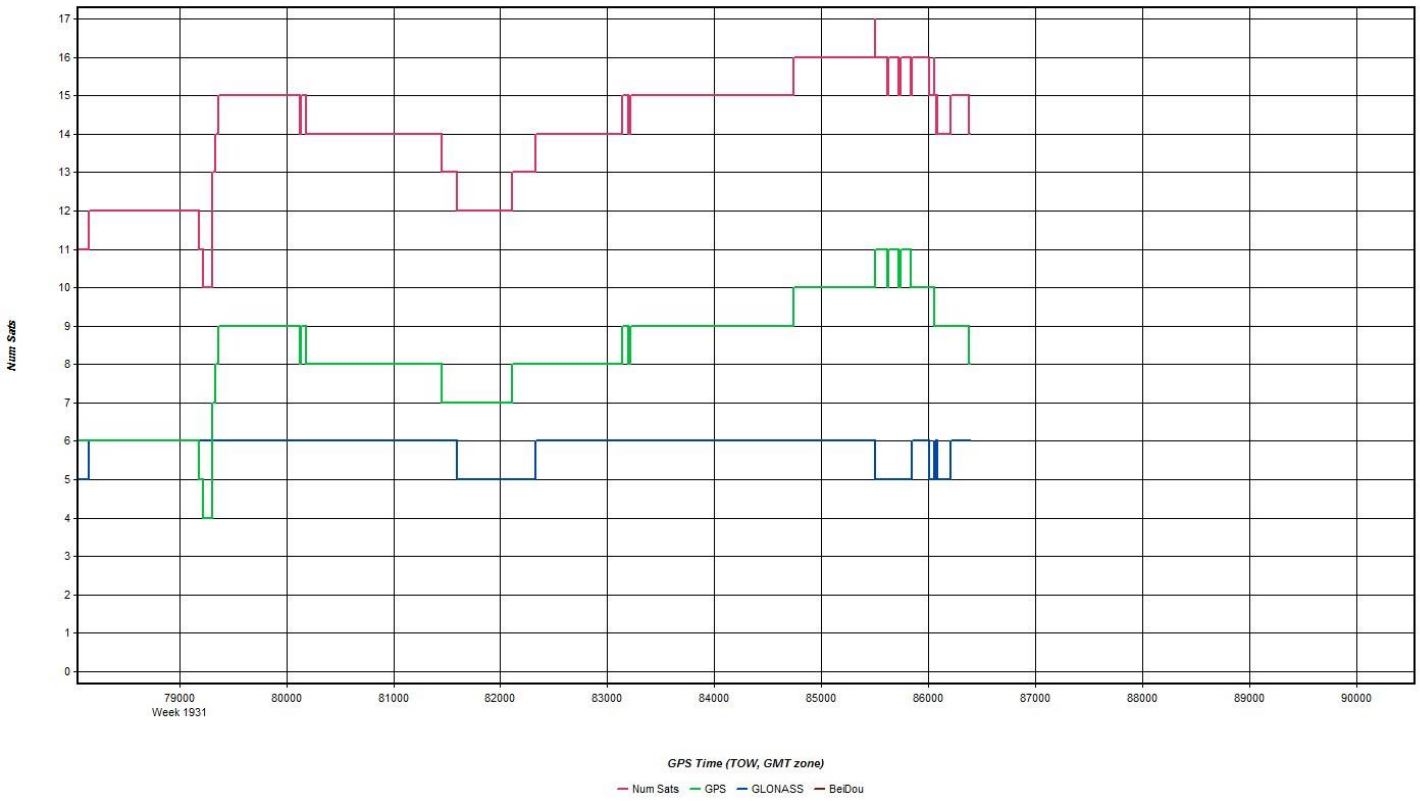
Beg GB	292	Storage Name/# SSD4
End GB	236	
Tot GB	56	

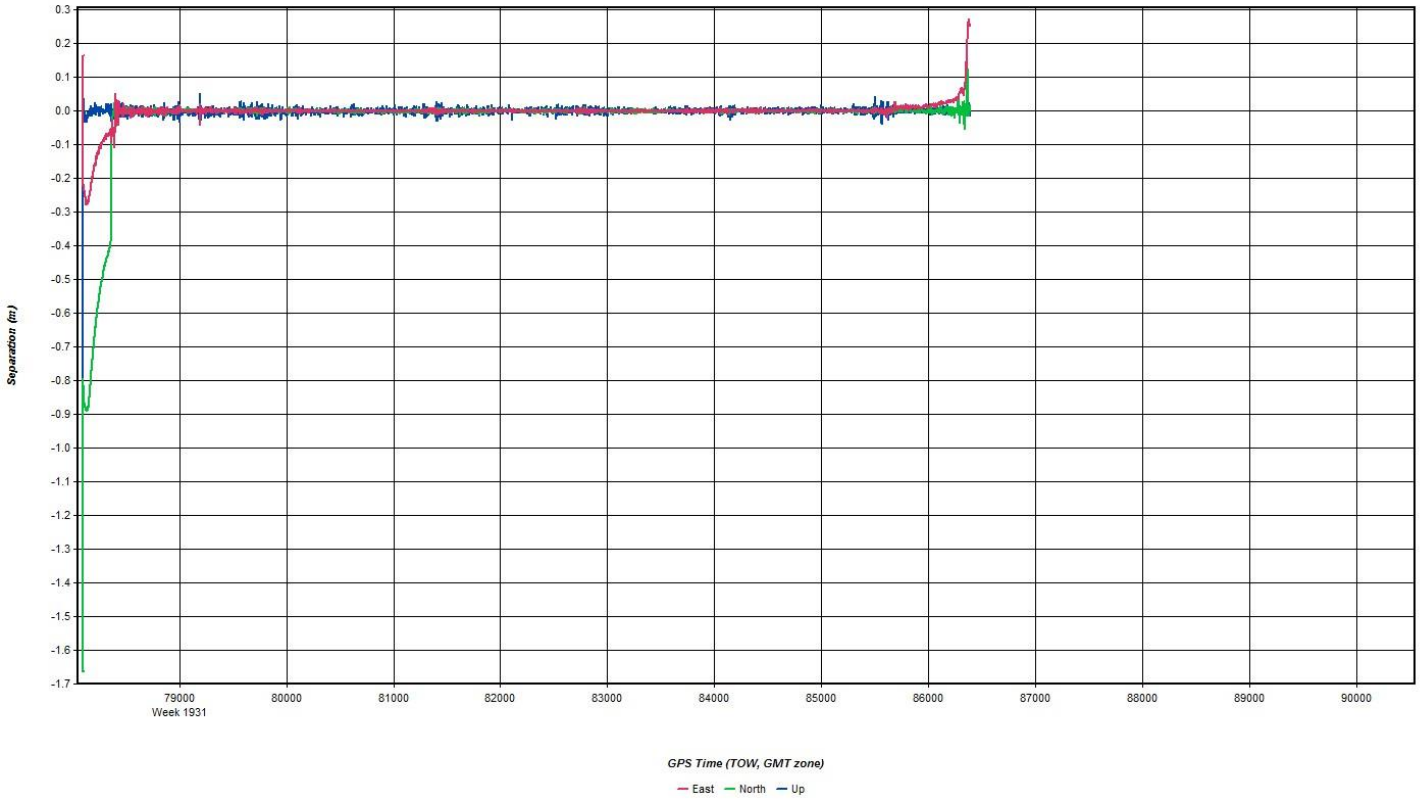
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
3081	180	01:21	01:39	139	1.2/17	5850	0	0	FIG 8 @ 01:12
3082	360	01:41	01:59	153	1.2/17	5850	0	0	
3083	180	02:01	02:19	148	1.3/16	5875	0	0	
3084	360	02:21	02:40	149	1.1/19	5850	0	0	10% RETURNS OVER LAKE
3085	180	02:44	03:02	156	1.3/18	5850	0	0	
3086	360	03:04	03:22	150	1.2/18	5850	0	0	
3087	180	03:24	03:44	155	1.2/17	5900	0	0	
X-FLT	270	03:51	03:55	144	1.2/18	5900	0	0	LINE 3116 OVER AREA FLOWN / FIG 8 @

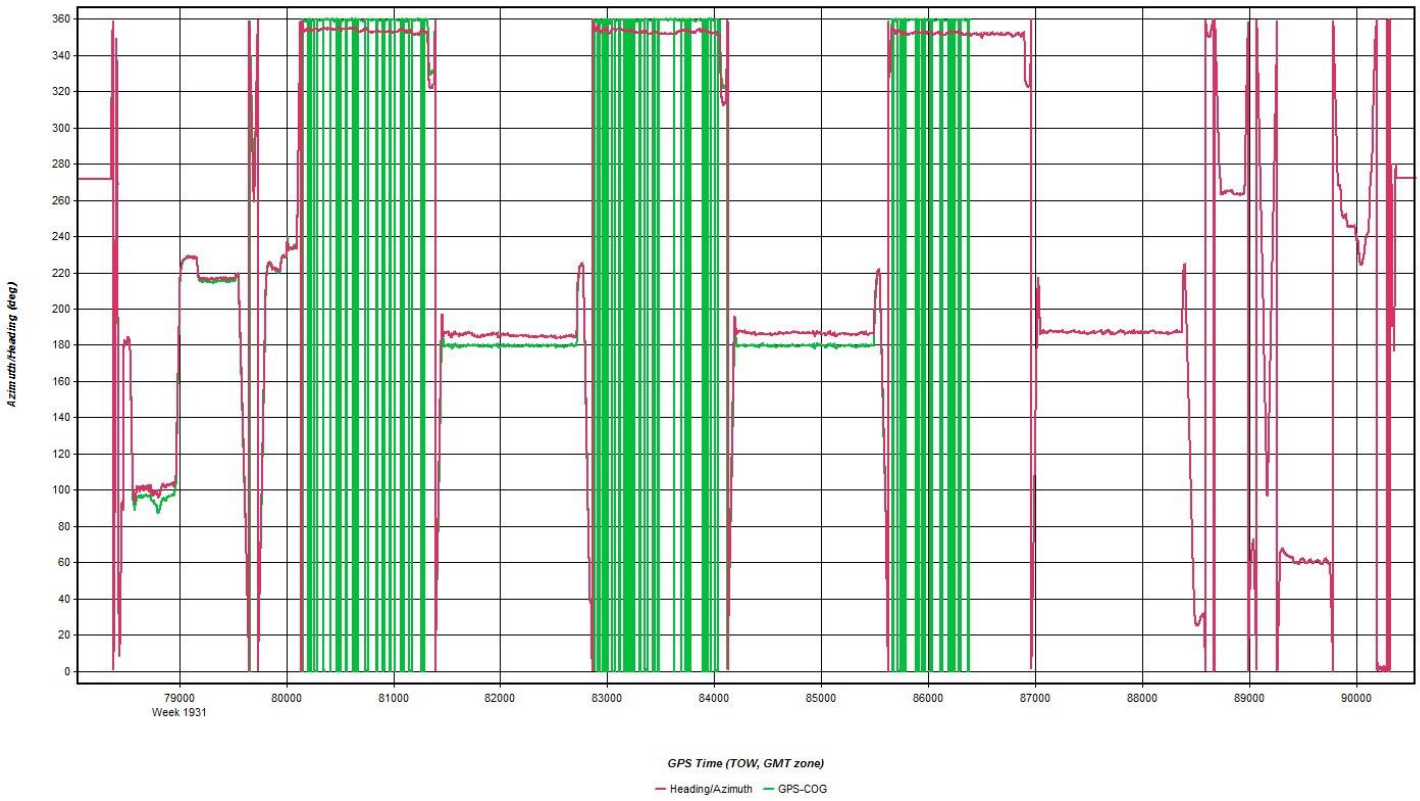
Total Proj Lines: Lines Flown: Lines Remain: On Line Time: 2.5 Mob Time: .5 Notes:

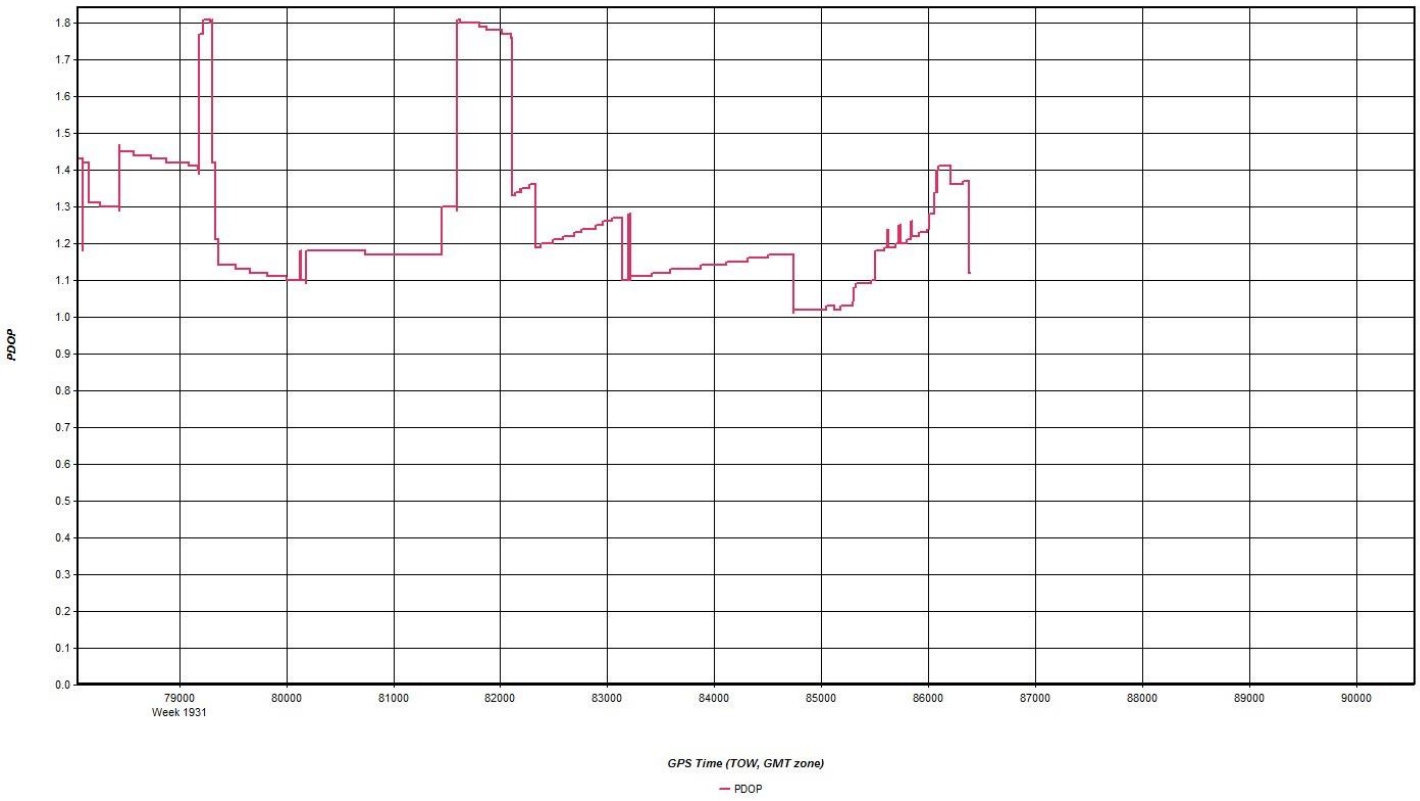
Jan 8, 2017-C (N246MP, SN8146)

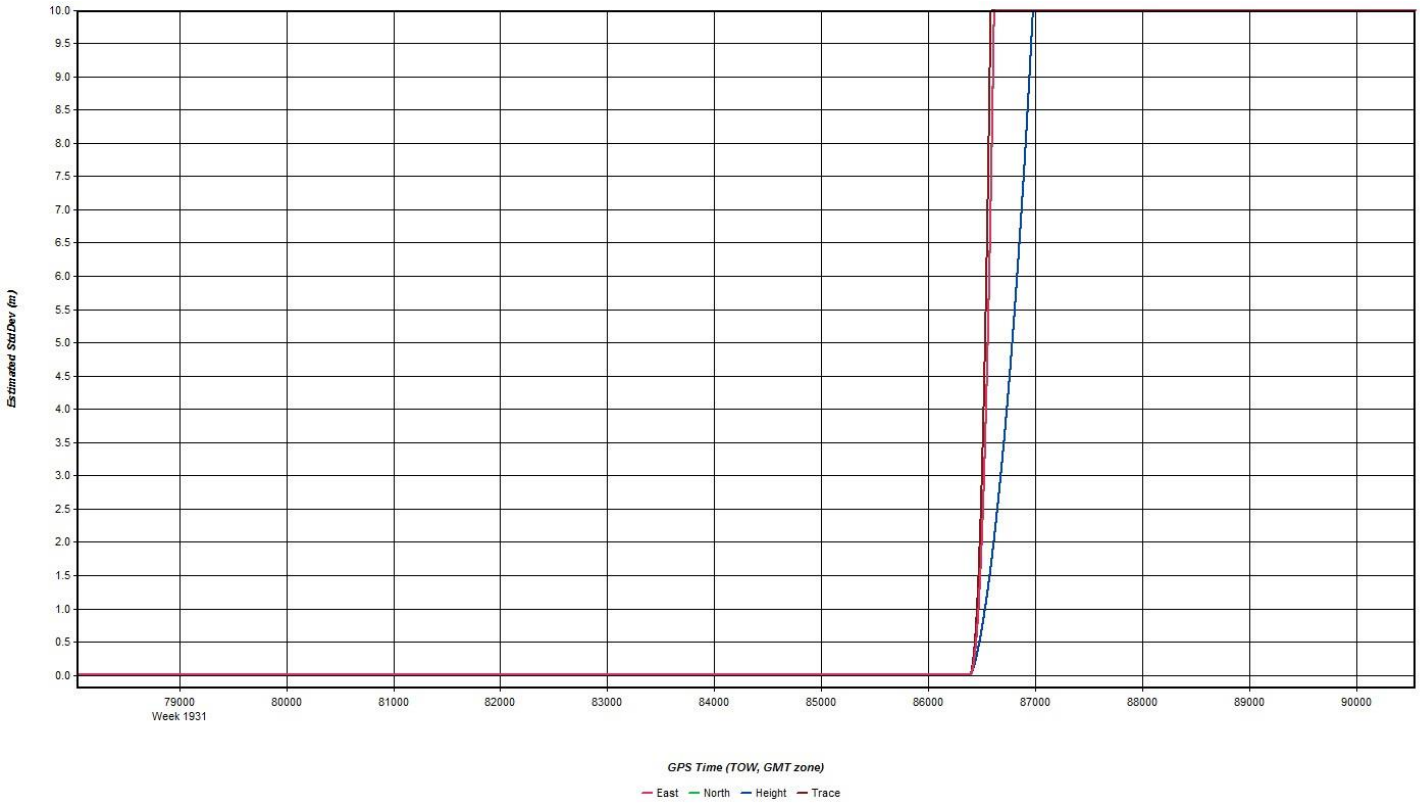


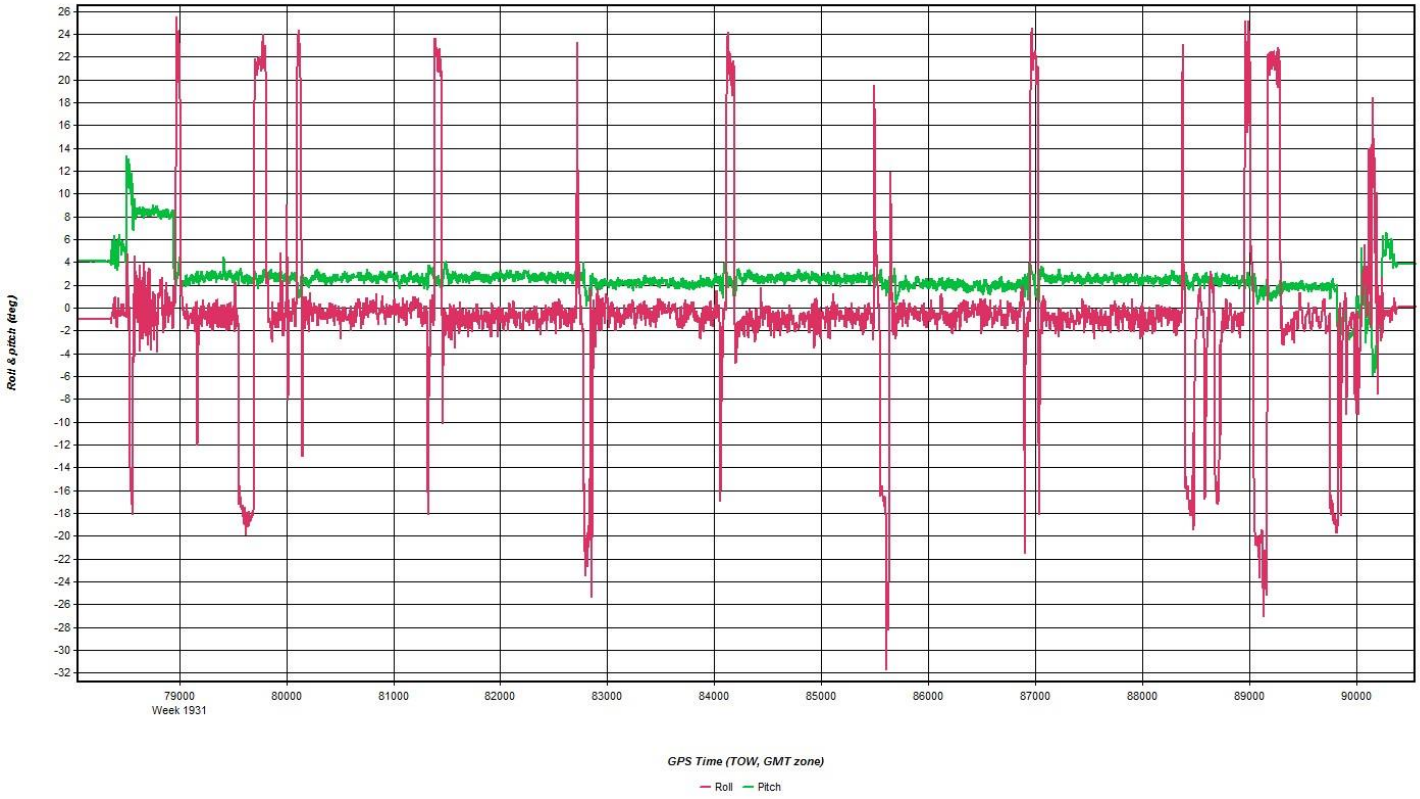

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
East
North
Up

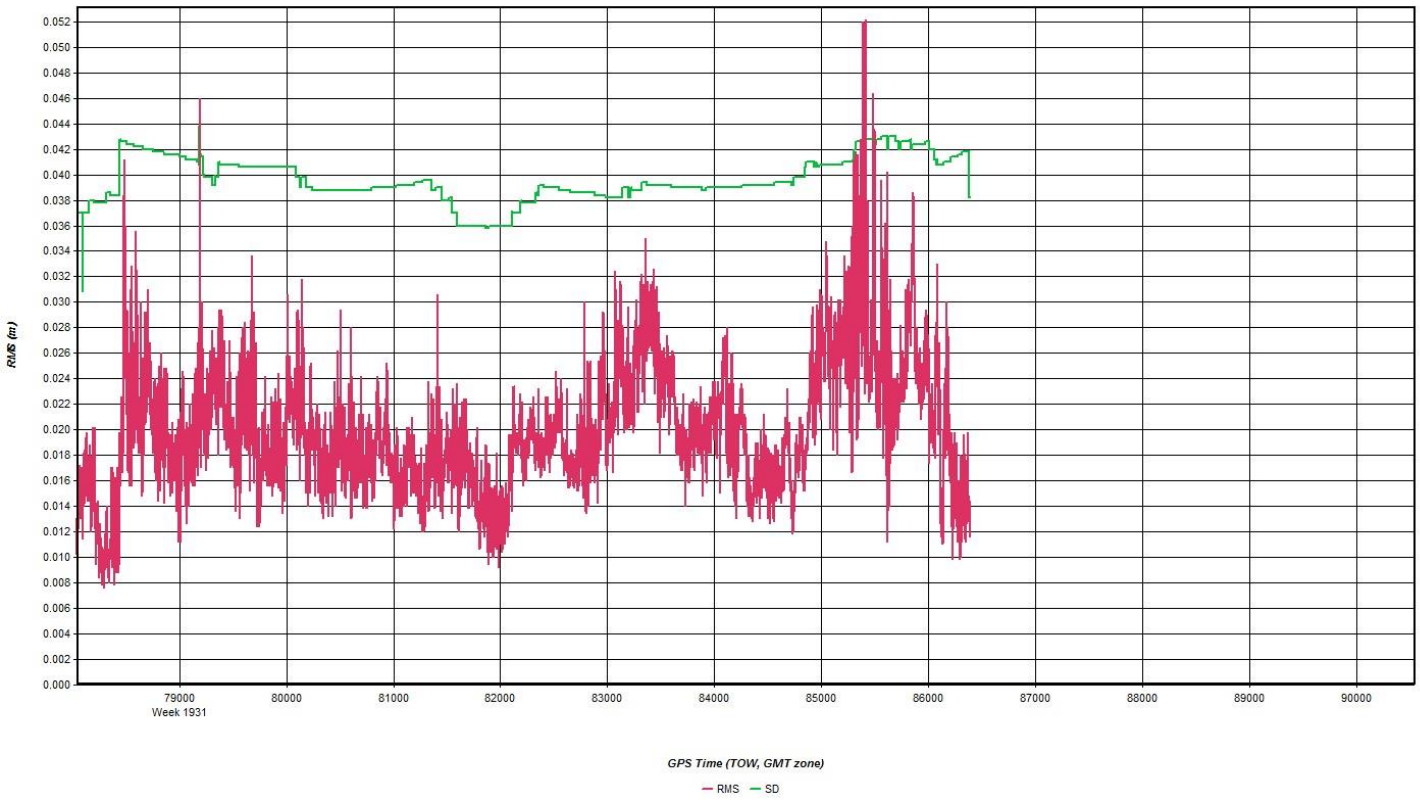

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

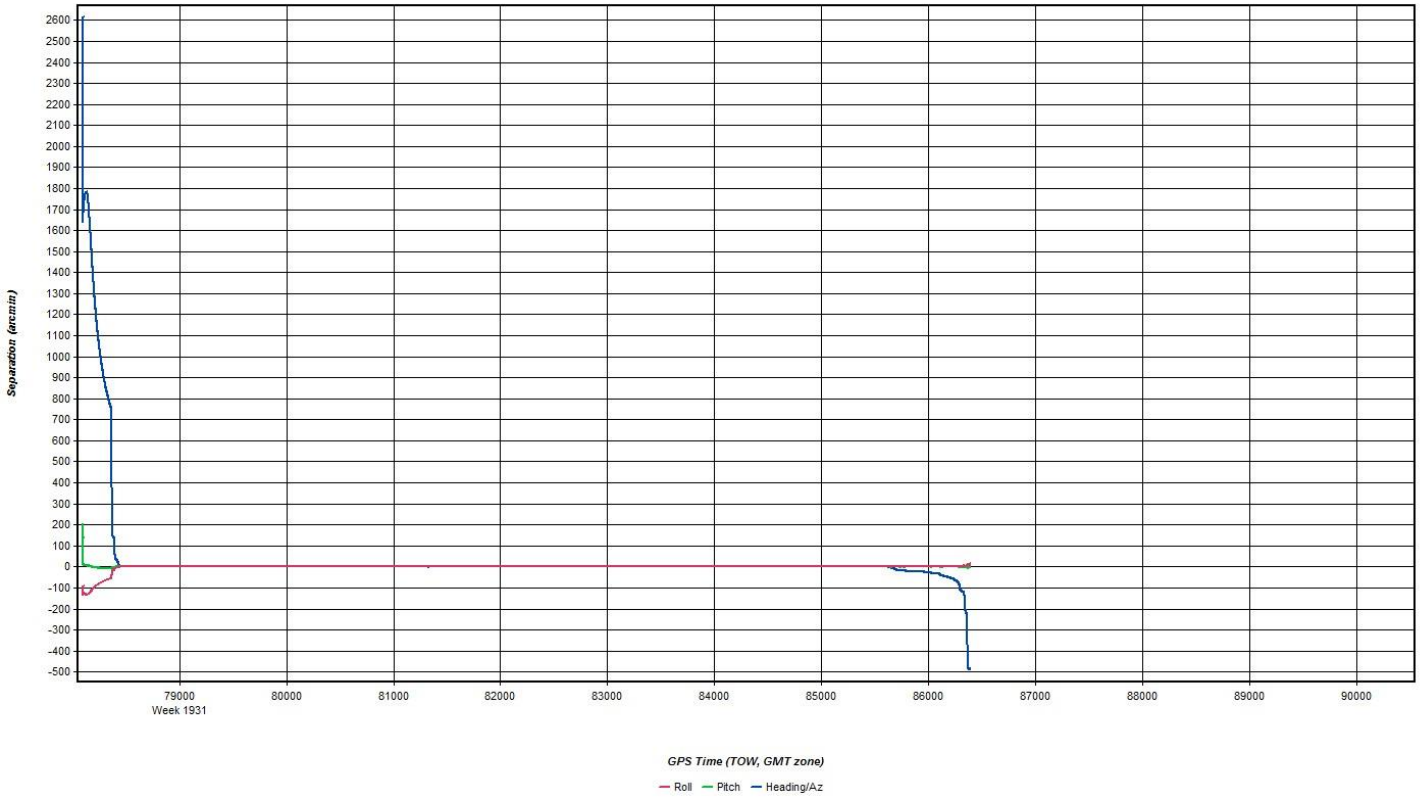

PDOP
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
PDOP

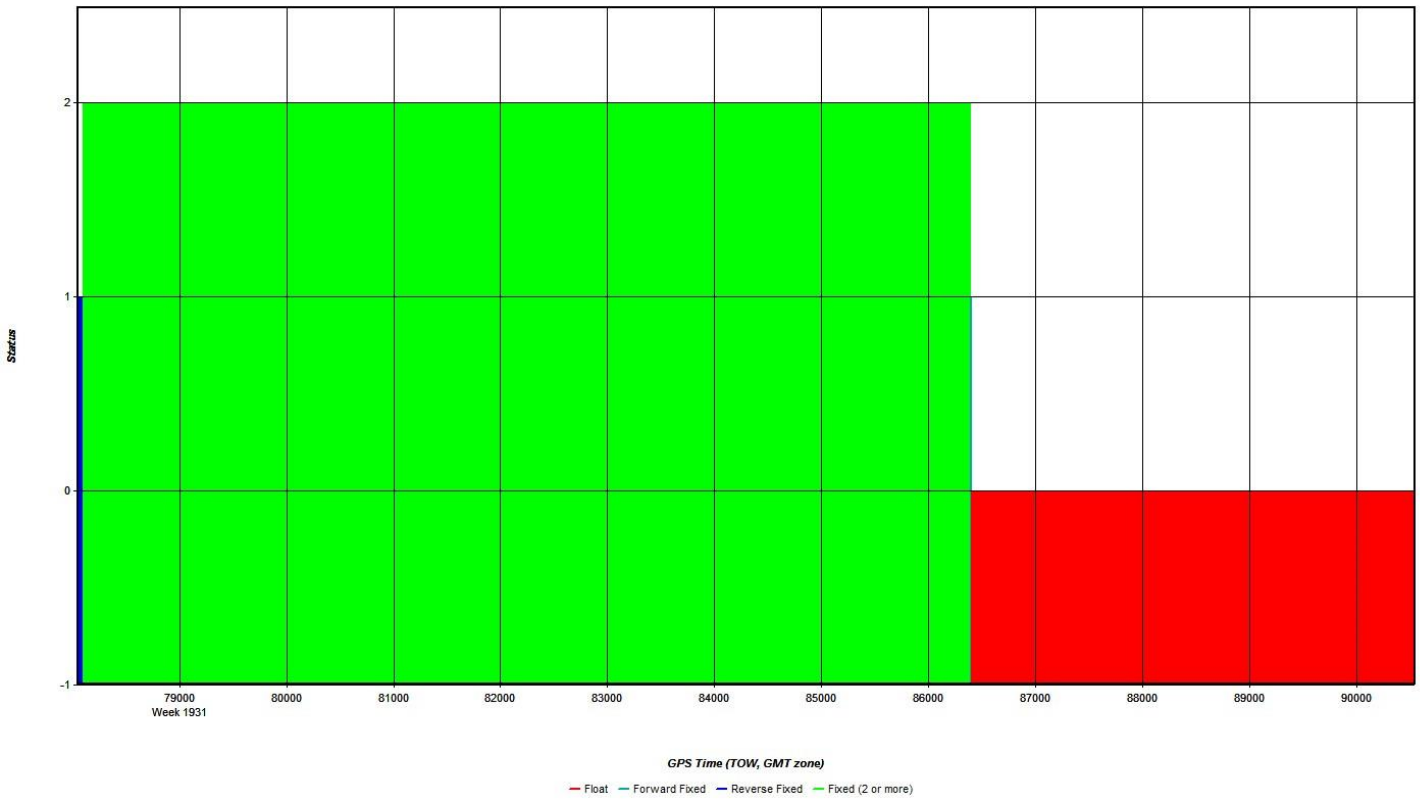

Estimated StdDev (m)
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

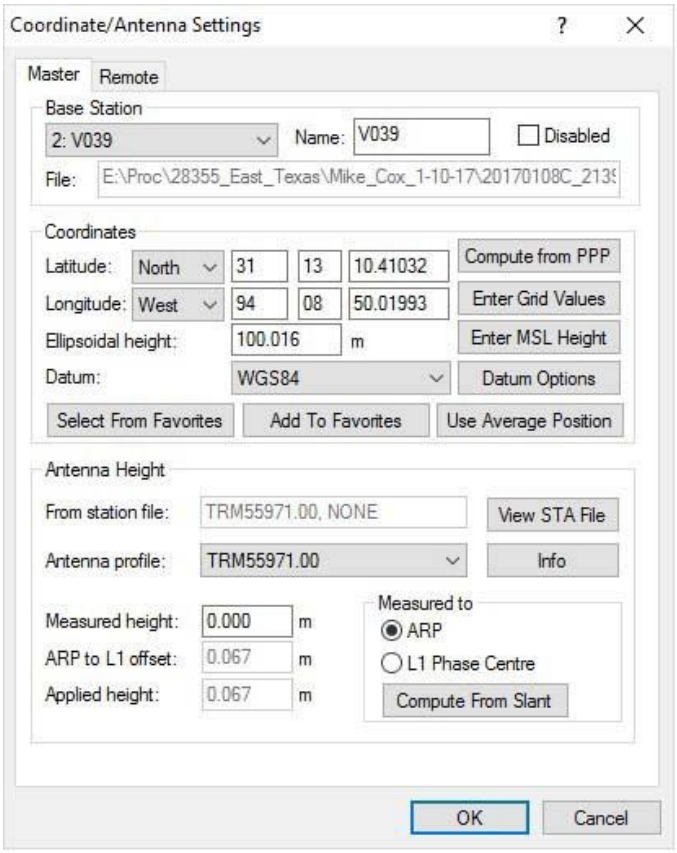

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
Roll
Pitch

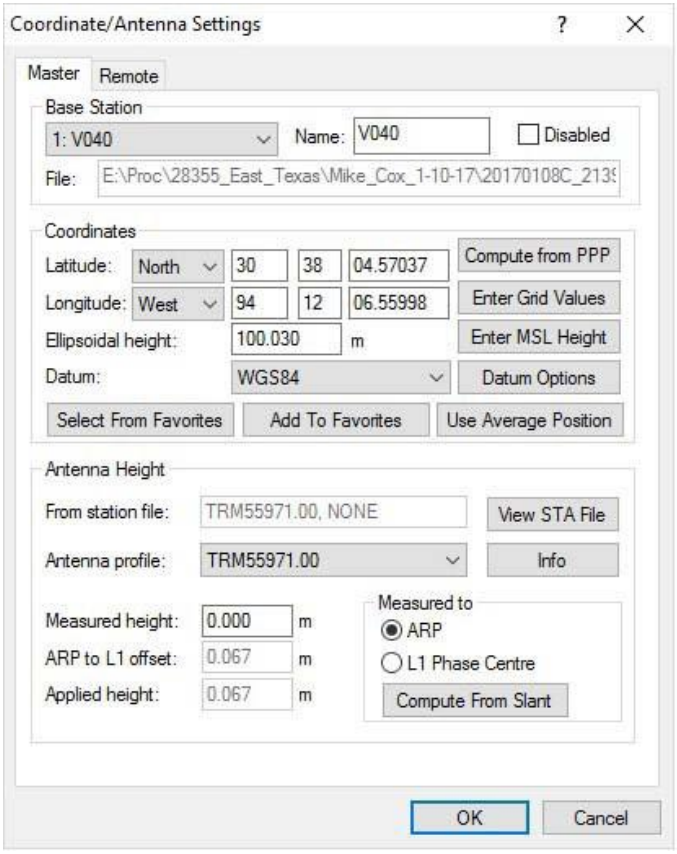

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
-500
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
RMS
SD

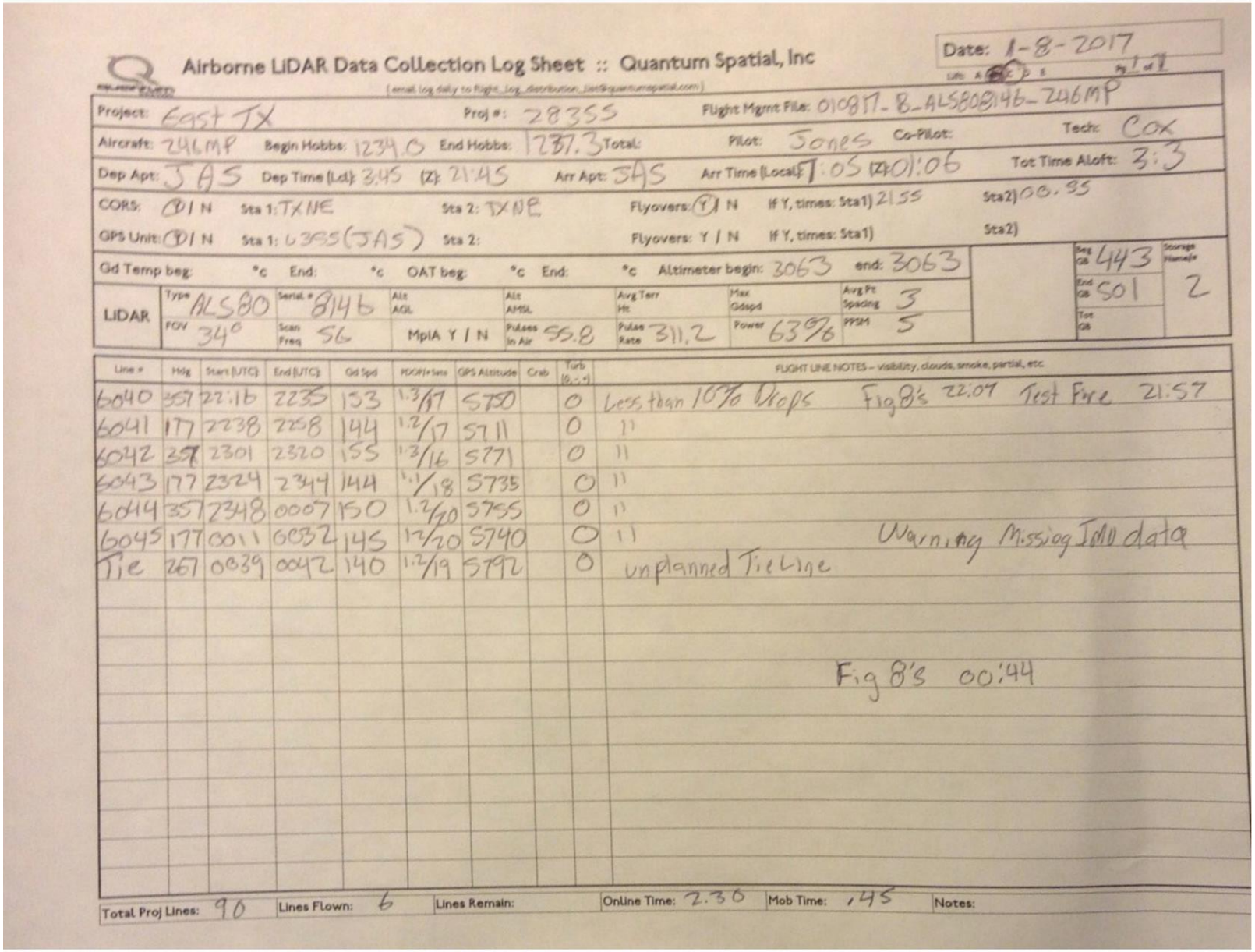

Separation (arcmin)
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
-500
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
79000
Week 1931
80000
81000
82000
83000
84000
85000
86000
87000
88000
89000
90000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V039
Name:
V039
Disabled
File:
E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108C_213
Coordinates
Latitude:
North
31
13
10.41032
Compute from PPP
Longitude:
West
94
08
50.01993
Enter Grid Values
Ellipsoidal height:
100.016
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM55971.00, NONE
View STA File
Antenna profile:
TRM55971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: V040
Name: V040
Disabled
File: E:\Proc\28355_East_Texas\Mike_Cox_1-10-17\20170108C_213
Coordinates
Latitude: North 30 38 04.57037
Longitude: West 94 12 06.55998
Ellipsoidal height: 100.030 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-8-2017

(email log daily to flight_log_distribution_list@quantumspatial.com)

Project: East TX | Proj #: 28355 | Flight Mgmt File: 010817_8_ALS80146_246MP

Aircraft: 246MP | Begin Hobbs: 1234.0 | End Hobbs: 1237.3 | Total: | Pilot: Jones | Co-Pilot: | Tech: Cox

Dep Apt: JAS | Dep Time (Lcl): 3:45 (Z): 21:45 | Arr Apt: JAS | Arr Time (Local): 1:05 (Z): 01:06 | Tot Time Aloft: 3:3

CORS: (Y) / N | Sta 1: TXNE | Sta 2: TXNE | Flyovers: (Y) / N | If Y, times: Sta1) 21:55 | Sta2) 00:55

GPS Unit: (Y) / N | Sta 1: 6355 (JAS) | Sta 2: | Flyovers: Y / N | If Y, times: Sta1) | Sta2)

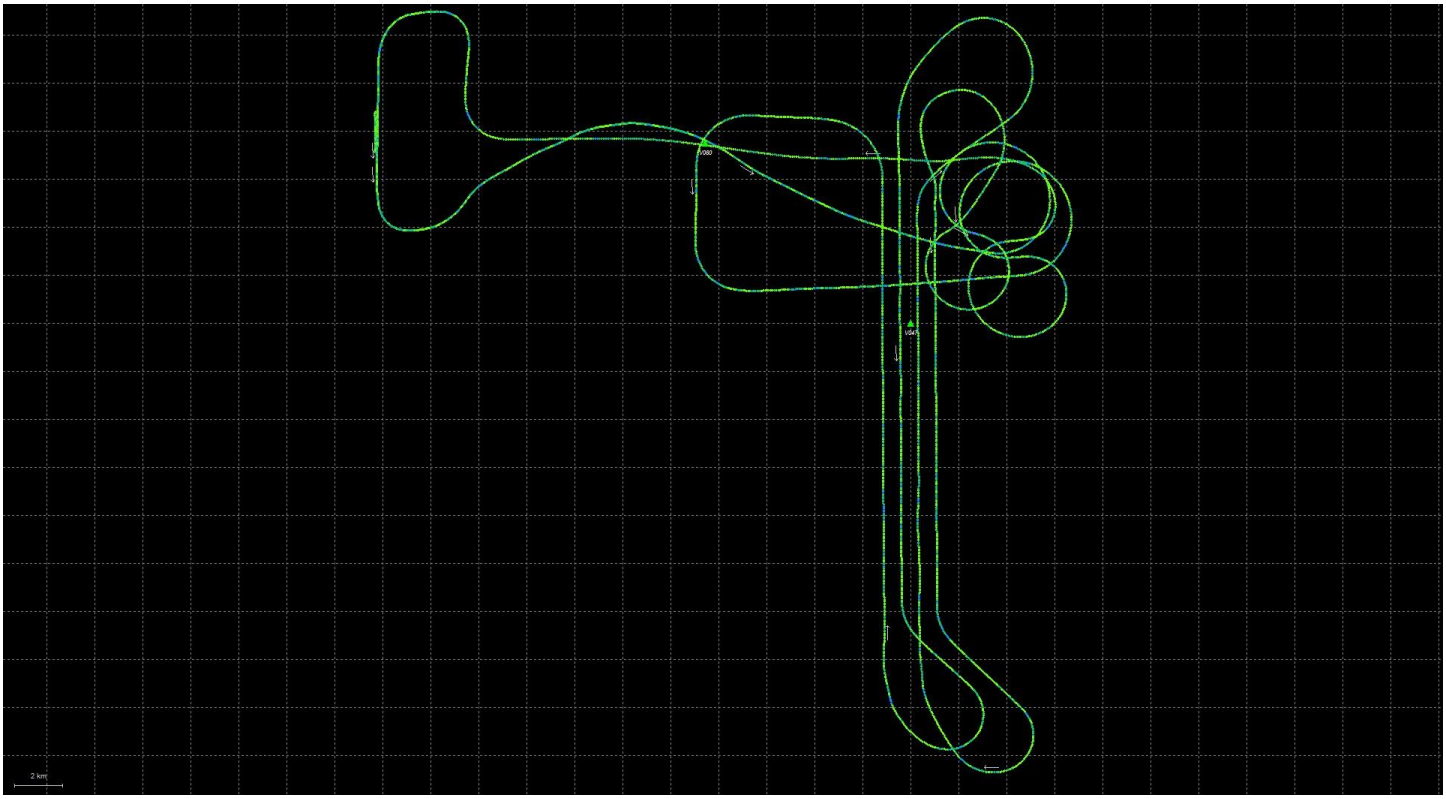
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 3063 end: 3063

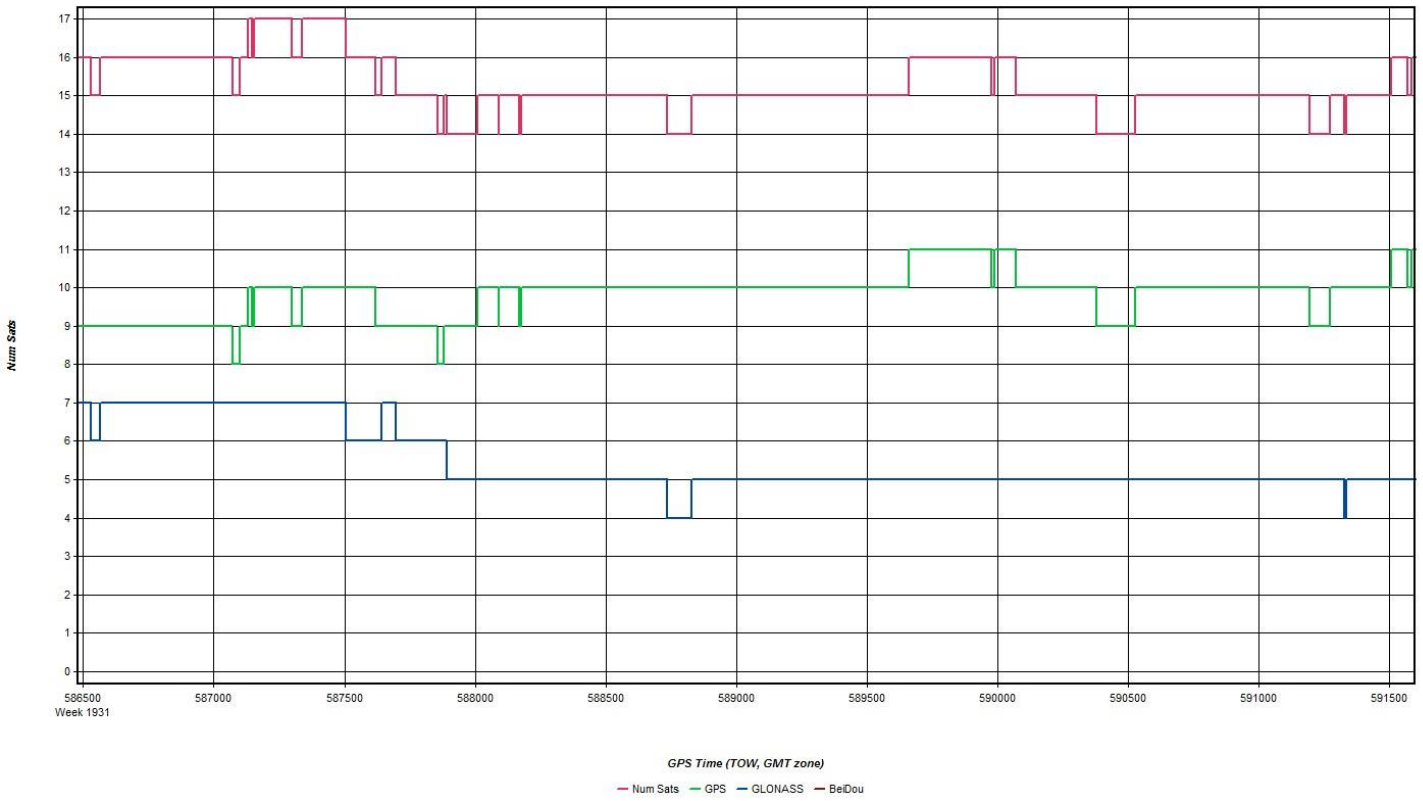
LiDAR	Type: ALS80	Serial #: 8146	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing: 3	Beg GB: 443	Storage Number: 2
	FOV: 34°	Scan Freq: 56	MpIA Y / N	Pulses In Air: 55.8	Pulse Rate: 311.2	Power: 63%	PPSM: 5	End GB: 501	
								Tot GB:	

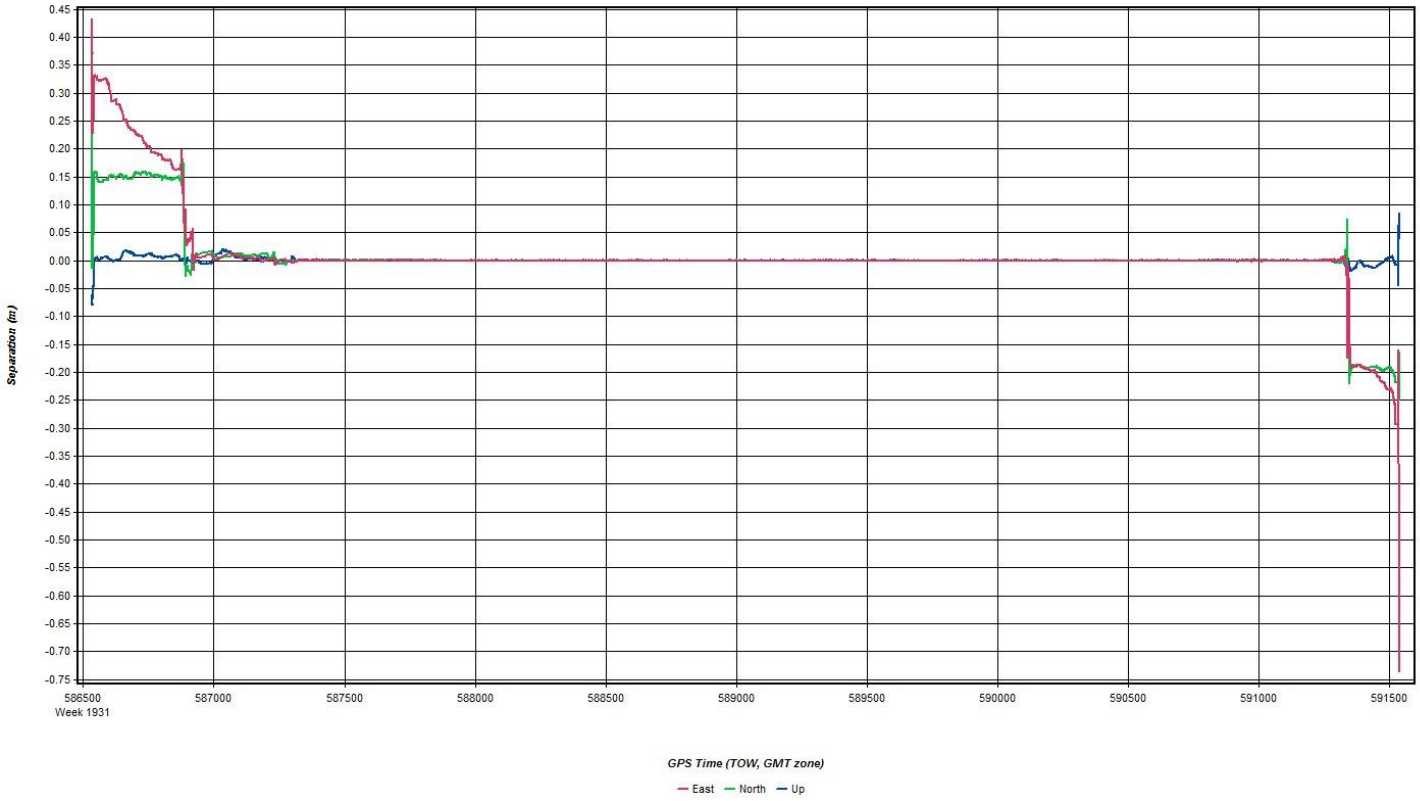
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0-5)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6040	357	22:16	2235	133	1.3/17	5750		0	Less than 10% Drops Fig 8's 22:07 Test Fire 21:57
6041	177	2238	2258	144	1.2/17	5711		0	"
6042	357	2301	2320	155	1.3/16	5771		0	"
6043	177	2324	2344	144	1.1/18	5735		0	"
6044	357	2348	0007	150	1.2/20	5755		0	"
6045	177	0011	0032	145	1.2/20	5740		0	" Warning Missing IMU data
Tie	267	0039	0042	140	1.2/19	5792		0	unplanned Tie Line
									Fig 8's 00:44

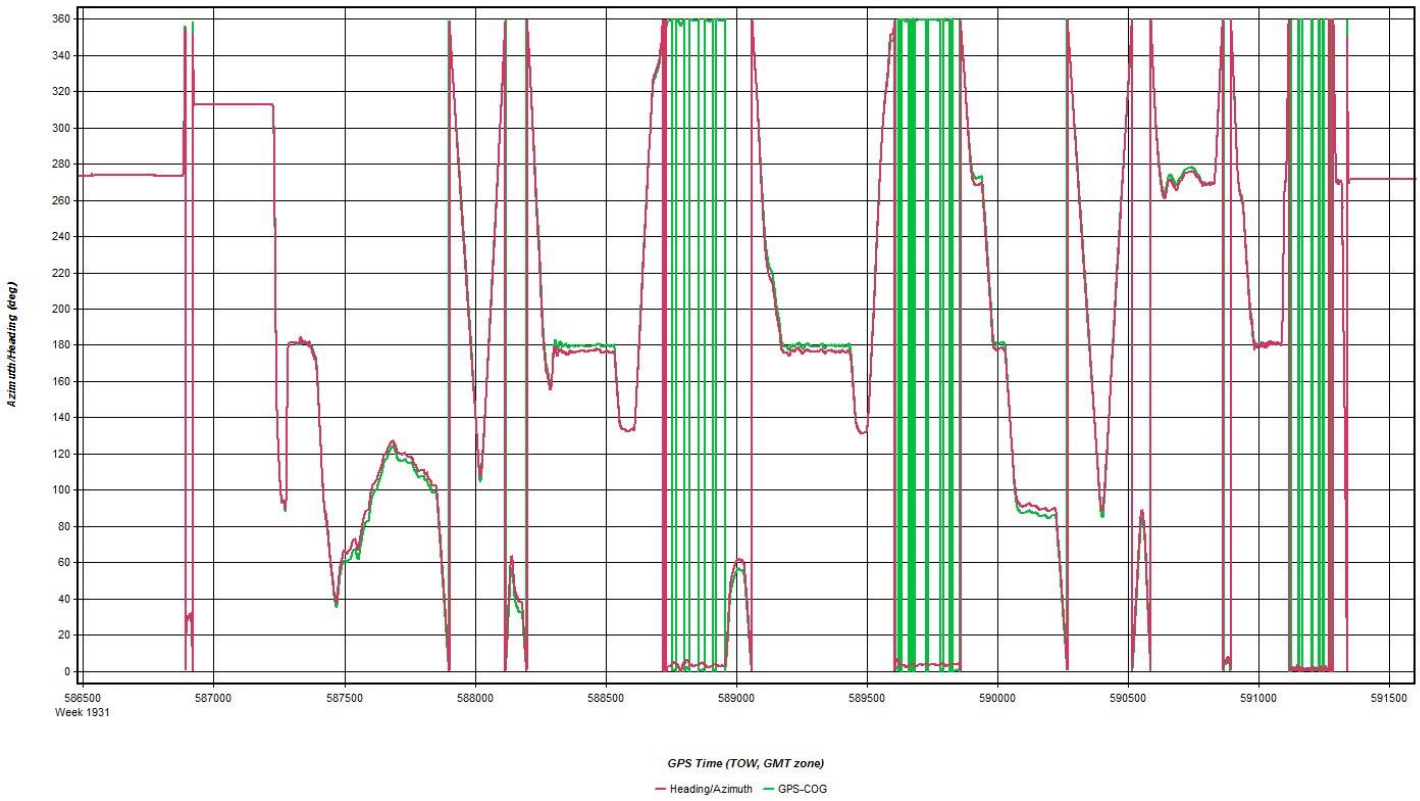
Total Proj Lines: 90 | Lines Flown: 6 | Lines Remain: | Online Time: 2.30 | Mob Time: 1.45 | Notes:

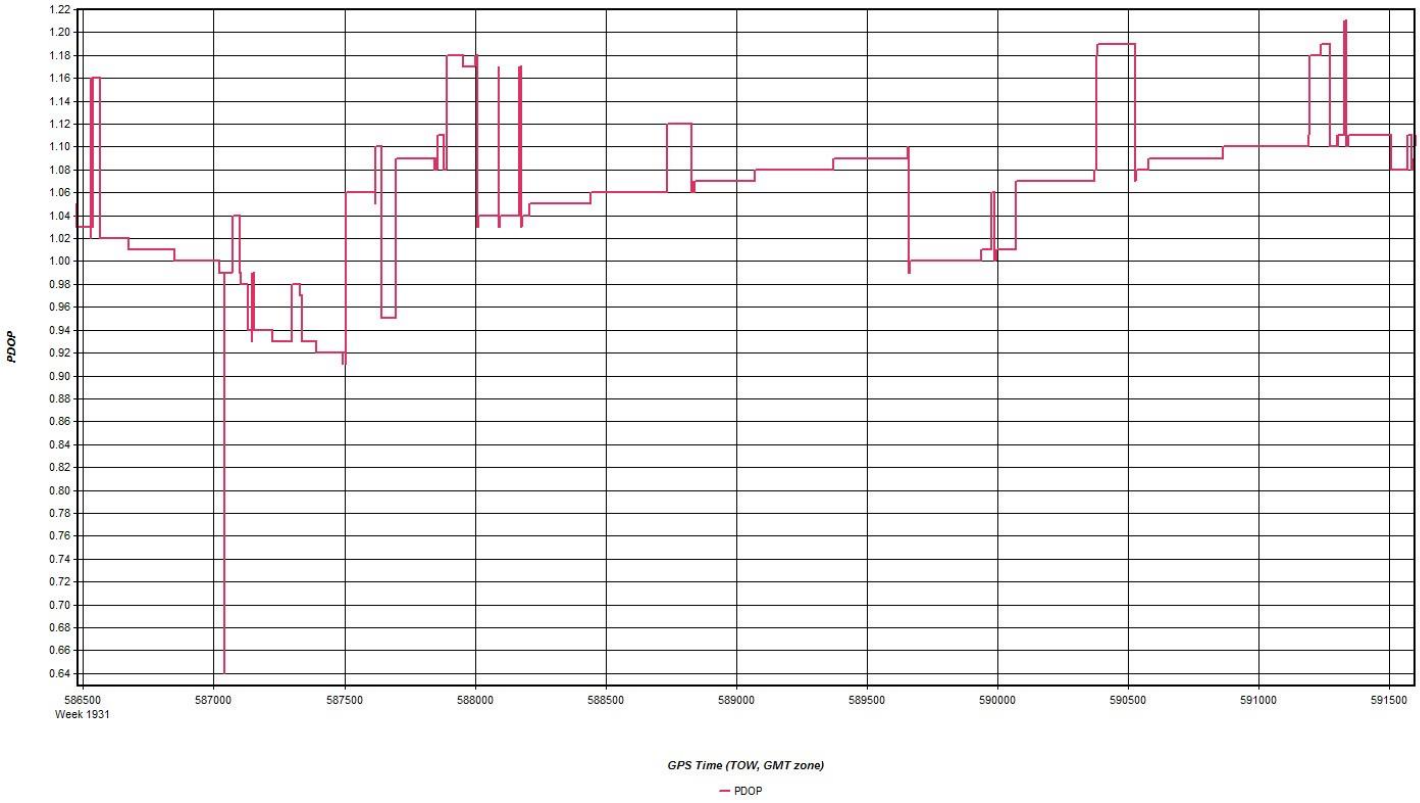
Jan 14, 2017-A (N246MP, SN8146)

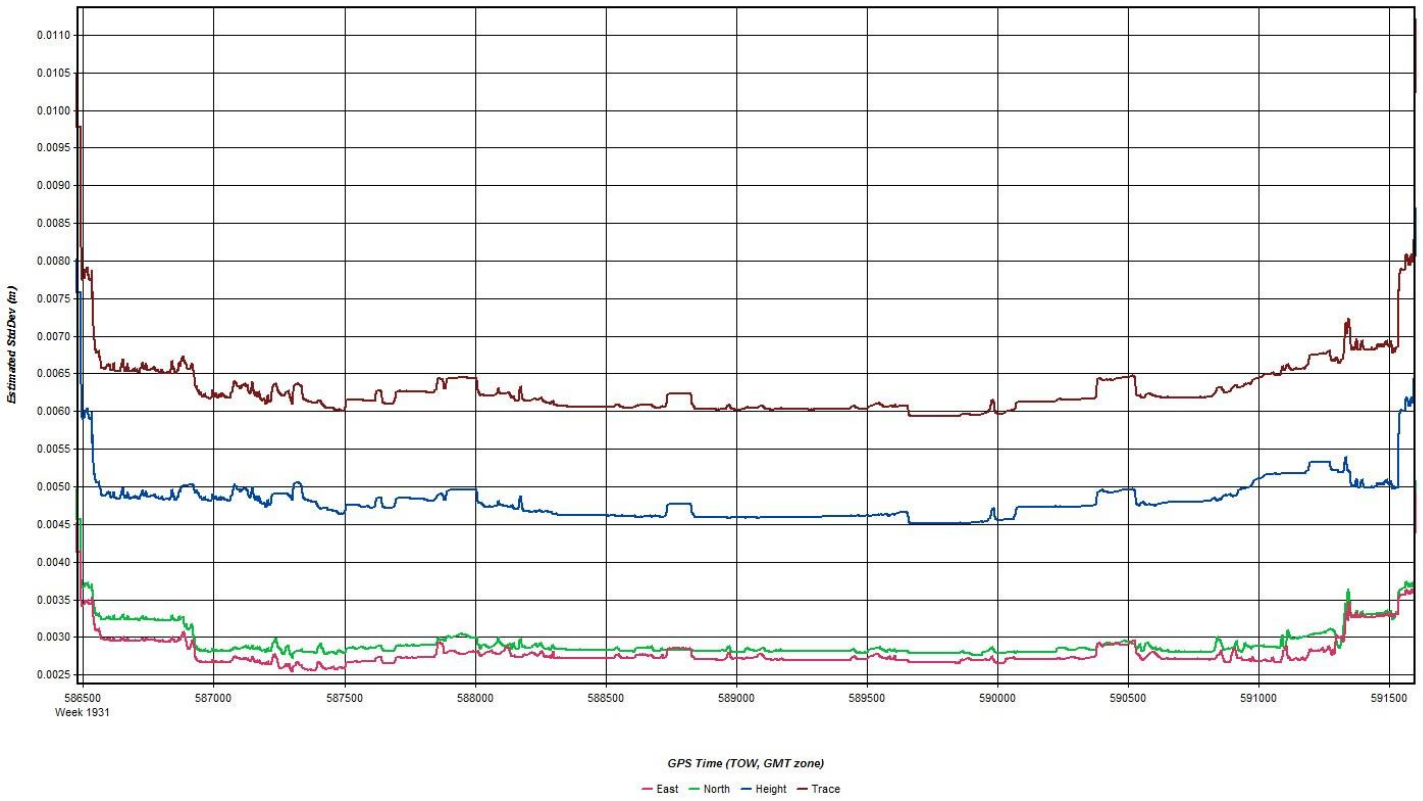


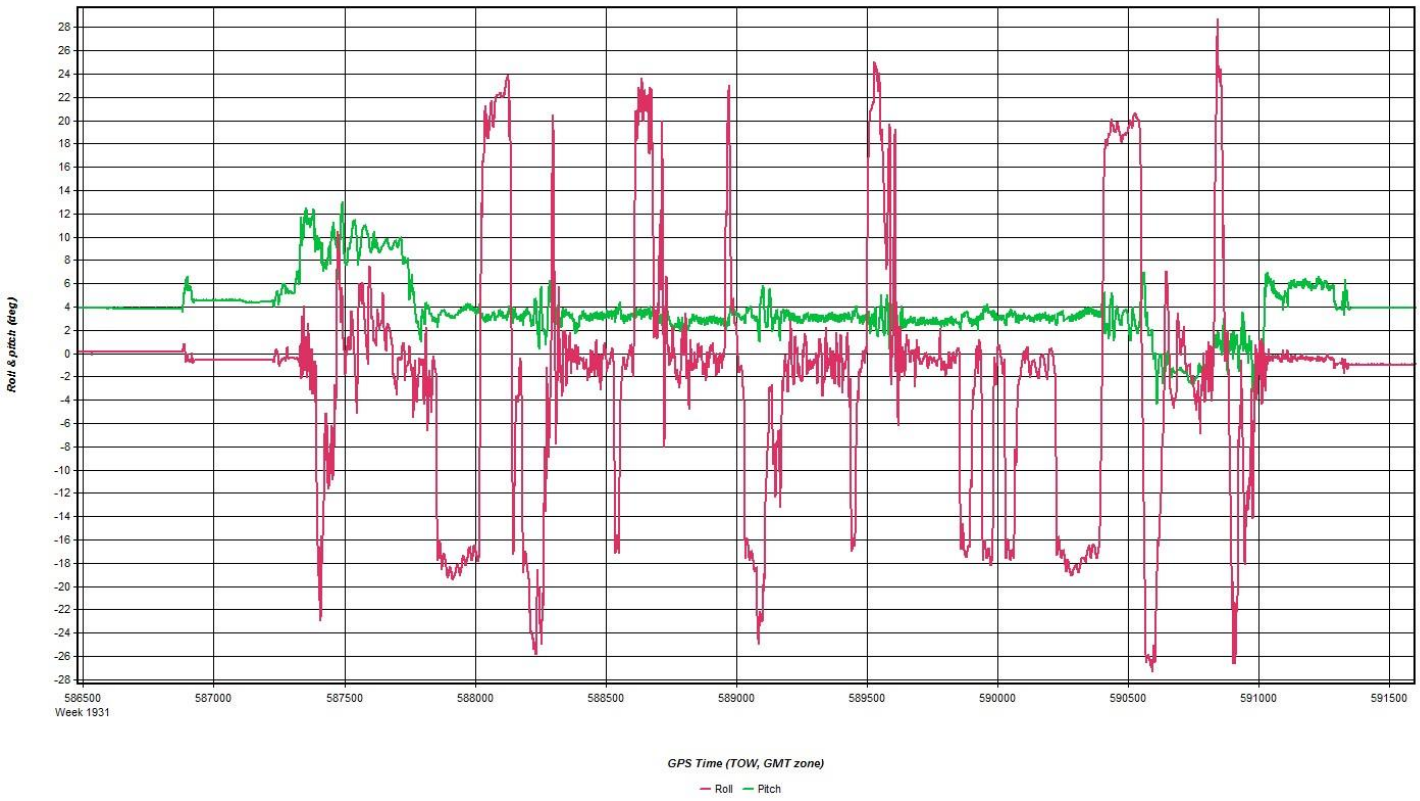

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

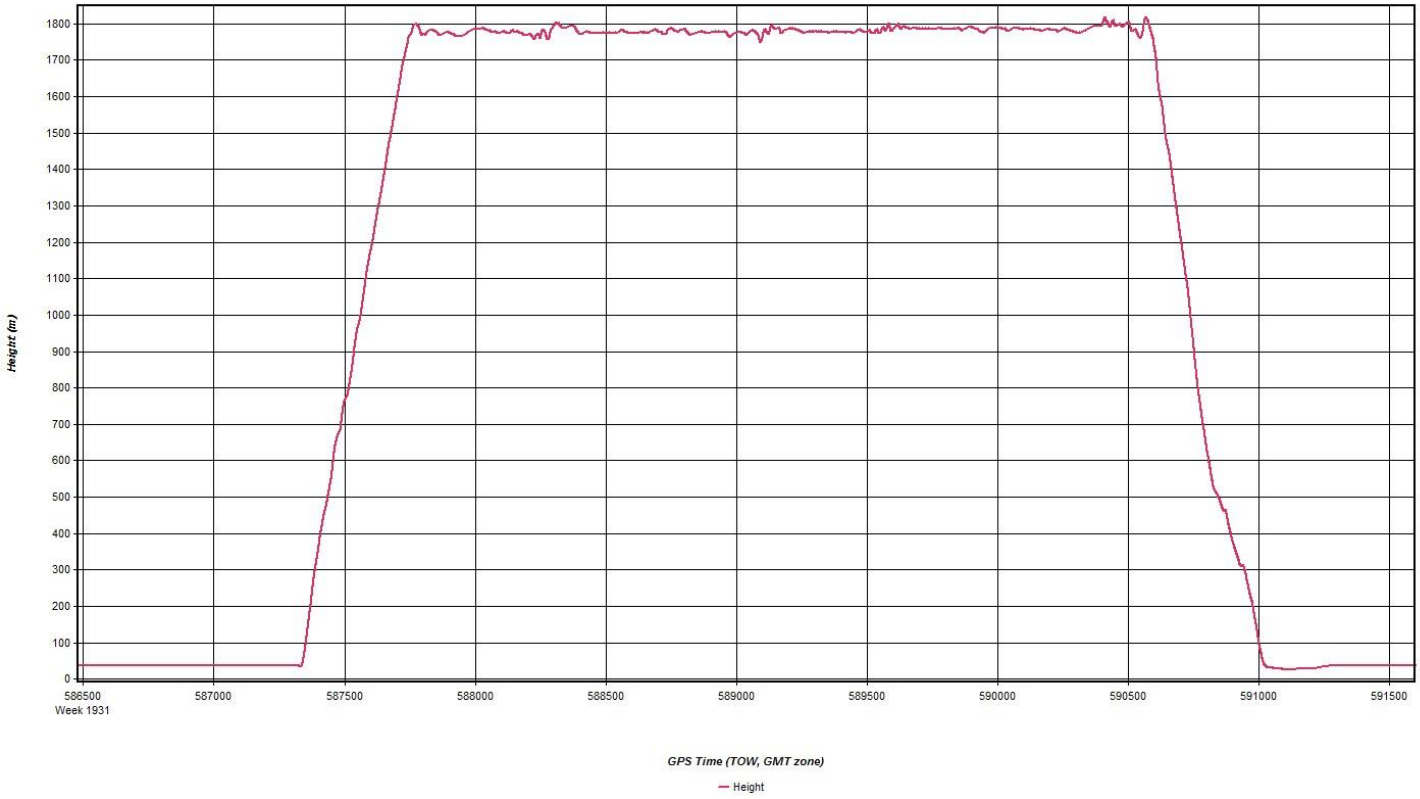

Separation (m)
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-0.65
-0.70
-0.75
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
East
North
Up

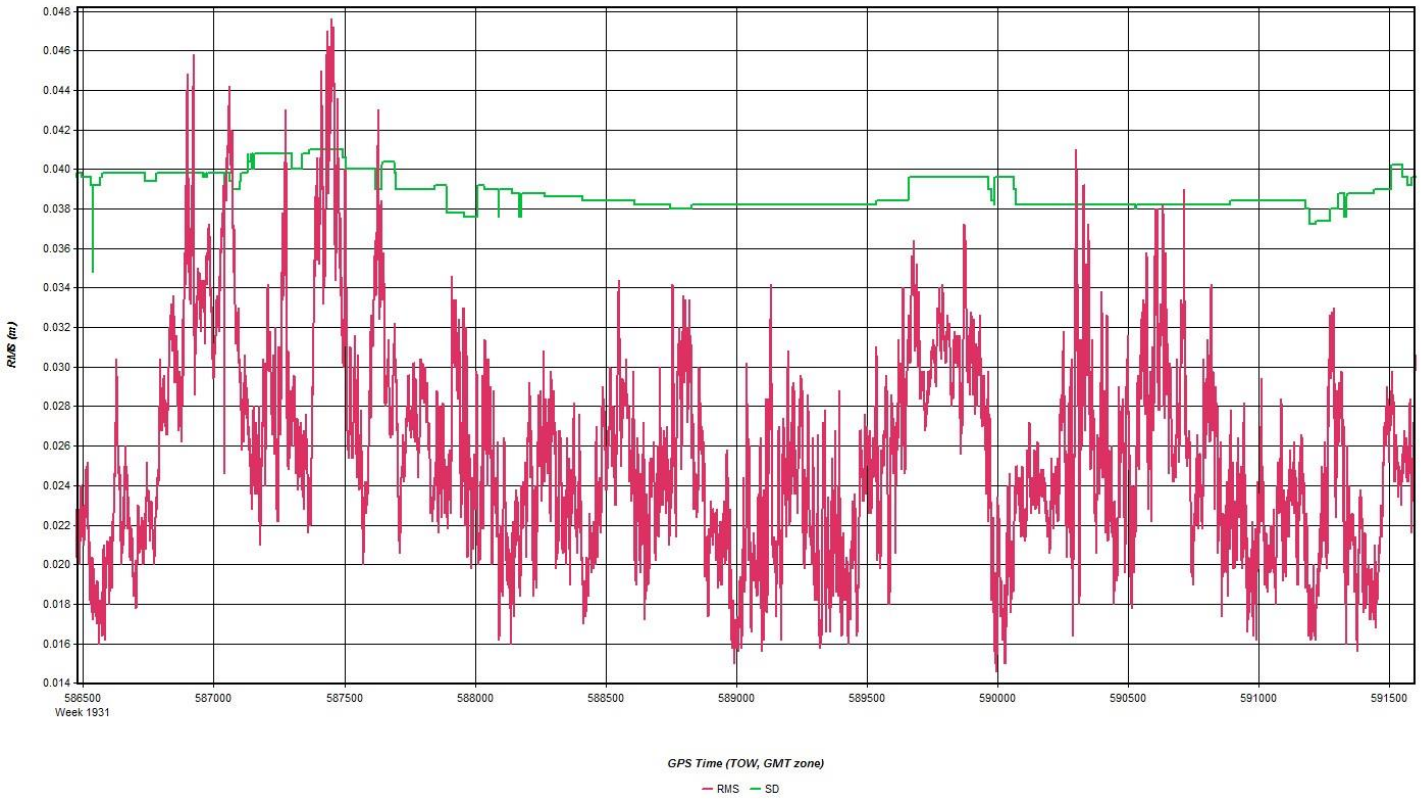

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

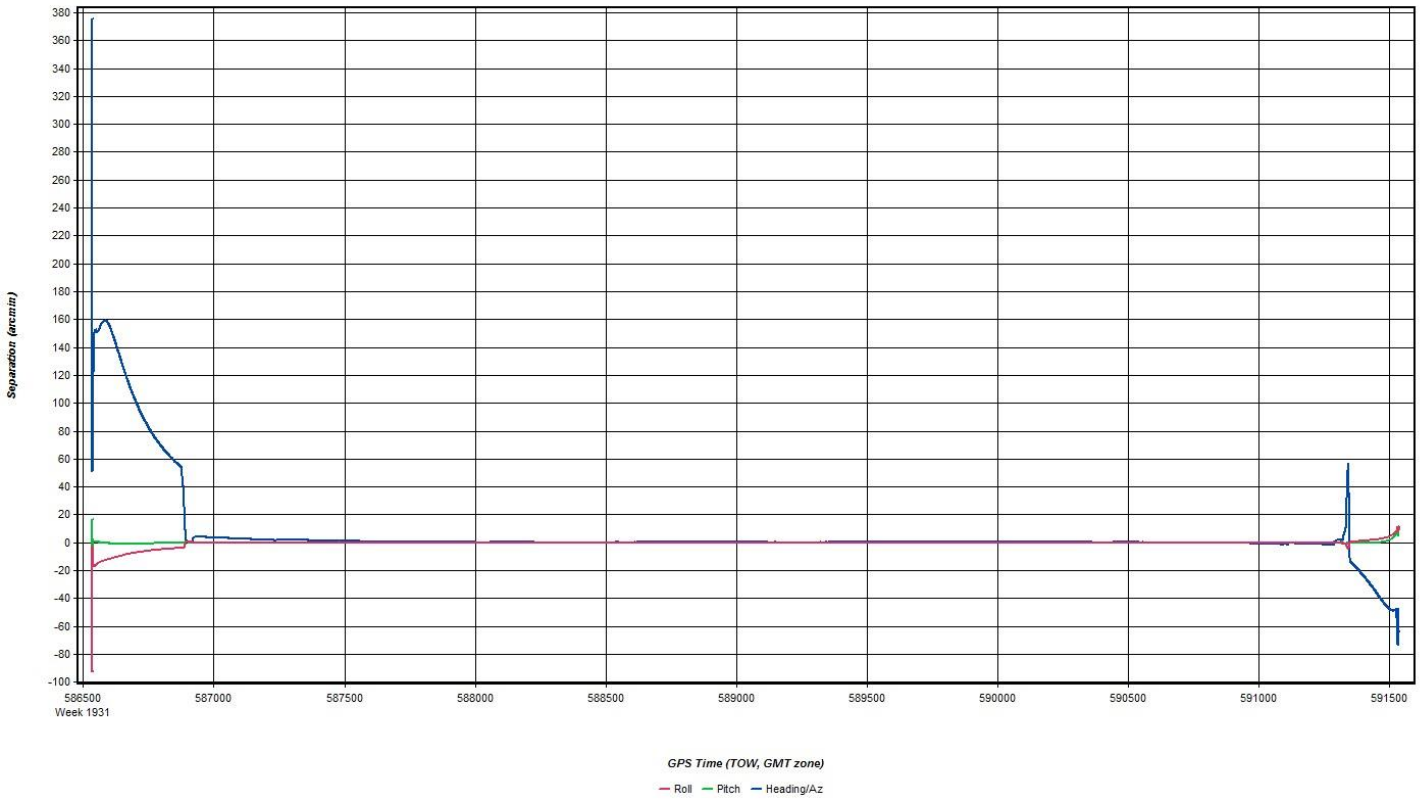

PDOP
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
0.88
0.86
0.84
0.82
0.80
0.78
0.76
0.74
0.72
0.70
0.68
0.66
0.64
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
PDOP

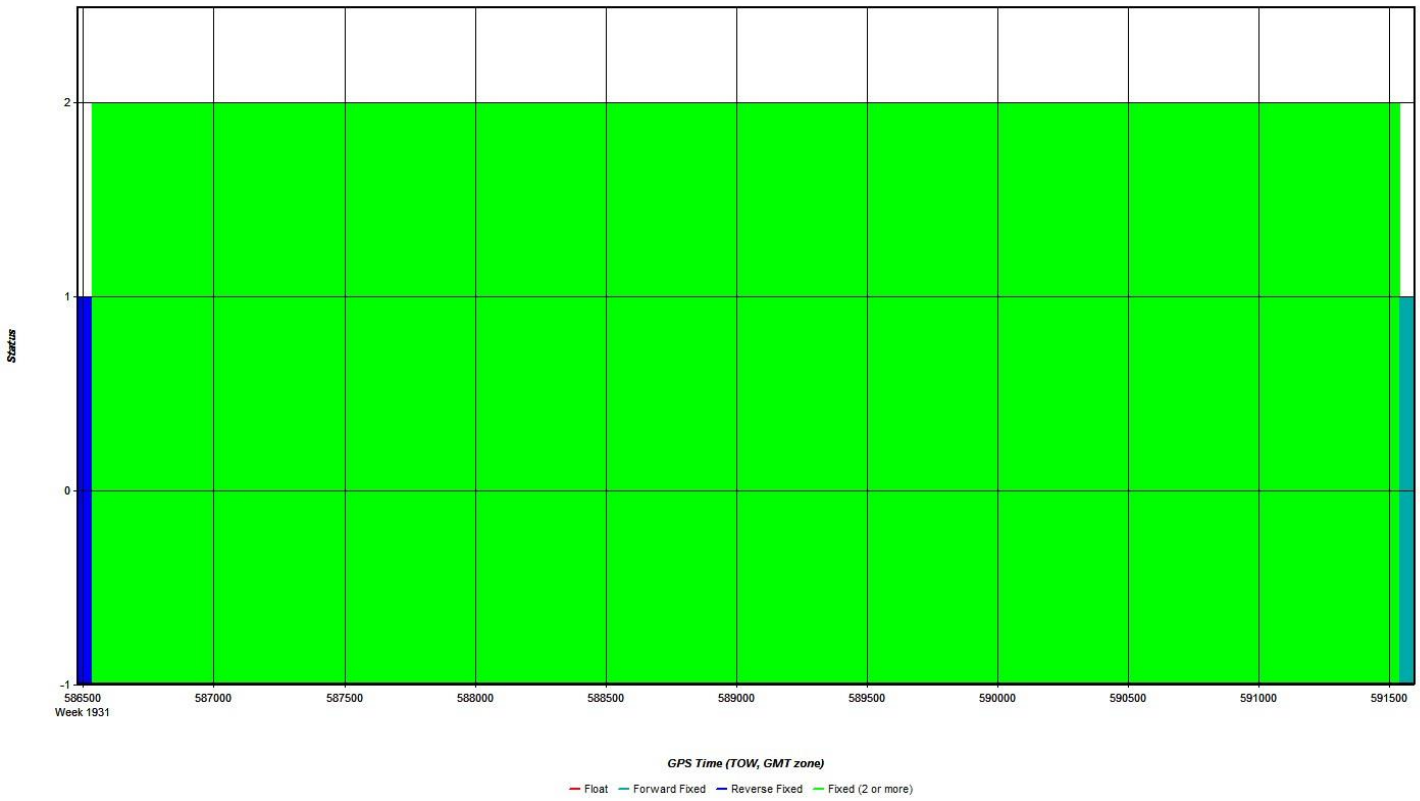

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

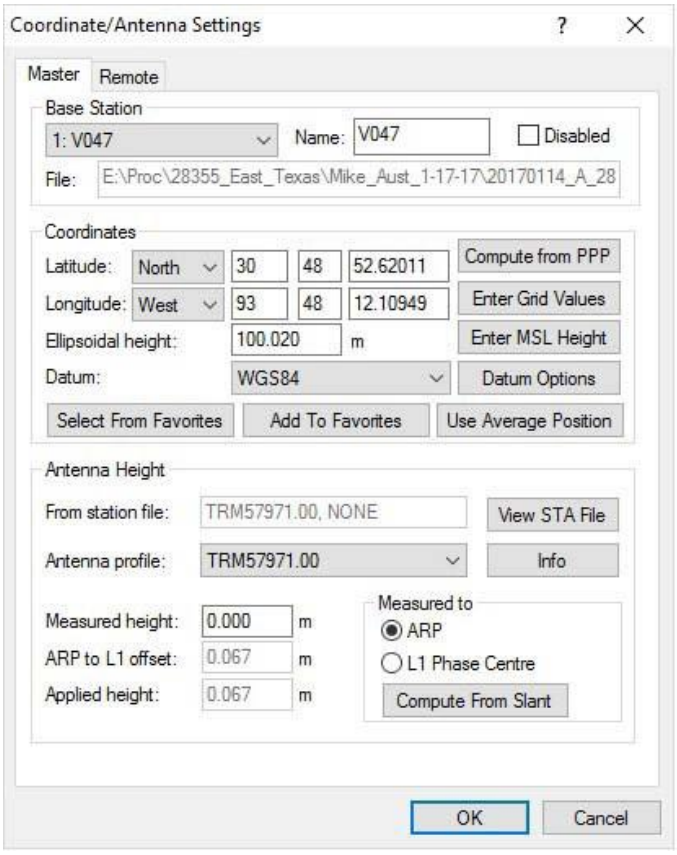

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
Roll
Pitch

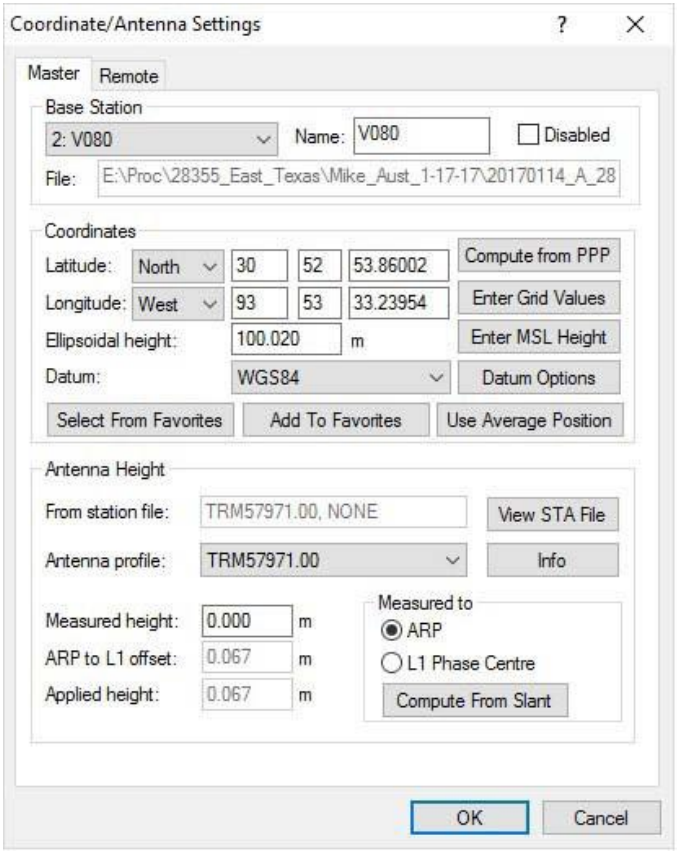

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
586500
Week 1931
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: V047
Name:
V047
Disabled
File:
E:\Proc\28355_East_Texas\Mike_Aust_1-17-17\20170114_A_28
Coordinates
Latitude:
North
30
48
52.62011
Compute from PPP
Longitude:
West
93
48
12.10949
Enter Grid Values
Ellipsoidal height:
100.020
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V080
Name: V080
Disabled
File: E:\Proc\28355_East_Texas\Mike_Aust_1-17-17\20170114_A_28
Coordinates
Latitude: North 30 52 53.86002
Longitude: West 93 53 33.23954
Ellipsoidal height: 100.020 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-14-17

Lift (A) B C D E Pg 1 of 1

Project: EAST-TEXAS LIDAR Proj #: 28355 Flight Mgmt File: 20170114_185317

Aircraft: 246MP Begin Hobbs: 1240.9 End Hobbs: 1241.9 Total: 1.0 Pilot: CARL C Co-Pilot: Tech: M AUST

Dep Apt: KJAS Dep Time (Lcl): 1205 (Z): 1205 Arr Apt: KJAS Arr Time (Local): 2:15 (Z): 2015 Tot Time Aloft: 1.0

CORS: Y / N Sta 1: TXNE Sta 2: Flyovers: (Y) / N If Y, times: Sta1) 1917, 1957 Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 23 °c End: 23 °c OAT beg: °c End: °c Altimeter begin: 30.37 end: 30.37

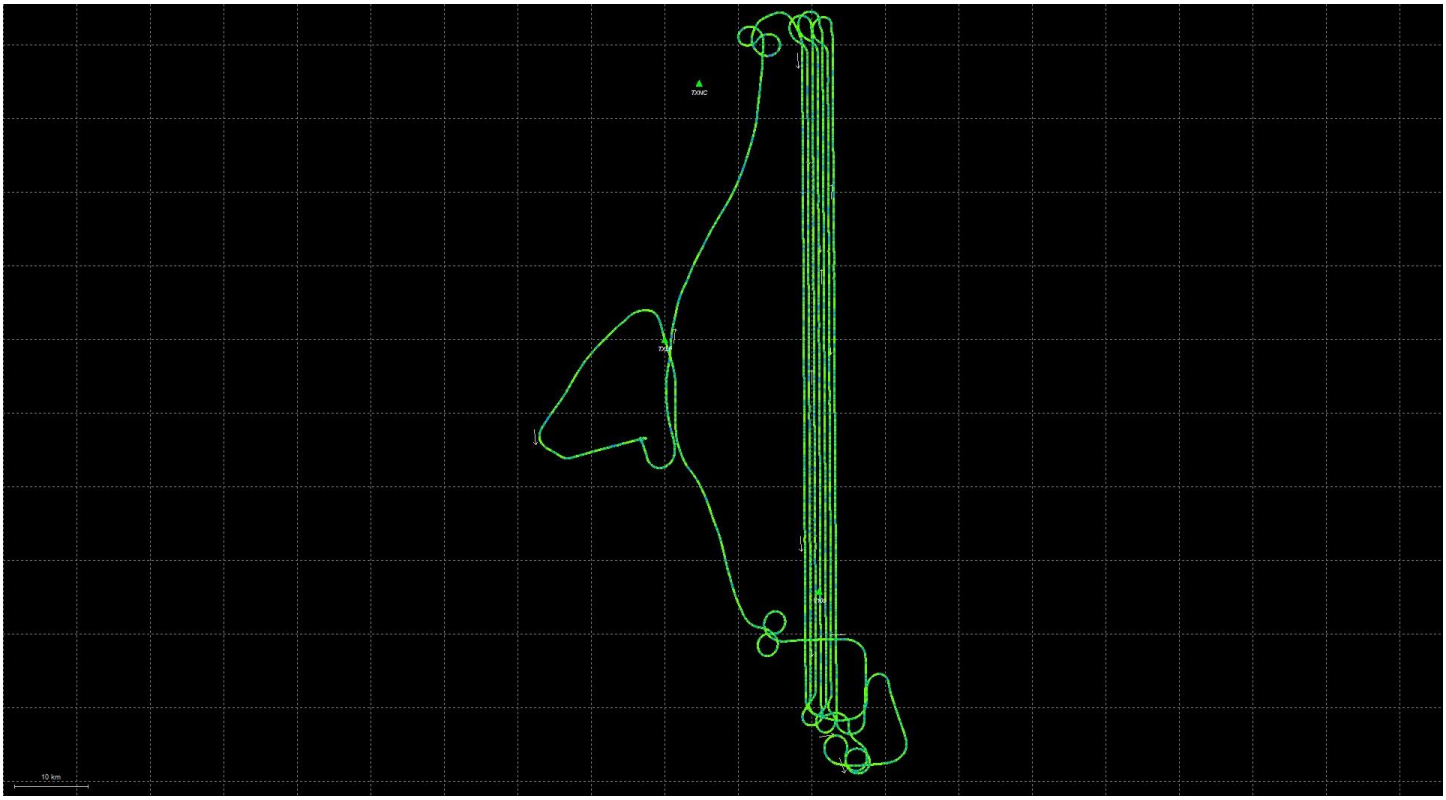
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8146		5.8'			
	FOV 34	Scan Freq 56	MpiA (Y) / N	Pulses In Air	Pulse Rate 311	Power 63	PPSM

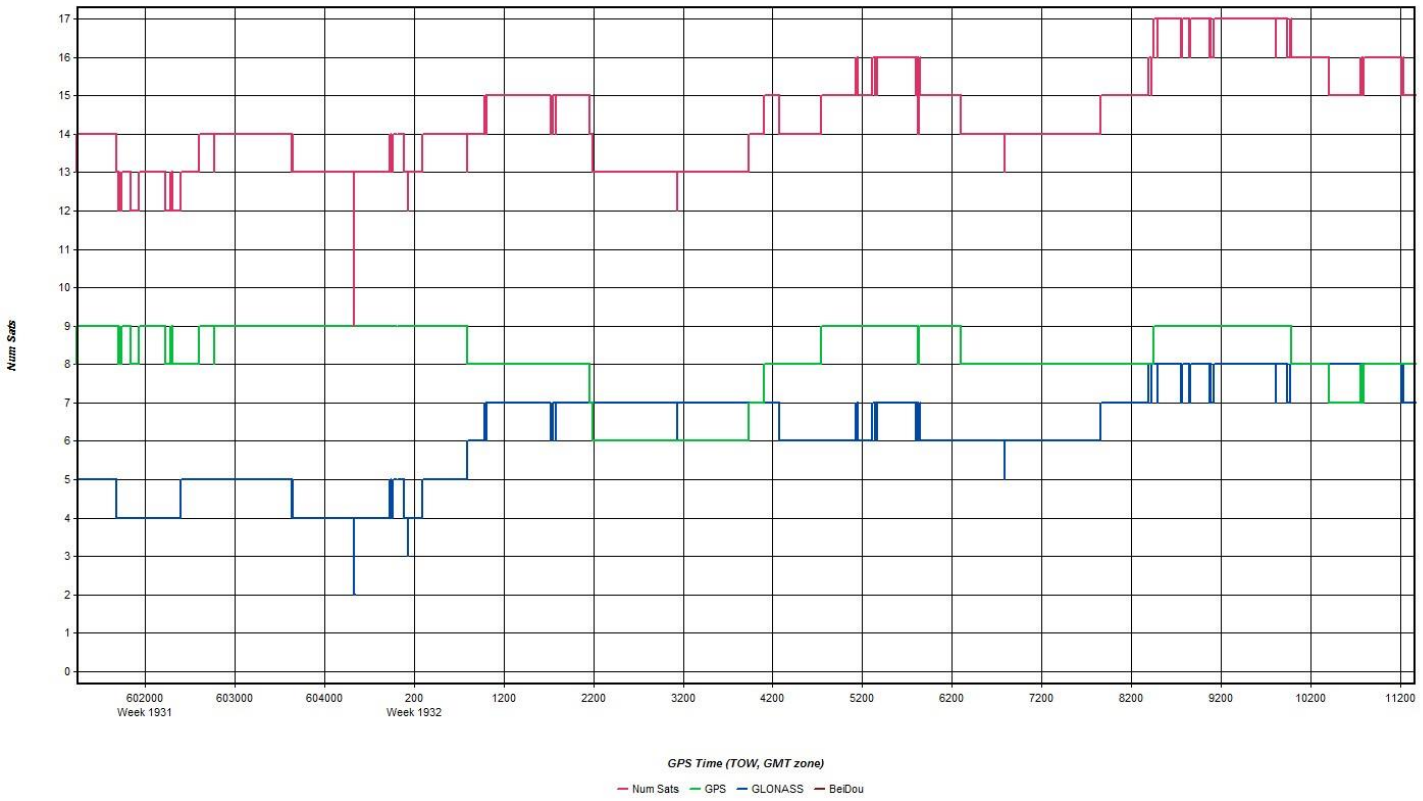
Bag GB	Storage Name/#
703	
End GB	
Tot GB	

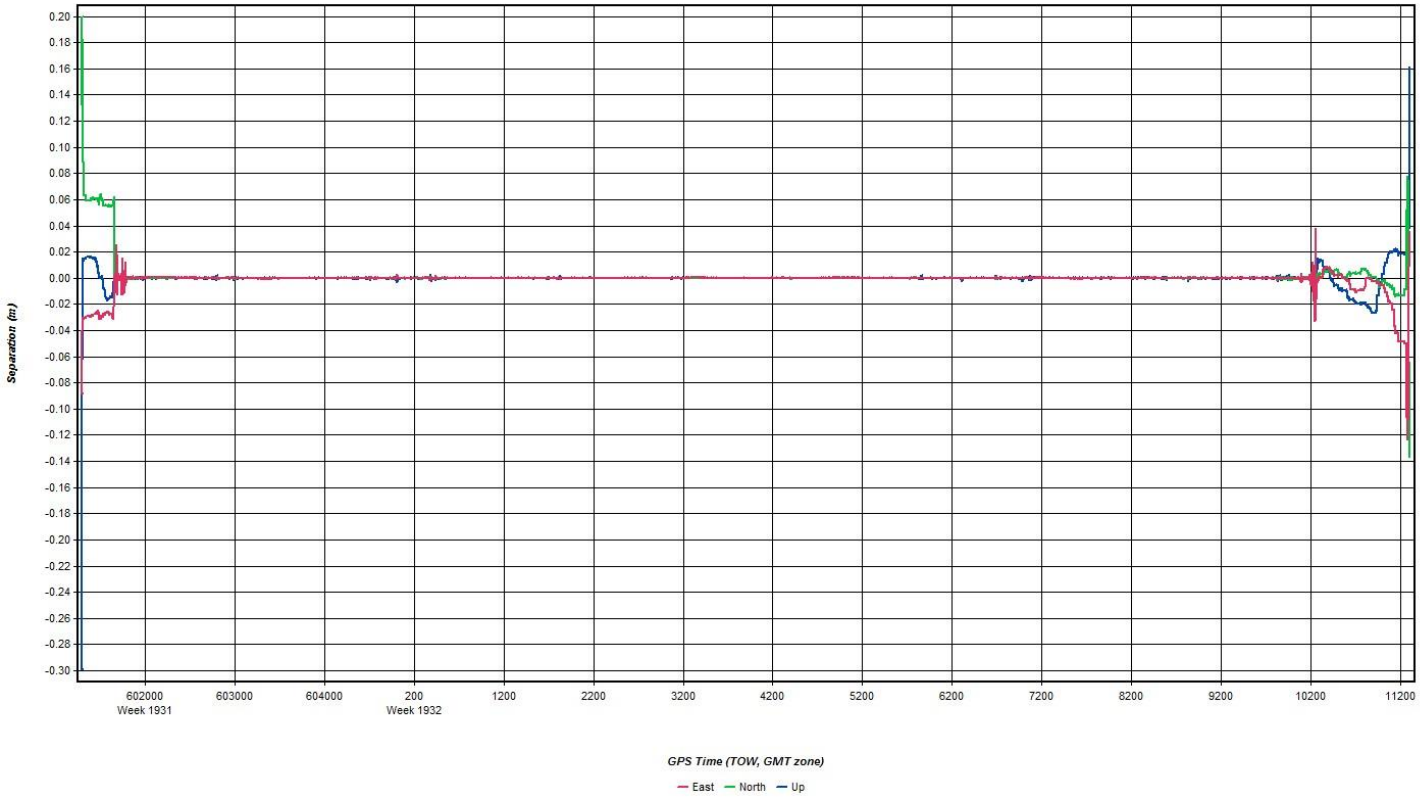
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6090	S	1925	1928	142	1.0/23	5.8			
6089	N	1932	1935	157	1.1/23	5.8			
6088	S	1940	1943	146	1.1/23	5.8			
6087	N	1947	1950	156	1.1/22	5.8			SMALL CLOUDS VERY SOUTH END
61001	E	1954	1956	147	1.3/20	5.8			CROSSFLIGHT

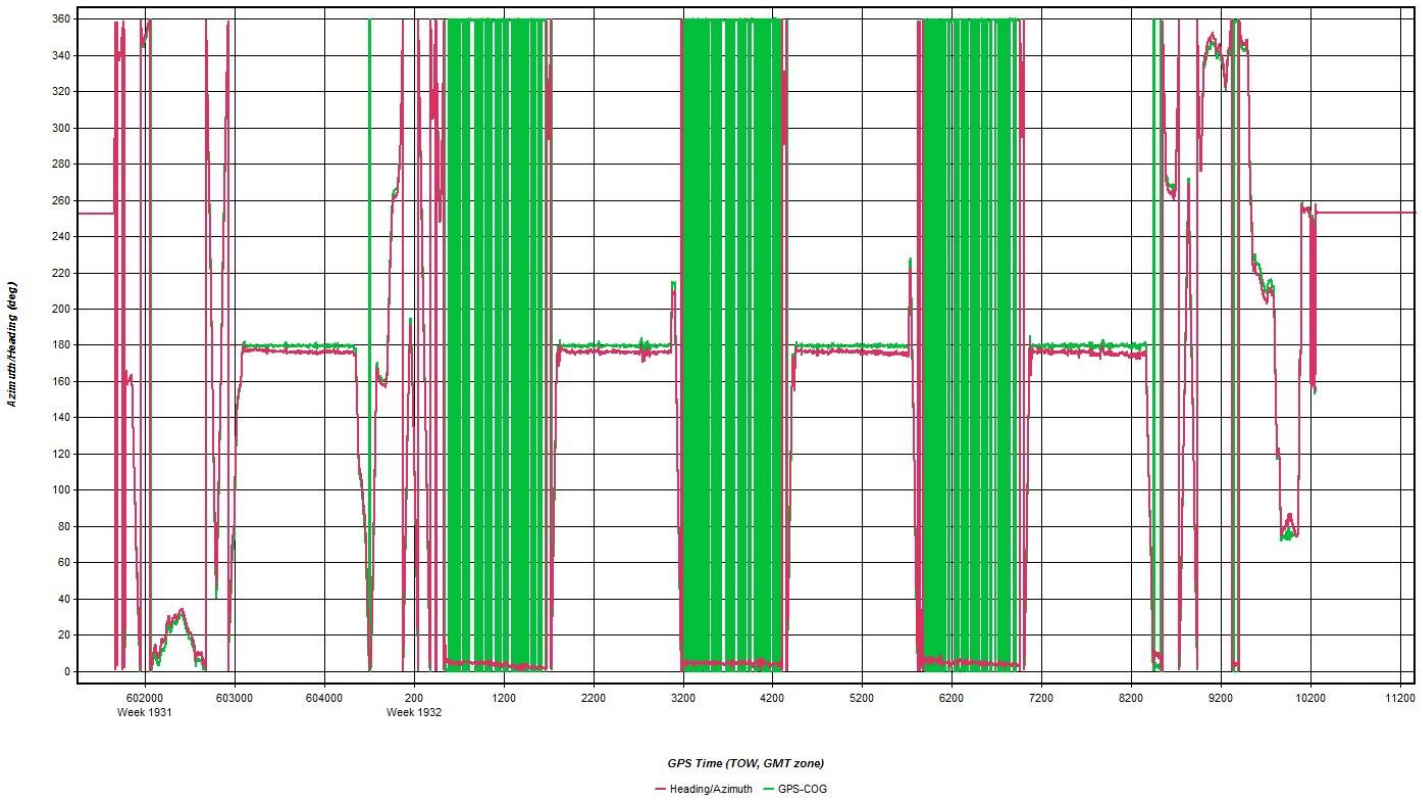
Total Proj Lines:	Lines Flown:	Lines Remain:	OnLine Time: .5	Mob Time: .5	Notes:

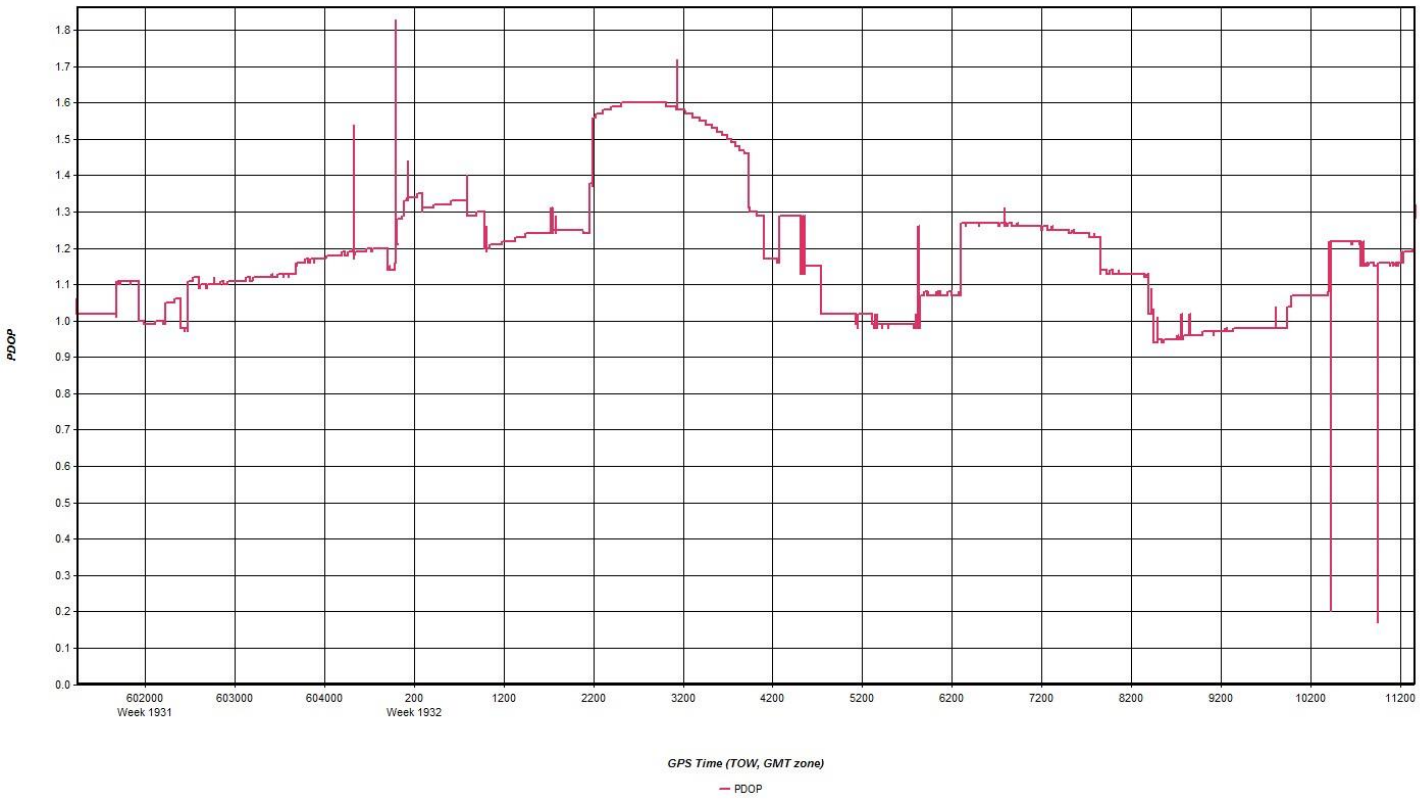
Jan 14, 2017-A (N812TB, SN7178)

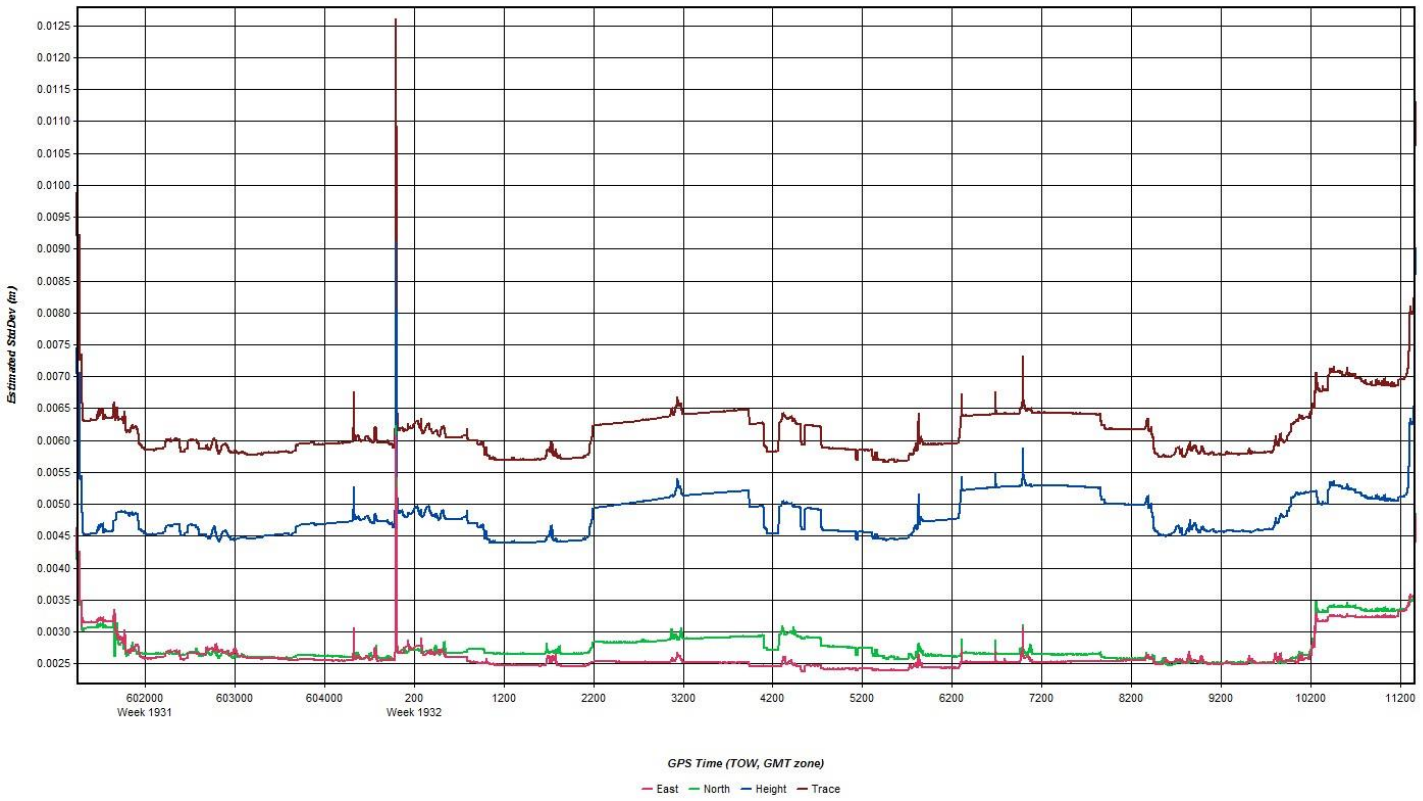


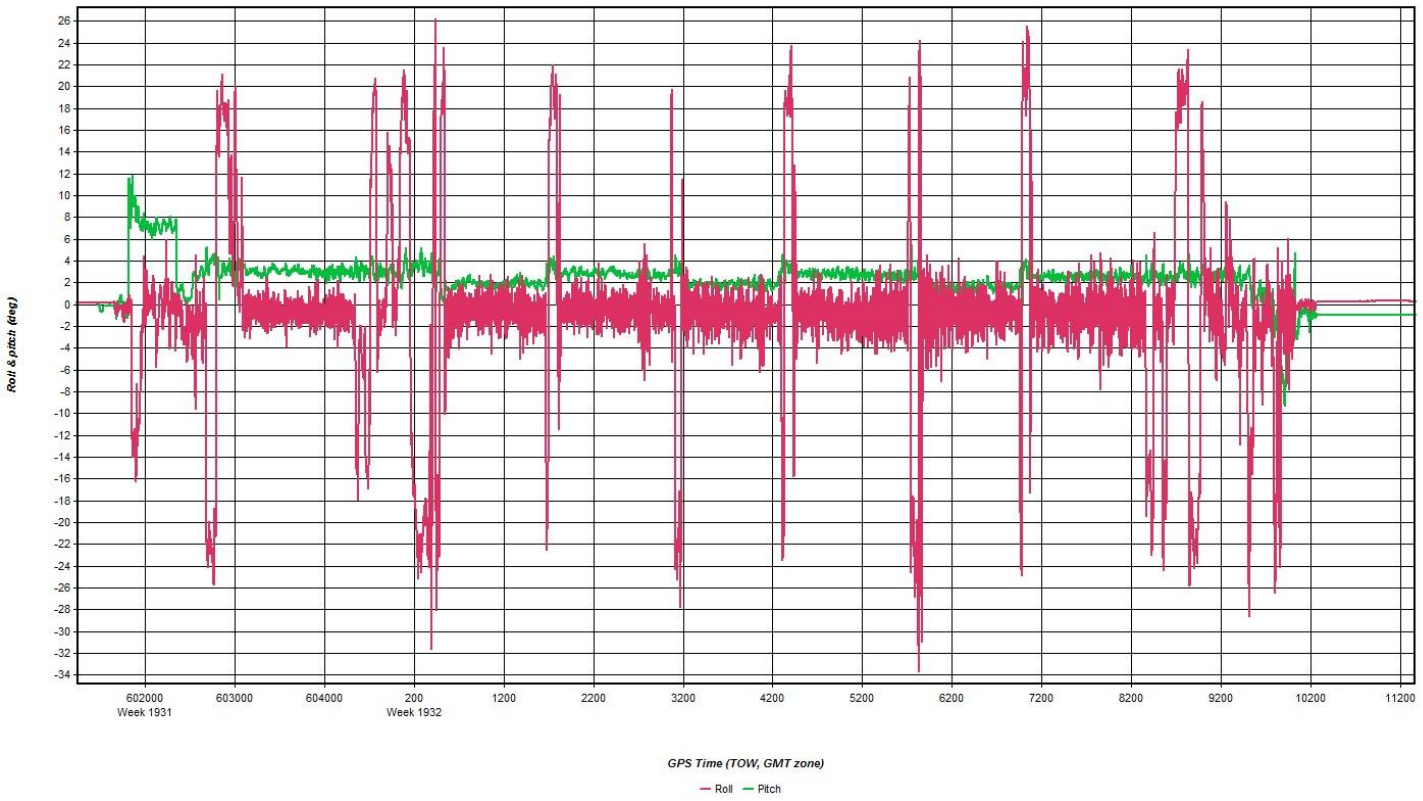

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

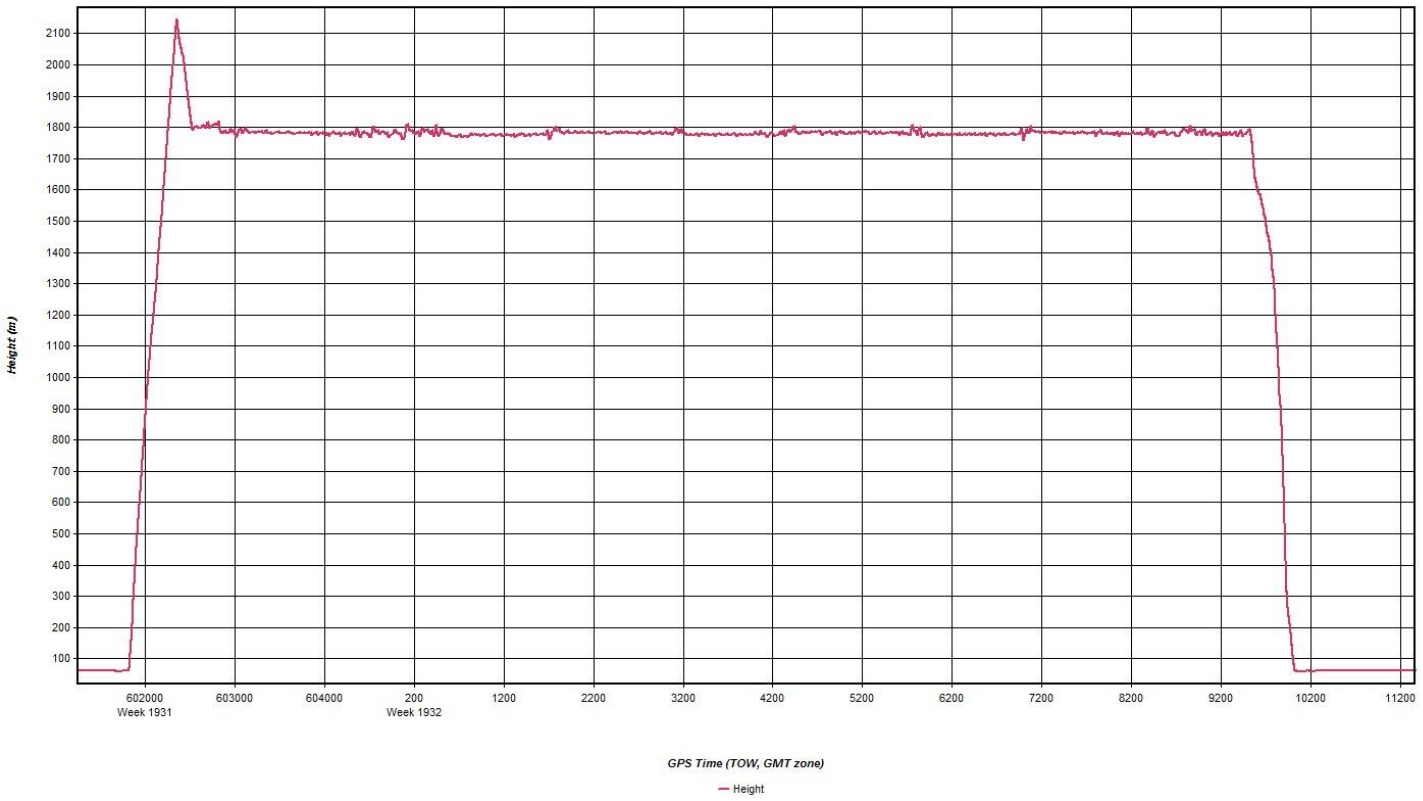

Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
East
North
Up

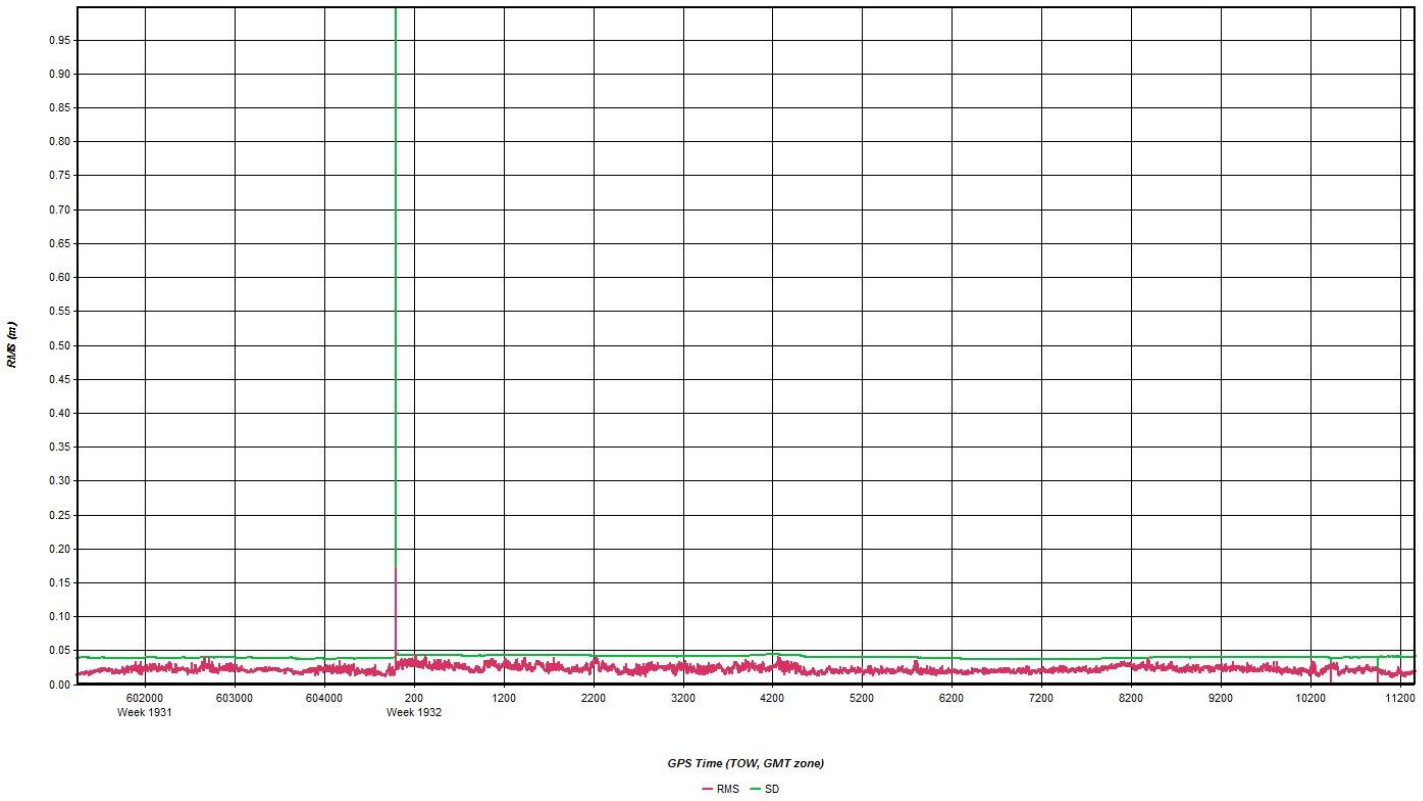

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

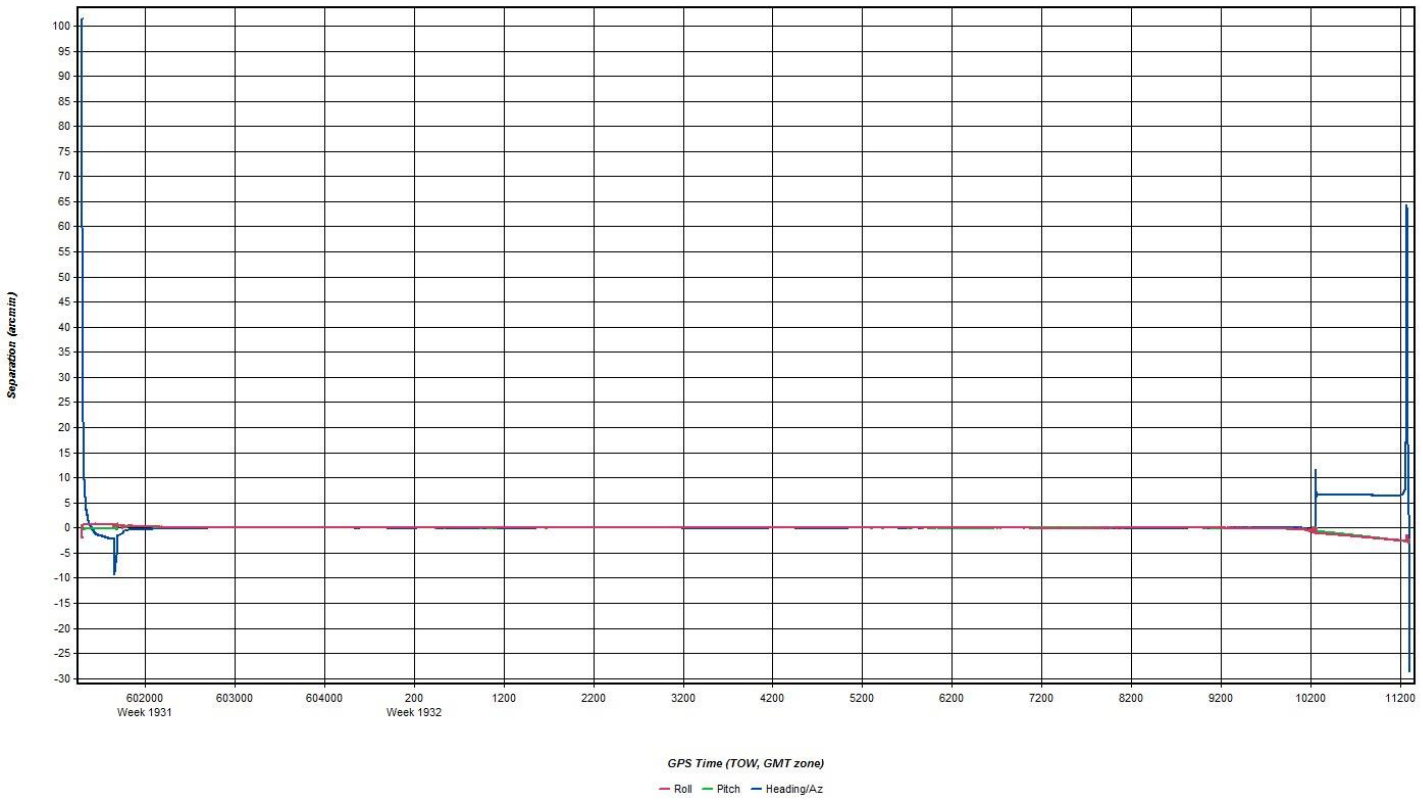

PDOP
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
PDOP

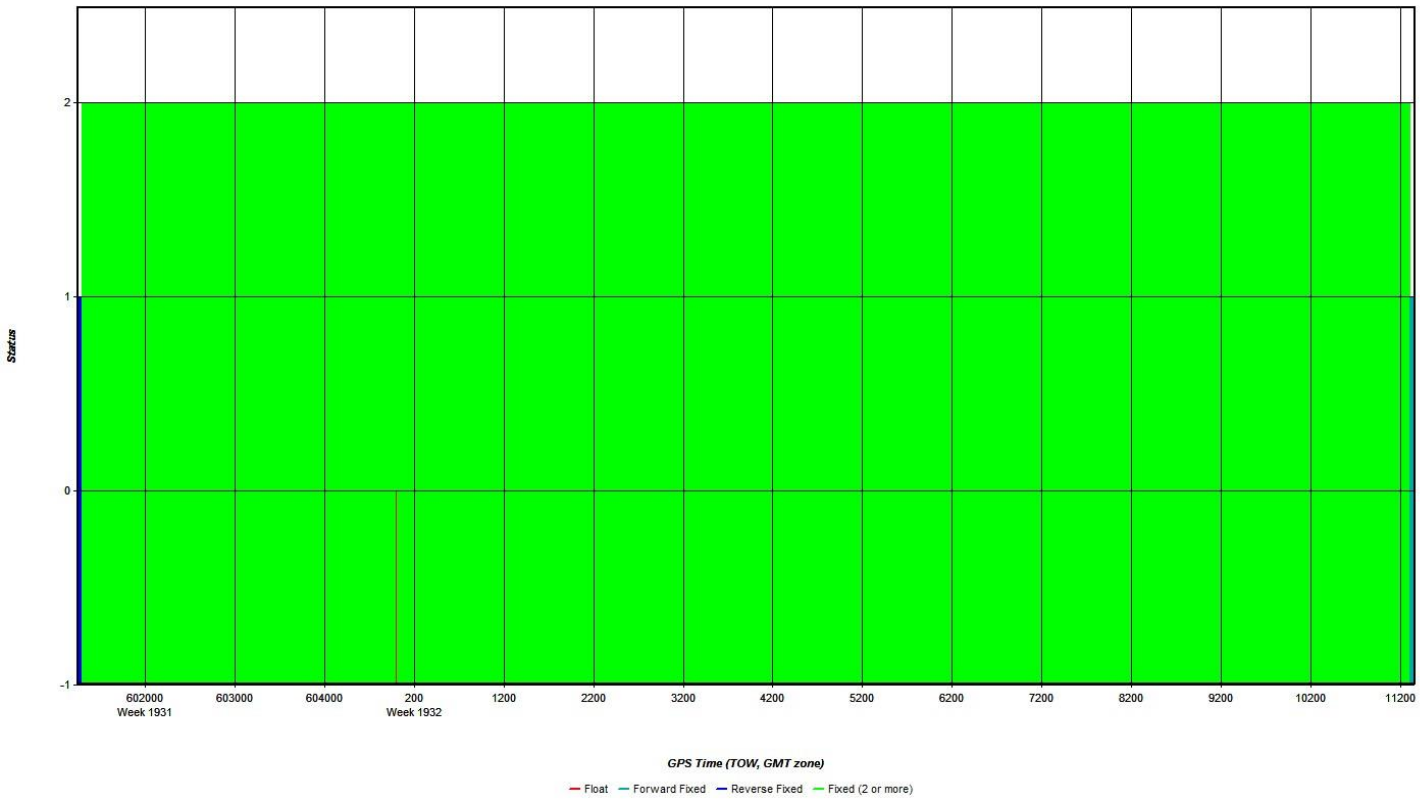

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
East
North
Height
Trace

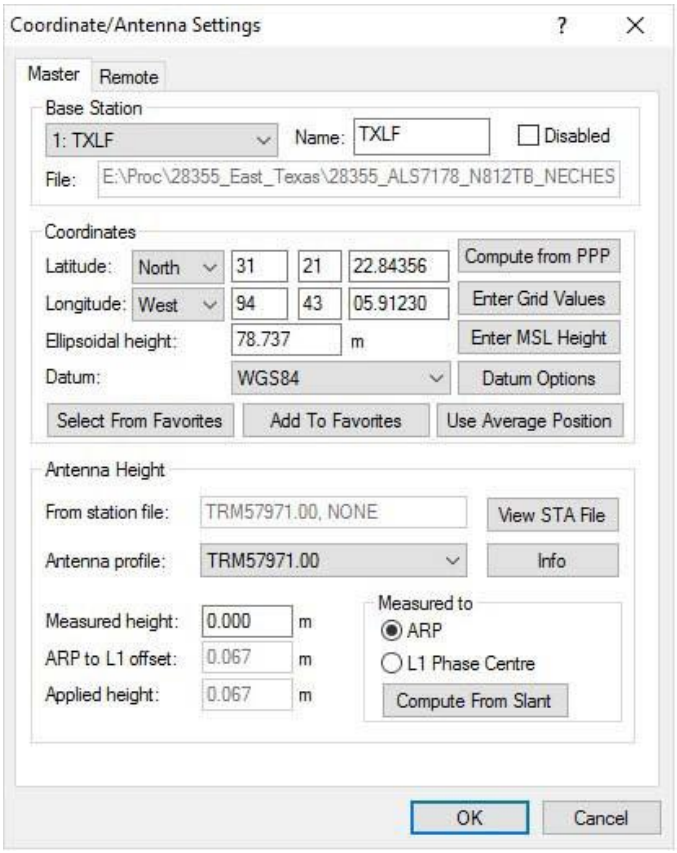

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
Roll
Pitch

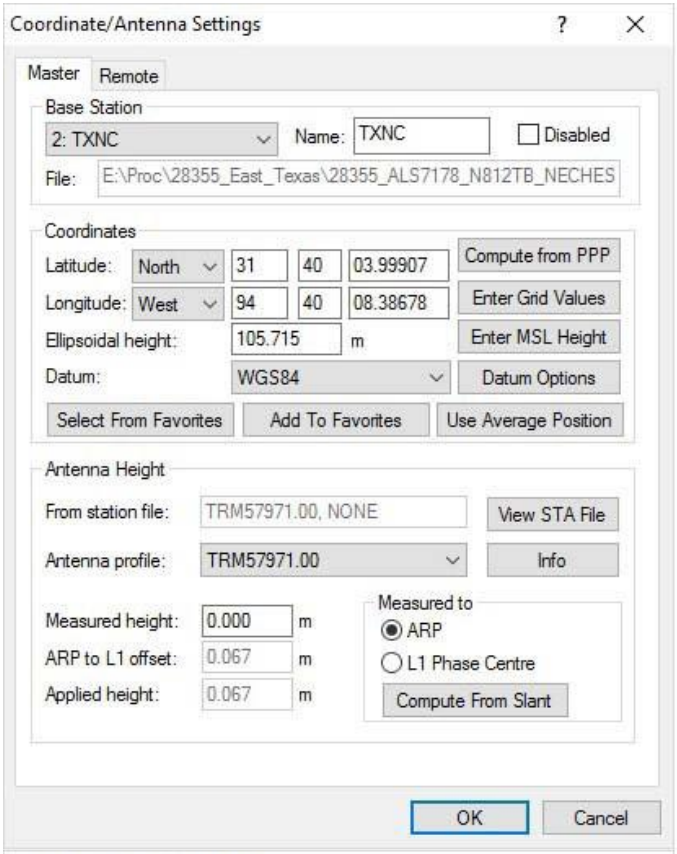

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
Height

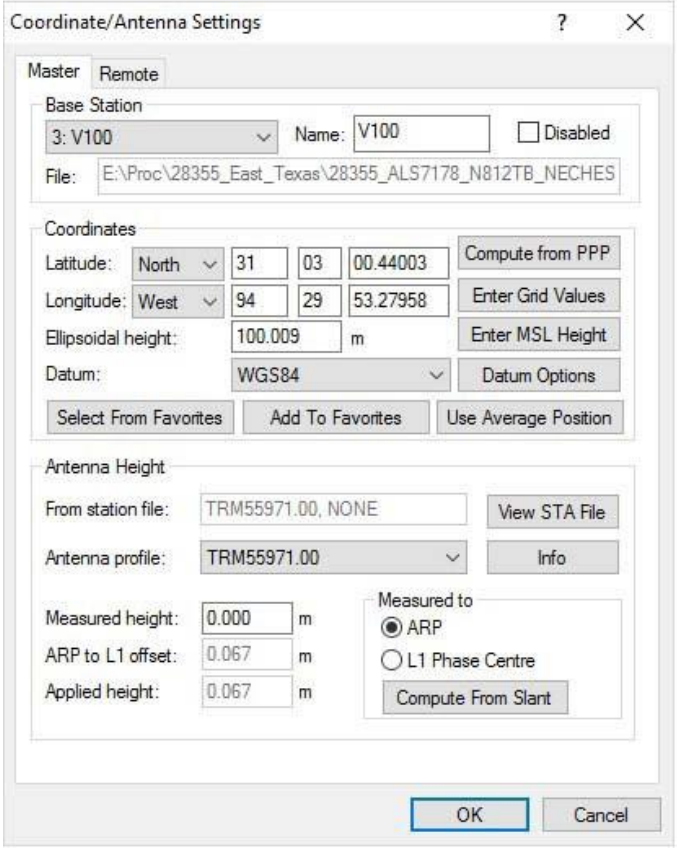

RMS (m)
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

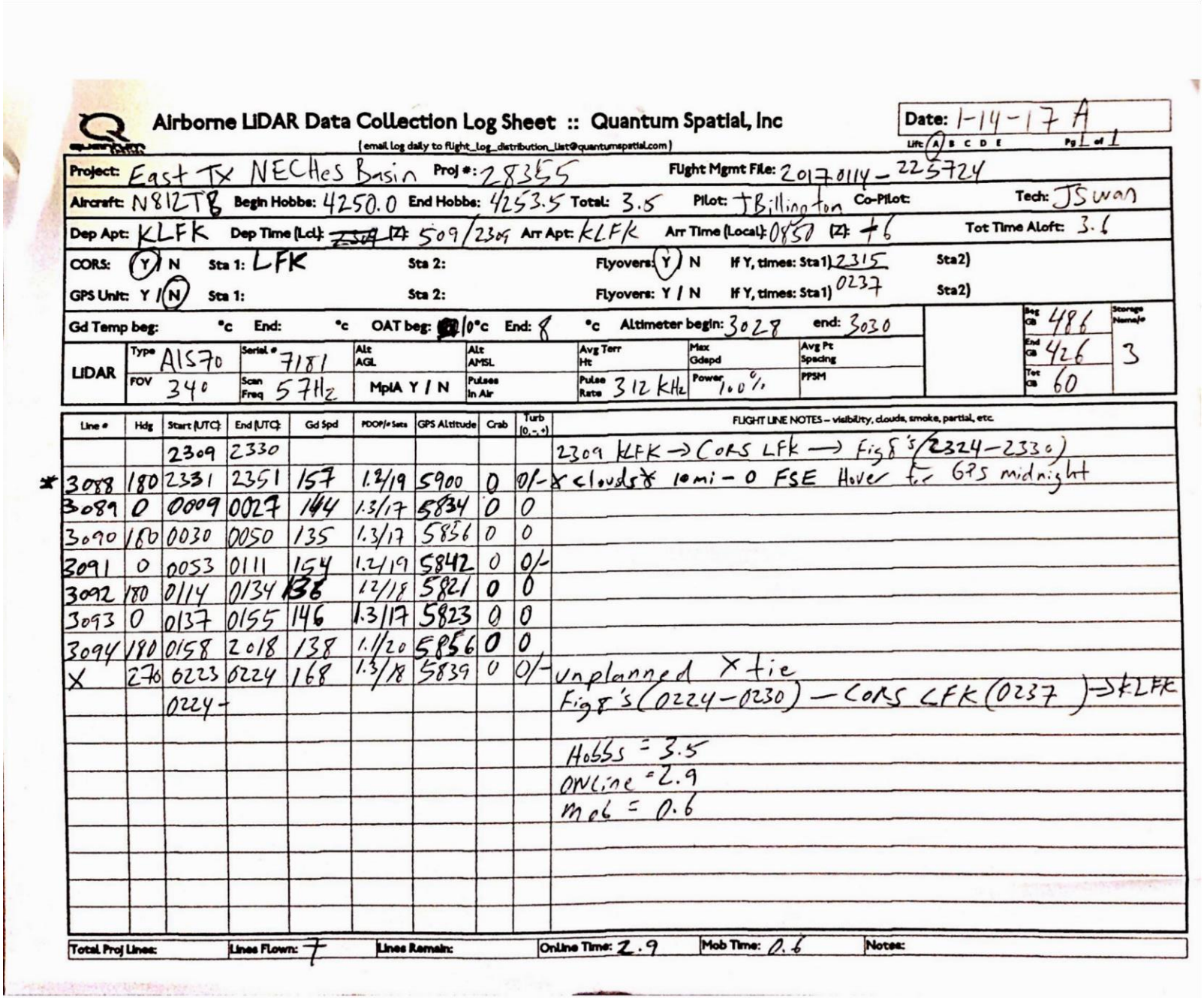

Status
2
1
0
-1
602000
Week 1931
603000
604000
200
Week 1932
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
11200
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLF
Name: TXLF
Disabled
File: E:\Proc\28355_East_Texas\28355_ALS7178_N812TB_NECHES
Coordinates
Latitude: North 31 21 22.84356
Longitude: West 94 43 05.91230
Ellipsoidal height: 78.737 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXNC
Name: TXNC
Disabled
File: E:\Proc\28355_East_Texas\28355_ALS7178_N812TB_NECHES
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V100
Name: V100
Disabled
File: E:\Proc\28355_East_Texas\28355_ALS7178_N812TB_NECHES
Coordinates
Latitude: North 31 03 00.44003
Longitude: West 94 29 53.27958
Ellipsoidal height: 100.009 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-14-17 A

(email Log daily to Flight_Log_distribution_List@quantumspatial.com)

Lift: A B C D E Pg 1 of 1

Project: East Tx NECHes Basin Proj #: 28355 Flight Mgmt File: 20170114 - 225724

Aircraft: N812TB Begin Hobbs: 4250.0 End Hobbs: 4253.5 Total: 3.5 Pilot: JBillington Co-Pilot: Tech: JSwan

Dep Apt: KLFK Dep Time (Lcl): ~~2304~~ (Z): 509/2309 Arr Apt: KLFK Arr Time (Local): 0850 (Z): +6 Tot Time Aloft: 3.6

CORS: (Y) / N Sta 1: LFK Sta 2: Flyovers: (Y) / N If Y, times: Sta1) 2315 Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) 0237 Sta2)

Gd Temp beg: °c End: °c OAT beg: [redacted]/0°c End: 8 °c Altimeter begin: 3028 end: 3030

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	Al570	7181					
	FOV 340	Scan Freq 57Hz	MpIA Y / N	Pulses In Air	Pulse Rate 312 kHz	Power 100%	PPSM

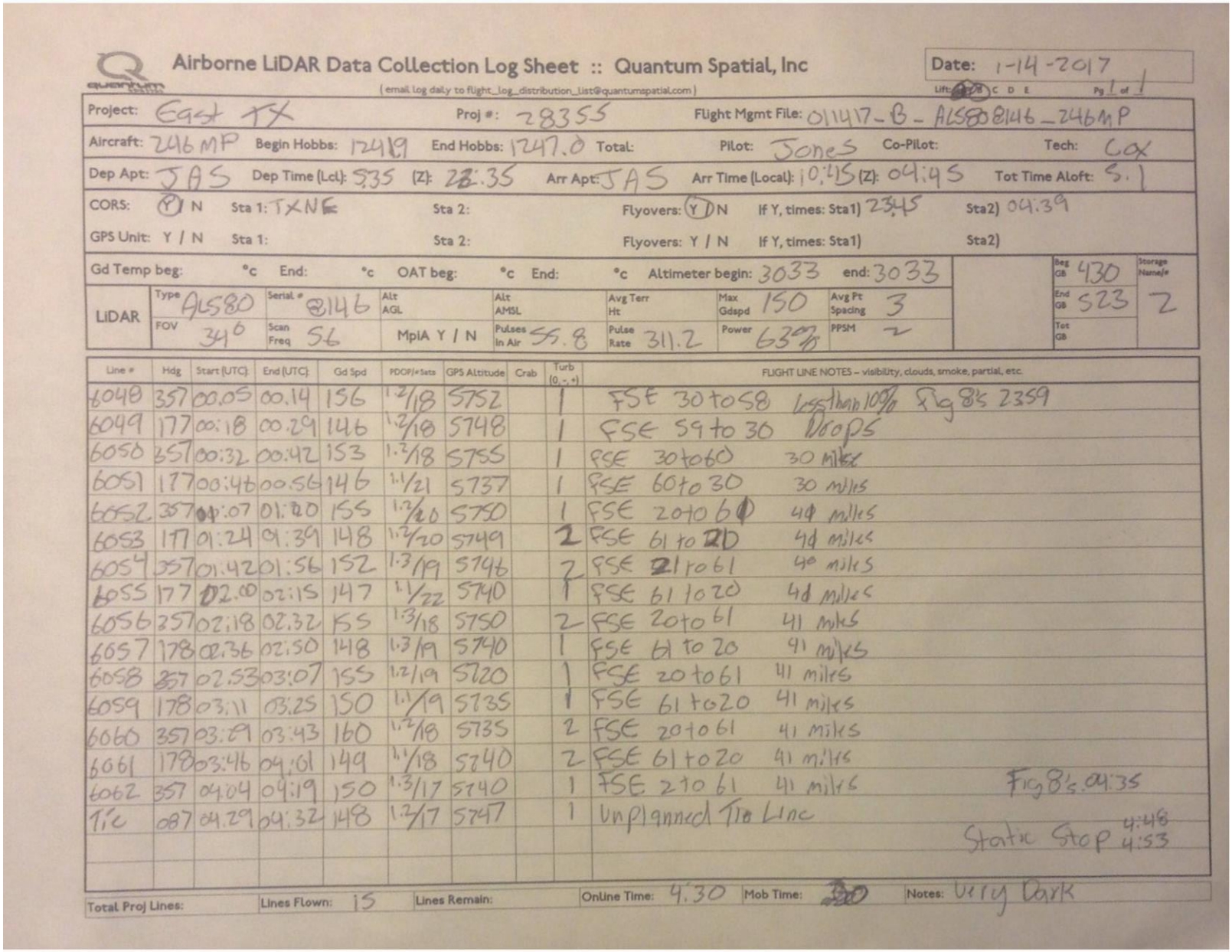
Beg GB	End GB	Tot GB	Storage Name/#
486	426	60	3

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		2309	2330						2309 KLFK → CORS LFK → Fig 8's (2324-2330)
* 3088	180	2331	2351	157	1.2/19	5900	0	0/-	* clouds * 10mi - 0 FSE Hover f.r GPS midnight
3089	0	0009	0027	144	1.3/17	5834	0	0	
3090	180	0030	0050	135	1.3/17	5836	0	0	
3091	0	0053	0111	154	1.2/19	5842	0	0/-	
3092	180	0114	0134	136	1.2/18	5821	0	0	
3093	0	0137	0155	146	1.3/17	5823	0	0	
3094	180	0158	2018	138	1.1/20	5856	0	0	
X	276	0223	0224	168	1.3/18	5839	0	0/-	Unplanned X tie
		0224-							Fig 8's (0224-0230) – CORS LFK (0237) → KLFK
									Hobbs = 3.5
									OnLine = 2.9
									Mob = 0.6

Total Proj Lines:	Lines Flown: 7	Lines Remain:	On-line Time: 2.9	Mob Time: 0.6	Notes:

Jan 14, 2017-B (N246MP, SN8146)

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-14-2017 Lift: A B C D E Pg 1 of 1

Project: East TX Proj #: 28355 Flight Mgmt File: 011417-B-ALS80 8146_246MP

Aircraft: 246MP Begin Hobbs: 1241.9 End Hobbs: 1247.0 Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: JAS Dep Time (Lcl): 5:35 (Z): 23:35 Arr Apt: JAS Arr Time (Local): 10:45 (Z): 04:45 Tot Time Aloft: 5.1

CORS: (Y) N Sta 1: TXNE Sta 2: Flyovers: (Y) N If Y, times: Sta1) 23:45 Sta2) 04:39

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

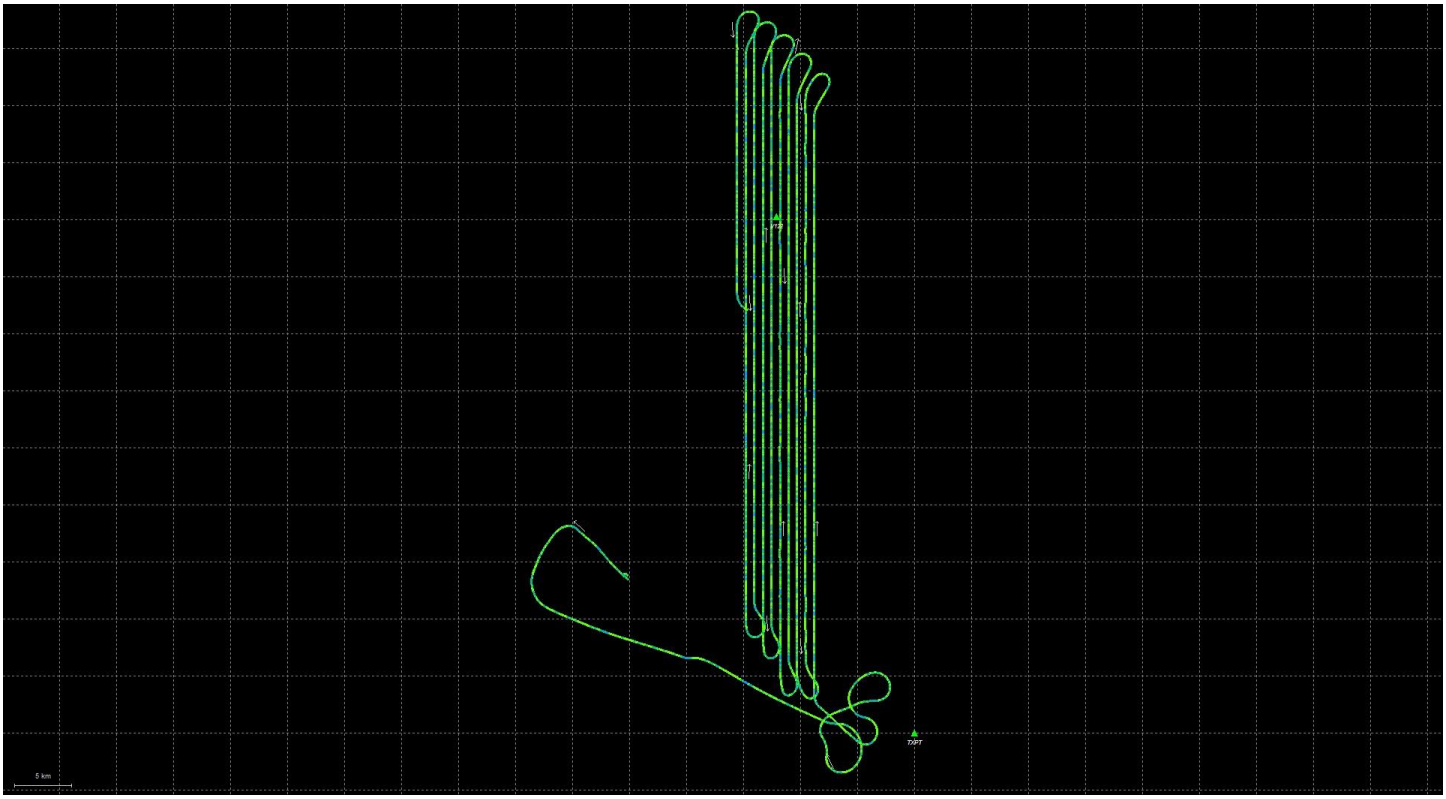
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 3033 end: 3033

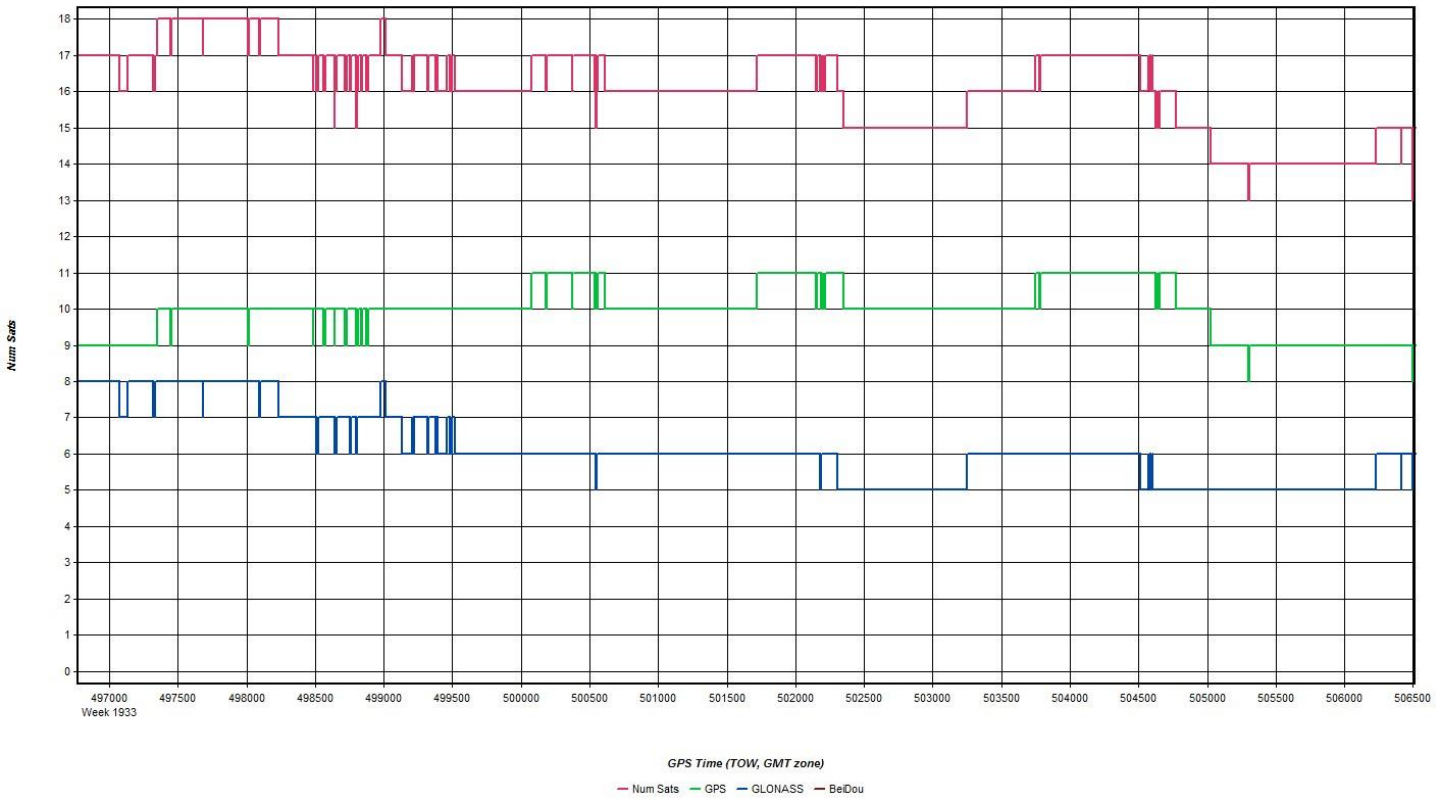
LiDAR	Type ALS80	Serial # 8146	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd 150	Avg Pt Spacing 3	Beg GB 430	Storage Name/# 2
	FOV 34°	Scan Freq 56	MpiA Y / N	Pulses In Air 55.8	Pulse Rate 311.2	Power 63%	PPSM 2	End GB 523	
								Tot GB	

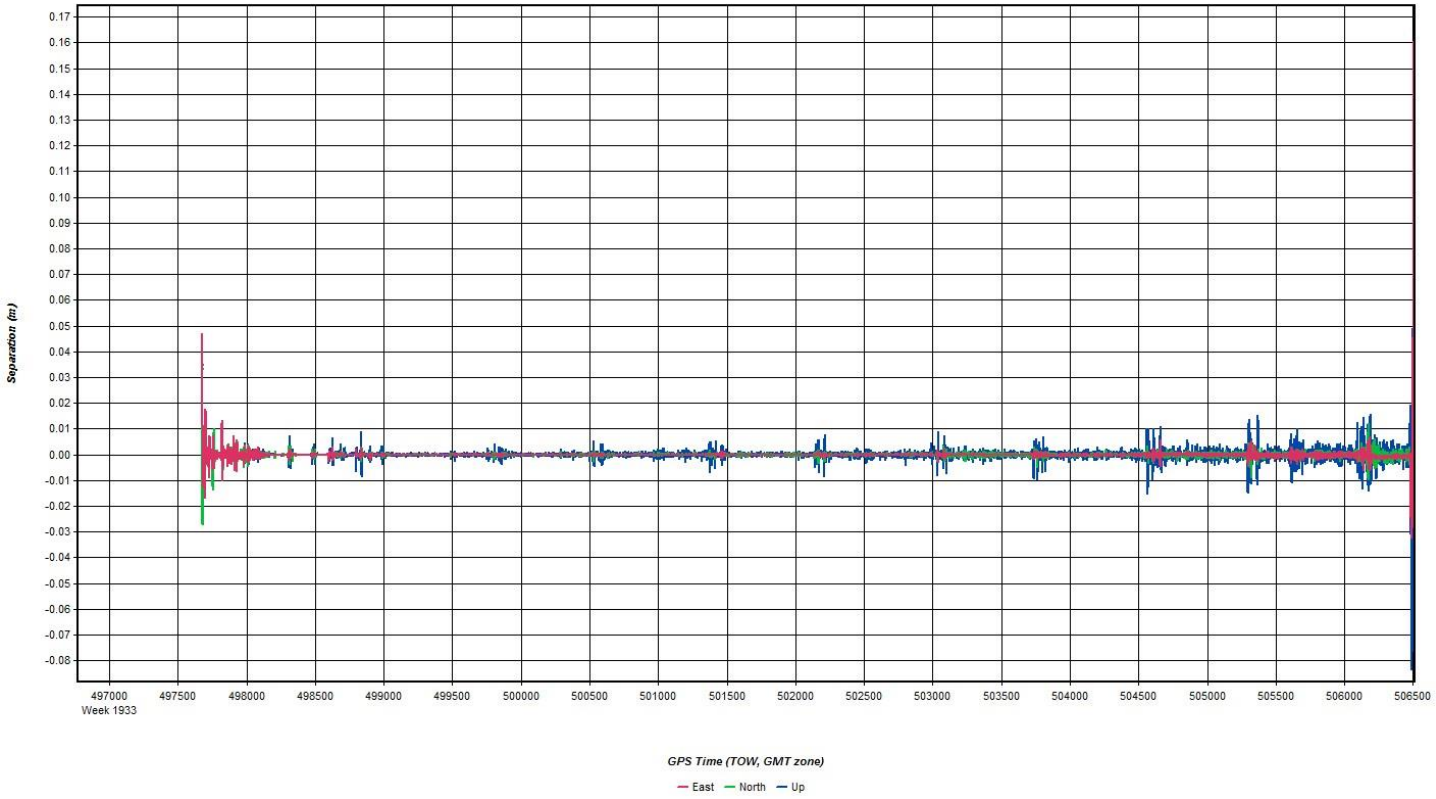
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6048	357	00:05	00:14	156	1.2/18	5752		1	FSE 30 to 58 Less than 10% Fig 8's 2359
6049	177	00:18	00:29	146	1.2/18	5748		1	FSE 59 to 30 Drops
6050	357	00:32	00:42	153	1.3/18	5755		1	FSE 30 to 60 30 miles
6051	177	00:46	00:56	146	1.1/21	5737		1	FSE 60 to 30 30 miles
6052	357	01:07	01:20	155	1.2/20	5750		1	FSE 20 to 60 40 miles
6053	177	01:24	01:39	148	1.2/20	5749		2	FSE 61 to 20 41 miles
6054	357	01:42	01:56	152	1.3/19	5746		2	FSE 21 to 61 40 miles
6055	177	02:00	02:15	147	1.1/22	5740		1	FSE 61 to 20 41 miles
6056	357	02:18	02:32	155	1.3/18	5750		2	FSE 20 to 61 41 miles
6057	178	02:36	02:50	148	1.3/19	5740		1	FSE 61 to 20 41 miles
6058	357	02:53	03:07	155	1.2/19	5720		1	FSE 20 to 61 41 miles
6059	178	03:11	03:25	150	1.1/19	5735		1	FSE 61 to 20 41 miles
6060	357	03:29	03:43	160	1.2/18	5735		2	FSE 20 to 61 41 miles
6061	178	03:46	04:01	149	1.1/18	5740		2	FSE 61 to 20 41 miles
6062	357	04:04	04:19	150	1.3/17	5740		1	FSE 20 to 61 41 miles Fig 8's 04:35
T/C	087	04:29	04:32	148	1.2/17	5747		1	Unplanned T/O Line Static Stop 4:48 4:53

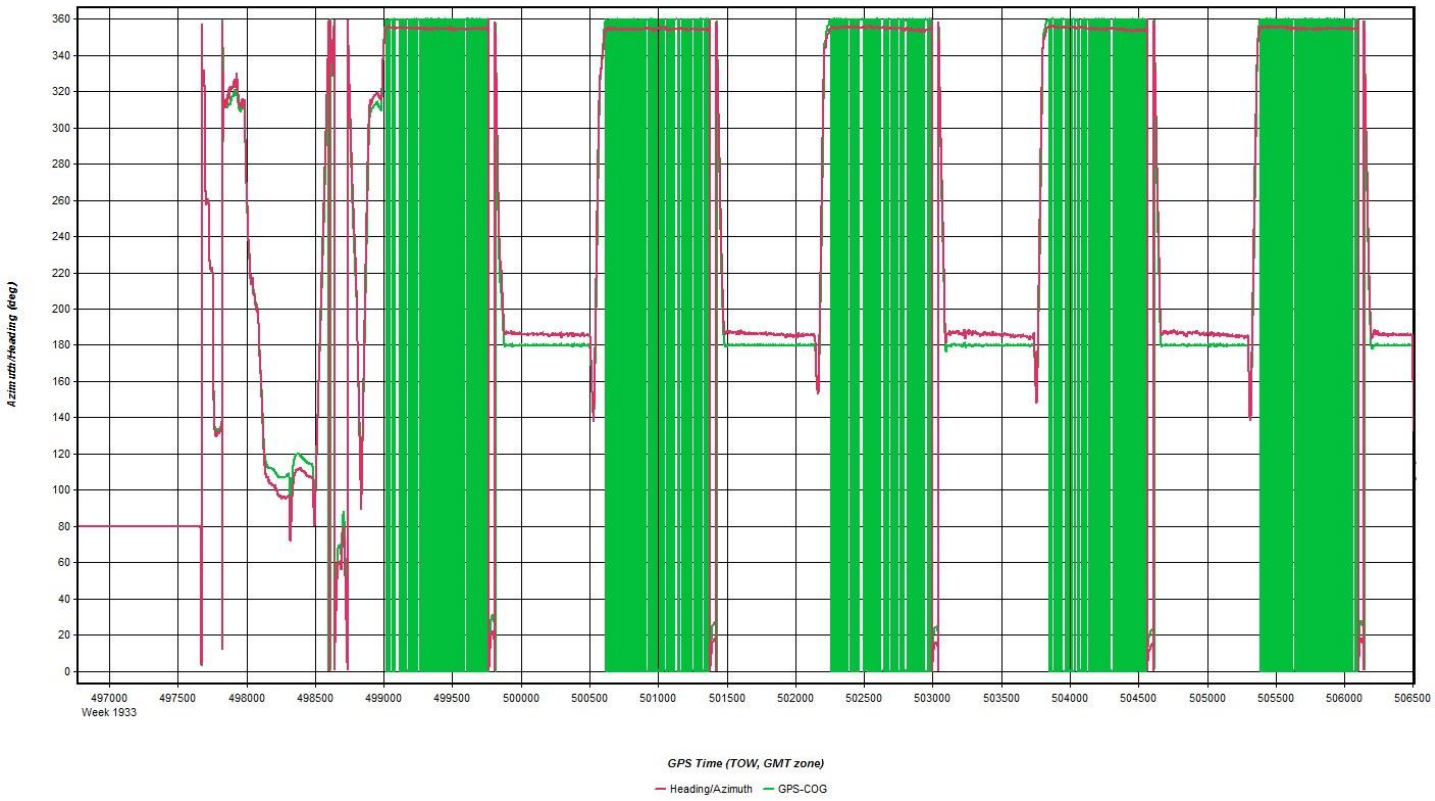
Total Proj Lines: Lines Flown: 15 Lines Remain: Online Time: 4:30 Mob Time: 3:30 Notes: Very Dark

Jan 27, 2017-A (N208NR, SN8239)

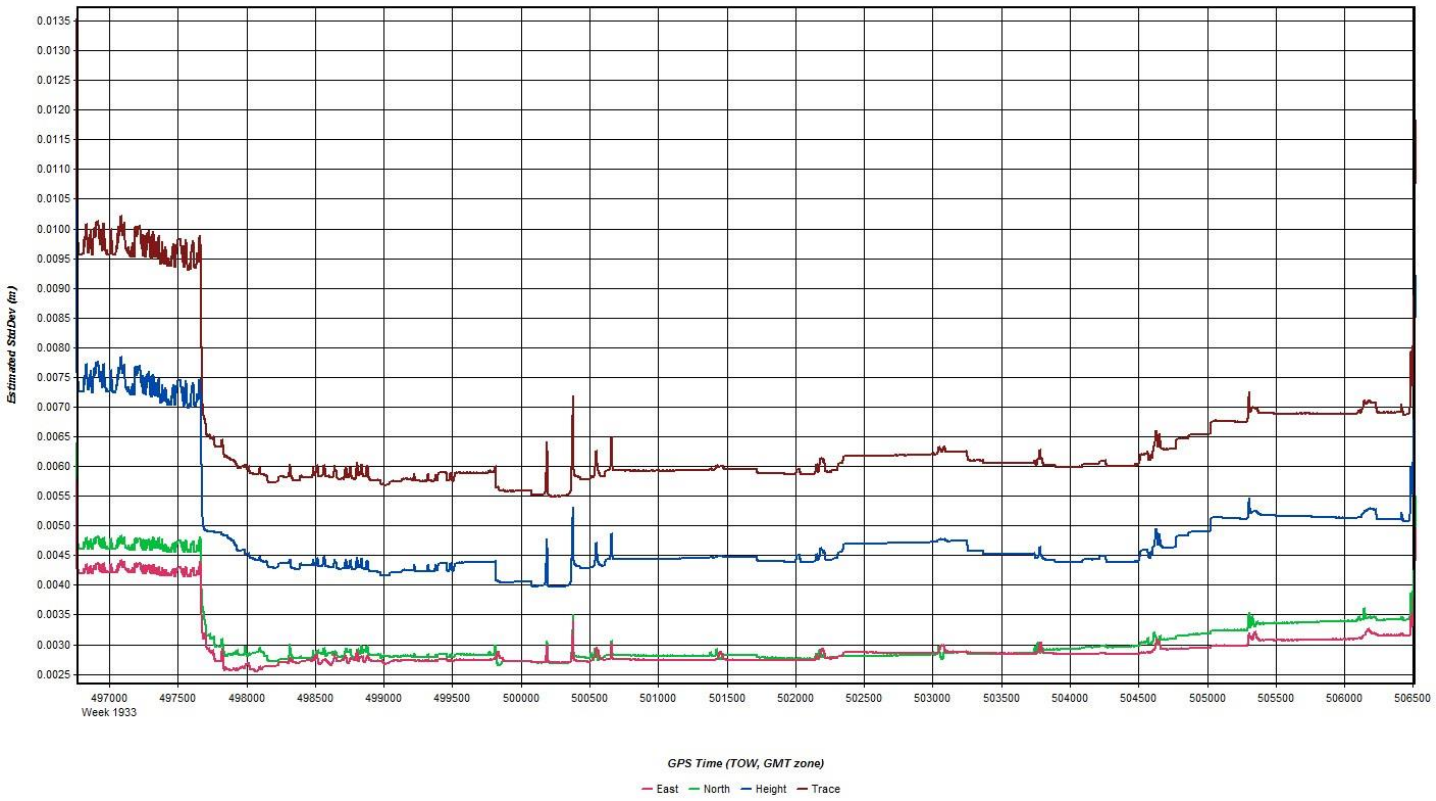


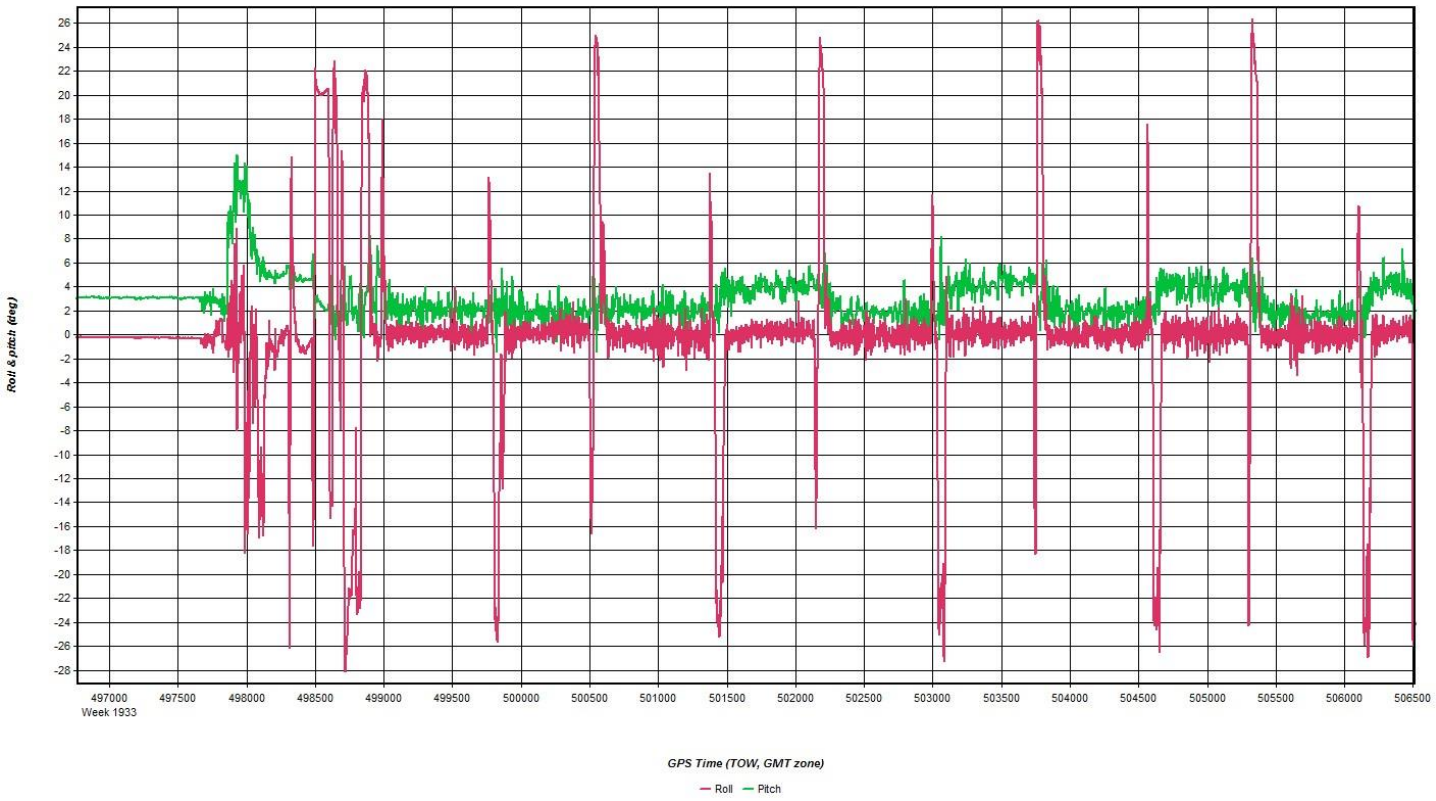

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

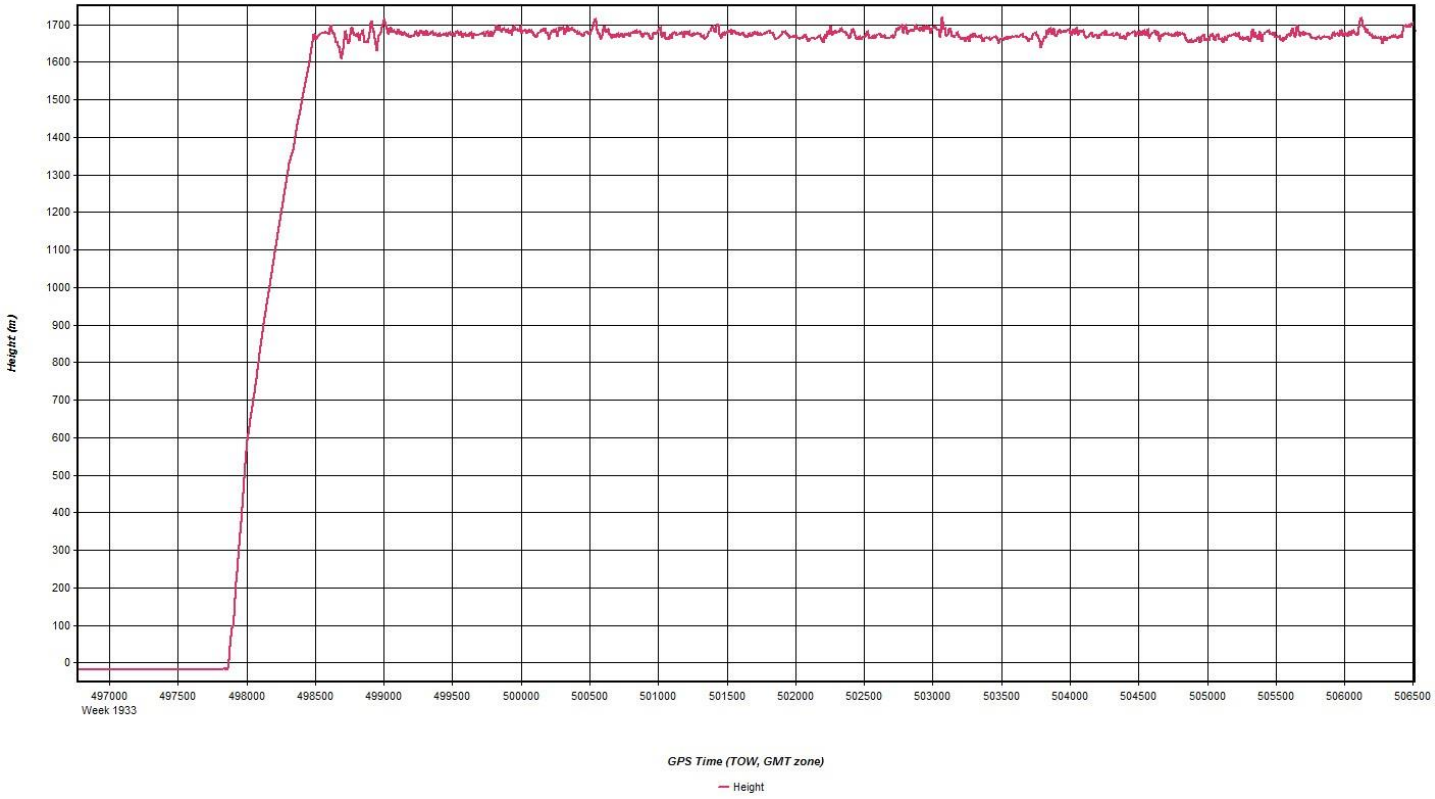

Separation (m)
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
East
North
Up

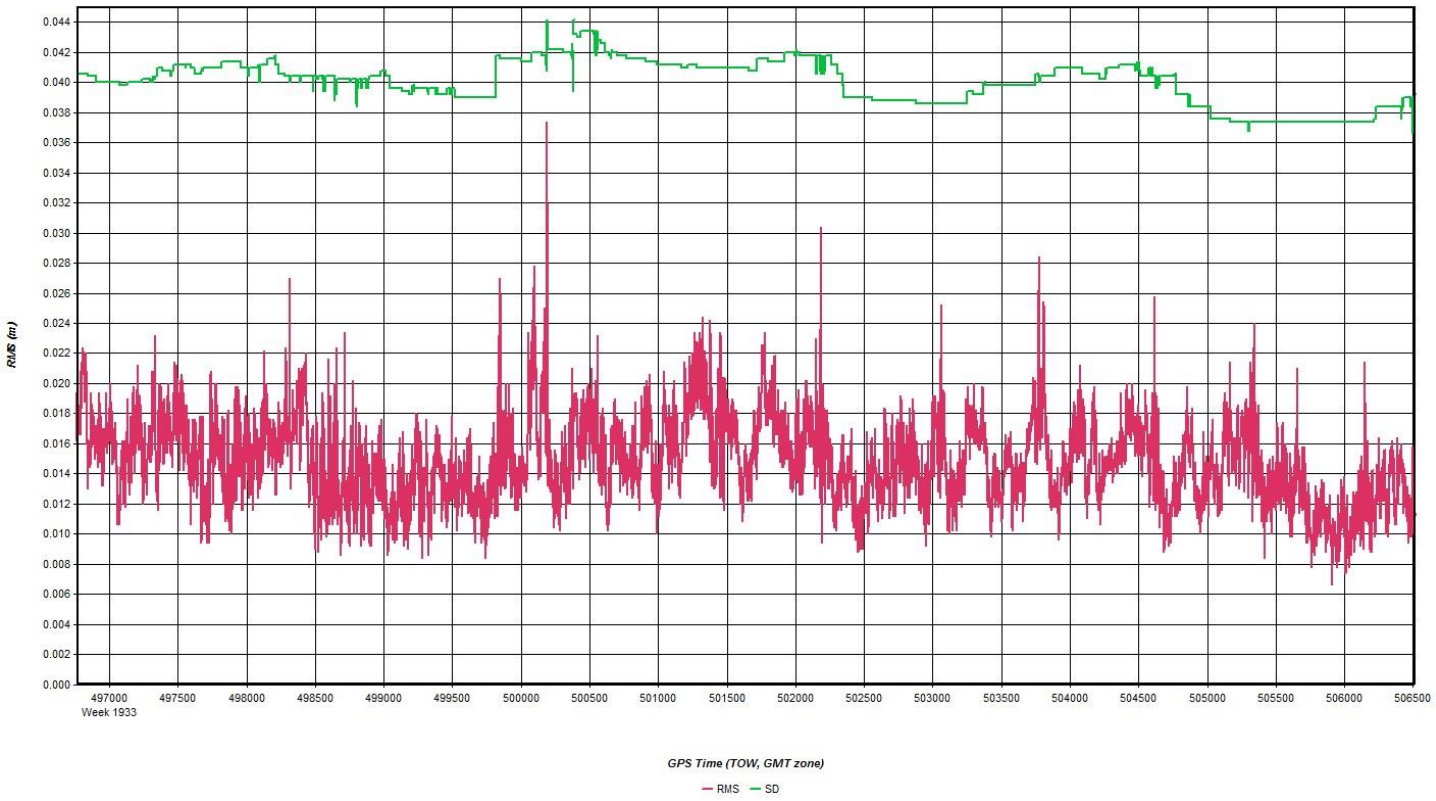

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

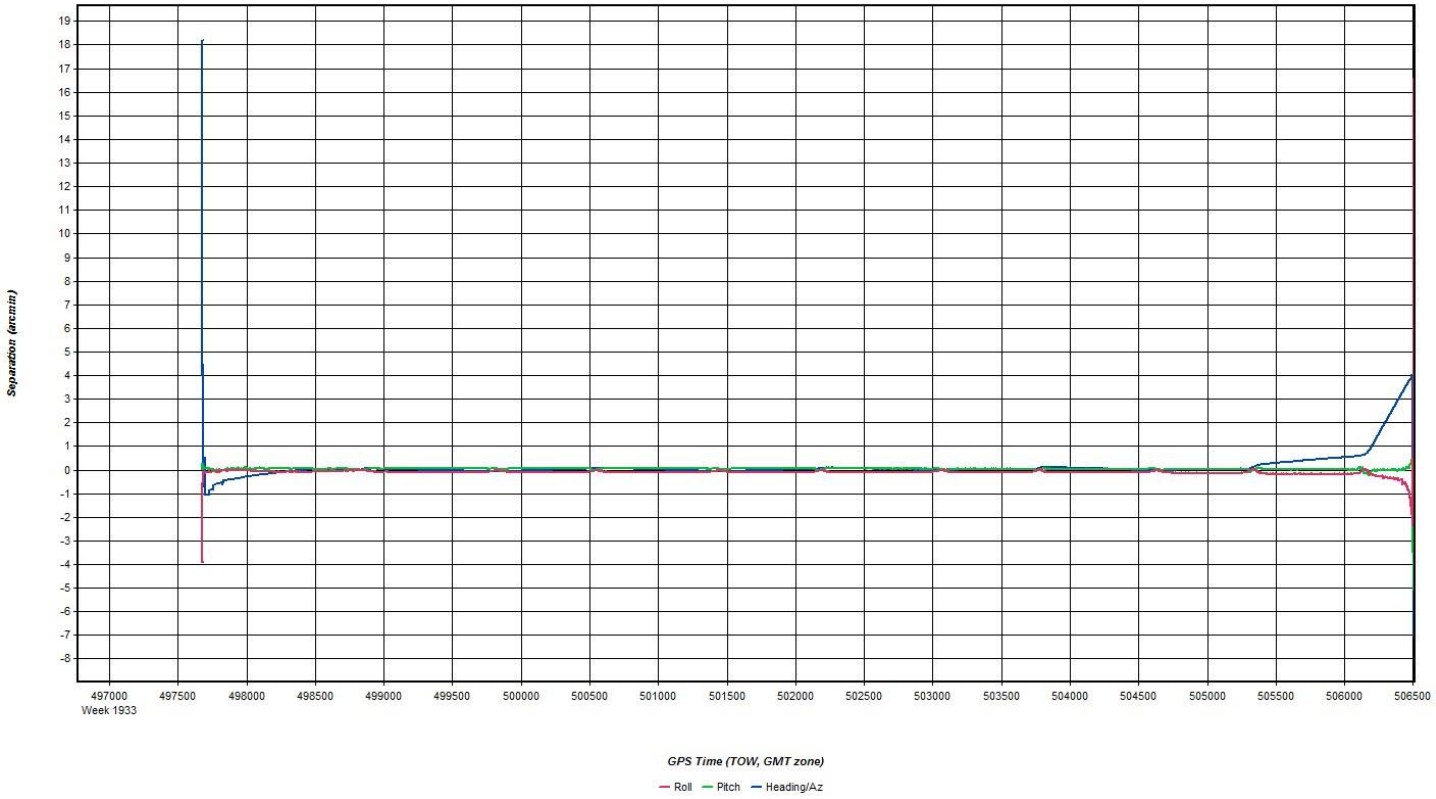

PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
PDOP

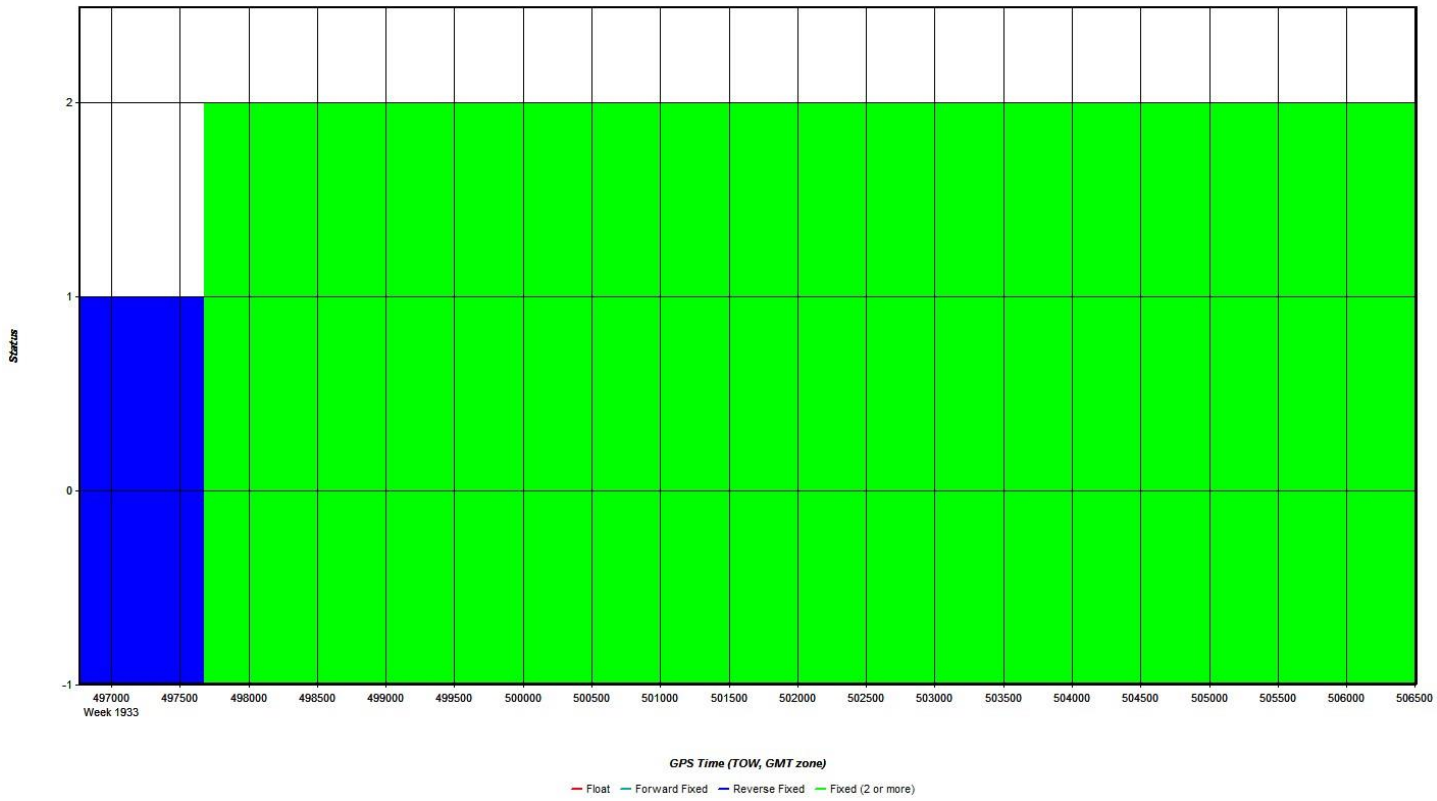

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

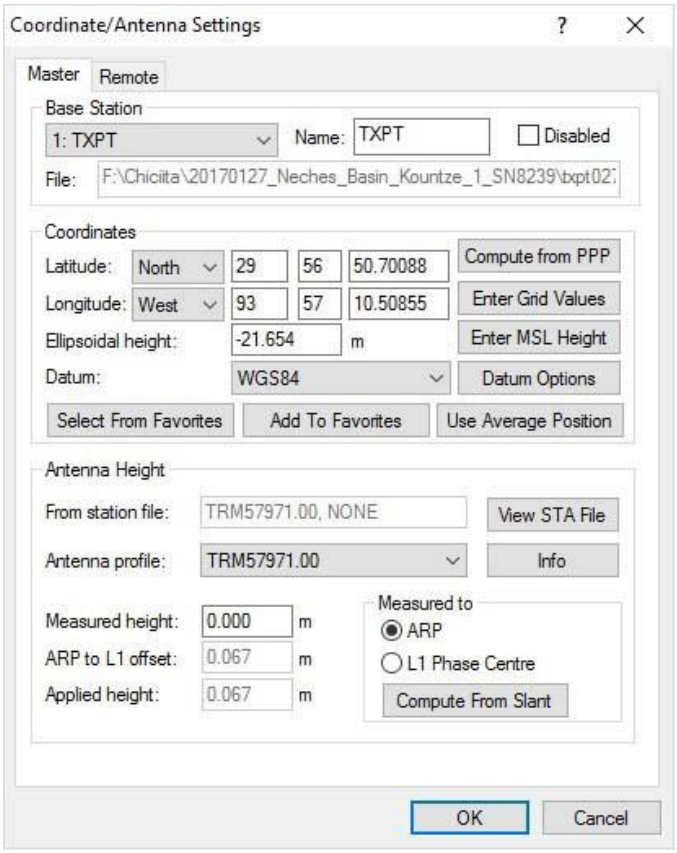

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
Roll
Pitch

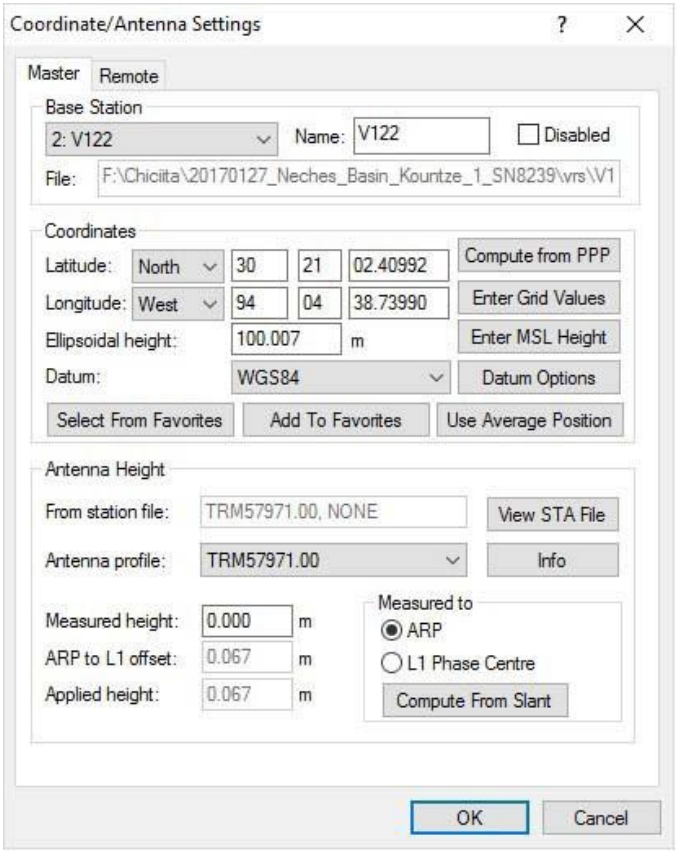

Height (m)
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
RMS
SD

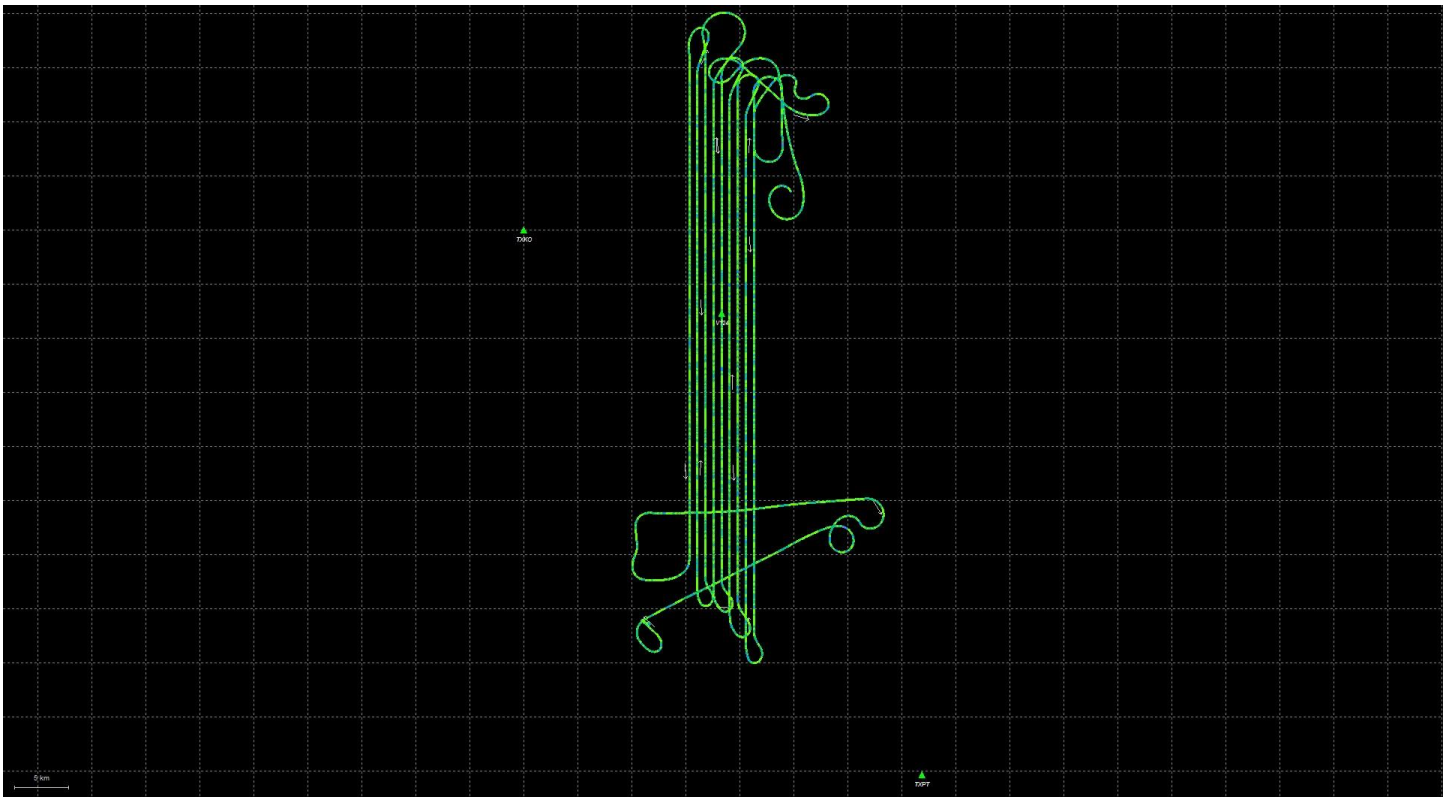

Separation (arcmin)
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

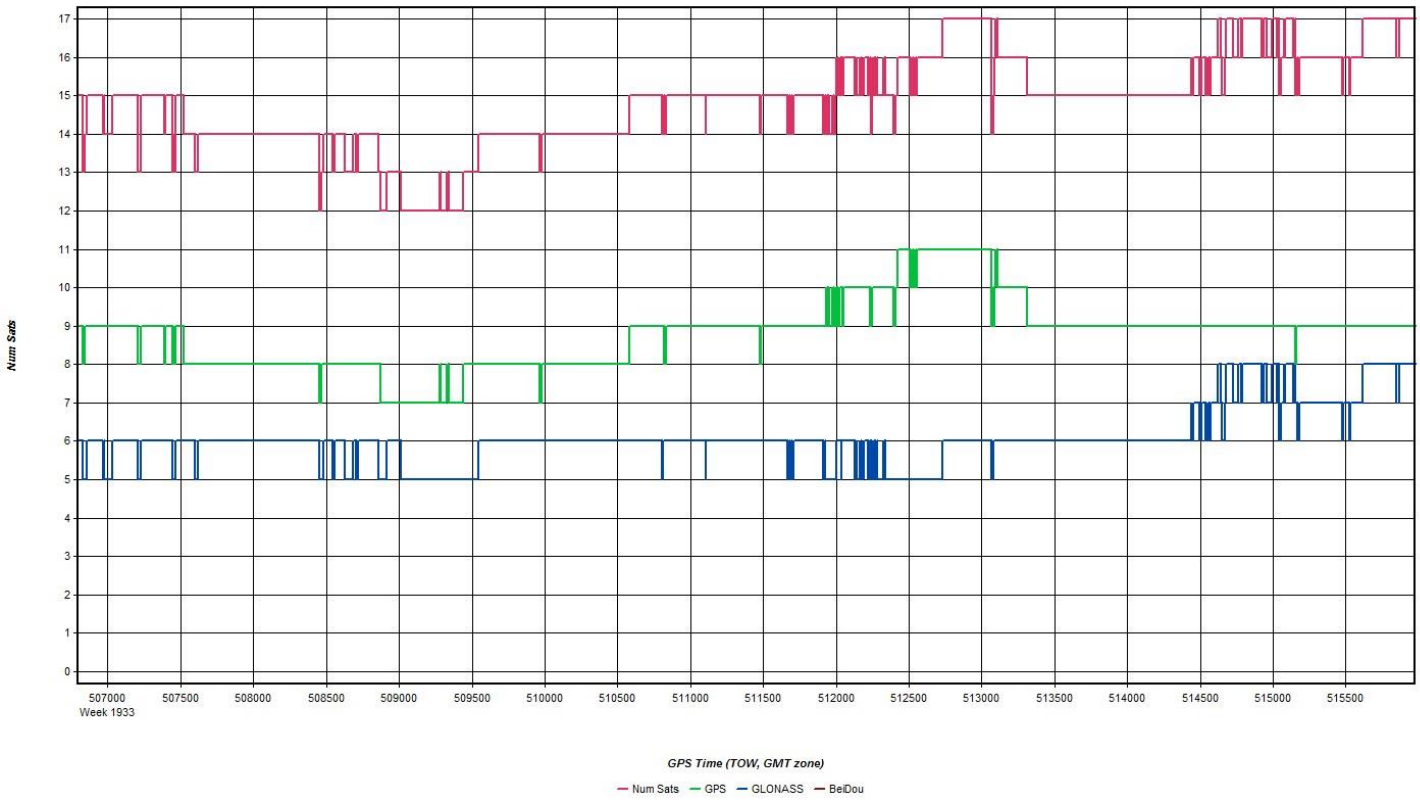

Status
2
1
0
-1
497000
Week 1933
497500
498000
498500
499000
499500
500000
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

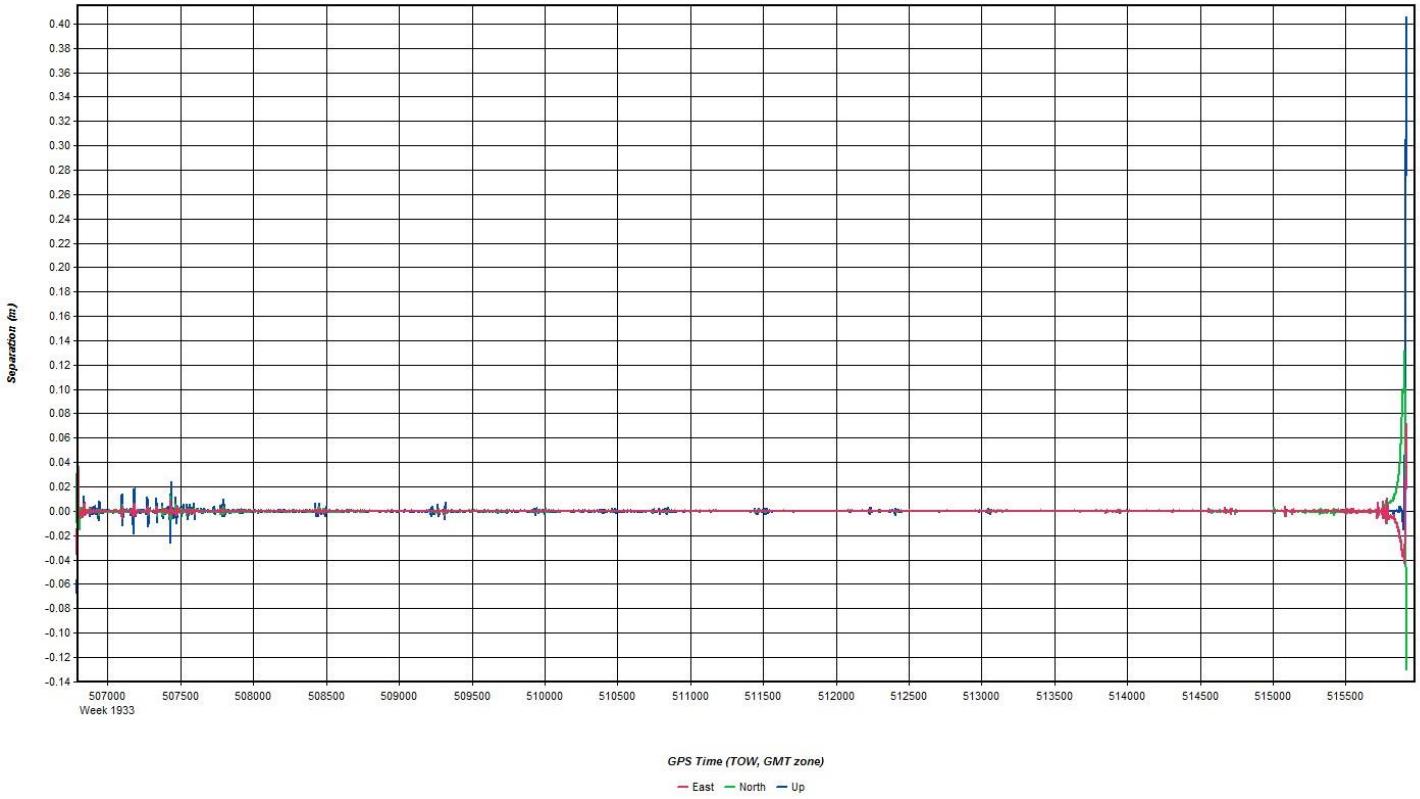

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name:
TXPT
Disabled
File:
F:\Chicita\20170127_Neches_Basin_Kountze_1_SN8239\txpt02
Coordinates
Latitude:
North
29
56
50.70088
Compute from PPP
Longitude:
West
93
57
10.50855
Enter Grid Values
Ellipsoidal height:
-21.654
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

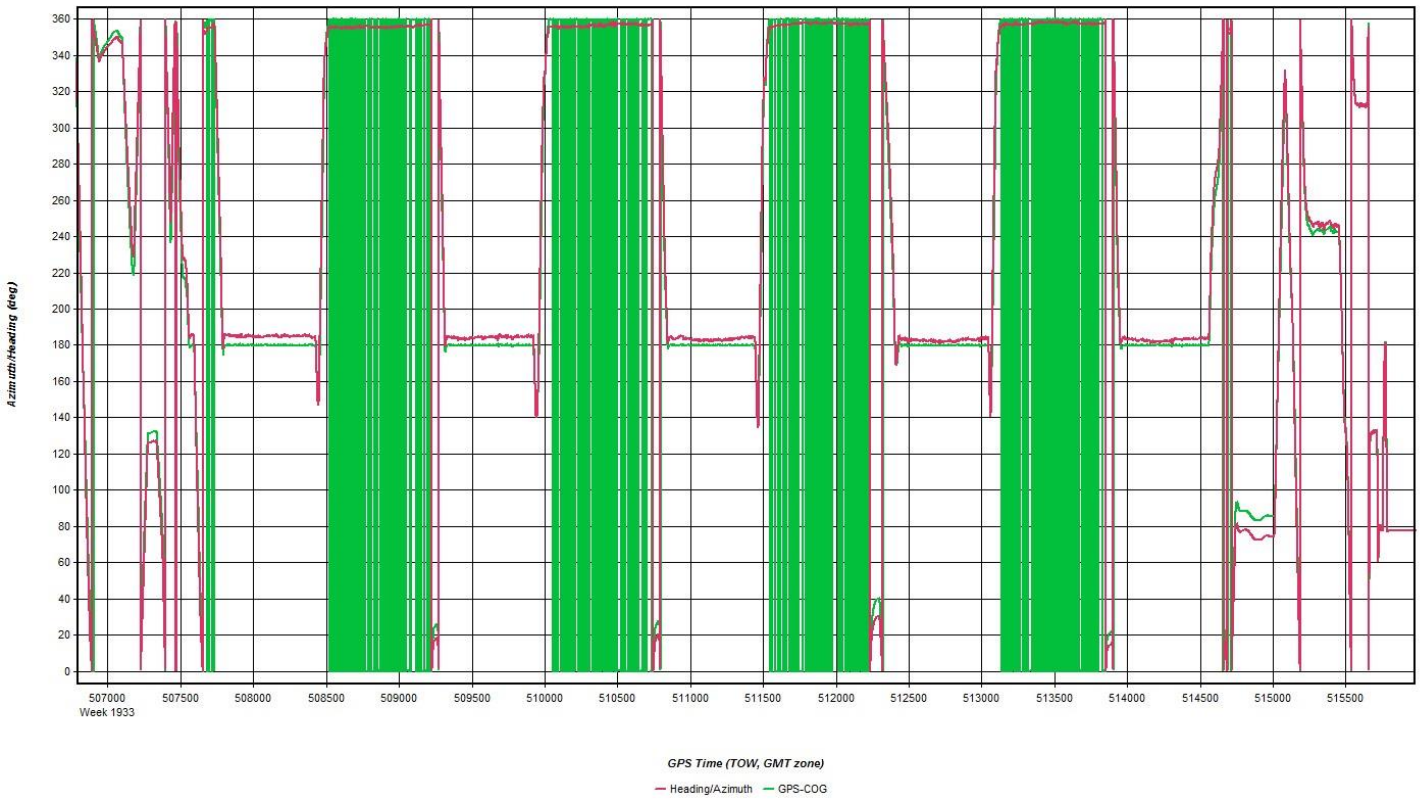


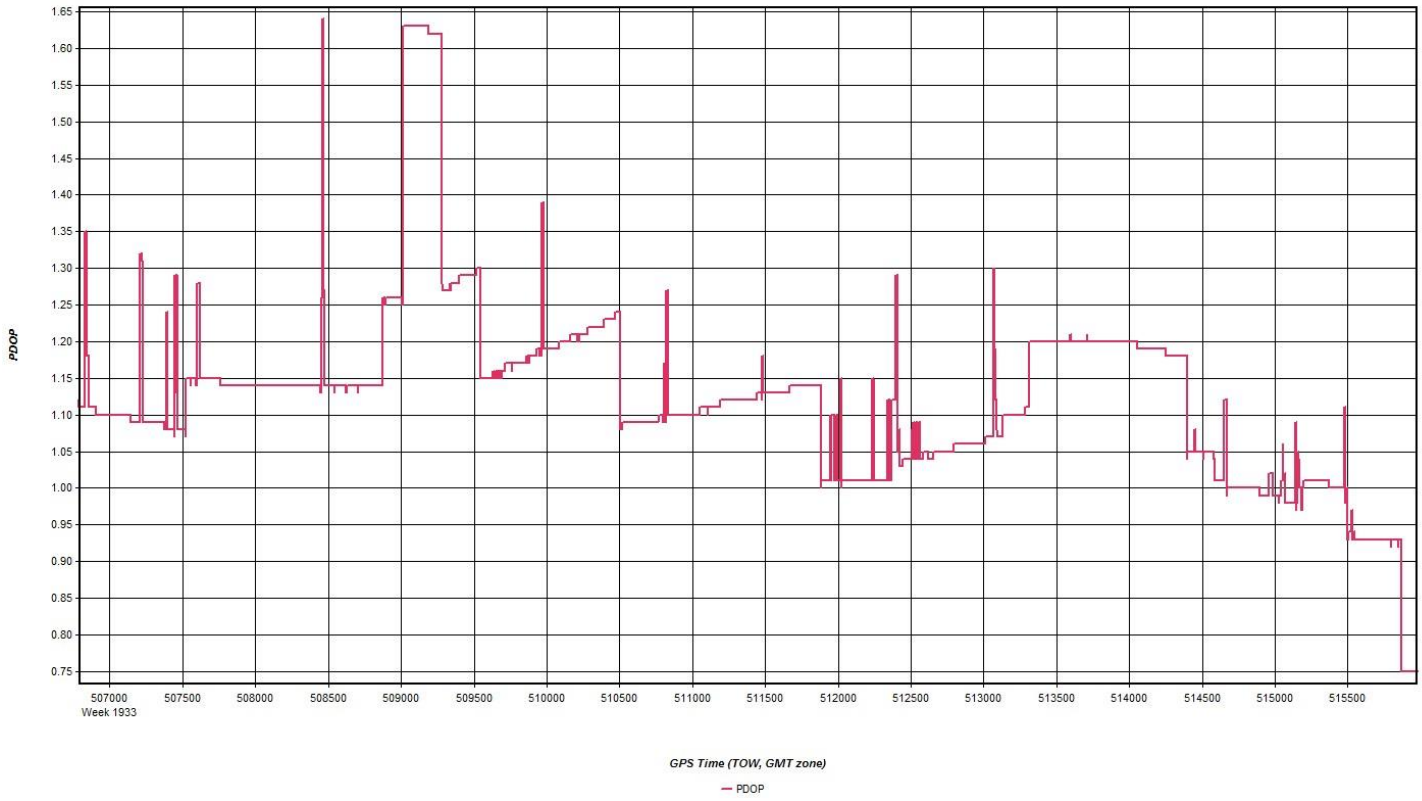
Jan 27, 2017-B (N208NR, SN8239)

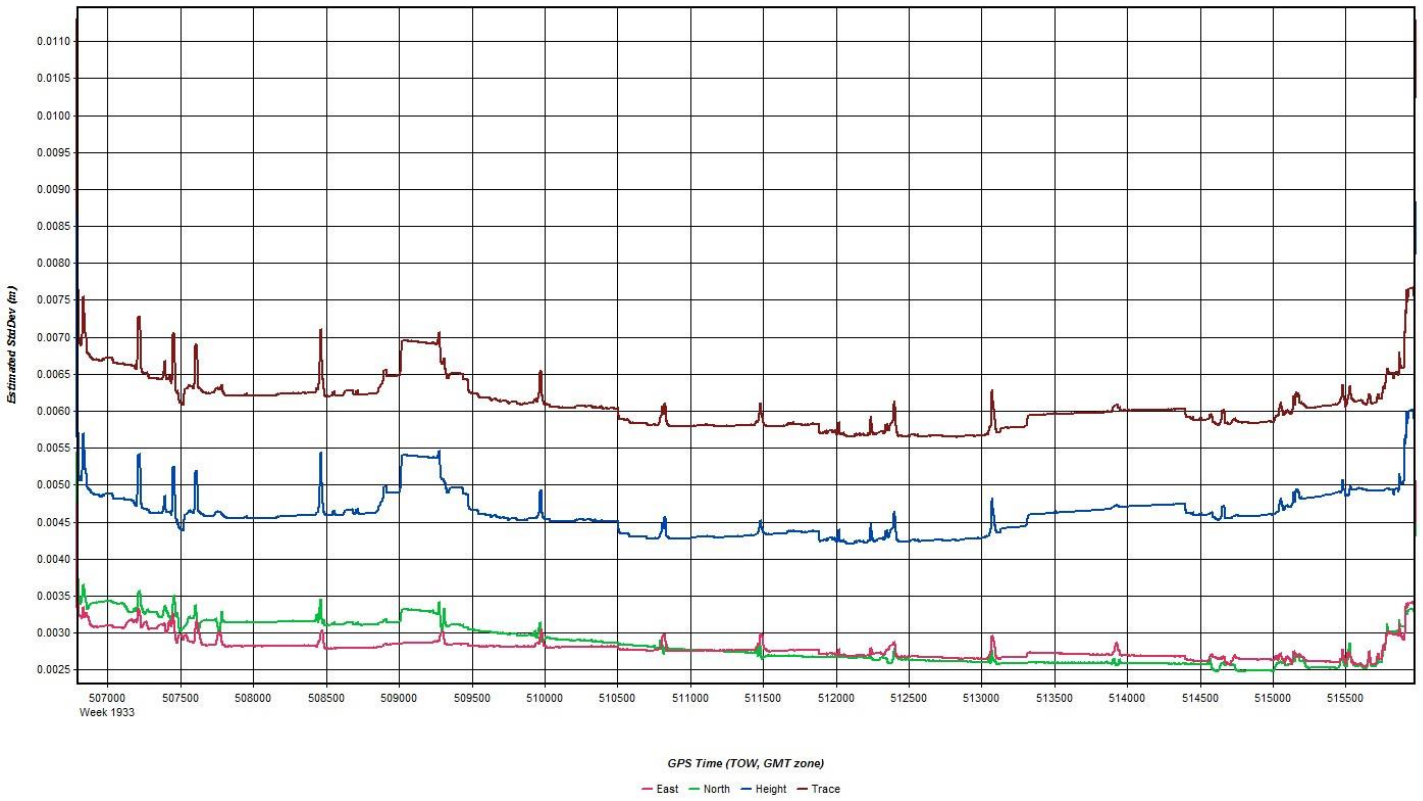



Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

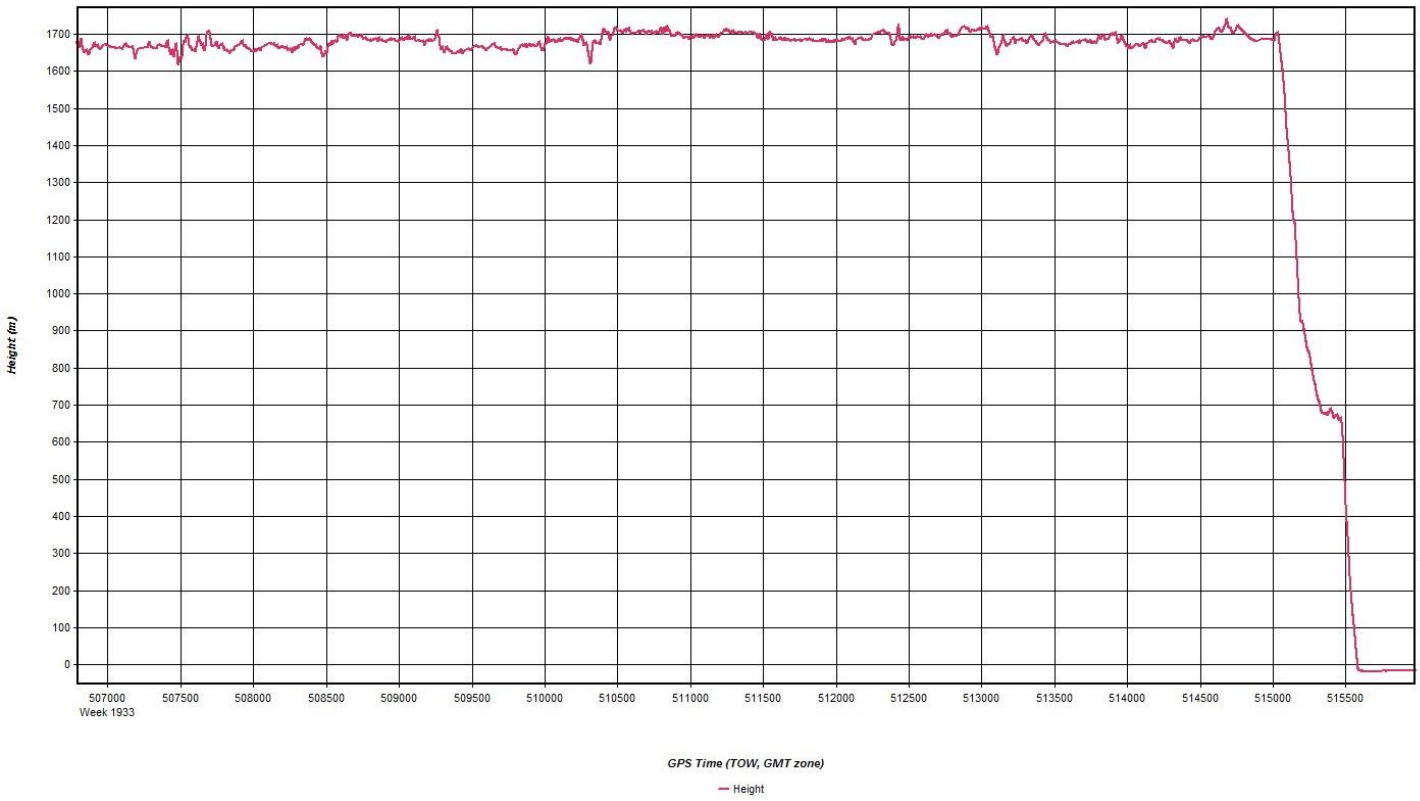

Separation (m)
0.40
0.38
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
East
North
Up

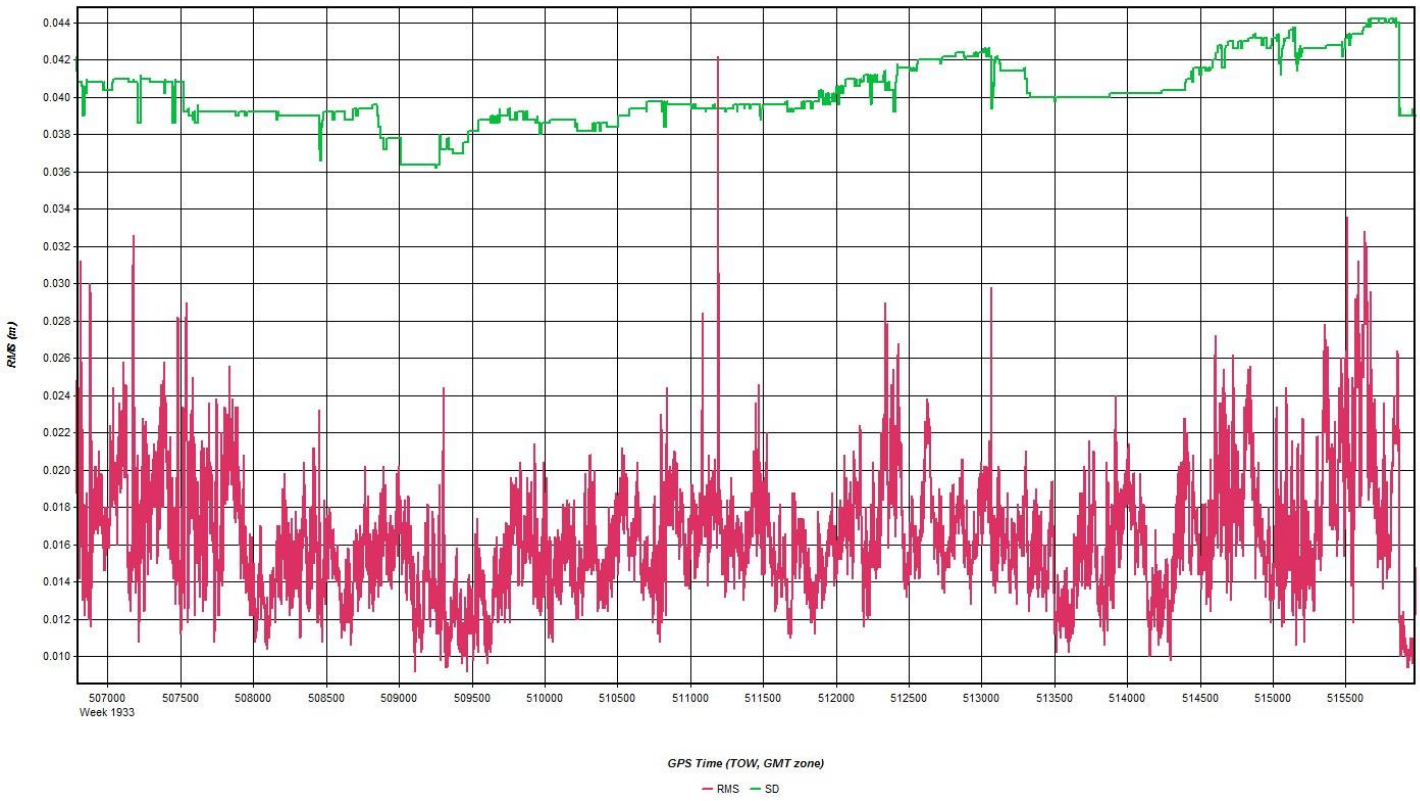

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

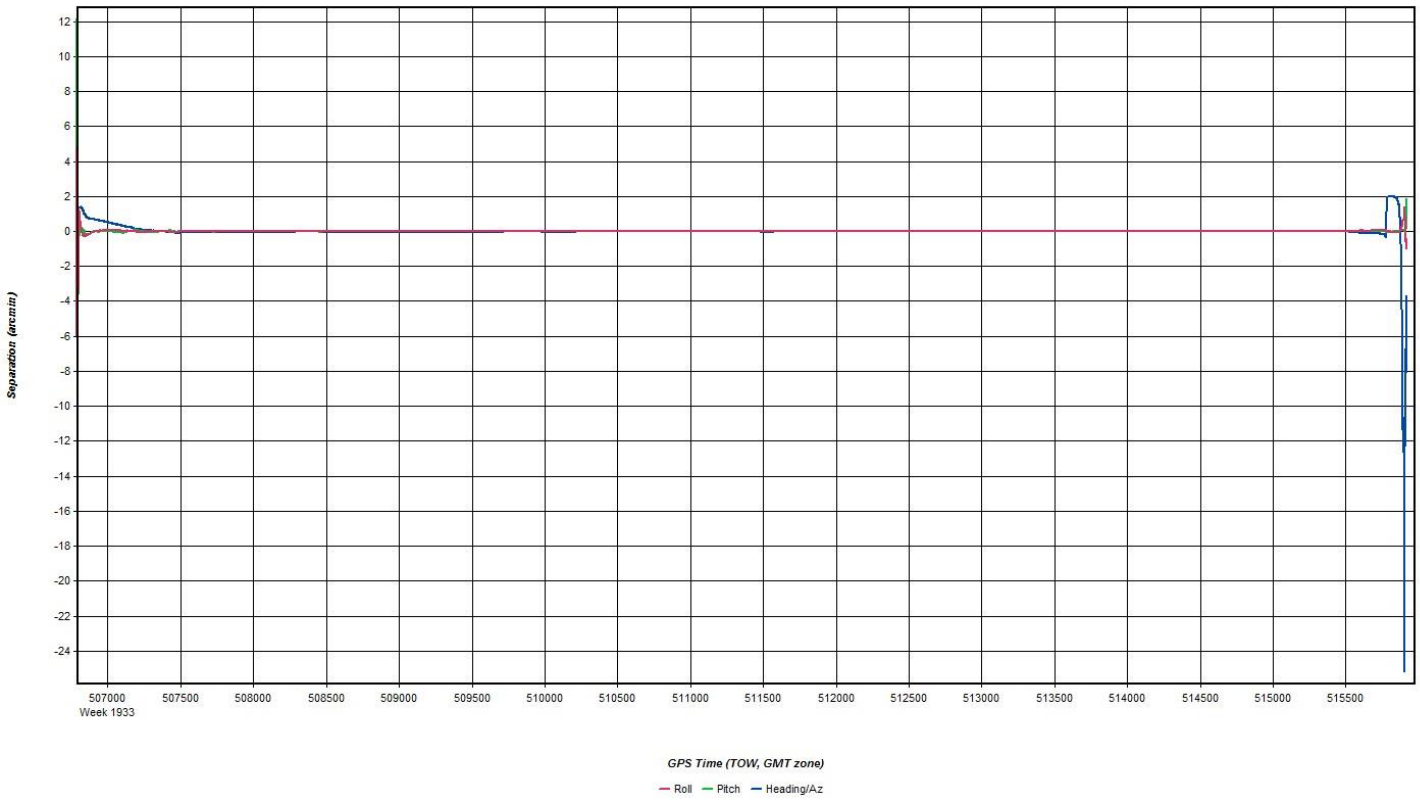

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
PDOP

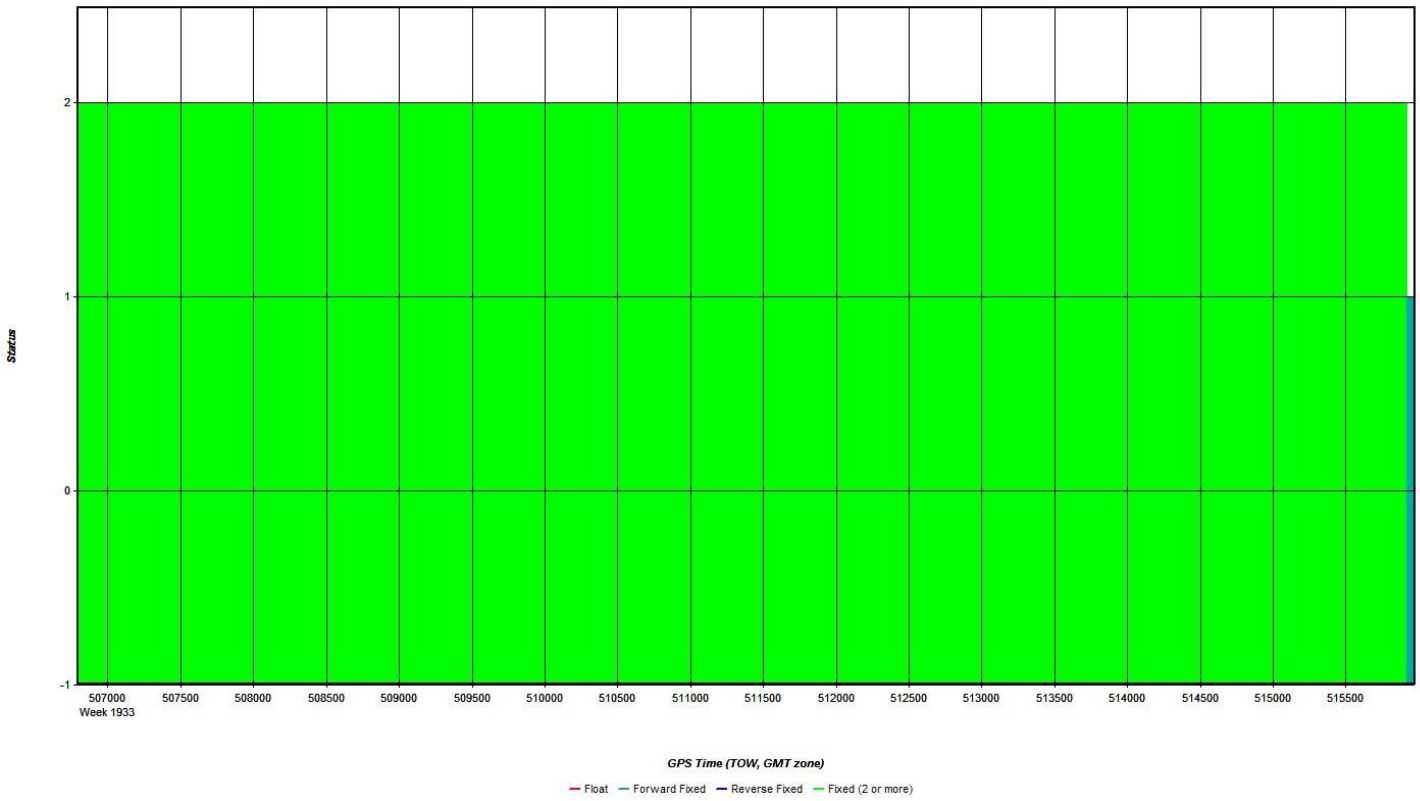

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

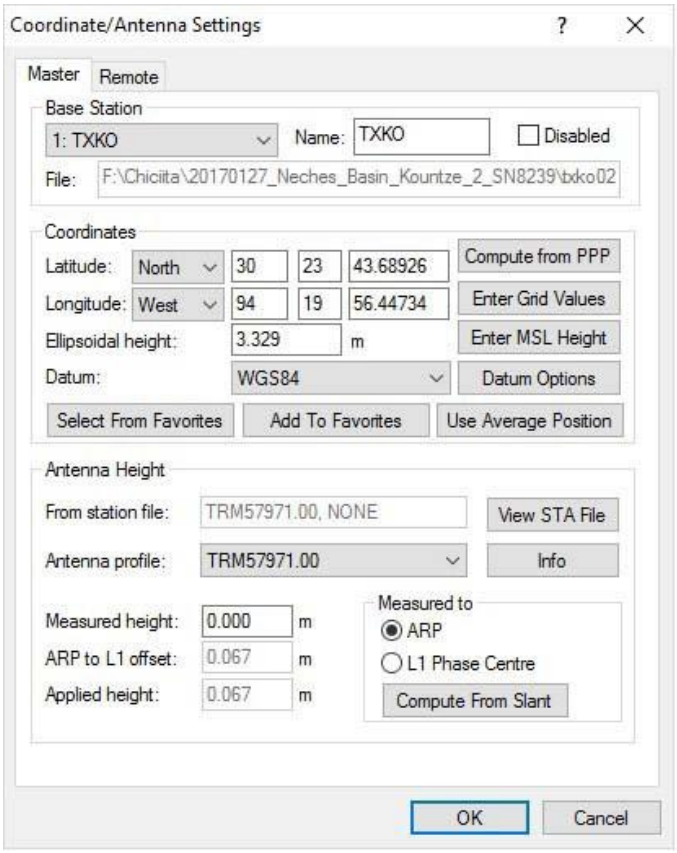

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
Roll
Pitch

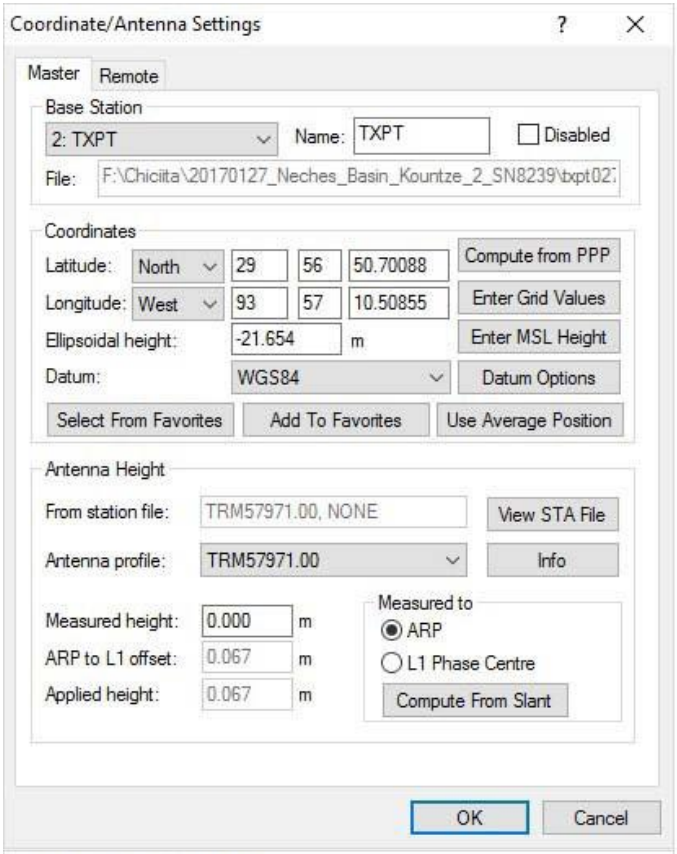

Height (m)
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
Height

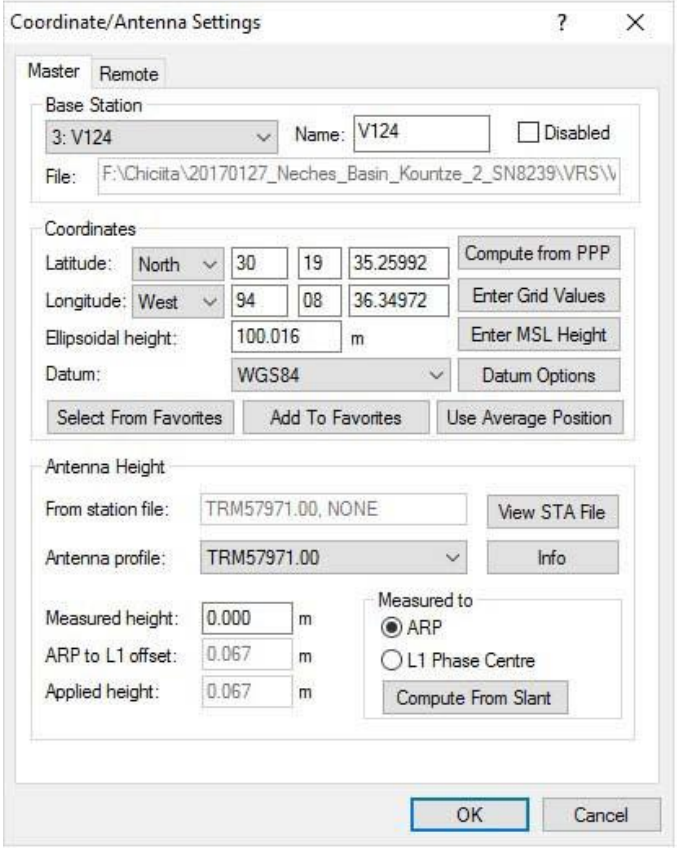

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
507000
Week 1933
507500
508000
508500
509000
509500
510000
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

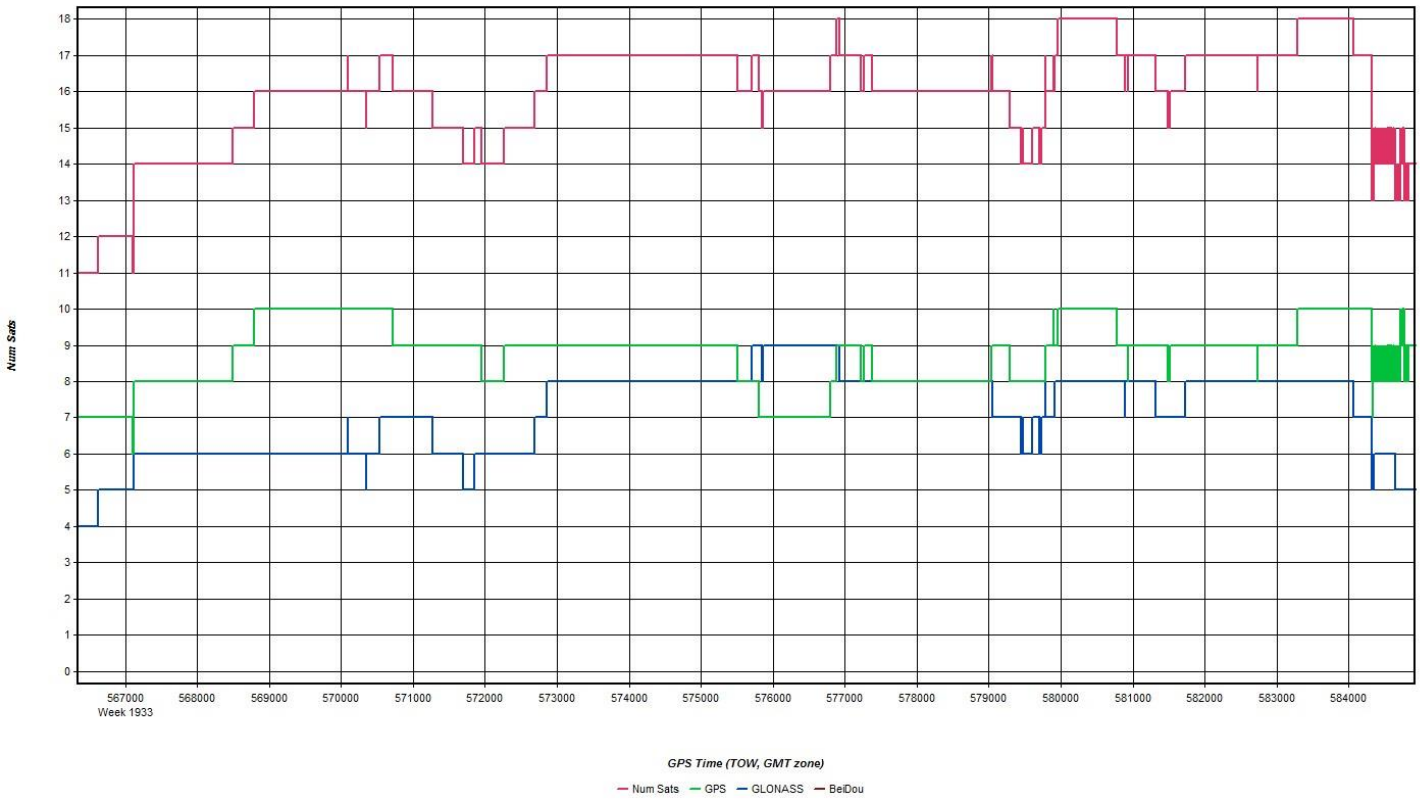

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name: TXKO
Disabled
File: F:\Chicita\20170127_Neches_Basin_Kountze_2_SN8239\txko02
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

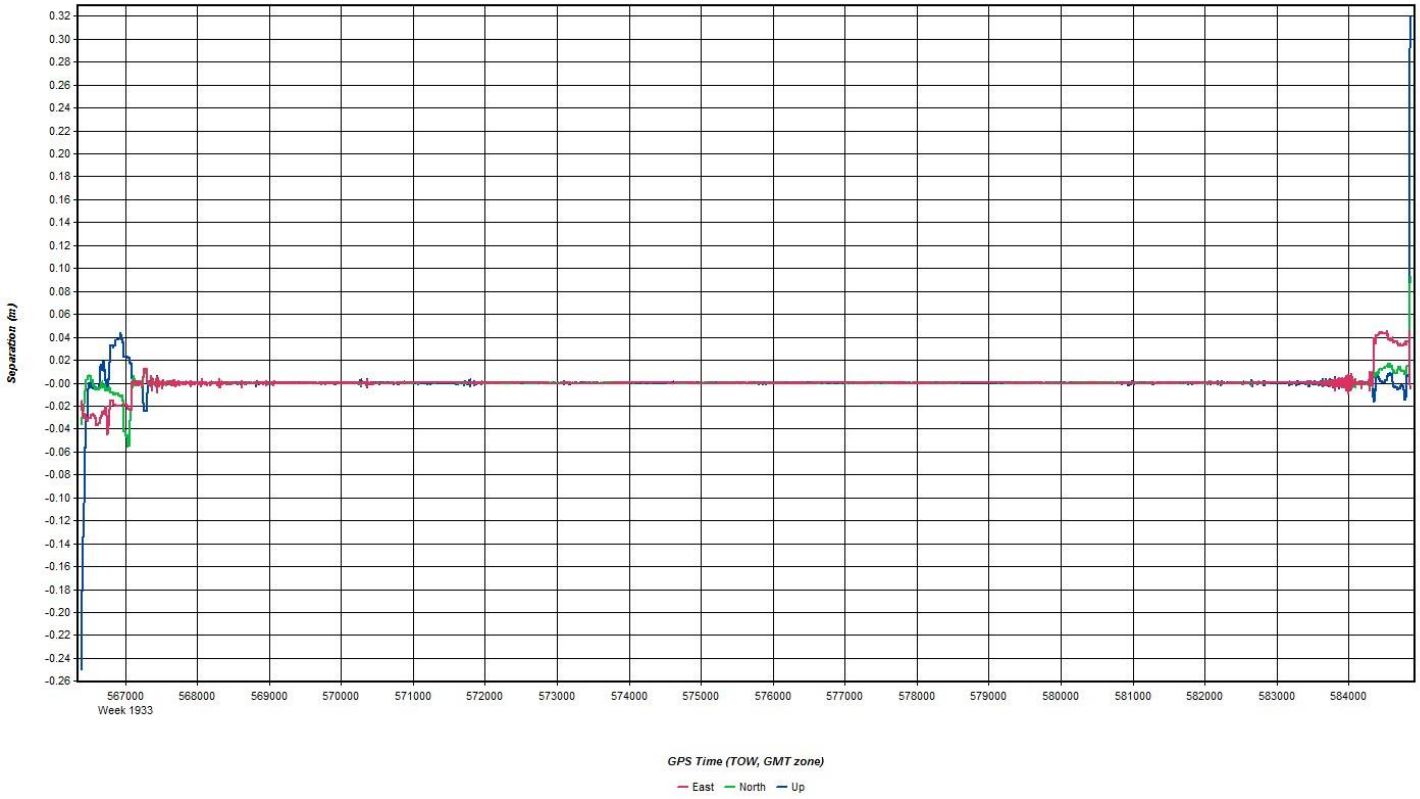

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXPT
Name: TXPT
Disabled
File: F:\Chiciita\20170127_Neches_Basin_Kountze_2_SN8239\txpt02
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

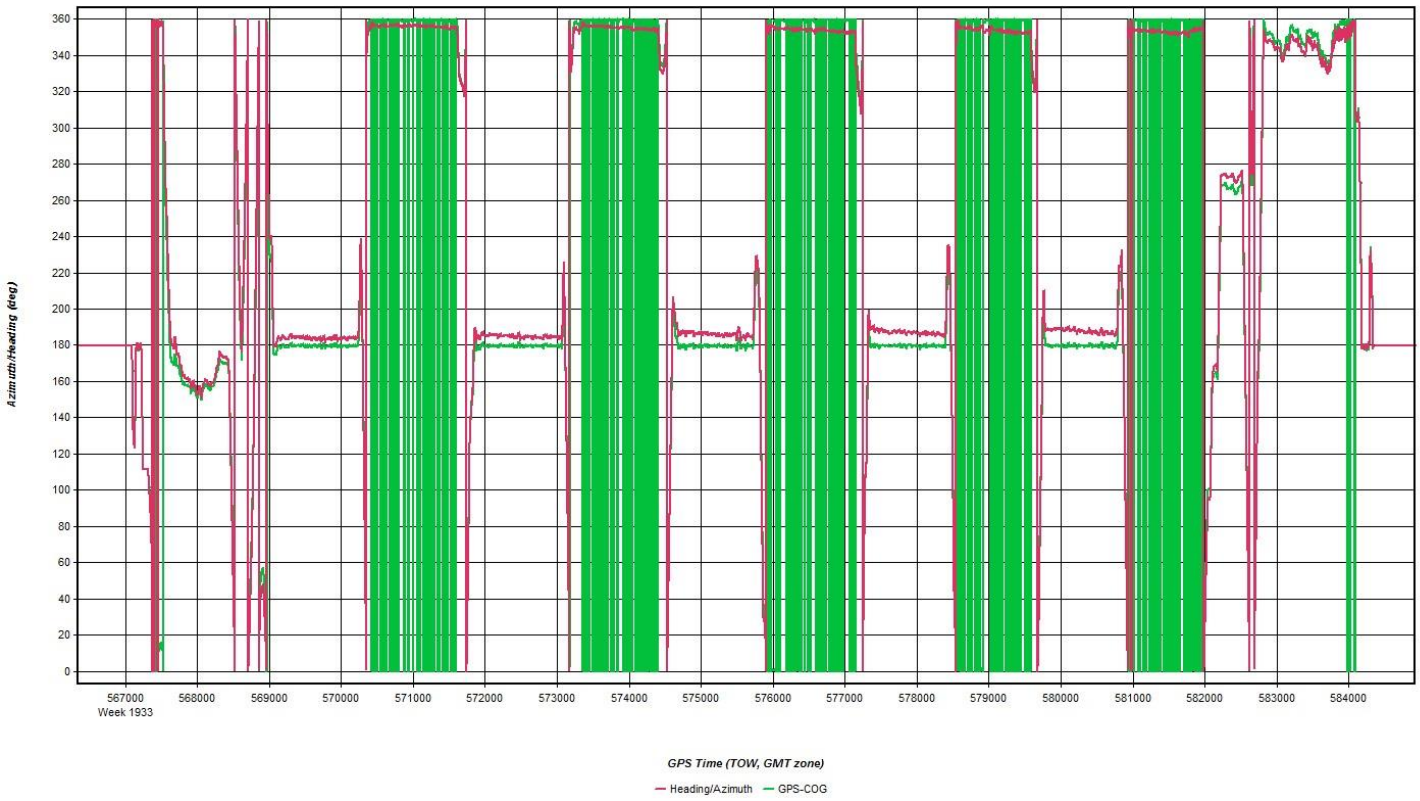

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V124
Name: V124
Disabled
File: F:\Chiciita\20170127_Neches_Basin_Kountze_2_SN8239\VRS\V
Coordinates
Latitude: North 30 19 35.25992
Longitude: West 94 08 36.34972
Ellipsoidal height: 100.016 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

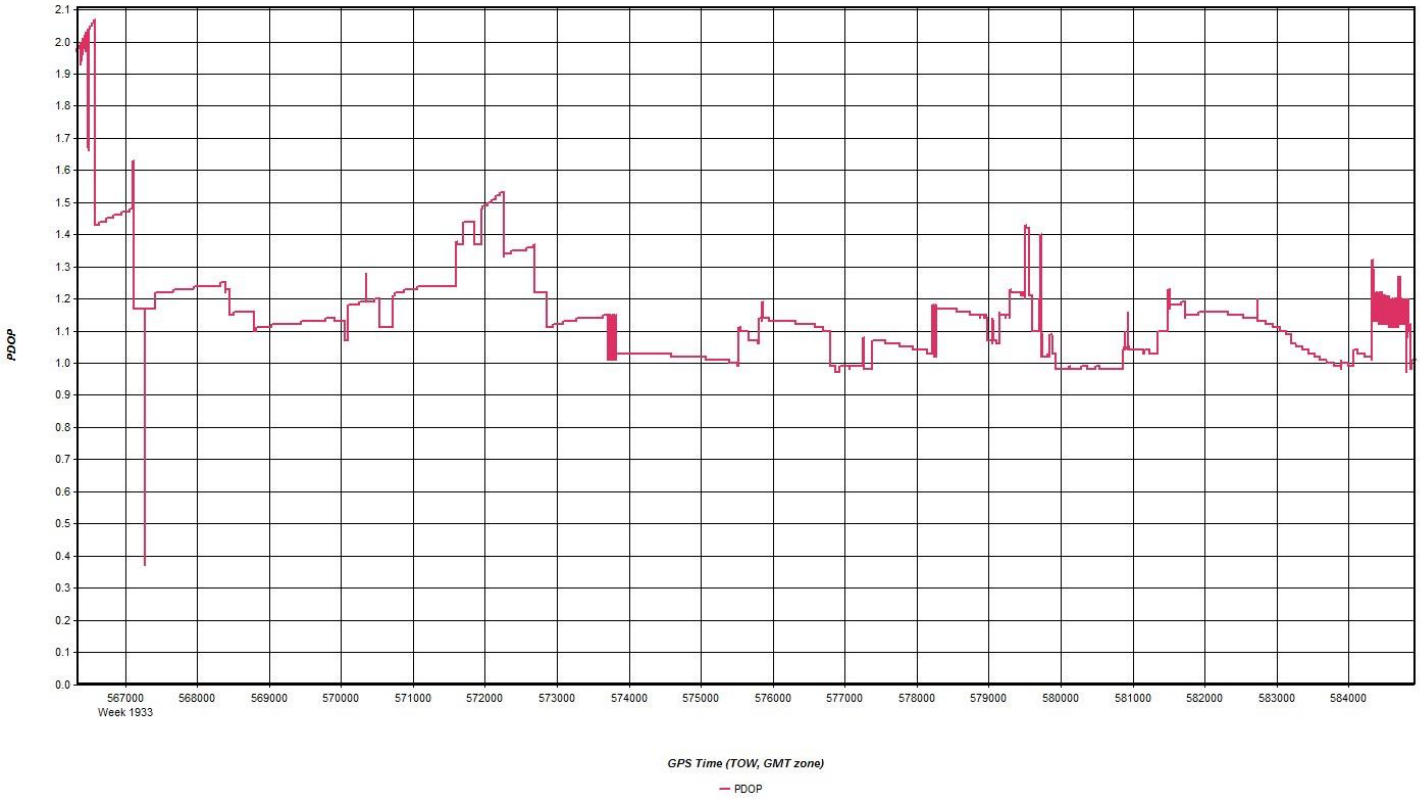
Jan 28, 2017-A (N812TB, SN7178)

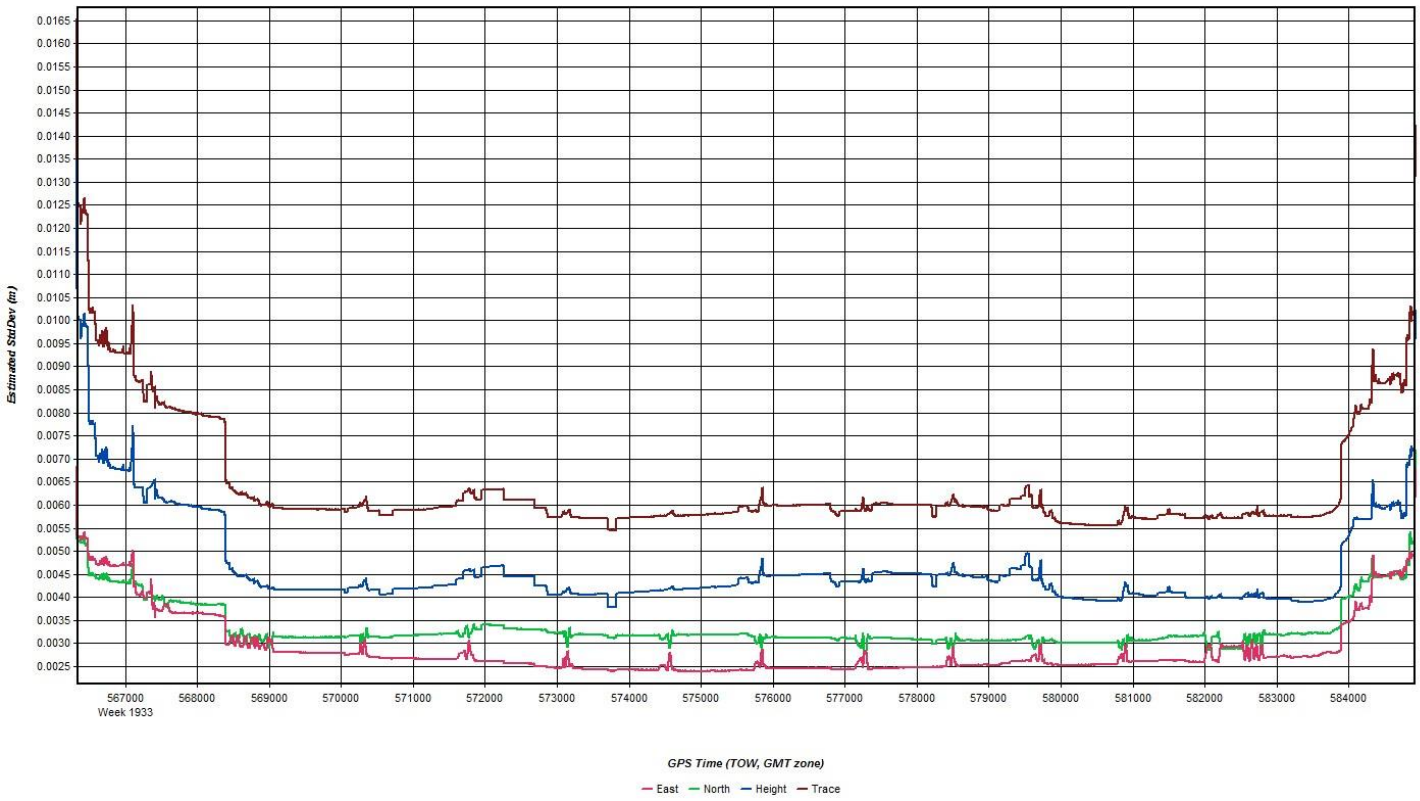


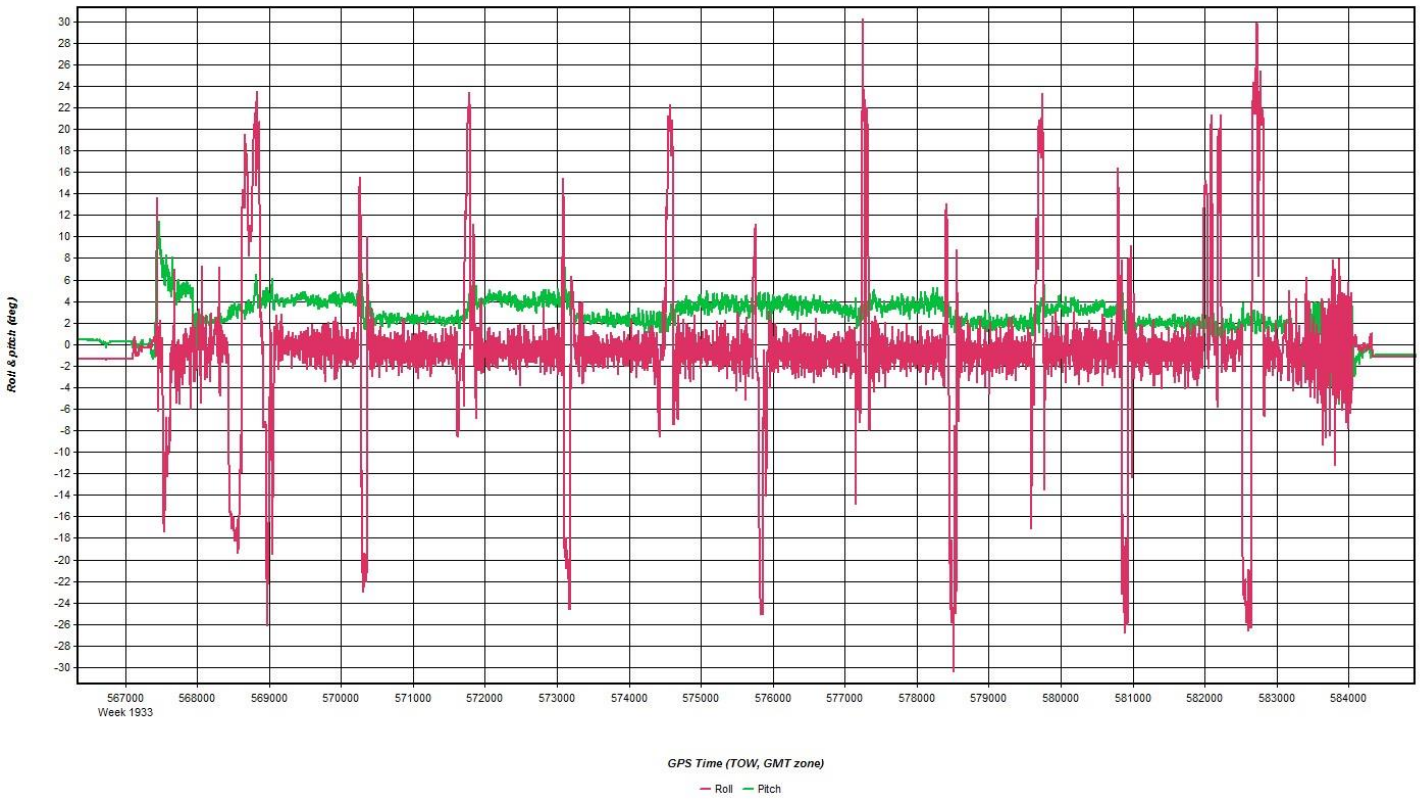

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

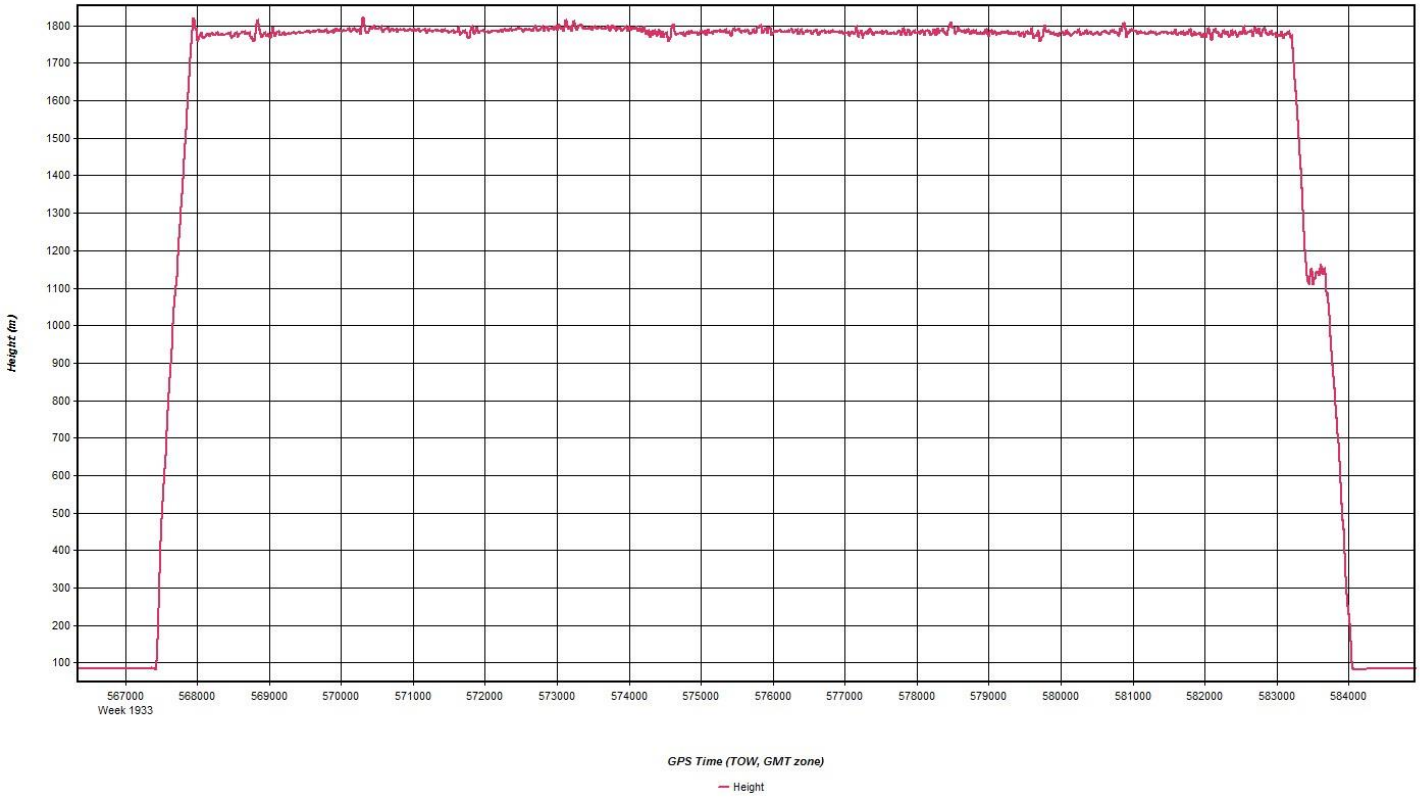

Separation (m)
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
East
North
Up

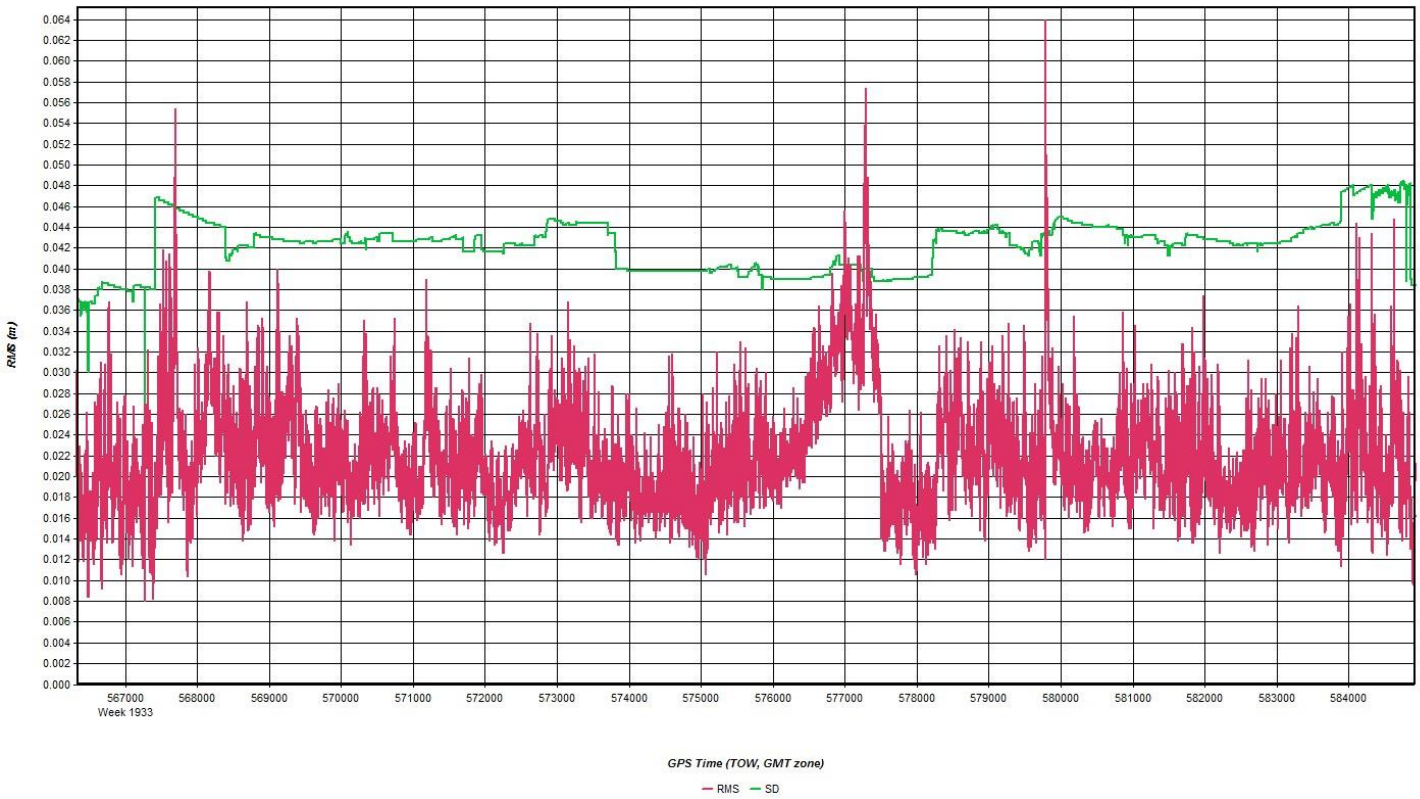

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

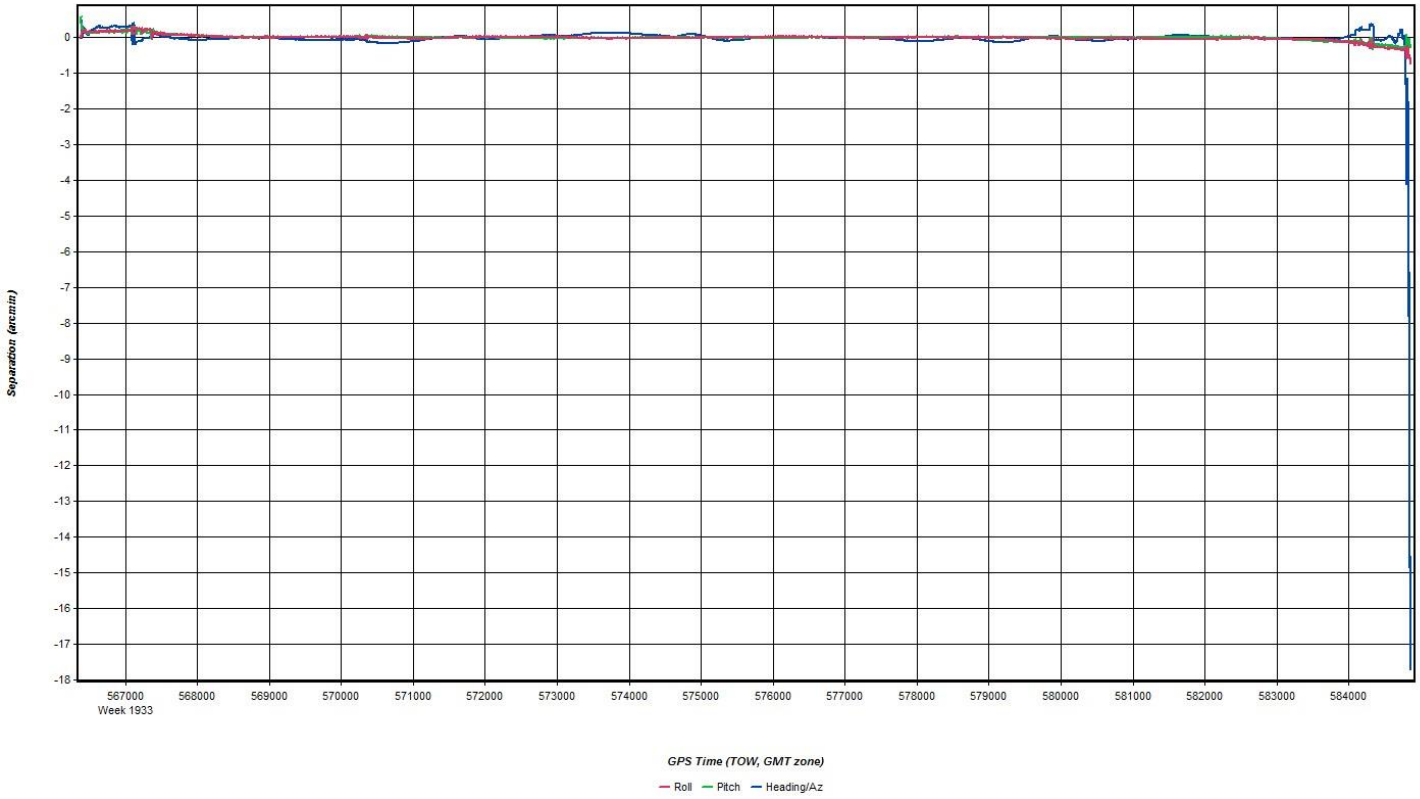

PDOP
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
PDOP

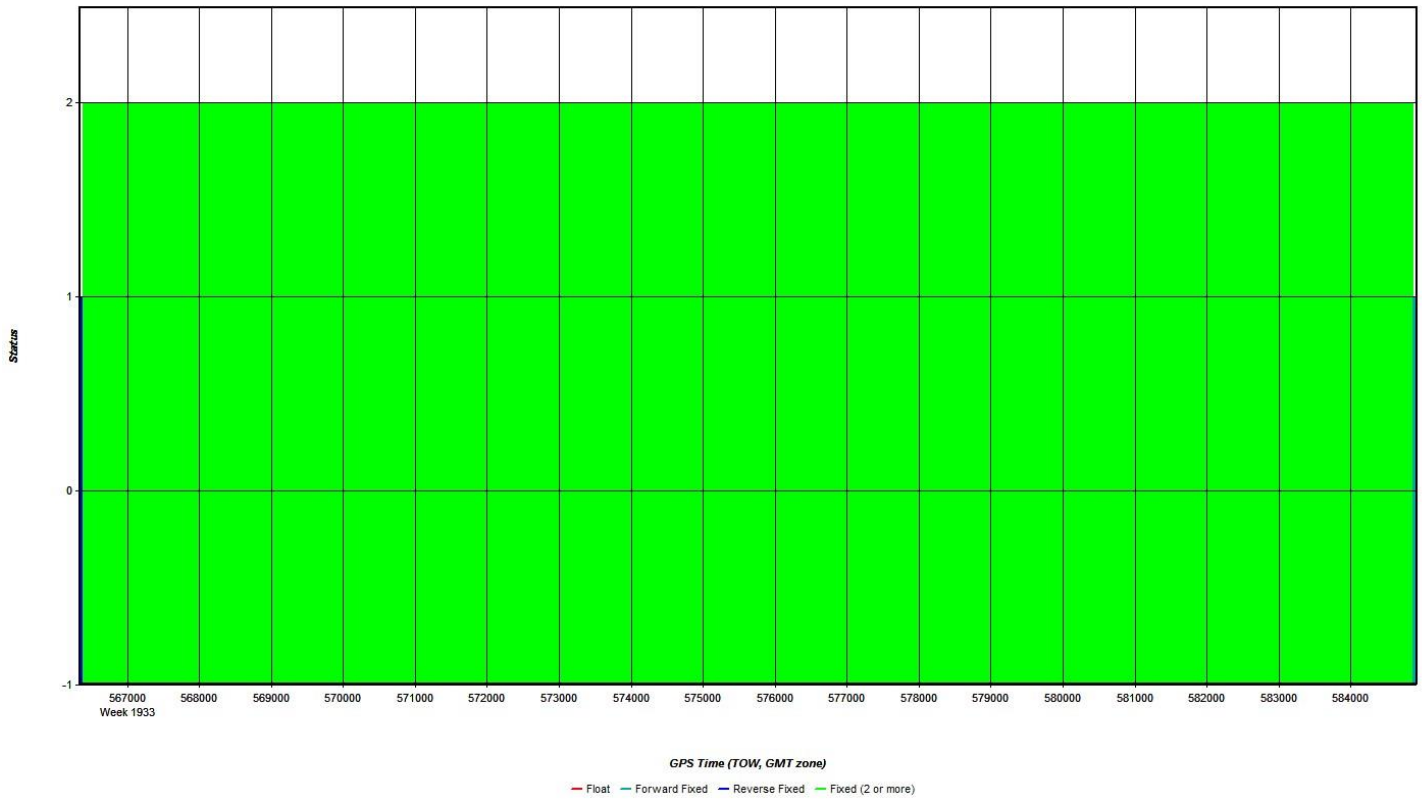

Estimated StdDev (m)
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

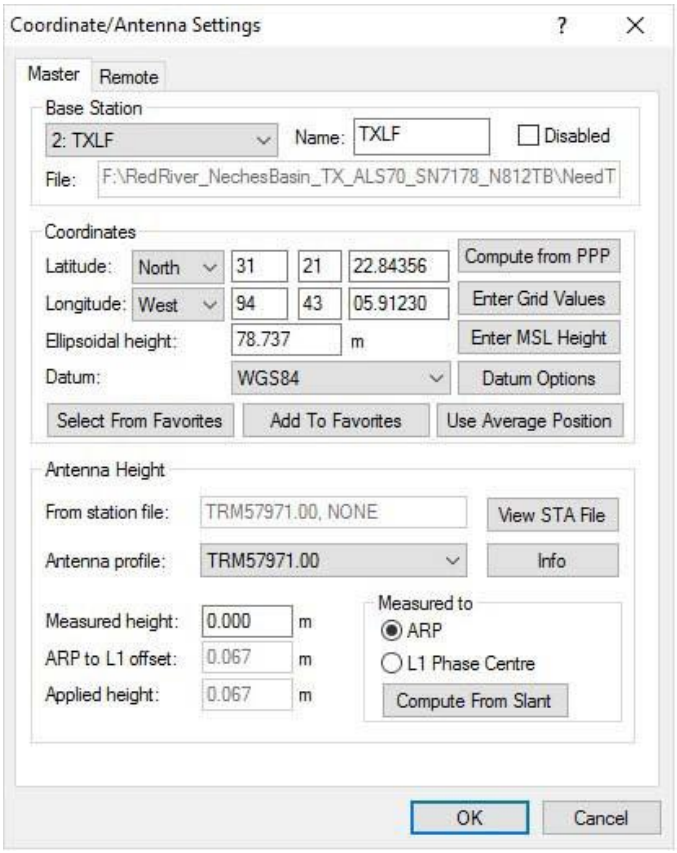

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
Roll
Pitch

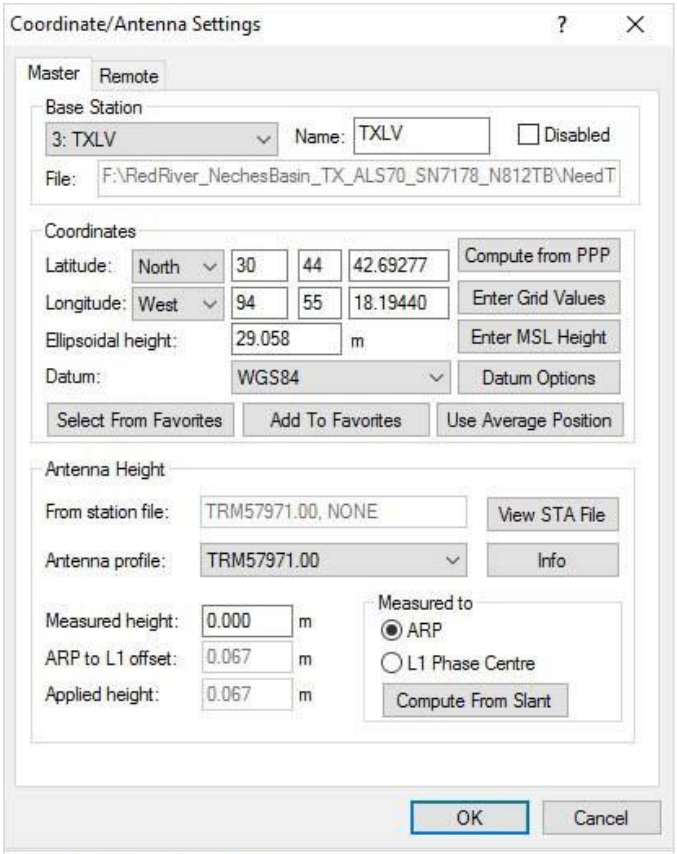

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
Height

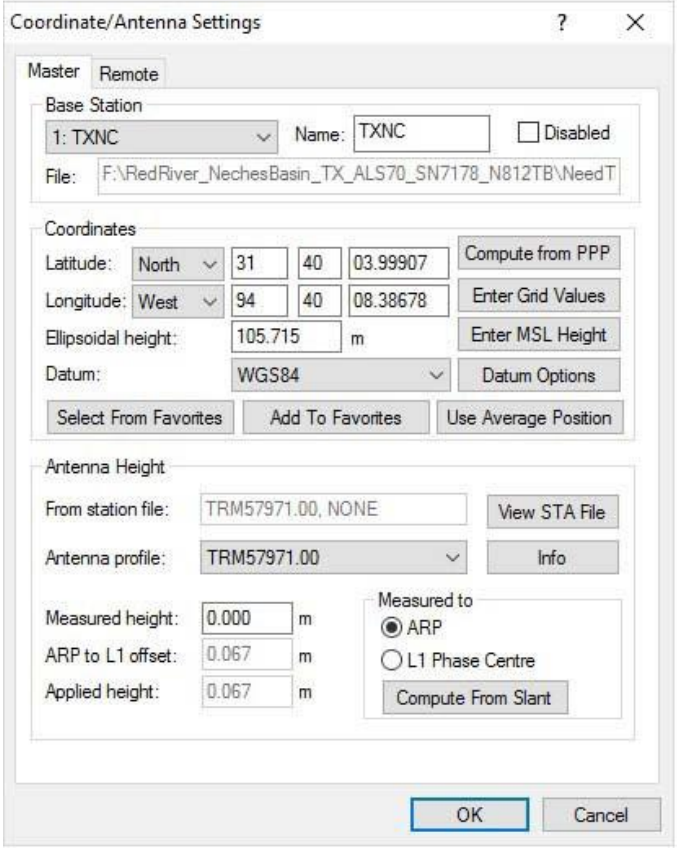

RMS (m)
0.064
0.062
0.060
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
567000
Week 1933
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXLF
Name:
TXLF
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
21
22.84356
Compute from PPP
Longitude:
West
94
43
05.91230
Enter Grid Values
Ellipsoidal height:
78.737
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLV
Name: TXLV
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 30 44 42.69277
Longitude: West 94 55 18.19440
Ellipsoidal height: 29.058 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXNC
Name: TXNC
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-28-17 A

(email log daily to flight_log_distribution_list@quantumspatial.com)

Lift: (A) B C D E Pg 1 of _

Project: NEches River Basin TX Proj #: 28355 Flight Mgmt File: 20170128_131102

Aircraft: N8127B Begin Hobbs: 4301.1 End Hobbs: 4305.6 Total: 4.5 Pilot: C.Mcdonald Co-Pilot: JBillington Tech: JSwan

Dep Apt: KGGG Dep Time (Lcl): 730 (Z): +6 Arr Apt: 1214 Arr Time (Local): +6 (Z): Tot Time Aloft: 4.5

CORS: (Y) N Sta 1: GCG VRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 6 °c End: 9 °c OAT beg: −2 °c End: −1 °c Altimeter begin: 3029 end: 3033

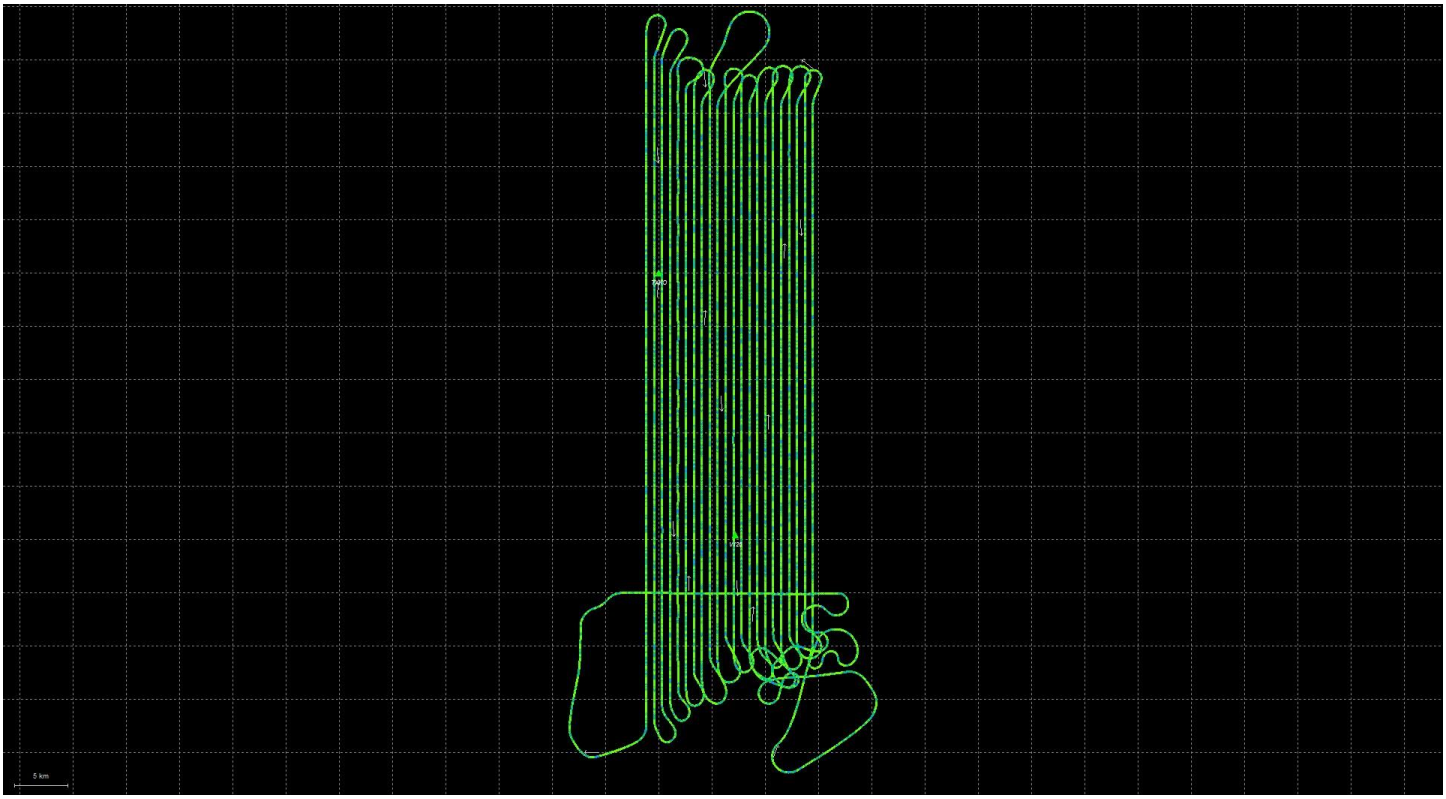
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	X1570	7178					
	FOV ~~72°~~ 54°	Scan Freq 57	MpIA Y / N	Pulses In Air	Pulse Rate 312	Power	PPSM

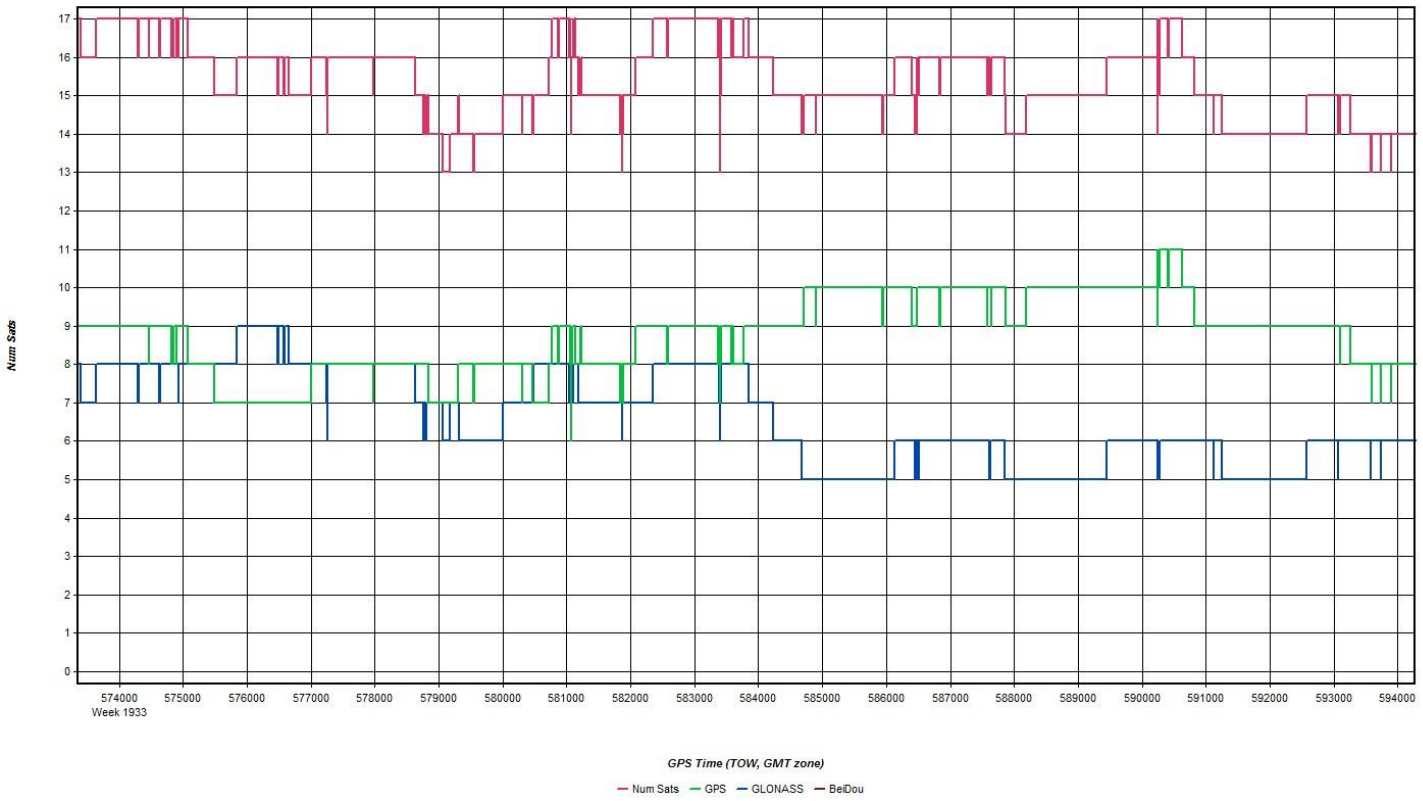
	Beg GB	Storage Name/#
	449	
	End GB 375	SSD
	Tot GB 75	#2

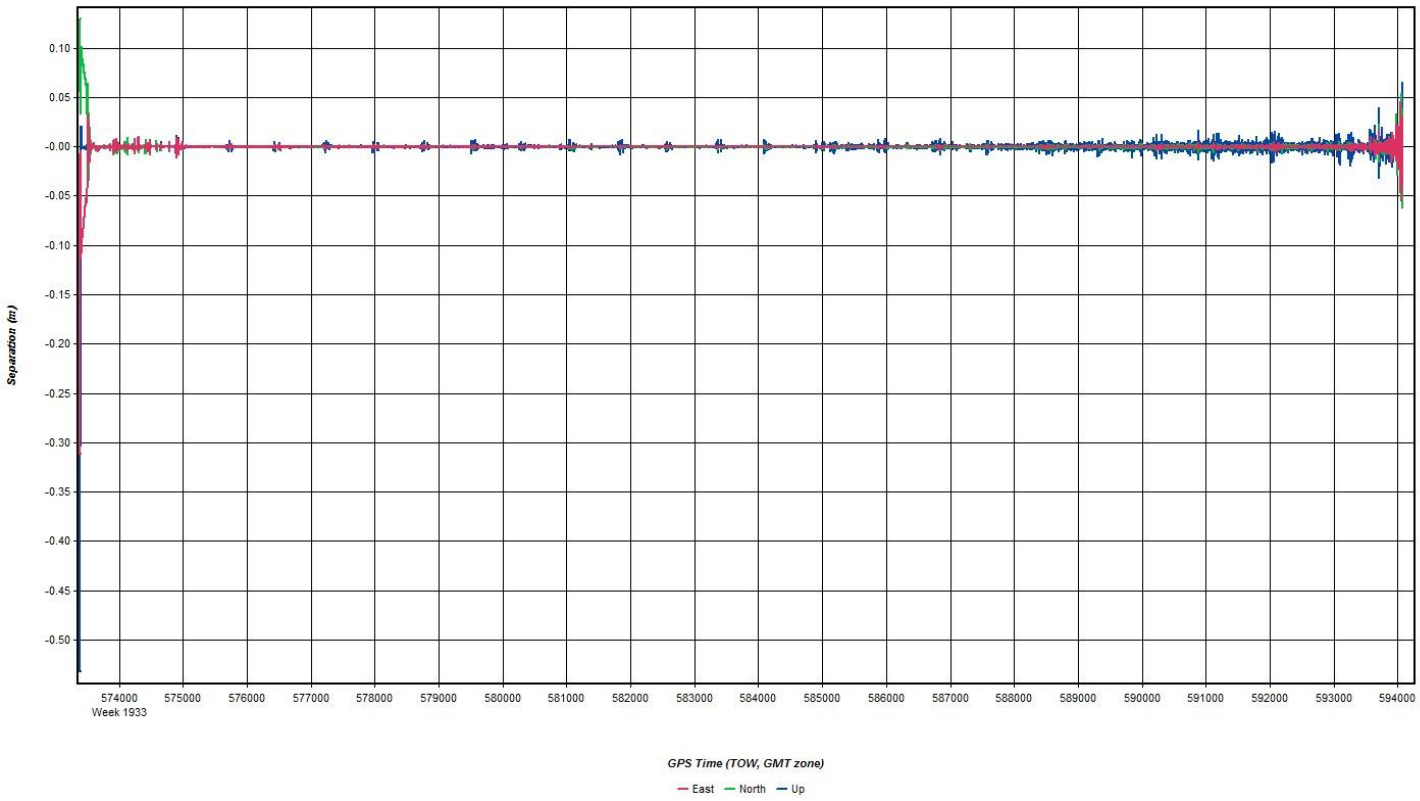
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
							KGGG→		Fig8's
3095	180	1405	1423	155	1.2/17	5850	+5	0	
3096	359	1427	1445	123	1.2/18	5856	-5	0	
3097	180	1451	1510	148	1.0/20	5851	+5	0	
3098	0	1516	1533	143	1.2/8	5912	-5	0	
3099	180	1538	1554	149	1.2/18	5838	+6	0	
3100	0	1559	1618	145	1.1/19	5912	-5	0	
3101	180	1622	1639	131	1.2/19	5851	+7	0	
3102	0	1643	1659	148	1.2/19	5860	-5	0	
3103	180	1703	1719	155	1.0/22	5852	+8	0	
3104	0	1723	1739	149	1.0/20	5859	-6	0	
Xline	270	1744	1747	144	1.3/17	5859	0	0	
									Fig8's → KGGG 1214 cst / 1819 Z
									Hobbs = 4.5
									online = 3.7
									mob = 0.8

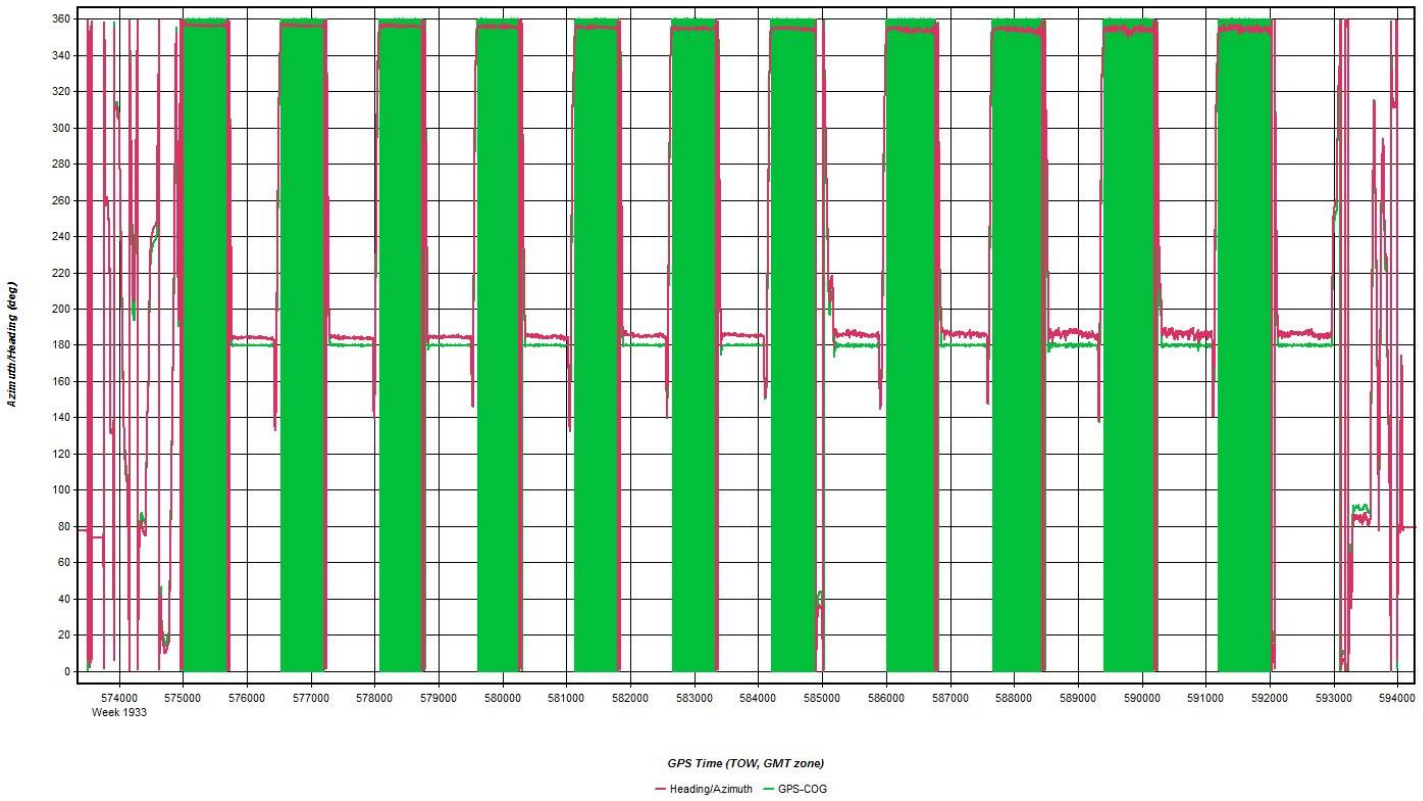
Total Proj Lines: Lines Flown: 10 Lines Remain: Online Time: 3.7 Mob Time: 0.8 Notes:

Jan 28, 2017-A (N208NR, SN8239)

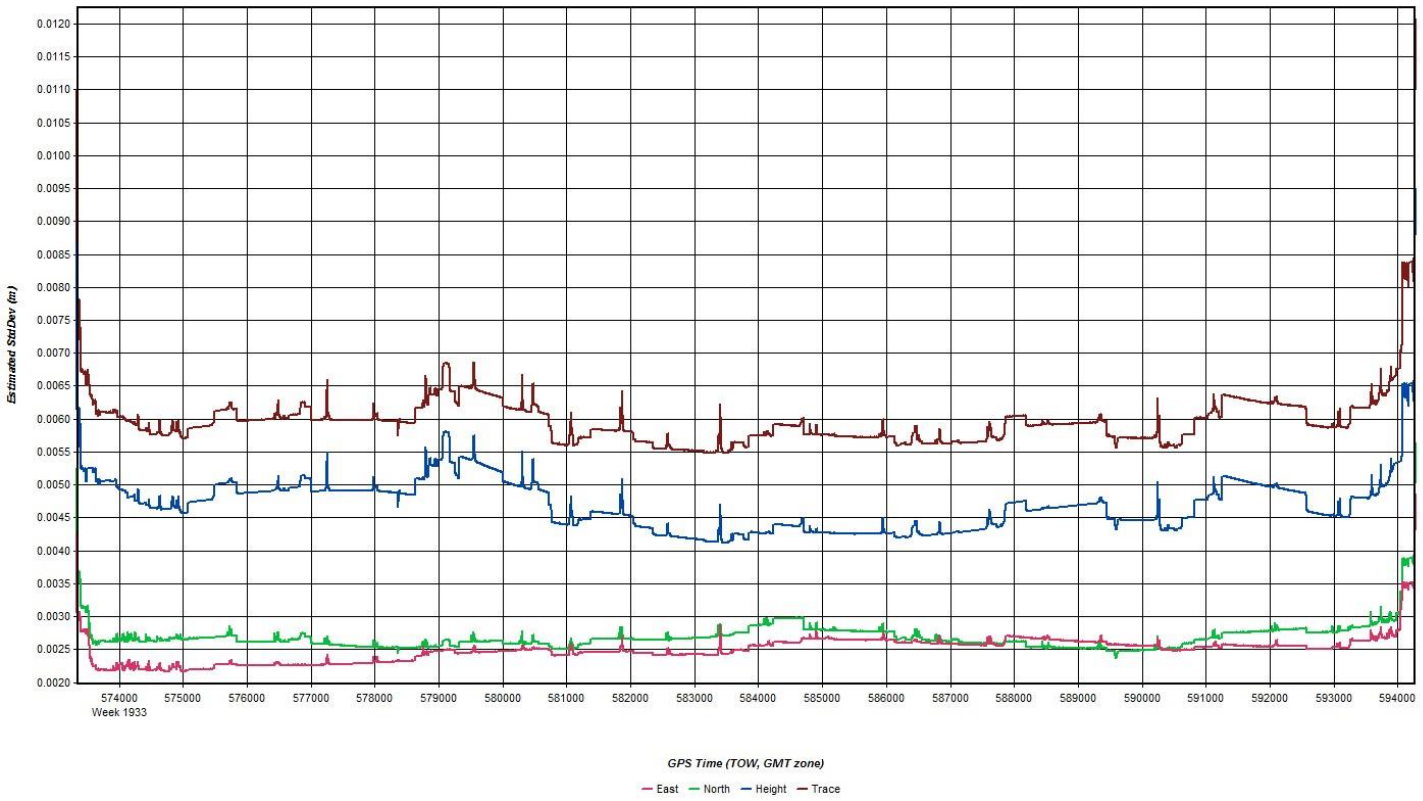


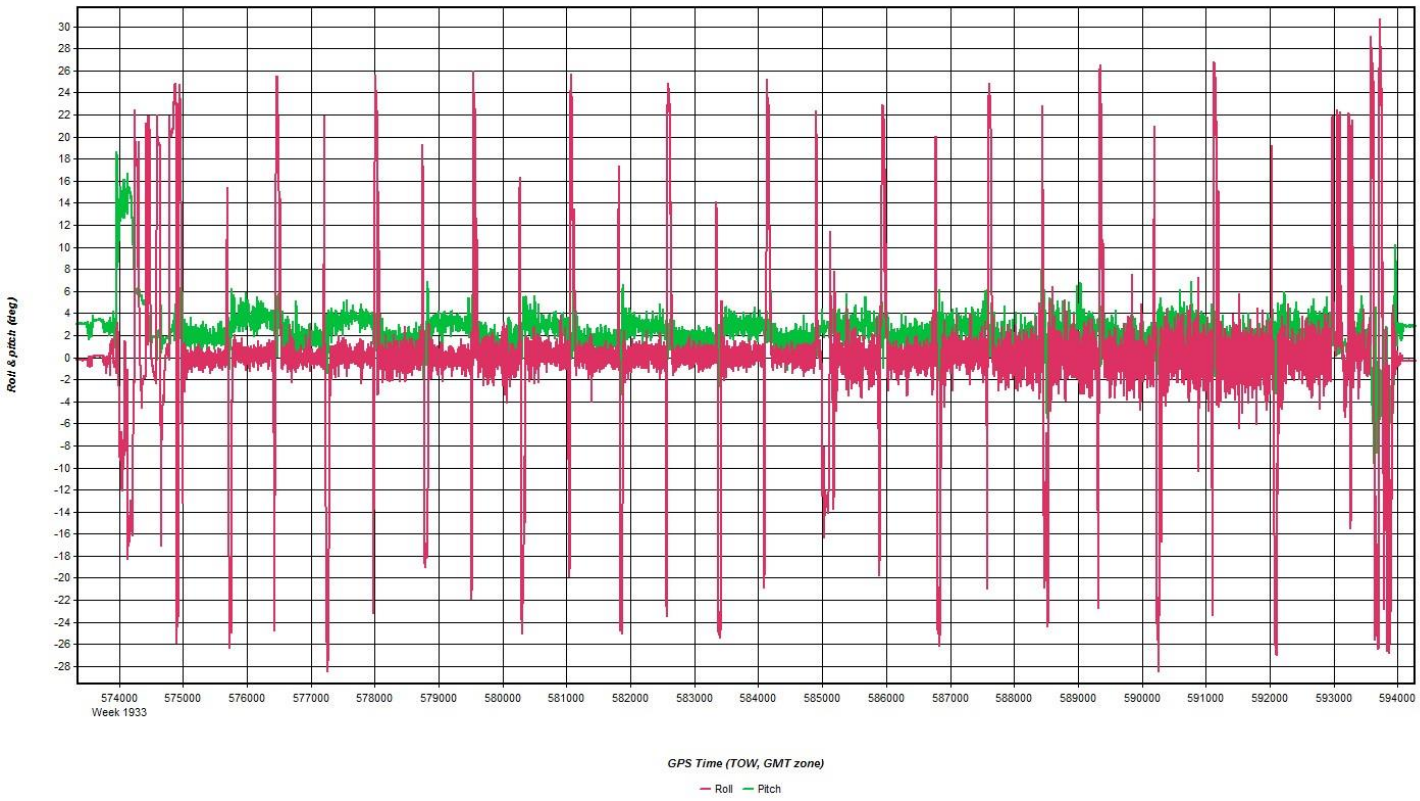

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

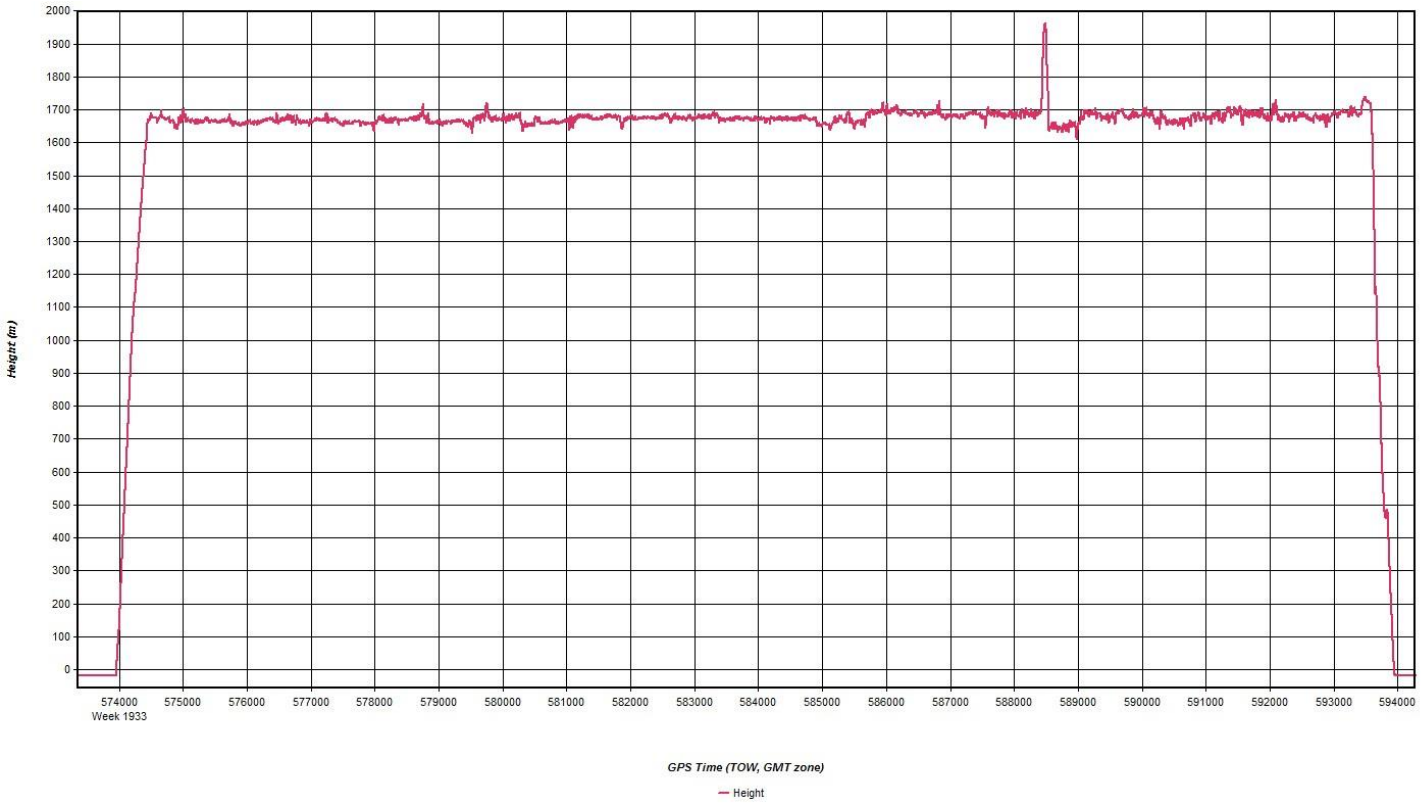

Separation (m)
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
East
North
Up

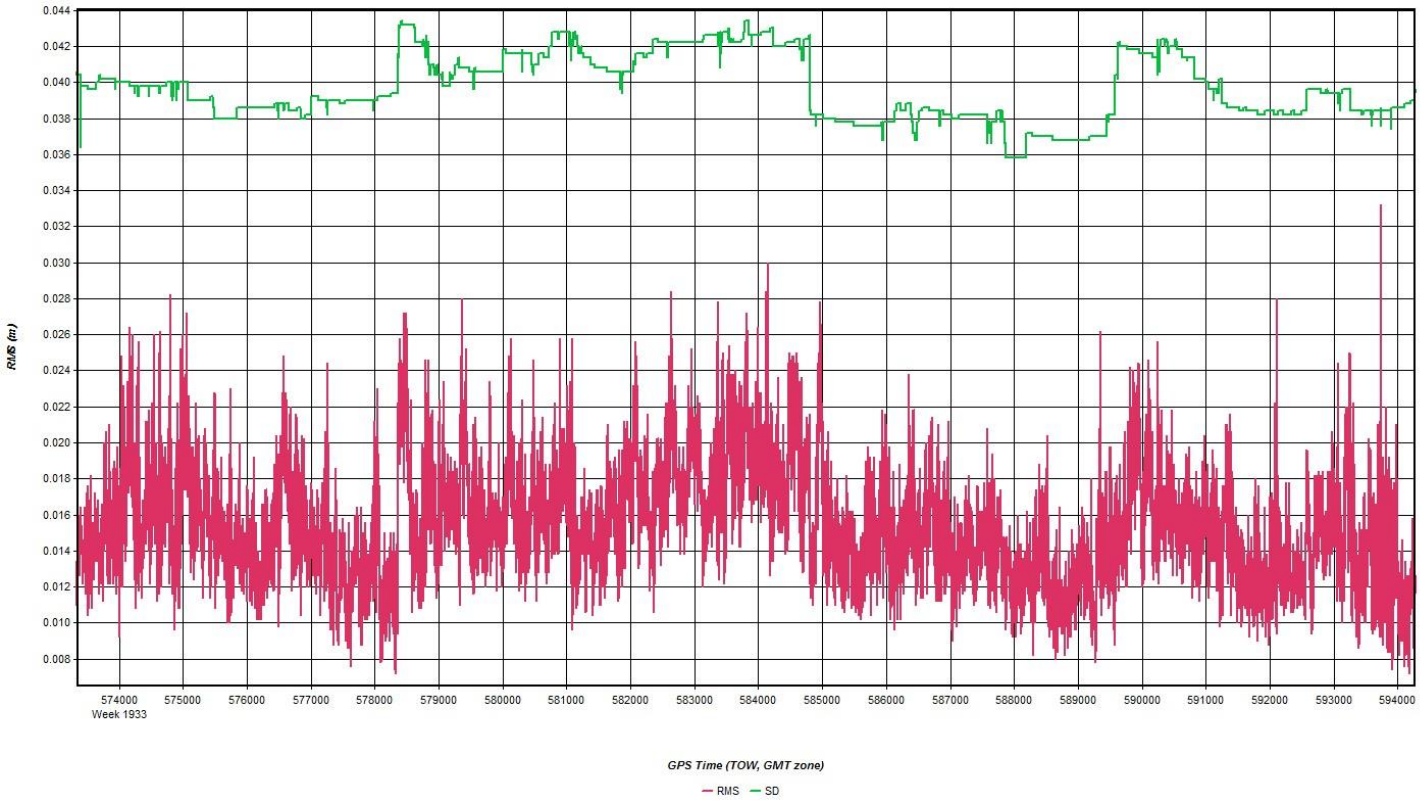

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

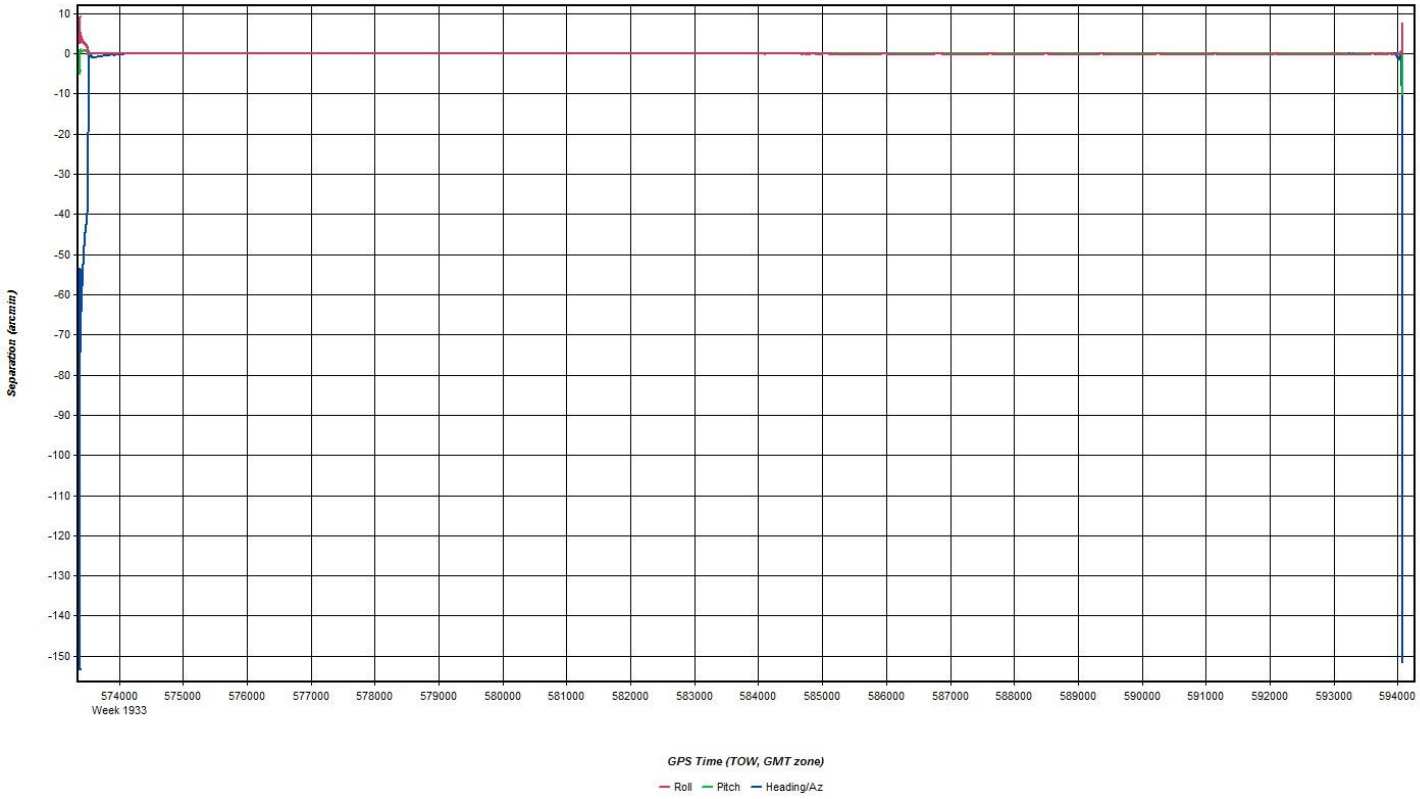

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
PDOP

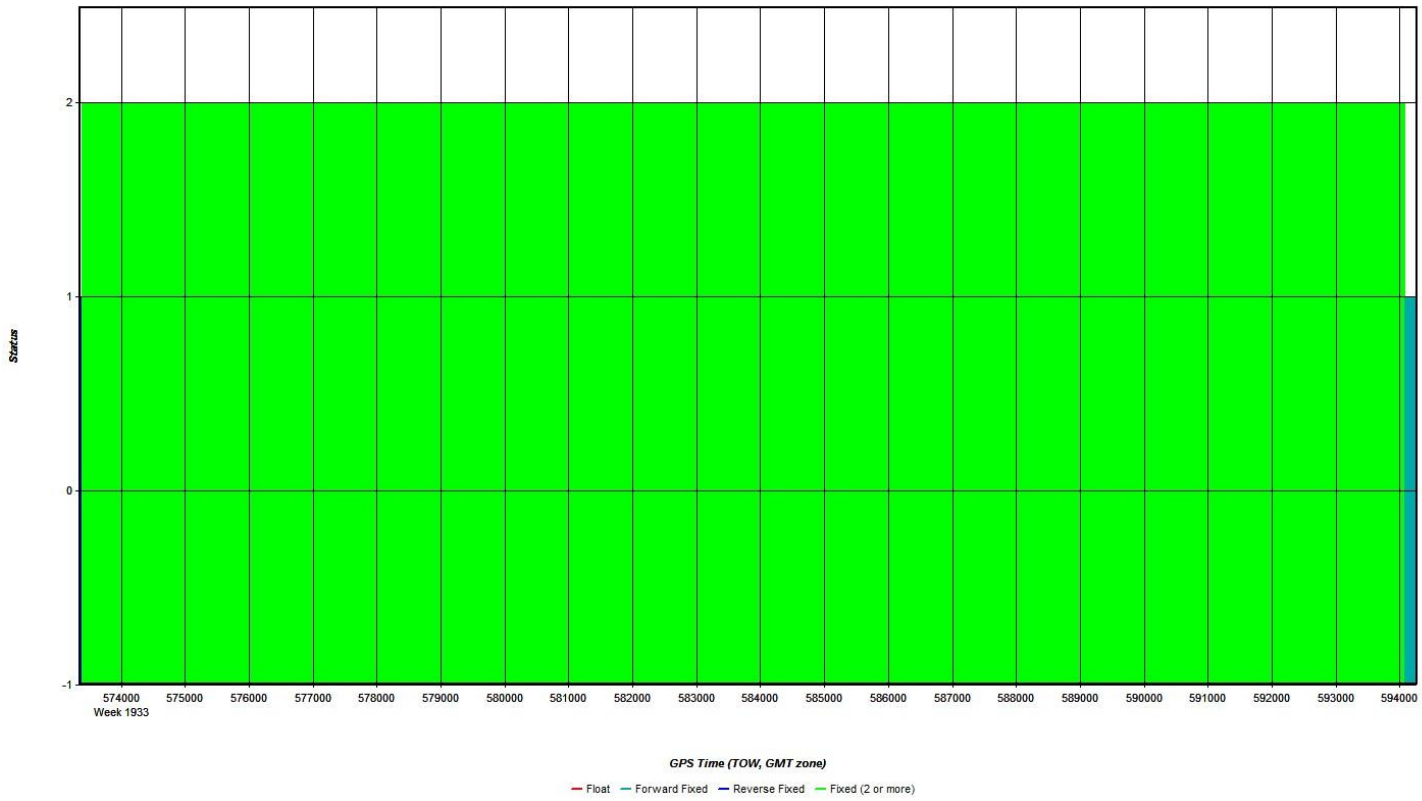

Estimated StdDev (m)
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

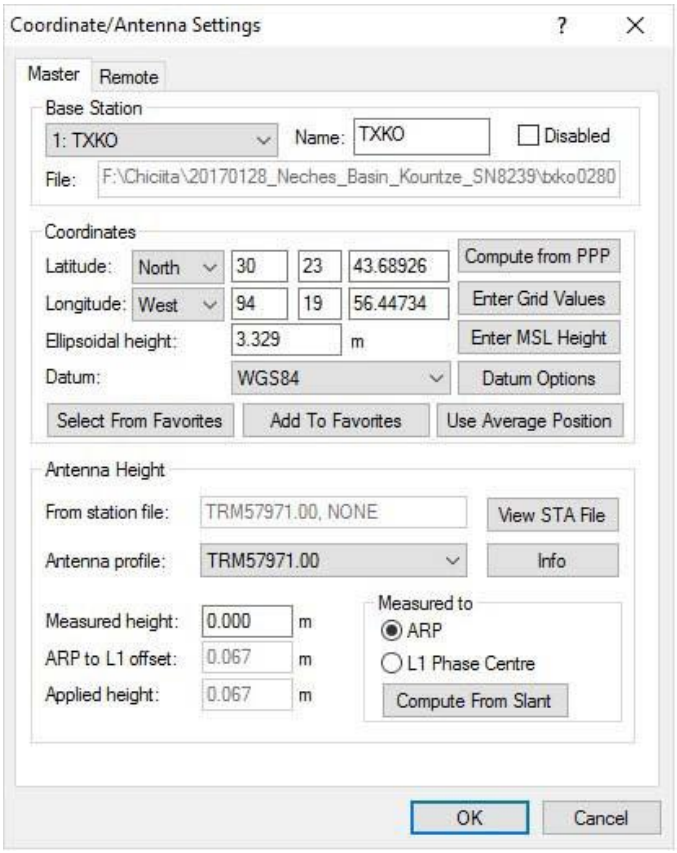

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
Roll
Pitch

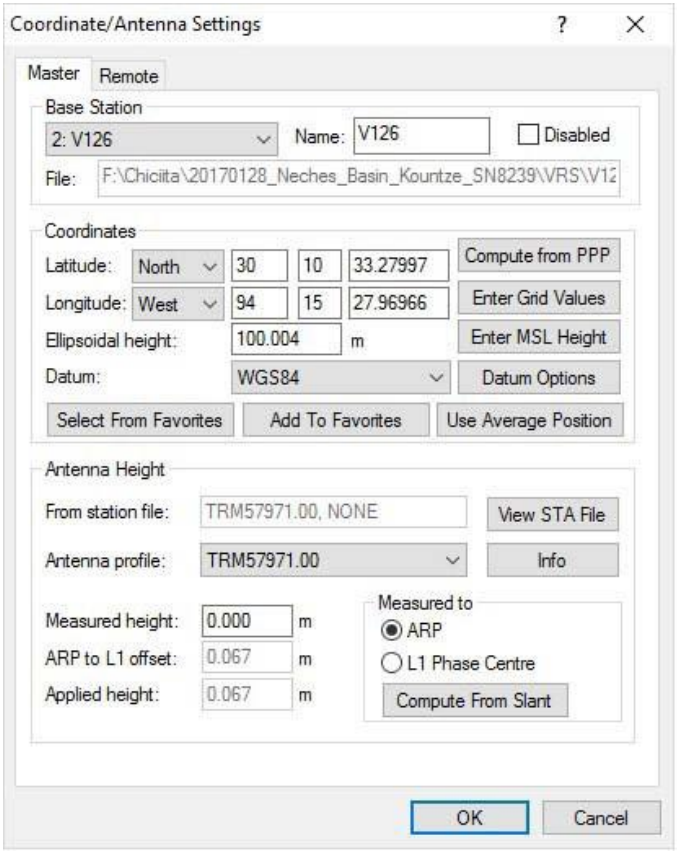

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
RMS
SD

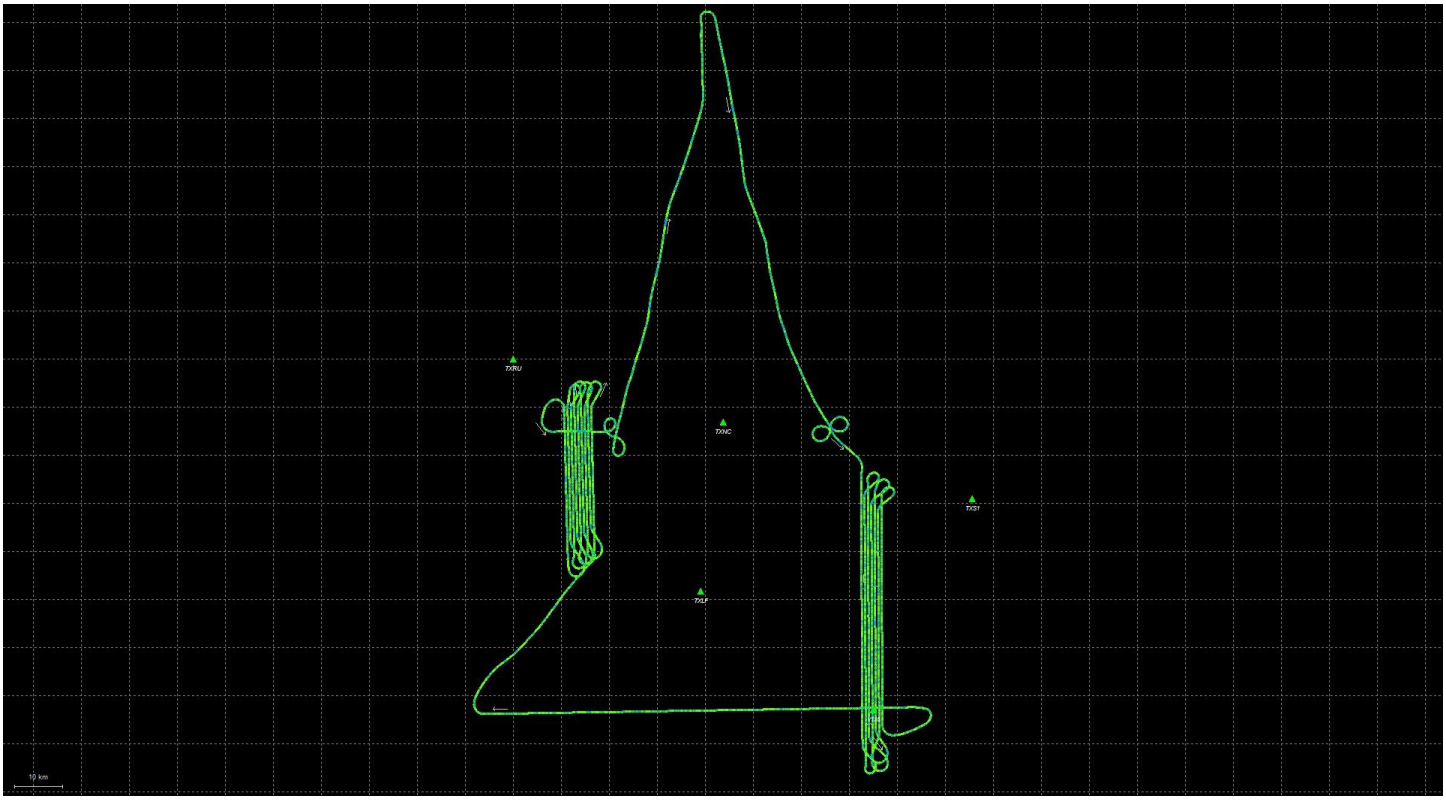

Separation (arcmin)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

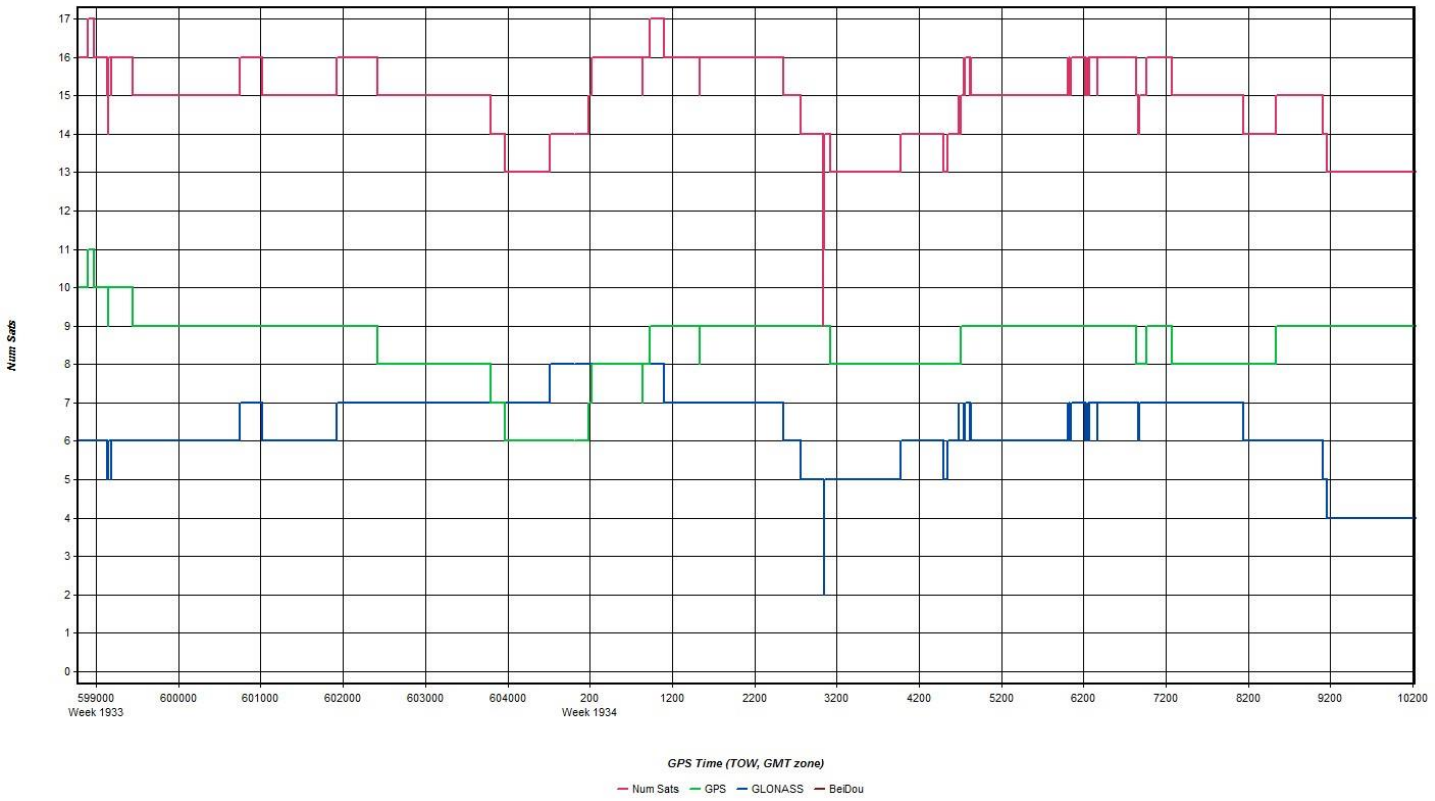

Status
2
1
0
-1
574000
Week 1933
575000
576000
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
587000
588000
589000
590000
591000
592000
593000
594000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

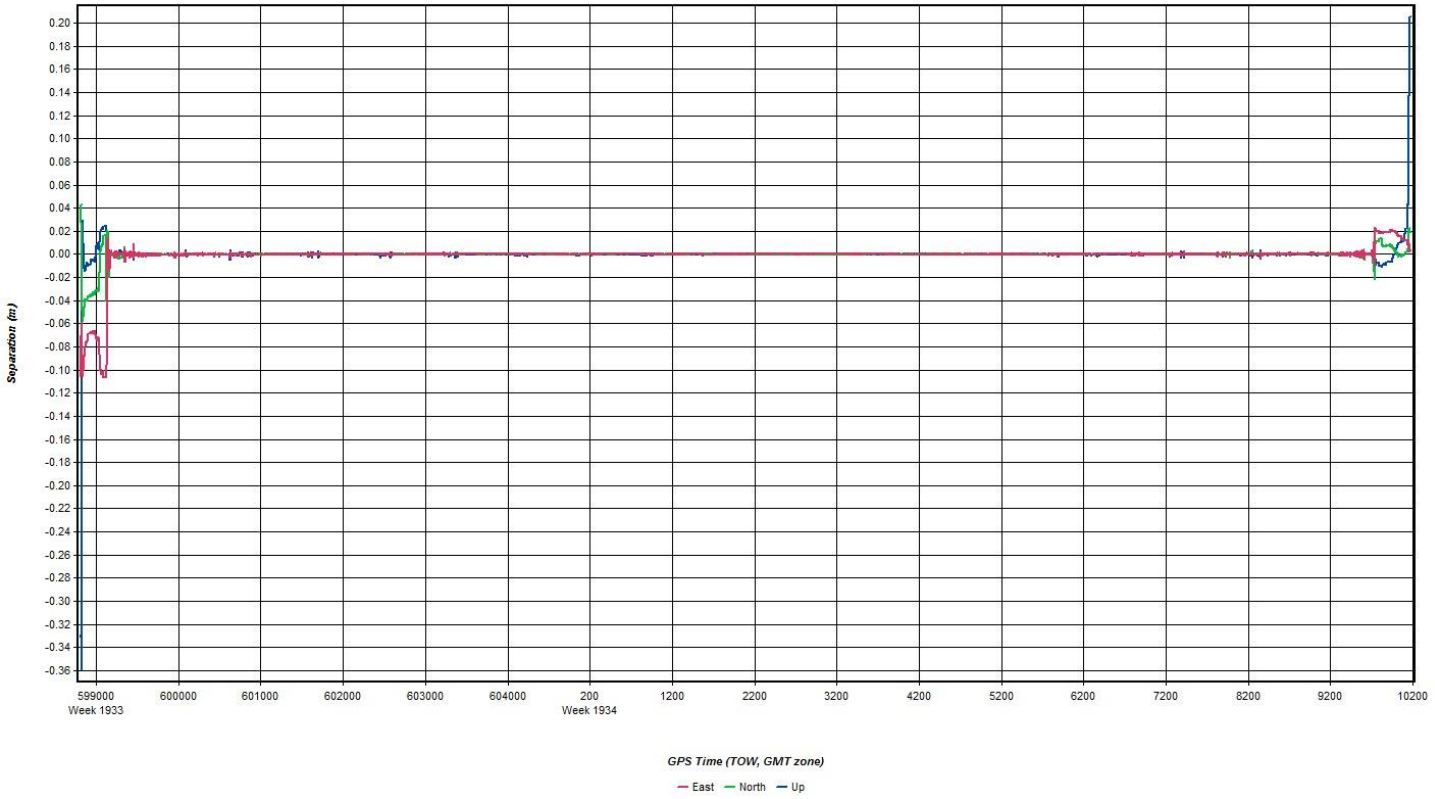

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name:
TXKO
Disabled
File:
F:\Chicita\20170128_Neches_Basin_Kountze_SN8239\txko0280
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

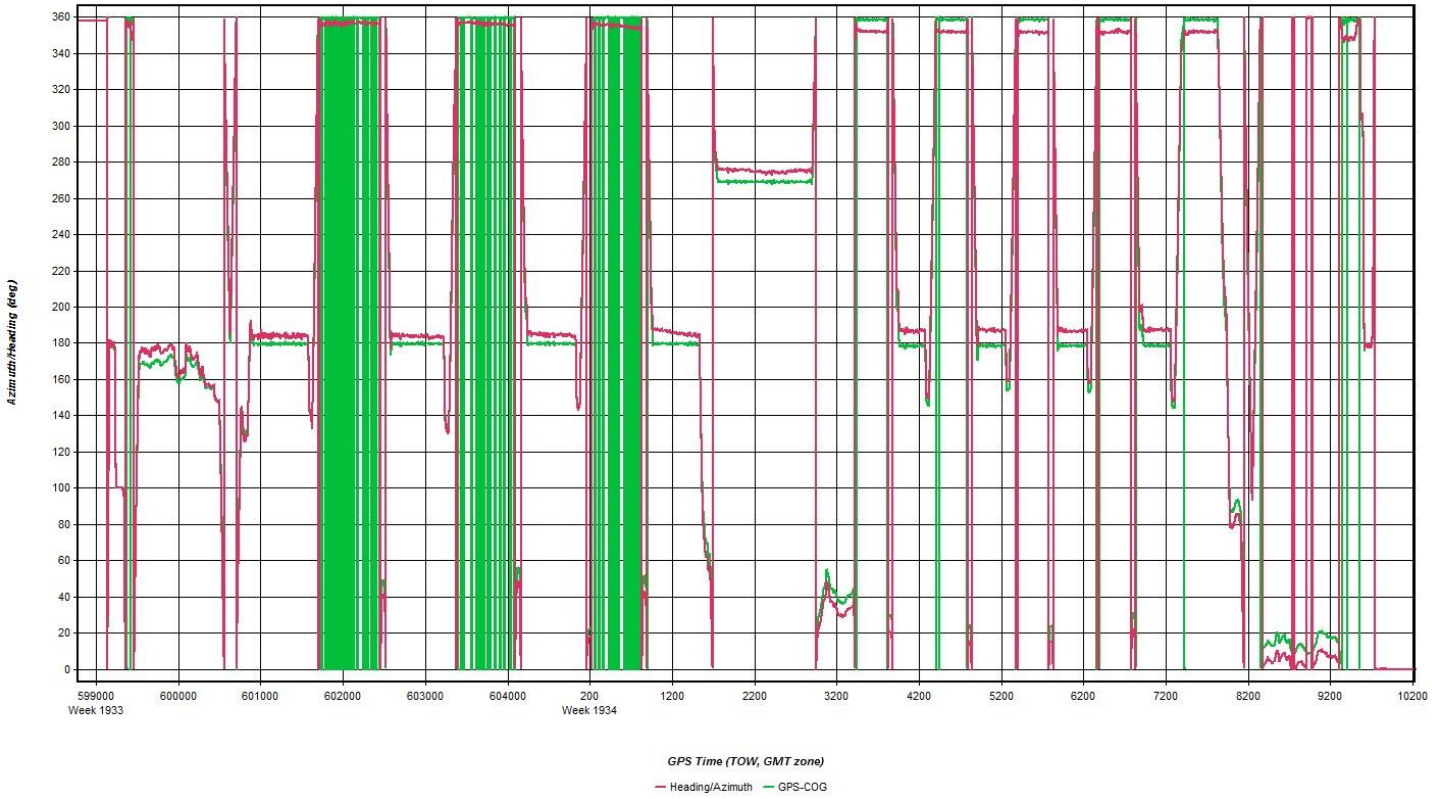

Coordinate/Antenna Settings
Master
Remote
Base Station
2: V126
Name: V126
Disabled
File: F:\Chicita\20170128_Neches_Basin_Kountze_SN8239\VRS\V12
Coordinates
Latitude: North 30 10 33.27997
Longitude: West 94 15 27.96966
Ellipsoidal height: 100.004 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

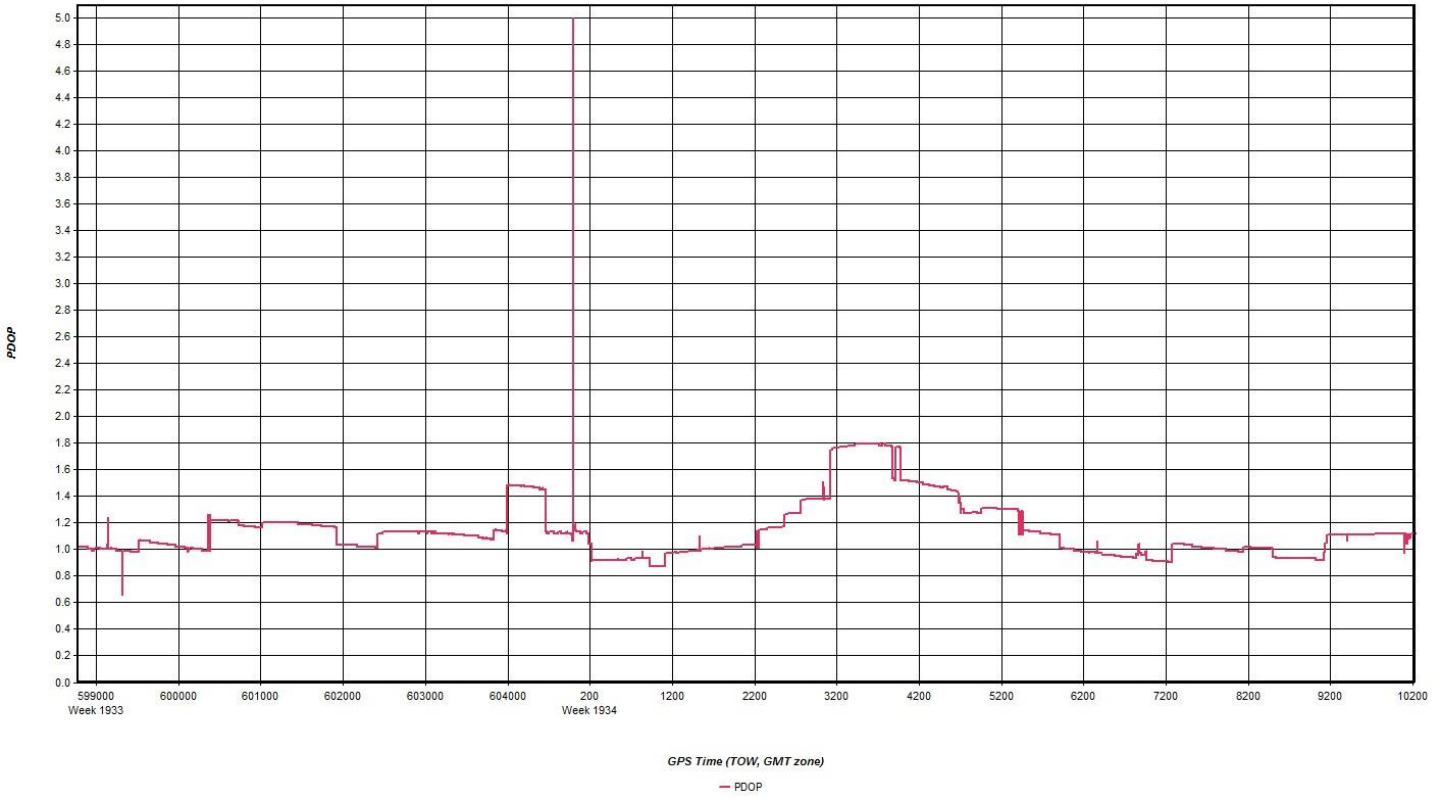
Jan 28, 2017-A (N812TB, SN7178)

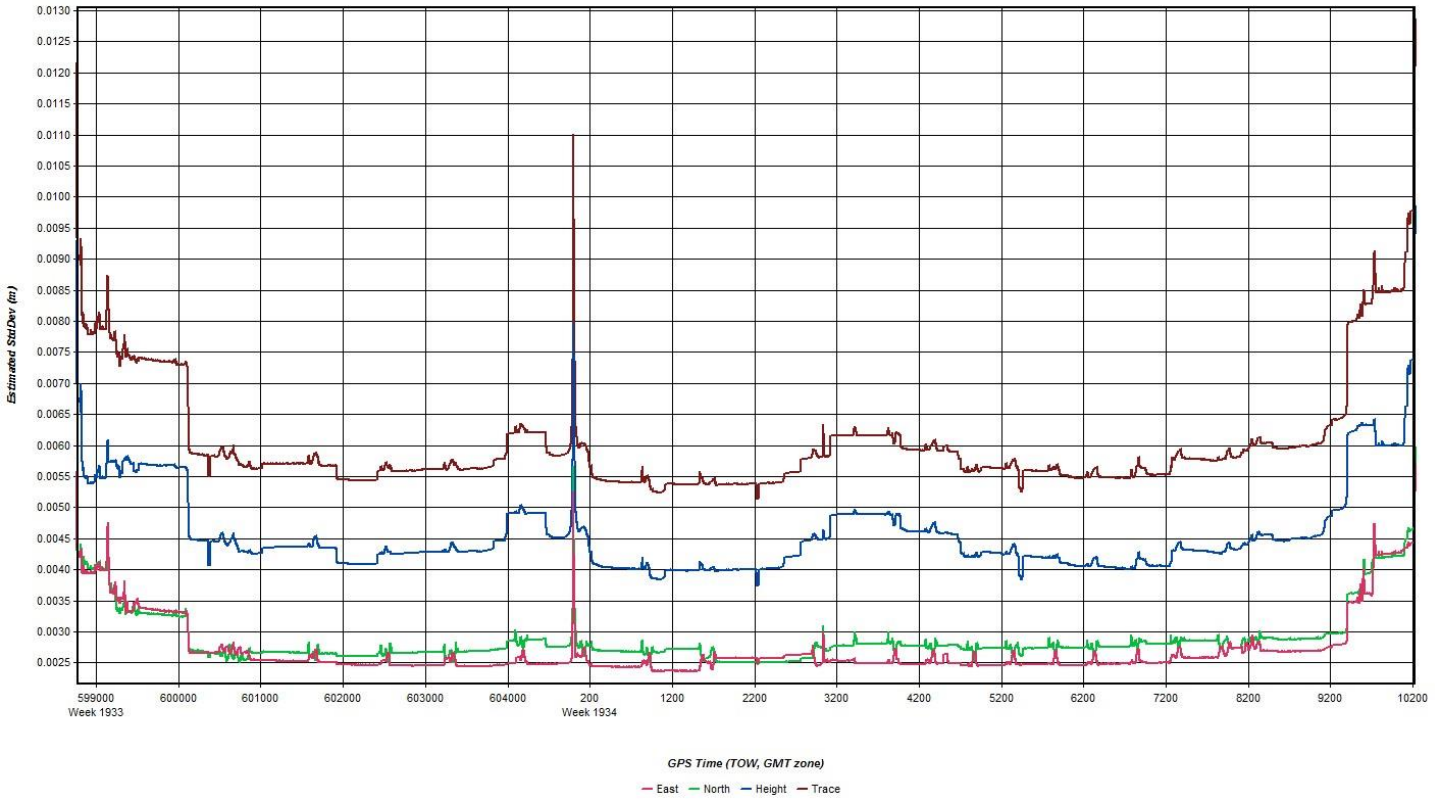


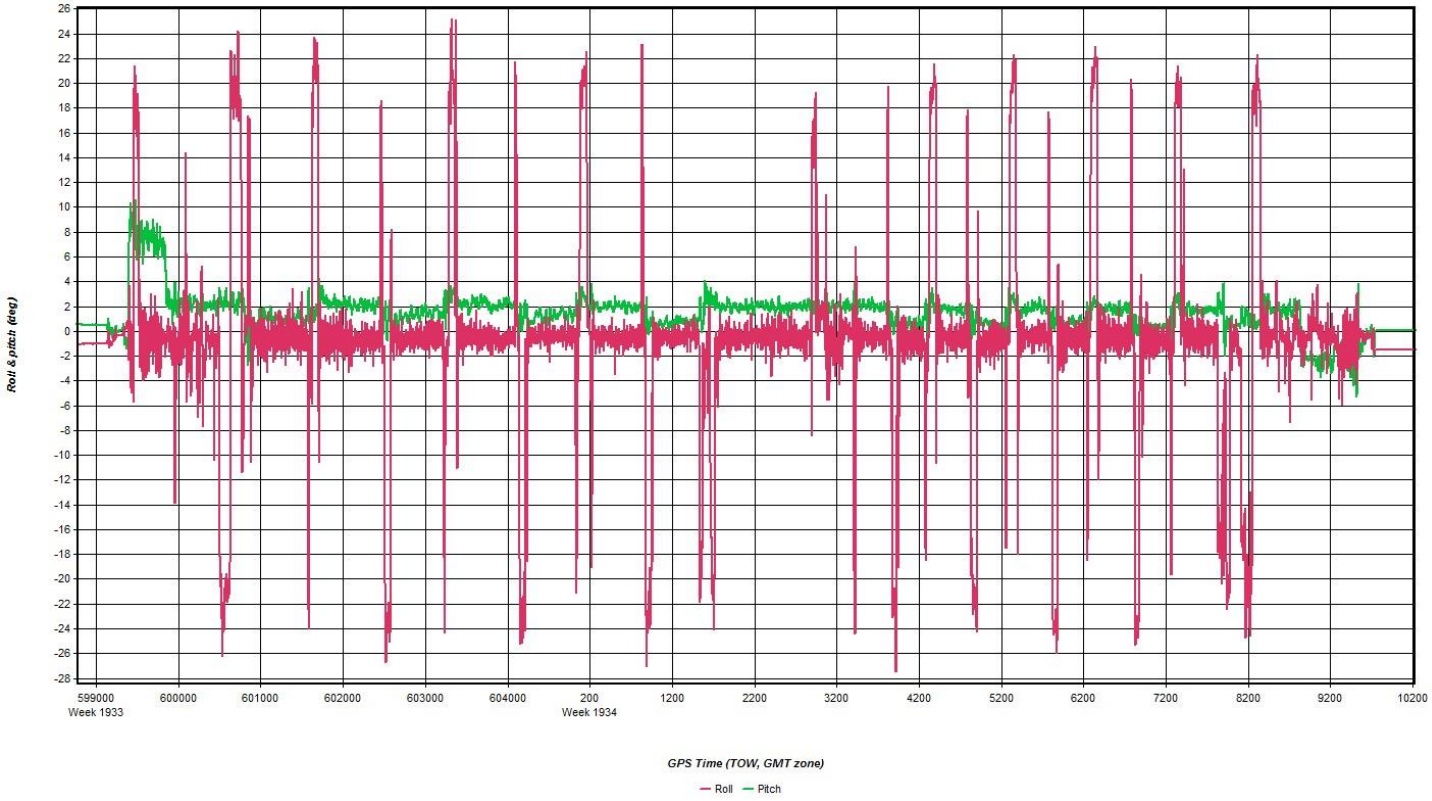

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

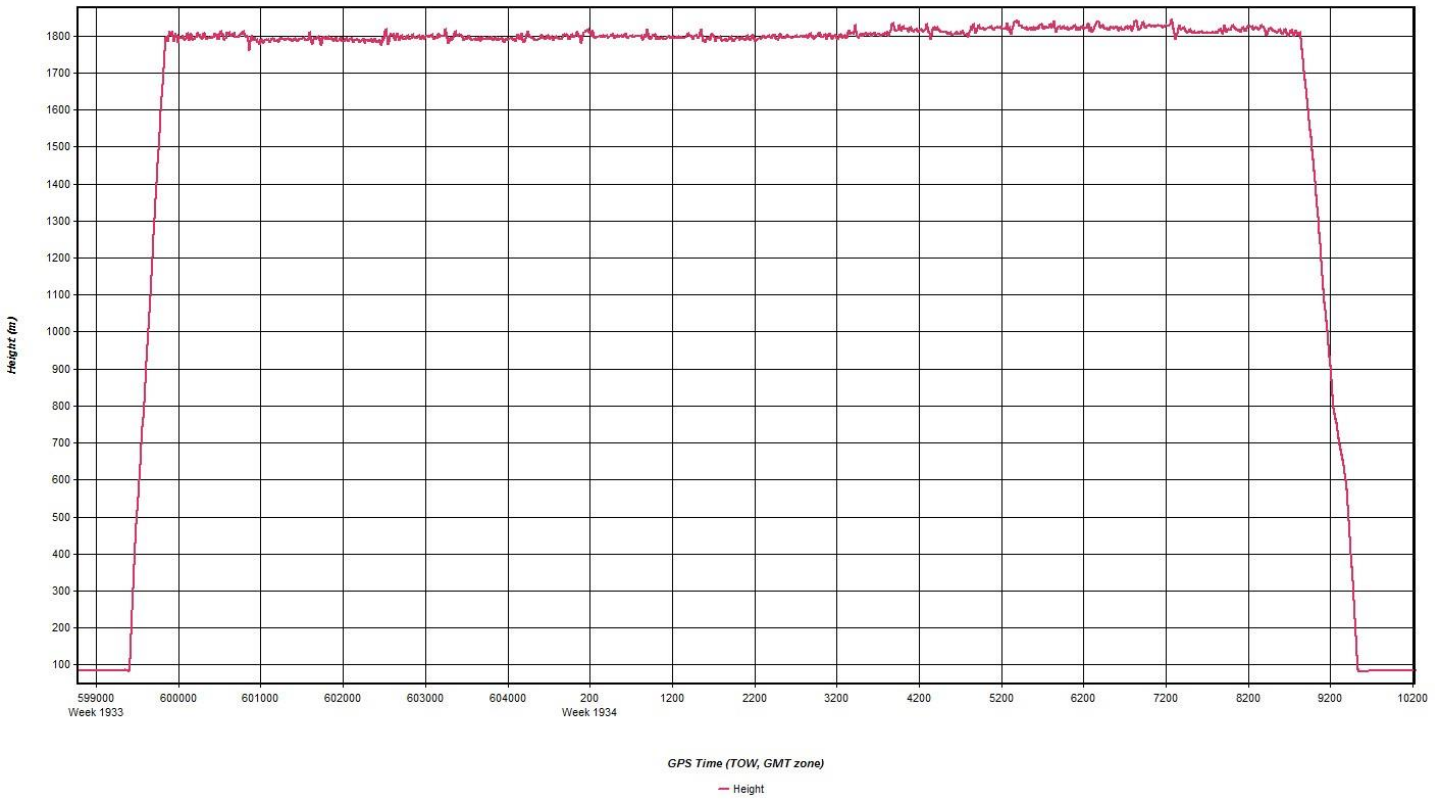

Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
East
North
Up

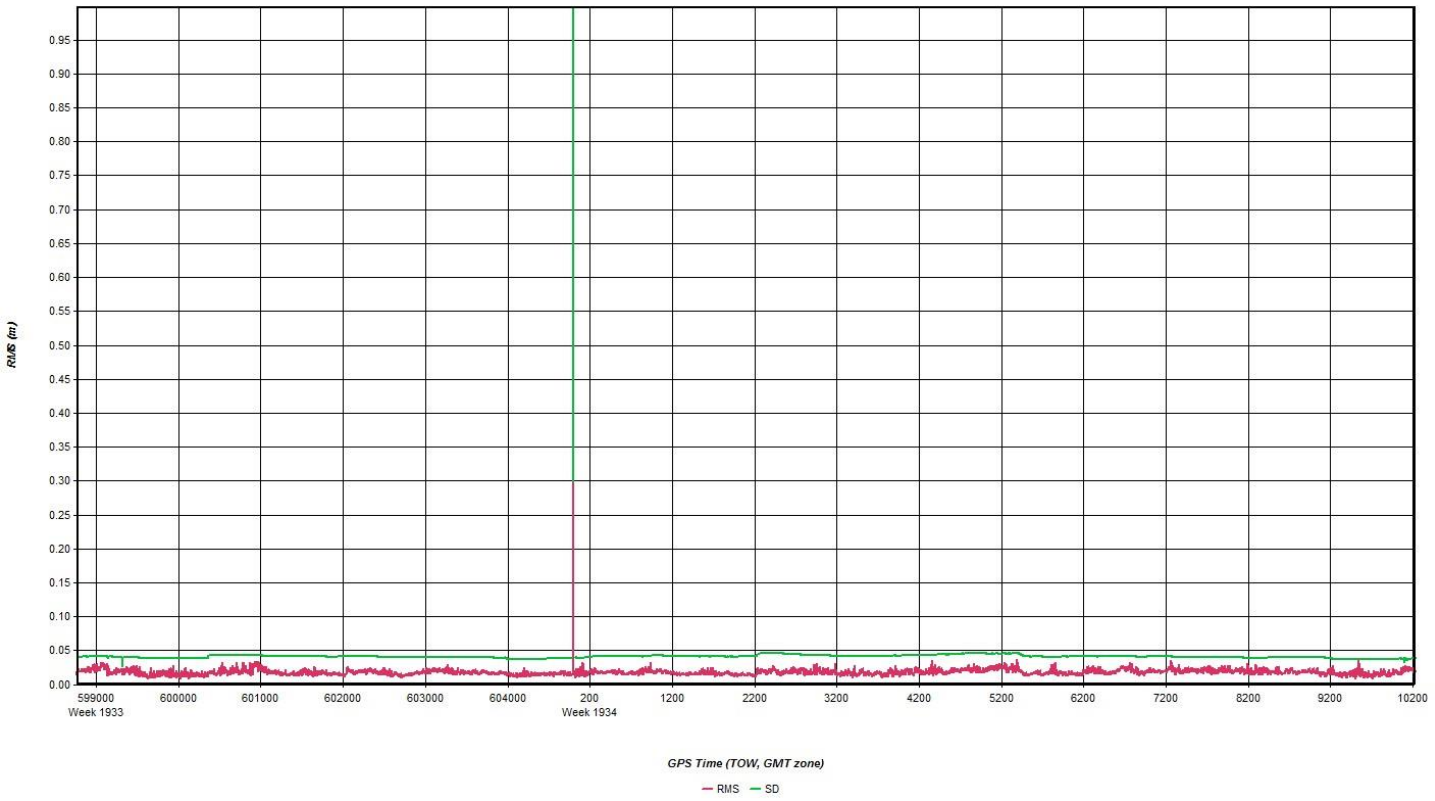

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

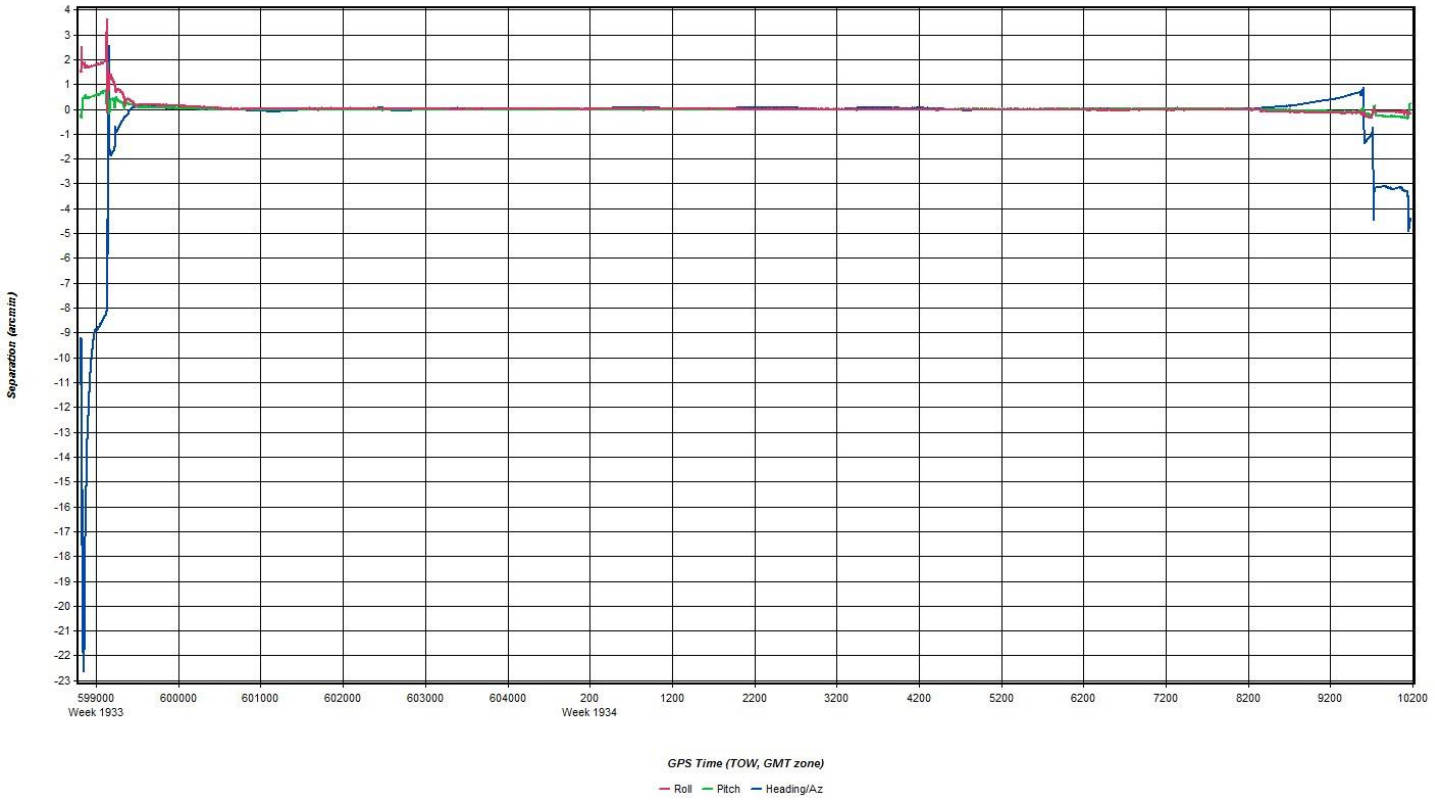

PDOP
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
PDOP

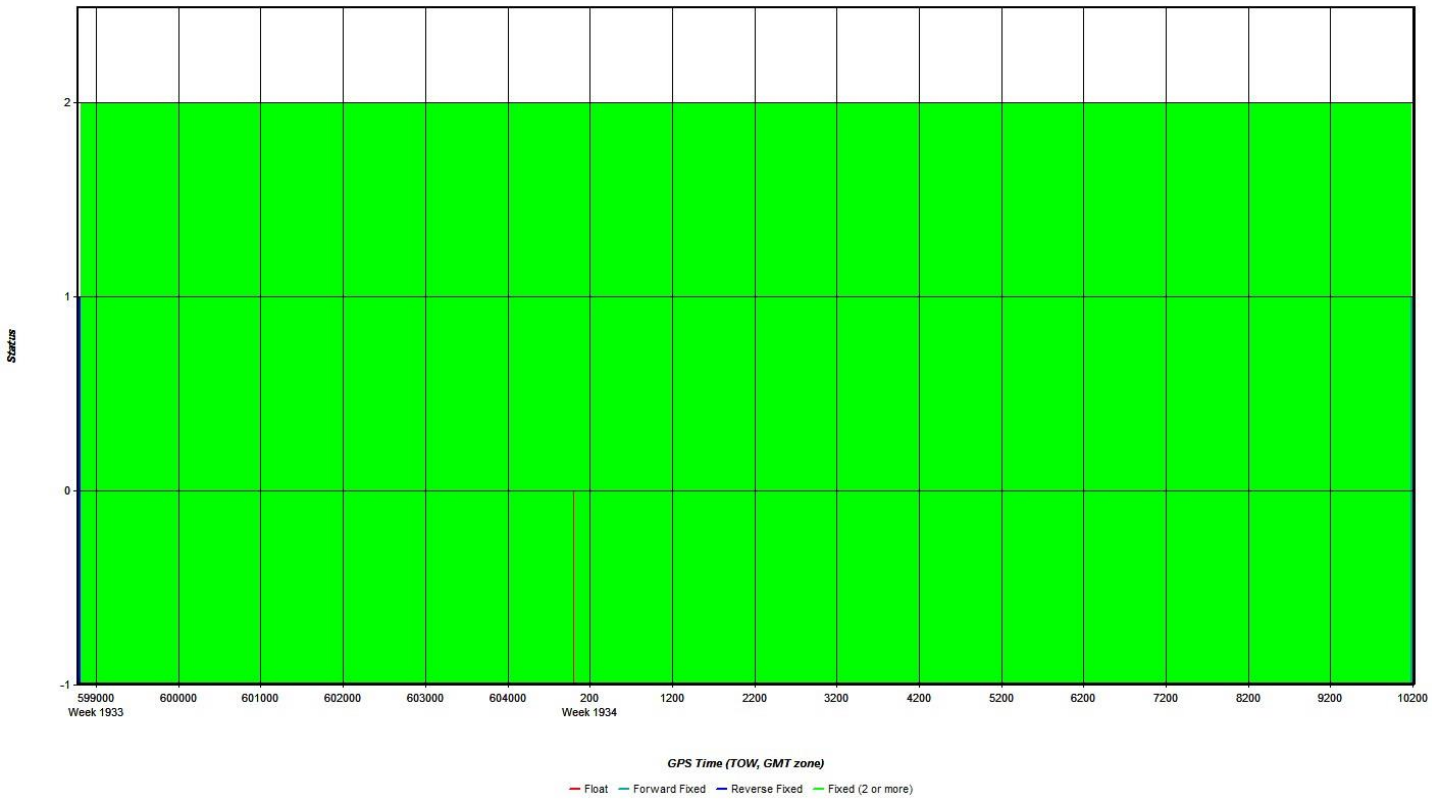

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
East
North
Height
Trace

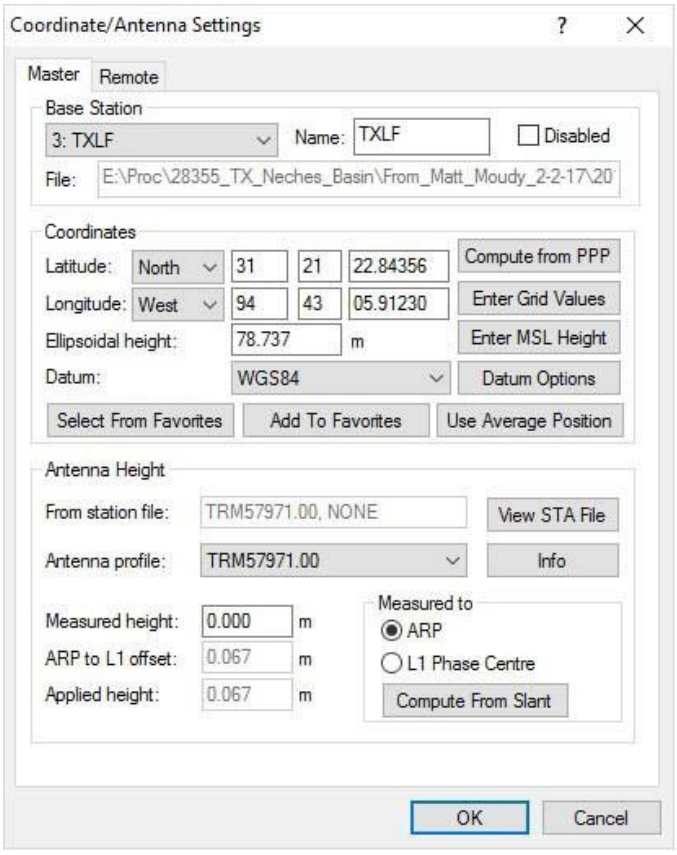

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
Roll
Pitch

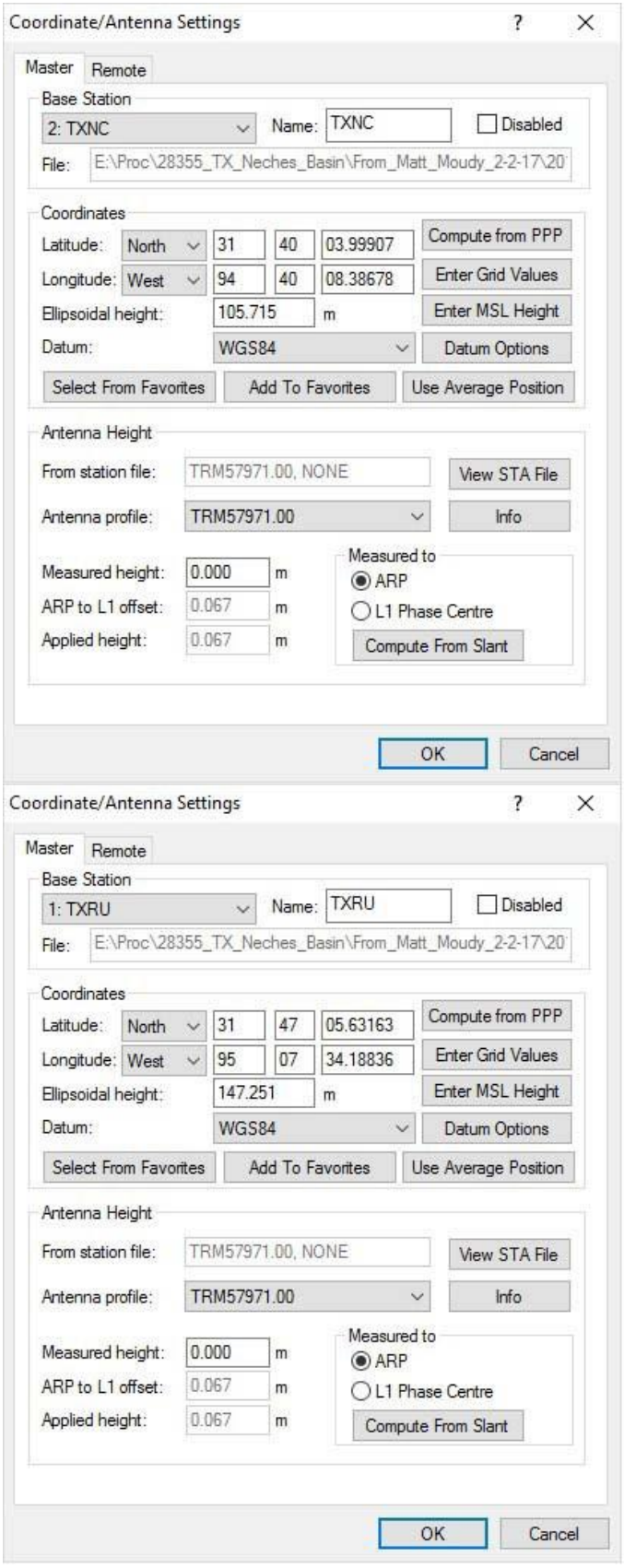

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
Height

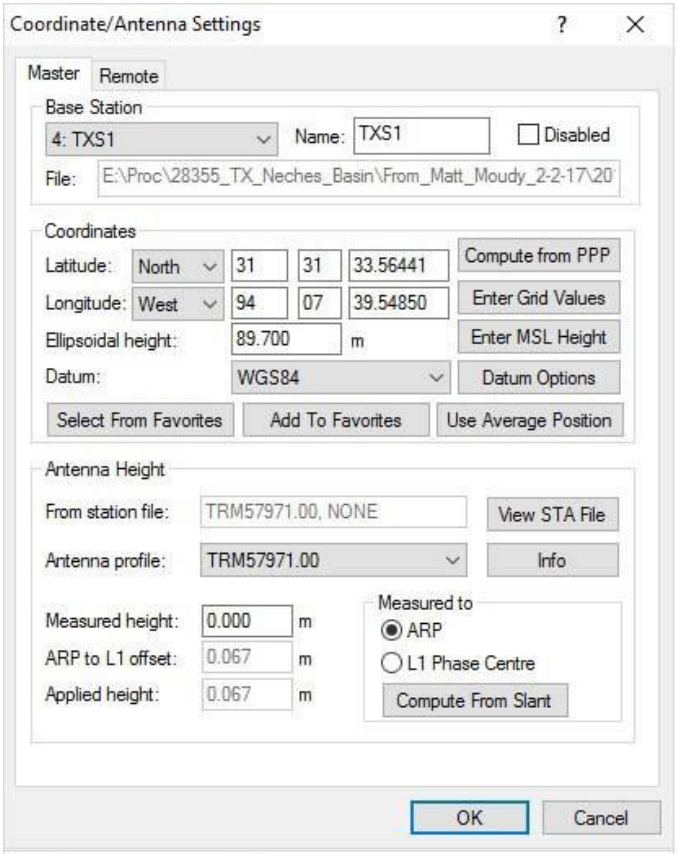

RMS (m)
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
RMS
SD

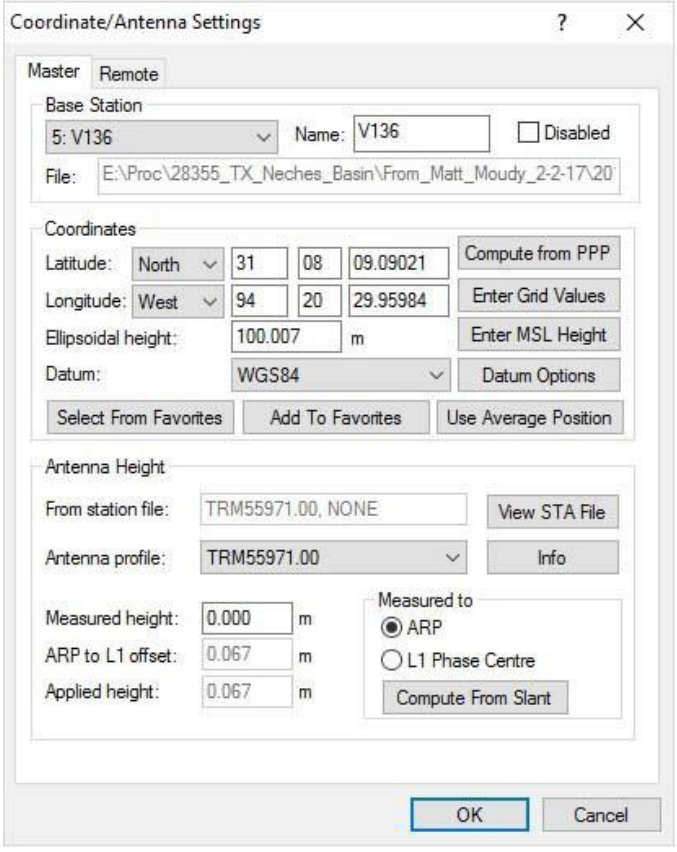

Separation (arcmin)
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
599000
Week 1933
600000
601000
602000
603000
604000
200
Week 1934
1200
2200
3200
4200
5200
6200
7200
8200
9200
10200
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLF
Name:
TXLF
Disabled
File:
E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude:
North
31
21
22.84356
Compute from PPP
Longitude:
West
94
43
05.91230
Enter Grid Values
Ellipsoidal height:
78.737
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXNC
Name: TXNC
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel
Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXRU
Name: TXRU
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXS1
Name: TXS1
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 31 33.56441
Longitude: West 94 07 39.54850
Ellipsoidal height: 89.700 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V136
Name: V136
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 08 09.09021
Longitude: West 94 20 29.95984
Ellipsoidal height: 100.007 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-28-17

Lift: (A) B C D E Pg 1 of 1

Project: NECHES BASIN, TX LUFKIN / RUSK Proj #: 28355 Flight Mgmt File: 28355_SN7178...

Aircraft: N812TS Begin Hobbs: 4307.6 End Hobbs: 4311.7 Total: 4.1 Pilot: RADTKE Co-Pilot: - Tech: MOODY

Dep Apt: GGG Dep Time (Lcl): 1628 (Z): 2228 Arr Apt: GGG Arr Time (Local): 2038 (Z): 0238 Tot Time Aloft: 4:10

CORS: Y / (N) Sta 1: VIRTUAL Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

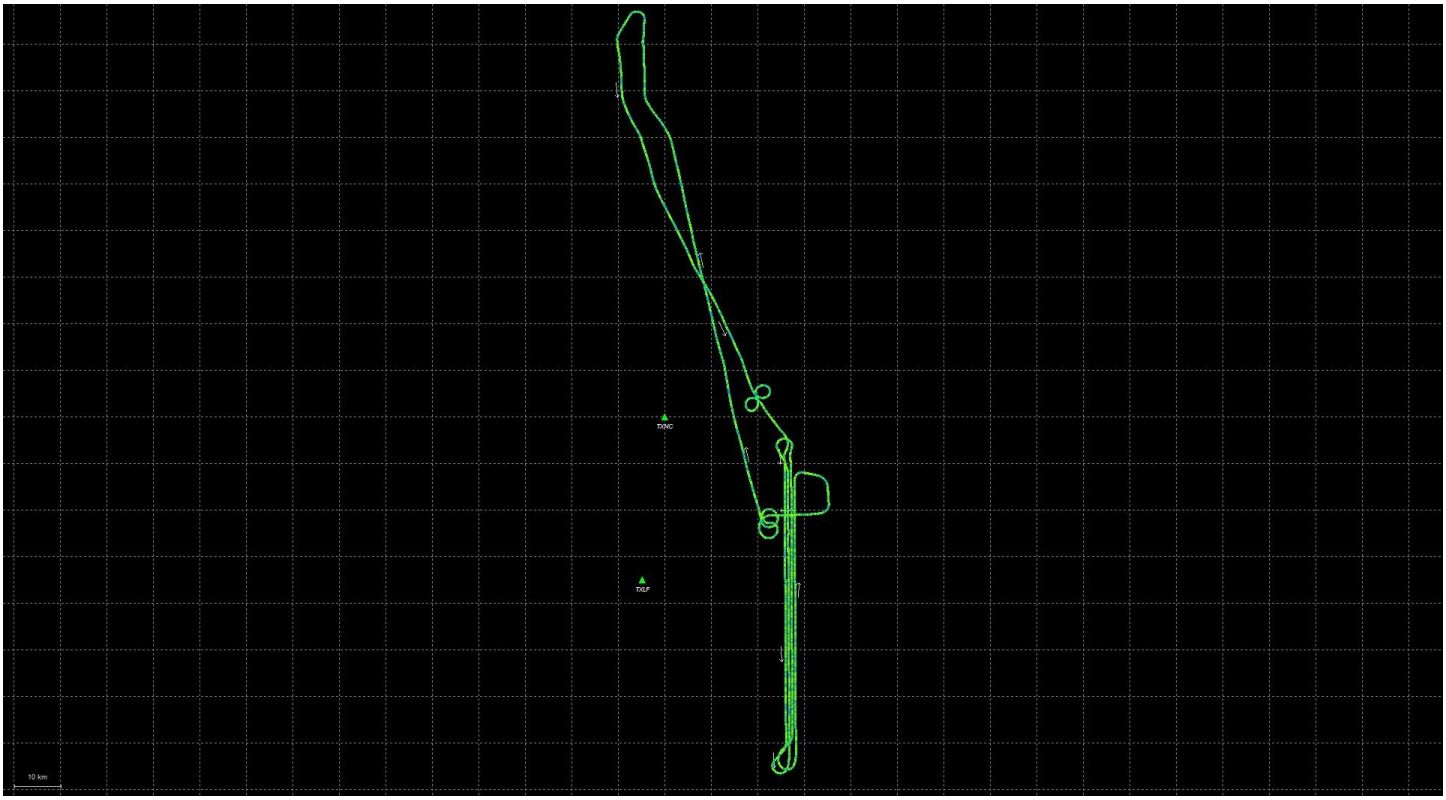
LiDAR	Type AL570	Serial # 7178	Alt AGL ~5550'	Alt AMSL ~5900'	Avg Terr Ht ~350'	Max Gdspd 150 KTS	Avg Pt Spacing
	FOV 34°	Scan Freq 57Hz	MplA (Y) / N	Pulses In Air 2	Pulse Rate 312 KHz	Power 100%	PPSM

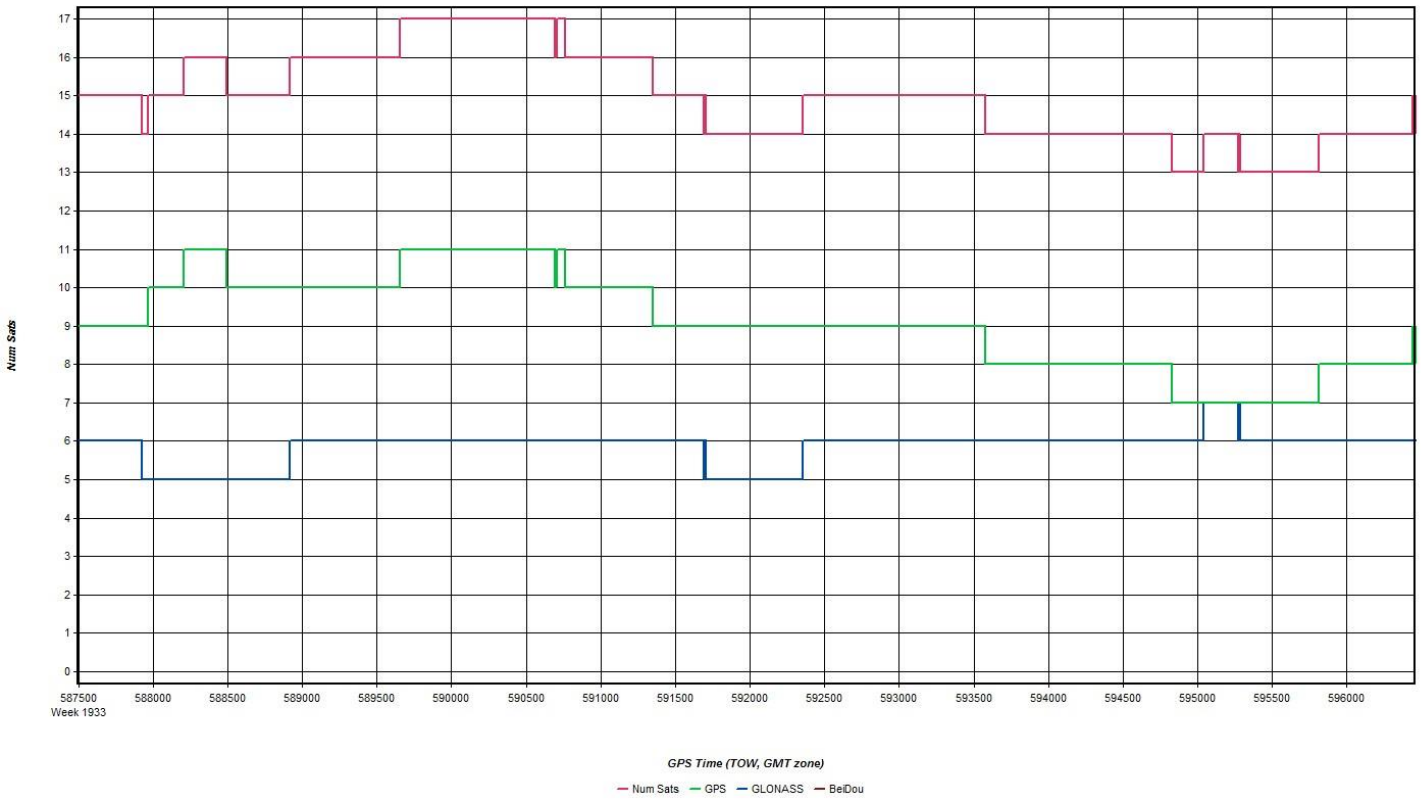
Reg GB 288 End GB 346 Tot GB 58 Storage Name/# 7178 SSD3

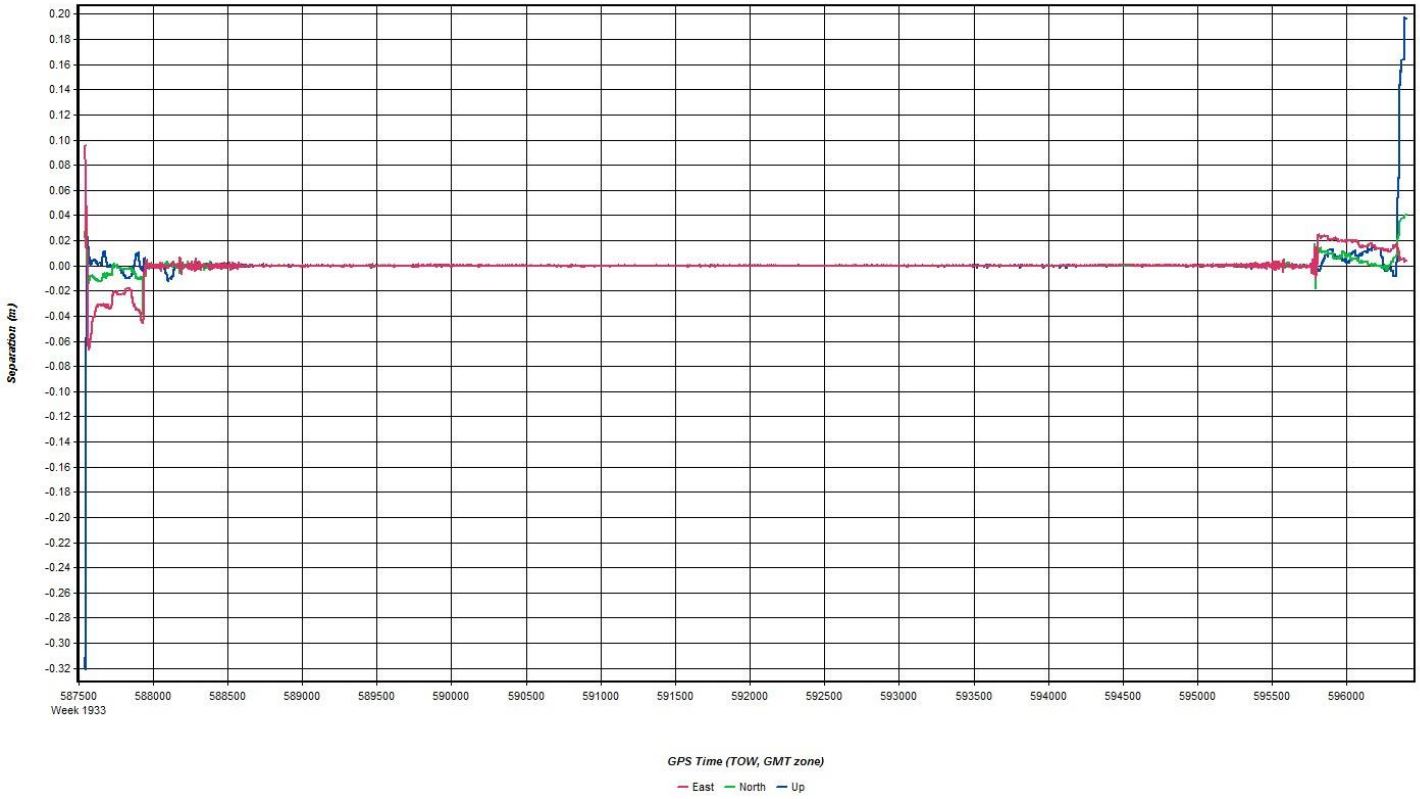
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.	DO
3109	180	2255	2305	164	1.2/18	5850	4	-	- LUFKIN	
3110	360	2309	2320	136	1.2/18	5820	2	-		
3111	180	2323	2333	161	1.2/17	5910	4	-		
3112	360	2337	2347	147	1.2/17	5880	3	-		
3113	180	2351	0000	164	1.1/19	5890	5	-		
3114	360	0003	0013	147	1.2/18	5890	3	-		
3115	180	0016	0025	162	1.2/18	5890	7	-		
3116	270	0030	0047	153	1.2/18	5860	6	-	- PLANNED TIE LINE LUFKIN COMPLETE	
2029	360	0058	0103	150	1.2/18	5930	6	-	- RUSK	
2028	180	0106	0110	161	1.2/17	5980	9	0		
2027	360	0114	0119	151	1.3/17	5950	7	0		
2026	180	0122	0127	159	1.2/18	5980	9	0		
2025	360	0130	0135	152	1.2/18	5970	6	0		
2024	180	0138	0143	166	1.3/17	5980	9	0		
2023	360	0146	0152	153	1.2/18	5970	7	0		
2022	180	0155	0200	163	1.2/18	5980	8	0		
2021	360	0204	0210	149	1.1/18	5960	7	0		

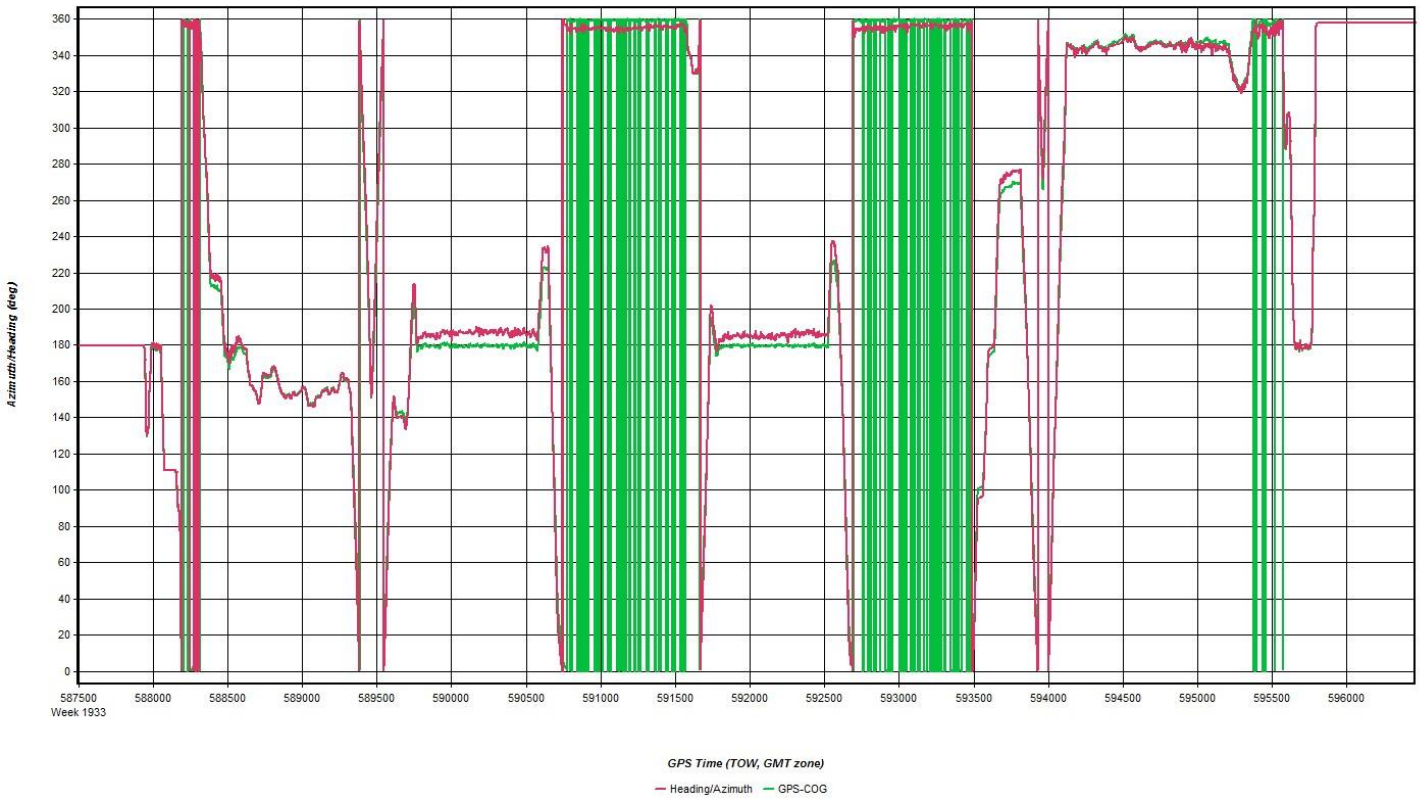
Total Proj Lines:	Lines Flown:	Lines Remain:	On line Time: 3.3	Mob Time: 1.0	Notes:
TIE 090 0213	0214 158	1.1/18 5990	11 0	- MANUAL TIE LINE	

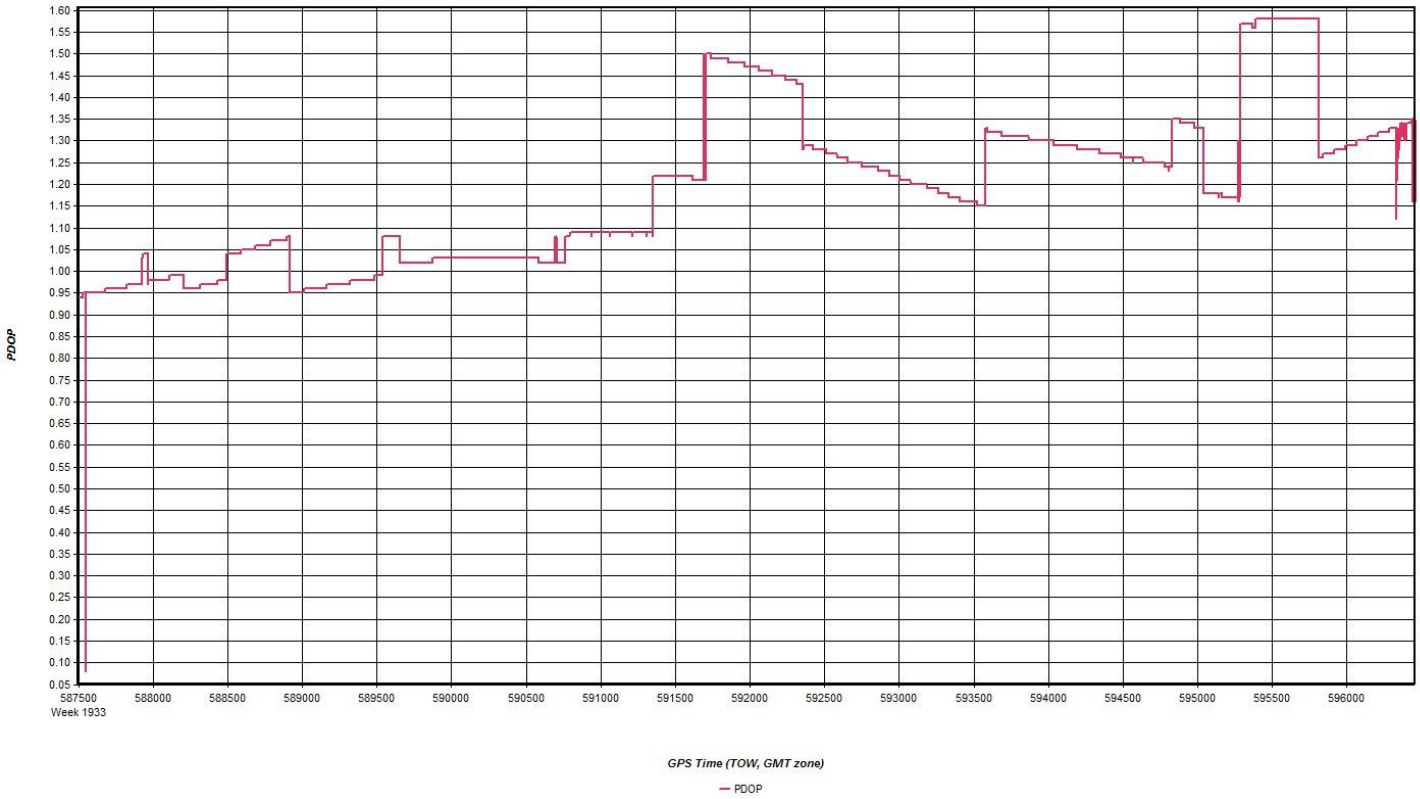
Jan 28, 2017-B (N812TB, SN7178)

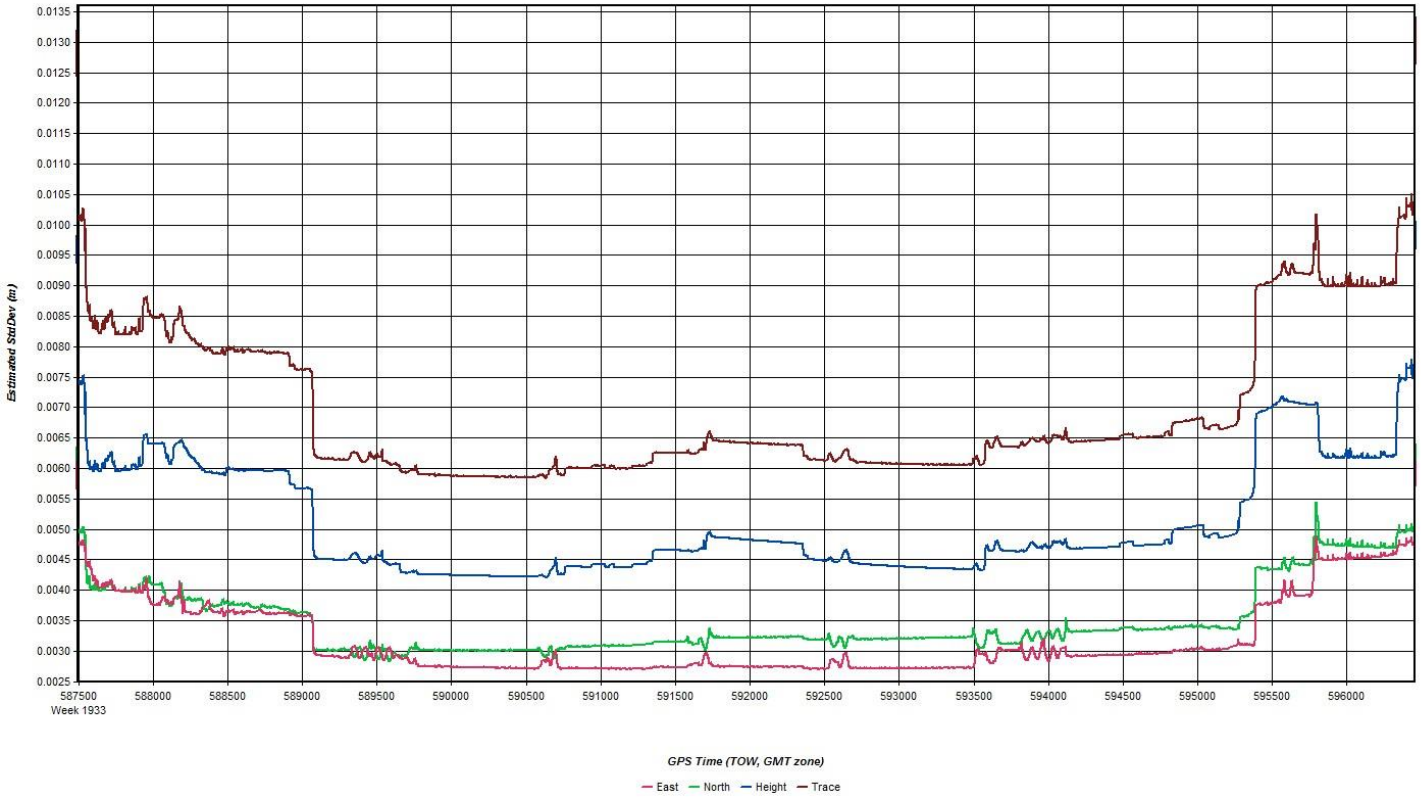


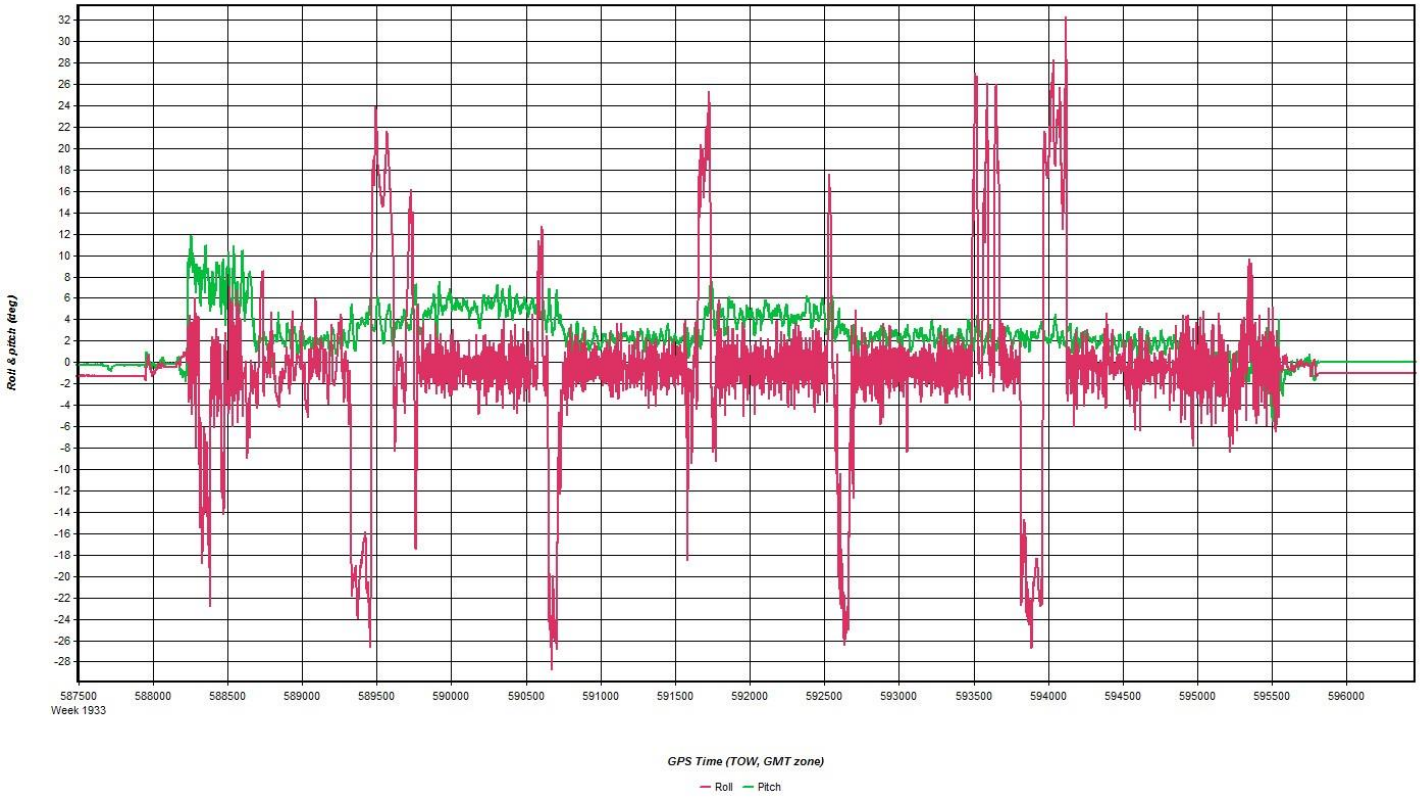

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

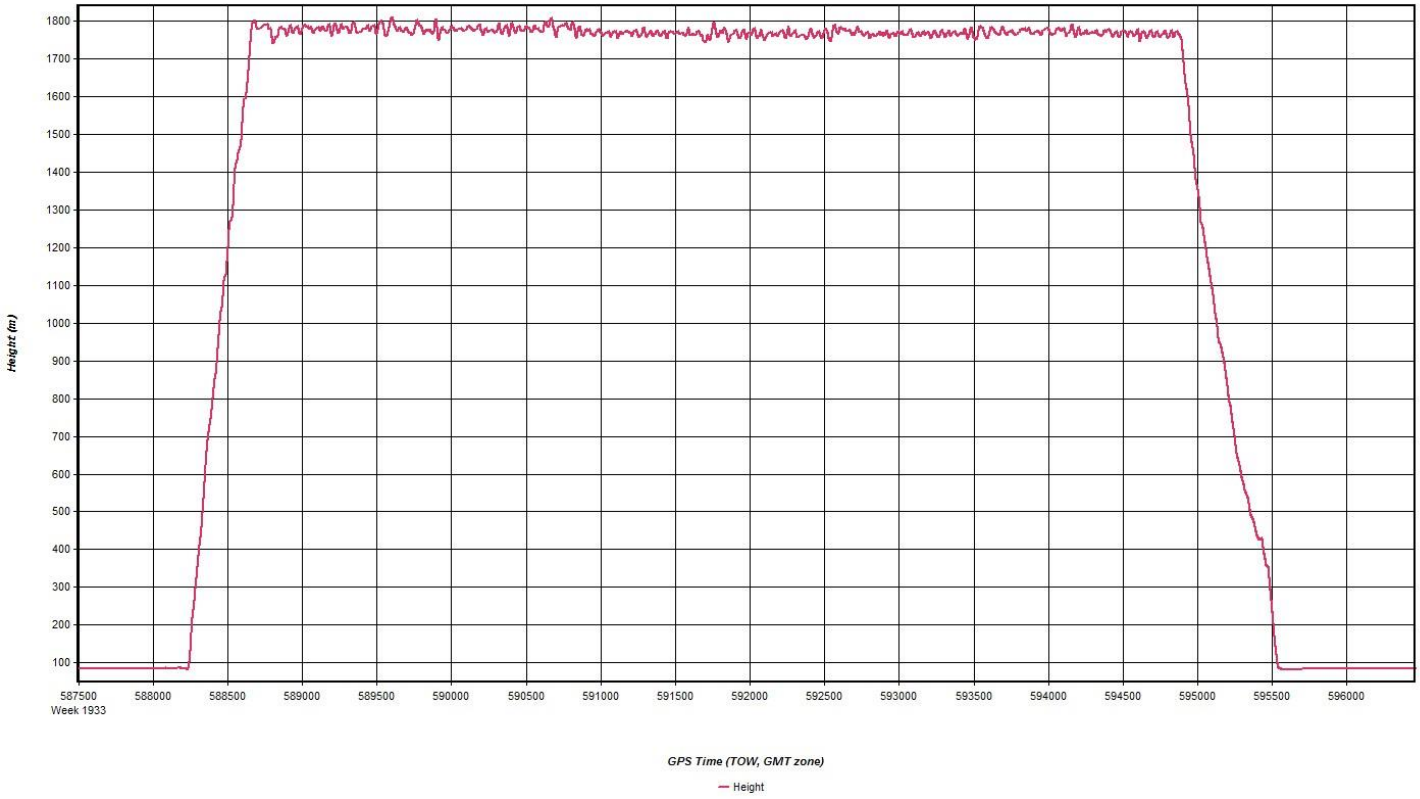

Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
East
North
Up

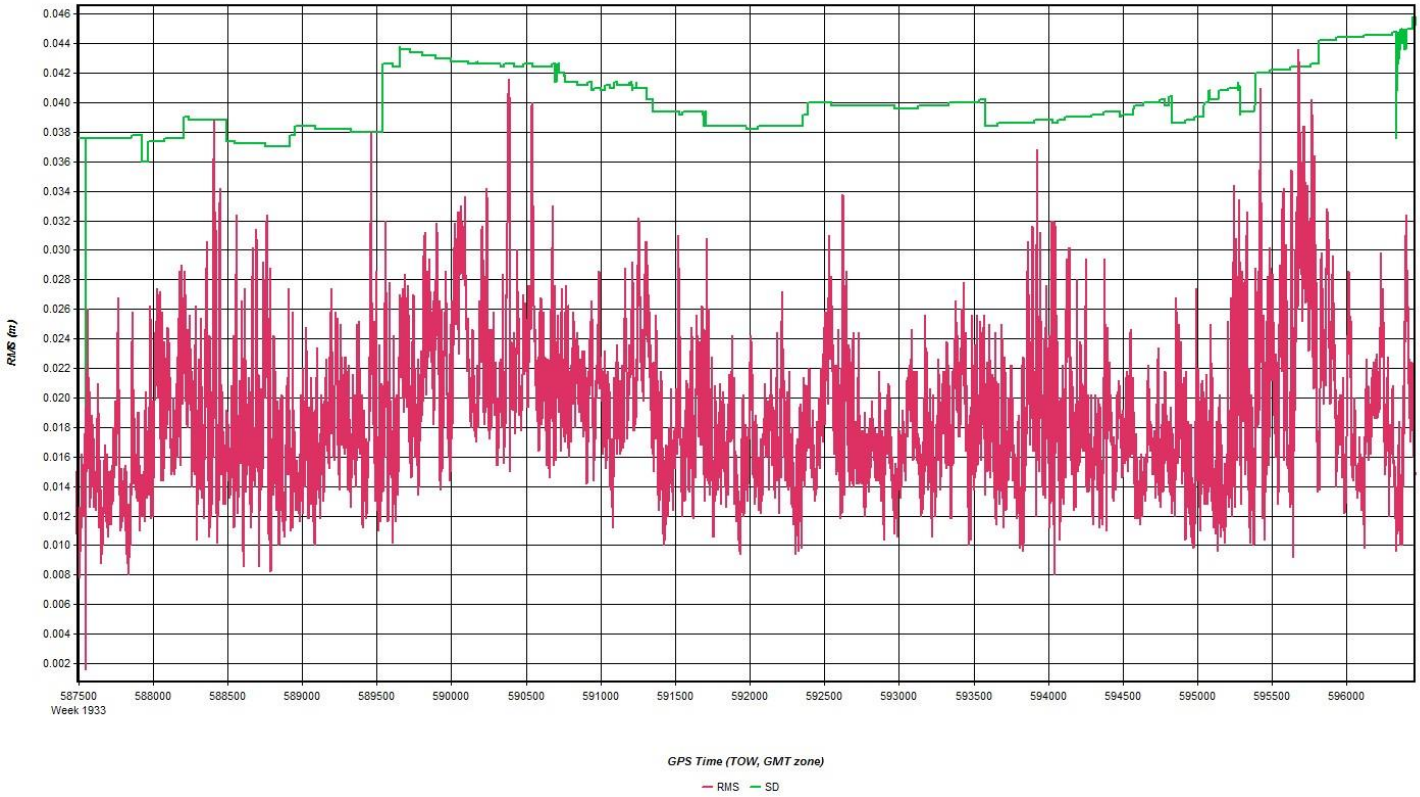

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

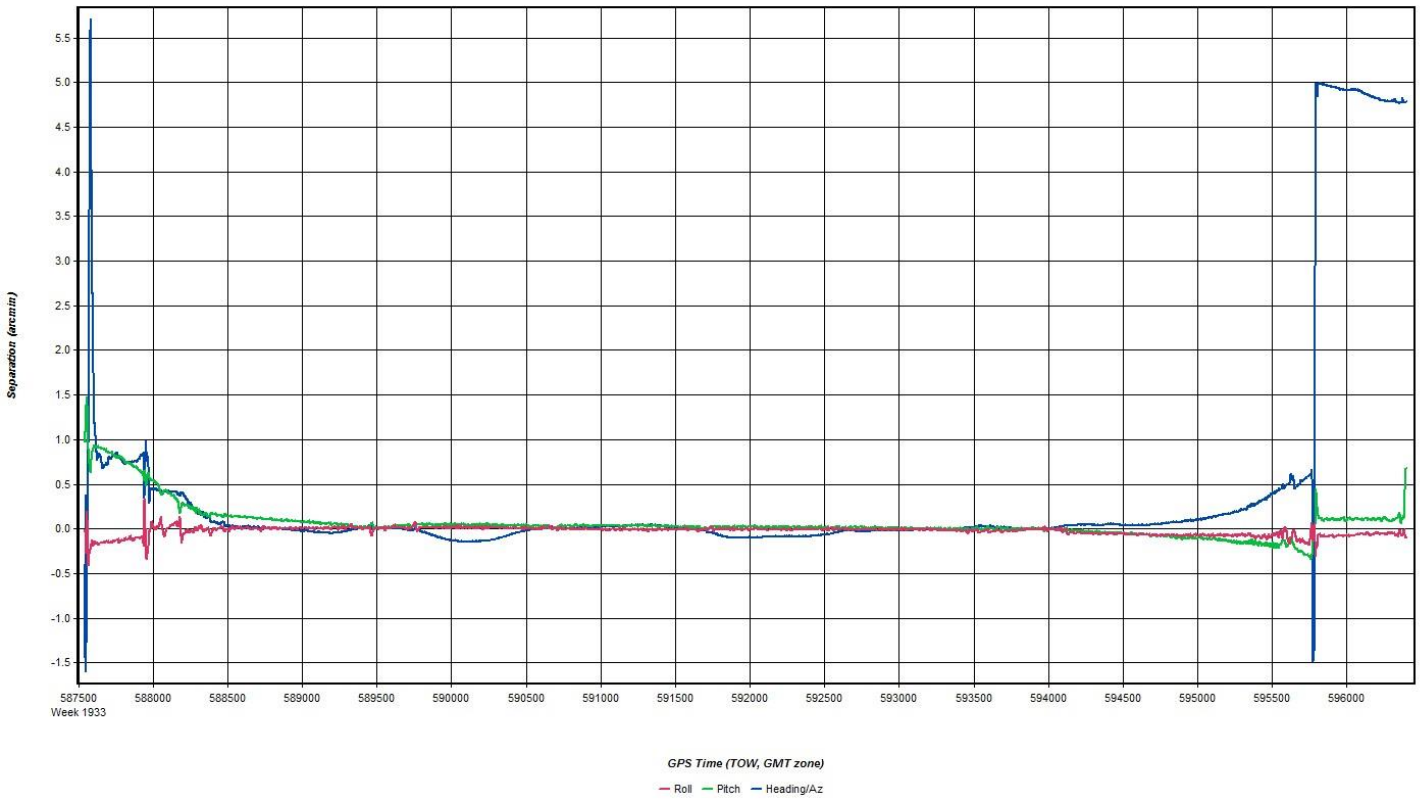

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
587500
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
Week 1933
GPS Time (TOW, GMT zone)
PDOP

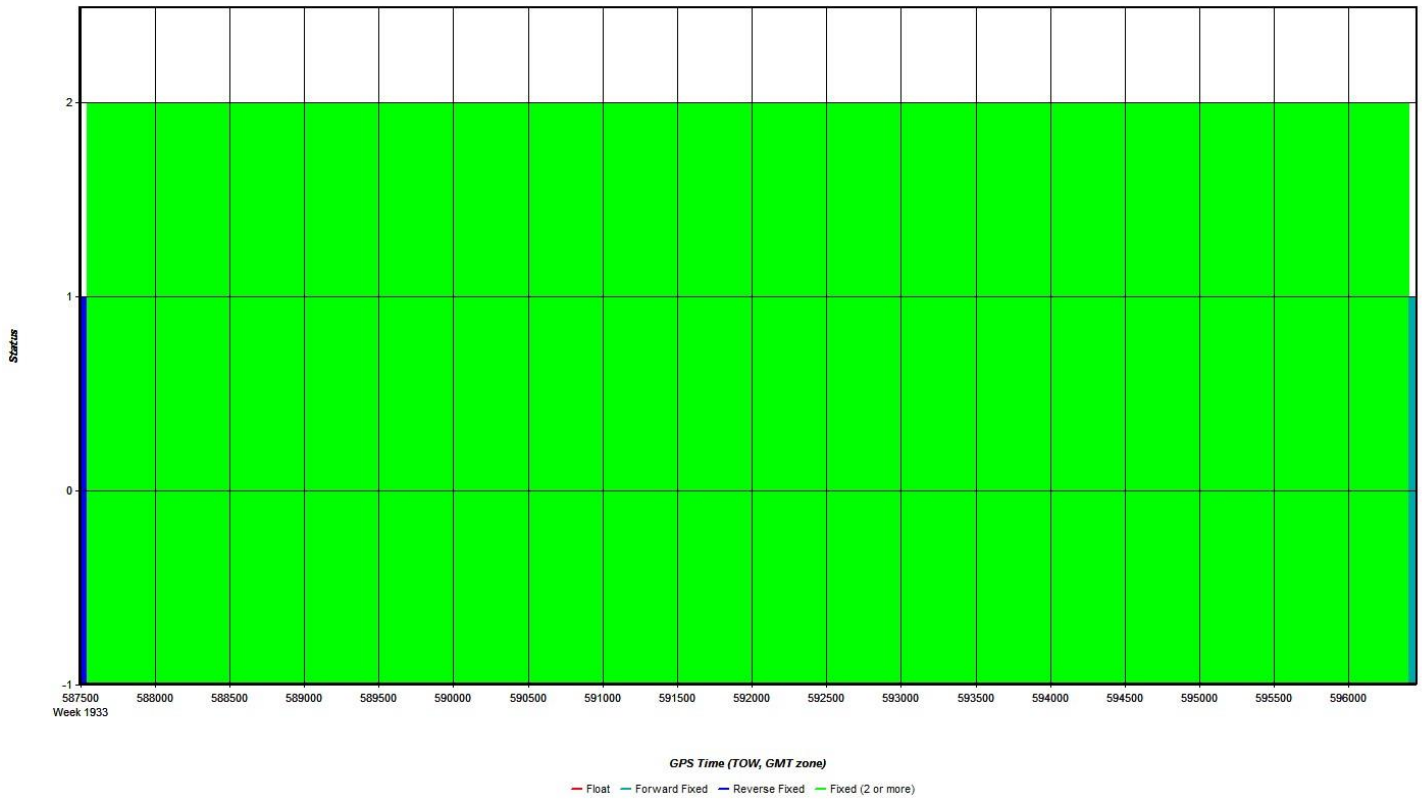

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

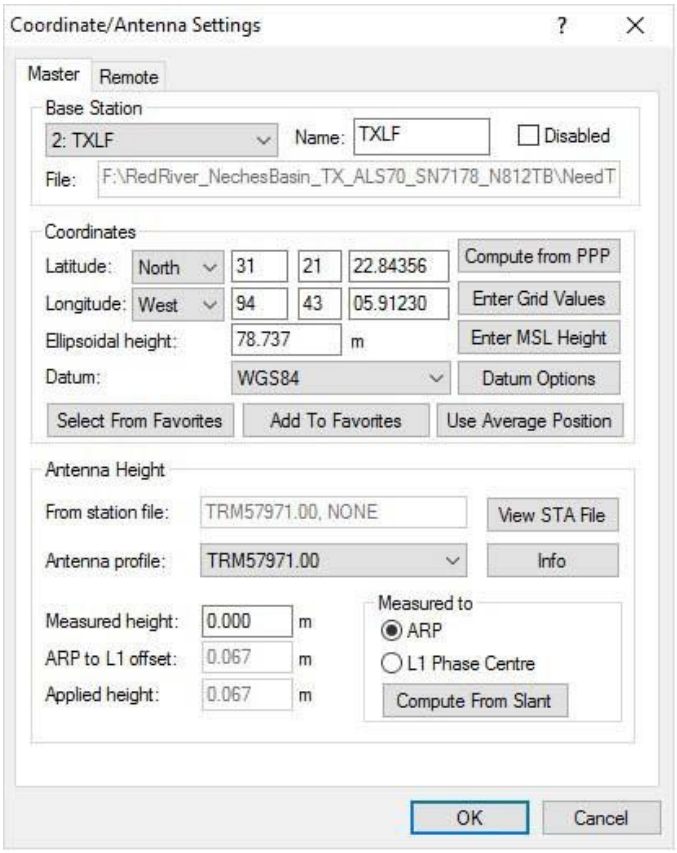

Roll & pitch (deg)
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
587500
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
Week 1933
GPS Time (TOW, GMT zone)
Roll
Pitch

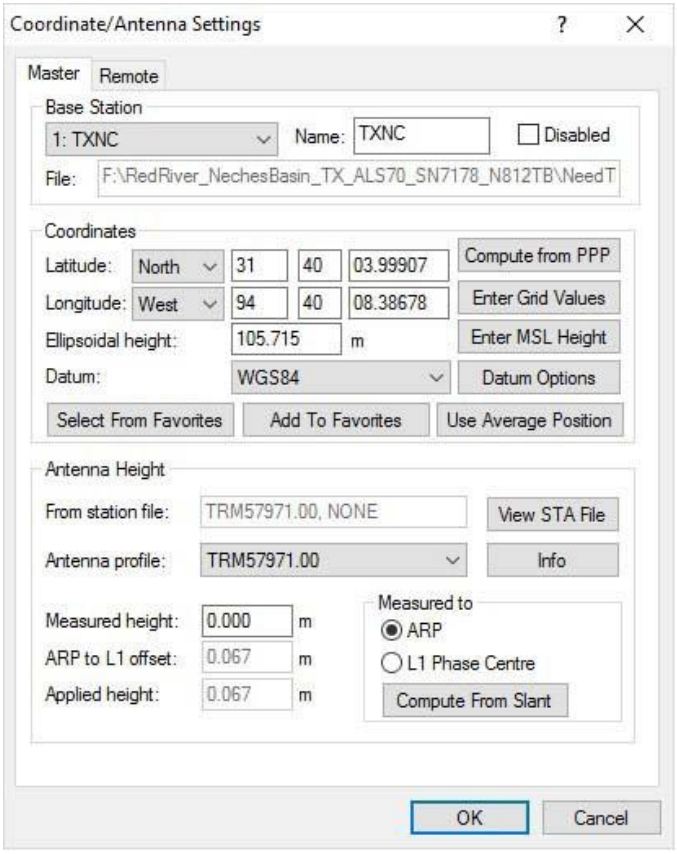

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
RMS
SD

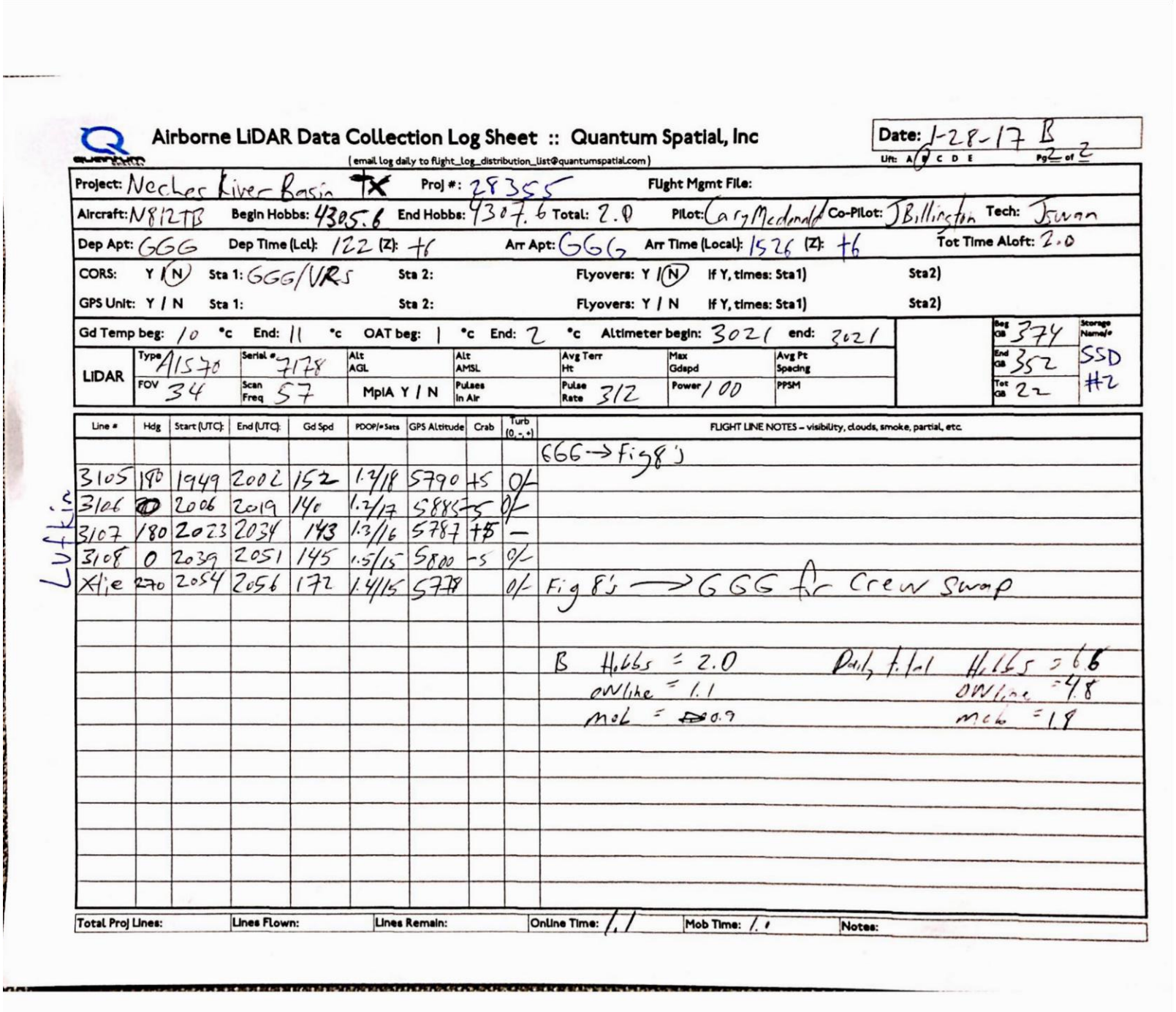

Separation (arcmin)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
587500
Week 1933
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
593000
593500
594000
594500
595000
595500
596000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXLF
Name:
TXLF
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
21
22.84356
Compute from PPP
Longitude:
West
94
43
05.91230
Enter Grid Values
Ellipsoidal height:
78.737
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXNC
Name: TXNC
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-28-17 B
Lift: A B C D E Pg 2 of 2

Project: Neches River Basin TX Proj #: 28355 Flight Mgmt File:

Aircraft: N812TB Begin Hobbs: 4305.6 End Hobbs: 4307.6 Total: 2.0 Pilot: Cary Mcdonald Co-Pilot: J Billington Tech: Juwan

Dep Apt: GGG Dep Time (Lcl): 122 (Z): +6 Arr Apt: GGG Arr Time (Local): 1526 (Z): +6 Tot Time Aloft: 2.0

CORS: Y / (N) Sta 1: GGG/VRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 10 °c End: 11 °c OAT beg: 1 °c End: 2 °c Altimeter begin: 3021 end: 3021

LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	A1570	7178					
	FOV 34	Scan Freq 57	MpIA Y / N	Pulses In Air	Pulse Rate 312	Power 100	PPSM

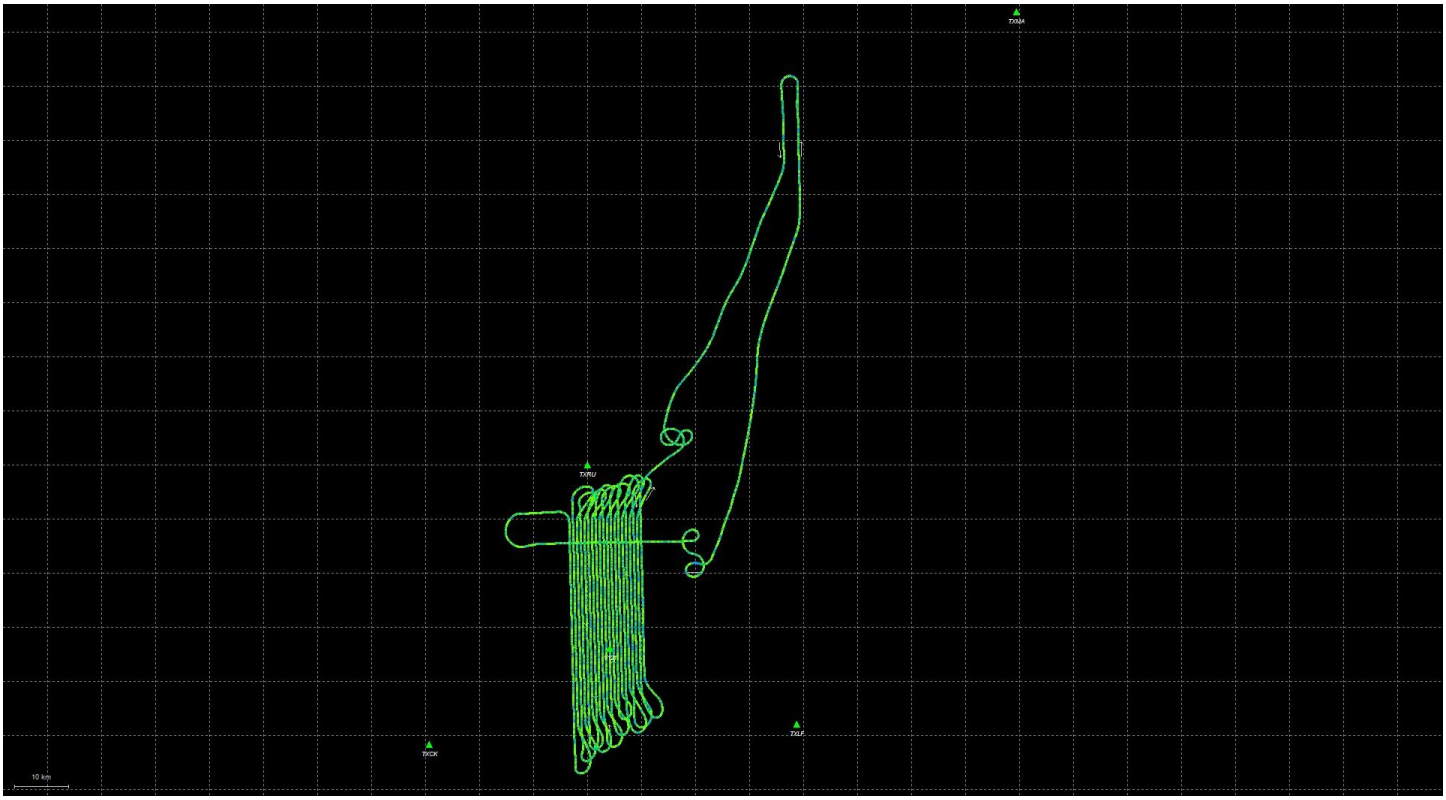
	Beg GB	End GB	Tot GB	Storage Name/#
	374	352	22	SSD #2

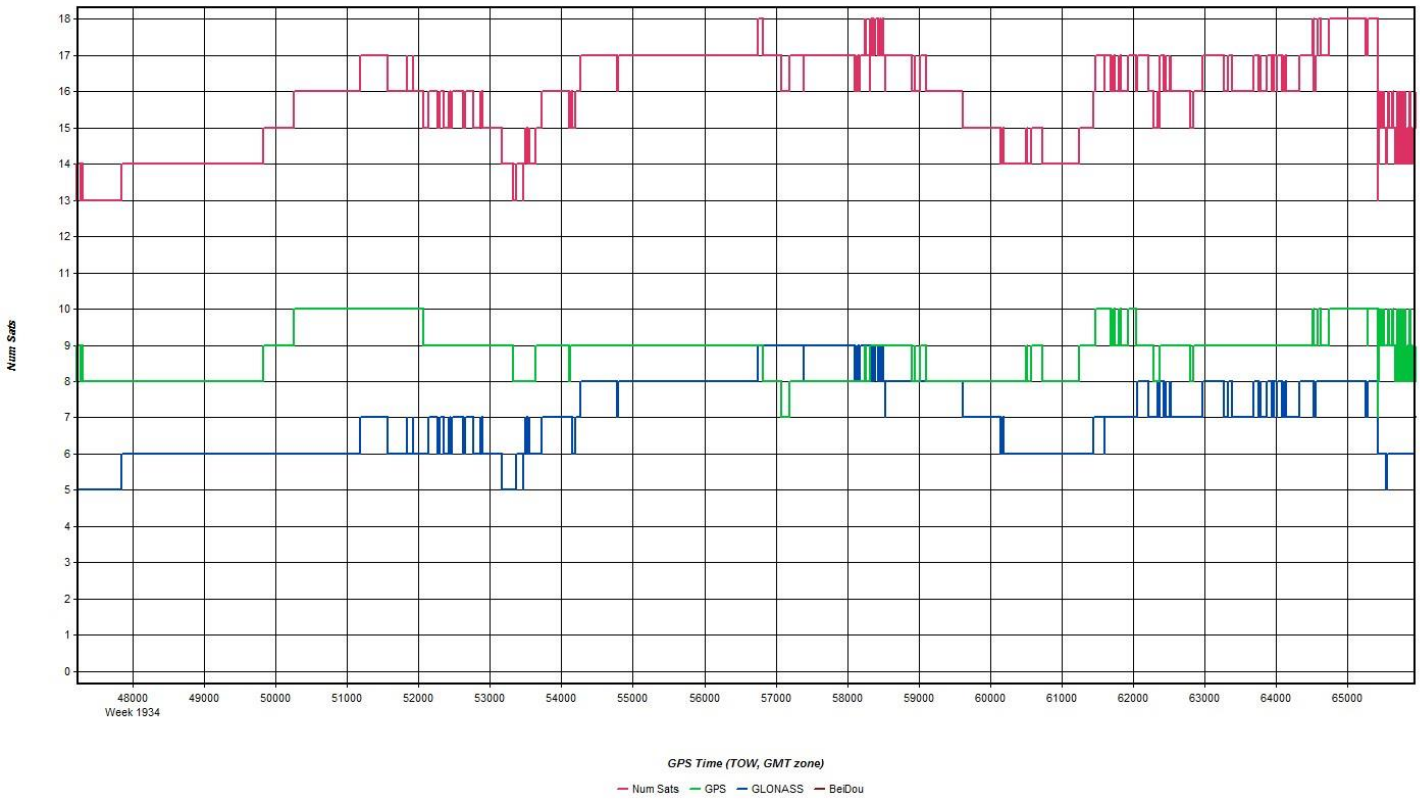
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									GGG → Fig 8's
3105	180	1949	2002	152	1.2/18	5790	+5	0/-	
3106	~~00~~ 360	2006	2019	140	1.2/17	5885	-5	0/-	
3107	180	2023	2034	143	1.3/16	5787	+5	-	
3108	0	2039	2051	145	1.5/15	5800	-5	0/-	
Xlie	270	2054	2056	172	1.4/15	5778		0/-	Fig 8's → GGG for Crew Swap
									B Hobbs = 2.0 Pail, final Hobbs = 6.6
									online = 1.1 online = 4.8
									mob = ~~0.9~~ mob = 1.8

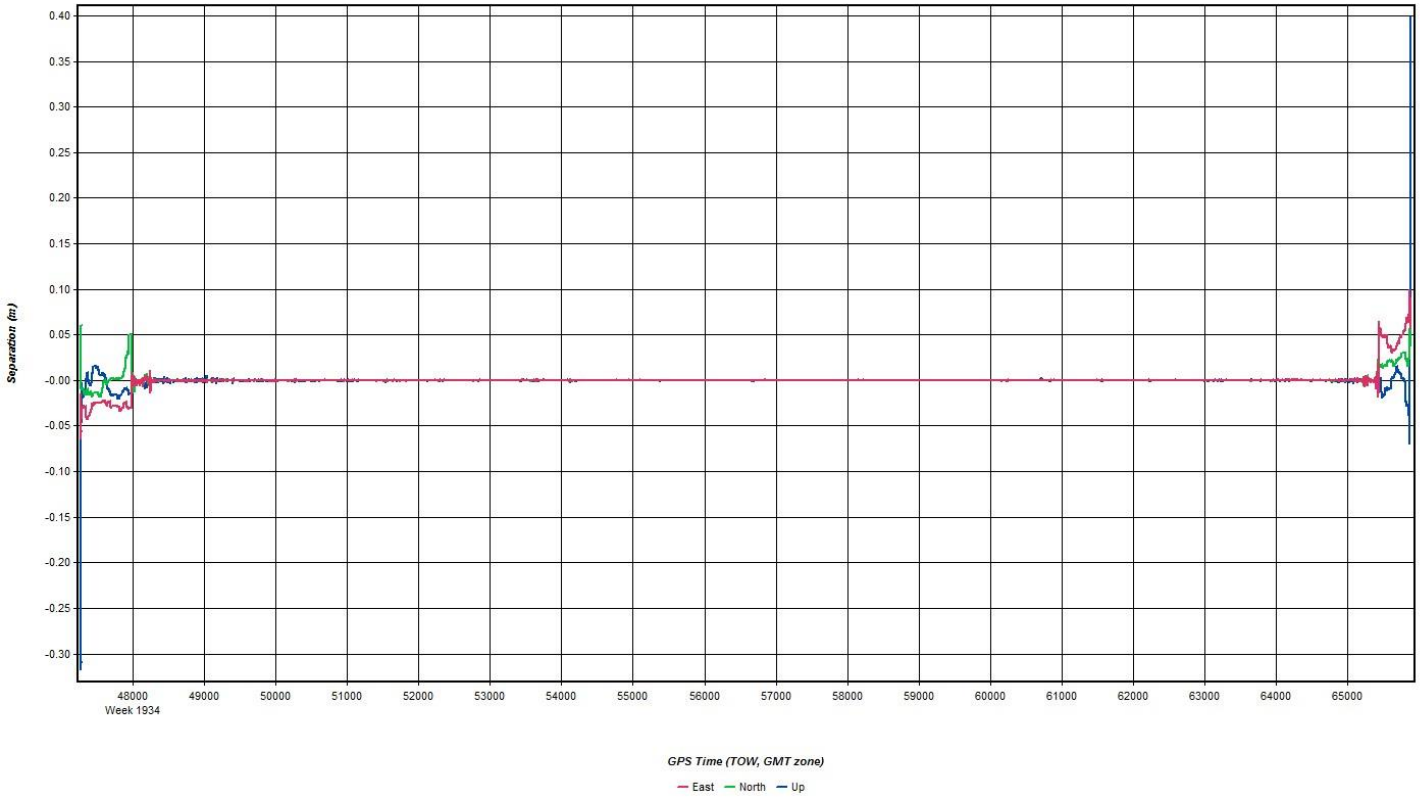
Luftkin

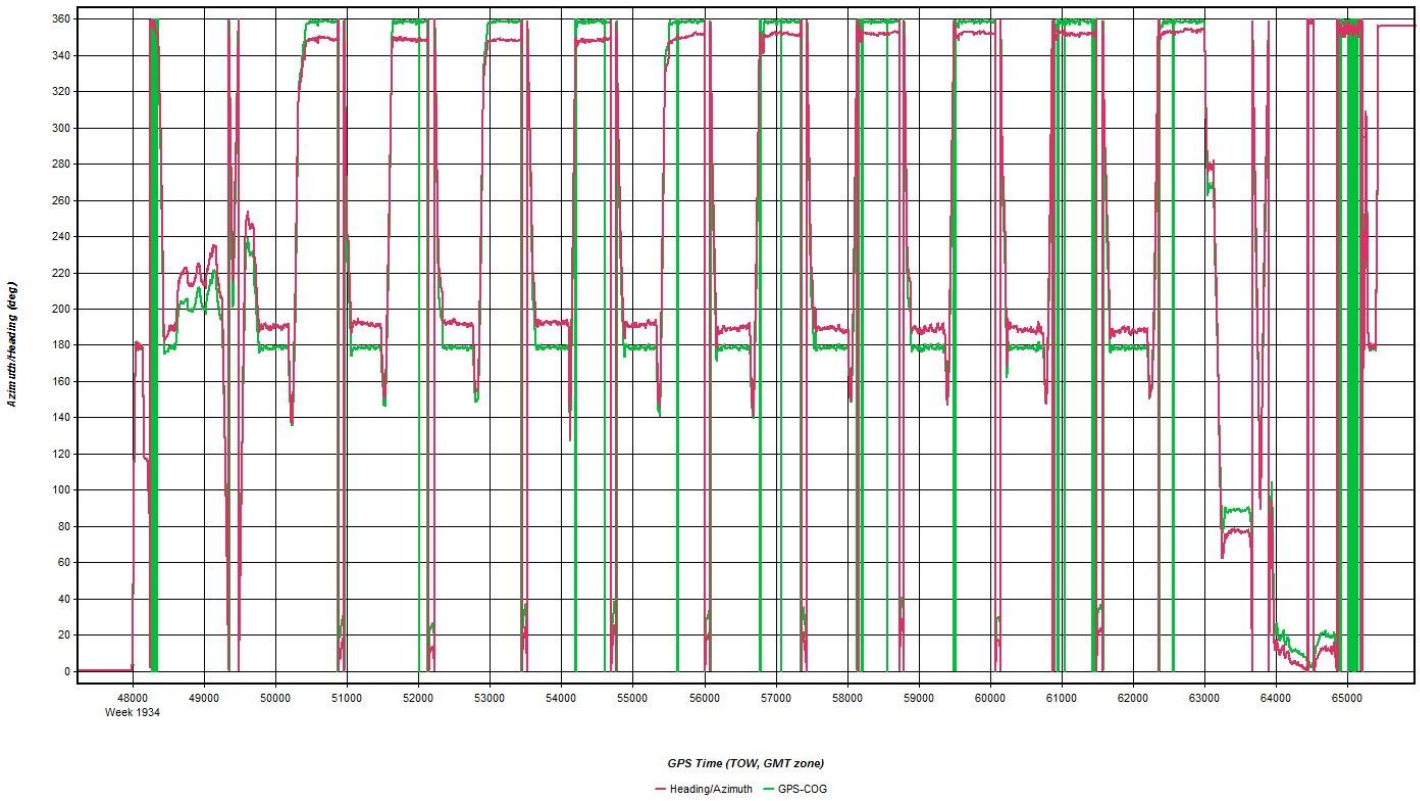
Total Proj Lines:	Lines Flown:	Lines Remain:	Online Time: 1.1	Mob Time: 1.8	Notes:

Jan 29, 2017-A (N812TB, SN7178)

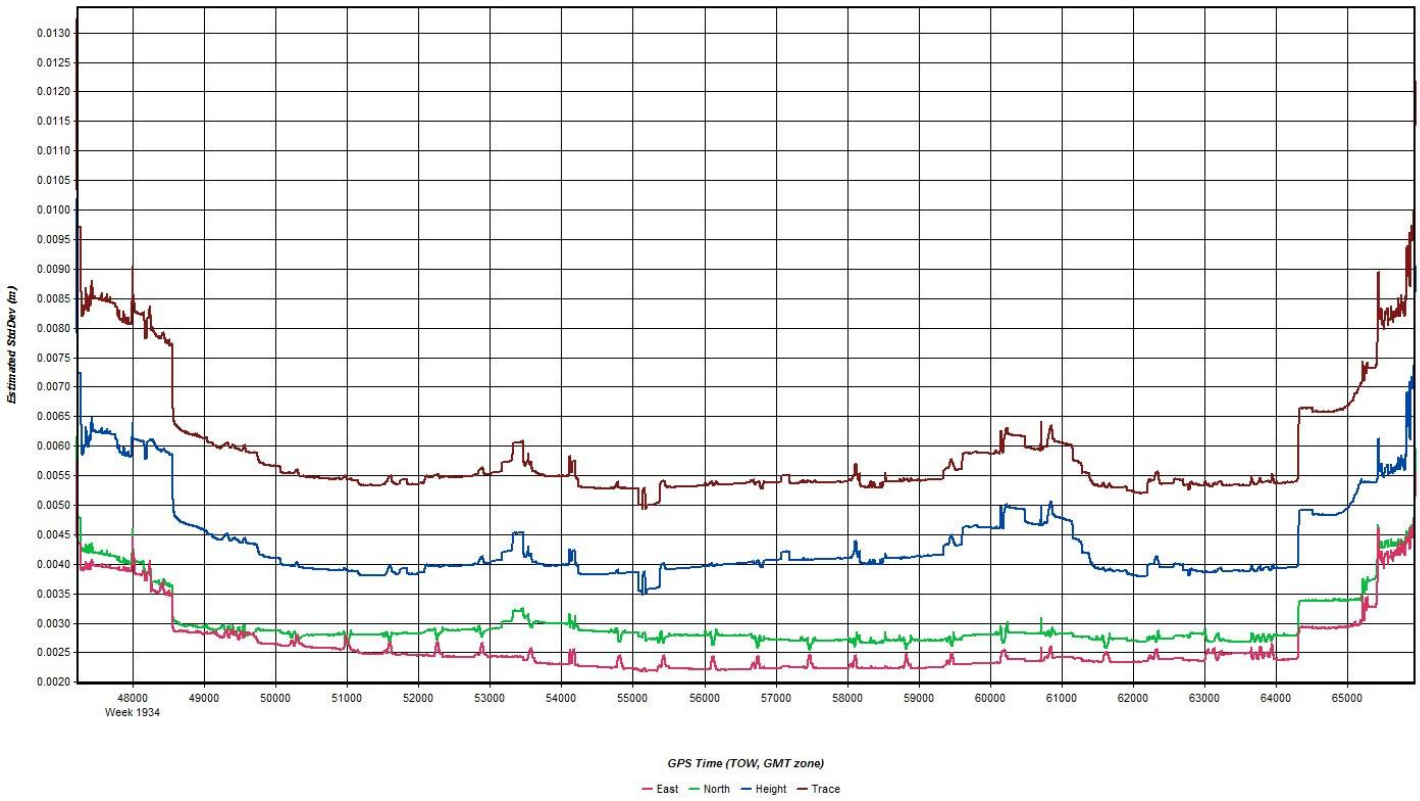


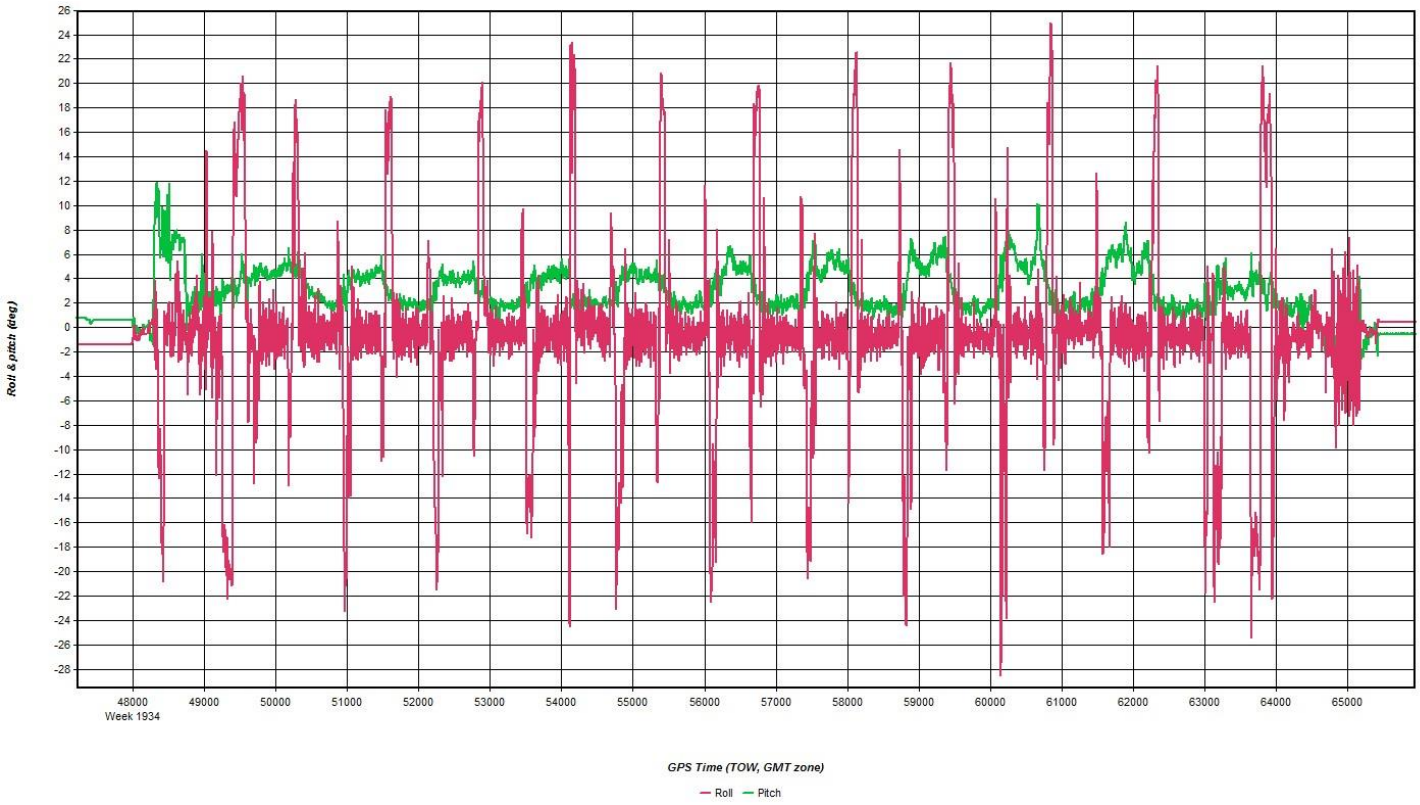

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

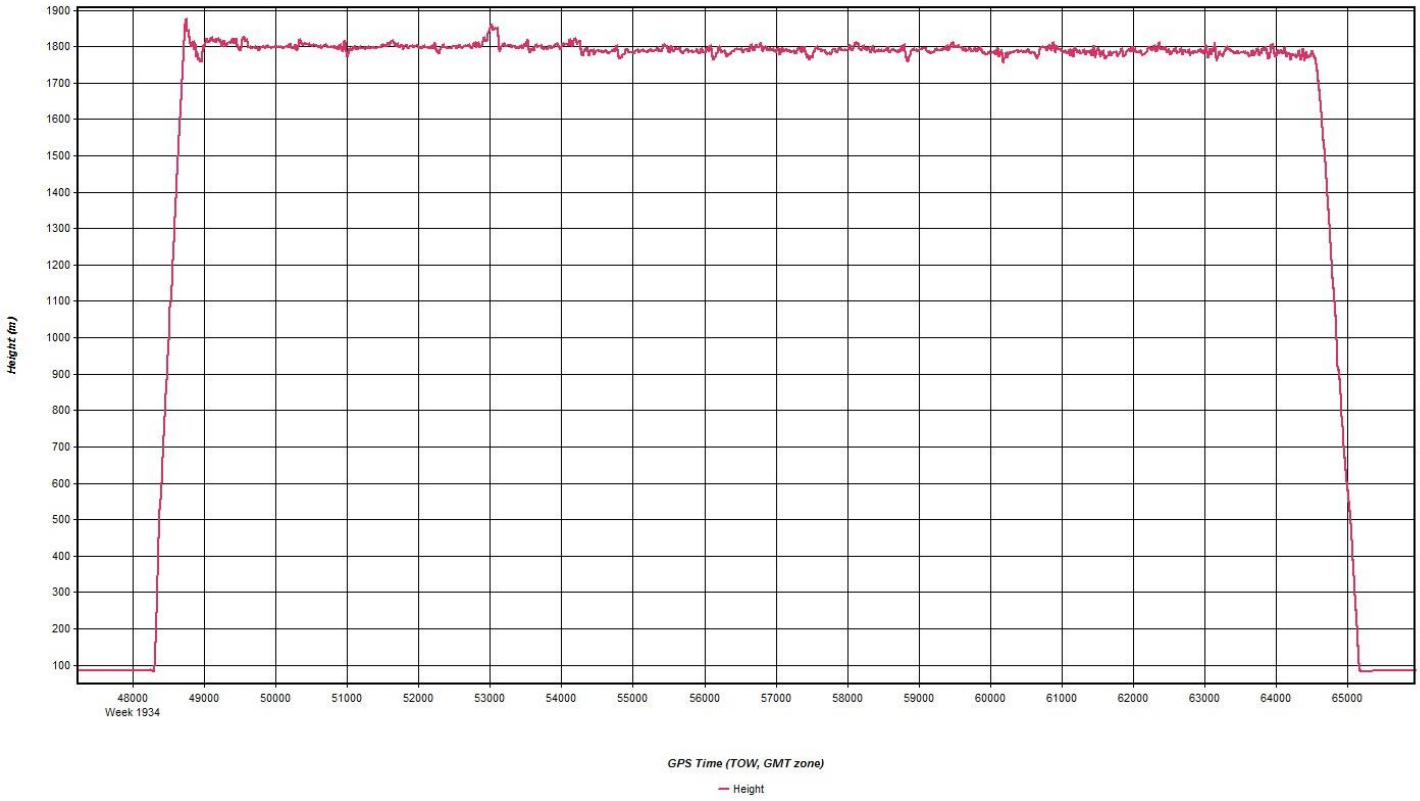

Separation (m)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
East
North
Up

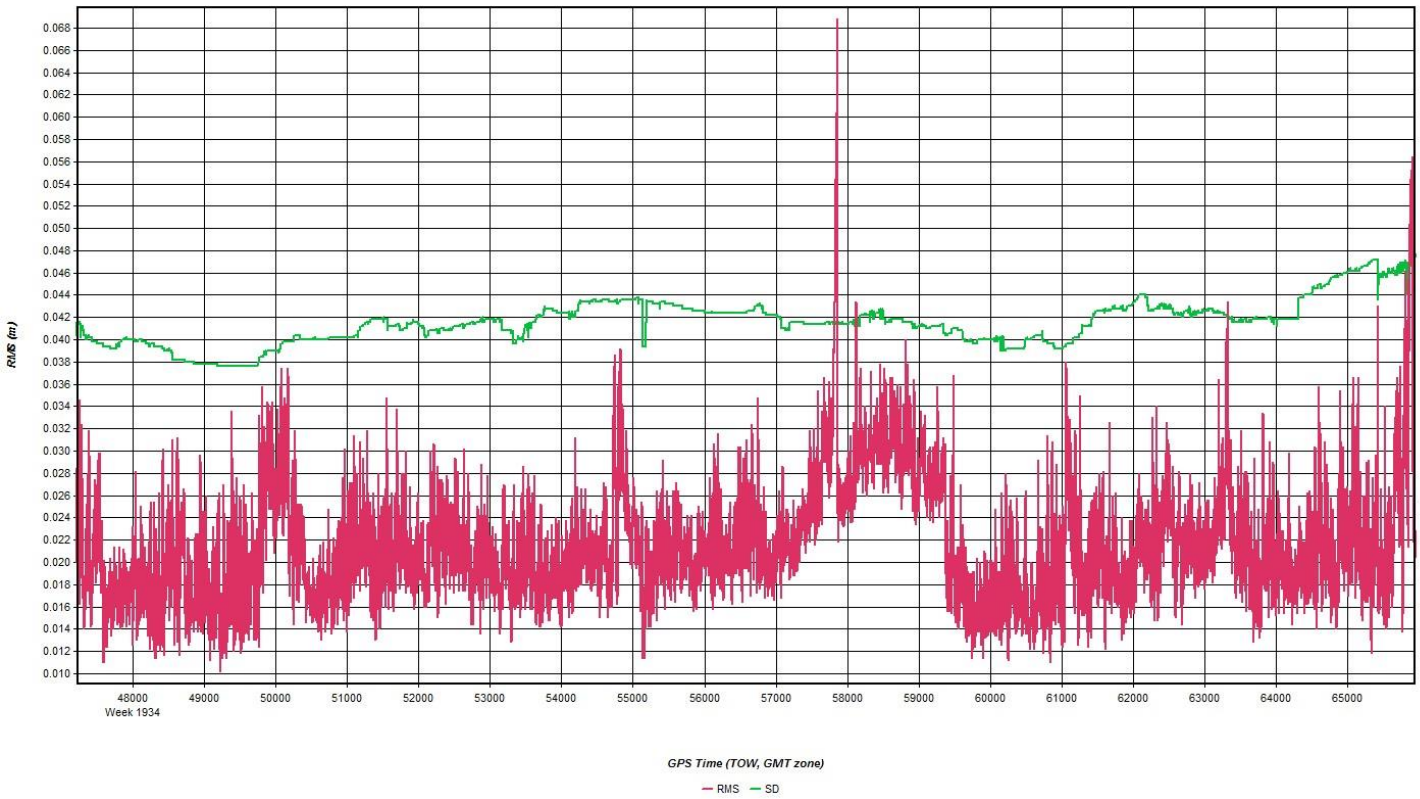

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

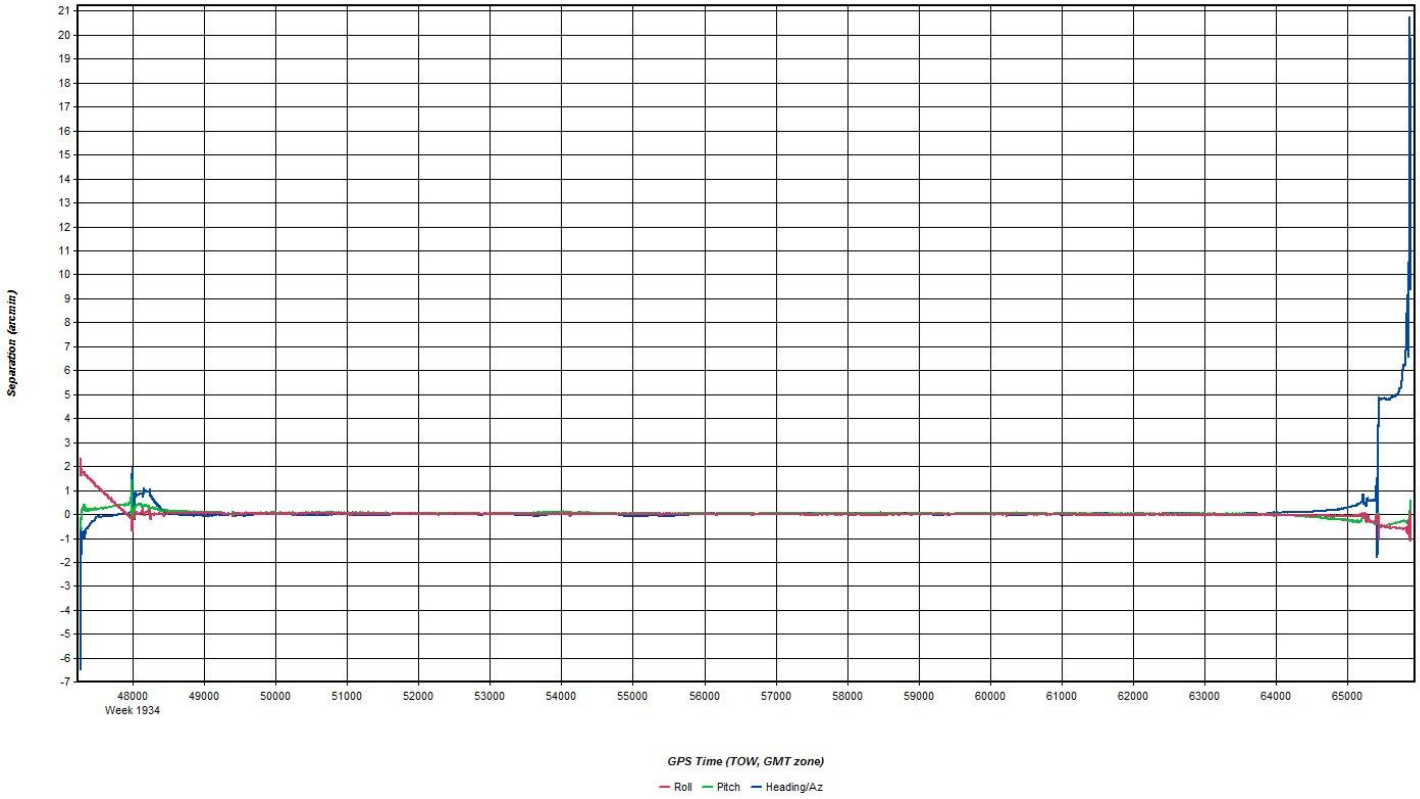

PDOP
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
PDOP

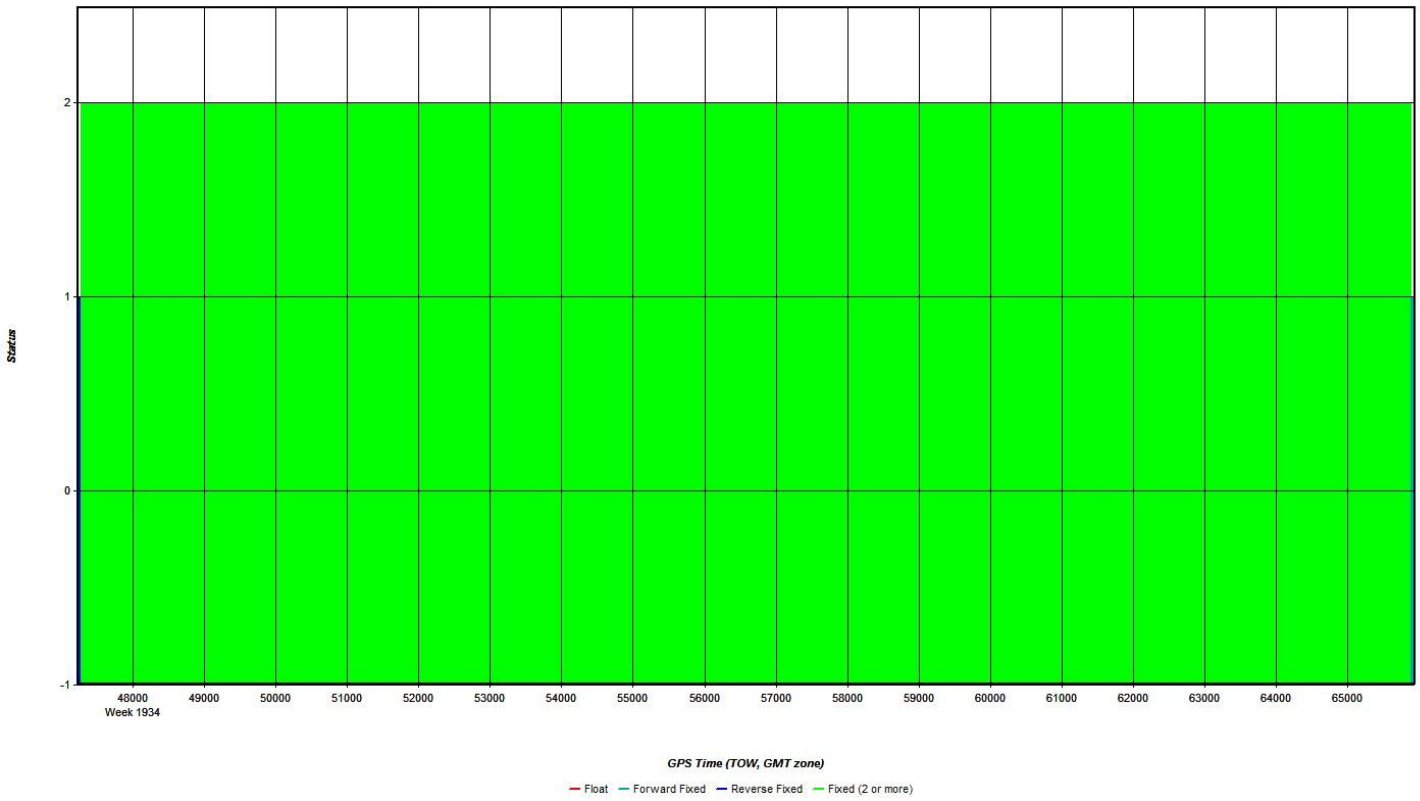

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

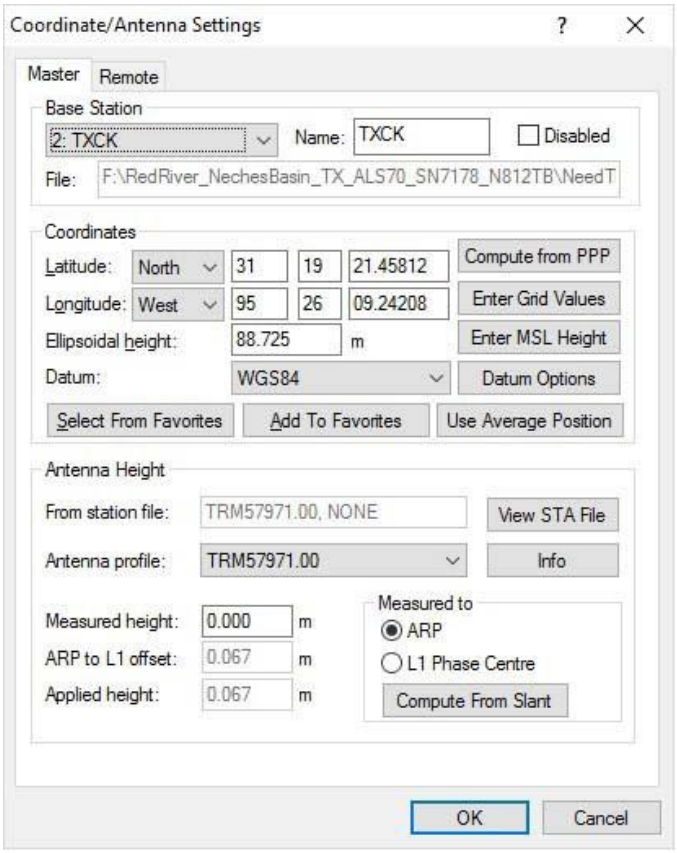

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
Roll
Pitch

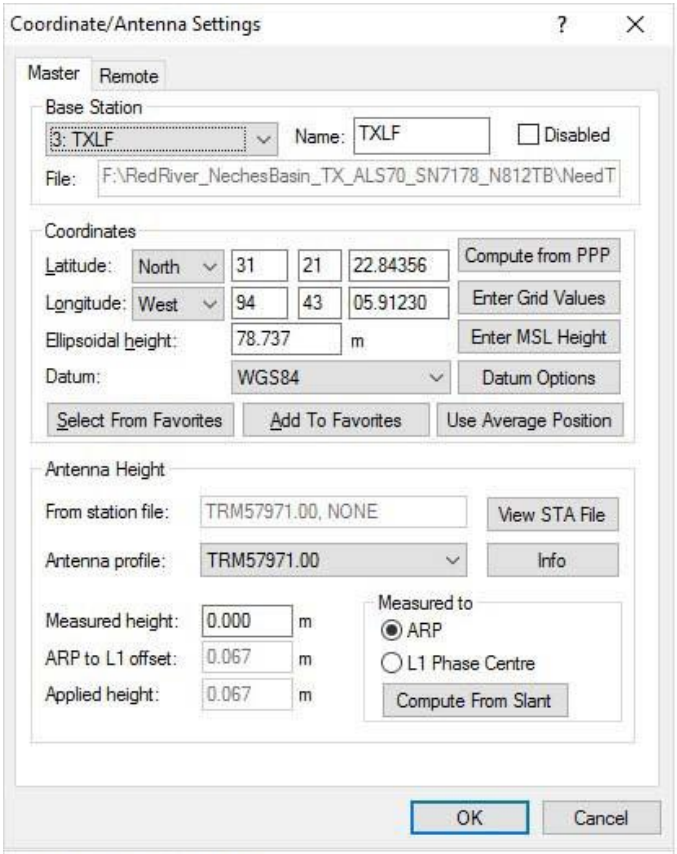

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
Height

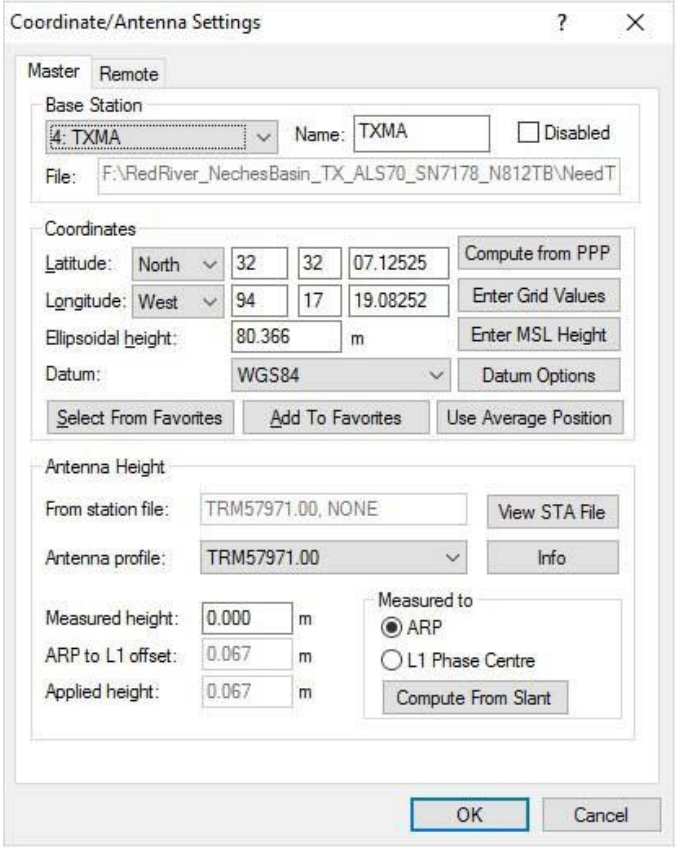

RMS (m)
0.068
0.066
0.064
0.062
0.060
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
RMS
SD

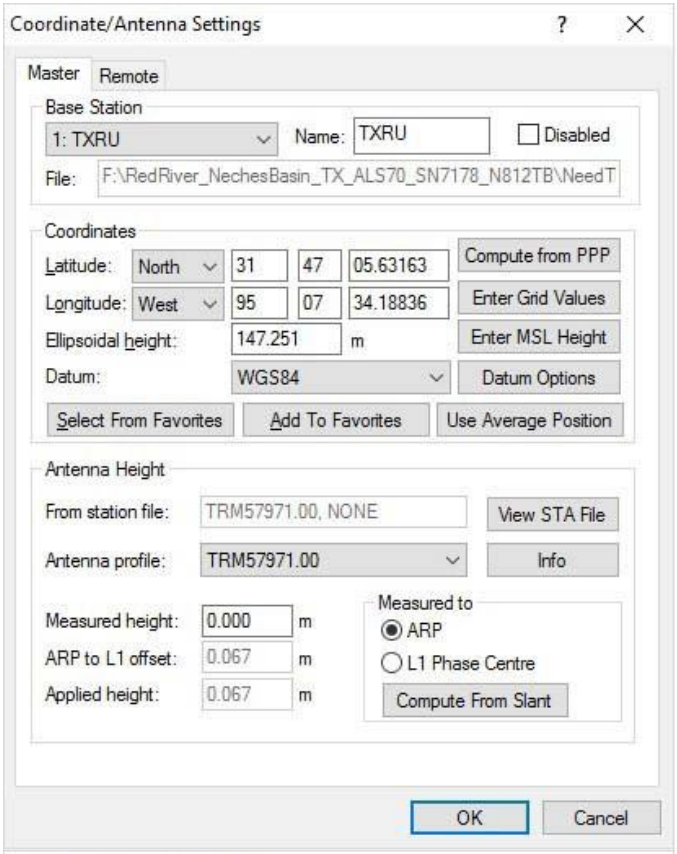

Separation (arcmin)
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

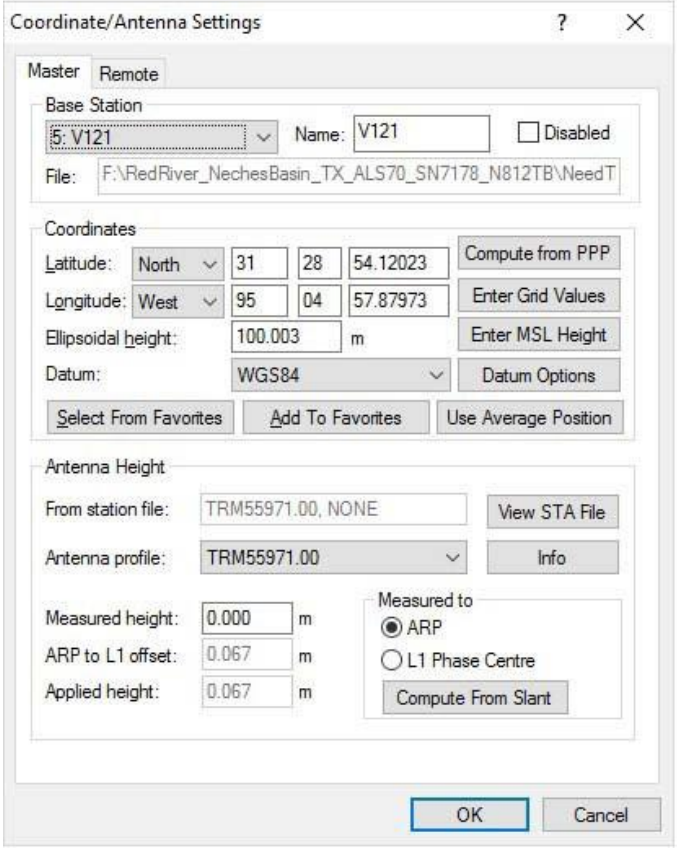

Status
2
1
0
-1
48000
Week 1934
49000
50000
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXCK
Name:
TXCK
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
19
21.45812
Compute from PPP
Longitude:
West
95
26
09.24208
Enter Grid Values
Ellipsoidal height:
88.725
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLF
Name: TXLF
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 21 22.84356
Longitude: West 94 43 05.91230
Ellipsoidal height: 78.737 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXMA
Name: TXMA
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 32 32 07.12525
Longitude: West 94 17 19.08252
Ellipsoidal height: 80.366 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXRU
Name: TXRU
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V121
Name: V121
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 28 54.12023
Longitude: West 95 04 57.87973
Ellipsoidal height: 100.003 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

1-29-17 A

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to Flight_Log_distribution_List@quantumspatial.com)

Date: 1-29-17 A

UTC: (A) D C D T

Project: NECHES Basin TX Proj #: 283355 Flight Mgmt File: 20170129_130411

Aircraft: N8121B Begin Hobbs: 4311.7 End Hobbs: 4311.1 Total: Pilot: C McDonald Co-Pilot: JB Illingsworth Tech: JSwan

Dep Apt: GGG Dep Time (Lcl): 0715 Arr Apt: GGG Arr Time (Local): [Y] / N Tot Time Aloft: 4.7

CORS: Y / N Sta 1: VLS Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: +1 °c End: +4 °c Altimeter begin: 3017 end: 3024

LiDAR	Type	Serial #	Alt AGL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS70	7778				
	FOV 34	Scan Freq 57	MpiA Y / N	Pulses In Air	Pulse Rate 312	Power/00 PRR#

Beg CB 351 End CB 285 Tot CB 66 Swap Number #2

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	ROOM+Sec	GPS Altitude	Crab	Turb (0..+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		715-	747	150	[illegible]	GGG→			Figs
2020	180	1350	1355	151	1.2/16	5897	+11	0	
2019	0	1400	1407	108	1.2/18	5929	-11	0	
2018	180	1411	1417	150	1.2/18	5889	+11	0	
2017	0	1421	1428	141	" "	5920	-11	0	
2016	180	1432	1439	155	1.1/19	5912	+11	0	
2015	0	1443	1450	139	1.2/18	5966	-11	0	Check for Aquatis – pilot for kids
2014	180	1454	1501	156	1.1/20	5907	+11	0	
2013	0	1503	1511	137	1.1/19	5914	-11	0	
2012	180	1515	1521	160	1.3/18	5863	+11	0	
2011	0	1525	1532	132	1.2/19	5900	-11	0	
2010	180	1536	1543	180	1.2/18	5855	+11	0	
2009	0	1547	1554	136	1.1/19	5908	-11	0	
2008	180	1559	1606	141	1.1/20	5863	+11	0	
2007	0	1610	1618	141	1.2/15	5879	-11	0	
2006	180	1621	1628	145	" "	5893	+11	0	
2005	0	1632	1640	143	" "	5913	-11	0	
2004	180	1644	1652	140	1.0/21	5874	+11	0	

Total Proj Lines: Lines Flown: Lines Remain: On-line Time: Mob Time: Notes:

1-29-17 A

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_List@quantumspatial.com)

Date: 1-29-A-17

Project: NECHES Basin TX Proj #: Flight Mgmt File:

Aircraft: Begin Hobbs: End Hobbs: Total: Pilot: Co-Pilot: Tech:

Dep Apt: Dep Time (Lcl): Arr Apt: Arr Time (Local): Tot Time Aloft:

CORS: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

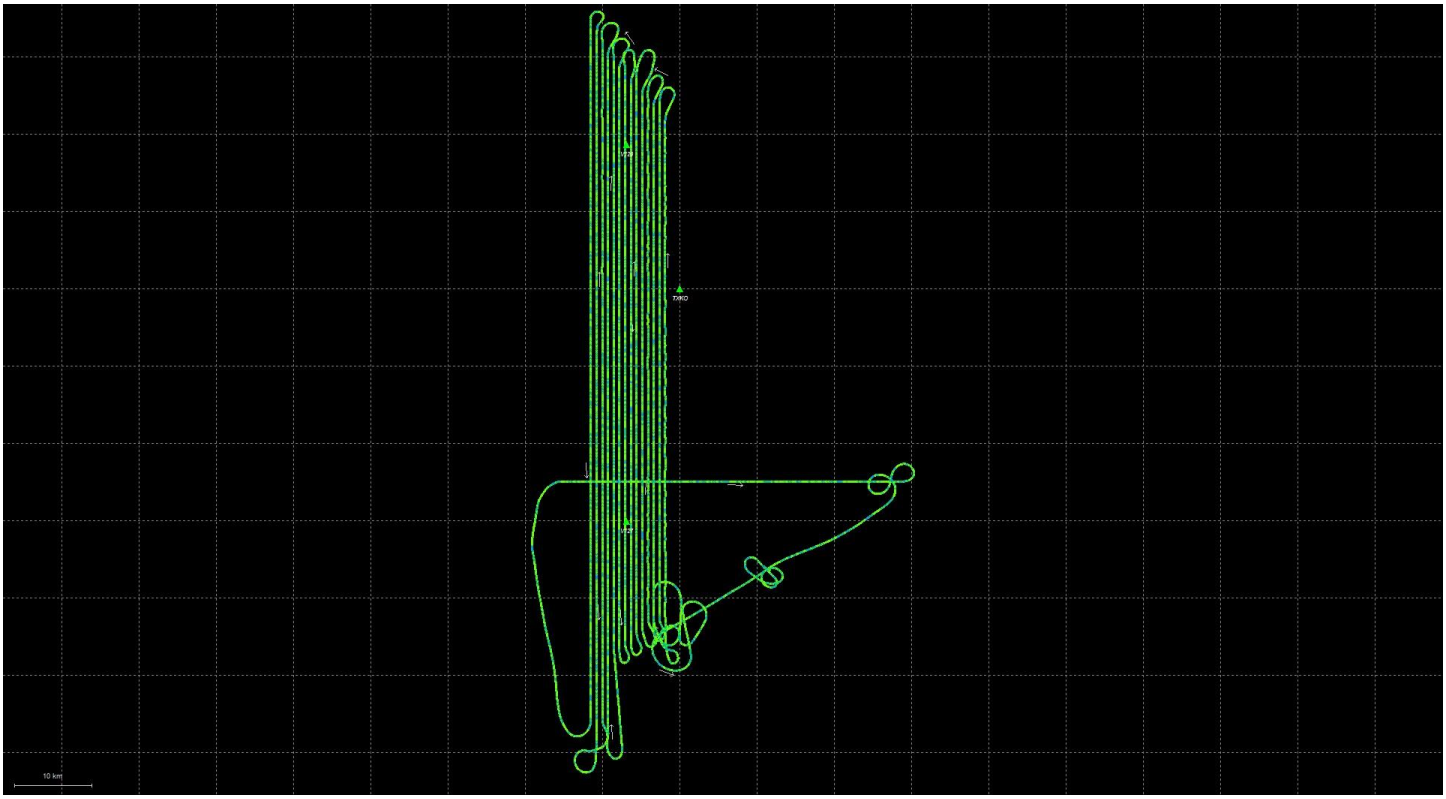
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

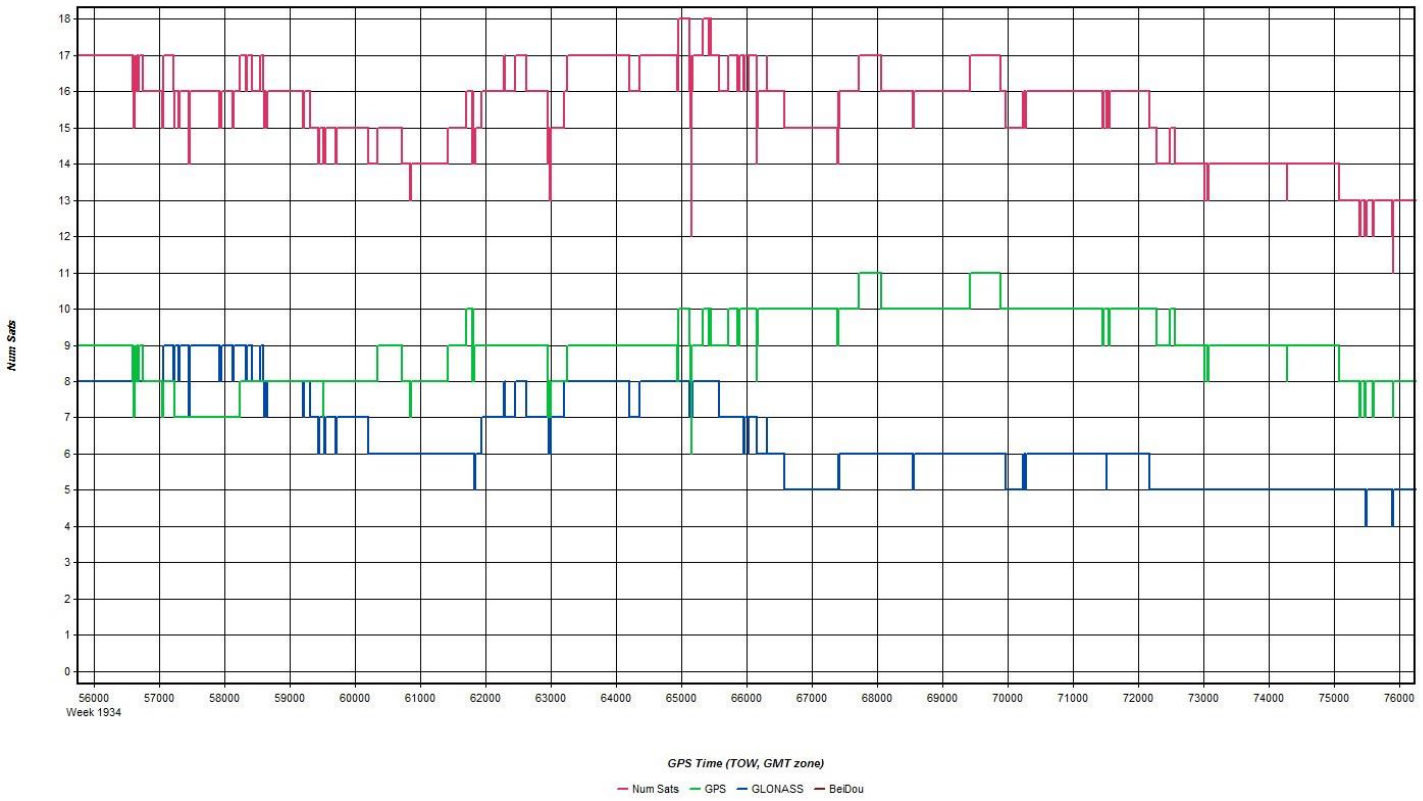
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV	Scan Freq	MpIA Y / N	Pulses in Air	Pulse Rate	Power	PPSM

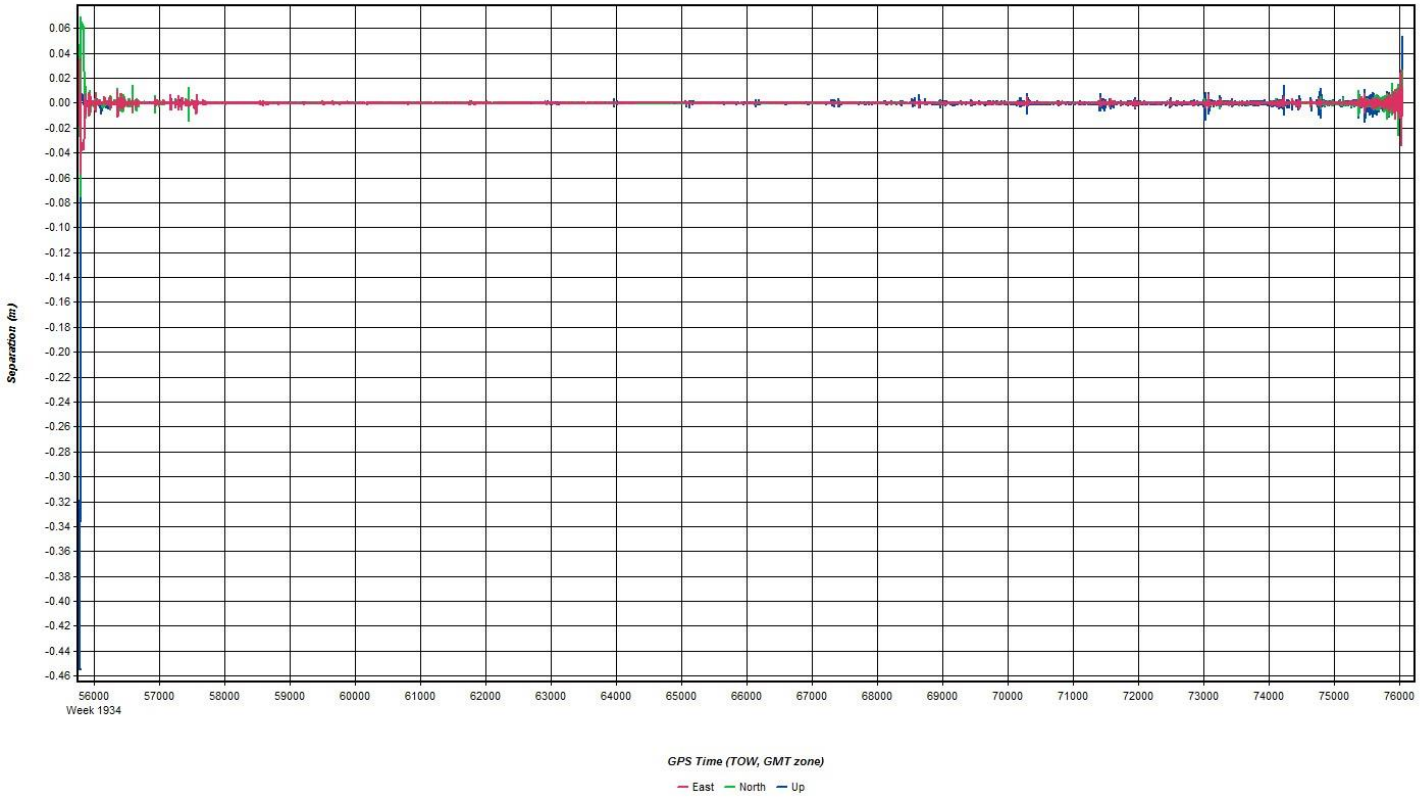
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,+,-)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
2003	0	1655	1704	137	1.0/20	5887	-11	0	
2002	180	1709	1716	150	1.0/21	5811	+11	0	
2001	0	1726	1729	135	1.0/20	5874	-11	0	
2030	90	1735	1740	138	1.1/19	5835	-15	0	planned X tie Rusk Complete Flight → GGG
									Hobbs = 4.7
									online = 3.9
									Mob = 0.8

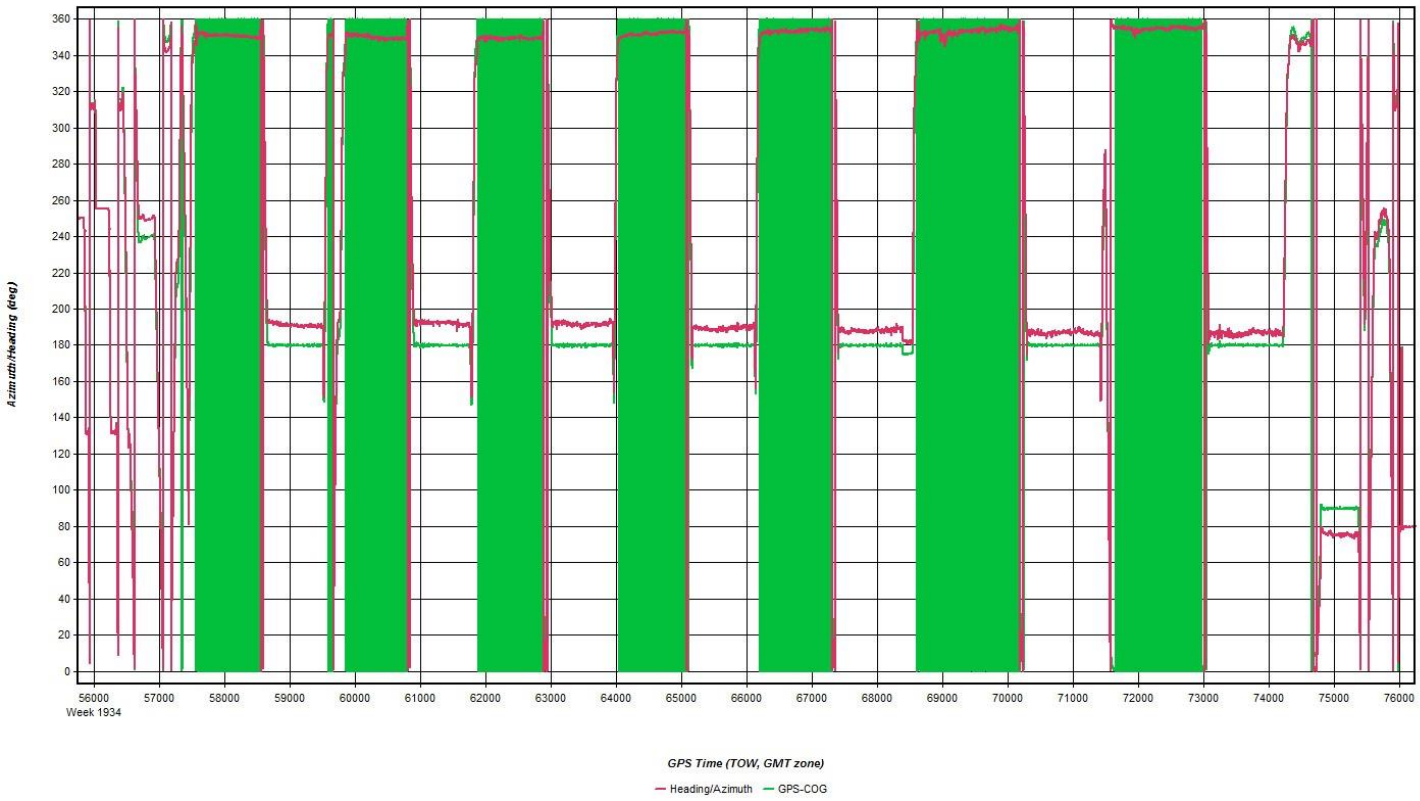
Total Proj Lines: Lines Flown: 21 Lines Remain: Online Time: 3.9 Mob Time: 0.8 Notes:

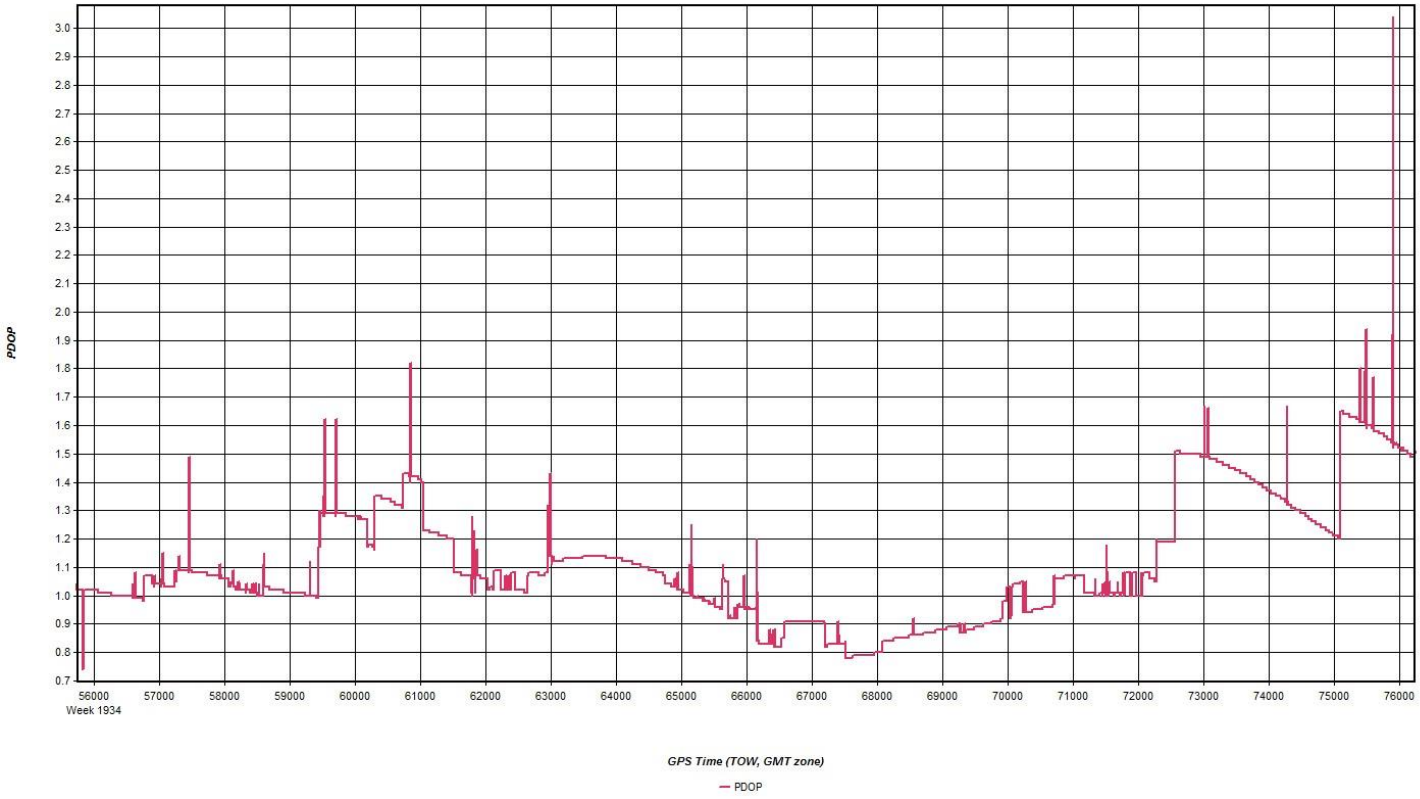
Jan 29, 2017-A (N208NR, SN8239)

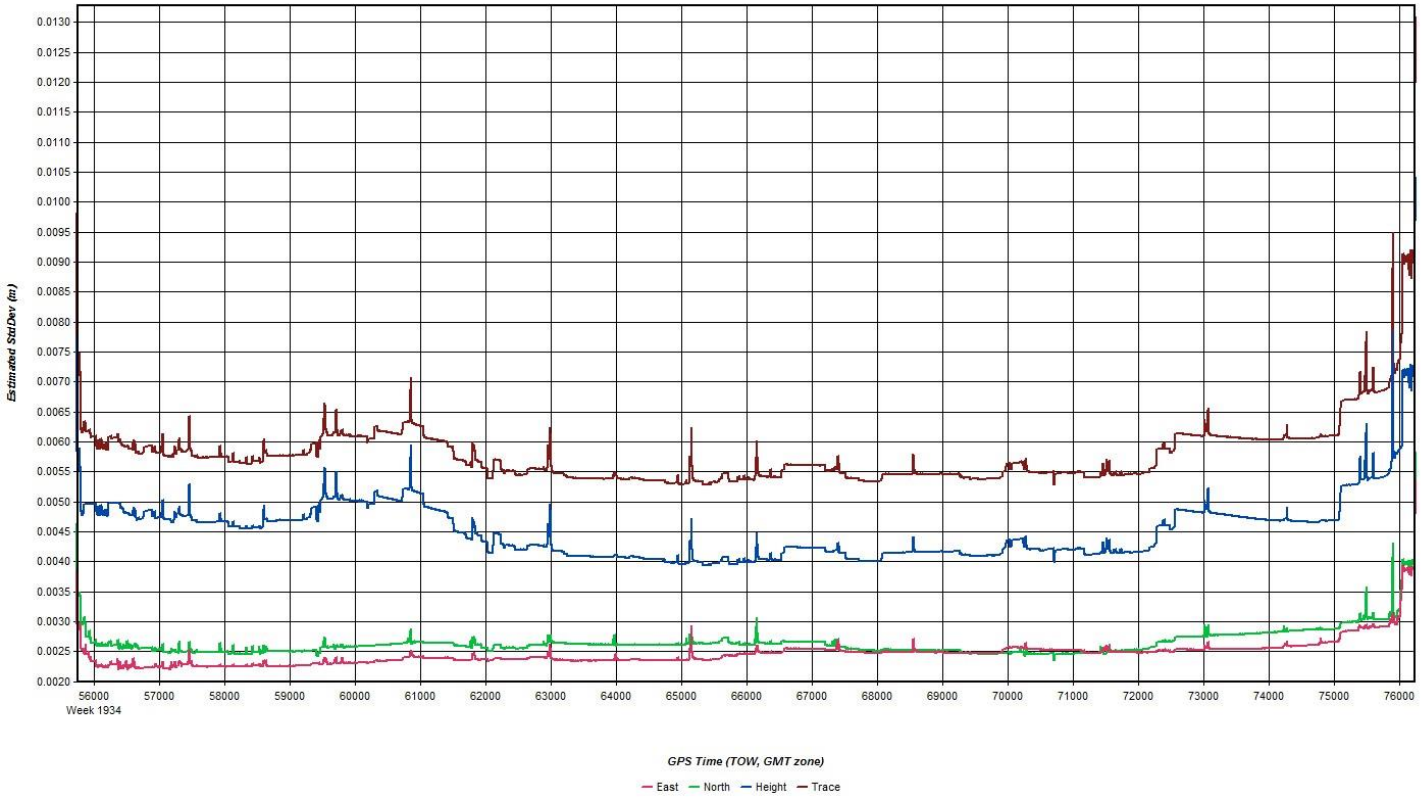


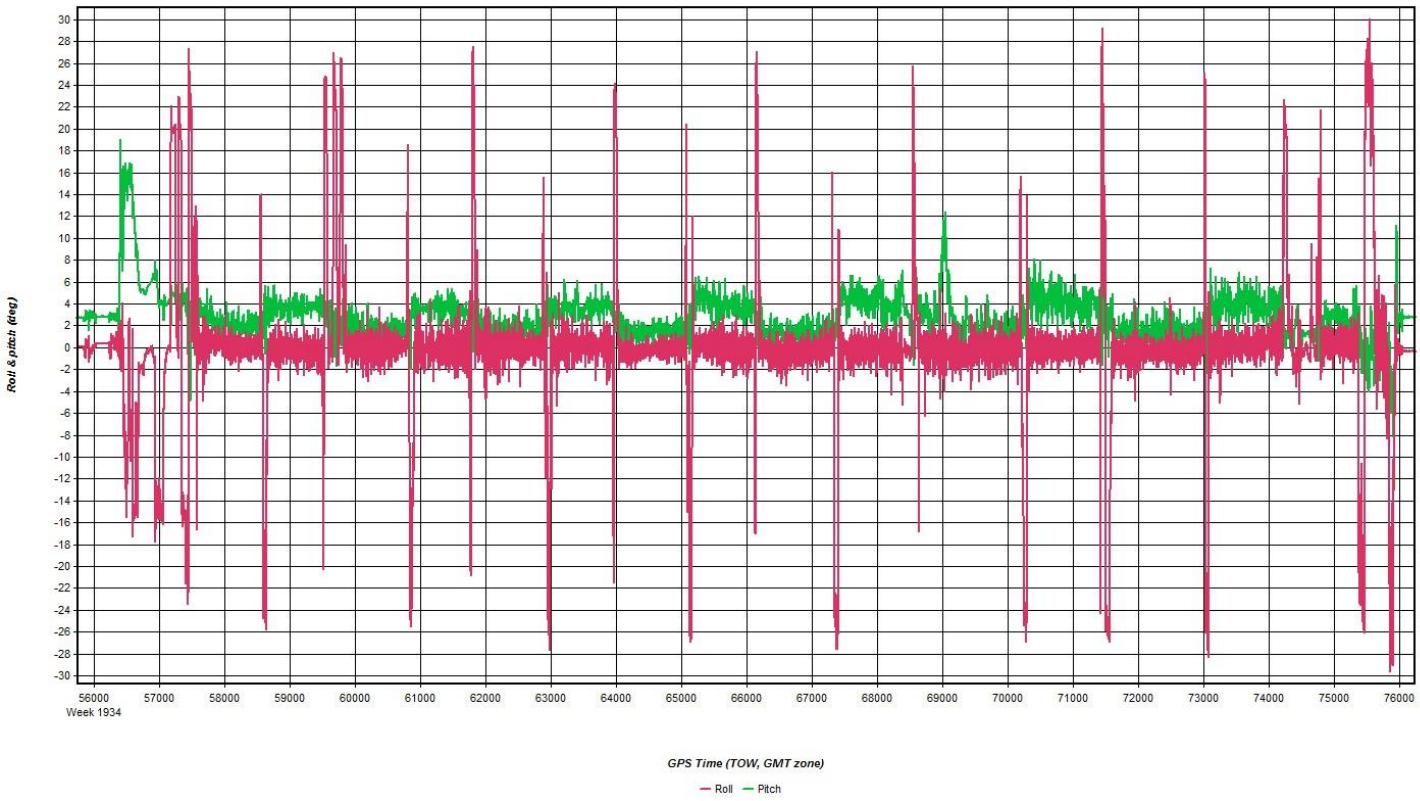

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
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67000
68000
69000
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71000
72000
73000
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75000
76000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

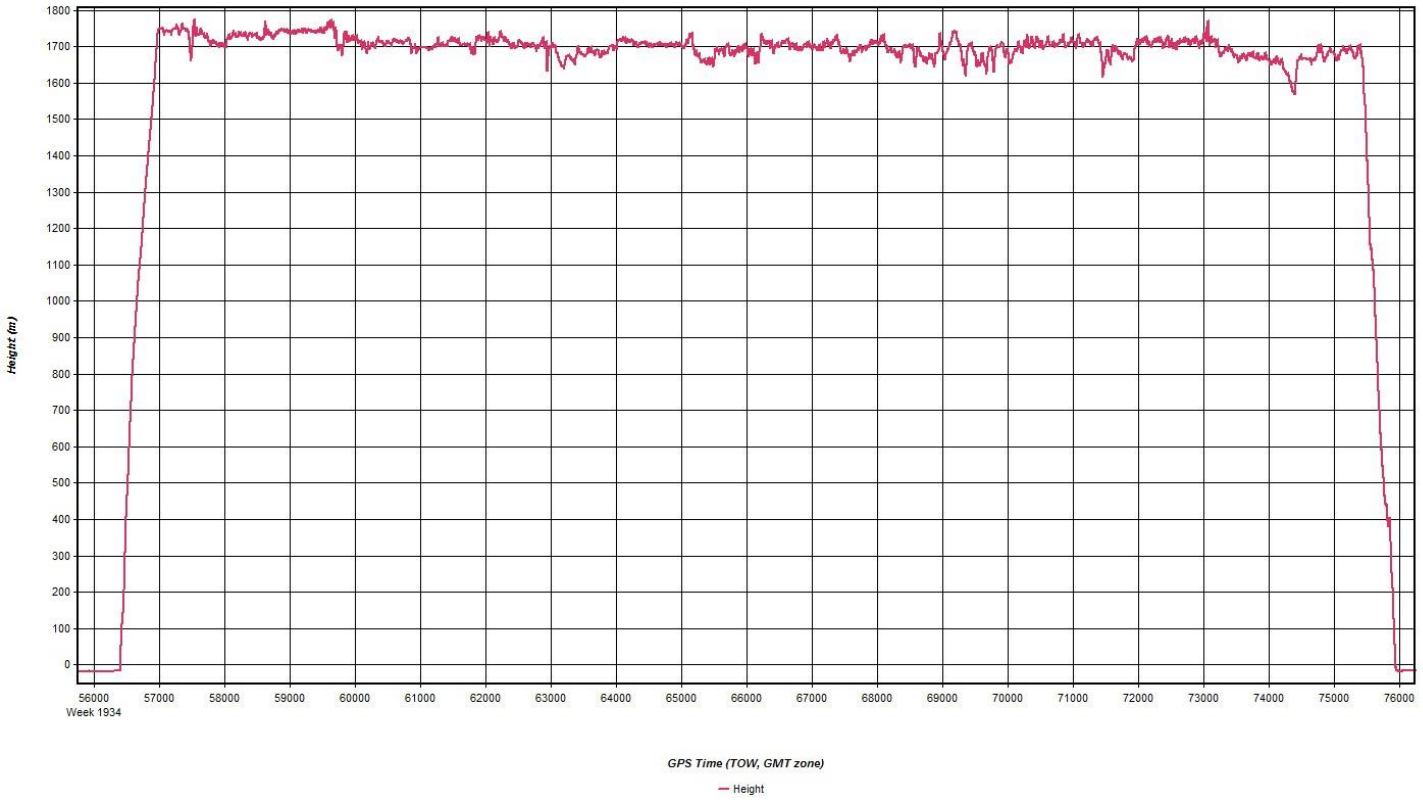

Separation (m)
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
-0.40
-0.42
-0.44
-0.46
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
East
North
Up

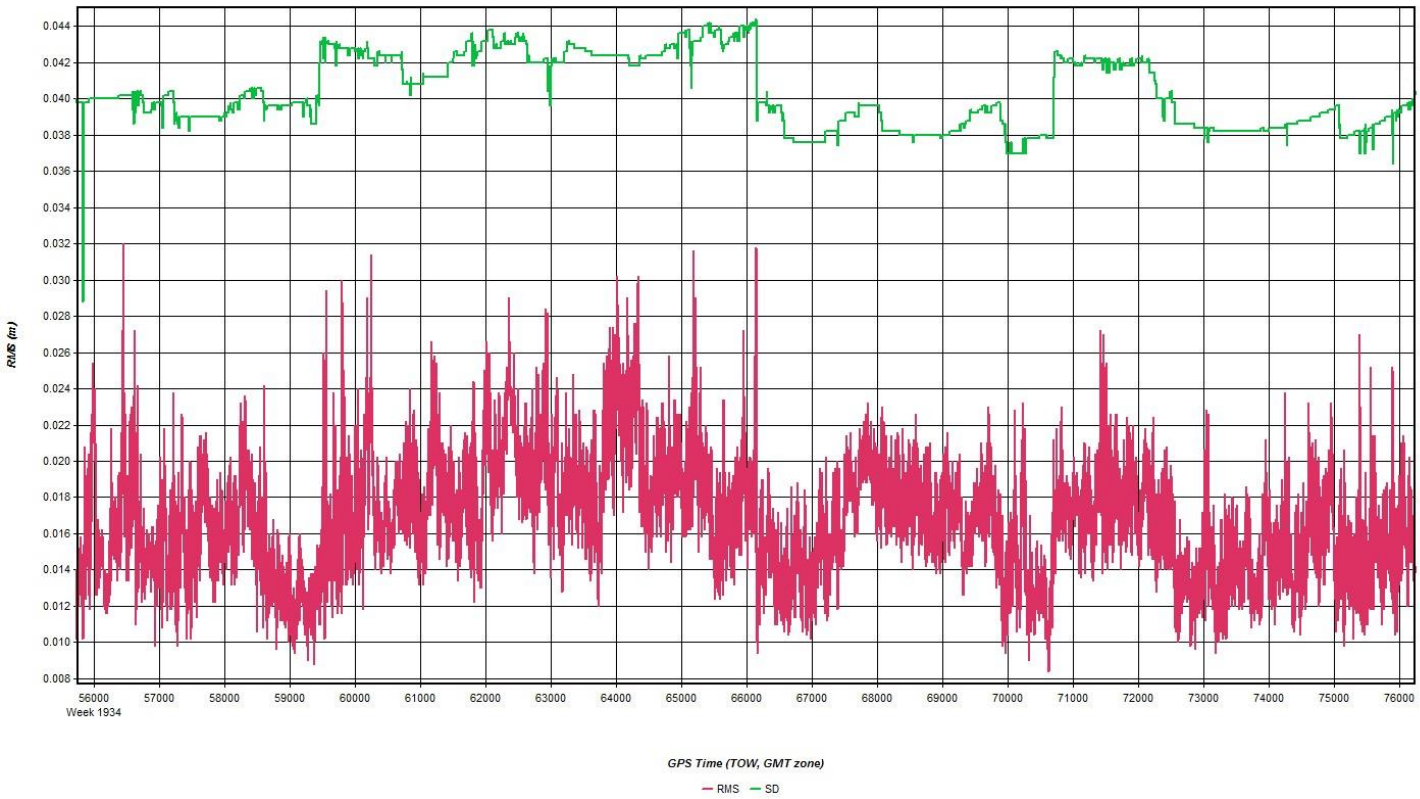

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

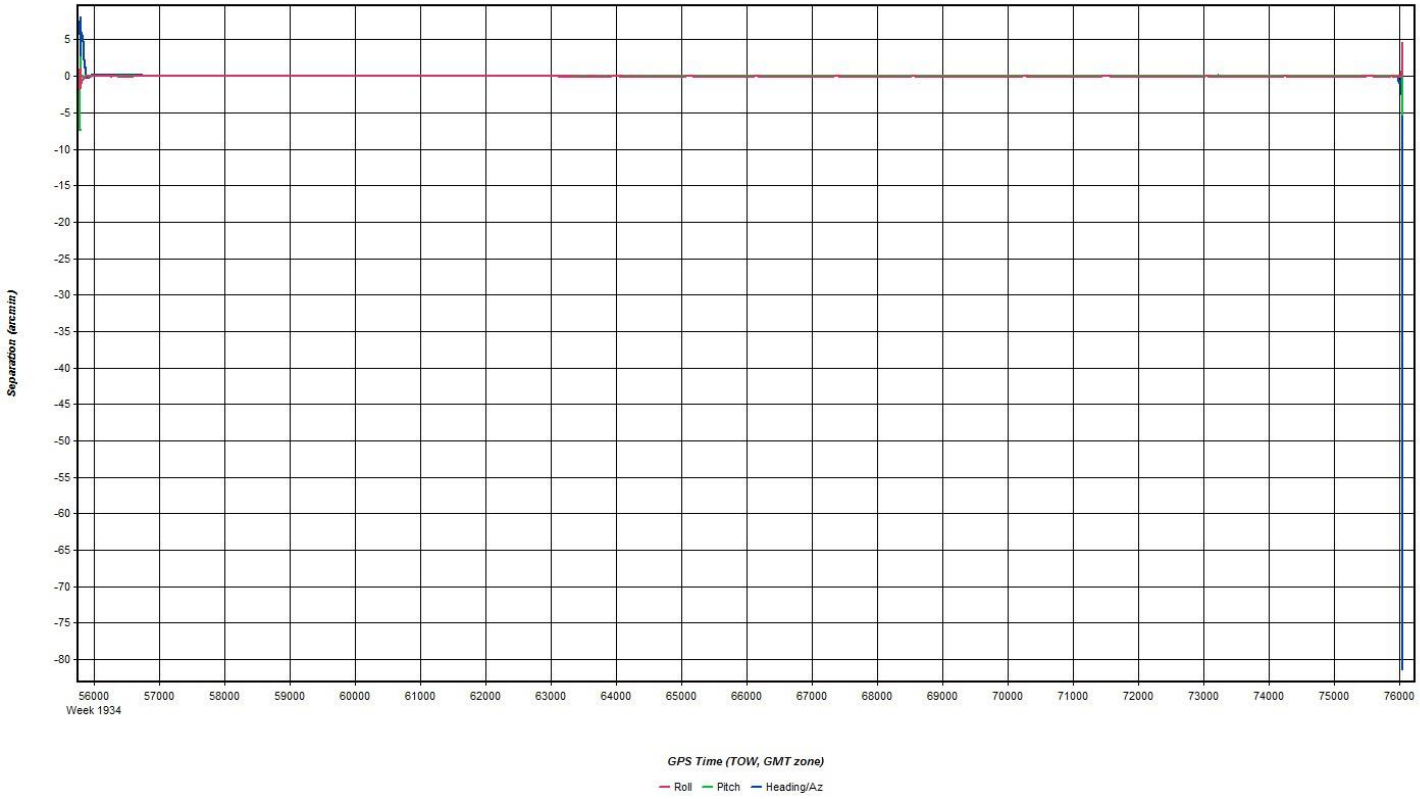

PDOP
3.0
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
PDOP

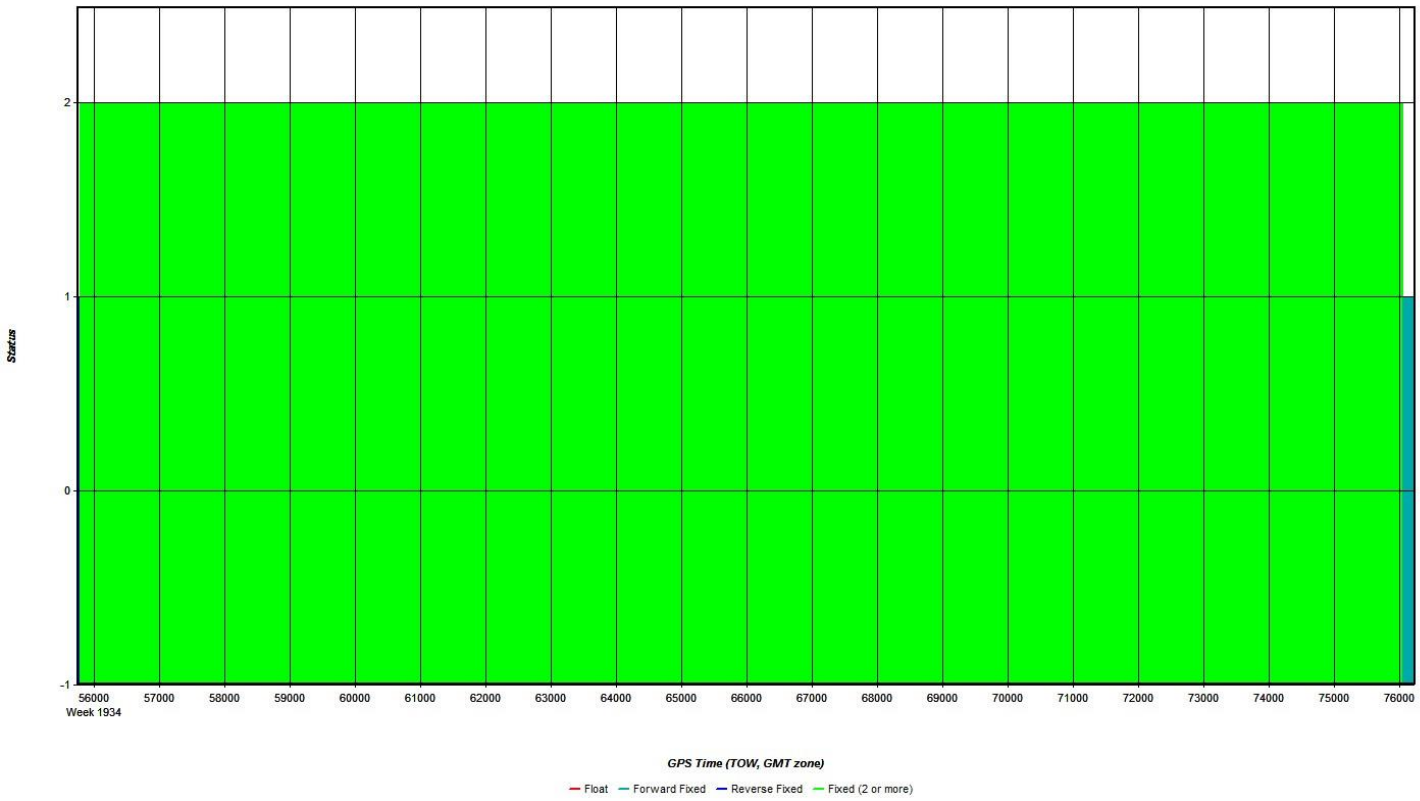

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

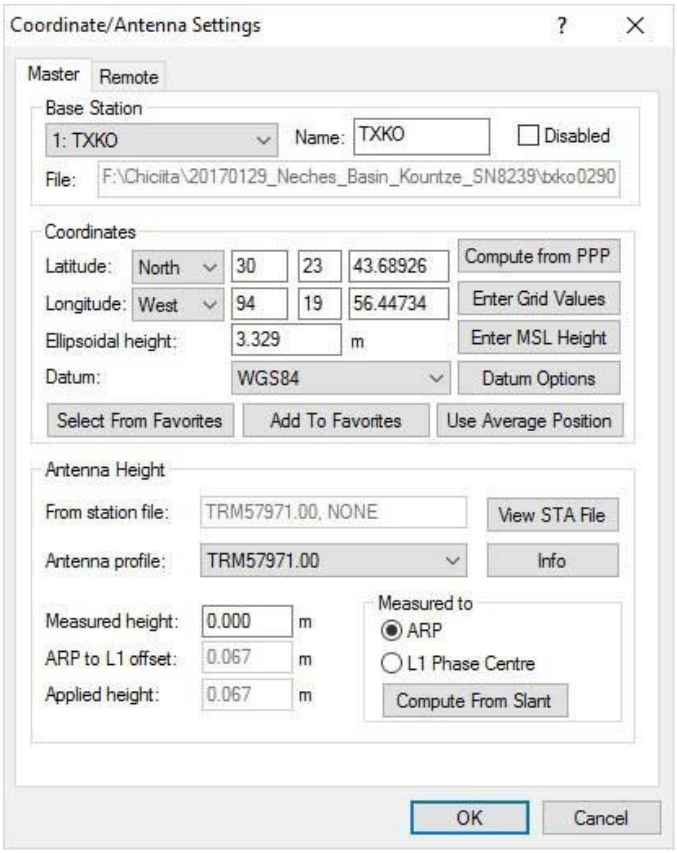

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Roll
Pitch

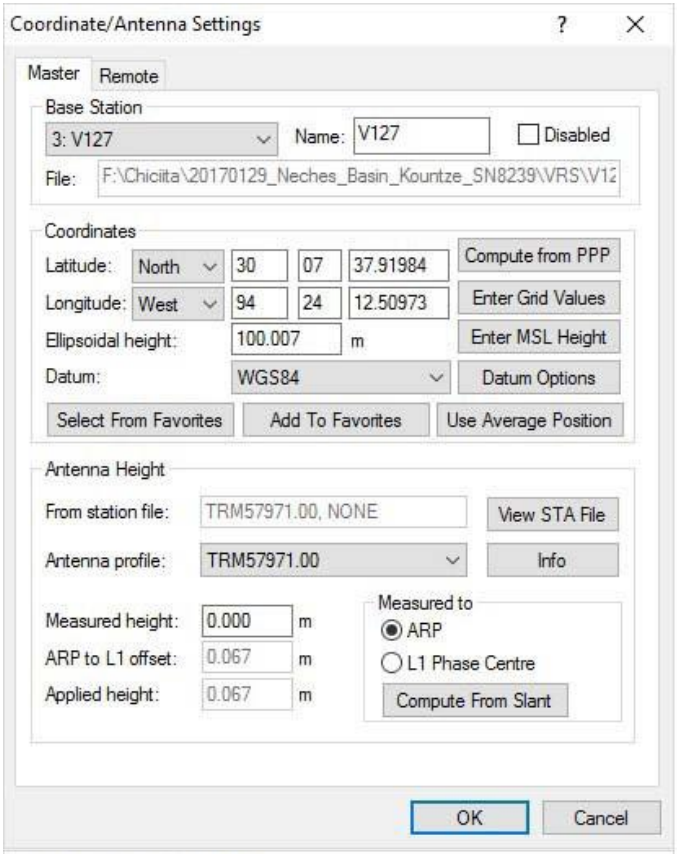

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Height

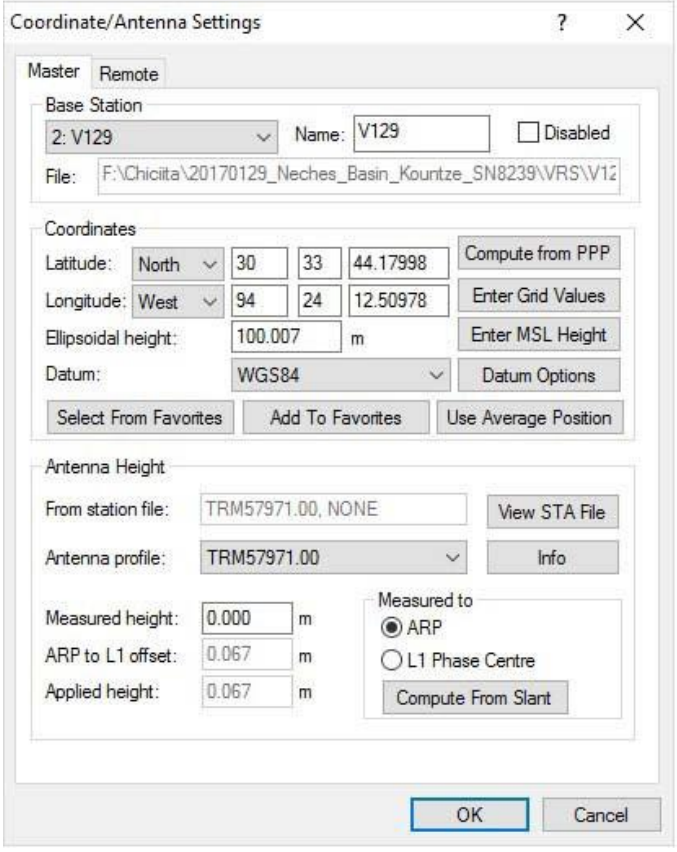

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
56000
Week 1934
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

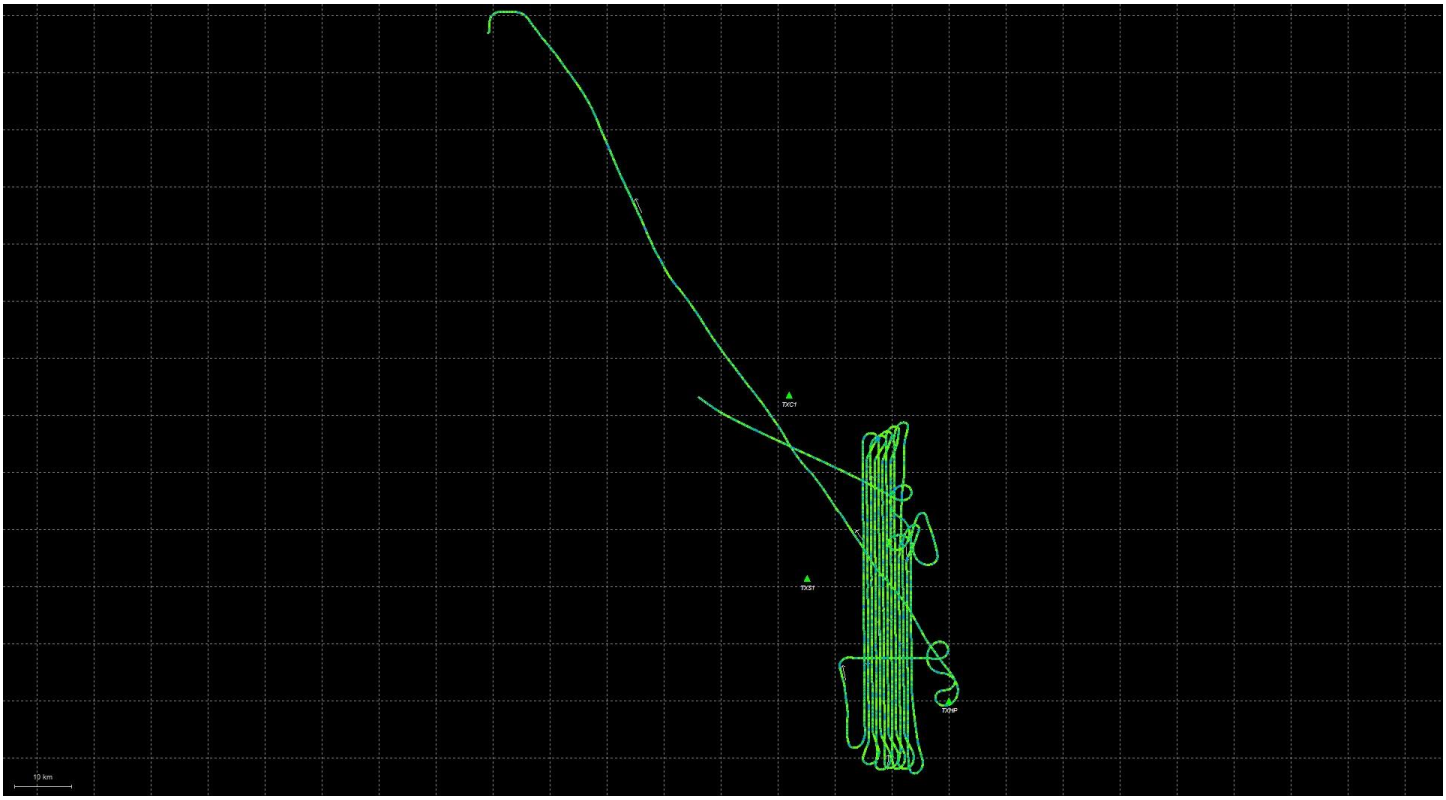

Status
2
1
0
-1
56000
57000
58000
59000
60000
61000
62000
63000
64000
65000
66000
67000
68000
69000
70000
71000
72000
73000
74000
75000
76000
Week 1934
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

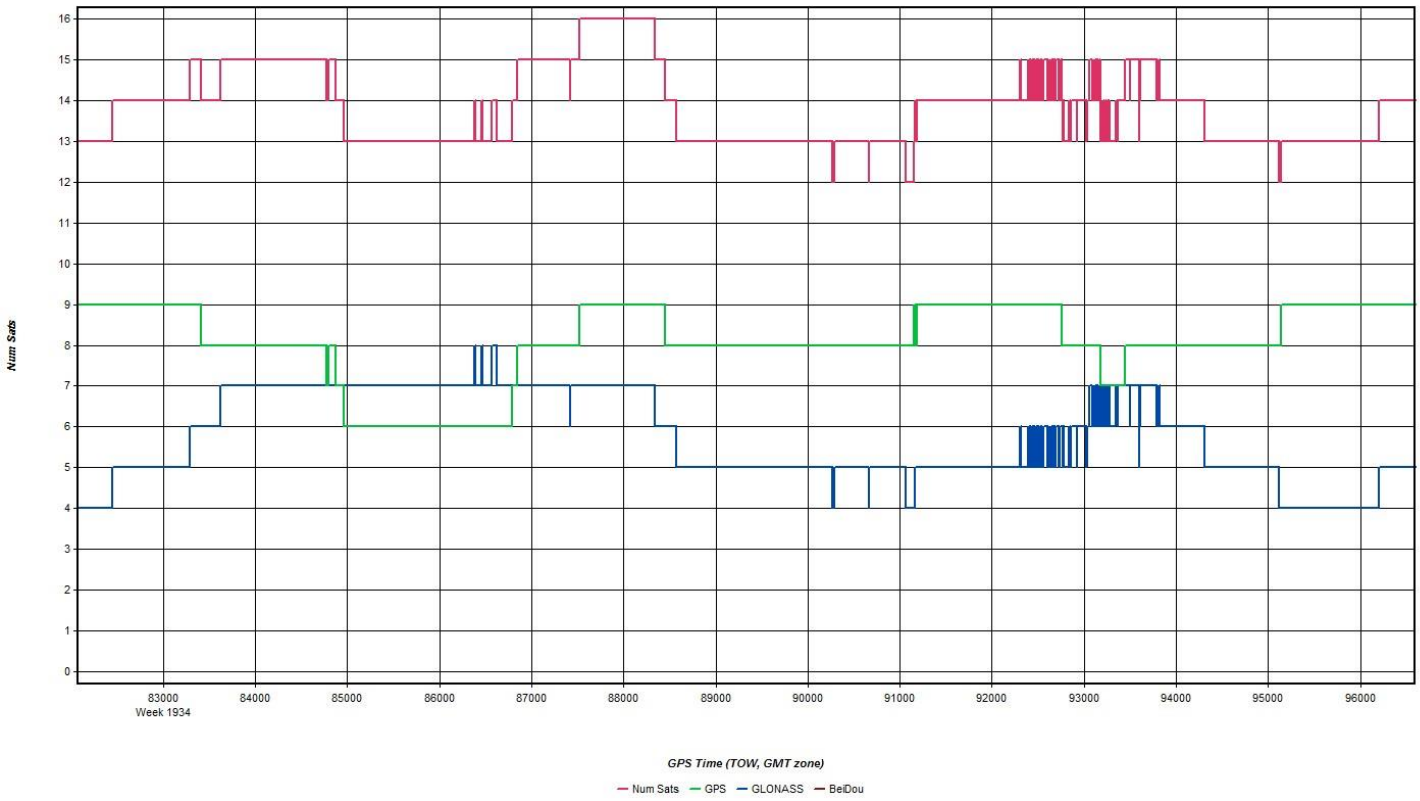

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name:
TXKO
Disabled
File:
F:\Chicita\20170129_Neches_Basin_Kountze_SN8239\txko0290
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

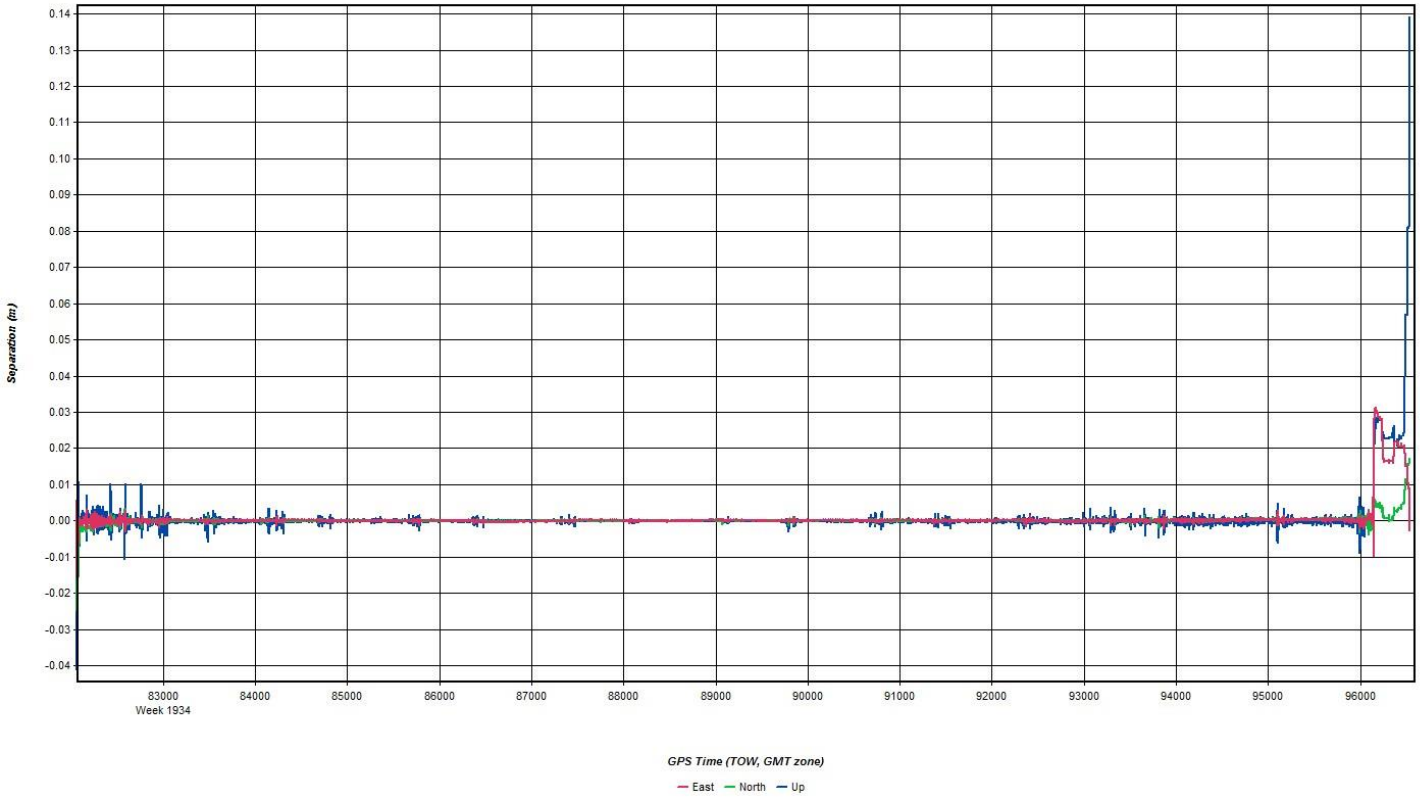

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V127
Name: V127
Disabled
File: F:\Chiciita\20170129_Neches_Basin_Kountze_SN8239\VRS\V12
Coordinates
Latitude: North 30 07 37.91984
Longitude: West 94 24 12.50973
Ellipsoidal height: 100.007 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

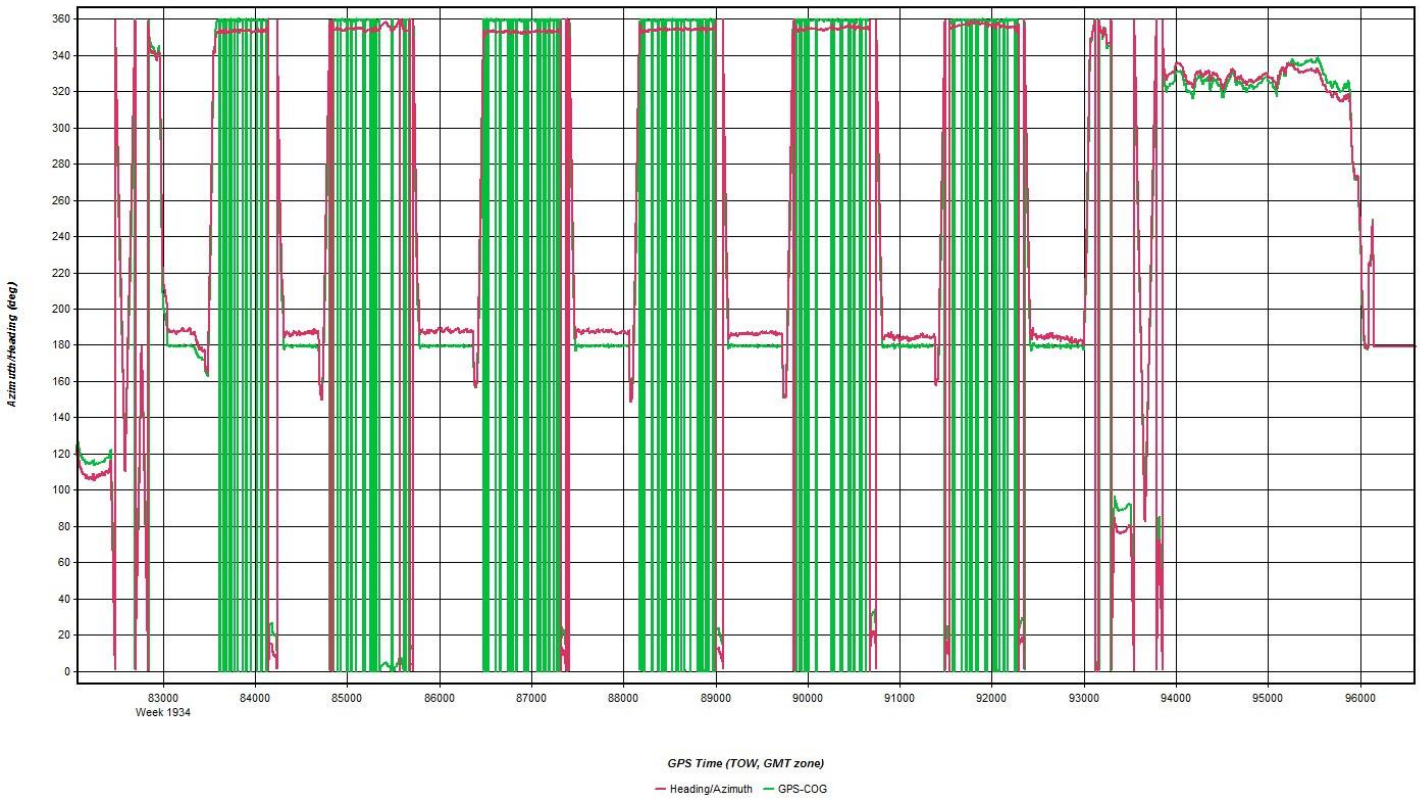

Coordinate/Antenna Settings
Master
Remote
Base Station
2: V129
Name: V129
Disabled
File: F:\Chiciita\20170129_Neches_Basin_Kountze_SN8239\VRS\V12
Coordinates
Latitude: North 30 33 44.17998
Longitude: West 94 24 12.50978
Ellipsoidal height: 100.007 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

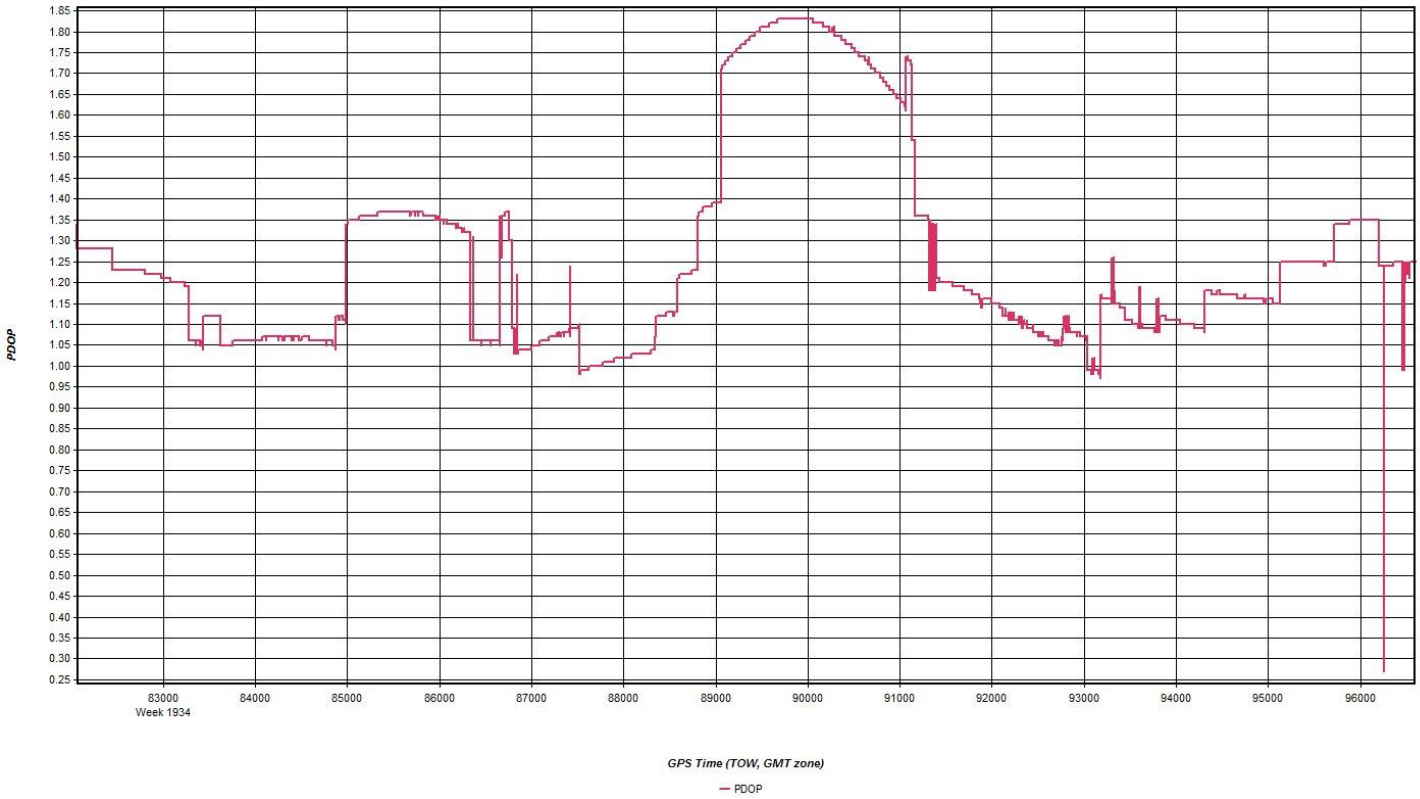
Jan 29, 2017-A (N812TB, SN7178)

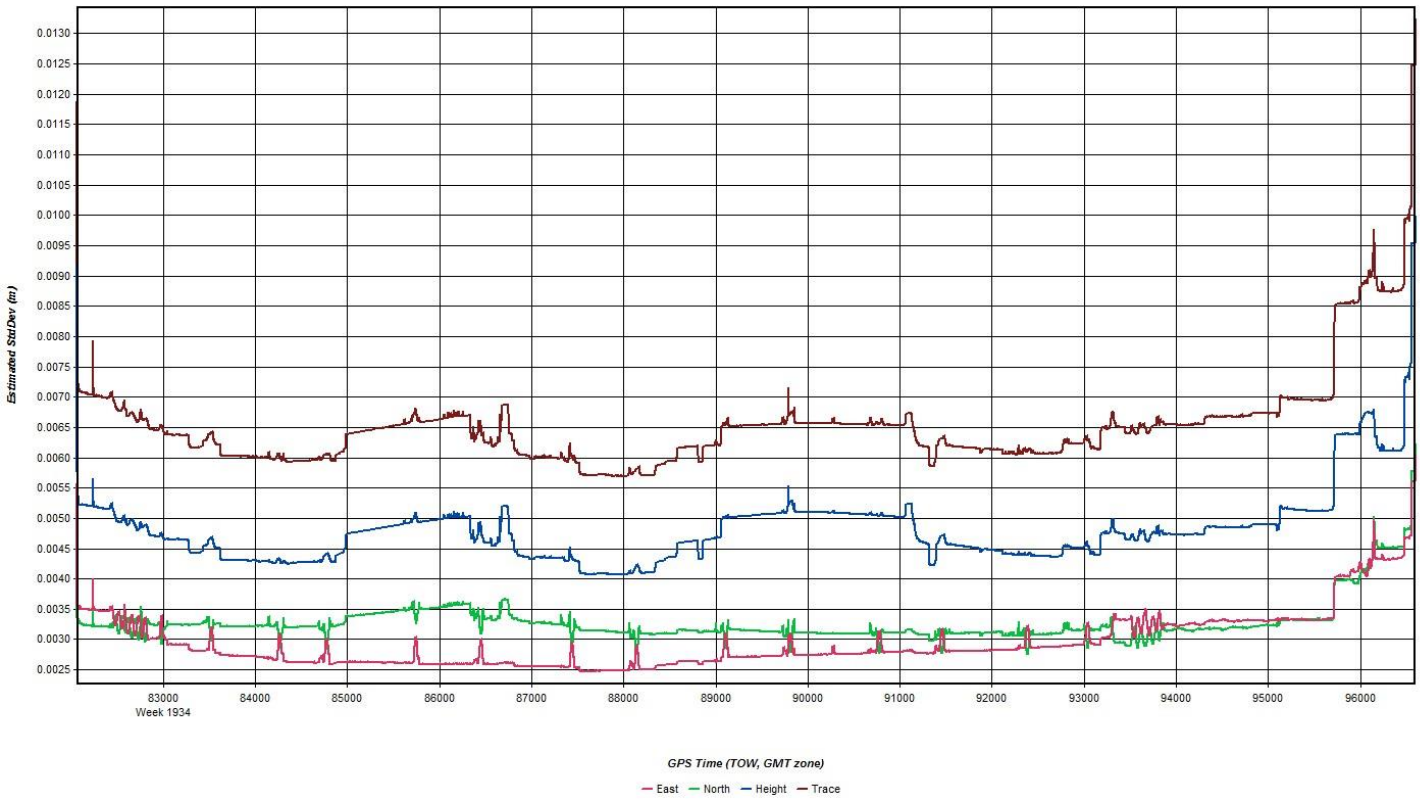


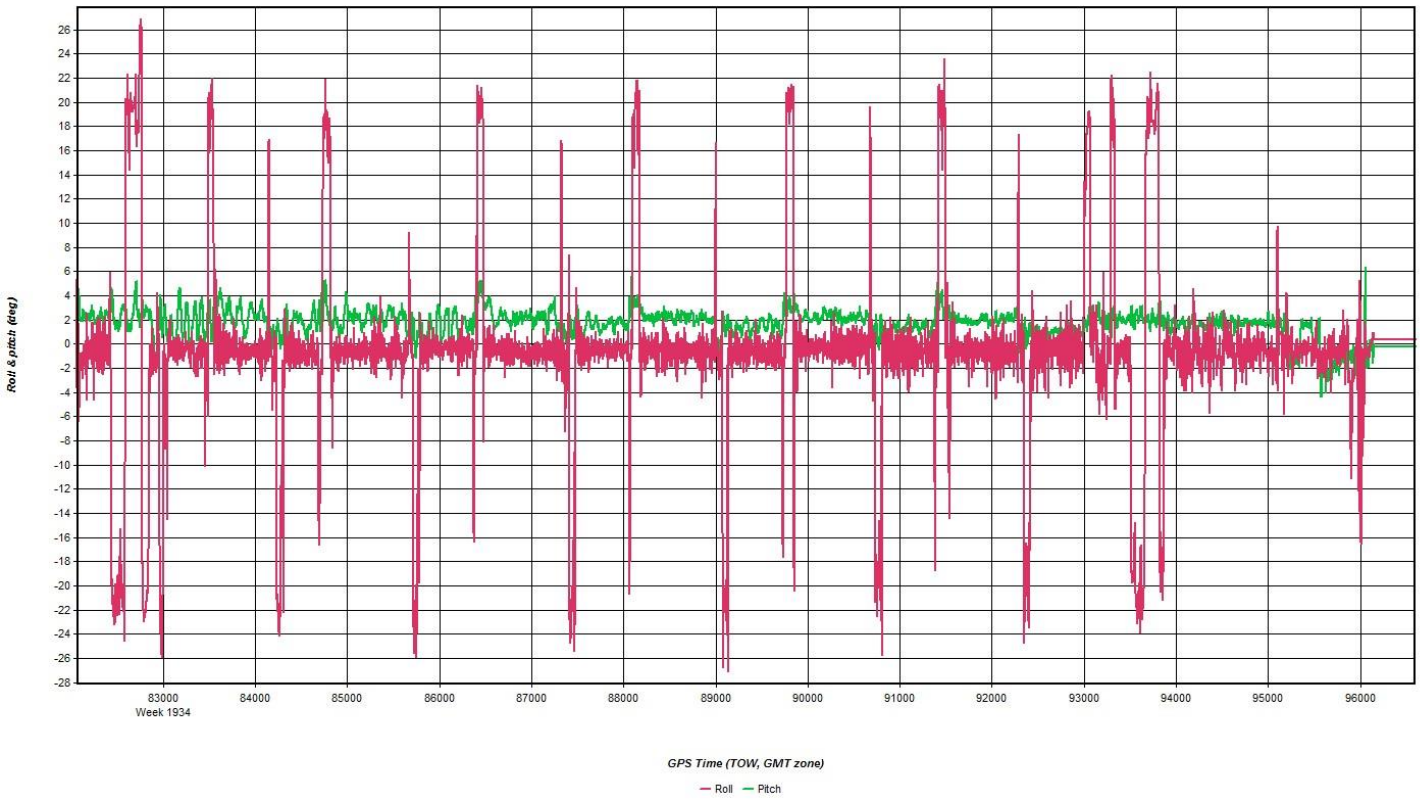

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

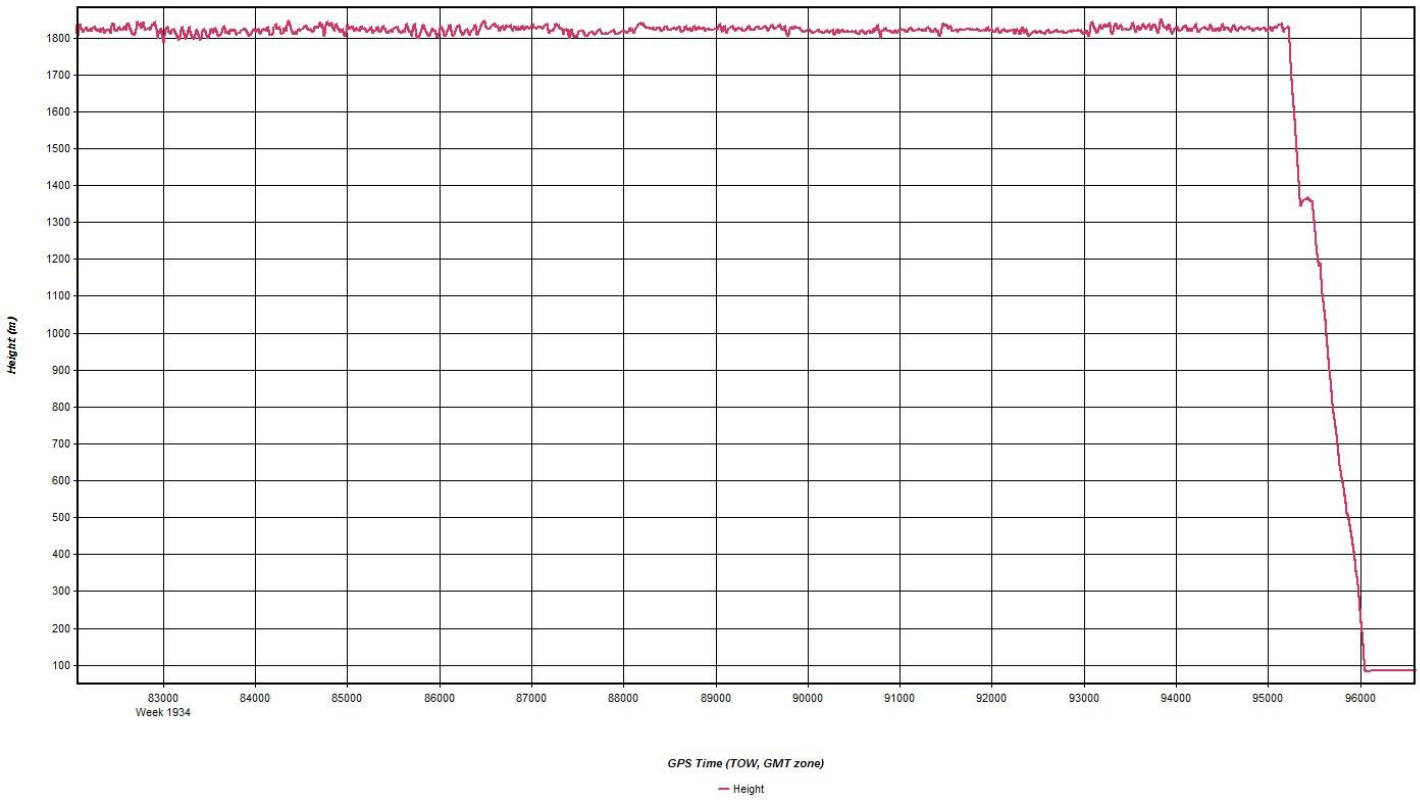

Separation (m)
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
East
North
Up

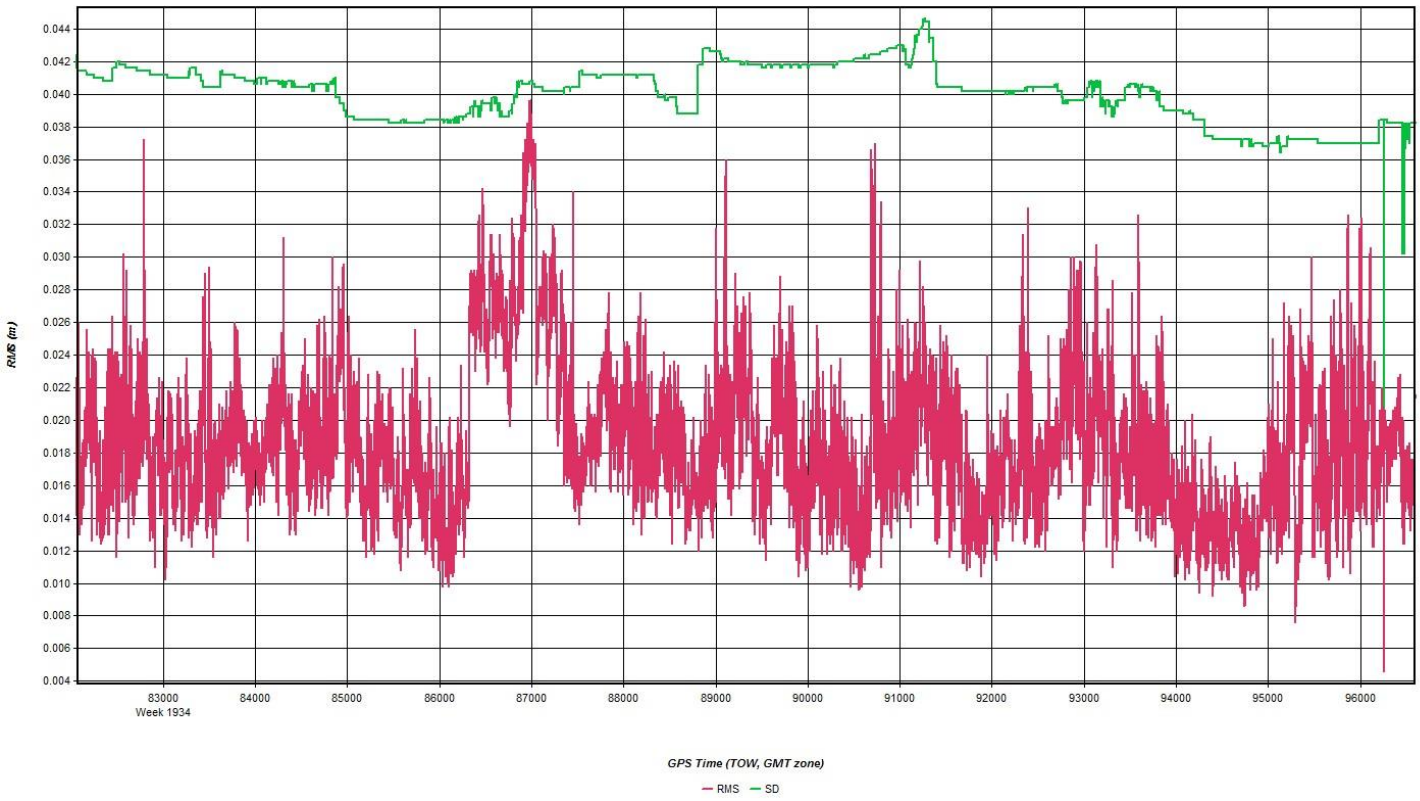

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

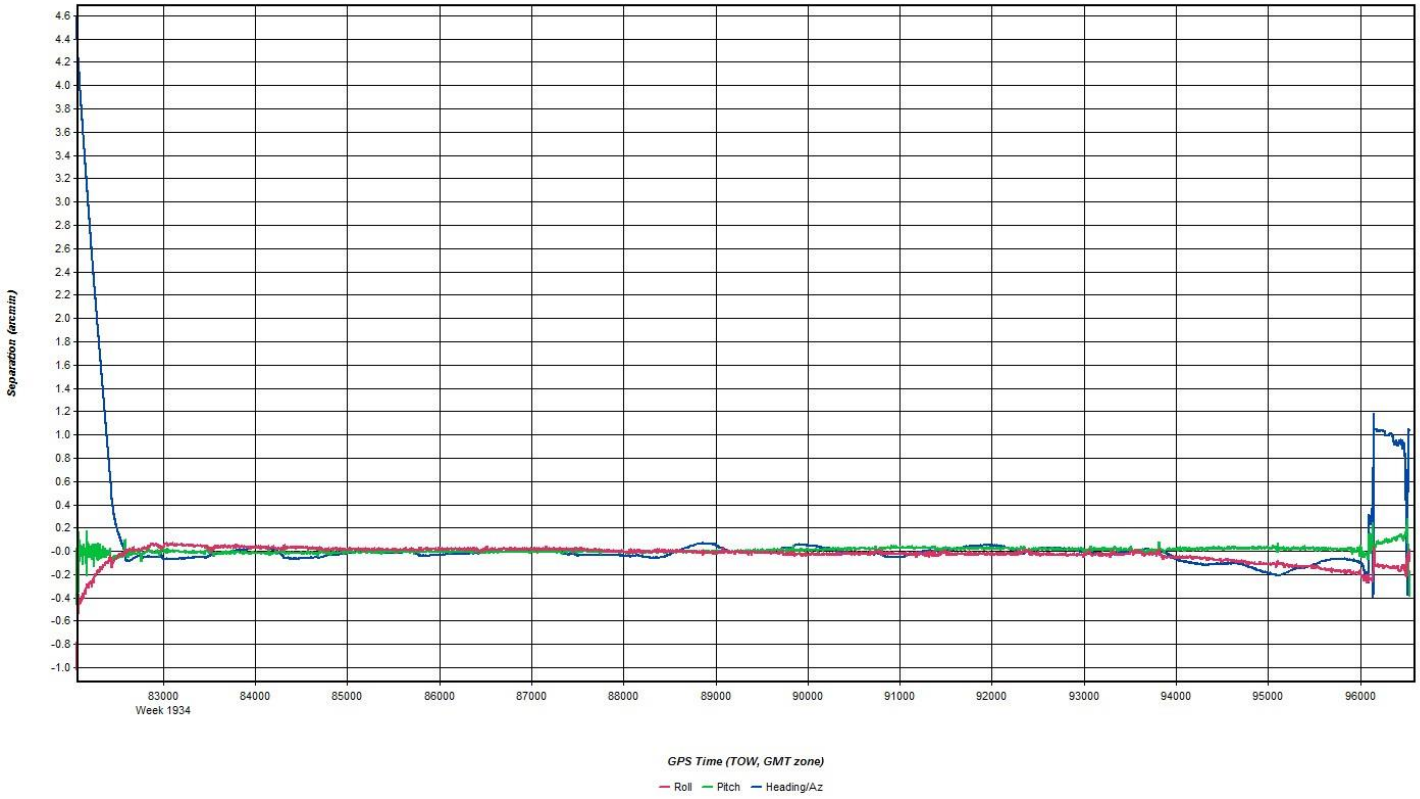

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
PDOP

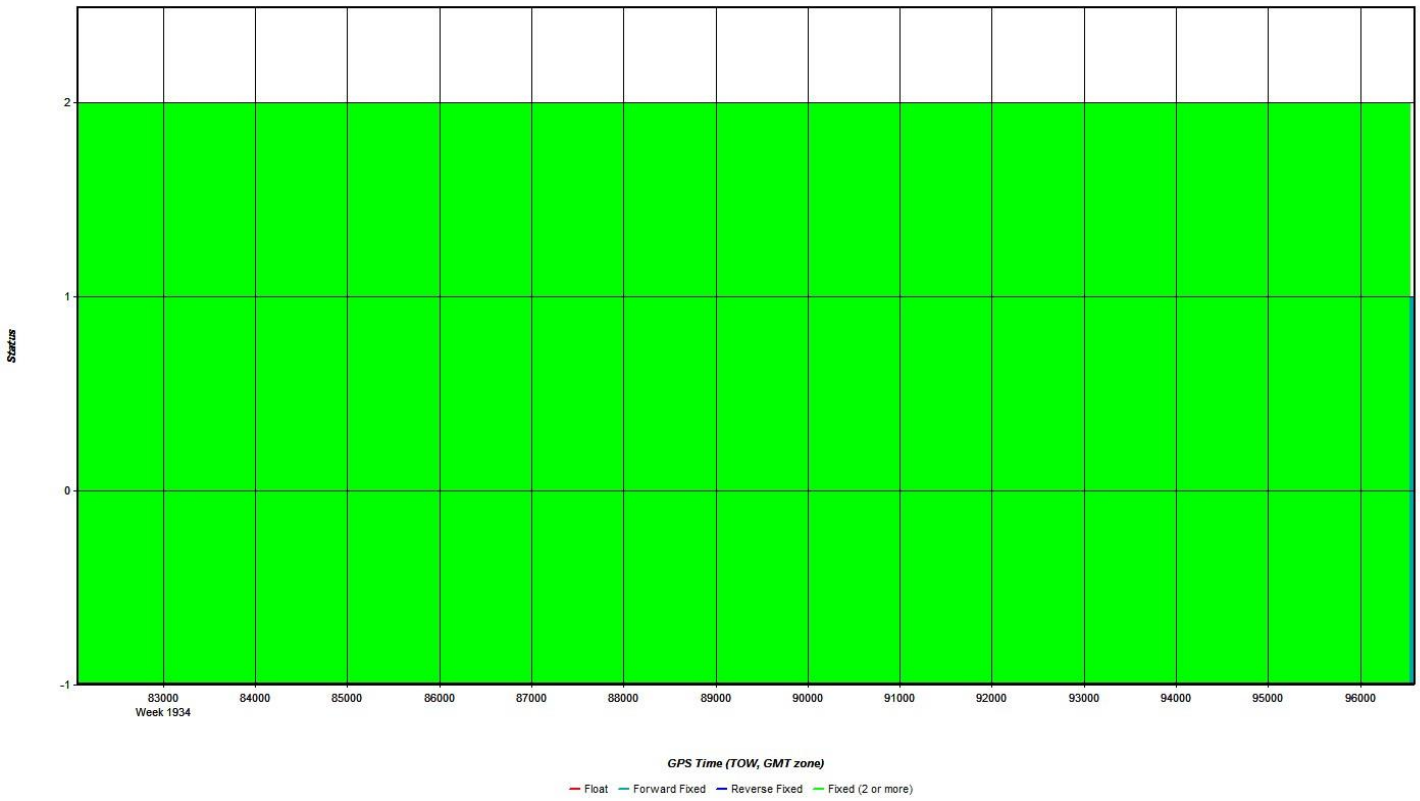

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

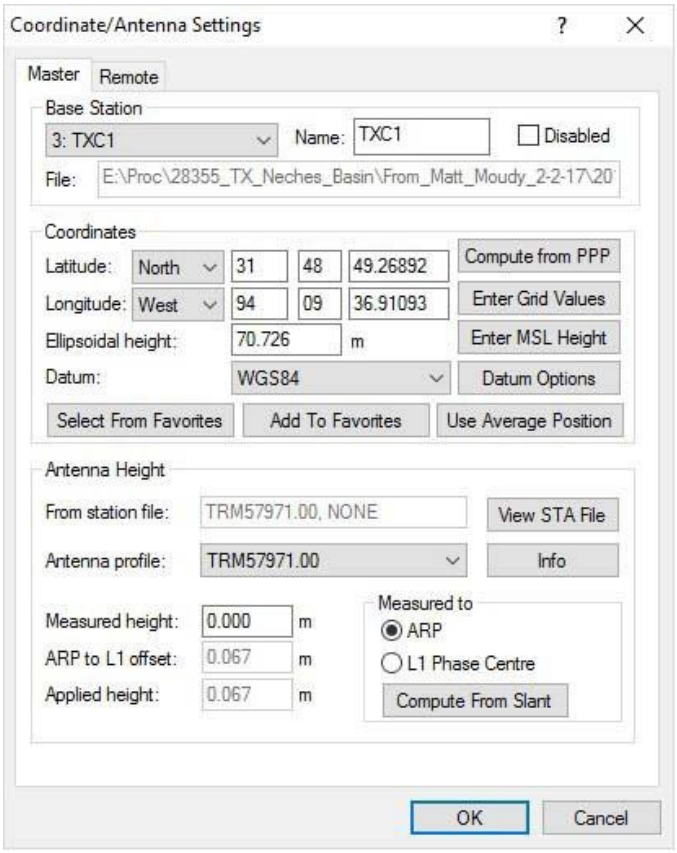

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
Roll
Pitch

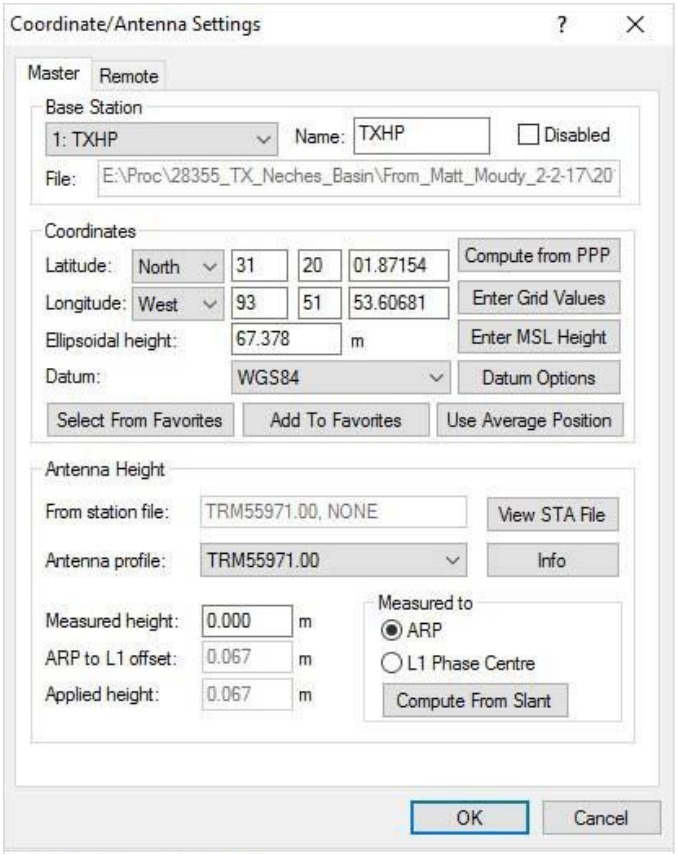

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
Height

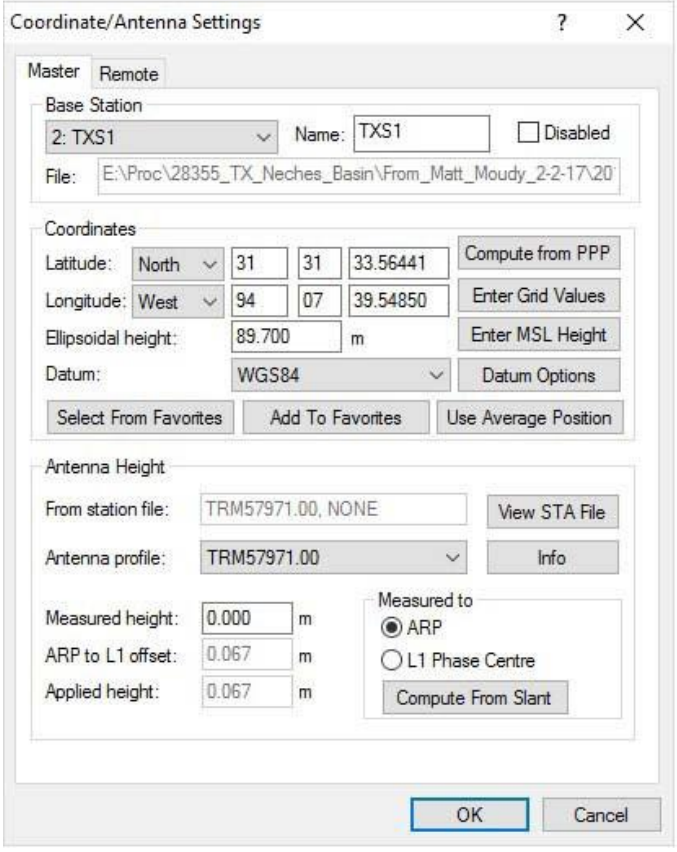

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
-0.0
-0.2
-0.4
-0.6
-0.8
-1.0
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
83000
Week 1934
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
95000
96000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXC1
Name:
TXC1
Disabled
File:
E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude:
North
31
48
49.26892
Compute from PPP
Longitude:
West
94
09
36.91093
Enter Grid Values
Ellipsoidal height:
70.726
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXHP
Name: TXHP
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXS1
Name: TXS1
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 31 33.56441
Longitude: West 94 07 39.54850
Ellipsoidal height: 89.700 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-29-17

Lift: (A) B C D E Pg 1 of 1

Project: NECHES BASIN, TX Proj #: 28355 Flight Mgmt File: 28355_SN7178_SANAUGUSTINE

Aircraft: N812TB Begin Hobbs: 4318.7 End Hobbs: 4322.8 Total: 4.1 Pilot: RADTKE Co-Pilot: - Tech: MOUSY

Dep Apt: GGG Dep Time (Lcl): 1630 (Z): 2230 Arr Apt: GGG Arr Time (Local): 2040 (Z): 0240 Tot Time Aloft: 4'10

CORS: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

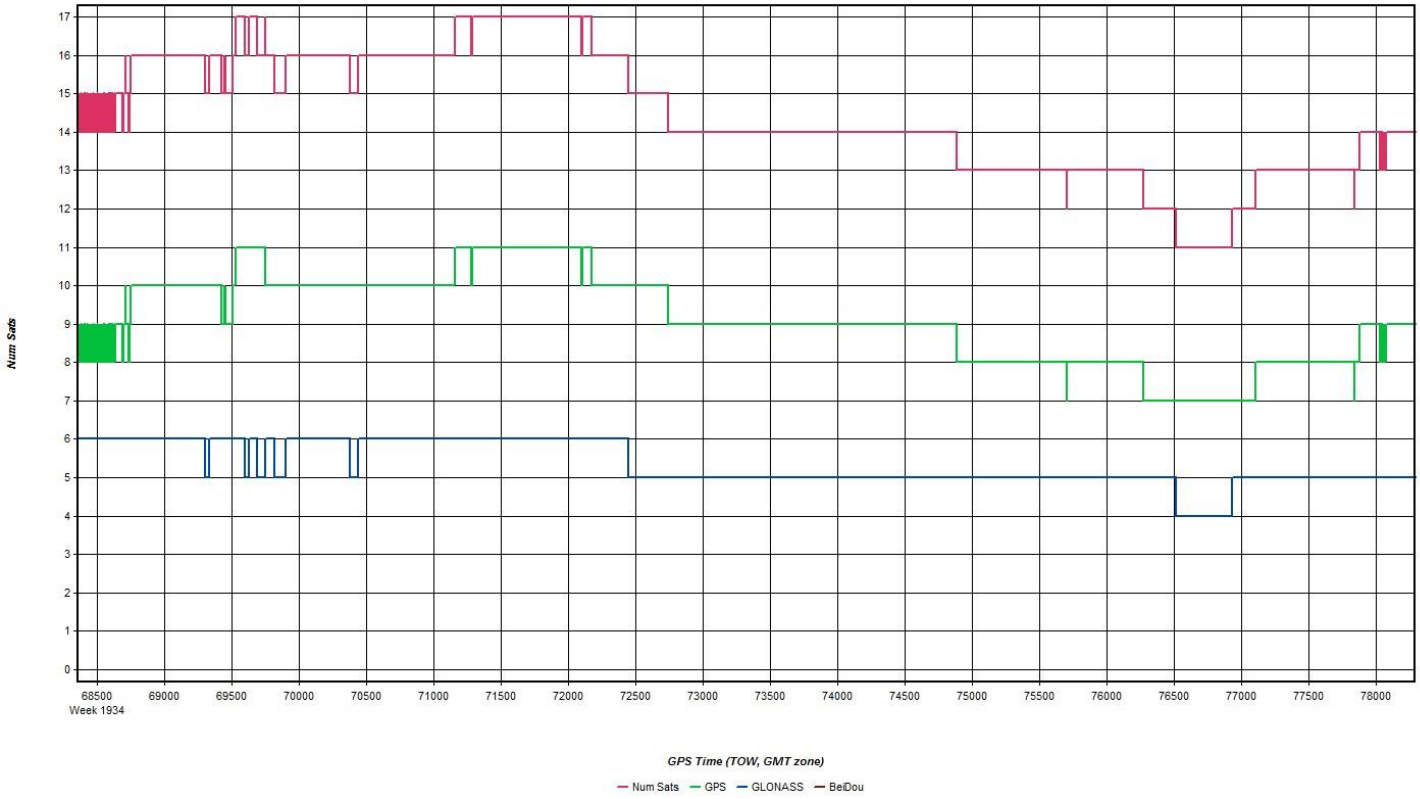
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	Storage Name/#
	AL570	7178	±5500'	±5950'	±450'	150 KTS		347	7178
	FOV 34°	Scan Freq 57Hz	MpiA (Y) / N	Pulses in Air 2	Pulse Rate 312 KHz	Power 100%	PPSM	End GB 400	5503
								Tot GB 53	

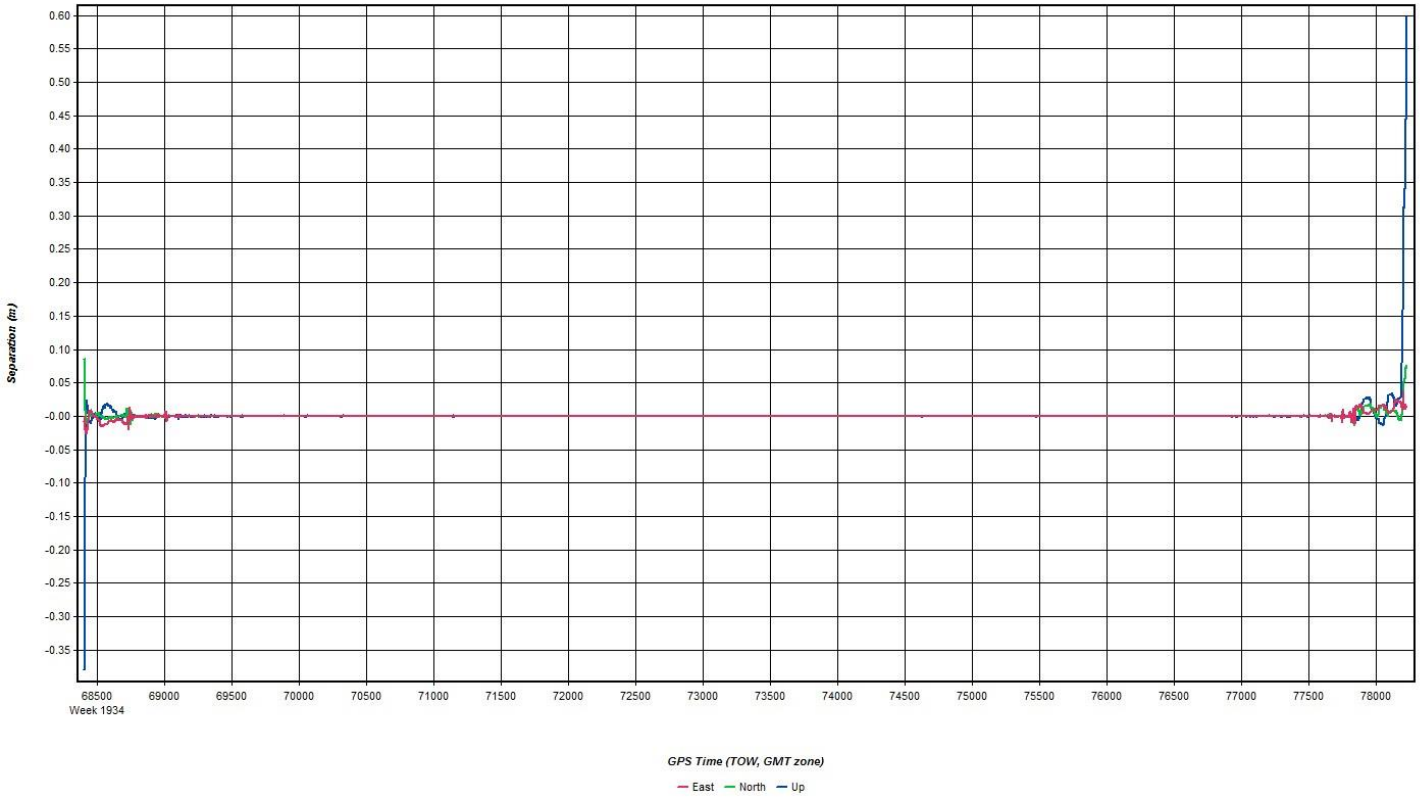
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
4066	180	2304	2308	168	1.1/18	5980	8	-	
4065	360	2314	2322	116	1.3/17	5960	7	-	
4064	180	2325	2331	170	1.2/17	6040	6	-	
4063	360	2334	2342	129	1.3/16	5950	5	-	
4062	180	2350	2359	170	1.0/19	6000	8	-	
4061	360	0002	0015	122	1.1/18	6000	6	-	
4060	180	0018	0027	170	1.1/18	5960	8	-	
4059	360	0030	0043	123	1.2/17	5990	5	-	
4058	180	0046	0055	171	1.2/18	5980	7	-	
4057	360	0058	0110	125	1.1/19	5960	5	-	
4056	180	0113	0122	171	1.3/17	5970	6	-	
4055	360	0126	0137	123	1.3/17	5970	4	-	
4054	180	0140	0149	166	1.2/18	5950	5	-	
TIE	090	0155	0158	167	1.2/18	5990	13	-	

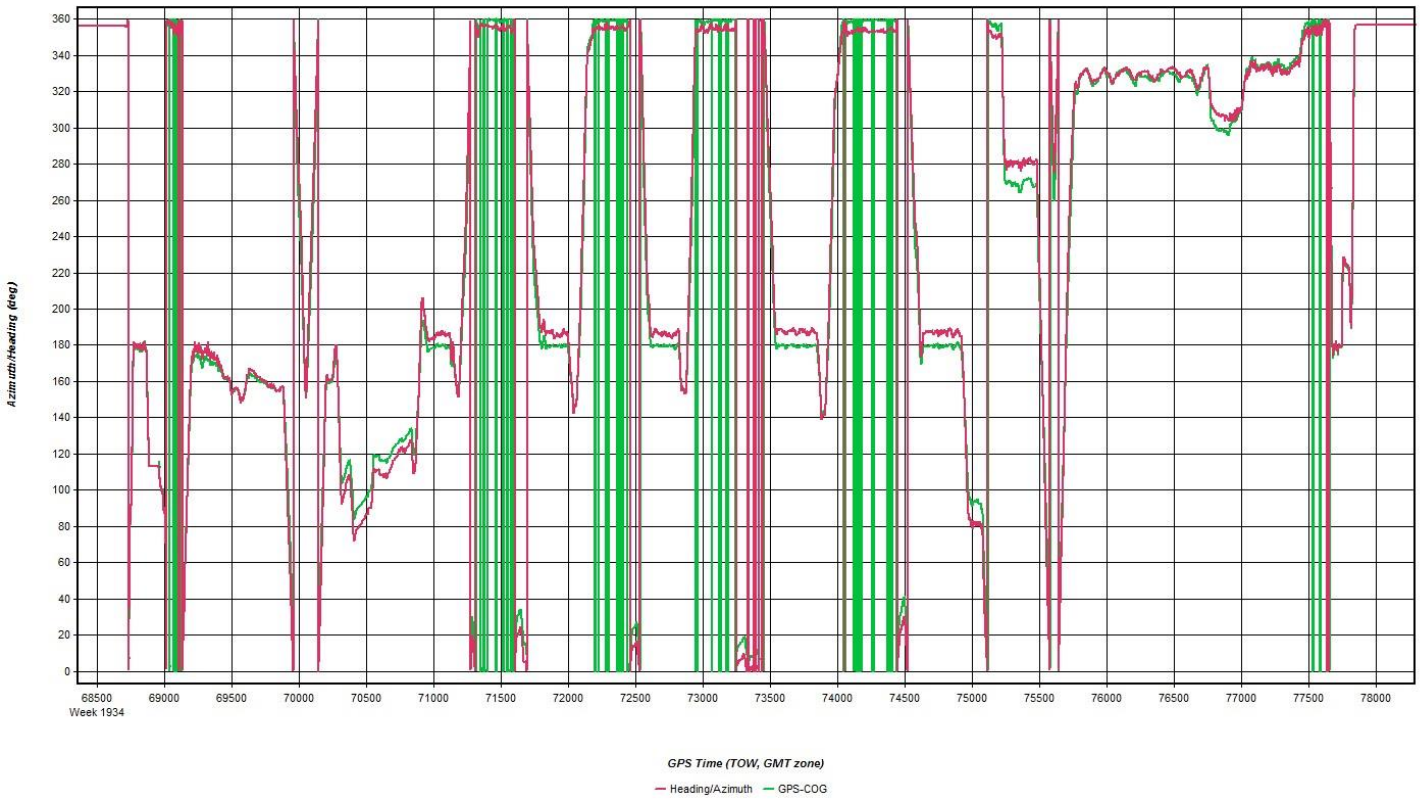
Total Proj Lines: Lines Flown: Lines Remain: On-line Time: 3.0 Mob Time: 1.0 Notes:

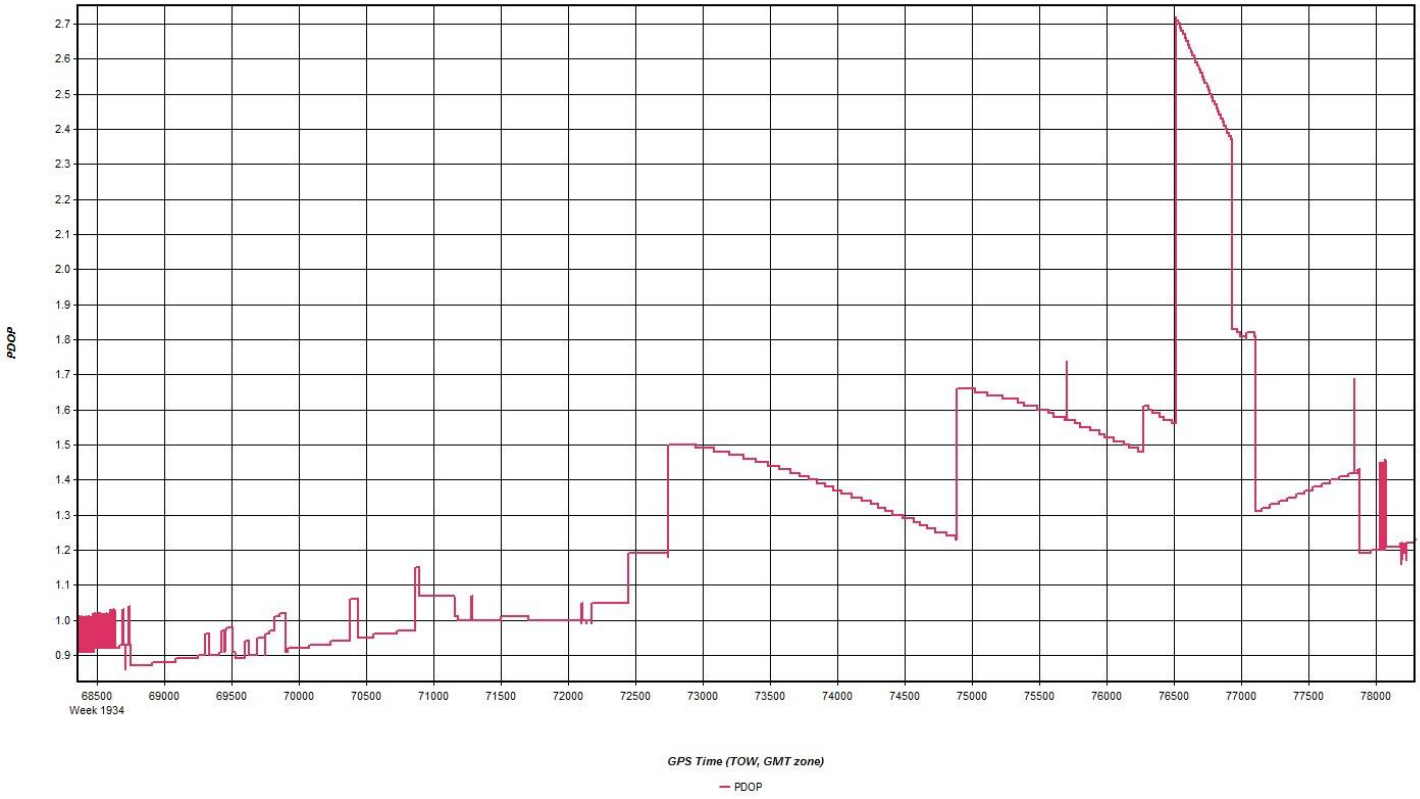
Jan 29, 2017-B (N812TB, SN7178)

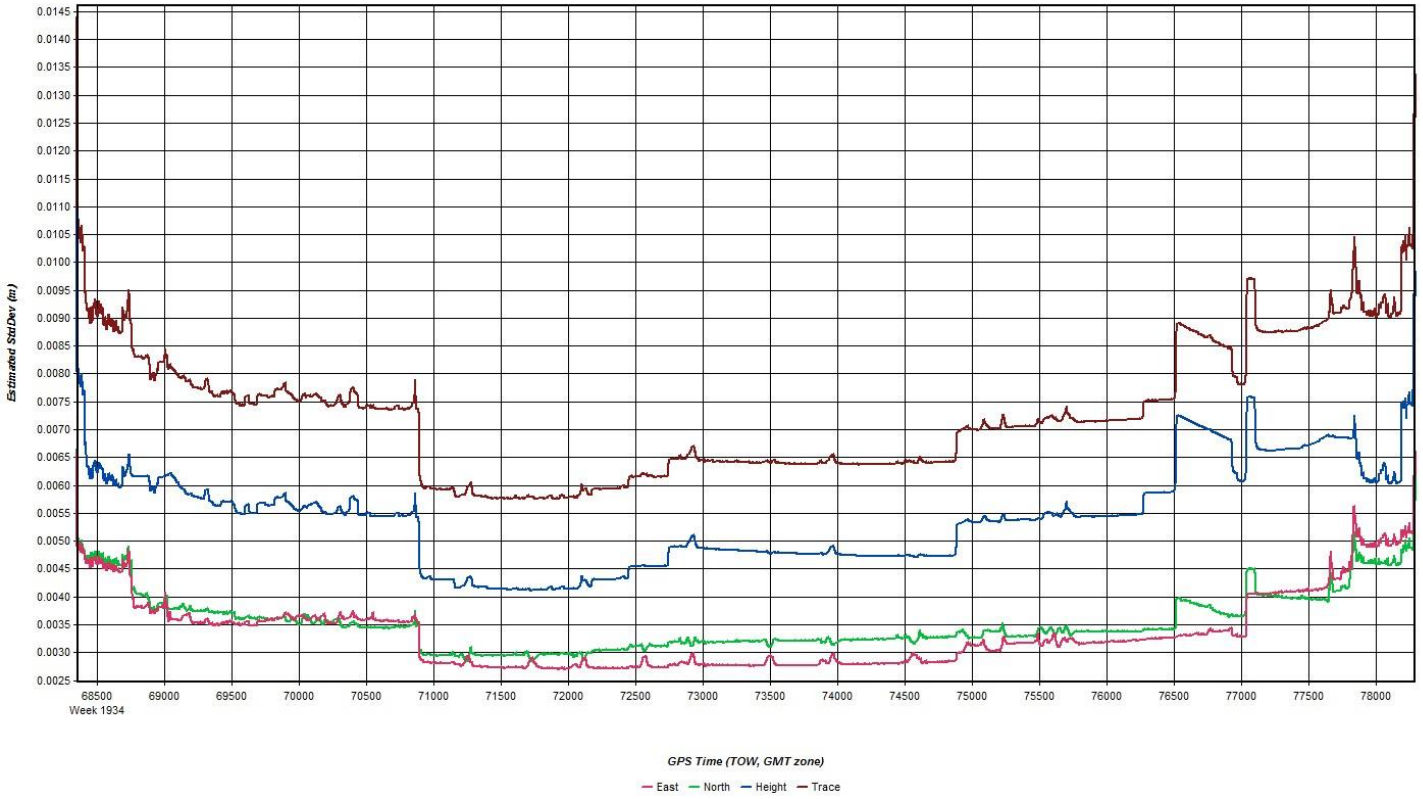



Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

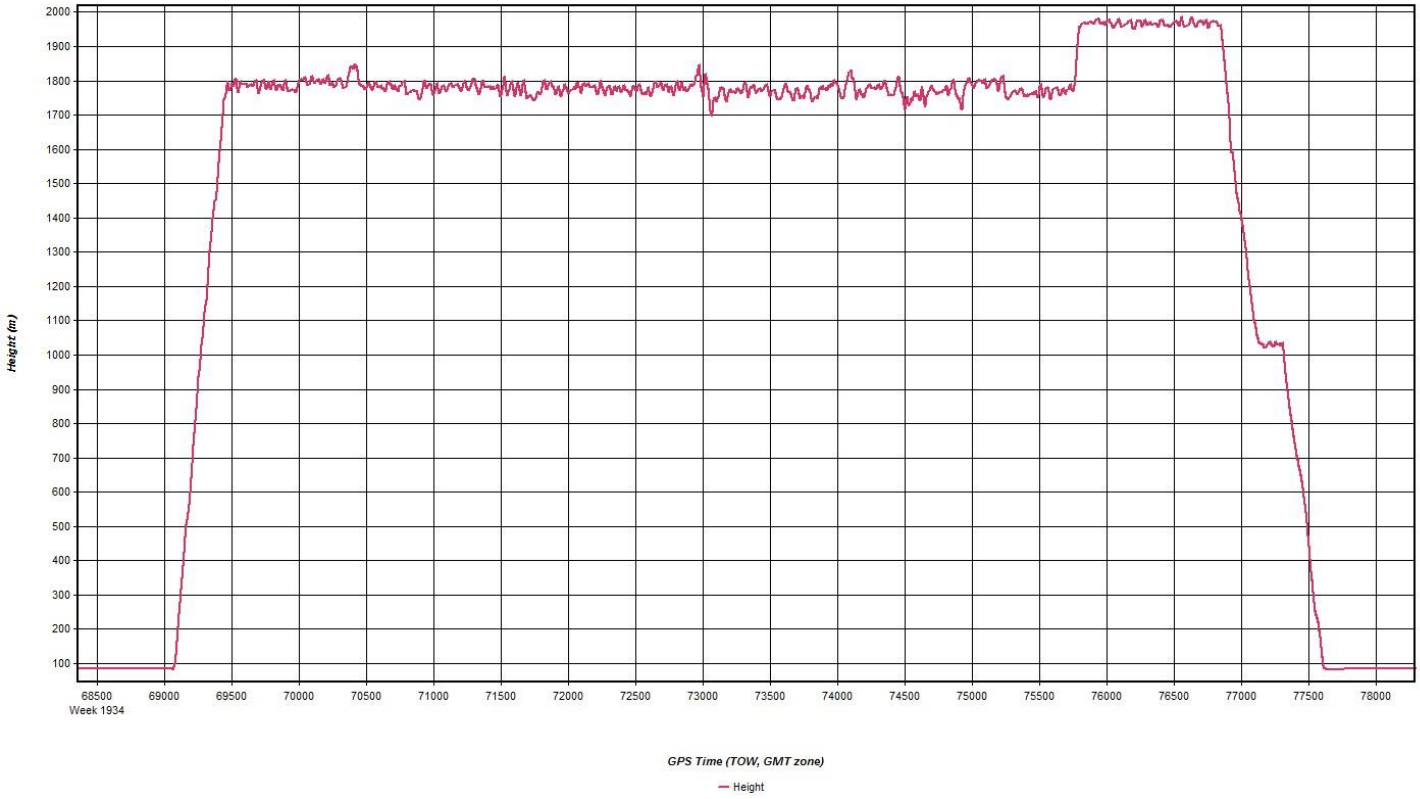

Separation (m)
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
East
North
Up

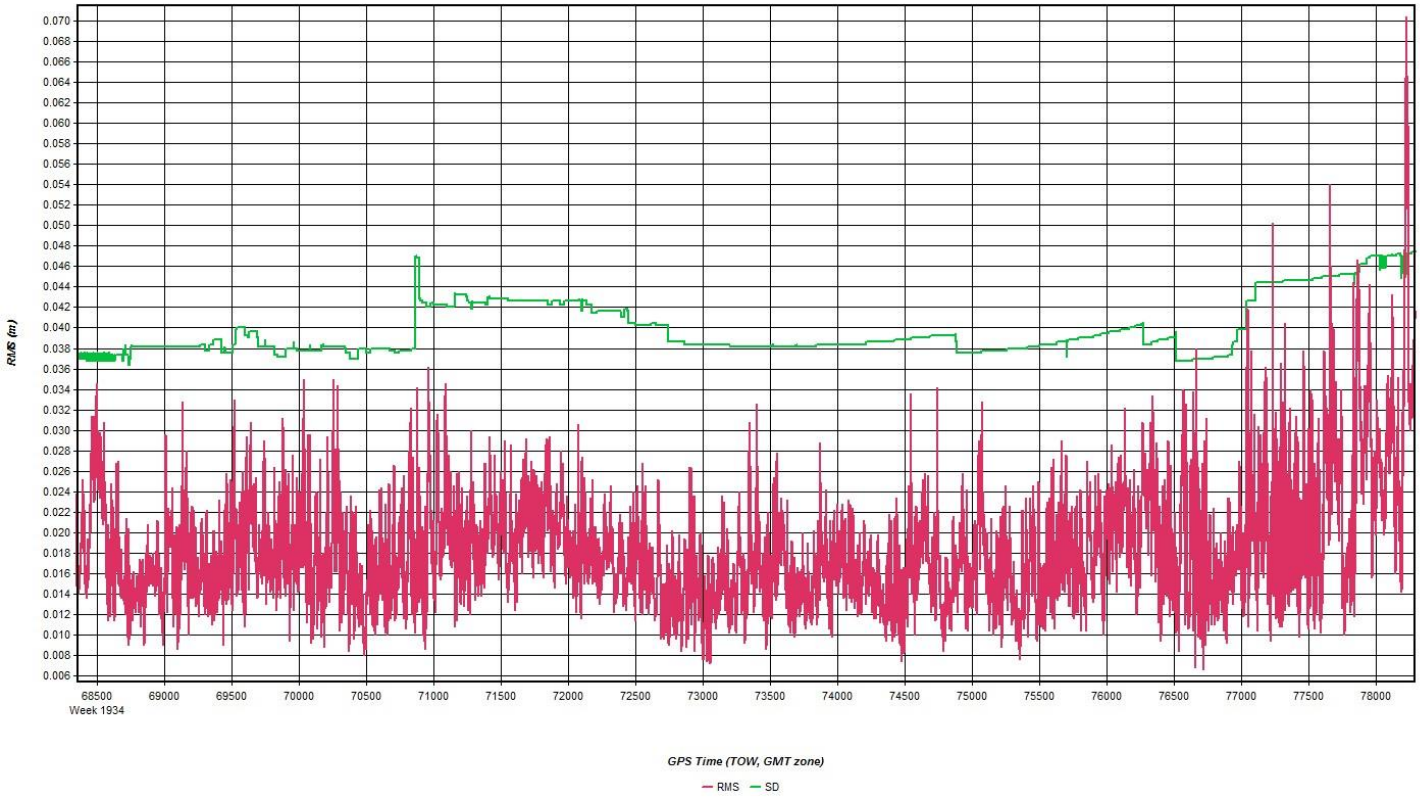

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

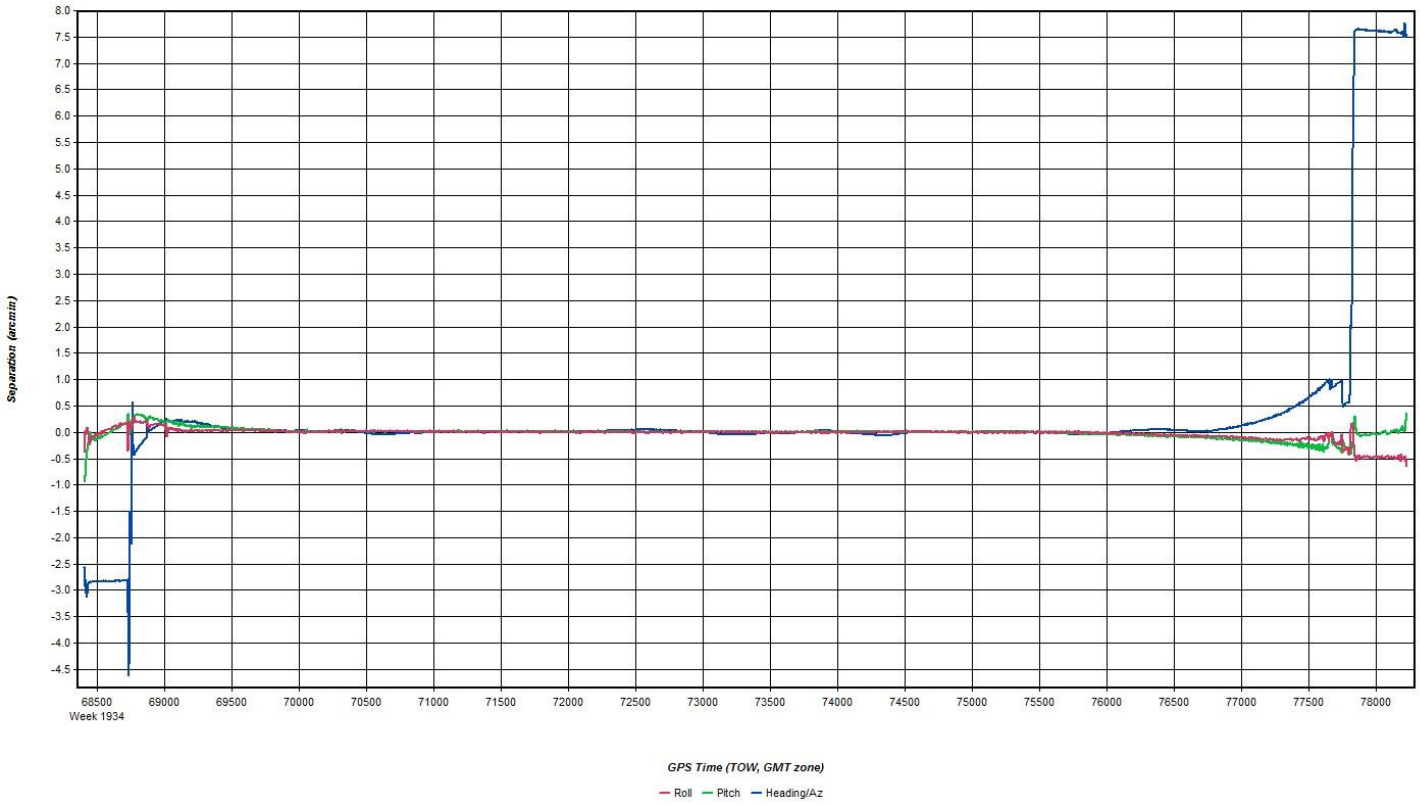

PDOP
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
PDOP

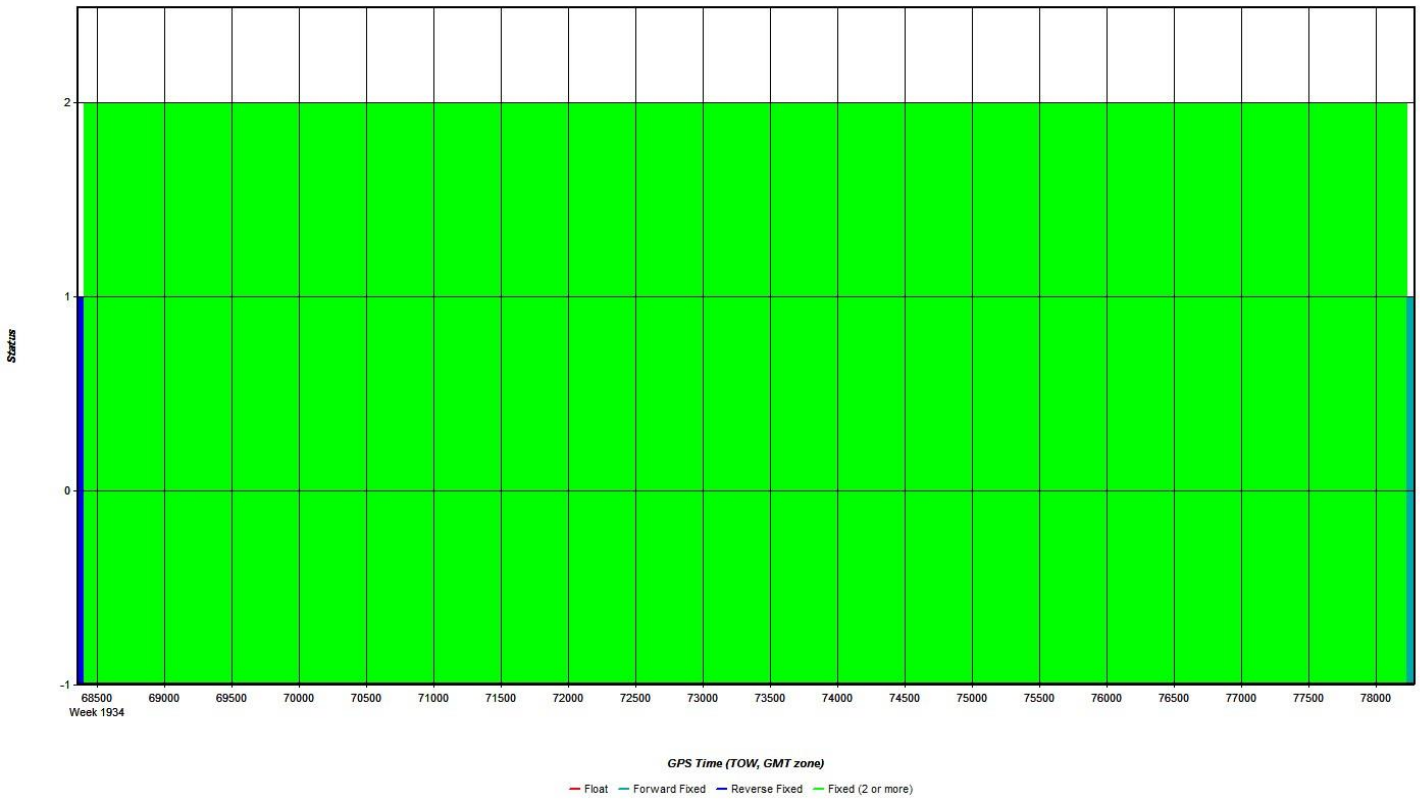

Estimated StdDev (m)
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

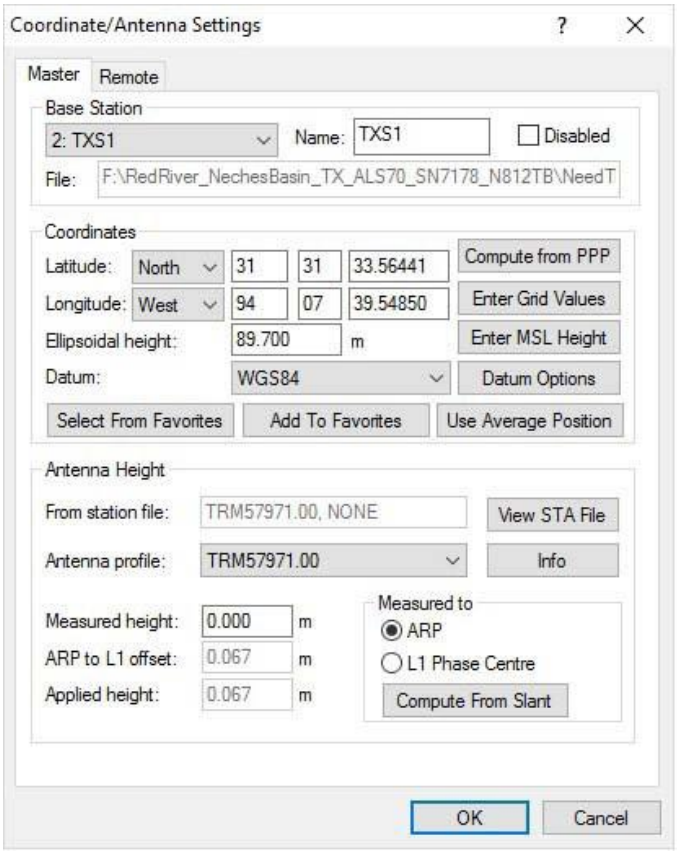

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
Roll
Pitch

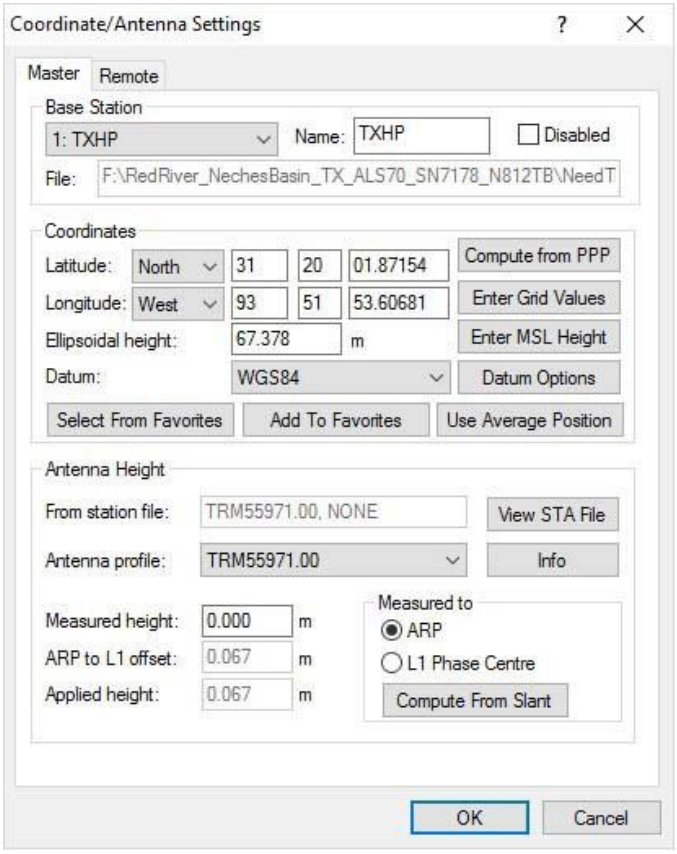

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.070
0.068
0.066
0.064
0.062
0.060
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
68500
Week 1934
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
77500
78000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXS1
Name:
TXS1
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
31
33.56441
Compute from PPP
Longitude:
West
94
07
39.54850
Enter Grid Values
Ellipsoidal height:
89.700
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXHP
Name: TXHP
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

1-29-17 B

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-29-17 B Lift: A (B) C D E Pg 2 of 2

Project: Neches River Basin TX Proj #: 28355 Flight Mgmt File: 20170129-185614

Aircraft: Begin Hobbs: 4316.4 End Hobbs: 4318.7 Total: 2.3 Pilot: C Mcdonald Co-Pilot: JBillingsley Tech: DSwan

Dep Apt: GGG Dep Time (Lcl): 109 (Z): +6 Arr Apt: GGG Arr Time (Local): 335 (Z): +6 Tot Time Aloft: 2.4

CORS: Y / (N) Sta 1: GGG/NRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 15 °c End: 17 °c OAT beg: +6 °c End: +17 °c Altimeter begin: 3017 end: 3017

Bag CB: 285 End CB: 271 Tot CB: 14 Storage Name/#: #2

LiDAR	Type: A1570	Serial #: 7178	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV: 34	Scan Freq: 57	MpIA Y / N	Pulses In Air	Pulse Rate: 312	Power: 100	PPSM

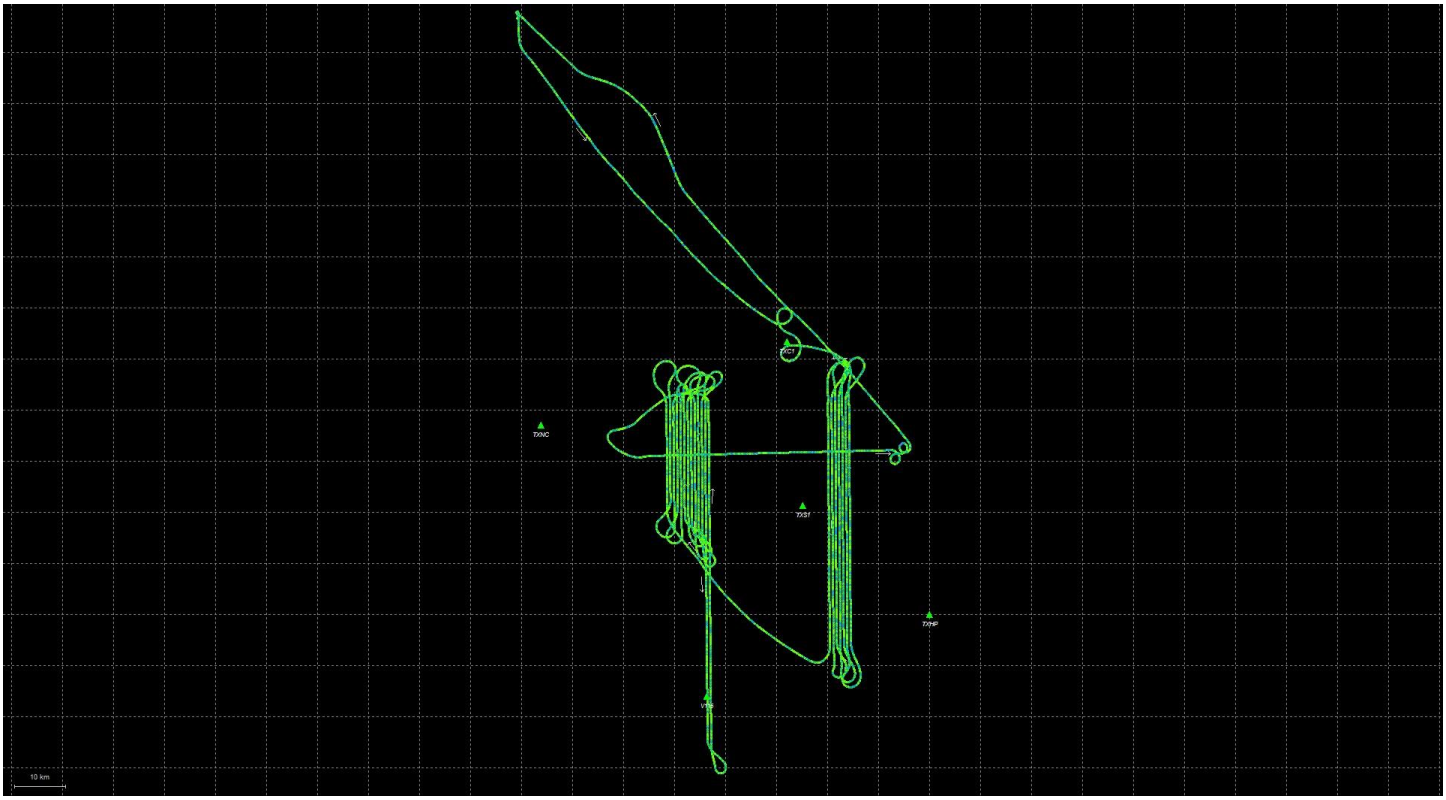
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									GGG → Fig 8's
4001	180								aborted due to PAR traffic
4075	180	1943	1944	139	1.2/18	5855	+5	0	
4074	0	1950	1952	140	1.3/17	5839	-4	0	
4073	180	1957	1959	147	1.2/17	5861	+5	0	
4072	0	2004	2007	134	1.3/17	5851	-7	0	
4071	180	2010	2013	156	1.2/17	5849	+8	0	
4070	0	2017	2020	127	1.3/16	5861	-5	0/-	
4069	180	2026	2030	164	1.2/16	5 714	+7	0/-	
4068	0	2035	2039	131	1.4/15	5926	-6	0/-	
4067	180	2044	2048	165	1.4/15	5790	+7	0/-	
Xtic	270	2054	2057	139	1.4/15	5737		0/-	unplanned Xtic
									Hobbs = 2.3
								(B)	onLine = 1.3
									Mob = 1.0

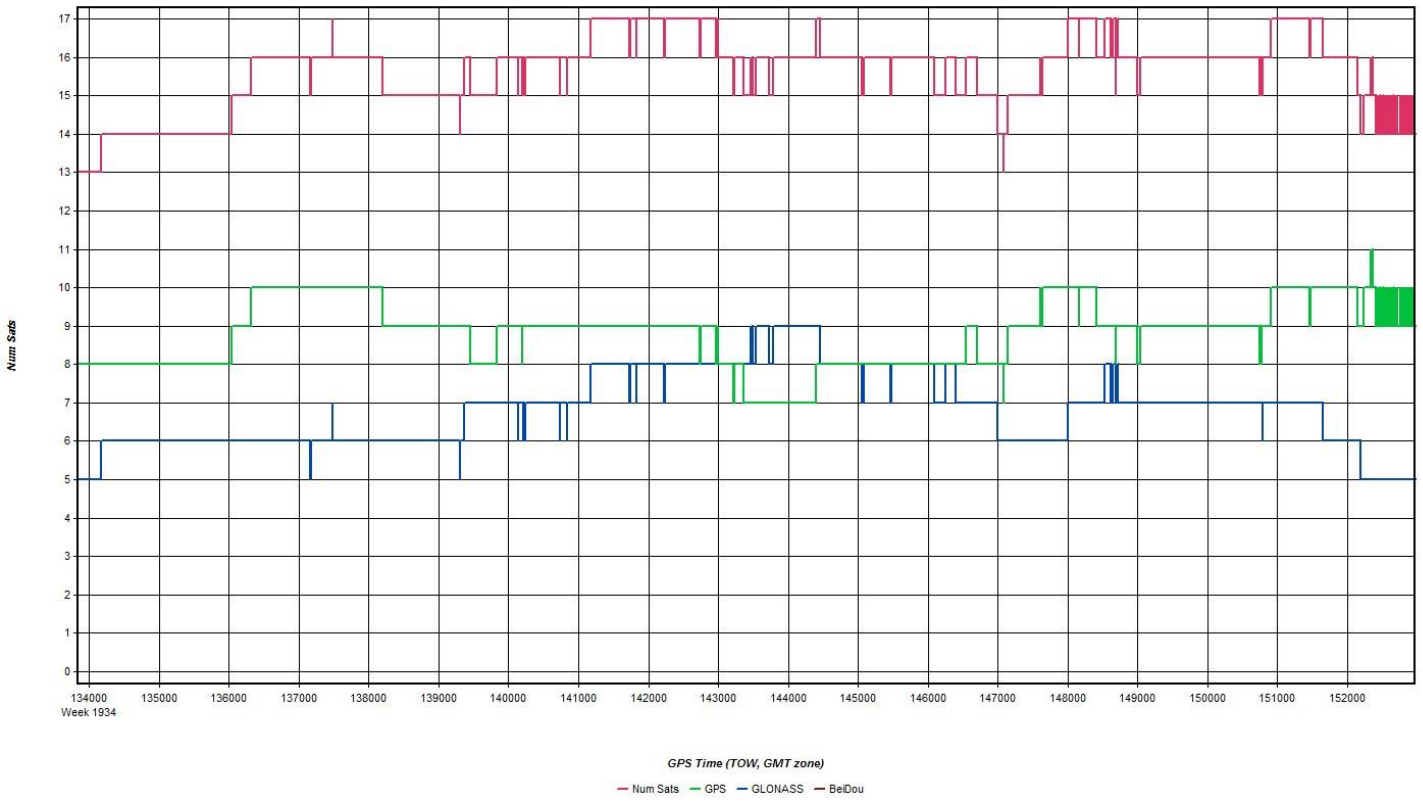
0129 Total Hobbs = 7.0
onLine = 5.2
Mob = 1.8

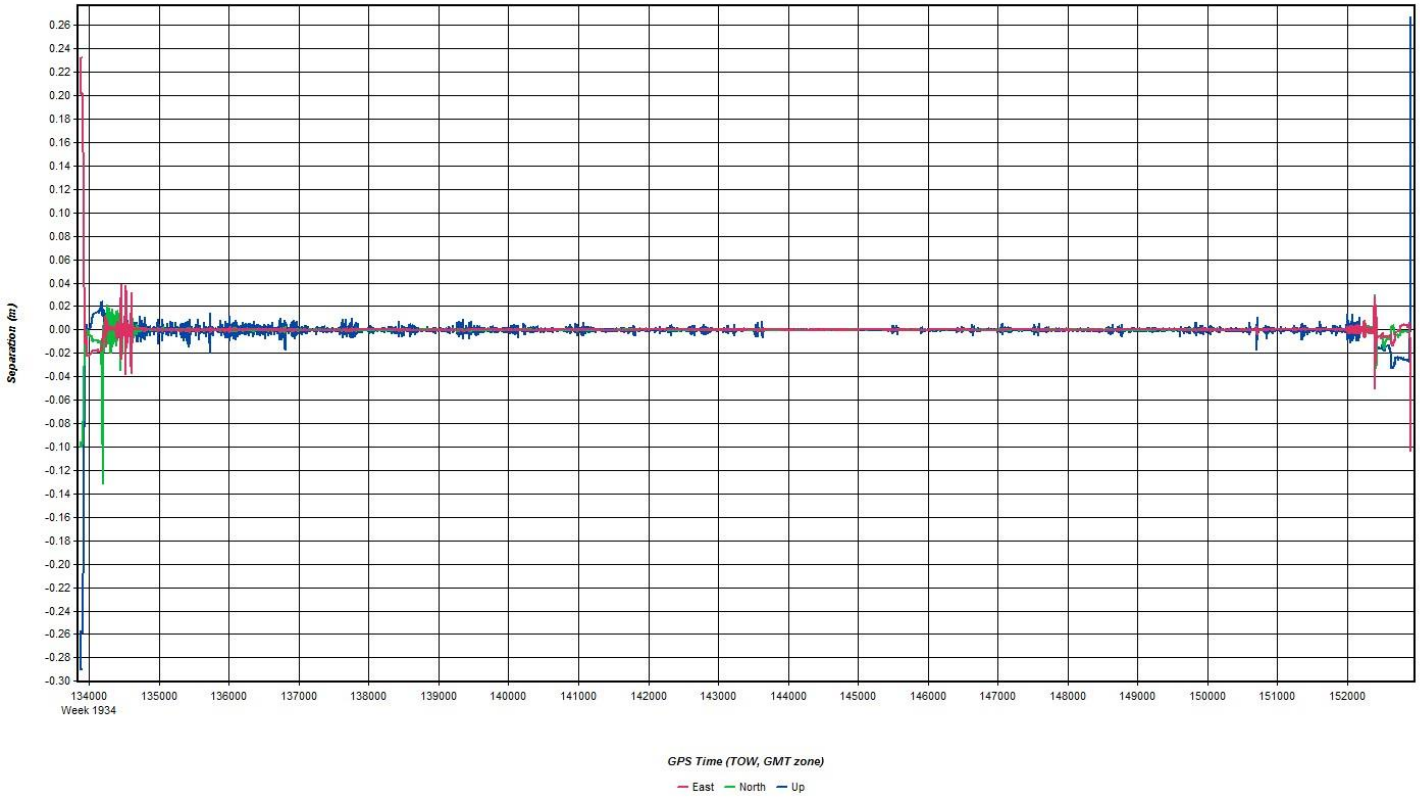
San Aug outline

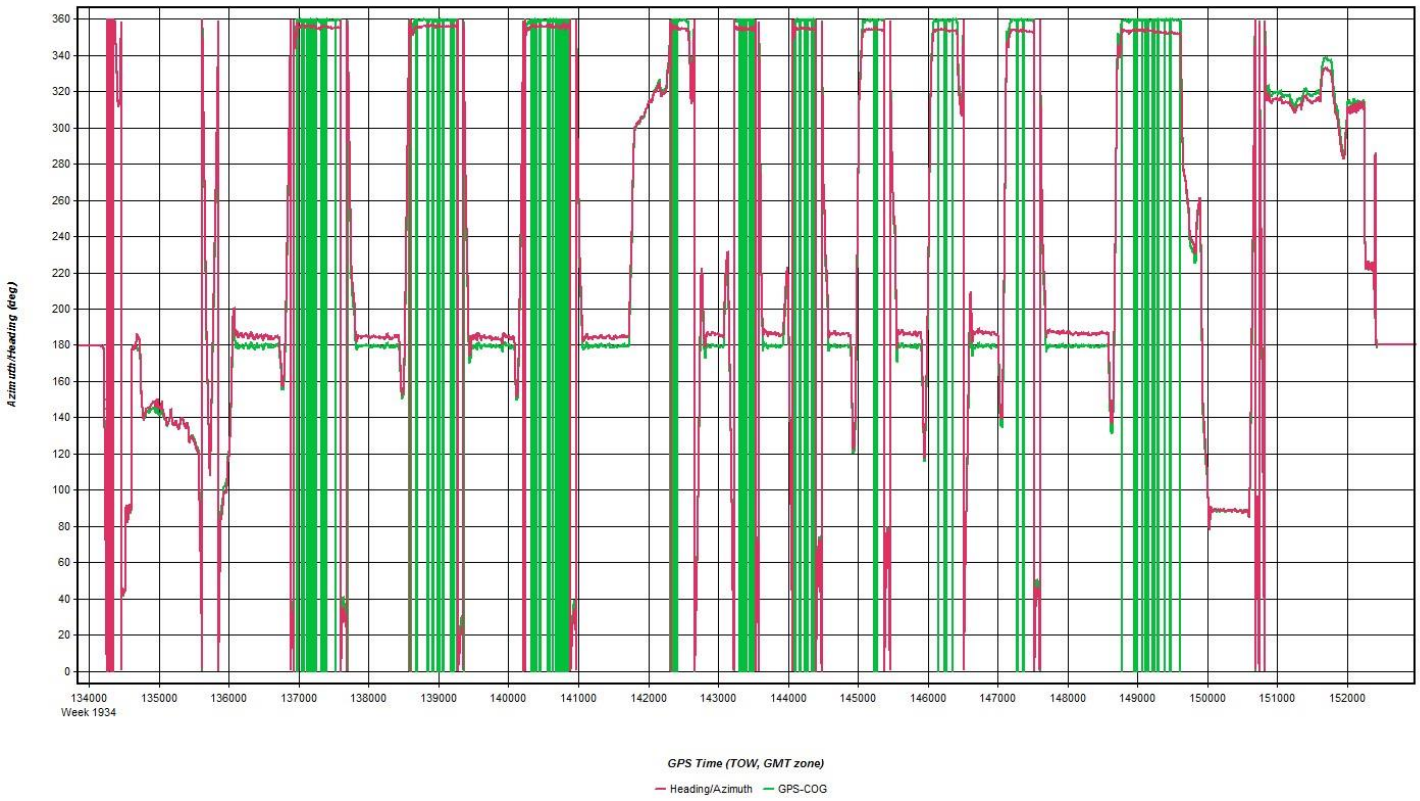
Total Proj Lines: Lines Flown: 9 Lines Remain: Online Time: 1.3 Mob Time: 1.0 Notes:

Jan 30, 2017-A (N812TB, SN7178)

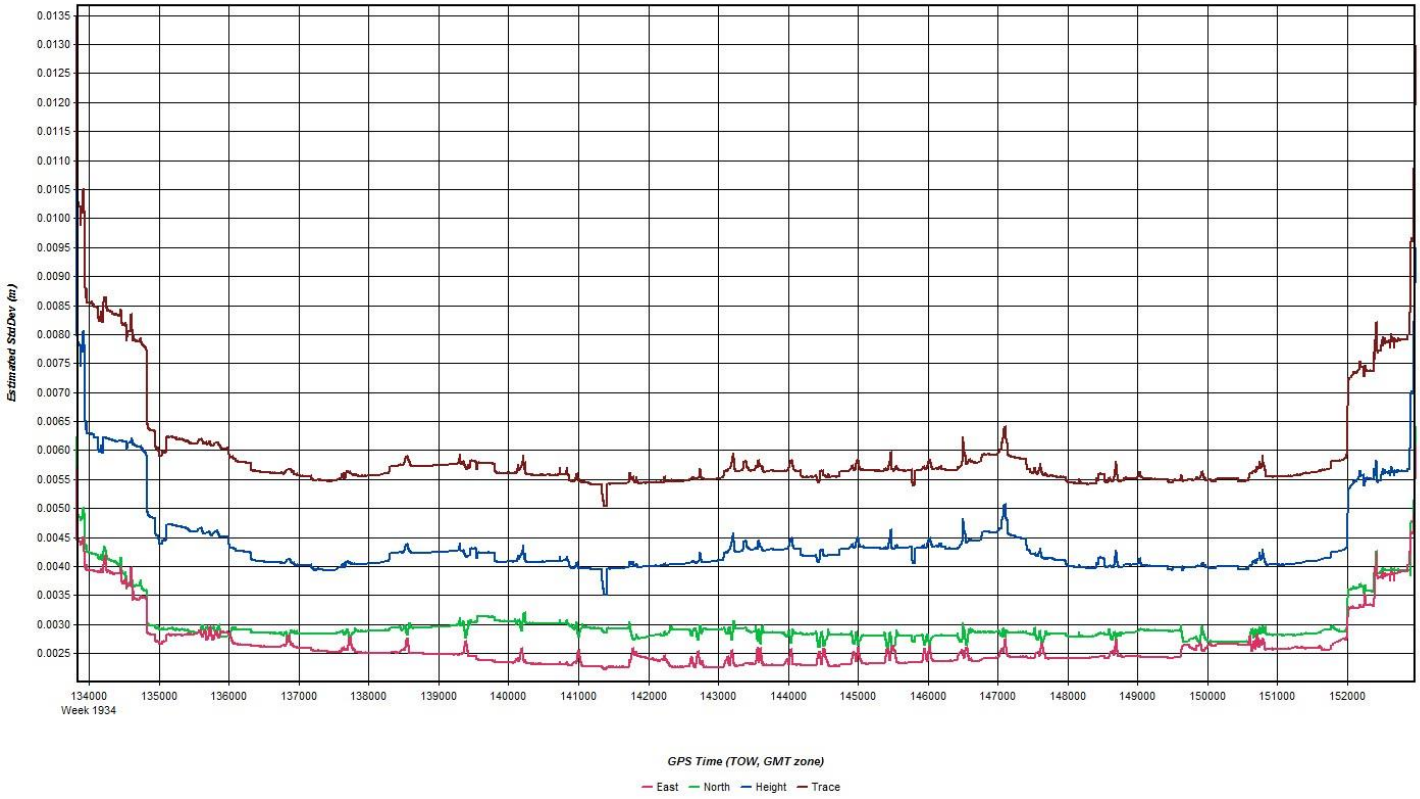


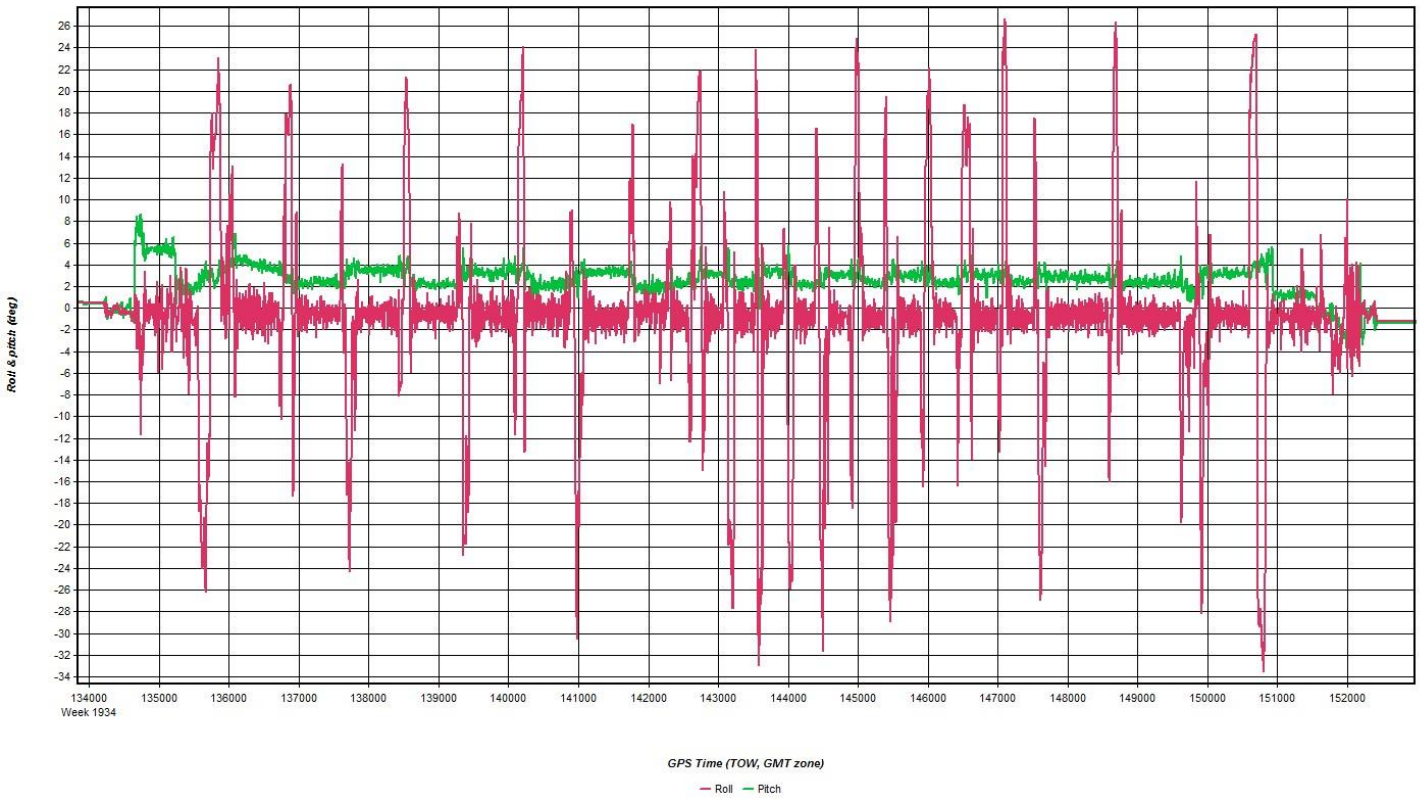

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

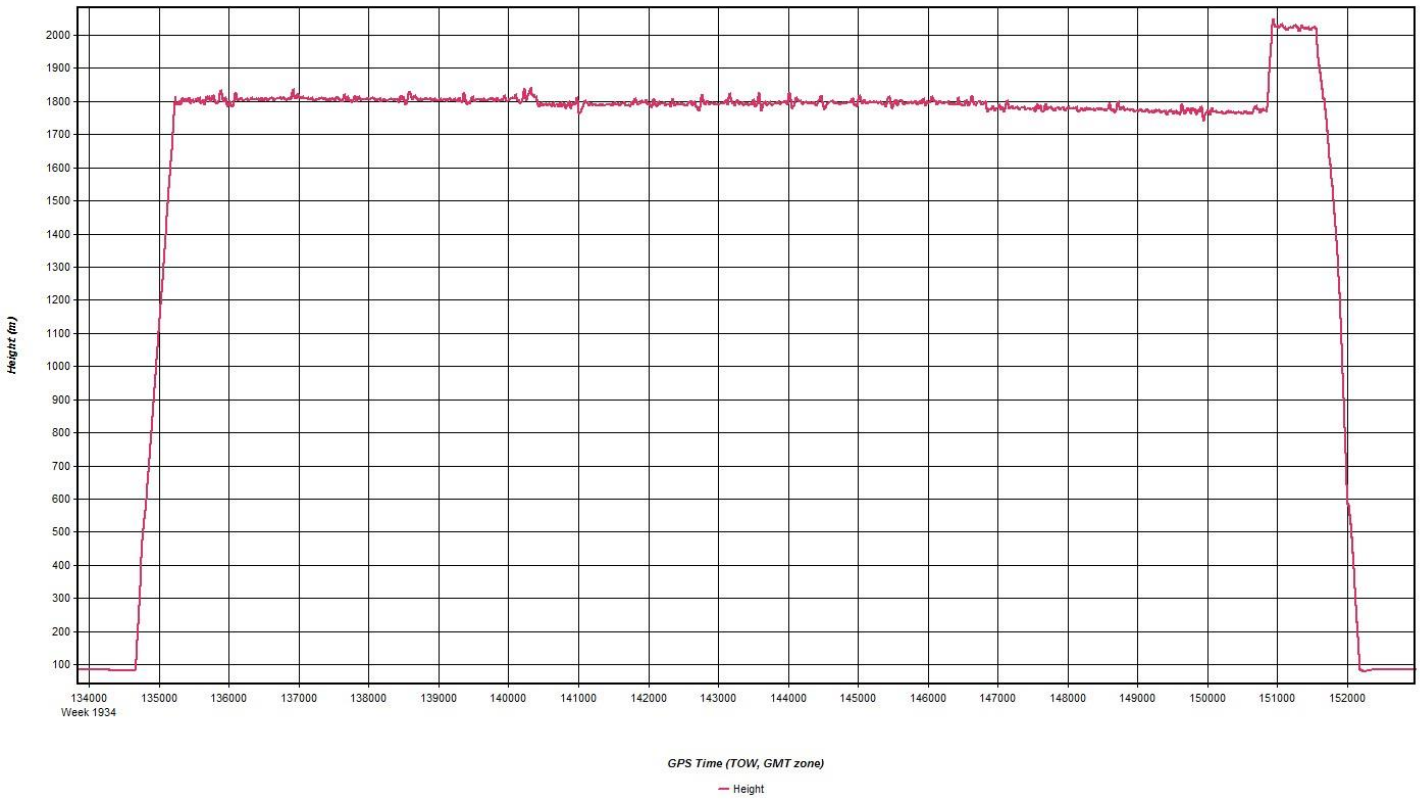

Separation (m)
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
East
North
Up

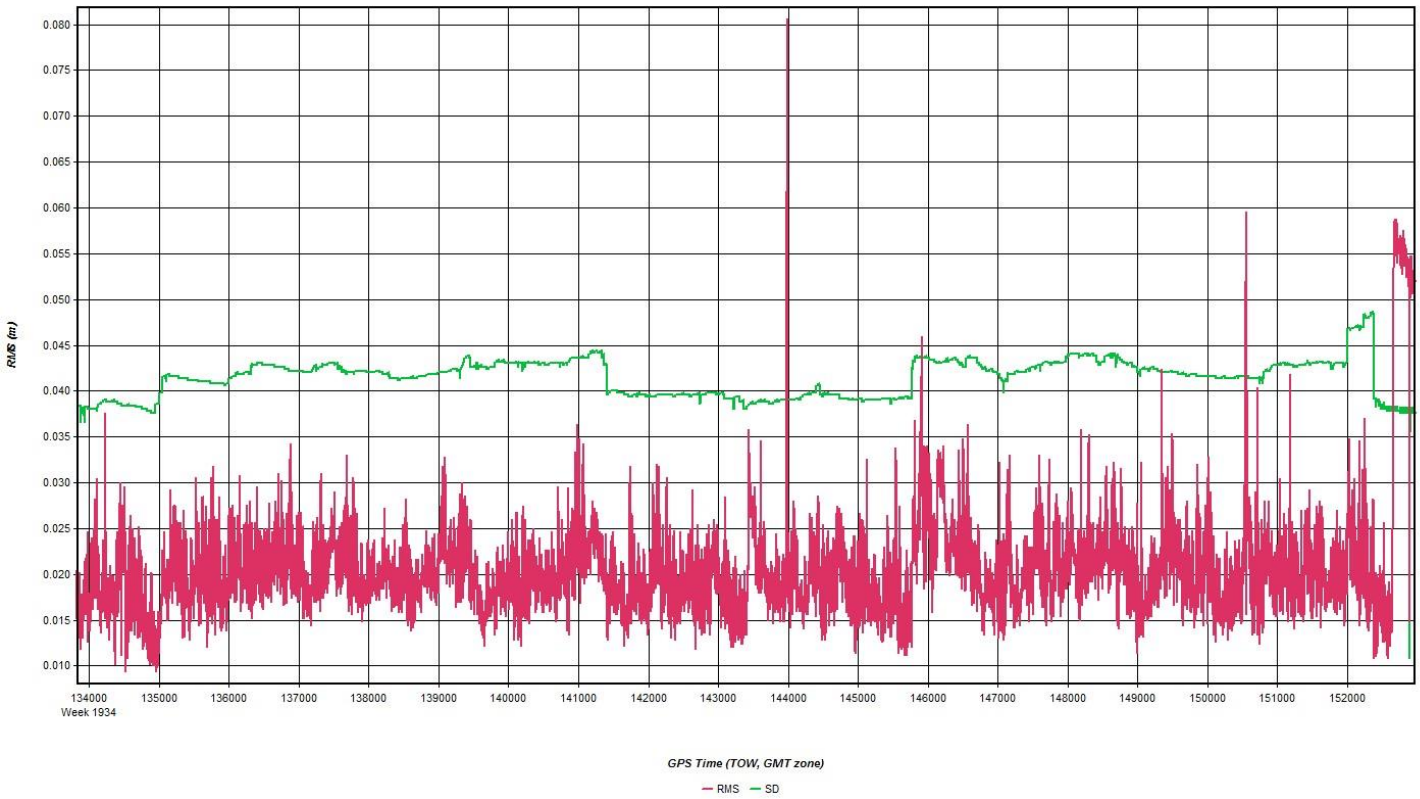

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

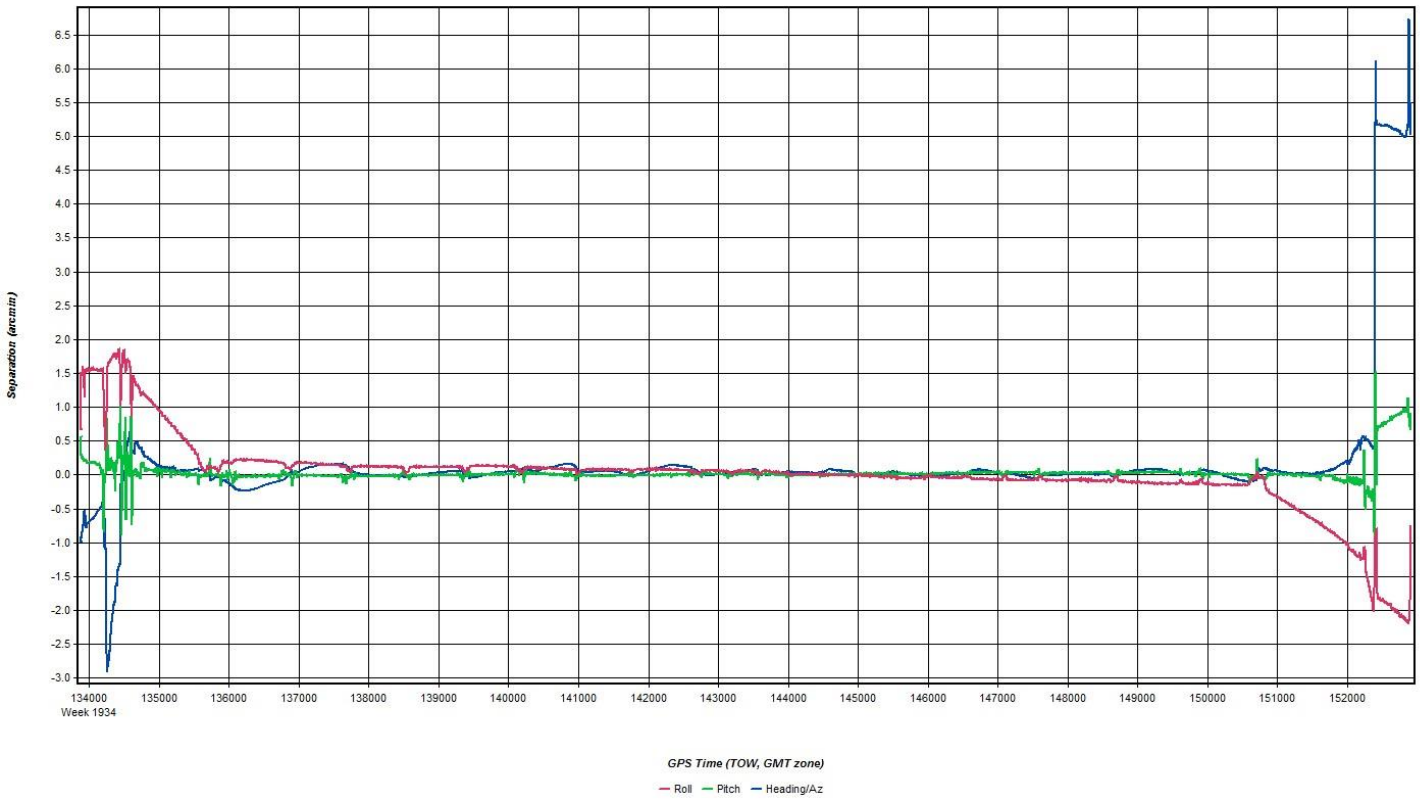

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
PDOP

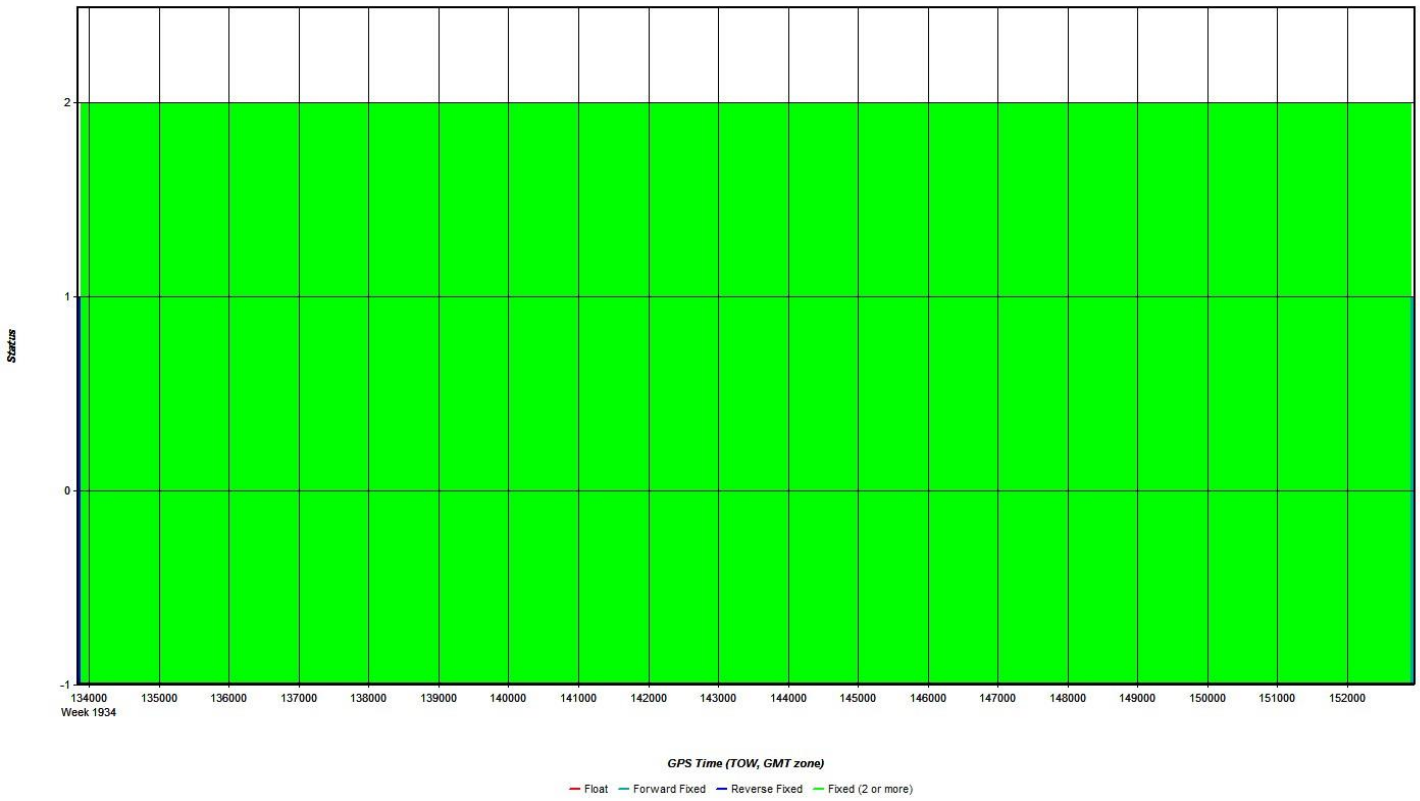

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

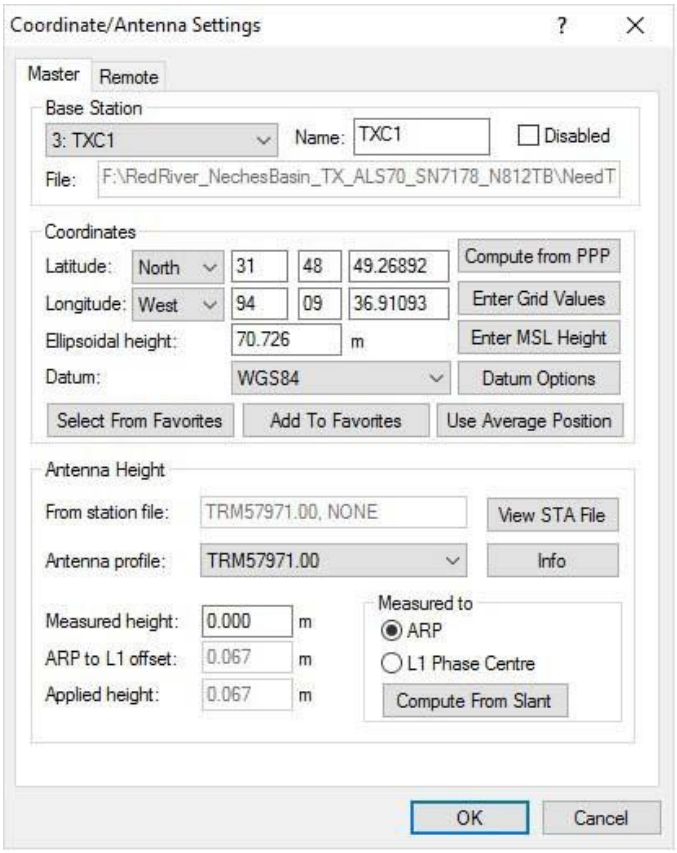

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Roll
Pitch

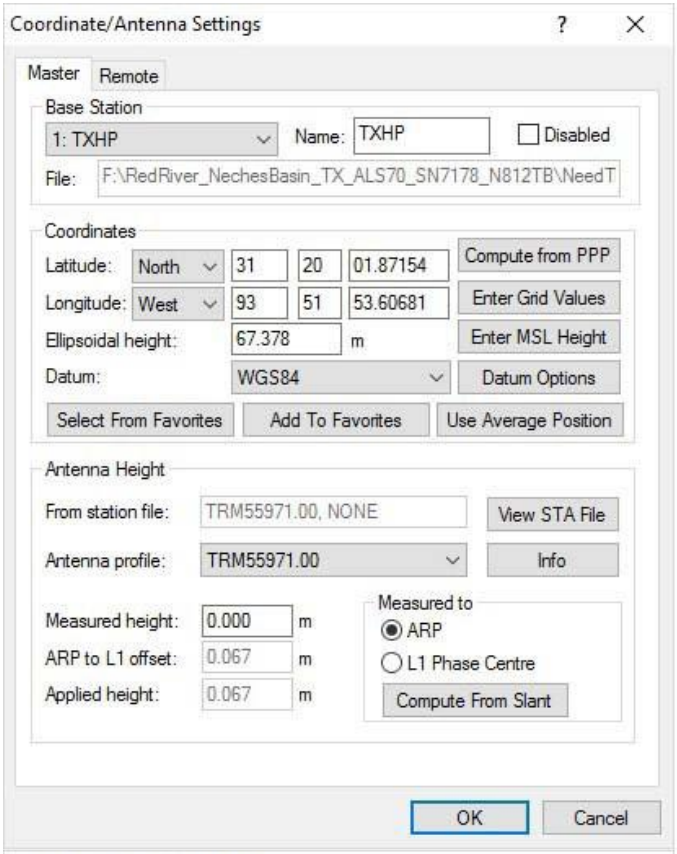

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Height

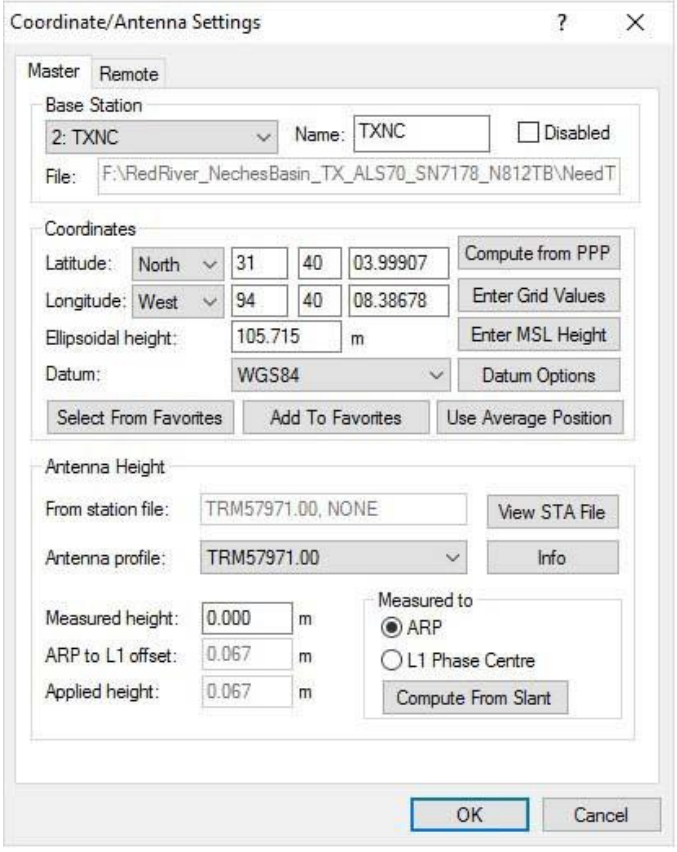

RMS (m)
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
RMS
SD

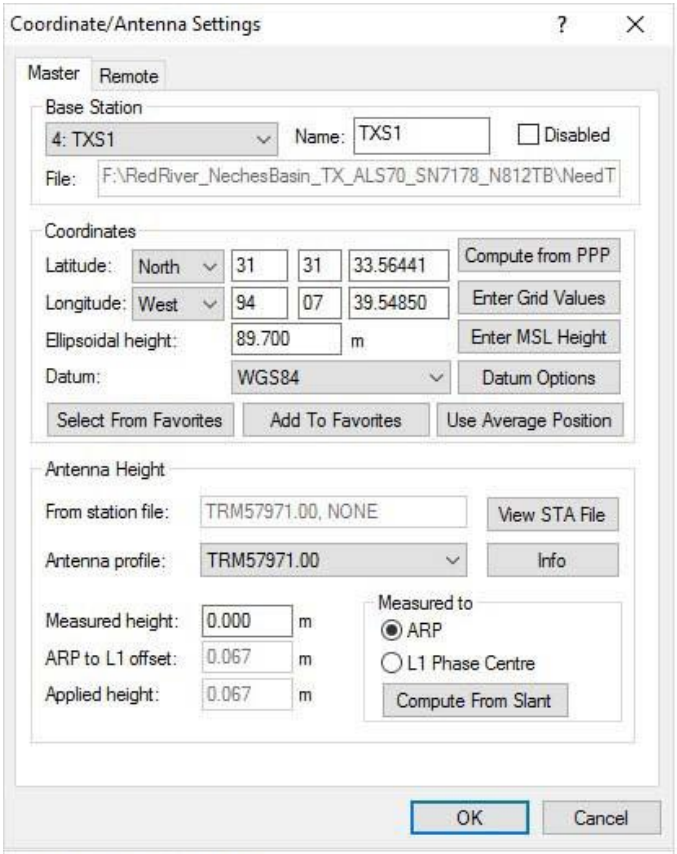

Separation (arcmin)
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

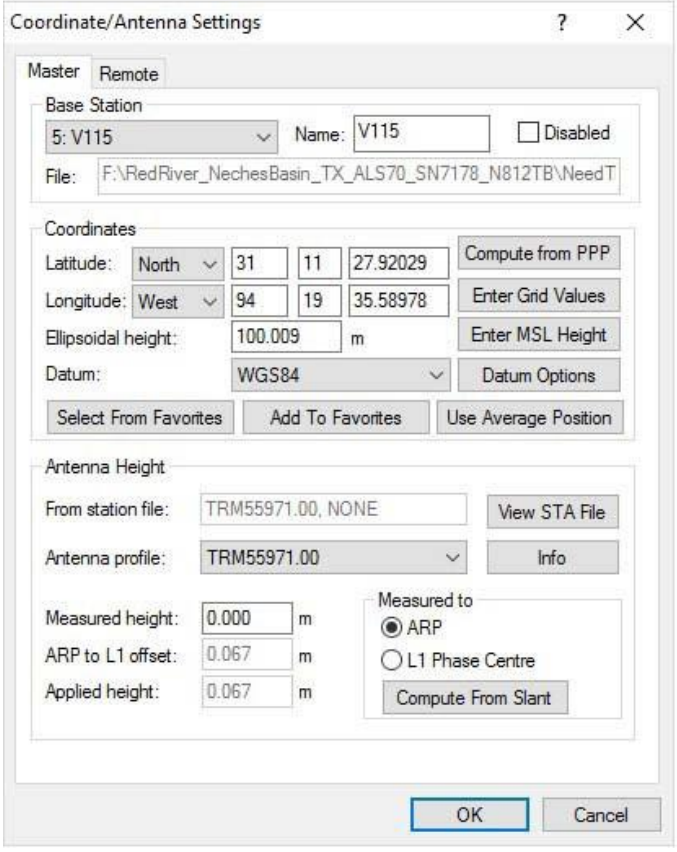

Status
2
1
0
-1
134000
Week 1934
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXC1
Name:
TXC1
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
48
49.26892
Compute from PPP
Longitude:
West
94
09
36.91093
Enter Grid Values
Ellipsoidal height:
70.726
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

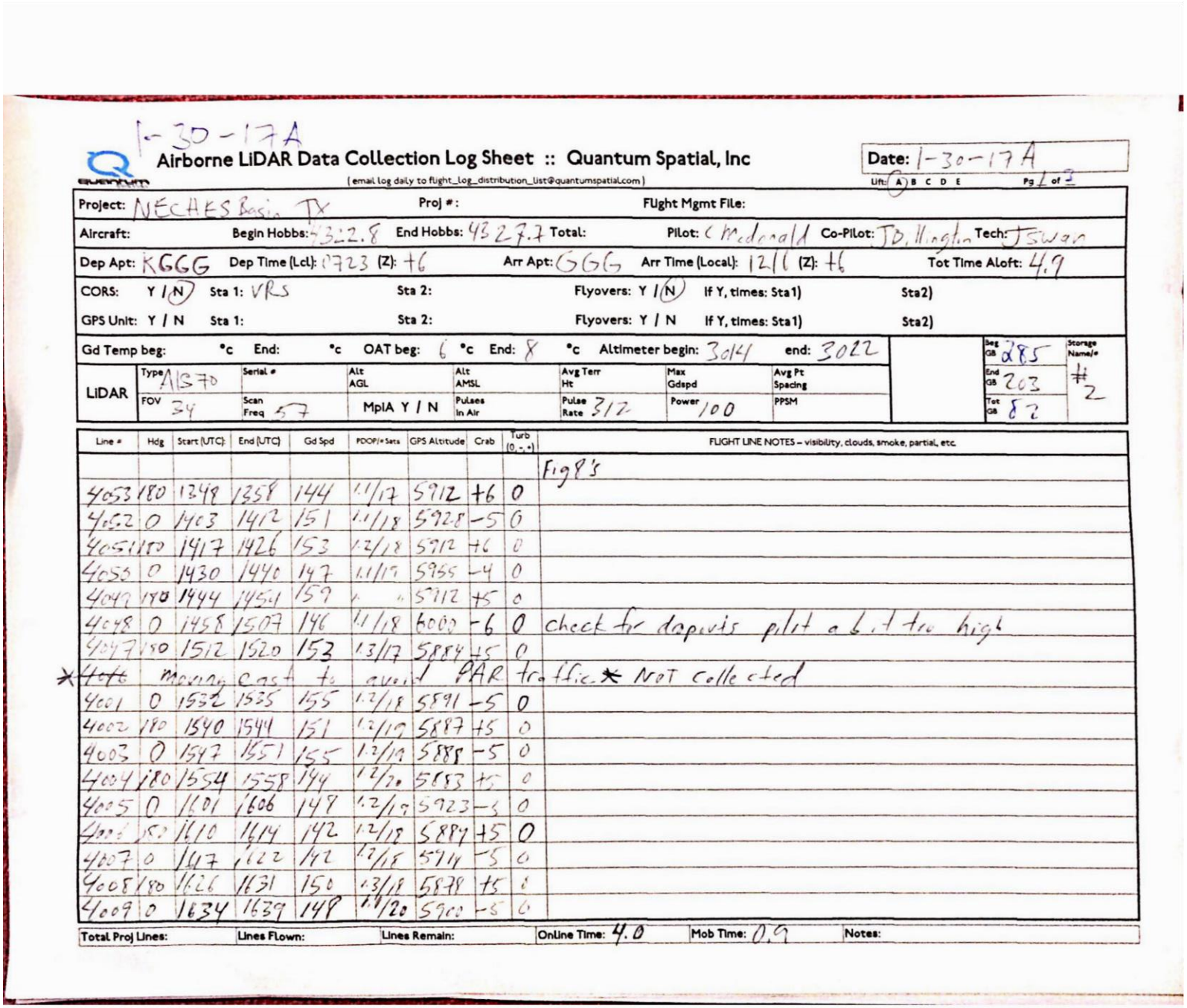

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXHP
Name: TXHP
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXNC
Name: TXNC
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXS1
Name: TXS1
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 31 33.56441
Longitude: West 94 07 39.54850
Ellipsoidal height: 89.700 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V115
Name: V115
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 11 27.92029
Longitude: West 94 19 35.58978
Ellipsoidal height: 100.009 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



1-30-17A

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-30-17A

Lift: (A) B C D E Pg 1 of 3

Project: NECHES Basin TX Proj #: Flight Mgmt File:

Aircraft: Begin Hobbs: 4322.8 End Hobbs: 4327.7 Total: Pilot: C Mcdonald Co-Pilot: JD, Hughes Tech: JSwan

Dep Apt: KGGG Dep Time (Lcl): 0723 (Z): +6 Arr Apt: GGG Arr Time (Local): 1211 (Z): +6 Tot Time Aloft: 4.9

CORS: Y / (N) Sta 1: VRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: 6 °c End: 8 °c Altimeter begin: 3014 end: 3022

LiDAR	Type A1S70	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 34	Scan Freq 57	MpIA Y / N	Pulses in Air	Pulse Rate 312	Power 100	PPSM

Beg GB 285 End GB 203 Tot GB 82 Storage Name/# #2

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									Fig 8's
4053	180	1348	1358	144	1.1/17	5912	+6	0	
4052	0	1403	1412	151	1.1/18	5928	-5	0	
4051	180	1417	1426	153	1.2/18	5912	+6	0	
4050	0	1430	1440	147	1.1/17	5955	-4	0	
4049	180	1444	1454	159	" "	5912	+5	0	
4048	0	1458	1507	146	1.1/18	6009	-6	0	check for dapvis pilot a bit too high
4047	180	1512	1520	153	1.3/17	5884	+5	0	
* ~~4046~~		Moving	east	to	avoid	PAR	traffic *	NOT	collected
4001	0	1532	1535	155	1.2/18	5891	-5	0	
4002	180	1540	1544	151	1.2/19	5887	+5	0	
4003	0	1547	1551	155	1.2/19	5885	-5	0	
4004	180	1554	1558	144	1.2/20	5883	+5	0	
4005	0	1601	1606	148	1.2/19	5923	-5	0	
4006	180	1610	1614	142	1.2/18	5884	+5	0	
4007	0	1617	1622	142	1.2/18	5914	-5	0	
4008	180	1626	1631	150	1.3/18	5878	+5	0	
4009	0	1634	1639	148	1.1/20	5900	-5	0	

Total Proj Lines: Lines Flown: Lines Remain: On line Time: 4.0 Mob Time: 0.9 Notes:

1-30-17 A

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-30-17A

Lift: (A) B C D E Pg 2 of 3

Project: NECHES TX	Proj #:		Flight Mgmt File:			
Aircraft:	Begin Hobbs:	End Hobbs:	Total:	Pilot:	Co-Pilot:	Tech:
Dep Apt:	Dep Time (Lcl):	(Z):	Arr Apt:	Arr Time (Local):	(Z):	Tot Time Aloft:
CORS: Y / N	Sta 1:	Sta 2:	Flyovers: Y / N	If Y, times: Sta1)	Sta2)	
GPS Unit: Y / N	Sta 1:	Sta 2:	Flyovers: Y / N	If Y, times: Sta1)	Sta2)	
Gd Temp beg: °c	End: °c	OAT beg: °c	End: °c	Altimeter begin:	end:	

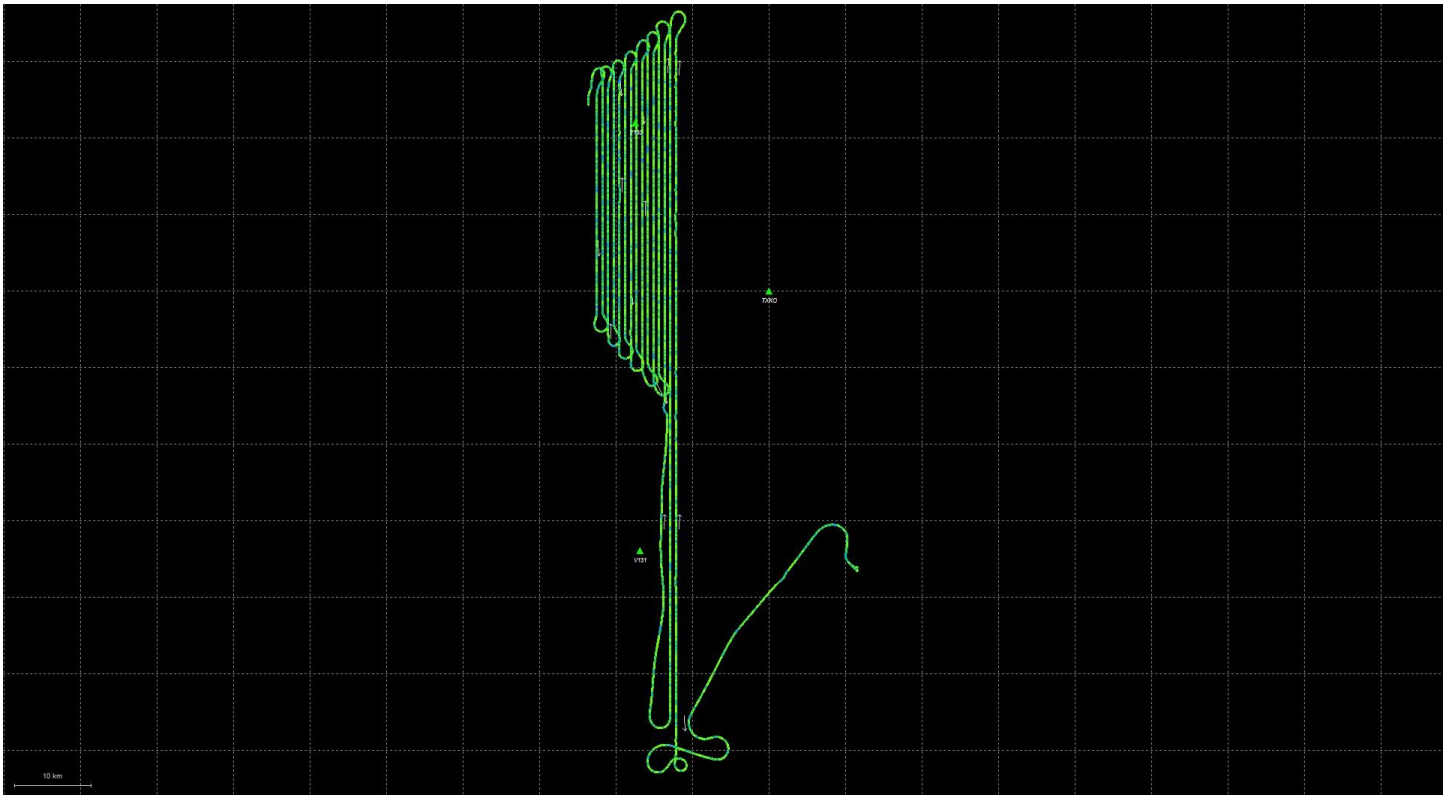
LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV	Scan Freq	MpiA Y / N	Pulses In Air	Pulse Rate	Power	PPSM

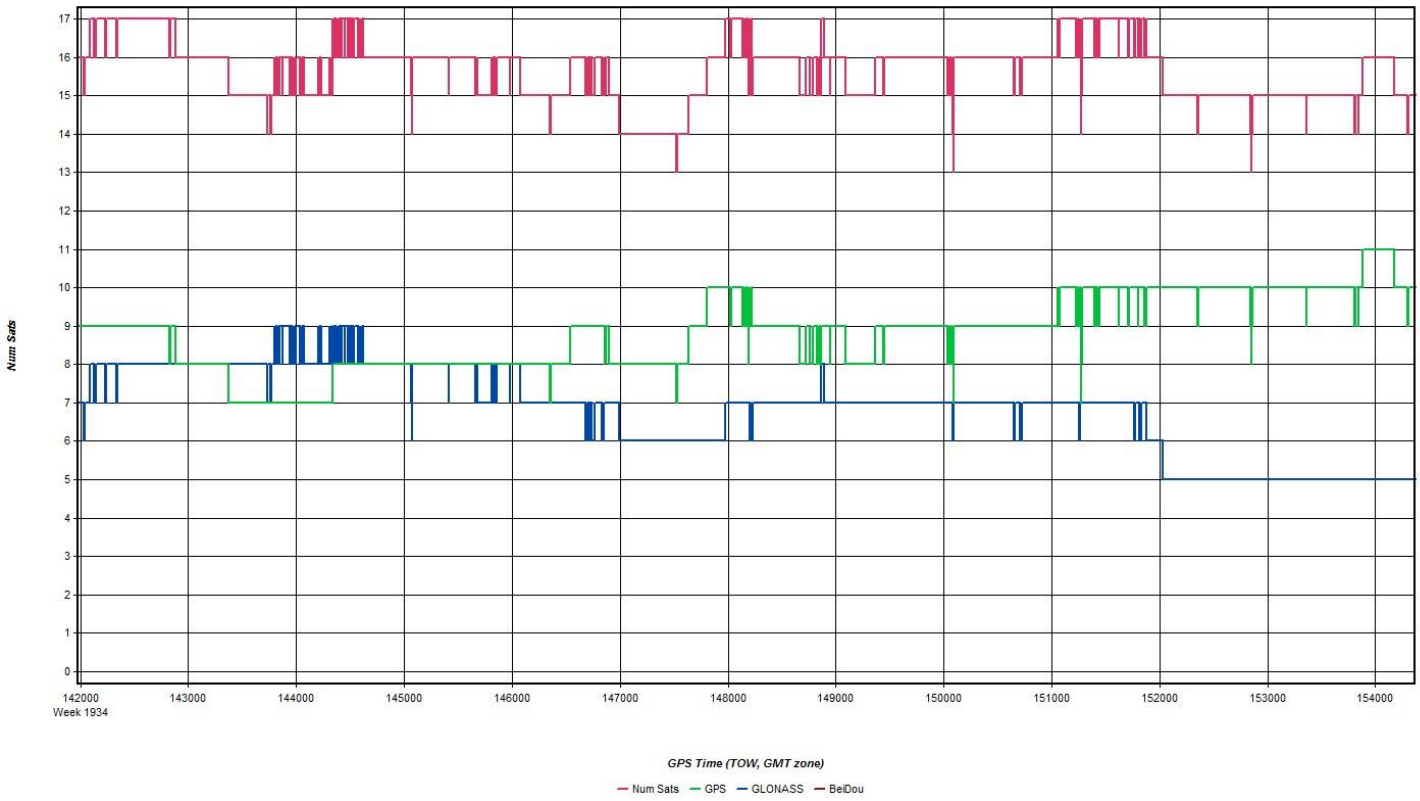
Beg GB	Storage Name/#
End GB	
Tot GB	

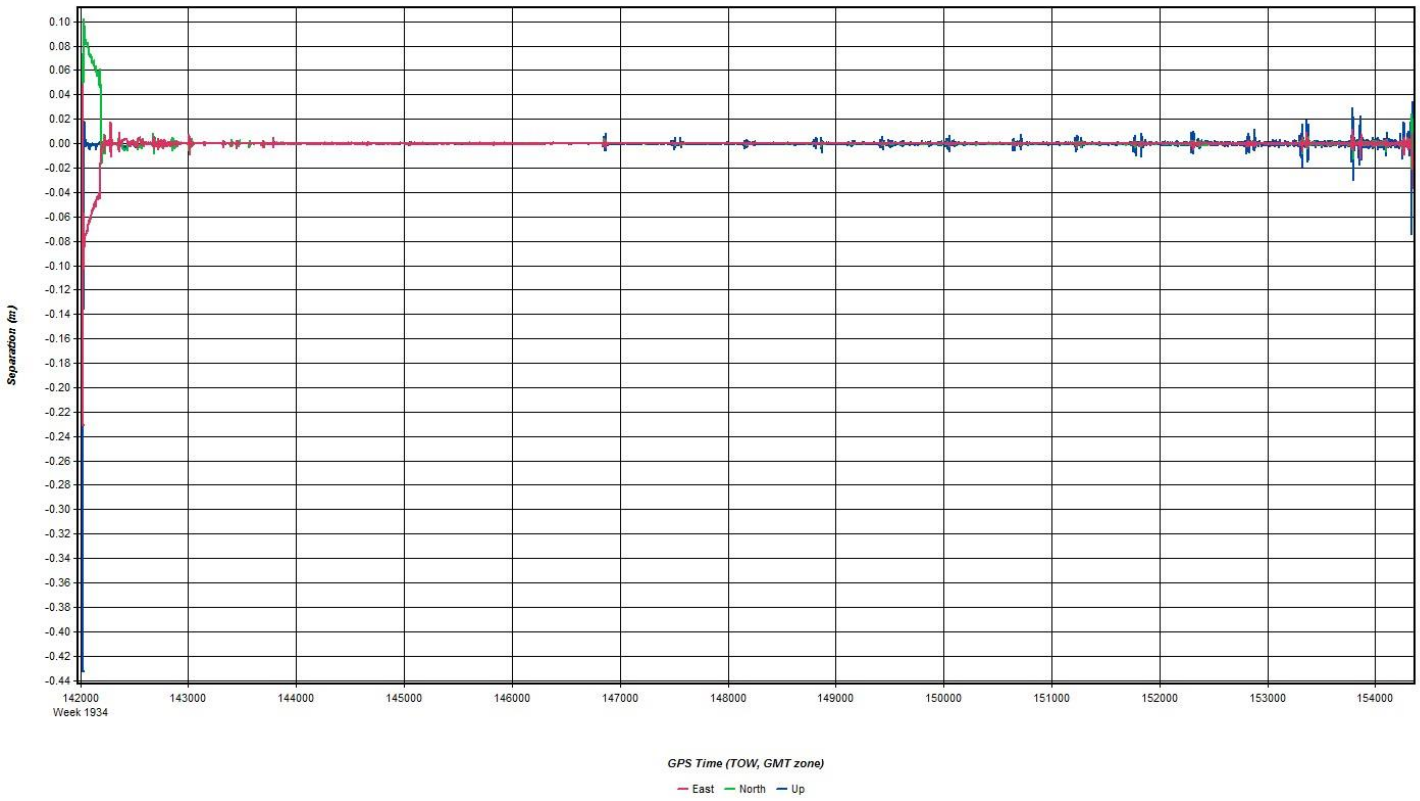
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
4010	180	1644	1649	148	1.0/21	5879	+5	0	
4011	0	1653	1658	150	1.0/21	5853	-5	0	
4012	180	1701	1710	145	1.0/22	5873	+5	0	
4013	0	1719	1733	156	1.0/20	5813	-5	0	
4076	270	1740	1749	140	1.2/18	5836	0	0	
									Fig 8's
									Hobbs = 4.9
									oNline = 4.0
									Mob = 0.9

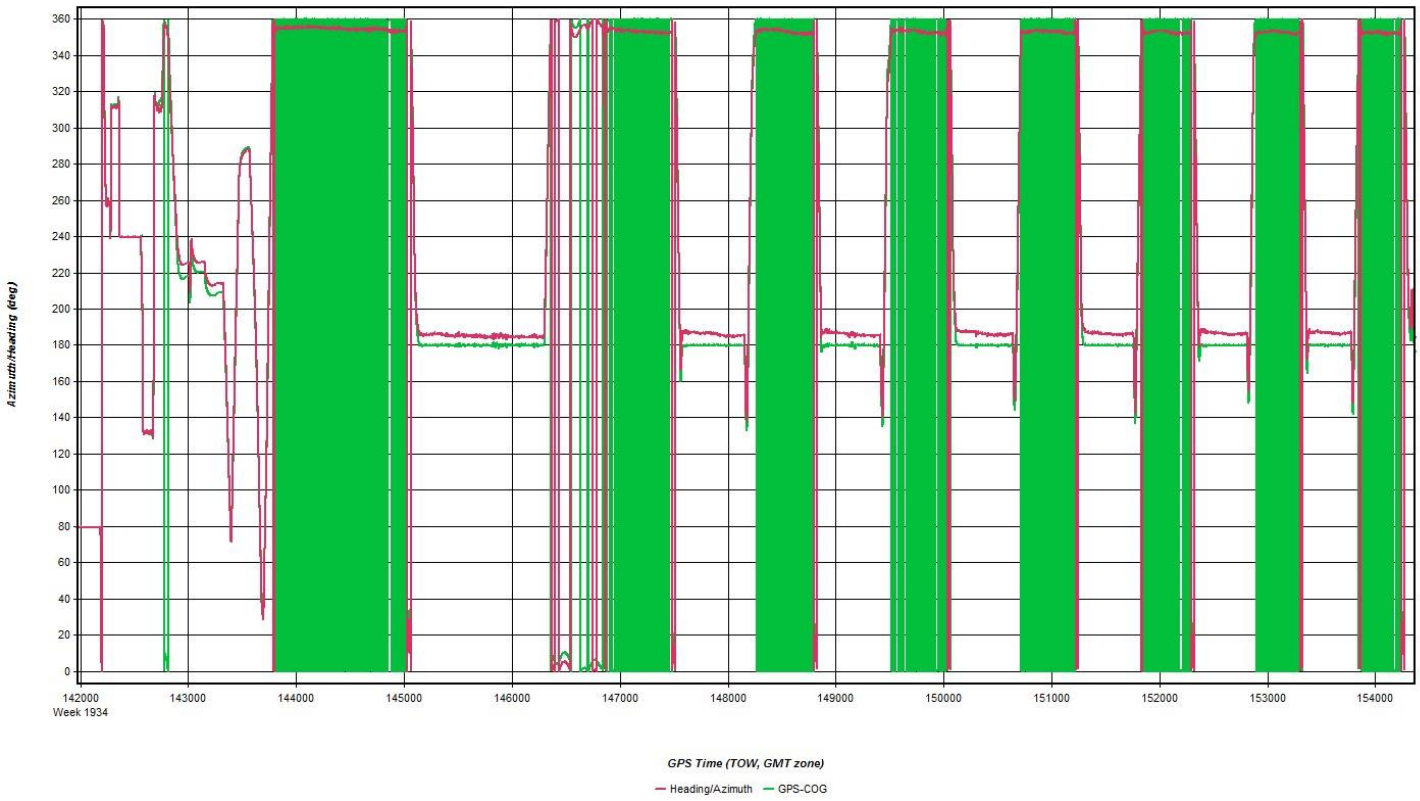
Total Proj Lines:	Lines Flown:	Lines Remain:	OnLine Time:	Mob Time:	Notes:

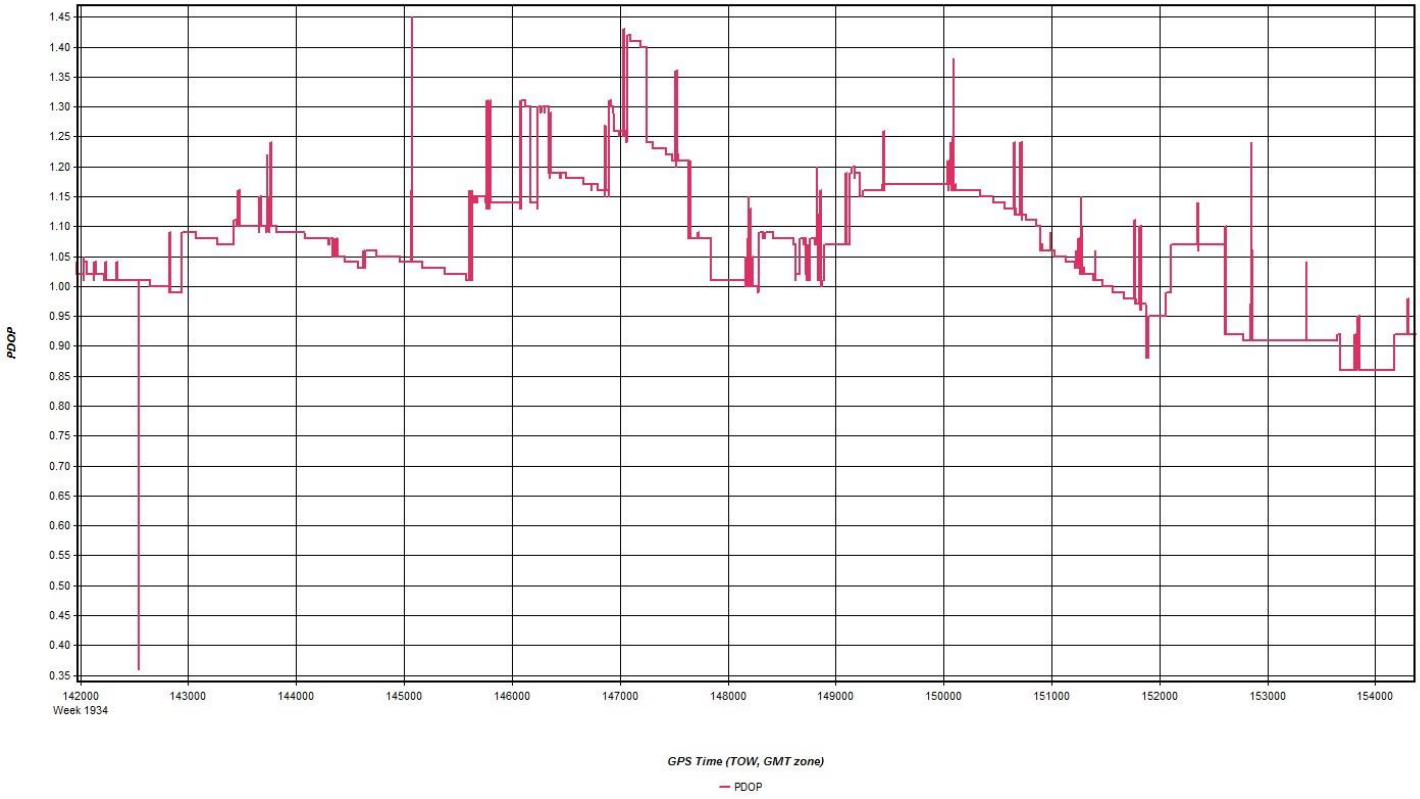
Jan 30, 2017-A (N208NR, SN8239)

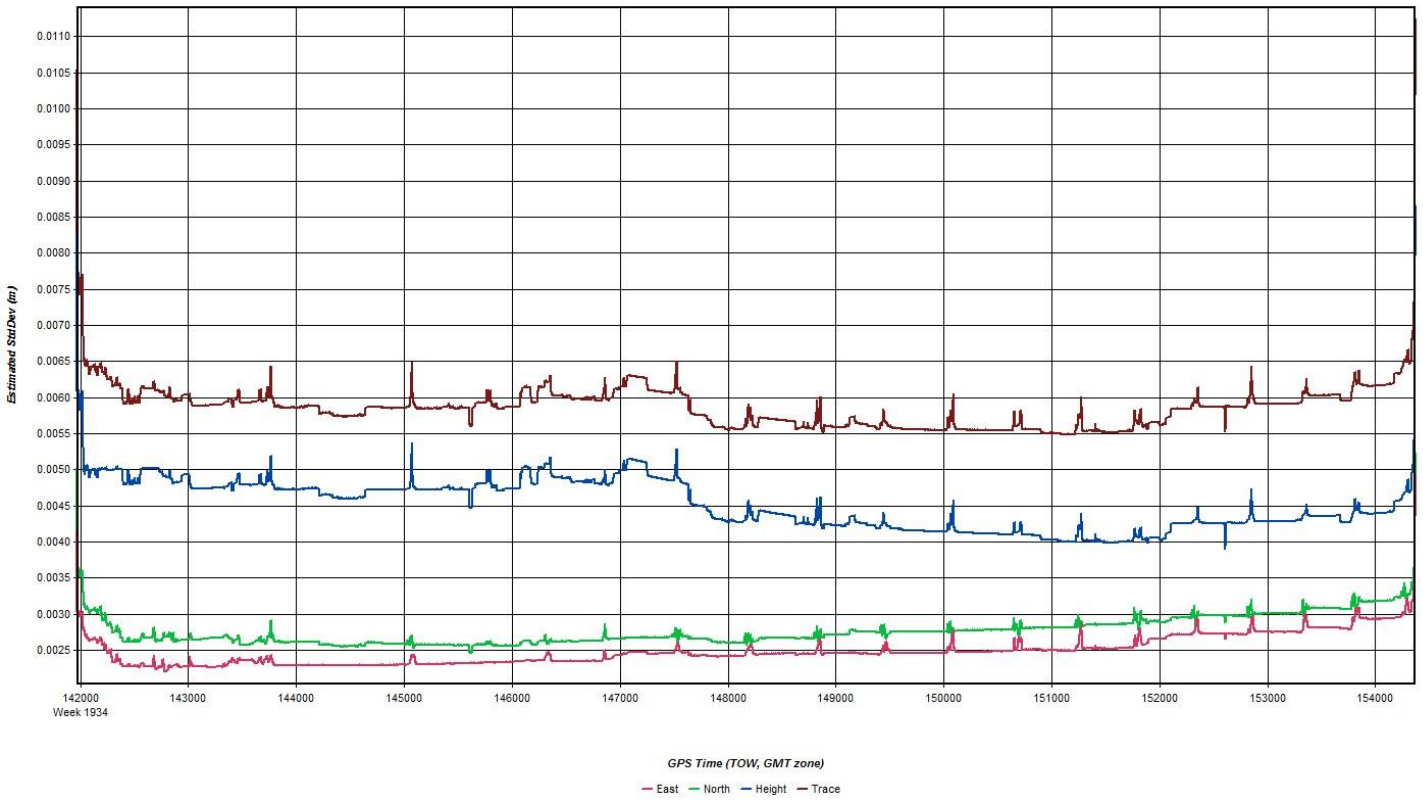


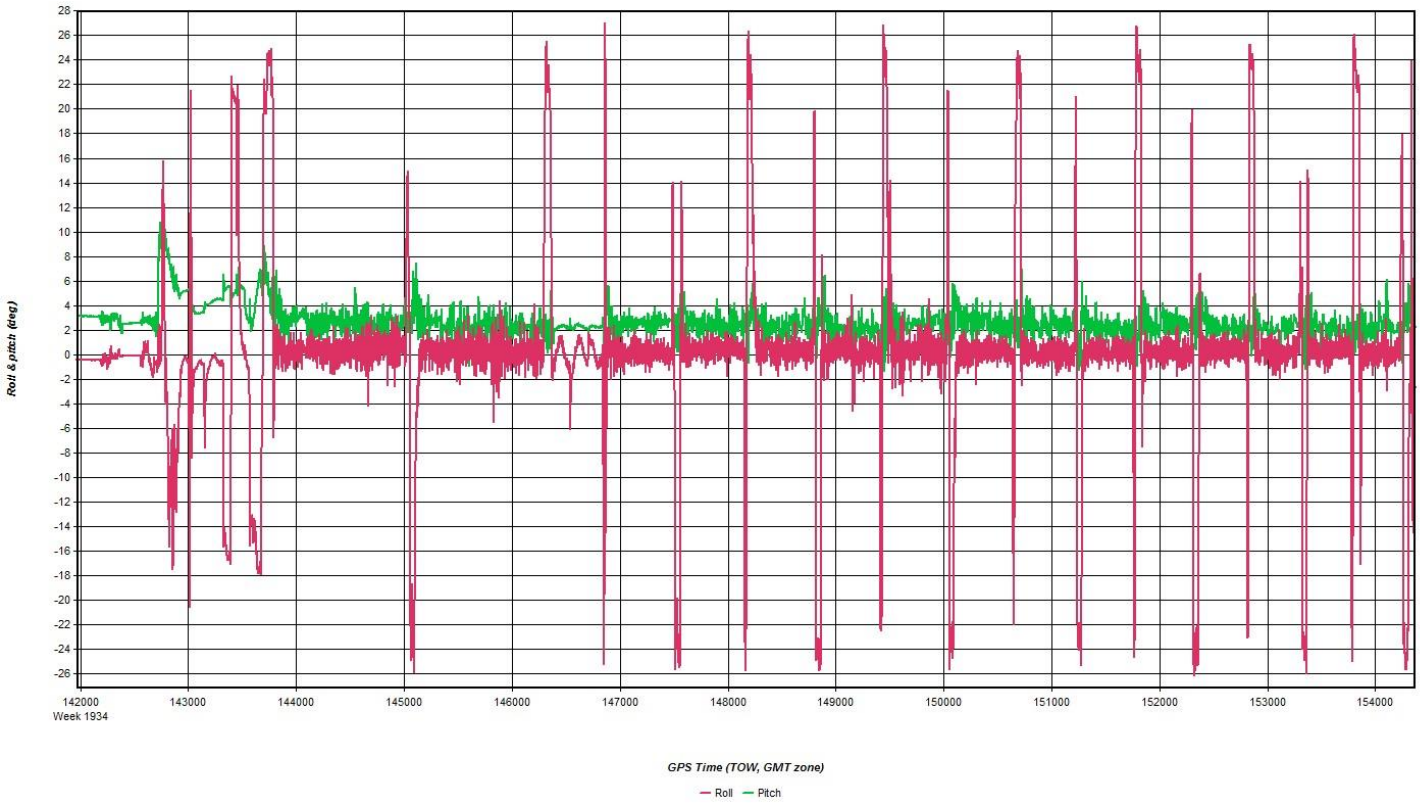

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

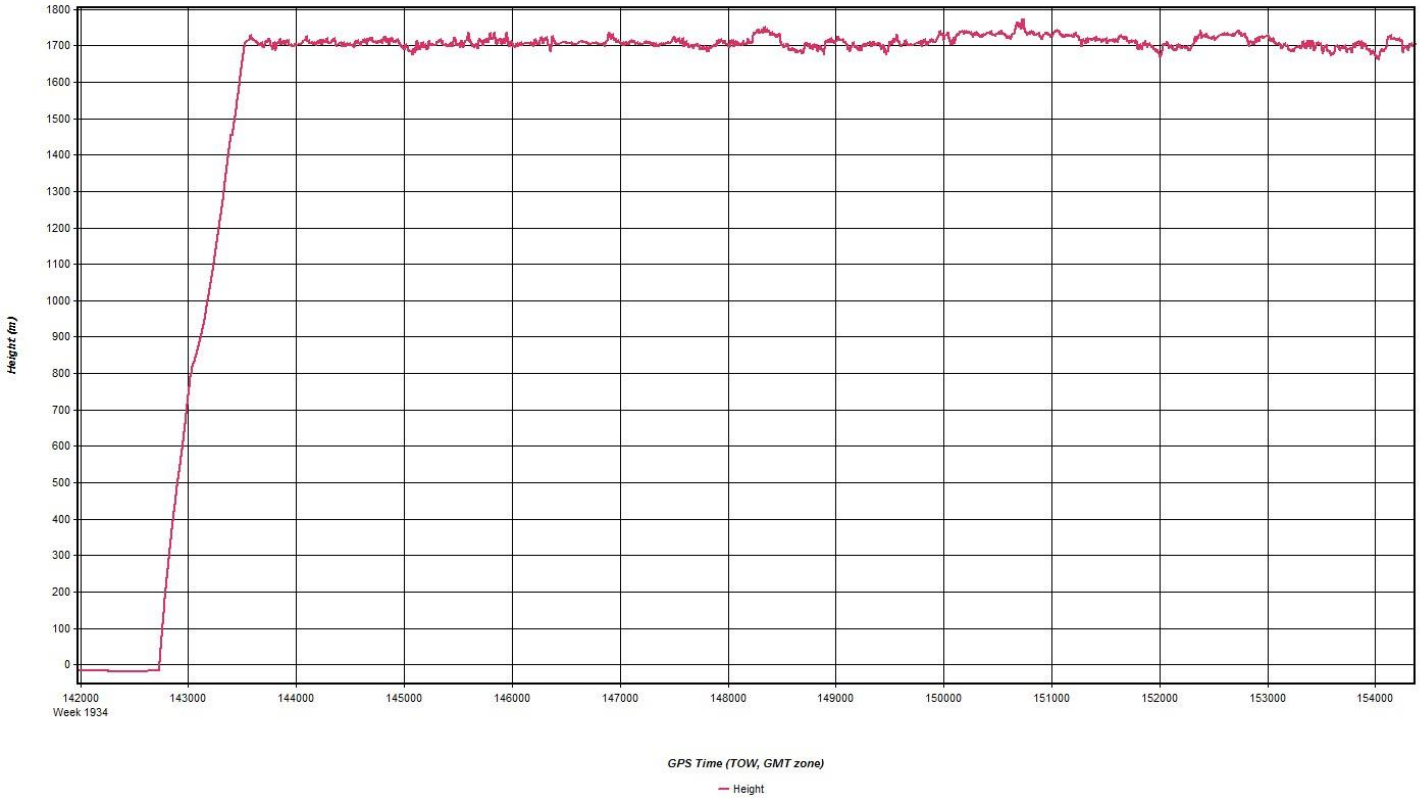

Separation (m)
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
-0.40
-0.42
-0.44
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
East
North
Up

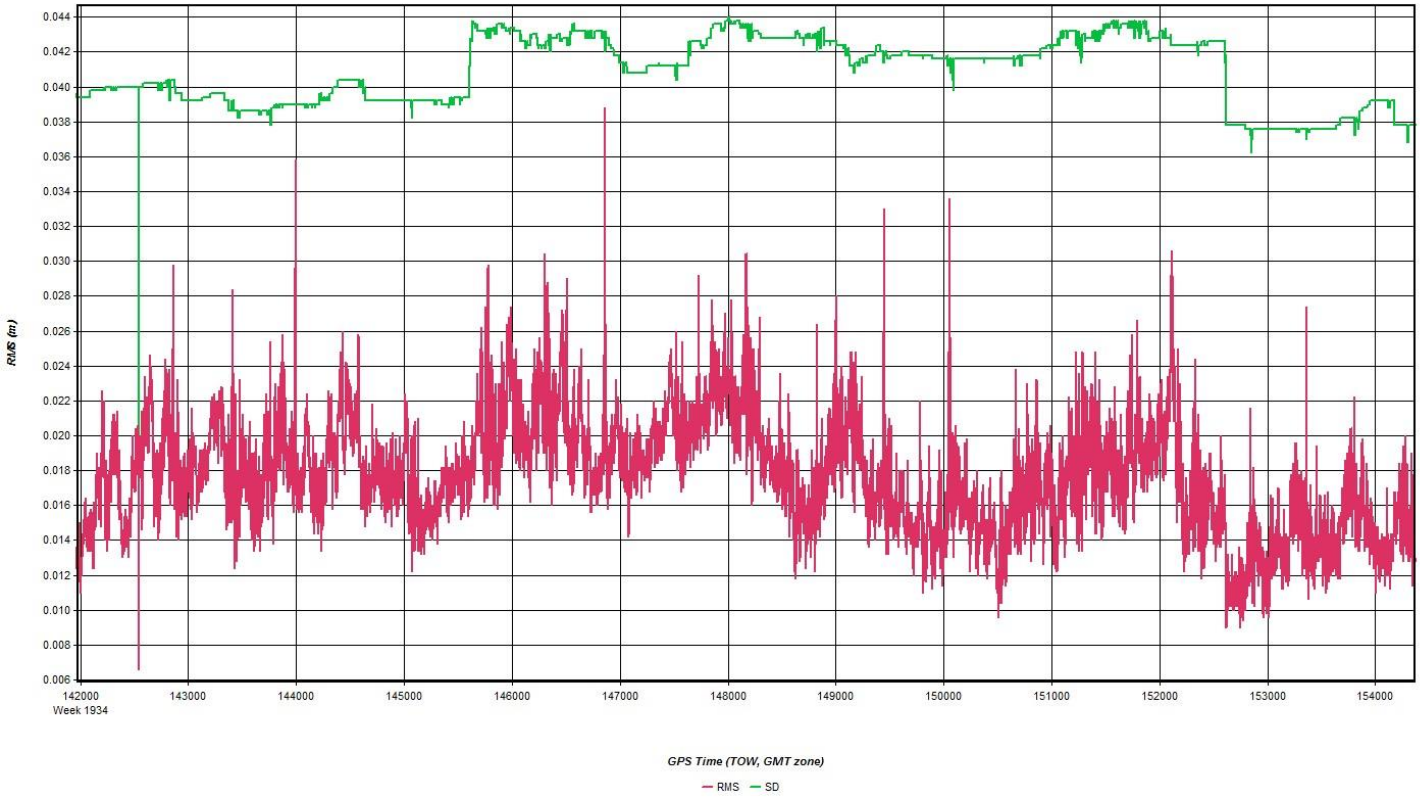

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

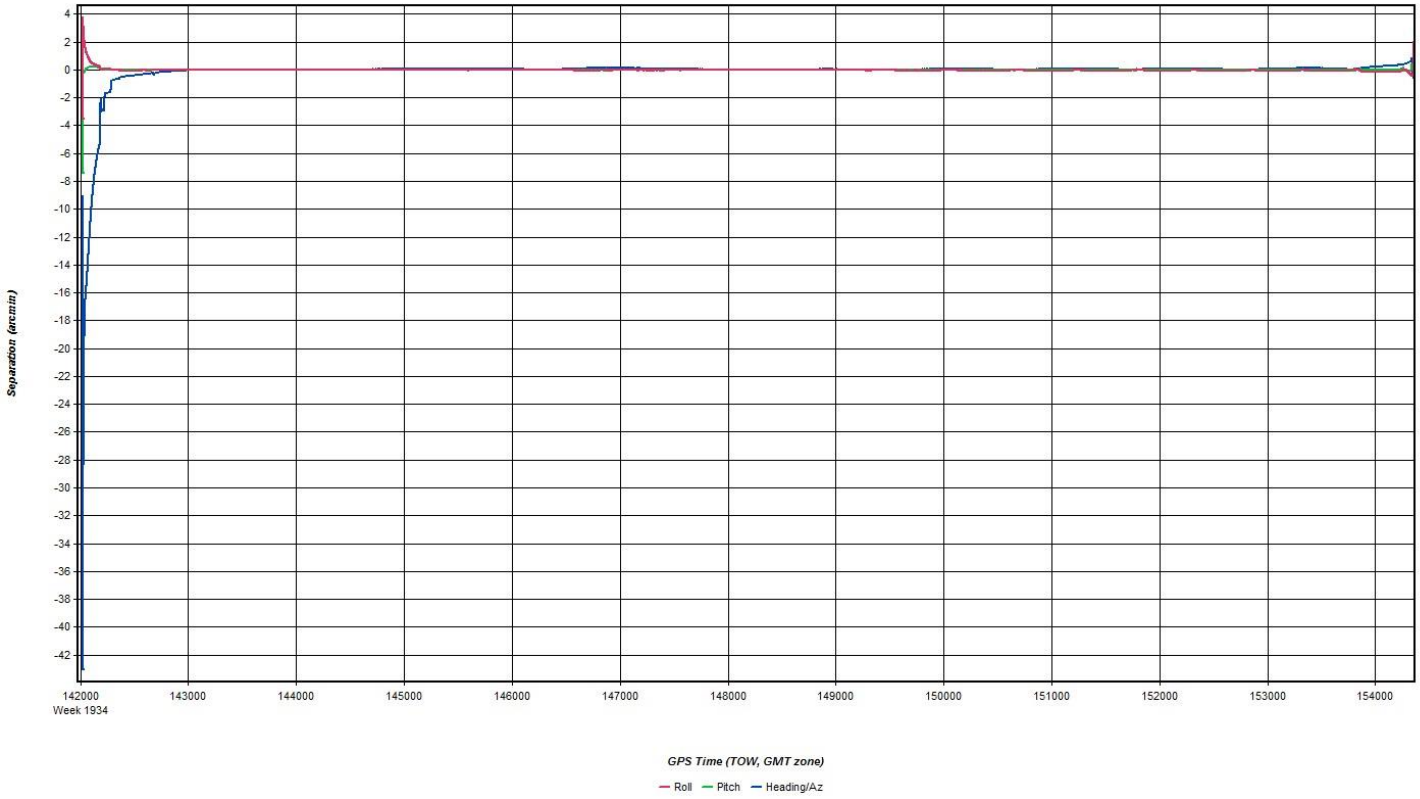

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
PDOP

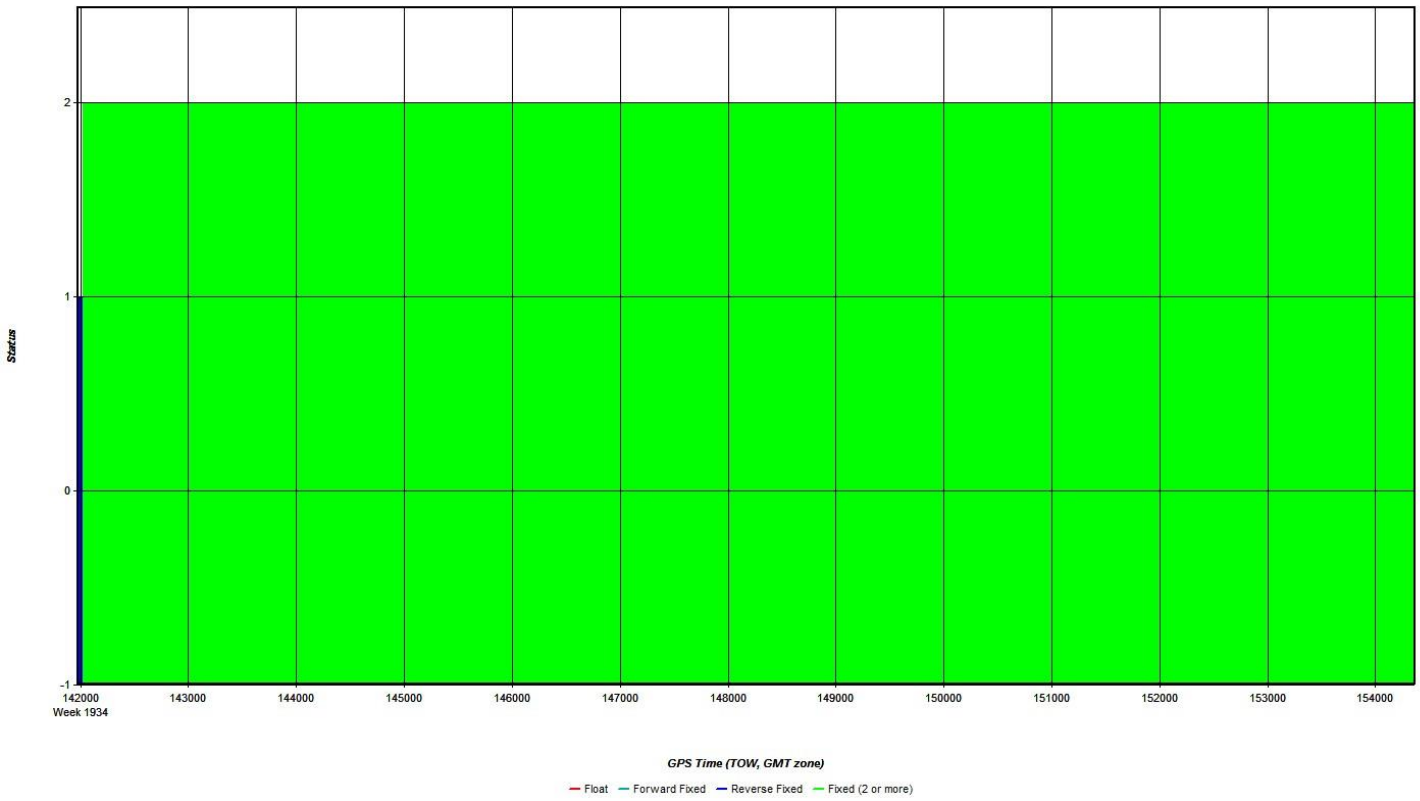

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

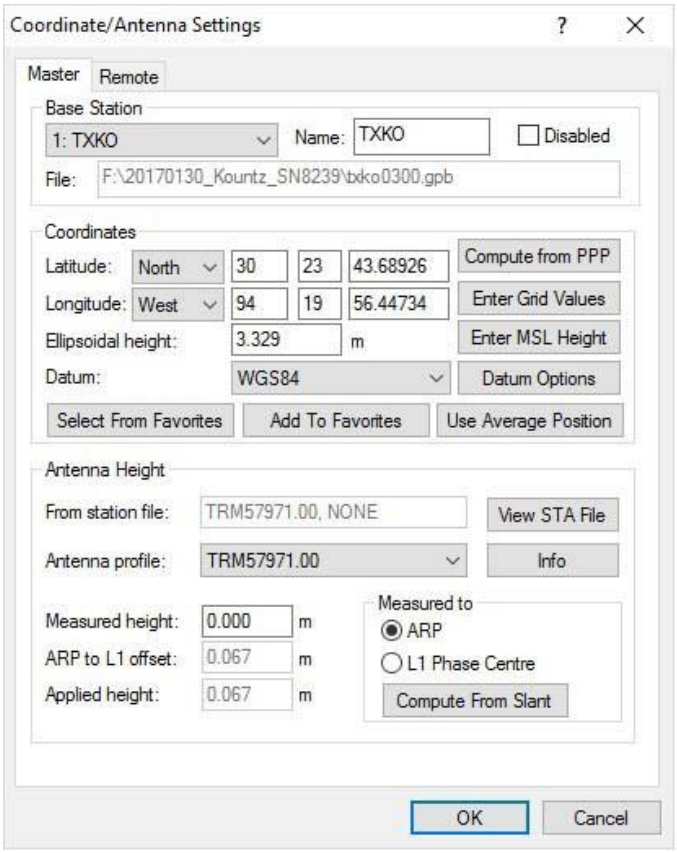

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Roll
Pitch

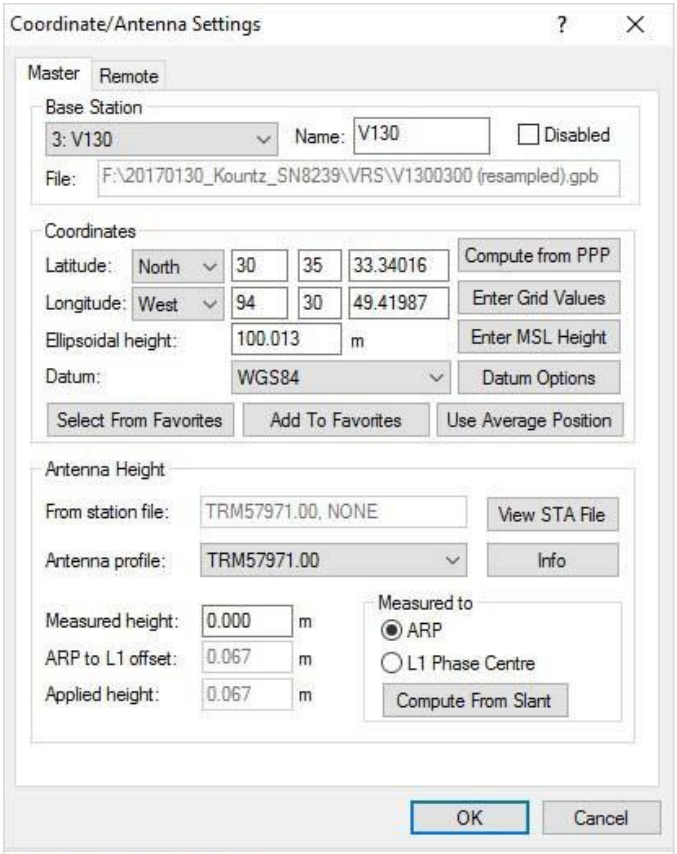

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Height

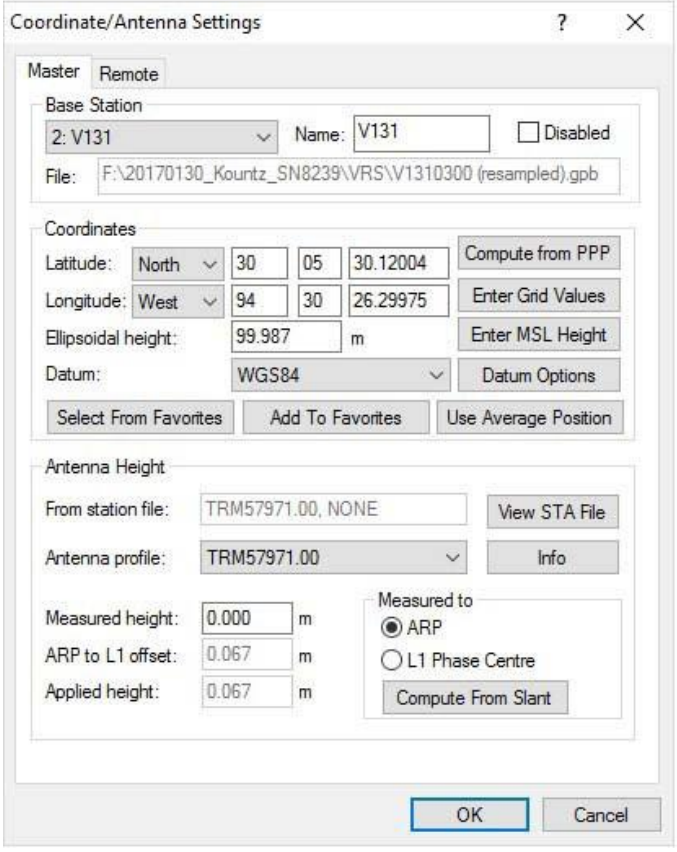

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
-38
-40
-42
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

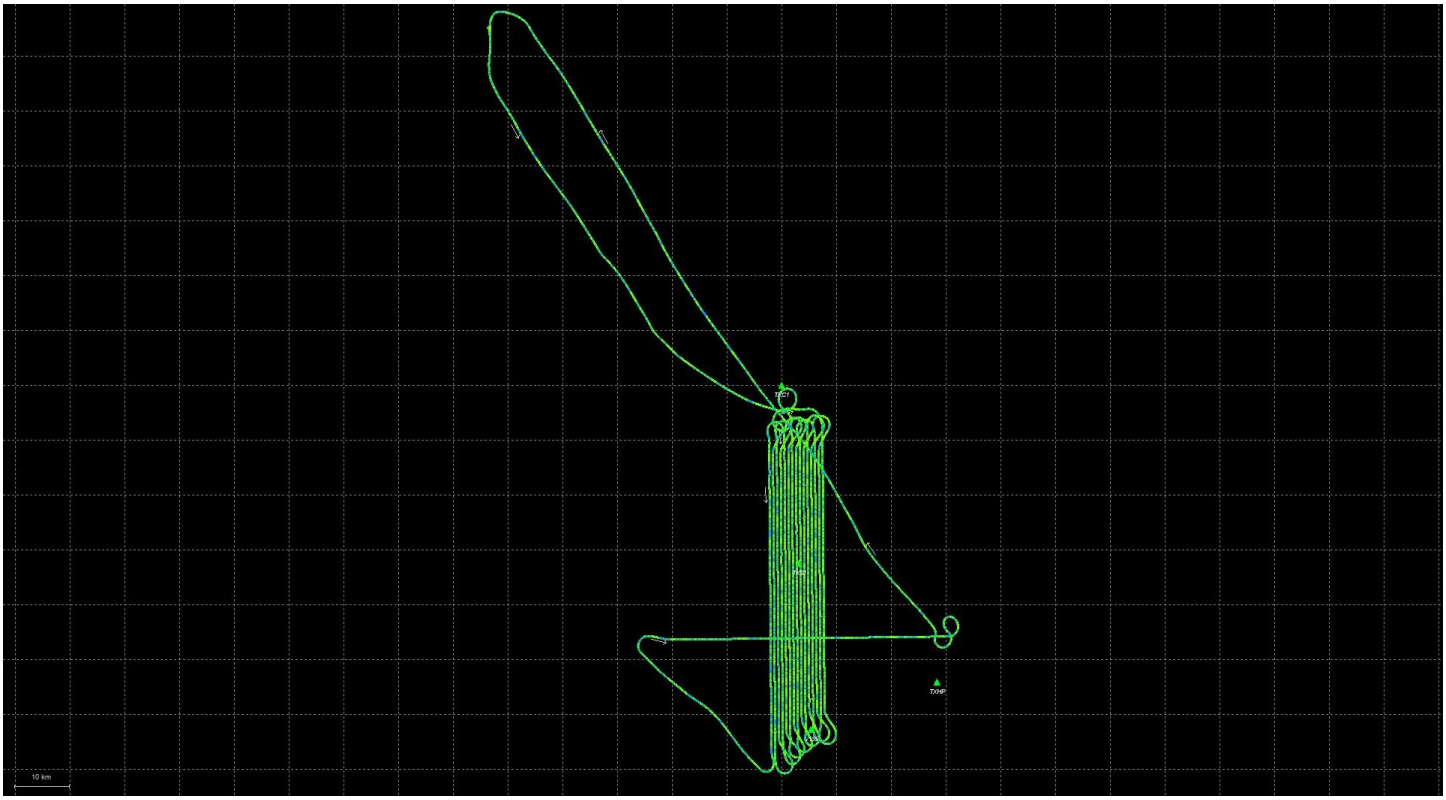

Status
2
1
0
-1
142000
Week 1934
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

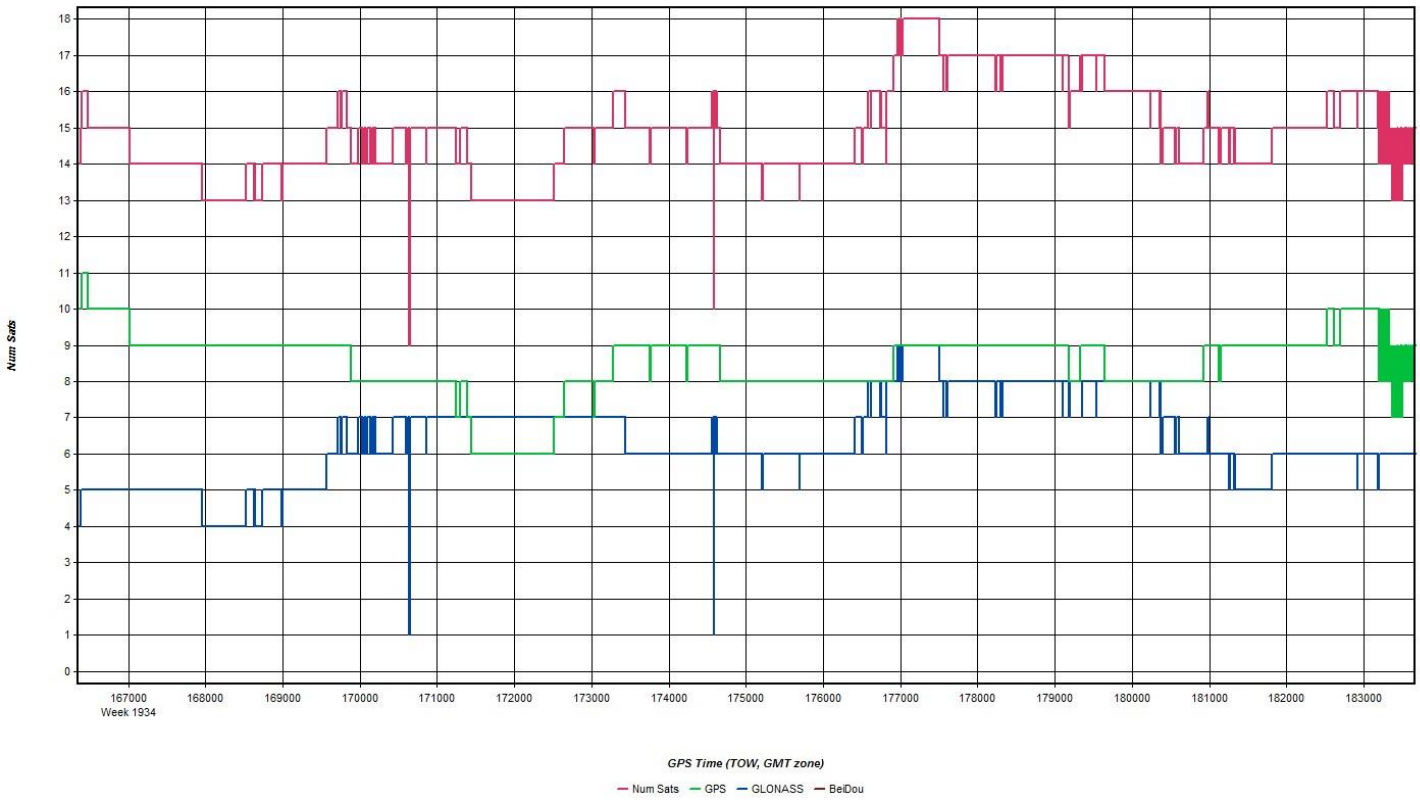

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name: TXKO
Disabled
File: F:\20170130_Kountz_SN8239\txko0300.gpb
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

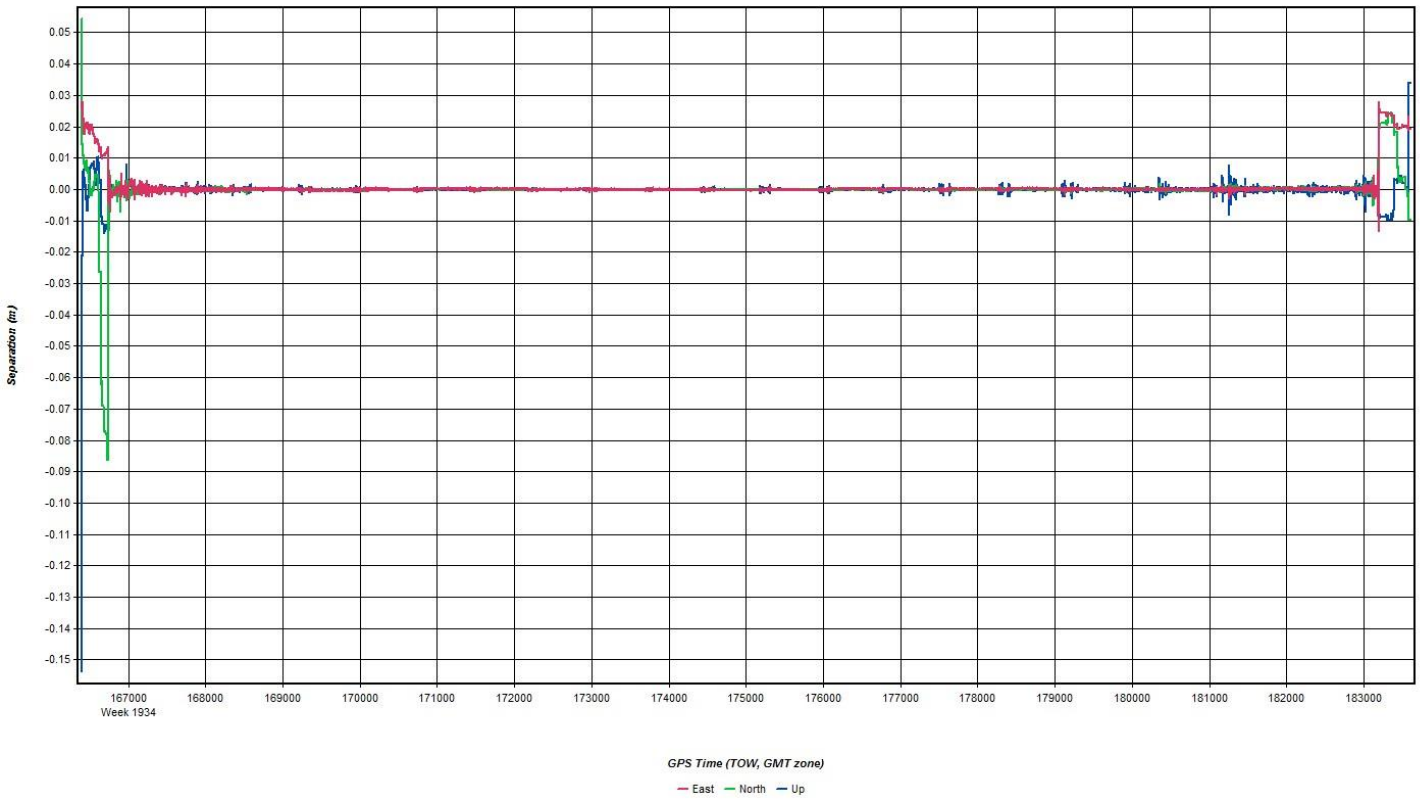

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V130
Name: V130
Disabled
File: F:\20170130_Kountz_SN8239\VRS\V1300300 (resampled).gpb
Coordinates
Latitude: North 30 35 33.34016
Longitude: West 94 30 49.41987
Ellipsoidal height: 100.013 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

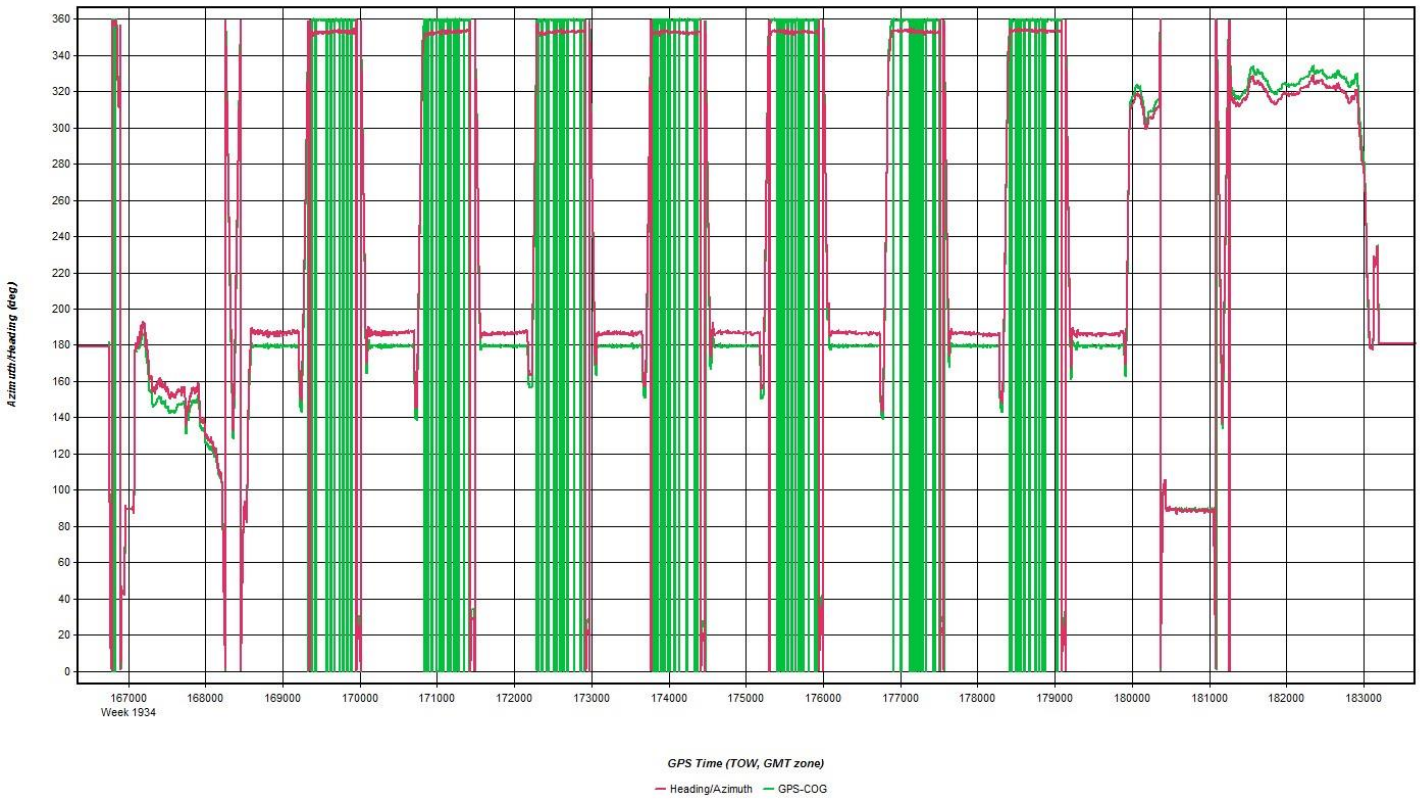

Coordinate/Antenna Settings
Master
Remote
Base Station
2: V131
Name: V131
Disabled
File: F:\20170130_Kountz_SN8239\VRS\V1310300 (resampled).gpb
Coordinates
Latitude: North 30 05 30.12004
Longitude: West 94 30 26.29975
Ellipsoidal height: 99.987 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Jan 30, 2017-A (N812TB, SN7178)

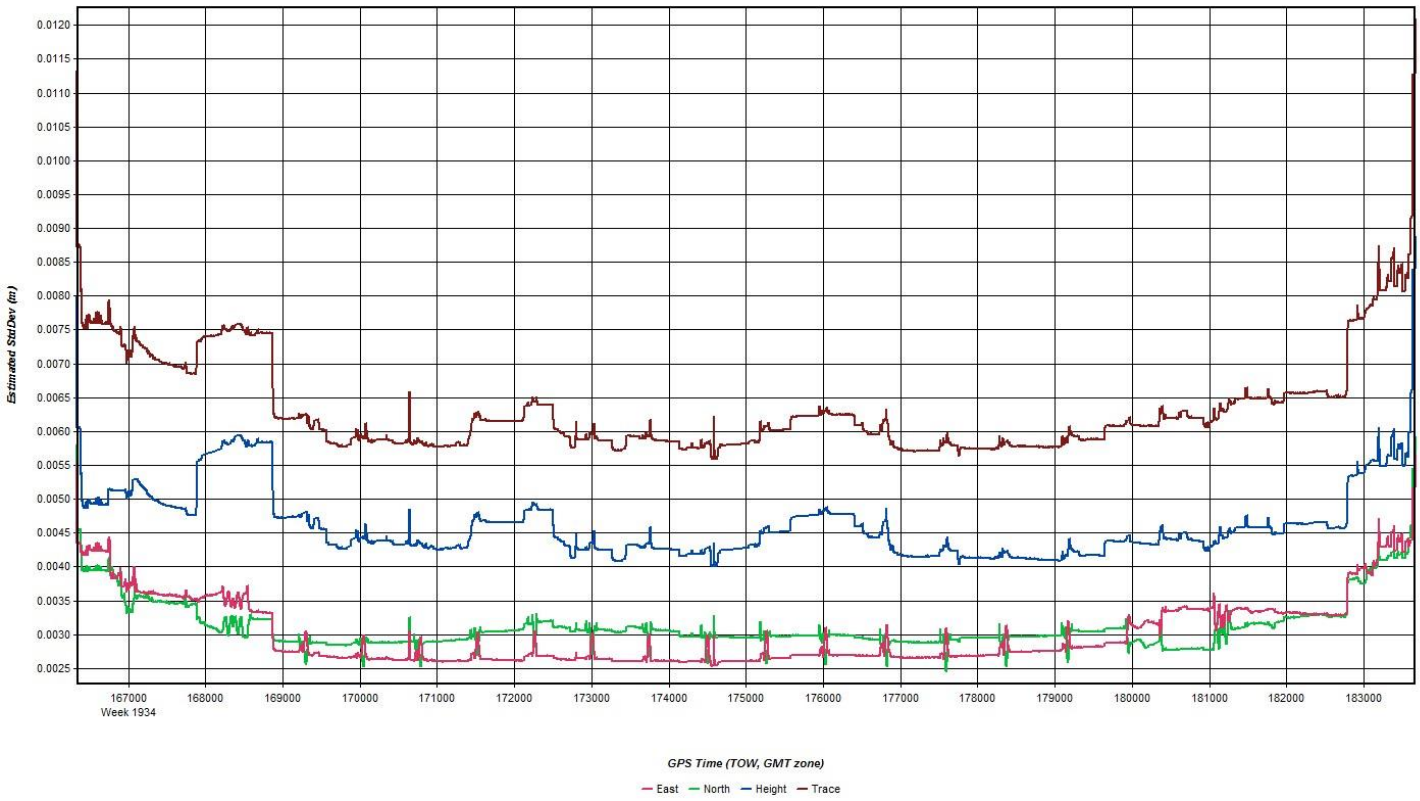


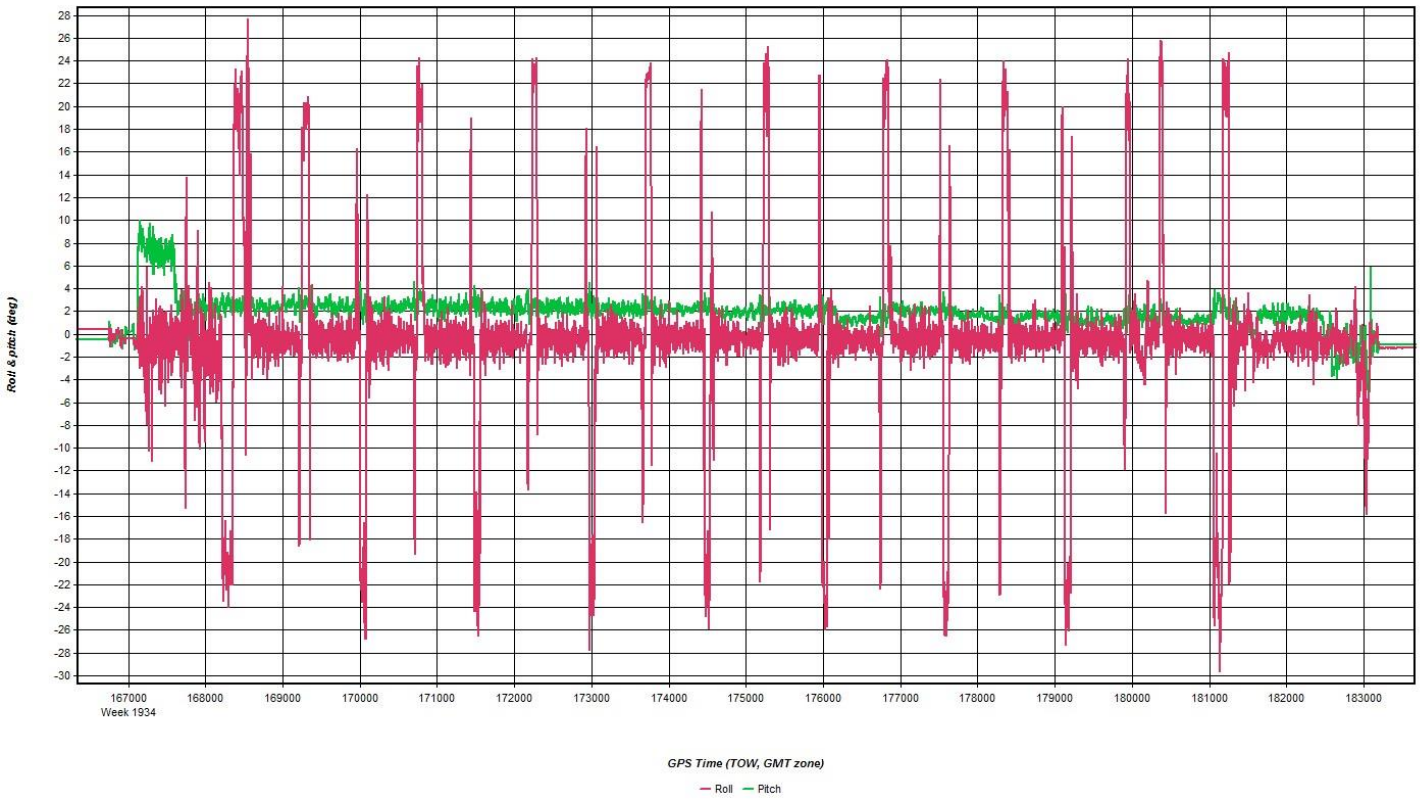

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

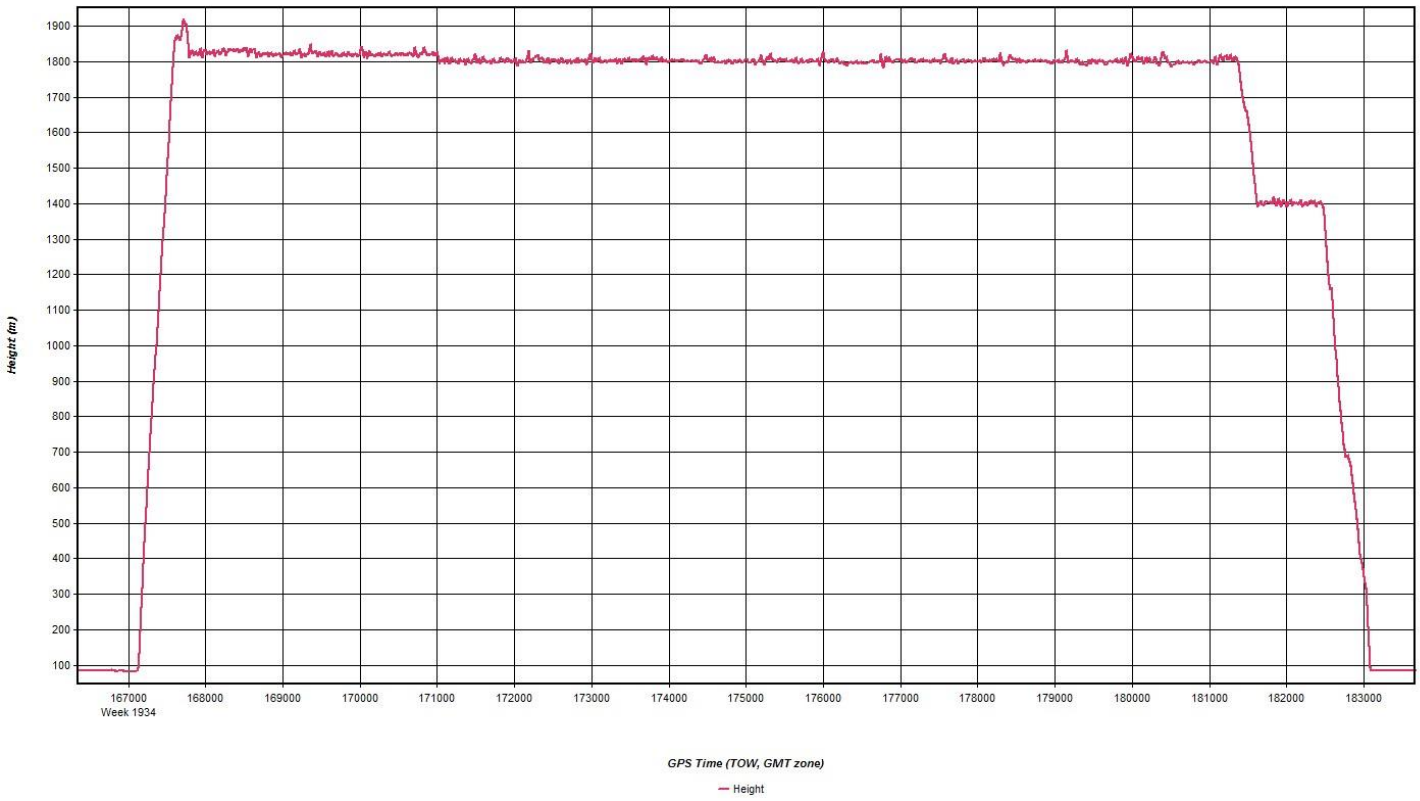

Separation (m)
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
-0.10
-0.11
-0.12
-0.13
-0.14
-0.15
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
East
North
Up

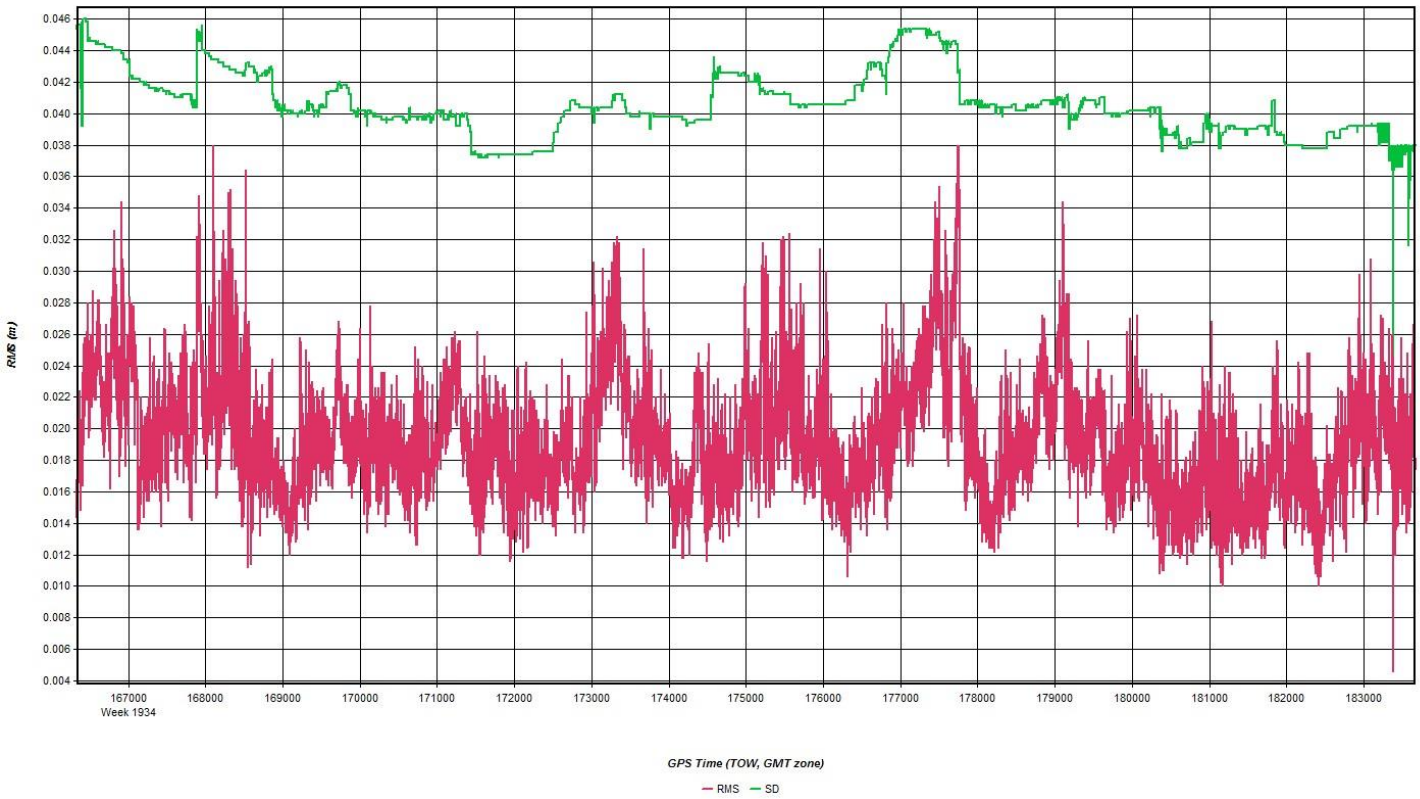

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

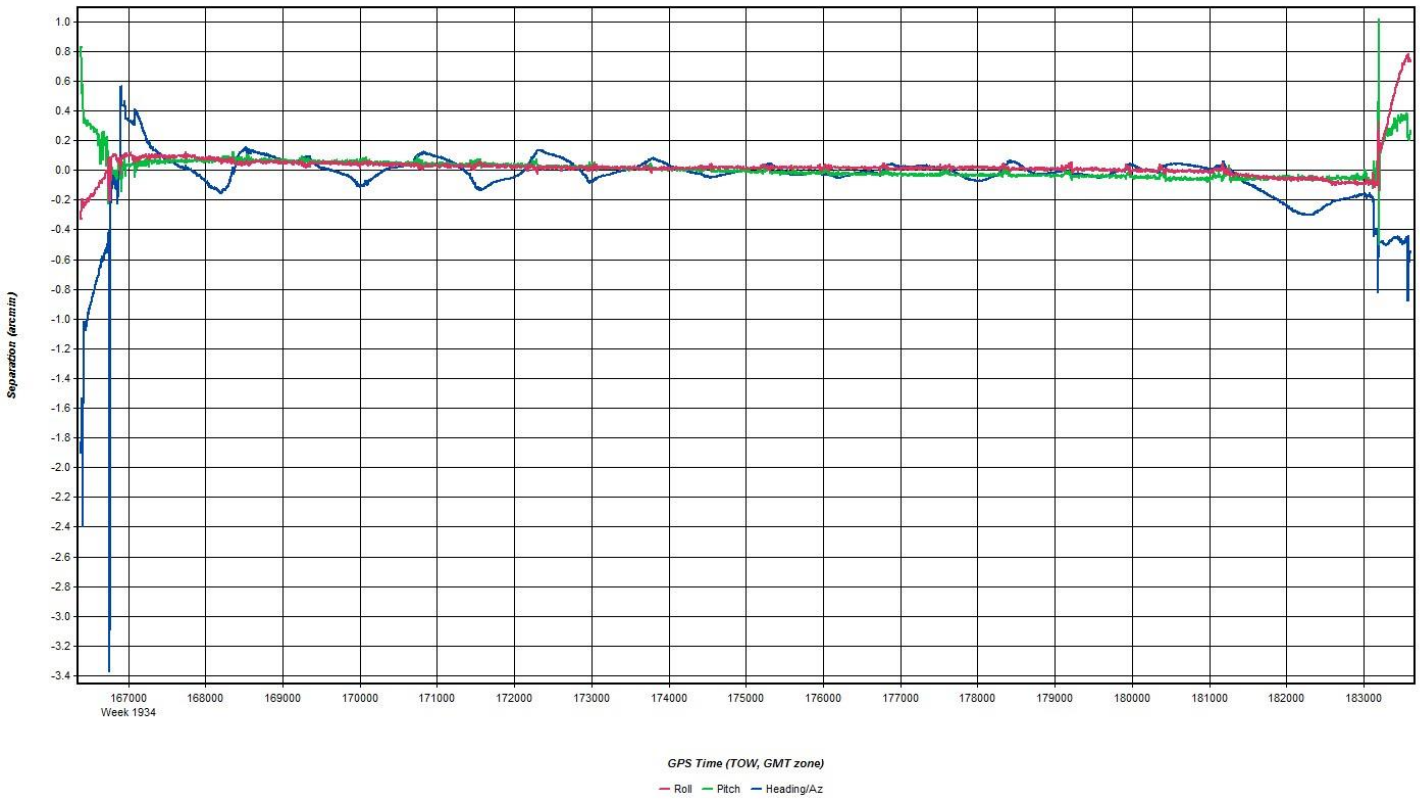

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
PDOP

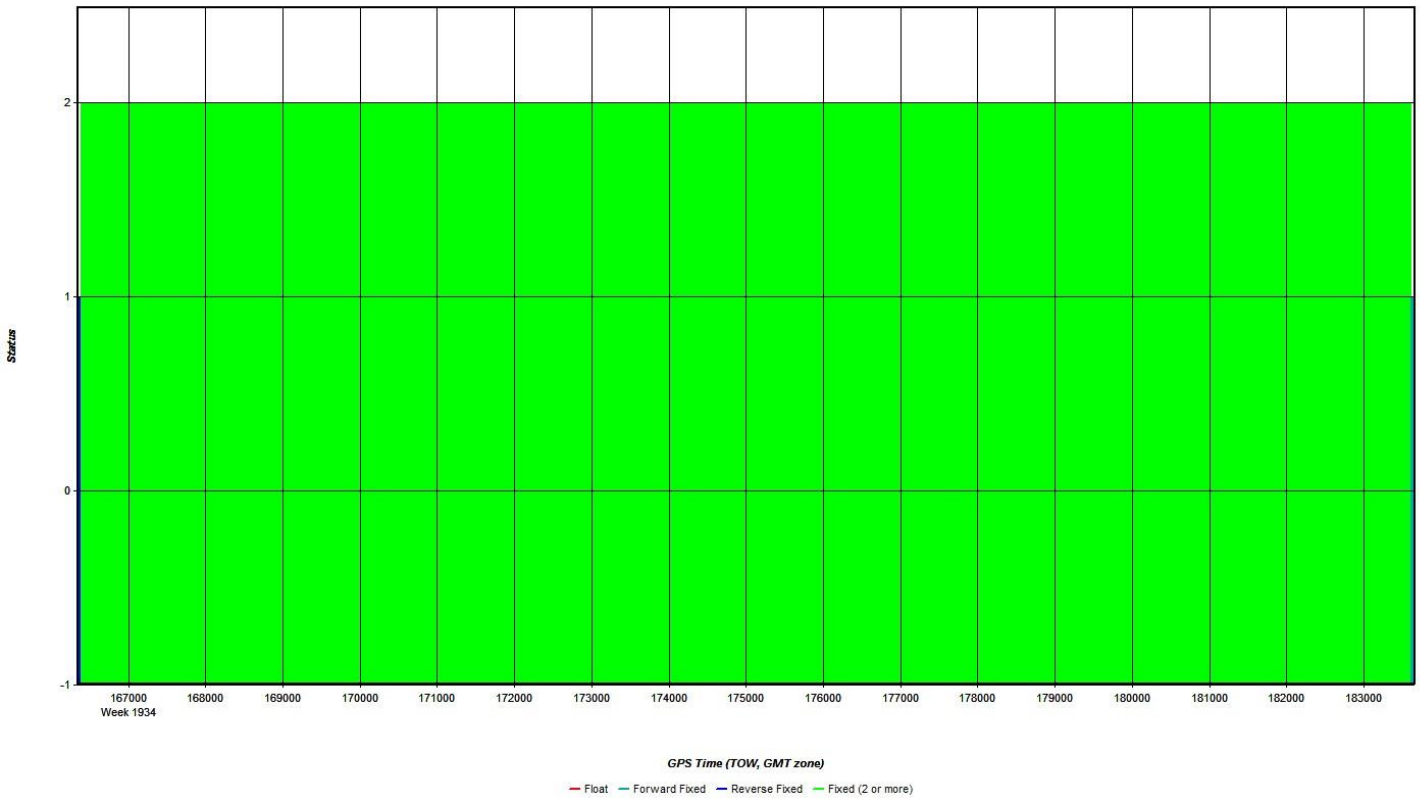

Estimated StdDev (m)
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

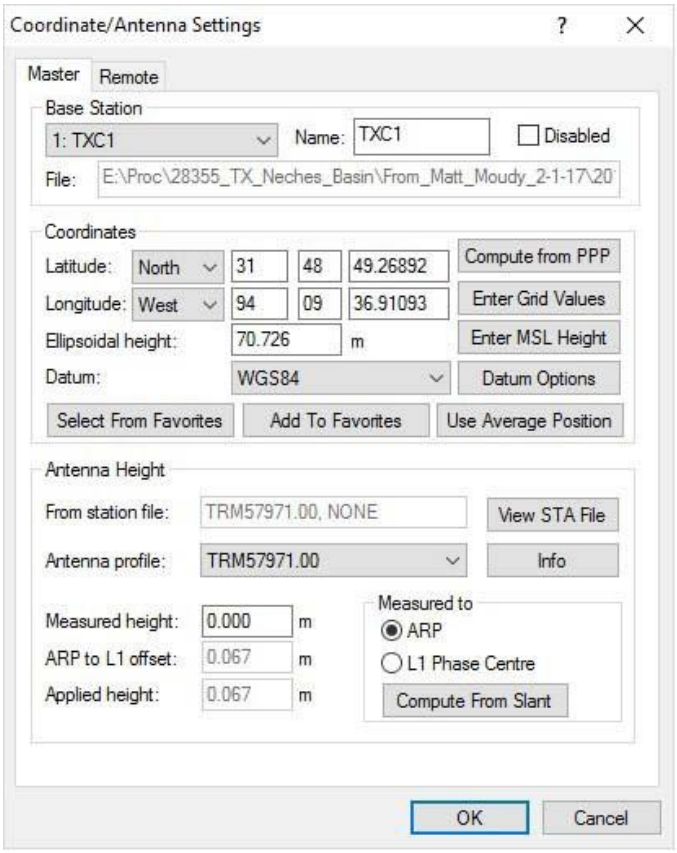

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
Roll
Pitch

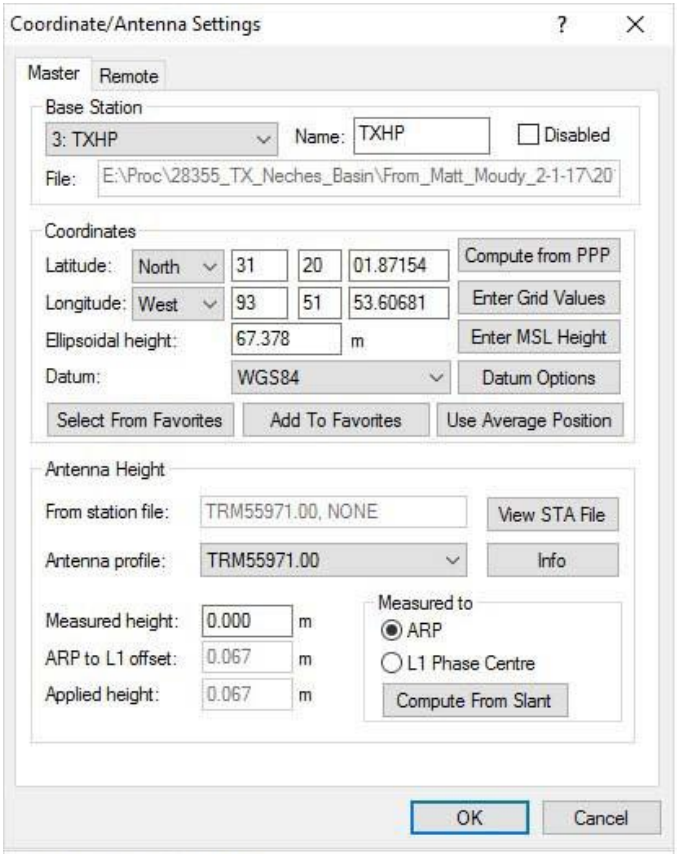

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
Height

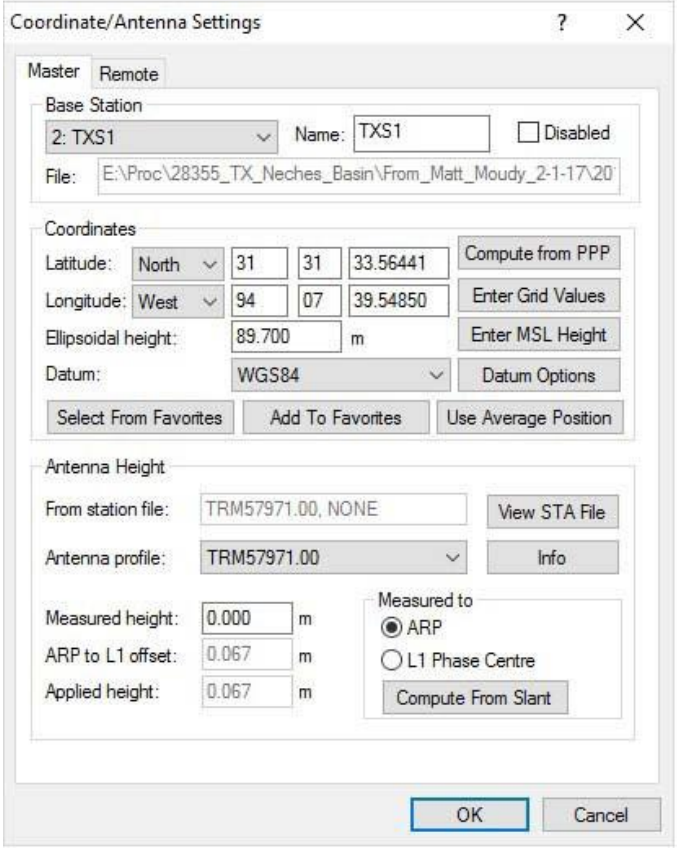

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
RMS
SD

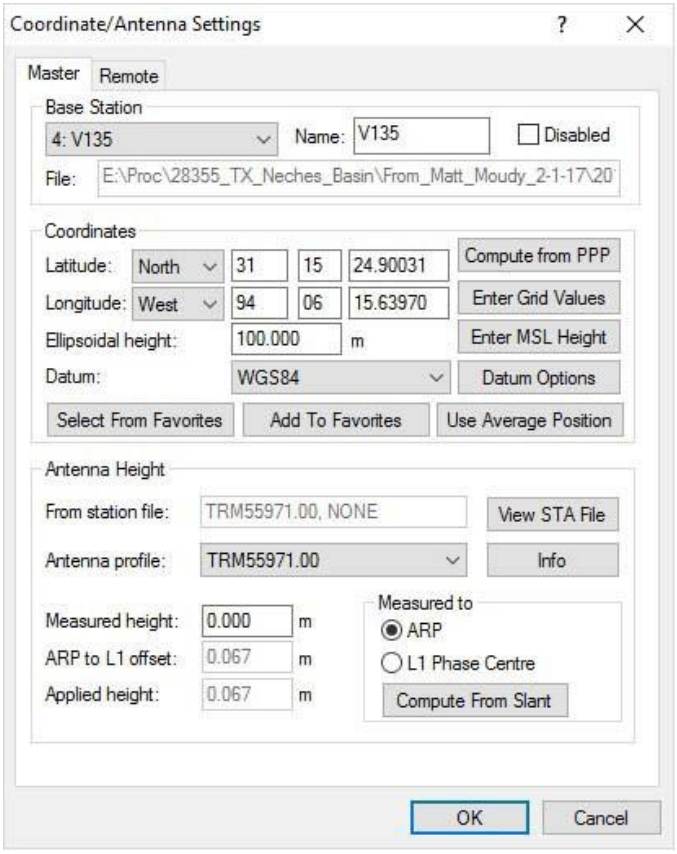

Separation (arcmin)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
-1.4
-1.6
-1.8
-2.0
-2.2
-2.4
-2.6
-2.8
-3.0
-3.2
-3.4
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
167000
Week 1934
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
182000
183000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXC1
Name:
TXC1
Disabled
File:
E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-1-17\20
Coordinates
Latitude:
North
31
48
49.26892
Compute from PPP
Longitude:
West
94
09
36.91093
Enter Grid Values
Ellipsoidal height:
70.726
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXHP
Name: TXHP
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-1-17\20
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXS1
Name: TXS1
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-1-17\20
Coordinates
Latitude: North 31 31 33.56441
Longitude: West 94 07 39.54850
Ellipsoidal height: 89.700 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V135
Name: V135
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-1-17\20
Coordinates
Latitude: North 31 15 24.90031
Longitude: West 94 06 15.63970
Ellipsoidal height: 100.000 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-30-17 Lift: A B C D E Pg 1 of 1

Project: NECHES BASIN, TX Proj #: 28355 Flight Mgmt File: 28355_SN7178_SANANGUSTINE

Aircraft: N812TB Begin Hobbs: 4329.6 End Hobbs: 4334.0 Total: 4.4 Pilot: PLATTE Co-Pilot: – Tech: MOODY

Dep Apt: GGG Dep Time (Lcl): 1624 (Z): 2224 Arr Apt: GGG Arr Time (Local): 2051 (Z): 0251 Tot Time Aloft: 4:27

CORS: Y / (N) Sta 1: VIRTUAL Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

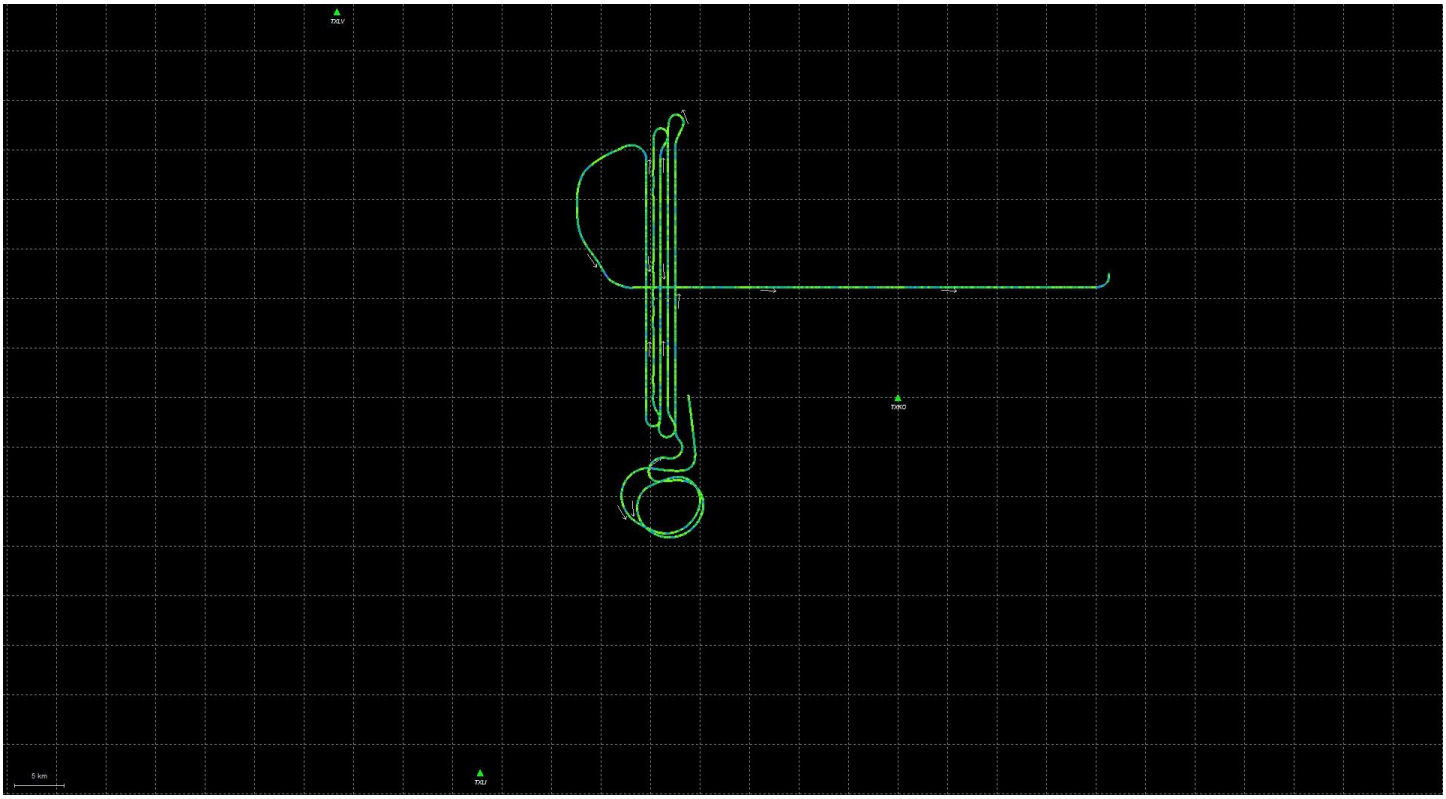
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	AL570	7178	± 5550'	± 5900'	± 350'	150 KTS	
	FOV 340°	Scan Freq 57 Hz	MpiA (Y) / N	Pulses in Air 2	Pulse Rate 312 KHz	Power 100%	PPSM

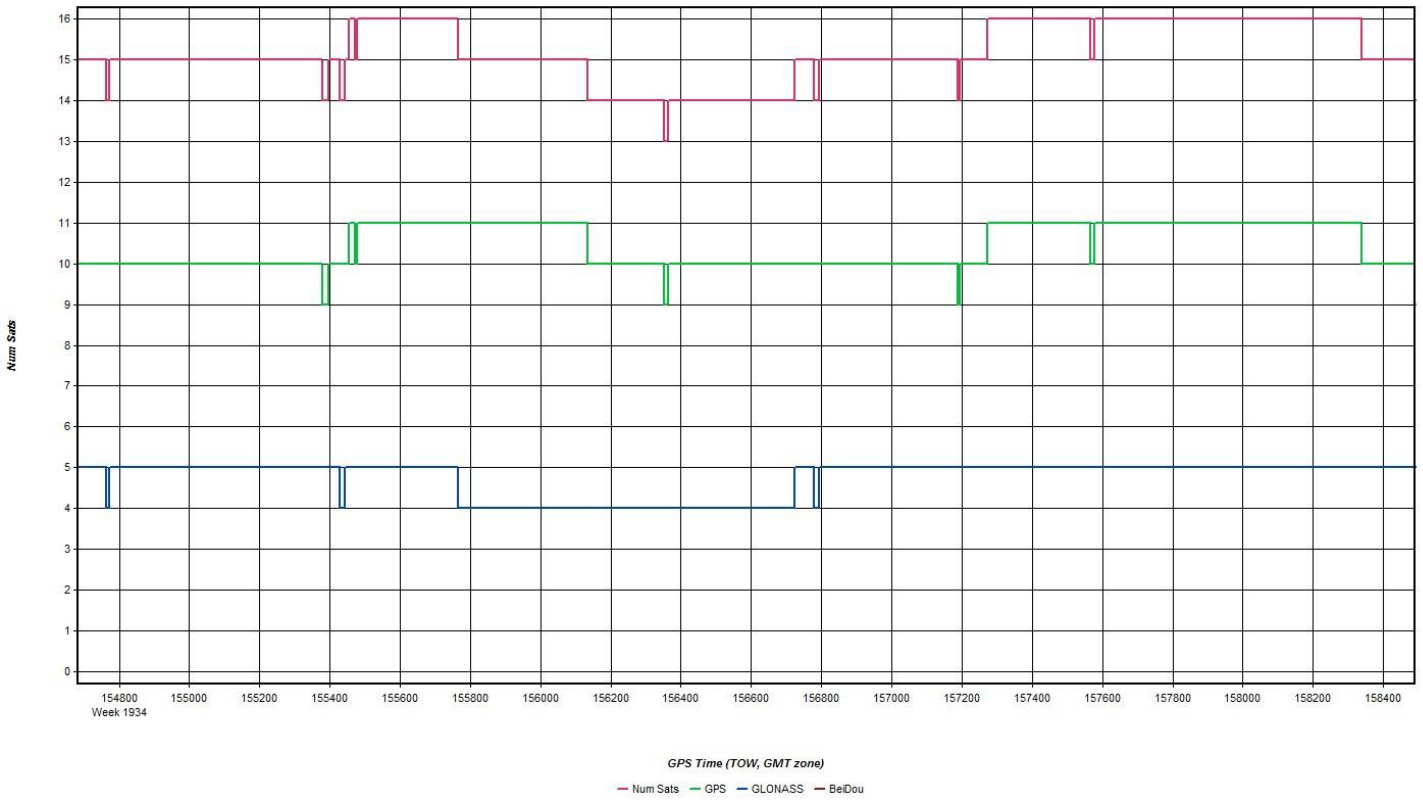
	Beg GB	Storage Name/#
	346	7178
	End GB 415	5503
	Tot GB 69	

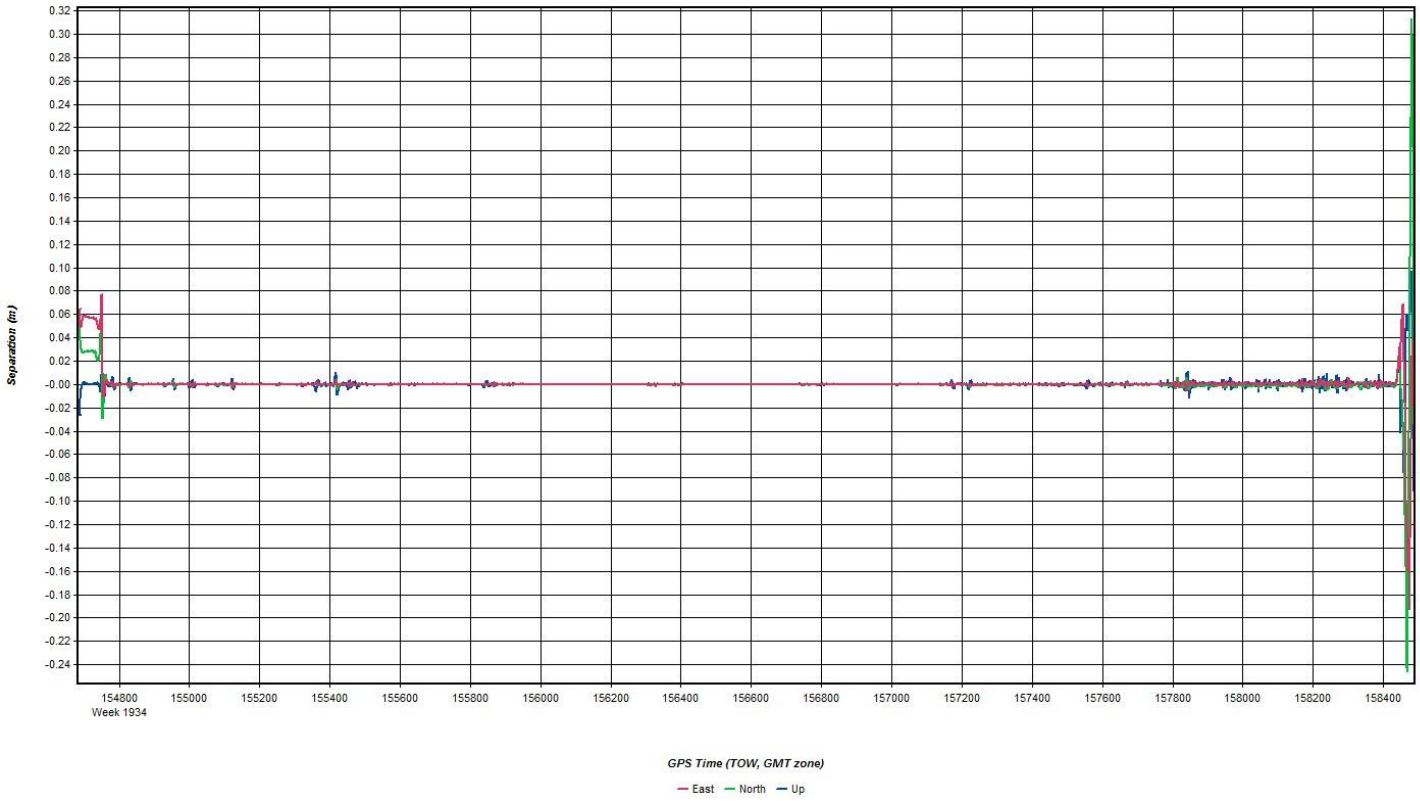
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc. DO
4046	180	2250	2259	162	1.3/18	5990	9	–	
4045	360	2302	2312	160	1.3/17	6000	7	–	
4044	180	2315	2324	162	1.3/17	5960	7	–	
4043	360	2327	2336	159	1.3/17	5970	8	–	
4042	180	2340	2349	161	1.1/19	5900	7	–	
4041	360	2352	0002	160	1.1/19	5930	6	–	
4040	180	0004	0013	164	1.2/18	5900	6	–	
4039	360	0016	0026	158	1.2/18	5930	7	–	
4038	180	0029	0039	164	1.4/17	5910	8	–	
4037	360	0042	0052	160	1.3/18	5910	6	–	
4036	180	0055	0105	165	1.1/20	5930	7	–	
4035	360	0108	0118	158	1.3/18	5910	6	–	
4034	180	0120	0131	168	1.3/18	5900	6	–	
4033	360	0134	0144	161	1.3/17	5930	6	–	
4032	180	0147	0157	163	1.2/18	5890	7	–	
4077	090	0208	0217	156	1.3/17	5900	0	–	- PLANNED TIE LINE

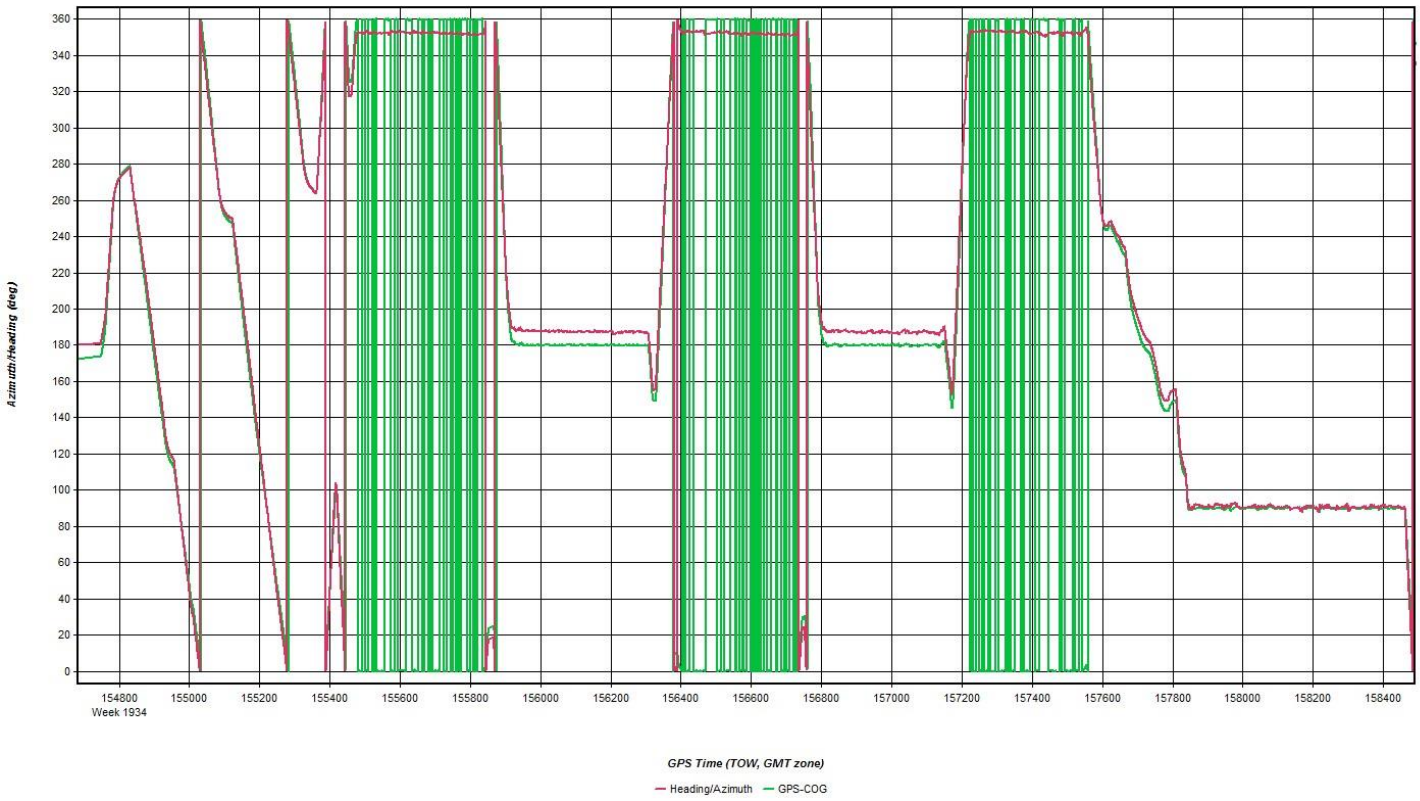
Total Proj Lines: Lines Flown: Lines Remain: On Line Time: 3.5 Mob Time: 1.0 Notes:

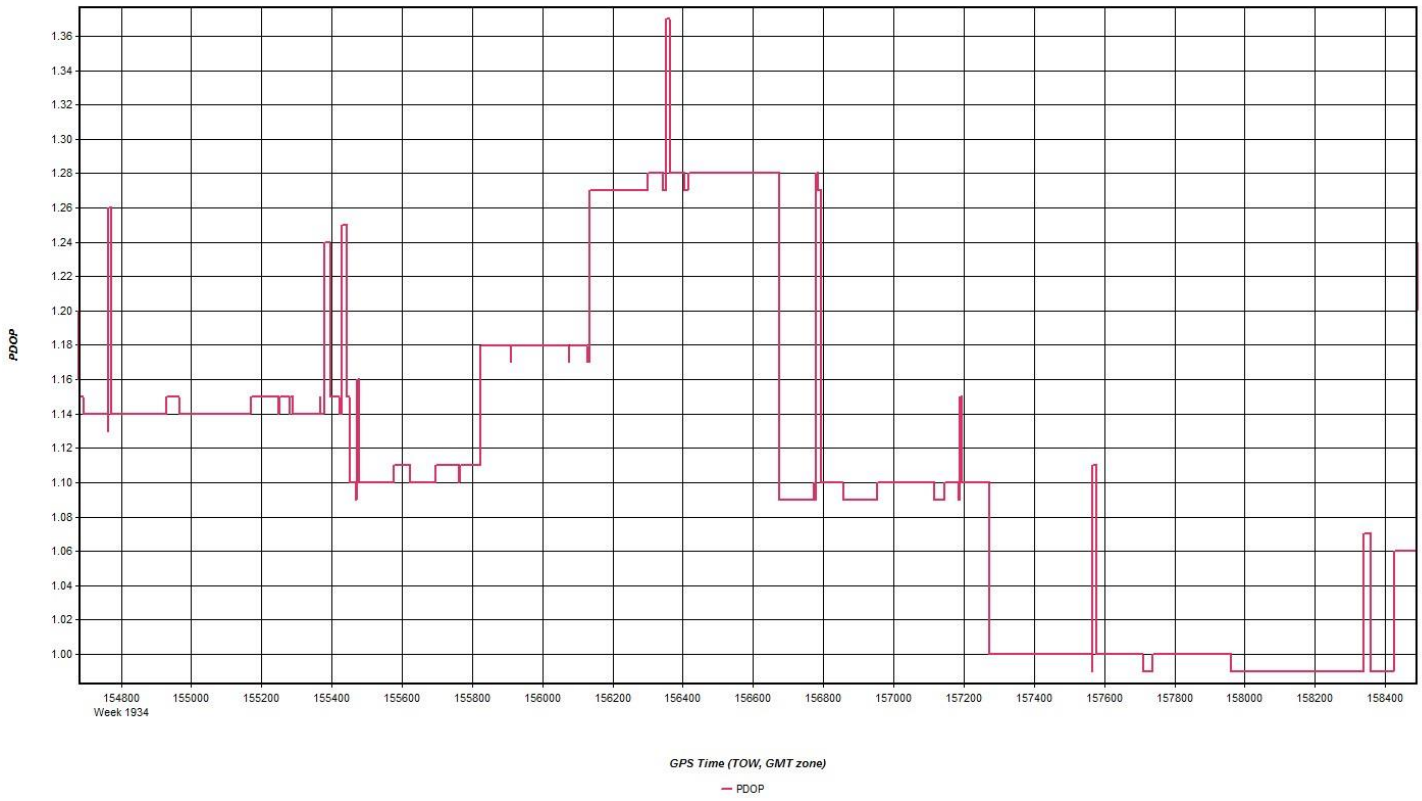
Jan 30, 2017-B (N208NR, SN8239)

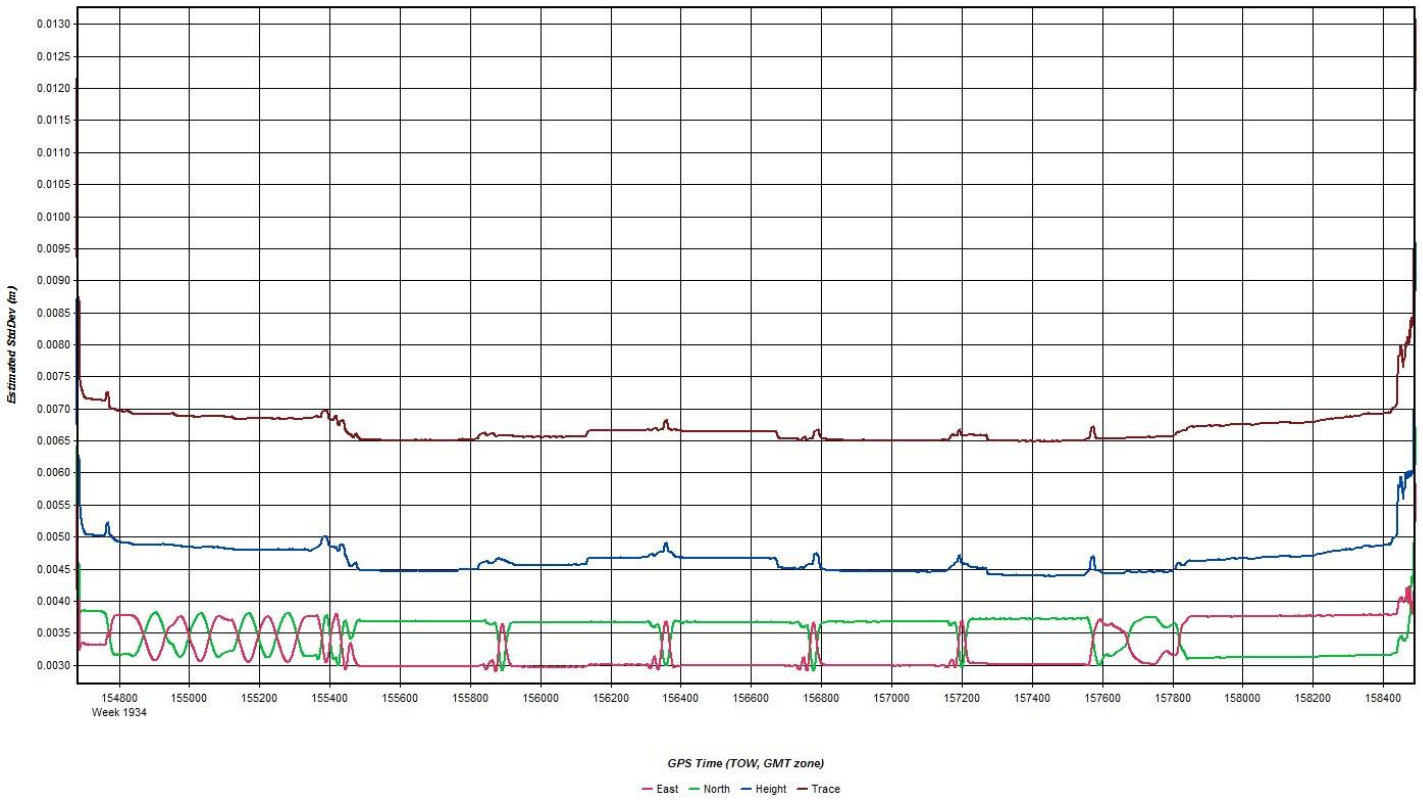


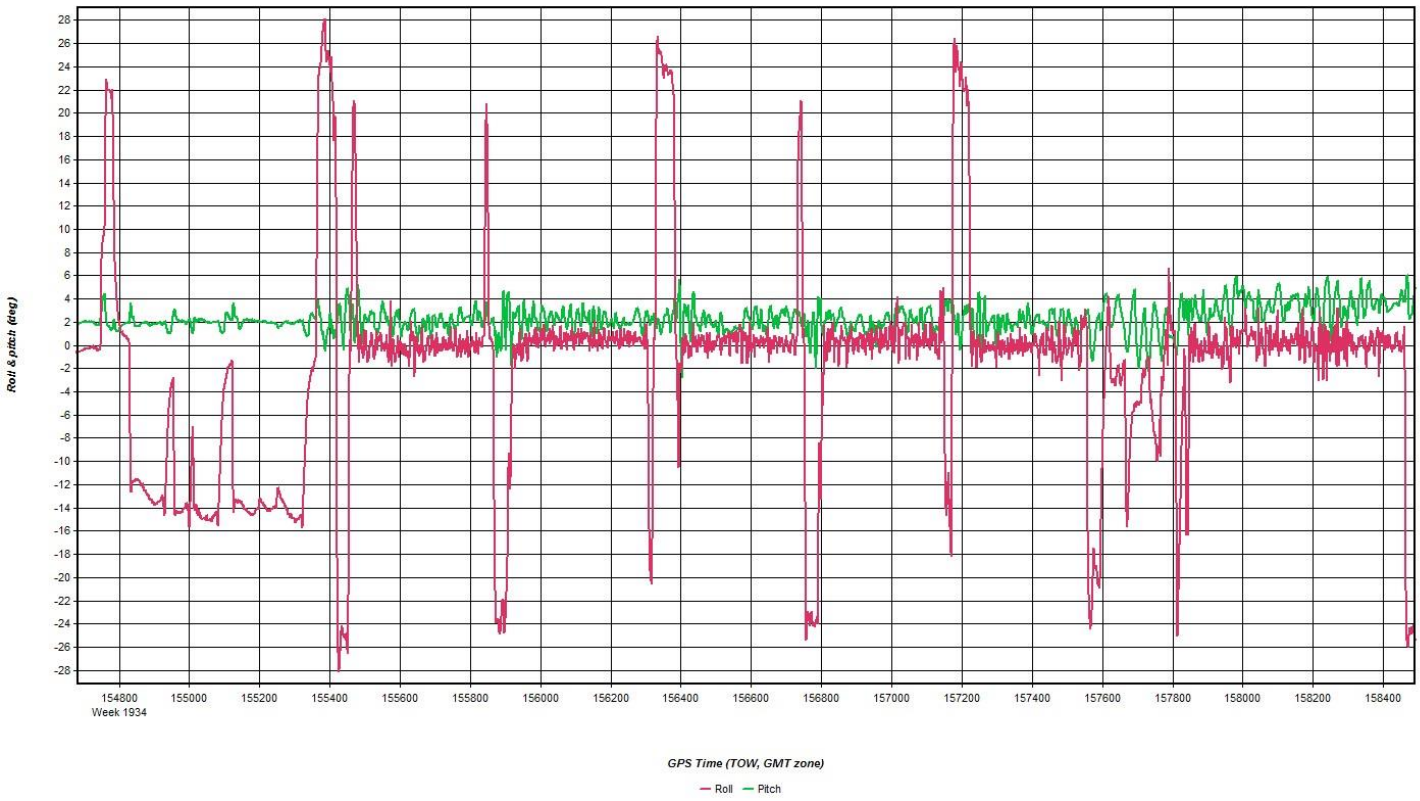

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

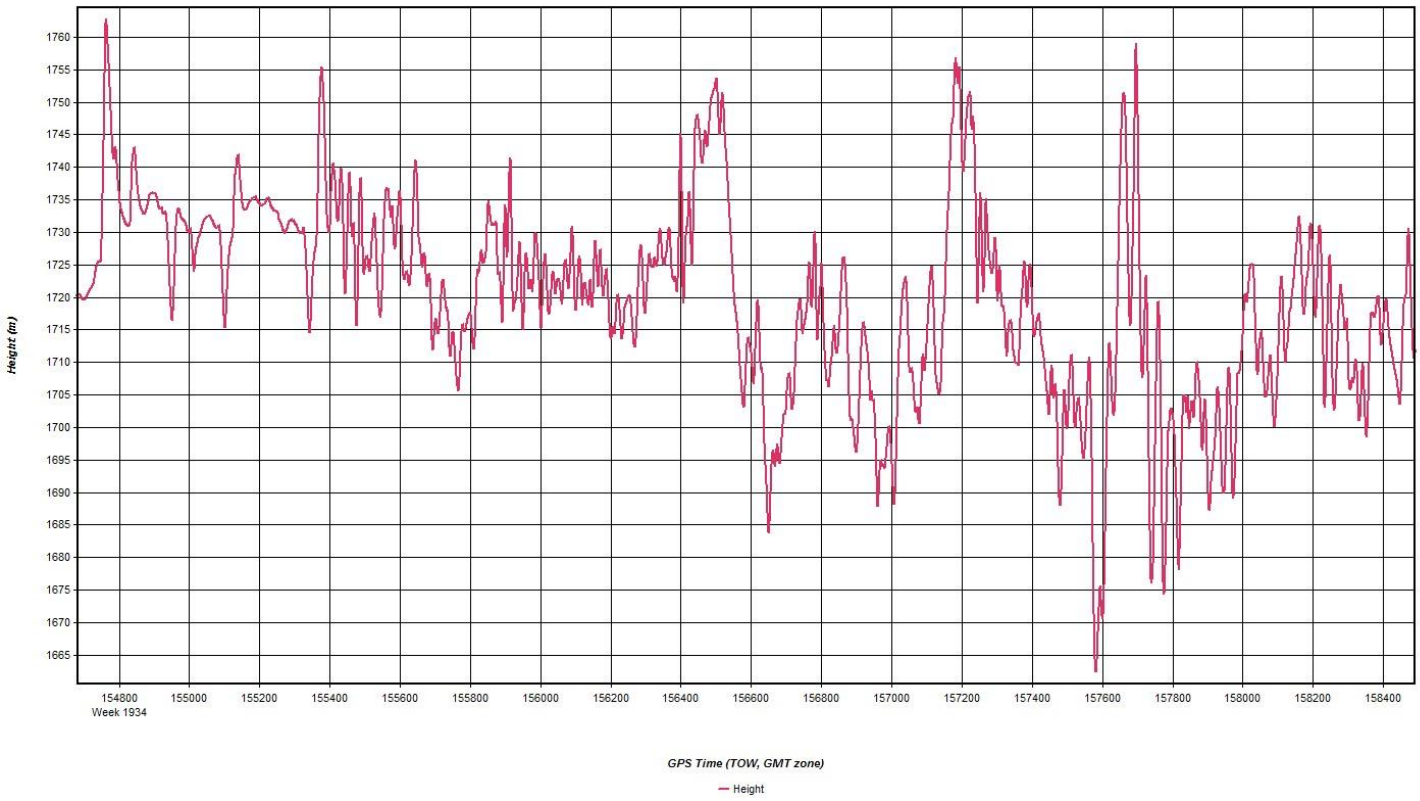

Separation (m)
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
East
North
Up

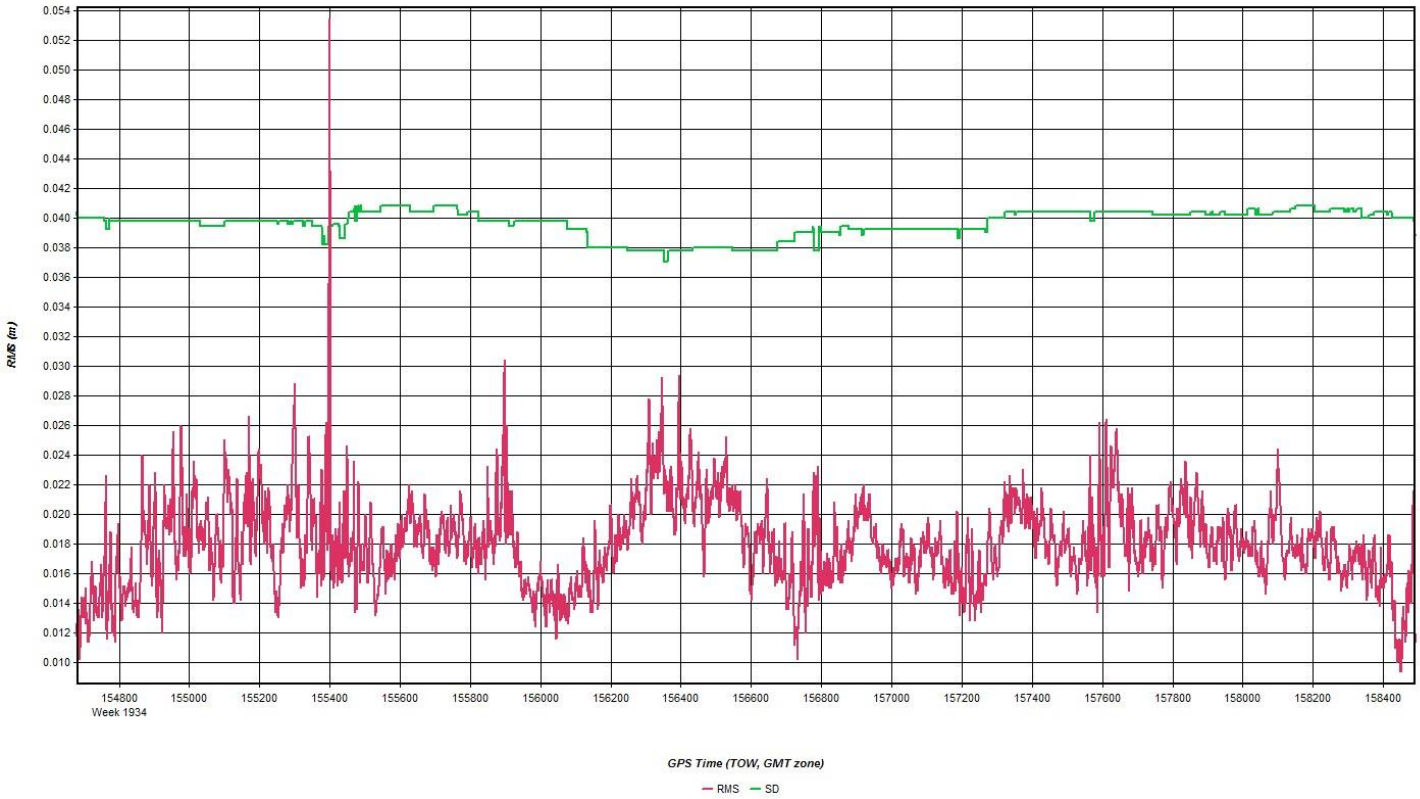

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

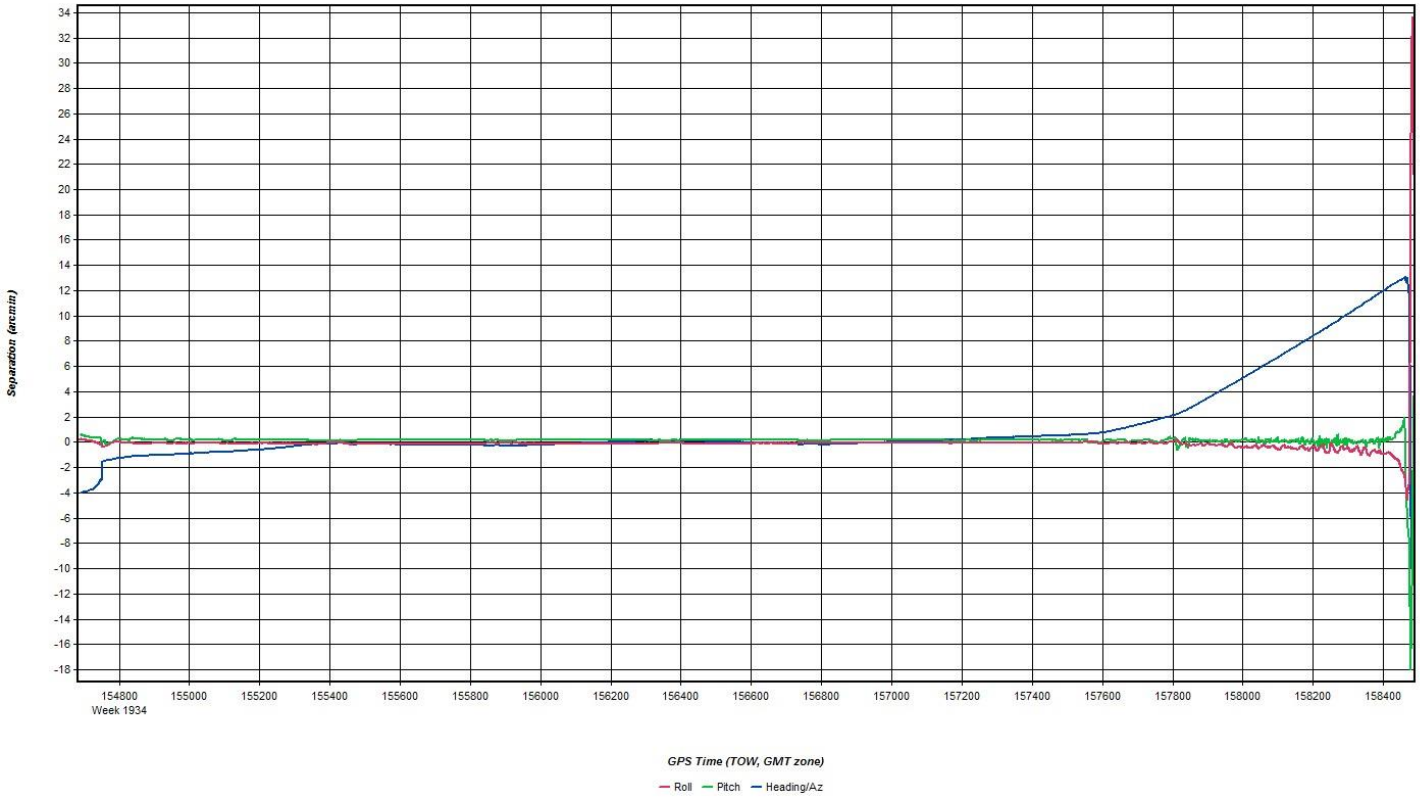

PDOP
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
PDOP

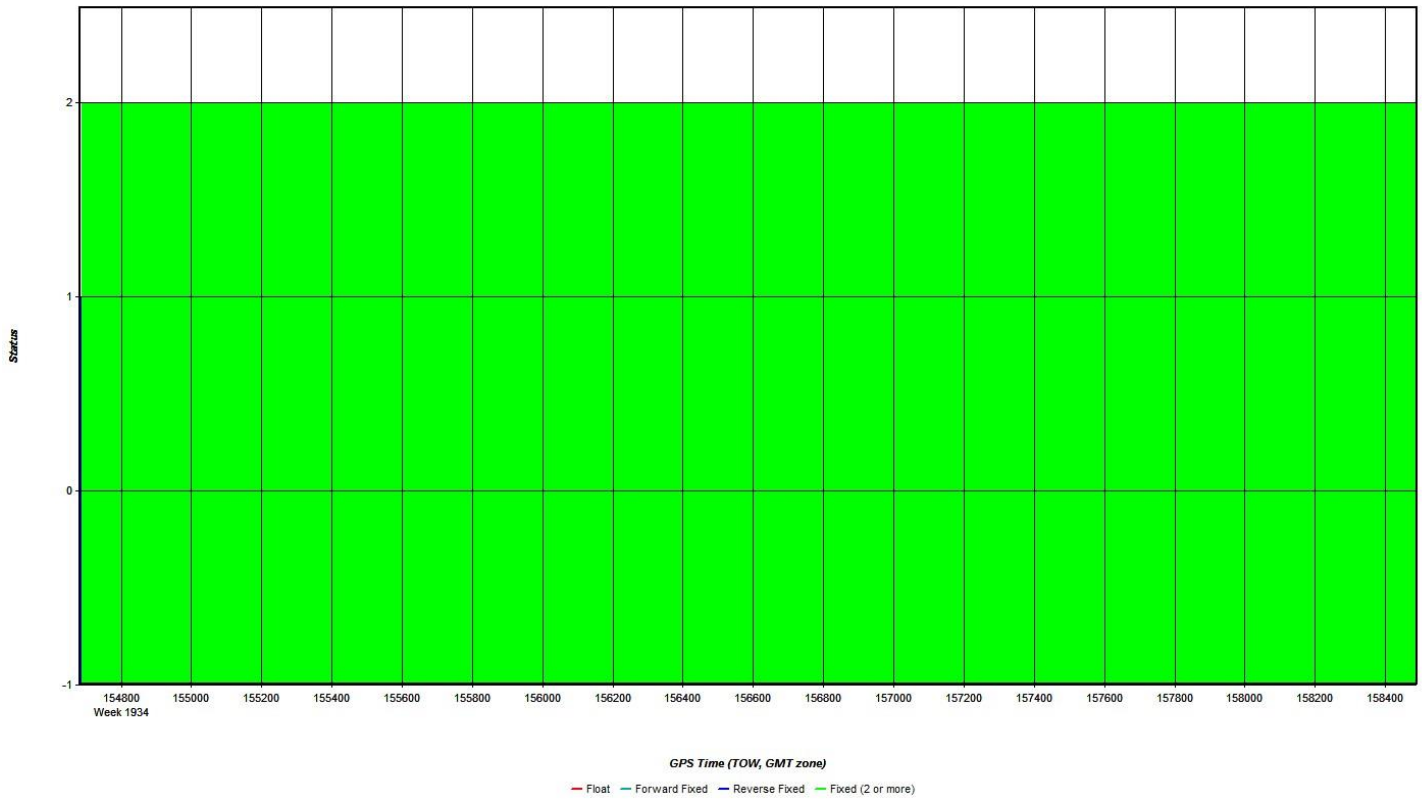

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
East
North
Height
Trace

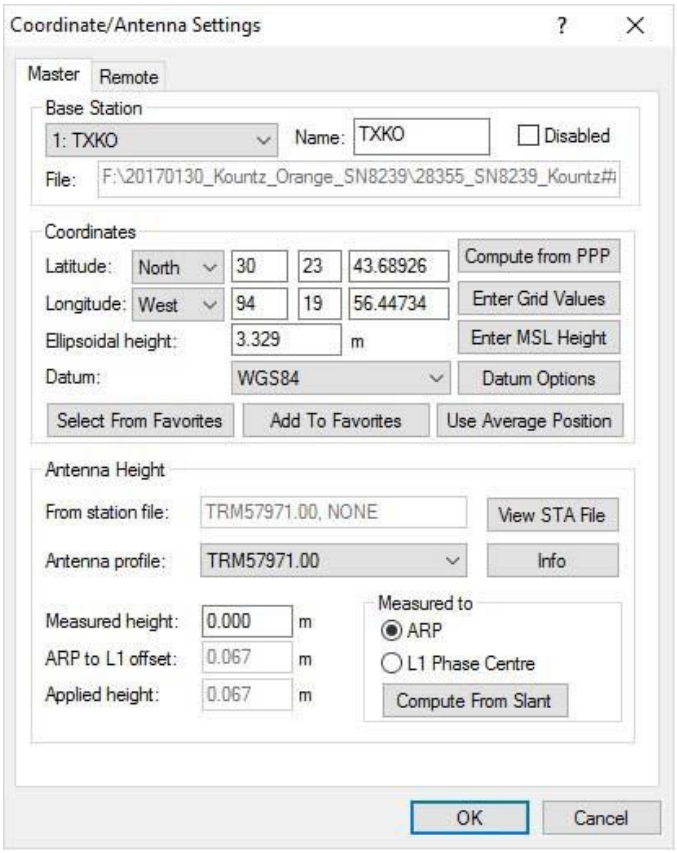

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
Roll
Pitch

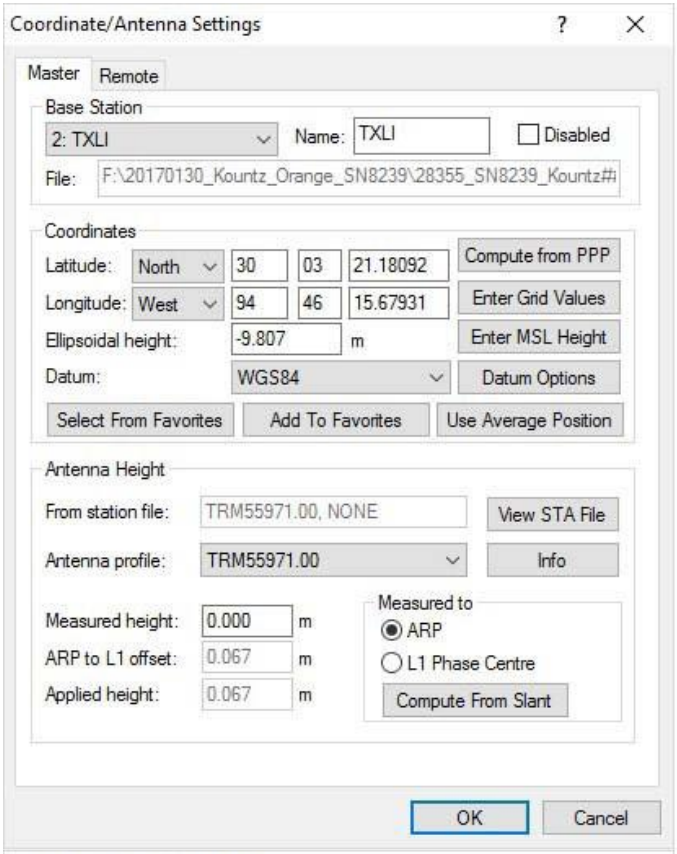

Height (m)
1760
1755
1750
1745
1740
1735
1730
1725
1720
1715
1710
1705
1700
1695
1690
1685
1680
1675
1670
1665
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
Height

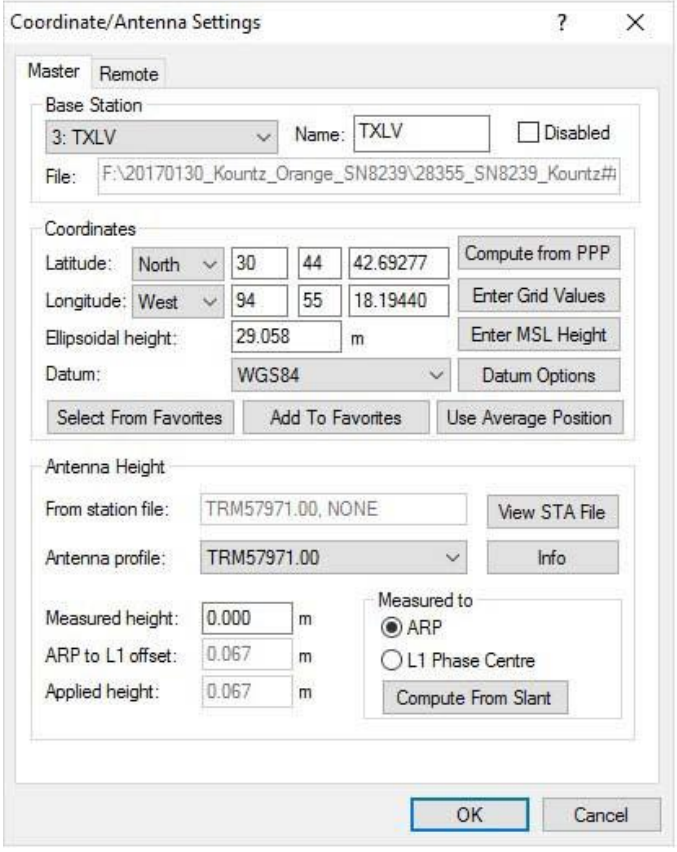

RMS (m)
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

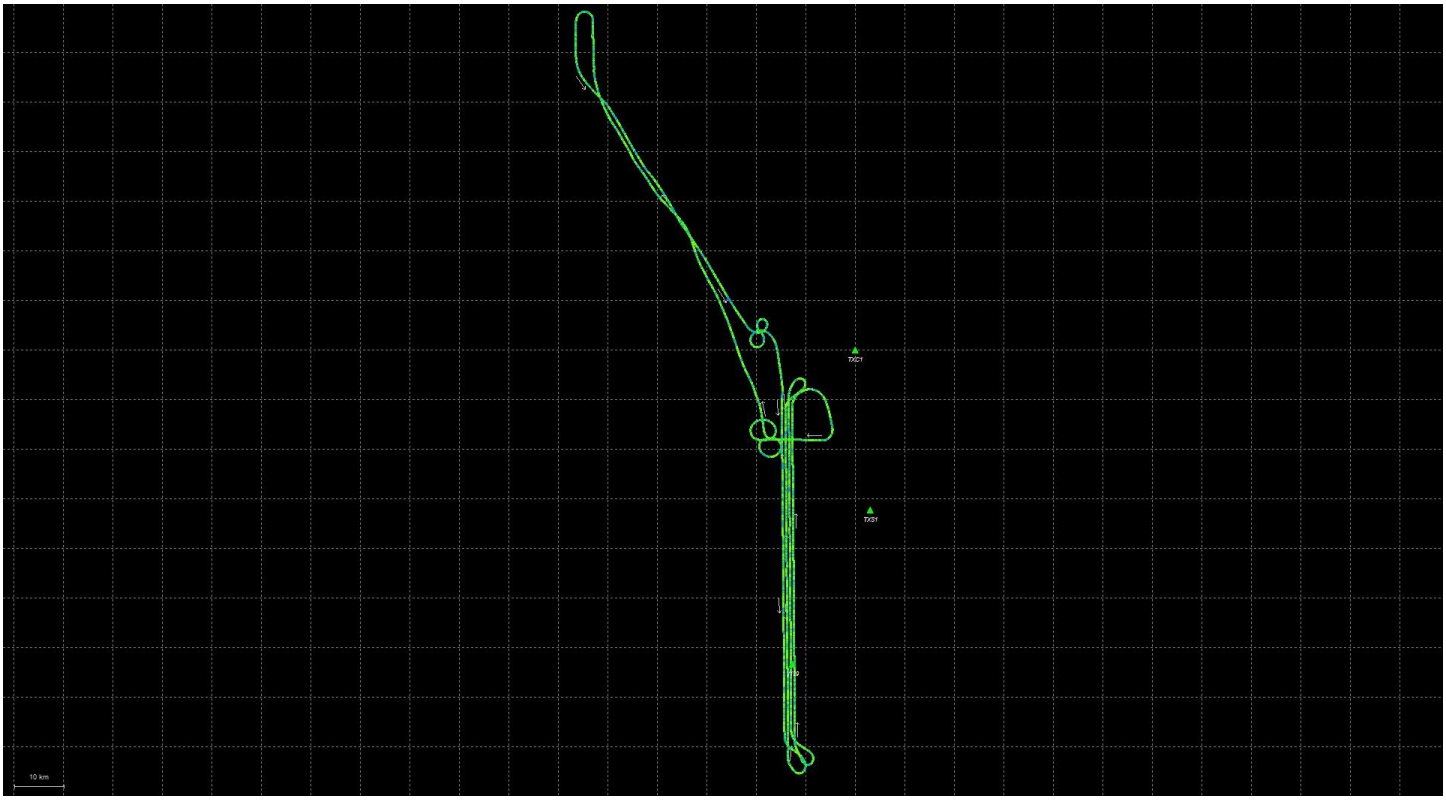

Status
2
1
0
-1
154800
Week 1934
155000
155200
155400
155600
155800
156000
156200
156400
156600
156800
157000
157200
157400
157600
157800
158000
158200
158400
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

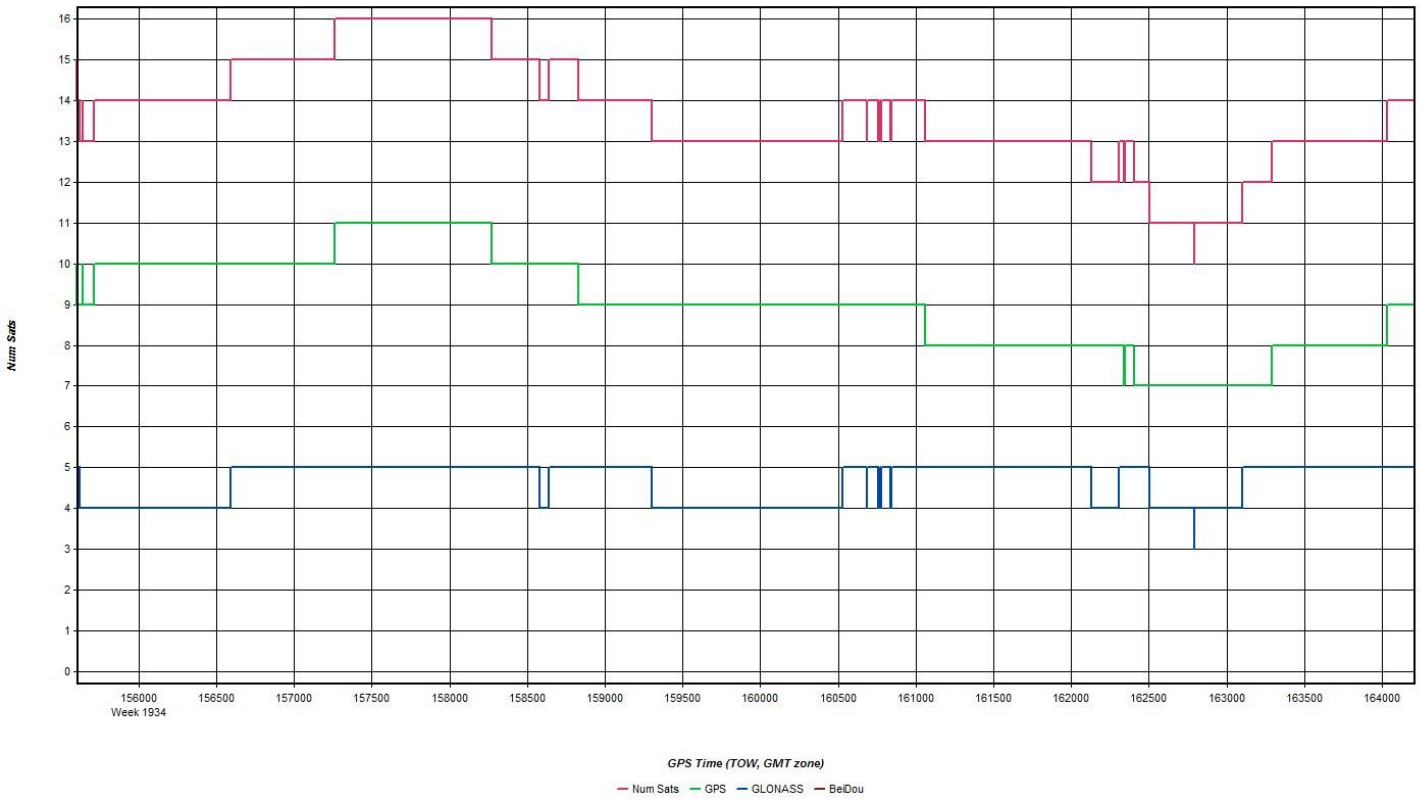

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name:
TXKO
Disabled
File:
F:\20170130_Kountz_Orange_SN8239\28355_SN8239_Kountz#
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

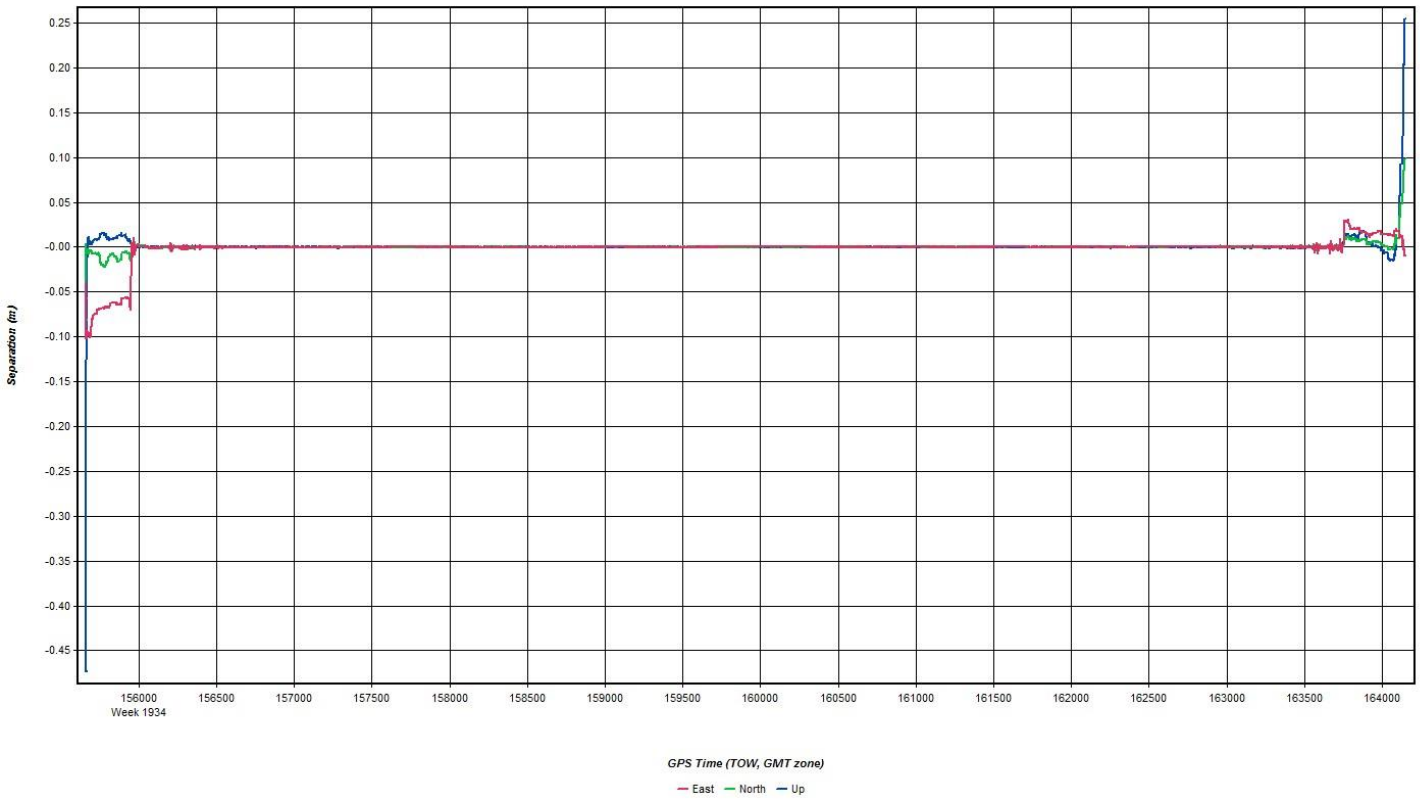

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXLI
Name: TXLI
Disabled
File: F:\20170130_Kountz_Orange_SN8239\28355_SN8239_Kountz#
Coordinates
Latitude: North 30 03 21.18092
Longitude: West 94 46 15.67931
Ellipsoidal height: -9.807 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

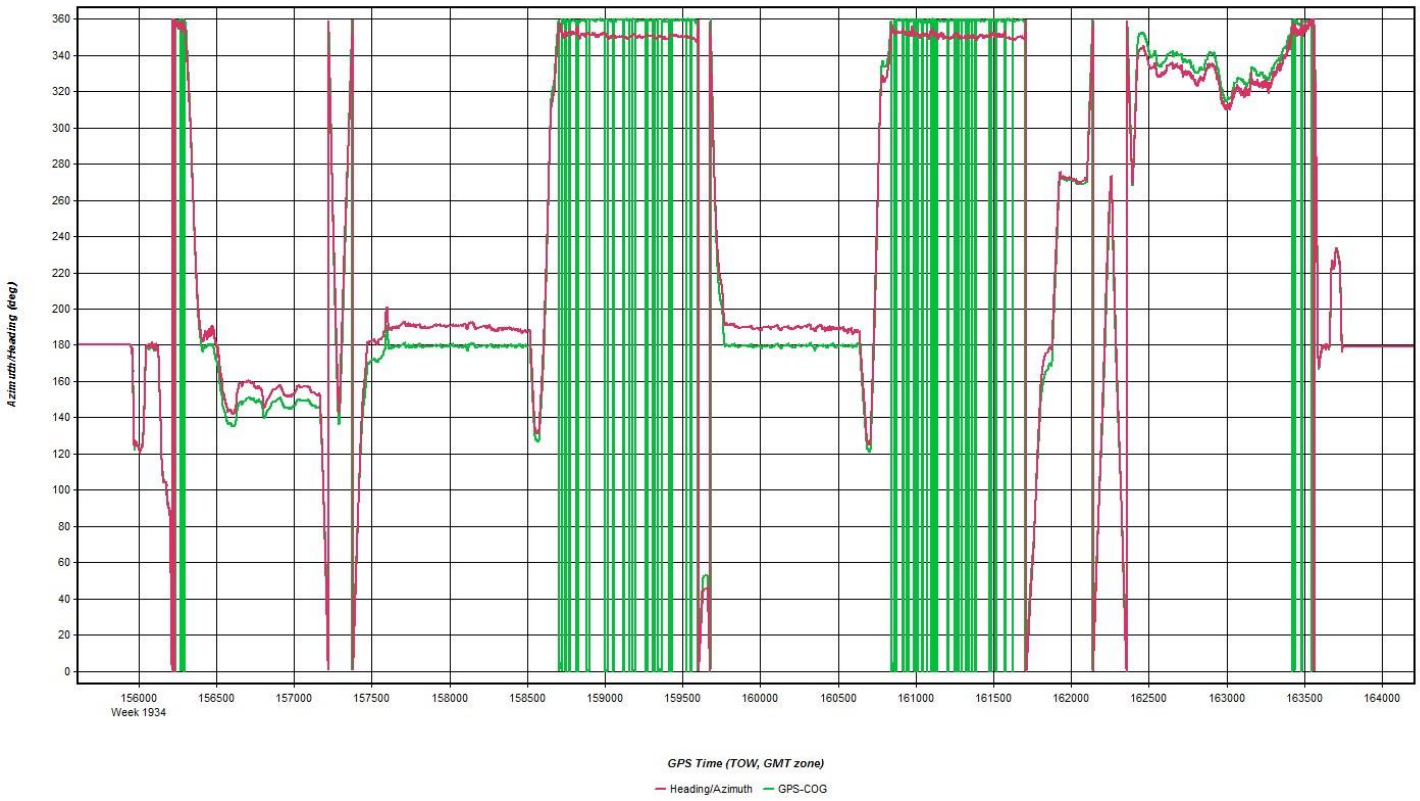

Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLV
Name: TXLV
Disabled
File: F:\20170130_Kountz_Orange_SN8239\28355_SN8239_Kountz#
Coordinates
Latitude: North 30 44 42.69277
Longitude: West 94 55 18.19440
Ellipsoidal height: 29.058 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

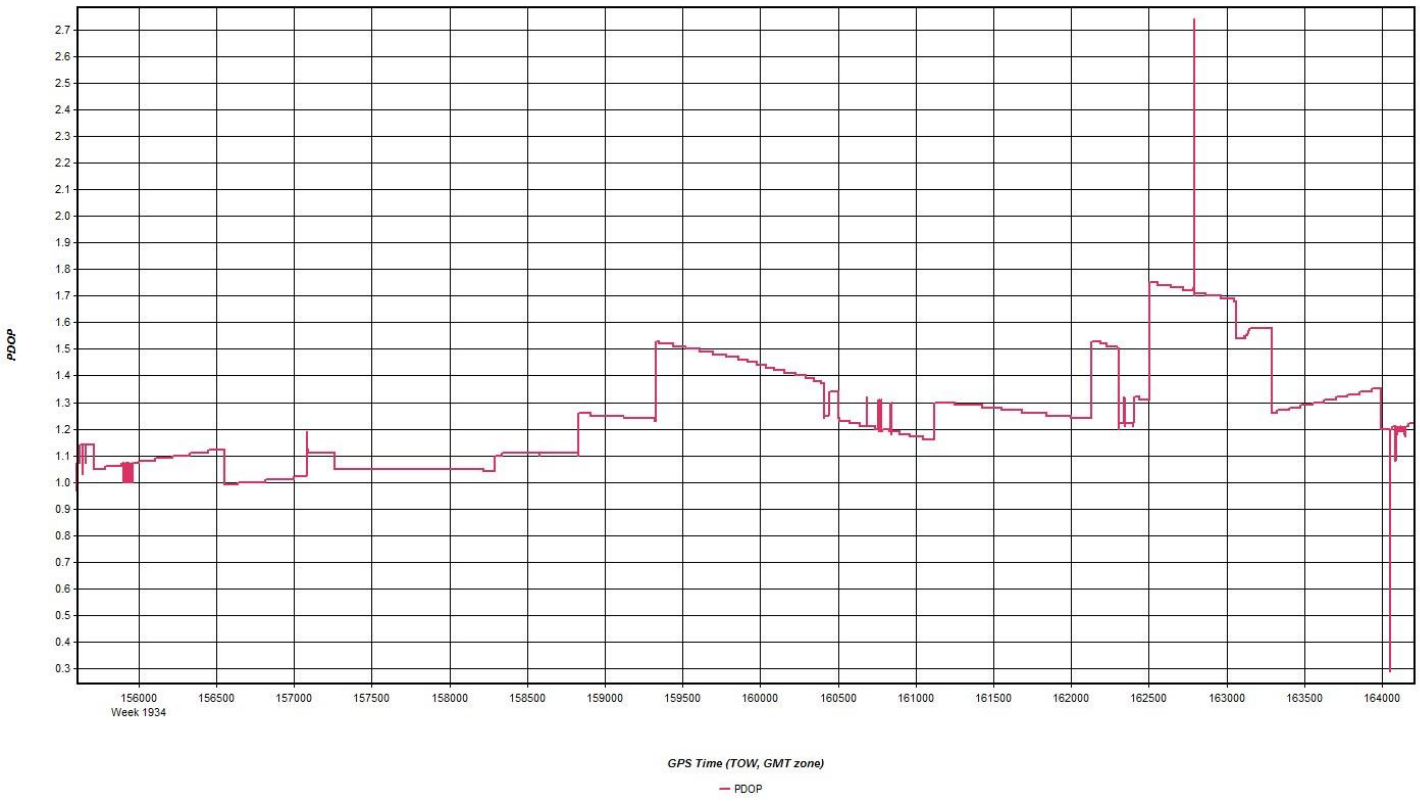
Jan 30, 2017-B (N812TB, SN7178)

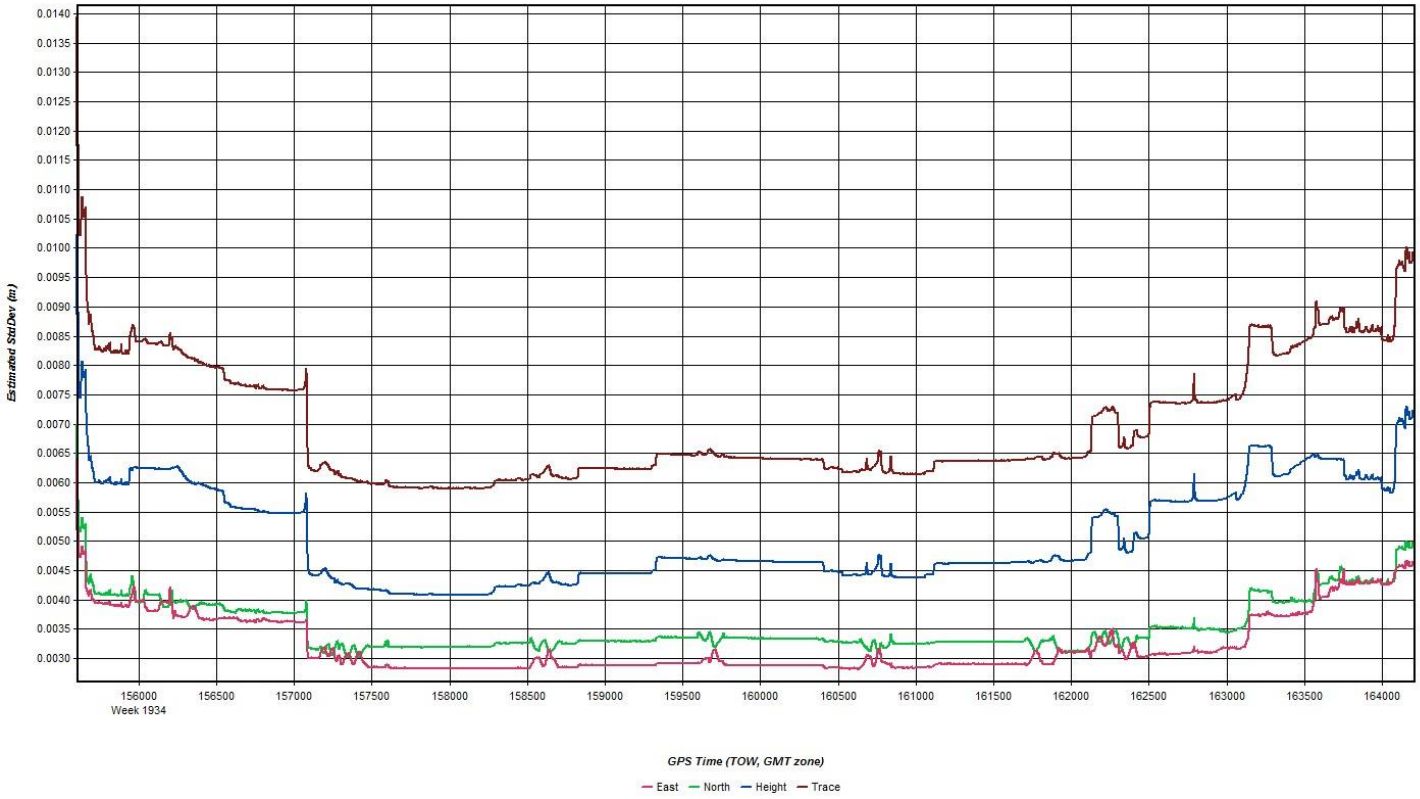


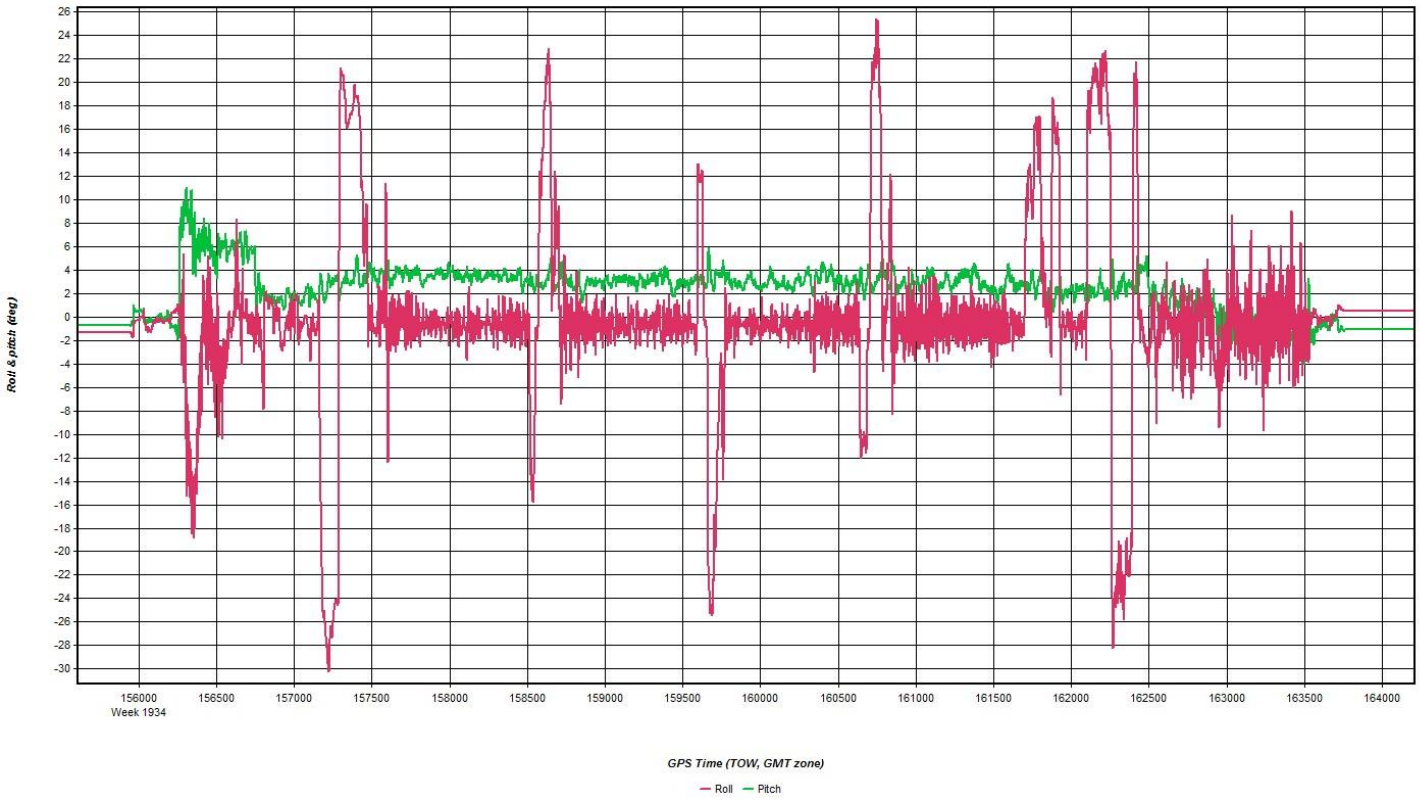

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

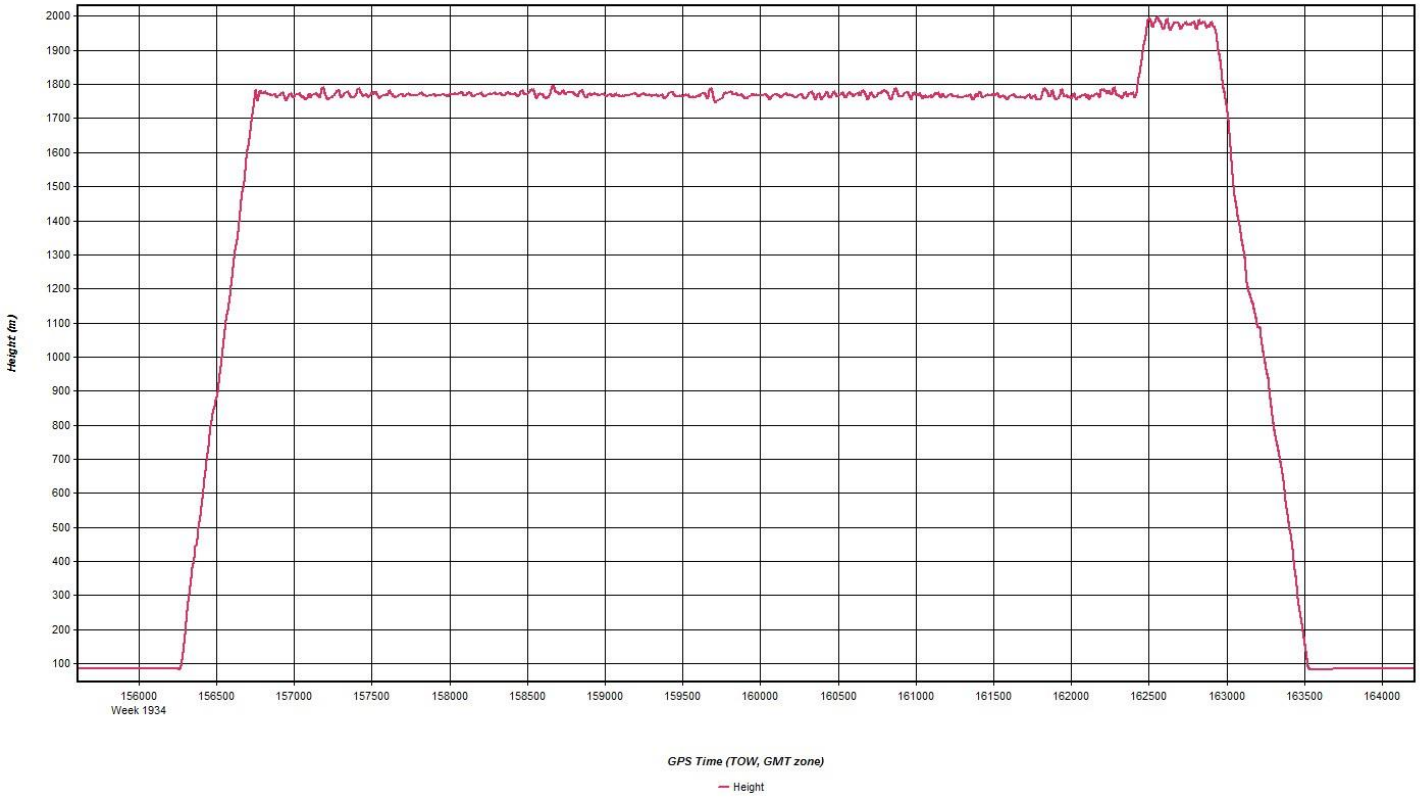

Separation (m)
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
East
North
Up

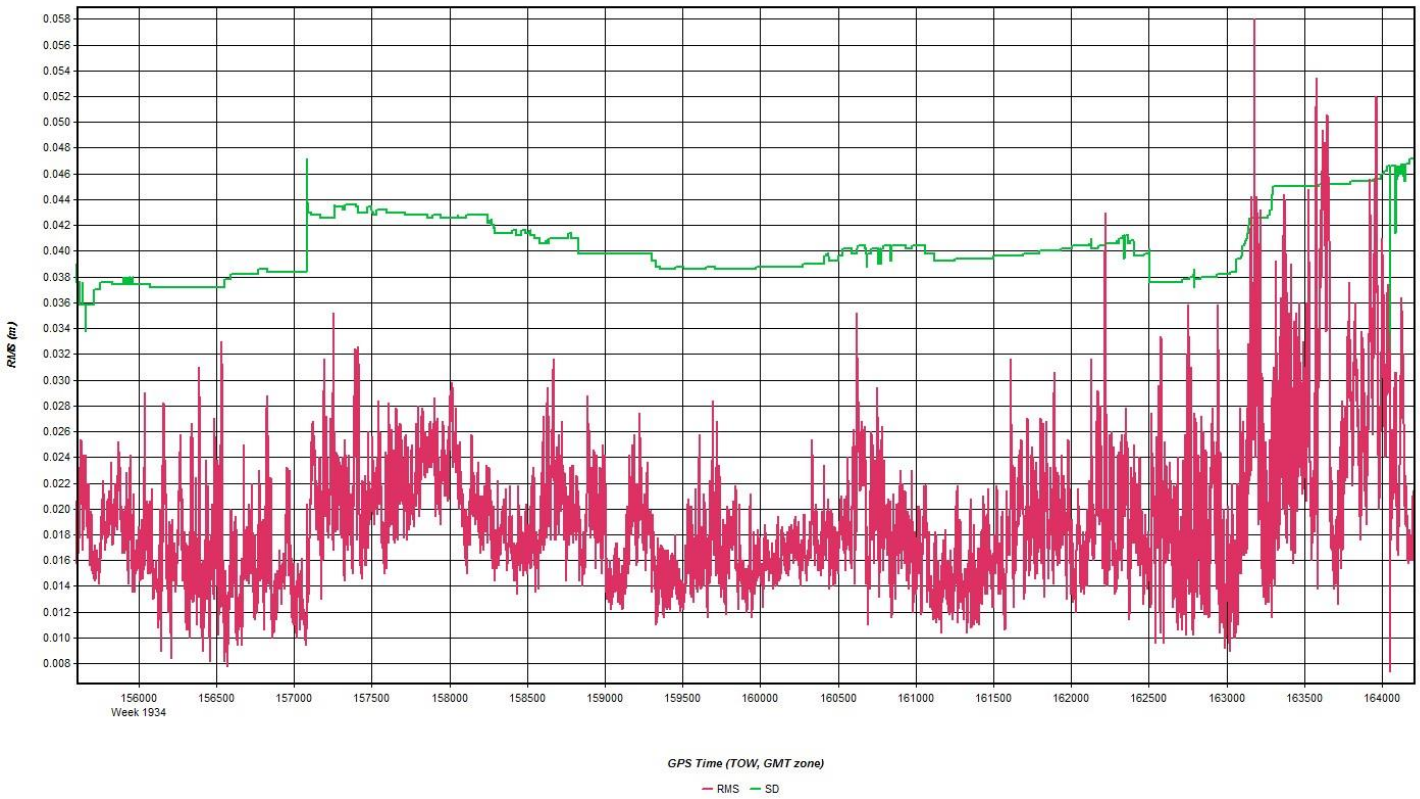

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

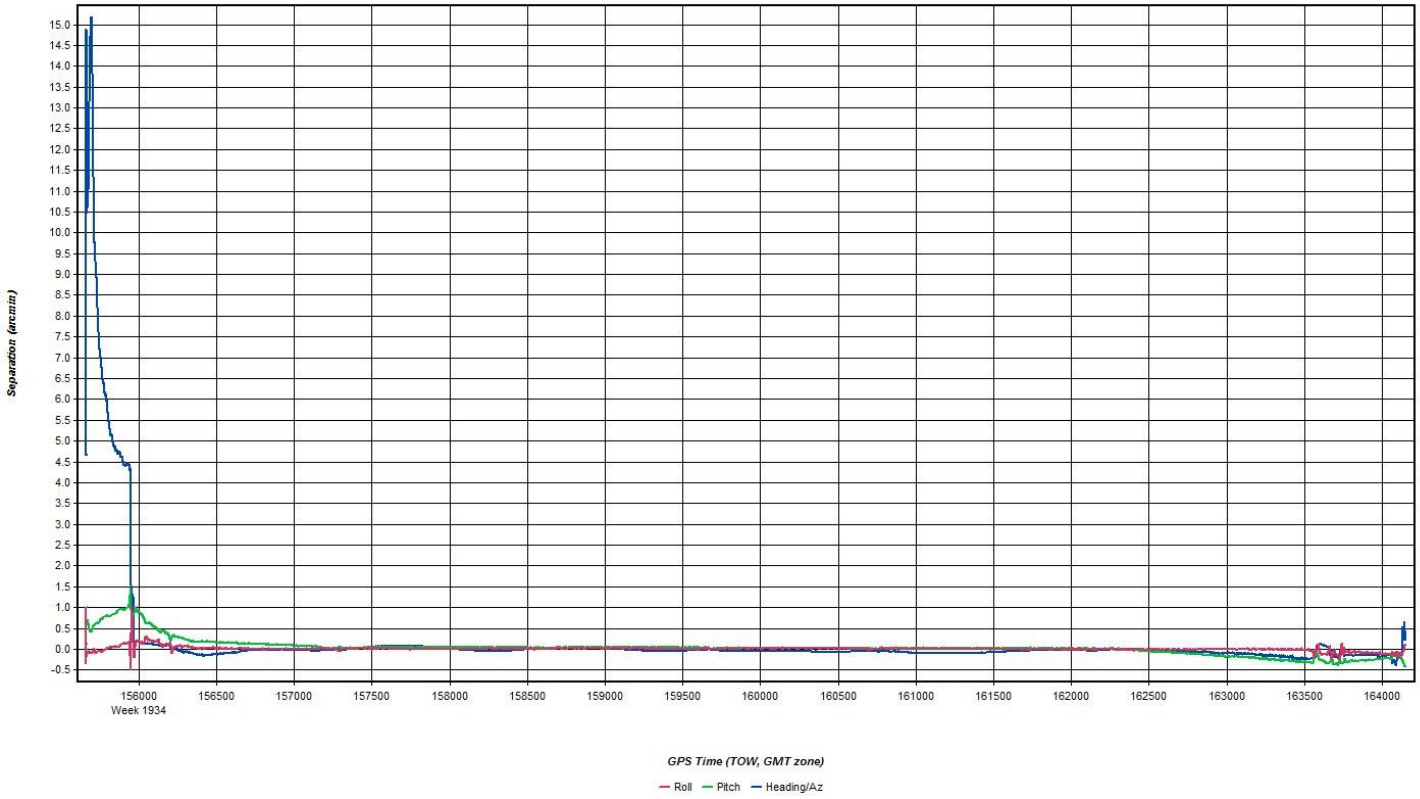

PDOP
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
PDOP

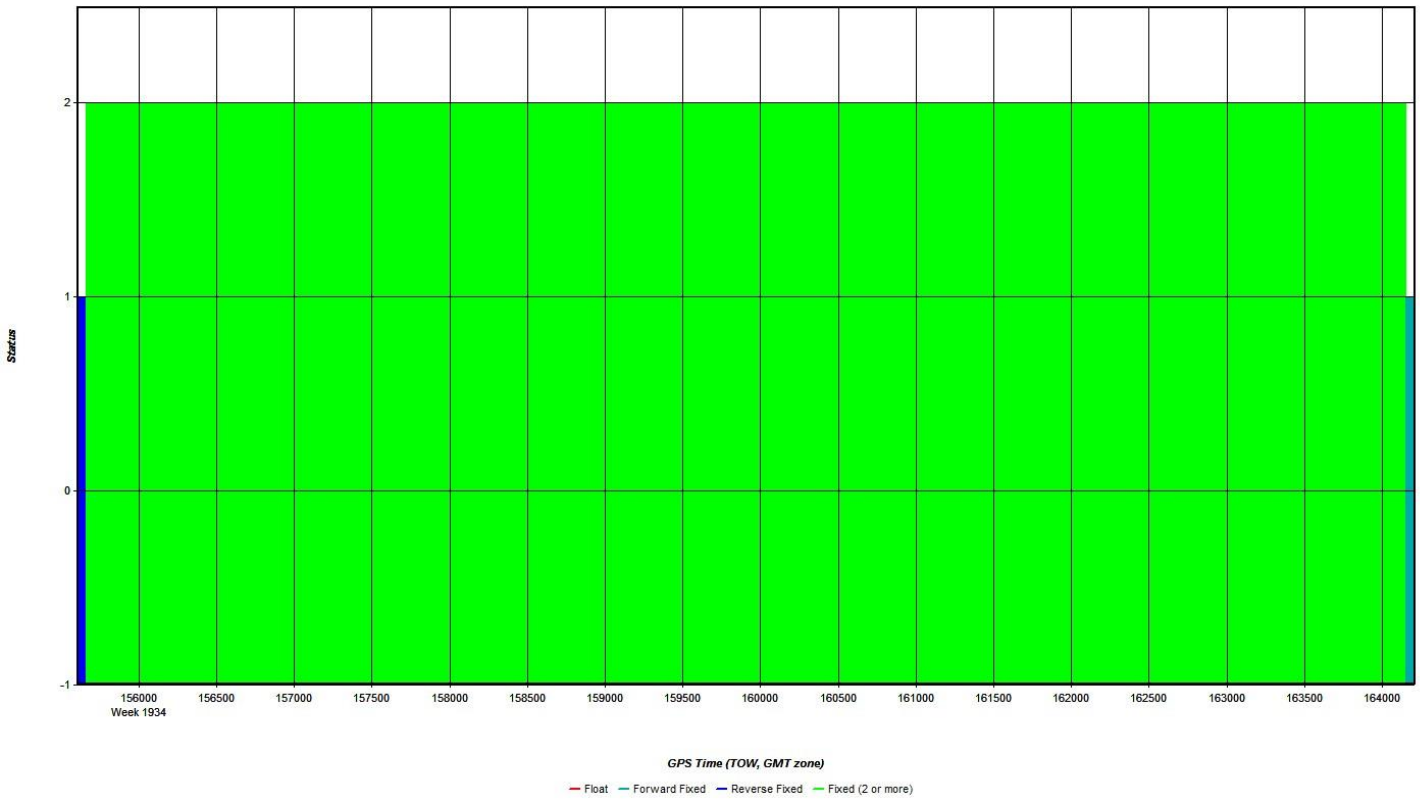

Estimated StdDev (m)
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

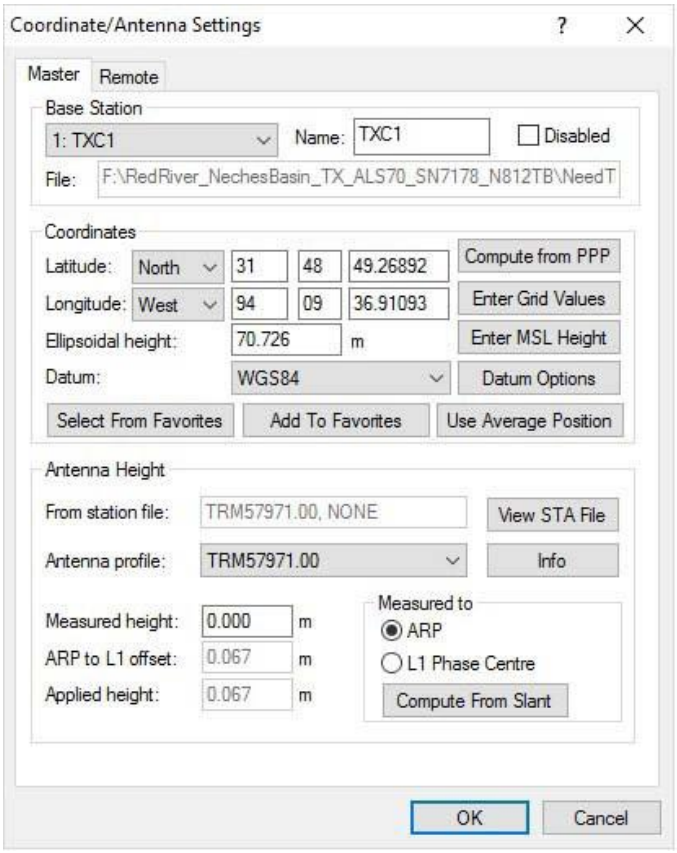

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
Roll
Pitch

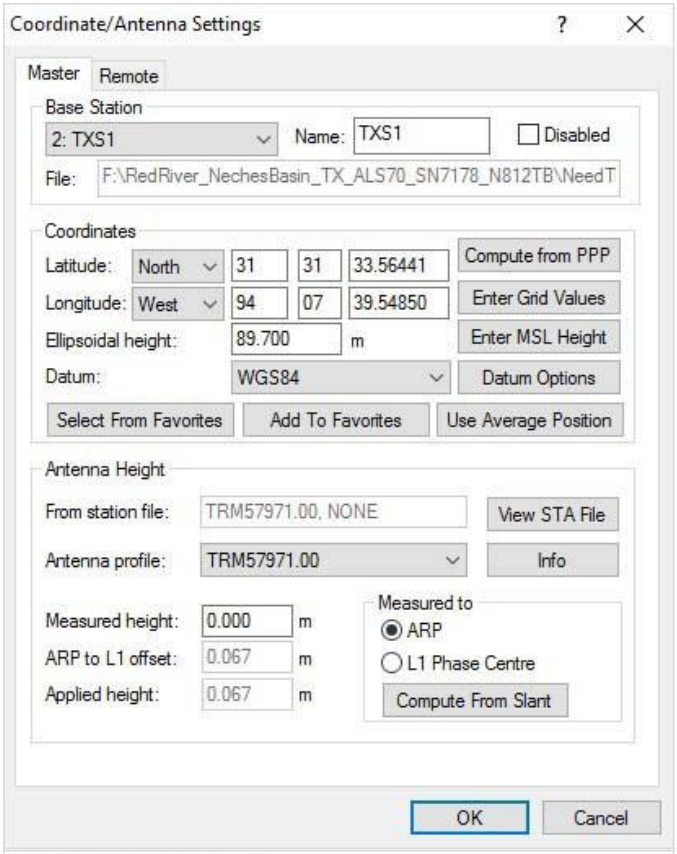

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
Height

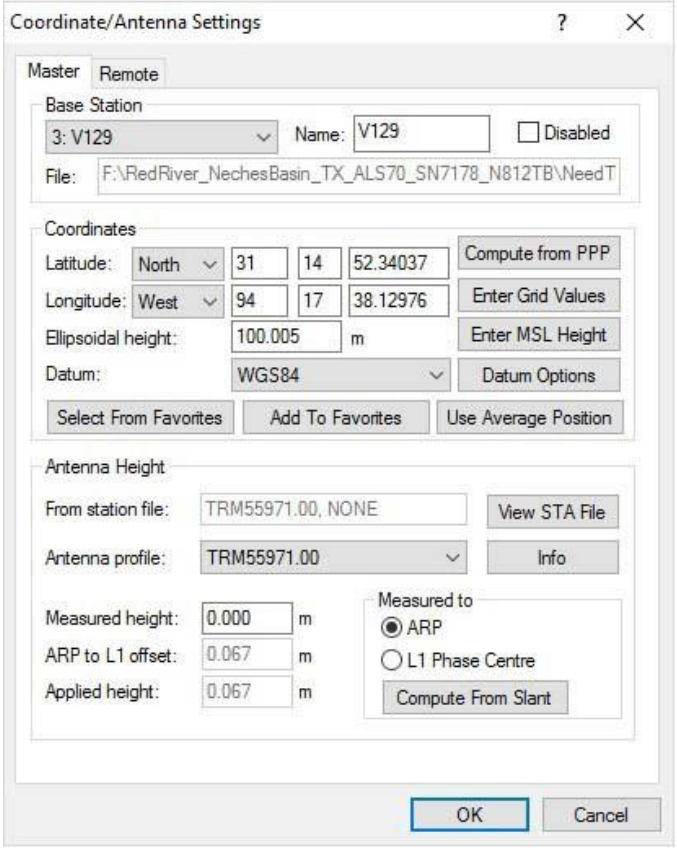

RMS (m)
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
156000
Week 1934
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
163500
164000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXC1
Name:
TXC1
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
48
49.26892
Compute from PPP
Longitude:
West
94
09
36.91093
Enter Grid Values
Ellipsoidal height:
70.726
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXS1
Name: TXS1
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 31 33.56441
Longitude: West 94 07 39.54850
Ellipsoidal height: 89.700 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V129
Name: V129
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 14 52.34037
Longitude: West 94 17 38.12976
Ellipsoidal height: 100.005 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

1-30-17B

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-30-17B Lift: A (B) C D E Pg 1 of 3

Project: NECHES Basin TX Proj #: 28355 Flight Mgmt File: 20170130_191018

Aircraft: N8127B Begin Hobbs: 4327.7 End Hobbs: 4329.6 Total: 1.9 Pilot: CHcdonald Co-Pilot: JBillington Tech: JSwan

Dep Apt: GGG Dep Time (Lcl): 1923 (Z): +6 Arr Apt: GGG Arr Time (Local): 1924 (Z): +6 Tot Time Aloft: 1.9

CORS: Y / (N) Sta 1: VRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: 8 °c End: 9 °c Altimeter begin: 3022 end: 3011

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	Alt 70	7178					
	FOV 34	Scan Freq 57	MpIA Y / N	Pulses In Air	Pulse Rate 312	Power 100	PPSM

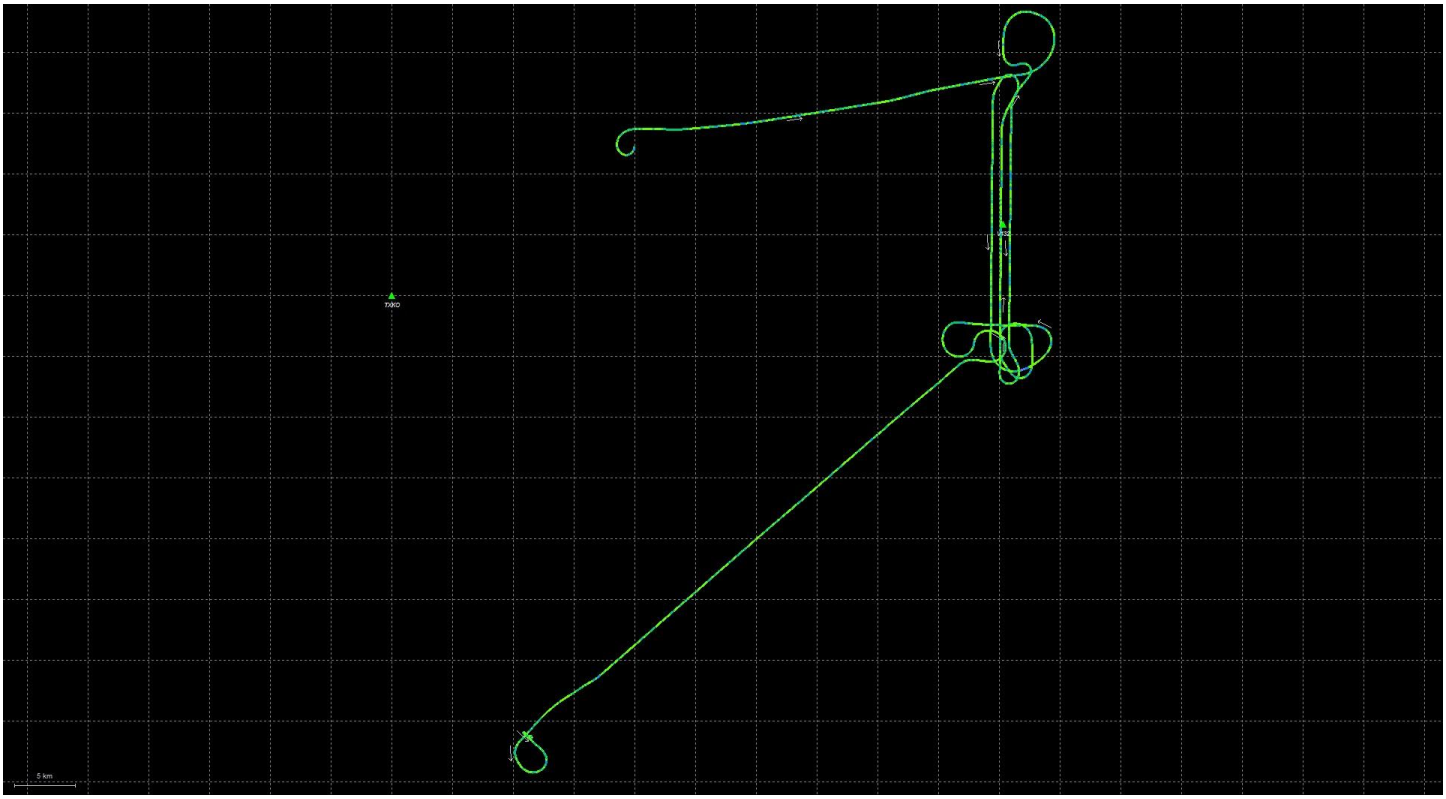
Beg GB	End GB	Tot GB	Storage Name/#
202	177	25	2

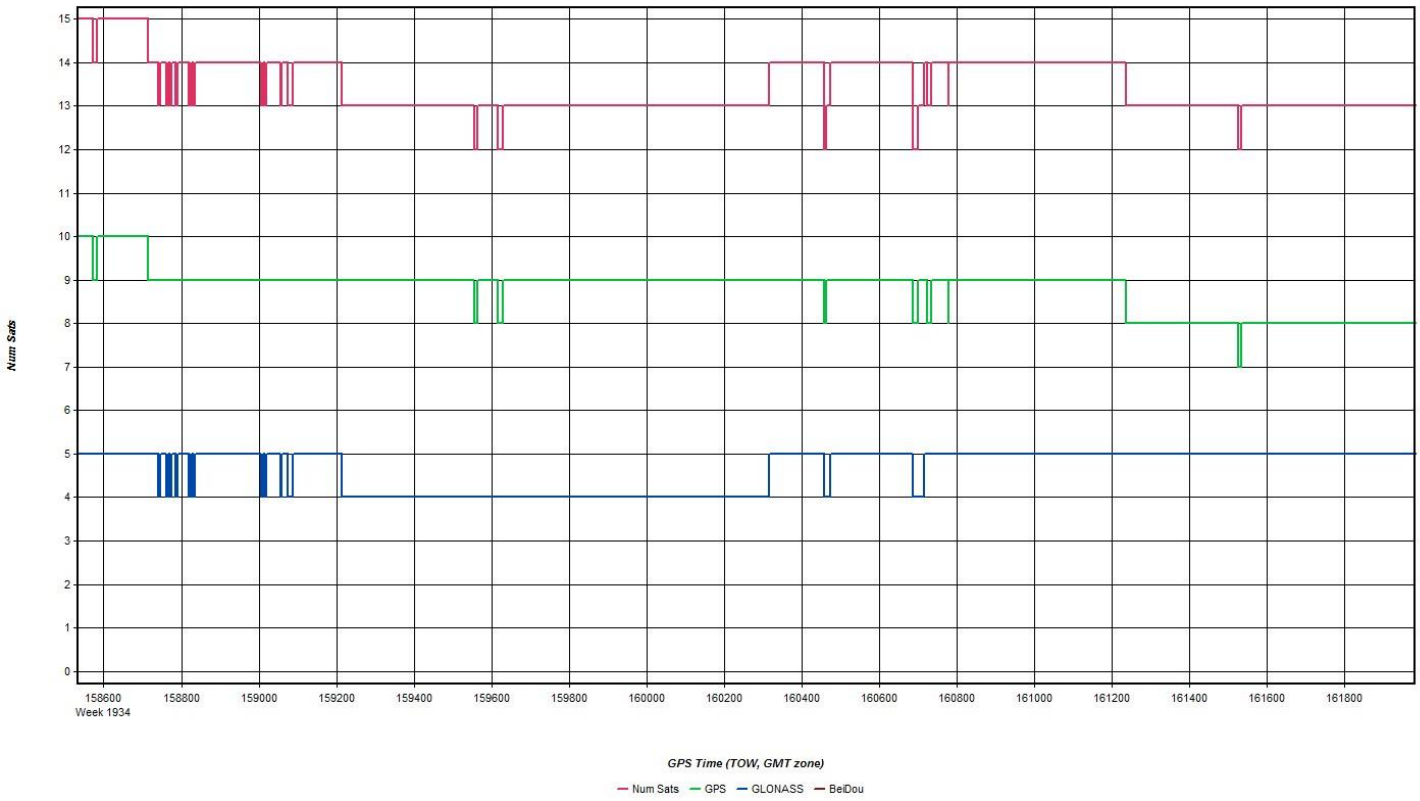
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									Fig 8's
4014	180	1946	2001	147	1.7/17	5803	+9	0	
4015	0	2005	2019	151	1.2/17	5819	-9	0	
4016	180	2022	2036	130	1.6/17	5730	+11	0	
4017	0	2041	2054	136	1.3/15	5793	-9	0	
Xtic	270	2058	2101	138	1.3/15	5811	+2	0	unplanned

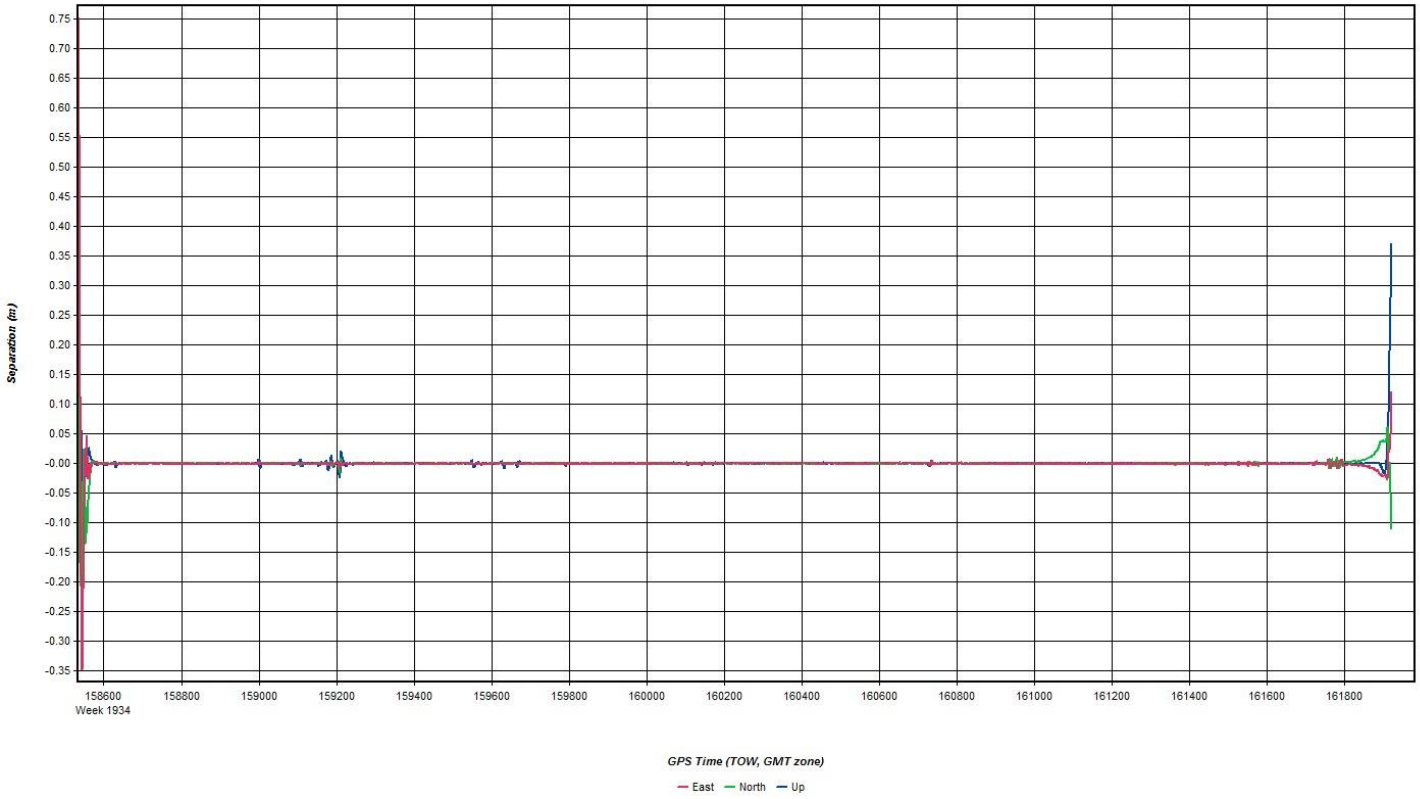
0130 Total Hobbs = 6.8
B Hobbs = 1.9
Online = 1.1
mob = 0.8
Online = 5.1
mob = 1.7

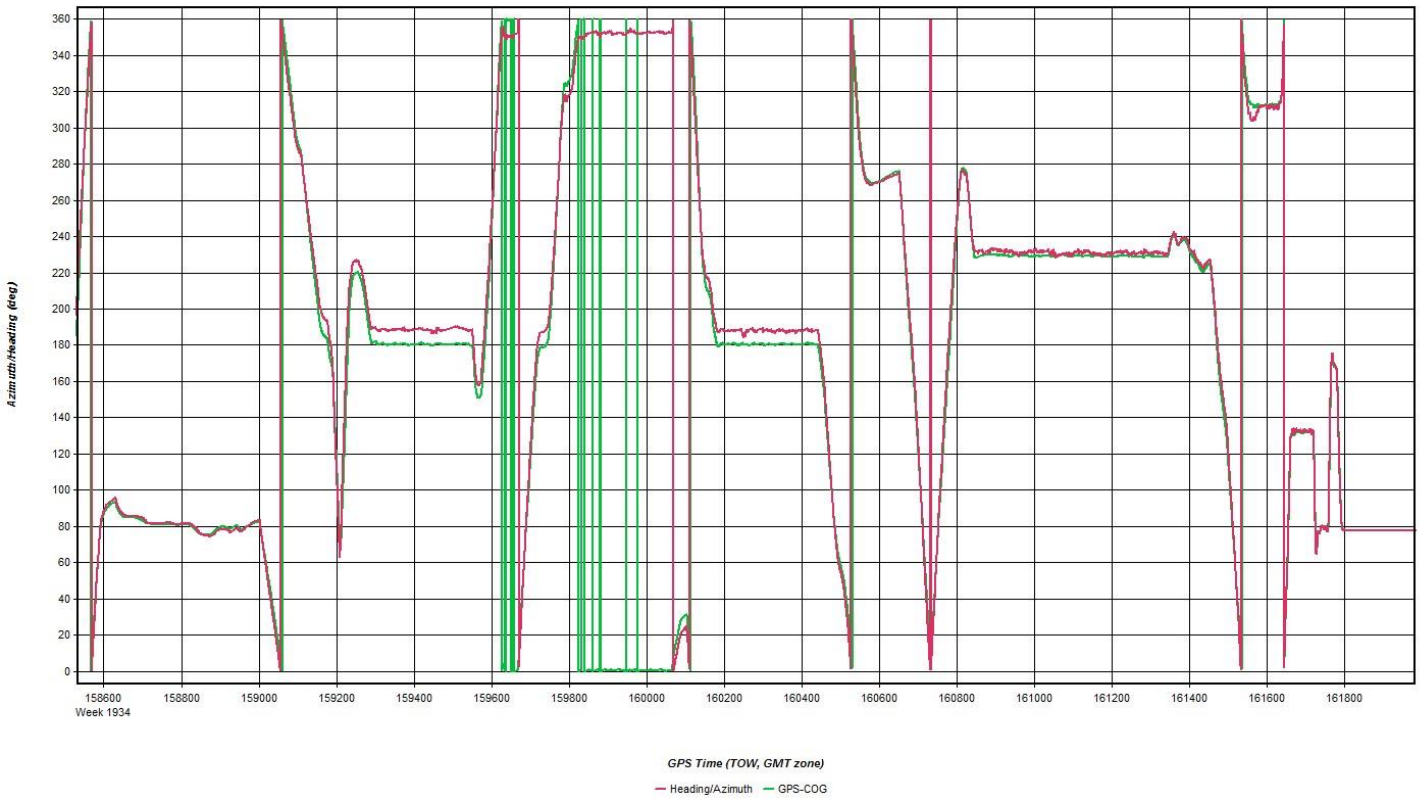
Total Proj Lines: Lines Flown: 4 Lines Remain: Online Time: 1.9 Mob Time: 0.8 Notes:

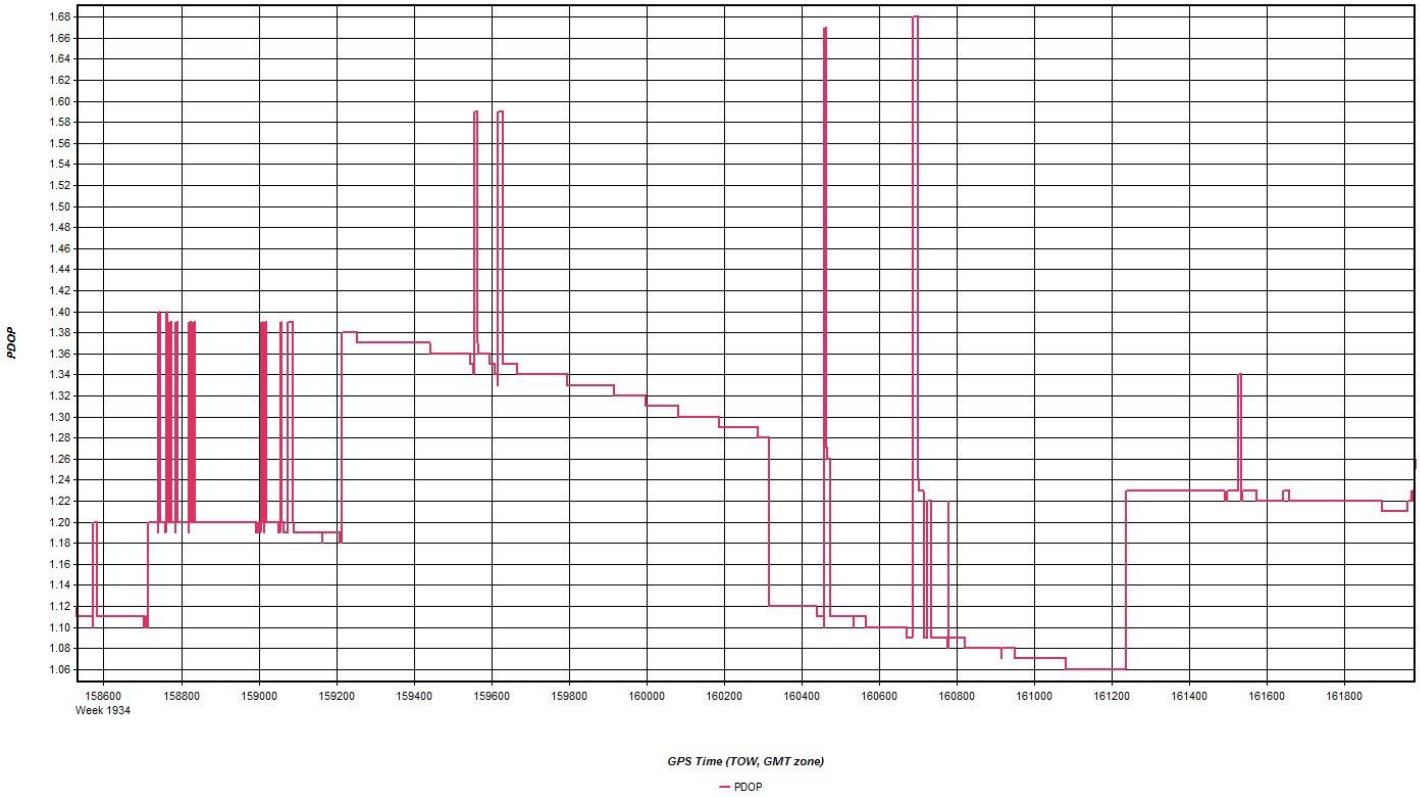
Jan 30, 2017-C (N208NR, SN8239)

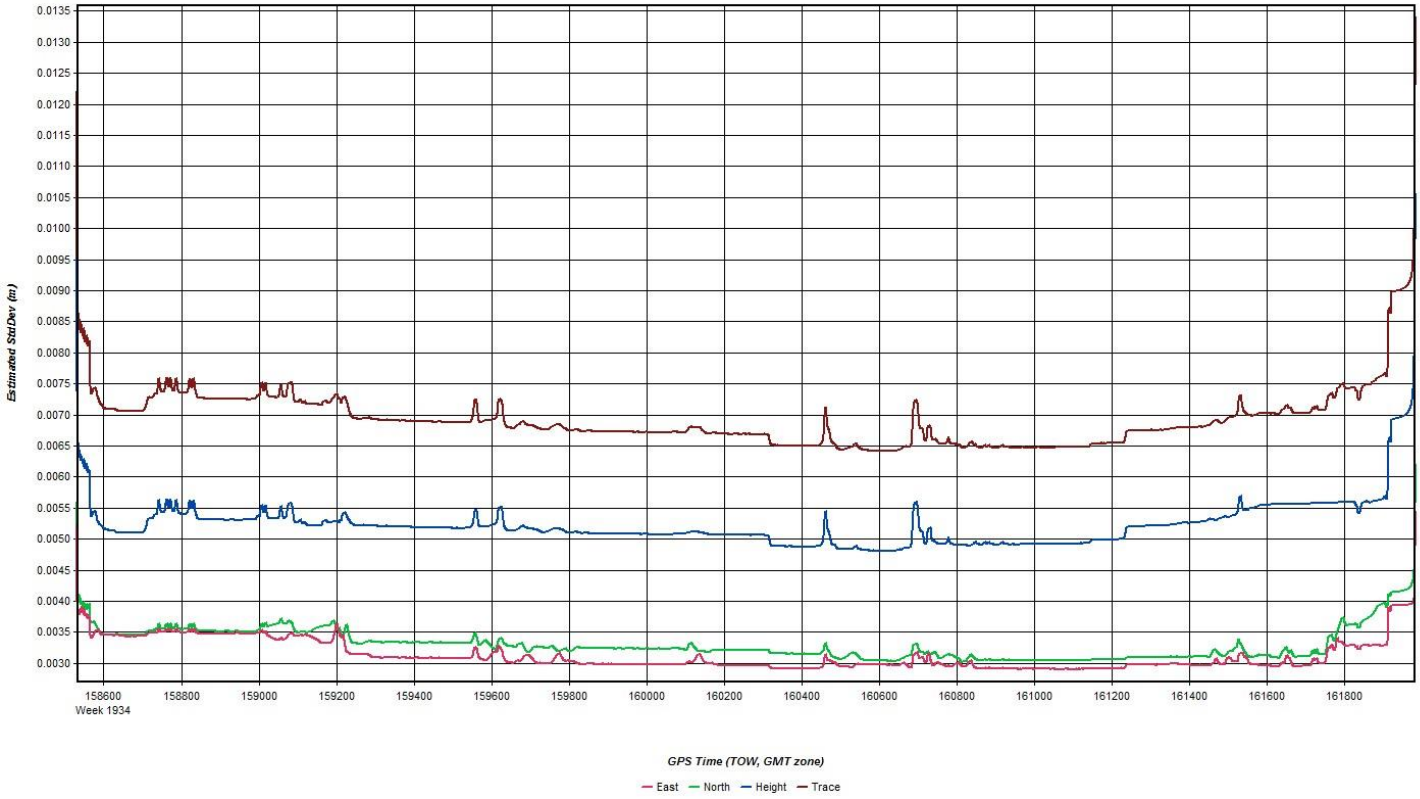


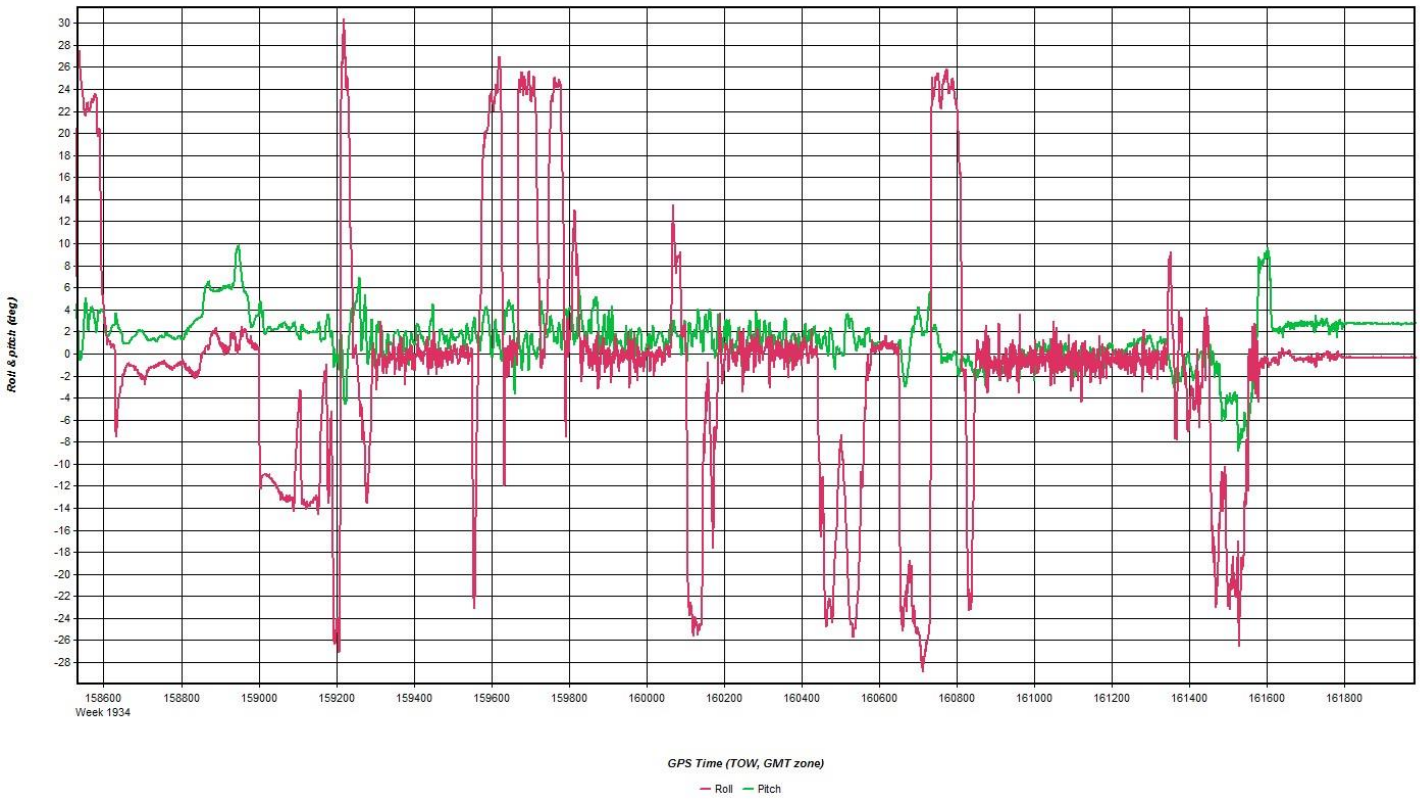

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

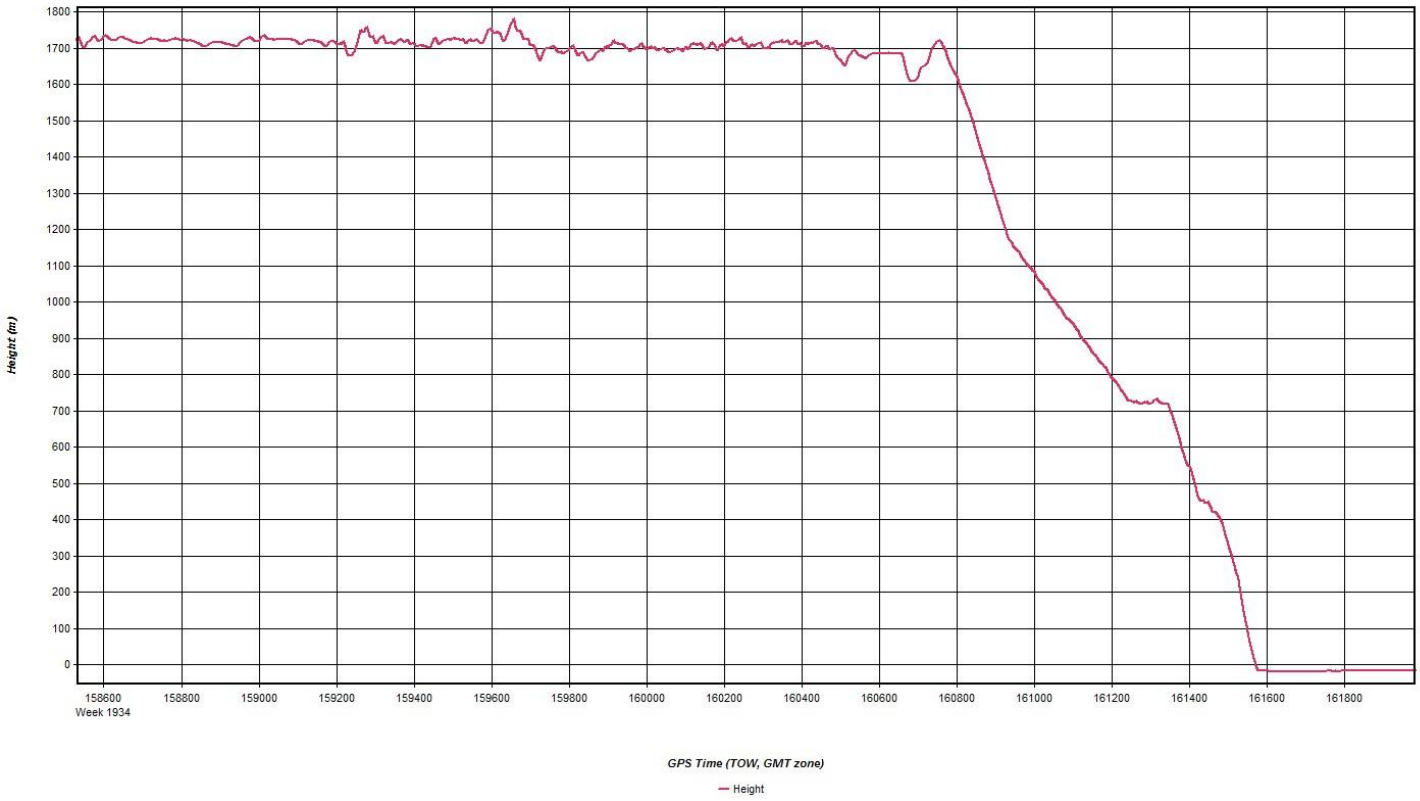

Separation (m)
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
East
North
Up

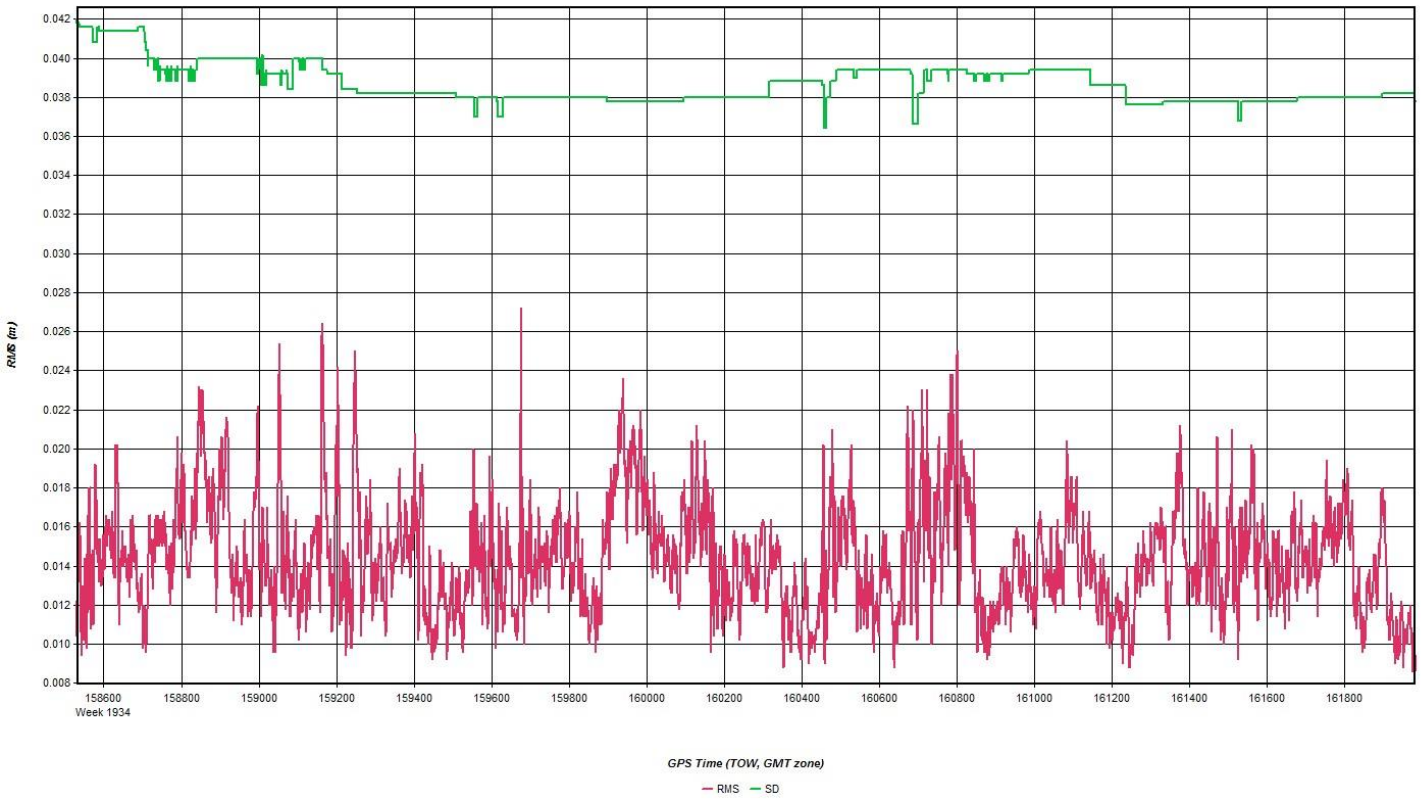

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

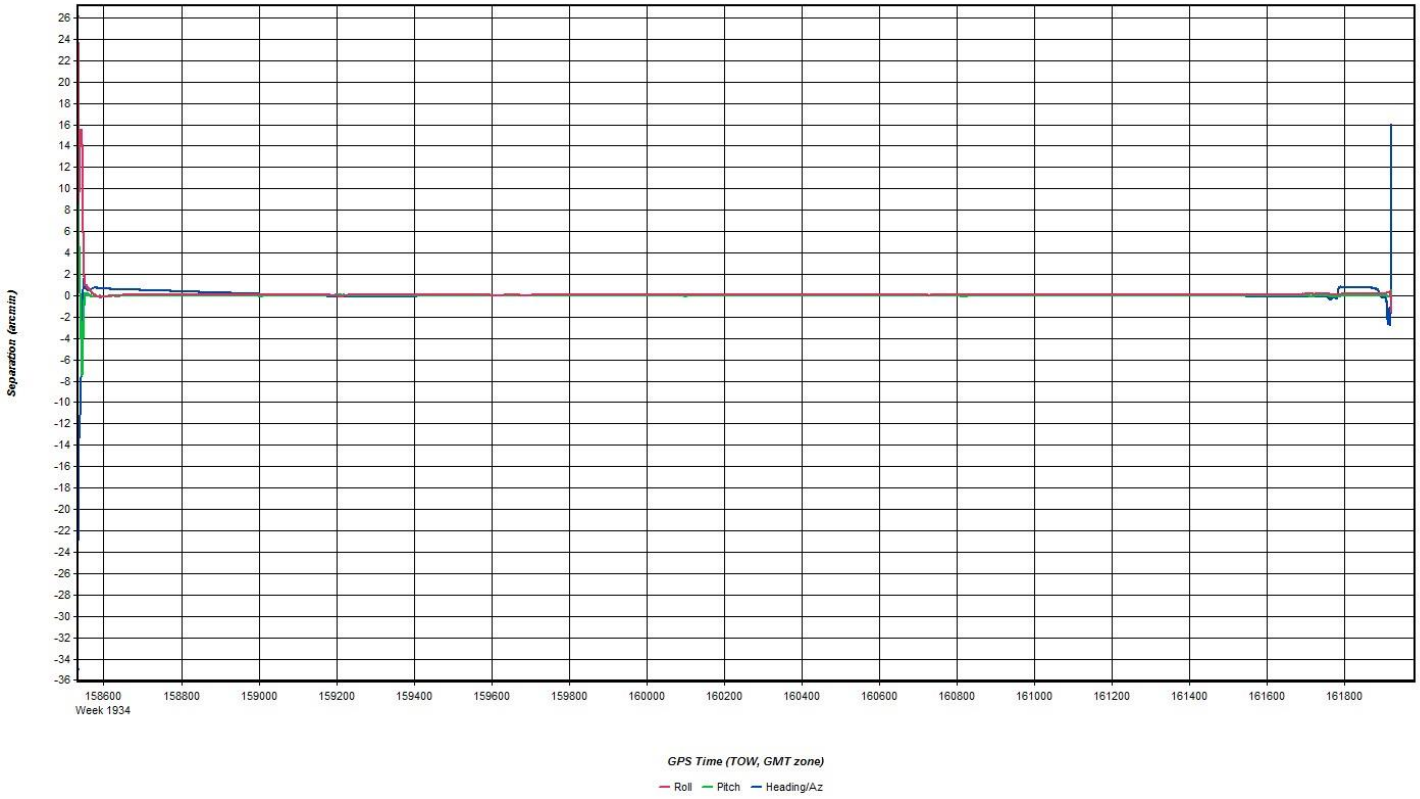

PDOP
1.68
1.66
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
PDOP

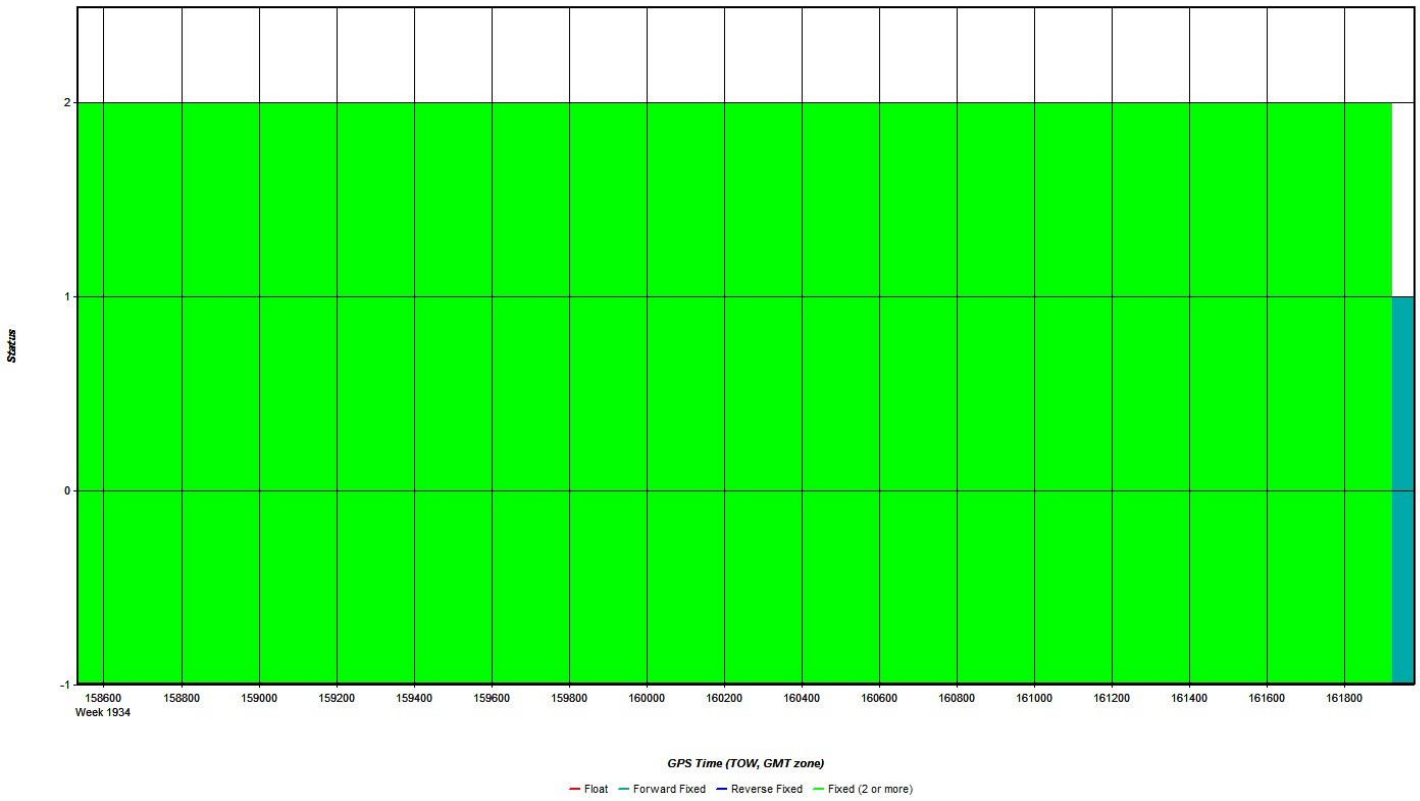

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
East
North
Height
Trace

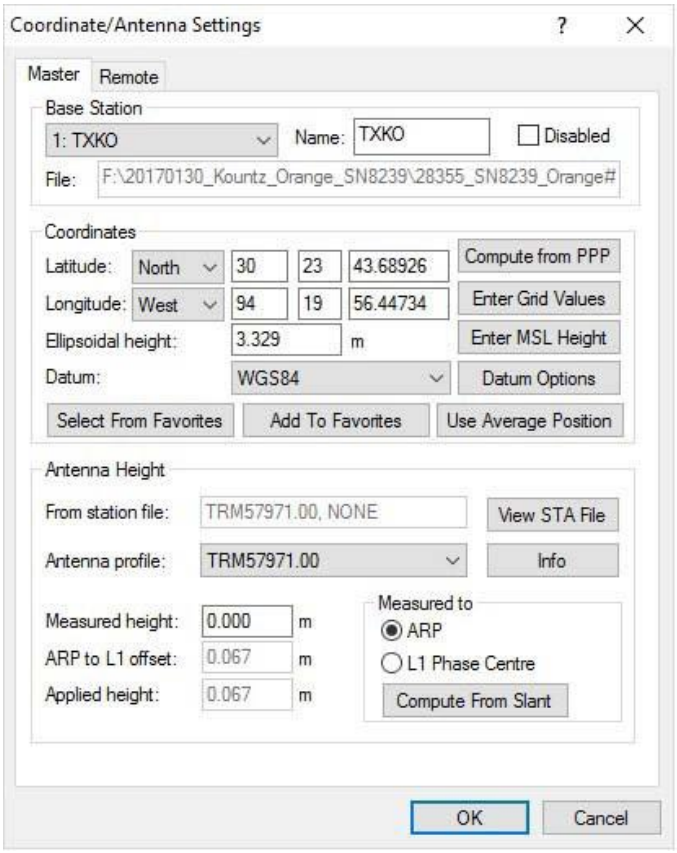

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
Roll
Pitch

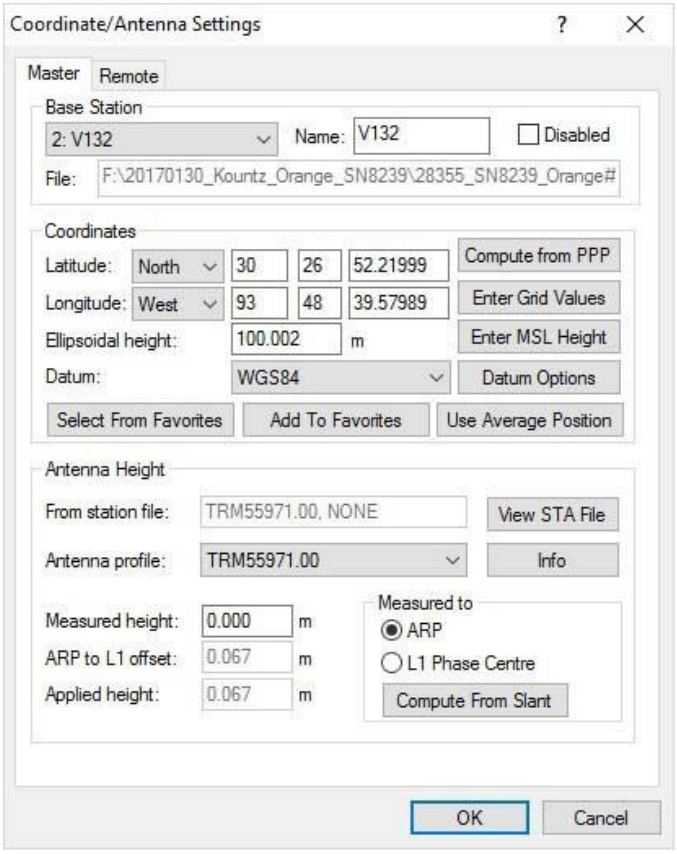

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
RMS
SD

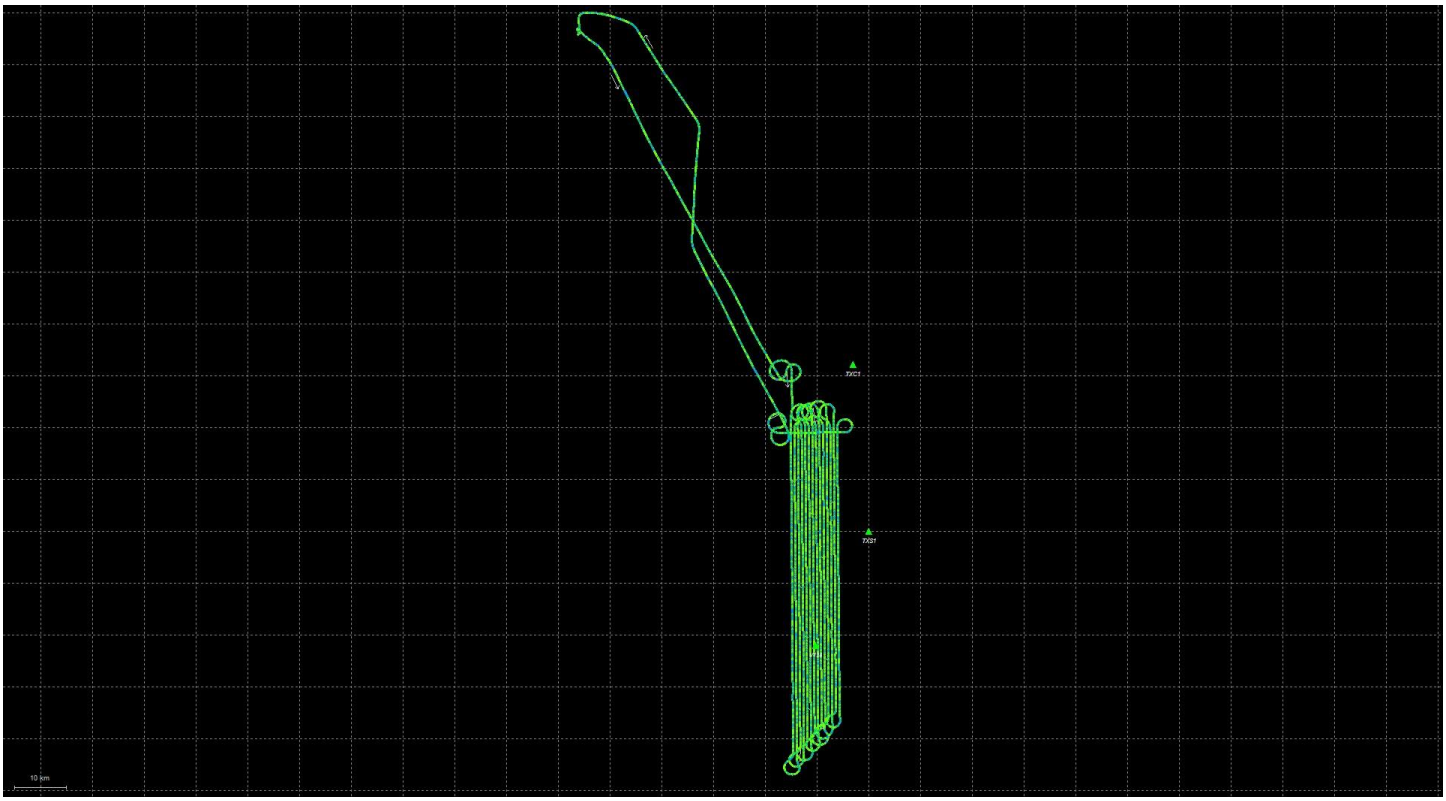

Separation (arcmin)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

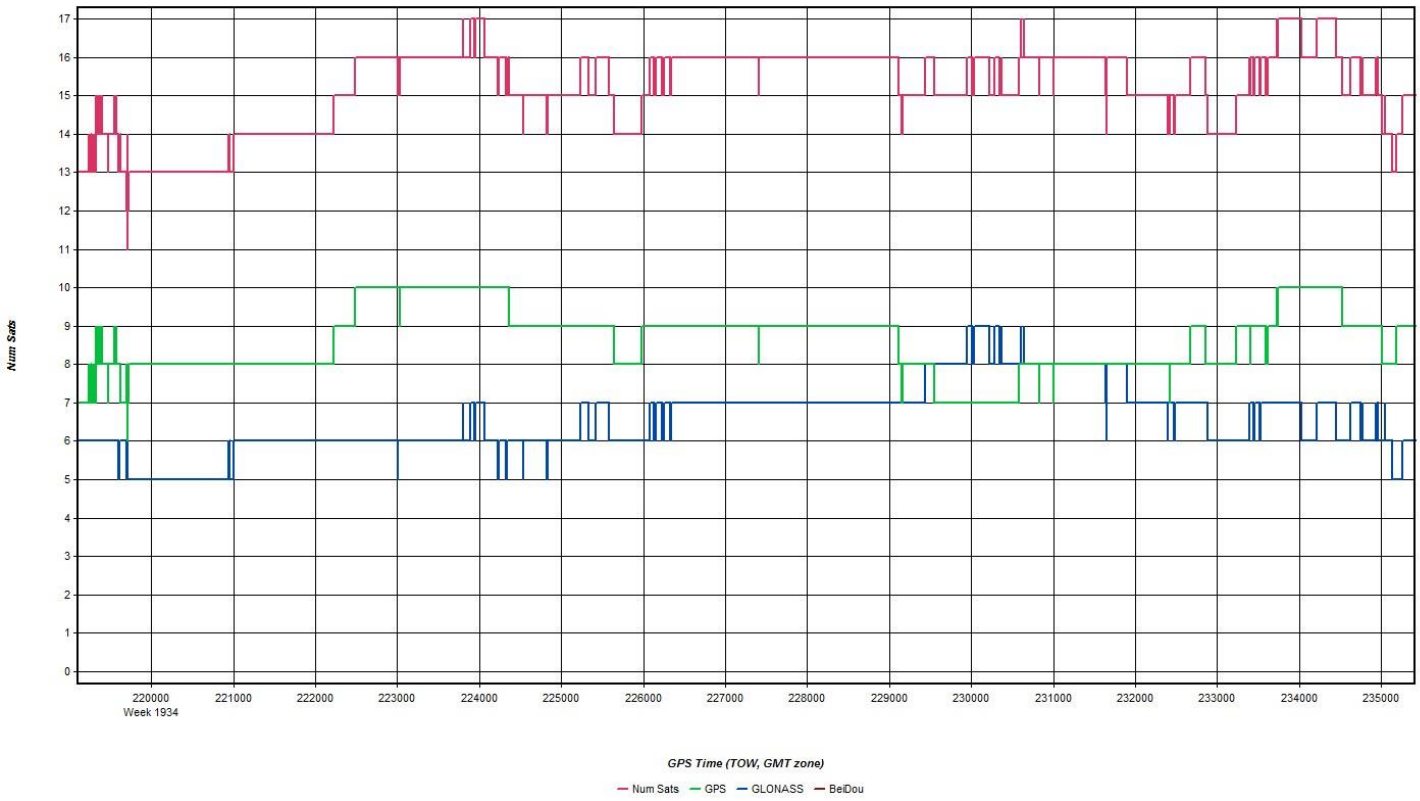

Status
2
1
0
-1
158600
Week 1934
158800
159000
159200
159400
159600
159800
160000
160200
160400
160600
160800
161000
161200
161400
161600
161800
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

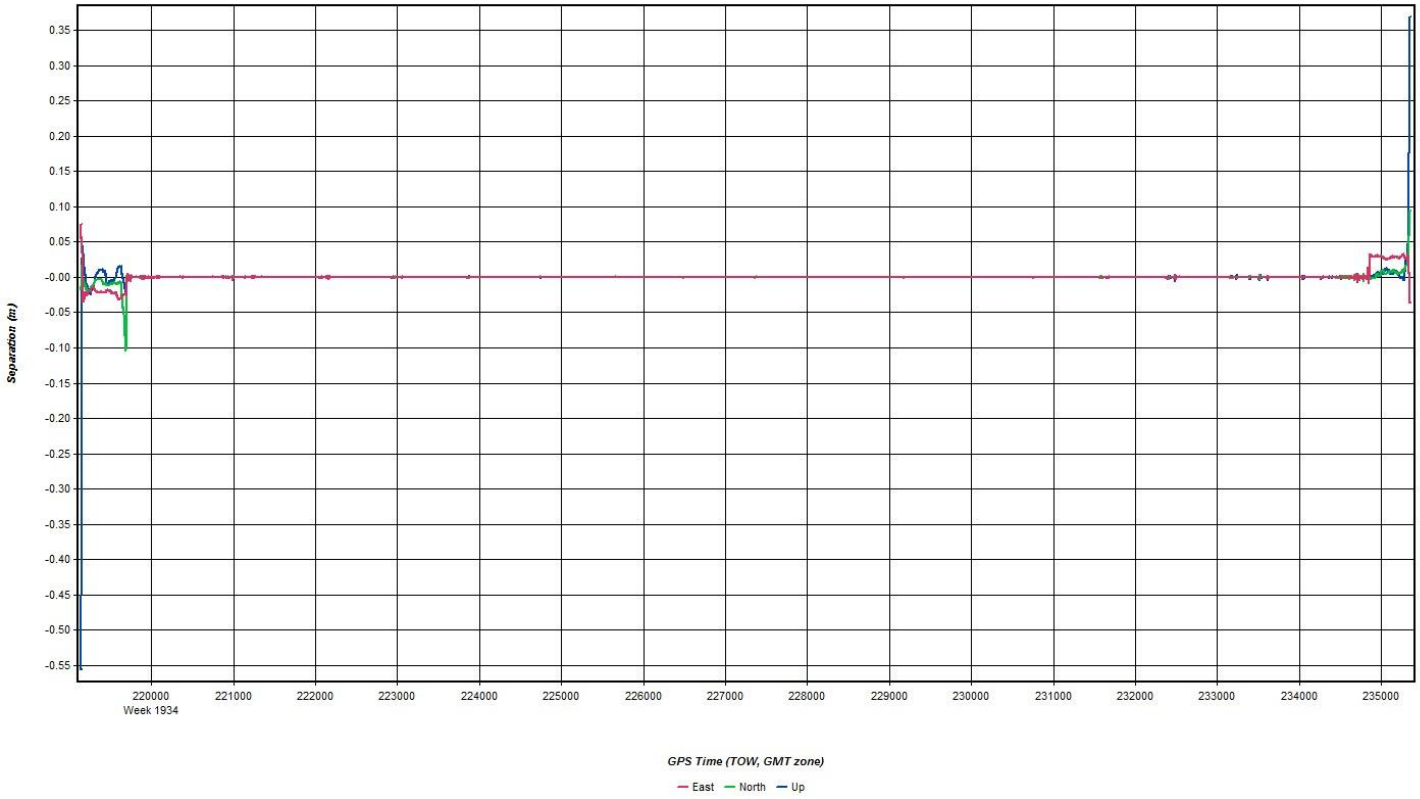

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXKO
Name:
TXKO
Disabled
File:
F:\20170130_Kountz_Orange_SN8239\28355_SN8239_Orange#
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

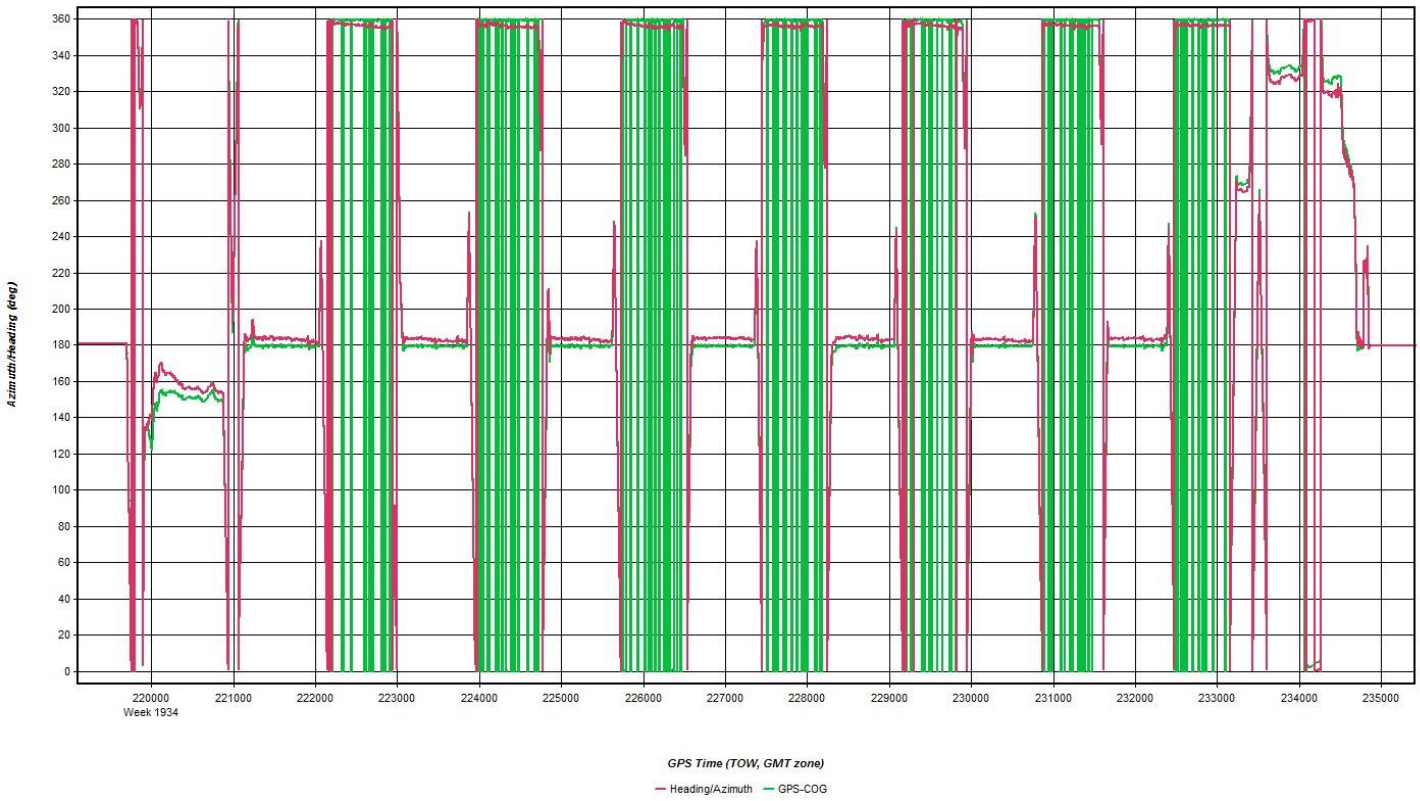


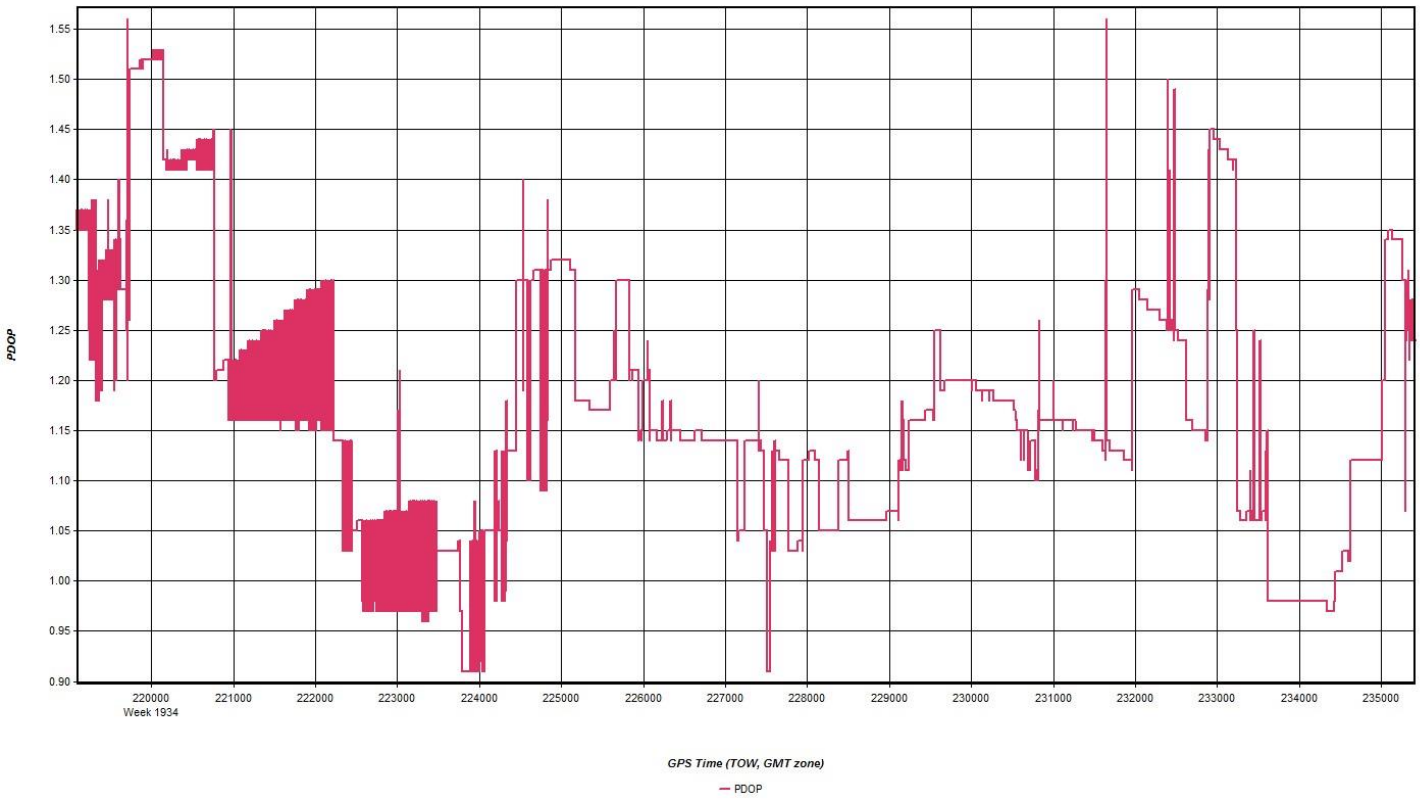
Jan 31, 2017-A (N812TB, SN7178)

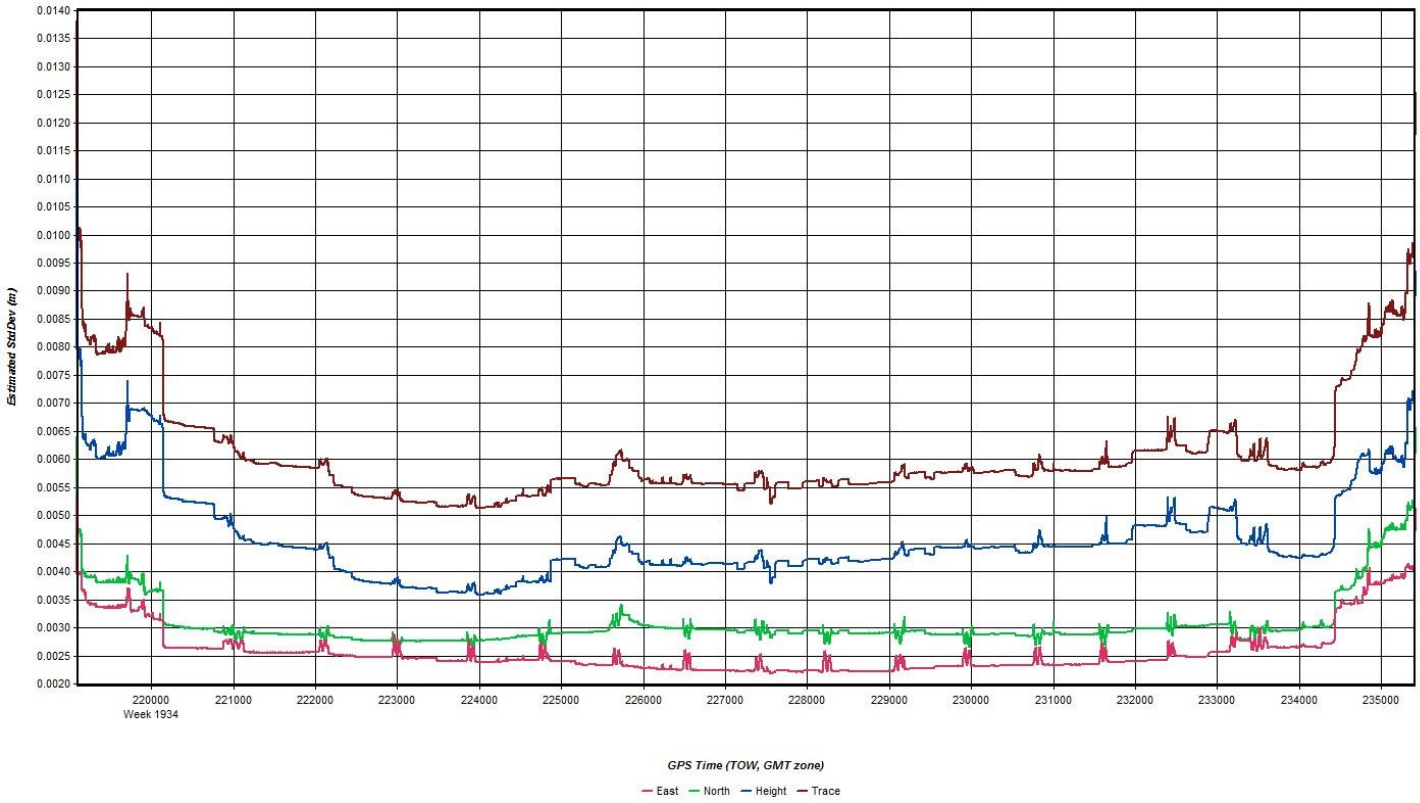


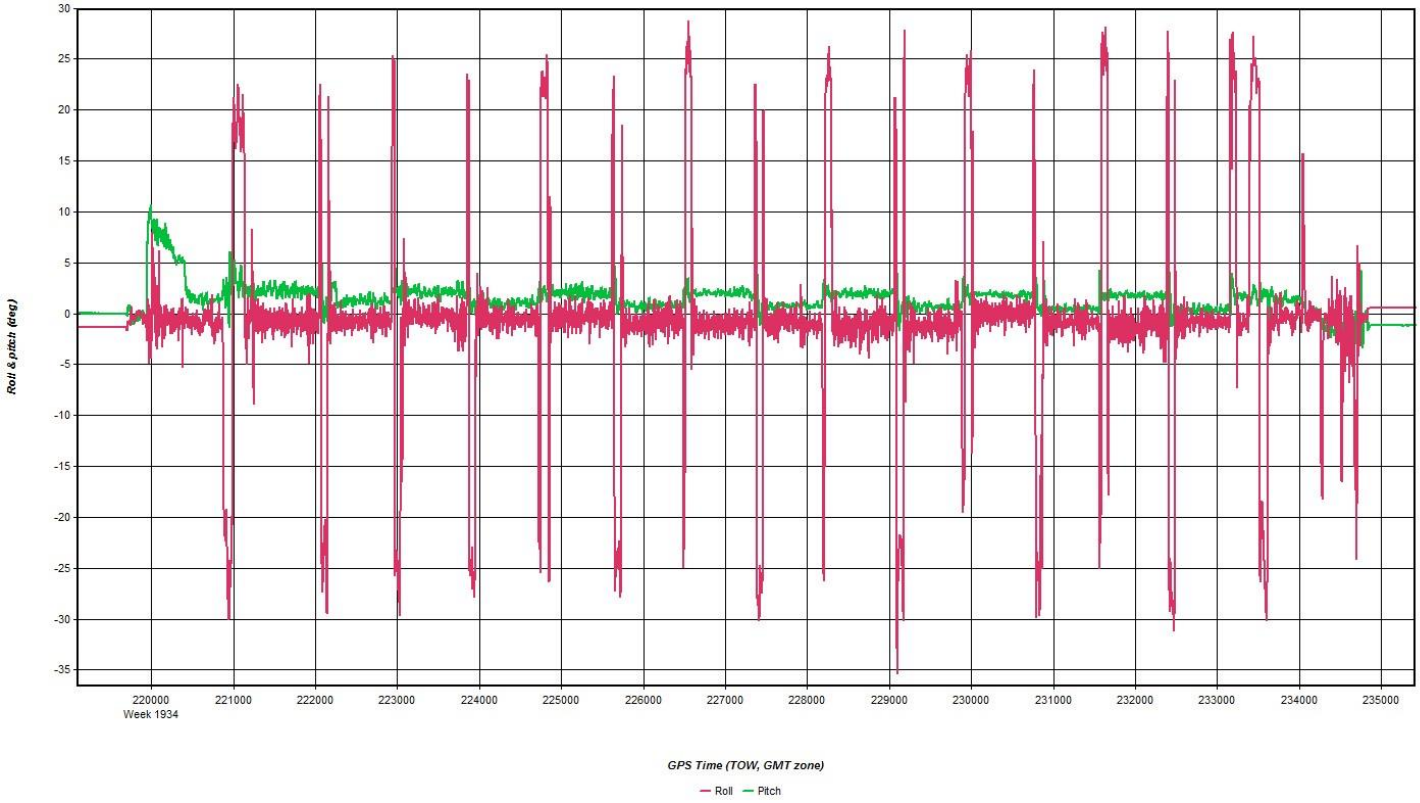

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

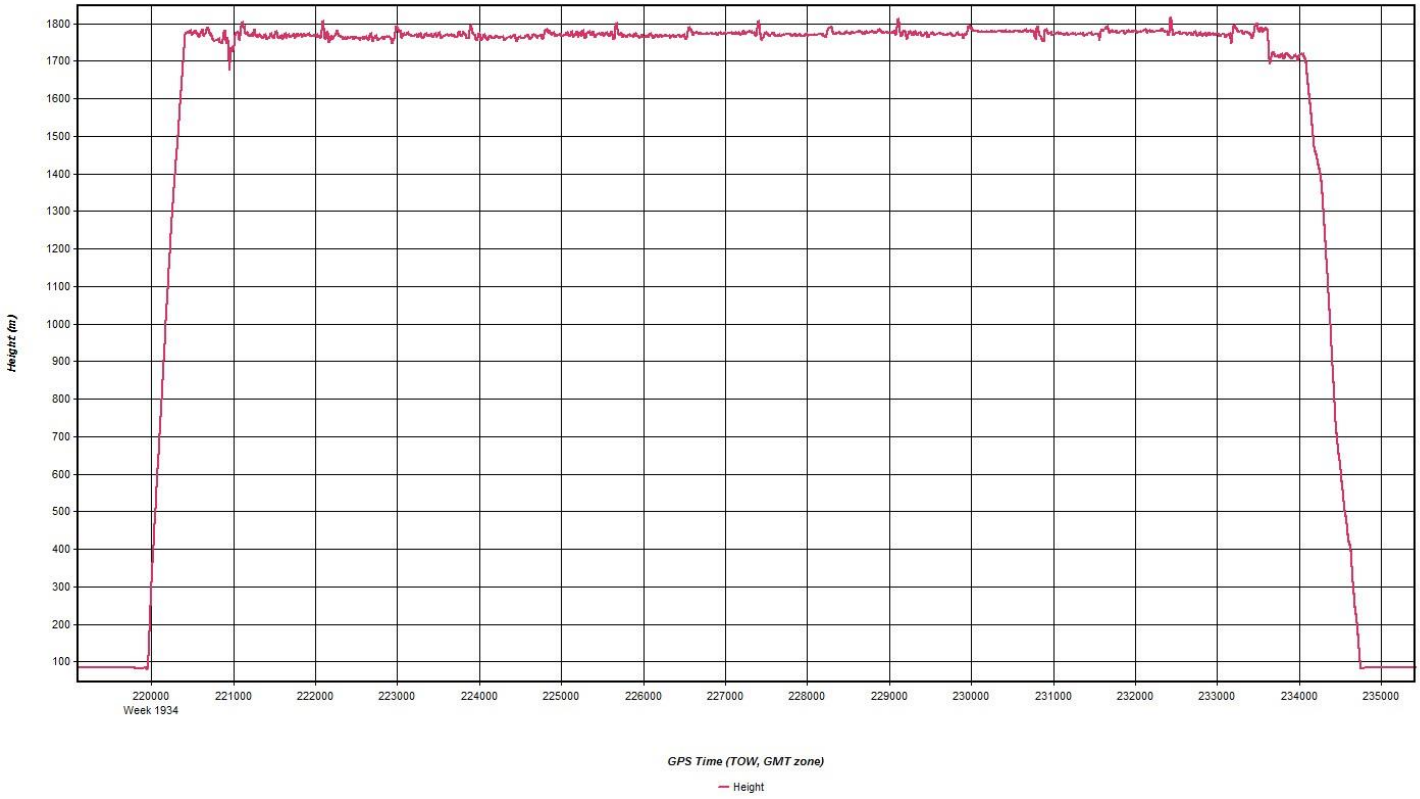

Separation (m)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
East
North
Up

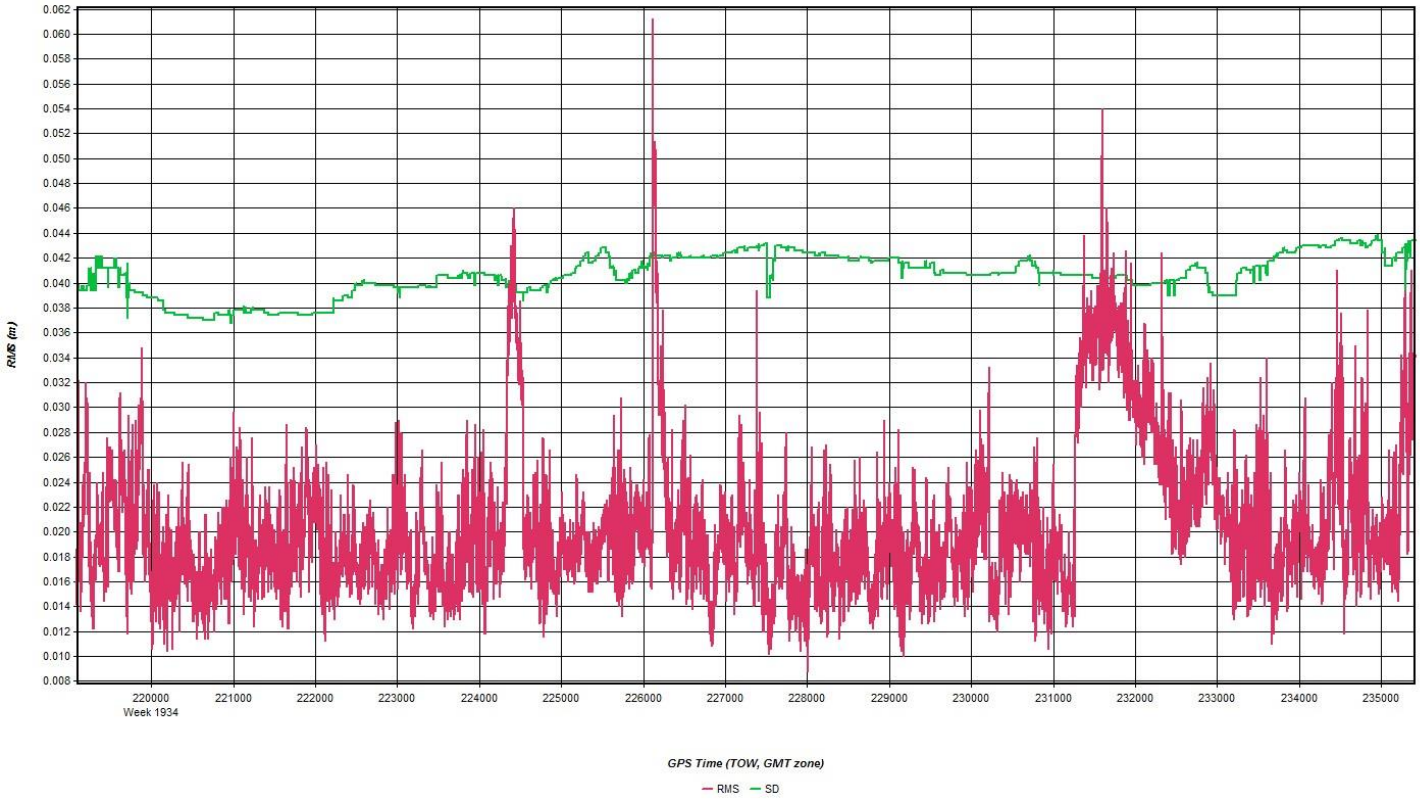

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

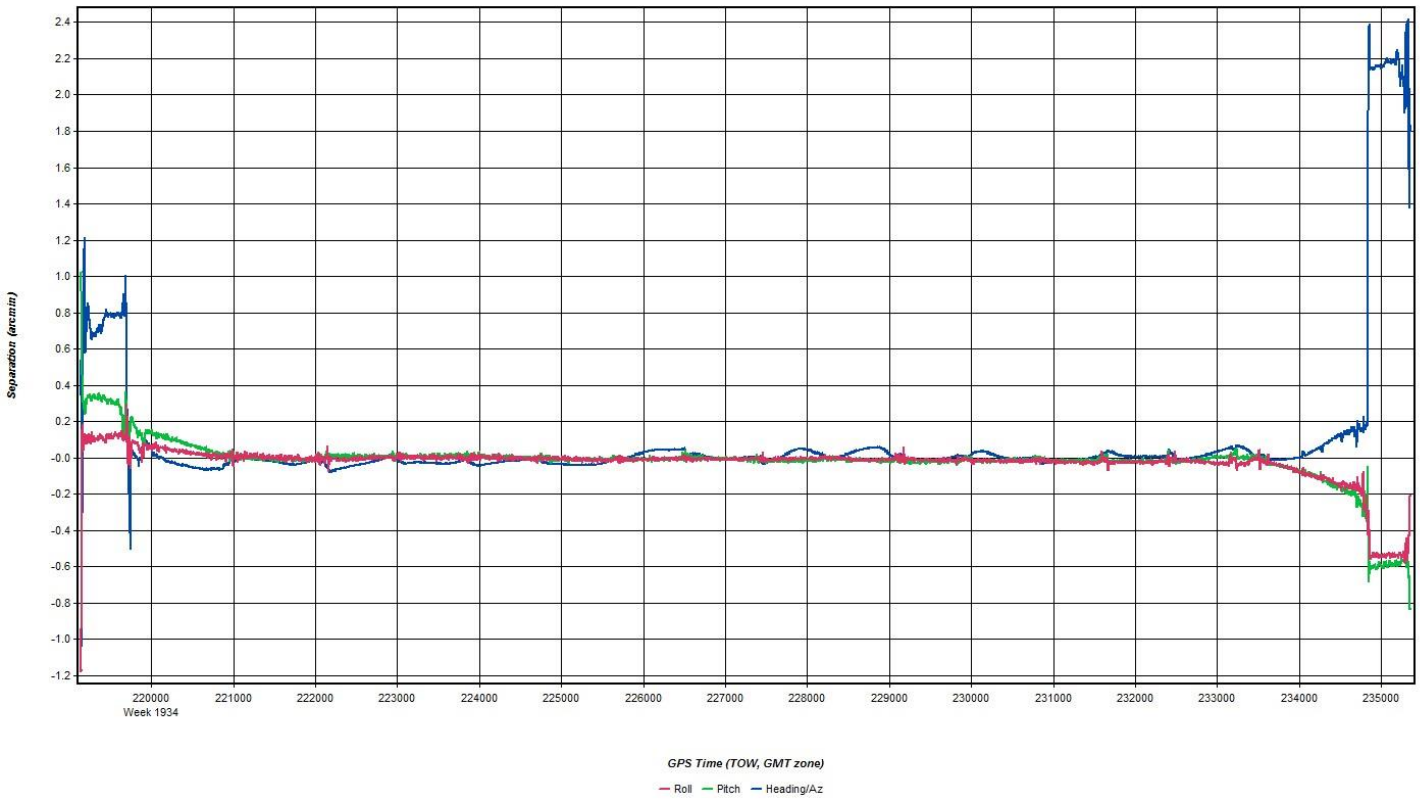

PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
PDOP

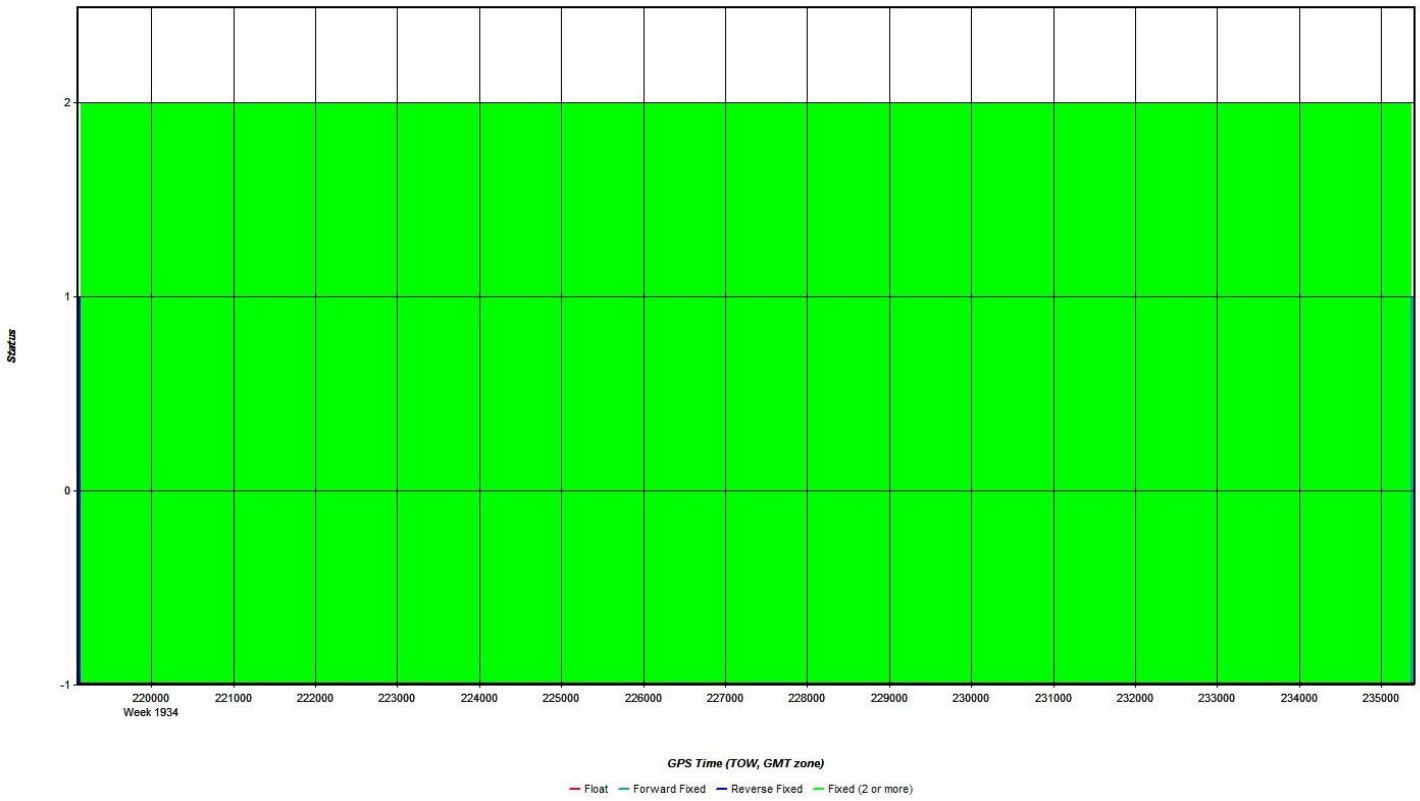

Estimated StdDev (m)
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

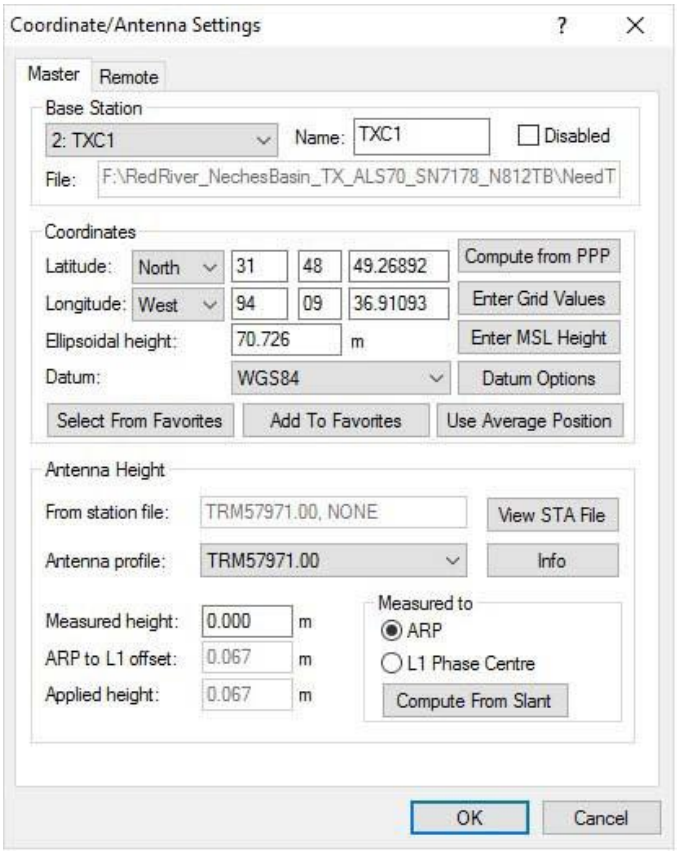

Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Roll
Pitch

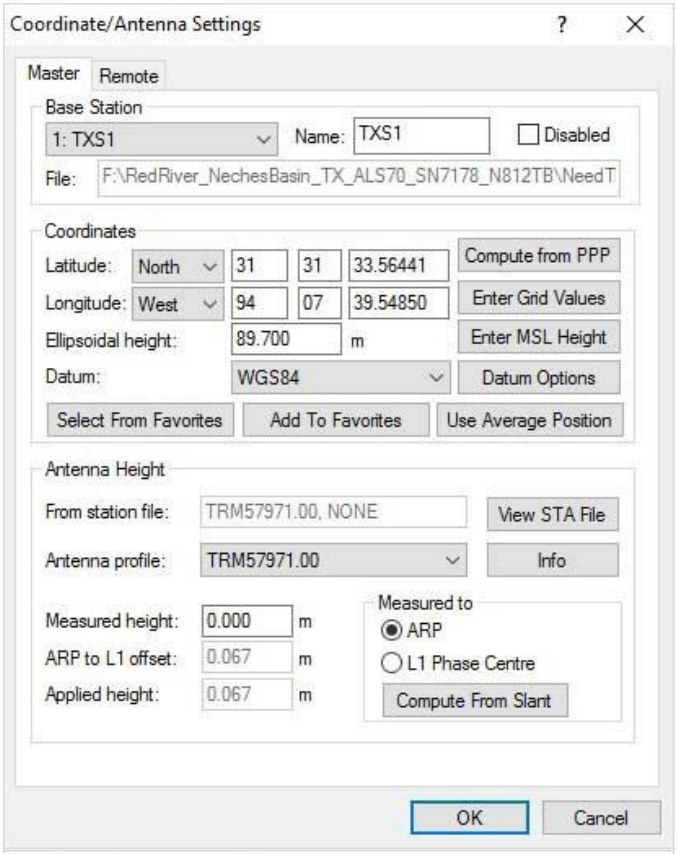

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Height

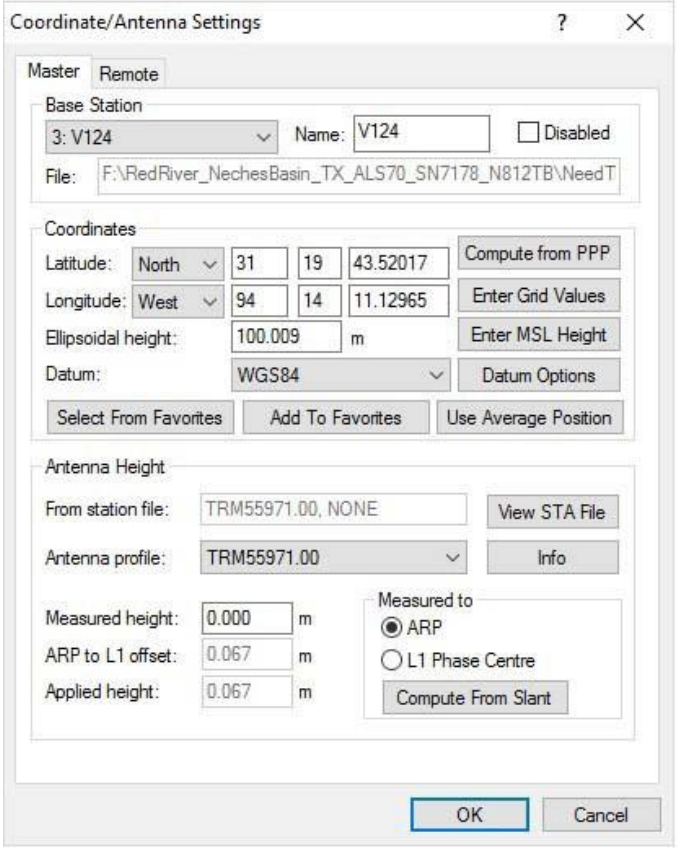

RMS (m)
0.062
0.060
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
-0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
220000
Week 1934
221000
222000
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXC1
Name:
TXC1
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
31
48
49.26892
Compute from PPP
Longitude:
West
94
09
36.91093
Enter Grid Values
Ellipsoidal height:
70.726
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXS1
Name: TXS1
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 31 33.56441
Longitude: West 94 07 39.54850
Ellipsoidal height: 89.700 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V124
Name: V124
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 19 43.52017
Longitude: West 94 14 11.12965
Ellipsoidal height: 100.009 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

1-31-17 A

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-31-17 A Lift: (A) B C D E Pg 1 of 2

Project: NECHES Basin TX Proj #: 28355 Flight Mgmt File: 20170131_124845

Aircraft: N812TB Begin Hobbs: 4334.0 End Hobbs: 4338.1 Total: 4.1 Pilot: JBillington Co-Pilot: Tech: JSwan

Dep Apt: GGG Dep Time (Lcl): 704 (Z): +6 Arr Apt: GGG Arr Time (Local): 1113 (Z): +6 Tot Time Aloft: 4.2

CORS: Y / (N) Sta 1: VRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 9 °c End: 21 °c OAT beg: 6 °c End: 11 °c Altimeter begin: 3005 end: 3005

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	Al570	7178					
	FOV 34	Scan Freq 57	MpiA Y / N	Pulses In Air	Pulse Rate 312	Power 100	PPSM

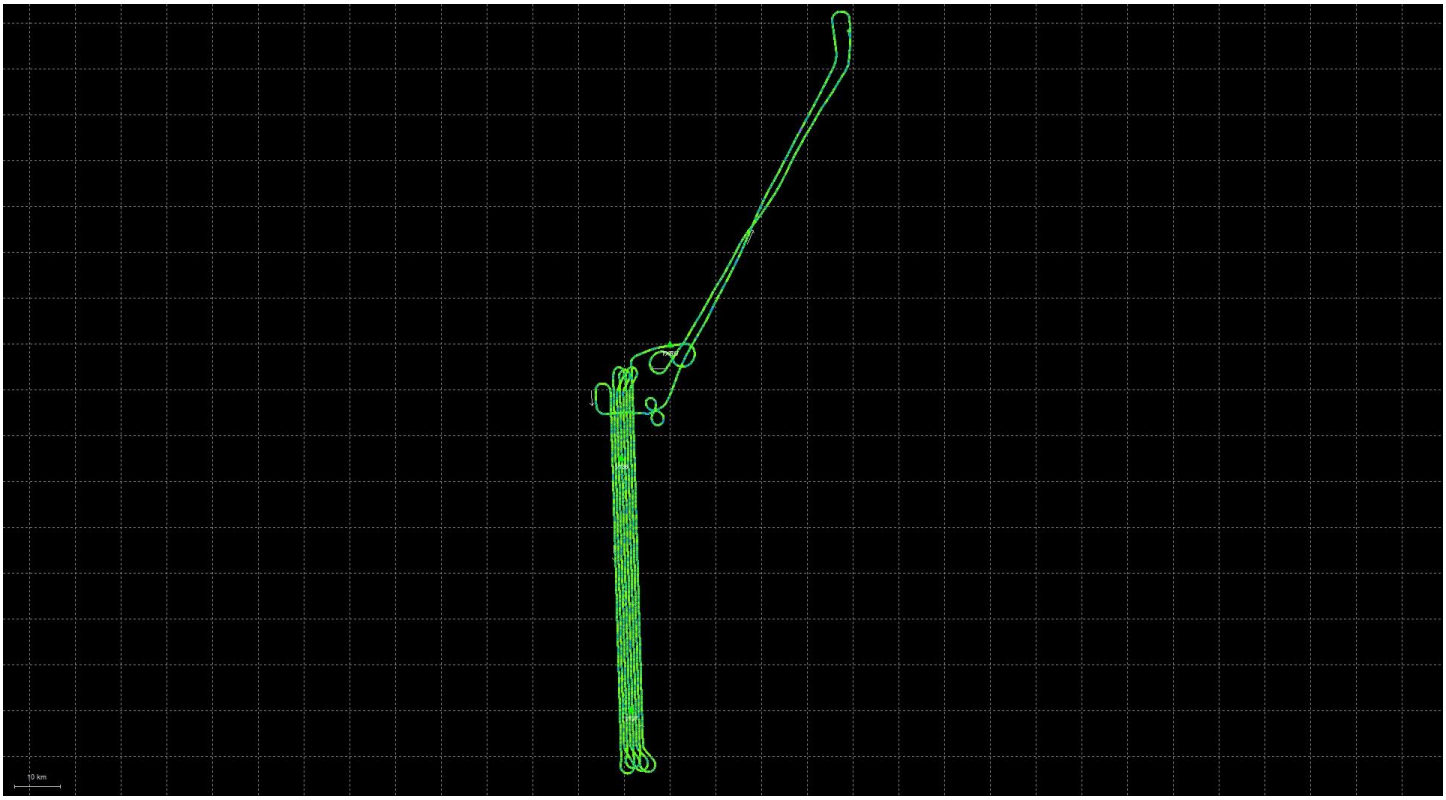
Beg CB 177 End CB 103 Tot CB Storage Name/# #2

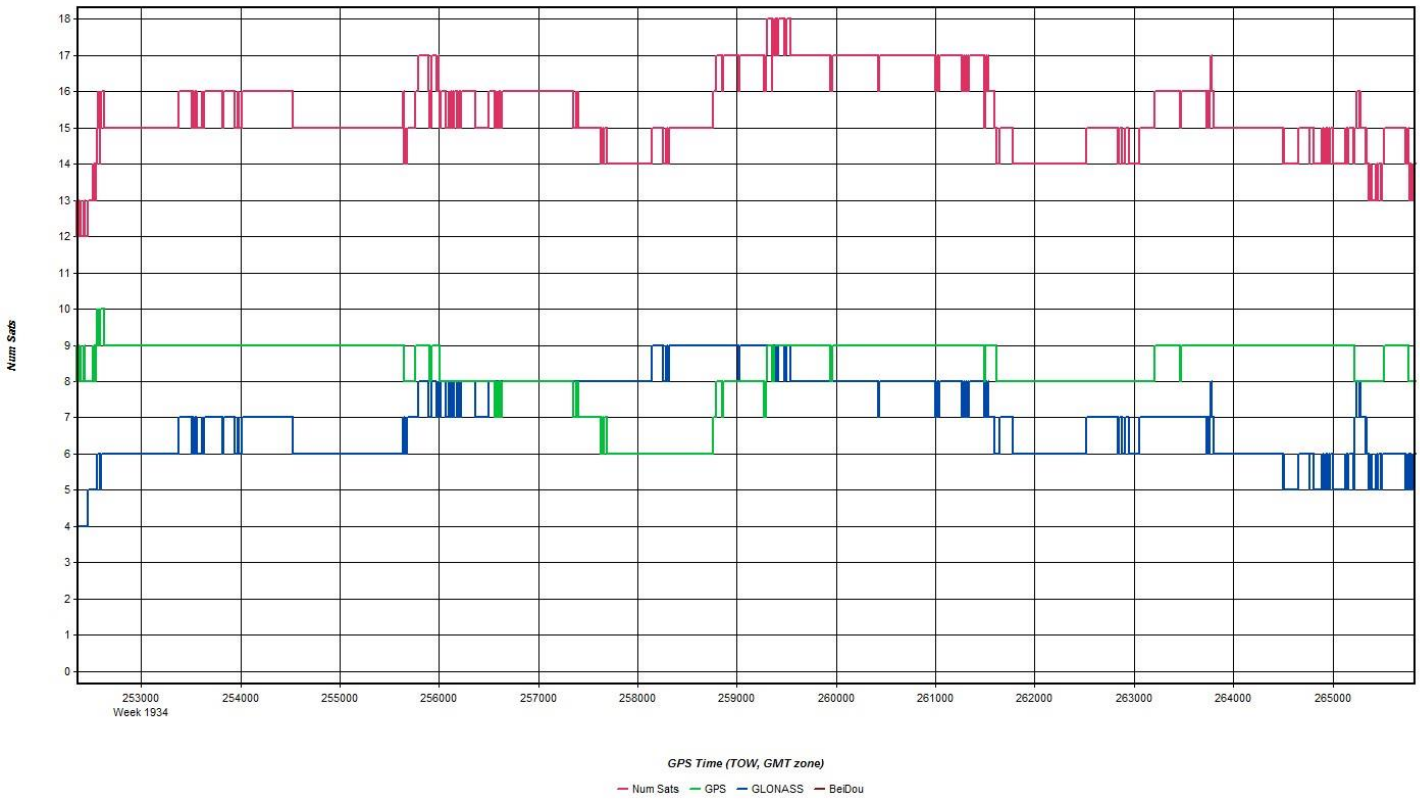
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									Fig 8's
4018	180	1327	1339	157	1.4/14	5812	+5	0	
4019	0	1343	1355	160	1.1/17	5756	-1	0	
4020	180	1358	1410	156	1.1/18	5800	+3	0	
4021	0	1412	1425	159	1.2/18	5750	-2	0	
4022	180	1427	1440	155	1.1/19	5802	+5	0	
4023	0	1442	1454	162	1.1/19	5802	-1	0	
4024	180	1456	1508	155	1.4/18	5804	+5	0	
4025	0	1511	1522	160	1.4/15	5810	-3	0	
4026	180	1525	1537	157	1.3/18	5790	+5	0	
4027	0	1539	1551	151	1.1/19	5803	-3	0	
4028	180	1554	1605	153	1.1/20	5824	+5	0	Hobbs = 4.1
4029	0	1608	1619	159	1.2/18	5830	-3	0	ONline = 3.4
4030	180	1621	1632	163	1.2/19	5811	+5	0	mob = 0.7
4031	0	1634	1645	145	1.1/20	5901	-4	0	
Xtie	270	1647	1649	155	1.0/21	5829	-5	0	San Augustine Complete!
									Fig 9's → GGG

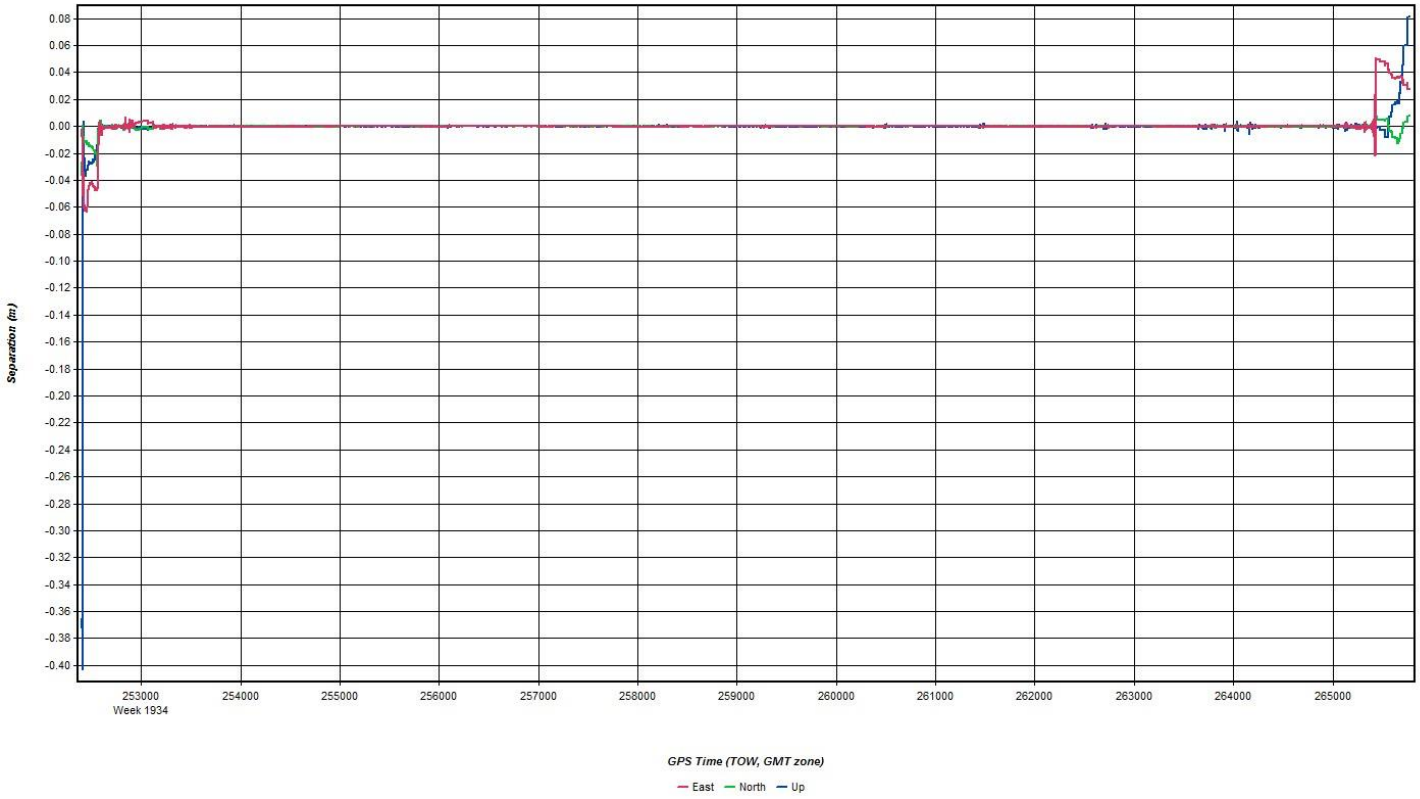
San Augustine

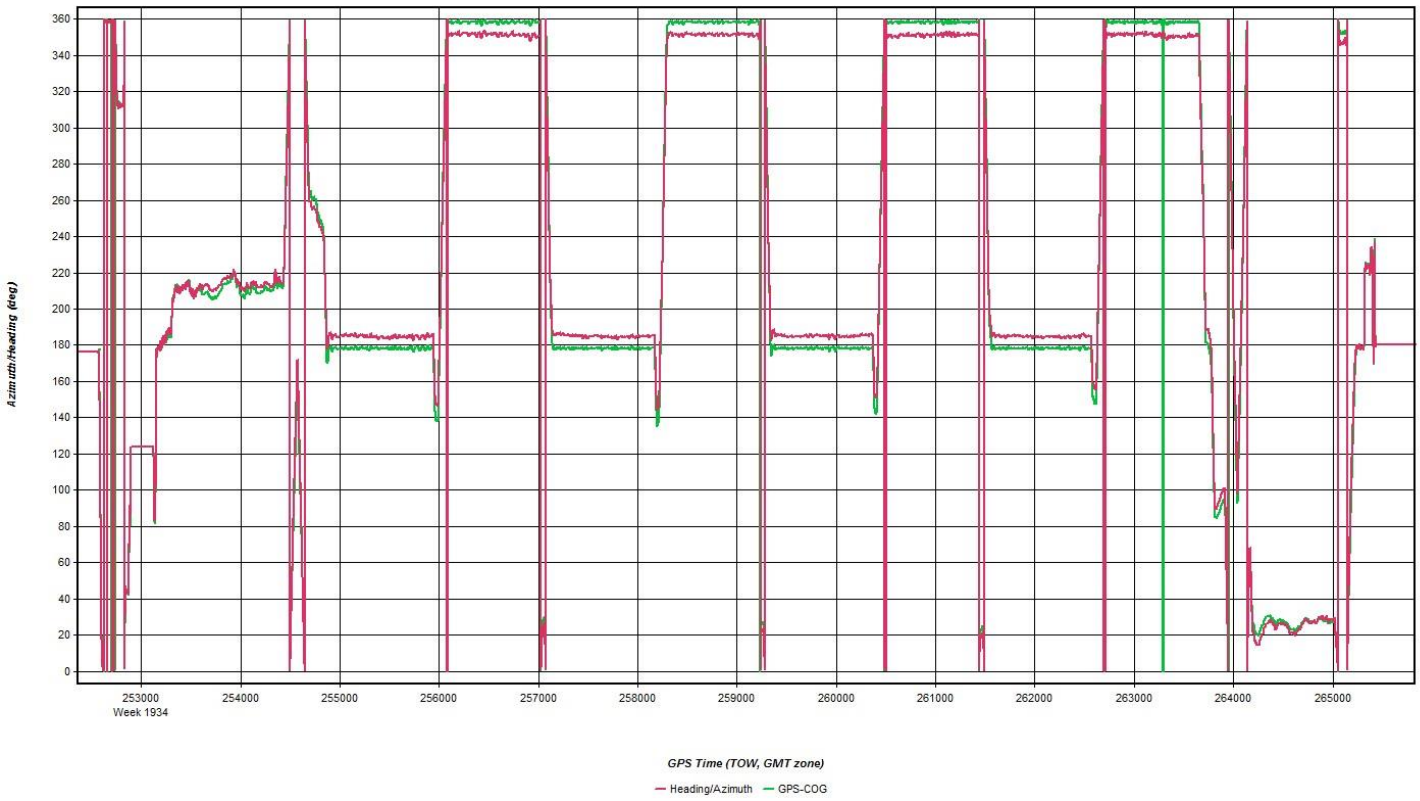
Total Proj Lines: Lines Flown: 14 Lines Remain: OnLine Time: 3:22 / 3.4 Mob Time: Notes:

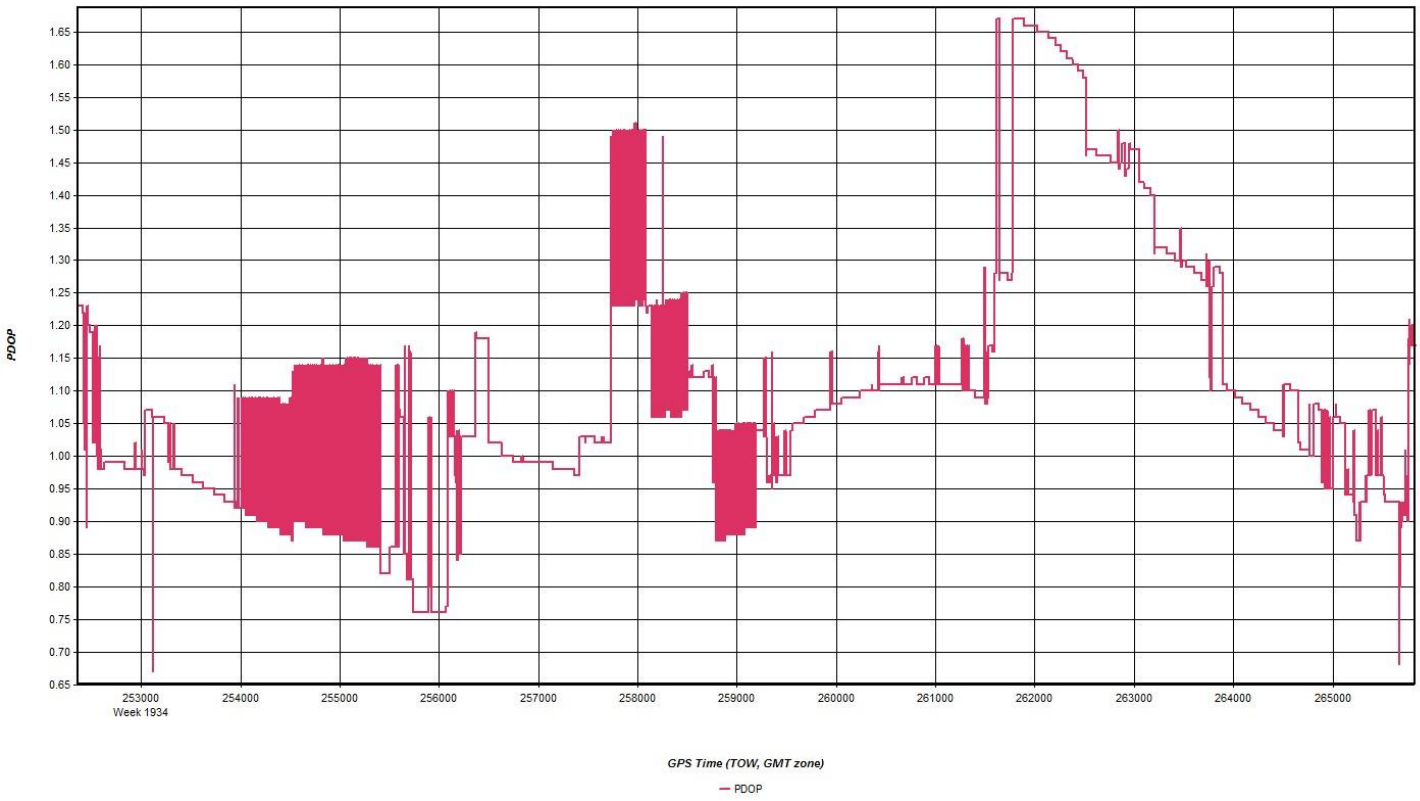
Jan 31, 2017-A (N812TB, SN7178)

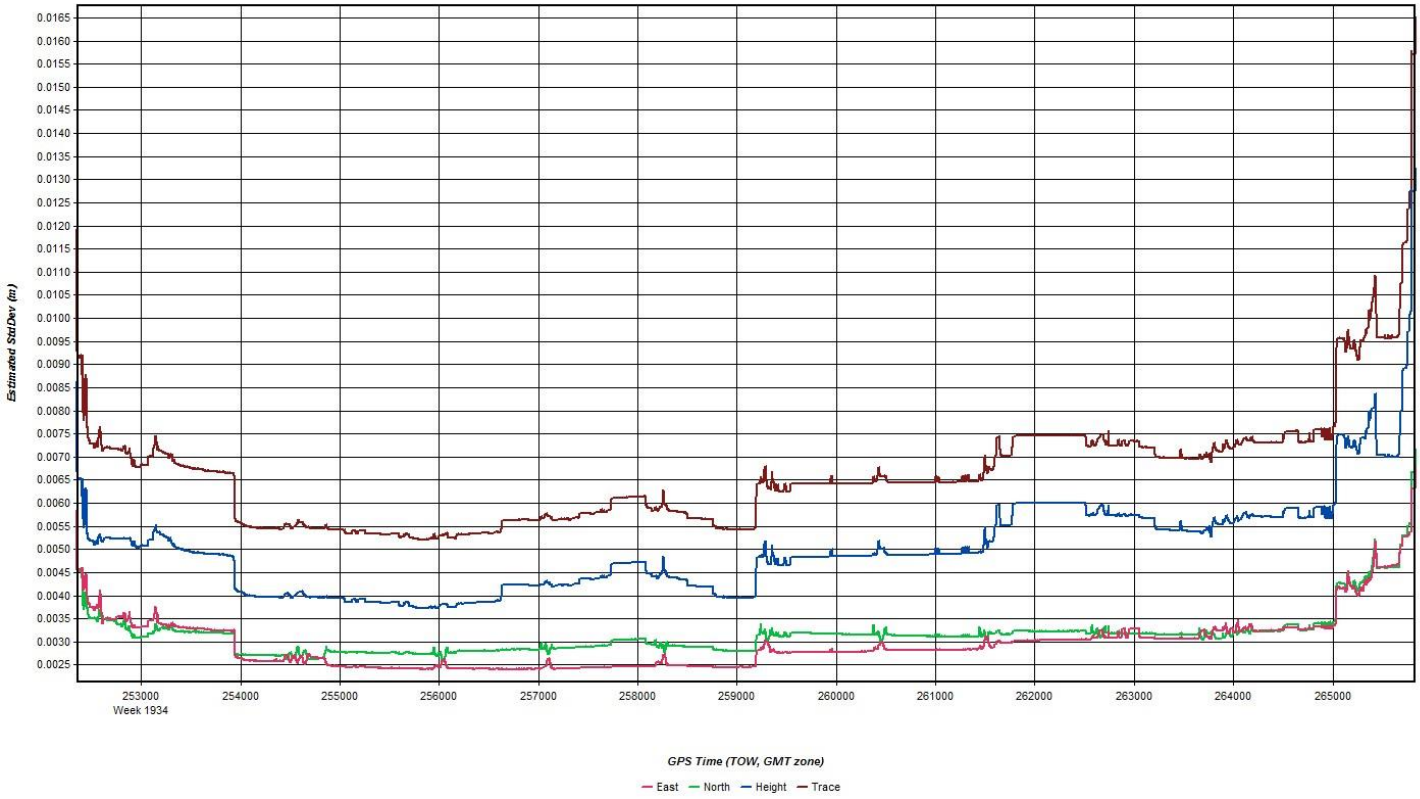


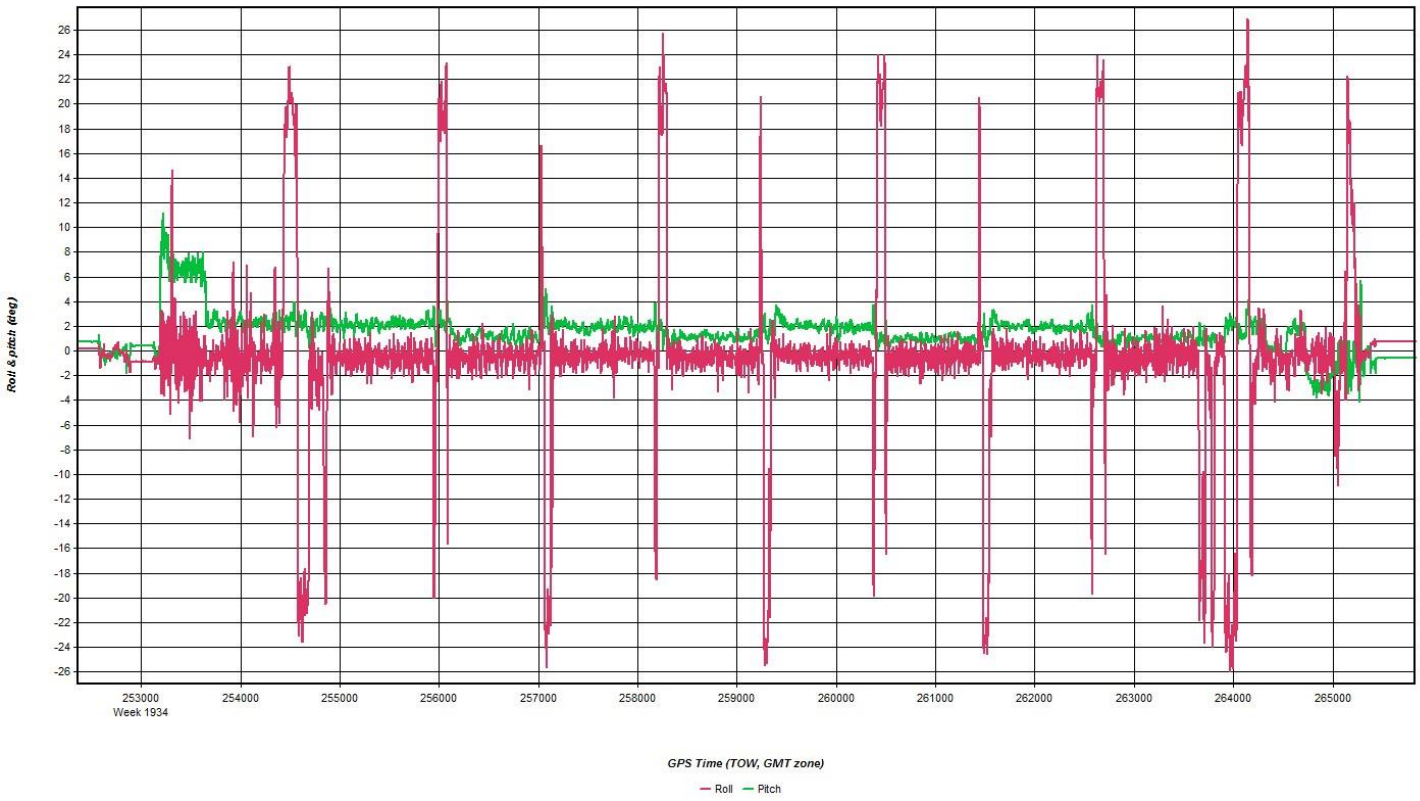

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

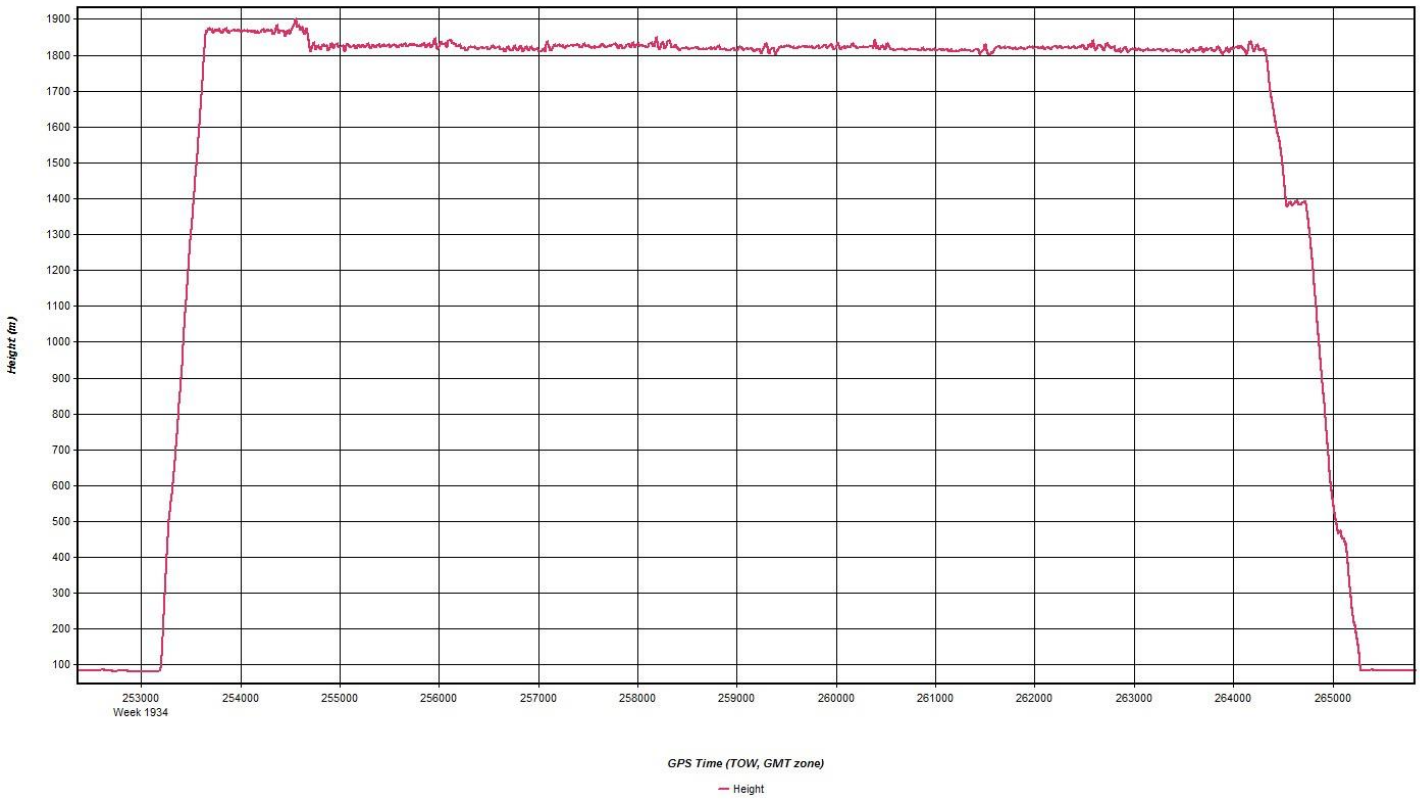

Separation (m)
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
-0.40
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
East
North
Up

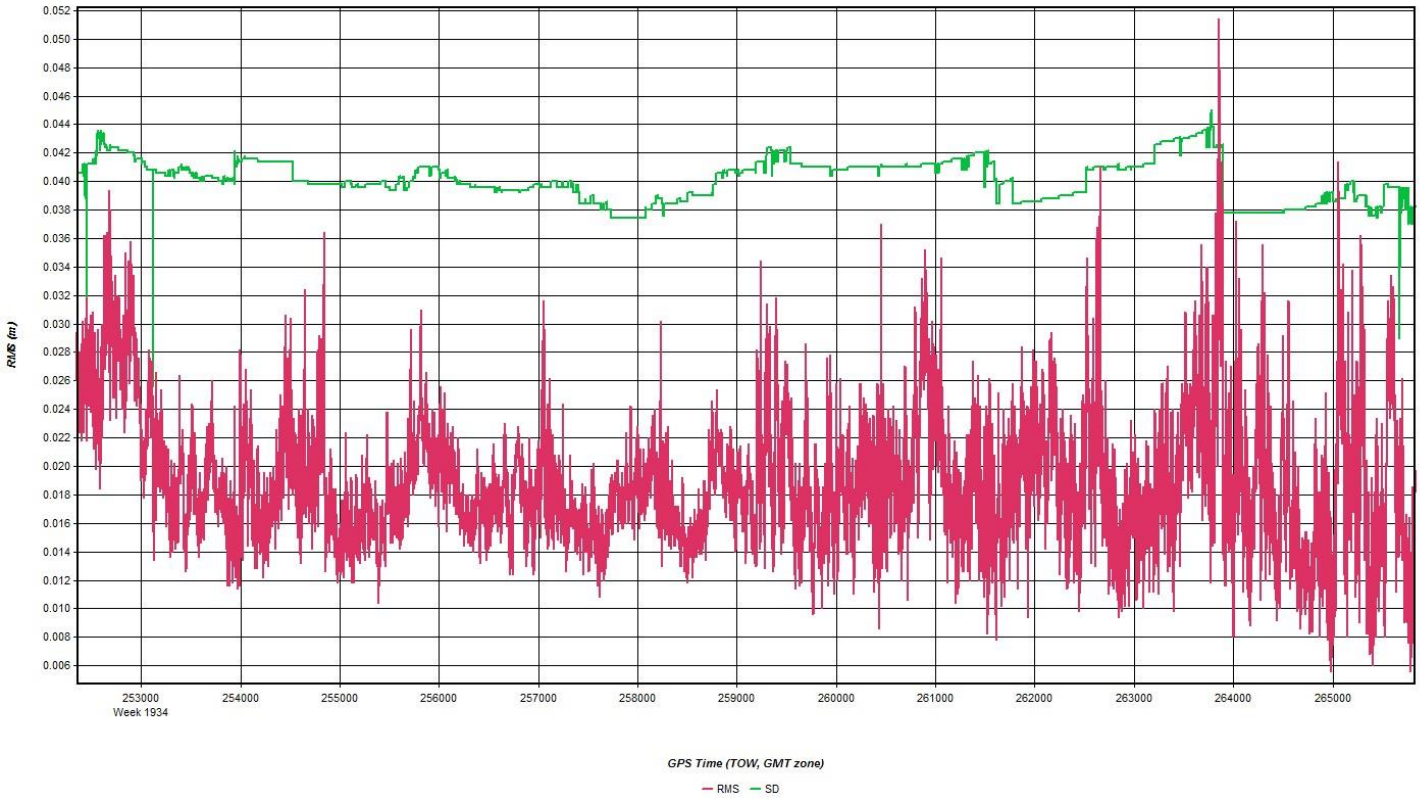

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

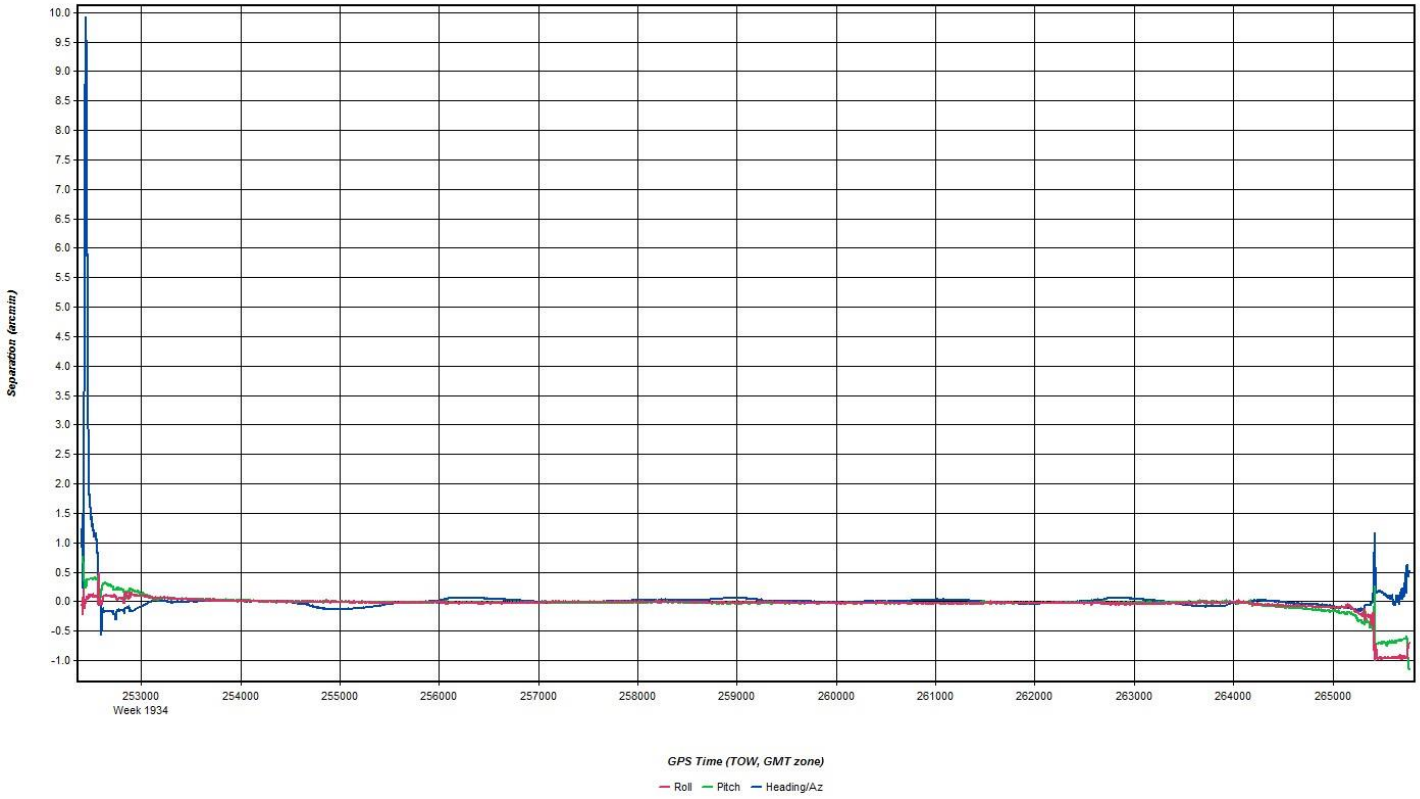

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
PDOP

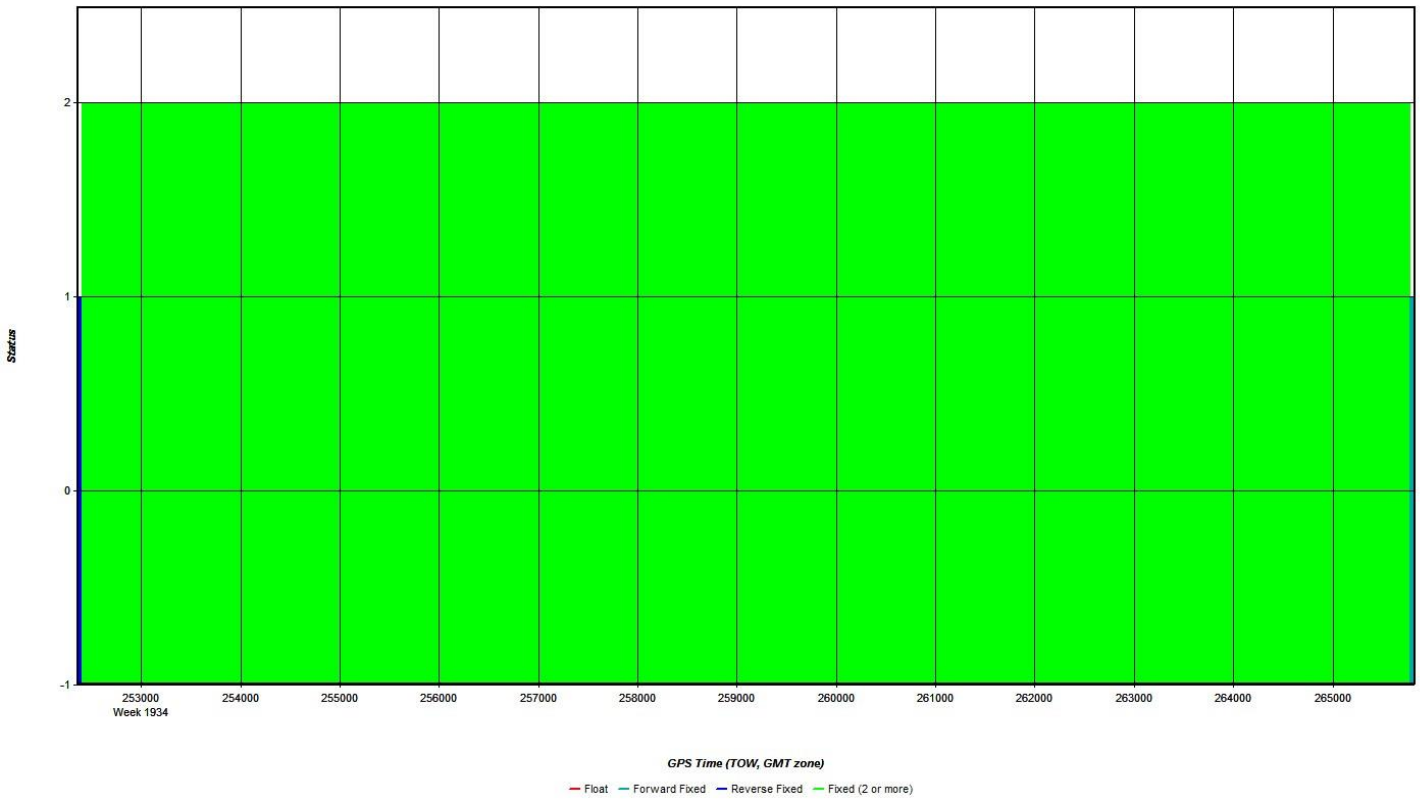

Estimated StdDev (m)
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

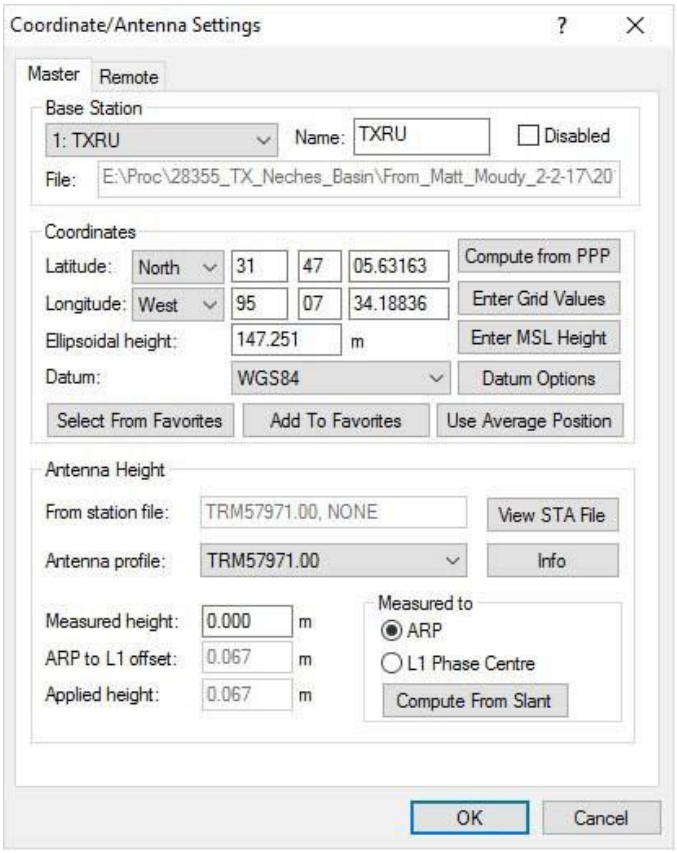

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
Roll
Pitch

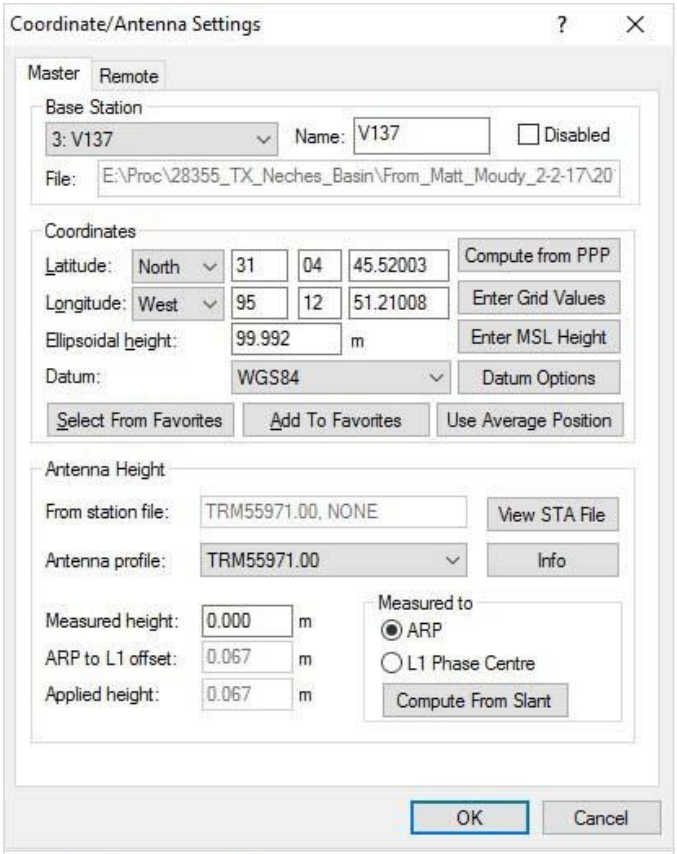

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
Height

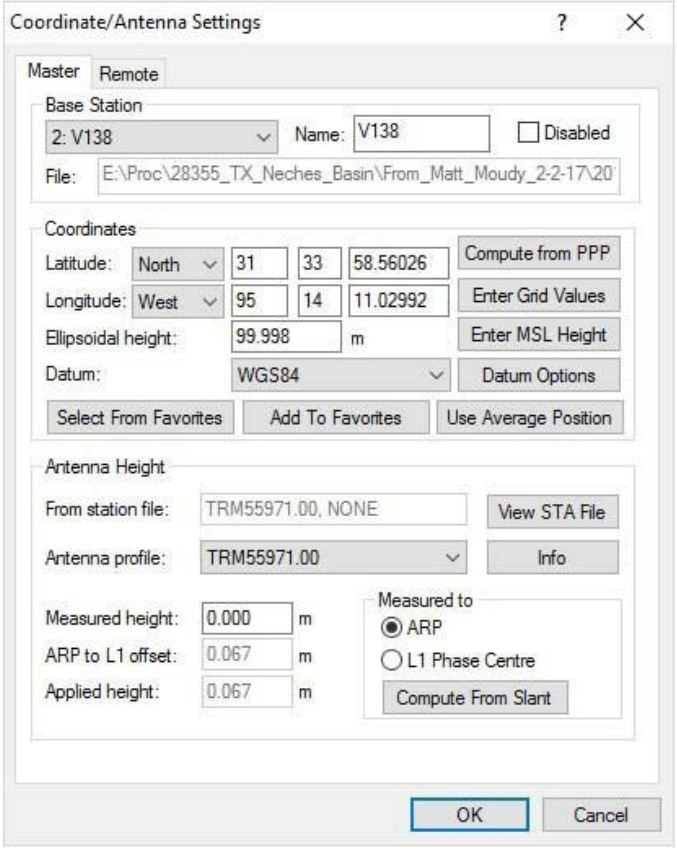

RMS (m)
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
253000
Week 1934
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXRU
Name:
TXRU
Disabled
File:
E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude:
North
31
47
05.63163
Compute from PPP
Longitude:
West
95
07
34.18836
Enter Grid Values
Ellipsoidal height:
147.251
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V137
Name: V137
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 04 45.52003
Longitude: West 95 12 51.21008
Ellipsoidal height: 99.992 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V138
Name: V138
Disabled
File: E:\Proc\28355_TX_Neches_Basin\From_Matt_Moudy_2-2-17\20
Coordinates
Latitude: North 31 33 58.56026
Longitude: West 95 14 11.02992
Ellipsoidal height: 99.998 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 1-31-17

(email log daily to flight_log_distribution_list@quantumspatial.com)

Lift: A B C D E Pg 1 of 1

Project: NECHES BASIN, TX Proj #: 28355 Flight Mgmt File:

Aircraft: N812TB Begin Hobbs: 4341.2 End Hobbs: 4344.5 Total: Pilot: Co-Pilot: - Tech: MANDY

Dep Apt: GGG Dep Time (Lcl): 1618 (Z): 2218 Arr Apt: GGG Arr Time (Local): 1941 (Z): 0141 Tot Time Aloft:

CORS: Y / (N) Sta 1: VIRTUAL Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

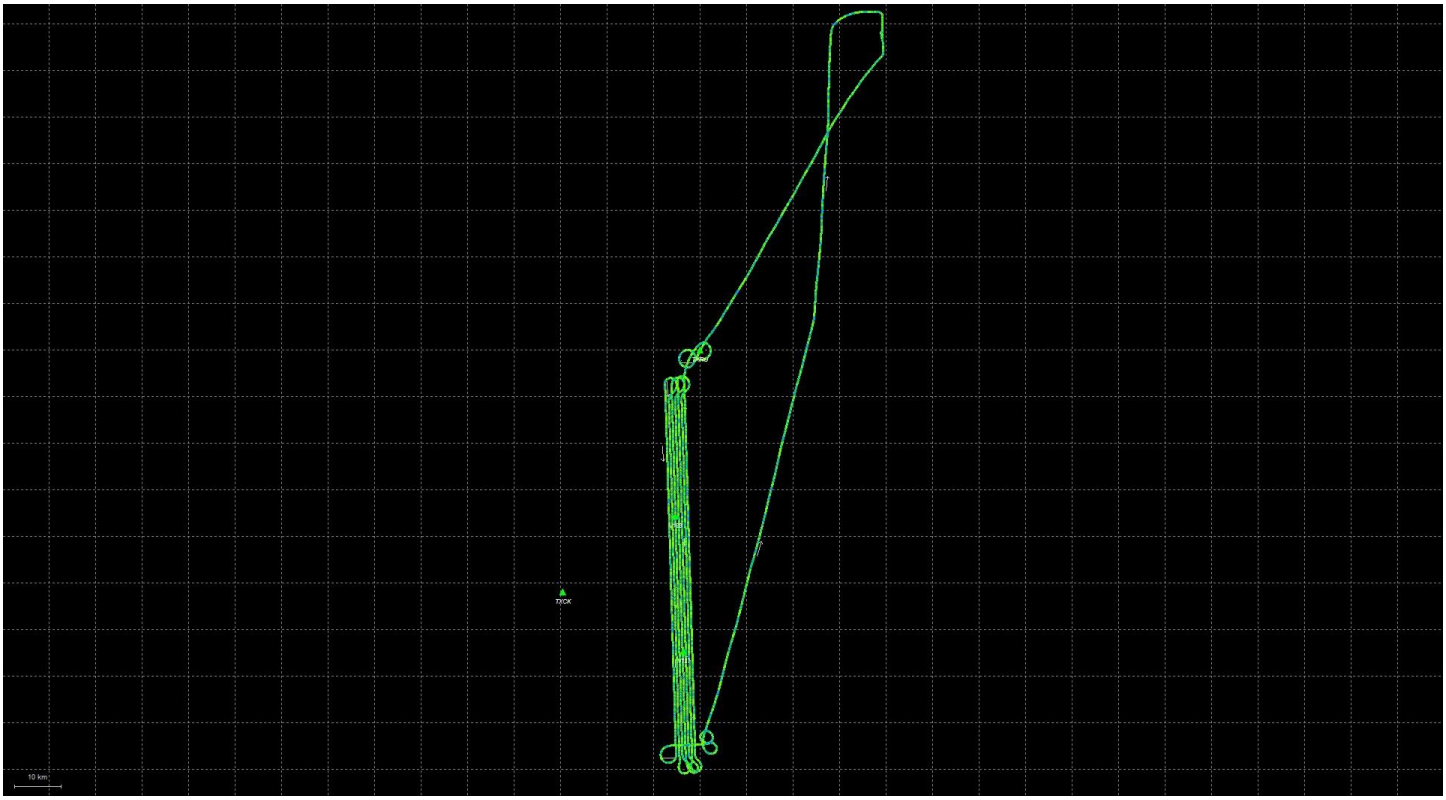
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	AL570	7178	5550'	5950'	400	150 kts	
	FOV 34°	Scan Freq 57 Hz	MpIA (Y) / N	Pulses In Air 2	Pulse Rate 312 KHz	Power 100%	PPSM

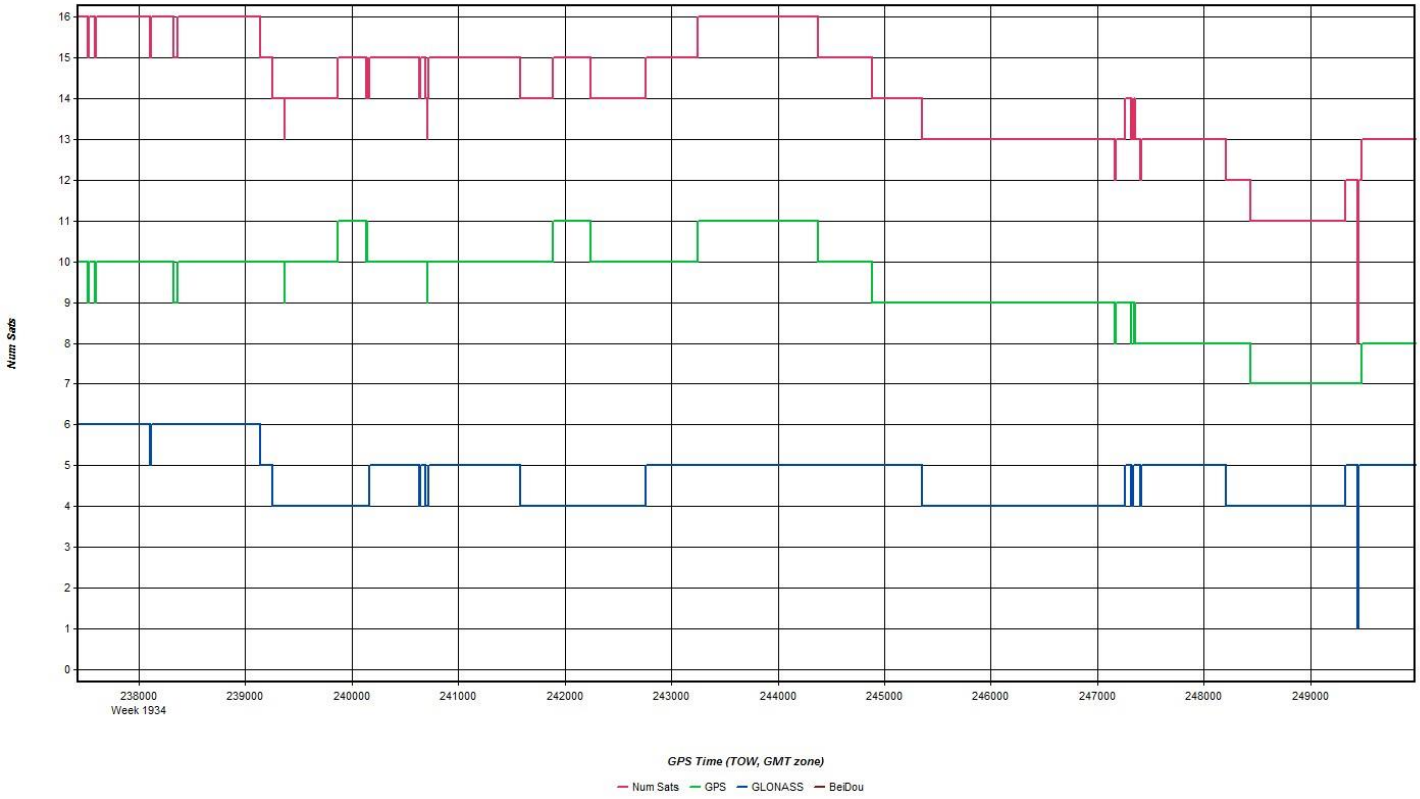
Beg GB	241	Storage Name/#
End GB	297	7178 5504
Tot GB	56	

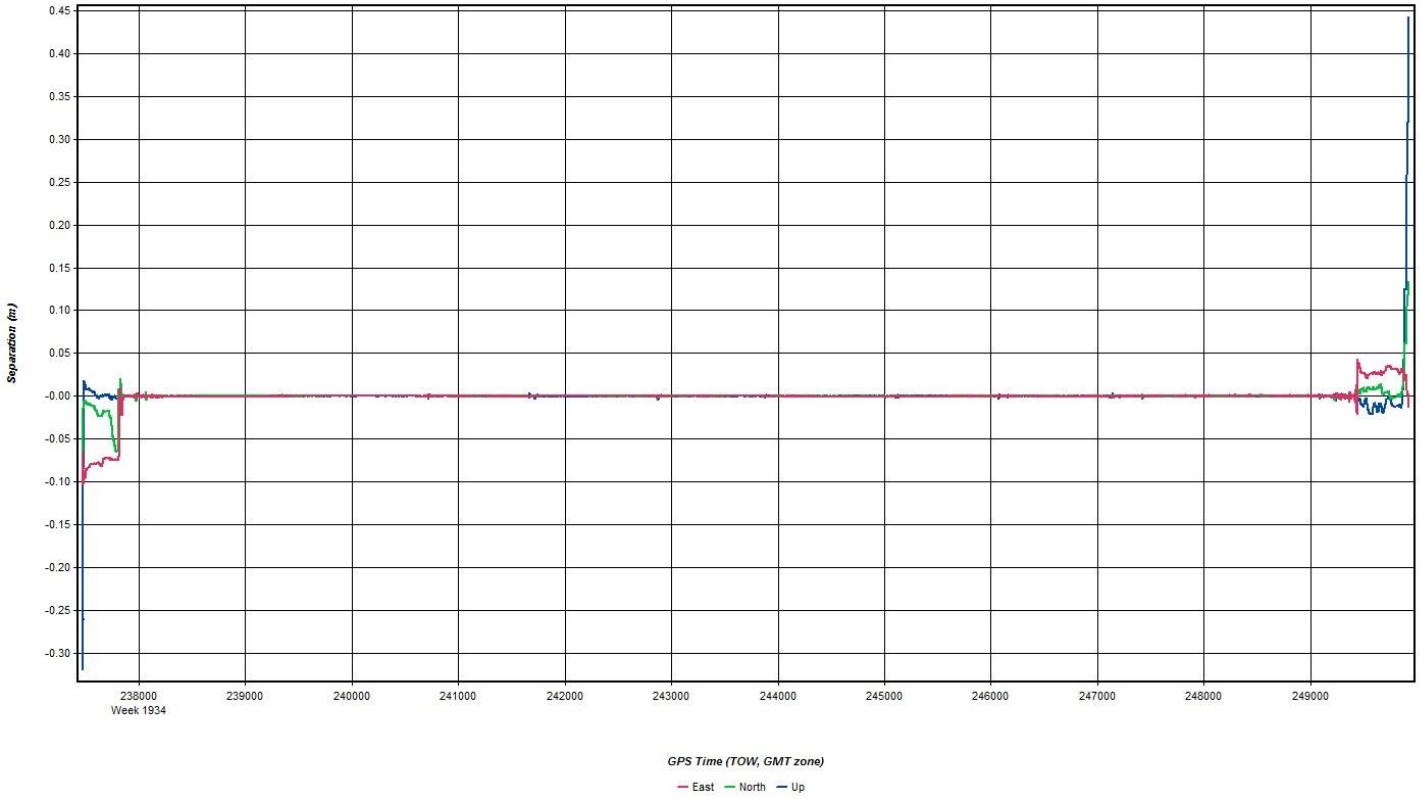
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
1090	178	2249	2305	146	1.1/19	6000'	7	0	
1089	358	2308	2323	171	1.3/17	6000'	6	0	
1088	178	2326	2342	143	1.4/16	6000'	7	0	
1087	358	2345	0000	166	1.1/19	5980'	7	0	
1086	178	0003	0019	138	1.2/18	5980'	7	0	
1085	358	0021	0036	163	1.3/17	6000'	7	0	
1084	178	0040	0055	150	1.2/18	5990'	6	0	
1083	358	0058	0113	170	1.1/19	5960'	6	0	
TIE	090	0116	0118	171	1.3/18	5970	5	0	- MANUAL TIE LINE

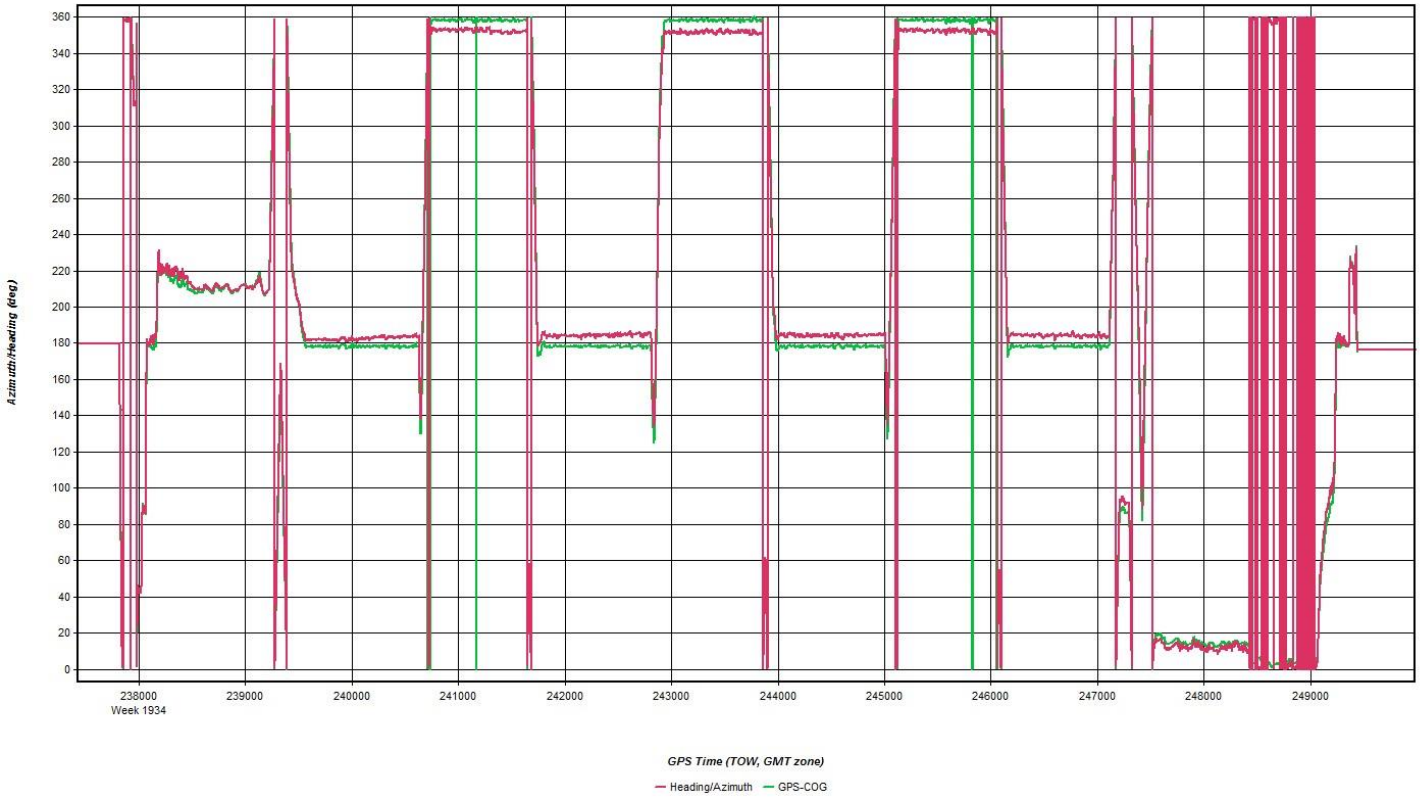
Total Proj Lines: Lines Flown: 8 Lines Remain: OnLine Time: 2.5 Mob Time: 0.8 Notes:

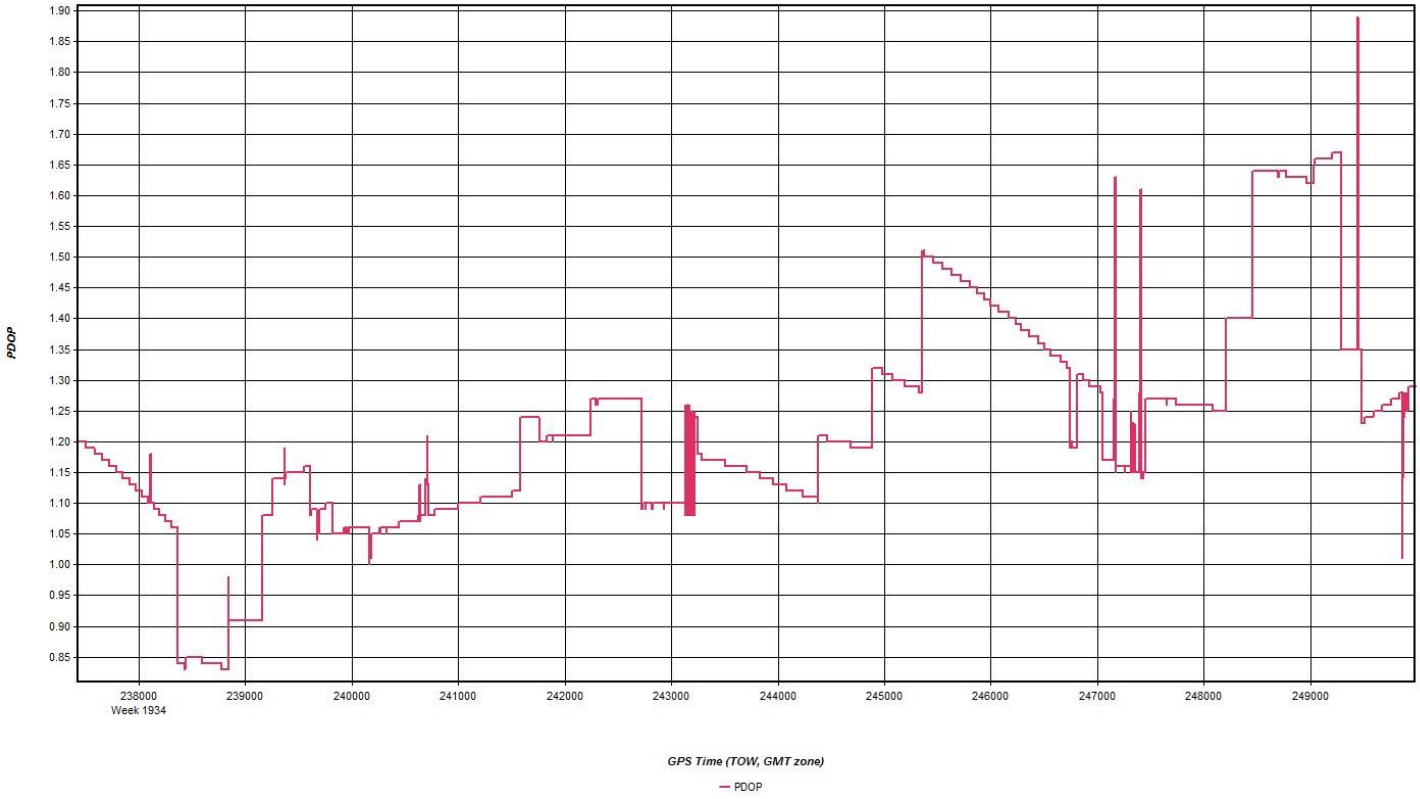
Jan 31, 2017-B (N812TB, SN7178)

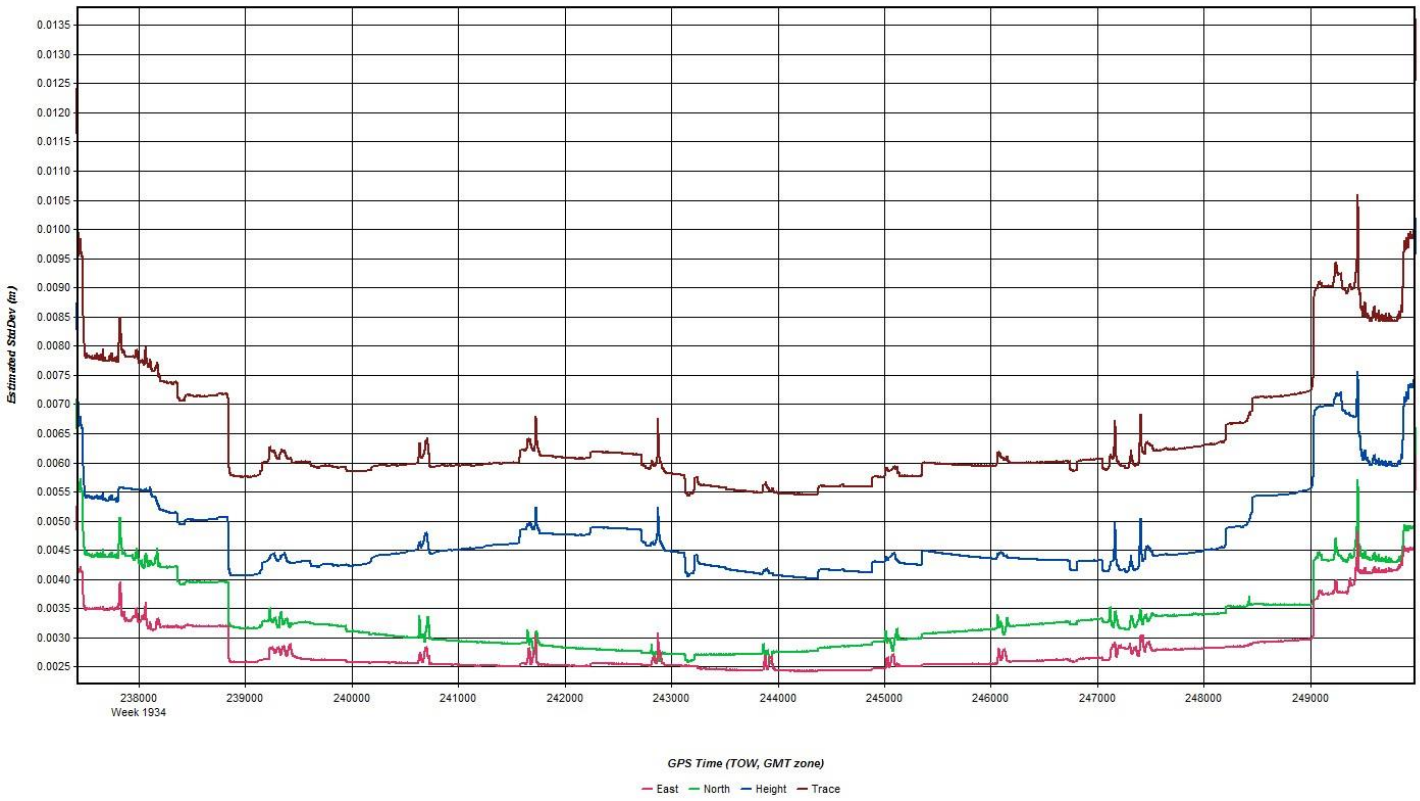


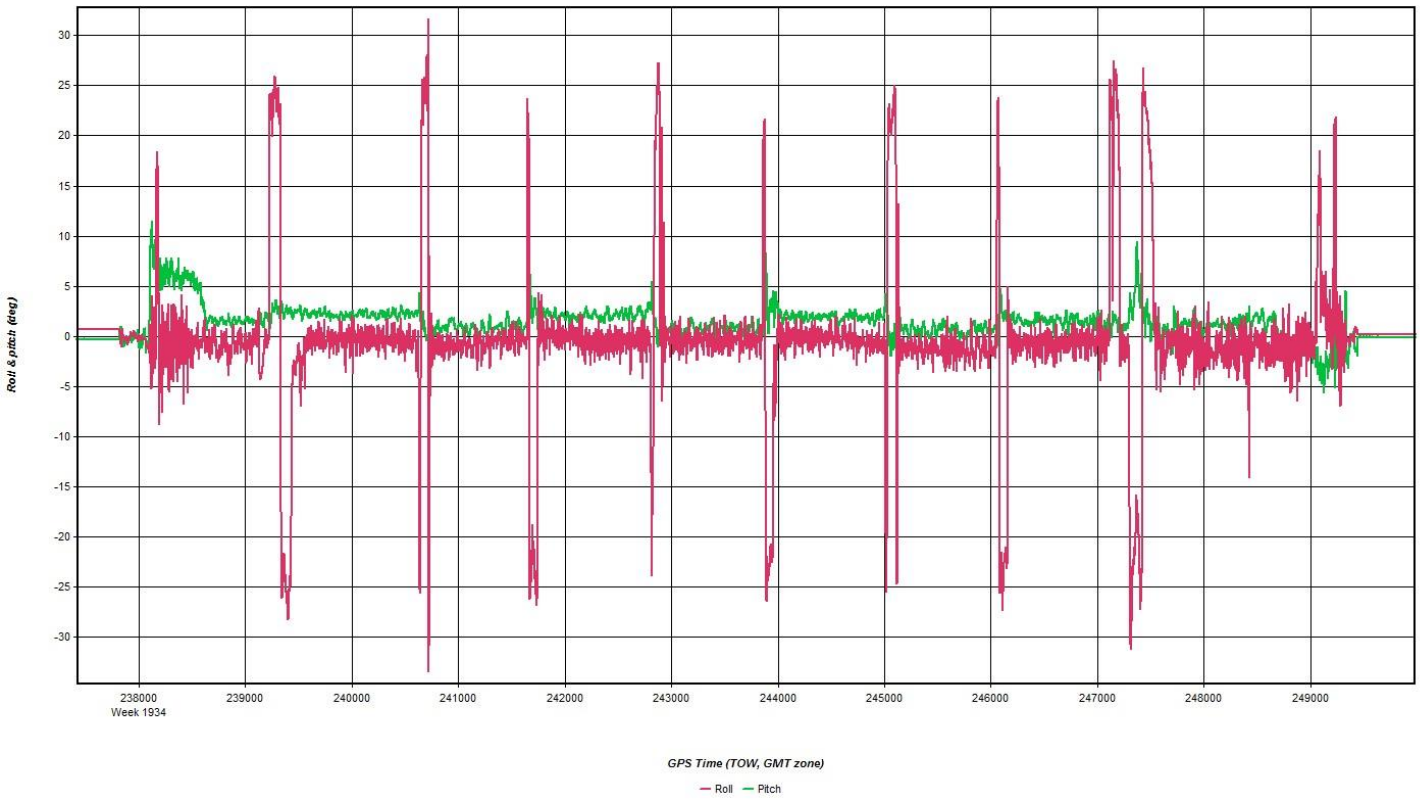

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

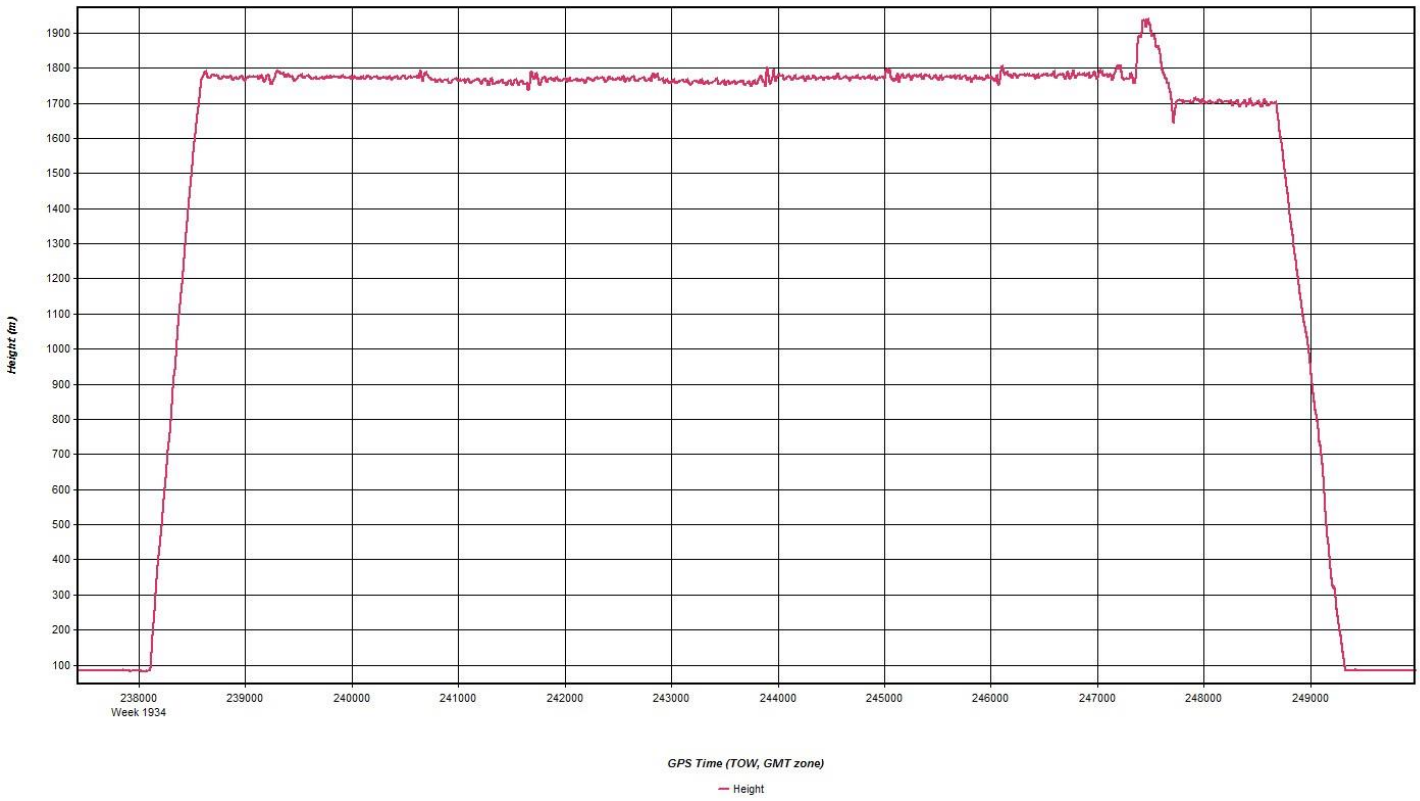

0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
Separation (m)
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
East
North
Up

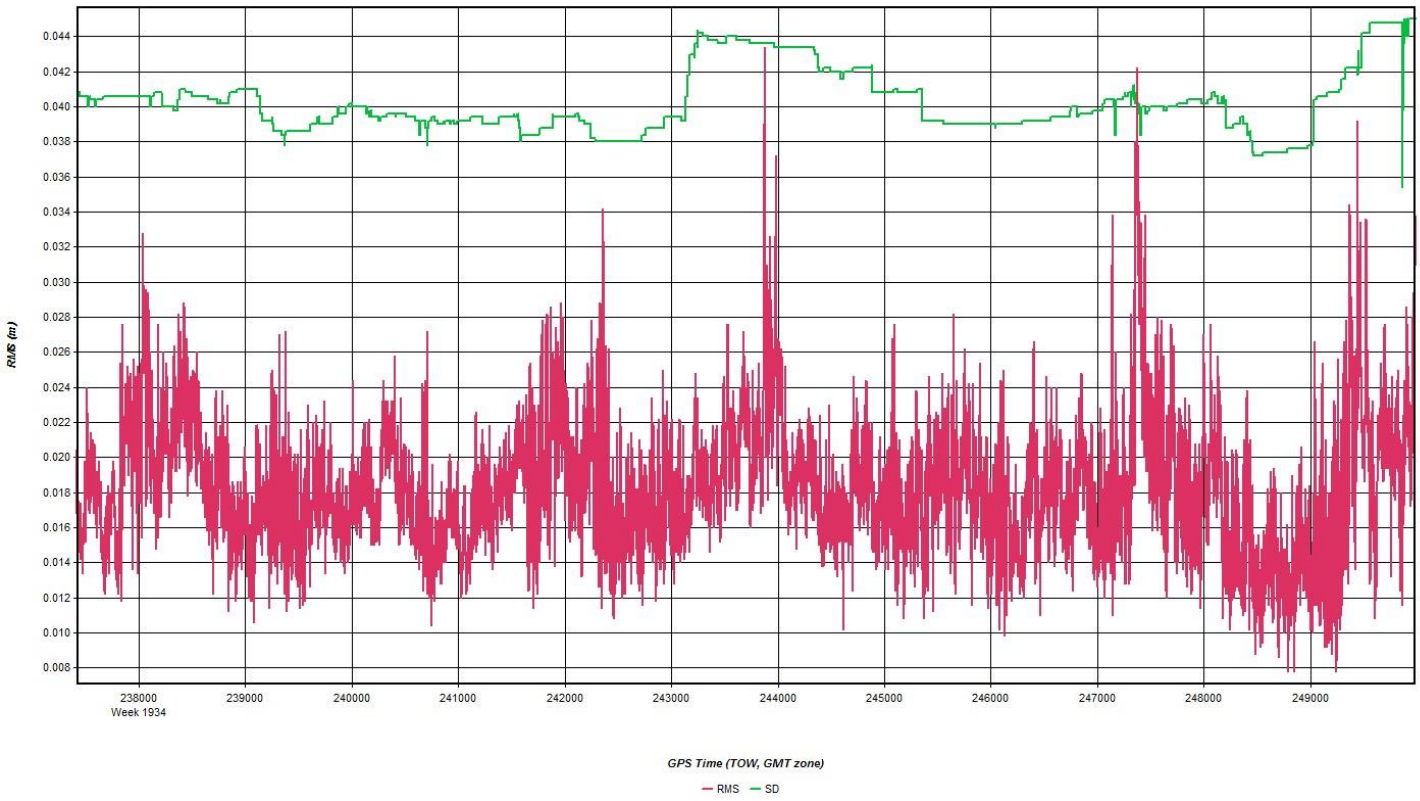

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

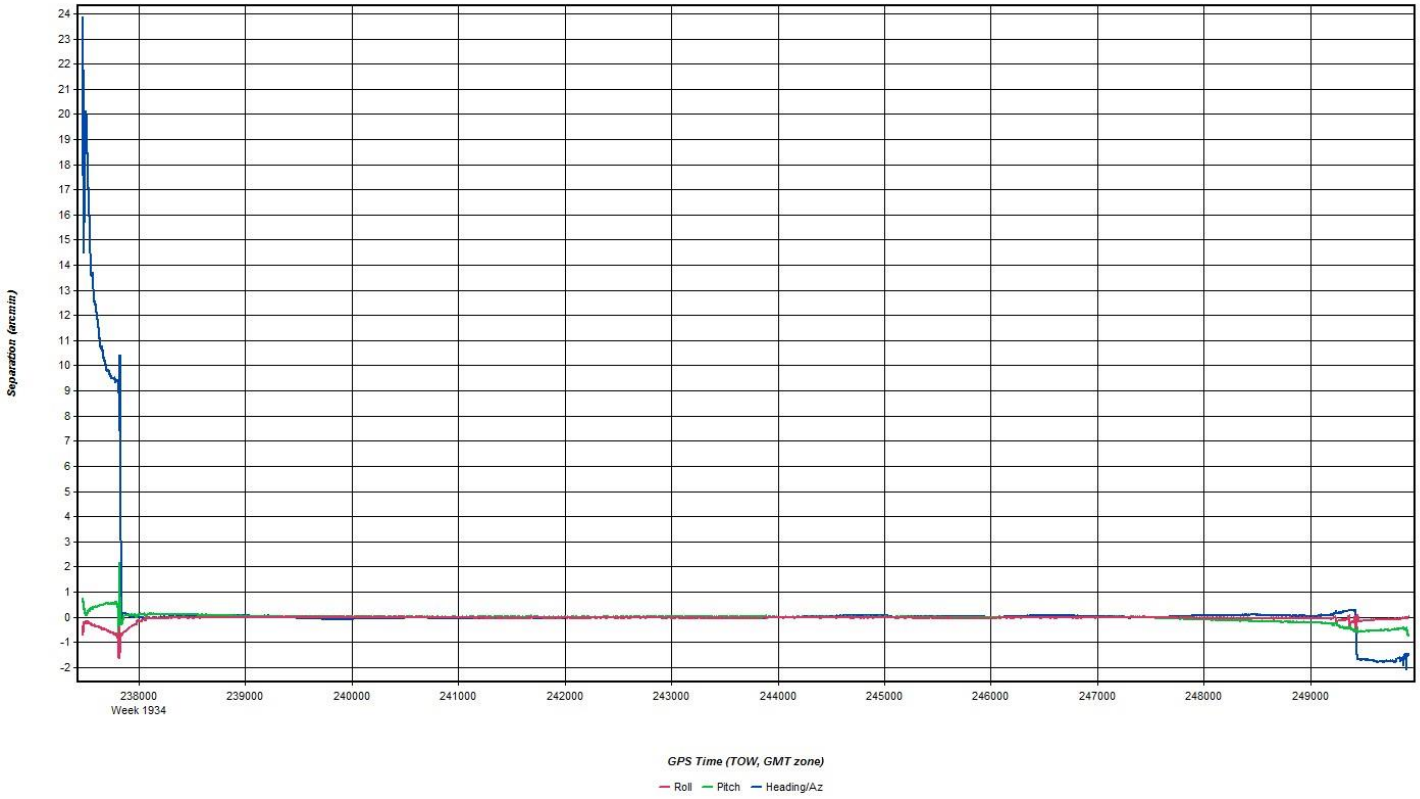

PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
PDOP

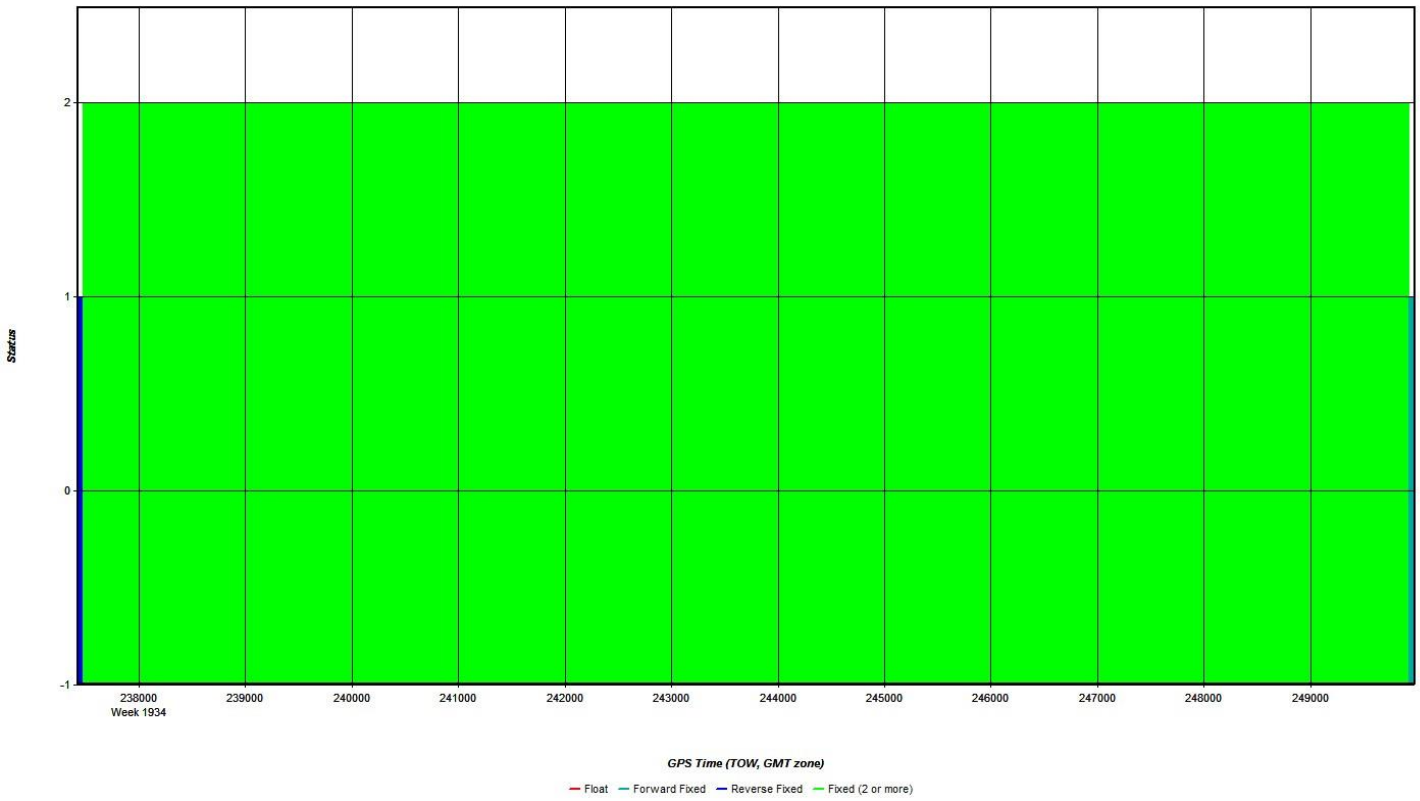

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

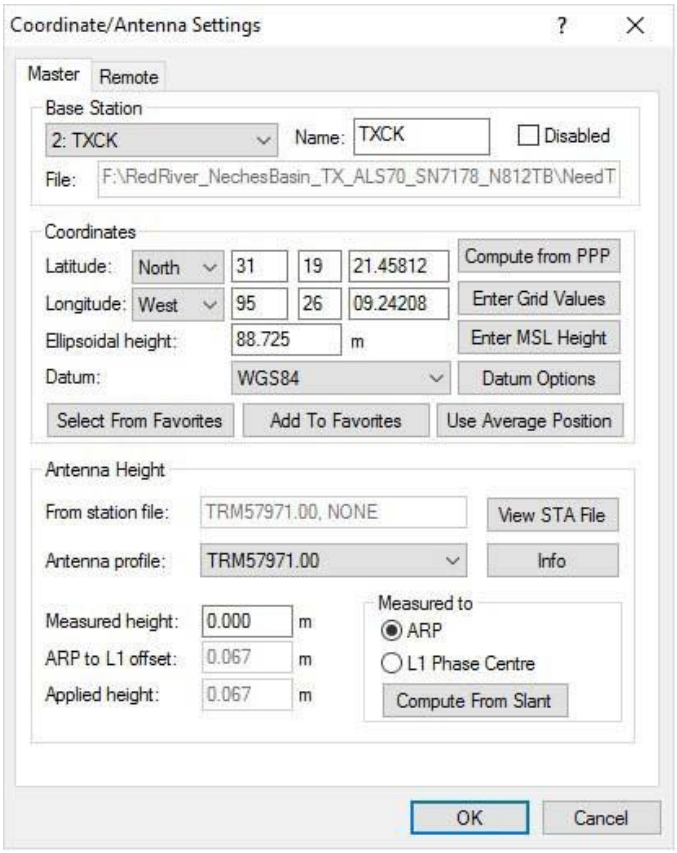

Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
Roll
Pitch

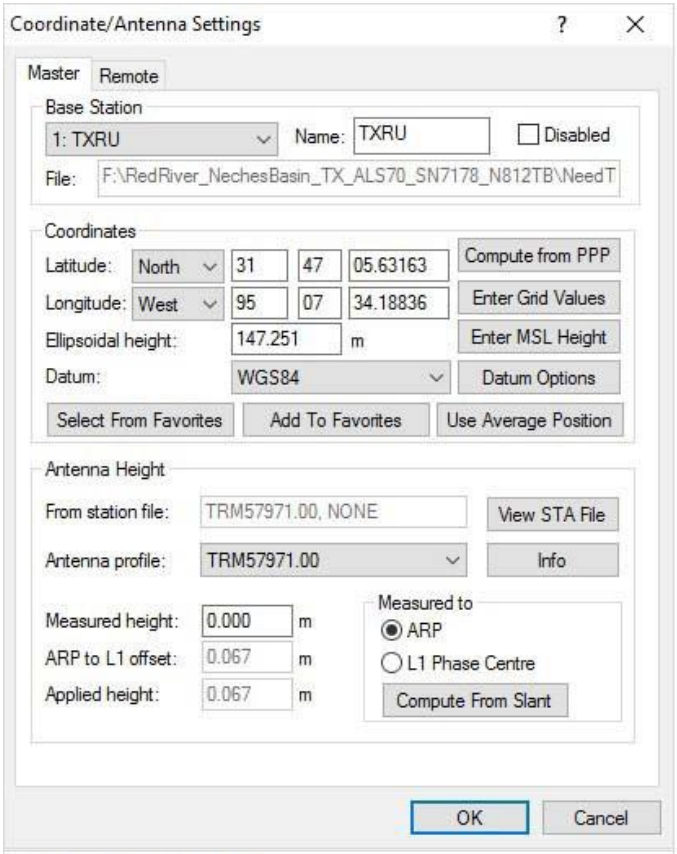

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
Height

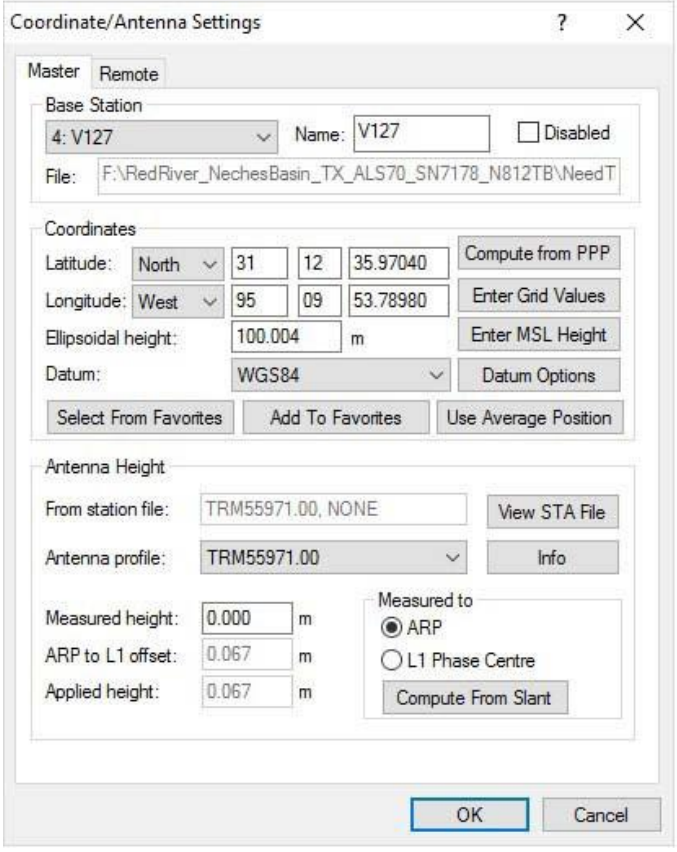

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
RMS
SD

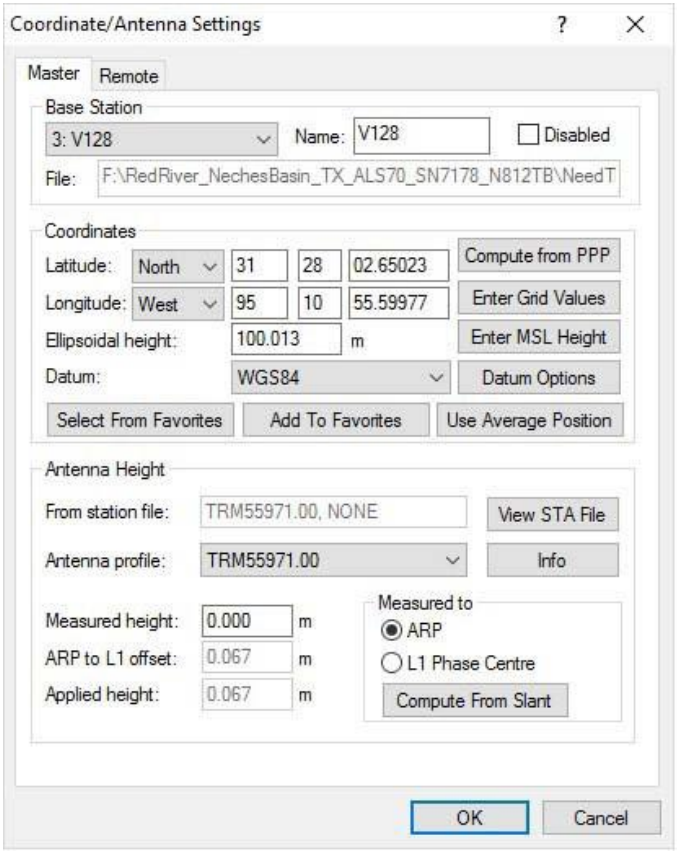

Separation (arcmin)
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
238000
Week 1934
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXCK
Name: TXCK
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXRU
Name: TXRU
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V127
Name: V127
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 12 35.97040
Longitude: West 95 09 53.78980
Ellipsoidal height: 100.004 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V128
Name: V128
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 31 28 02.65023
Longitude: West 95 10 55.59977
Ellipsoidal height: 100.013 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

1-31-17 B

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-31-17 B

Lift: A (B) C D E Pg 2 of 2

Project: NECHES Basin TX Proj #: 28355 Flight Mgmt File: 20170131_175408

Aircraft: N812TB Begin Hobbs: 4338.1 End Hobbs: 4341.2 Total: 3.1 Pilot: JBillington Co-Pilot: Tech: JSwan

Dep Apt: GGG Dep Time (Lcl): 1207 (Z): +6 Arr Apt: GGG Arr Time (Local): (Z): +6 Tot Time Aloft: 3.2

CORS: Y (N) Sta 1: VRS Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 22 °c End: °c OAT beg: 10 °c End: 10 °c Altimeter begin: 3006 end: 2998

LiDAR	Type: A|S7i	Serial #: 7181	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdepd	Avg Pt Spacing
	FOV: 34	Scan Freq: 57	MpIA Y / N	Pulses In Air	Pulse Rate: 312	Power: 100	PPSM

	Beg CB	End CB	Tot CB	Storage Name/#
	102	52	50	#2

Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									Fig 8's
1097	180	1833	1849	146	1.1/19	5826	+6	0	
1096	0	1851	1907	161	1.4/17	5798	-7	0	
1095	180	1909	1926	147	1.3/17	5750	+5	0	
1094	0	~~1928~~	1928/1943	158	1.2/18	5789	-6	0	
1093	180	1946	2003	135	1.2/17	5832	+6	0	
1092	0	2005	2020	159	1.1/17	5828	-6	0	
1091	180	2022	2038	155	1.3/15	5830	+6	6	
Xtie	90	2039	2041	158	1.4/15	5810		0	unplanned Xtie

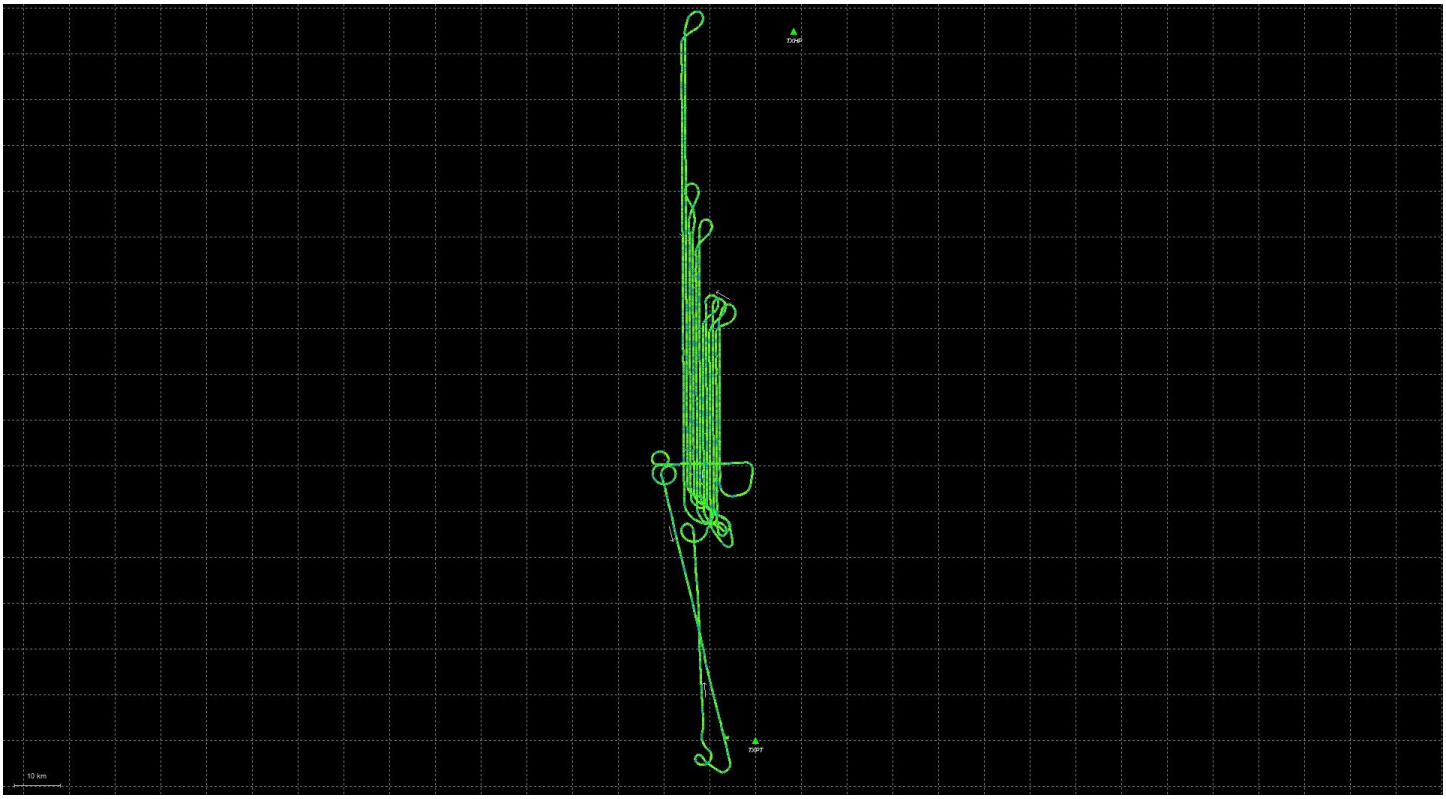
Crockett

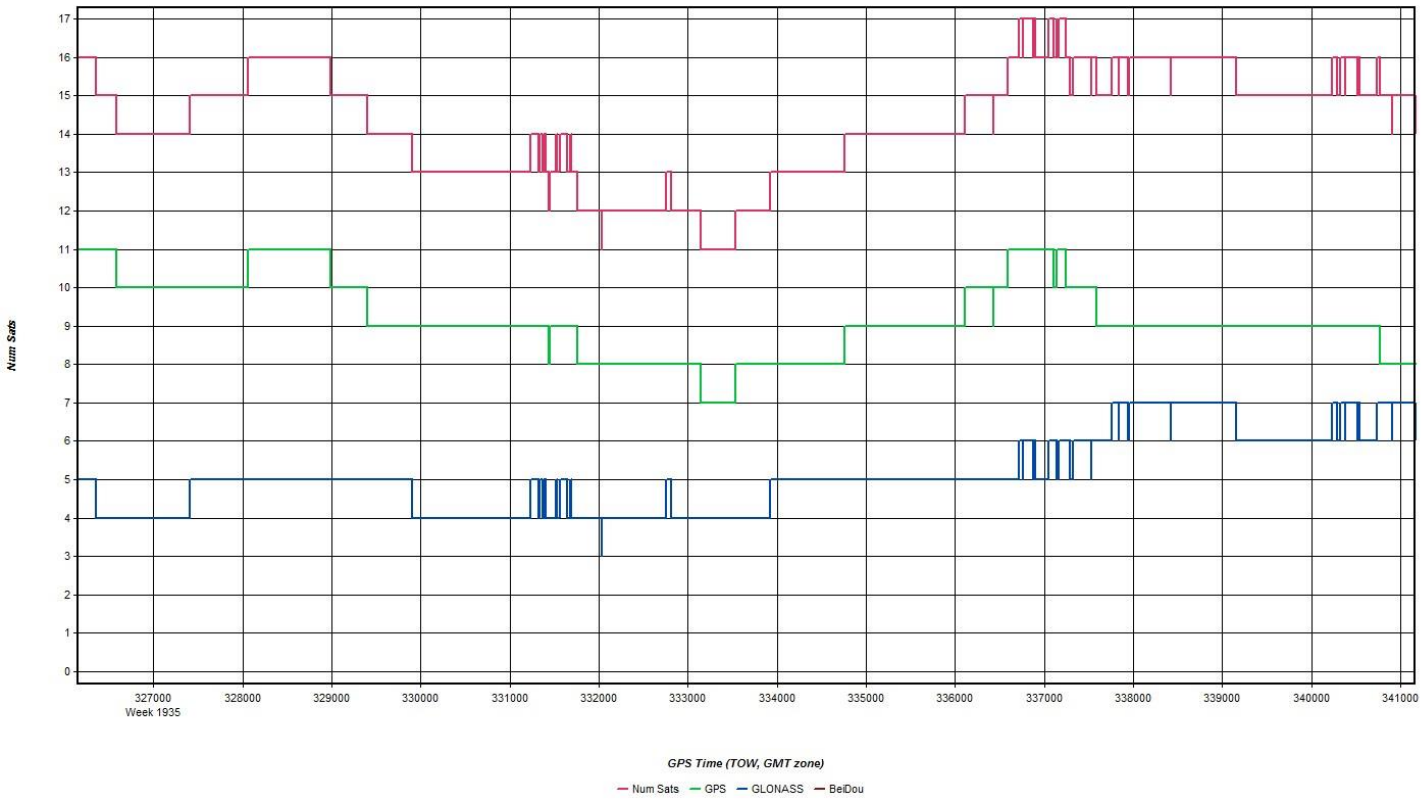
0131 Total

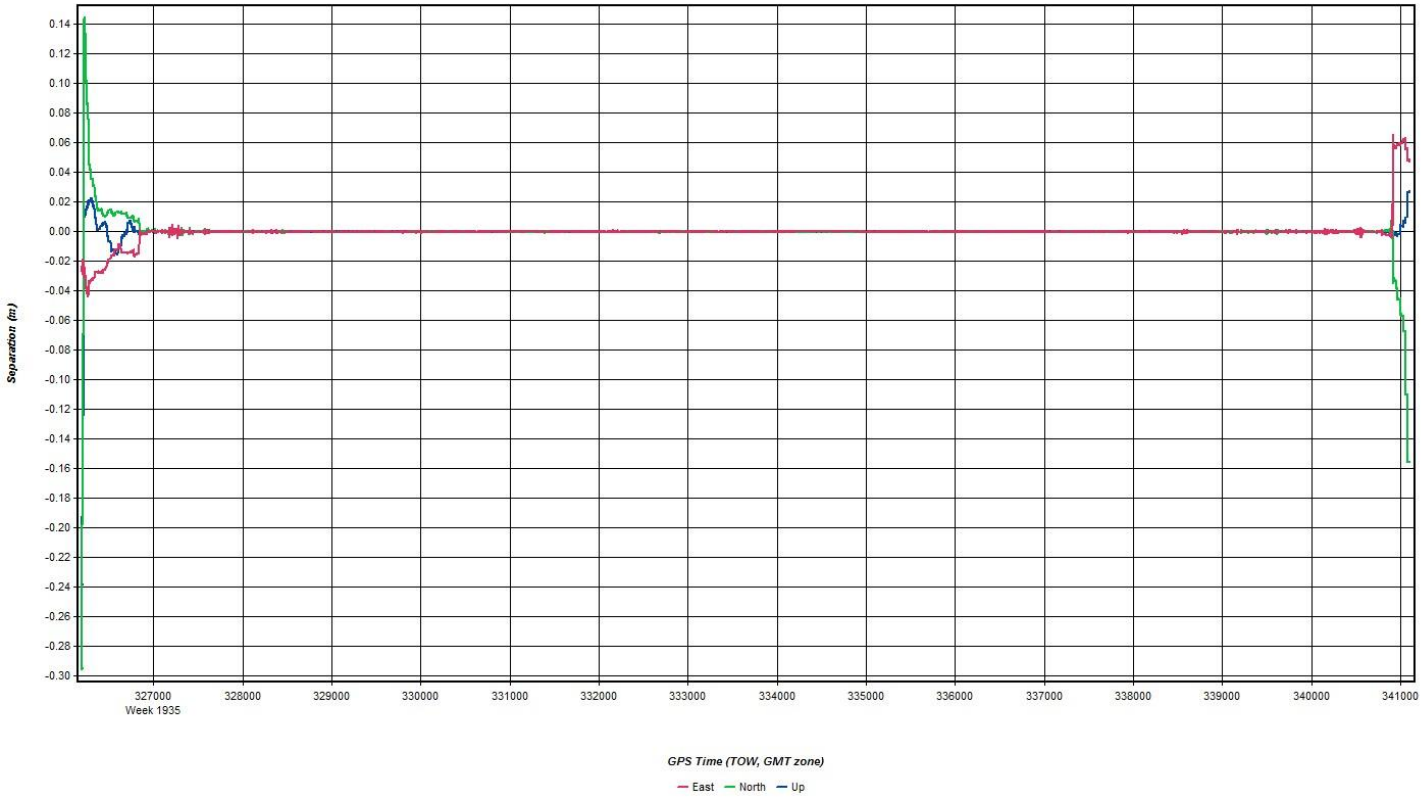
B Hobbs = 2.1 — Hobbs = 7.2
oNline = 2.1 — oNline = 5.5
mob = 1.0 — mob = 1.7

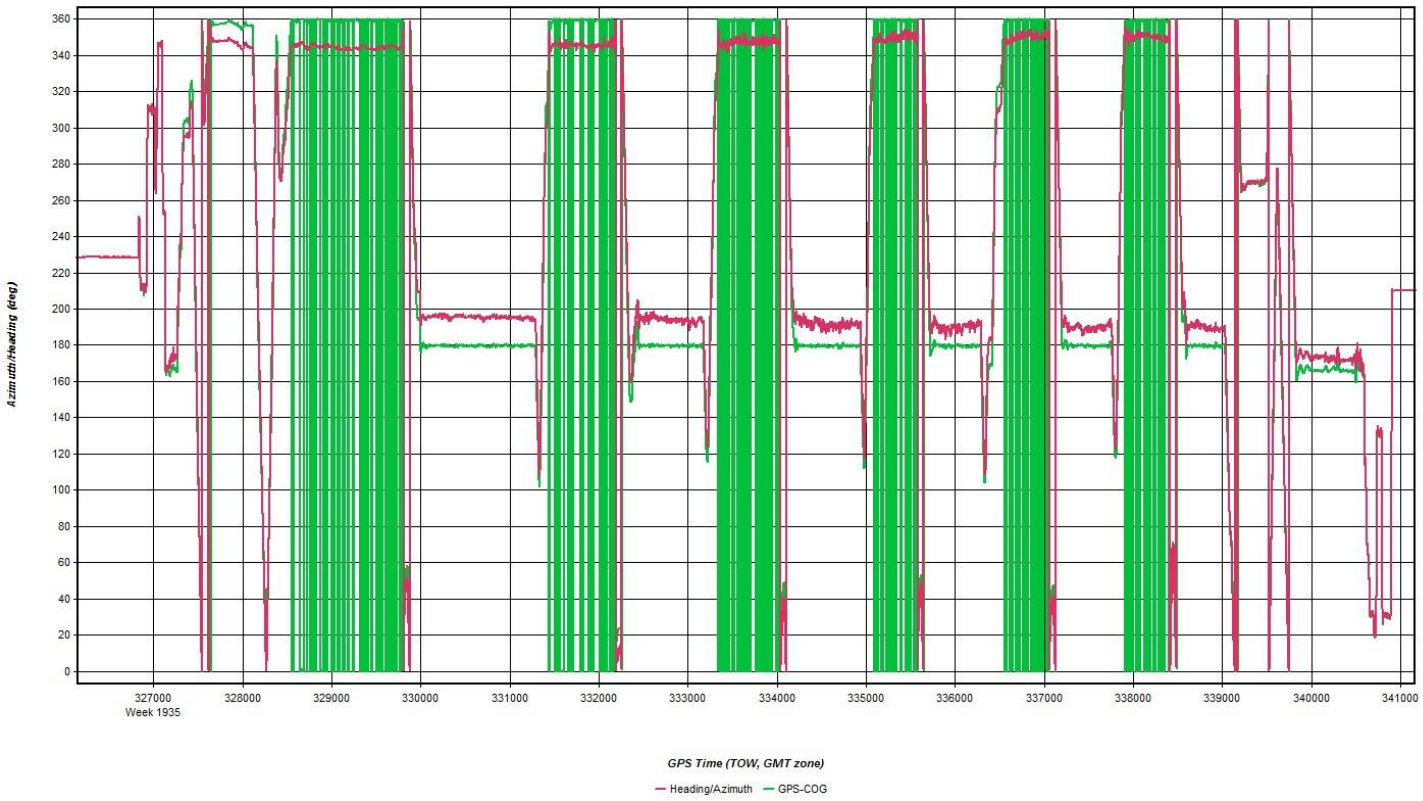
Total Proj Lines:	Lines Flown: 7	Lines Remain:	OnLine Time: 2.1	Mob Time: 1.0	Notes:

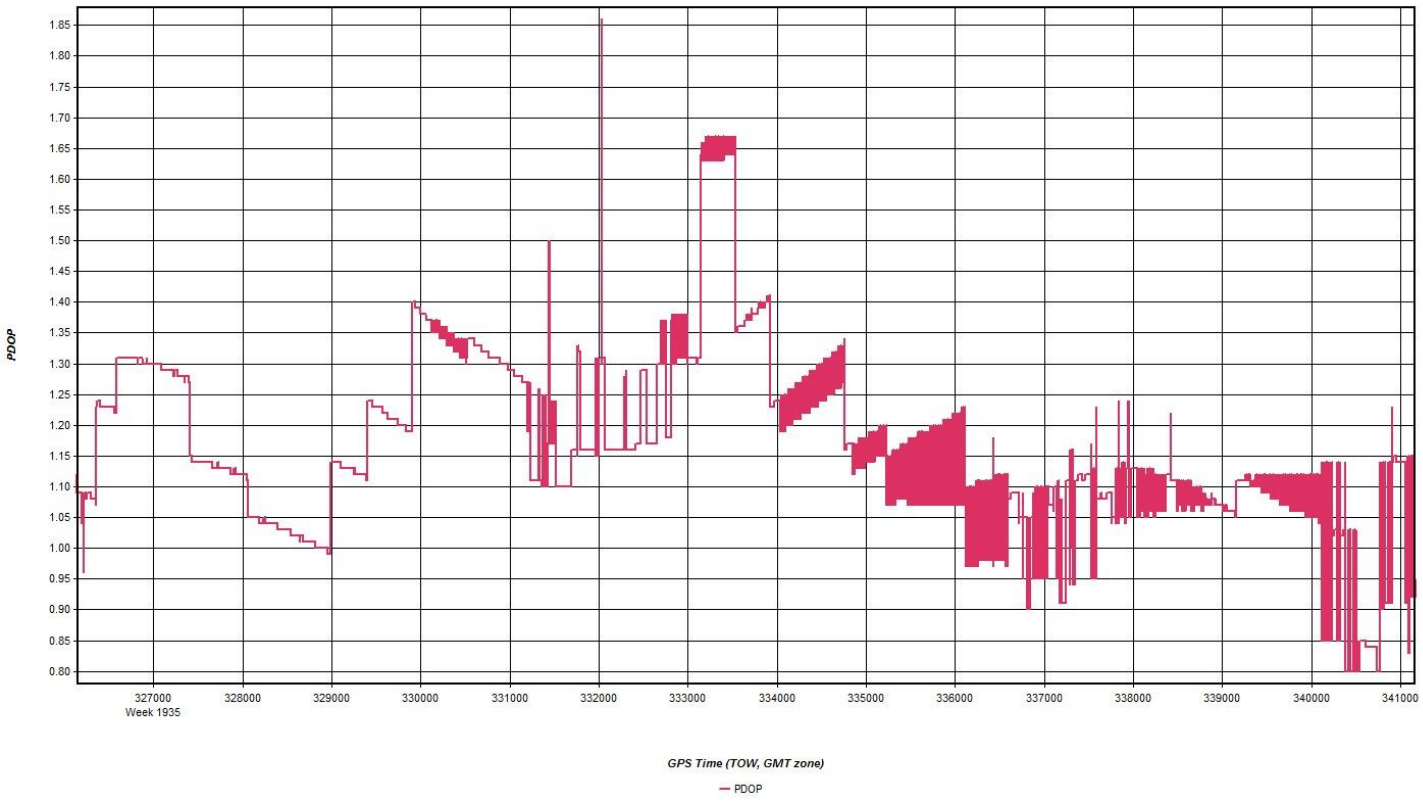
Feb 8, 2017-A (N246MP, SN8227)

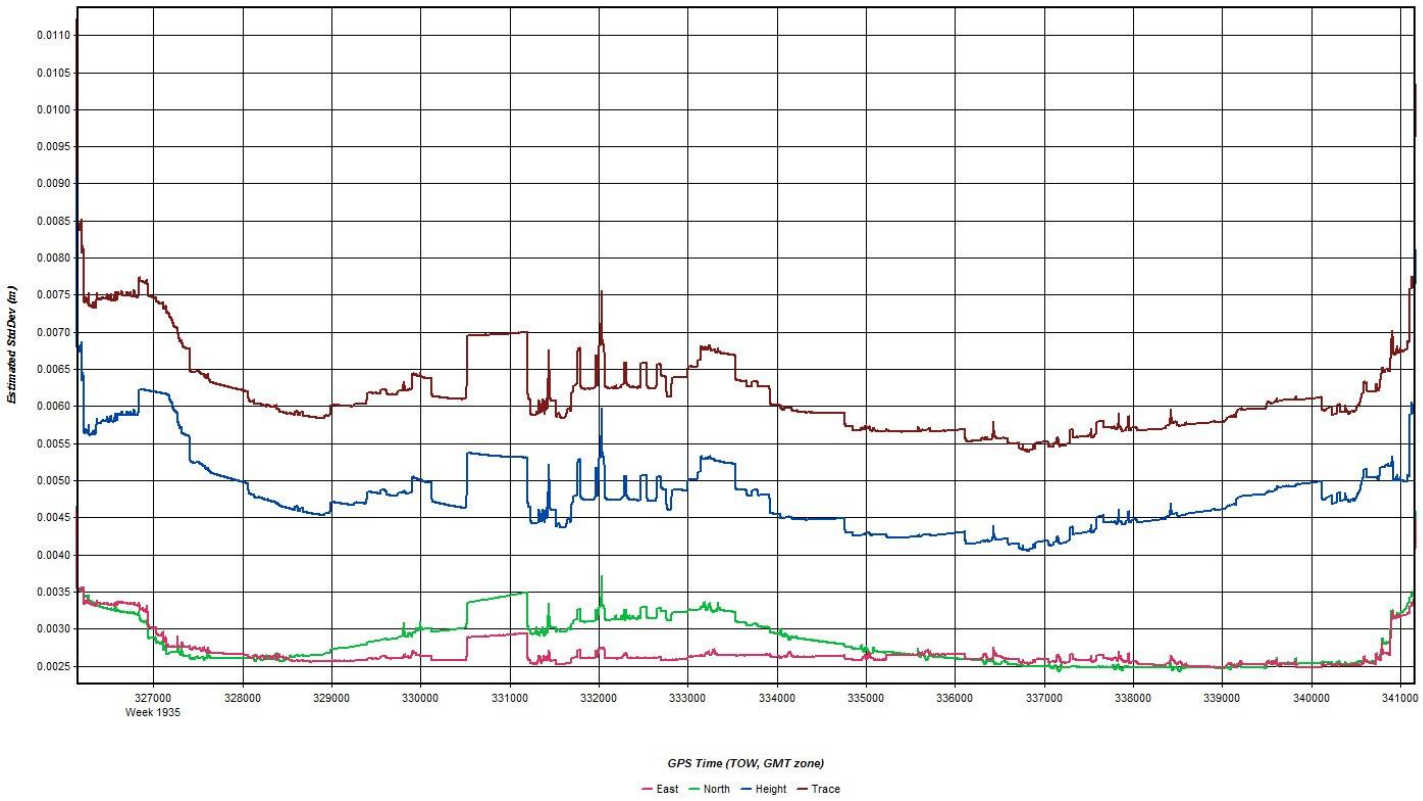


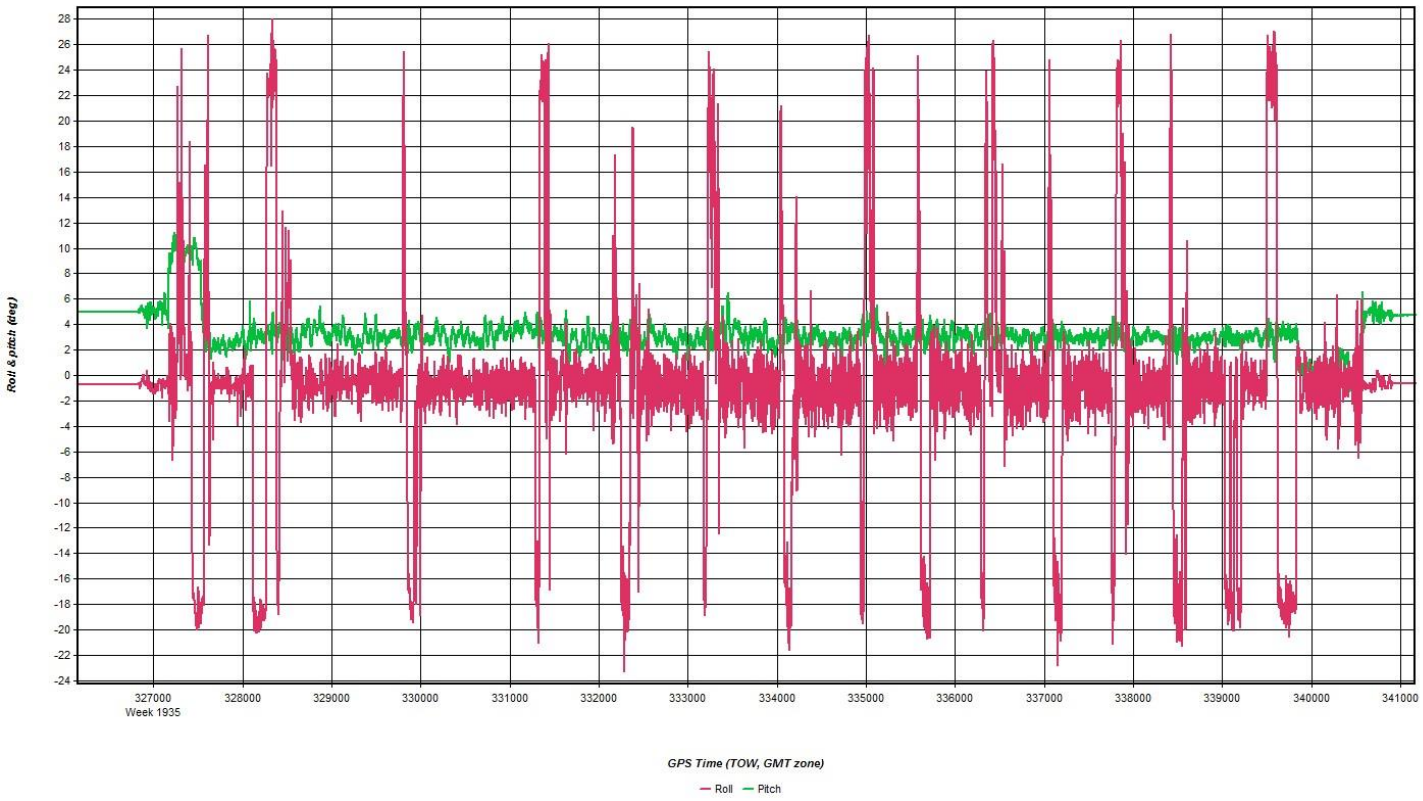

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

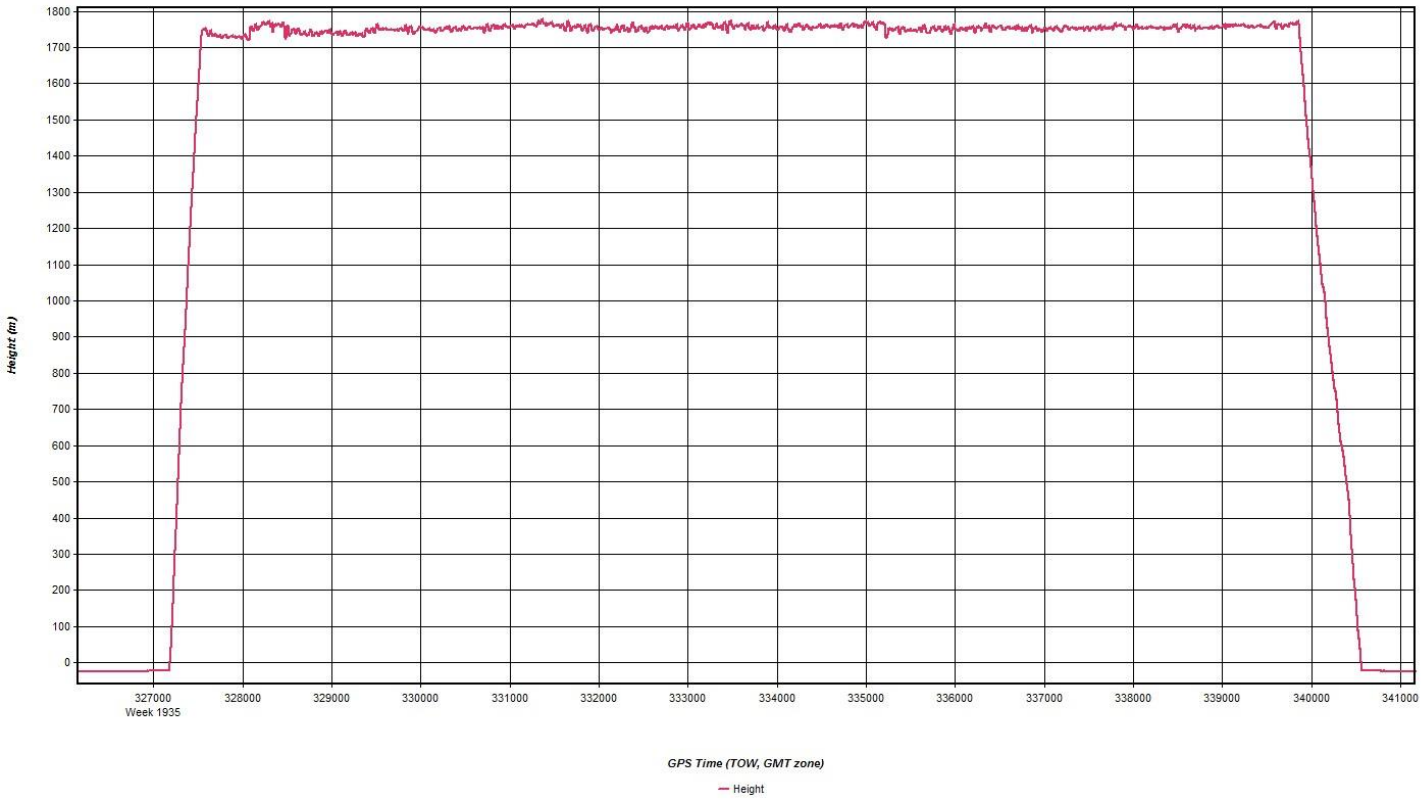

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
East
North
Up

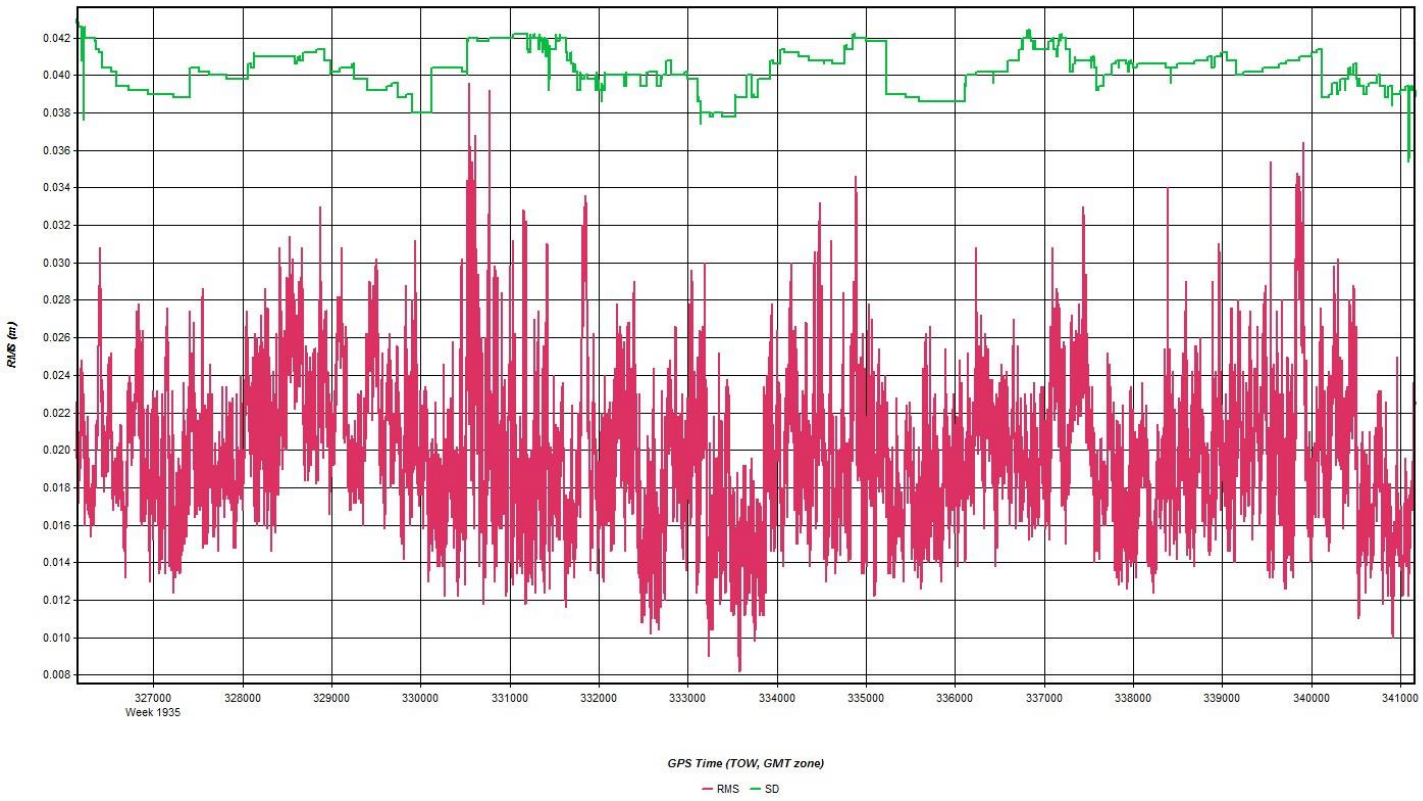

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

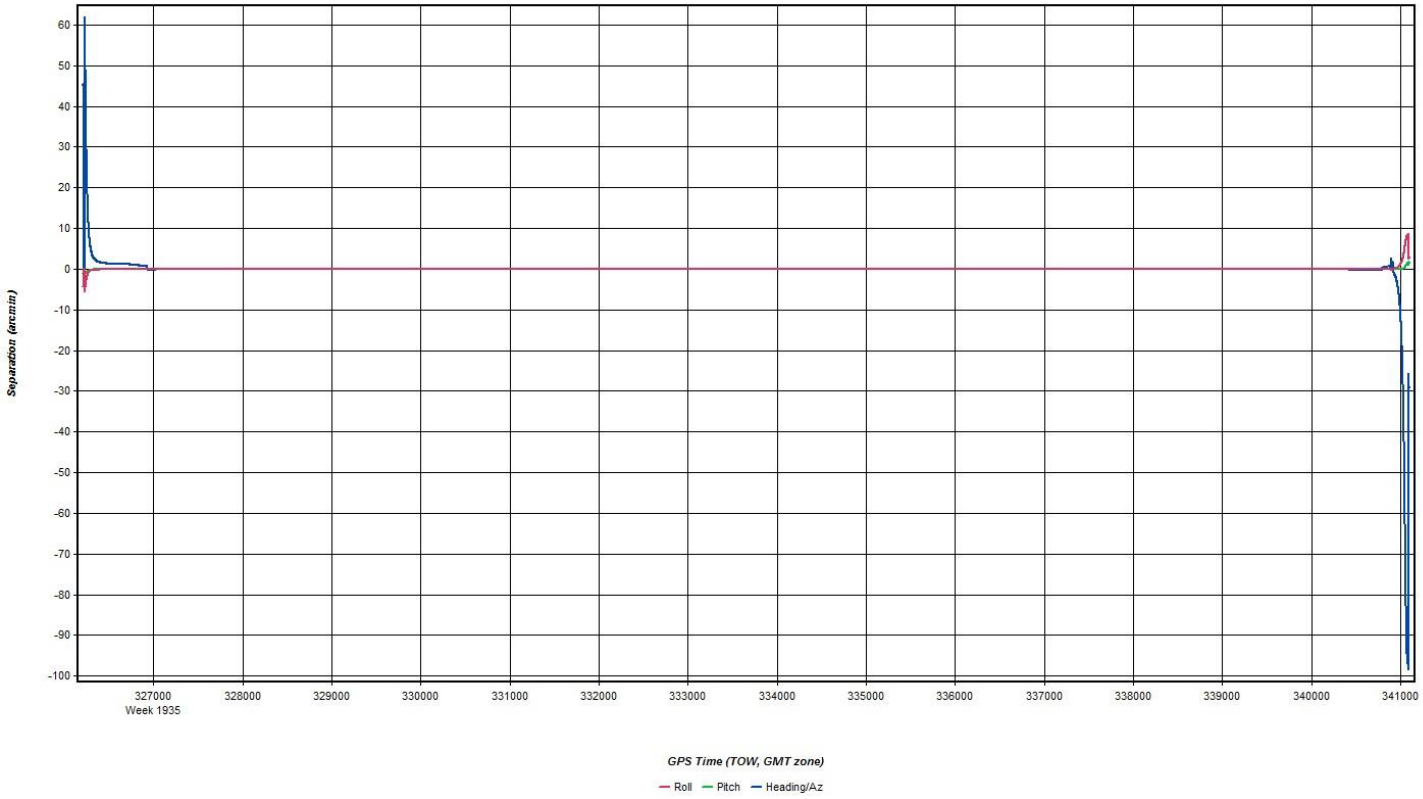

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
PDOP

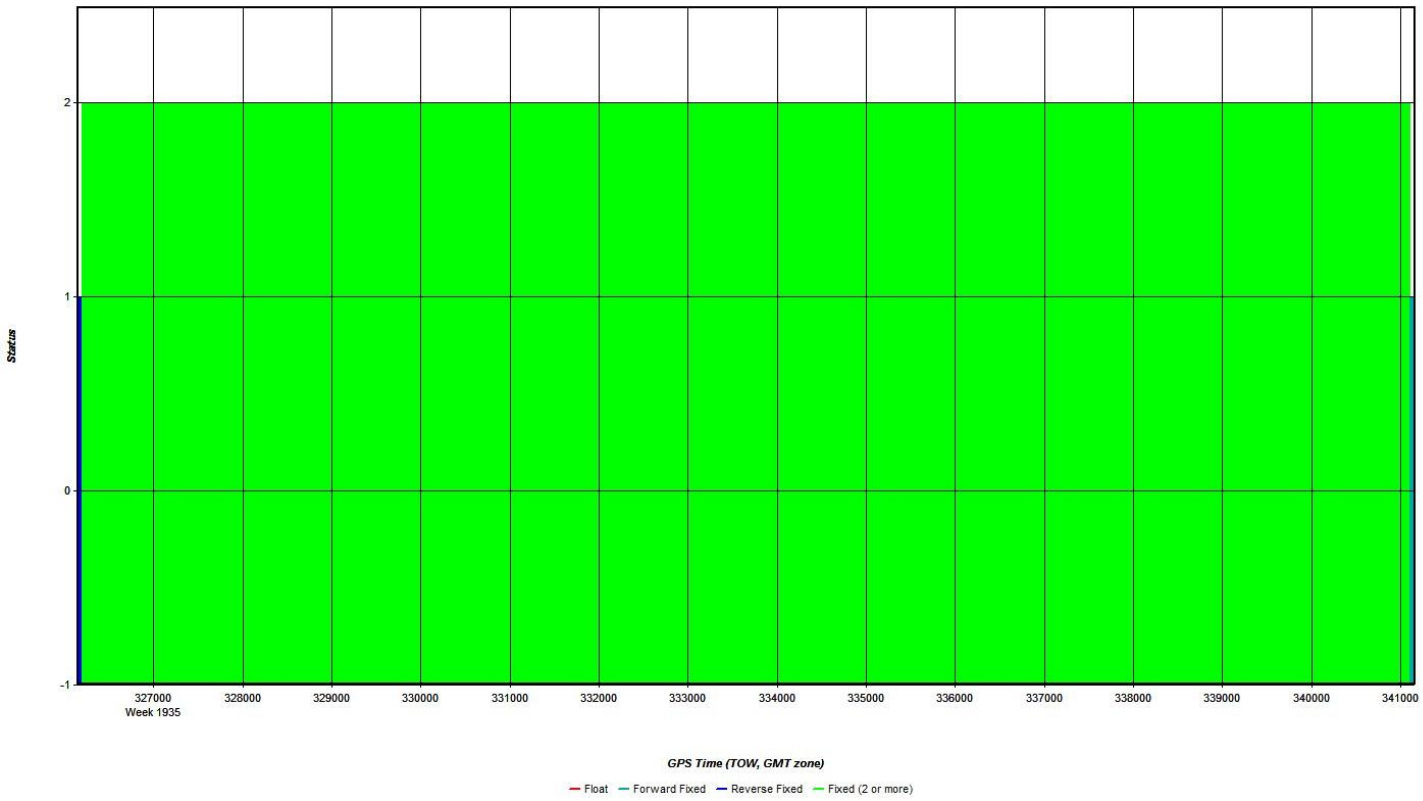

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

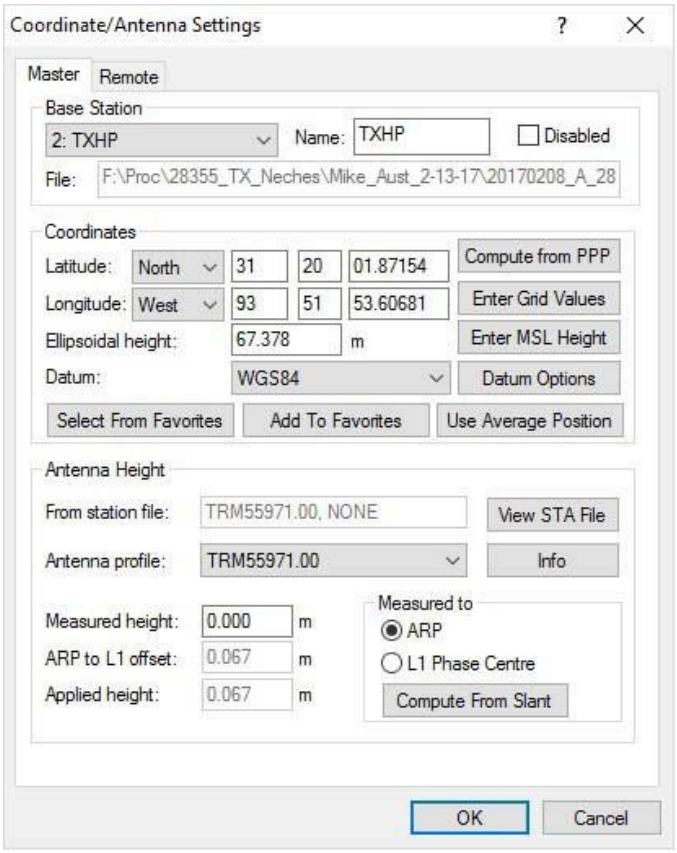

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
Roll
Pitch

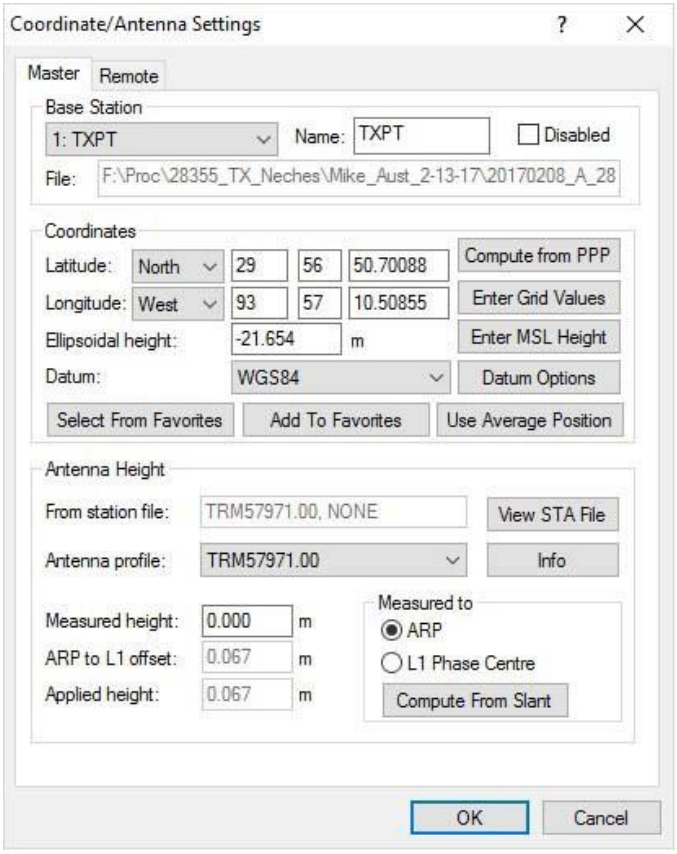

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXHP
Name:
TXHP
Disabled
File:
F:\Proc\28355_TX_Neches\Mike_Aust_2-13-17\20170208_A_28
Coordinates
Latitude:
North
31
20
01.87154
Compute from PPP
Longitude:
West
93
51
53.60681
Enter Grid Values
Ellipsoidal height:
67.378
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM55971.00, NONE
View STA File
Antenna profile:
TRM55971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: F:\Proc\28355_TX_Neches\Mike_Aust_2-13-17\20170208_A_28
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-8-17 Lift: A B C D E Pg 1 of 1

Project: NECHES BASIN LIDAR Proj #: 28555 Flight Mgmt File: 20170208

Aircraft: 246MP Begin Hobbs: 1272.9 End Hobbs: 1276.6 Total: 3.7 Pilot: C McDONALD Co-Pilot: Tech: M AUST

Dep Apt: BPT Dep Time (Lcl): 12:52 (Z): 1852 Arr Apt: BPT Arr Time (Local): 4:36 (Z): 2236 Tot Time Aloft:

CORS: (Y) N Sta 1: TXKO Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 28 °c End: 25 °c OAT beg: °c End: °c Altimeter begin: 29.81 end: 29.78

LiDAR	Type ALS80	Serial # 8227	Alt AGL	Alt AMSL 5.7	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 34	Scan Freq 56	MpIA (Y) N	Pulses In Air	Pulse Rate 311	Power 63	PPSM

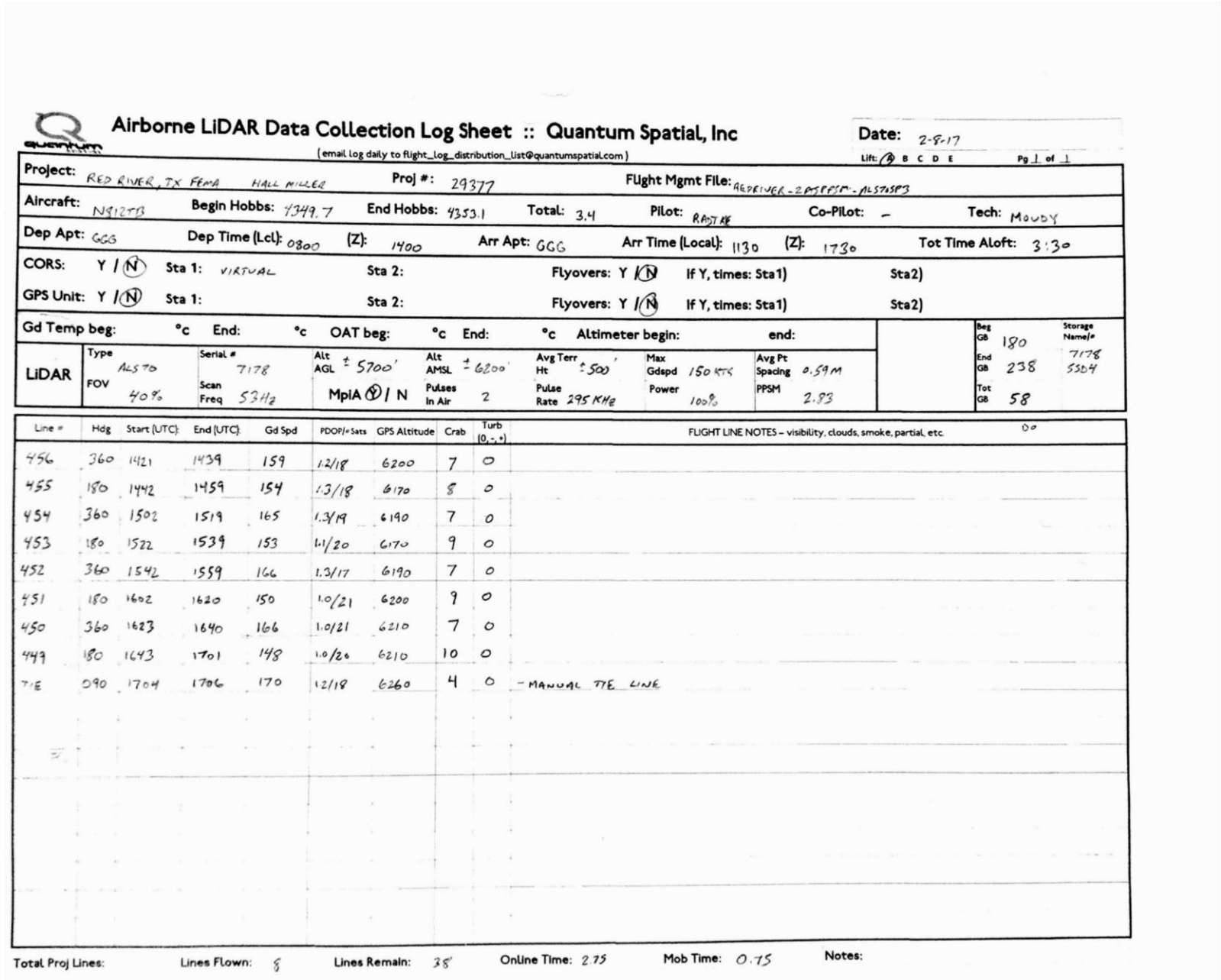
Beg GB 666	Storage Name/#
End GB 601	
Tot GB 65	

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, 1, 2)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6046	N	1916	1936	159	1.3|17	5.7			FIGURE 8's 19:12 SOME SMOKE NORTH END OF LINE
6047	S	1940	2001	152	1.3|16	5.7			SMOKE ON NORTH END OF LINE WINDS 265° @ 44 KTS
6048	N	2004	2014	157	1.3|15	5.7		YES	PARTIAL - FLEW SOUTH 32 MILES OF LINE
6049	S	2021	2032	154	1.2|15	5.7		YES	PARTIAL " "
6050	N	2036	2047	150	1.2|16	5.7		YES	PARTIAL " "
6051	S	2050	2102	151	1.3|15	5.7		YES	PARTIAL " "
6052	N	2105	2112	155	1.1|17	5.7		YES	PARTIAL FLEW SOUTH 22 MILES OF LINE
6053	S	2116	2124	146	1.0|20	5.7		YES	PARTIAL " "
6054	N	2129	2137	154	1.0|22	5.7		YES	PARTIAL " "
6055	S	2141	2149	150	1.1|22	5.7		YES	PARTIAL " "
6056	N	2152	2159	158	1.1|22	5.7		YES	PARTIAL " "
6057	S	2203		157	1.1|21	5.7		YES	PARTIAL " " - REFLY
			22:10						RED ERROR - GNSS DATA GAP DETECTED
									IMU DATA ARE MISSING
									X - 3 hrs Online
									X - SENSOR WAS ON 3hrs 40 min
									X VERY SLUGGISH - TAKES A MIN EACH TIME
									A BUTTON WAS HIT

Total Proj Lines:	Lines Flown:	Lines Remain:	Online Time: 3	Mob Time: .7	Notes:

1271.5 - 1272.9 = 1.4 MOB KTYK → KBPT
HOBBS

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-8-17 Lift: A B C D E Pg 1 of 1

Project: RED RIVER, TX FEMA HALL MILLER Proj #: 29377 Flight Mgmt File: AGDRIVER-2PSPSM-ALS70SP3

Aircraft: N912TB Begin Hobbs: 4349.7 End Hobbs: 4353.1 Total: 3.4 Pilot: RADTKE Co-Pilot: – Tech: MOODY

Dep Apt: GGG Dep Time (Lcl): 0800 (Z): 1400 Arr Apt: GGG Arr Time (Local): 1130 (Z): 1730 Tot Time Aloft: 3:30

CORS: Y / (N) Sta 1: VIRTUAL Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

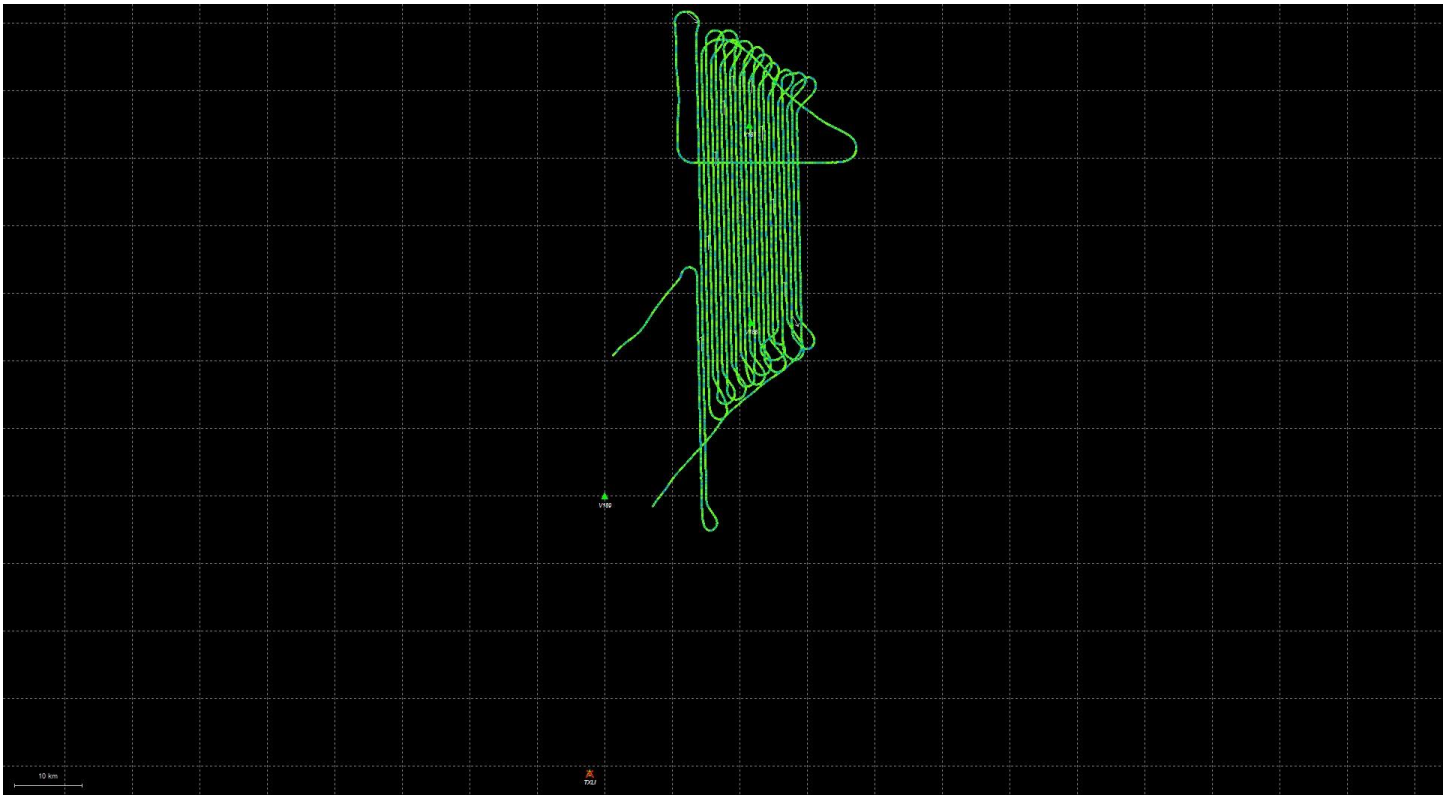
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

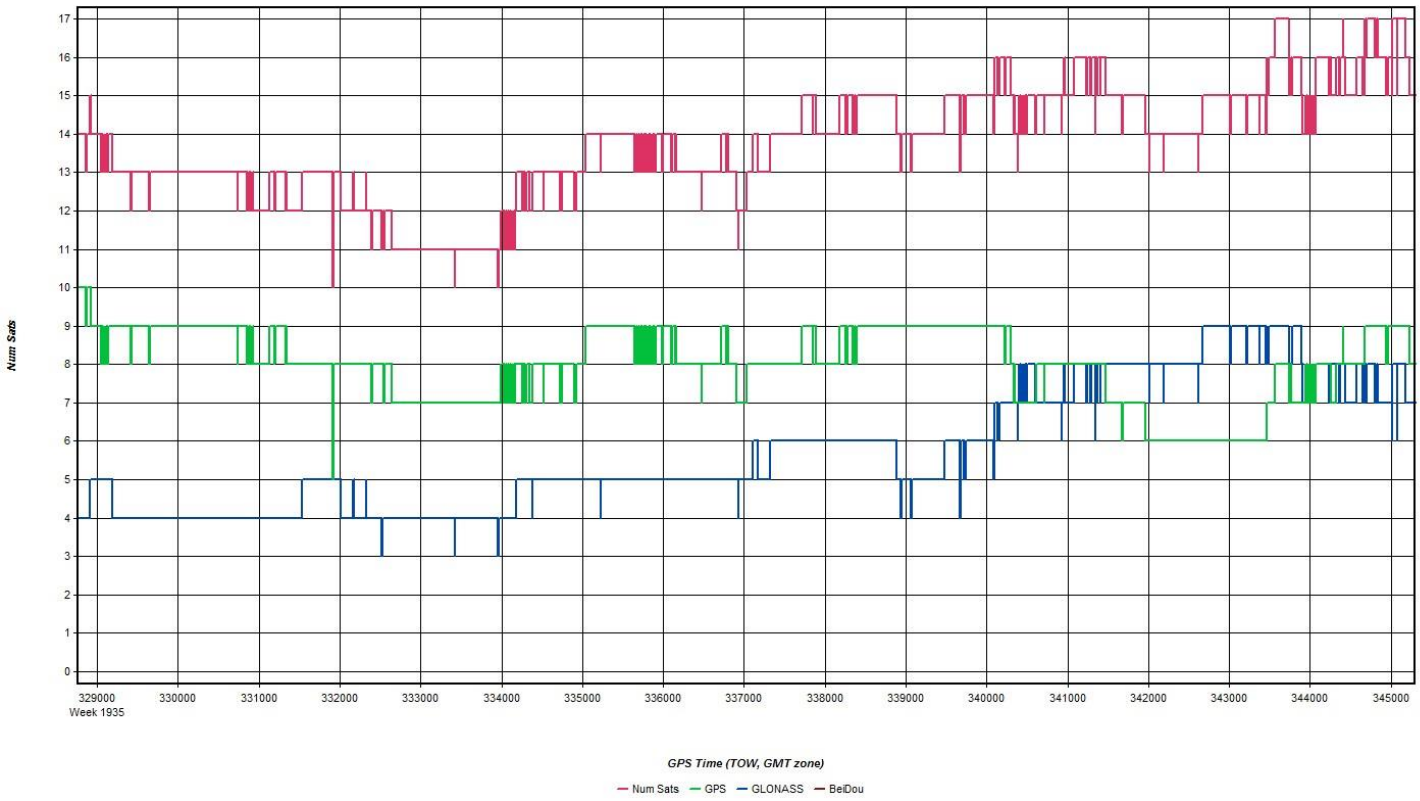
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	Storage Name/#
	ALS70	7178	± 5700'	± 6200'	± 500'	150 KTS	0.59M	180	7178
	FOV 40%	Scan Freq 53Hz	MpiA (Y) / N	Pulses In Air 2	Pulse Rate 295 KHz	Power 100%	PPSM 2.83	End GB 238	5504
								Tot GB 58	

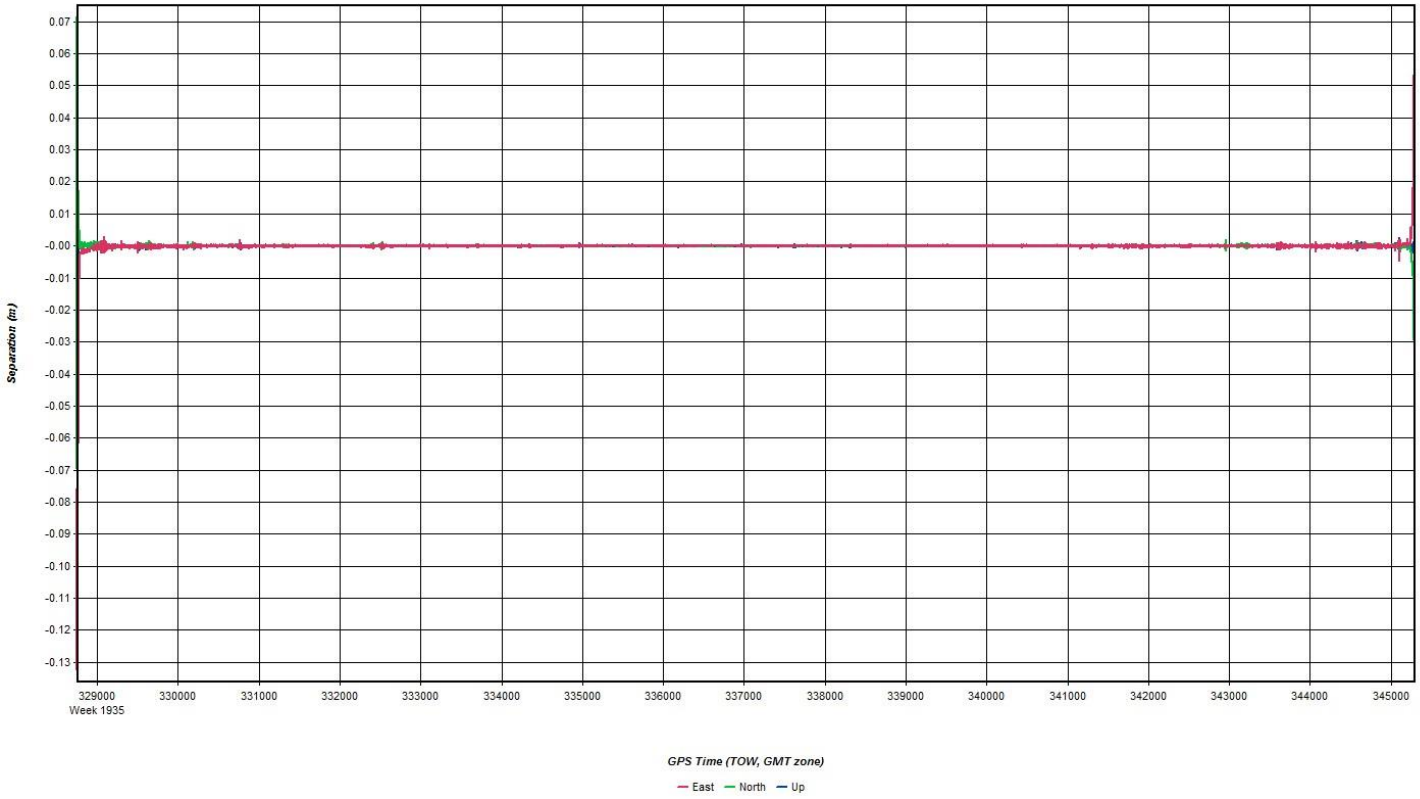
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
456	360	1421	1439	159	1.2/18	6200	7	0	
455	180	1442	1459	154	1.3/18	6170	8	0	
454	360	1502	1519	165	1.3/19	6190	7	0	
453	180	1522	1539	153	1.1/20	6170	9	0	
452	360	1542	1559	166	1.3/17	6190	7	0	
451	180	1602	1620	150	1.0/21	6200	9	0	
450	360	1623	1640	166	1.0/21	6210	7	0	
449	180	1643	1701	148	1.0/20	6210	10	0	
TIE	090	1704	1706	170	1.2/18	6260	4	0	– MANUAL TIE LINE

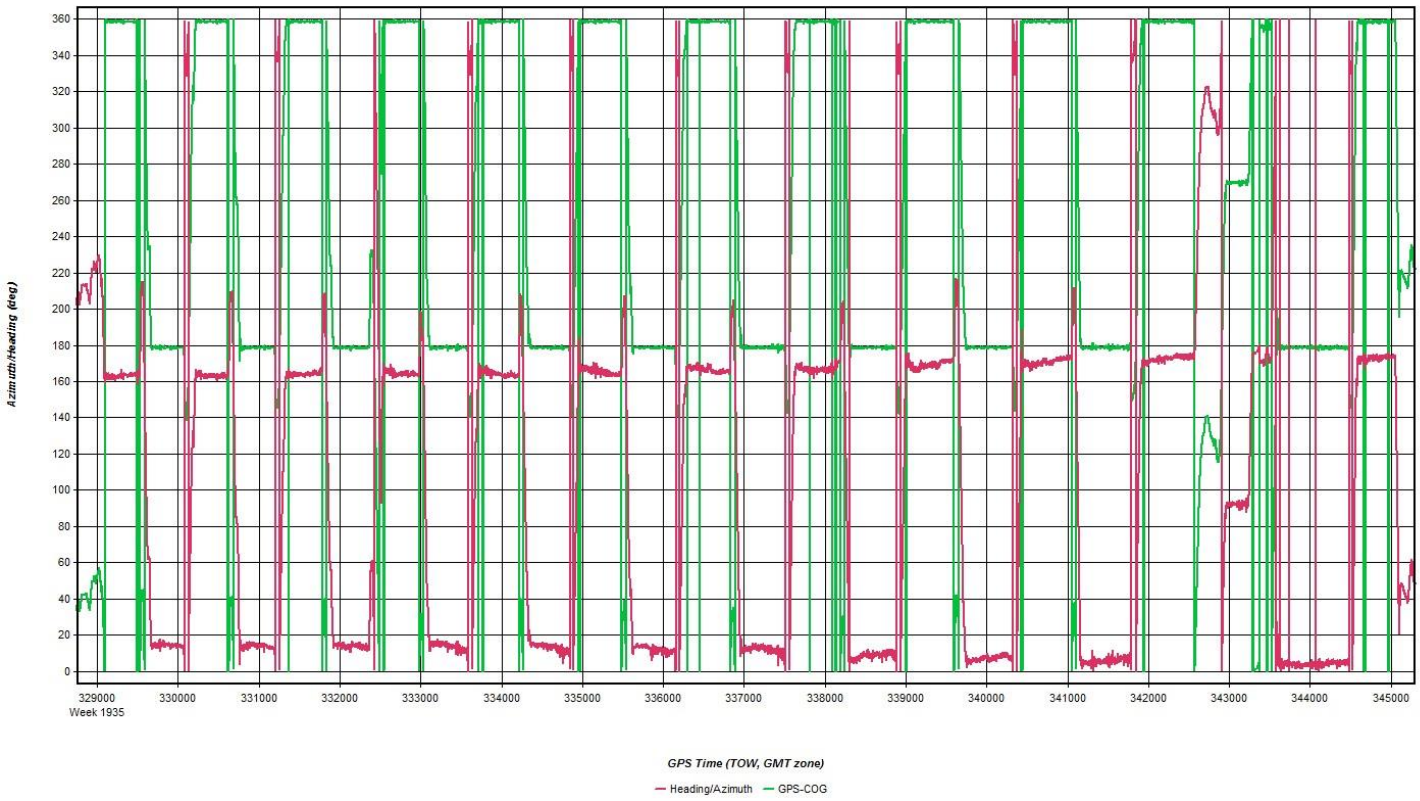
Total Proj Lines: Lines Flown: 8 Lines Remain: 38 Online Time: 2.75 Mob Time: 0.75 Notes:

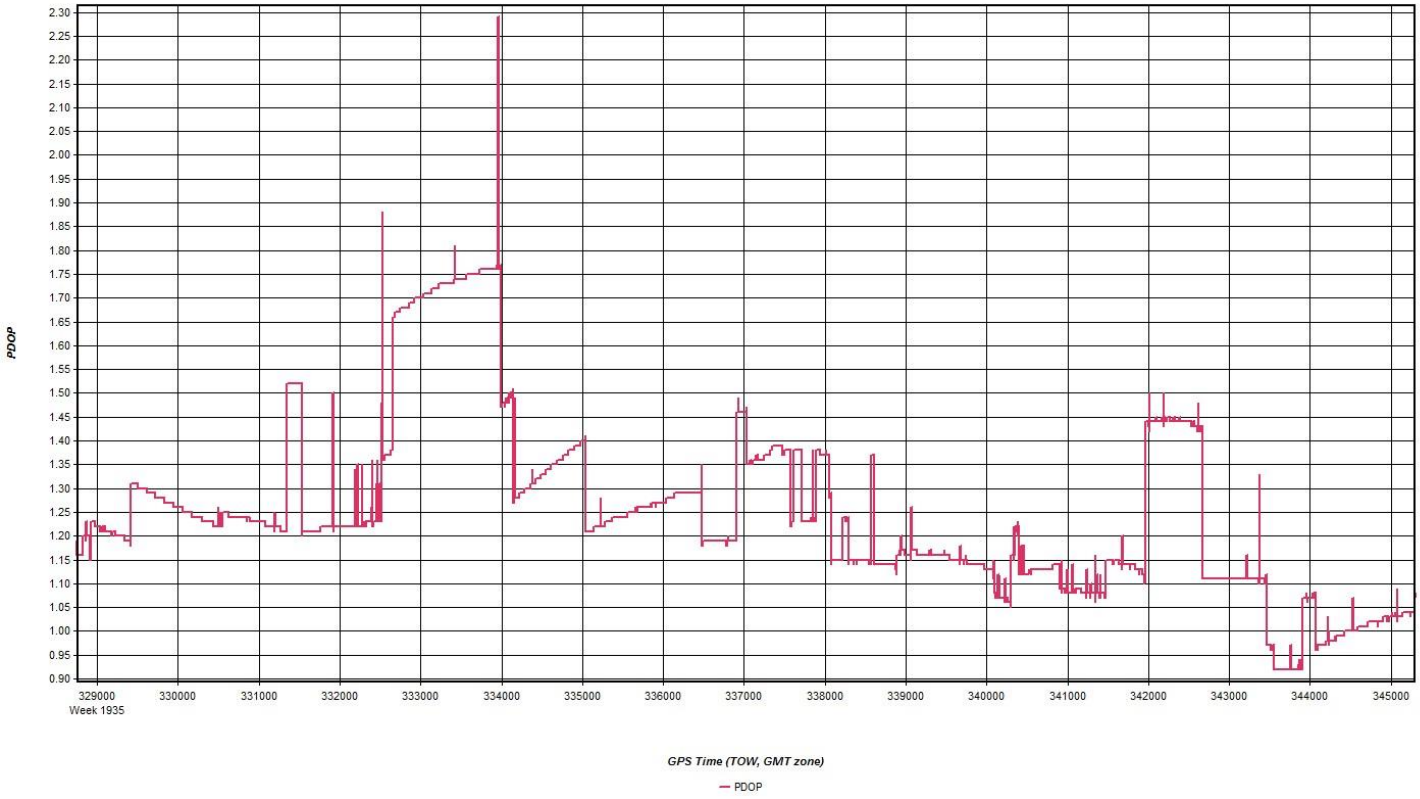
Feb 8, 2017-A (SN7229)

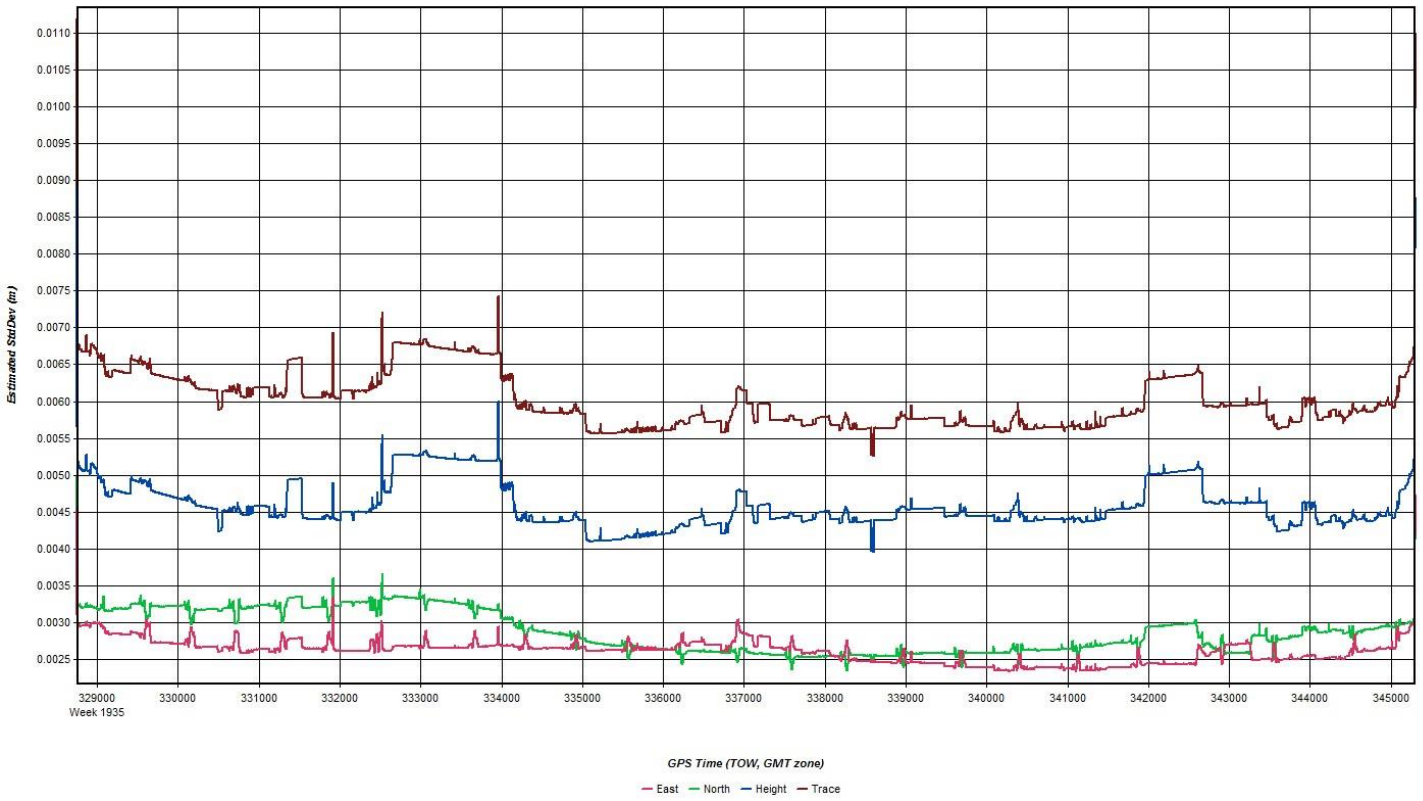


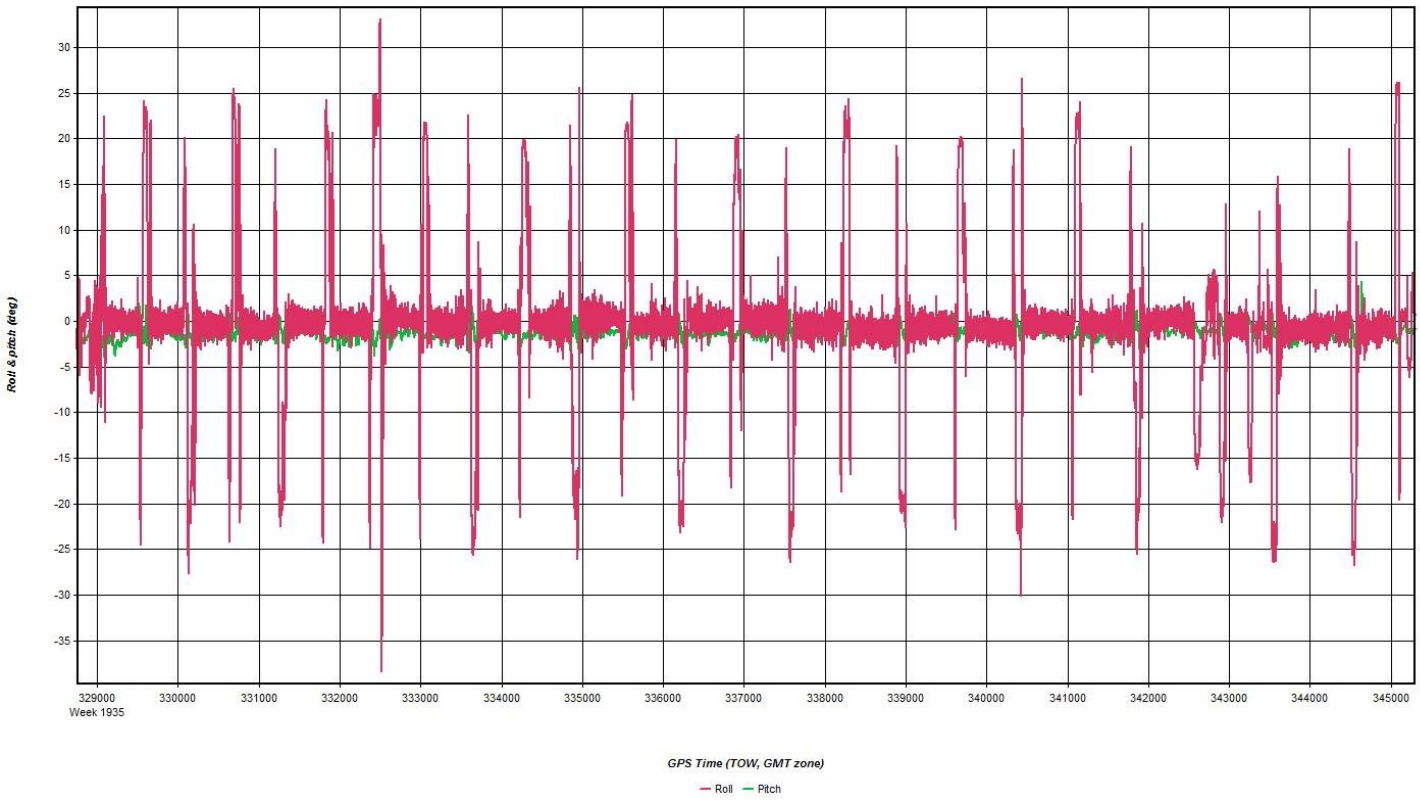

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

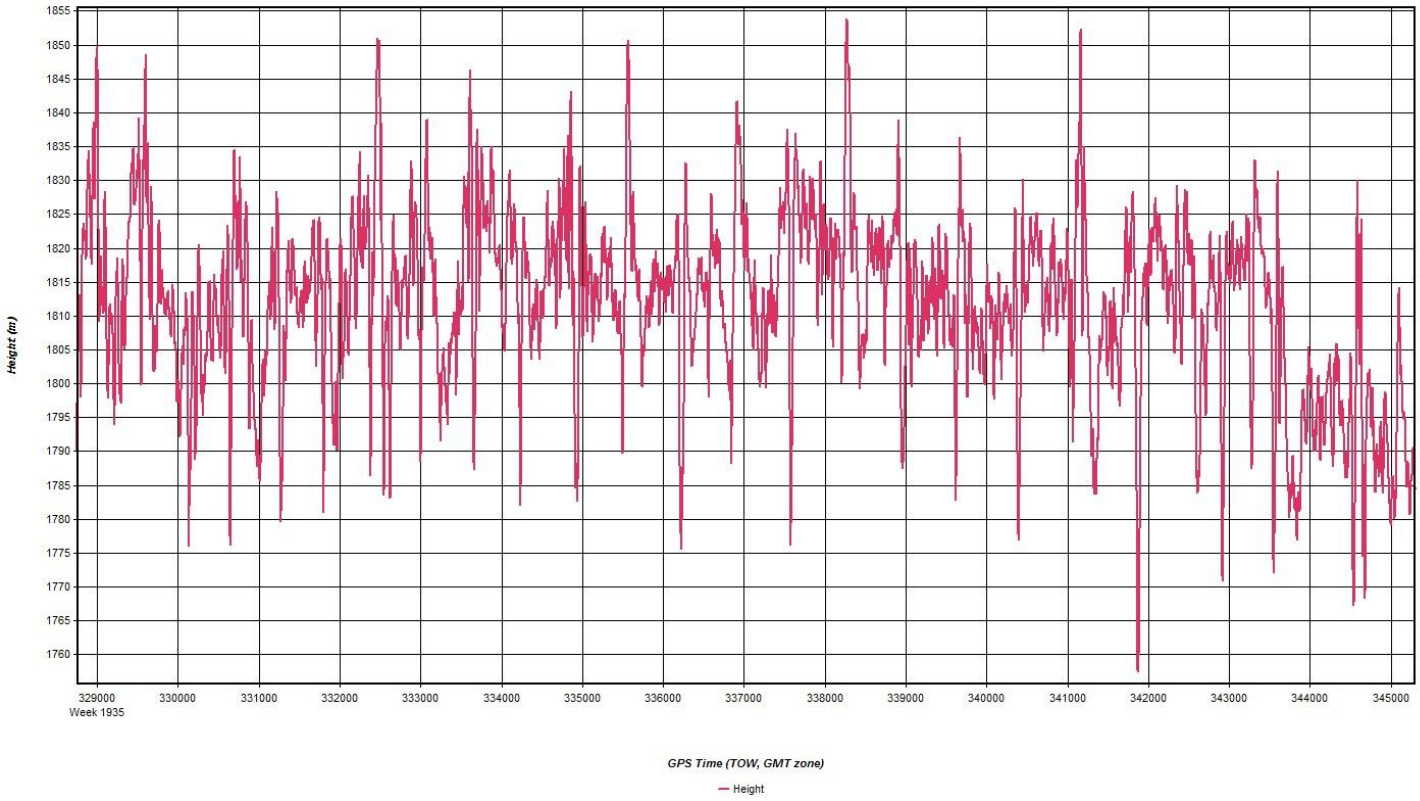

Separation (m)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
-0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
-0.10
-0.11
-0.12
-0.13
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
East
North
Up

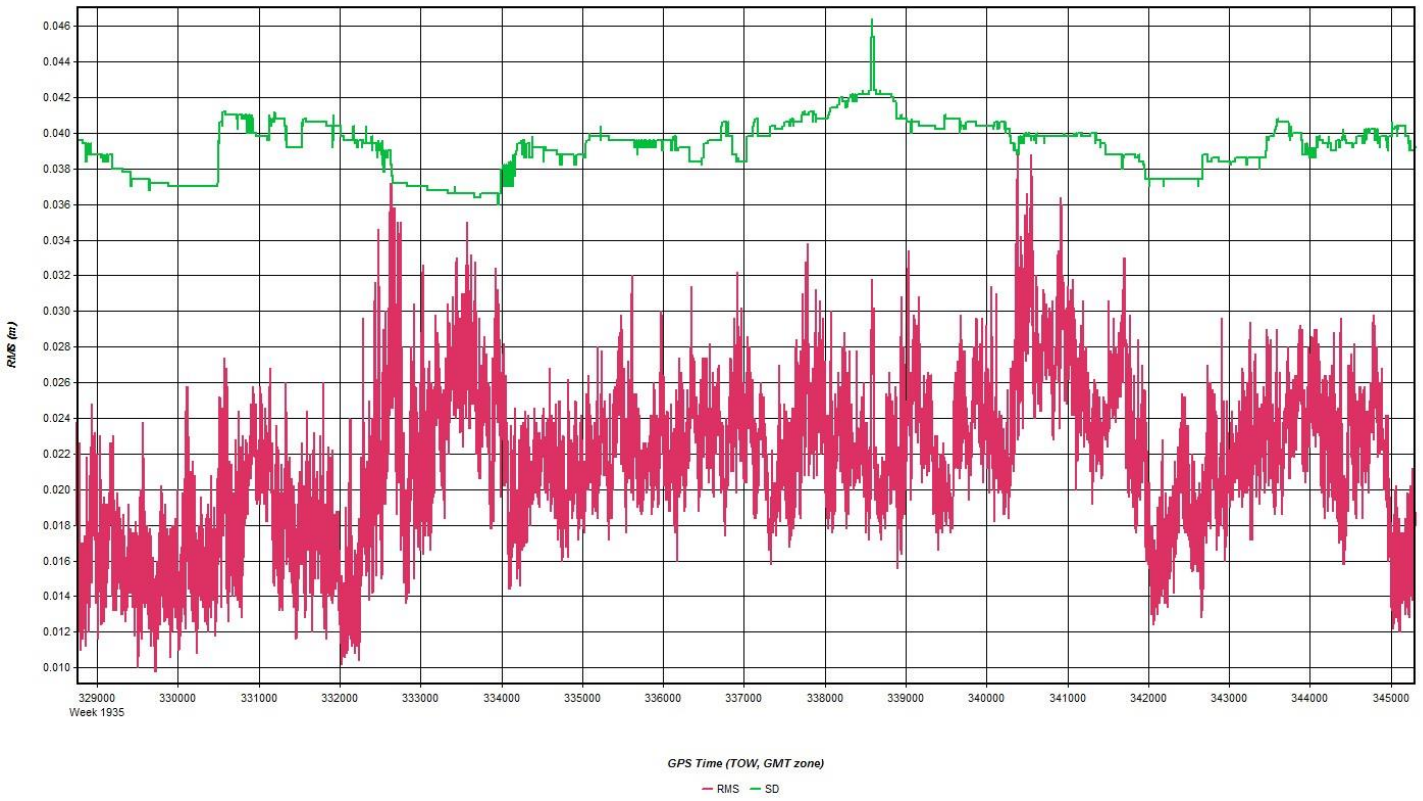

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

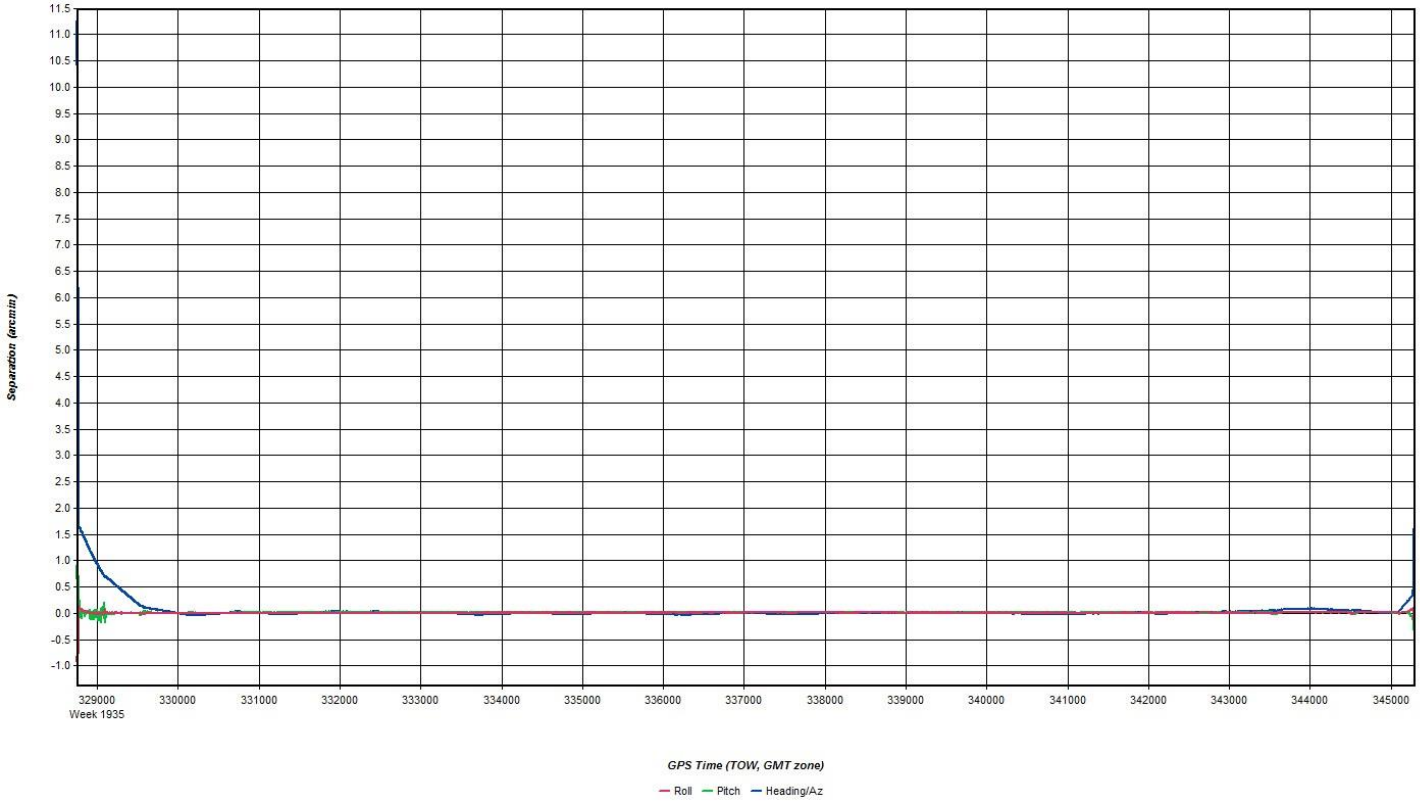

PDOP
2.30
2.25
2.20
2.15
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
PDOP

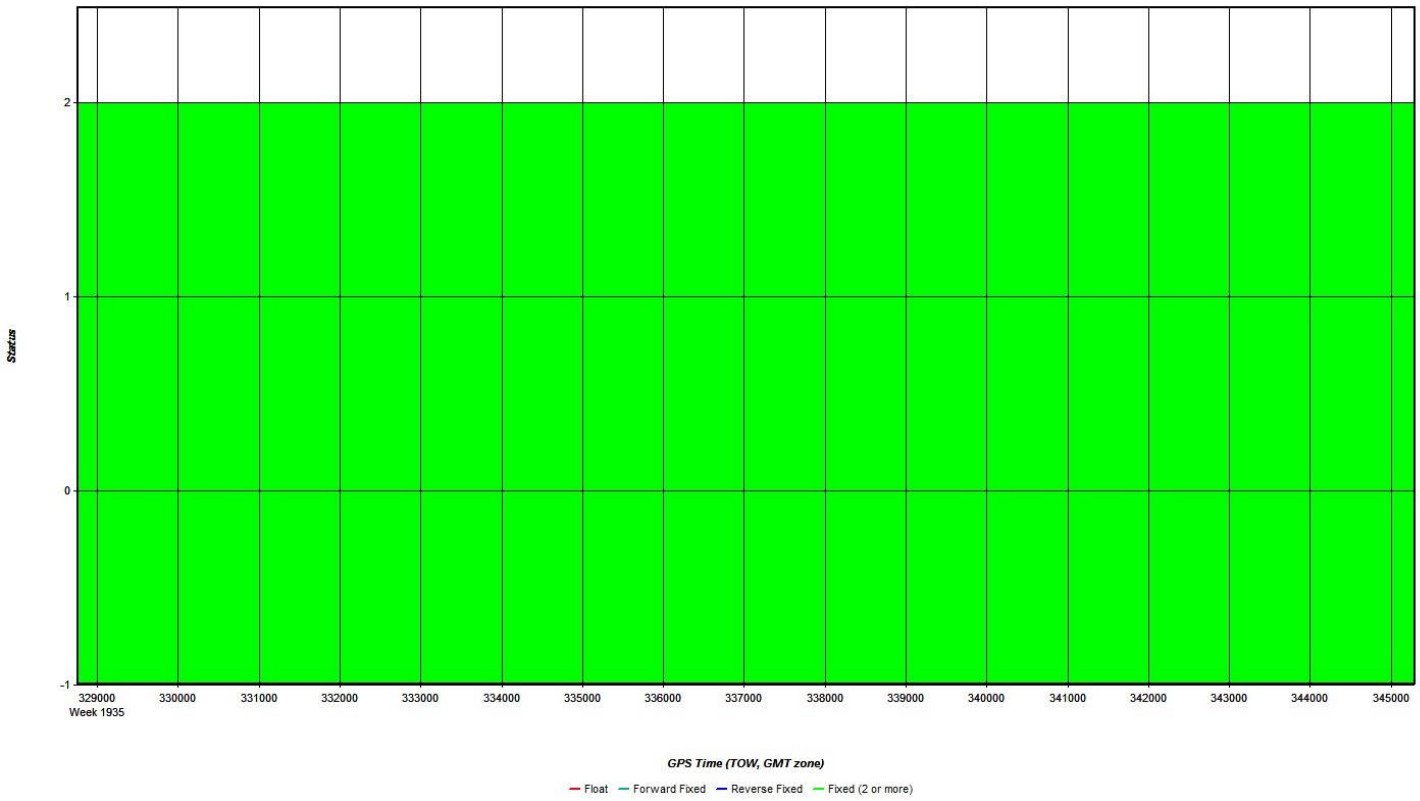

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

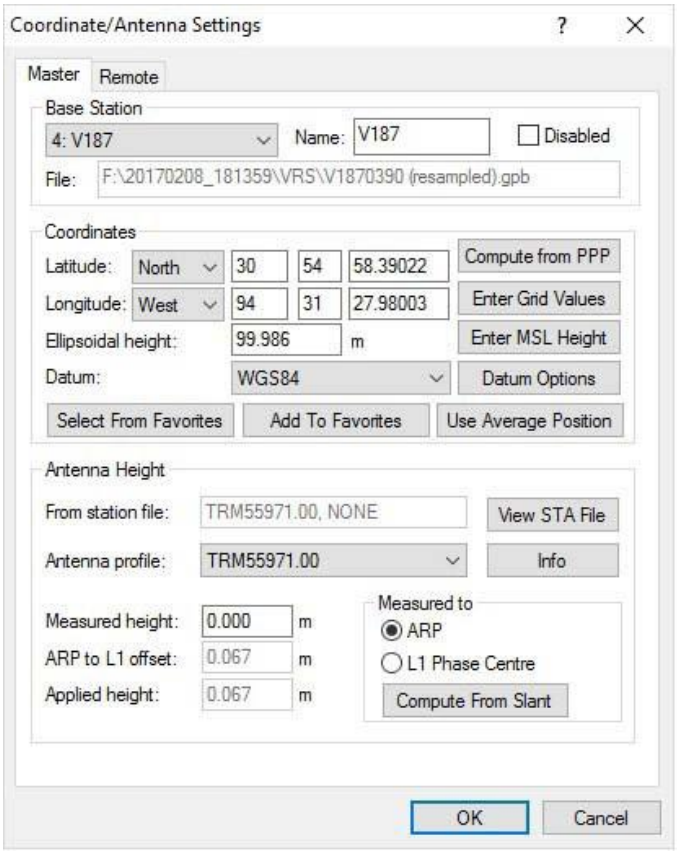

Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
Roll
Pitch

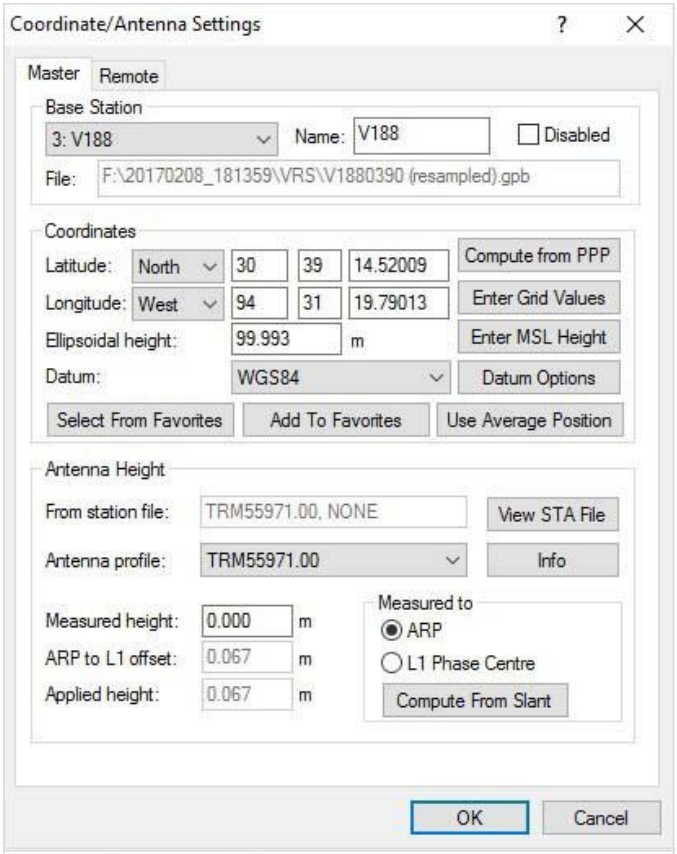

Height (m)
1855
1850
1845
1840
1835
1830
1825
1820
1815
1810
1805
1800
1795
1790
1785
1780
1775
1770
1765
1760
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
Height

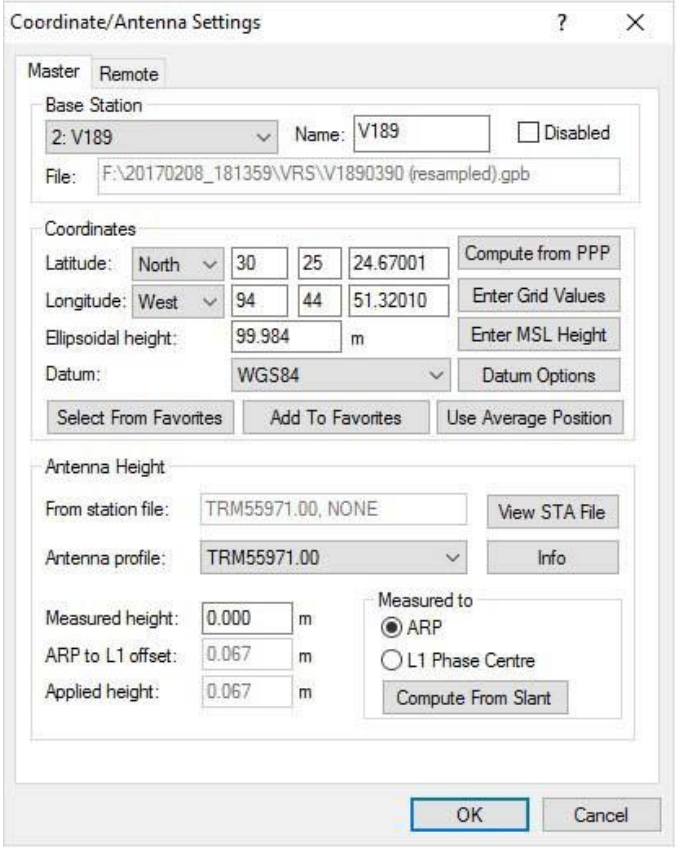

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
329000
Week 1935
330000
331000
332000
333000
334000
335000
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V187
Name: V187
Disabled
File: F:\20170208_181359\VRS\V1870390 (resampled).gpb
Coordinates
Latitude: North 30 54 58.39022
Longitude: West 94 31 27.98003
Ellipsoidal height: 99.986 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V188
Name: V188
Disabled
File: F:\20170208_181359\VRS\V1880390 (resampled).gpb
Coordinates
Latitude: North 30 39 14.52009
Longitude: West 94 31 19.79013
Ellipsoidal height: 99.993 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V189
Name: V189
Disabled
File: F:\20170208_181359\VRS\V1890390 (resampled).gpb
Coordinates
Latitude: North 30 25 24.67001
Longitude: West 94 44 51.32010
Ellipsoidal height: 99.984 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

LIDAR & AERIAL PHOTO FLIGHT LOG

20 YEARS OF EXCELLENCE — ATLIS — LIDAR + IMAGERY + GEOMATICS

PROJECT NAME	QS Texas	DATE	08/02/2017
SENSOR OPERATOR	Michael Kettridge	SENSOR(S)	ALS70-HP / RCD30
PILOT	Daniel Thibeault	IMU	Honeywell uIRS
AIRCRAFT	Navajo C-FVZM	ABGPS	IPAS-CUS6
AIRBASE	Cleveland, TX	DATA DRIVES	LiDar3

AIRCRAFT BLOCK TIME				MISSION DETAILS				STATIC ALIGNMENT	GPS TIME	
Engine On:	18:05:00	Takeoff:	18:26:00	AGL Height:	1775	Pulse Rate:	312		START	END
Engine Off:	00:17:00	Landing:	00:05:00	Speed:	150	Scan Rate:	57	Pre-Mission	18:16:00	18:23:00
TOTAL:	6.2 hr	TOTAL:	5.65 hr	Laser Power:	100	FOV:	34	Post Mission	00:08:00	00:14:00

FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME START	GPS TIME END	COMMENTS
7001		South	170208_184007	18:40:07	18:46:57	All Complete
7002		North	170208_184956	18:49:57	18:57:25	1.4nm from the north we went under a cloud but stayed with in the range gate
7003		South	170208_190033	19:00:35	19:08:02	All Complete
7004		North	170208_191101	19:11:02		Interfering with approach to IAH, forced to move areas
5096		North	170208_192549	19:25:51	19:31:46	All Complete
5095		South	170208_193445	19:34:46	19:40:59	All Complete
5094		North	170208_194348	19:43:49	19:50:05	All Complete
5093		South	170208_195307	19:53:09	19:59:37	All Complete
5092		North	170208_200240	20:02:41	20:09:39	All Complete
5091		South	170208_201209	20:12:10	20:19:40	All Complete
5090		North	170208_202213	20:22:14	20:29:23	All Complete
5089		South	170208_203200	20:32:01	20:39:30	All Complete
5088		North	170208_204217	20:42:18	20:49:50	All Complete
5087		South	170208_205244	20:52:46	21:00:20	All Complete
5086		North	170208_210303	21:03:04	21:11:01	All Complete
5085		South	170208_211356	21:13:56	21:22:01	All Complete
5084		North	170208_212502	21:25:02	21:33:25	All Complete
5083		South	170208_213624	21:36:24	21:44:51	All Complete
5082		North	170208_214727	21:47:28	21:56:07	All Complete
5081		South	170208_215845	21:58:46	22:08:40	All Complete
5080		North	170208_221039	22:10:40	22:19:31	All Complete
5079		South	170208_222233	22:22:34	22:31:34	All Complete
5078		North	170208_223426	22:34:27	22:43:45	All Complete
5077		South	170208_224622	22:46:23	22:55:50	All Complete

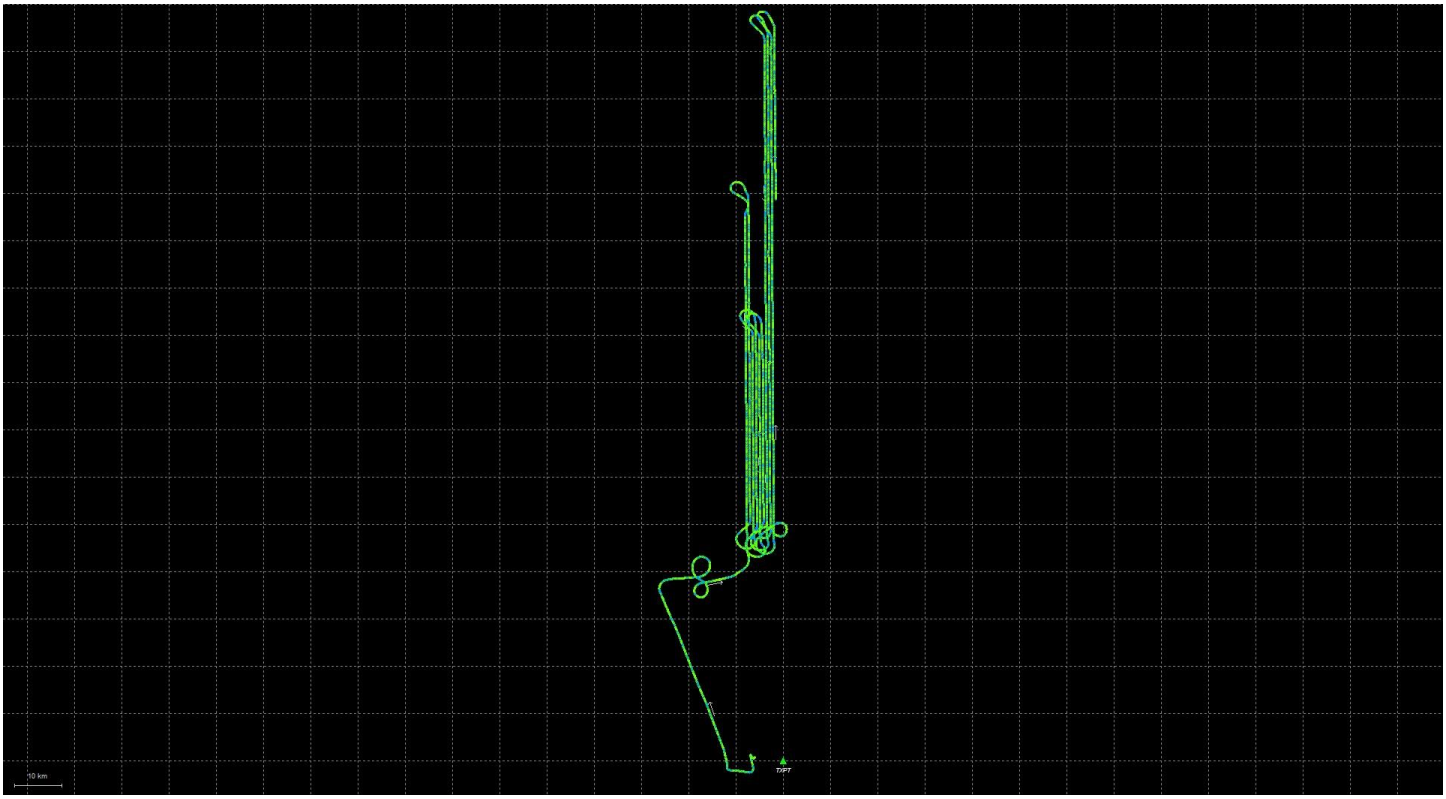
SUN ANGLE @Start: @End: @Peak:	Clear skies with some scattered low cloud in the south, Temperature was 25C at take off. Flying height was 1740 to 1780m AGL Sats and DOPS avg. 17, 1.3 The VRS network will be used but a base station was set at the airport for a backup, the ant height to the ARP was 1.679m

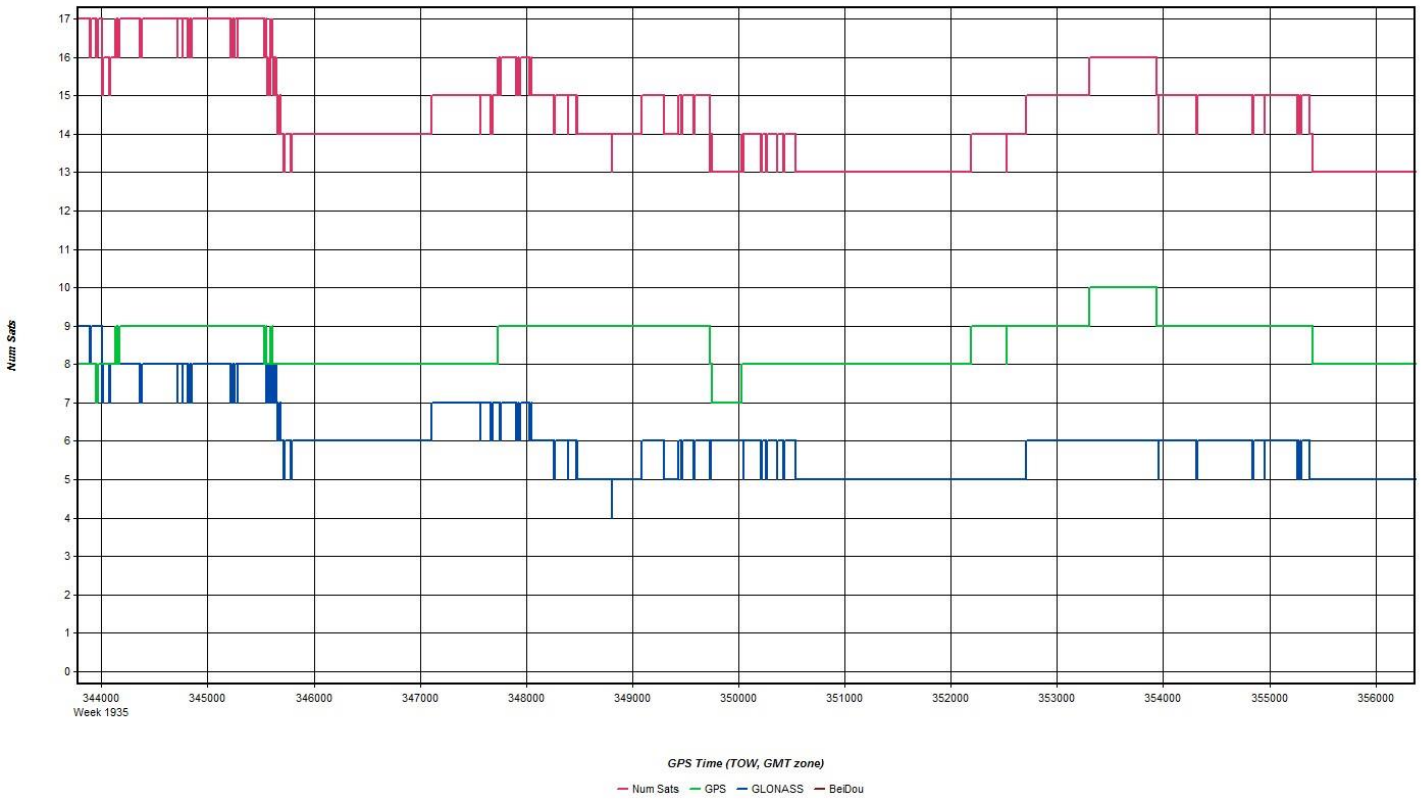


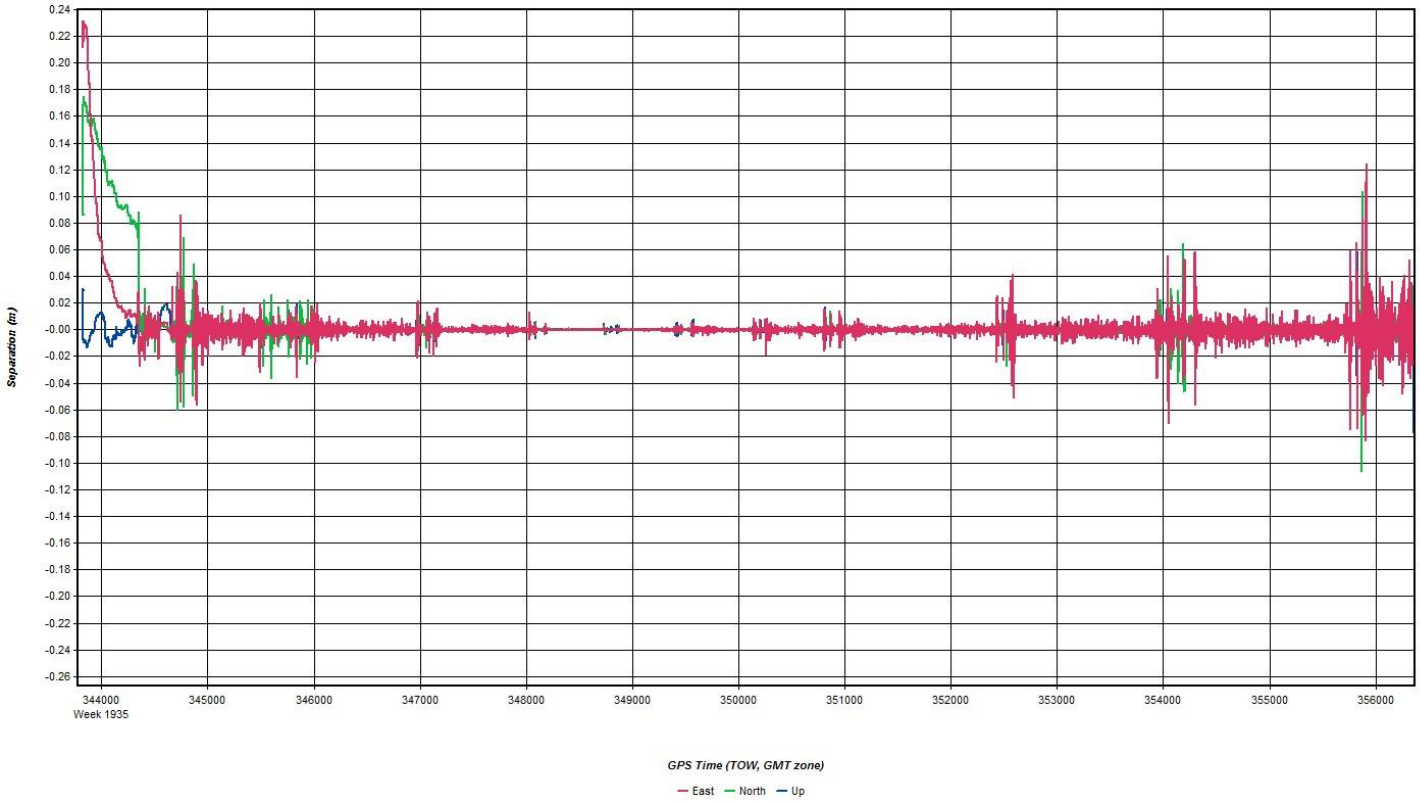
FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME		COMMENTS
				START	END	
5076		North	170208_225854	22:58:55	23:09:05	All Complete
CL		West	170208_231640	23:16:41	23:20:20	All Complete
5075		Sout	170208_232704	23:27:05	23:40:56	All Complete
5074		North	170208_234322	23:43:23	23:50:37	18nm from north not acquired

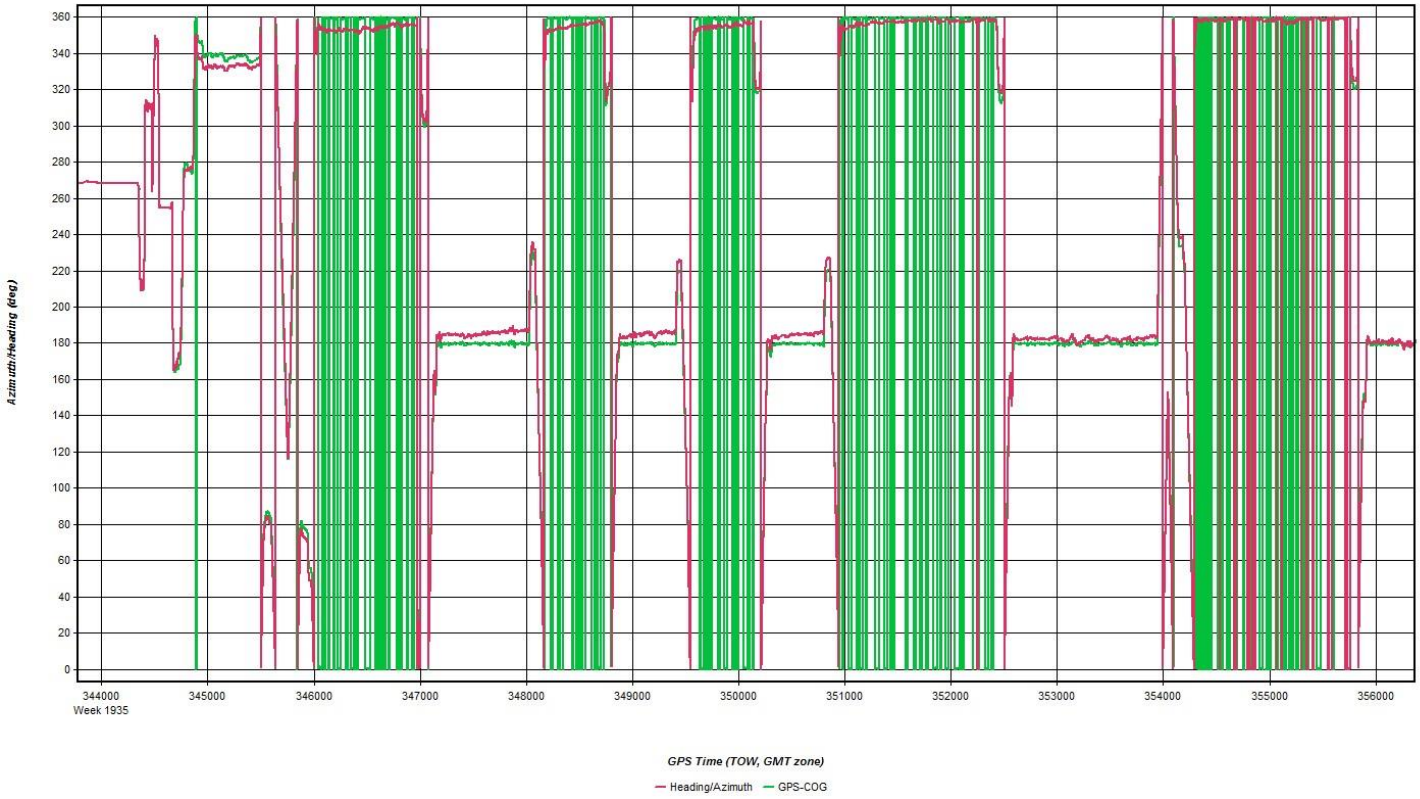
ADDITIONAL NOTES:

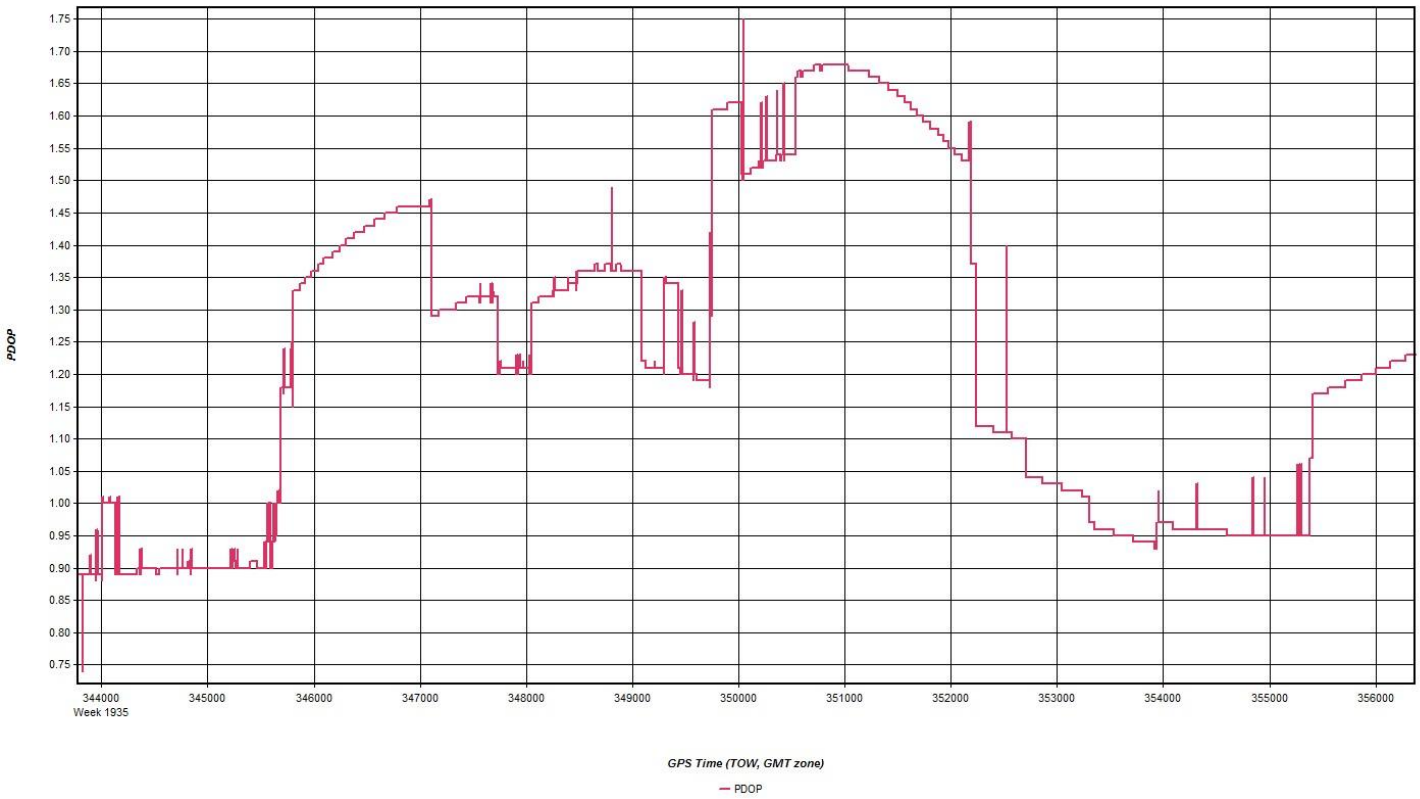
Feb 8, 2017-B (N246MP, SN8227)

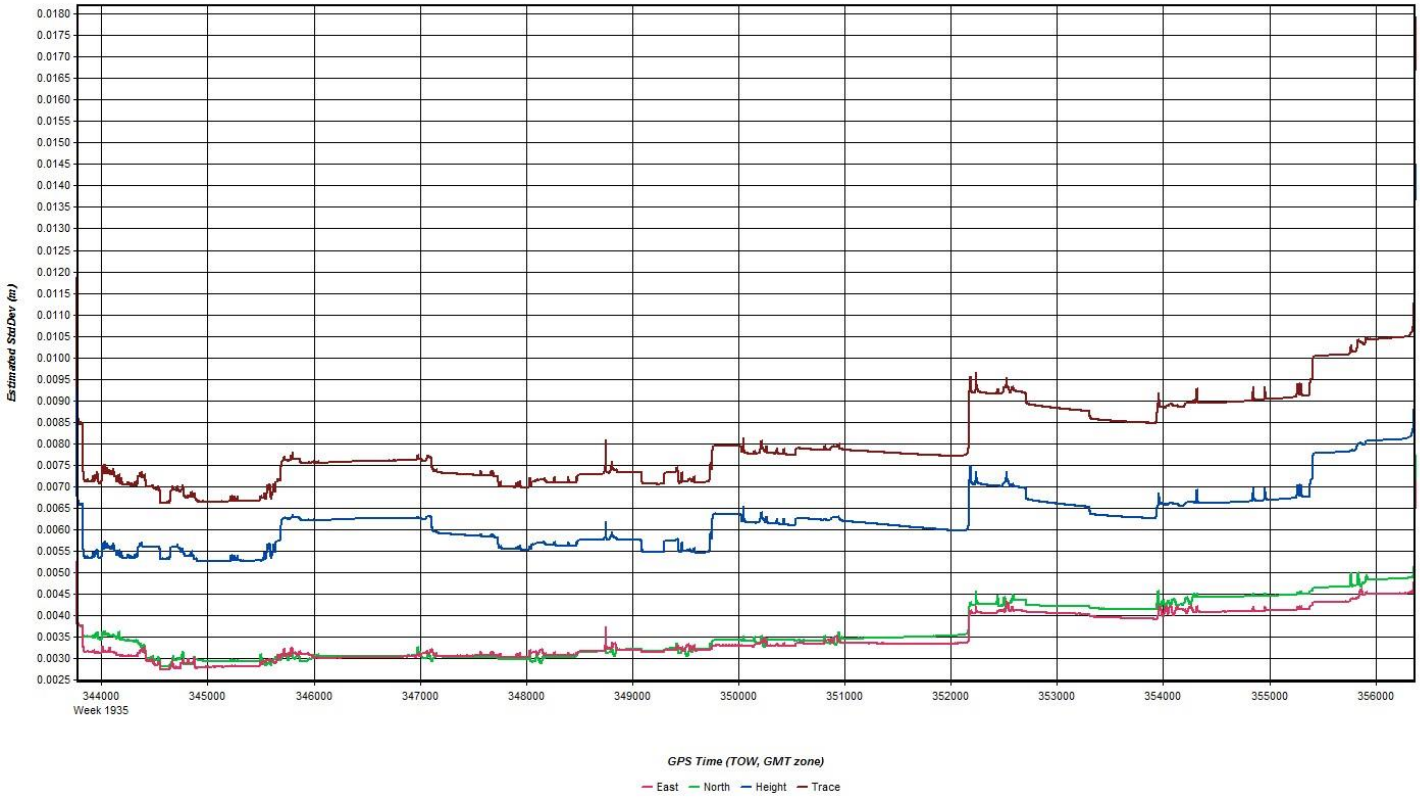


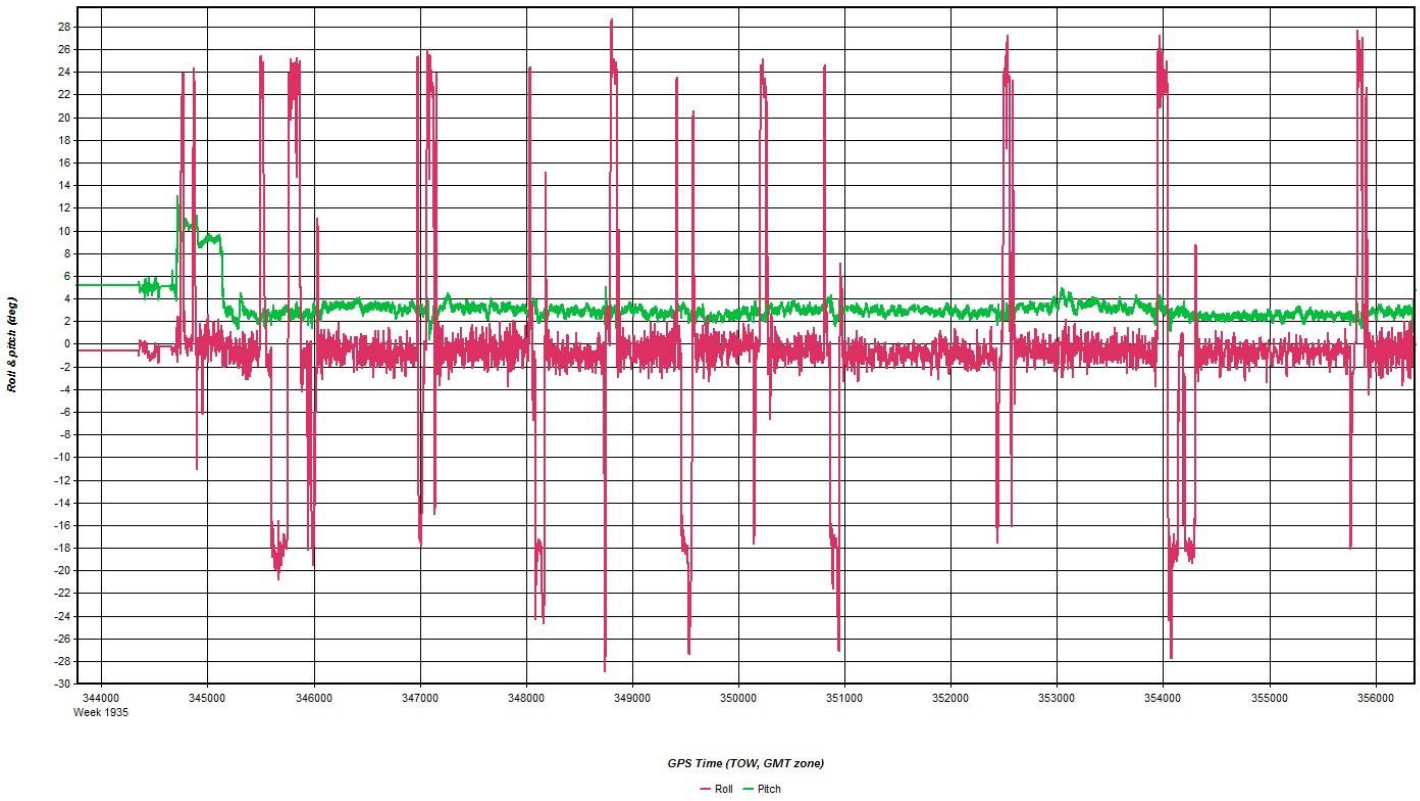

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

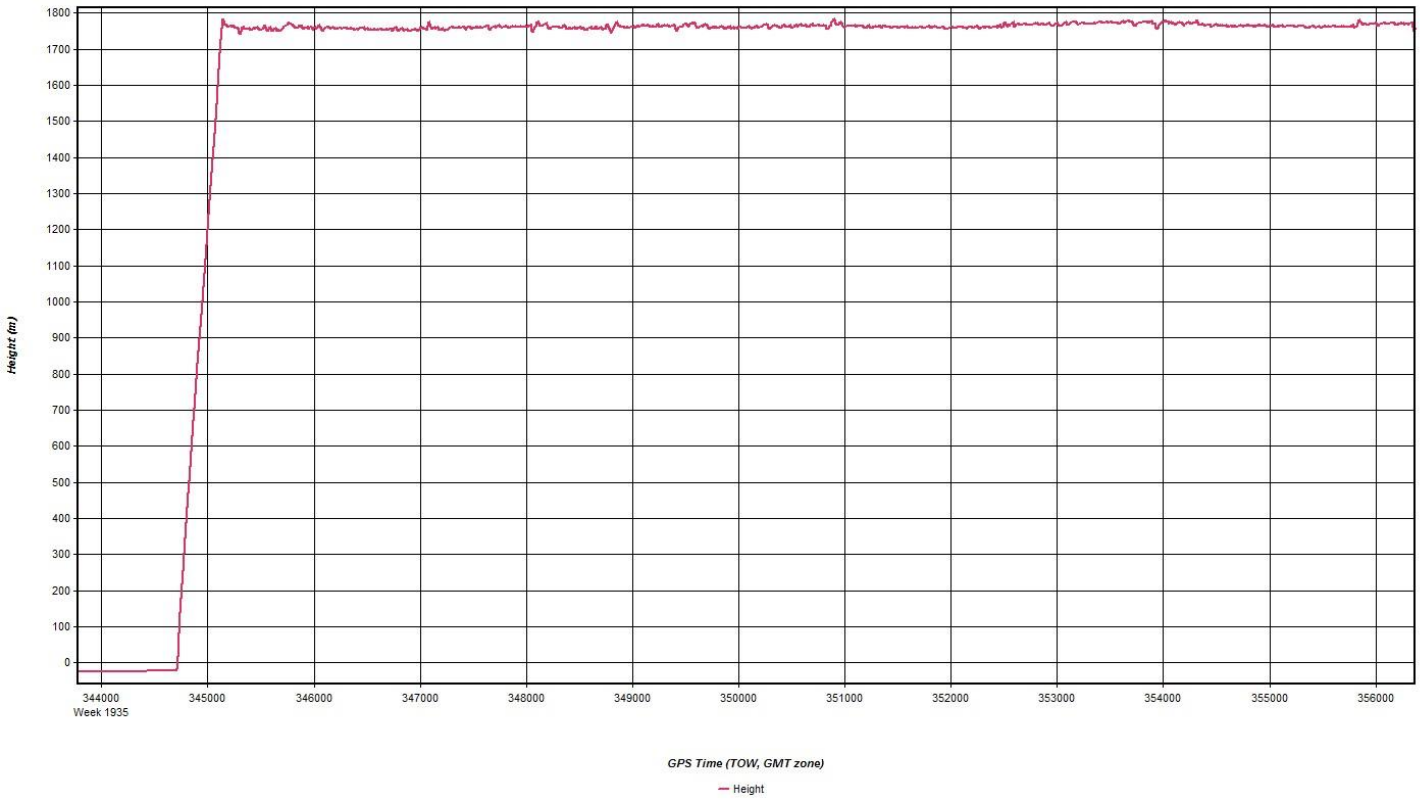

Separation (m)
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
East
North
Up

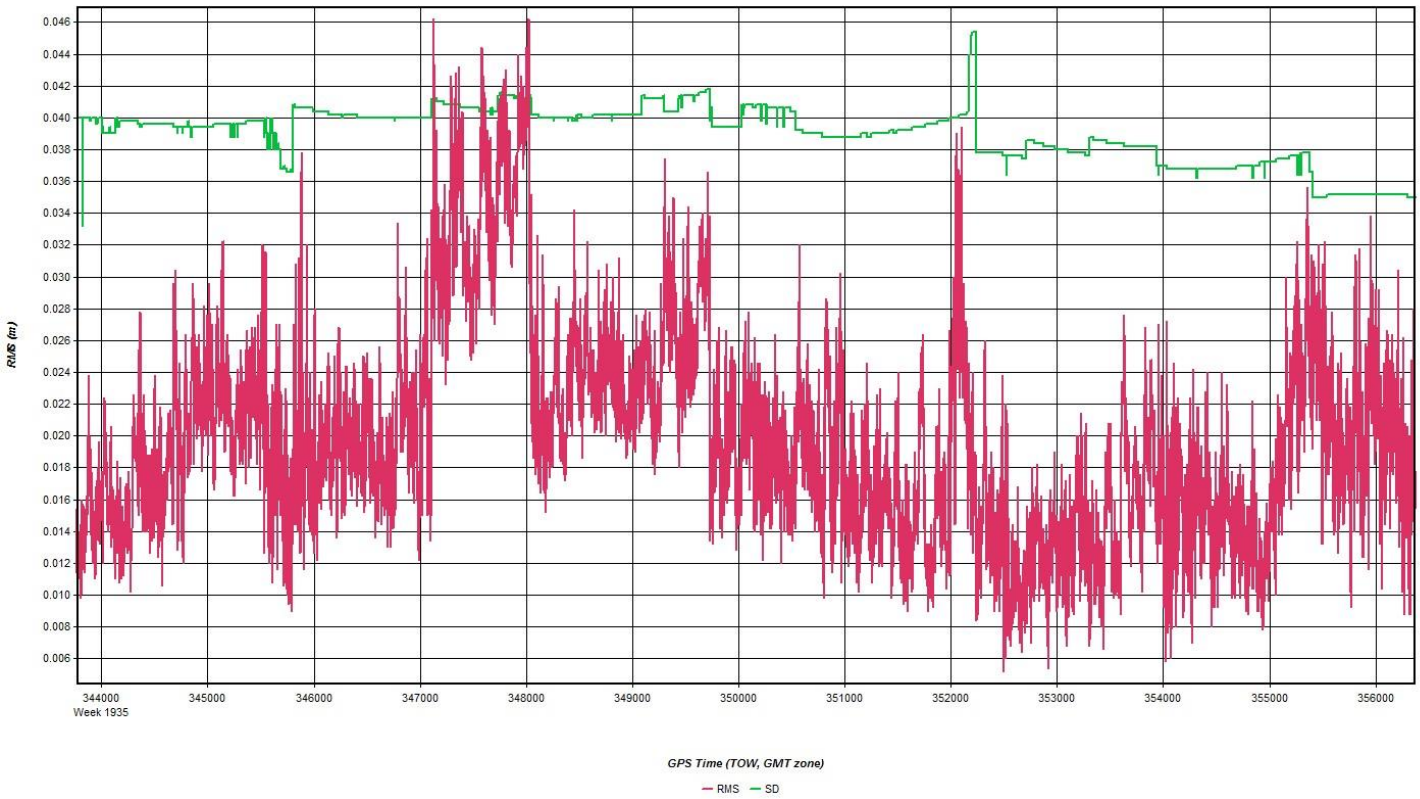

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

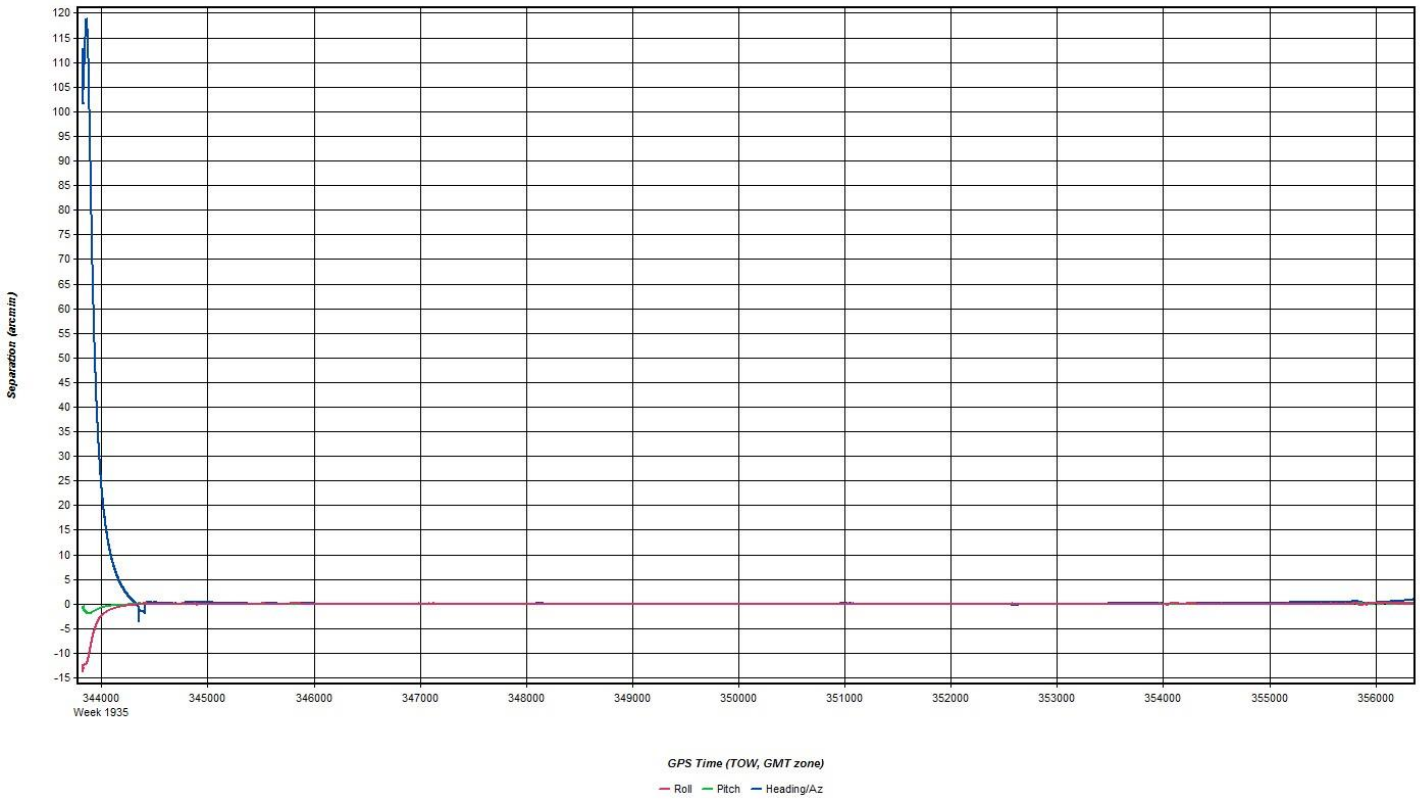

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
PDOP

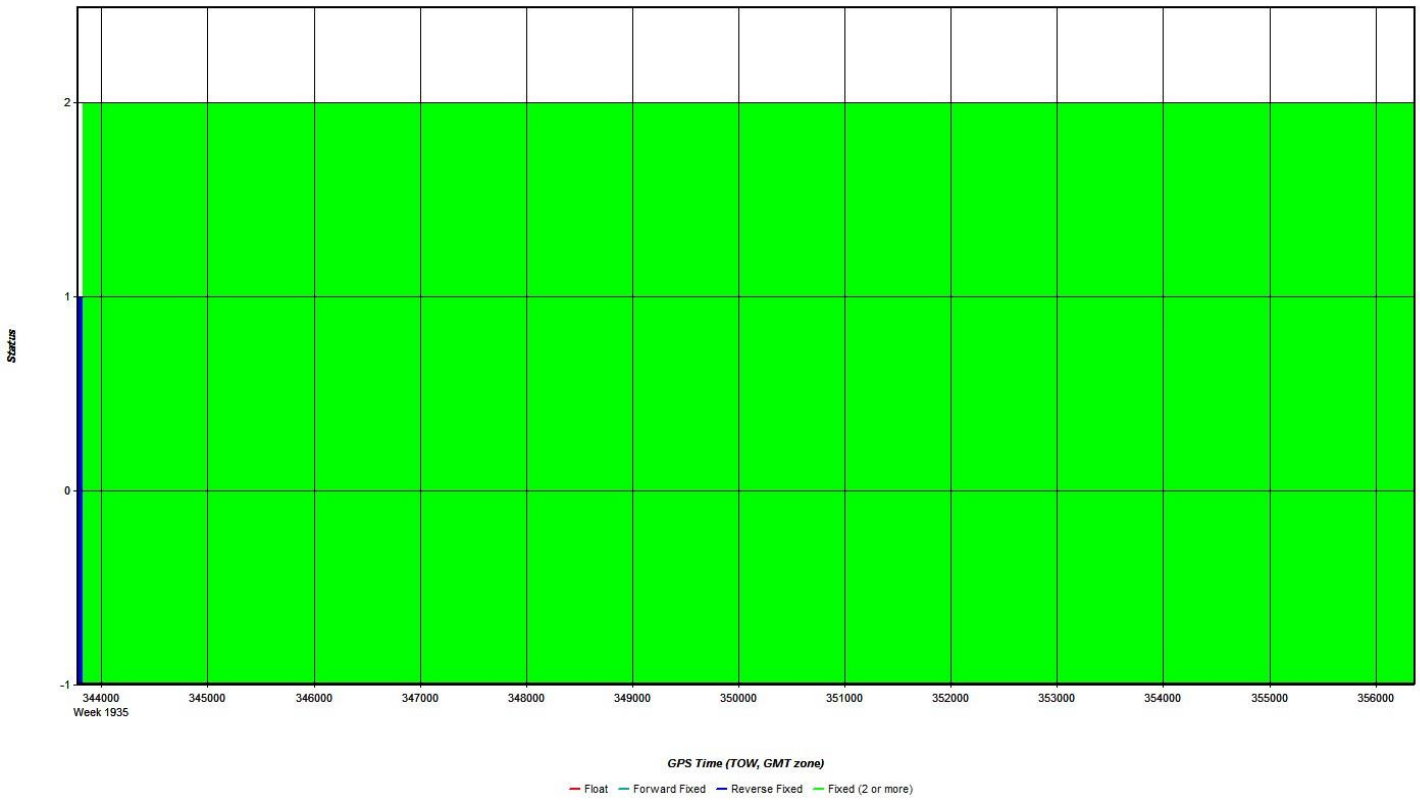

Estimated StdDev (m)
0.0180
0.0175
0.0170
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

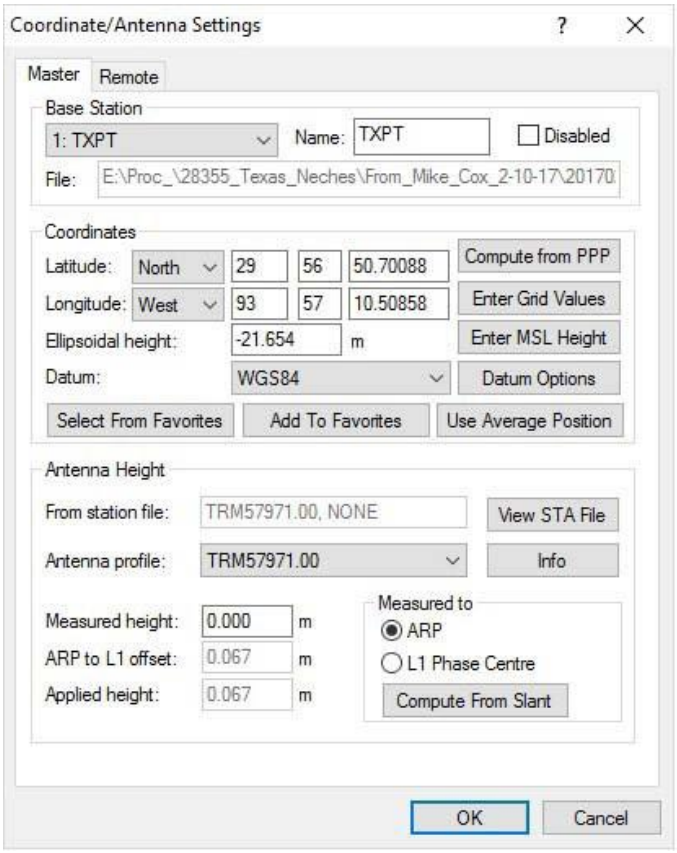

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
Height

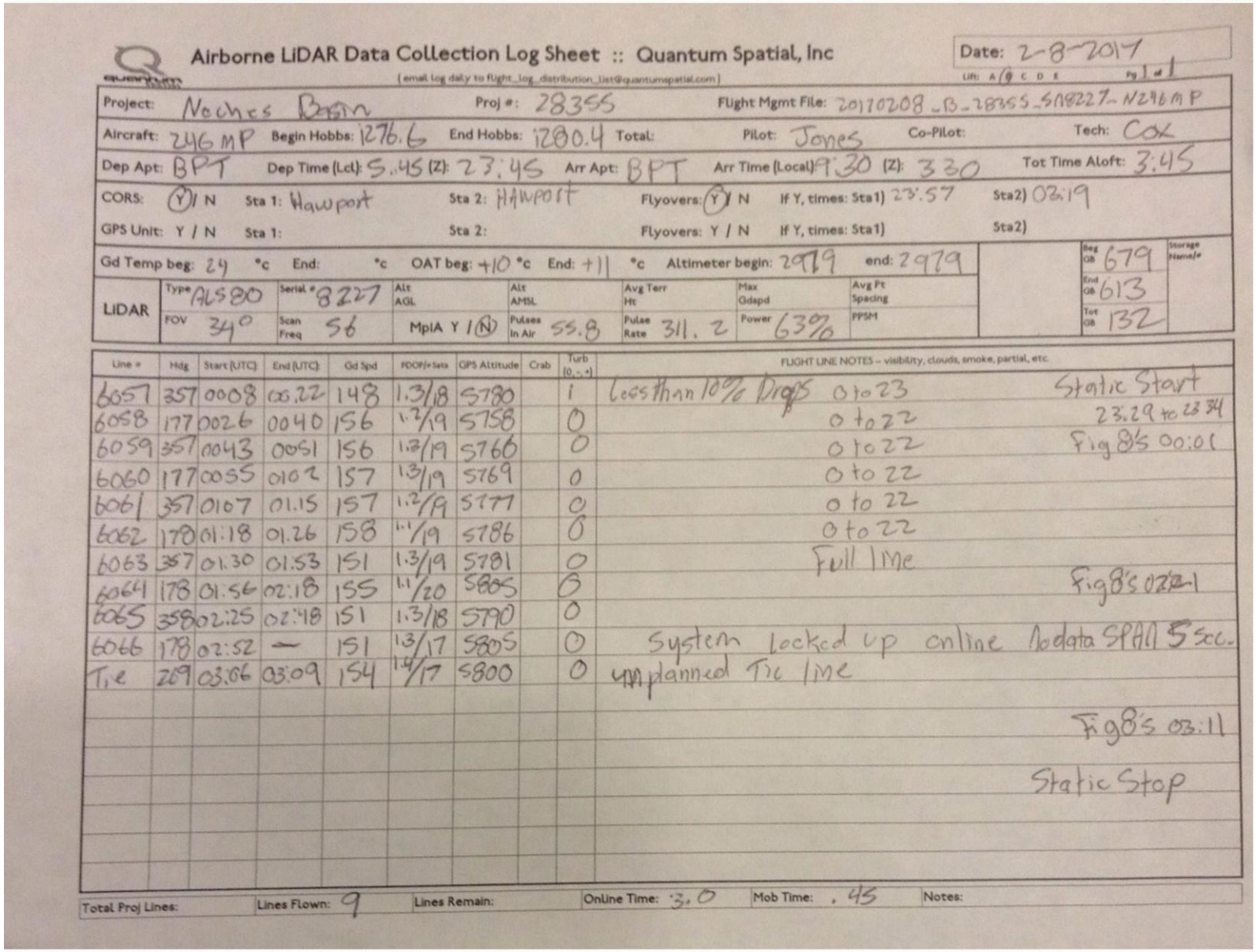

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
344000
Week 1935
345000
346000
347000
348000
349000
350000
351000
352000
353000
354000
355000
356000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Proc_\28355_Texas_Neches\From_Mike_Cox_2-10-17\20170
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50858
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-8-2017

Life: A / B C D E — Pg 1 of 1

Project: Neches Basin — Proj #: 28355 — Flight Mgmt File: 20170208_B_28355_SN8227_N246MP

Aircraft: 246MP — Begin Hobbs: 1276.6 — End Hobbs: 1280.4 — Total: — Pilot: Jones — Co-Pilot: — Tech: Cox

Dep Apt: BPT — Dep Time (Lcl): 5:45 (Z): 23:45 — Arr Apt: BPT — Arr Time (Local): 9:30 (Z): 330 — Tot Time Aloft: 3:45

CORS: (Y) / N — Sta 1: Hawport — Sta 2: HAWPORT — Flyovers: (Y) / N — If Y, times: Sta1) 23:57 — Sta2) 02:19

GPS Unit: Y / N — Sta 1: — Sta 2: — Flyovers: Y / N — If Y, times: Sta1) — Sta2)

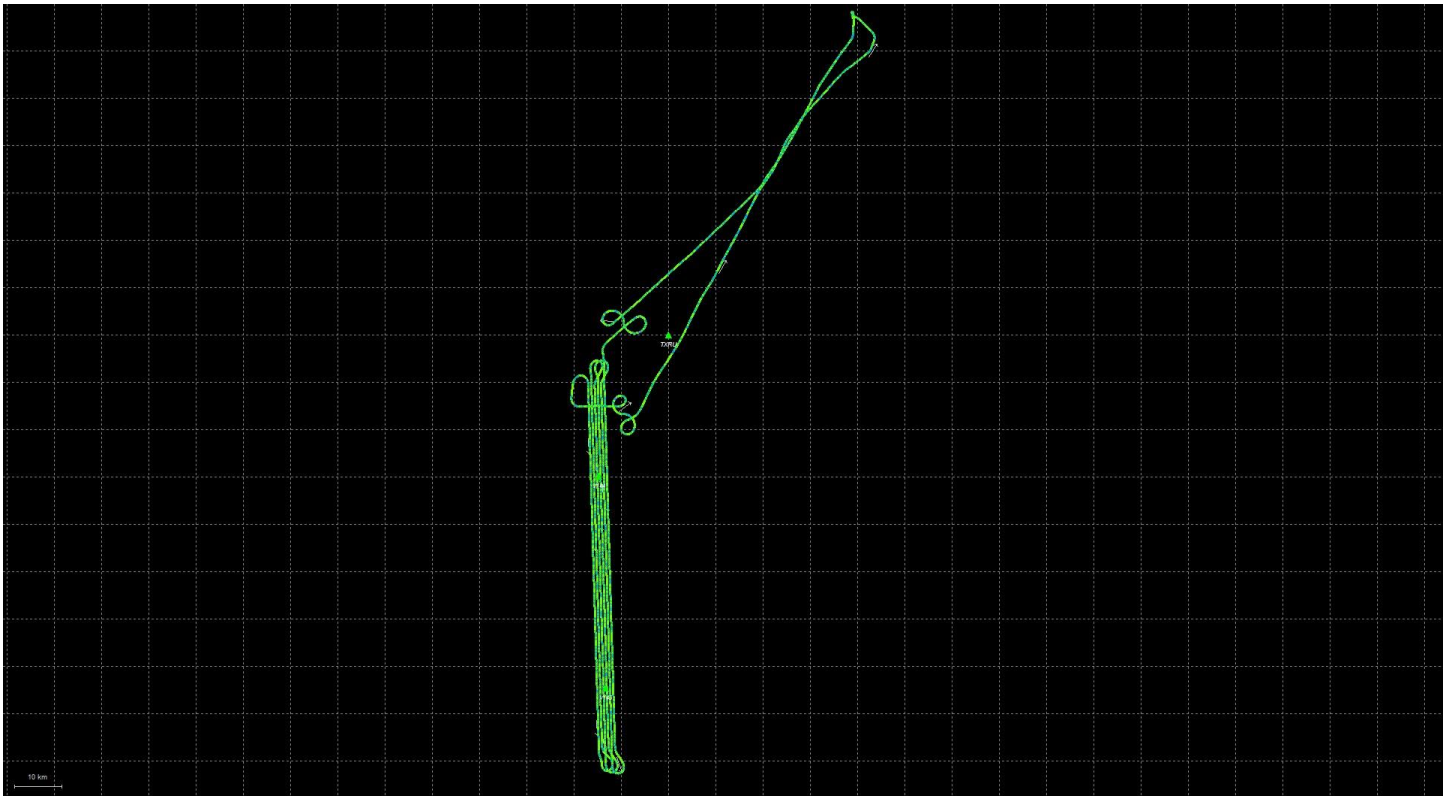
Gd Temp beg: 24 °c — End: °c — OAT beg: +10 °c — End: +11 °c — Altimeter begin: 2979 — end: 2979

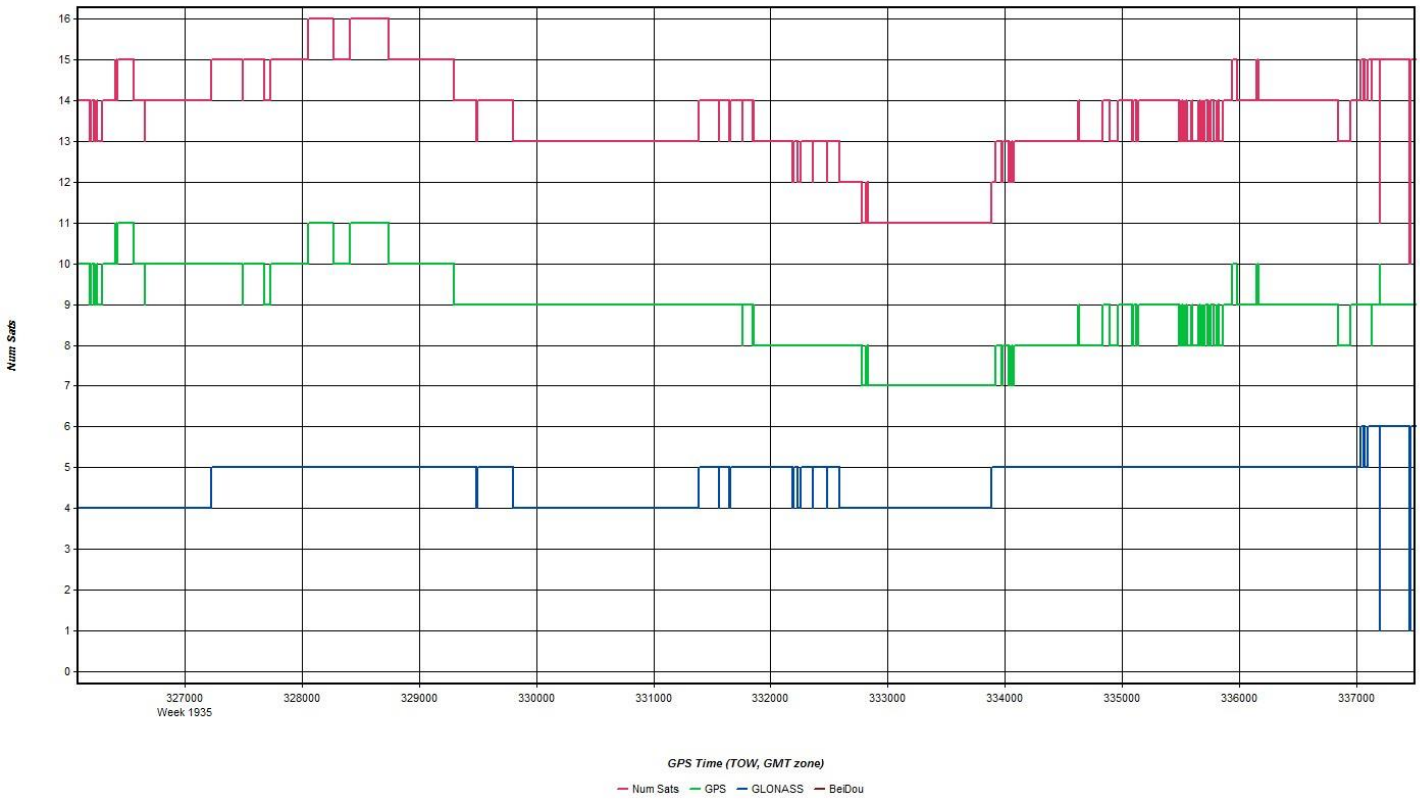
LiDAR	Type: ALS80	Serial #: 8227	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB: 679	Storage Name/#
	FOV: 34°	Scan Freq: 56	MpIA Y / (N)	Pulses In Air: 55.8	Pulse Rate: 311.2	Power: 63%	PPSM	End GB: 613	
								Tot GB: 132	

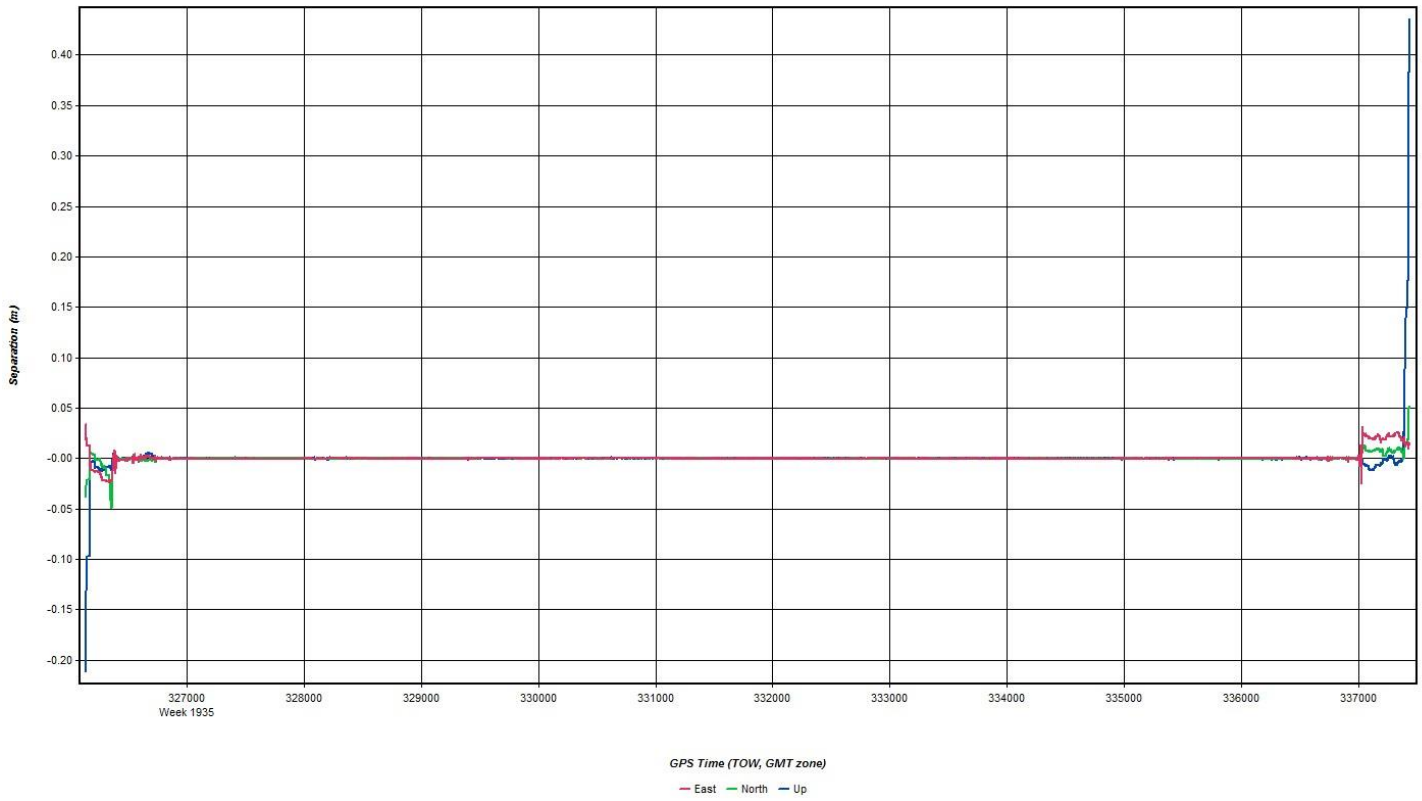
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6057	357	0008	00:22	148	1.3/18	5780		1	Less than 10% Drops 0 to 23 — Static Start
6058	177	0026	0040	156	1.2/19	5758		0	0 to 22 — 23:29 to 23:34
6059	357	0043	0051	156	1.3/19	5766		0	0 to 22 — Fig 8's 00:01
6060	177	0055	0102	157	1.3/19	5769		0	0 to 22
6061	357	0107	01:15	157	1.2/19	5777		0	0 to 22
6062	178	01:18	01:26	158	1.1/19	5786		0	0 to 22
6063	357	01:30	01:53	151	1.3/19	5781		0	Full line
6064	178	01:56	02:18	155	1.1/20	5805		0	Fig 8's 02:21
6065	358	02:25	02:48	151	1.3/18	5790		0	
6066	178	02:52	—	151	1.3/17	5805		0	System locked up online No data SPAN 5 sec.
Tie	269	03:06	03:09	154	1.4/17	5800		0	unplanned Tie line
									Fig 8's 03:11
									Static Stop

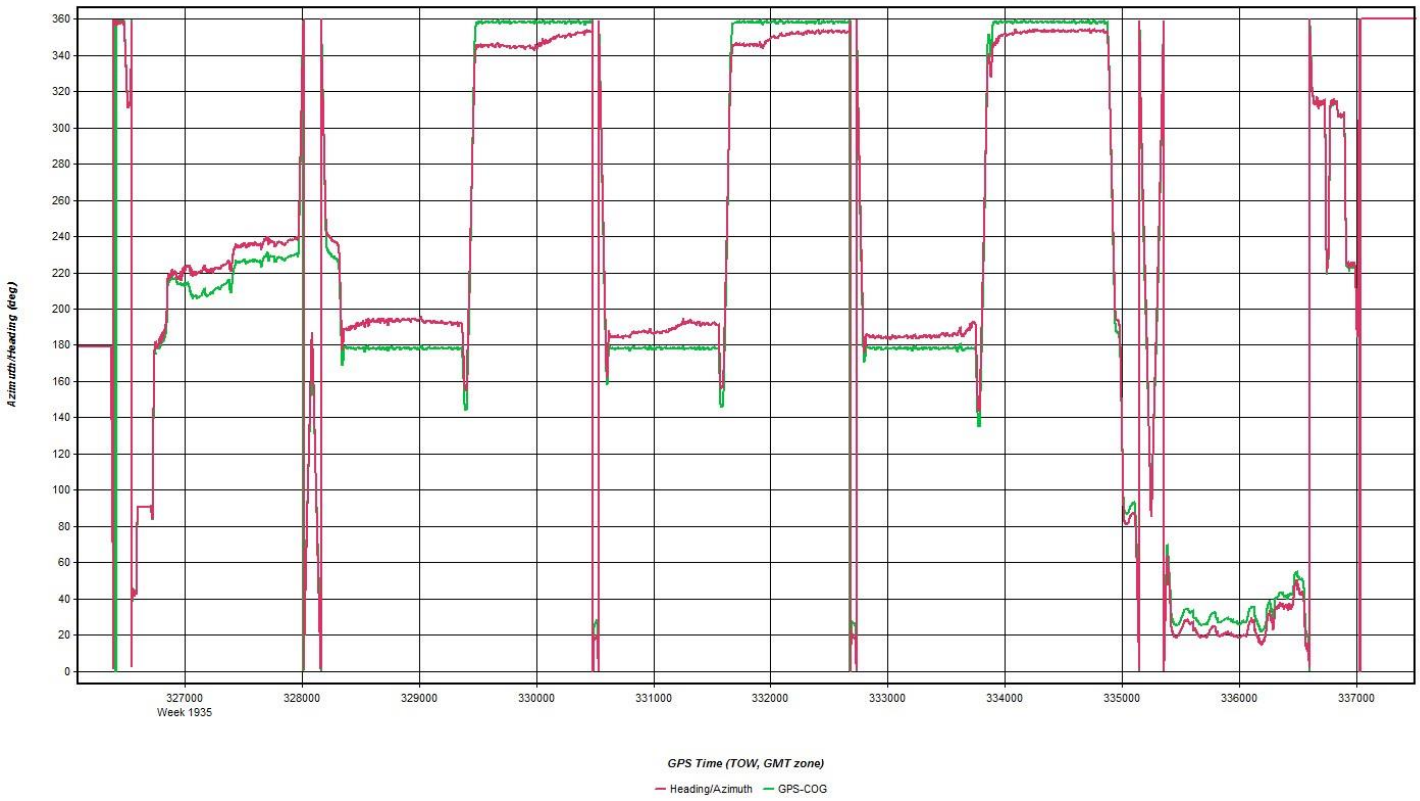
Total Proj Lines: — Lines Flown: 9 — Lines Remain: — Online Time: 3.0 — Mob Time: .45 — Notes:

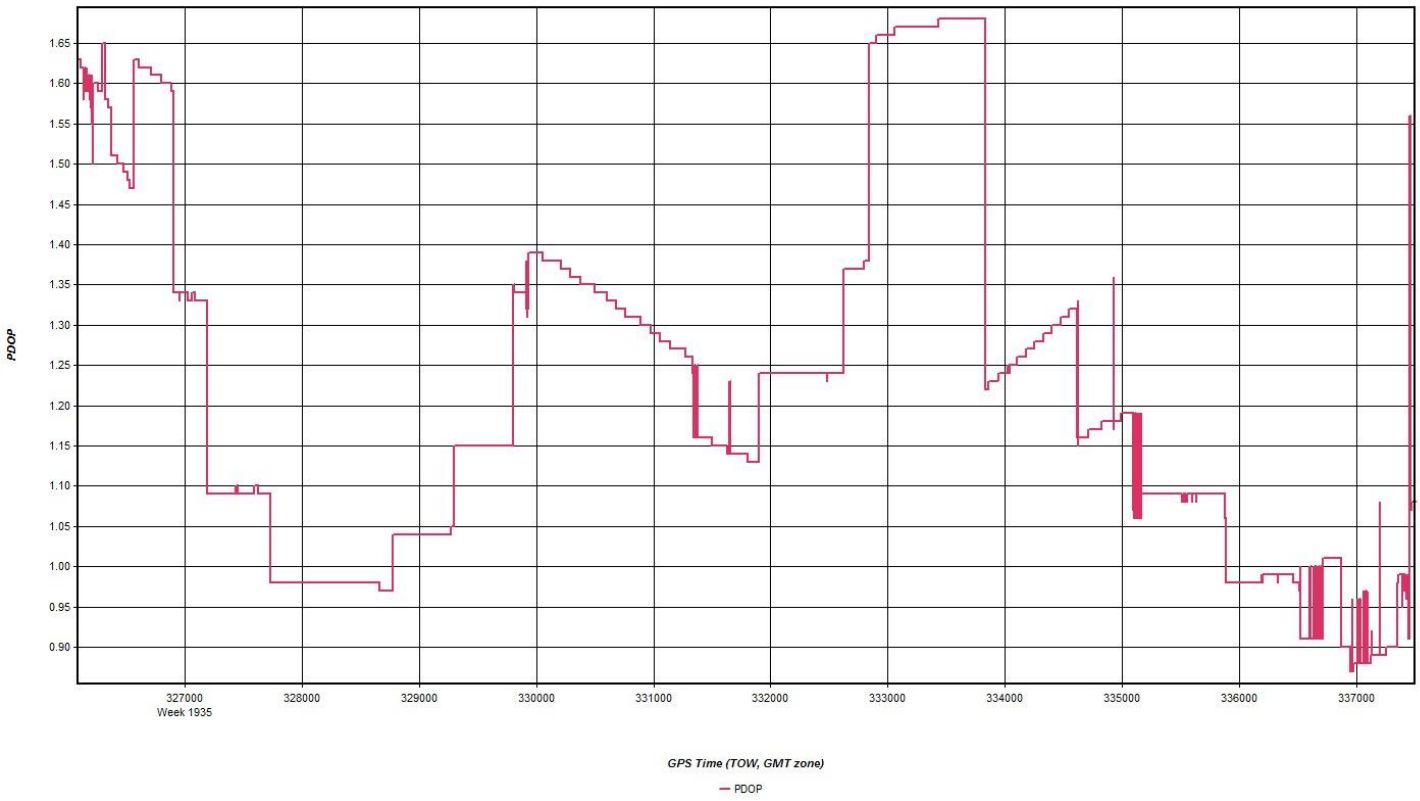
Feb 8, 2017-B (N812TB, SN7178)

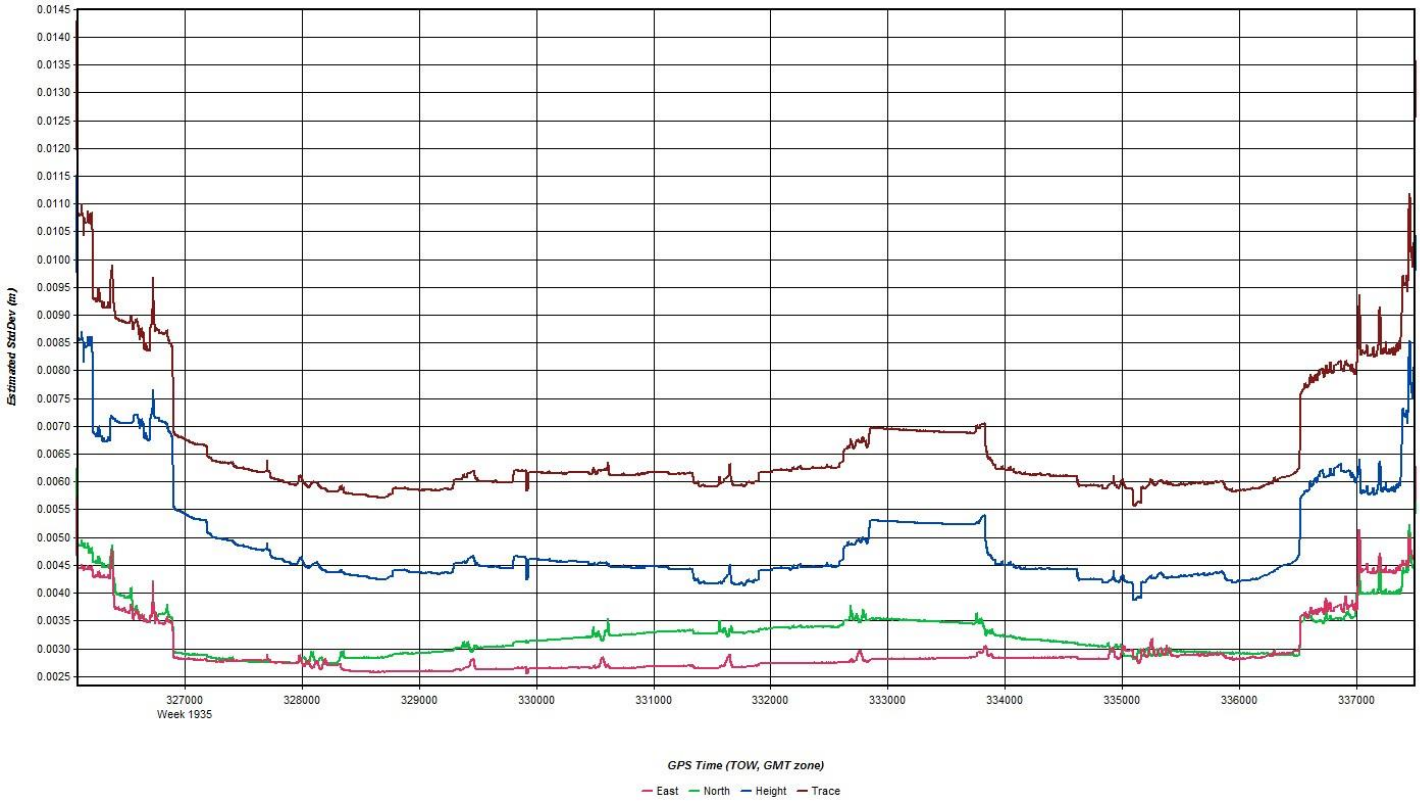


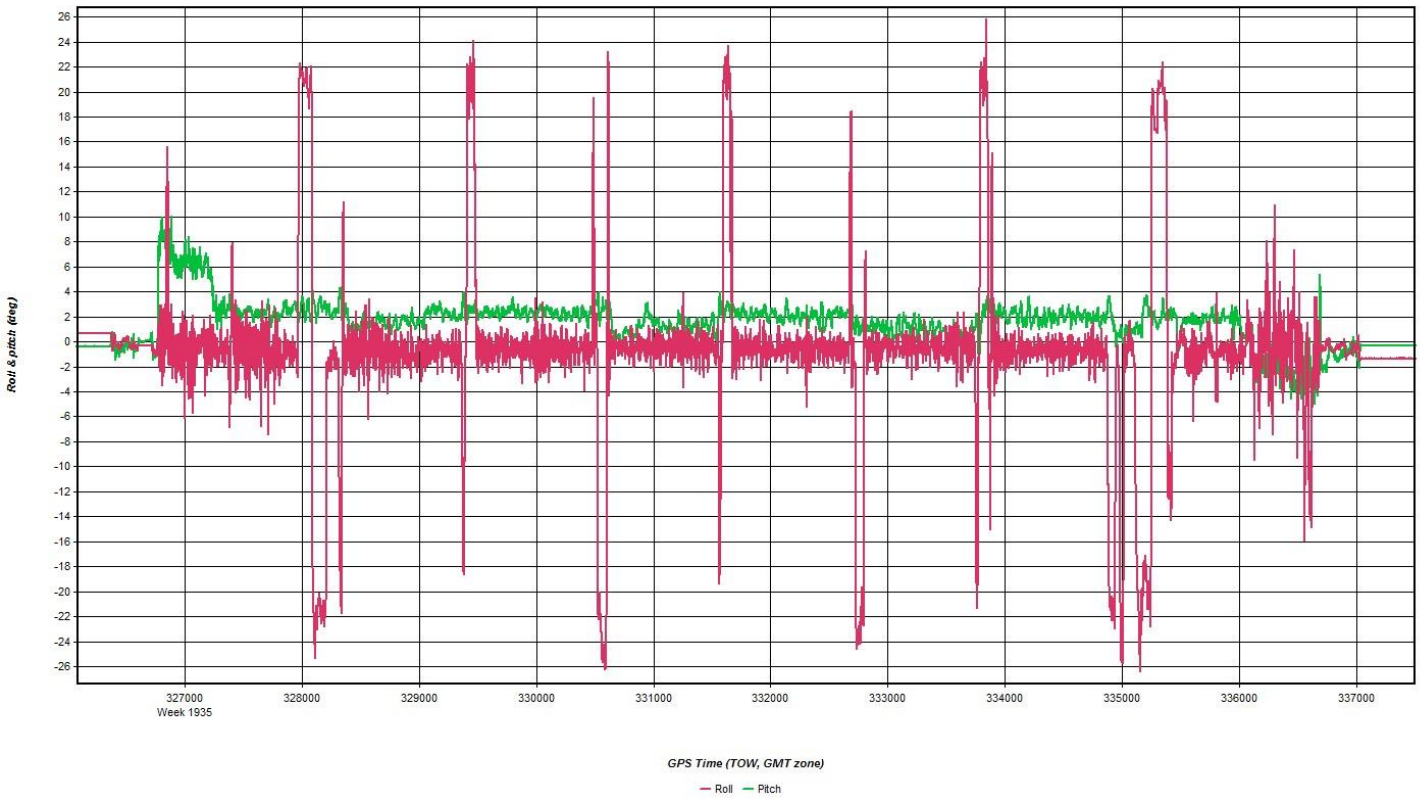

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

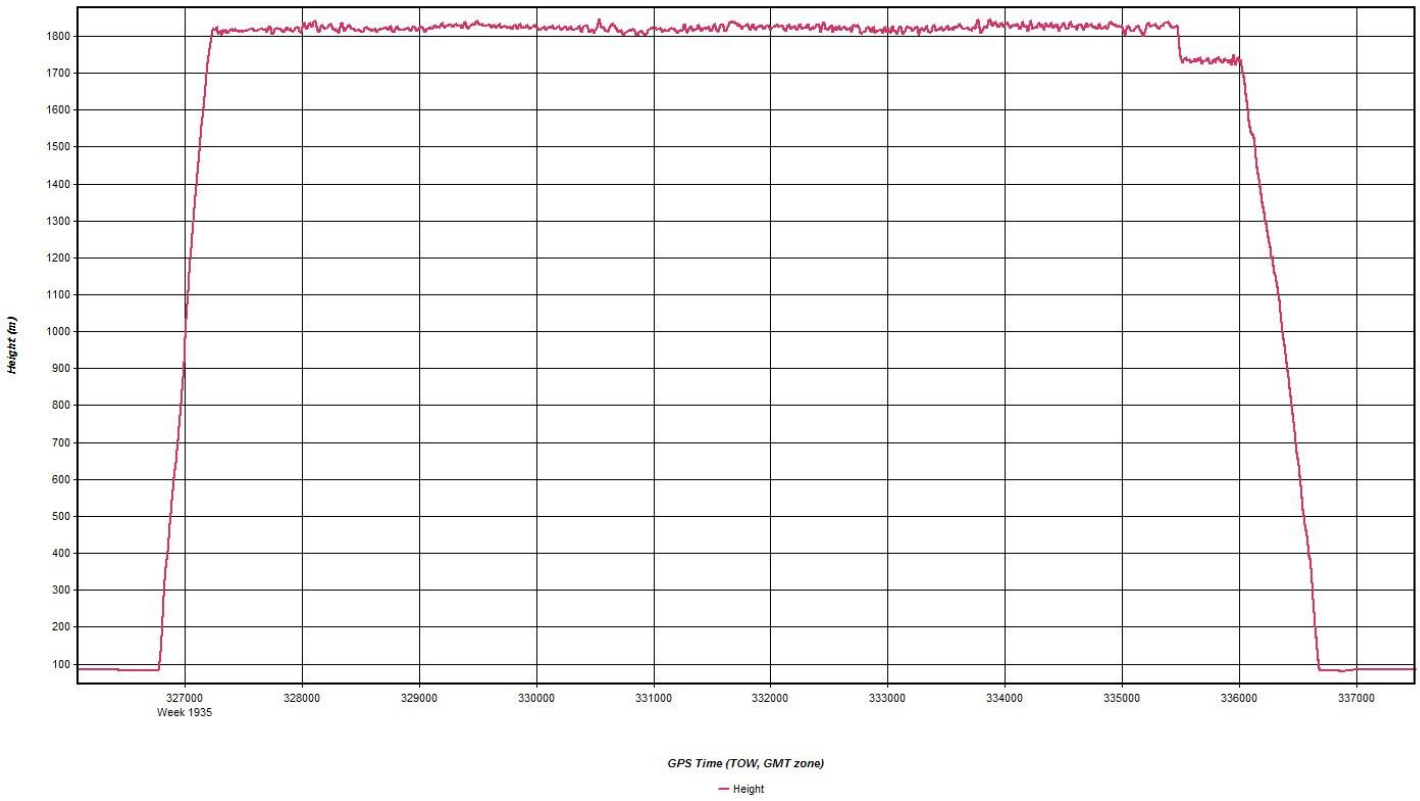

Separation (m)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
East
North
Up

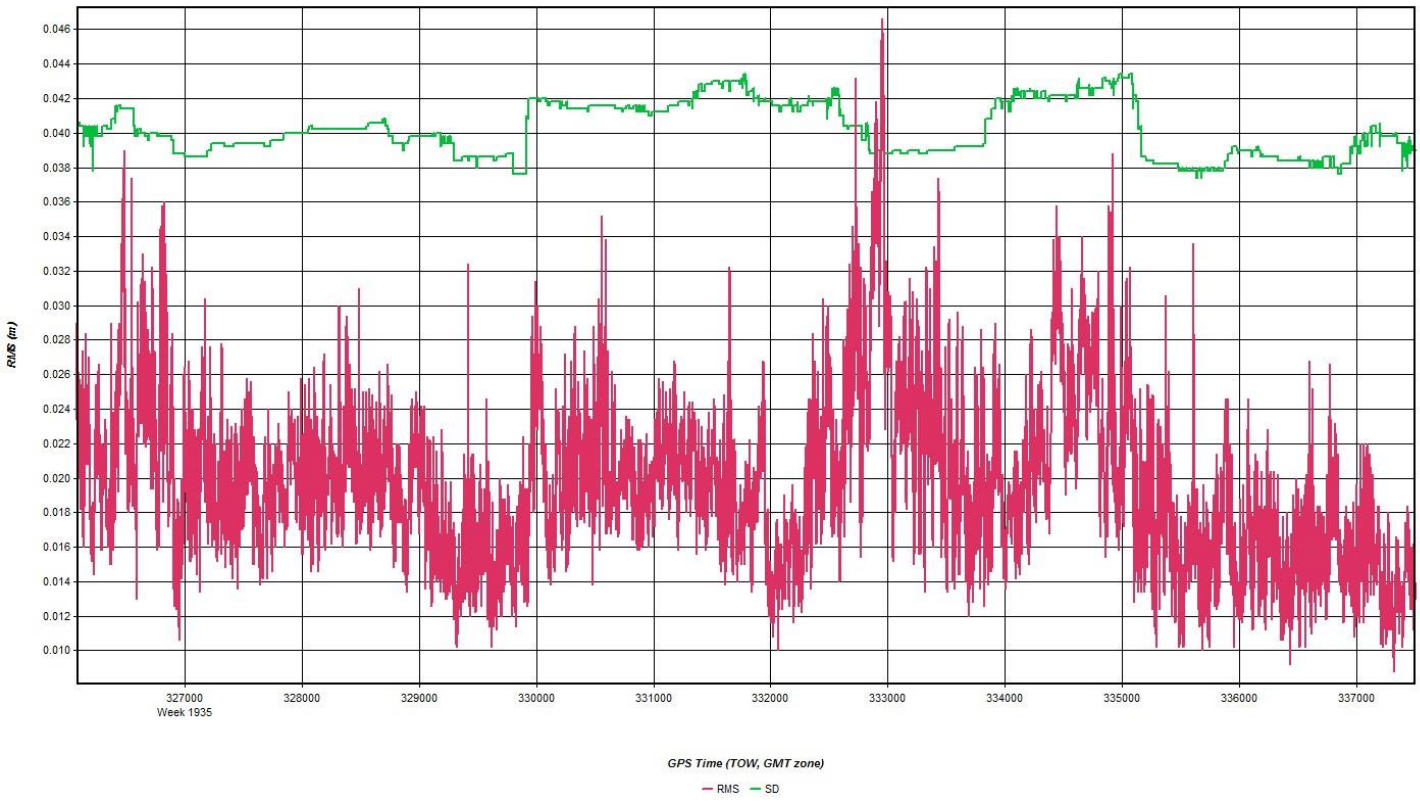

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

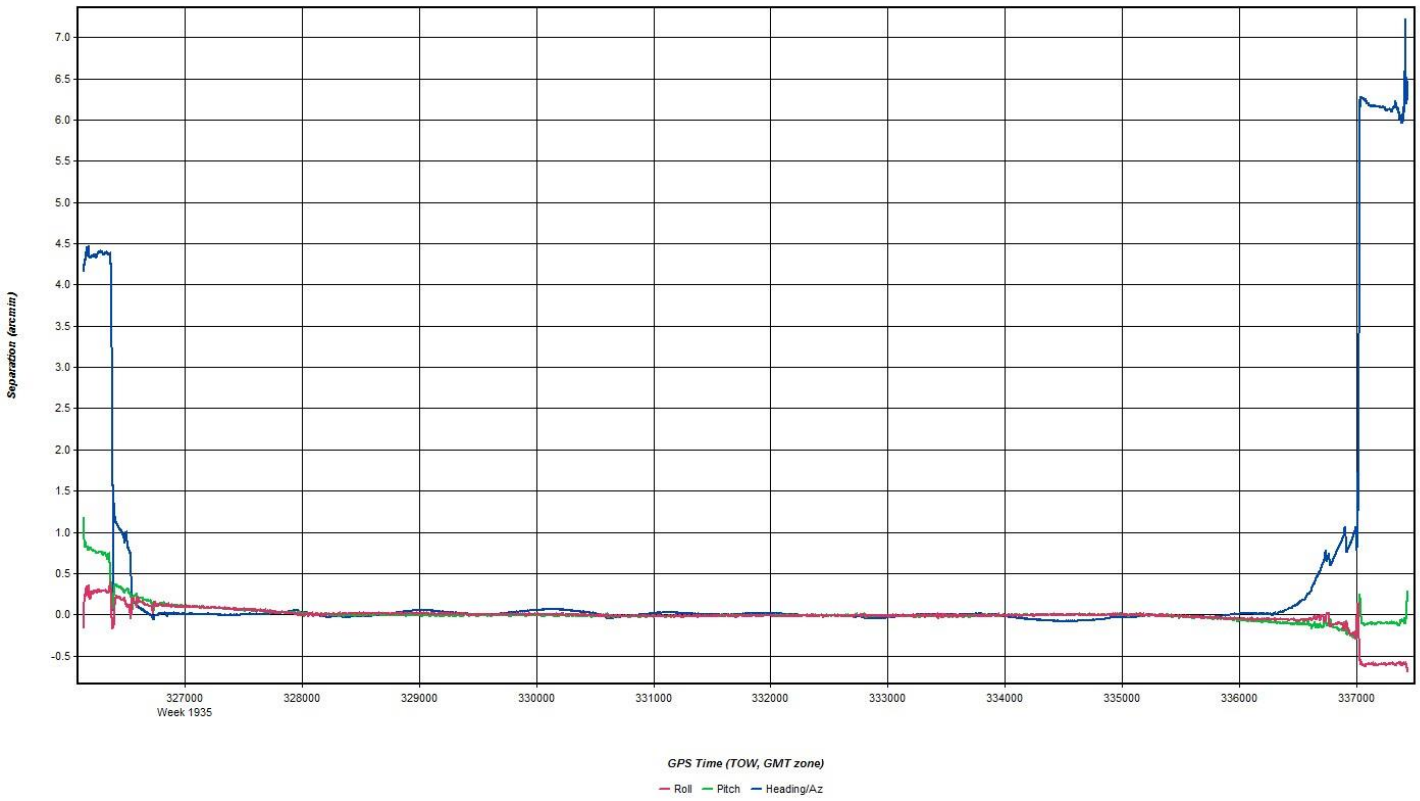

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
PDOP

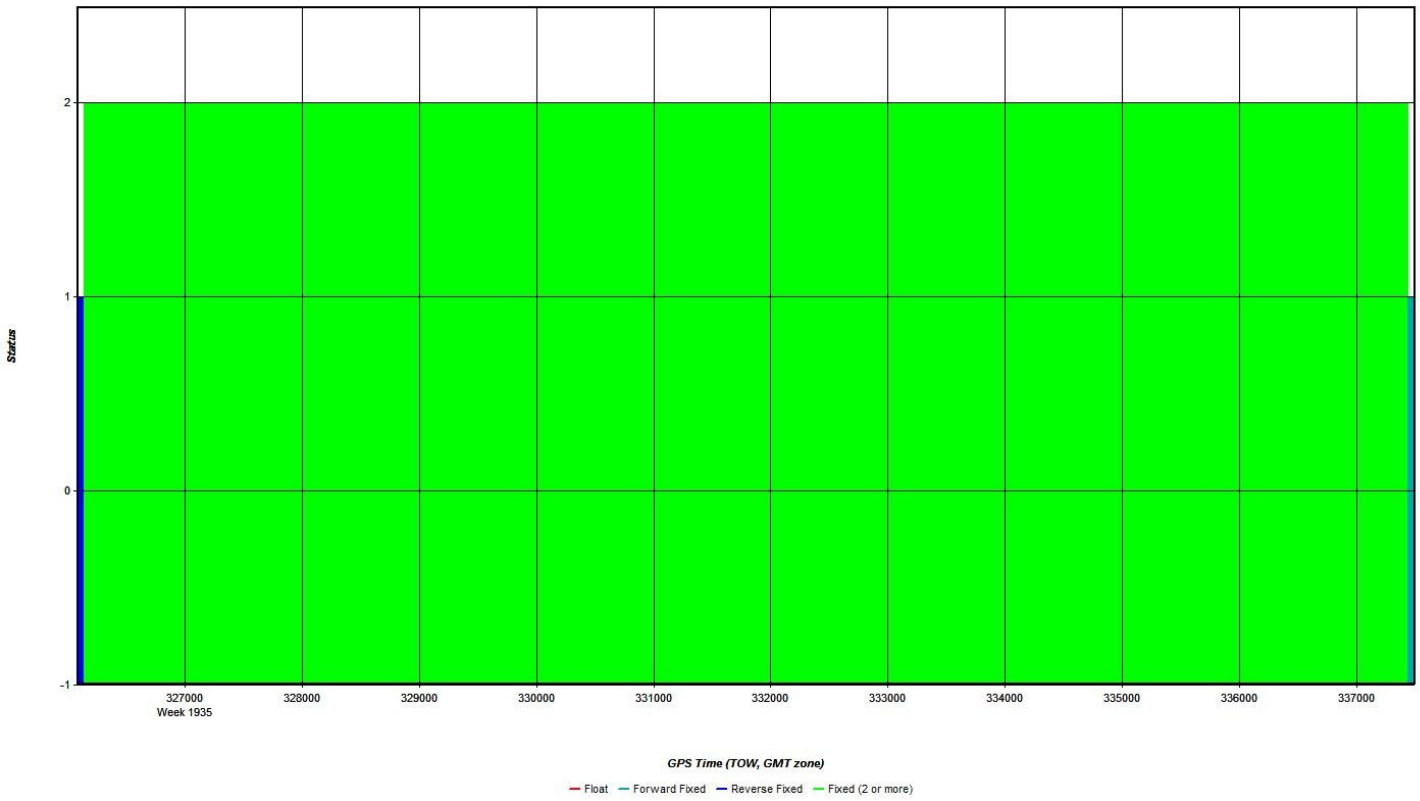

Estimated StdDev (m)
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

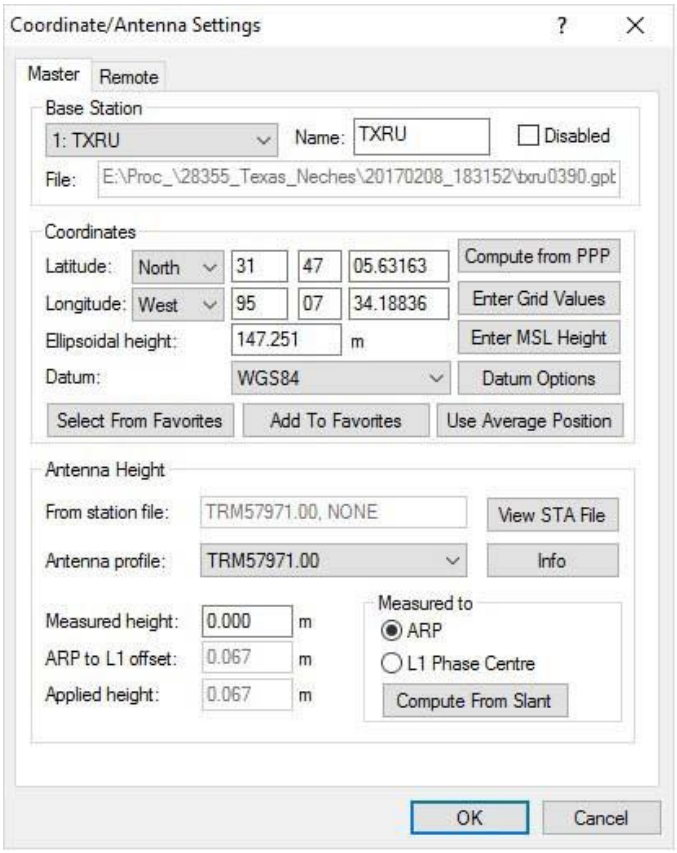

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
Roll
Pitch

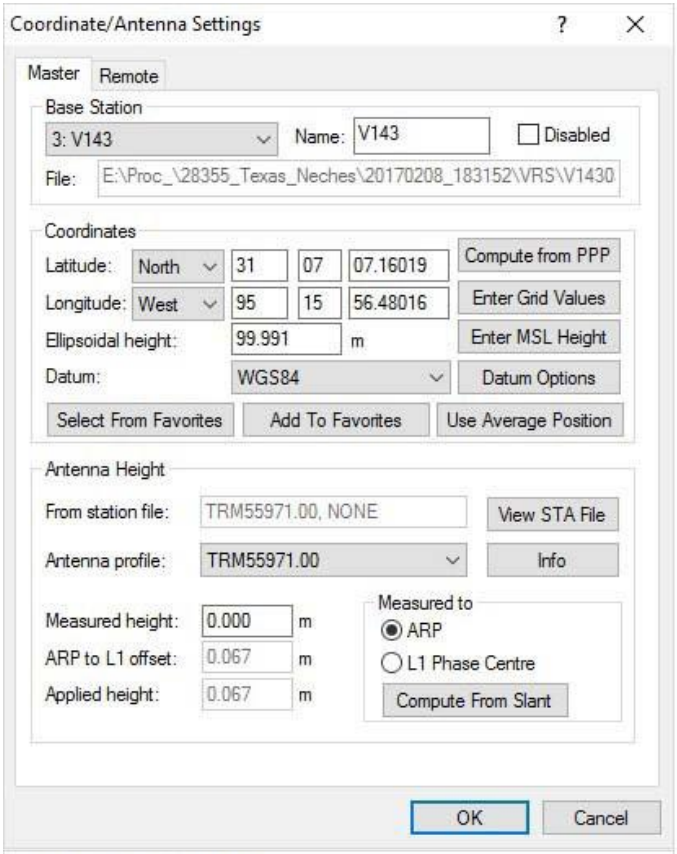

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
Height

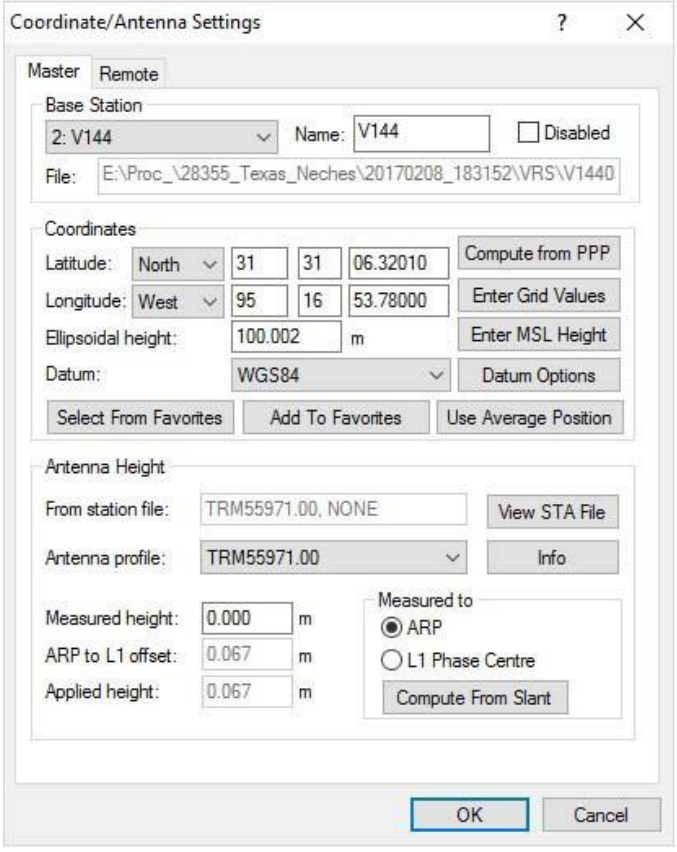

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
327000
Week 1935
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXRU
Name: TXRU
Disabled
File: E:\Proc_\28355_Texas_Neches\20170208_183152\txru0390.gpb
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V143
Name: V143
Disabled
File: E:\Proc_\28355_Texas_Neches\20170208_183152\VRS\V1430
Coordinates
Latitude: North 31 07 07.16019
Longitude: West 95 15 56.48016
Ellipsoidal height: 99.991 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V144
Name: V144
Disabled
File: E:\Proc_\28355_Texas_Neches\20170208_183152\VRS\V1440
Coordinates
Latitude: North 31 31 06.32010
Longitude: West 95 16 53.78000
Ellipsoidal height: 100.002 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-8-17 Lift: A (B) C D E Pg 1 of 1

Project: NECHES BASIN, TX CROCKETT Proj #: 28355 Flight Mgmt File: 28355_SN7178_CROCKETT

Aircraft: N812TB Begin Hobbs: 4353.1 End Hobbs: 4355.9 Total: 2.8 Pilot: RADTICH Co-Pilot: - Tech: MOODY

Dep Apt: GGG Dep Time (Lcl): 1245 (Z): 1845 Arr Apt: GGG Arr Time (Local): 1331 (Z): 2131 Tot Time Aloft: 2:45

CORS: Y /(N) Sta 1: VIRTUAL Sta 2: Flyovers: Y /(N) If Y, times: Sta1) Sta2)

GPS Unit: Y /(N) Sta 1: Sta 2: Flyovers: Y /(N) If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

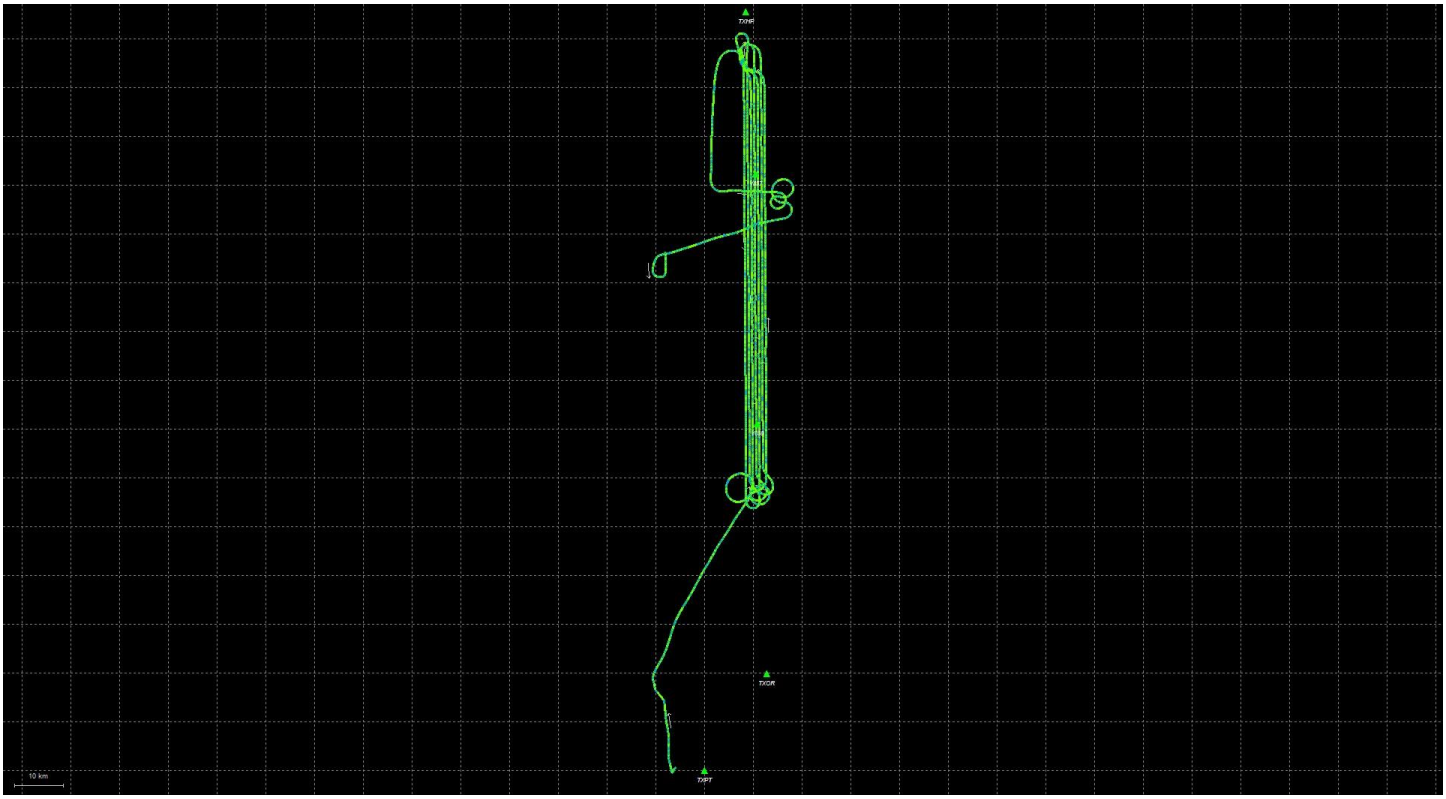
LiDAR	Type	Serial #	Alt AGL ±5500'	Alt AMSL ±5950'	Avg Terr Ht ±	Max Gdspd 150 KTS	Avg Pt Spacing
	AL570	7178					
	FOV 34°	Scan Freq 57 Hz	MpIA (D) / N	Pulses In Air 2	Pulse Rate 312 KHz	Power 100%	PPSM

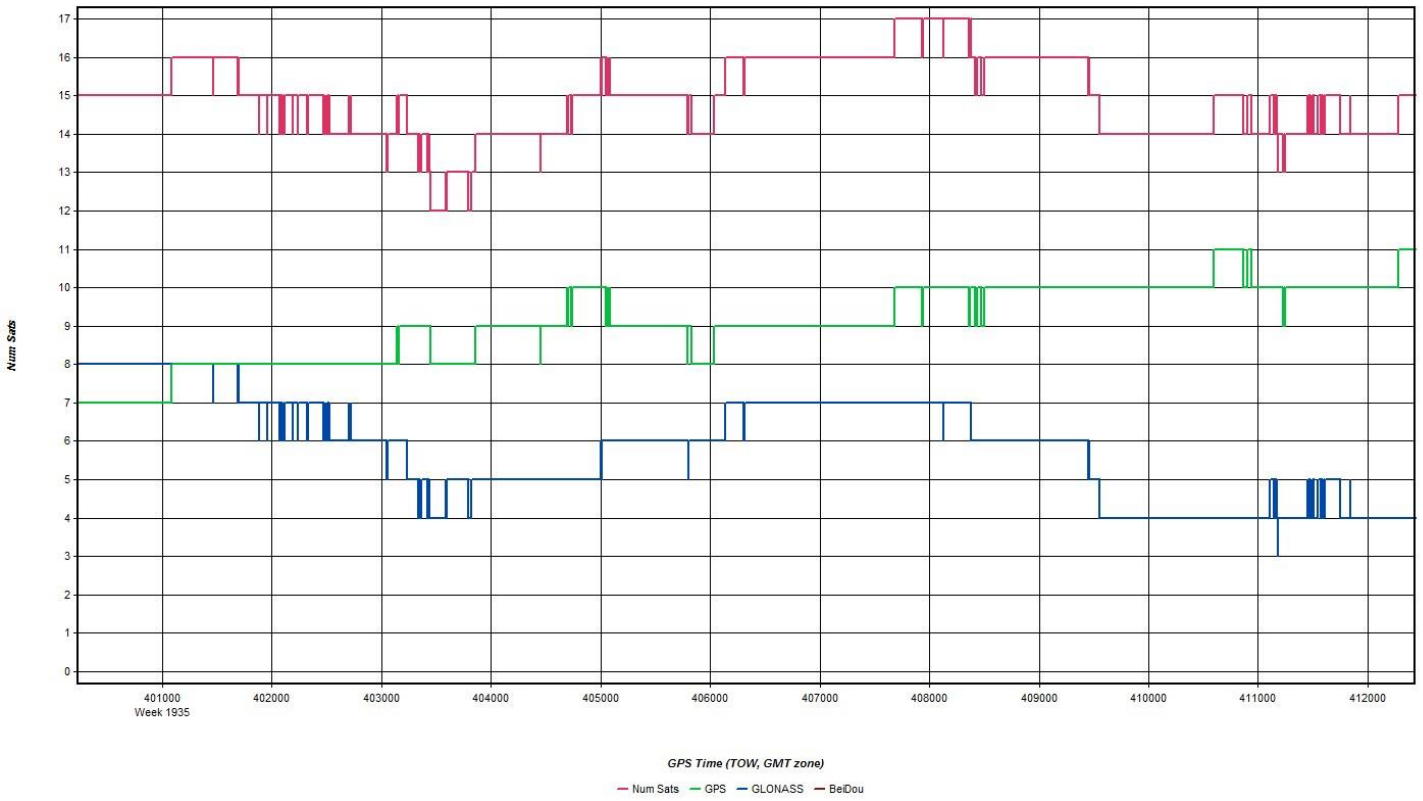
Beg GB	238	Storage Name/# 7178
End GB	280	SSD4
Tot GB	42	

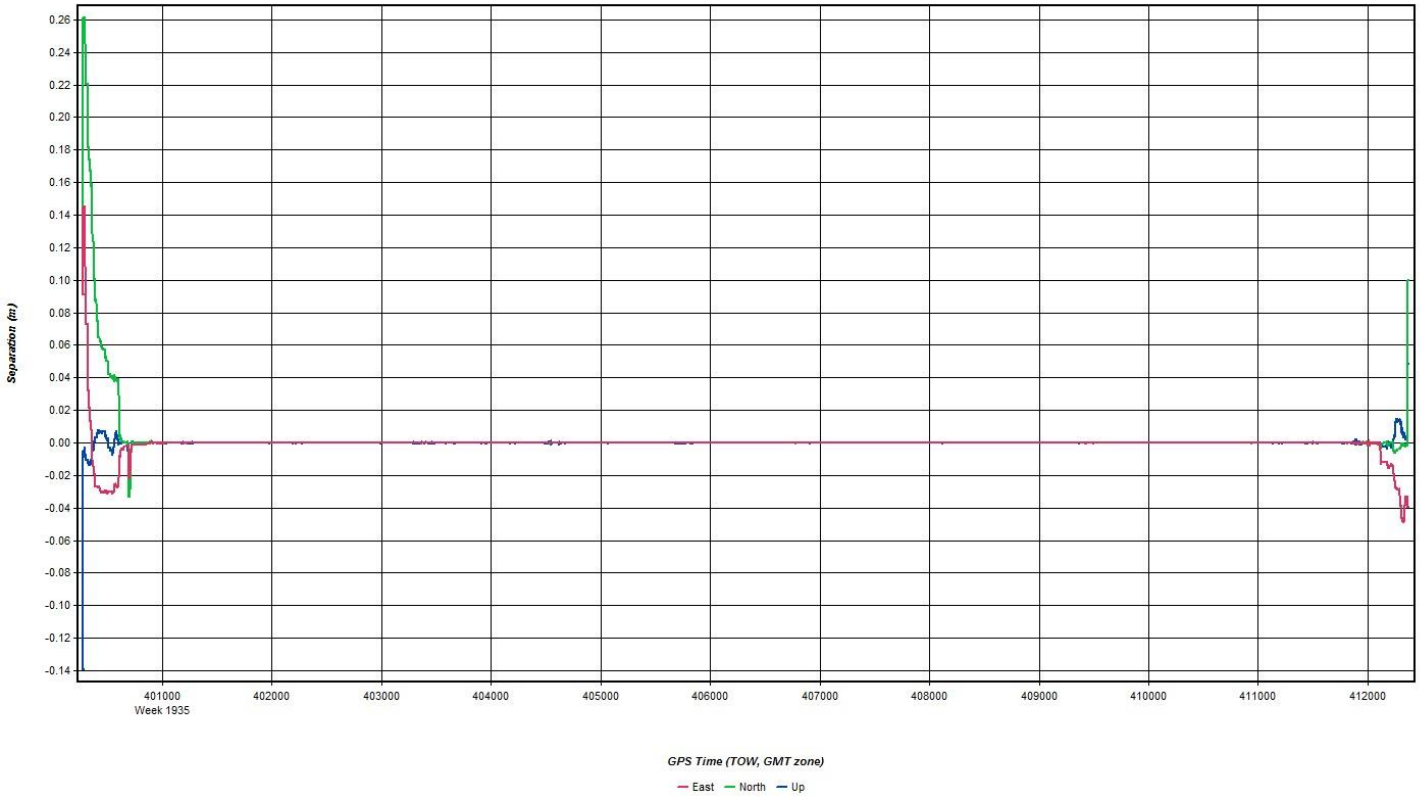
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
1052	178	1913	1929	160	1.2/14	5950	14	-	
1051	358	1932	1947	160	1.1/17	5980	13	-	
1050	178	1950	2005	156	1.5/15	5940	12	-	
1079	358	2008	2024	155	1.4/15	5990	12	-	
1078	178	2027	2042	162	1.3/16	5940	7	-	
1077	358	2045	2100	152	1.3/15	5980	7	-	
TIE	090	2103	2104	153	1.2/16	5990	5	-	- MANUAL TIE LINE

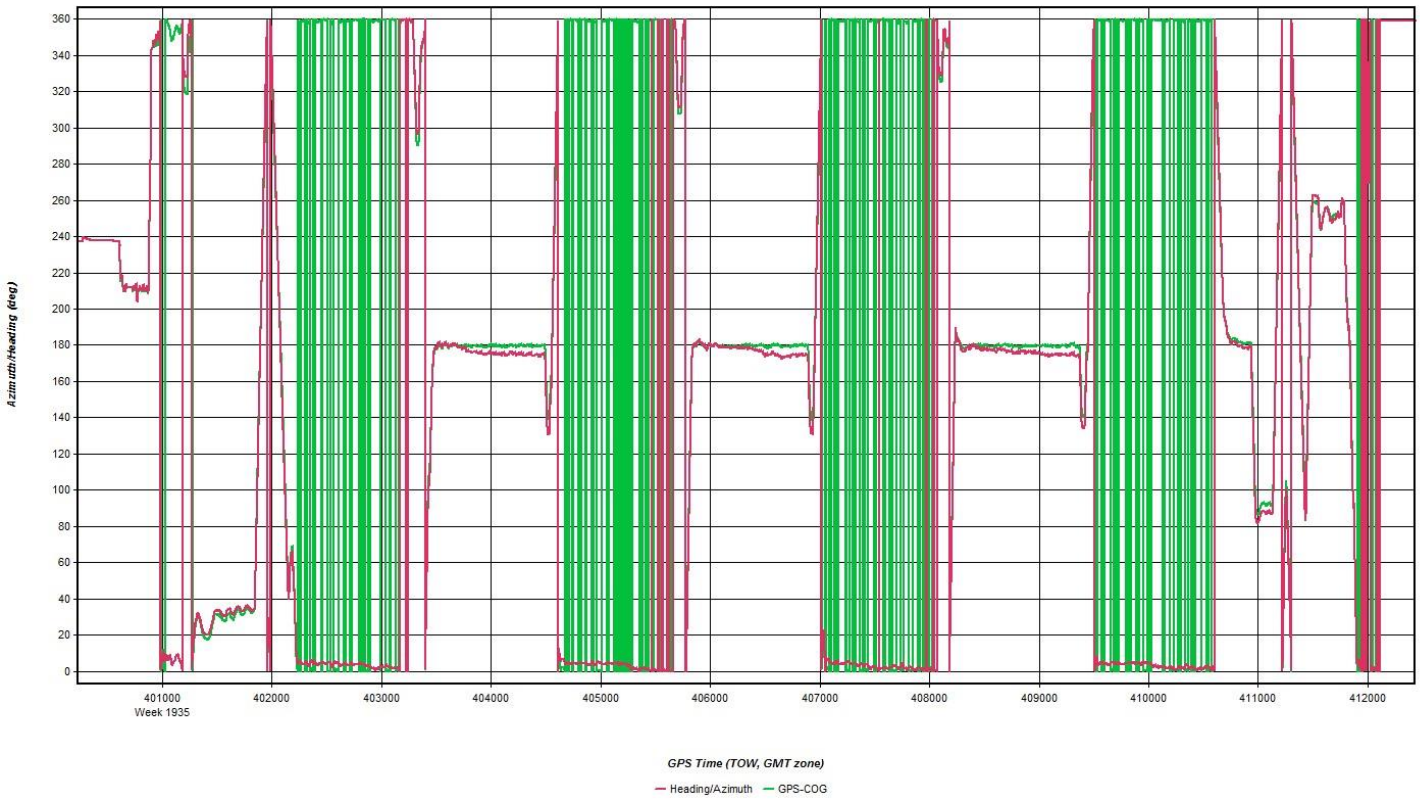
Total Proj Lines: Lines Flown: 6 Lines Remain: 78 Online Time: 1.75 Mob Time: 1.0 Notes:

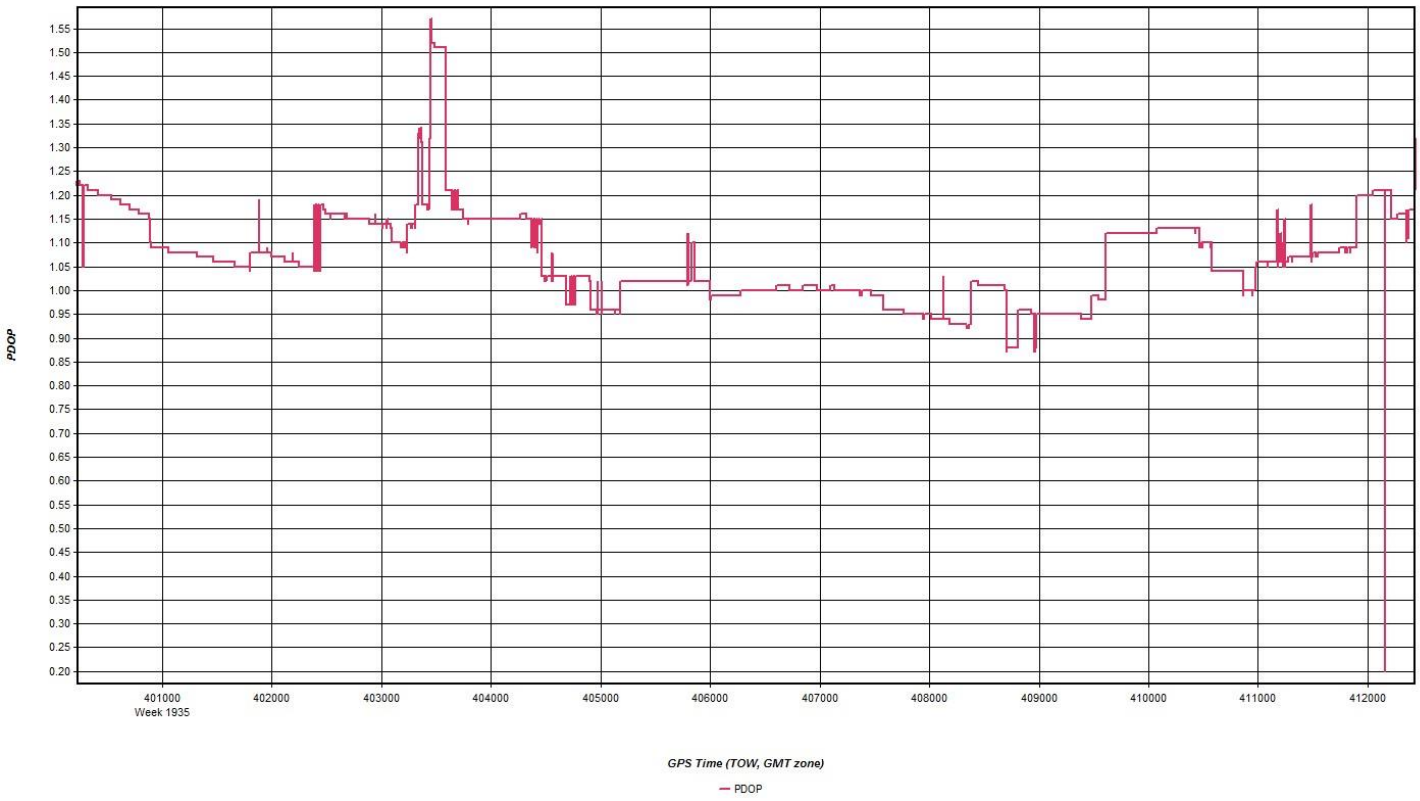
Feb 9, 2017-A (N246MP, SN8227)

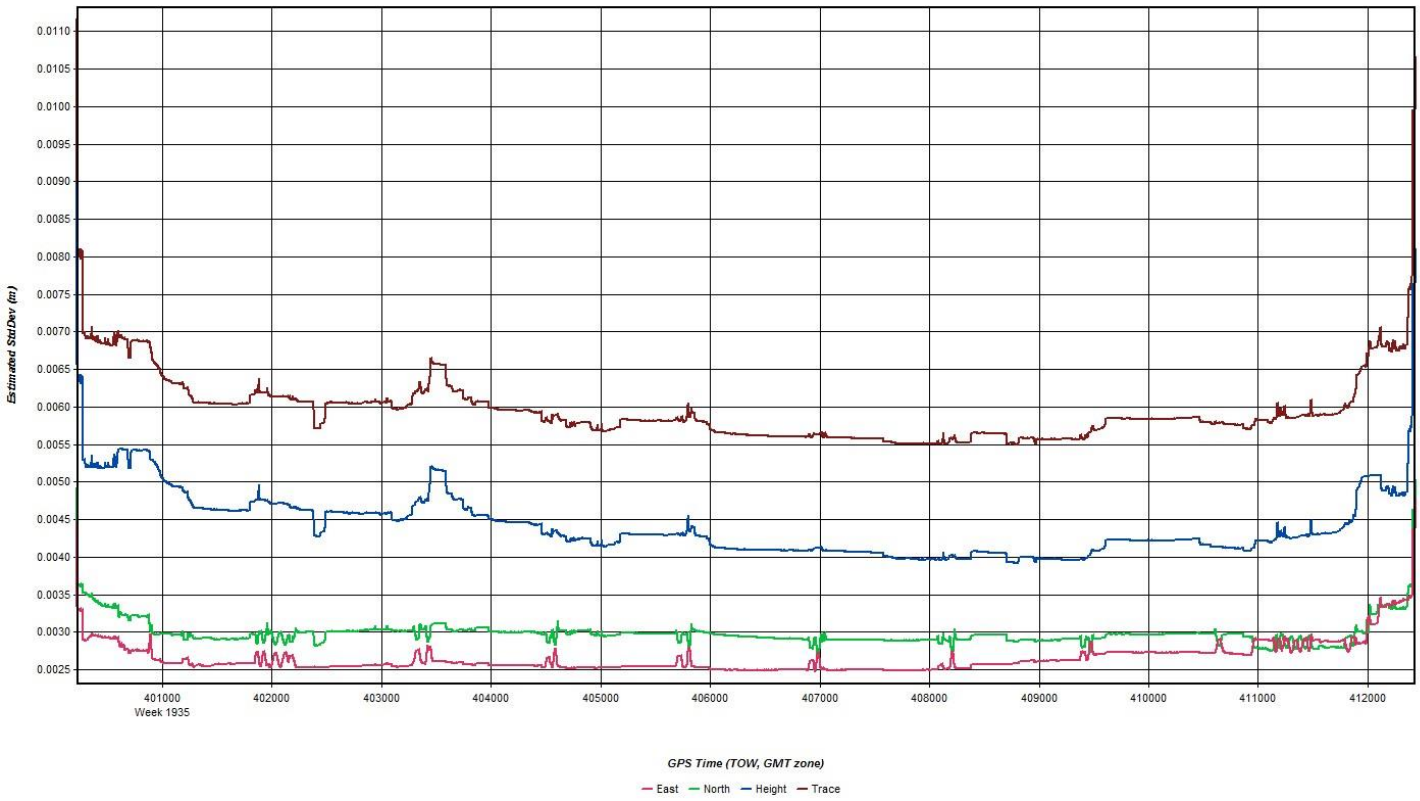


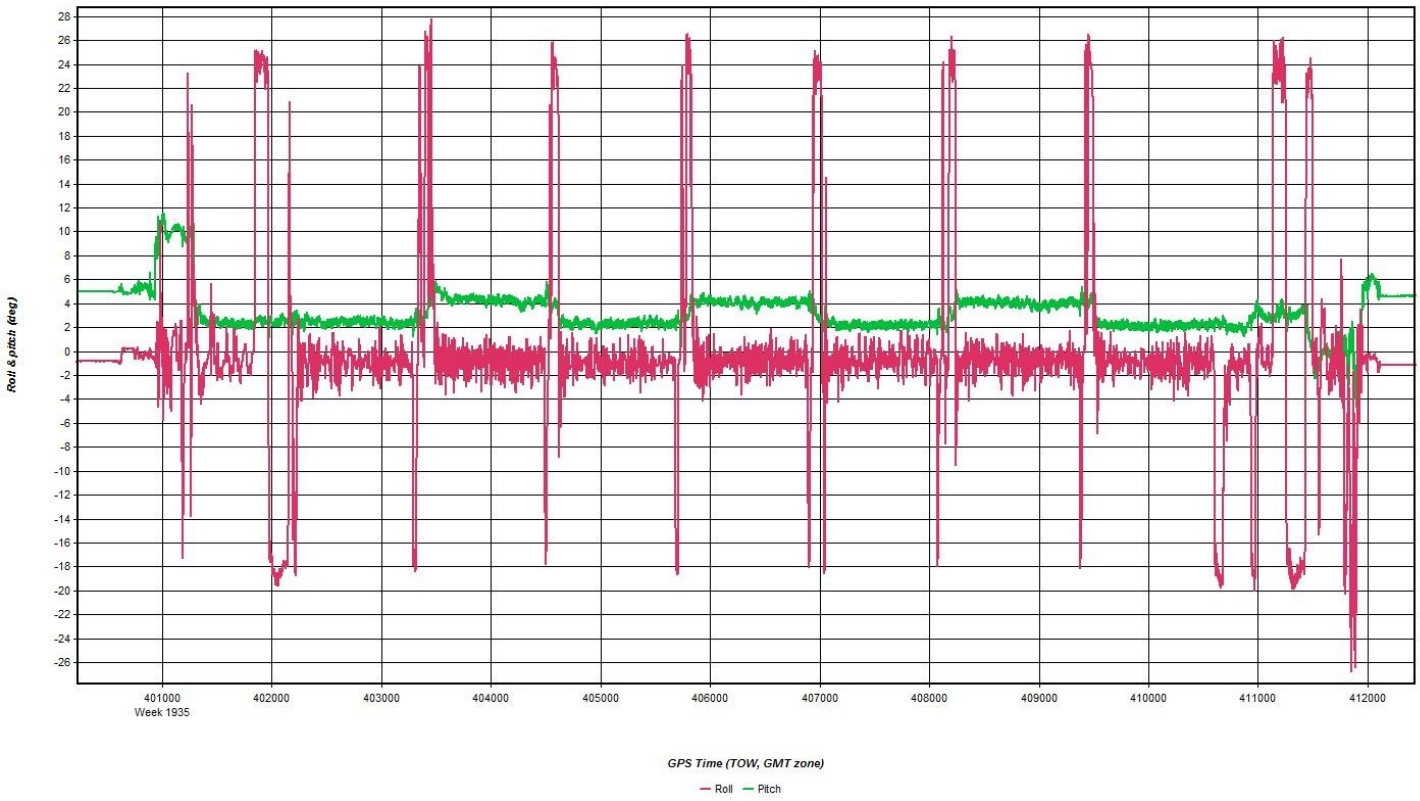

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

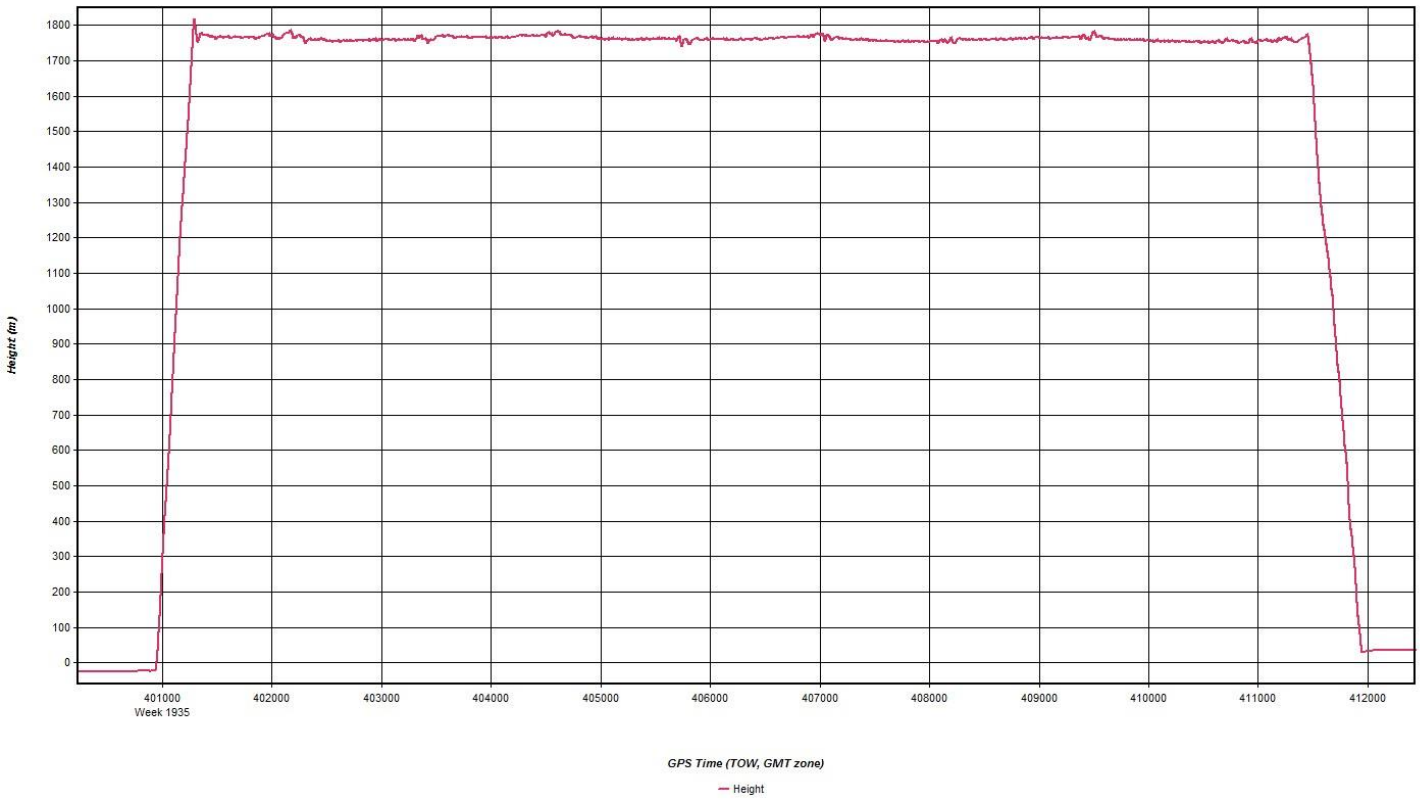

Separation (m)
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
East
North
Up

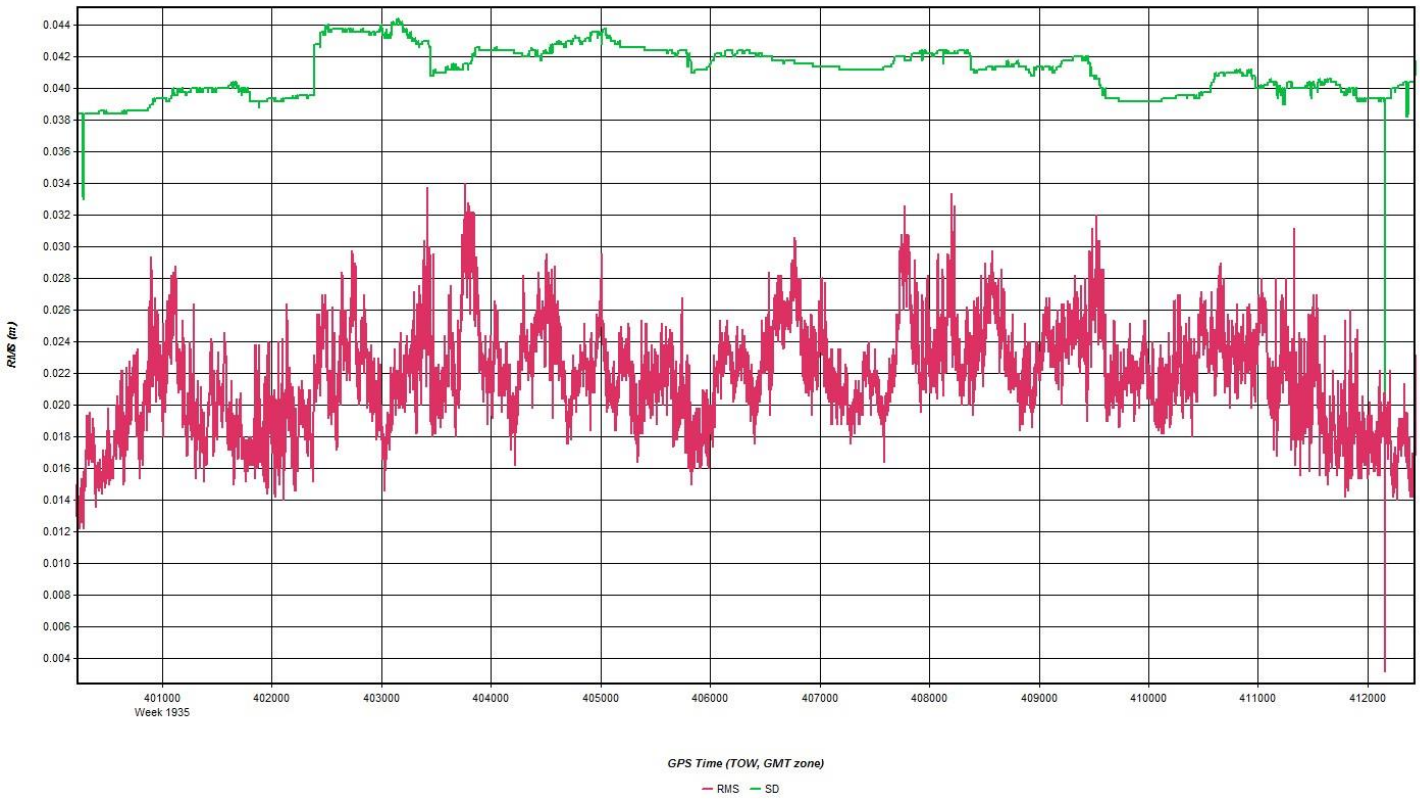

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
PDOP

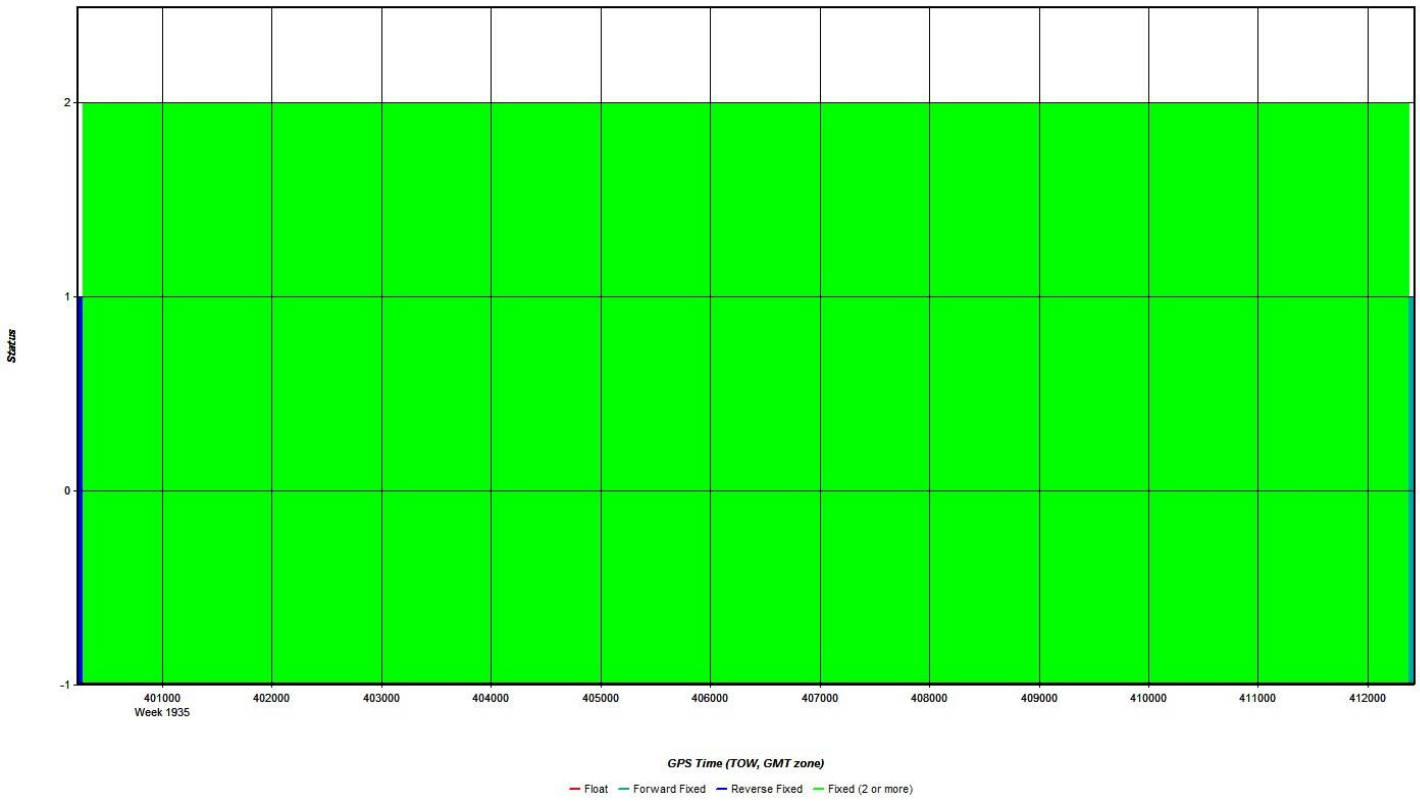

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

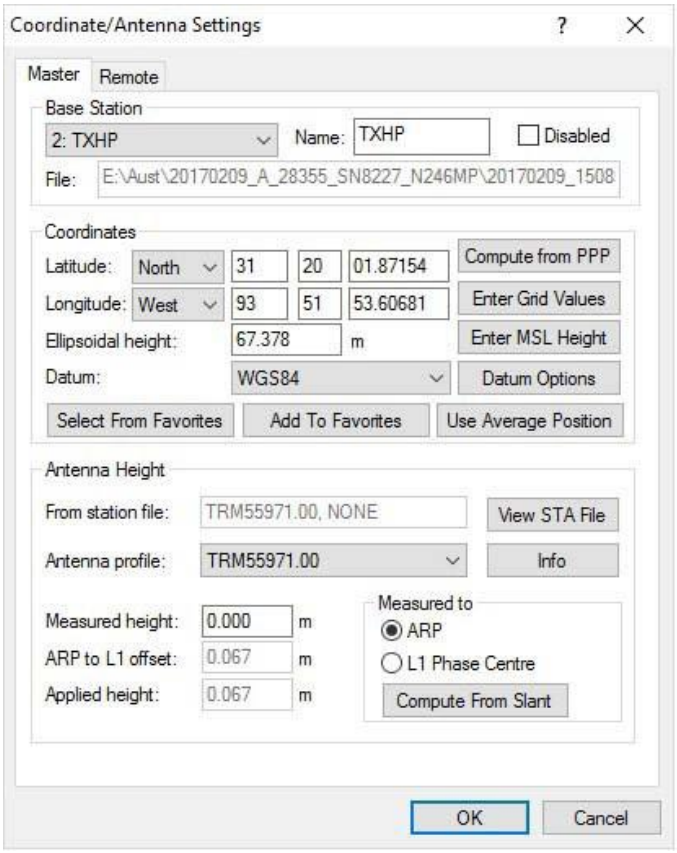

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
Roll
Pitch

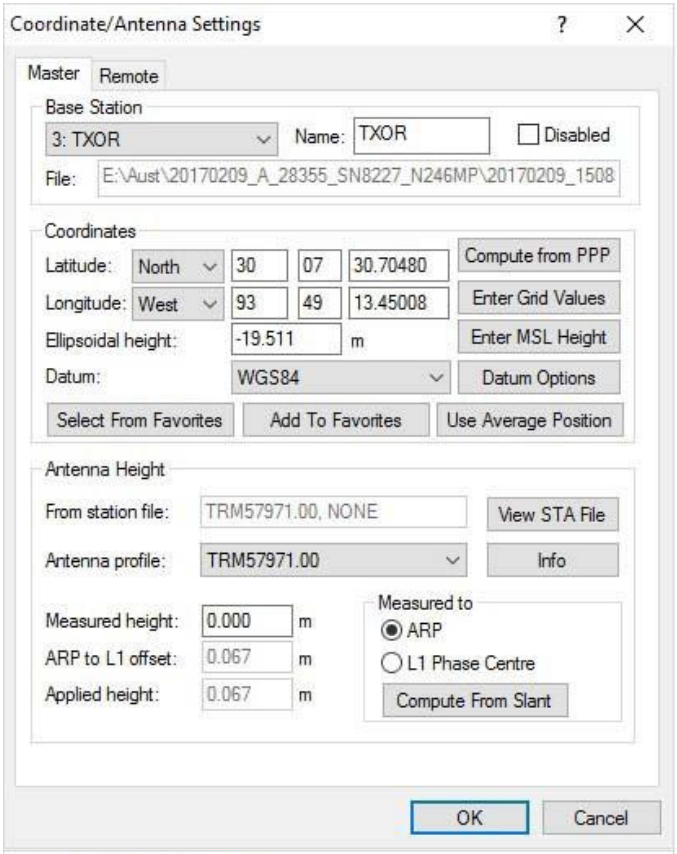

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
Height

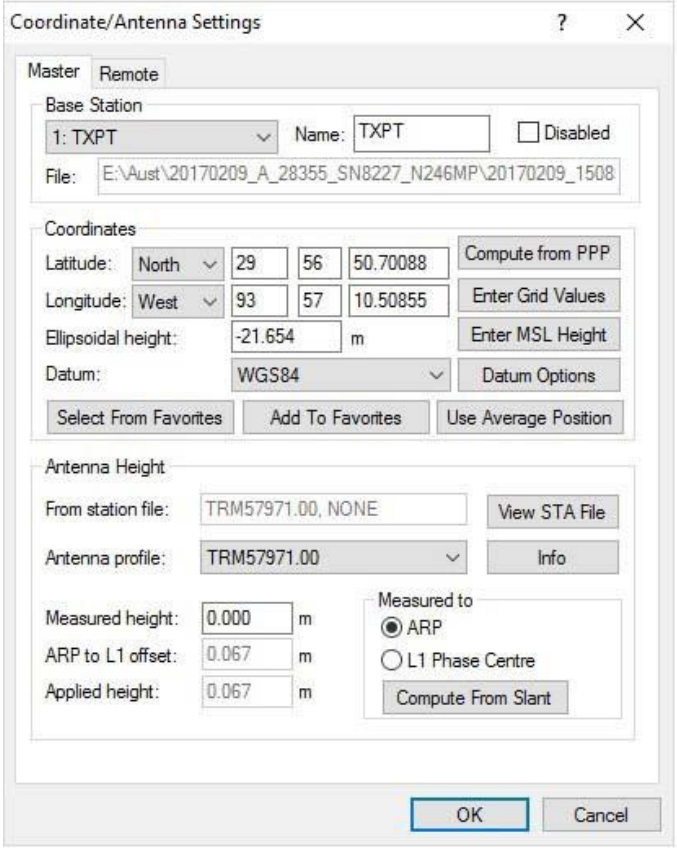

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
RMS
SD

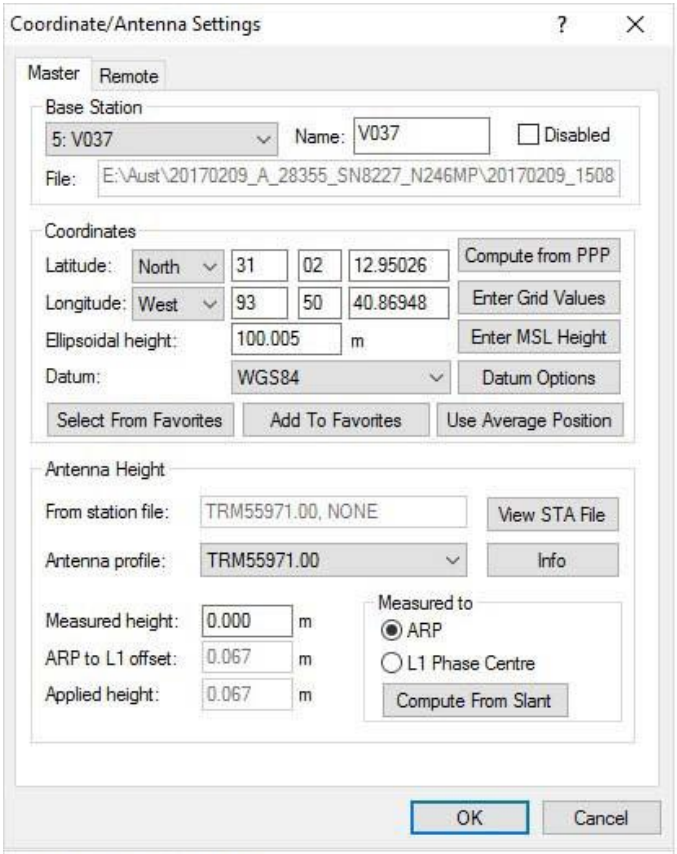

Separation (arcmin)
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

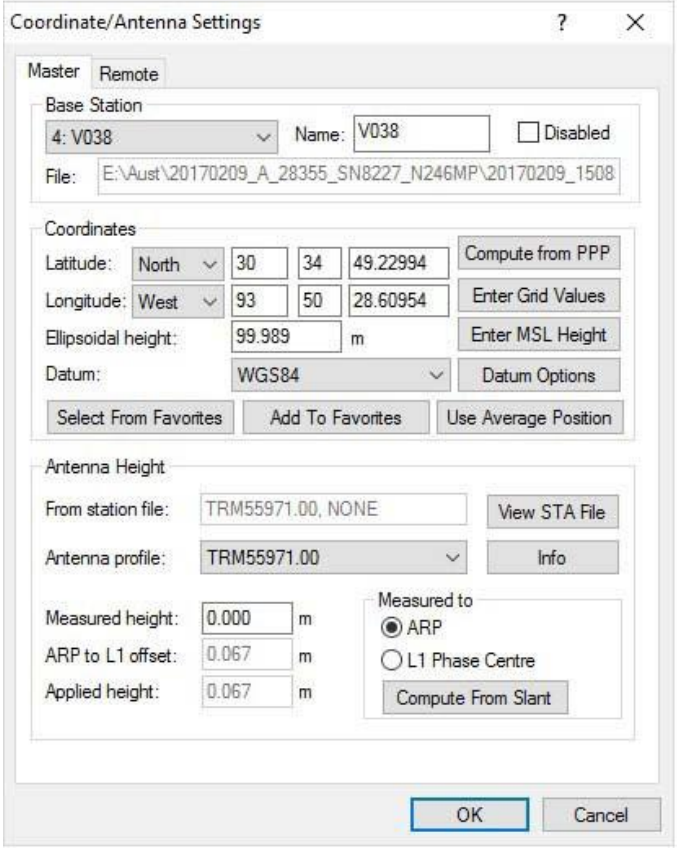

Status
2
1
0
-1
401000
Week 1935
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXHP
Name: TXHP
Disabled
File: E:\Aust\20170209_A_28355_SN8227_N246MP\20170209_1508
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXOR
Name: TXOR
Disabled
File: E:\Aust\20170209_A_28355_SN8227_N246MP\20170209_1508
Coordinates
Latitude: North 30 07 30.70480
Longitude: West 93 49 13.45008
Ellipsoidal height: -19.511 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Aust\20170209_A_28355_SN8227_N246MP\20170209_1508
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V037
Name: V037
Disabled
File: E:\Aust\20170209_A_28355_SN8227_N246MP\20170209_1508
Coordinates
Latitude: North 31 02 12.95026
Longitude: West 93 50 40.86948
Ellipsoidal height: 100.005 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V038
Name: V038
Disabled
File: E:\Aust\20170209_A_28355_SN8227_N246MP\20170209_1508
Coordinates
Latitude: North 30 34 49.22994
Longitude: West 93 50 28.60954
Ellipsoidal height: 99.989 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_Log_distribution_list@quantumspatial.com)

Date: 2-9-17 **Lift:** (A) B C D E **Pg** 1 of 1

Project: NECHES BASIN LIDAR **Proj #:** 28355 **Flight Mgmt File:** 20170209 150859

Aircraft: 246MP **Begin Hobbs:** 1280.4 **End Hobbs:** 1283.5 **Total:** 3.1 **Pilot:** C McDONALD **Co-Pilot:** **Tech:** M AUST

Dep Apt: BPT **Dep Time (Lcl):** 9:15 **(Z):** 15:15 **Arr Apt:** JAS **Arr Time (Local):** **(Z):** **Tot Time Aloft:**

CORS: (Y) / N **Sta 1:** TXNE **Sta 2:** **Flyovers:** Y / N **If Y, times: Sta1)** **Sta2)**

GPS Unit: Y / N **Sta 1:** **Sta 2:** **Flyovers:** Y / N **If Y, times: Sta1)** **Sta2)**

Gd Temp beg: 14 °c **End:** 16 °c **OAT beg:** 10 °c **End:** °c **Altimeter begin:** 30.22 **end:** 30.37

LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8227		5.7'			
	FOV 34	Scan Freq 56	MpIA (Y) N	Pulses In Air	Pulse Rate 311	Power 63	PPSM

Bag GB 601 · End GB 542 · Tot GB 59 · Storage Name/s:

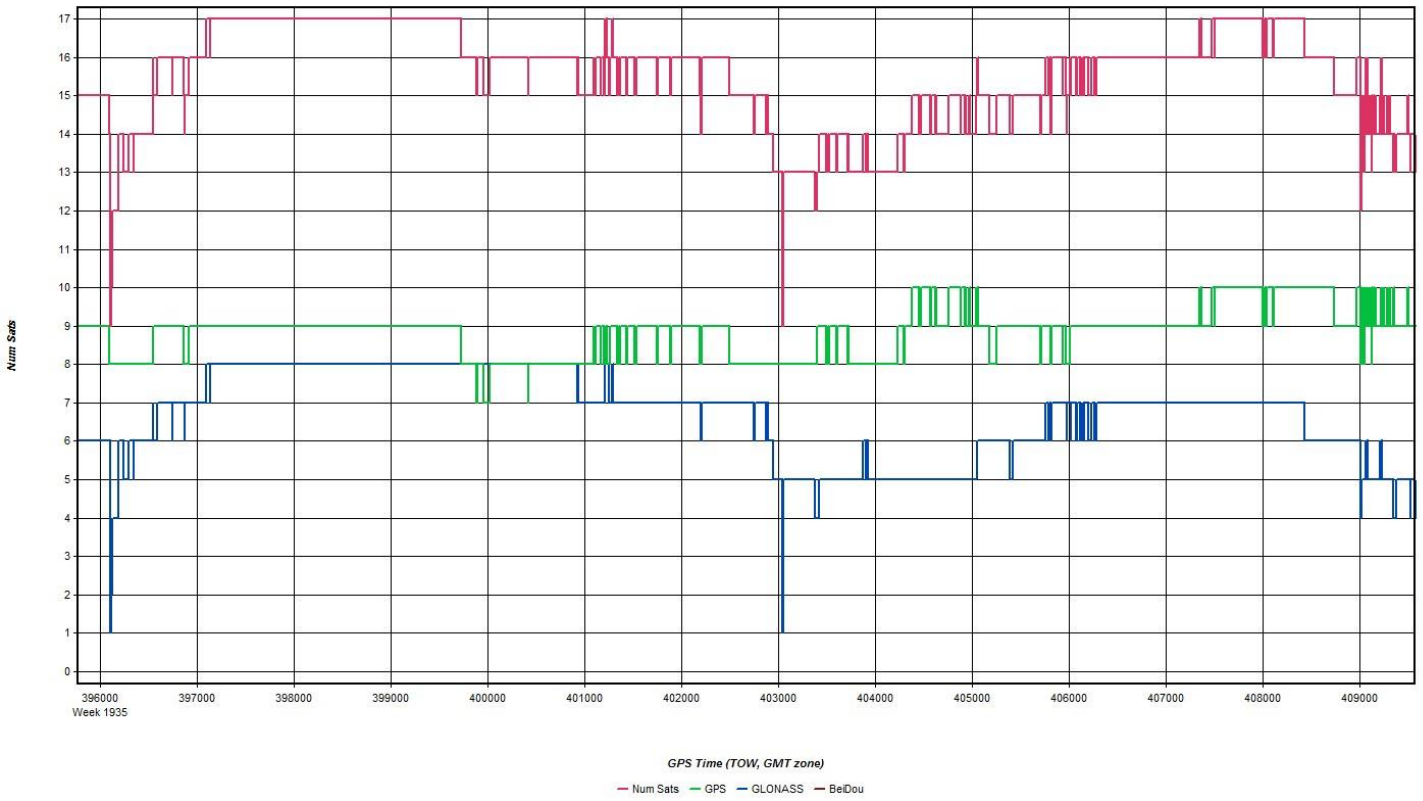
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6086	N	1544	1601	150	1.1/21	5.8		-	FIGURE 8's 15:39
6085	S	1605	1621	152	1.0/23	5.8		-	
6084	N	1624	1641	150	1.1/21	5.8		-	
6083	S	1645	1701	152	1.0/23	5.8		-	
6082	N	1704	1720	147	1.3/21	5.8		-	
6081	S	1725	1742	151	1.1/21	5.8		-	
6080	N	1745	1802	159	1.1/19	5.8		-	
									RED ERROR AFTER LINE 6080 225 online
									IMU DATA MISSING
TIE	E	1809	1812	136	1.3/18	5.8		-	MANUAL CROSSFLIGHT

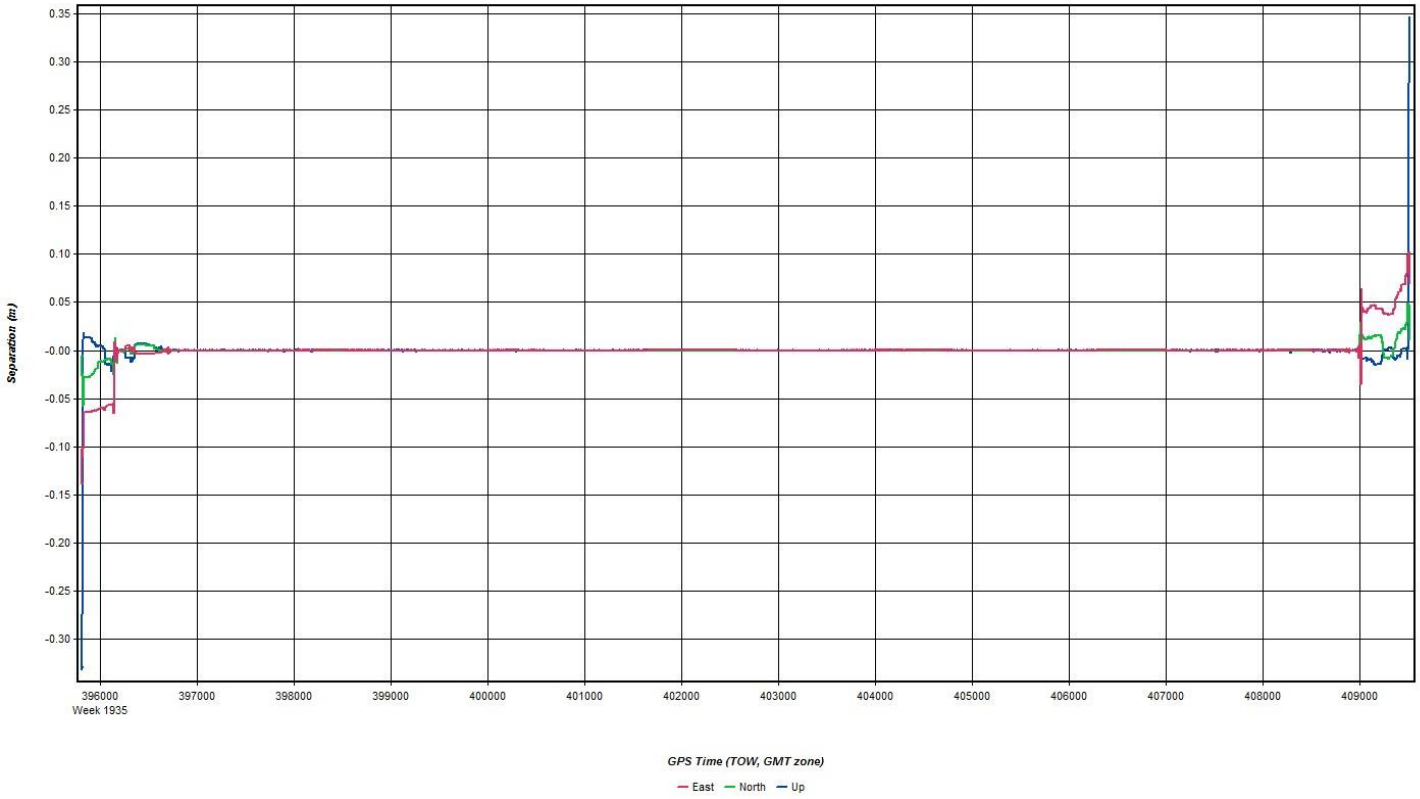
SHORE

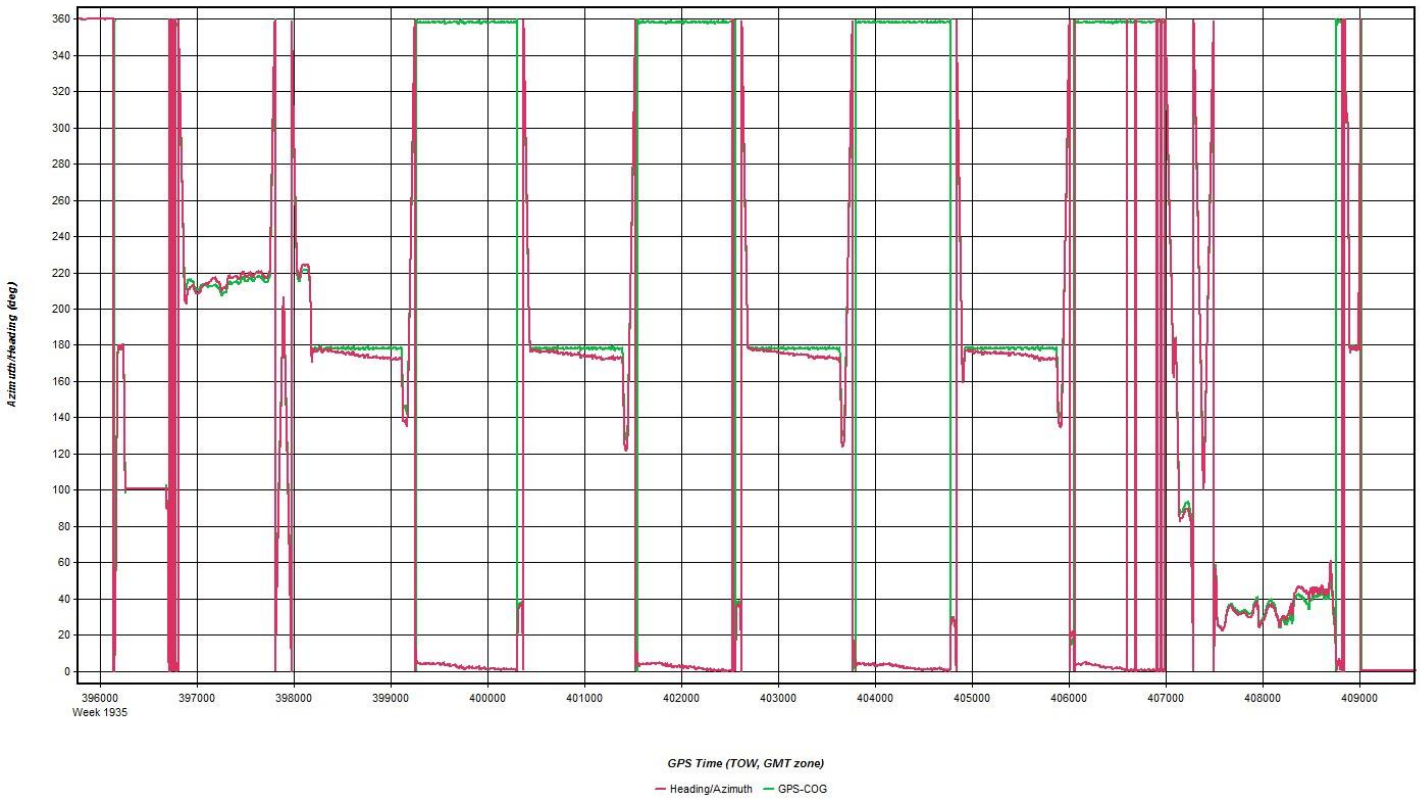
Total Proj Lines: **Lines Flown:** **Lines Remain:** **Online Time:** 2.5 **Mob Time:** .6 **Notes:**

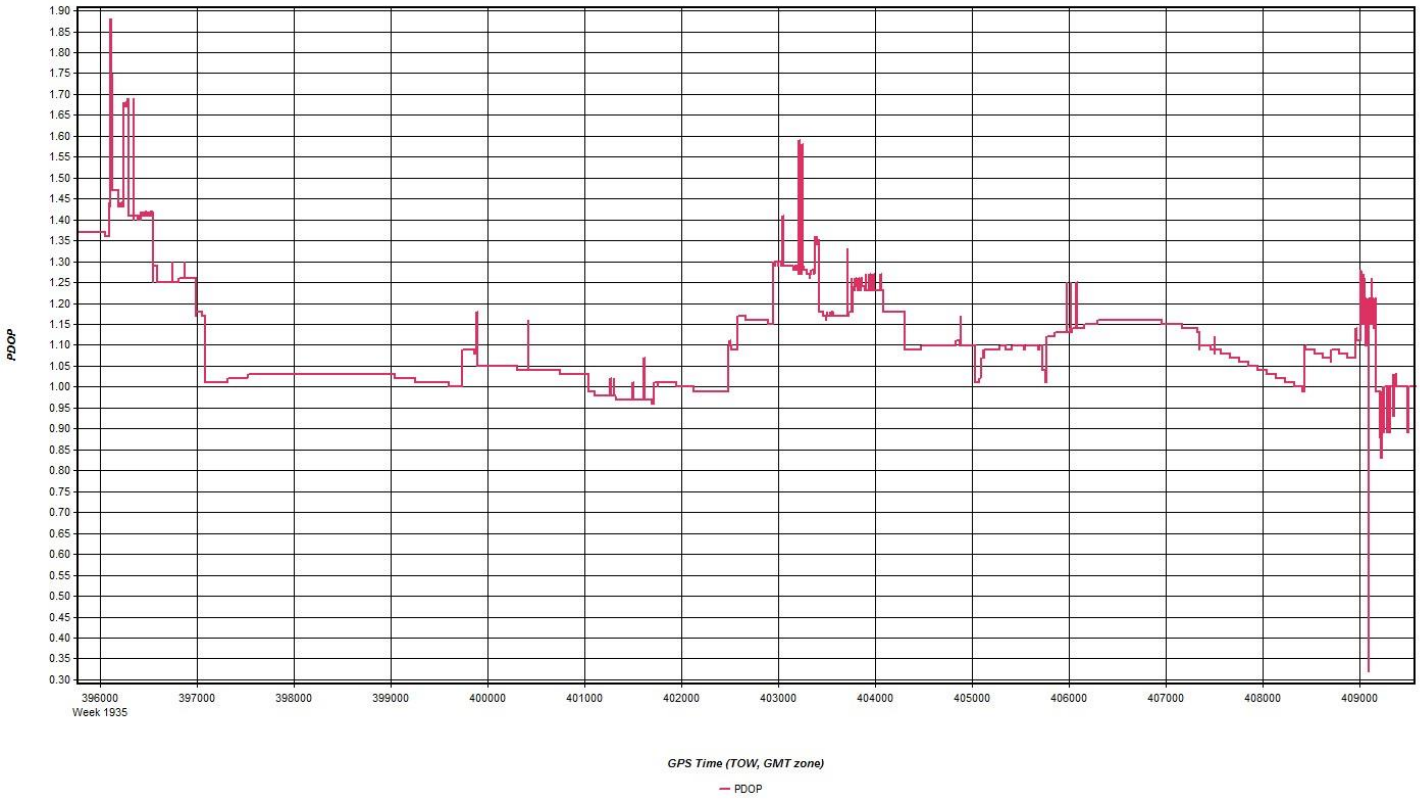
Feb 9, 2017-A (N812TB, SN7178)

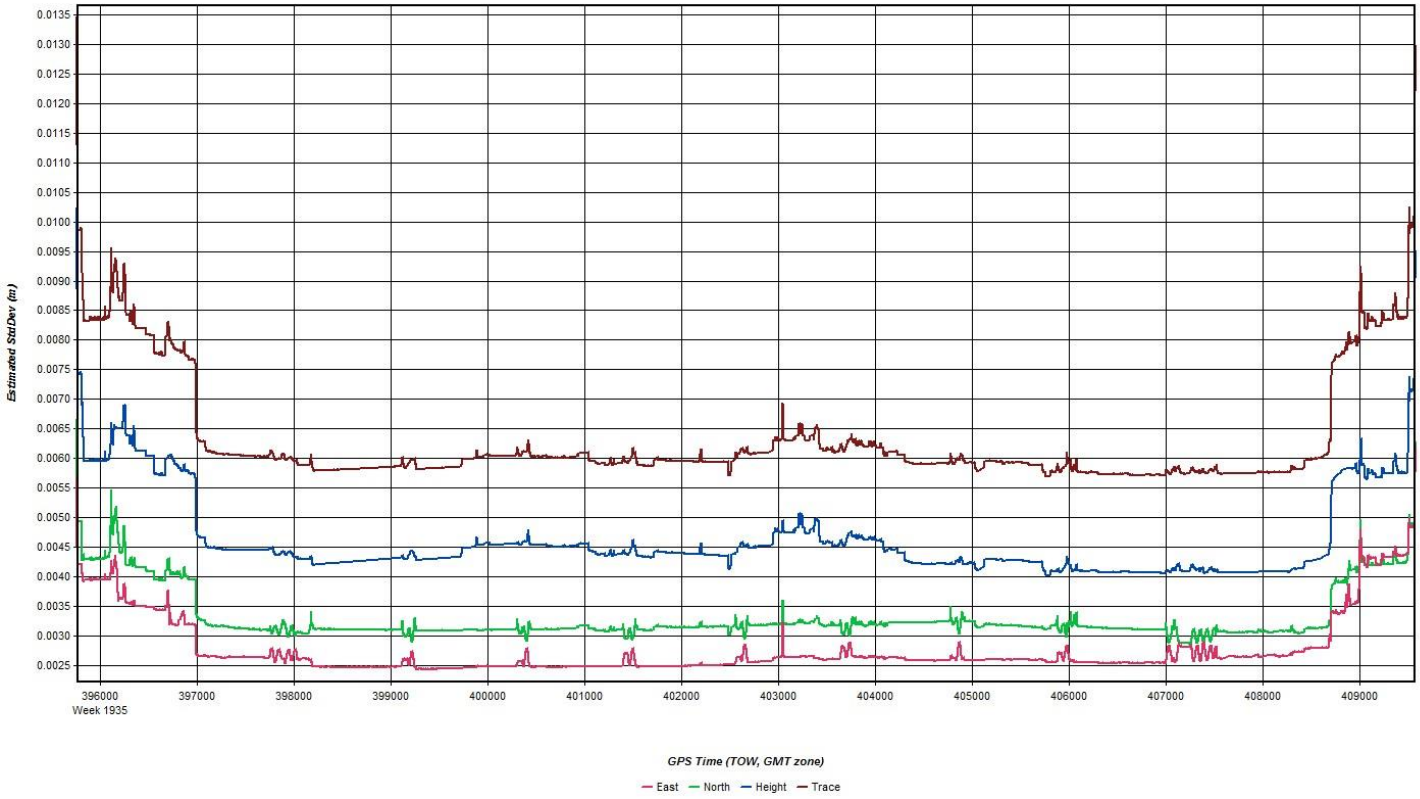


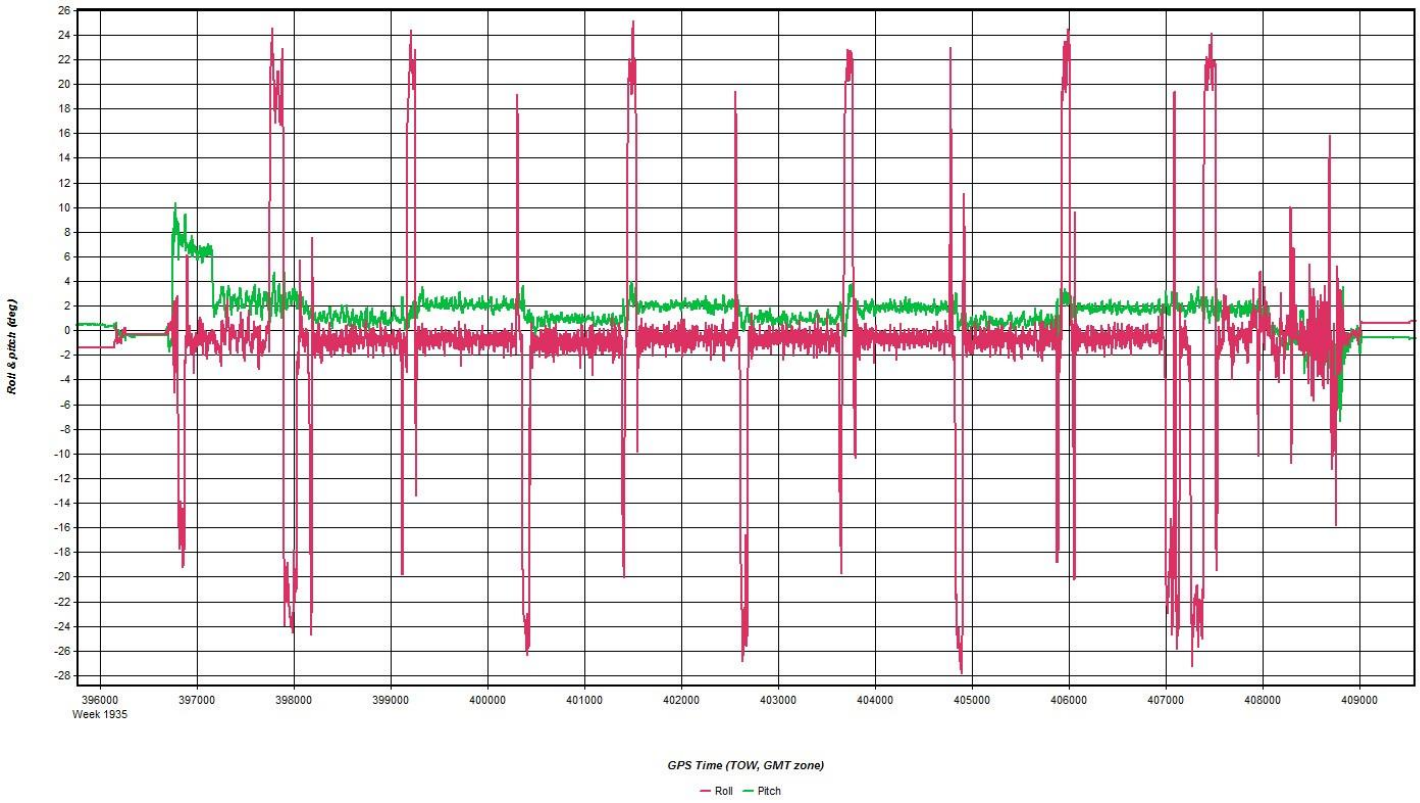

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

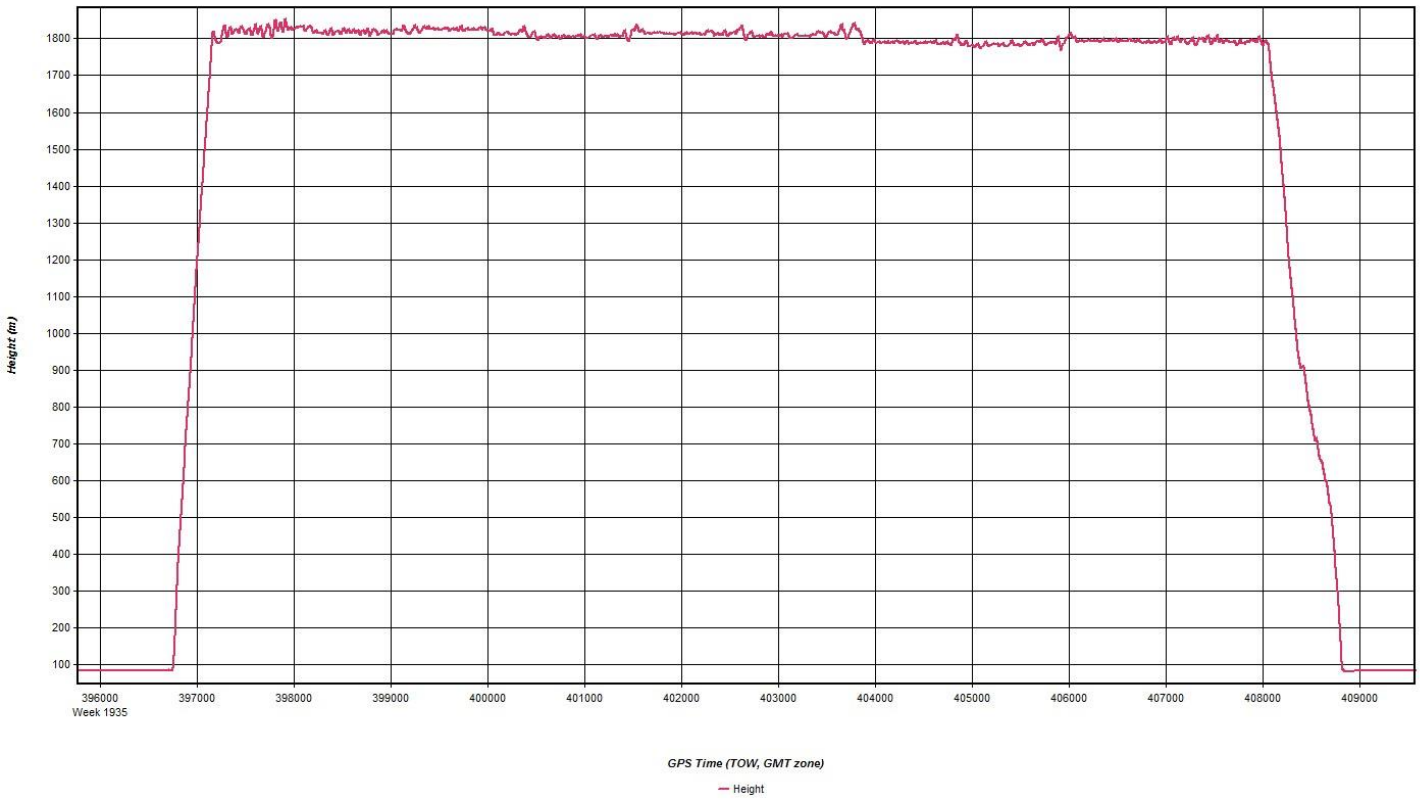

0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
Separation (m)
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
East
North
Up

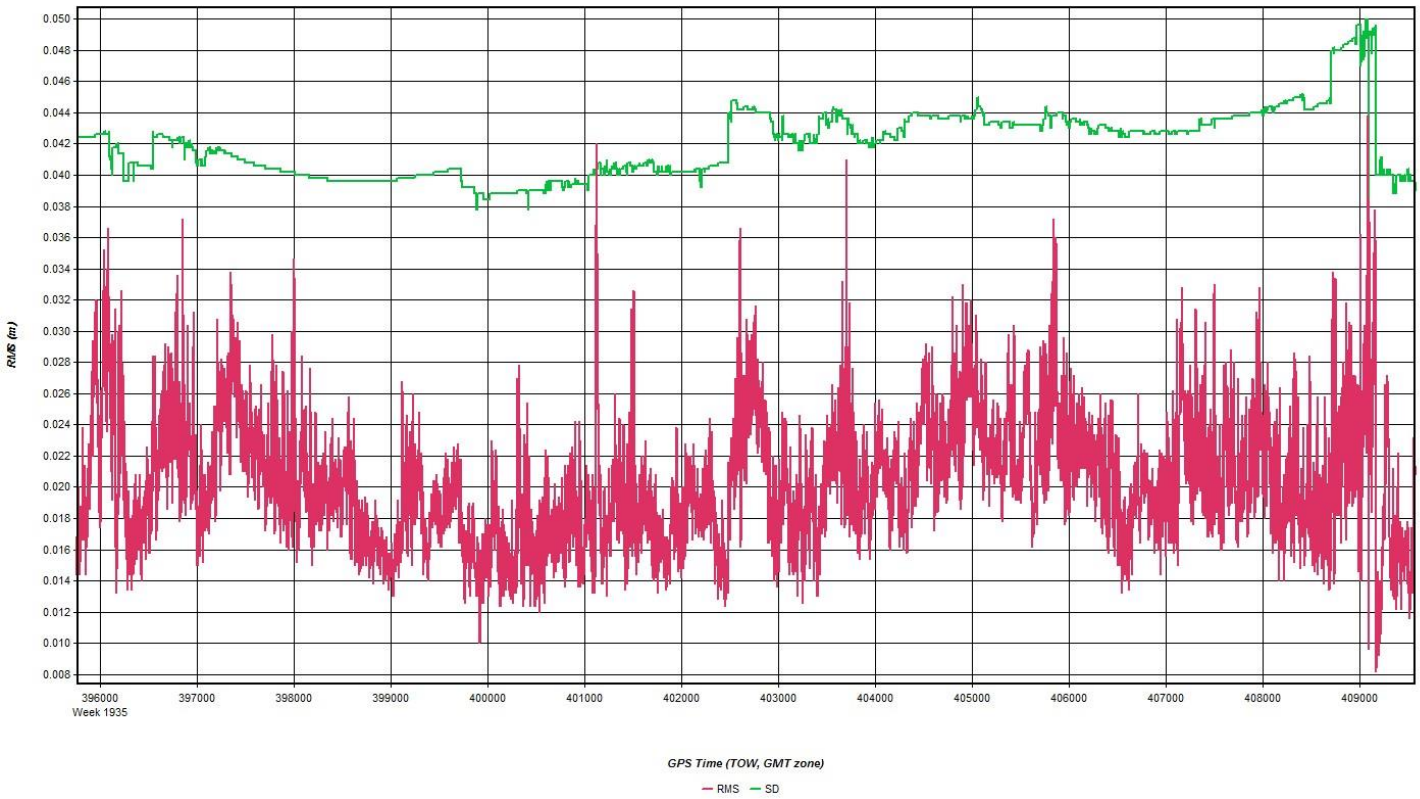

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

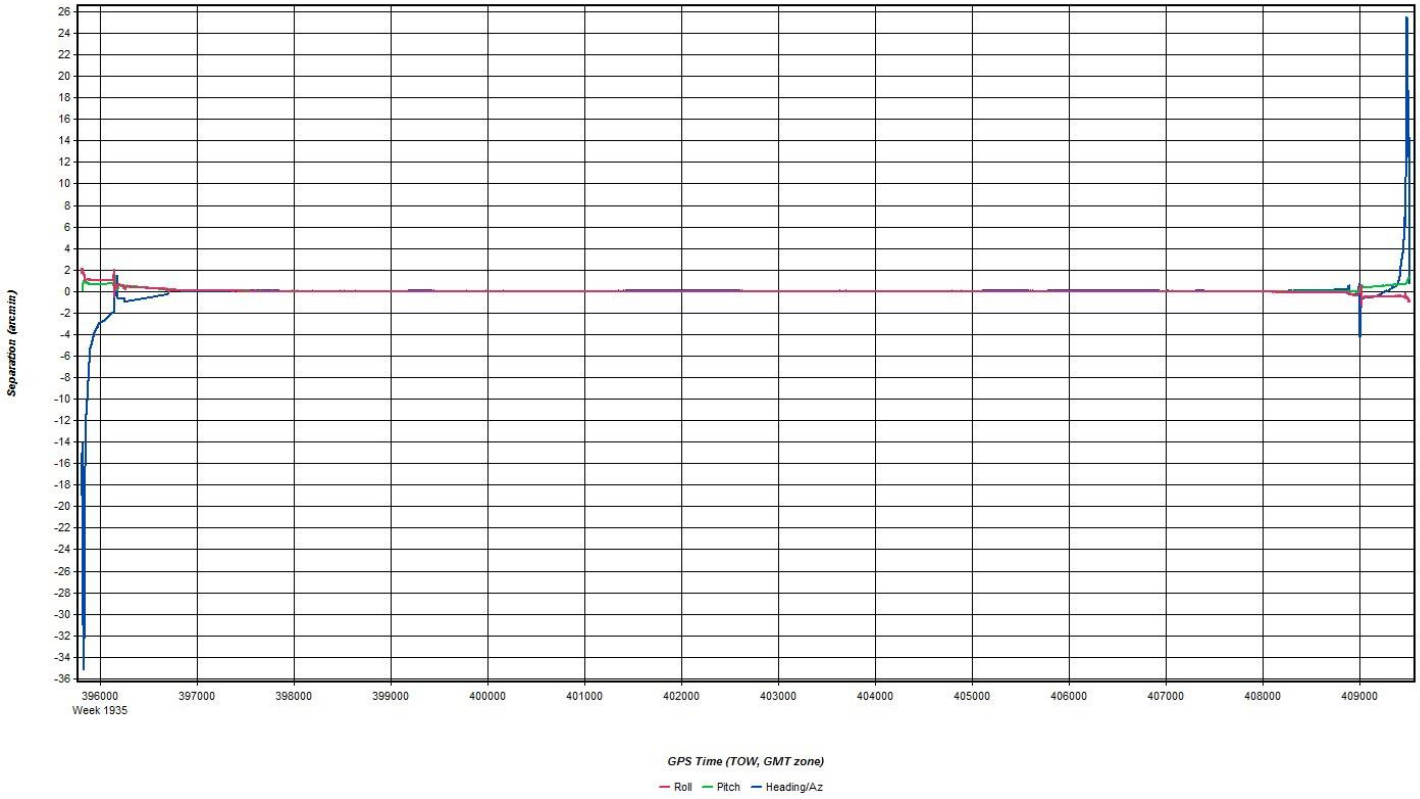

PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
PDOP

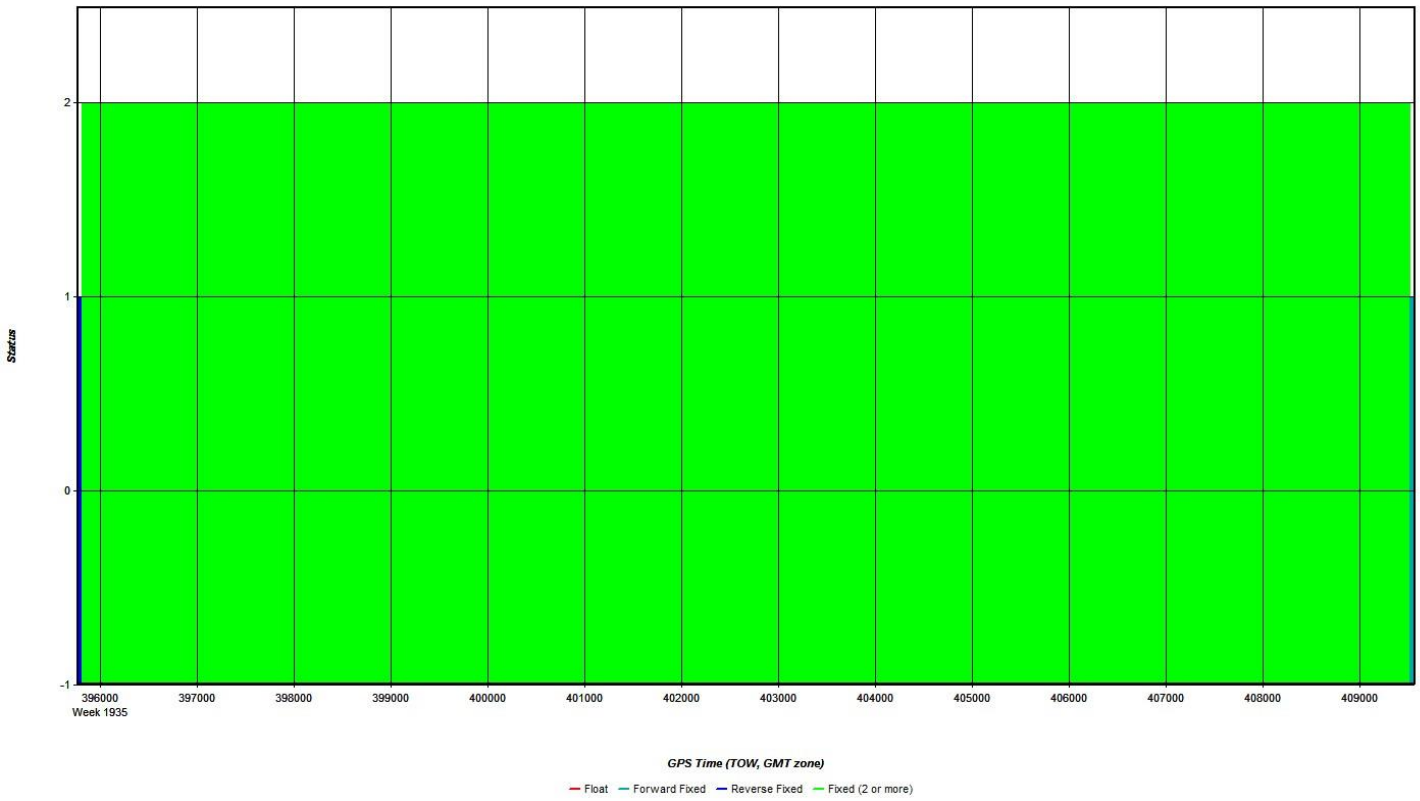

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

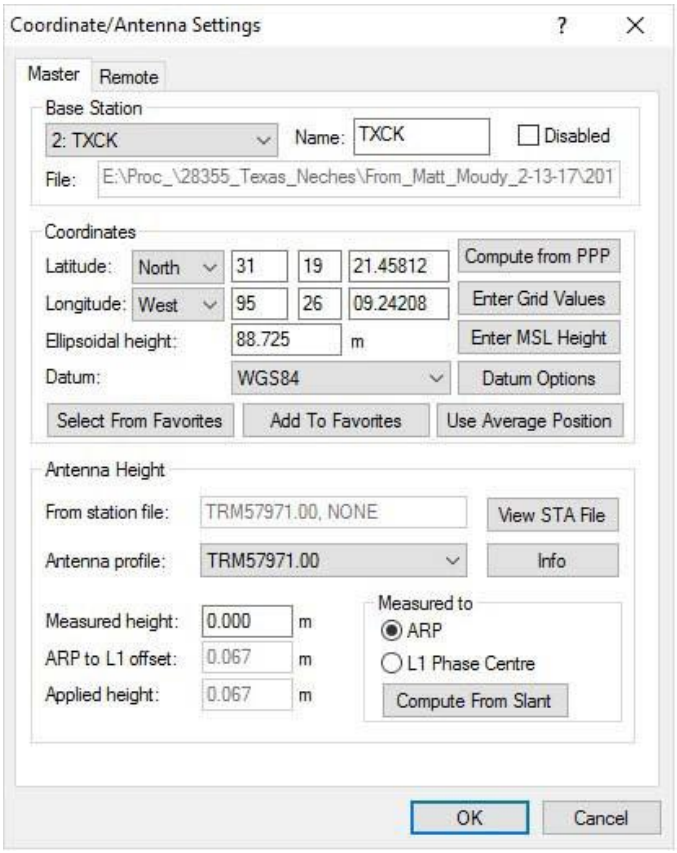

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Roll
Pitch

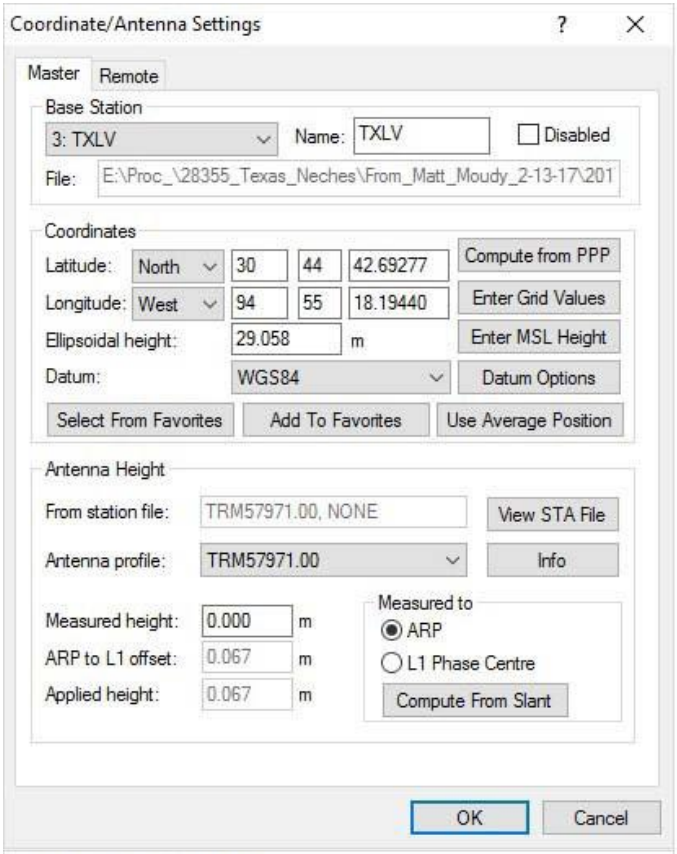

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Height

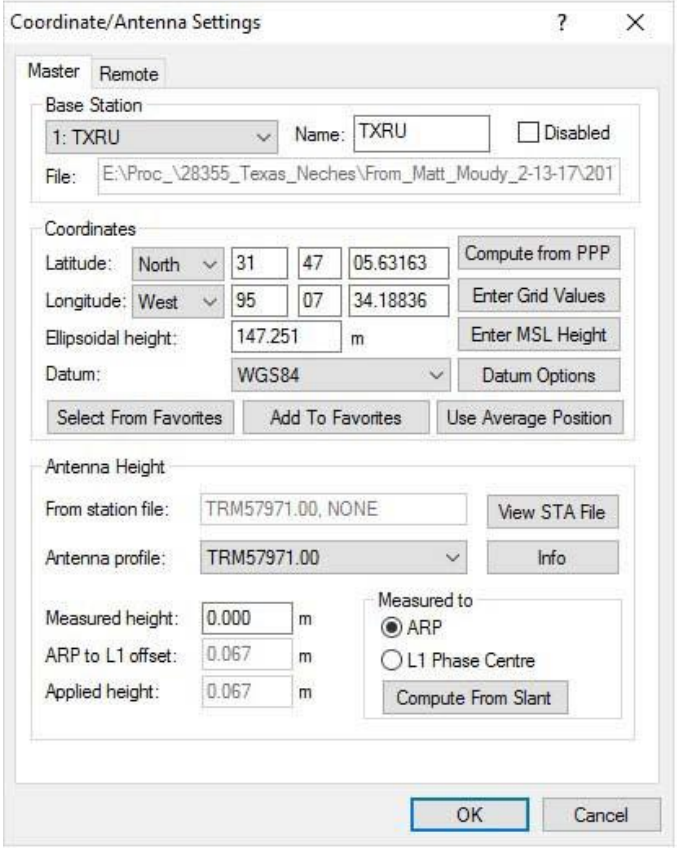

RMS (m)
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
396000
Week 1935
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXCK
Name:
TXCK
Disabled
File:
E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude:
North
31
19
21.45812
Compute from PPP
Longitude:
West
95
26
09.24208
Enter Grid Values
Ellipsoidal height:
88.725
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLV
Name: TXLV
Disabled
File: E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude: North 30 44 42.69277
Longitude: West 94 55 18.19440
Ellipsoidal height: 29.058 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXRU
Name: TXRU
Disabled
File: E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-9-17

Lift: (A) B C D E Pg 1 of 1

Project: NECHES BASIN, TX CROCKET **Proj #:** 28355 **Flight Mgmt File:** 28355_SN7178_CROCKET

Aircraft: N812TB **Begin Hobbs:** 4355.9 **End Hobbs:** 4359.2 **Total:** 3.3 **Pilot:** RADTKE **Co-Pilot:** - **Tech:** MOUDY

Dep Apt: GGG **Dep Time (Lcl):** 0811 **(Z):** 1411 **Arr Apt:** GGG **Arr Time (Local):** 1133 **(Z):** 1733 **Tot Time Aloft:** 3:22

CORS: Y / (N) **Sta 1:** VIRTUAL **Sta 2:** **Flyovers:** Y / (N) **If Y, times: Sta1)** **Sta2)**

GPS Unit: Y / (N) **Sta 1:** **Sta 2:** **Flyovers:** Y / (N) **If Y, times: Sta1)** **Sta2)**

Gd Temp beg: °c **End:** °c **OAT beg:** °c **End:** °c **Altimeter begin:** **end:**

LiDAR

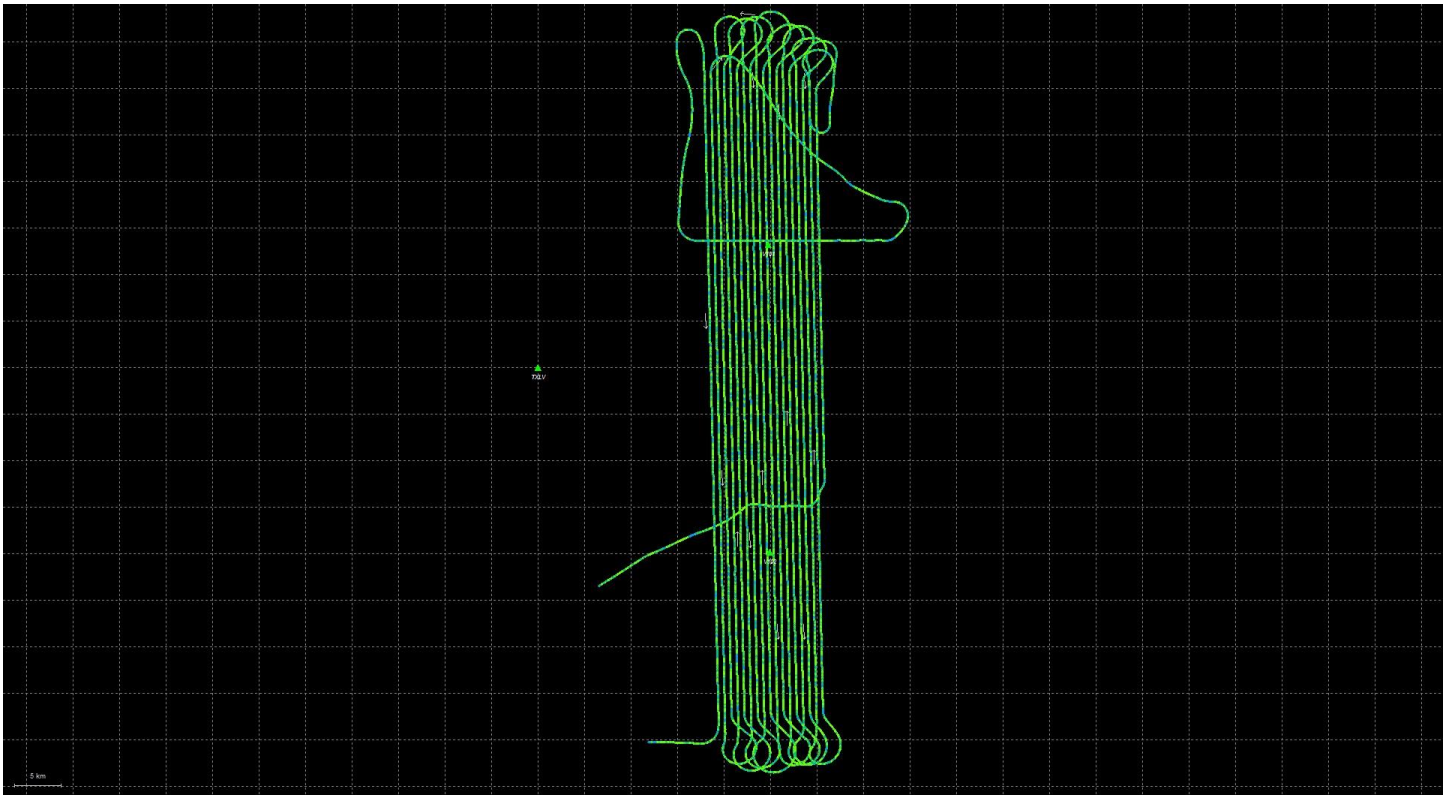
Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
AL570	7178	± 5500'	± 5950'	± 450'	150 KTS	
FOV	**Scan Freq**	**MpiA (Y) / N**	**Pulses In Air**	**Pulse Rate**	**Power**	**PPSM**
34°	57Hz		2	312 KHz	100%	

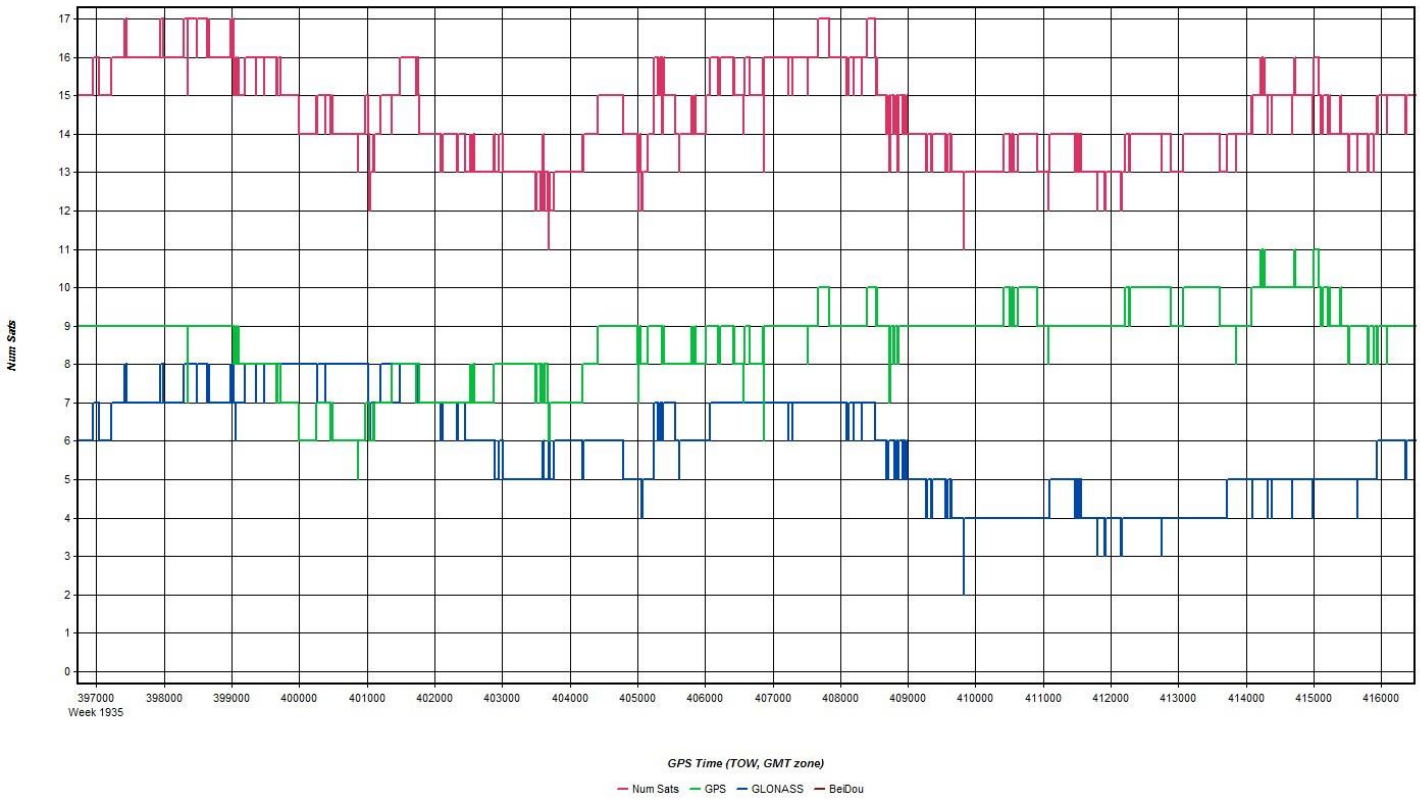
Beg GB	End GB	Tot GB	Storage Name/#
280	335	55	7178 5504

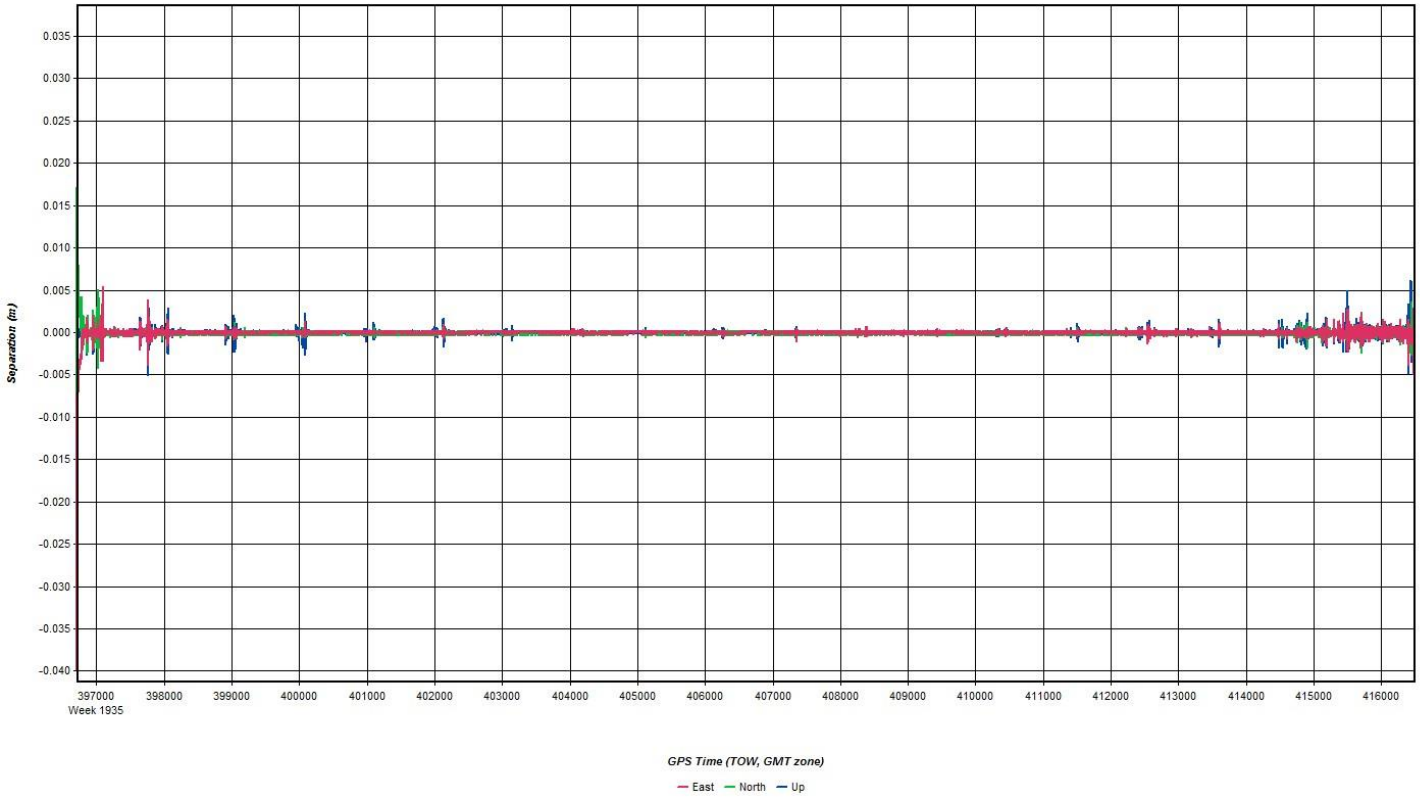
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
1076	178	1436	1451	166	1.2/18	5970	2	0	
1075	358	1453	1511	147	1.3/19	6000	6	0	
1074	178	1514	1529	165	1.1/20	5900	2	0	
1073	358	1532	1548	155	1.3/18	5960	6	0	
1072	178	1552	1606	163	1.1/20	5930	1	0	
1071	358	1610	1625	155	1.0/20	5940	6	0	
1070	178	1629	1644	165	1.0/21	5850	1	0	
1069	358	1647	1702	160	1.1/19	5890	5	0	
TIE	090	1705	1707	163	1.3/18	5900	3	0	- MANUAL TIE LINE

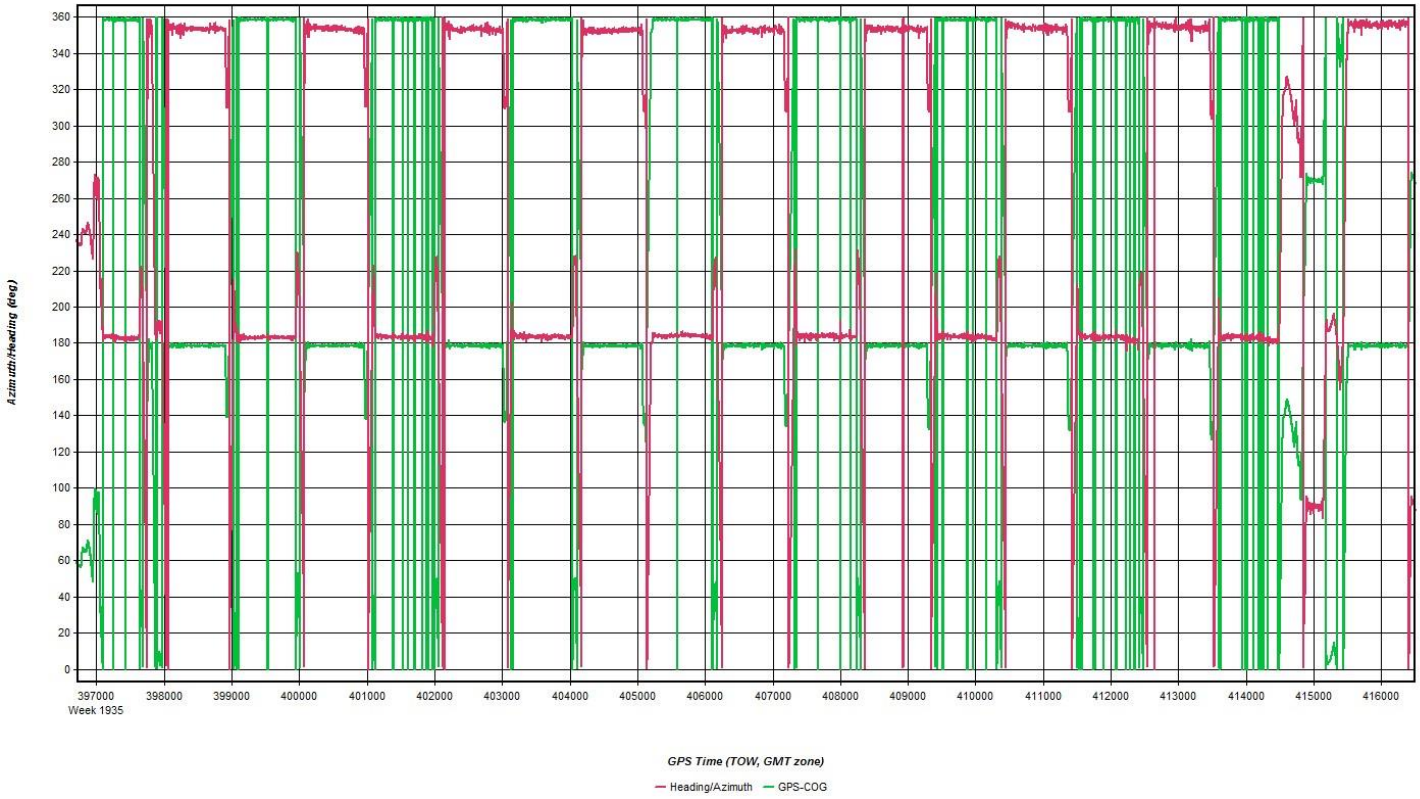
Total Proj Lines: **Lines Flown:** **Lines Remain:** **OnLine Time:** 2.5 **Mob Time:** 0.8 **Notes:**

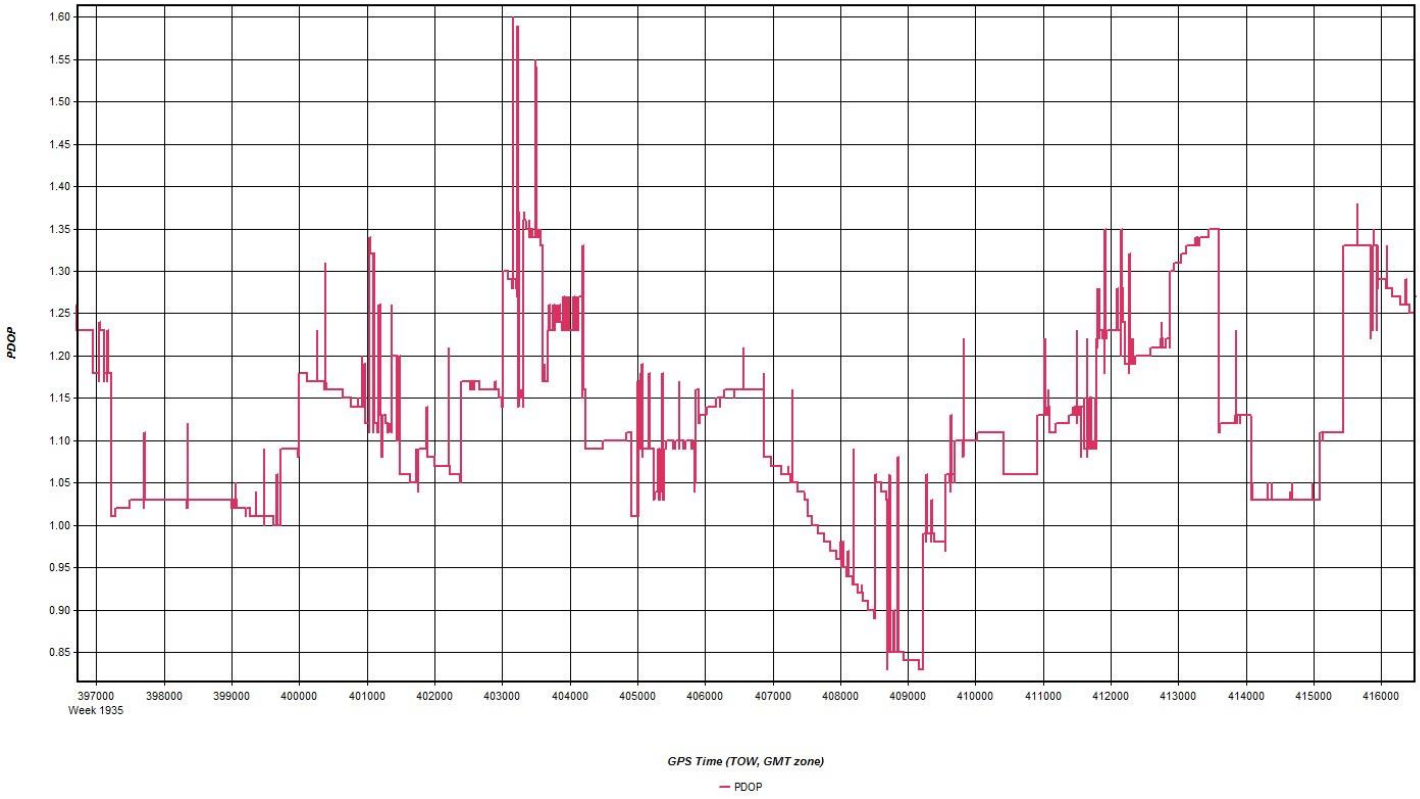
Feb 9, 2017-A (SN7229)

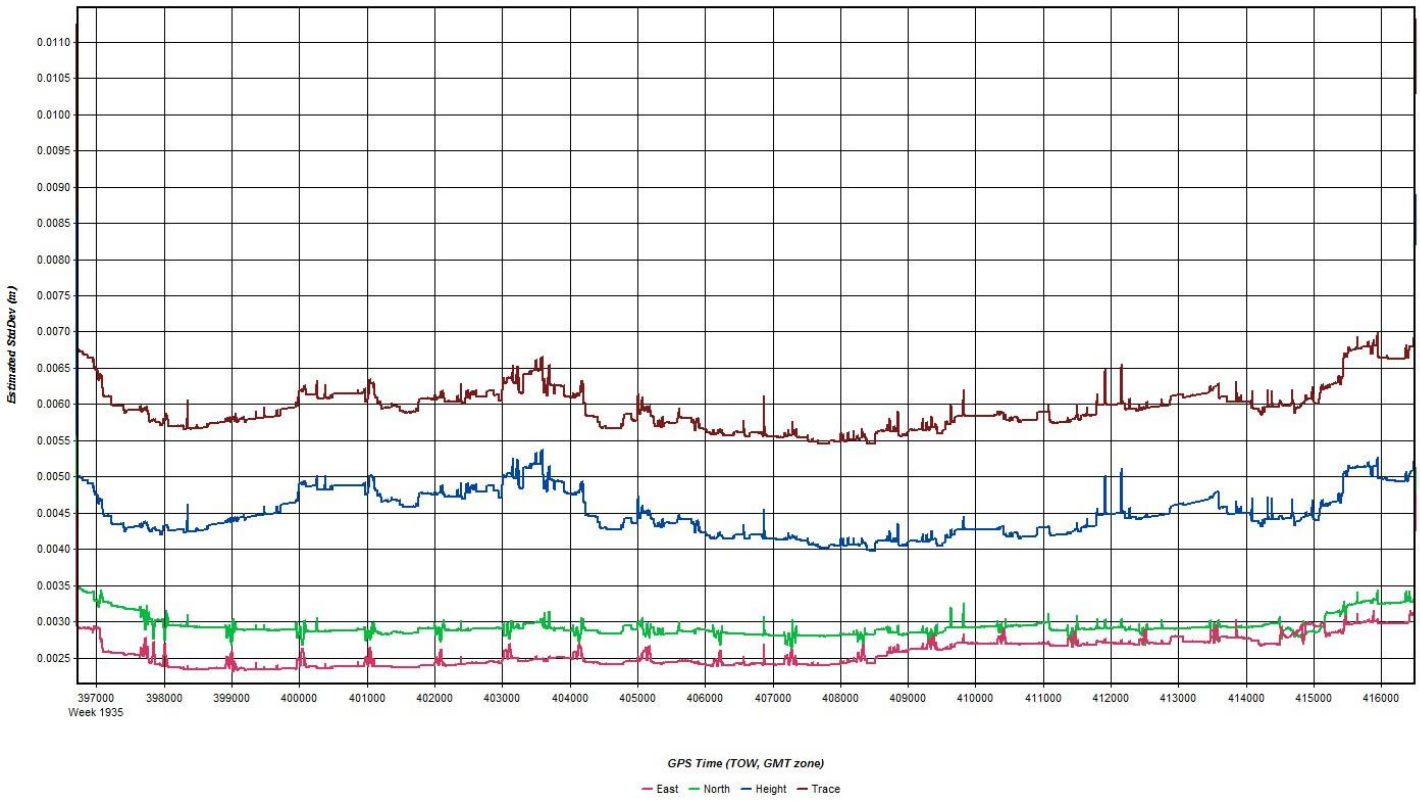


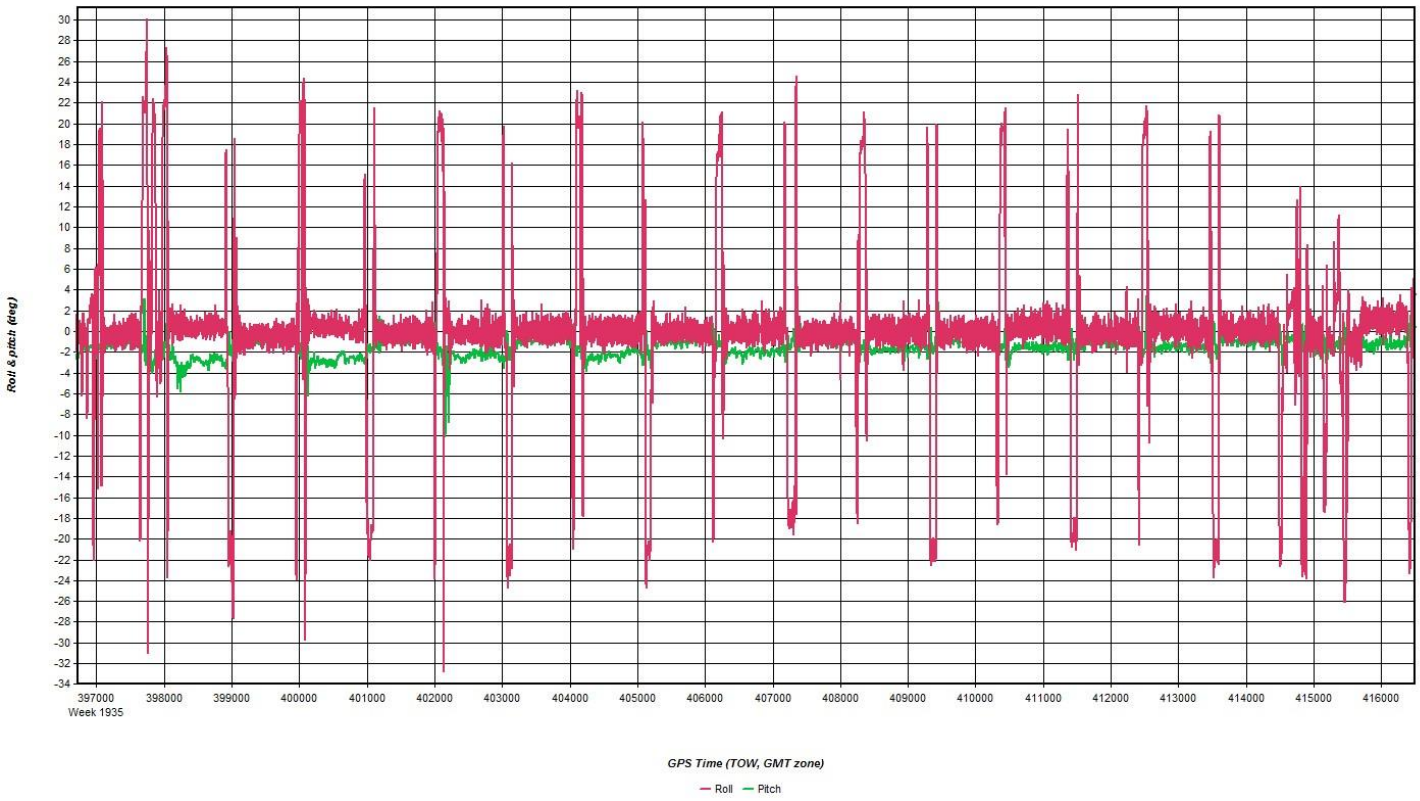

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

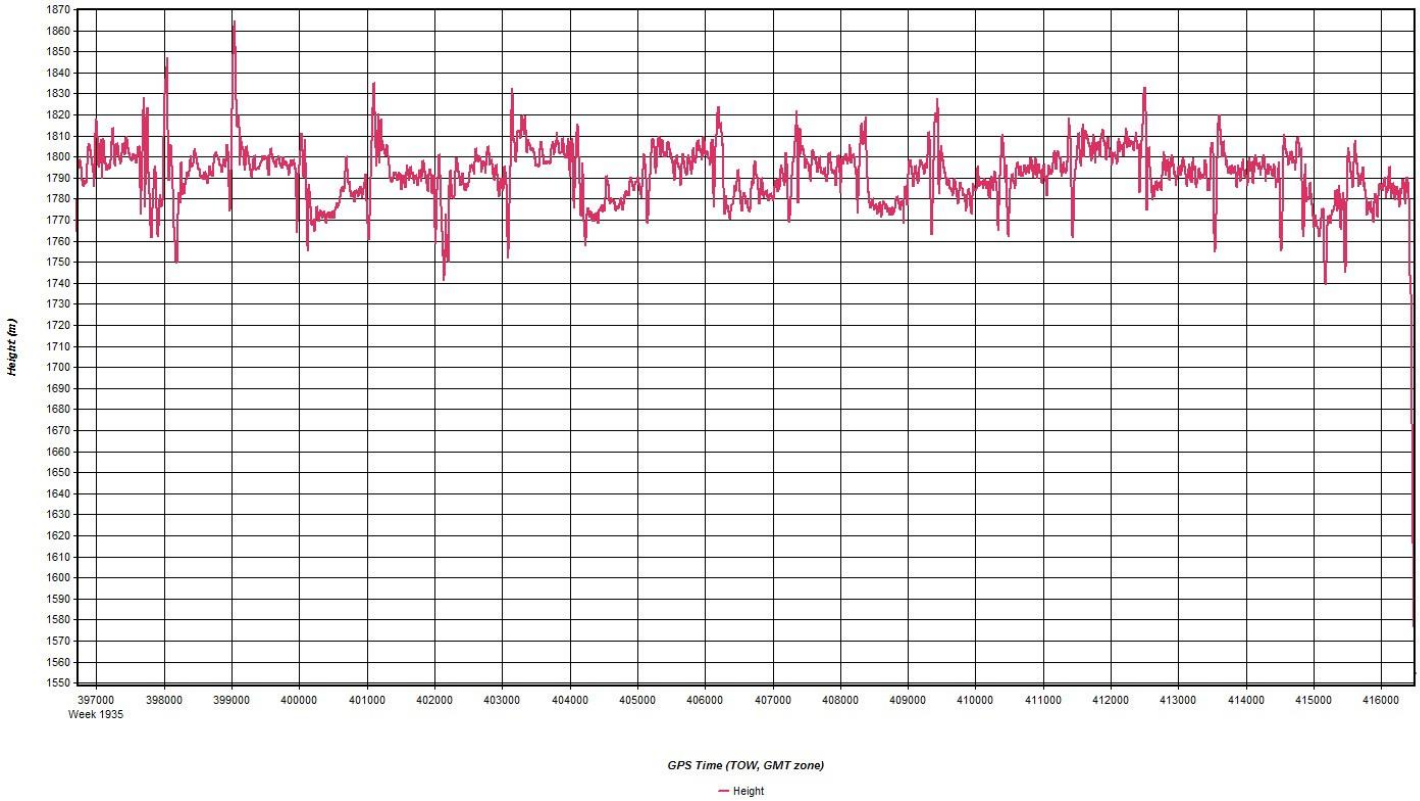

Separation (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
East
North
Up

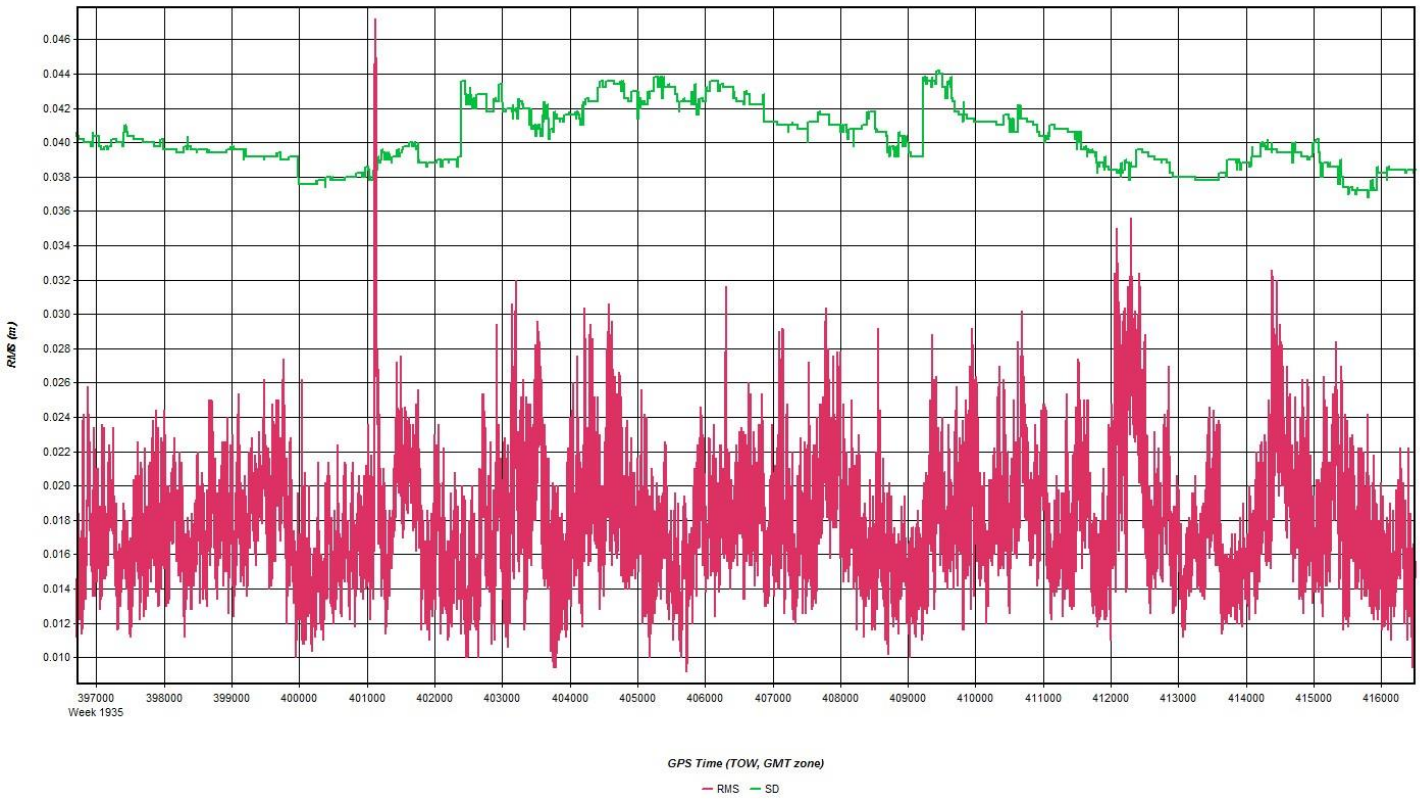

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

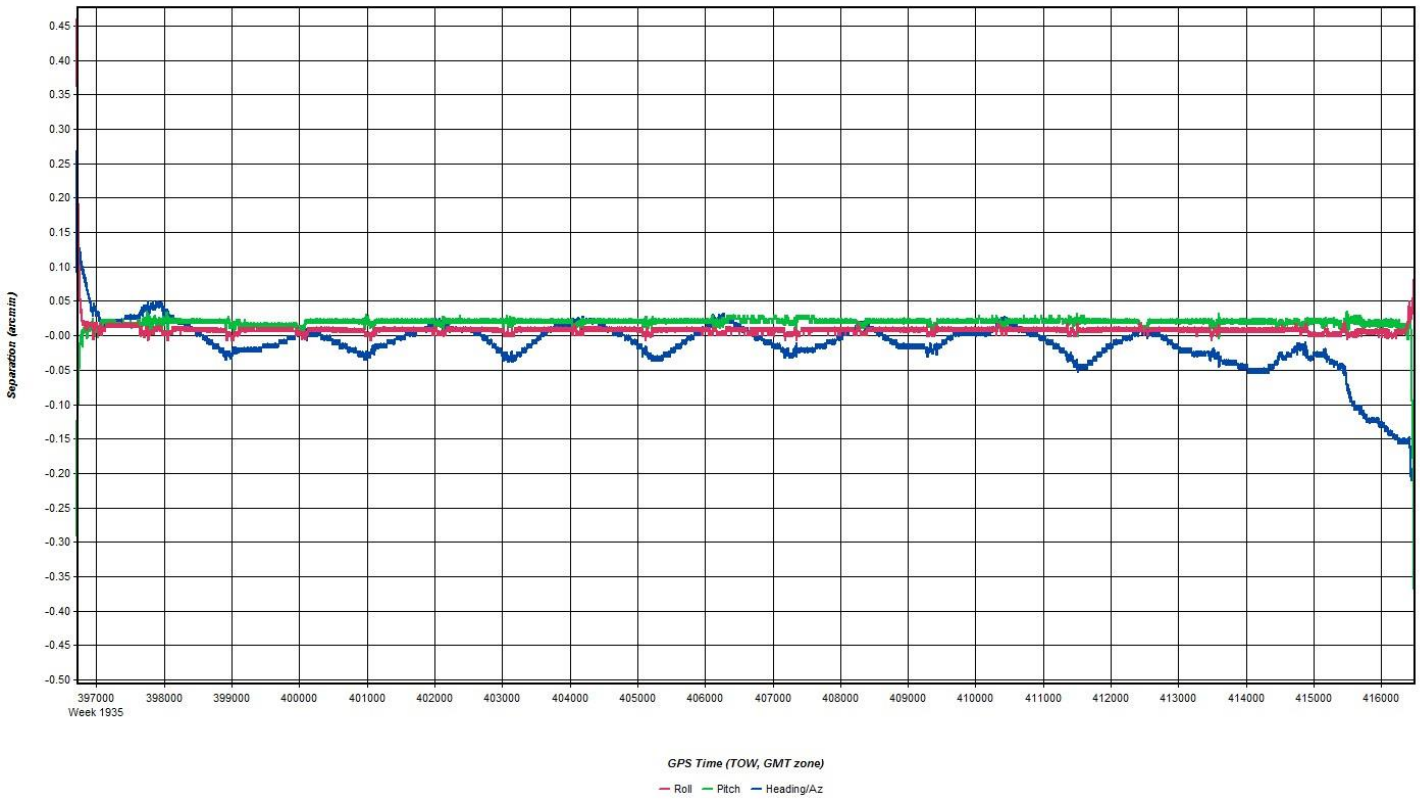

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
PDOP

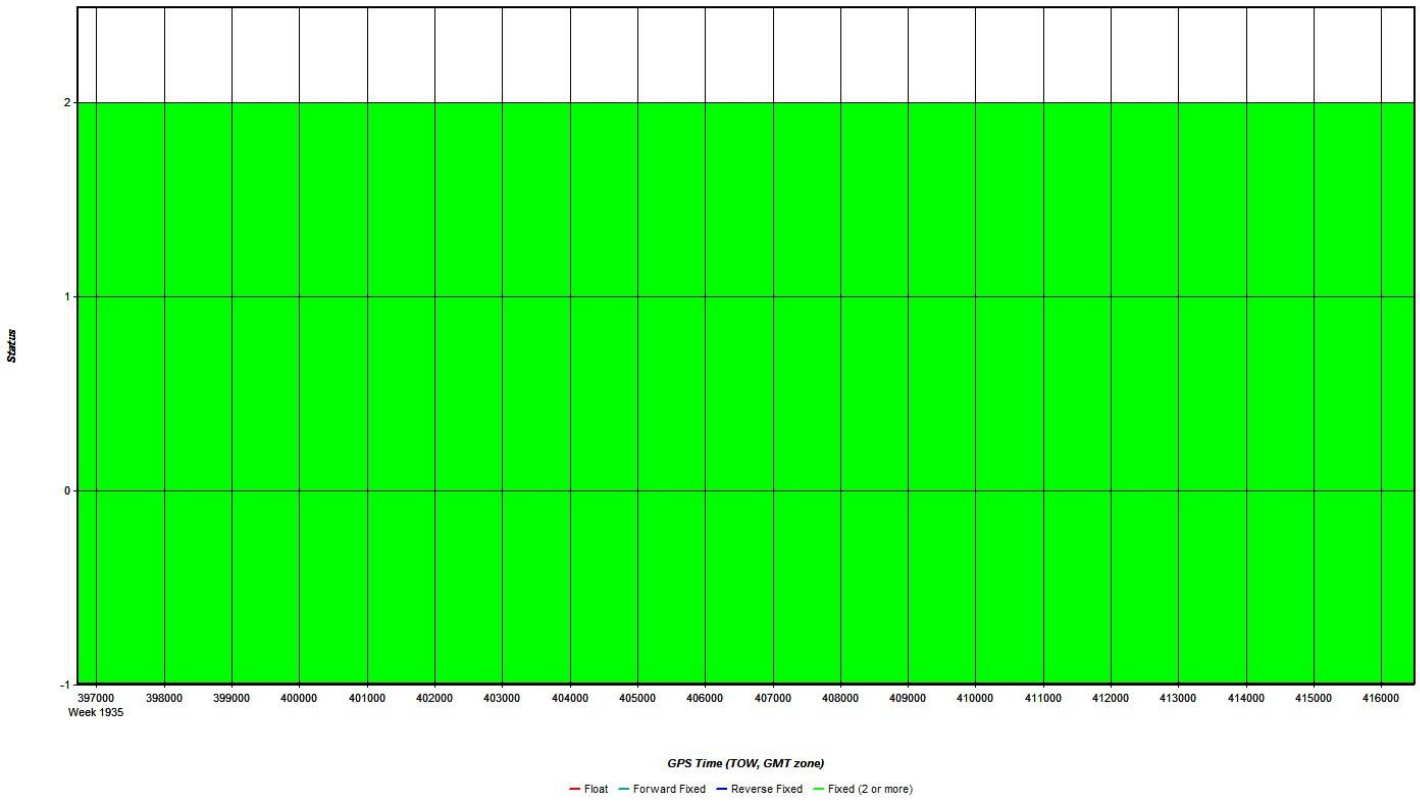

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

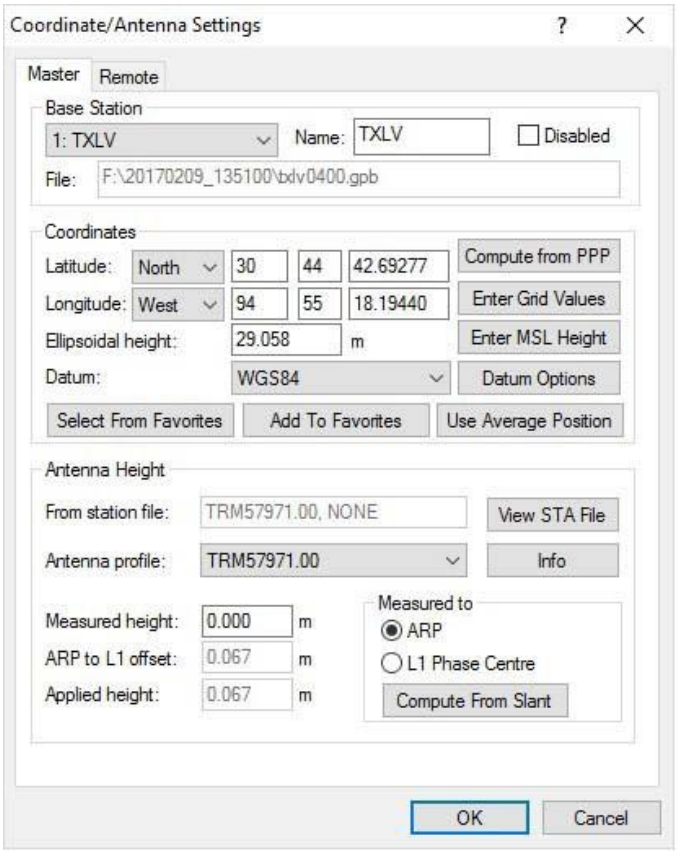

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Roll
Pitch

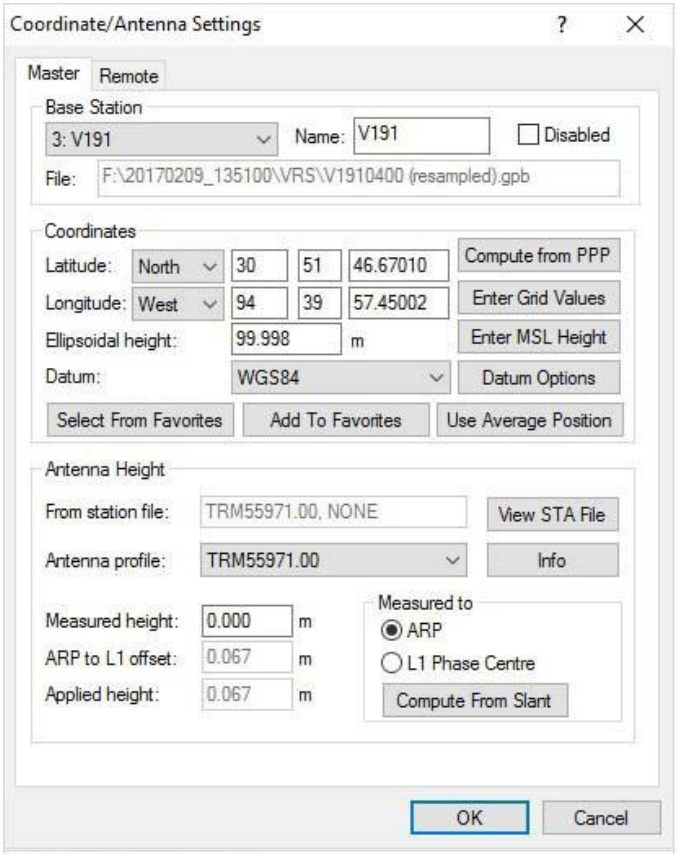

Height (m)
1870
1860
1850
1840
1830
1820
1810
1800
1790
1780
1770
1760
1750
1740
1730
1720
1710
1700
1690
1680
1670
1660
1650
1640
1630
1620
1610
1600
1590
1580
1570
1560
1550
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Height

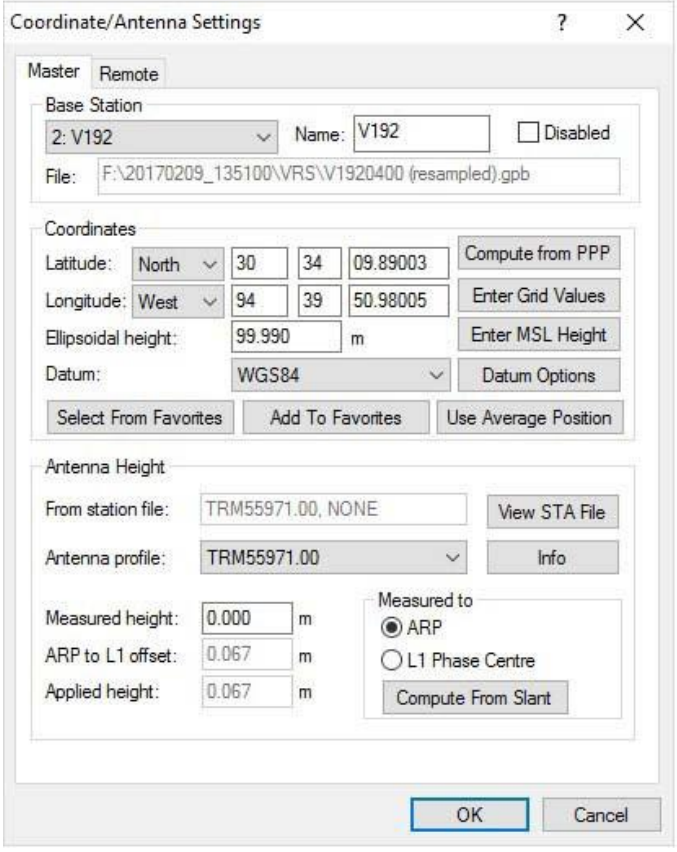

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
397000
Week 1935
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLV
Name:
TXLV
Disabled
File:
F:\20170209_135100\txlv0400.gpb
Coordinates
Latitude:
North
30
44
42.69277
Compute from PPP
Longitude:
West
94
55
18.19440
Enter Grid Values
Ellipsoidal height:
29.058
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V191
Name: V191
Disabled
File: F:\20170209_135100\VRS\V1910400 (resampled).gpb
Coordinates
Latitude: North 30 51 46.67010
Longitude: West 94 39 57.45002
Ellipsoidal height: 99.998 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V192
Name: V192
Disabled
File: F:\20170209_135100\VRS\V1920400 (resampled).gpb
Coordinates
Latitude: North 30 34 09.89003
Longitude: West 94 39 50.98005
Ellipsoidal height: 99.990 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

LIDAR & AERIAL PHOTO FLIGHT LOG

20 YEARS OF EXCELLENCE — ATLIS — LIDAR + IMAGERY + GEOMATICS

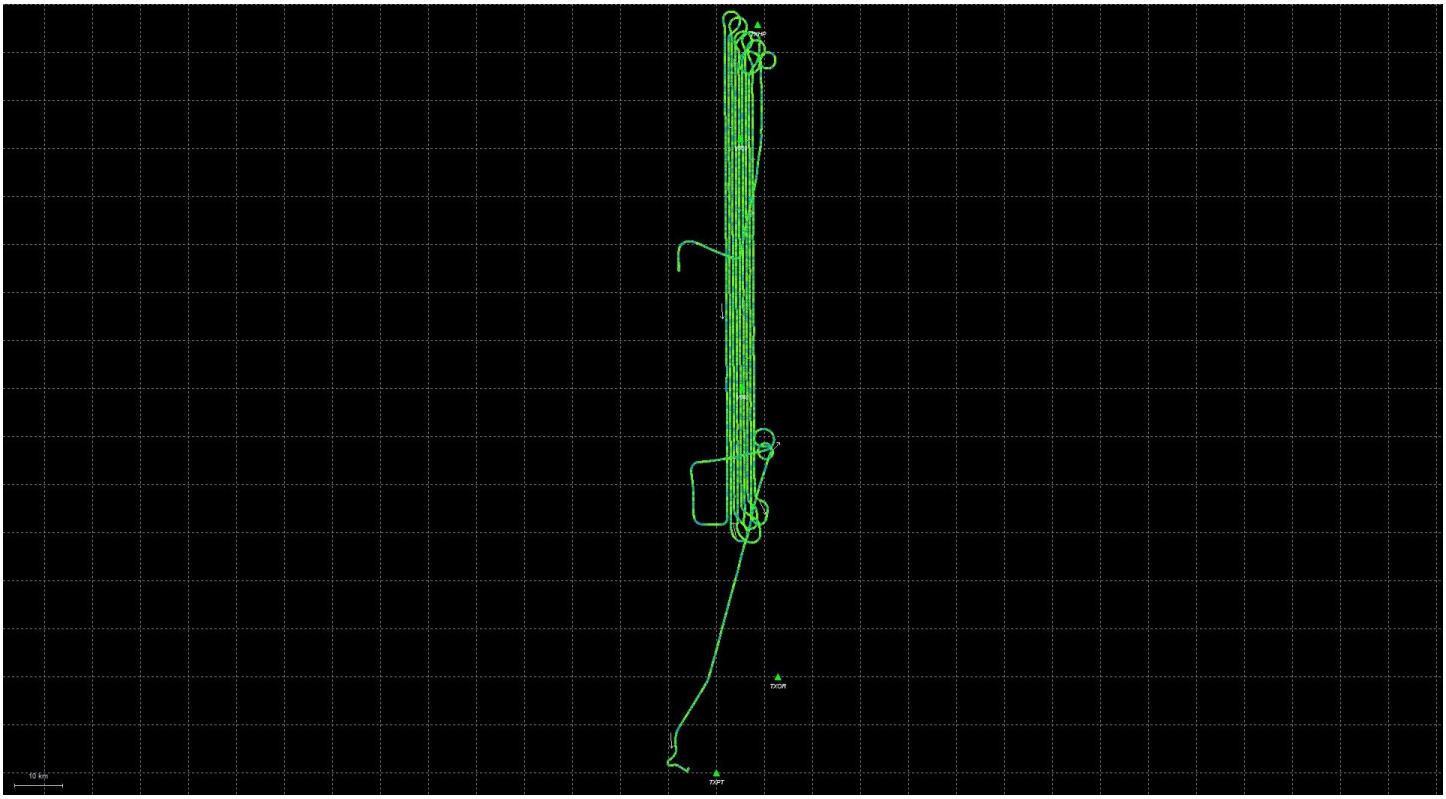
PROJECT NAME	QS Texas	DATE	09/02/2017
SENSOR OPERATOR	Michael Kettridge	SENSOR(S)	ALS70-HP / RCD30
PILOT	Daniel Thibeault	IMU	Honeywell uIRS
AIRCRAFT	Navajo C-FVZM	ABGPS	IPAS-CUS6
AIRBASE	Cleveland, TX	DATA DRIVES	LiDar3

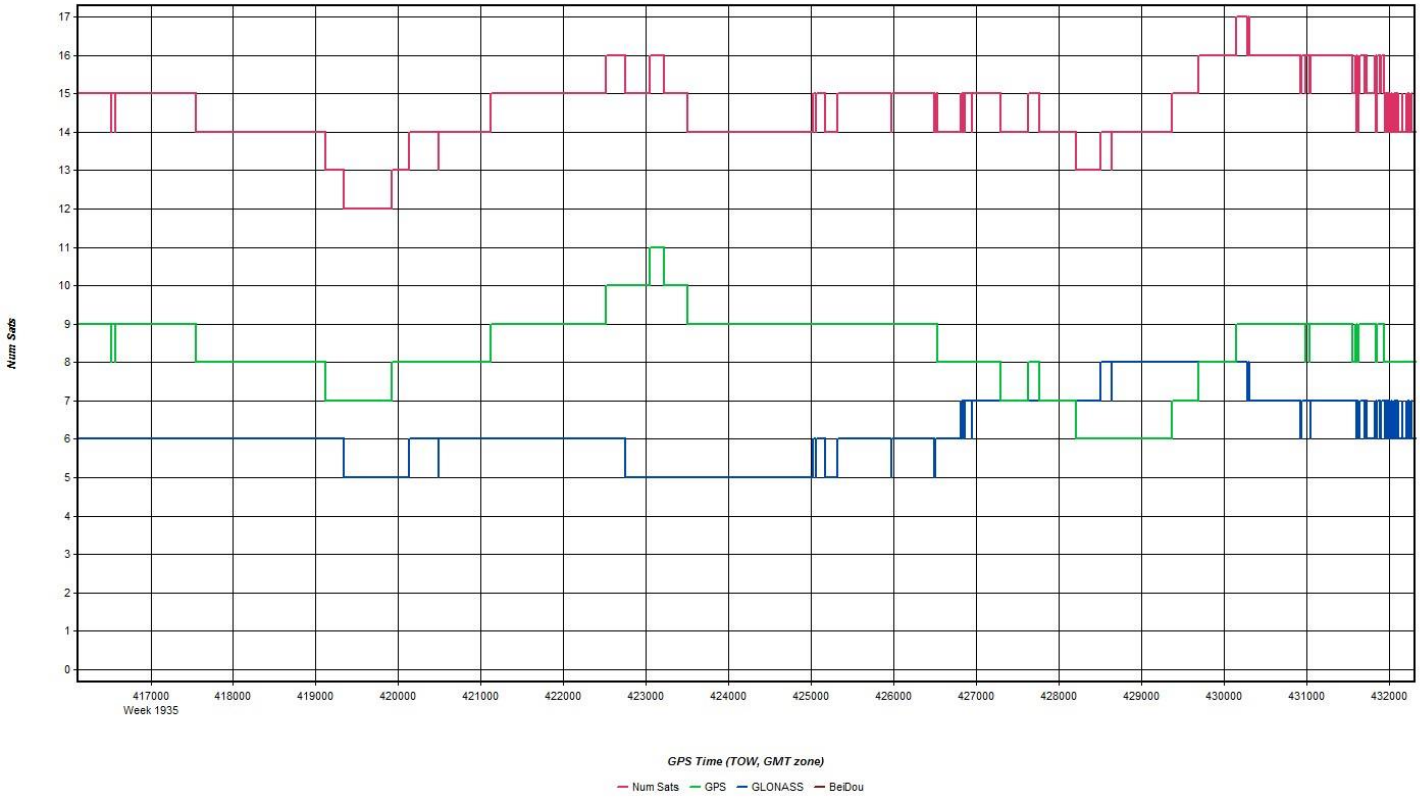
AIRCRAFT BLOCK TIME				MISSION DETAILS				STATIC ALIGNMENT	GPS TIME	
Engine On:	13:50:00	Takeoff:	14:03:00	AGL Height:	1750	Pulse Rate:	312		START	END
Engine Off:	19:57:00	Landing:	19:48:00	Speed:	150	Scan Rate:	57	Pre-Mission	13:54:00	14:00:00
TOTAL:	6.1 hr	TOTAL:	5.75 hr	Laser Power:	100	FOV:	34	Post Mission	19:49:00	19:55:00

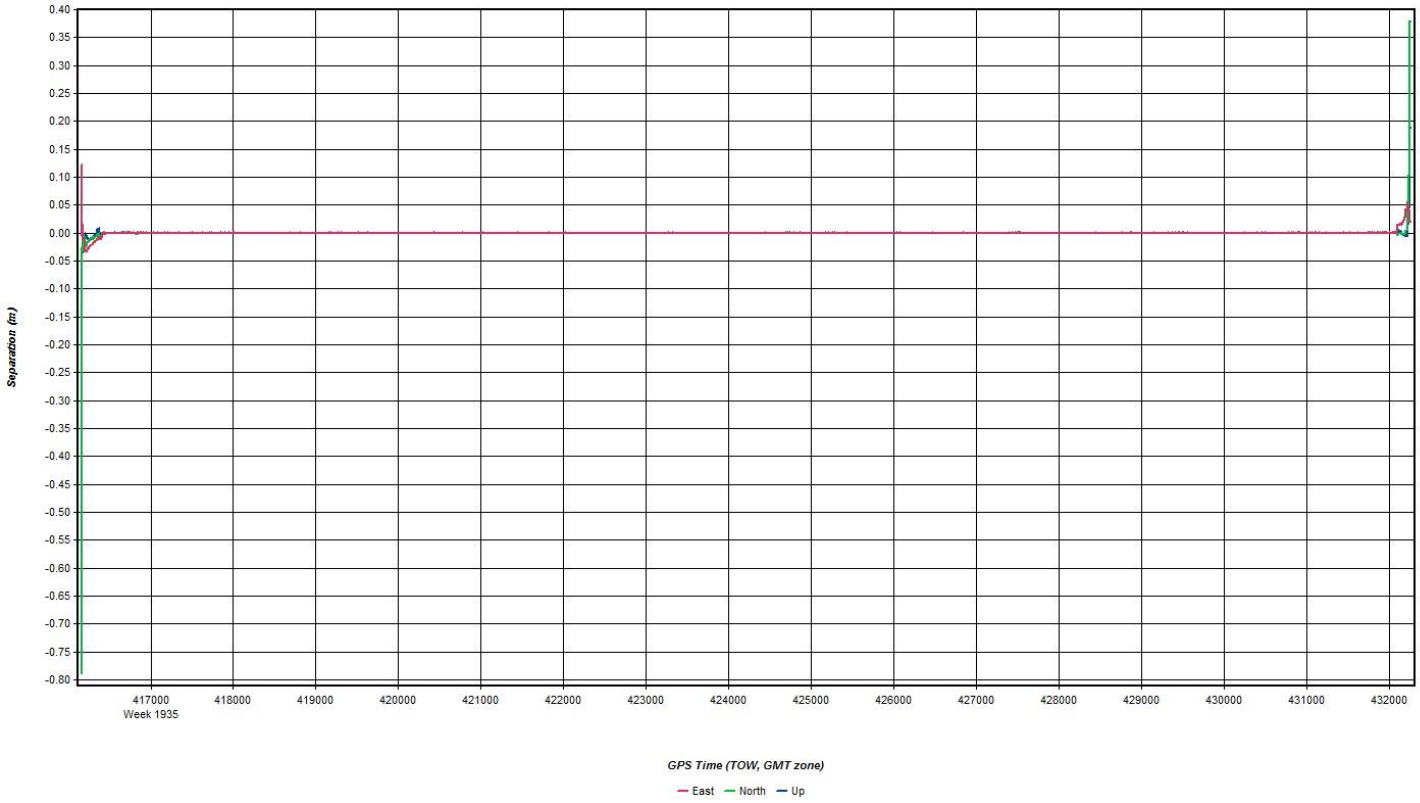
FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME START	GPS TIME END	COMMENTS
5074		North	170209_141843	14:18:44	14:27:01	All Complete
5073		South	170209_143415	14:34:18	14:48:08	All Complete
5072		North	170209_145108	14:51:10	15:05:28	All Complete
5071		South	170209_150813	15:08:14	15:22:15	All Complete
5070		North	170209_152520	15:25:22	15:39:31	All Complete
5069		South	170209_154225	15:42:28	15:56:29	All Complete
5068		North	170209_155936	15:59:37	16:13:39	All Complete
5067		South	170209_161638	16:16:39	16:30:49	All Complete
5066		North	170209_163403	16:34:05	16:48:11	All Complete
5065		South	170209_165138	16:51:40	17:05:47	All Complete
5064		North	170209_170918	17:09:19	17:23:32	All Complete, 10nm from north 30m off line
5063		South	170209_172644	17:26:44	17:40:52	All Complete, 14.7nm from south 30nm off line
5062		North	170209_174404	17:44:06	17:58:12	All Complete
5061		South	170209_180120	18:01:21	18:15:29	All Complete
5060		North	170209_181855	18:18:56	18:33:08	All Complete
5059		South	170209_183618	18:36:19	18:50:36	All Complete
5058		North	170209_185344	18:53:45	19:12:45	All Complete
CL		West	170209_191531	19:15:32	19:18:41	All Complete
5057		South	170209_192414	19:24:15	19:39:19	All Complete

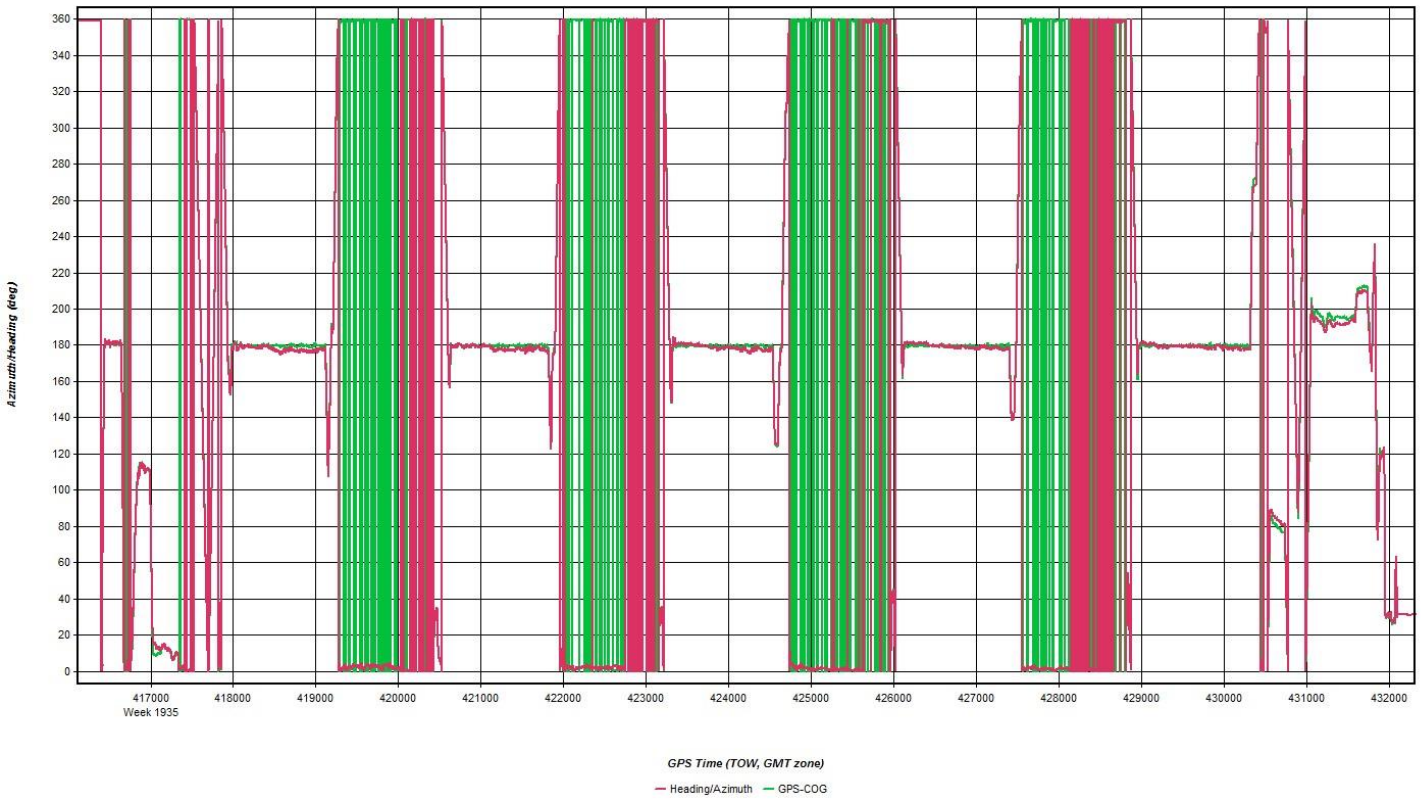
SUN ANGLE	Clear skies, 15C at take off
@Start:	Sats and DOPS averaged 18 and 1.2.
@End:	1720 to 1780 AGL
@Peak:	Antenna height for the back up station at the airport was 1.7m to the ARP

Feb 9, 2017-B (N246MP, SN8227)

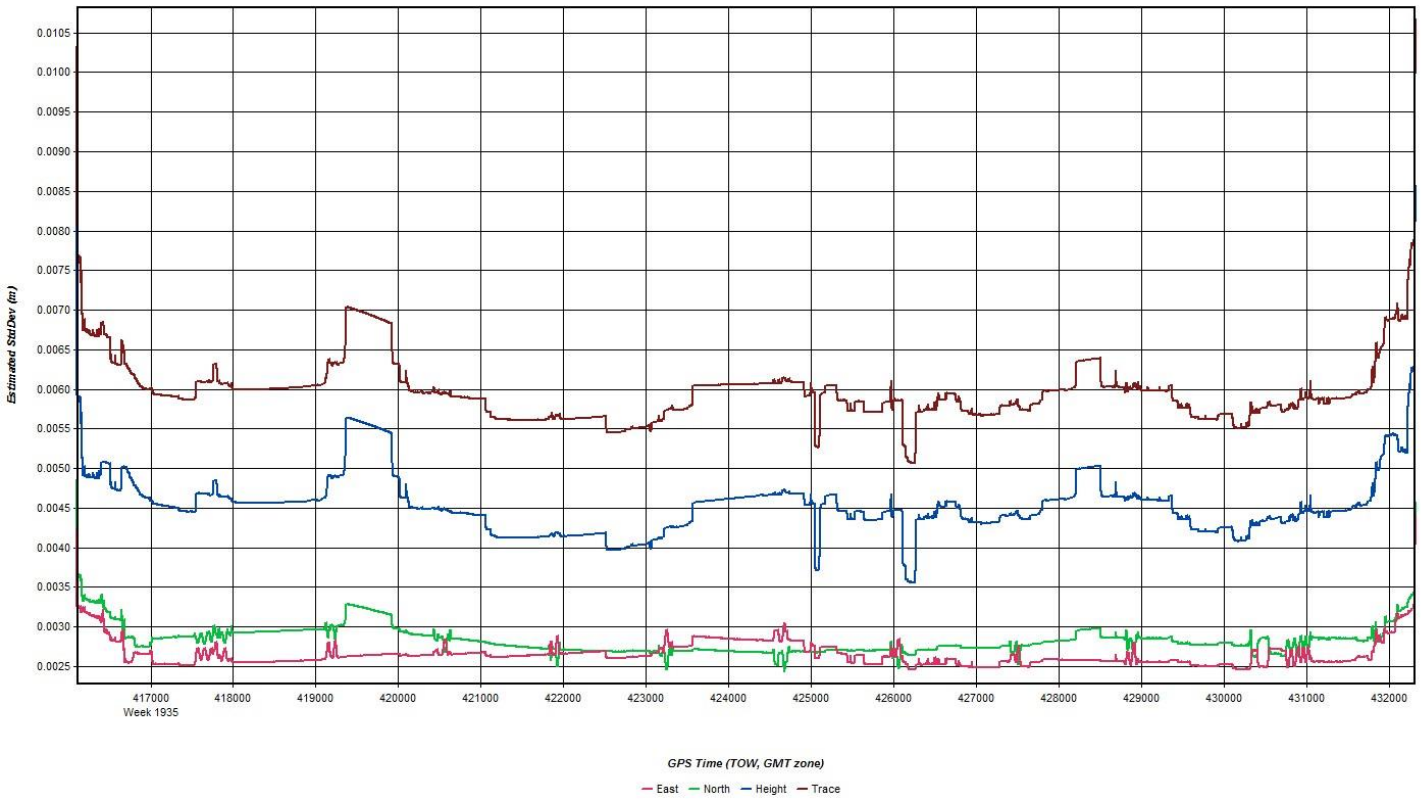


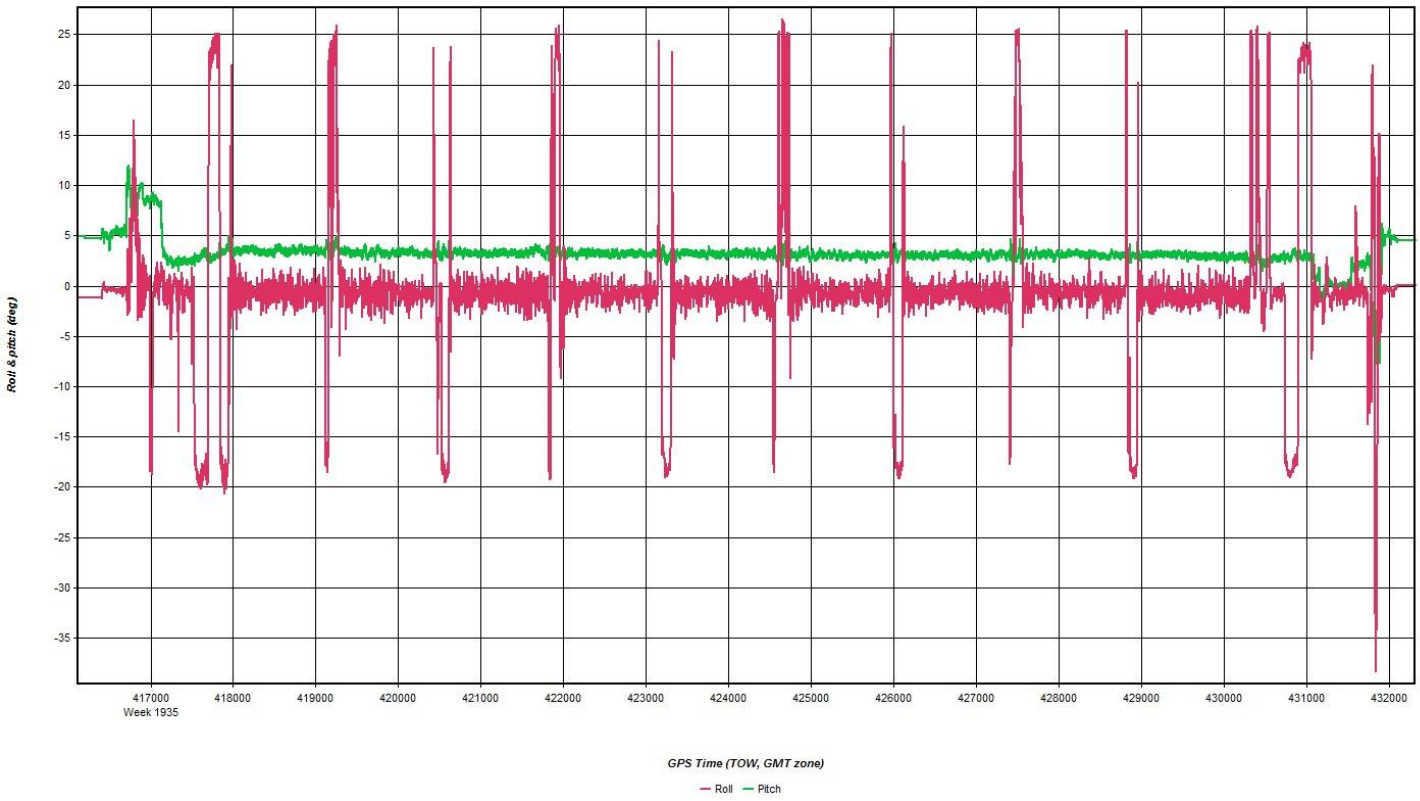

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

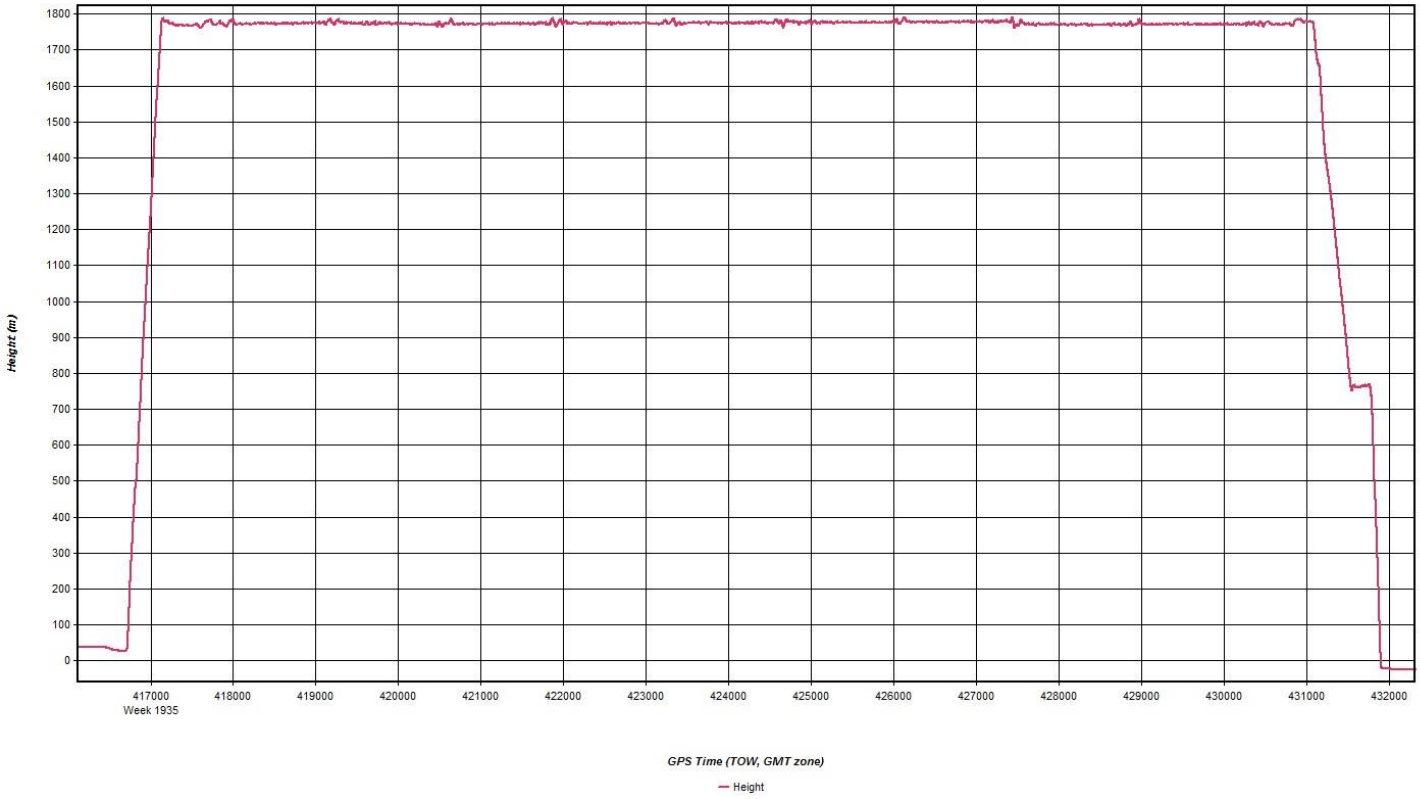

Separation (m)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-0.65
-0.70
-0.75
-0.80
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
East
North
Up


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

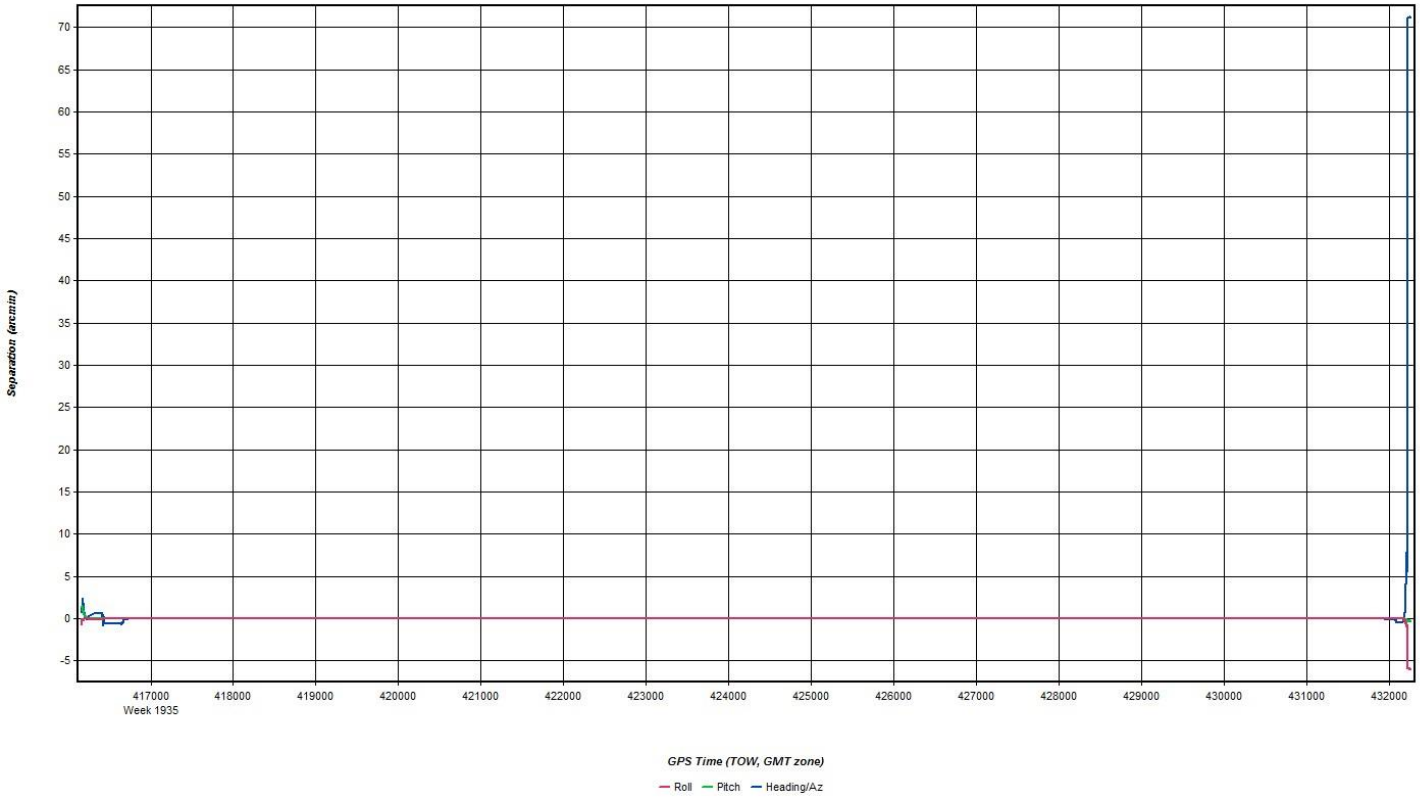

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
PDOP

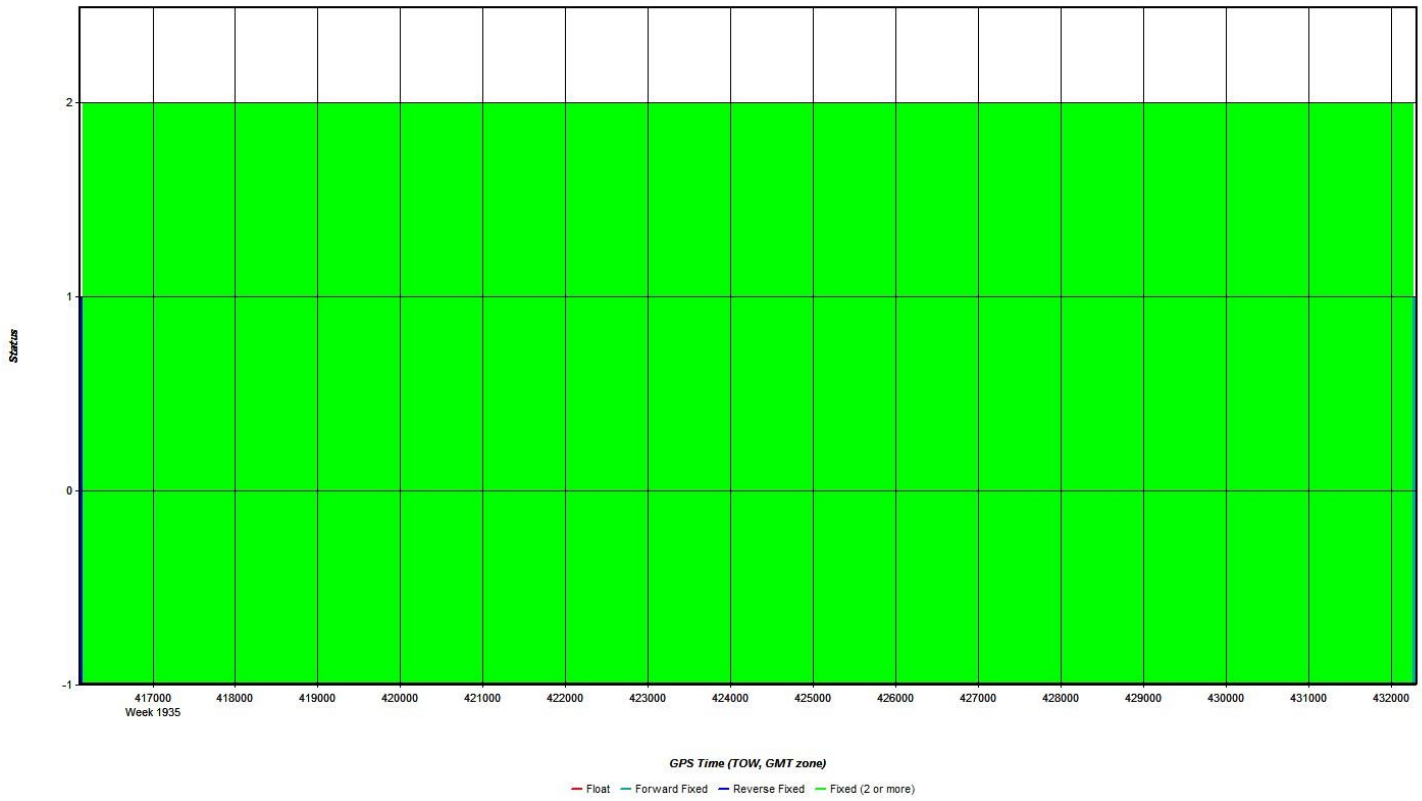

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

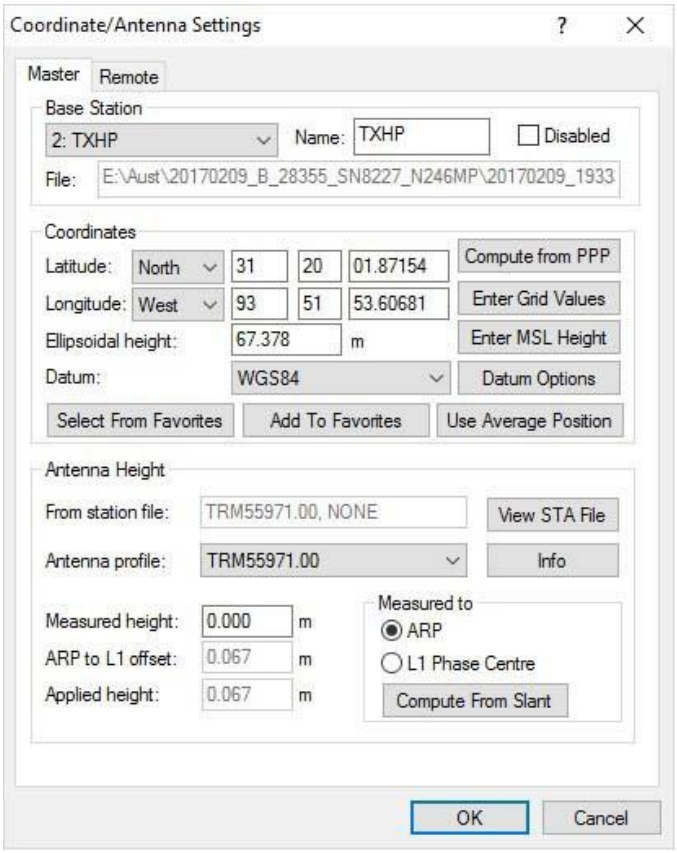

Roll & pitch (deg)
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Roll
Pitch

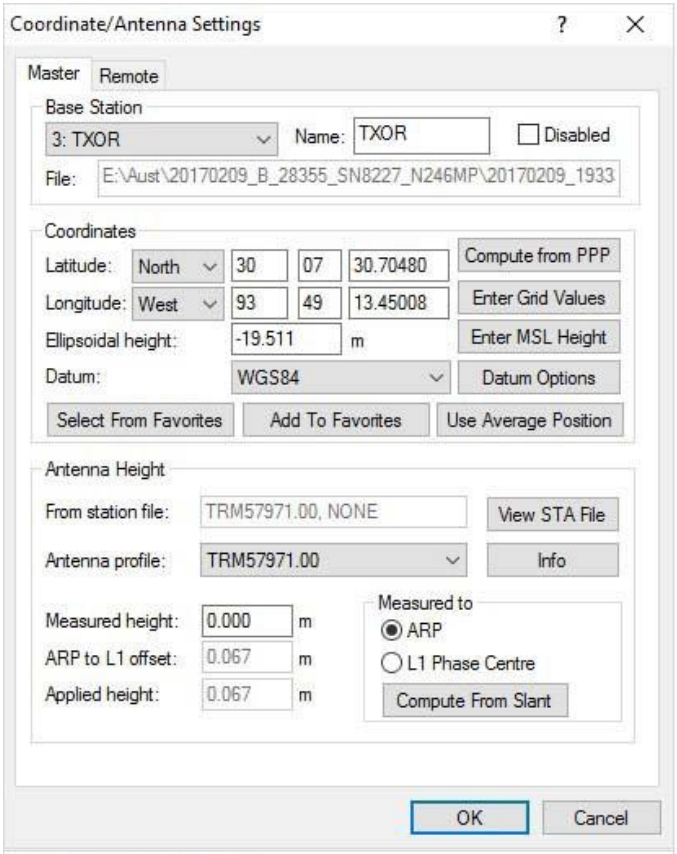

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Height

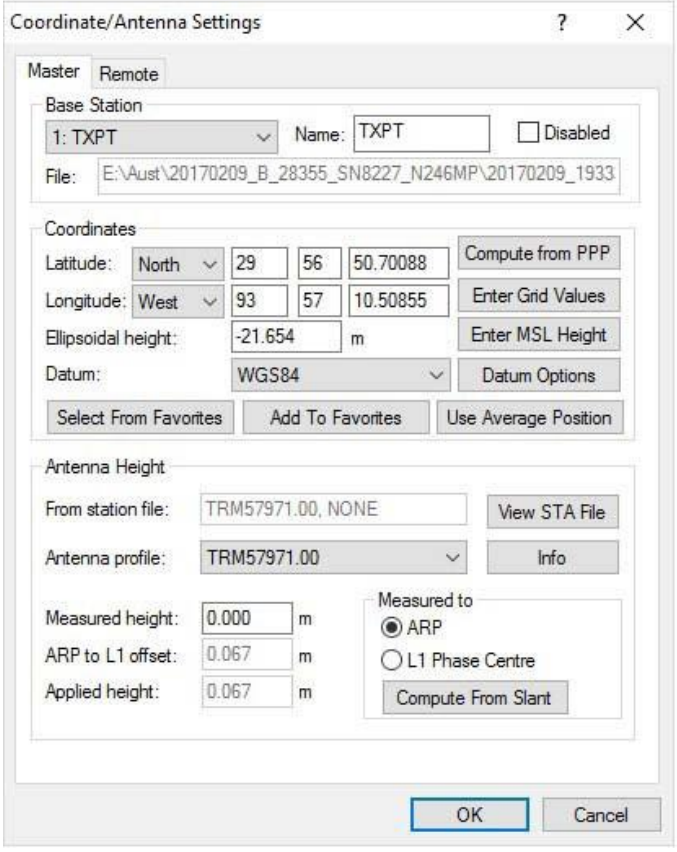

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
RMS
SD

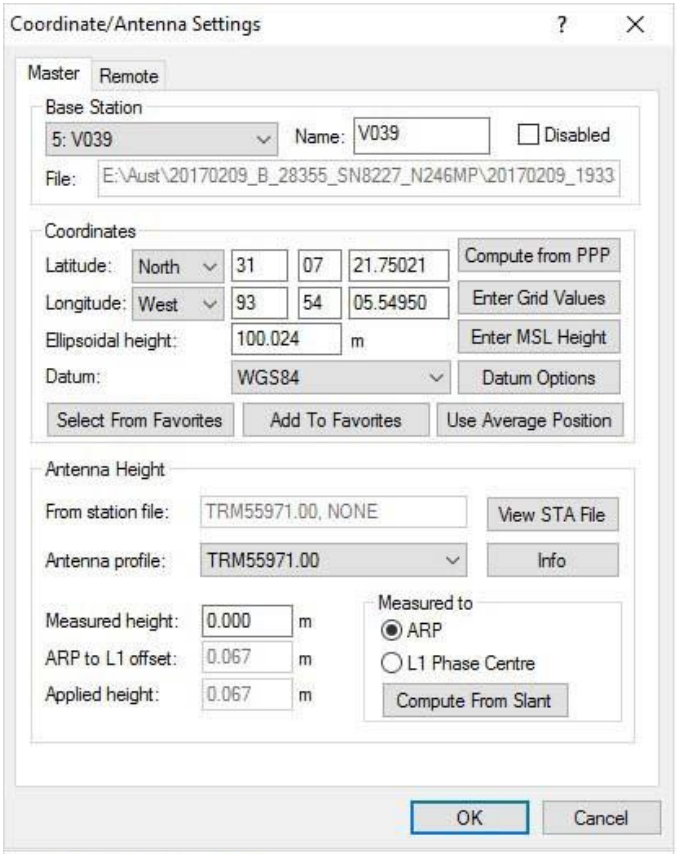

Separation (arcmin)
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

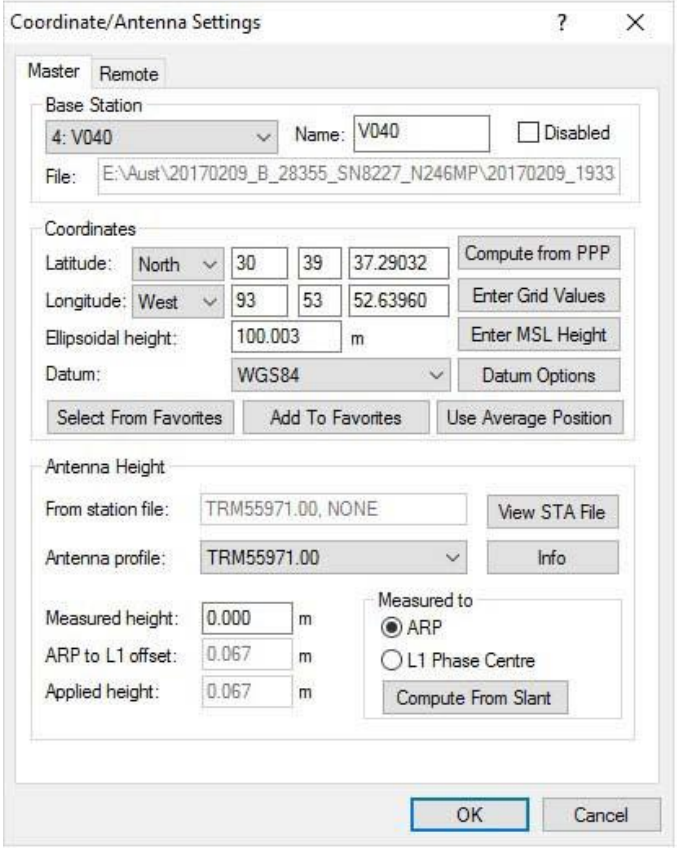

Status
2
1
0
-1
417000
Week 1935
418000
419000
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXHP
Name: TXHP
Disabled
File: E:\Aust\20170209_B_28355_SN8227_N246MP\20170209_1933
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXOR
Name: TXOR
Disabled
File: E:\Aust\20170209_B_28355_SN8227_N246MP\20170209_1933
Coordinates
Latitude: North 30 07 30.70480
Longitude: West 93 49 13.45008
Ellipsoidal height: -19.511 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Aust\20170209_B_28355_SN8227_N246MP\20170209_1933
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V039
Name: V039
Disabled
File: E:\Aust\20170209_B_28355_SN8227_N246MP\20170209_1933
Coordinates
Latitude: North 31 07 21.75021
Longitude: West 93 54 05.54950
Ellipsoidal height: 100.024 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V040
Name: V040
Disabled
File: E:\Aust\20170209_B_28355_SN8227_N246MP\20170209_1933
Coordinates
Latitude: North 30 39 37.29032
Longitude: West 93 53 52.63960
Ellipsoidal height: 100.003 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-9-17

Lift: A (B) C D E Pg 1 of 1

Project: NECHES BASIN LIDAR Proj #: 28355 Flight Mgmt File: 20170209 193339

Aircraft: 246MP Begin Hobbe: 1283.5 End Hobbe: 1287.7 Total: 4.2 Pilot: C McDONALD Co-Pilot: Tech: M AUST

Dep Apt: JAS Dep Time (Lcl): 1145 (Z): 1945 Arr Apt: BPT Arr Time (Local): 6'00 (Z): 00:00 Tot Time Aloft:

CORS: (Y) / N Sta 1: TXNE Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 19 °c End: 21 °c OAT beg: °c End: °c Altimeter begin: 30.37 end: 30.26

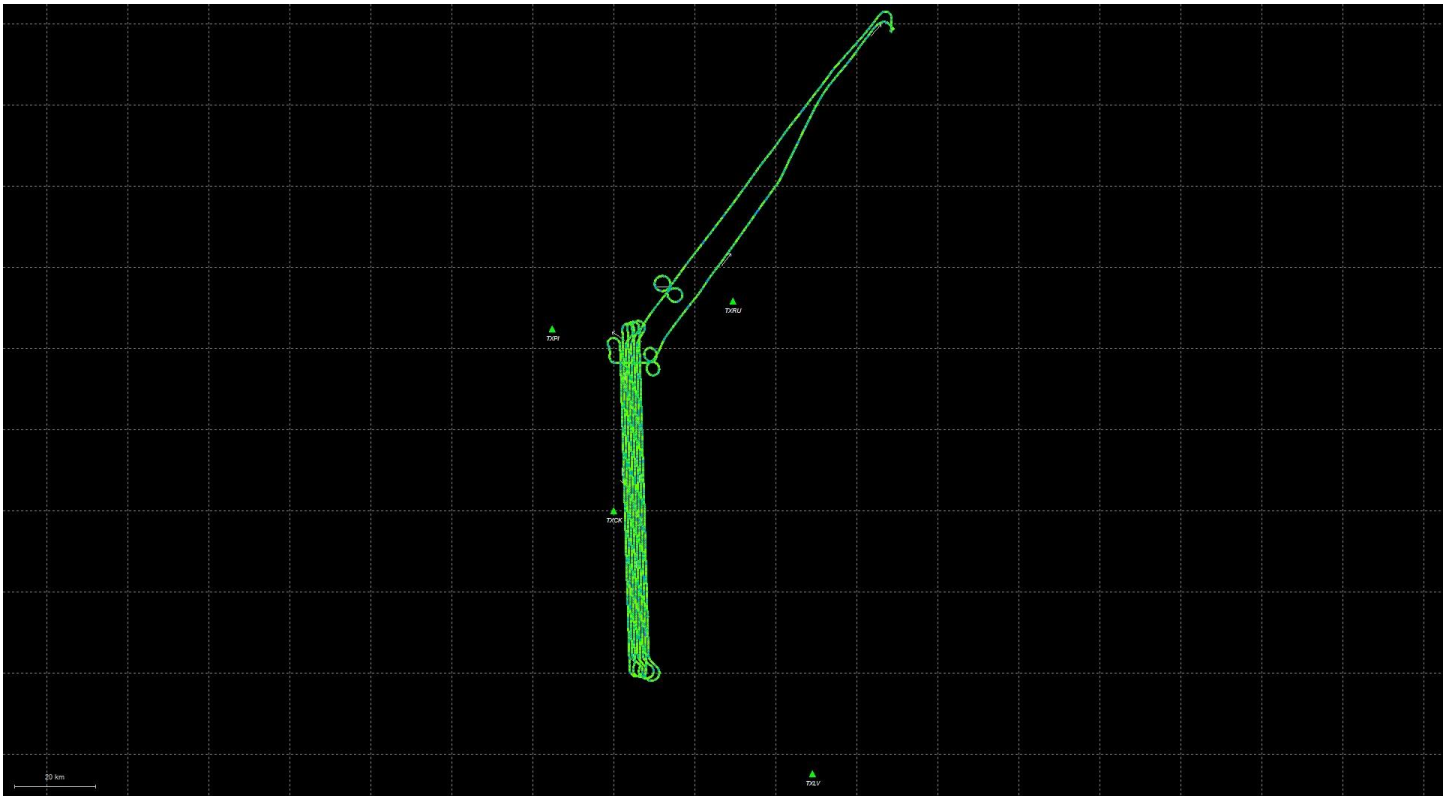
LiDAR	Type ALS 80	Serial # 8227	Alt AGL	Alt AMSL 5,8'	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 34	Scan Freq 56	MpiA (Y) N	Pulses in Air	Pulse Rate 311	Power 63	PPSM

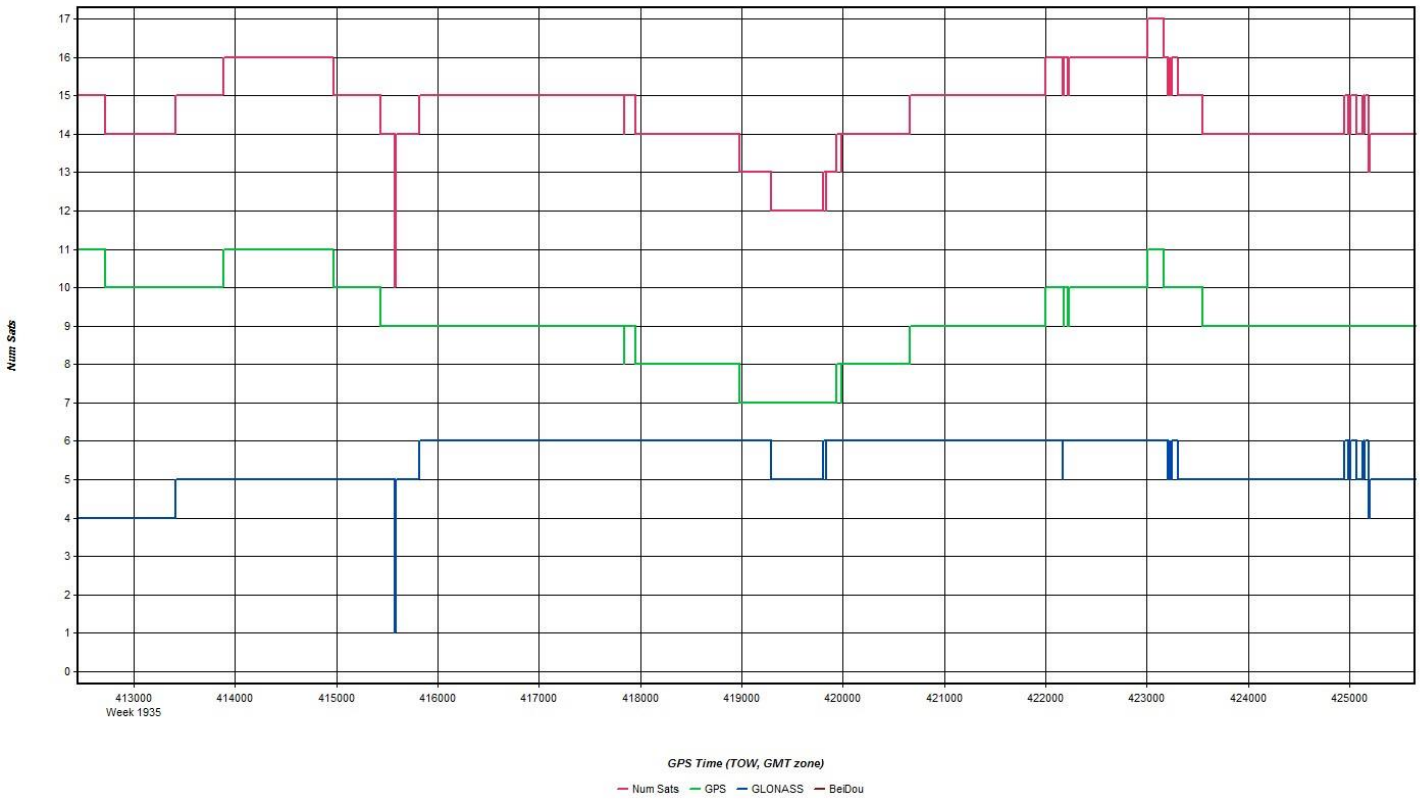
Bag GB	End GB	Tot GB	Storage Name/s
542	455	87	

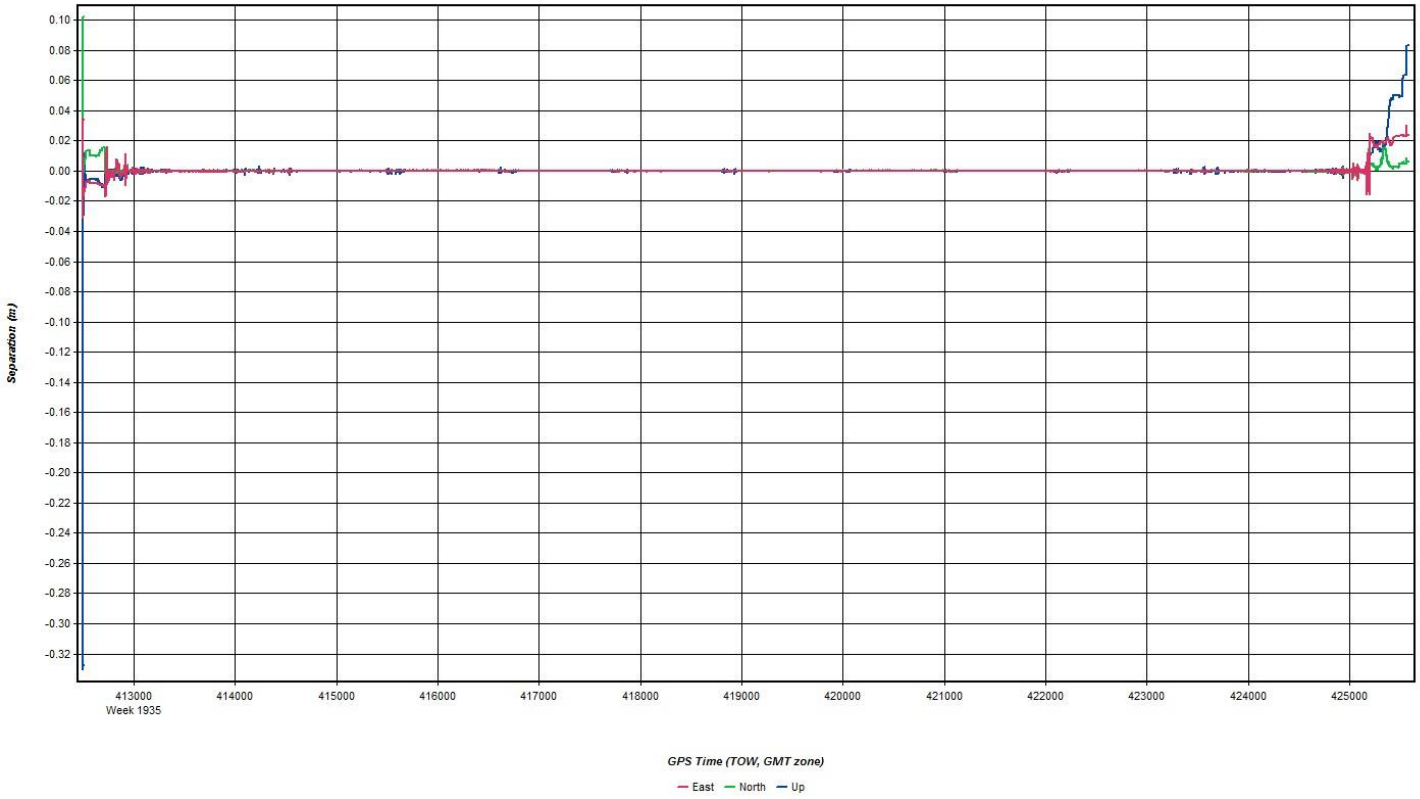
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6079	S	2006	2024	153	1.3/15	5.8		-	FIGURE 8's 20:00
6078	N	2028	2046	152	1.2/16	5.8		-	
6077	S	2050	2110	154	1.3/16	5.8		-	
6076	N	2113	2134	154	1.0/21	5.8		-	
6075	S	2135	2155	155	1.1/20	5.8		-	1.5hrs ONLINE - CLOSE PROJECT AND REOPEN IF SLUGGISH
6074	N	2159	2219	158	1.1/20	5.8		-	PER LEICA
6073	S	2222	2243	152	1.1/19	5.8		-	
6072	N	2246	2306	156	1.2/19	5.8		-	SMOKE NORTH 15 MILES - NEED TO REFLY N 15 MLS
6071	S	2309	2331	146	1.2/21	5.8			SMOKE - REFLY NORTH 17 MILES
TIE	E	2336	2338	153	1.2/21	5.8			MANUAL CROSSFLIGHT

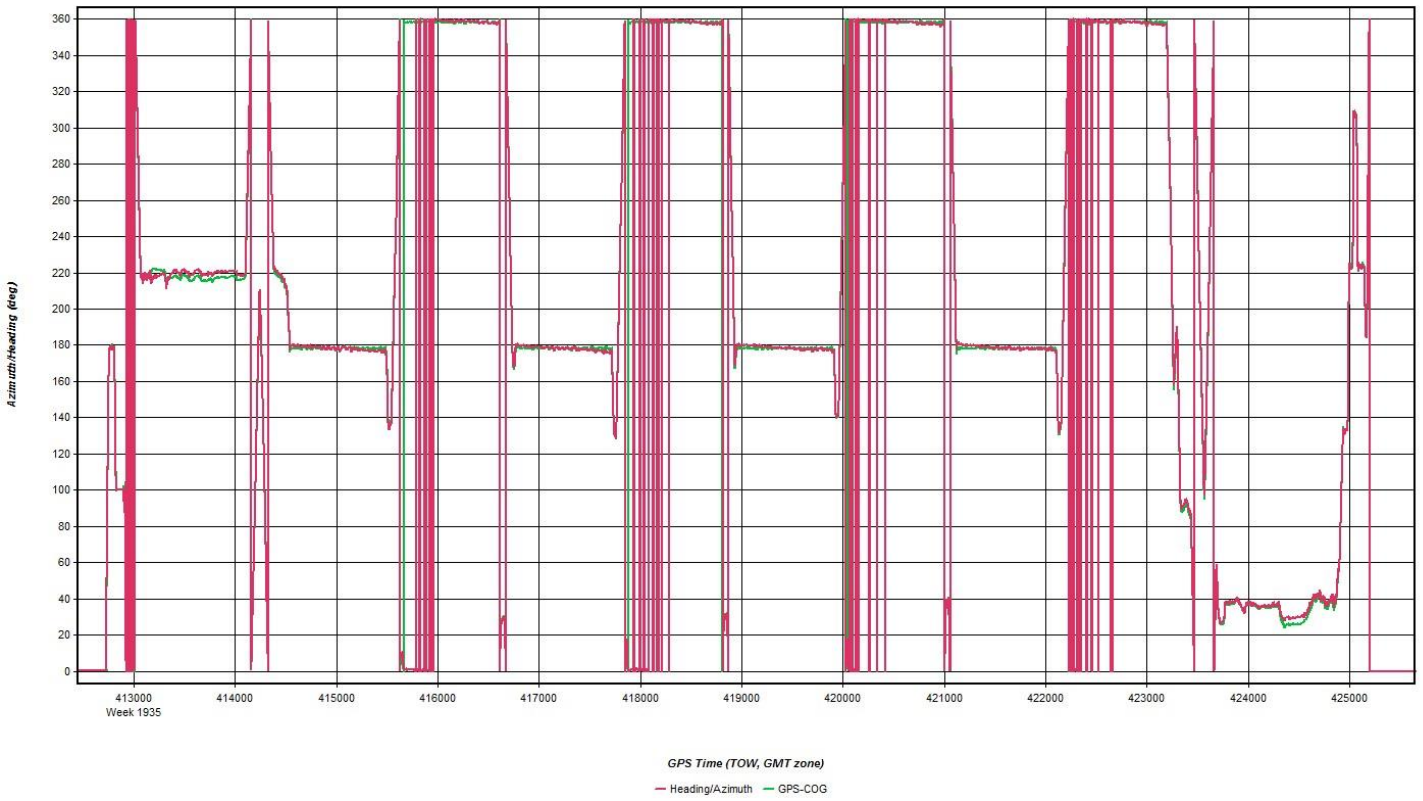
Total Proj Lines:	Lines Flown:	Lines Remain:	Online Time: 3,5	Mob Time: .7	Notes:

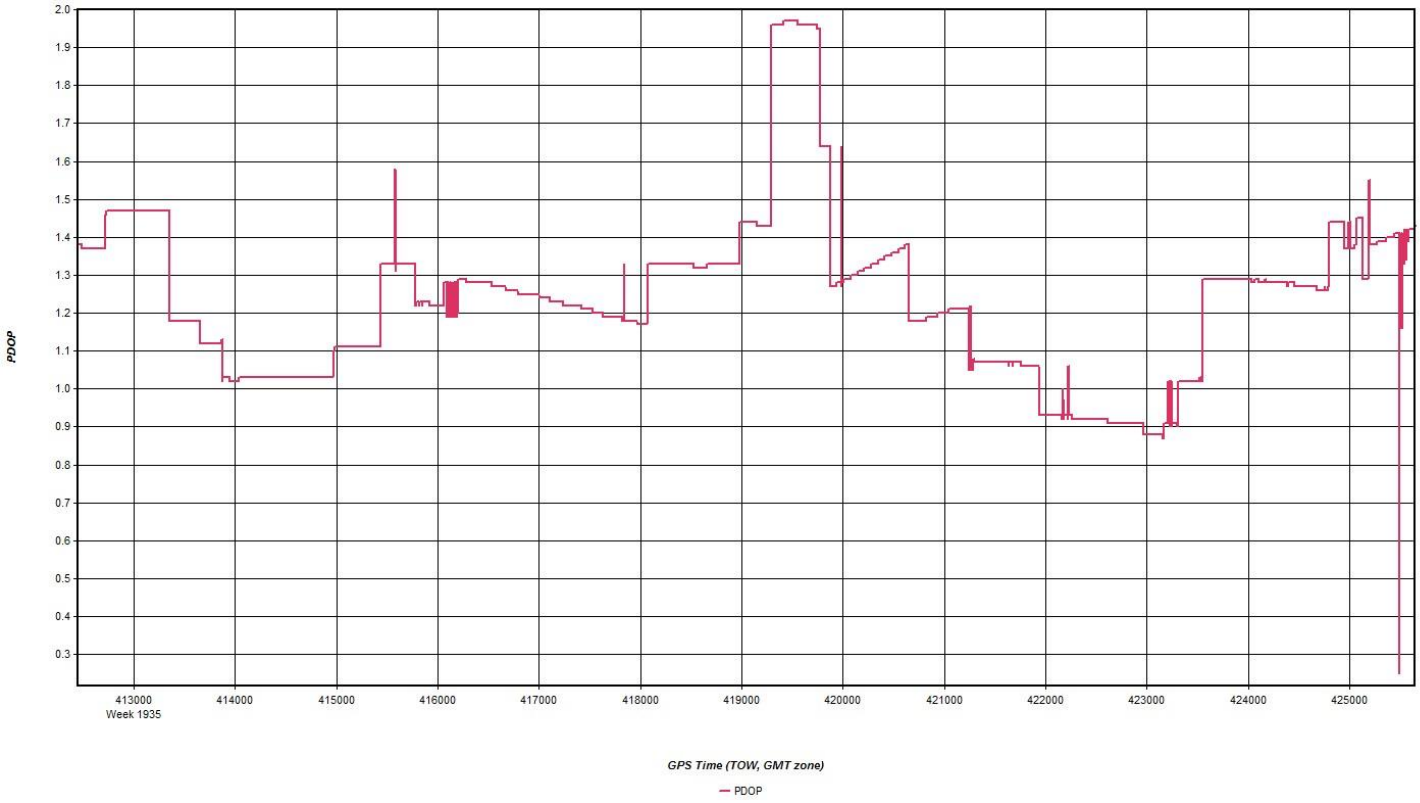
Feb 9, 2017-B (N812TB, SN7178)

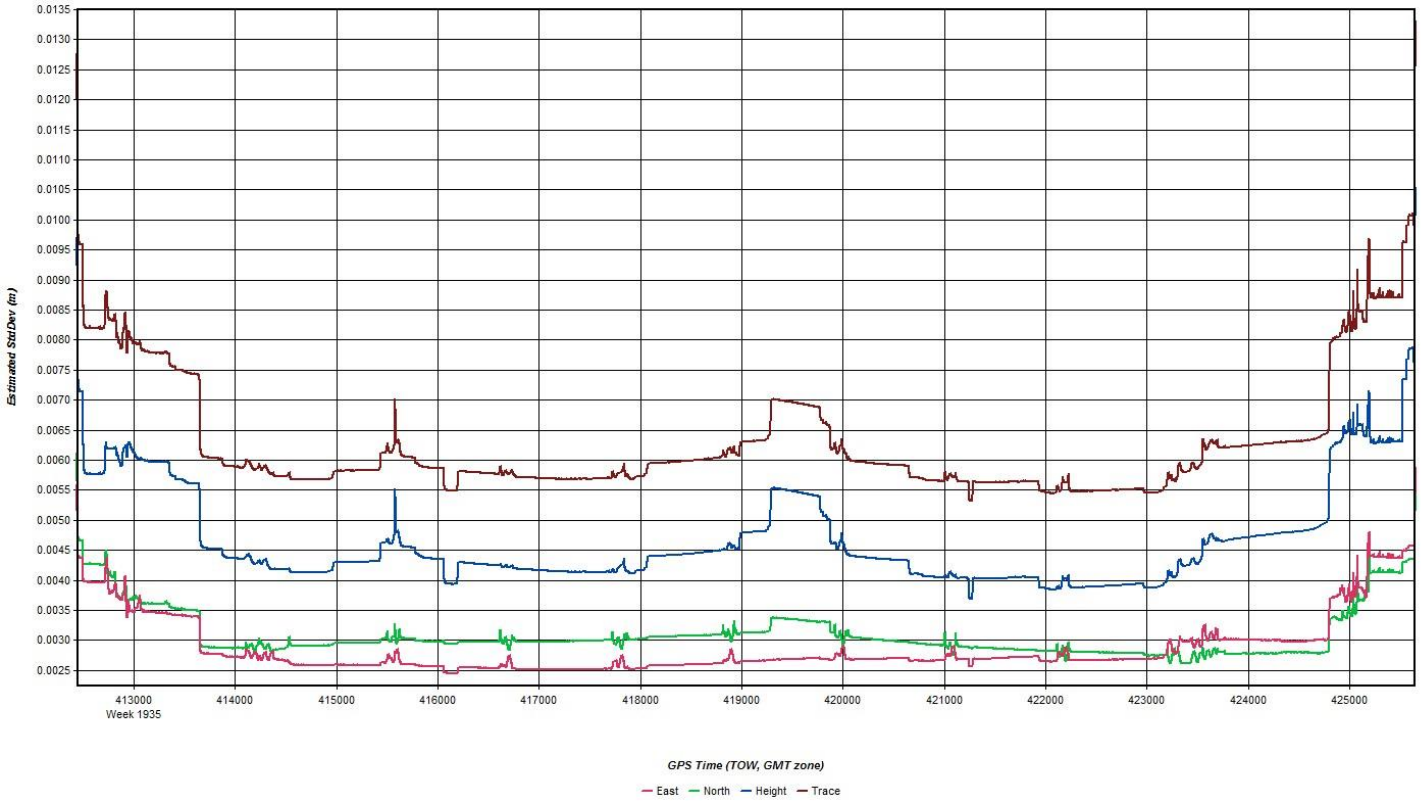


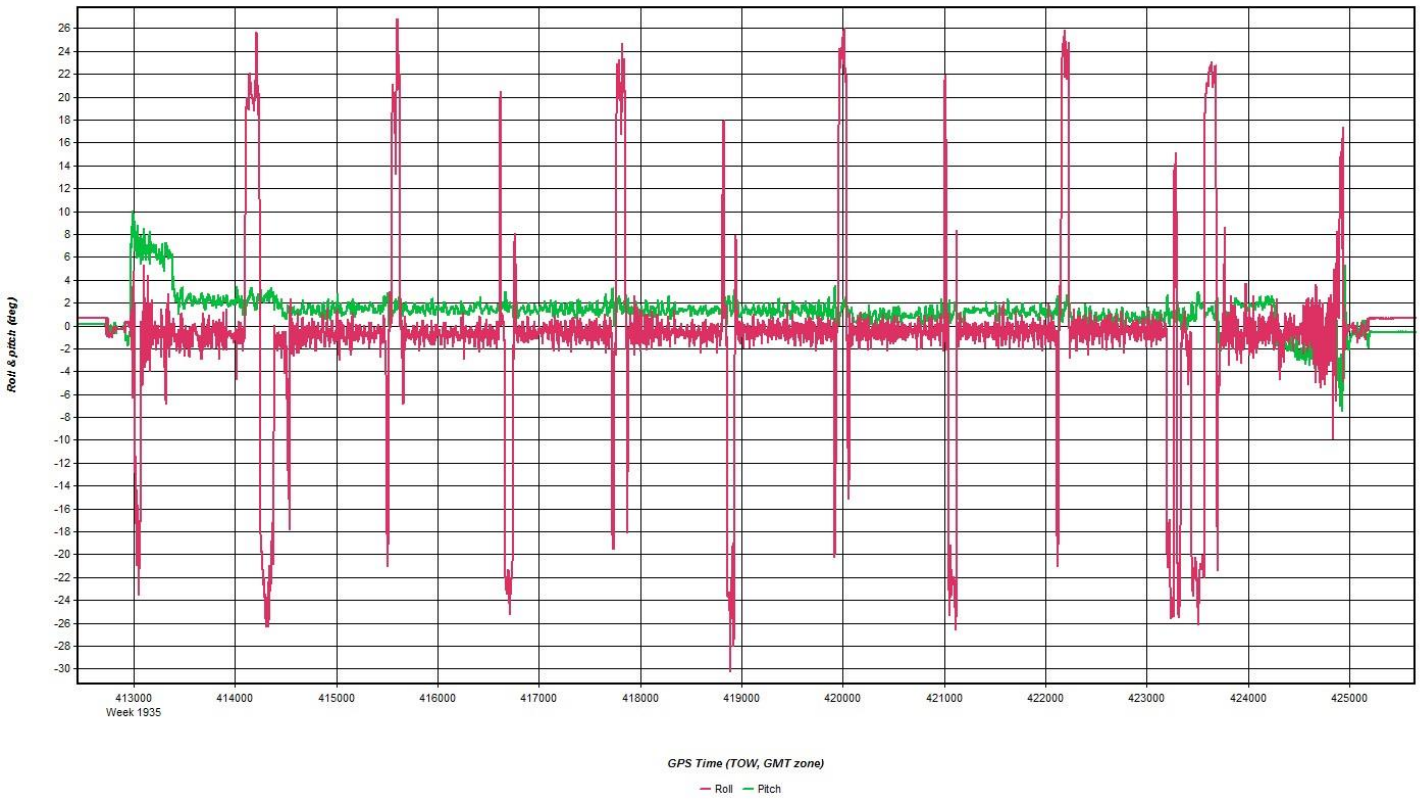

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

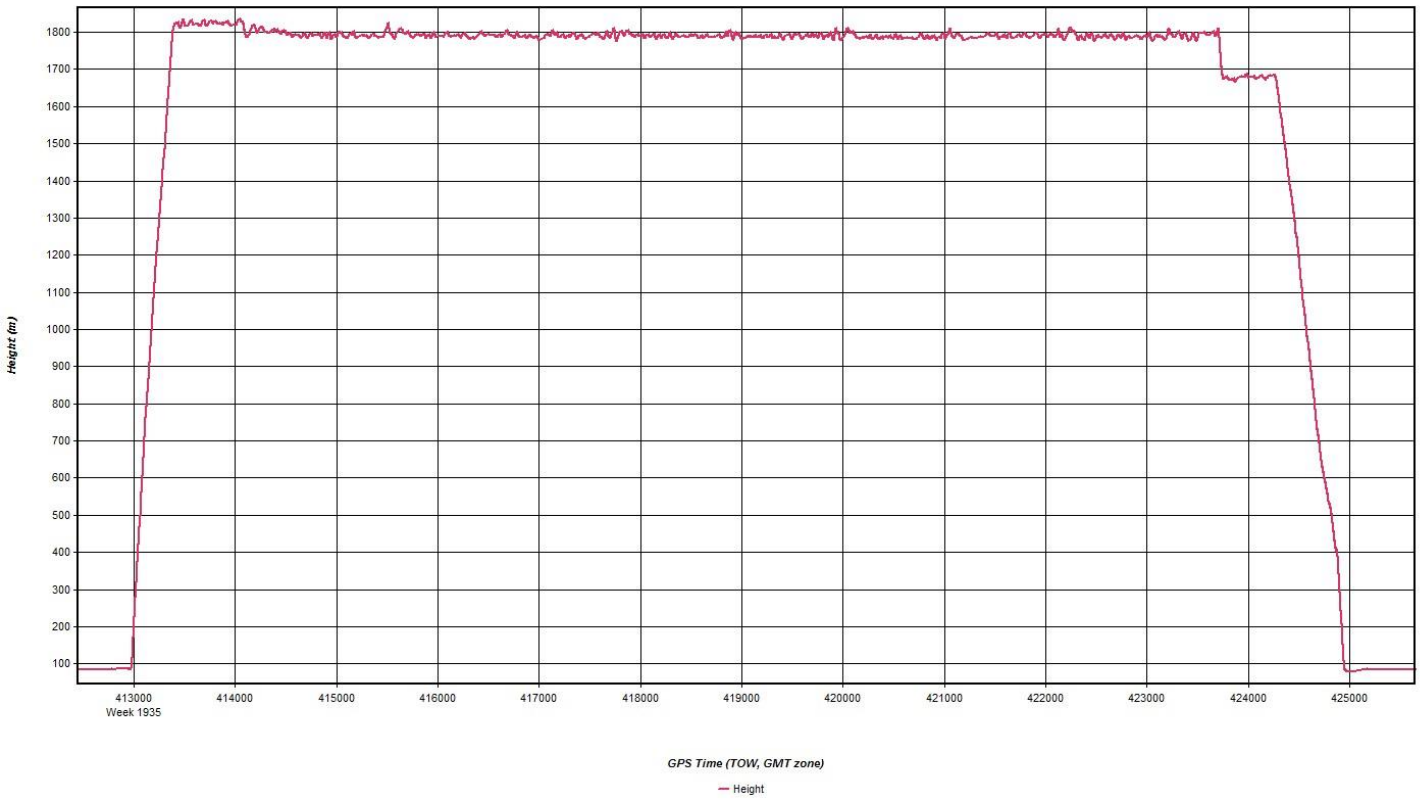

Separation (m)
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
East
North
Up

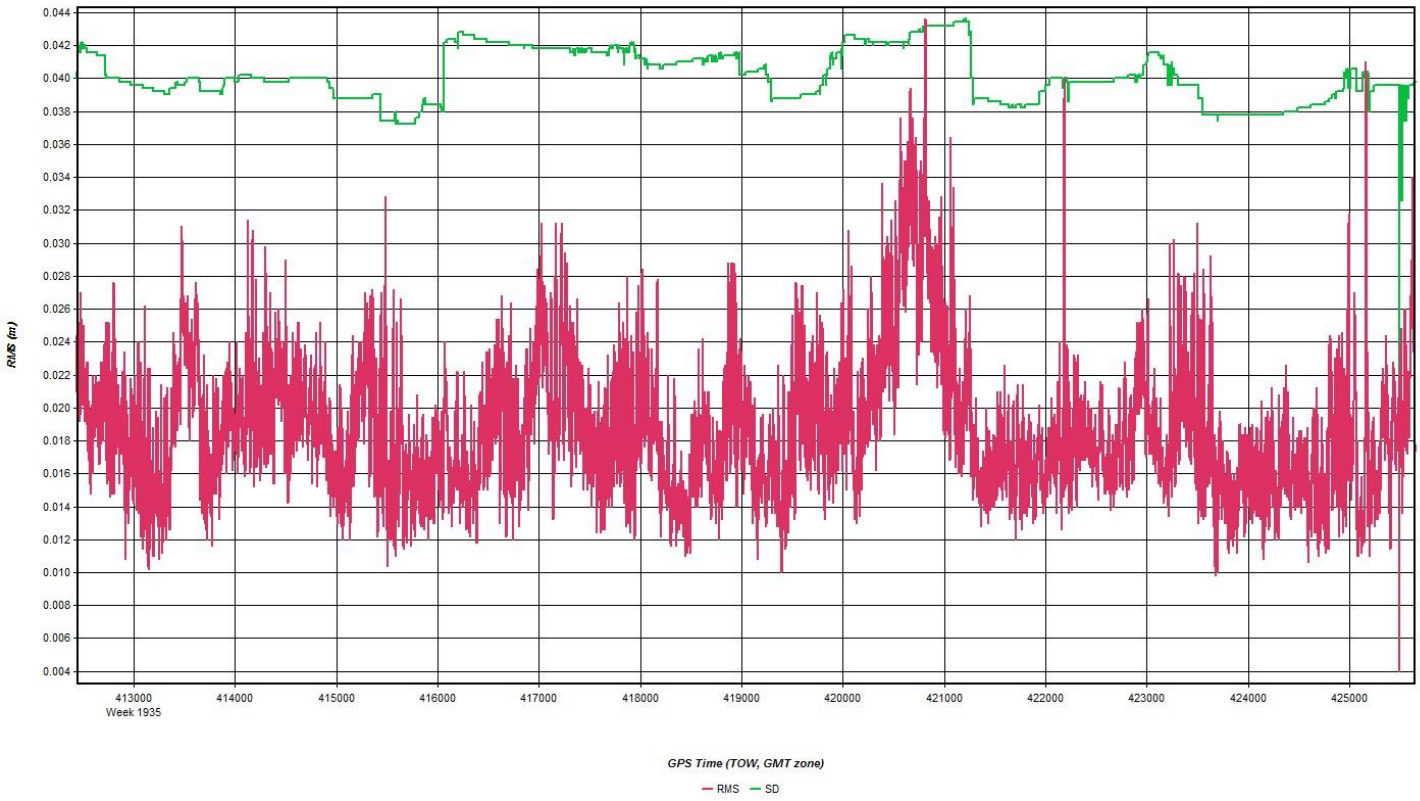

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

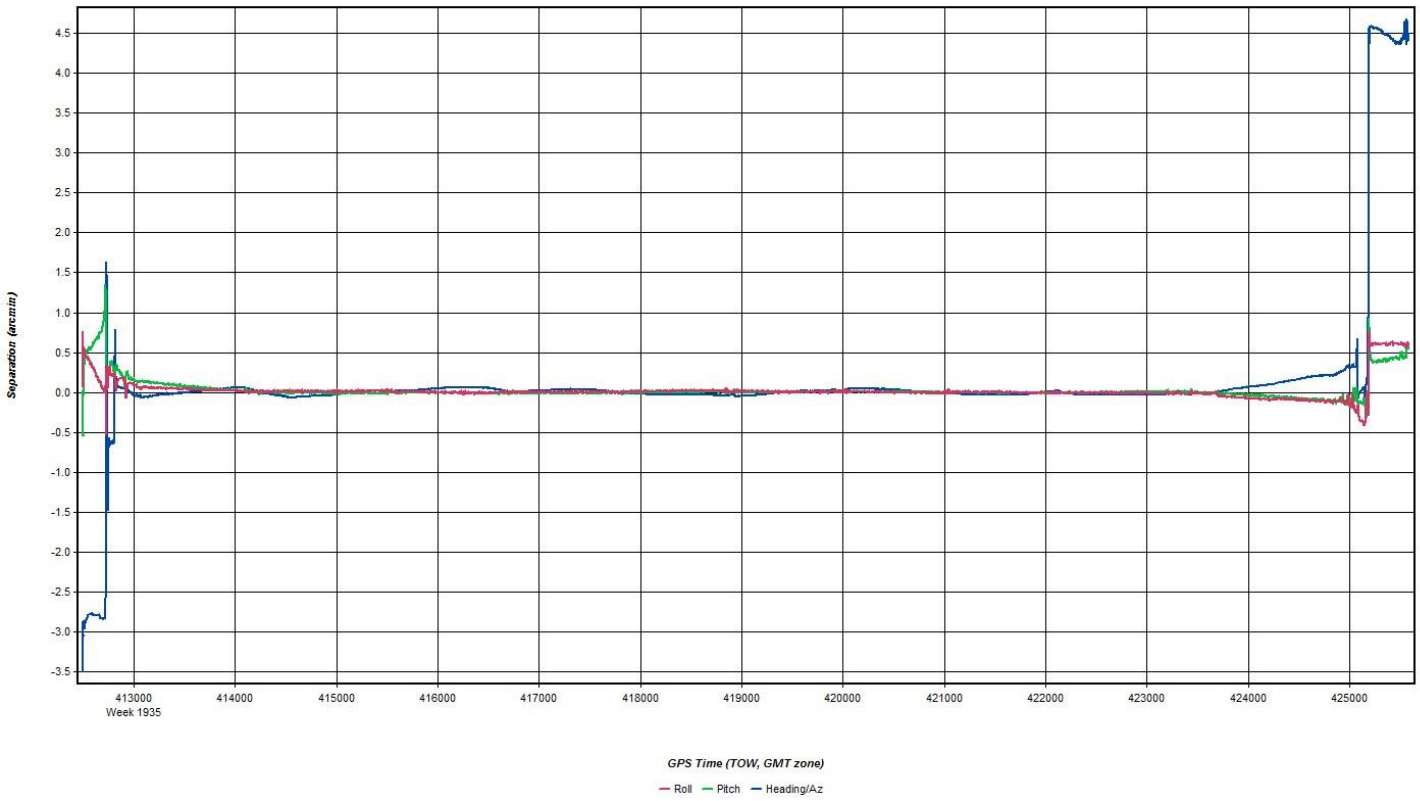

PDOP
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
PDOP

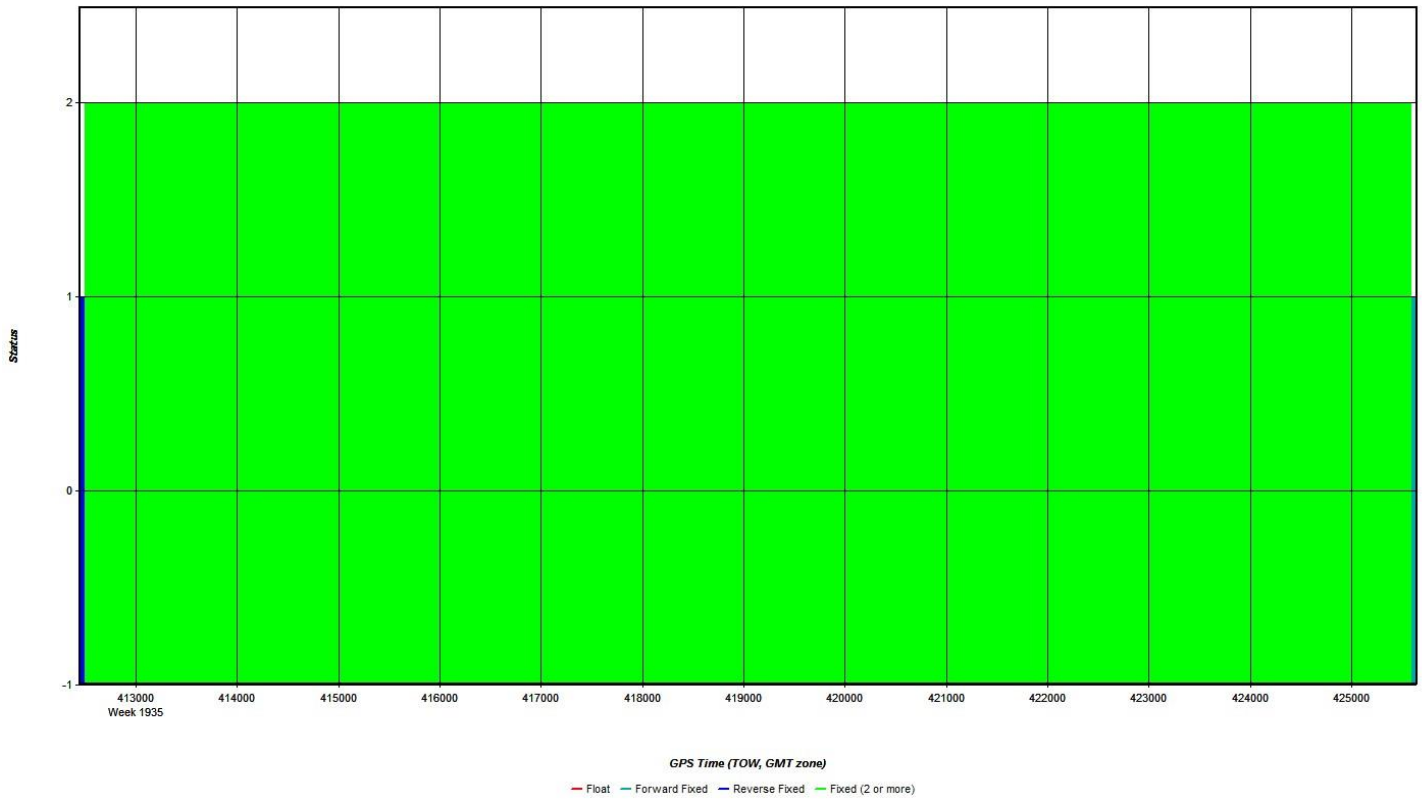

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

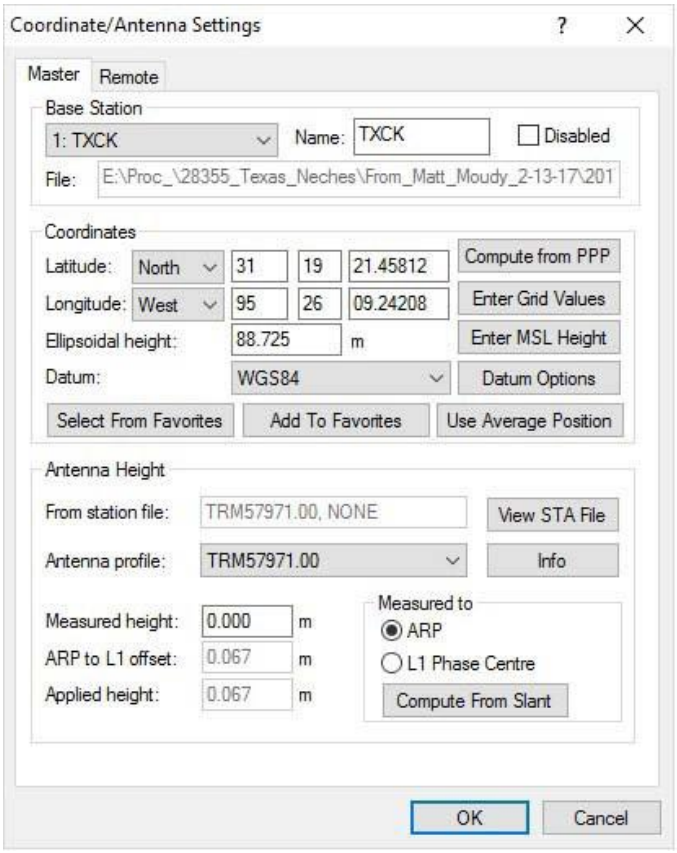

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
Roll
Pitch

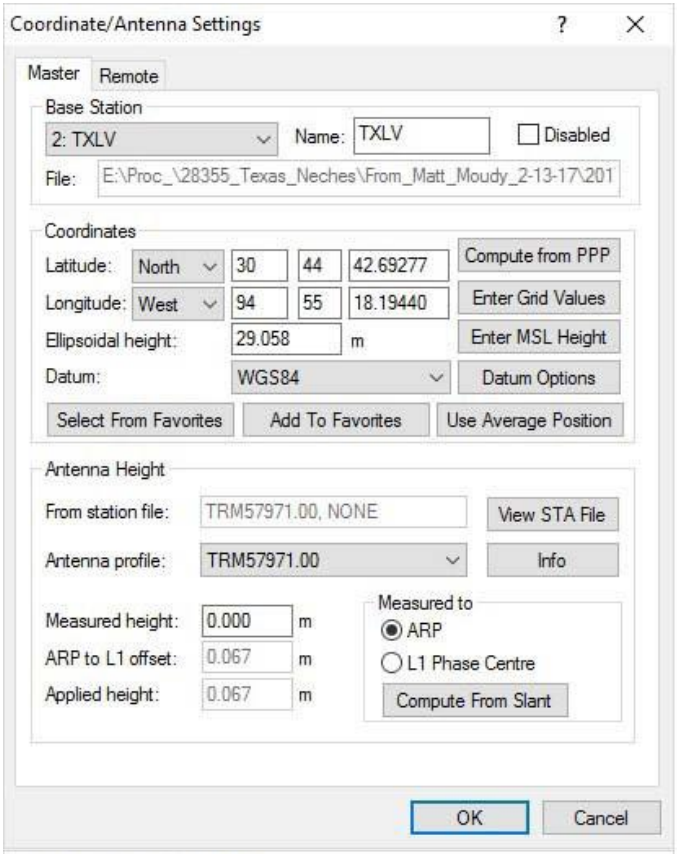

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
Height

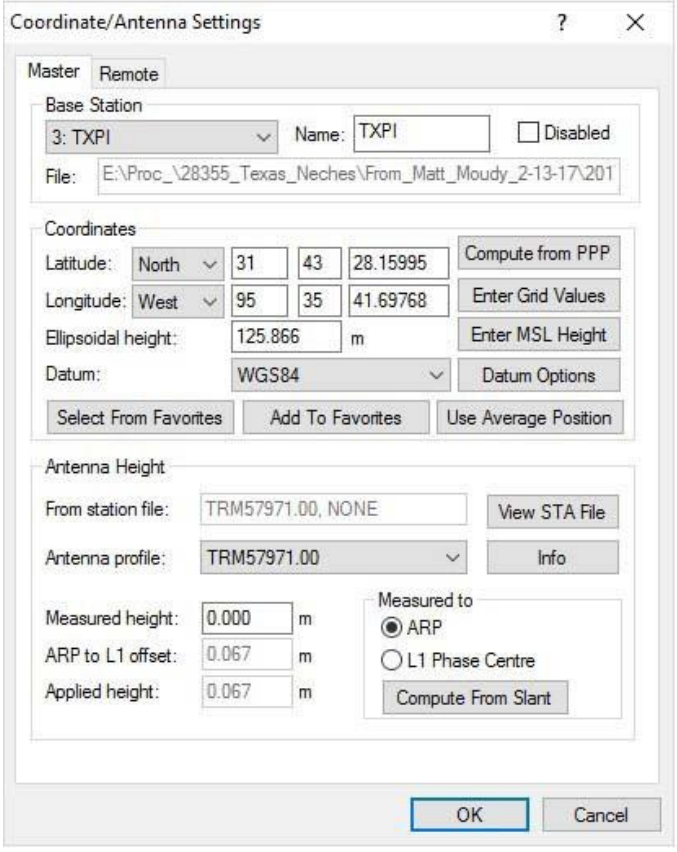

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
RMS
SD

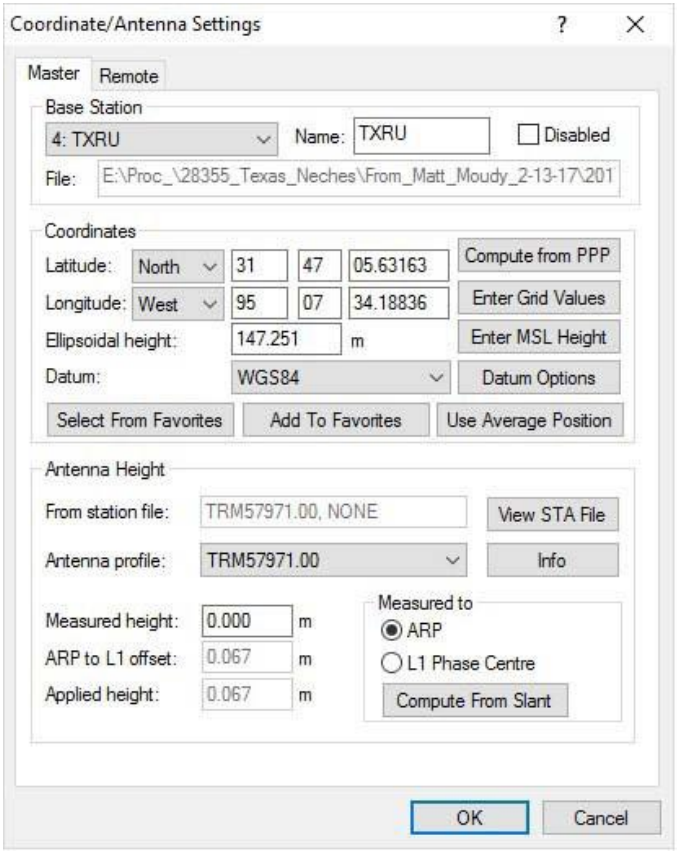

Separation (arcmin)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
413000
Week 1935
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCK
Name: TXCK
Disabled
File: E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXLV
Name: TXLV
Disabled
File: E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude: North 30 44 42.69277
Longitude: West 94 55 18.19440
Ellipsoidal height: 29.058 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXPI
Name: TXPI
Disabled
File: E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXRU
Name:
TXRU
Disabled
File:
E:\Proc_\28355_Texas_Neches\From_Matt_Moudy_2-13-17\201
Coordinates
Latitude:
North
31
47
05.63163
Compute from PPP
Longitude:
West
95
07
34.18836
Enter Grid Values
Ellipsoidal height:
147.251
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-9-17

(email log daily to flight_log_distribution_list@quantumspatial.com)

Lift: A B C D E Pg 1 of 1

Project: NECHES BASIN, TX CROCKETT Proj #: 28355 Flight Mgmt File: 28355_SN7178_CROCKETT

Aircraft: N812TB Begin Hobbs: 4359.2 End Hobbs: 4362.5 Total: 3.3 Pilot: RADTKE Co-Pilot: - Tech: MOODY

Dep Apt: GGG Dep Time (Lcl): 1242 (Z): 1842 Arr Apt: GGG Arr Time (Local): 1602 (Z): 2202 Tot Time Aloft: 3:20

CORS: Y / (N) Sta 1: VIRTUAL Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

GPS Unit: Y / (N) Sta 1: Sta 2: Flyovers: Y / (N) If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

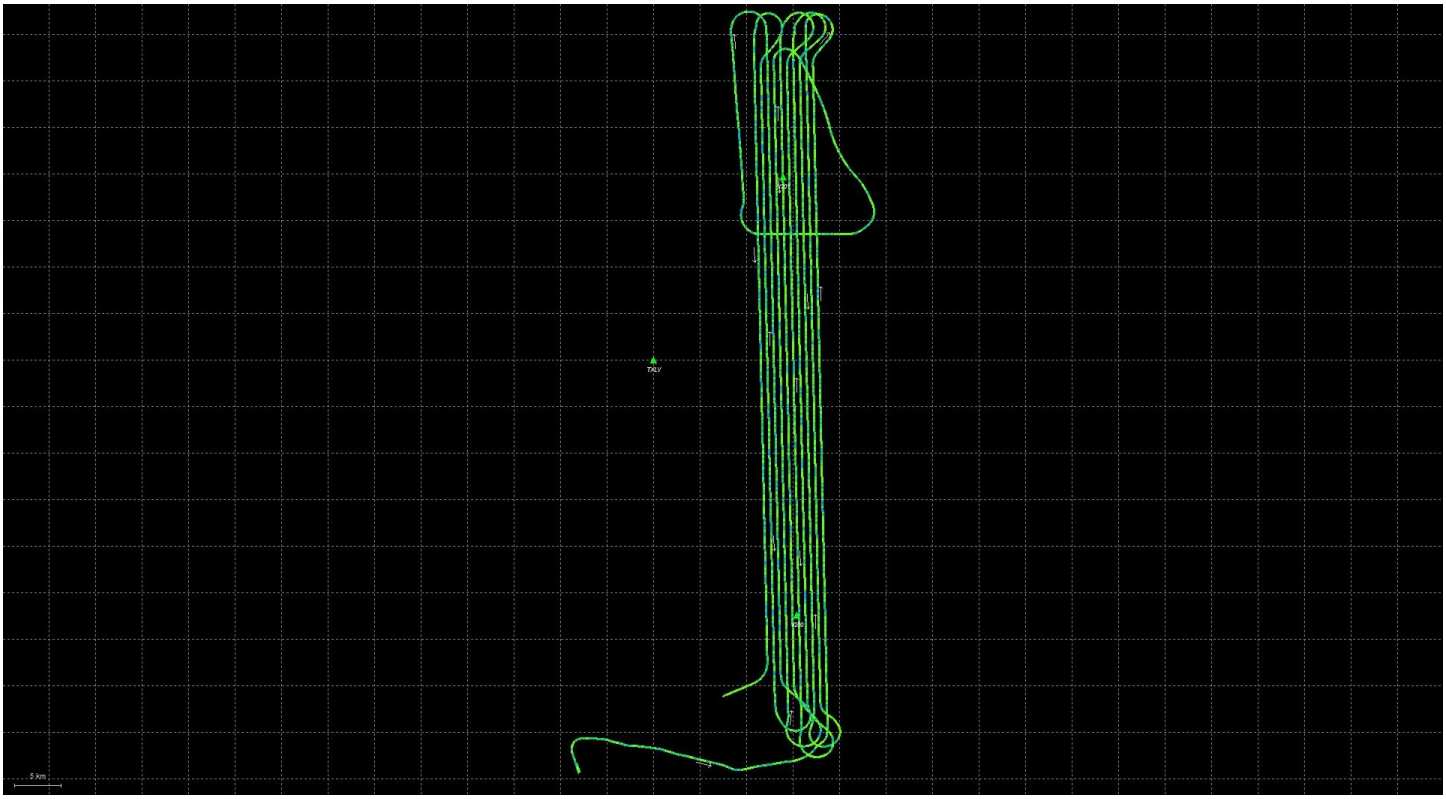
LiDAR	Type	ALS70	Serial #	7178	Alt AGL	±5500'	Alt AMSL	±5950	Avg Terr Ht	±750'	Max Gdspd	150 KTS	Avg Pt Spacing	
	FOV	34°	Scan Freq	57Hz	MpiA (Y) / N		Pulses In Air	2	Pulse Rate	312 KHz	Power	100%	PPSM	

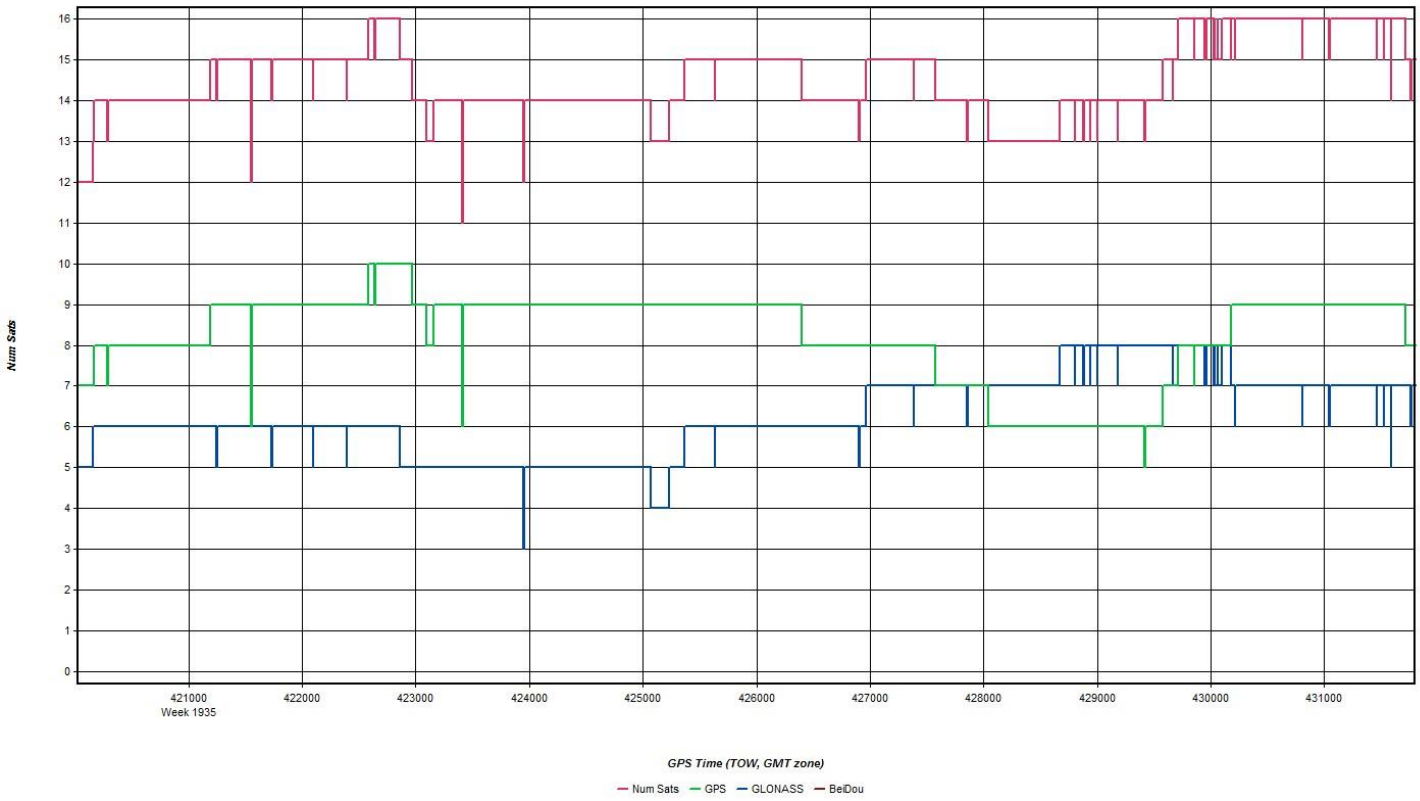
Beg GB	335	Storage Name/#	7178 SSD#1
End GB	390		
Tot GB	55		

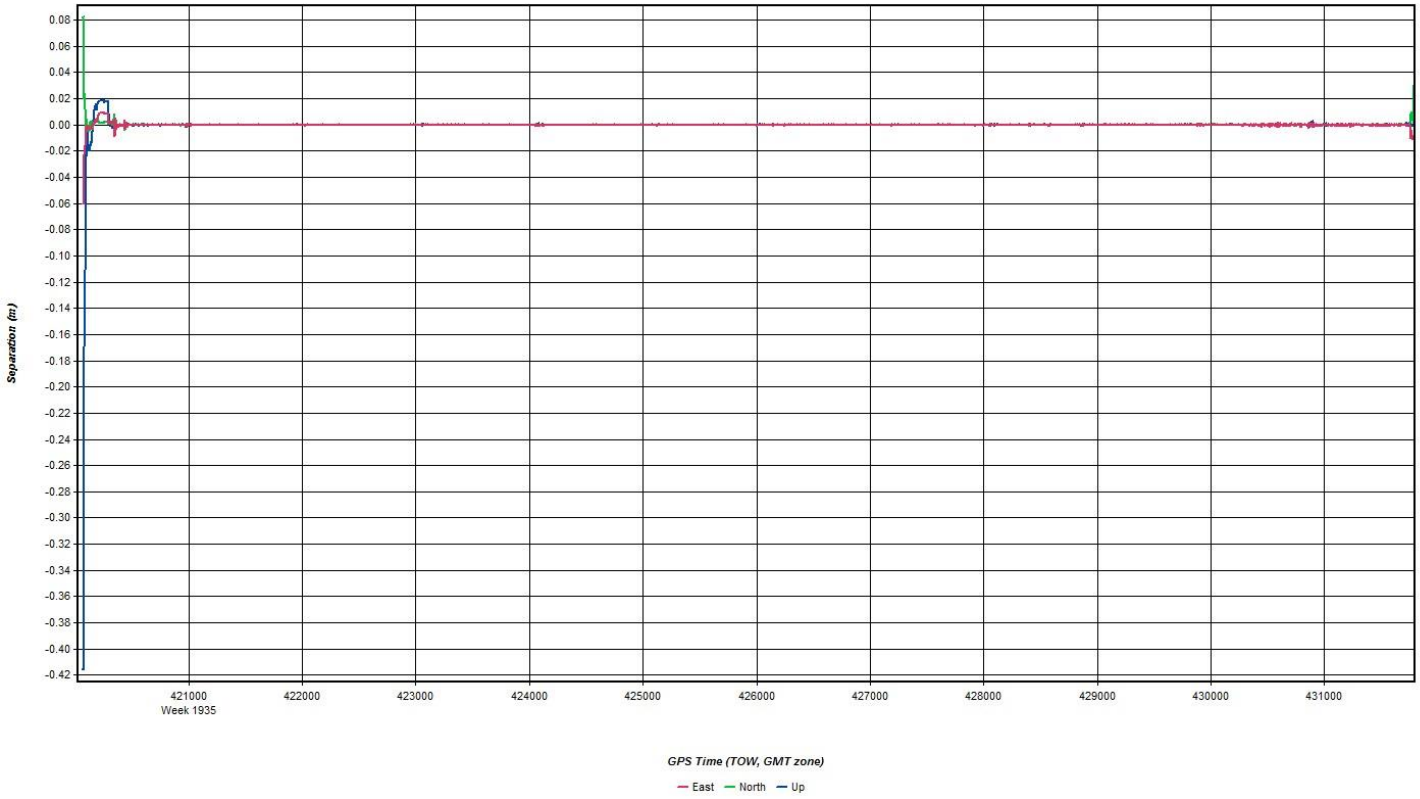
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
1068	178	1909	1924	159	1.2/17	5890	0	0	
1067	358	1927	1943	159	1.1/18	5880	3	0	
1066	178	1946	2001	158	1.5/15	5850	1	0	
1065	358	2004	2019	162	1.4/15	5870	2	0	
1064	178	2022	2038	160	1.2/16	5840	2	0	
1063	358	2041	2056	165	1.3/15	5900	2	0	
1062	178	2059	2114	151	1.2/16	5860	1	0	
1061	358	2117	2132	164	1.1/19	5890	2	0	
TIE	090	2135	2136	159	1.2/19	5890	3	0	- MANUAL TIE LINE

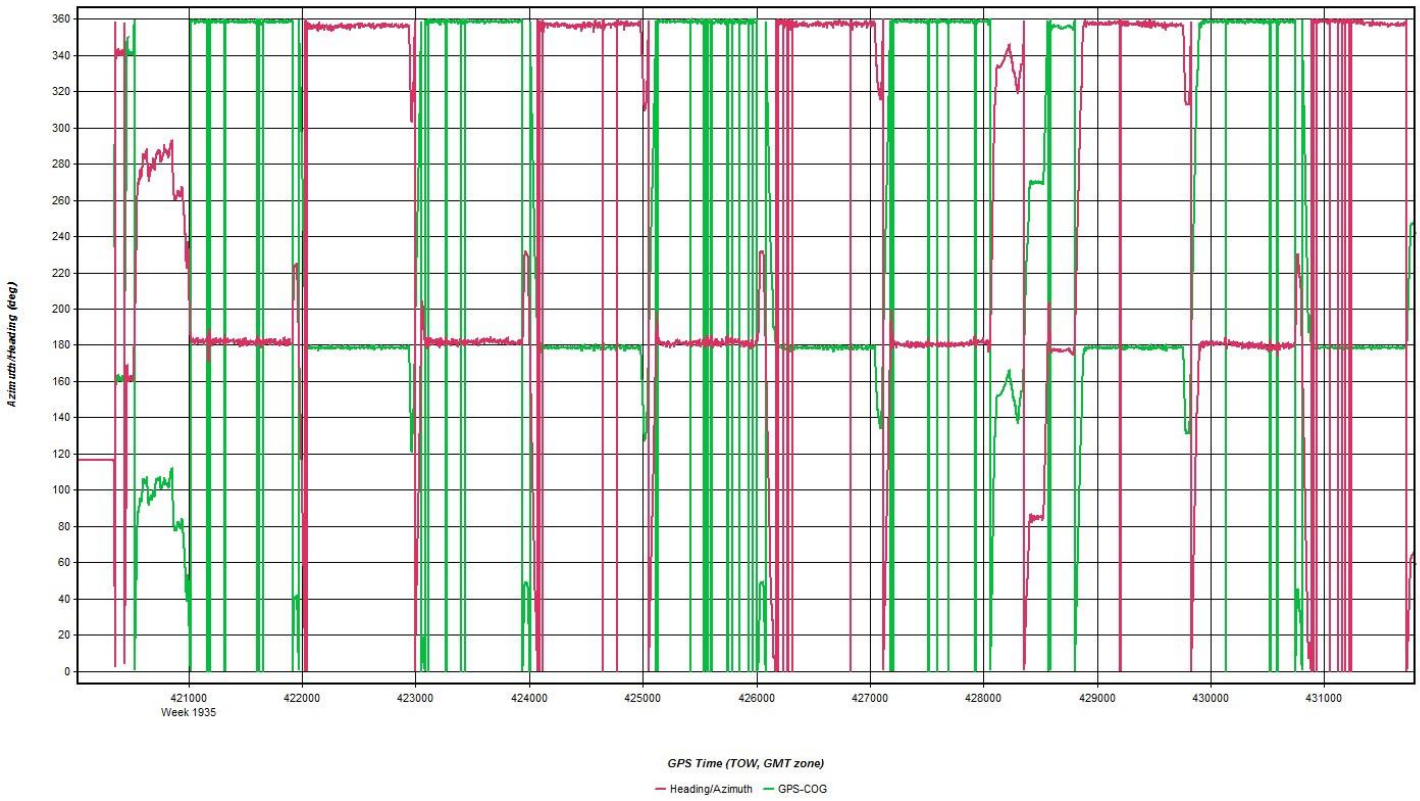
Total Proj Lines: Lines Flown: Lines Remain: 2.5 On Line Time: 0.8 Mob Time: Notes:

Feb 9, 2017-B (SN7229)

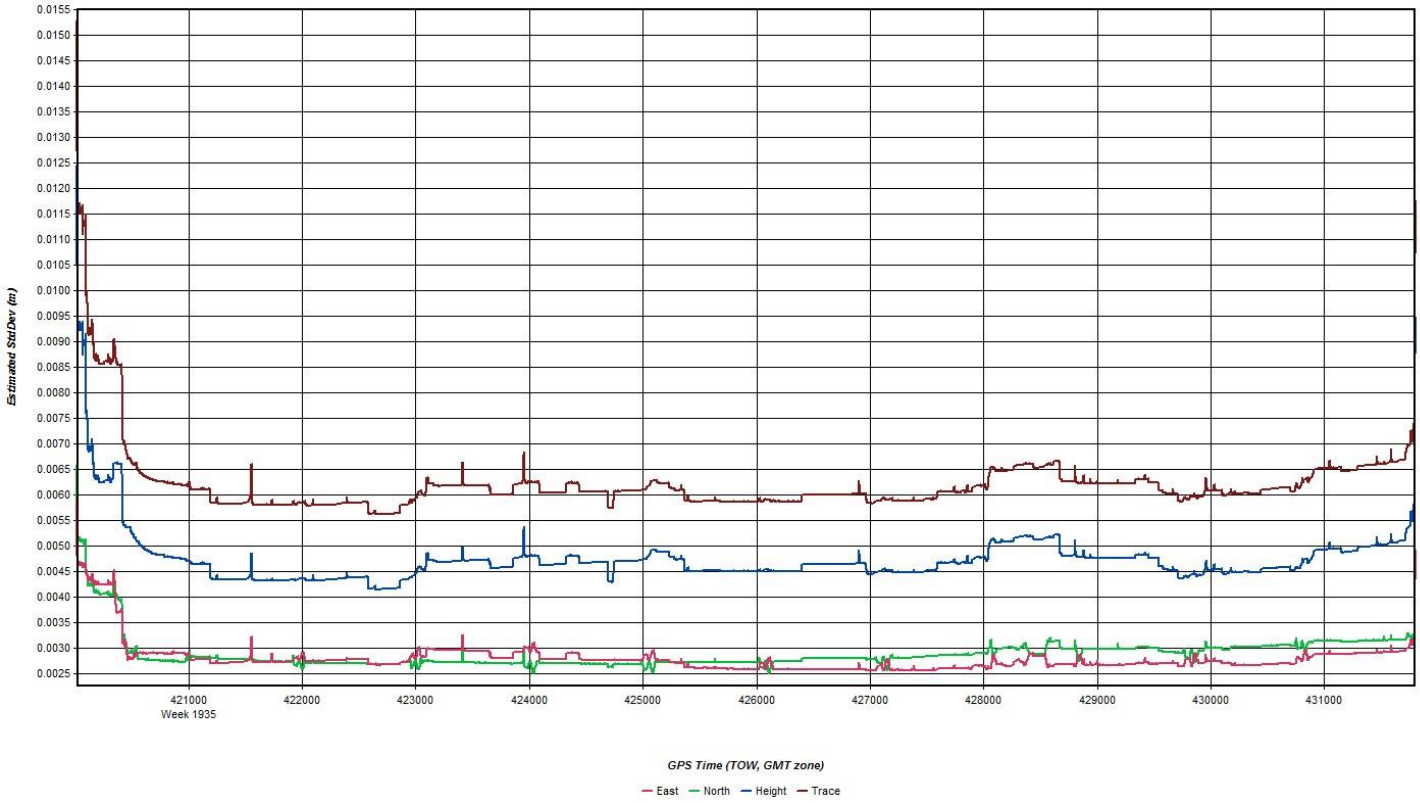



Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

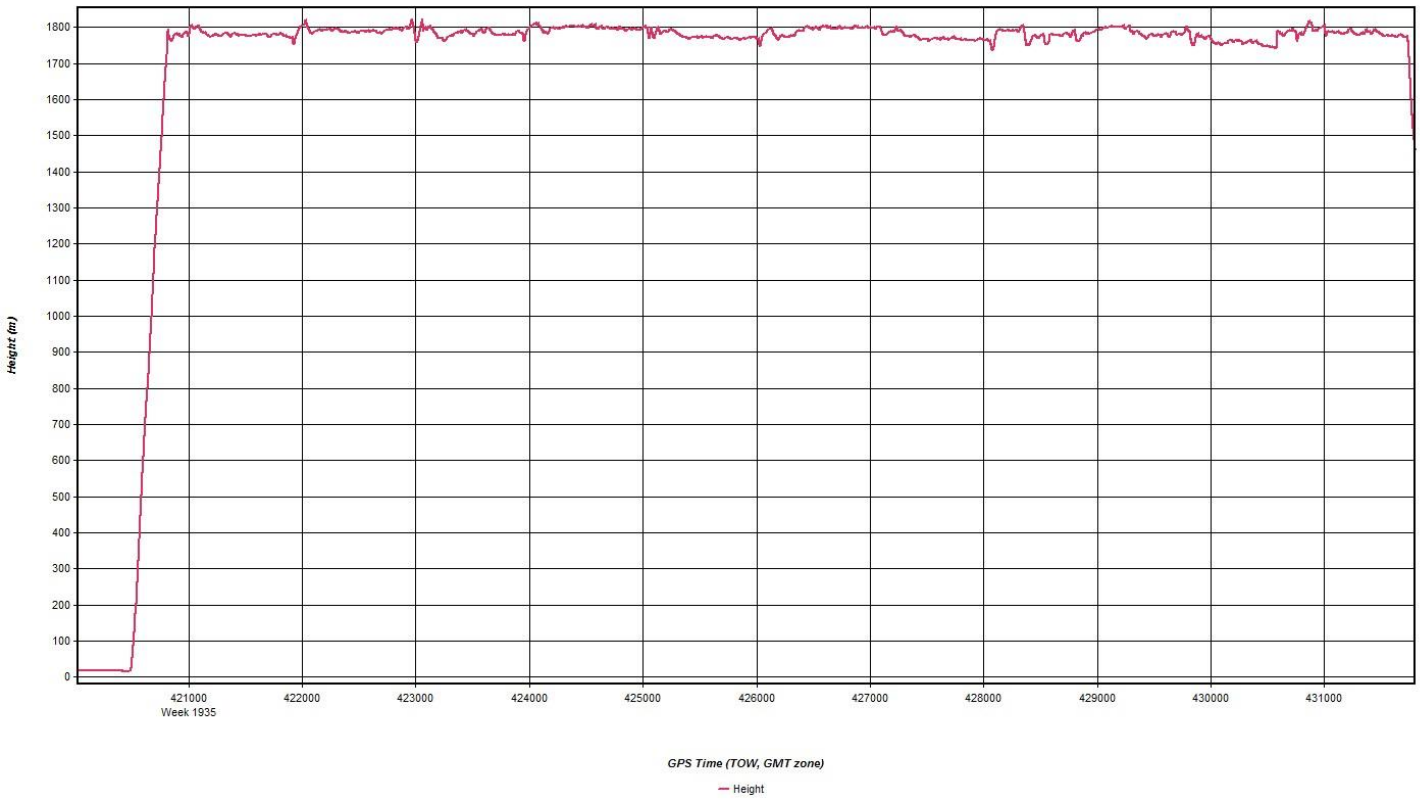

Separation (m)
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
-0.40
-0.42
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
East
North
Up


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

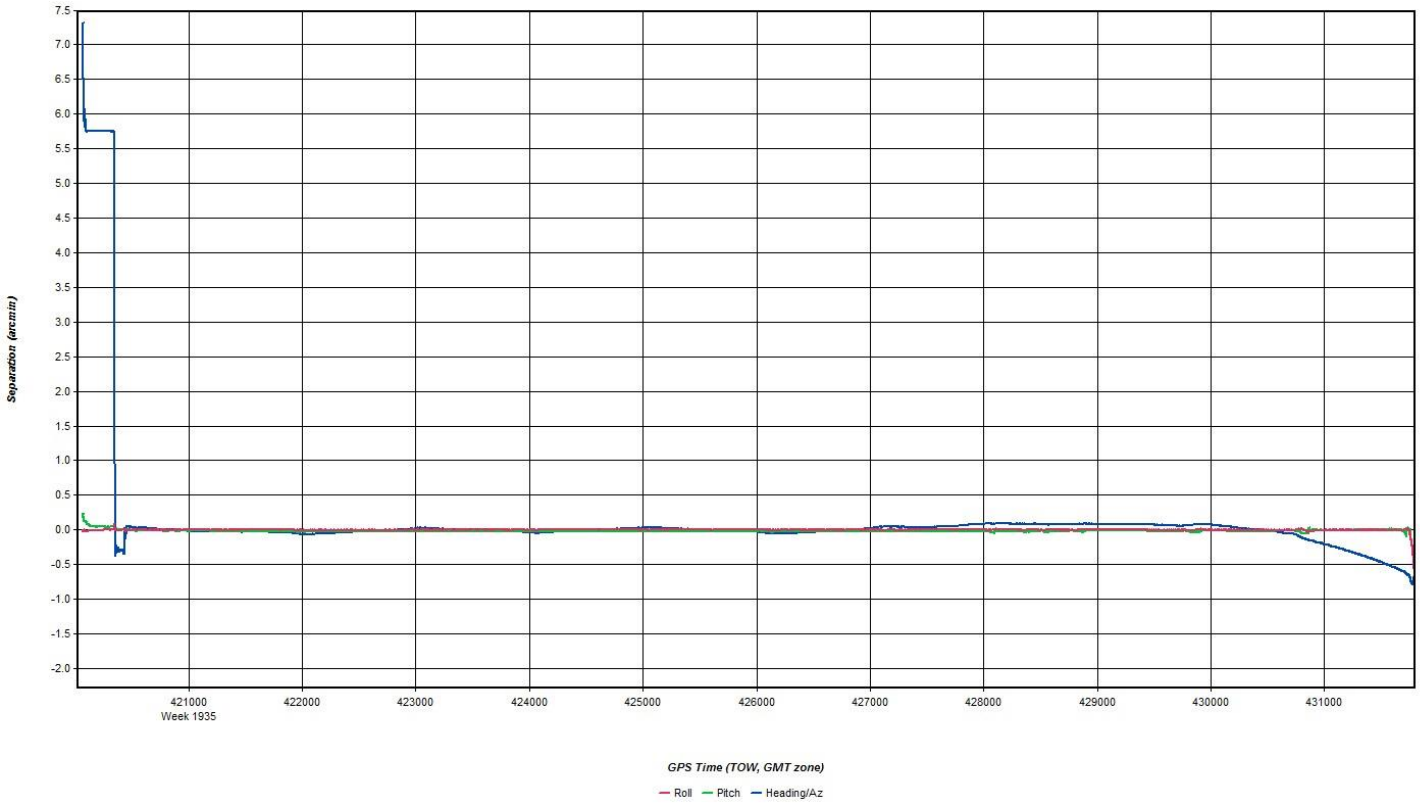

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
PDOP

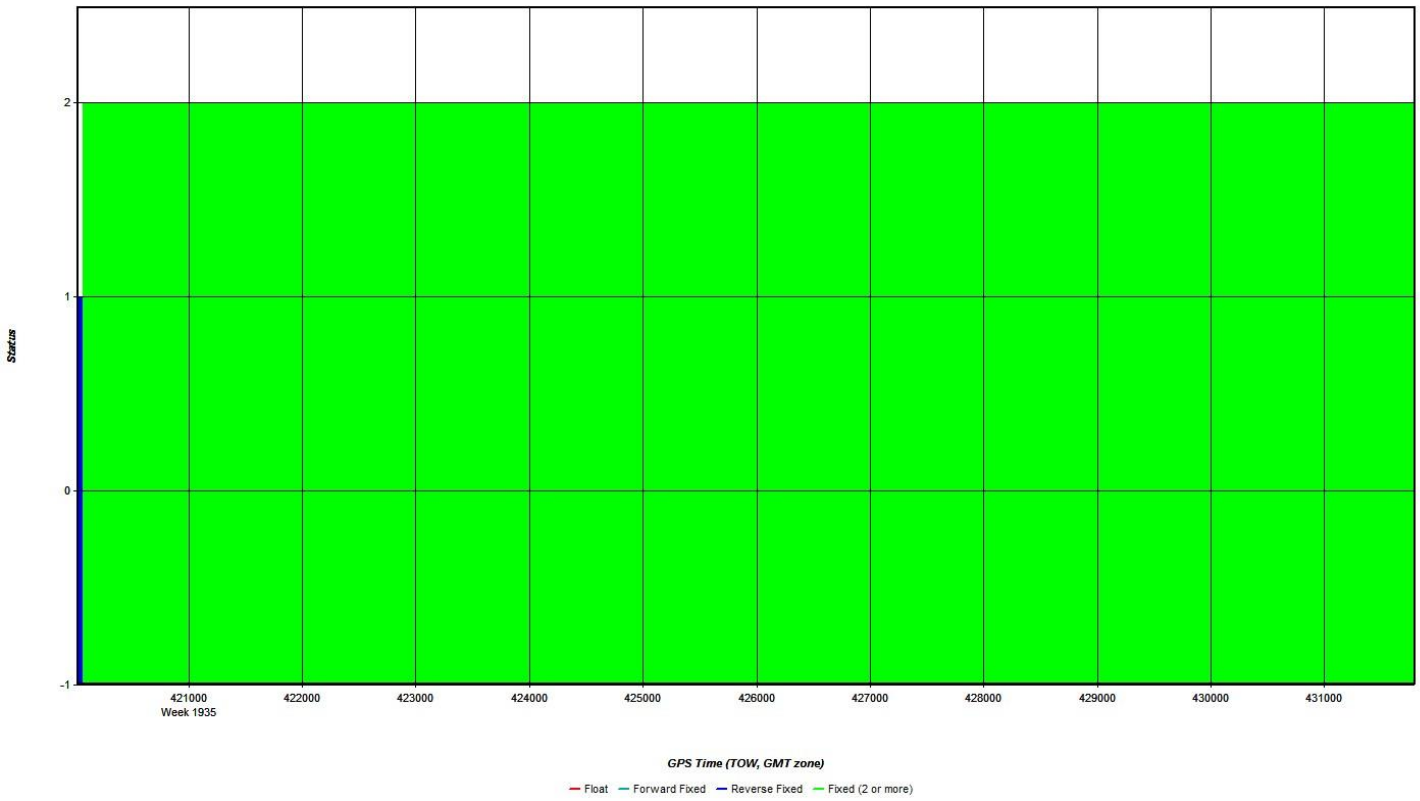

Estimated StdDev (m)
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

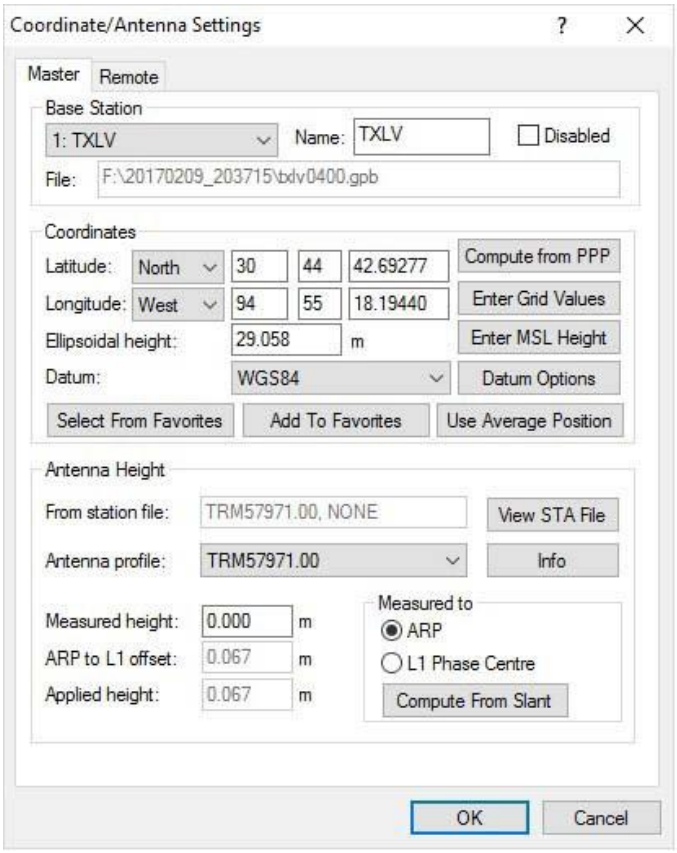

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
Roll
Pitch

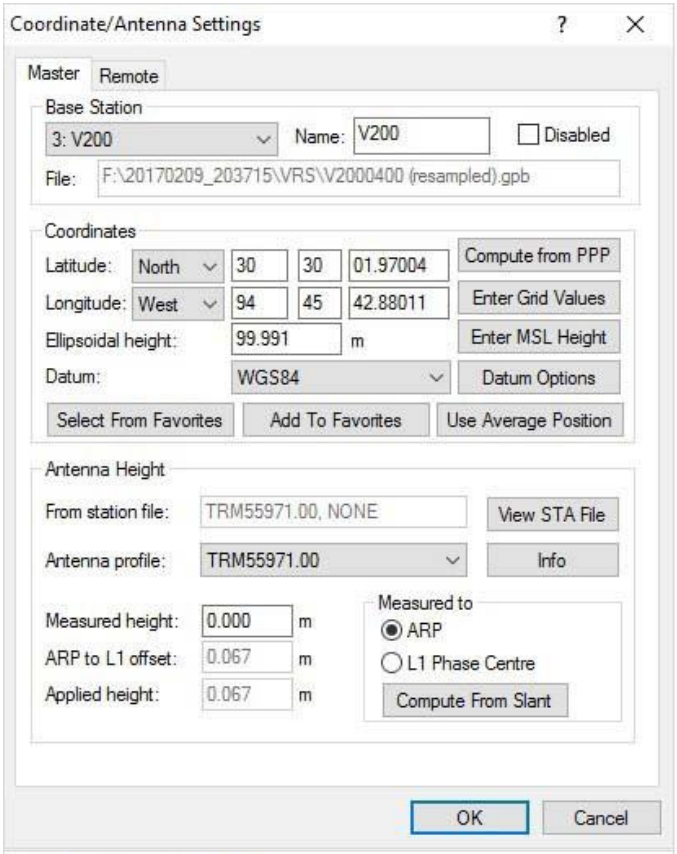

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
Height

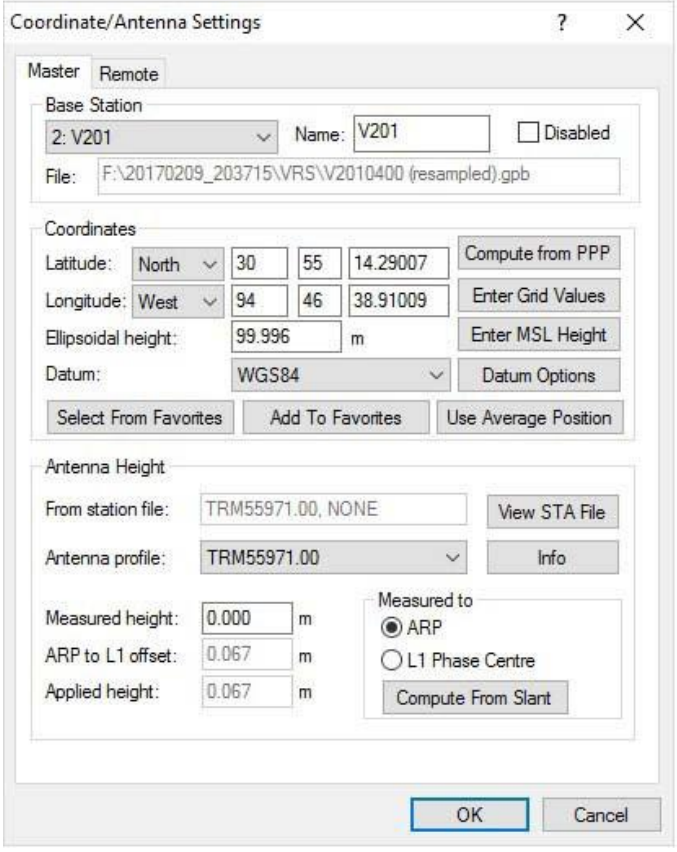

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
421000
Week 1935
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLV
Name: TXLV
Disabled
File: F:\20170209_203715\txlv0400.gpb
Coordinates
Latitude: North 30 44 42.69277
Longitude: West 94 55 18.19440
Ellipsoidal height: 29.058 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V200
Name: V200
Disabled
File: F:\20170209_203715\VRS\V2000400 (resampled).gpb
Coordinates
Latitude: North 30 30 01.97004
Longitude: West 94 45 42.88011
Ellipsoidal height: 99.991 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V201
Name: V201
Disabled
File: F:\20170209_203715\VRS\V2010400 (resampled).gpb
Coordinates
Latitude: North 30 55 14.29007
Longitude: West 94 46 38.91009
Ellipsoidal height: 99.996 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

LIDAR & AERIAL PHOTO FLIGHT LOG

20 YEARS OF EXCELLENCE — ATLIS — LIDAR + IMAGERY + GEOMATICS

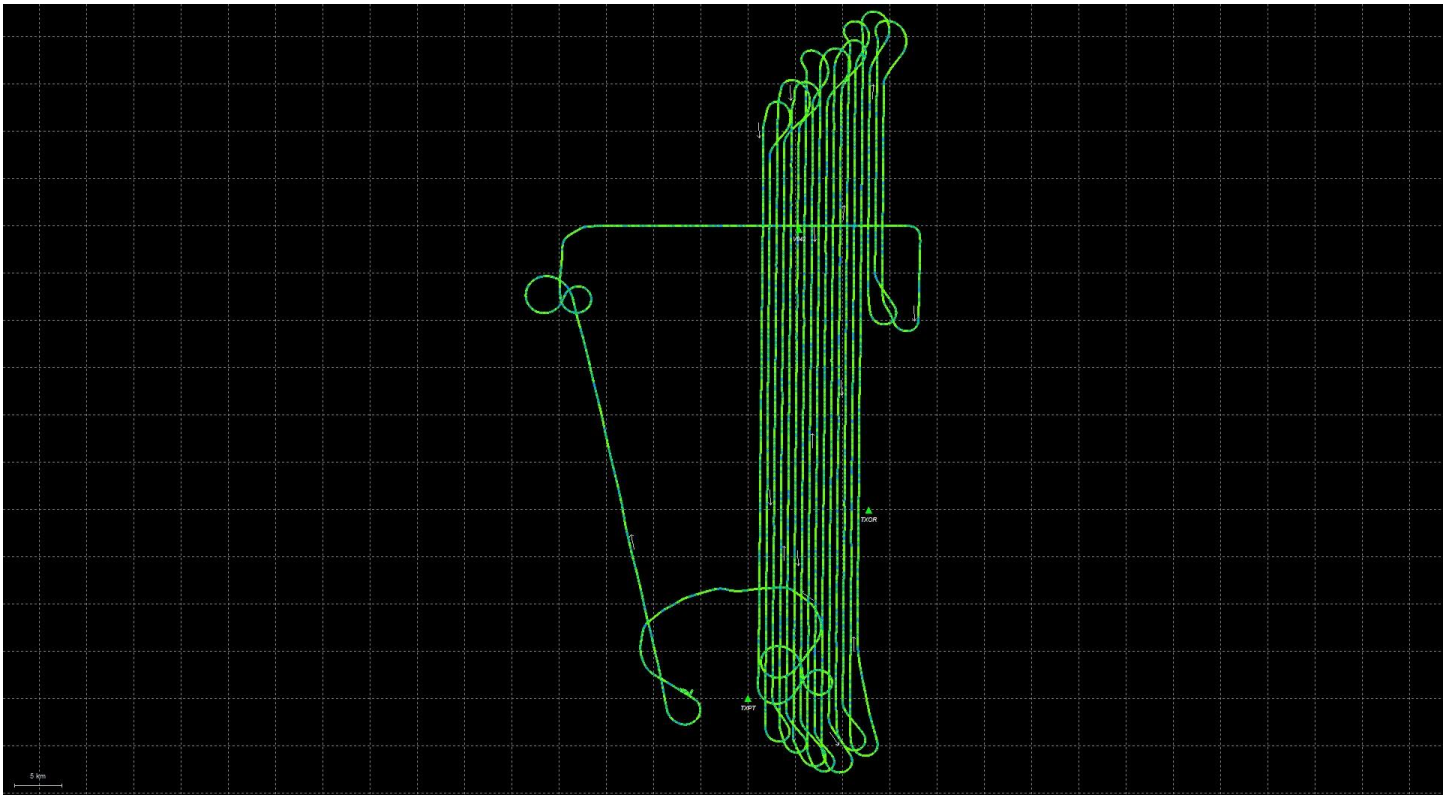
PROJECT NAME	QS Texas	DATE	09/02/2017
SENSOR OPERATOR	Michael Kettridge	SENSOR(S)	ALS70-HP / RCD30
PILOT	Daniel Thibeault	IMU	Honeywell uIRS
AIRCRAFT	Navajo C-FVZM	ABGPS	IPAS-CUS6
AIRBASE	Cleveland, TX	DATA DRIVES	LiDar3

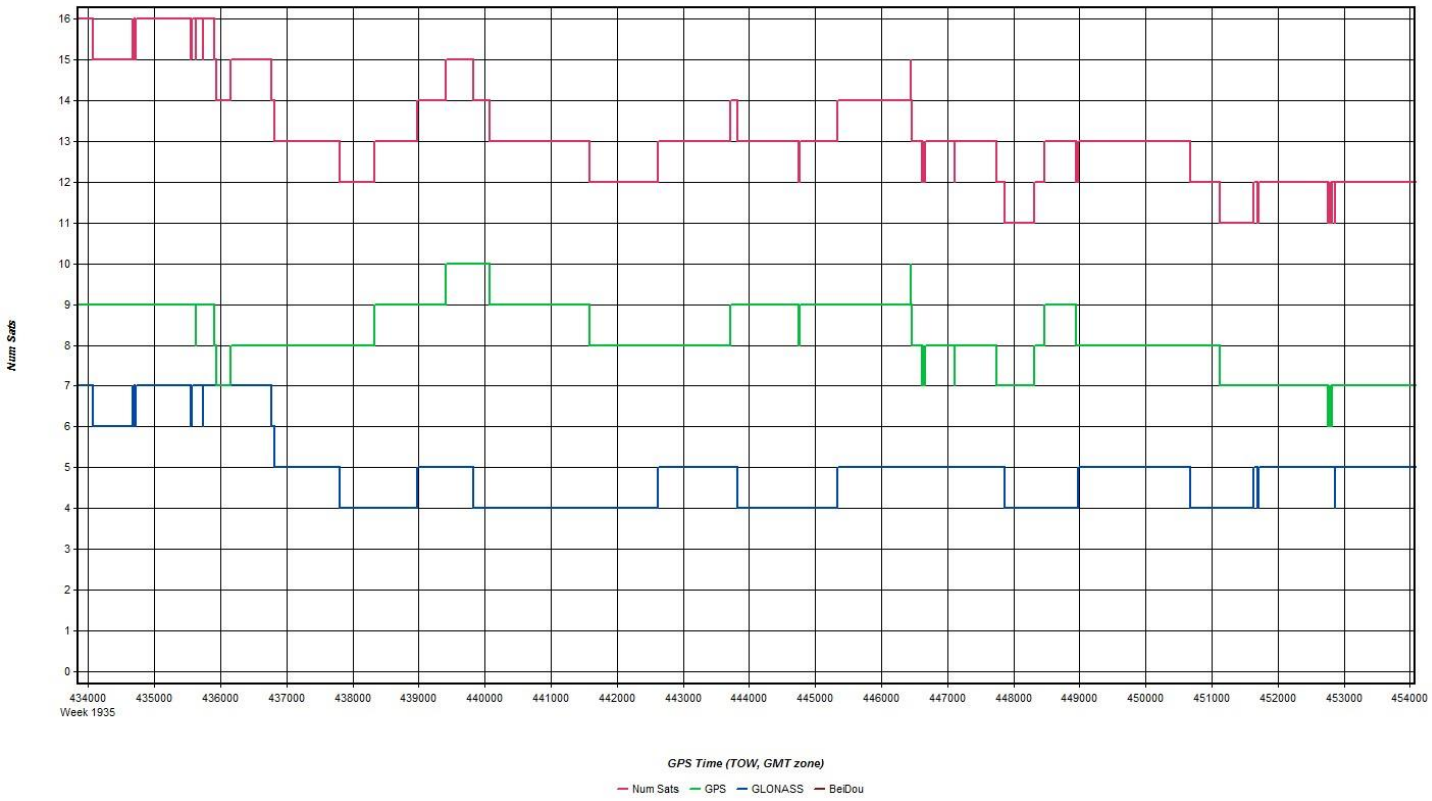
AIRCRAFT BLOCK TIME				MISSION DETAILS				STATIC ALIGNMENT	GPS TIME	
Engine On:	20:35:00	Takeoff:	20:48:00	AGL Height:	1750	Pulse Rate:	312		START	END
Engine Off:	00:12:00	Landing:	00:05:00	Speed:	150	Scan Rate:	57	Pre-Mission	20:40:00	20:45:00
TOTAL:	3.62 hr	TOTAL:	3.3 hr	Laser Power:	100	FOV:	34	Post Mission	00:06:00	00:11:00

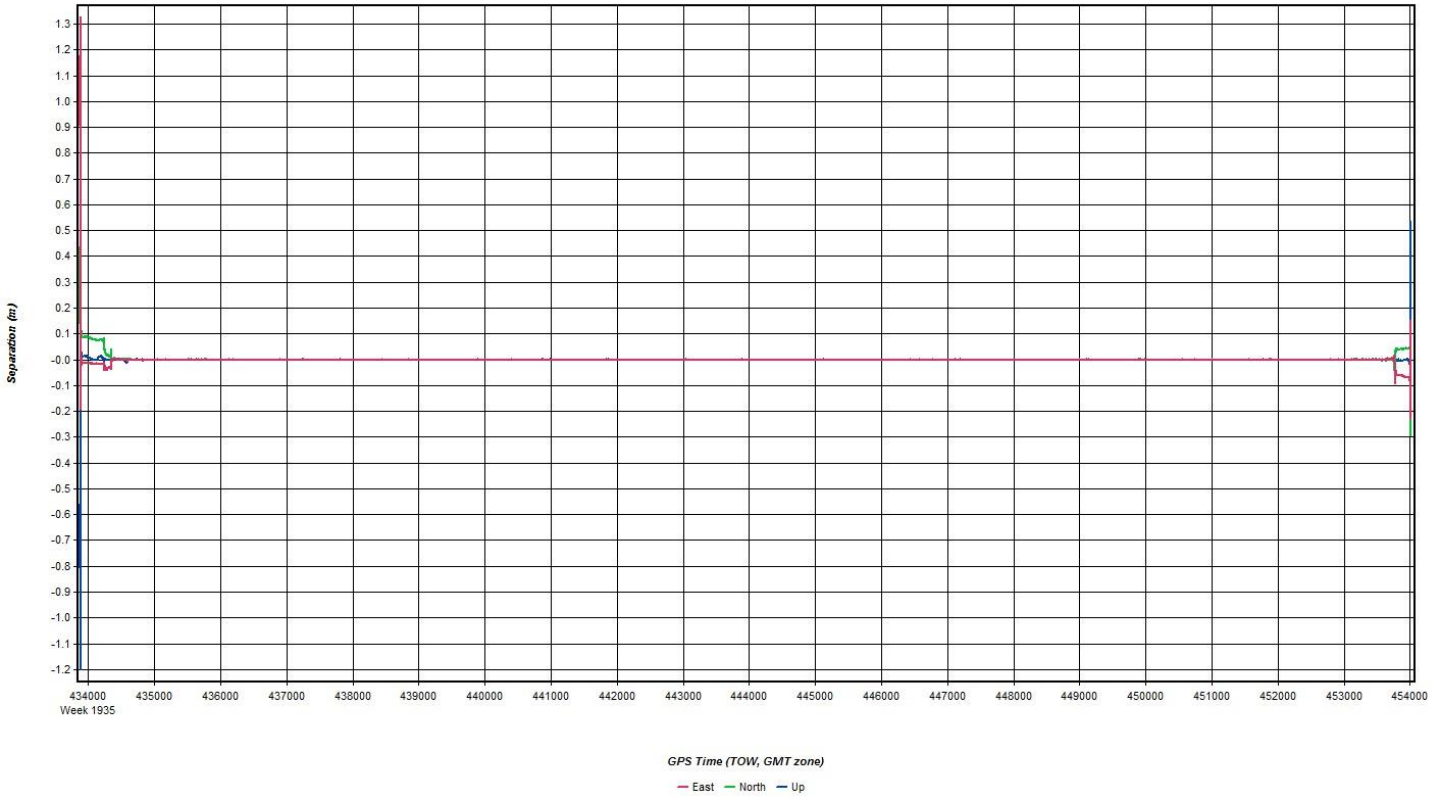
FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME START	GPS TIME END	COMMENTS
5056		North	170209_205715	20:57:15	21:11:30	All complete
5055		South	170209_211427	21:14:27	21:28:40	All complete
5054		North	170209_213111	21:31:12	21:45:41	All complete
5053		South	170209_214826	21:48:29	22:03:21	All complete
5052		North	170209_220548	22:05:50	22:19:51	All complete
5051		South	170209_222307	22:23:09	22:36:58	All complete
5050		North	170209_224026	22:40:26	22:53:51	All complete
CL		West	170209_230011	23:00:13	23:01:48	All complete
5049		North	170209_230837	23:08:38	23:22:12	All complete
5048		South	170209_232530	23:25:31	23:38:42	All complete
5047		North	170209_234145	23:41:47	23:55:03	All complete

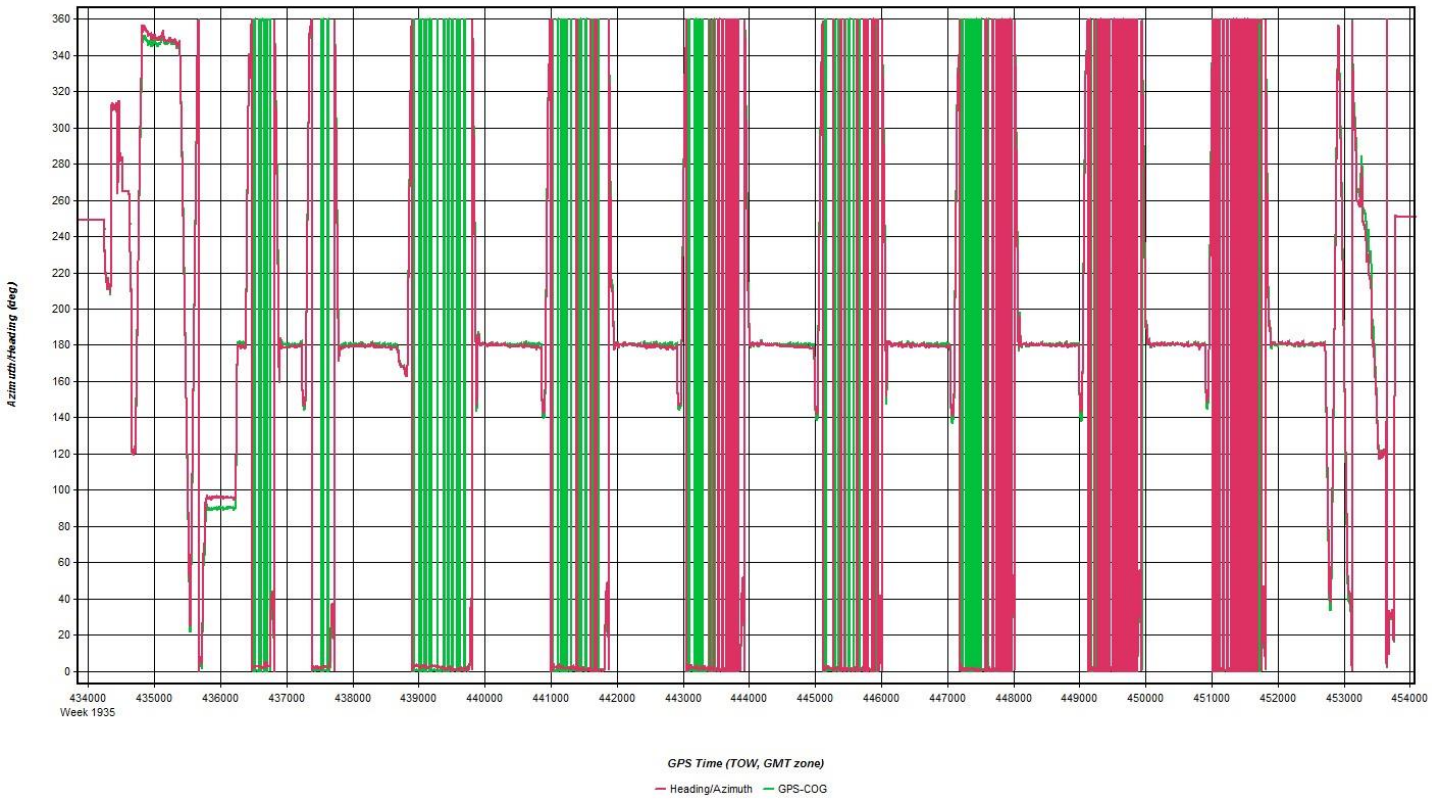
SUN ANGLE @Start: @End: @Peak:	Clear skies, 24C at take off Sats and DOPS averaged 18 and 1.2 1720 to 1780 AGL Antenna height for the back up station at the airport was 1.7m to the ARP

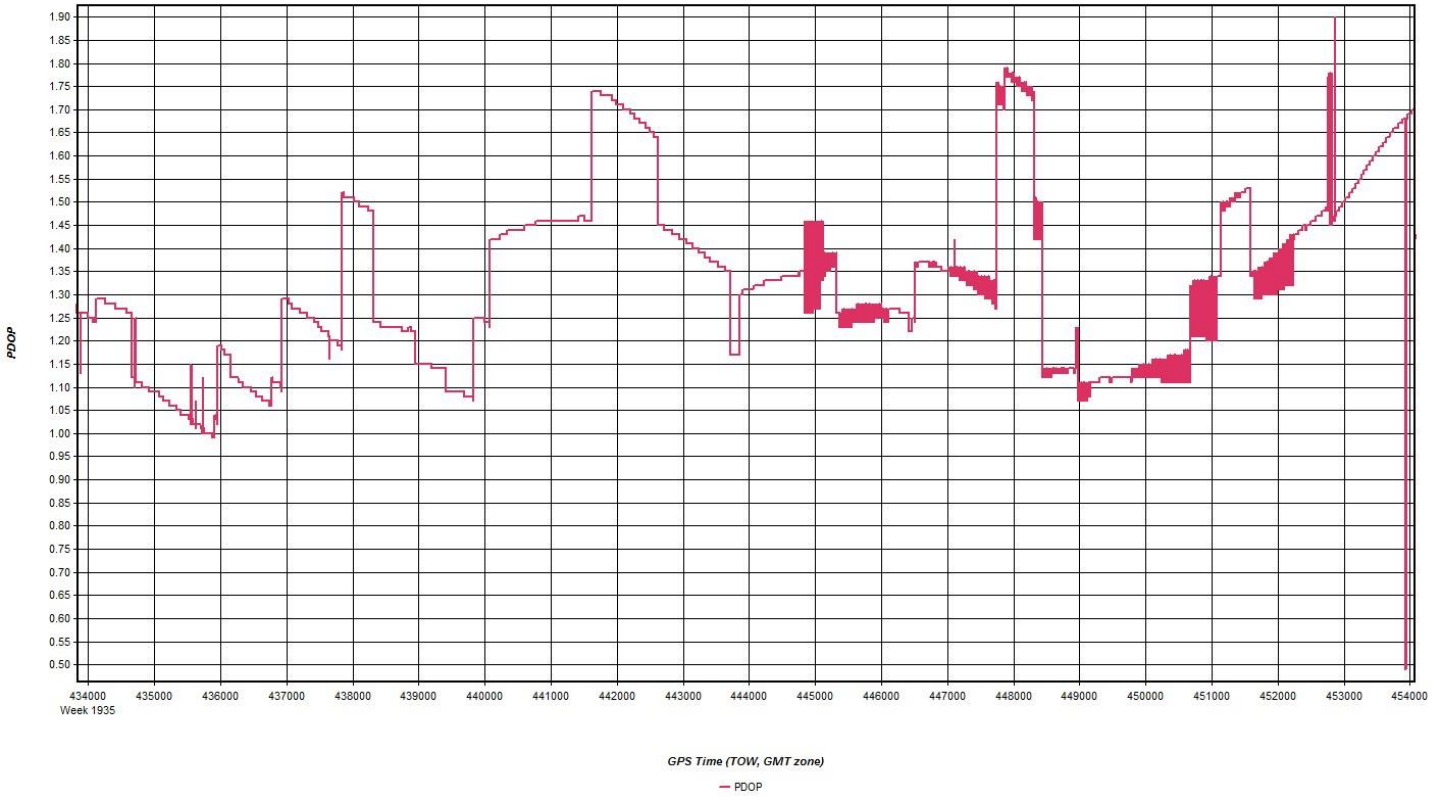
Feb 9, 2017-C (N246MP, SN8227)

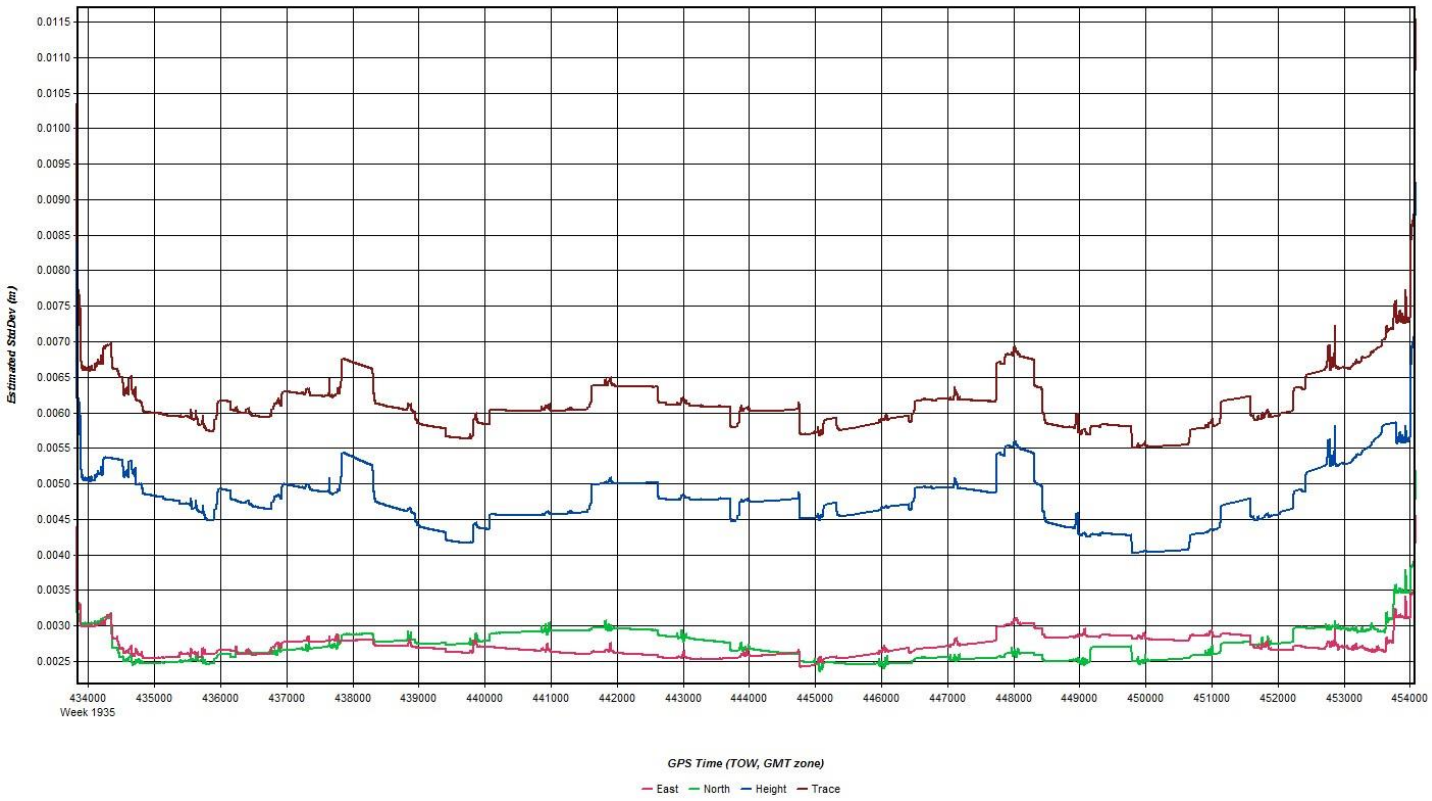


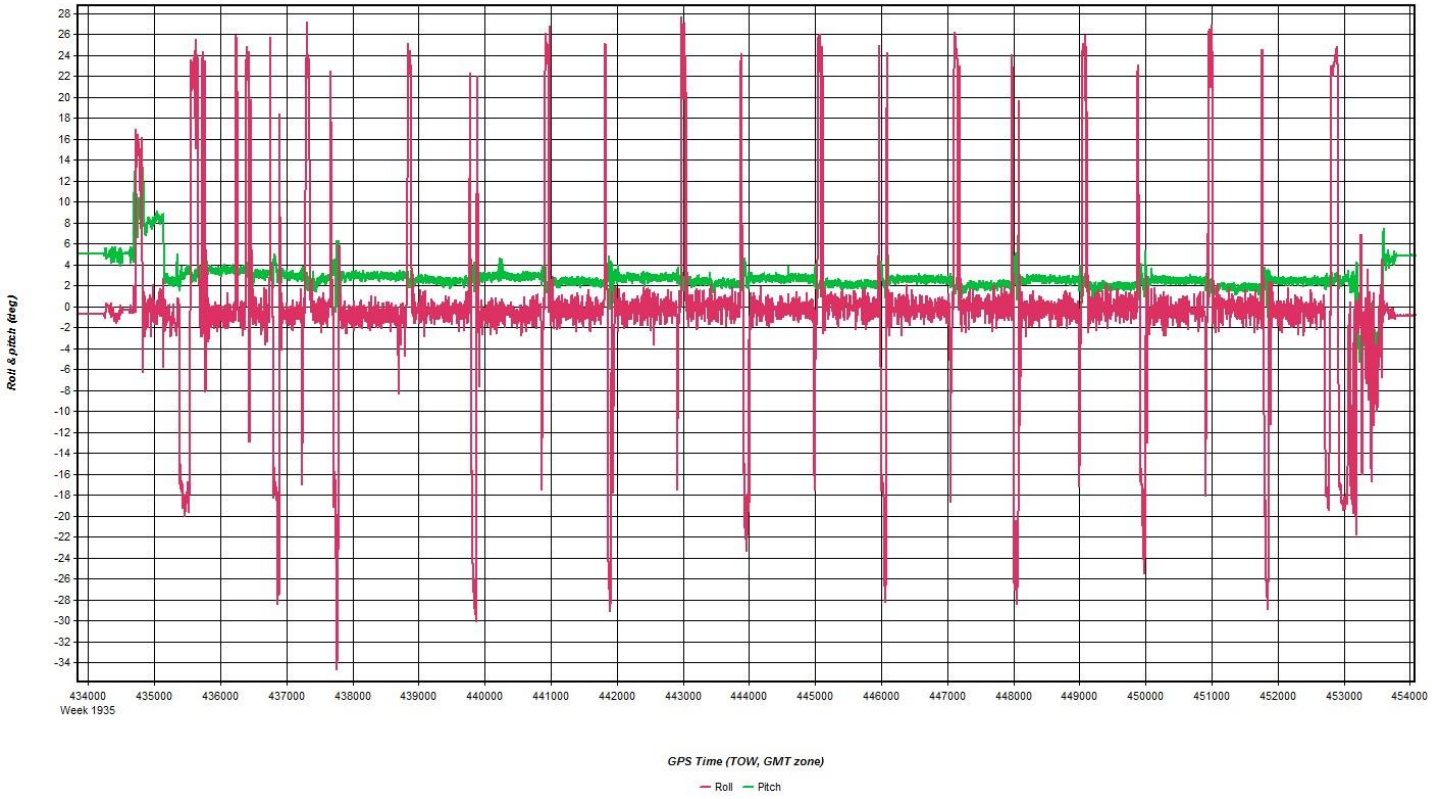

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

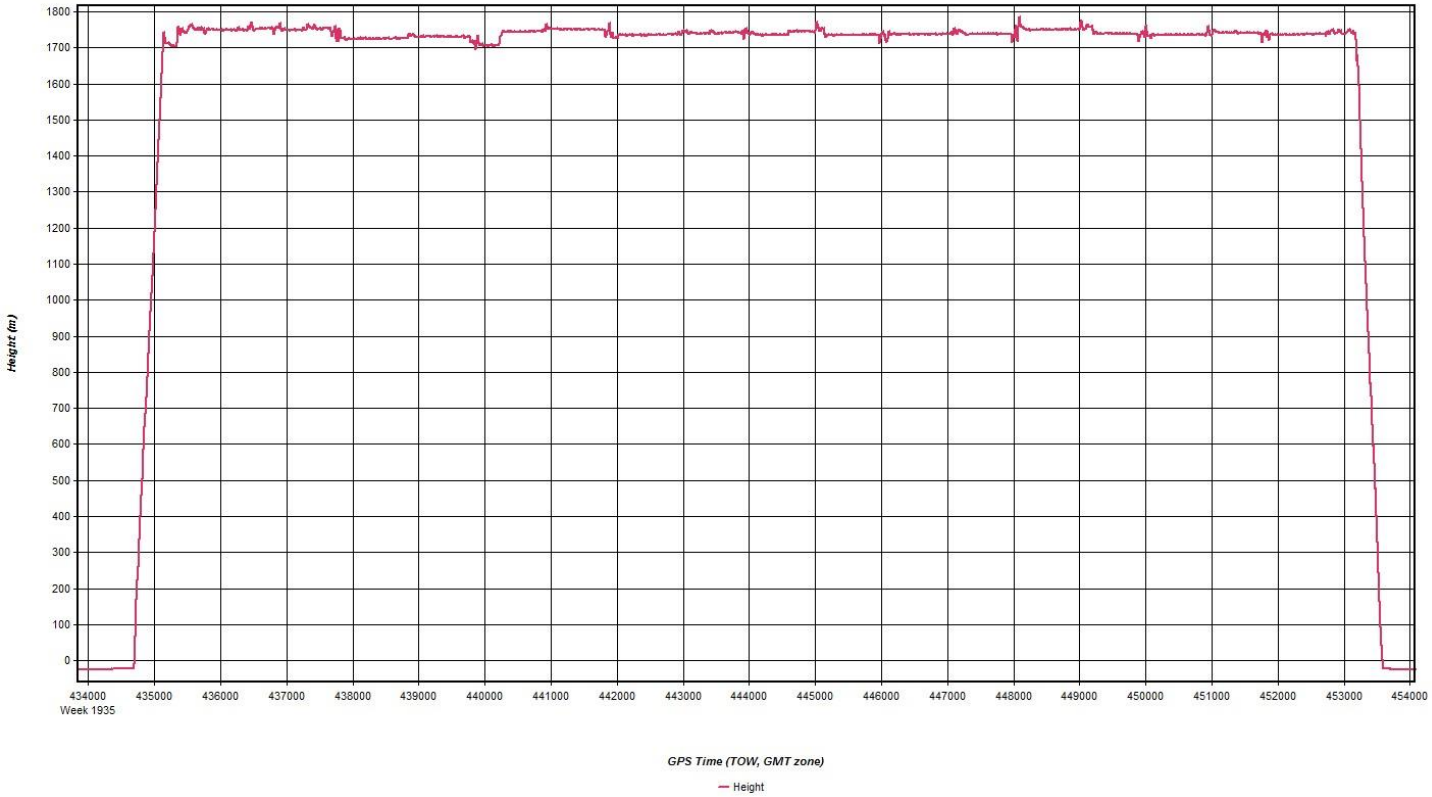

Separation (m)
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
East
North
Up

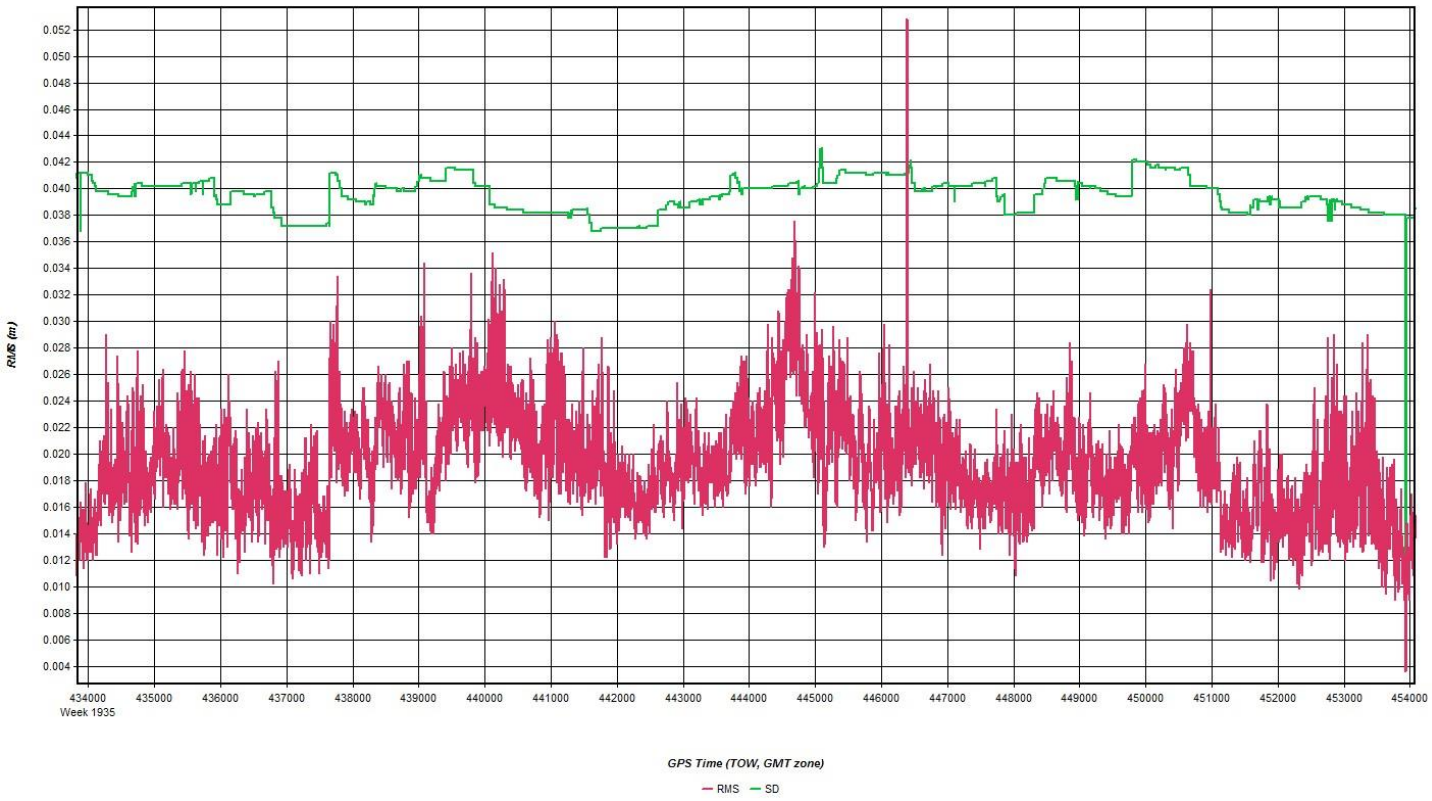

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

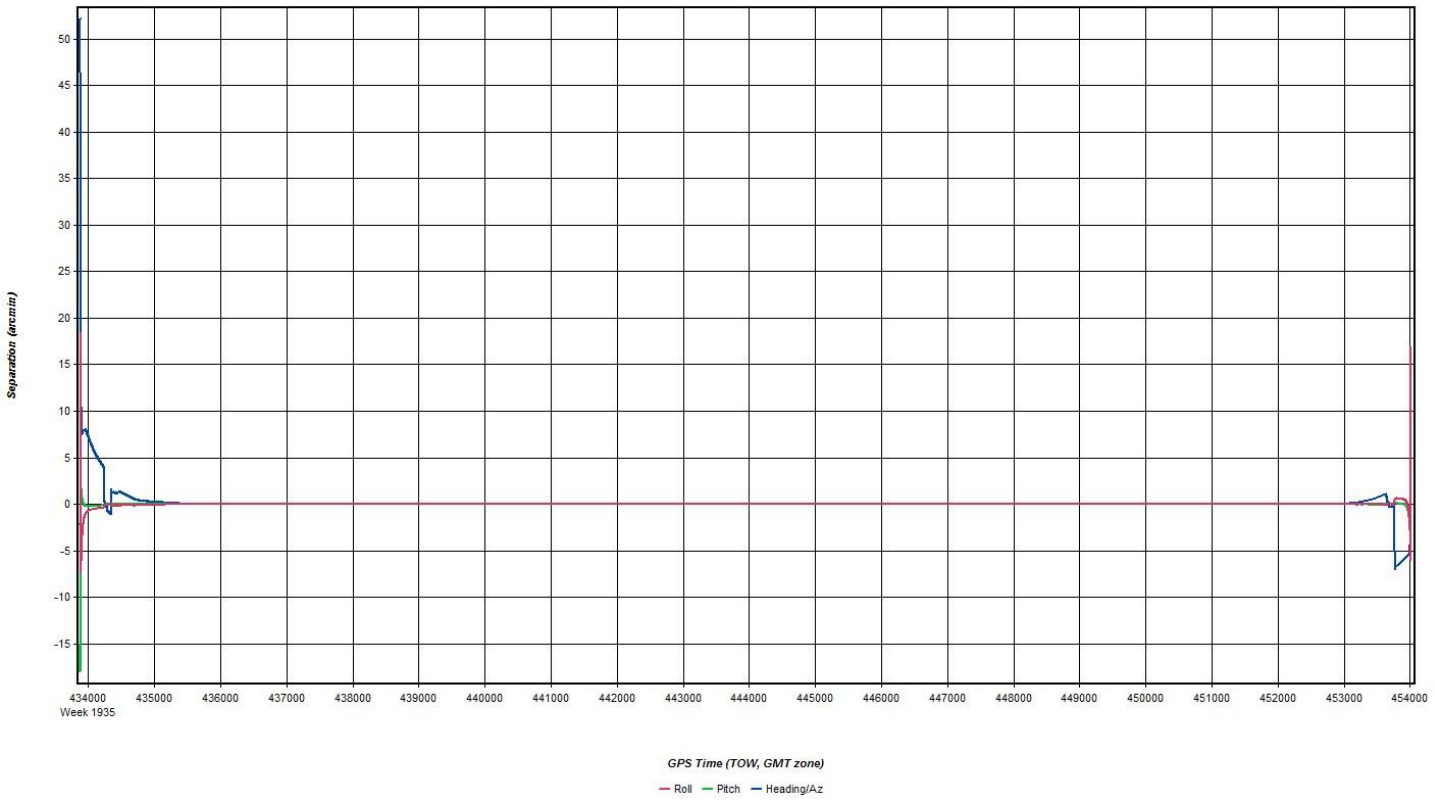

PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
PDOP

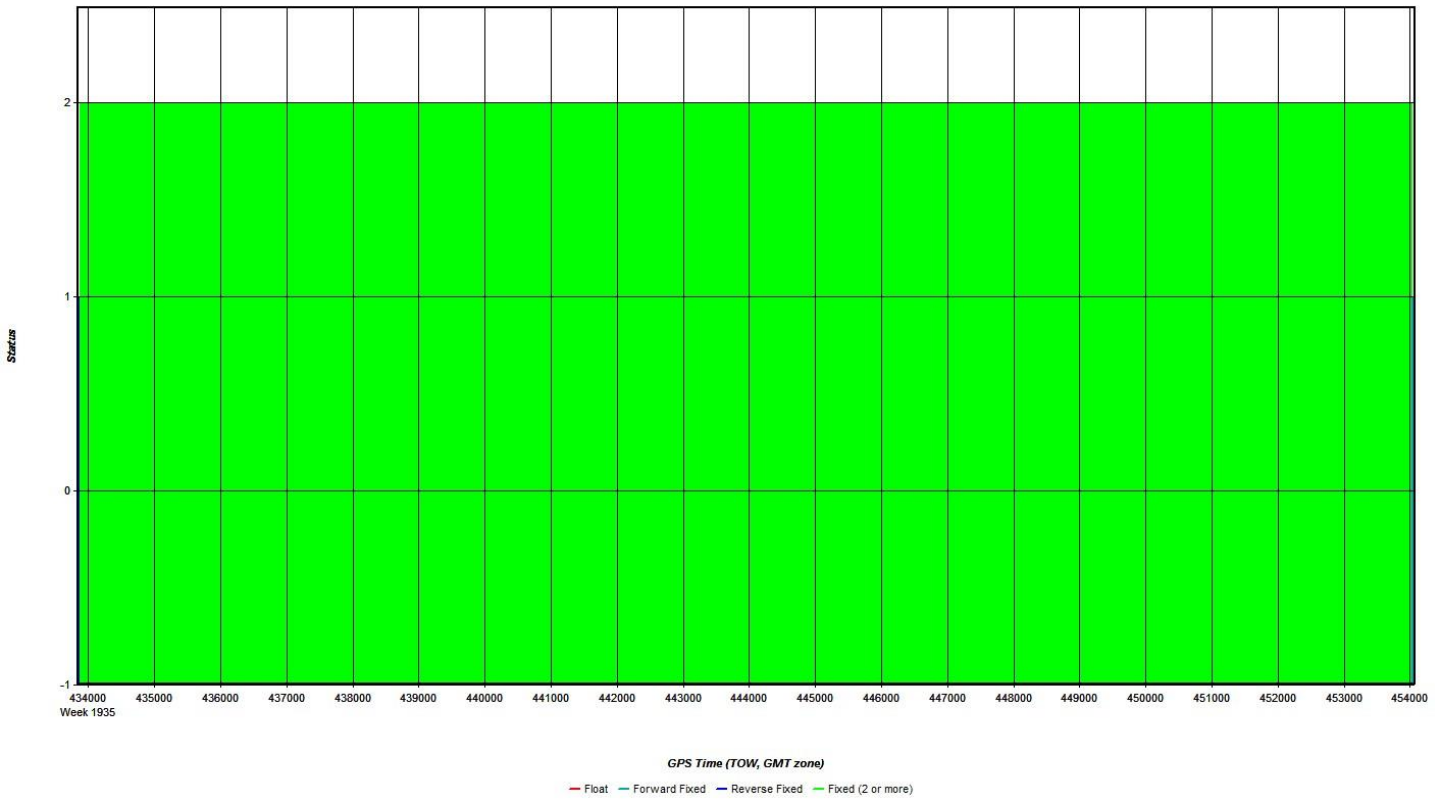

Estimated StdDev (m)
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

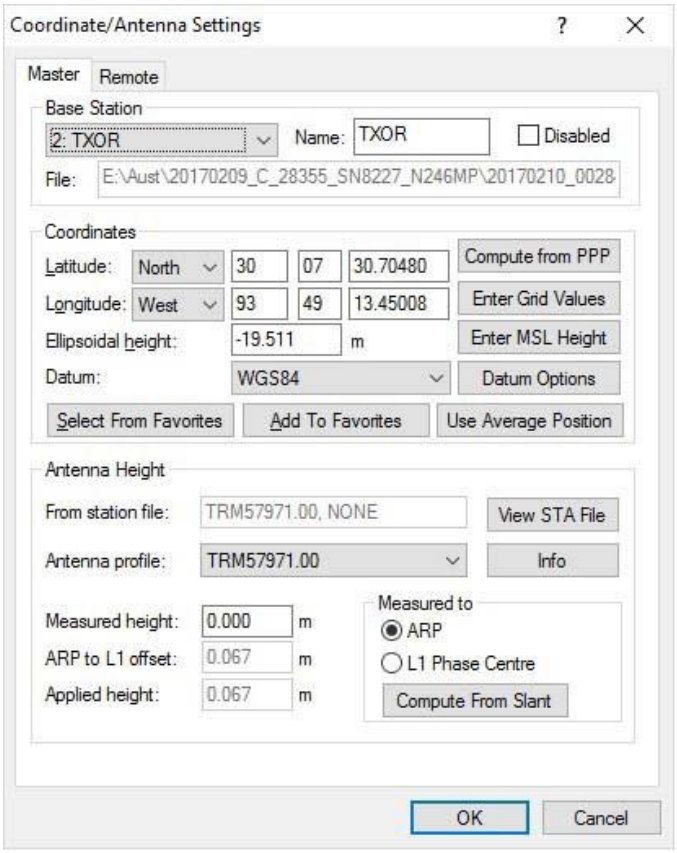

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
Roll
Pitch

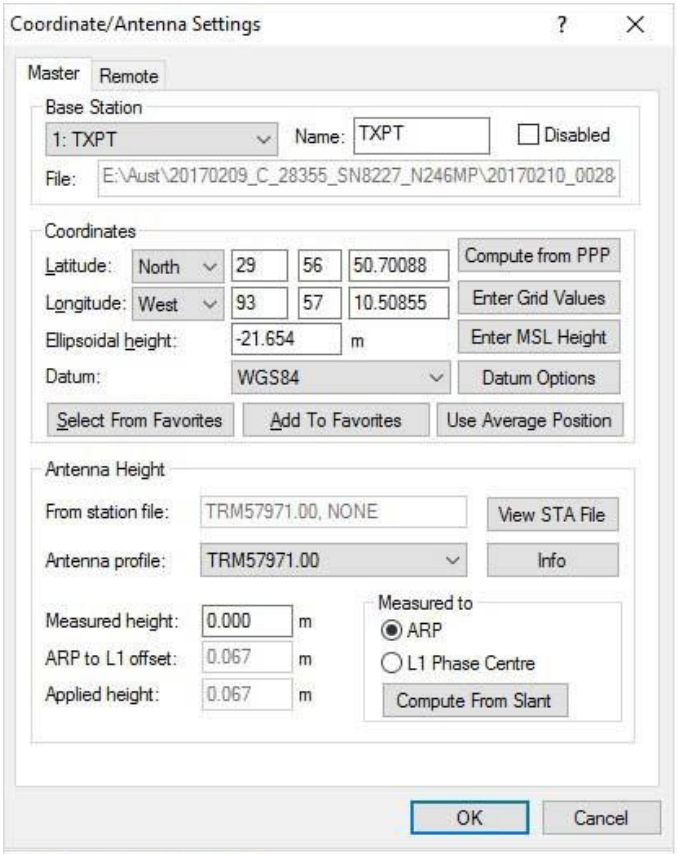

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
Height

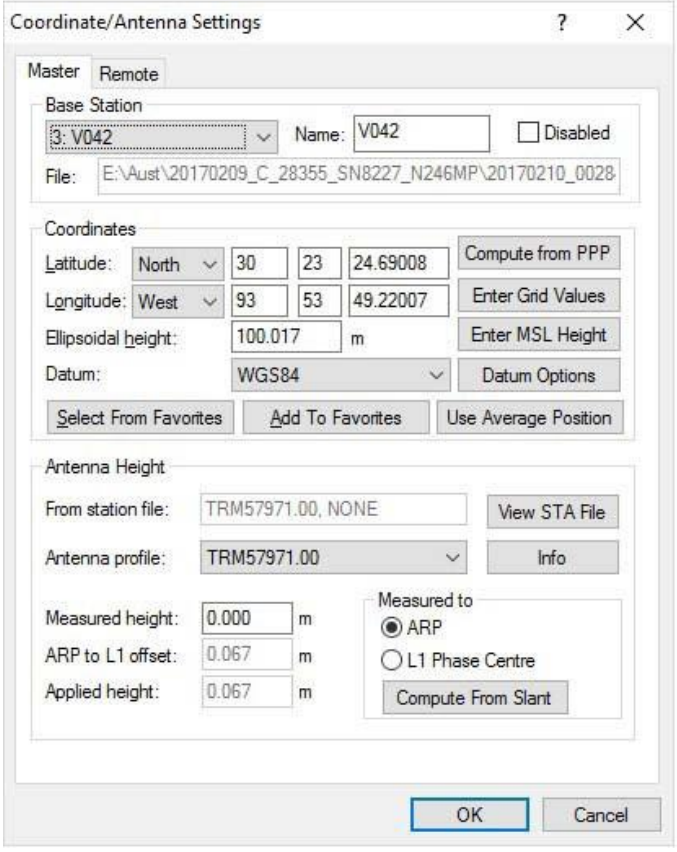

RMS (m)
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
434000
Week 1935
435000
436000
437000
438000
439000
440000
441000
442000
443000
444000
445000
446000
447000
448000
449000
450000
451000
452000
453000
454000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXOR
Name:
TXOR
Disabled
File:
E:\Aust\20170209_C_28355_SN8227_N246MP\20170210_0028
Coordinates
Latitude:
North
30
07
30.70480
Compute from PPP
Longitude:
West
93
49
13.45008
Enter Grid Values
Ellipsoidal height:
-19.511
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Aust\20170209_C_28355_SN8227_N246MP\20170210_0028
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V042
Name: V042
Disabled
File: E:\Aust\20170209_C_28355_SN8227_N246MP\20170210_0028
Coordinates
Latitude: North 30 23 24.69008
Longitude: West 93 53 49.22007
Ellipsoidal height: 100.017 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-9-2017

Project: Neches Basin Proj #: 28355 Flight Mgmt File: 20170209-B-28355-SN8727-N246MP

Aircraft: 246MP Begin Hobbs: 1287.7 End Hobbs: 1293.0 Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 6:45 (Z) 00:45 Arr Apt: BPT Arr Time (Local) 12:00 (Z) 6:00 Tot Time Aloft: 5:15

CORS: (Y) N Sta 1: Hawkport Sta 2: 5037 Flyovers: (Y) N If Y, times: Sta1) 00:56 Sta2) 05:51

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

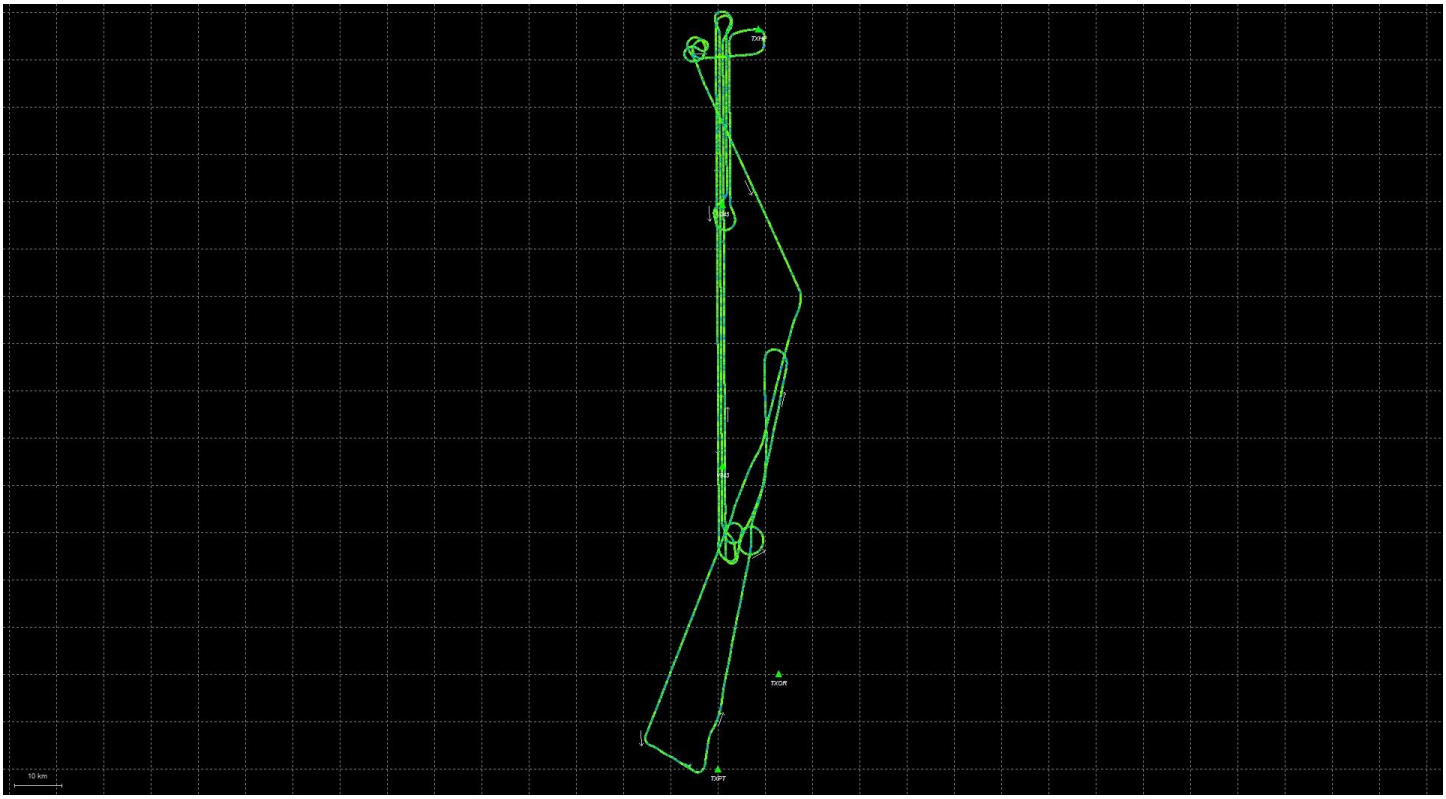
Gd Temp beg: 19 °c End: °c OAT beg: °c End: °c Altimeter begin: 3028 end: 3032

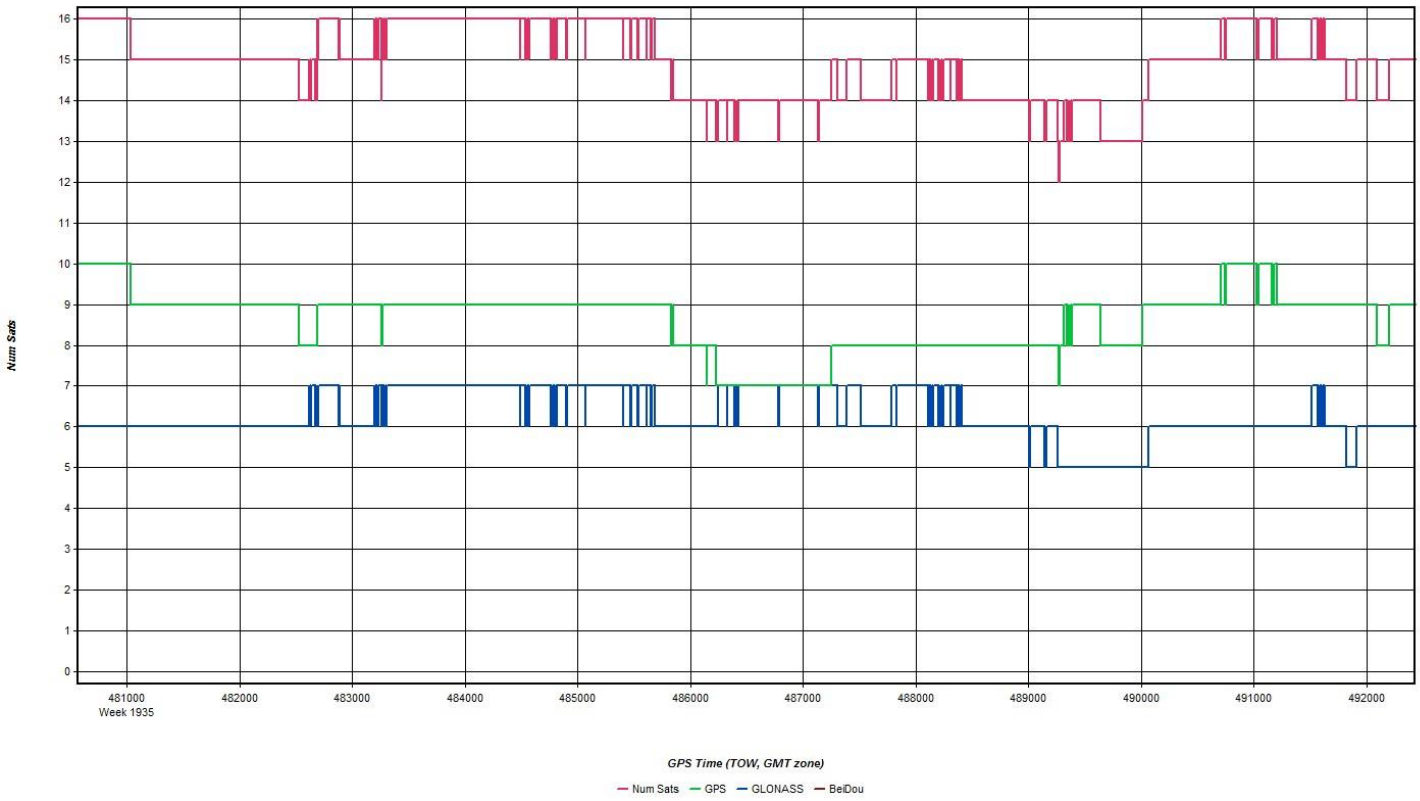
	Type	Serial #	Alt AGL	Alt ASL		Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	613
LIDAR		0227							End GB	913
	FOV 340	Scan Freq	MpiA Y (N)	Pulses In Air 55.8	Pulse Rate 311.2	Power 63970	PPSM		Tot GB	100

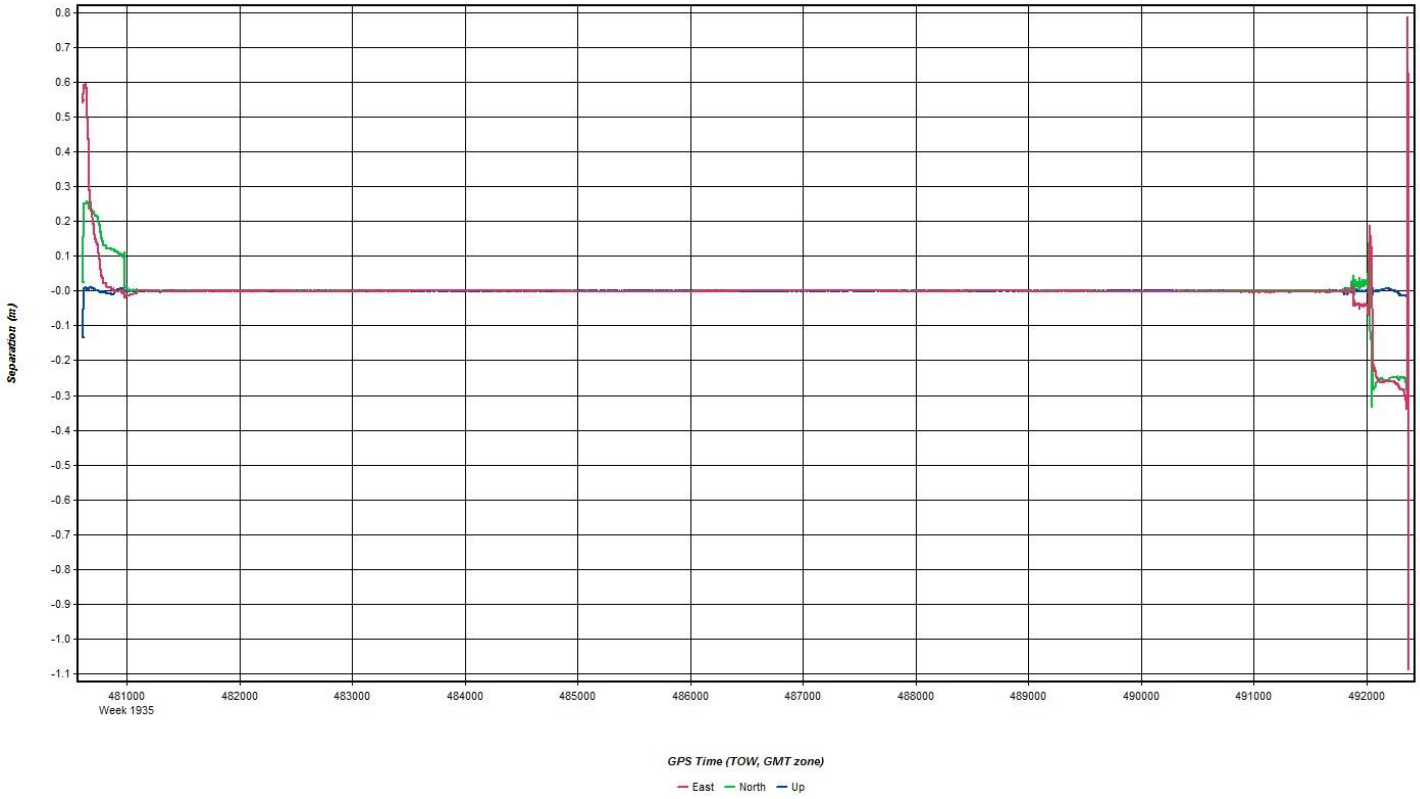
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PODPs Secs	GPS Altitude	Crab	Turb (0...+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
9033	088	0104	0110	143	1:7/10	5737		0	Less Than 10SB Drops X-Line Static Start
9032	358	0114	0118	156	1:1/16	5744		0	00:30-00:35
9031	178	0122	0126	141	1:1/21	5730		0	Flight 00:57
9030	358	0129	0133	156	1:3/19	5774		0	
9029	178	0137	0150	141	1:2/19	5660		0	
9028	358	0155	0208	157	1:2/19	5673		0	
9027	178	02:12	02:27	141	1:3/17	5590		0	
9026	358	02:30	02:43	155	1:2/16	5740		0	
9025	178	02:46	03:01	141	1:5/15	5705		0	
9024	358	03:04	03:17	161	1:3/15	5715		0	
9023	178	03:21	03:36	140	1:2/17	5688		0	
9022	358	03:39	03:52	156	1:3/18	5685		0	
9021	178	03:56	04:10	136	1:3/18	5703		0	
9020	358	04:13	04:25	160	1:3/20	5710		0	
9019	178	04:29	04:42	137	1:0/20	5740		0	
9018	358	04:45	04:57	156	1:1/19	5700		0	Flight 5:48
9017	178	05:01	05:14	134	1:2/18	5696		0	Static Stop
9016	358	05:17	05:28	159	1:3/17	5710		0	06:02 - 06:07

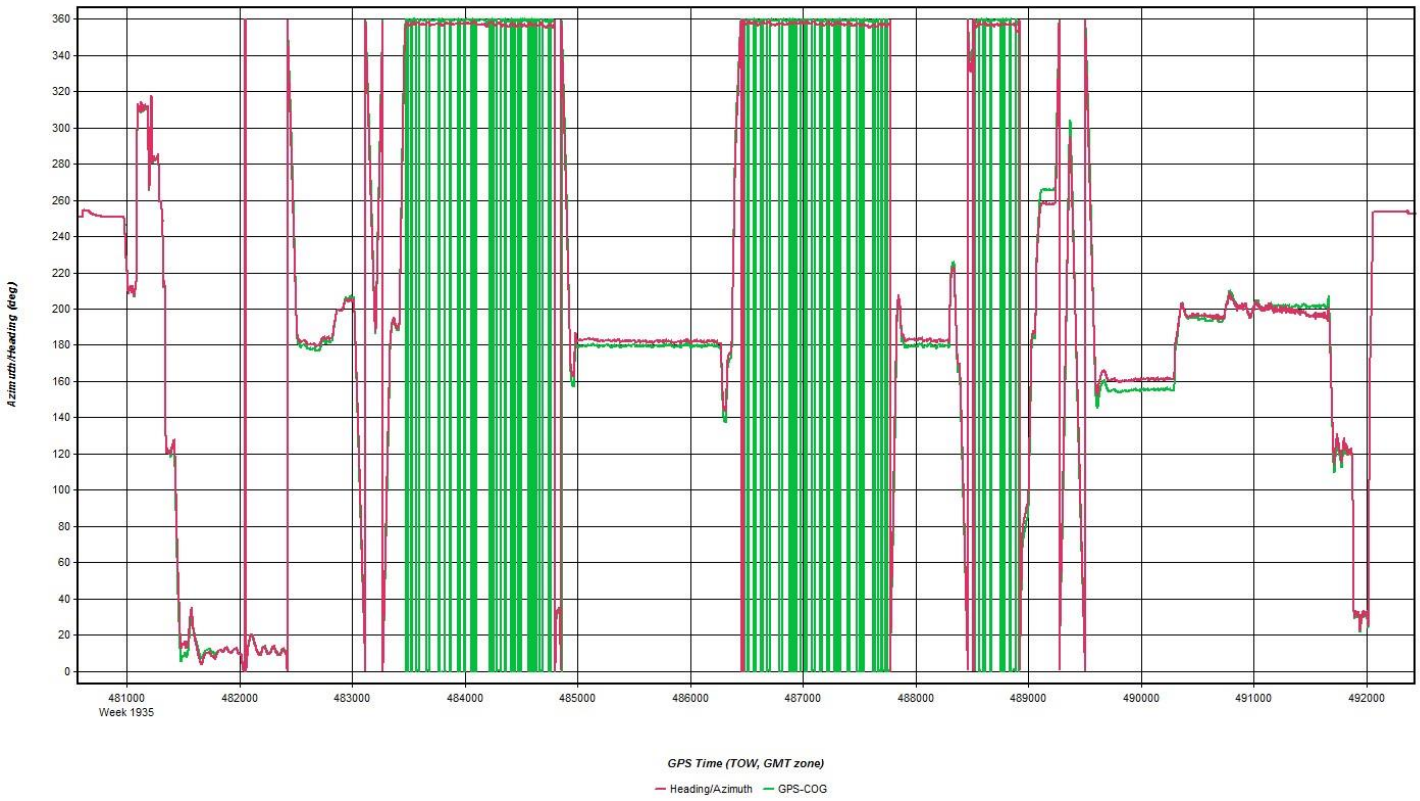
Total Proj Lines: Lines Flown: 19 Lines Remain: Online Time: 5:45 Mob Time: :30 Notes:

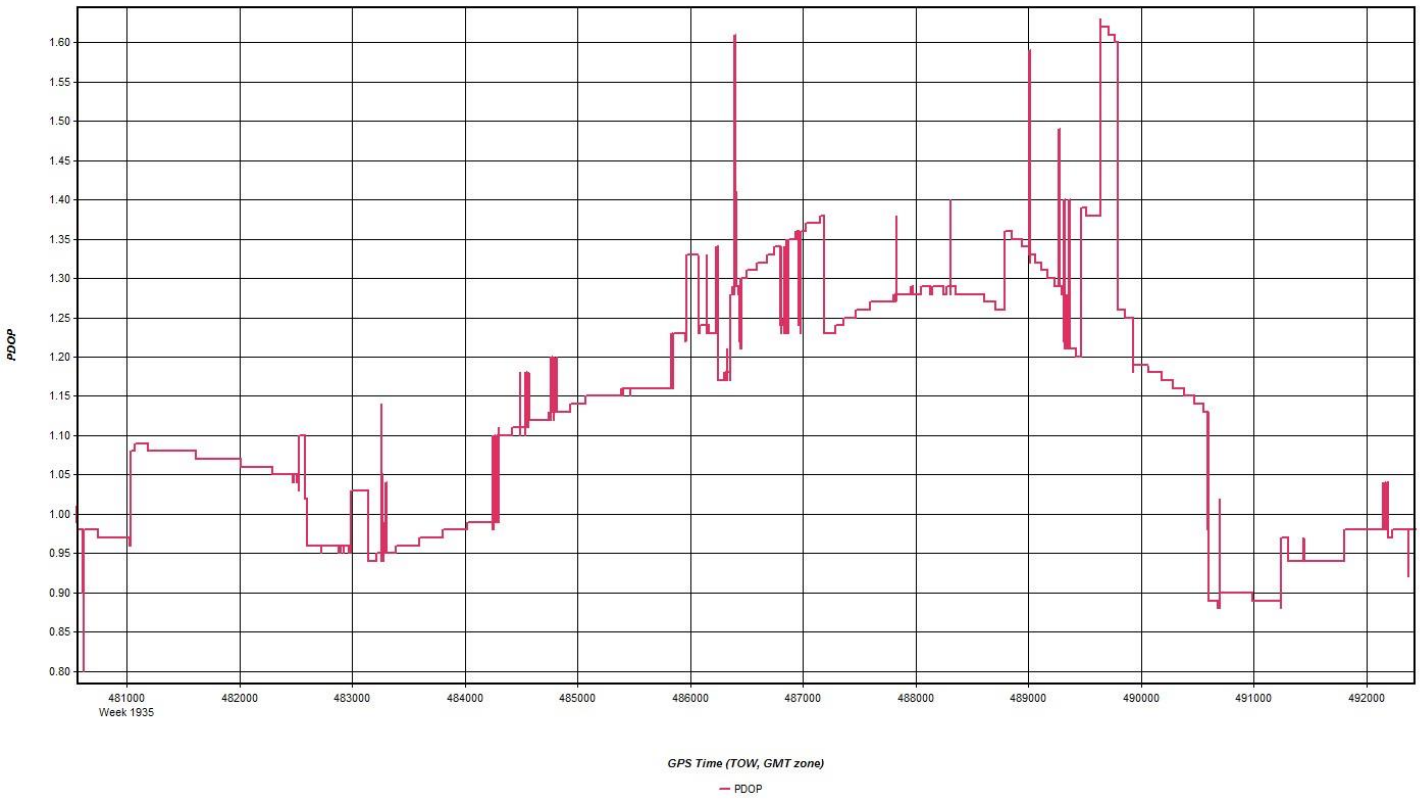
Feb 10, 2017-A (N246MP, SN8227)

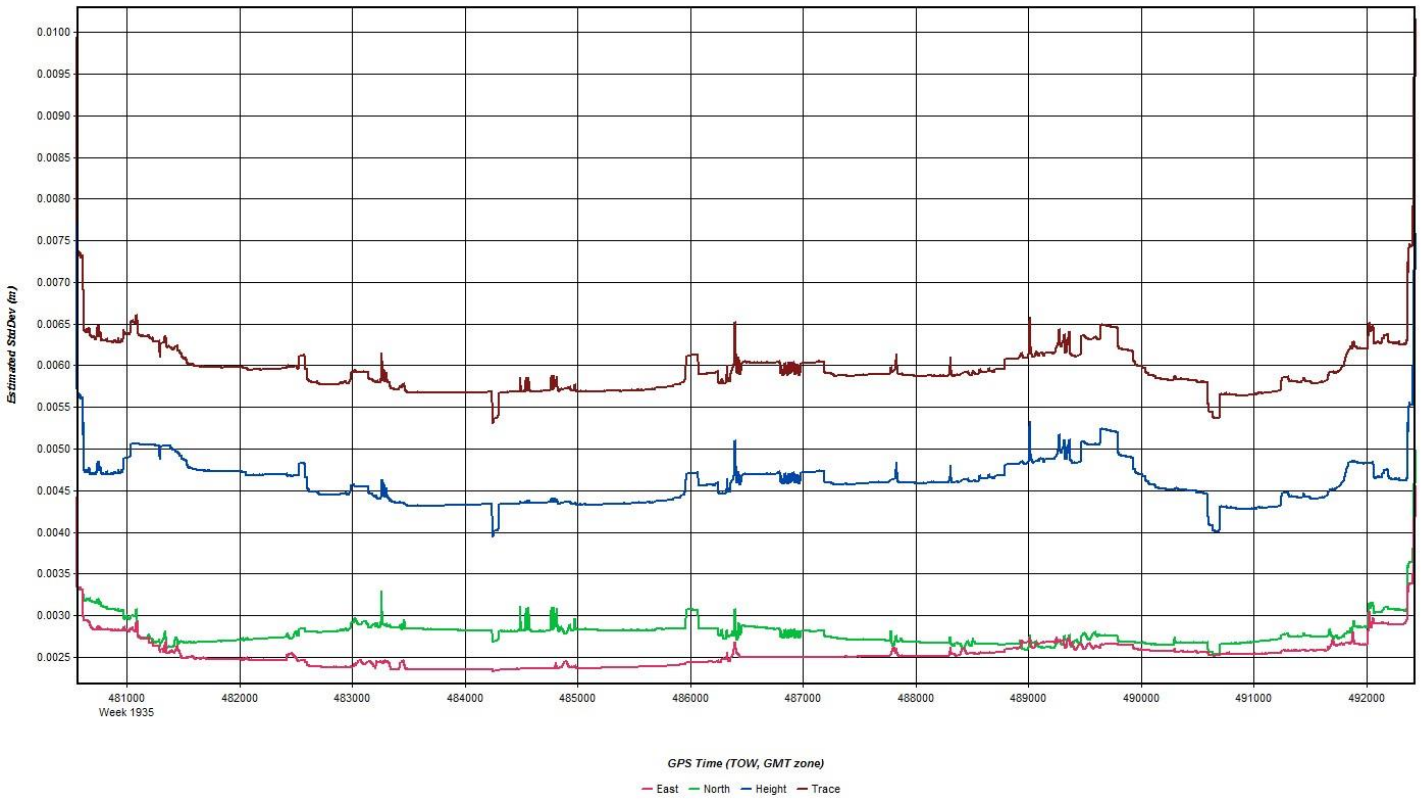


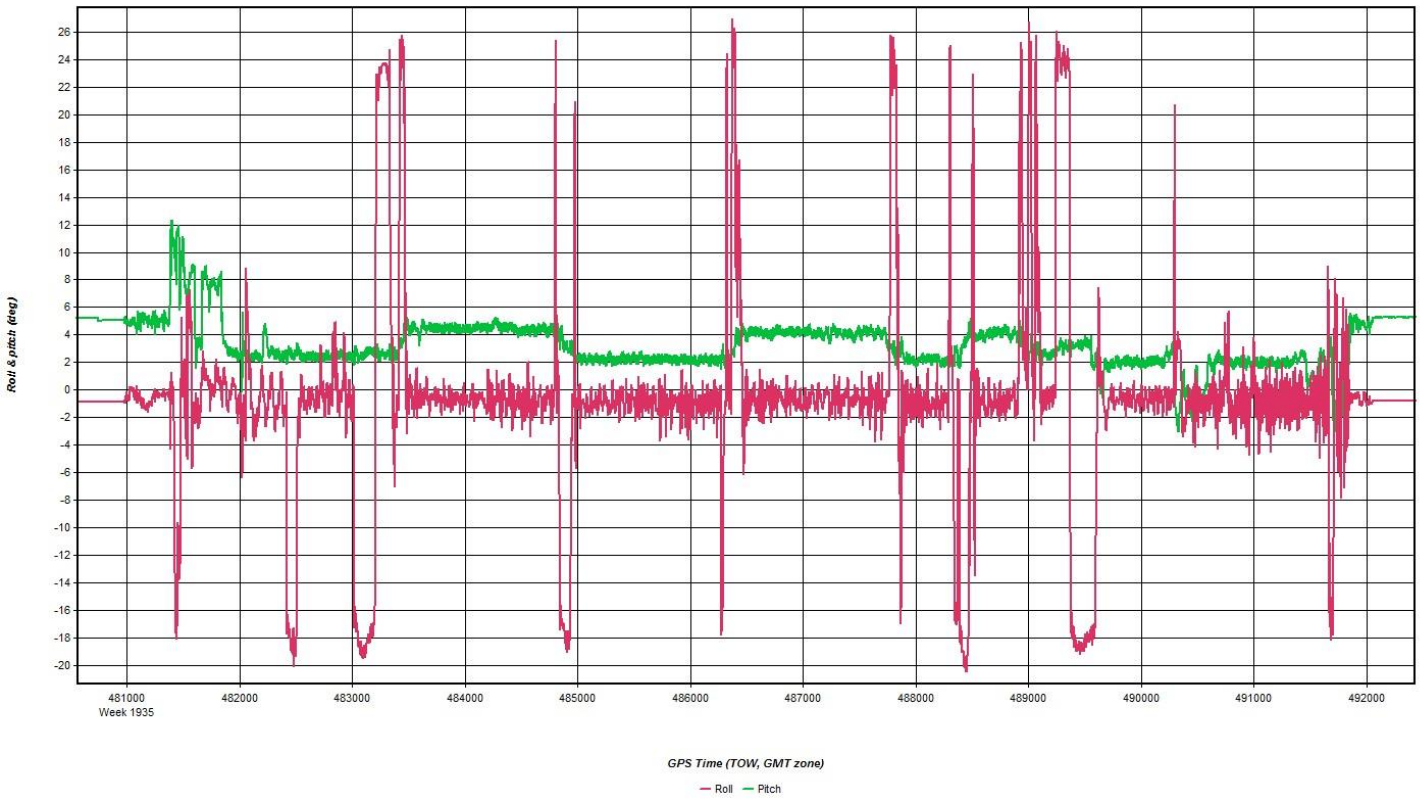

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

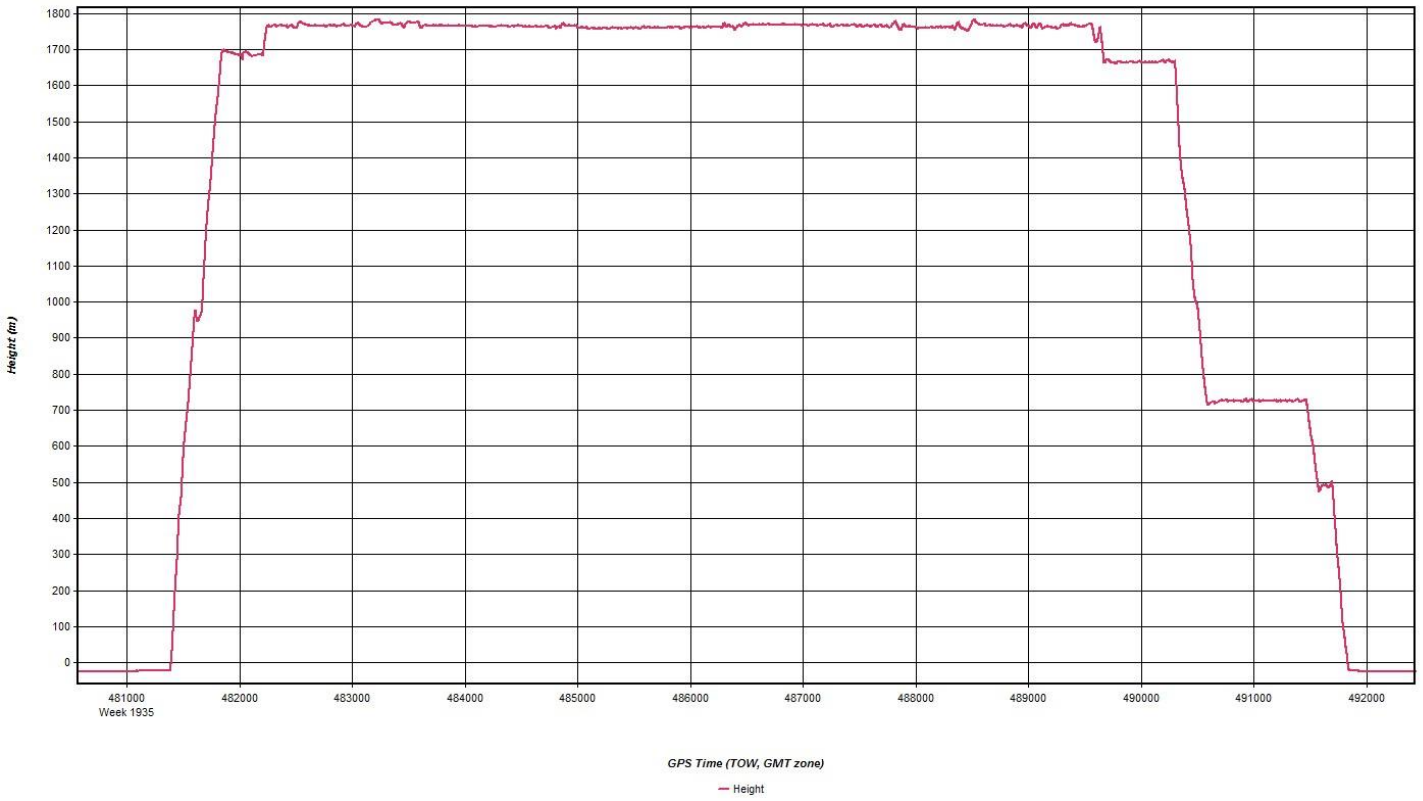

Separation (m)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
East
North
Up

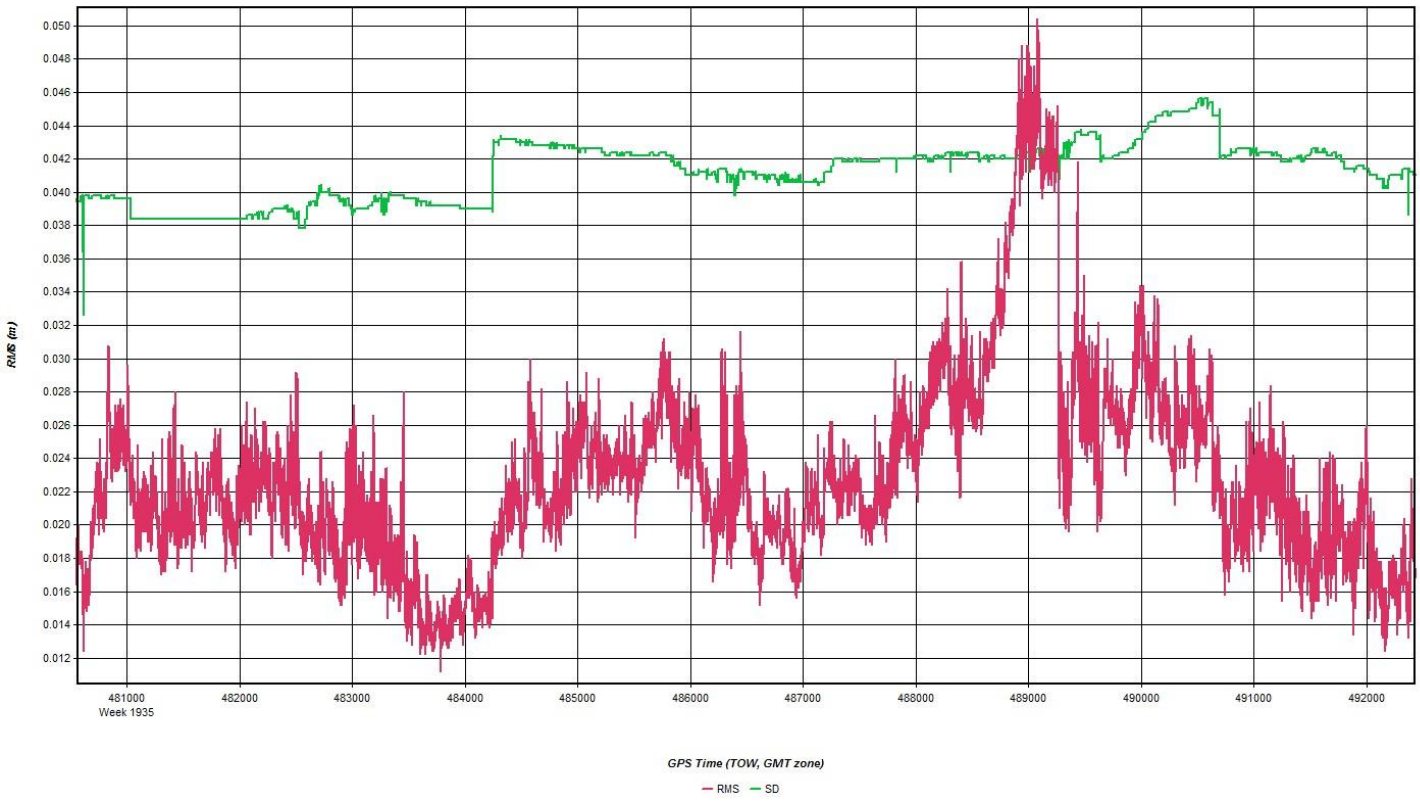

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

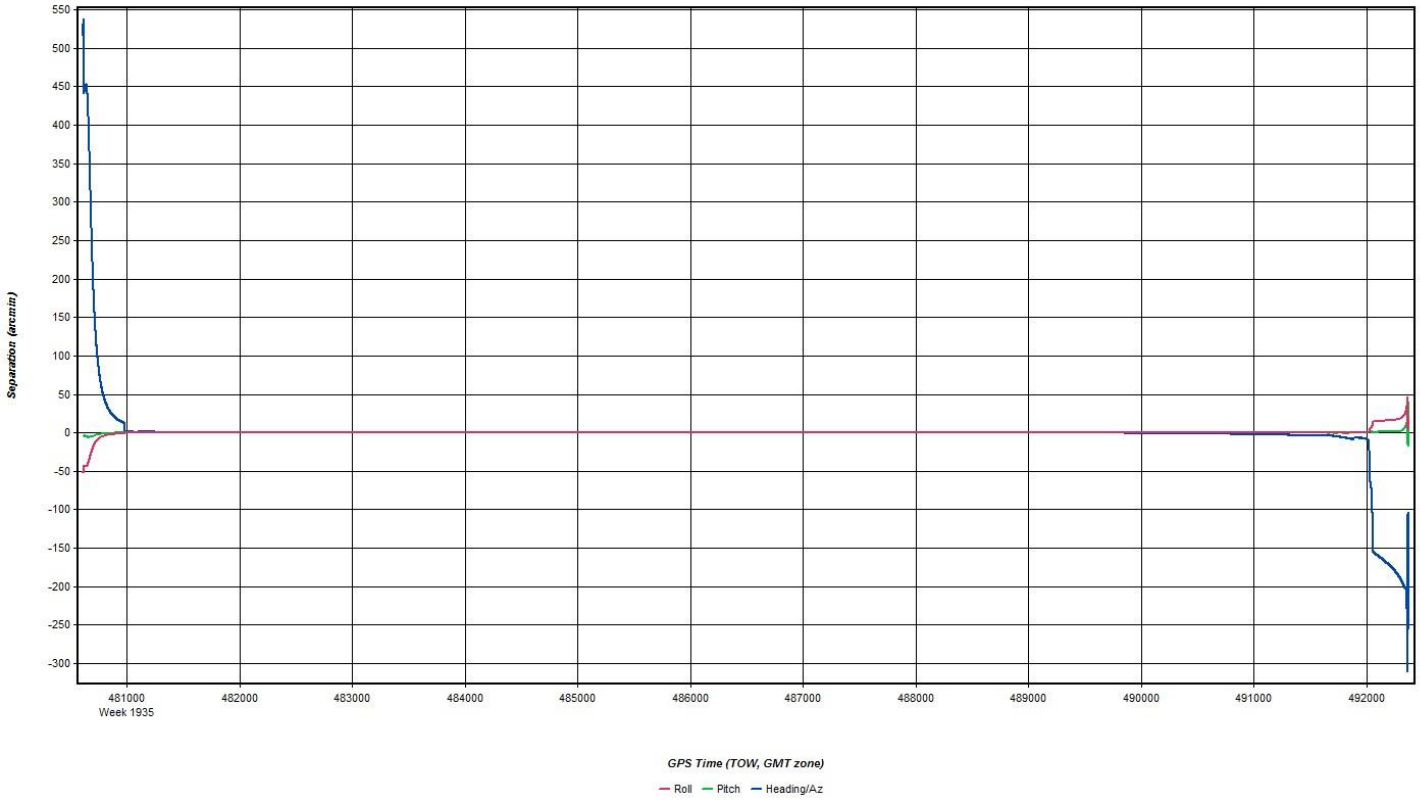

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
PDOP

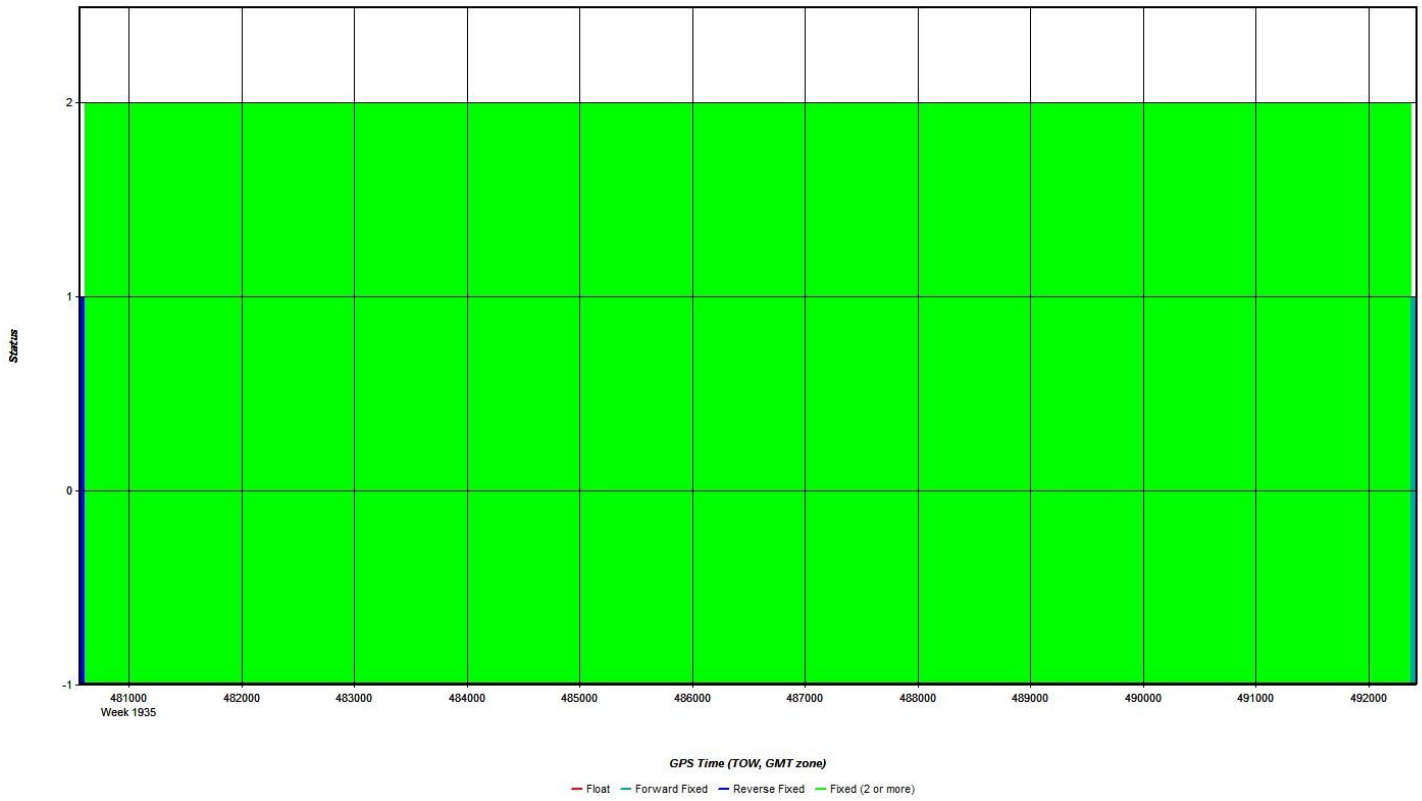

Estimated StdDev (m)
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

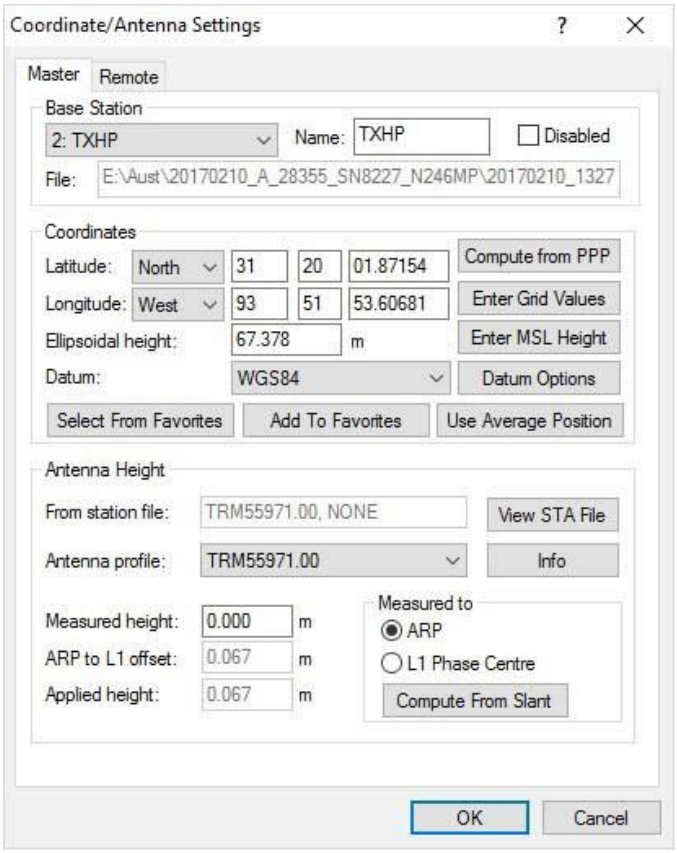

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
Roll
Pitch

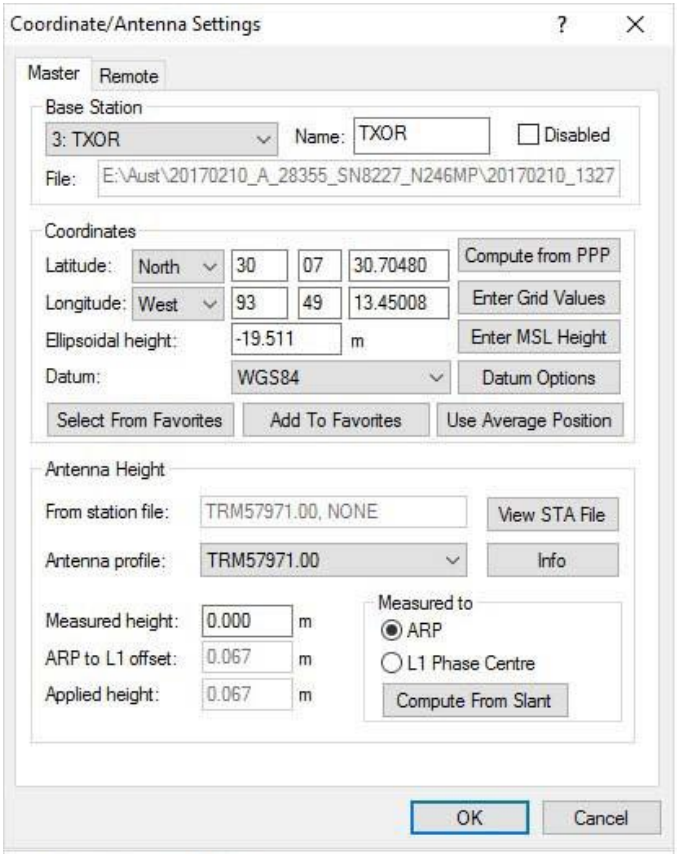

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
RMS
SD

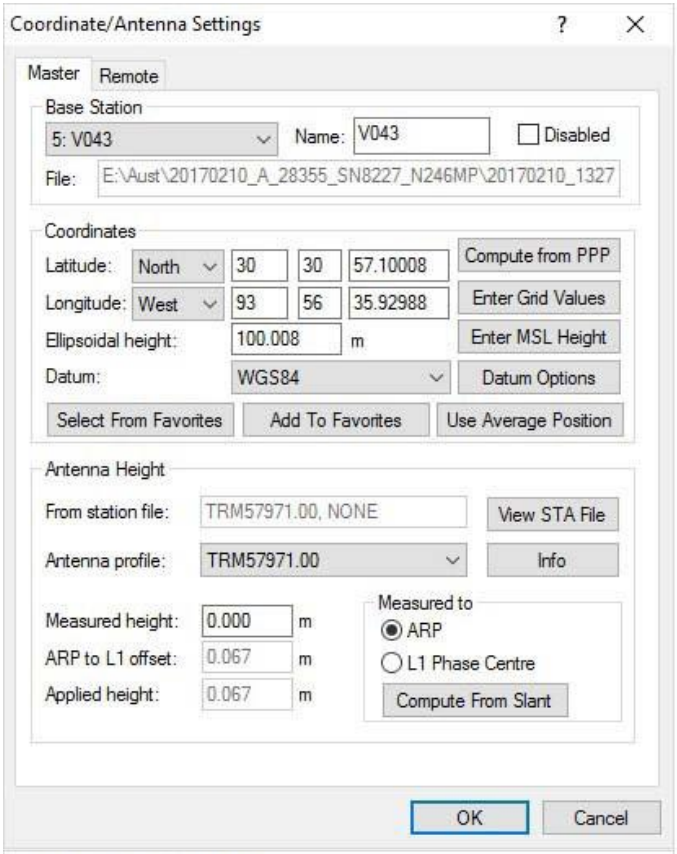

Separation (arcmin)
550
500
450
400
350
300
250
200
150
100
50
0
-50
-100
-150
-200
-250
-300
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

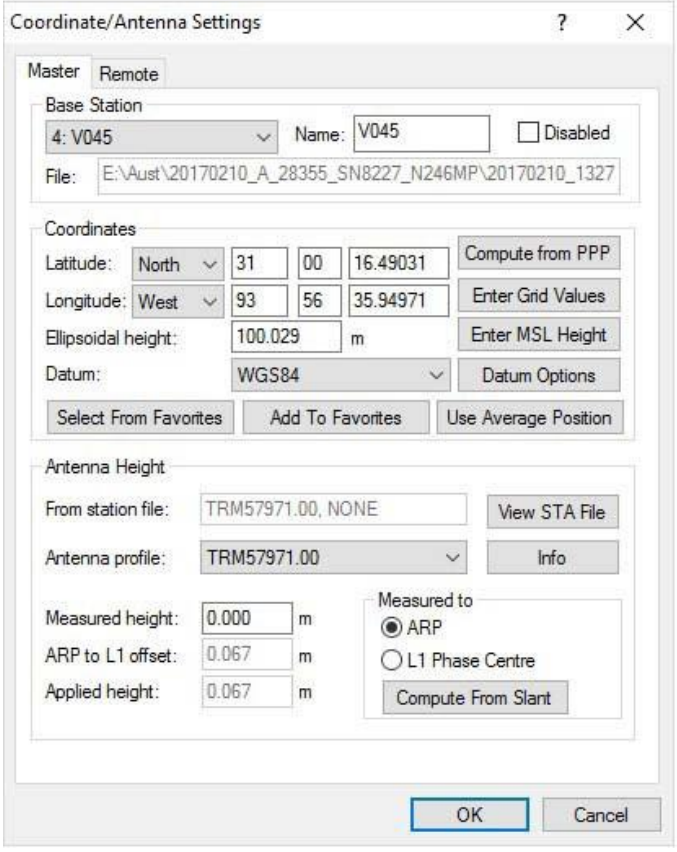

Status
2
1
0
-1
481000
Week 1935
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXHP
Name:
TXHP
Disabled
File:
E:\Aust\20170210_A_28355_SN8227_N246MP\20170210_1327
Coordinates
Latitude:
North
31
20
01.87154
Compute from PPP
Longitude:
West
93
51
53.60681
Enter Grid Values
Ellipsoidal height:
67.378
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM55971.00, NONE
View STA File
Antenna profile:
TRM55971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXOR
Name: TXOR
Disabled
File: E:\Aust\20170210_A_28355_SN8227_N246MP\20170210_1327
Coordinates
Latitude: North 30 07 30.70480
Longitude: West 93 49 13.45008
Ellipsoidal height: -19.511 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Aust\20170210_A_28355_SN8227_N246MP\20170210_1327
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V043
Name: V043
Disabled
File: E:\Aust\20170210_A_28355_SN8227_N246MP\20170210_1327
Coordinates
Latitude: North 30 30 57.10008
Longitude: West 93 56 35.92988
Ellipsoidal height: 100.008 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V045
Name: V045
Disabled
File: E:\Aust\20170210_A_28355_SN8227_N246MP\20170210_1327
Coordinates
Latitude: North 31 00 16.49031
Longitude: West 93 56 35.94971
Ellipsoidal height: 100.029 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-10-17

Life A B C D E Pg 1 of 1

Project: NECHES BASIN LIDAR Proj #: 28355 Flight Mgmt File:

Aircraft: 24bmP Begin Hobbs: 1293.0 End Hobbs: 1296.0 Total: 3 Pilot: R McDonald Co-Pilot: Tech: M Aust

Dep Apt: BPT Dep Time (Lcl): 7:40 (Z): 13:40 Arr Apt: BPT Arr Time (Local): 10:40 (Z): 13:40 Tot Time Aloft:

CORS: Y / N Sta 1: TXNE Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

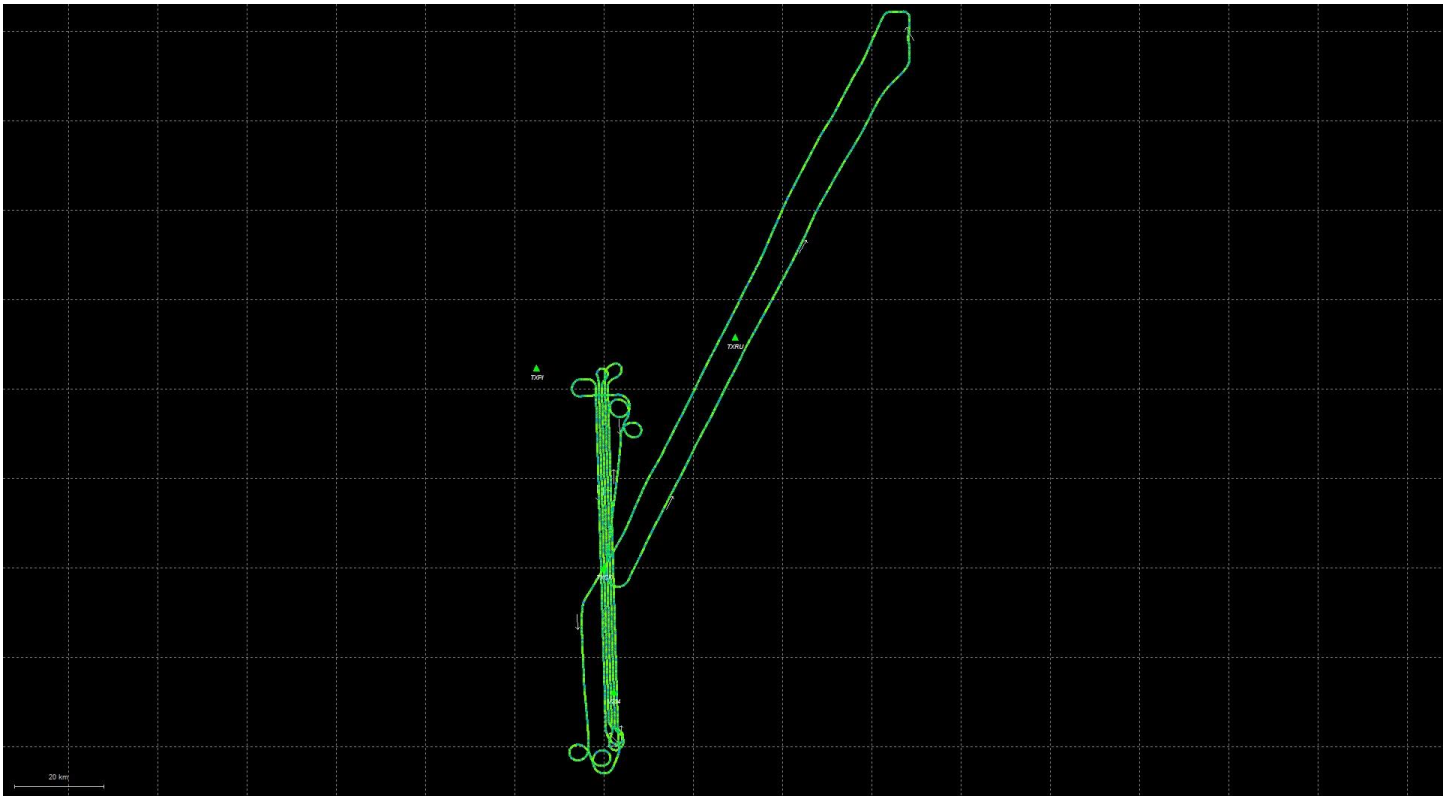
Gd Temp beg: 11 °c End: 13 °c OAT beg: 7 °c End: °c Altimeter begin: 30.27 end: 30.29

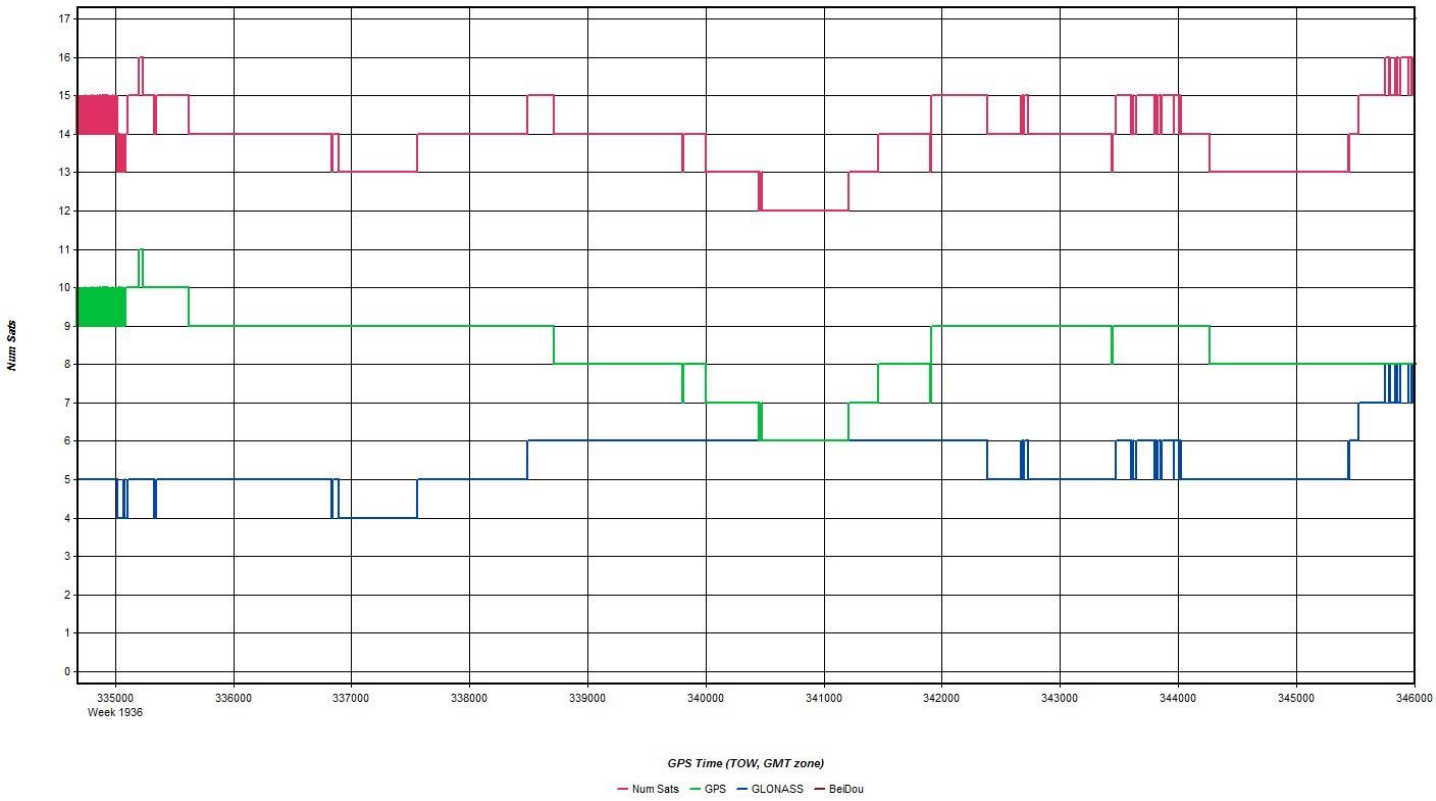
LiDAR	Type ALS80	Serial # 8227	Alt AGL	Alt AMSL 5.8'	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB 455	Storage Name/#
	FOV 34	Scan Freq 56	MpiA Y / N	Pulses In Air	Pulse Rate 311	Power 63	PPSM	End GB	
								Tot GB	

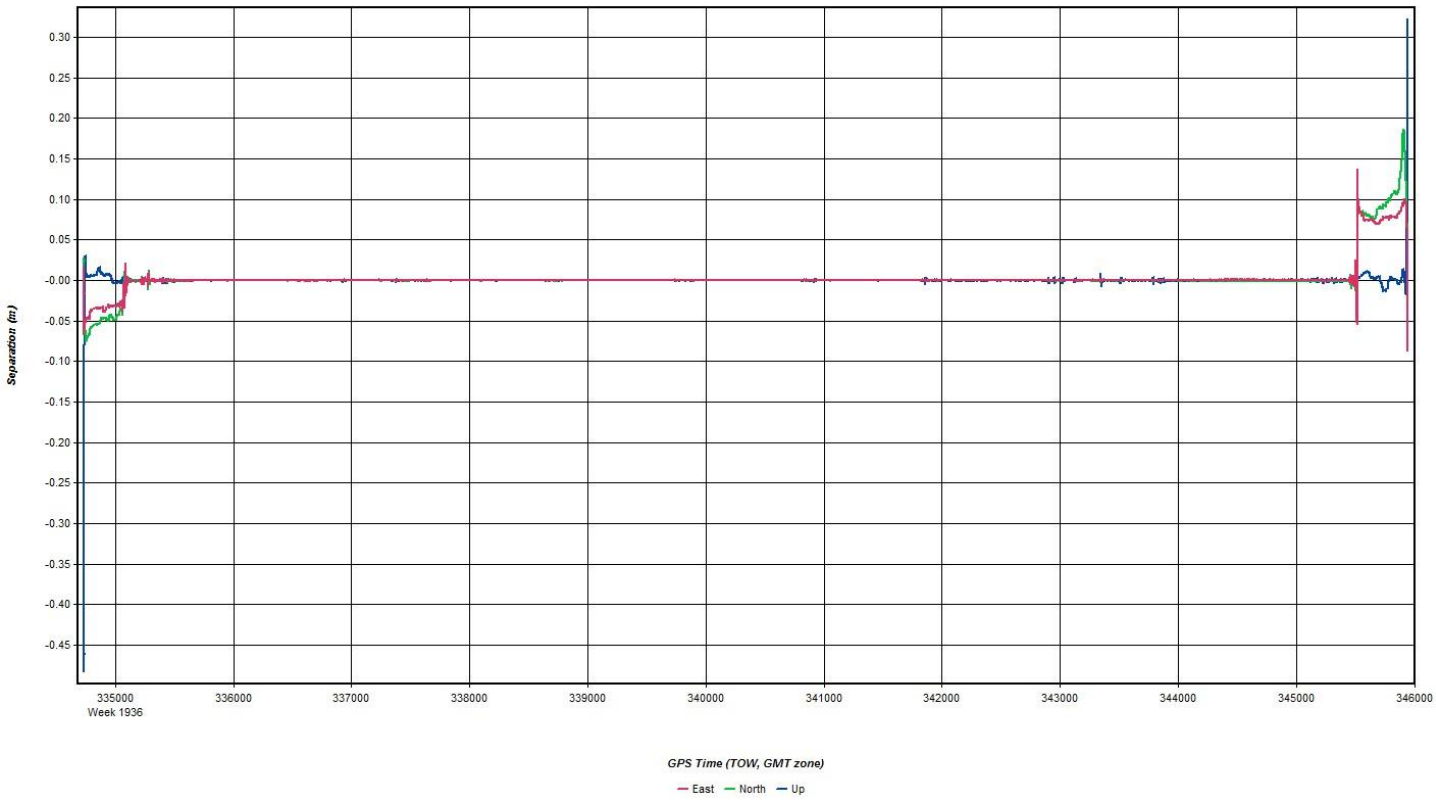
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6070	N	1419	1439	159	1.2/19	5.8			FIGURE 8's 14:15
6069	S	1443	1504	150	1.3/19	5.8			
6068	N	1508	1528	158	1.1/21	5.8			
6071	S	1531	1537	146	1.3/19	5.8			REFLIGHT → NORTH 18 MILES
6072	N	1542	1449	159	1.1/21	5.8			REFLIGHT → NORTH 18 MILES
TIE	W	1551	1553	150	1.1/22	5.8			MANUAL CROSS FLIGHT - SOME CLOUDS ON THE LINE
									FIGURE 8's 15:55

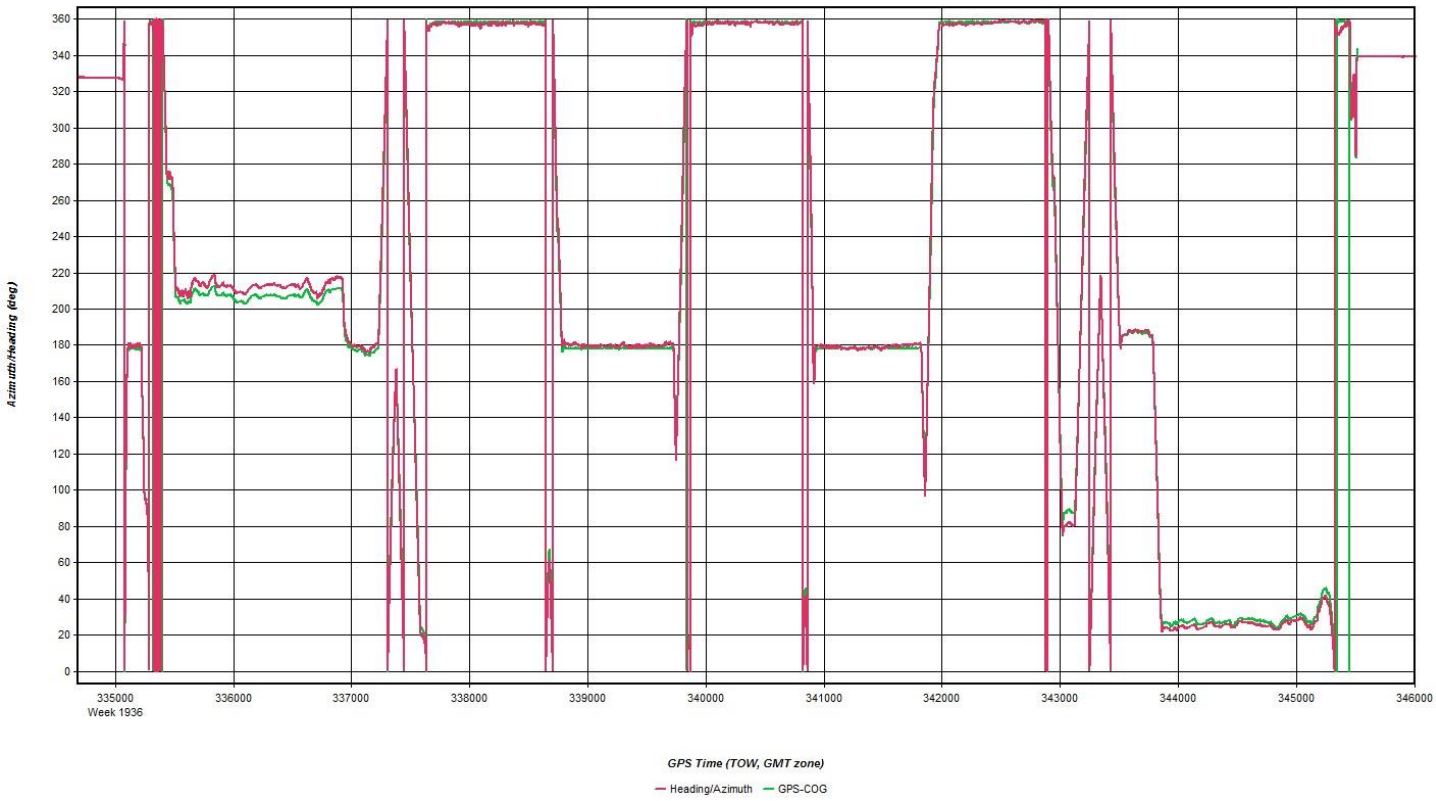
Total Proj Lines:	Lines Flown:	Lines Remain:	Online Time: 1.5	Mob Time: 1.5	Notes:

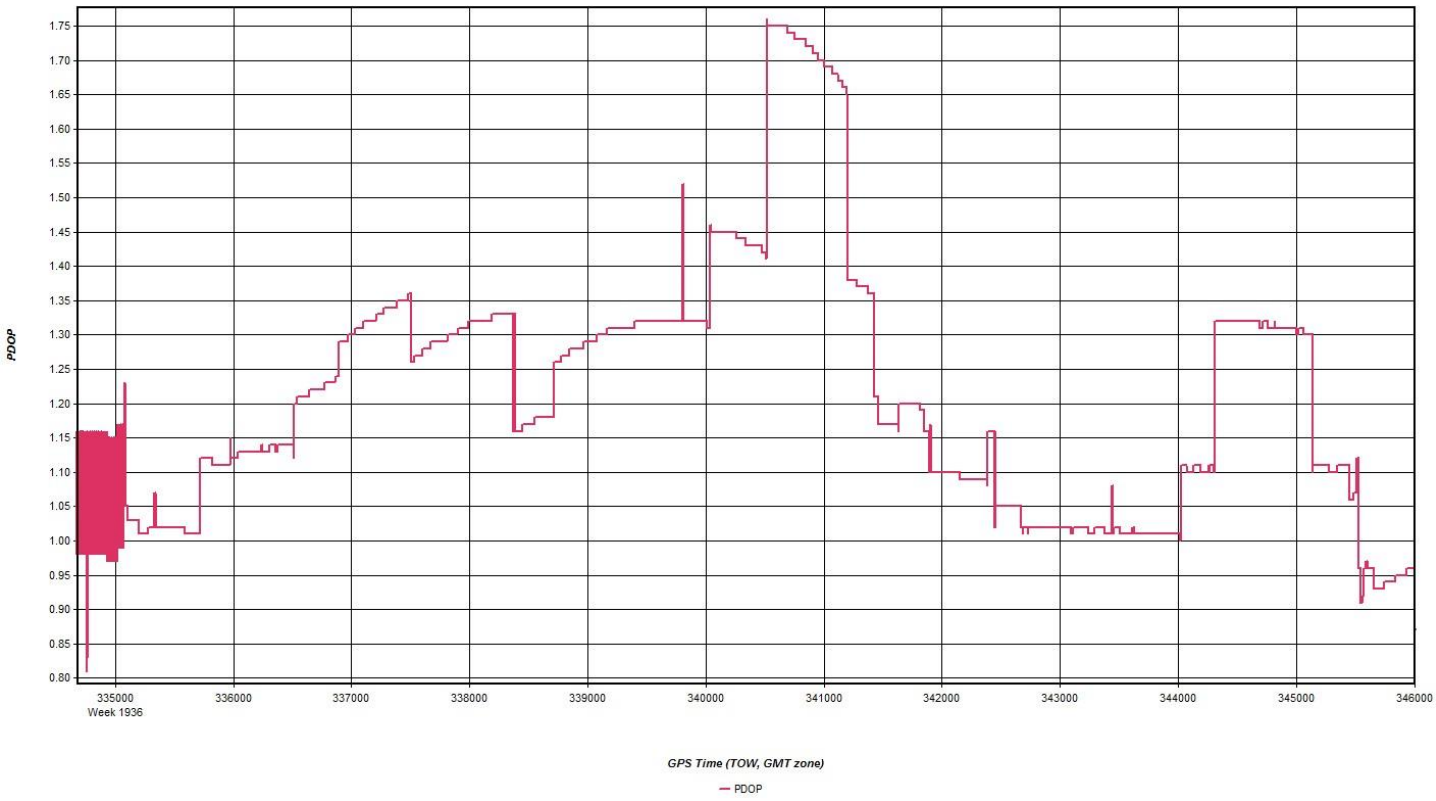
Feb 15, 2017-A (N812TB, SN7178)

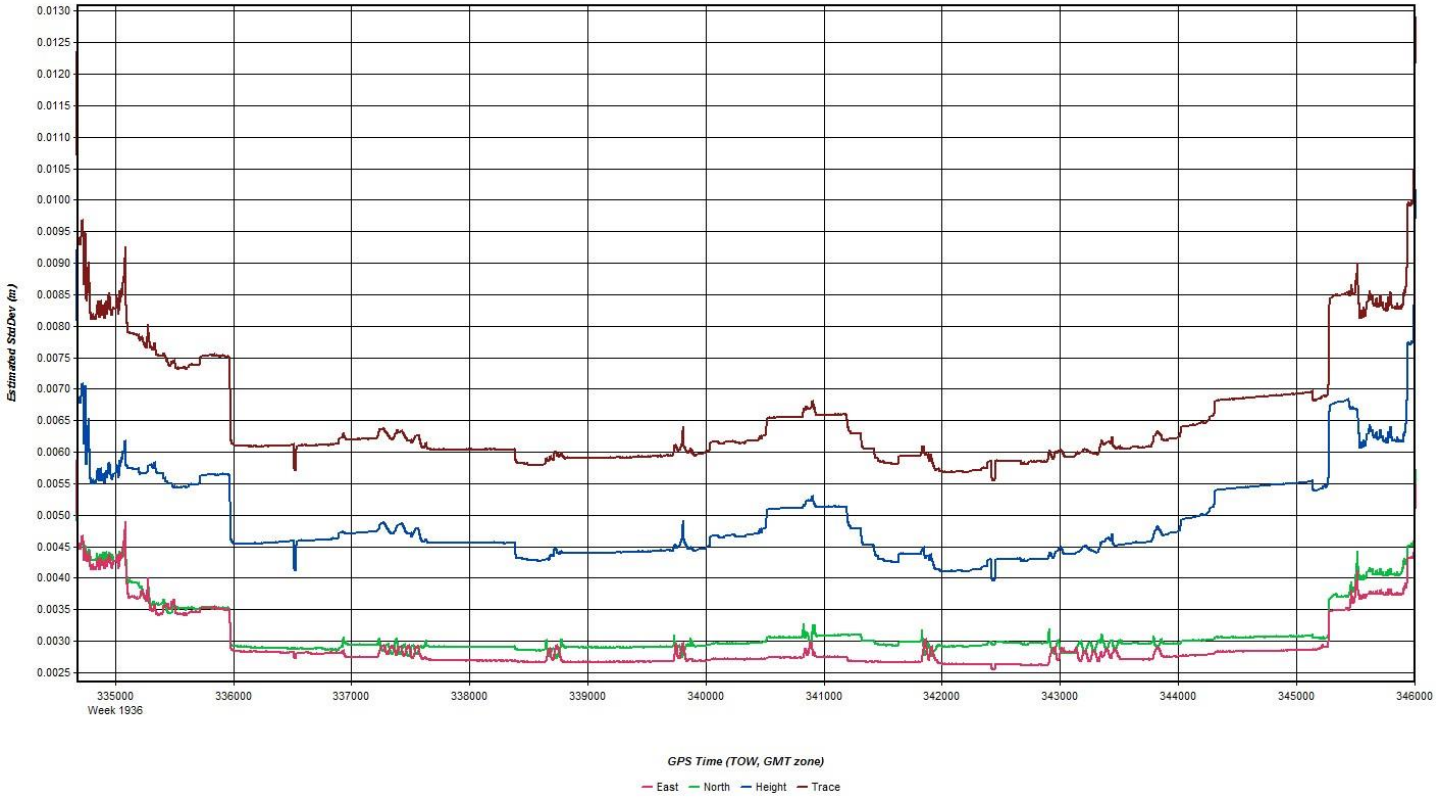


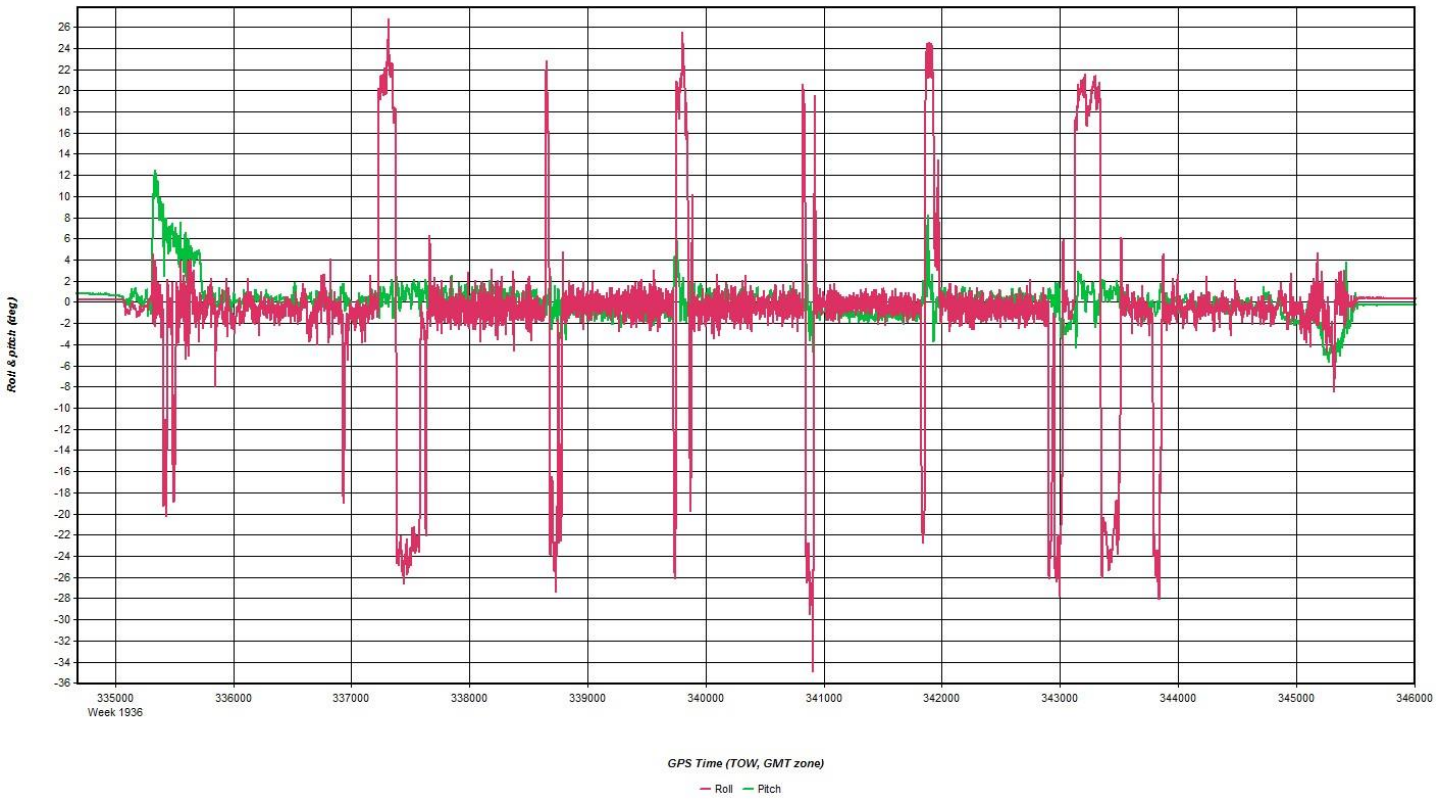

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

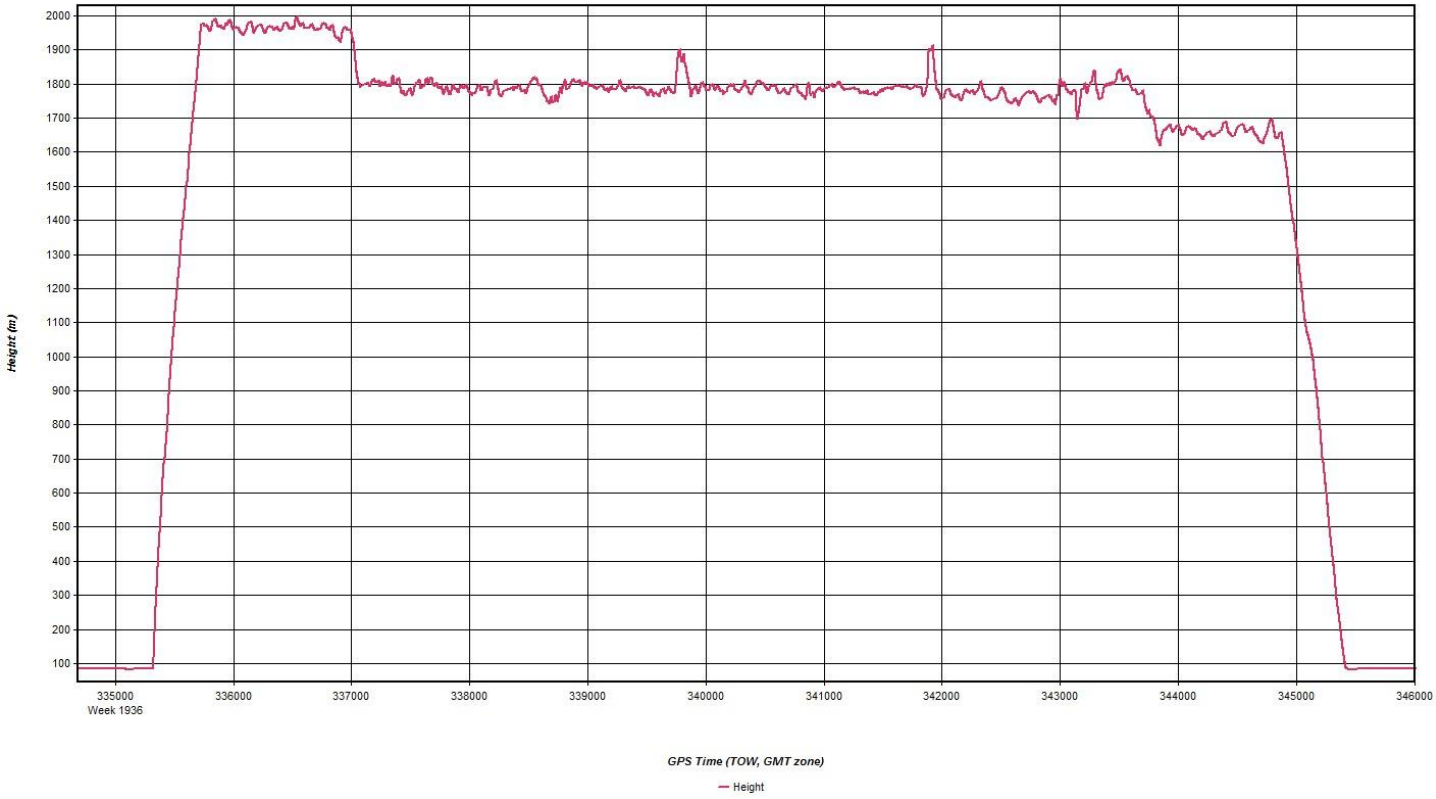

Separation (m)
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
East
North
Up

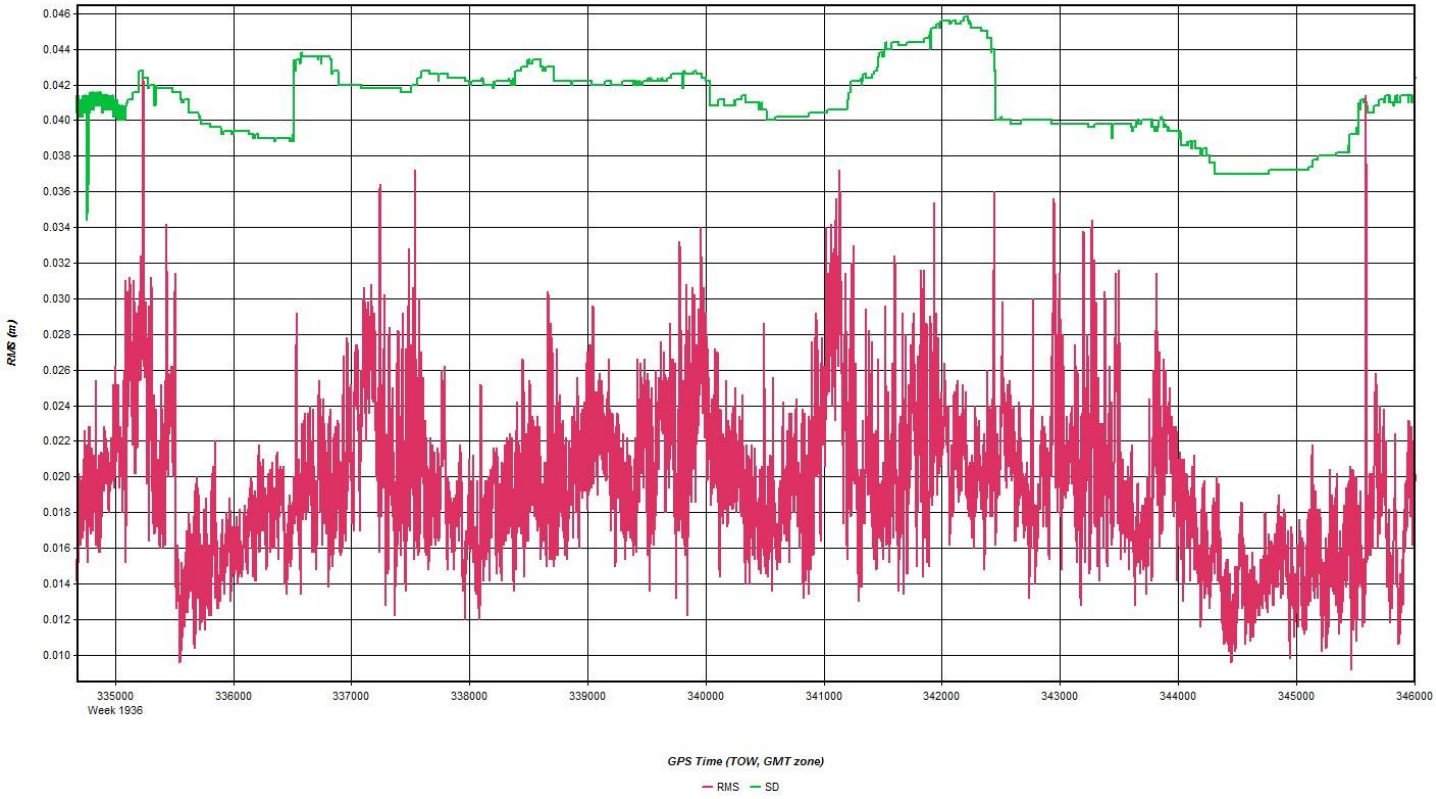

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

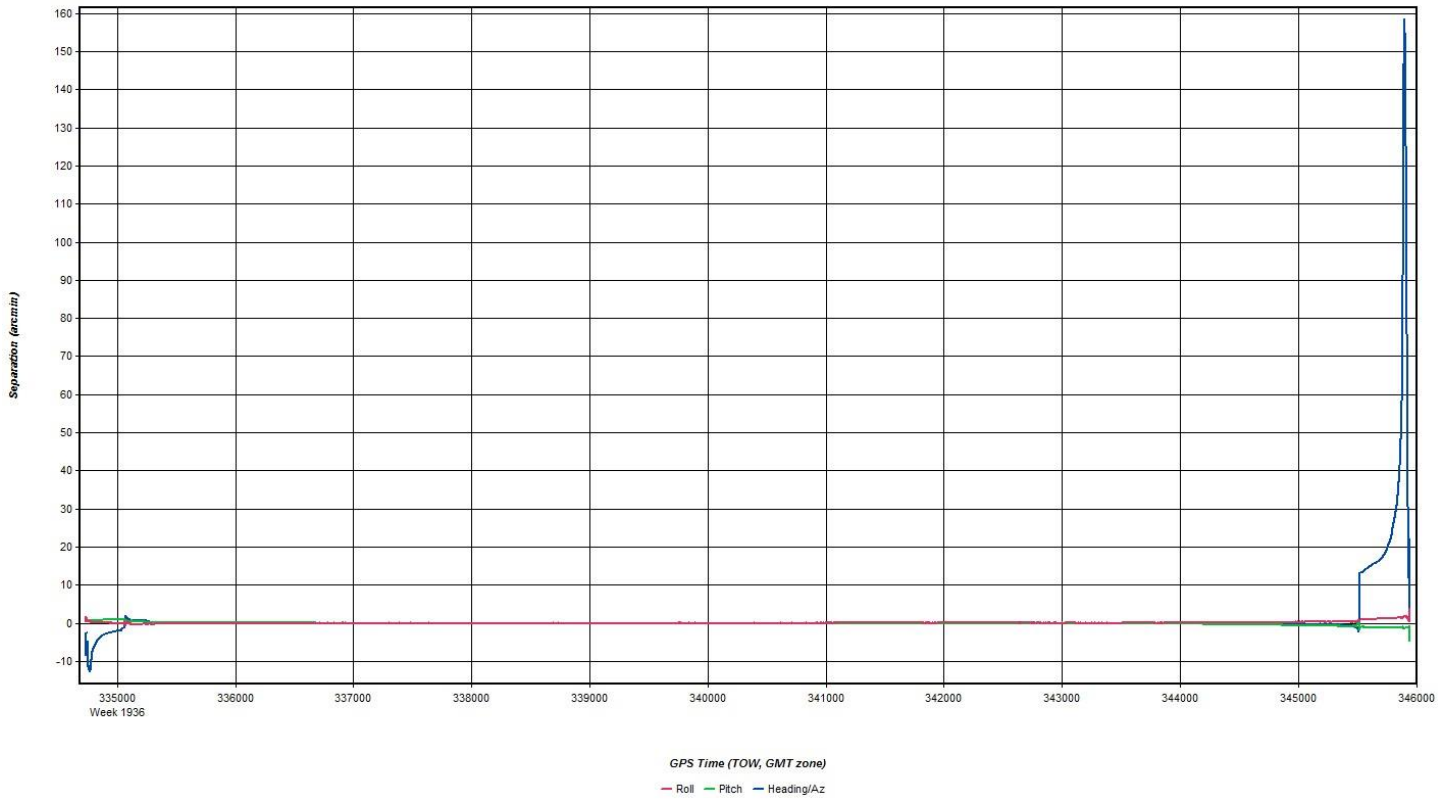

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
PDOP

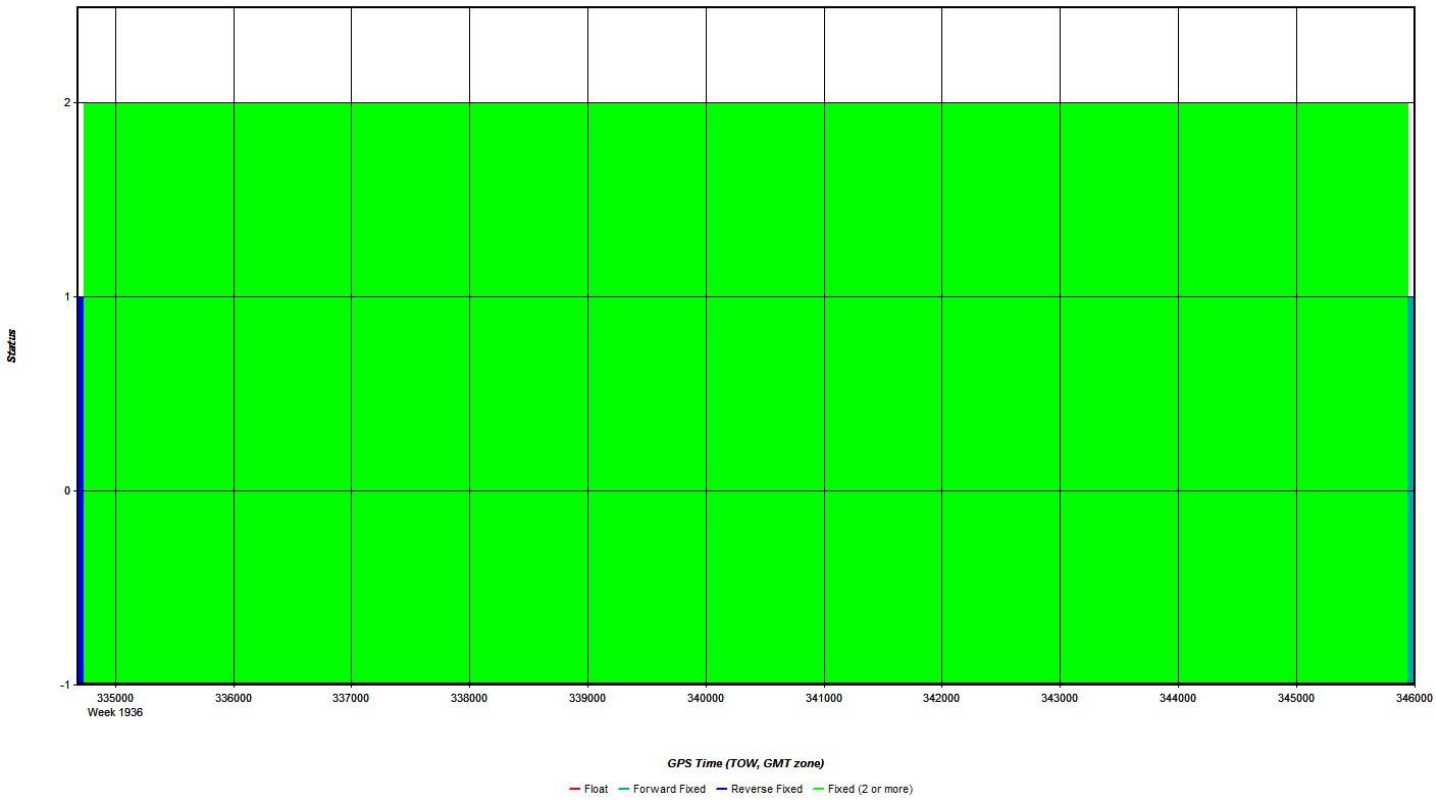

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

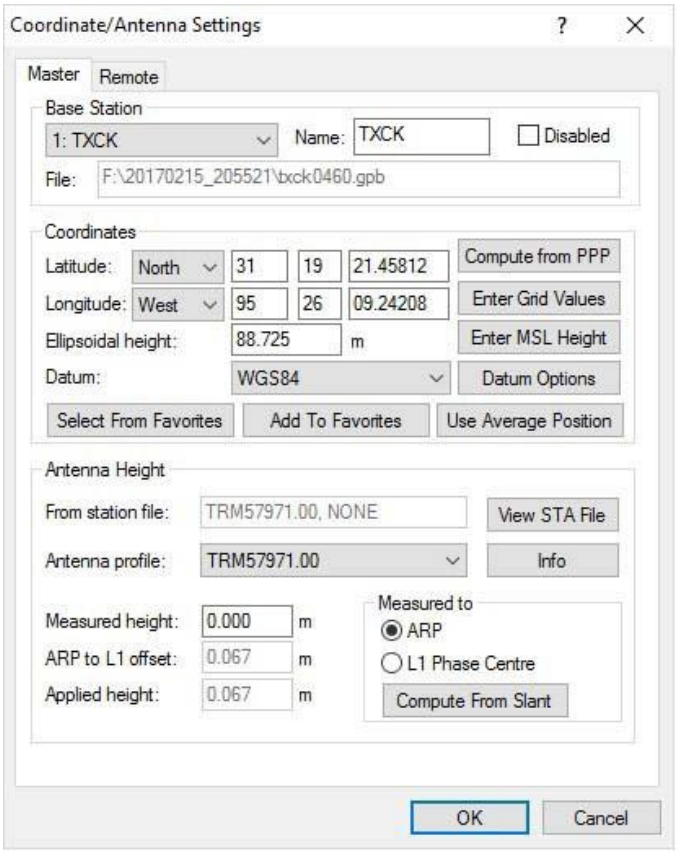

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
Roll
Pitch

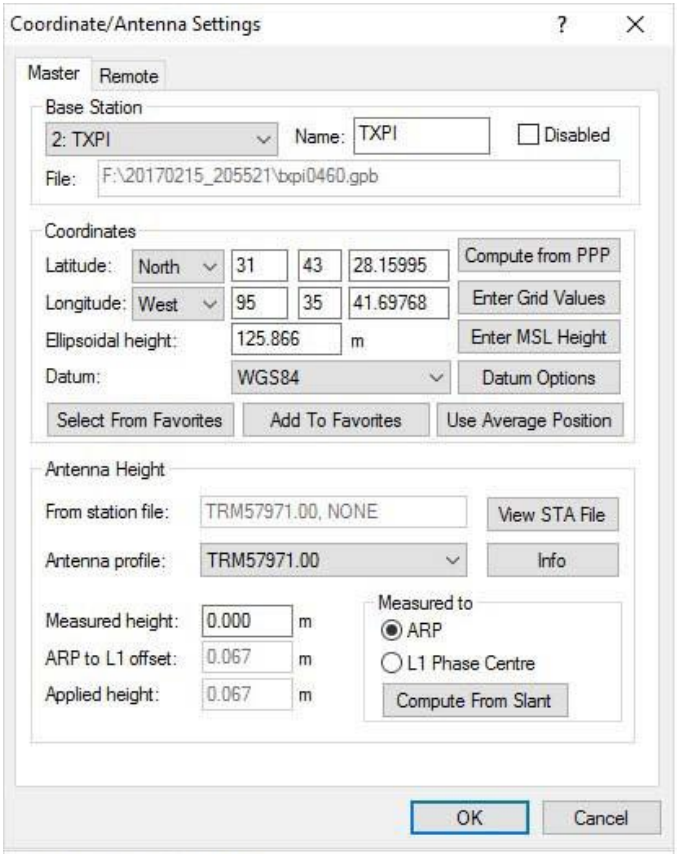

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
Height

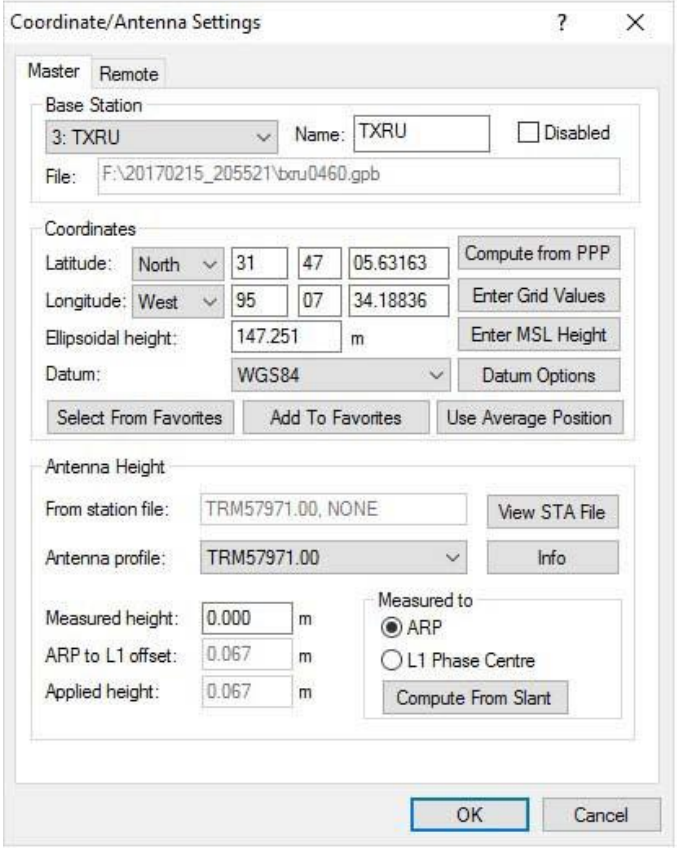

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
RMS
SD

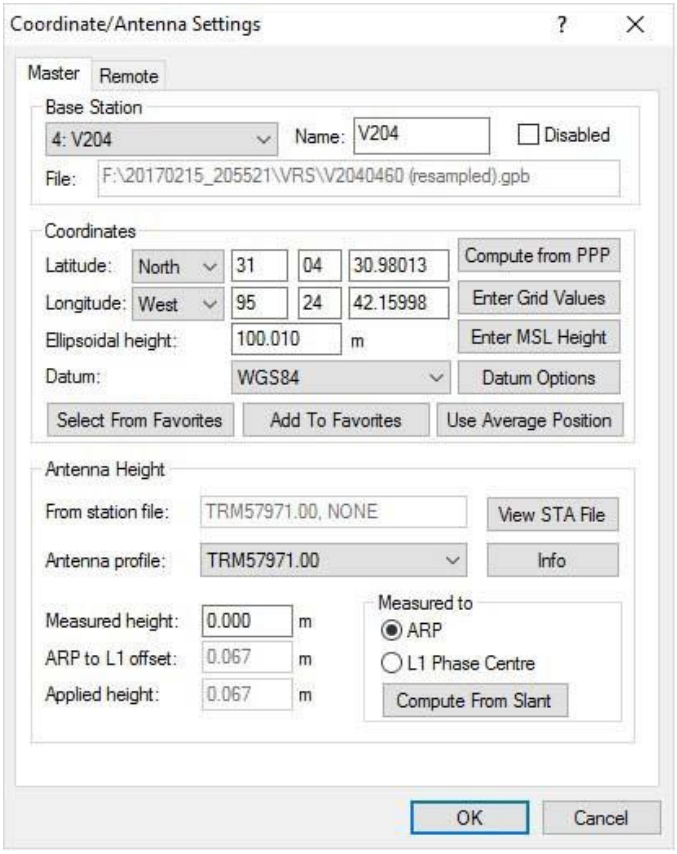

Separation (arcmin)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
335000
Week 1936
336000
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCK
Name: TXCK
Disabled
File: F:\20170215_205521\txck0460.gpb
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXPI
Name: TXPI
Disabled
File: F:\20170215_205521\txpi0460.gpb
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXRU
Name: TXRU
Disabled
File: F:\20170215_205521\txru0460.gpb
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V204
Name: V204
Disabled
File: F:\20170215_205521\VRS\V2040460 (resampled).gpb
Coordinates
Latitude: North 31 04 30.98013
Longitude: West 95 24 42.15998
Ellipsoidal height: 100.010 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 02/15/17 Lift: (A) B C D E Pg 1 of 1

Project: USGS NECHES BASIN Proj #: 28355 Flight Mgmt File: 20170215_205521

Aircraft: N73TM Begin Hobbs: 6544.2 End Hobbs: 6551.1 Total: 6.9 Pilot: JAMON Co-Pilot: JOSEY Tech: MIKE A. TOM P.

Dep Apt: SBM Dep Time (Lcl): 9:30 (Z): Arr Apt: Arr Time (Local): 29.88 (Z): Tot Time Aloft:

CORS: Y / N Sta 1: TXCK Sta 2: TXCK Flyovers: Y / N If Y, times: Sta1) 21:34 Sta2) 23:29

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 25 °c End: °c OAT beg: °c End: °c Altimeter begin: end:

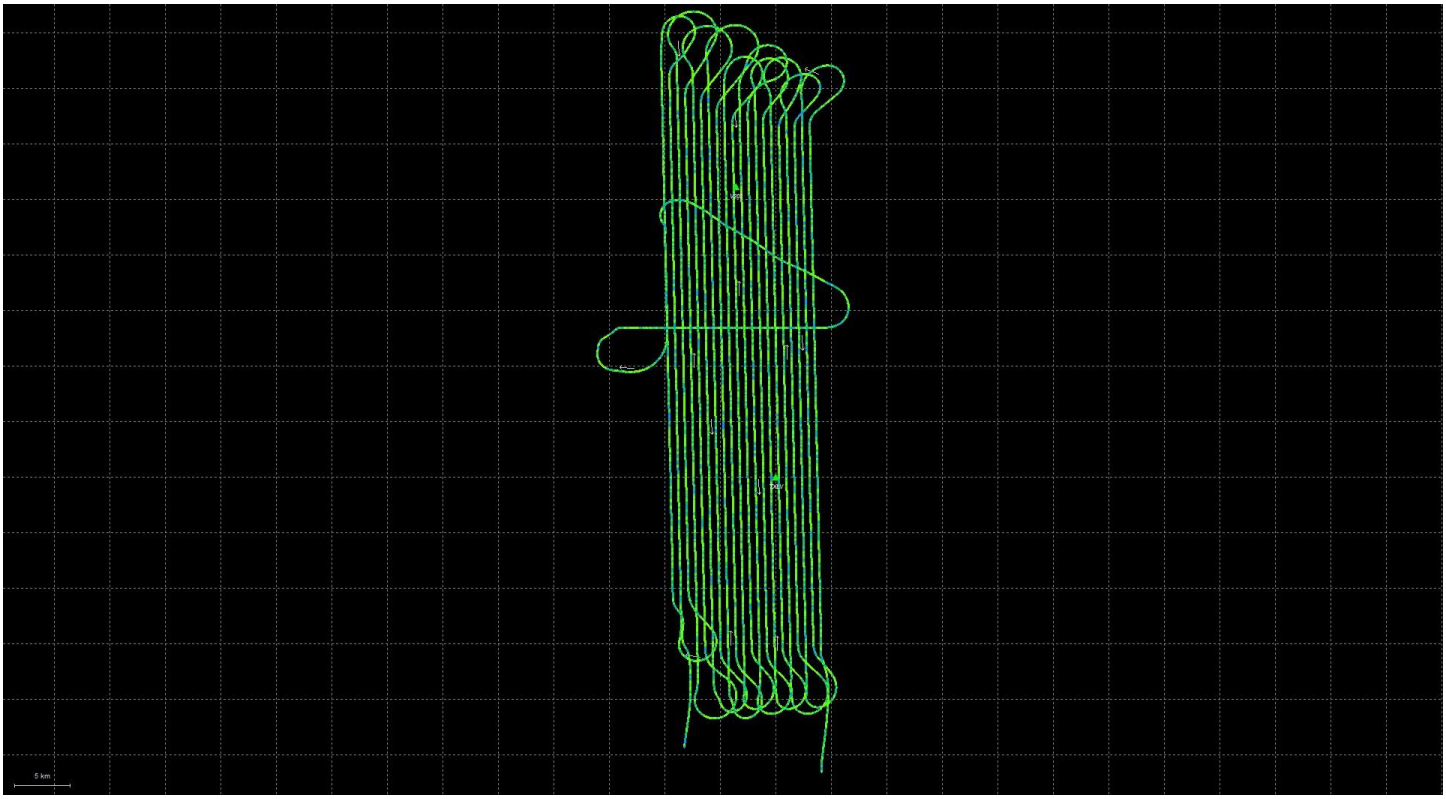
LiDAR	Type ALS-70	Serial # 7178	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	Storage Name/#
	FOV 34	Scan Freq 57.3	MpiA (Y) / N	Pulses In Air	Pulse Rate 312	Power 100%	PPSM 3.5+	End GB	
								Tot GB	

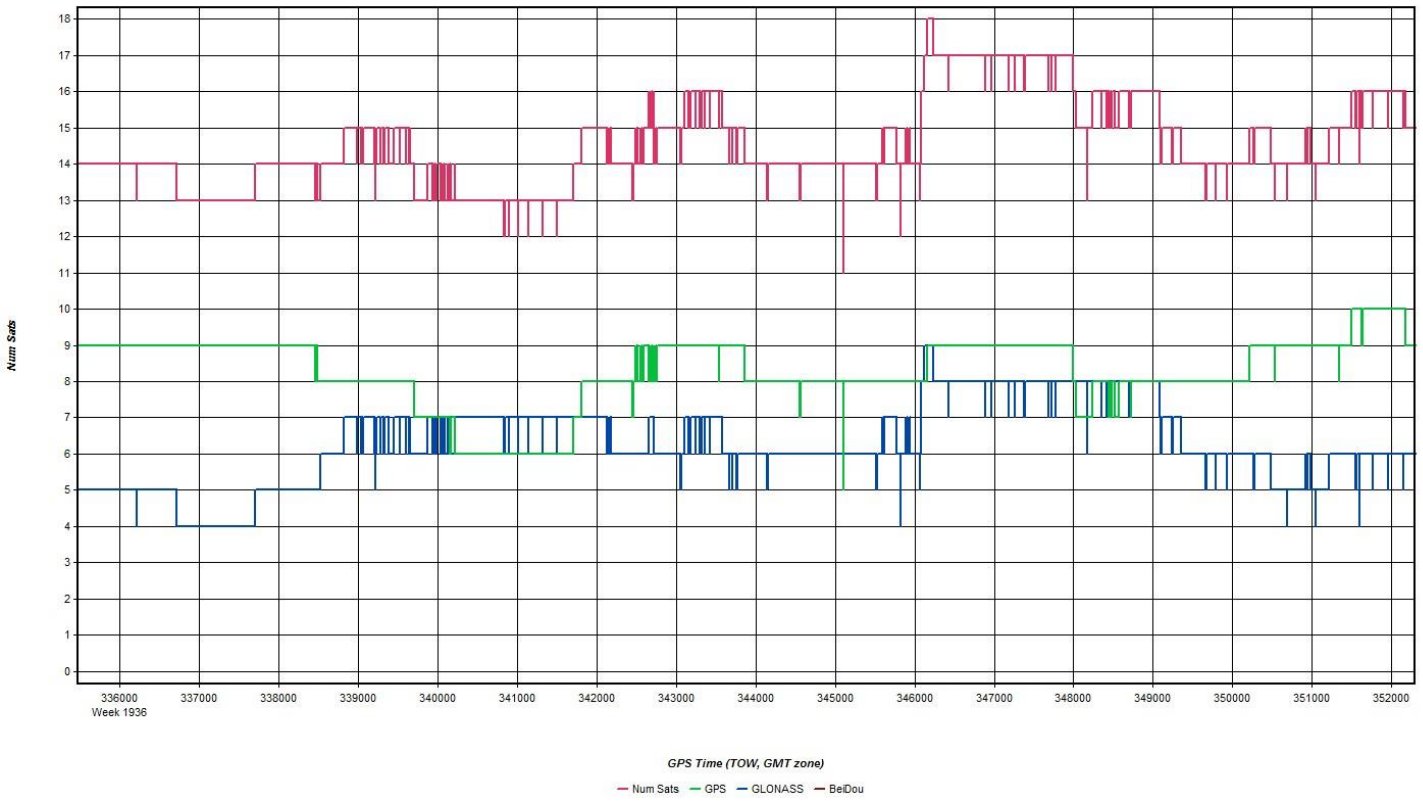
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.	
		09:30	11:42						FERRY: SBM → JEF	2.2
		12:06	2:36						FERRY: JEF → GGG	2.5
		2:54	3:48						FERRY: GGG → ~~SITE~~ TXCK → SITE	0.9
1060	(S) N	21:48	22:03	150	1.3/14	5905			808	
1059	S	22:06	22:21	150+	1.2/14	"			807	
1058	N	22:24	22:40	150	1.1/18	5931			806	
1057	S	22:42	22:54	150+	1.2/18	5922			805	
1056	N	22:59	23:14		1.1/17	5918			804	
XFLT	E	23:17	23:18							
		5:30	6:12						FERRY: SITE → TXCK → GGG	0.7
										6.3
									SHIP DRIVE: PASSPORT E26J	

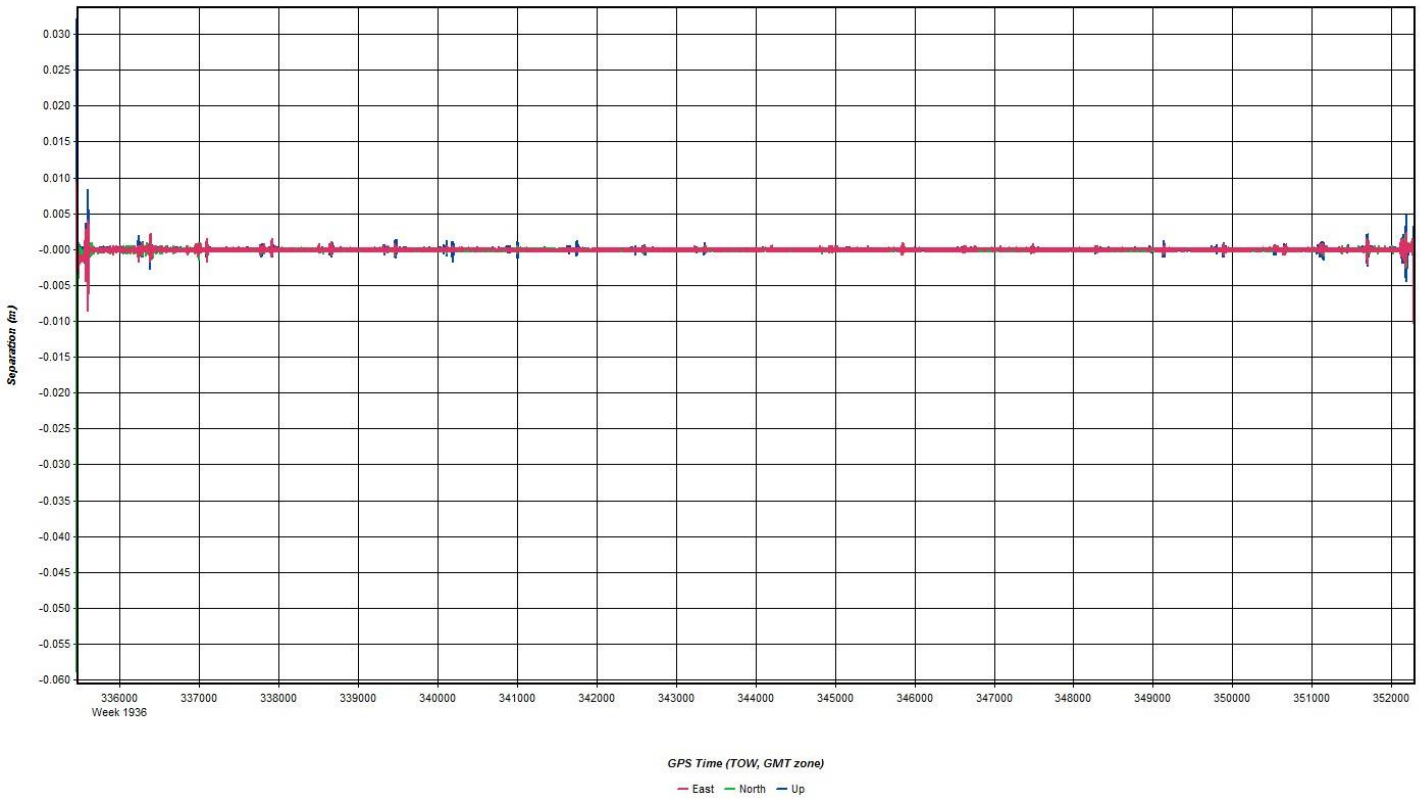
Total Proj Lines:	Lines Flown: 5	Lines Remain:	On Line Time: 1.8	Mob Time: 6.3	Notes:

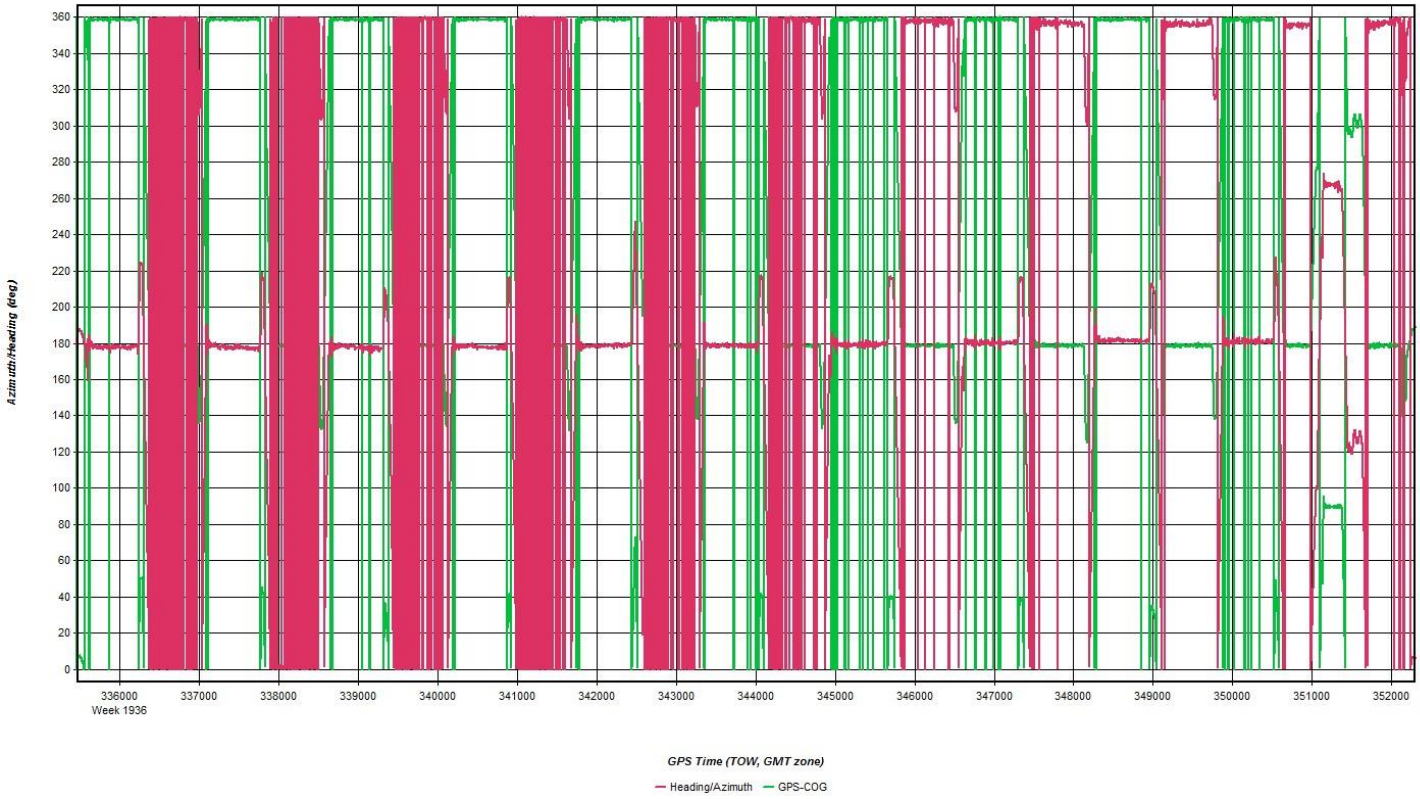
30,022 | 144 | 243,119,179,076

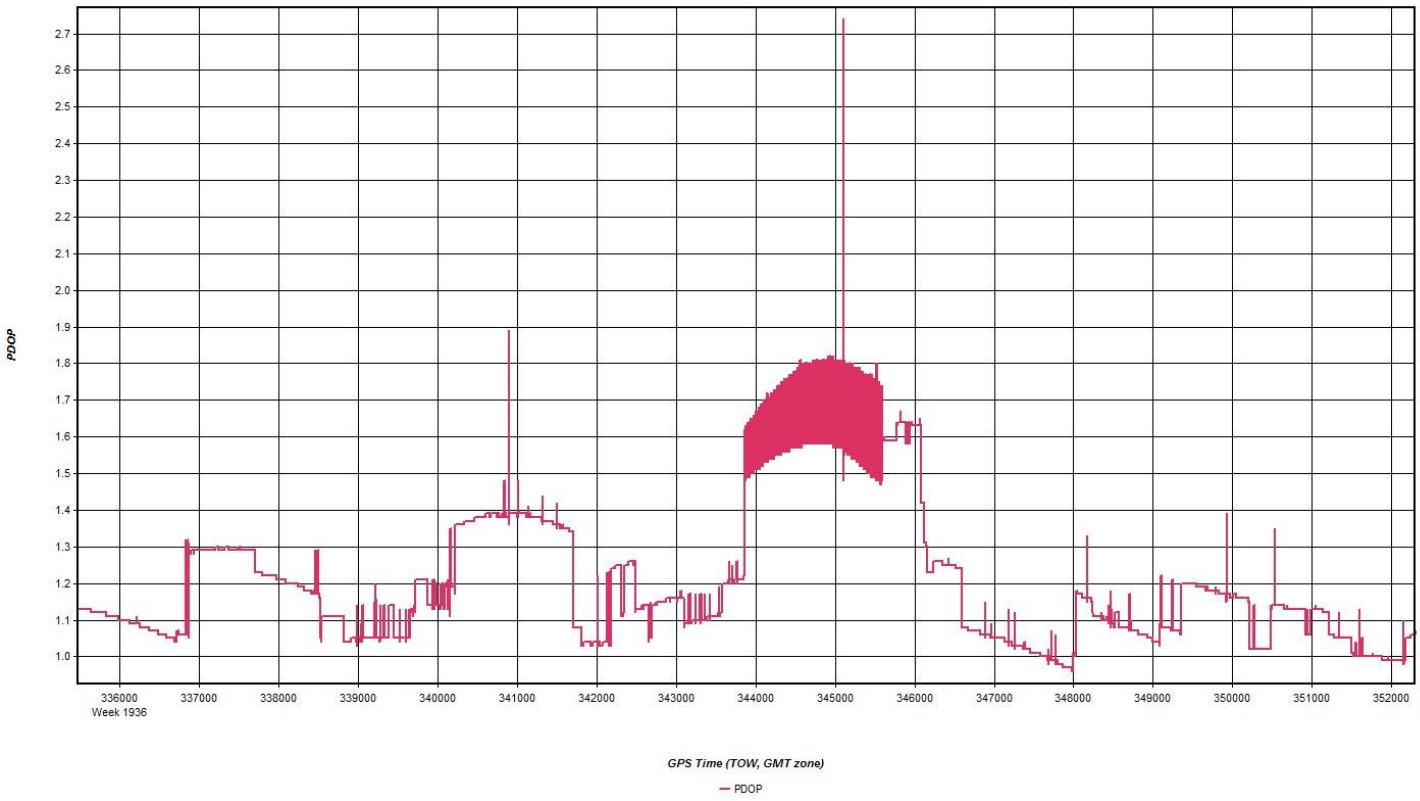
Feb 15, 2017-A (SN7229)

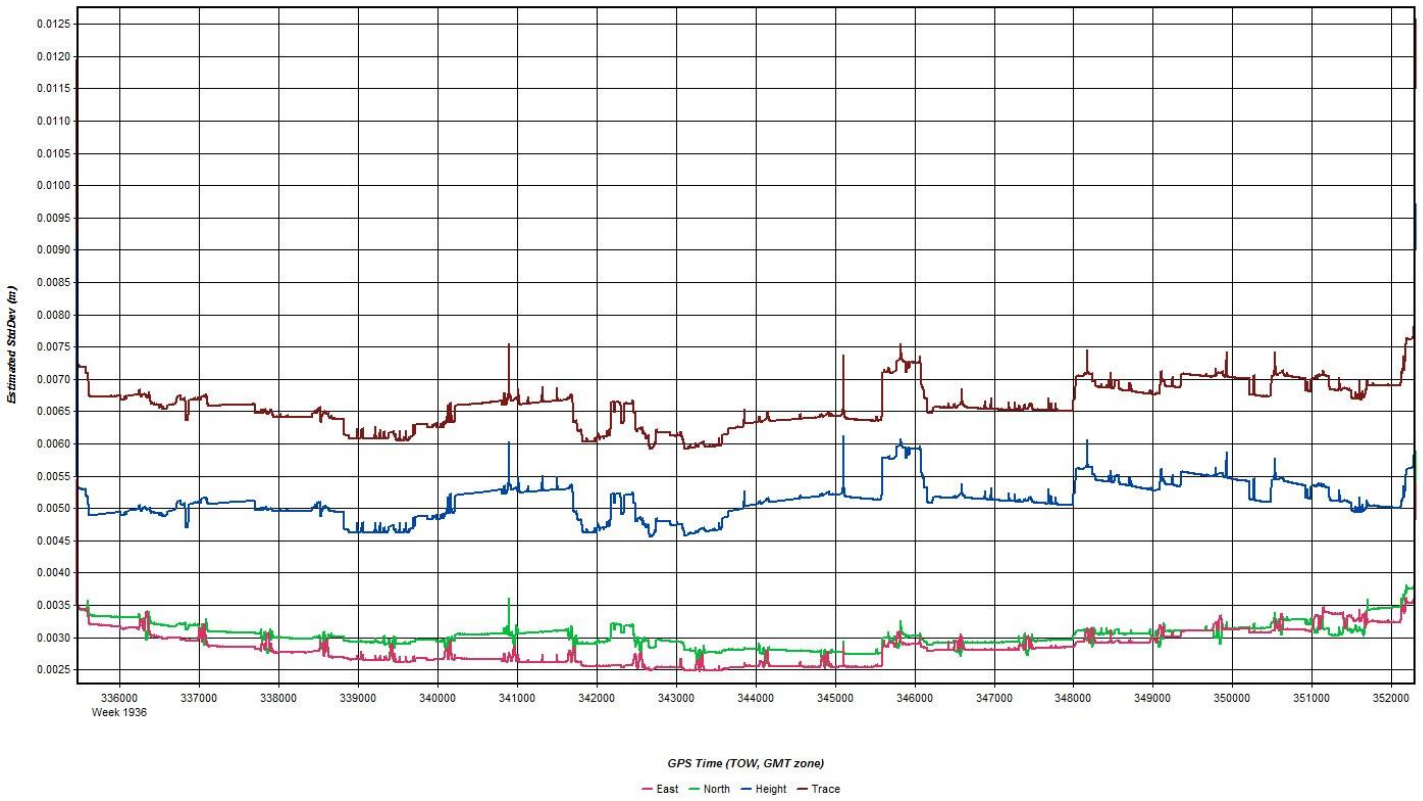


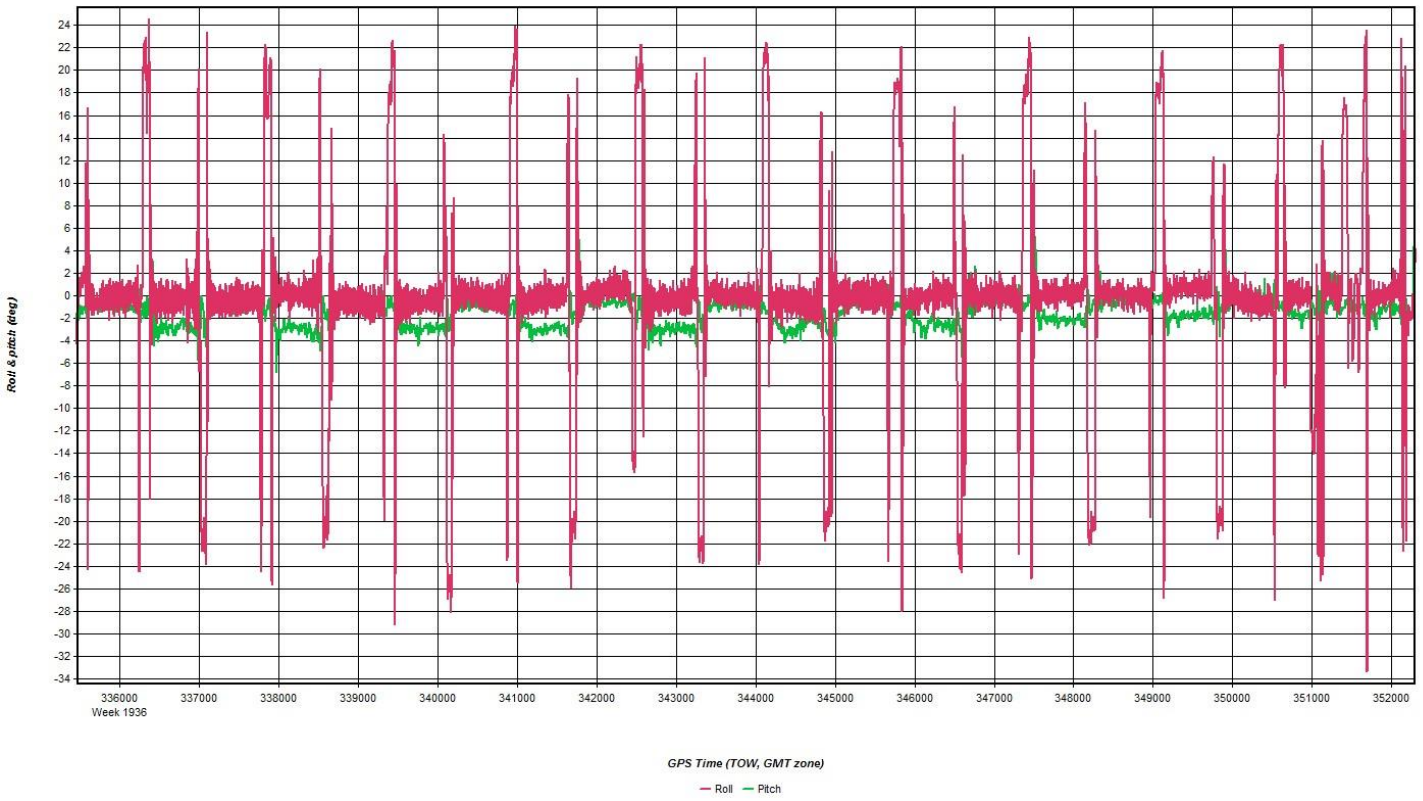

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

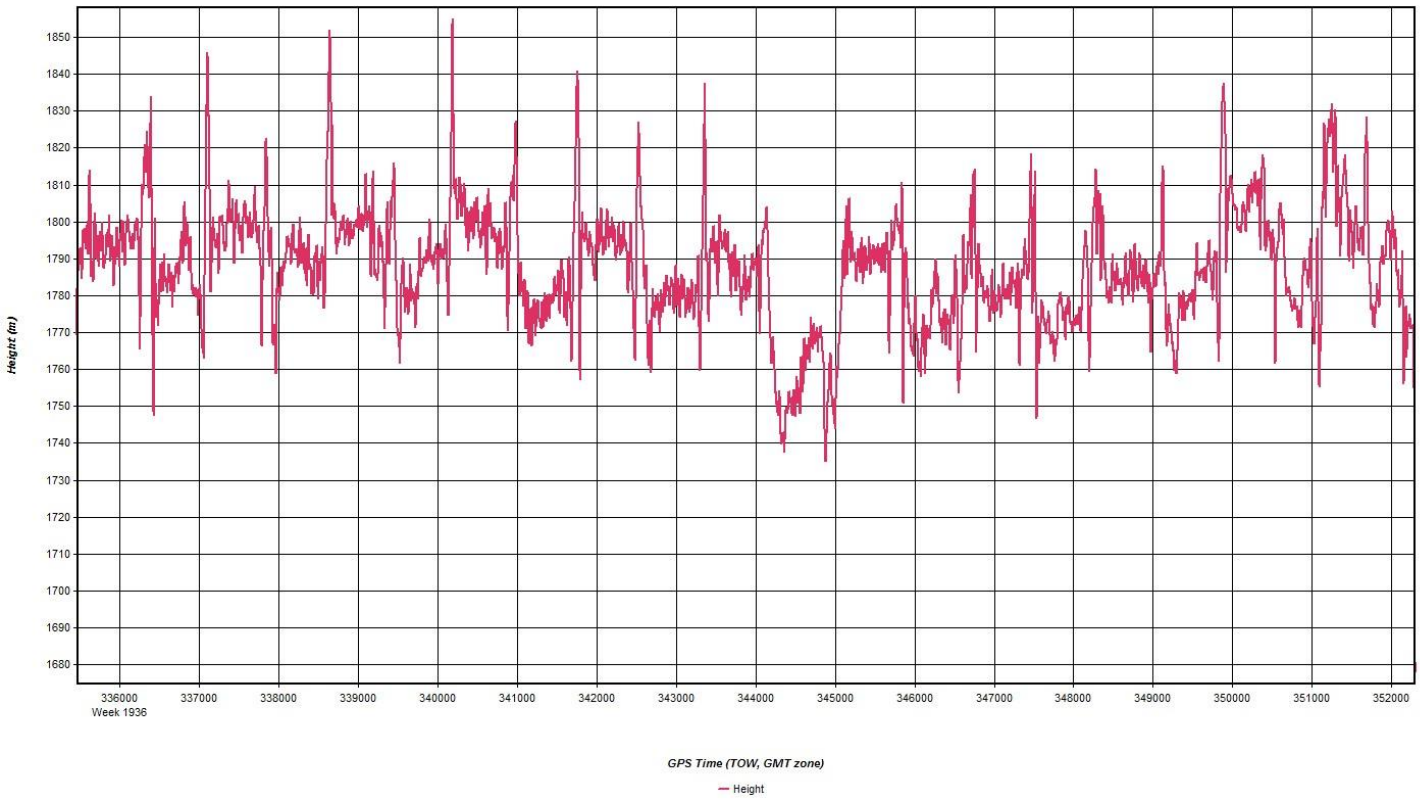

0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
Separation (m)
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
East
North
Up

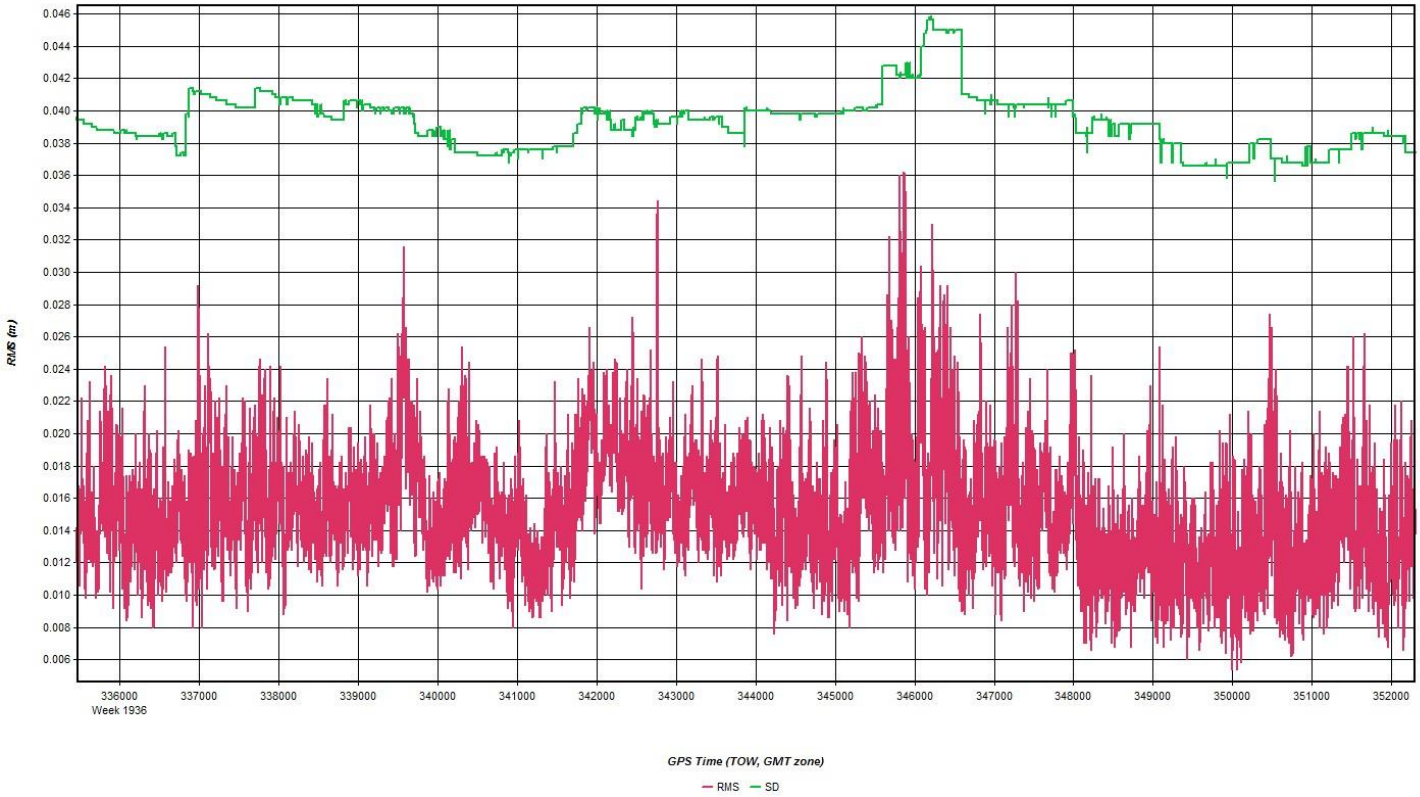

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

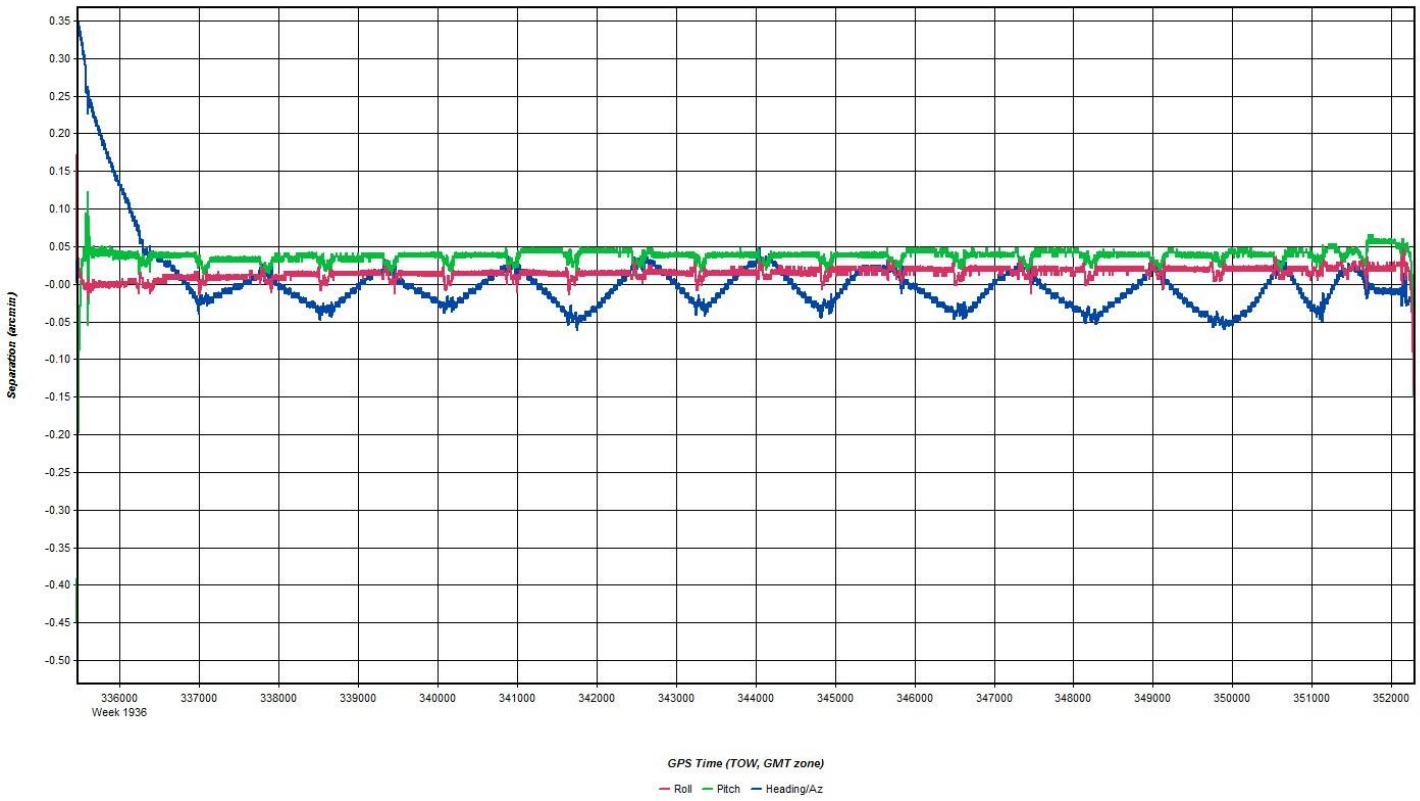

PDOP
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
PDOP

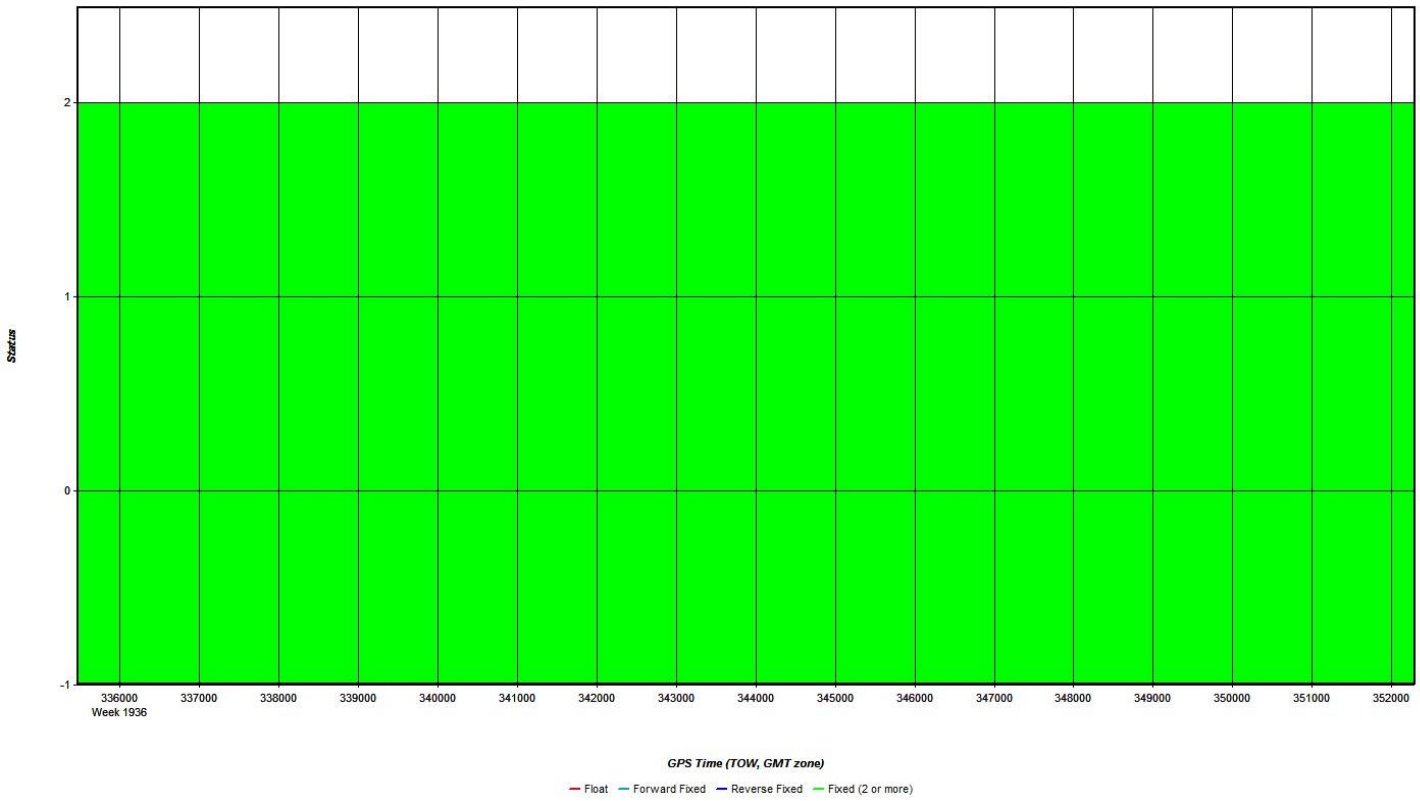

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

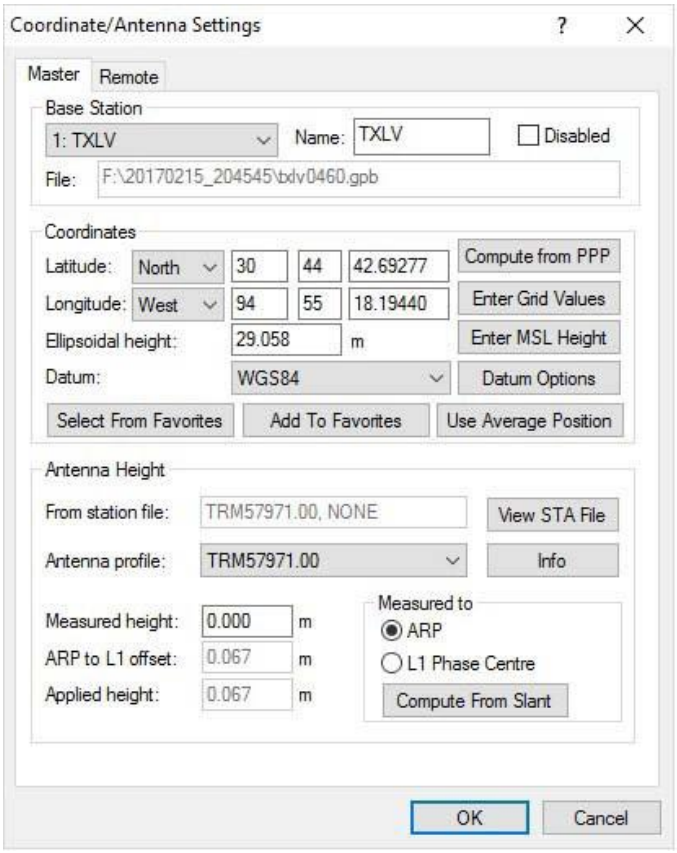

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
Roll
Pitch

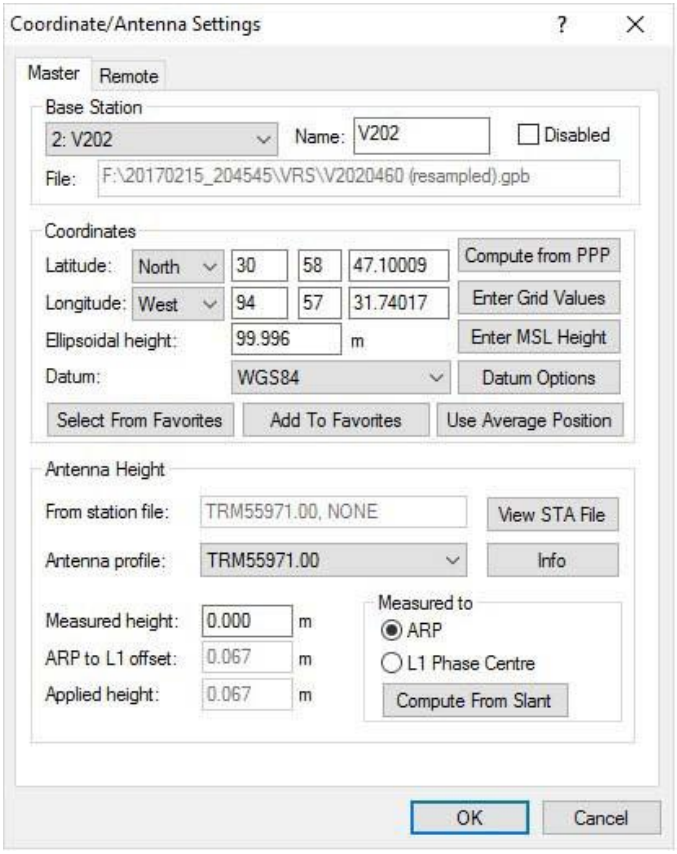

Height (m)
1850
1840
1830
1820
1810
1800
1790
1780
1770
1760
1750
1740
1730
1720
1710
1700
1690
1680
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
336000
Week 1936
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
350000
351000
352000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLV
Name:
TXLV
Disabled
File:
F:\20170215_204545\txlv0460.gpb
Coordinates
Latitude:
North
30
44
42.69277
Compute from PPP
Longitude:
West
94
55
18.19440
Enter Grid Values
Ellipsoidal height:
29.058
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V202
Name: V202
Disabled
File: F:\20170215_204545\VRS\V2020460 (resampled).gpb
Coordinates
Latitude: North 30 58 47.10009
Longitude: West 94 57 31.74017
Ellipsoidal height: 99.996 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

LIDAR & AERIAL PHOTO FLIGHT LOG

20 YEARS OF EXCELLENCE — ATLIS — LIDAR + IMAGERY + GEOMATICS

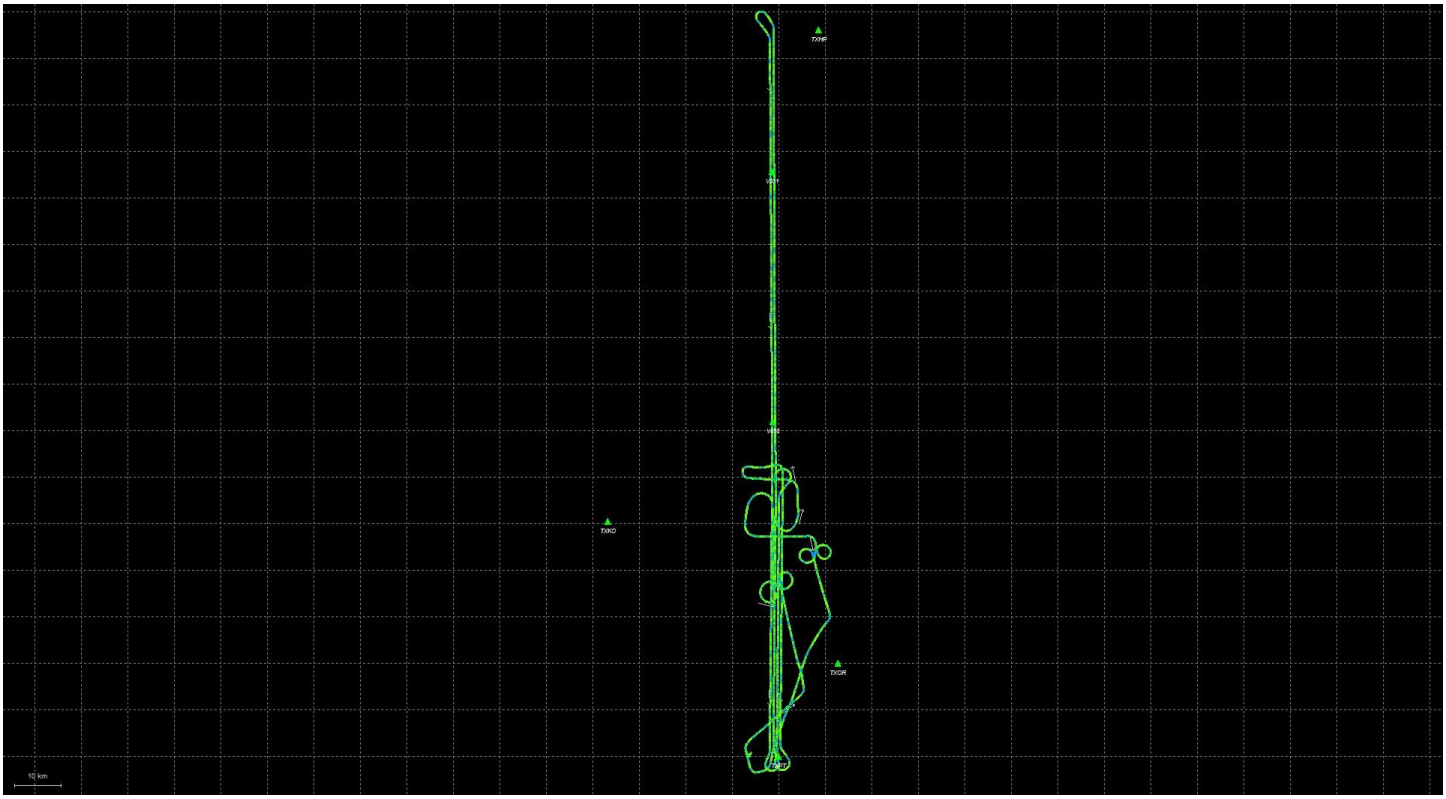
PROJECT NAME	QS Texas	DATE	15/02/2017
SENSOR OPERATOR	Michael Kettridge	SENSOR(S)	ALS70-HP / RCD30
PILOT	Daniel Thibeault	IMU	Honeywell uIRS
AIRCRAFT	Navajo C-FVZM	ABGPS	IPAS-CUS6
AIRBASE	Cleveland, TX	DATA DRIVES	LiDar3

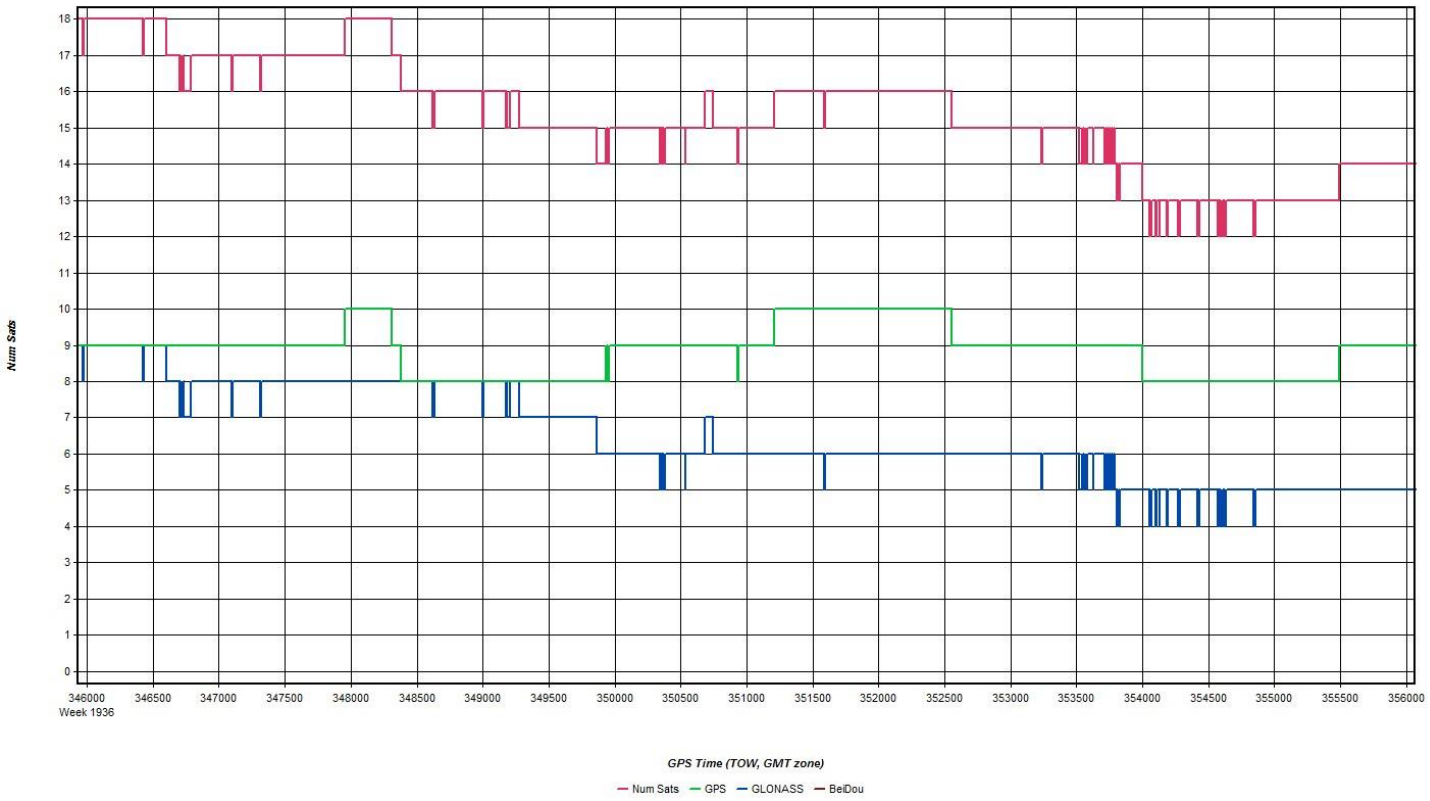
AIRCRAFT BLOCK TIME				MISSION DETAILS				STATIC ALIGNMENT	GPS TIME	
Engine On:	20:45:00	Takeoff:	20:58:00	AGL Height:	1740	Pulse Rate:	312		START	END
Engine Off:	02:17:00	Landing:	02:01:00	Speed:	150	Scan Rate:	57	Pre-Mission	20:49:00	20:55:00
TOTAL:	5.53 hr	TOTAL:	5.05 hr	Laser Power:	100	FOV:	34	Post Mission	02:03:00	02:08:00

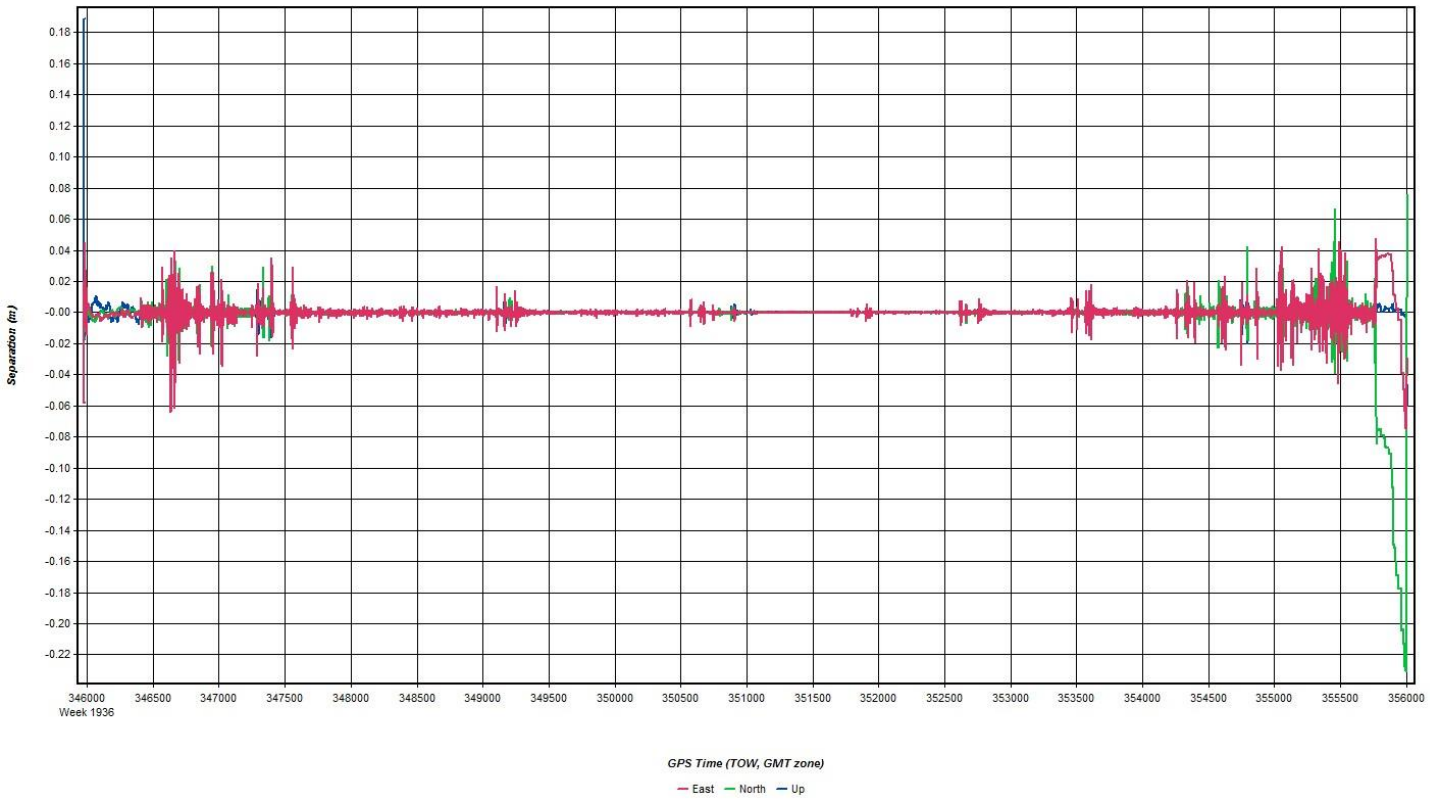
FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME START	GPS TIME END	COMMENTS
5036		North	170215_211314	21:13:15	21:23:32	All Complete
5035		South	170215_212629	21:26:30	21:36:00	All Complete
5034		North	170215_213857	21:38:59	21:49:09	All Complete
5033		South	170215_215150	21:51:51	22:01:27	All Complete
5032		North	170215_220440	22:04:41	22:15:01	All Complete
5031		South	170215_221801	22:18:03	22:27:32	All Complete
5030		North	170215_223024	22:30:25	22:40:40	All Complete
5029		South	170215_224345	22:43:46	22:53:21	All Complete
5028		North	170215_225628	22:56:29	23:06:40	All Complete
5027		South	170215_231033	23:10:34	23:20:17	All Complete
5026		North	170215_232315	23:23:16	23:33:32	All Complete
5025		South	170215_233633	23:36:36	23:46:23	All Complete
5024		North	170215_235012	23:50:16	00:00:38	All Complete
5023		South	170215_000433	00:04:34	00:14:25	All Complete
5022		North	170215_001737	00:17:39	00:28:00	All Complete
5021		South	170215_003126	00:31:28	00:41:48	All Complete
5020		North	170215_004504	00:45:04	00:55:36	All Complete
5019		South	170215_005919	00:59:21	01:08:44	All Complete
5018		North	170215_011153	01:11:54	01:21:29	All Complete
5017		South	170215_012438	01:24:40	01:29:15	Line ended 13nm from South
CL		East	170215_013242	01:32:44	01:35:52	
5017		South	170215_014205	01:42:06	01:48:13	Line started 15nm from south

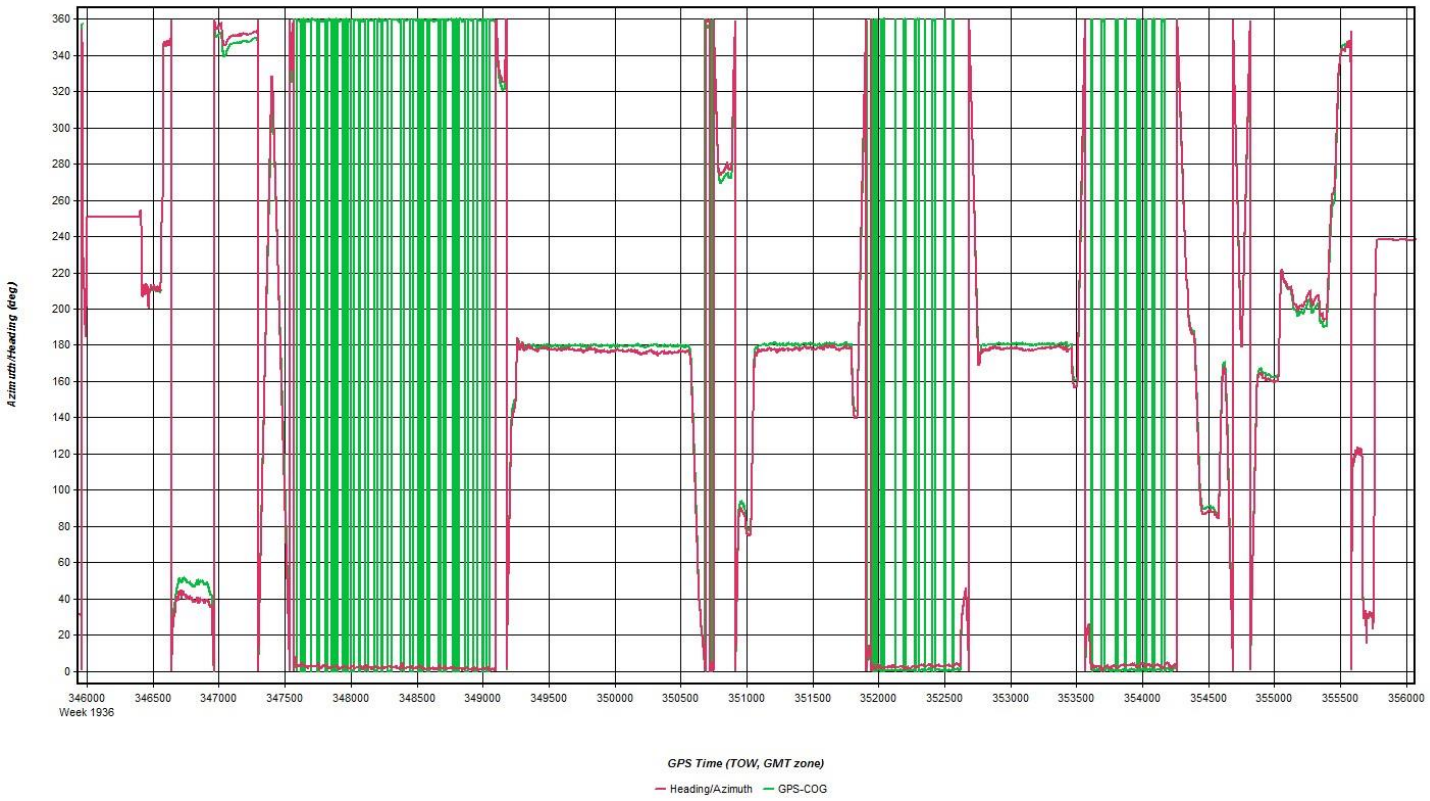
SUN ANGLE @Start: @End: @Peak:	Clouds were covering the east half of the project but the west was clear. There was an IMU gap before take off (20:58) but after that no problems with the system. Sats and dops averaged 18 and 1.2 The antenna height for the back up base station was 1.709 to the ARP. Flying height ranged from 1680 to 1780 AGL

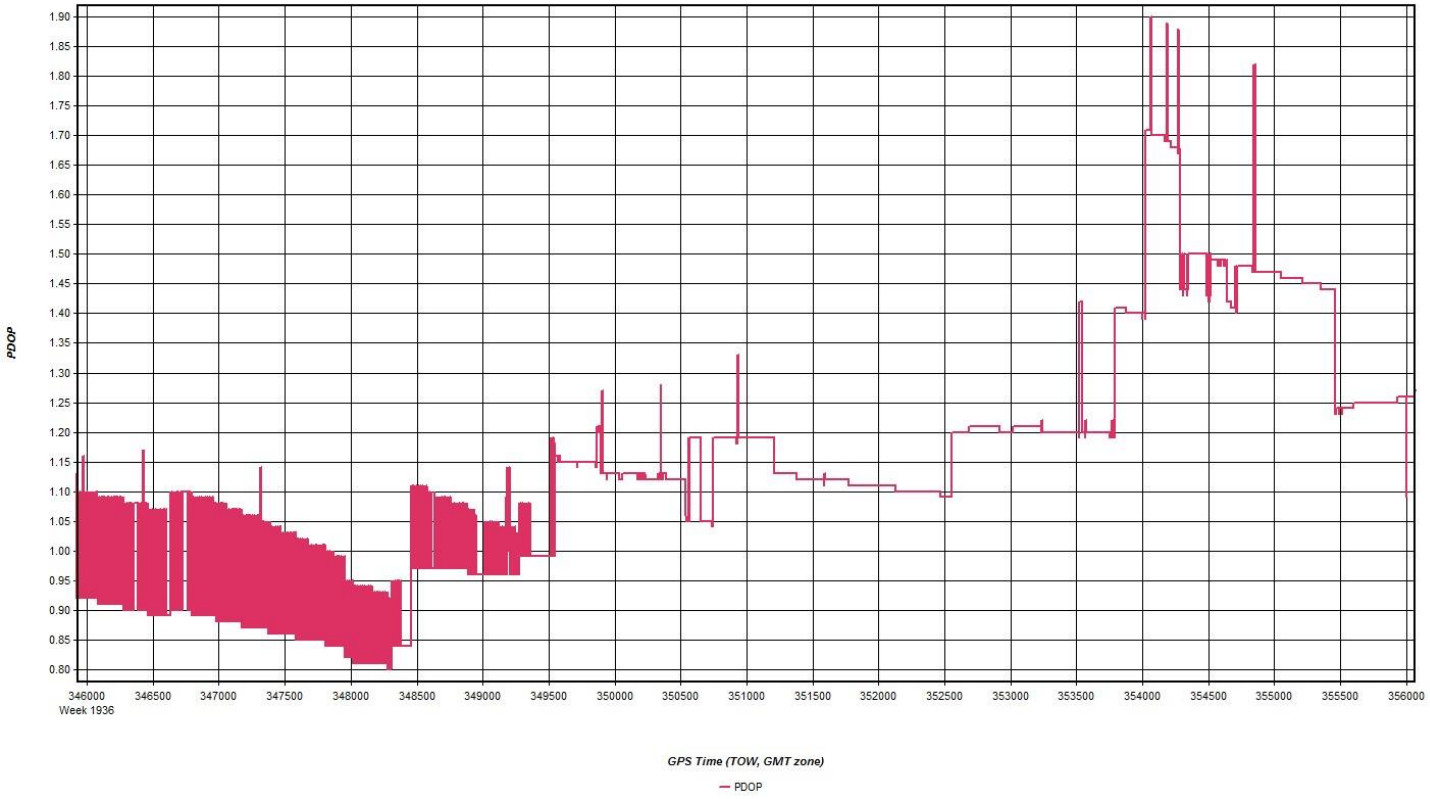
Feb 15, 2017-B (N246MP, SN8227)

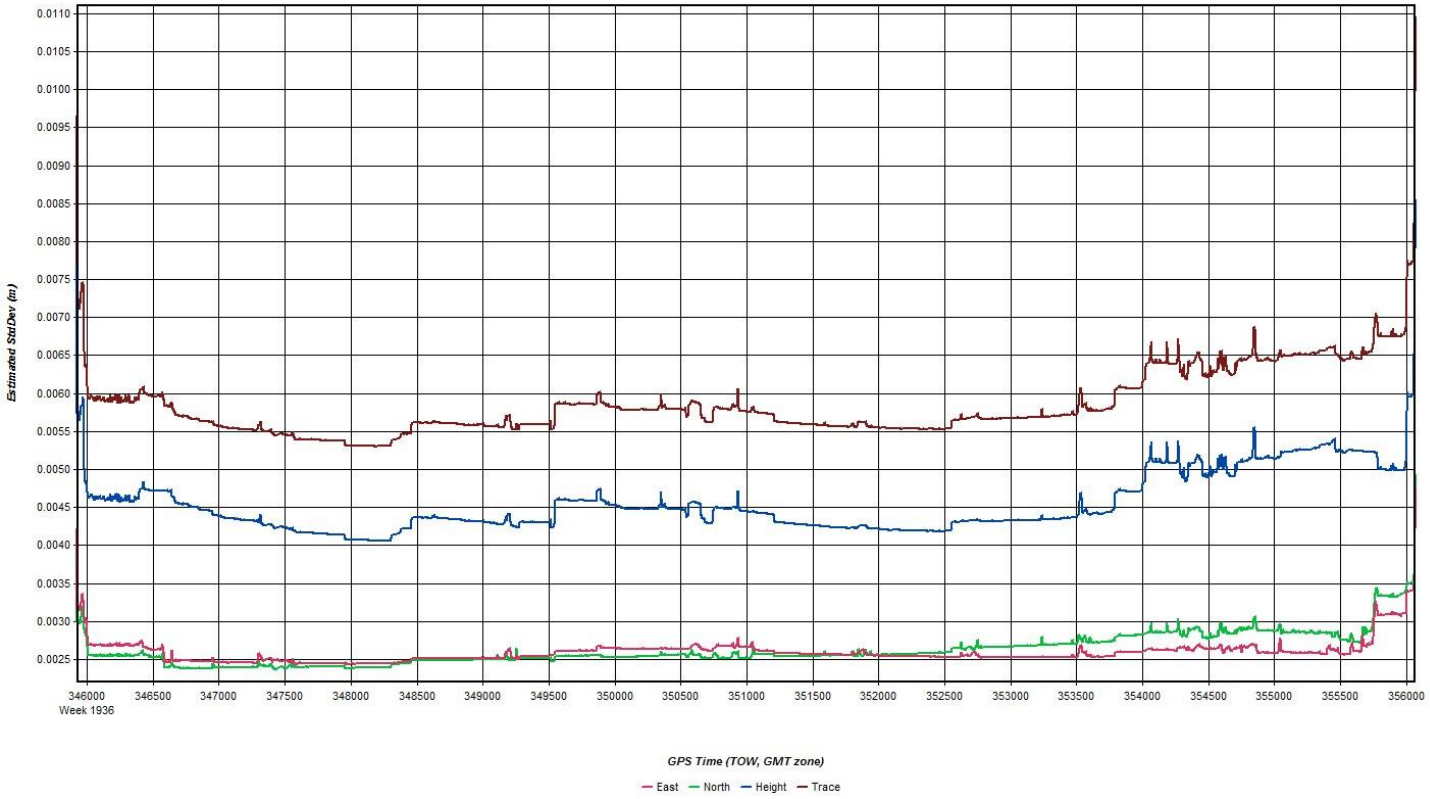


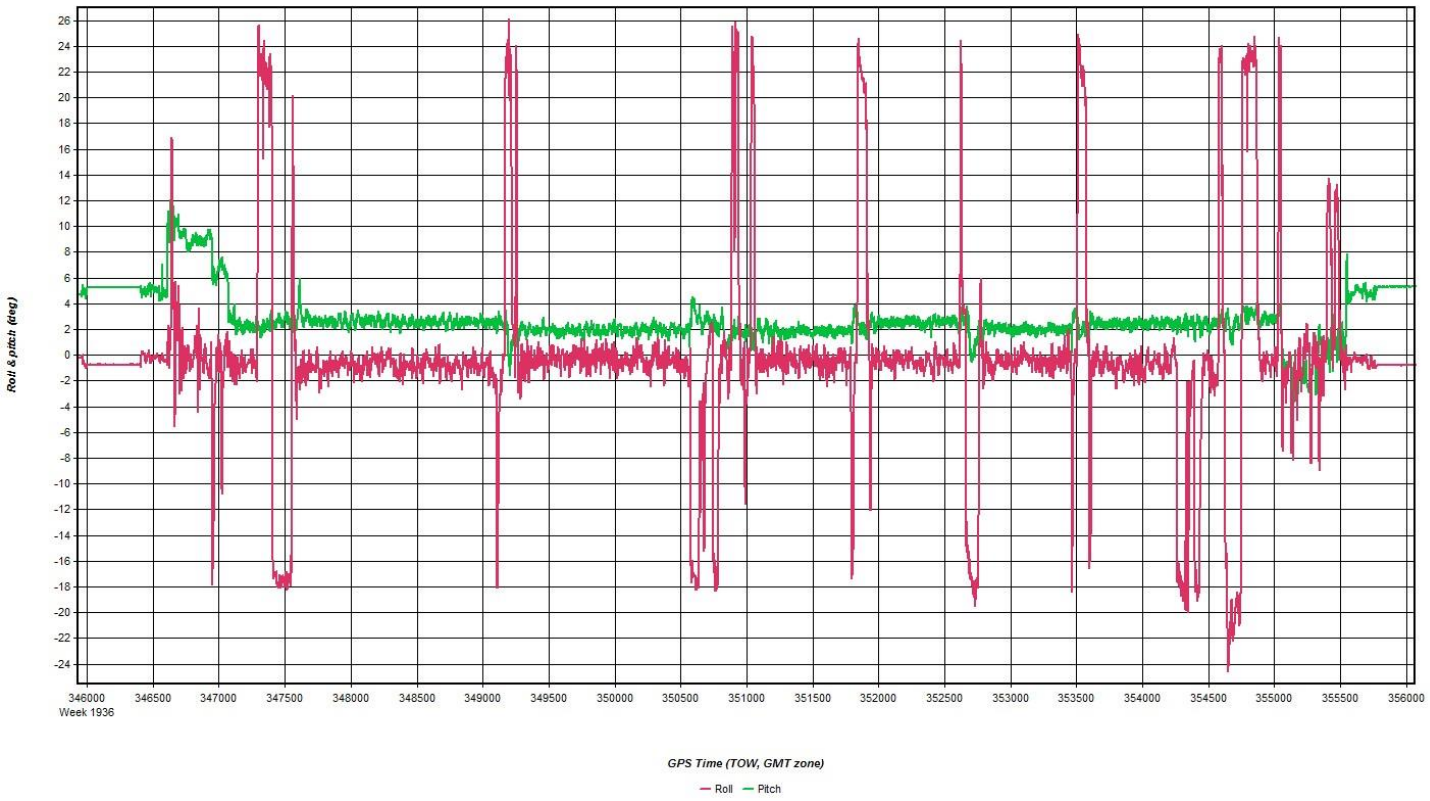

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

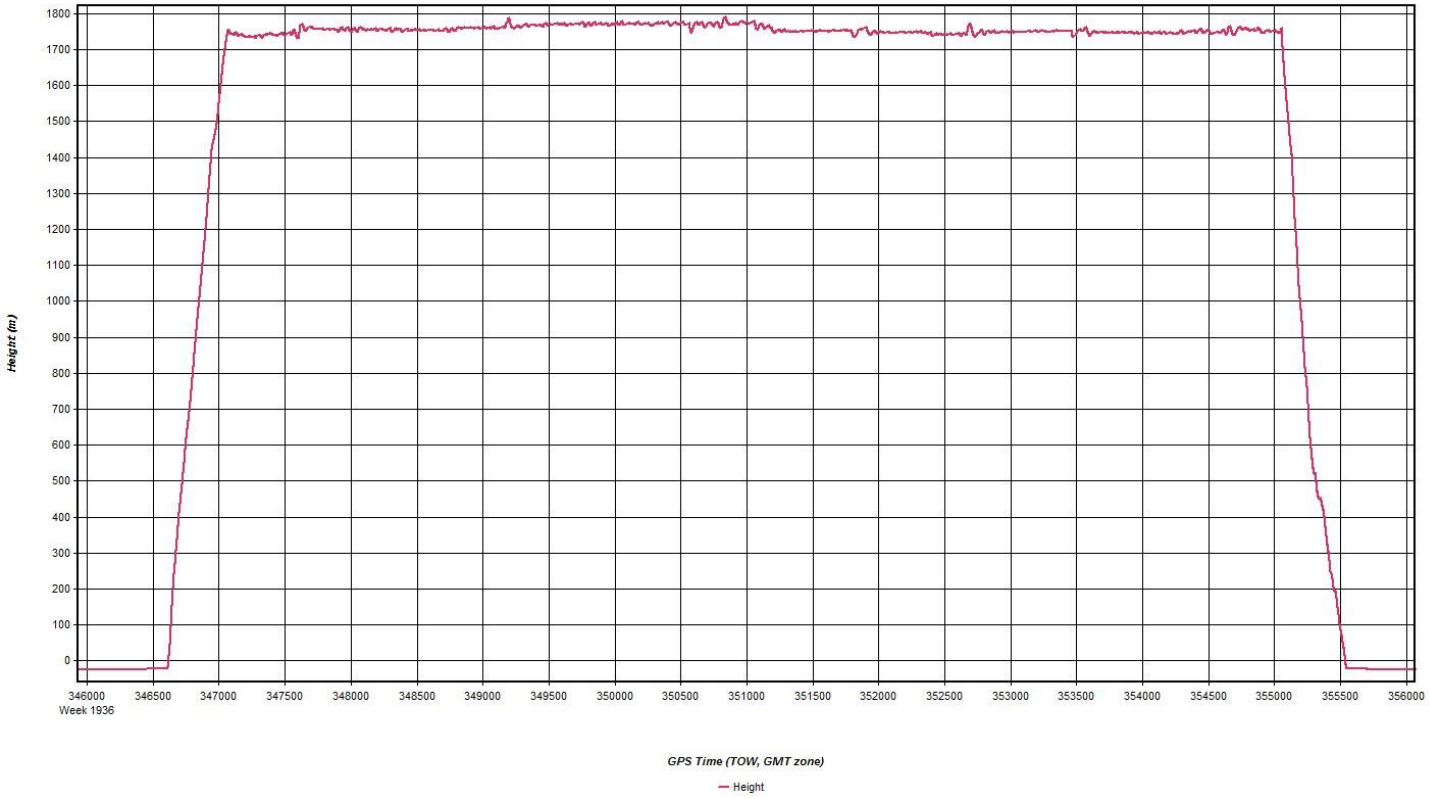

Separation (m)
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
East
North
Up

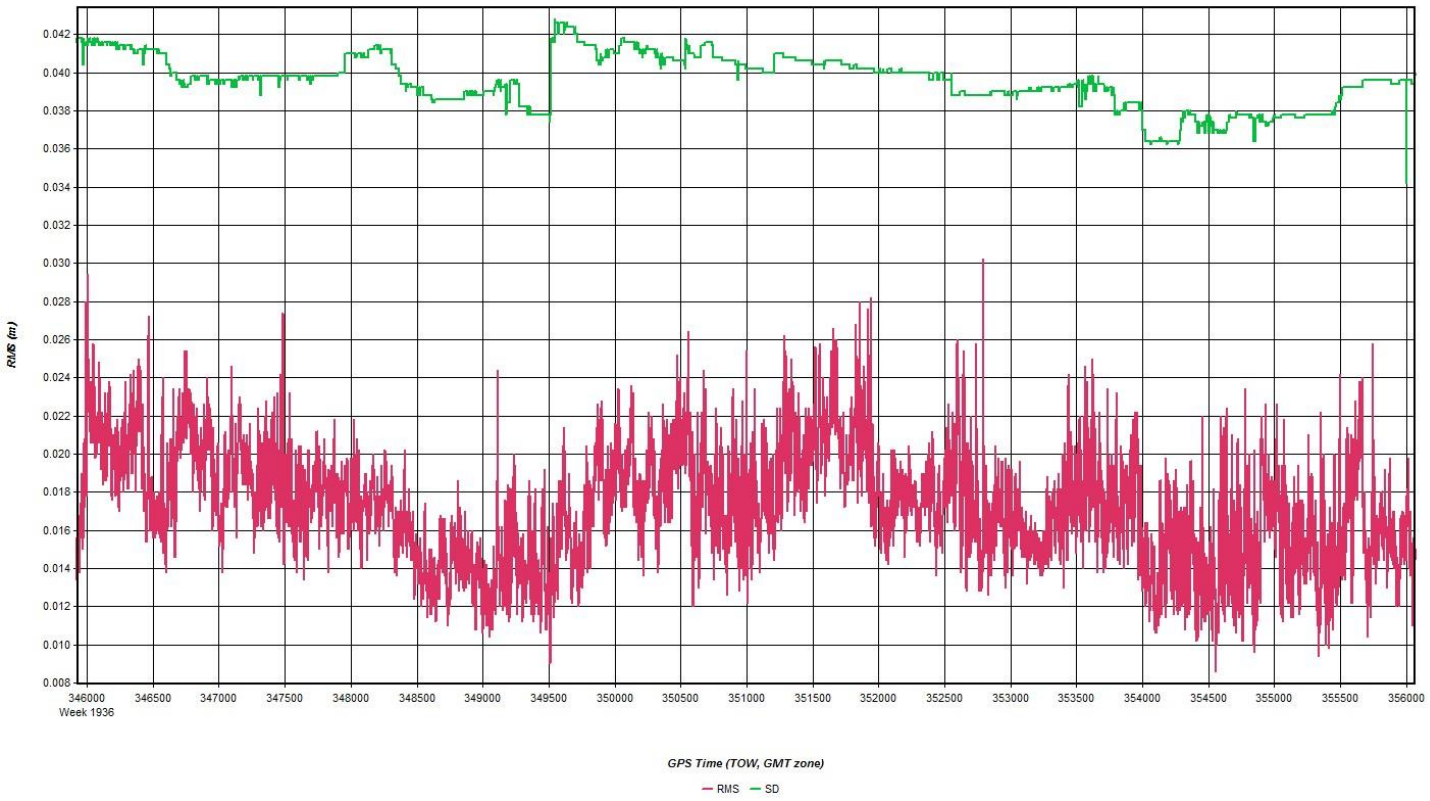

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

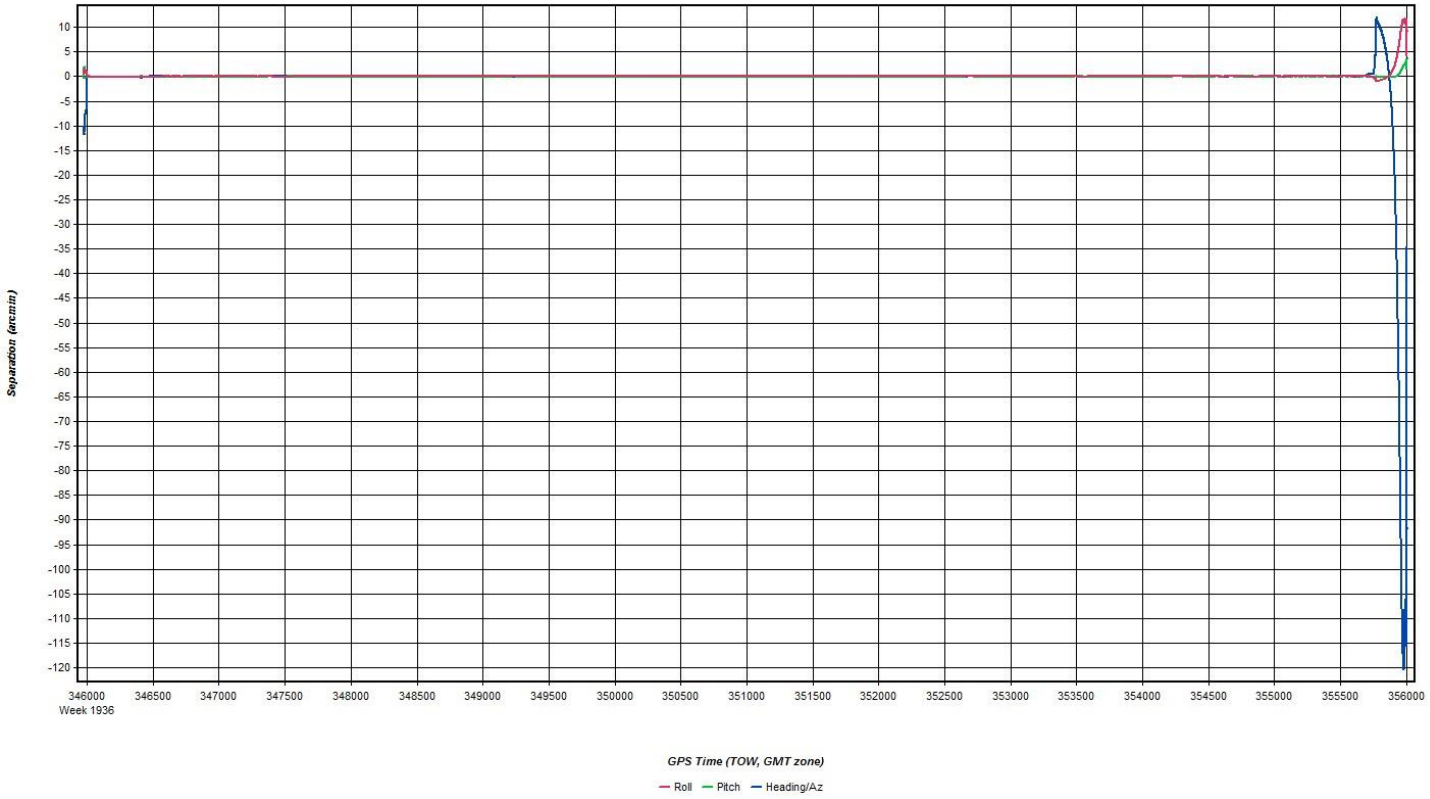

PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
PDOP

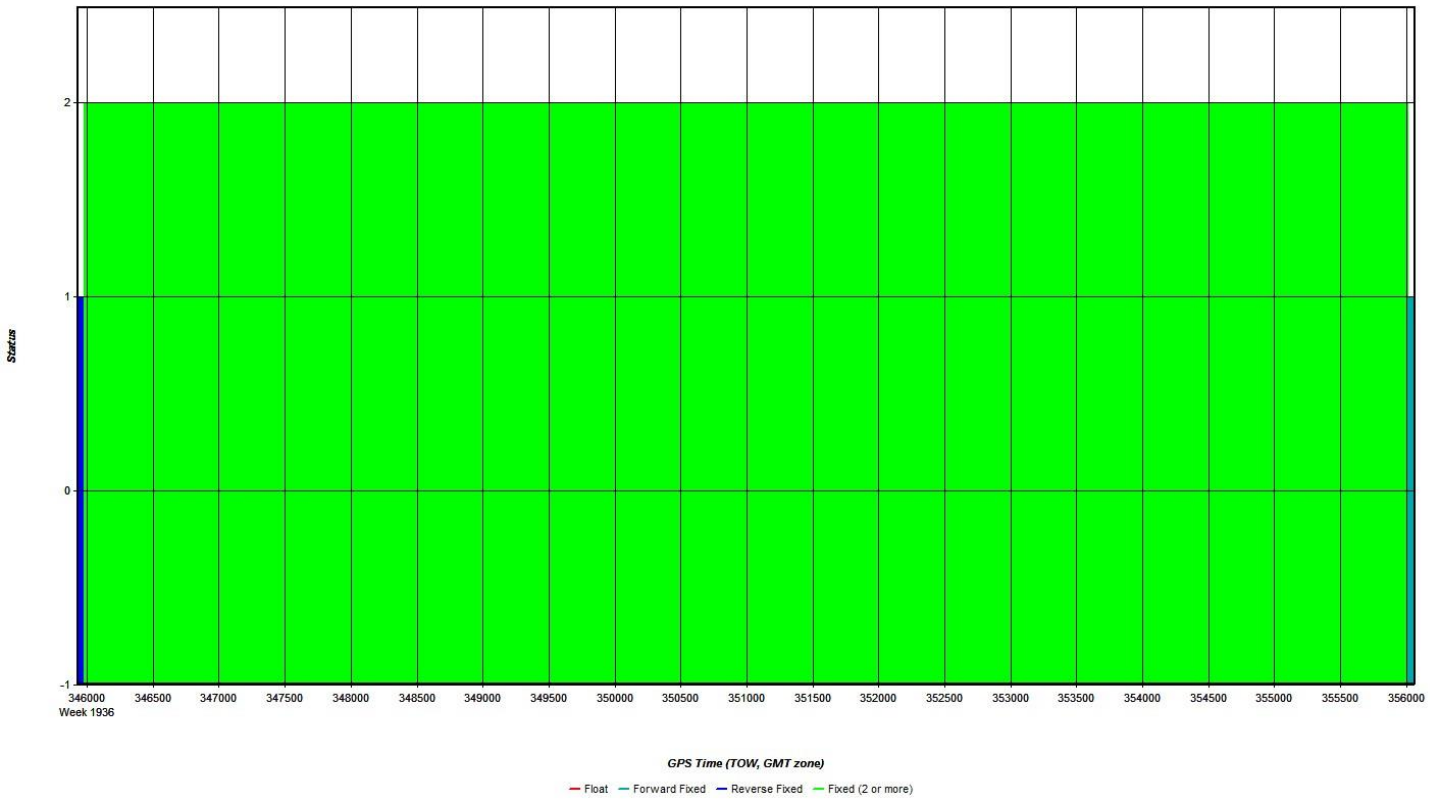

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

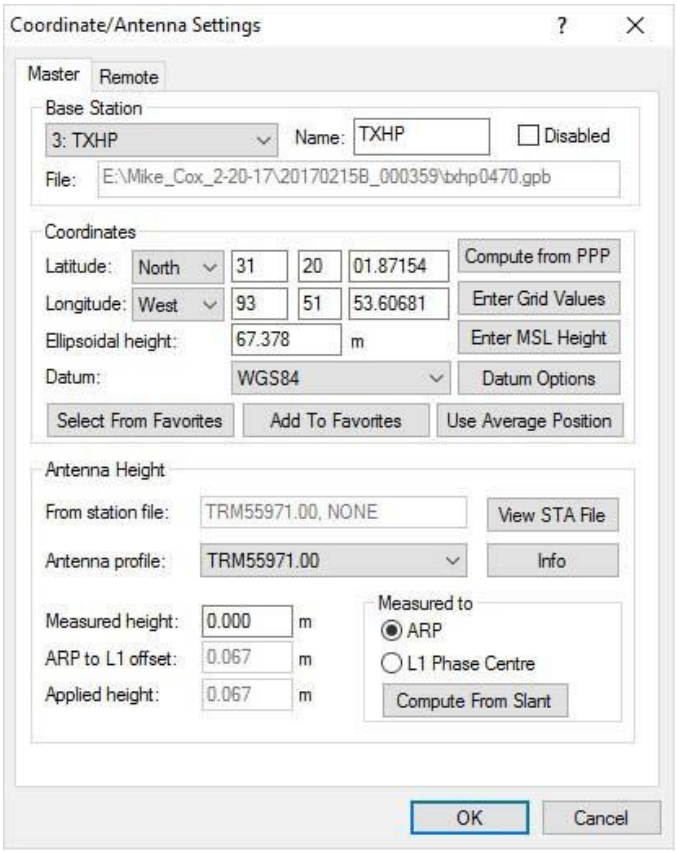

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Roll
Pitch

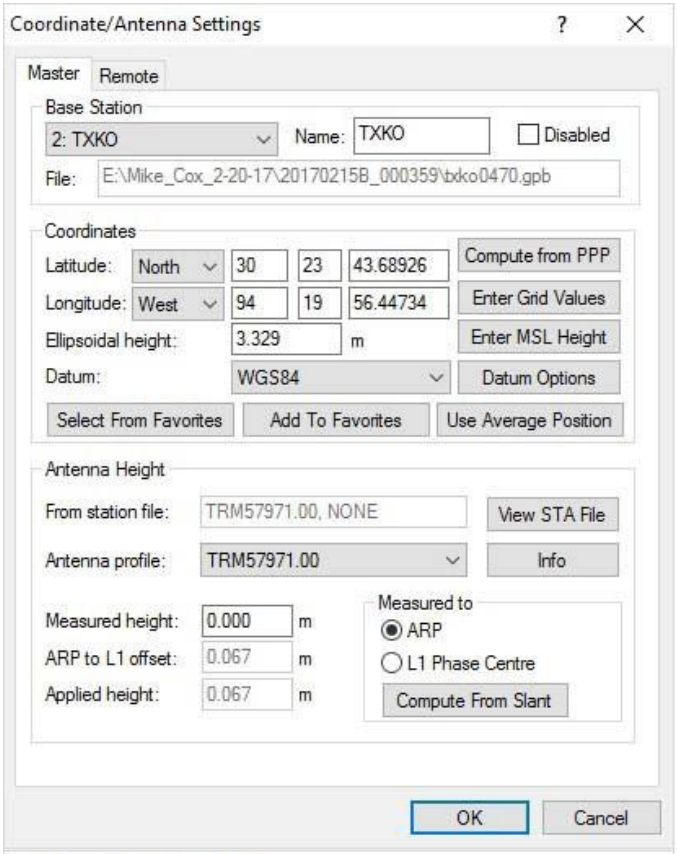

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Height

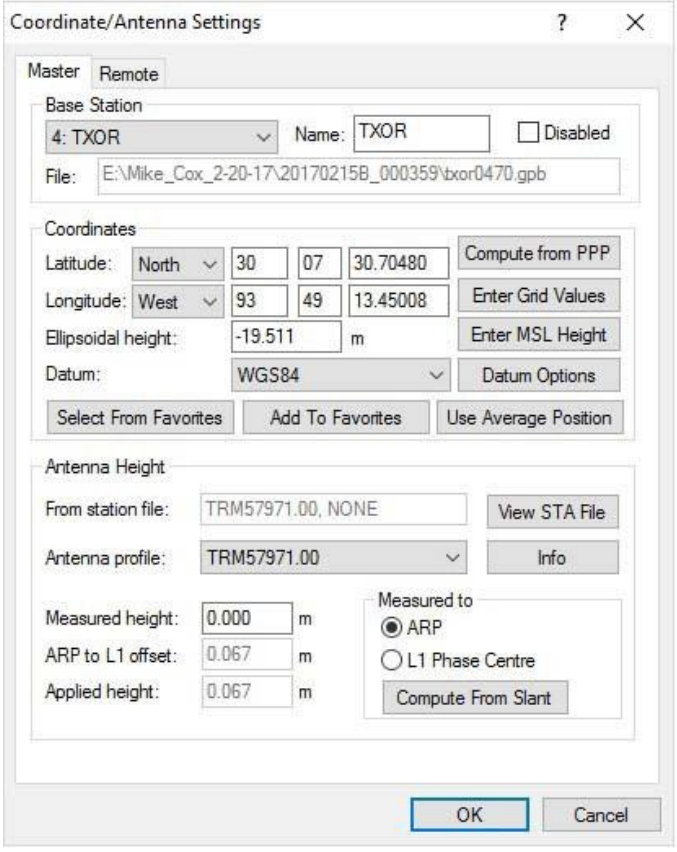

RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
RMS
SD

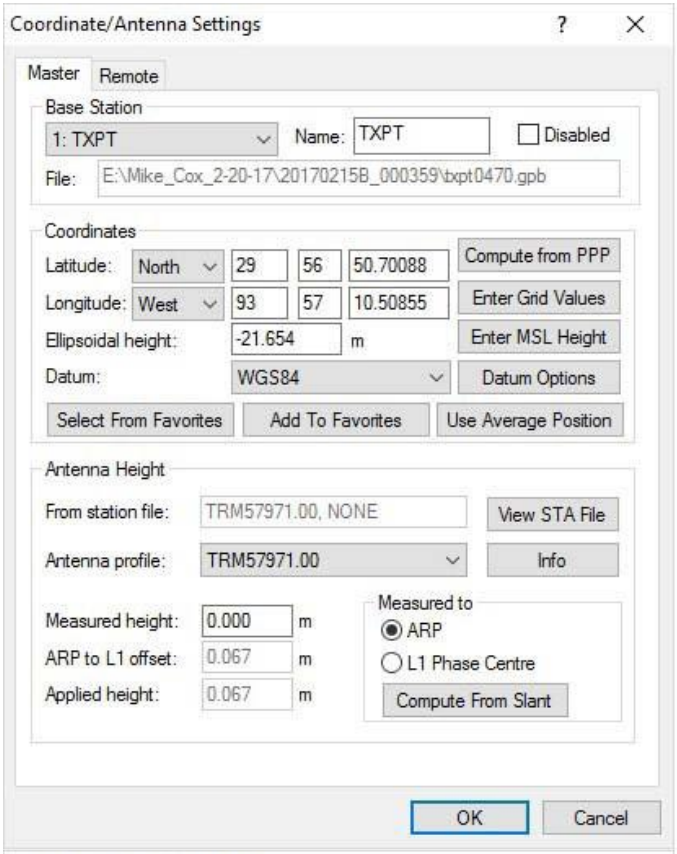

Separation (arcmin)
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90
-95
-100
-105
-110
-115
-120
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

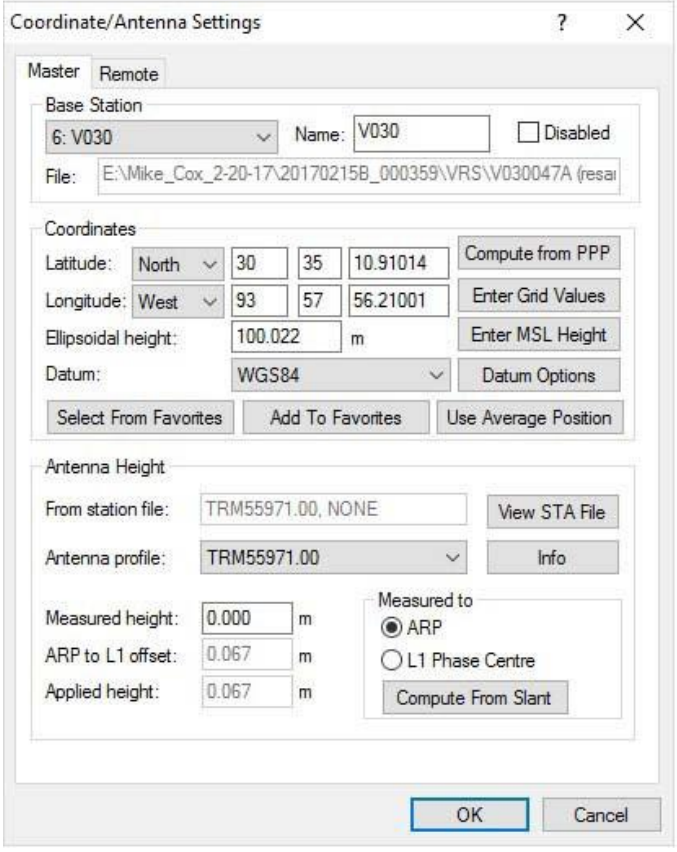

Status
2
1
0
-1
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

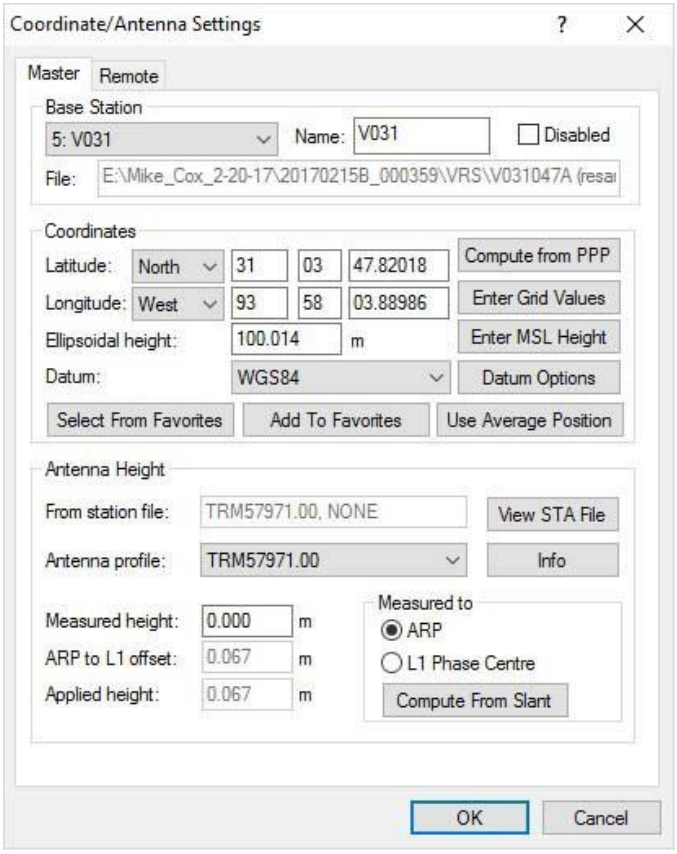

Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXHP
Name: TXHP
Disabled
File: E:\Mike_Cox_2-20-17\20170215B_000359\txhp0470.gpb
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\Mike_Cox_2-20-17\20170215B_000359\txko0470.gpb
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

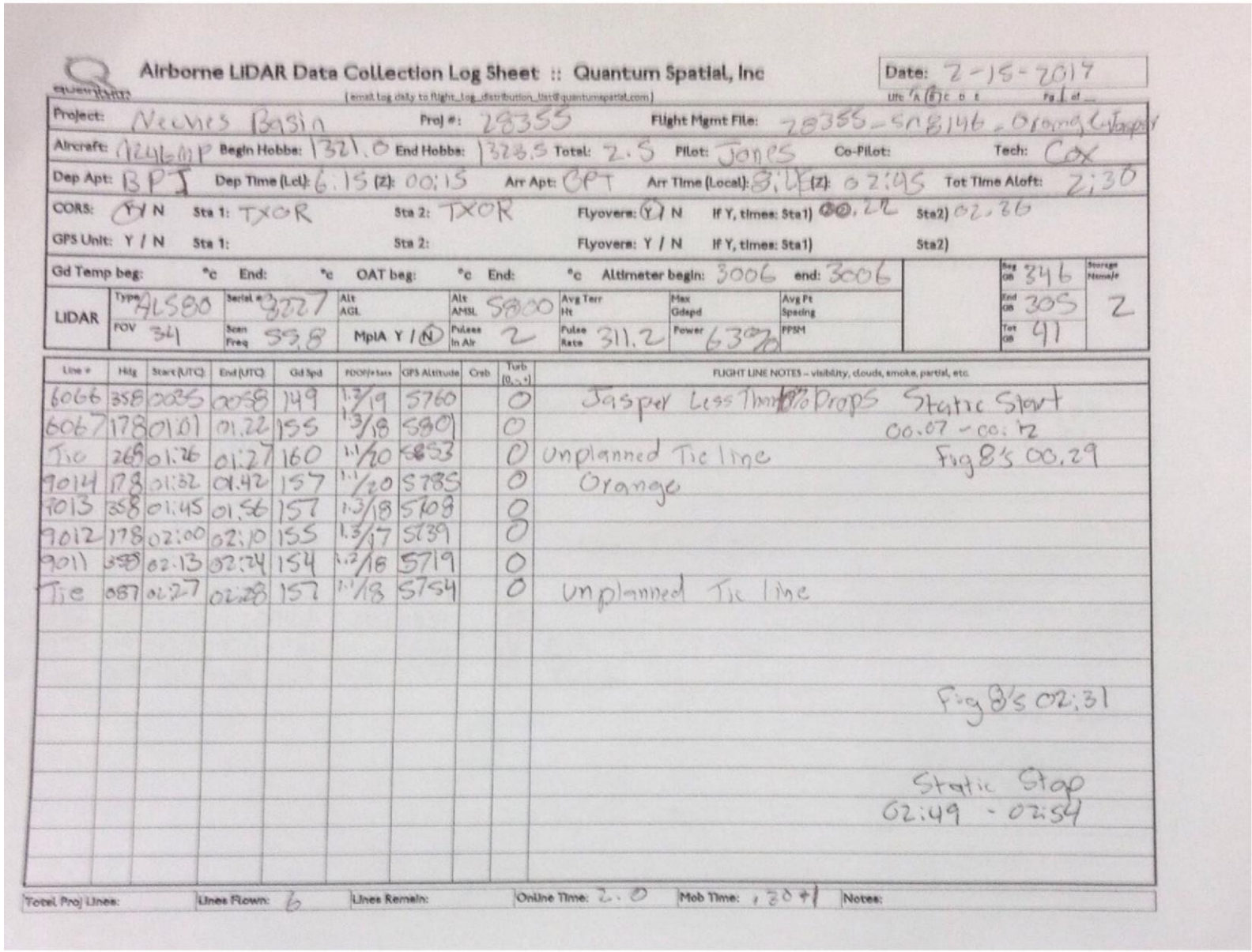

Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXOR
Name: TXOR
Disabled
File: E:\Mike_Cox_2-20-17\20170215B_000359\txor0470.gpb
Coordinates
Latitude: North 30 07 30.70480
Longitude: West 93 49 13.45008
Ellipsoidal height: -19.511 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Mike_Cox_2-20-17\20170215B_000359\txpt0470.gpb
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
6: V030
Name: V030
Disabled
File: E:\Mike_Cox_2-20-17\20170215B_000359\VRS\V030047A (resa
Coordinates
Latitude: North 30 35 10.91014
Longitude: West 93 57 56.21001
Ellipsoidal height: 100.022 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V031
Name: V031
Disabled
File: E:\Mike_Cox_2-20-17\20170215B_000359\VRS\V031047A (resa
Coordinates
Latitude: North 31 03 47.82018
Longitude: West 93 58 03.88986
Ellipsoidal height: 100.014 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-15-2017

(email log daily to flight_log_distribution_list@quantumspatial.com)

Life: A (B) C D E Pg 1 of __

Project: Neches Basin Proj #: 28355 Flight Mgmt File: 28355_SN8146_Orange&Tap

Aircraft: N246MP Begin Hobbs: 1321.0 End Hobbs: 1323.5 Total: 2.5 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 6:15 (Z): 00:15 Arr Apt: CPT Arr Time (Local): 8:12 (Z): 02:45 Tot Time Aloft: 2:30

CORS: (Y) / N Sta 1: TXOR Sta 2: TXOR Flyovers: (Y) / N If Y, times: Sta1) 00:22 Sta2) 02:36

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 3006 end: 3006

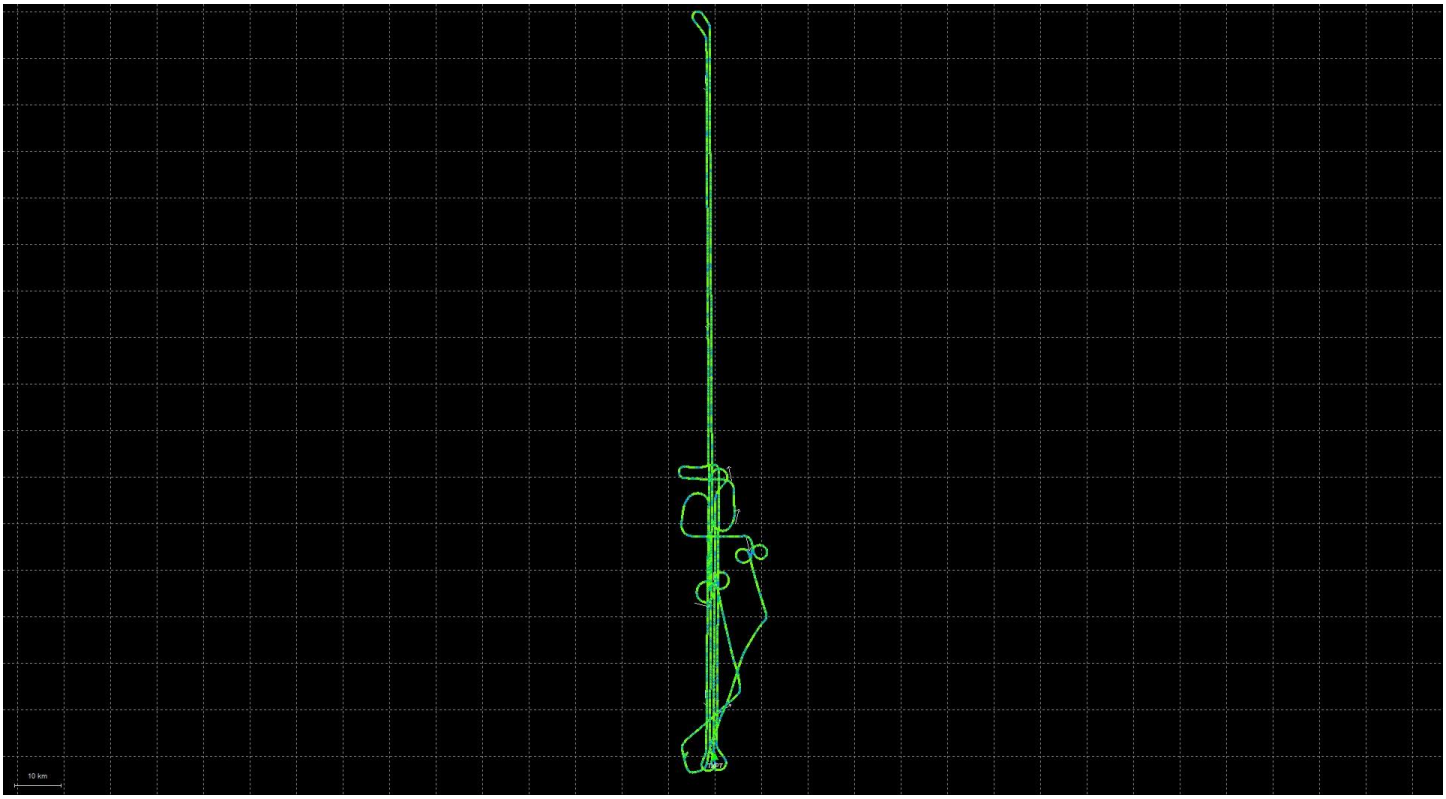
LIDAR	Type: ALS80	Serial #: 9227	Alt AGL	Alt AMSL: 5800	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV: 34	Scan Freq: 55.8	MpIA Y / (N)	Pulses In Air: 2	Pulse Rate: 311.2	Power: 63%	PPSM

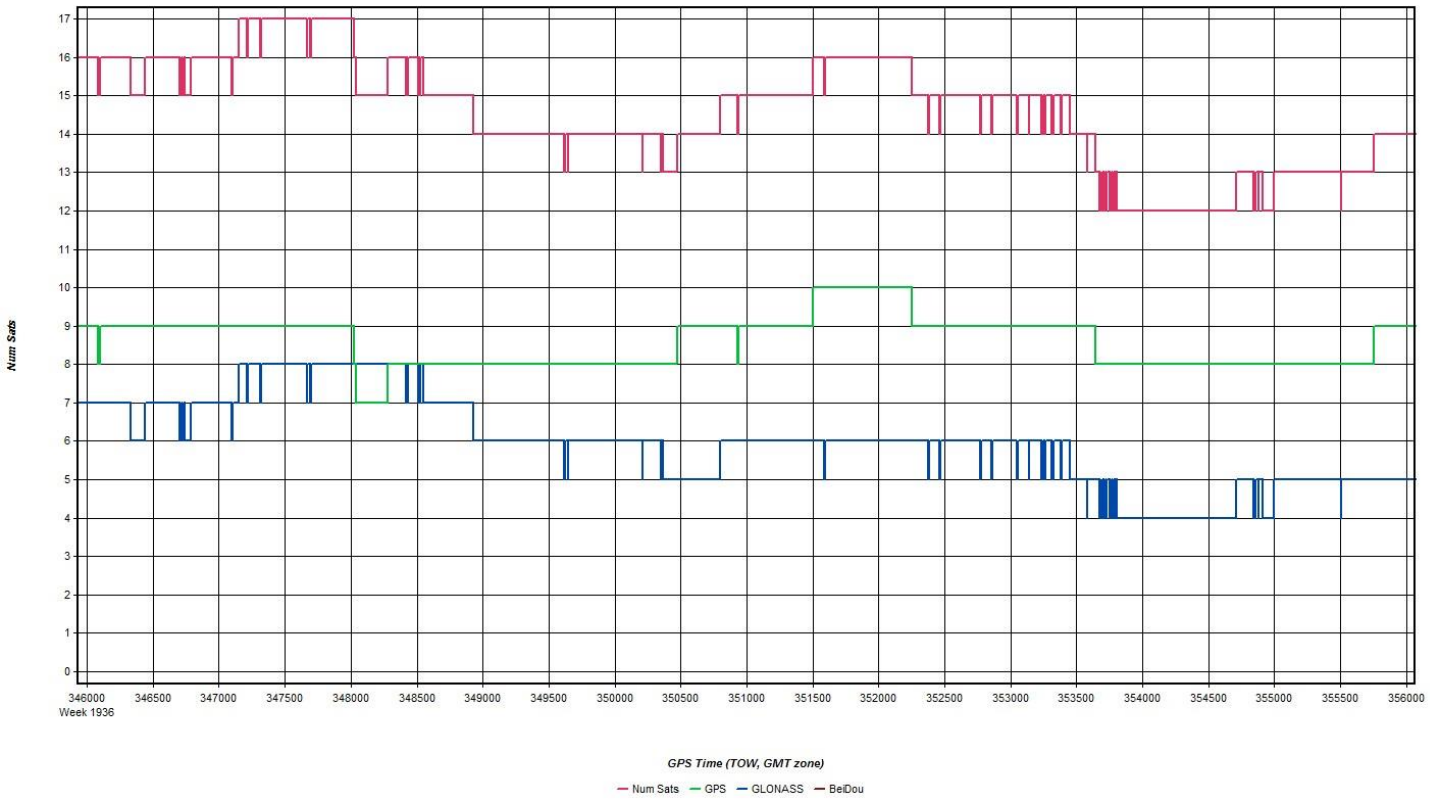
Beg GB: 346 End GB: 385 Tot GB: 41 Storage Remote: 2

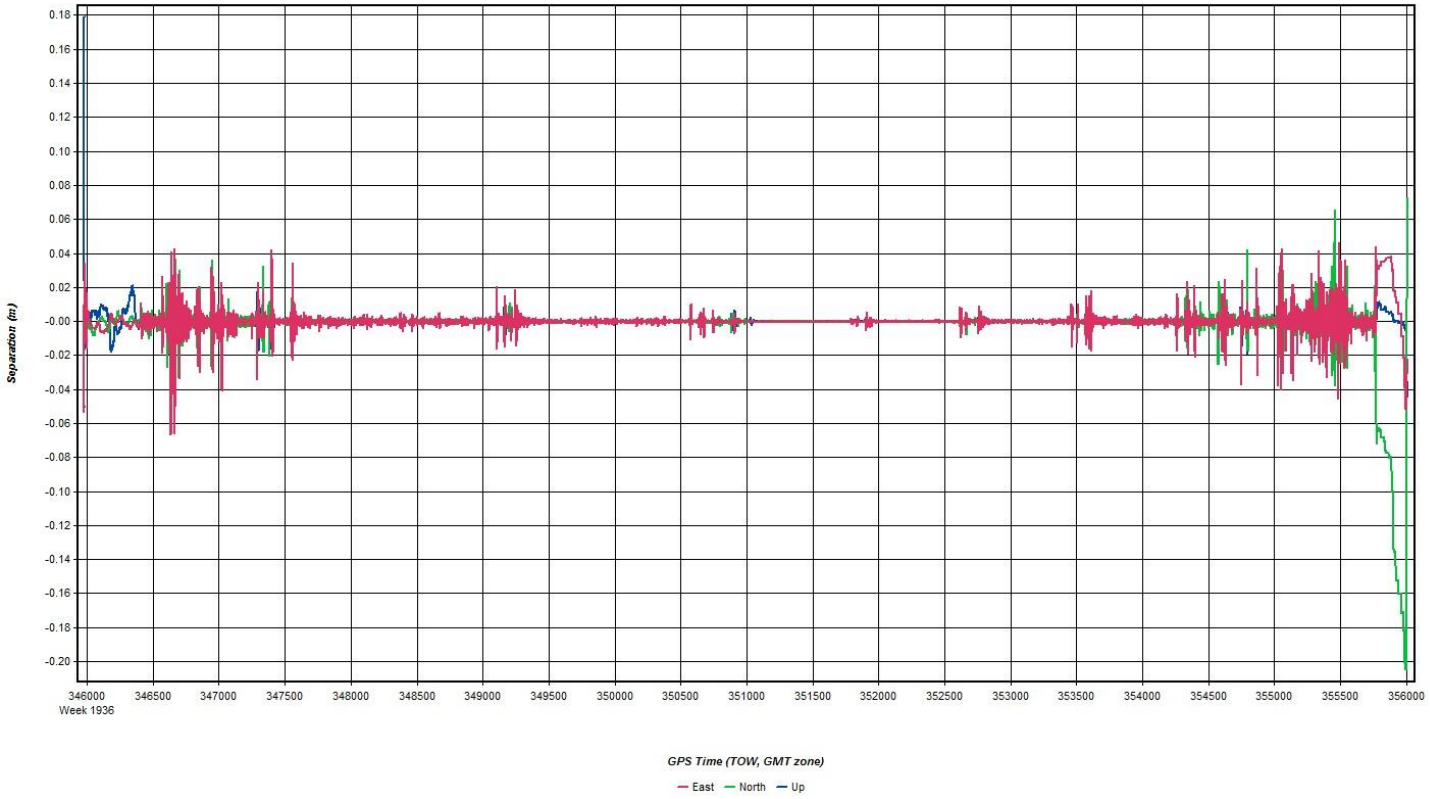
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	FOOP/#Sats	GPS Altitude	Crab	Turb (0,+,-)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6066	358	2025	2038	149	1:3/19	5760		0	Jasper Less Than 10% Props Static Start 00:07 - 00:12
6067	178	01:01	01:22	155	1:3/18	5801		0	
Tie	269	01:26	01:27	160	1:1/10	5853		0	Unplanned Tie Line Fig 8's 00:29
9014	178	01:32	01:42	157	1:1/20	5785		0	Orange
9013	358	01:45	01:56	157	1:3/18	5709		0	
9012	178	02:00	02:10	155	1:3/17	5739		0	
9011	358	02:13	02:24	154	1:3/16	5719		0	
Tie	087	02:27	02:28	157	1:1/18	5754		0	Unplanned Tie Line
									Fig 8's 02:31
									Static Stop 02:49 - 02:54

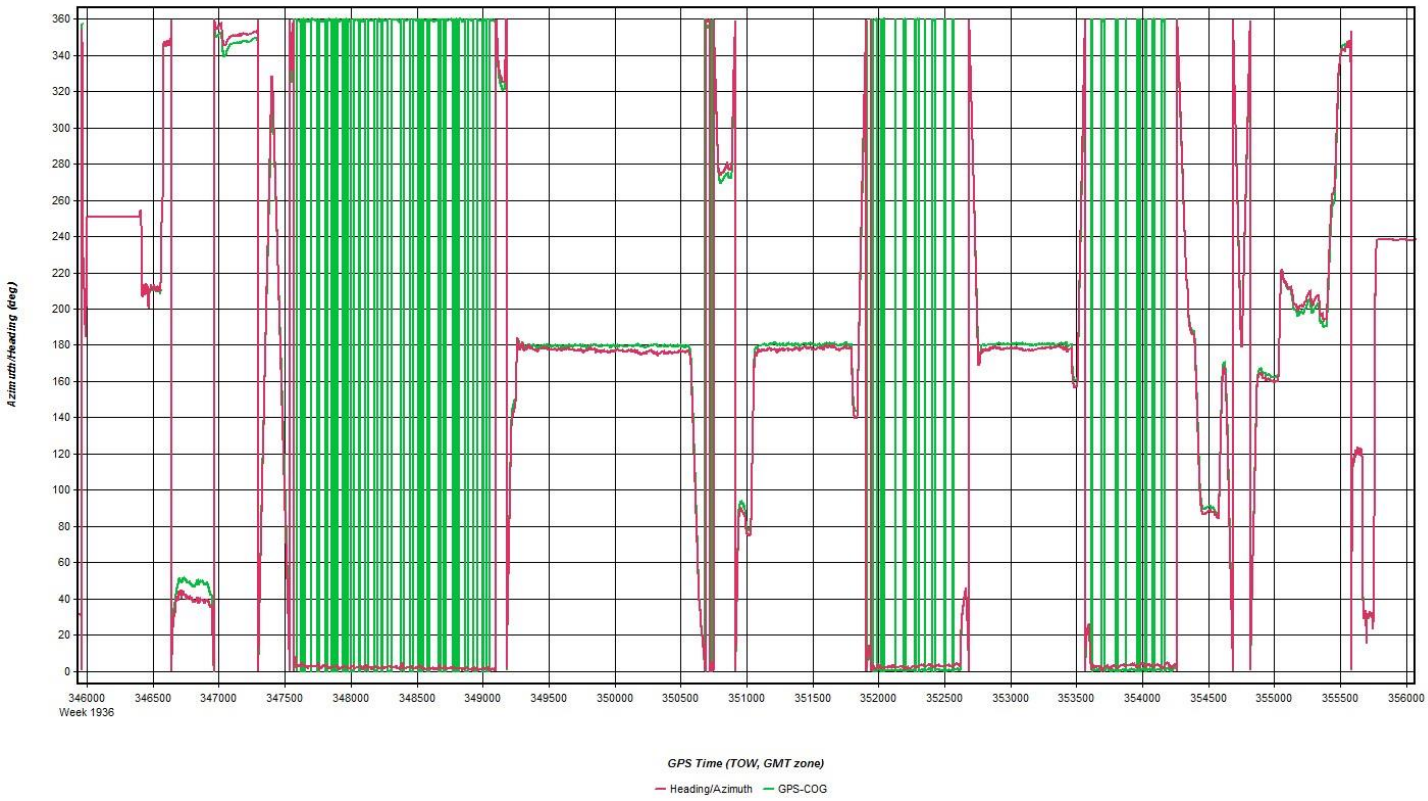
Total Proj Lines: Lines Flown: 6 Lines Remain: Online Time: 2.0 Mob Time: 1.30+1 Notes:

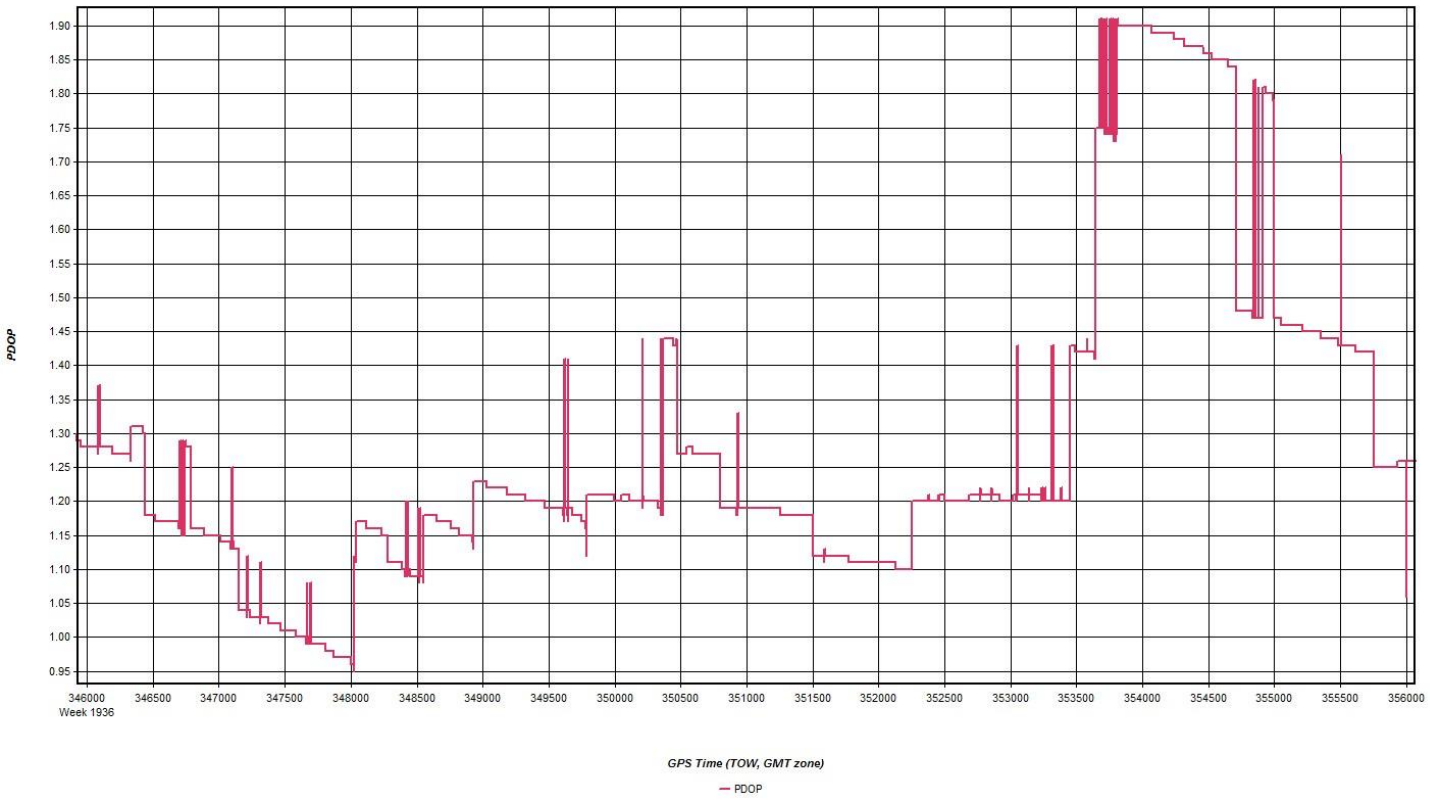
Feb 16, 2017-A (N246MP, SN8227)

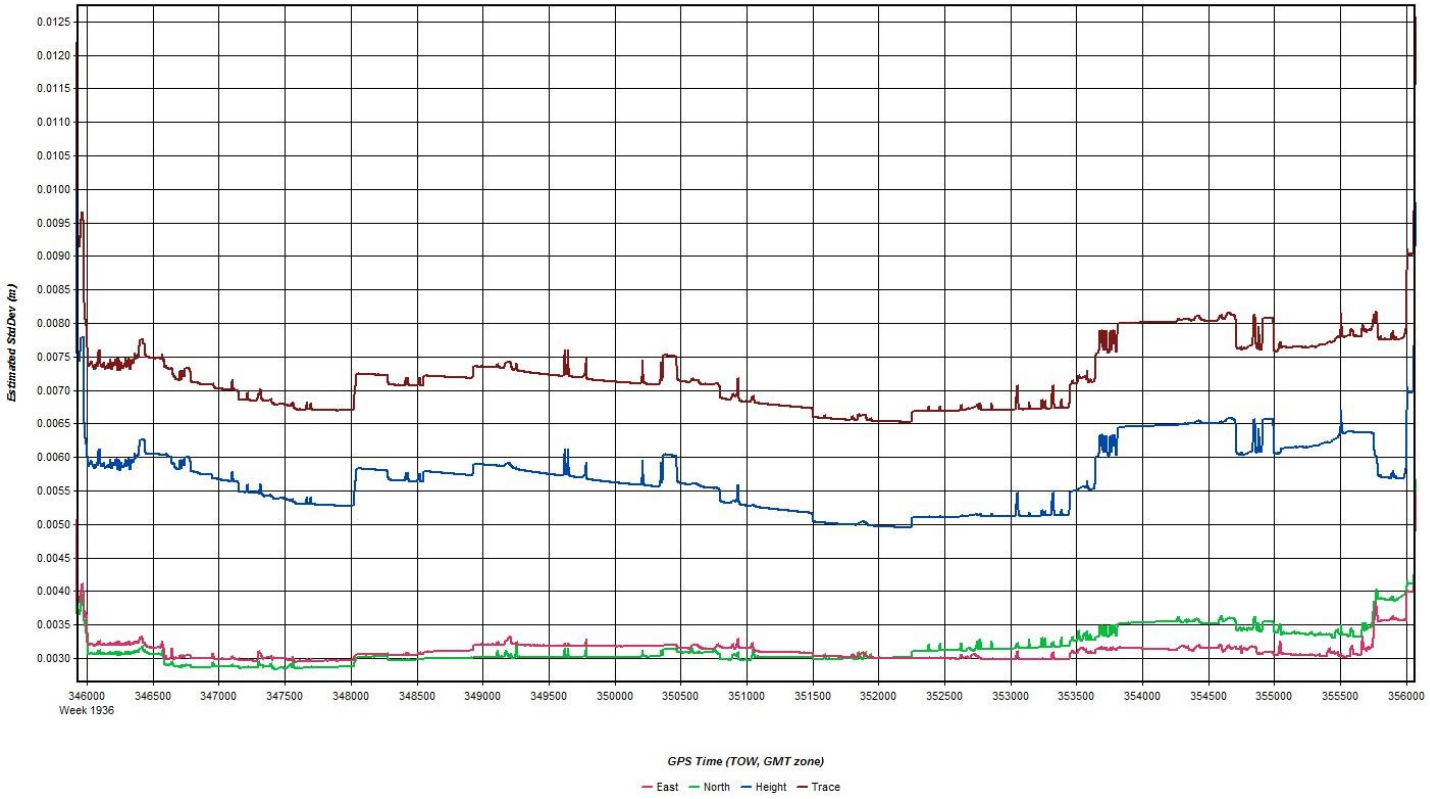


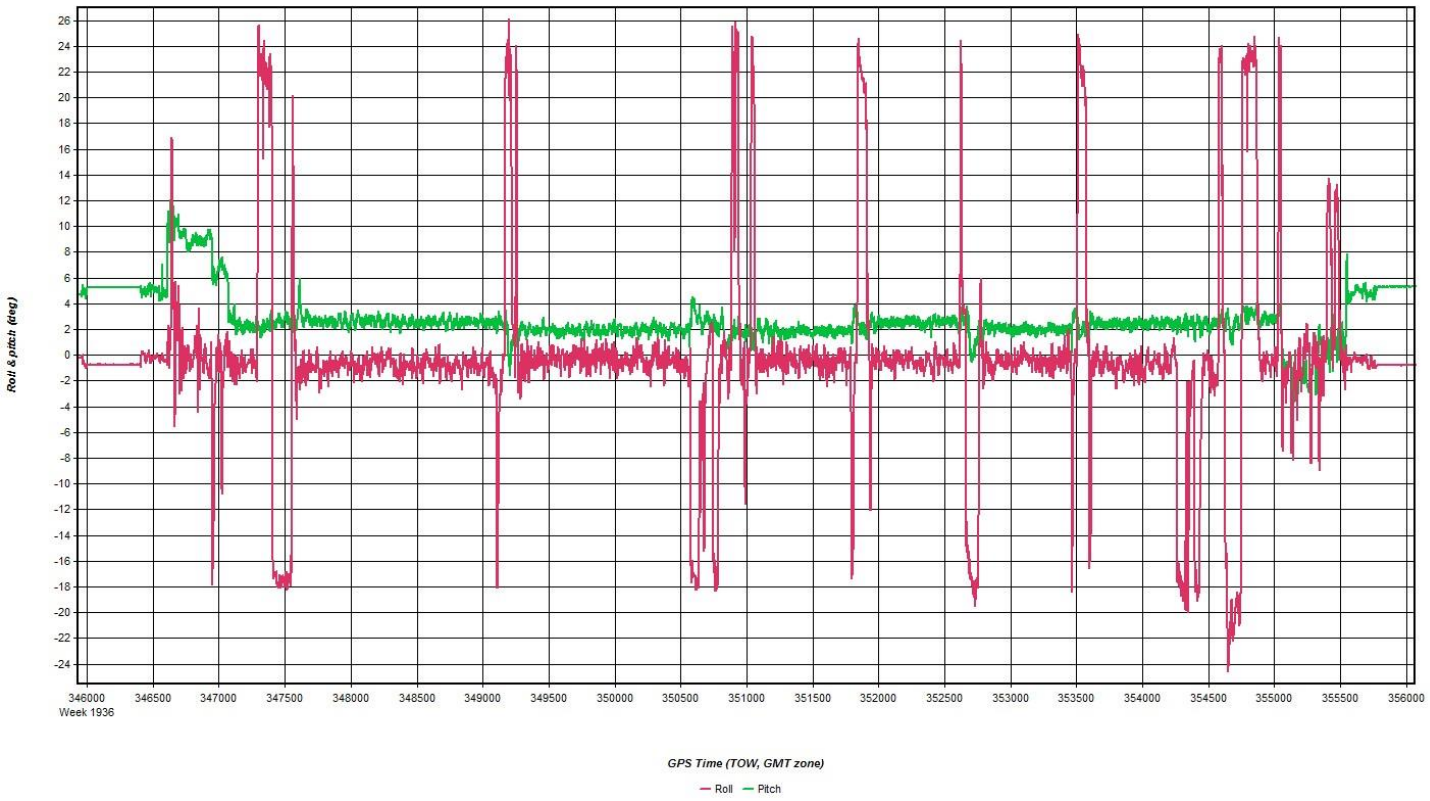

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

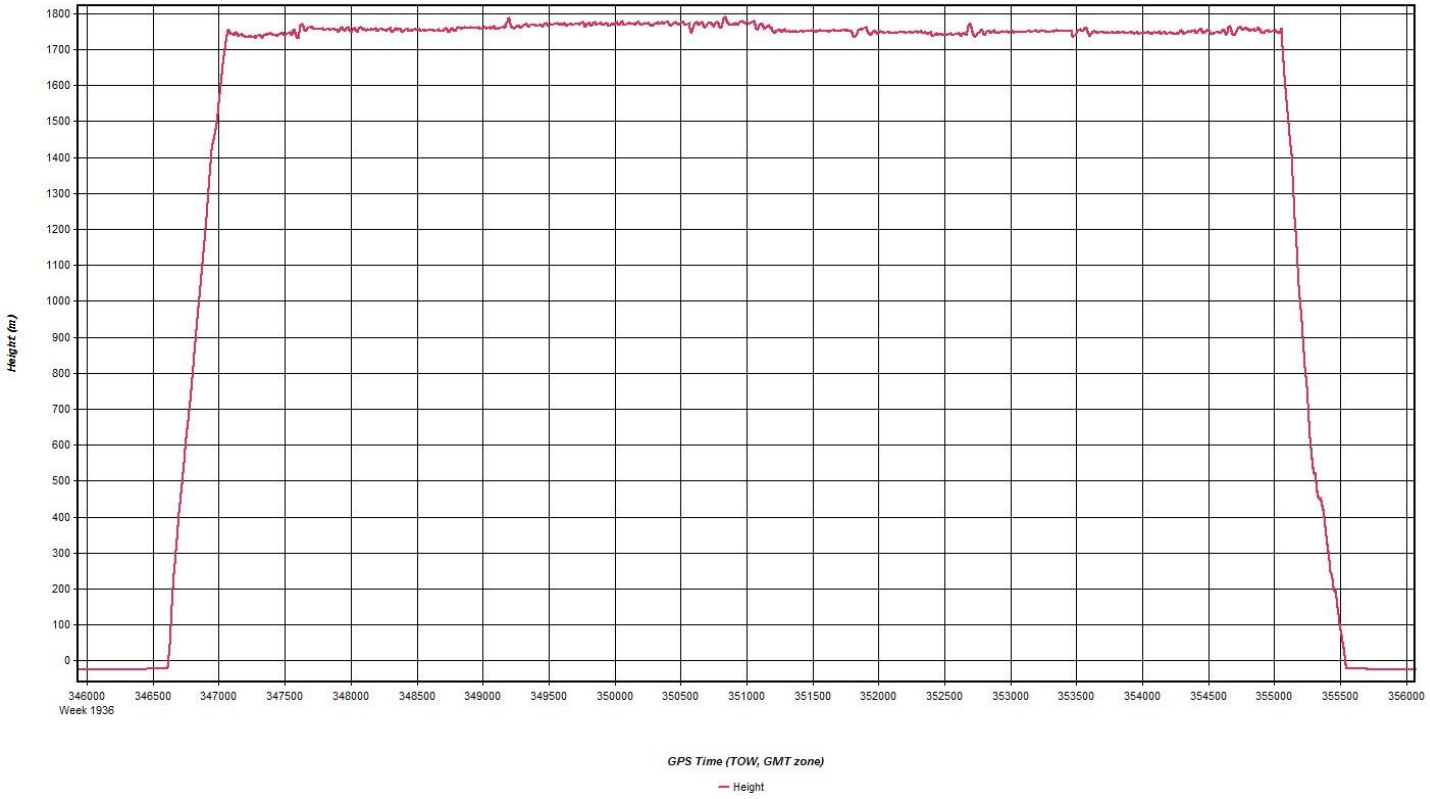

Separation (m)
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
East
North
Up

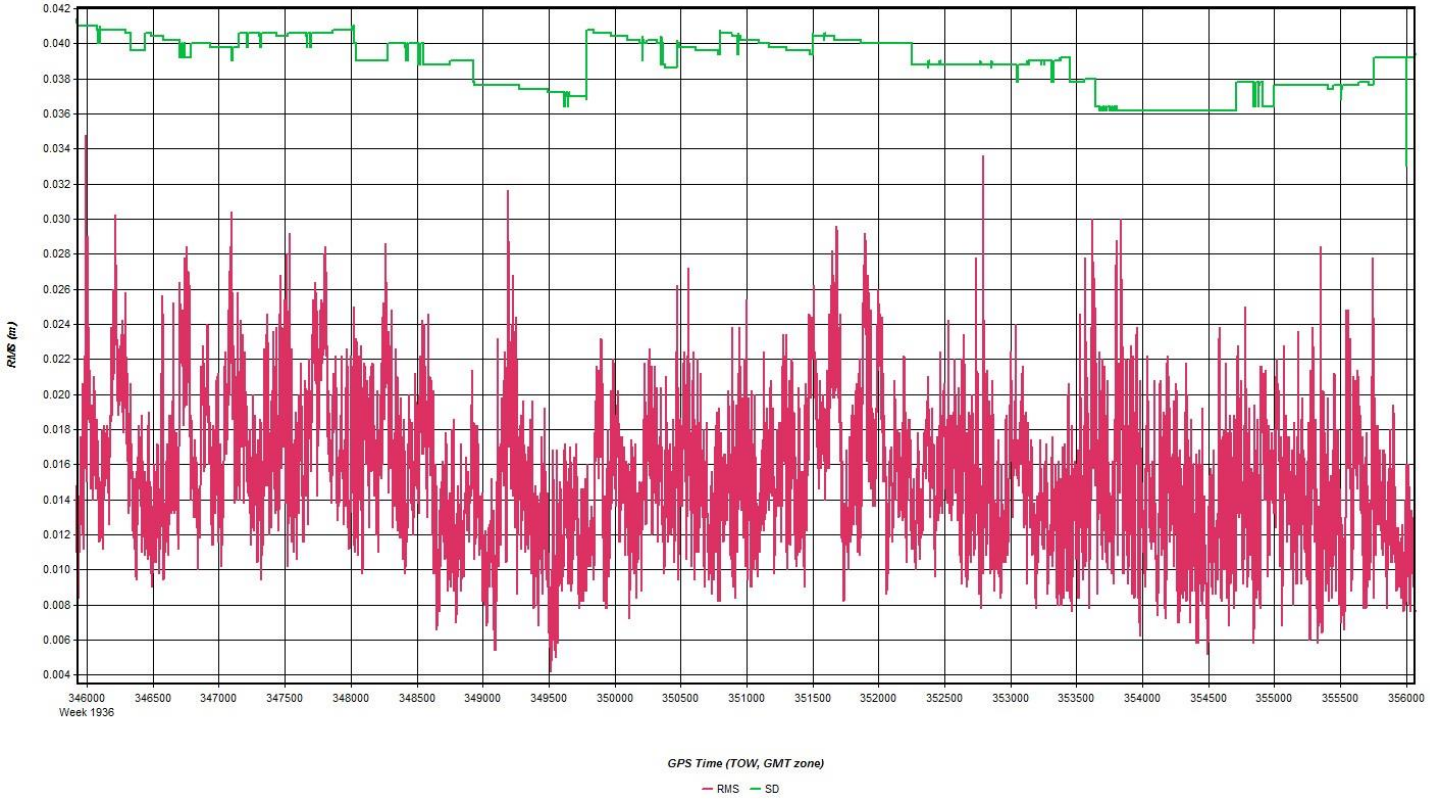

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

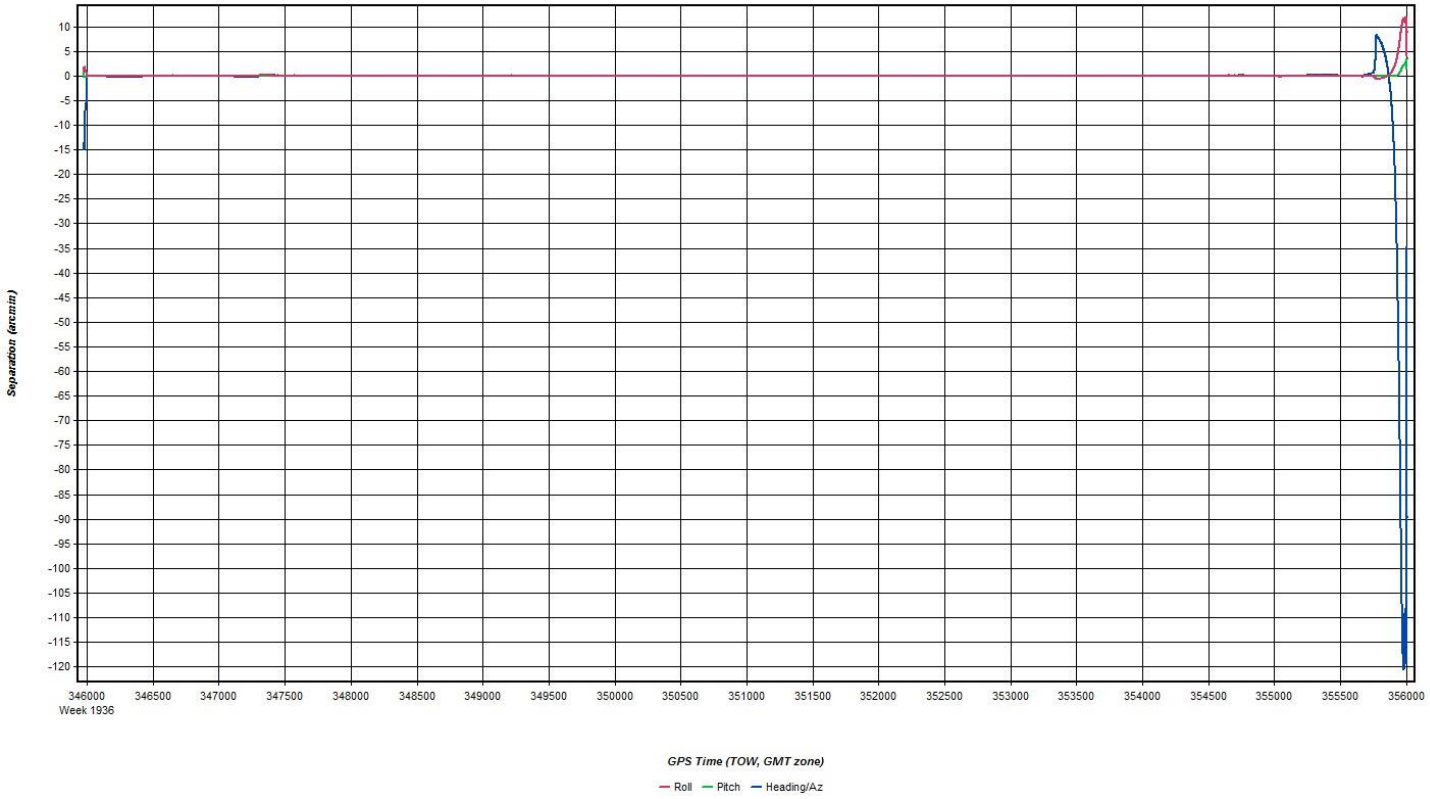

PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
PDOP

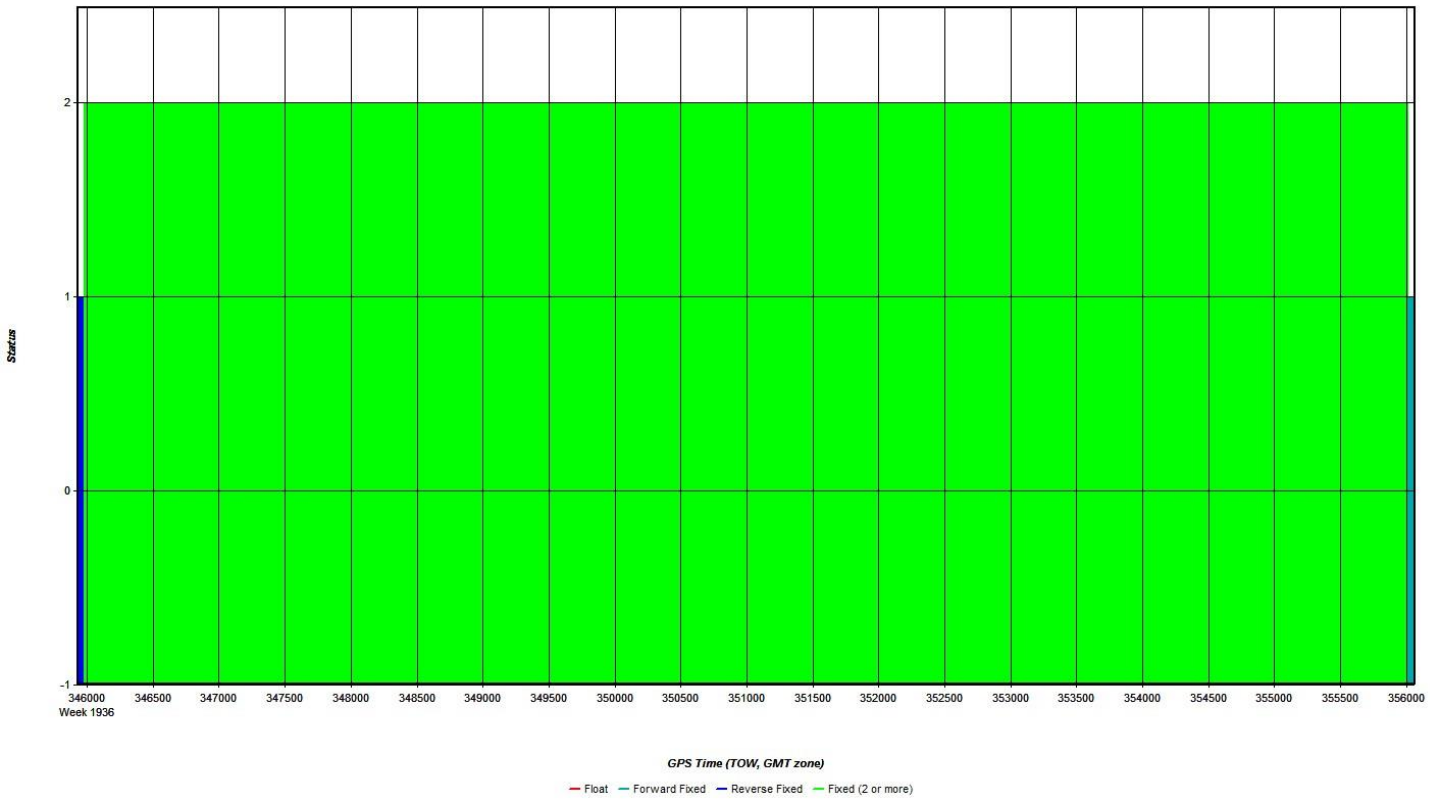

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

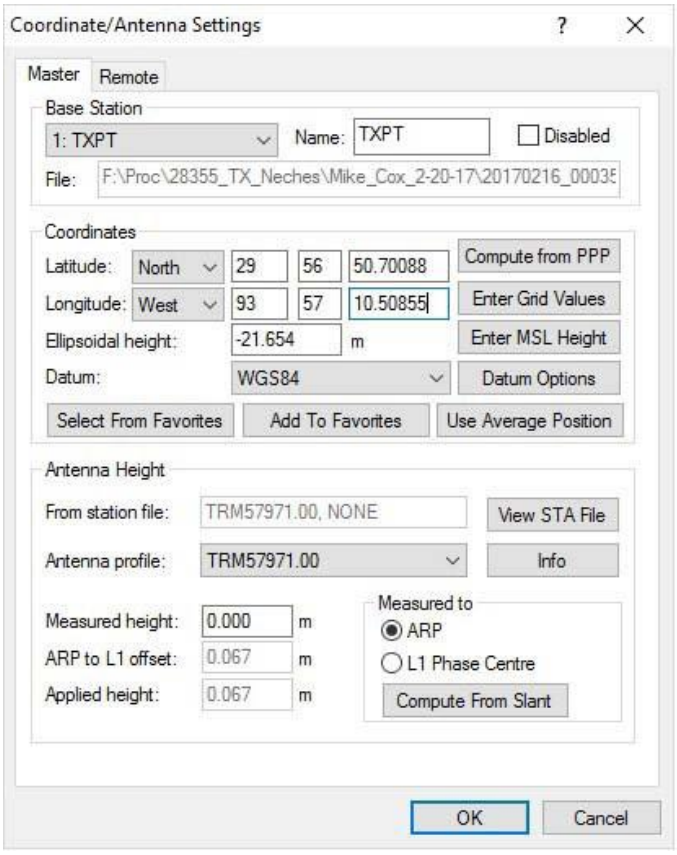

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Height

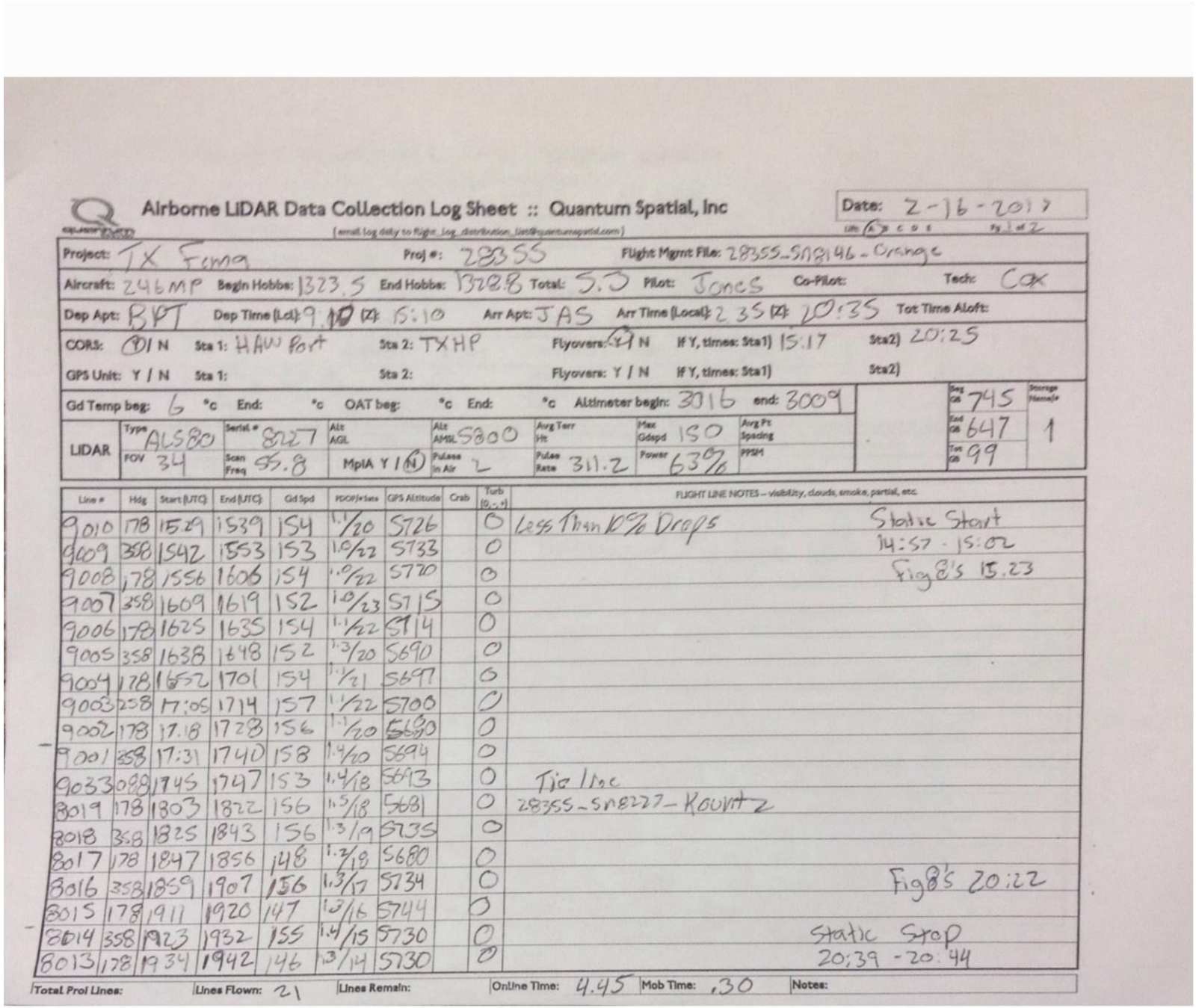

RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90
-95
-100
-105
-110
-115
-120
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
346000
Week 1936
346500
347000
347500
348000
348500
349000
349500
350000
350500
351000
351500
352000
352500
353000
353500
354000
354500
355000
355500
356000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name:
TXPT
Disabled
File:
F:\Proc\28355_TX_Neches\Mike_Cox_2-20-17\20170216_0003
Coordinates
Latitude:
North
29
56
50.70088
Compute from PPP
Longitude:
West
93
57
10.50855
Enter Grid Values
Ellipsoidal height:
-21.654
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-16-2017

(email log daily to flight_log_distribution_list@quantumspatial.com)

Project: TX Fluvial Proj #: 28355 Flight Mgmt File: 28355_SN8146 - Orange

Aircraft: 246MP Begin Hobbs: 1323.5 End Hobbs: 1328.8 Total: 5.3 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Local): 9:10 CT 15:10 Arr Apt: JAS Arr Time (Local): 2:35 CT 20:35 Tot Time Aloft:

CORS: (Y) / N Sta 1: HAW Port Sta 2: TXHP Flyovers: (Y) / N If Y, times: Sta1) 15:17 Sta2) 20:25

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 6 °c End: °c OAT beg: °c End: °c Altimeter begin: 3016 end: 3009

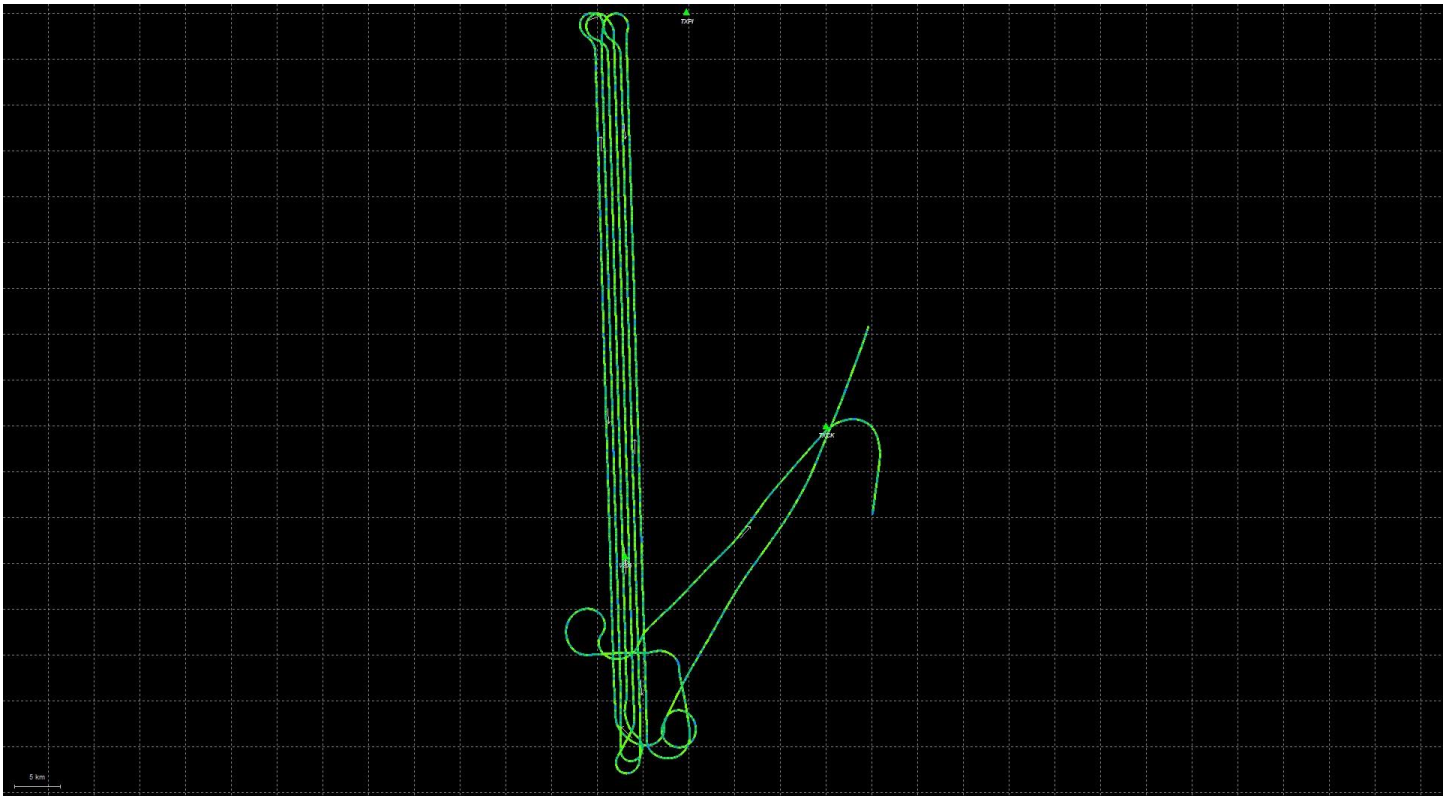
LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8227		5800		150	
	FOV 34	Scan Freq 55.8	MpIA Y / (N)	Pulses In Air 2	Pulse Rate 311.2	Power 63%	PPSM

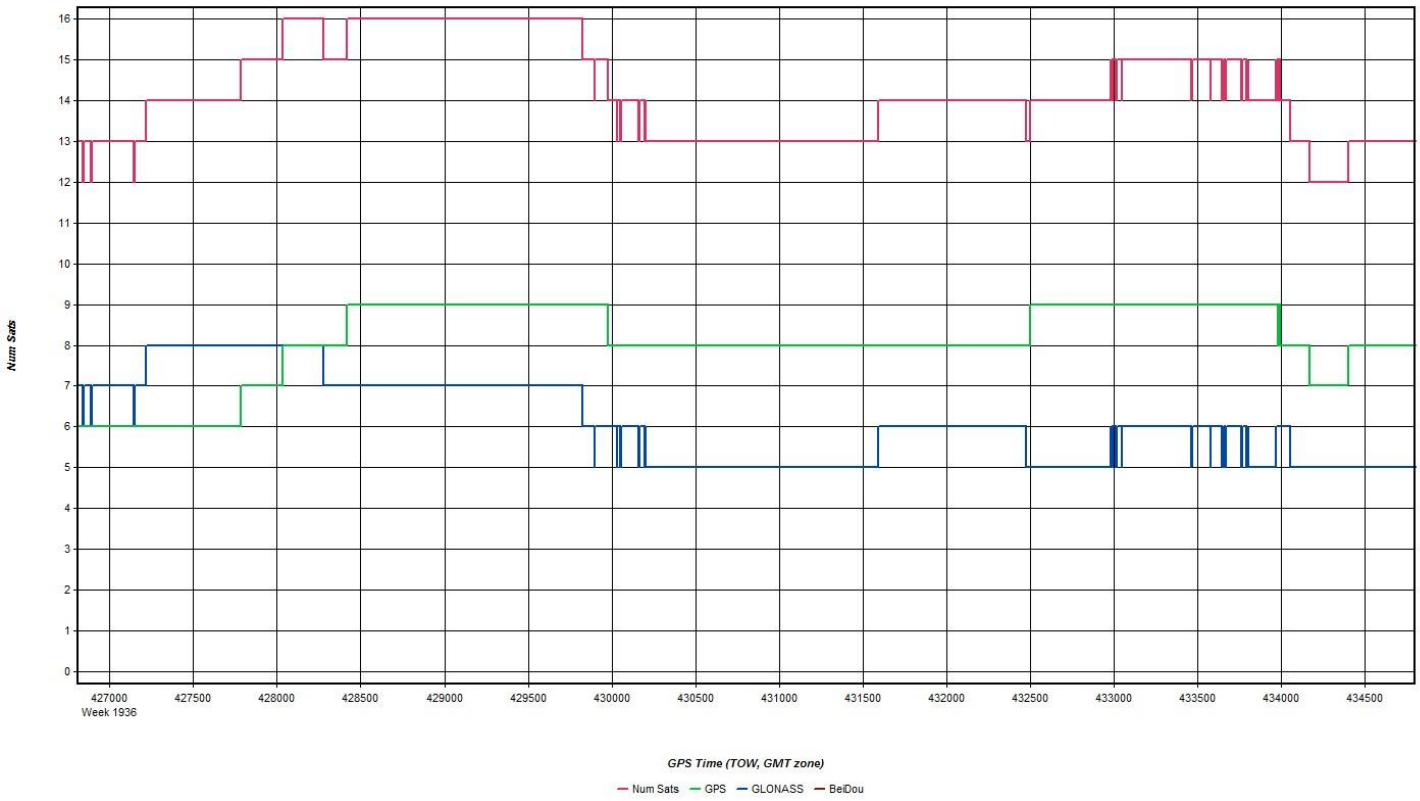
Seq GB 745 End GB 647 Ton GB 99 Storage Name/# 1

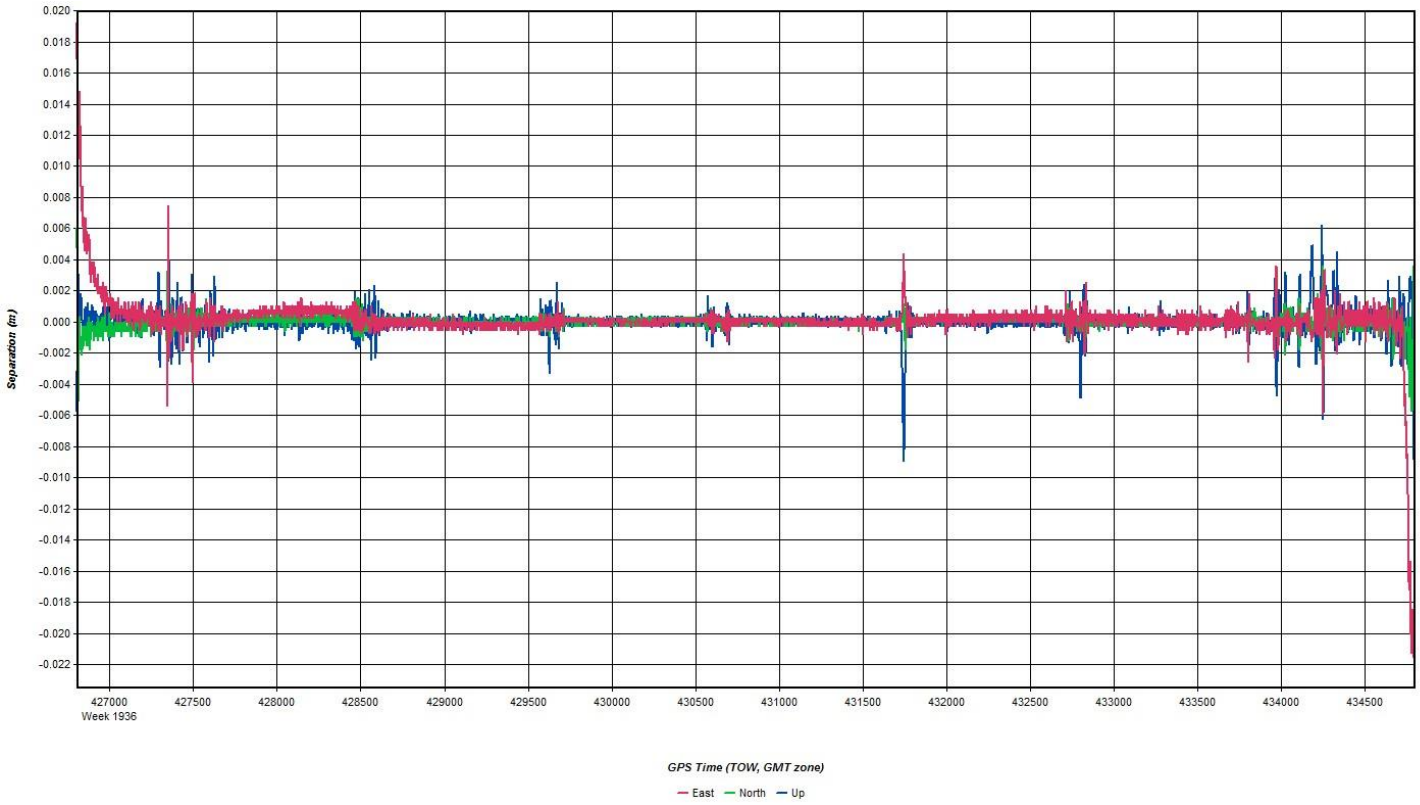
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sws	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
9010	178	15:29	1539	154	1.1/20	5726		0	Less Than 10% Drops Static Start 14:57 - 15:02
9009	358	1542	1553	153	1.0/22	5733		0	Fig 8's 15:23
9008	178	1556	1606	154	1.0/22	5720		0	
9007	358	1609	1619	152	1.0/23	5715		0	
9006	178	1625	1635	154	1.1/22	5714		0	
9005	358	1638	1648	152	1.3/20	5690		0	
9004	178	1652	1701	154	1.1/21	5697		0	
9003	358	17:05	1714	157	1.1/22	5700		0	
9002	178	17:18	1728	156	1.1/20	5690		0	
9001	358	17:31	1740	158	1.4/10	5694		0	
9033	088	1745	1747	153	1.4/18	5693		0	Tie line
8019	178	1803	1822	156	1.5/18	5681		0	28355_SN8227 - Kountz
8018	358	1825	1843	156	1.3/19	5735		0	
8017	178	1847	1856	148	1.3/18	5680		0	
8016	358	1859	1907	156	1.3/17	5734		0	Fig 8's 20:22
8015	178	1911	1920	147	1.3/16	5744		0	
8014	358	1923	1932	155	1.4/15	5730		0	Static Stop 20:39 - 20:44
8013	178	1934	1942	146	1.3/14	5730		0	

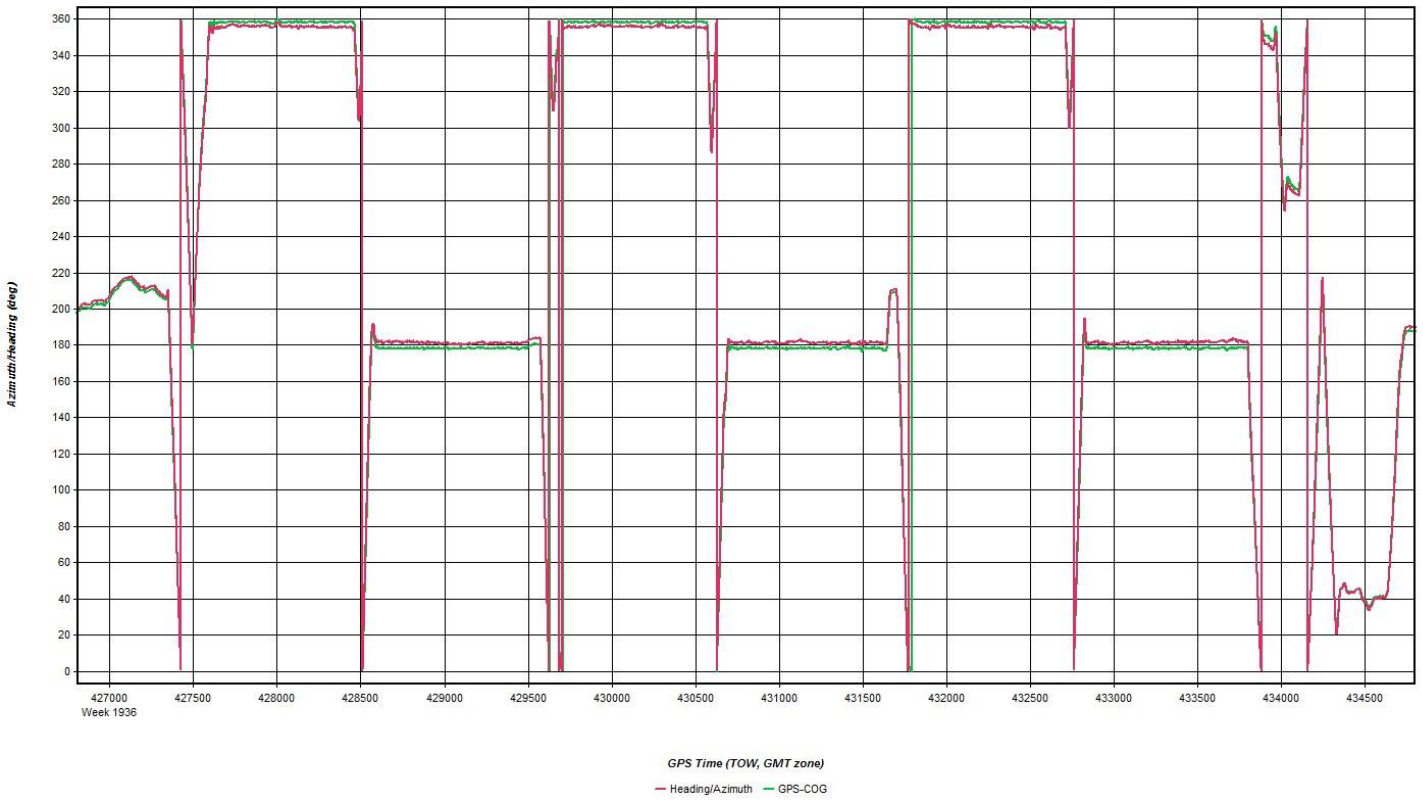
Total Prof Lines: Lines Flown: 21 Lines Remain: OnLine Time: 4.45 Mob Time: .30 Notes:

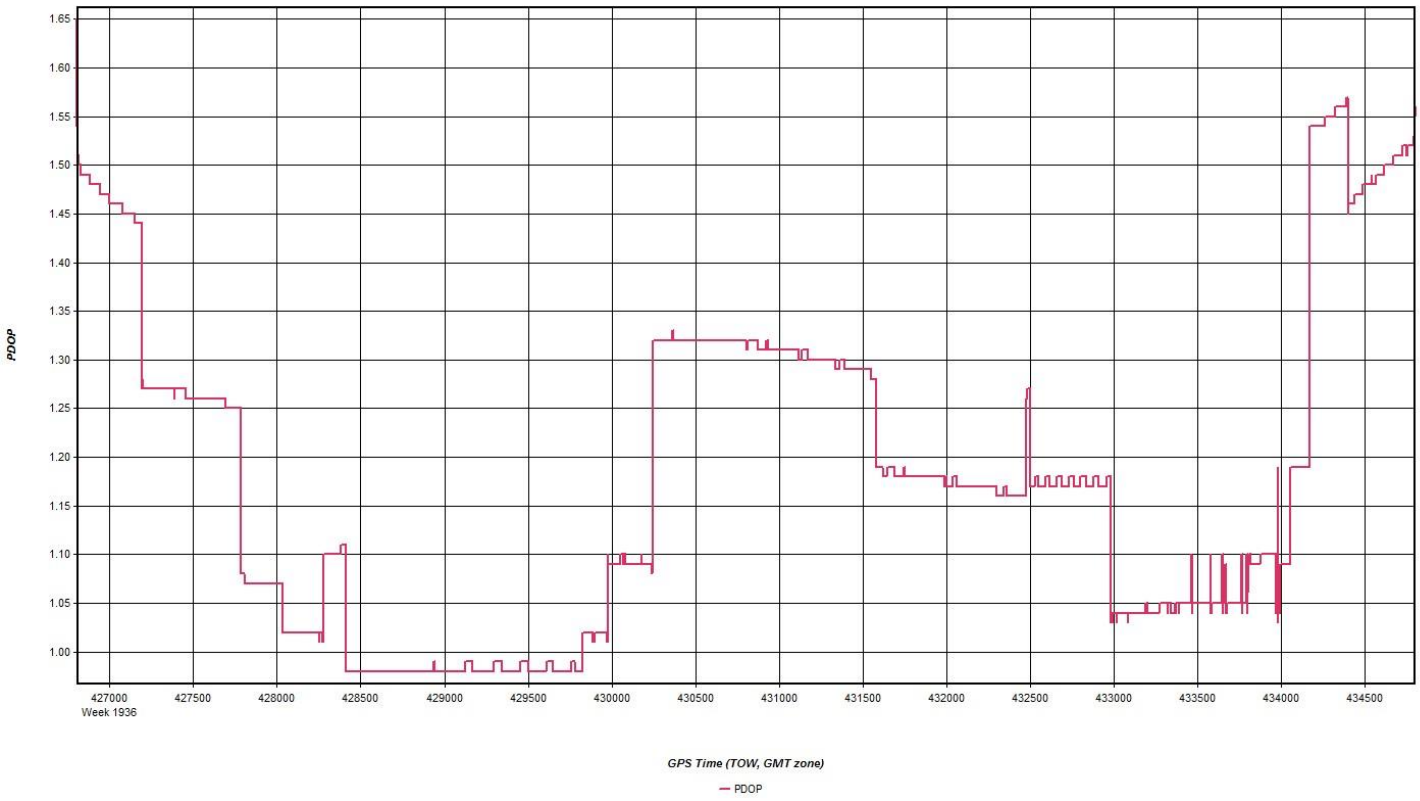
Feb 16, 2017-A (N73TM, SN7178)

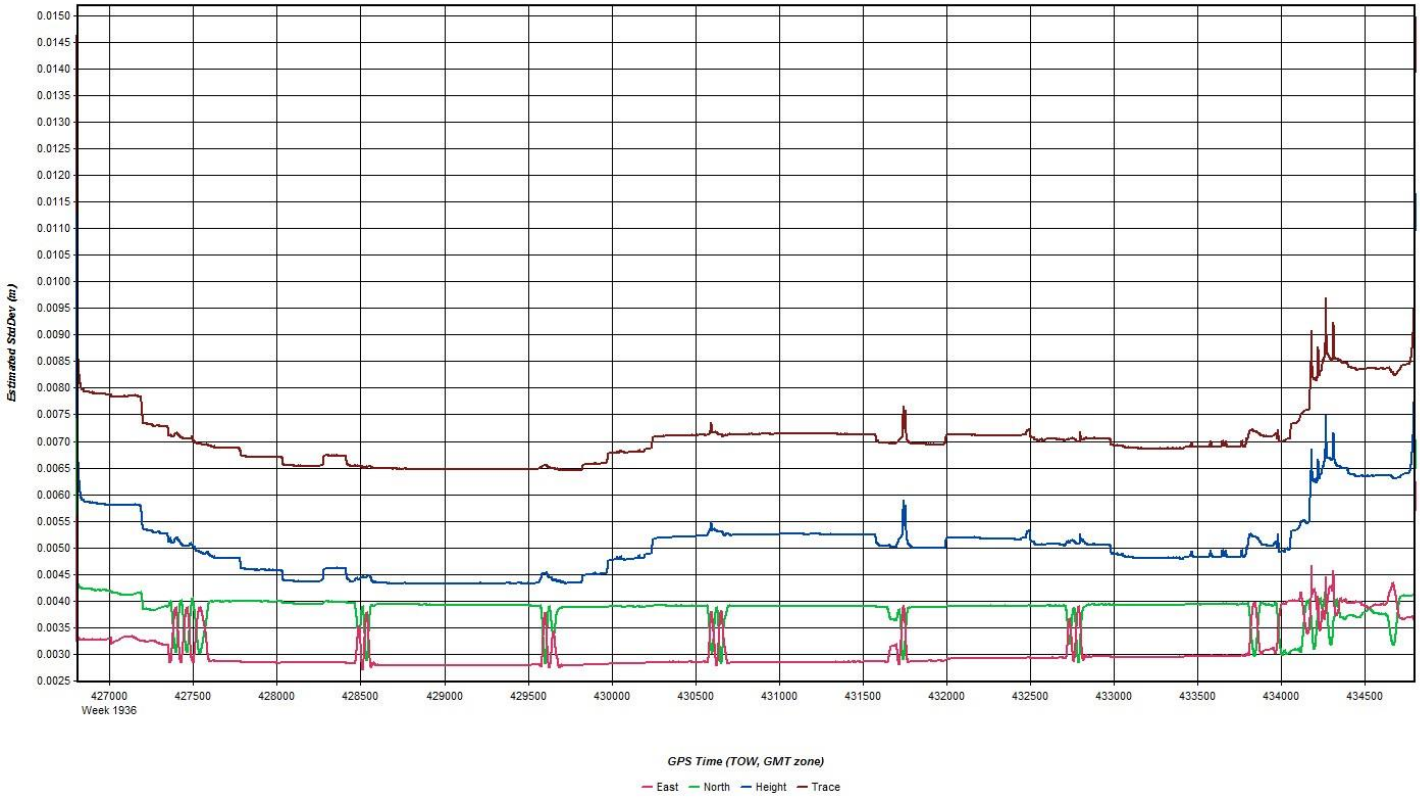


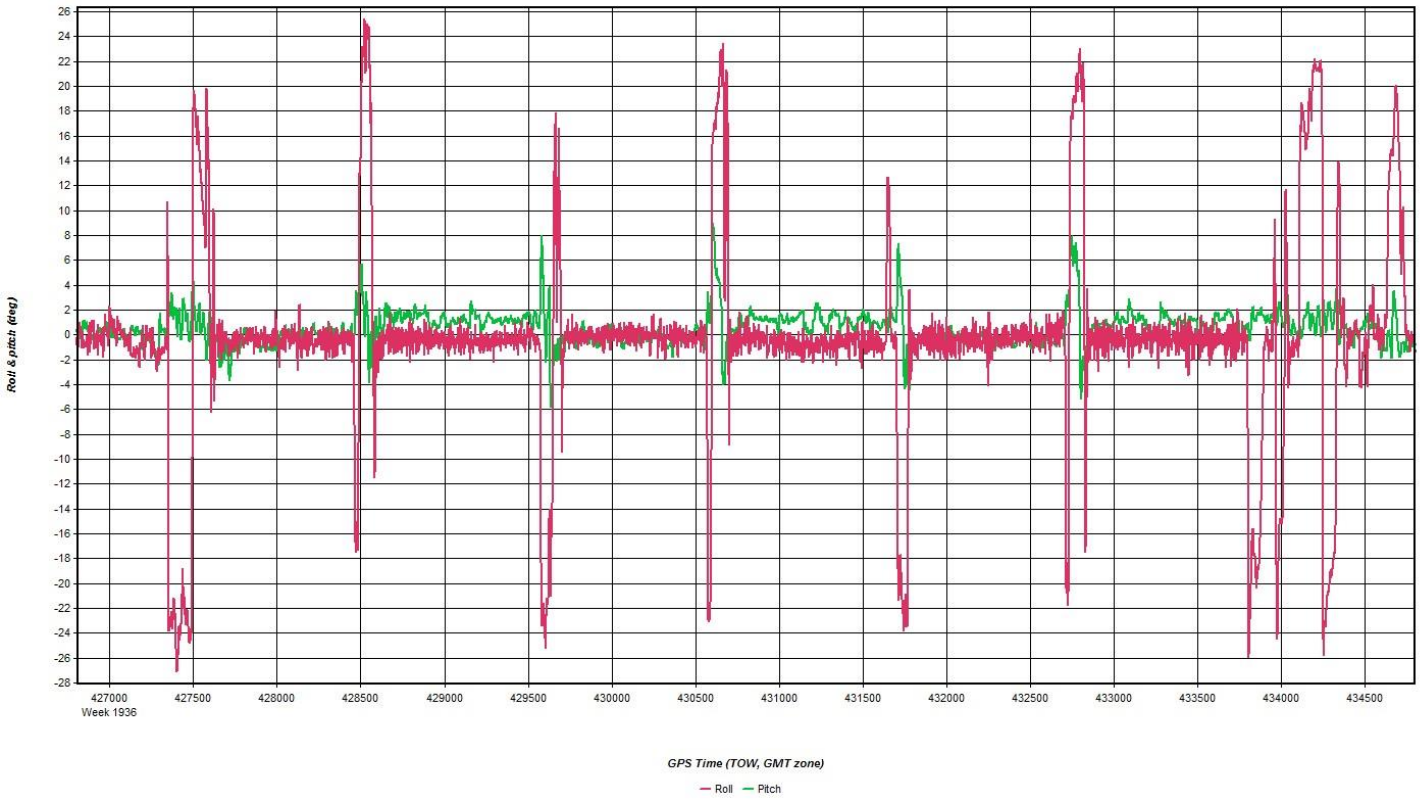

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

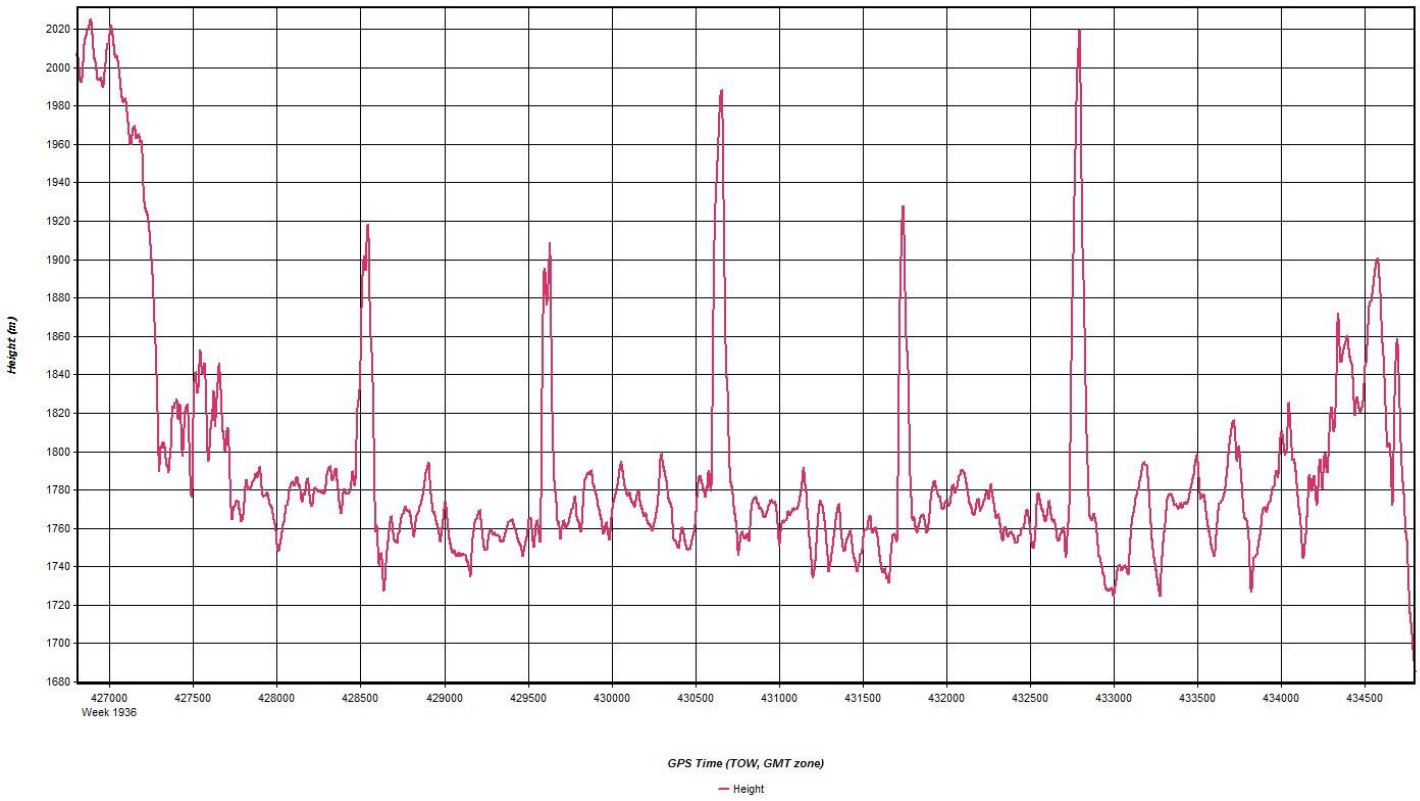

Separation (m)
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
East
North
Up

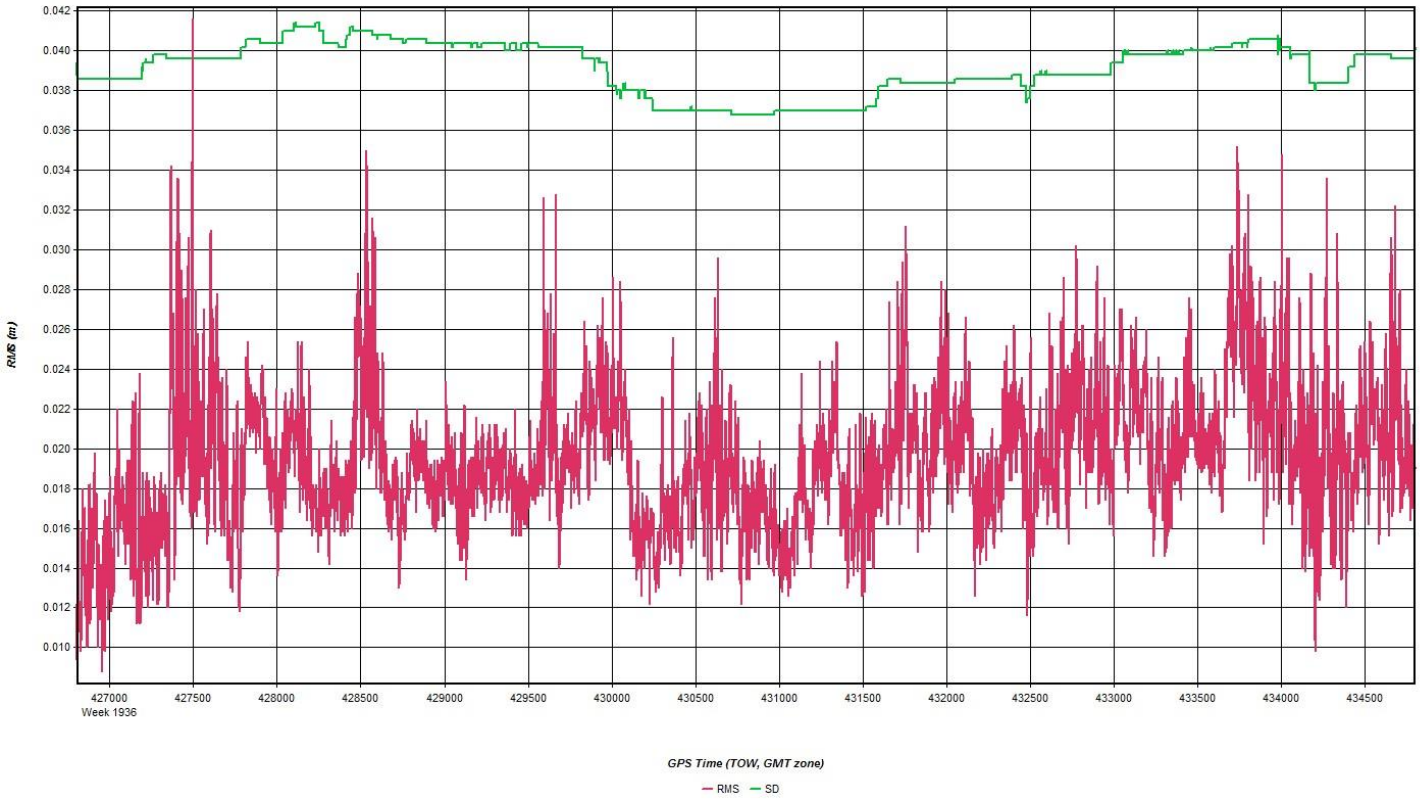

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

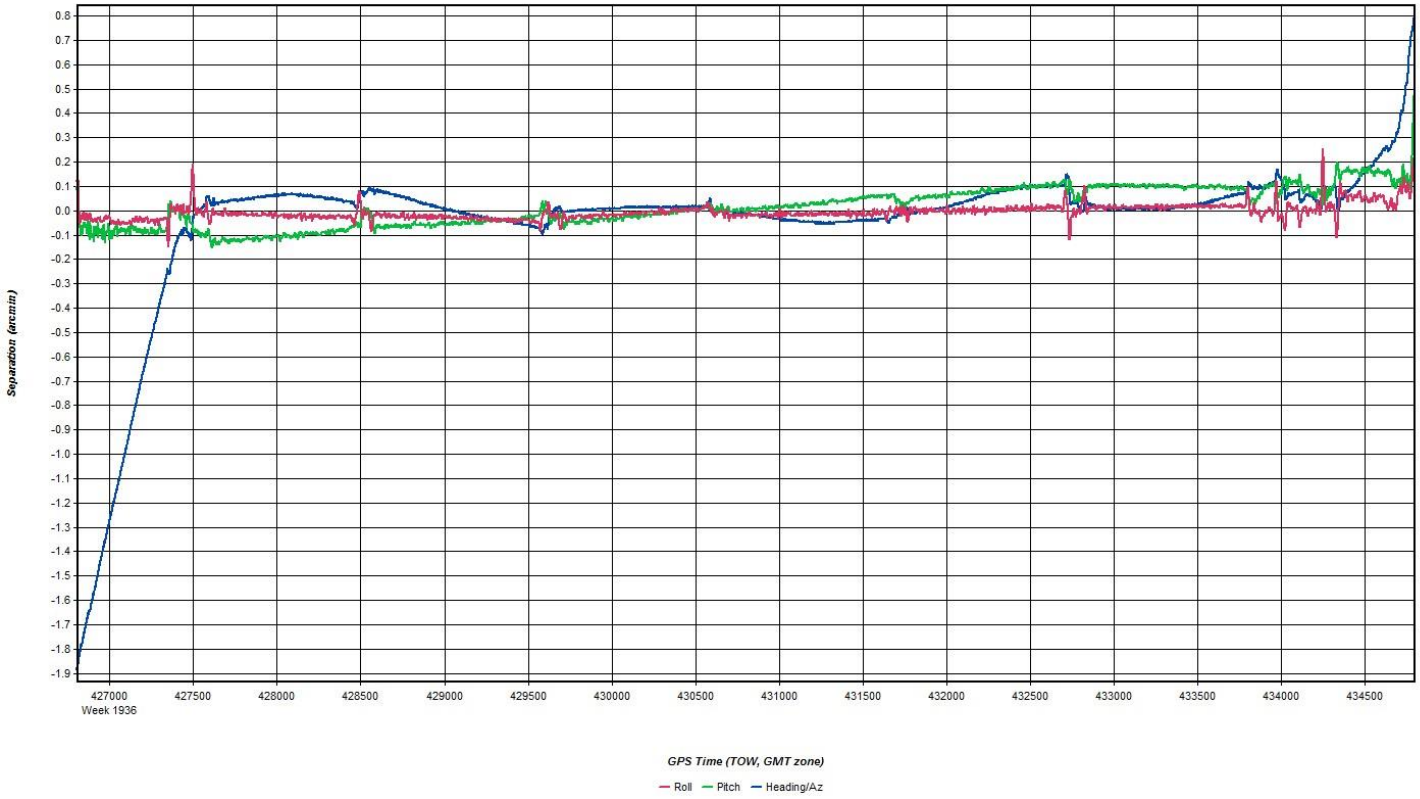

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
PDOP

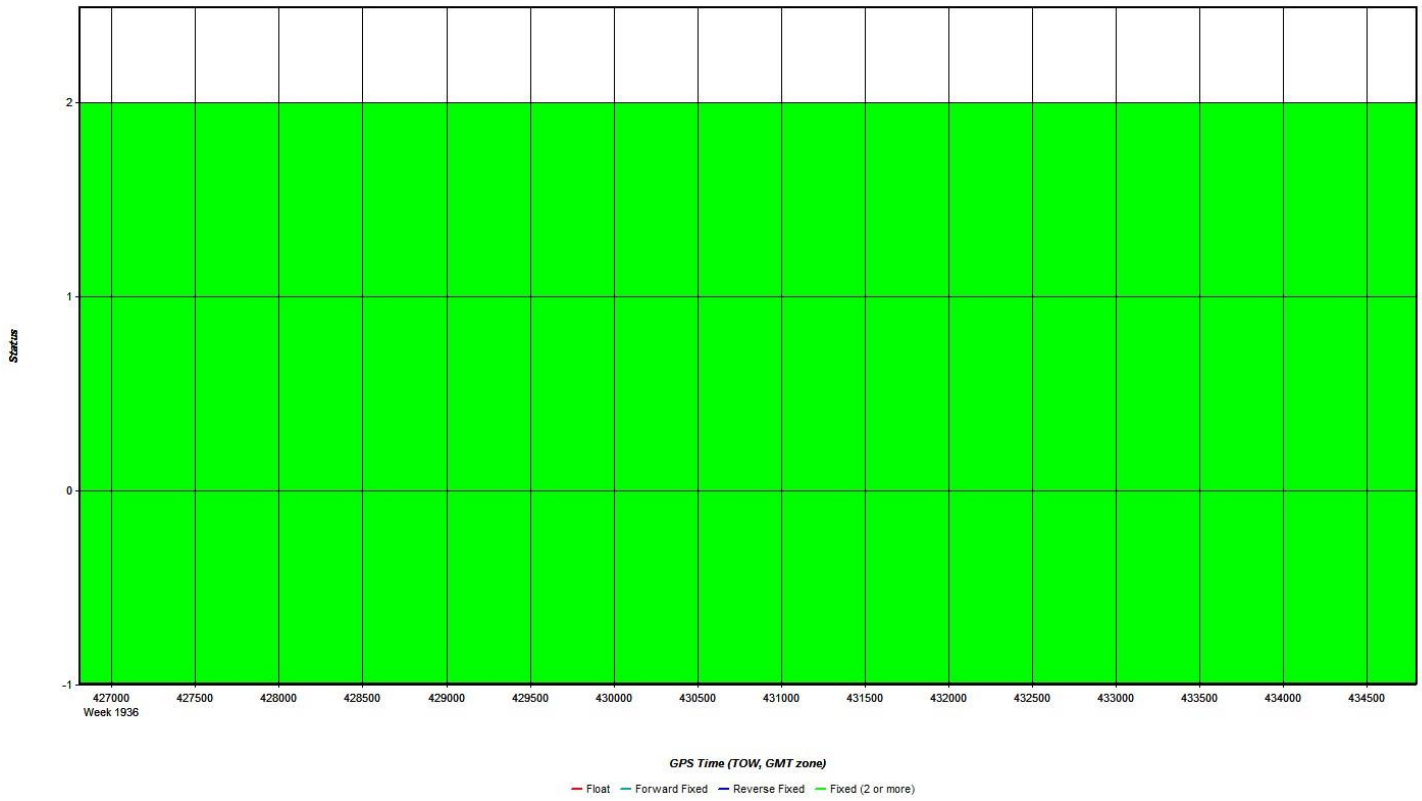

Estimated StdDev (m)
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

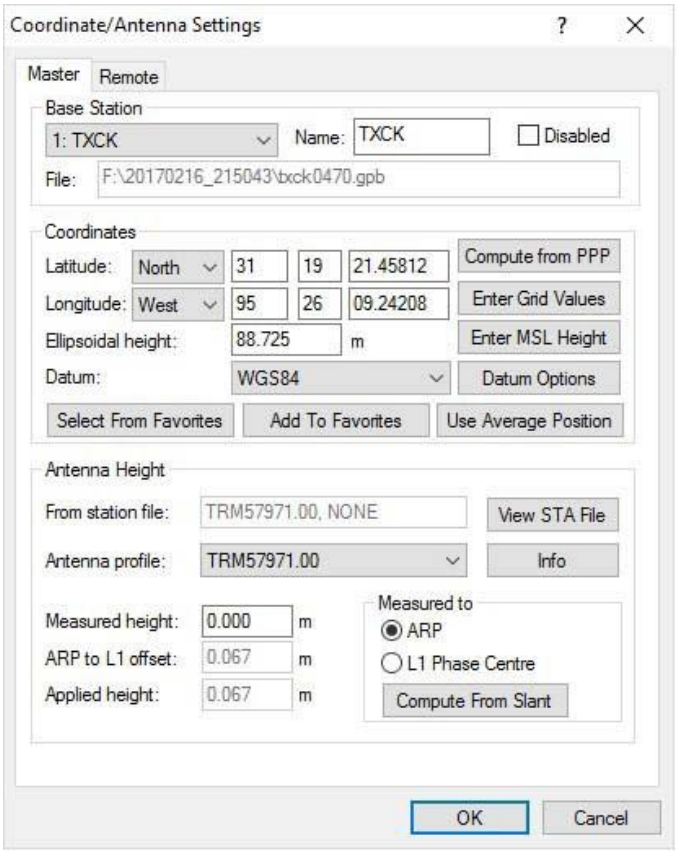

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
Roll
Pitch

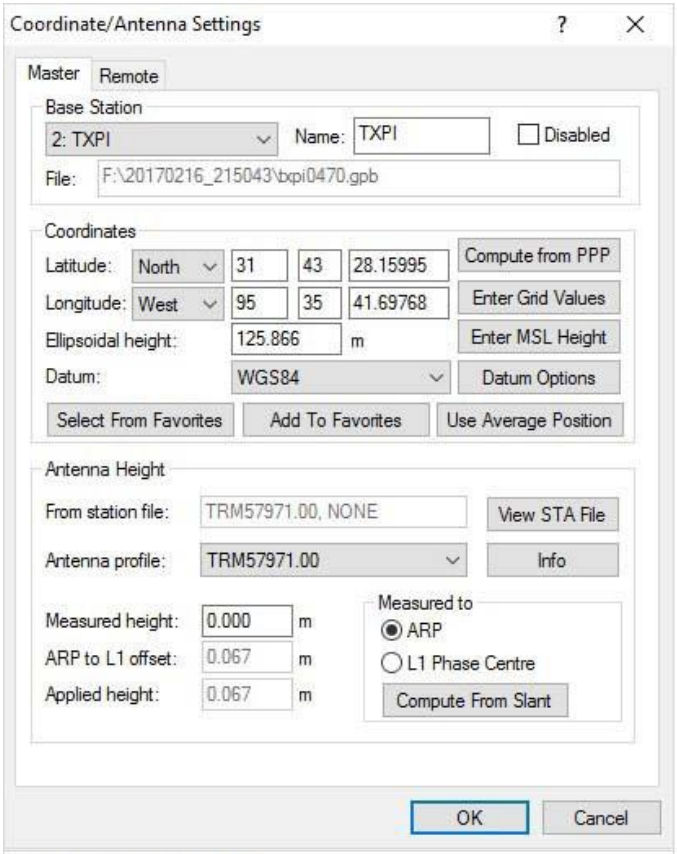

Height (m)
2020
2000
1980
1960
1940
1920
1900
1880
1860
1840
1820
1800
1780
1760
1740
1720
1700
1680
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
Height

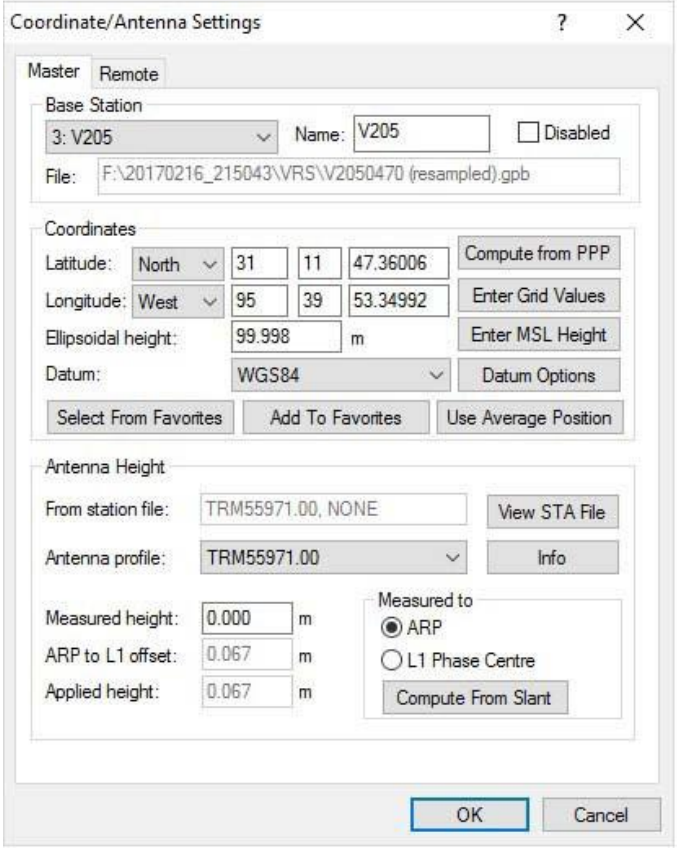

RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
427000
Week 1936
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCK
Name: TXCK
Disabled
File: F:\20170216_215043\txck0470.gpb
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXPI
Name: TXPI
Disabled
File: F:\20170216_215043\txpi0470.gpb
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V205
Name: V205
Disabled
File: F:\20170216_215043\VRS\V2050470 (resampled).gpb
Coordinates
Latitude: North 31 11 47.36006
Longitude: West 95 39 53.34992
Ellipsoidal height: 99.998 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 02/16/17 Lift: (A) B C D E Pg 1 of 2

Project: 28355 Proj #: USGS NECHES Flight Mgmt File: 170216 – 215043

Aircraft: N73TM Begin Hobbs: 6557.7 End Hobbs: 6560.2 Total: 2.5 Pilot: JOSEY Co-Pilot: — Tech: TOM

Dep Apt: KGGG Dep Time (Lcl): 4:02 (Z): 22:02 Arr Apt: CXO Arr Time (Local): 7:09 (Z): 15:09 Tot Time Aloft: 3:07

CORS: (Y) / N Sta 1: TXCK Sta 2: TXCK Flyovers: Y / N If Y, times: Sta1) 22:35 Sta2) 00:43

GPS Unit: Y / N Sta 1: — Sta 2: — Flyovers: Y / N If Y, times: Sta1) — Sta2) —

Gd Temp beg: 64 °c End: °c OAT beg: °c End: °c Altimeter begin: 30.08 end:

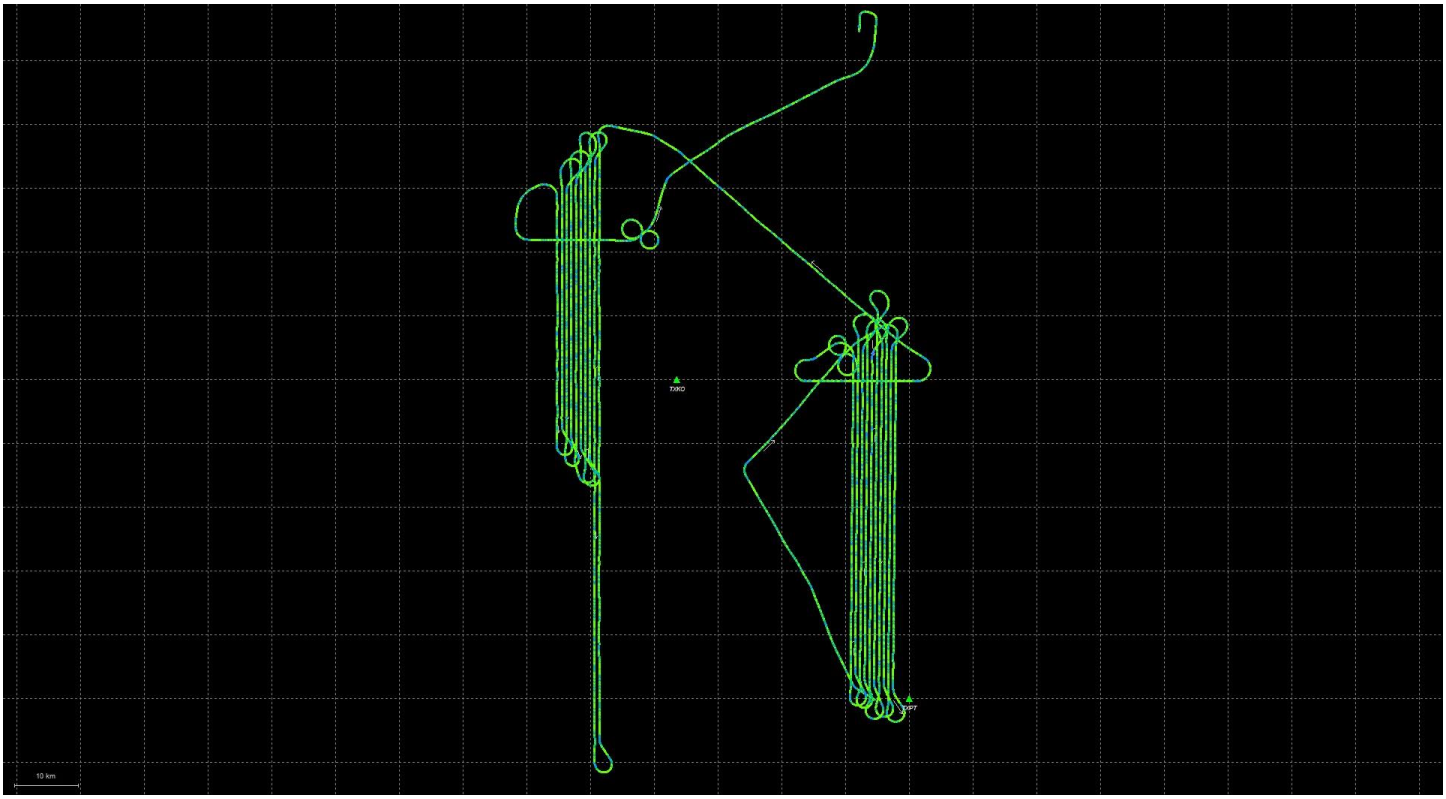
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS-70	7178	1775				
	FOV	Scan Freq	MpiA (Y) / N	Pulses In Air	Pulse Rate	Power	PPSM
	34	57.3			312	100%	3.5+

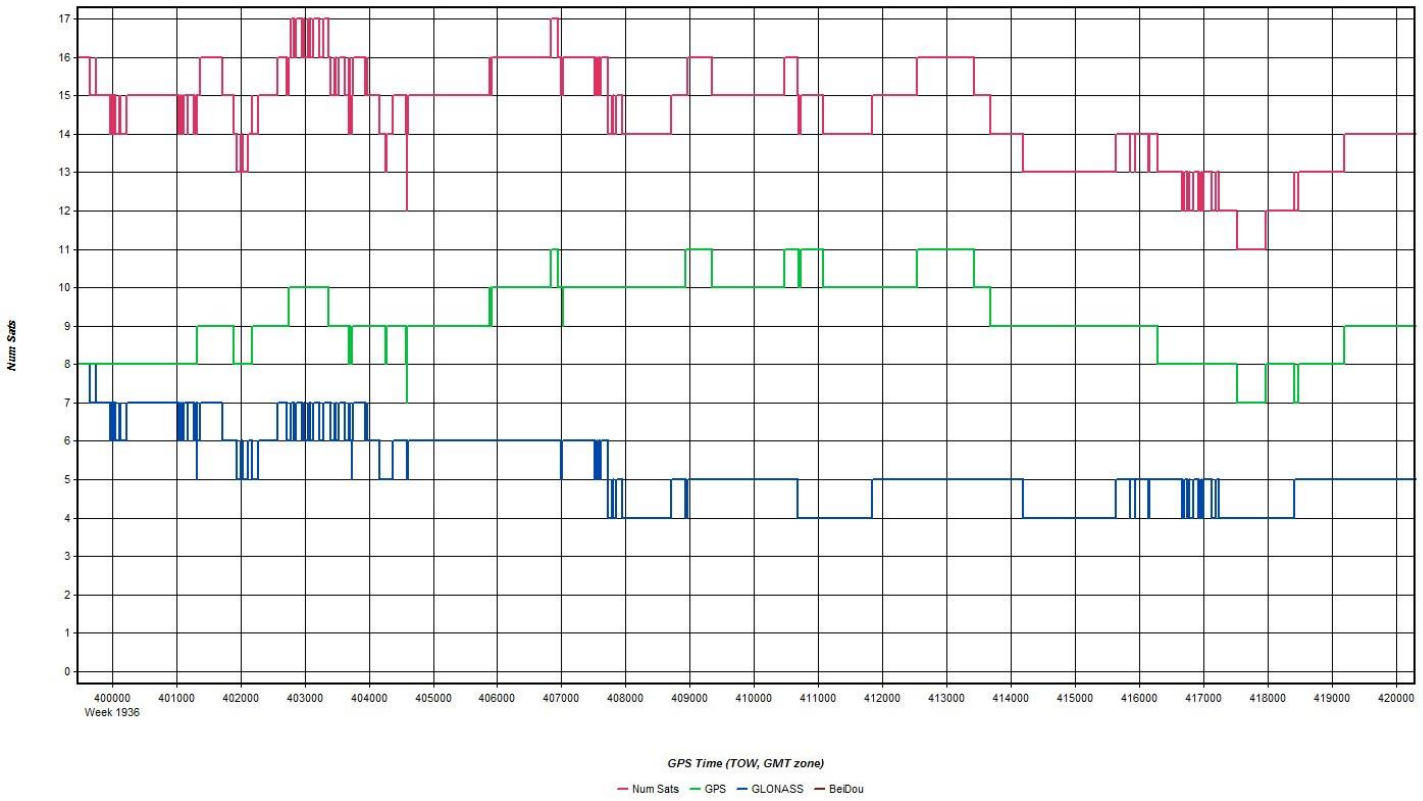
Beg GB	End GB	Tot GB	Storage Name/s
435	395	40	SSD4 7178

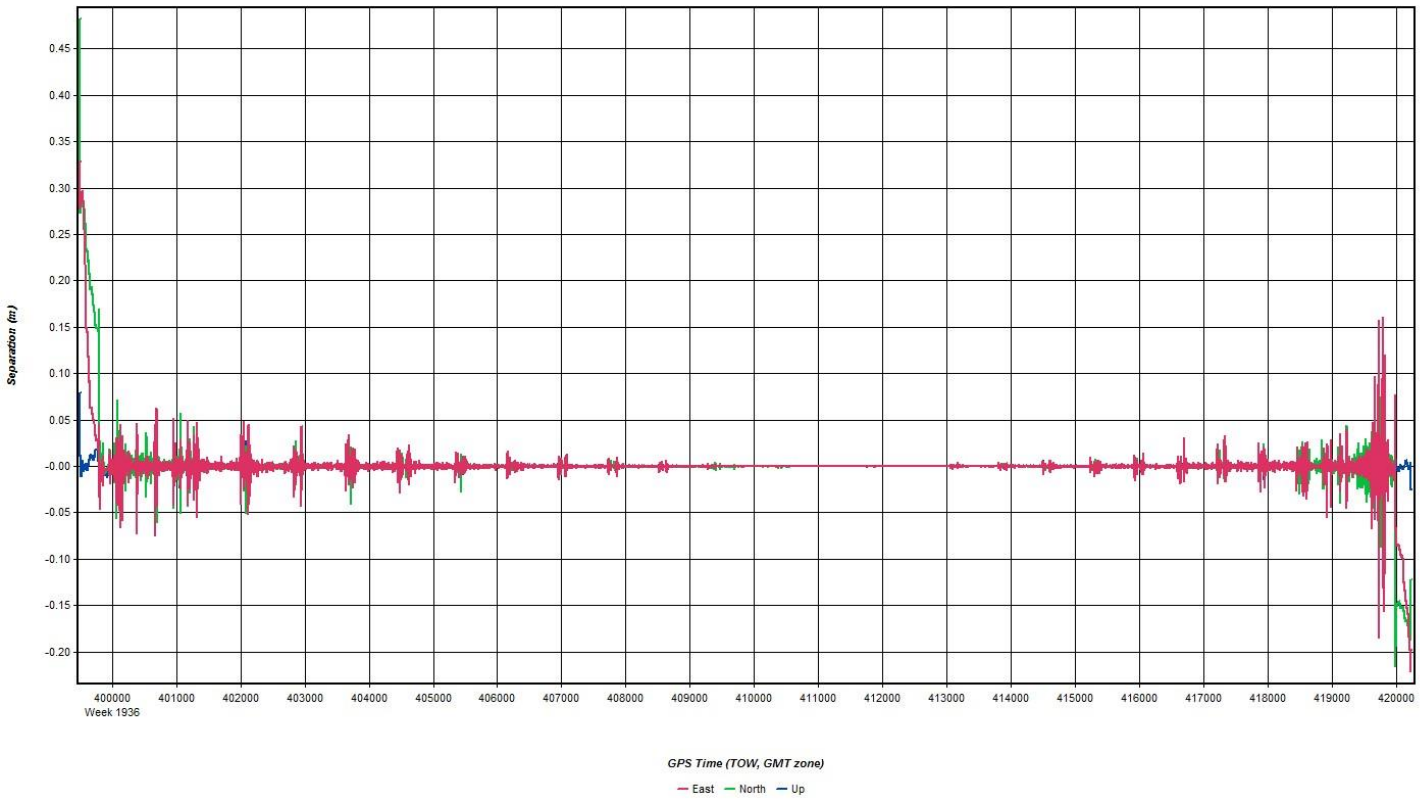
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		3:48	4:48						FERRY: KGGG → TXCK → SITE 1.0
1022	N	22:47	23:00	150	12/17	5879		0	770 - SMOKE 8mi FNE
1023	S	23:03	23:18	150	12/17	"		0	771 - " "
1024	N	23:21	23:35	150	13/16	"		0	772 - " " 4→6 FNE JUST WEST 6→8mi F.N.E.
1025	S	23:38	23:53	150	12/17	5885		0	773 " "
1026	N	23:56	00:11	150	/	5879		0	774
1027	S	00:14	00:29	150	13/17	5883		0	775
XTIE	W	00:33	00:34	—	12/17	"		0	
		6:36	7:18						FERRY: SITE → TXCK → CXO 0.7
		7:42							
									SHIPPER: E26J (PASSPORT)

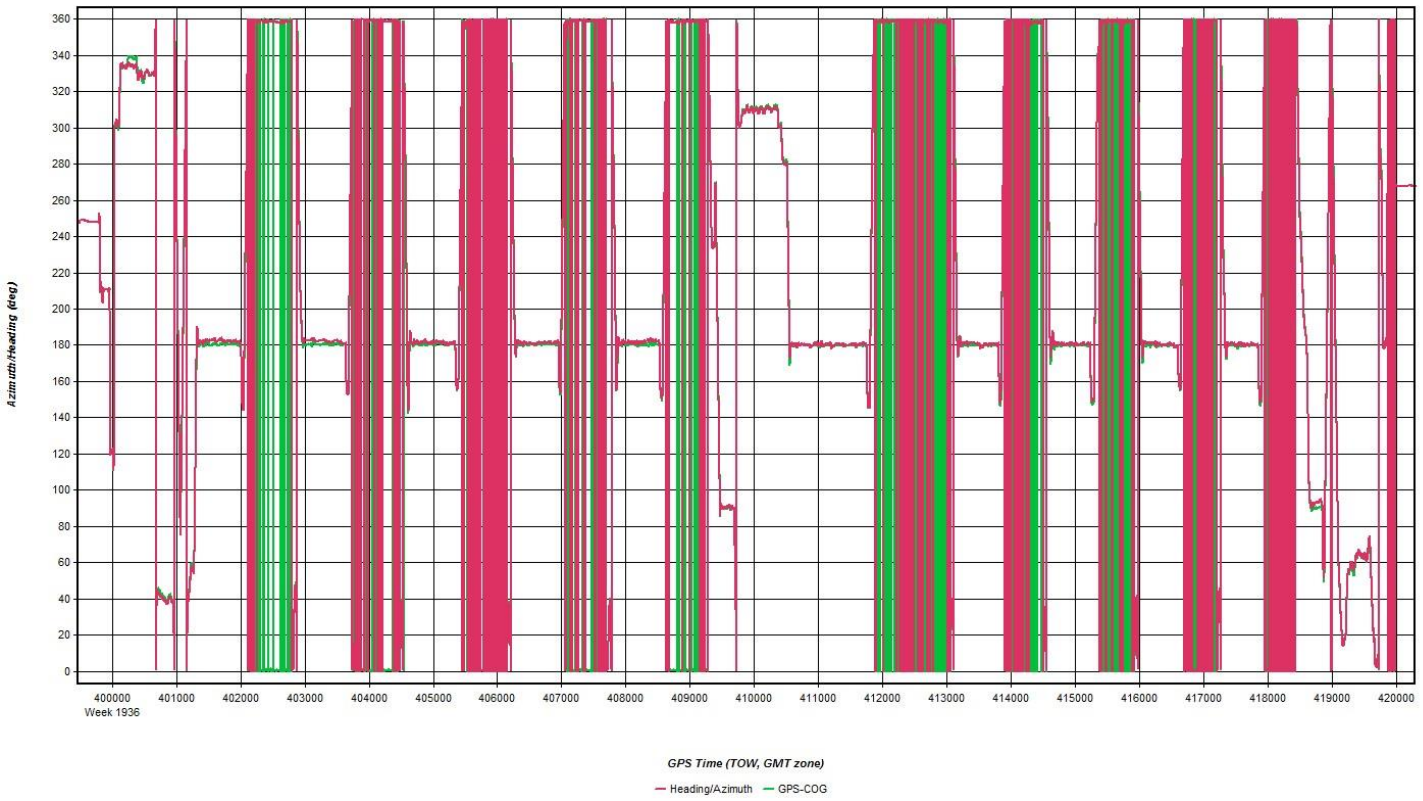
Total Proj Lines: 99 CROCKETT | Lines Flown: 6 | Lines Remain: 28 | On line Time: 1.8 | Mob Time: 1.5 | Notes:

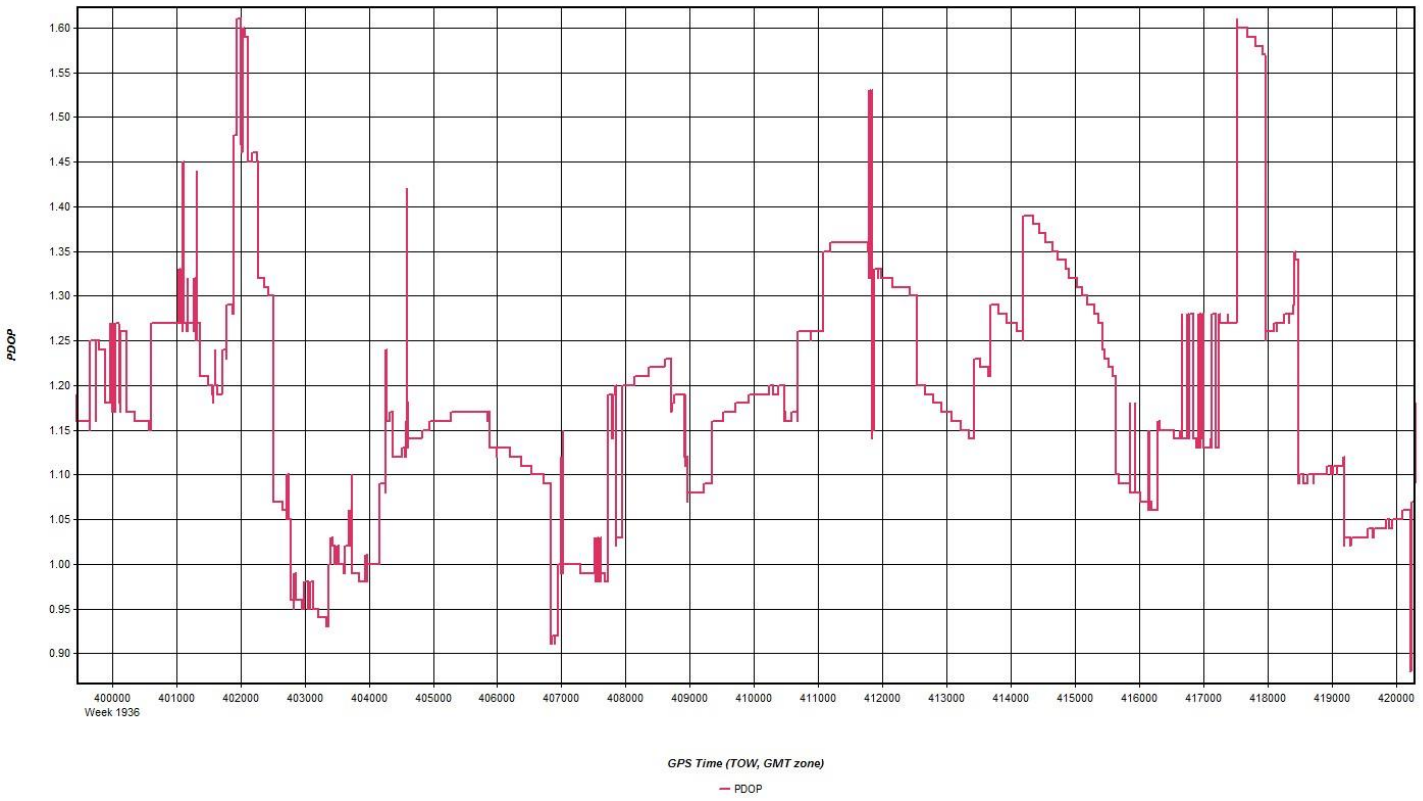
Feb 16, 2017-A (N246MP, SN8227)

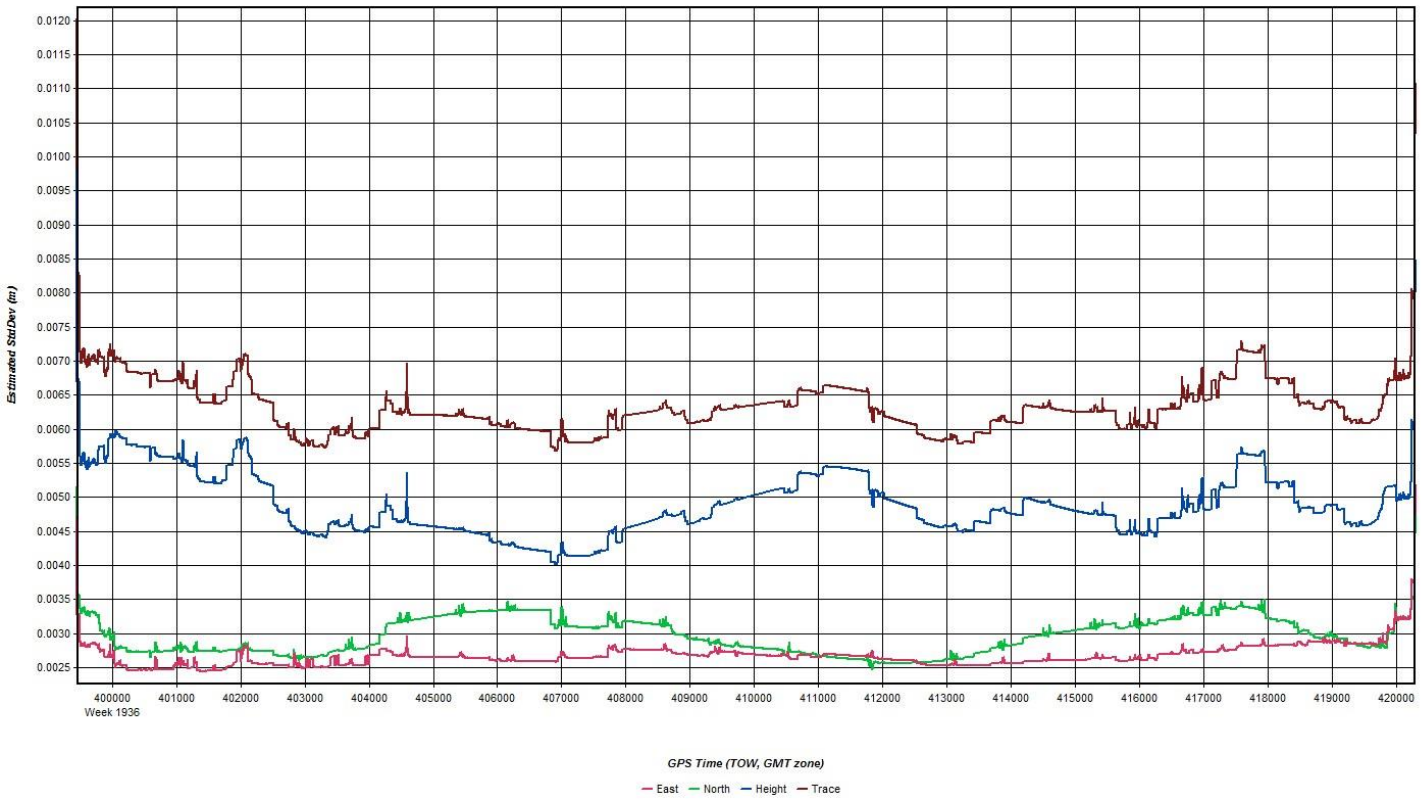


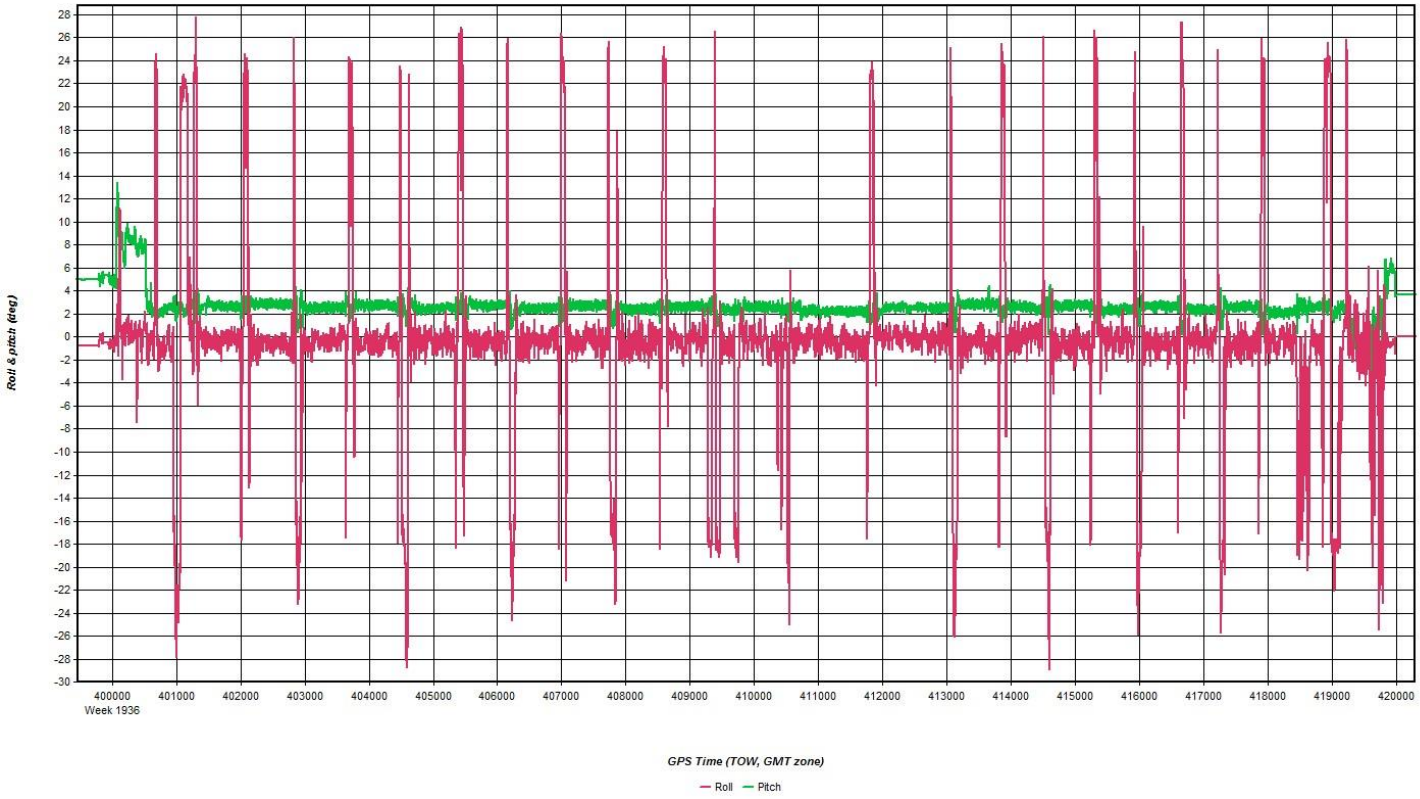

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

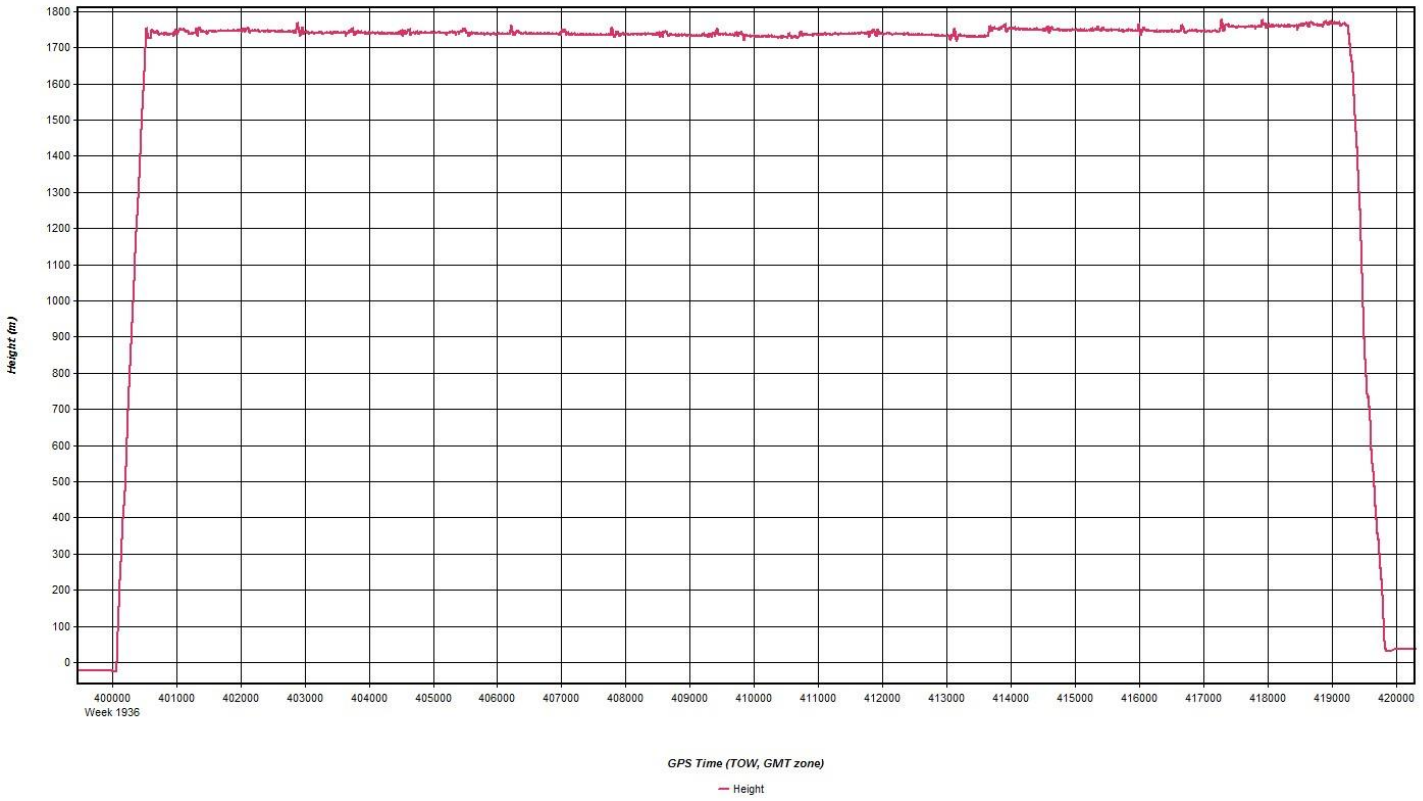

Separation (m)
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
East
North
Up

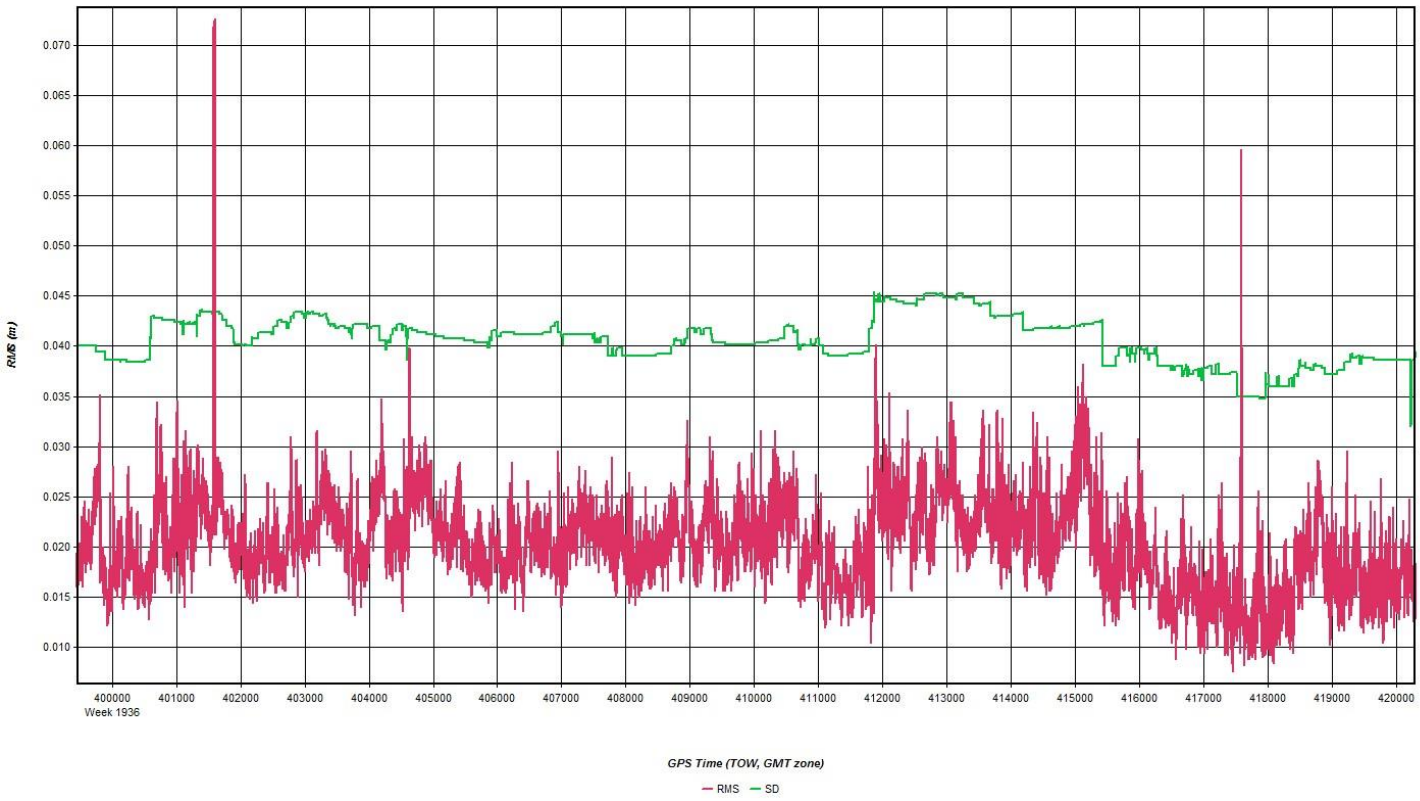

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

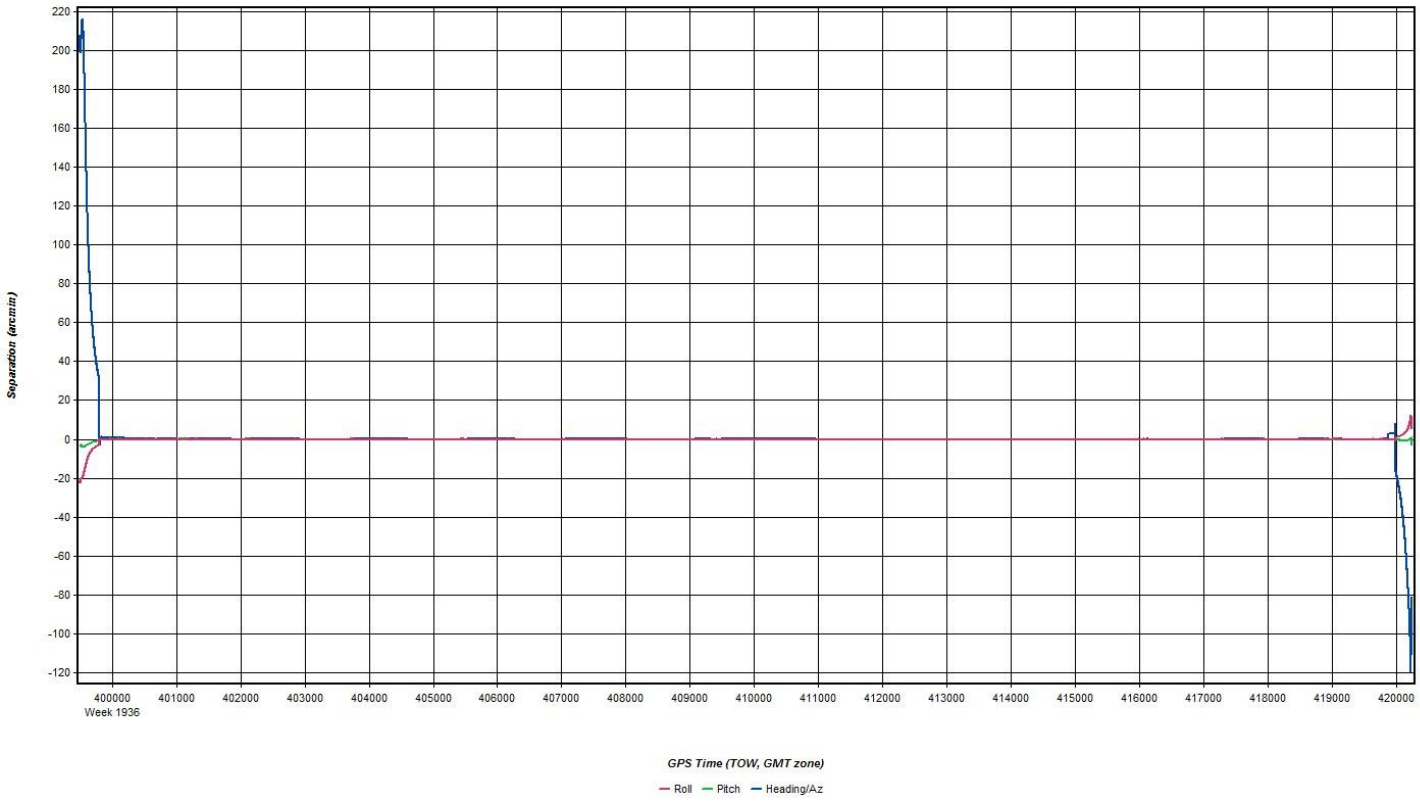

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
PDOP

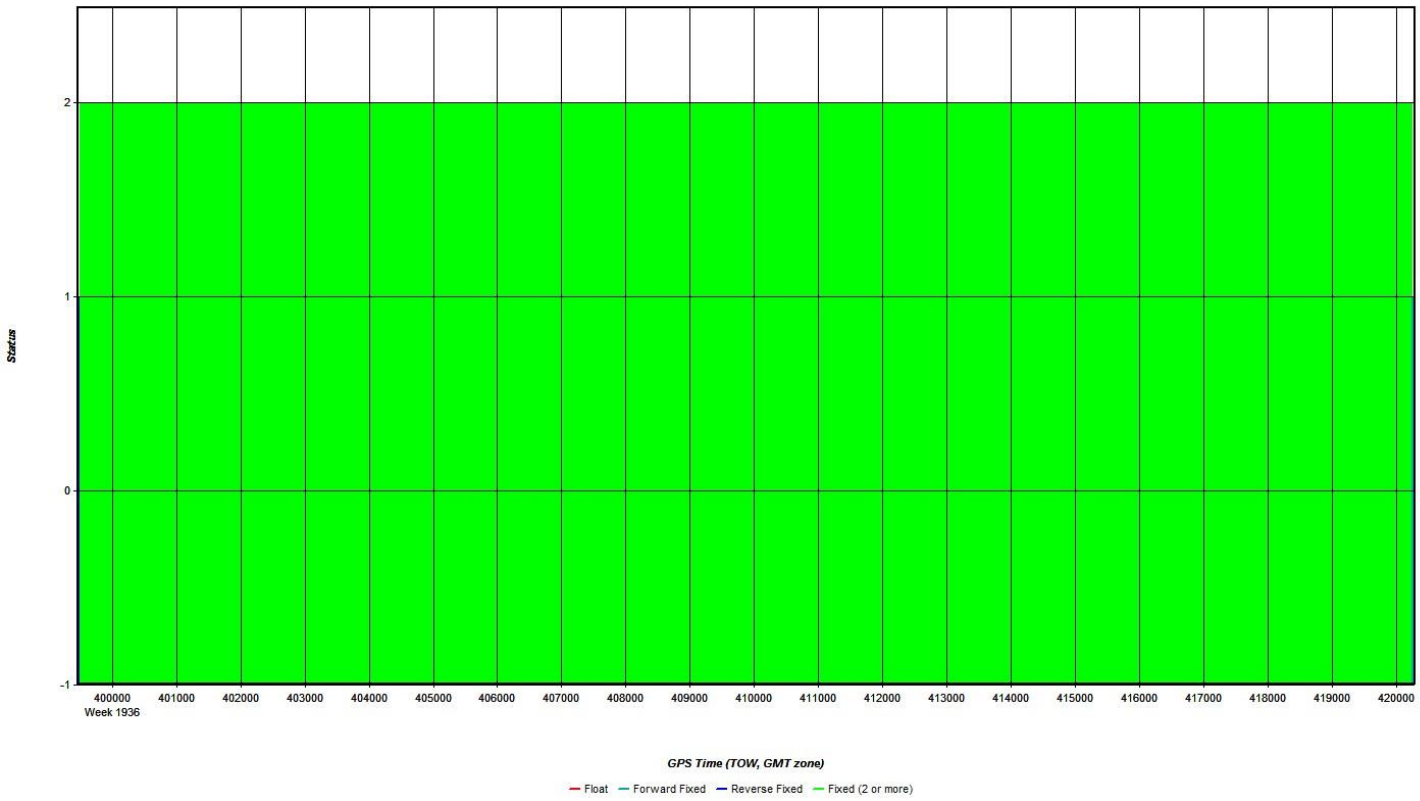

Estimated StdDev (m)
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

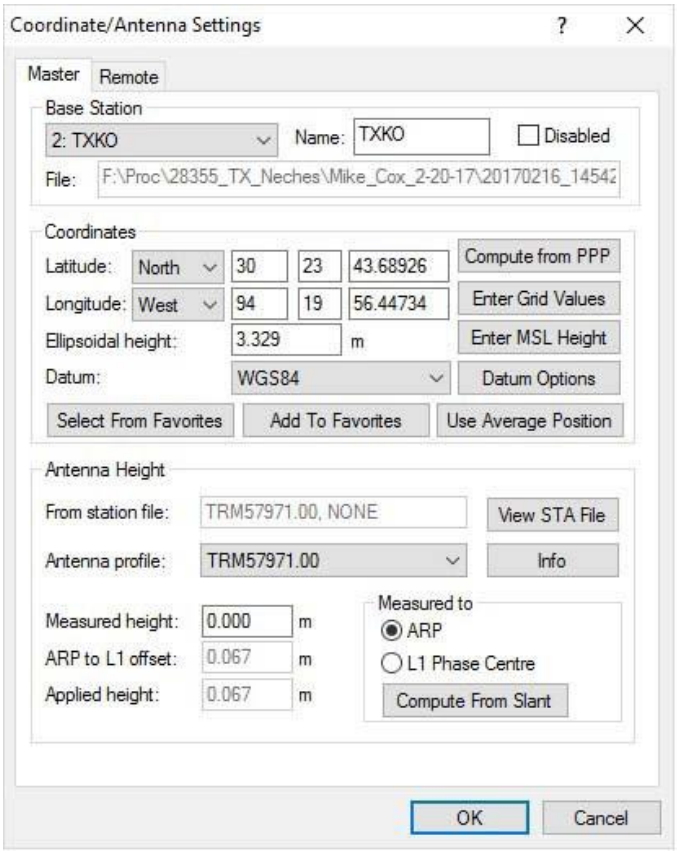

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
Roll
Pitch

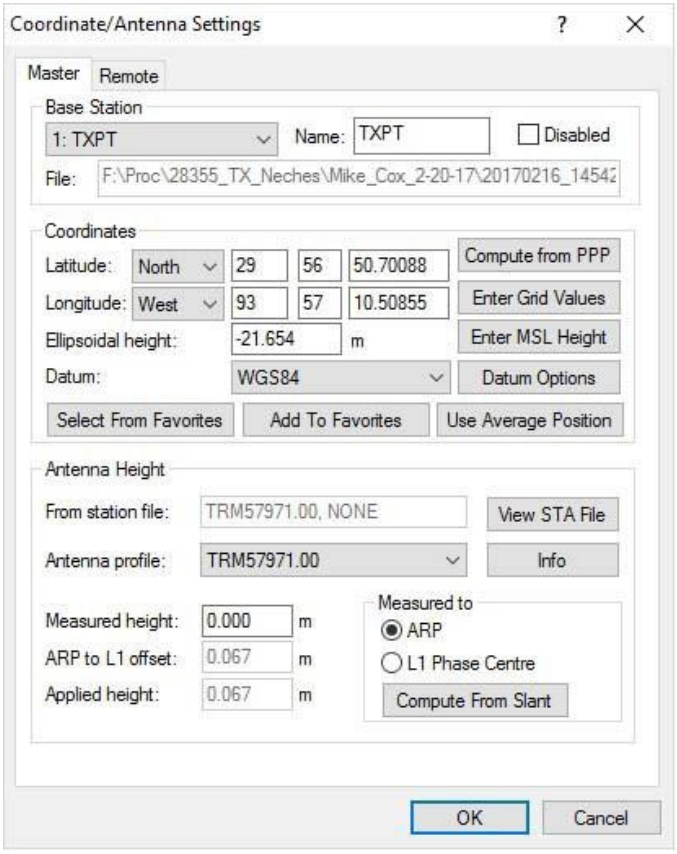

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
RMS
SD

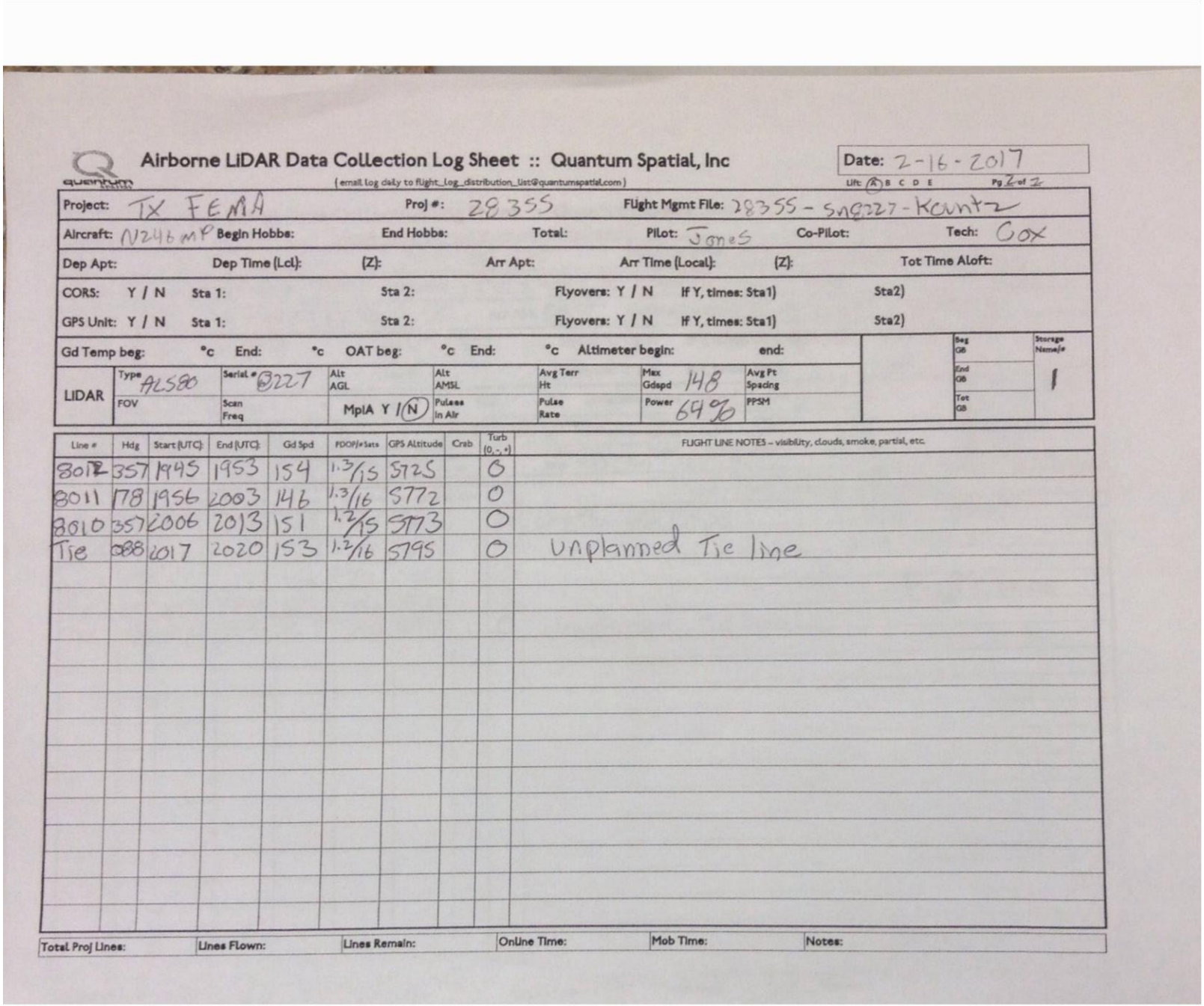

Separation (arcmin)
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
400000
Week 1936
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
417000
418000
419000
420000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name:
TXKO
Disabled
File:
F:\Proc\28355_TX_Neches\Mike_Cox_2-20-17\20170216_14542
Coordinates
Latitude:
North
30
23
43.68926
Compute from PPP
Longitude:
West
94
19
56.44734
Enter Grid Values
Ellipsoidal height:
3.329
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: F:\Proc\28355_TX_Neches\Mike_Cox_2-20-17\20170216_14542
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-16-2017

Lift: (A) B C D E Pg 2 of 2

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355 - sn8227 - kcunt2

Aircraft: N246MP Begin Hobbs: End Hobbs: Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: Dep Time (Lcl): (Z): Arr Apt: Arr Time (Local): (Z): Tot Time Aloft:

CORS: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

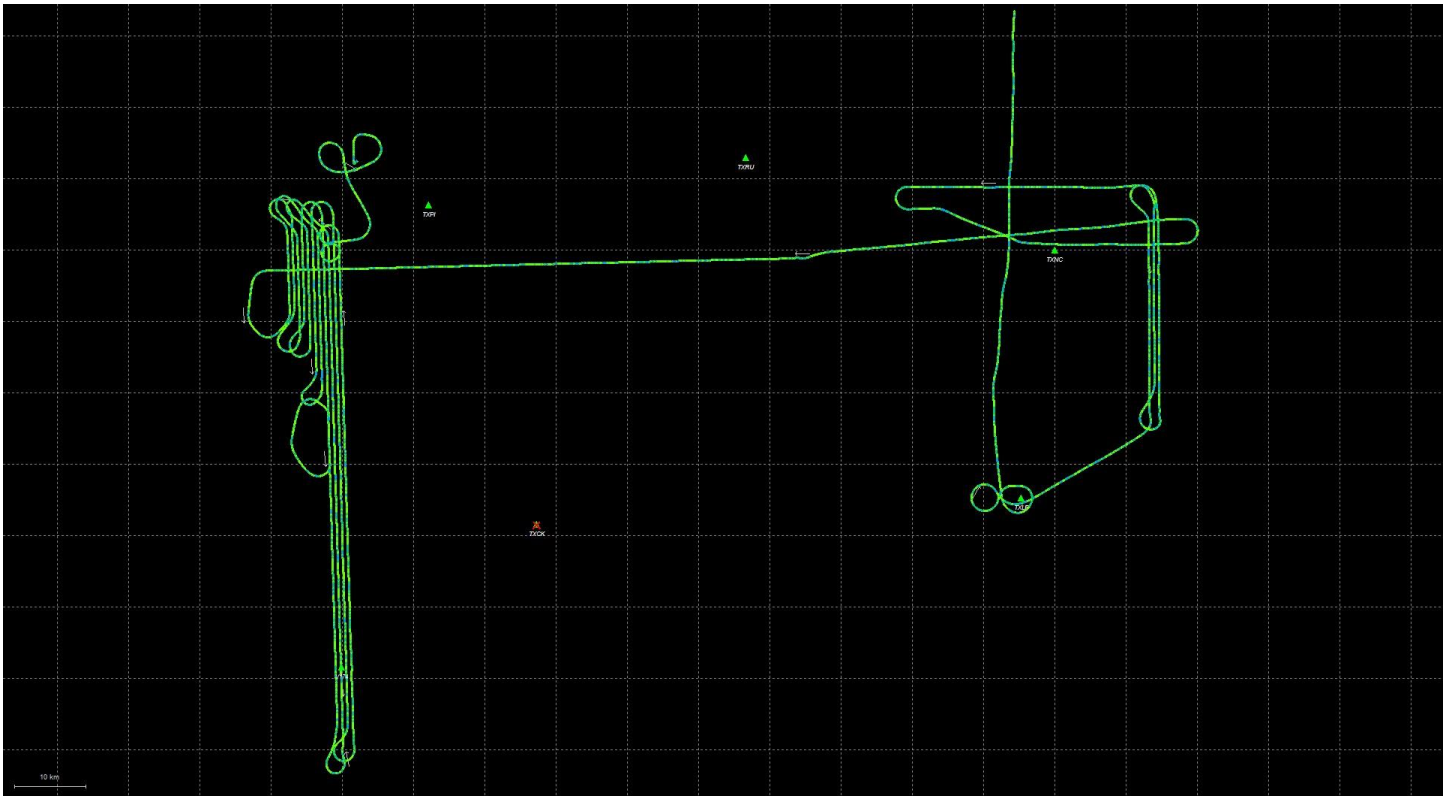
LIDAR	Type: ALS80	Serial #: 8227	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd: 148	Avg Pt Spacing
	FOV	Scan Freq	MpIA Y / (N)	Pulses in Air	Pulse Rate	Power: 64%	PPSM

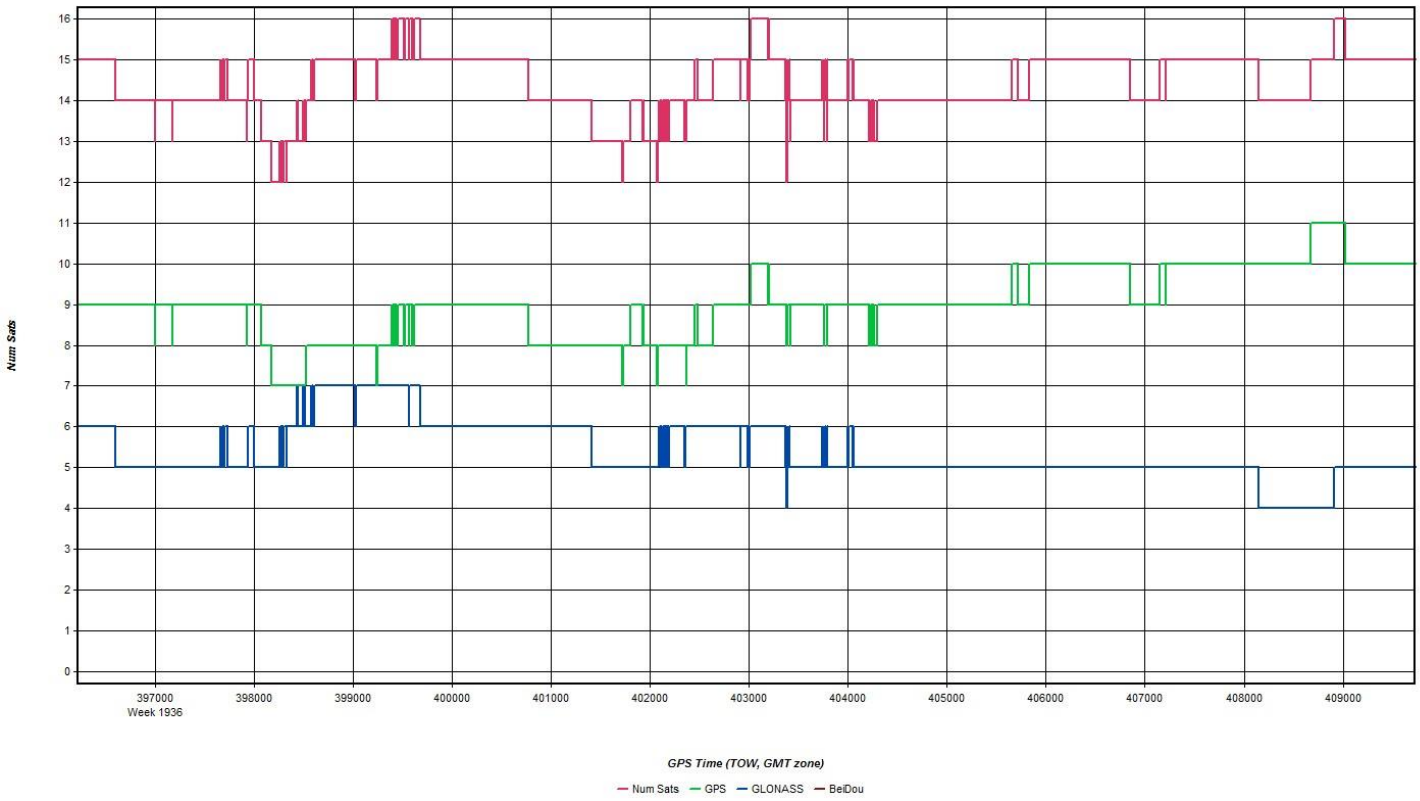
Beg GB | End GB | Tot GB | Storage Name/#: 1

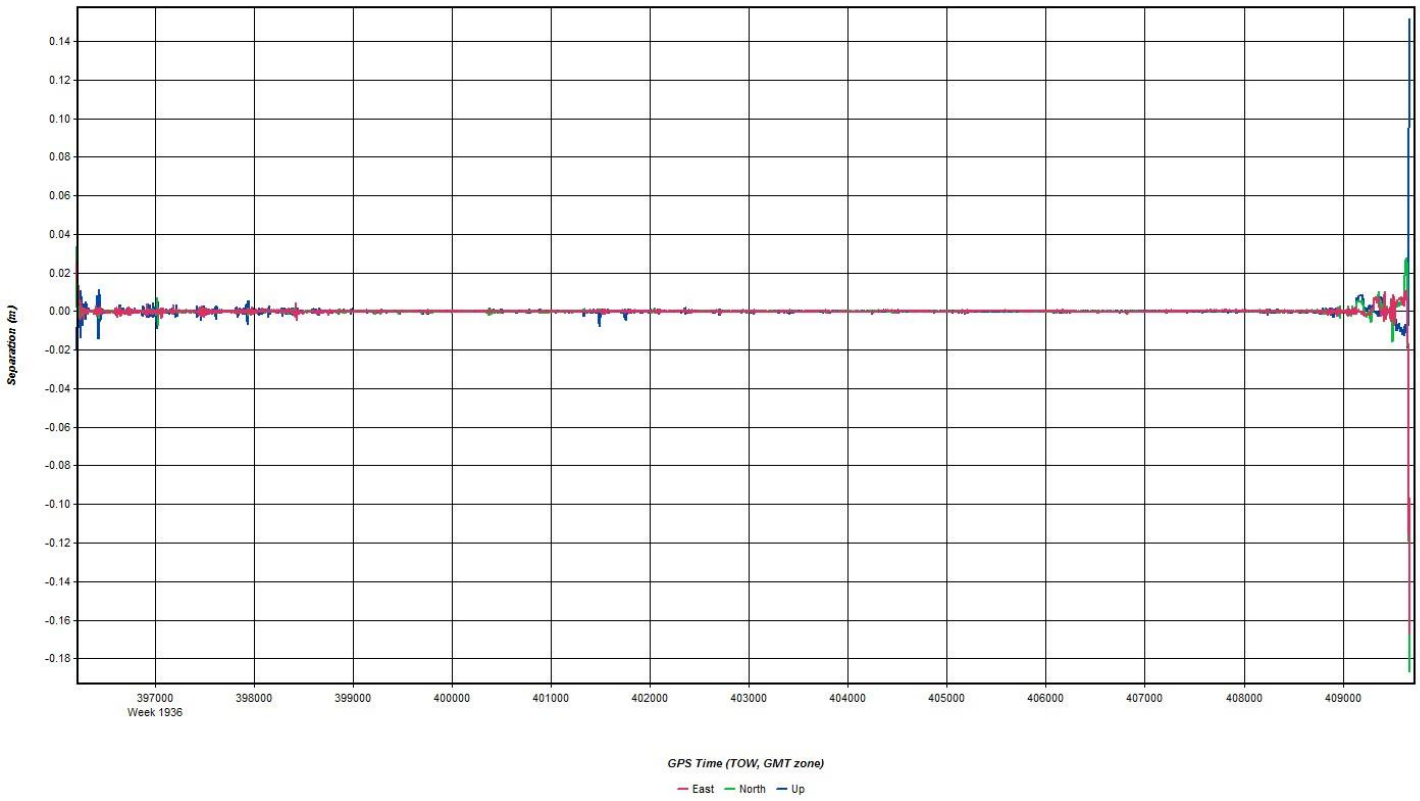
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
8012	357	1945	1953	154	1.3/15	5725		0	
8011	178	1956	2003	146	1.3/16	5772		0	
8010	357	2006	2013	151	1.2/15	5773		0	
Tie	088	2017	2020	153	1.2/16	5795		0	unplanned Tie line

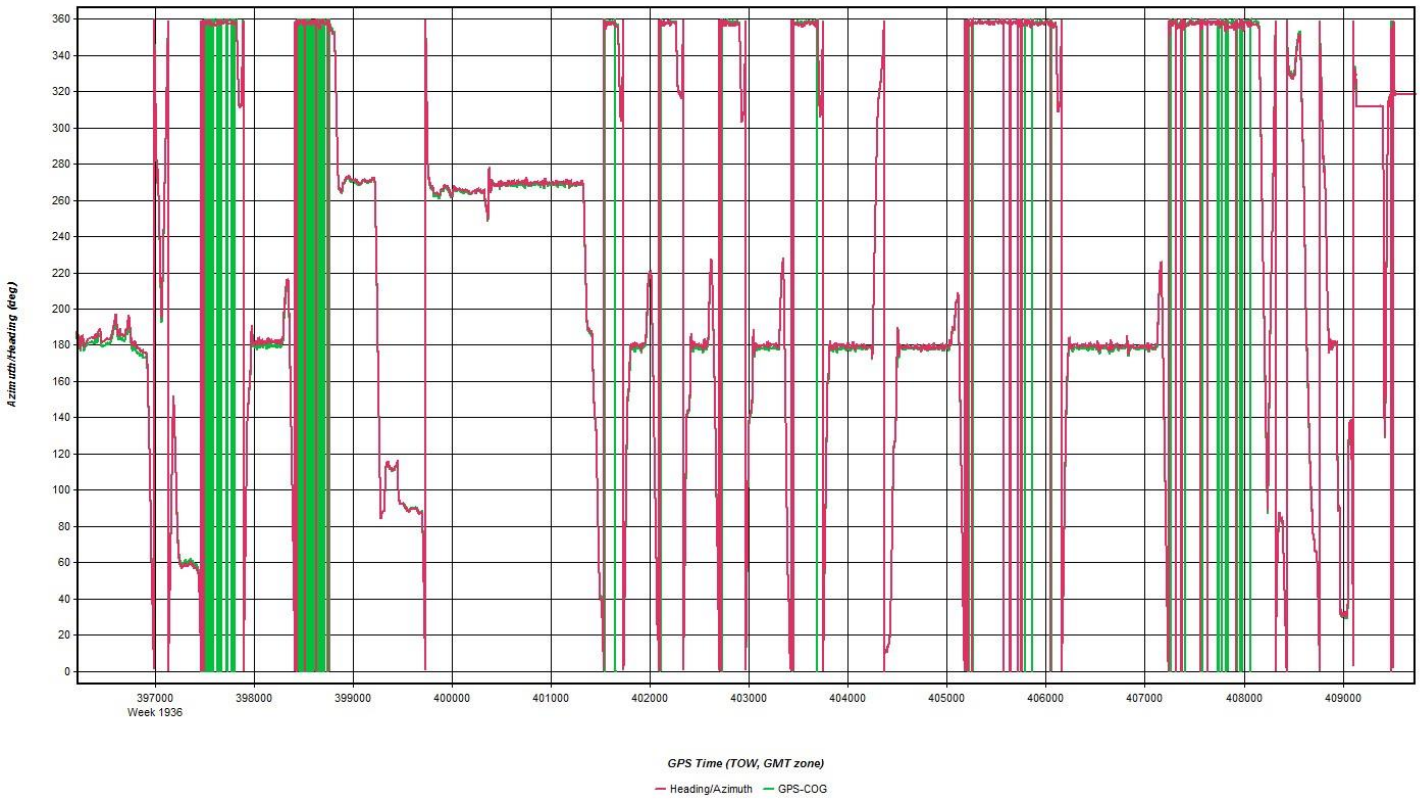
Total Proj Lines:	Lines Flown:	Lines Remain:	OnLine Time:	Mob Time:	Notes:

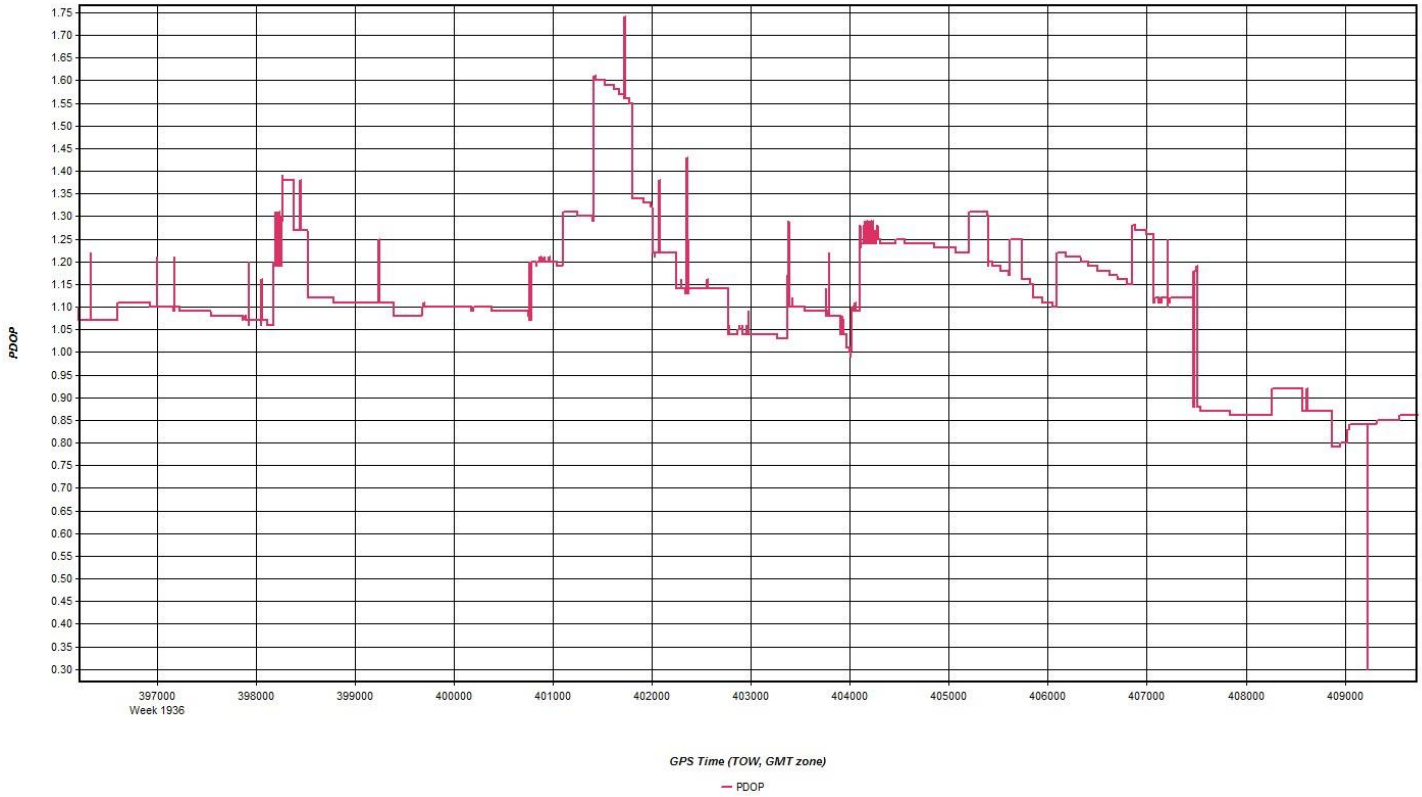
Feb 16, 2017-A (N812TB, SN7178)

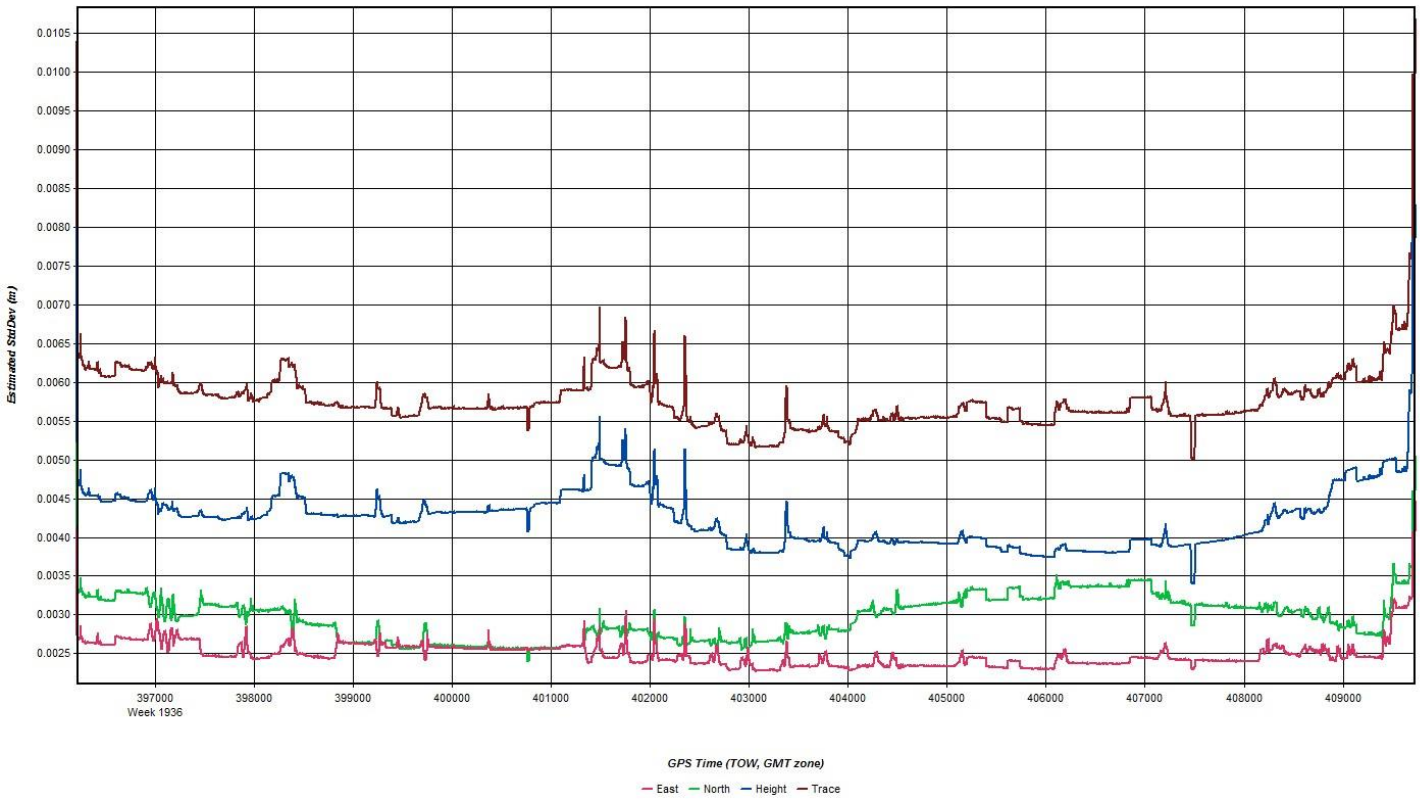


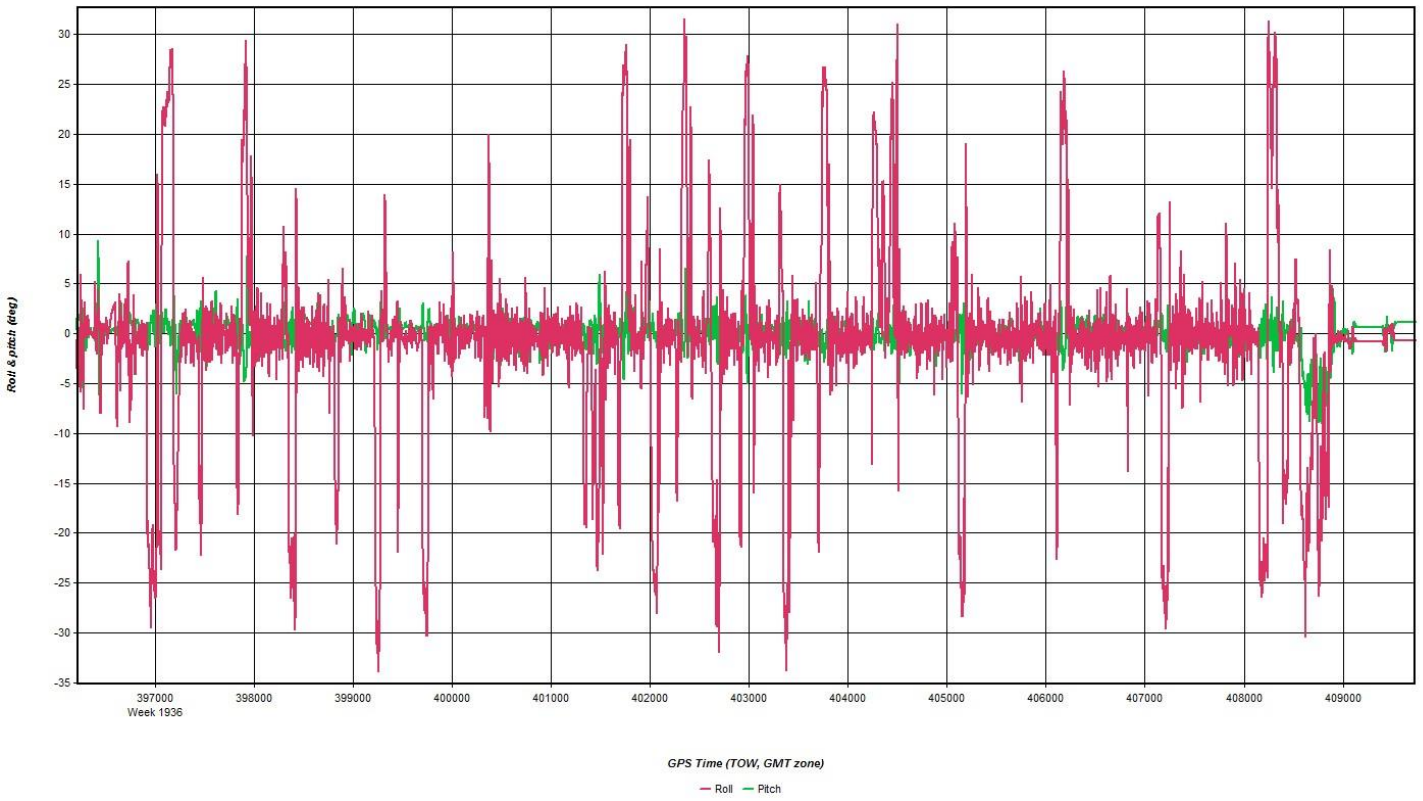

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

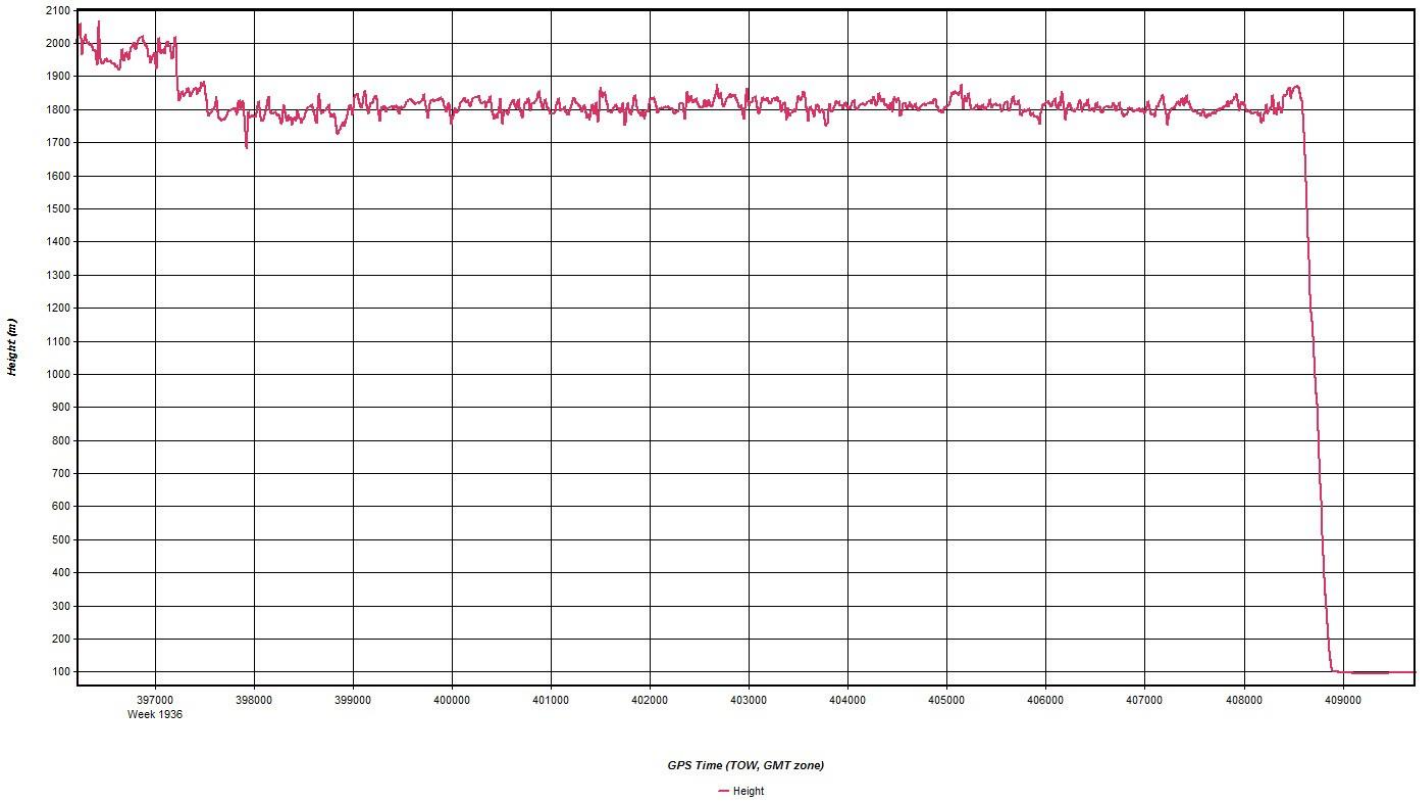

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
East
North
Up

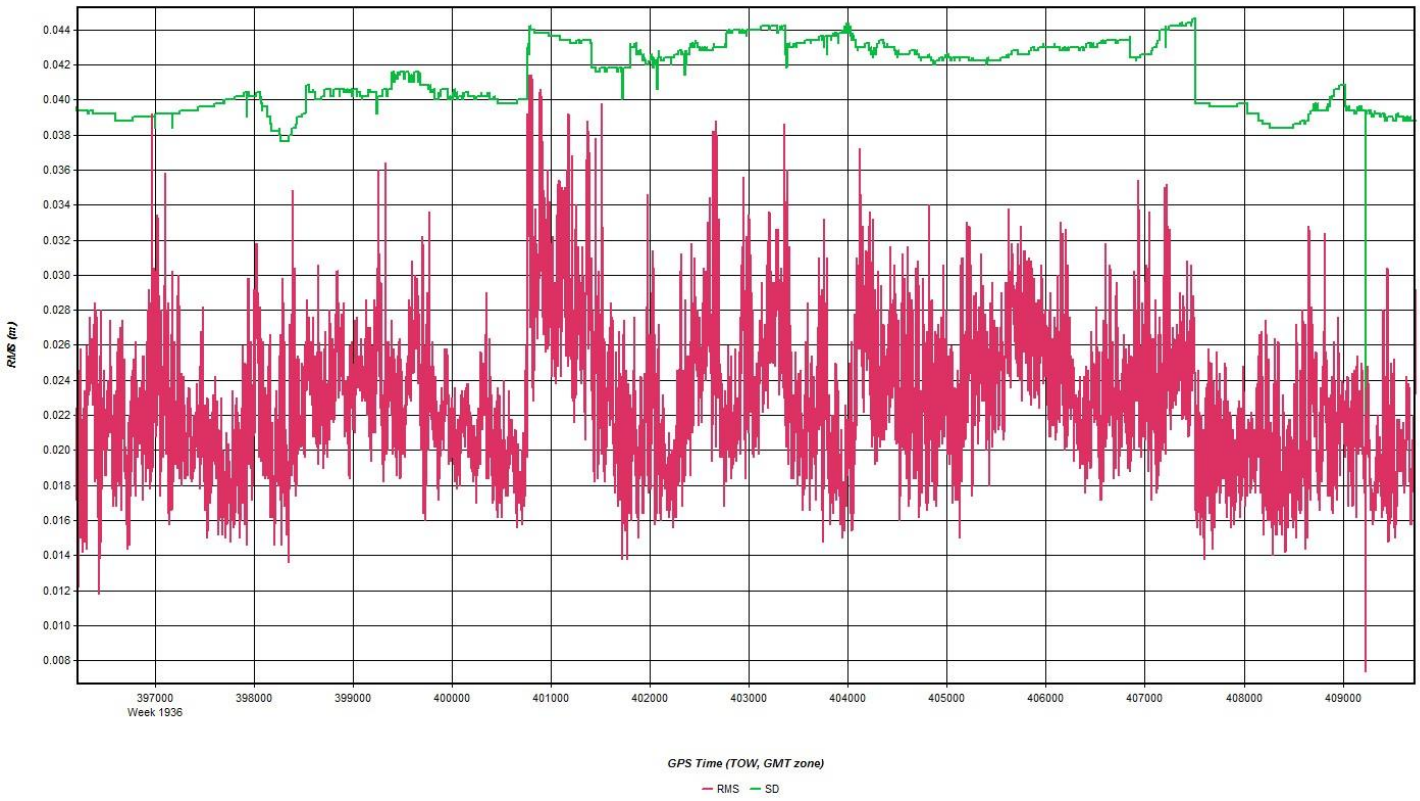

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

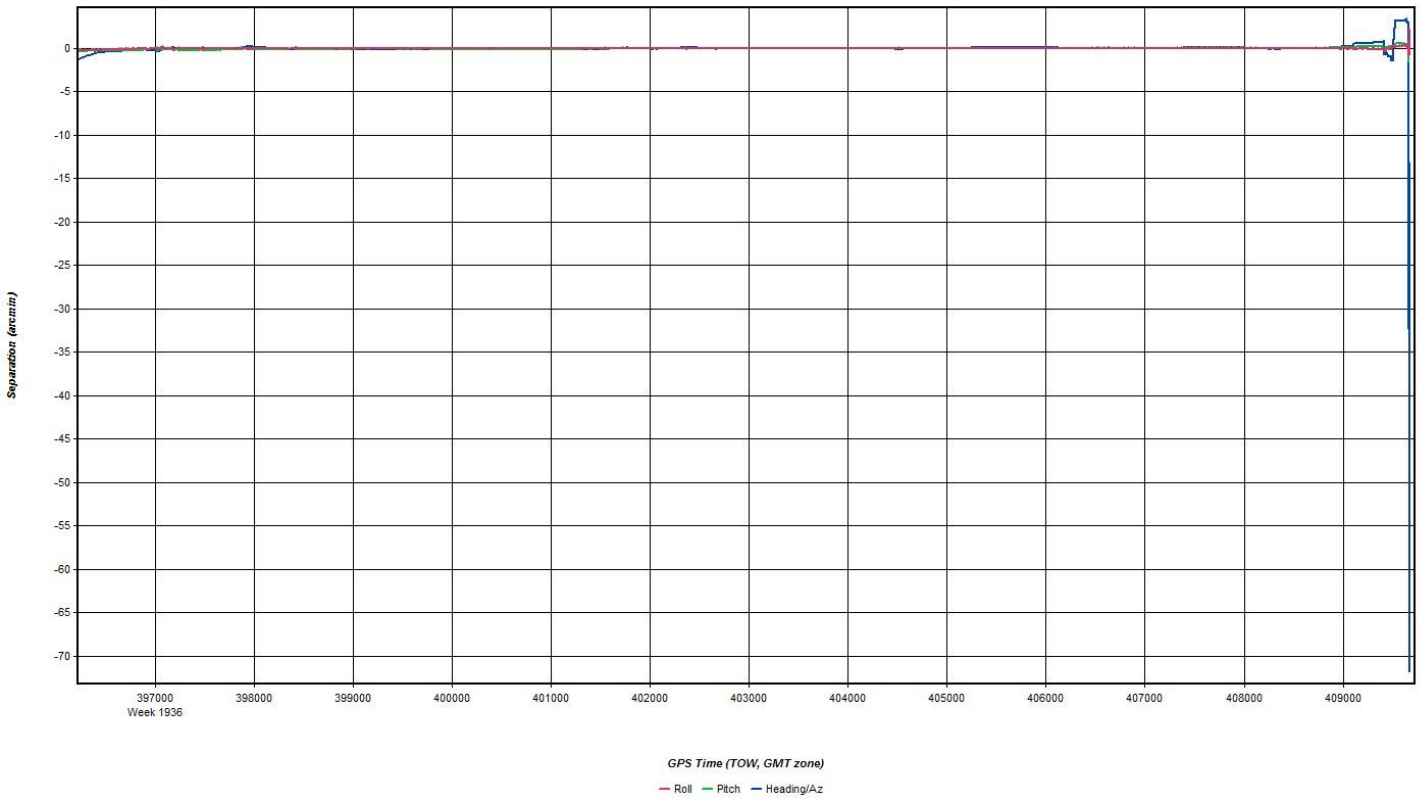

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
PDOP

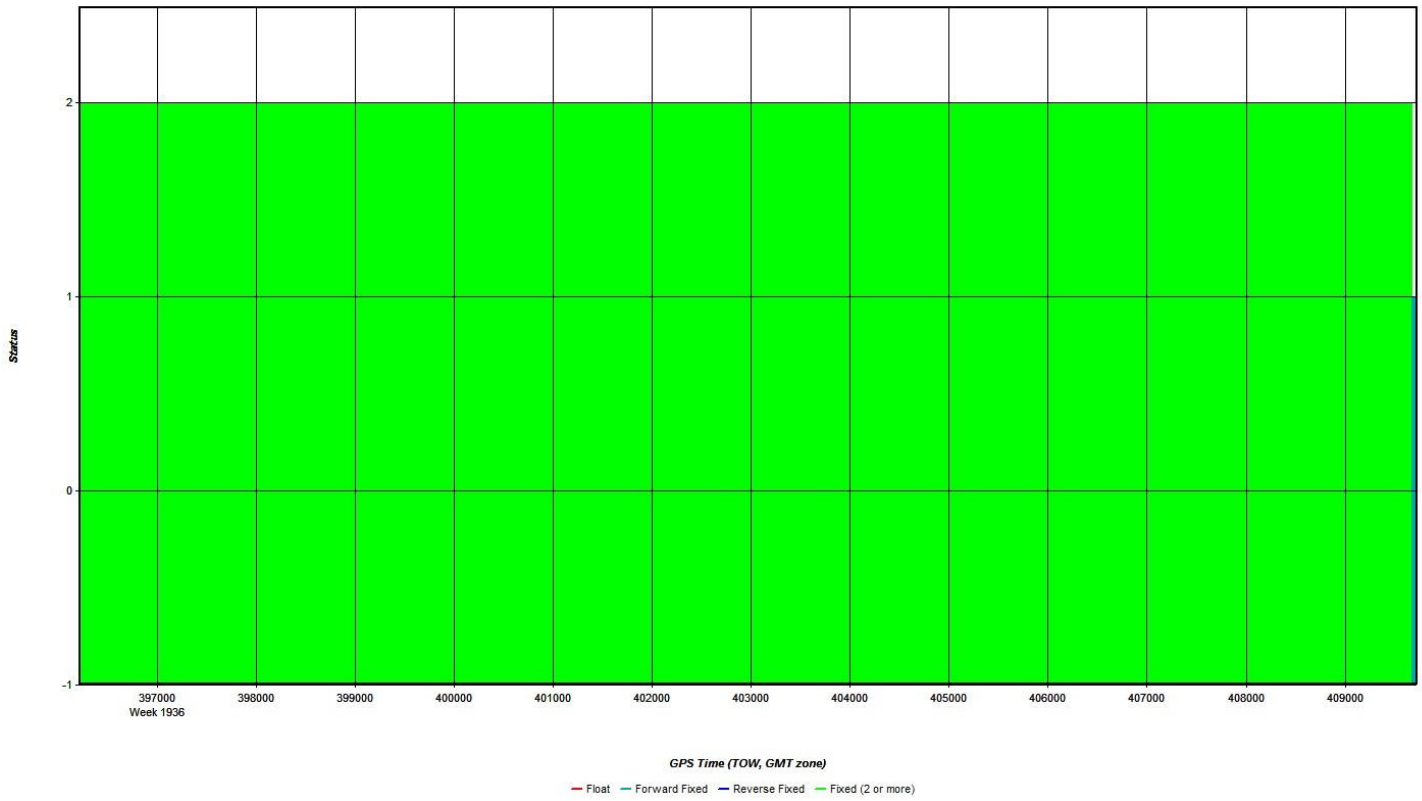

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

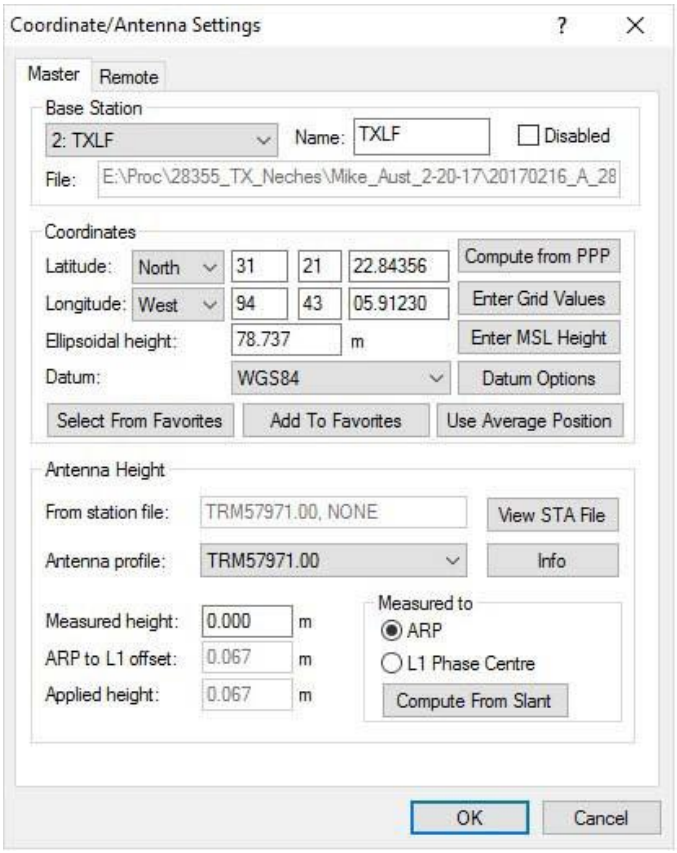

Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Roll
Pitch

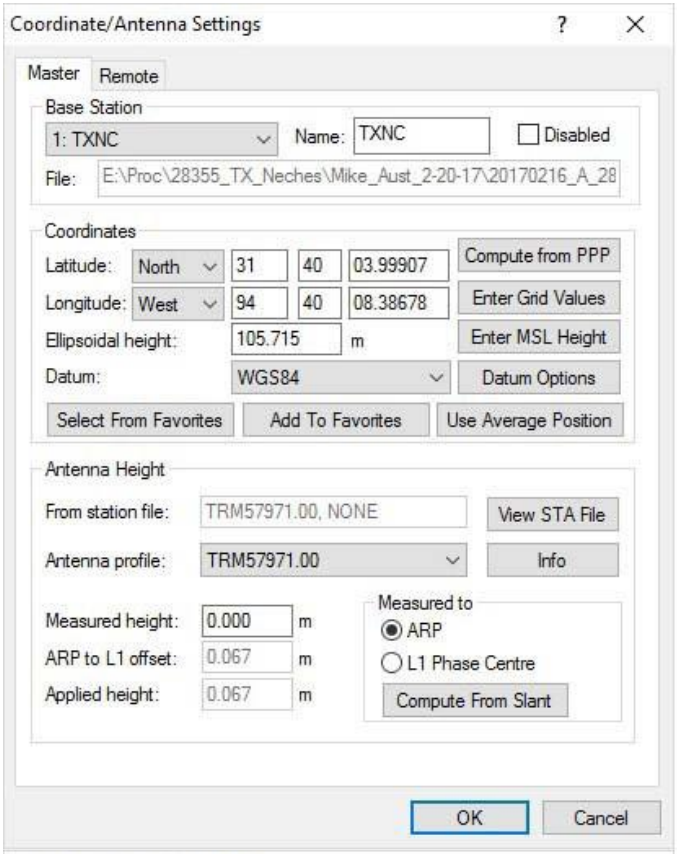

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Height

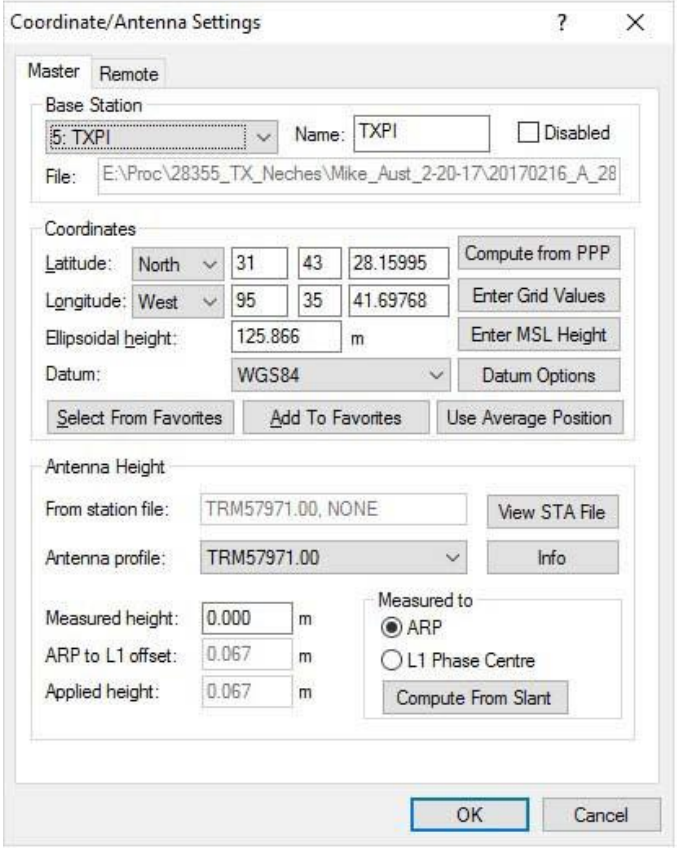

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
RMS
SD

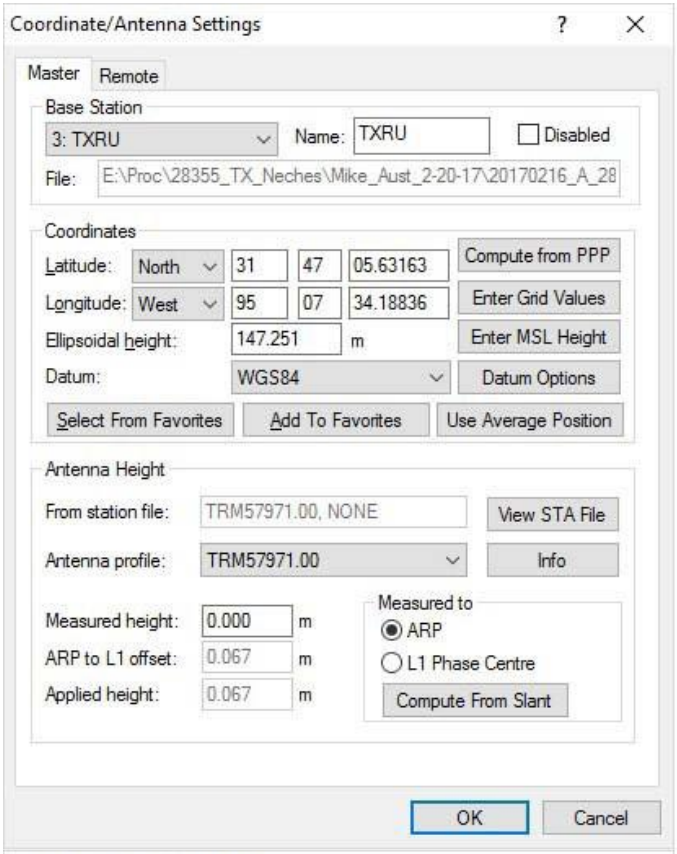

Separation (arcmin)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

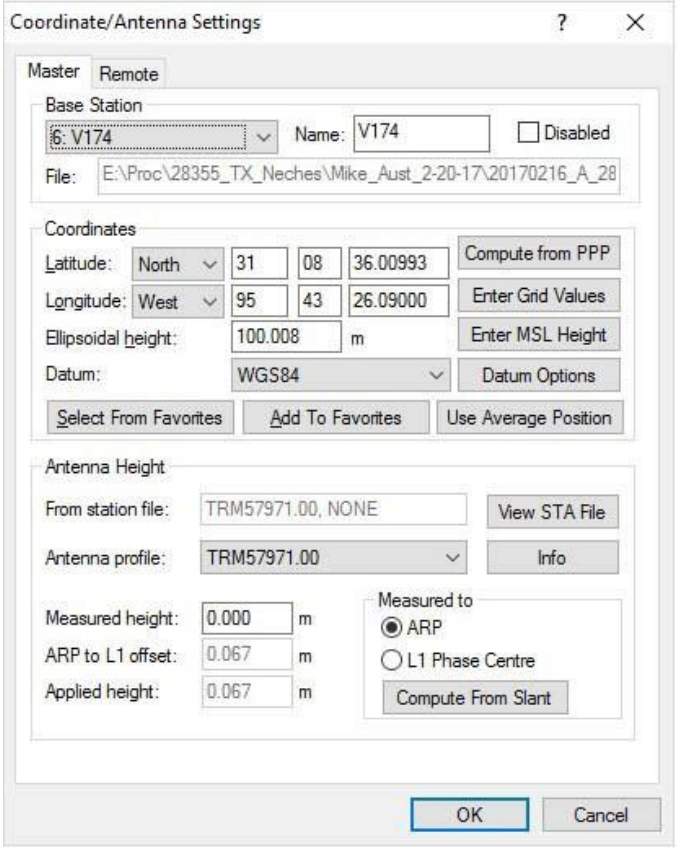

Status
2
1
0
-1
397000
Week 1936
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXLF
Name: TXLF
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_A_28
Coordinates
Latitude: North 31 21 22.84356
Longitude: West 94 43 05.91230
Ellipsoidal height: 78.737 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXNC
Name: TXNC
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_A_28
Coordinates
Latitude: North 31 40 03.99907
Longitude: West 94 40 08.38678
Ellipsoidal height: 105.715 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: TXPI
Name: TXPI
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_A_28
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXRU
Name: TXRU
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_A_28
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
6: V174
Name: V174
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_A_28
Coordinates
Latitude: North 31 08 36.00993
Longitude: West 95 43 26.09000
Ellipsoidal height: 100.008 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-16-17

Lift: (A) B C D E Pg 1 of 1

Project: NECHES BASIN LIDAR Proj #: 28355 Flight Mgmt File: 20170216133533

Aircraft: 73TM Begin Hobbs: 6551.1 End Hobbs: 6554.8 Total: 3.7 Pilot: J NELSON Co-Pilot: Tech: M AUST

Dep Apt: GGG Dep Time (Lcl): 7:40 (Z): 1340 Arr Apt: PSN Arr Time (Local): 11:40 (Z): 1740 Tot Time Aloft:

CORS: (Y) N Sta 1: LFK C Sta 2: Flyovers: (Y) N If Y, times: Sta1) 14:15 Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 1 °c End: °c OAT beg: °c End: °c Altimeter begin: 3012 end:

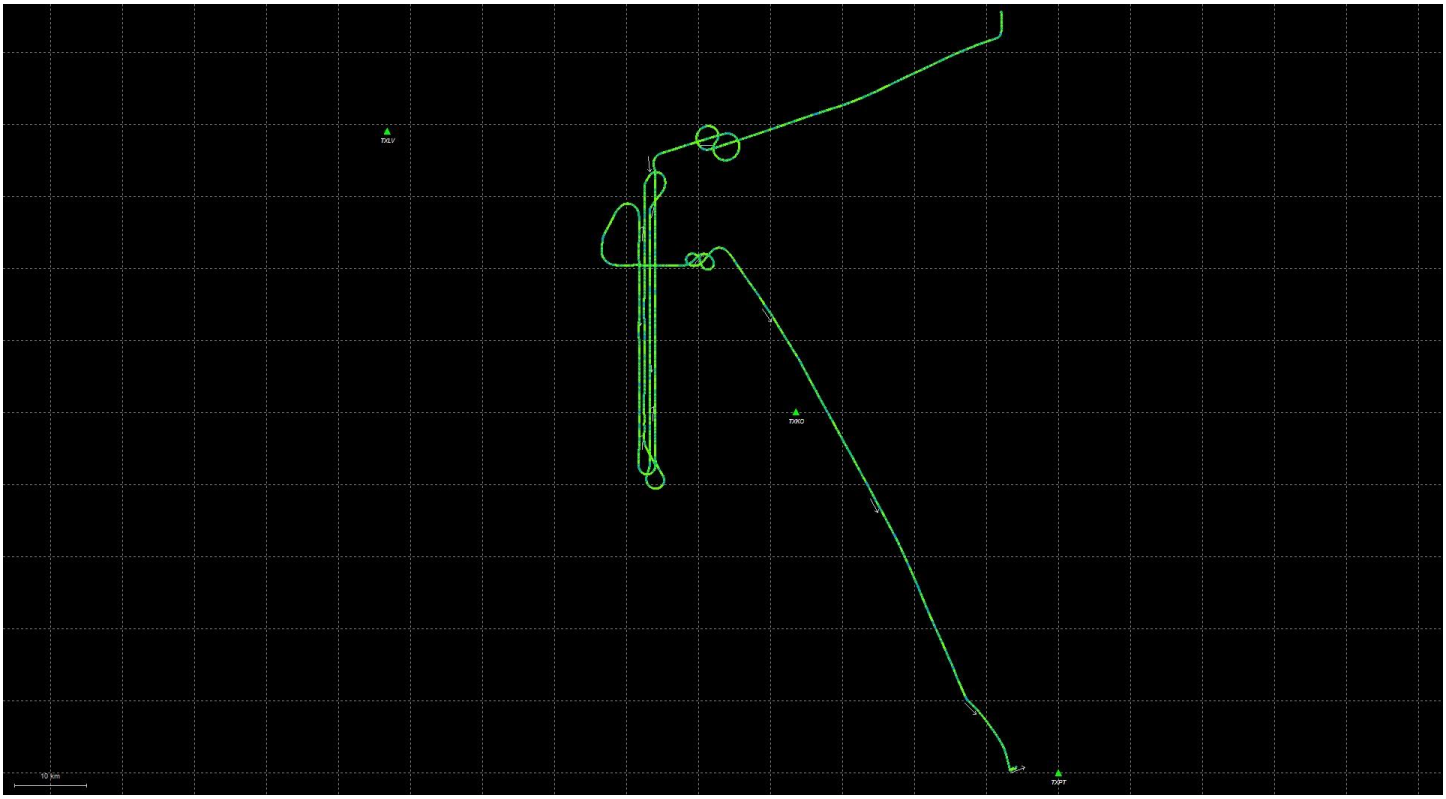
LiDAR	Type ALS70	Serial # 7178	Alt AGL	Alt AMSL 5,8'	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 34	Scan Freq 57	MpiA (Y) / N	Pulses In Air	Pulse Rate 312	Power 100	PPSM

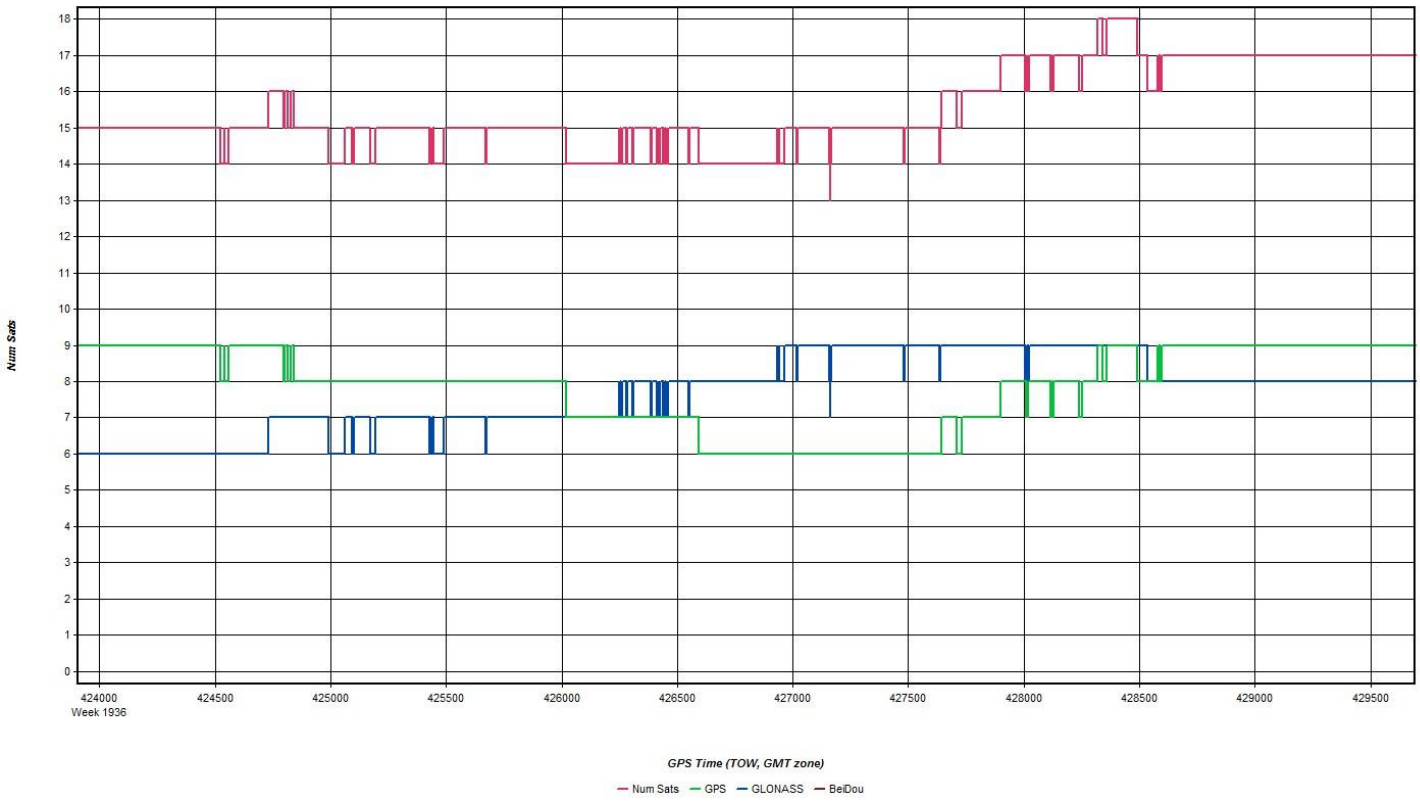
Beg GB 419	Storage Name/#
End GB 375	3
Tot GB 44	

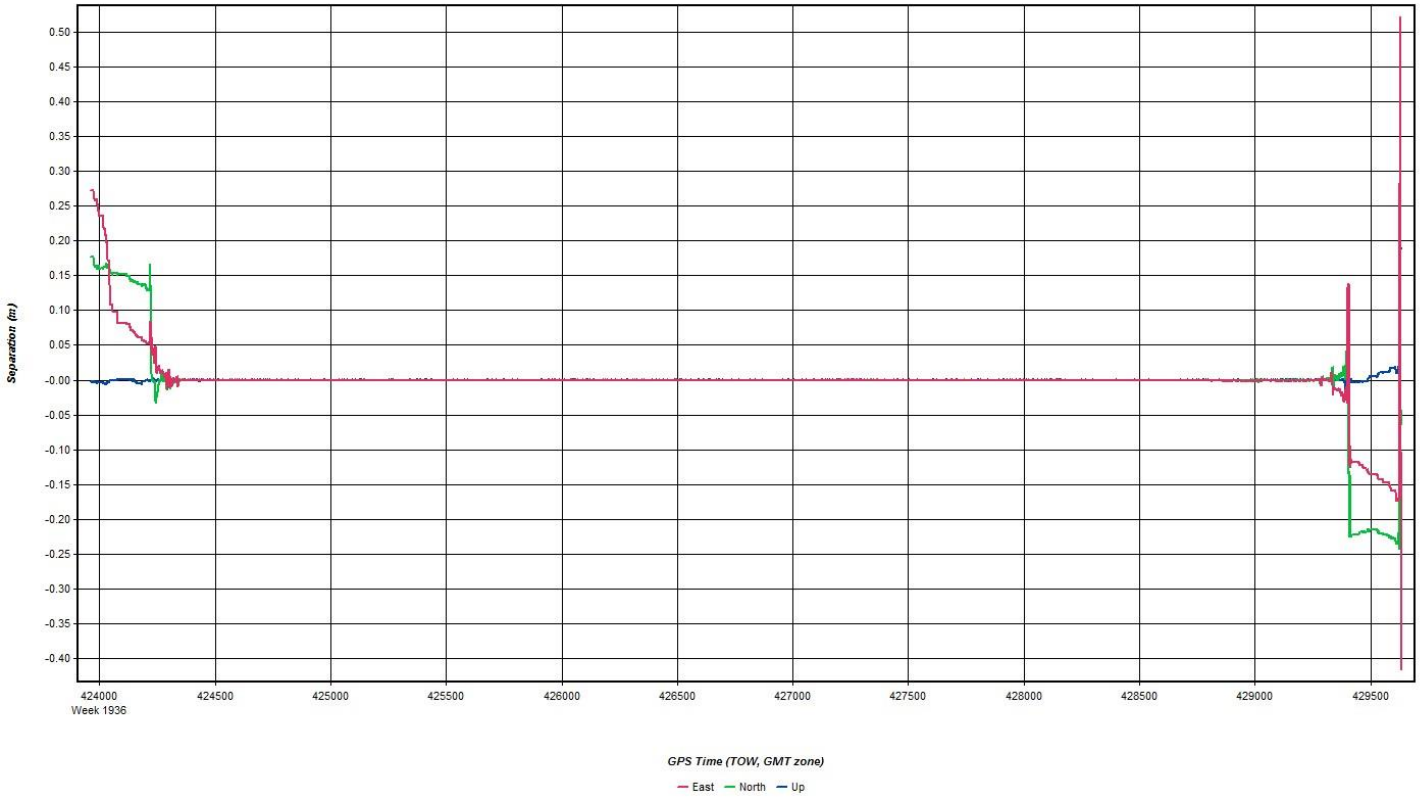
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
3087	N	1425	1430	160	1.3/16	5,8			REFLIGHT 0-13 MILES FIGURE 8's 14:15
3088	S	1433	1437	143	1.2/17	5.8			REFLIGHT 0-13 MILES
3089	N	1441	1445	153	1.2/17	5.8			REFLIGHT 0-13 MILES
W001	E	1500	1502	180	1.3/16	5.9			MANUAL CROSSFLIGHT
1099	W	1514	1528	152	1.3/16	5,9			CROSSFLIGHT CROCKETT BLK
1001	N	1532	1534	159	1.0/19	5.9			
1003	S	1537	1538	159	1.0/19	5.9			
1005	N	1542	1544	154	1.0/19	5,9			
1007	S	1547	1549	154	1.0/20	6.0			
1009	N	1552	1554	150	1.1/19	6.0			
1011	S	1557	1601	160	1.0/21	5.9			
1013	N	1604	1607	152	1.0/19	6.0			
1015	S	1610	1617	149	1.0/19	6.0			ABORT - ATC TRAFFIC -
1015	S	1621	1630	150	1.1/18	6.0			PARTIAL - FLYING REST OF LINE
1016	N	1634	1647	150	1.2/17	5.9			
1017	S	1657	1705	149	1.1/18	5.9			
1018	N	1707	1722	159	1.2/18	5.9			

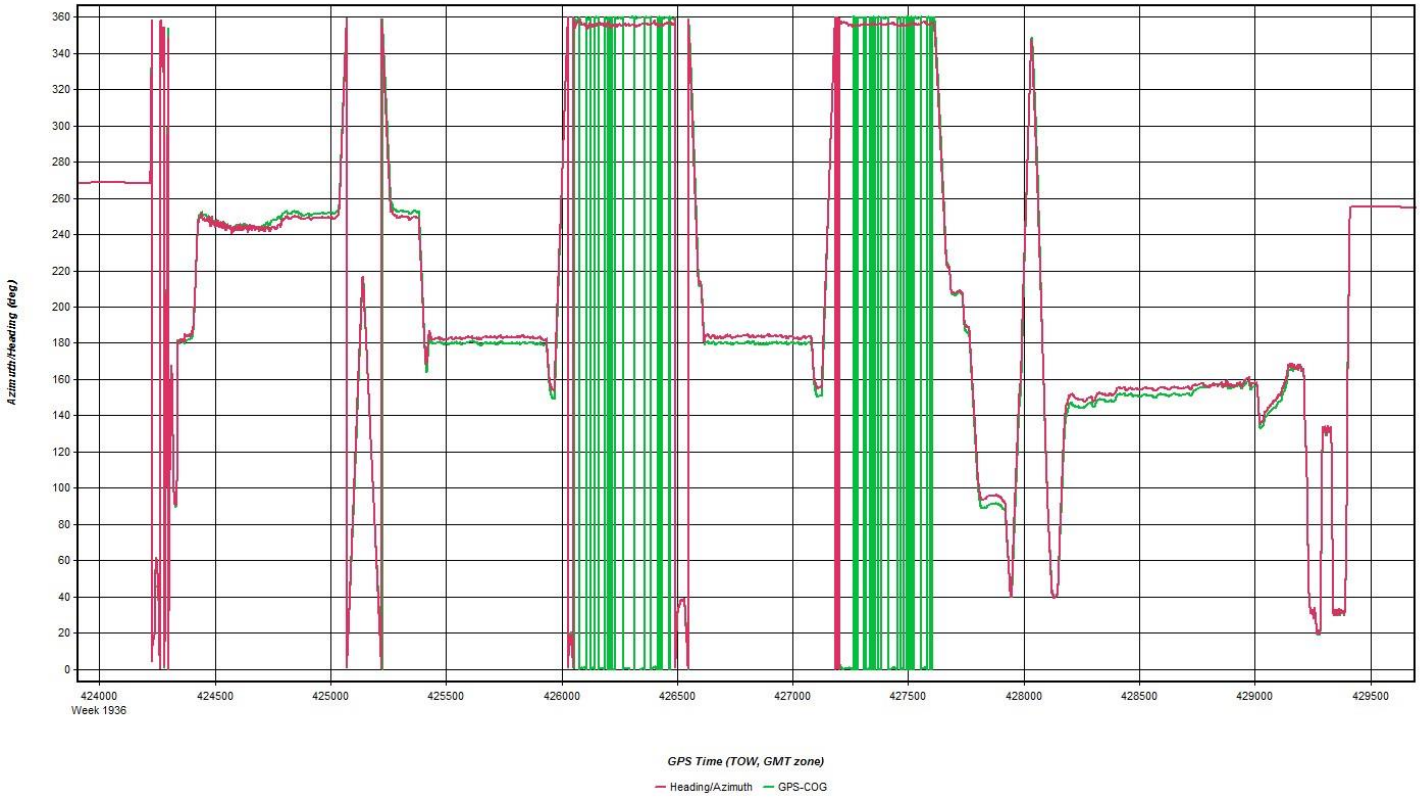
Total Proj Lines:	Lines Flown:	Lines Remain:	OnLine Time: 3	Mob Time: .75	Notes:

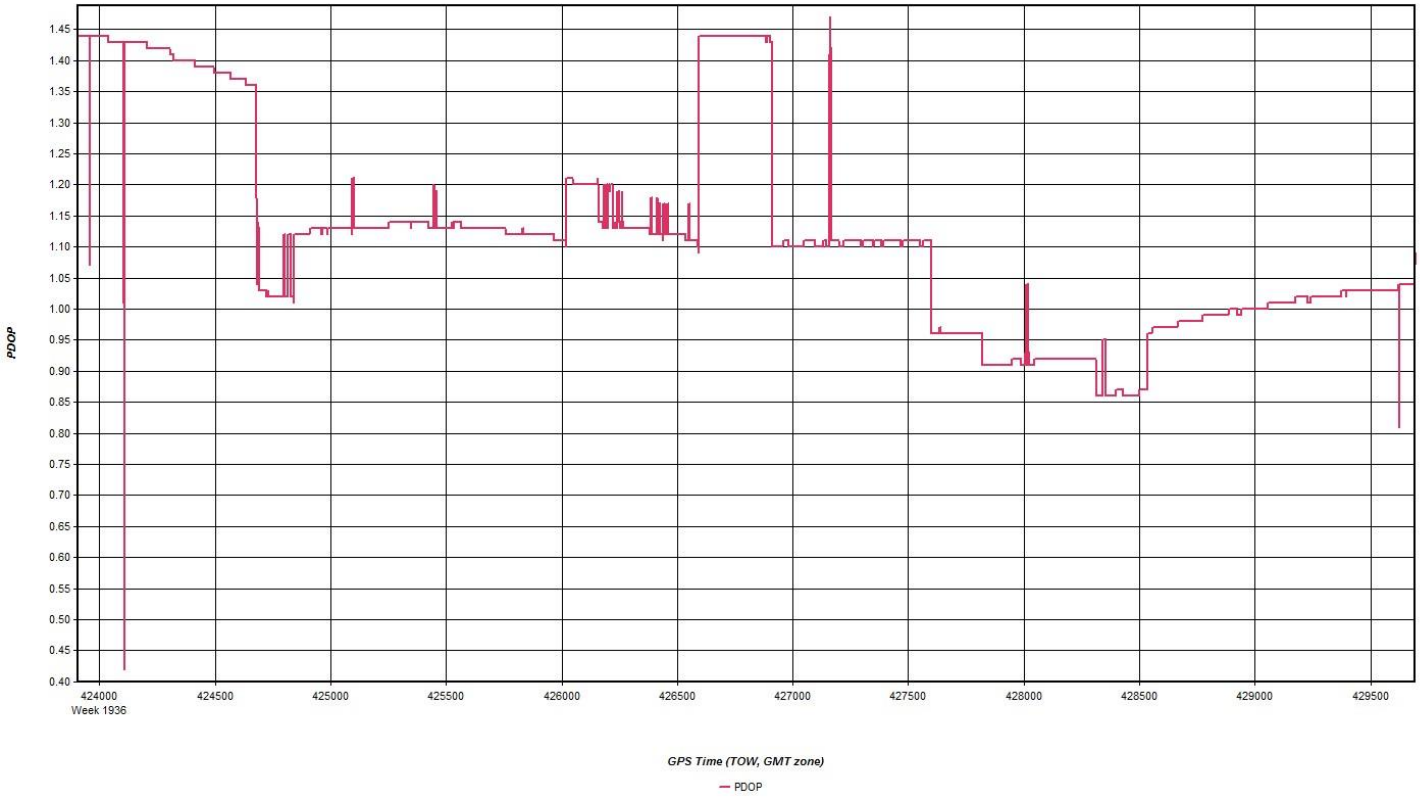
Feb 16, 2017-B (N246MP, SN8227)

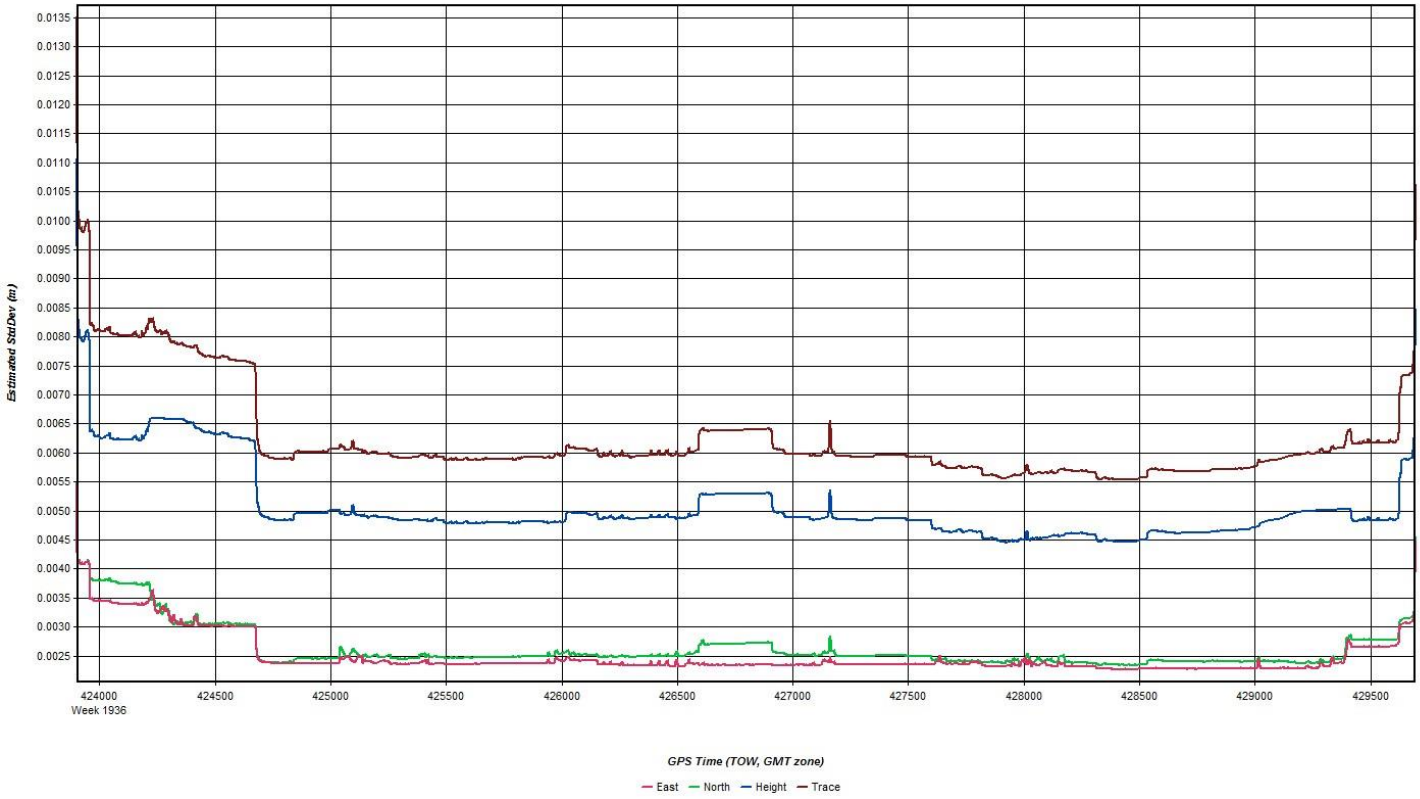


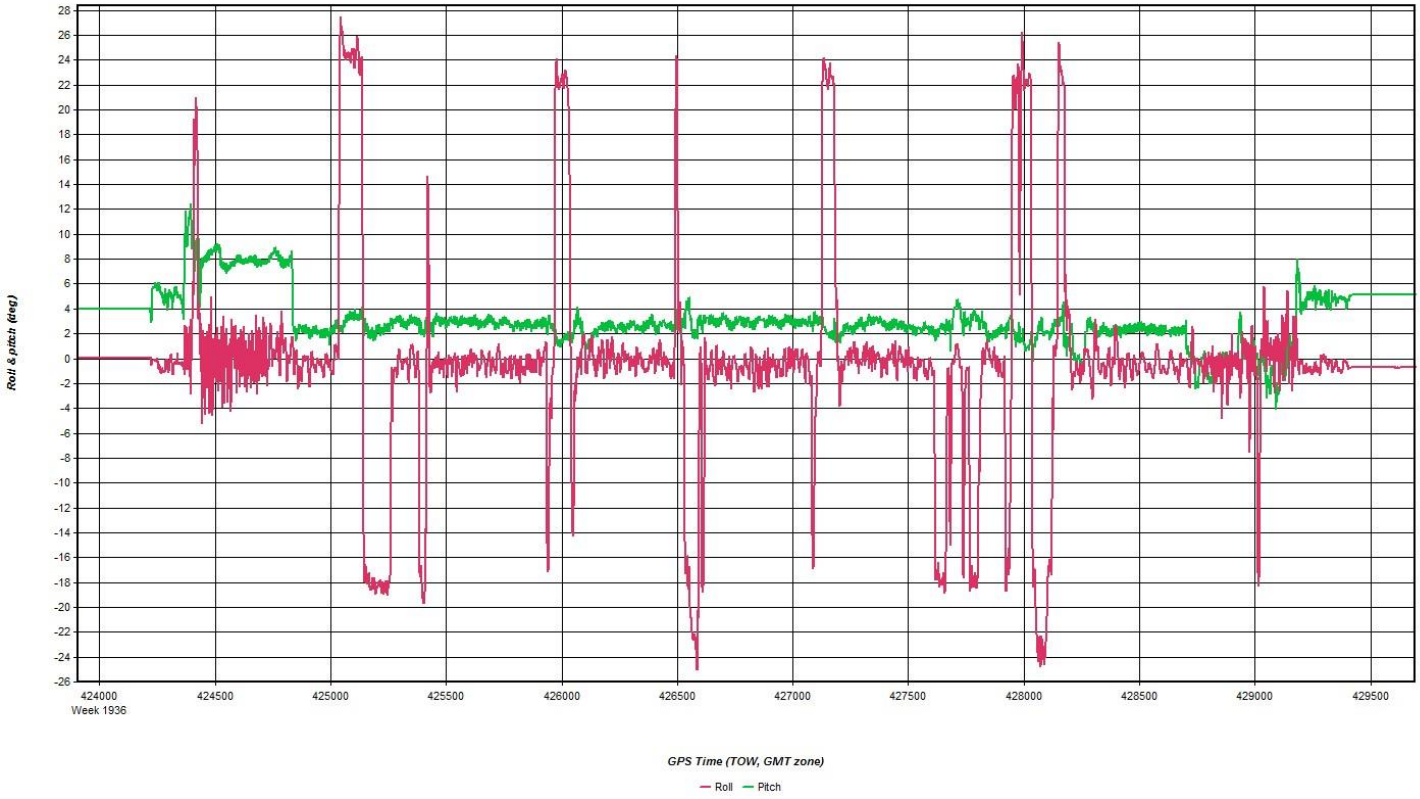

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

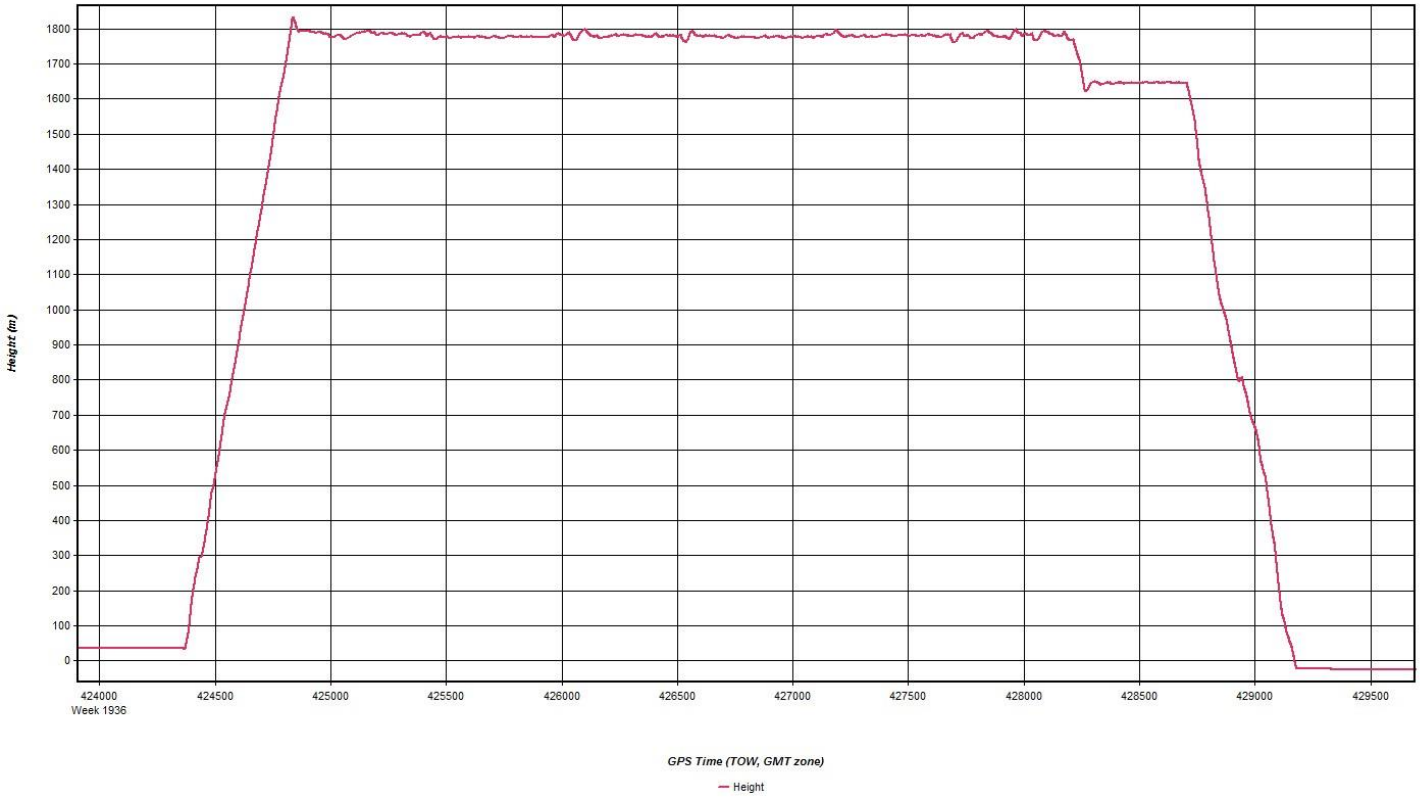

Separation (m)
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
East
North
Up


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

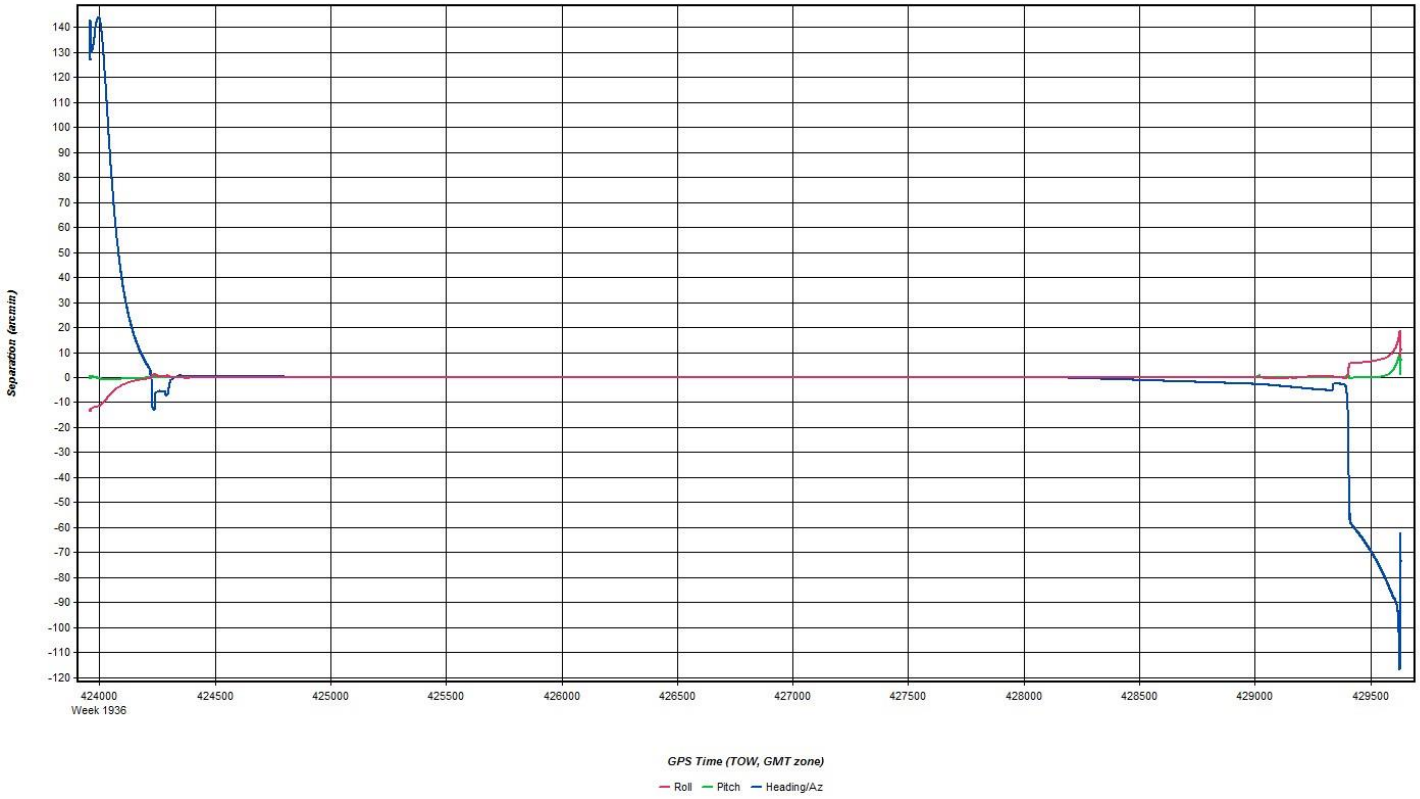

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
PDOP

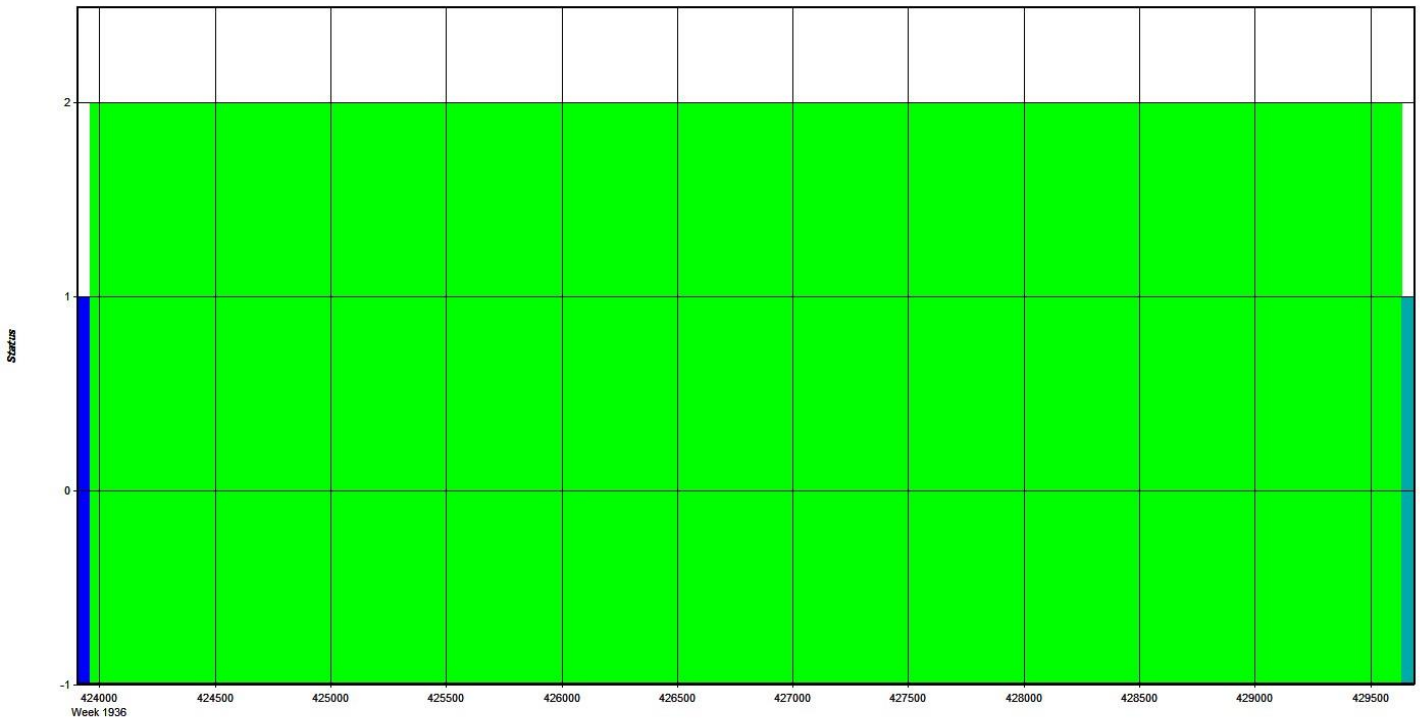

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

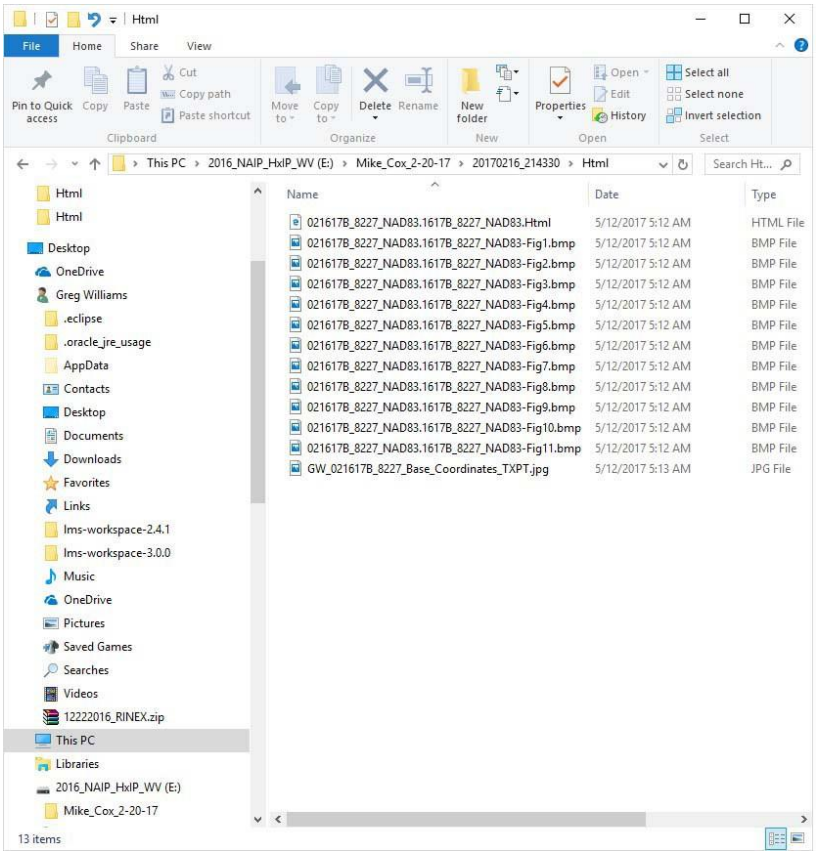

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Roll
Pitch

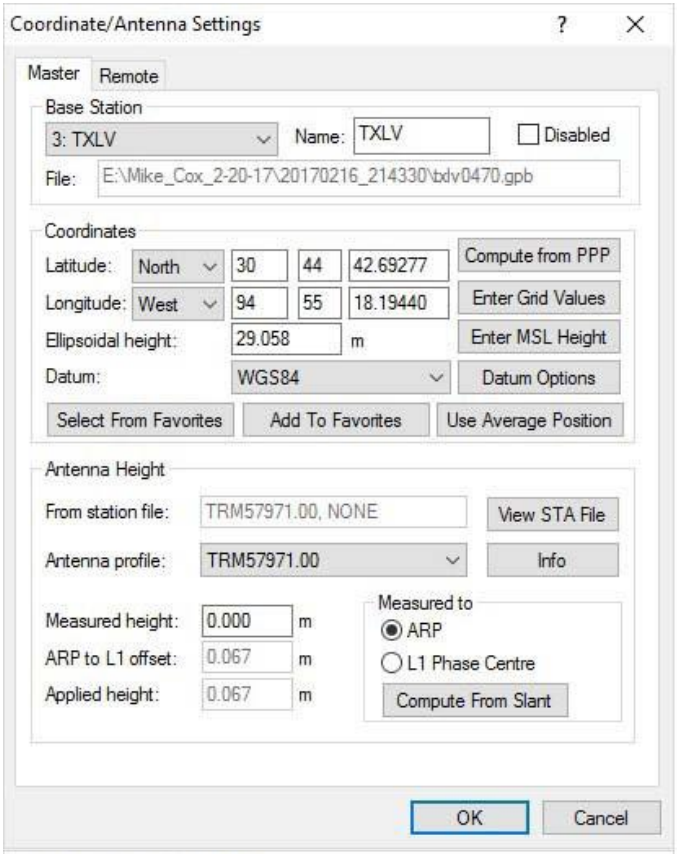

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Height

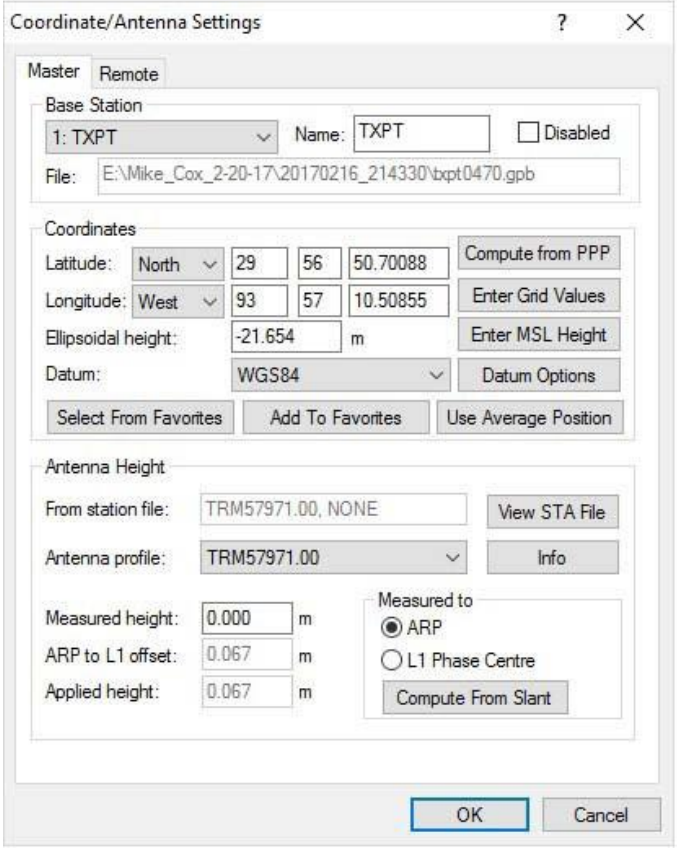

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

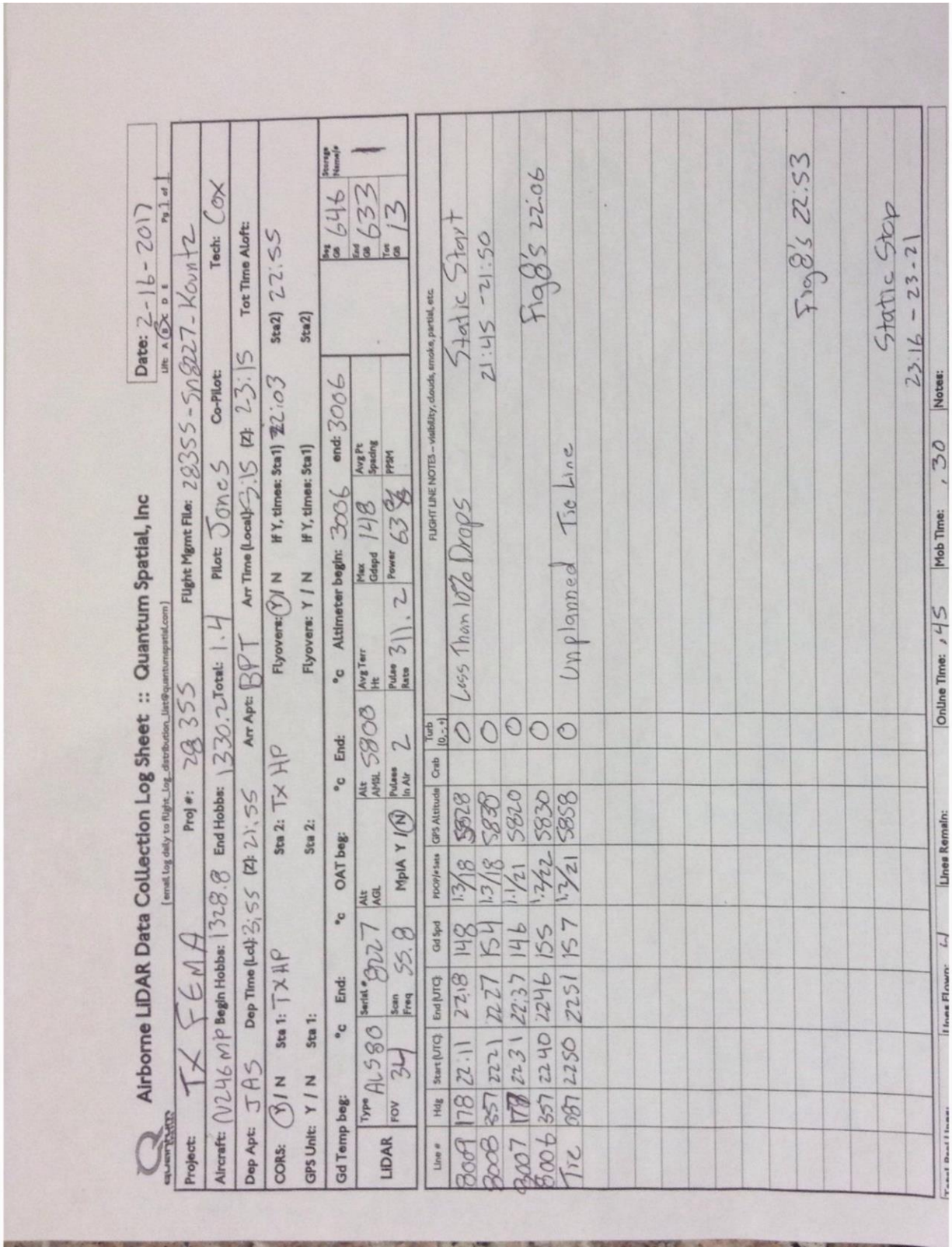

Status
2
1
0
-1
424000
Week 1936
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Html
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
This PC
2016_NAIP_HxIP_WV (E:)
Mike_Cox_2-20-17
20170216_214330
Html
Search Ht...
Name
Date
Type
021617B_8227_NAD83.1617B_8227_NAD83.Html 5/12/2017 5:12 AM HTML File
021617B_8227_NAD83.1617B_8227_NAD83-Fig1.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig2.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig3.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig4.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig5.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig6.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig7.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig8.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig9.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig10.bmp 5/12/2017 5:12 AM BMP File
021617B_8227_NAD83.1617B_8227_NAD83-Fig11.bmp 5/12/2017 5:12 AM BMP File
GW_021617B_8227_Base_Coordinates_TXPT.jpg 5/12/2017 5:13 AM JPG File
Html
Html
Desktop
OneDrive
Greg Williams
.eclipse
.oracle_jre_usage
AppData
Contacts
Desktop
Documents
Downloads
Favorites
Links
lms-workspace-2.4.1
lms-workspace-3.0.0
Music
OneDrive
Pictures
Saved Games
Searches
Videos
12222016_RINEX.zip
This PC
Libraries
2016_NAIP_HxIP_WV (E:)
Mike_Cox_2-20-17
13 items


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLV
Name: TXLV
Disabled
File: E:\Mike_Cox_2-20-17\20170216_214330\txlv0470.gpb
Coordinates
Latitude: North 30 44 42.69277
Longitude: West 94 55 18.19440
Ellipsoidal height: 29.058 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\Mike_Cox_2-20-17\20170216_214330\txpt0470.gpb
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-16-2017

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355-sn8227-Kountz

Aircraft: N246MP Begin Hobbs: 1328.8 End Hobbs: 1330.2 Total: 1.4 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: JAS Dep Time (Lcl): 3:55 (Z): 21:55 Arr Apt: BPT Arr Time (Local): 5:15 (Z): 23:15 Tot Time Aloft:

CORS: (Y) N Sta 1: TX HP Sta 2: TX HP Flyovers: (Y) N If Y, times: Sta1) 22:03 Sta2) 22:55

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 3006 end: 3006

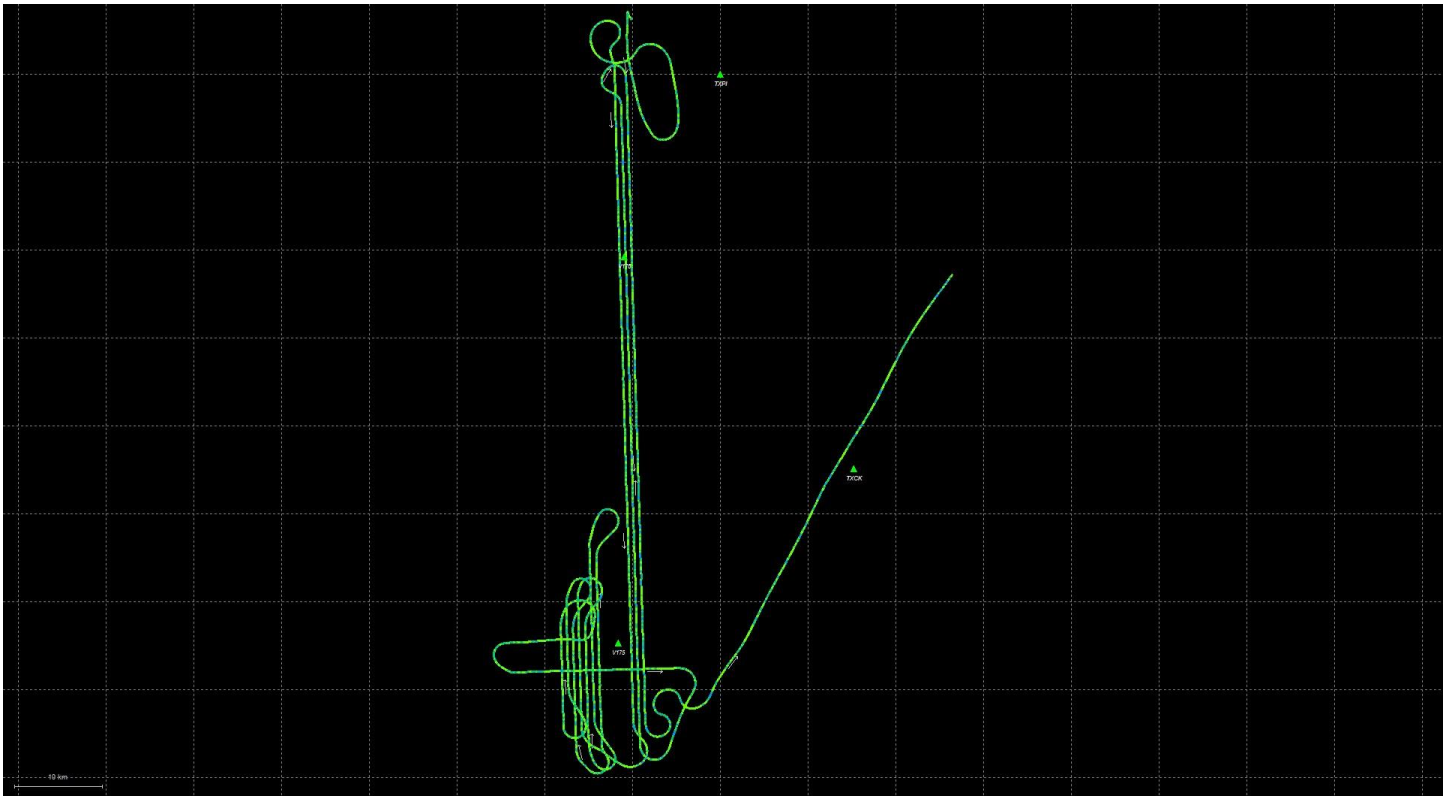
LIDAR	Type AL580	Serial # 8227	Alt AGL		Alt AMSL 5800		Avg Terr Ht		Max Gdspd 148	Avg Pt Spacing		Beg GB 646		Storage Name/#
	FOV 34	Scan Freq 55.8	MpIA Y (N)		Pulses In Air 2		Pulse Rate 311.2		Power 63%	PPSM		End GB 633		
												Tot GB 13		

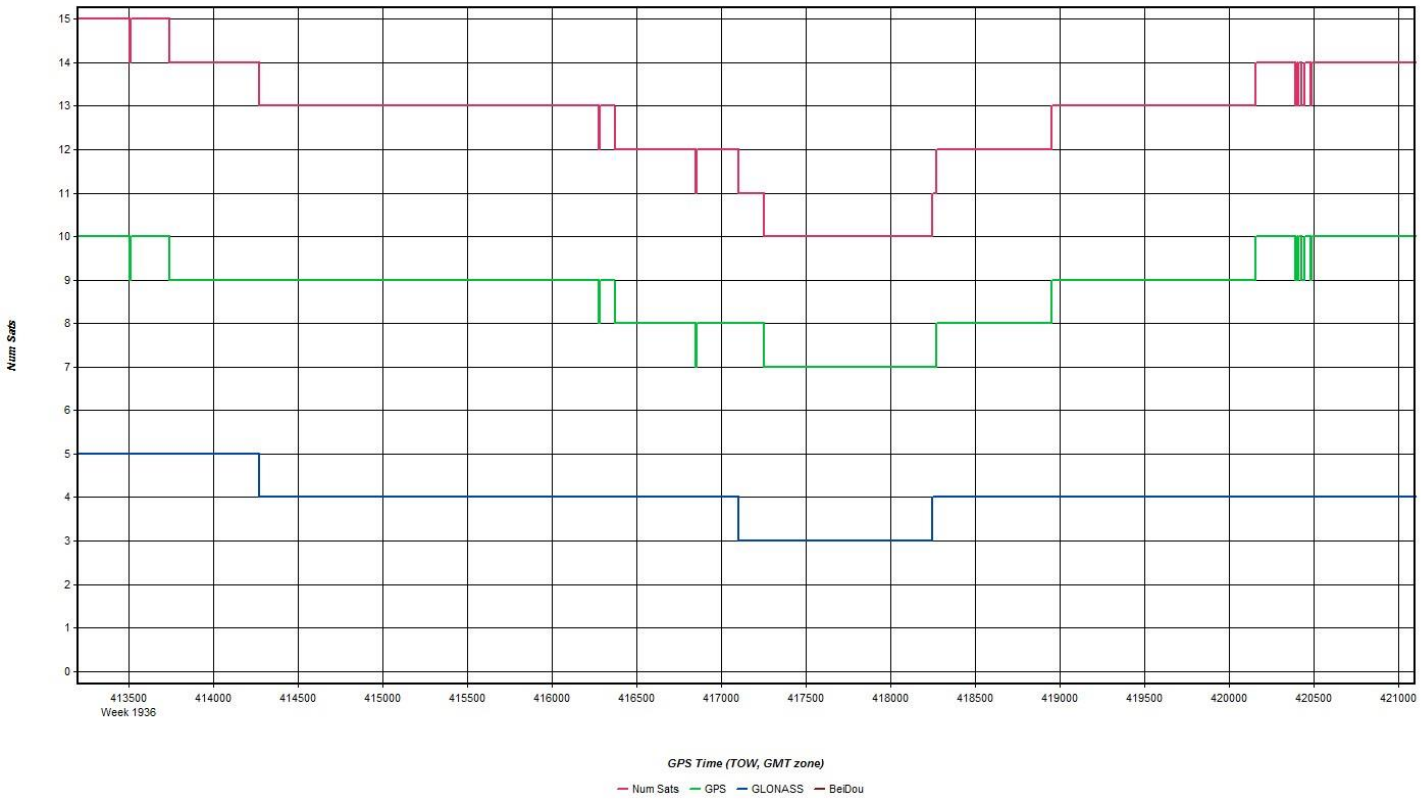
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/Sats	GPS Altitude	Crab	Turb [0,+]	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
B009	178	22:11	22:18	148	1.3/18	5828		0	Less Than 10% Drops Static Start
B008	357	2221	2227	154	1.3/18	5830		0	21:45 - 21:50
B007	178	2231	2237	146	1.1/21	5820		0	
B006	357	2240	2246	155	1.3/22	5830		0	Flight 22:06
Tie	087	2250	2251	157	1.3/21	5858		0	Unplanned Tie Line

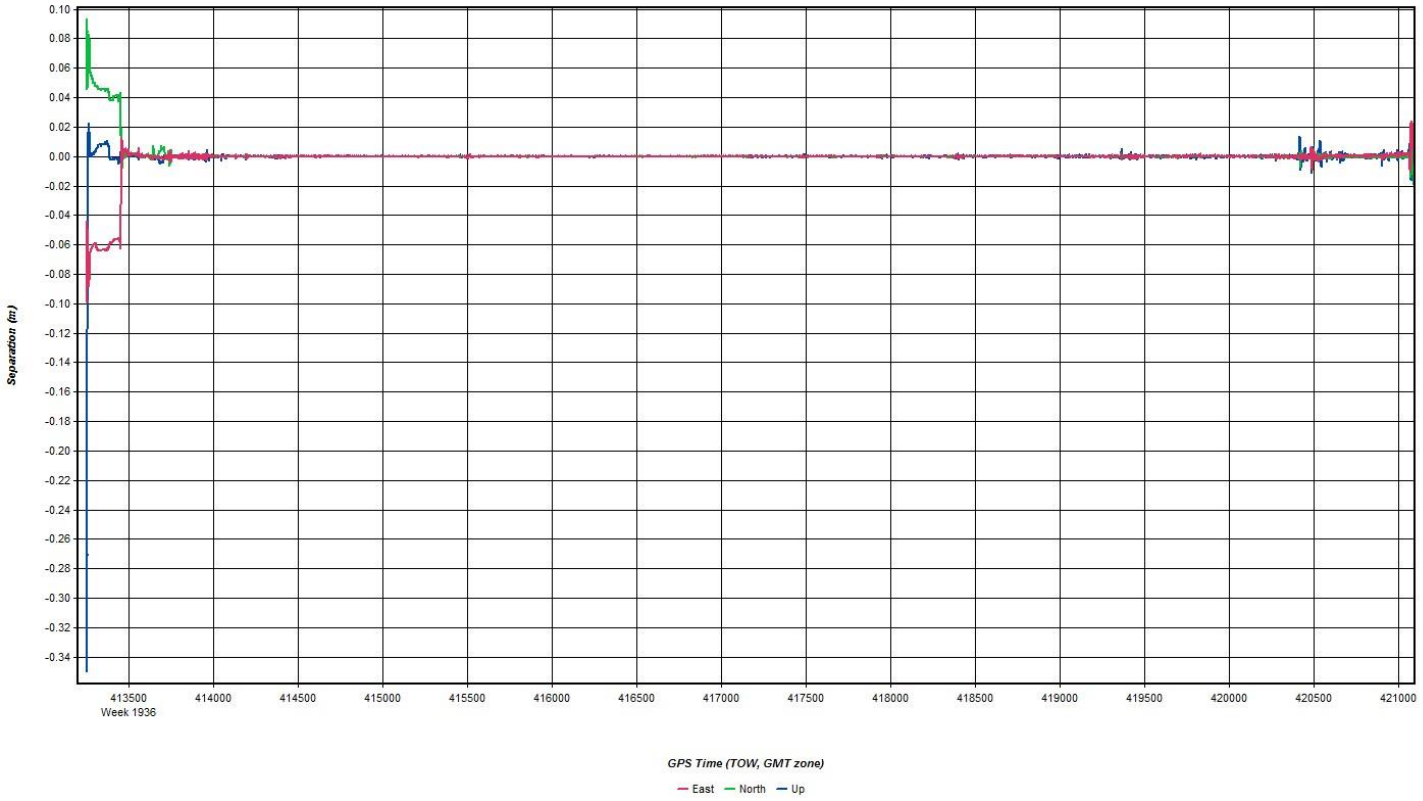
Total Real Lines: Lines Flown: 4 Lines Remain: OnLine Time: 1:45 Mob Time: :30 Notes:

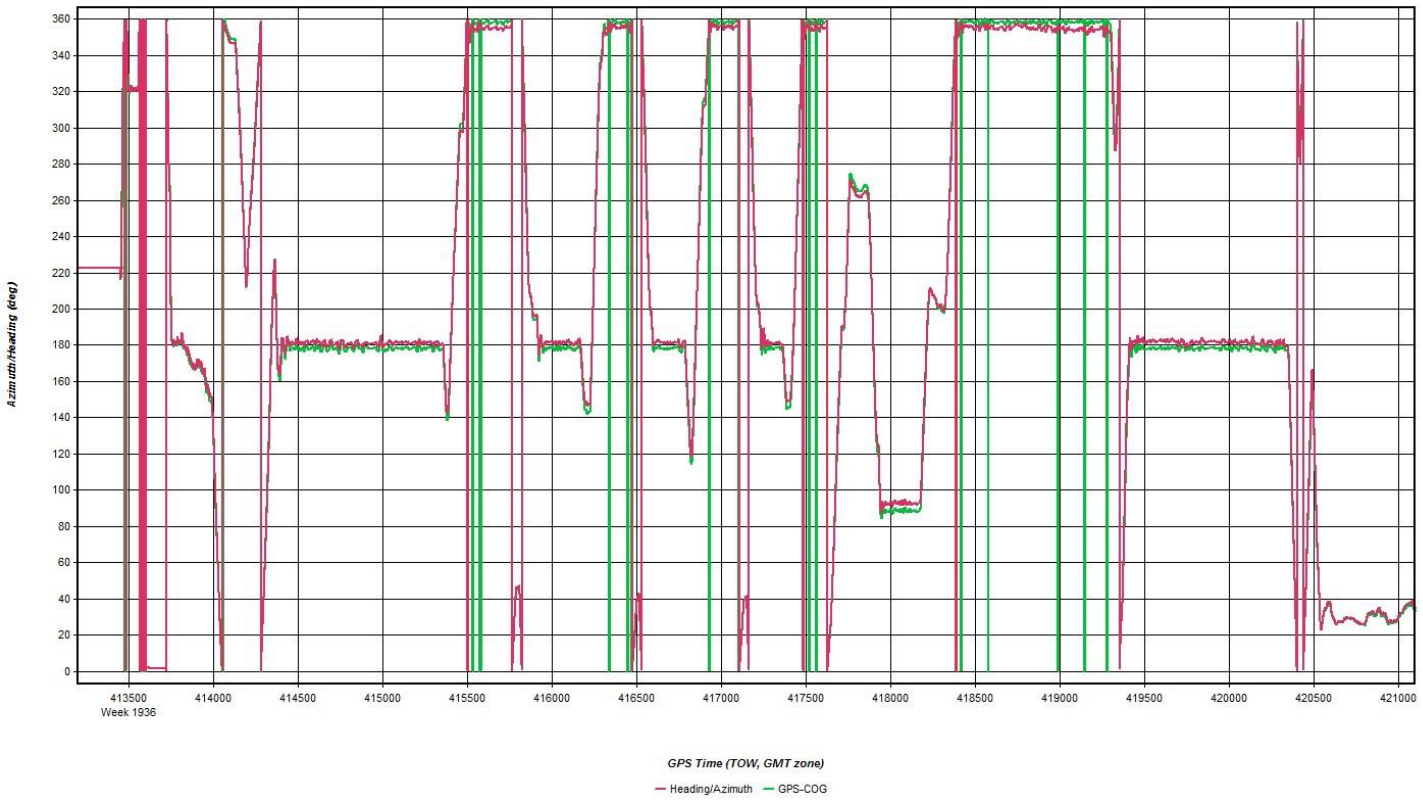
Static Stop
23:16 - 23-21

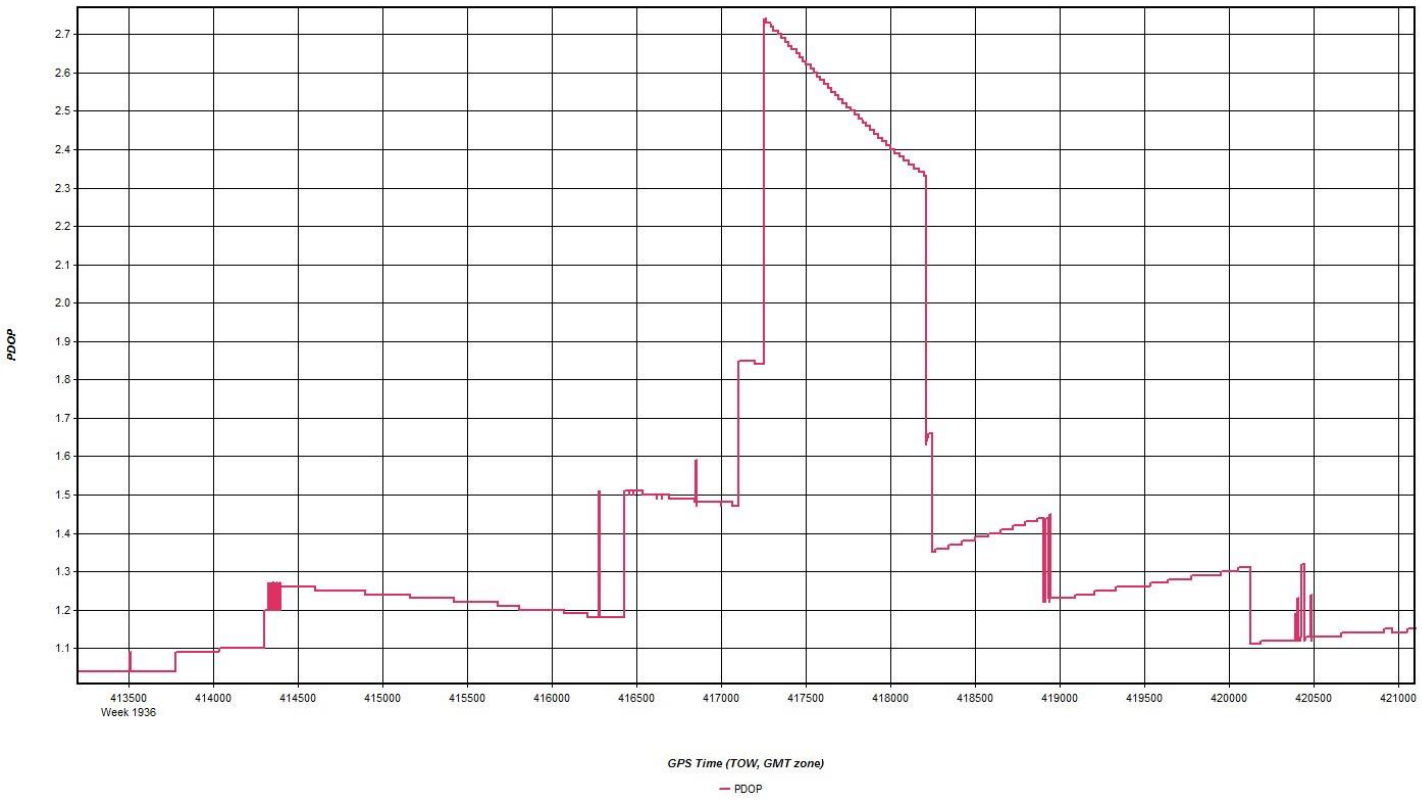
Feb 16, 2017-B (N73TM, SN7178)

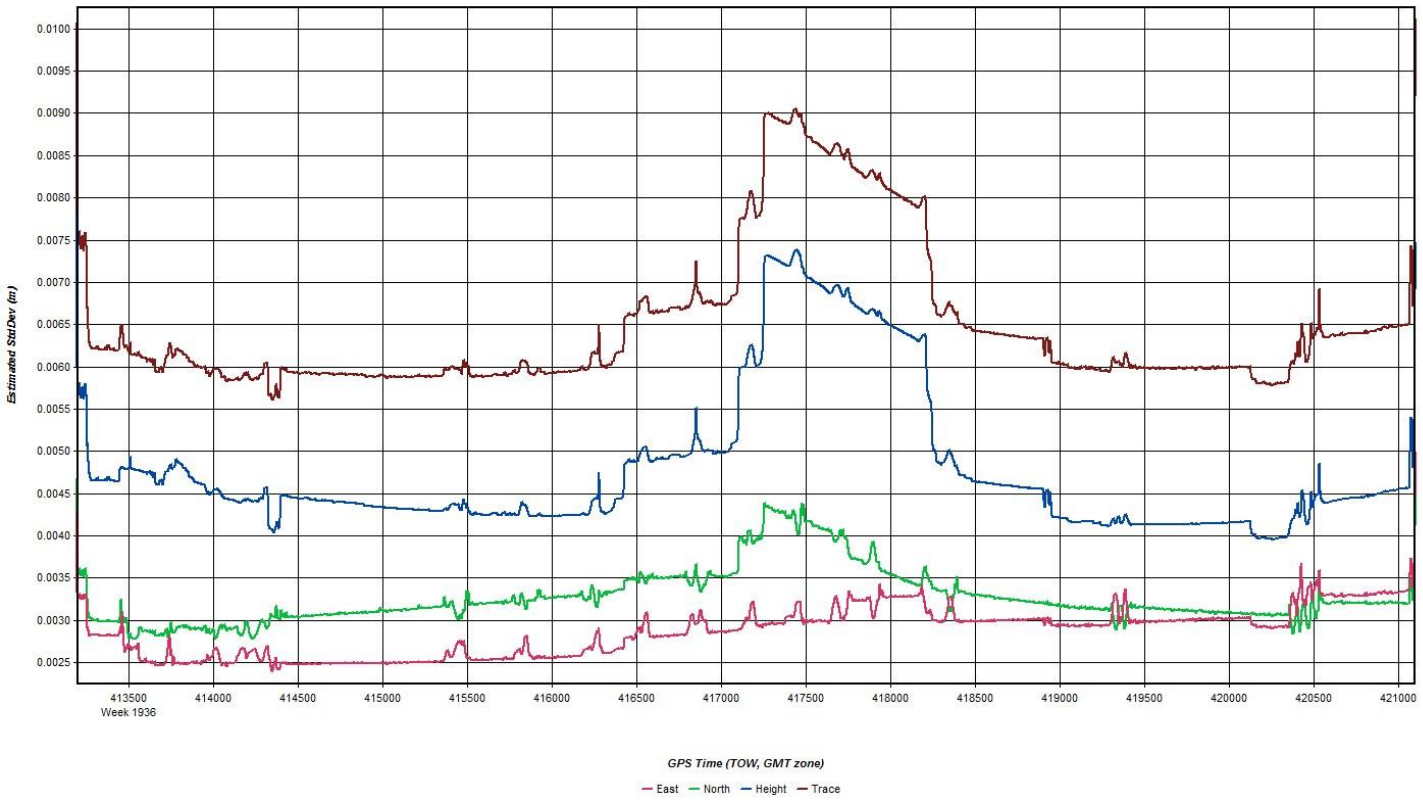


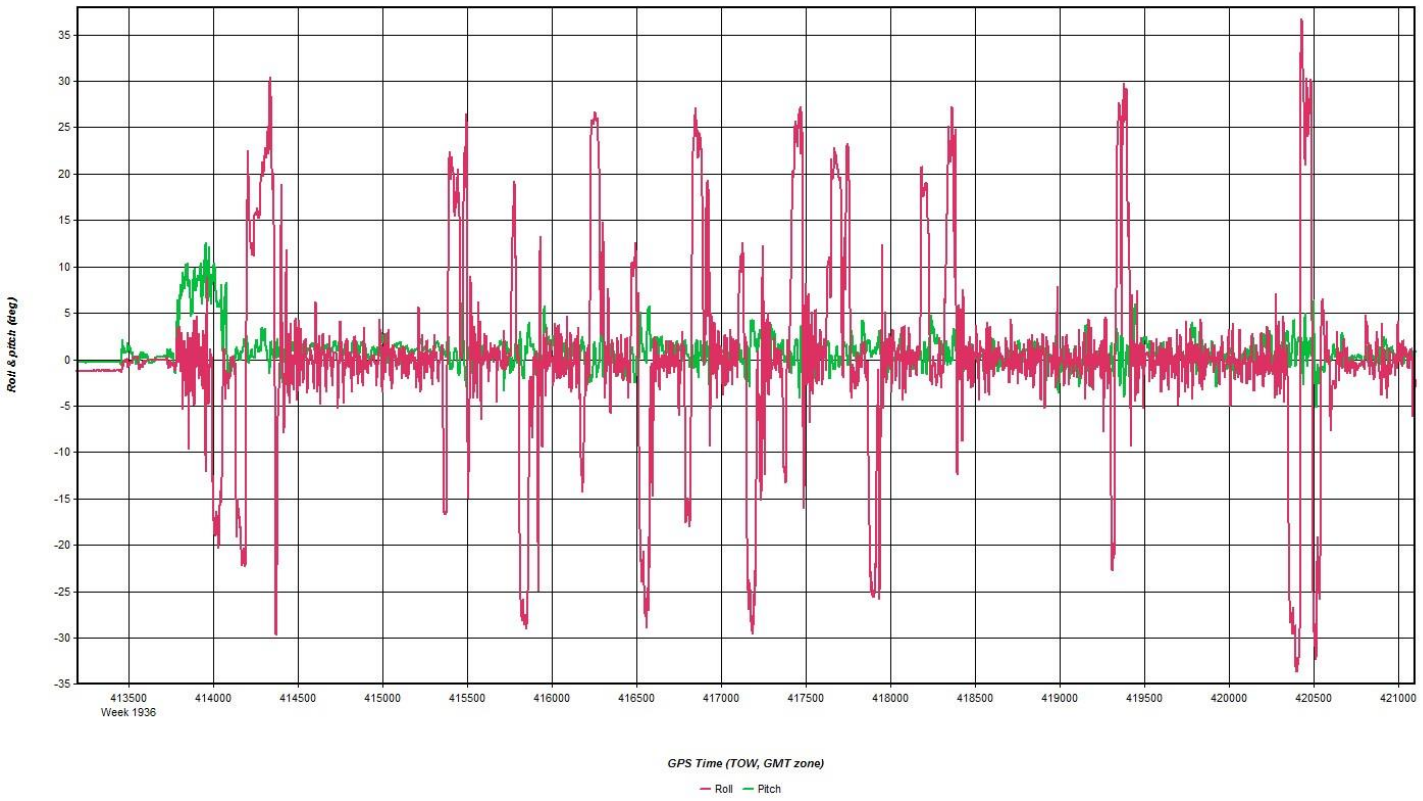

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

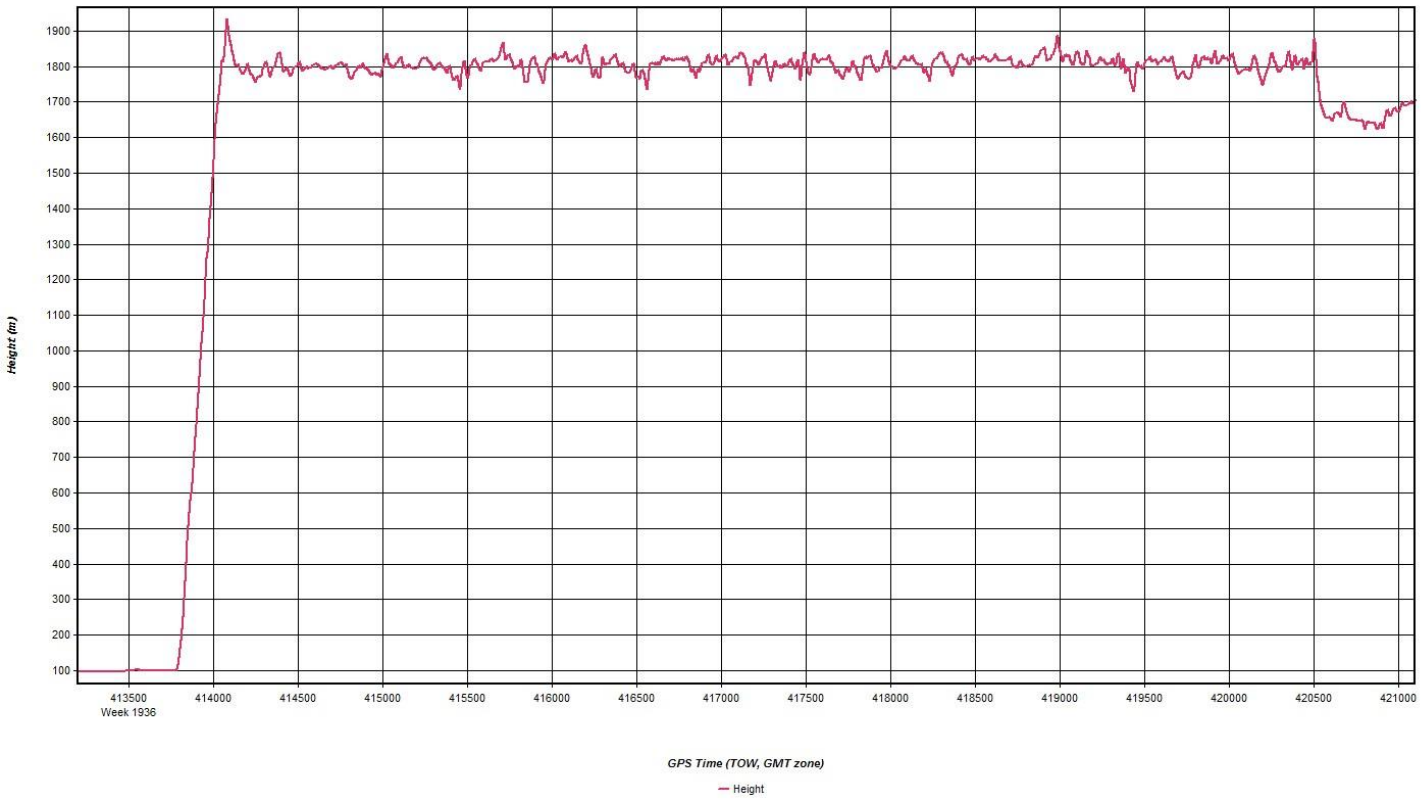

Separation (m)
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
East
North
Up

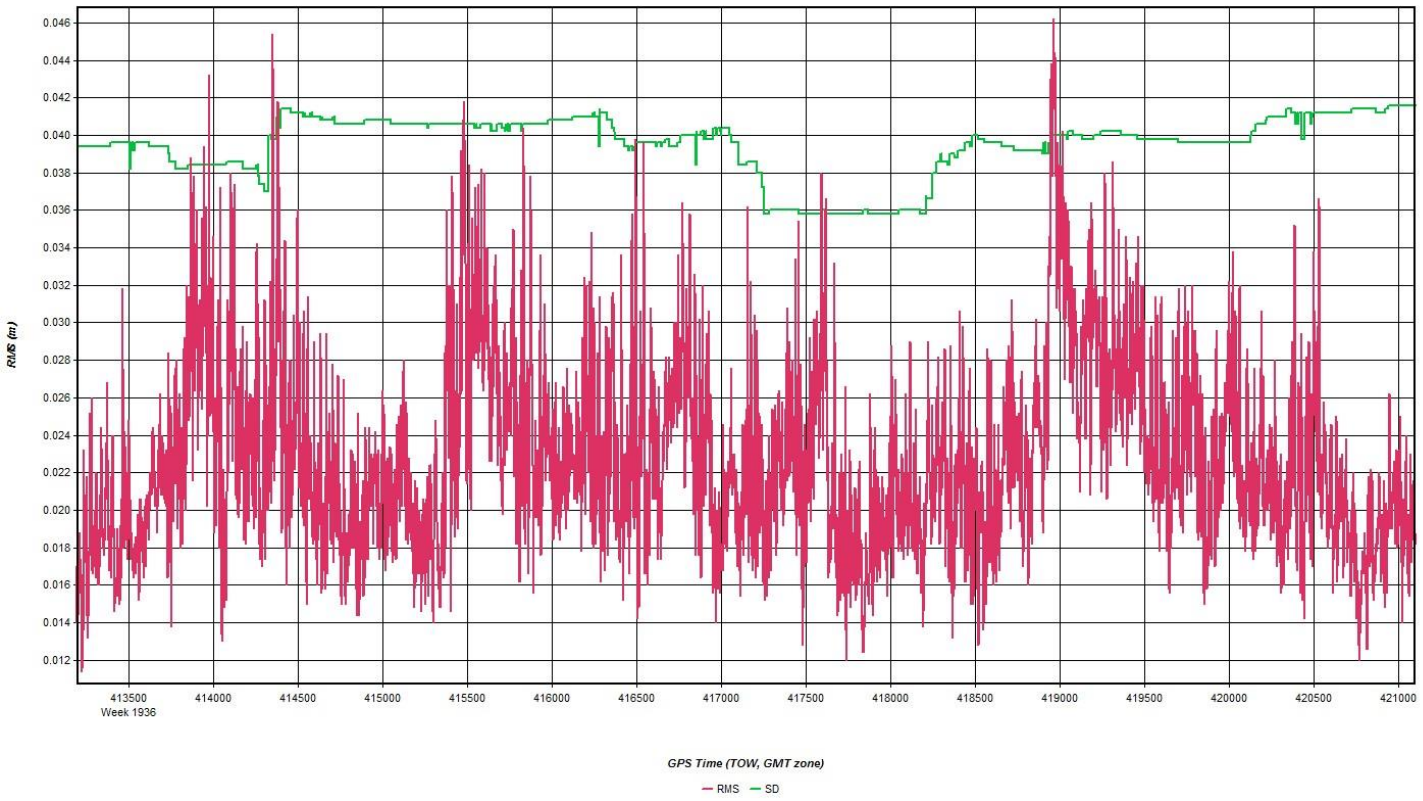

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

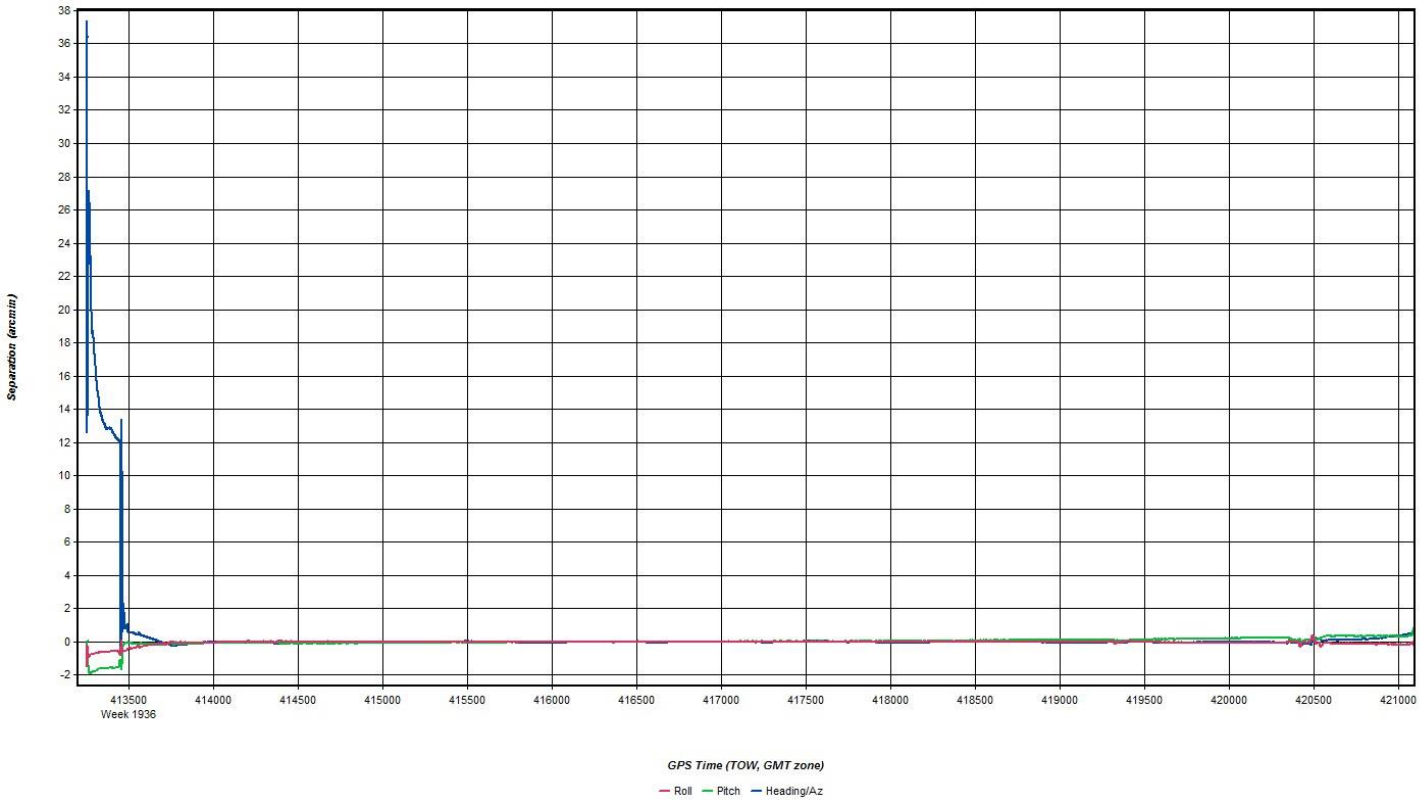

PDOP
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
PDOP

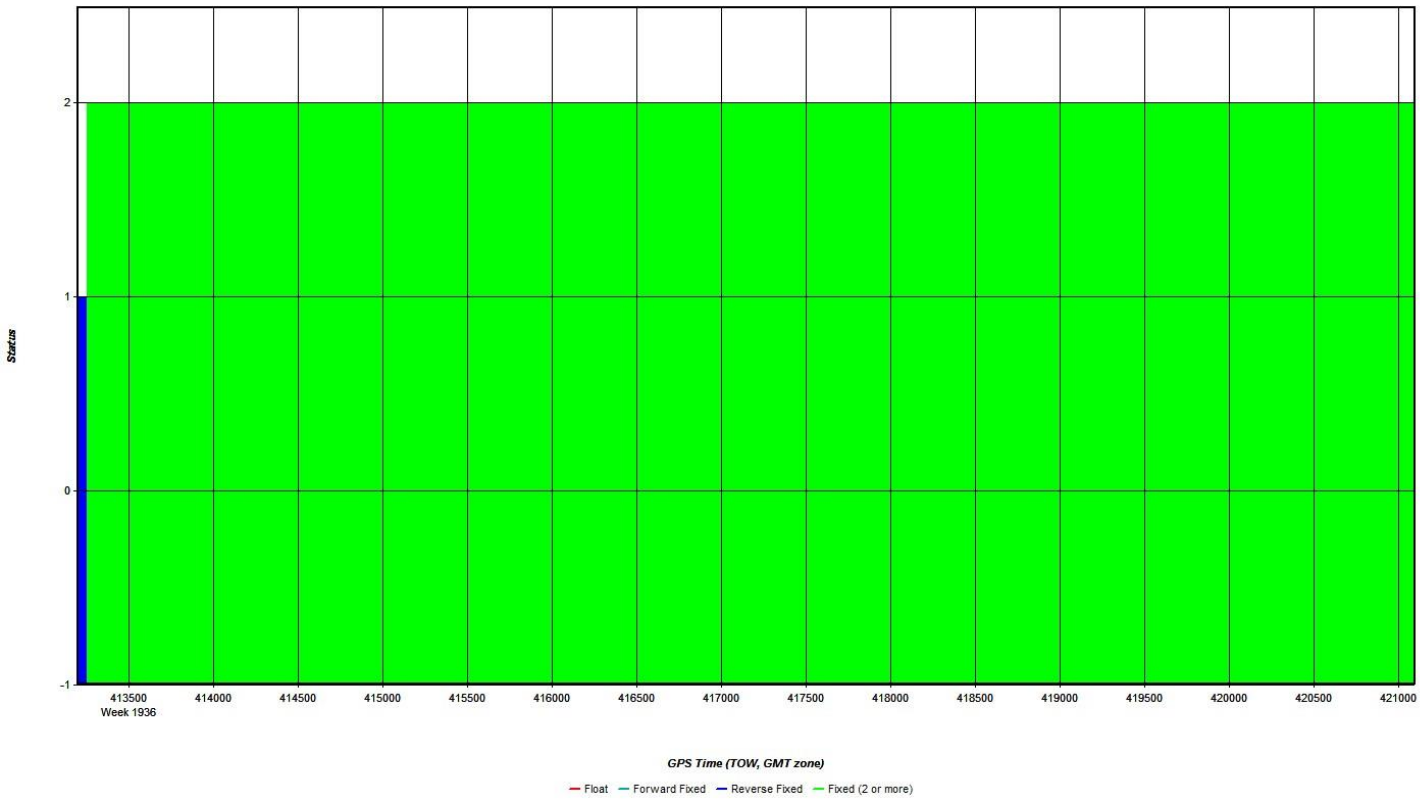

Estimated StdDev (m)
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

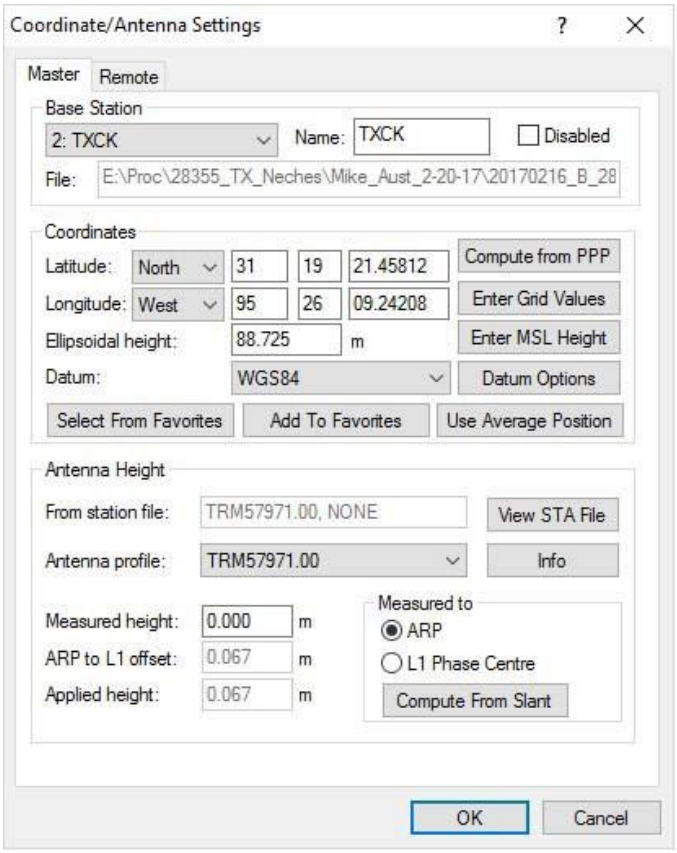

Roll & pitch (deg)
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
Roll
Pitch

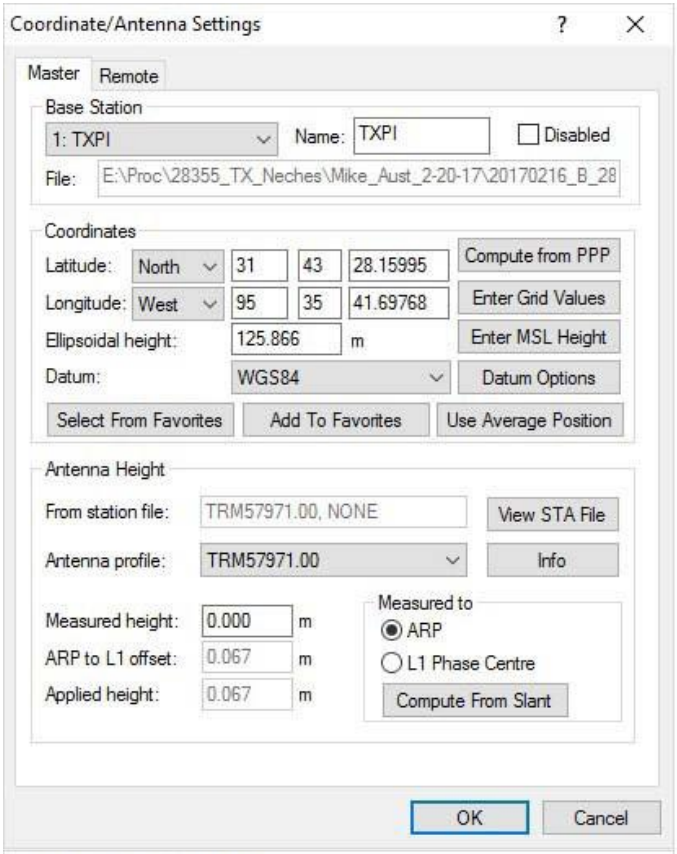

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
Height

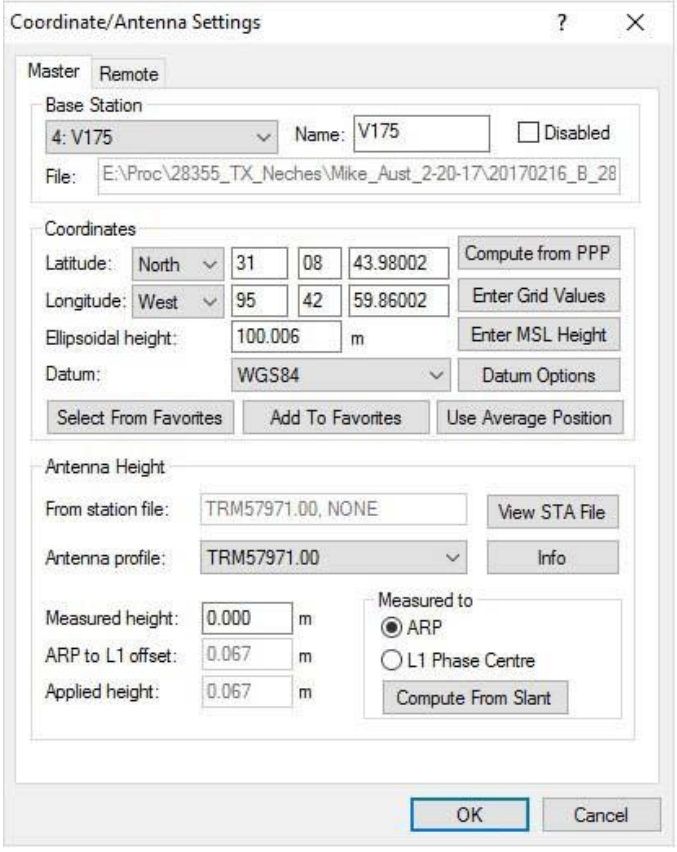

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
RMS
SD

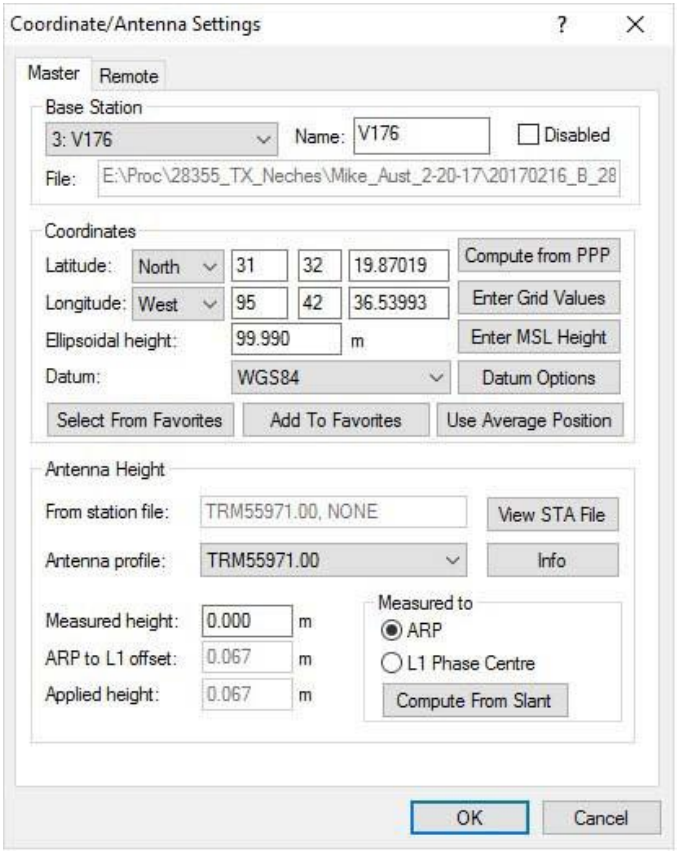

Separation (arcmin)
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
413500
Week 1936
414000
414500
415000
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
421000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXCK
Name: TXCK
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_B_28
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPI
Name: TXPI
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_B_28
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V175
Name: V175
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_B_28
Coordinates
Latitude: North 31 08 43.98002
Longitude: West 95 42 59.86002
Ellipsoidal height: 100.006 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V176
Name: V176
Disabled
File: E:\Proc\28355_TX_Neches\Mike_Aust_2-20-17\20170216_B_28
Coordinates
Latitude: North 31 32 19.87019
Longitude: West 95 42 36.53993
Ellipsoidal height: 99.990 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-16-17 Lift: A (B) C D E Pg 1 of 1

Project: MECHES BASIN LIDAR Proj #: 28355 Flight Mgmt File: 20170216_184349

Aircraft: 73TM Begin Hobbs: 6554,8 End Hobbs: 6557,2 Total: 2,4 Pilot: J NELSON Co-Pilot: Tech: M AUST

Dep Apt: PSN Dep Time (Lcl): 12:50 (Z): 18:50 Arr Apt: 6G6 Arr Time (Local): 3:25 (Z): 21:25 Tot Time Aloft:

CORS: (Y) / N Sta 1: TXCK Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

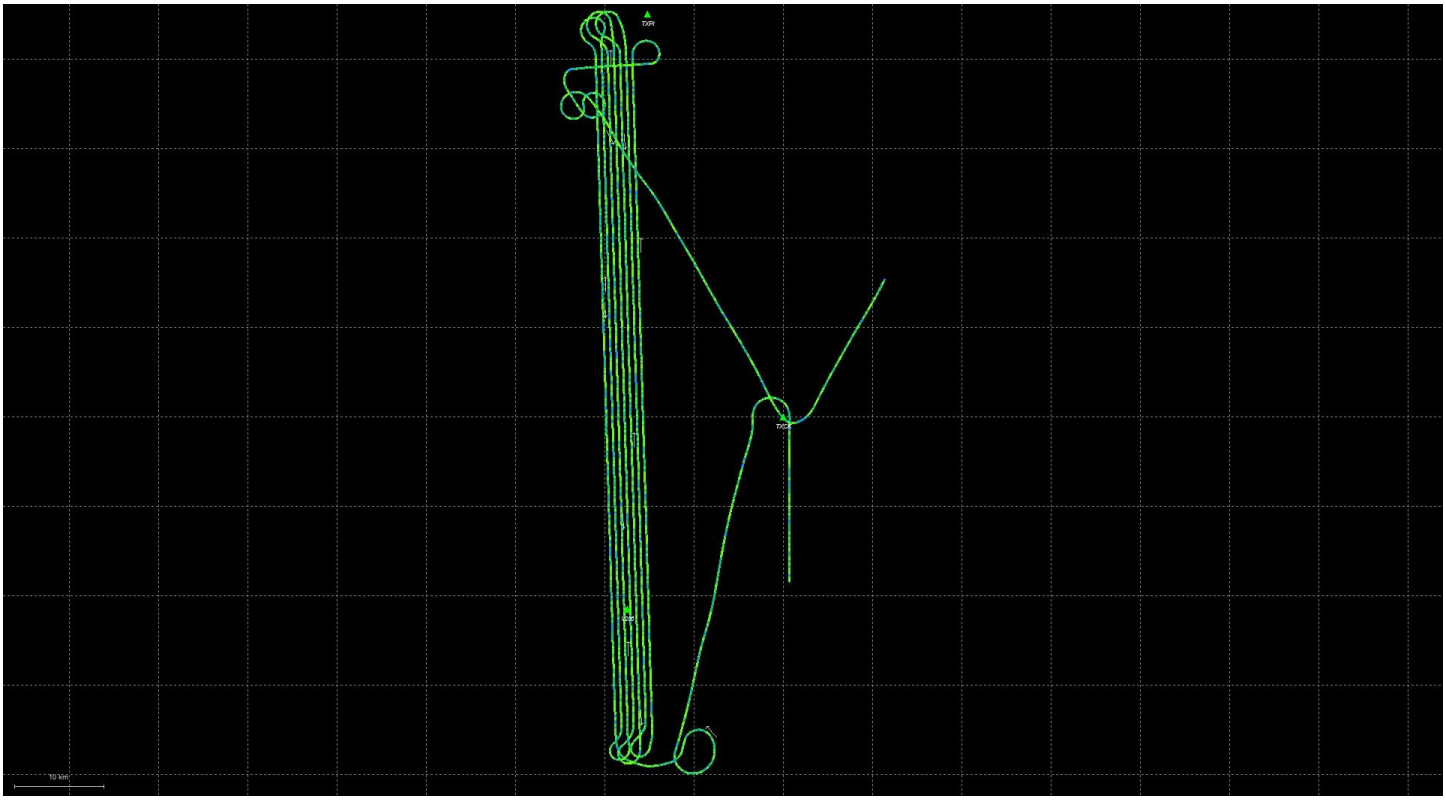
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS70	7178		5,8'			
	FOV 34	Scan Freq 57	MpiA (Y) / N	Pulses In Air	Pulse Rate 312	Power 100	PPSM

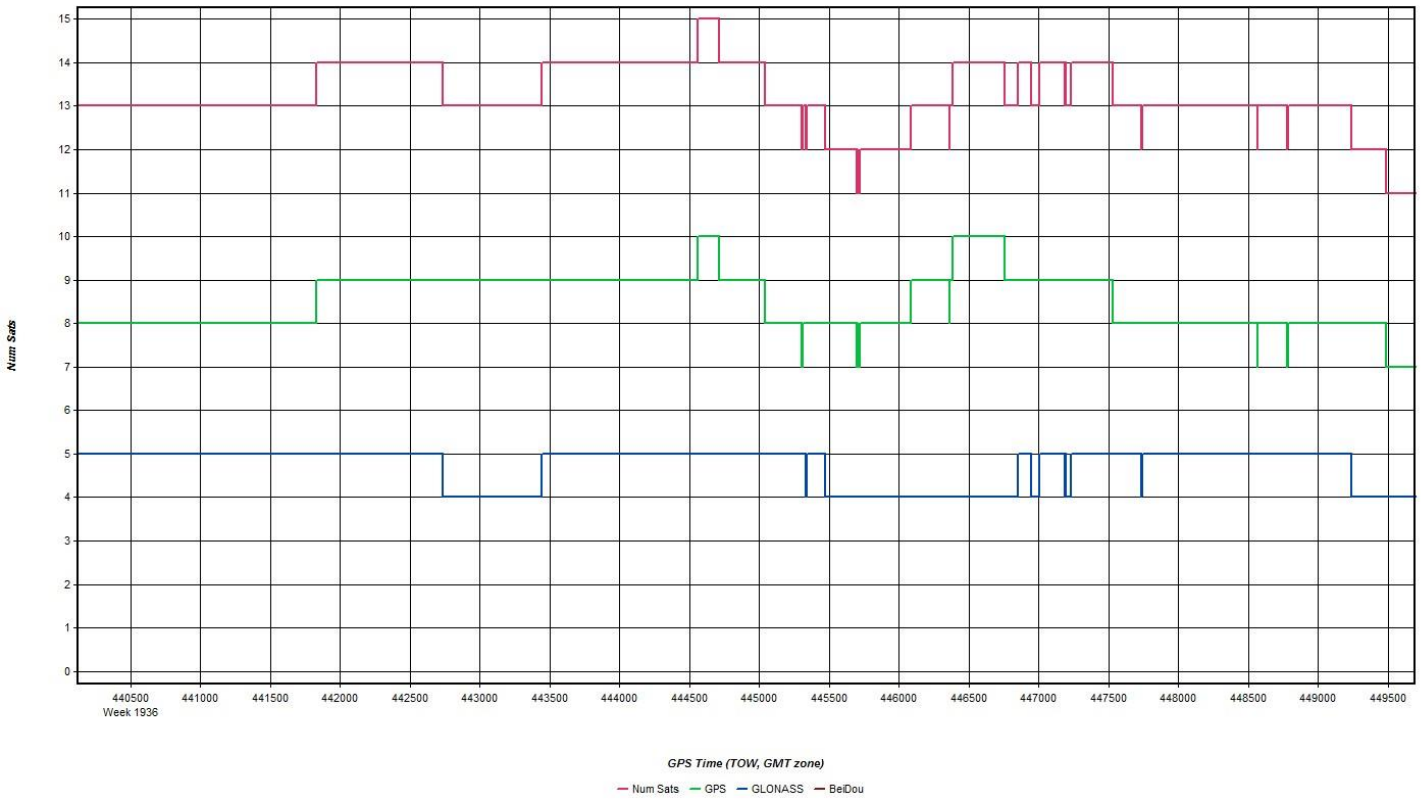
Beg GB	End GB	Tot GB	Storage Name/#
375	348	27	3

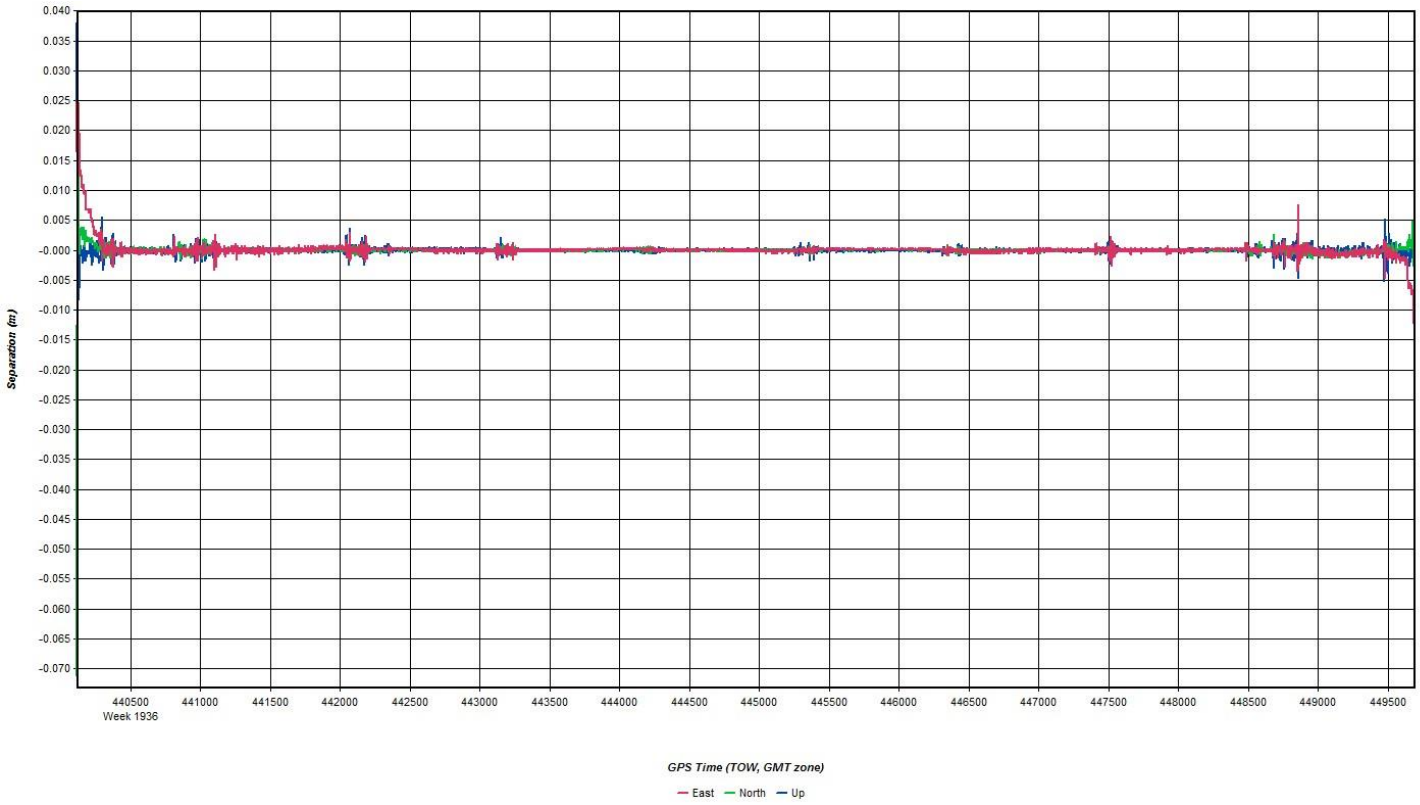
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
1019	S	1907	1922	146	1.3/16	5.9			FIGURE 8's 19:04
1014	N	1925	1928	144	1.4/14	5.9			
1012	S	1932	1936	148	1.4/14	5.9			
1010	N	1938	1940	154	1.4/14	5.9			
1008	S	1943	1946	148	1.3/14	6.0			
1006	N	1949	1951	152	1.3/14	5.9			
1004	S	1954	1956	158	1.2/15	5.8			
1002	N	1958	2000	140	1.2/15	5.9			
1098	E	2006	2010	154	1.3/14	5.9			PARTIAL - CROSSFLIGHT
1020	N	2013	2027	155	1.3/14	5.9			
1021	S	2030	2045	156	1.1/16	5.9			FIGURE 8's 20:46

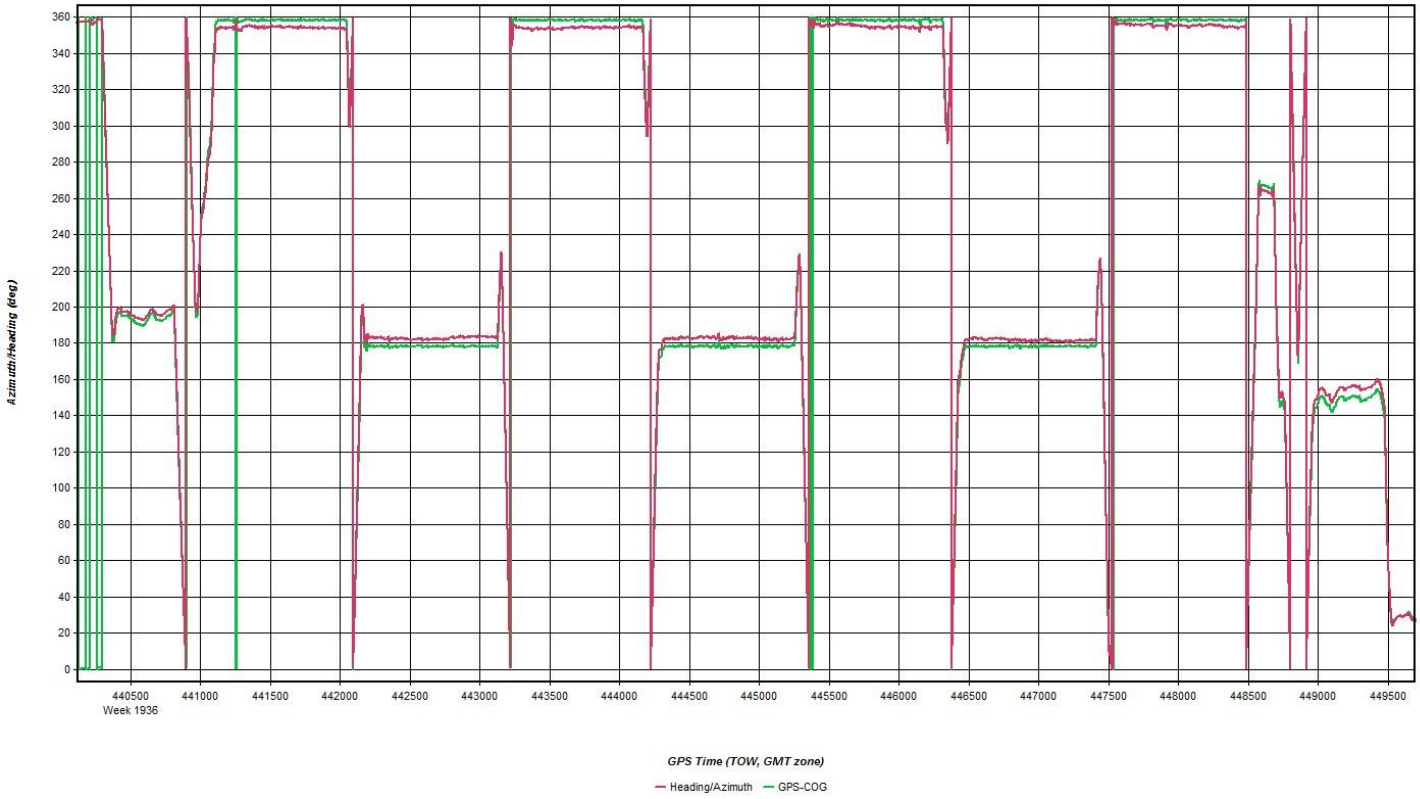
Total Proj Lines: Lines Flown: Lines Remain: On line Time: 1.75 Mob Time: .75 Notes:

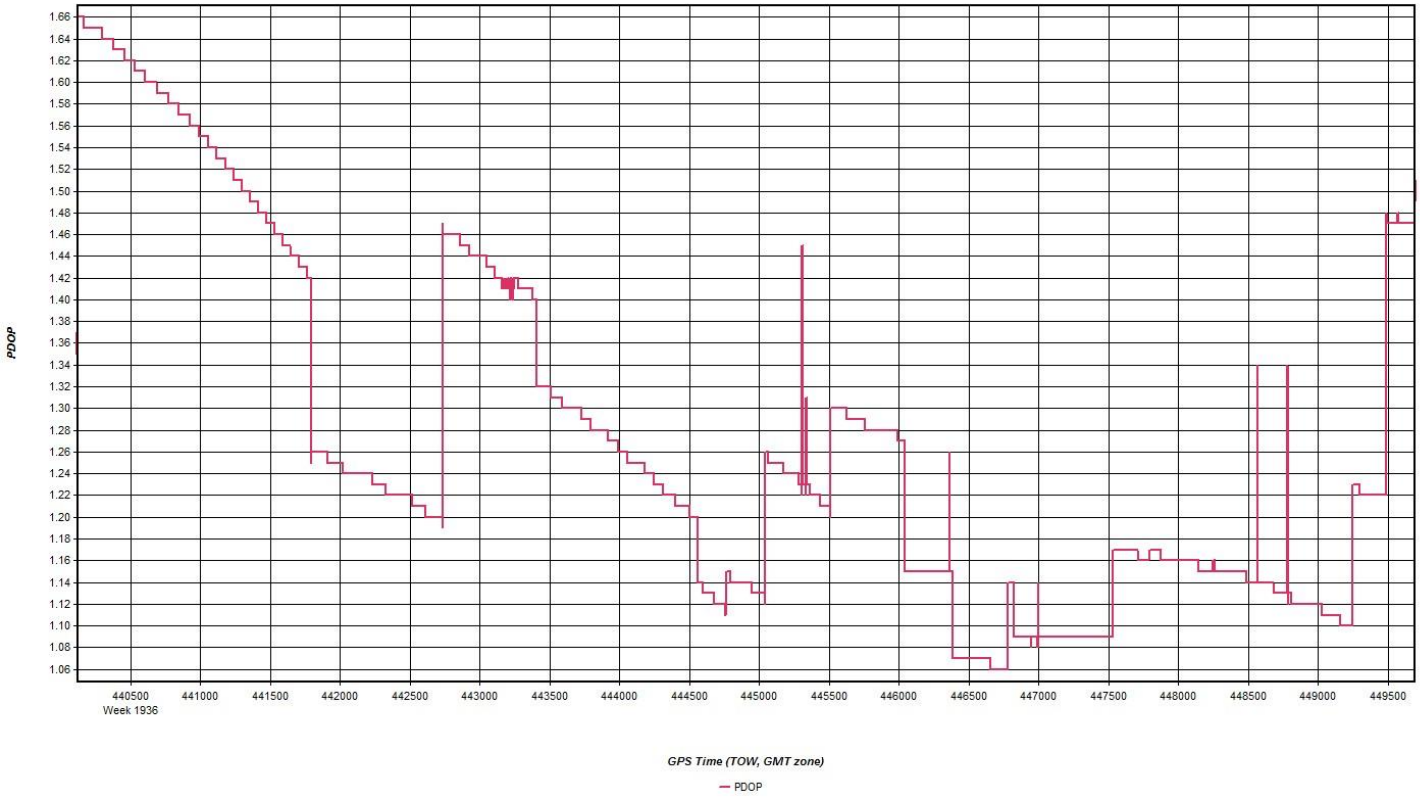
Feb 17, 2017-A (N73TM, SN7178)

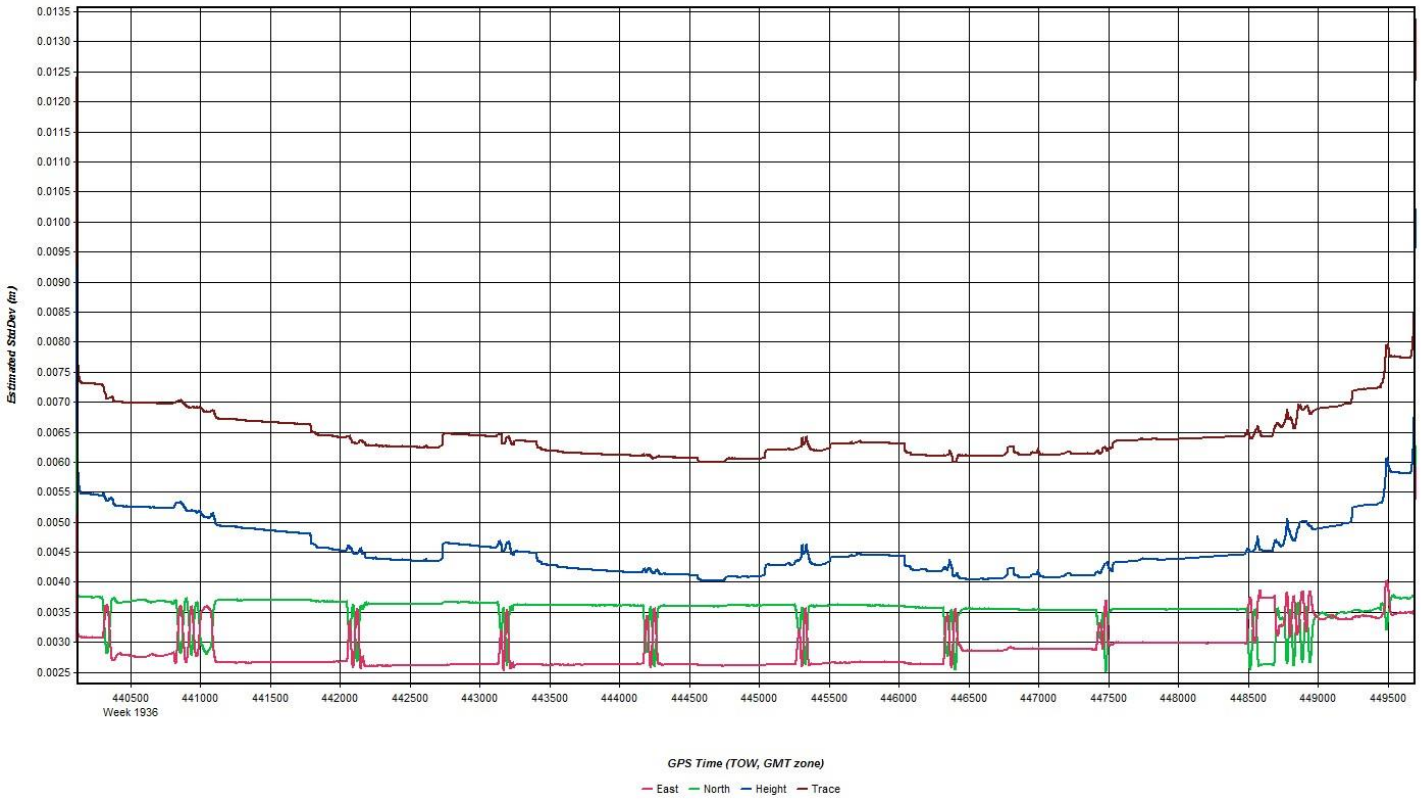


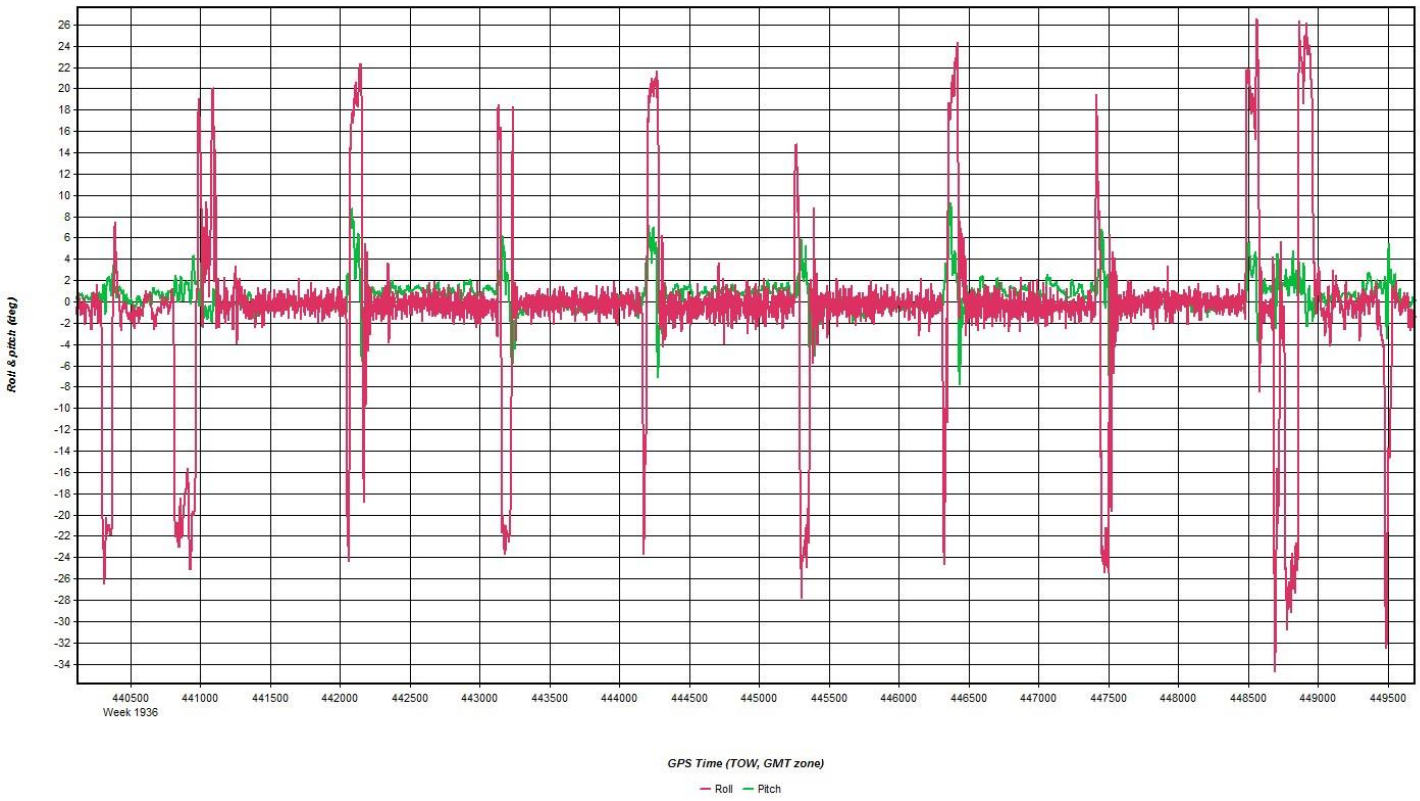

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

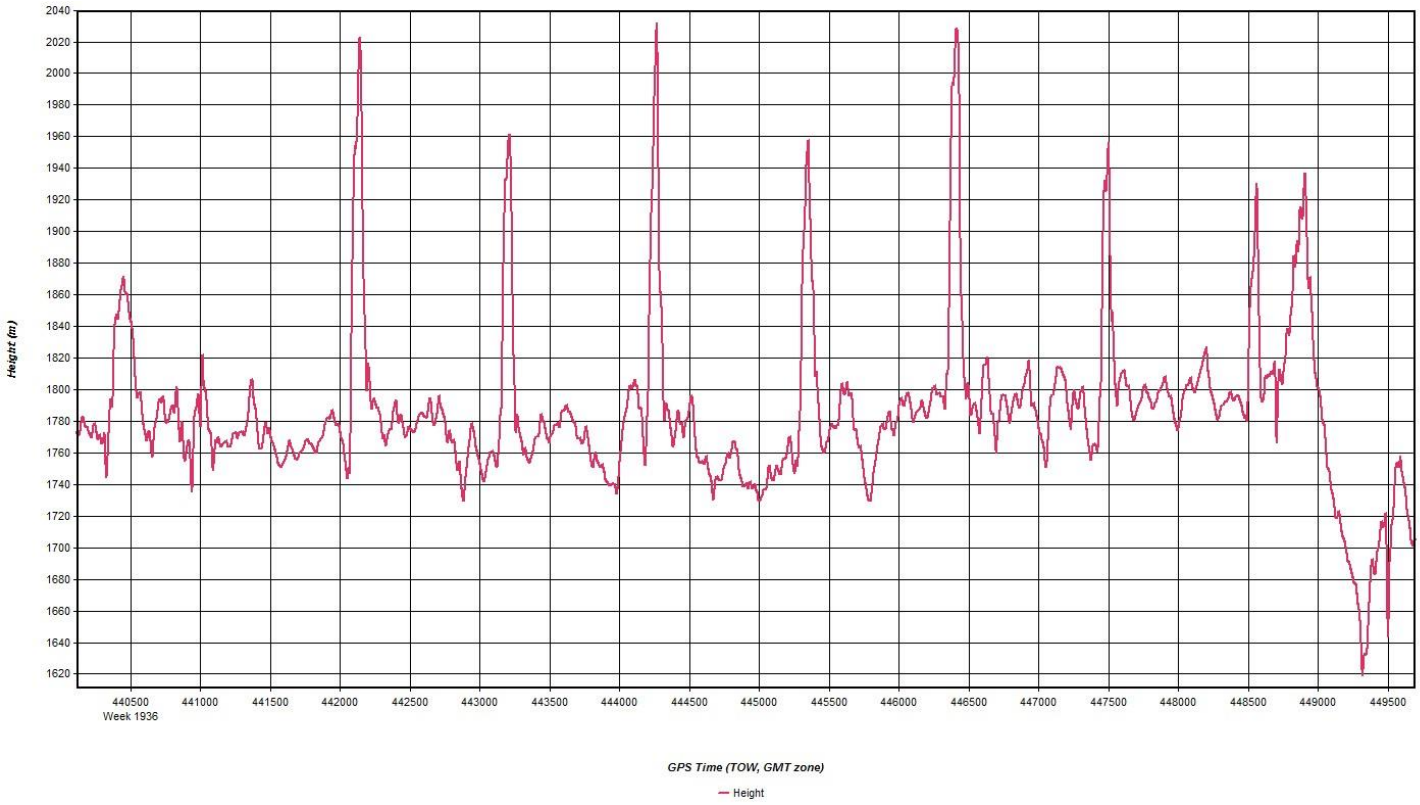

Separation (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
East
North
Up

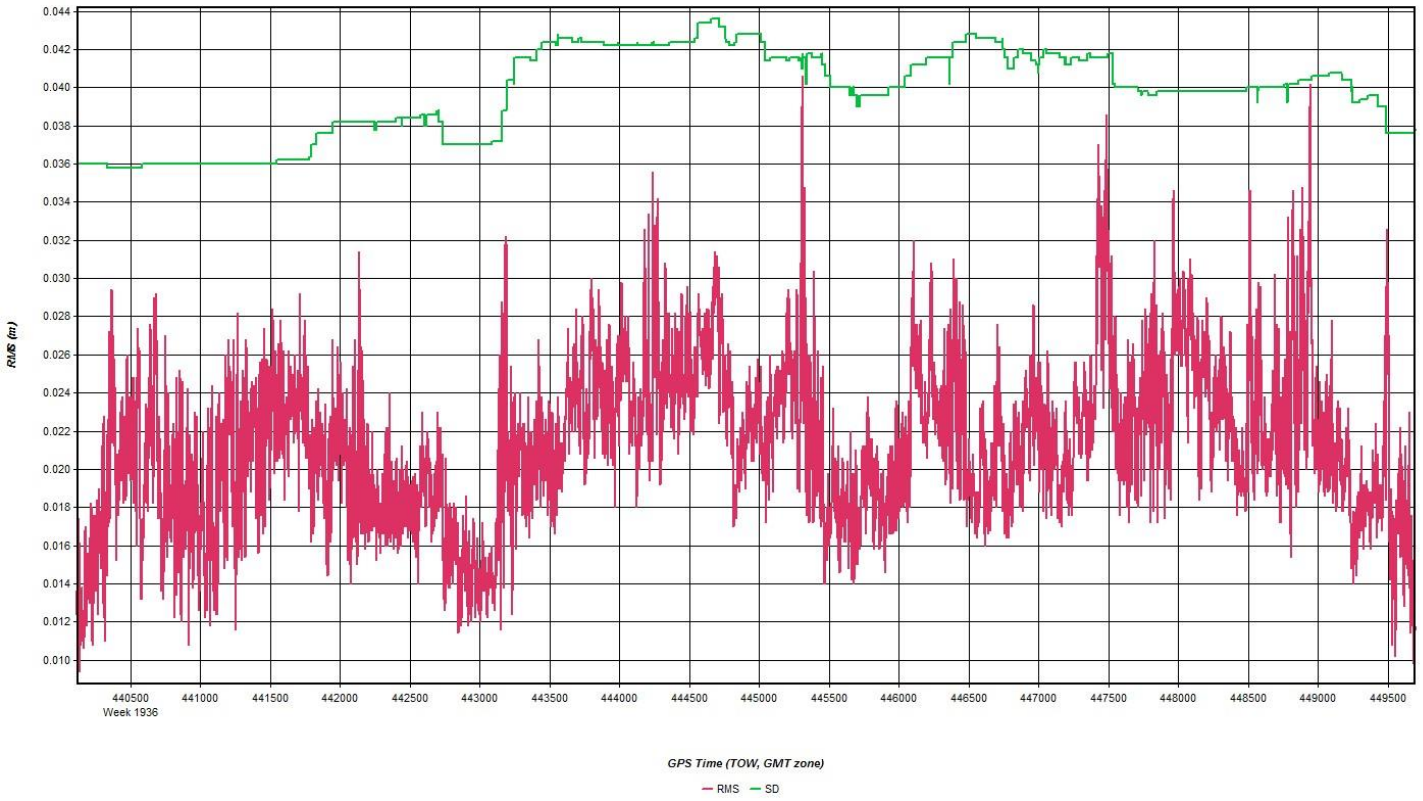

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

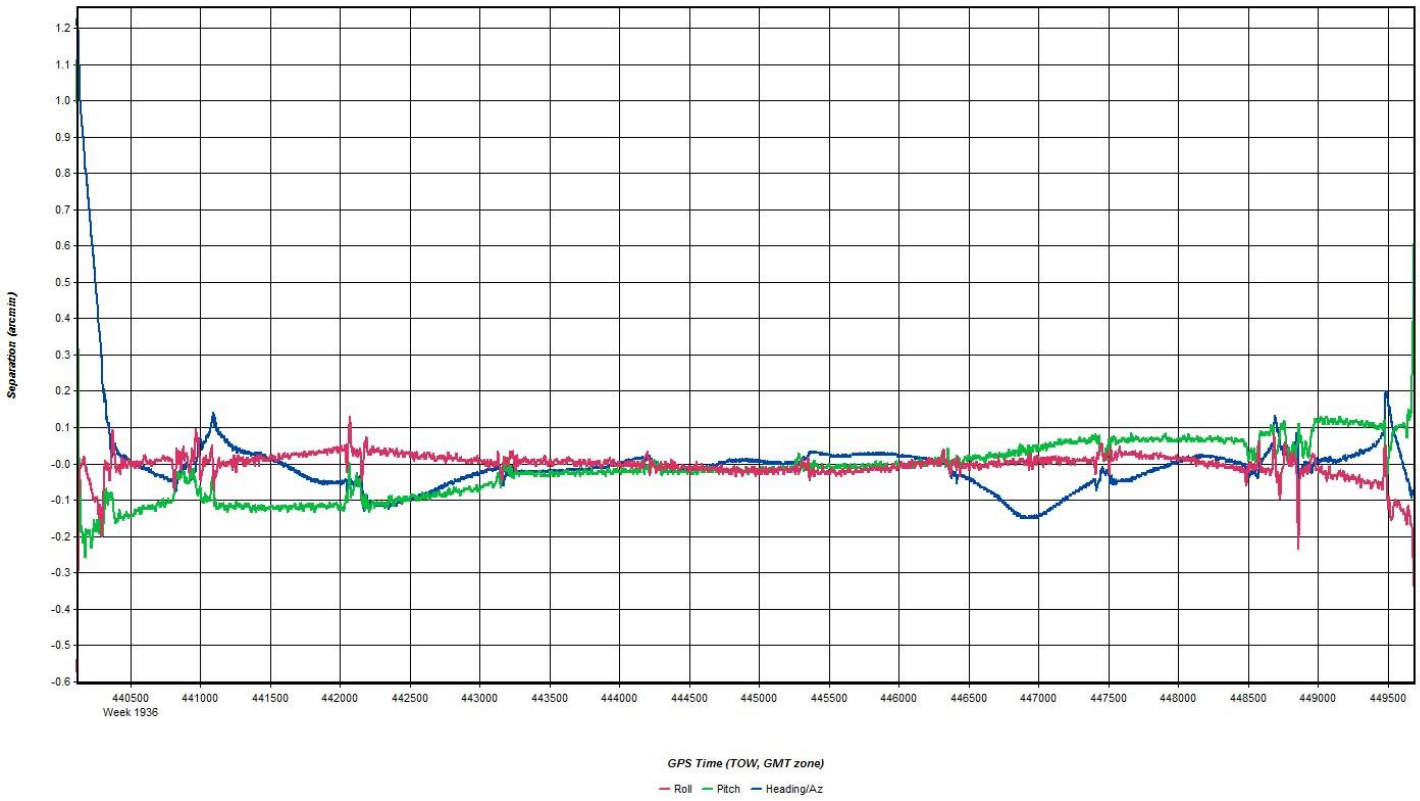

PDOP
1.66
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
PDOP

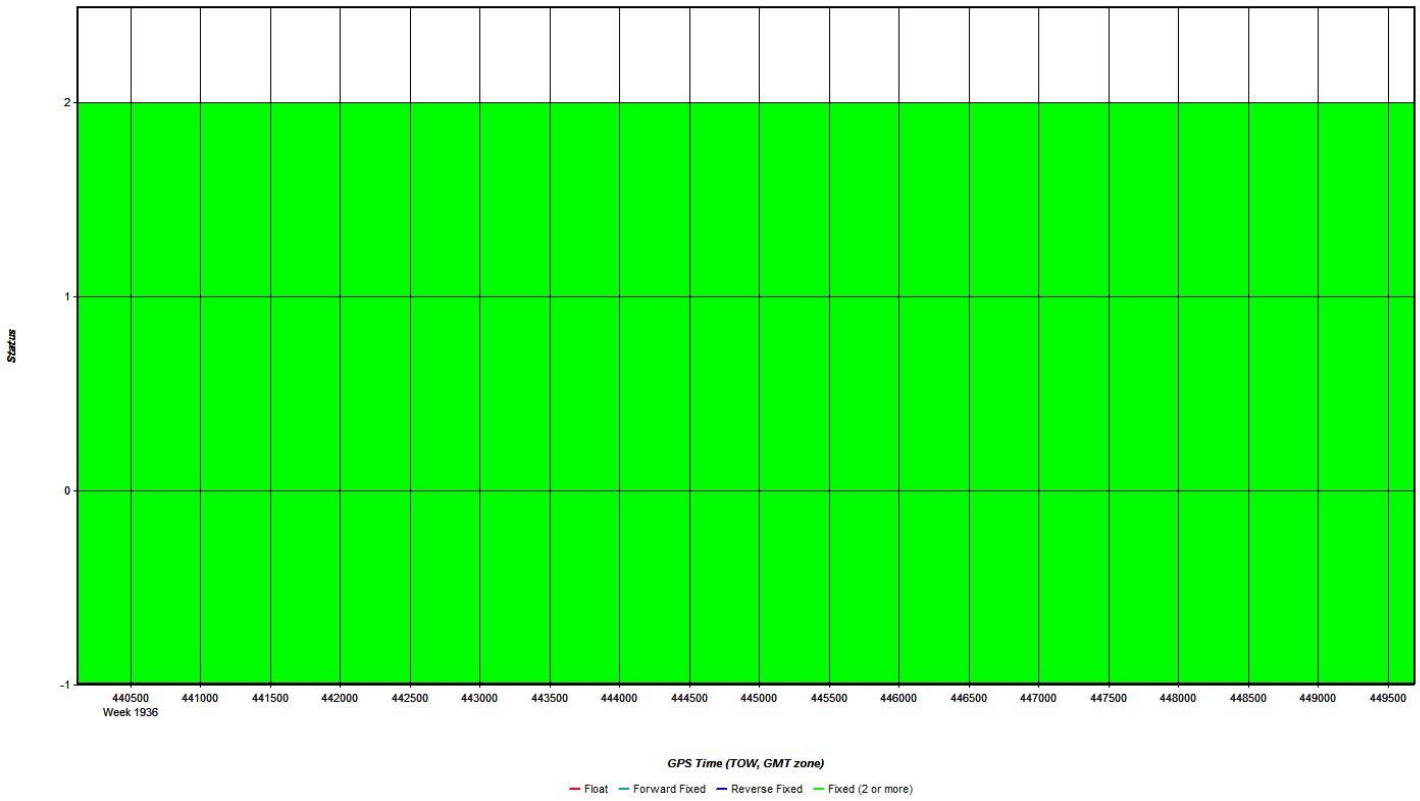

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

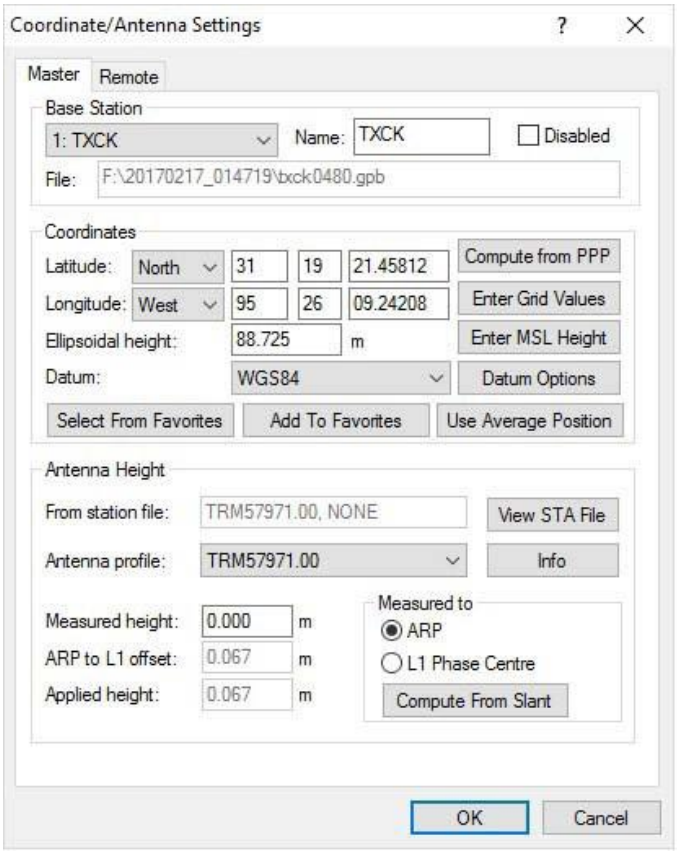

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
Roll
Pitch

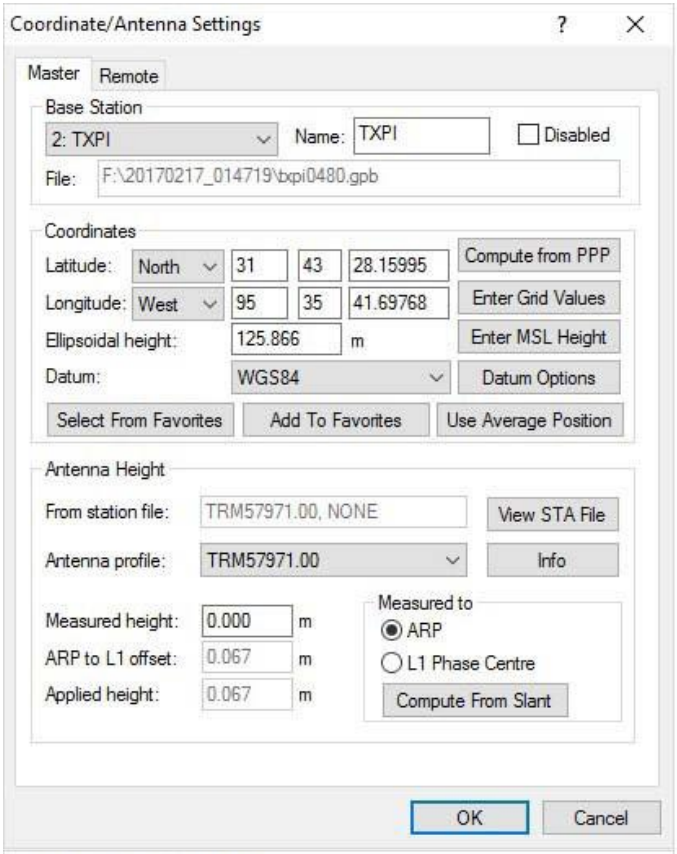

Height (m)
2040
2020
2000
1980
1960
1940
1920
1900
1880
1860
1840
1820
1800
1780
1760
1740
1720
1700
1680
1660
1640
1620
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
Height

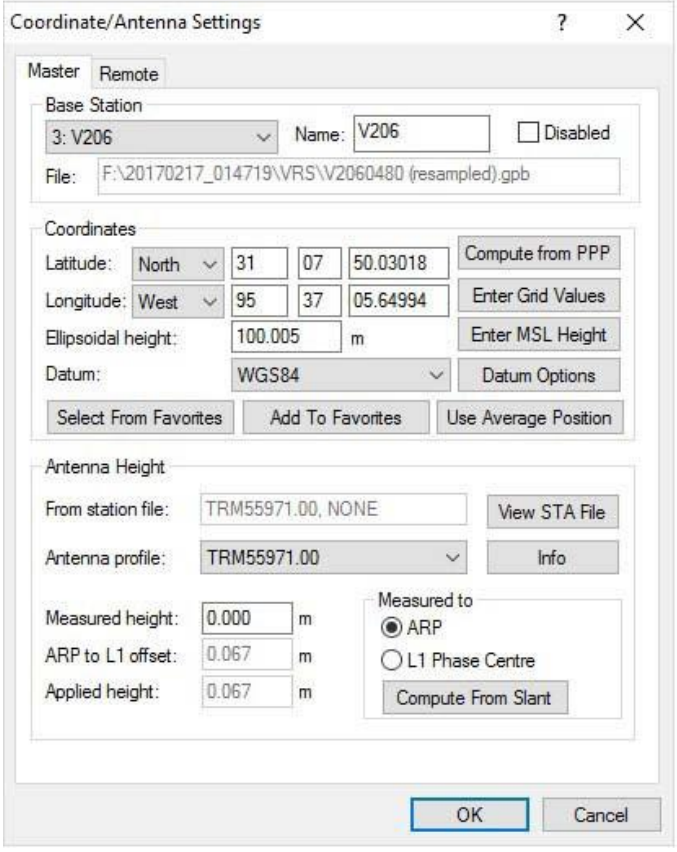

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
440500
Week 1936
441000
441500
442000
442500
443000
443500
444000
444500
445000
445500
446000
446500
447000
447500
448000
448500
449000
449500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCK
Name: TXCK
Disabled
File: F:\20170217_014719\txck0480.gpb
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXPI
Name: TXPI
Disabled
File: F:\20170217_014719\txpi0480.gpb
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V206
Name: V206
Disabled
File: F:\20170217_014719\VRS\V2060480 (resampled).gpb
Coordinates
Latitude: North 31 07 50.03018
Longitude: West 95 37 05.64994
Ellipsoidal height: 100.005 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 02/16/17
Lift: A (B) C D E Pg 2 of 2

Project: USGS NECHES BASIN Proj #: 28355 Flight Mgmt File: 170217-014719

Aircraft: N73Tm Begin Hobbs: 6560.2 End Hobbs: 6563.5 Total: 3.3 Pilot: JOSEY Co-Pilot: — Tech: TOM

Dep Apt: CXO Dep Time (Lcl): 7:57 (Z): 01:57 Arr Apt: Arr Time (Local): 11:14 (Z): ~~3~~5:16 Tot Time Aloft: 3.3

CORS: (Y) / N Sta 1: TXCK Sta 2: TXCK Flyovers: Y / N If Y, times: Sta1) 02:18 Z Sta2) 4:51 Z

GPS Unit: Y / (N) Sta 1: — Sta 2: — Flyovers: Y / N If Y, times: Sta1) — Sta2) —

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS-70	7178					
	FOV	Scan Freq	MpiA (Y) / N	Pulses in Air	Pulse Rate	Power	PPSM
	34	57.3			312	100%	3.5+

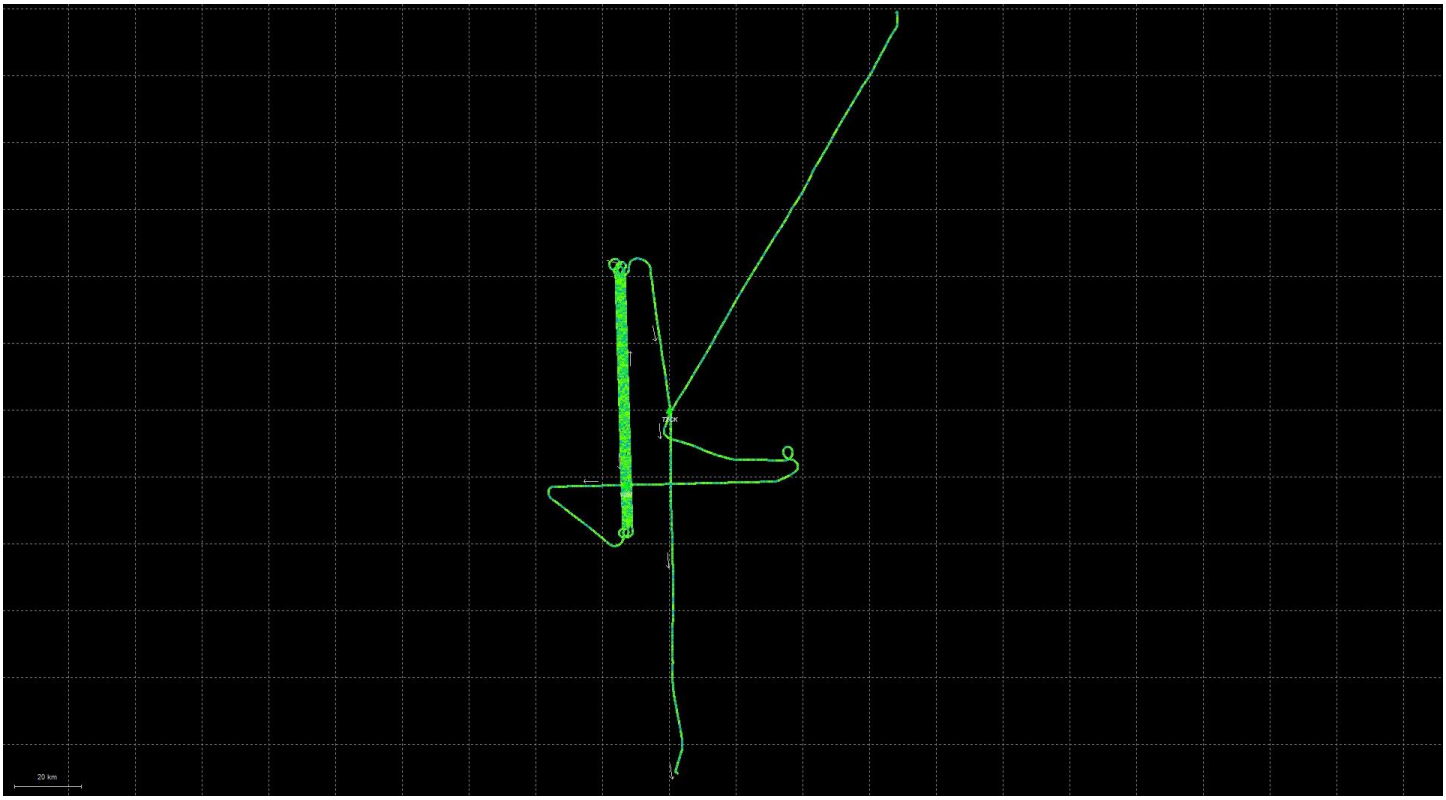
Beg GB	Storage Name/#
395	5504
End GB	
	7178
Tot GB	

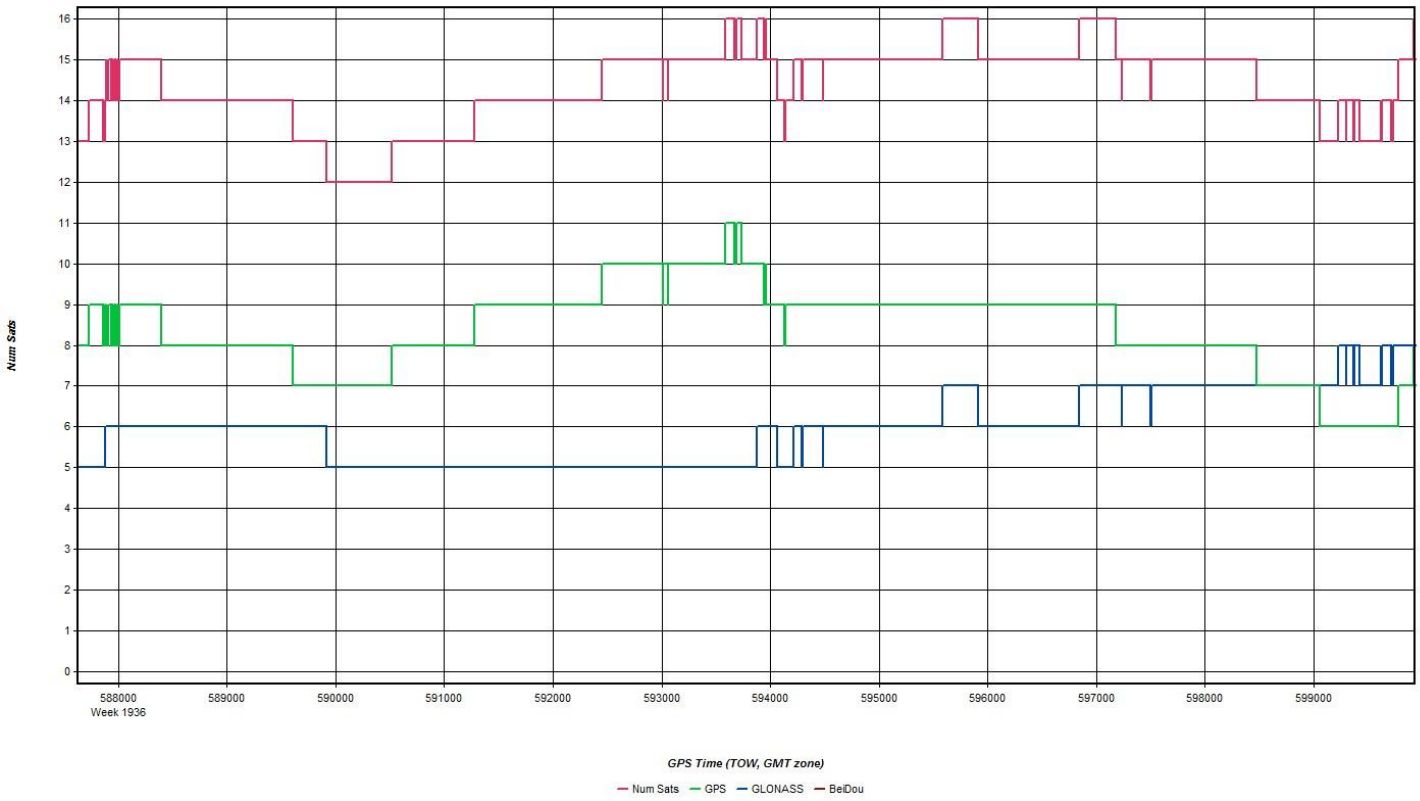
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES — visibility, clouds, smoke, partial, etc.
		7:42	8:30		FIG 8				FERRY: CXO → TXCK → SITE 0.8
1028	N	2:31	2:47	150	1.2/15	5882	-	0	
1029	S	2:49	3:05	|	|		—	0	777
1030	N	3:07	3:22	|	1.0/19	5892	-	0	
1031	S	3:25	3:40	|	1.0/18	5908	—	0	779
1032	N	3:43	3:58	|	1.0/17	5918	—	0	780
1033	S	4:01	4:16	|	1.1/17	5925	—	0	781
1034	N	4:18	434	|	1.2/16	5938	-	0	782
XTIE	W	4:36	437	|	—	—	—	—	
									10:51 Z
		10:36	11:30		FIG 8				FERRY: SITE → TXCK → GGG 0.9
									SHIPPER: EZGJ (PASSPORT)
									28355 — SN 7178 — CROCKETT fpd2

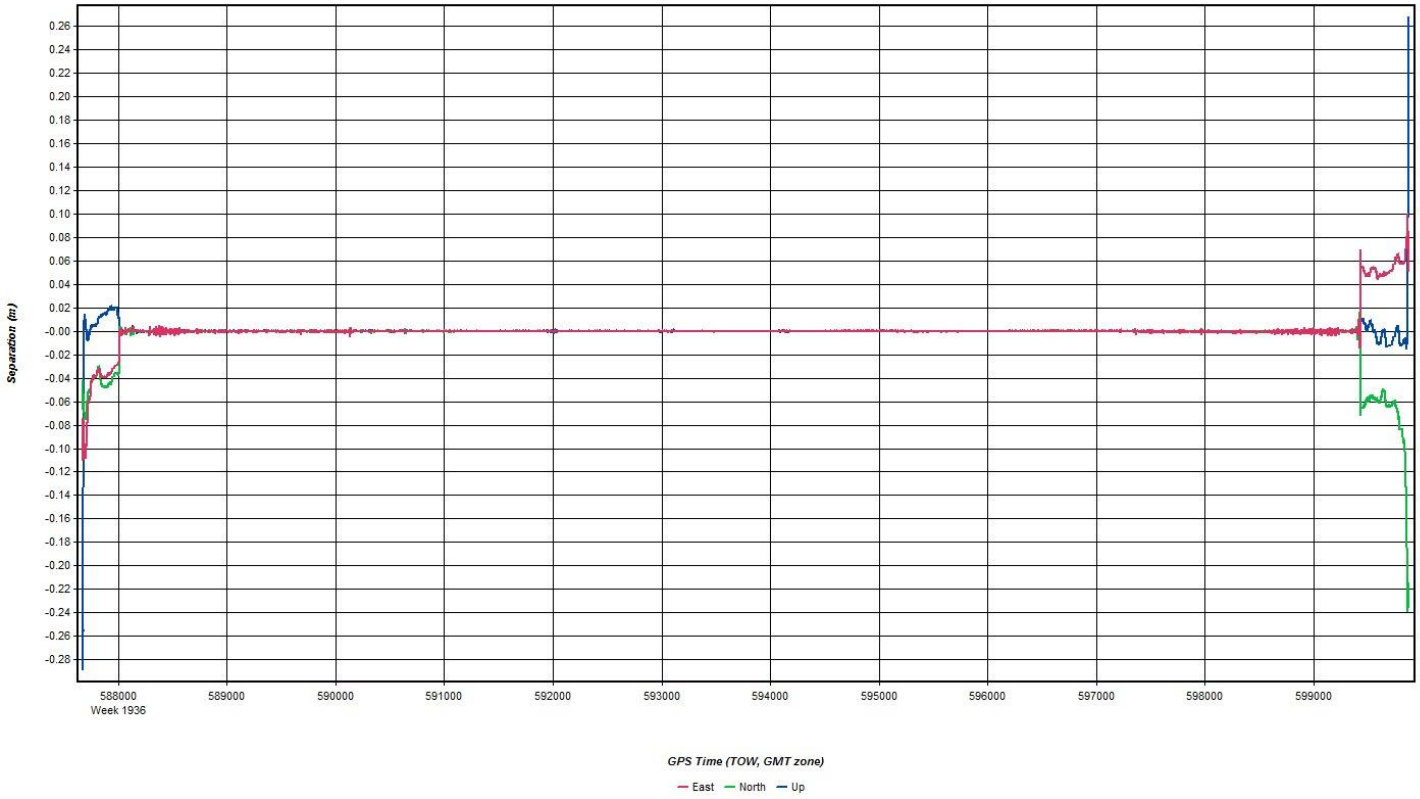
Total Proj Lines: 99 Lines Flown: 7 Lines Remain: 22 Online Time: 2.1 Mob Time: 1.7 Notes:

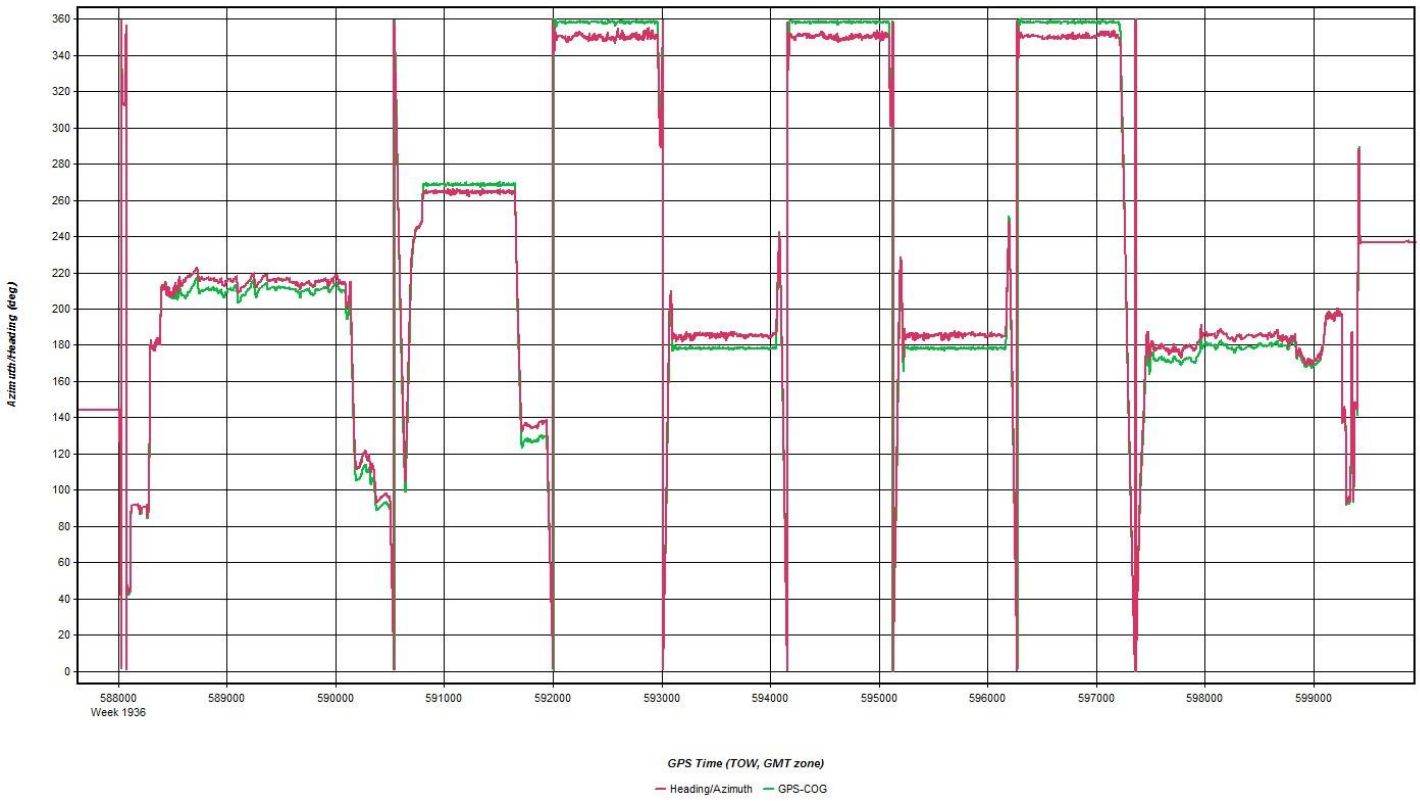
CROCKETT

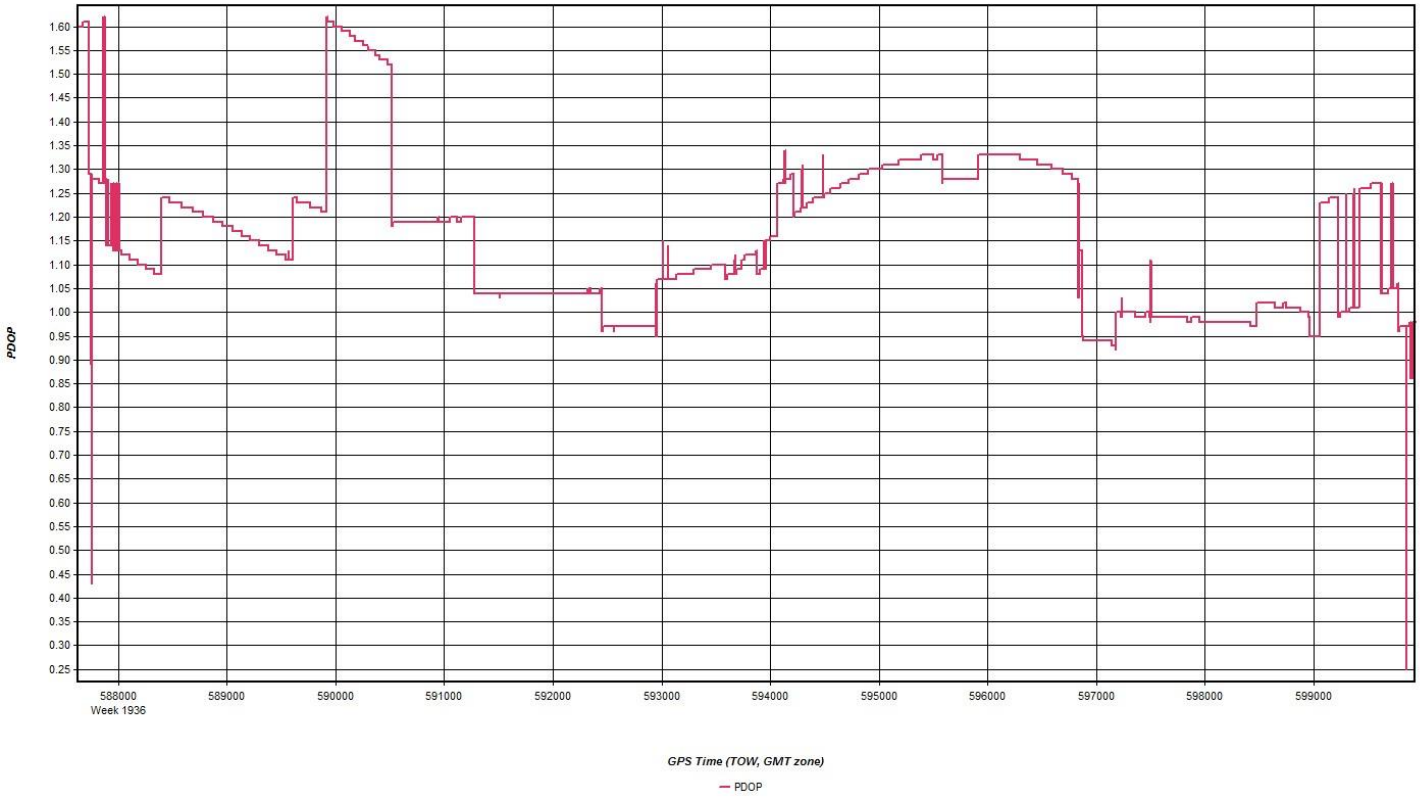
Feb 18, 2017-A (N73TM, SN7178)

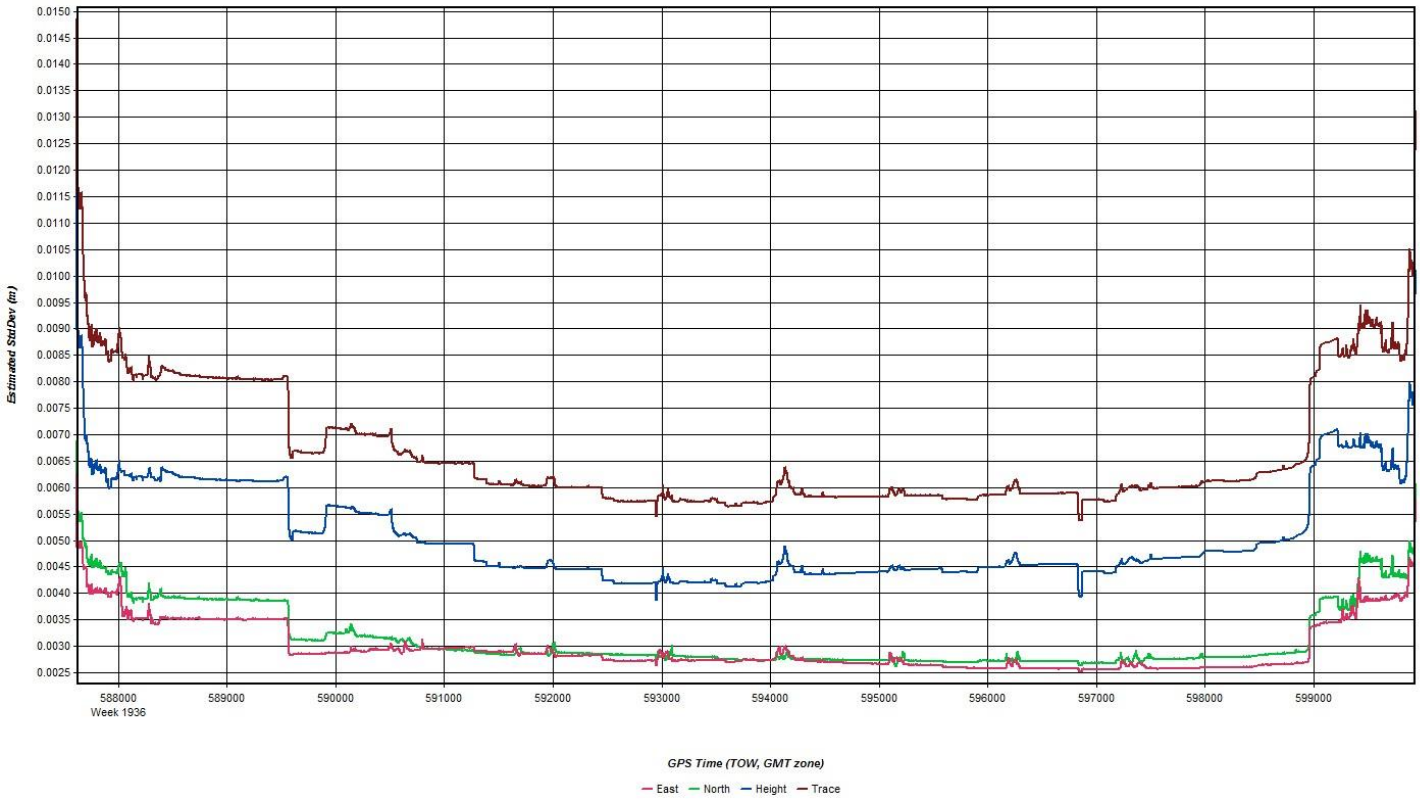


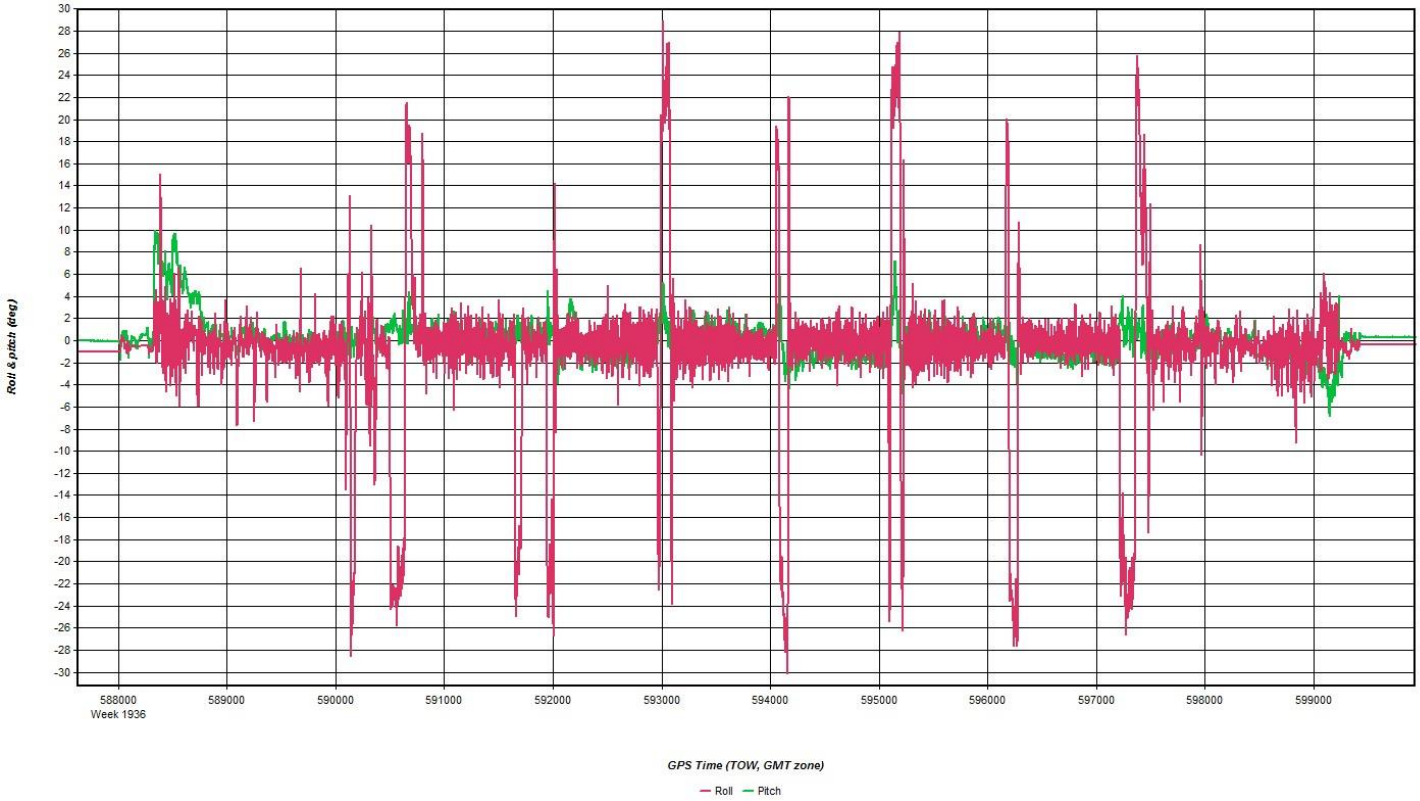

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

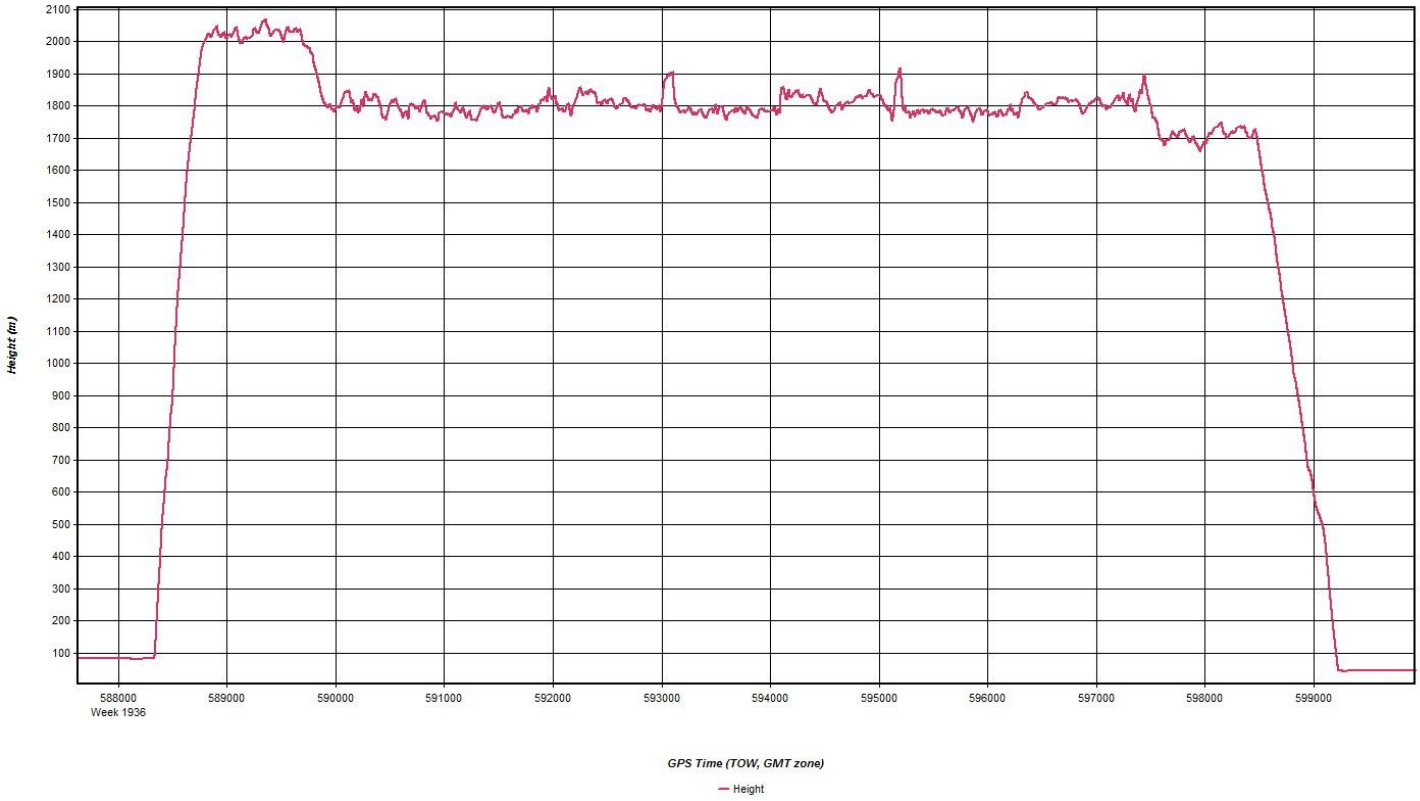

Separation (m)
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
East
North
Up

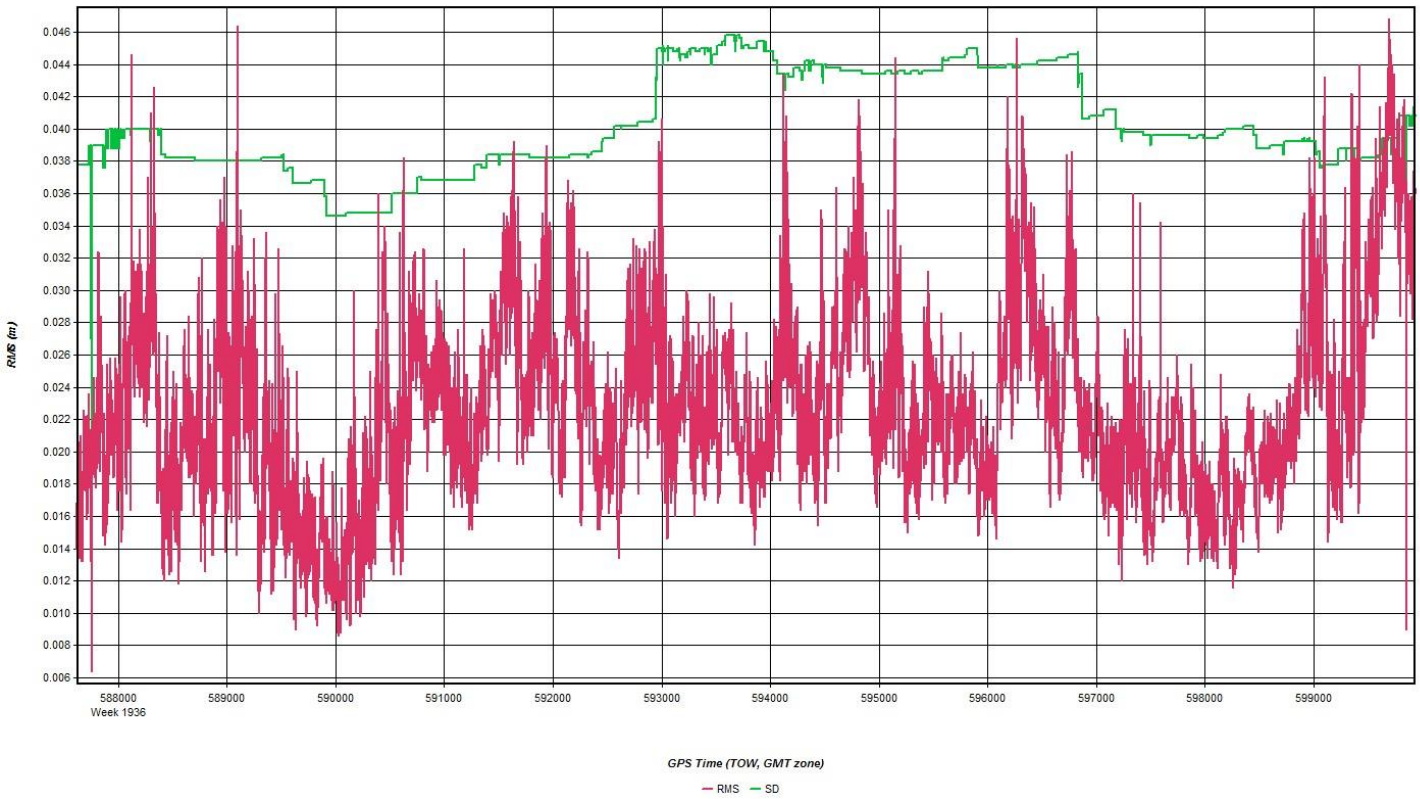

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

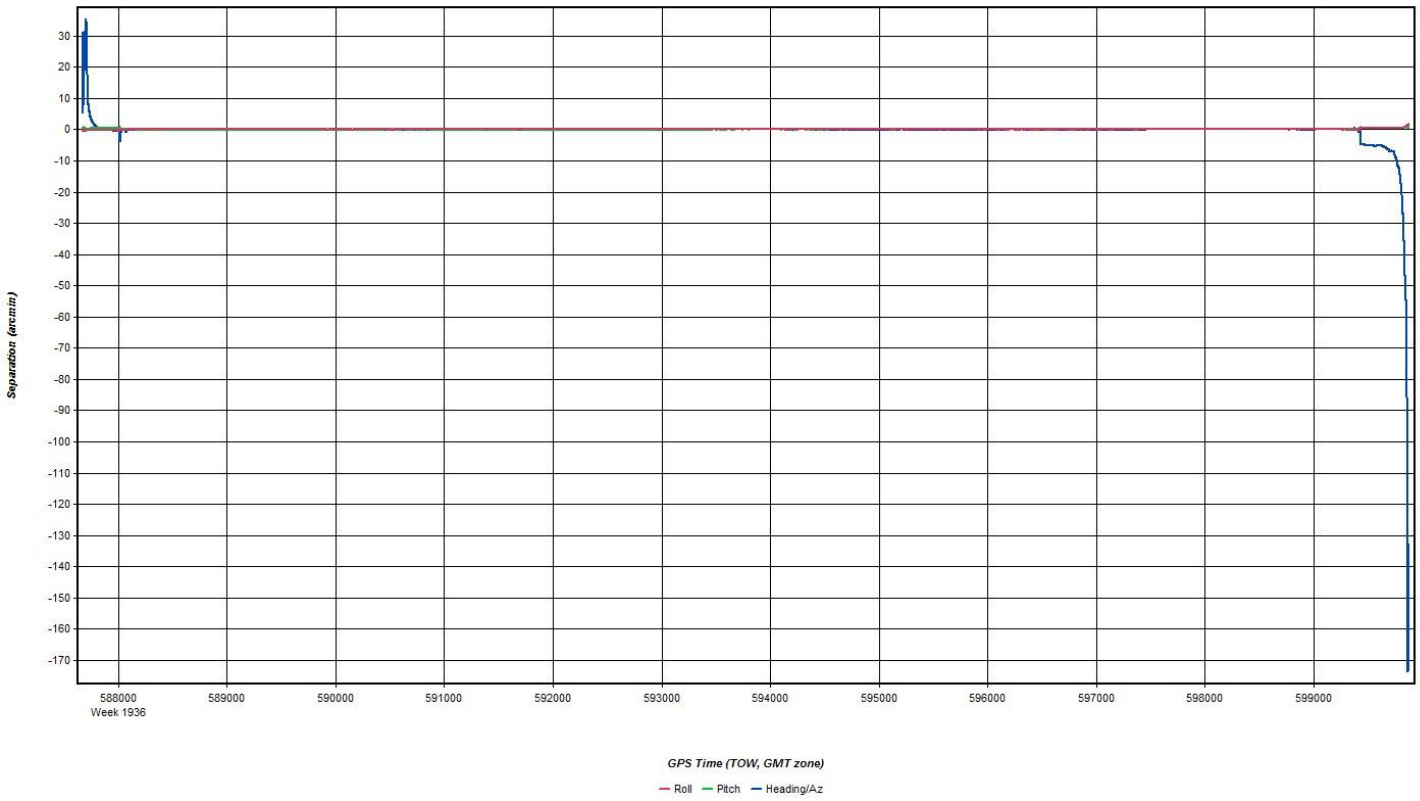

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
PDOP

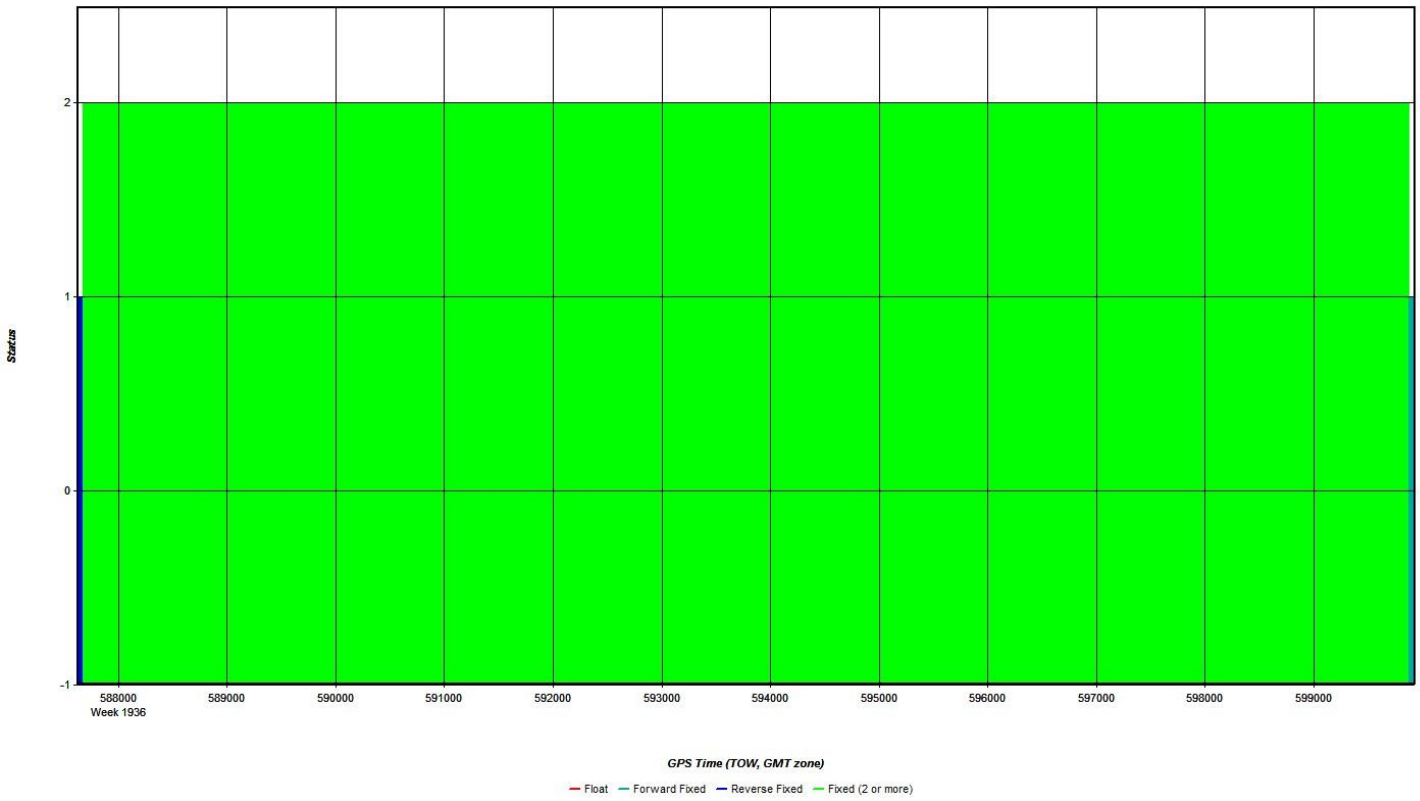

Estimated StdDev (m)
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

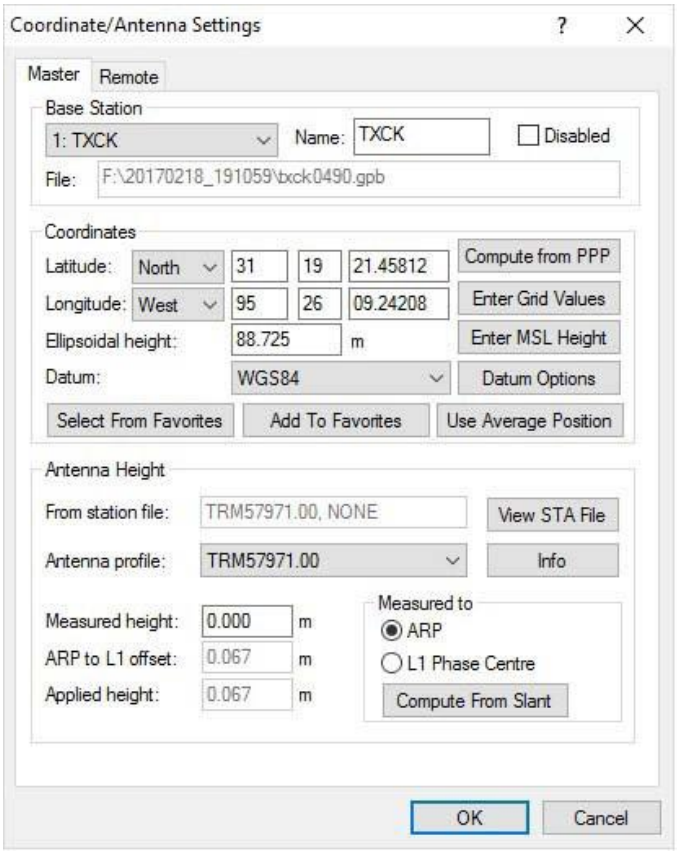

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Roll
Pitch

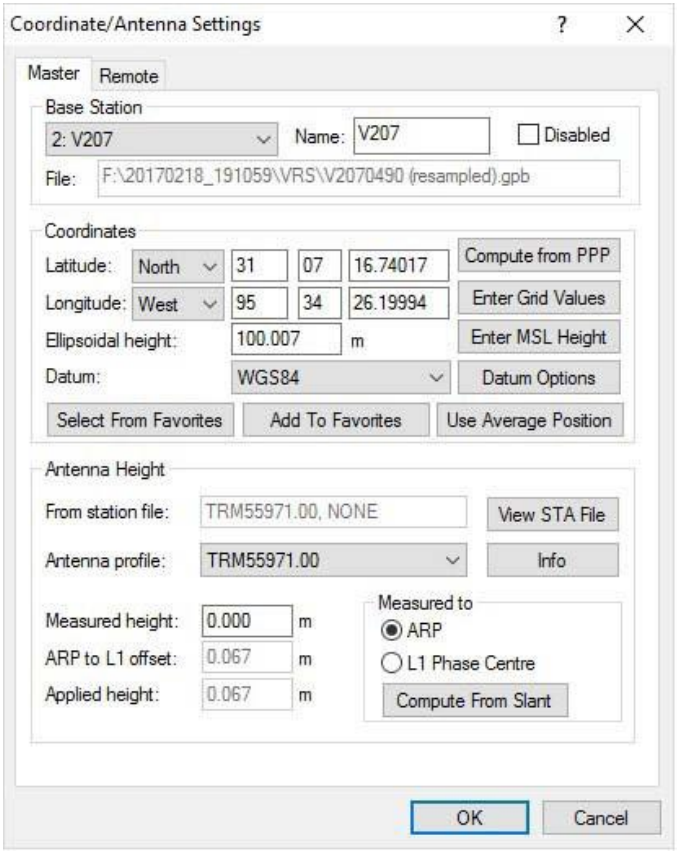

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
588000
Week 1936
589000
590000
591000
592000
593000
594000
595000
596000
597000
598000
599000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCK
Name: TXCK
Disabled
File: F:\20170218_191059\txck0490.gpb
Coordinates
Latitude: North 31 19 21.45812
Longitude: West 95 26 09.24208
Ellipsoidal height: 88.725 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V207
Name: V207
Disabled
File: F:\20170218_191059\VRS\V2070490 (resampled).gpb
Coordinates
Latitude: North 31 07 16.74017
Longitude: West 95 34 26.19994
Ellipsoidal height: 100.007 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 02/18/17 — Lift: (A) B C D E — Pg 1 of 2

Project: USGS NECHES BASIN — Proj #: 28355 — Flight Mgmt File: 20170218_191059

Aircraft: N737TM — Begin Hobbs: 6570.6 — End Hobbs: 6573.6 — Total: 3.0 — Pilot: JOSEY — Co-Pilot: — — Tech: Tom

Dep Apt: KGGG — Dep Time (Lcl): 1:24 (Z): 19:24 — Arr Apt: KCXO — Arr Time (Local): 4:26 (Z): 22:26 — Tot Time Aloft: 3:02

CORS: (Y) / N — Sta 1: TXCK — Sta 2: TXCK — Flyovers: (Y) / N — If Y, times: Sta1) 19:54 — Sta2) 21:05

GPS Unit: Y / N — Sta 1: — — Sta 2: — — Flyovers: Y / N — If Y, times: Sta1) — — Sta2) —

Gd Temp beg: 73F — End: 83F — OAT beg: °c — End: °c — Altimeter begin: 29.80 inHg — end: 29.77

LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS-70	7178	1775				
	FOV 34	Scan Freq 57.3	MpiA (Y) / N	Pulses In Air	Pulse Rate 312	Power	PPSM 3.5+

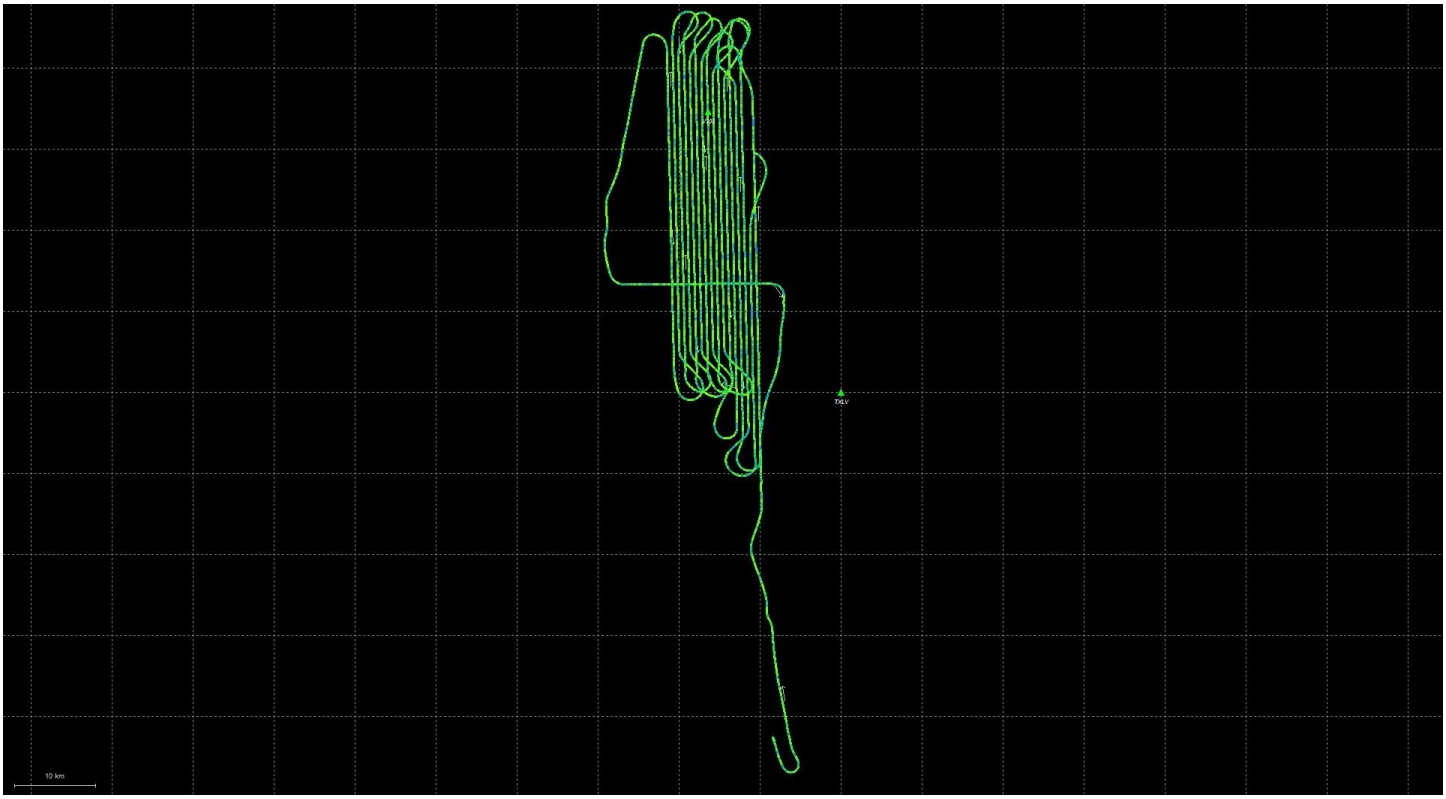
Beg GB	End GB	Tot GB	Storage Name/#
324	285	39	5504 7178

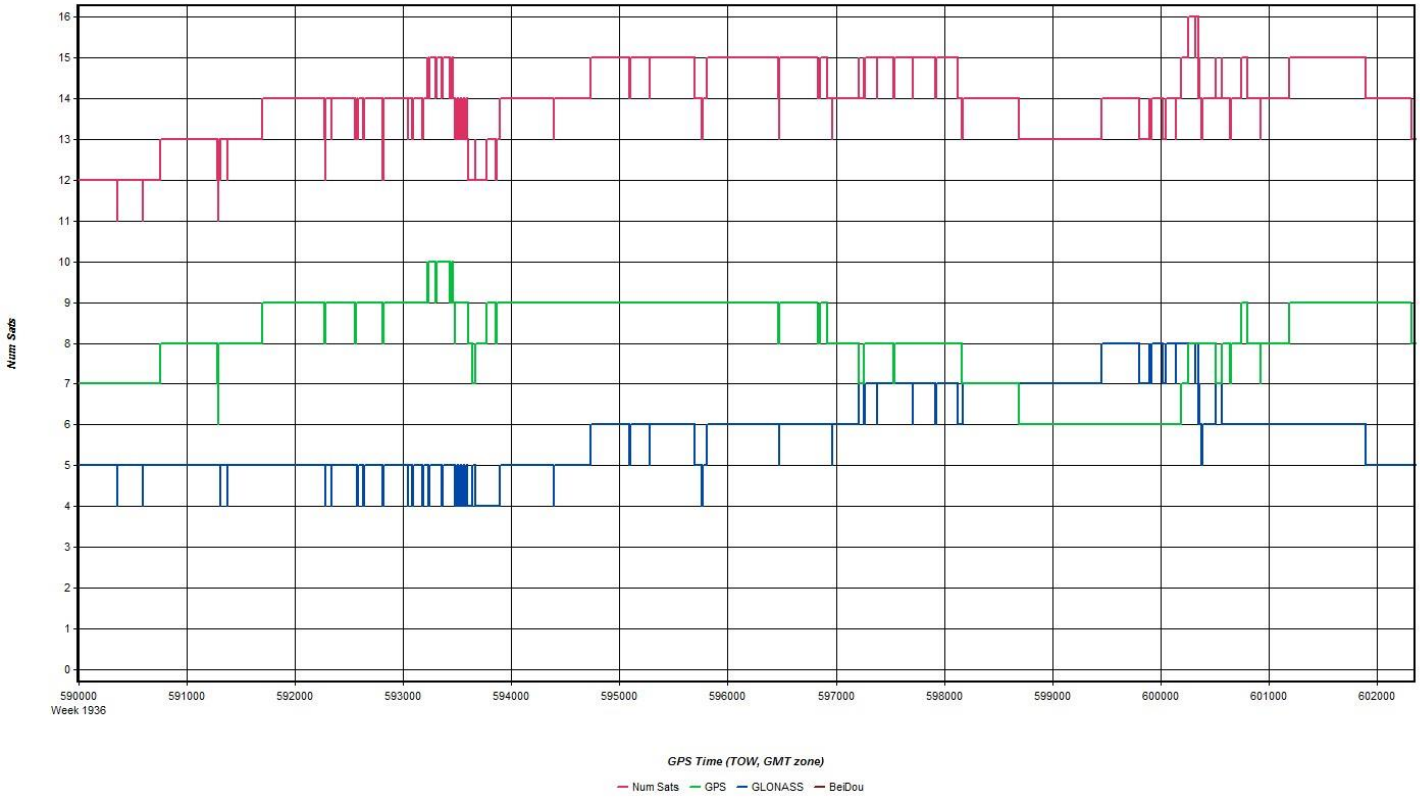
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		1:06	2:06	FI68	20:02				FERRY: GGG → TXCK → SITE 1.0
1098	W	20:07	20:20	150	1.1/16	5889	-	-	1:54 Cu JUST ABOVE FLT ALT
1035	N	20:27	20:42		1.2/16	"		-	Poss cloud 22 FNE
1036	S	20:45	21:00		1.0/20	-		+	
1037	N	21:02	21:17		1.2/20	-		-	
1038	S	21:20	21:36		1.2/18	-		-	
1039		21:38	21:53		"	5948		-	X FLT W/ L 1098
		FI68	21:54		1.2/17				
		3:54	4:42						FERRY: SITE → TXCK → CXO 0.8

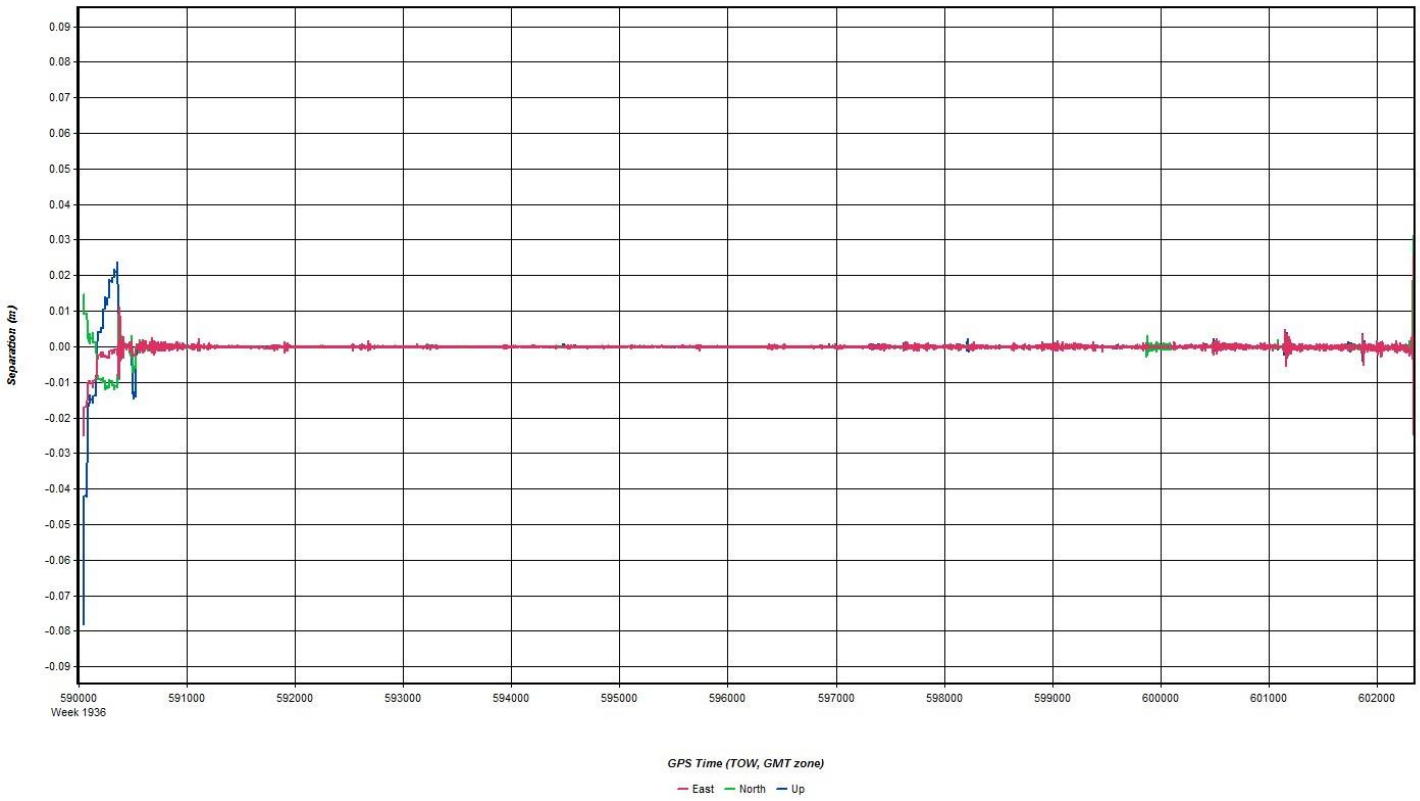
Total Proj Lines: 99	Lines Flown: 6	Lines Remain: 16	On-line Time: 1.8	Mob Time: 1.8	Notes:

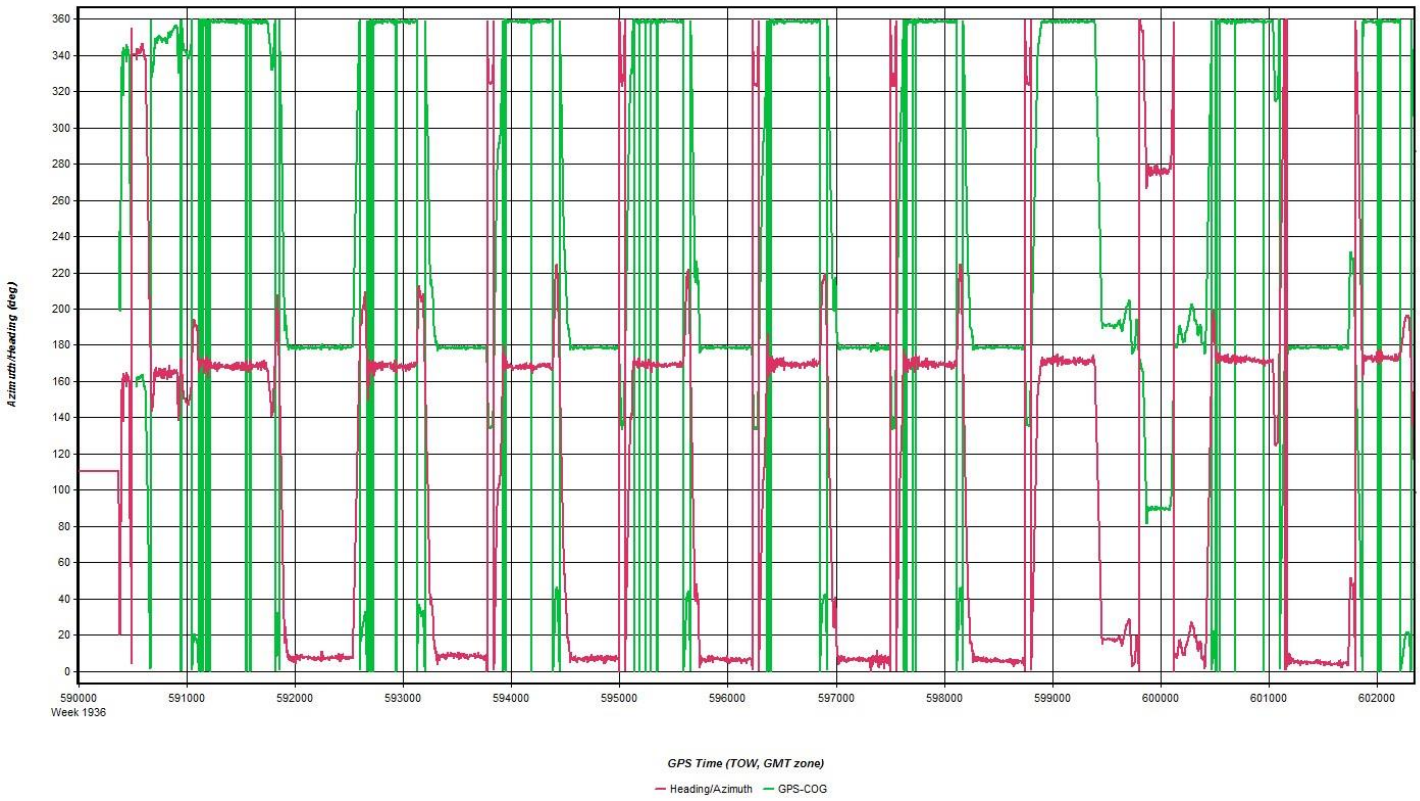
CROCKETT

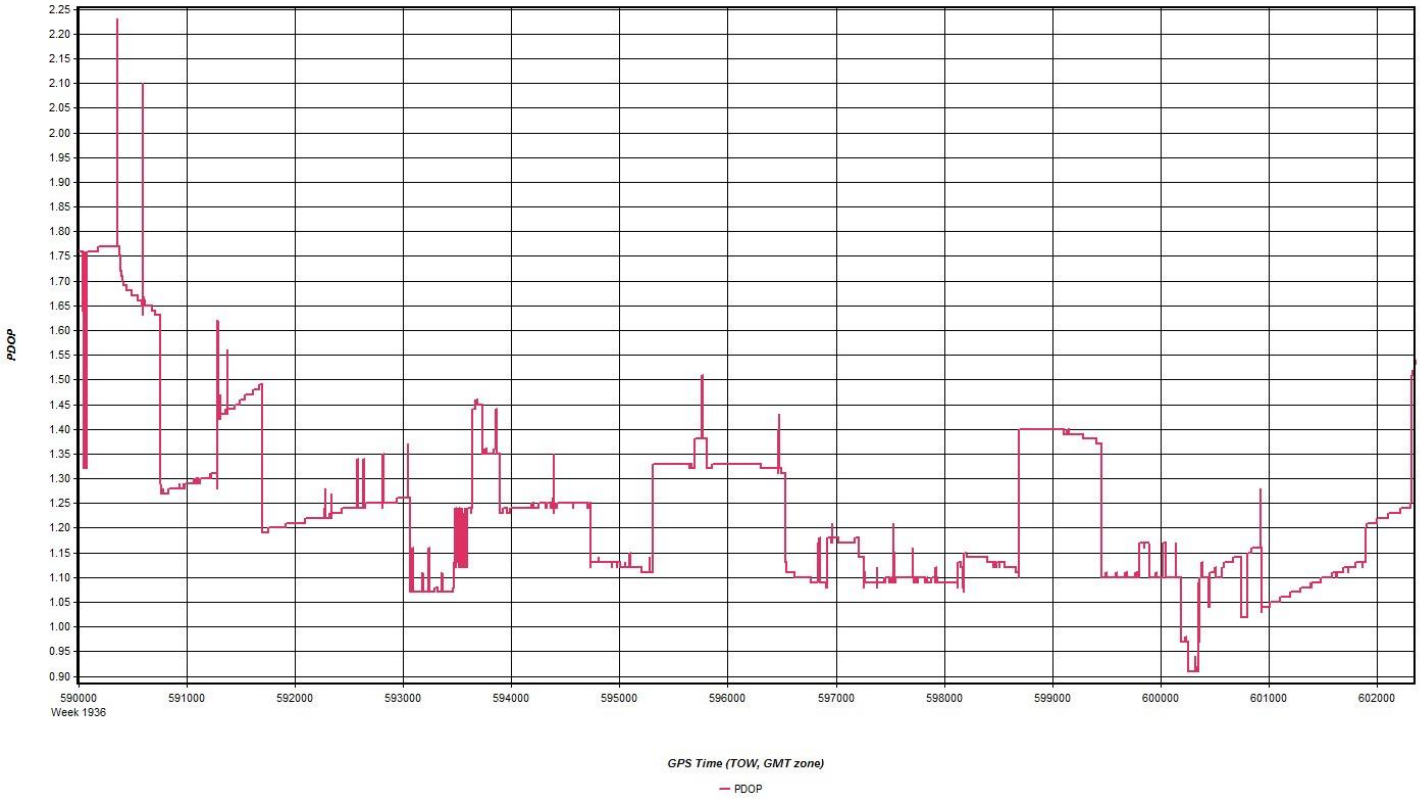
Feb 18, 2017-A (SN7229)

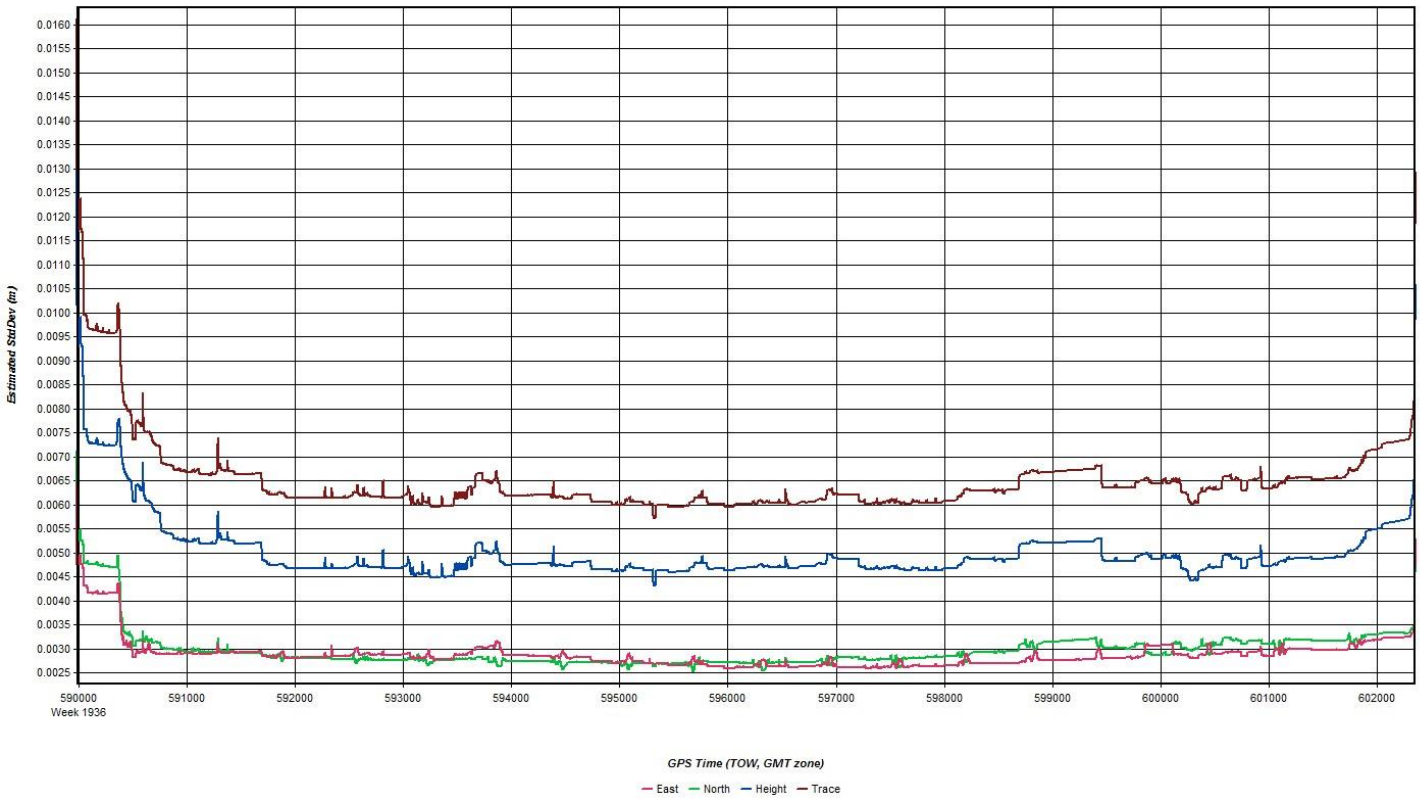


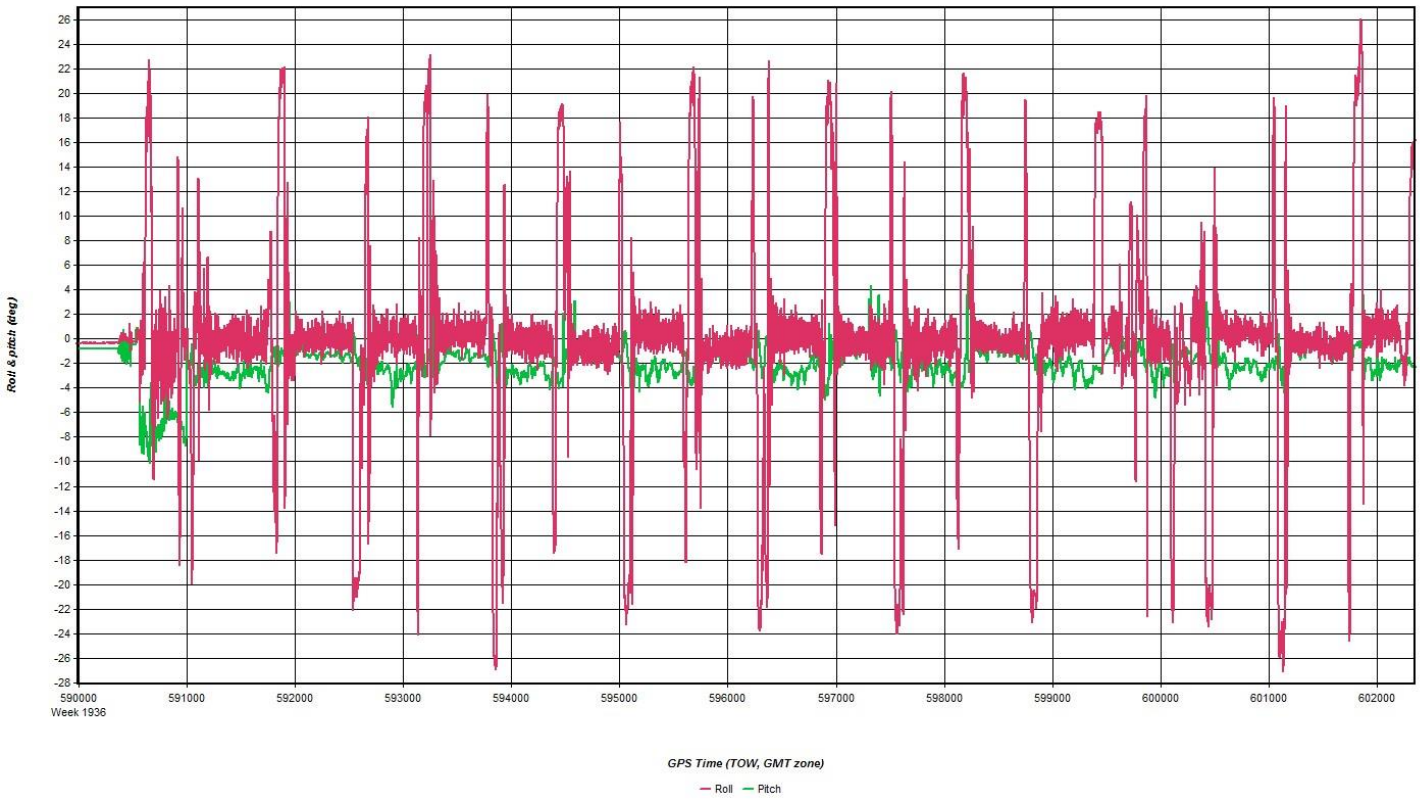

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
East
North
Up


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

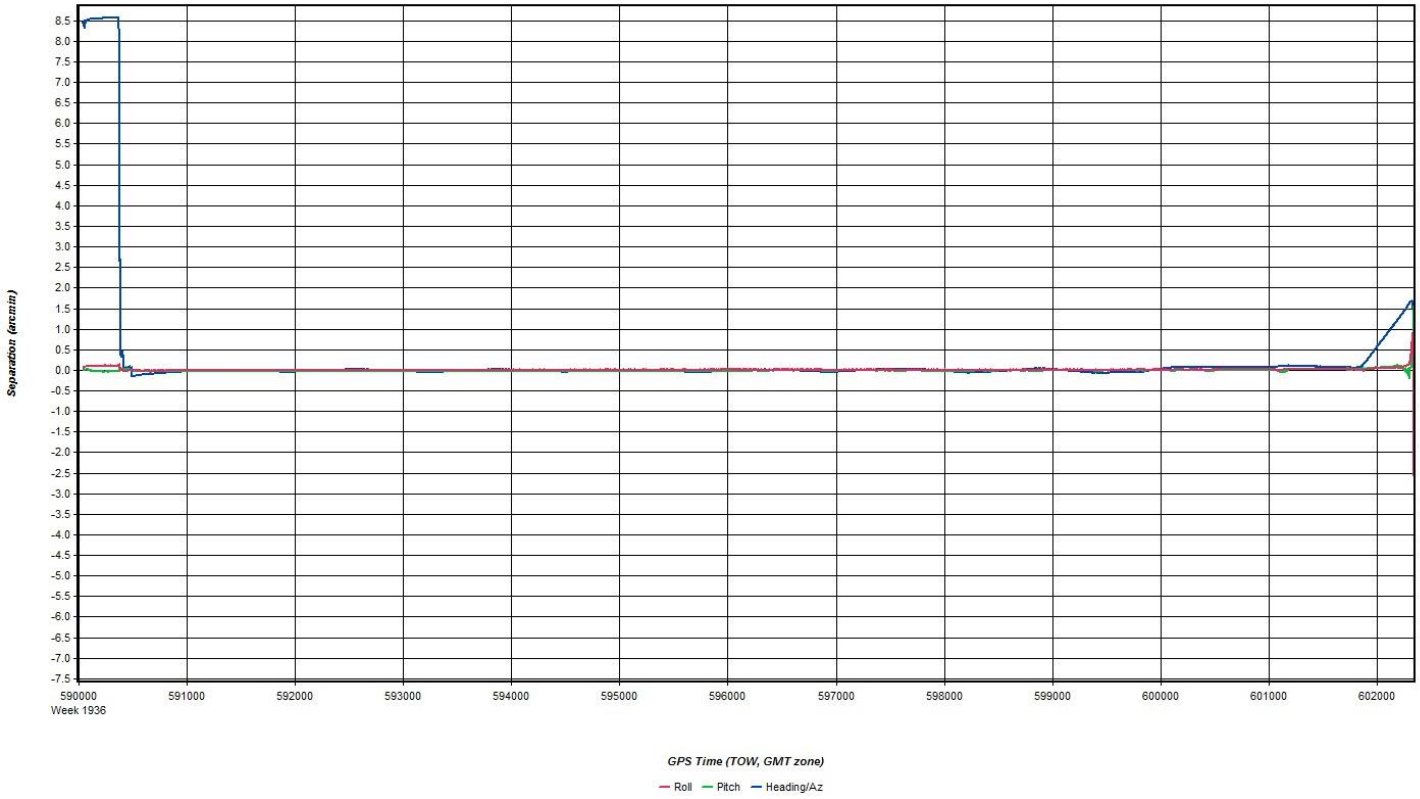

PDOP
2.25
2.20
2.15
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
PDOP

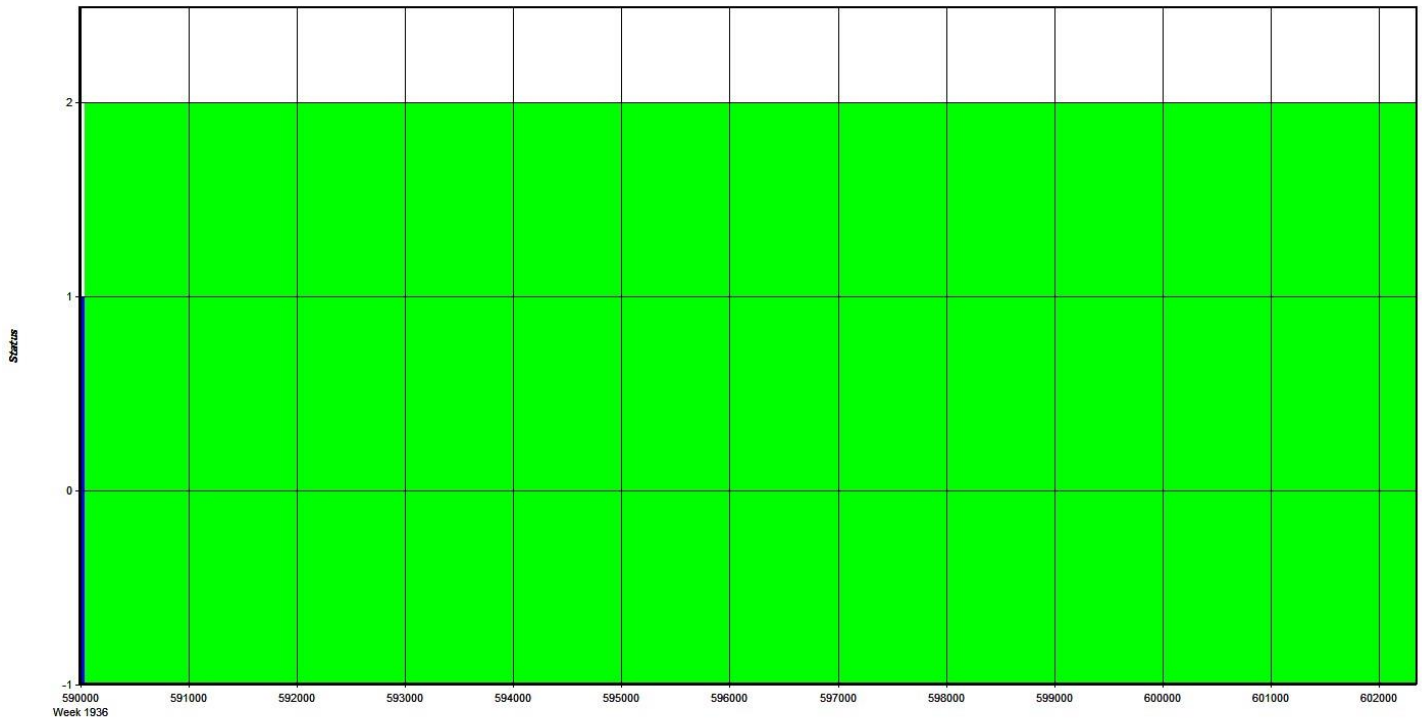

Estimated StdDev (m)
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
East
North
Height
Trace


Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
Roll
Pitch

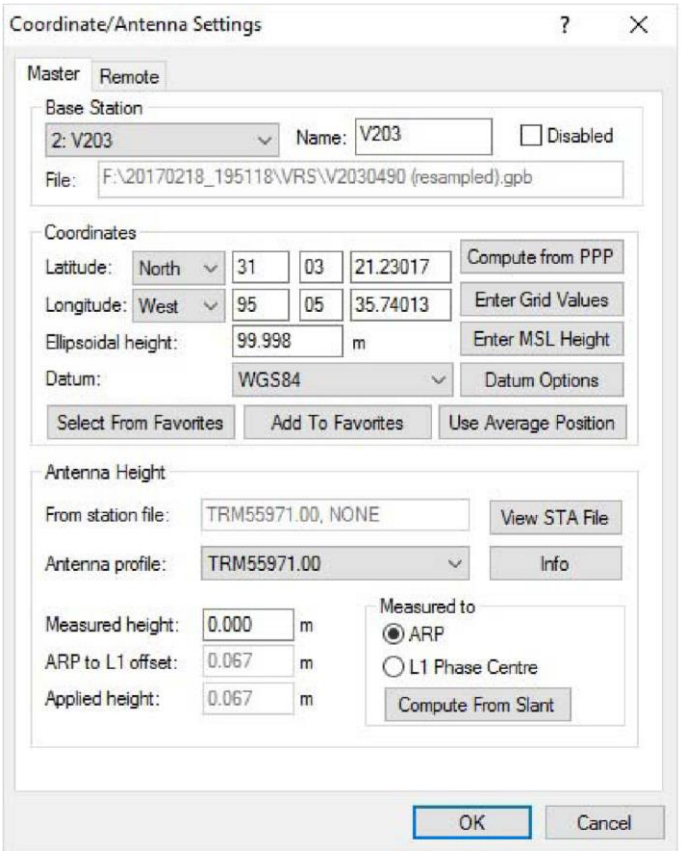

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
-6.5
-7.0
-7.5
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
590000
Week 1936
591000
592000
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLV
Name:
TXLV
Disabled
File:
F:\20170218_195118\txlv0490.gpb
Coordinates
Latitude:
North
30
44
42.69277
Compute from PPP
Longitude:
West
94
55
18.19440
Enter Grid Values
Ellipsoidal height:
29.058
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V203
Name: V203
Disabled
File: F:\20170218_195118\VRS\V2030490 (resampled).gpb
Coordinates
Latitude: North 31 03 21.23017
Longitude: West 95 05 35.74013
Ellipsoidal height: 99.998 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 02/18/17 — Lift: A (B) C D E — Pg 2 of 2

Project: USGS NECHES BASIN — **Proj #:** 28355 — **Flight Mgmt File:** 20170218_231206

Aircraft: N73TM — **Begin Hobbs:** 6573.6 — **End Hobbs:** 6576.7 — **Total:** 3.1 — **Pilot:** JOSEY — **Co-Pilot:** — — **Tech:** TOM

Dep Apt: KCXO — **Dep Time (Lcl):** — **(Z):** — **Arr Apt:** — **Arr Time (Local):** 8:27 **(Z):** 02:27 — **Tot Time Aloft:** 3.1 hrs

CORS: (Y) / N — **Sta 1:** TXCK — **Sta 2:** TXCK — **Flyovers:** (Y) / N — **If Y, times: Sta1)** 23:44 — **Sta2)** 02:01

GPS Unit: Y / N — **Sta 1:** — — **Sta 2:** — — **Flyovers:** Y / N — **If Y, times: Sta1)** — — **Sta2)** —

Gd Temp beg: — °c **End:** — °c **OAT beg:** — °c **End:** — °c **Altimeter begin:** — **end:** —

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS-70	7178					
	FOV 34	Scan Freq 57.3	MpiA (Y) / N	Pulses In Air	Pulse Rate 312	Power	PPSM 3.54

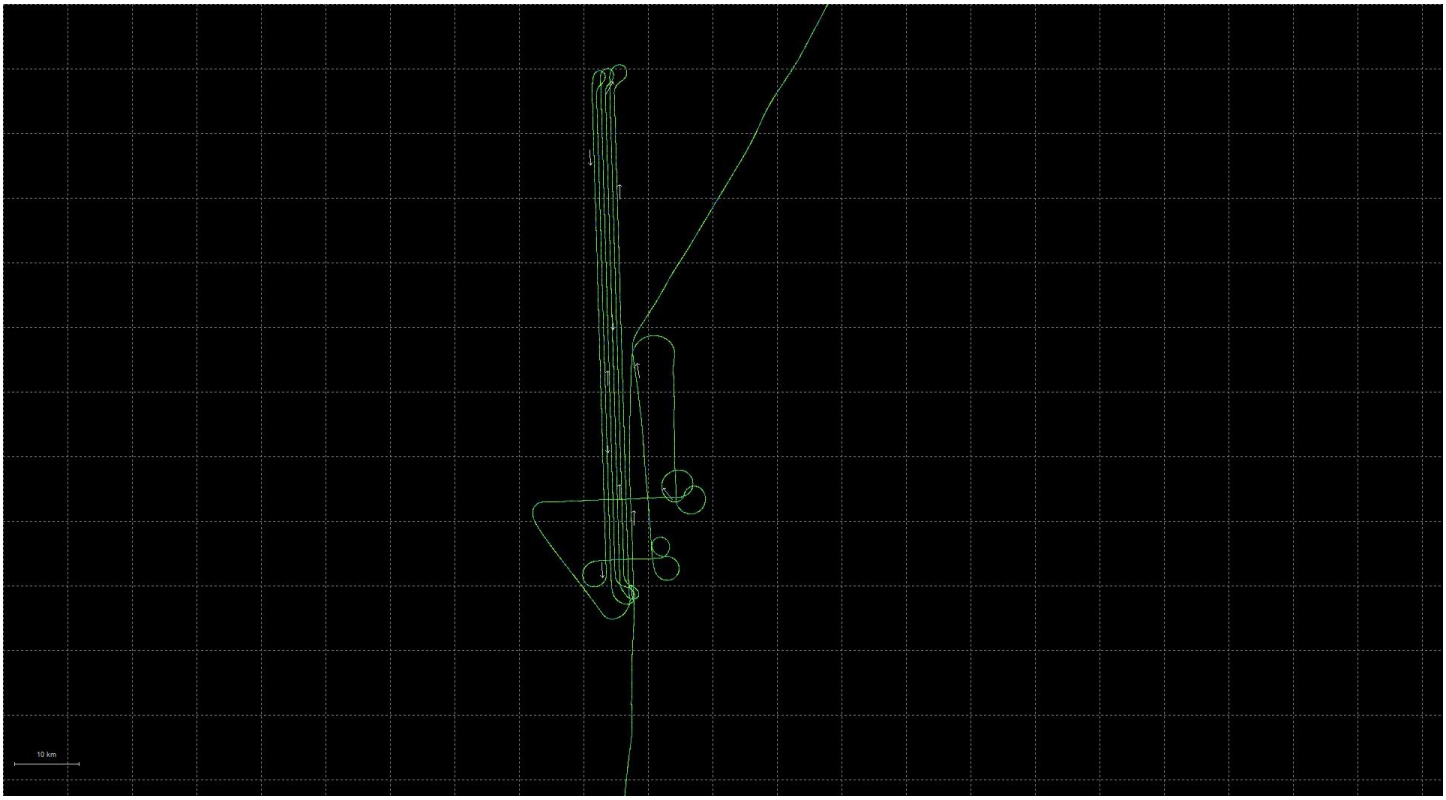
	Beg GB	Storage Name/#
	285	5504
	End GB	
	Tot GB	7178

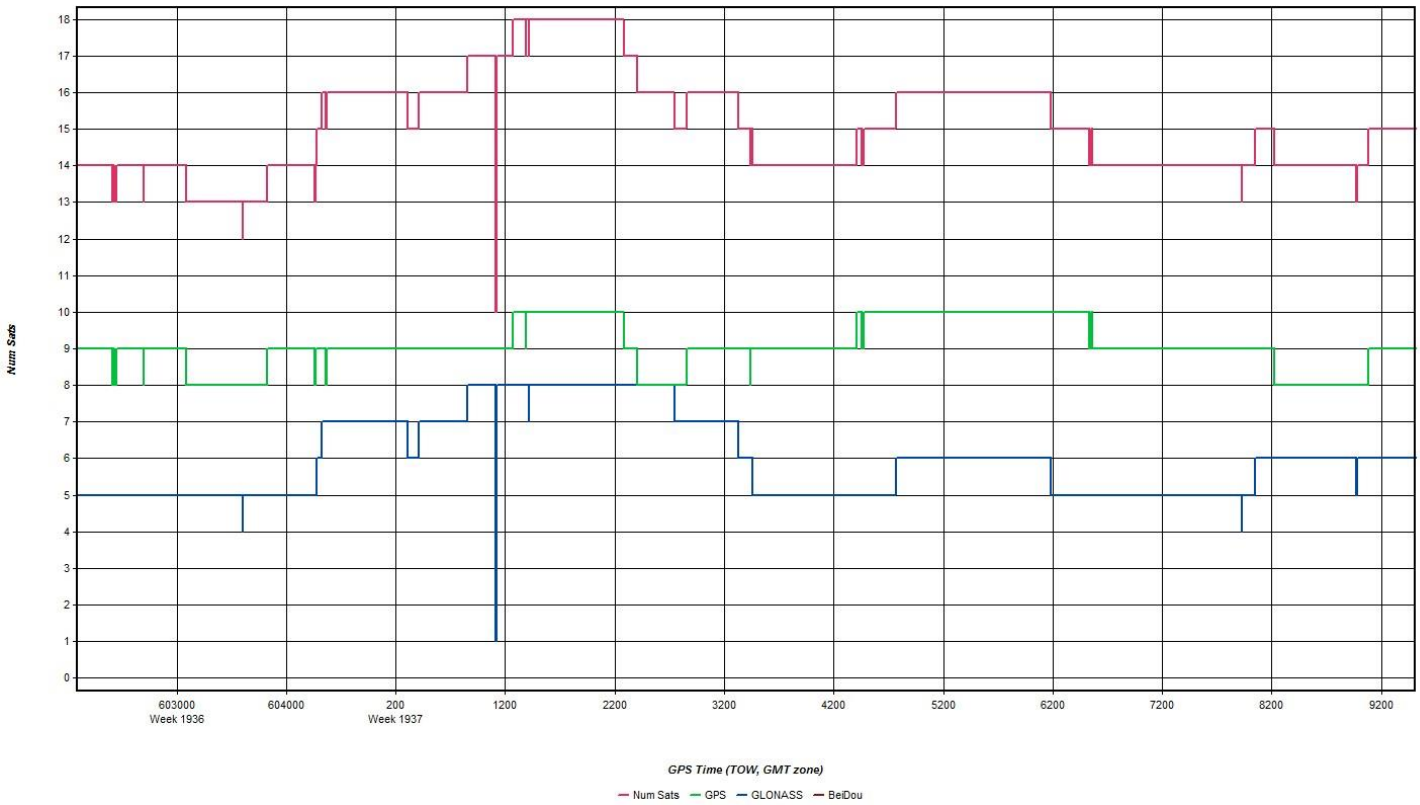
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		5:06	5:~~58~~		F16	8			FERRY: CXO → TXCK → SITE 0.8
XTIE	W	23:55	23:59						CLOSE TO GPS MID NIGHT 5:44
1055	N	00:06	00:21	150	1.3/18	5928	–	0	
1054	S	00:24	00:39	|	1.2/18	5938	–	0	
1053	N	00:41	00:56	|	1.1/19	5941	–	0	
1052	S	00:58	01:13	|	1.3/16	5948	–	0	
1051	N	01:16	01:31	|	1.3/17	4	–	0	
1050	S	01:33	01:48	|	1.3/16	5945	–	0	
XFLT	E	01:50	01:51	|	1.2/16	—	—	—	
F16	8	7:54	8:42						FERRY: SITE → TXCK → GGG 0.8

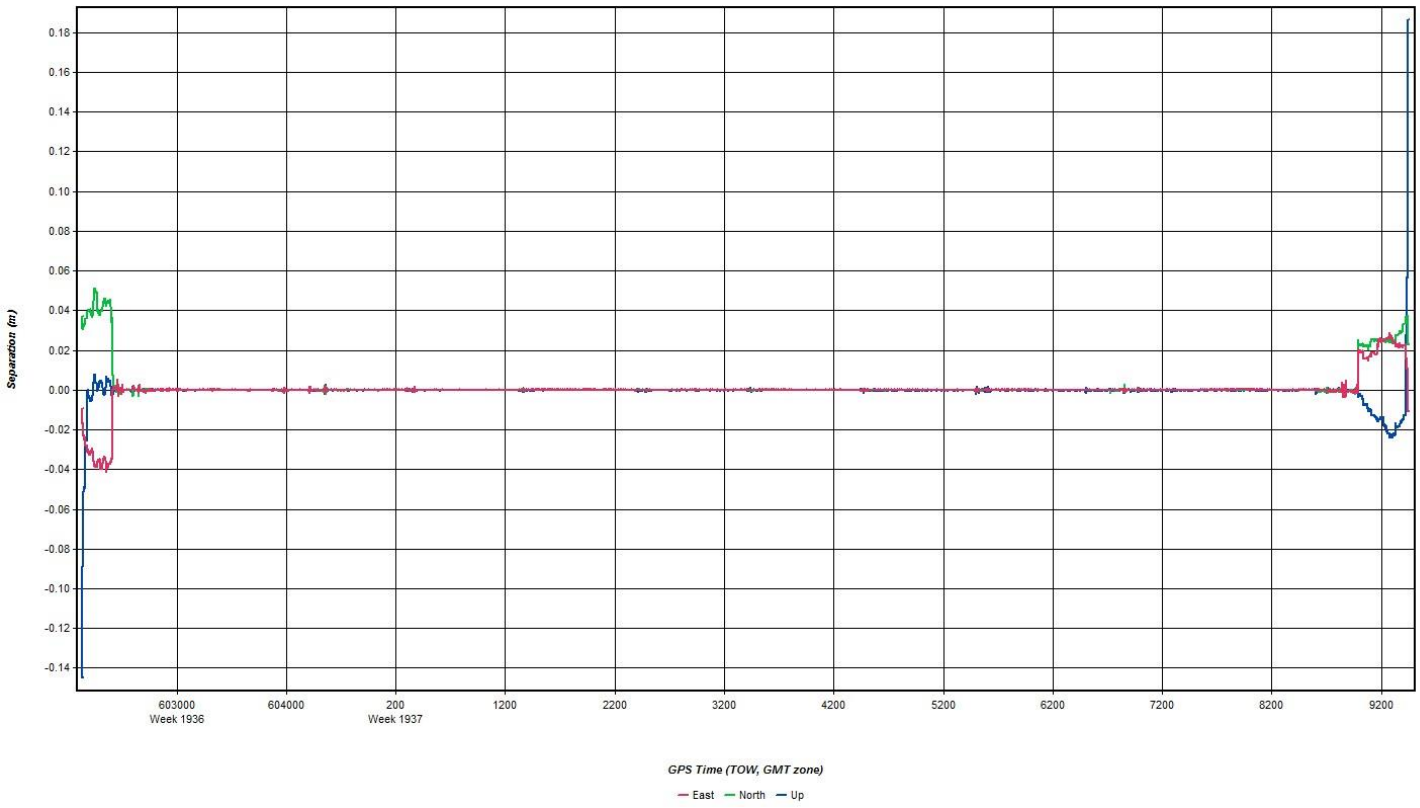
Total Proj Lines: 99	Lines Flown: 6	Lines Remain: 10	Online Time: 2.0	Mob Time: 1.6	Notes:

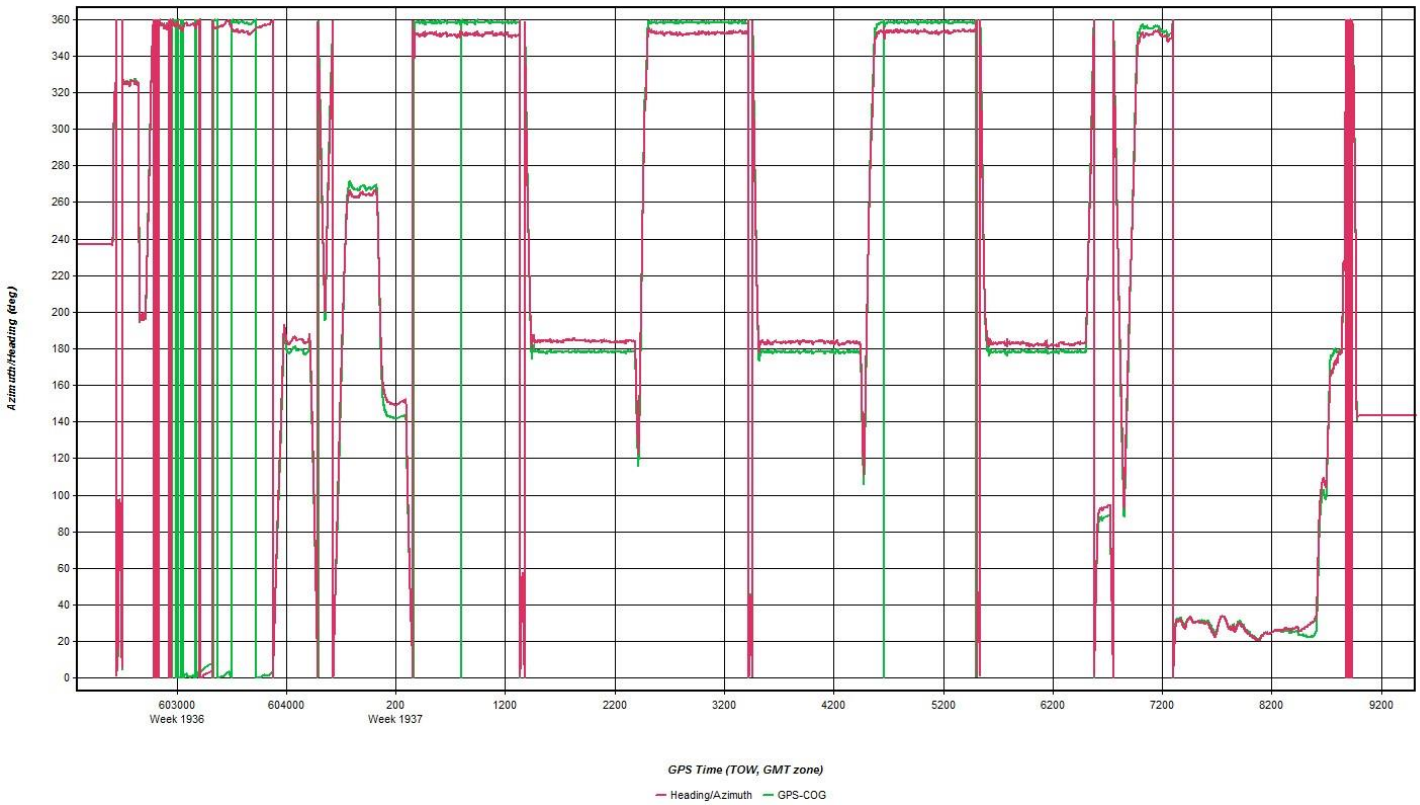
CROCKETT

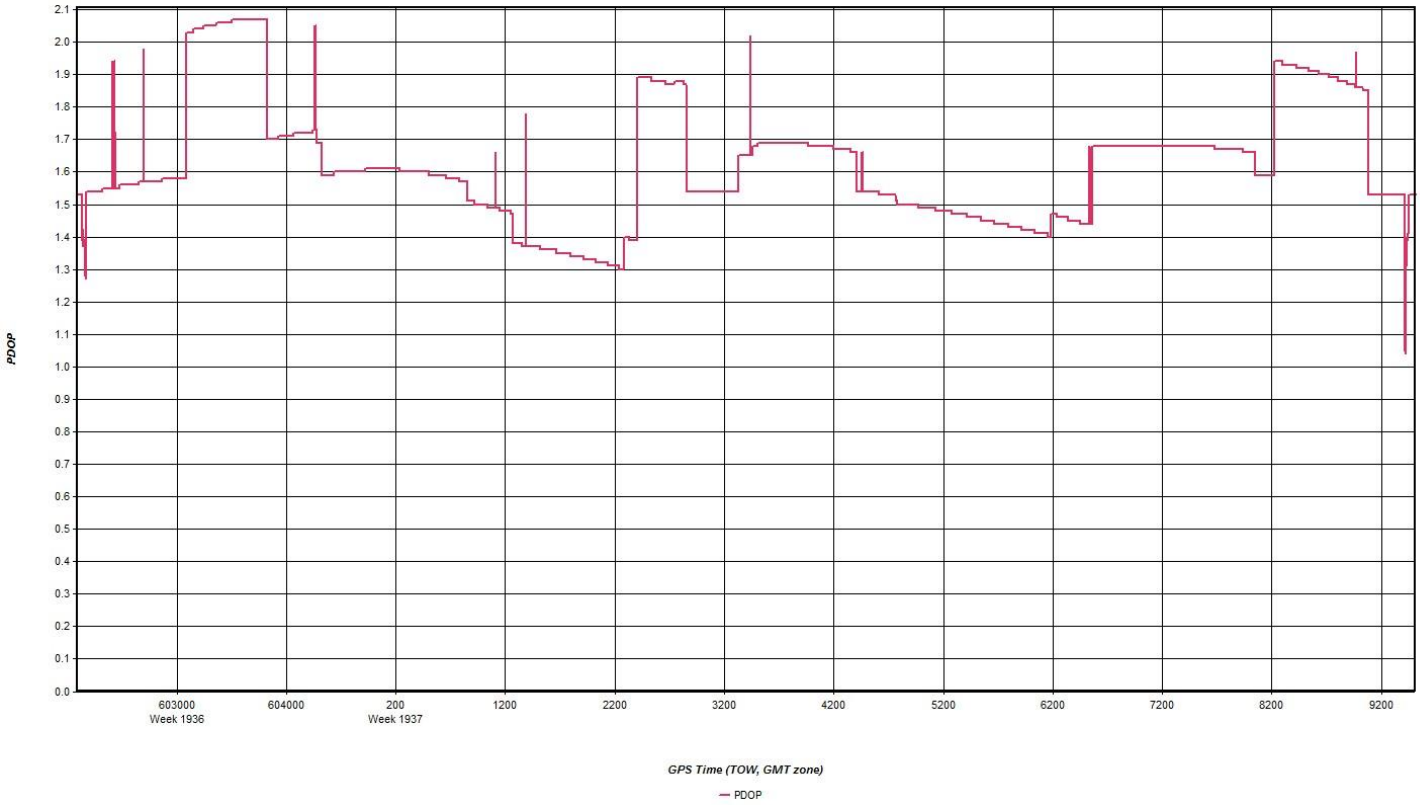
Feb 18, 2017-B (N73TM, SN7178)

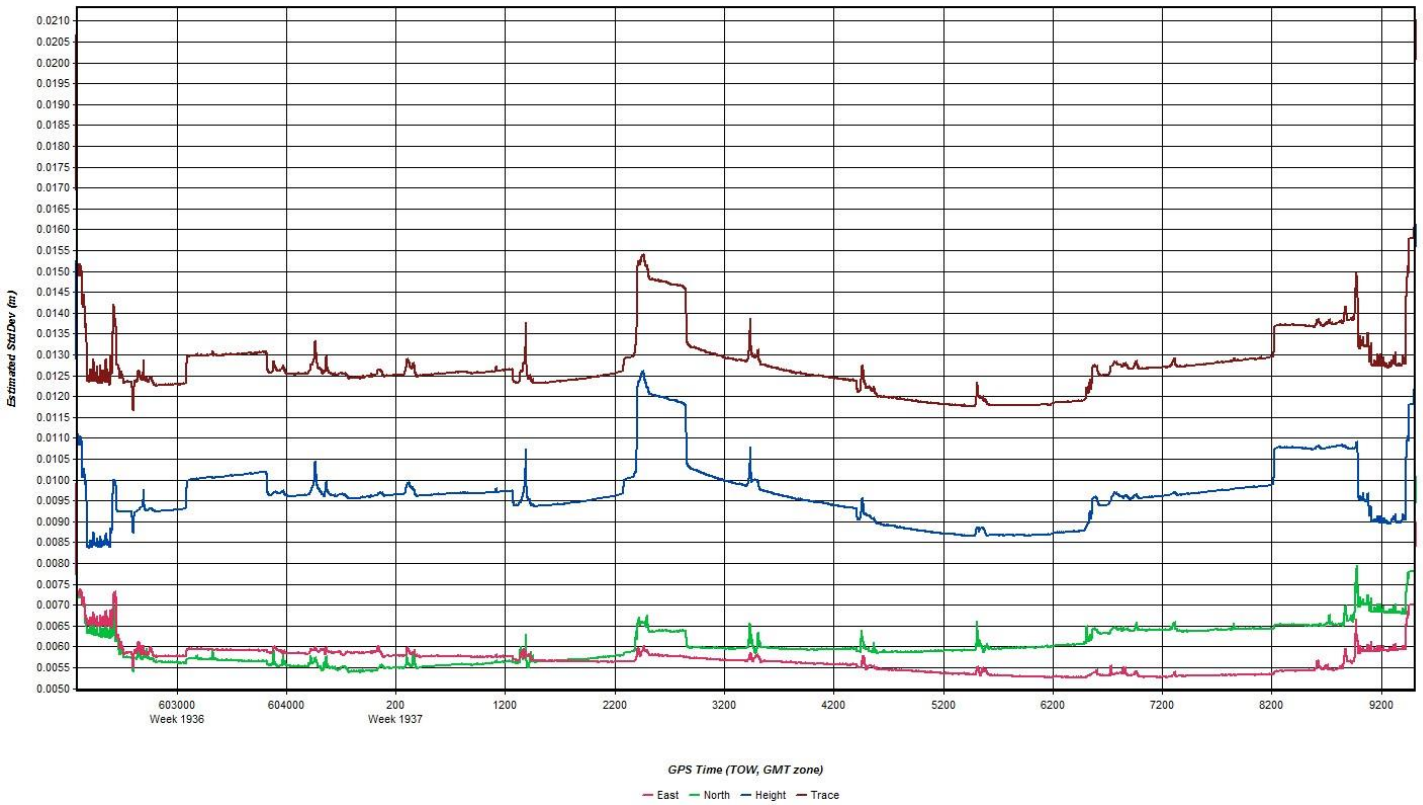


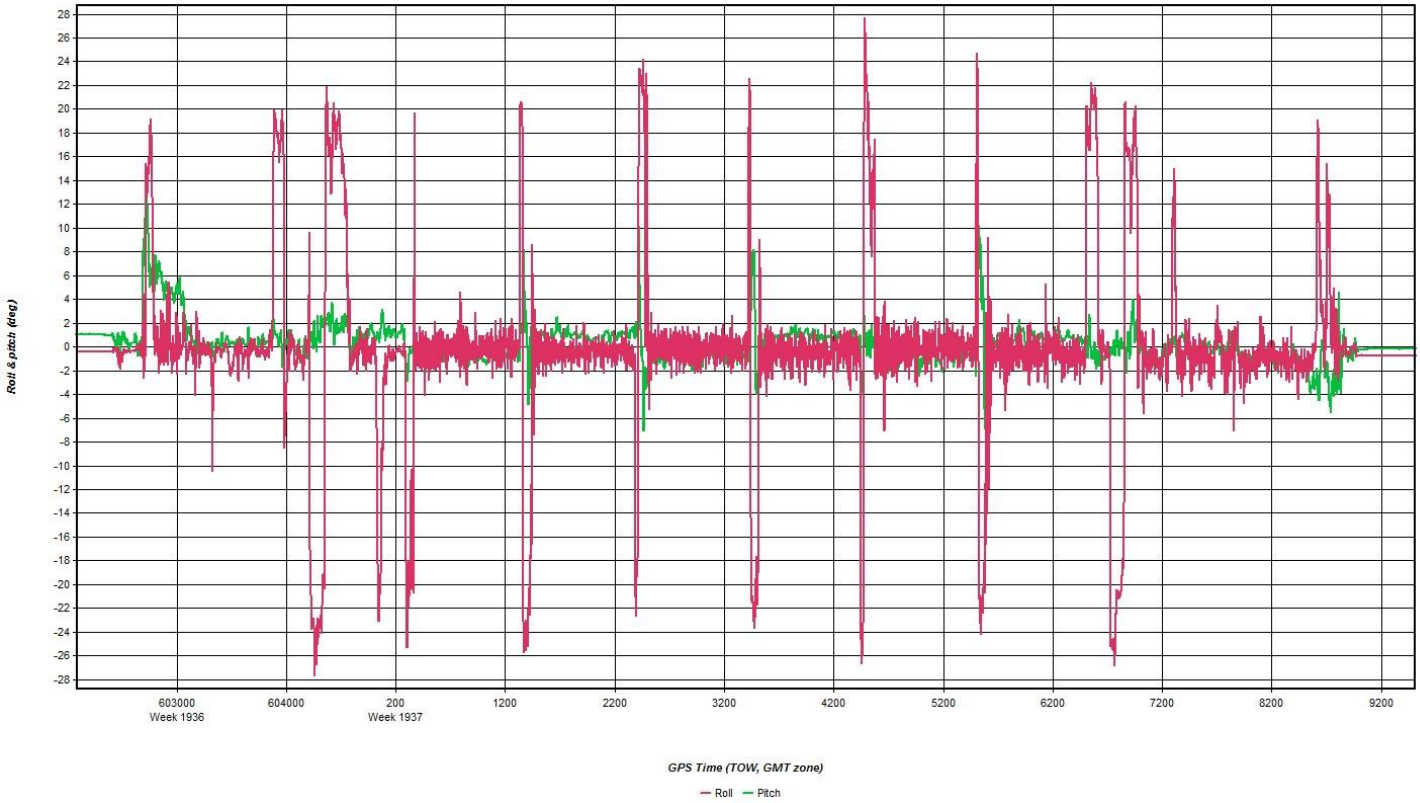

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

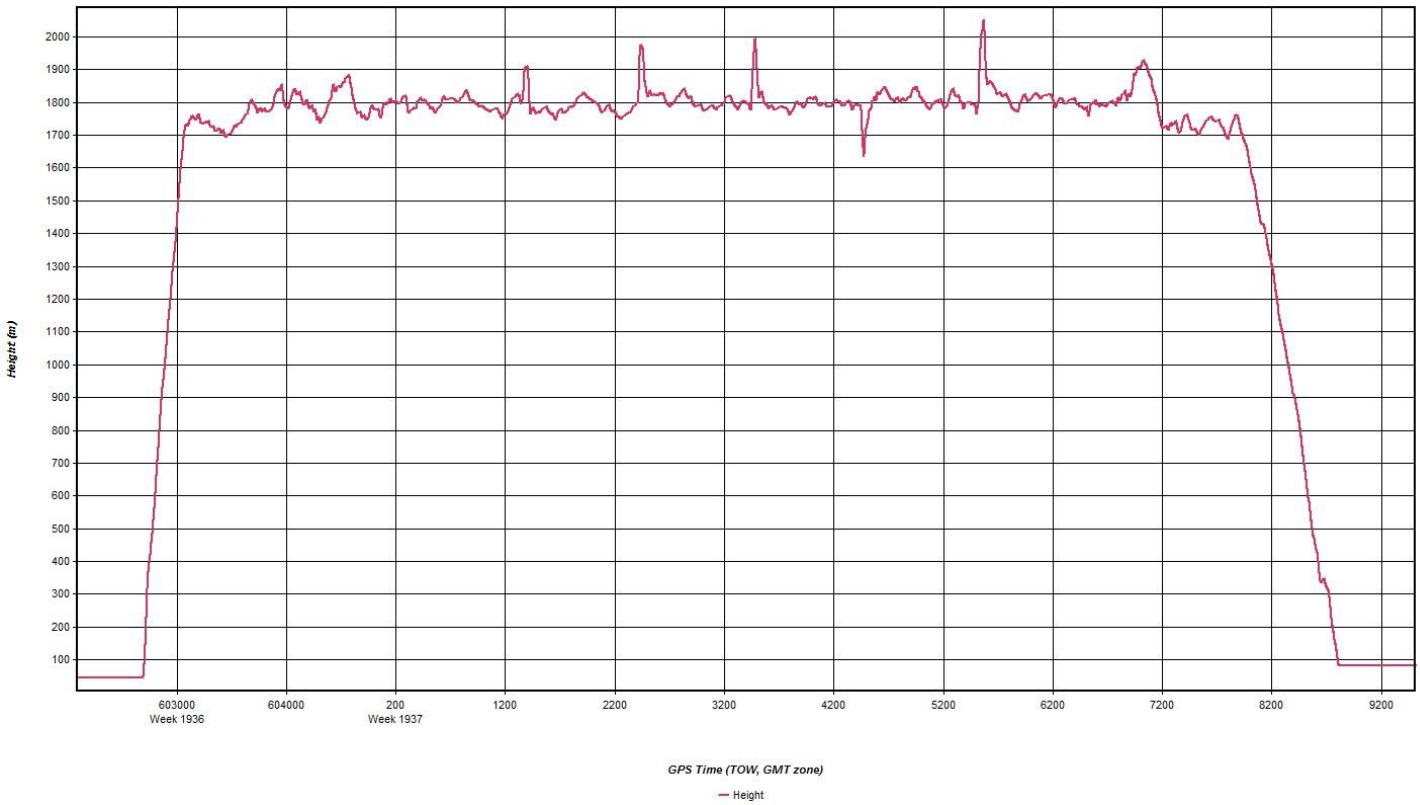

Separation (m)
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
East
North
Up

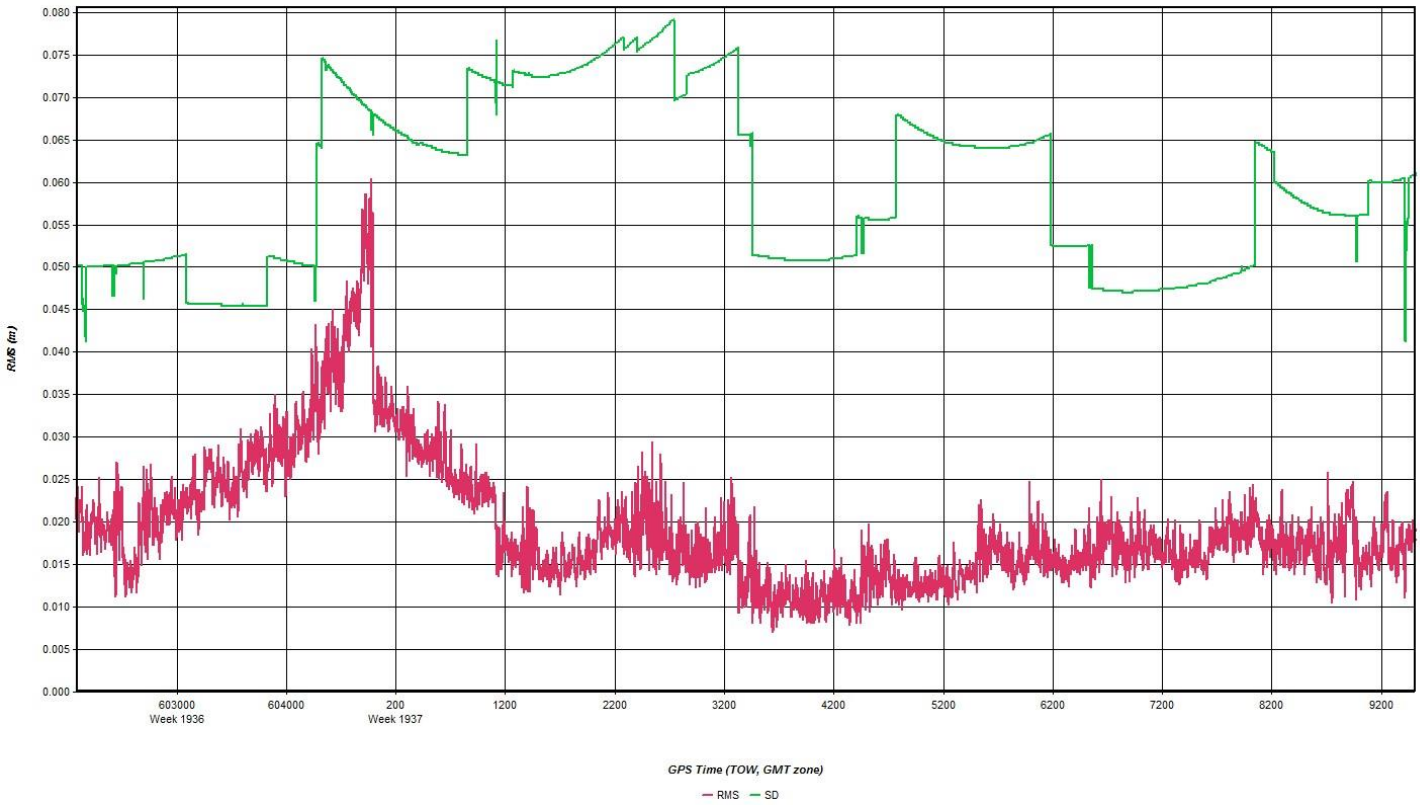

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

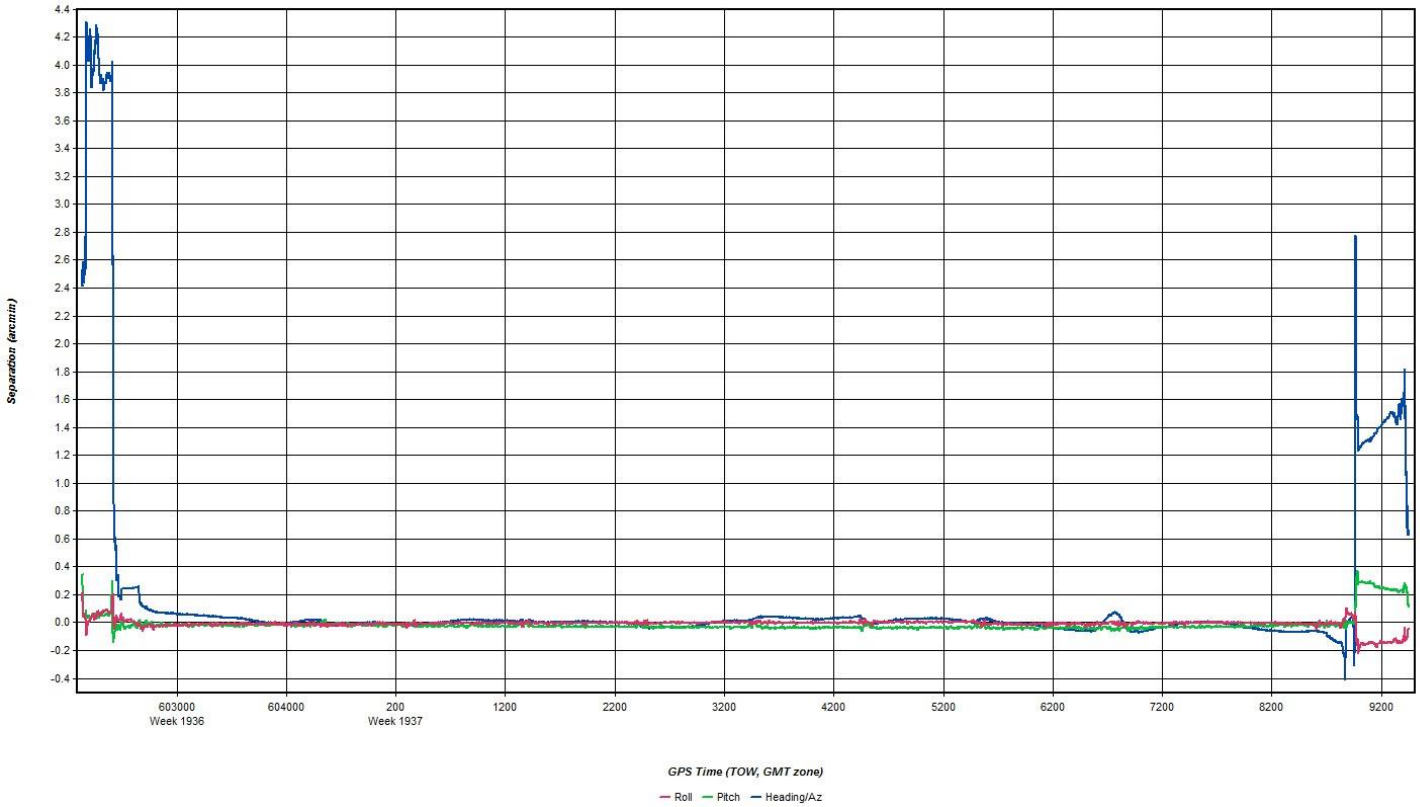

PDOP
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
PDOP

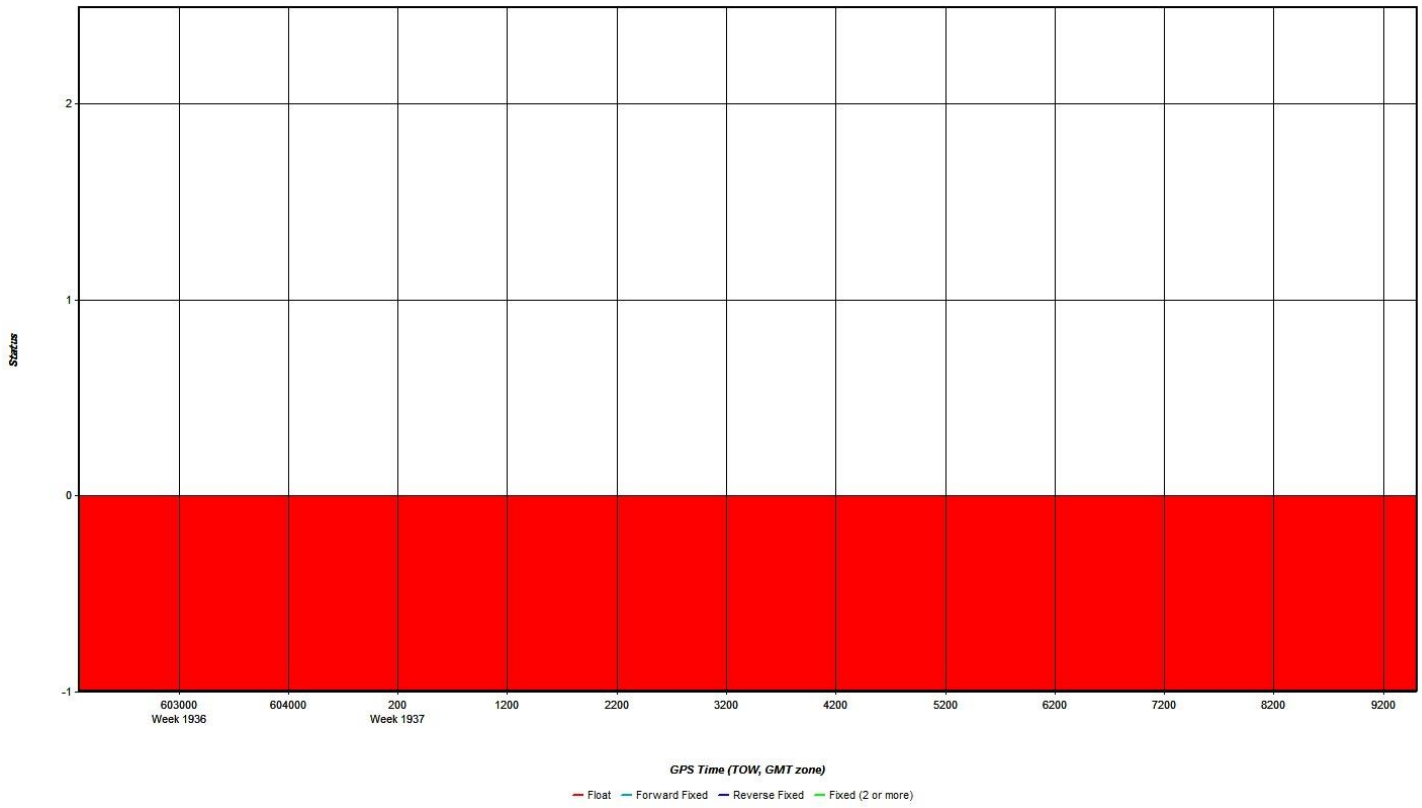

Estimated StdDev (m)
0.0210
0.0205
0.0200
0.0195
0.0190
0.0185
0.0180
0.0175
0.0170
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
East
North
Height
Trace


Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arc:min)
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
603000
Week 1936
604000
200
Week 1937
1200
2200
3200
4200
5200
6200
7200
8200
9200
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 02/18/17

Lift: A (B) C D E Pg 2 of 2

Project: USGS NECHES BASIN Proj #: 28355 Flight Mgmt File: 20170218_231206

Aircraft: N73TM Begin Hobbs: 6573.6 End Hobbs: 6576.7 Total: 3.1 Pilot: JOSEY Co-Pilot: — Tech: TOM

Dep Apt: KCXO Dep Time (Lcl): (Z): Arr Apt: Arr Time (Local): 8:27 (Z): 02:27 Tot Time Aloft: 3.1 hrs

CORS: (Y) / N Sta 1: TXCK Sta 2: TXCK Flyovers: (Y) / N If Y, times: Sta1) 23:44 Sta2) 02:01

GPS Unit: Y / N Sta 1: — Sta 2: — Flyovers: Y / N If Y, times: Sta1) — Sta2) —

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS-70	7178					
	FOV 34	Scan Freq 57.3	MpiA (Y) / N	Pulses In Air	Pulse Rate 312	Power	PPSM 3.5+

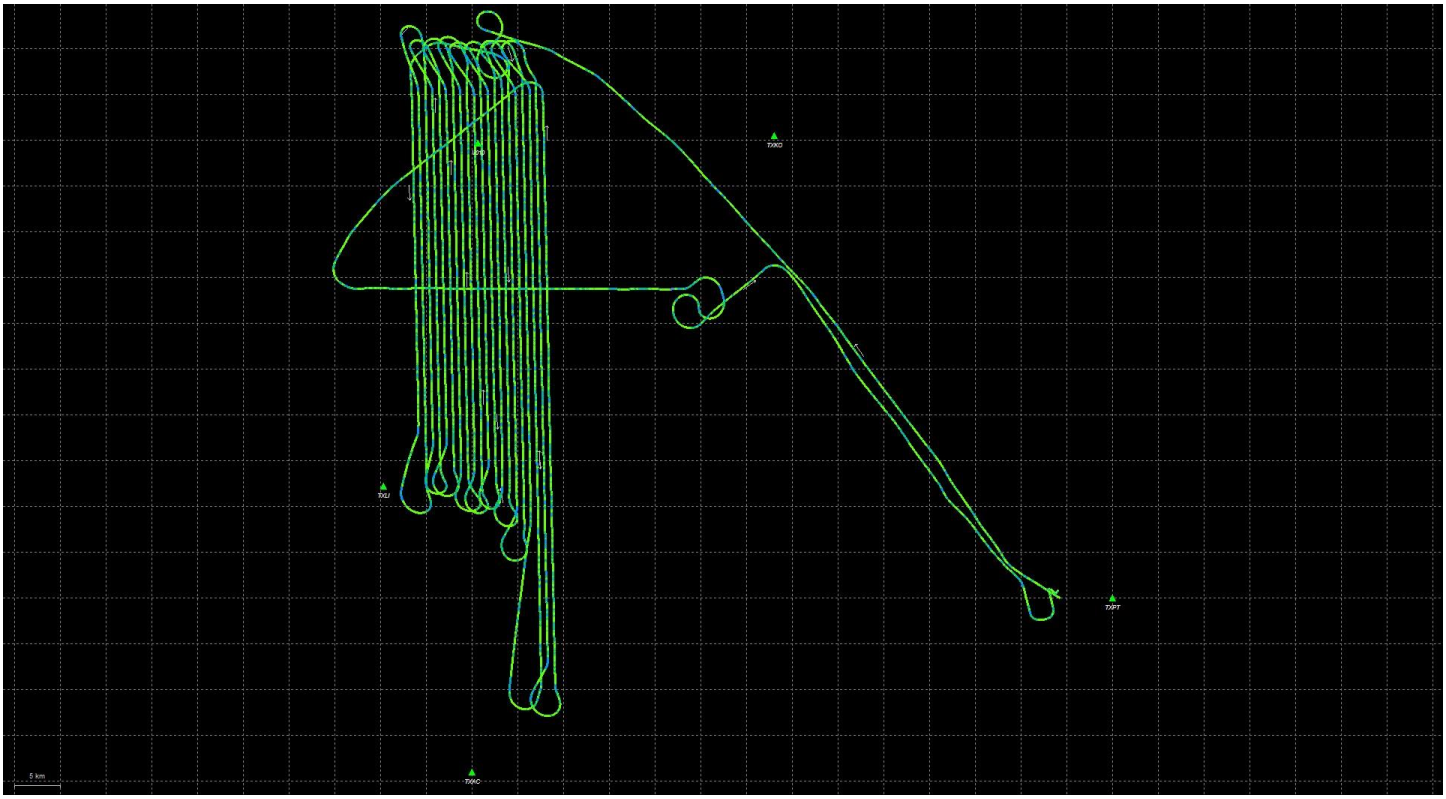
Beg GB	285	Storage Name/#
End GB		5504
Tot GB		7178

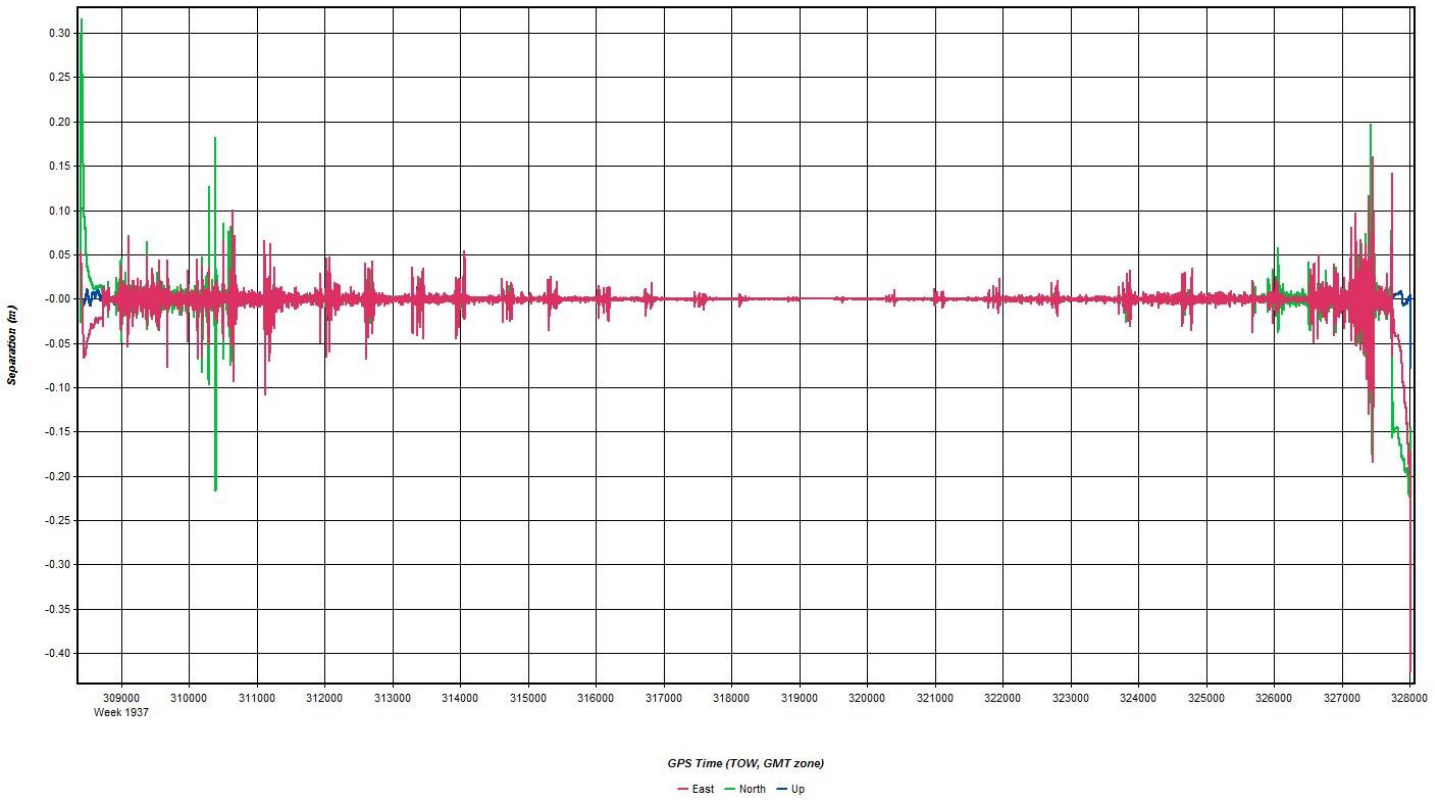
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		5:06	5:~~58~~		FIG	8			FERRY: CXO → TXCK → SITE 0.8
XTIE	W	23:55	23:59						CLOSE TO GPS MID NIGHT 5:44
1055	N	00:06	00:21	150	1.3/18	5928	—	0	
1054	S	00:24	00:39	|	1.2/18	5938	—	0	
1053	N	00:41	00:56	|	1.1/19	5941	—	0	
1052	S	00:58	01:13	|	1.3/16	5948	—	0	
1051	N	01:16	01:31	|	1.3/17	4	—	0	
1050	S	01:33	01:48	|	1.3/16	5945	—	0	
XFLT	E	01:50	01:51	|	1.2/16	—	—	—	
FIG.	8	7:54	8:42						FERRY: SITE → TXCK → GGG 0.8

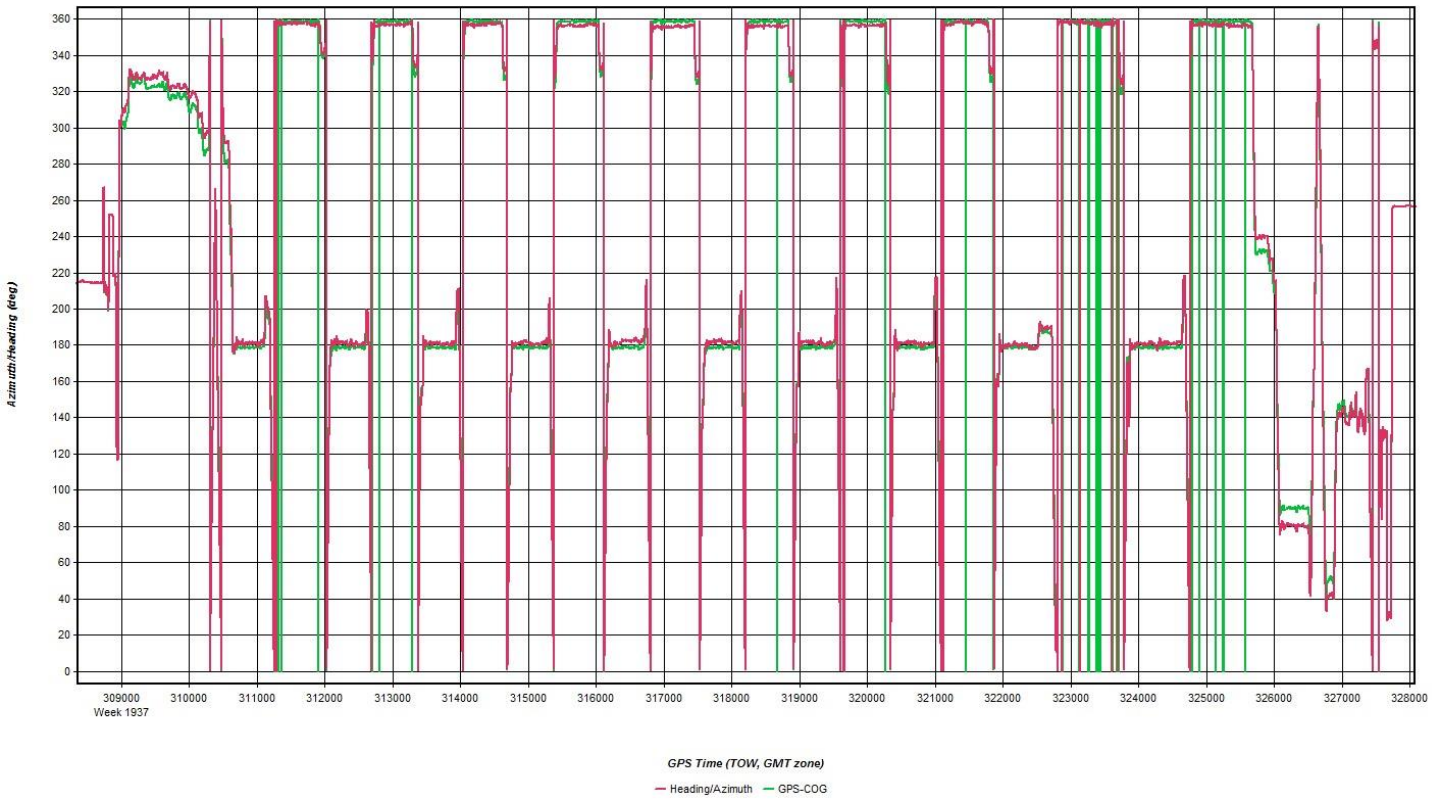
Total Proj Lines: 99	Lines Flown: 6	Lines Remain: 10	Online Time: 2.0	Mob Time: 1.6	Notes:

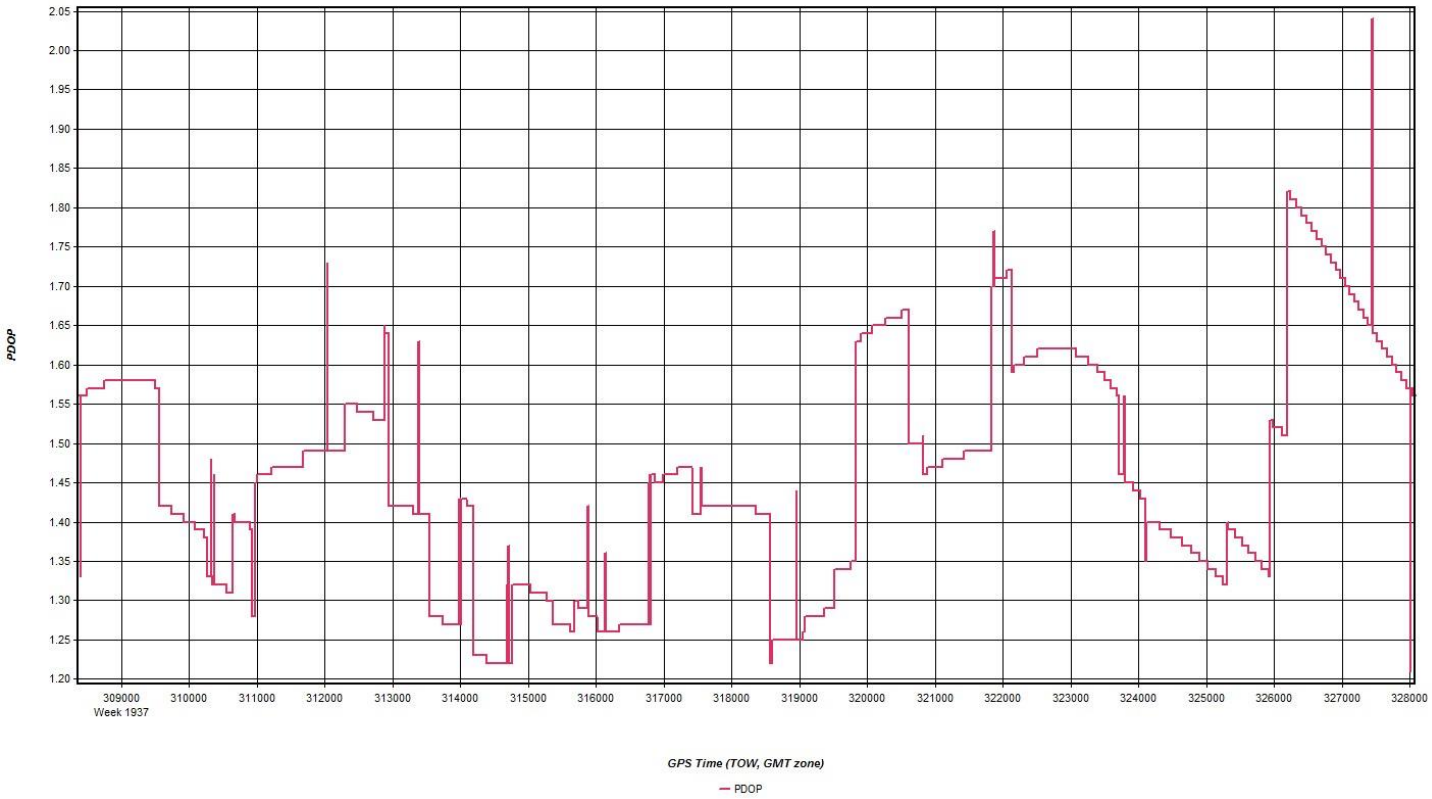
CROCKETT

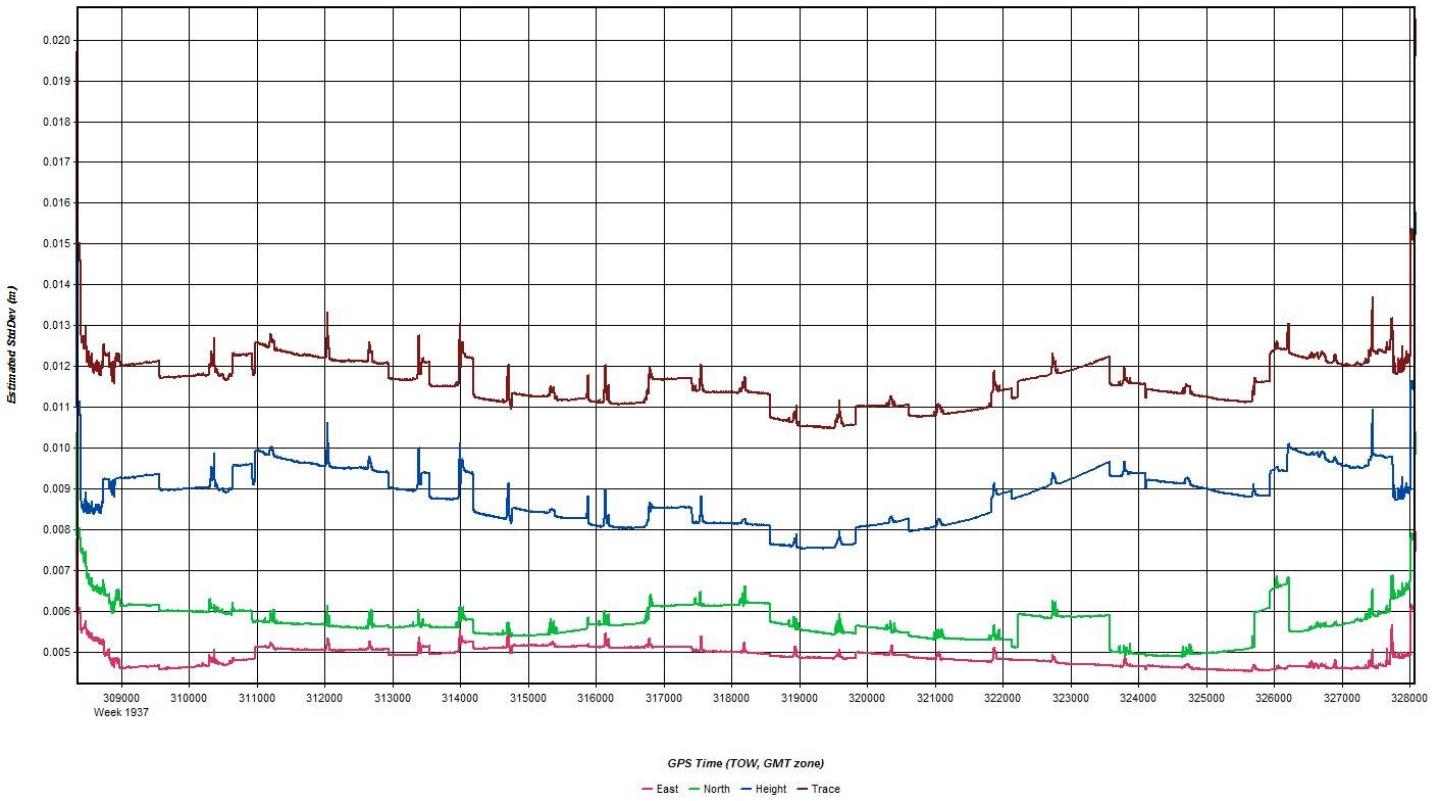
Feb 22, 2017-A (N246MP, SN8227)

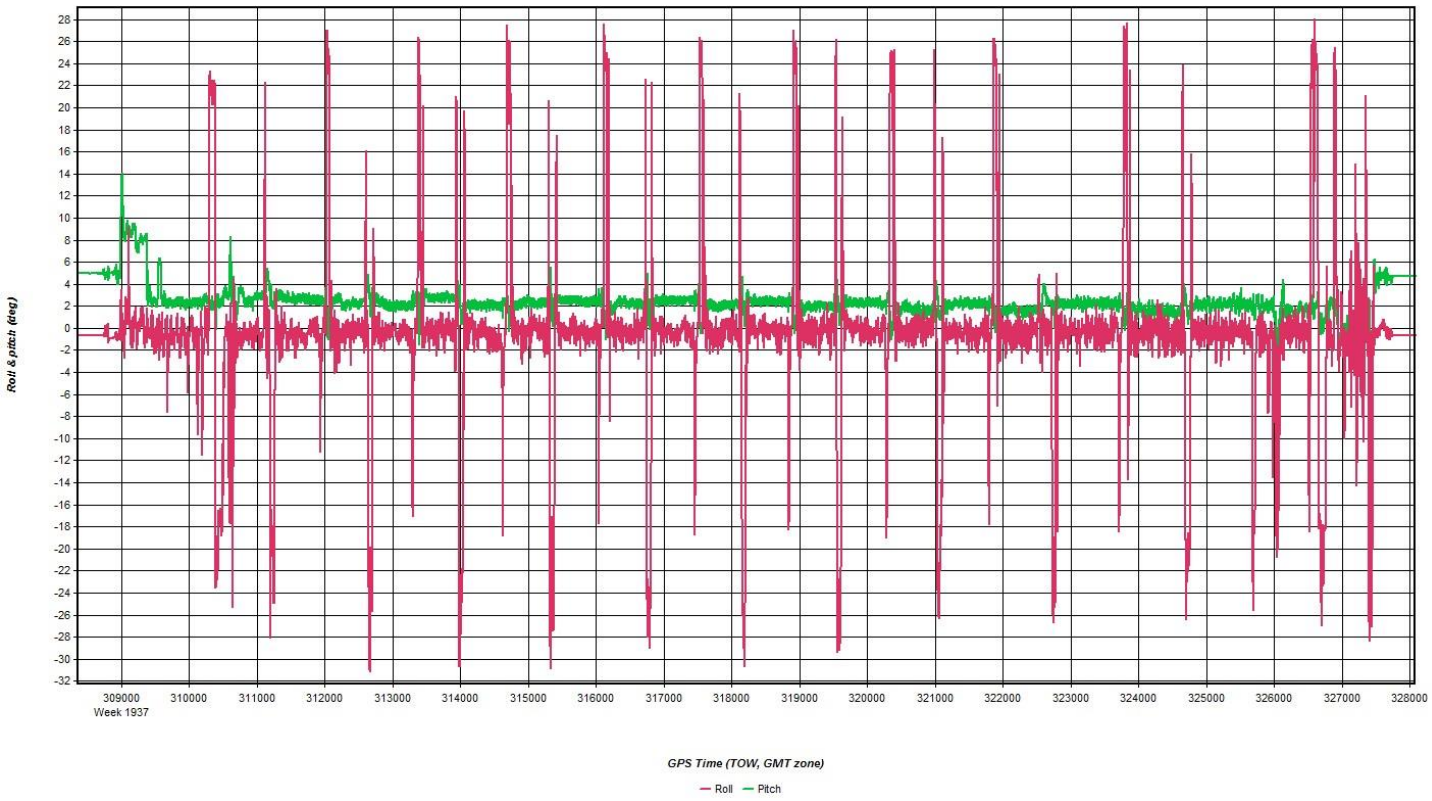


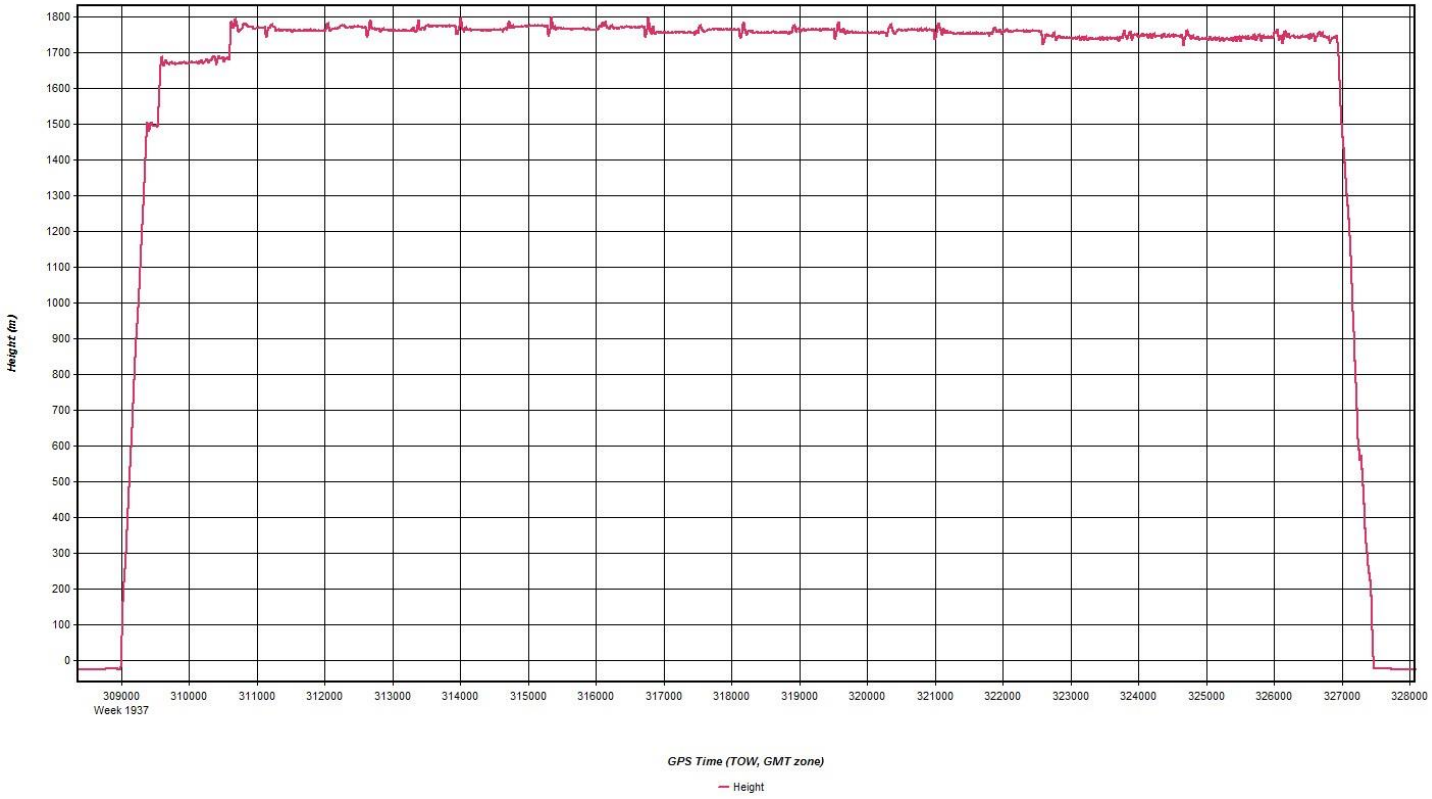

Separation (m)
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
East
North
Up

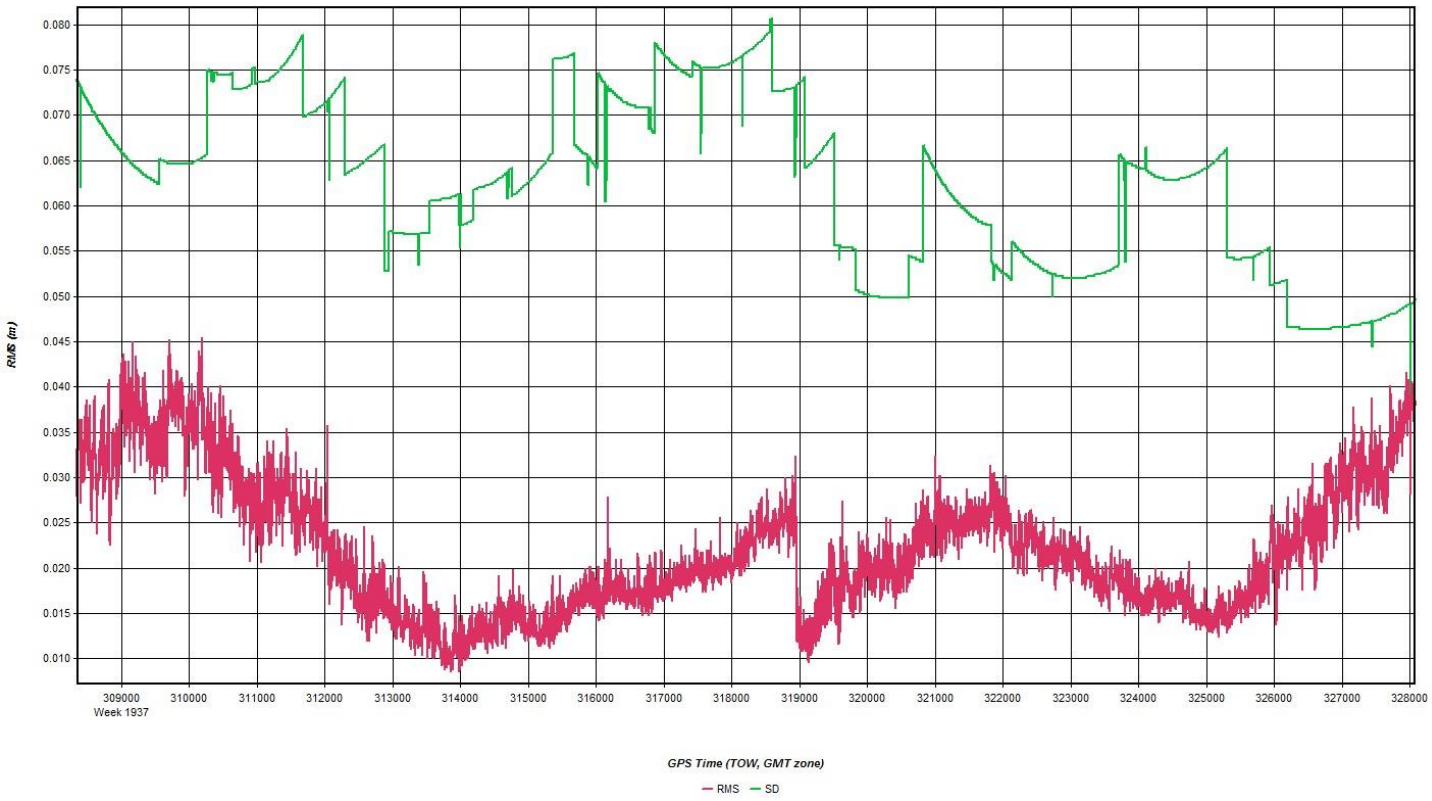

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

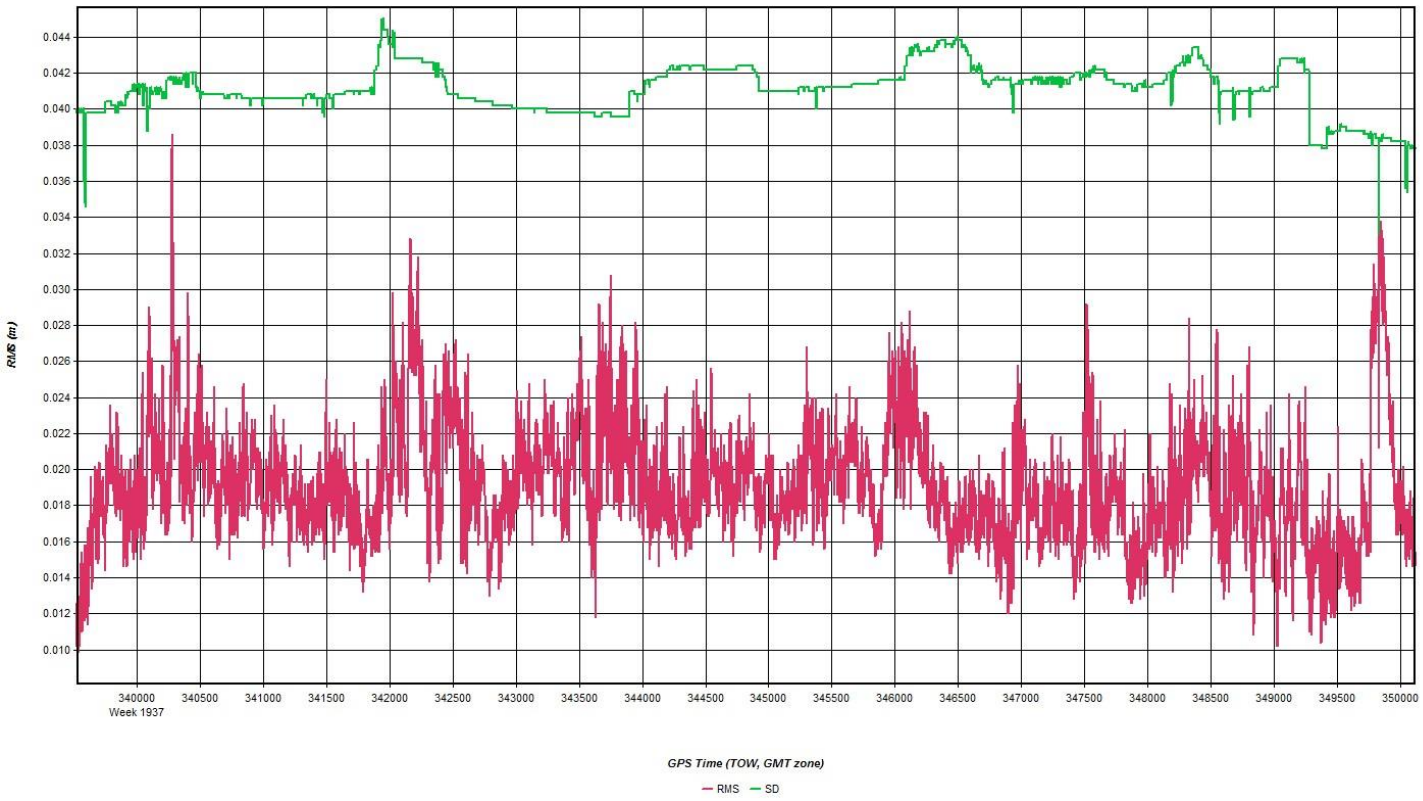

PDOP
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
PDOP

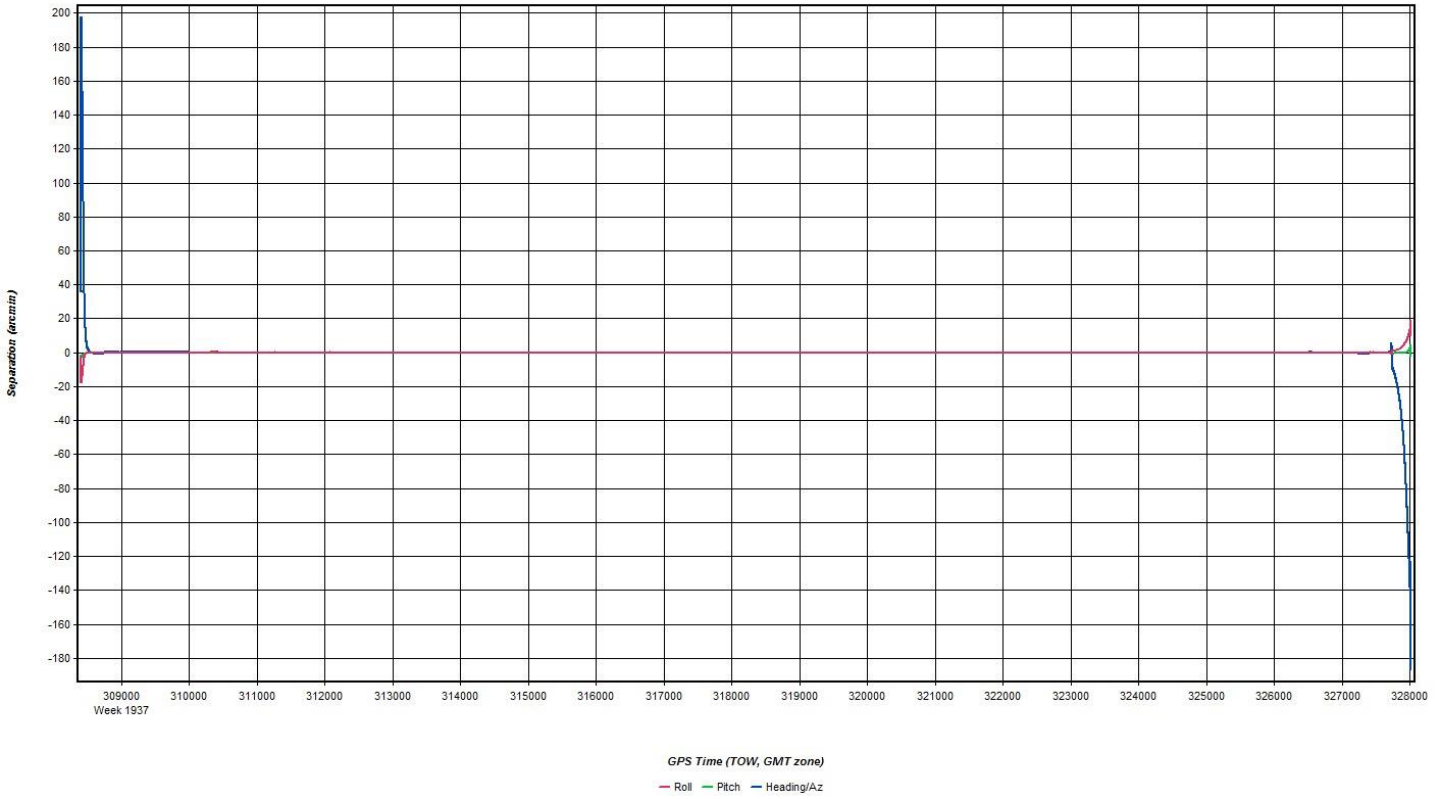

Estimated StdDev (m)
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

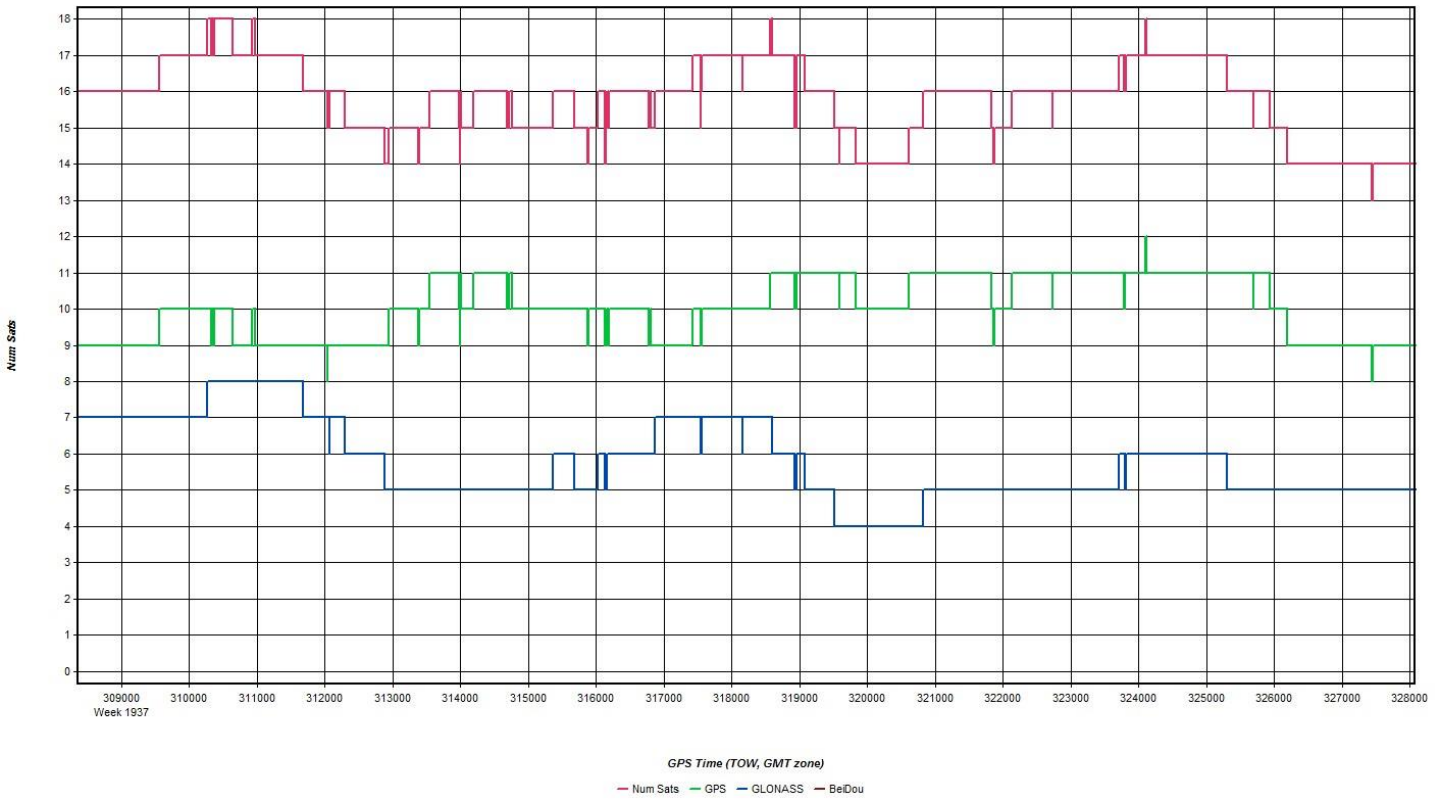

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
Roll
Pitch

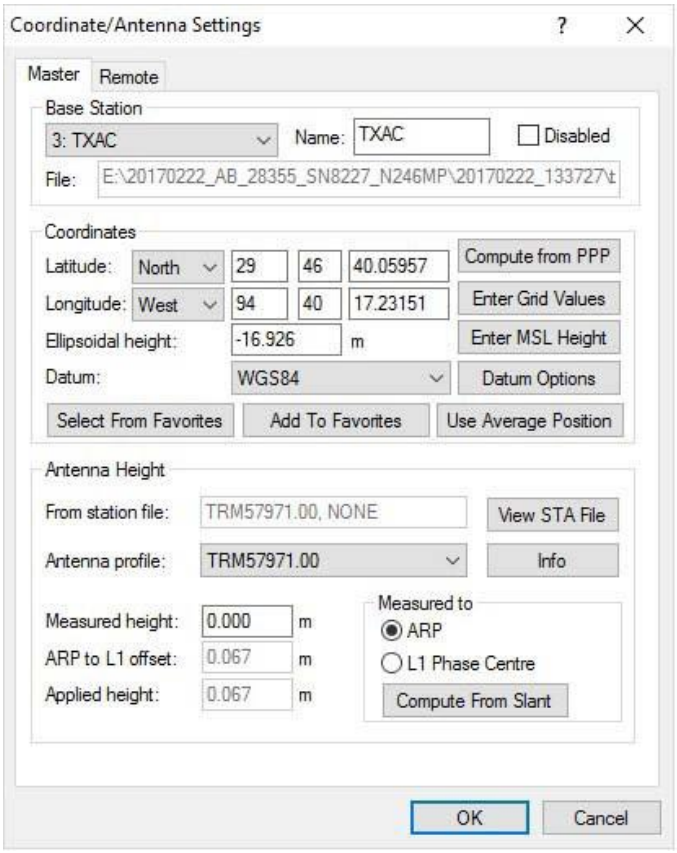

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
Height

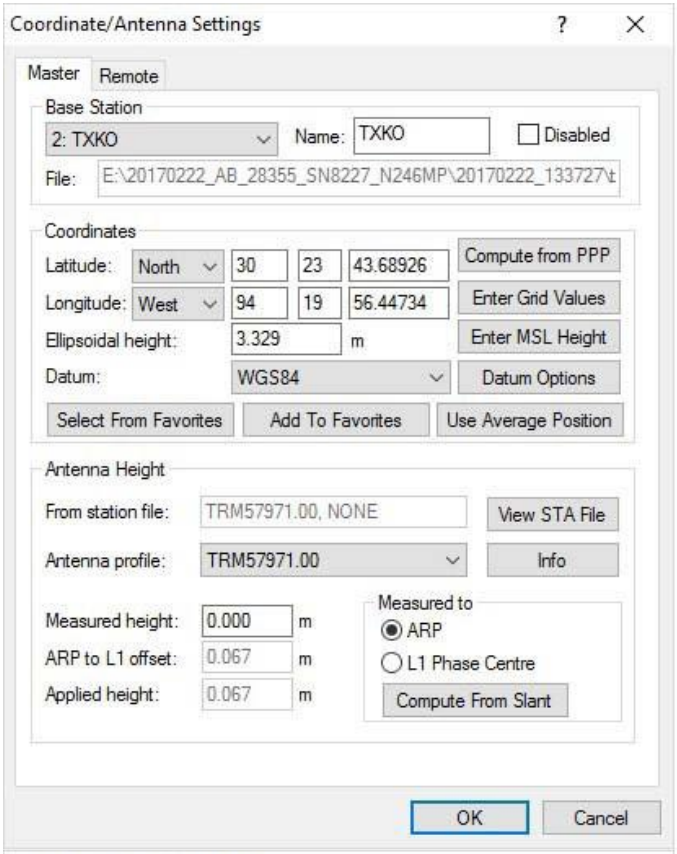

RMS (m)
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
RMS
SD

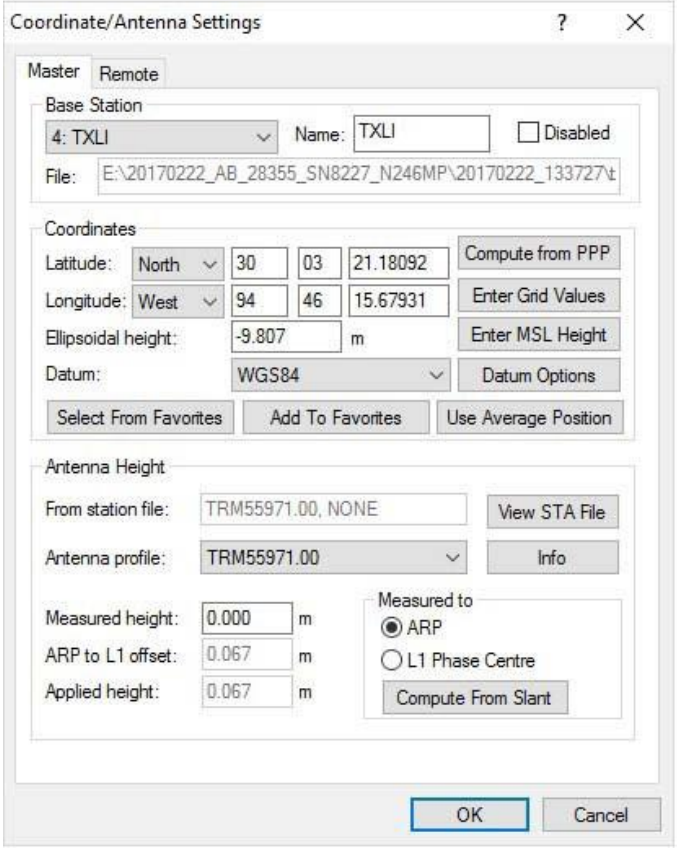

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
RMS
SD

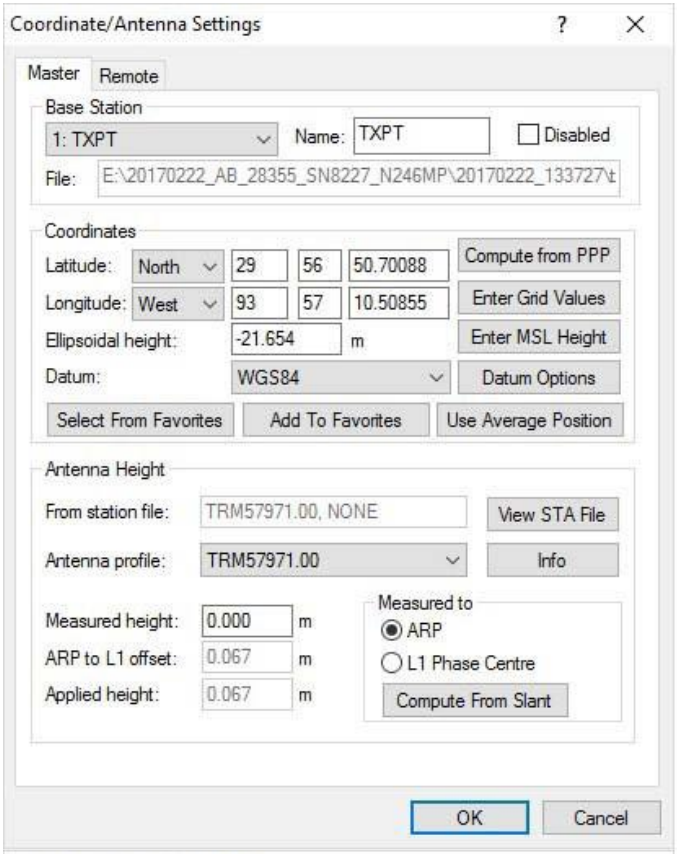

Separation (arcmin)
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

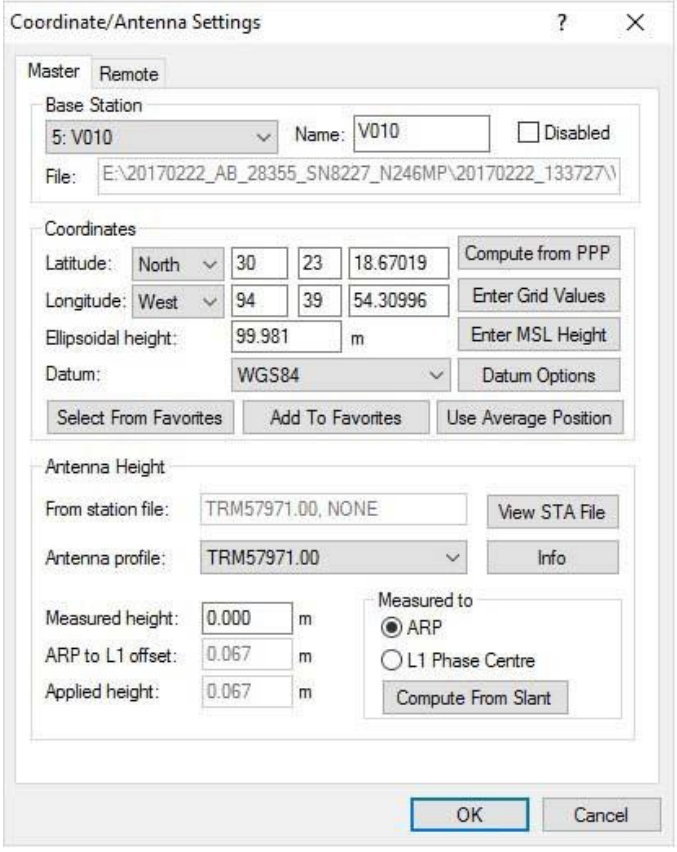

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
309000
Week 1937
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXAC
Name:
TXAC
Disabled
File:
E:\20170222_AB_28355_SN8227_N246MP\20170222_133727\t
Coordinates
Latitude:
North
29
46
40.05957
Compute from PPP
Longitude:
West
94
40
17.23151
Enter Grid Values
Ellipsoidal height:
-16.926
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

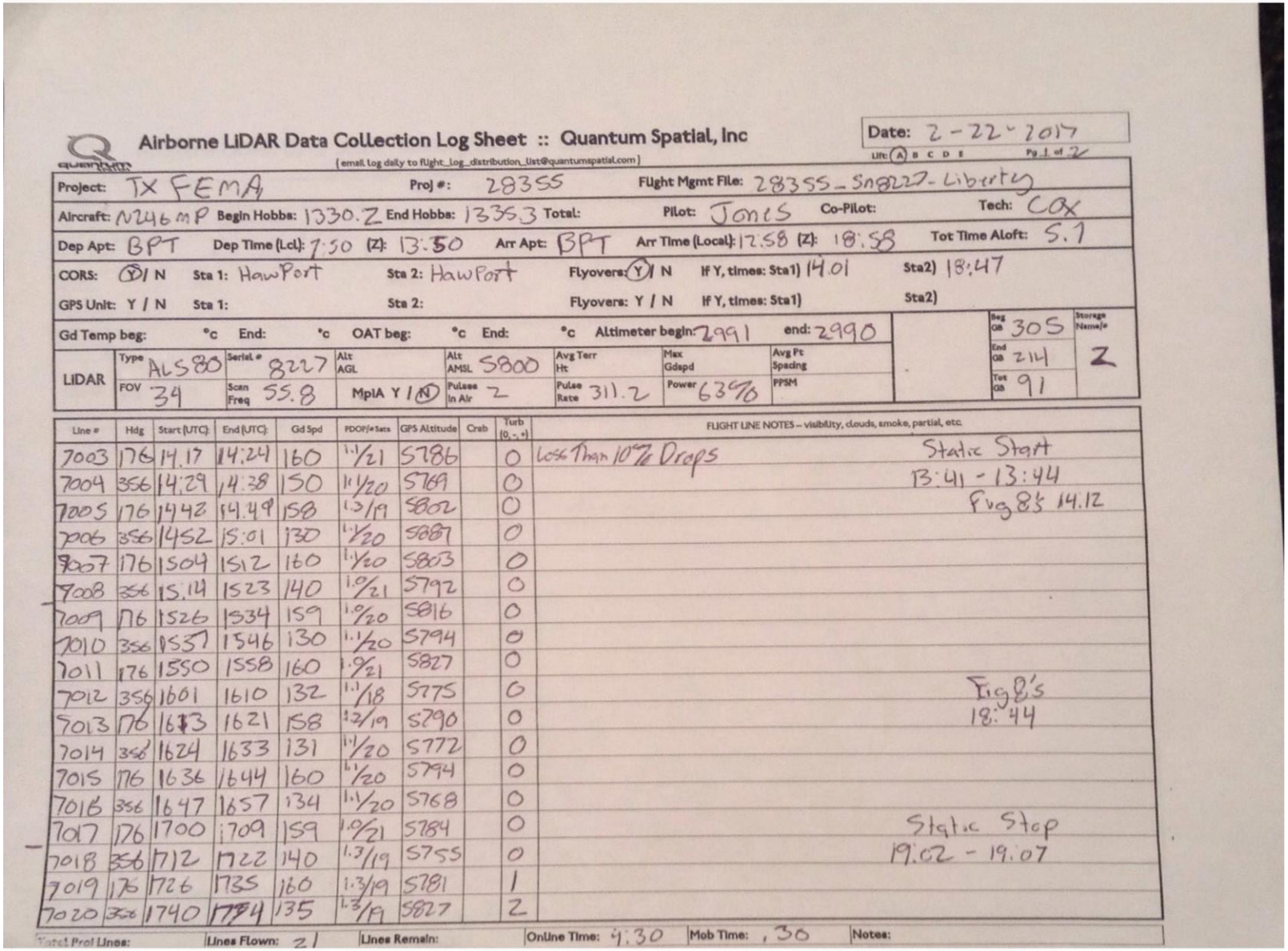

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_133727\t
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXLI
Name: TXLI
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_133727\t
Coordinates
Latitude: North 30 03 21.18092
Longitude: West 94 46 15.67931
Ellipsoidal height: -9.807 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_133727\t
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V010
Name: V010
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_133727\\
Coordinates
Latitude: North 30 23 18.67019
Longitude: West 94 39 54.30996
Ellipsoidal height: 99.981 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-22-2017 Life: A B C D E Pg 1 of 2

(email log daily to flight_log_distribution_list@quantumspatial.com)

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355_Sn8227_Liberty

Aircraft: N246MP Begin Hobbs: 1330.2 End Hobbs: 1335.3 Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 7:50 (Z): 13:50 Arr Apt: BPT Arr Time (Local): 12:58 (Z): 18:58 Tot Time Aloft: 5.1

CORS: (Y) / N Sta 1: HawPort Sta 2: HawPort Flyovers: (Y) / N If Y, times: Sta1) 14:01 Sta2) 18:47

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 2991 end: 2990

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8227		5800			
	FOV 34	Scan Freq 55.8	MpIA Y / (N)	Pulses In Air 2	Pulse Rate 311.2	Power 63%	PPSM

Beg GB	End GB	Tot GB	Storage Name/s
305	214	91	2

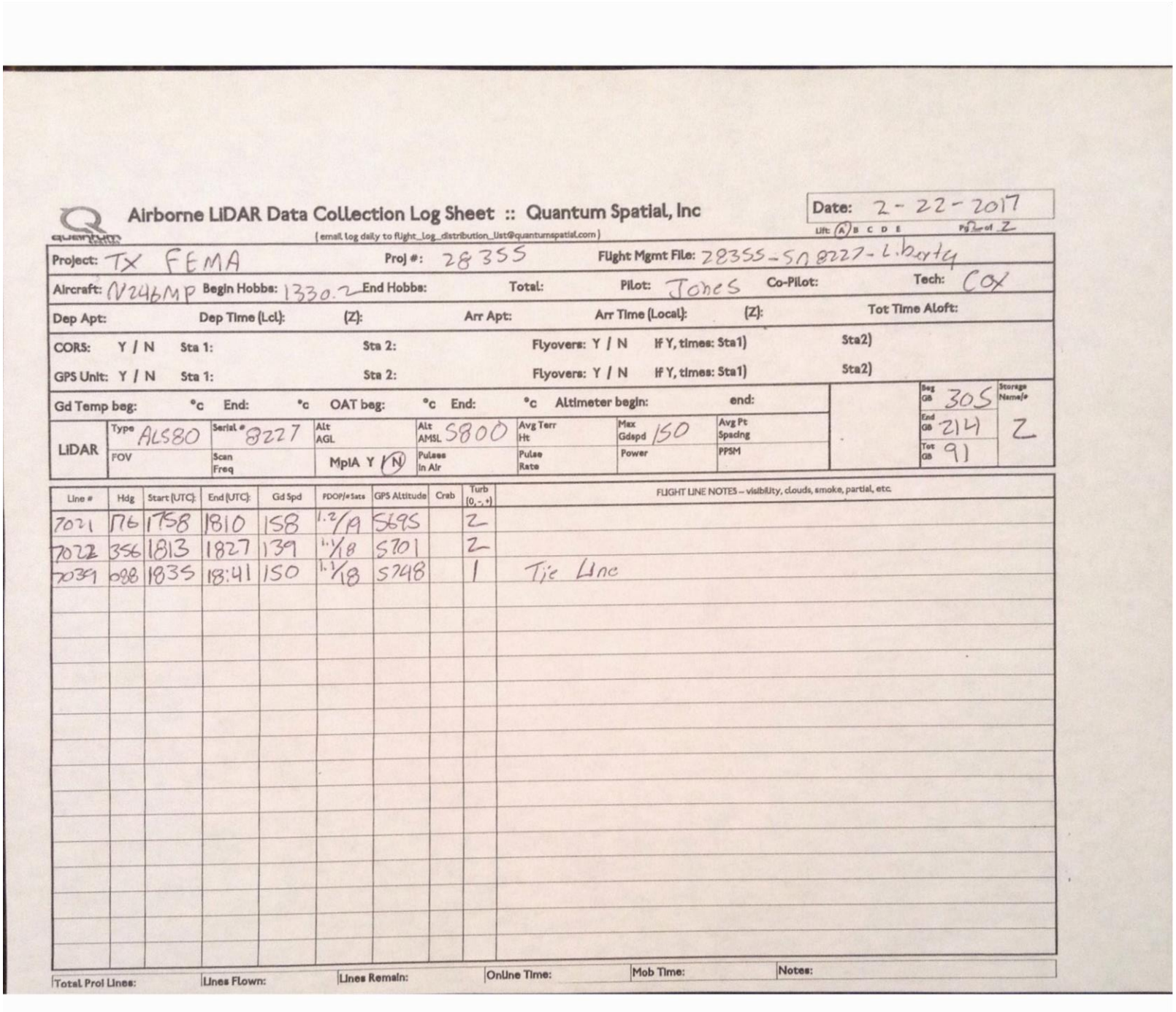
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
7003	176	14:17	14:24	160	1.1/21	5786		0	Less Than 10% Drops
7004	356	14:29	14:38	150	1.1/20	5769		0	
7005	176	1442	14:49	158	1.3/19	5802		0	
7006	356	1452	15:01	130	1.1/20	5687		0	
7007	176	1504	1512	160	1.1/20	5803		0	
7008	356	15.14	1523	140	1.0/21	5792		0	
7009	176	1526	1534	159	1.0/20	5816		0	
7010	356	1537	1546	130	1.1/20	5794		0	
7011	176	1550	1558	160	1.0/21	5827		0	
7012	356	1601	1610	132	1.1/18	5775		0	
7013	176	1613	1621	158	1.2/19	5790		0	
7014	356	1624	1633	131	1.1/20	5772		0	
7015	176	1636	1644	160	1.1/20	5794		0	
7016	356	1647	1657	134	1.1/20	5768		0	
7017	176	1700	1709	159	1.0/21	5784		0	
7018	356	1712	1722	140	1.3/19	5755		0	
7019	176	1726	1735	160	1.3/19	5781		1	
7020	356	1740	1754	135	1.3/19	5827		2	

Static Start
13:41 - 13:44
Fig 8's 14:12

Fig 8's
18:44

Static Stop
19:02 - 19:07

Total Prof Lines: Lines Flown: 21 Lines Remain: Online Time: 4:30 Mob Time: :30 Notes:



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-22-2017

{ email log daily to flight_log_distribution_list@quantumspatial.com }

Lift: (A) B C D E Pg 2 of 2

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355-SN8227-Liberty

Aircraft: N246MP Begin Hobbs: 1330.2 End Hobbs: Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: Dep Time (Lcl): (Z): Arr Apt: Arr Time (Local): (Z): Tot Time Aloft:

CORS: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

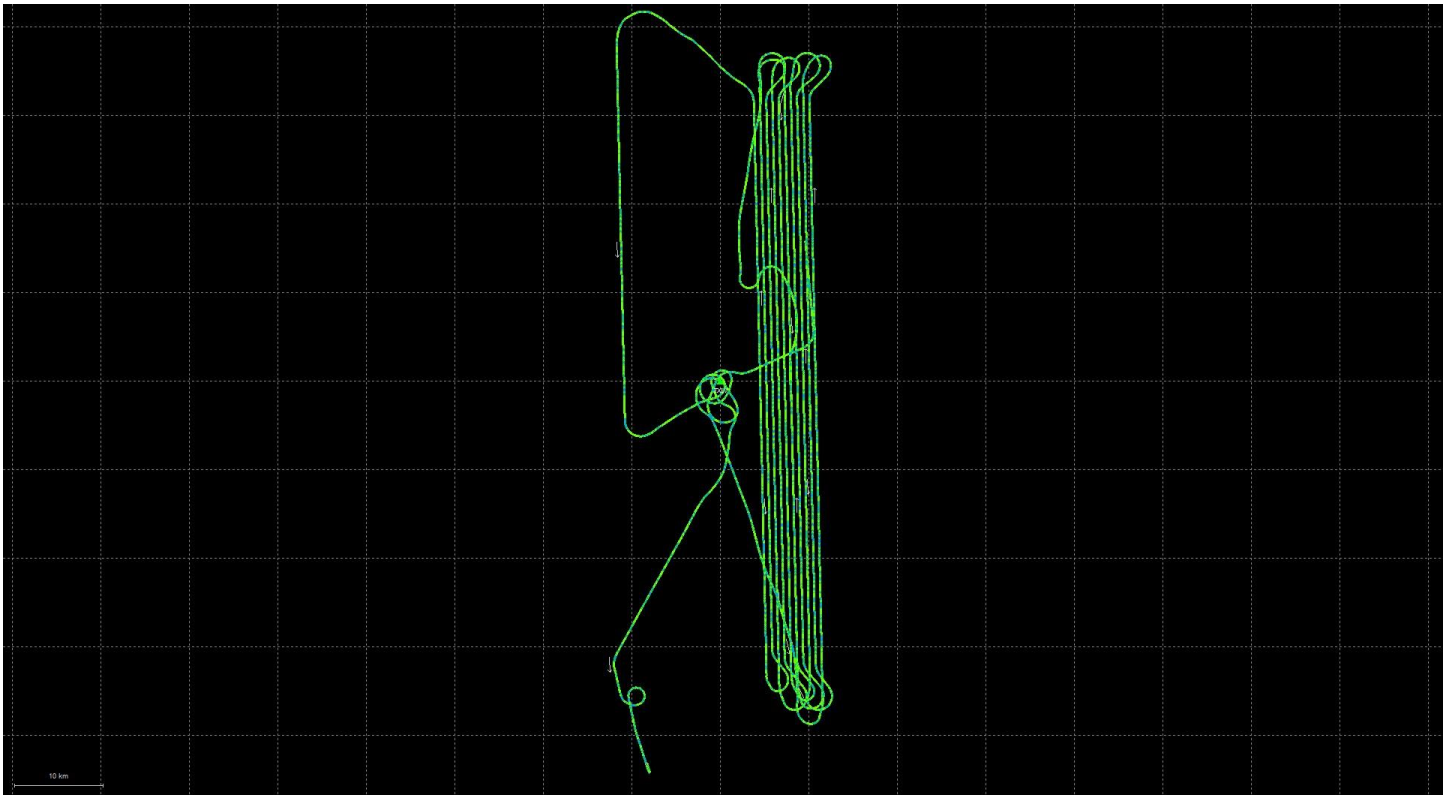
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8227		5800		150	
	FOV	Scan Freq	MpIA Y (N)	Pulses in Air	Pulse Rate	Power	PPSM

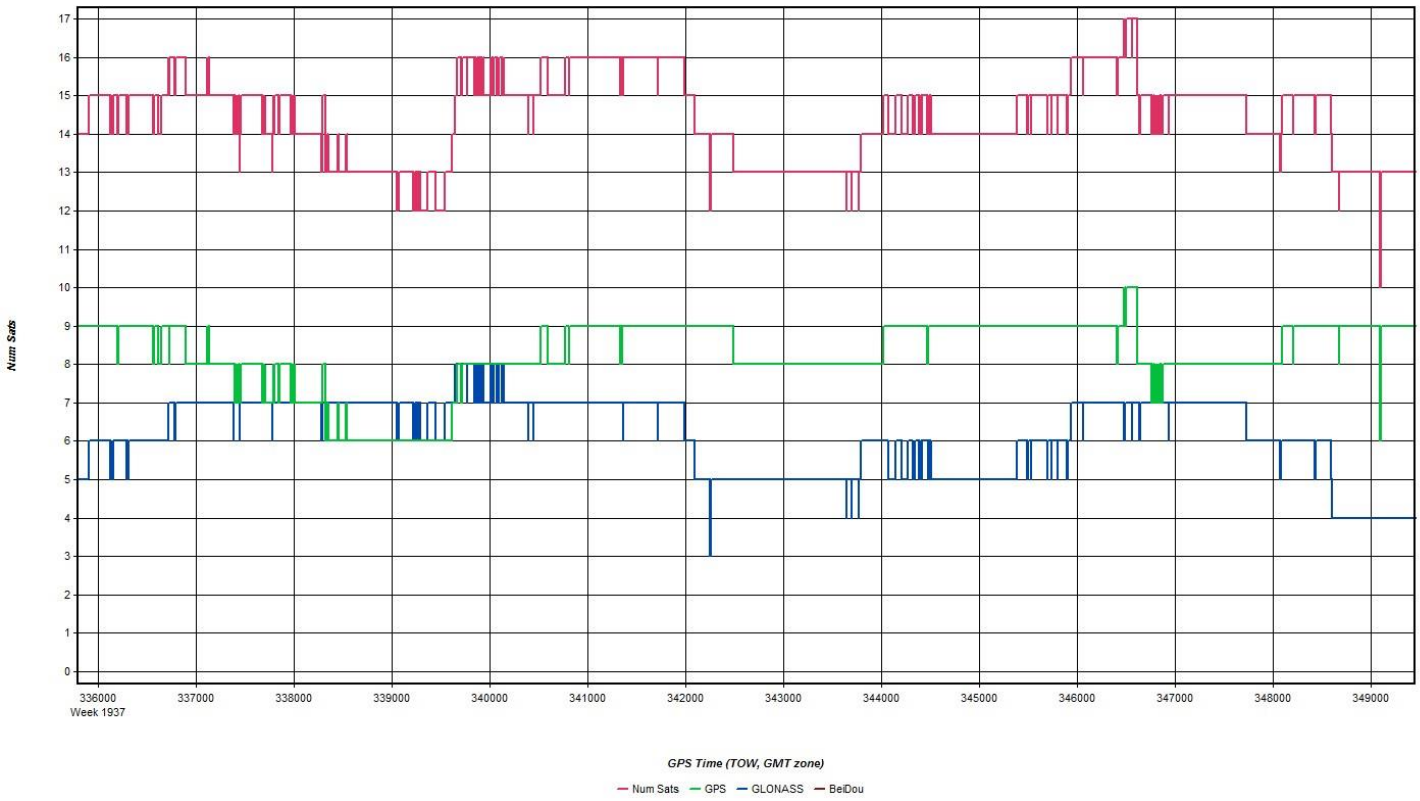
Beg GB	End GB	Tot GB	Storage Name/#
305	214	91	2

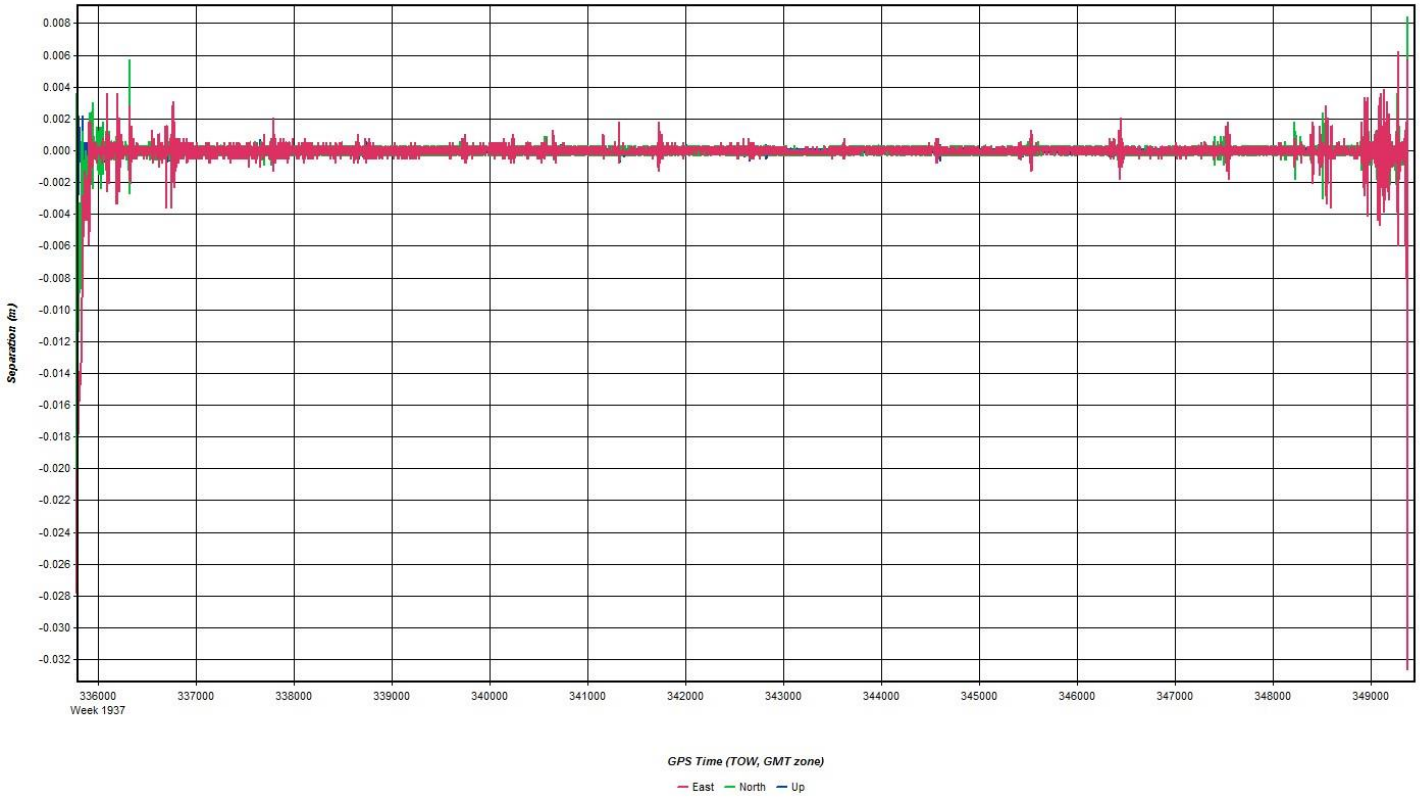
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
7021	176	1758	1810	158	1.2/A	5695		2	
7022	356	1813	1827	139	1.1/8	5701		2	
7039	088	1835	18:41	150	1.1/8	5748		1	Tie Line

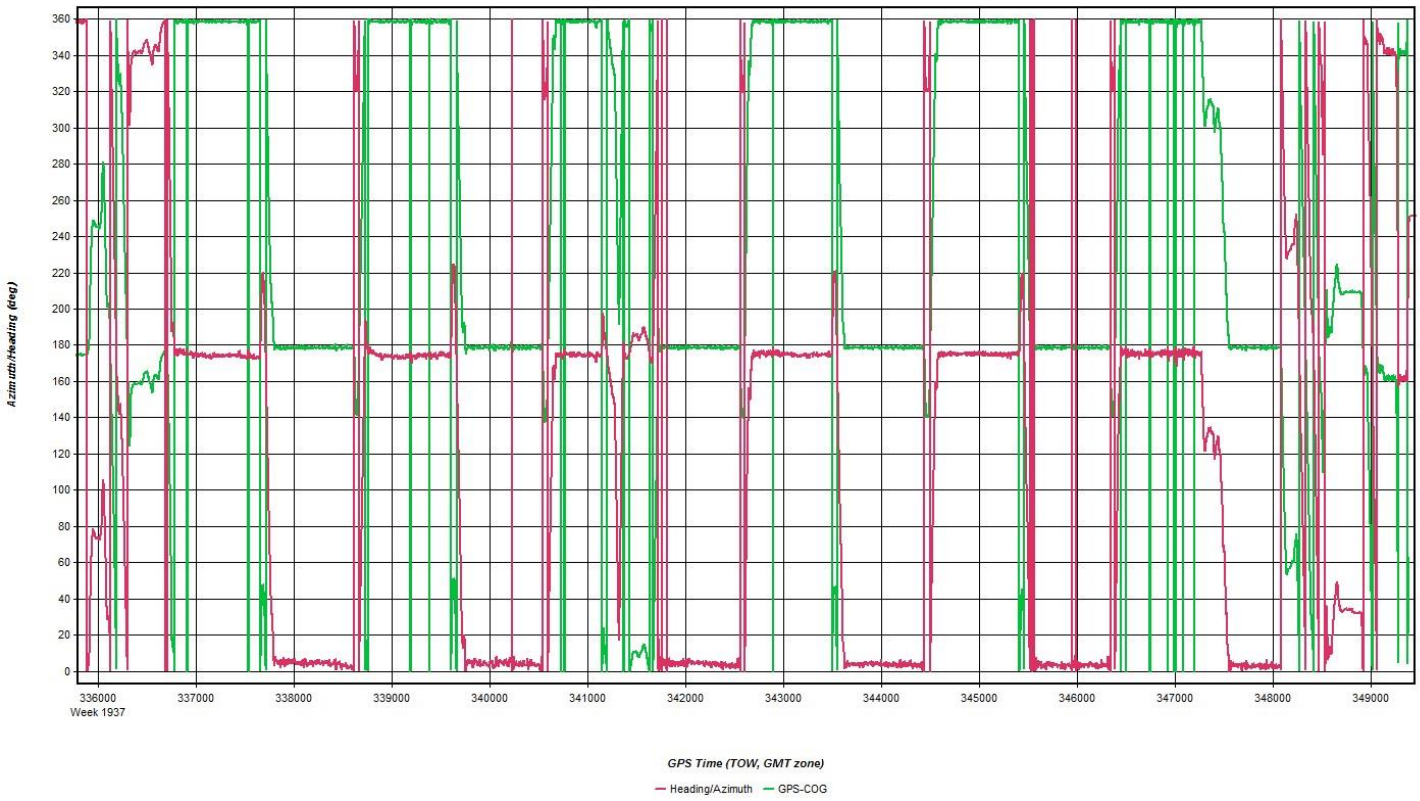
Total Prol Lines: Lines Flown: Lines Remain: OnLine Time: Mob Time: Notes:

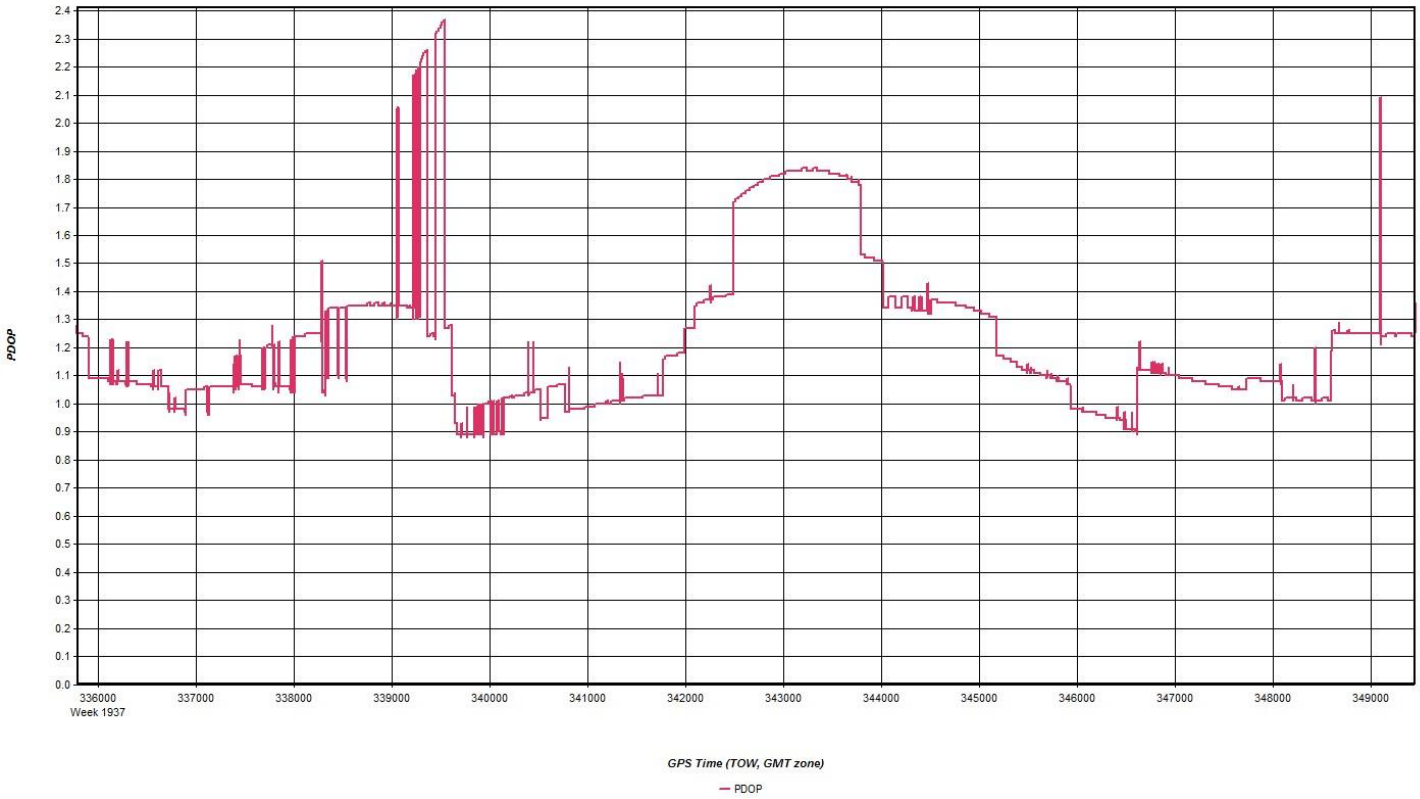
Feb 22, 2017-A (SN7229)

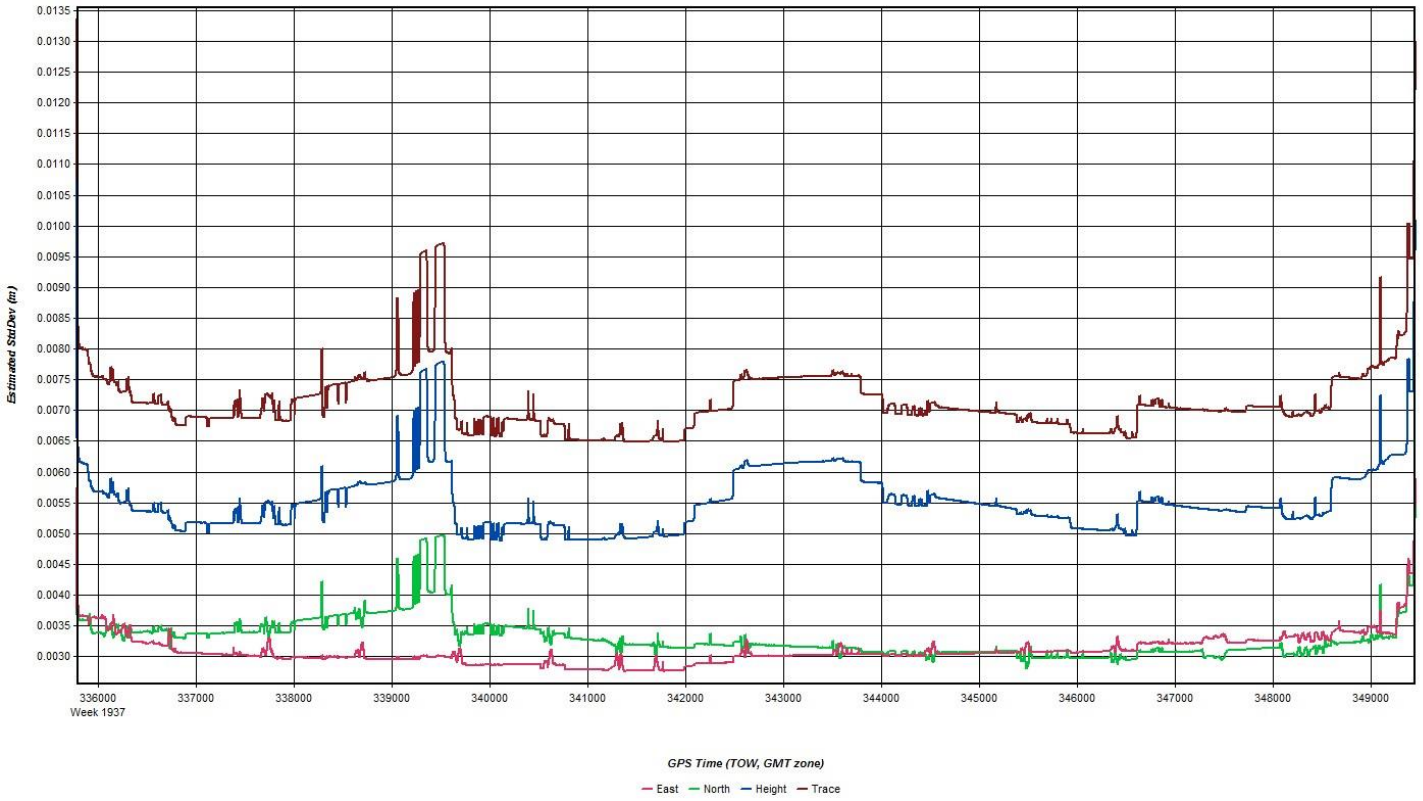


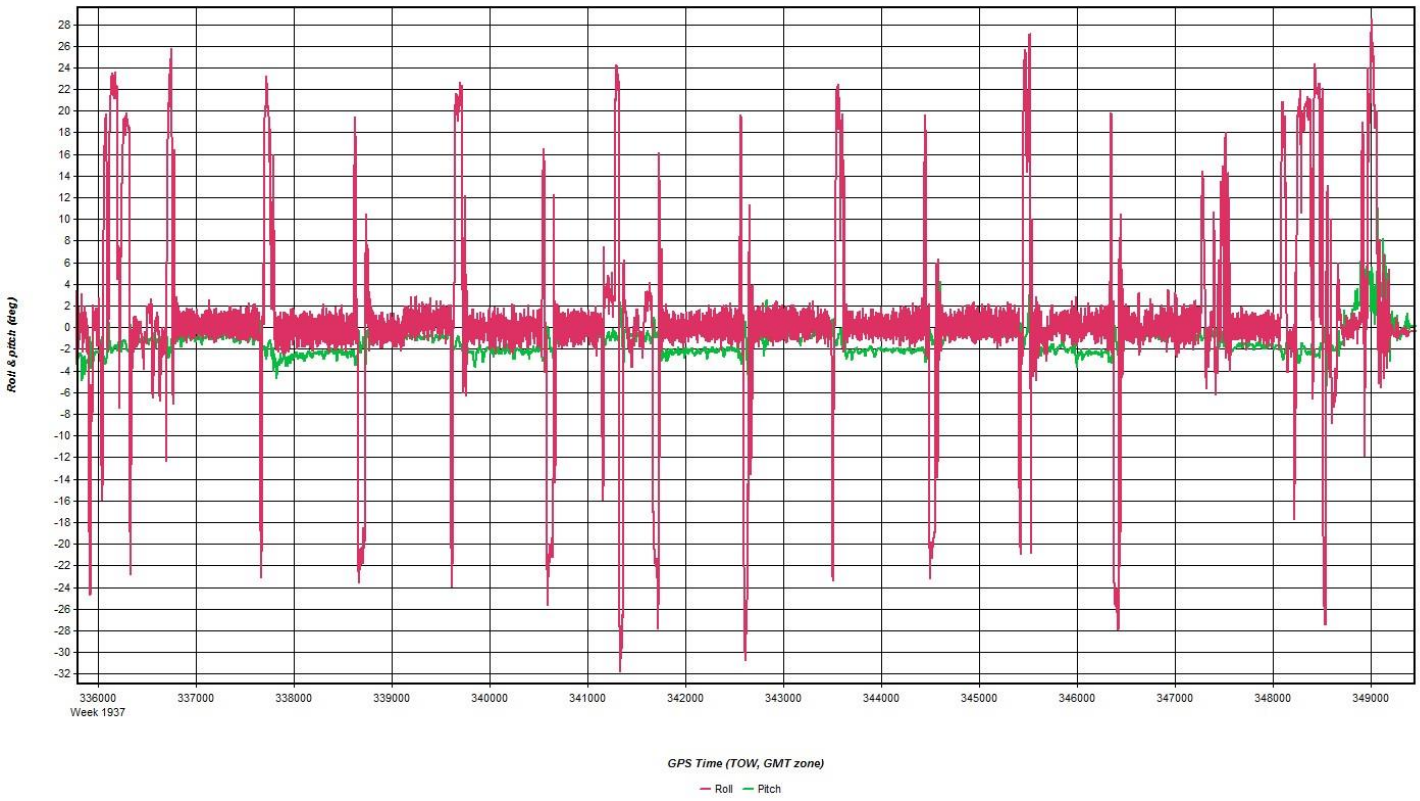

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

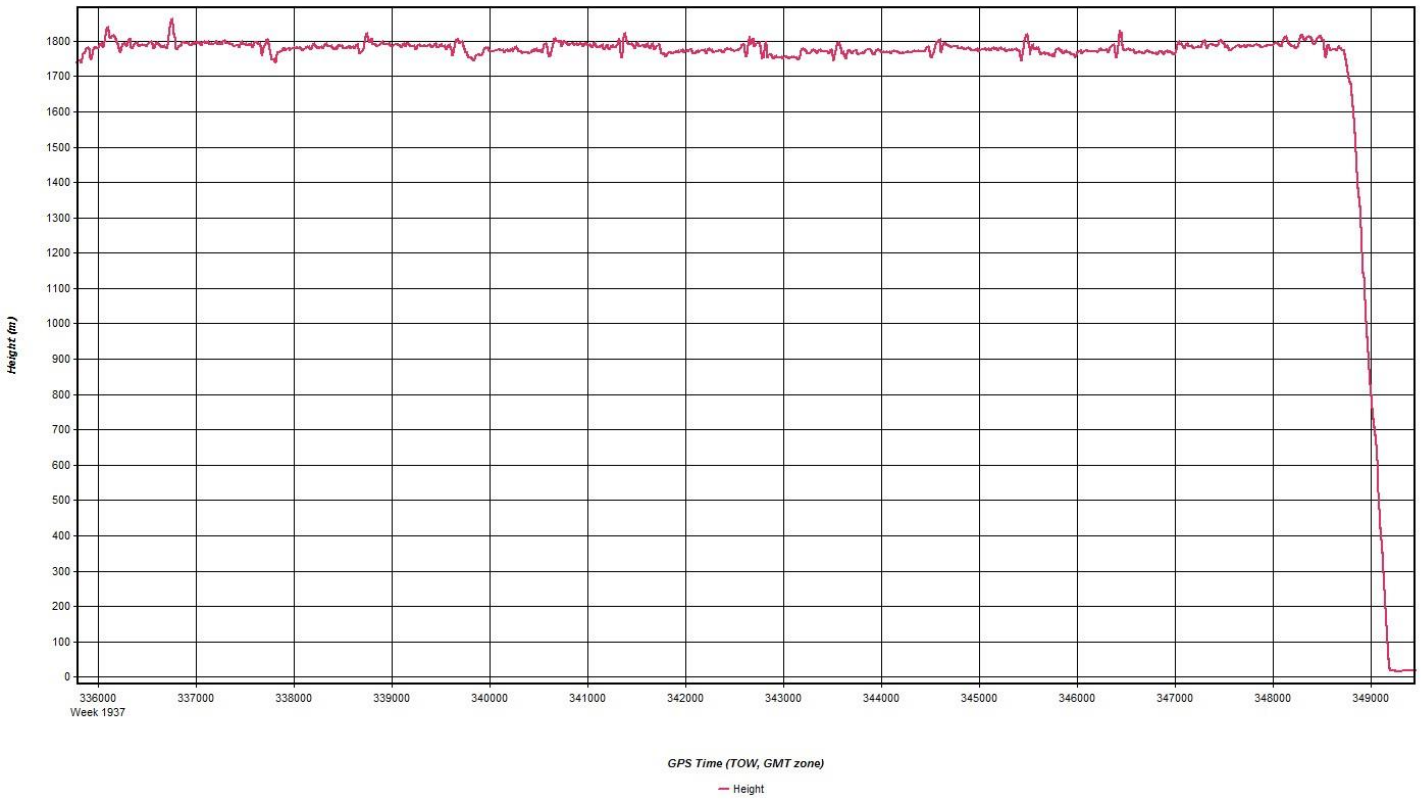

Separation (m)
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
-0.028
-0.030
-0.032
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
East
North
Up

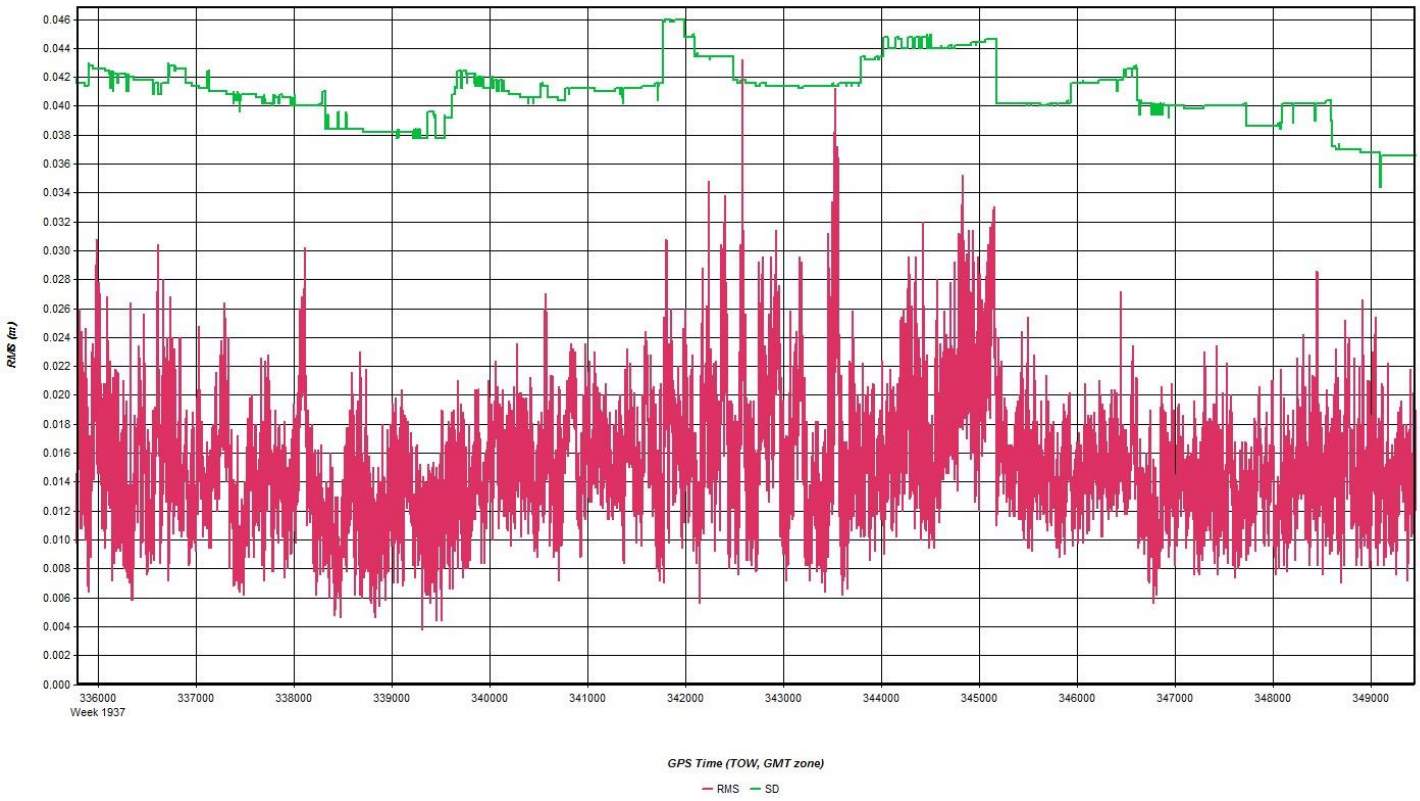

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


PDOP
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
PDOP

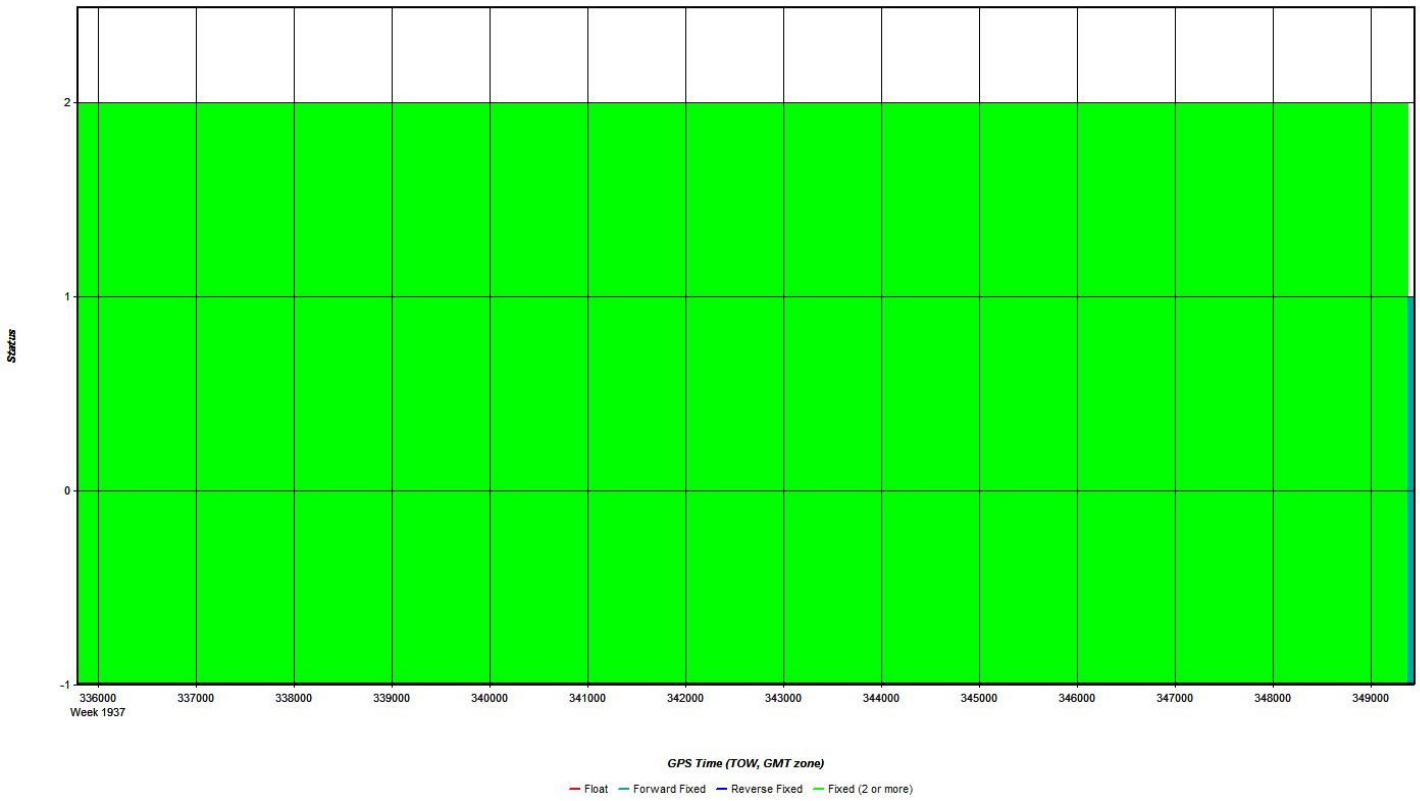

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

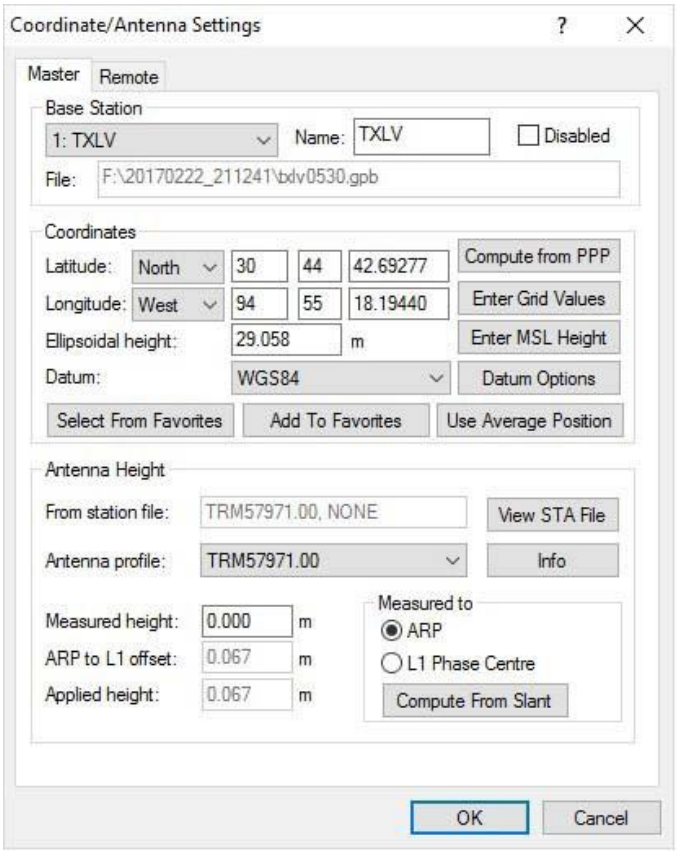

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
-24
-25
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
336000
Week 1937
337000
338000
339000
340000
341000
342000
343000
344000
345000
346000
347000
348000
349000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLV
Name:
TXLV
Disabled
File:
F:\20170222_211241\txlv0530.gpb
Coordinates
Latitude:
North
30
44
42.69277
Compute from PPP
Longitude:
West
94
55
18.19440
Enter Grid Values
Ellipsoidal height:
29.058
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

LIDAR & AERIAL PHOTO FLIGHT LOG

20 YEARS OF EXCELLENCE — ATLIS — LIDAR + IMAGERY + GEOMATICS

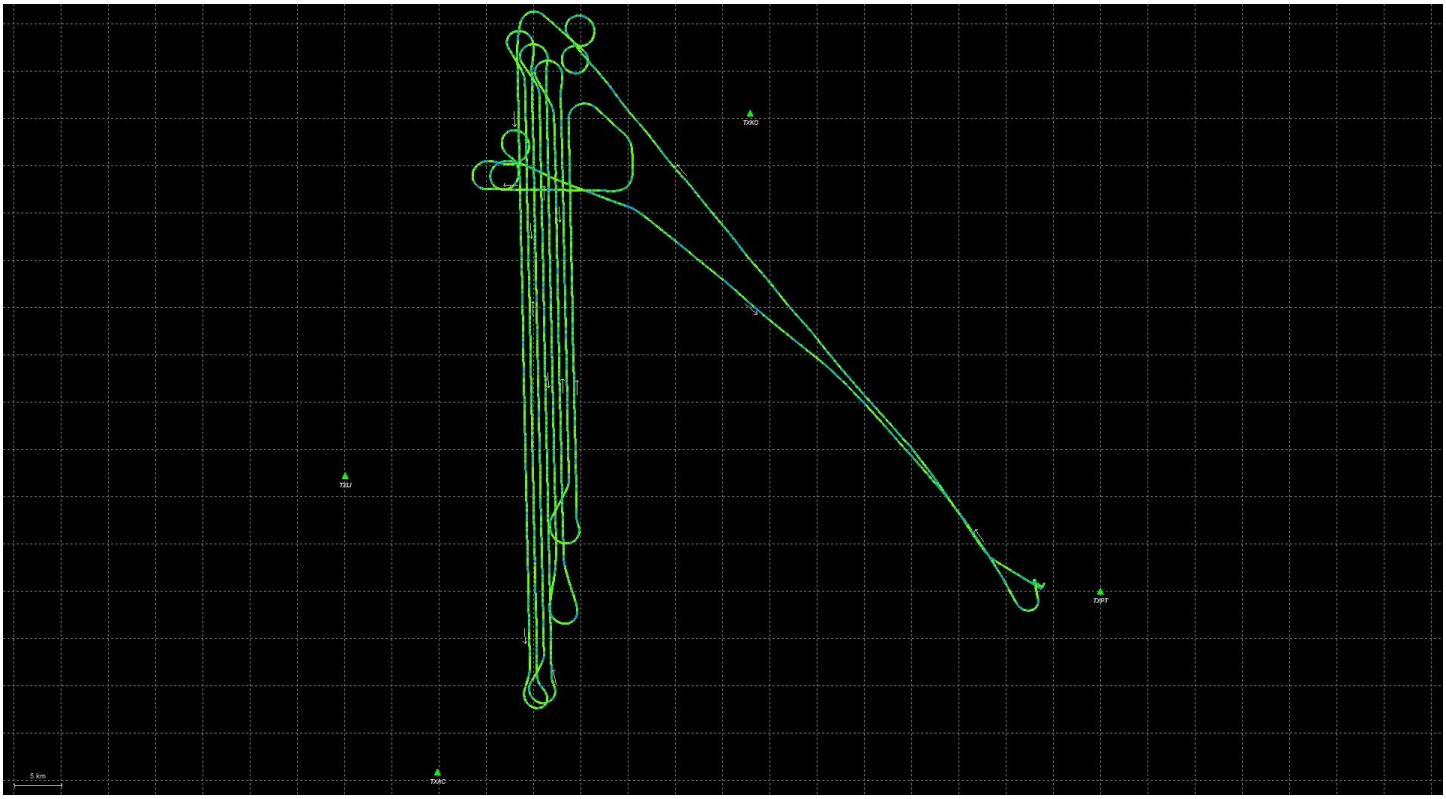
PROJECT NAME	QS. Texas	DATE	22/02/2017
SENSOR OPERATOR	Michael Kettridge	SENSOR(S)	ALS70-HP / RCD30
PILOT	Daniel Thibeault	IMU	Honeywell uIRS
AIRCRAFT	Navajo C-FVZM	ABGPS	IPAS-CUS6
AIRBASE	Cleveland, TX	DATA DRIVES	LiDar3

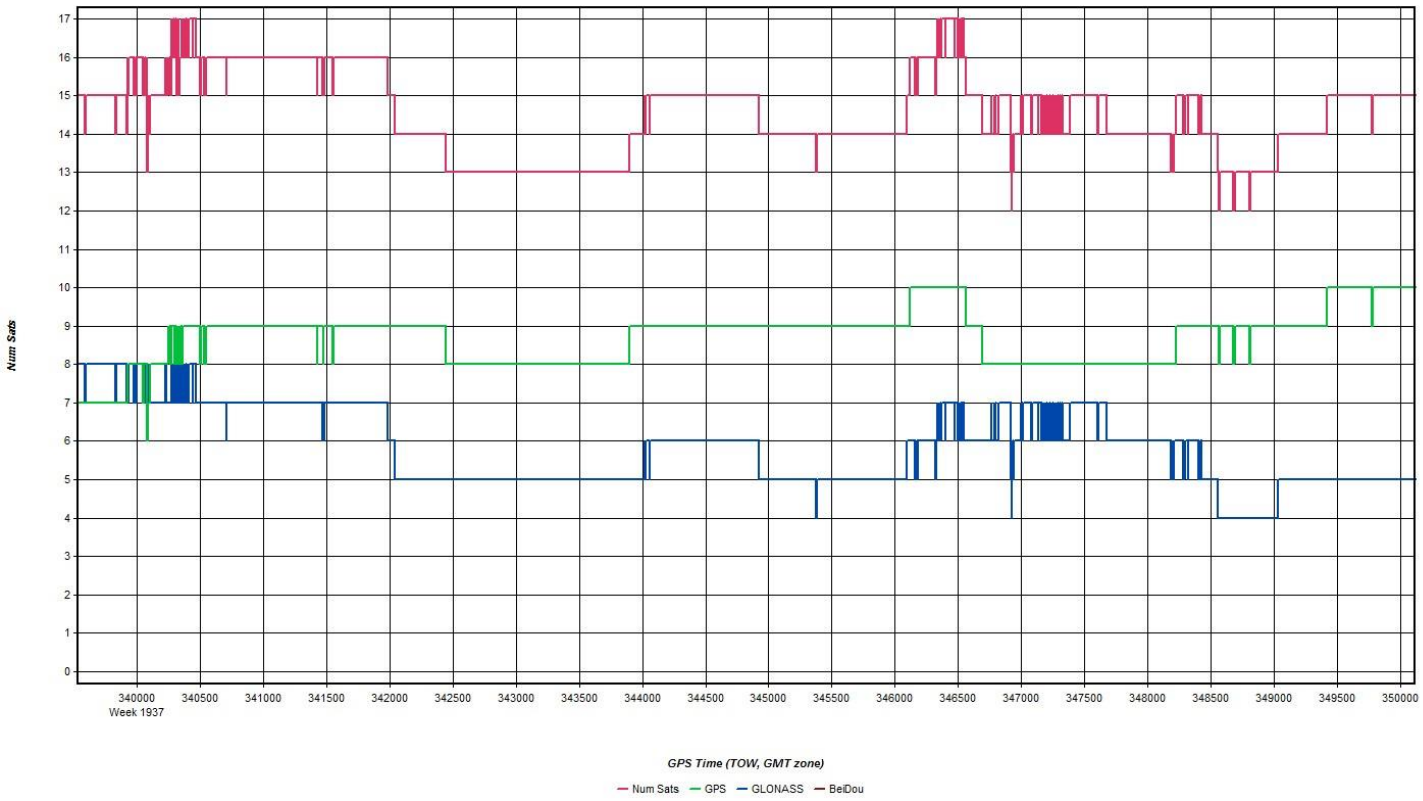
AIRCRAFT BLOCK TIME				MISSION DETAILS				STATIC ALIGNMENT	GPS TIME	
Engine On:	20:35:00	Takeoff:	20:44:00	AGL Height:	1720	Pulse Rate:	312		START	END
Engine Off:	01:06:00	Landing:	01:00:00	Speed:	150	Scan Rate:	57	Pre-Mission	21:20:00	21:25:00
TOTAL:	4.7 hr	TOTAL:	4.25 hr	Laser Power:	100	FOV:	34	Post Mission	00:43:00	00:48:00

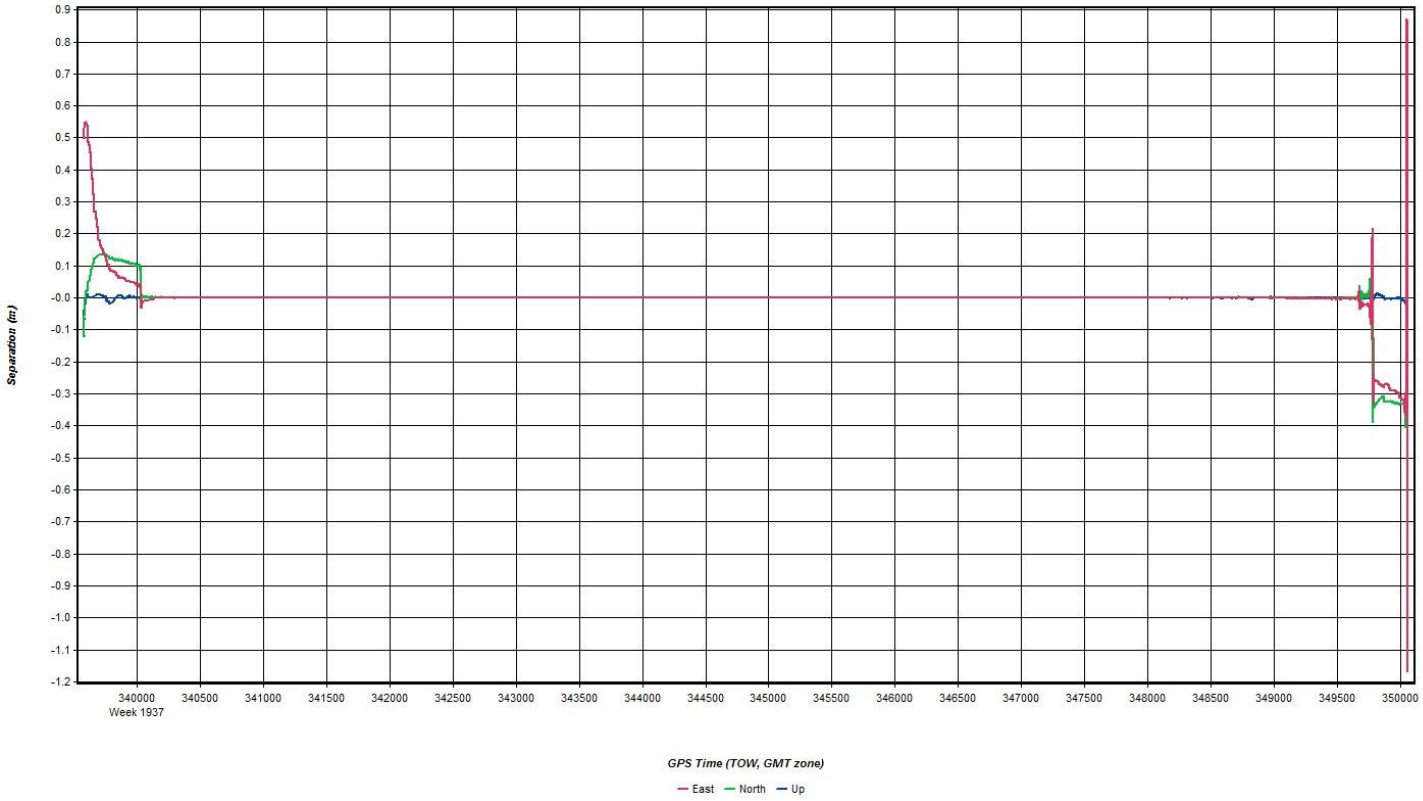
FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME START	GPS TIME END	COMMENTS
5046		North	170222_213339	21:33:39	21:47:13	All complete
5045		South	170222_215009	21:50:09	22:03:14	All complete
5044		North	170222_220610	22:06:10	22:19:39	All complete
5043		South	170222_222235	22:22:36	22:35:16	All complete
5042		North	170222_223822	22:38:23		Problems with the pilot guide, re-few the line
5042		South	170222_225601	22:56:02	23:08:53	All complete
5041		North	170222_231132	23:11:33	23:24:35	All complete
5040		South	170222_232715	23:27:15	23:40:20	All complete
5039		North	170222_234326	23:43:27	23:56:31	All complete
5038		South	170222_235857	23:58:58	00:11:59	All complete
5037		North	170222_001443	00:14:43	00:27:31	All complete
5015		South	170222_003236	00:32:37	00:40:02	All complete

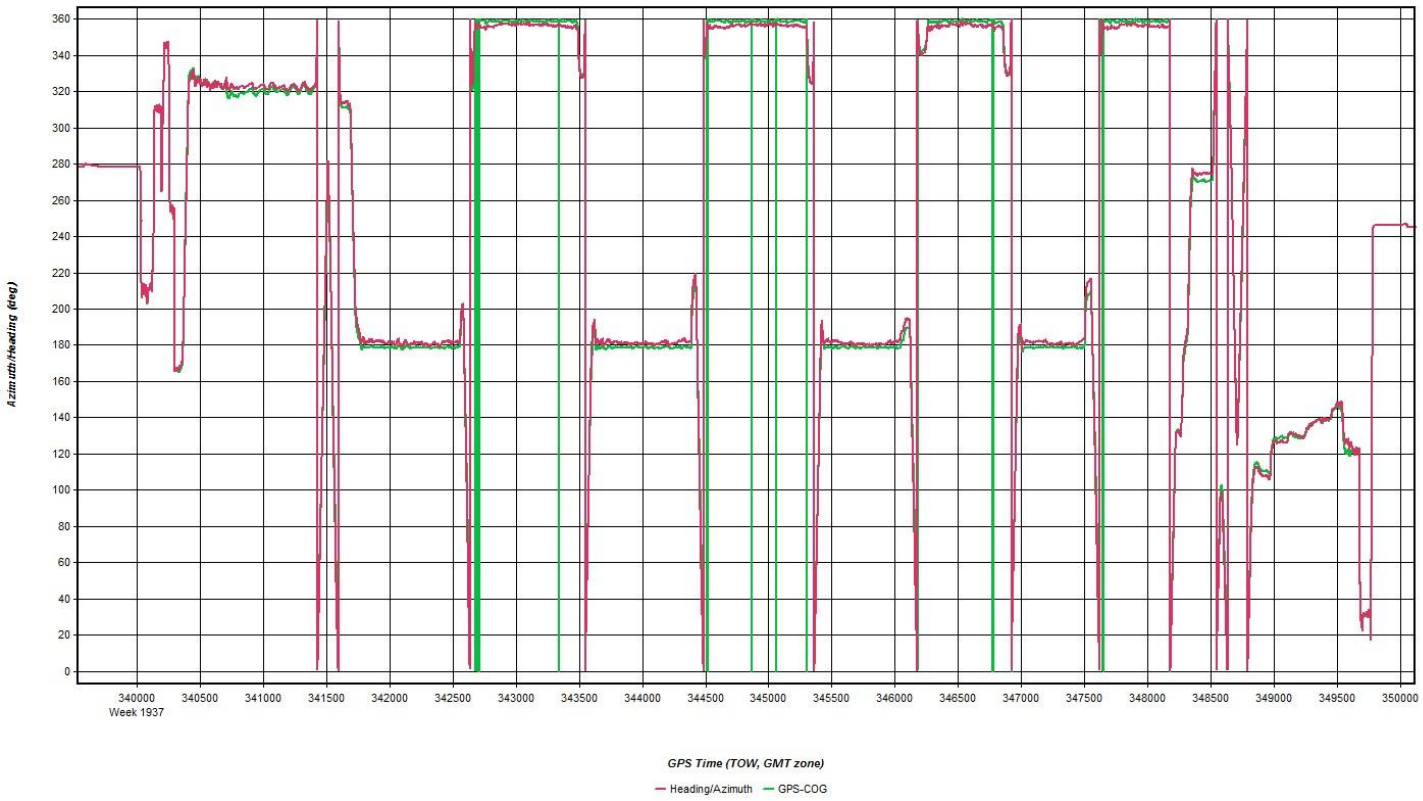
SUN ANGLE @Start: @End: @Peak:	Clear skies Sats and DOPS averaged 18 and 1.2 An air start was required for this mission, the CORS station in Livingston was used for the KAR turns. The antenna height for the back up base station was 1.701m to the ARP.

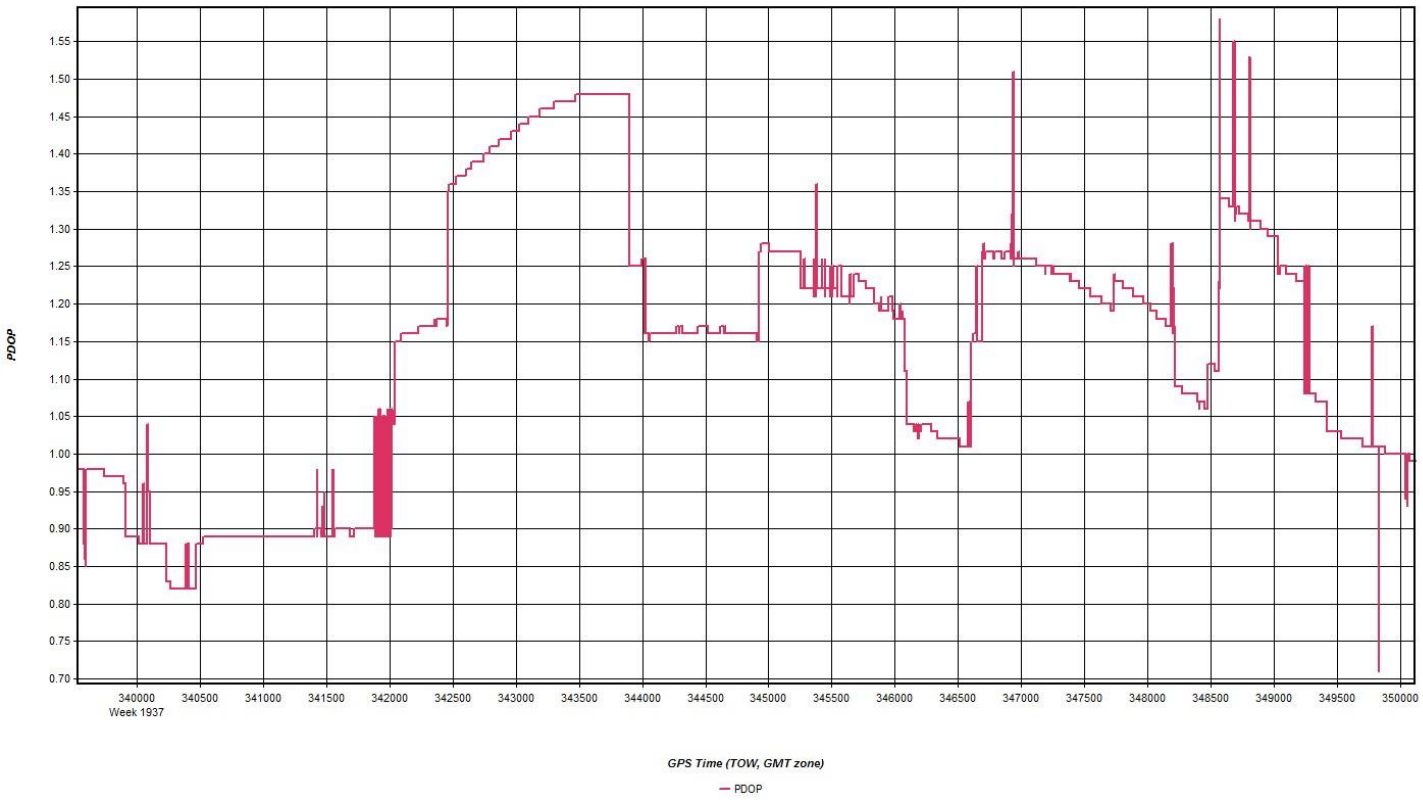
Feb 22, 2017-B (N246MP, SN8227)

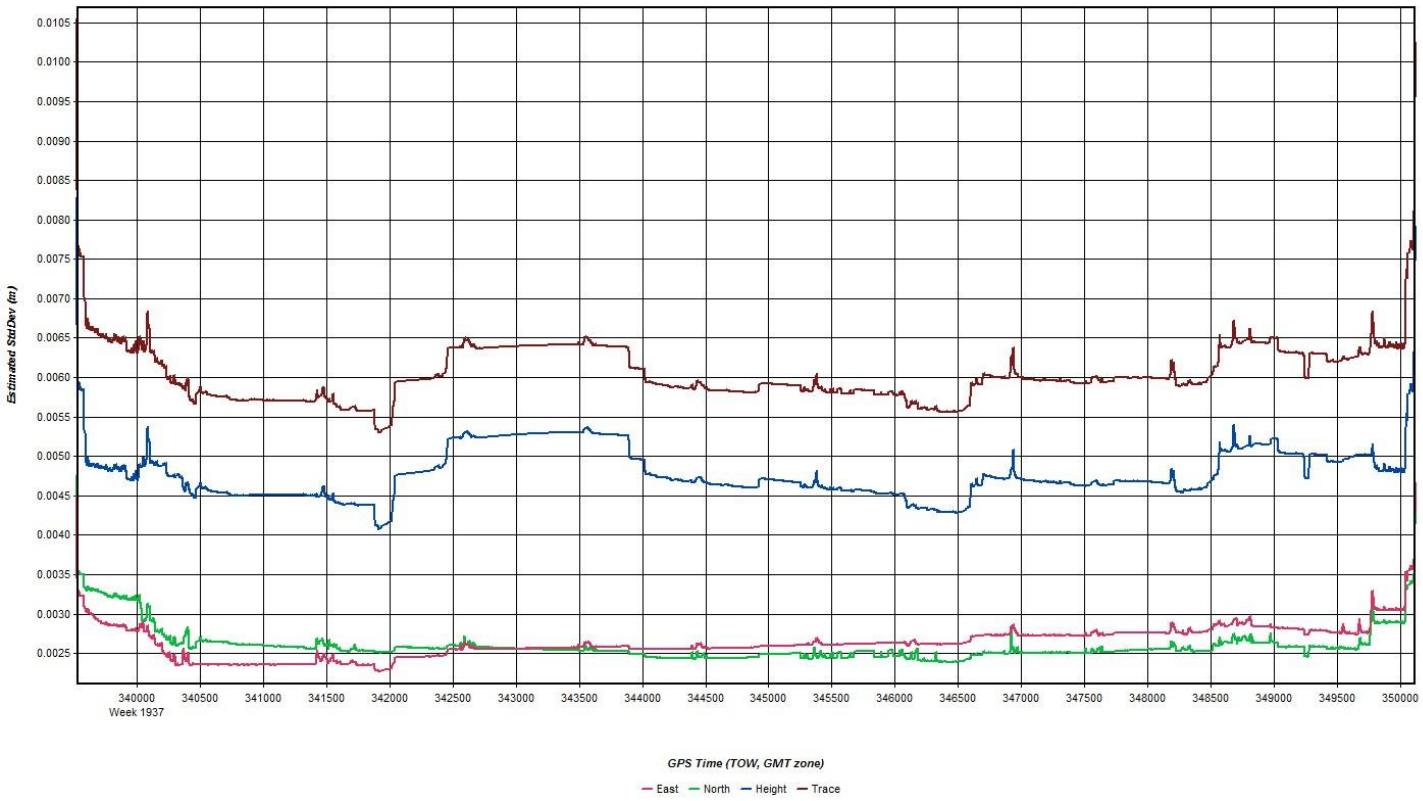


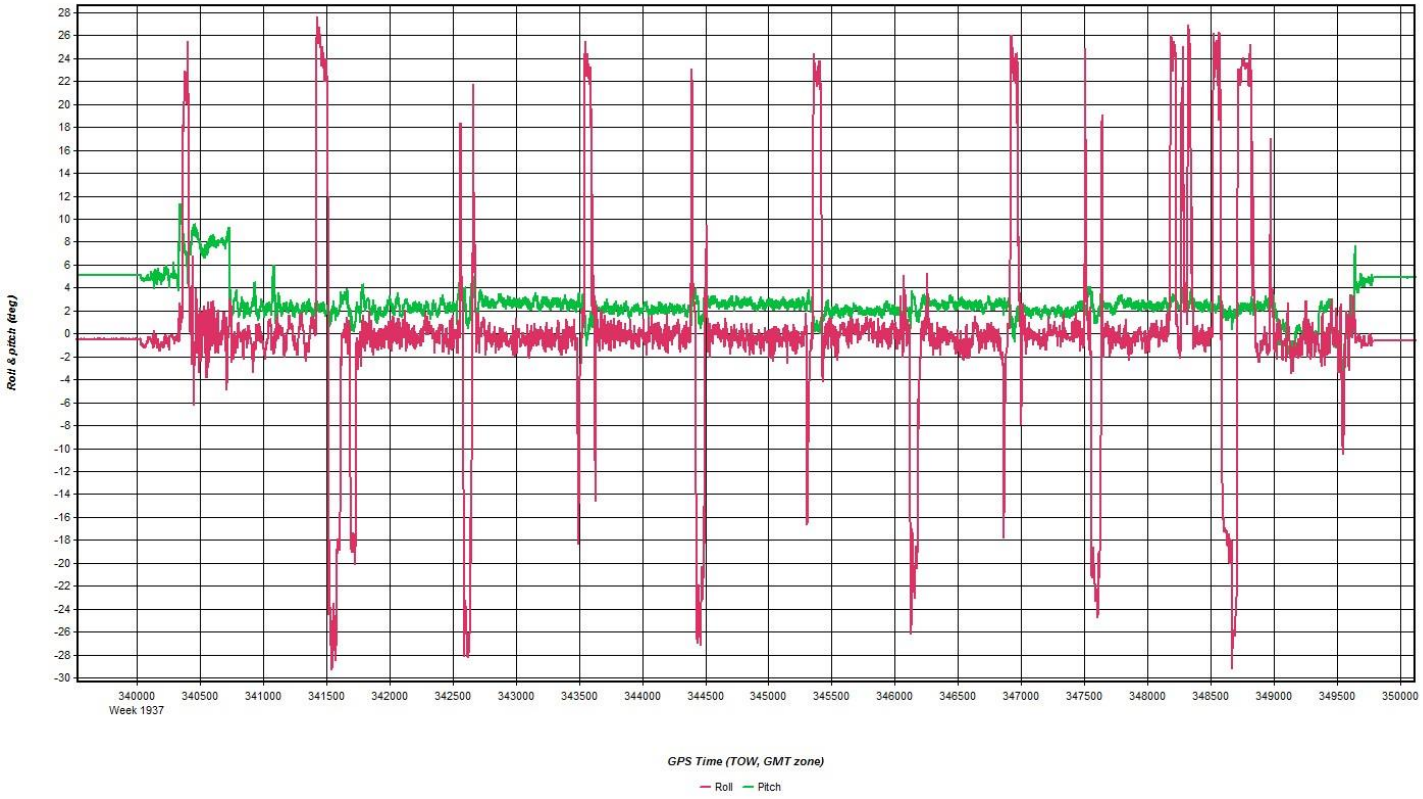

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

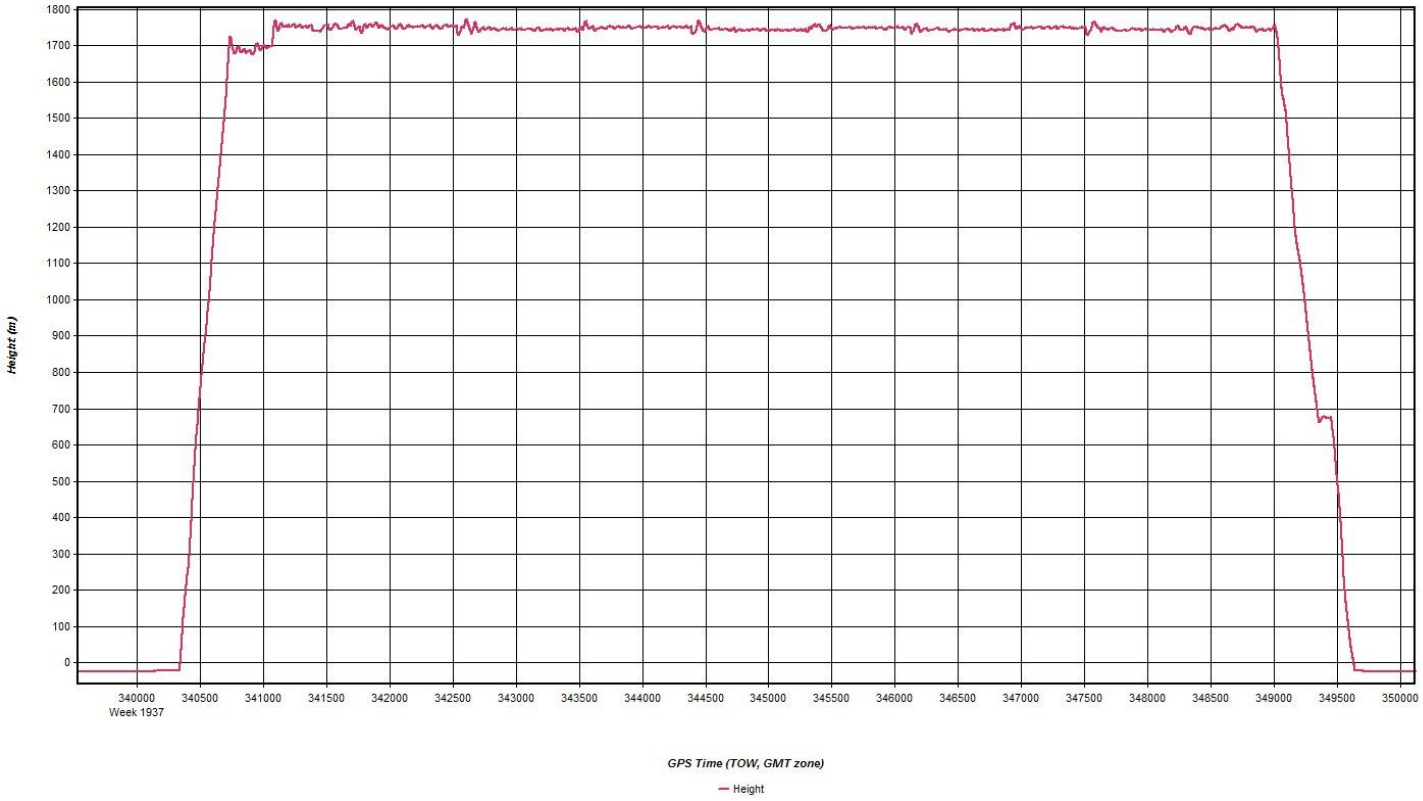

Separation (m)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
East
North
Up

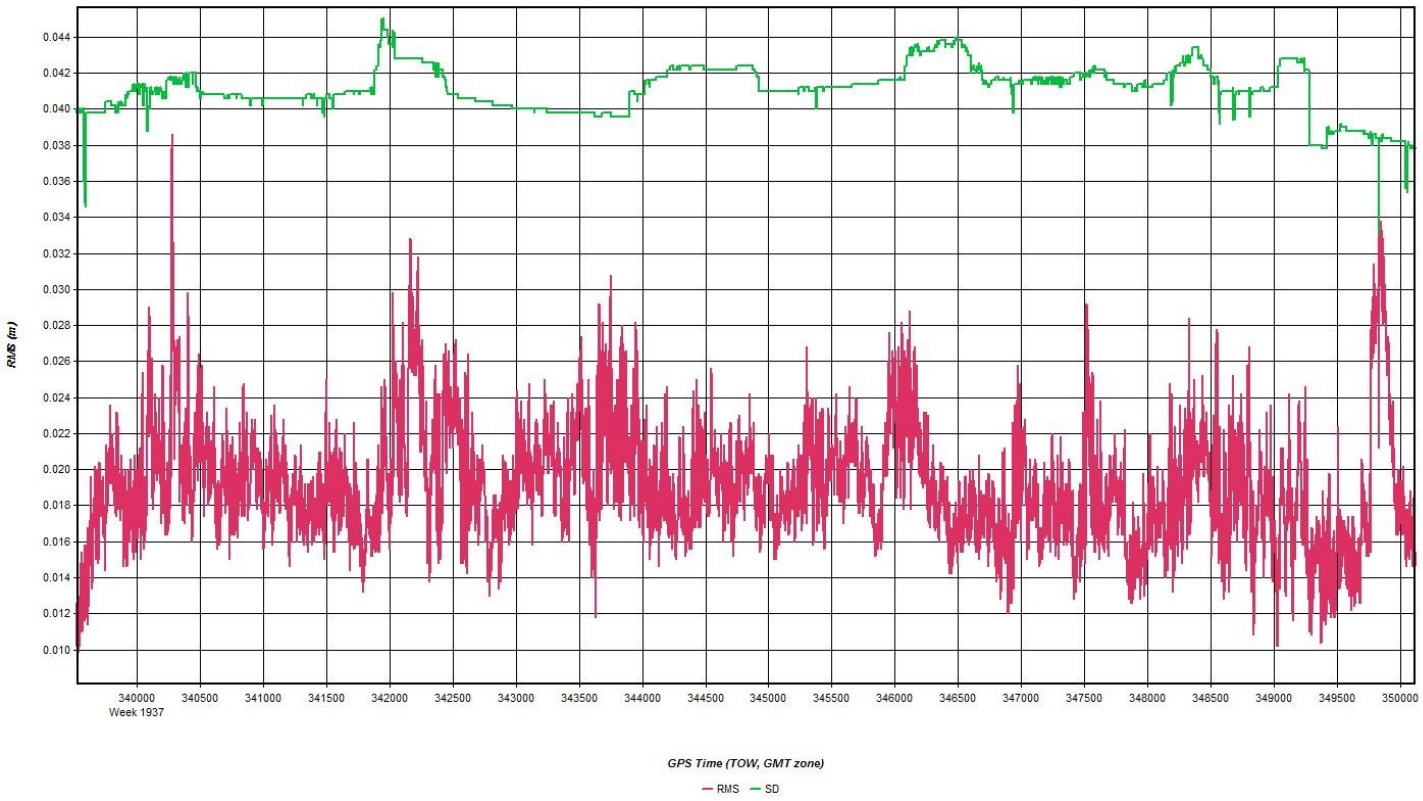

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

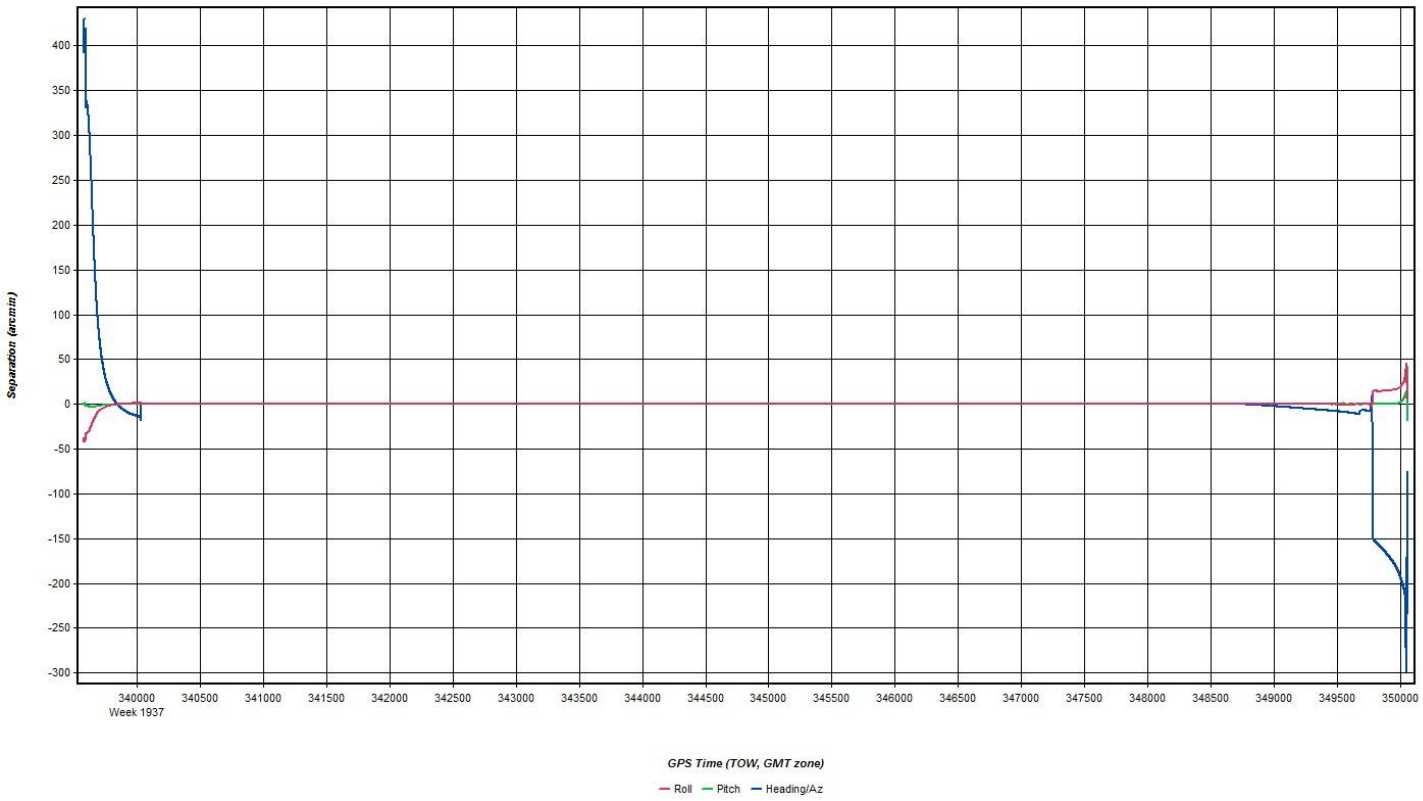

PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
PDOP

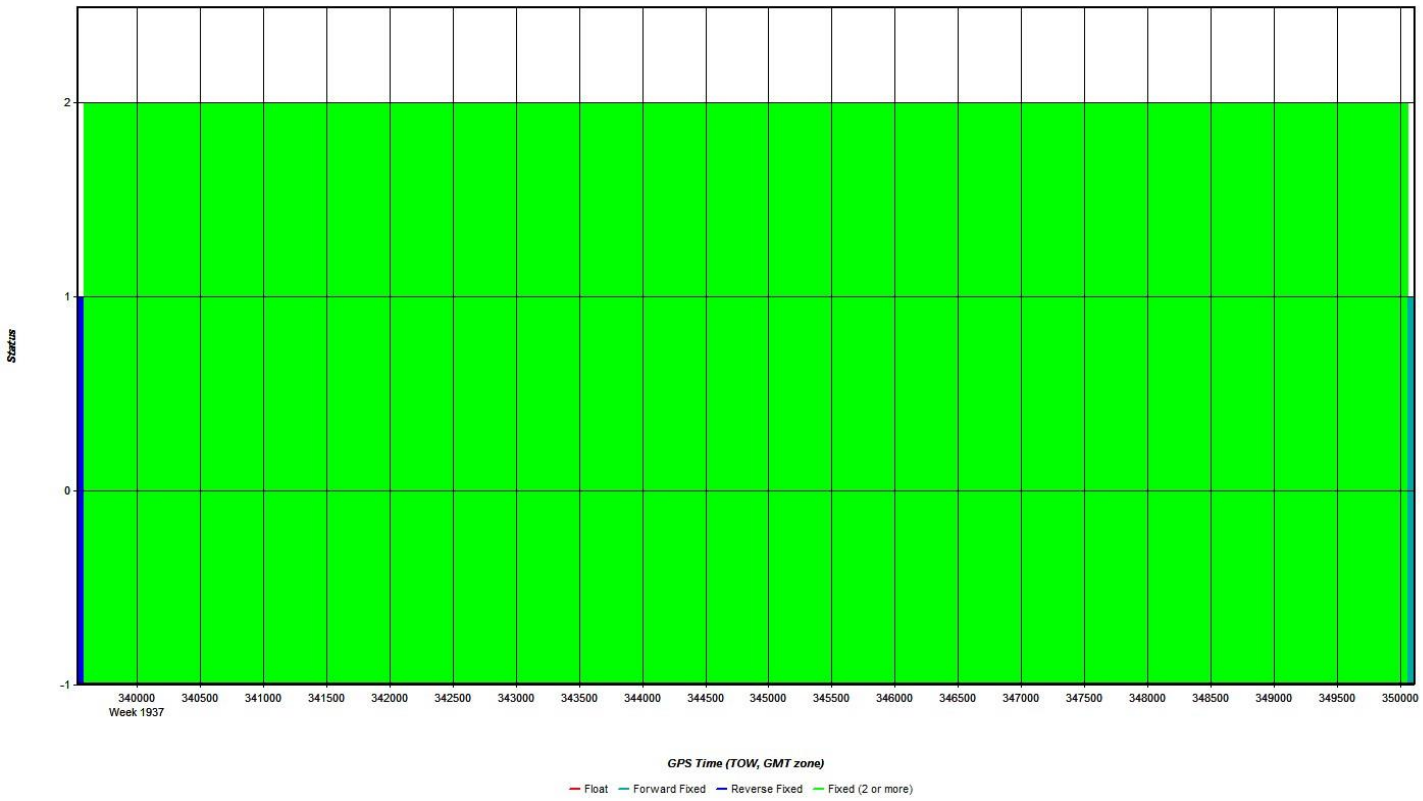

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

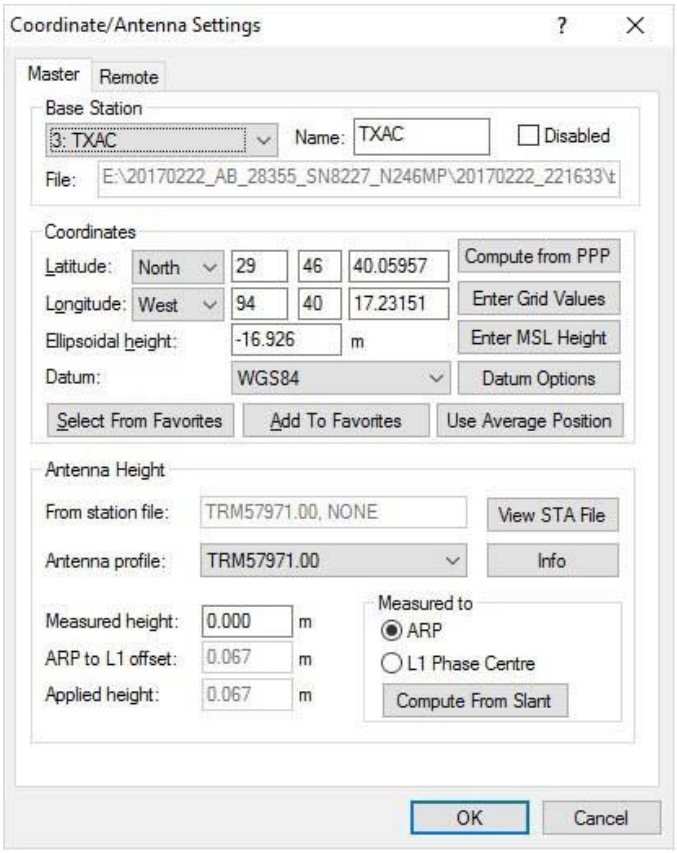

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
Roll
Pitch

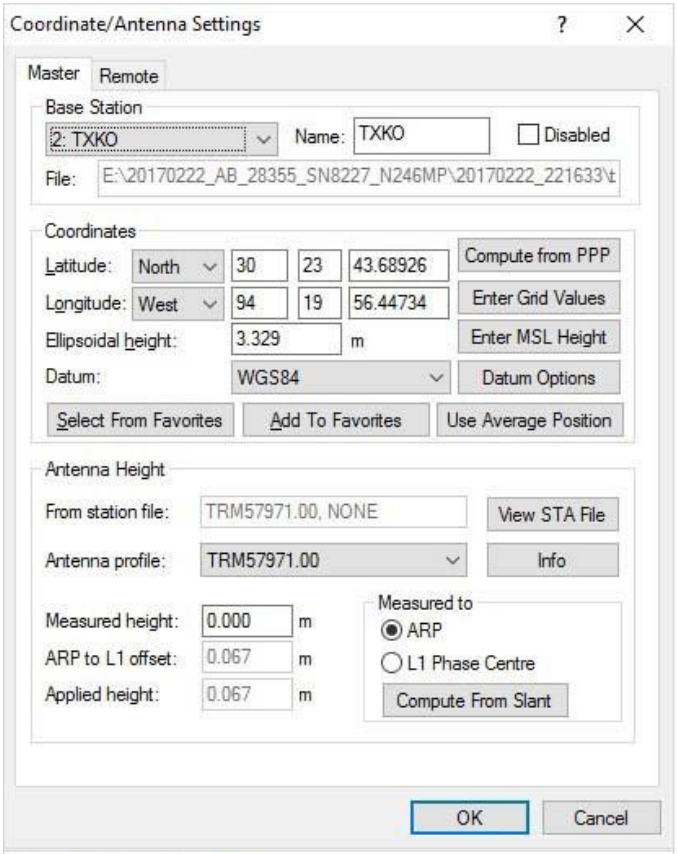

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
Height

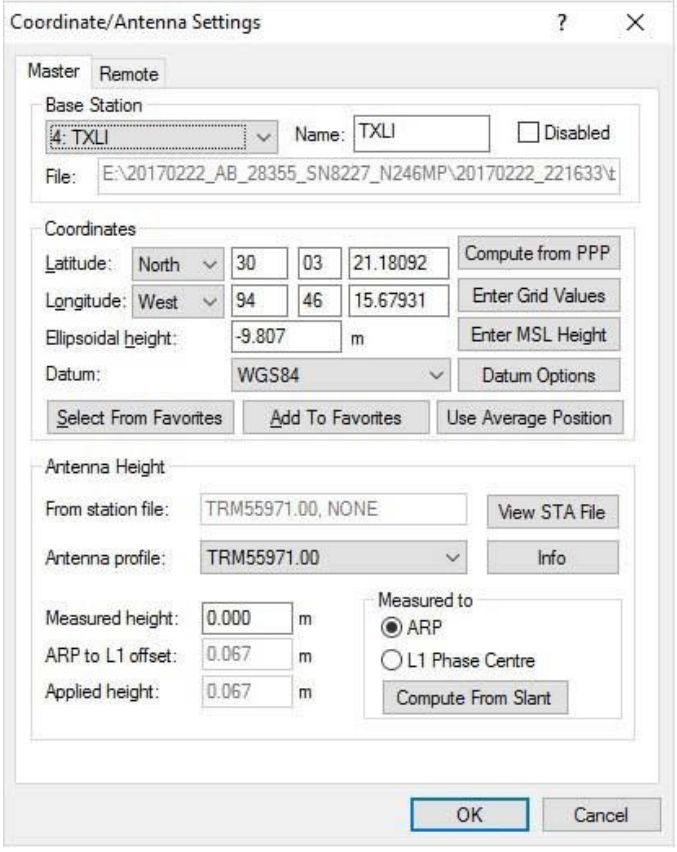

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
RMS
SD

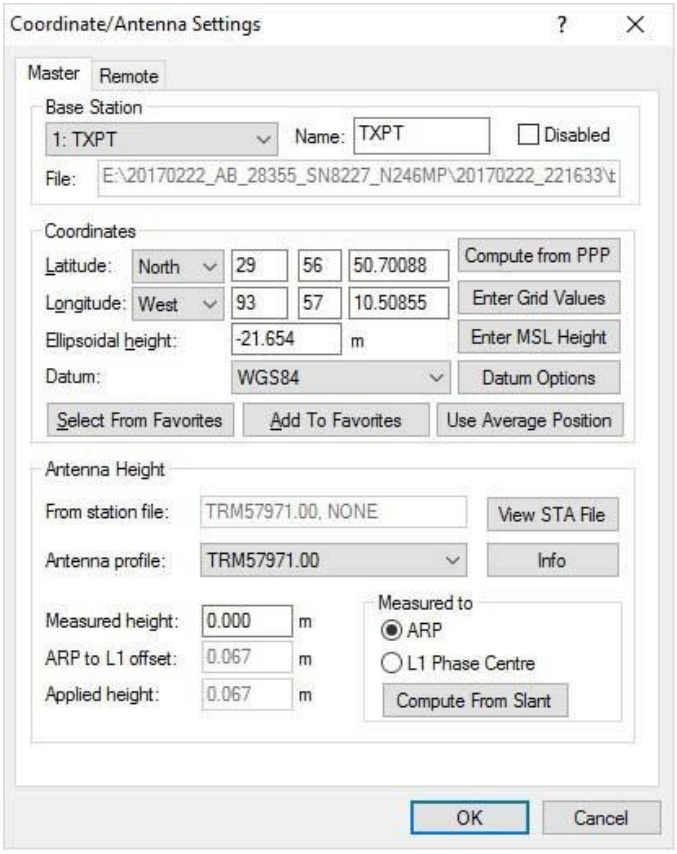

Separation (arcmin)
400
350
300
250
200
150
100
50
0
-50
-100
-150
-200
-250
-300
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
340000
Week 1937
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
348000
348500
349000
349500
350000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

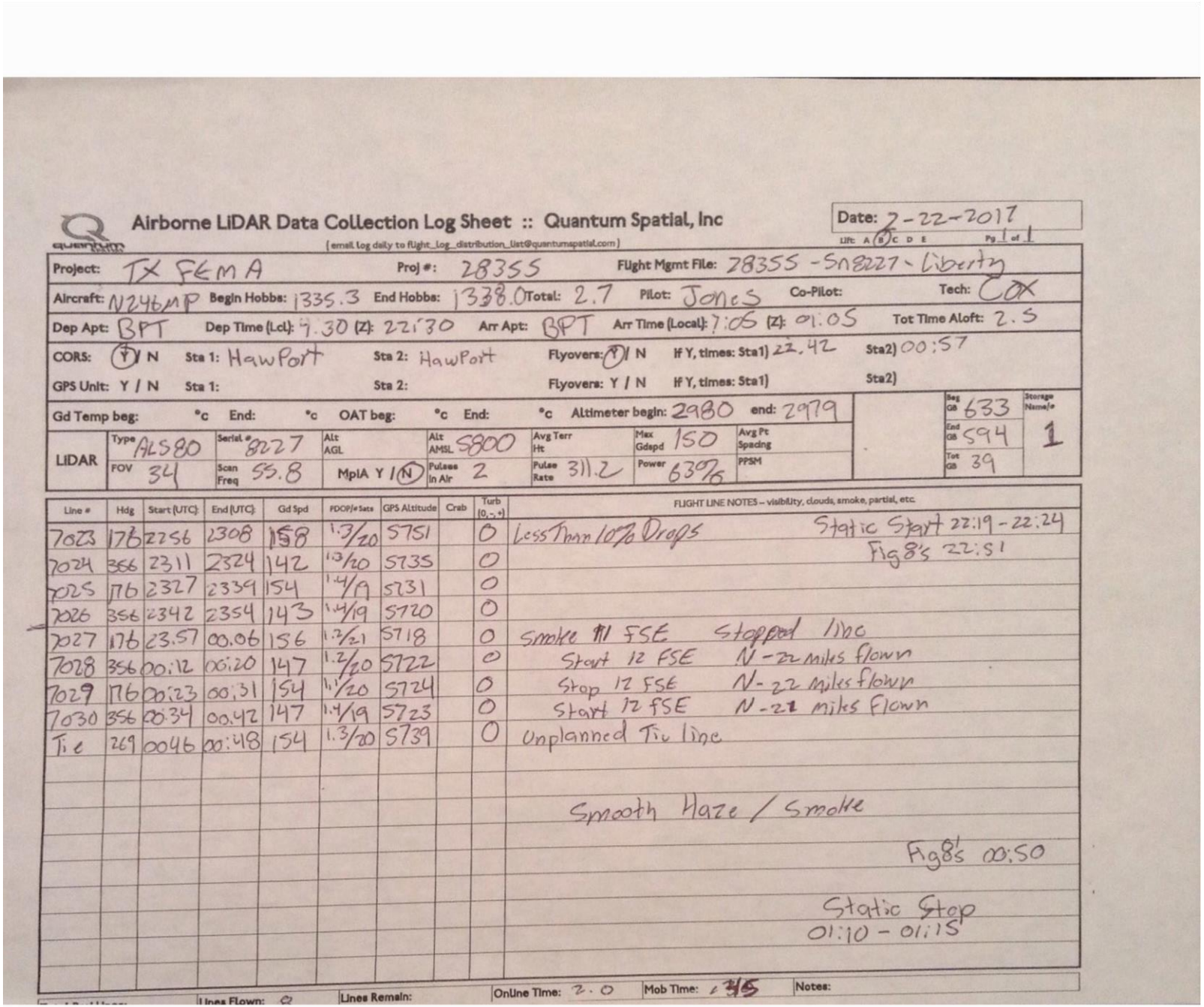

Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXAC
Name:
TXAC
Disabled
File:
E:\20170222_AB_28355_SN8227_N246MP\20170222_221633\t
Coordinates
Latitude:
North
29
46
40.05957
Compute from PPP
Longitude:
West
94
40
17.23151
Enter Grid Values
Ellipsoidal height:
-16.926
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_221633\t
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXLI
Name: TXLI
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_221633\t
Coordinates
Latitude: North 30 03 21.18092
Longitude: West 94 46 15.67931
Ellipsoidal height: -9.807 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\20170222_AB_28355_SN8227_N246MP\20170222_221633\t
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_List@quantumspatial.com)

Date: 7-22-2017 Lift: A B C D E Pg 1 of 1

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355 - SN8227 - Liberty

Aircraft: N246MP Begin Hobbs: 1335.3 End Hobbs: 1338.0 Total: 2.7 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 9.30 (Z): 22:30 Arr Apt: BPT Arr Time (Local): 7:05 (Z): 01:05 Tot Time Aloft: 2.5

CORS: (Y) / N Sta 1: HawPort Sta 2: HawPort Flyovers: (Y) / N If Y, times: Sta1) 22.42 Sta2) 00:57

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 2980 end: 2979

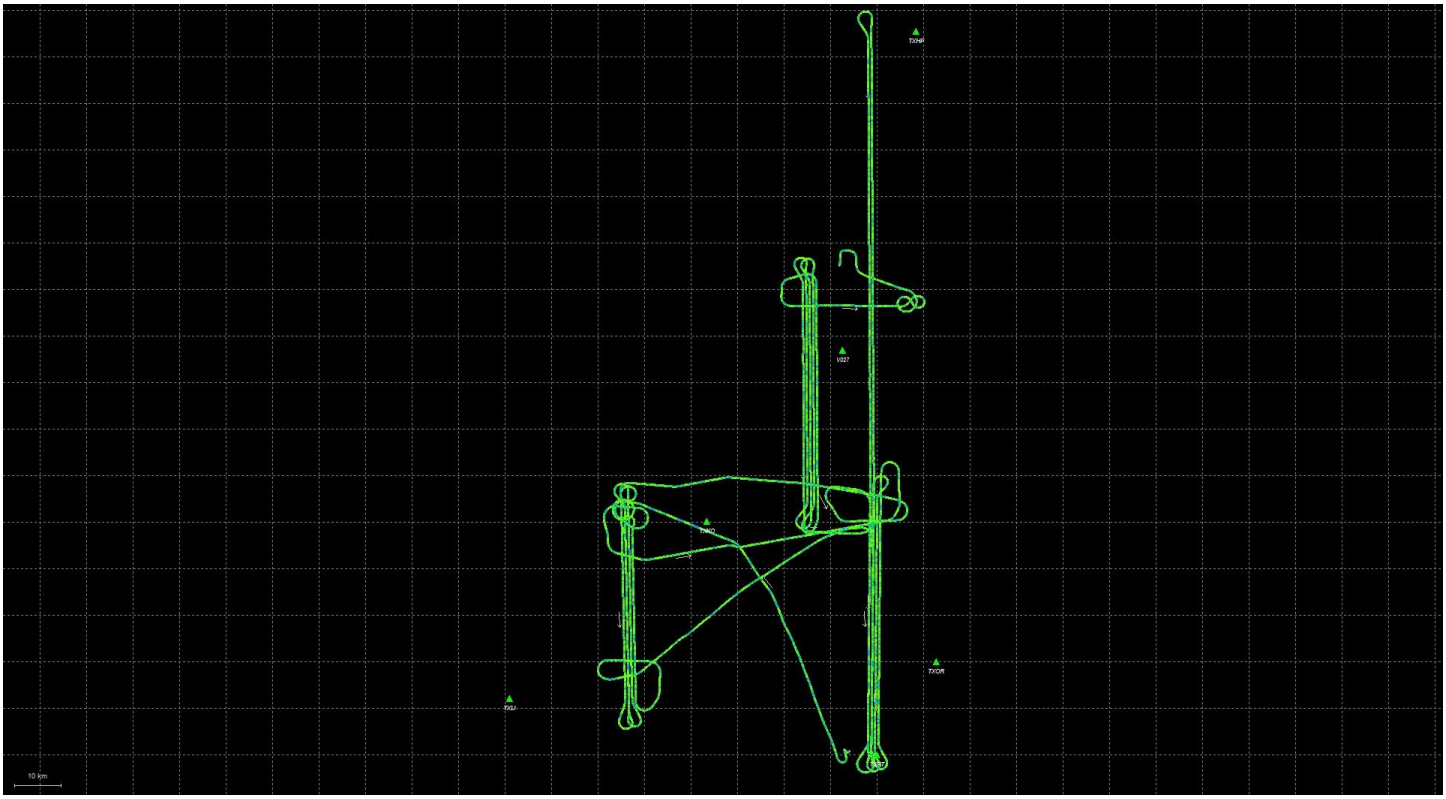
LiDAR	Type ALS80	Serial # 8227	Alt AGL	Alt AMSL 5800	Avg Terr Ht	Max Gdspd 150	Avg Pt Spacing
	FOV 34	Scan Freq 55.8	MpIA Y / (N)	Pulses In Air 2	Pulse Rate 311.2	Power 63%	PPSM

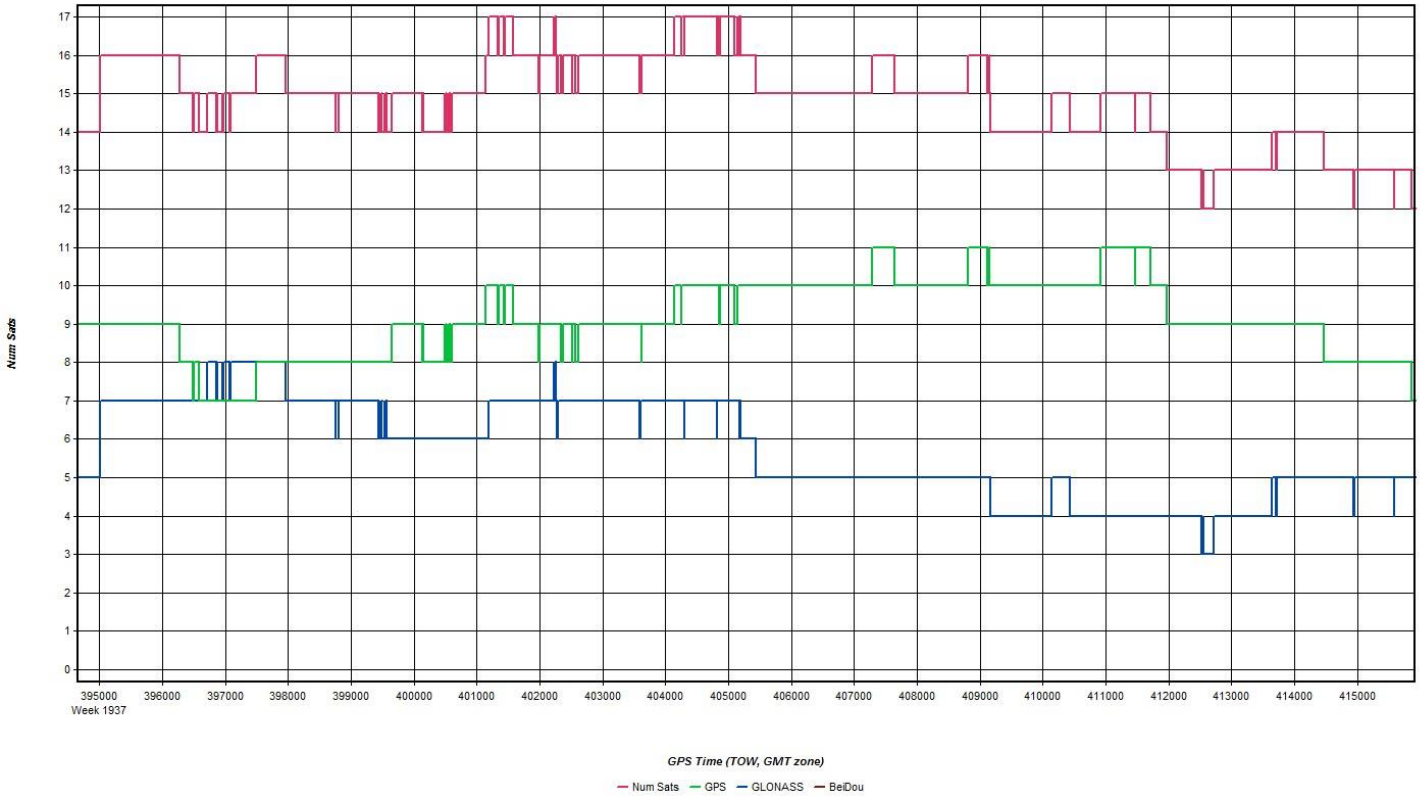
Seq GB	End GB	Tot GB	Storage Name/#
633	594	39	1

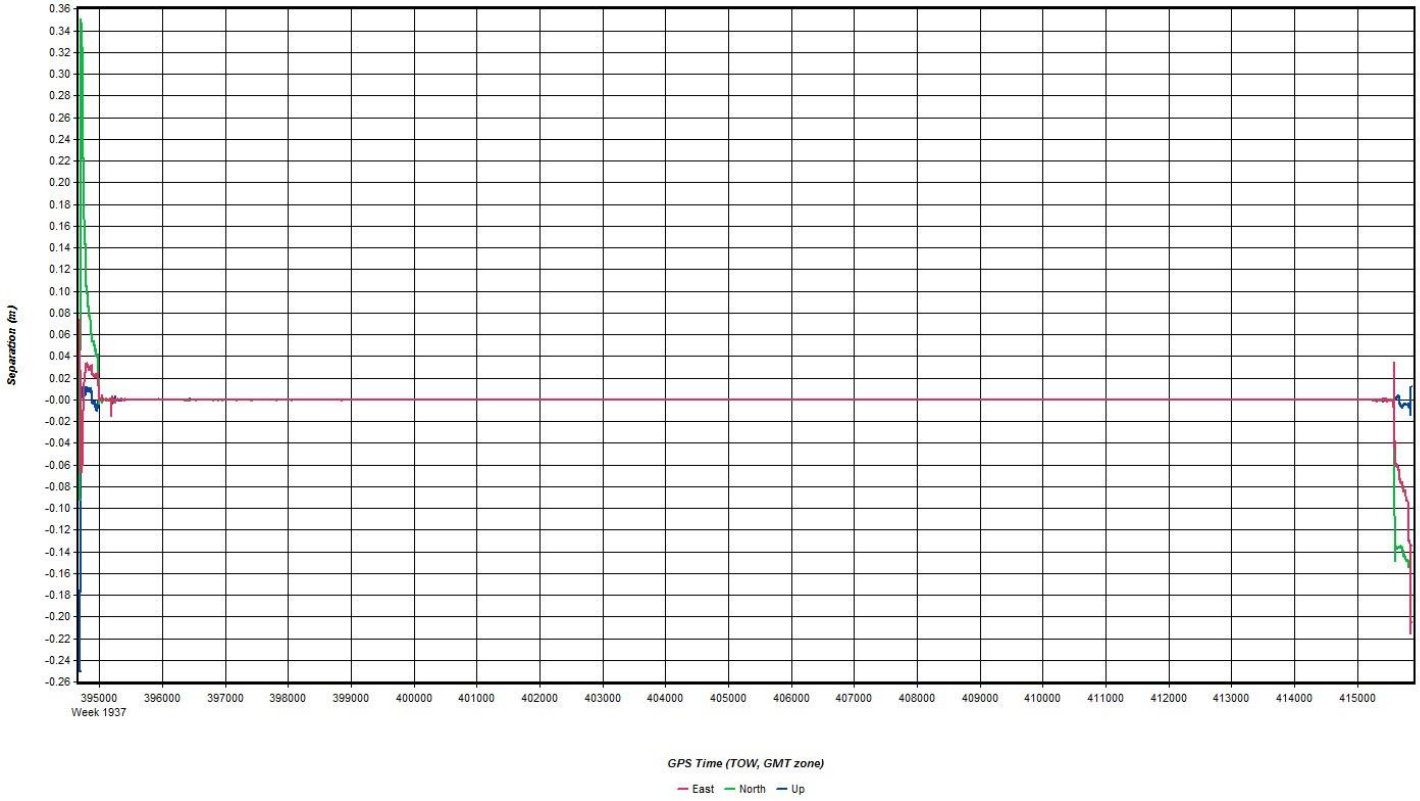
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
7023	176	2256	2308	158	1.3/20	5751		0	Less Than 10% Drops — Static Start 22:19 - 22:24
7024	356	2311	2324	142	1.3/20	5735		0	Fig 8's 22:51
7025	176	2327	2339	154	1.4/19	5731		0	
7026	356	2342	2354	143	1.4/19	5720		0	
7027	176	23.57	00.06	156	1.3/21	5718		0	Smoke #1 FSE Stopped Line
7028	356	00:12	00:20	147	1.2/20	5722		0	Start 12 FSE N - 22 miles flown
7029	176	00:23	00,31	154	1.1/20	5724		0	Stop 12 FSE N - 22 miles flown
7030	356	00:34	00.42	147	1.4/19	5723		0	Start 12 FSE N - 22 miles Flown
Tie	269	0046	00:48	154	1.3/20	5739		0	Unplanned Tie line
									Smooth Haze / Smoke
									Fig 8's 00:50
									Static Stop 01:10 - 01:15

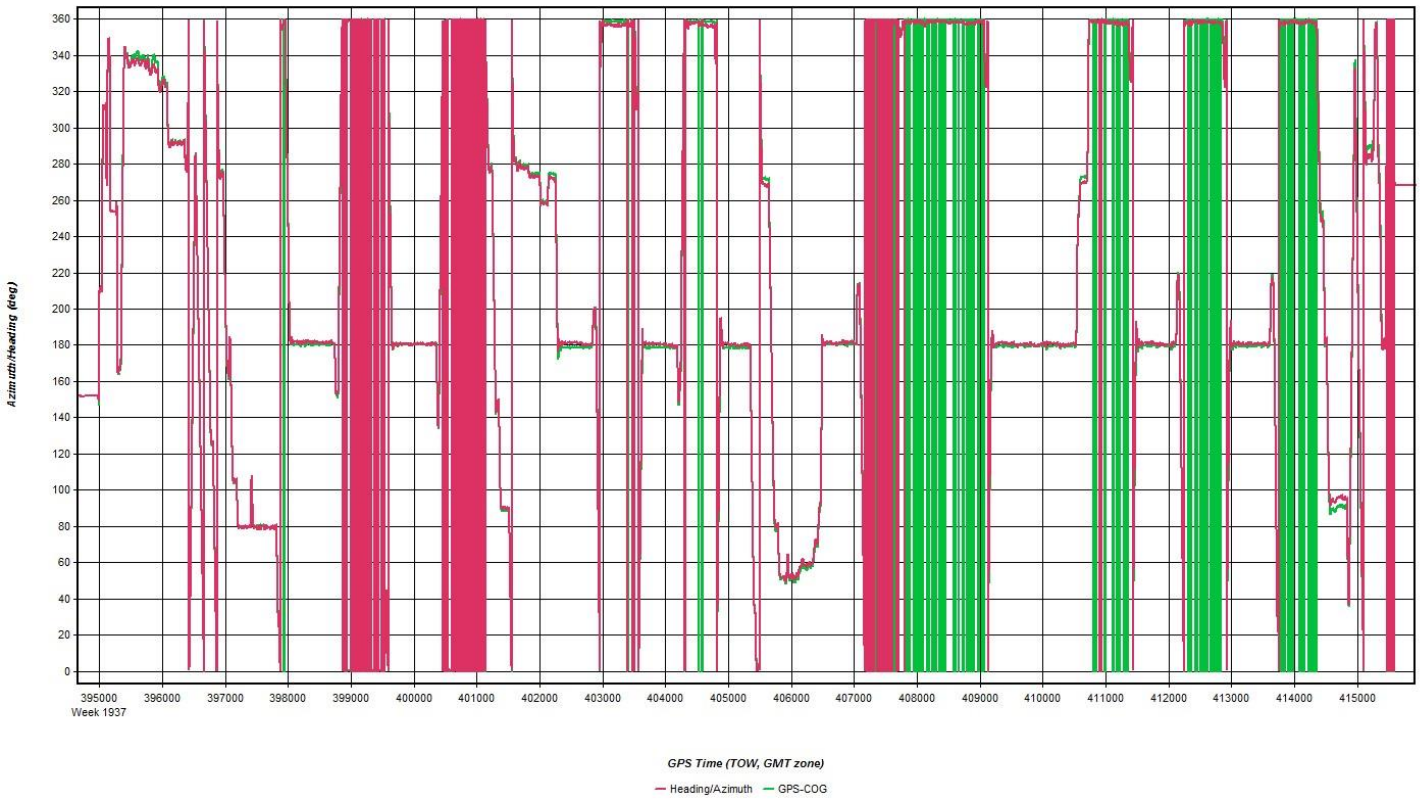
Lines Flown: Lines Remain: OnLine Time: 2.0 Mob Time: 1.45 Notes:

Feb 23, 2017-A (N246MP, SN8227)

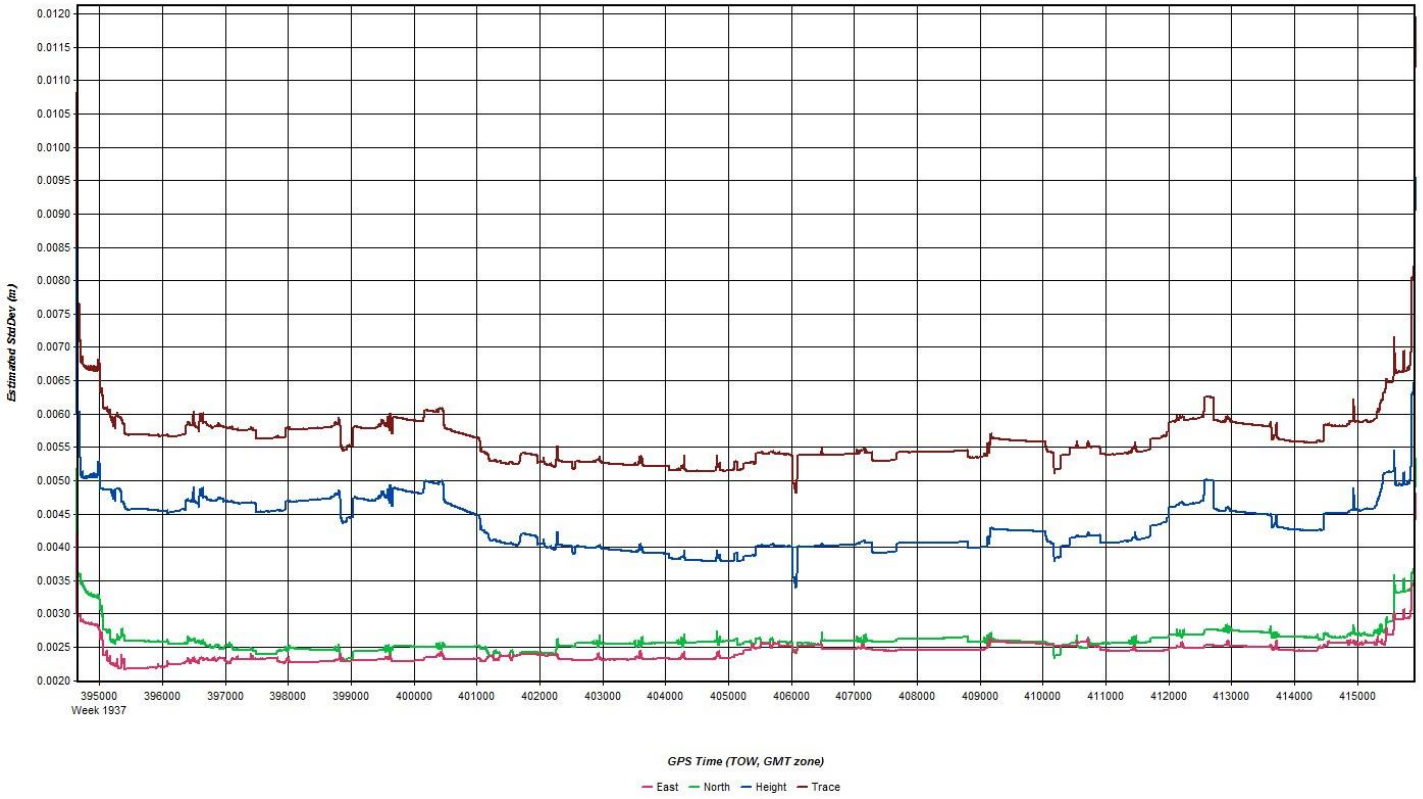


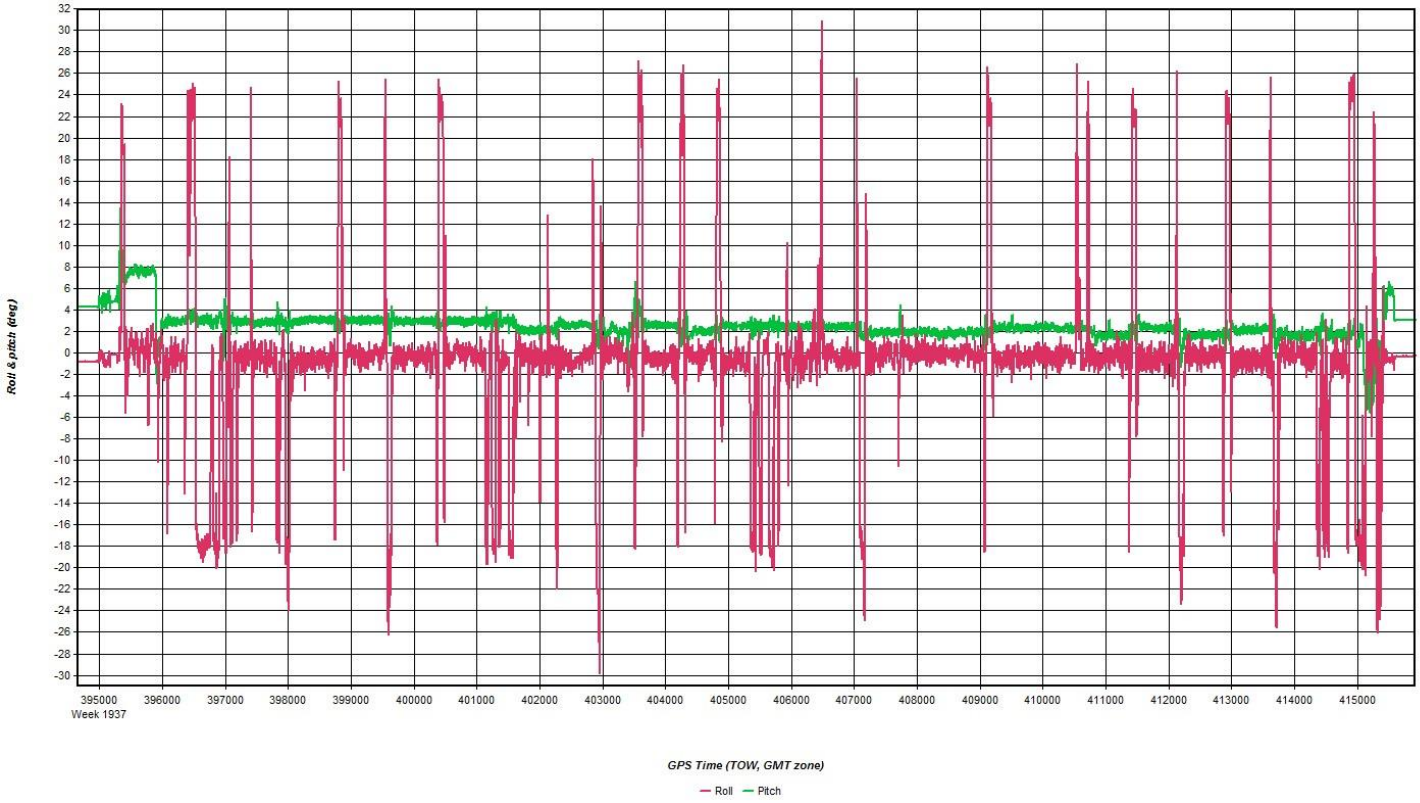

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

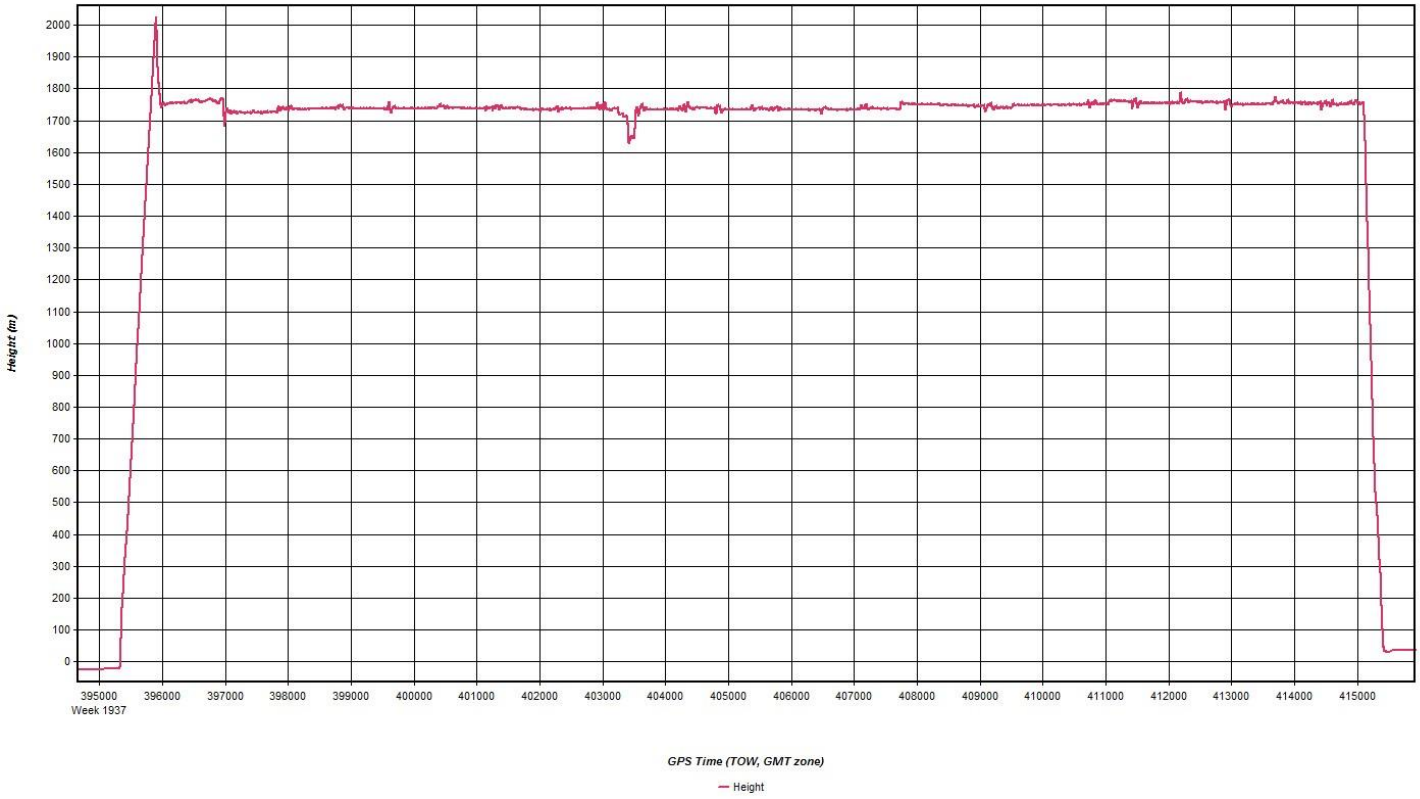

Separation (m)
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
East
North
Up

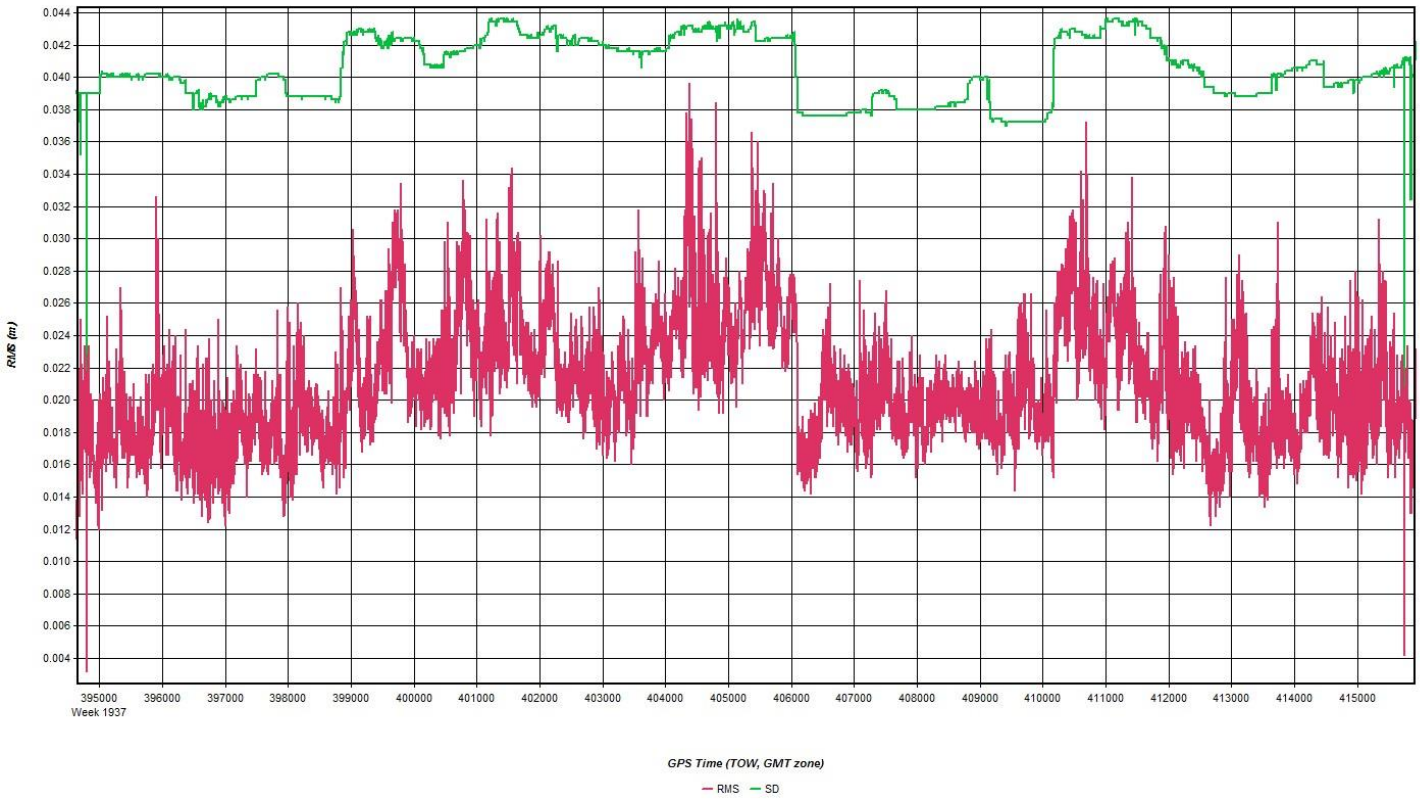

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

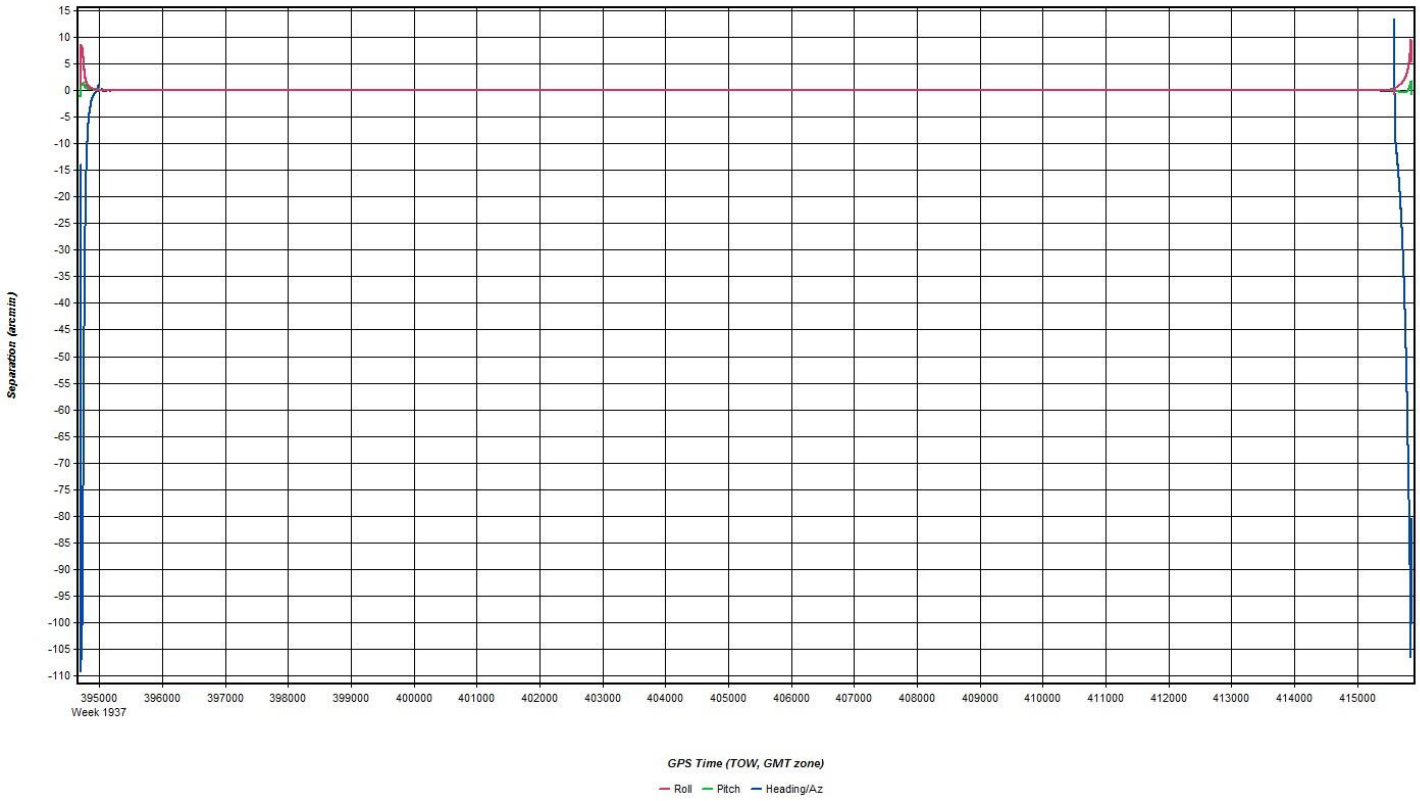

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
PDOP

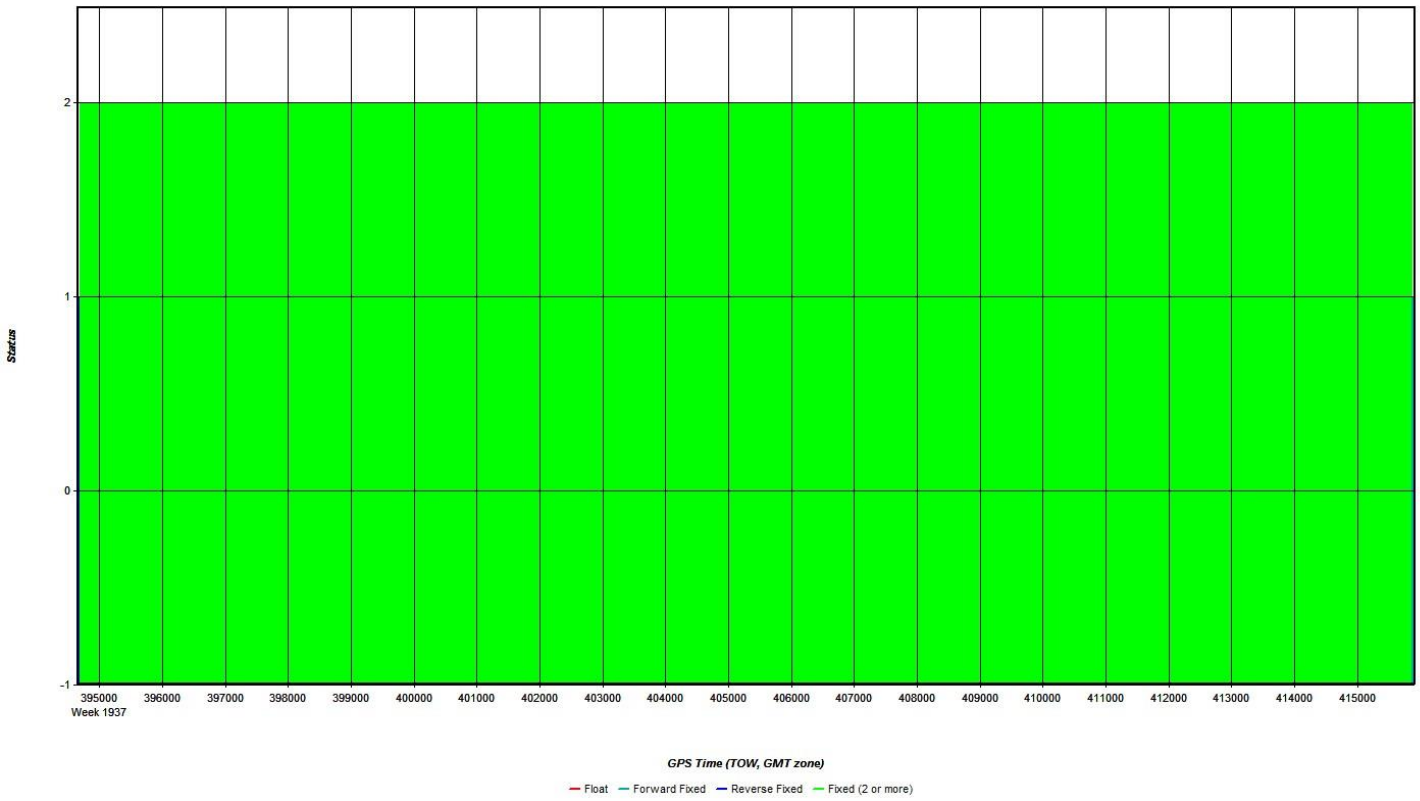

Estimated StdDev (m)
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

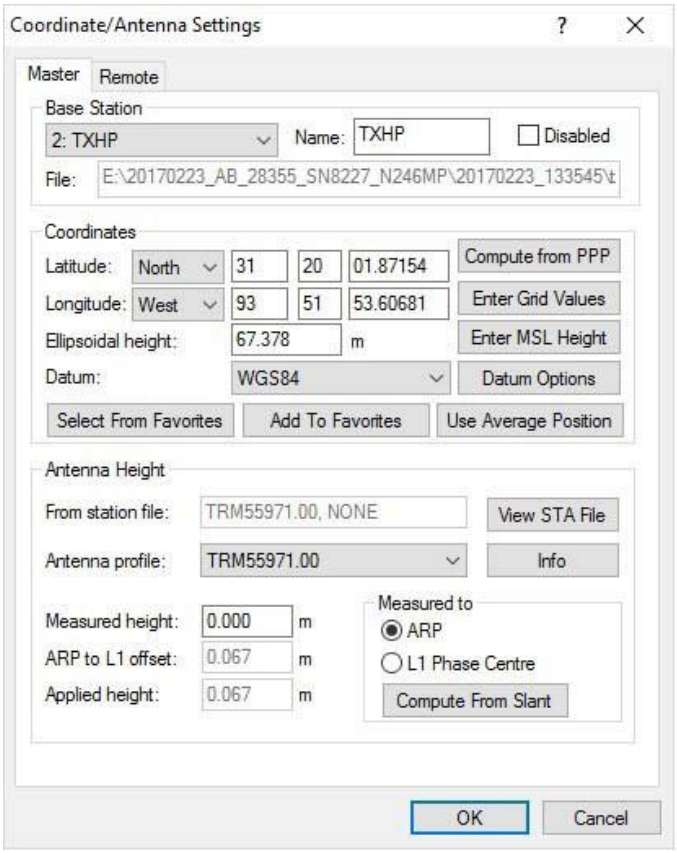

Roll & pitch (deg)
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
Roll
Pitch

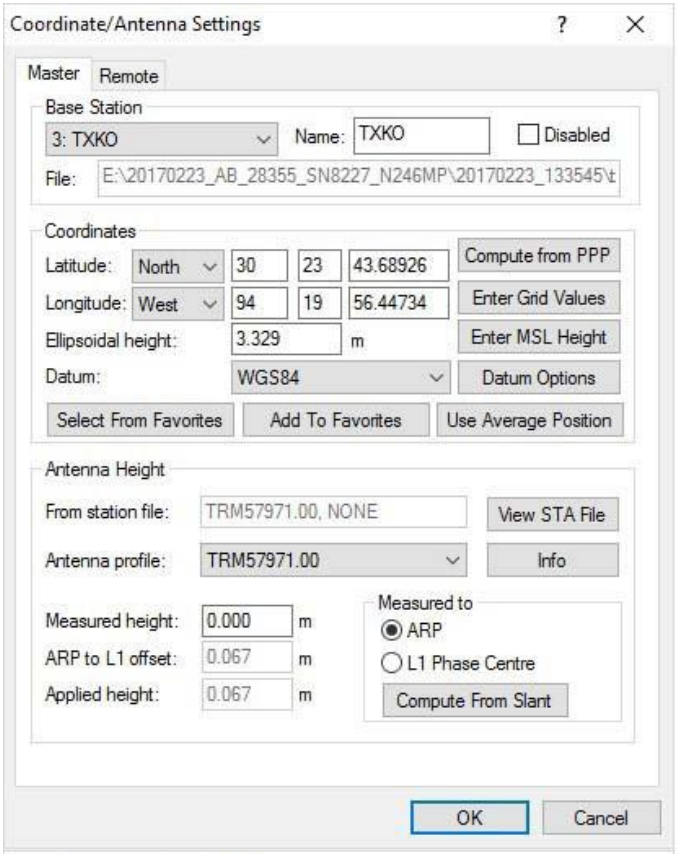

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
Height

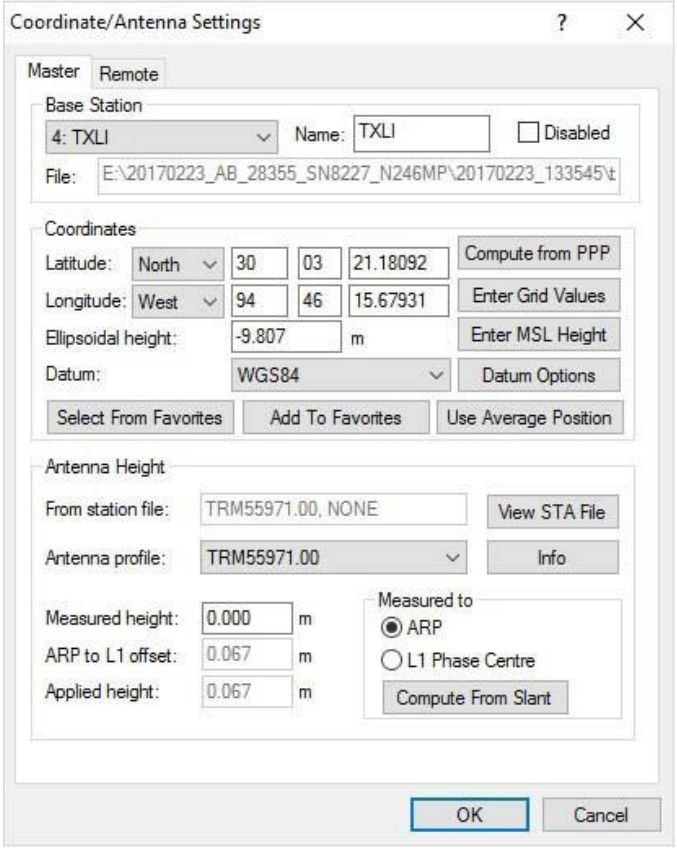

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
RMS
SD

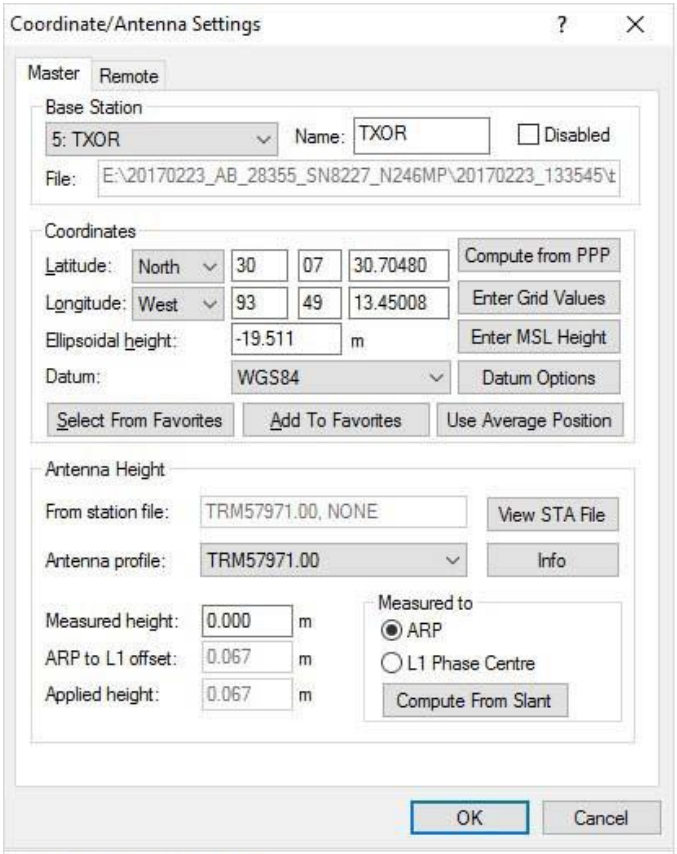

Separation (arcmin)
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90
-95
-100
-105
-110
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

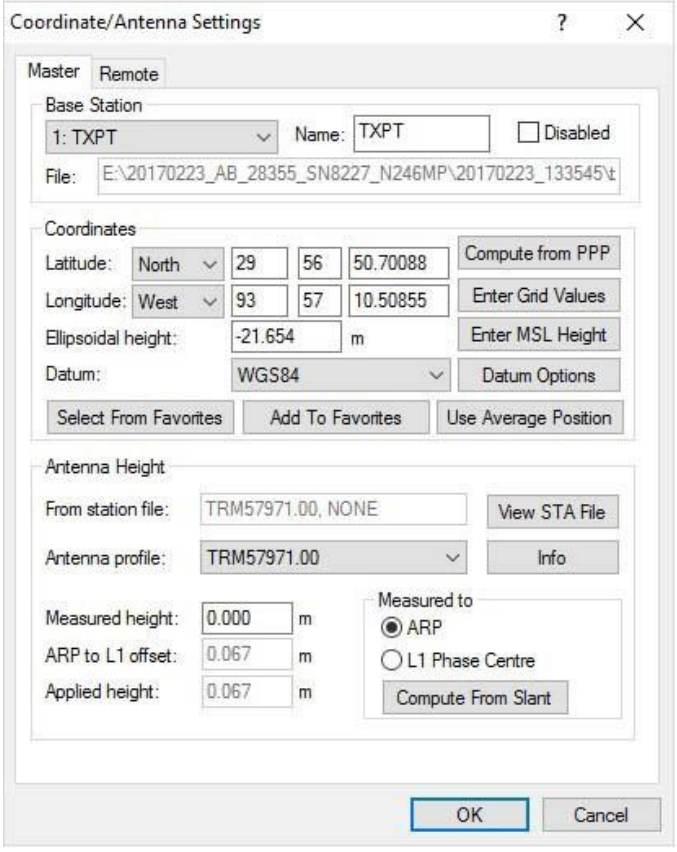

Status
2
1
0
-1
395000
Week 1937
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
415000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

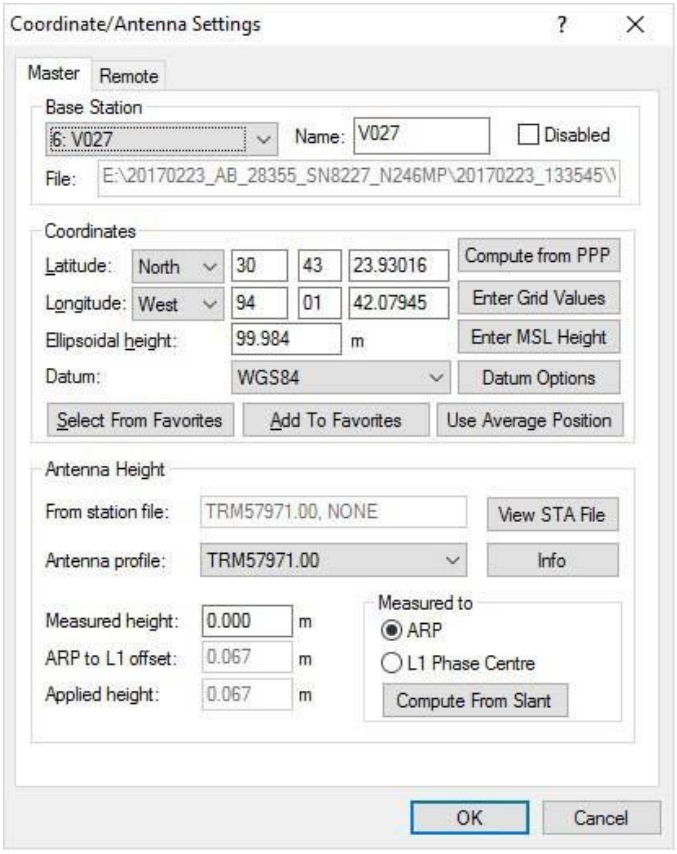

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXHP
Name:
TXHP
Disabled
File:
E:\20170223_AB_28355_SN8227_N246MP\20170223_133545\t
Coordinates
Latitude:
North
31
20
01.87154
Compute from PPP
Longitude:
West
93
51
53.60681
Enter Grid Values
Ellipsoidal height:
67.378
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM55971.00, NONE
View STA File
Antenna profile:
TRM55971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXKO
Name: TXKO
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_133545\t
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

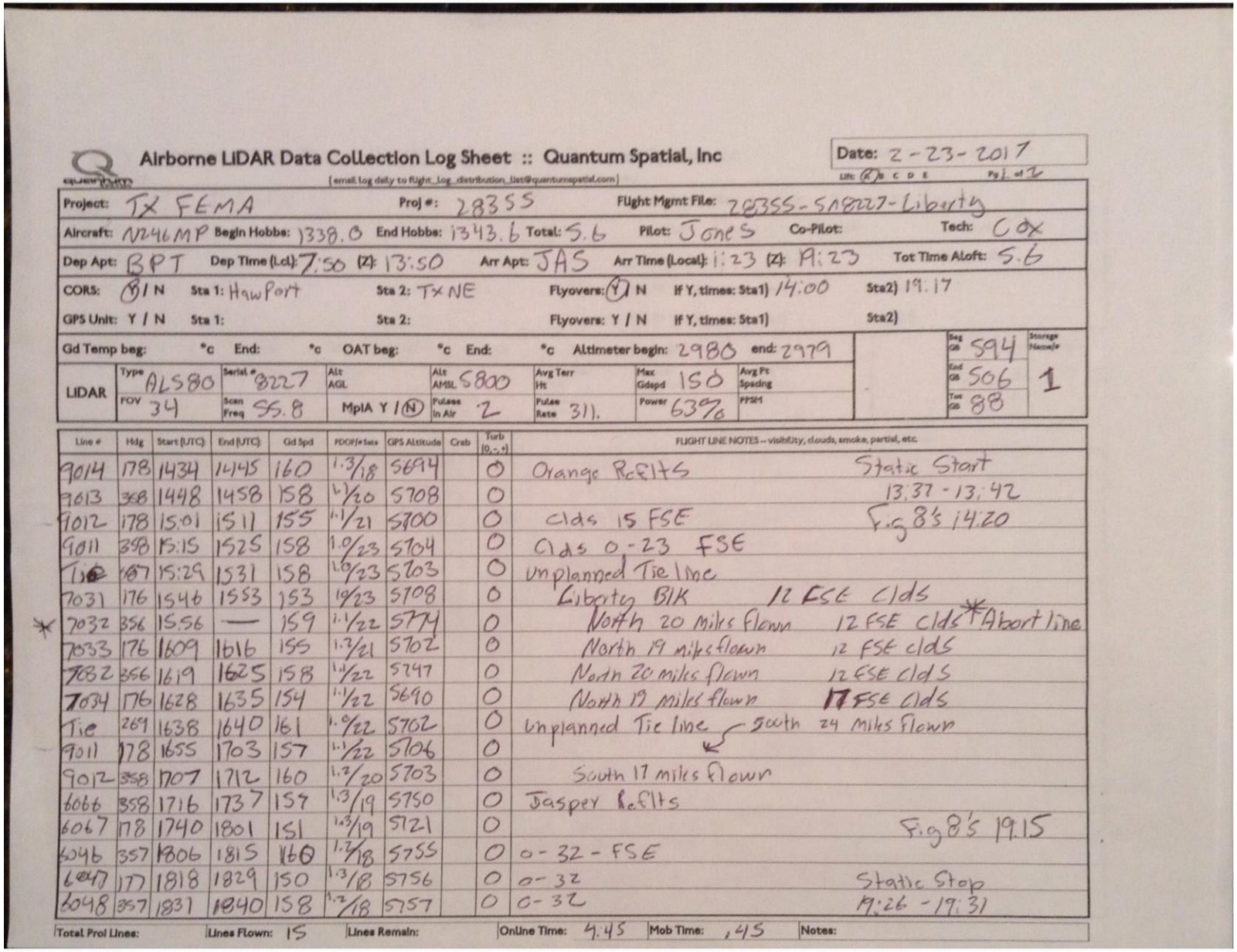

Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXLI
Name: TXLI
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_133545\t
Coordinates
Latitude: North 30 03 21.18092
Longitude: West 94 46 15.67931
Ellipsoidal height: -9.807 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: TXOR
Name: TXOR
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_133545\t
Coordinates
Latitude: North 30 07 30.70480
Longitude: West 93 49 13.45008
Ellipsoidal height: -19.511 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_133545\t
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
6: V027
Name:
V027
Disabled
File:
E:\20170223_AB_28355_SN8227_N246MP\20170223_133545\\
Coordinates
Latitude:
North
30
43
23.93016
Compute from PPP
Longitude:
West
94
01
42.07945
Enter Grid Values
Ellipsoidal height:
99.984
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-23-2017

Life: A B C D E Pg 1 of 2

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355-SA8227-Liberty

Aircraft: N246MP Begin Hobbs: 1338.0 End Hobbs: 1343.6 Total: 5.6 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 7:50 (Z): 13:50 Arr Apt: JAS Arr Time (Local): 1:23 (Z): A:23 Tot Time Aloft: 5.6

CORS: (Y) / N Sta 1: HawPort Sta 2: TX NE Flyovers: (Y) / N If Y, times: Sta1) 14:00 Sta2) 19.17

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

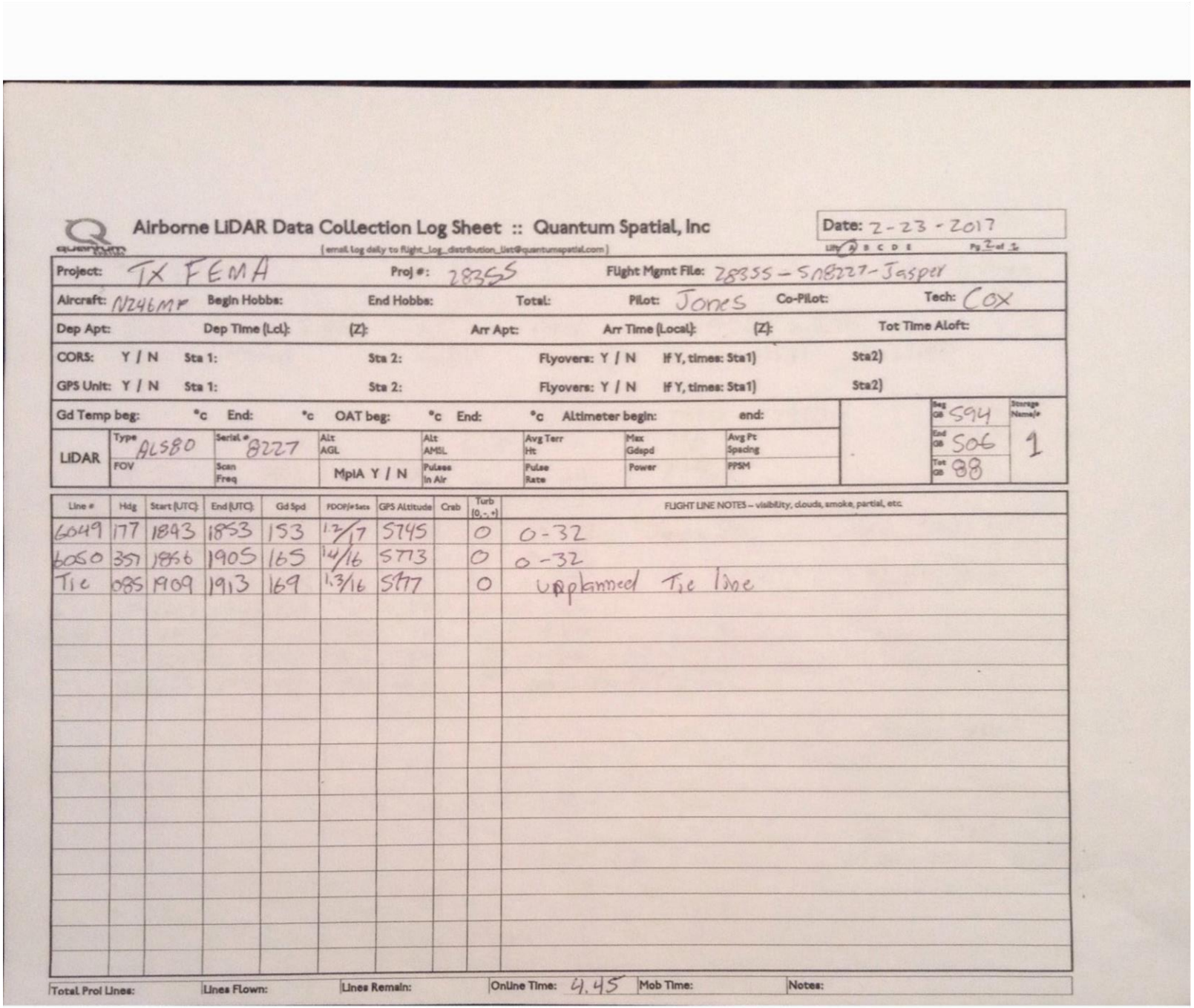
Gd Temp beg: °C End: °C OAT beg: °C End: °C Altimeter begin: 2980 end: 2979

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS80	8227		5800		150	
	FOV 34	Scan Freq 55.8	MpIA Y / (N)	Pulses In Air 2	Pulse Rate 311.	Power 63%	PPSM

Seq GB	End GB	Tot GB	Storage Name/#
594	506	88	1

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
9014	178	1434	1445	160	1.3/18	5694		0	Orange Refits — Static Start 13:37 - 13:42
9013	358	1448	1458	158	1.2/20	5708		0	
9012	178	15:01	1511	155	1.1/21	5700		0	clds 15 FSE — Fig 8's 14:20
9011	358	15:15	1525	158	1.0/23	5704		0	clds 0-23 FSE
Tie	267	15:29	1531	158	1.0/23	5703		0	unplanned Tie line
7031	176	1546	1553	153	1.0/23	5708		0	Liberty BIK — 12 FSE clds
* 7032	356	15.56	—	159	1.1/22	5774		0	North 20 miles flown — 12 FSE clds *Abort line
7033	176	1609	1616	155	1.3/21	5702		0	North 19 miles flown — 12 FSE clds
7032	356	1619	1625	158	1.1/22	5747		0	North 20 miles flown — 12 FSE clds
7034	176	1628	1635	154	1.1/22	5690		0	North 19 miles flown — 17 FSE clds
Tie	269	1638	1640	161	1.0/22	5702		0	unplanned Tie line — South 24 miles flown
9011	178	1655	1703	157	1.1/22	5706		0	
9012	358	1707	1712	160	1.2/20	5703		0	South 17 miles flown
6066	358	1716	1737	157	1.3/19	5750		0	Jasper Refits
6067	178	1740	1801	151	1.3/19	5721		0	Fig 8's 19.15
6046	357	1806	1815	160	1.2/18	5755		0	0-32-FSE
6047	177	1818	1829	150	1.3/18	5756		0	0-32
6048	357	1831	1840	158	1.2/18	5757		0	0-32 — Static Stop 19:26 - 19:31

Total Prol Lines: Lines Flown: 15 Lines Remain: OnLine Time: 4.45 Mob Time: .45 Notes:



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-23-2017

(email log daily to flight_log_distribution_list@quantumspatial.com)

Life: A B C D E Pg 2 of 2

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355 – SN8227 – Jasper

Aircraft: N246MF Begin Hobbs: End Hobbs: Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: Dep Time (Lcl): (Z): Arr Apt: Arr Time (Local): (Z): Tot Time Aloft:

CORS: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

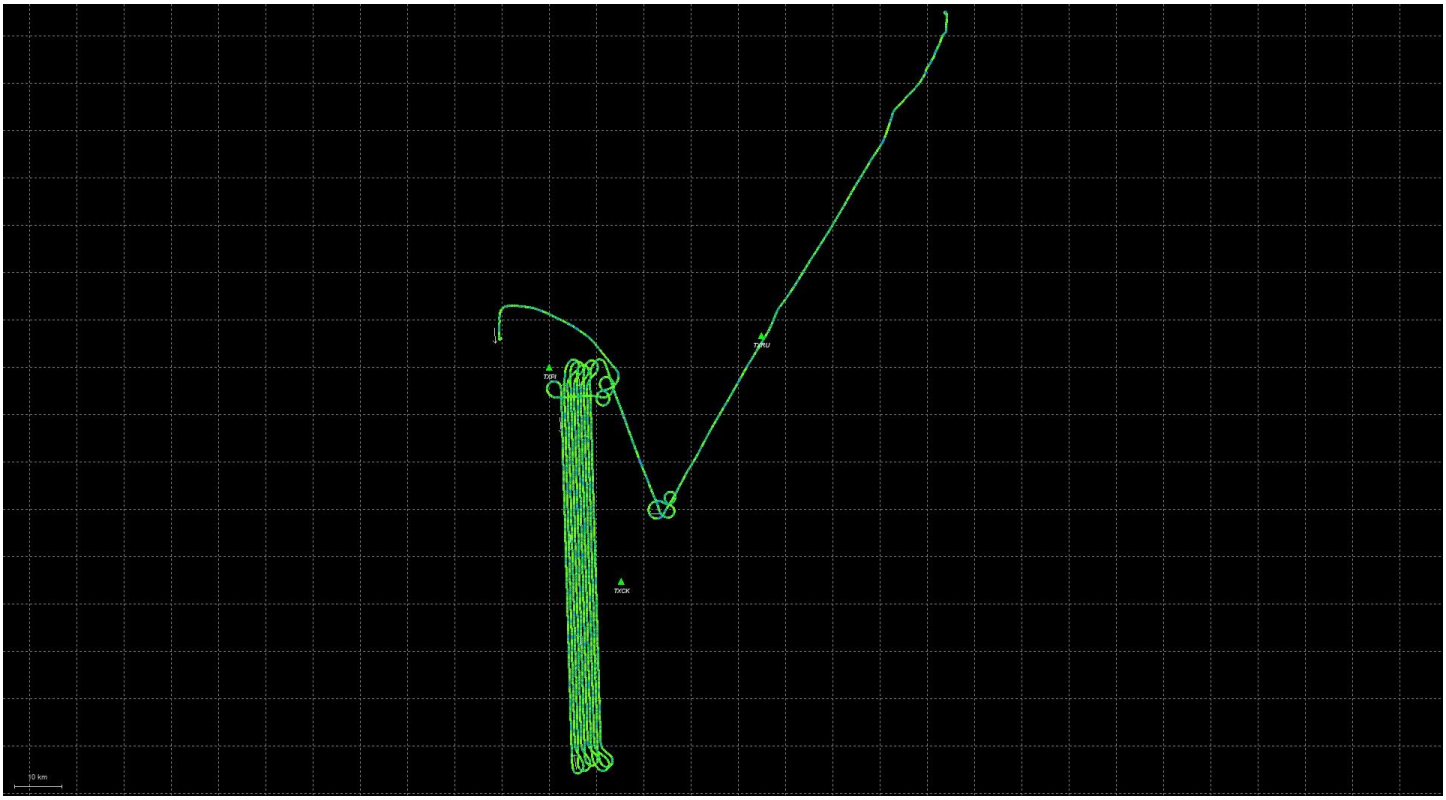
LiDAR	Type: ALS80	Serial #: 8227	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV	Scan Freq	MpiA Y / N	Pulses In Air	Pulse Rate	Power	PPSM

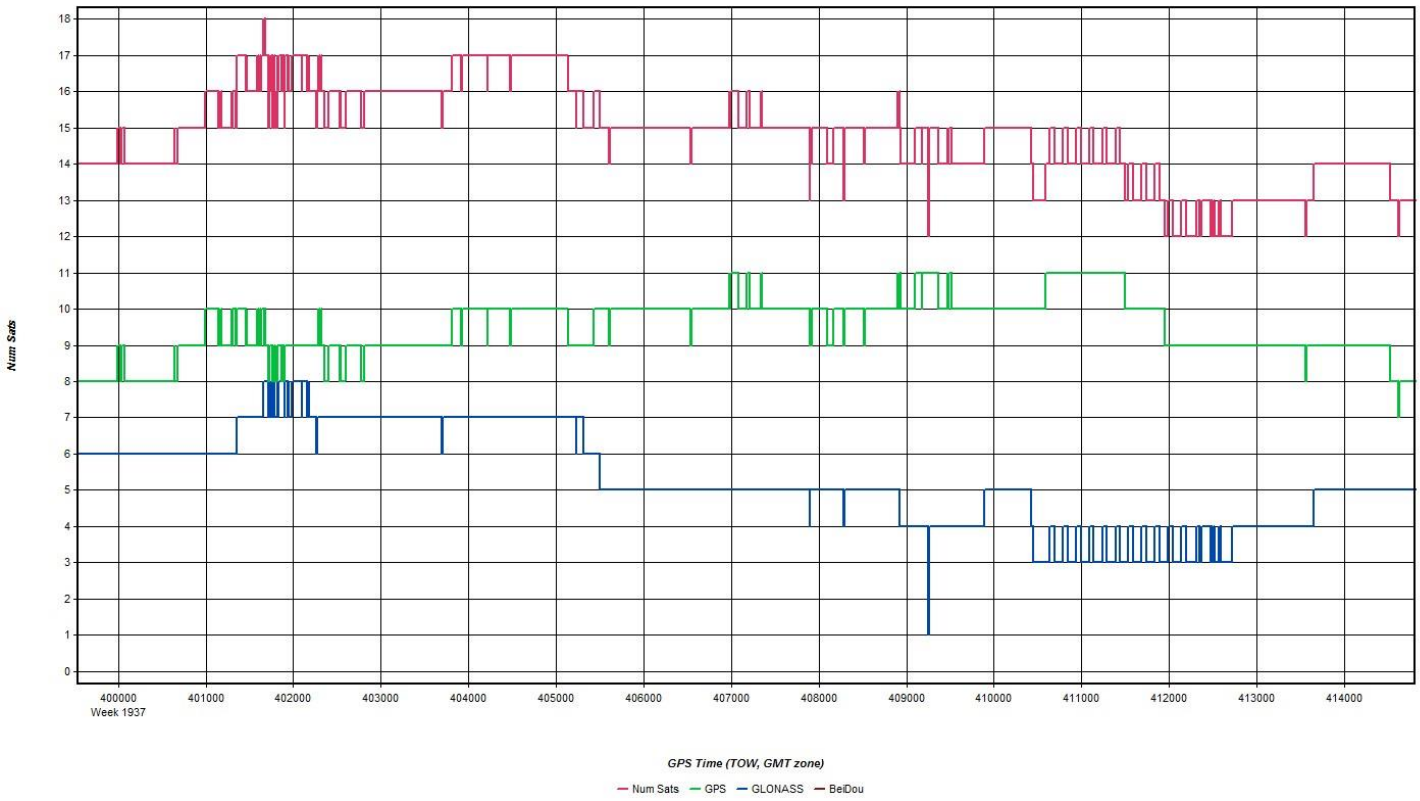
Beg GB: 594 End GB: 506 Tot GB: 88 Storage Media #: 1

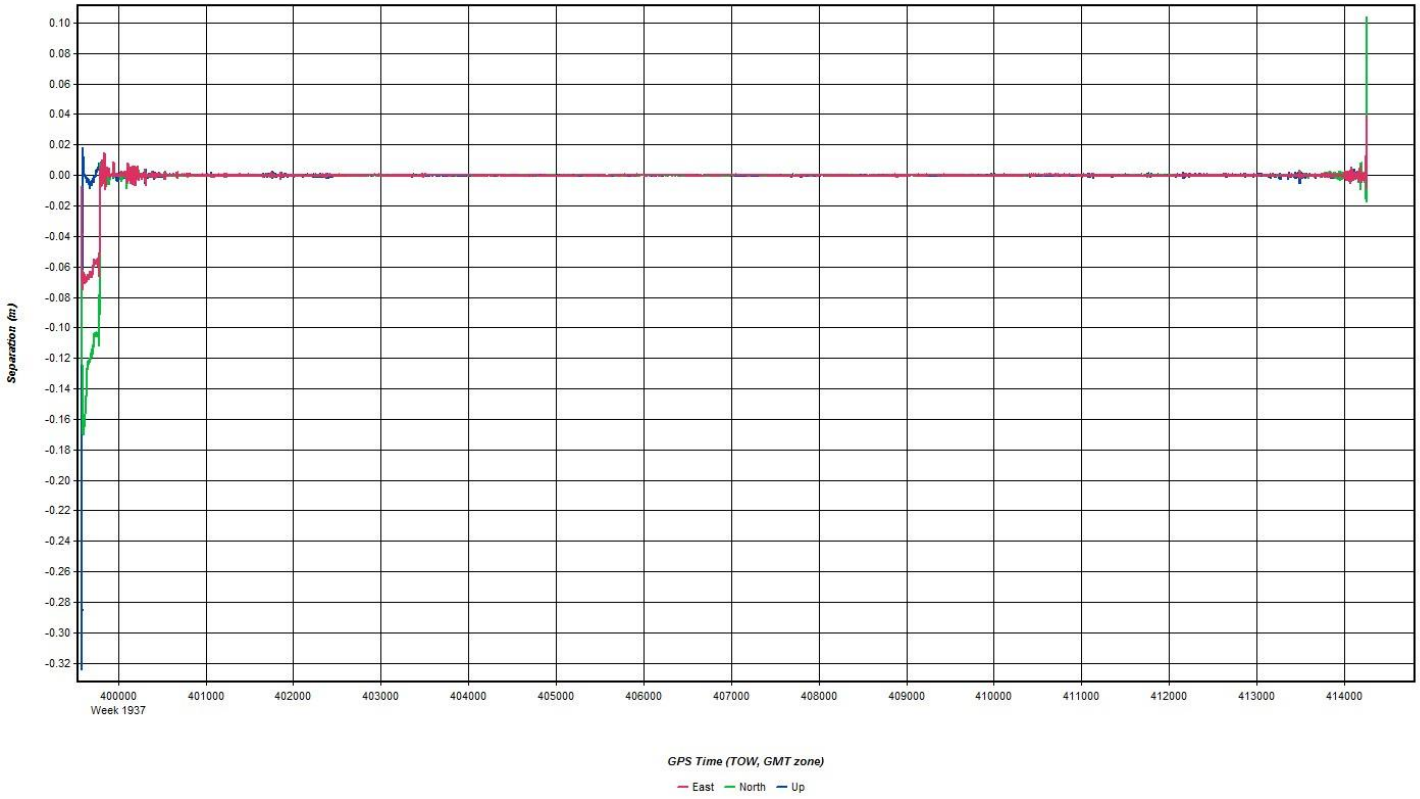
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
6049	177	1843	1853	153	1.3/17	5745		0	0-32
6050	357	1856	1905	165	1.4/16	5773		0	0-32
Tie	085	1909	1913	169	1.3/16	5777		0	Unplanned Tie line

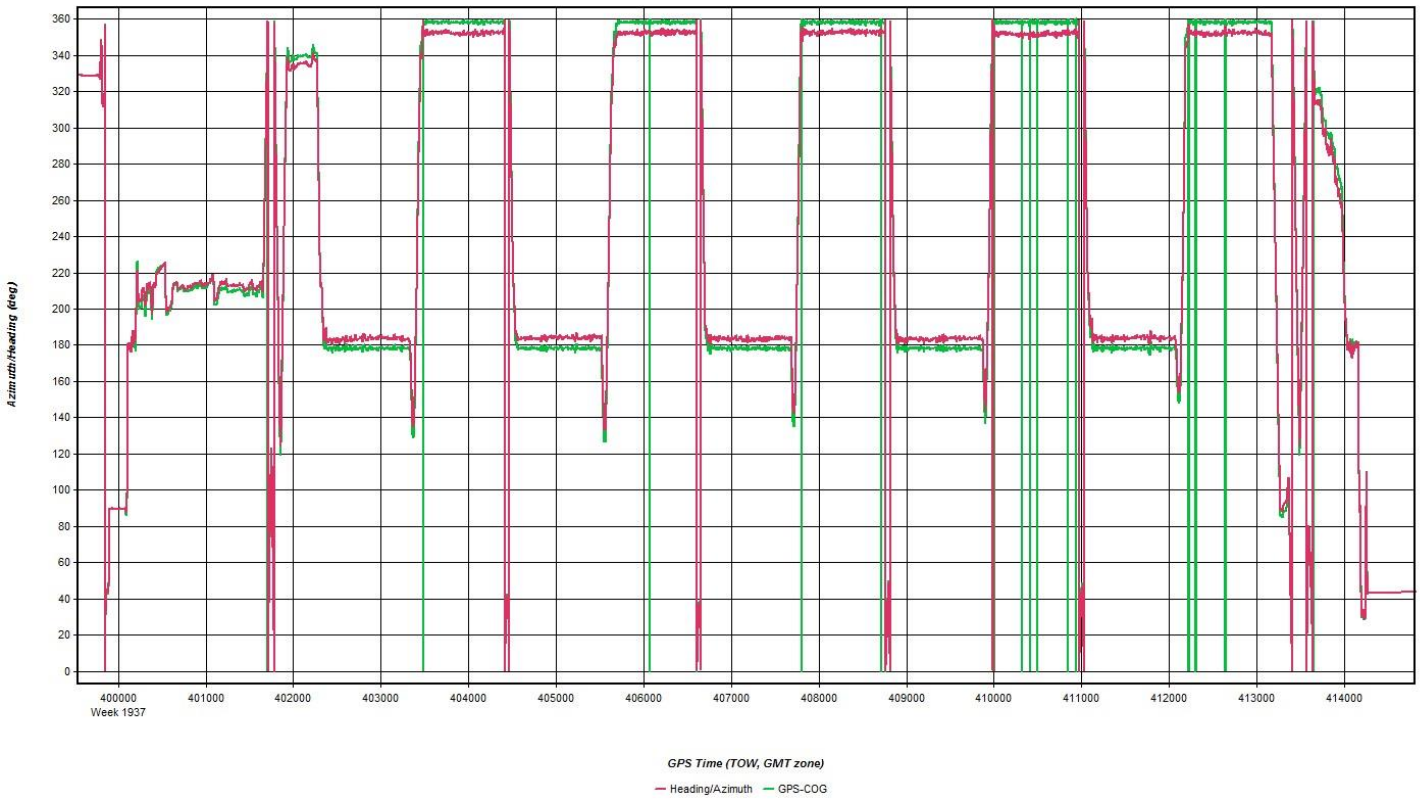
Total Prol Lines: Lines Flown: Lines Remain: Online Time: 4.45 Mob Time: Notes:

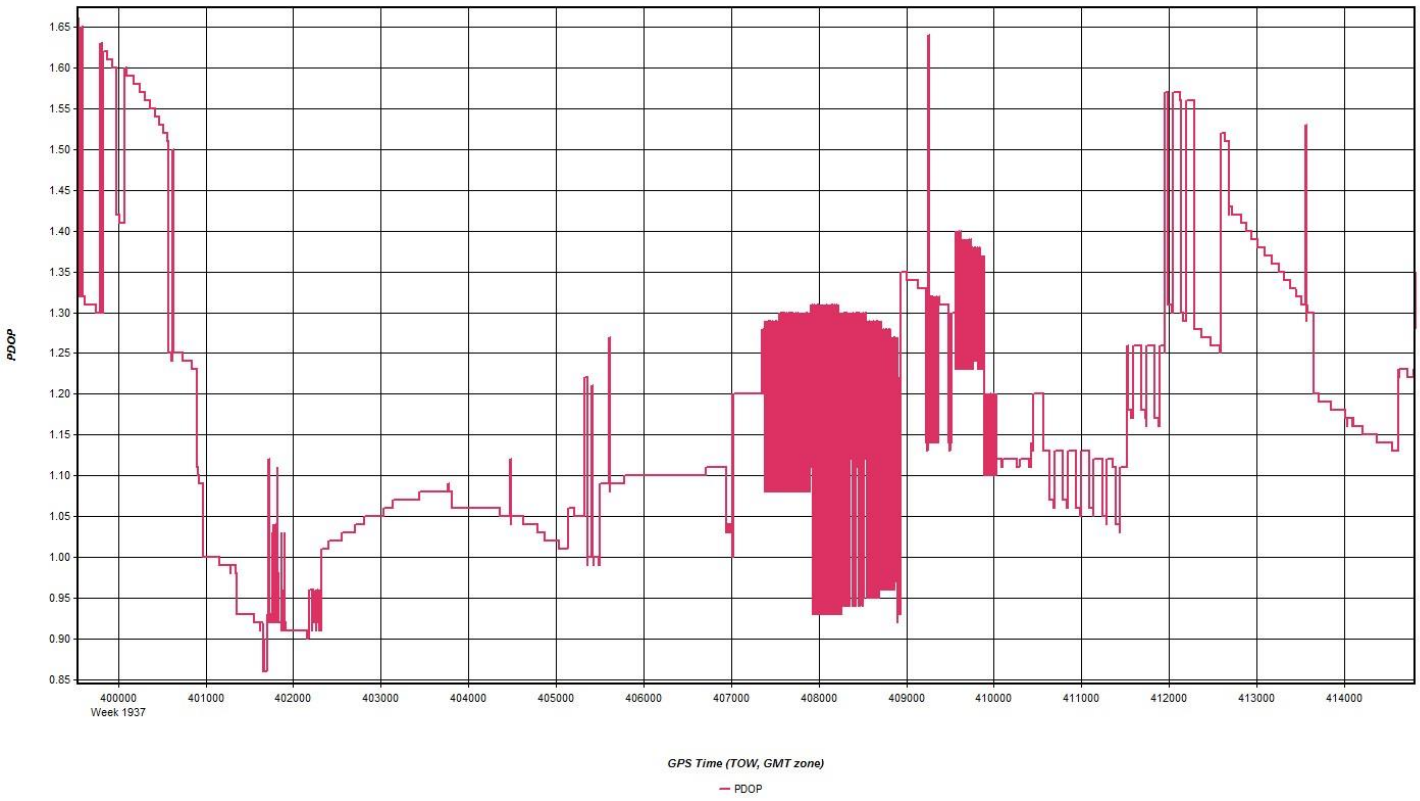
Feb 23, 2017-A (N73TM, SN7178)

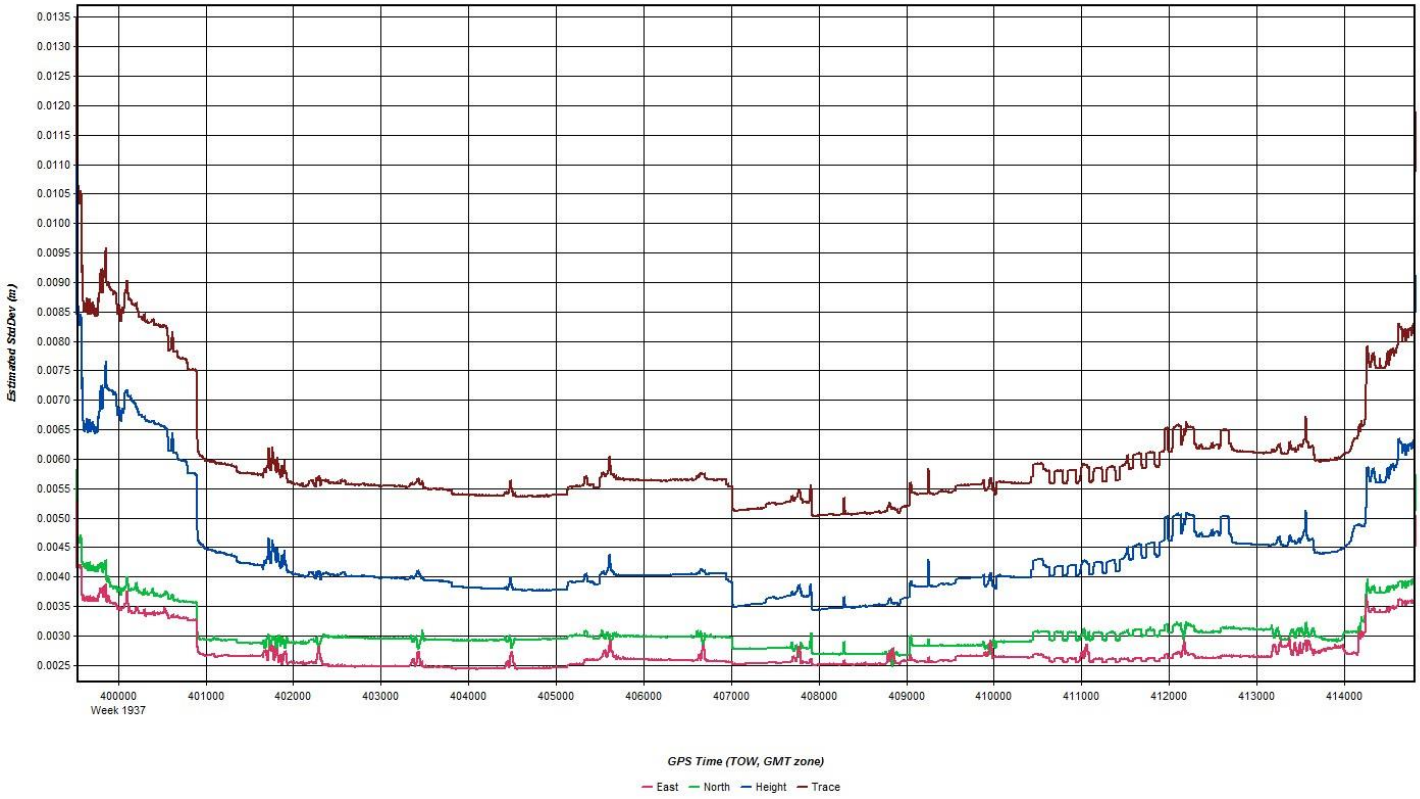


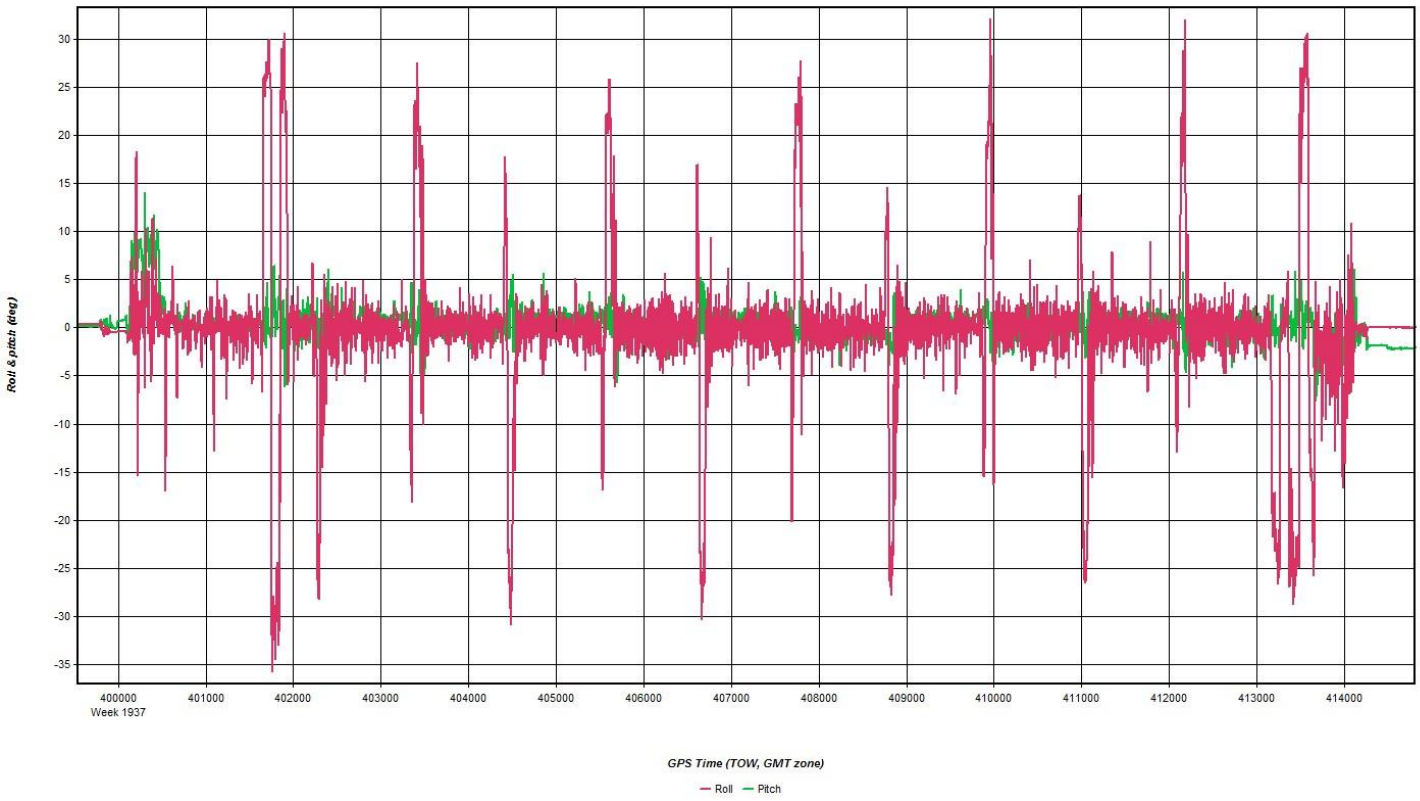

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

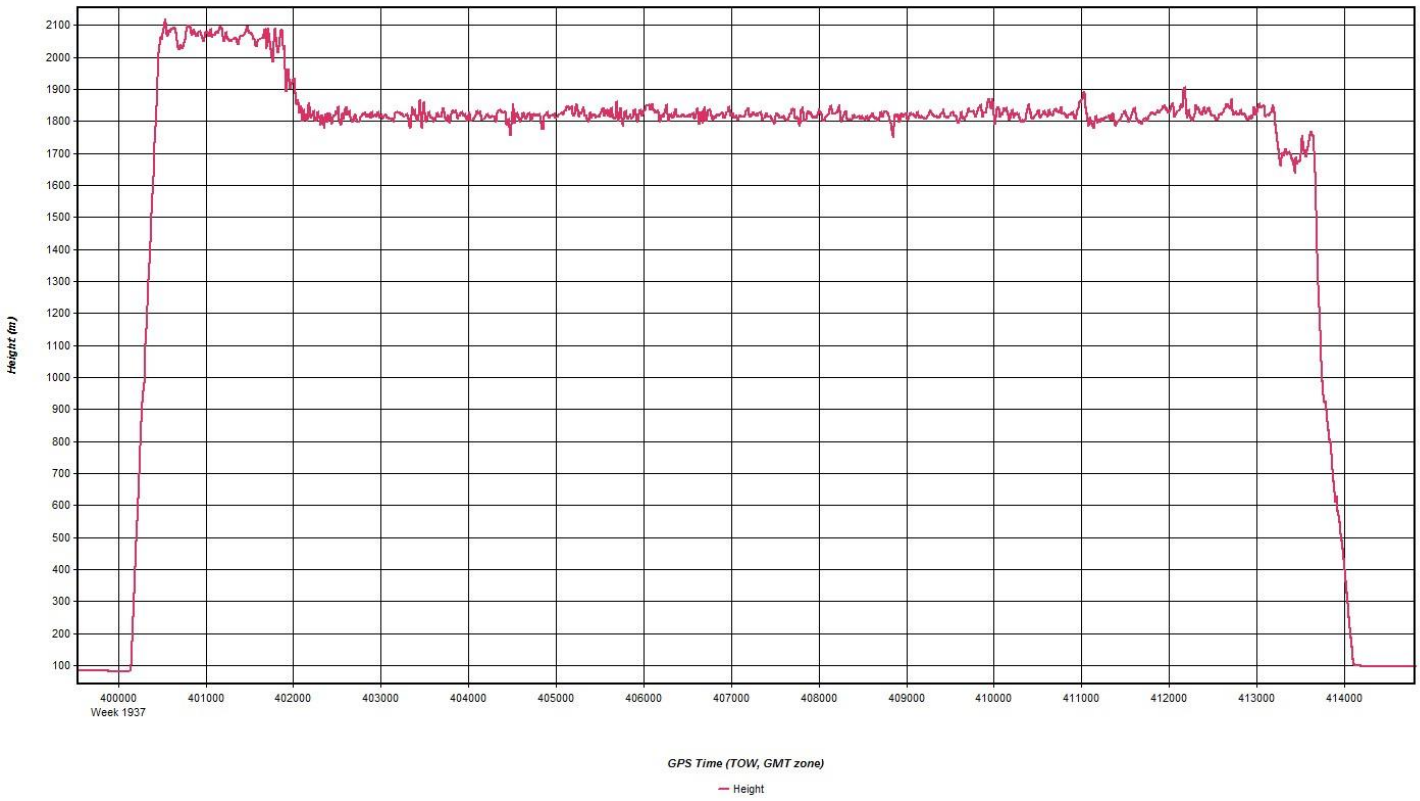

Separation (m)
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
East
North
Up

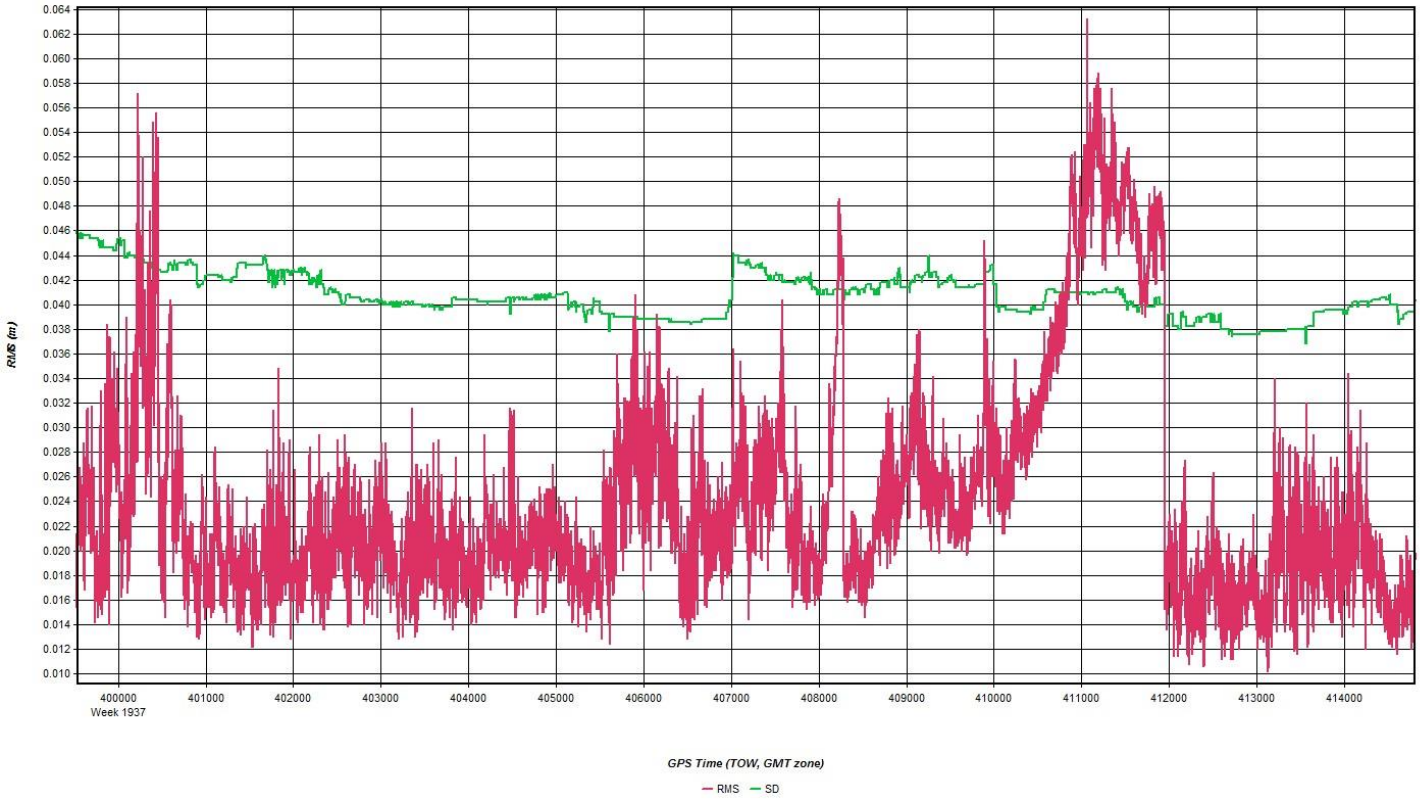

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

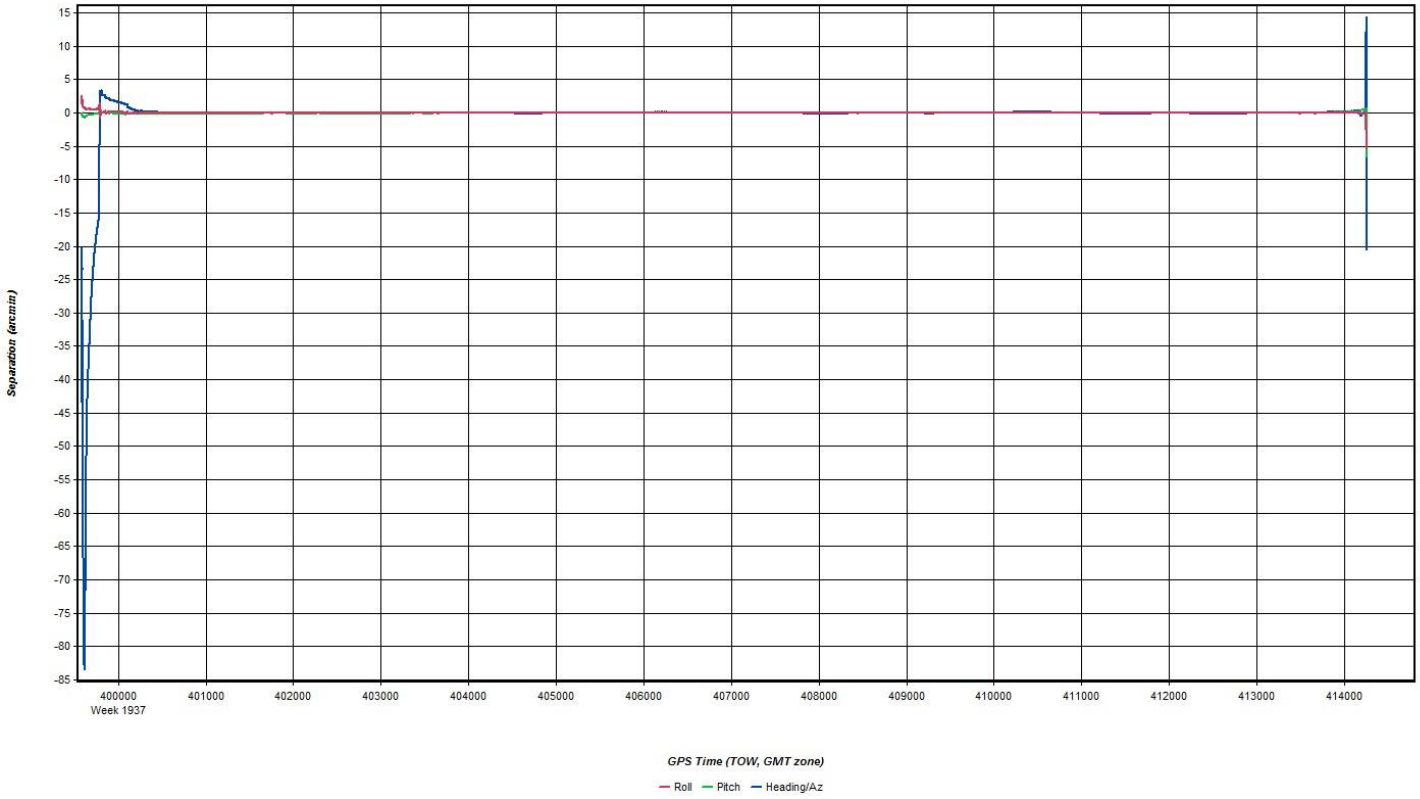

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
PDOP

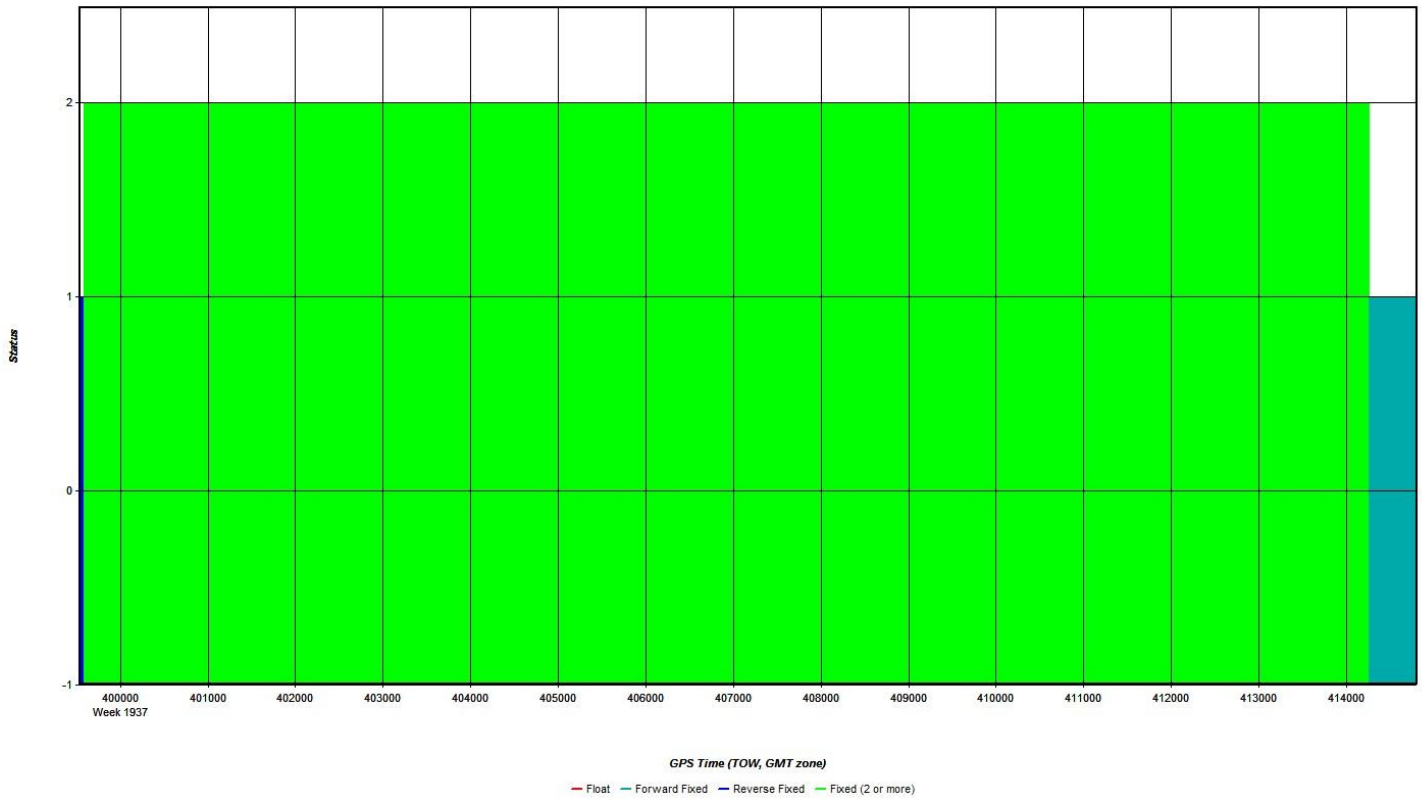

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

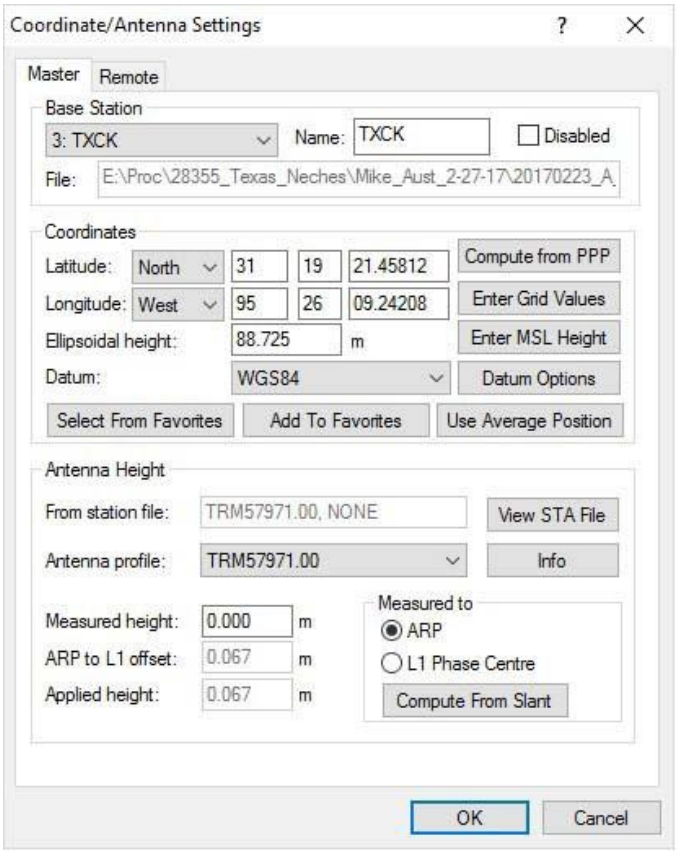

Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
Roll
Pitch

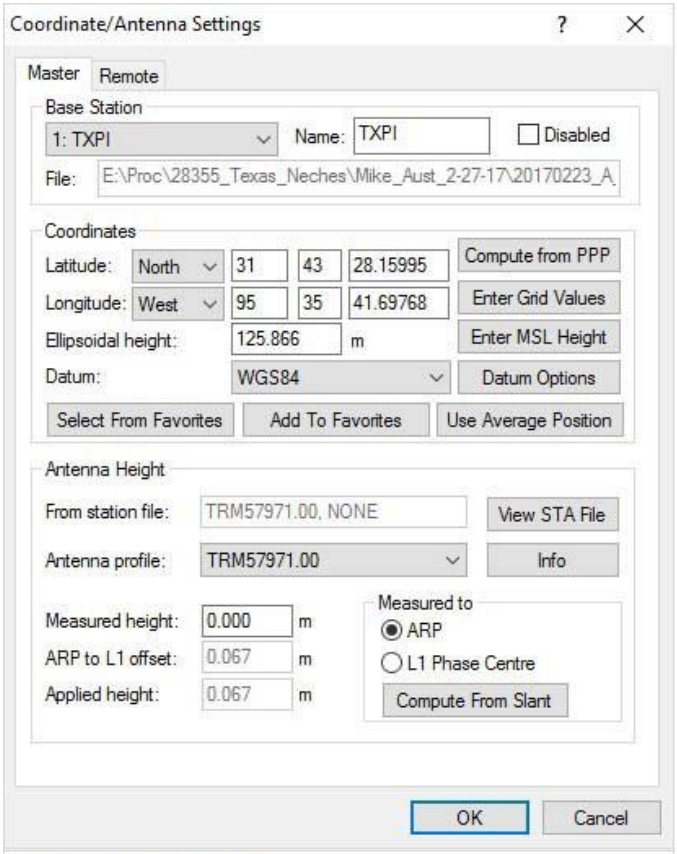

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
Height

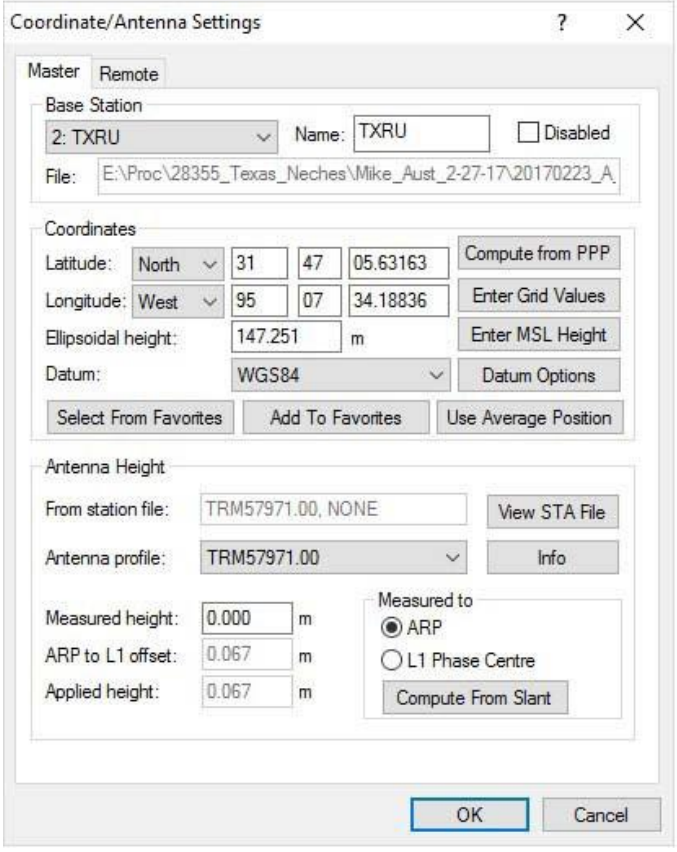

RMS (m)
0.064
0.062
0.060
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
400000
Week 1937
401000
402000
403000
404000
405000
406000
407000
408000
409000
410000
411000
412000
413000
414000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXCK
Name:
TXCK
Disabled
File:
E:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_A
Coordinates
Latitude:
North
31
19
21.45812
Compute from PPP
Longitude:
West
95
26
09.24208
Enter Grid Values
Ellipsoidal height:
88.725
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPI
Name: TXPI
Disabled
File: E:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_A
Coordinates
Latitude: North 31 43 28.15995
Longitude: West 95 35 41.69768
Ellipsoidal height: 125.866 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXRU
Name: TXRU
Disabled
File: E:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_A
Coordinates
Latitude: North 31 47 05.63163
Longitude: West 95 07 34.18836
Ellipsoidal height: 147.251 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-23-17

Life: A B C D E Pg 1 of 1

Project: NECHES BASIN LIDAR Proj #: 28355 Flight Mgmt File: 20170223 145626

Aircraft: 737TM Begin Hobbs: 6576.7 End Hobbs: 6580.6 Total: 3.9 Pilot: J NELSON Co-Pilot: Tech: M AUST

Dep Apt: AGG Dep Time (Lcl): 9:00 (Z): 1500 Arr Apt: KPSN Arr Time (Local): 1110 (Z): 1910 Tot Time Aloft: 3.9

CORS: Y N Sta 1: TXCK Sta 2: Flyovers: Y N If Y, times: Sta1) 1534 Sta2)

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

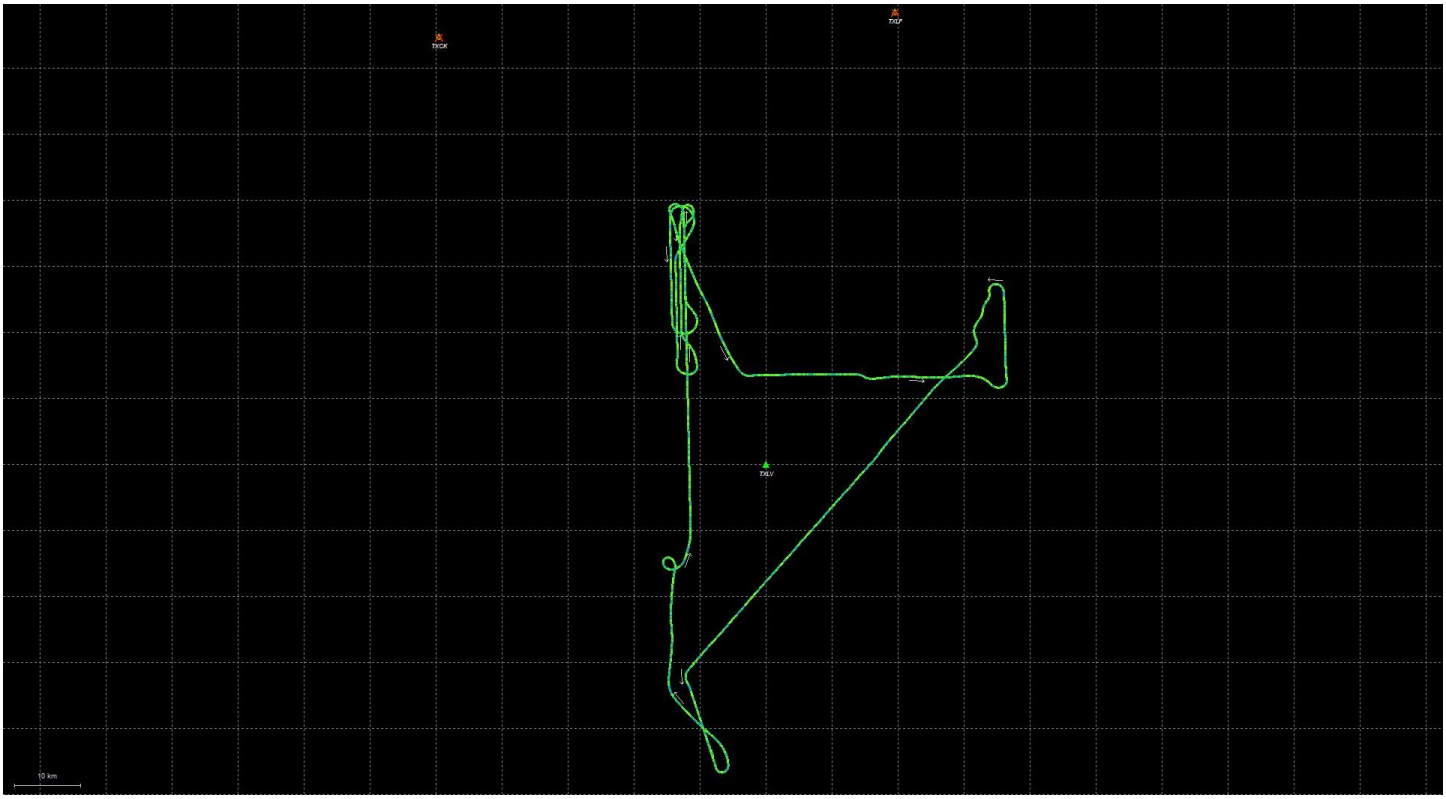
Gd Temp beg: 17 °c End: 27 °c OAT beg: °c End: °c Altimeter begin: 29.97 end: 29.95

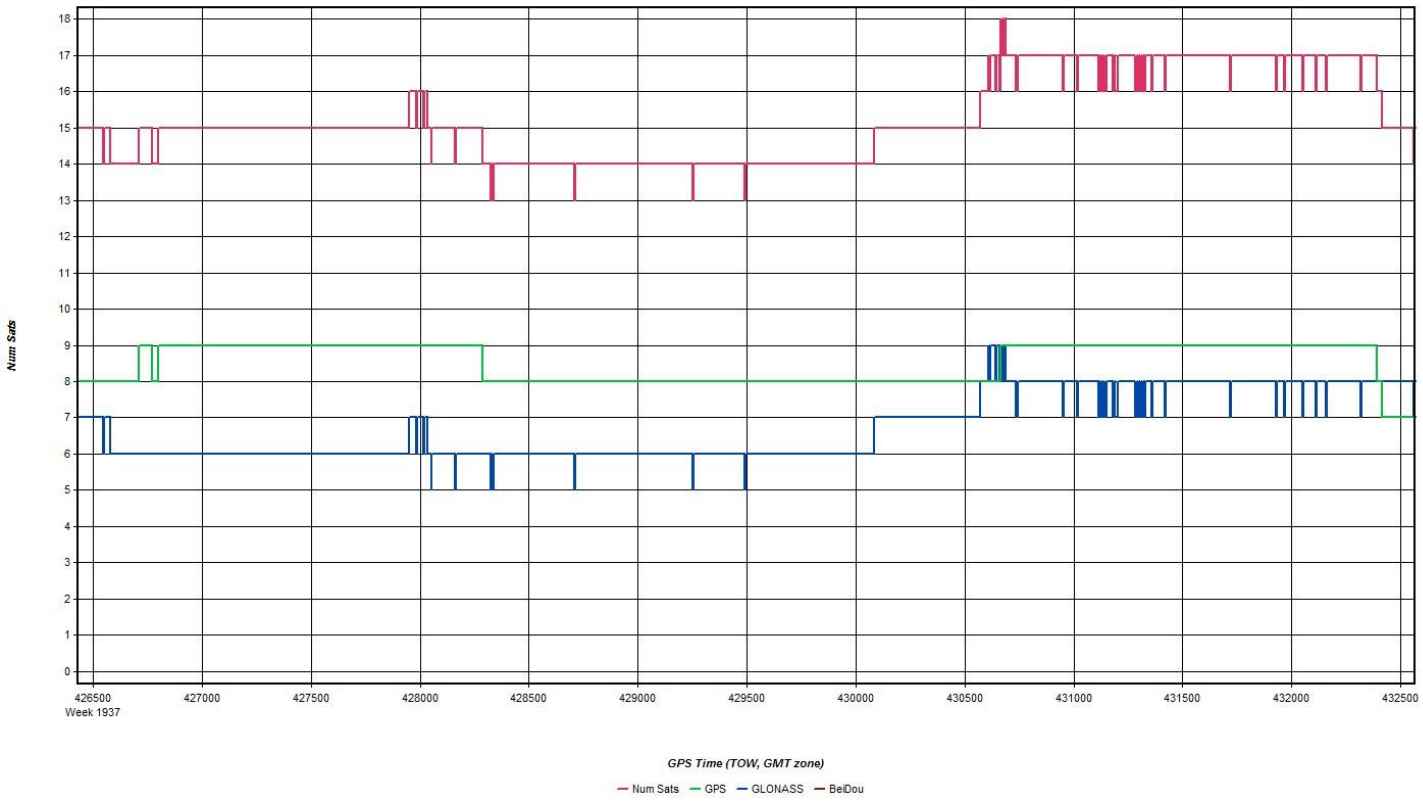
	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Bse GB	Storage Needs
LiDAR	A1570	7178		5.9				264	3
	FOV	Scan Freq	Mpl (Y) N	Pulses In Air	Pulse Rate	Power	PPSM	End GB	
	34	57			312	100		Tot GB	

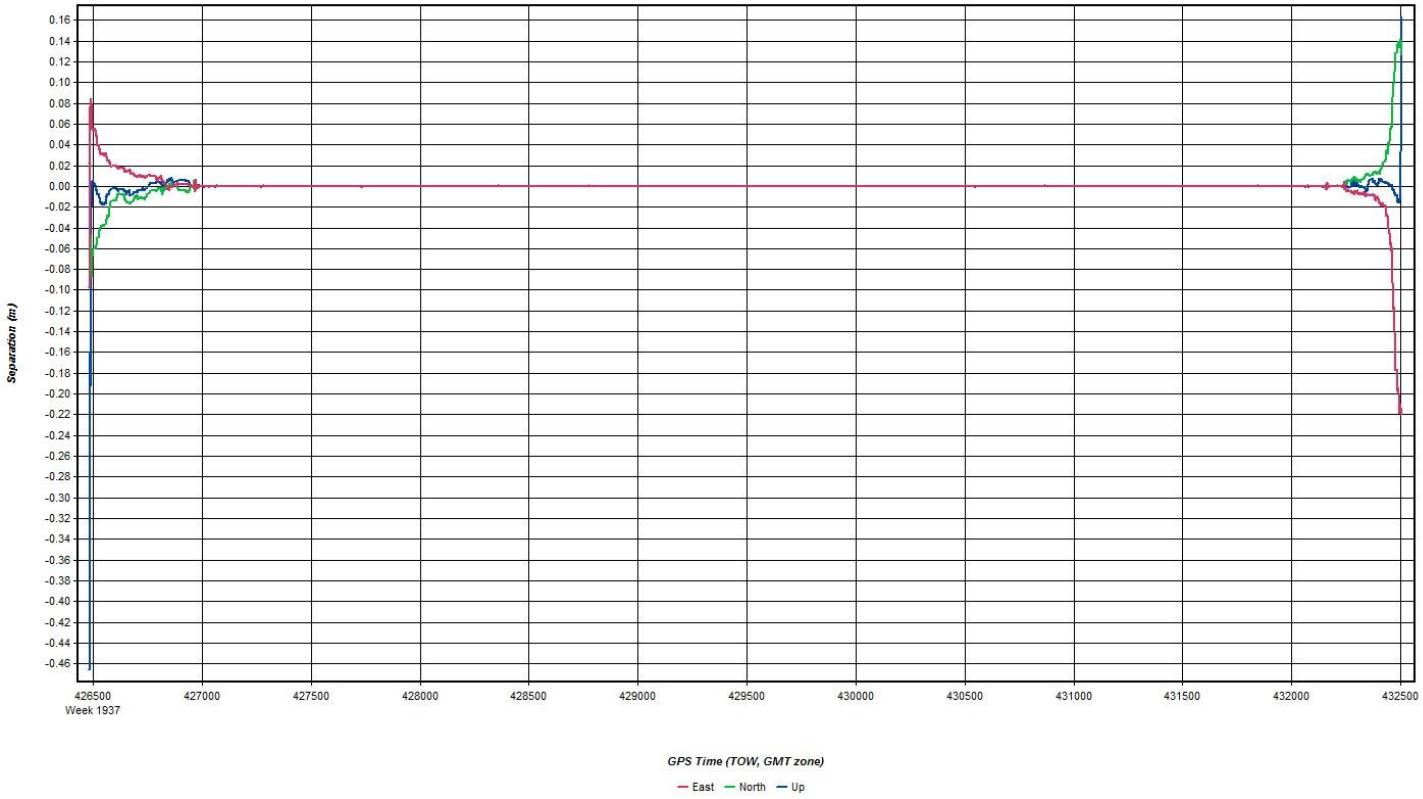
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
1049	S	1544	1601	141	1.0/20	5.9			
1048	N	1604	1619	159	1.3/18	5.9			
1047	S	1622	1638	151	1.1/19	5.9			
1046	N	1641	1656	154	1.1/19	5.9			
1045	S	1700	1714	154	1.2/18	5.9			
1044	N	1717	1732	160	1.3/17	5.9			
1043	S	1735	1750	150	1.3/17	5.9			
1042	N	1753	1808	157	1.2/18	5.9			
1041	S	1812	1827	143	1.3/15	5.9			
1040	N	1830	1845	162	1.3/15	5.9			
4001	E	1847	1849	182	1.4/16	5.9			THE LINE

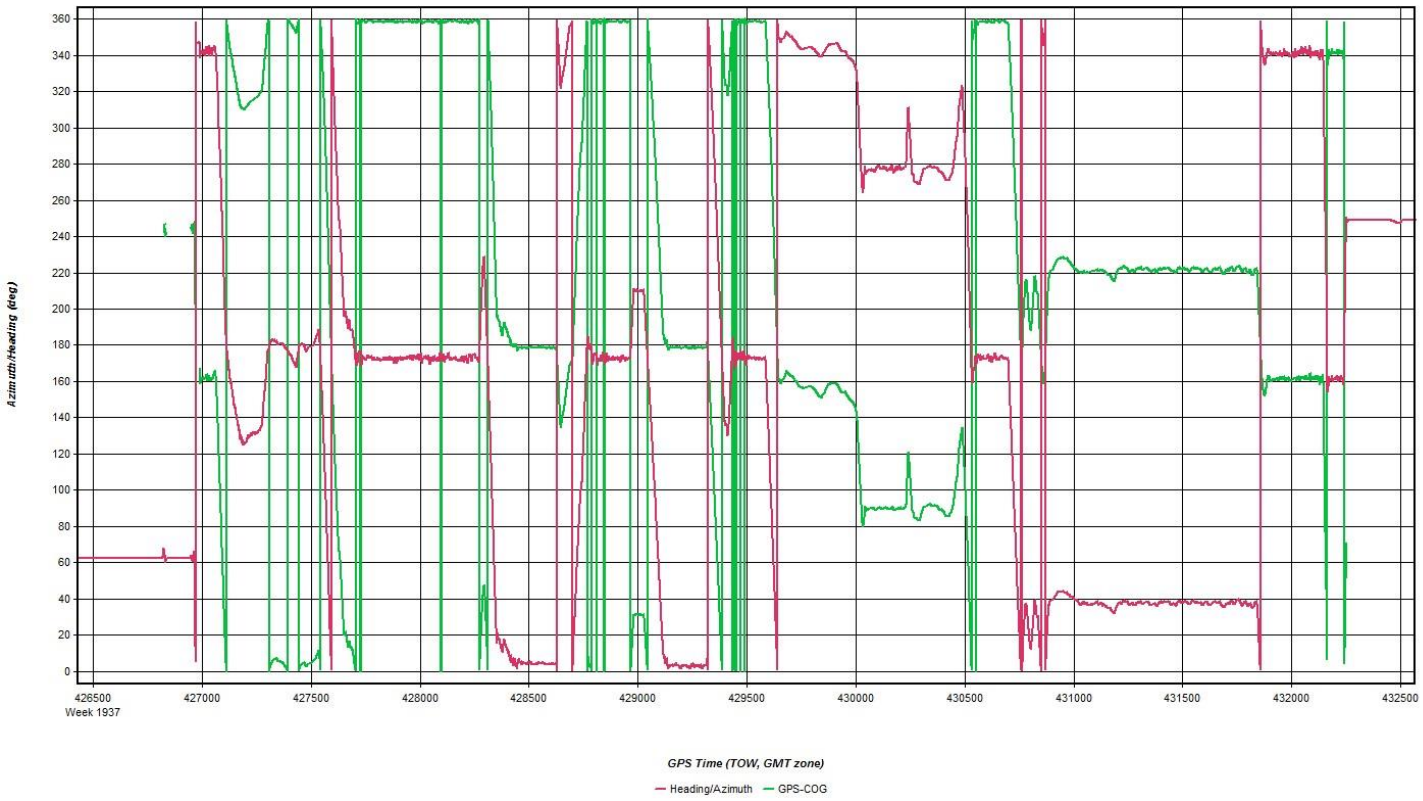
Total Proj Lines: Lines Flown: 104 THE Lines Remain: 0 Online Time: 3 Mob Time: .9 Notes:

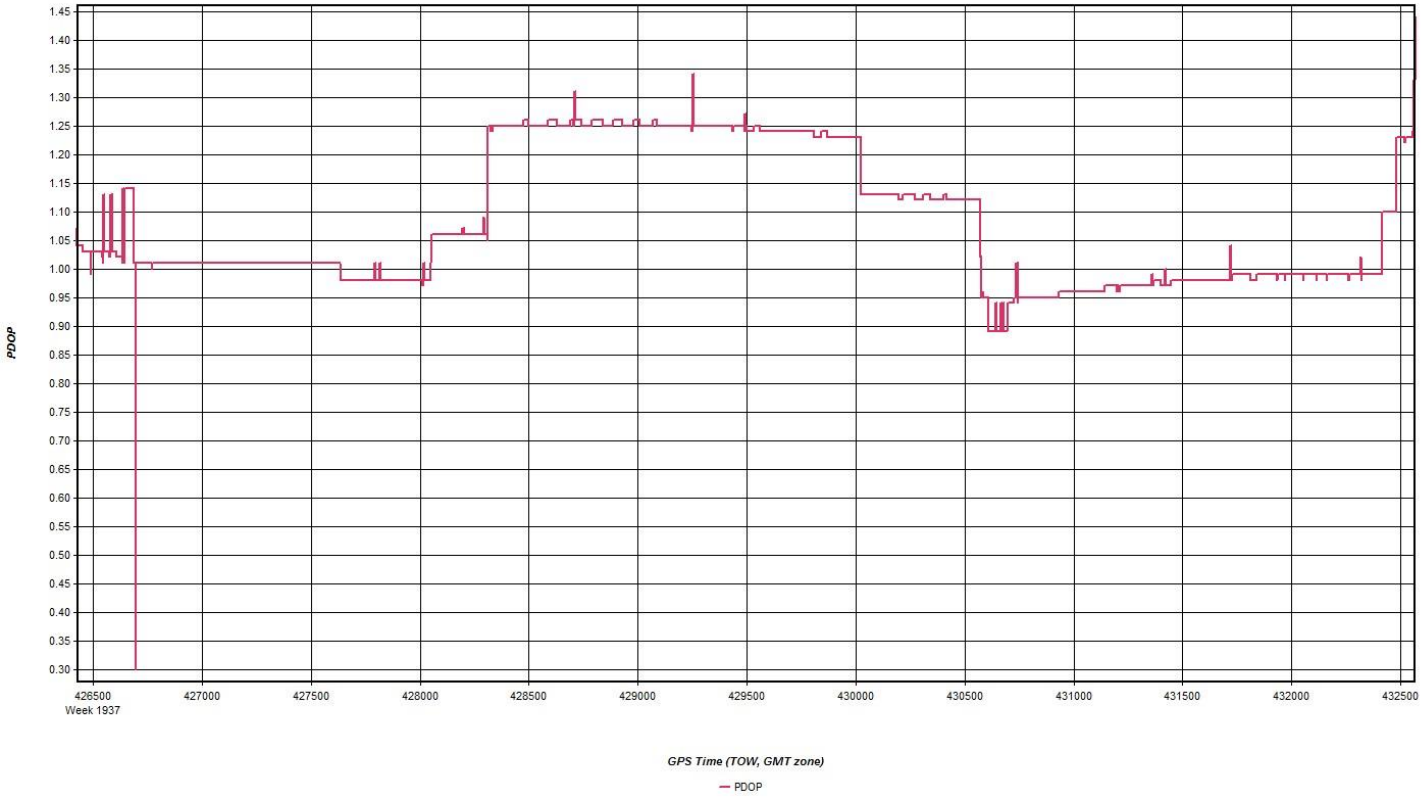
Feb 23, 2017-A (SN7229)

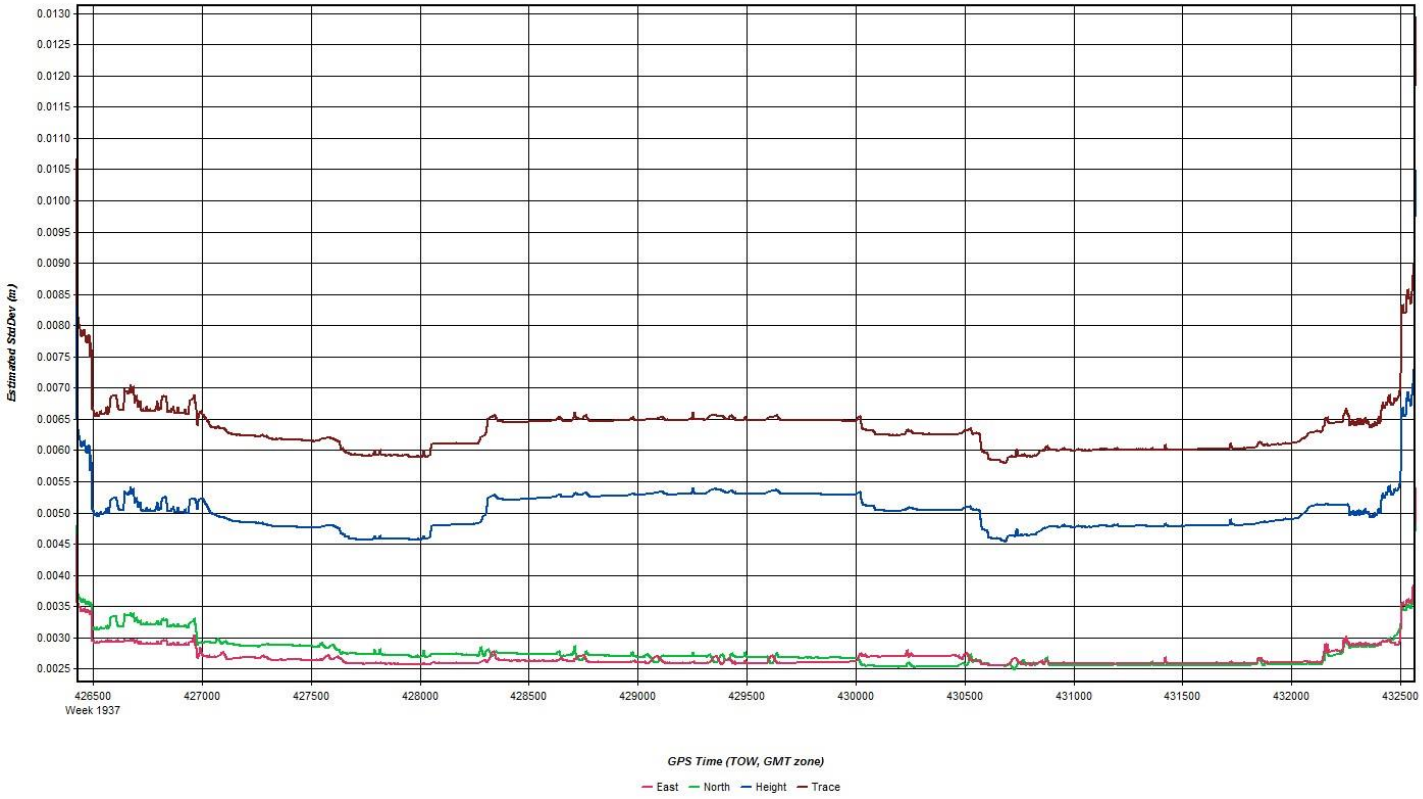


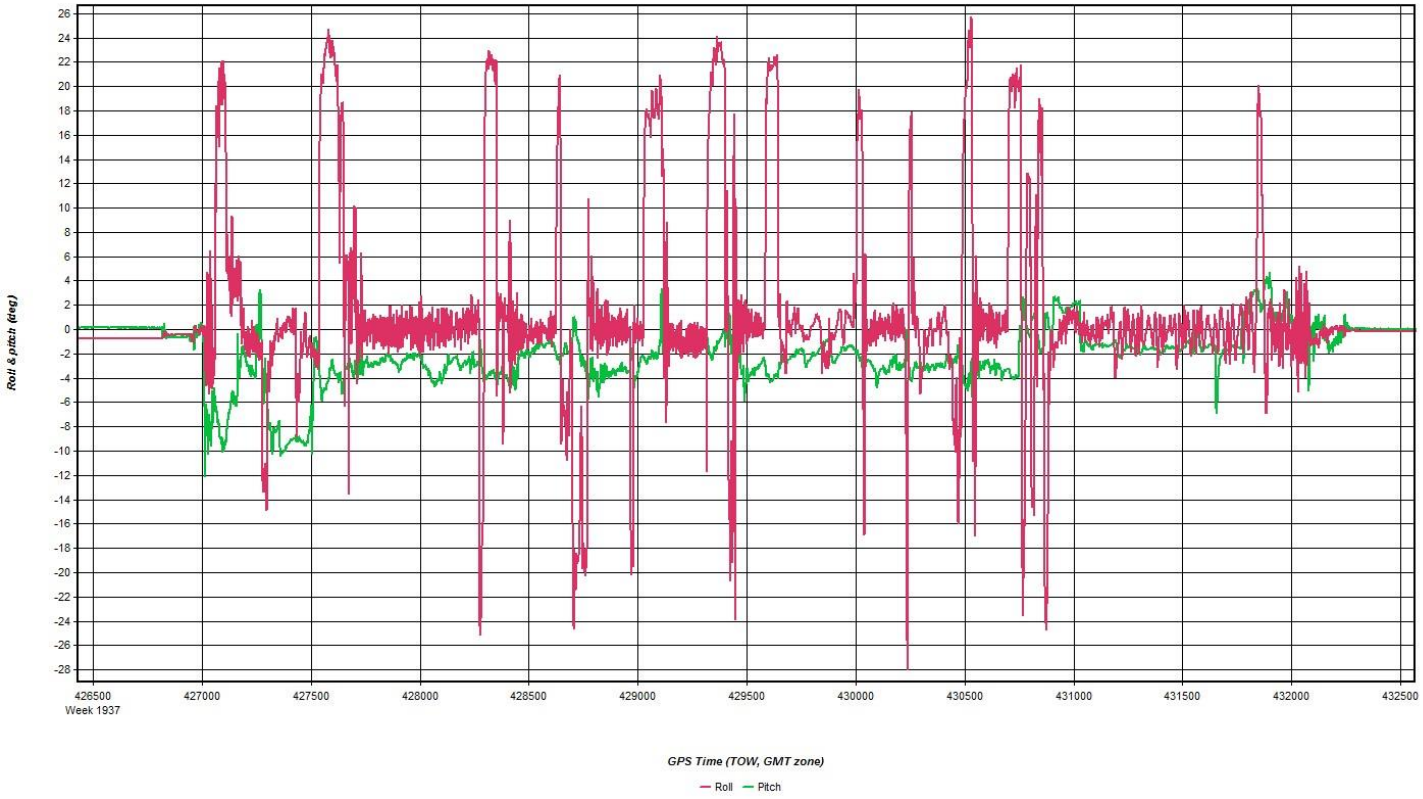

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

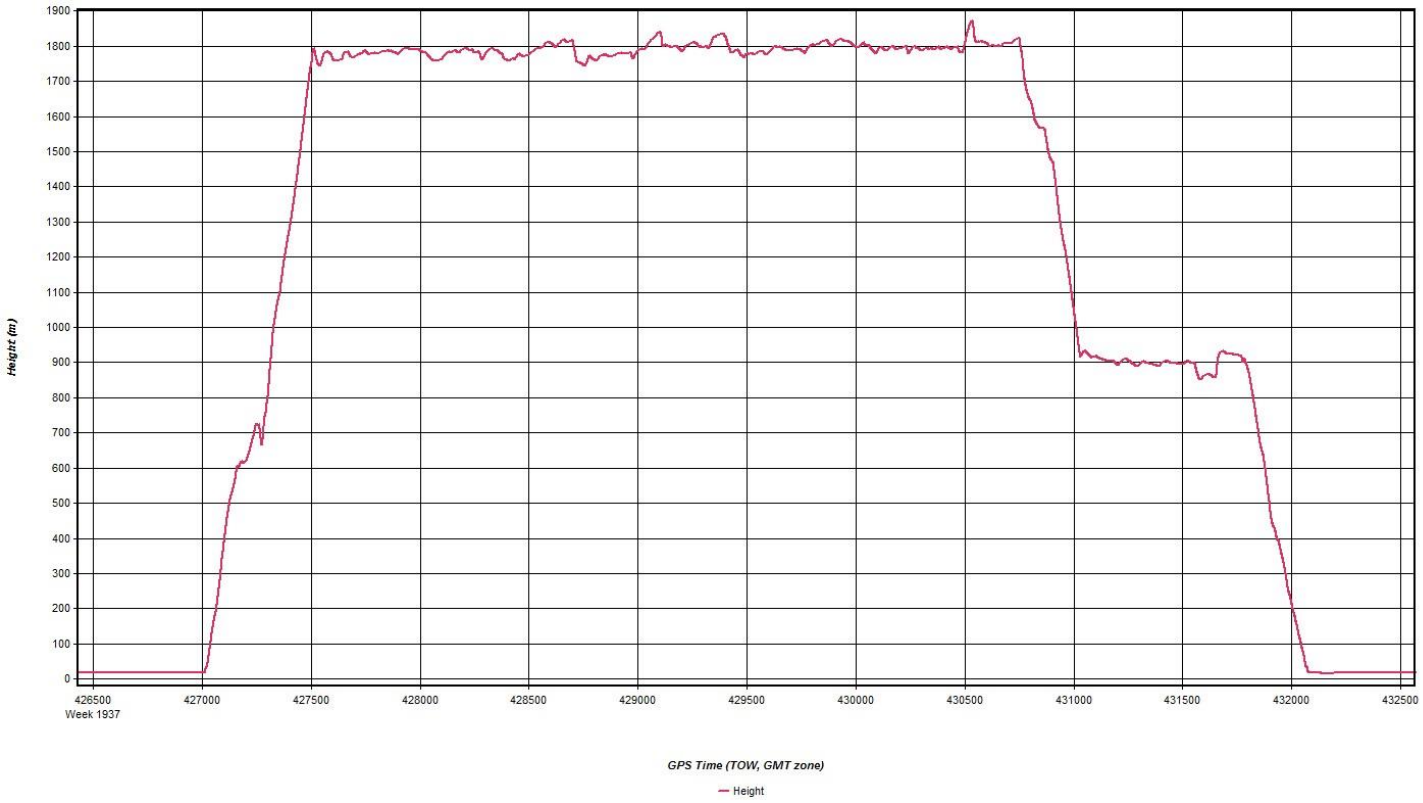

Separation (m)
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
-0.40
-0.42
-0.44
-0.46
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
East
North
Up

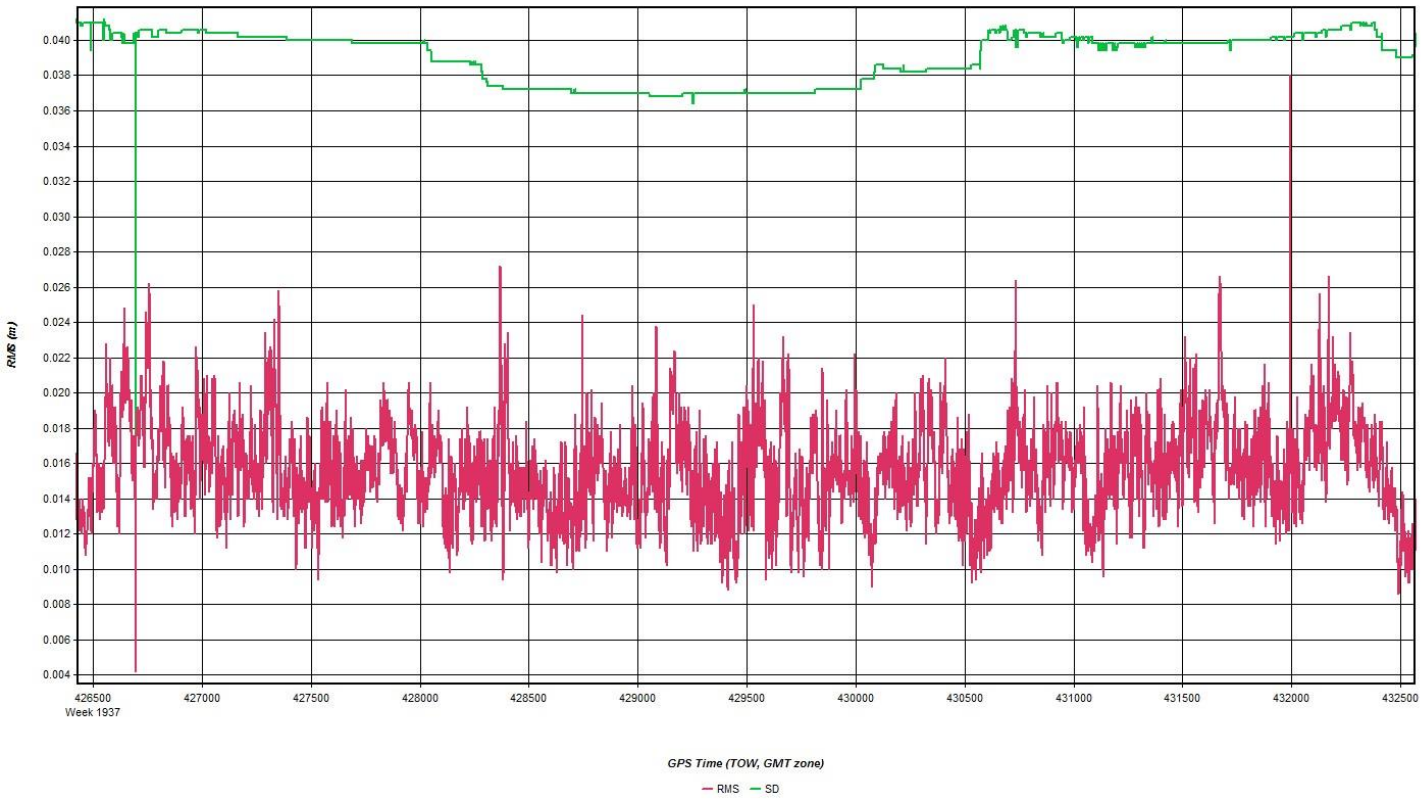

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

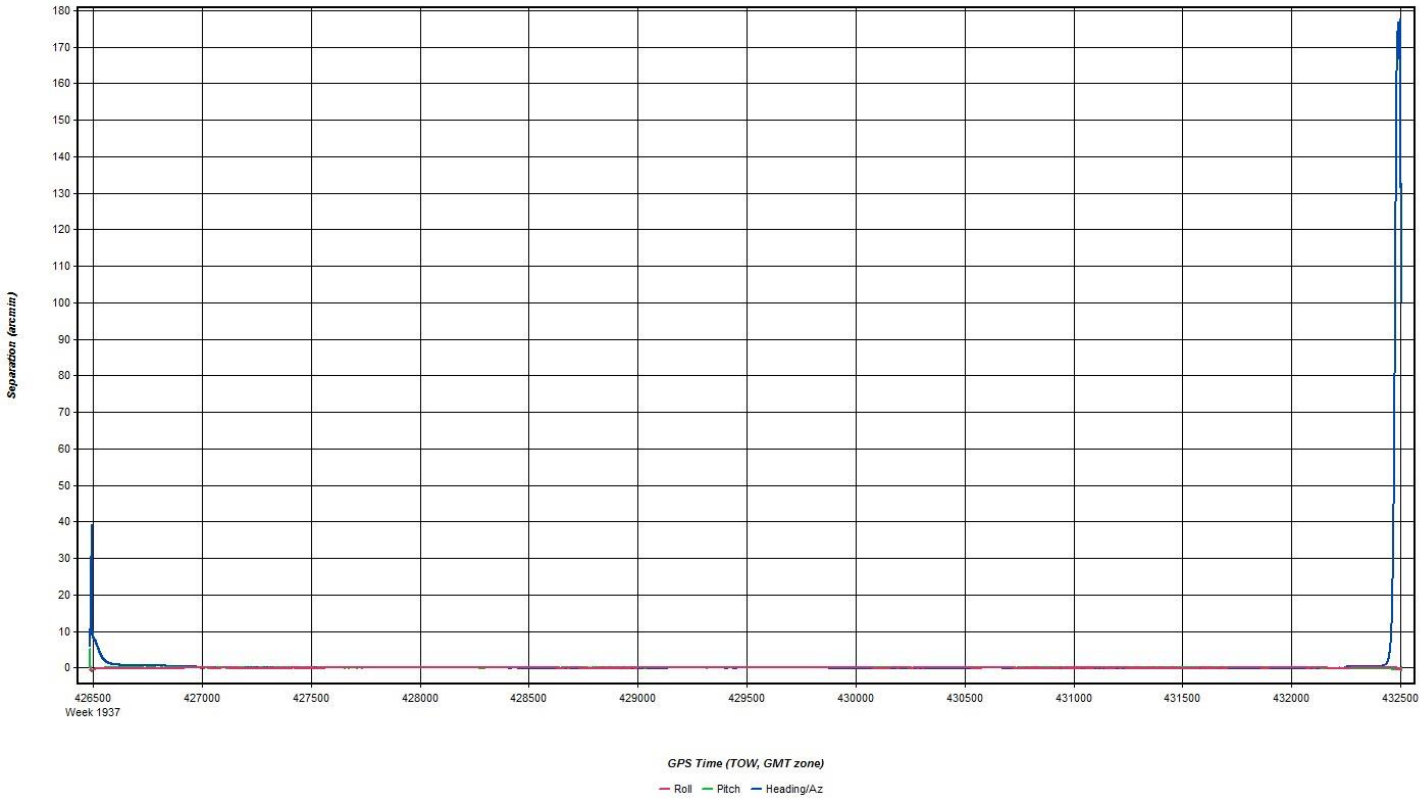

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
PDOP

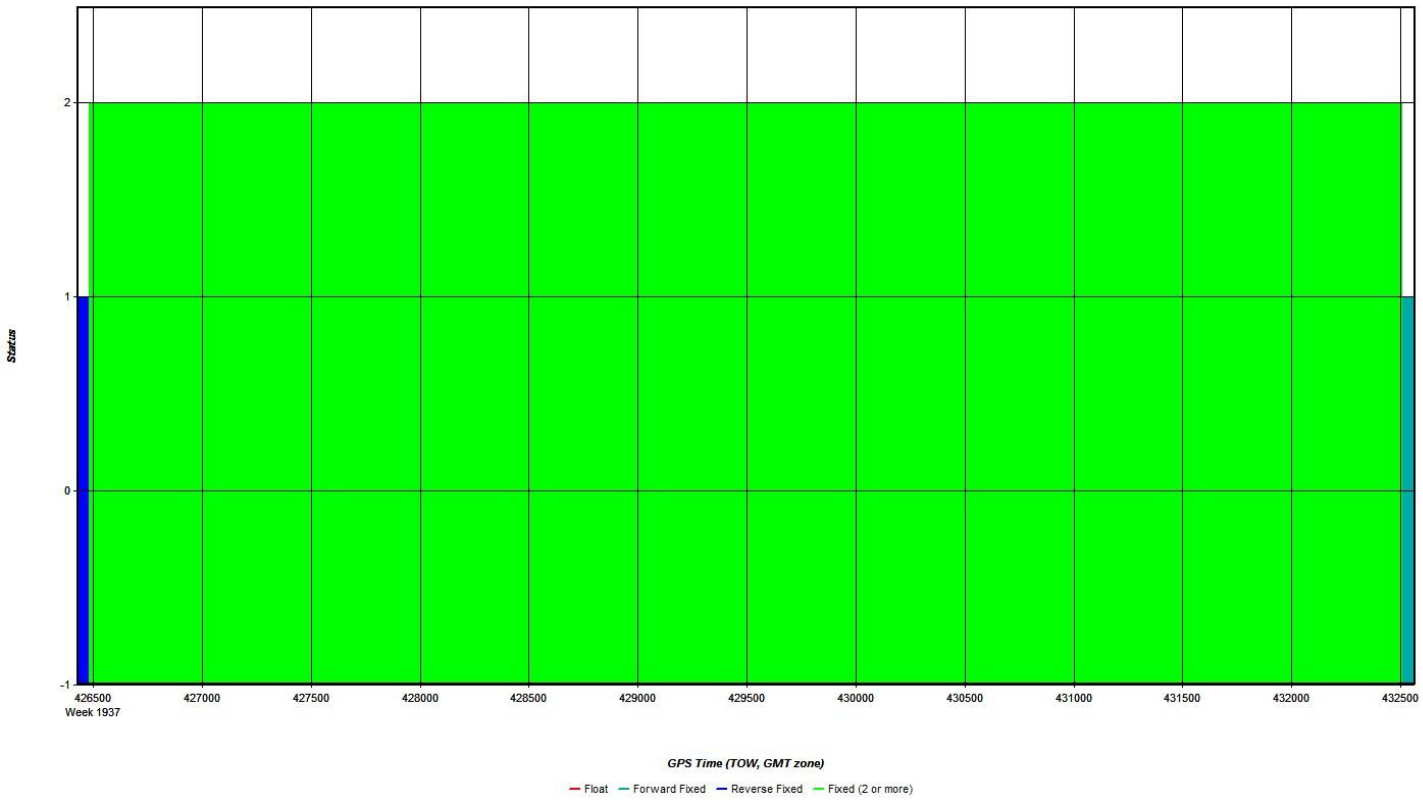

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

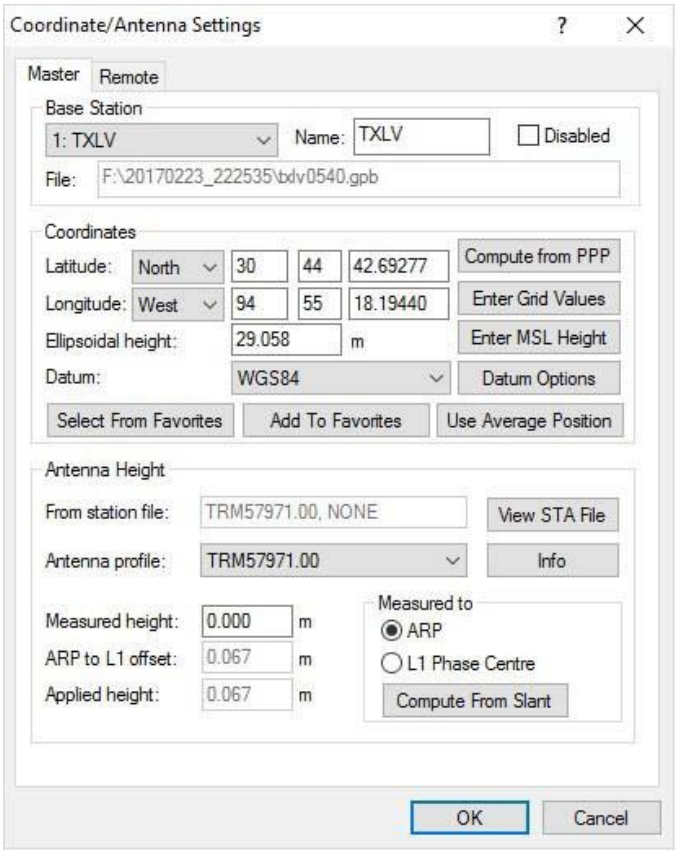

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
426500
Week 1937
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXLV
Name:
TXLV
Disabled
File:
F:\20170223_222535\txlv0540.gpb
Coordinates
Latitude:
North
30
44
42.69277
Compute from PPP
Longitude:
West
94
55
18.19440
Enter Grid Values
Ellipsoidal height:
29.058
m
Enter MSL Height
Datum:
WGS84
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM57971.00, NONE
View STA File
Antenna profile:
TRM57971.00
Info
Measured height:
0.000
m
ARP to L1 offset:
0.067
m
Applied height:
0.067
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

LIDAR & AERIAL PHOTO FLIGHT LOG

20 YEARS OF EXCELLENCE — ATLIS — LIDAR + IMAGERY + GEOMATICS

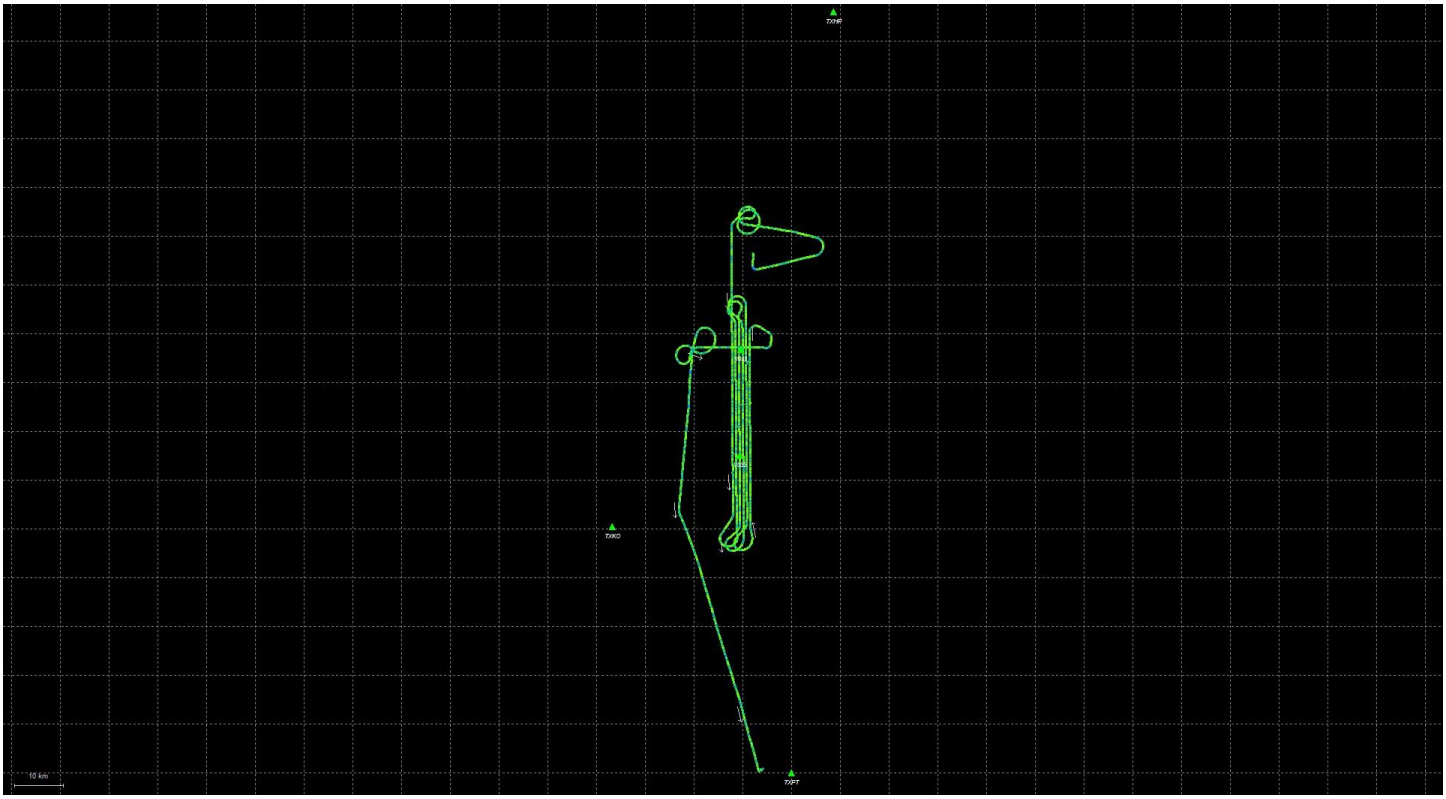
PROJECT NAME	QS. Texas	DATE	23/02/2017
SENSOR OPERATOR	Michael Kettridge	SENSOR(S)	ALS70-HP / RCD30
PILOT	Daniel Thibeault	IMU	Honeywell uIRS
AIRCRAFT	Navajo C-FVZM	ABGPS	IPAS-CUS6
AIRBASE	Cleveland, TX	DATA DRIVES	LiDar4

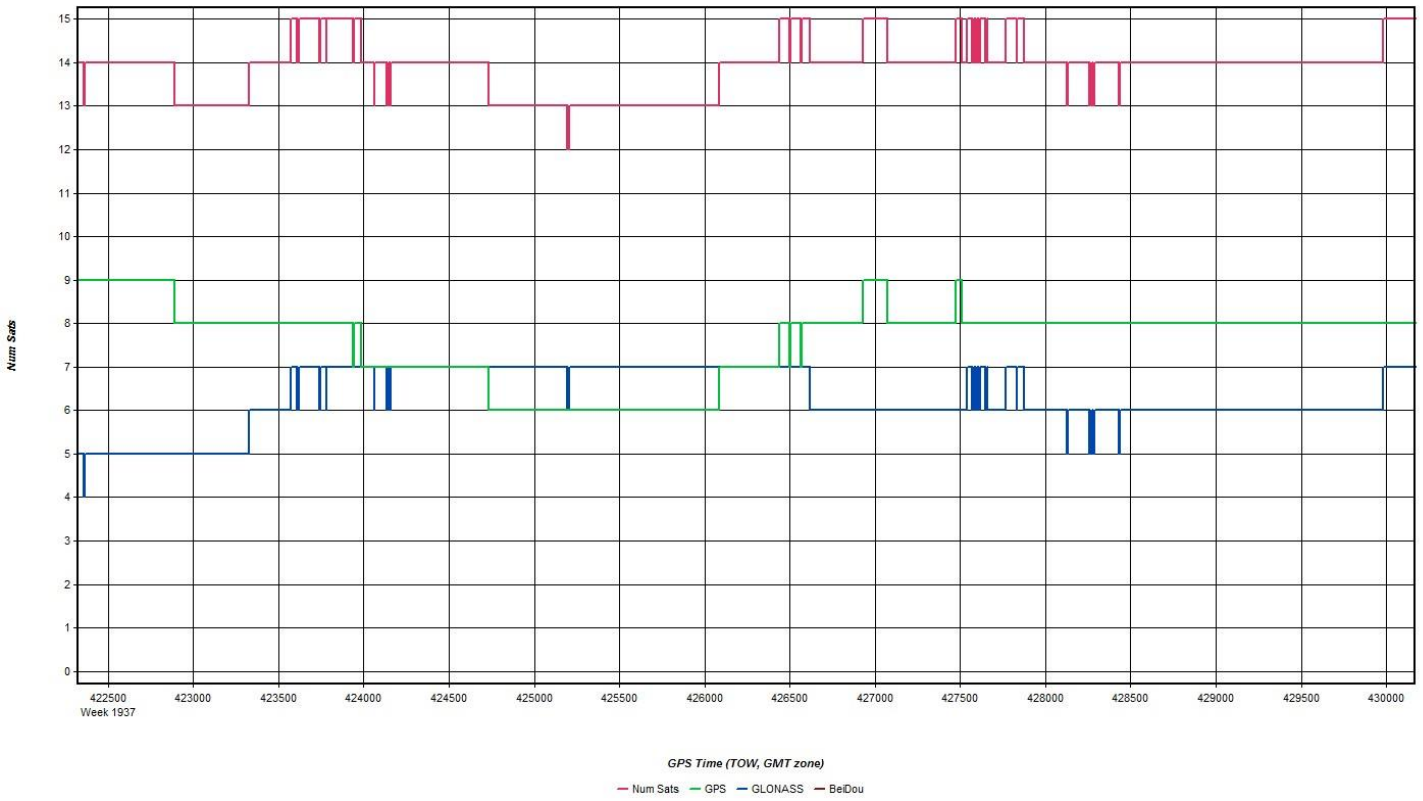
AIRCRAFT BLOCK TIME				MISSION DETAILS				STATIC ALIGNMENT	GPS TIME	
Engine On:	22:15:00	Takeoff:	22:36:00	AGL Height:	1720	Pulse Rate:	312		START	END
Engine Off:	00:12:00	Landing:	00:01:00	Speed:	150	Scan Rate:	57	Pre-Mission	22:28:00	22:33:00
TOTAL:	1.95 hr	TOTAL:	1.4 hr	Laser Power:	100	FOV:	34	Post Mission	00:04:00	00:09:00

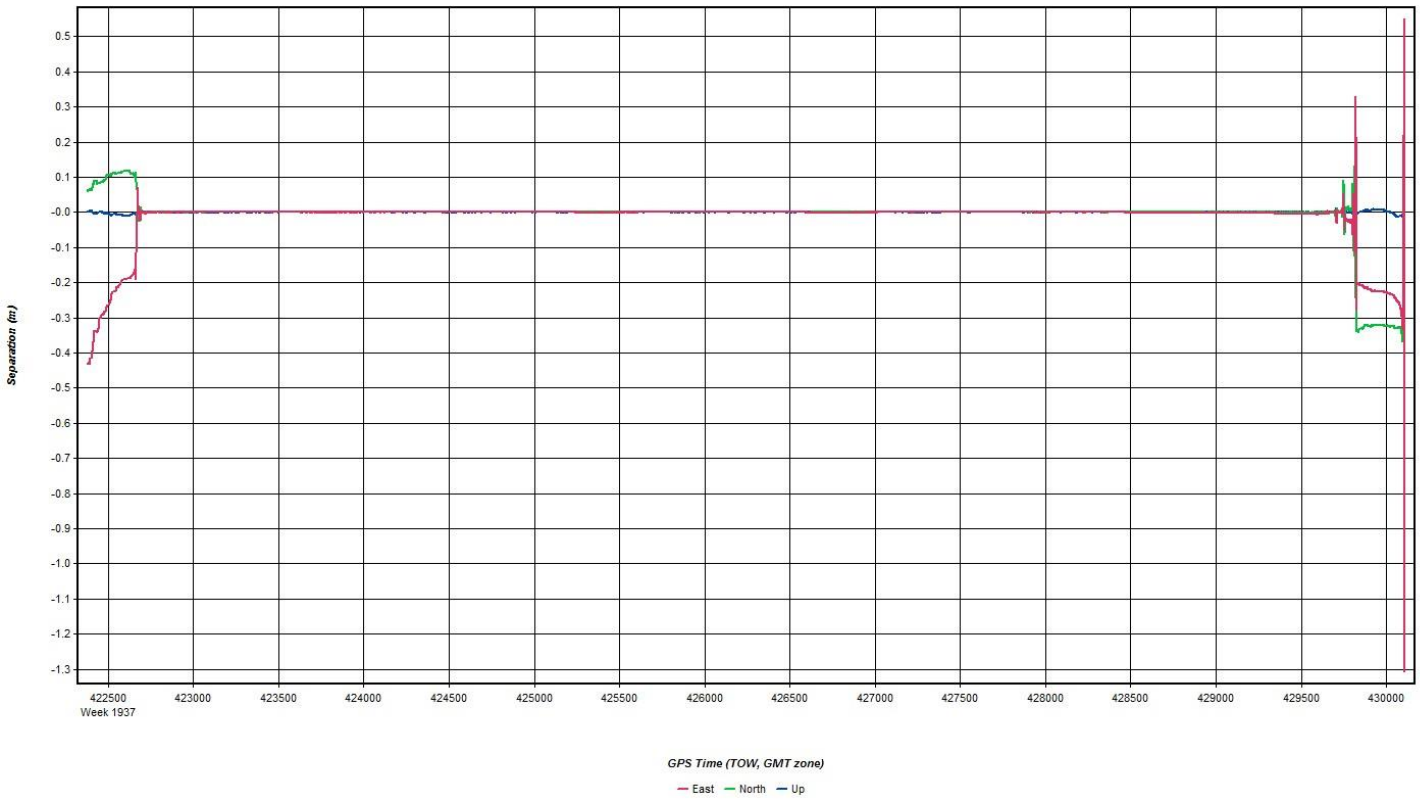
FLIGHT LINE #	SET HISTO	DIRECTION	LiDAR File Name	GPS TIME START	GPS TIME END	COMMENTS
5014		North	170223_224924	22:49:24	22:57:35	Stopped 2nm from the north because of a small cloud
5013		South	170223_220119	22:01:20	23:02:40	Covered area where smoke was present before
5012		North	170223_220638	23:06:39	23:09:04	Covered area where smoke was present before
5010		South	170223_231239	23:12:40	23:14:48	Covered area where a small loud was present before
5014		North	170223_231730	23:17:30	23:19:19	4nm from North to complete line
CL		East	170223_232741	23:27:41	23:30:40	
5084		North	170223_233614	23:36:15	23:38:00	Covered area where smoke was present before

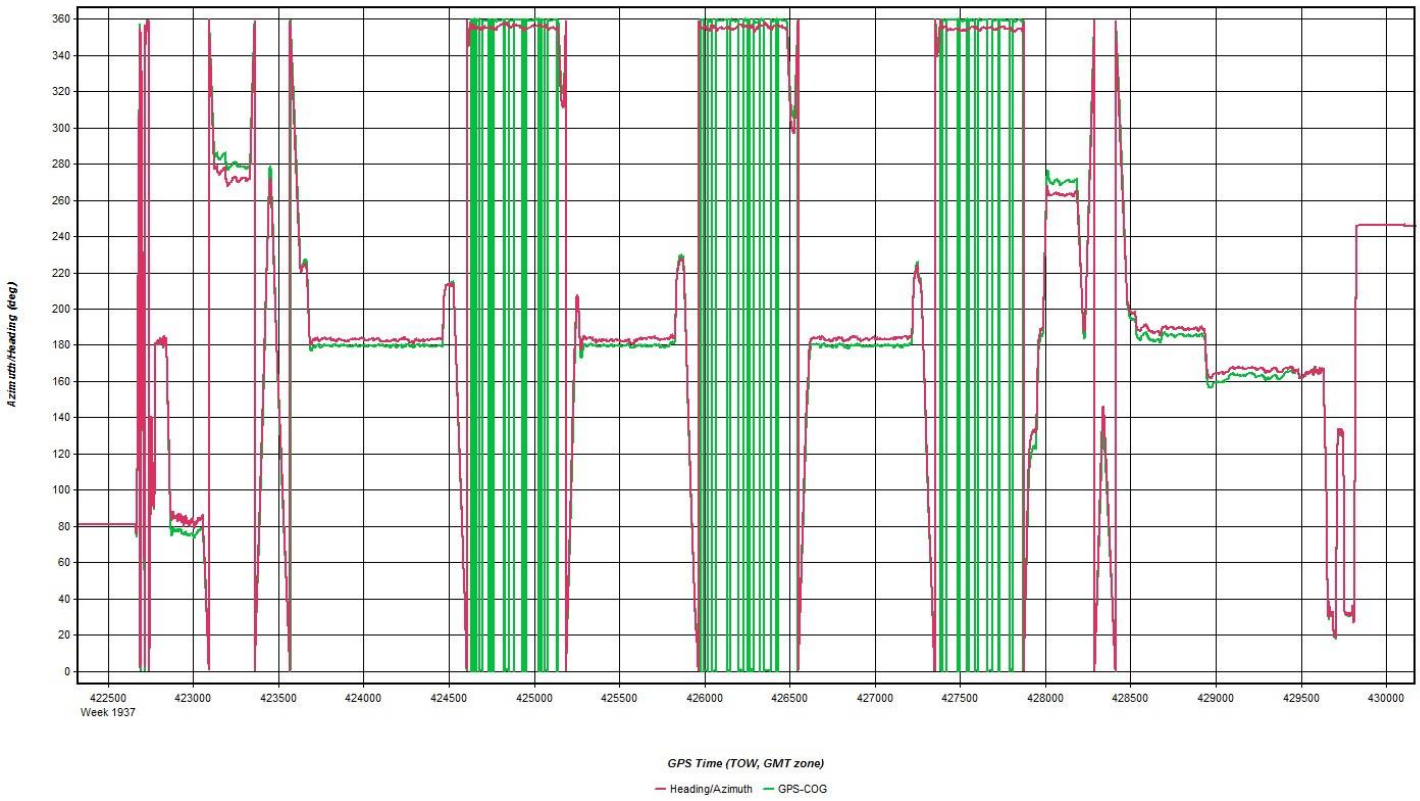
SUN ANGLE @Start: @End: @Peak:	Clear skies Sats and DOPS averaged 18 and 1.2 The antenna height for the back up base station was 1.693m to the ARP. The areas flown may not all be required but wanted to cover possible problem areas.

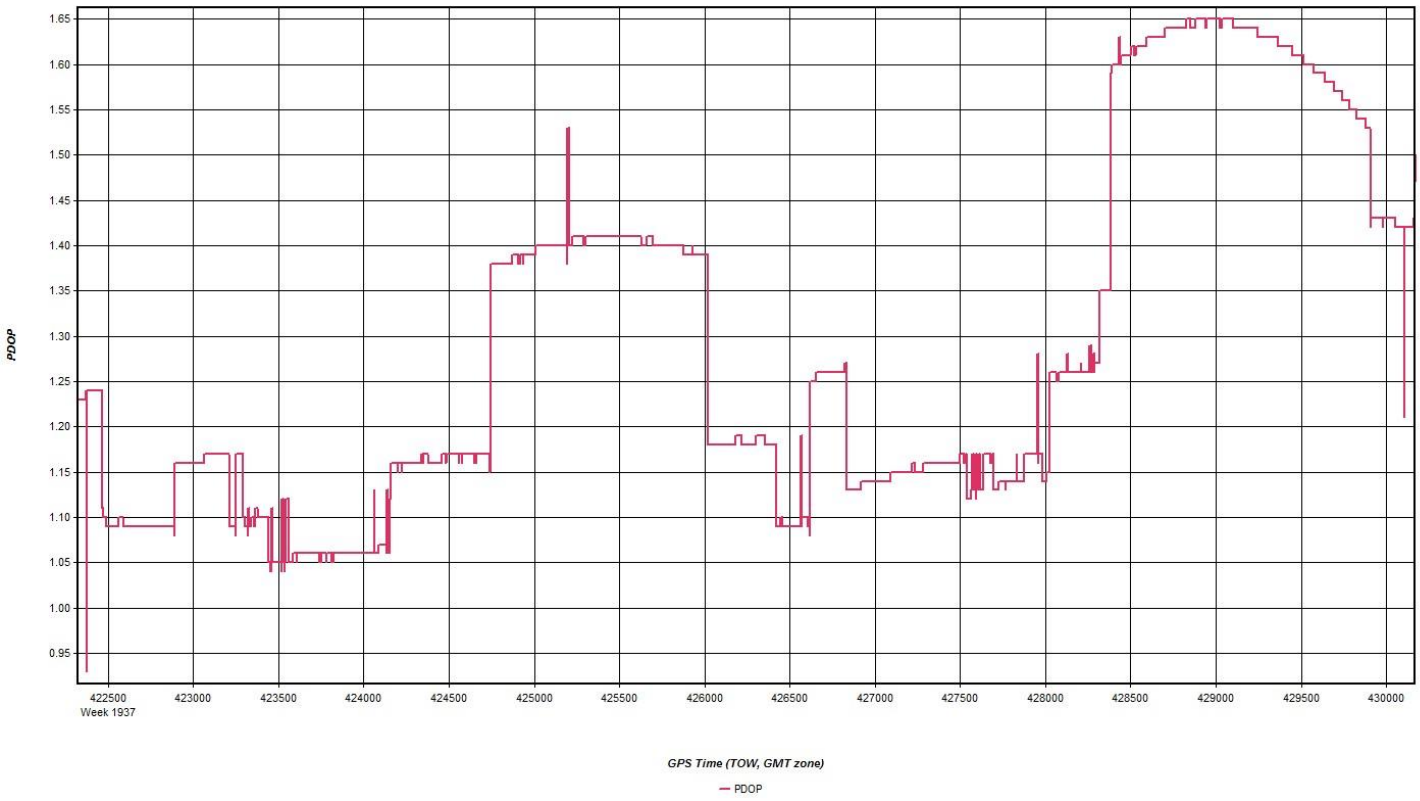
Feb 23, 2017-B (N246MP, SN8227)

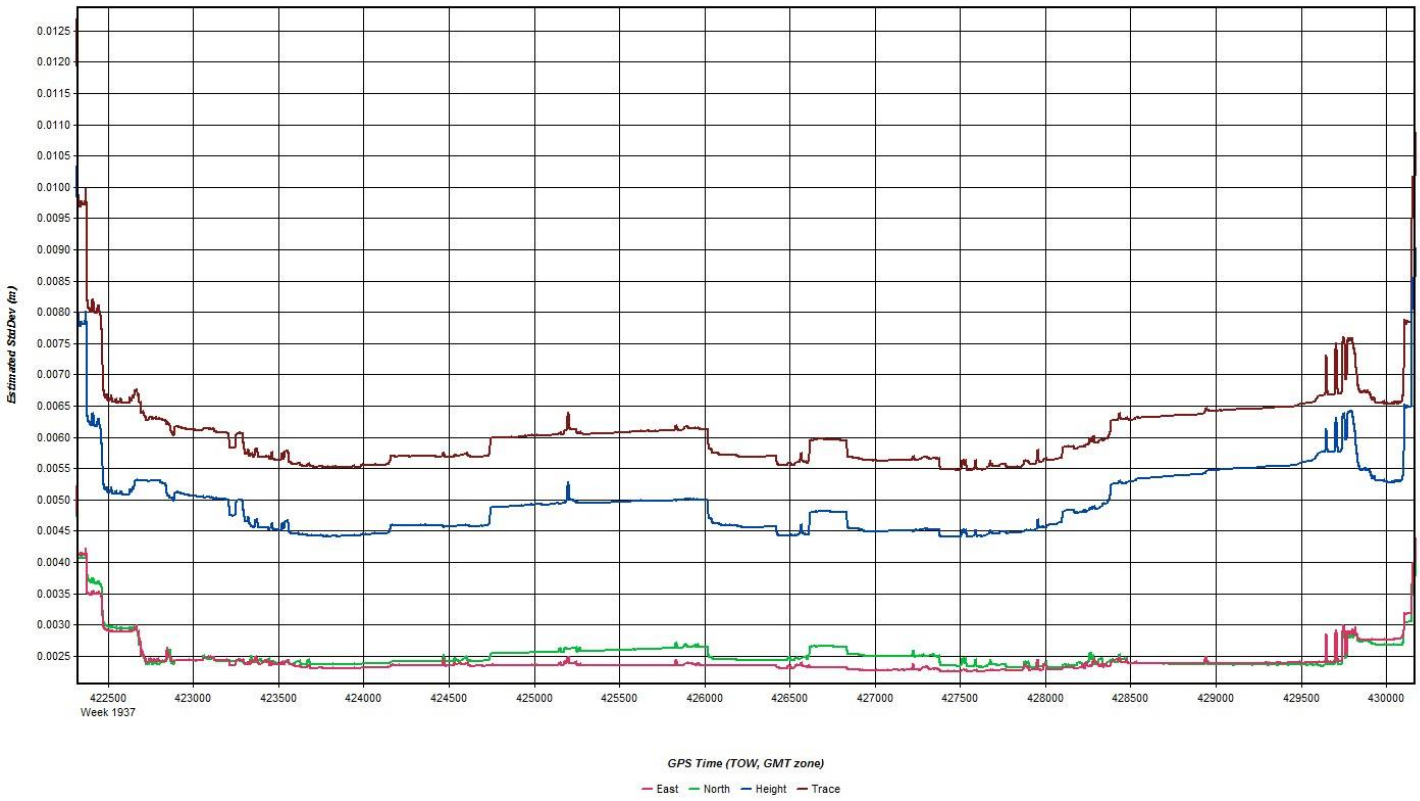


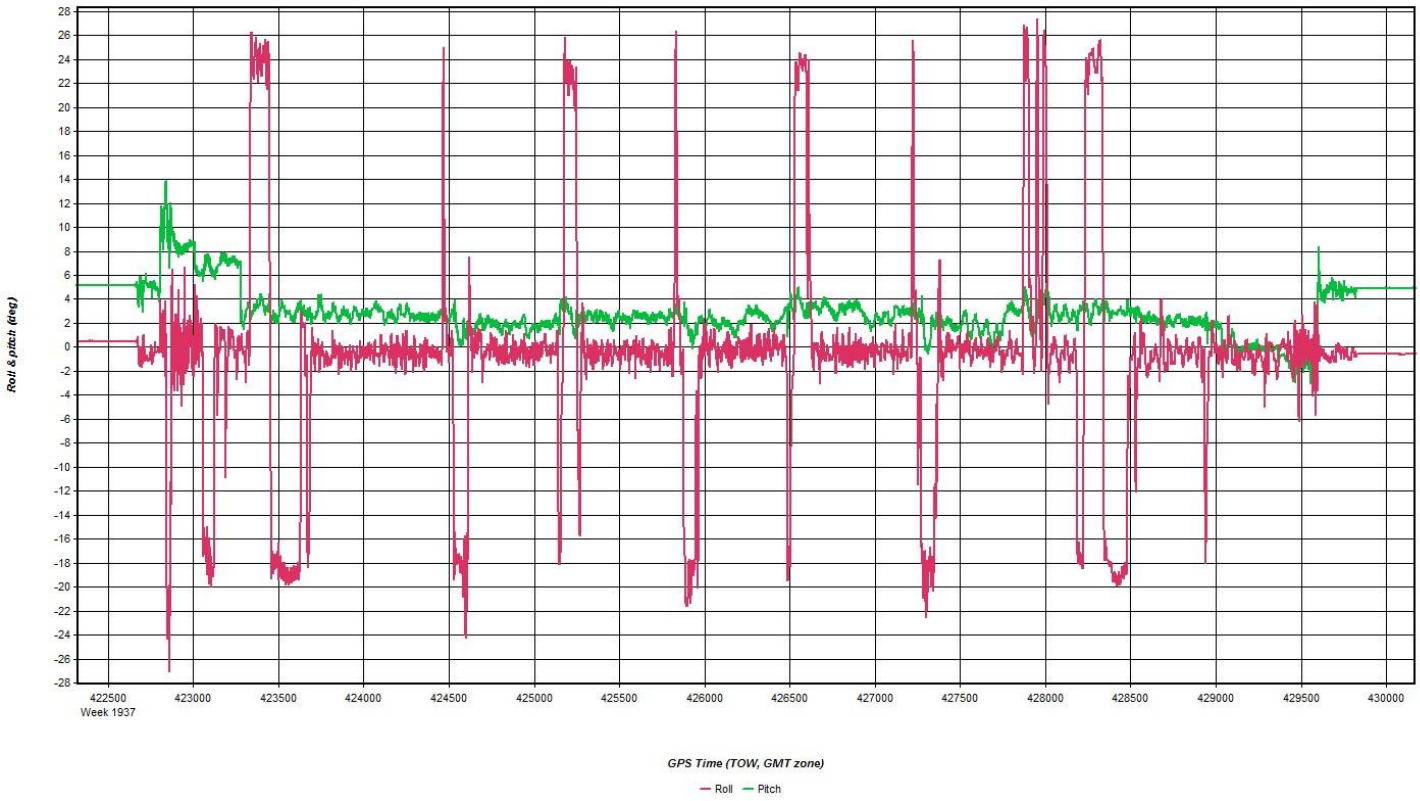

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

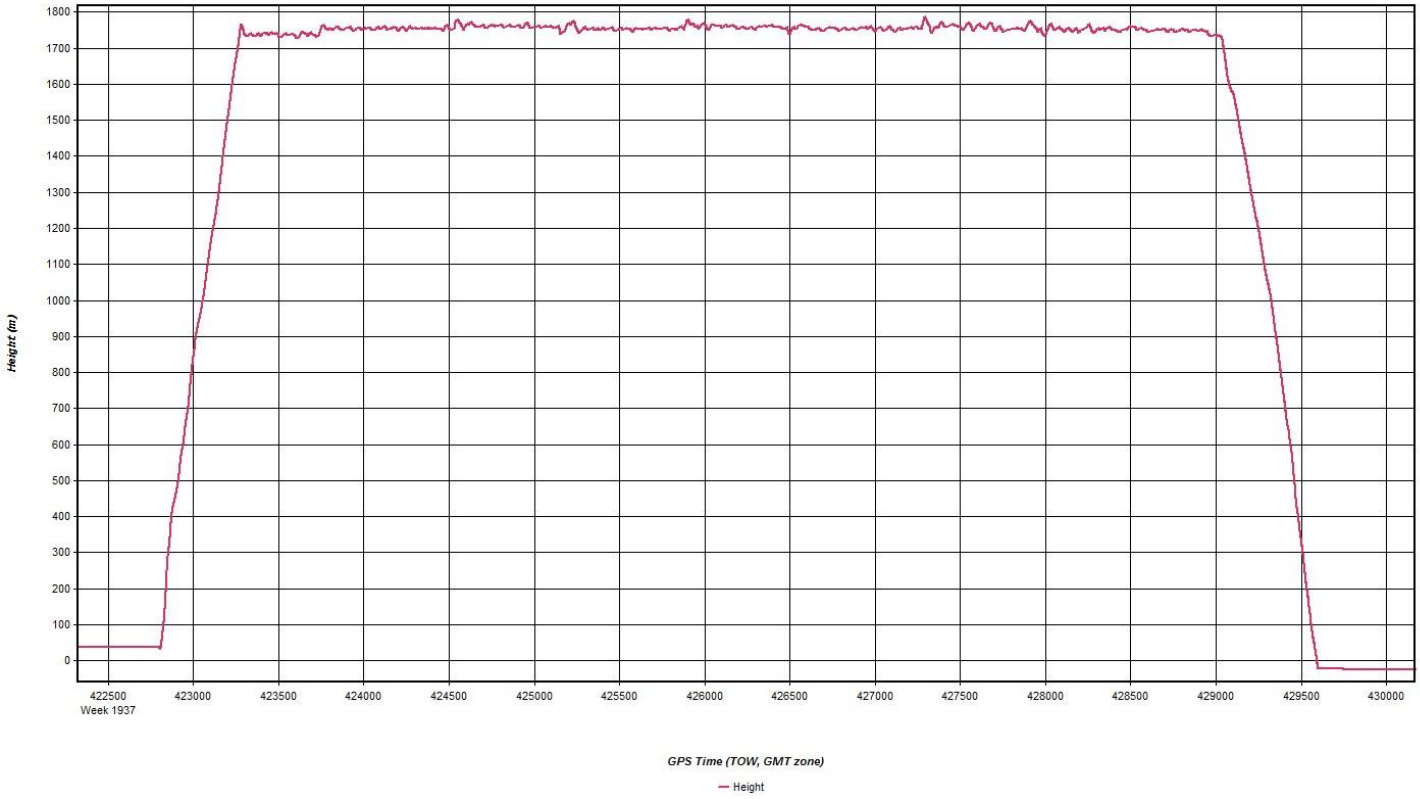

Separation (m)
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
-1.3
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
East
North
Up

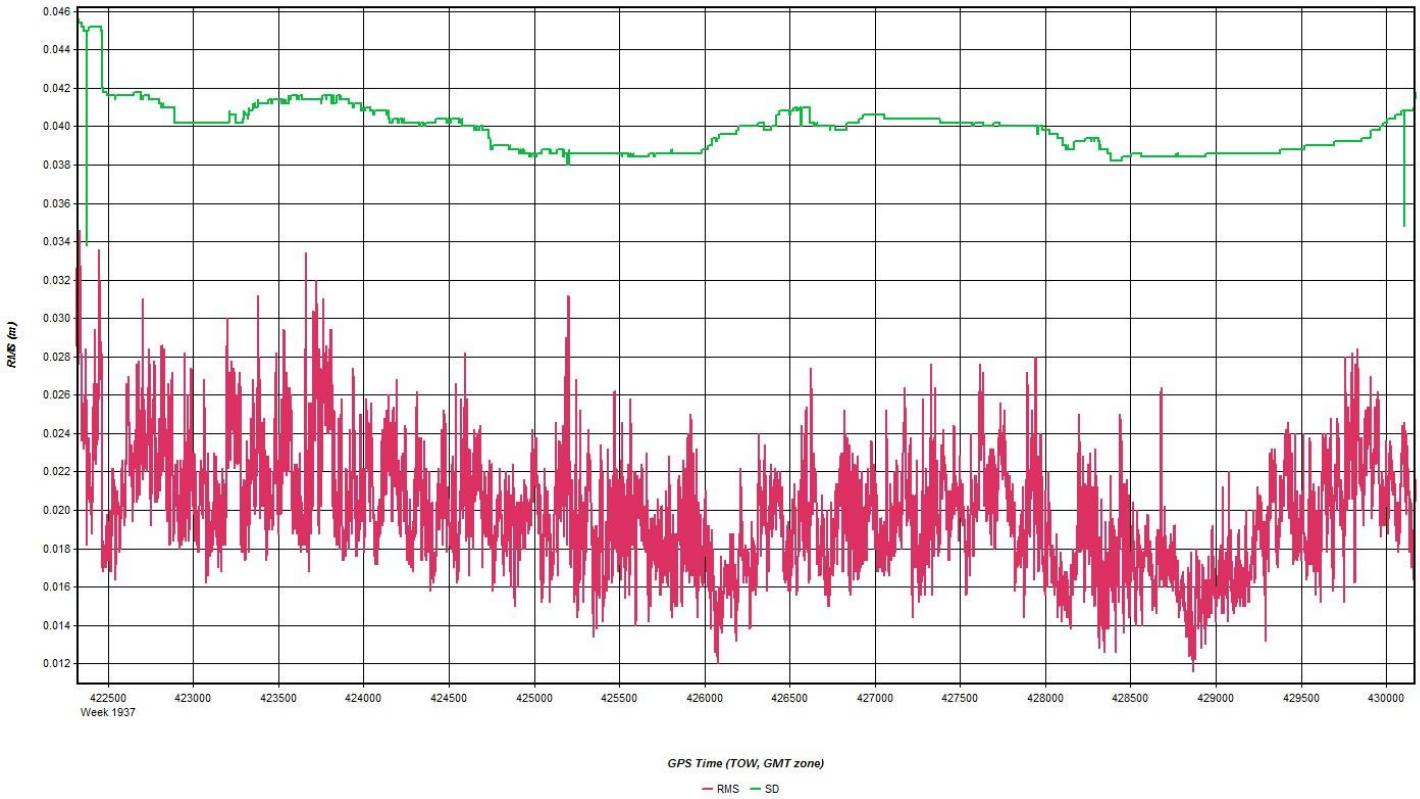

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

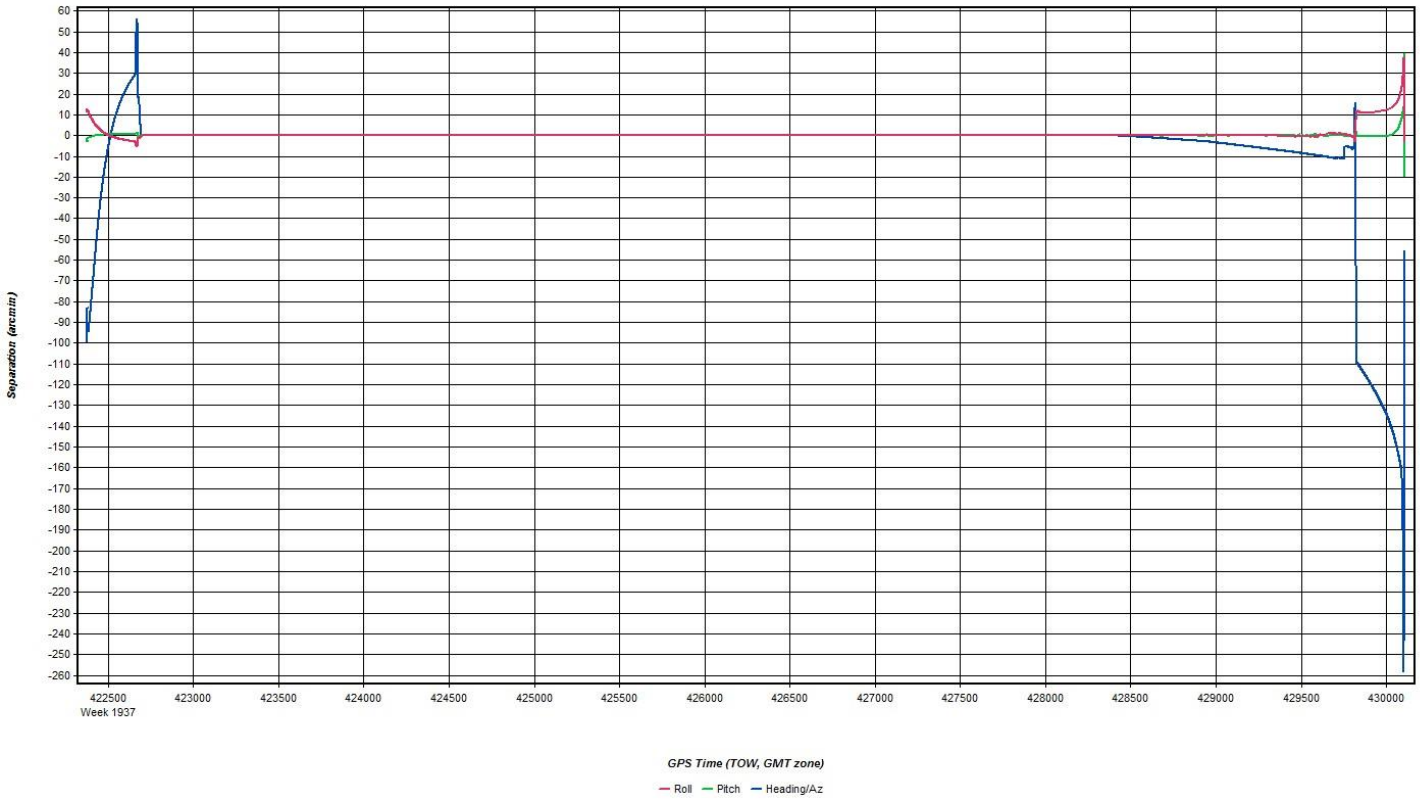

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
PDOP

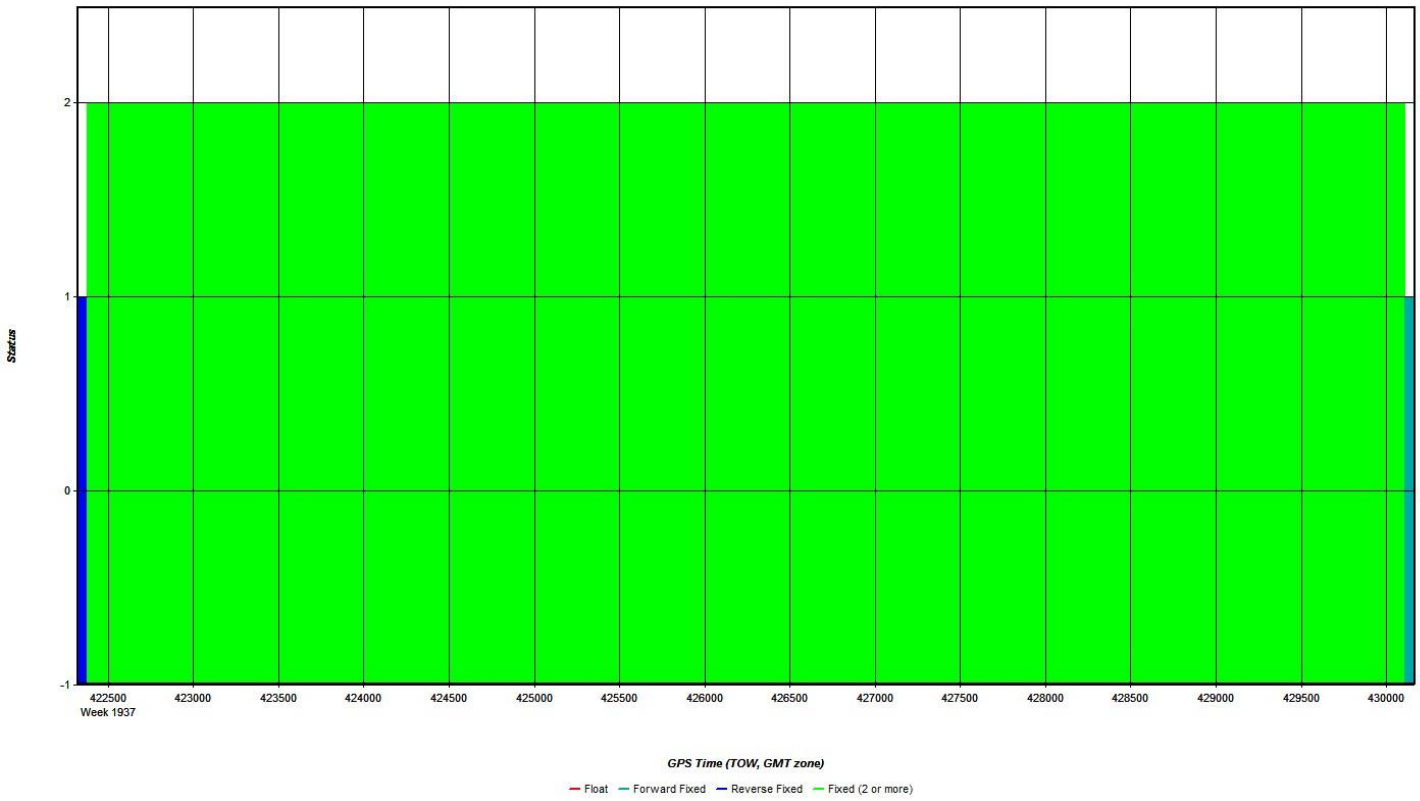

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

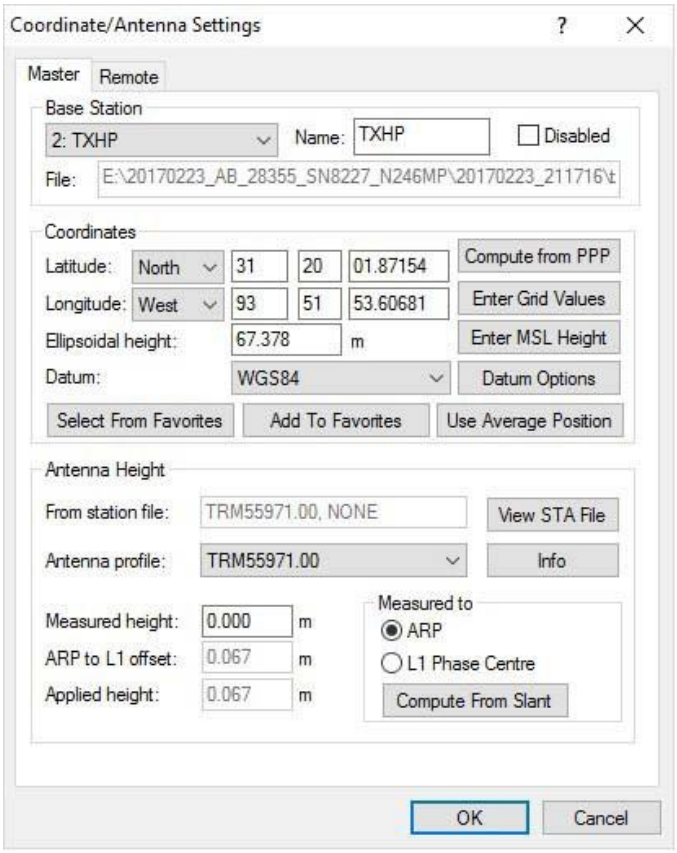

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
Roll
Pitch

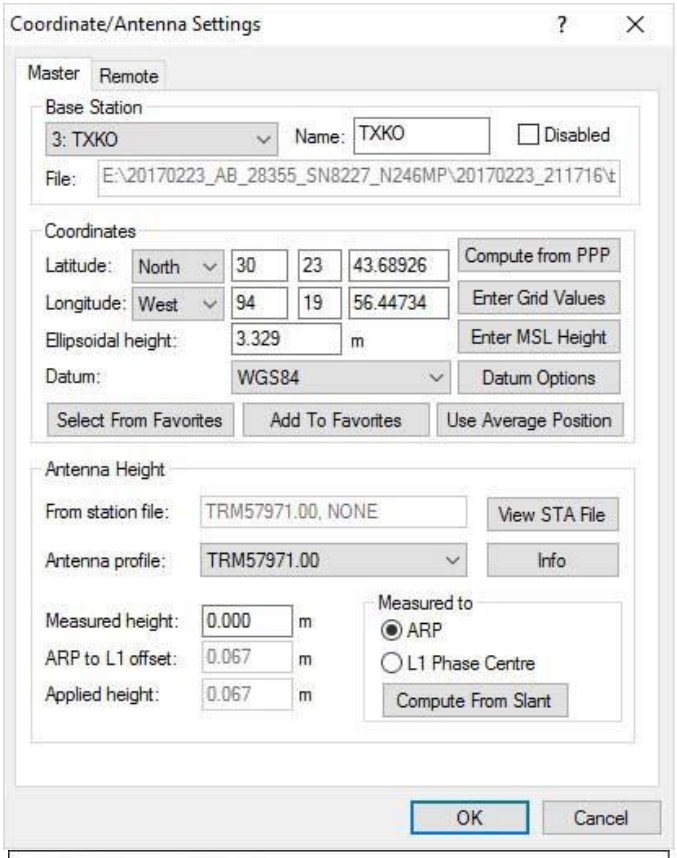

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
Height

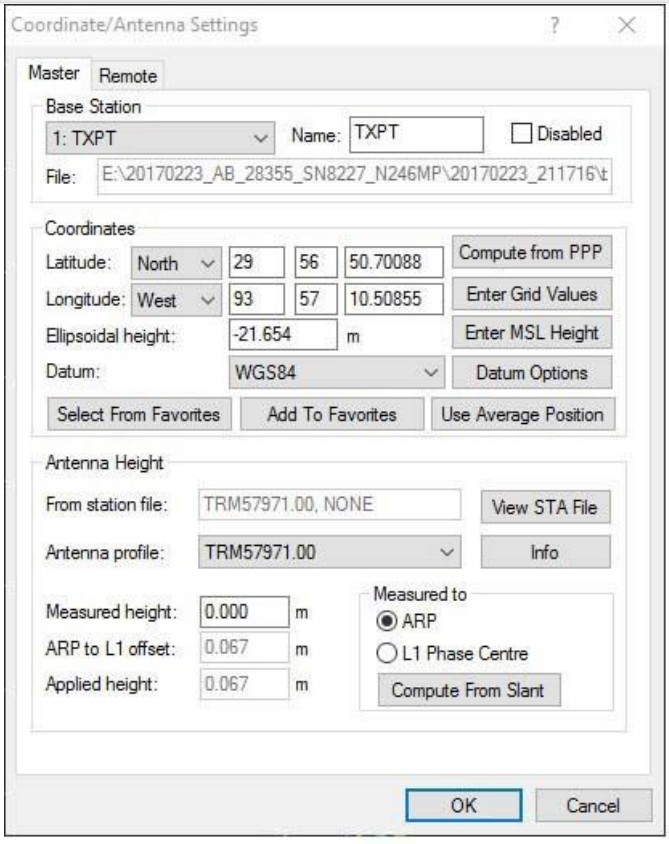

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
RMS
SD

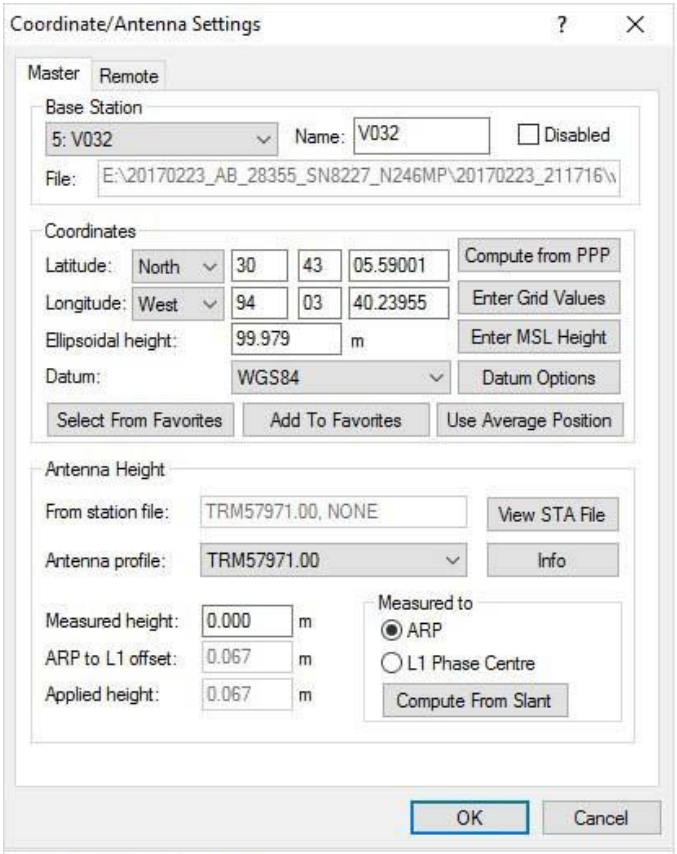

Separation (arcmin)
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
-220
-230
-240
-250
-260
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

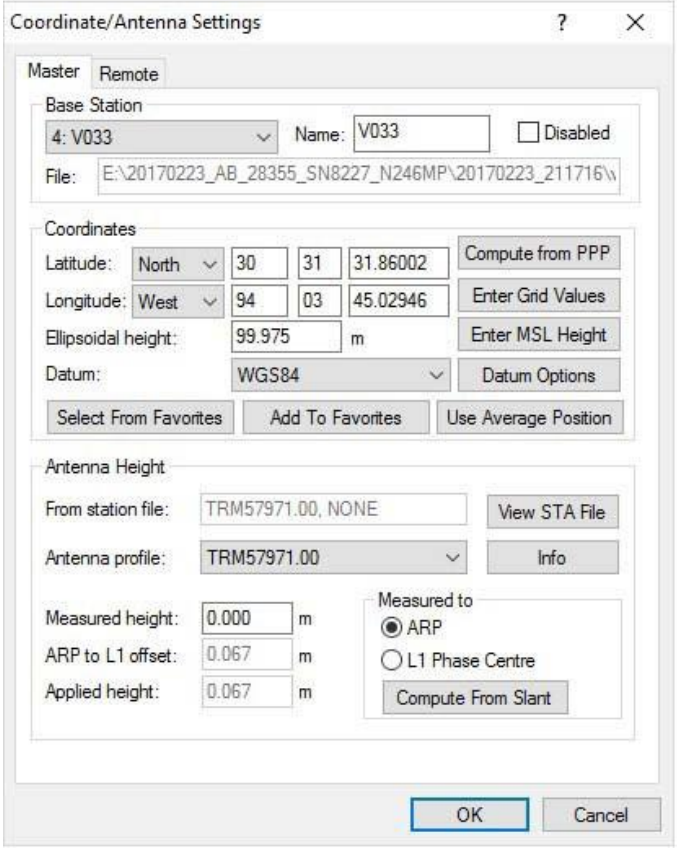

Status
2
1
0
-1
422500
Week 1937
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXHP
Name: TXHP
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_211716\t
Coordinates
Latitude: North 31 20 01.87154
Longitude: West 93 51 53.60681
Ellipsoidal height: 67.378 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

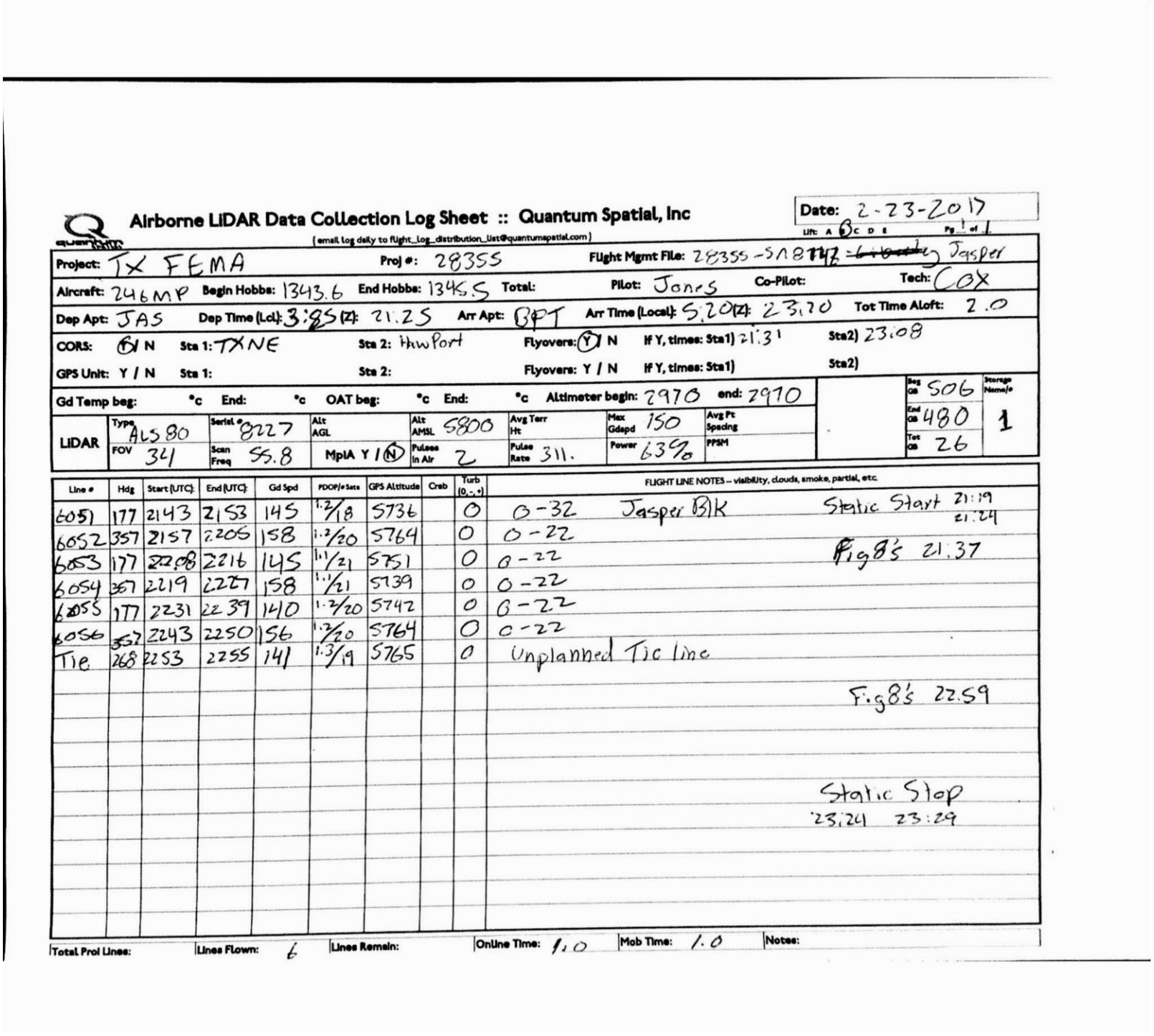

Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXKO
Name: TXKO
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_211716\t
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_211716\t
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V032
Name: V032
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_211716\\
Coordinates
Latitude: North 30 43 05.59001
Longitude: West 94 03 40.23955
Ellipsoidal height: 99.979 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V033
Name: V033
Disabled
File: E:\20170223_AB_28355_SN8227_N246MP\20170223_211716\\
Coordinates
Latitude: North 30 31 31.86002
Longitude: West 94 03 45.02946
Ellipsoidal height: 99.975 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-23-2017 Lift: A B C D E Pg 1 of 1

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355-SN8747-6-Hbastrop Jasper

Aircraft: 246MP Begin Hobbs: 1343.6 End Hobbs: 1345.5 Total: Pilot: Jones Co-Pilot: Tech: COX

Dep Apt: JAS Dep Time (Lcl): 3:25 (Z): 21.25 Arr Apt: BPT Arr Time (Local): 5:20 (Z): 23:20 Tot Time Aloft: 2.0

CORS: (Y) N Sta 1: TXNE Sta 2: Hawport Flyovers: (Y) N If Y, times: Sta1) 21:31 Sta2) 23:08

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 2970 end: 2970

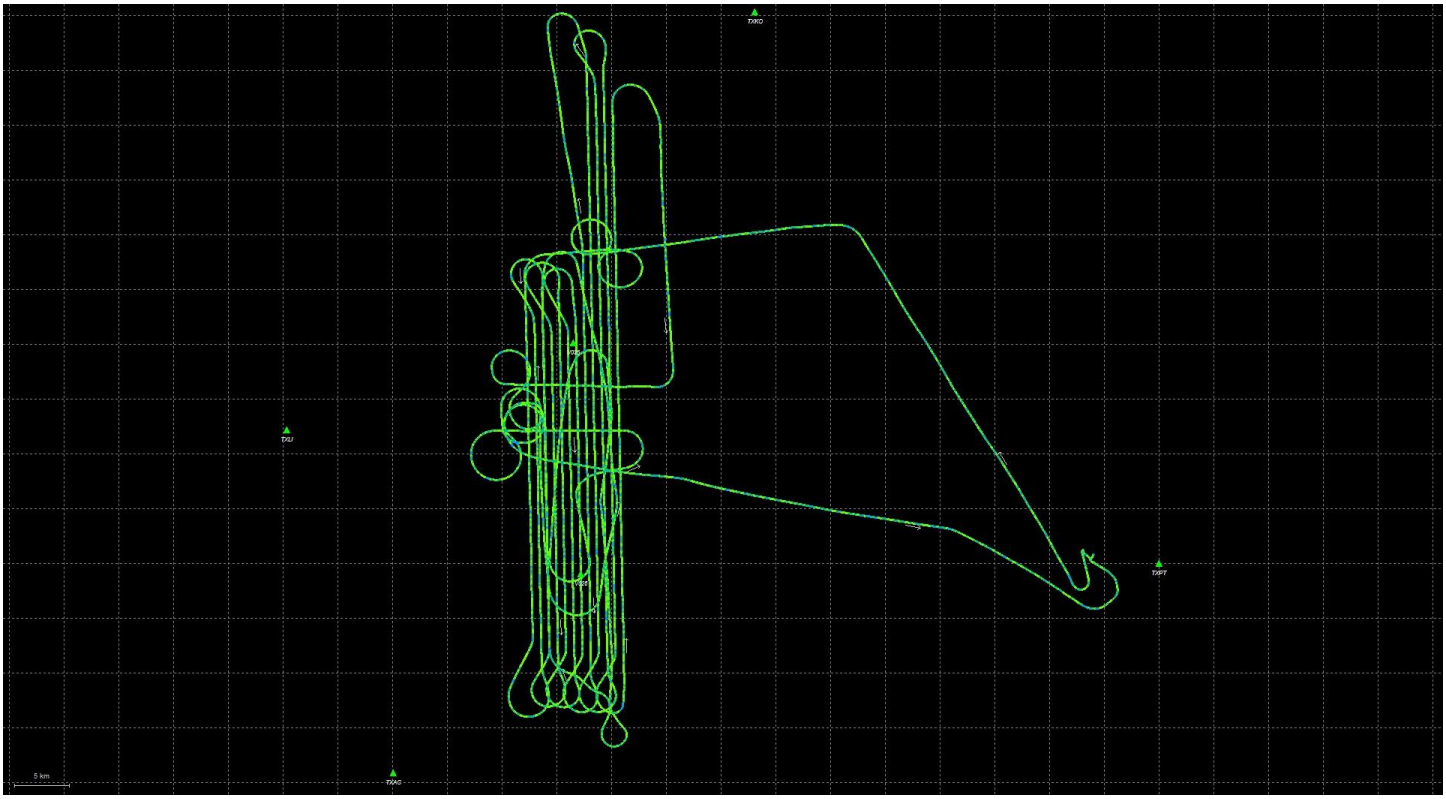
Beg GB 506 End GB 480 Tot GB 26 Storage Name/# 1

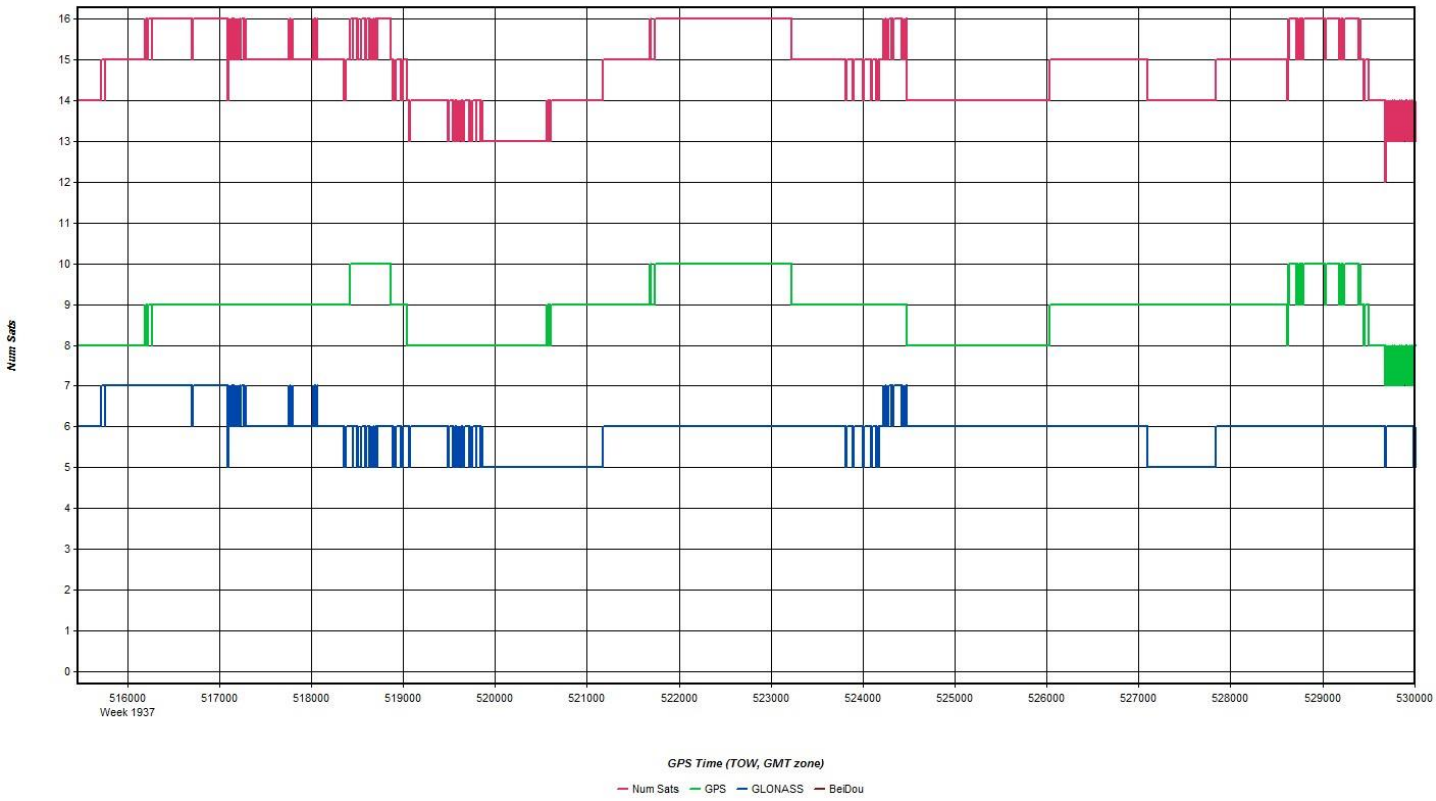
LIDAR	Type ALS80	Serial # 8227	Alt AGL	Alt AMSL 5800	Avg Terr Ht	Max Gdspd 150	Avg Pt Spacing
	FOV 34	Scan Freq 55.8	MpIA Y / (N)	Pulses In Air 2	Pulse Rate 311.	Power 63%	PPSM

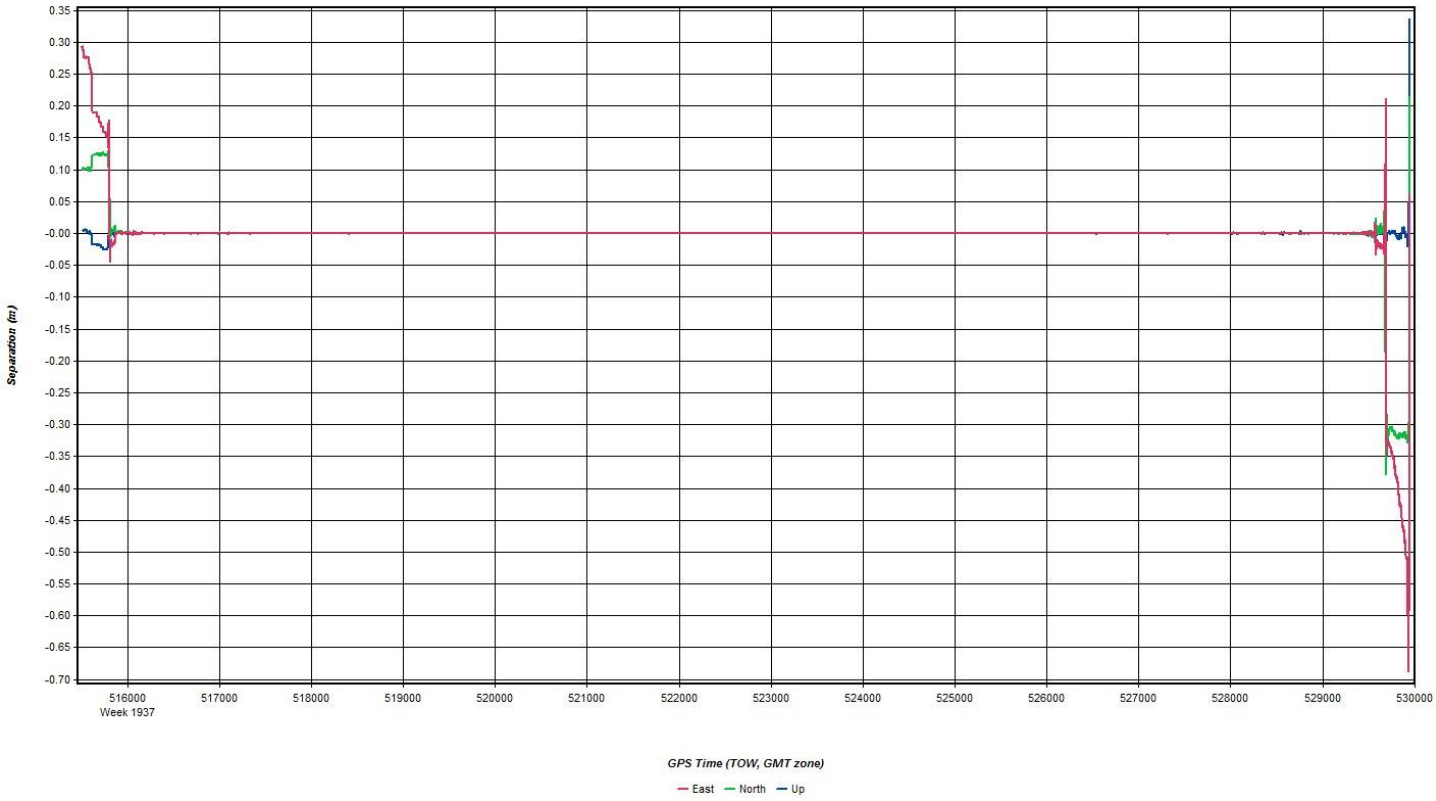
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
6051	177	2143	2153	145	1.2/18	5736		0	0-32 Jasper BLK Static Start 21:19 21:24
6052	357	2157	2205	158	1.2/20	5764		0	0-22
6053	177	2208	2216	145	1.1/21	5751		0	0-22 Fig 8's 21.37
6054	357	2219	2227	158	1.1/21	5739		0	0-22
6055	177	2231	2239	140	1.2/20	5742		0	0-22
6056	357	2243	2250	156	1.2/20	5764		0	0-22
Tie	268	2253	2255	141	1.3/19	5765		0	Unplanned Tie line
									Fig 8's 22.59
									Static Stop 23:24 23:29

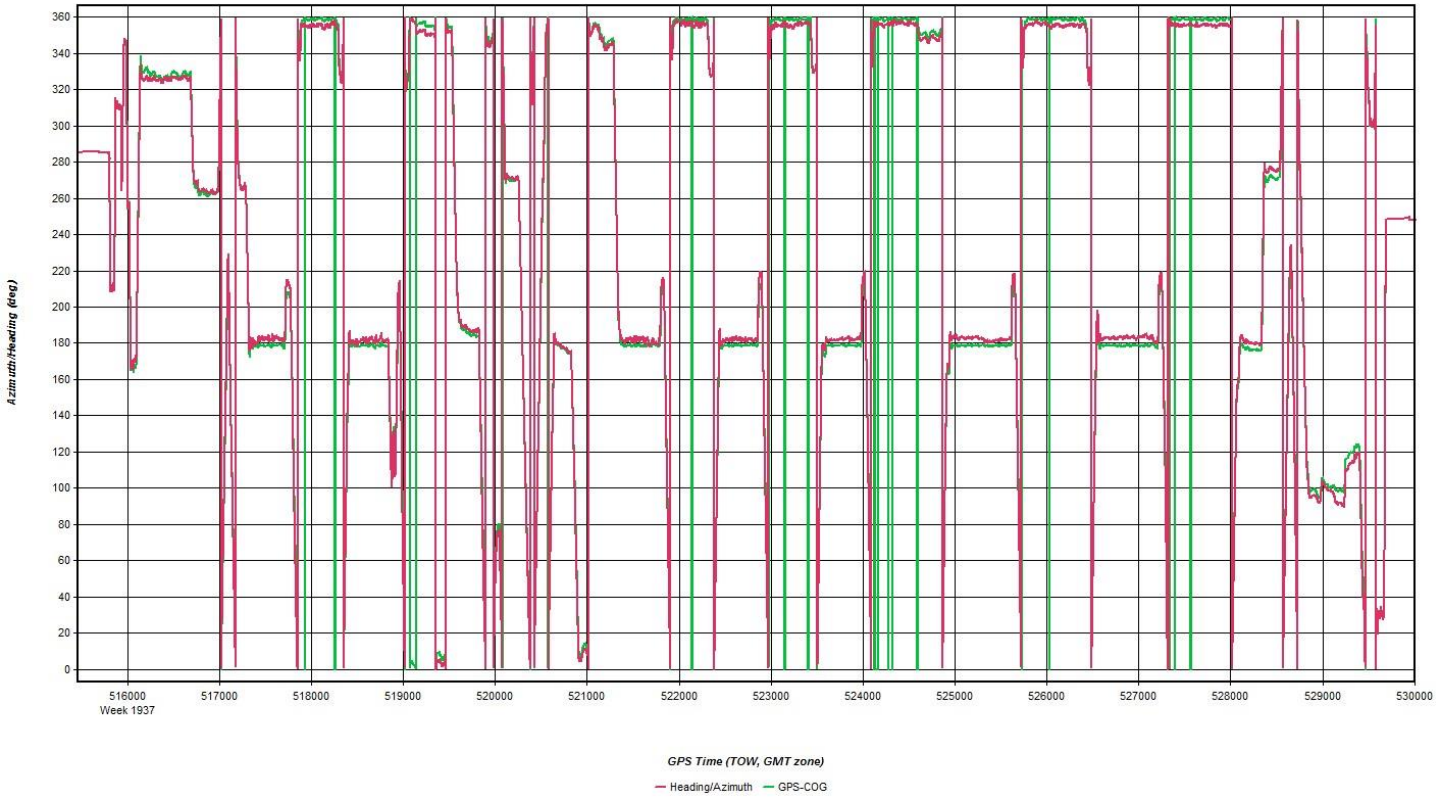
Total Prol Lines: Lines Flown: 6 Lines Remain: OnLine Time: 1.0 Mob Time: 1.0 Notes:

Feb 24, 2017-A (N246MP, SN8227)

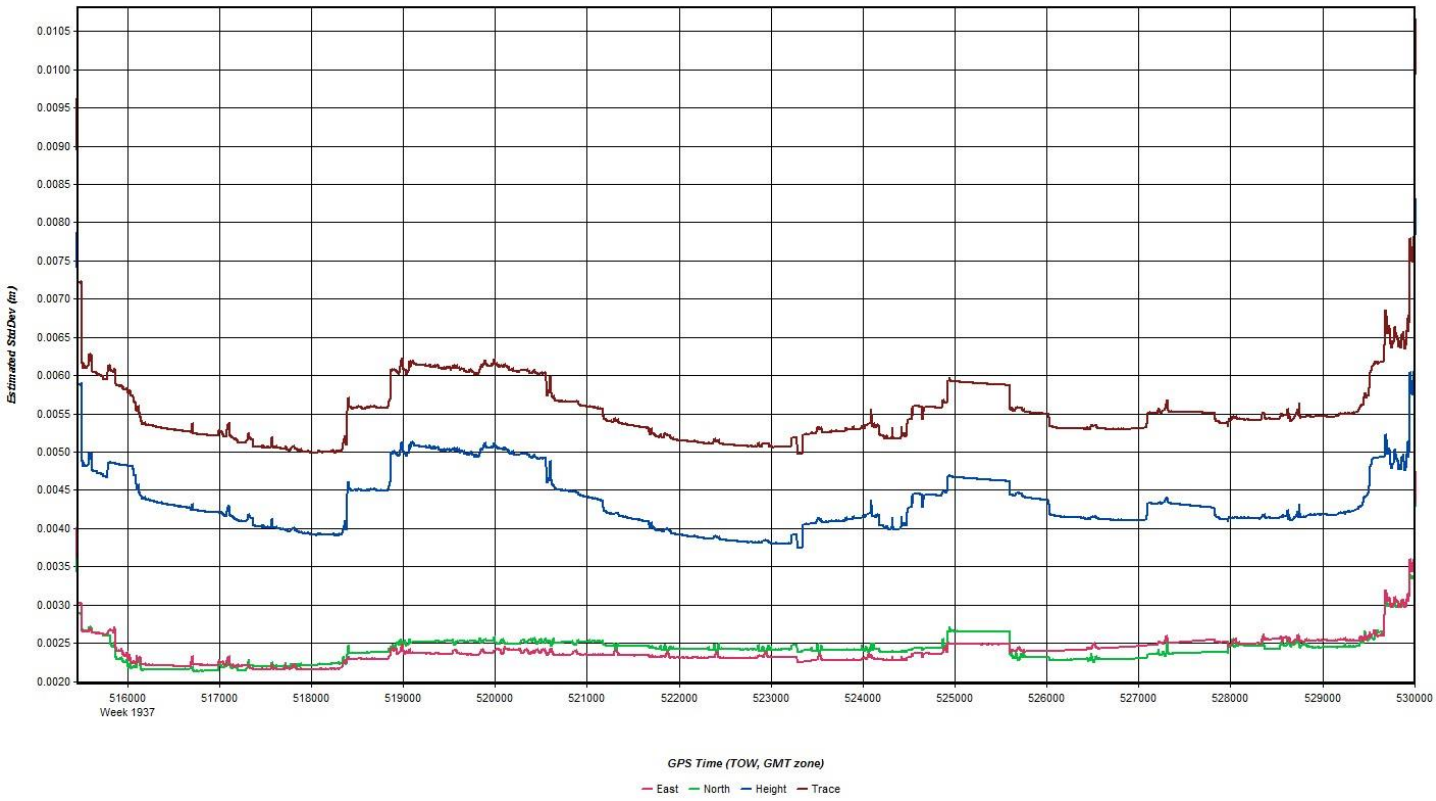


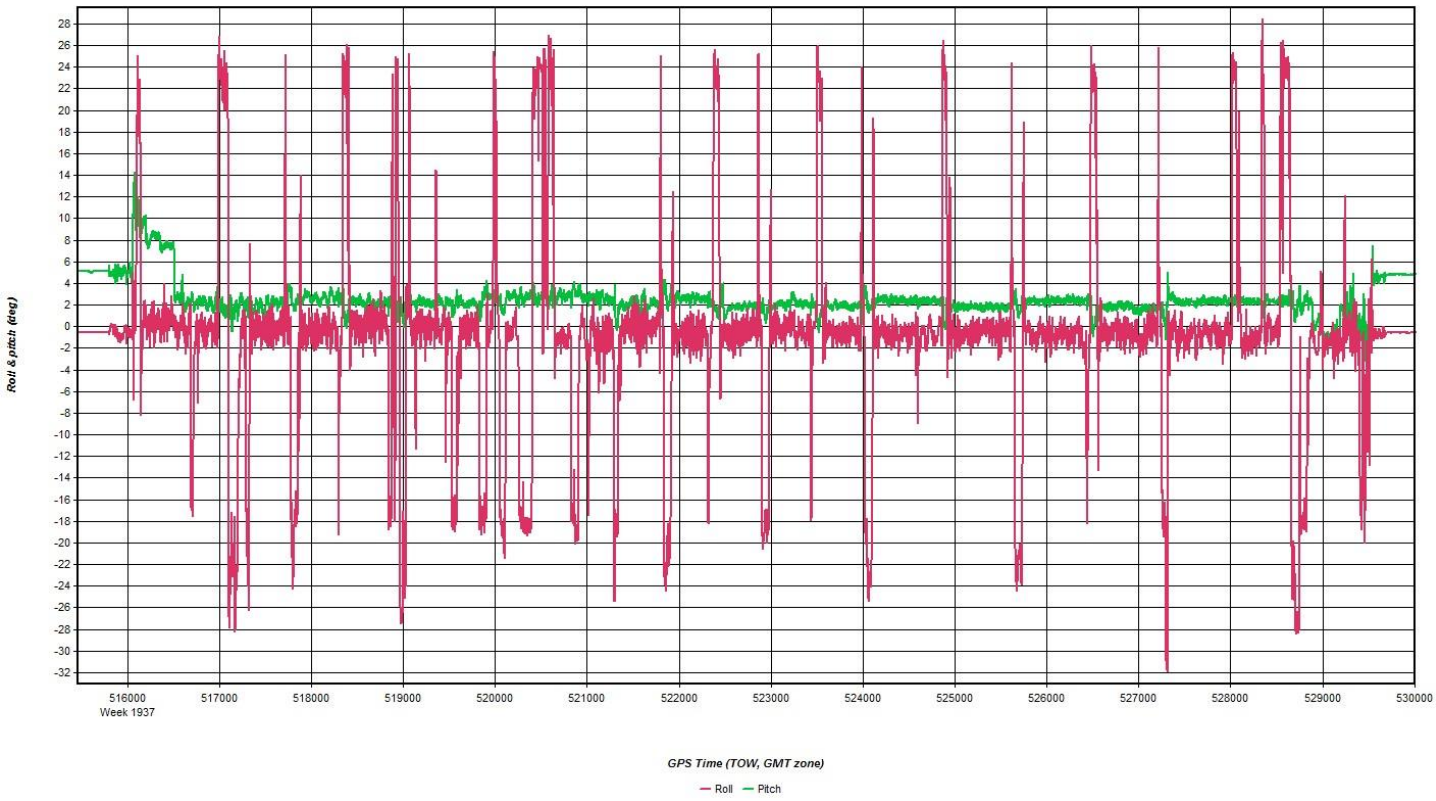

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

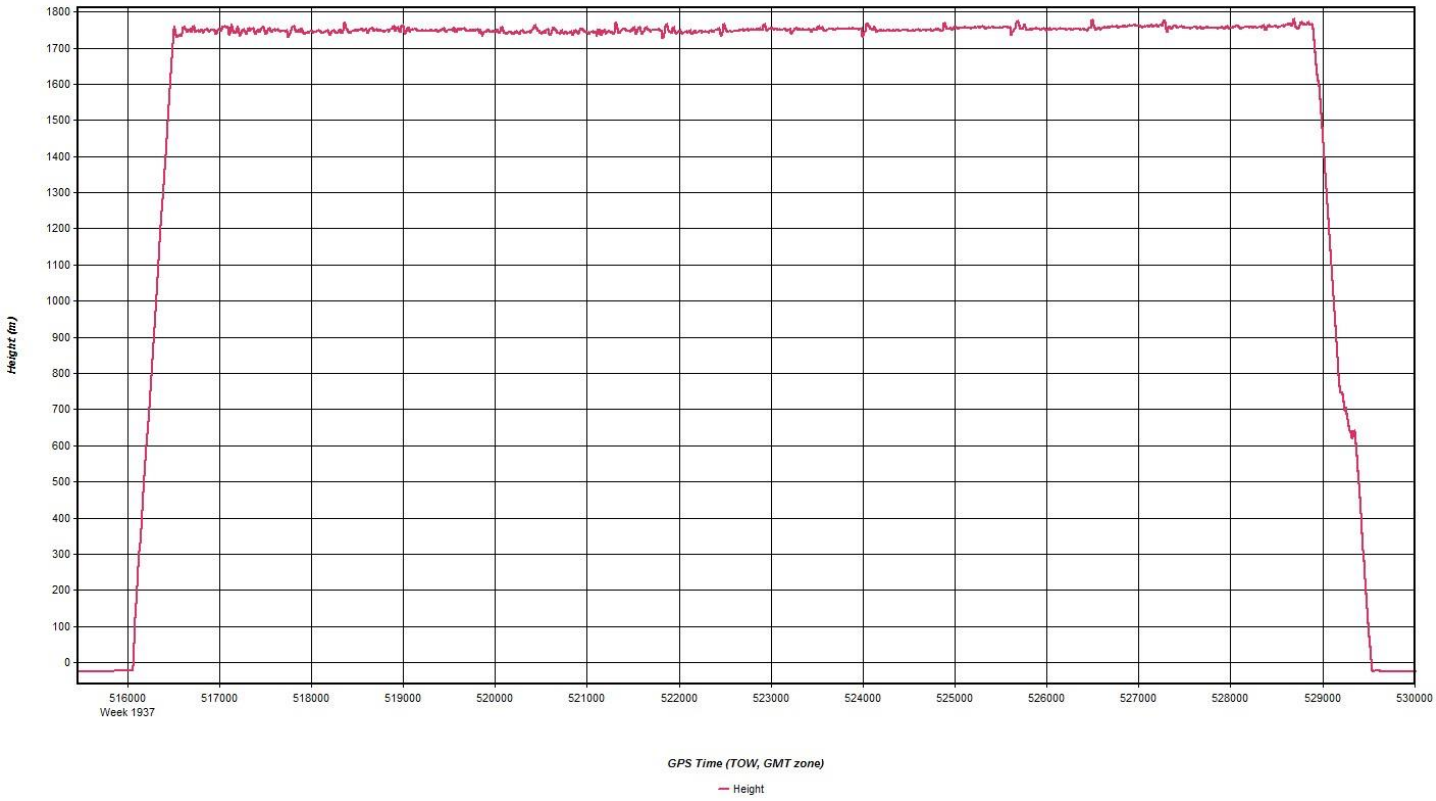

Separation (m)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-0.65
-0.70
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
East
North
Up

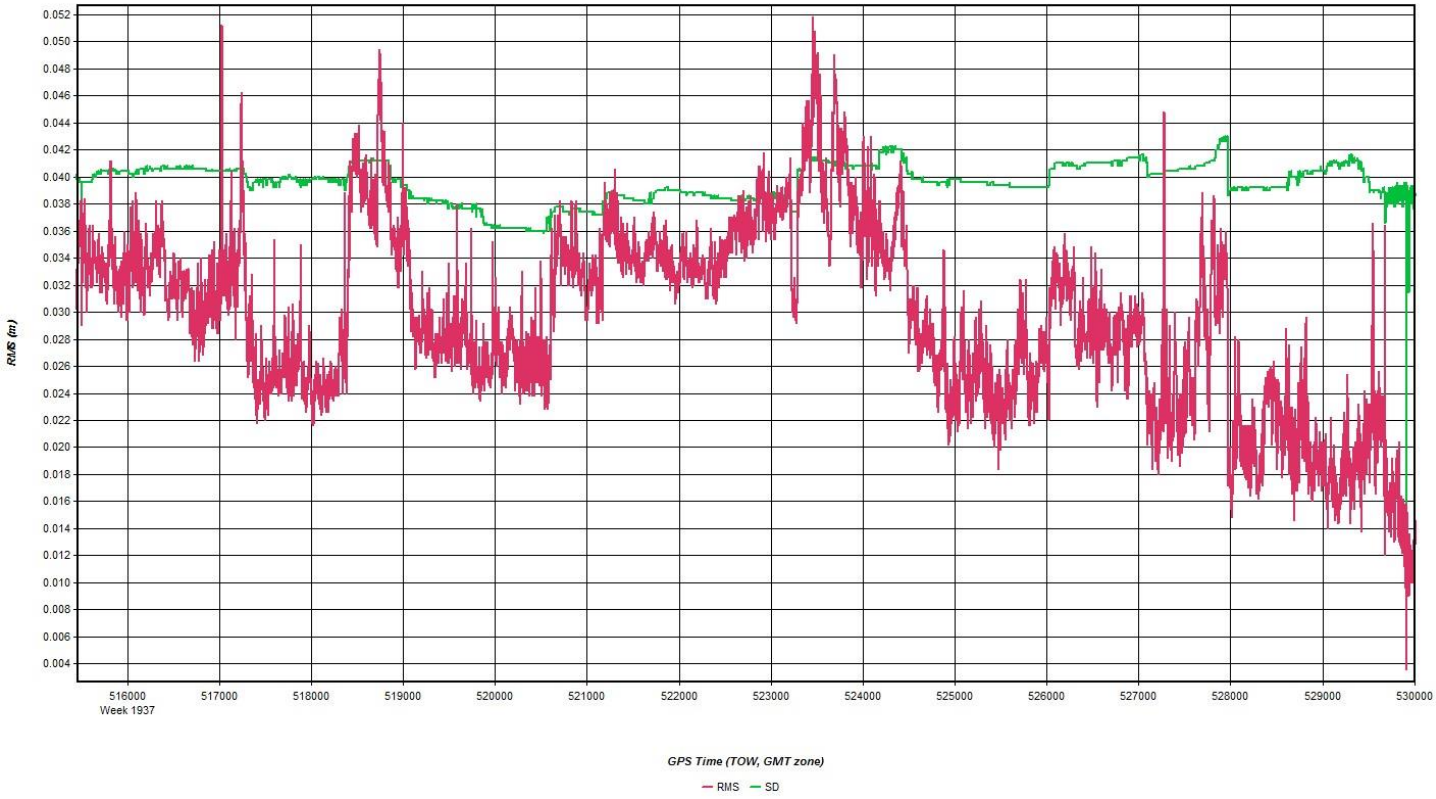

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

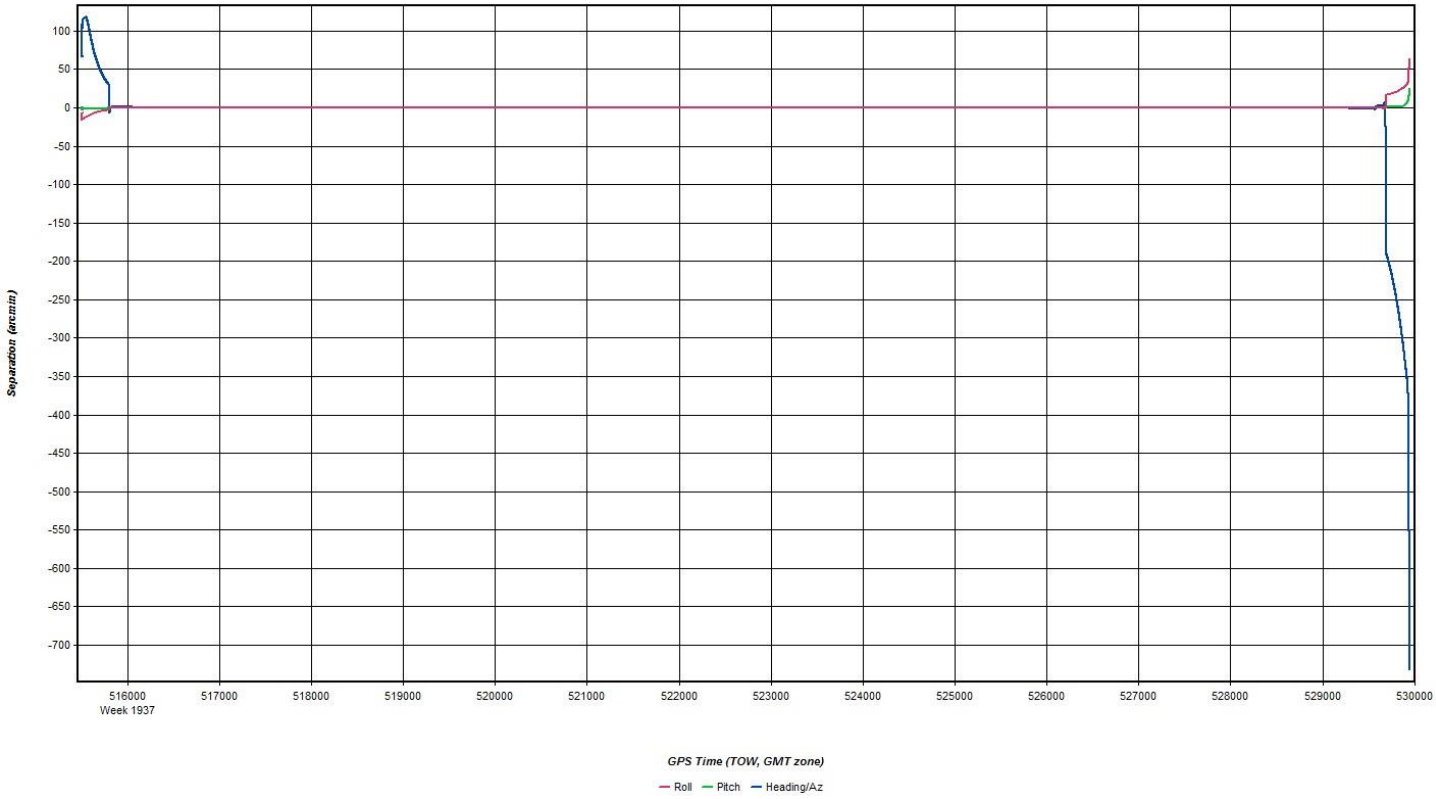

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
PDOP

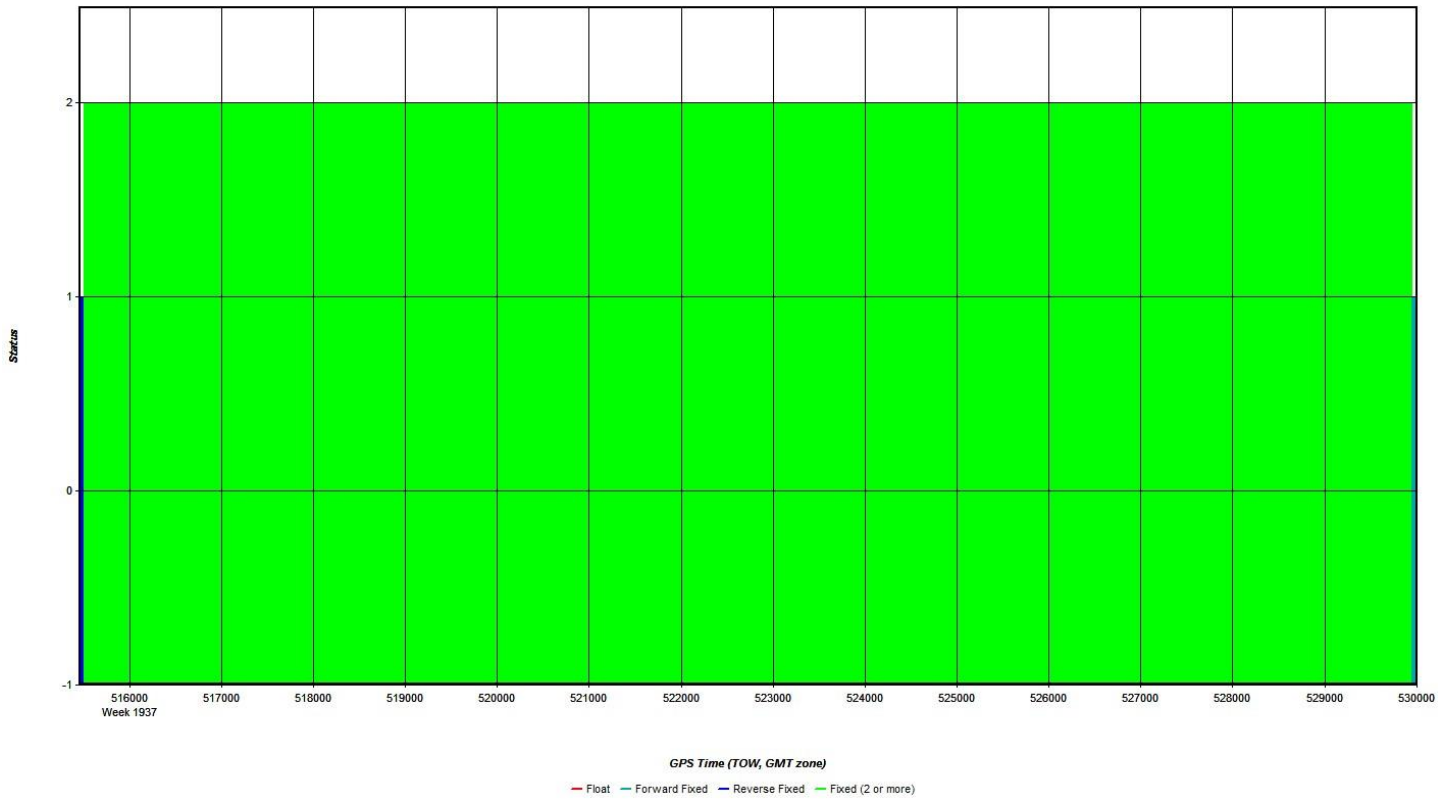

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

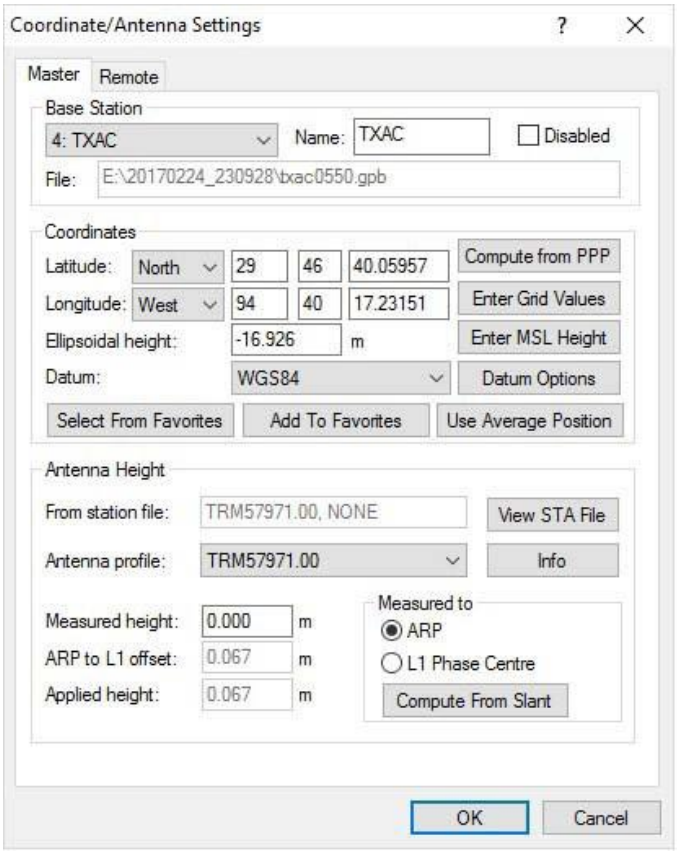

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
Roll
Pitch

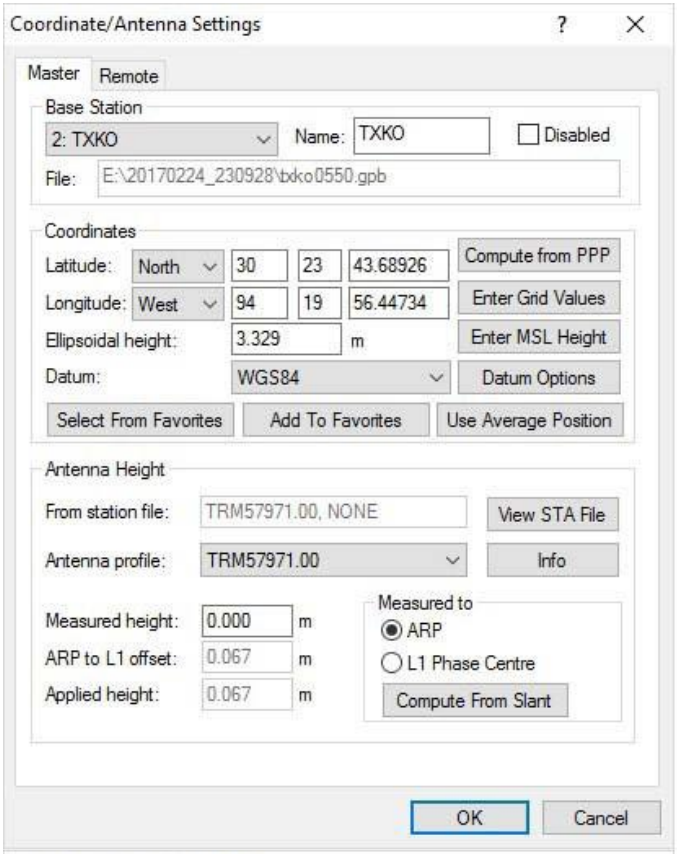

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
Height

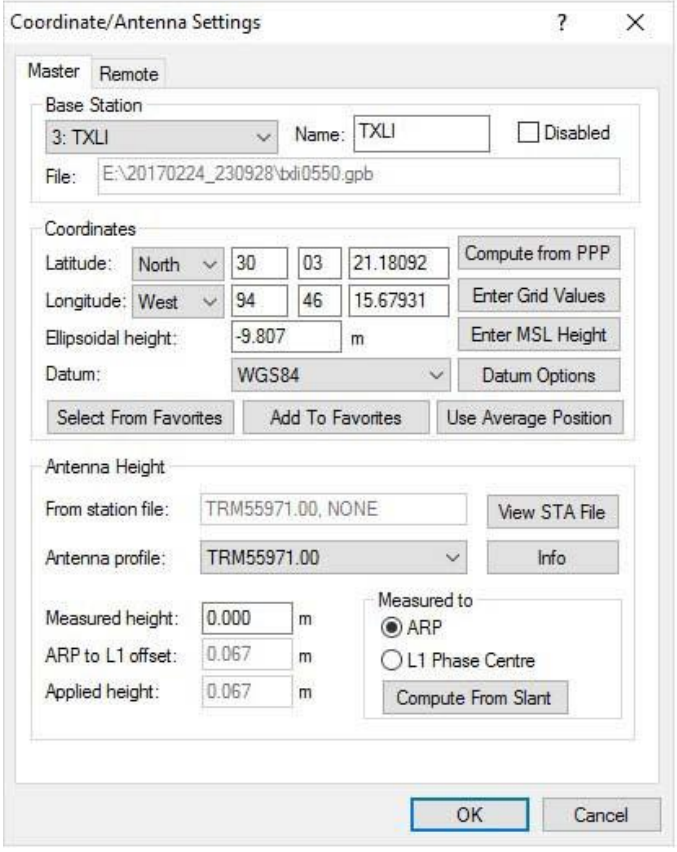

RMS (m)
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
RMS
SD

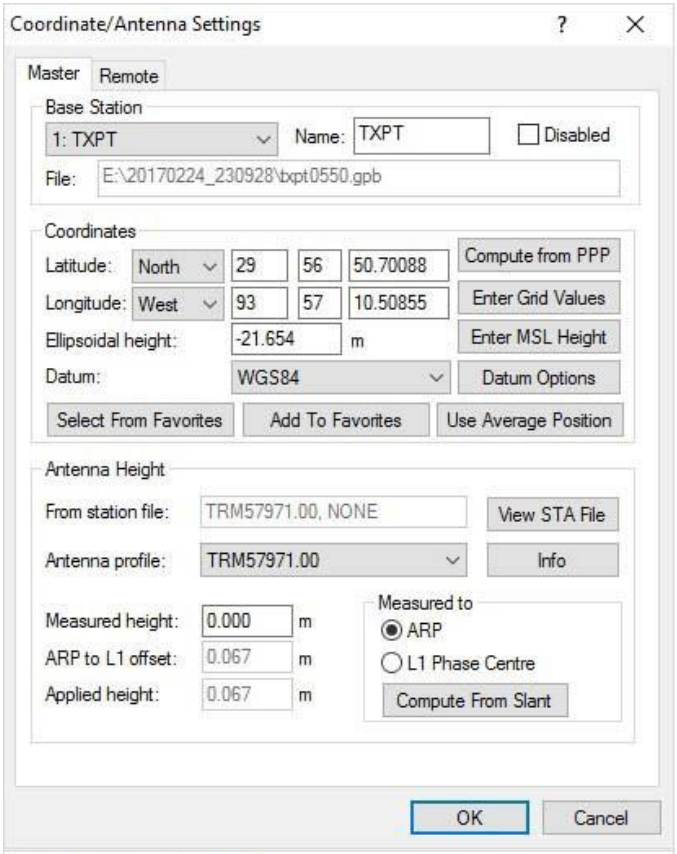

Separation (arcmin)
100
50
0
-50
-100
-150
-200
-250
-300
-350
-400
-450
-500
-550
-600
-650
-700
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

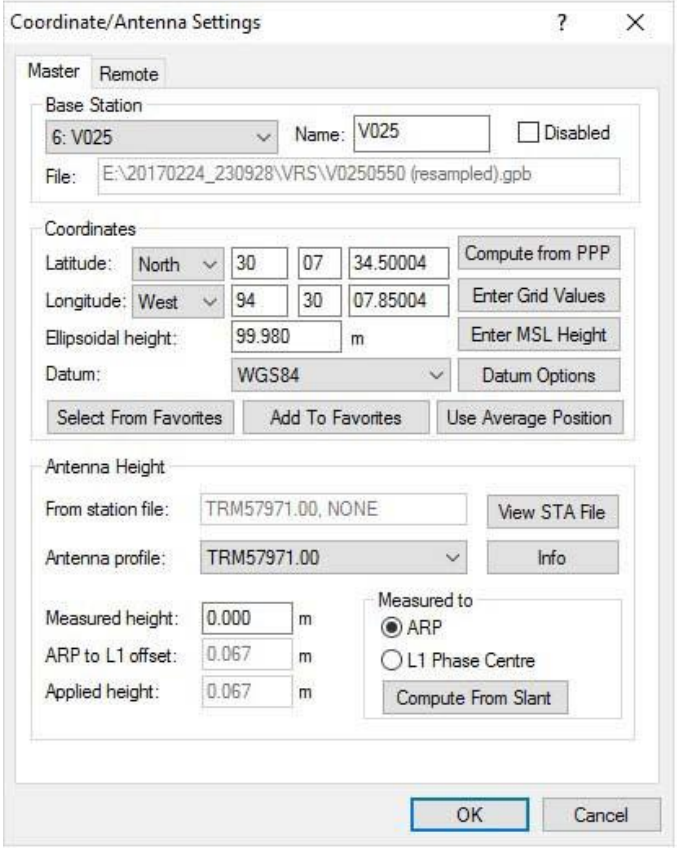

Status
2
1
0
-1
516000
Week 1937
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

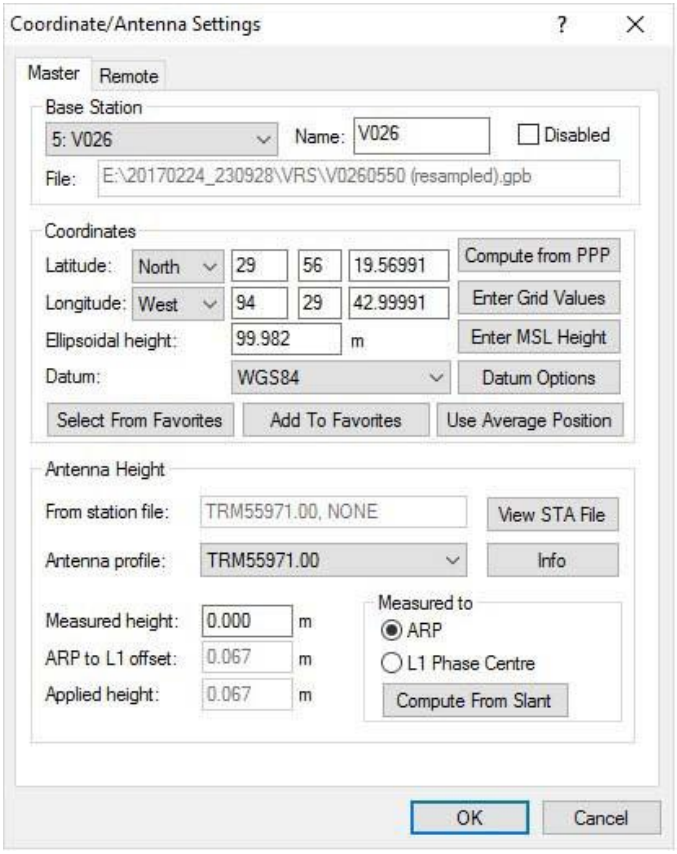

Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXAC
Name: TXAC
Disabled
File: E:\20170224_230928\txac0550.gpb
Coordinates
Latitude: North 29 46 40.05957
Longitude: West 94 40 17.23151
Ellipsoidal height: -16.926 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXKO
Name: TXKO
Disabled
File: E:\20170224_230928\txko0550.gpb
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXLI
Name: TXLI
Disabled
File: E:\20170224_230928\txli0550.gpb
Coordinates
Latitude: North 30 03 21.18092
Longitude: West 94 46 15.67931
Ellipsoidal height: -9.807 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\20170224_230928\txpt0550.gpb
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
6: V025
Name: V025
Disabled
File: E:\20170224_230928\VRS\V0250550 (resampled).gpb
Coordinates
Latitude: North 30 07 34.50004
Longitude: West 94 30 07.85004
Ellipsoidal height: 99.980 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
5: V026
Name: V026
Disabled
File: E:\20170224_230928\VRS\V0260550 (resampled).gpb
Coordinates
Latitude: North 29 56 19.56991
Longitude: West 94 29 42.99991
Ellipsoidal height: 99.982 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
View STA File
Antenna profile: TRM55971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

Date: 2-24-2017

Project: TX Eenta Proj #: 28355 Flight Mgmt File: 28365-SN8027-Liberty

Aircraft: 246 N Begin Hobbs: 1345.5 End Hobbs: 1349.2 Total: 3.7 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 9:20 Arr Apt: BPT Arr Time (Local): 16:05 Tot Time Aloft: 3:40

CORS: Y / N Sta 1: Hawkport Sta 2: LaPorte Flyovers: Y / N # Y, times: Sta1) 23:31 Sta2) 00:36 / 02:53

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N # Y, times: Sta1) Sta2)

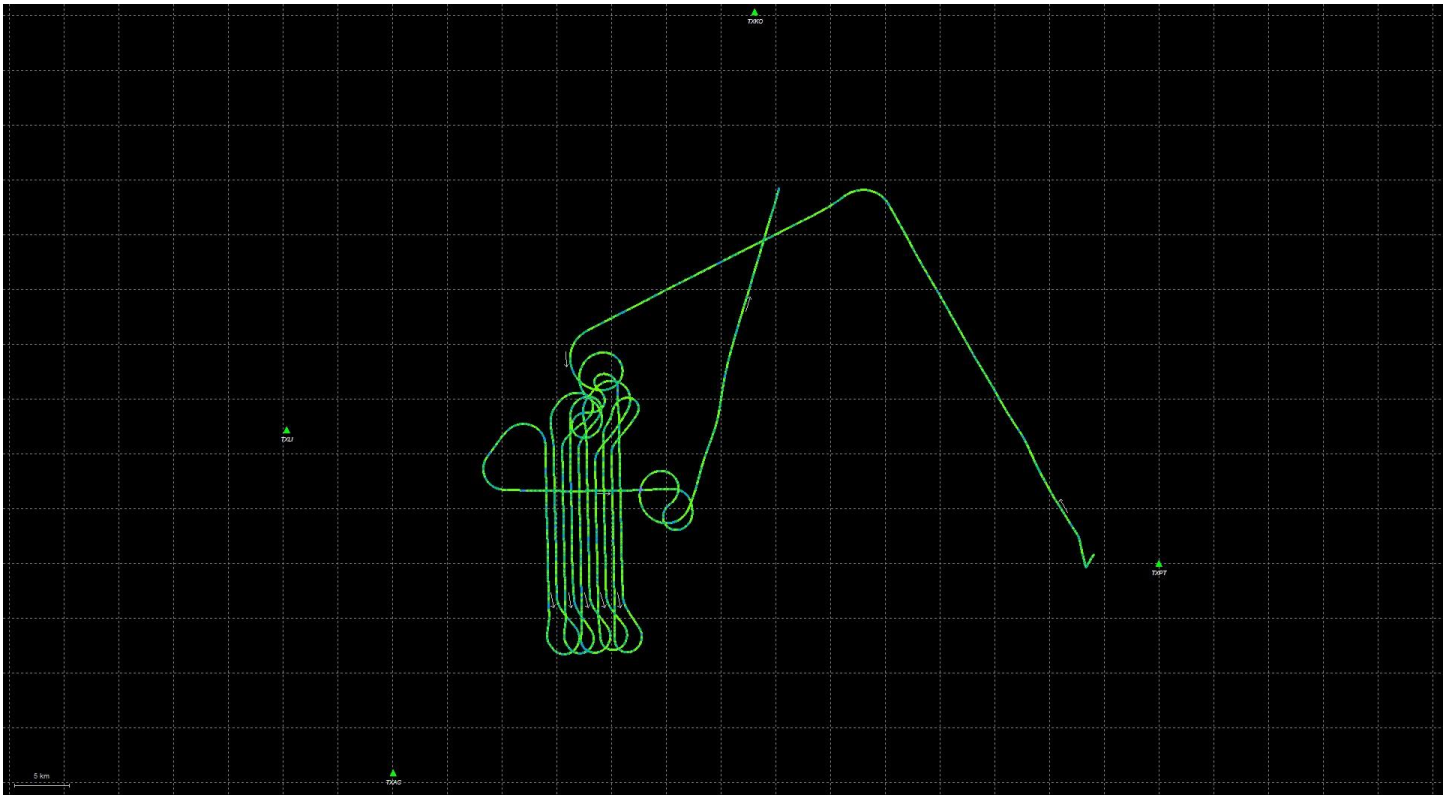
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 29.74 end: 29.84

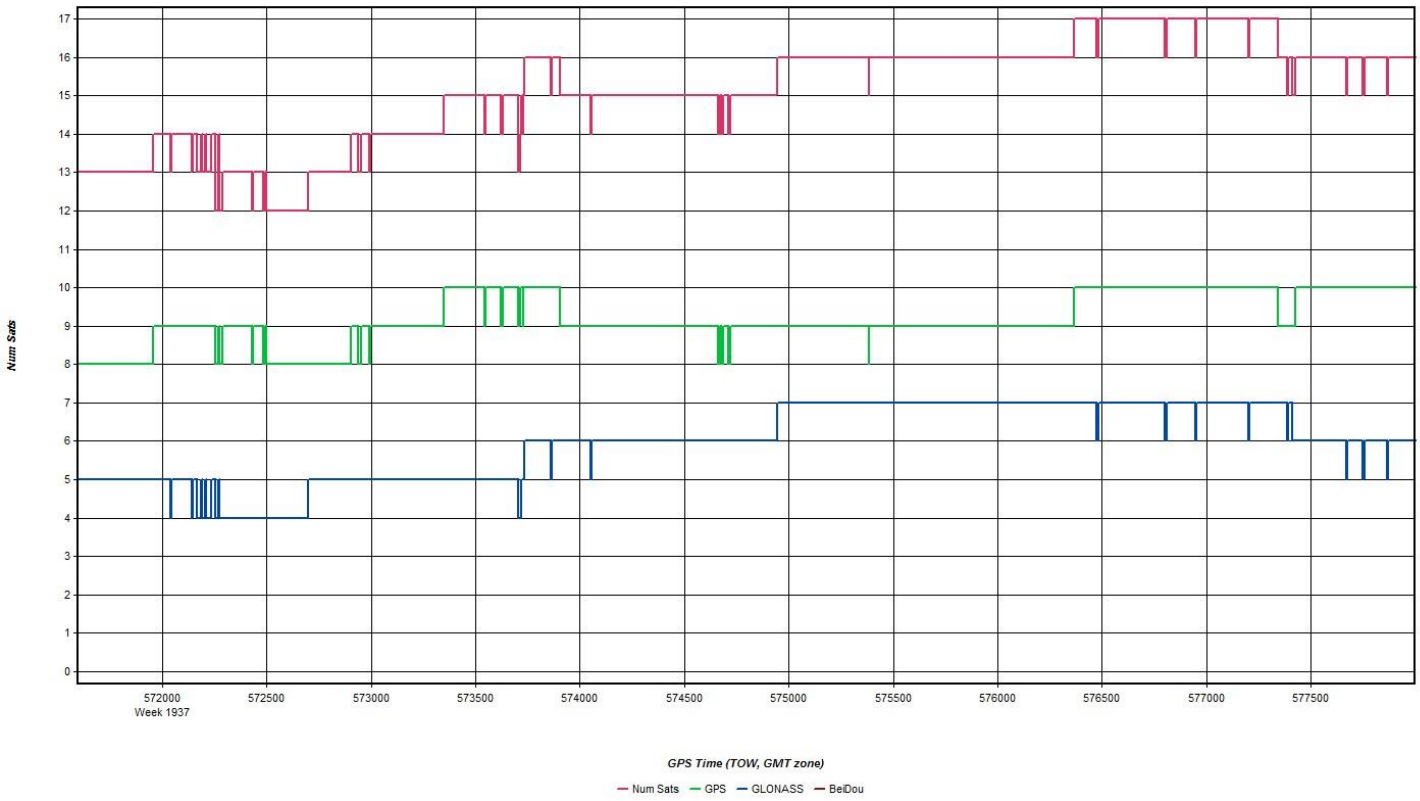
	Type	Serial #	Alt AGL	Alt ASL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg Dn	434	Flt Lines
LIDAR	FOV 34	Scan Freq 55.8	MpiA Y / N	Pulses in Air 2	Pulses Rate 311	Power 63%	PRR	End	446	1

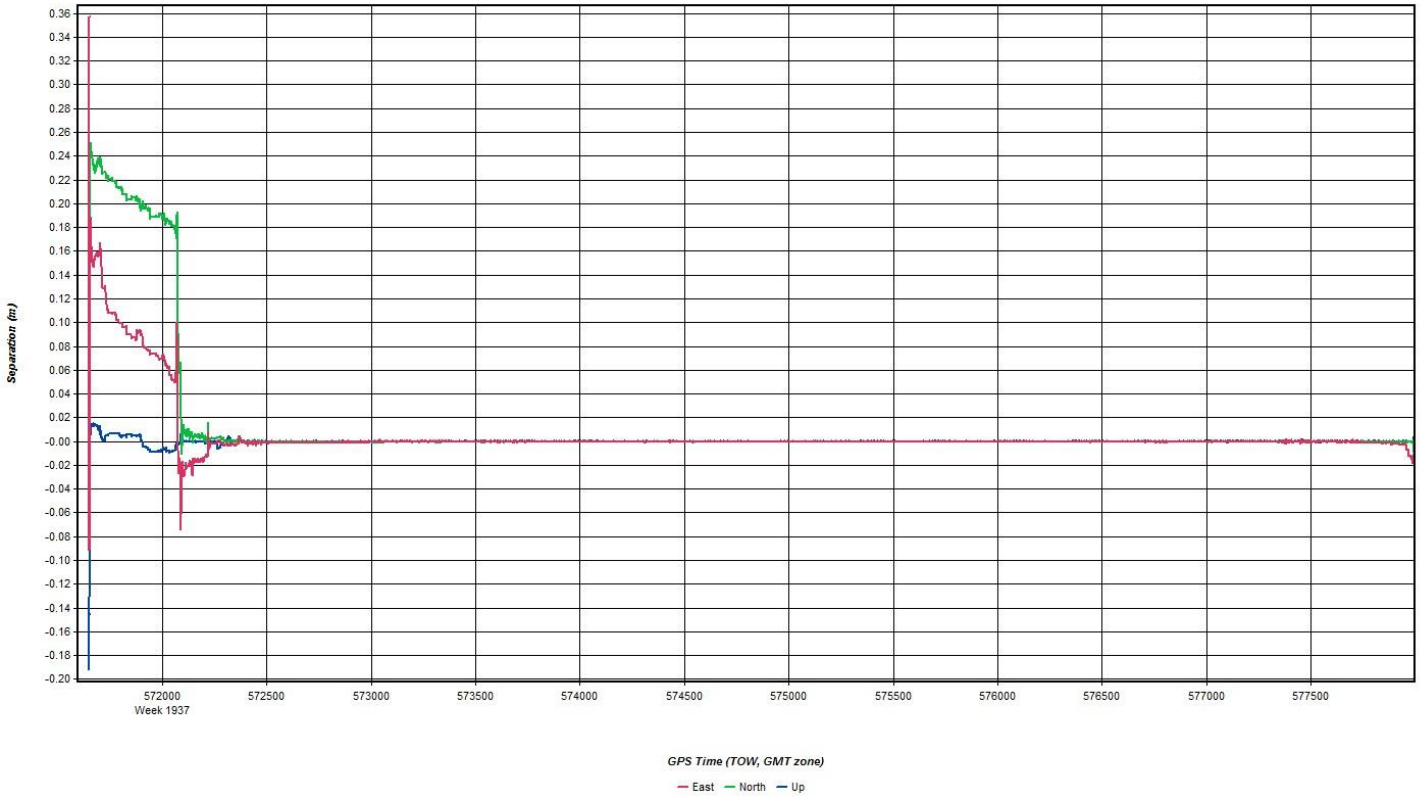
Line #	Hdg	Start (UTC)	End (UTC)	Gdspd	Flt Lines	GPS Altitude	Crab	Tide (ft, +/-)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc:
7027	176	23:43	23:48	156	1:40	5711		1	0-15 FSE Flown Static Start
7028	356	23:51	23:57	146	1:21	5704		1	0-16 FSE Flown 23:11 - 23:16
7029	176	00:01	00:06	144	1:20	5767		1	0-16 FSE Old Smoke Fig 8& 23:37
Tie	248	0008	0030	156	1:31	5719		0	Unplanned Tie line
7029	176	00:50	00:56	140	1:39	5724		3	0-16 FSE Smoke South End
7030	356	00:59	01:04	155	1:31	5721		2	0-16 FSE
7031	176	01:07	01:13	159	1:30	5743		2	0-16 FSE
7032	356	01:17	01:23	131	1:18	5735		1	0-16 FSE
7033	176	01:26	01:32	150	1:19	5746		1	0-16 FSE
7034	356	01:35	01:42	152	1:17	5731		1	0-20 FSE
7035	176	01:49	01:55	158	1:17	5769		1	
7036	356	02:03	02:13	155	1:16	5745		1	Fig 8& 23:50
7037	176	02:16	02:26	156	1:16	5757		1	
7038	356	02:29	02:39	148	1:19	5766		1	
Tie 2	268	02:46	02:48	154	1:18	5774		0	Unplanned Tie Line Static Stop 03:08 - 03:13

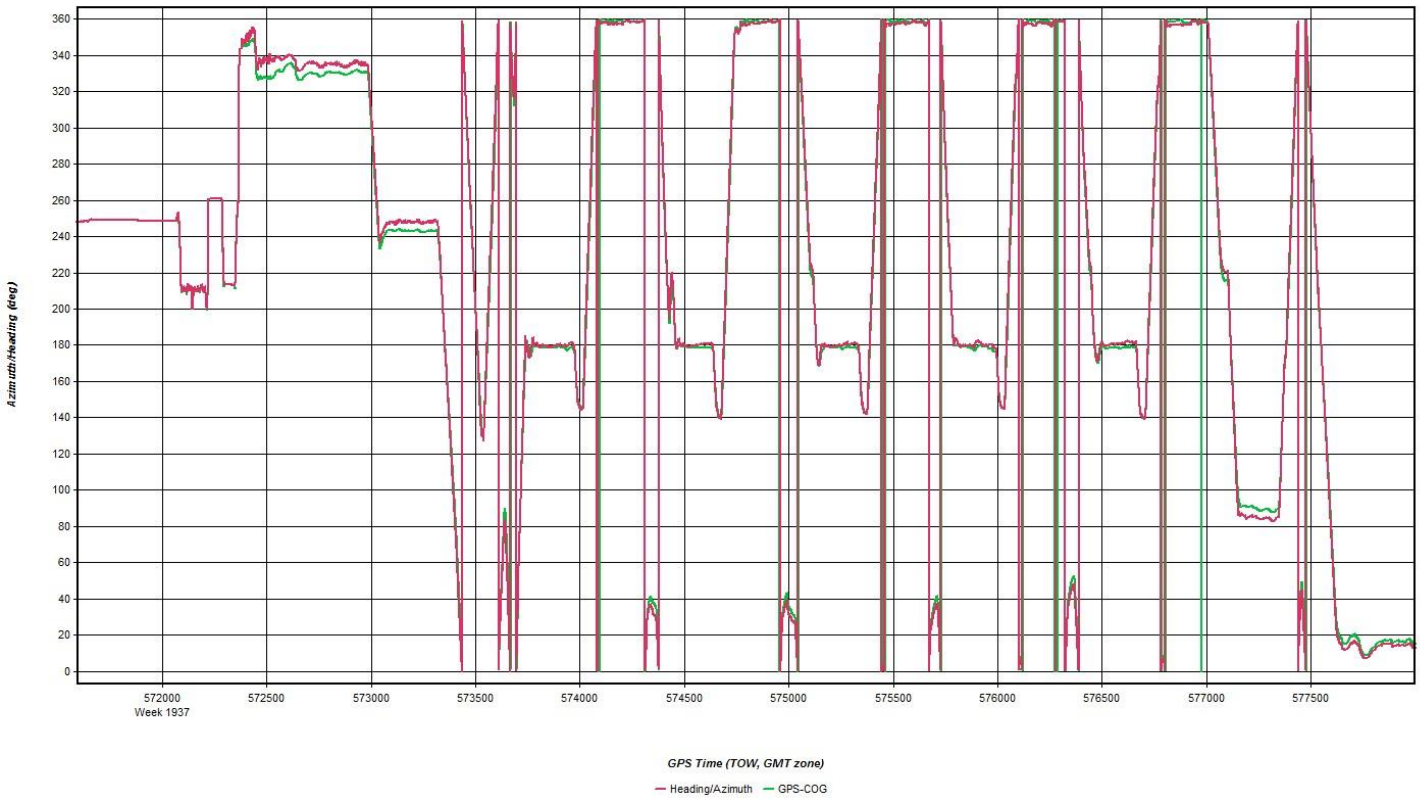
Total Proj Lines: Lines Flown: 17 Lines Remain: Online Time: 3.0 Mob Time: .45 Notes:

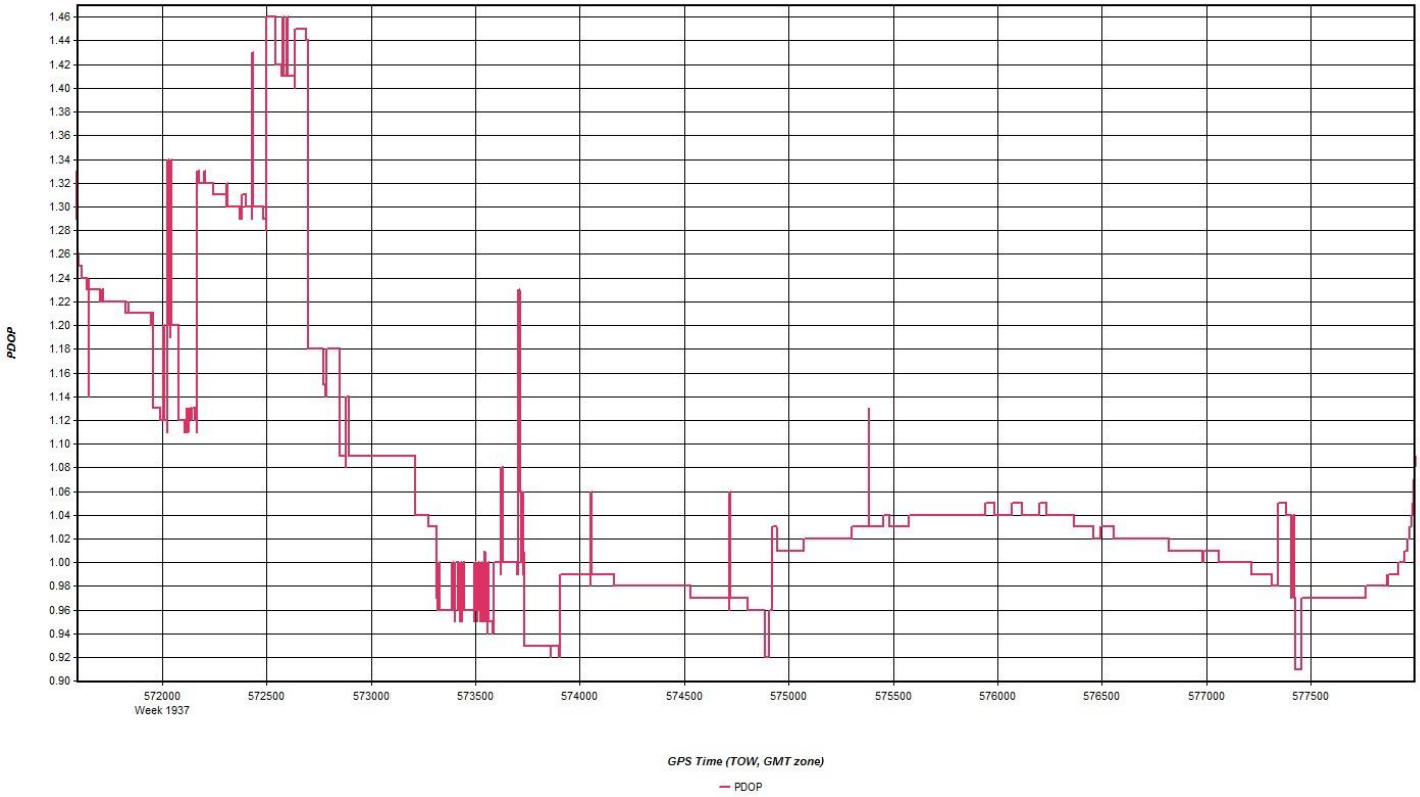
Feb 25, 2017-A (N246MP, SN8227)

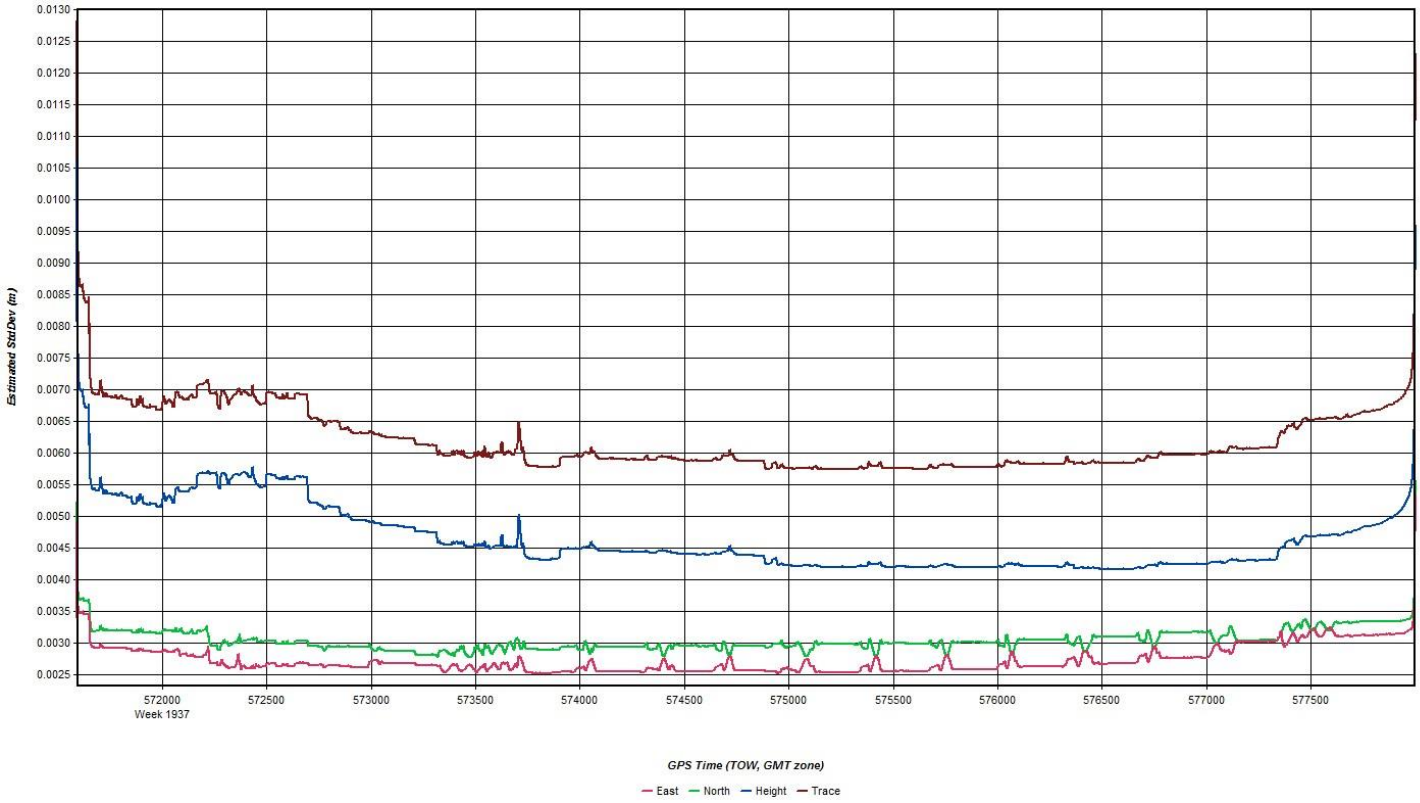


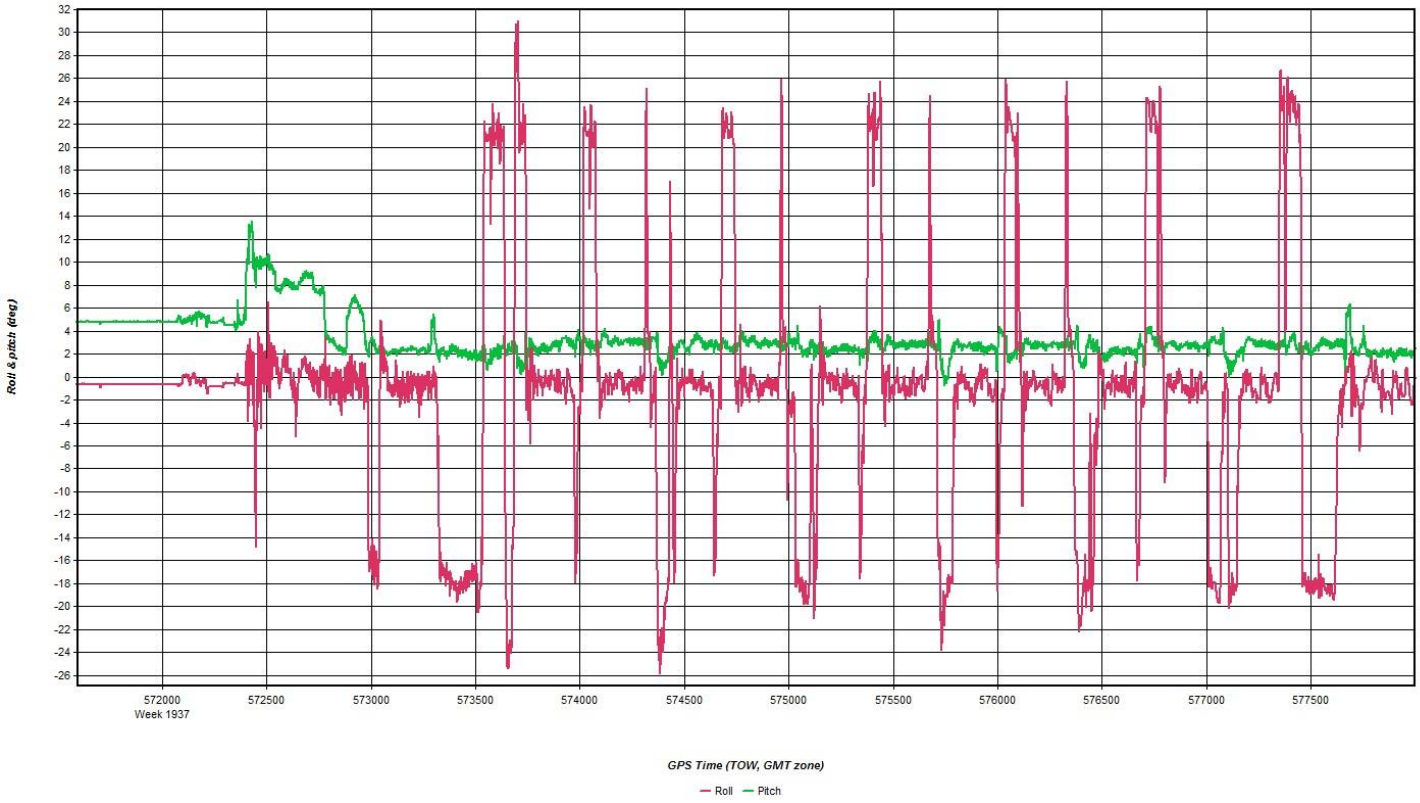

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

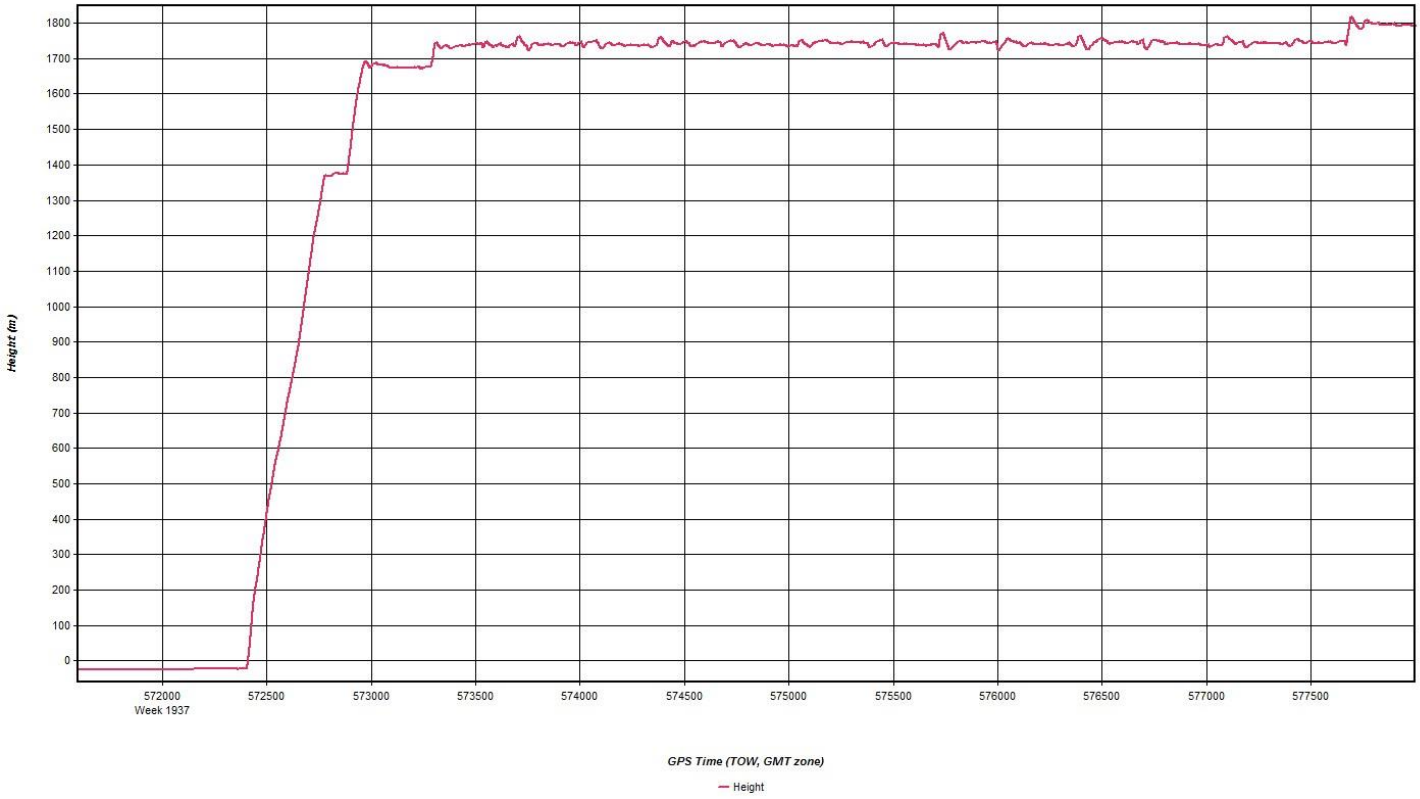

Separation (m)
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
East
North
Up

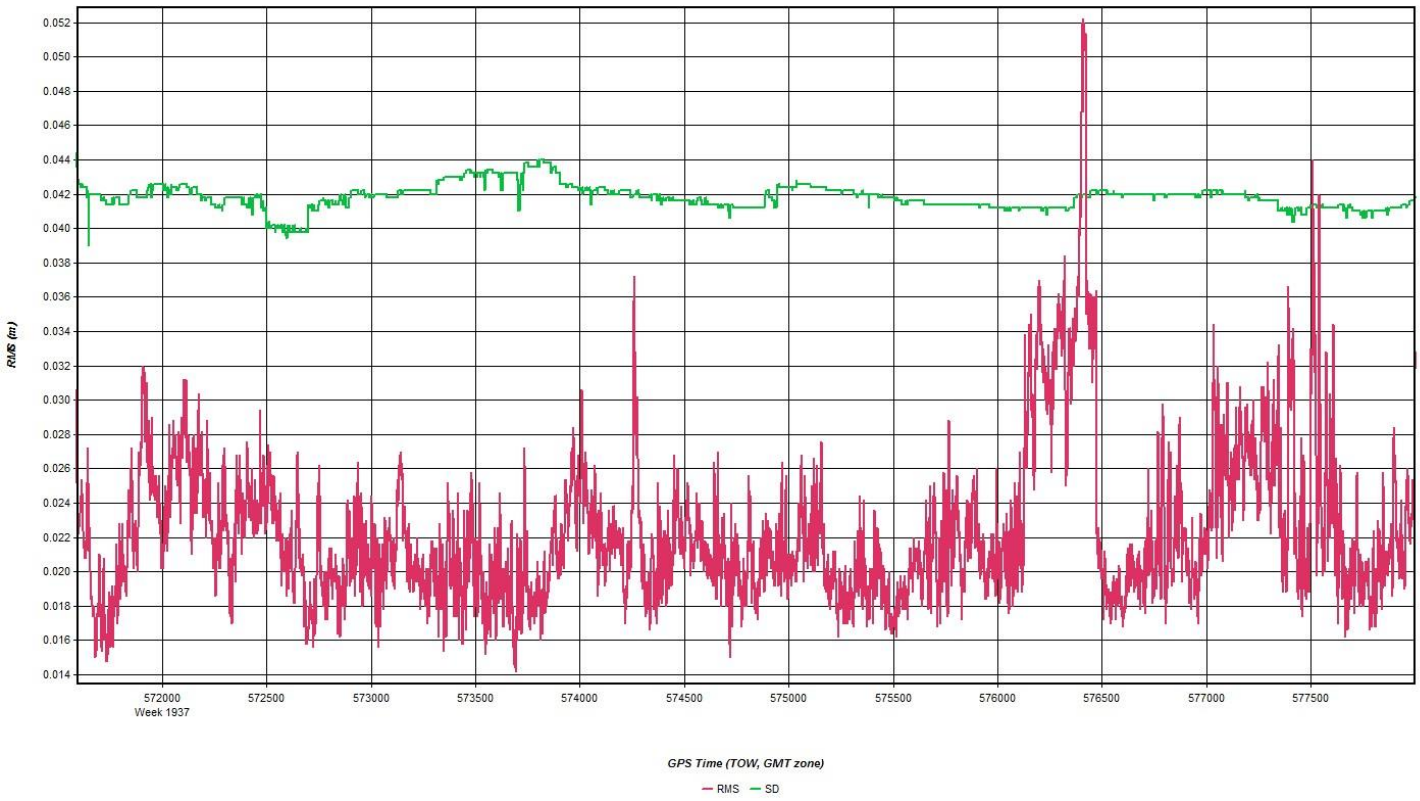

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

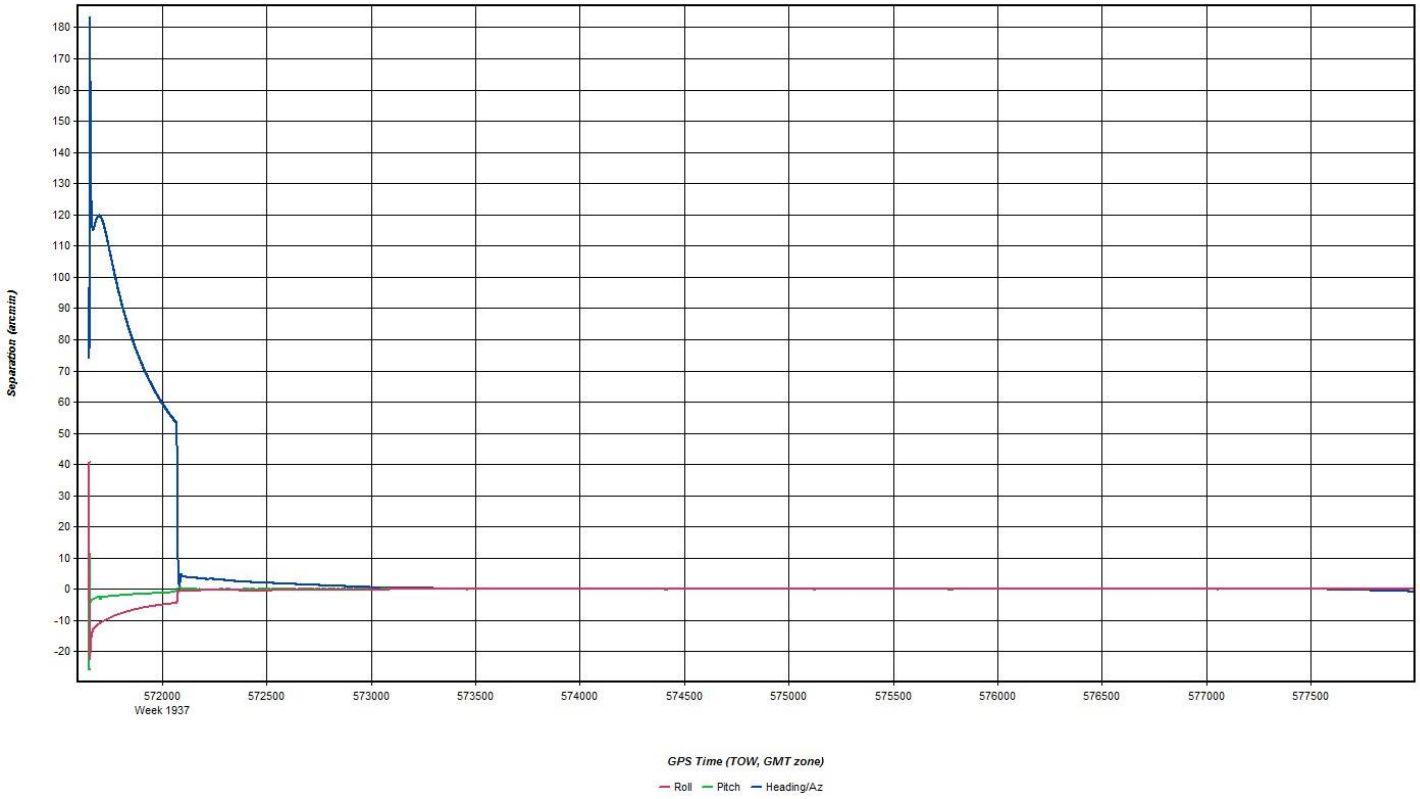

PDOP
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
PDOP

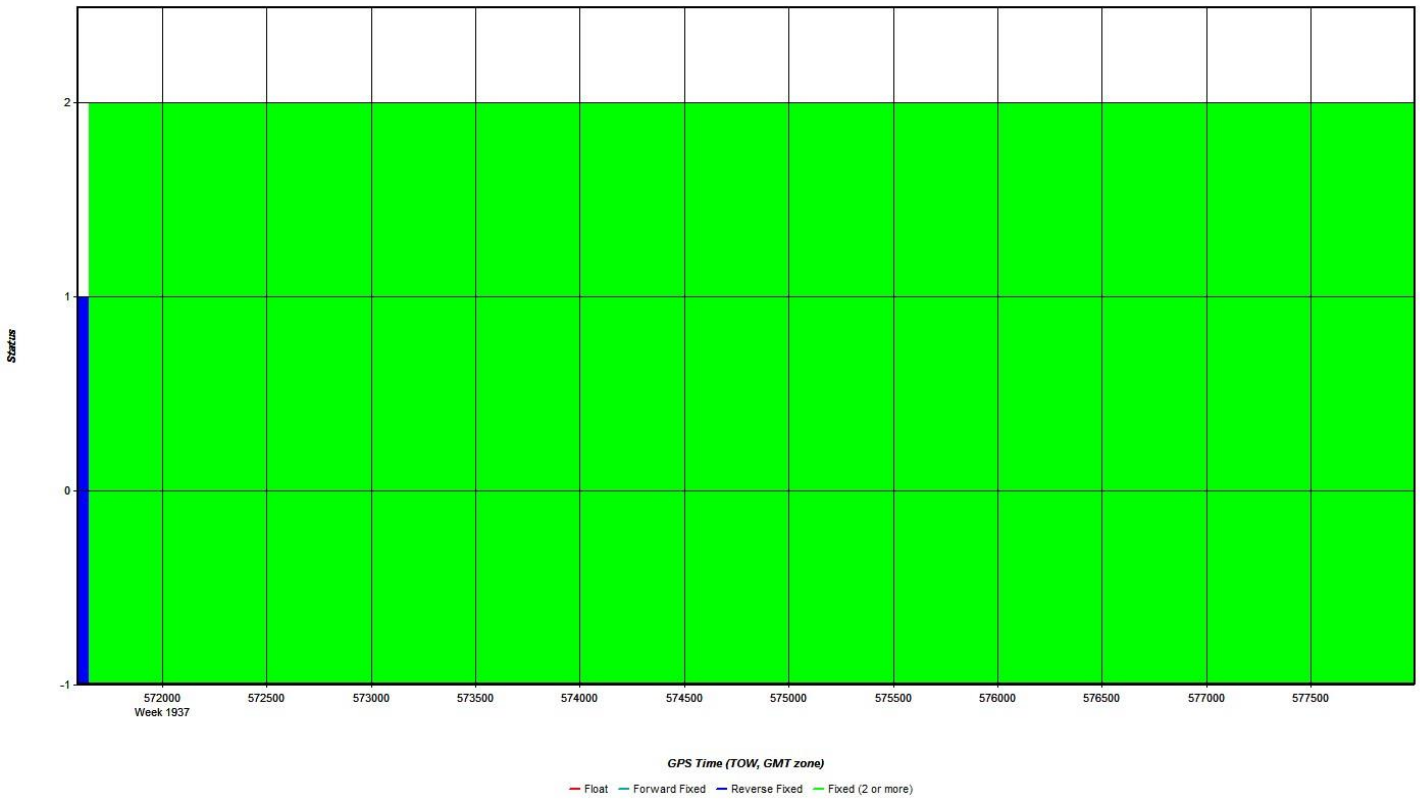

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

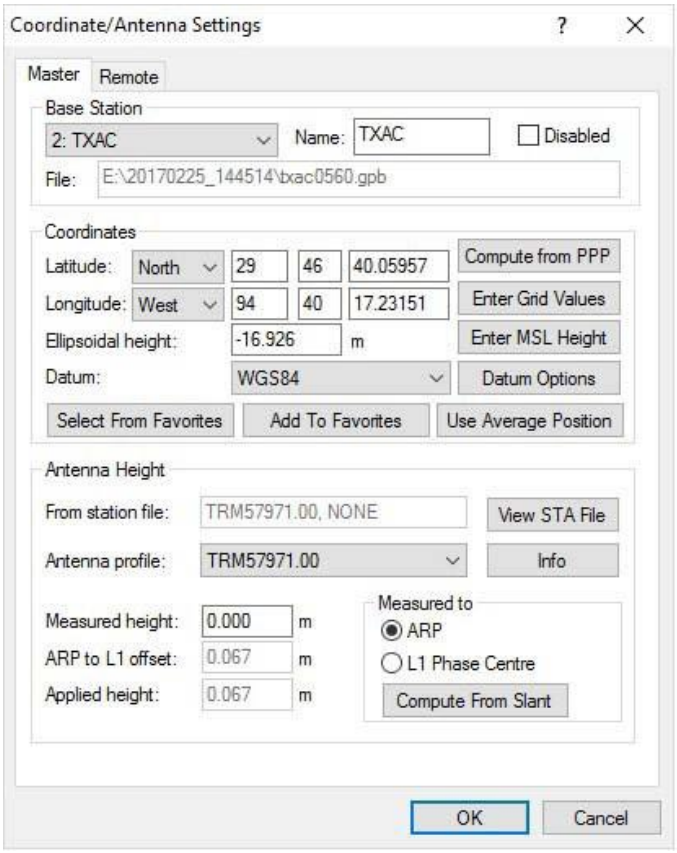

Roll & pitch (deg)
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
Roll
Pitch

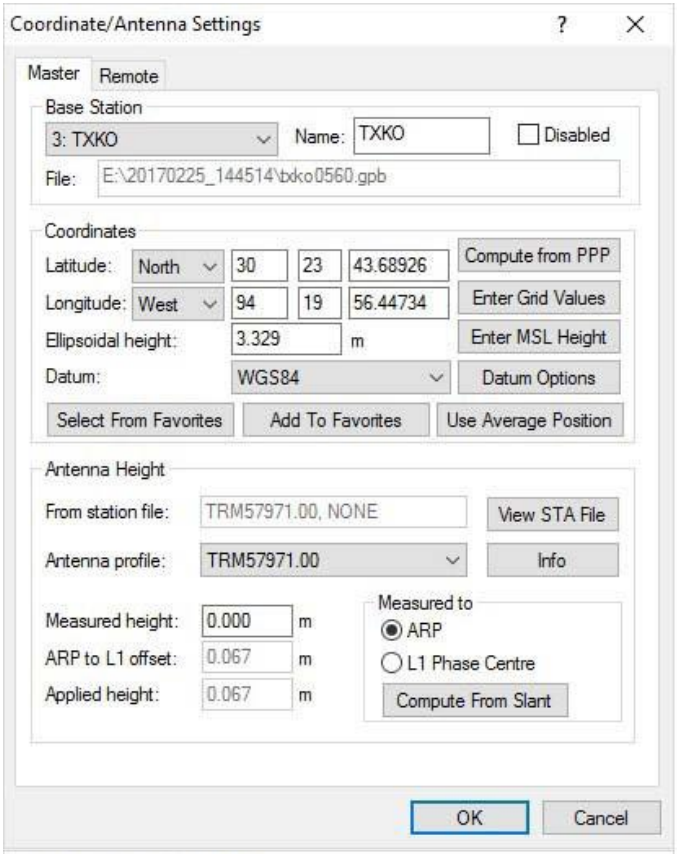

Height (m)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
Height

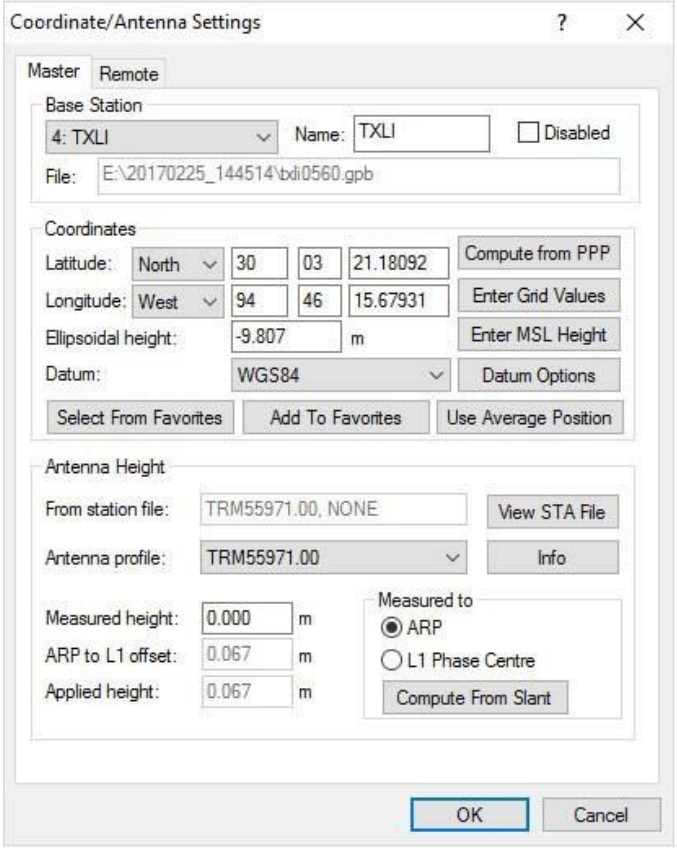

RMS (m)
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
RMS
SD

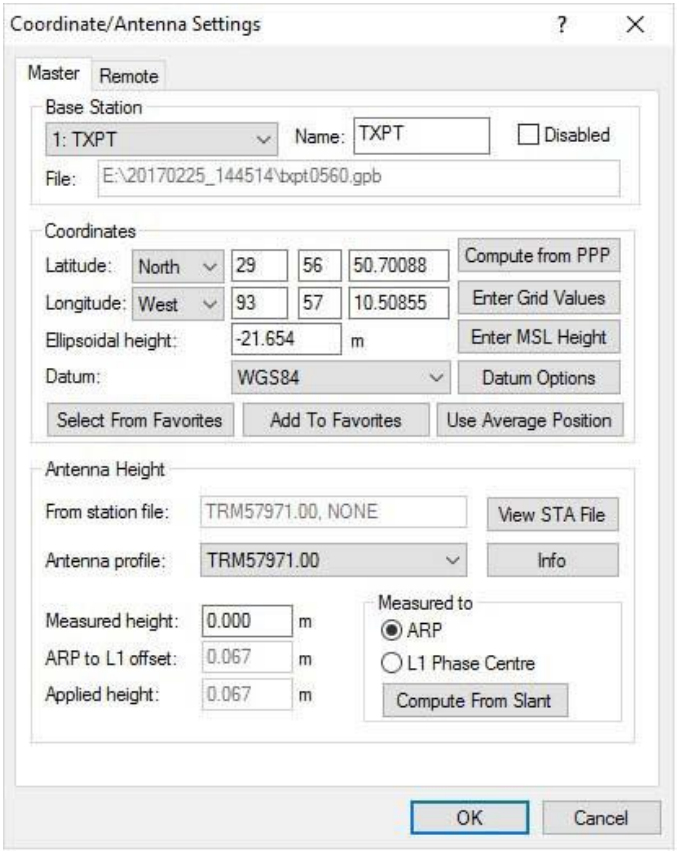

Separation (arcmin)
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
572000
Week 1937
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

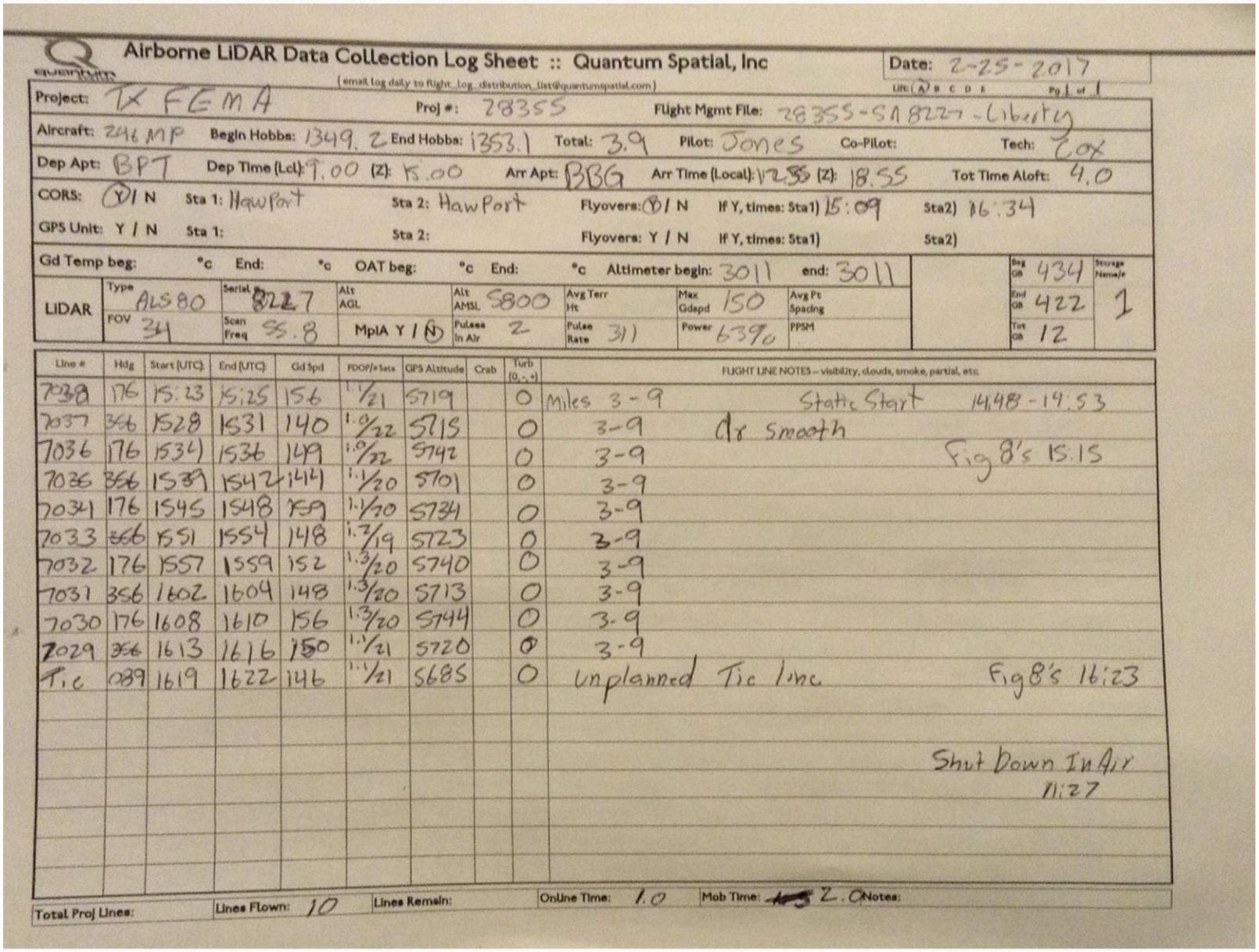

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXAC
Name: TXAC
Disabled
File: E:\20170225_144514\txac0560.gpb
Coordinates
Latitude: North 29 46 40.05957
Longitude: West 94 40 17.23151
Ellipsoidal height: -16.926 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXKO
Name: TXKO
Disabled
File: E:\20170225_144514\txko0560.gpb
Coordinates
Latitude: North 30 23 43.68926
Longitude: West 94 19 56.44734
Ellipsoidal height: 3.329 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
Antenna profile: TRM57971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
4: TXLI
Name: TXLI
Disabled
File: E:\20170225_144514\txli0560.gpb
Coordinates
Latitude: North 30 03 21.18092
Longitude: West 94 46 15.67931
Ellipsoidal height: -9.807 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM55971.00, NONE
Antenna profile: TRM55971.00
View STA File
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPT
Name: TXPT
Disabled
File: E:\20170225_144514\txpt0560.gpb
Coordinates
Latitude: North 29 56 50.70088
Longitude: West 93 57 10.50855
Ellipsoidal height: -21.654 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: TRM57971.00, NONE
View STA File
Antenna profile: TRM57971.00
Info
Measured height: 0.000 m
ARP to L1 offset: 0.067 m
Applied height: 0.067 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log



Airborne LiDAR Data Collection Log Sheet :: Quantum Spatial, Inc

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-25-2017 Life: A B C D E Pg 1 of 1

Project: TX FEMA Proj #: 28355 Flight Mgmt File: 28355-SA8227-Liberty

Aircraft: 246 MP Begin Hobbs: 1349.2 End Hobbs: 1353.1 Total: 3.9 Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BPT Dep Time (Lcl): 9.00 (Z): 15.00 Arr Apt: BBG Arr Time (Local): 12.55 (Z): 18.55 Tot Time Aloft: 4.0

CORS: (Y) / N Sta 1: HawPort Sta 2: HawPort Flyovers: (Y) / N If Y, times: Sta1) 15:09 Sta2) 16:34

GPS Unit: Y / N Sta 1: Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: 3011 end: 3011

LiDAR	Type ALS80	Serial # 8227	Alt AGL	Alt AMSL 5800	Avg Terr Ht	Max Gdspd 150	Avg Pt Spacing	Beg GB 434	Storage Name/# 1
	FOV 34	Scan Freq 55.8	MpIA Y / (N)	Pulses In Air 2	Pulse Rate 311	Power 63%	PPSM	End GB 422	
								Tot GB 12	

Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
7038	176	15:23	15:25	156	1.1/21	5719		0	Miles 3-9 Static Start 14:48-14:53
7037	356	1528	1531	140	1.0/22	5715		0	3-9 Ar smooth
7036	176	1534	1536	149	1.0/22	5742		0	3-9 Fig 8's 15:15
7035	356	1539	1542	144	1.1/20	5701		0	3-9
7034	176	1545	1548	159	1.1/20	5734		0	3-9
7033	356	1551	1554	148	1.2/19	5723		0	3-9
7032	176	1557	1559	152	1.3/20	5740		0	3-9
7031	356	1602	1604	148	1.3/20	5713		0	3-9
7030	176	1608	1610	156	1.3/20	5744		0	3.9
7029	356	1613	1616	150	1.1/21	5720		0	3-9
Tie	089	1619	1622	146	1.1/21	5685		0	Unplanned Tie line Fig 8's 16:23
									Shut Down In Air 11:27

Total Proj Lines: Lines Flown: 10 Lines Remain: OnLine Time: 1.0 Mob Time: 2.0 Notes: