Appendix B

The following section contains the appendices as listed in the Red River 2017 Project Report.

Appendices

GPS/IMU Processing Statistics Flight Logs

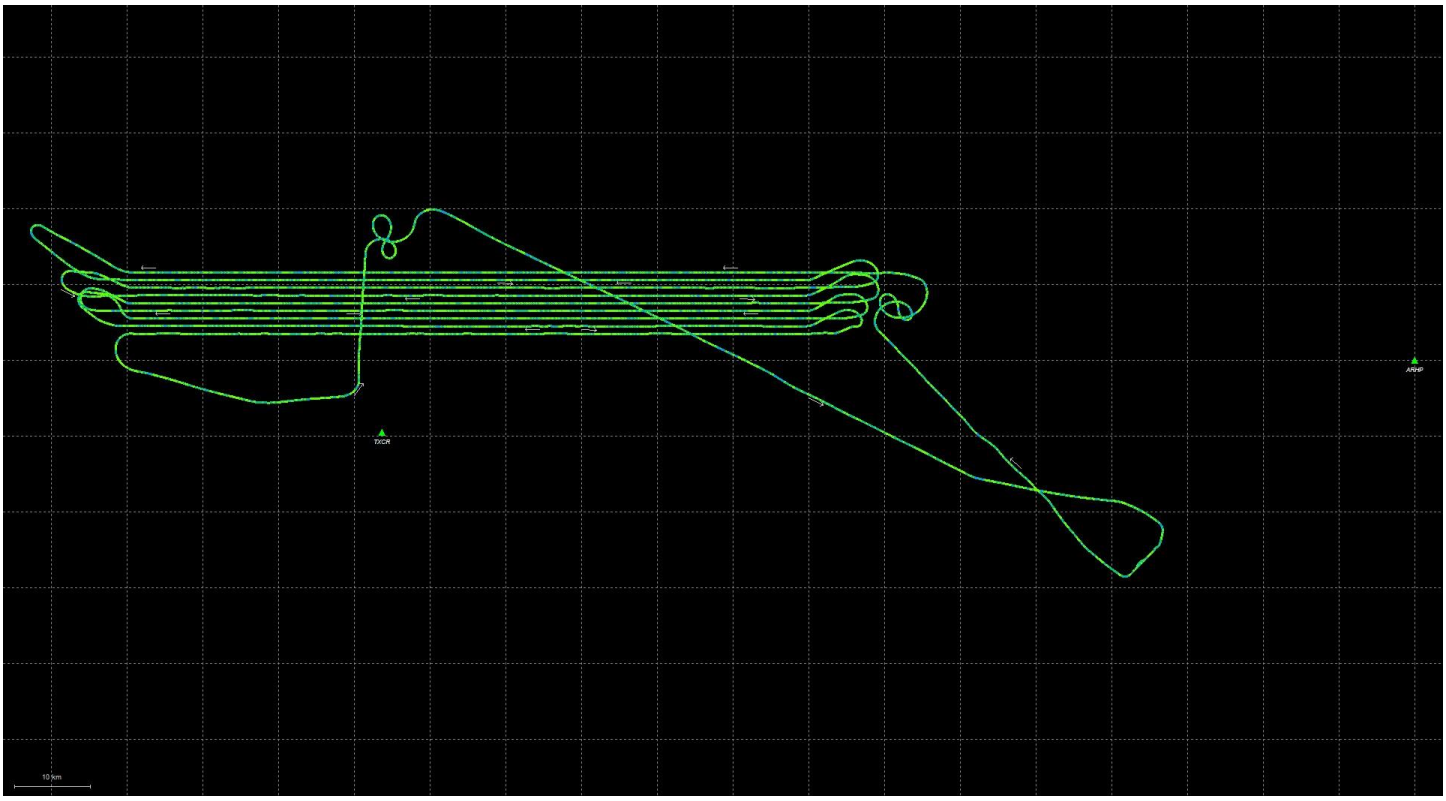
Red River, Texas 2017

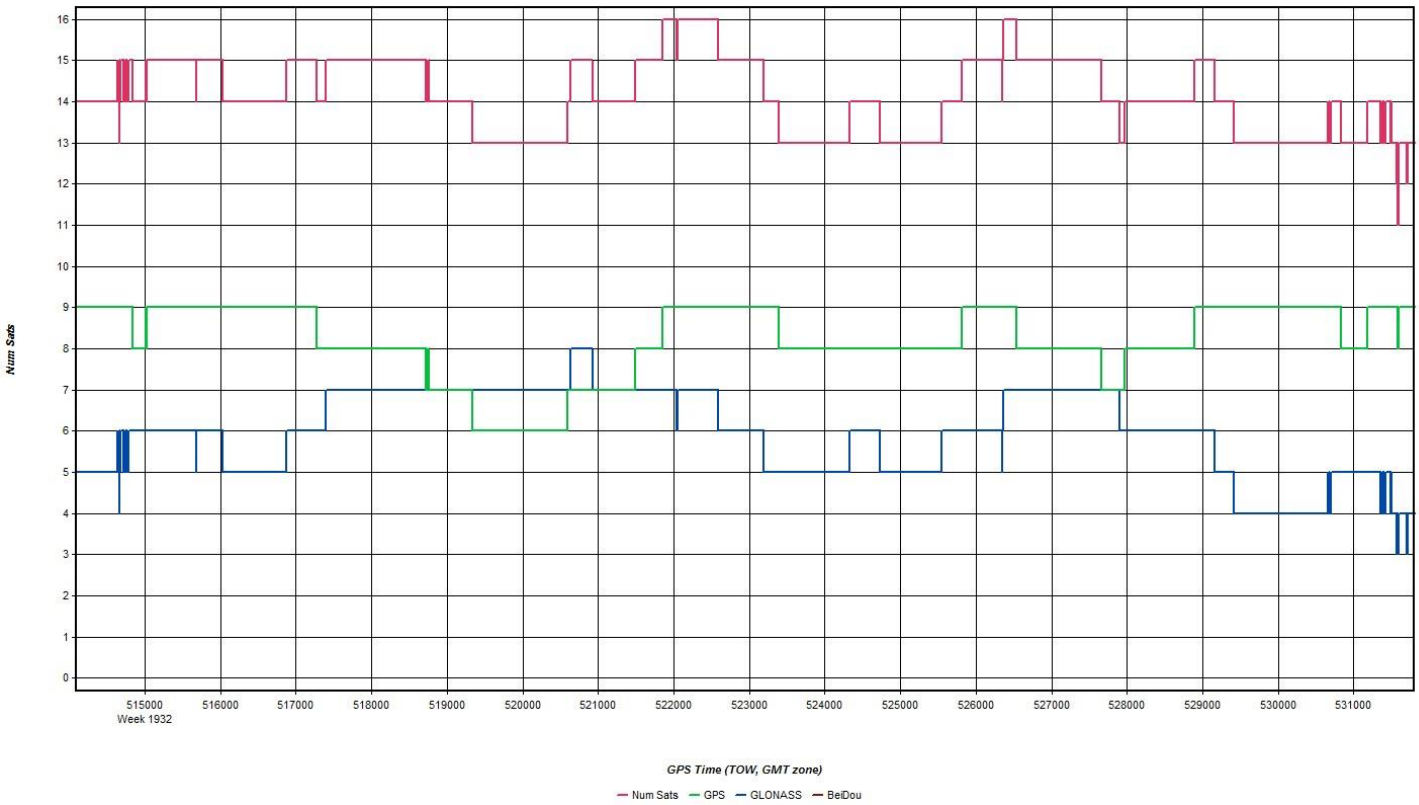
May 26, 2017

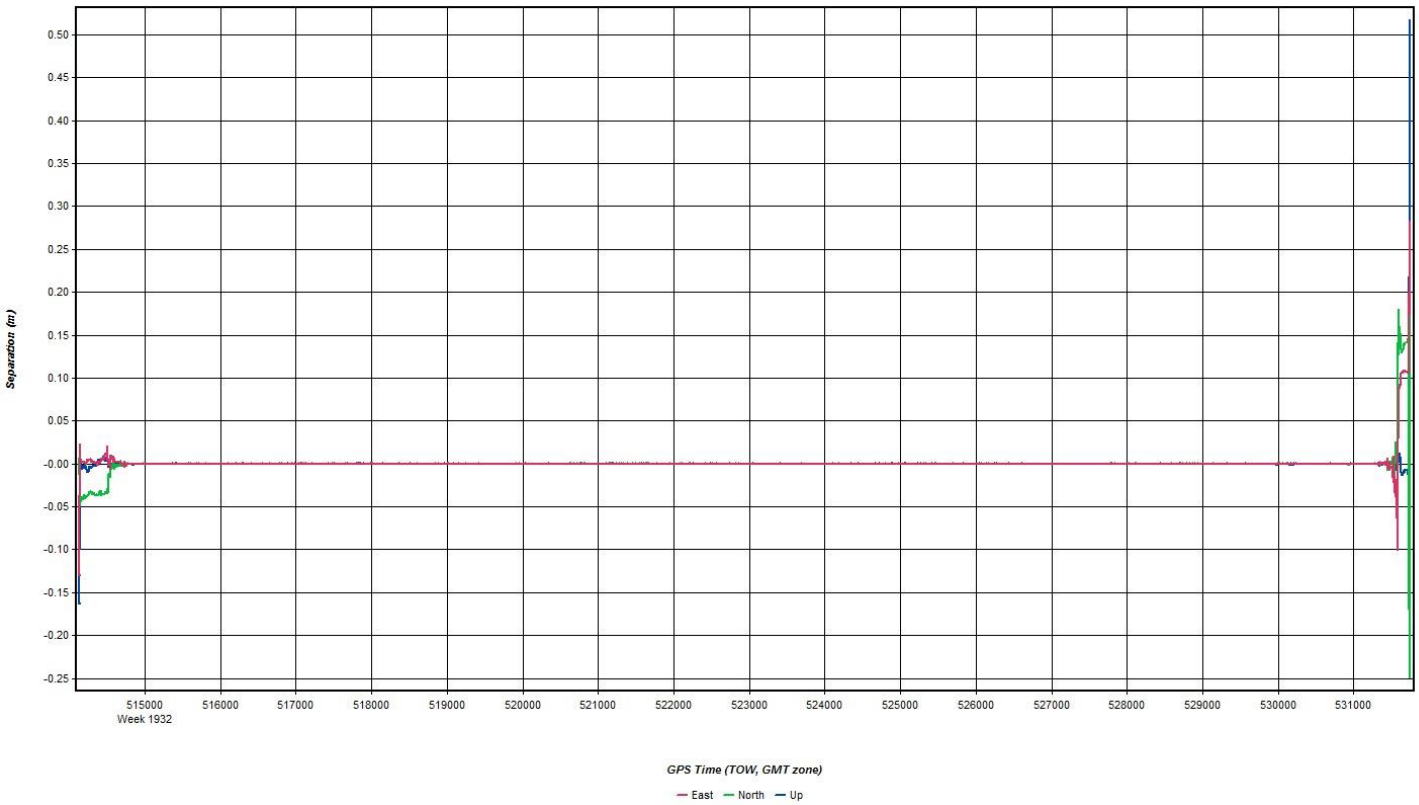
LiDAR Project

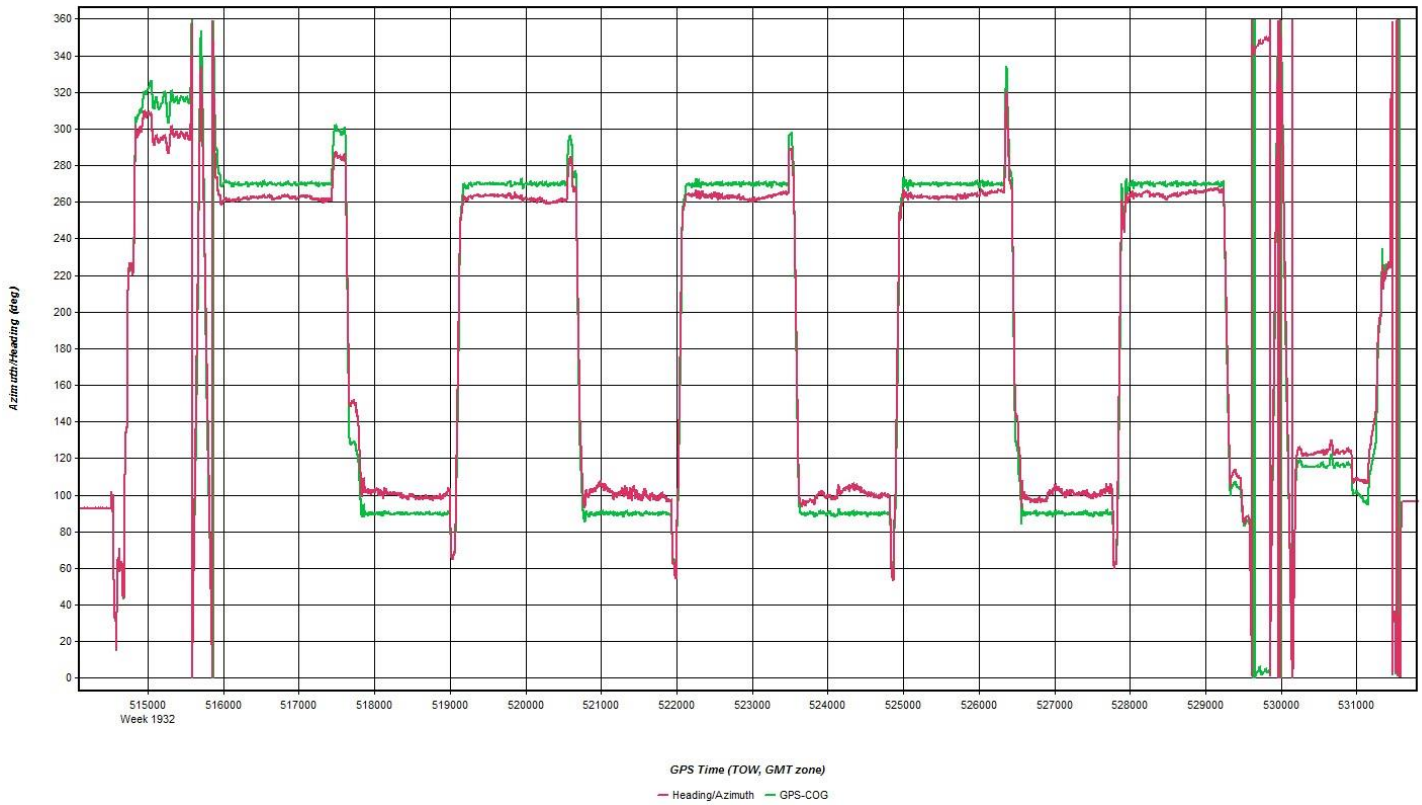
There were 32 total lifts. Graph reports generated from processing software and flight logs are found on the following pages.

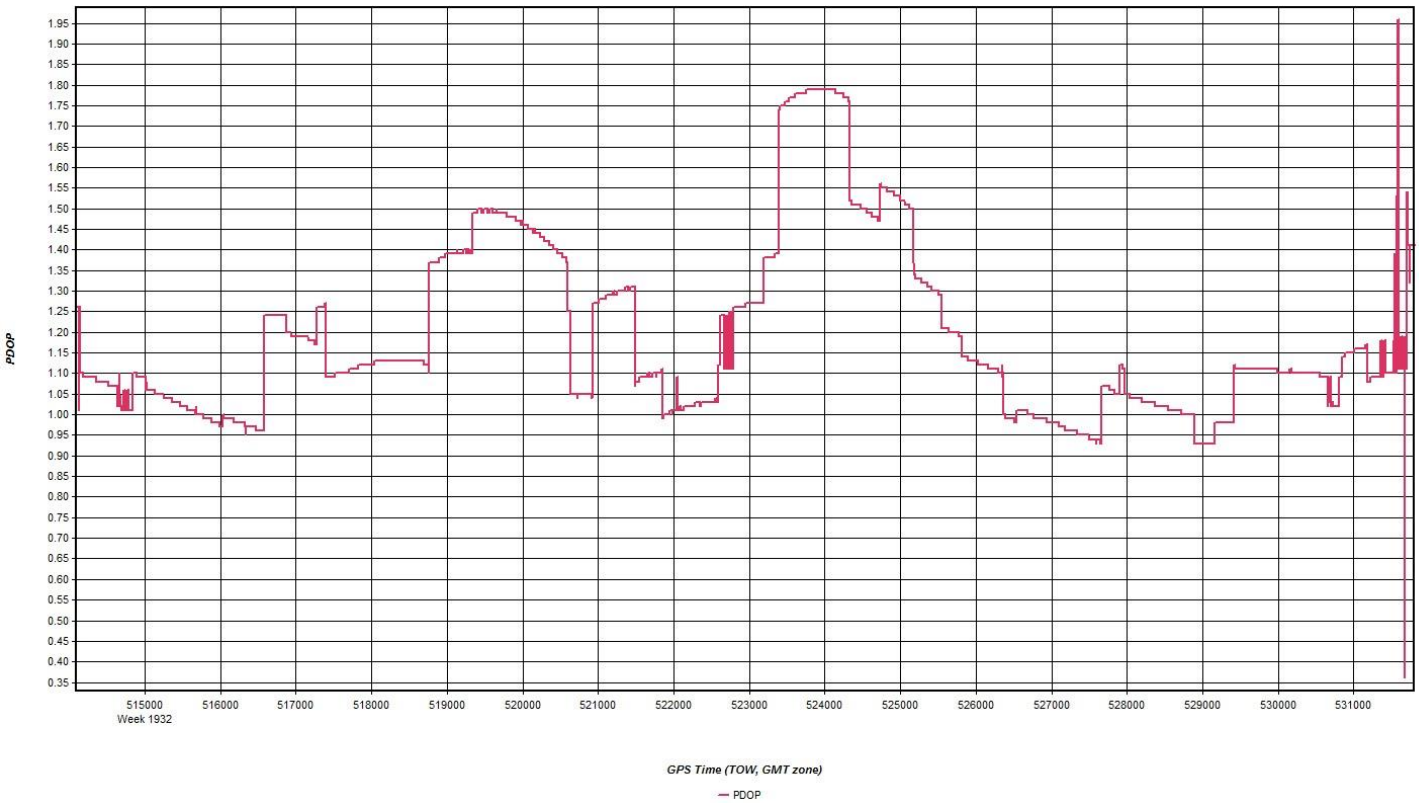
Jan 20, 2017-A (N246MP, SN8146)

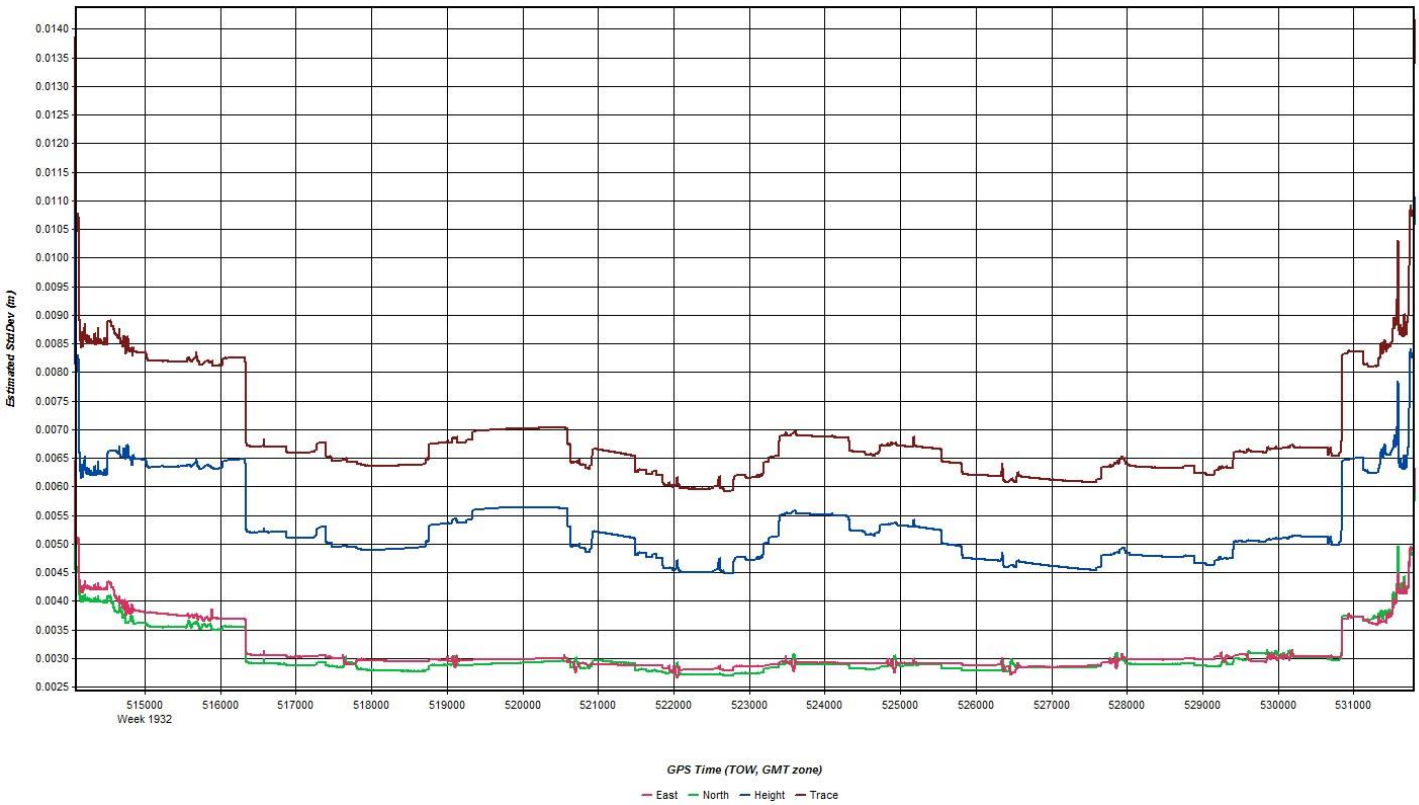


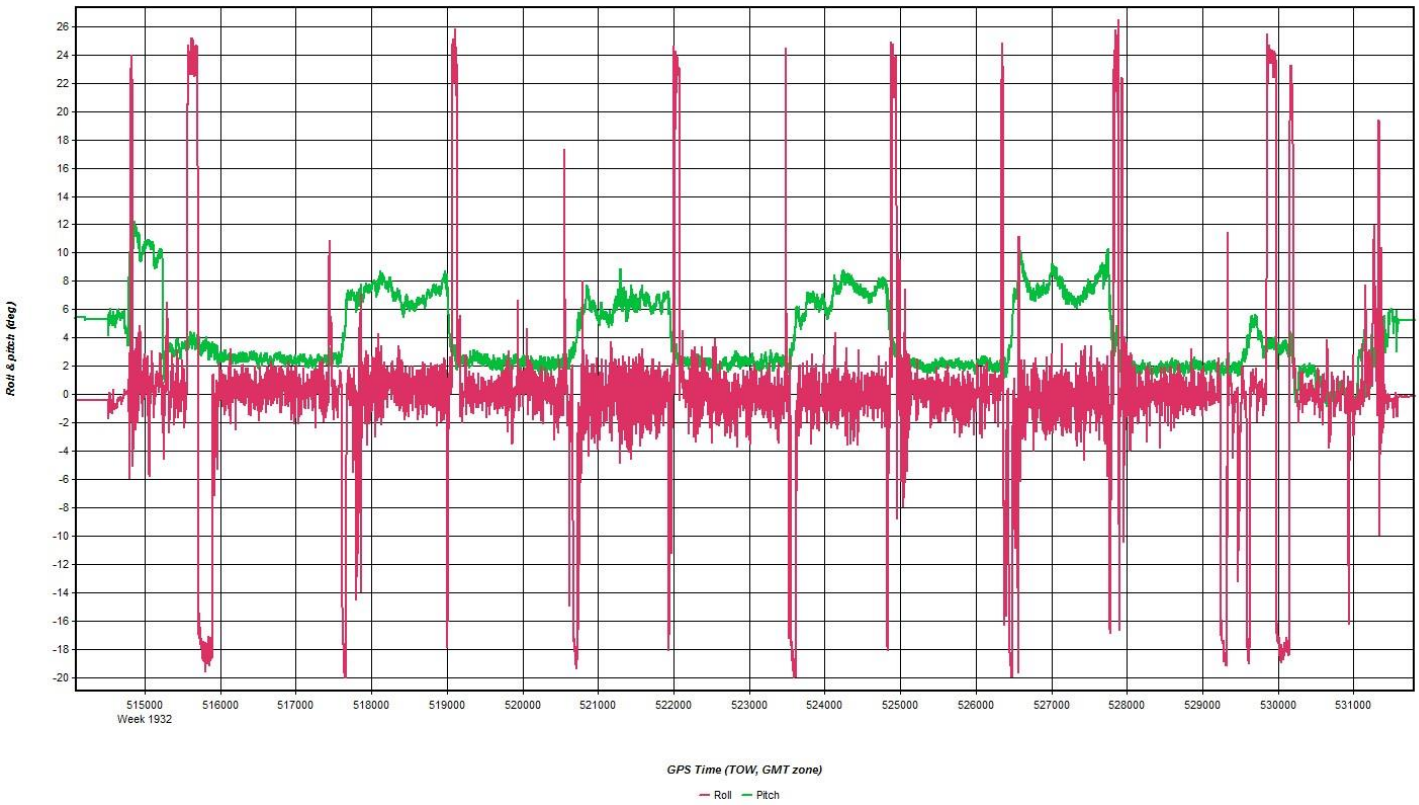

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

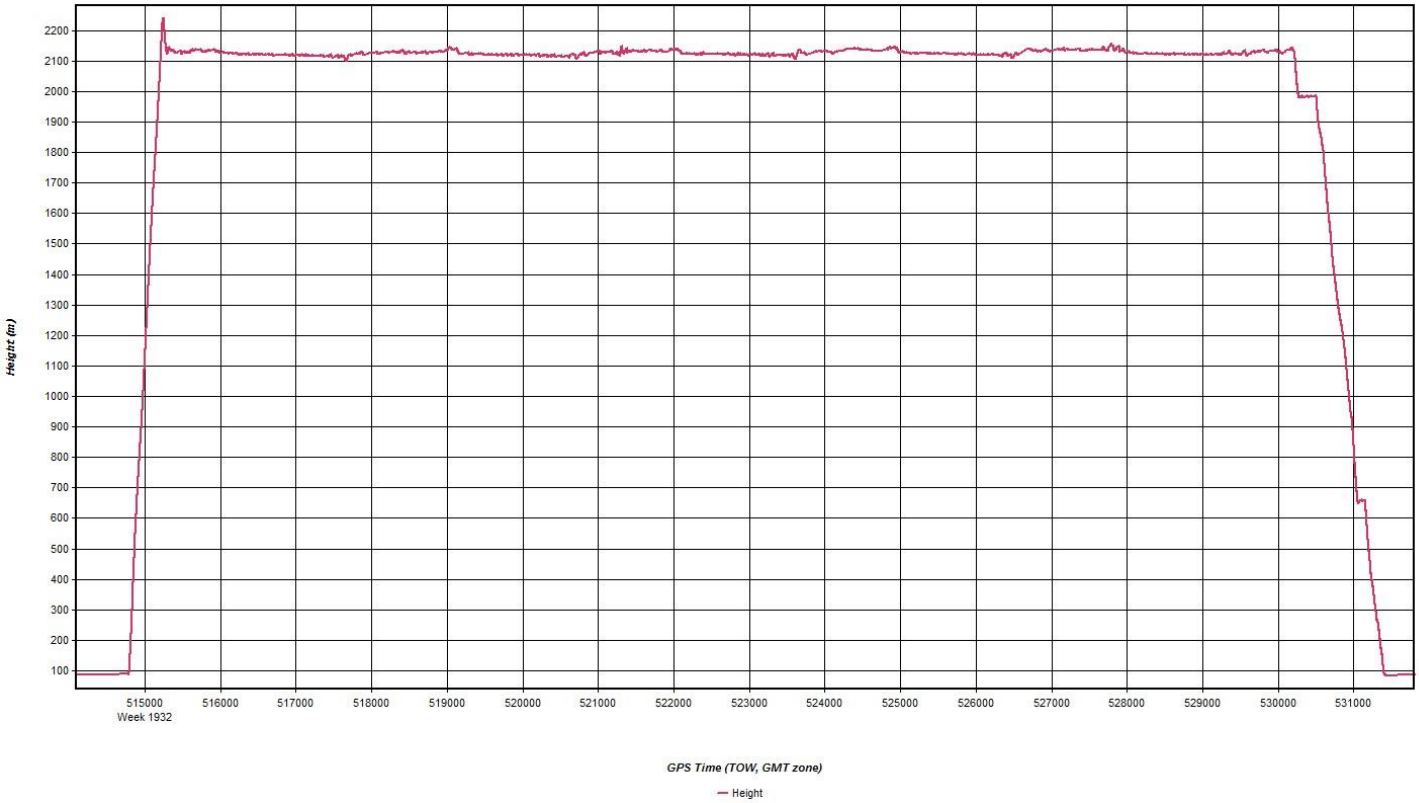

Separation (m)
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
East
North
Up

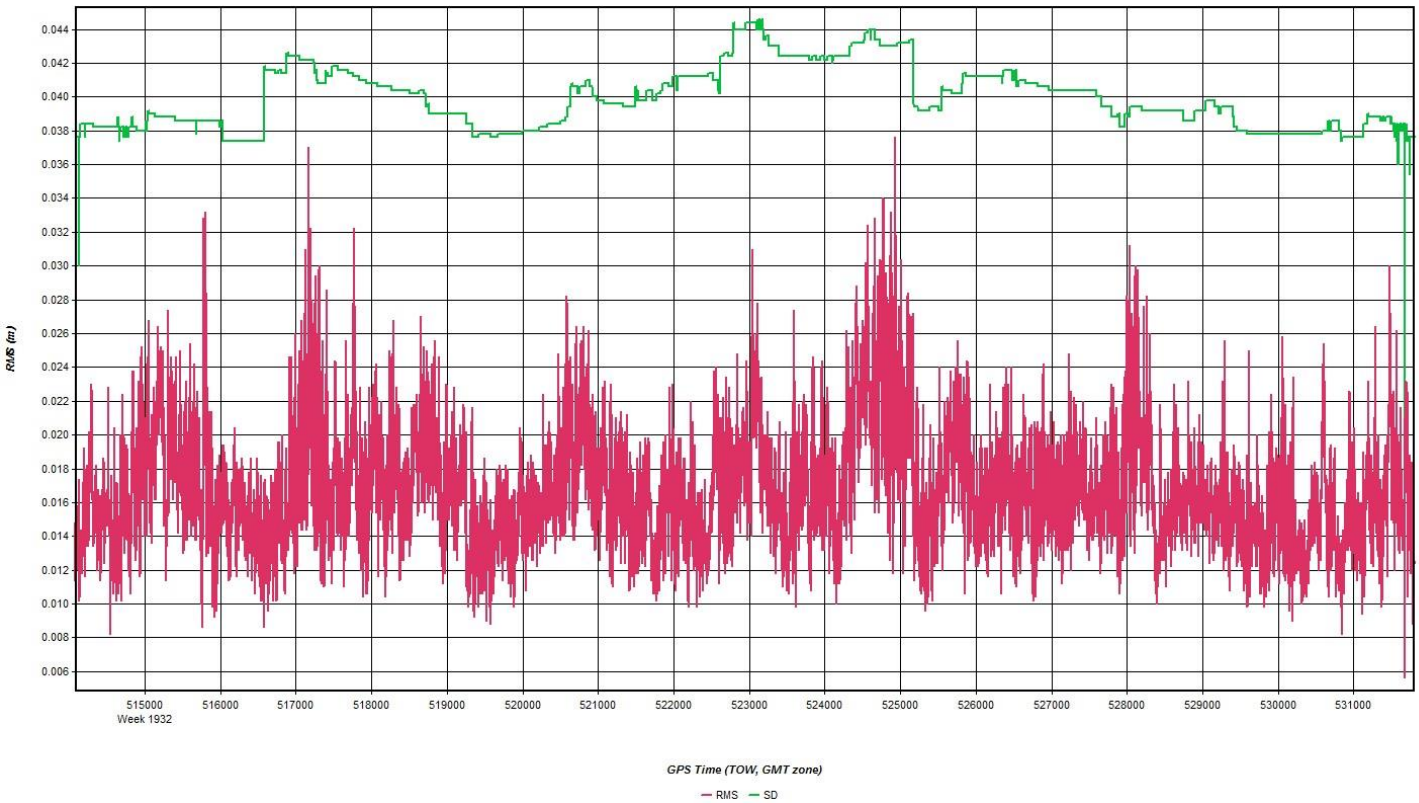

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

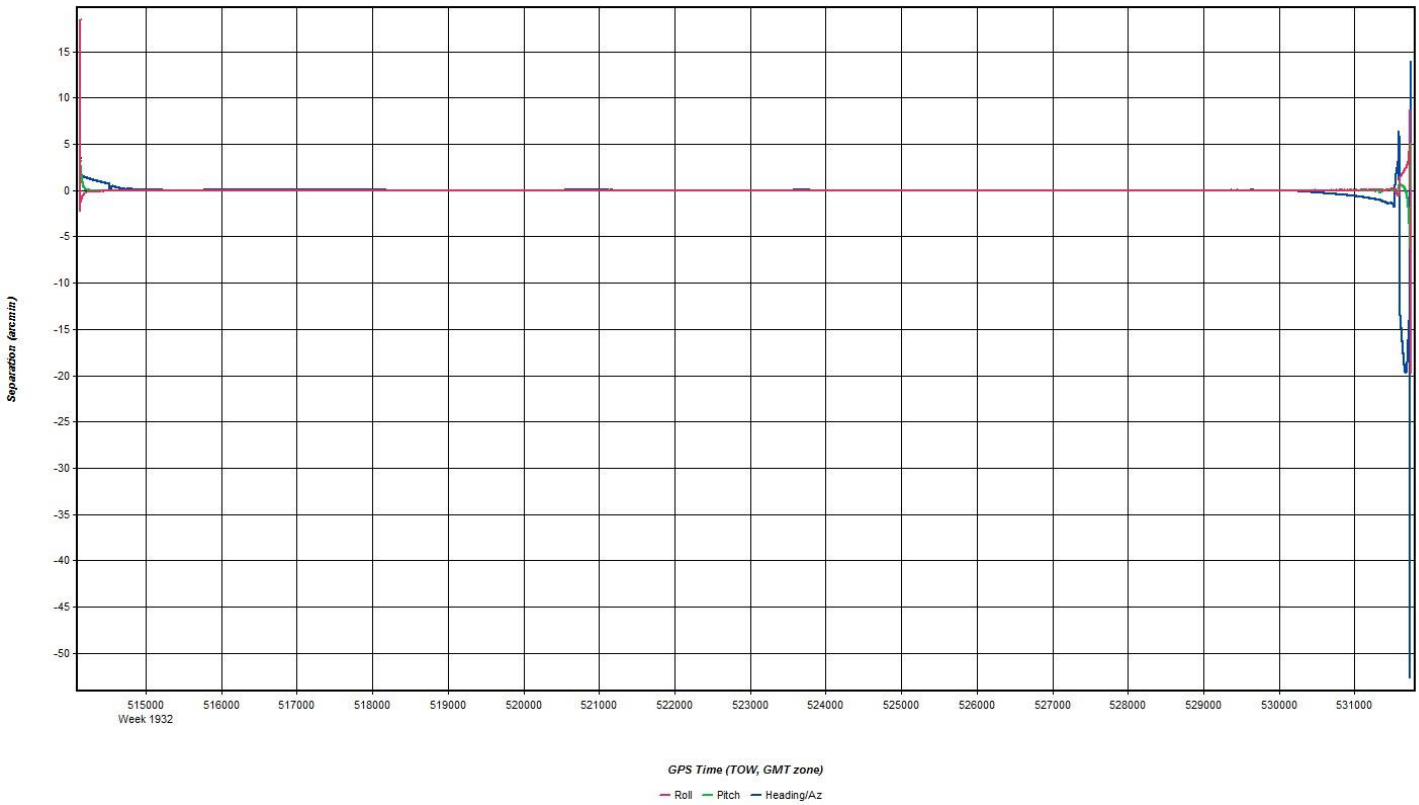

PDOP
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
PDOP

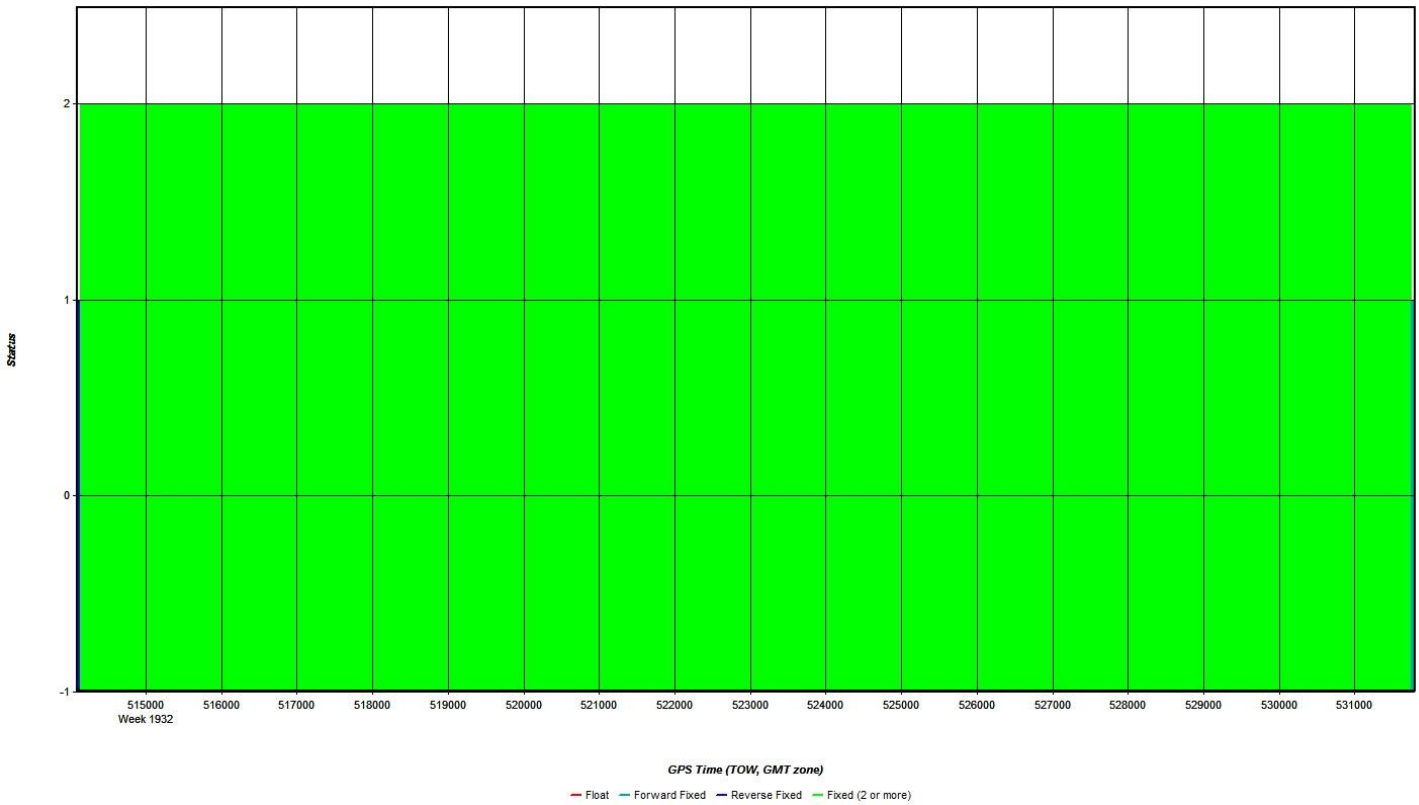

Estimated StdDev (m)
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

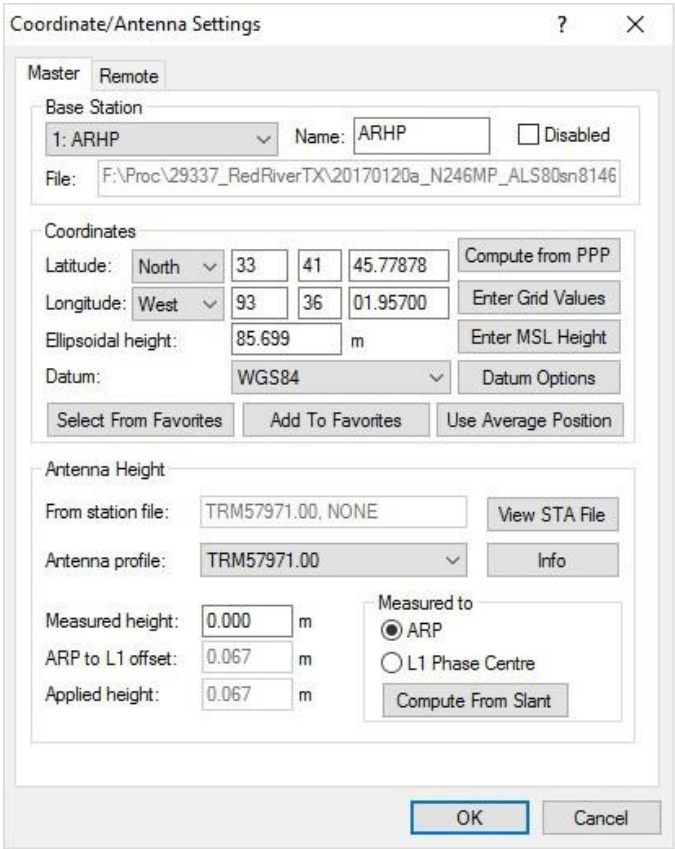

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
Roll
Pitch

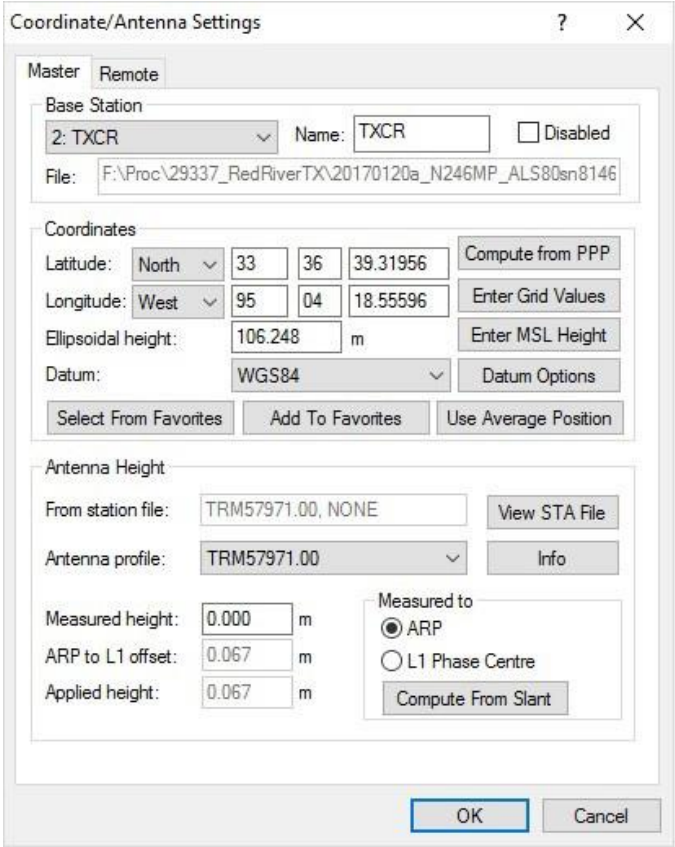

Height (m)
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
Height


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
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
515000
Week 1932
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
529000
530000
531000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: ARHP
Name: ARHP
Disabled
File: F:\Proc\29337_RedRiverTX\20170120a_N246MP_ALS80sn8146
Coordinates
Latitude: North 33 41 45.77878
Longitude: West 93 36 01.95700
Ellipsoidal height: 85.699 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: TXCR
Name:
TXCR
Disabled
File:
F:\Proc\29337_RedRiverTX\20170120a_N246MP_ALS80sn8146
Coordinates
Latitude:
North
33
36
39.31956
Compute from PPP
Longitude:
West
95
04
18.55596
Enter Grid Values
Ellipsoidal height:
106.248
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) 20170120_224426

Date: JANUARY 20th, 2017

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

Project: RED RIVER TX **Proj #:** 29337 **Flight Mgmt File:** 29337_SN8146_Clarksville.fpd2

Aircraft: N246MP **Begin Hobbs:** 1248.0 **End Hobbs:** 1252.7 **Total:** 4.7 **Pilot:** C. McDONALD **Co-Pilot:** – **Tech:** P. HRABAK

Dep Apt: KTXK **Dep Time (Lcl):** 16:59 **(Z):** 22:59 z **Arr Apt:** KTXK **Arr Time (Local):** 21:36 **(Z):** 03:36z **Tot Time Aloft:** 4:37

CORS: (Y) / N **Sta 1:** NETWORK **Sta 2:** – **Flyovers:** Y / (N) **If Y, times: Sta1)** (STATIC ONLY) **Sta2)** –

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

Gd Temp beg: +22 °c **End:** +16 °c **OAT beg:** +08 °c **End:** +06 °c **Altimeter begin:** 29.64" **end:** 29.66"

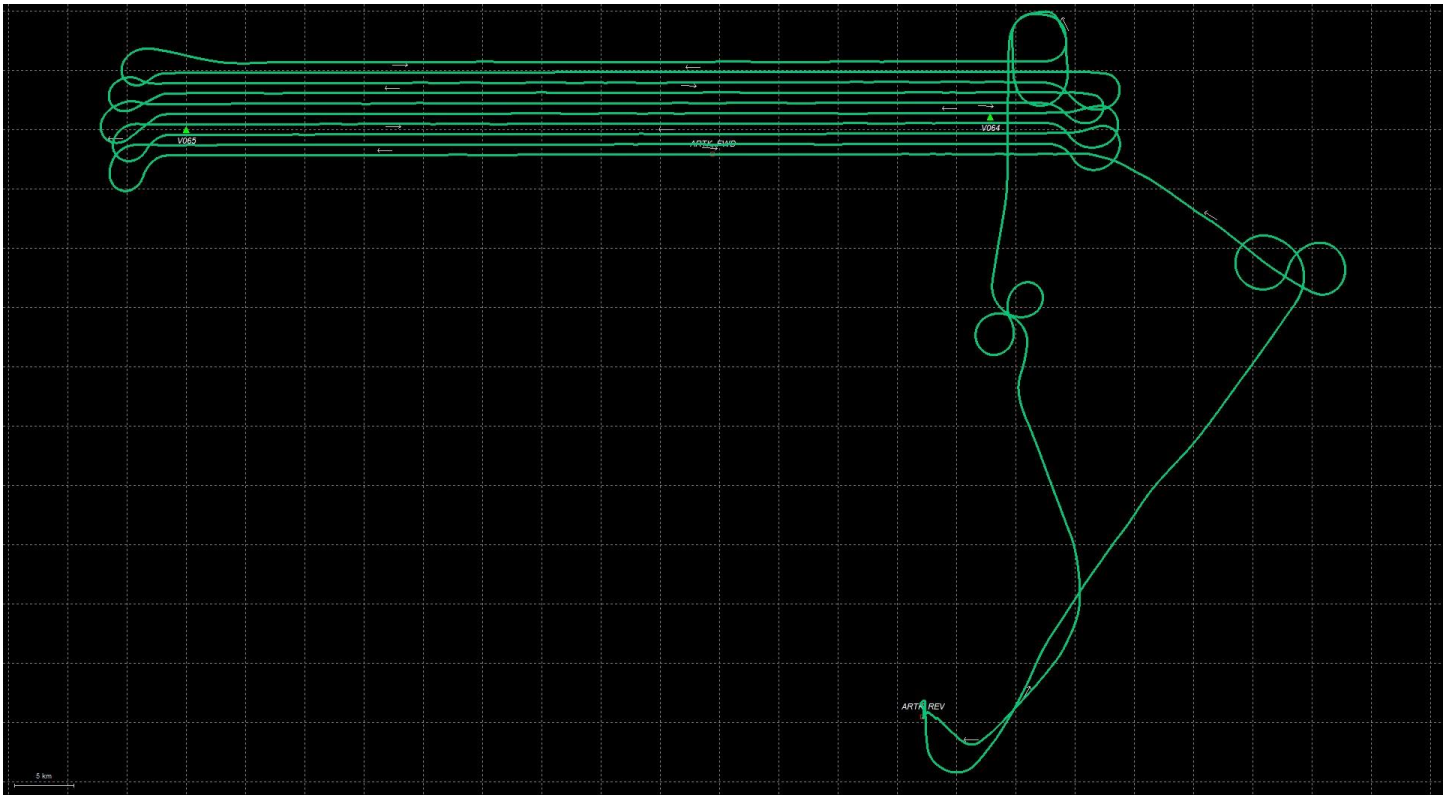
LiDAR	Type: ALS80	Serial #: 8146	Alt AGL: ~6500'	Alt AMSL: ~6960'	Avg Terr Ht: ~400'	Max Gdspd: 155 kts.	Avg Pt Spacing: 0.52 m	Beg GB: 228	Storage Name/#
	FOV: 40°	Scan Freq: 52.0 Hz	MpIA (Y) / N	Pulses In Air: 3	Pulse Rate: 396.6 kHz	Power: 100%	PPSM: ~3.69	End GB: 336	SN 8239_
								Tot GB: 108	SSD-2

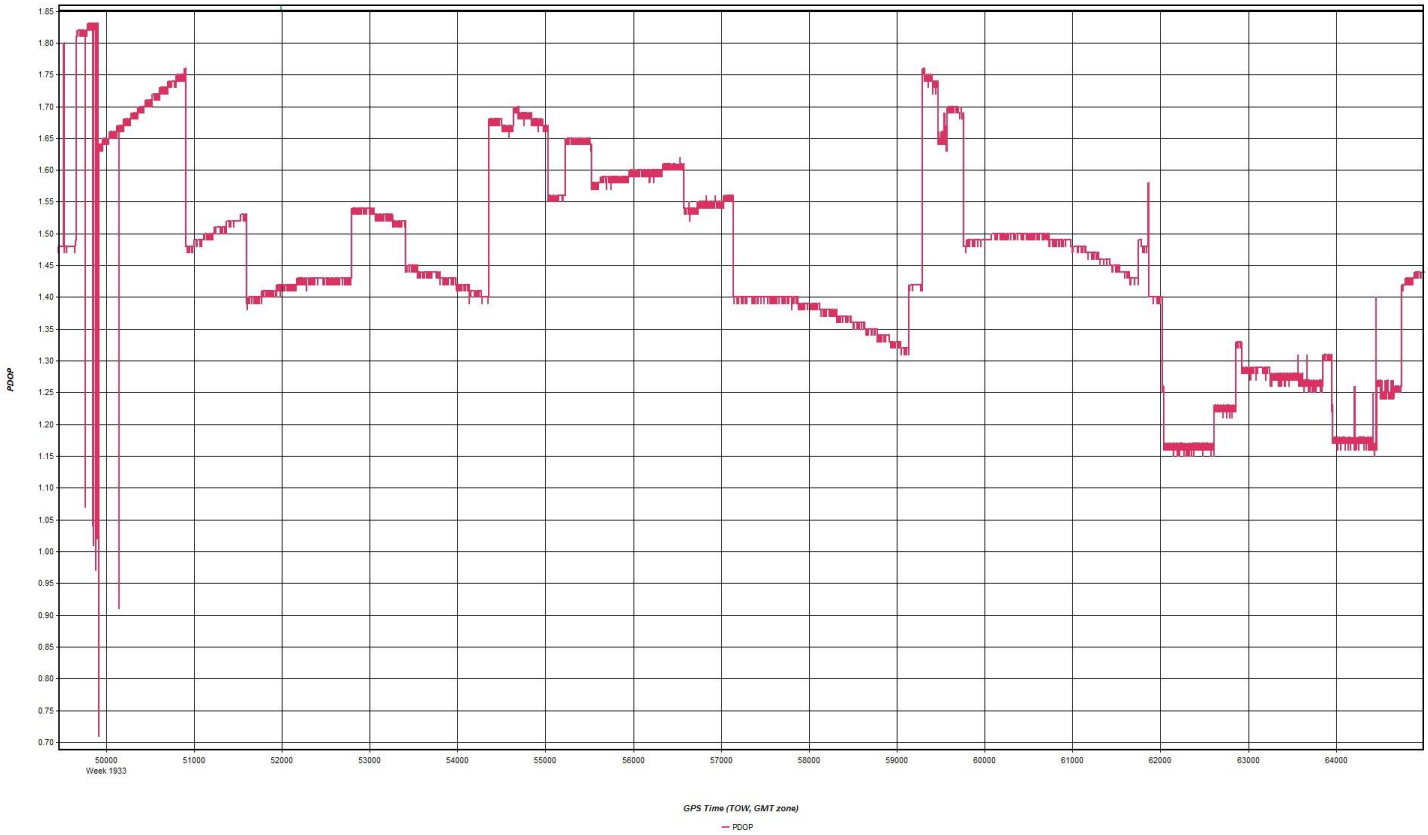
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc. (FIG 8 @ 23:12 → 23:18z)
201	W	23:22	23:43	~135 kts.	1.2/20	6980'	8°	0	few thin above, clear below, -hz, occ -turb, SW winds ~55 kts, some standing water in fields
202	E	23:51	00:09	~155 kts.	1.3/18	6980'	12°	0	few thin above, clear below, -hz, occ -turb, SW winds ~50 kts, some standing water in fields
203	W	00:14	00:35	~135 kts	1.4/18	6970'	6°	0	few thin above, clear below, -hz. occ -turb, SW winds ~55 kts., some standing water in fields
204	E	00:40	00:58	~155 kts.	1.2/21	6980'	11°	–	few thin above, clear below, -hz, cont.-turb, SW winds ~45 kts., some standing water in fields
205	W	01:03	01:24	~135 kts.	1.3/20	6960'	5°	–	skc above & below, -hz, cont.-turb, SW winds ~45 kts., some standing water in fields
206	E	01:27	01:46	~150 kts.	1.2/21	6970'	7°	0	skc above & below, -hz, occ.-turb, SW winds ~35 kts., some standing water in fields
207	W	01:50	02:11	~140 kts.	1.3/21	6970'	7°	0	skc above & below, -hz, occ.-turb, SW winds ~45 kts., some standing water in fields
208	E	02:16	02:35	~150 kts.	1.3/20	6960'	8°	0	skc above & below, -hz, occ.-turb, SW winds ~40 kts., some standing water in fields
209	W	02:39	03:00	~140 kts.	1.2/21	6960'	7°	0	skc above & below, -hz, occ.-turb, SW winds ~45 kts., some standing water in fields (*)
~~210~~	~~E~~	~~03:~~	~~03:~~	~~kts.~~					→ (decided to abort lift early due to warnings)
ULØØ1	N	03:07	03:10	~145 kts	1.3/19	6960'	18°	0	↑ same as above ↑ (IMPROVISED CROSS LINE)
									(FIG 8 @ 03:10 → 03:15 z)
									[LANDED TO NOT RISK COLLECTING BAD DATA DUE TO SIGNIFICANT WARNINGS]
									(*: "ALS WARNING: SOW IS NOT BEING UPDATED" & TM1B time recovery improper warning)

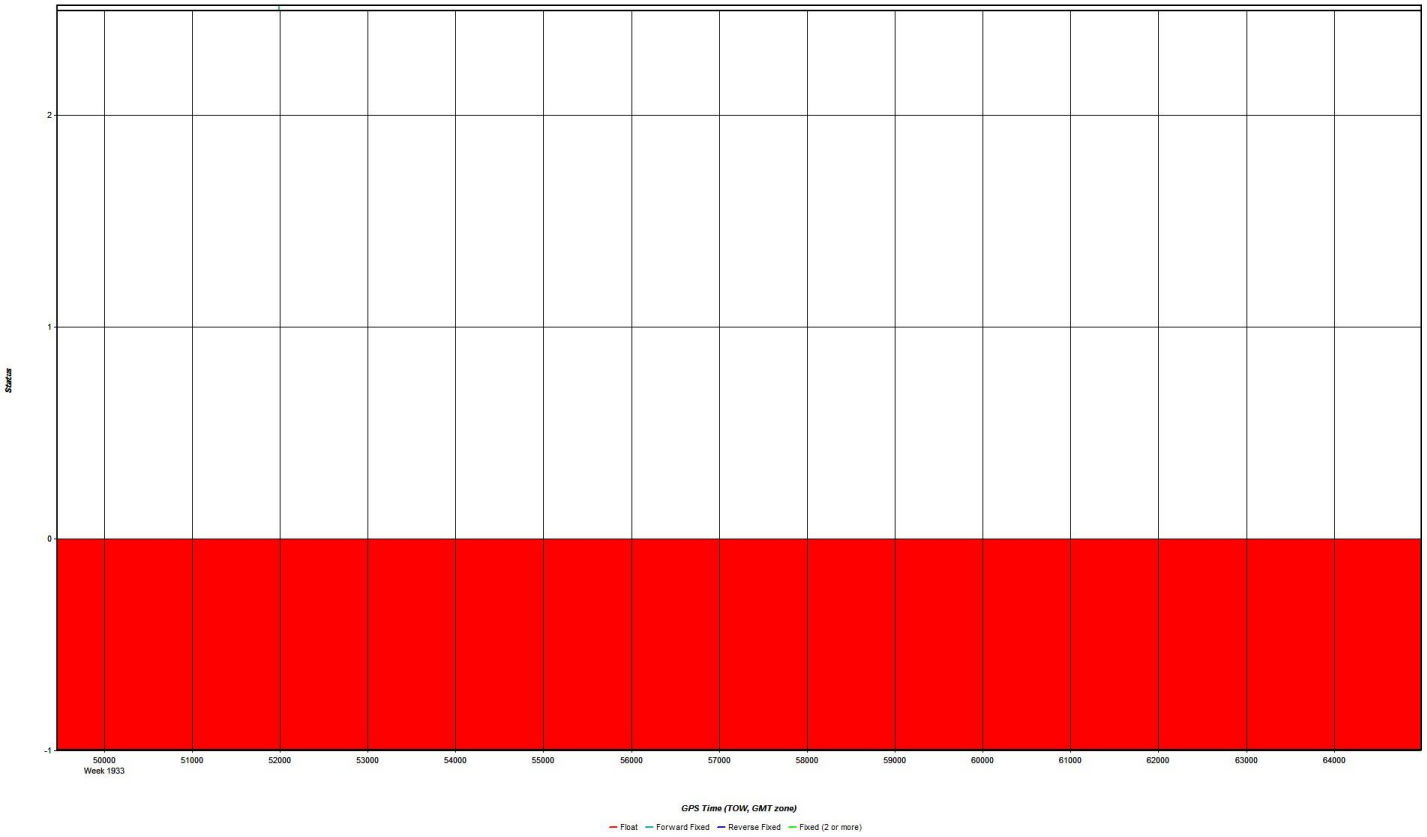
Total Proj Lines: 55	Lines Flown: 9	Lines Remain: 46	Online Time: 3:48	Mob Time: 0:49	Notes: 20170120_224426

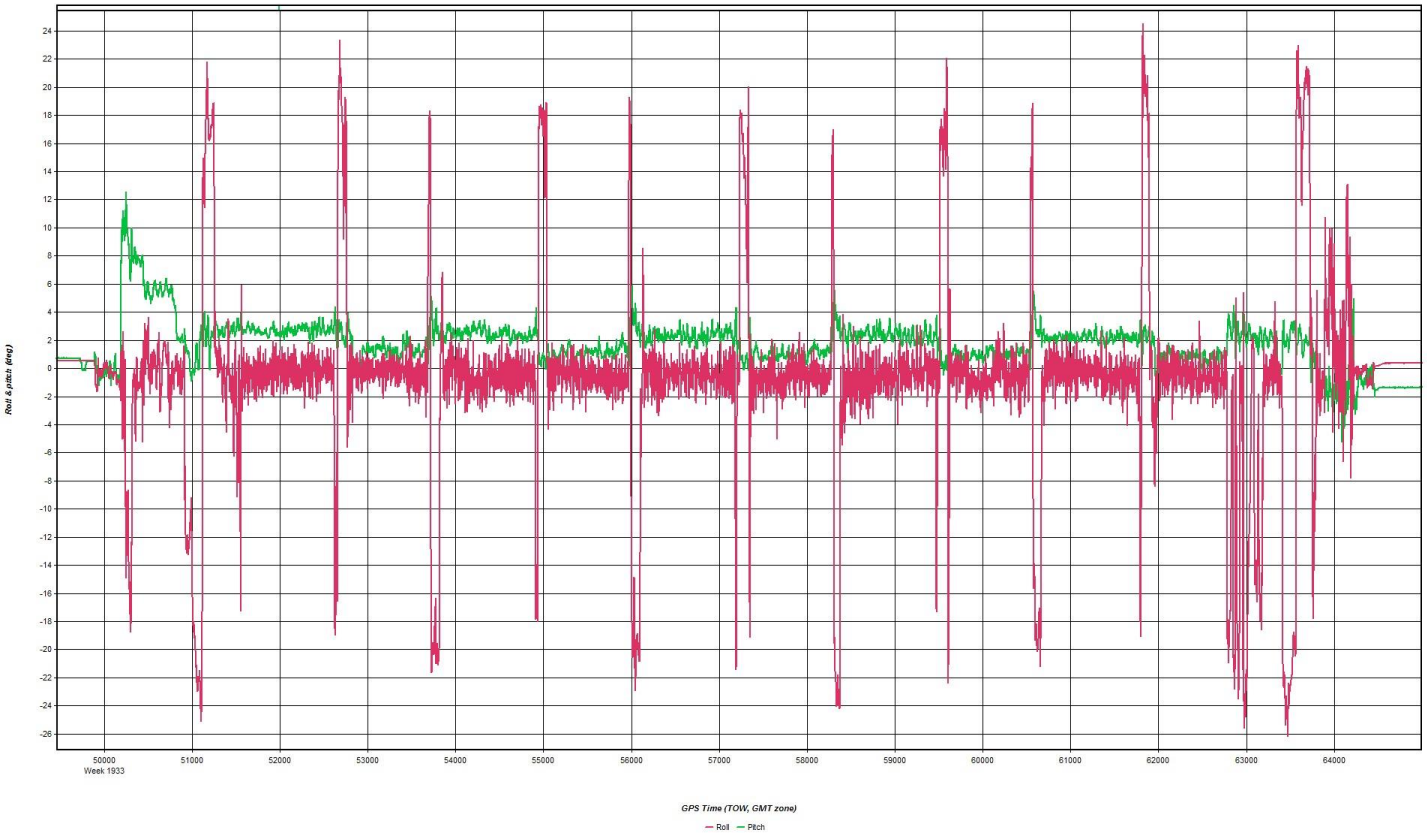
44

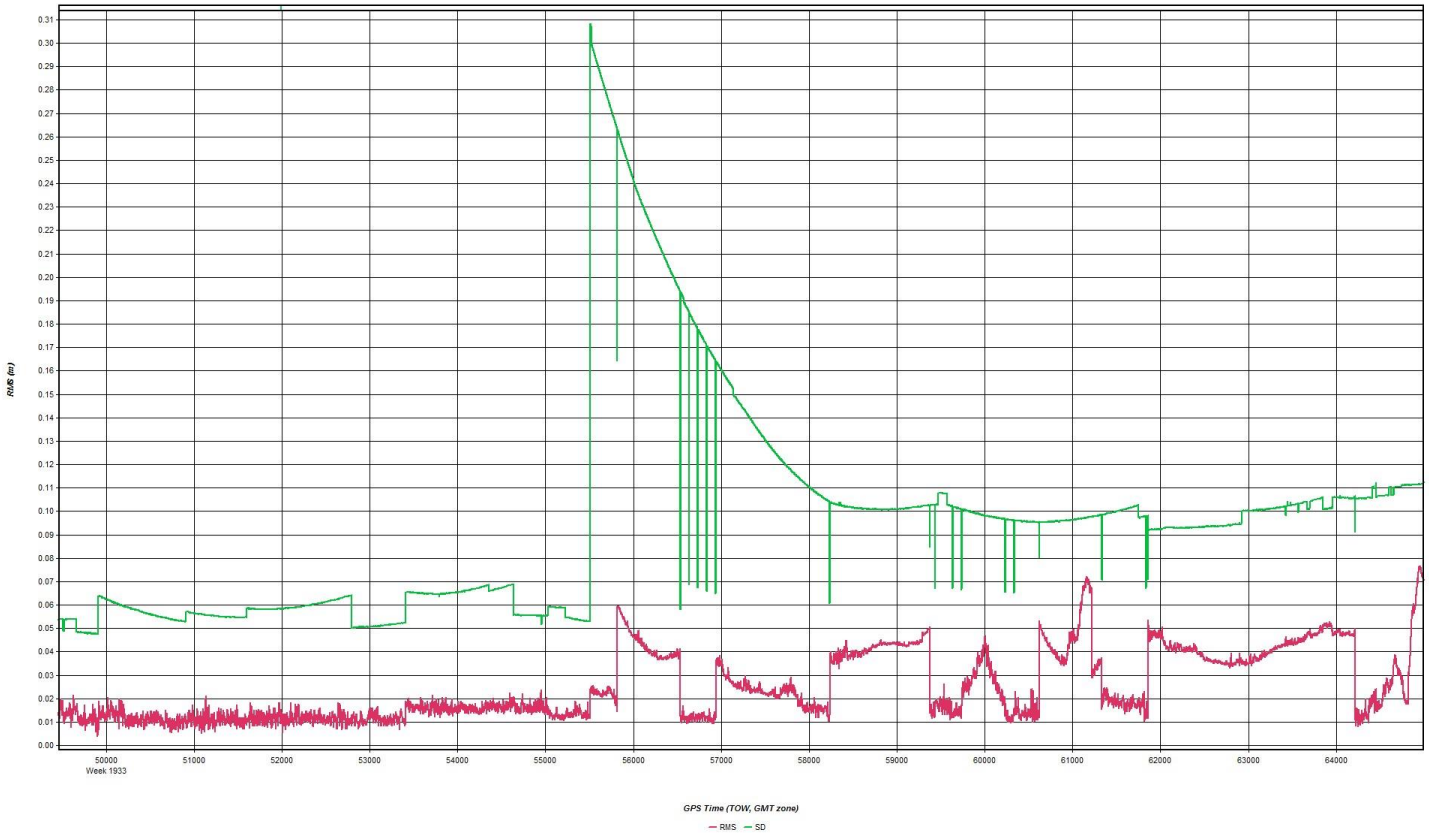
Jan 22, 2017-A (N812TB, SN7178)

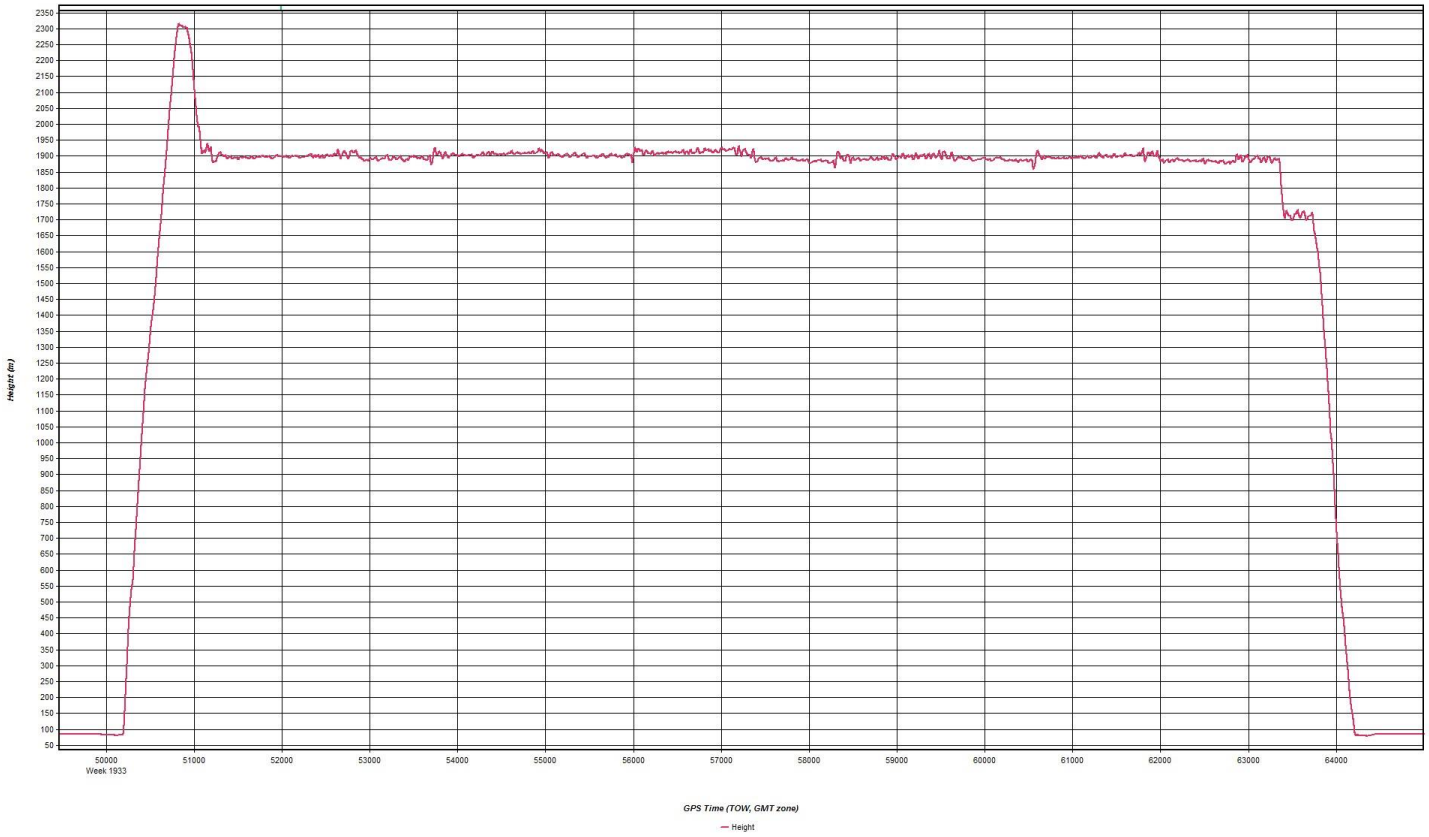


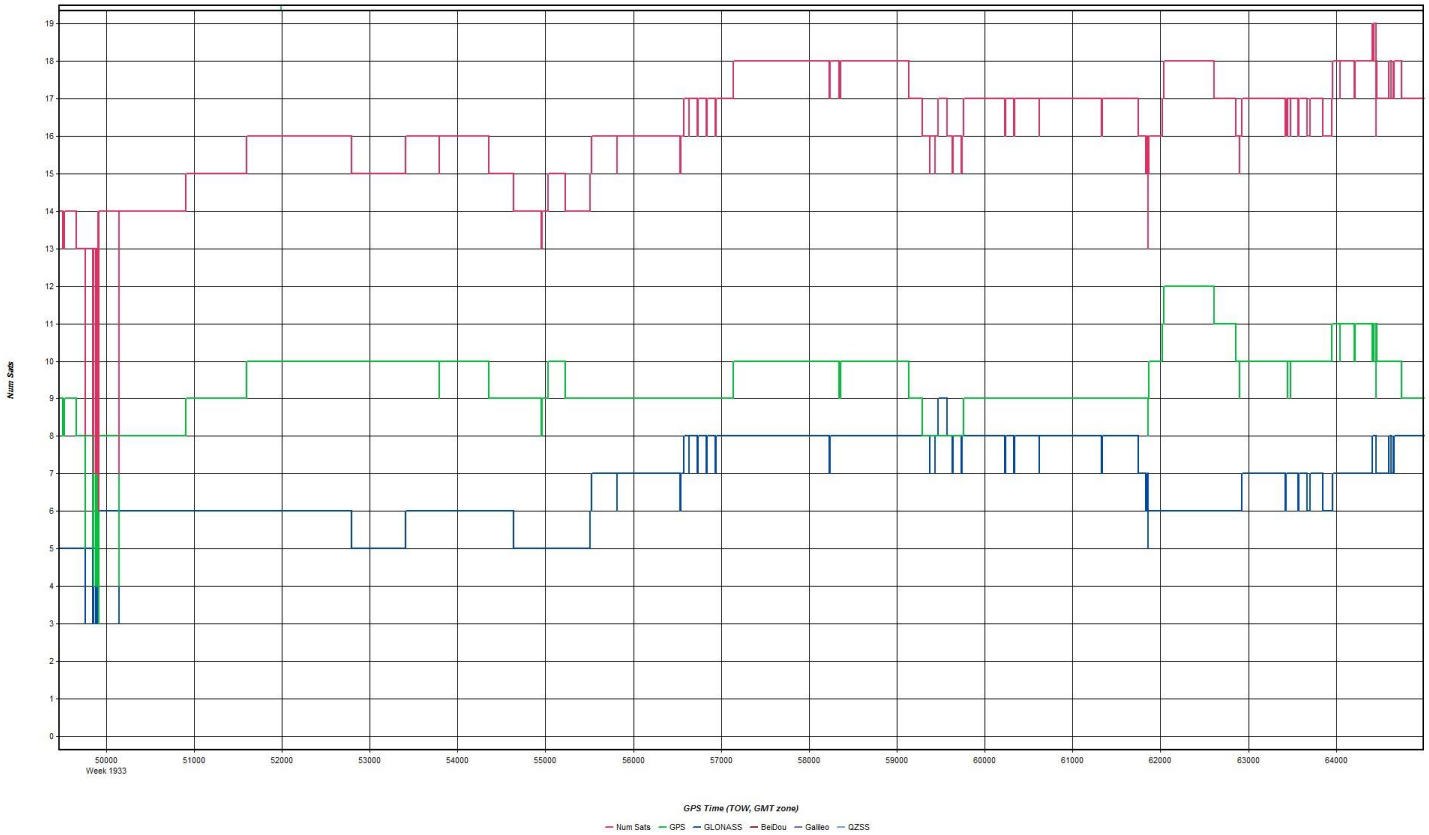

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
50000
Week 1933
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
GPS Time (TOW, GMT zone)
PDOP

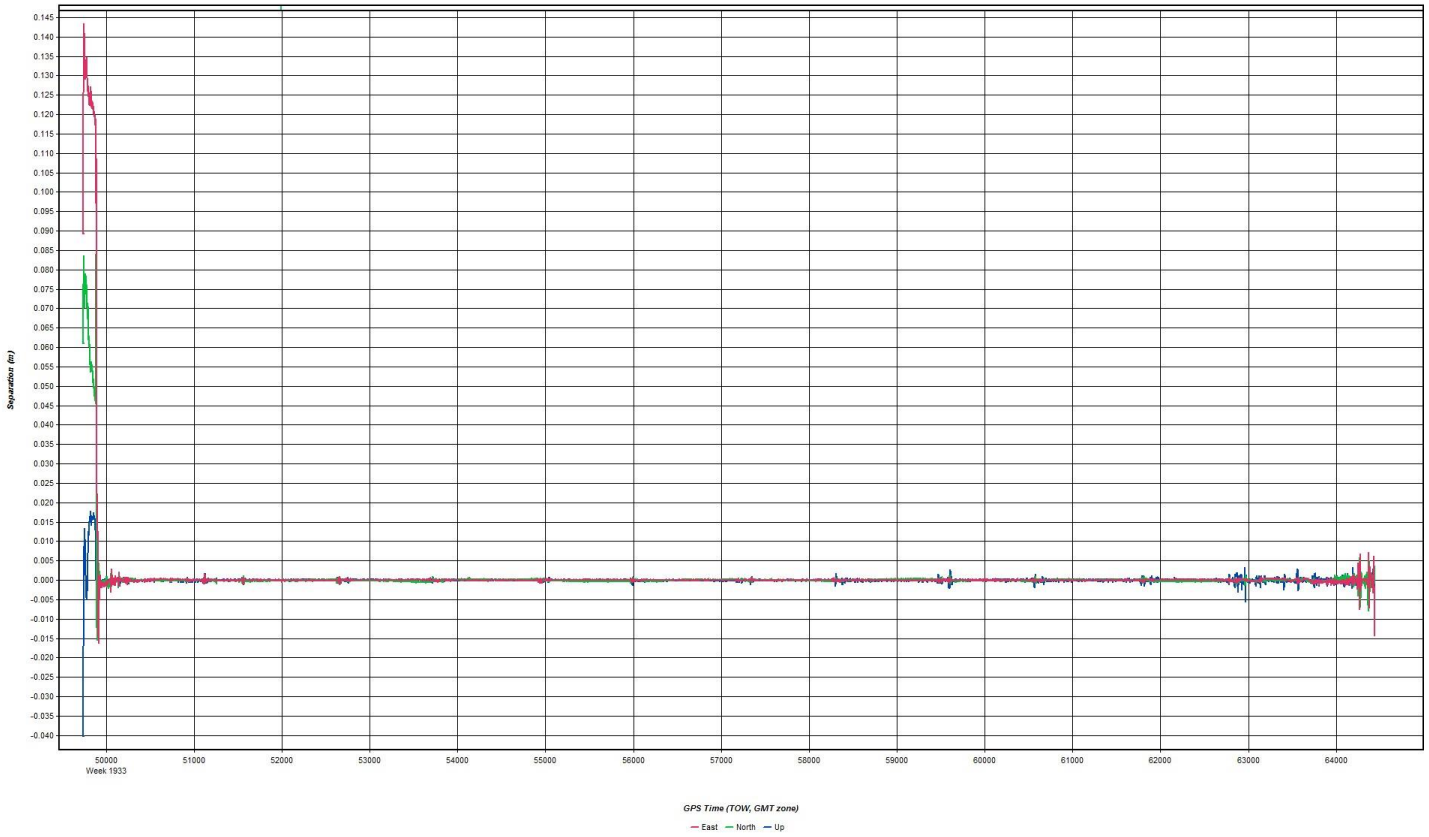

Status
2
1
0
-1
50000
Week 1933
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

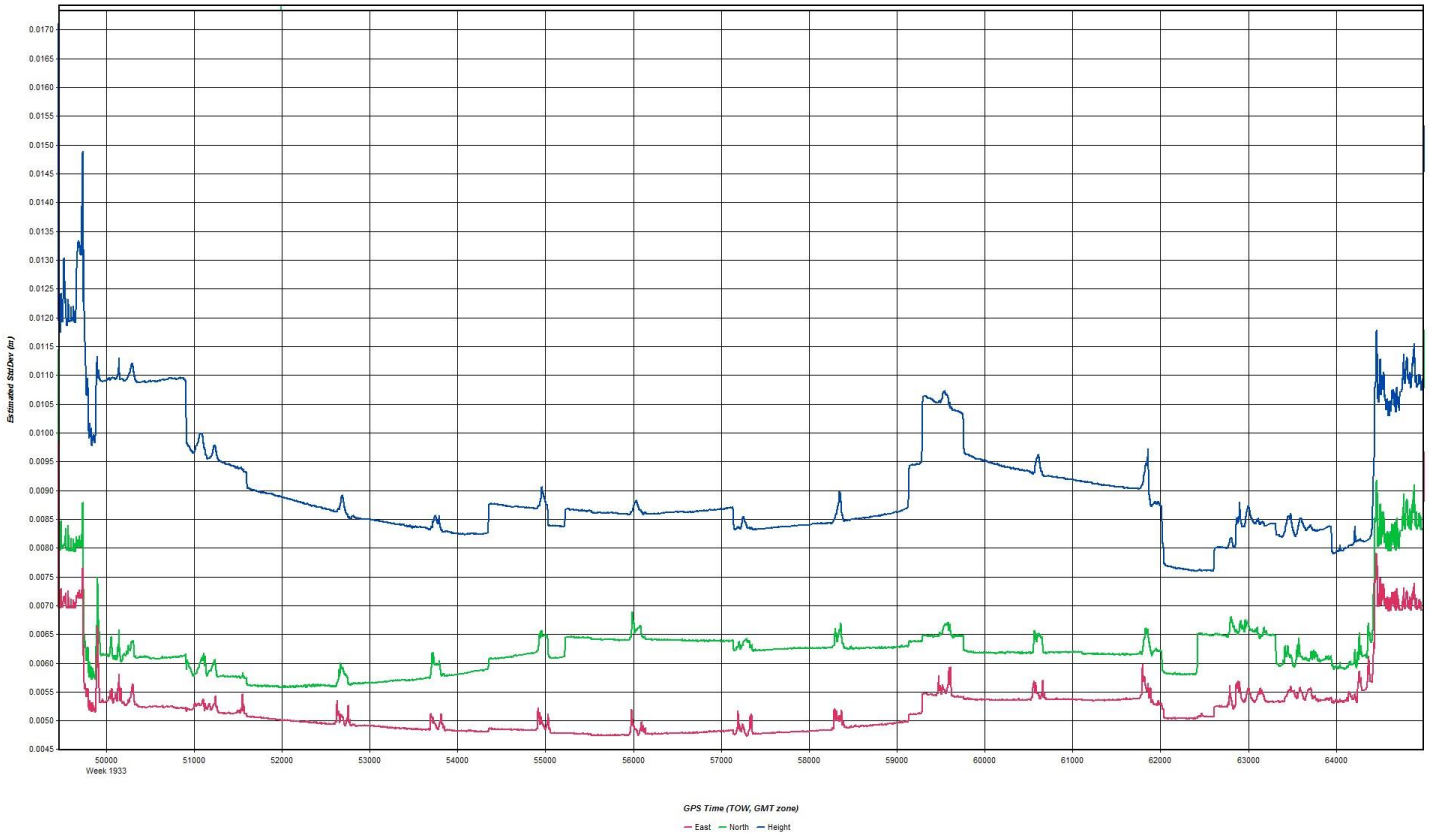

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
50000
Week 1933
51000
52000
53000
54000
55000
56000
57000
58000
59000
60000
61000
62000
63000
64000
GPS Time (TOW, GMT zone)
Roll
Pitch

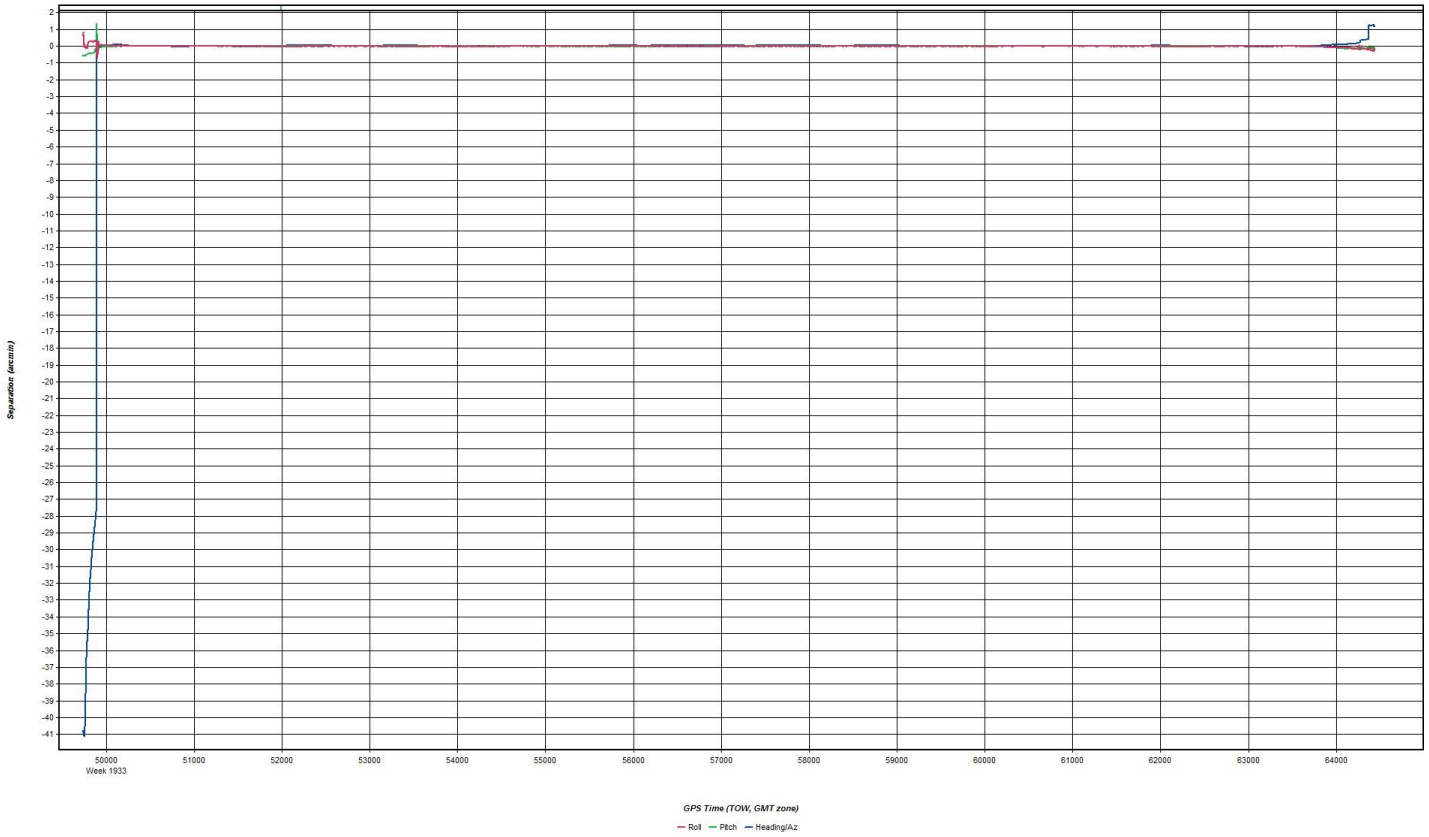

RMS (m)
GPS Time (TOW, GMT zone)
Week 1933
RMS
SD


Height (m)
GPS Time (TOW, GMT zone)
Week 1933
Height


Num Sats
Week 1933
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou
Galileo
QZSS


Separation (m)
Week 1933
GPS Time (TOW, GMT zone)
East
North
Up


Estimated StdDev (m)
Week 1933
GPS Time (TOW, GMT zone)
East
North
Height


Separation (arcmin)
Week 1933
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

Flight Log

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-22-17 Life: A B C D E Pg 1 of 1

Project: Red River TX Proj #: 29337 Flight Mgmt File:

Aircraft: N812TB Begin Hobbs: 4255.2 End Hobbs: 4259.1 Total: Pilot: JBillington Co-Pilot: — Tech: JSwan

Dep Apt: KGGG Dep Time (Lcl): 0750 (Z): +6 Arr Apt: Arr Time (Local): (Z): Tot Time Aloft: 3.9

CORS: (Y) / N Sta 1: Longview 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)

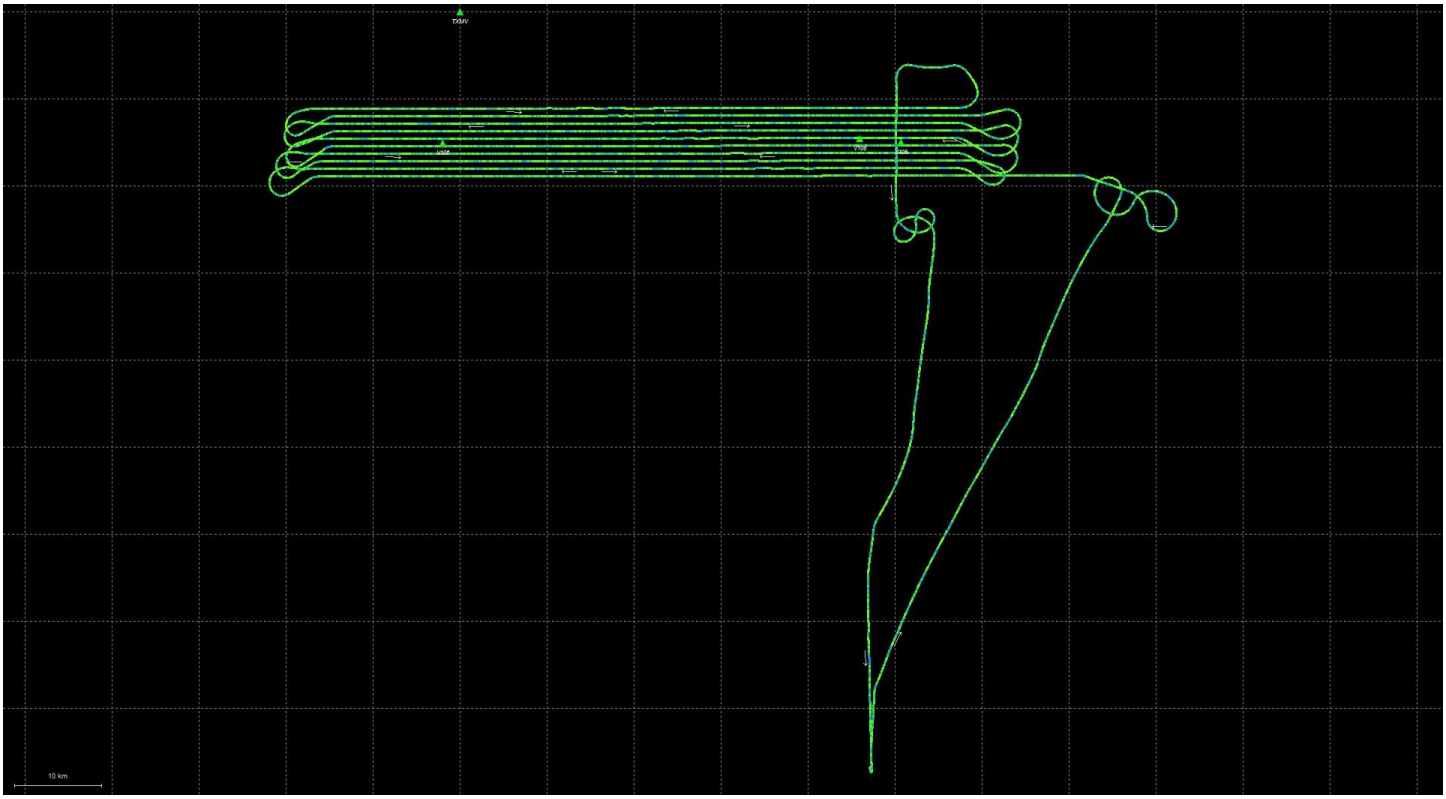
Gd Temp beg: 55F °c End: °c OAT beg: +3 °c End: +4 °c Altimeter begin: 2940 end: 2949

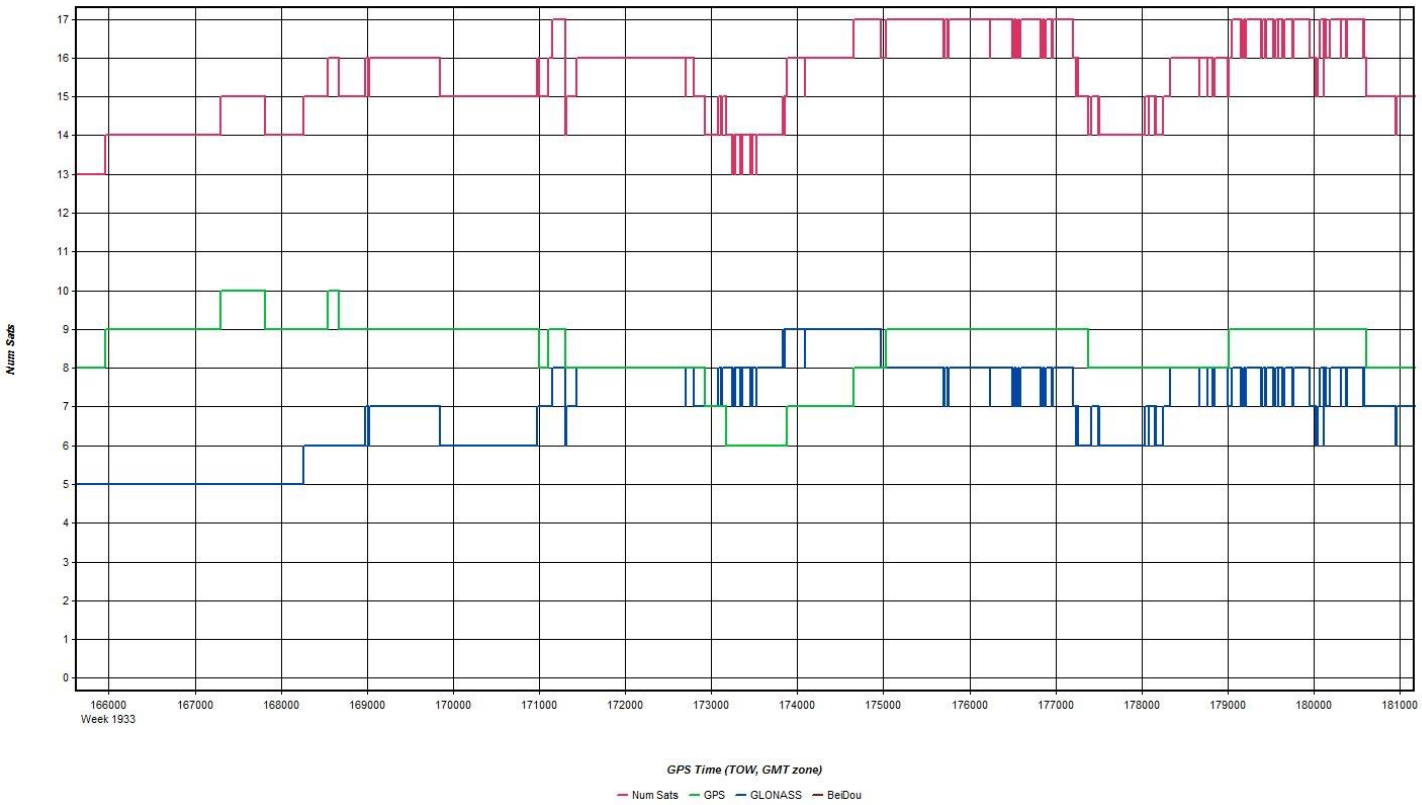
LIDAR	Type: A1570	Serial #: 7181	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB: 427	Storage Name/#
	FOV: 40	Scan Freq: 53	MpIA Y / N	Pulses In Air	Pulse Rate: 295	Power: 100	PPSM	End GB: 367	
								Tot GB	

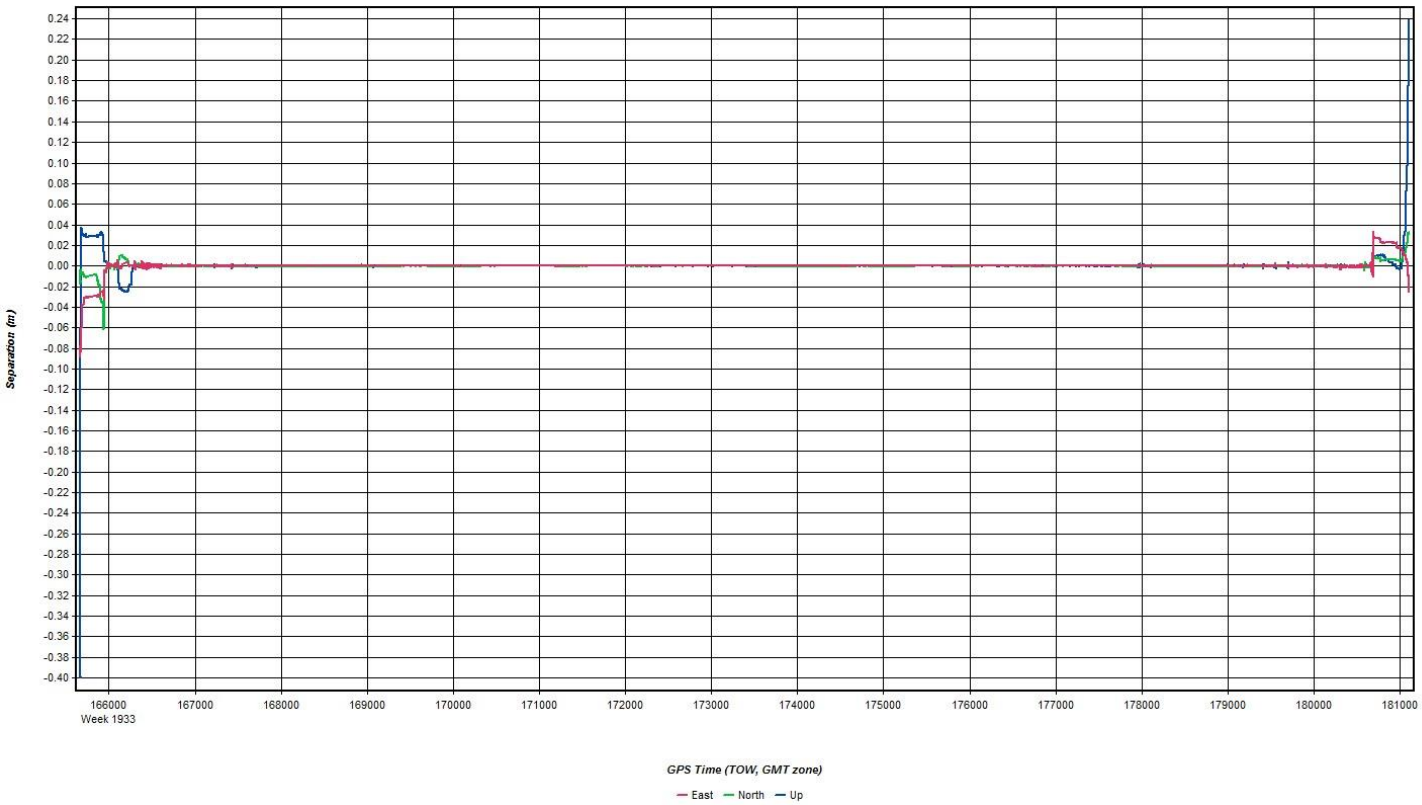
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		0750	1414						GGG → Fig 8's (1410 - 1414)
367	270	1419	1436	148	1.1/17	6214		0	
366	90	1439	1454	160	1.1/18	6286		0	
365	270	1457	1514	142	1.2/19	6245		0	
364	90	1517	1531	155	1.1/19	6285		0	
363	270	1535	1552	156	1.2/17	6256		0	
362	90	1556	1610	161	1.2/18	6224		0	
361	270	1613	1630	137	1.2/19	6200		0	
360	90	1633	1648	159	1.2/19	6199		0	
* 359	270	1652	1709	135	1.3/17	6231		0	* clouds 0-9 FWE (from West End) Refly
358	90	1713	1726	169	1.0/21	6206		0	clouds 0-3 West End (did not fly first 7 miles on West end
Xtie	180	1729	1729	182	1.0/22	6245		0	unplanned xtie reflown
Xtie	180	1733	1735	173	1.6/22	6226		0	
		1736 -							fig 8's (1736 - 1740) → KGGG
									Hobbs = 3.9
									Online = 3.3
									Mob = 0.6

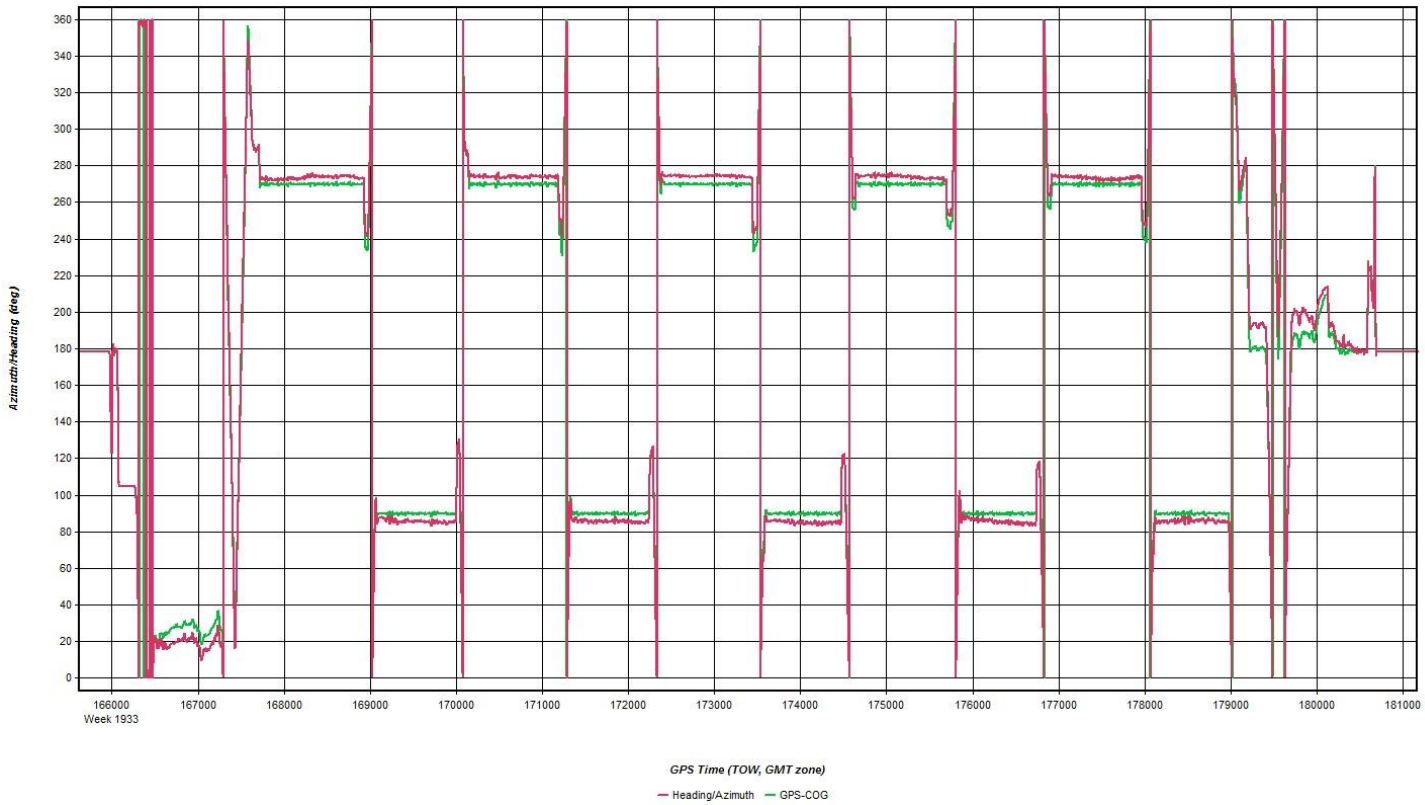
Total Proj Lines: Lines Flown: 10 Lines Remain: Online Time: 3.3 Mob Time: 0.6 Notes:

Jan 23, 2017-A (N812TB, SN7178)

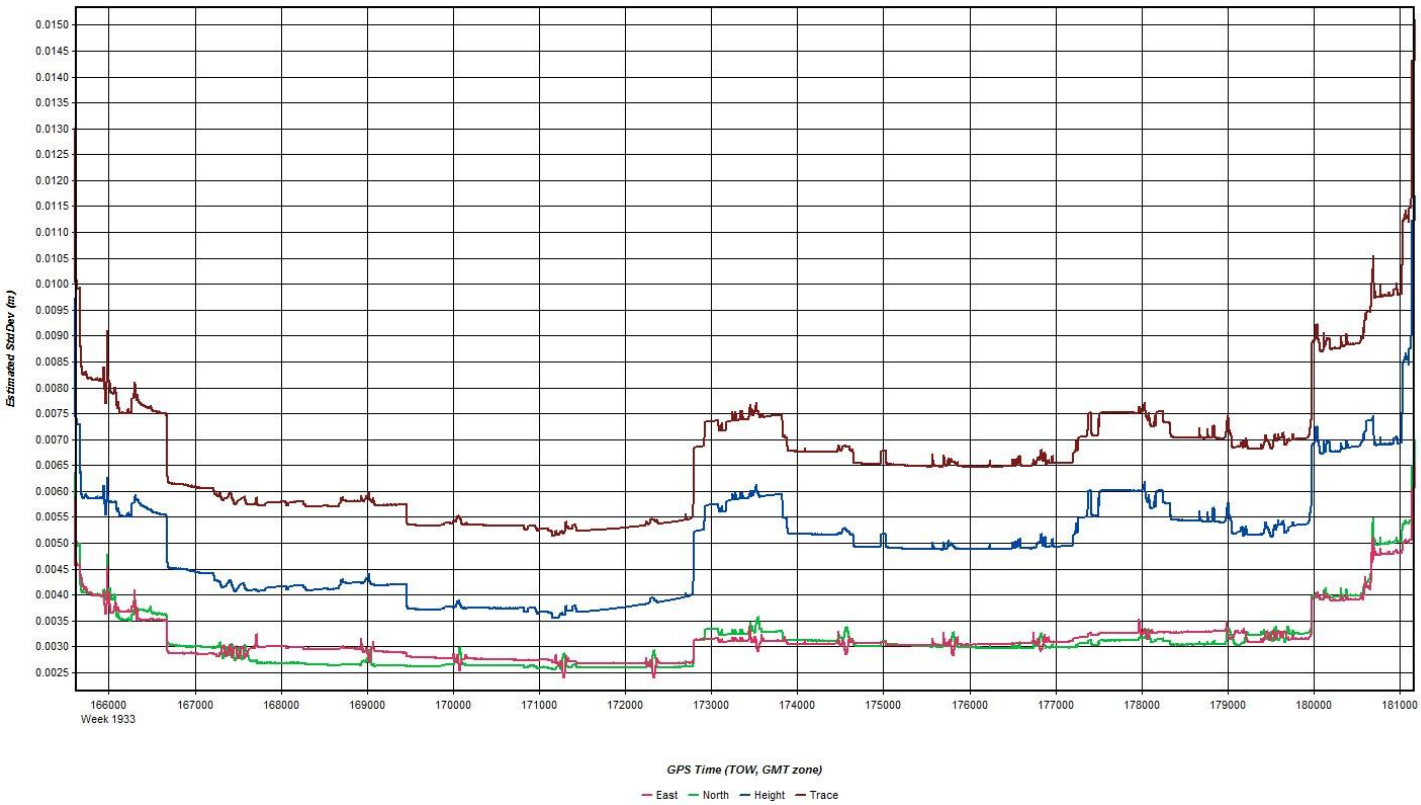


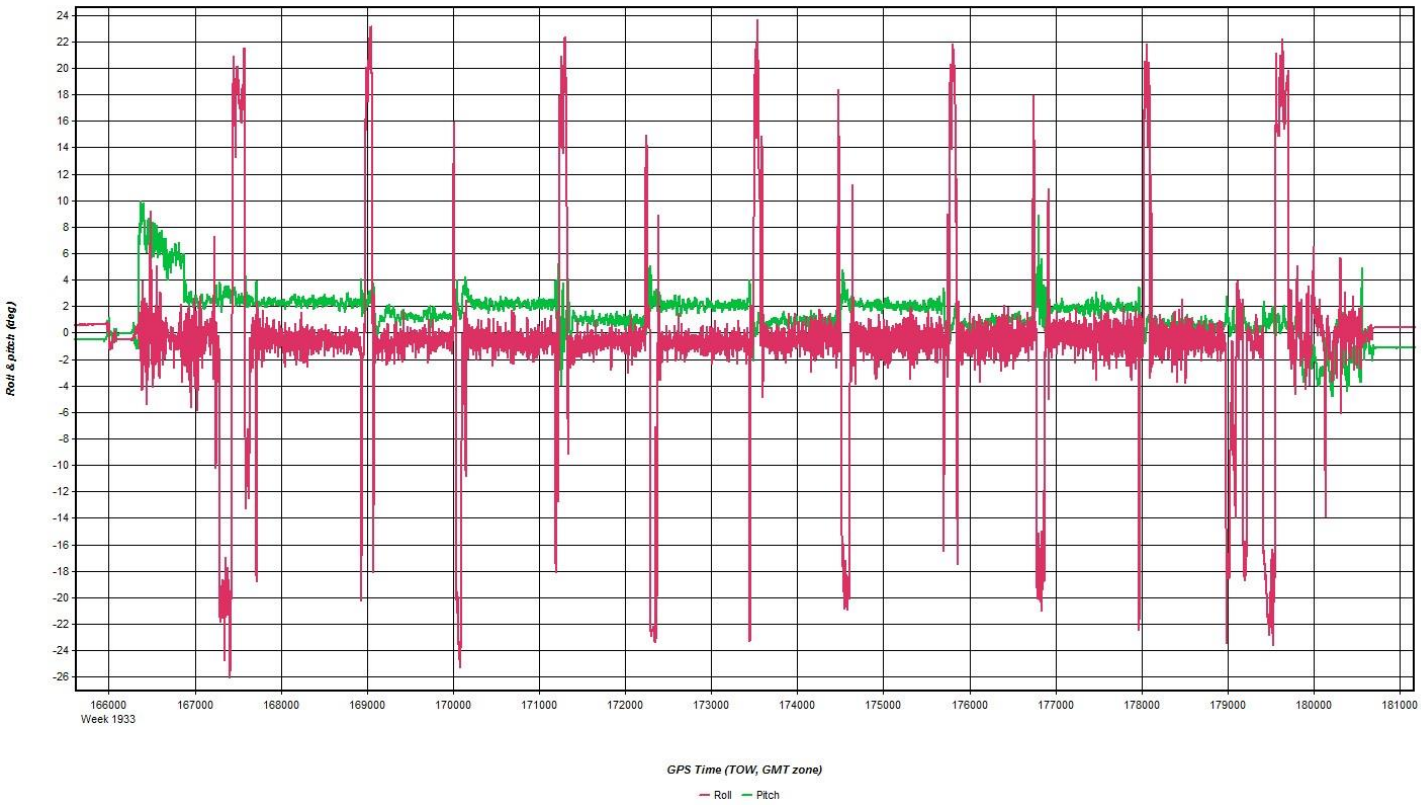

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

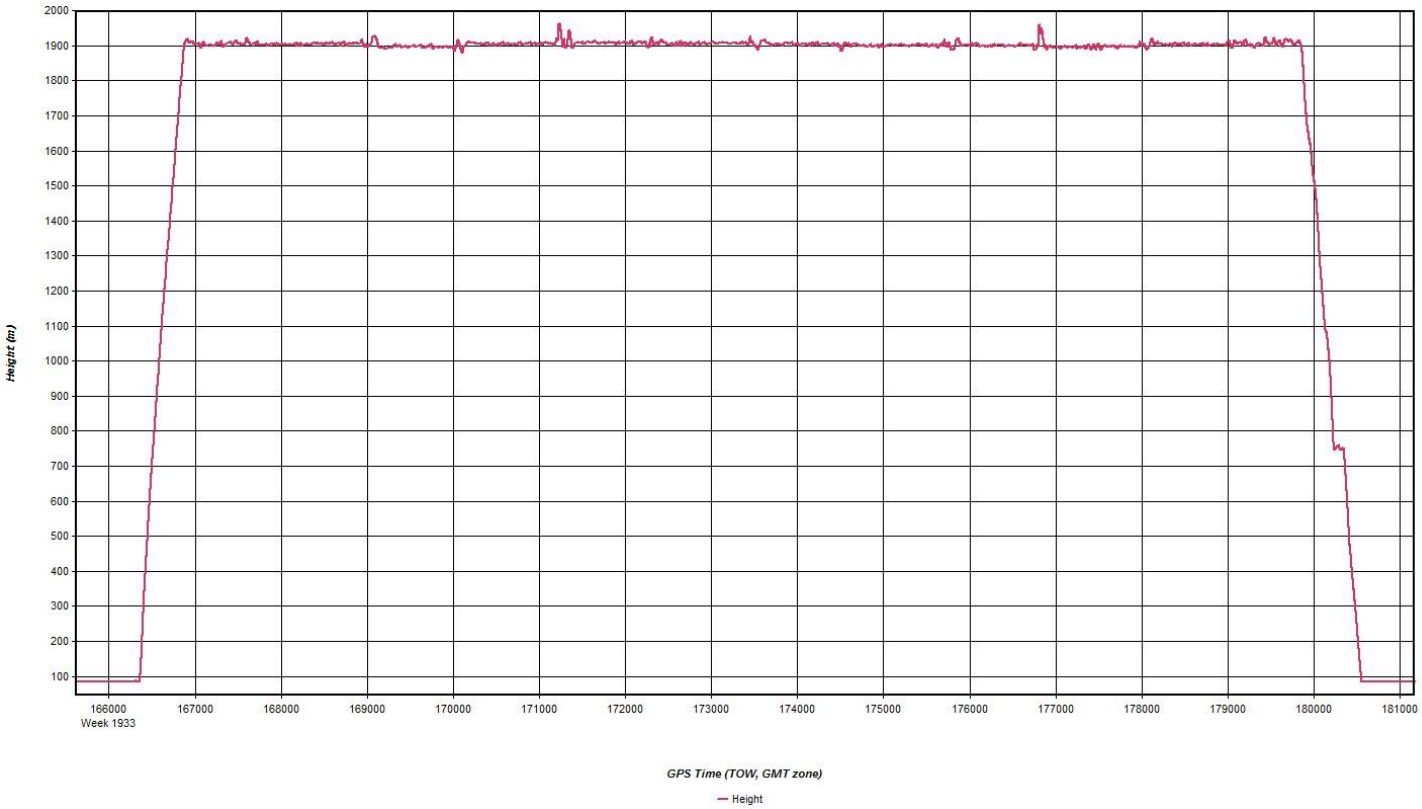

Separation (m)
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
-0.40
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
East
North
Up

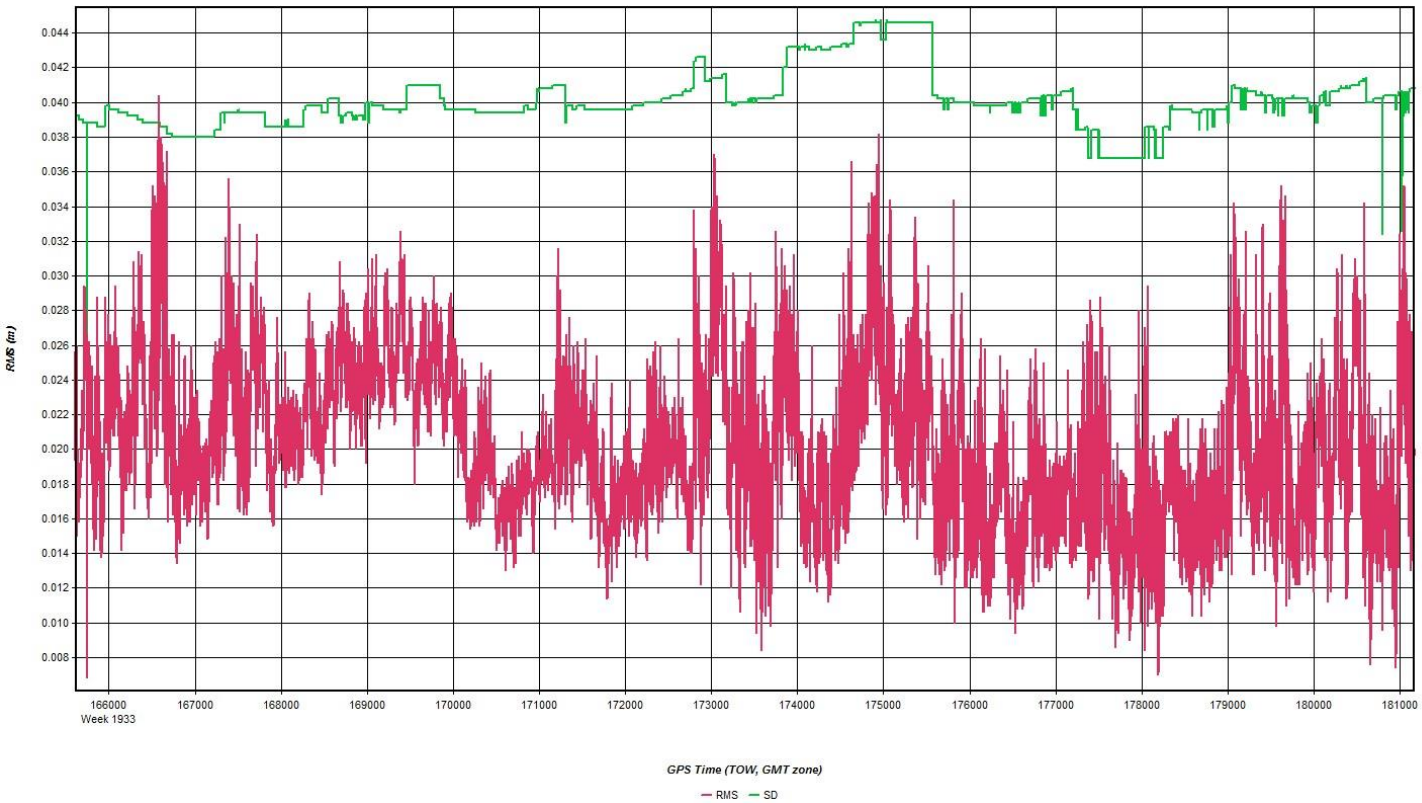

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

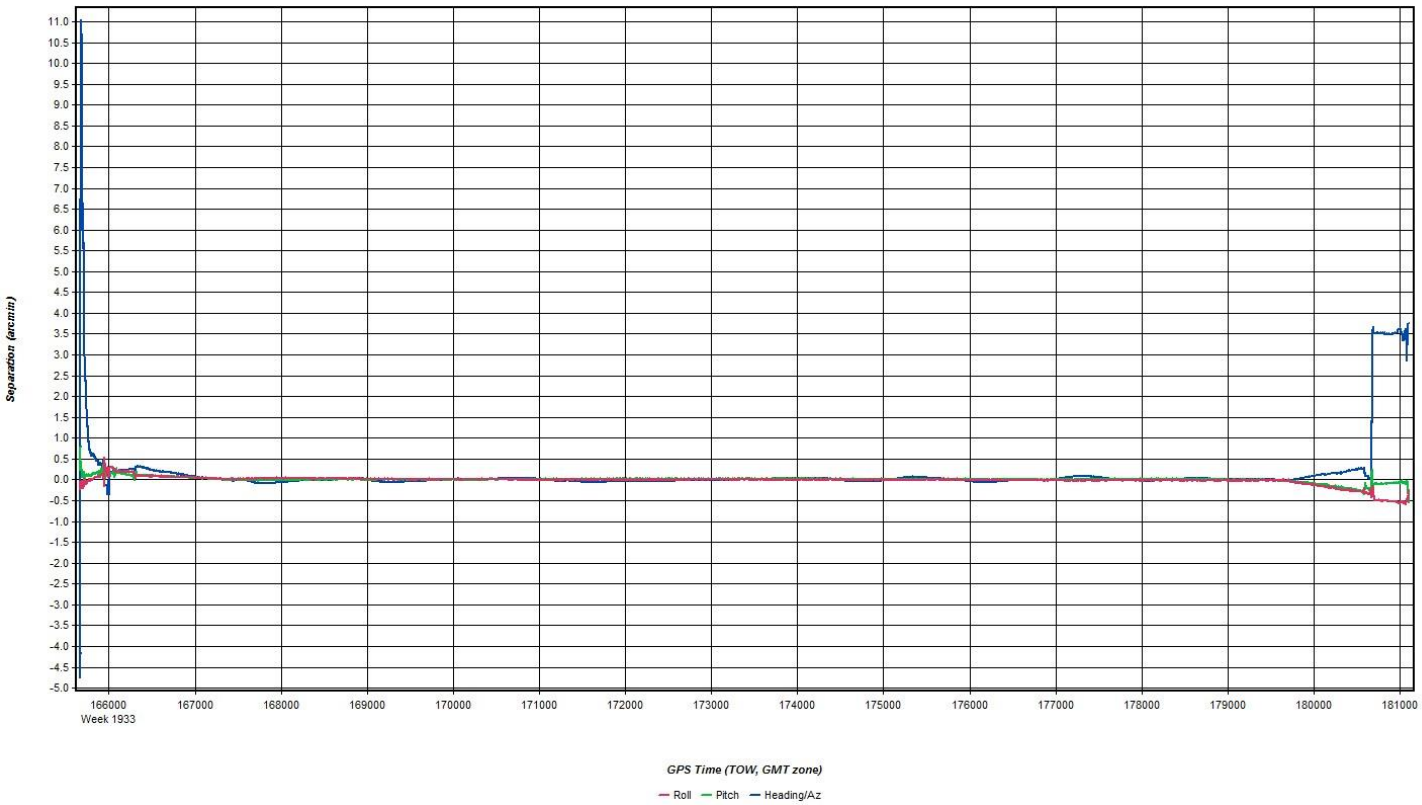

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
PDOP

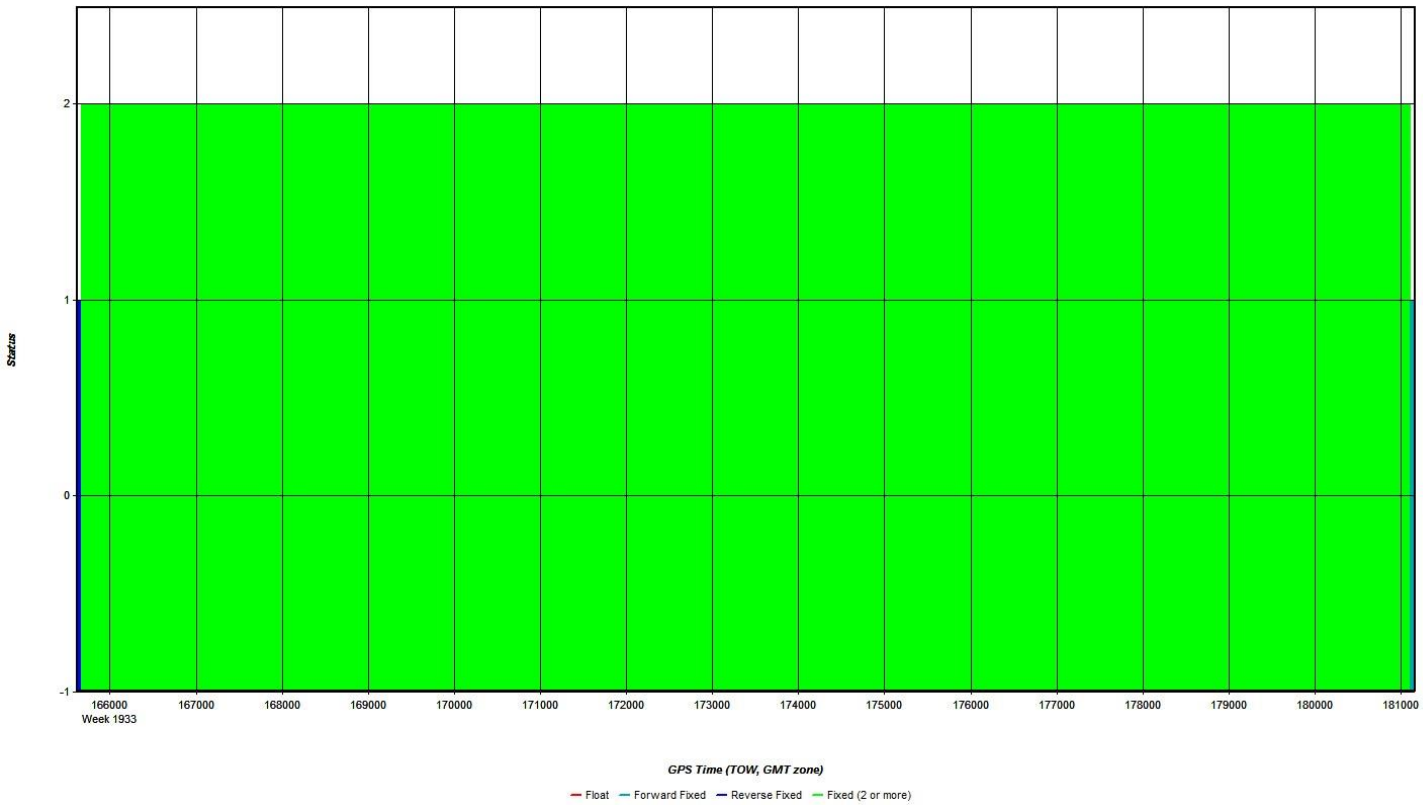

Estimated StdDev (m)
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

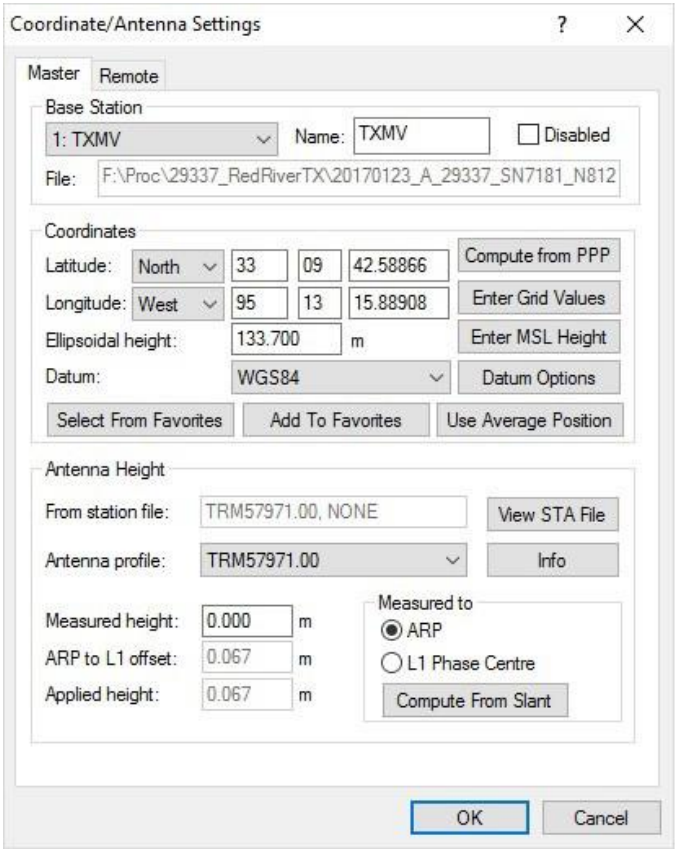

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
Roll
Pitch

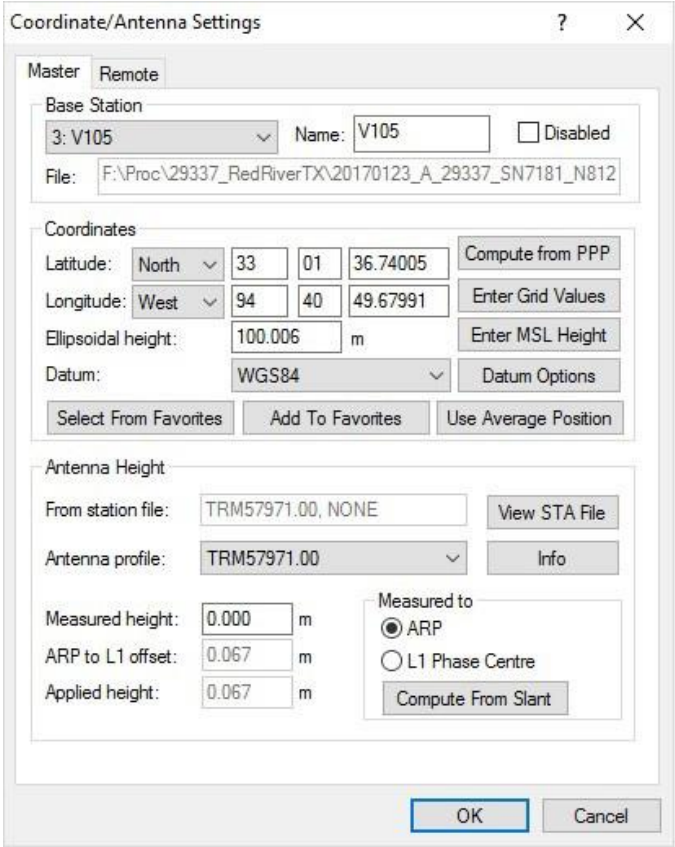

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
Height

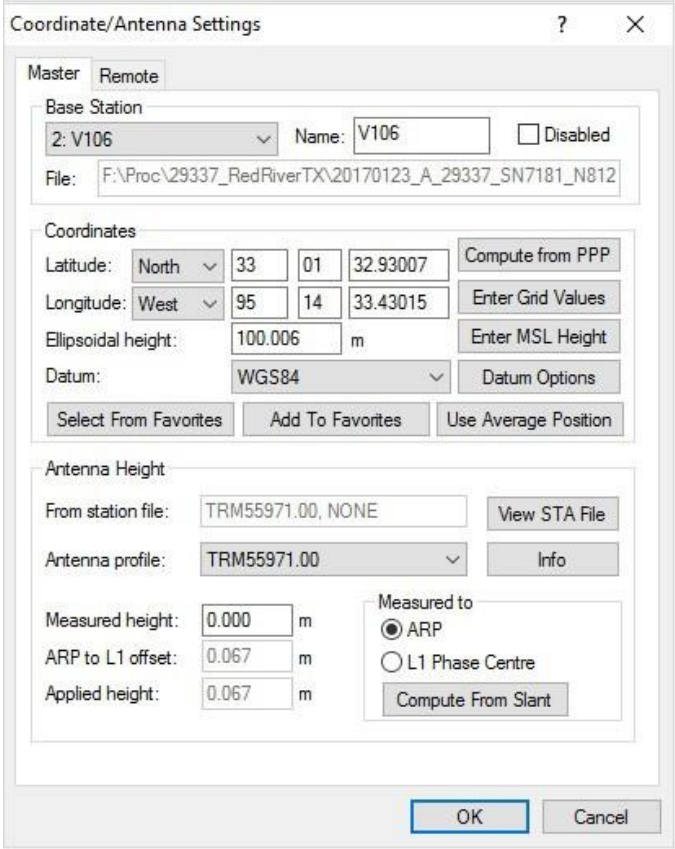

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
RMS
SD

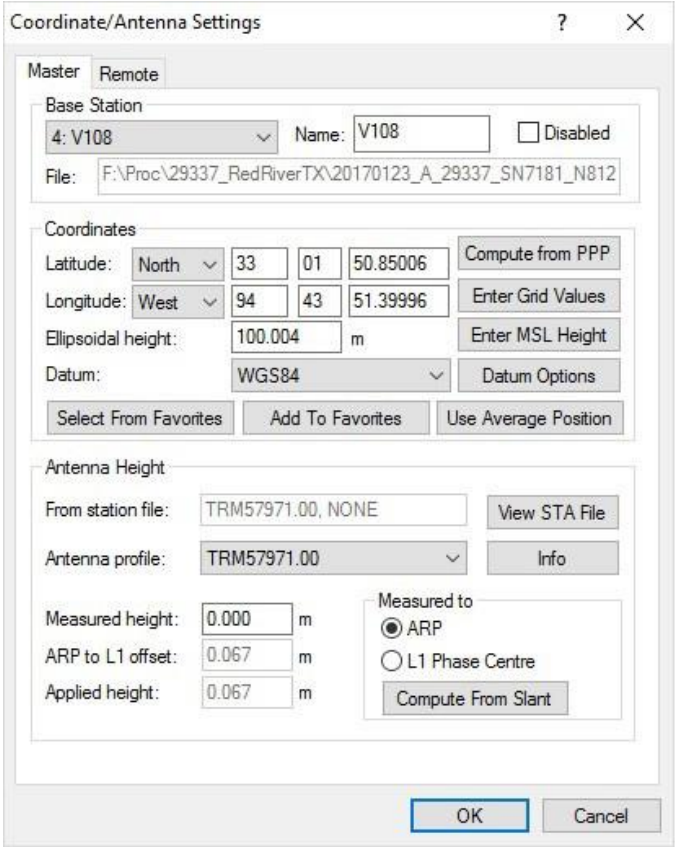

Separation (arcmin)
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
166000
Week 1933
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
178000
179000
180000
181000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMV
Name: TXMV
Disabled
File: F:\Proc\29337_RedRiverTX\20170123_A_29337_SN7181_N812
Coordinates
Latitude: North 33 09 42.58866
Longitude: West 95 13 15.88908
Ellipsoidal height: 133.700 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
3: V105
Name: V105
Disabled
File: F:\Proc\29337_RedRiverTX\20170123_A_29337_SN7181_N812
Coordinates
Latitude: North 33 01 36.74005
Longitude: West 94 40 49.67991
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
2: V106
Name: V106
Disabled
File: F:\Proc\29337_RedRiverTX\20170123_A_29337_SN7181_N812
Coordinates
Latitude: North 33 01 32.93007
Longitude: West 95 14 33.43015
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: 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: V108
Name:
V108
Disabled
File:
F:\Proc\29337_RedRiverTX\20170123_A_29337_SN7181_N812
Coordinates
Latitude:
North
33
01
50.85006
Compute from PPP
Longitude:
West
94
43
51.39996
Enter Grid Values
Ellipsoidal height:
100.004
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: 1-23-17

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

Project: RED RIVER, TX FEMA MT PLEASANT Proj #: 29377 Flight Mgmt File: REDRIVER-2PT5P...

Aircraft: N812TB Begin Hobbs: 4265.5 End Hobbs: 4269.4 Total: 3.9 Pilot: RADTKE Co-Pilot: - Tech: MOUDY

Dep Apt: GGG Dep Time (Lcl): 1610 (Z): 2210 Arr Apt: GGG Arr Time (Local): 2010 (Z): 0210 Tot Time Aloft: 4:00

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)

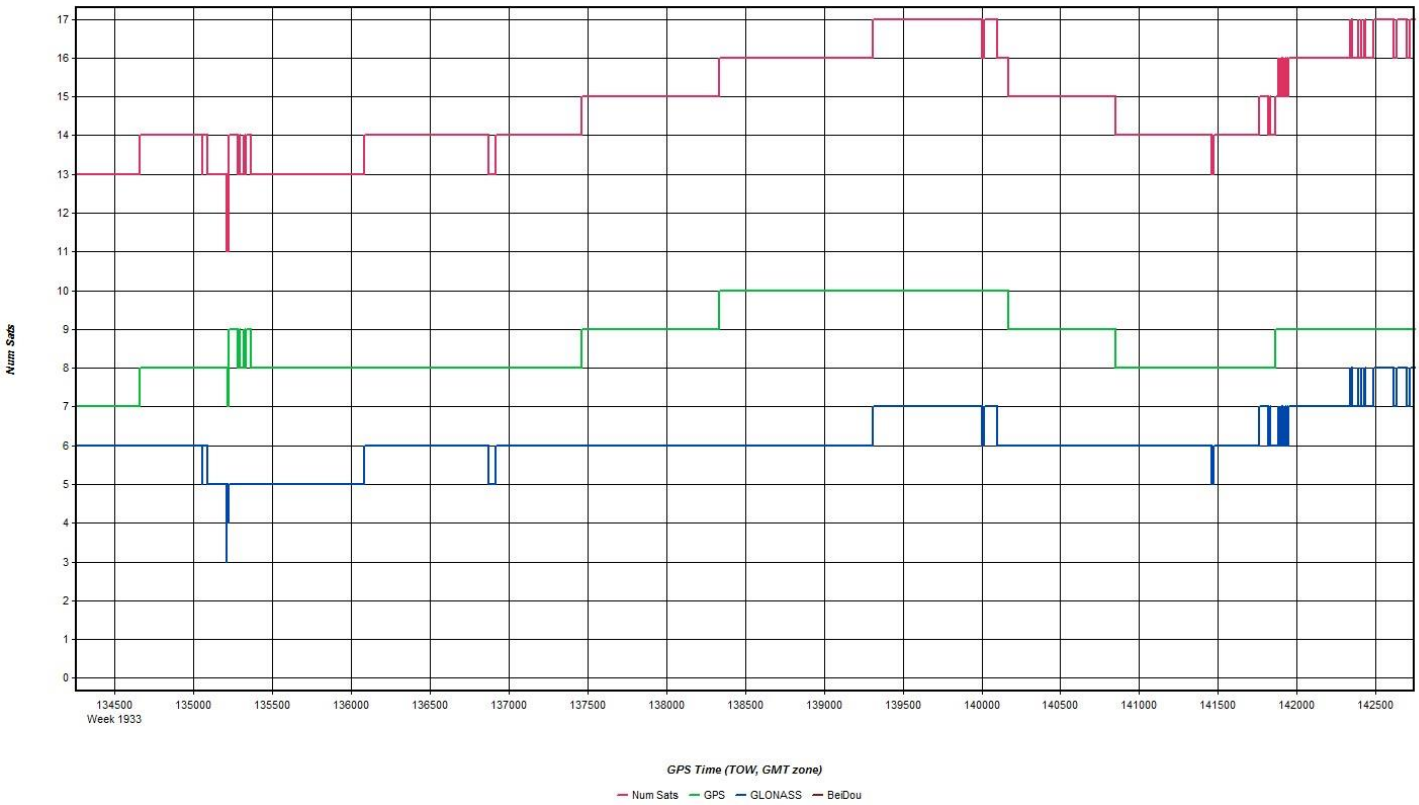
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

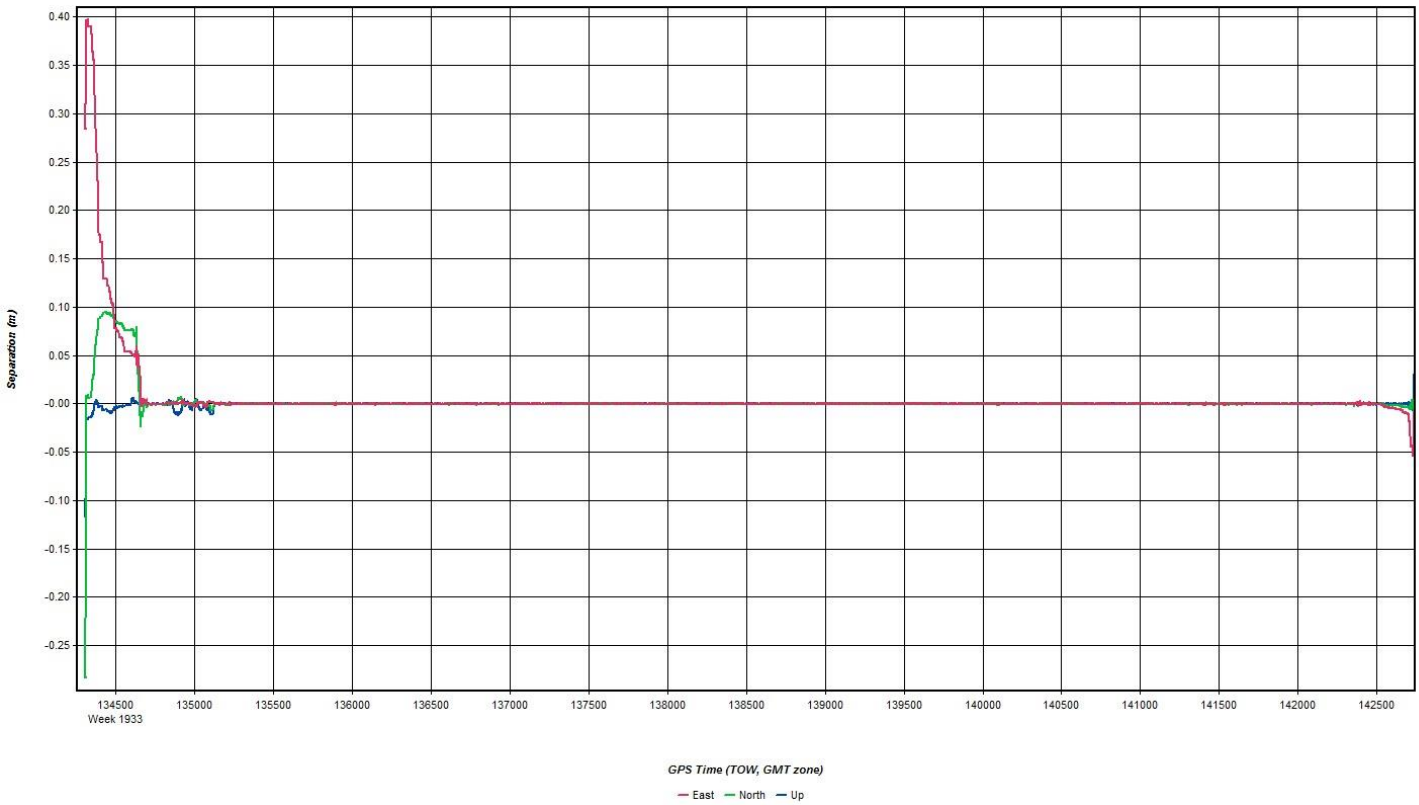
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/#
	ALS70	7178	±5700'	±6200'	±500'	150 KTS	0.59M	57	121	74	7178 SSD3
	FOV 40°	Scan Freq 53 Hz	MpIA (Y) / N	Pulses In Air 2	Pulse Rate 295 KHZ	Power 100%	PPSM 2.83				

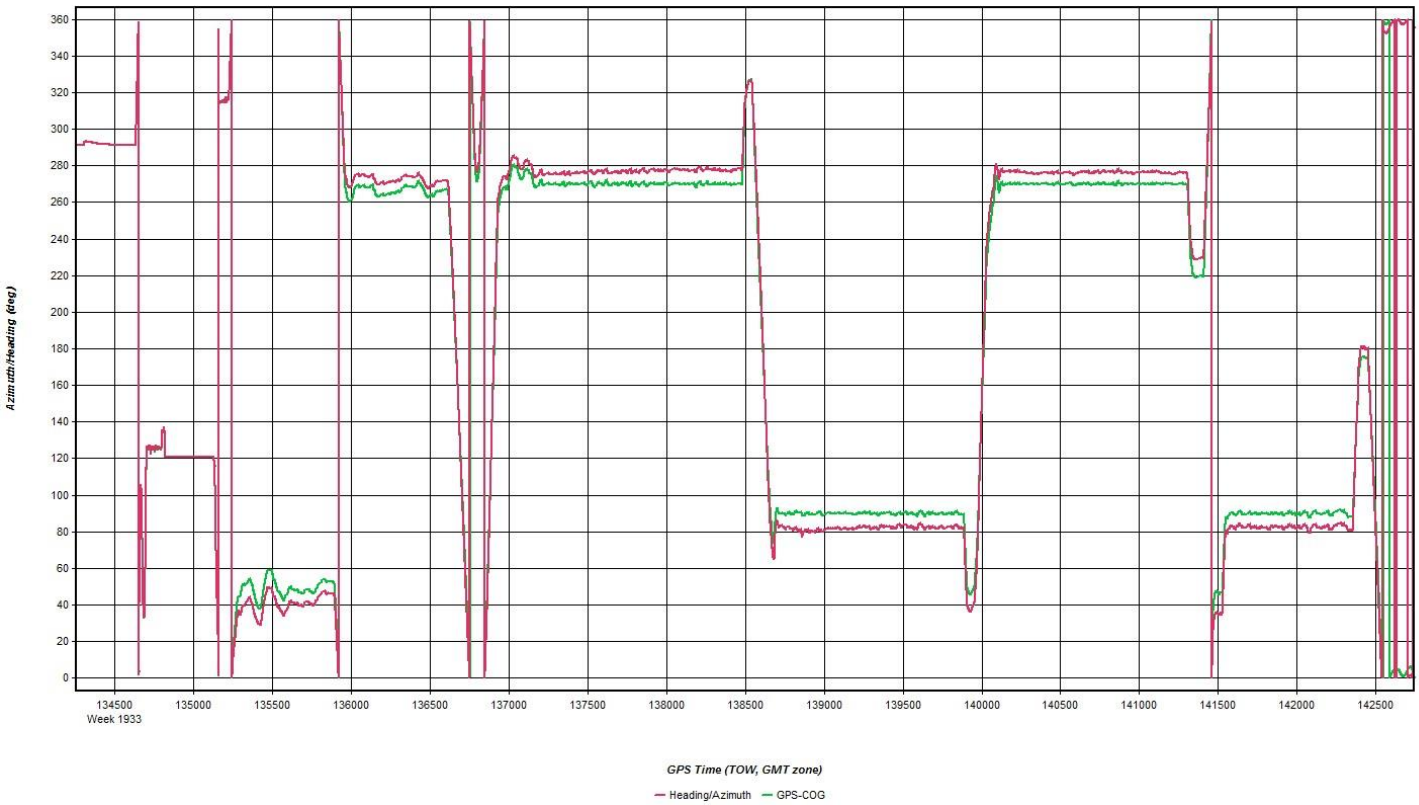
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.	DO
343	270	2238	2255	140	1.0/20	6240	4	-		
342	90	2258	2312	158	1.1/18	6220	2	-		
341	270	2316	2332	138	1.2/19	6250	4	0		
340	90	2336	2350	163	1.3/17	6230	3	0		
339	270	2353	0010	141	1.4/16	6240	4	0		
338	90	0013	0027	163	1.1/19	6260	4	0		
337	270	0031	0047	137	1.2/18	6250	4	-		
336	90	0050	0105	164	1.3/17	6250	3	0		
335	270	0109	0125	138	1.3/18	6230	4	0		
334	90	0128	0142	165	1.0/21	6250	4	-		
TIE	180	0147	0149	154	1.3/18	6250	13	0	- MANUAL TIE LINE	

Total Proj Lines: 67 Lines Flown: 10 Lines Remain: 33 OnLine Time: 3.2 Mob Time: 0.8 Notes:

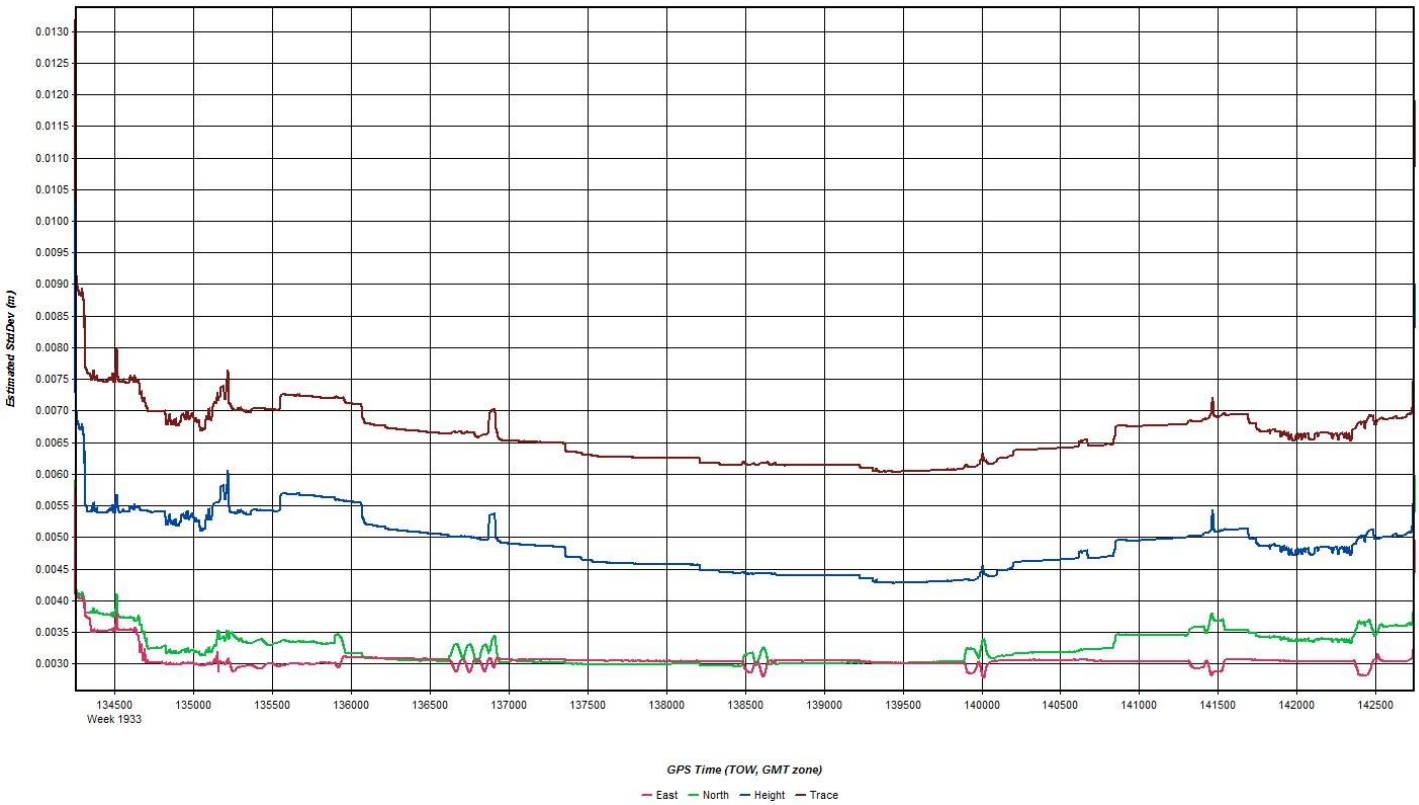
Jan 23, 2017-A (N812TB, SN8146)

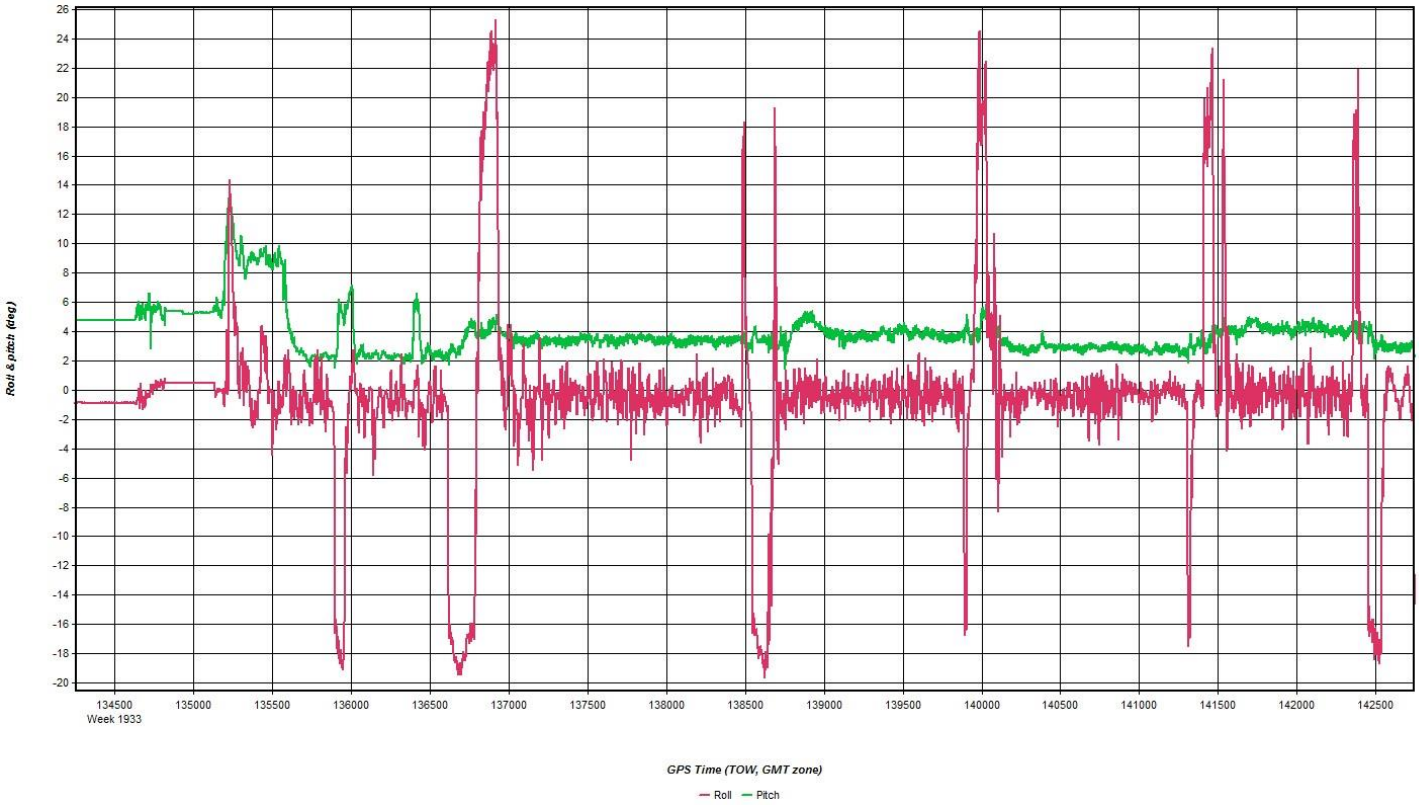

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

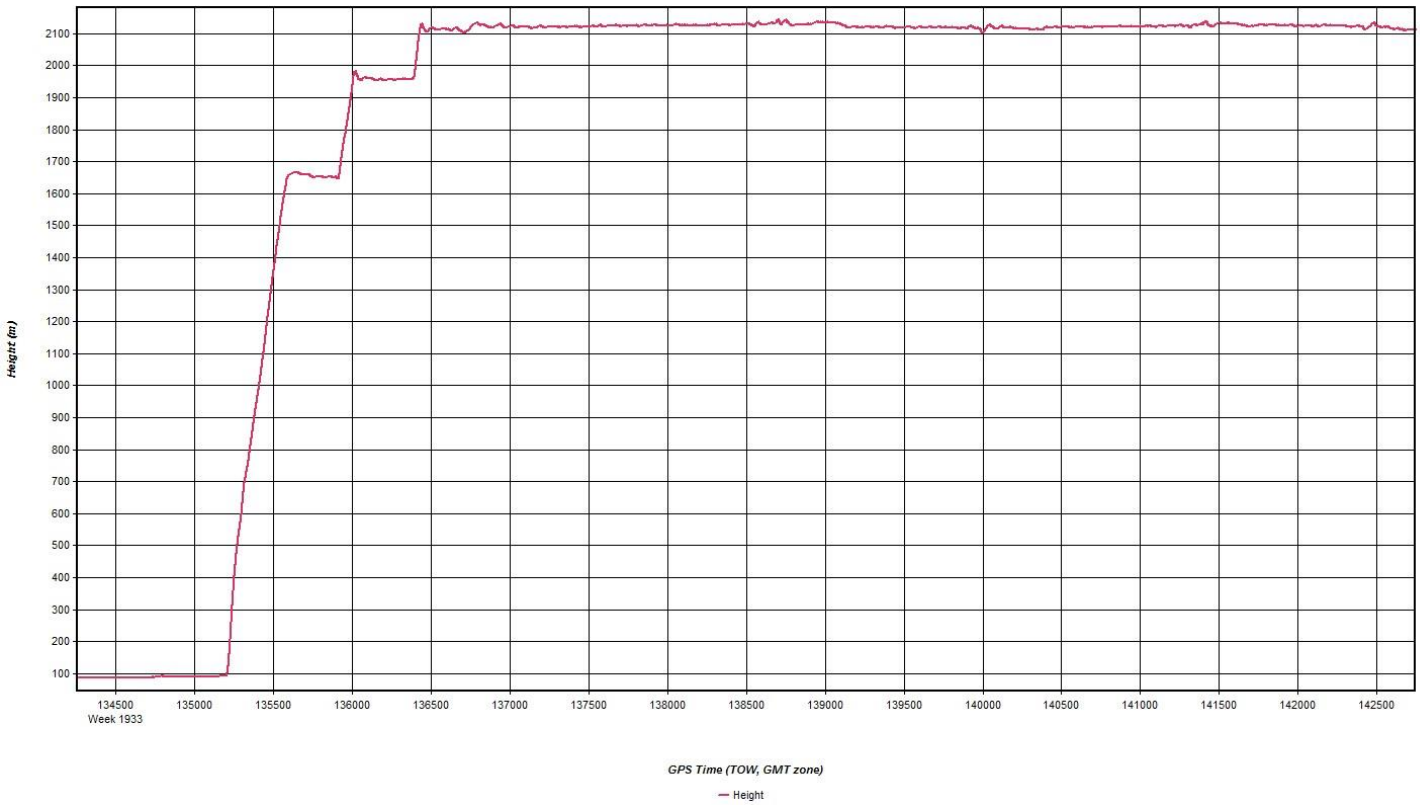

Separation (m)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
East
North
Up

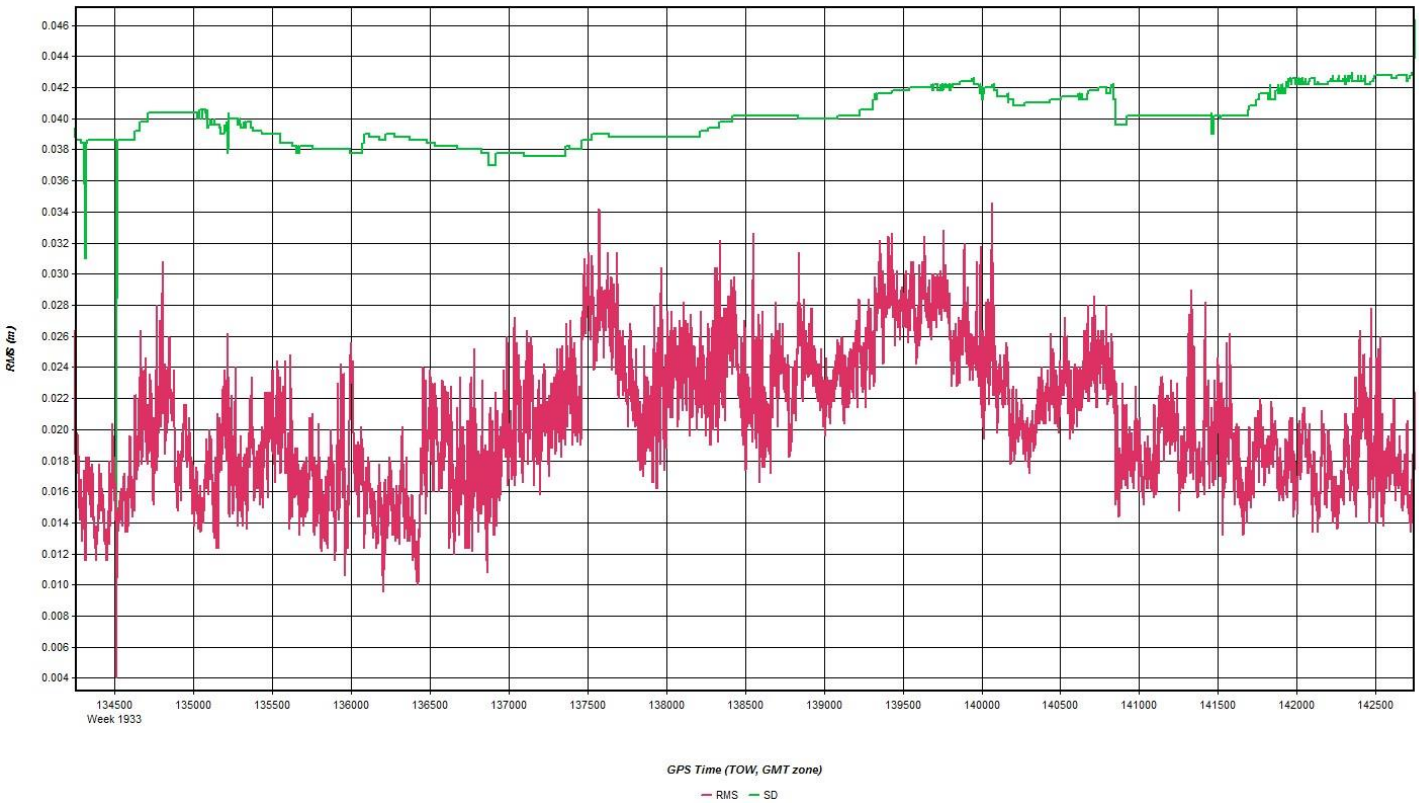

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

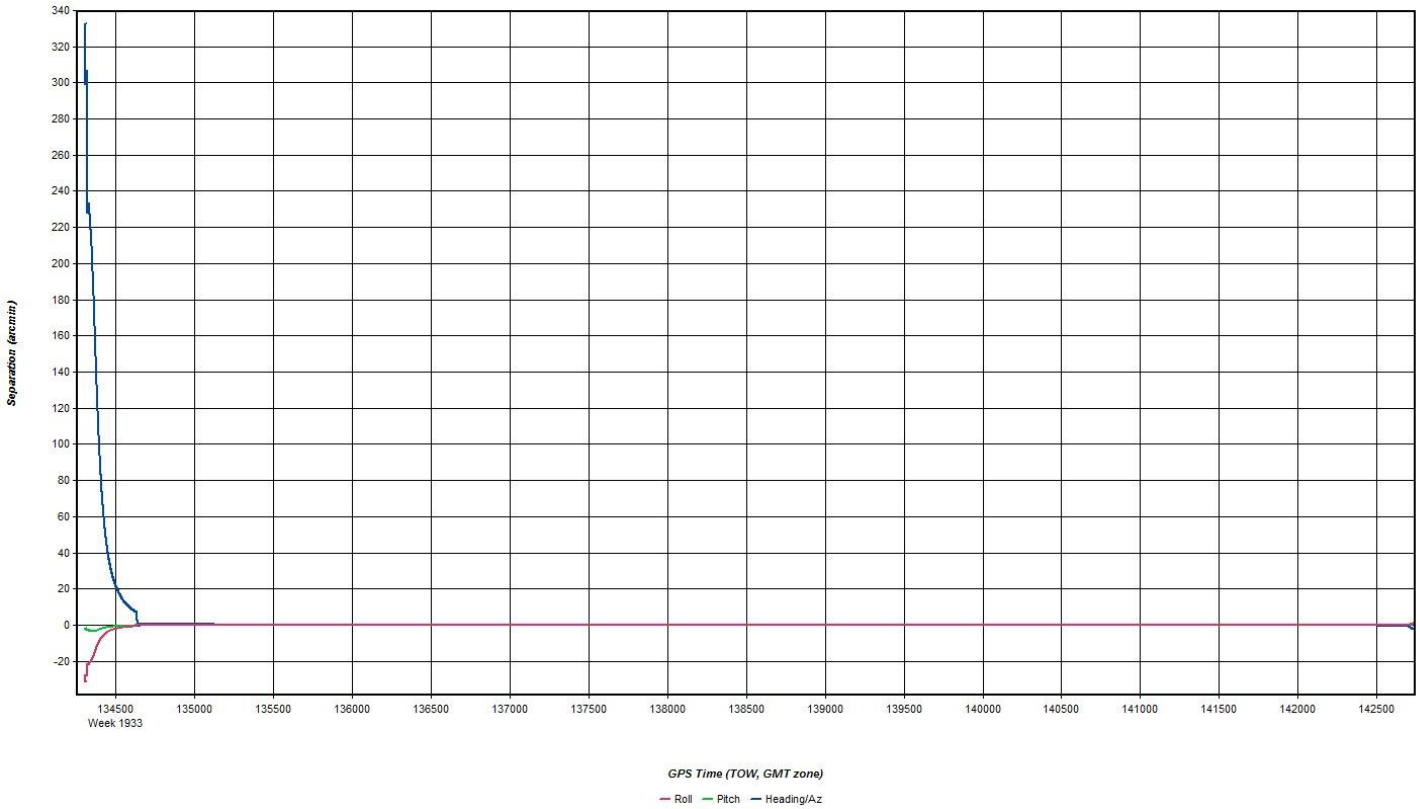

PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
PDOP

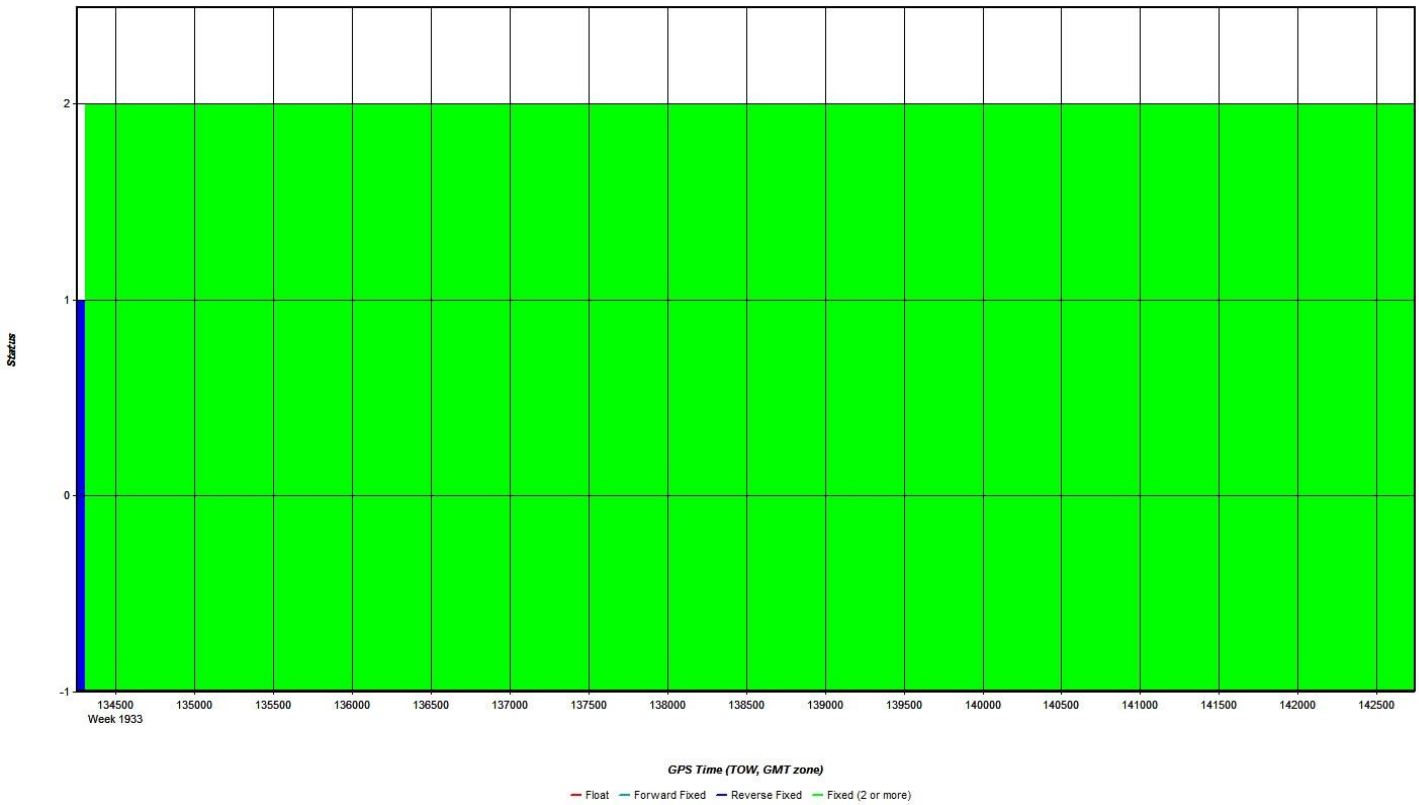

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

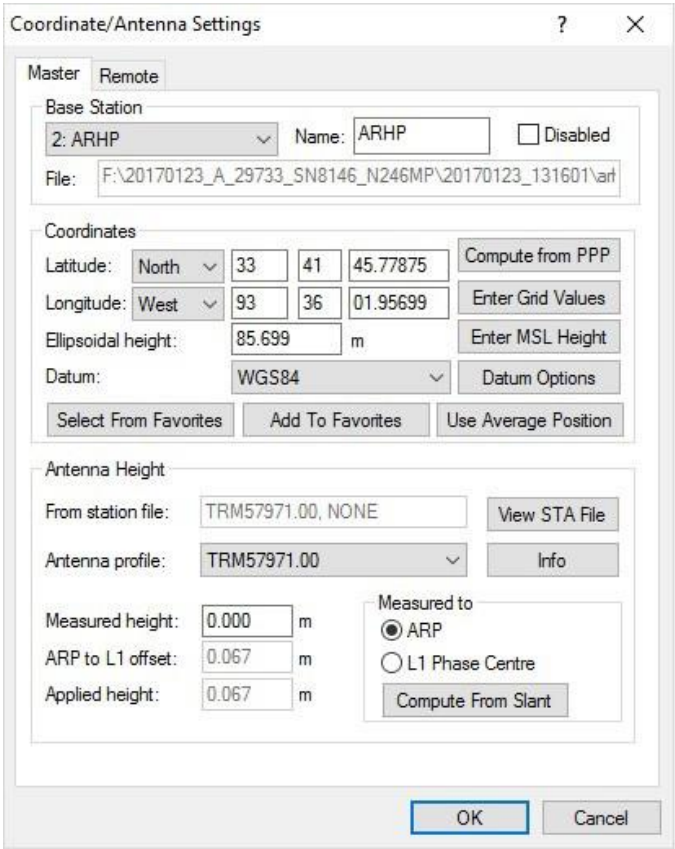

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Roll
Pitch

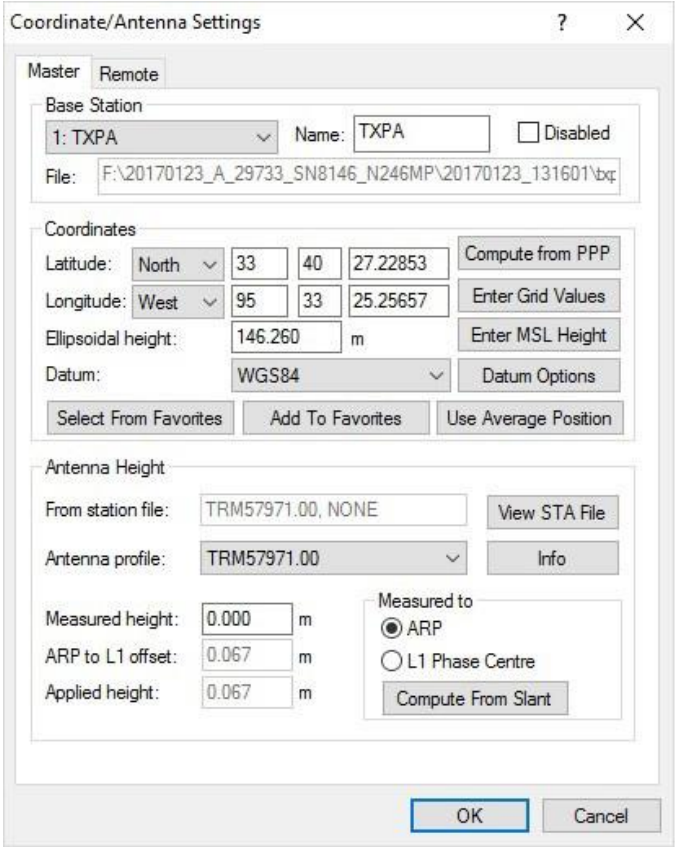

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Height

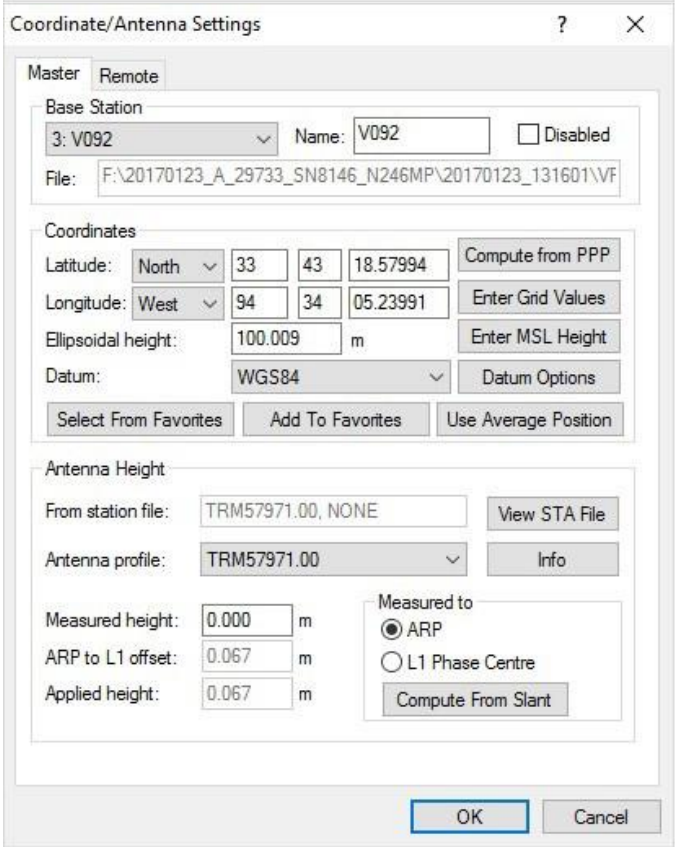

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

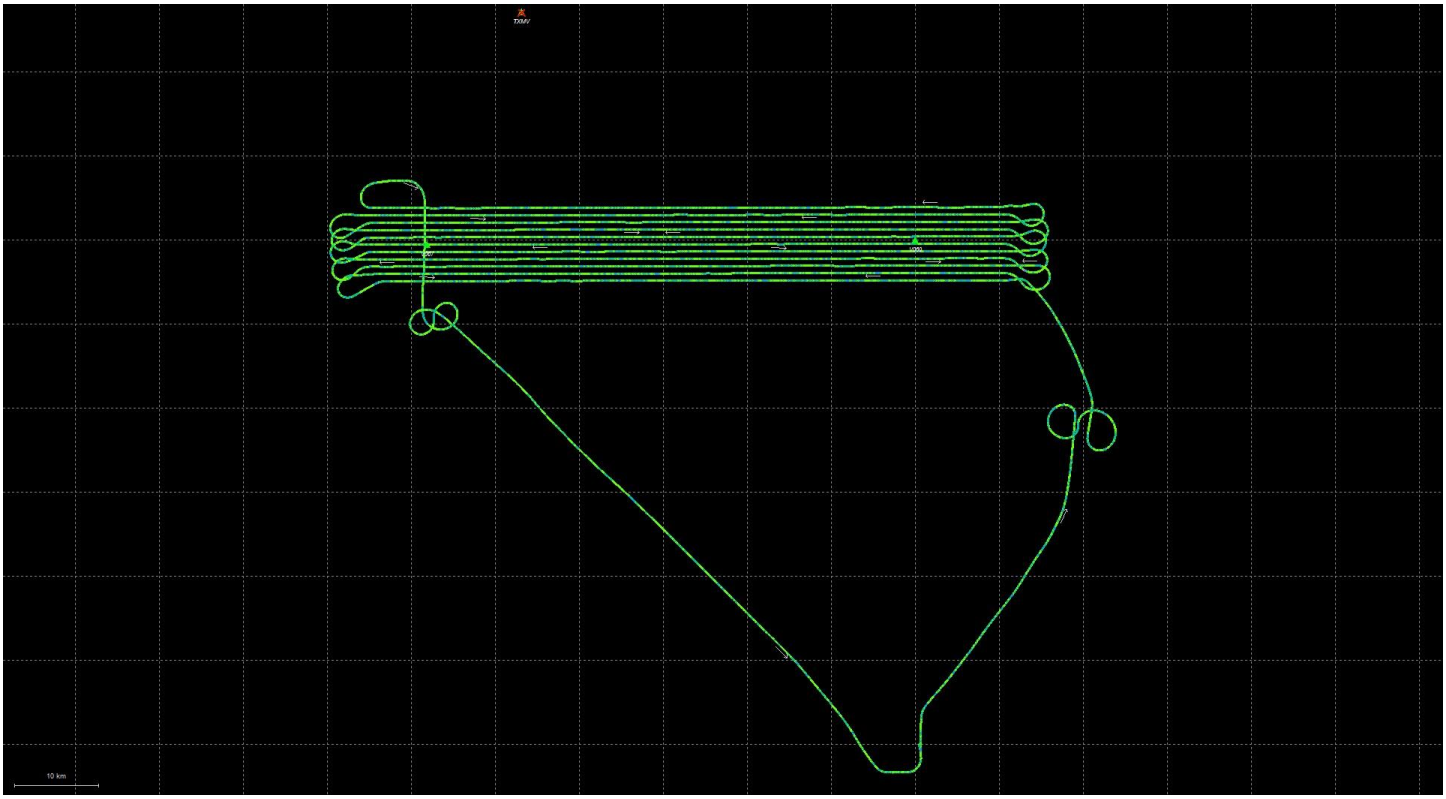

Status
2
1
0
-1
134500
Week 1933
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

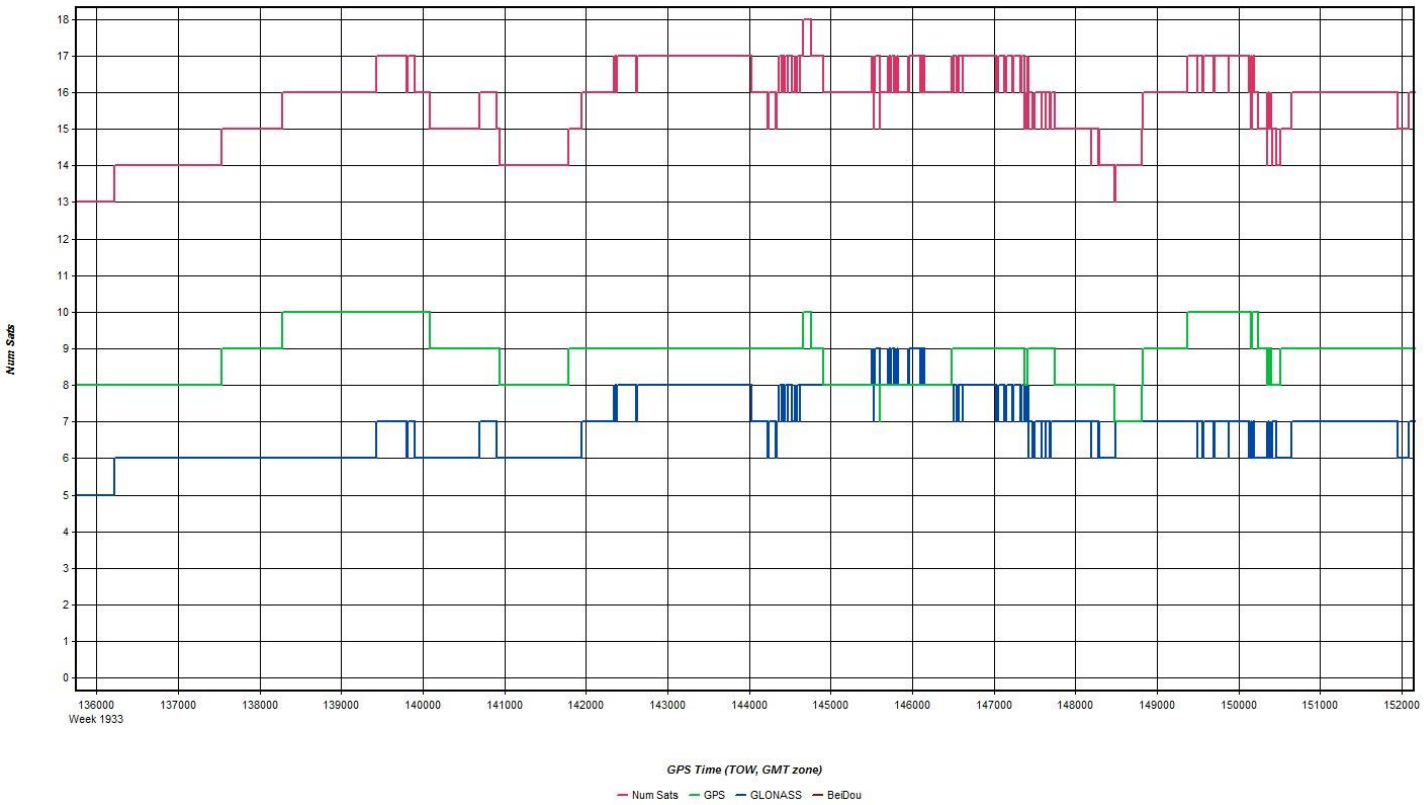

Coordinate/Antenna Settings
Master
Remote
Base Station
2: ARHP
Name:
ARHP
Disabled
File:
F:\20170123_A_29733_SN8146_N246MP\20170123_131601\arh
Coordinates
Latitude:
North
33
41
45.77875
Compute from PPP
Longitude:
West
93
36
01.95699
Enter Grid Values
Ellipsoidal height:
85.699
m
Enter MSL Height
Datum:
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

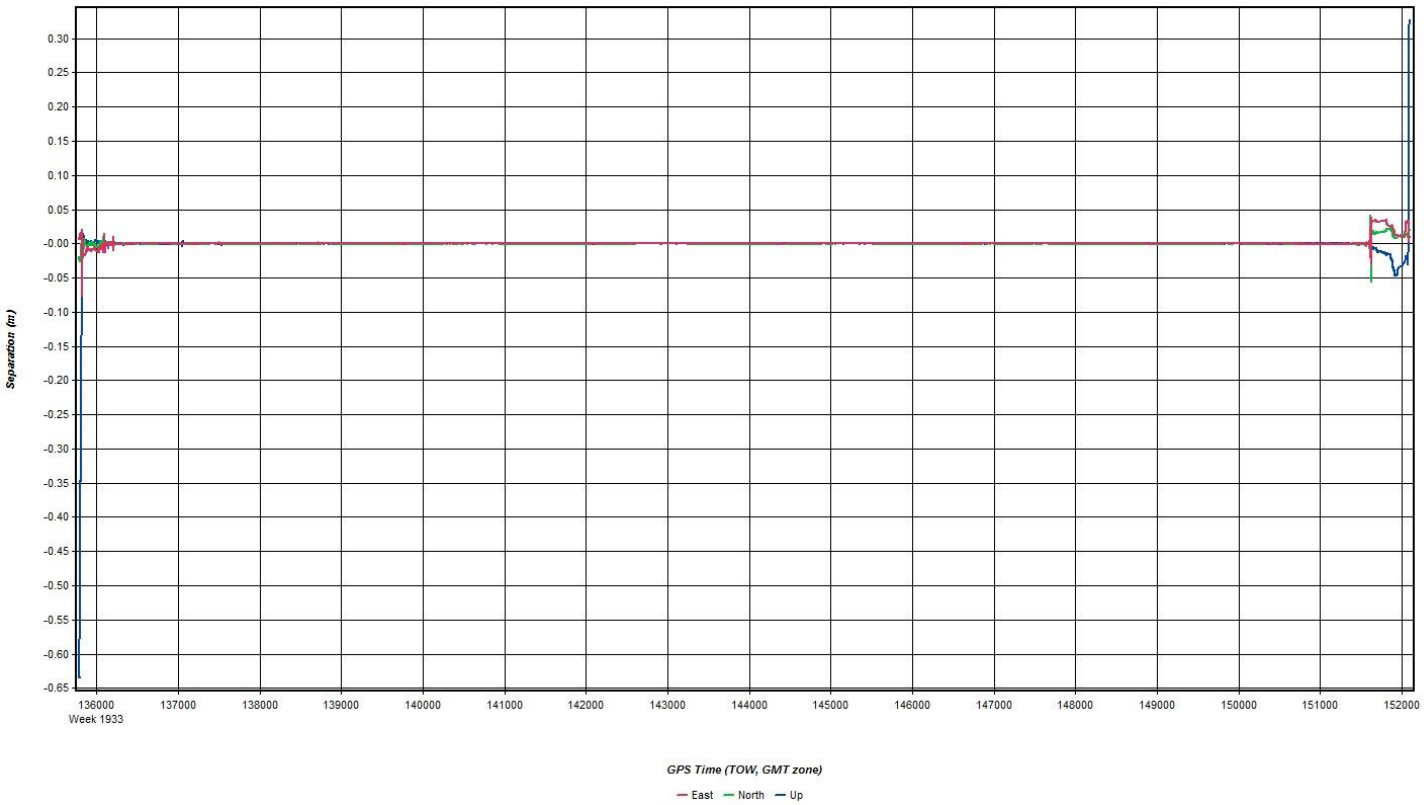

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXPA
Name: TXPA
Disabled
File: F:\20170123_A_29733_SN8146_N246MP\20170123_131601\txp
Coordinates
Latitude: North 33 40 27.22853
Longitude: West 95 33 25.25657
Ellipsoidal height: 146.260 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter 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

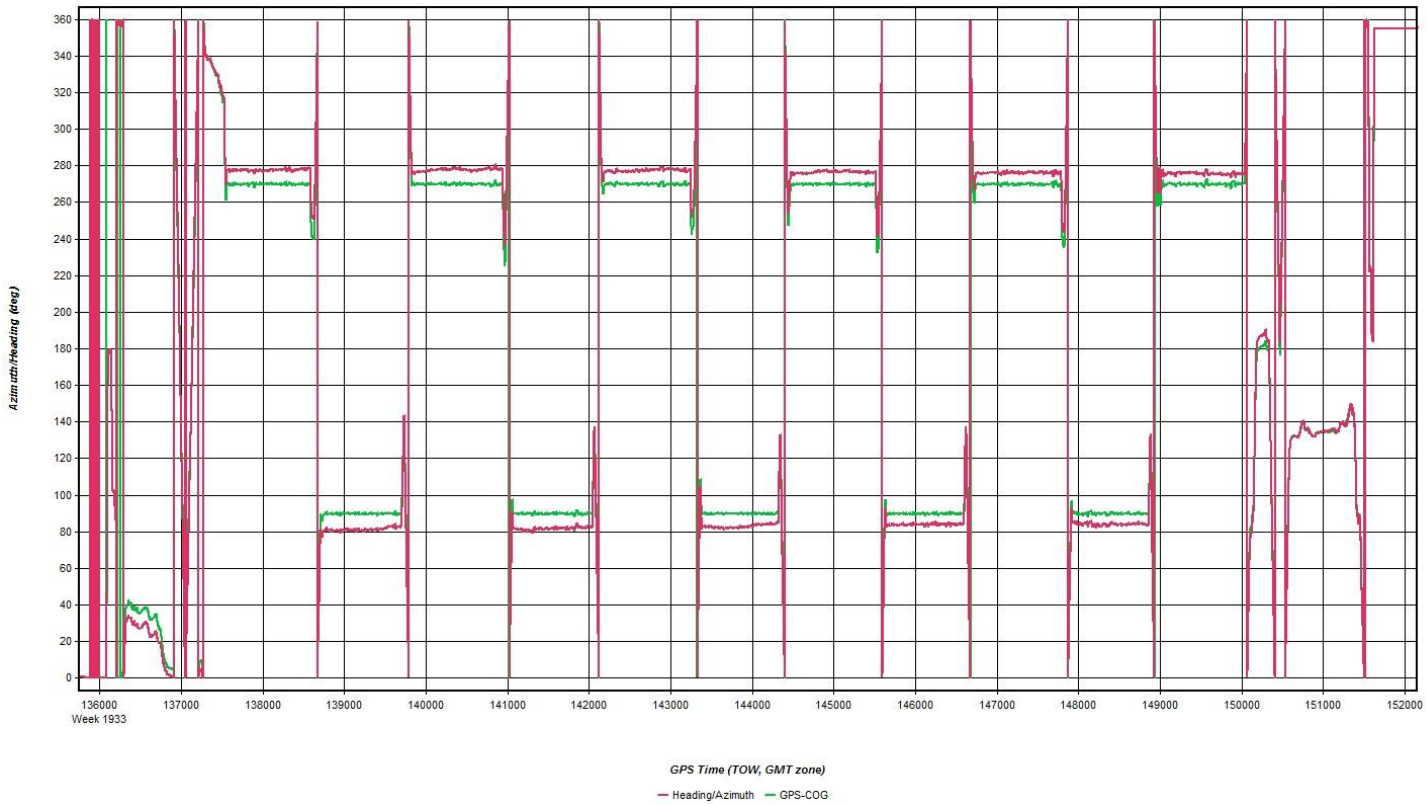

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V092
Name: V092
Disabled
File: F:\20170123_A_29733_SN8146_N246MP\20170123_131601\VF
Coordinates
Latitude: North 33 43 18.57994
Longitude: West 94 34 05.23991
Ellipsoidal height: 100.009 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: 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

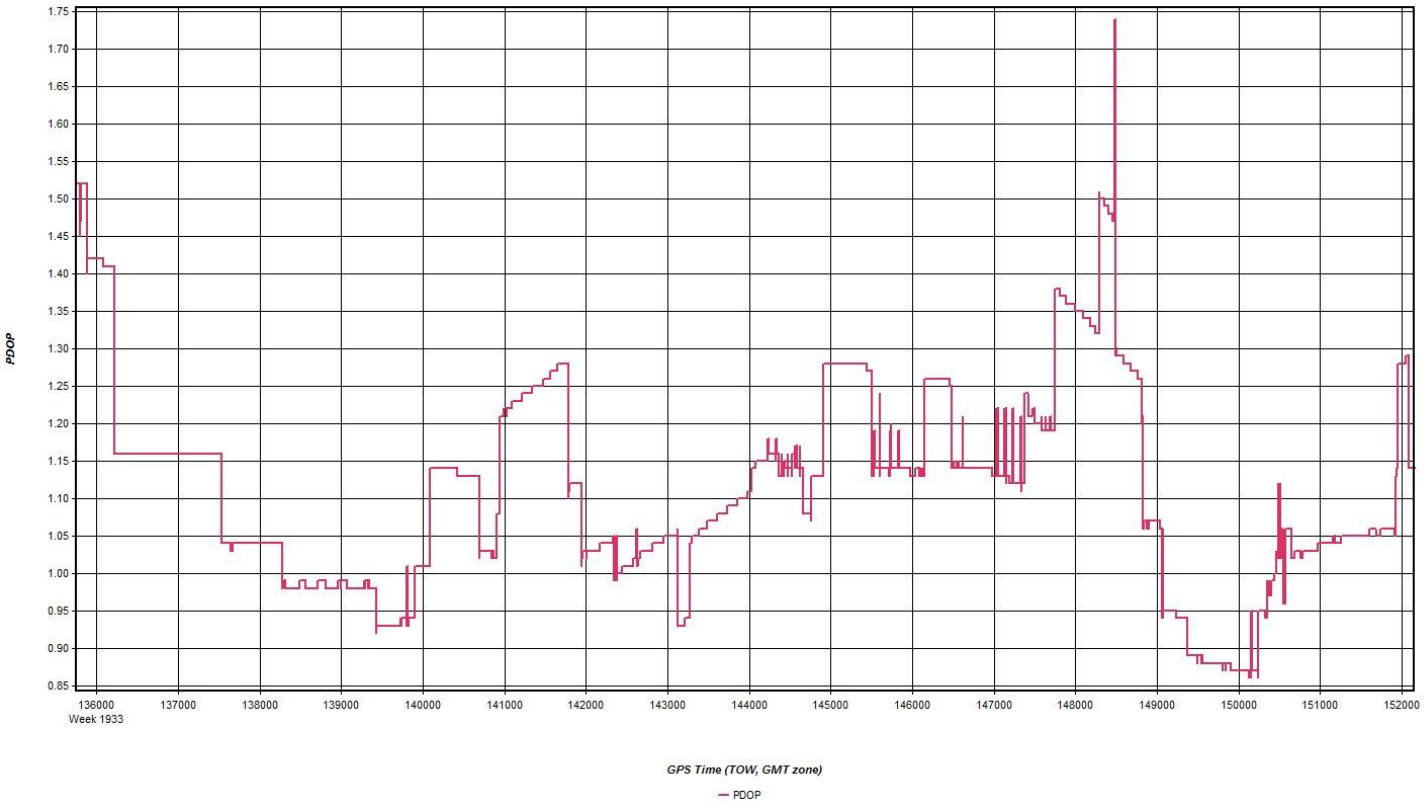
Jan 23, 2017-A1 (N812TB, SN7178)

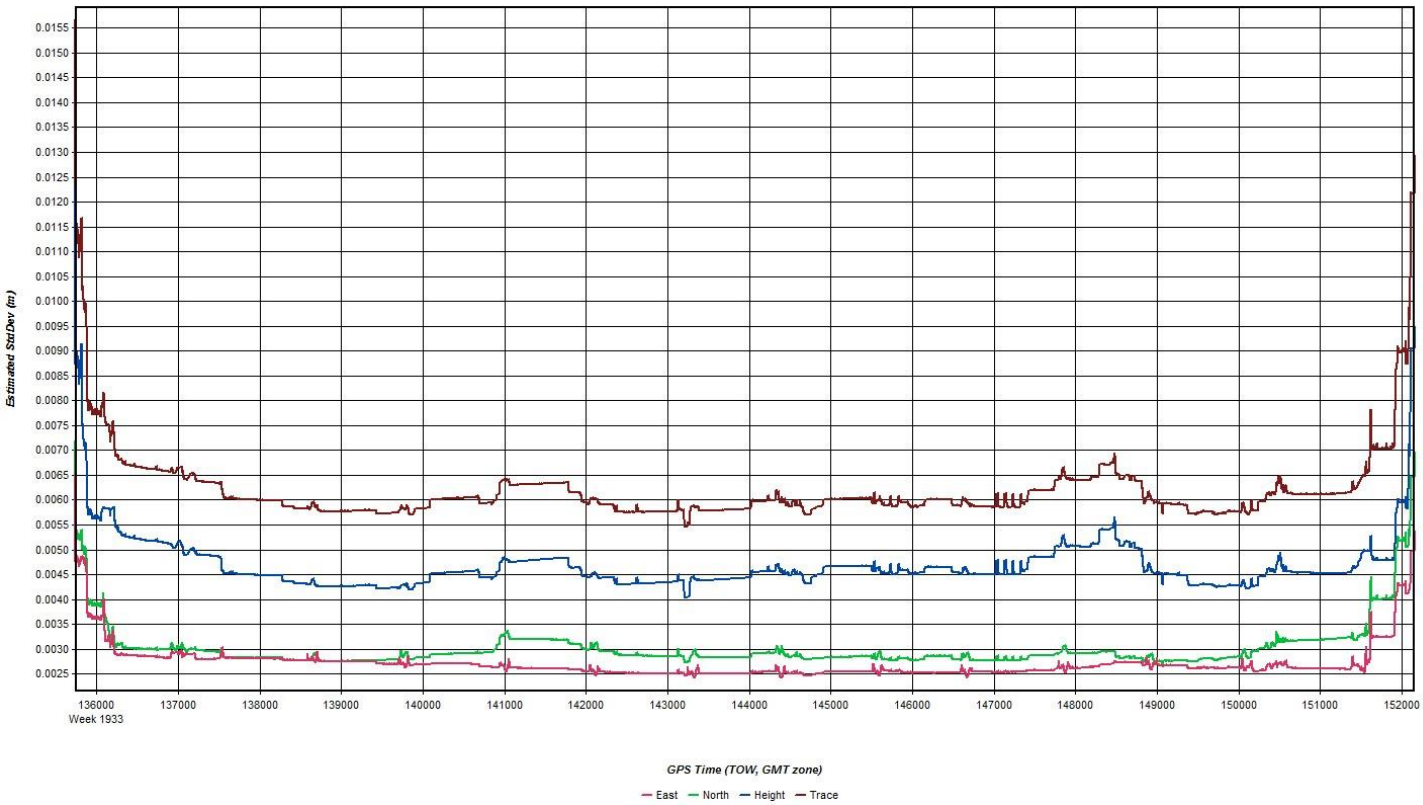


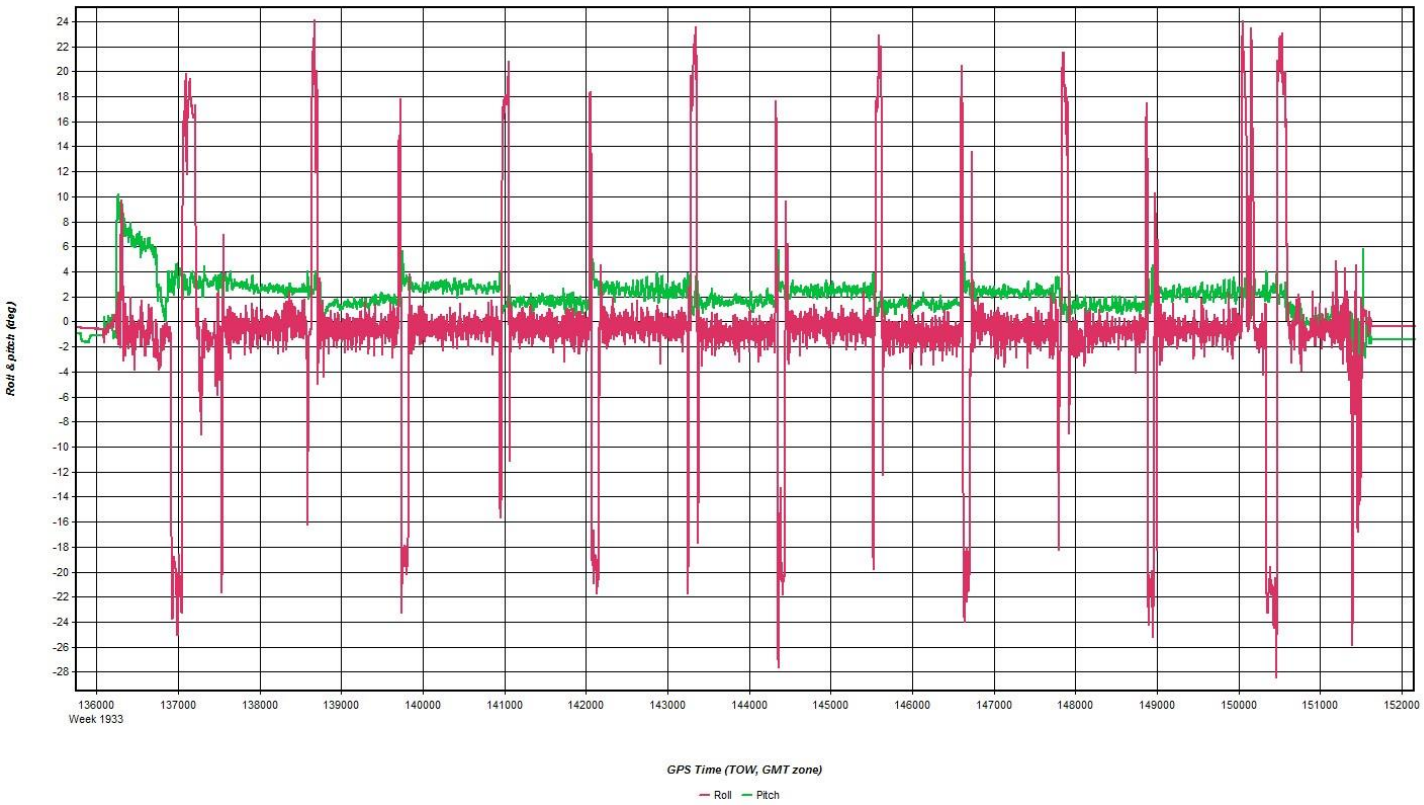

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

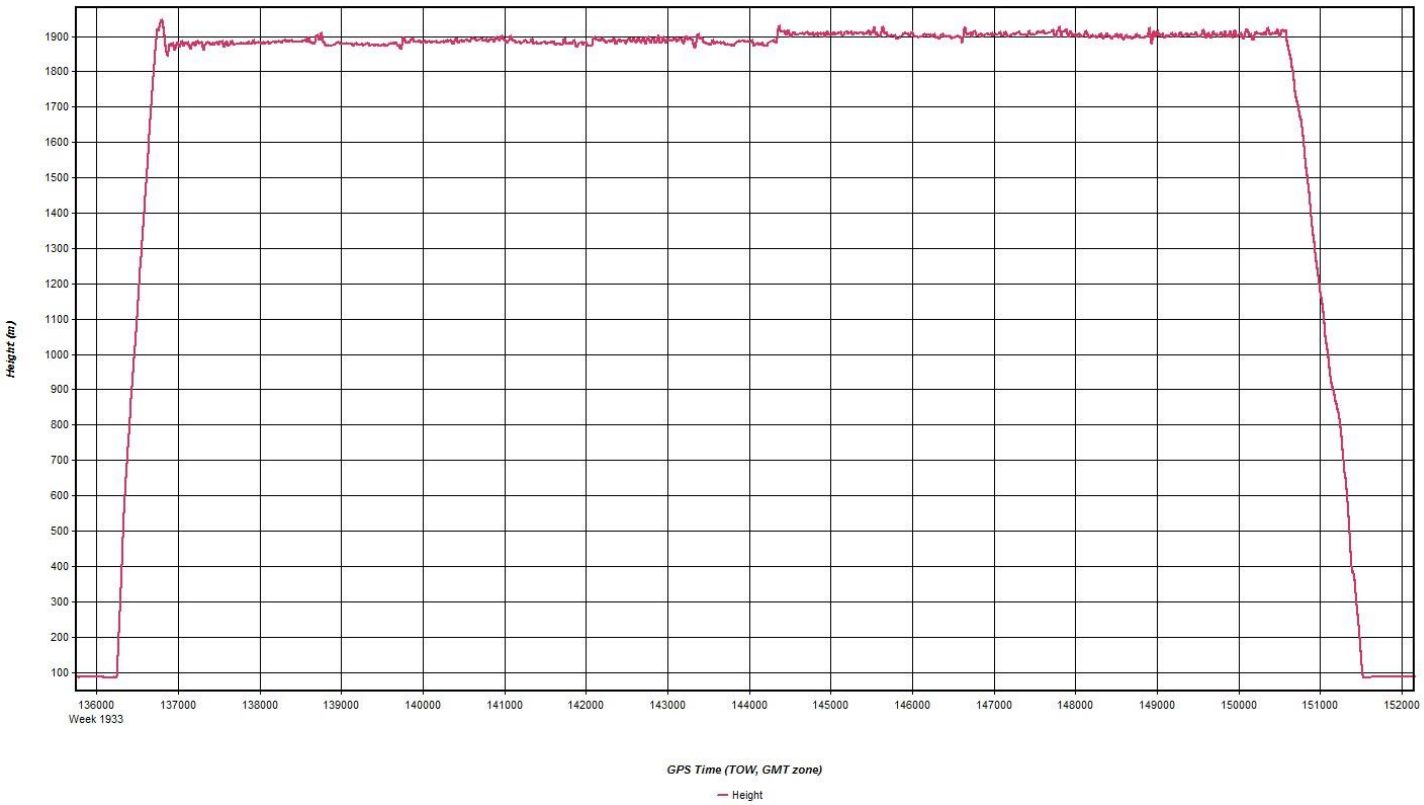

Separation (m)
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-0.65
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
East
North
Up

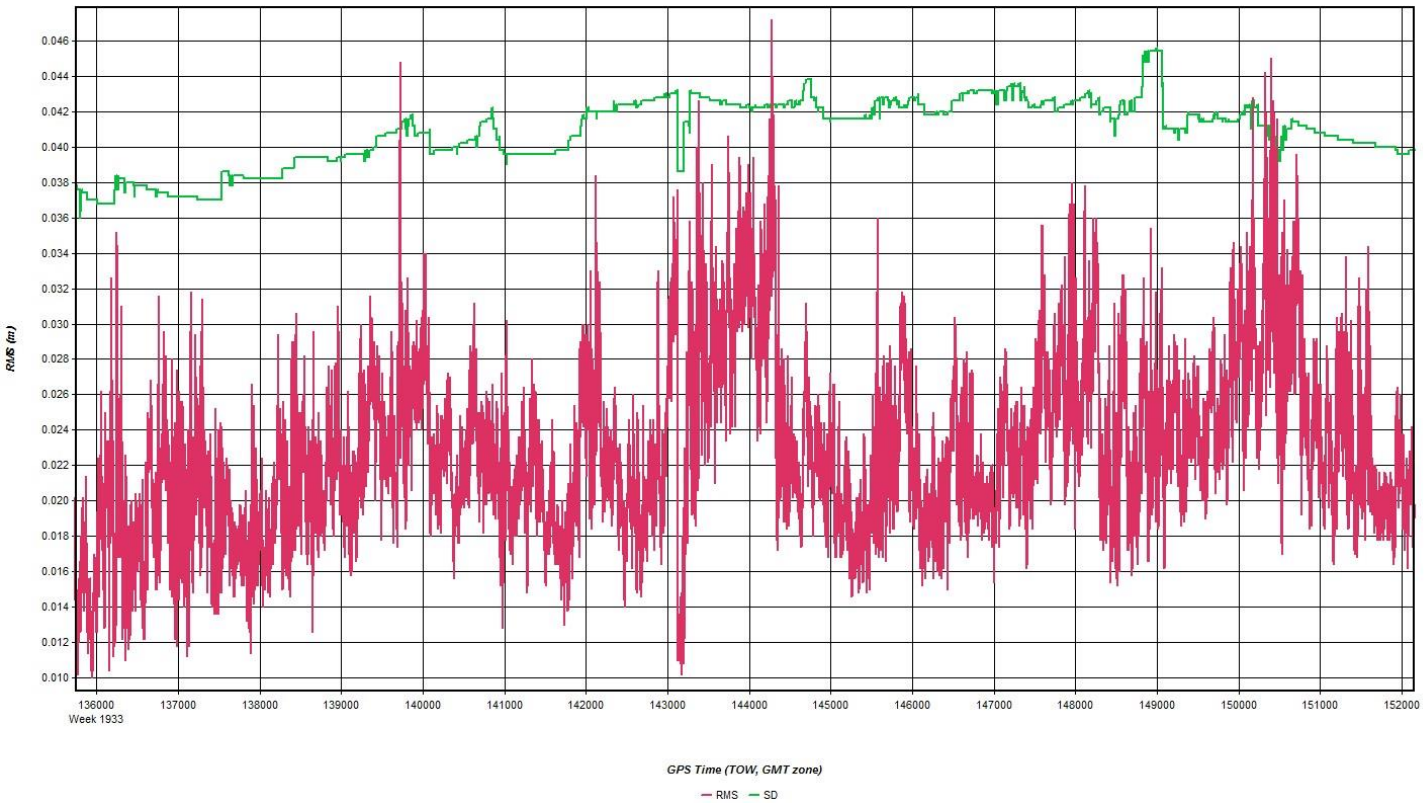

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

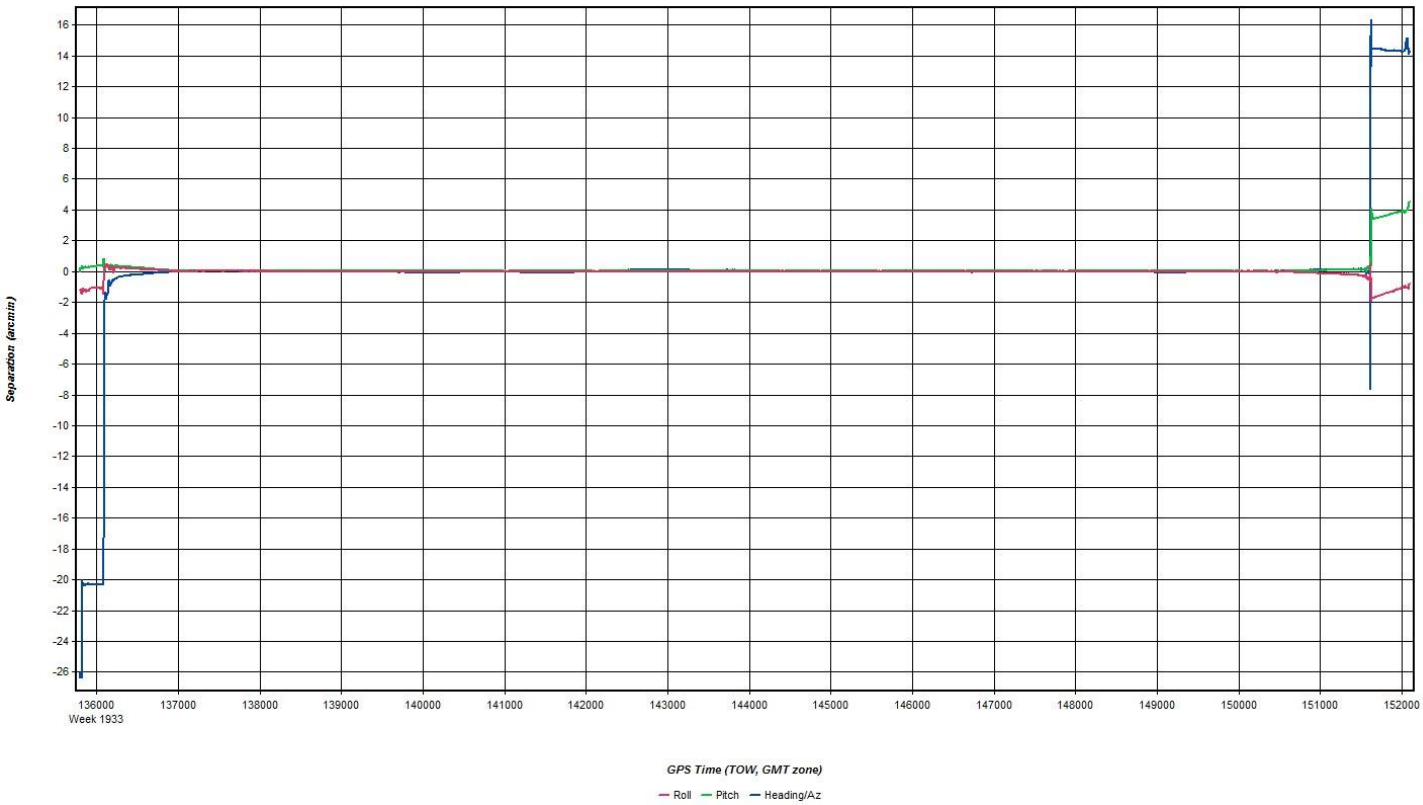

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
PDOP

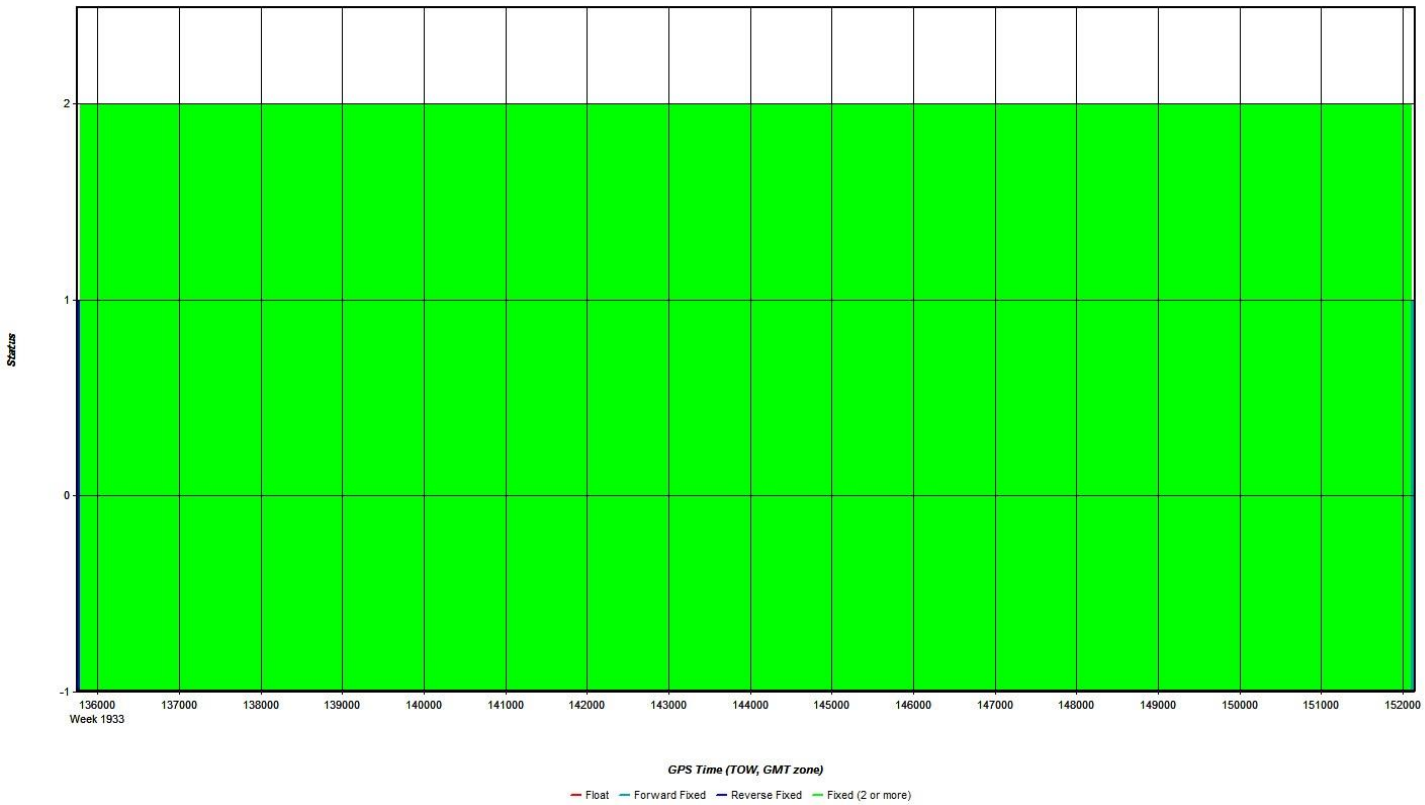

Estimated StdDev (m)
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

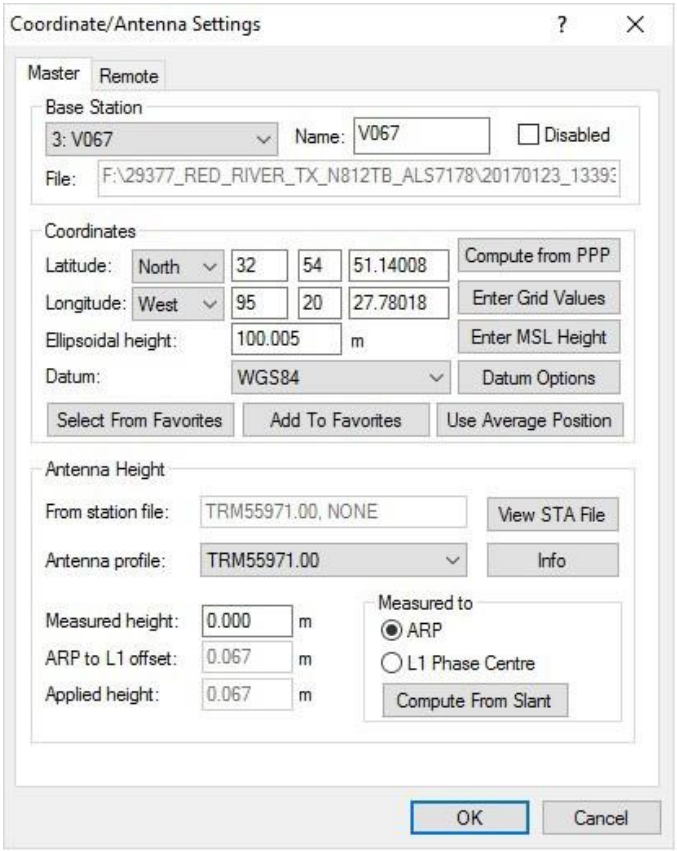

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Roll
Pitch

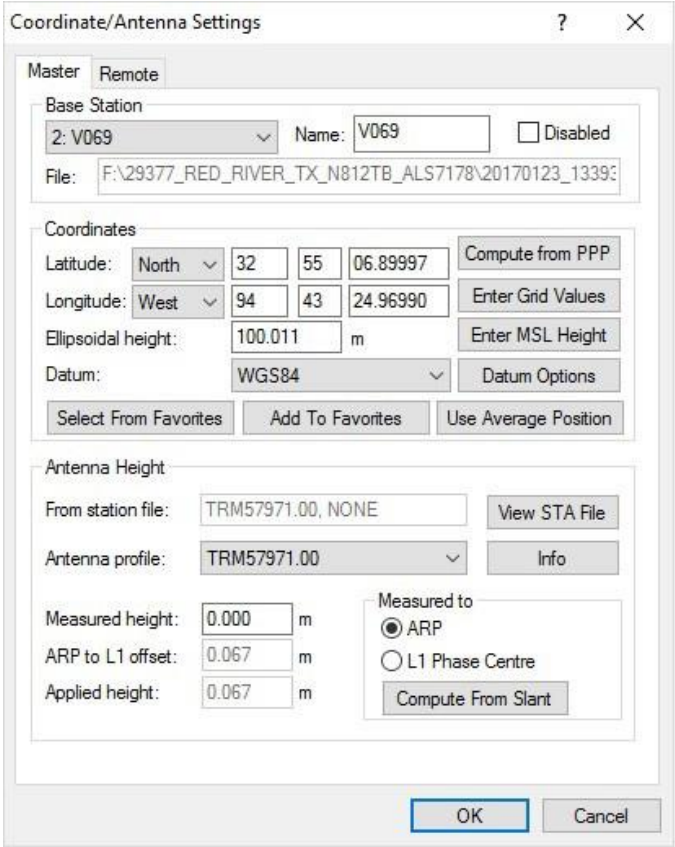

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
136000
Week 1933
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
GPS Time (TOW, GMT zone)
Height


RMS (m)
0.046
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
136000
Week 1933
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)
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
136000
Week 1933
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
136000
Week 1933
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: V067
Name:
V067
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170123_13393
Coordinates
Latitude:
North
32
54
51.14008
Compute from PPP
Longitude:
West
95
20
27.78018
Enter Grid Values
Ellipsoidal height:
100.005
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: V069
Name:
V069
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170123_13393
Coordinates
Latitude:
North
32
55
06.89997
Compute from PPP
Longitude:
West
94
43
24.96990
Enter Grid Values
Ellipsoidal height:
100.011
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: 1-23-2017 A
Life: (A) B C D E Pg 1 of 1

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170123_133935

Aircraft: N812TB Begin Hobbs: 4259.1 End Hobbs: 4263.3 Total: 4.2 Pilot: JBillingsley Co-Pilot: —— Tech: JSwan

Dep Apt: KGGG Dep Time (Lcl): 0750 (Z): +6 Arr Apt: KGGG Arr Time (Local): 1206 (Z): +6 Tot Time Aloft: 4.2

CORS: (Y) / N Sta 1: Longview/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: 12 °c End: 14 °c OAT beg: +6 °c End: 8 °c Altimeter begin: 2991 end: 2997

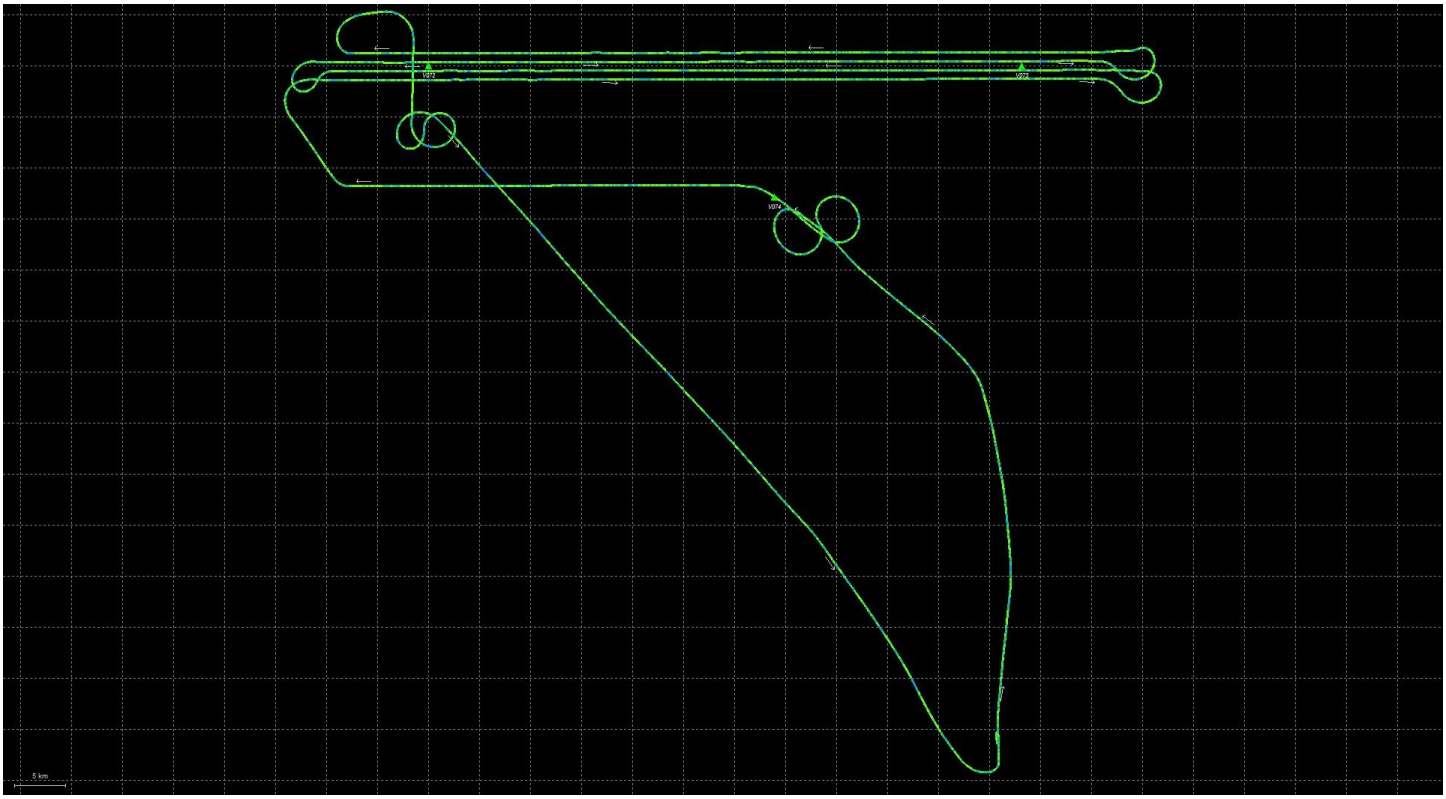
LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg CB	End CB	Tot CB	Storage Name/#s
	ALS70	7181						366	292	74	3
	FOV 40	Scan Freq 53	MpIA Y / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM				

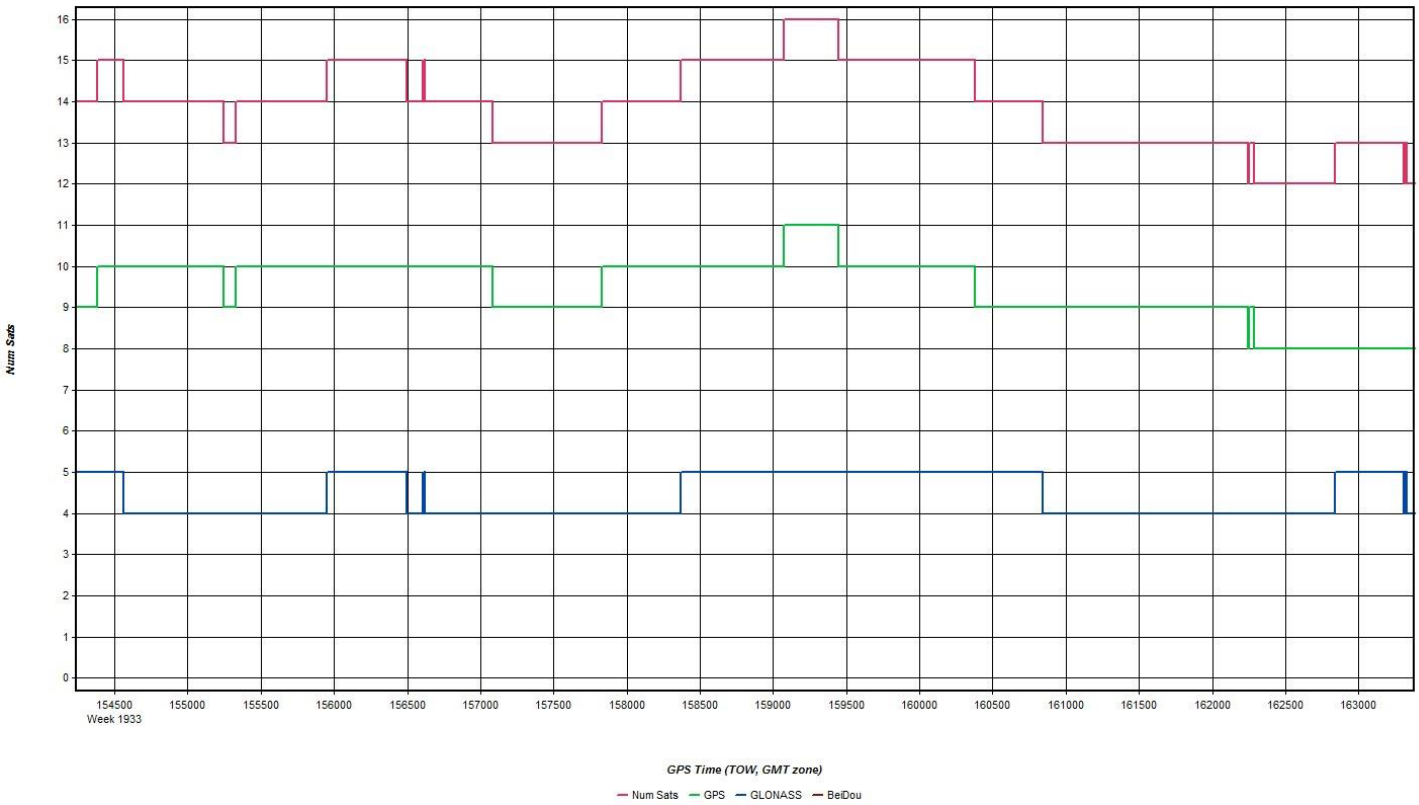
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,+,-)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		1350 –	1407						GGG → Fig 8's (1401 – 1407)
358	270	1412	1429	130	1.1/17	6179		0	Reflight
357	90	1432	1448	165	1.1/18	6168		0	
356	270	1451	1508	140	1.1/18	6182		0	
355	90	1511	1526	155	1.1/19	6194		0	
354	270	1529	1545	138	1.3/18	6192		0	
353	90	1549	1604	159	1.3/18	6217		0	
352	270	1608	1624	144	1.2/19	6244		0	
351	90	1627	1642	142	1.1/19	6266		0	
350	270	1645	1702	154	1.2/18	6218		0	
349	90	1705	1720	158	1.0/21	6237		0	
348	270	1723	1740	143	1.0/20	6241		0	
Xtie	180	1742	1745	170	1.0/20	6263		0	Xtie
									Fig 8's (1745 –) — KGGG
									Hobbs = 4.2
									ONline = 3.6
									Mob = 0.6

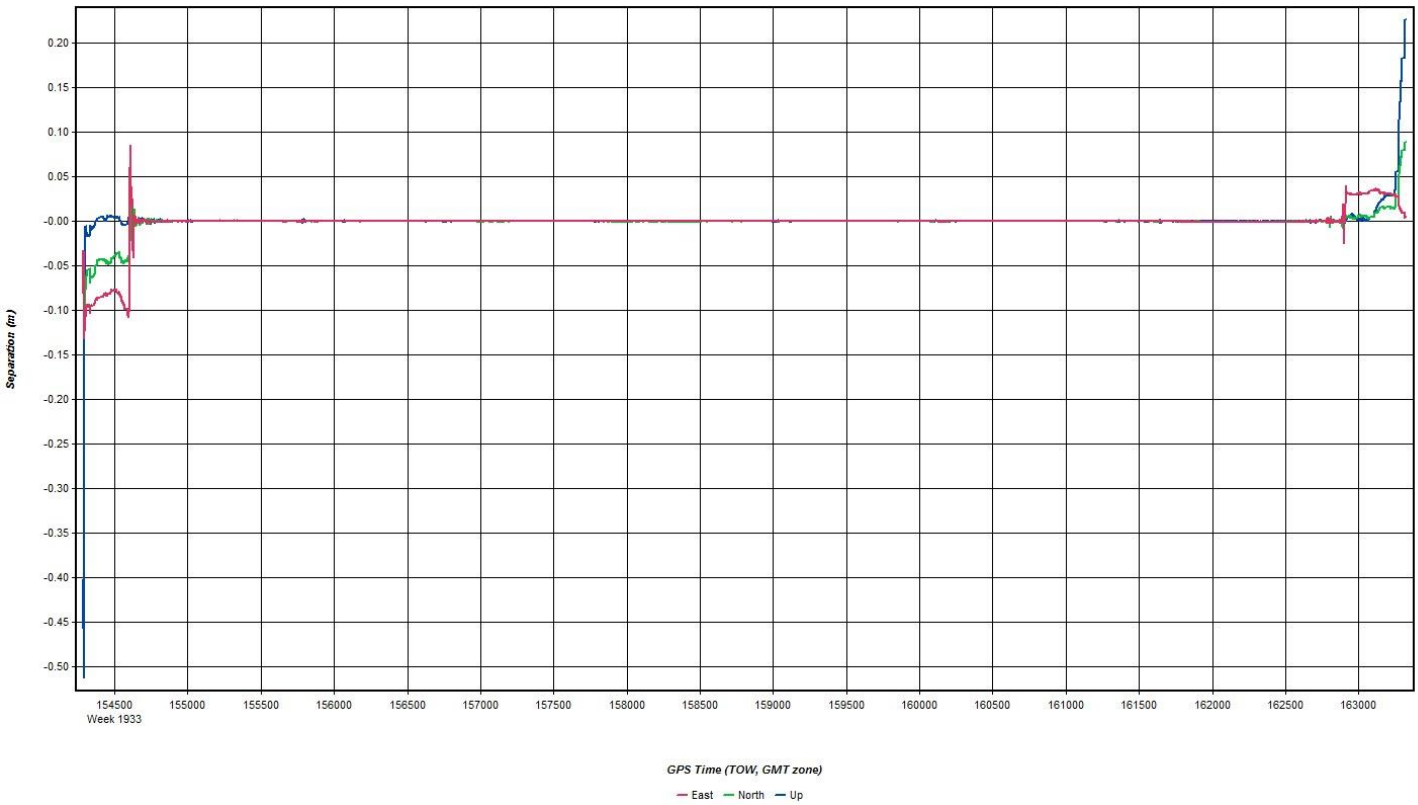
Mt Pleasant

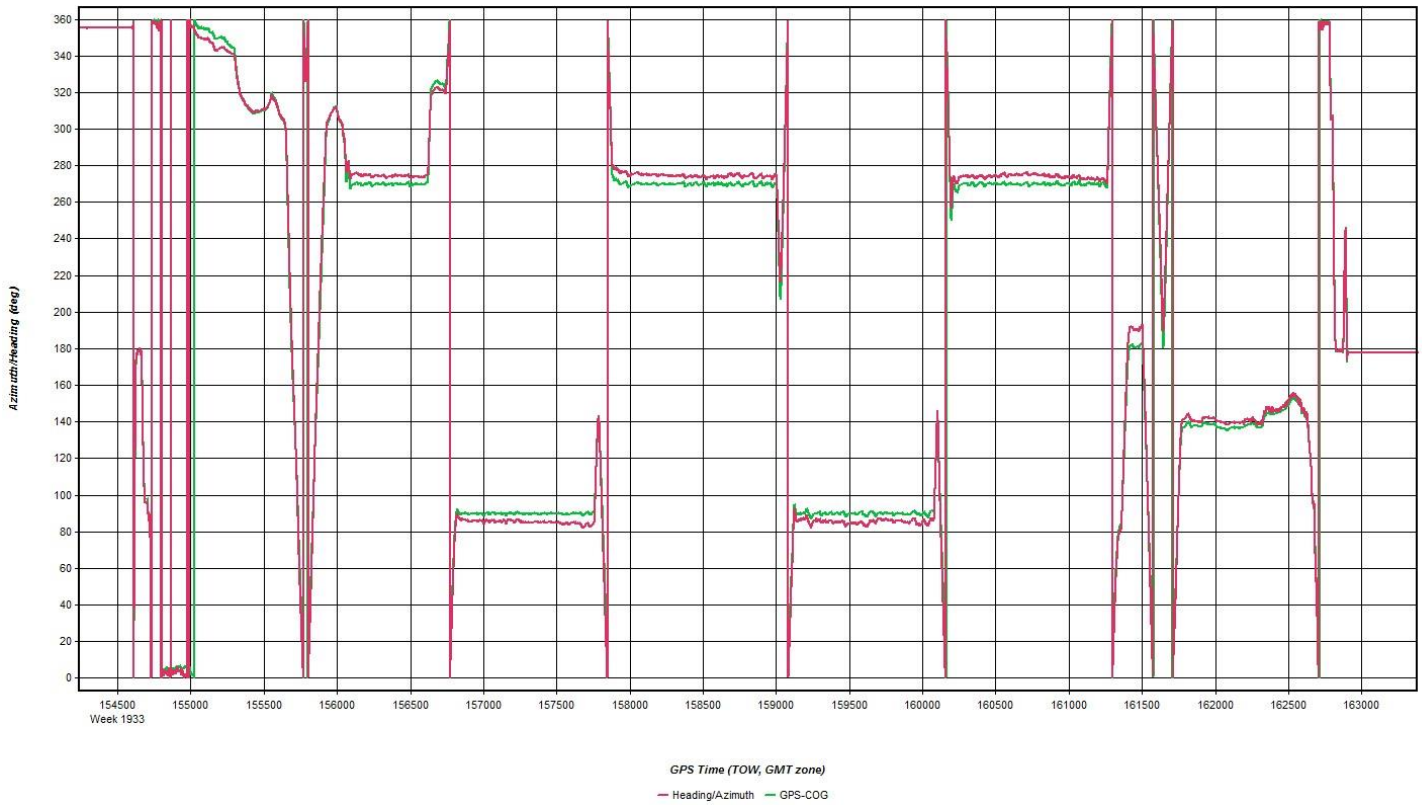
Total Proj Lines: Lines Flown: 11 Lines Remain: Online Time: 3.6 Mob Time: 0.6 Notes:

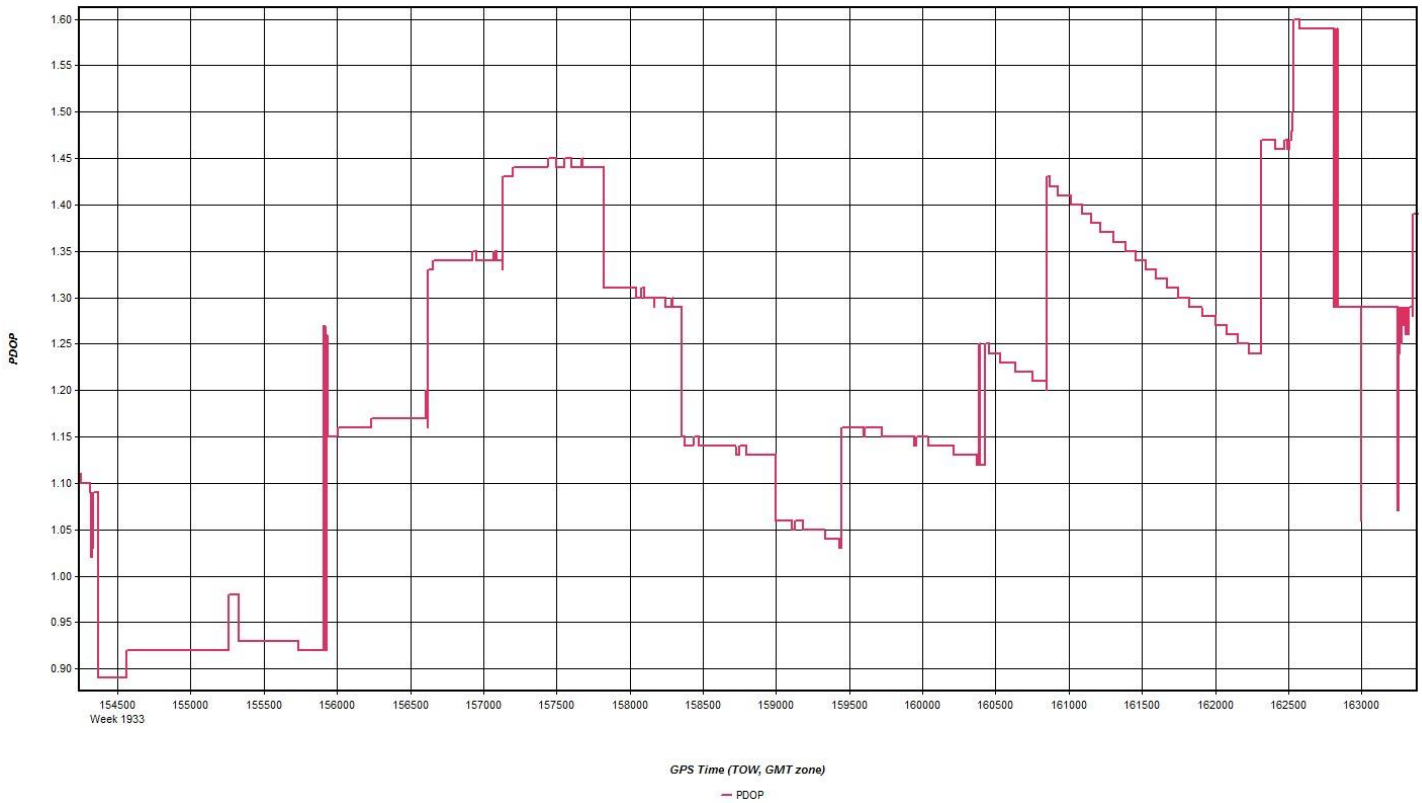
Jan 23, 2017-B (N812TB, SN7178)

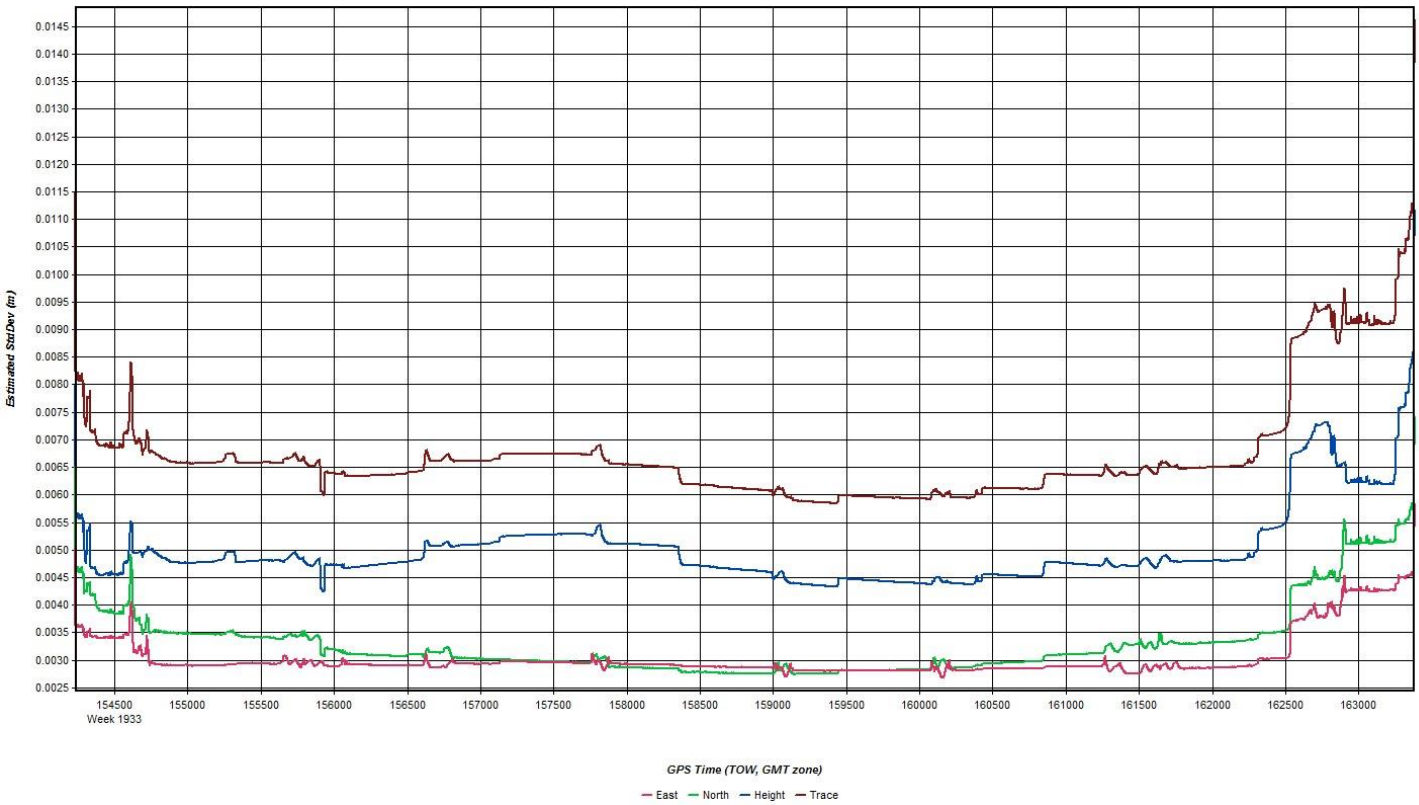


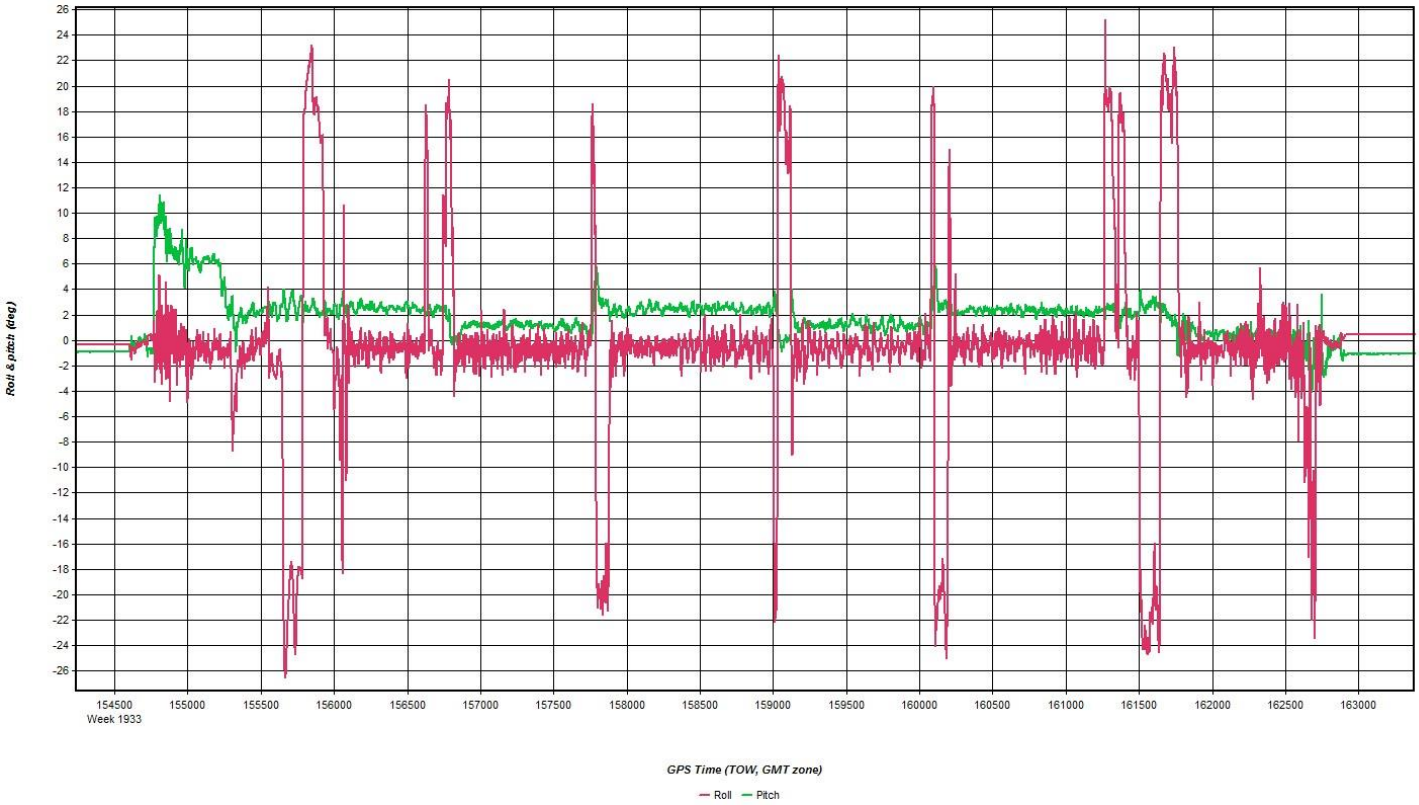

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

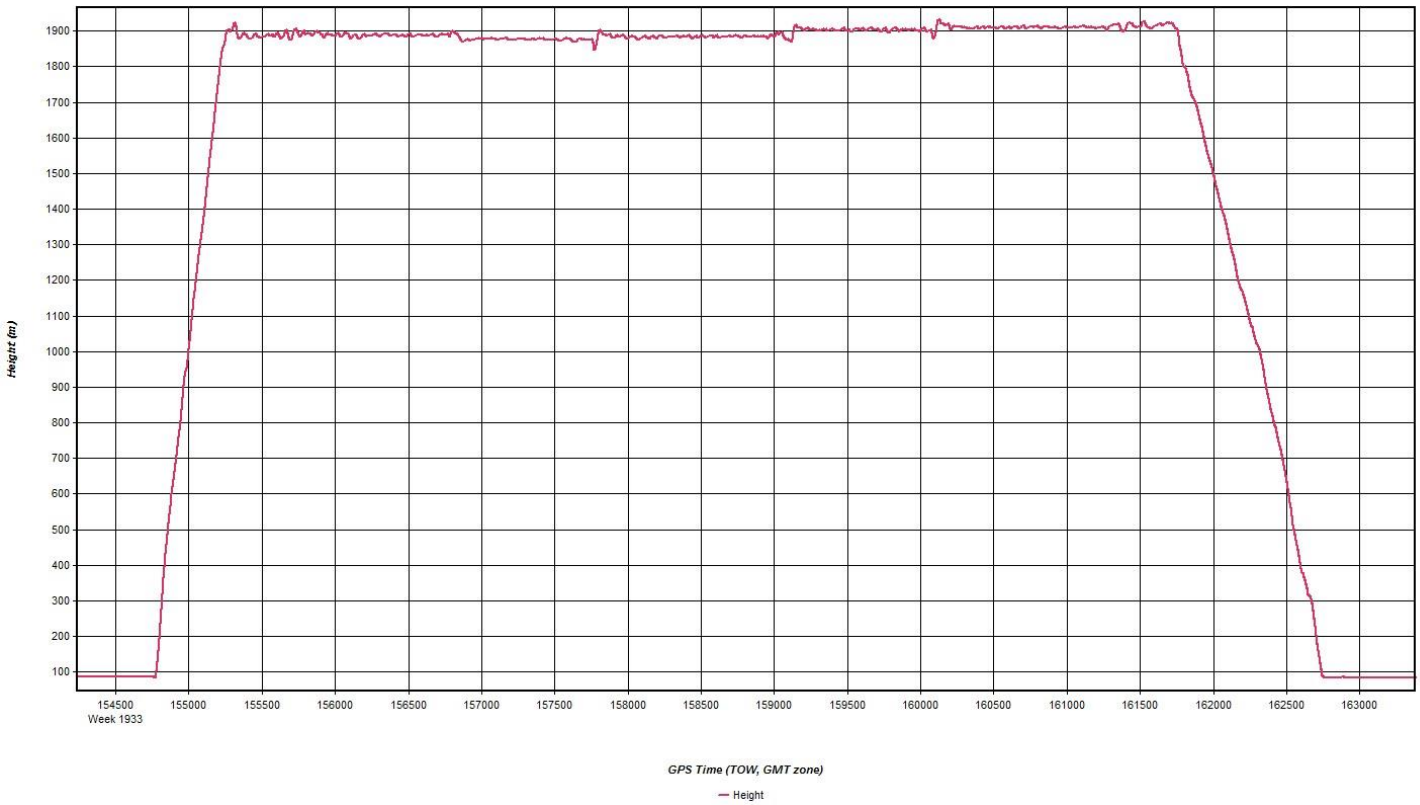

Separation (m)
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
East
North
Up

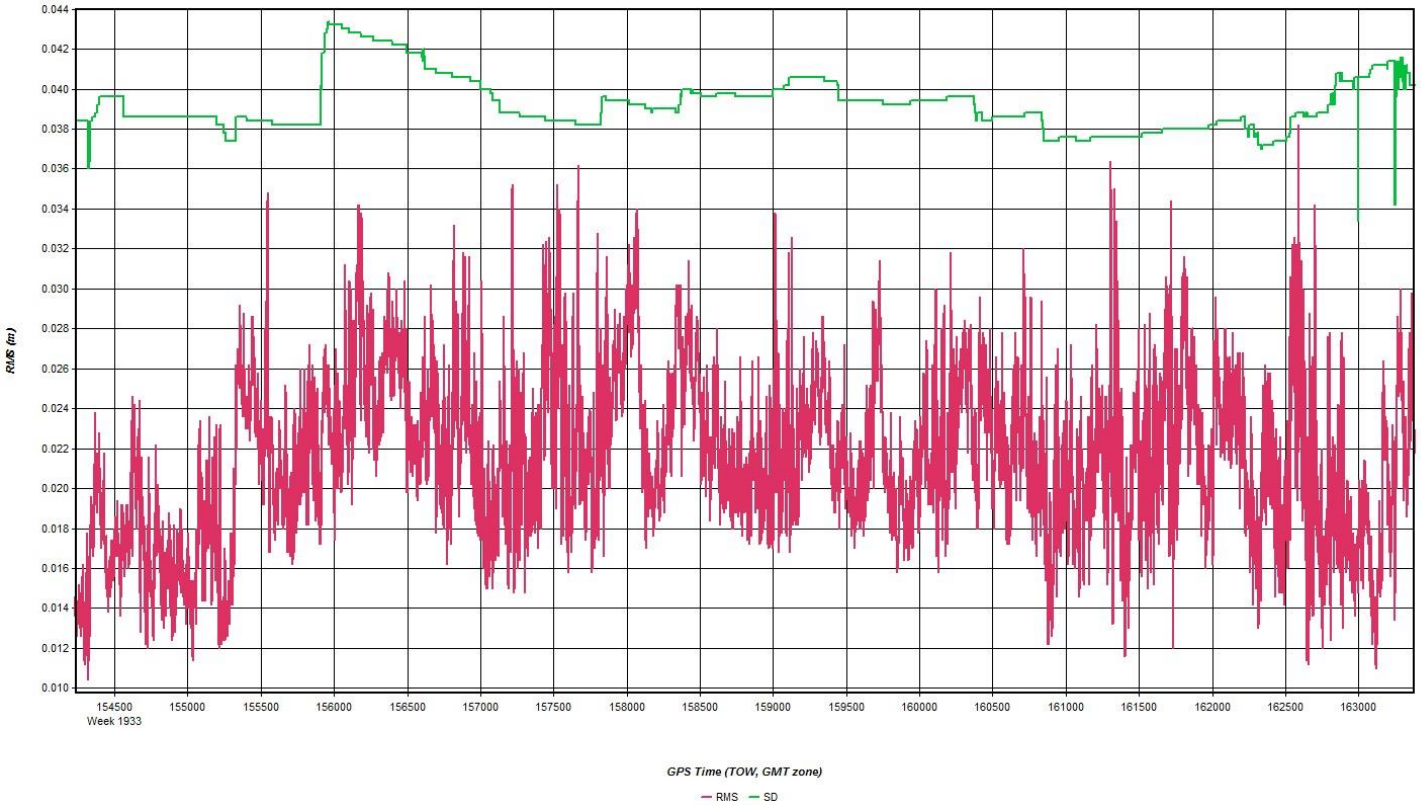

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

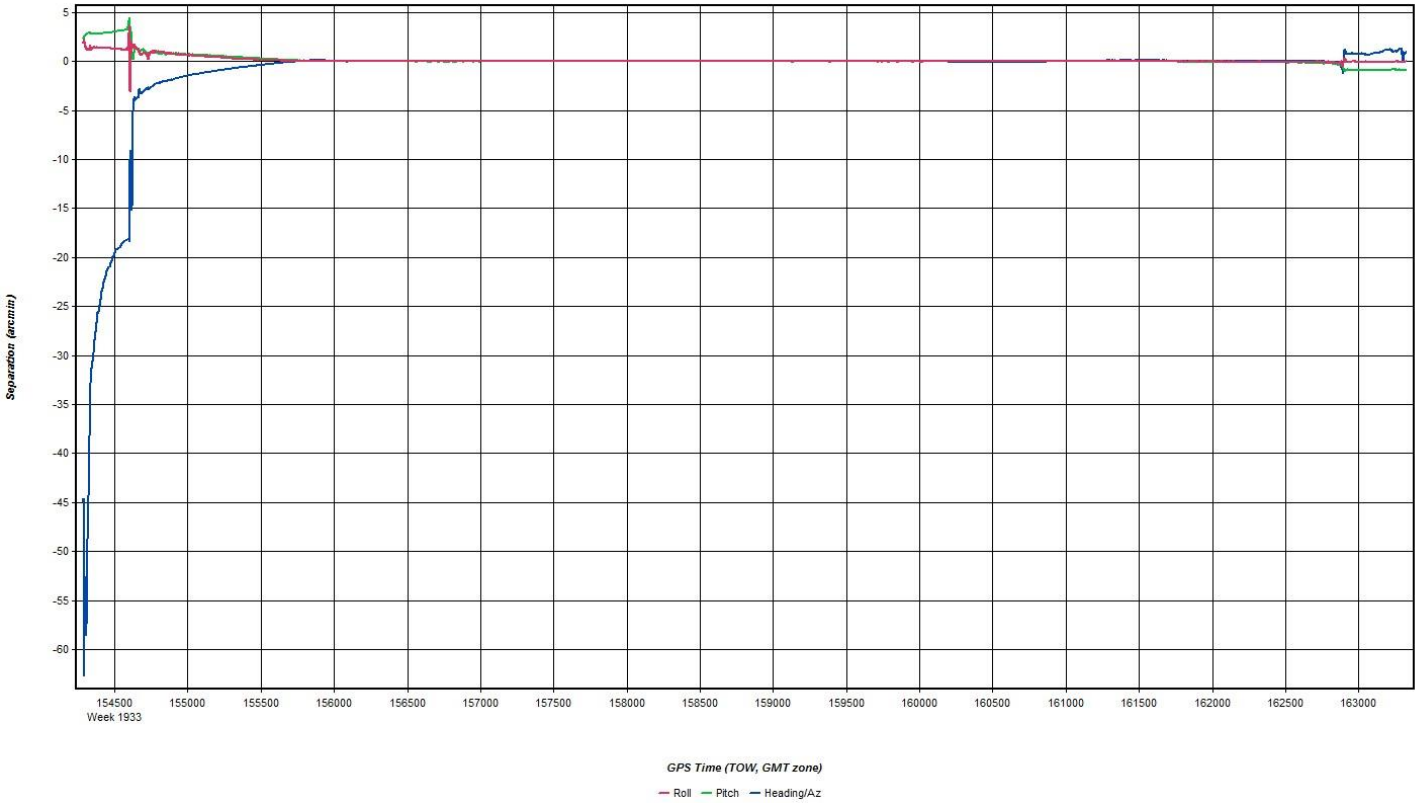

PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
PDOP

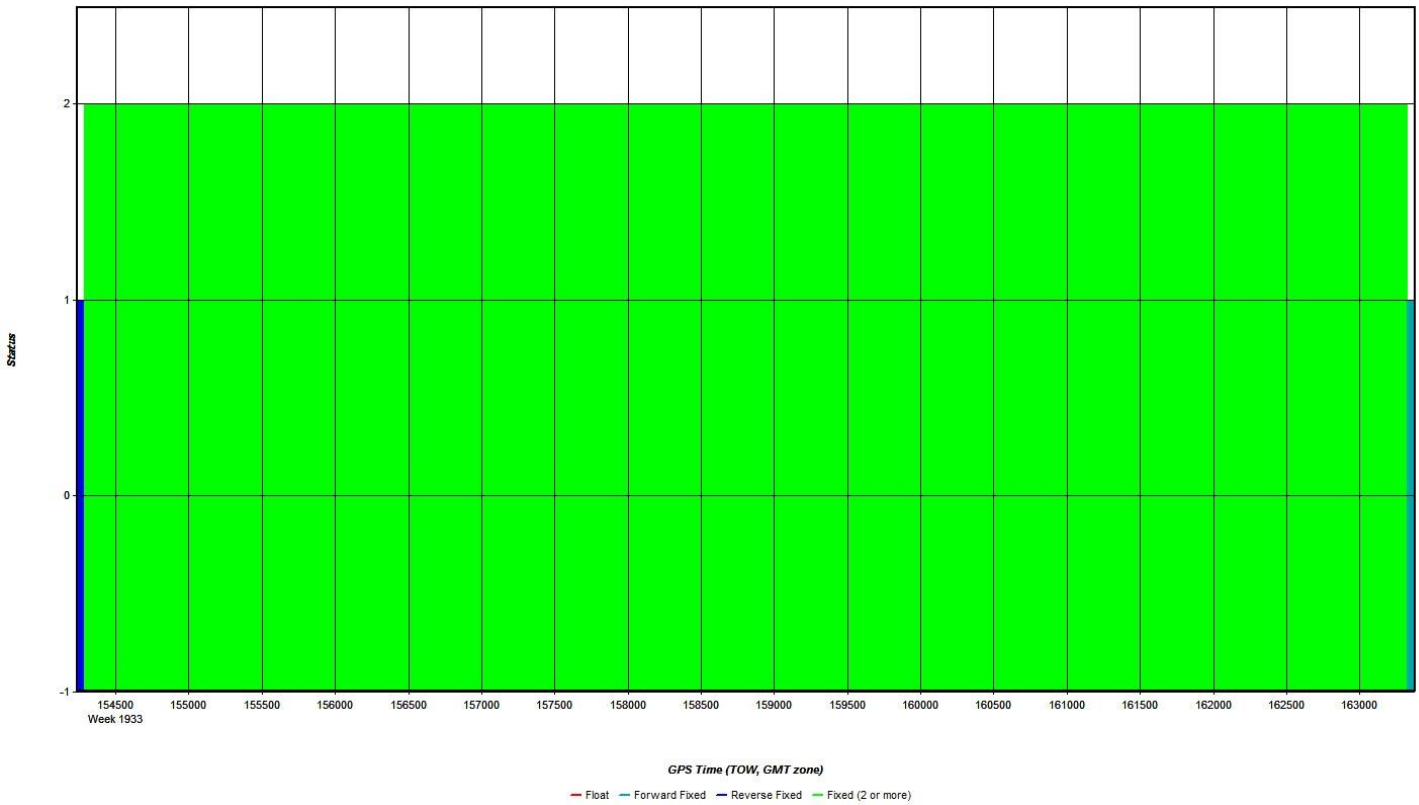

Estimated StdDev (m)
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

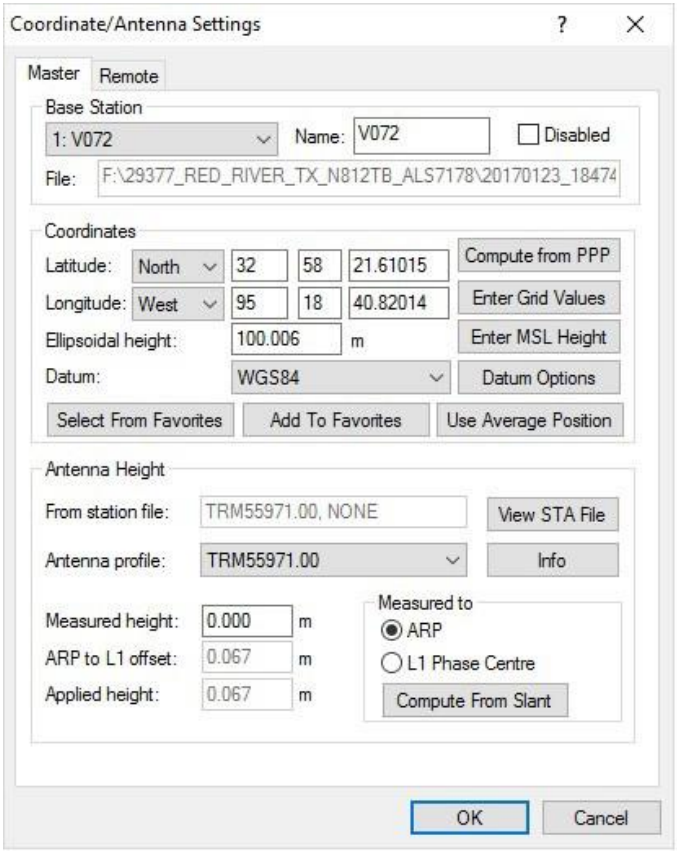

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
Roll
Pitch

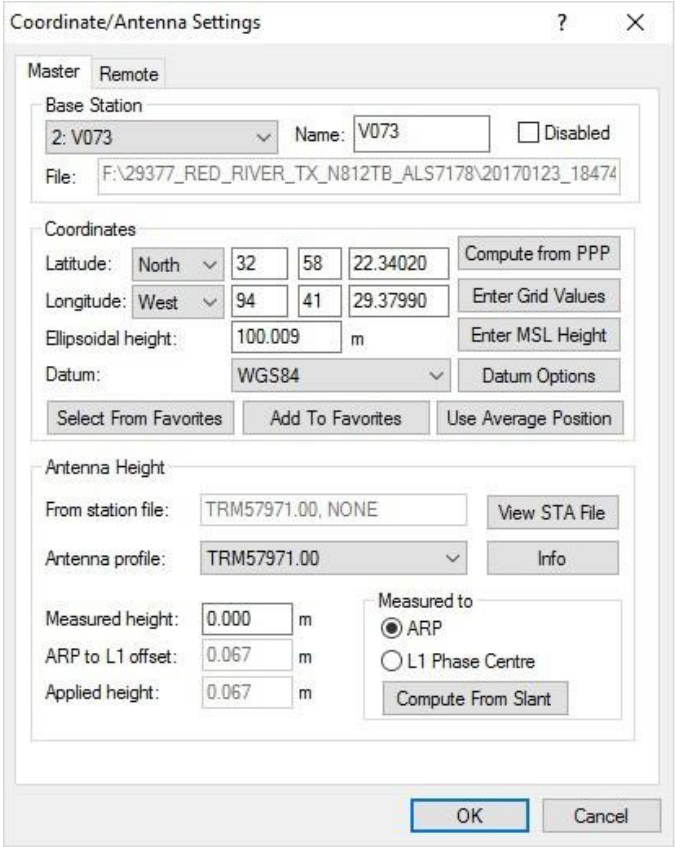

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
Height

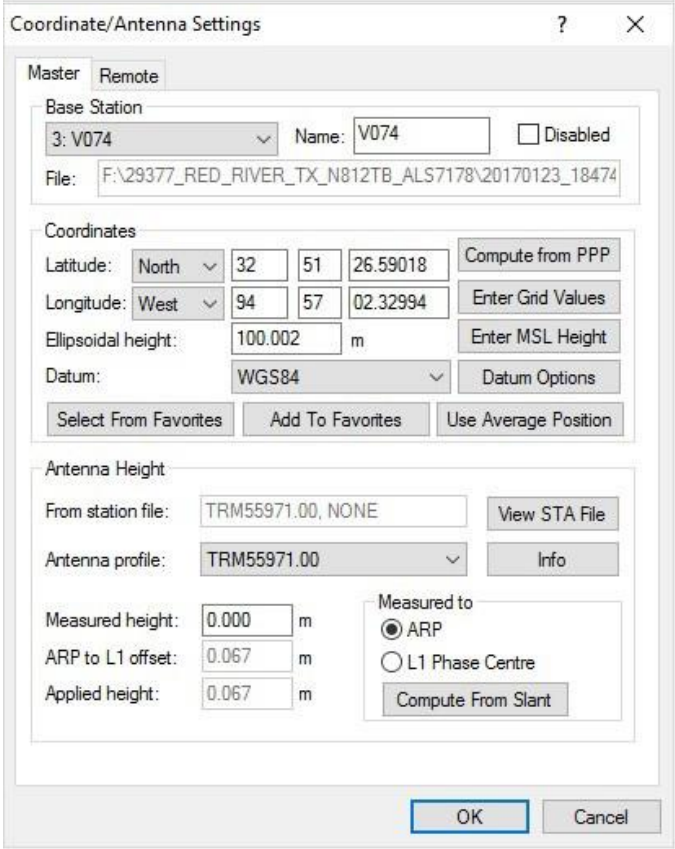

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
154500
Week 1933
155000
155500
156000
156500
157000
157500
158000
158500
159000
159500
160000
160500
161000
161500
162000
162500
163000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: V072
Name: V072
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170123_18474
Coordinates
Latitude: North 32 58 21.61015
Longitude: West 95 18 40.82014
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: 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: V073
Name: V073
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170123_18474
Coordinates
Latitude: North 32 58 22.34020
Longitude: West 94 41 29.37990
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: 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: V074
Name: V074
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170123_18474
Coordinates
Latitude: North 32 51 26.59018
Longitude: West 94 57 02.32994
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: 1-23-17 B
Life: A (B) C D E Pg 2 of 2

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170123_184745

Aircraft: N812TB Begin Hobbs: 4263.3 End Hobbs: 4265.5 Total: 2.2 Pilot: JBillington Co-Pilot: — Tech: JSwan

Dep Apt: KGGG Dep Time (Lcl): 1856 (Z): +6 Arr Apt: GGG Arr Time (Local): 2113 (Z): +6 Tot Time Aloft: 2.2

CORS: (Y) / N Sta 1: Longview/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: 14 °c End: 13 °c OAT beg: +7 °c End: +7 °c Altimeter begin: 2997 end: 3001

LiDAR	Type: Alsa70	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg CB 292	Storage Name/#
	FOV: 40	Scan Freq: 53	MpIA Y / N	Pulses In Air	Pulse Rate: 295	Power: 100	PPSM	End CB 261	3
								Tot CB 31	

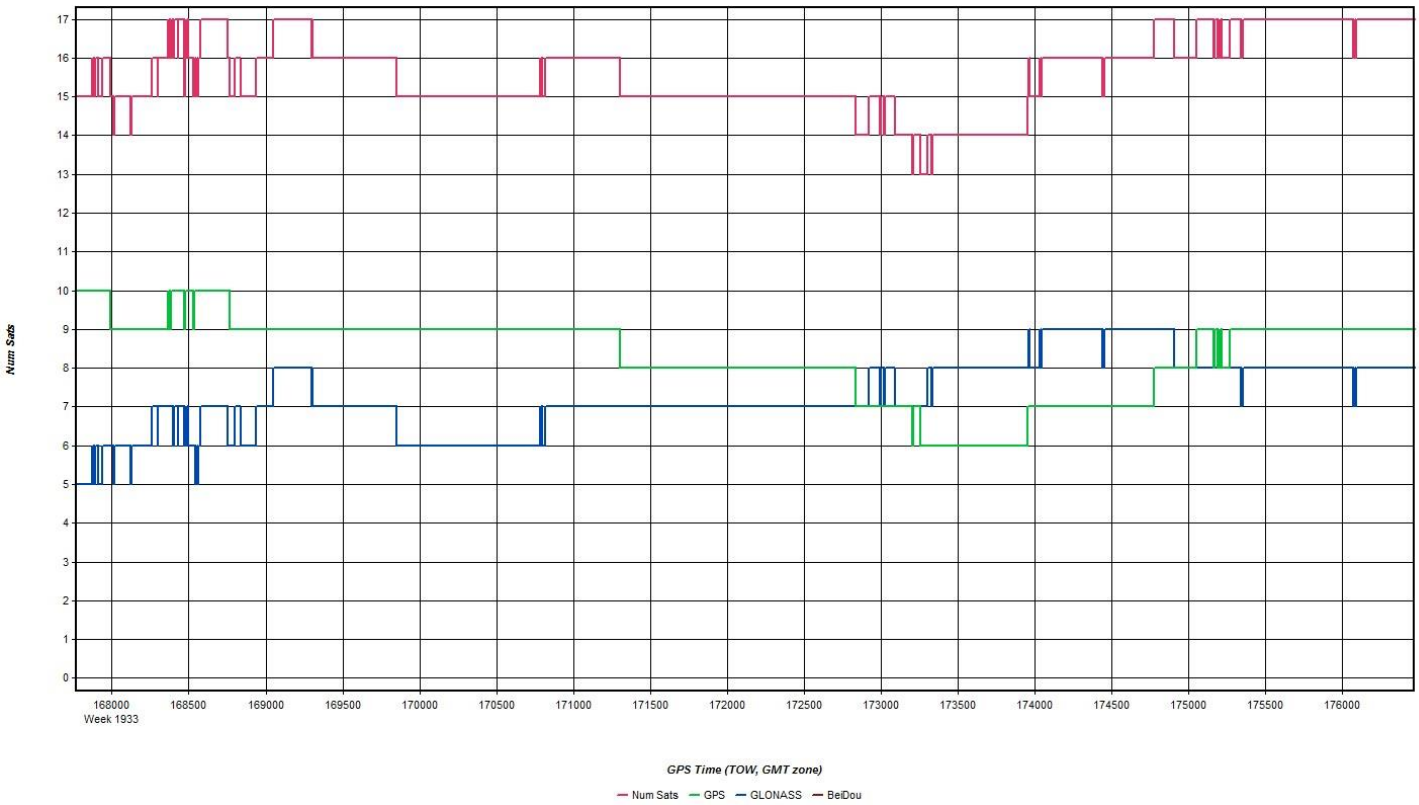
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		1856	1919						GGG → Fig 8's (1913 – 1919)
359	270	1922	1929	135	1.2/18	6197		0	Reflight Partial 0–21 miles on West End
347	90	1933	1948	161	1.3/17	6220		0	
346	270	1952	2008	137	1.1/17	6174		0	
345	90	2012	2027	141	1.2/18	6192		0	
344	270	2030	2047	137	1.1/17	6272		0	
X-lic	180	2049	2051	180	1.2/16	6285		0	Fig 8's (2051 – 2055) → KGGG (2113)

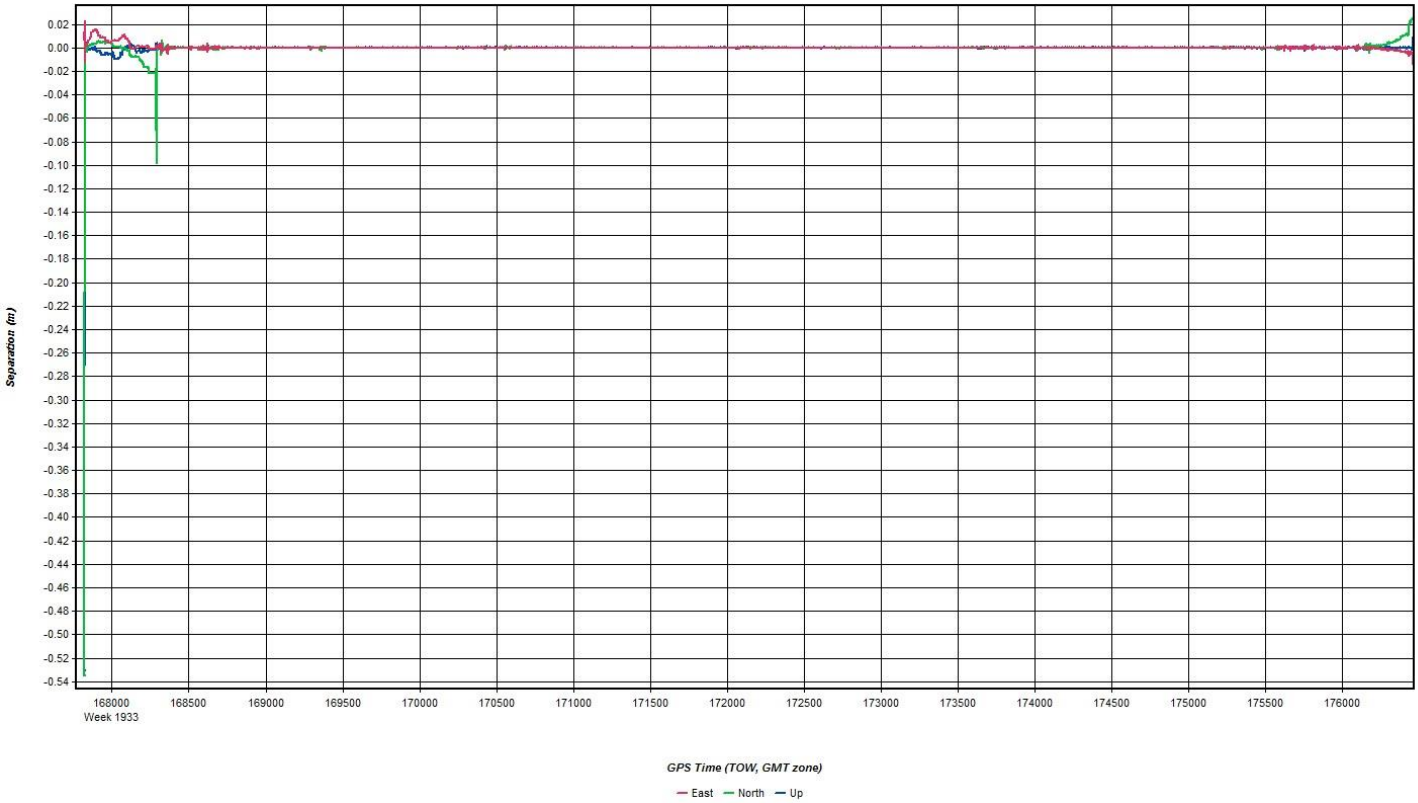
Mt Pleasant

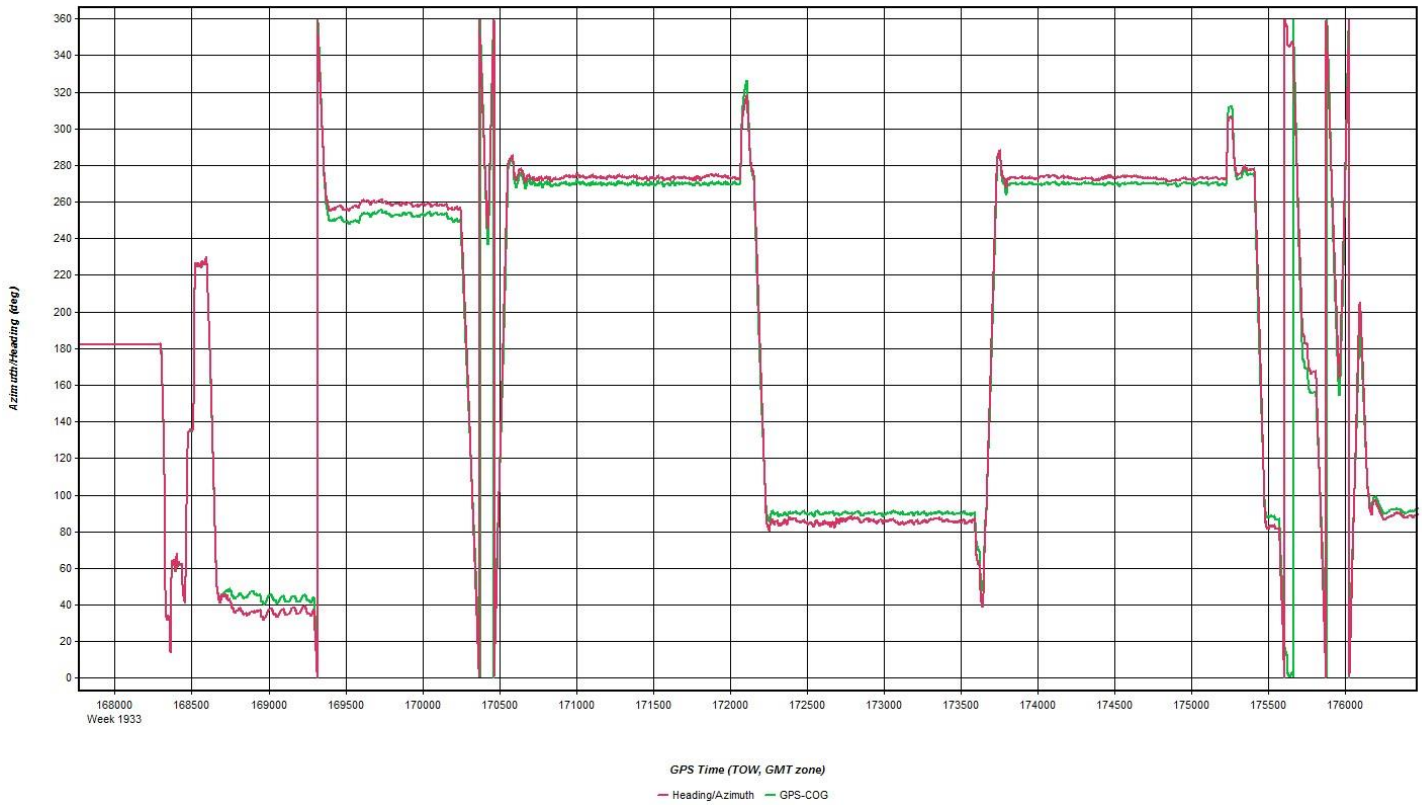
Hobbs = 2.2
online = 1.4
mob = 0.8

Total Proj Lines: Lines Flown: 4/18 Lines Remain: Online Time: 1.4 Mob Time: 0.8 Notes:

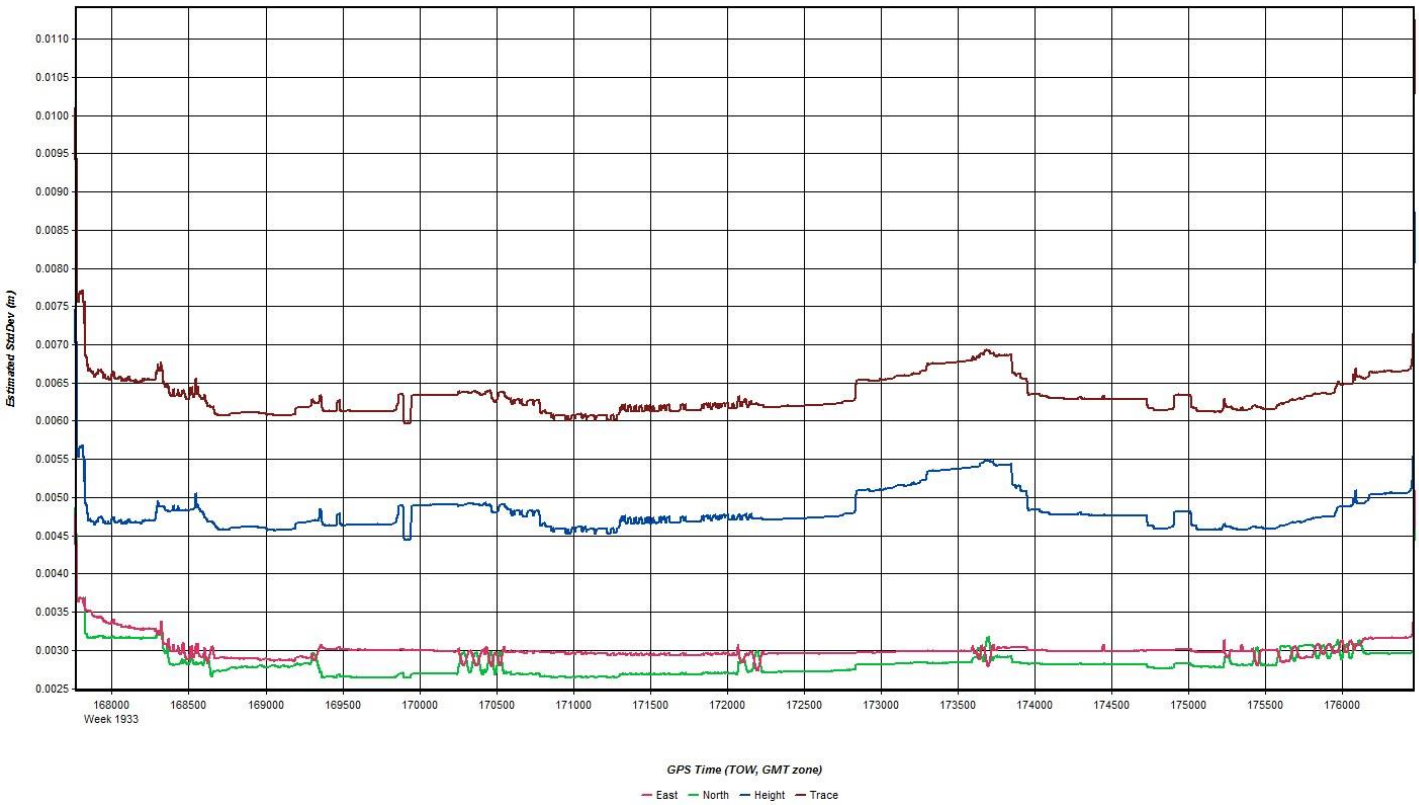
Jan 23, 2017-B (N812TB, SN8146)

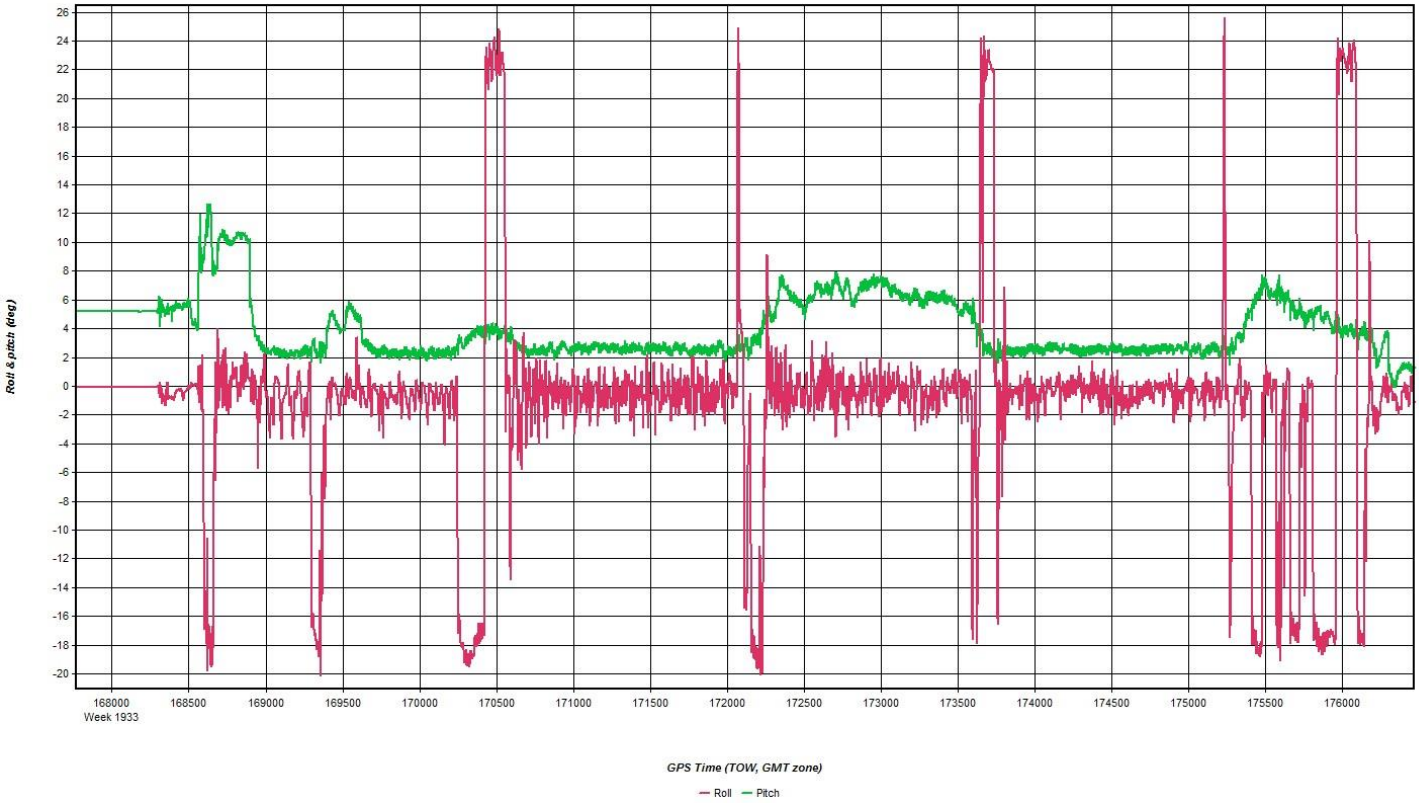

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
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
-0.48
-0.50
-0.52
-0.54
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
East
North
Up

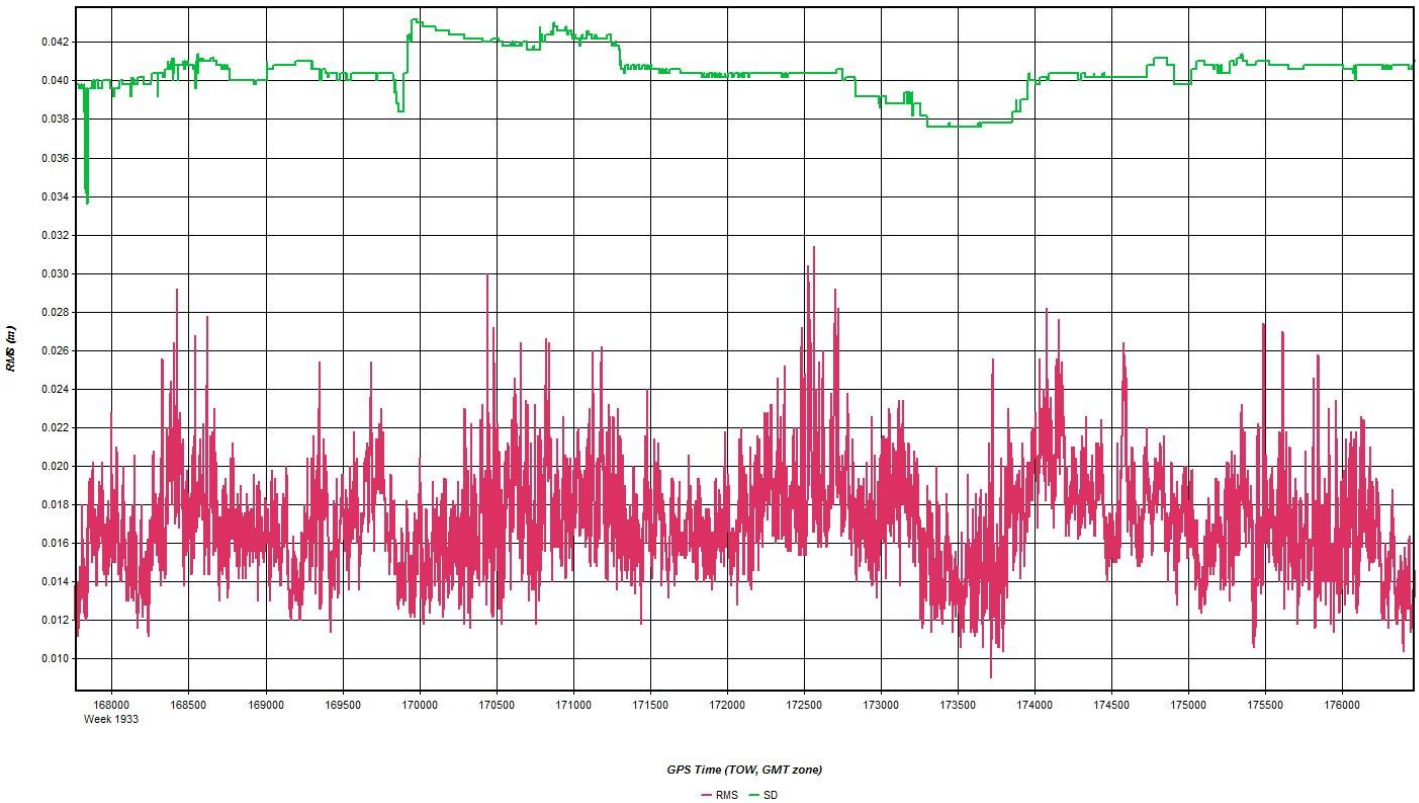

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

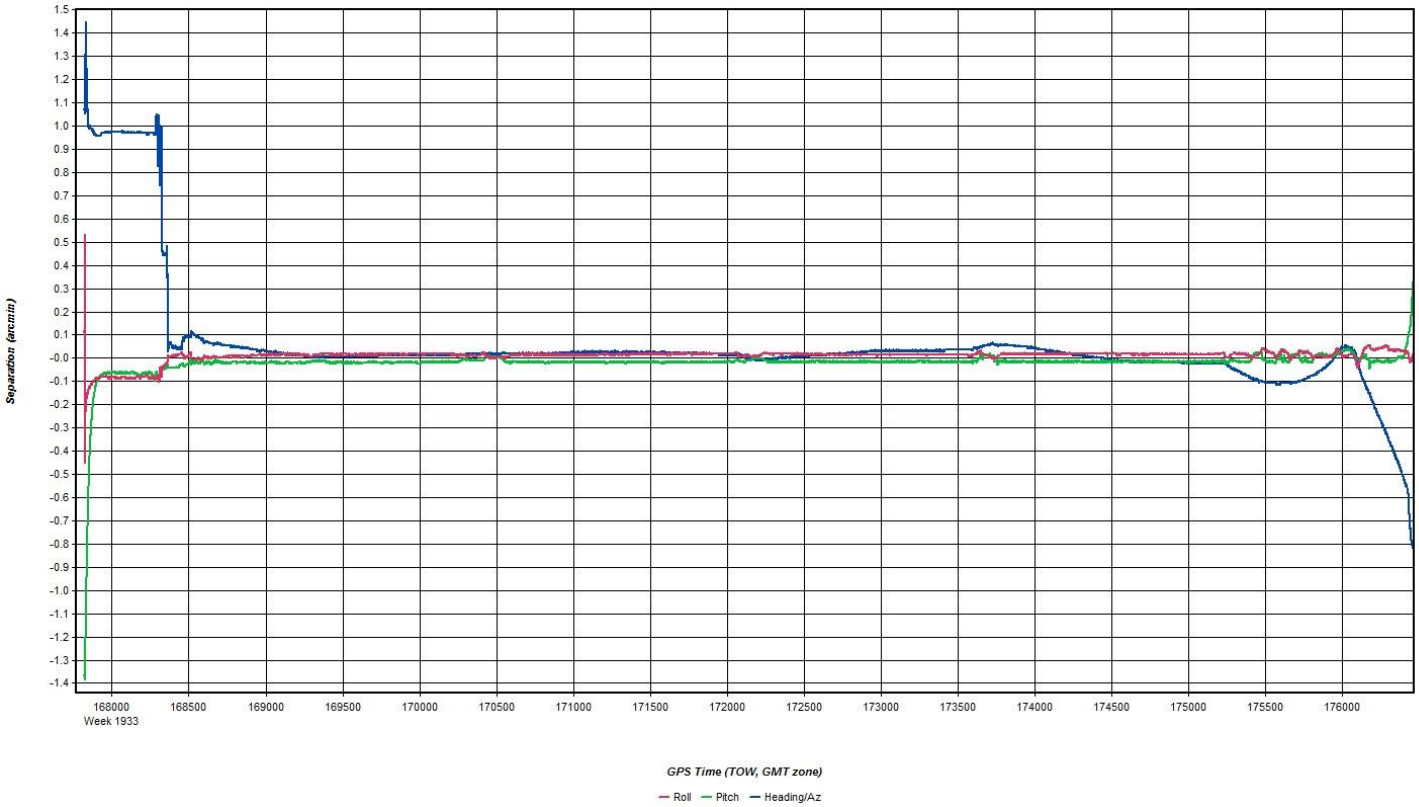

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
PDOP

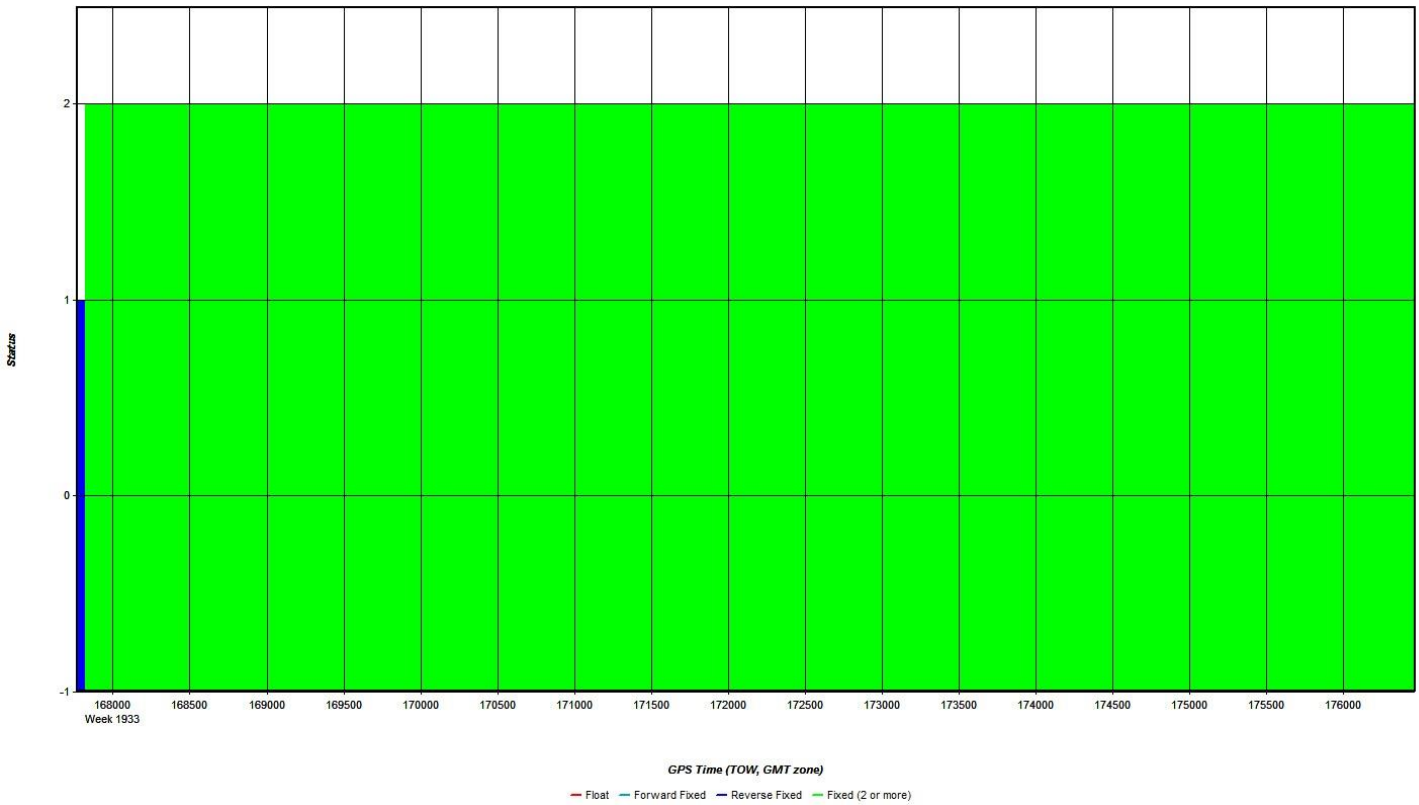

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

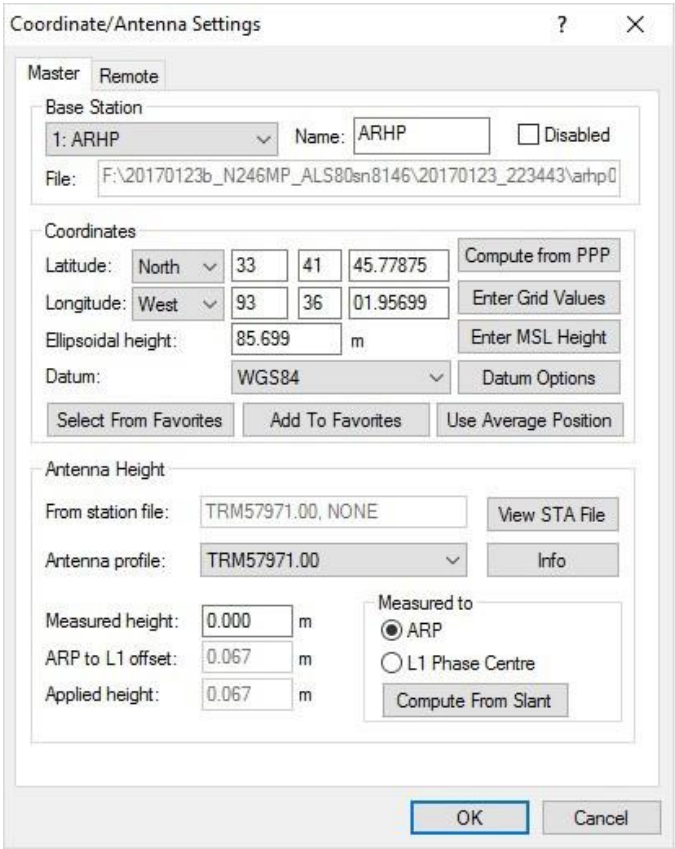

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
Roll
Pitch

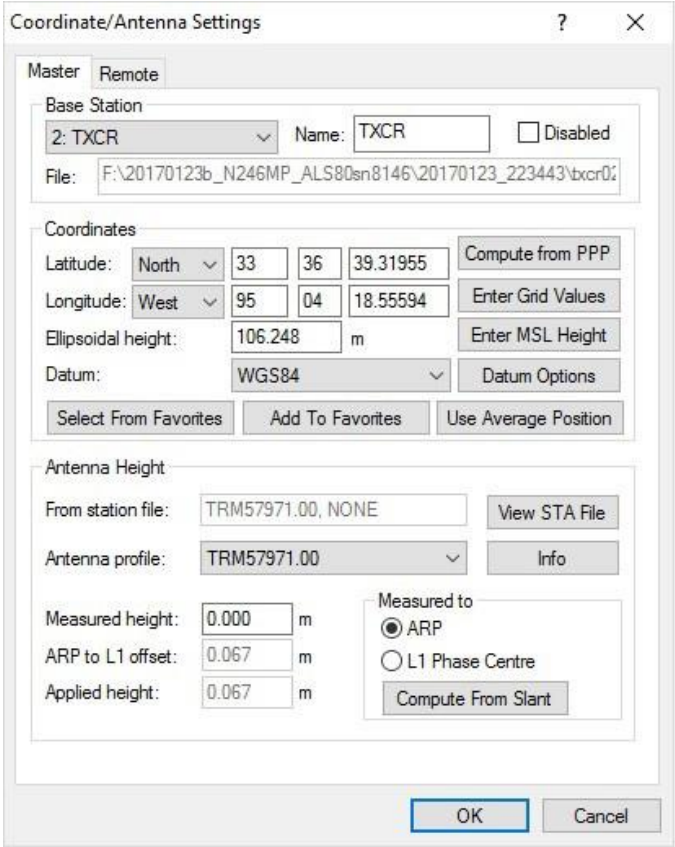

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
Height

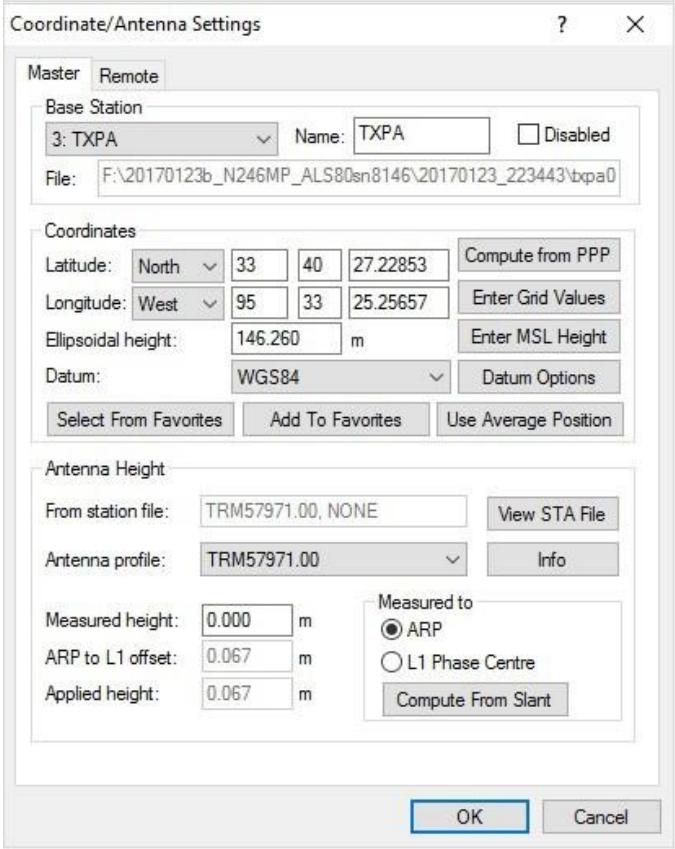

RMS (m)
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
RMS
SD

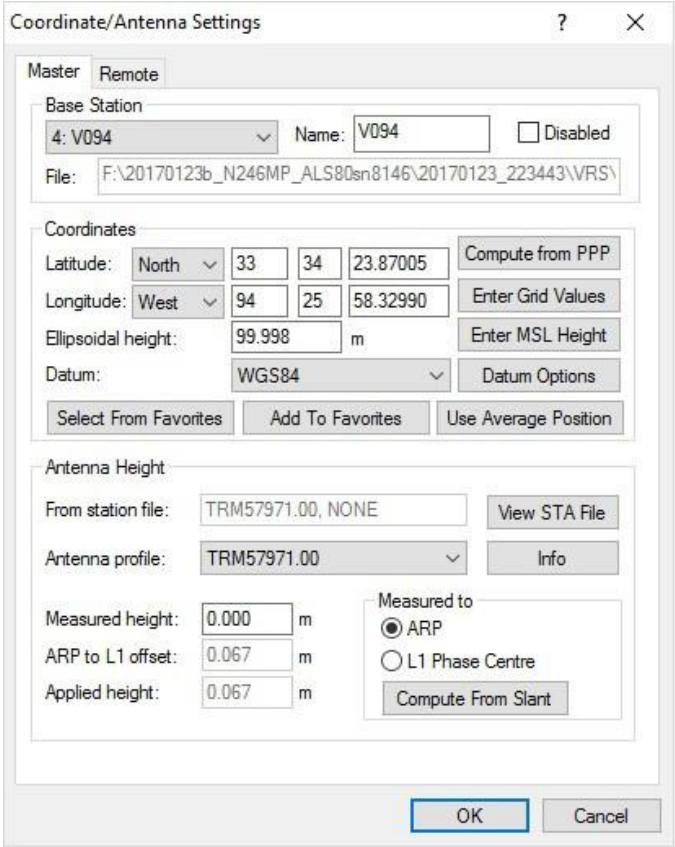

Separation (arcmin)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1.0
-1.1
-1.2
-1.3
-1.4
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
168000
Week 1933
168500
169000
169500
170000
170500
171000
171500
172000
172500
173000
173500
174000
174500
175000
175500
176000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: ARHP
Name:
ARHP
Disabled
File:
F:\20170123b_N246MP_ALS80sn8146\20170123_223443\arhp0
Coordinates
Latitude:
North
33
41
45.77875
Compute from PPP
Longitude:
West
93
36
01.95699
Enter Grid Values
Ellipsoidal height:
85.699
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: TXCR
Name: TXCR
Disabled
File: F:\20170123b_N246MP_ALS80sn8146\20170123_223443\txcr0
Coordinates
Latitude: North 33 36 39.31955
Longitude: West 95 04 18.55594
Ellipsoidal height: 106.248 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: TXPA
Name: TXPA
Disabled
File: F:\20170123b_N246MP_ALS80sn8146\20170123_223443\txpa0
Coordinates
Latitude: North 33 40 27.22853
Longitude: West 95 33 25.25657
Ellipsoidal height: 146.260 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: V094
Name:
V094
Disabled
File:
F:\20170123b_N246MP_ALS80sn8146\20170123_223443\VRS\
Coordinates
Latitude:
North
33
34
23.87005
Compute from PPP
Longitude:
West
94
25
58.32990
Enter Grid Values
Ellipsoidal height:
99.998
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) 20170123_223443

Date: JANUARY 23RD, 2017

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

Project: RED RIVER TX Proj #: 29377 Flight Mgmt File: 29337_SN8146_Clarksville.fpd2

Aircraft: N246MP Begin Hobbs: 1256.1 End Hobbs: 1258.6 Total: 2.5 Pilot: C. McDONALD Co-Pilot: – Tech: P. HRABAK

Dep Apt: KTXK Dep Time (Lcl): 16:49 (Z): 22:49 z Arr Apt: KTXK Arr Time (Local): 19:18 (Z): 01:18 z Tot Time Aloft: 2:29

CORS: (Y) / N Sta 1: ARHP CORS Sta 2: – Flyovers: (Y) / N If Y, times: Sta1) 23:00 z (NO END TIME) Sta2) –

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

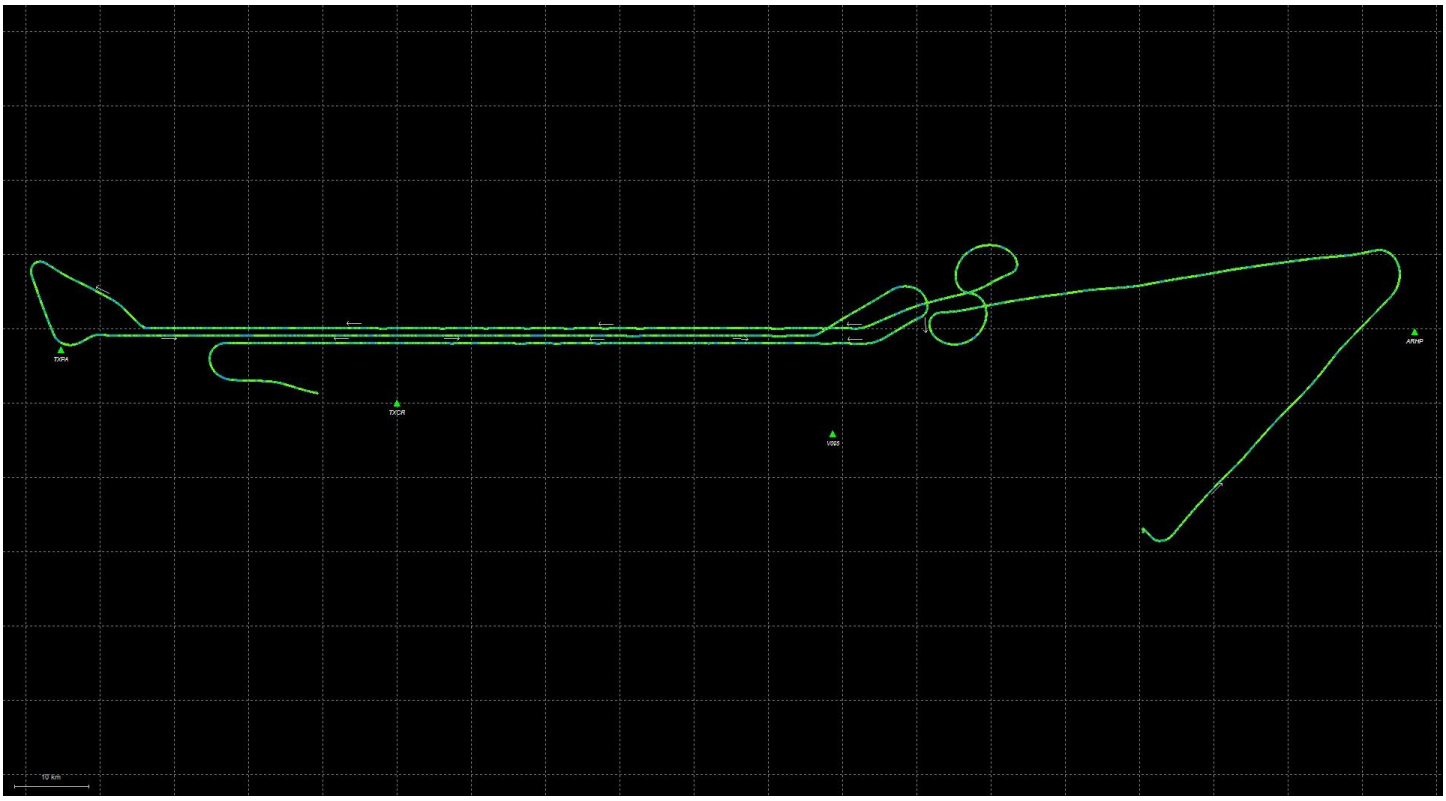
Gd Temp beg: +16 °c End: +11 °c OAT beg: +06 °c End: +05 °c Altimeter begin: 29.85" end: 29.85"

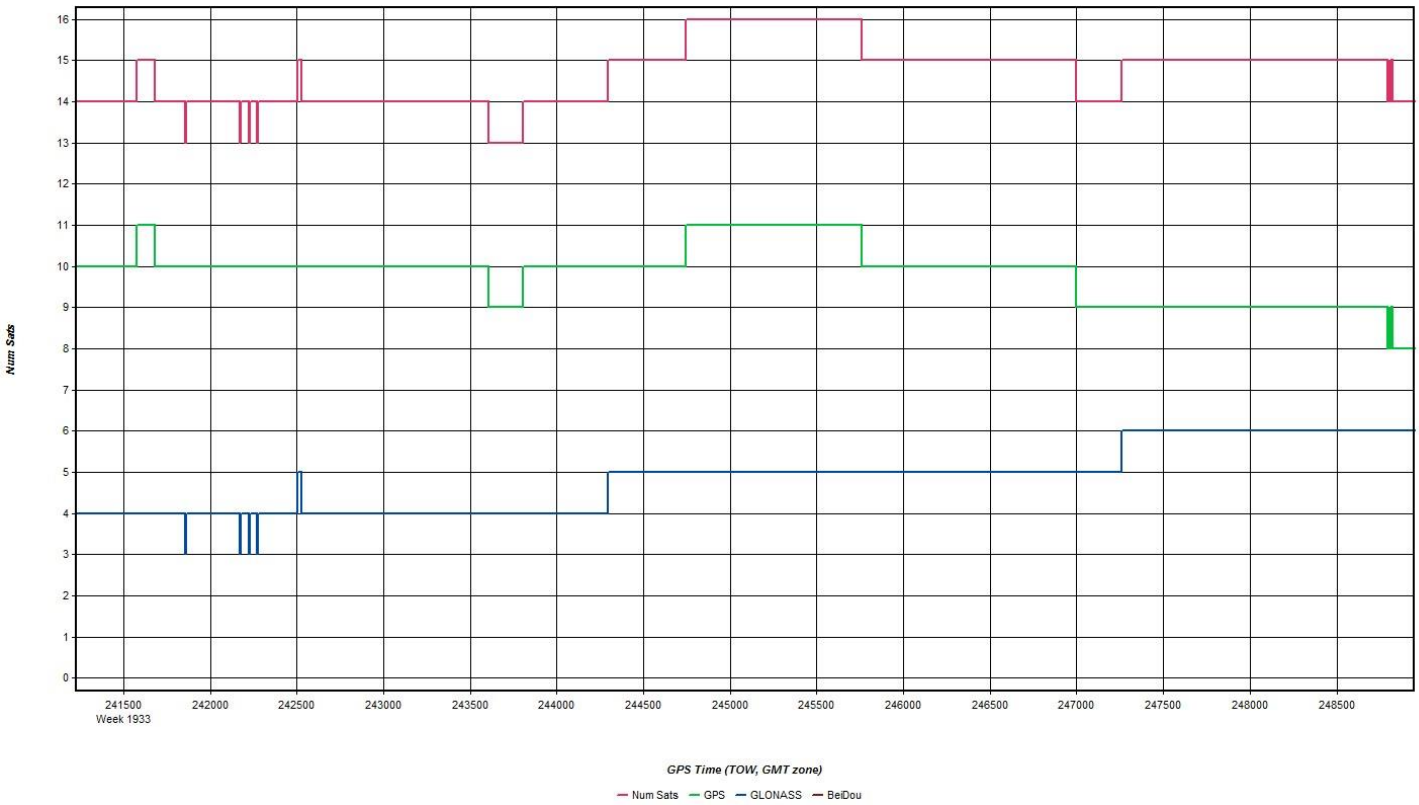
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	Storage Name/#
	ALS 80	8146	~6500'	~6960'	~400'	155 kts.	0.52m	340	SN 8239_SSD_2
	FOV	Scan Freq	MpIA (Y) / N	Pulses In Air	Pulse Rate	Power	PPSM	End GB	
	40°	52.0 Hz		3	396.6 kHz	100%	~3.69	377	
								Tot GB	
								37	

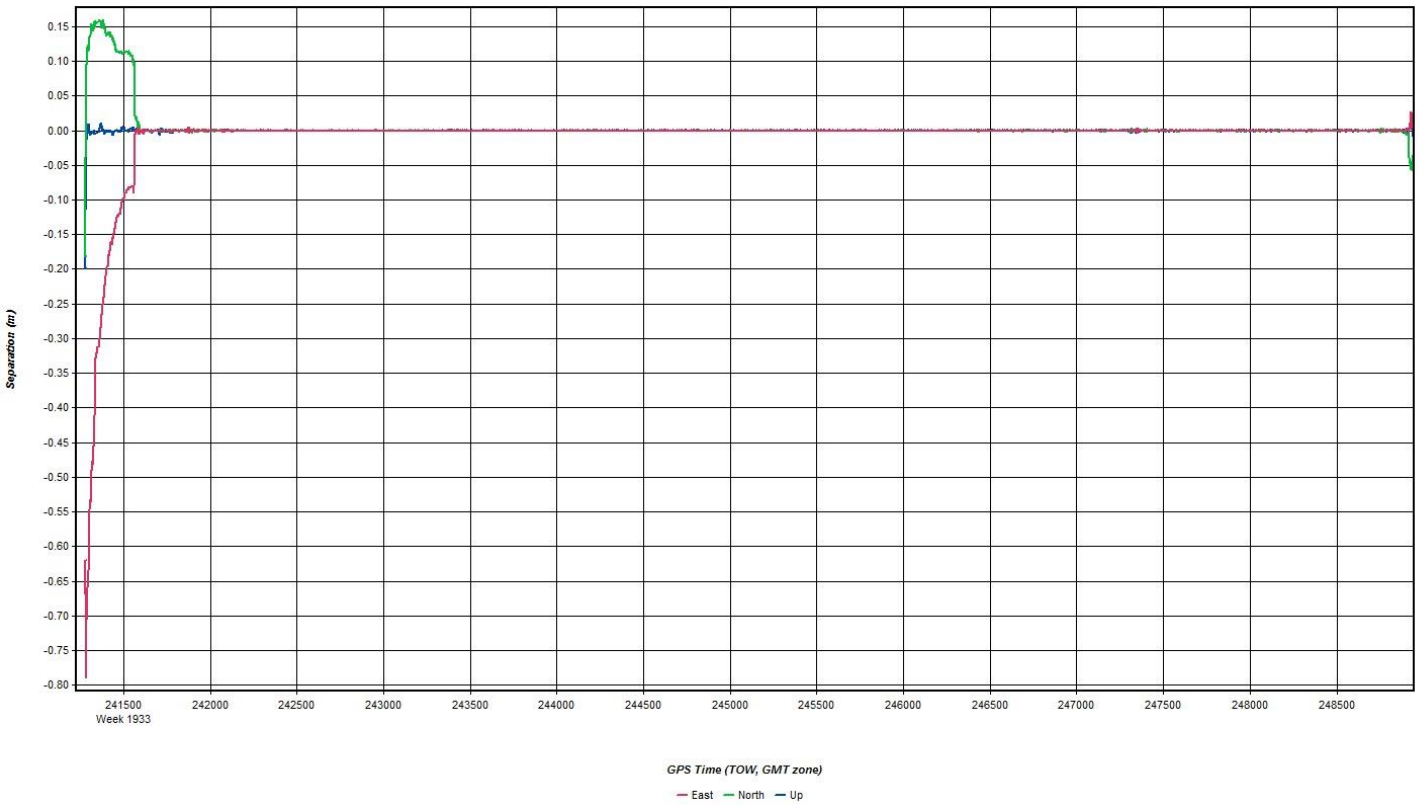
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc. (FIG 8 @ 23:17 → 23:22 z)
225	W	23:24	23:47	~140 kts.	1.2/19	6940'	~3°	0	sky above & below, -hz, some smoke in zones, occ-turb, W winds ~30 kts.
226	E	23:51	00:12	~150 kts.	1.4/17	6920'	~5°	0	sky above & below, -hz, some smoke in zones, occ-turb, W winds ~30 kts. (*)
227	W	00:16	00:??	~140 kts.	1.1/21	6920'	~4°	0	sky above & below, -hz, some smoke in zones, occ-turb, W winds ~30 kts. (**) @END
~~228~~									
~~229~~									(FIG 8 @ ~00:45 → 00:54)
~~230~~									
									[ABORTED MISSION DUE TO REPEATED SENSOR ERRORS, WOULD NOT STOP FIRING LASER OR RECORDING, COULD NOT COLLECT PROPER CROSS LINE, HAD TO DO HARD SHUTDOWN OF SYSTEM PRIOR TO DESCENT FOR LANDING]
									(*): "NO CONNECTION TO ALS DATA LOGGER ~4 miles INTO LINE (COULDN'T VERIFY IN TRACKER)
									(**): DID NOT STOP RECORDING, GIVES SHUTTER ERRORS, CANNOT STOP LASER FIRING ("SHUTTER WAS OPENED THROUGH EXTERNAL CONTROL")

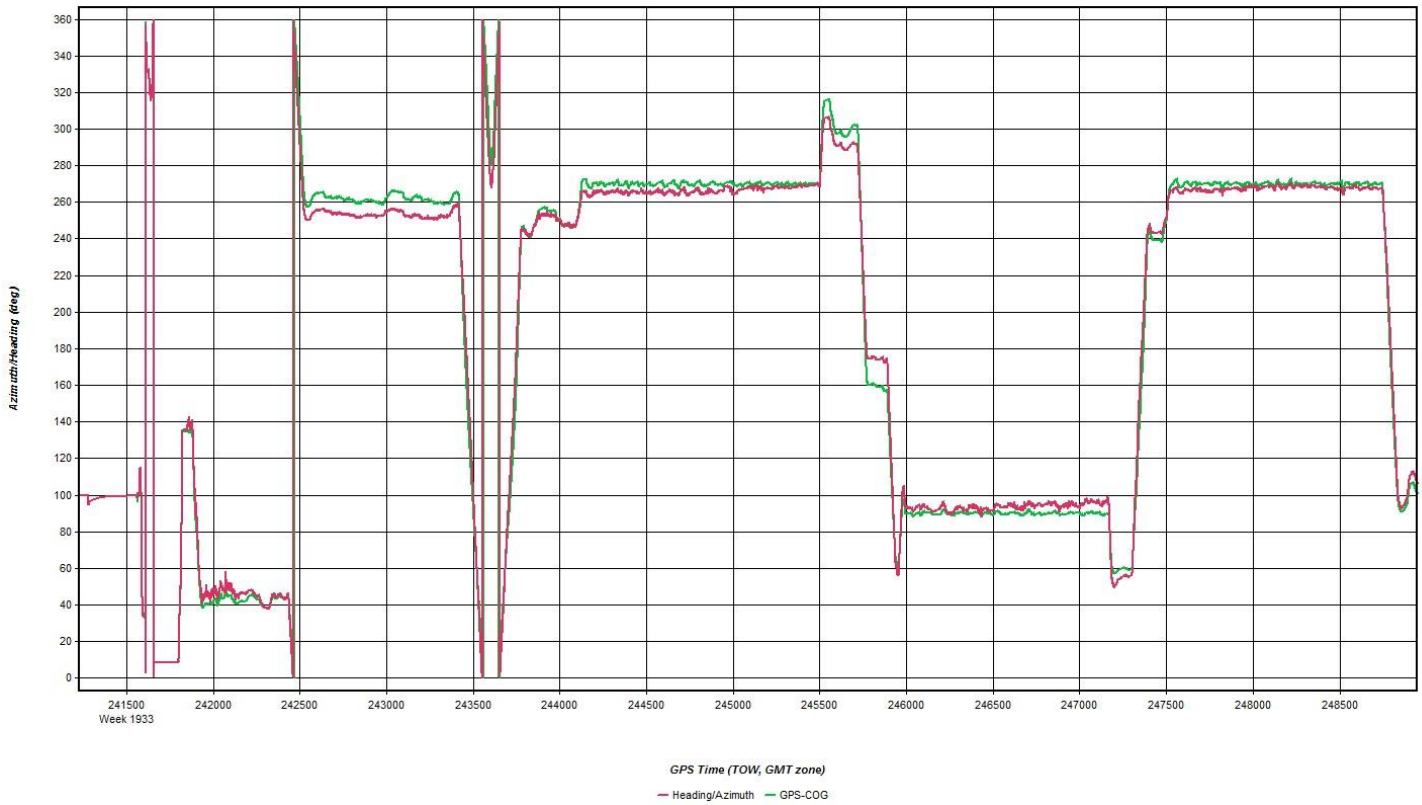
Total Proj Lines: 55 Lines Flown: 3 Lines Remain: ? Online Time: ~1:15 Mob Time: ~1:14 Notes: 20170123_223443

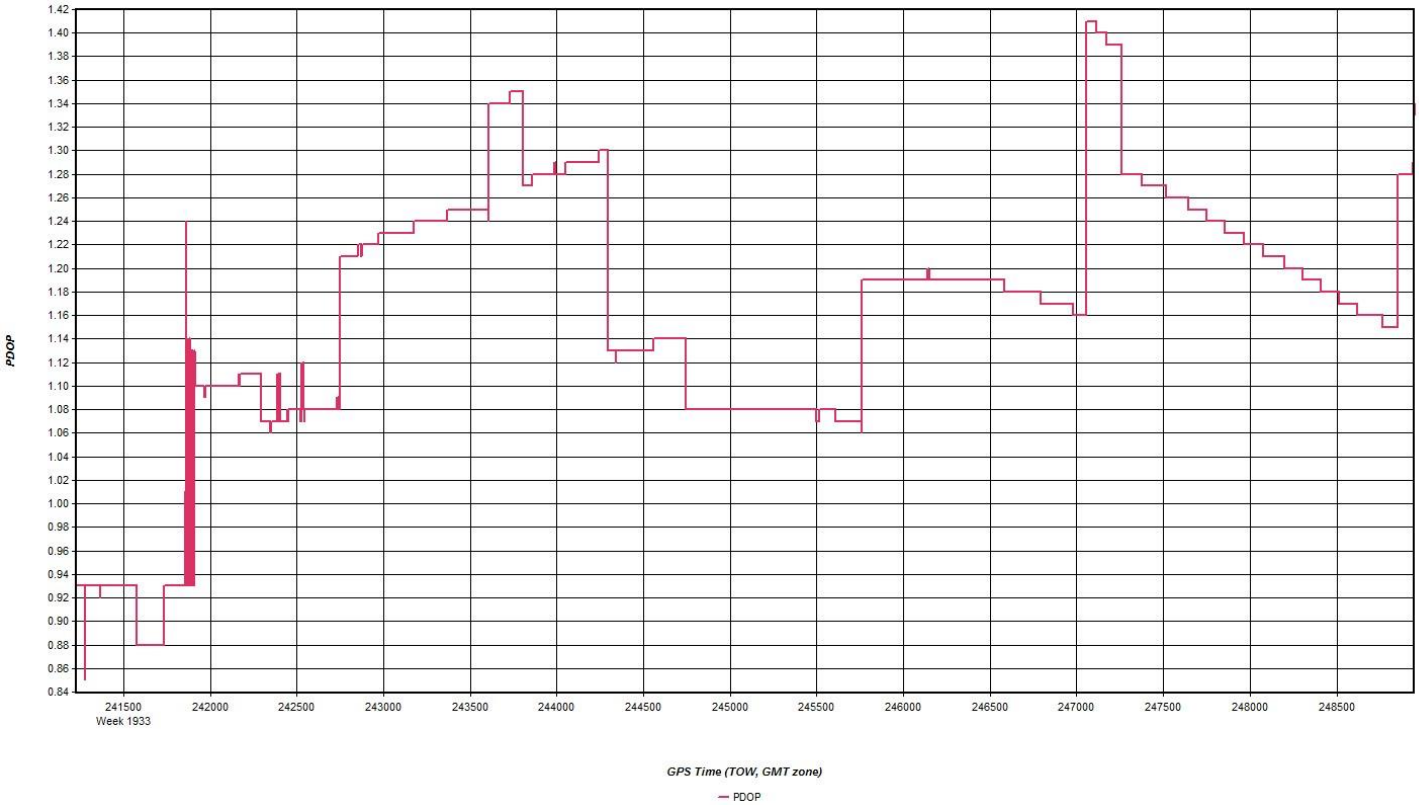
Jan 24, 2017-A (N246MP, SN8146)

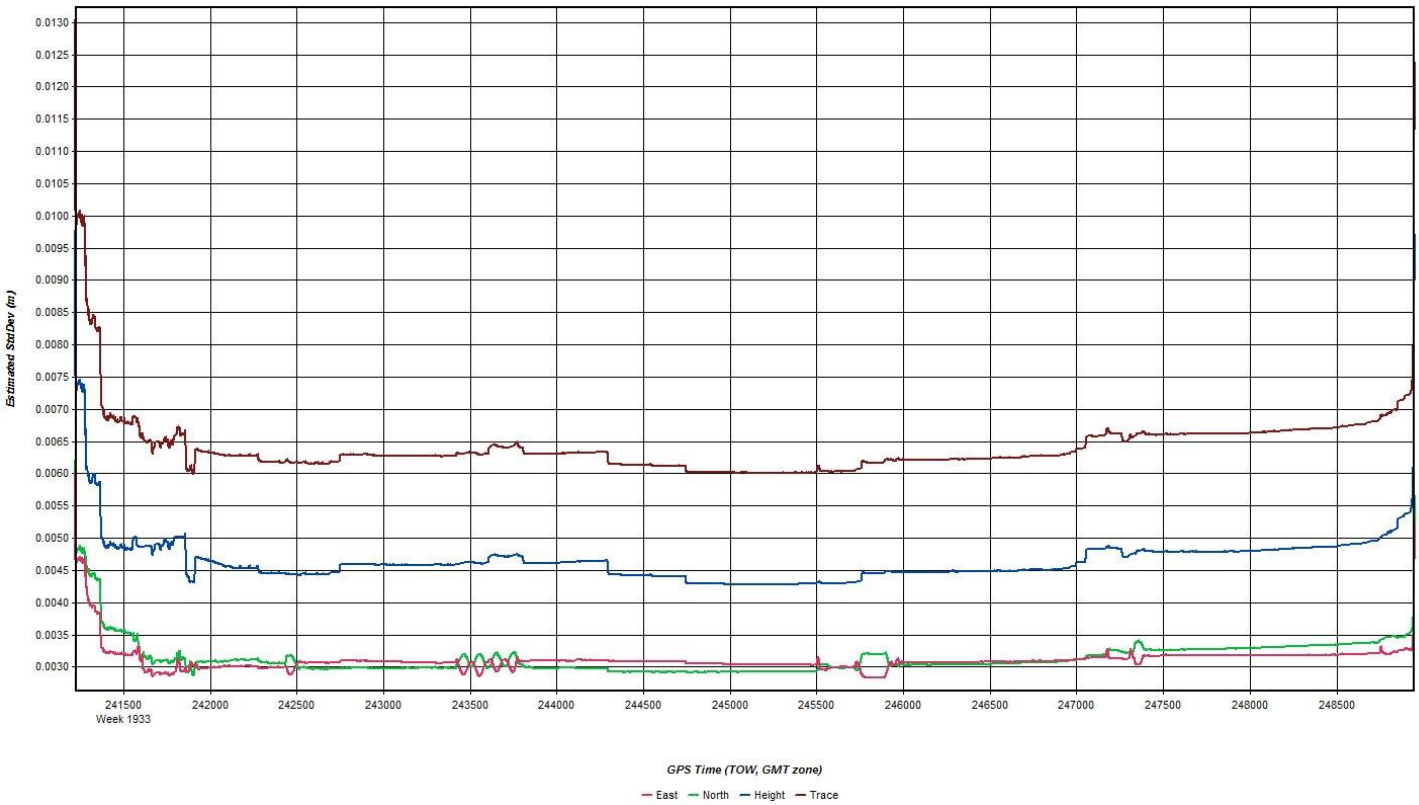


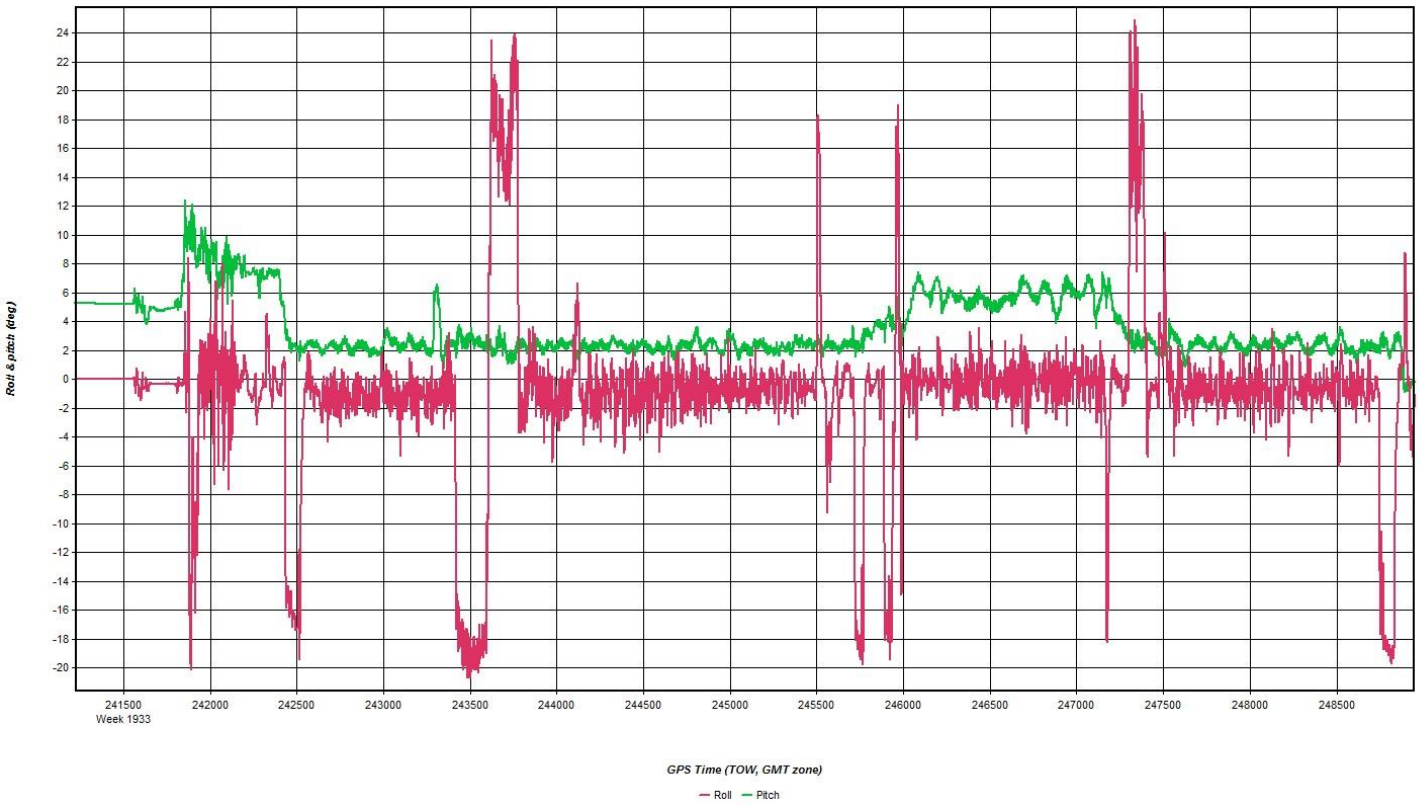

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

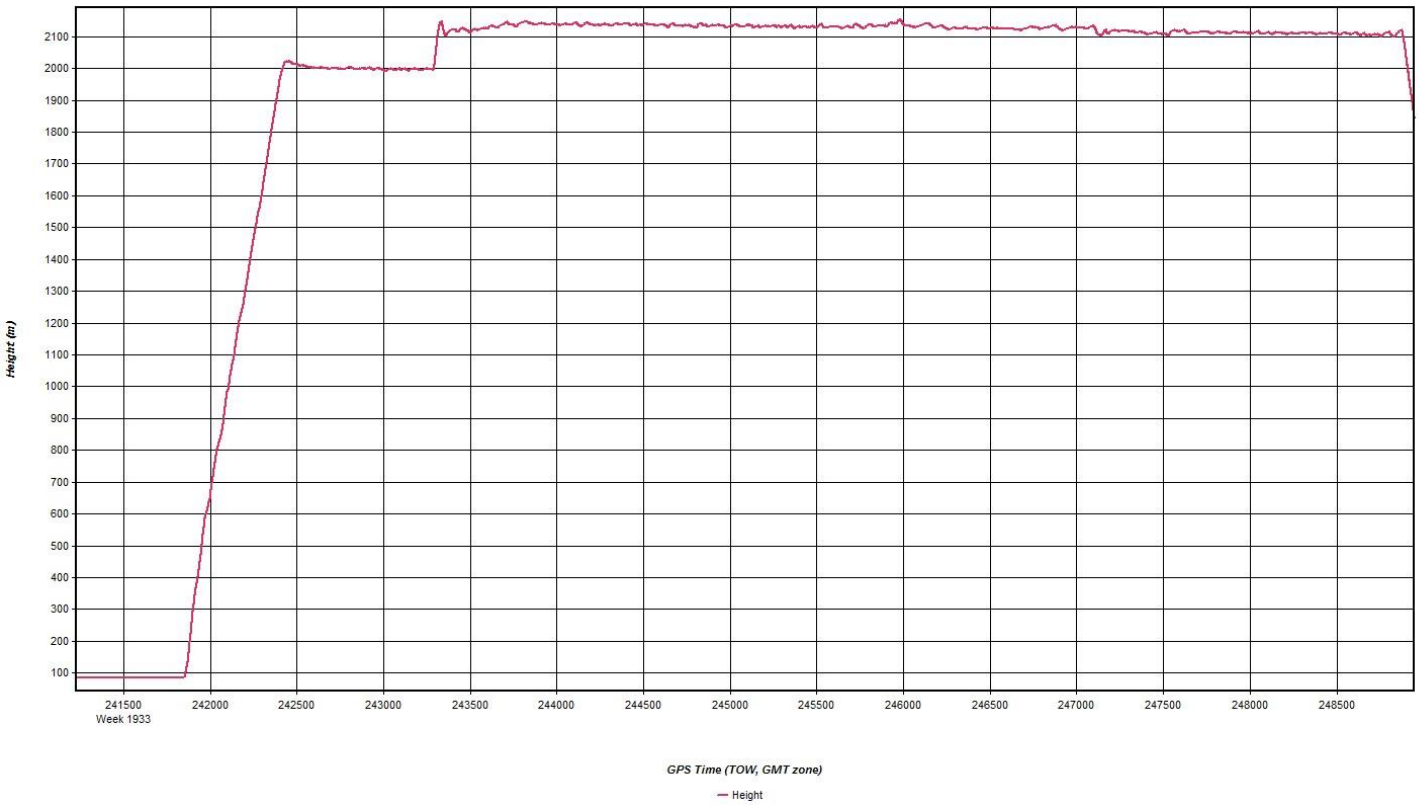

Separation (m)
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-0.65
-0.70
-0.75
-0.80
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
East
North
Up

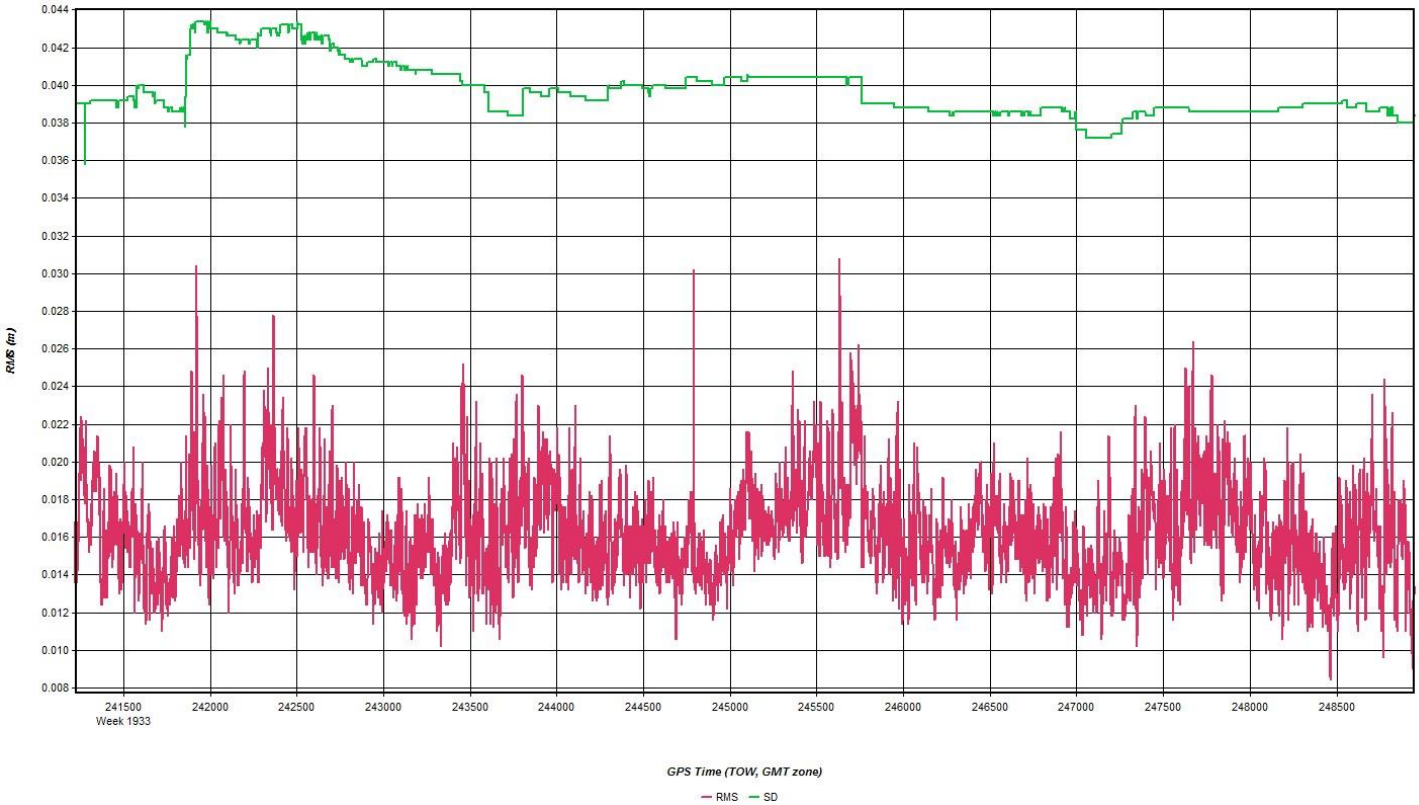

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

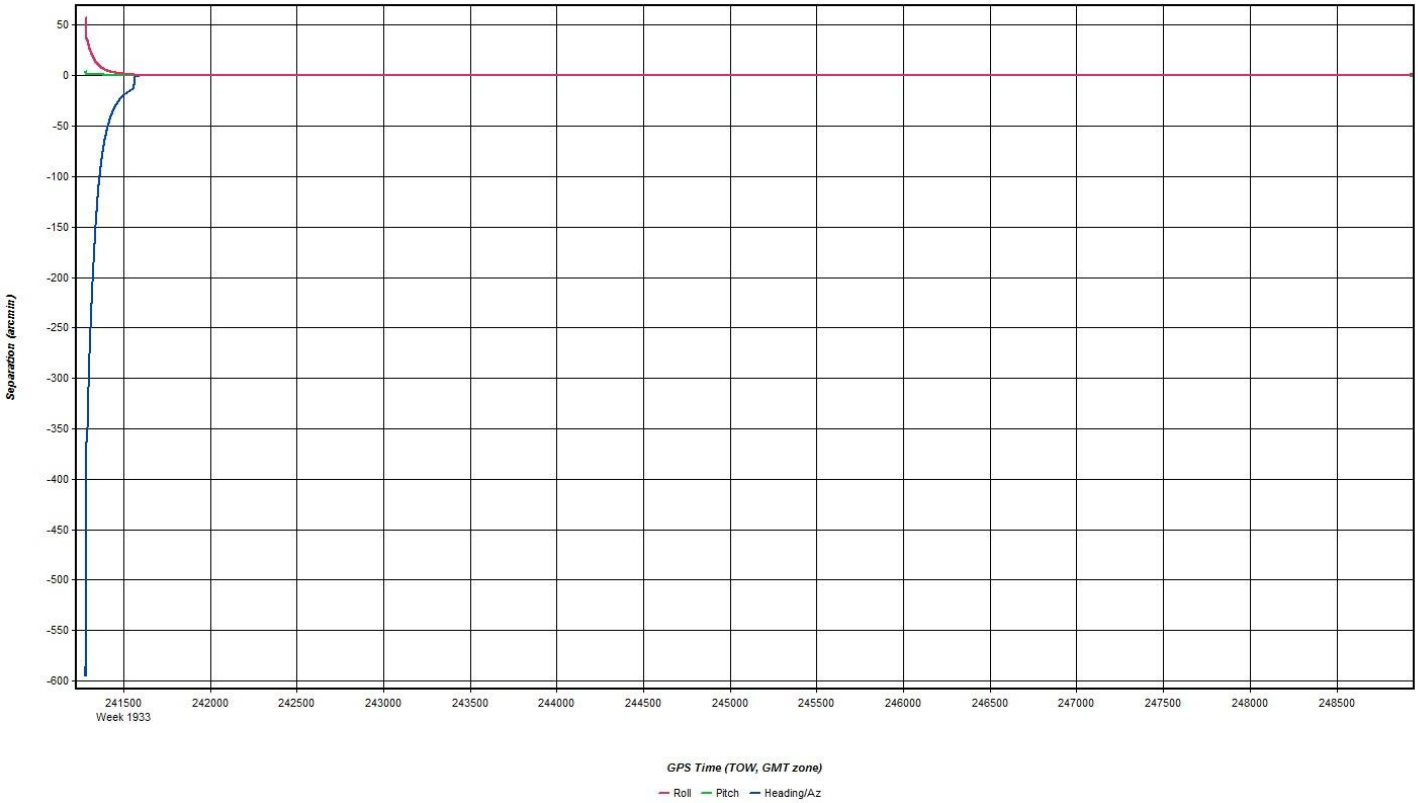

PDOP
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
0.88
0.86
0.84
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
PDOP

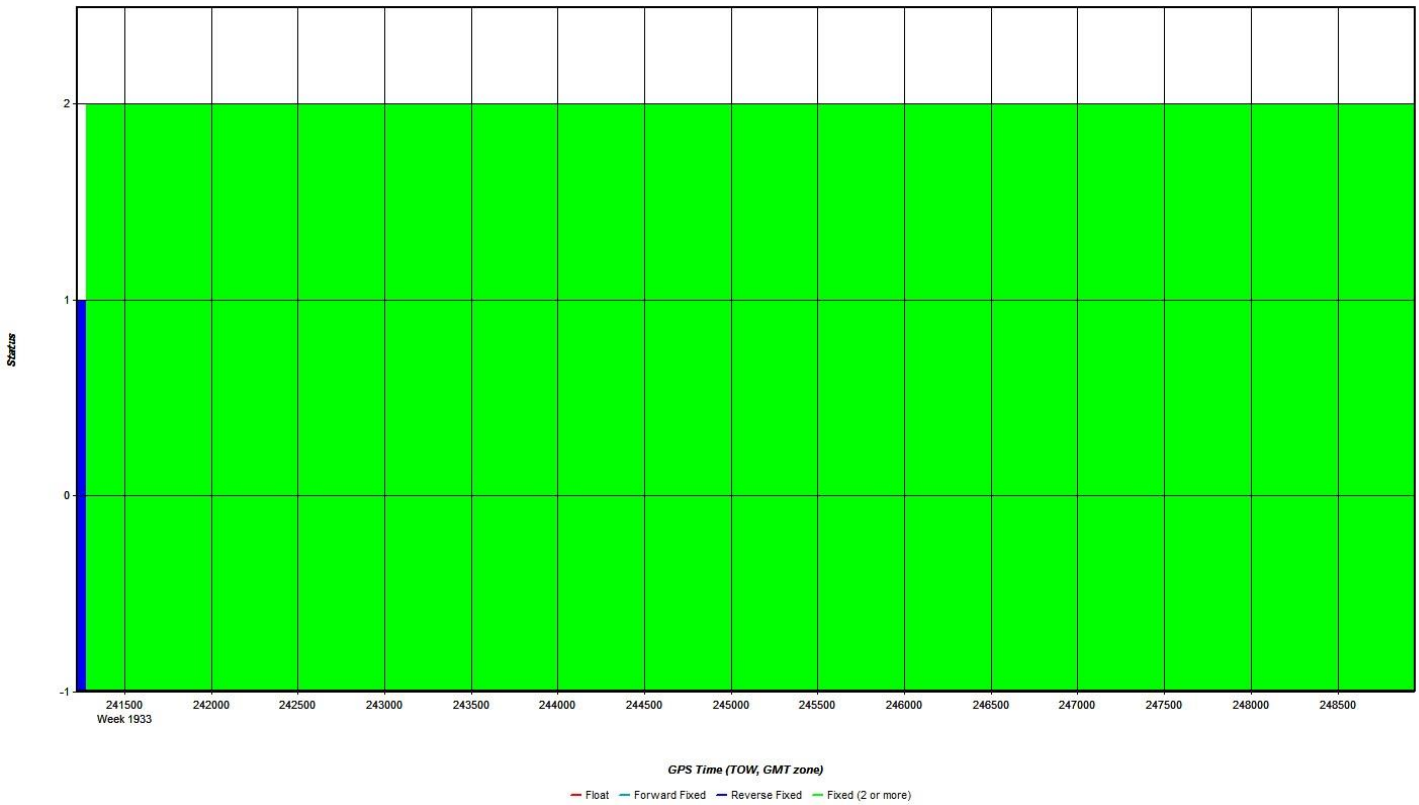

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

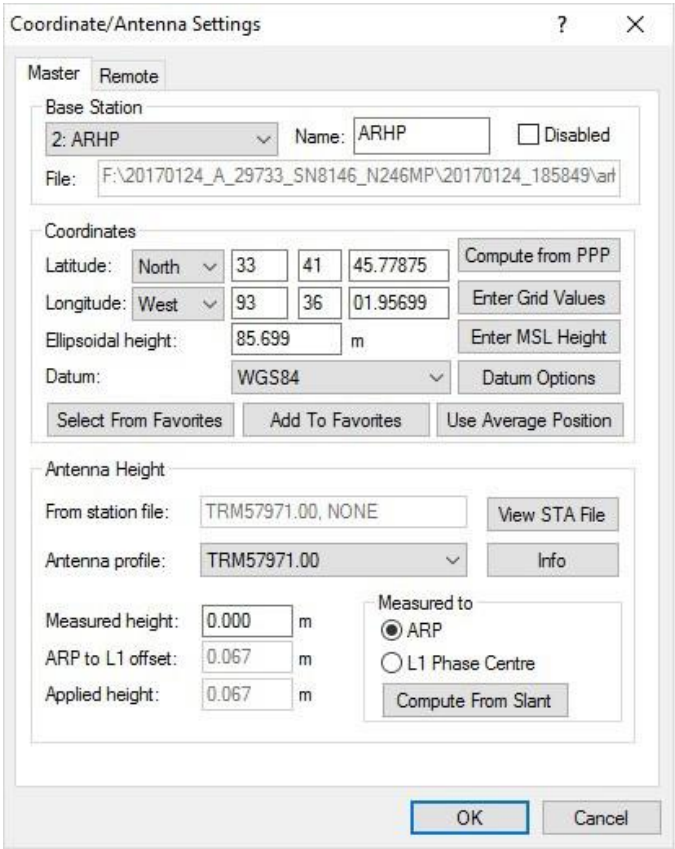

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
Roll
Pitch

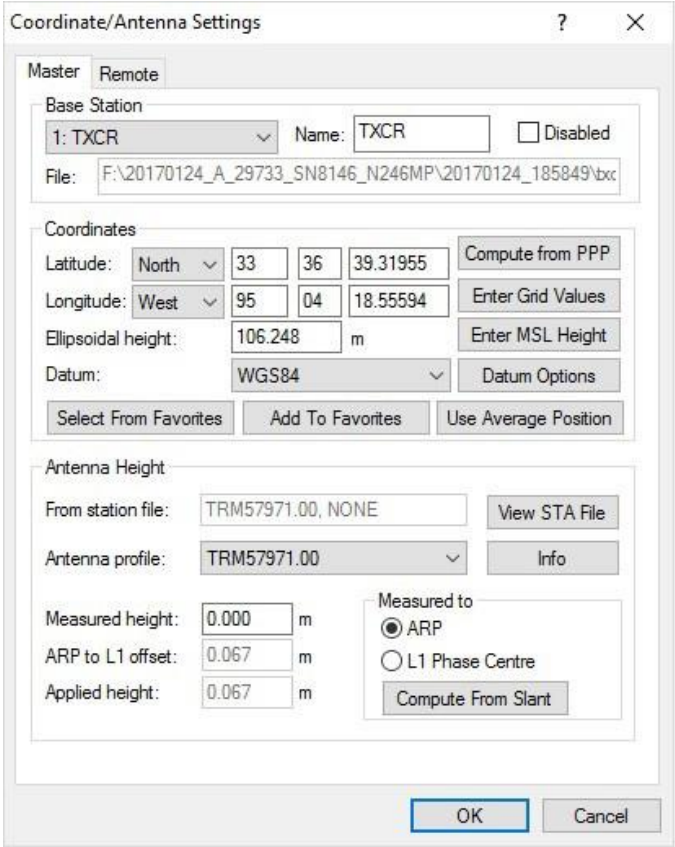

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
Height

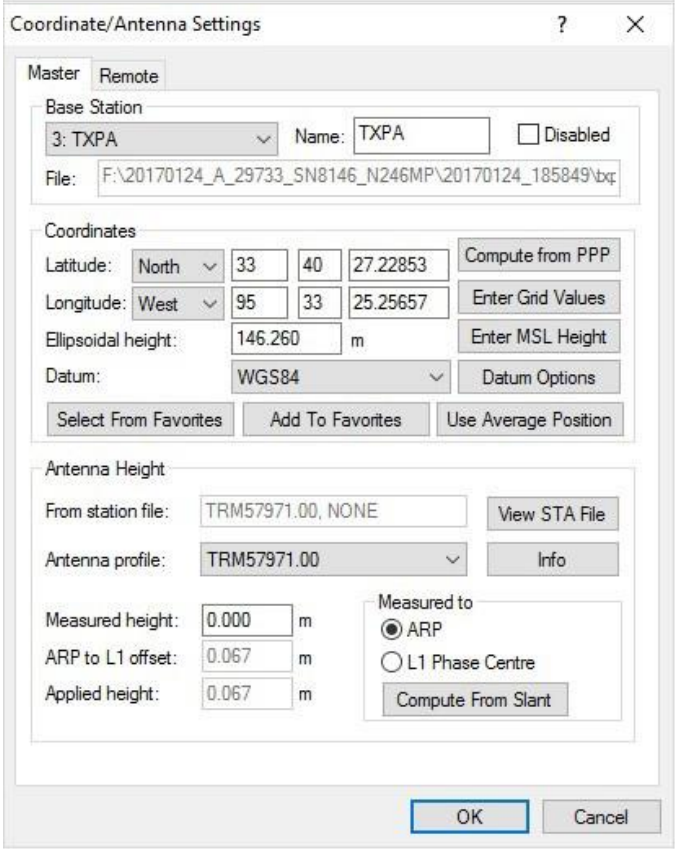

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
RMS
SD

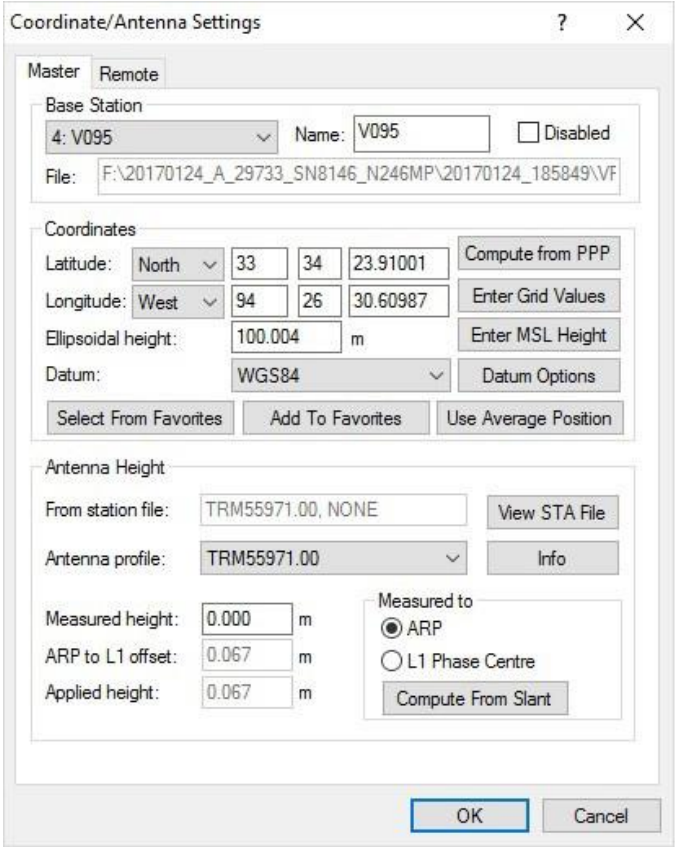

Separation (arcmin)
50
0
-50
-100
-150
-200
-250
-300
-350
-400
-450
-500
-550
-600
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
241500
Week 1933
242000
242500
243000
243500
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: ARHP
Name: ARHP
Disabled
File: F:\20170124_A_29733_SN8146_N246MP\20170124_185849\arh
Coordinates
Latitude: North 33 41 45.77875
Longitude: West 93 36 01.95699
Ellipsoidal height: 85.699 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: TXCR
Name: TXCR
Disabled
File: F:\20170124_A_29733_SN8146_N246MP\20170124_185849\bx
Coordinates
Latitude: North 33 36 39.31955
Longitude: West 95 04 18.55594
Ellipsoidal height: 106.248 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: TXPA
Name: TXPA
Disabled
File: F:\20170124_A_29733_SN8146_N246MP\20170124_185849\bx
Coordinates
Latitude: North 33 40 27.22853
Longitude: West 95 33 25.25657
Ellipsoidal height: 146.260 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: V095
Name:
V095
Disabled
File:
F:\20170124_A_29733_SN8146_N246MP\20170124_185849\VF
Coordinates
Latitude:
North
33
34
23.91001
Compute from PPP
Longitude:
West
94
26
30.60987
Enter Grid Values
Ellipsoidal height:
100.004
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

Flight Log

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-24-17
Lift: (A) B C D E Pg 1 of 1

Project: RED RIVER LIDAR Proj #: 29377 Flight Mgmt File: 20170124_

Aircraft: 246MP Begin Hobbs: 1258.7 End Hobbs: 1261.0 Total: 2.3 Pilot: CARL C Co-Pilot: Tech: M AUST

Dep Apt: TXK Dep Time (Lcl): 1:10 (Z): 19:10 Arr Apt: TXK Arr Time (Local): 3:30 (Z): 21:30 Tot Time Aloft:

CORS: (Y) / N Sta 1: ARHD Sta 2: Flyovers: (Y) / N If Y, times: Sta1) 19:20 Sta2)

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

Gd Temp beg: 20 °c End: 23 °c OAT beg: 12 °c End: °c Altimeter begin: 29.73 end: 29.66

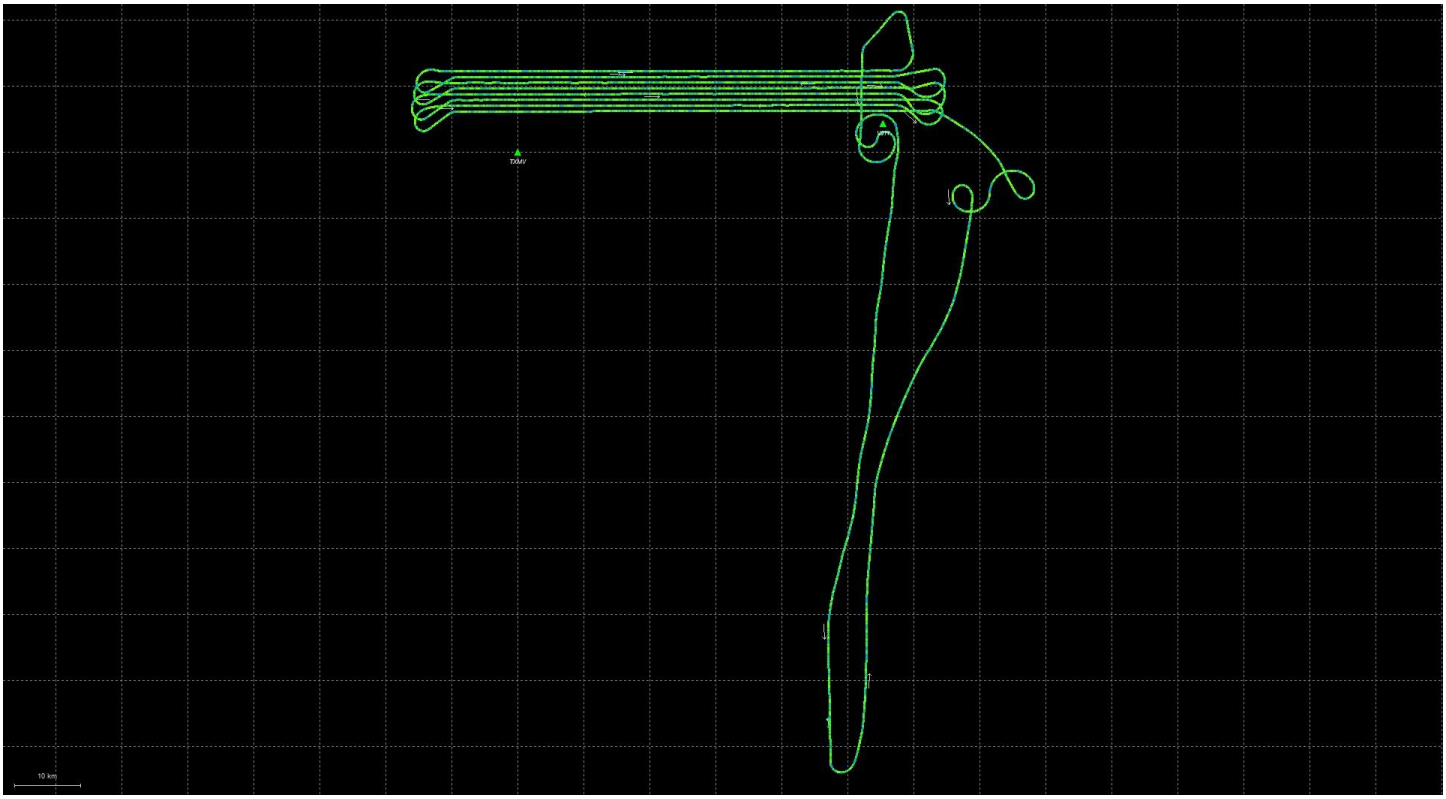
LiDAR	Type PLS80	Serial # 8146	Alt AGL	Alt AMSL 6.9	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 40	Scan Freq 52	MpiA Y / N	Pulses in Air	Pulse Rate 397	Power 100	PPSM

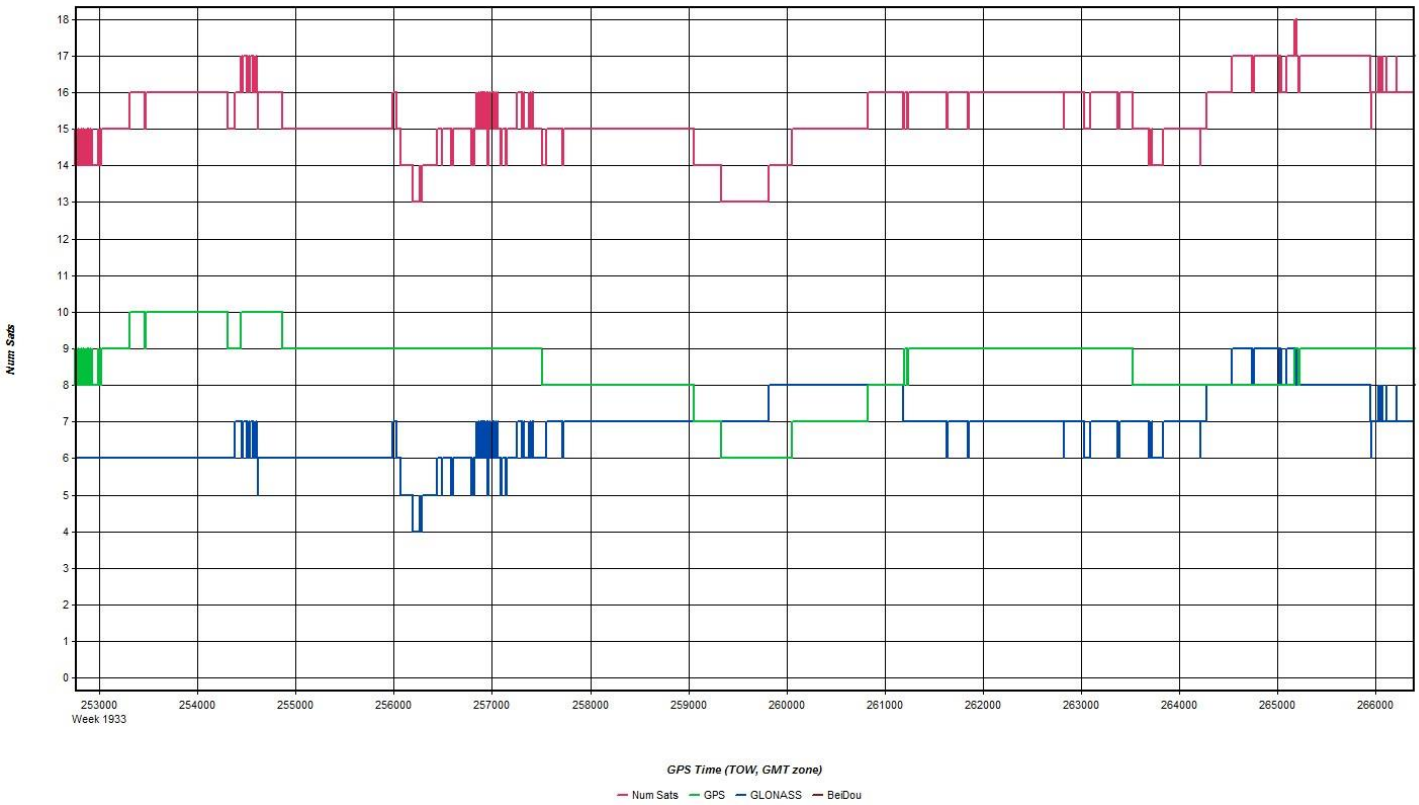
Beg GB 647	Storage Name/#
End GB	
Tot GB	

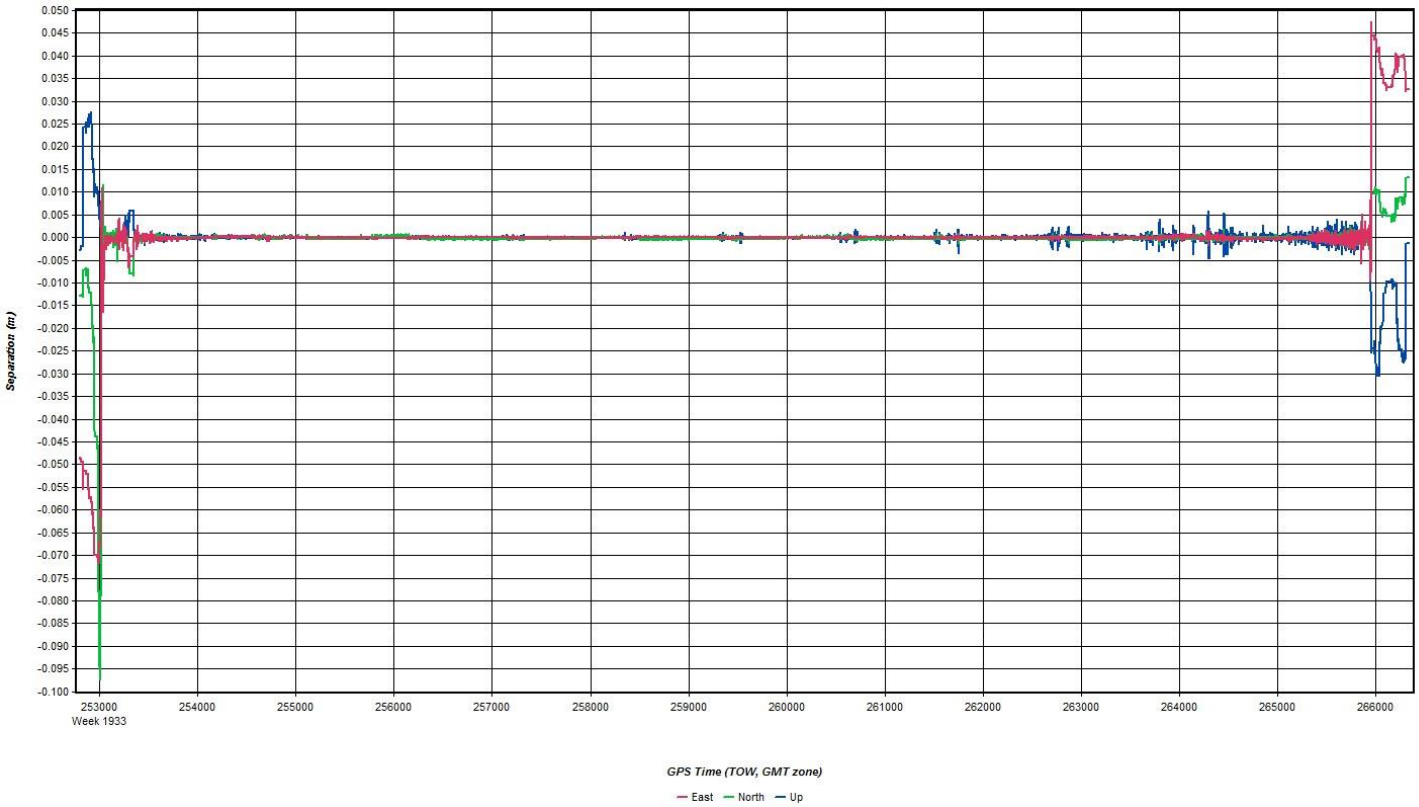
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
212	W	1950	2011	129	1.3/19	7.0		+	SENSOR STARTED @ 19:00 REFLIGHT
213	E	2019	2037	166	1.3/18	7.0			FIGURE 8's 19:36-19:42 WIND 239° @ 56 kts
214	W	2047	21:02	135	1.2/18	6.9		+	RED ERROR - BACK REFLECTION - SHUTTING DOWN
									1.25 ONLINE TIME GOT Fixed

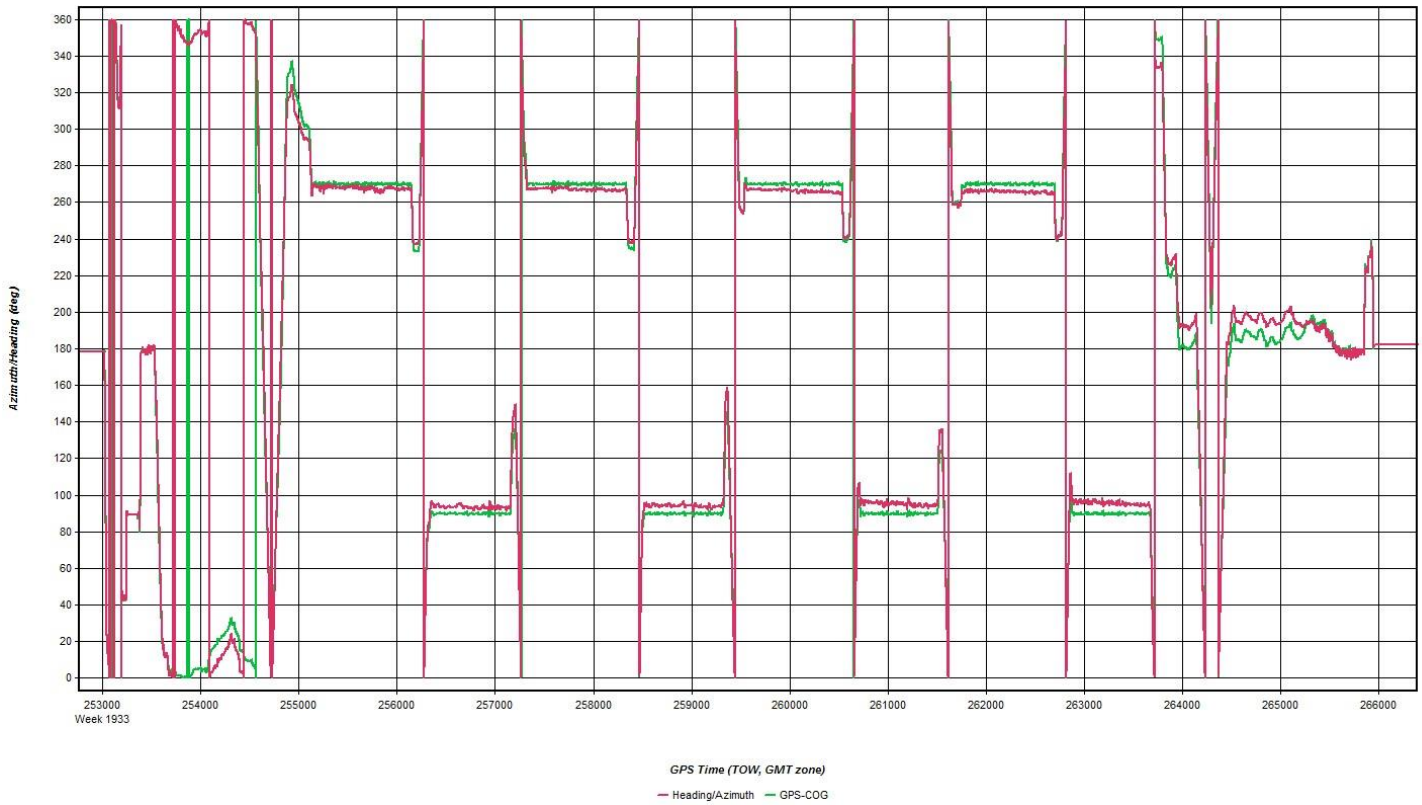
Total Proj Lines:	Lines Flown:	Lines Remain:	Online Time: 1	Mob Time: 1.25	Notes:

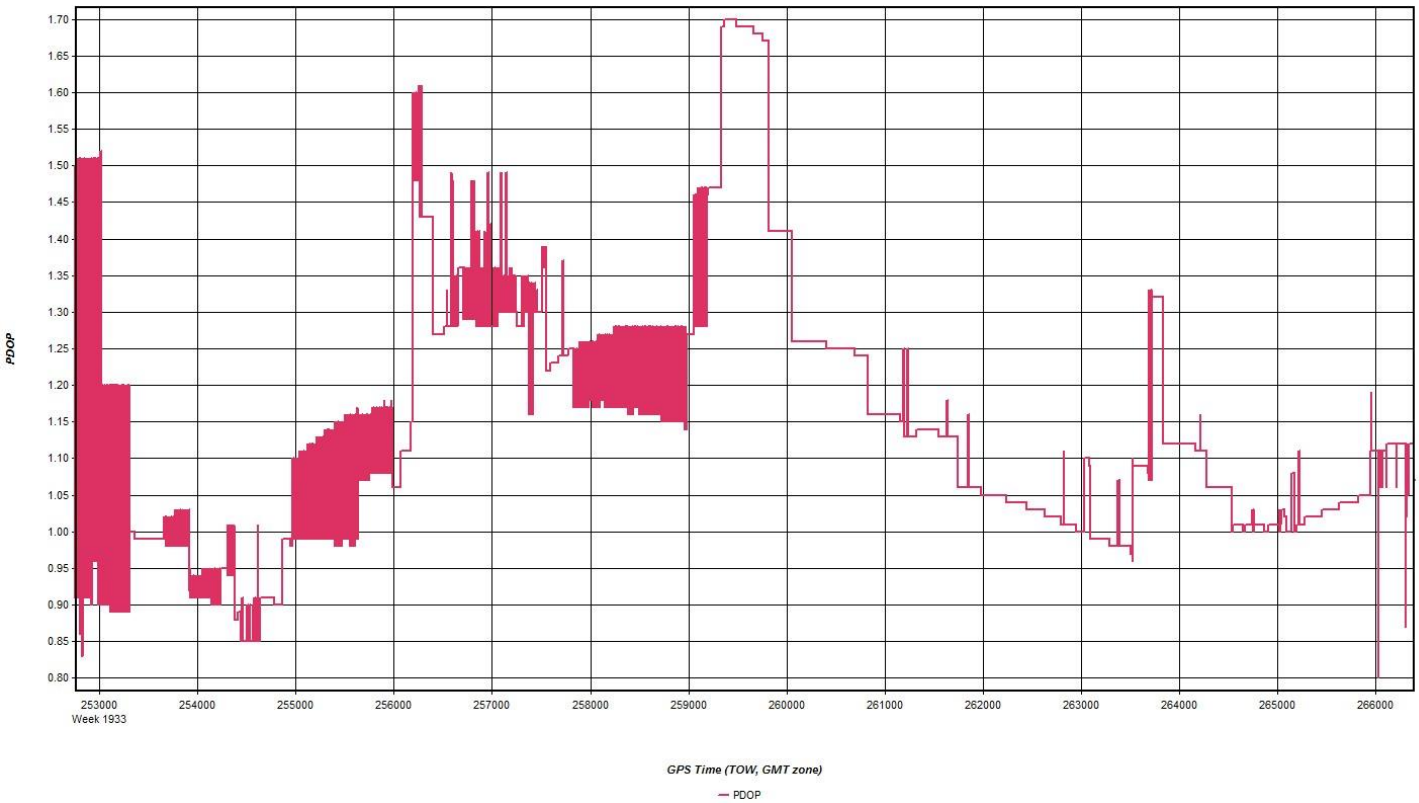
Jan 24, 2017-A (N812TB, SN7178)

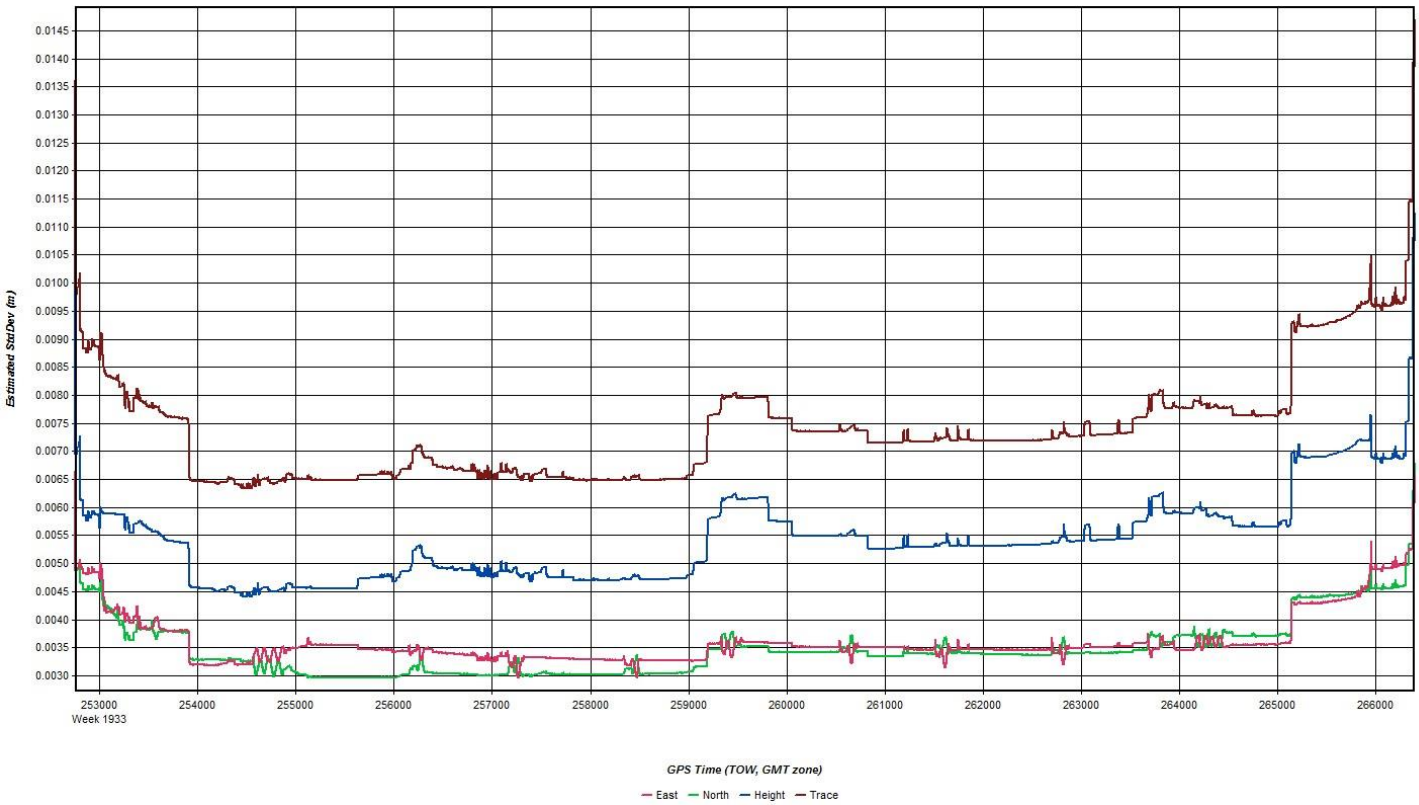


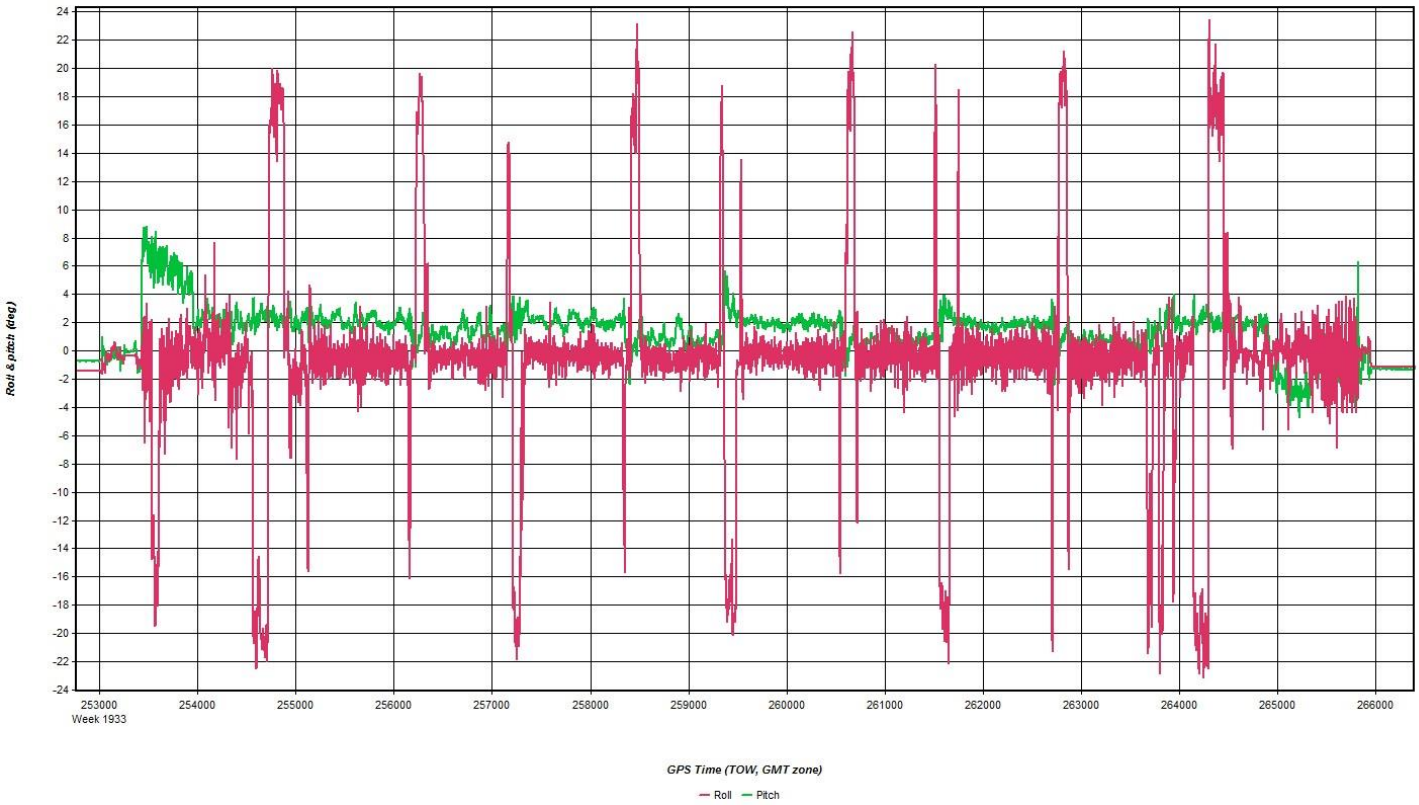

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

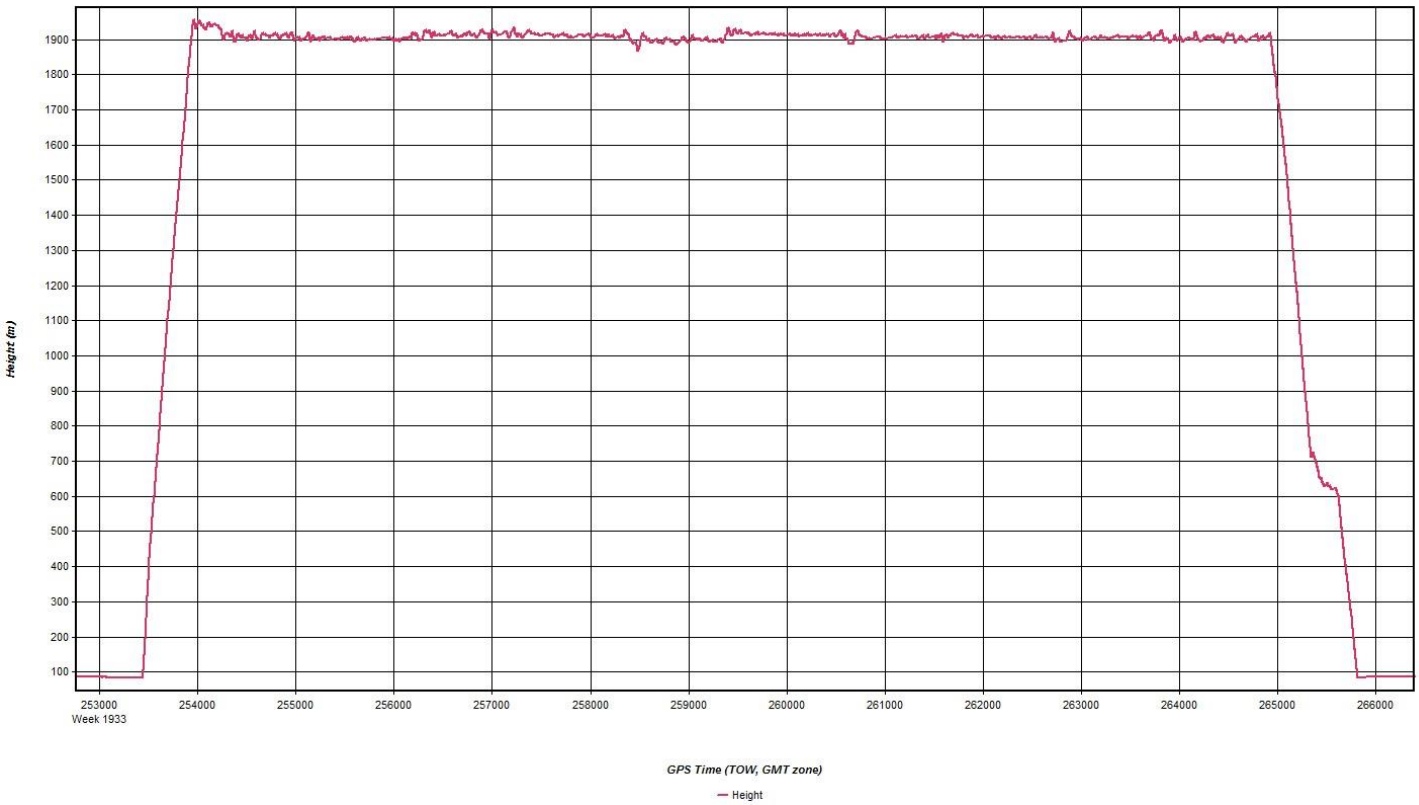

Separation (m)
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
-0.075
-0.080
-0.085
-0.090
-0.095
-0.100
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
East
North
Up

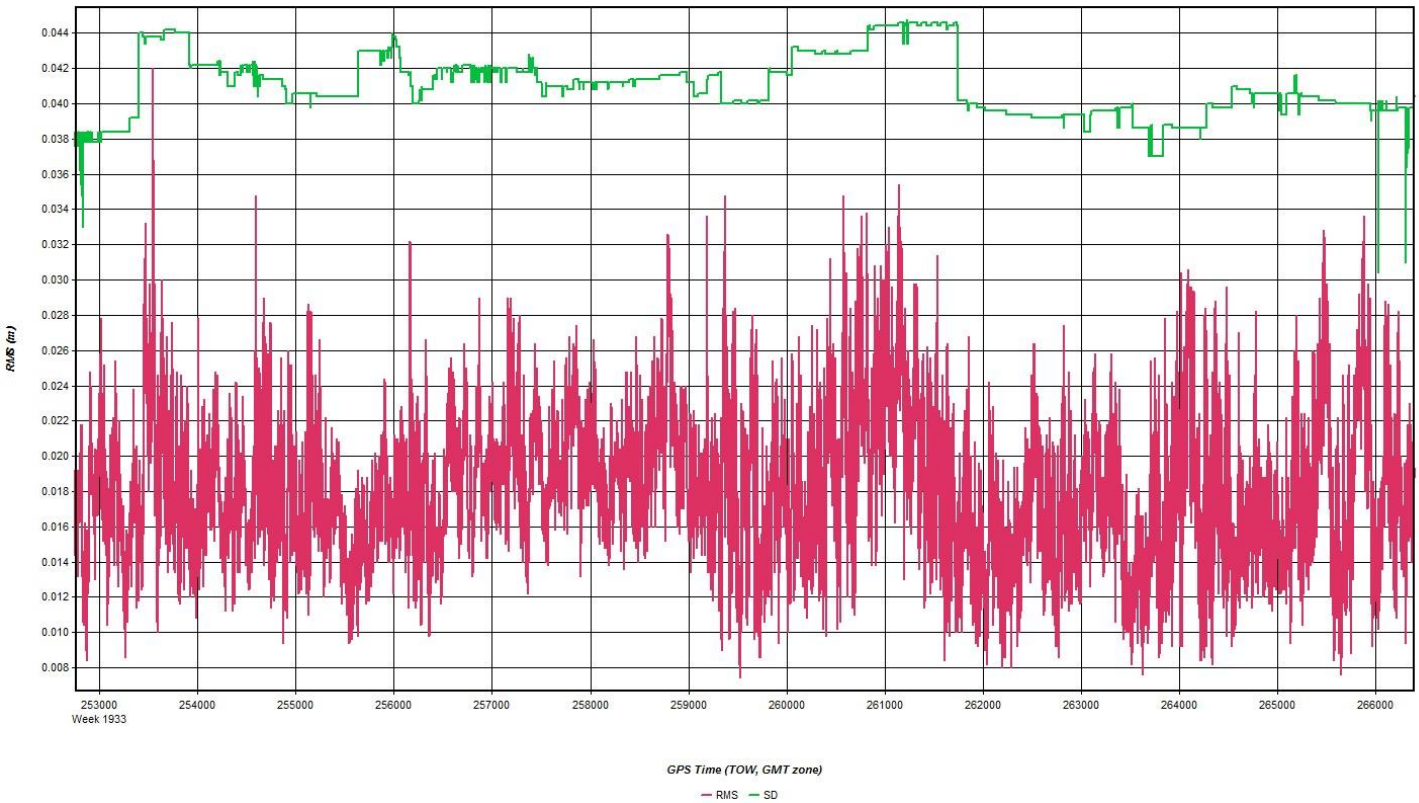

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

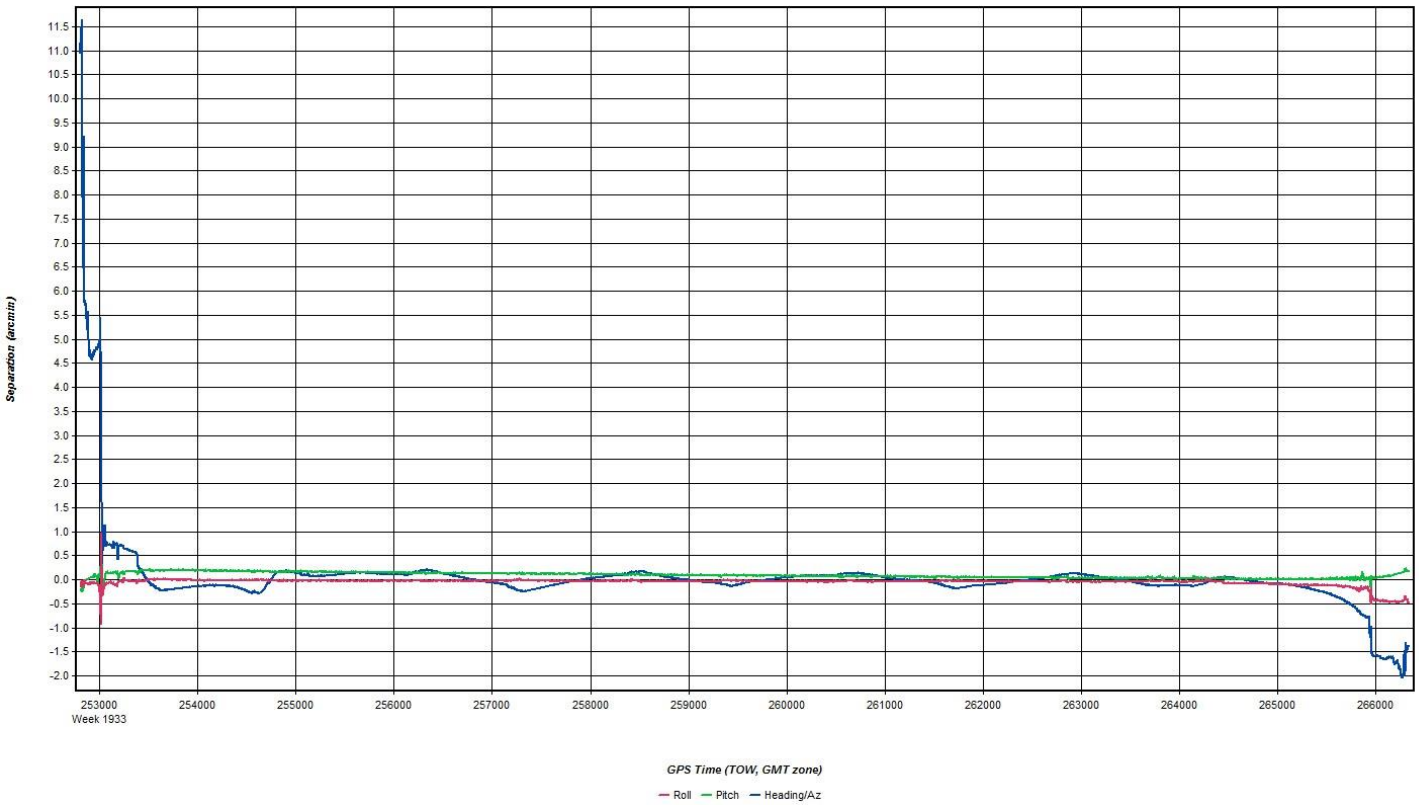

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
PDOP

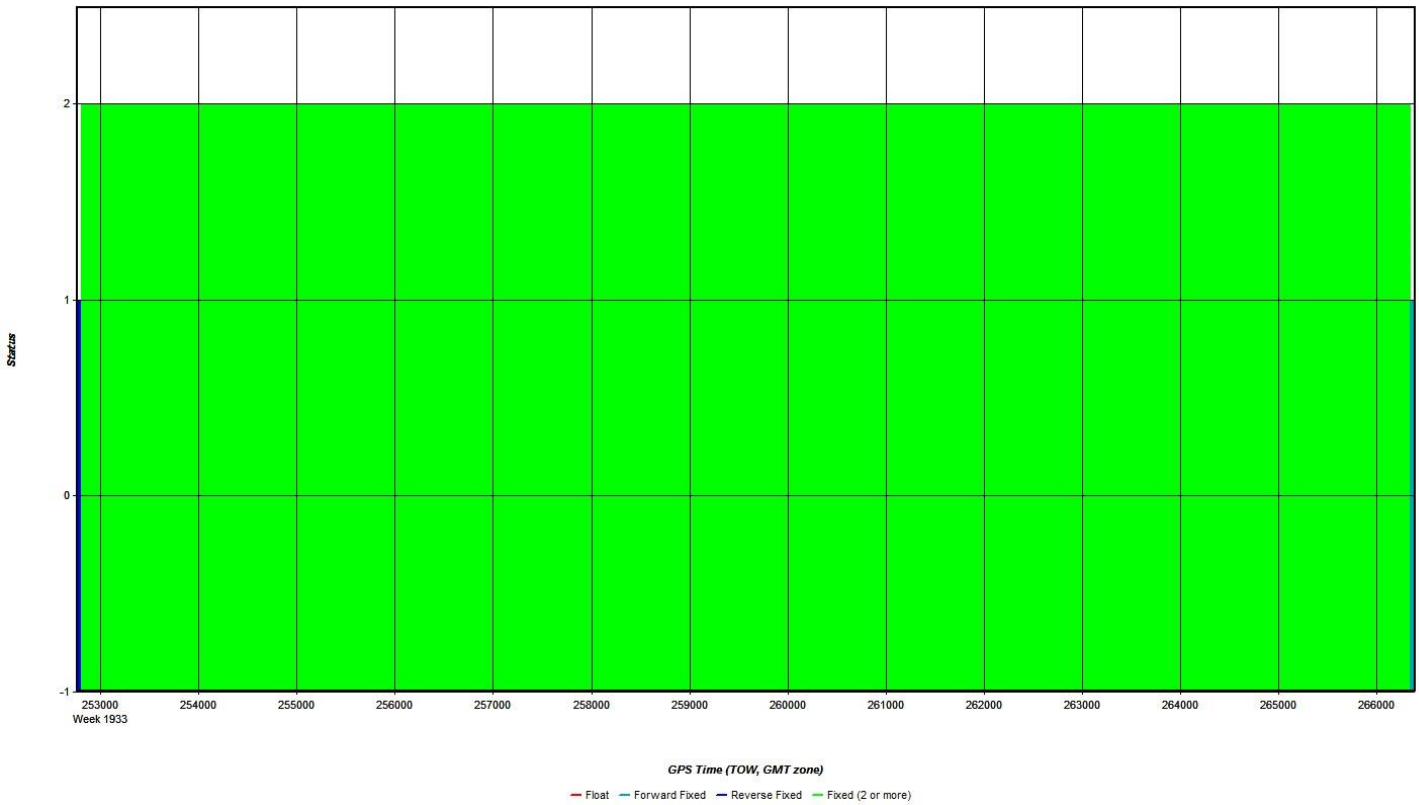

Estimated StdDev (m)
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

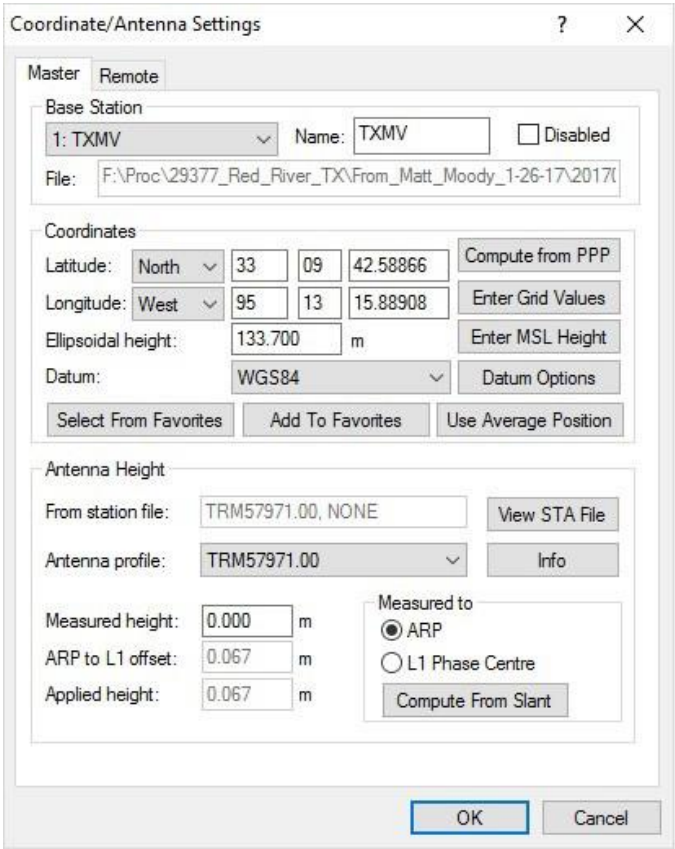

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
Roll
Pitch

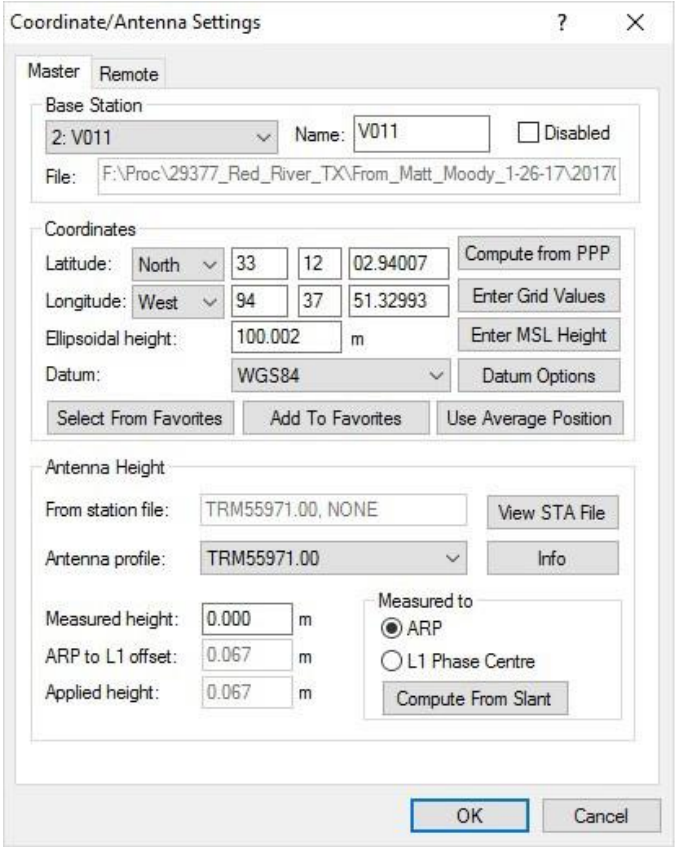

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
Height


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
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
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
-1.5
-2.0
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
253000
Week 1933
254000
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMV
Name: TXMV
Disabled
File: F:\Proc\29377_Red_River_TX\From_Matt_Moody_1-26-17\2017(
Coordinates
Latitude: North 33 09 42.58866
Longitude: West 95 13 15.88908
Ellipsoidal height: 133.700 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
2: V011
Name:
V011
Disabled
File:
F:\Proc\29377_Red_River_TX\From_Matt_Moody_1-26-17\2017(
Coordinates
Latitude:
North
33
12
02.94007
Compute from PPP
Longitude:
West
94
37
51.32993
Enter Grid Values
Ellipsoidal height:
100.002
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

Flight Log

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

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-24-17

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

Project: RED RIVER, TX FEMA MT PLEASANT **Proj #:** 29377 **Flight Mgmt File:** REDRIVER_2PT5A...

Aircraft: N812TB **Begin Hobbs:** 4276.7 **End Hobbs:** 4280.0 **Total:** 3.3 **Pilot:** RADTKE **Co-Pilot:** - **Tech:** MOUDY

Dep Apt: GGG **Dep Time (Lcl):** 1632 **(Z):** 2222Z **Arr Apt:** GGG **Arr Time (Local):** 0750 **(Z):** 0150 **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)**

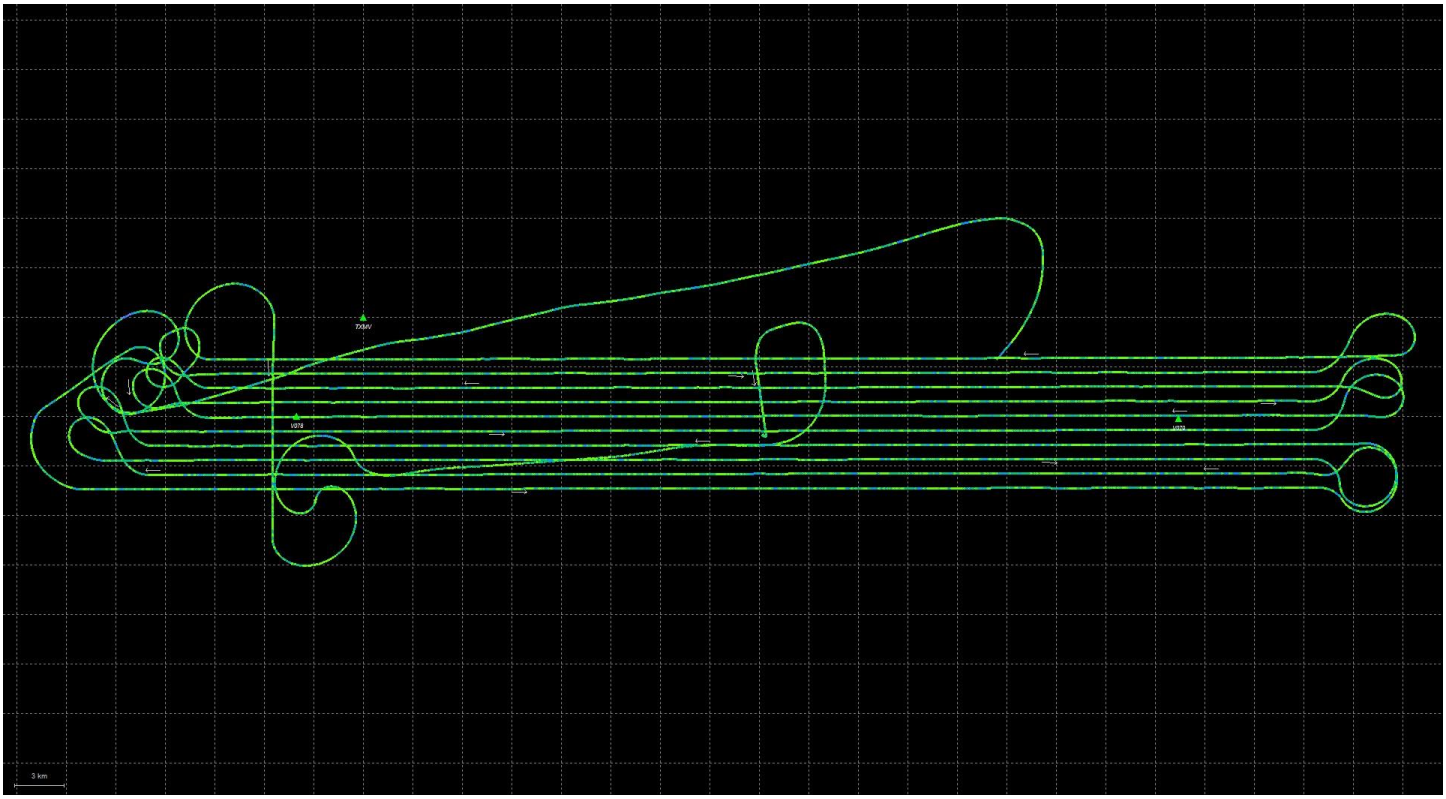
Gd Temp beg: °c **End:** °c **OAT beg:** °c **End:** °c **Altimeter begin:** **end:**

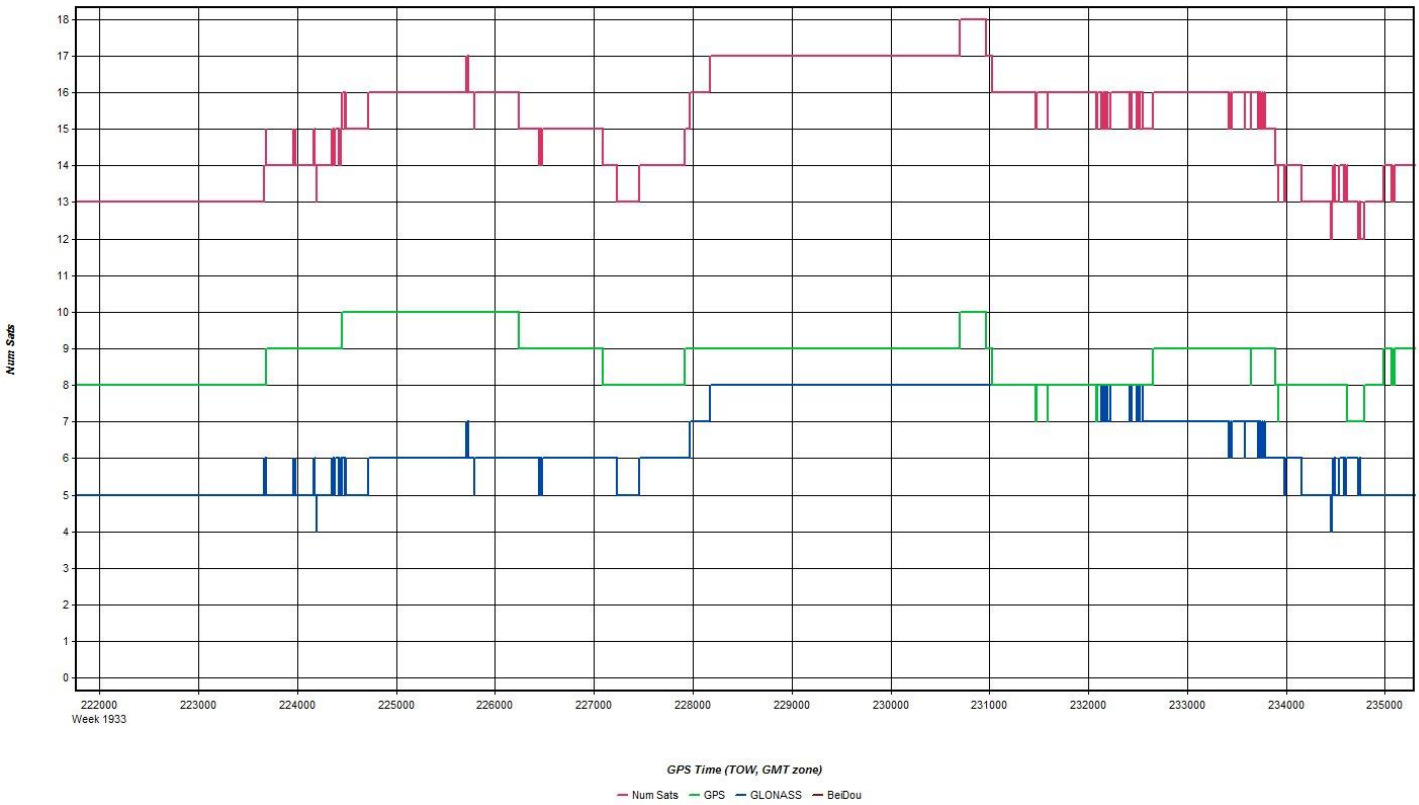
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/s
	ALS70	7178	± 5700'	± 6200'	± 500	150 KTS	0.59 M	121	169	48	7178 5503
	FOV 40°	Scan Freq 53Hz	MpIA (Y) / N	Pulses In Air 2	Pulse Rate 295 KHz	Power 100%	PPSM 2.83				

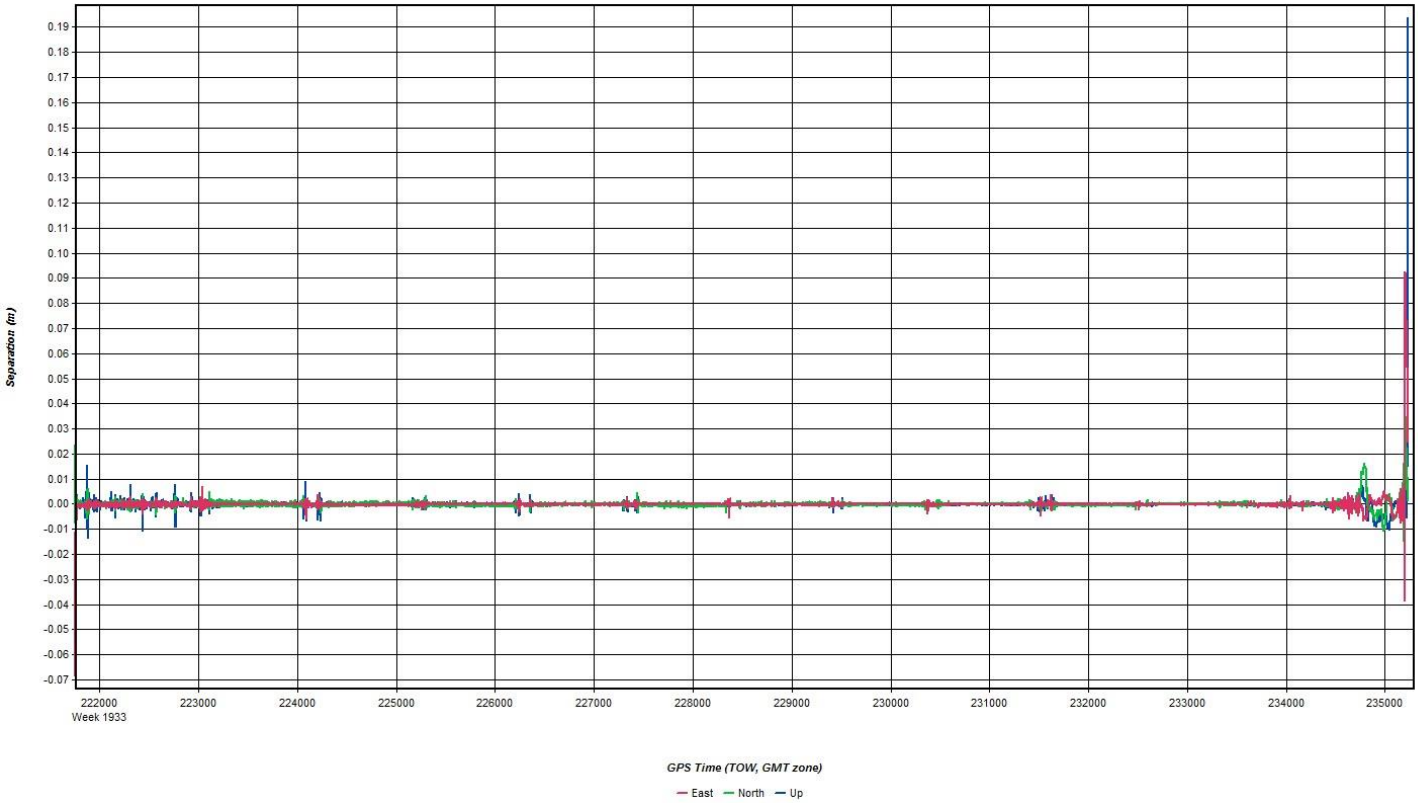
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.	DQ
314	270	2253	2308	132	1.1/19	6220	2	-		
313	90	2312	2325	162	1.3/18	6300	4	-		
312	270	2329	2345	133	1.1/18	6300	2	-		
311	90	2349	0001	166	1.3/16	6240	5	-		
310	270	0006	0021	134	1.1/18	6290	3	-		
309	90	0025	0038	168	1.2/18	6260	6	-		
308	270	0042	0057	130	1.3/18	6280	3	-		
307	90	0101	0114	166	1.2/18	6260	7	-		
T1R	180	0119	0121	147	1.1/20	6240	12	-	- MANUAL TIE LINE	

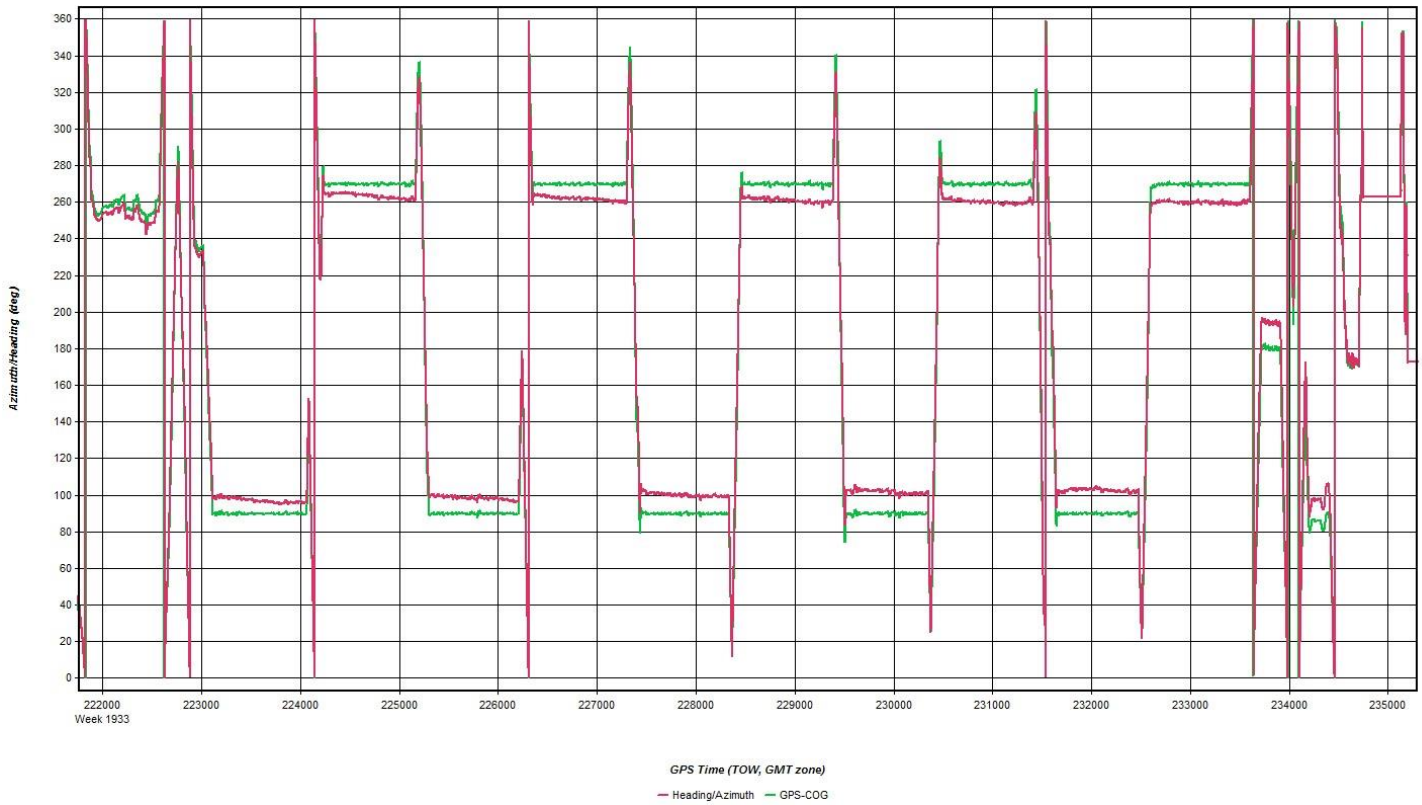
Total Proj Lines: 67 **Lines Flown:** 8 **Lines Remain:** 6 **Online Time:** 2.5 **Mob Time:** 1.0 **Notes:**

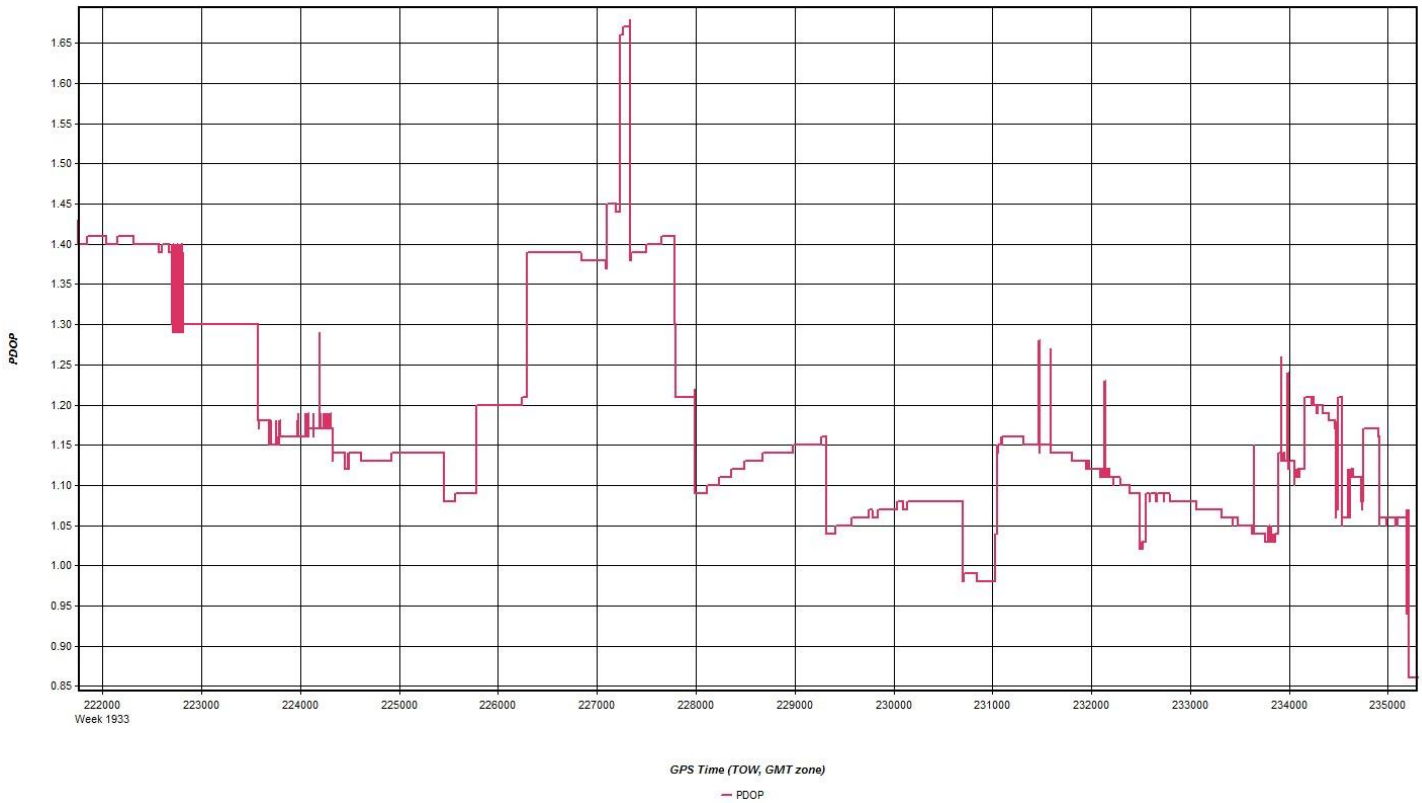
Jan 24, 2017-A1 (N812TB, SN7178)

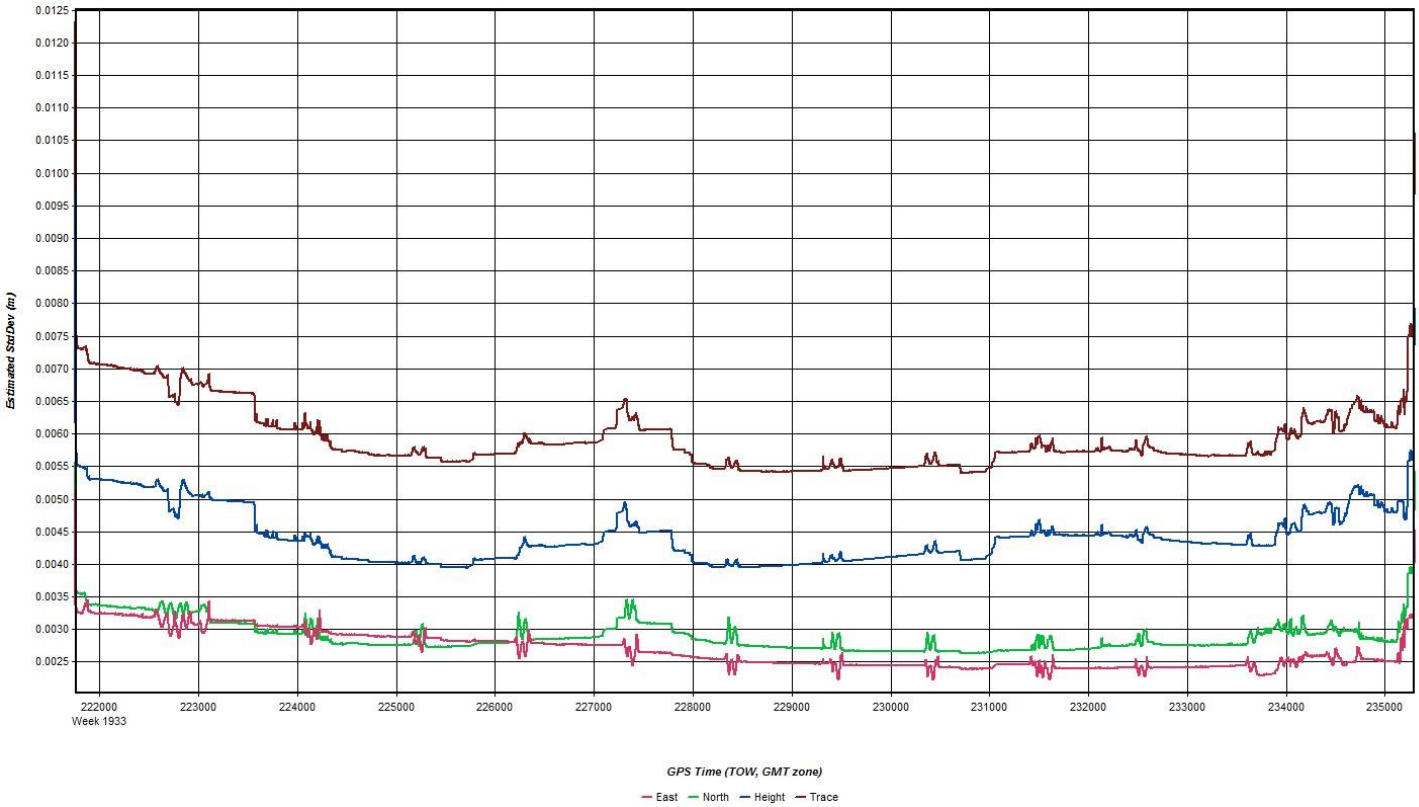


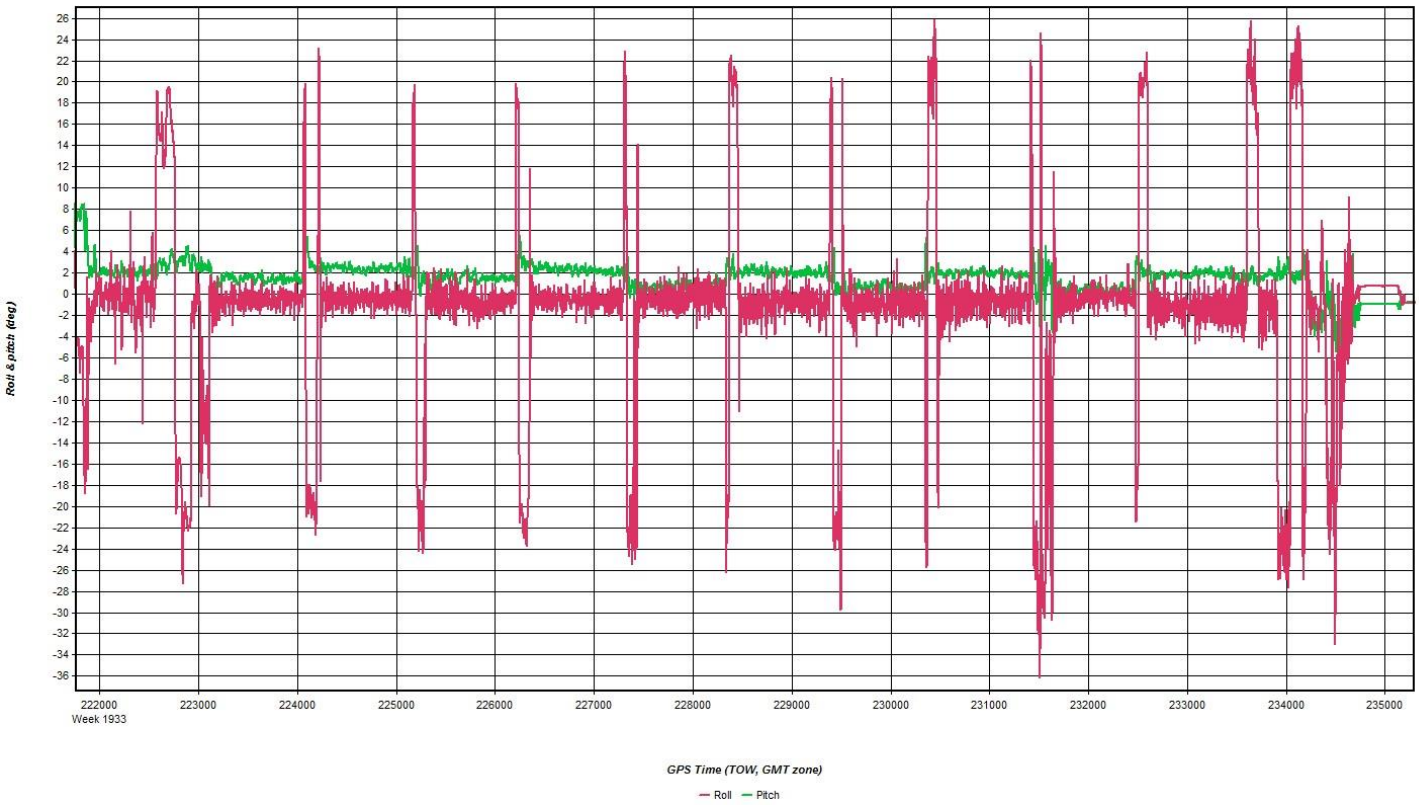

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

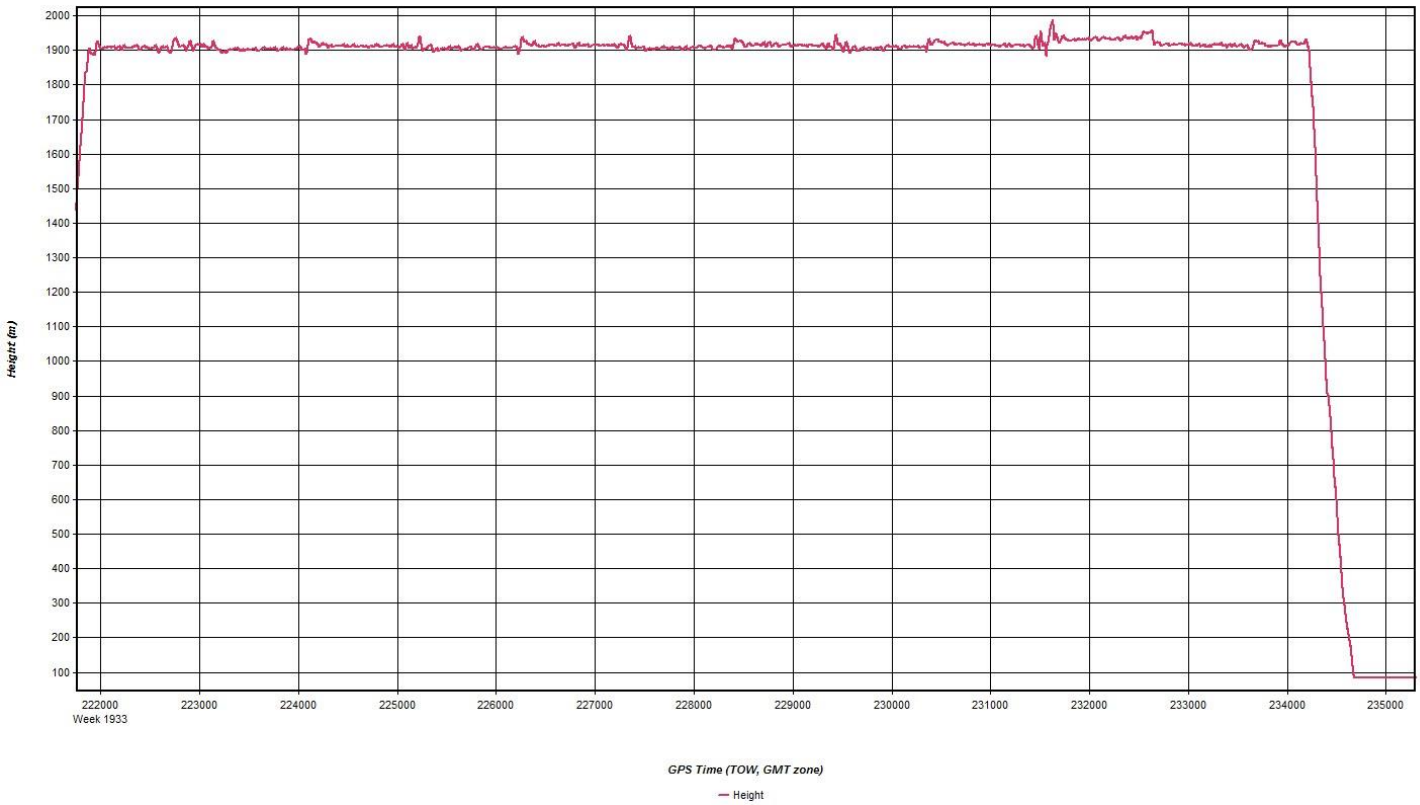

Separation (m)
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
East
North
Up

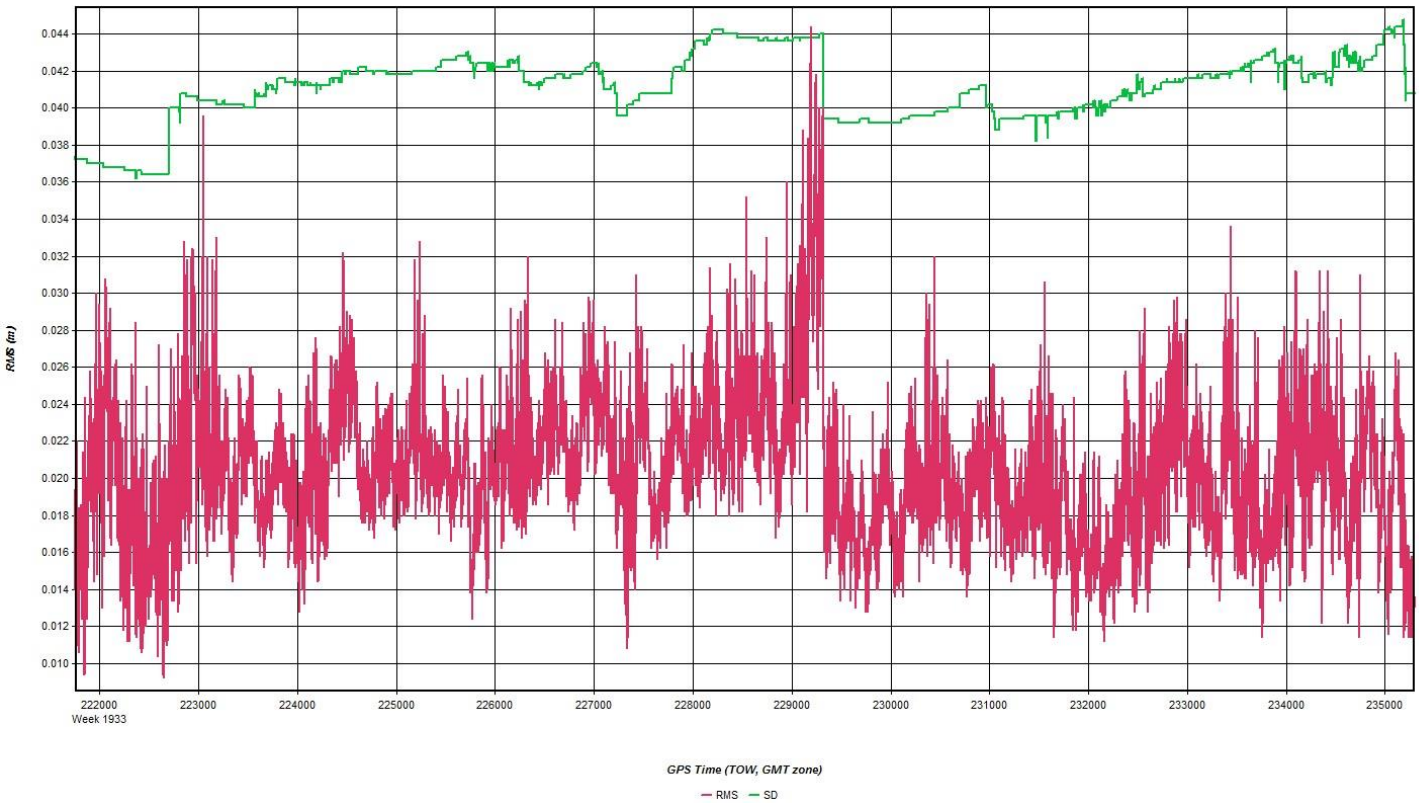

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

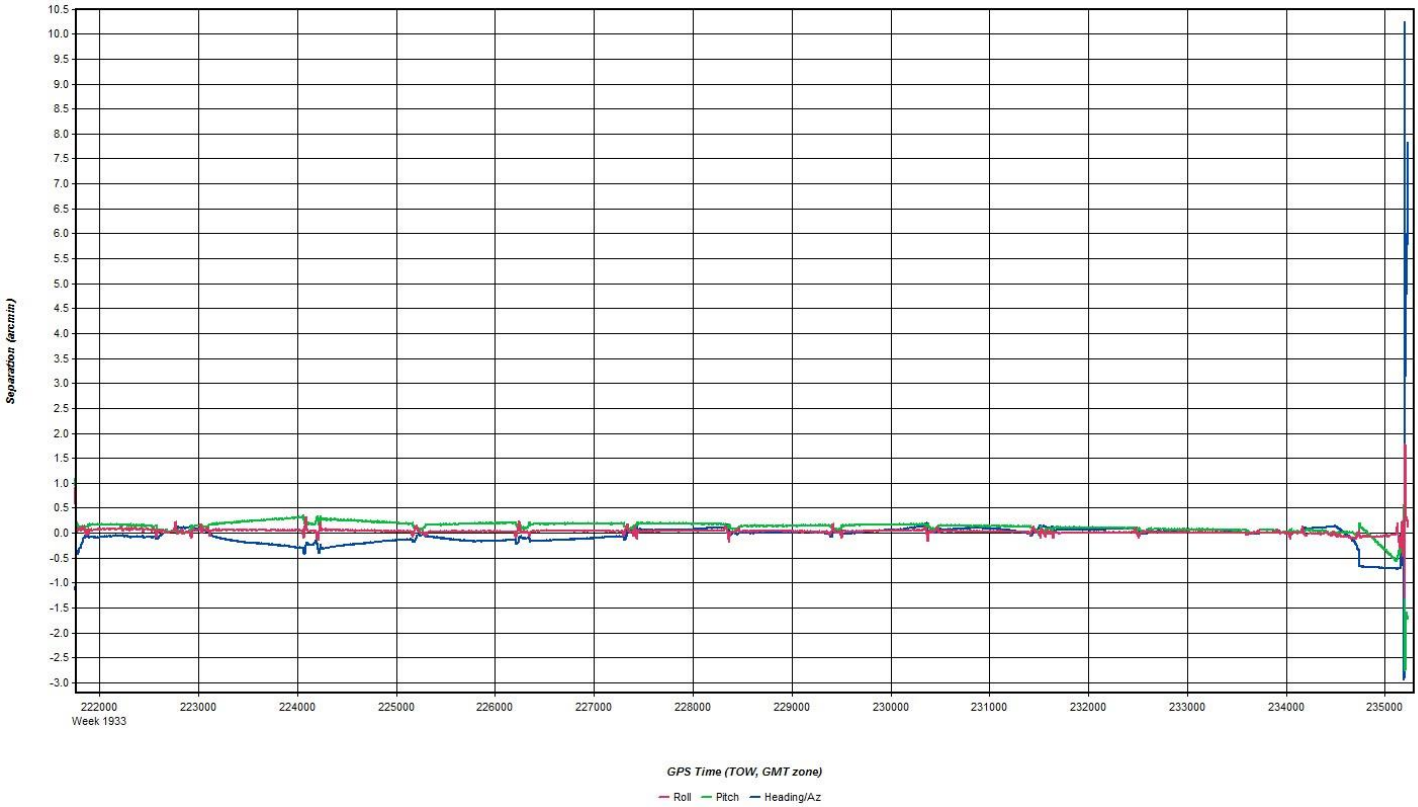

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
PDOP

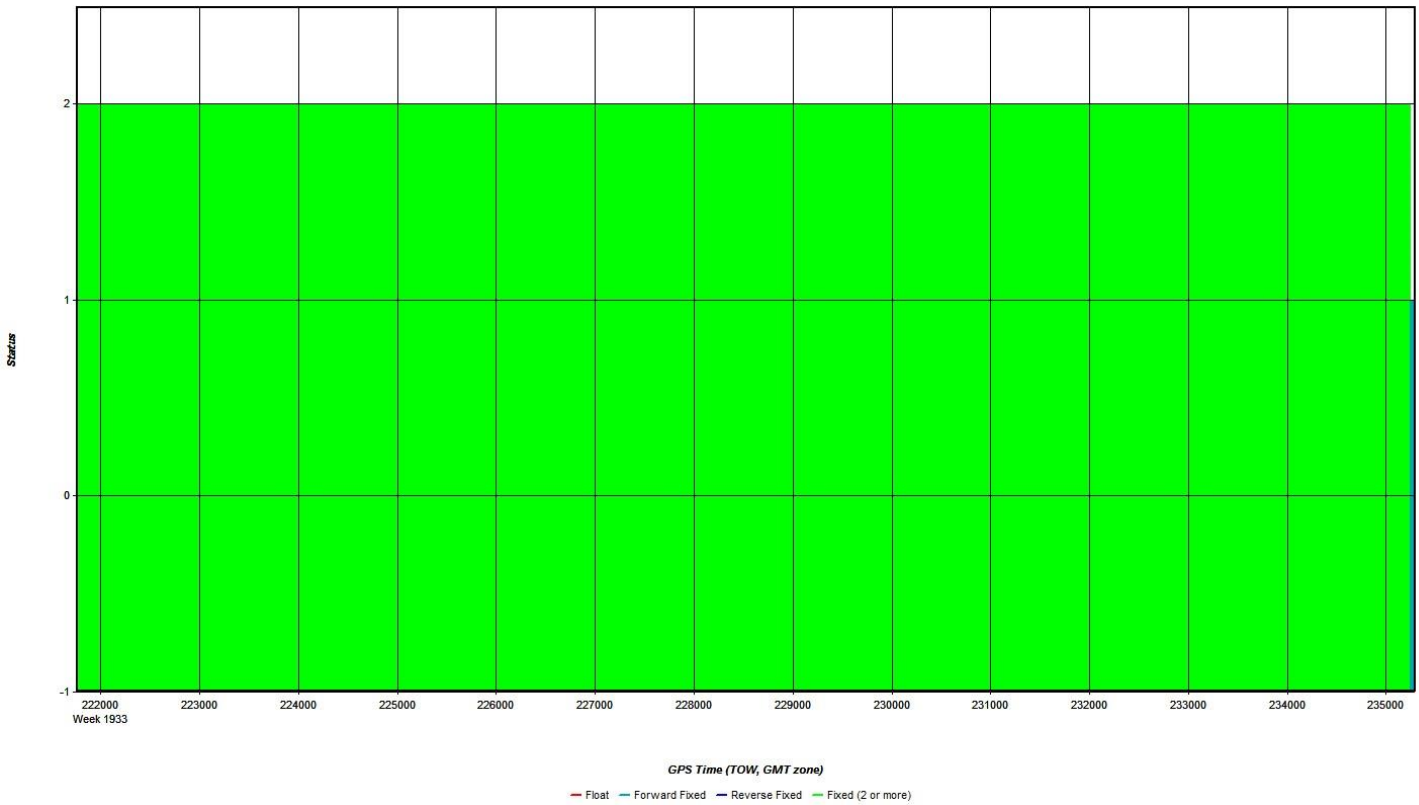

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

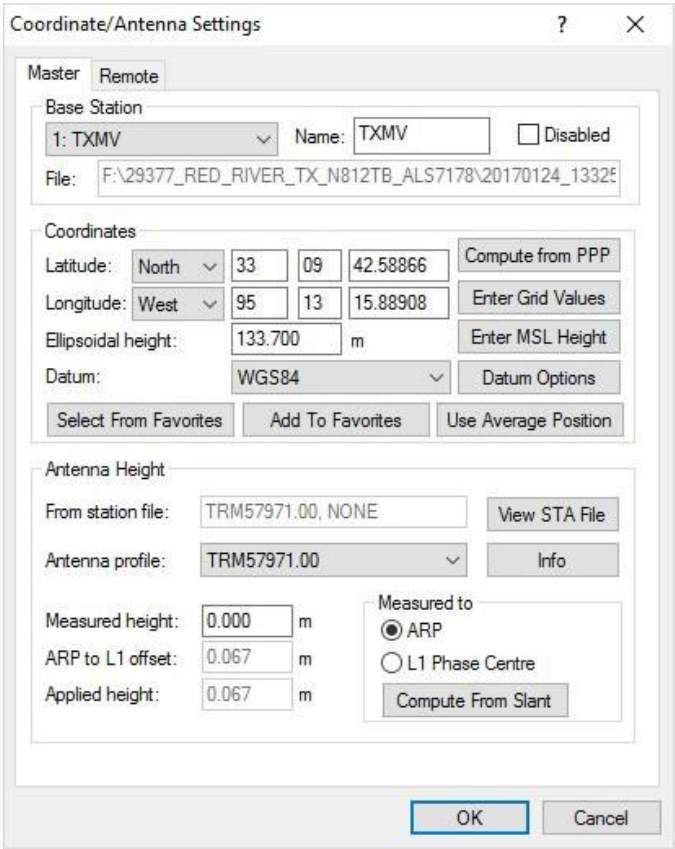

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Roll
Pitch

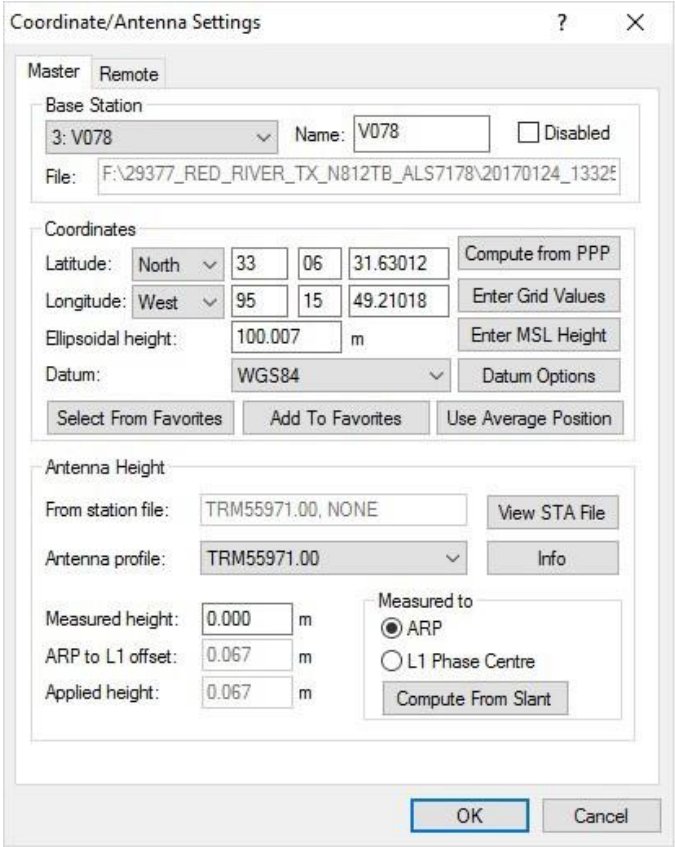

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
Height

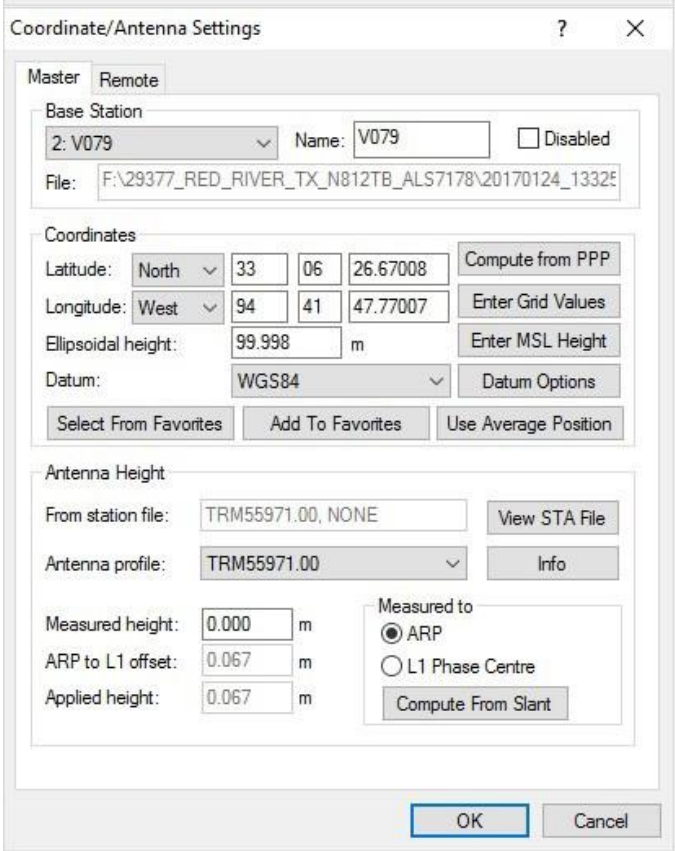

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
222000
Week 1933
223000
224000
225000
226000
227000
228000
229000
230000
231000
232000
233000
234000
235000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
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
-1.5
-2.0
-2.5
-3.0
222000
Week 1933
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
222000
Week 1933
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
1: TXMV
Name:
TXMV
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170124_13325
Coordinates
Latitude:
North
33
09
42.58866
Compute from PPP
Longitude:
West
95
13
15.88908
Enter Grid Values
Ellipsoidal height:
133.700
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
3: V078
Name: V078
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170124_13325
Coordinates
Latitude: North 33 06 31.63012
Longitude: West 95 15 49.21018
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


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V079
Name: V079
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170124_13325
Coordinates
Latitude: North 33 06 26.67008
Longitude: West 94 41 47.77007
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: 1-24-17 A

Life: (A) B C D E Pg 1 of 2

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170124-133253

Aircraft: N812TB Begin Hobbs: 4269.4 End Hobbs: 4273.3 Total: 3.8 Pilot: JBillington Co-Pilot: — Tech: JSWAN

Dep Apt: 66G Dep Time (Lcl): 1310 (Z): +6 Arr Apt: KOSA Arr Time (Local): (Z): +6 Tot Time Aloft: 3.8

CORS: (Y) / N Sta 1: Longview / VRS Sta 2: Flyovers: (Y) / N If Y, times: Sta1) (1346) Sta2)

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

Gd Temp beg: 14 °c End: 19 °c OAT beg: 7 °c End: 12 °c Altimeter begin: 2977 end: 2978

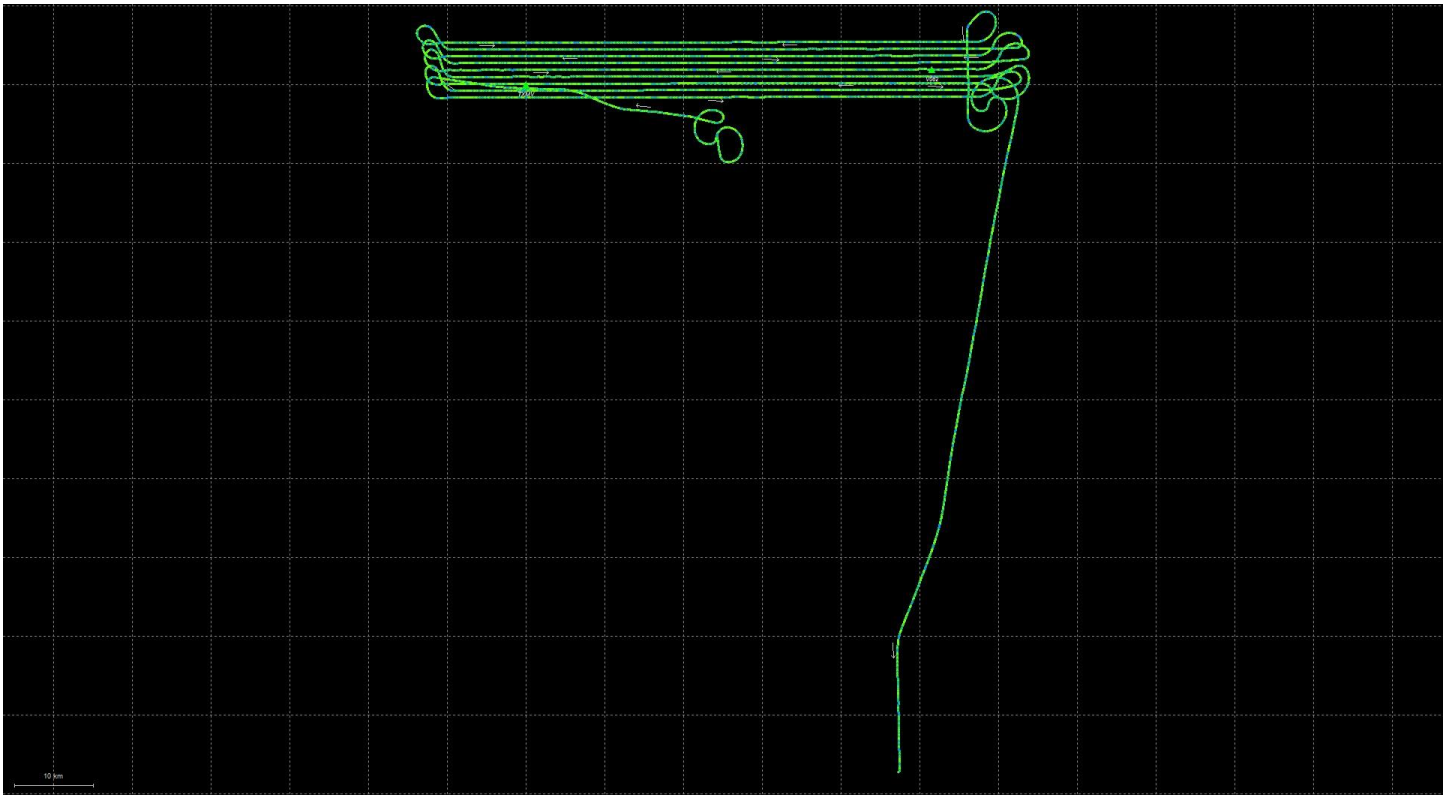
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/#
	A1570							261	200	61	3
	FOV 40	Scan Freq 53	MpIA Y / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM				

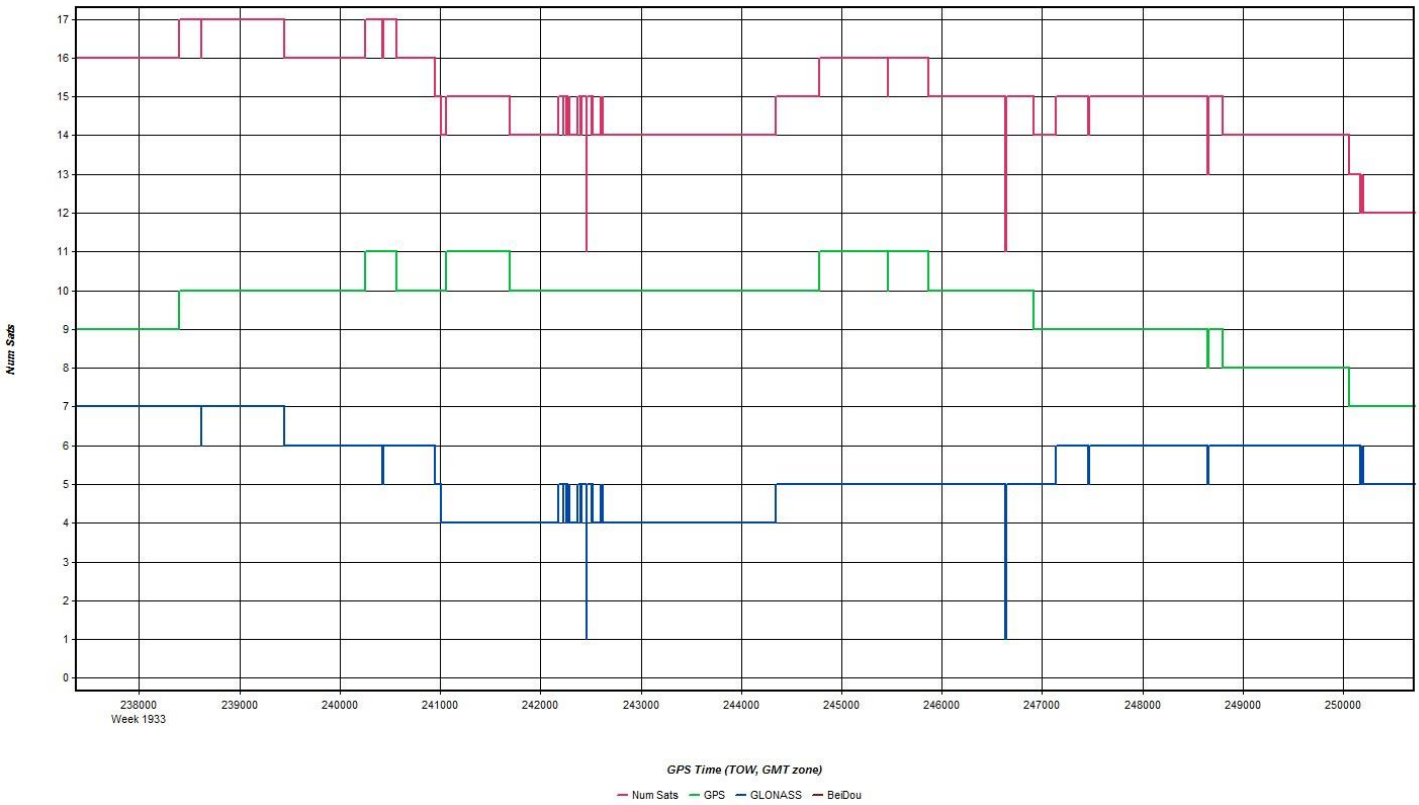
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0-5)	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
									— RtB — Camera door will not open
									— door opened shortly before Landing
									x — in air start — TXMB GORS Flyover (1346)
									Fig 8's (1350-1354)
333	90	1358	1413	142	1.3/15	6246		0	
332	270	1417	1432	149	1.1/17	6295		0	
331	90	1435	1449	163	1.2/18	6277		0	
330	270	1452	1508	148	1.3/19	6272		0	
329	90	1510	1524	160	1.0/20	6254		0	
328	270	1528	1542	150	1.2/17	6306		0	
327	90	1545	1558	143	1.2/18	6265		0	
326	270	1601	1616	150	1.2/18	6305		0/-	
325	90	1621	1634	138	1.1/19	6287		0/-	
324	270	1637	1653	146	1.3/19	6275		0/-	
xtie	180	1655	1658	132	1.1/20	6302		0/-	
									Fig 8's → KOSA Mount Pleasant TX
									(1658-1702) — 1714 Landed KOSA

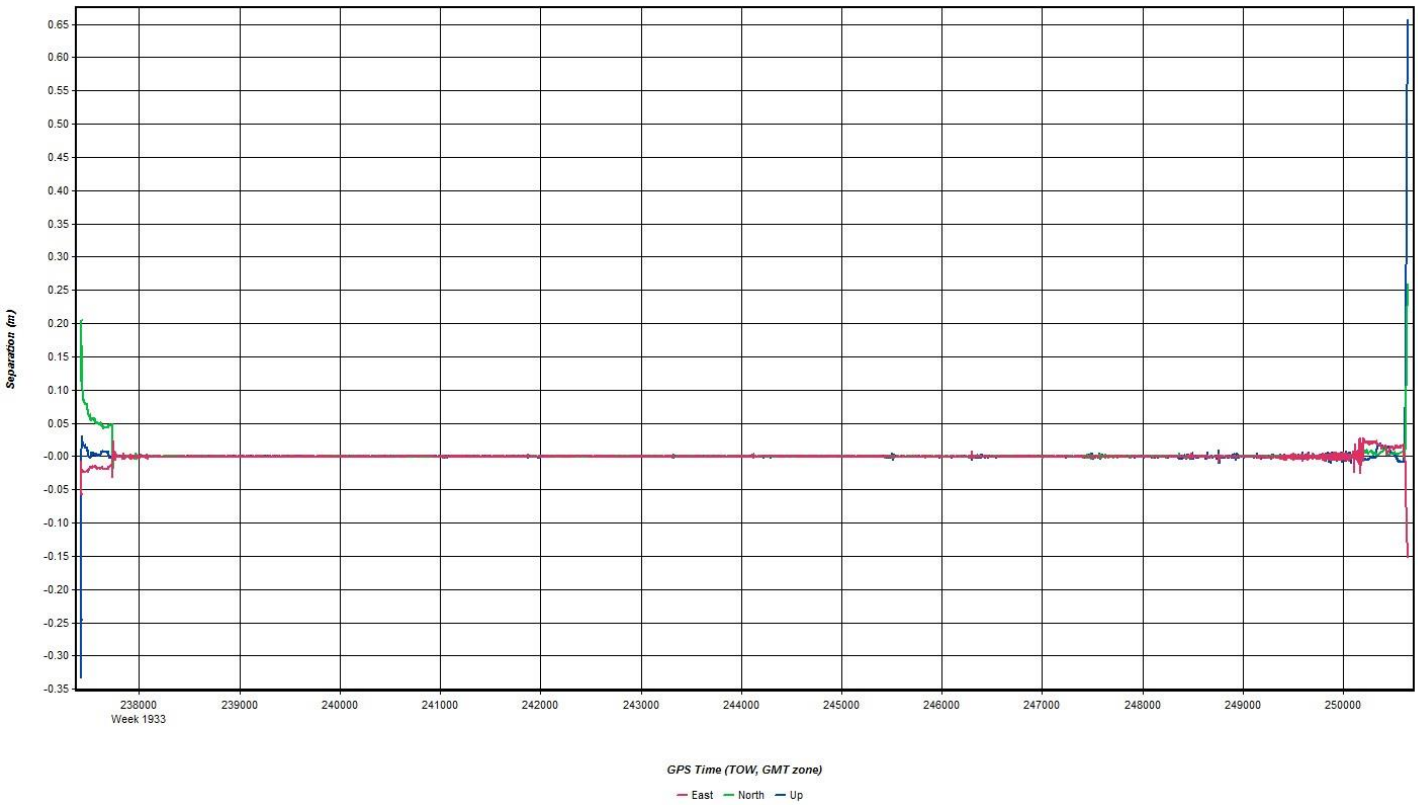
(A) Hobbs = 3.8
Online = 3.0
mob = 0.8

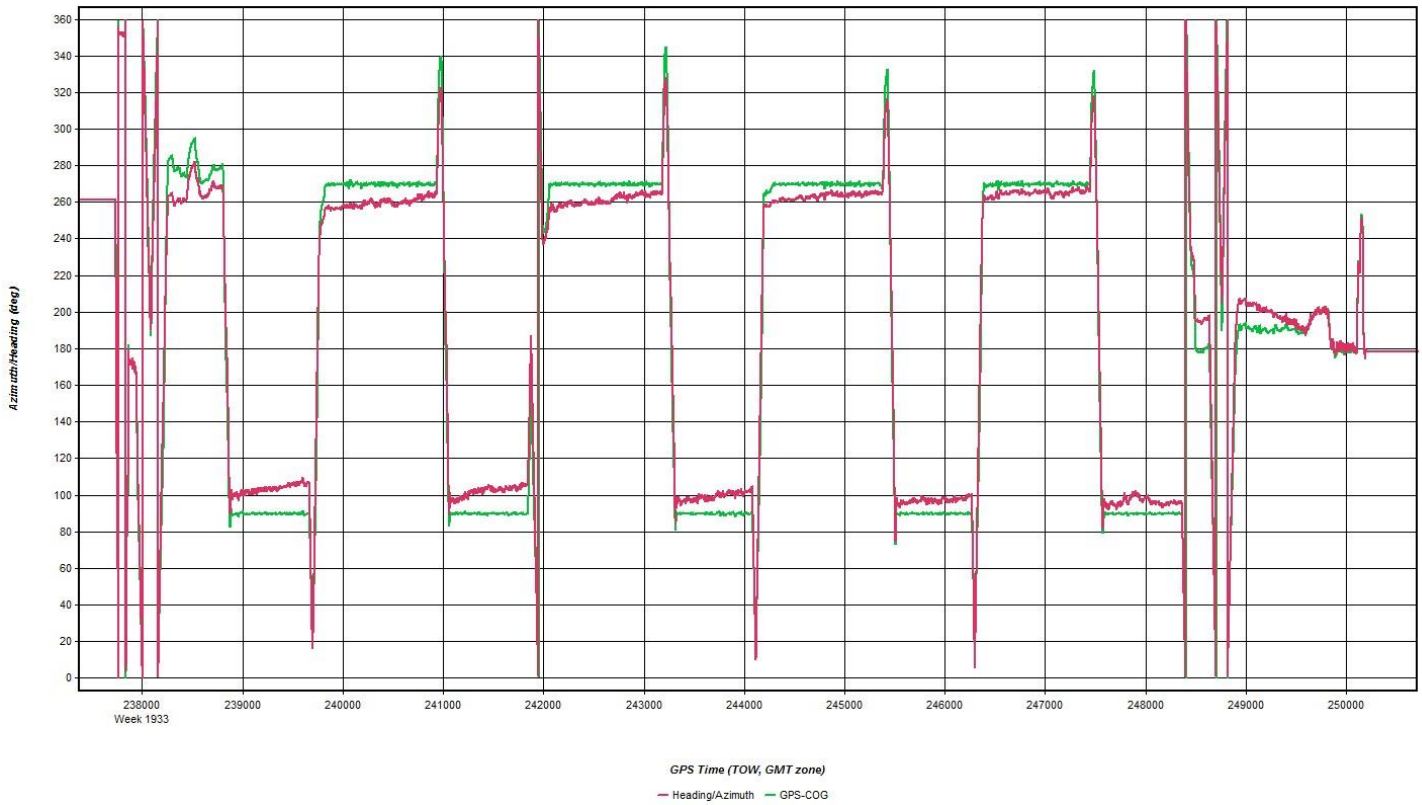
Total Proj Lines:	Lines Flown: 10	Lines Remain:	Online Time: 3.0	Mob Time: 0.8	Notes: IN air start

Jan 24, 2017-B (N812TB, SN7178)

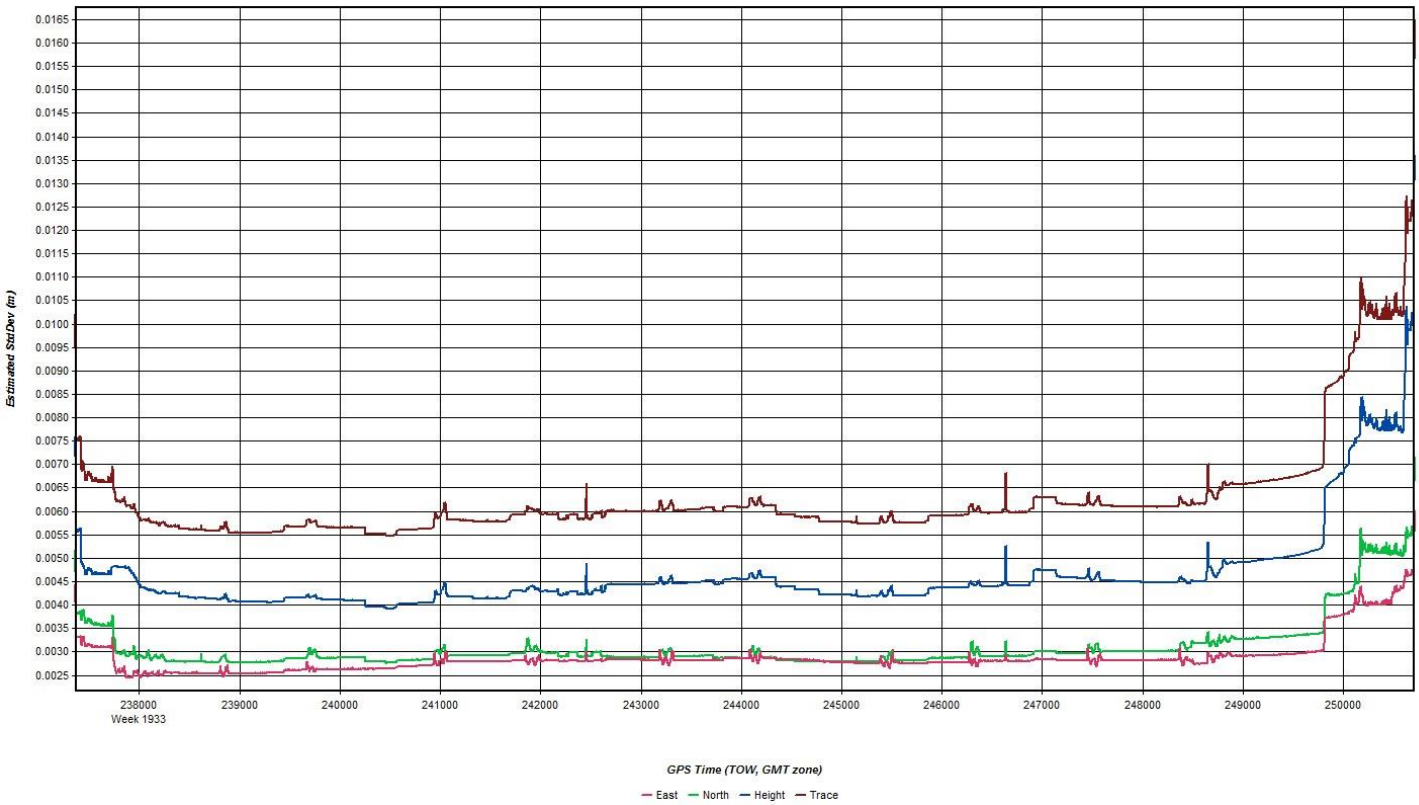


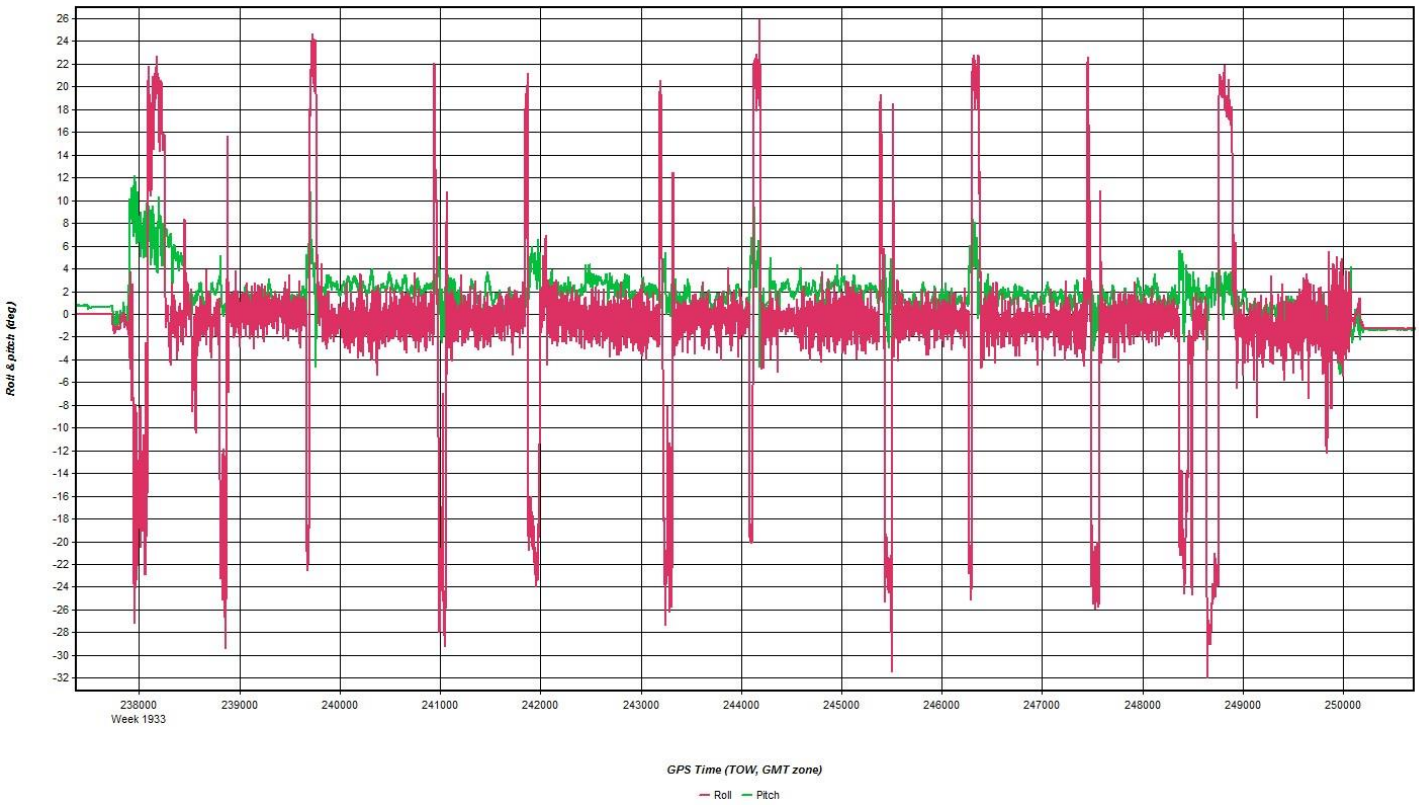

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

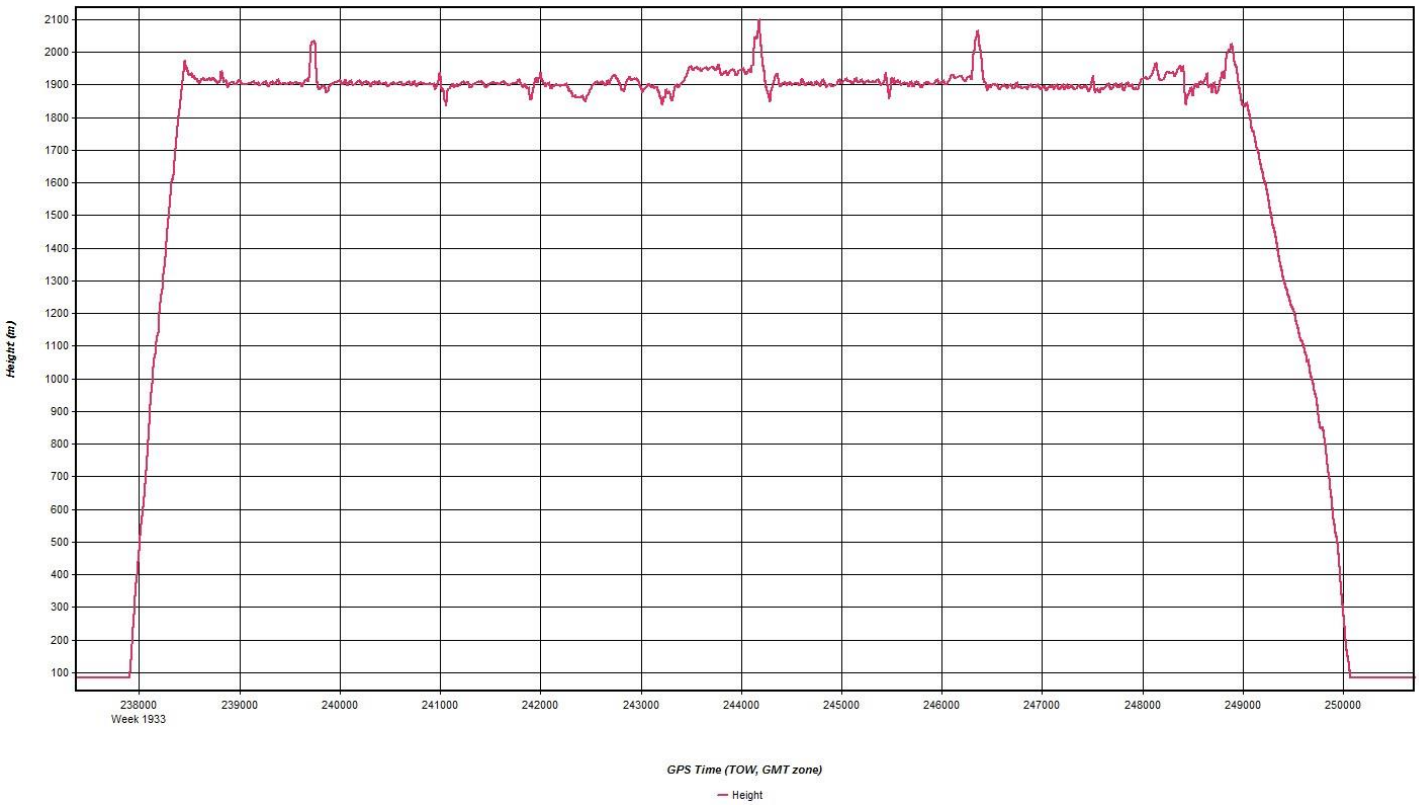

Separation (m)
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
East
North
Up


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

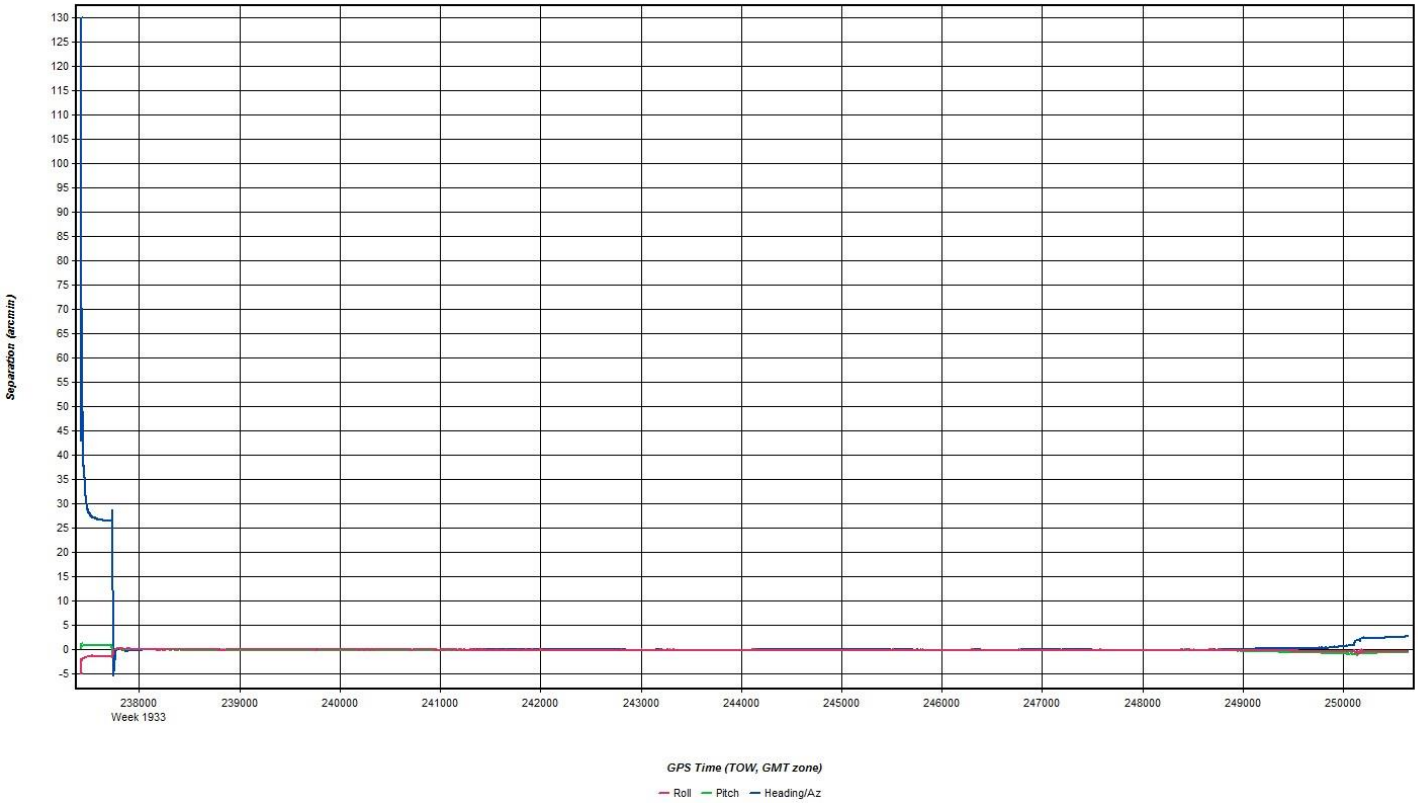

PDOP
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
PDOP

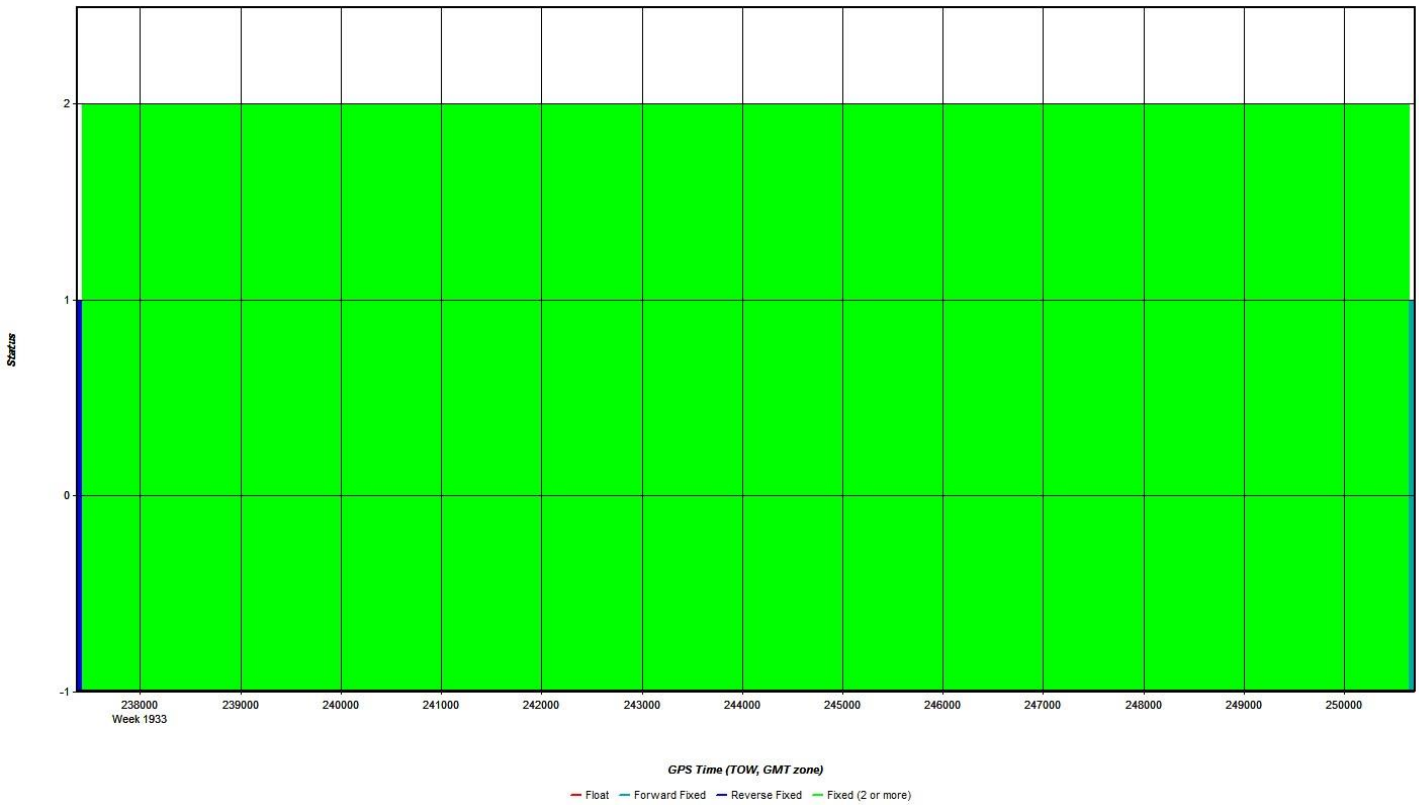

Estimated StdDev (m)
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

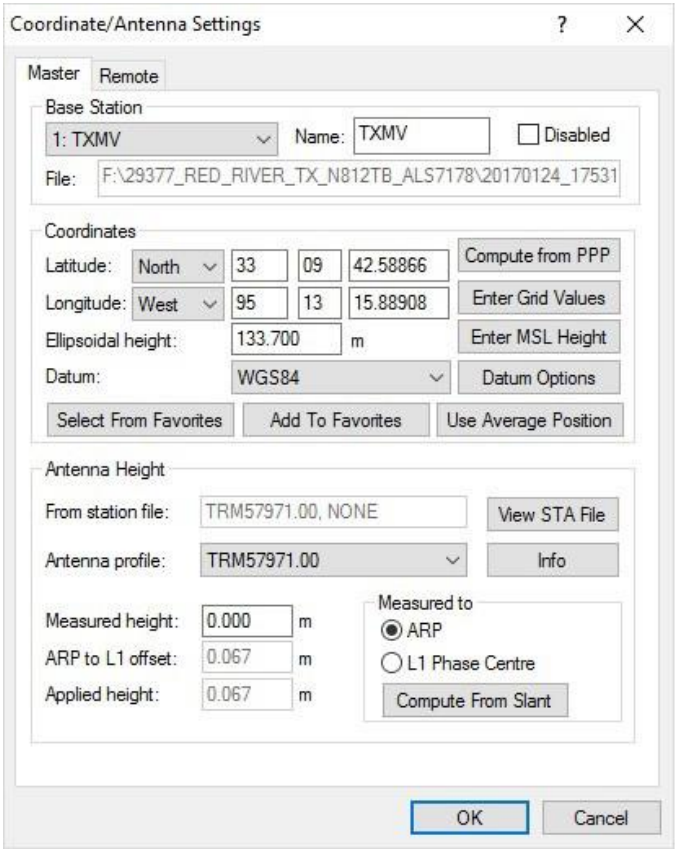

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
Roll
Pitch

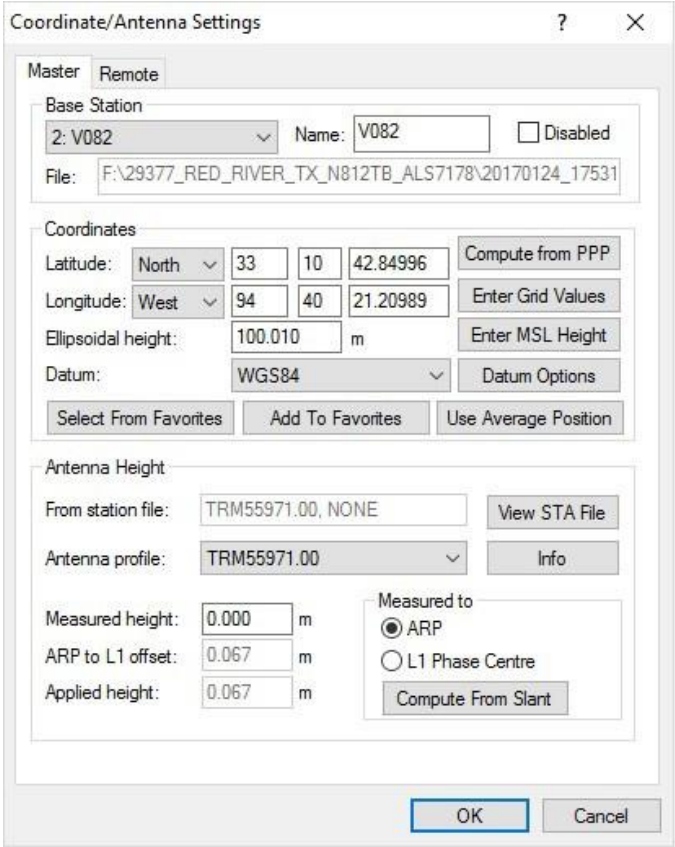

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
Height


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
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
130
125
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
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
238000
Week 1933
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMV
Name:
TXMV
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170124_17531
Coordinates
Latitude:
North
33
09
42.58866
Compute from PPP
Longitude:
West
95
13
15.88908
Enter Grid Values
Ellipsoidal height:
133.700
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
2: V082
Name:
V082
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170124_17531
Coordinates
Latitude:
North
33
10
42.84996
Compute from PPP
Longitude:
West
94
40
21.20989
Enter Grid Values
Ellipsoidal height:
100.010
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

Flight Log

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-24-17 B
Life: A (B) C D E
Pg 2 of 2

Project: Red River TX
Proj #: 29377
Flight Mgmt File: 20170124_175314
Aircraft: N812TB
Begin Hobbs: 4273.3
End Hobbs: 4276.7
Total: 3.4
Pilot: J Billington
Co-Pilot: —
Tech: J Swan
Dep Apt: KOSA
Dep Time (Lcl): 1155 (Z): +6
Arr Apt: KGGG
Arr Time (Local): 1530 (Z): +6
Tot Time Aloft: 3.4
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: 24 °c OAT beg: 20 °c End: 18 °c Altimeter begin: 2973 end: 2964

LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg CB	End CB	Tot CB	Storage Name/#e
	ALS70							200	145	55	3
	FOV 40	Scan Freq 53	MpIA Y / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM				

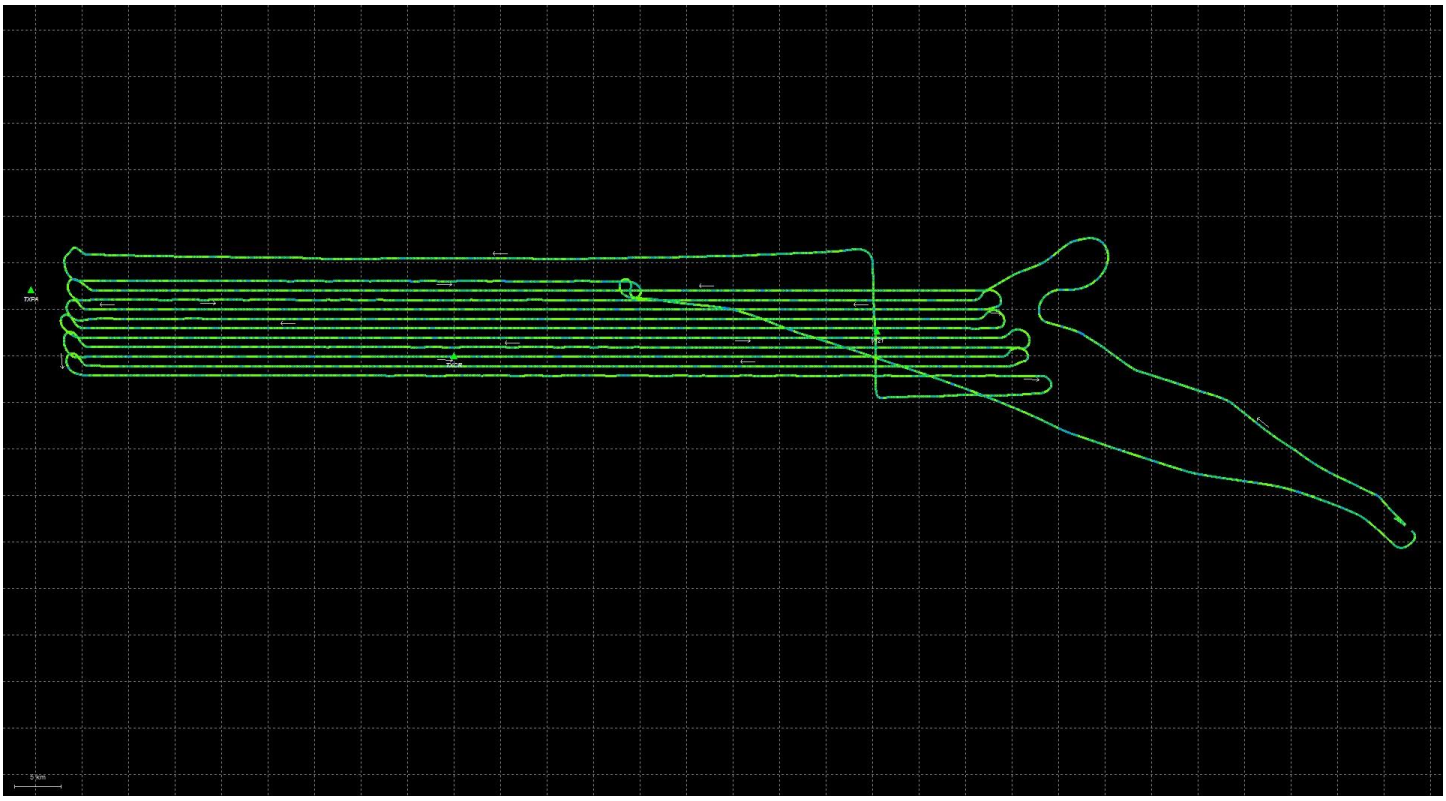
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									fig 8's (~~[illegible]~~ – on take off and climb
323	90	1821	1834	170	1.3/18	6254		0/-	40kt tail wind
322	270	1837	1854	126	1.1/19	6214		0/-	
321	90	1857	1910	~~170~~ 164	1.1/19	6185		0/-	40kt tail wind
320	270	1914	1932	117	1.3/17	6212		0/-	
319	90	1935	1947	170	1.3/17	6225		0/-	40-50kt tail wind
318	270	1951	2009	119	1.2/18	6250		0	
317	90	2012	2024	175	1.2/18	6238		0	40-50kt tailwind
316	270	2027	2043	125	1.2/17	6190		0/-	
315	90	2046	2059	163	1.2/17	6228		0/-	40-50kt tail wind
xtie	180	2101	2103	115	1.5/15	6313		0	
									Fig 8's (2103) → KGGG

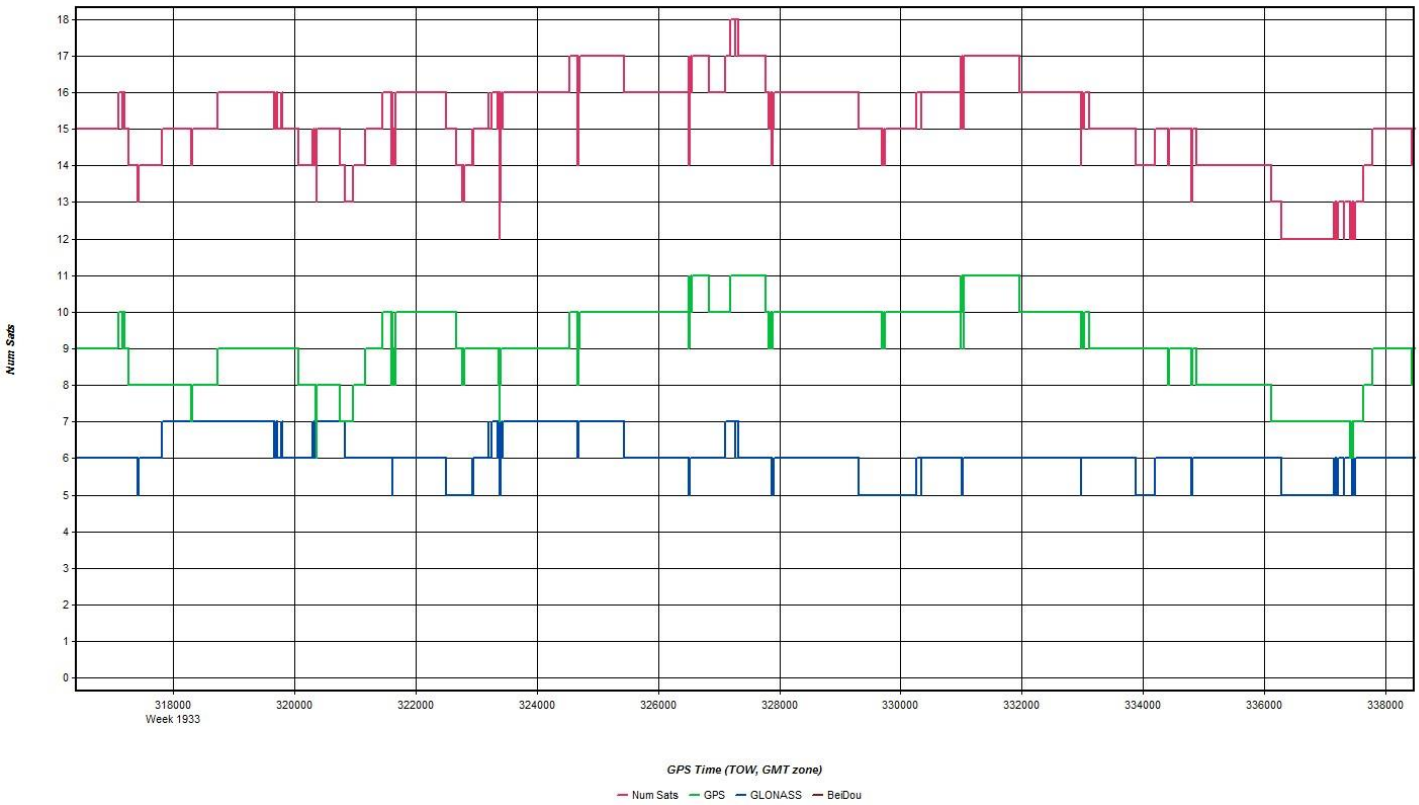
B Hobbs = 3.4
ONline = 2.7
mob = 0.7

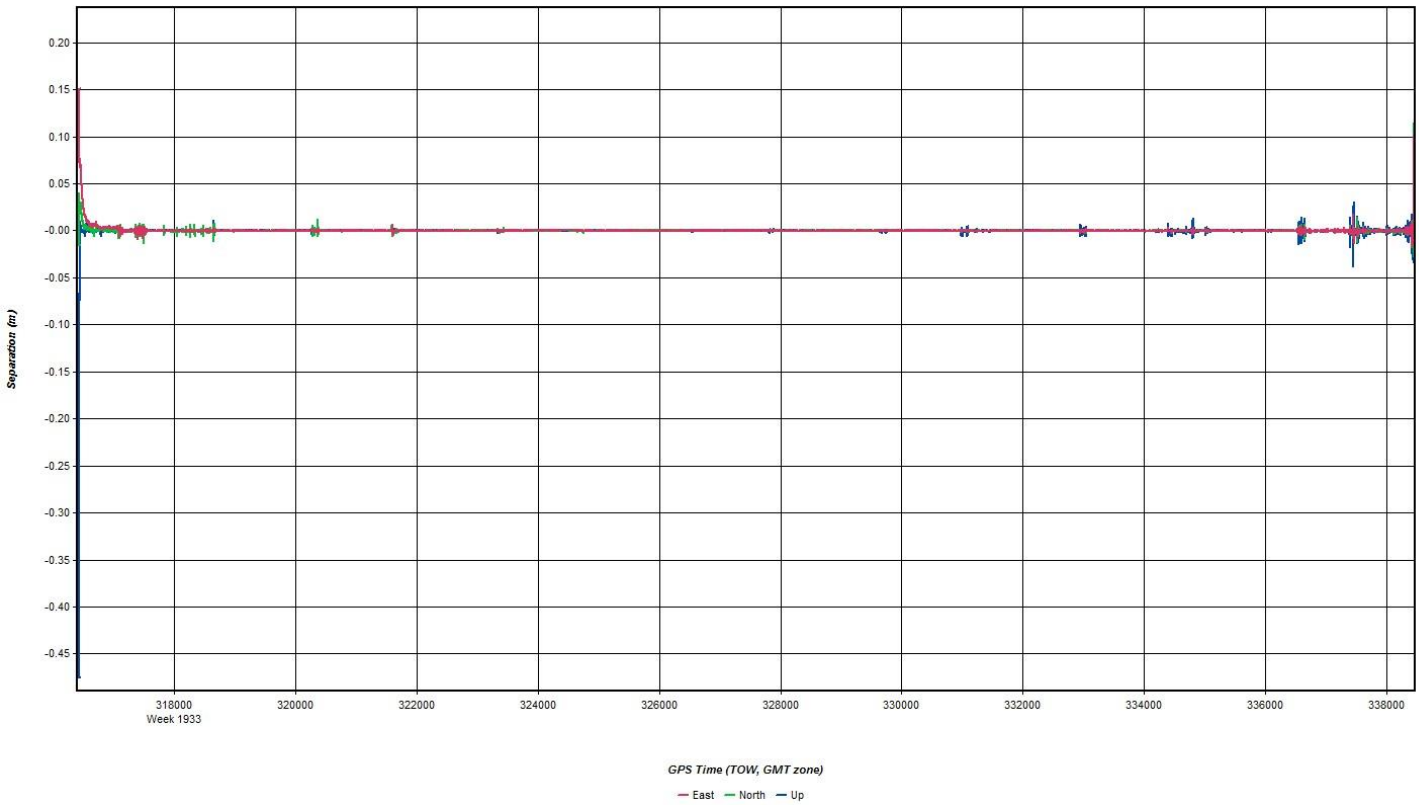
Daily total Hobbs = ~~[illegible]~~ 7.3
ONline = 5.7
mob = 1.5

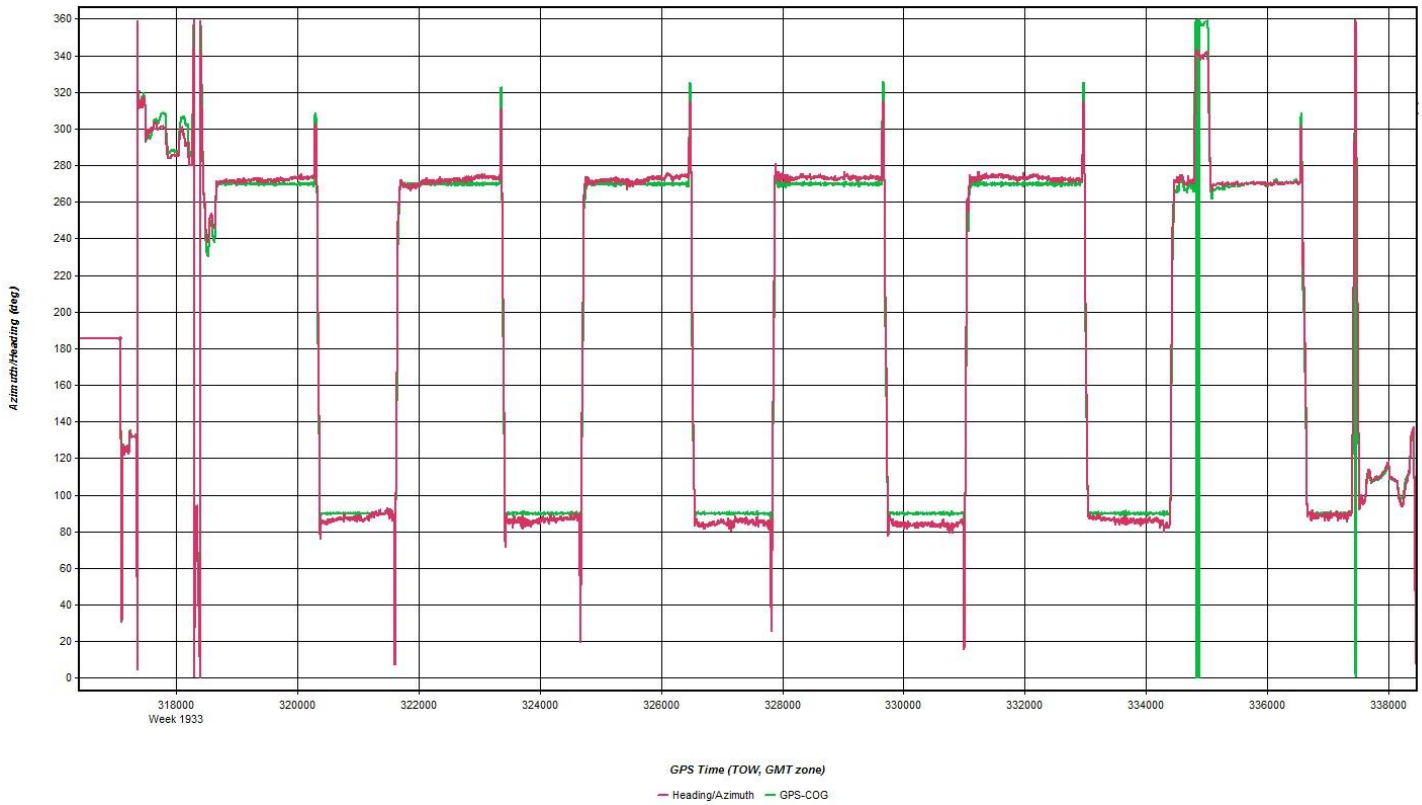
Total Proj Lines: | Lines Flown: 9 | Lines Remain: | Online Time: 2.7 | Mob Time: 1.5 | Notes:

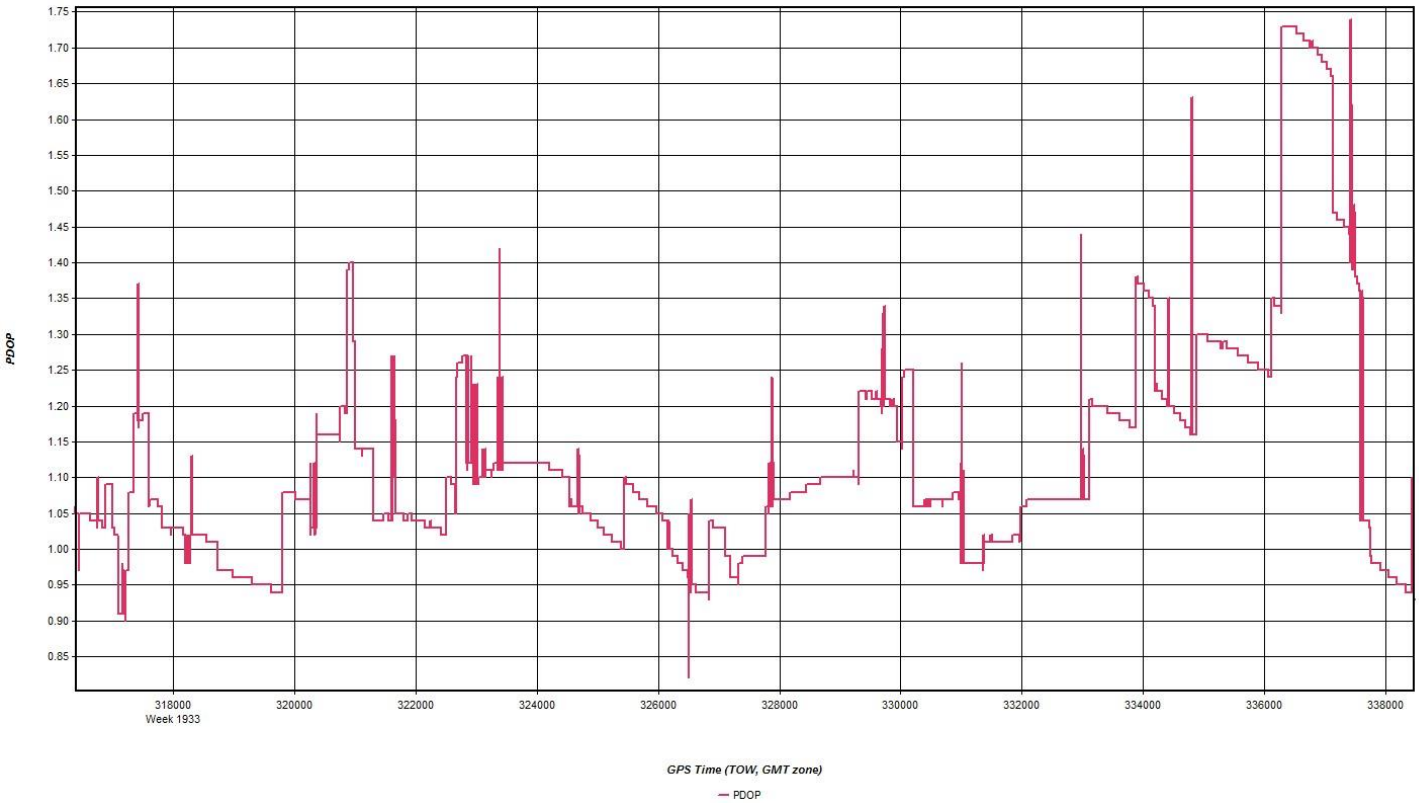
Jan 25, 2017-A (N208NR, SN8239)

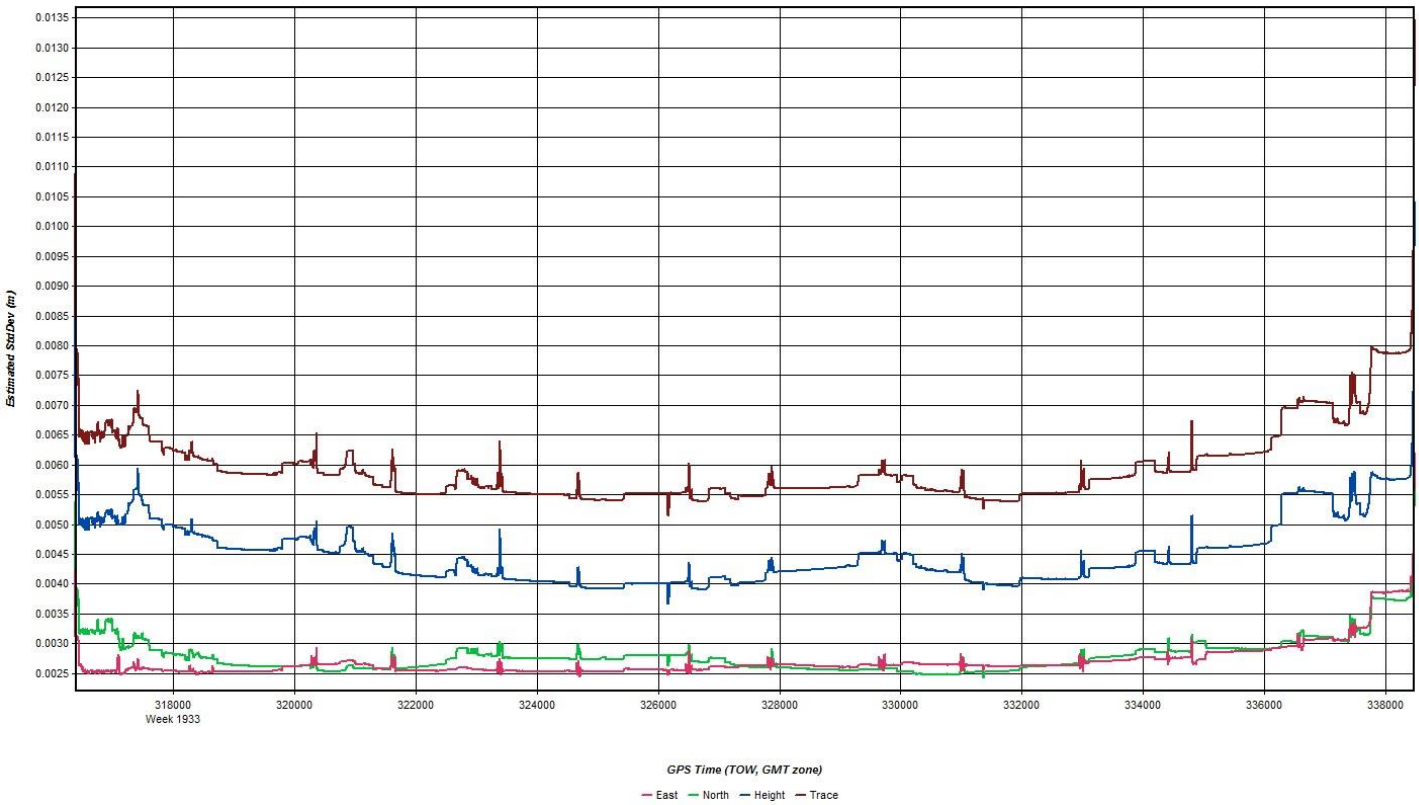


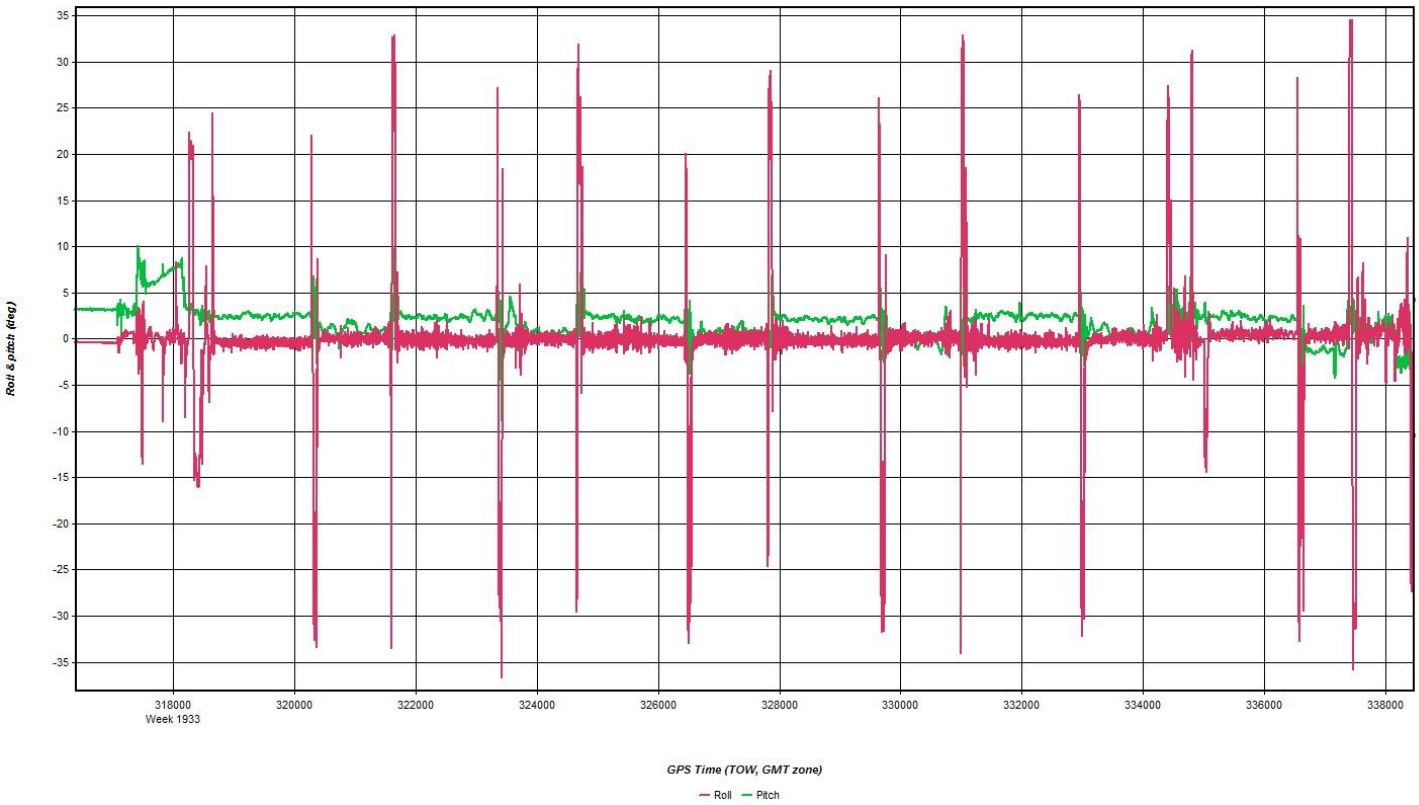

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

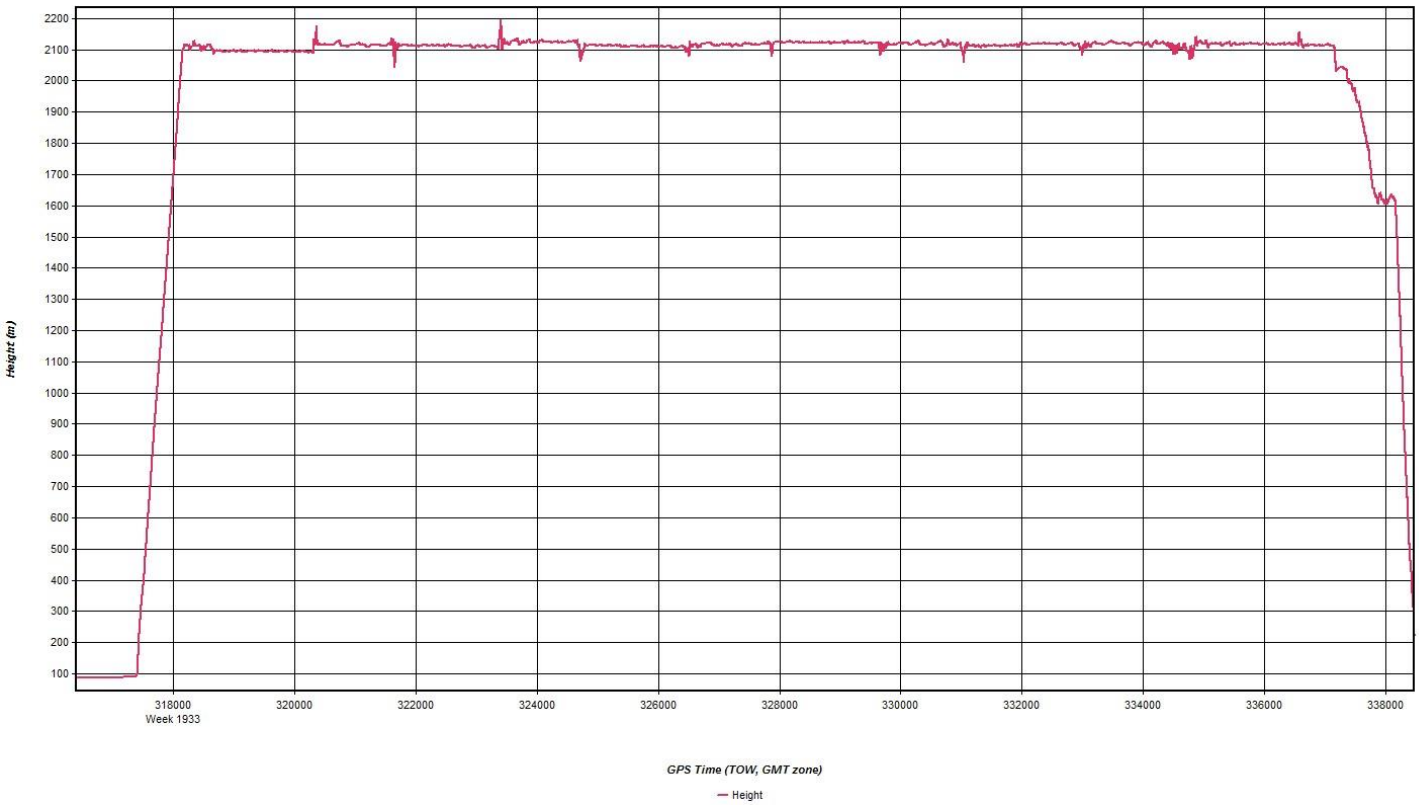

0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
Separation (m)
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
East
North
Up

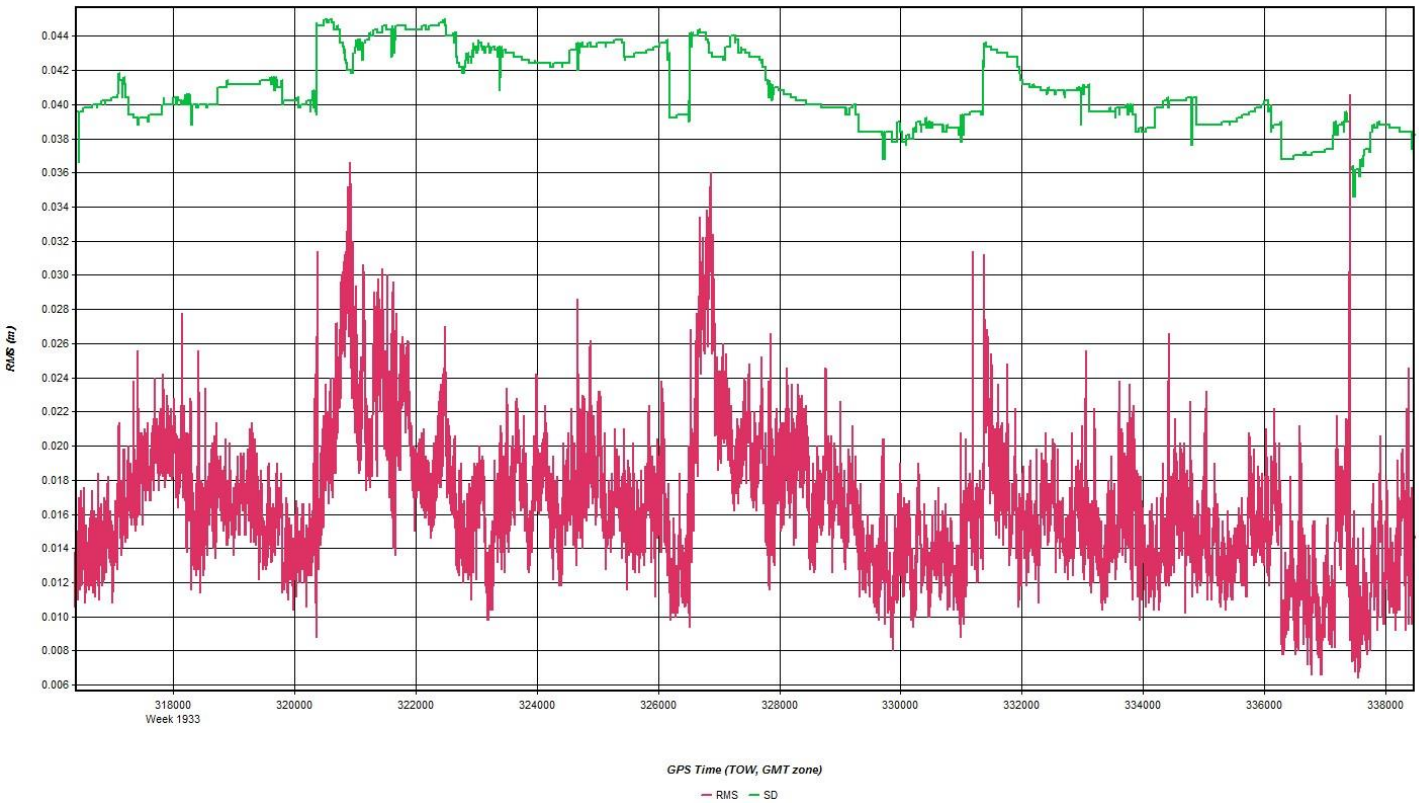

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

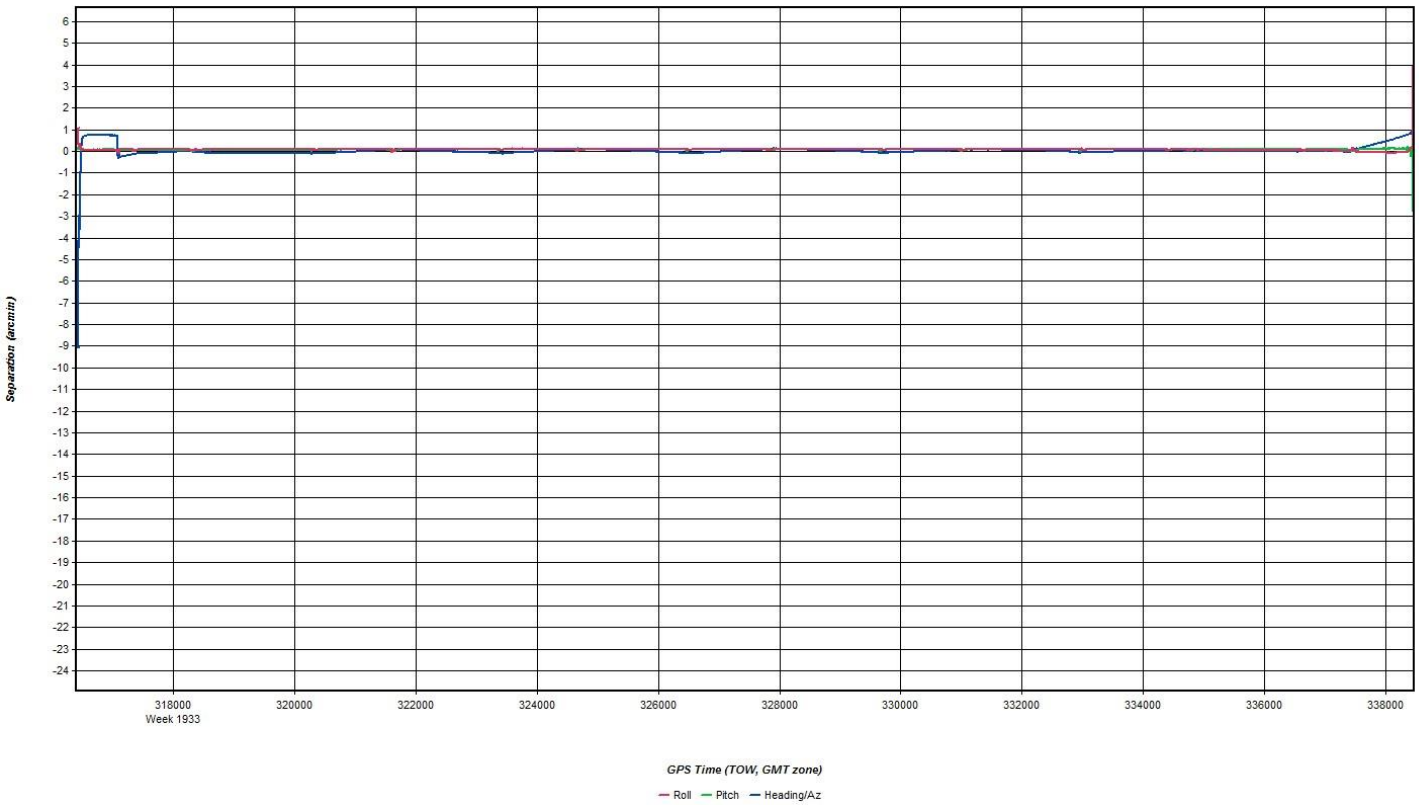

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
PDOP

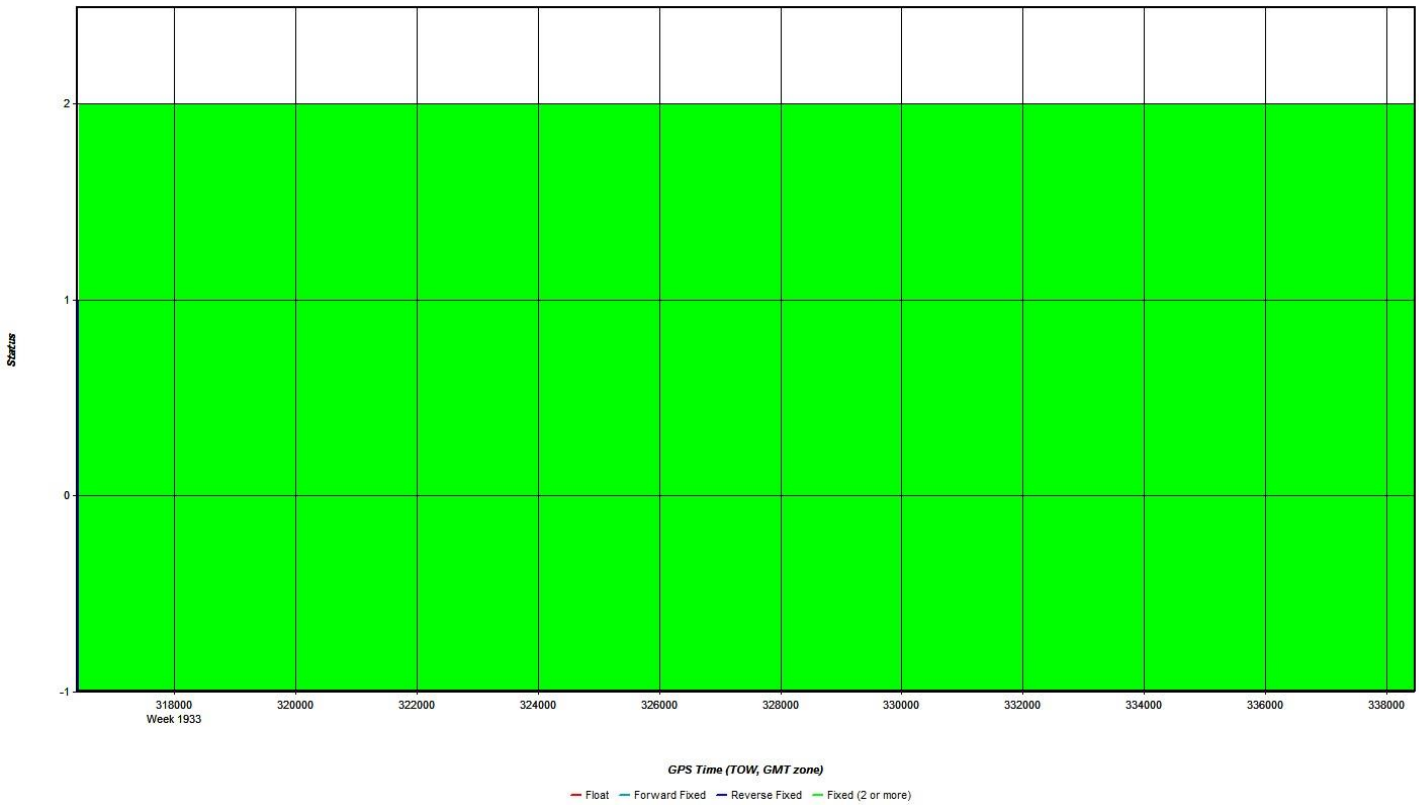

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

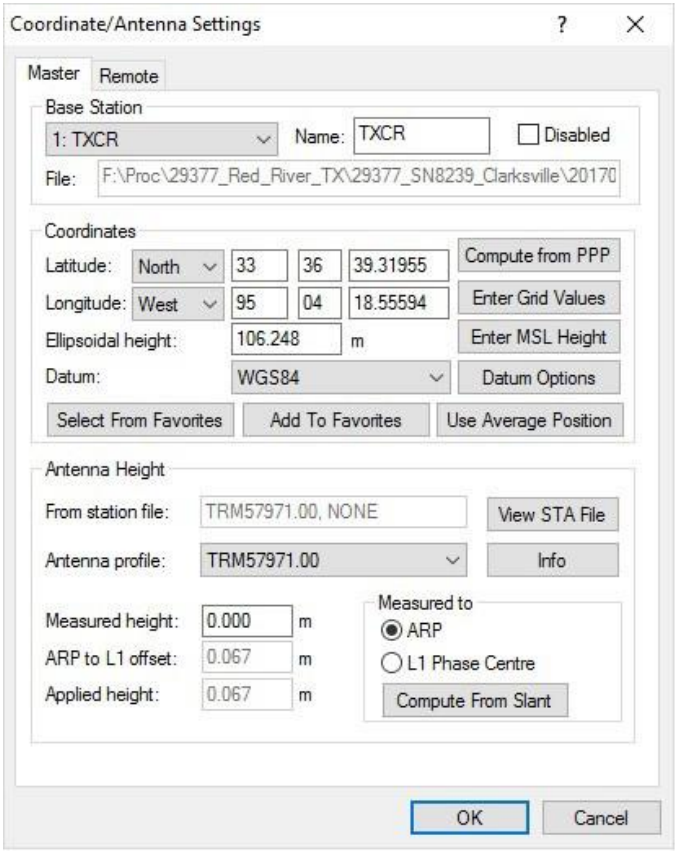

Roll & pitch (deg)
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
Roll
Pitch

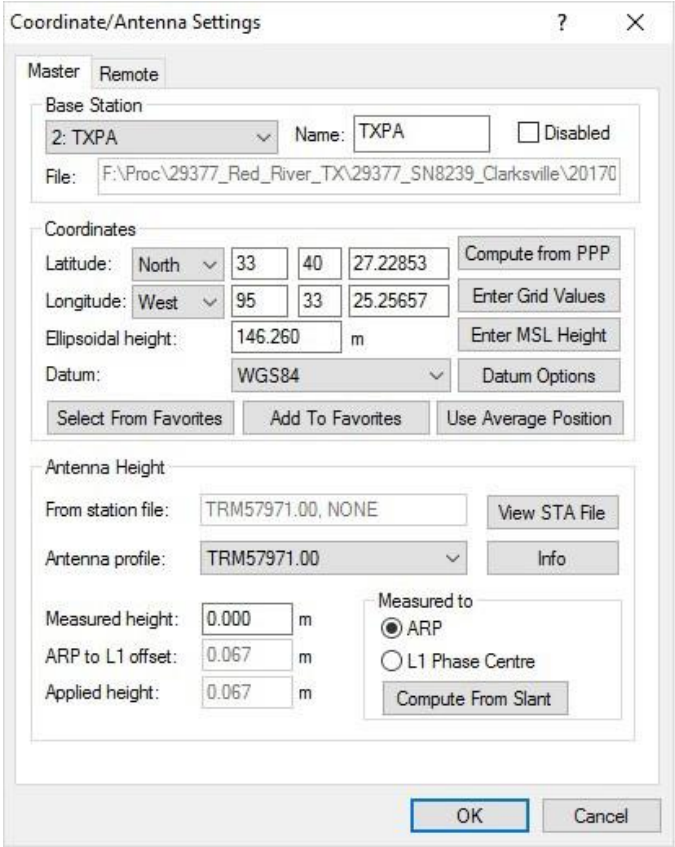

Height (m)
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
Height

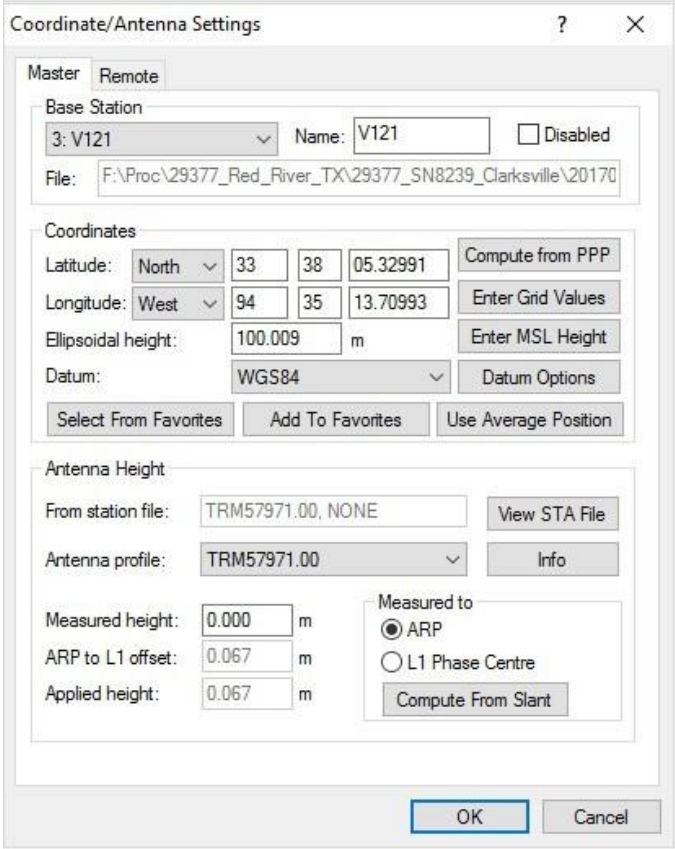

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
6
5
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
-24
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

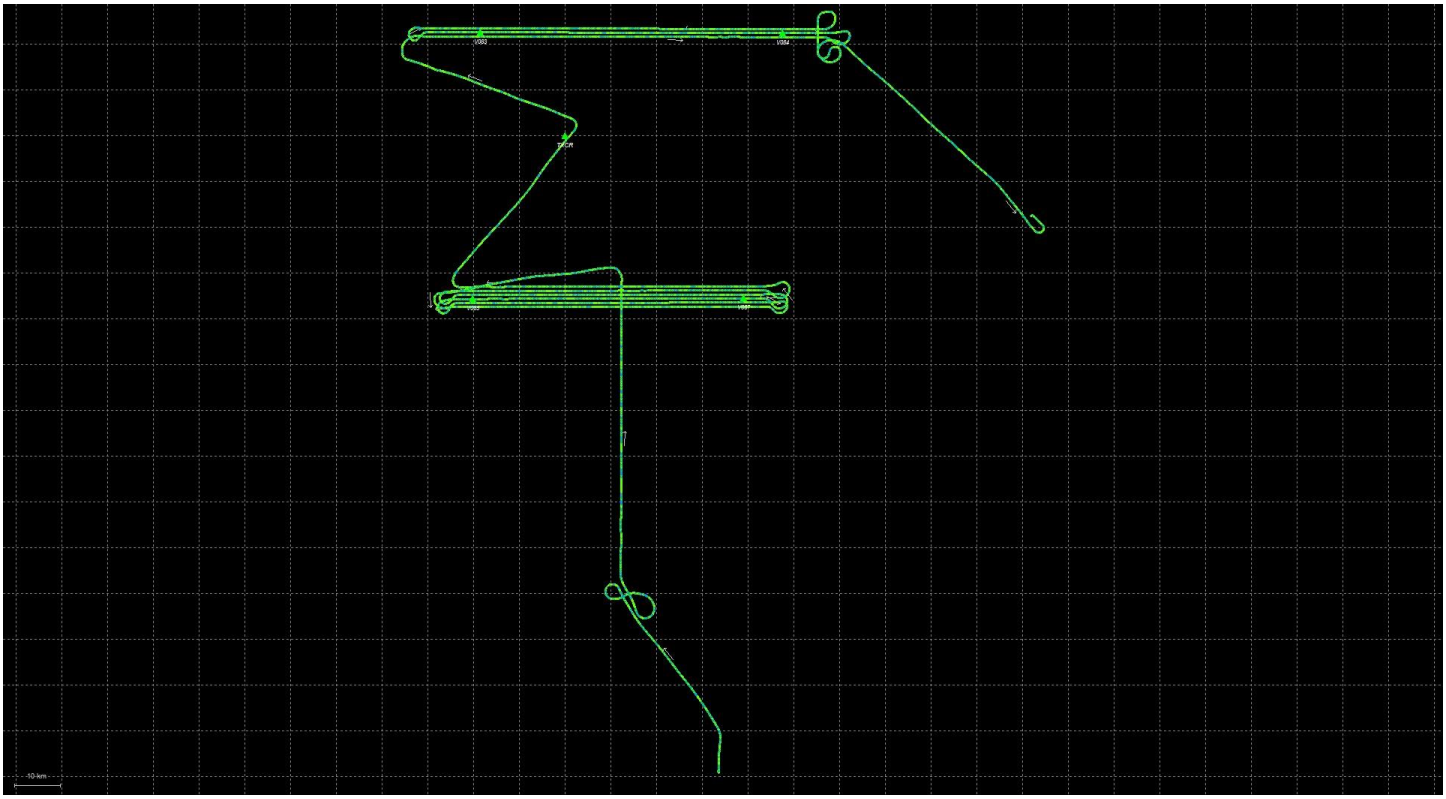

Status
2
1
0
-1
318000
Week 1933
320000
322000
324000
326000
328000
330000
332000
334000
336000
338000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

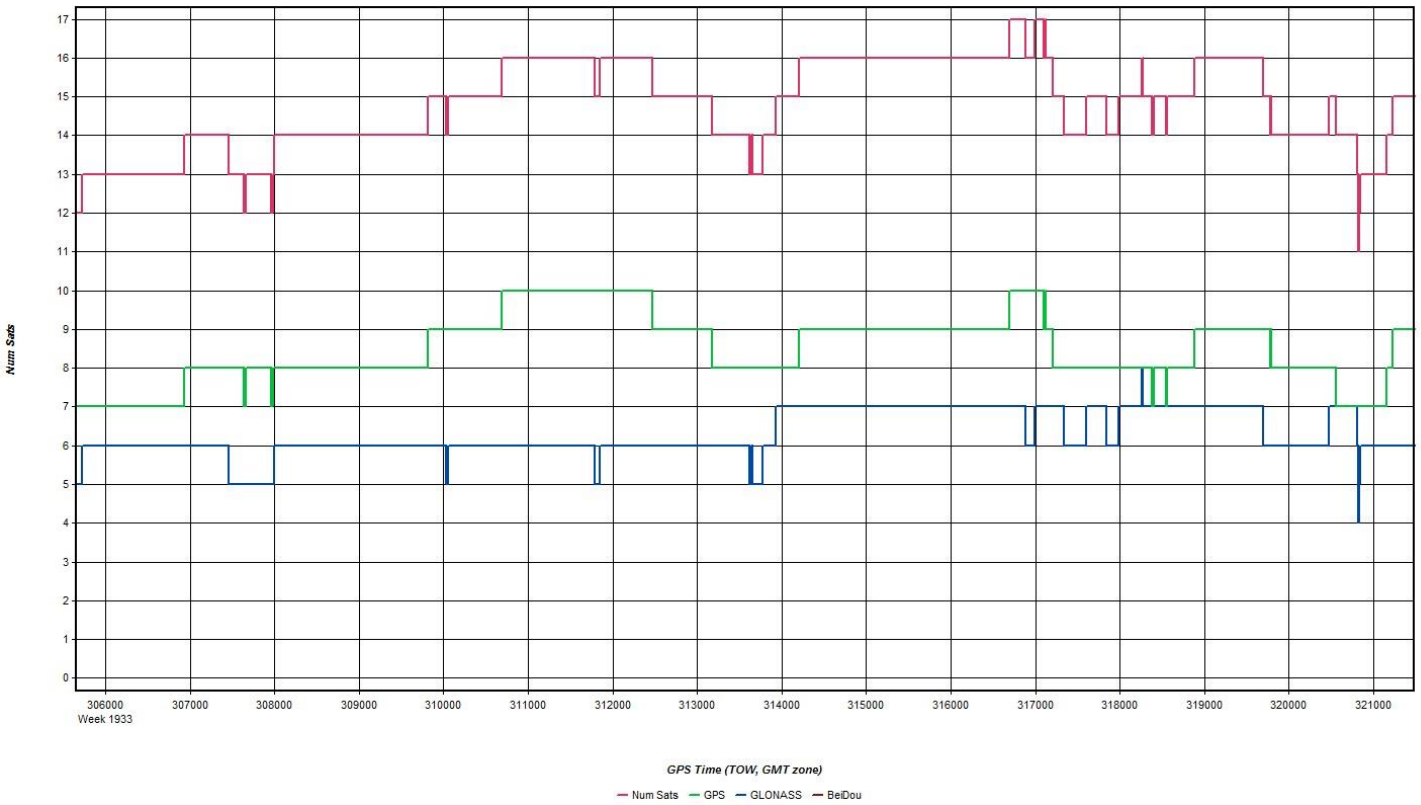

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name:
TXCR
Disabled
File:
F:\Proc\29377_Red_River_TX\29377_SN8239_Clarksville\20170
Coordinates
Latitude:
North
33
36
39.31955
Compute from PPP
Longitude:
West
95
04
18.55594
Enter Grid Values
Ellipsoidal height:
106.248
m
Enter MSL Height
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

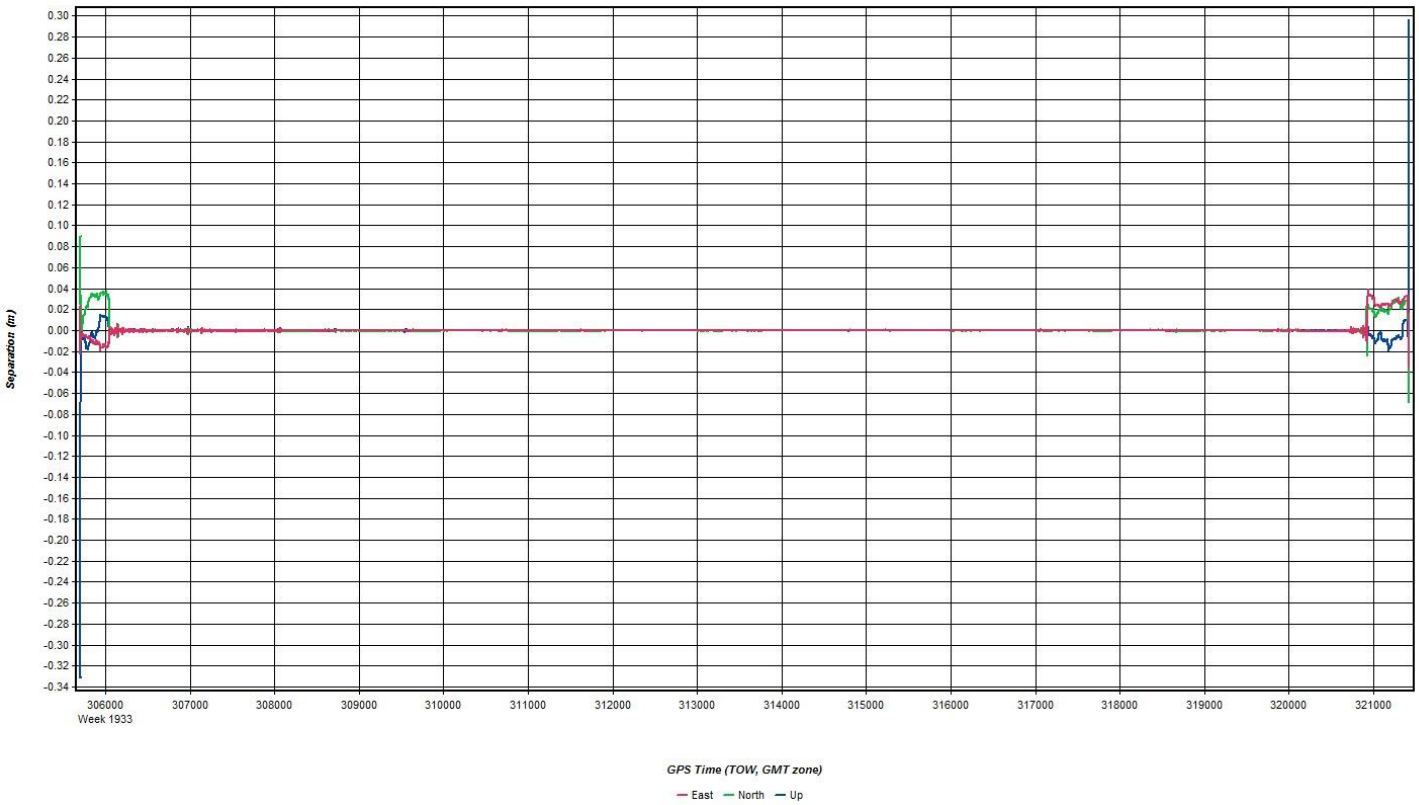

Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXPA
Name: TXPA
Disabled
File: F:\Proc\29377_Red_River_TX\29377_SN8239_Clarksville\20170
Coordinates
Latitude: North 33 40 27.22853
Longitude: West 95 33 25.25657
Ellipsoidal height: 146.260 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter 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

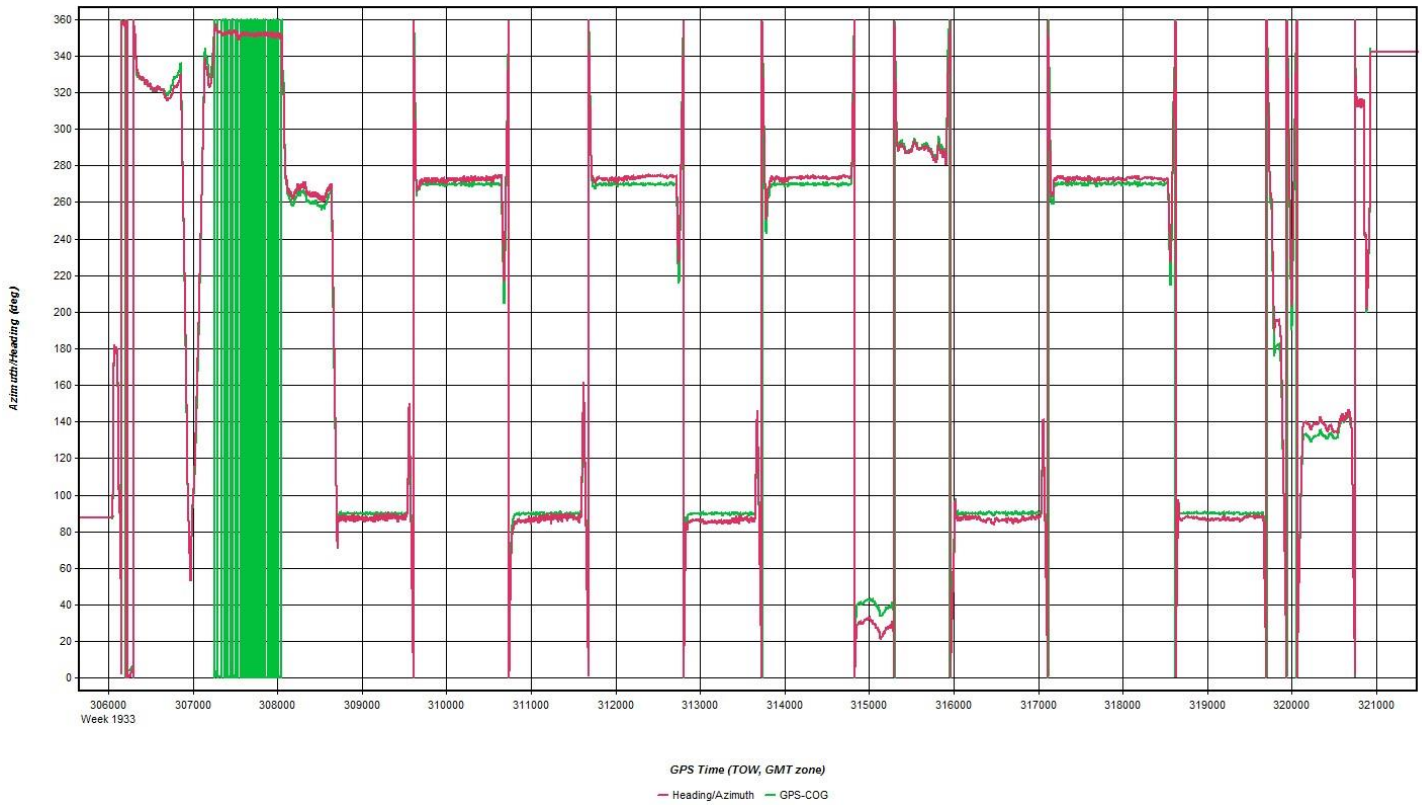

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V121
Name: V121
Disabled
File: F:\Proc\29377_Red_River_TX\29377_SN8239_Clarksville\20170
Coordinates
Latitude: North 33 38 05.32991
Longitude: West 94 35 13.70993
Ellipsoidal height: 100.009 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL Height
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file: 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 25, 2017-A (N812TB, SN7178)

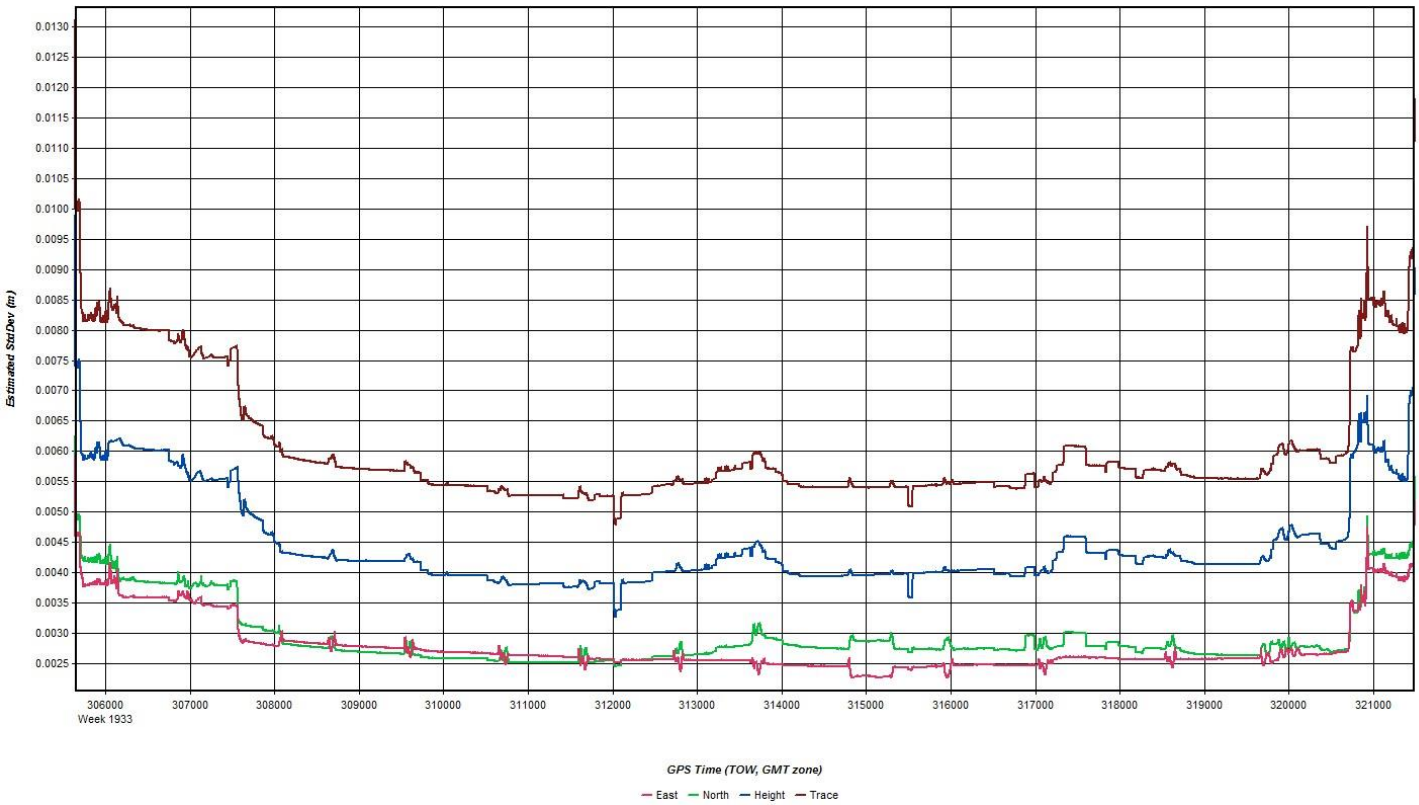


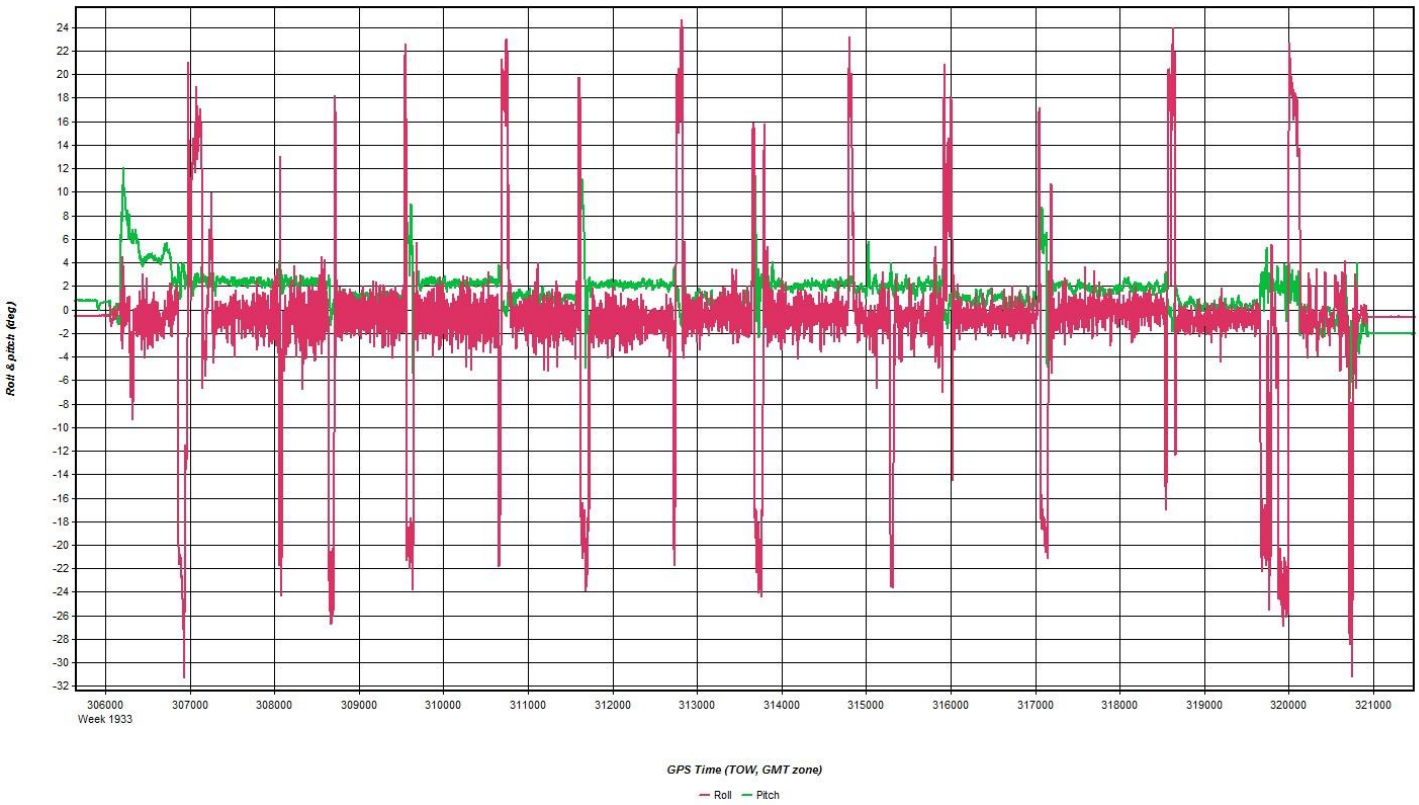

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

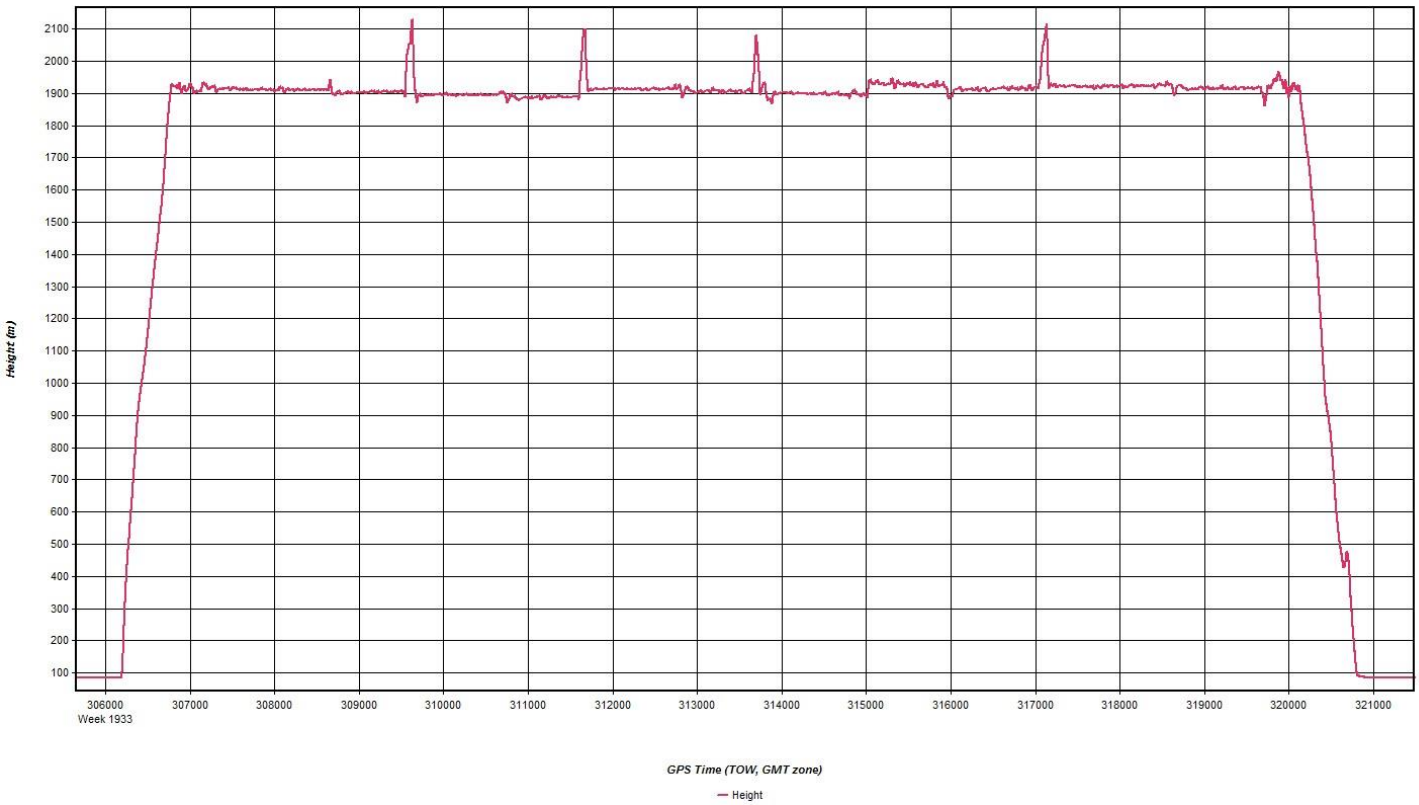

Separation (m)
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
East
North
Up

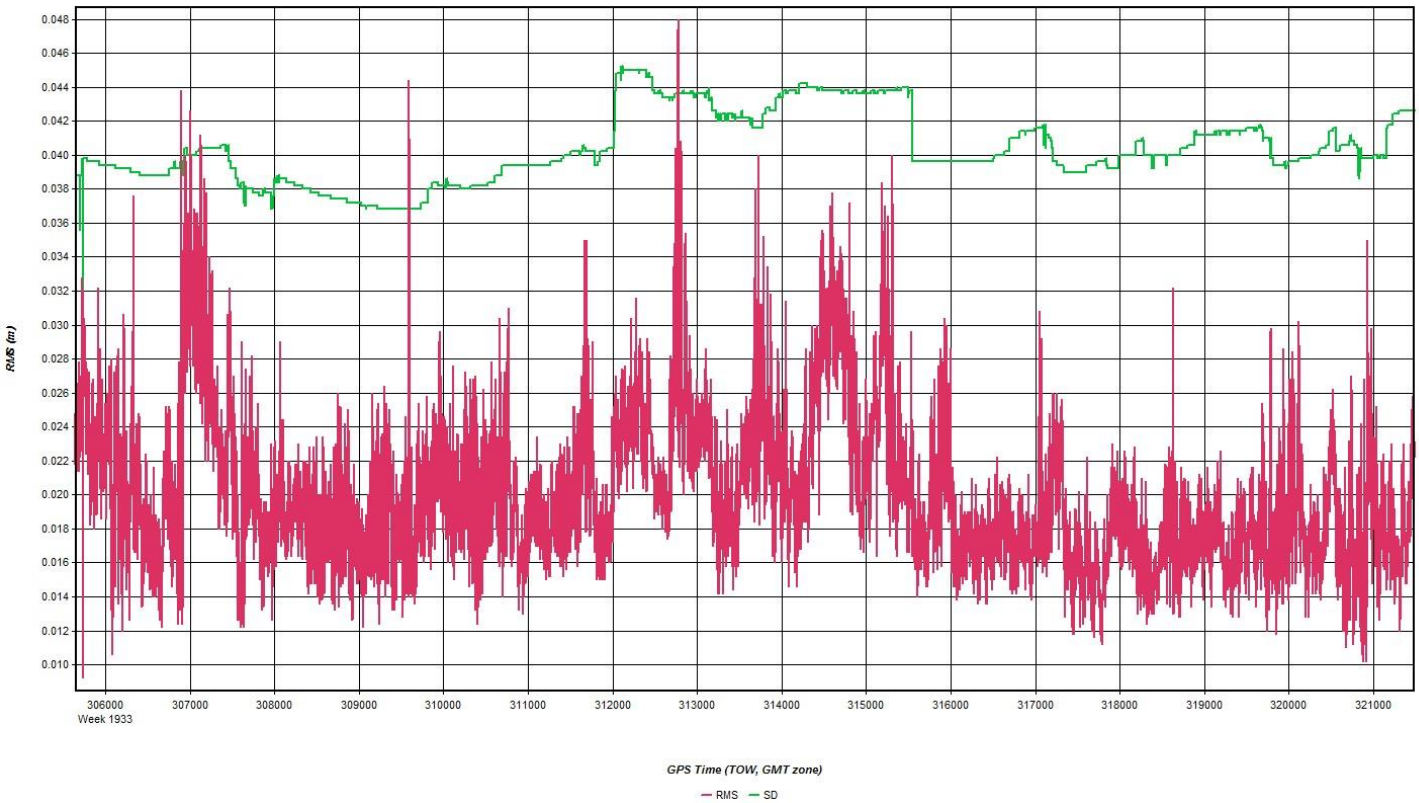

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

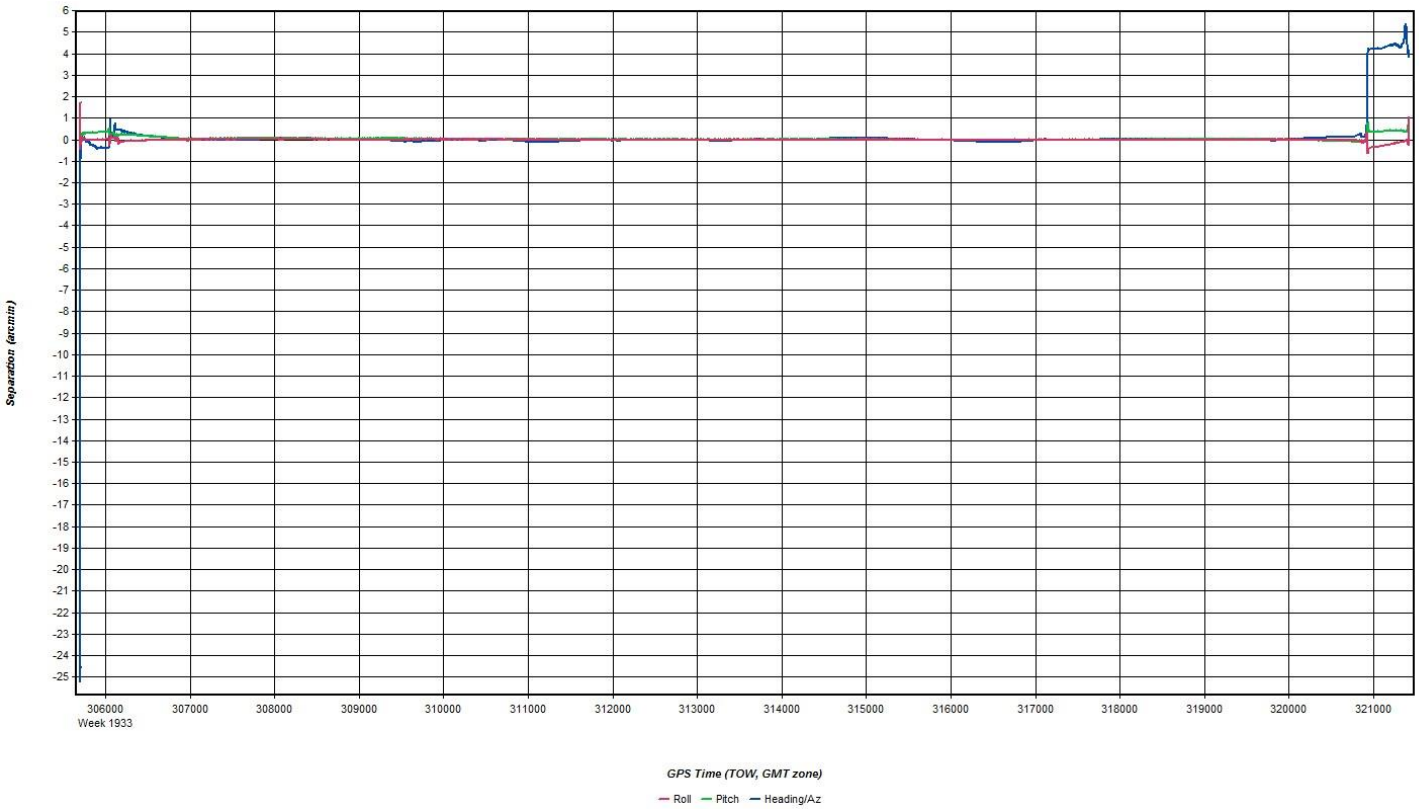

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
PDOP

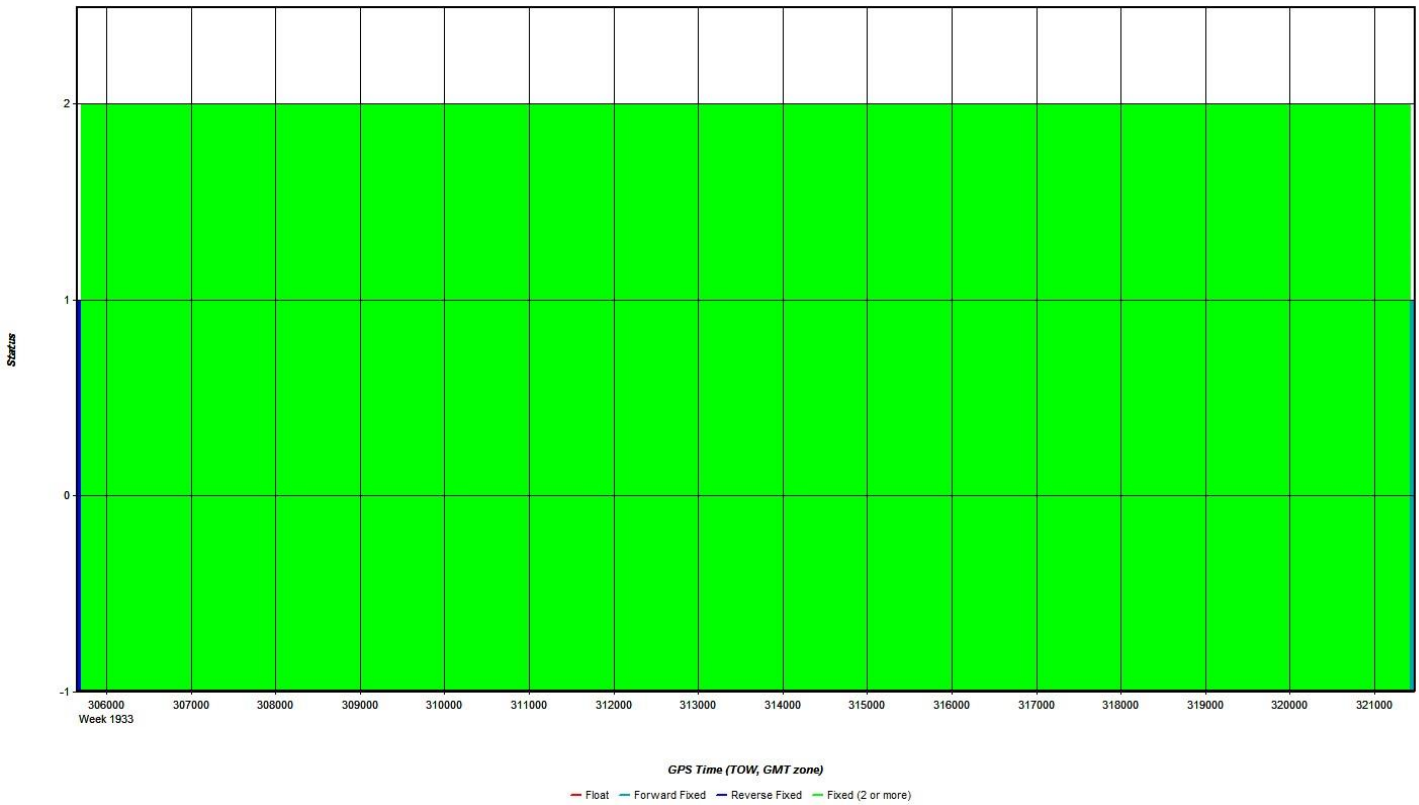

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

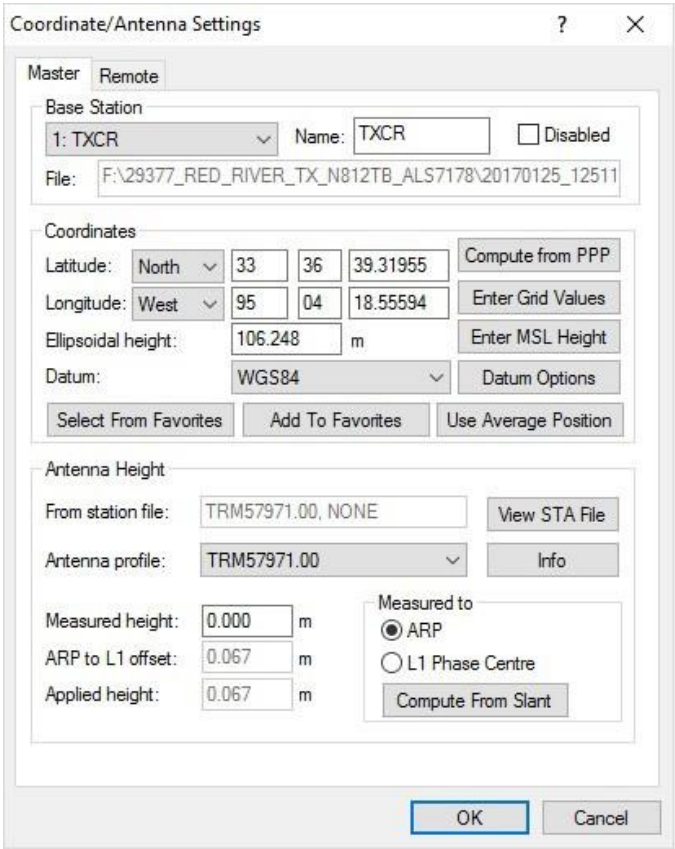

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Roll
Pitch

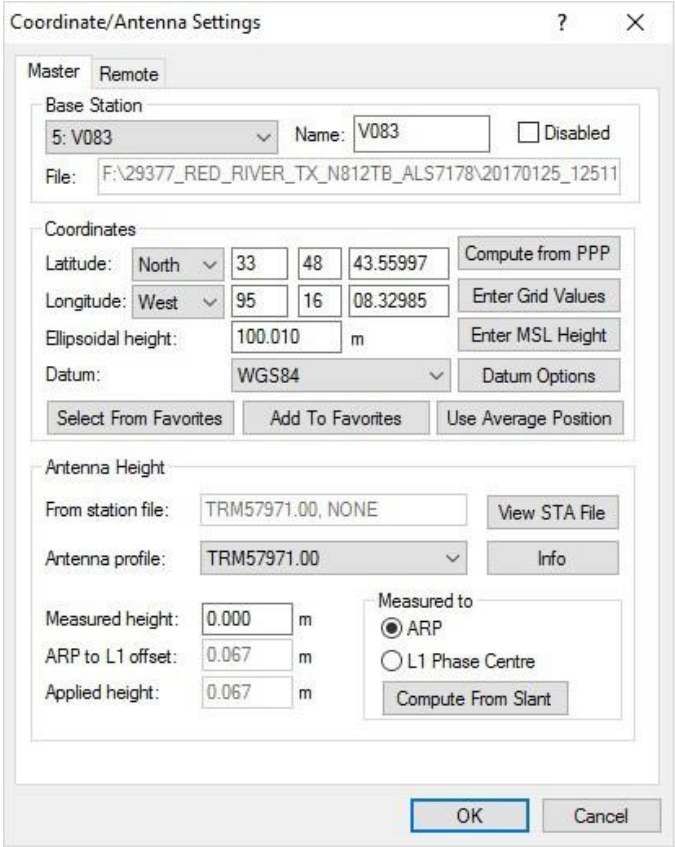

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Height

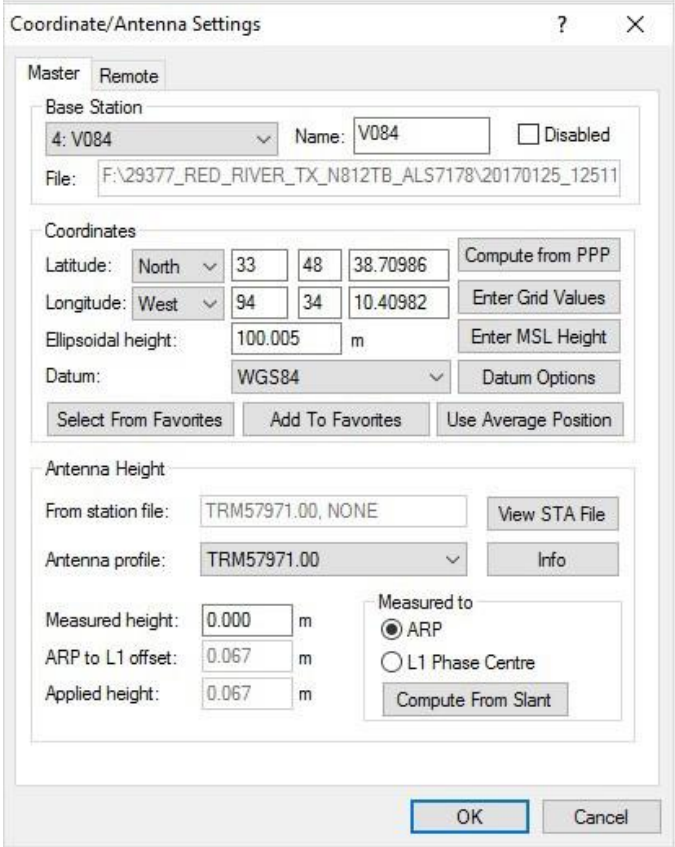

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
RMS
SD

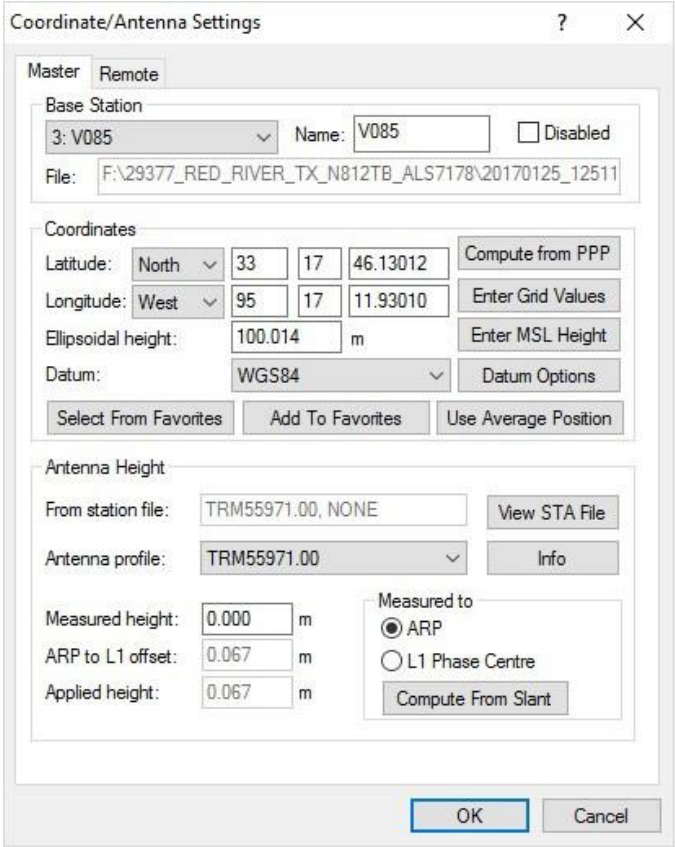

Separation (arcmin)
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
-24
-25
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

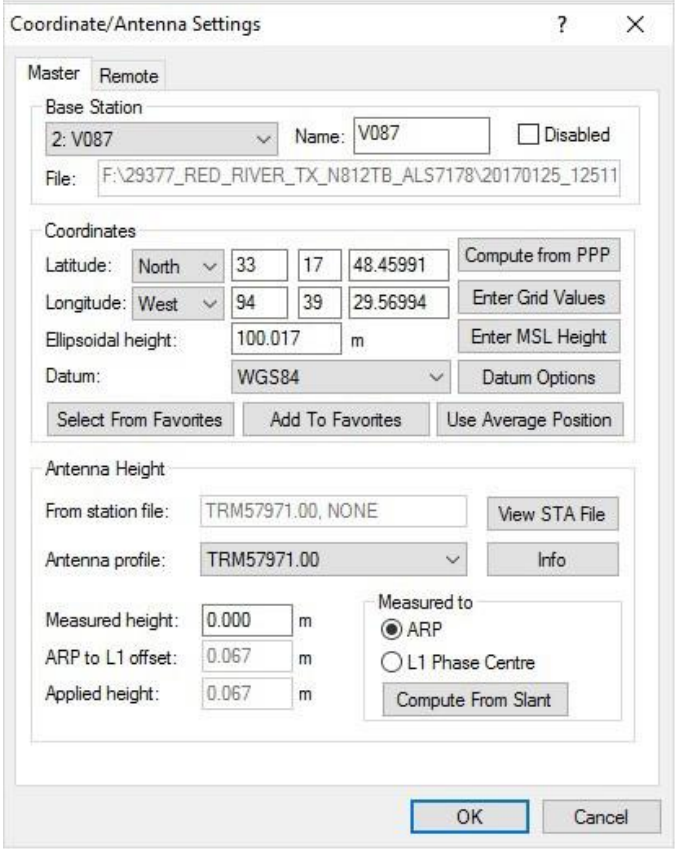

Status
2
1
0
-1
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name: TXCR
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_12511
Coordinates
Latitude: North 33 36 39.31955
Longitude: West 95 04 18.55594
Ellipsoidal height: 106.248 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: V083
Name: V083
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_12511
Coordinates
Latitude: North 33 48 43.55997
Longitude: West 95 16 08.32985
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


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V084
Name: V084
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_12511
Coordinates
Latitude: North 33 48 38.70986
Longitude: West 94 34 10.40982
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: 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: V085
Name: V085
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_12511
Coordinates
Latitude: North 33 17 46.13012
Longitude: West 95 17 11.93010
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: 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: V087
Name: V087
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_12511
Coordinates
Latitude: North 33 17 48.45991
Longitude: West 94 39 29.56994
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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-25-17

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

Project: RED RIVER, TX FEMA IDAHEL Proj #: 29377 Flight Mgmt File: REDRIVER_20T59... 20170125_205948

Aircraft: N812TB Begin Hobbs: 4286.9 End Hobbs: 4290.8 Total: 3.9 Pilot: RASTKE Co-Pilot: – Tech: MOUDY

Dep Apt: GGG Dep Time (Lcl): 1610 (Z): 2210 Arr Apt: GGG Arr Time (Local): 2021 (Z): 0221 Tot Time Aloft: 4:01

CORS: (Y) / N Sta 1: TXCR Sta 2: Flyovers: (Y) / N If Y, times: Sta1) 2242/0143 Sta2)

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

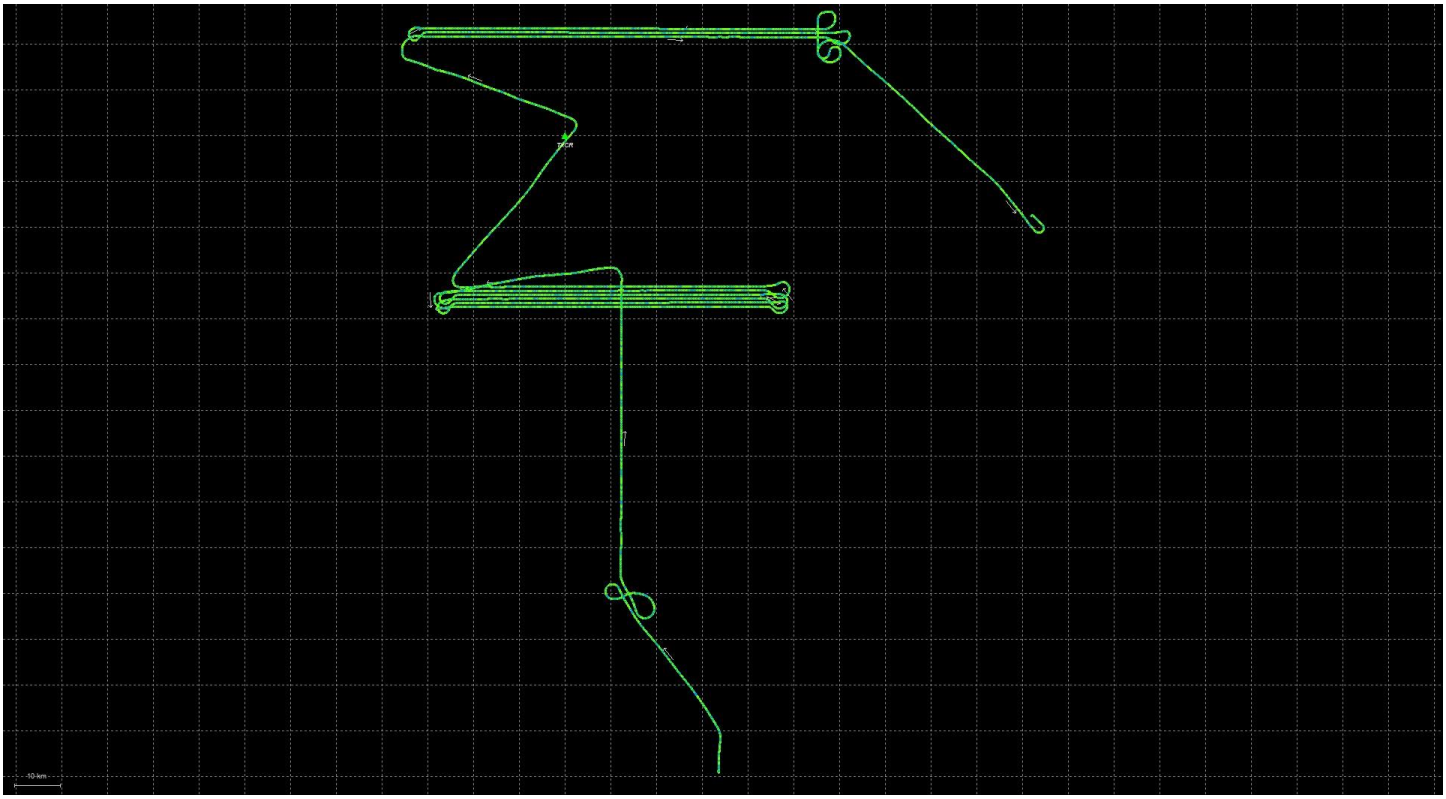
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

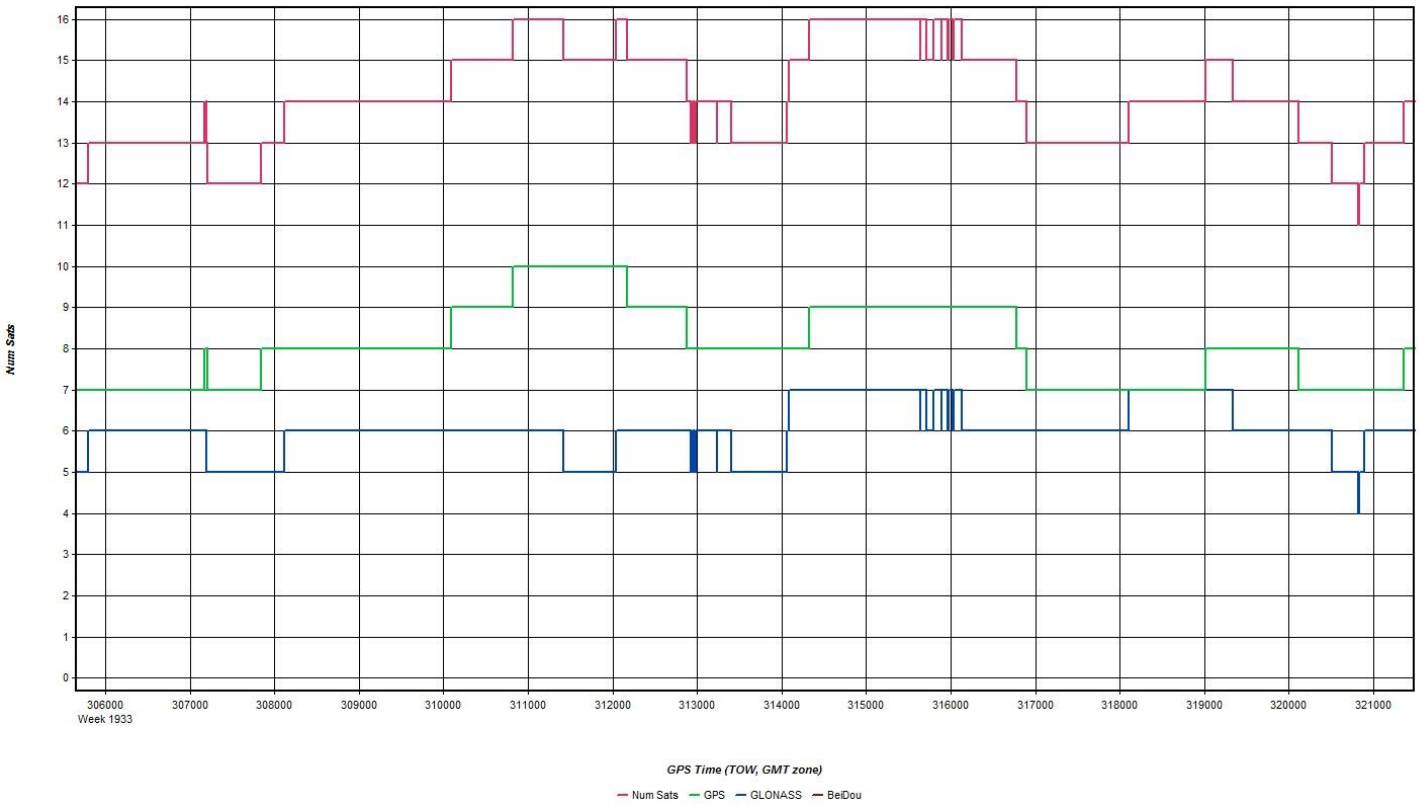
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/s
	ALS70	7178	±5700'	±6200'	±500'	150 KTS	0.59 M	169	221	52	7178
	FOV 40°	Scan Freq 53 Hz	MpIA (Y) / N	Pulses in Air 2	Pulse Rate 295 KHz	Power 100%	PPSM 2.83				5503

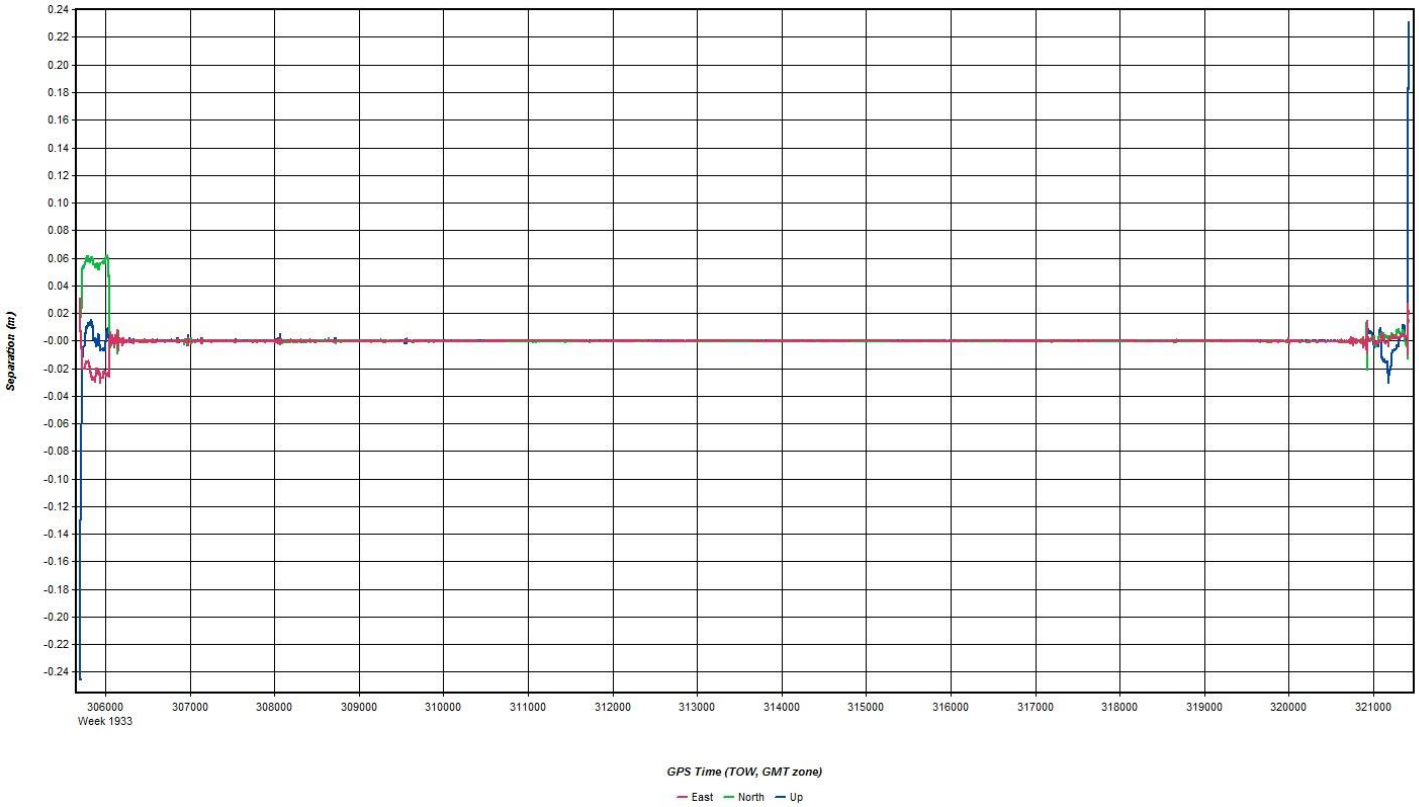
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.	DO
120	90	2259	2316	165	1.1/20	6320	5	–		
119	270	2319	2337	136	1.1/18	6330	5	–		
118	90	2340	2355	162	1.2/17	6330	5	–		
117	270	2358	0014	140	1.1/18	6340	4	0		
116	90	0018	0033	163	1.1/18	6330	4	0		
115	270	0036	0053	147	1.2/17	6340	3	0		
114	90	0056	0110	169	1.1/18	6320	4	0		
113	270	0114	0130	151	1.2/17	6350	3	0		
TIE	180	0132	0134	169	1.3/18	6350	13	0	- MANUAL TIE LINE	

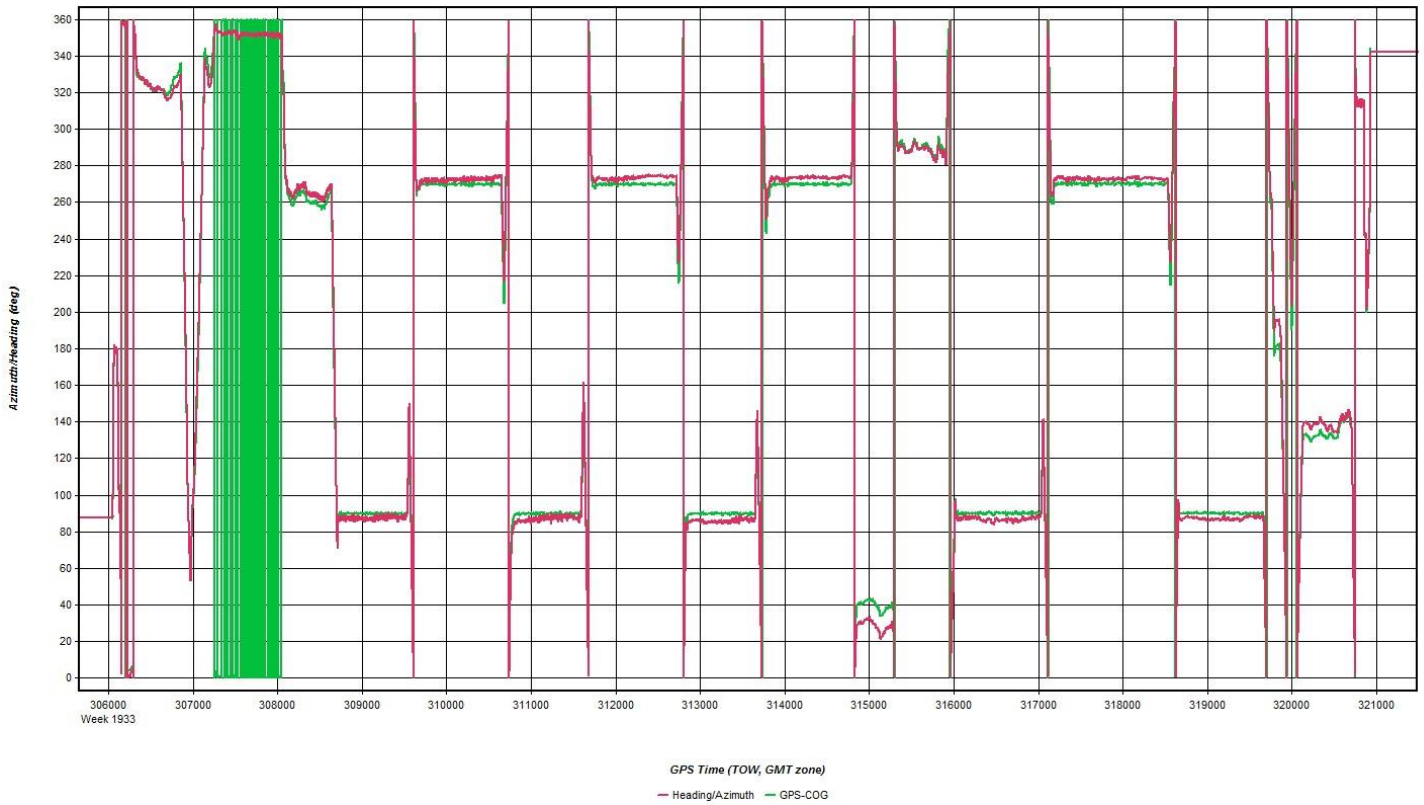
Total Proj Lines: Lines Flown: 8 Lines Remain: 13 Online Time: 2.5 Mob Time: 1.5 Notes:

Jan 25, 2017-A1 (N812TB, SN7178)

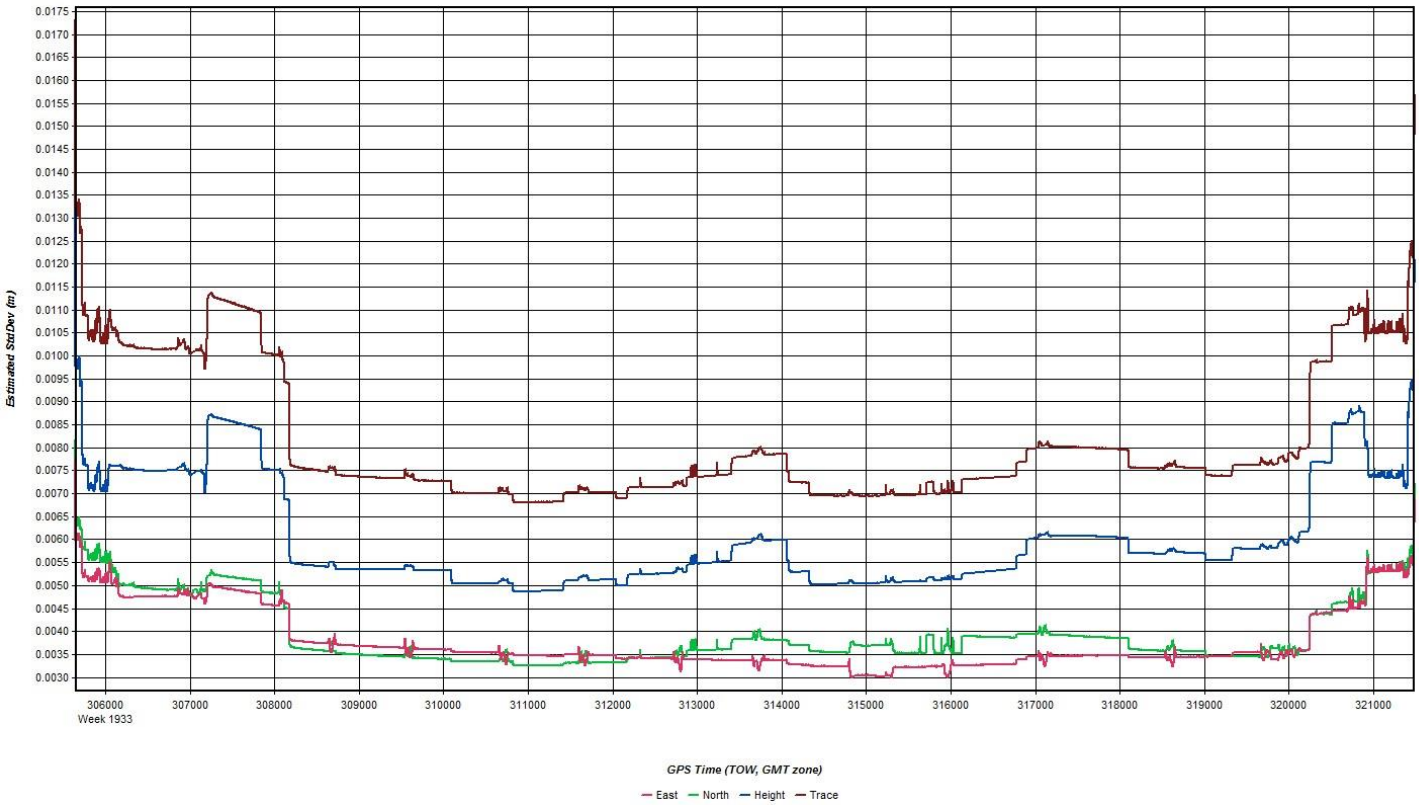


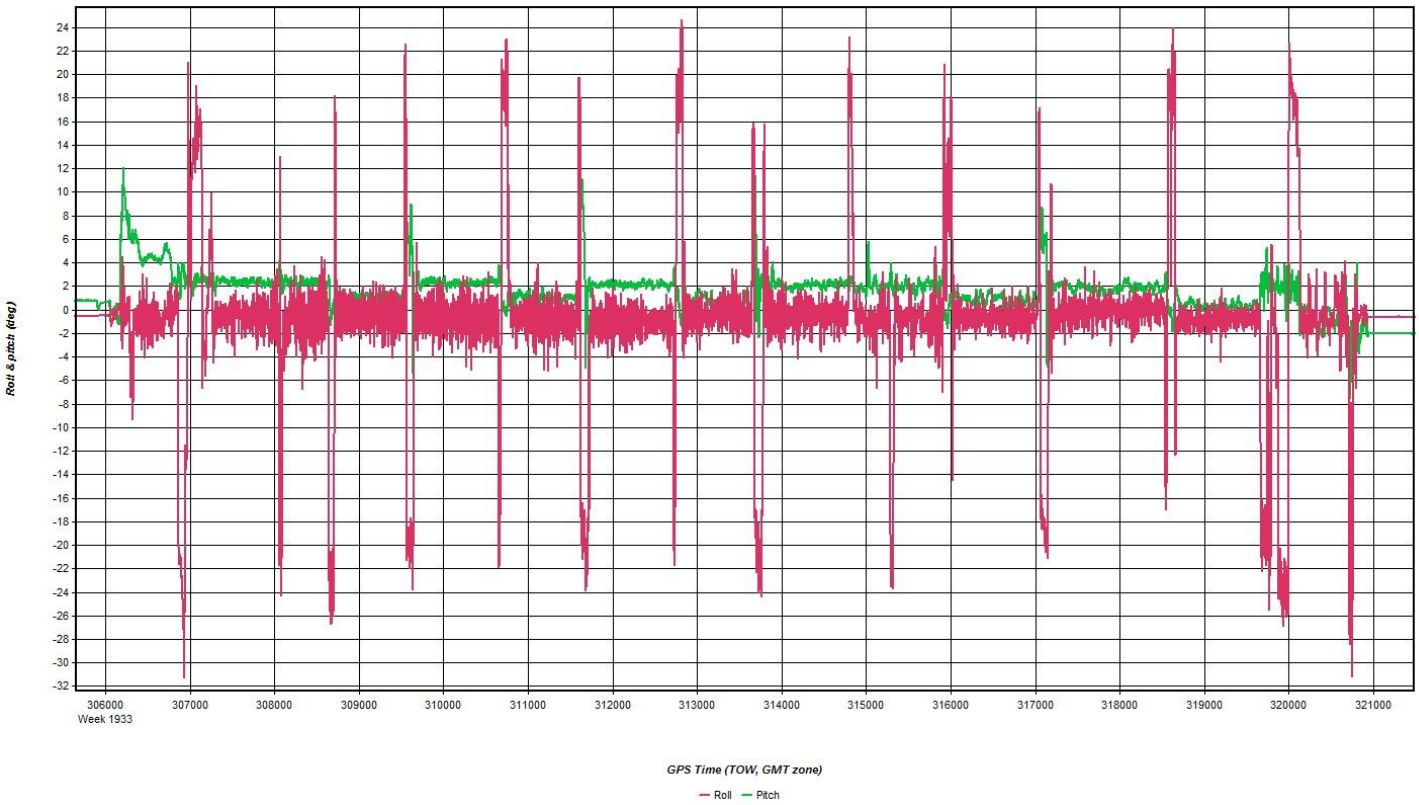

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

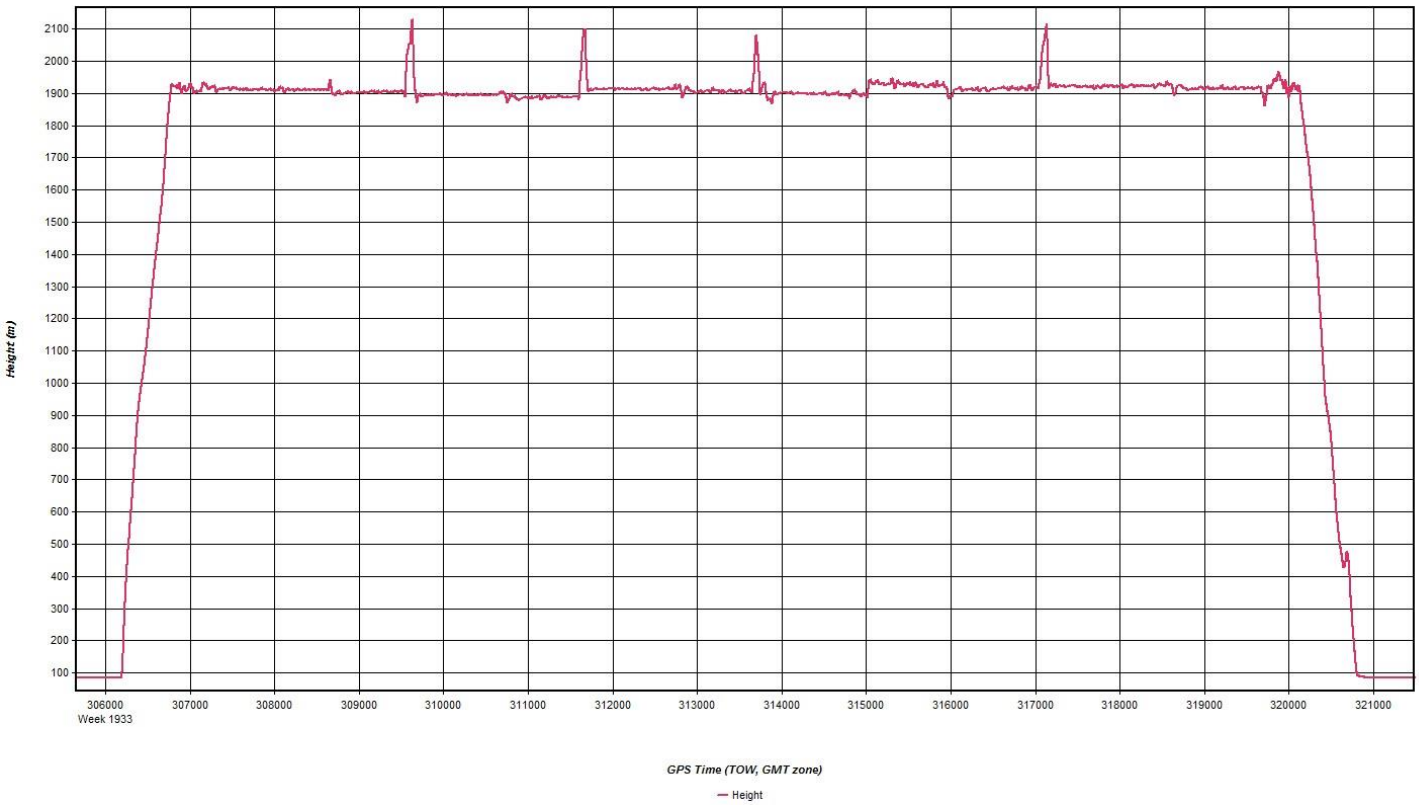

Separation (m)
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
East
North
Up

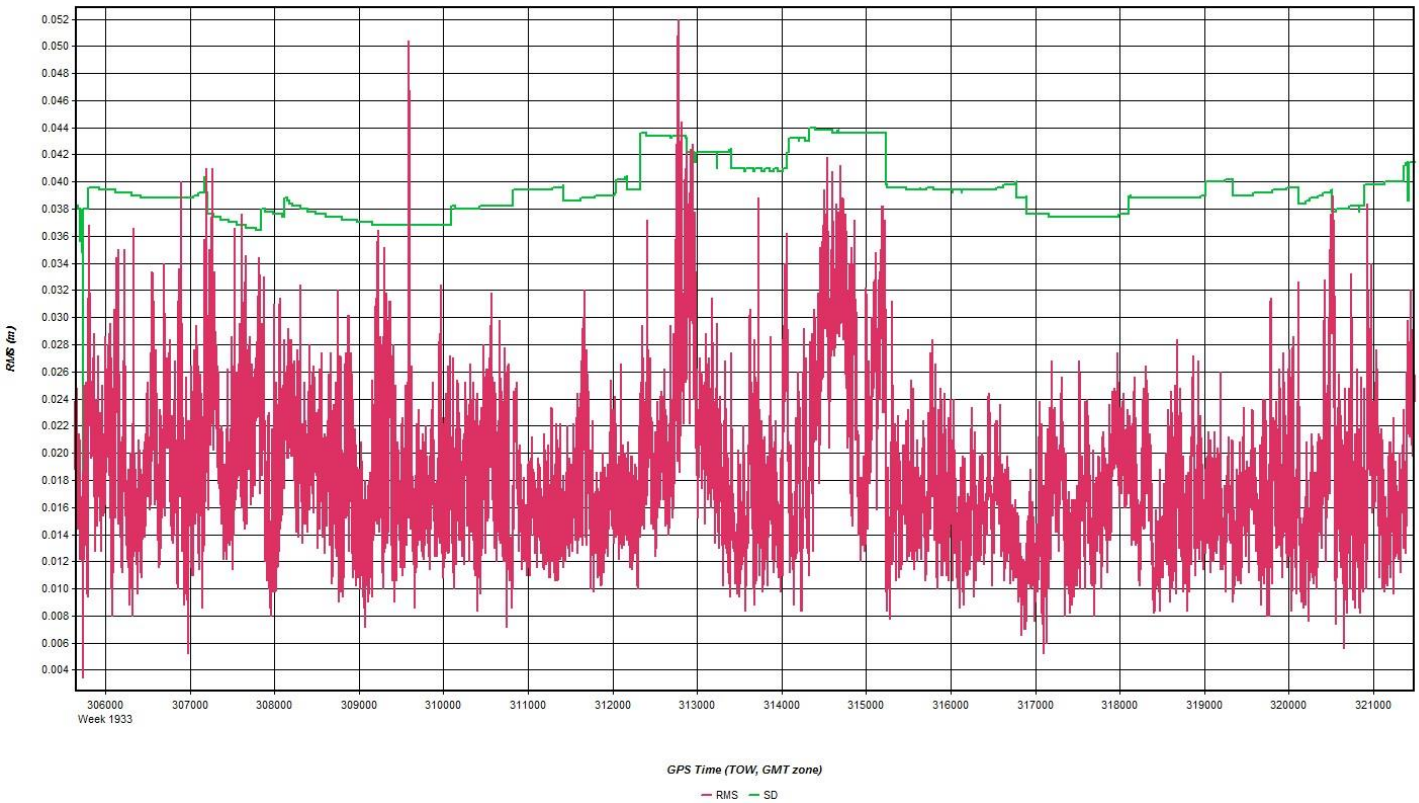

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

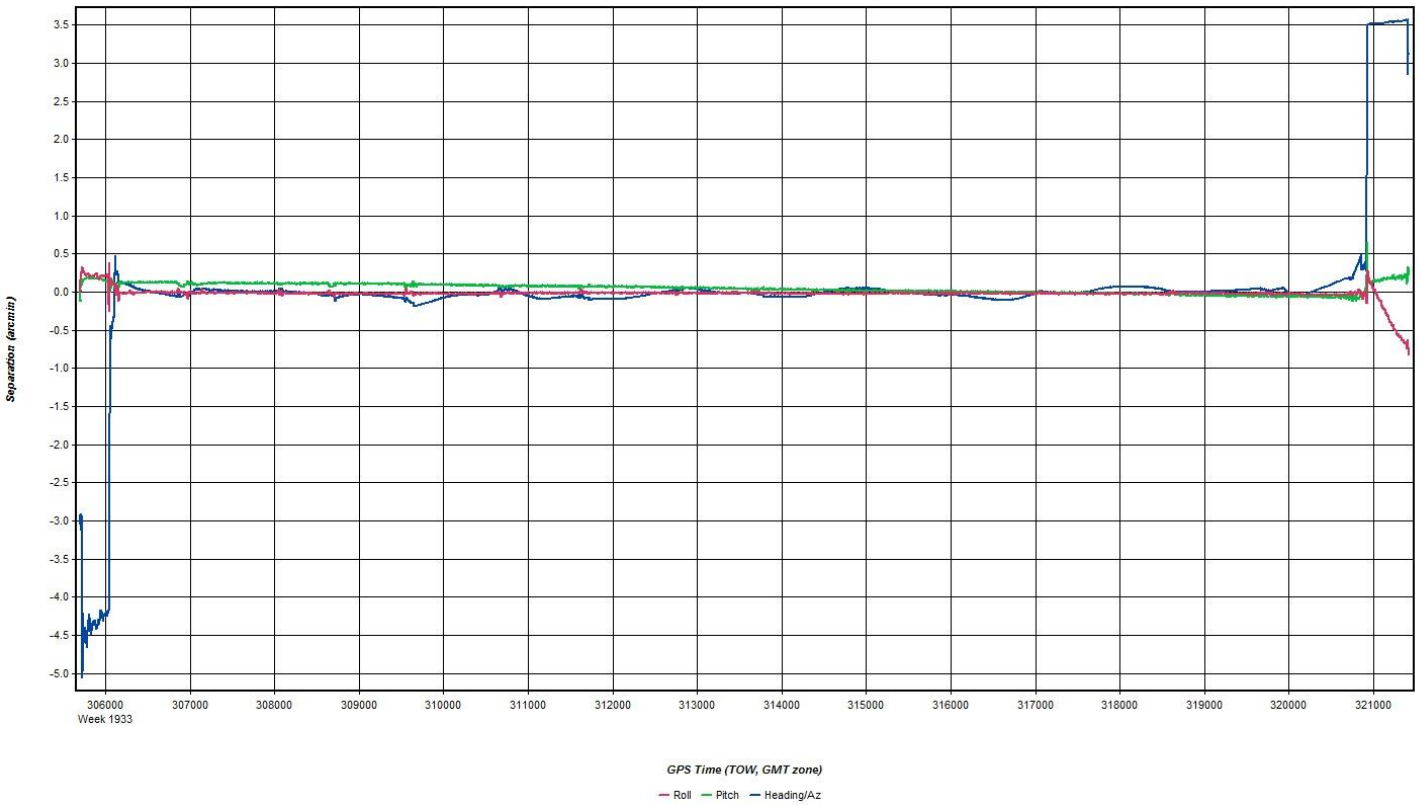

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
PDOP

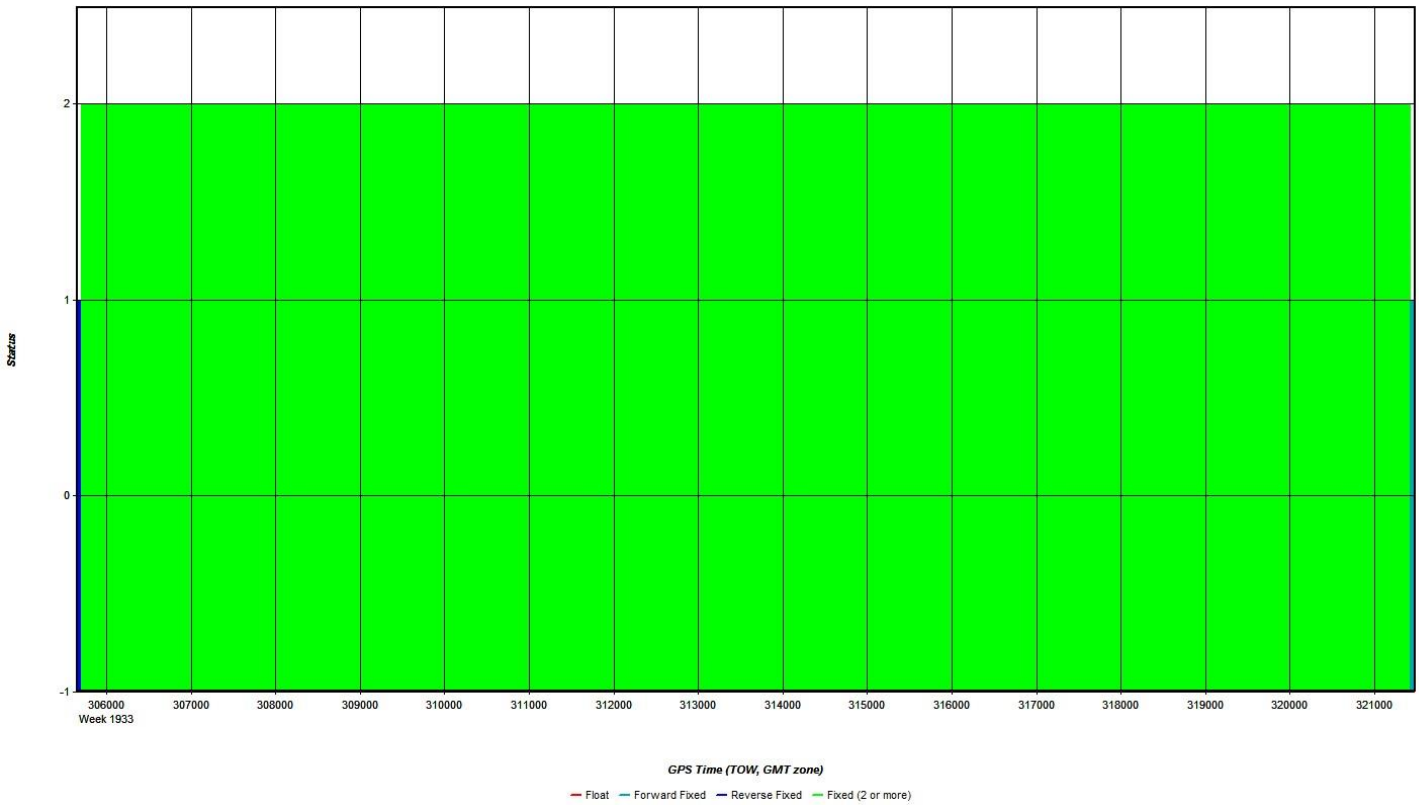

Estimated StdDev (m)
0.0175
0.0170
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

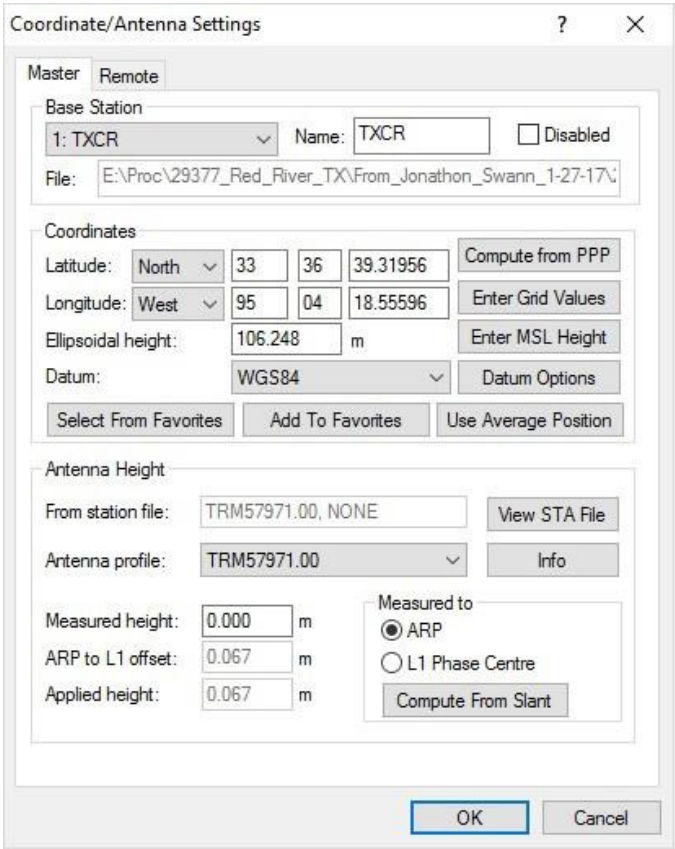

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
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
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
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
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
306000
Week 1933
307000
308000
309000
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name: TXCR
Disabled
File: E:\Proc\29377_Red_River_TX\From_Jonathon_Swann_1-27-17\
Coordinates
Latitude: North 33 36 39.31956
Longitude: West 95 04 18.55596
Ellipsoidal height: 106.248 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: 1-25-17 A
Life: (A) B C D E Pg 1 of 2

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170125-125114

Aircraft: N812TB Begin Hobbs: 4280.0 End Hobbs: 4284.1 Total: 4.1 Pilot: JBillington Co-Pilot: Tech: JSwan

Dep Apt: KGGG Dep Time (Lcl): 655 (Z): +6 Arr Apt: KTXK Arr Time (Local): 1111 (Z): +6 Tot Time Aloft: 4.2

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

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

Gd Temp beg: +10 °c End: 14 °c OAT beg: +10 °c End: +6 °c Altimeter begin: 2979 end: 2985

LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	Storage Name/#e
	A1570	7178						145	
	FOV	Scan Freq	MpIA Y / N	Pulses In Air	Pulse Rate	Power	PPSM	End GB	
	40	53			295	100		80	3
								Tot GB	

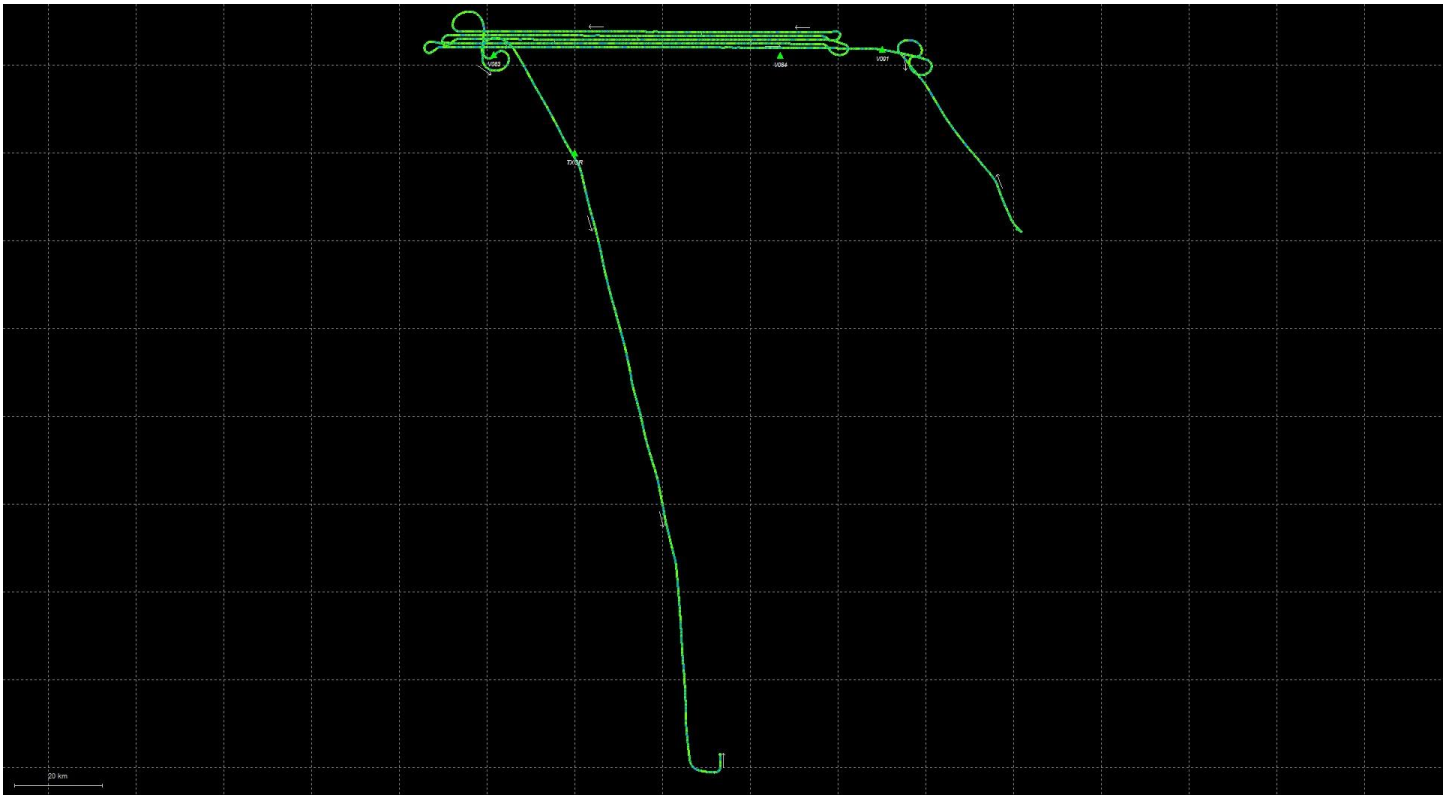
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									figs (1313-1319)
399	0°	1321	1333	152	1.1/11	6300		0	
306	90	1345	1358	161	1.4/14	6249		0	
305	270	1401	1417	147	1.3/16	6187		0/-	
304	90	1419	1432	143	1.2/17	6251		0	
303	270	1435	1451	138	1.2/18	6271		0/-	
302	90	1454	1507	143	" "	6275		0/-	
301	270	1510	1526	137	1.1/20	6168		0/-	Mt Pleasant complete!
IDABEL									IDABel-CORS Flyover TXCR(1534)
128	90	1546	1603	165	1.3/18	6223		0	
127	270	1606	1628	132	1.1/19	6327		0	
126	90	1631	1647	169	1.2/18	6281		0	
Xtie	180	1649	1651	167	1.2/20	6318		0	unplanned xtie
									figs (1651-1656) → CORS (TXTE)
									KTXK fuel stop
									Hobbs = 4.1
									onLine = 3.6
									Mob = 0.5

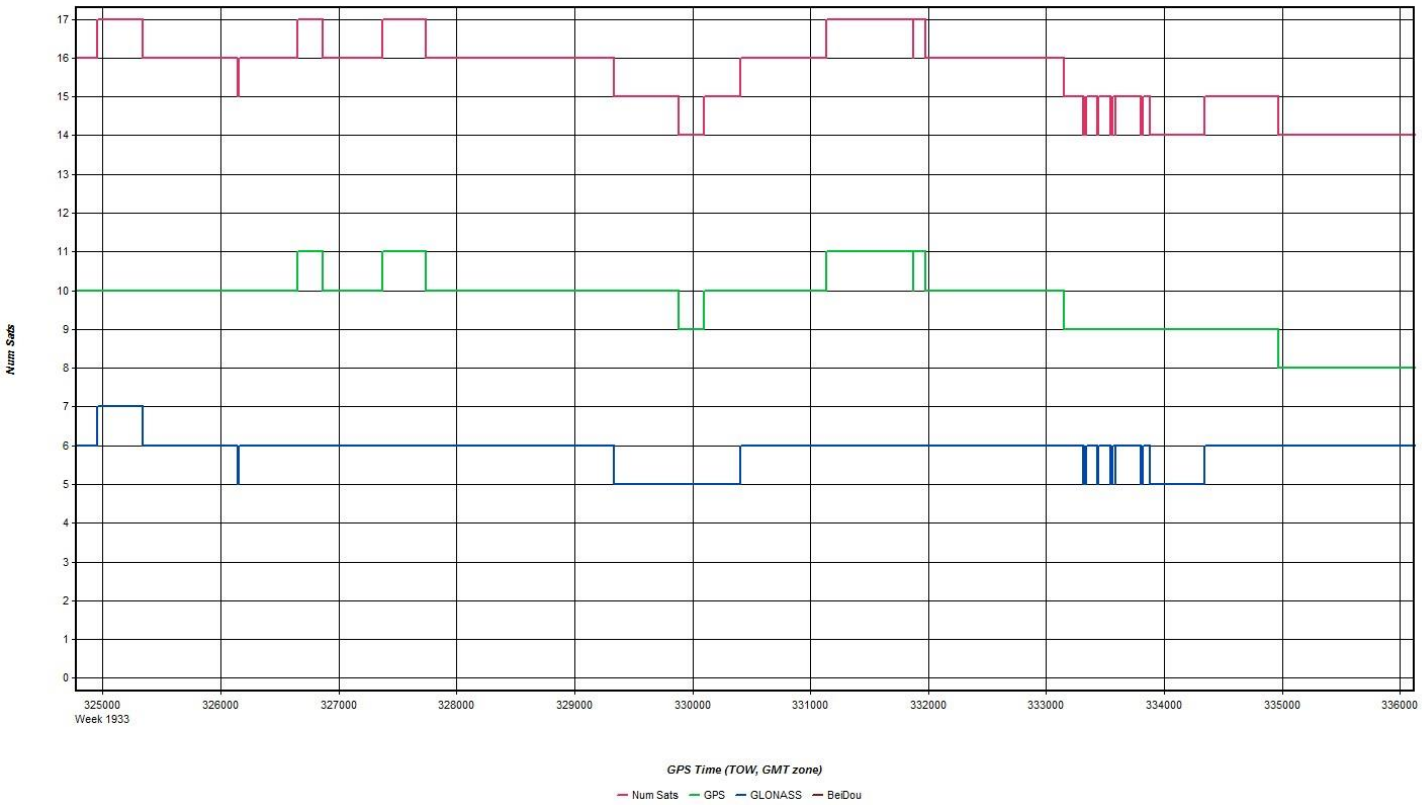
Mt Pleasant Complete

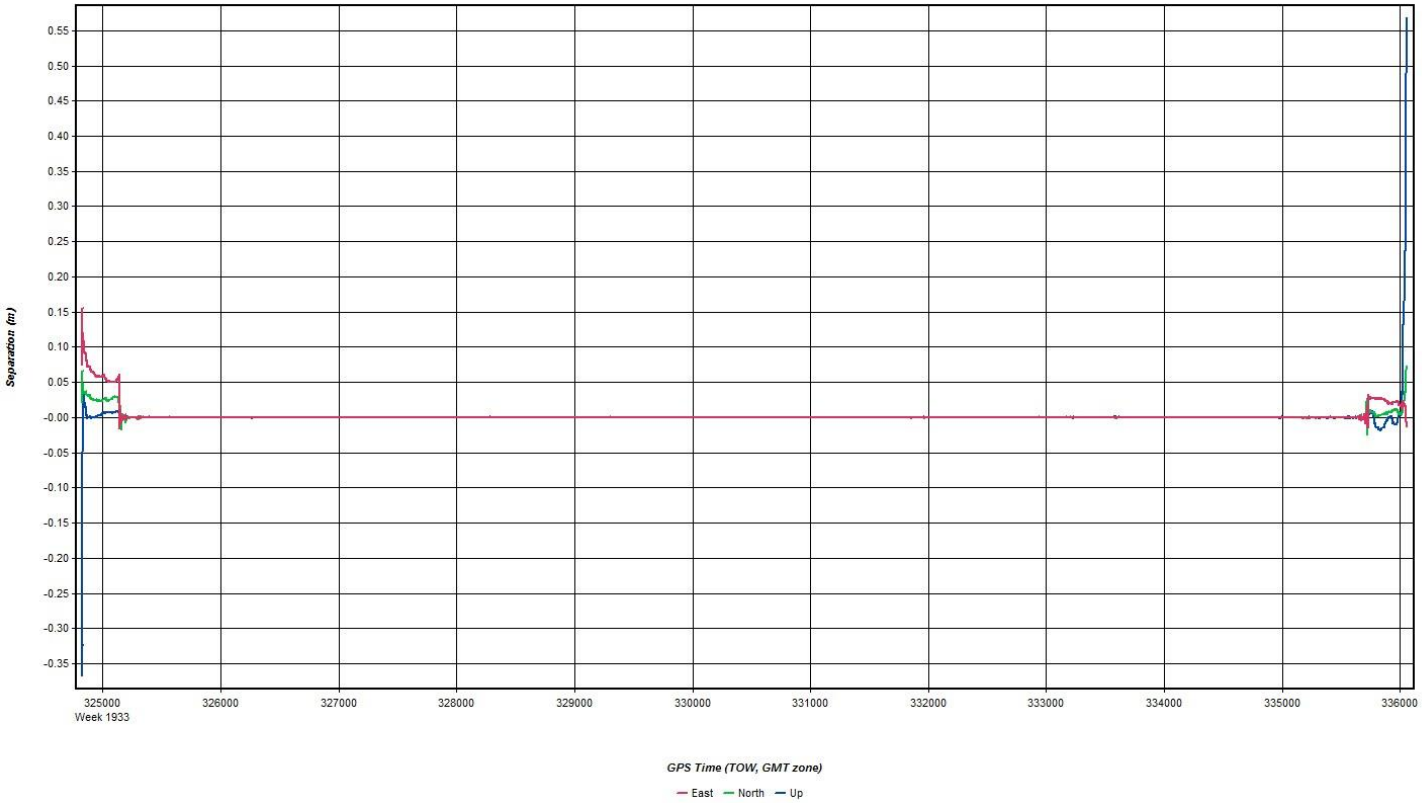
IDABel

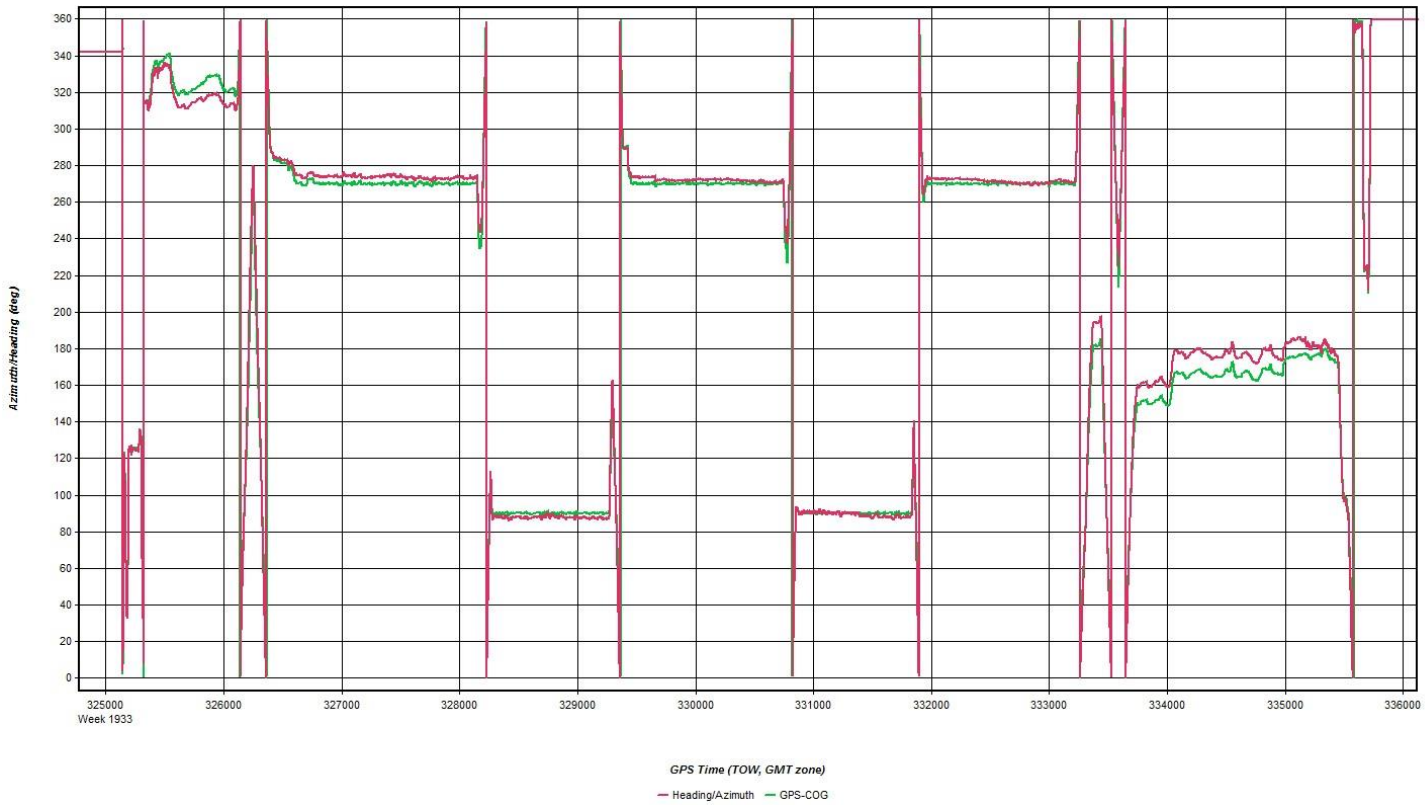
Total Proj Lines: Lines Flown: 10 Lines Remain: OnLine Time: 3.6 Mob Time: Notes: Strong wind out of west

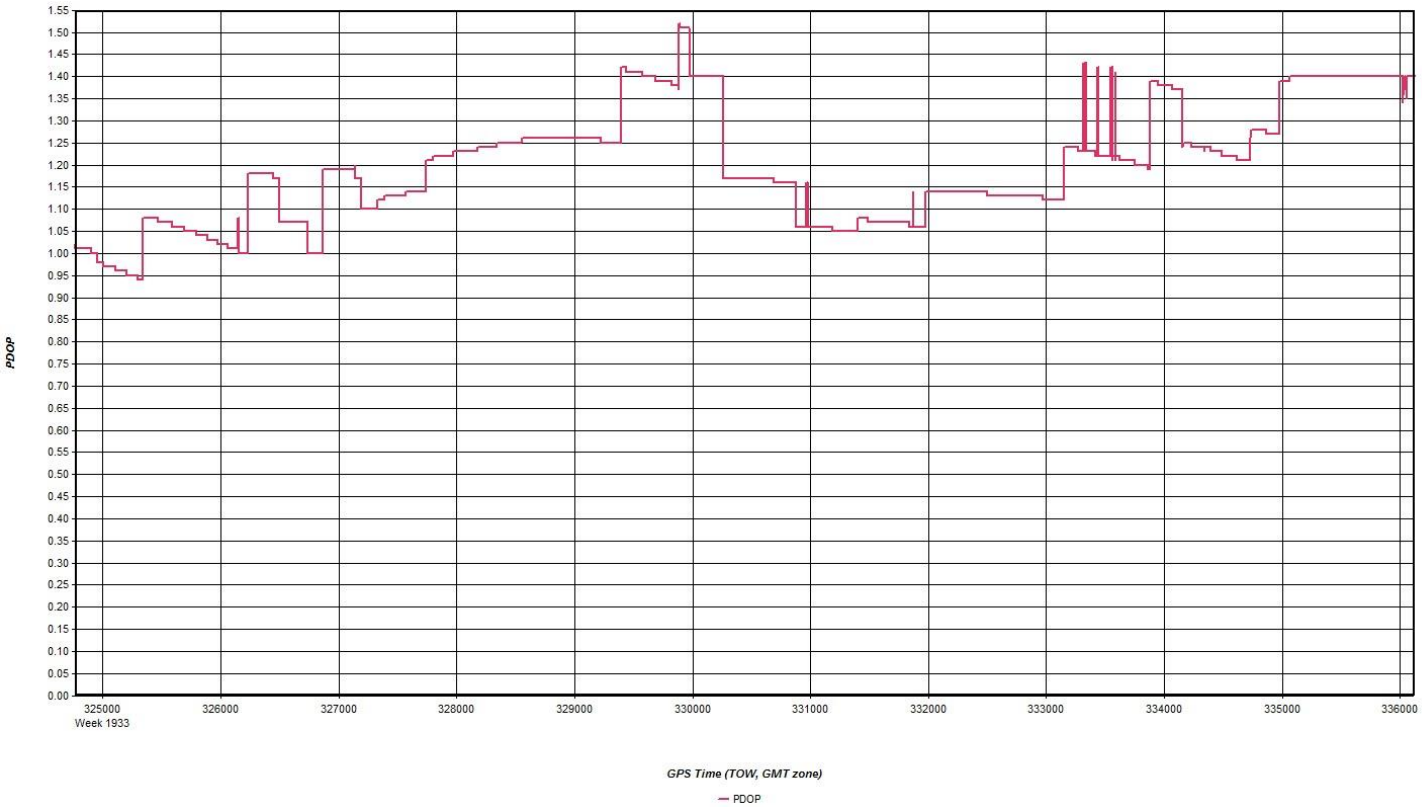
Jan 25, 2017-B (N812TB, SN7178)

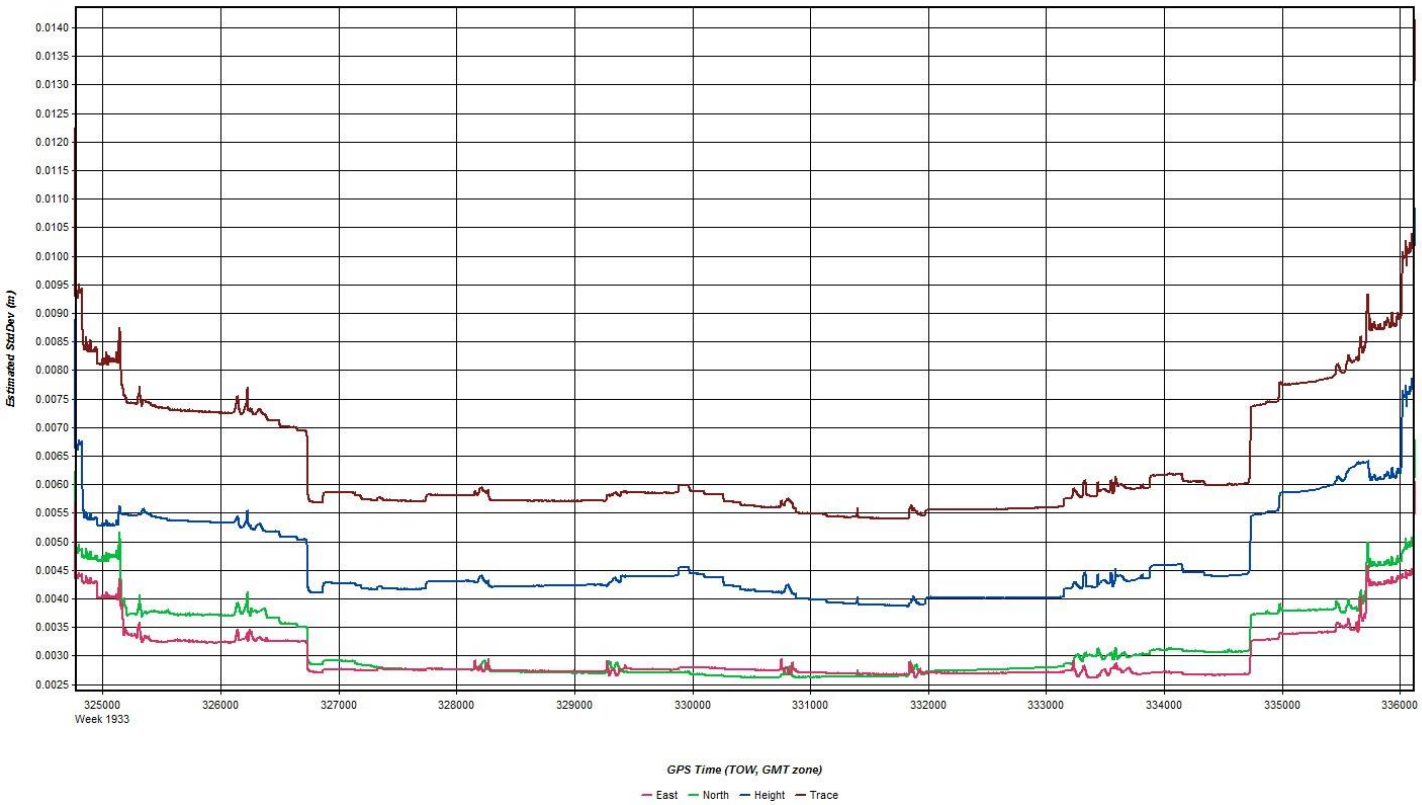


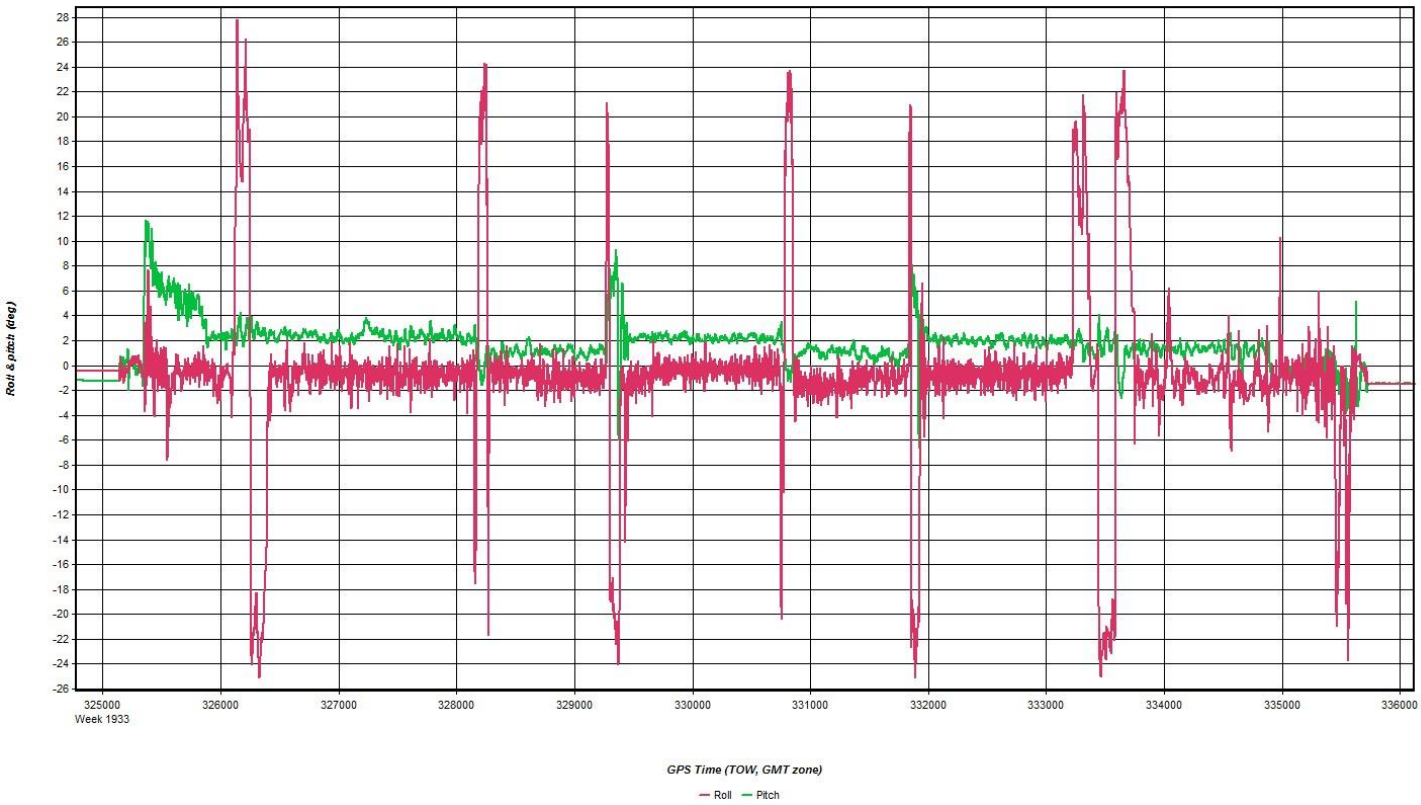

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

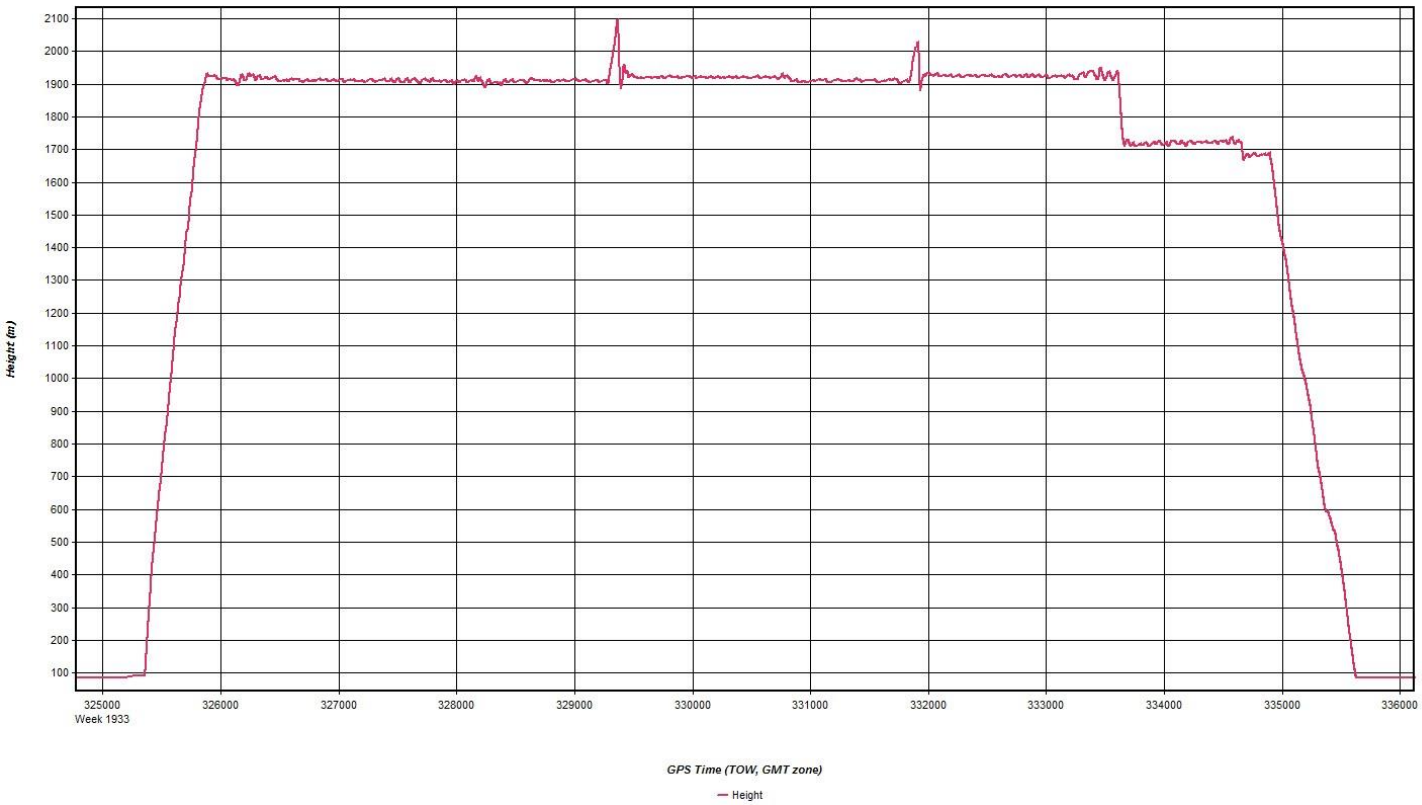

Separation (m)
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
East
North
Up


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

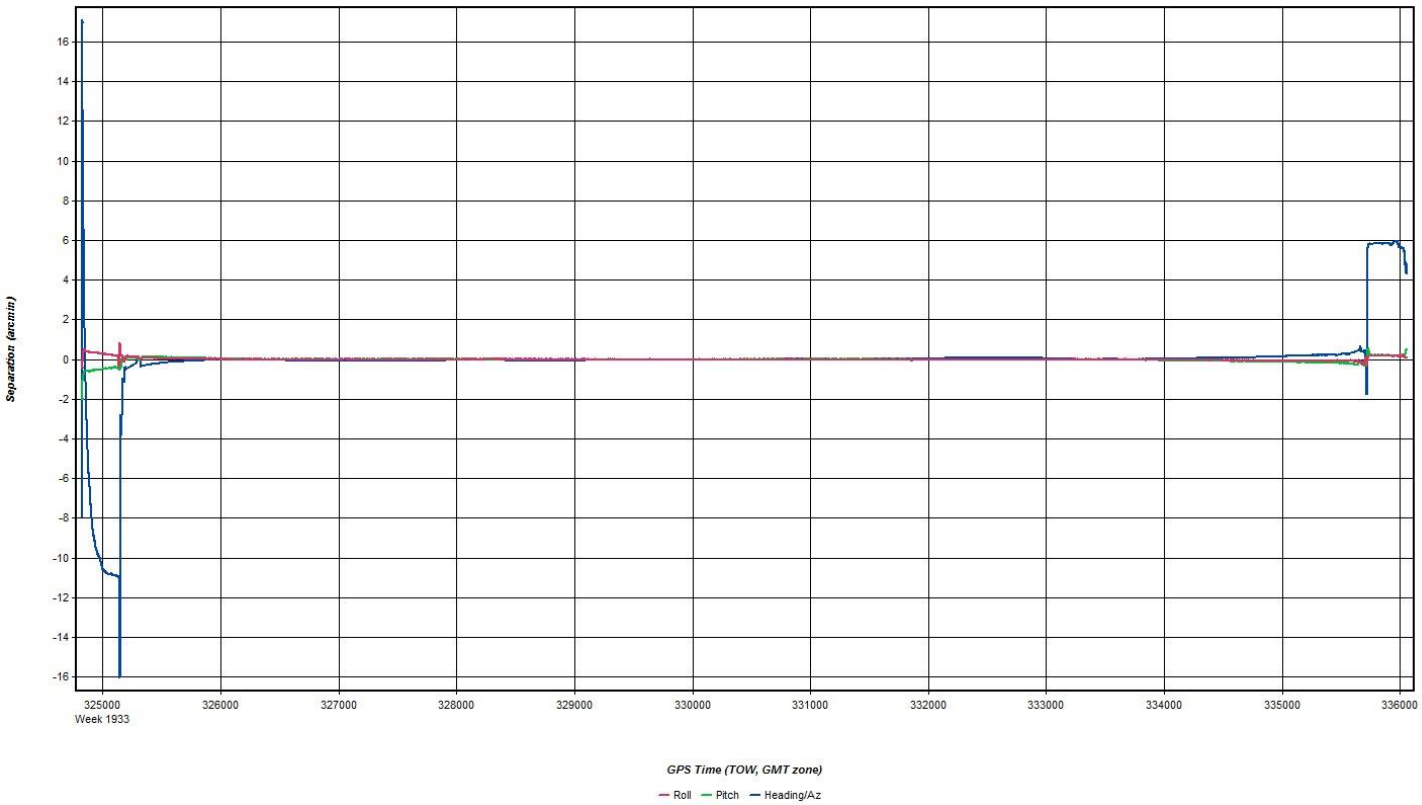

PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
PDOP

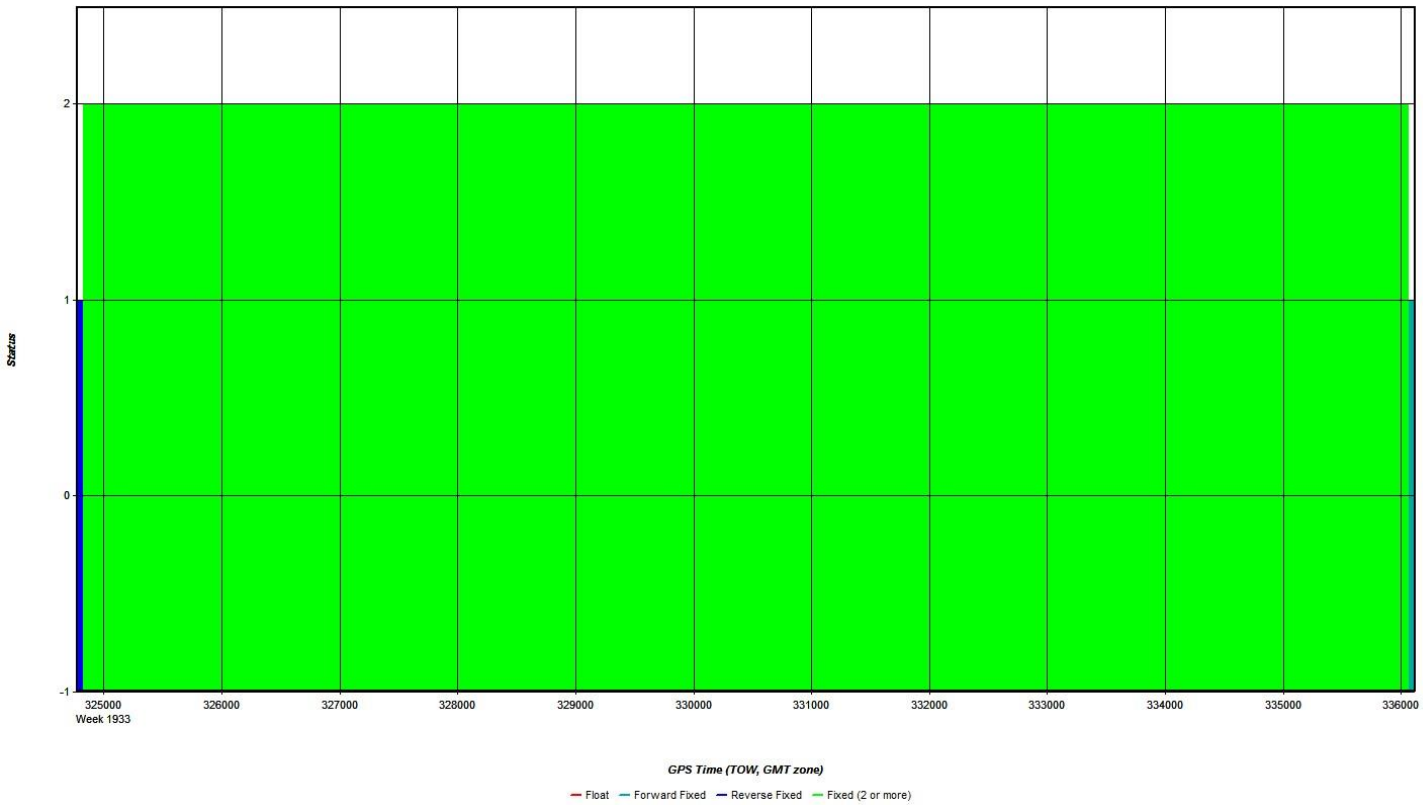

Estimated StdDev (m)
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

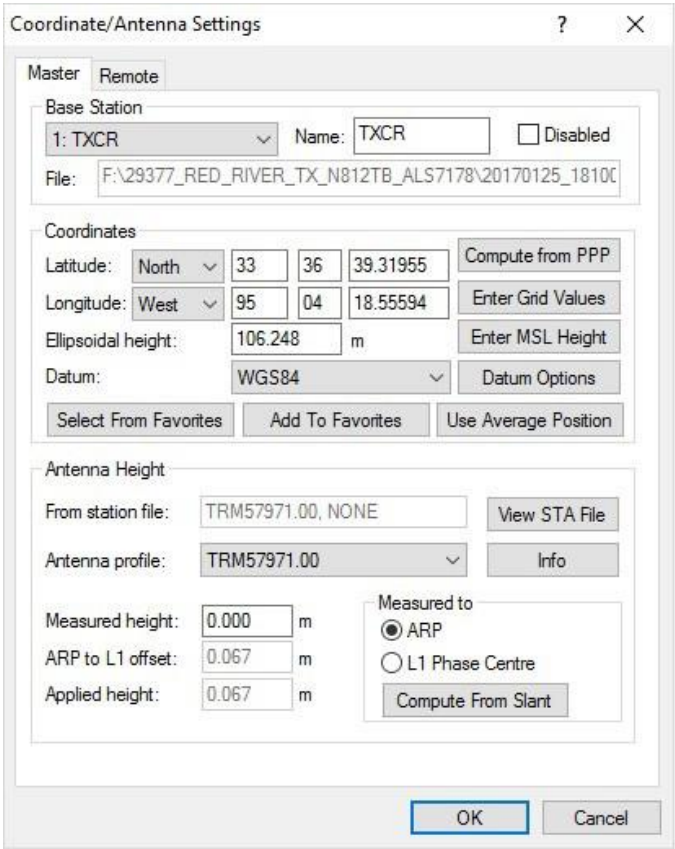

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
Roll
Pitch

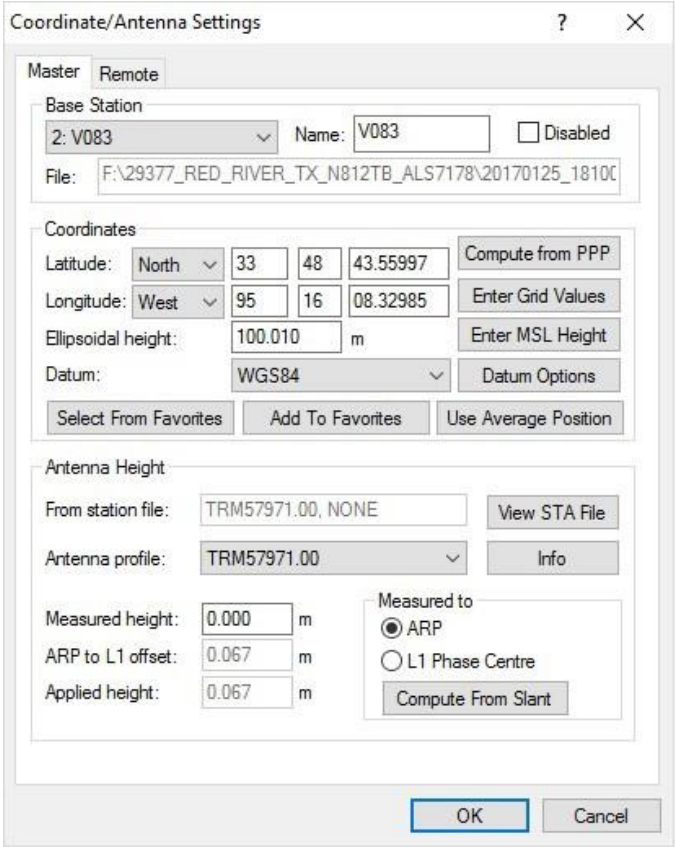

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
Height

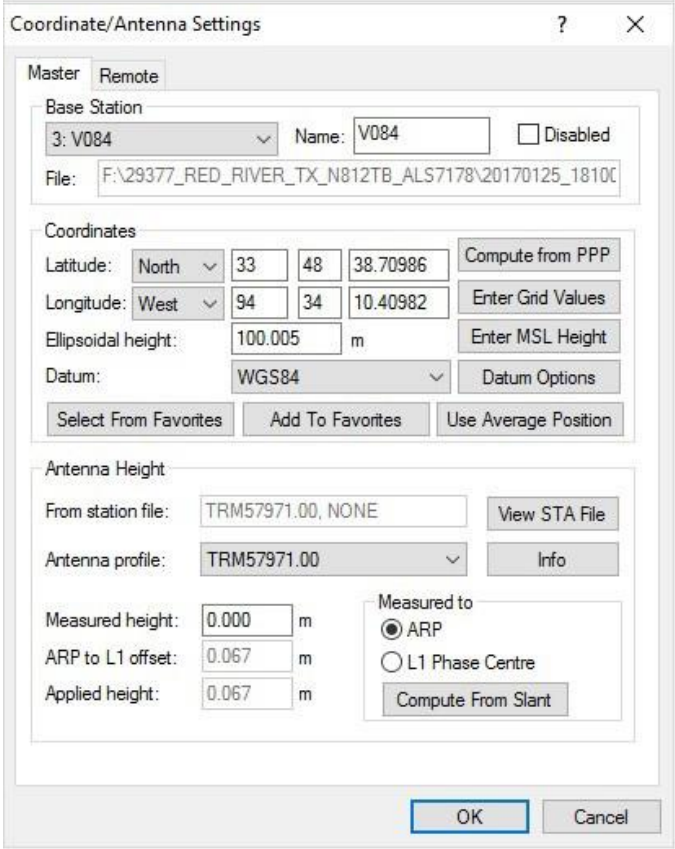

RMS (m)
0.066
0.064
0.062
0.060
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
RMS
SD

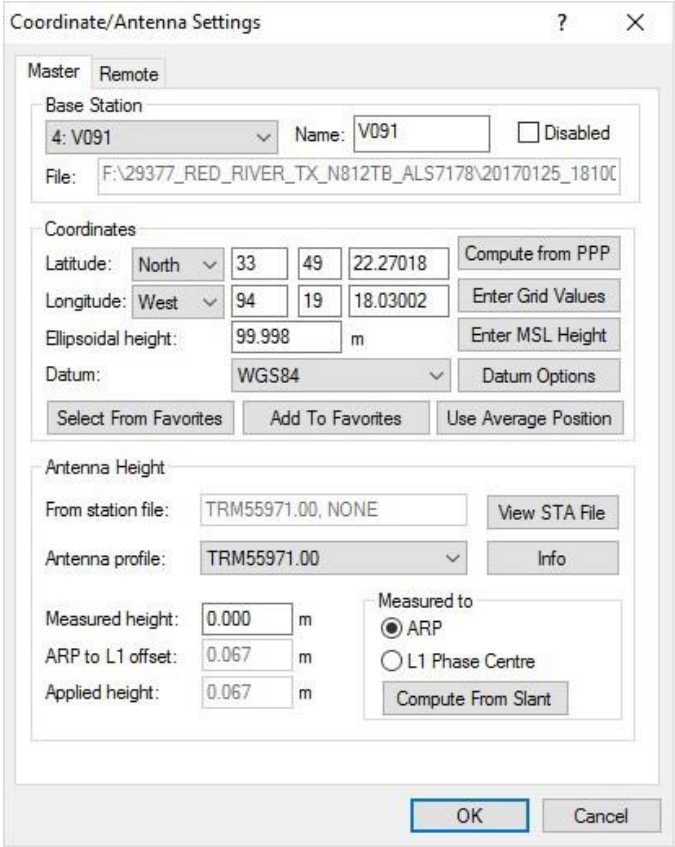

Separation (arcmin)
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
325000
Week 1933
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name:
TXCR
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_1810(
Coordinates
Latitude:
North
33
36
39.31955
Compute from PPP
Longitude:
West
95
04
18.55594
Enter Grid Values
Ellipsoidal height:
106.248
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: V083
Name: V083
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_1810(
Coordinates
Latitude: North 33 48 43.55997
Longitude: West 95 16 08.32985
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


Coordinate/Antenna Settings
Master
Remote
Base Station
3: V084
Name: V084
Disabled
File: F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_1810(
Coordinates
Latitude: North 33 48 38.70986
Longitude: West 94 34 10.40982
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: 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: V091
Name:
V091
Disabled
File:
F:\29377_RED_RIVER_TX_N812TB_ALS7178\20170125_1810(
Coordinates
Latitude:
North
33
49
22.27018
Compute from PPP
Longitude:
West
94
19
18.03002
Enter Grid Values
Ellipsoidal height:
99.998
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

Flight Log

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

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-25-17 B

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

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170125_181002

Aircraft: N812TB Begin Hobbs: ~~1820~~ 4284.1 End Hobbs: 4286.9 Total: 2.8 Pilot: J Billington Co-Pilot: ____ Tech: JSwan

Dep Apt: KTXK Dep Time (Lcl): ~~1820~~ (Z): +6 Arr Apt: K666 Arr Time (Local): (Z): Tot Time Aloft: 2.9

CORS: (Y) / N Sta 1: TXTE 1820 Sta 2: Flyovers: (Y) / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: TXCR - ~~2045~~ 2046 Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

Gd Temp beg: 14 °c End: 15 °c OAT beg: 6 °c End: 5 °c Altimeter begin: 2985 end: 2985

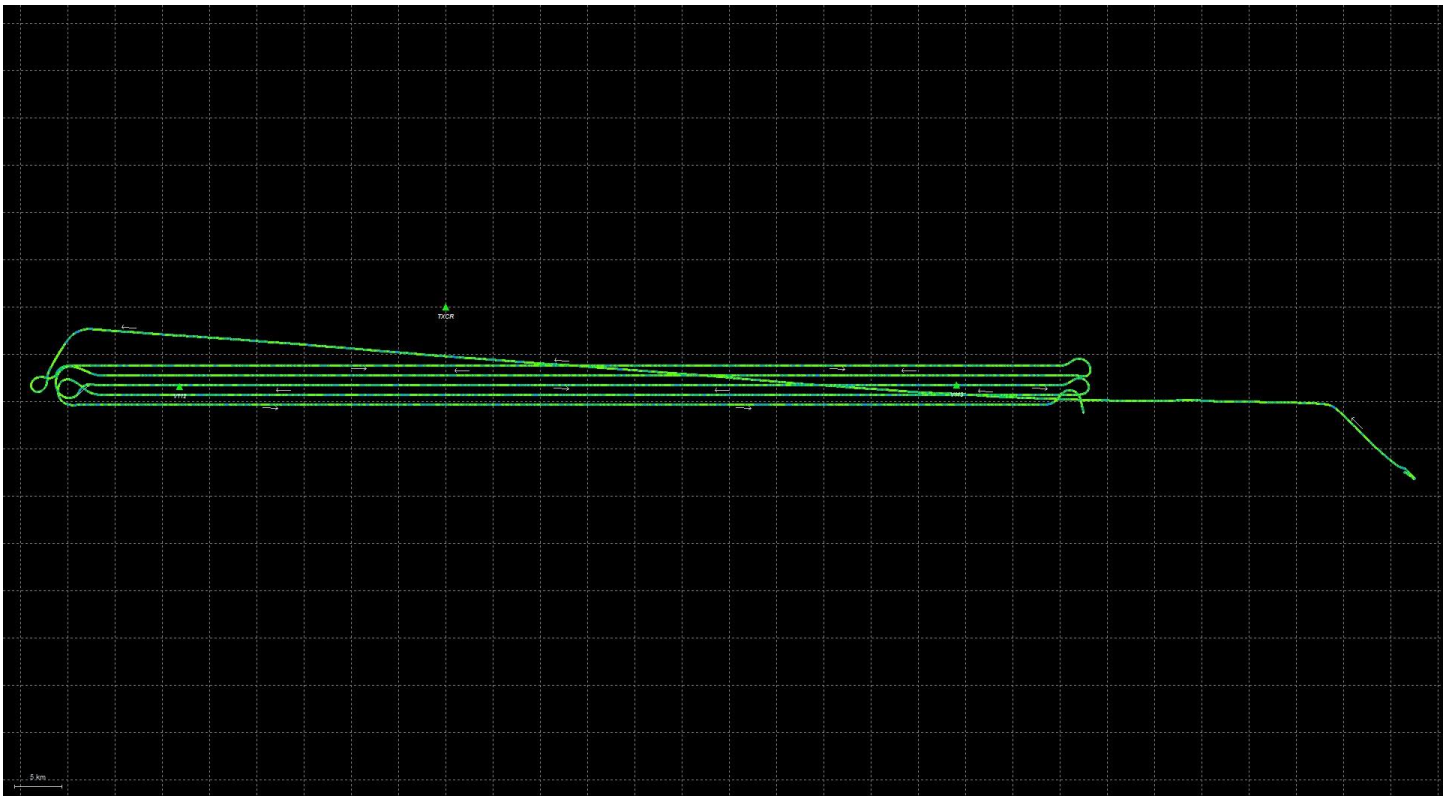
LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing		Beg CB	Storage Name/#
	A1570	7178							80	3
	FOV	Scan Freq	MpIA Y / N	Pulses In Air	Pulse Rate	Power	PPSM		End CB	
	40	53			295	100			40	
									Tot CB	
									40	

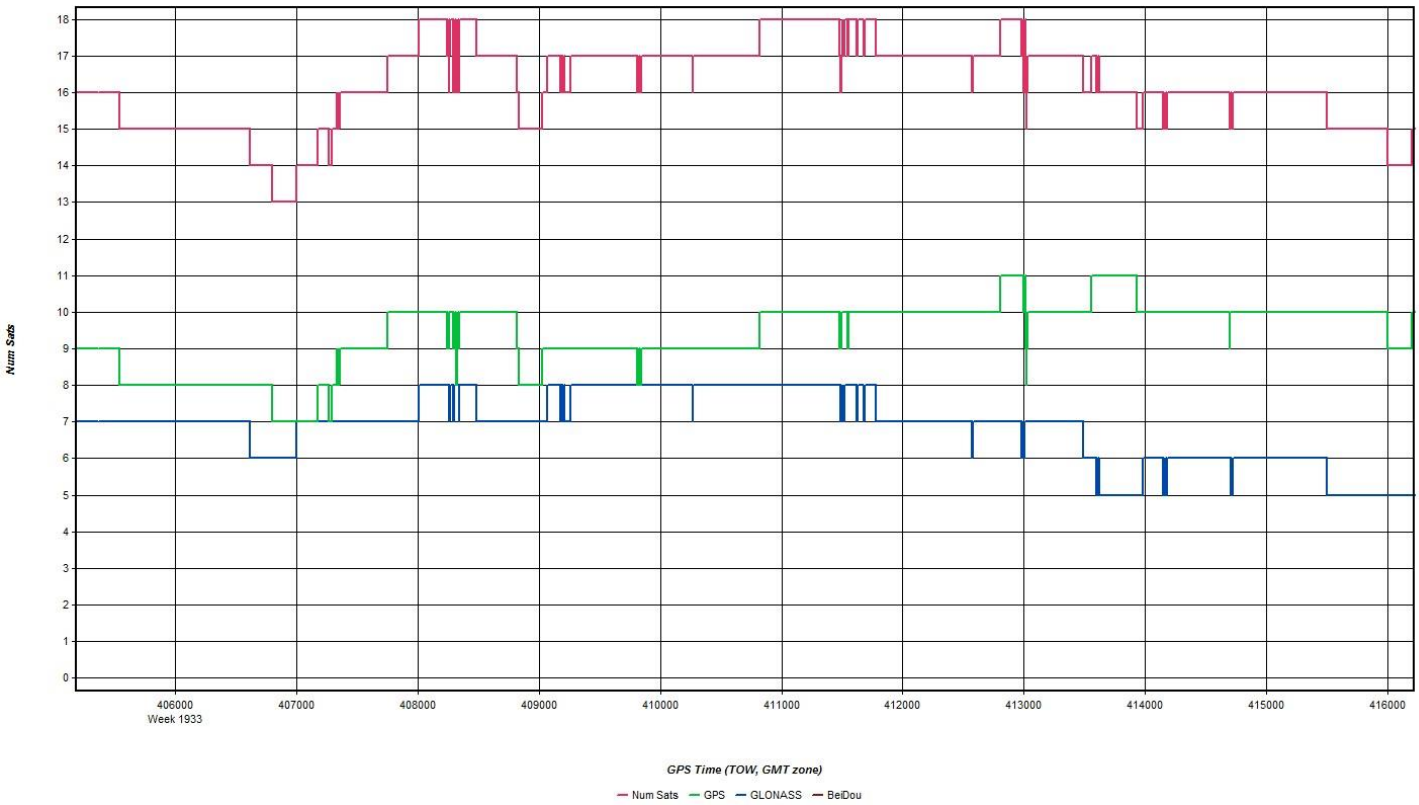
IDABEL Lines

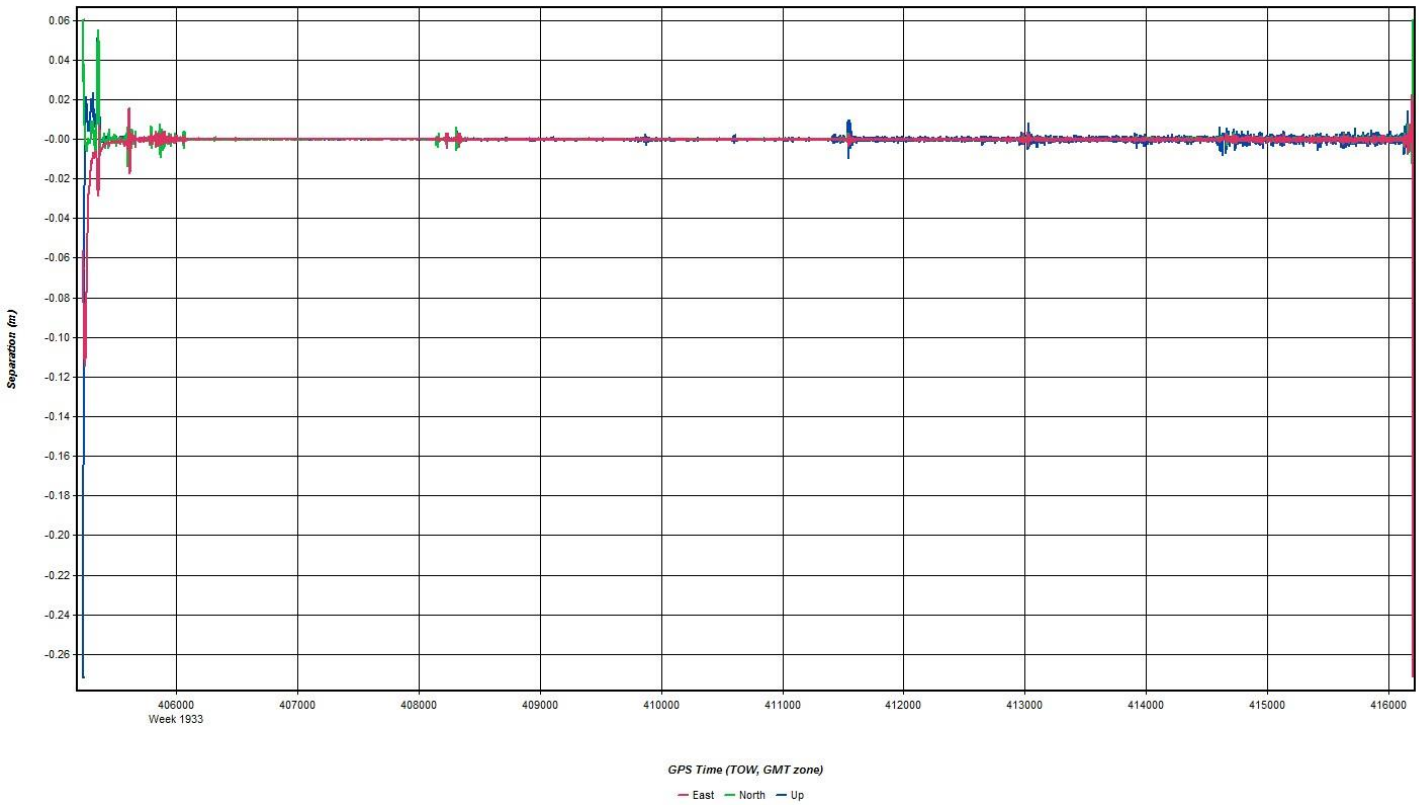
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	HDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES -- visibility, clouds, smoke, partial, etc.
		1820 -	1840		TXTE →		KTXK →		Fig 8's (1837-1840)
125	270	1846	1908	120	1.1/20	6269		0	
124	90	1911	1927	170	1.4/18	6237		0	
123	270	1931	1952	125	1.5/17	6260		0	
122	90	1955	2010	167	1.3/18	6249		0	
121	270	2012	2032	124	1.2/17	6305		0	
xtie	180	2035	2037	181	1.3/16	6349		0	
									Fig 8's (2037-2041) → TXCR (2046)
									Hobbs = 2.8
								(B)	ONLine = 1.8
									mob = 1.0
									0125 HOBBS = 6.9
									Total ONLine = 5.4
									mob = 1.5

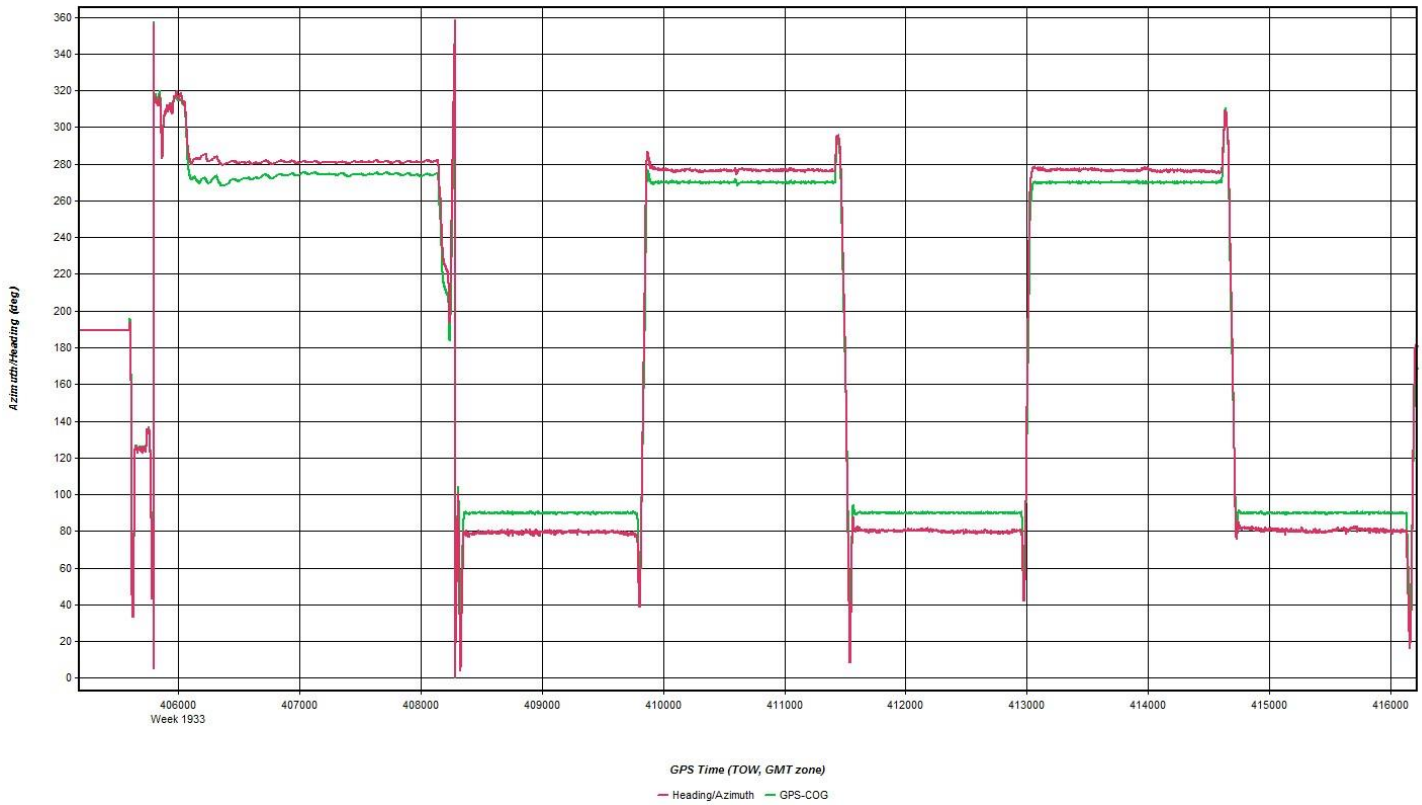
Total Proj Lines: Lines Flown: 5 Lines Remain: Online Time: 1.8 Mob Time: 1.0 Notes:

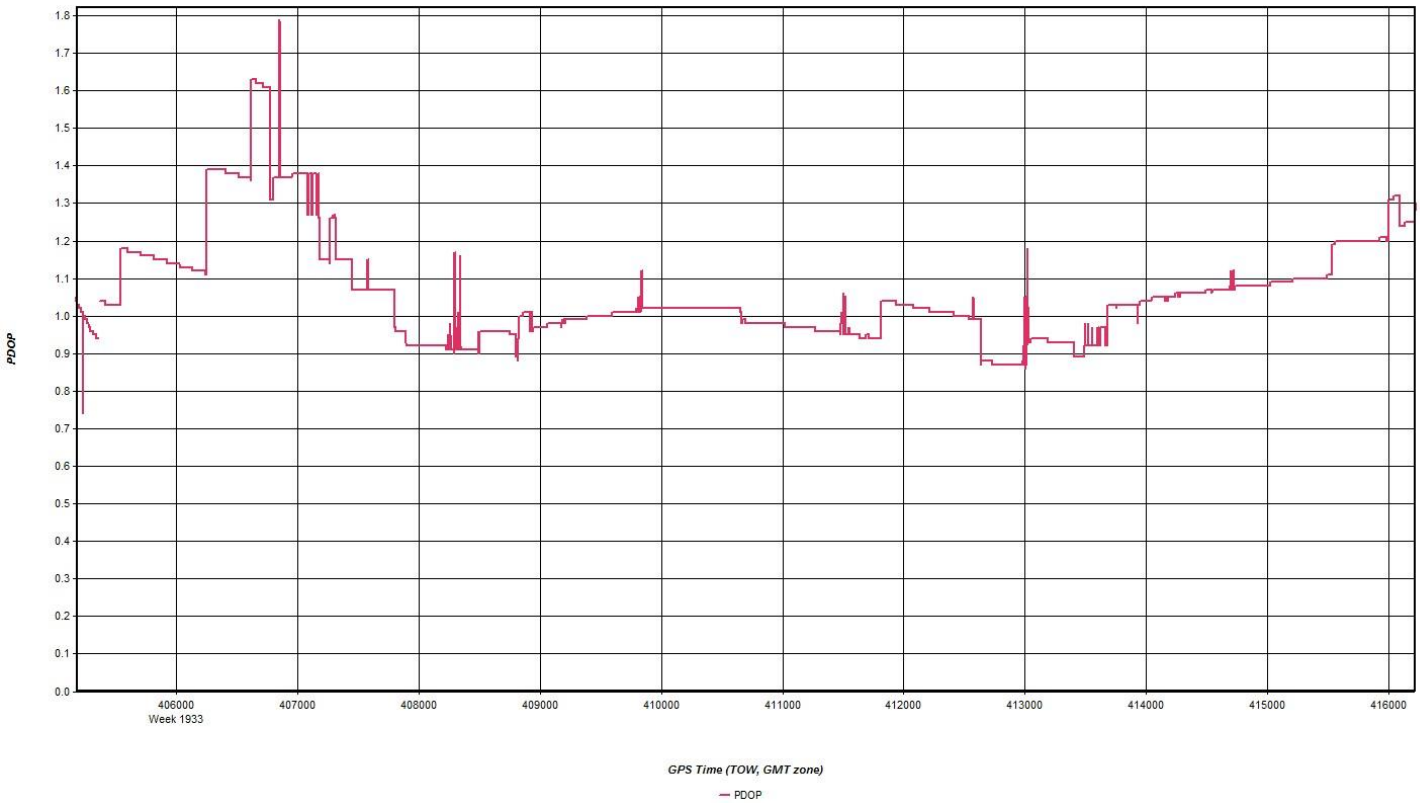
Jan 26, 2017-A (N208NR, SN8239)

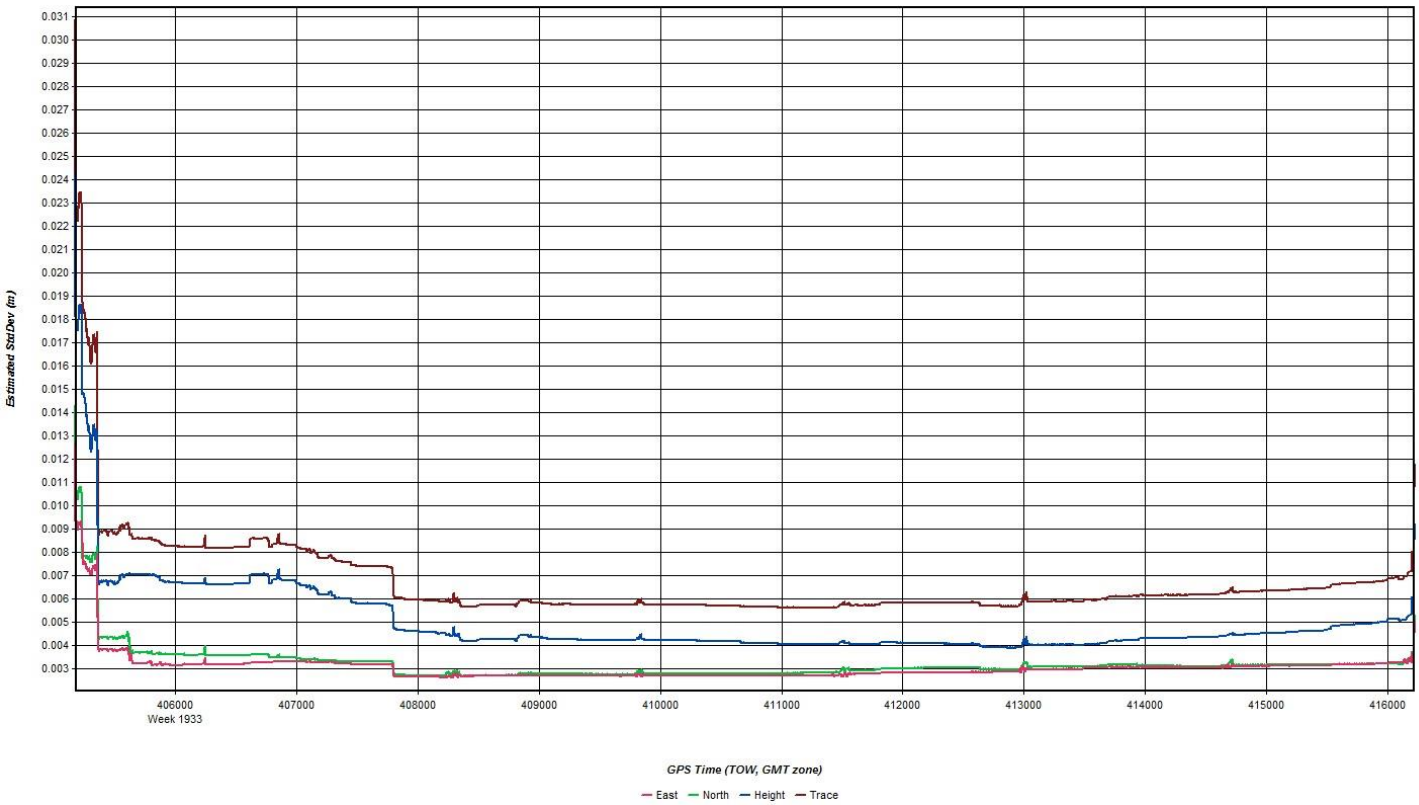


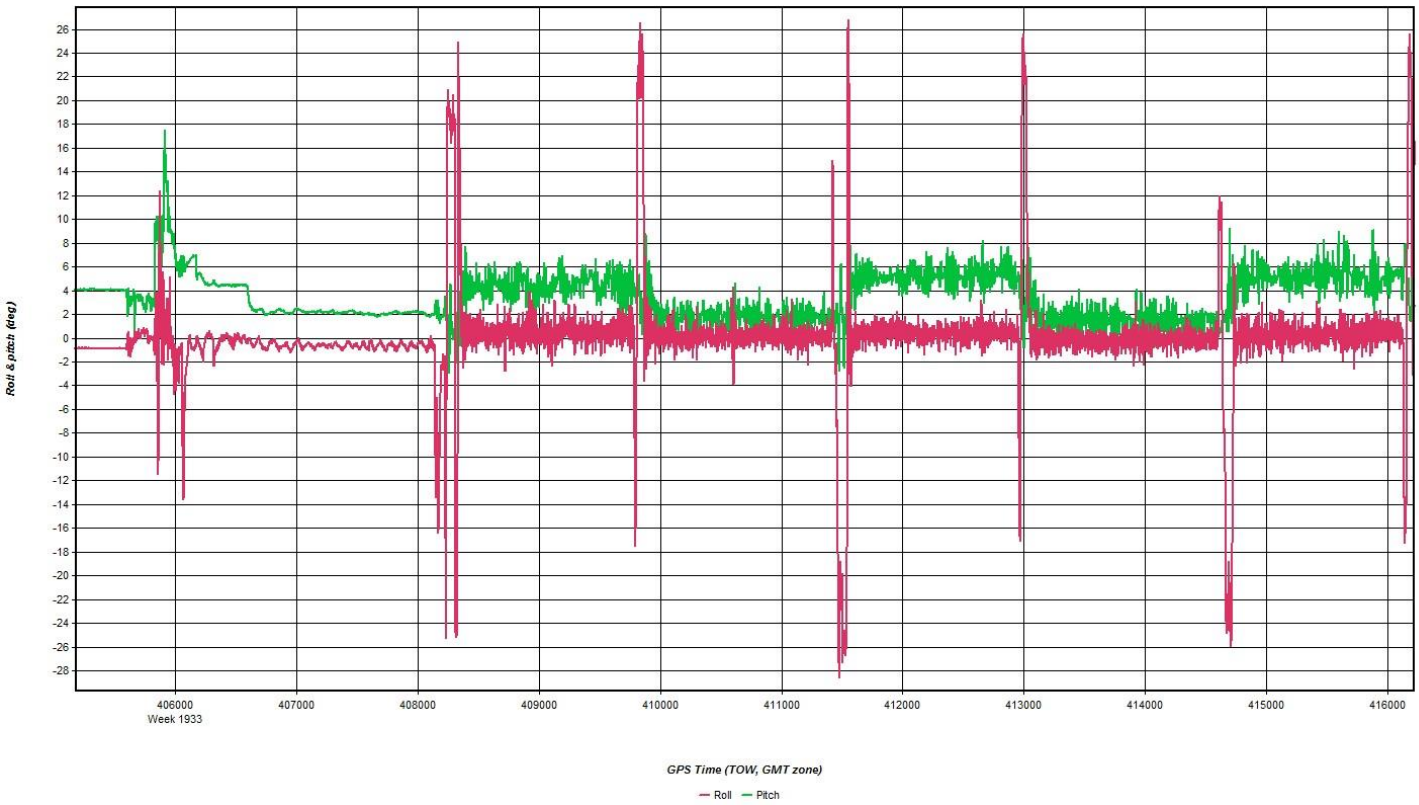

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

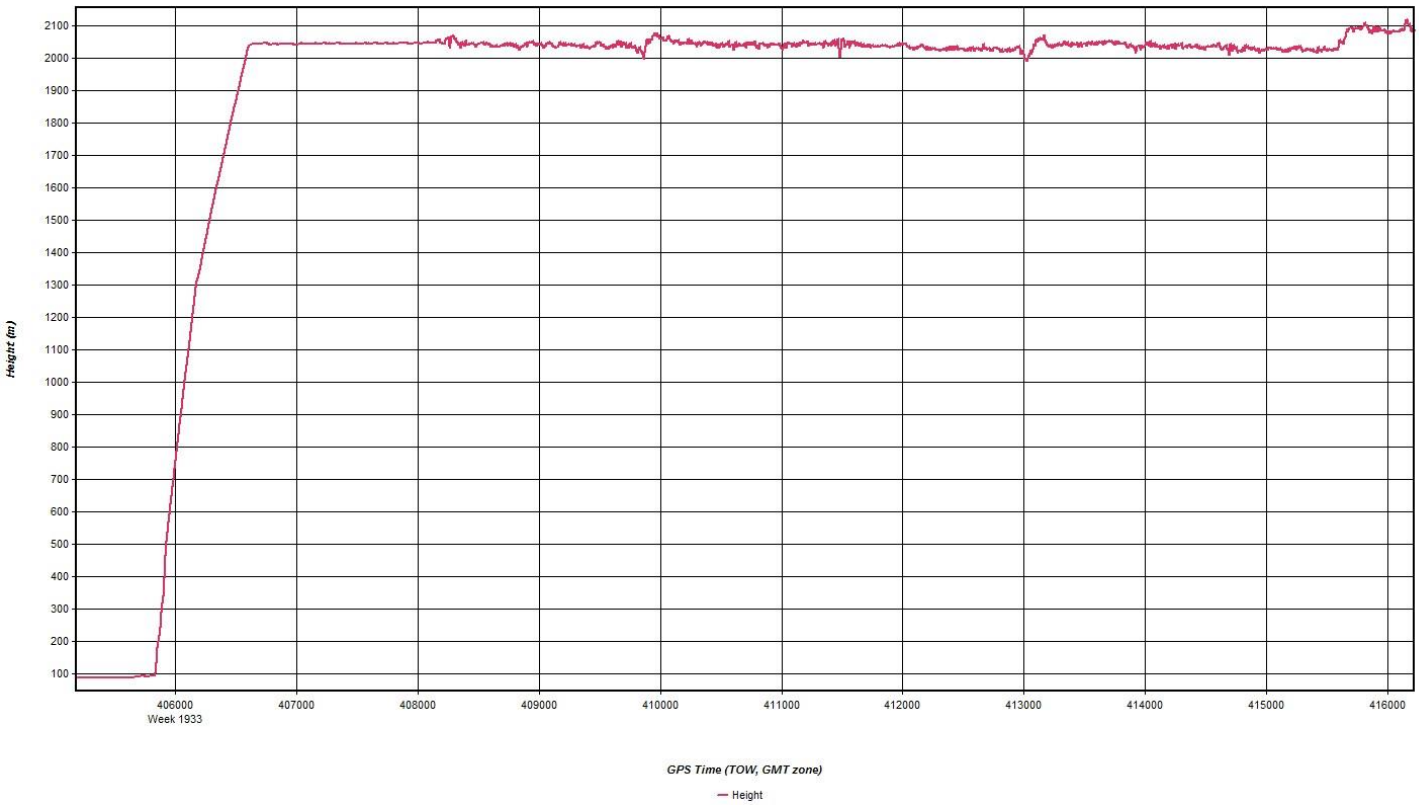

0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
Separation (m)
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
East
North
Up

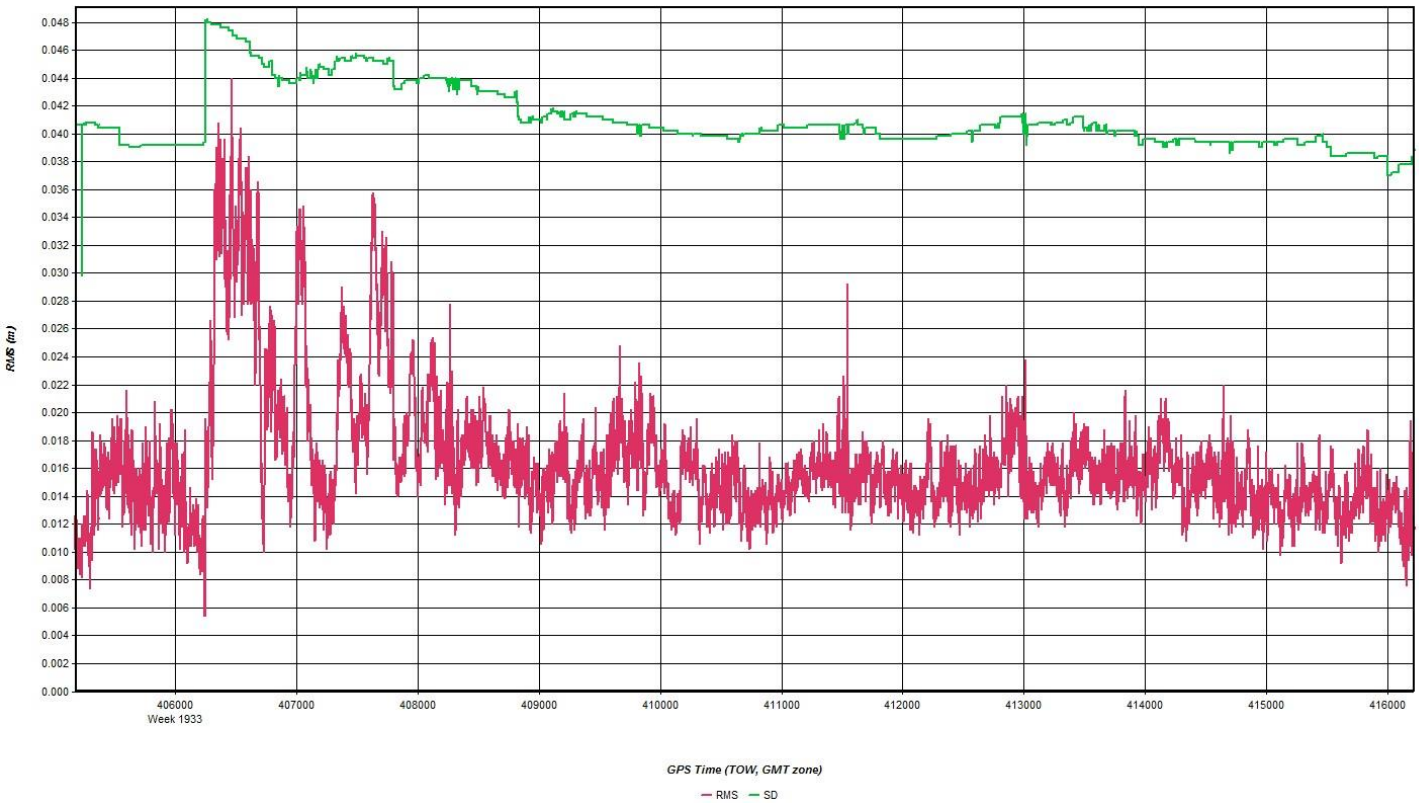

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

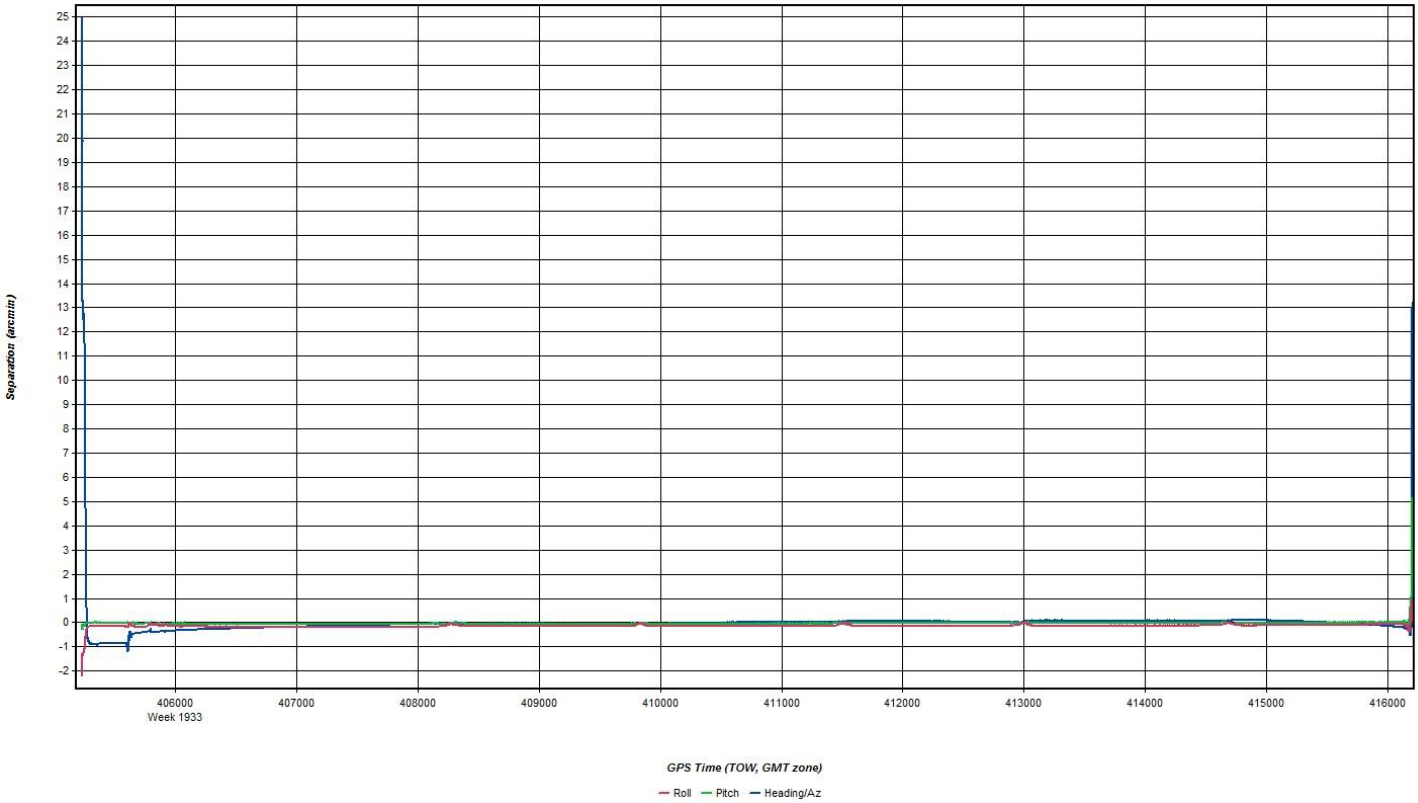

PDOP
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
PDOP

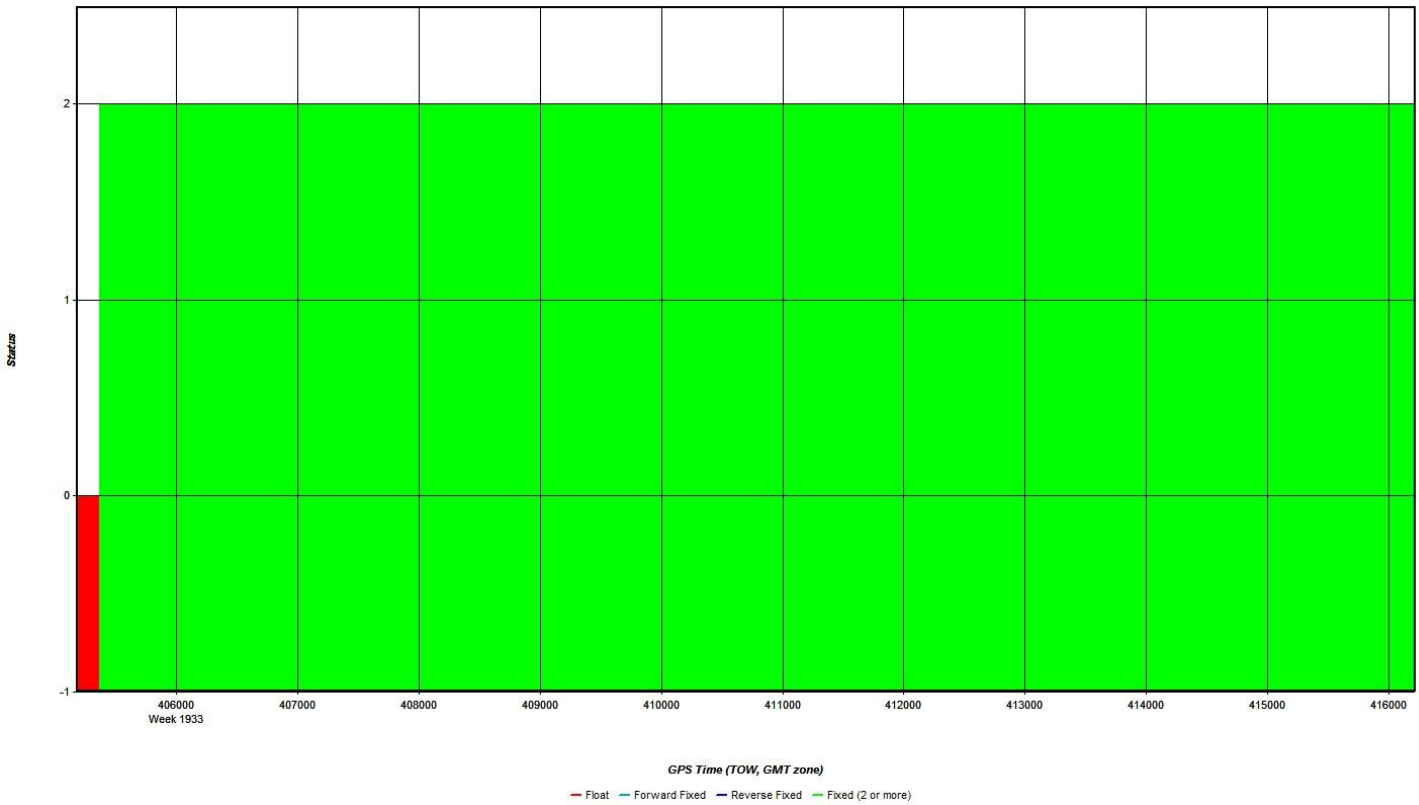

Estimated StdDev (m)
0.031
0.030
0.029
0.028
0.027
0.026
0.025
0.024
0.023
0.022
0.021
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
0.003
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

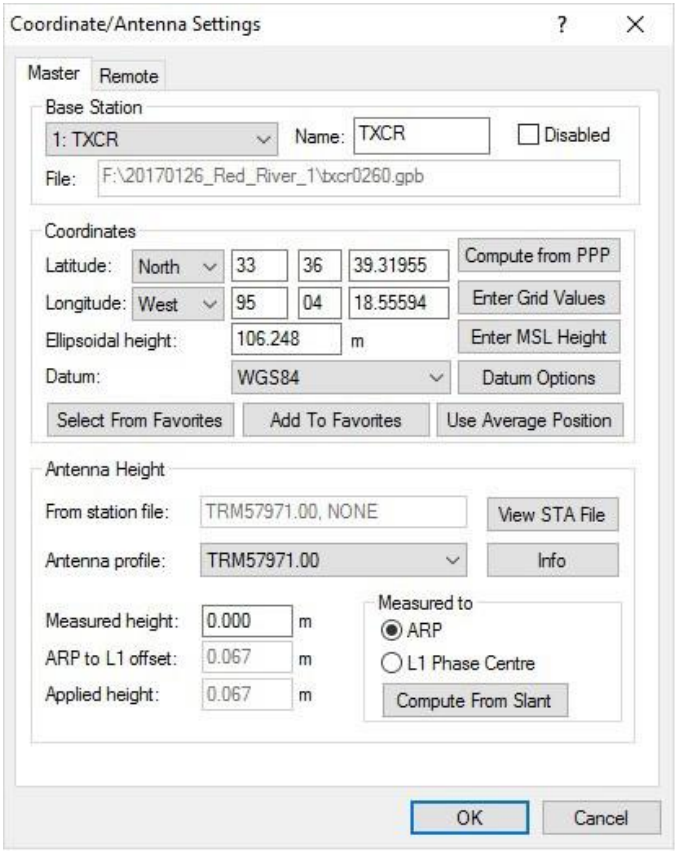

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Roll
Pitch

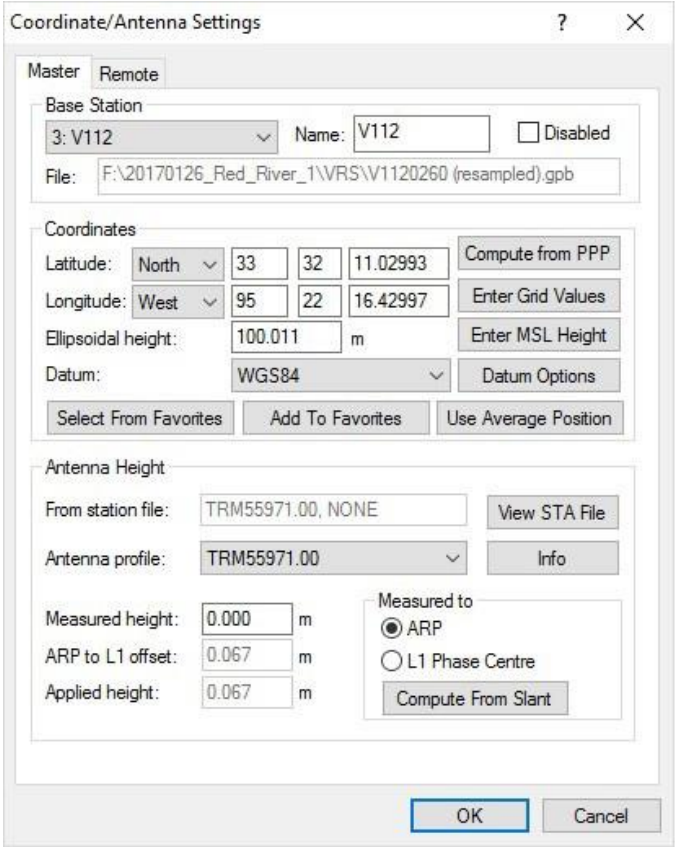

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Height

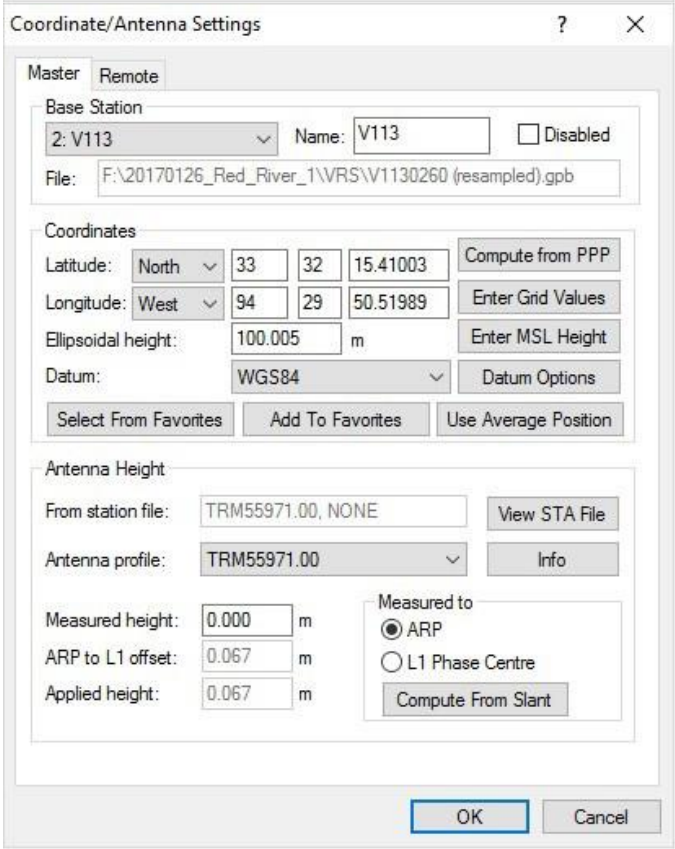

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
25
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
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

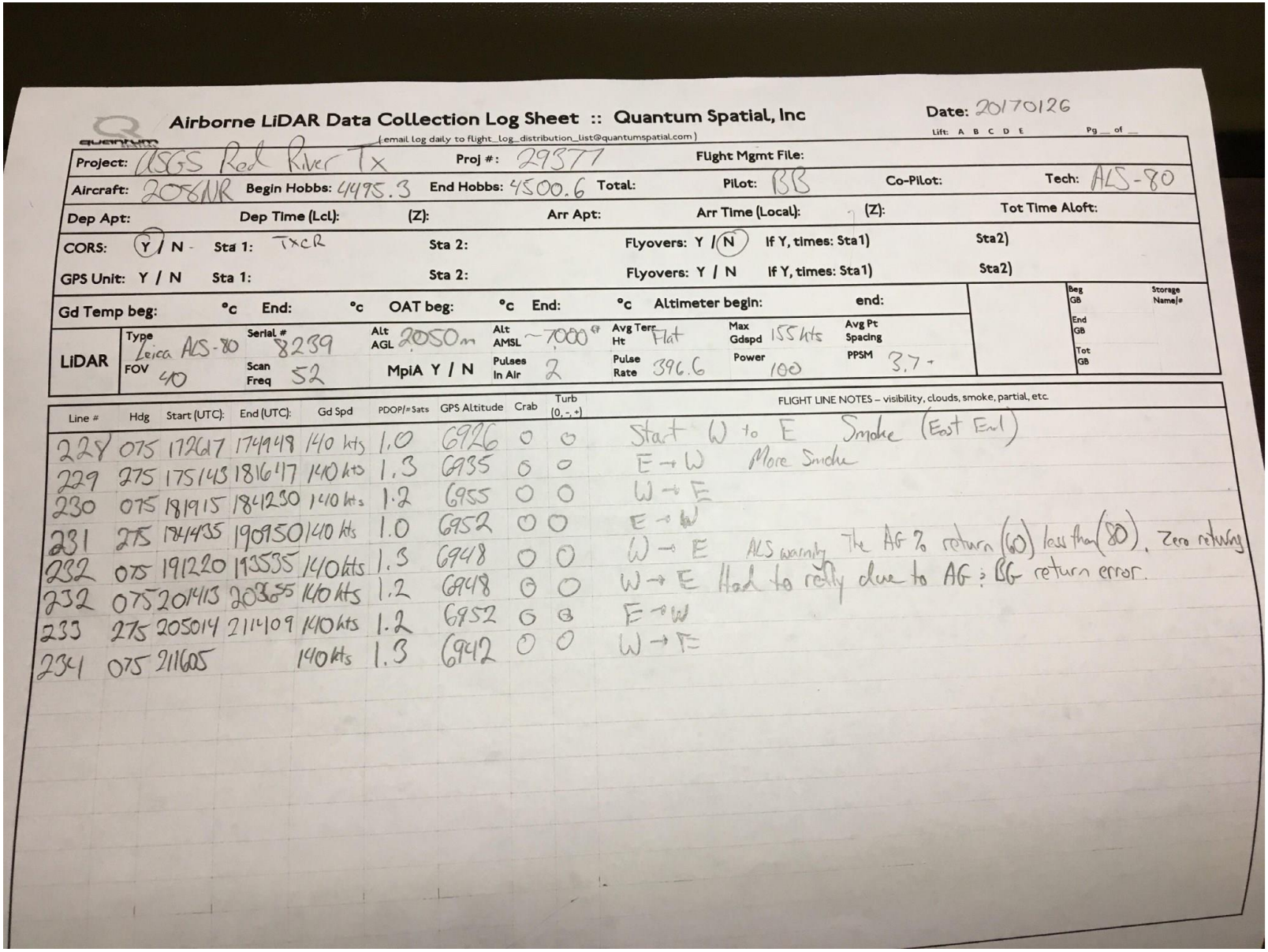

Status
2
1
0
-1
406000
Week 1933
407000
408000
409000
410000
411000
412000
413000
414000
415000
416000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name: TXCR
Disabled
File: F:\20170126_Red_River_1\txcr0260.gpb
Coordinates
Latitude: North 33 36 39.31955
Compute from PPP
Longitude: West 95 04 18.55594
Enter Grid Values
Ellipsoidal height: 106.248 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: V112
Name: V112
Disabled
File: F:\20170126_Red_River_1\VRS\V1120260 (resampled).gpb
Coordinates
Latitude: North 33 32 11.02993
Longitude: West 95 22 16.42997
Ellipsoidal height: 100.011 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: V113
Name: V113
Disabled
File: F:\20170126_Red_River_1\VRS\V1130260 (resampled).gpb
Coordinates
Latitude: North 33 32 15.41003
Longitude: West 94 29 50.51989
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

Flight Log



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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 20170126

Lift: A B C D E Pg __ of __

Project: USGS Red River Tx Proj #: 29377 Flight Mgmt File:

Aircraft: 206NR Begin Hobbs: 4495.3 End Hobbs: 4500.6 Total: Pilot: BB Co-Pilot: Tech: ALS-80

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

CORS: (Y) / N Sta 1: TXCR 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:

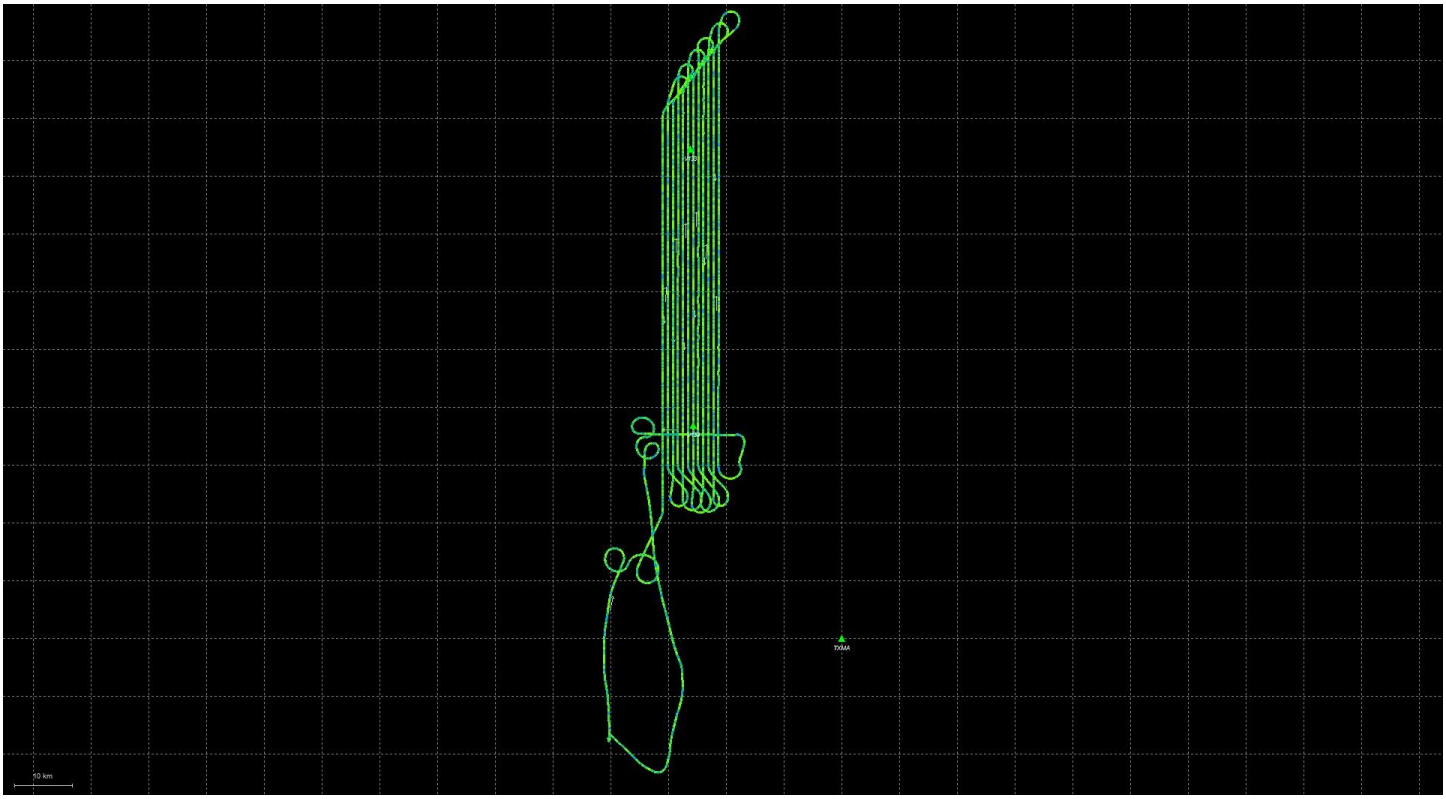
Beg GB End GB Tot GB Storage Name/#

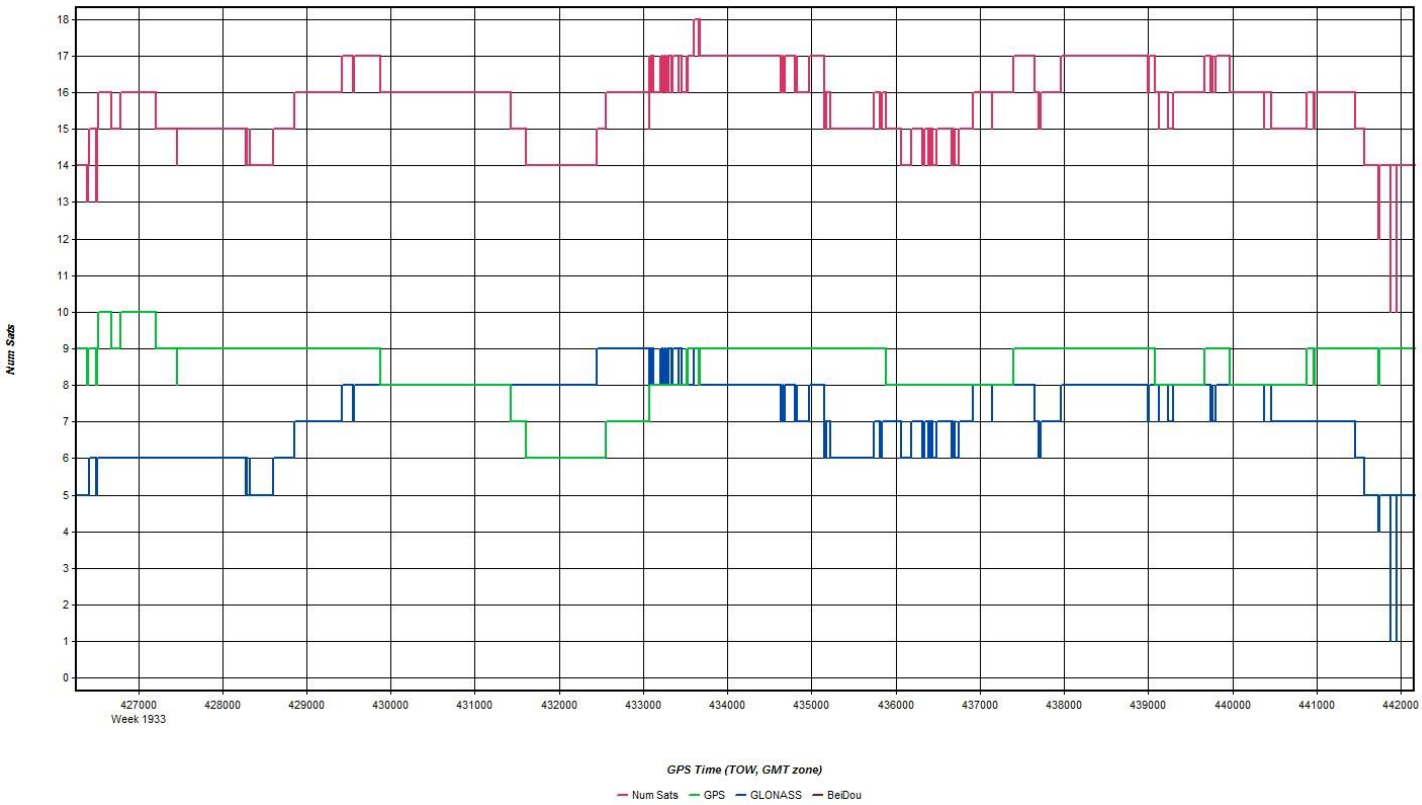
LiDAR: Type Leica ALS-80 Serial # 8239 Alt AGL 2050m Alt AMSL ~7000' Avg Terr Ht Flat Max Gdspd 155 kts Avg Pt Spacing

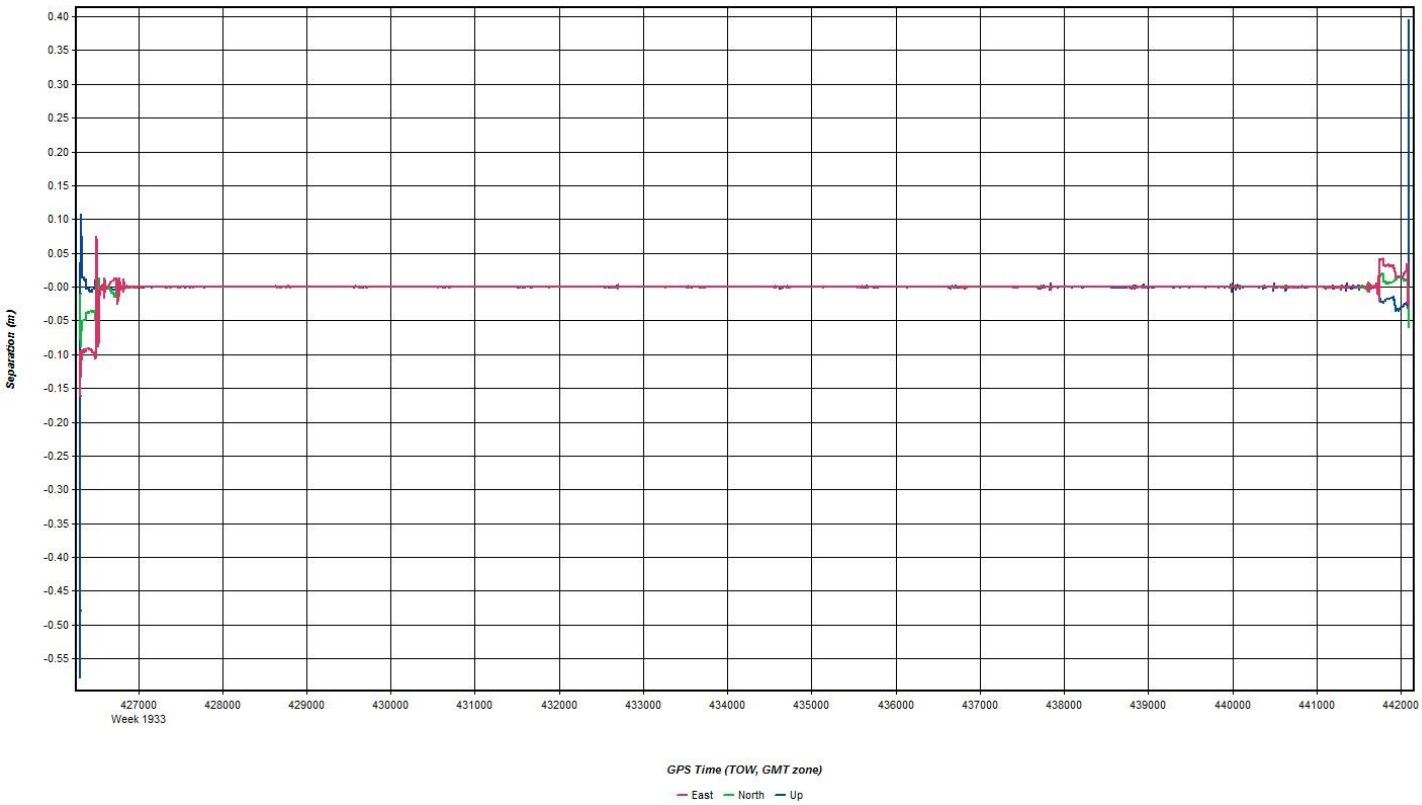
FOV 40 Scan Freq 52 MpiA Y / N Pulses In Air 2 Pulse Rate 396.6 Power 100 PPSM 3.7+

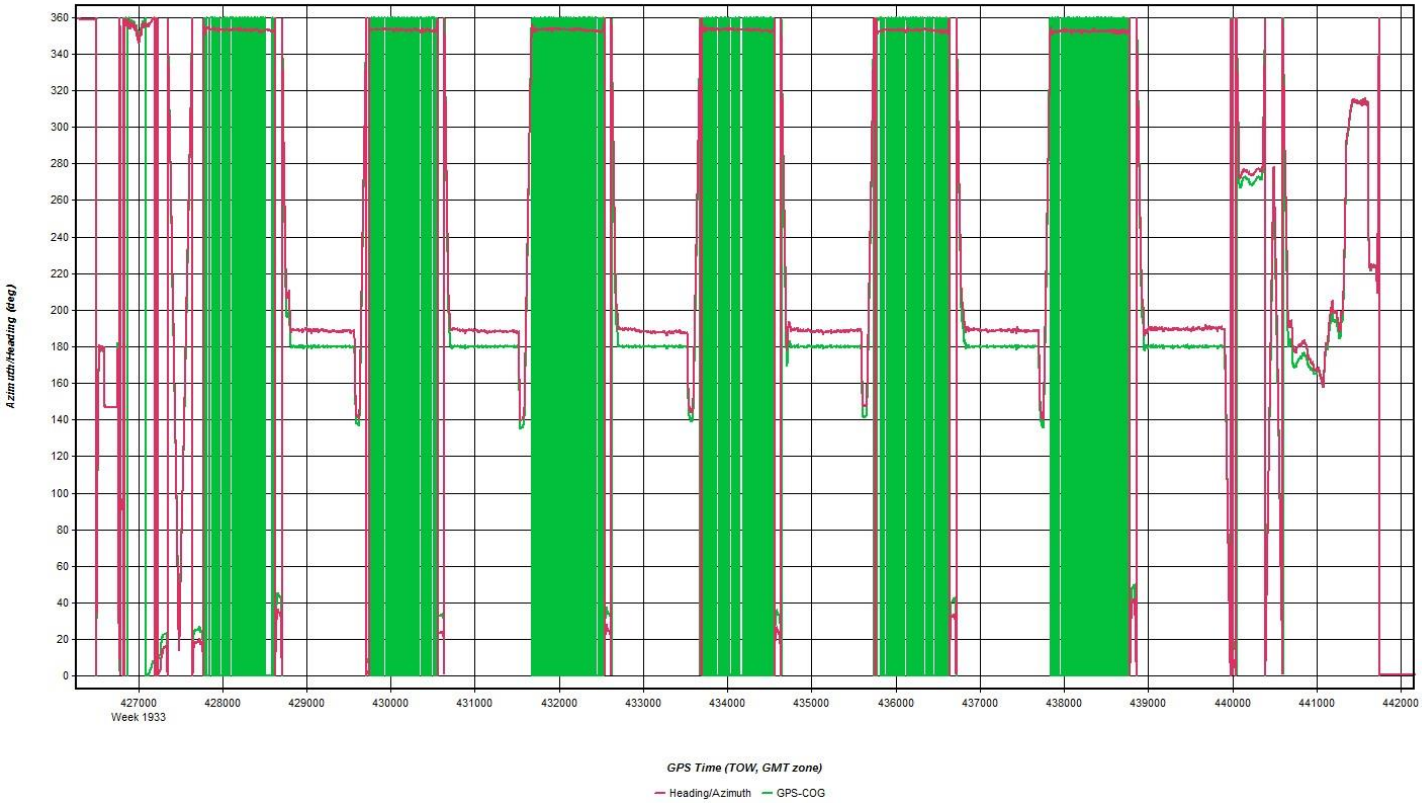
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
228	075	172627	174948	140 kts	1.0	6926	0	0	Start W to E Smoke (East End)
229	275	175143	181617	140 kts	1.3	6935	0	0	E → W More Smoke
230	075	181915	184230	140 kts	1.2	6955	0	0	W → E
231	275	184435	190950	140 kts	1.0	6952	0	0	E → W
232	075	191220	193535	140 kts	1.3	6948	0	0	W → E ALS warning The AG % return (60) less than (80). Zero returns
232	075	201413	203855	140 kts	1.2	6948	0	0	W → E Had to retry due to AG & BG return error.
233	275	205014	211409	140 kts	1.2	6952	0	0	E → W
234	075	211605		140 kts	1.3	6942	0	0	W → E

Jan 26, 2017-A (N812TB, SN7178)

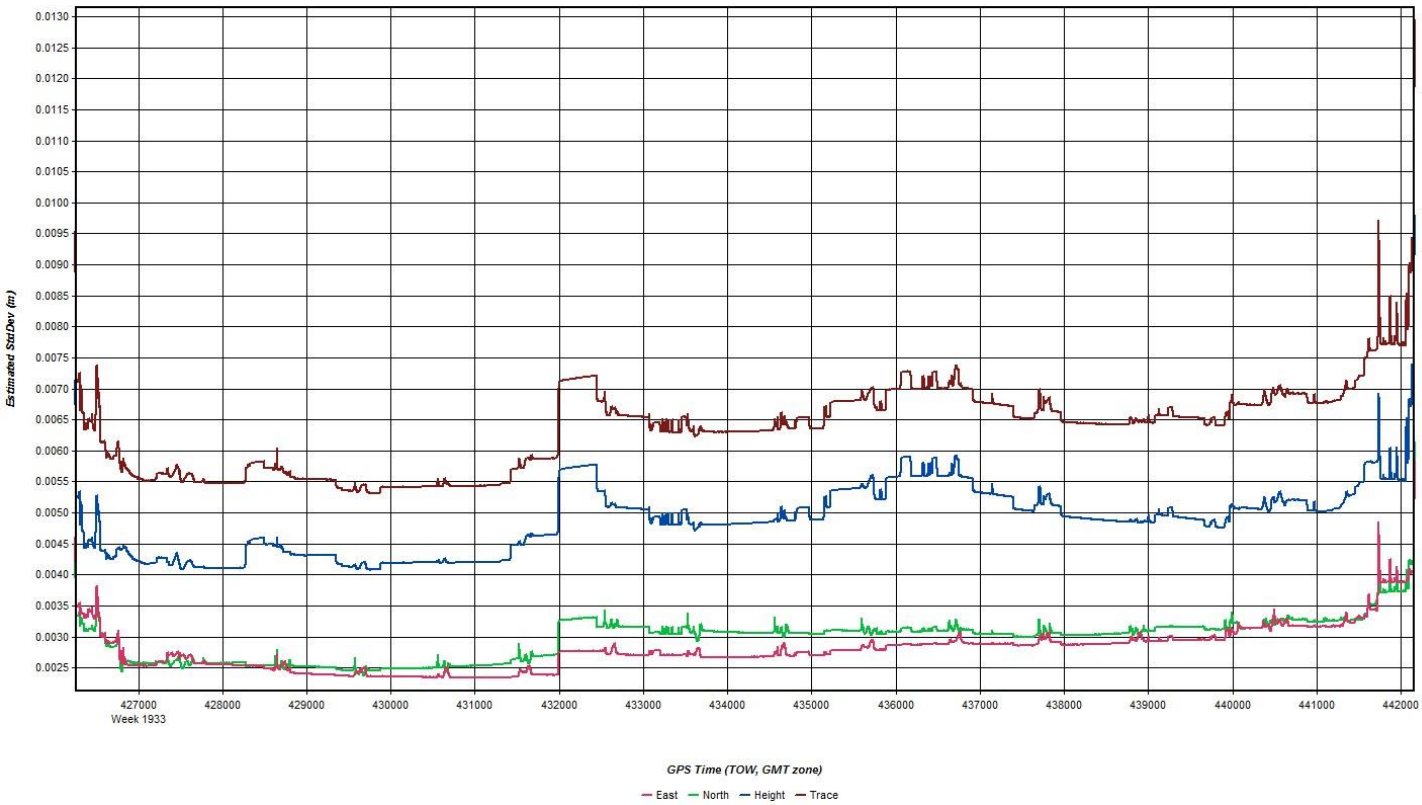


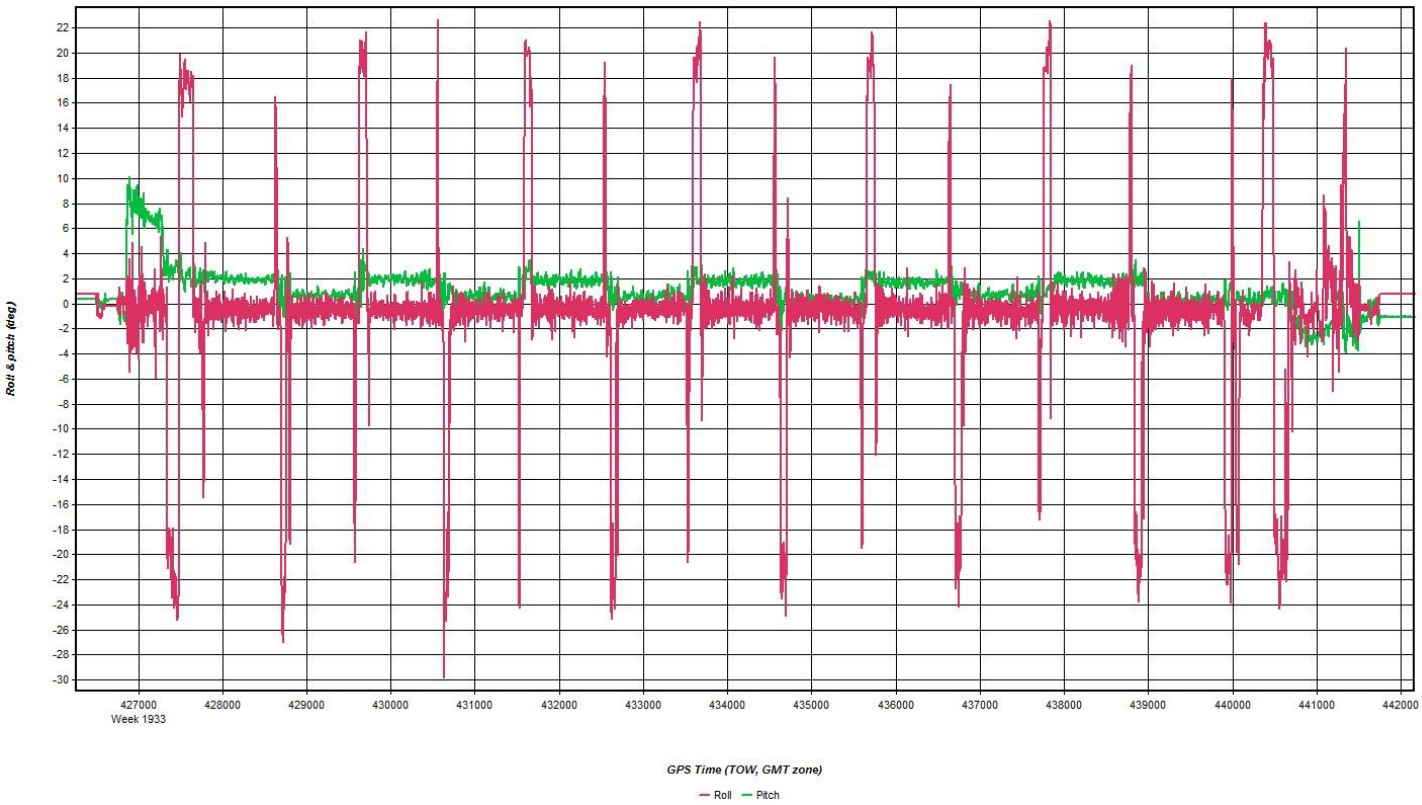

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

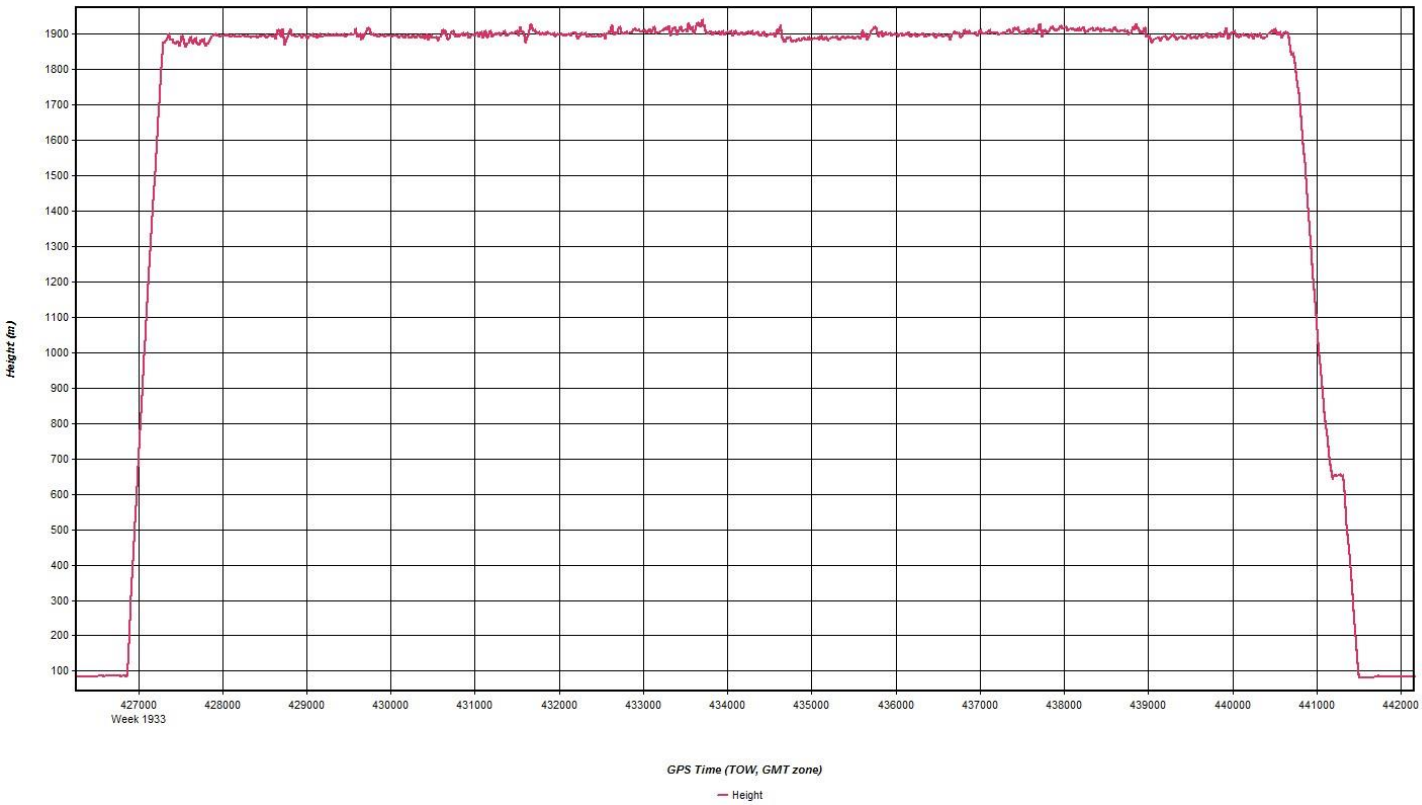

Separation (m)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
East
North
Up

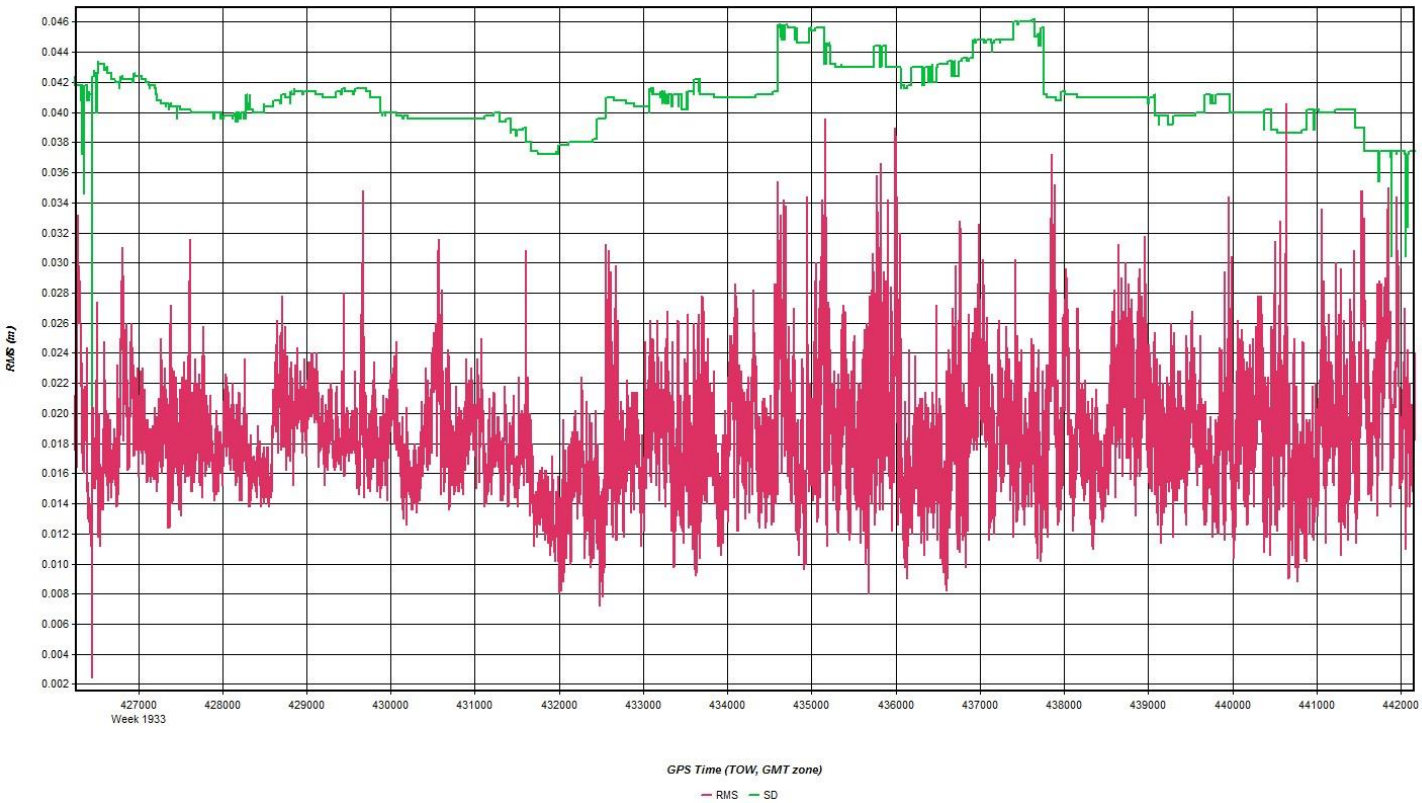

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

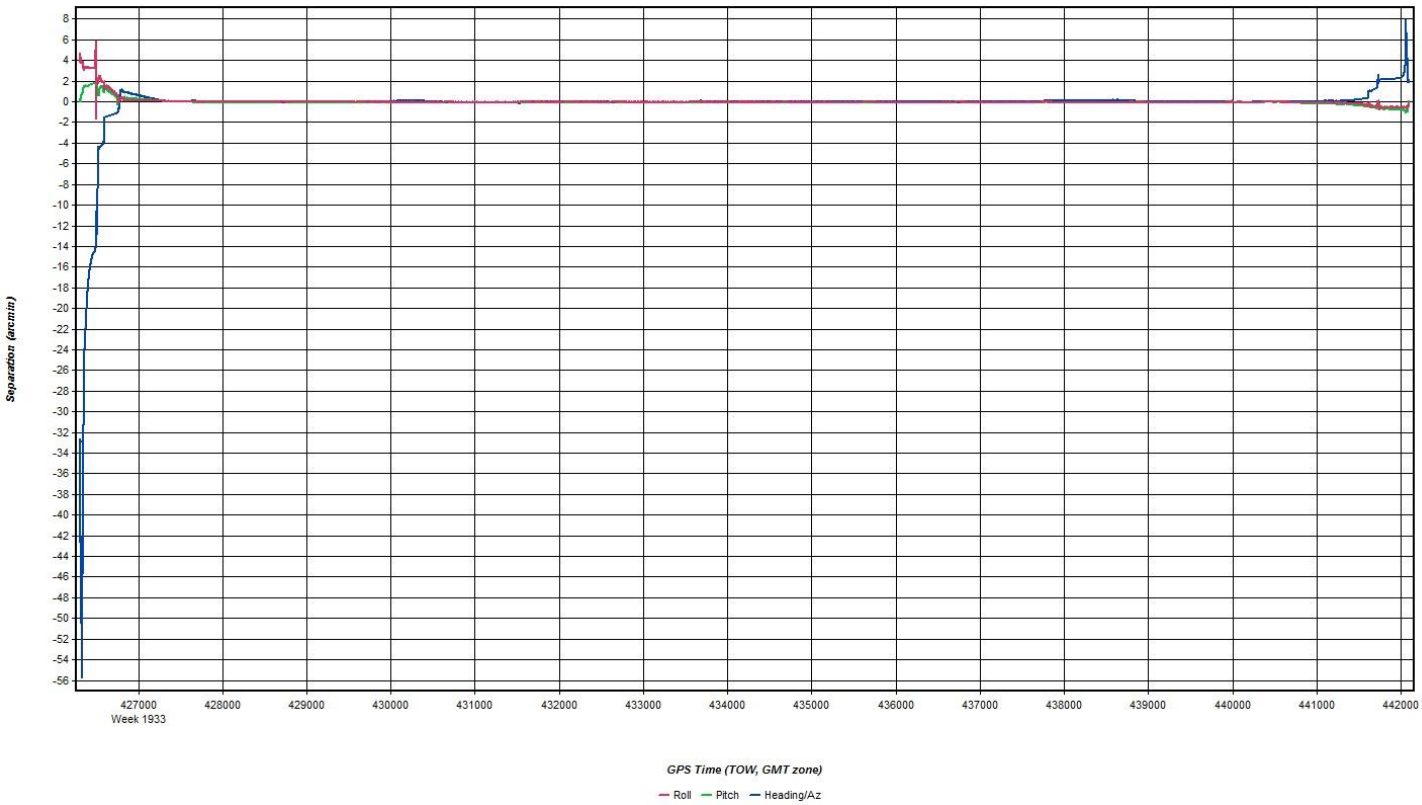

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
PDOP

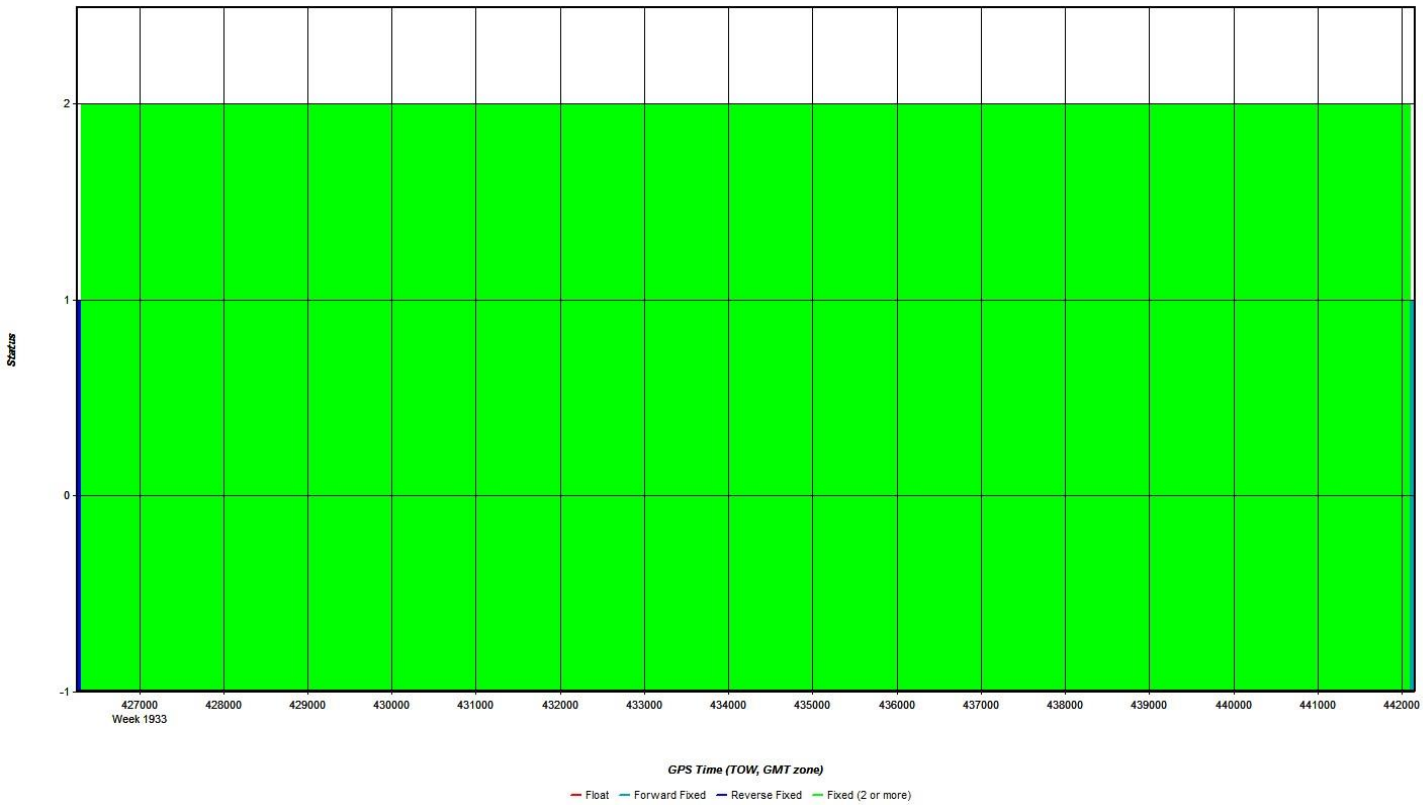

Estimated StdDev (m)
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

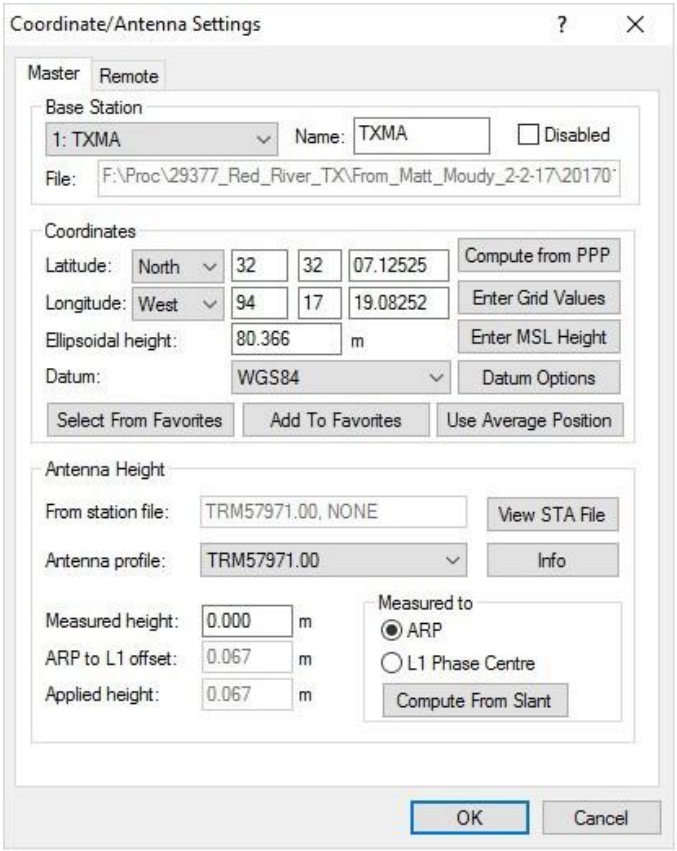

Roll & pitch (deg)
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
Roll
Pitch

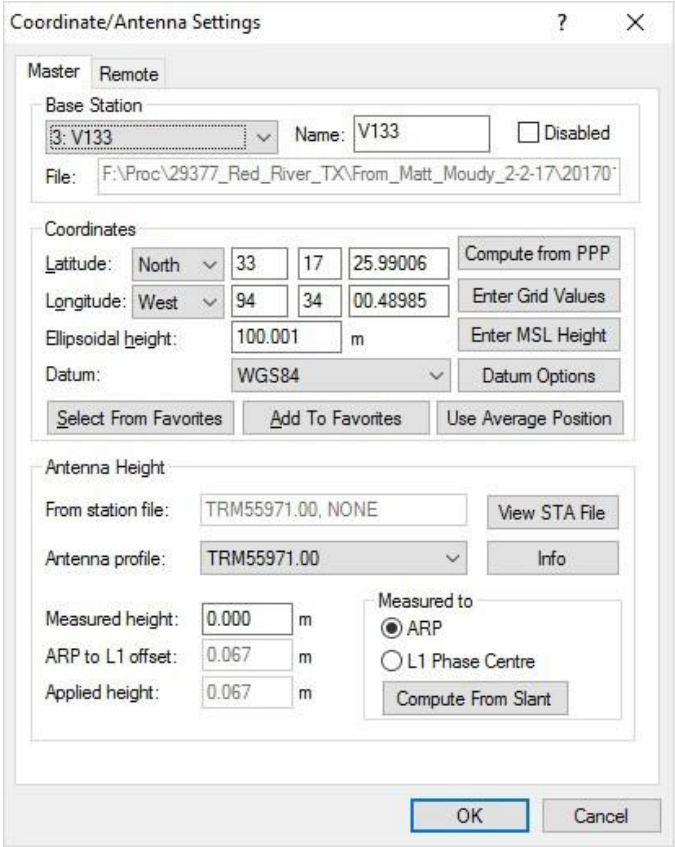

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
Height

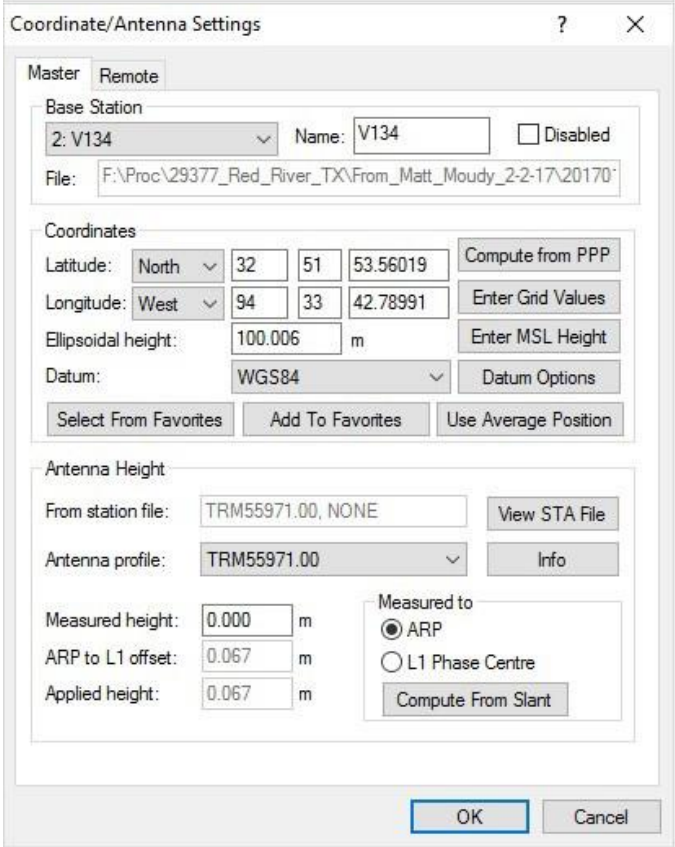

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
-36
-38
-40
-42
-44
-46
-48
-50
-52
-54
-56
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
427000
Week 1933
428000
429000
430000
431000
432000
433000
434000
435000
436000
437000
438000
439000
440000
441000
442000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: F:\Proc\29377_Red_River_TX\From_Matt_Moudy_2-2-17\20170
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
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: V133
Name: V133
Disabled
File: F:\Proc\29377_Red_River_TX\From_Matt_Moudy_2-2-17\20170
Coordinates
Latitude: North 33 17 25.99006
Longitude: West 94 34 00.48985
Ellipsoidal height: 100.001 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: V134
Name: V134
Disabled
File: F:\Proc\29377_Red_River_TX\From_Matt_Moudy_2-2-17\20170
Coordinates
Latitude: North 32 51 53.56019
Longitude: West 94 33 42.78991
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: 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: 1-26-17

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

Project: RED RIVER, TX FEMA HALL MILLER **Proj #:** 29377 **Flight Mgmt File:** 29377-SN7178_HALLMILLER

Aircraft: N812TB **Begin Hobbs:** 4297.1 **End Hobbs:** **Total:** **Pilot:** RADTKE **Co-Pilot:** – **Tech:** MOODY

Dep Apt: GGG **Dep Time (Lcl):** 1633 **(Z):** 2233 **Arr Apt:** GGG **Arr Time (Local):** 2038 **(Z):** 0238 **Tot Time Aloft:** 4:05

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:**

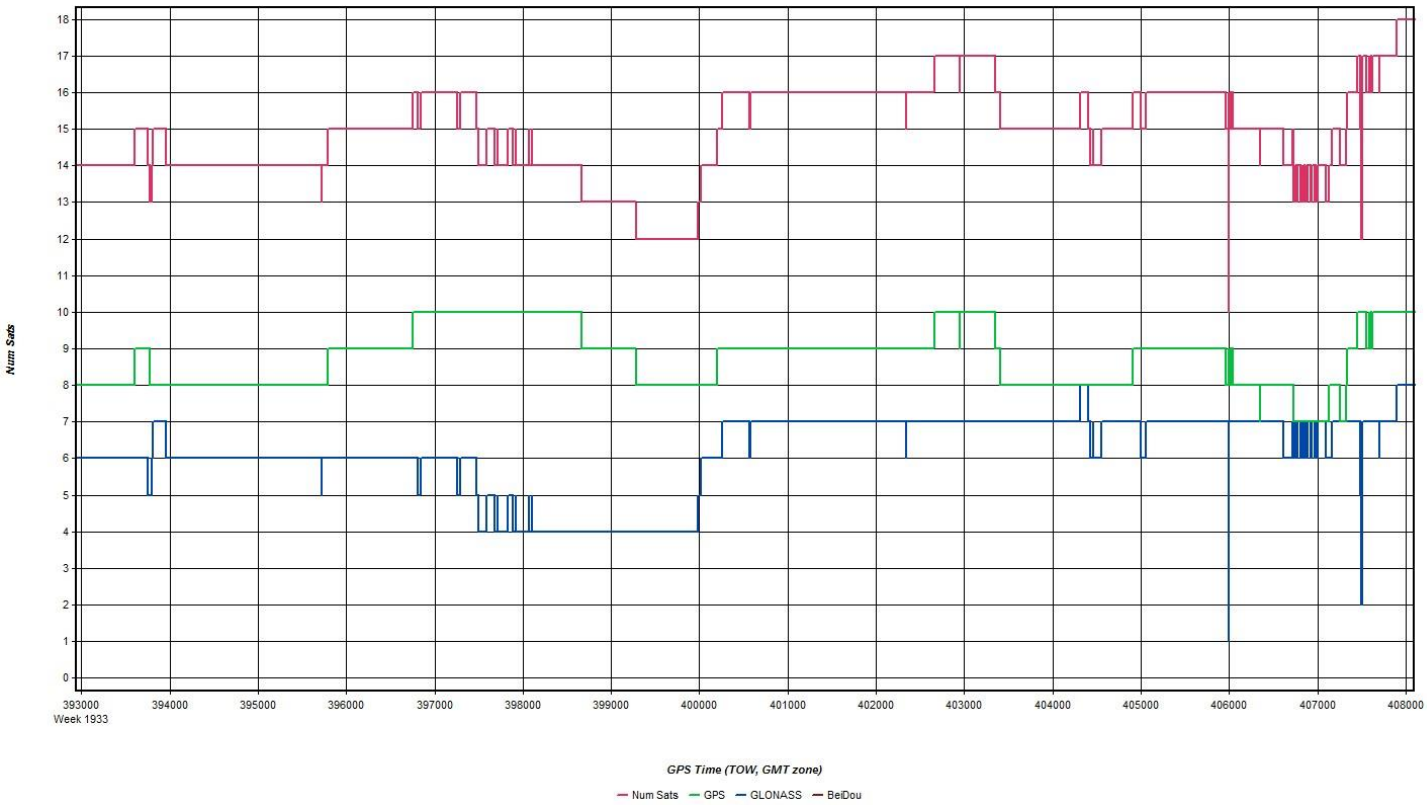
LiDAR											
Type	ALS70	Serial #	7178	Alt AGL	±5700'	Alt AMSL	±6200'	Avg Terr Ht	±500'	Max Gdspd	150 KTS
FOV	40°	Scan Freq	53 Hz	MpIA (Y) / N		Pulses in Air	2	Pulse Rate	295 KHz	Power	100%
Avg Pt Spacing	0.59M	PPSM	2.83								

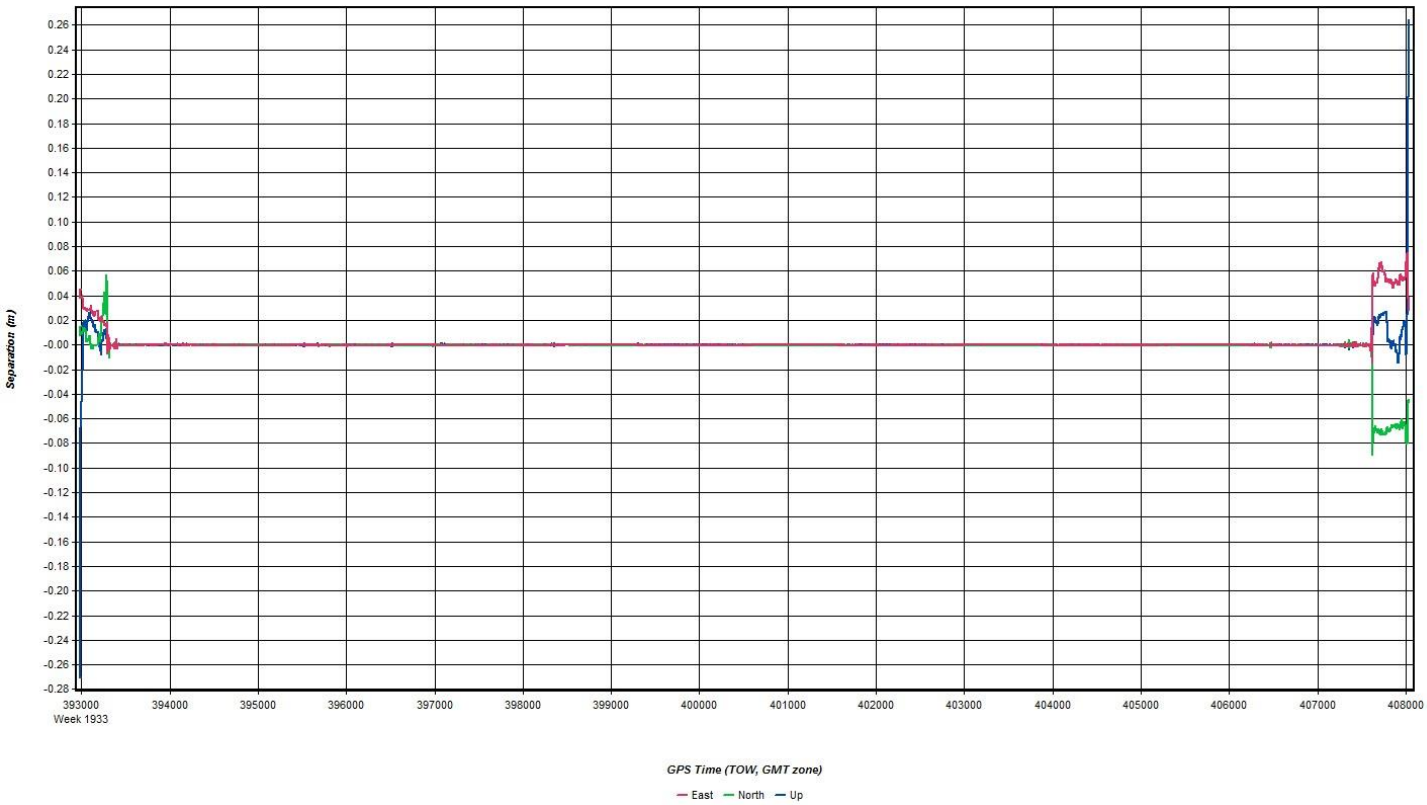
Beg GB	221	Storage Name/#	7178
End GB			SSD3
Tot GB			

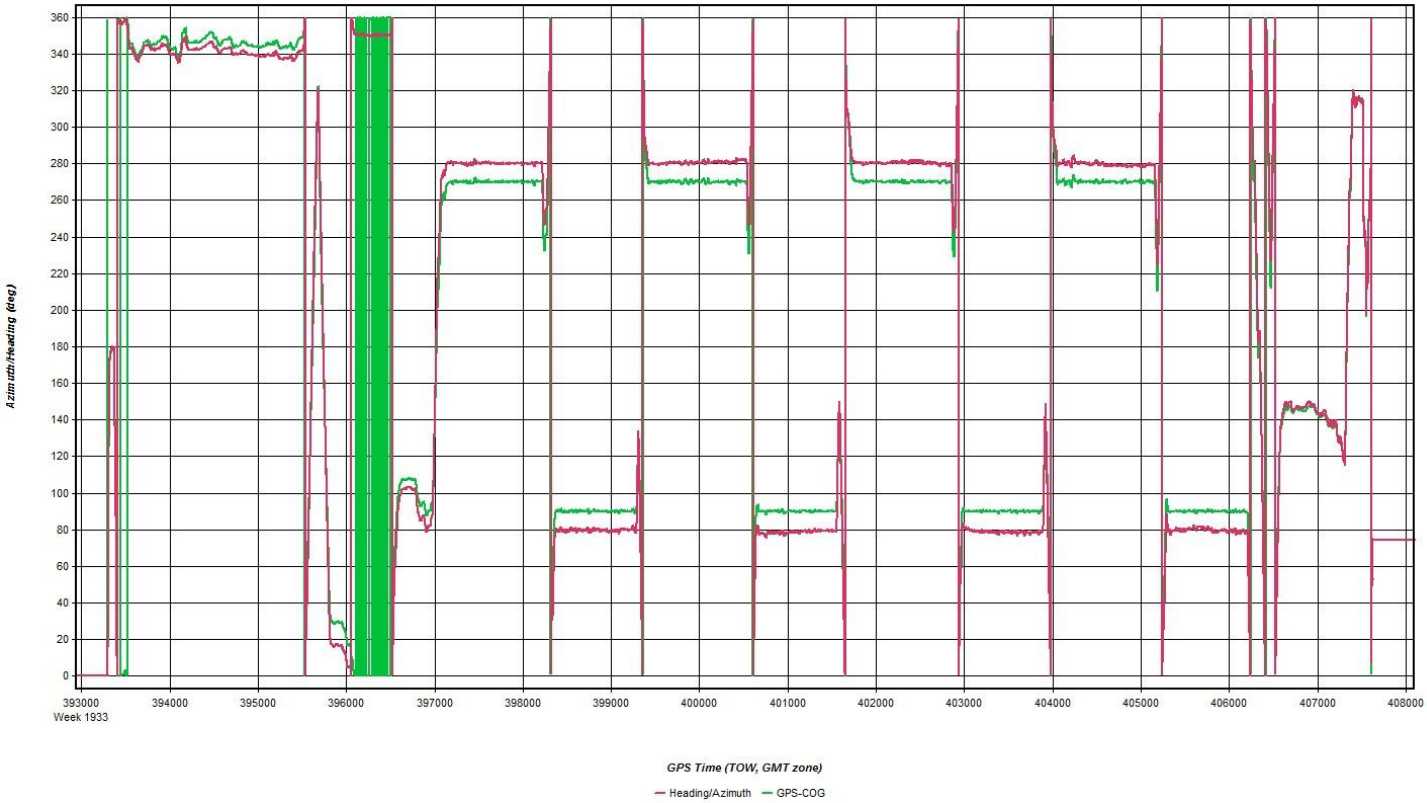
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.	Do
401	360	2251	2303	156	1.2/19	6220	7	0		
402	180	2306	2319	159	1.1/19	6220	9	0		
403	360	2322	2335	160	1.3/17	6220	7	0		
404	180	2338	2351	160	1.4/16	6200	9	0		
405	360	2355	0008	160	1.2/17	6240	6	0		
406	180	0012	0025	164	1.1/18	6230	10	0		
407	360	0029	0042	167	1.2/18	6260	6	0		
408	180	0045	0059	161	1.2/18	6180	10	0		
409	360	0103	0116	164	1.2/18	6220	7	0		
410	180	0120	0134	160	1.1/19	6260	10	0		
411	360	0138	0152	158	1.3/18	6270	8	0		
412	180	0156	0211	161	1.2/18	6180	10	–		
TIE	270	0214	0218	120	1.2/18	6220	5	0	- MANUAL TIE LINE	

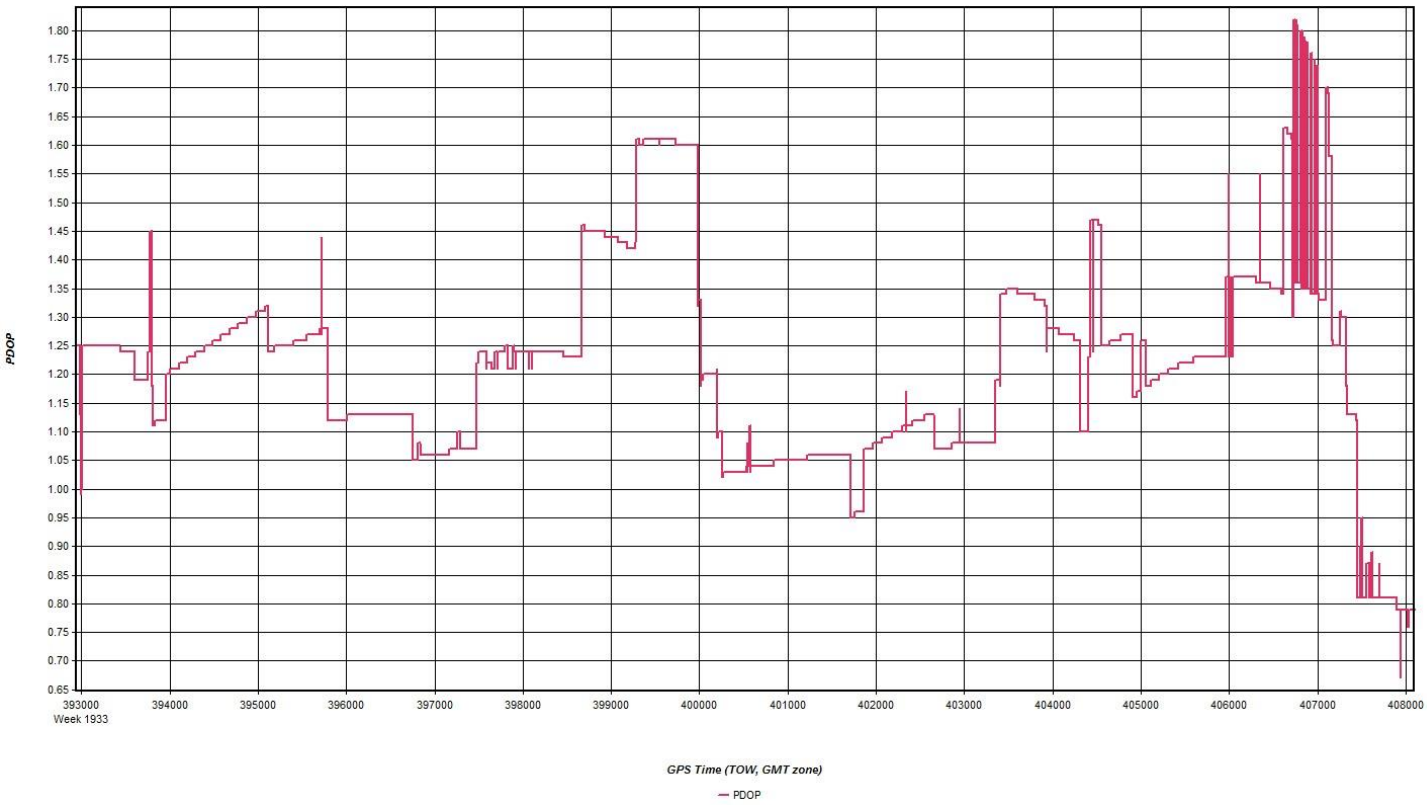
Total Proj Lines: 65 **Lines Flown:** 12 **Lines Remain:** 53 **OnLine Time:** 3.5 **Mob Time:** 0.5 **Notes:**

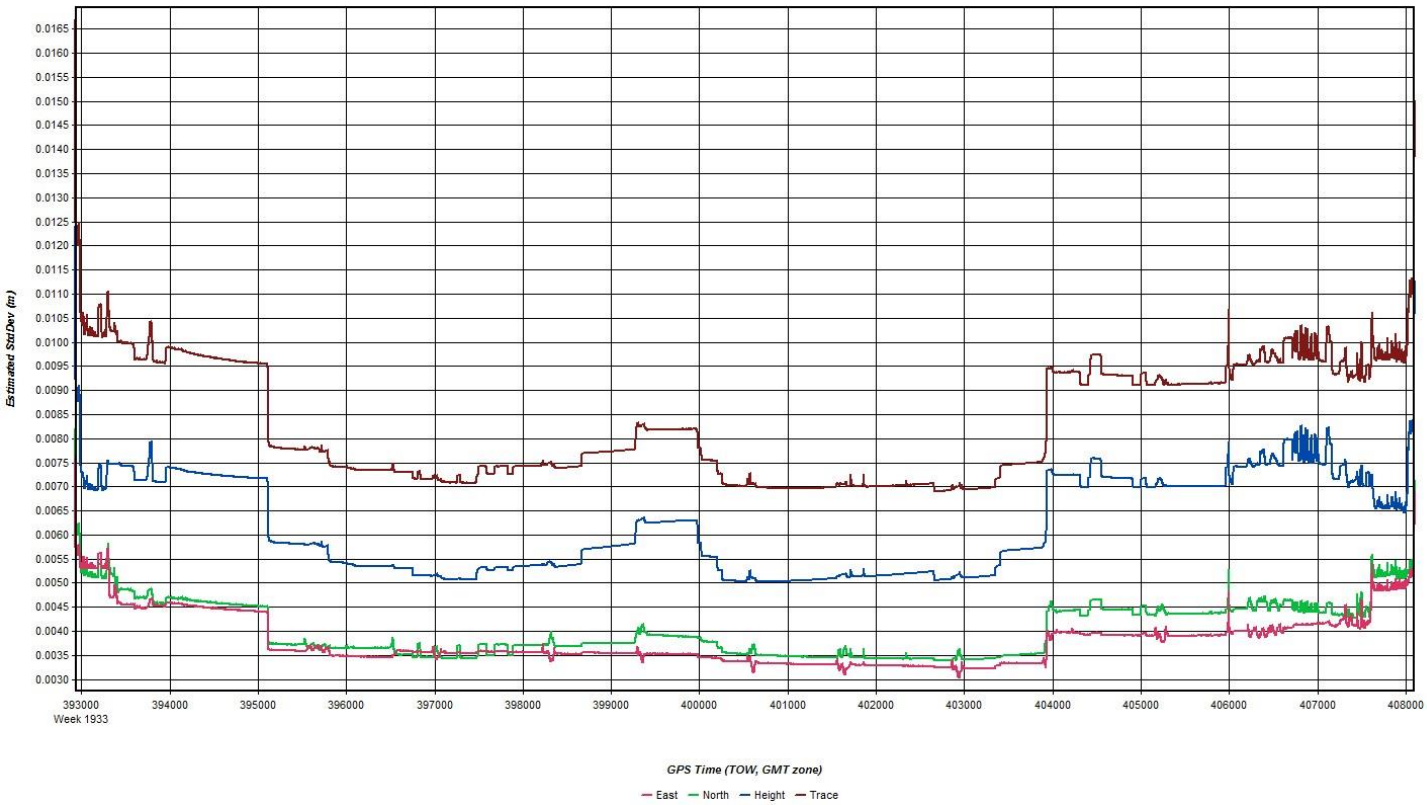
Jan 26, 2017-A1 (N812TB, SN7178)

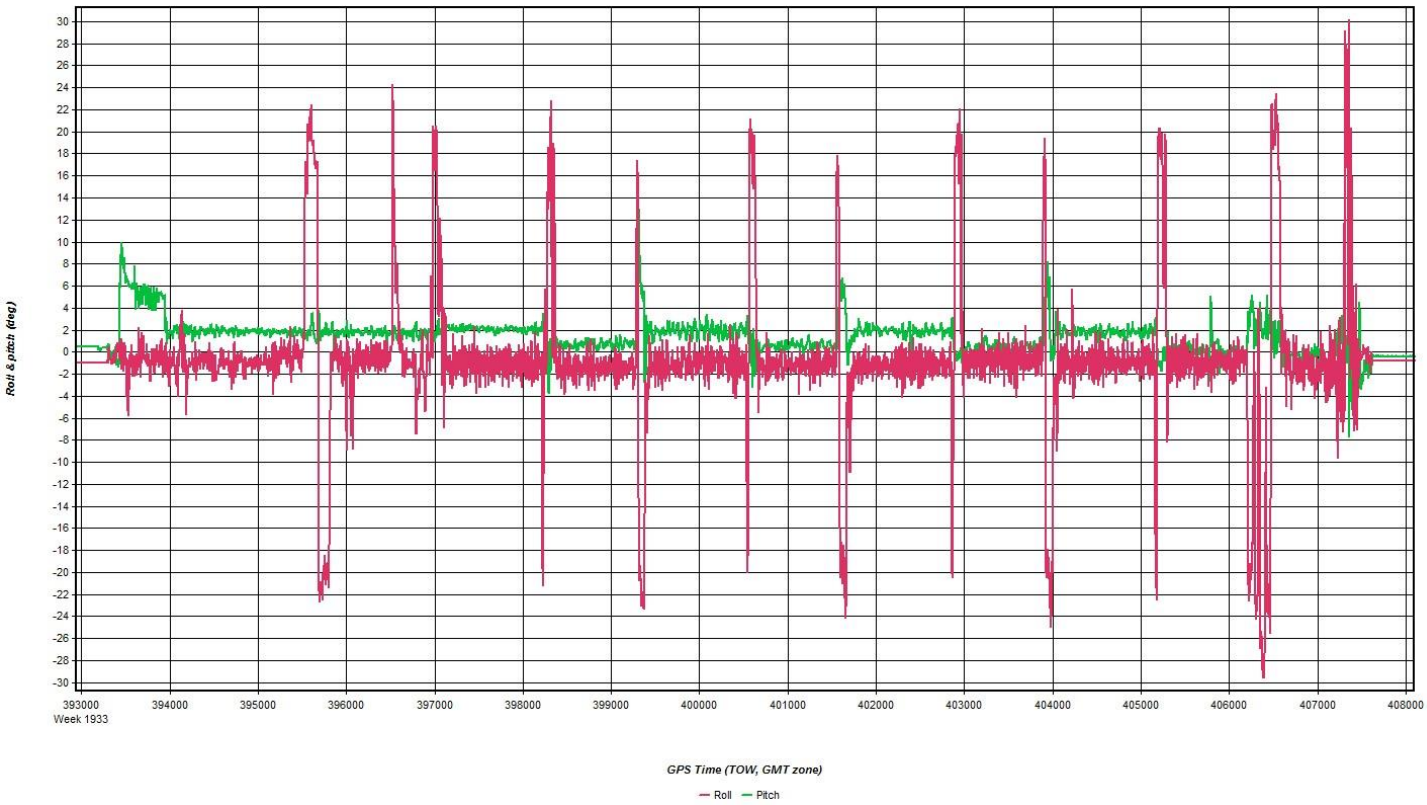

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

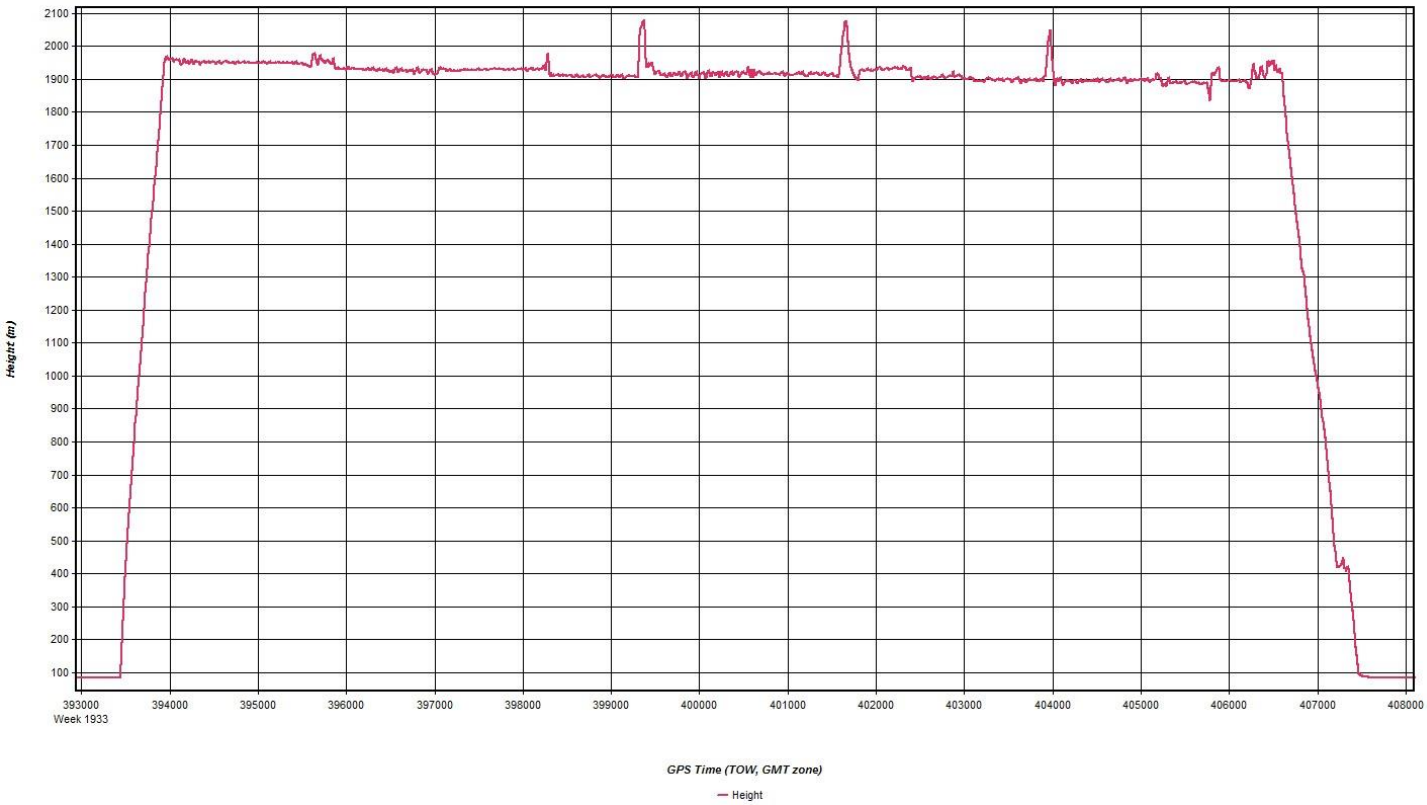

Separation (m)
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (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
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

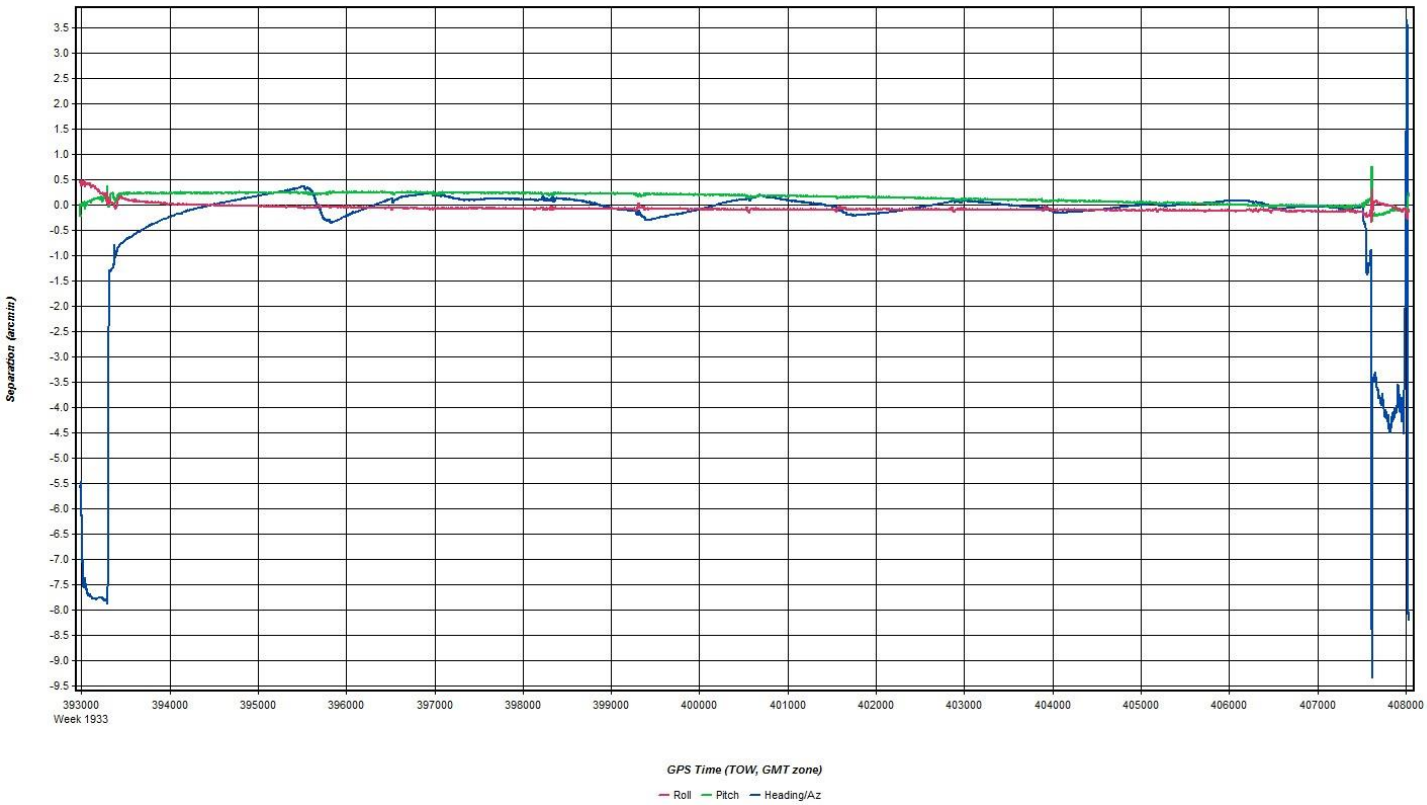

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
PDOP

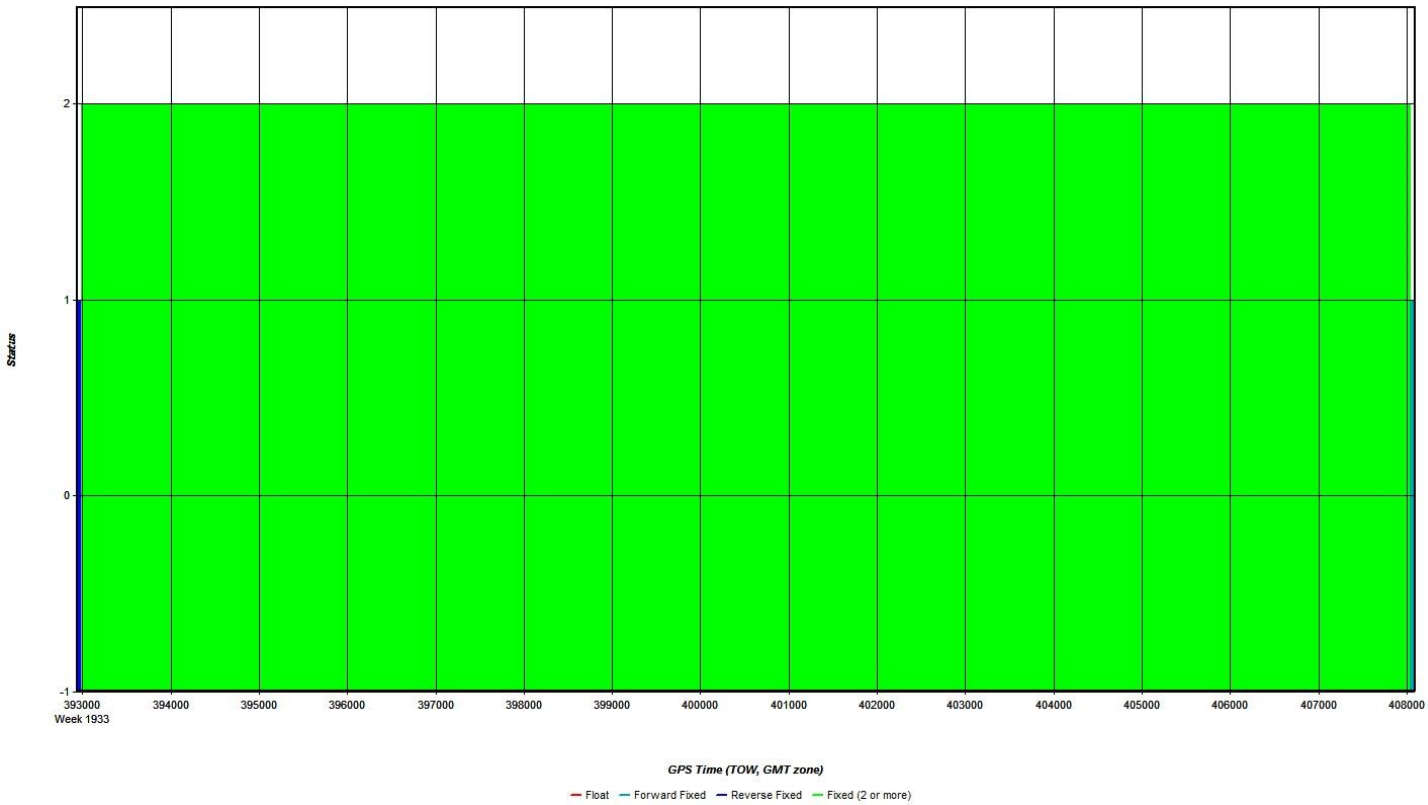

Estimated StdDev (m)
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

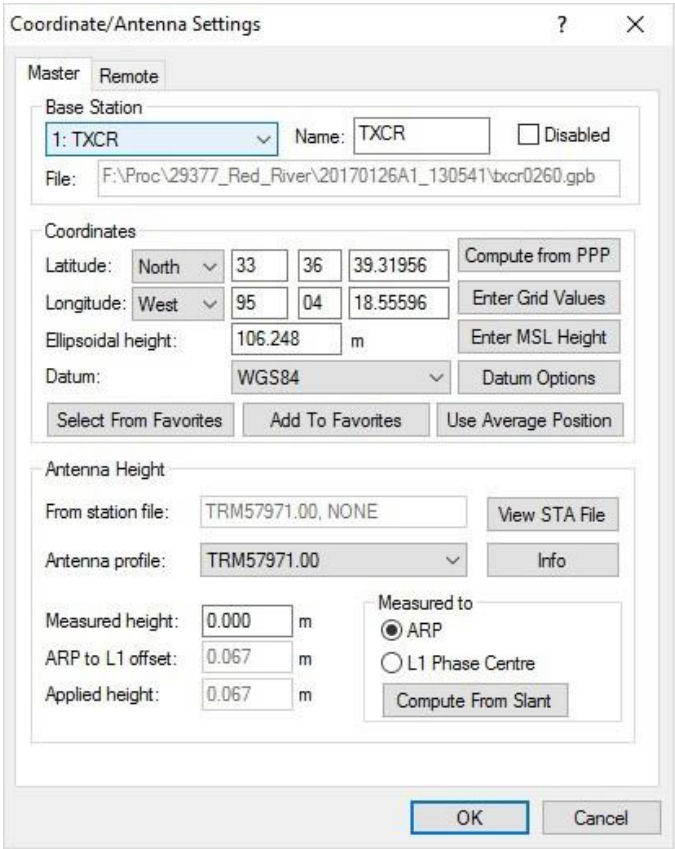

Roll & pitch (deg)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
Roll
Pitch


Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
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
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
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
-8.0
-8.5
-9.0
-9.5
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
393000
Week 1933
394000
395000
396000
397000
398000
399000
400000
401000
402000
403000
404000
405000
406000
407000
408000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name:
TXCR
Disabled
File:
F:\Proc\29377_Red_River\20170126A1_130541\txcr0260.gpb
Coordinates
Latitude:
North
33
36
39.31956
Compute from PPP
Longitude:
West
95
04
18.55596
Enter Grid Values
Ellipsoidal height:
106.248
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: 1-26-17A
Lift: (A) B C D E Pg 1 of 2

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170126_130541

Aircraft: N812TB Begin Hobbs: 4290.8 End Hobbs: 4294.7 Total: 3.9 Pilot: JBillington Co-Pilot: Tech: JSVan

Dep Apt: GGG Dep Time (Lcl): 0716 (Z): +6 Arr Apt: TXK Arr Time (Local): 1111 (Z): +6 Tot Time Aloft:

CORS: (Y) / N Sta 1: TXCR (1350) Sta 2: Flyovers: (Y) / N If Y, times: Sta1) Sta2)

GPS Unit: Y / N Sta 1: TXTE (1711) Sta 2: Flyovers: Y / N If Y, times: Sta1) Sta2)

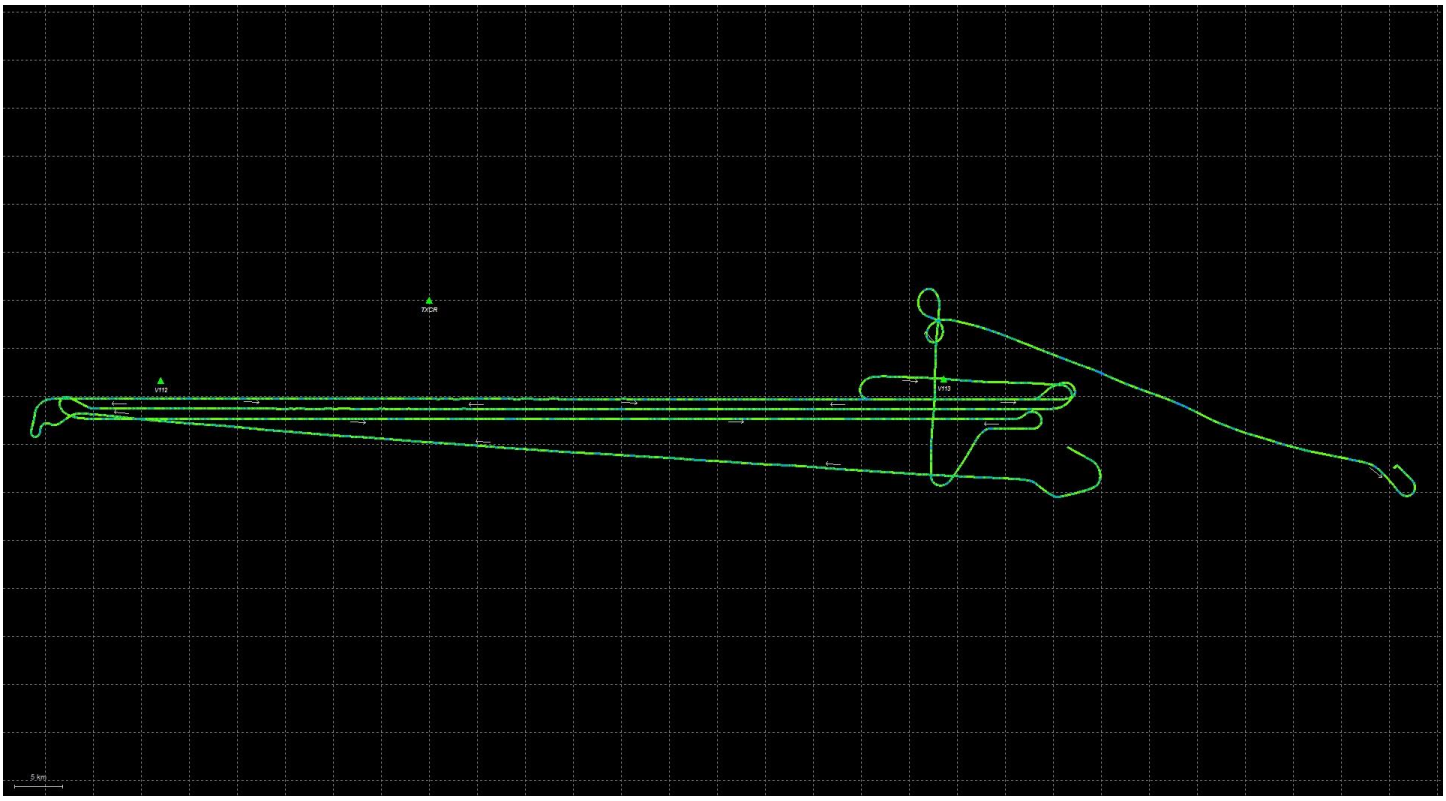
Gd Temp beg: 0 °c End: 6 °c OAT beg: -1 °c End: -1 °c Altimeter begin: 3022 end: 3027

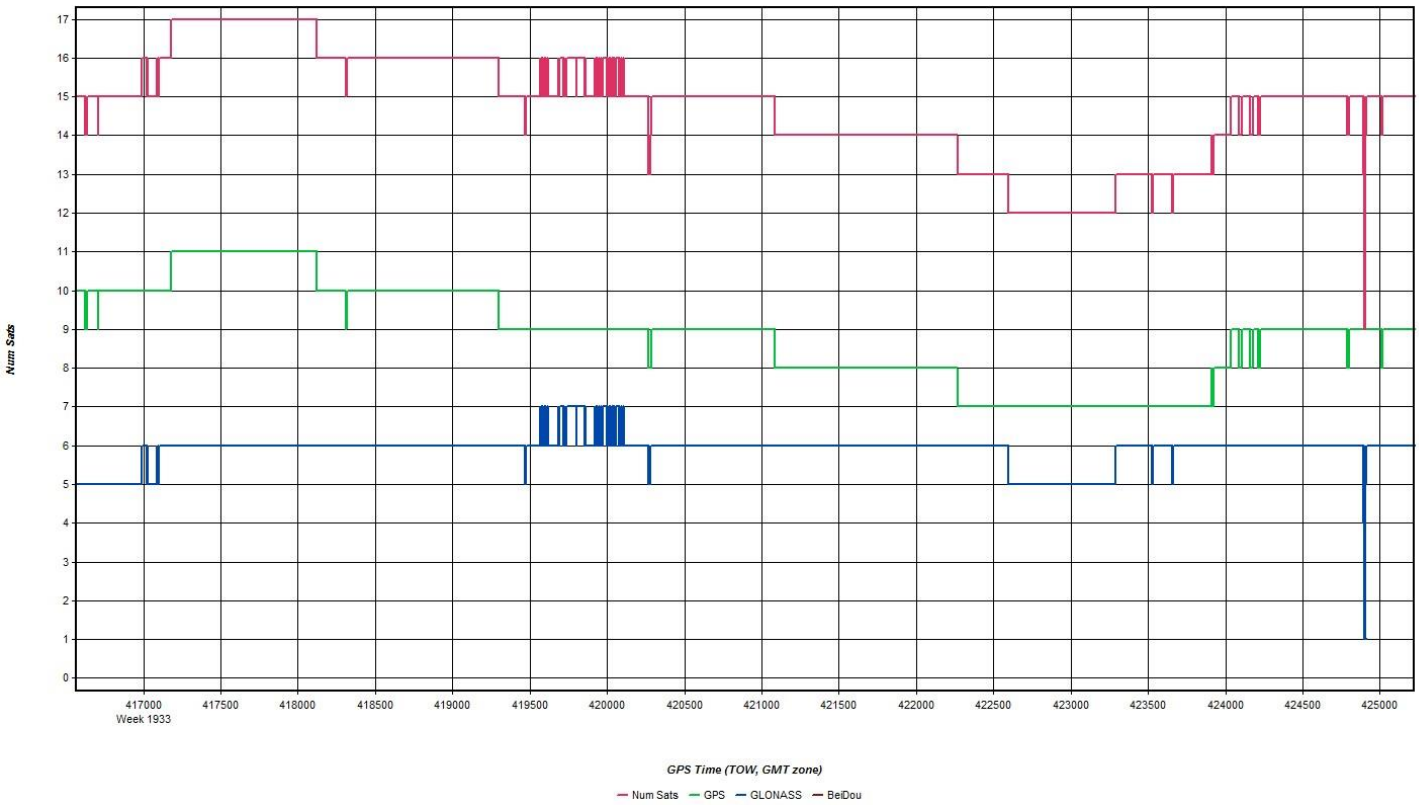
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing		Beg GB	Storage Name/s
	A1570	7181							108	
	FOV	Scan Freq	MpIA Y / N	Pulses in Air	Pulse Rate	Power	PPSM		End GB	
	46	53			295	100			51	3
									Tot GB	
									59	

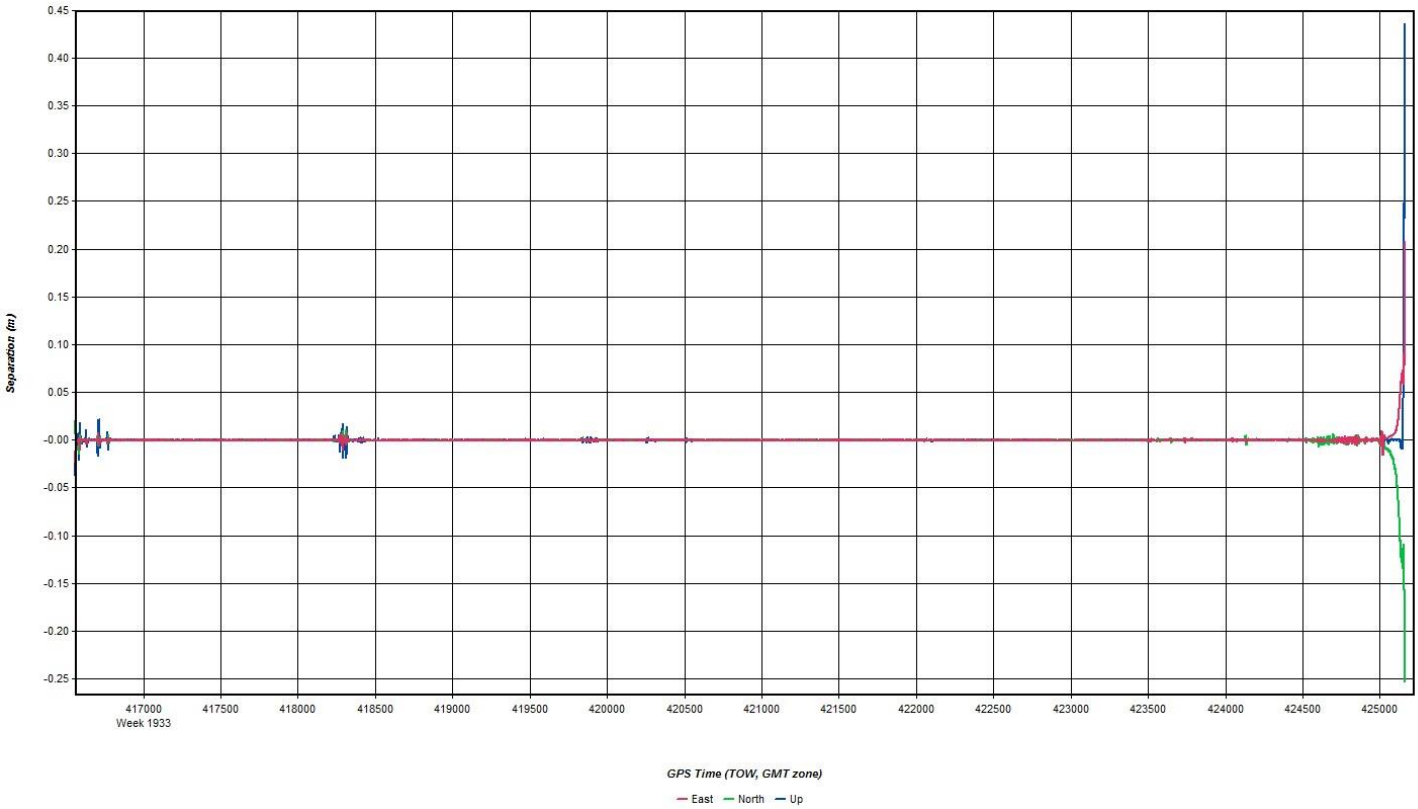
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									Fig 8's (1353 – 1358) → TXCR (1350
299	0	1402	1406	155	1.1/17	6324		0	planned X tie
112	270	1418	1434	129	1.2/18	6311	+12	0	
111	90	1439	1454	159	1.2/17	6272	-12	0	
110	270	1456	1515	133	1.0/21	6340	+12	0	
109	90	1517	1531	161	1.1/18	6305	-12	0	
108	270	1536	1552	131	1.2/18	6300	+12	0	
107	90	1556	1611	165	1.2/18	6240	-10	0	
106	270	1614	1632	136	1.2/19	6243	+10	0	
105	90	1634	1649	160	1.3/17	6295	-10	0	~~Fig 8's (1650 – 1656) → TXTE~~
~~[illegible]~~									Fig 8's (1650 – 1656) → TXTE (1711)
									landing KTXK – for Fuel
									Hobbs = 3.9
									on line = 2.8
									mob = 1.1

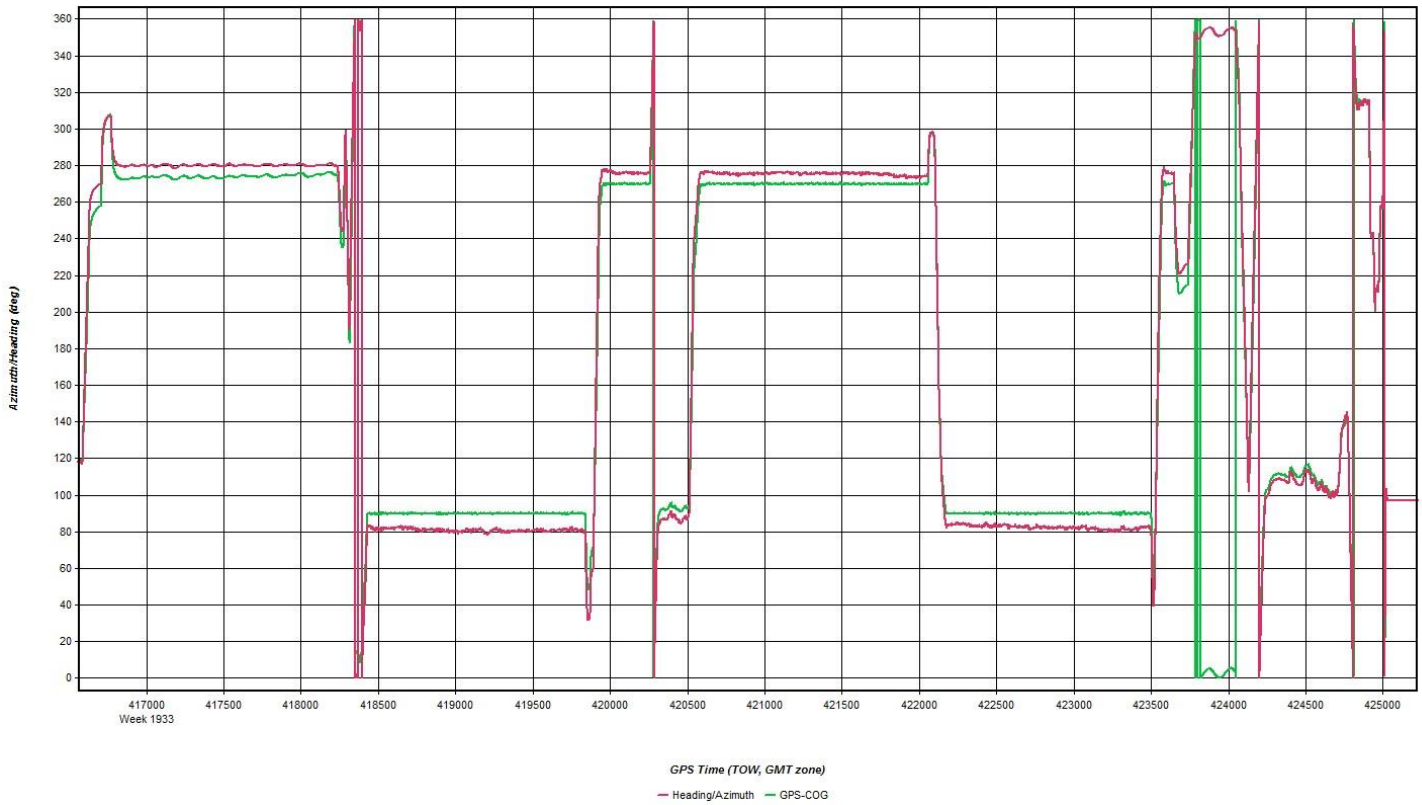
Total Proj Lines: Lines Flown: Lines Remain: Online Time: 2.8 Mob Time: 1.1 Notes:

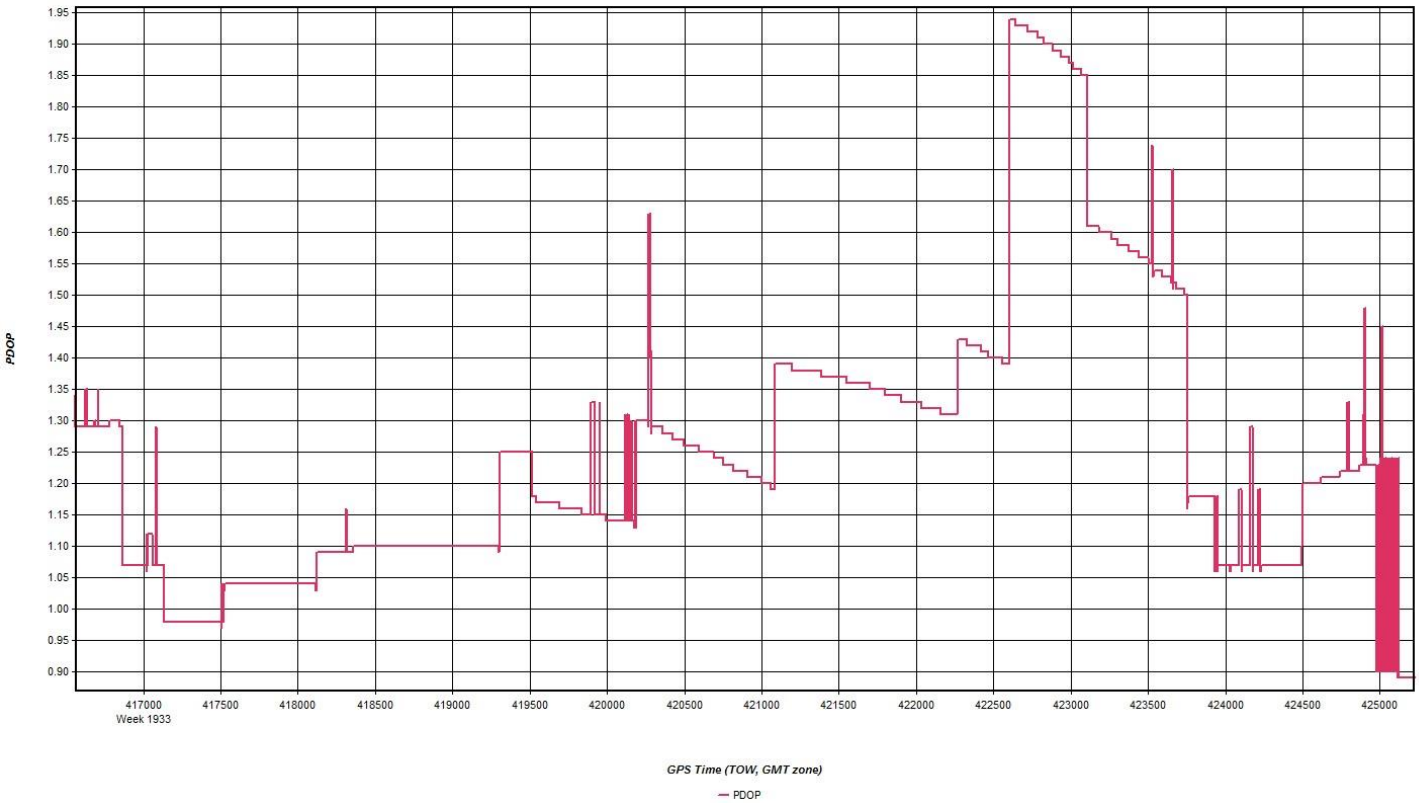
Jan 26, 2017-B (N208NR, SN8239)

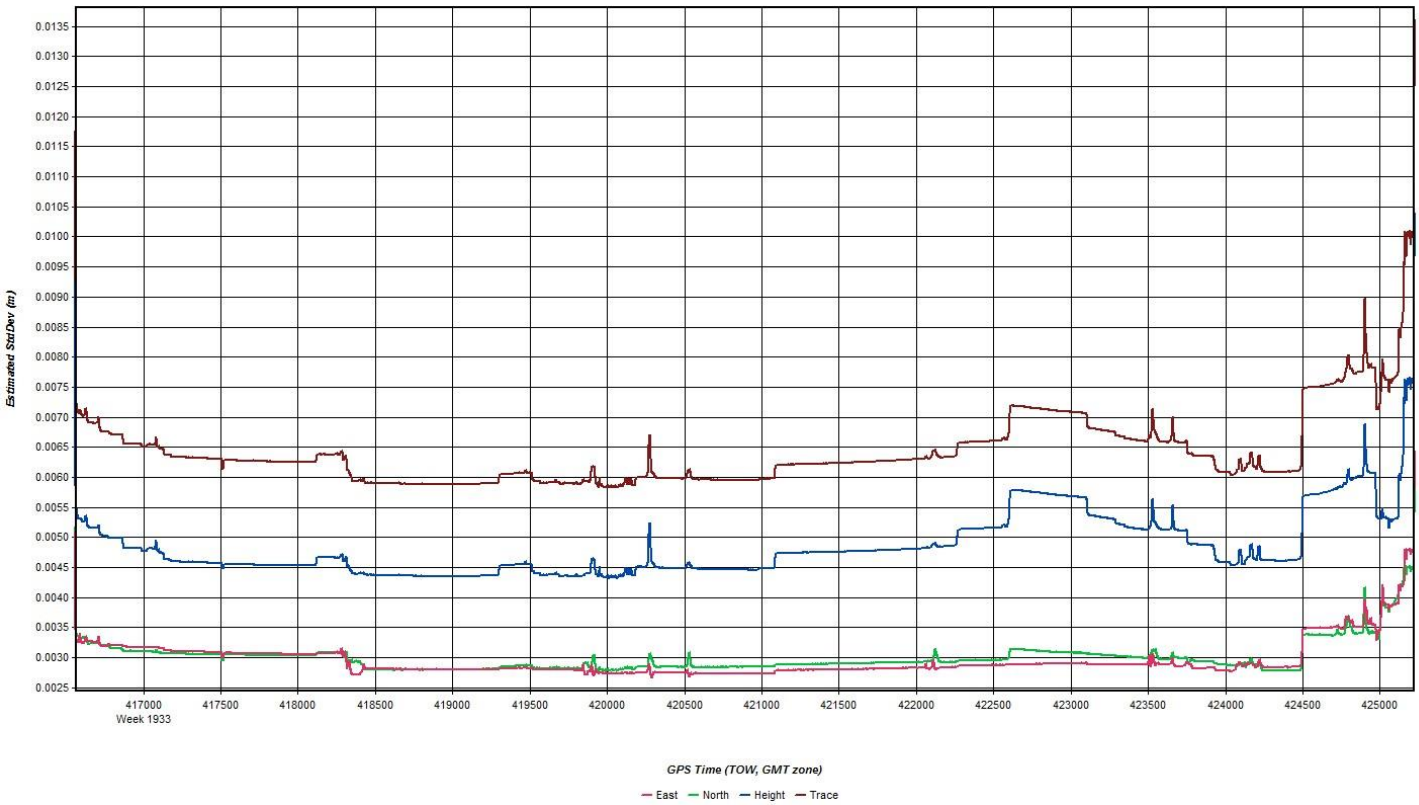


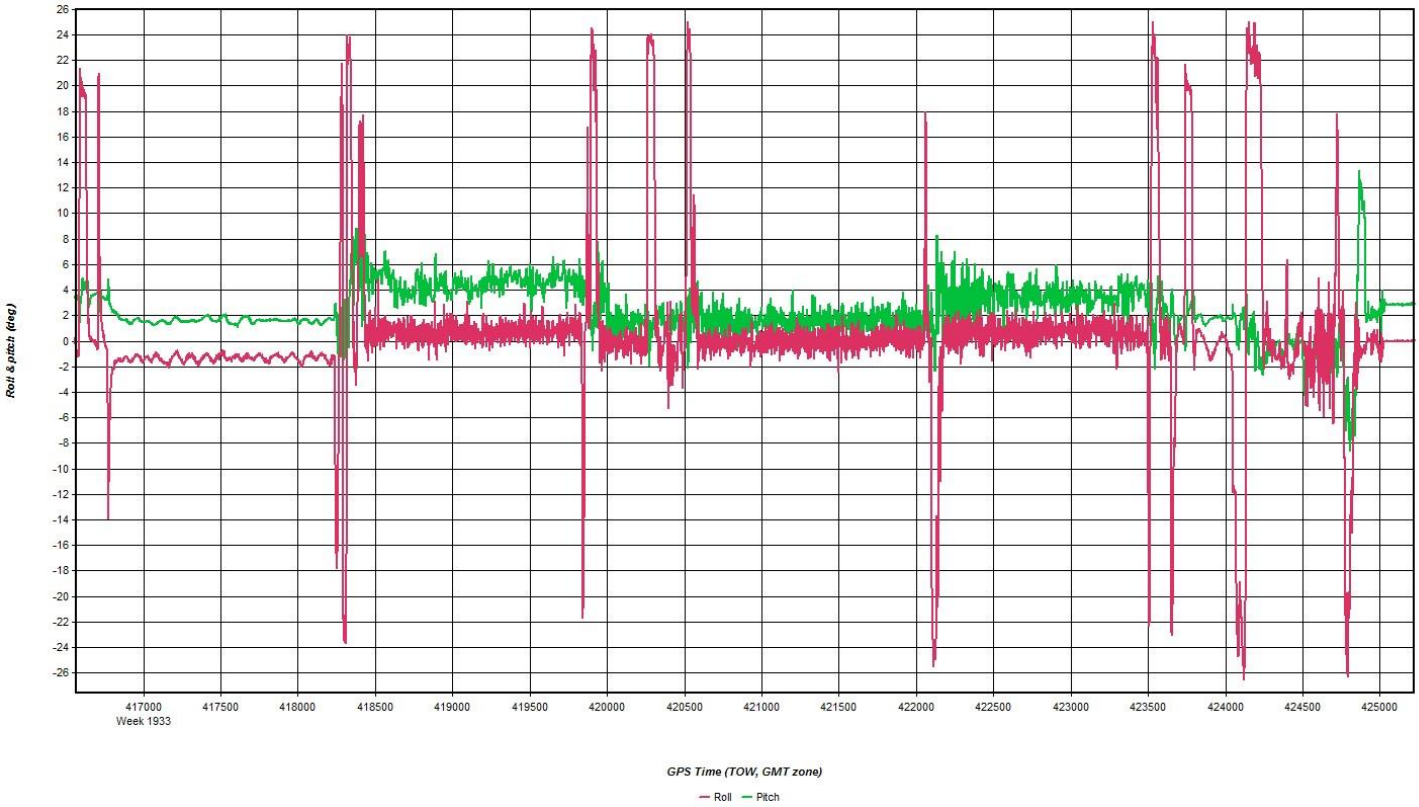

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

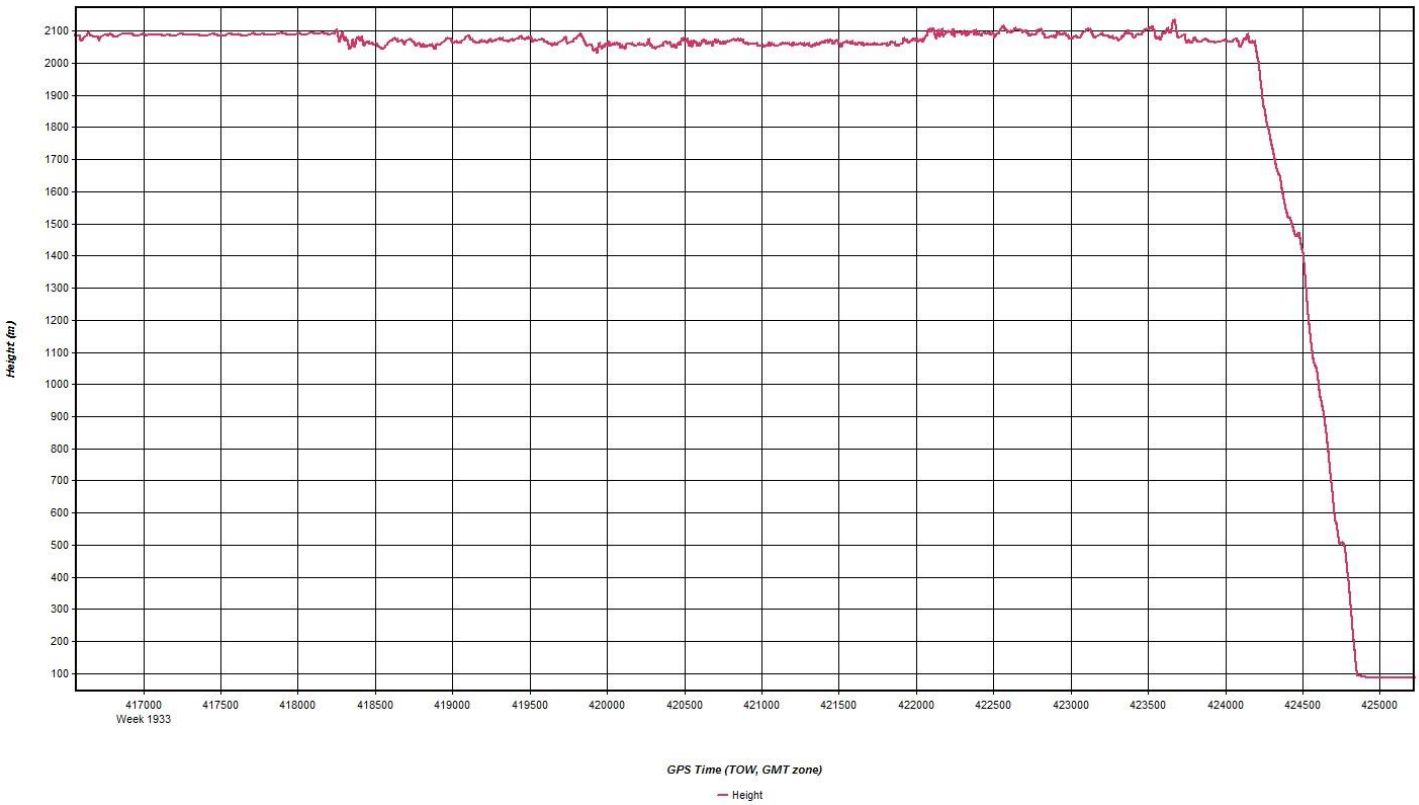

0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
Separation (m)
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
East
North
Up

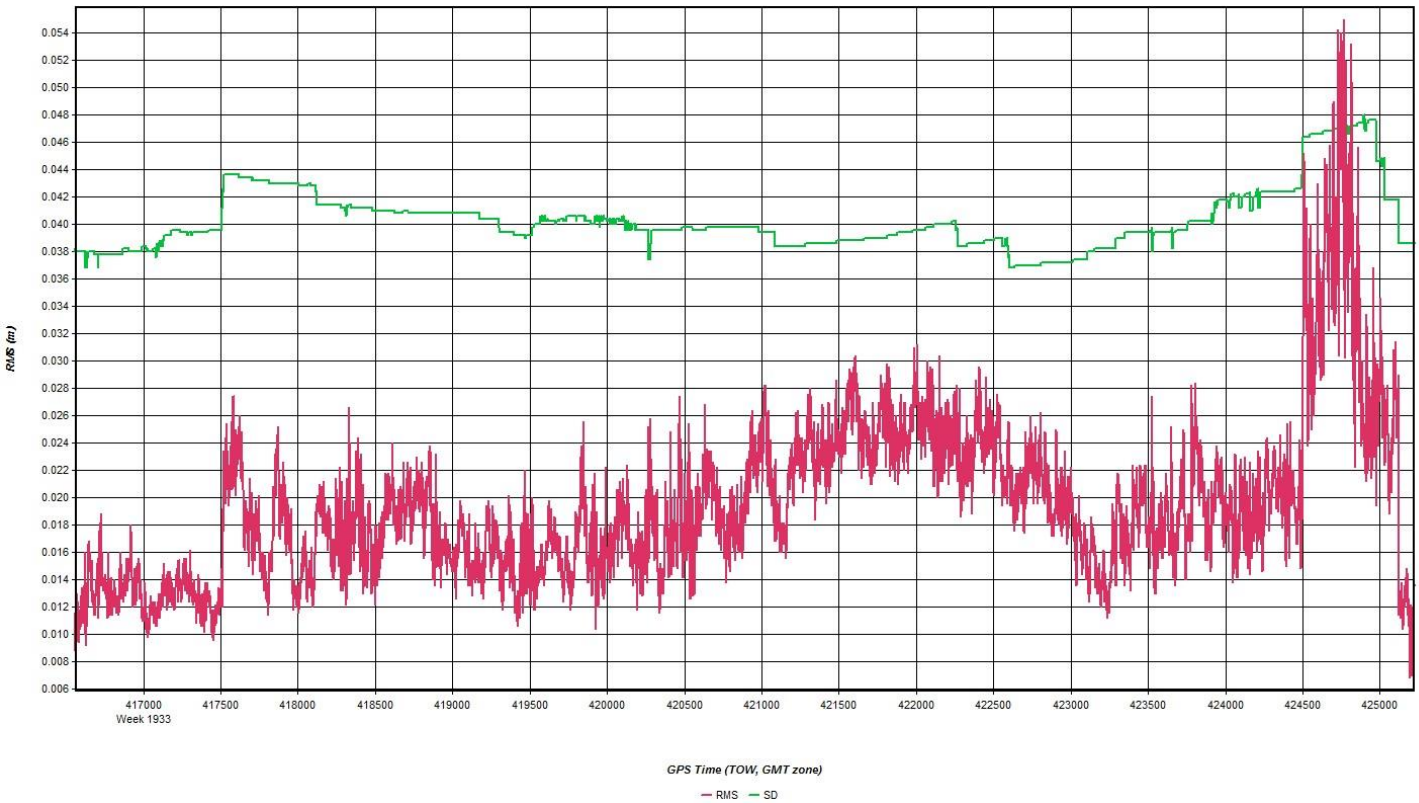

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

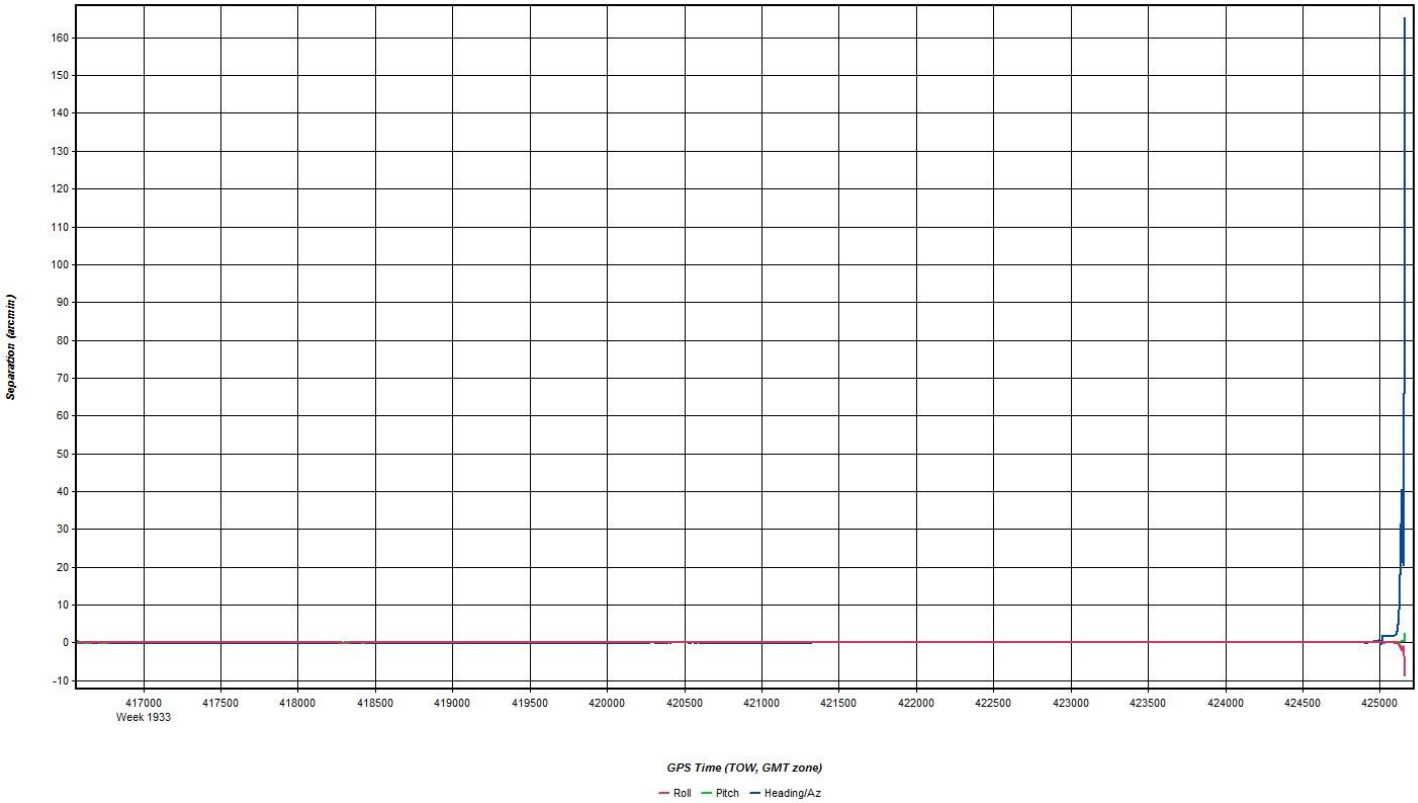

PDOP
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
PDOP

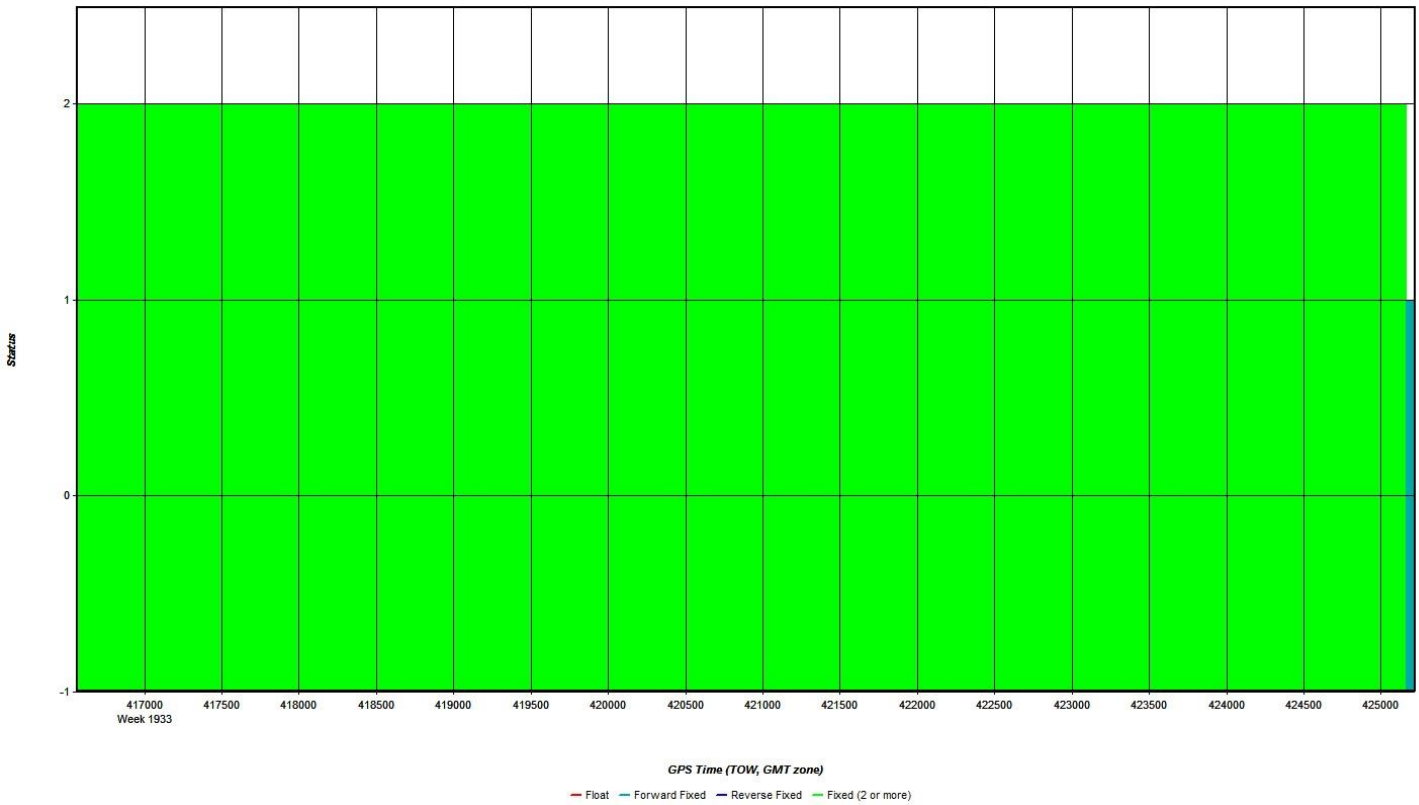

Estimated StdDev (m)
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

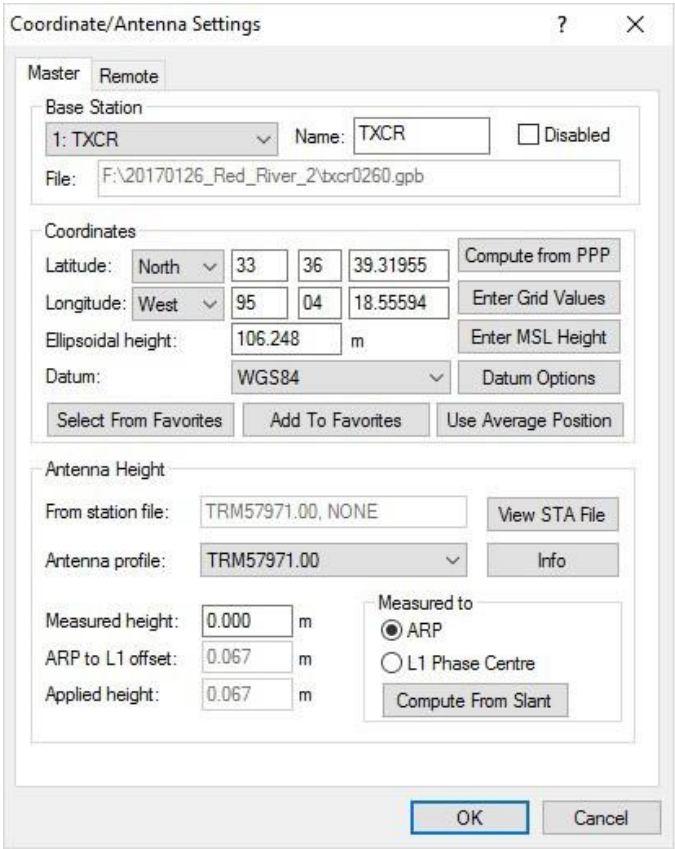

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
Roll
Pitch

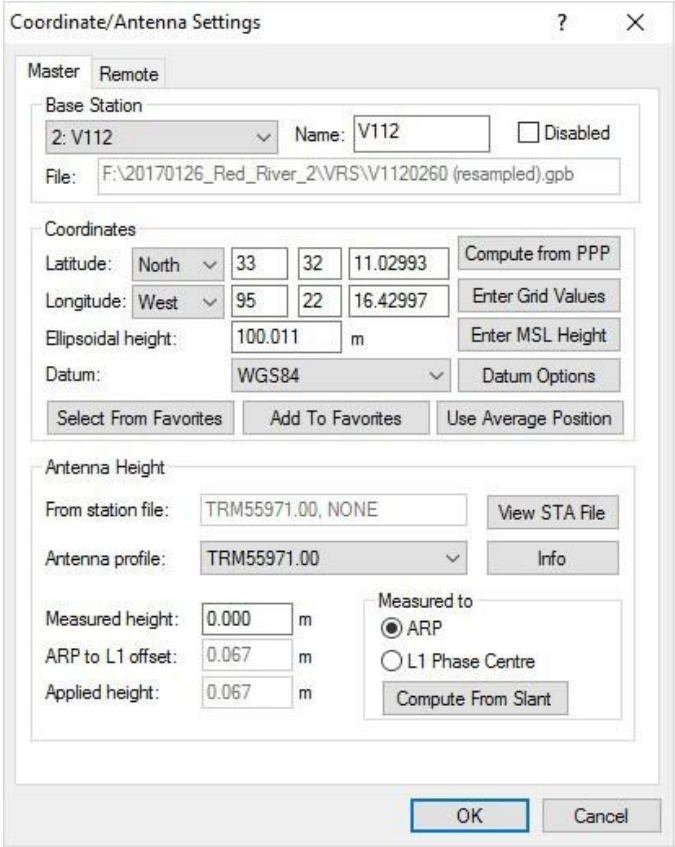

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
Height

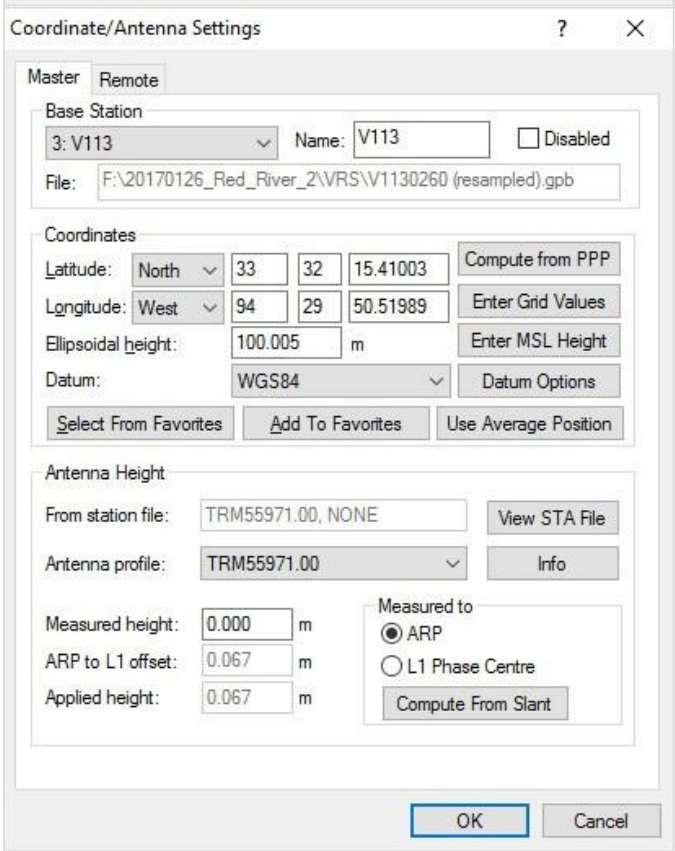

RMS (m)
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

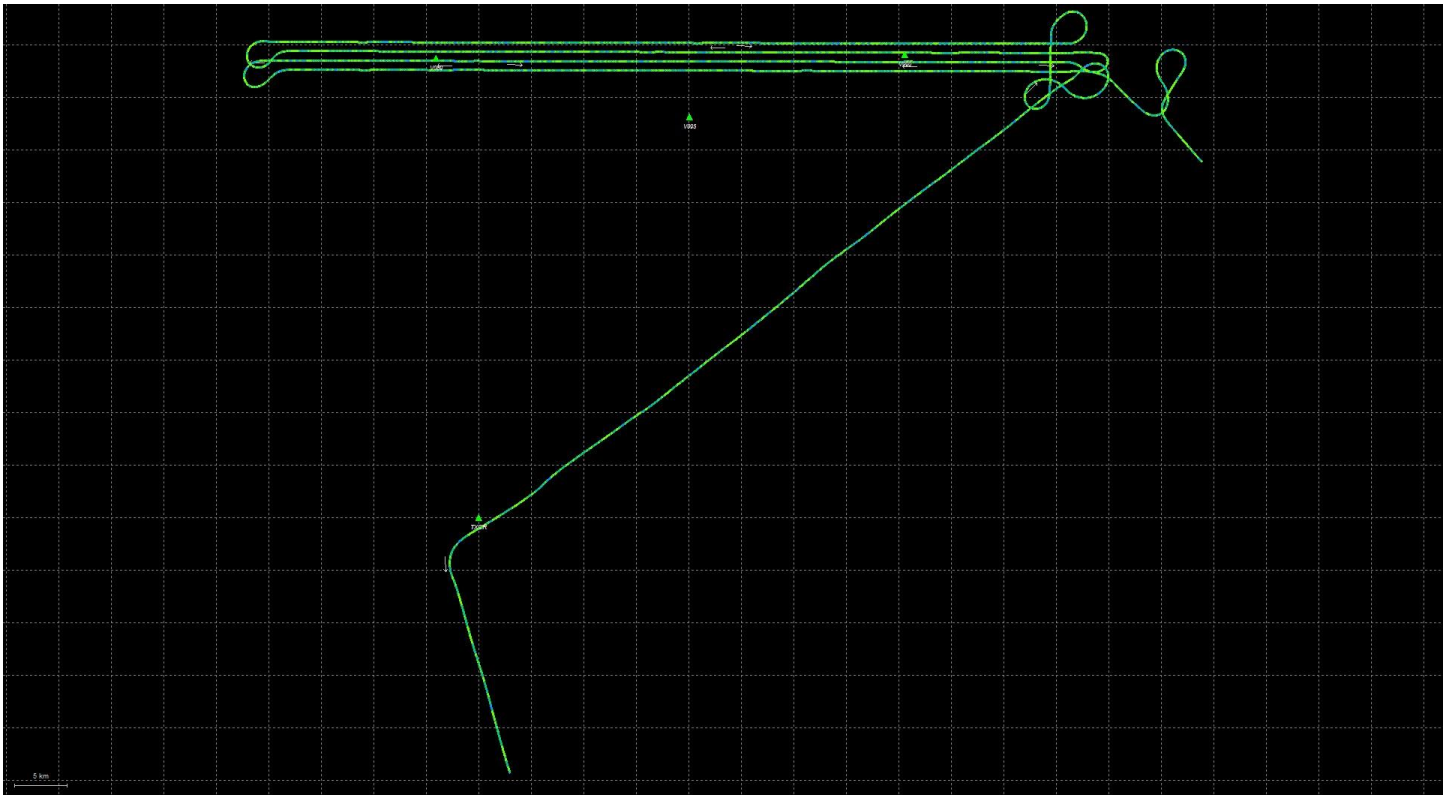

Status
2
1
0
-1
417000
Week 1933
417500
418000
418500
419000
419500
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

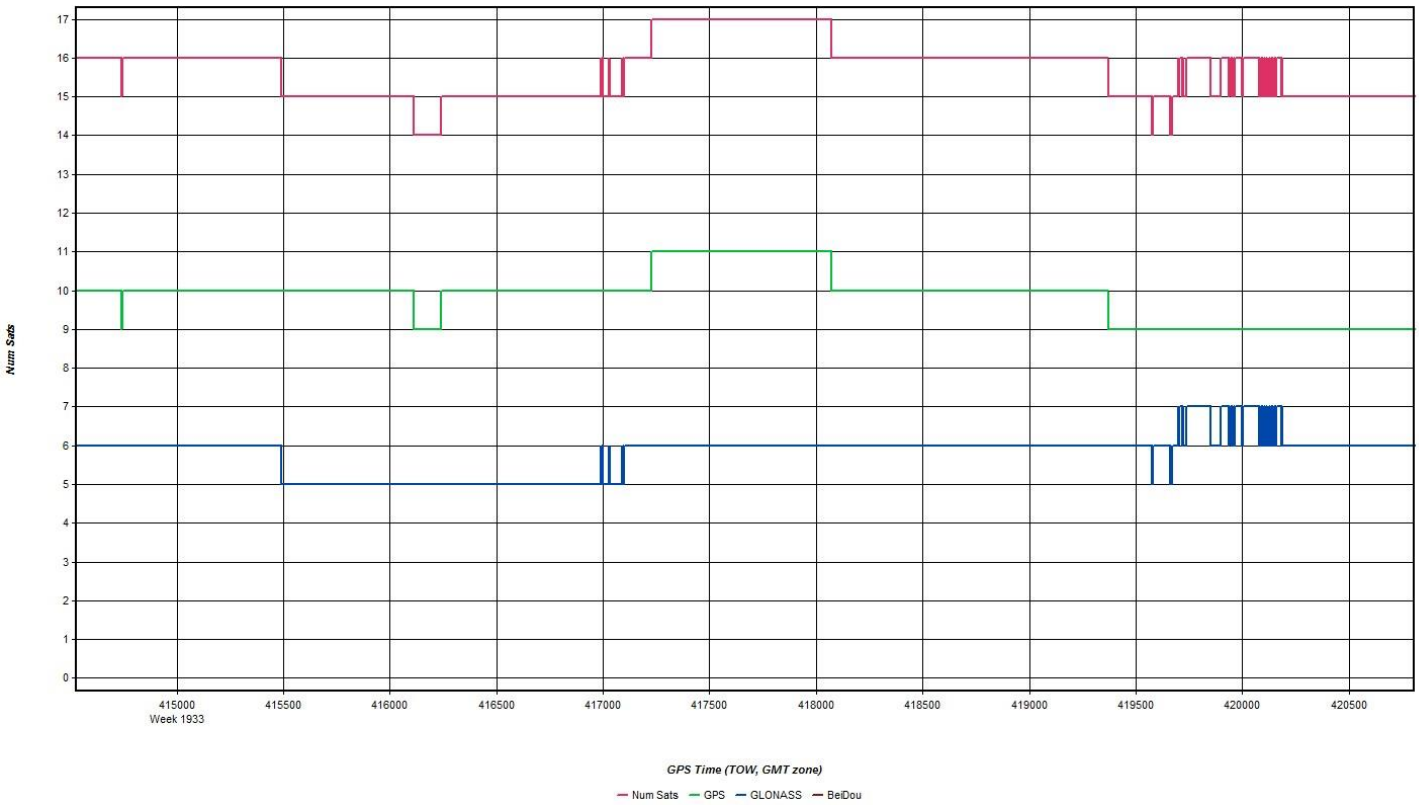

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name:
TXCR
Disabled
File:
F:\20170126_Red_River_2\txcr0260.gpb
Coordinates
Latitude:
North
33
36
39.31955
Compute from PPP
Longitude:
West
95
04
18.55594
Enter Grid Values
Ellipsoidal height:
106.248
m
Enter MSL Height
Datum:
WGS84
Datum 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

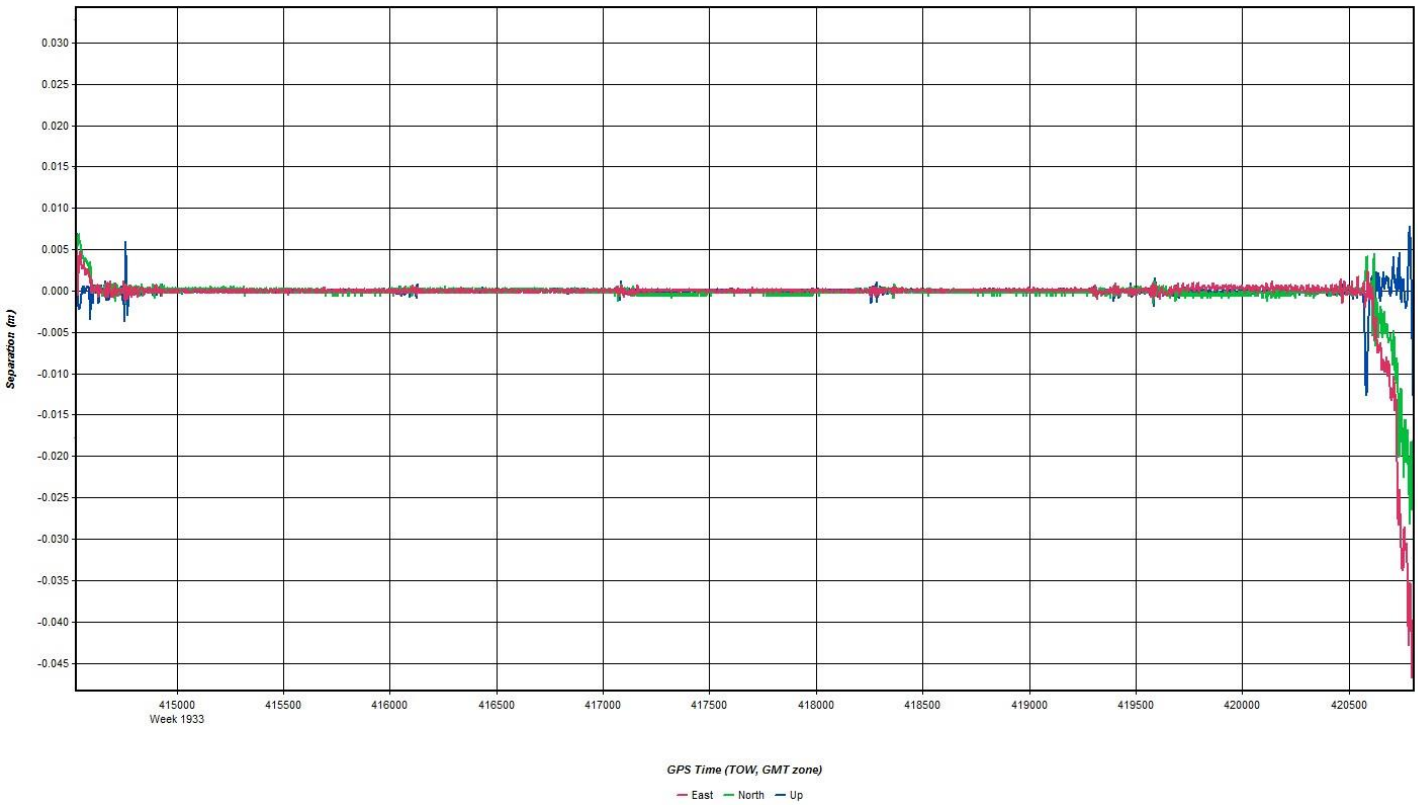

Coordinate/Antenna Settings
Master
Remote
Base Station
2: V112
Name: V112
Disabled
File: F:\20170126_Red_River_2\VRS\V1120260 (resampled).gpb
Coordinates
Latitude: North 33 32 11.02993
Longitude: West 95 22 16.42997
Ellipsoidal height: 100.011 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL 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

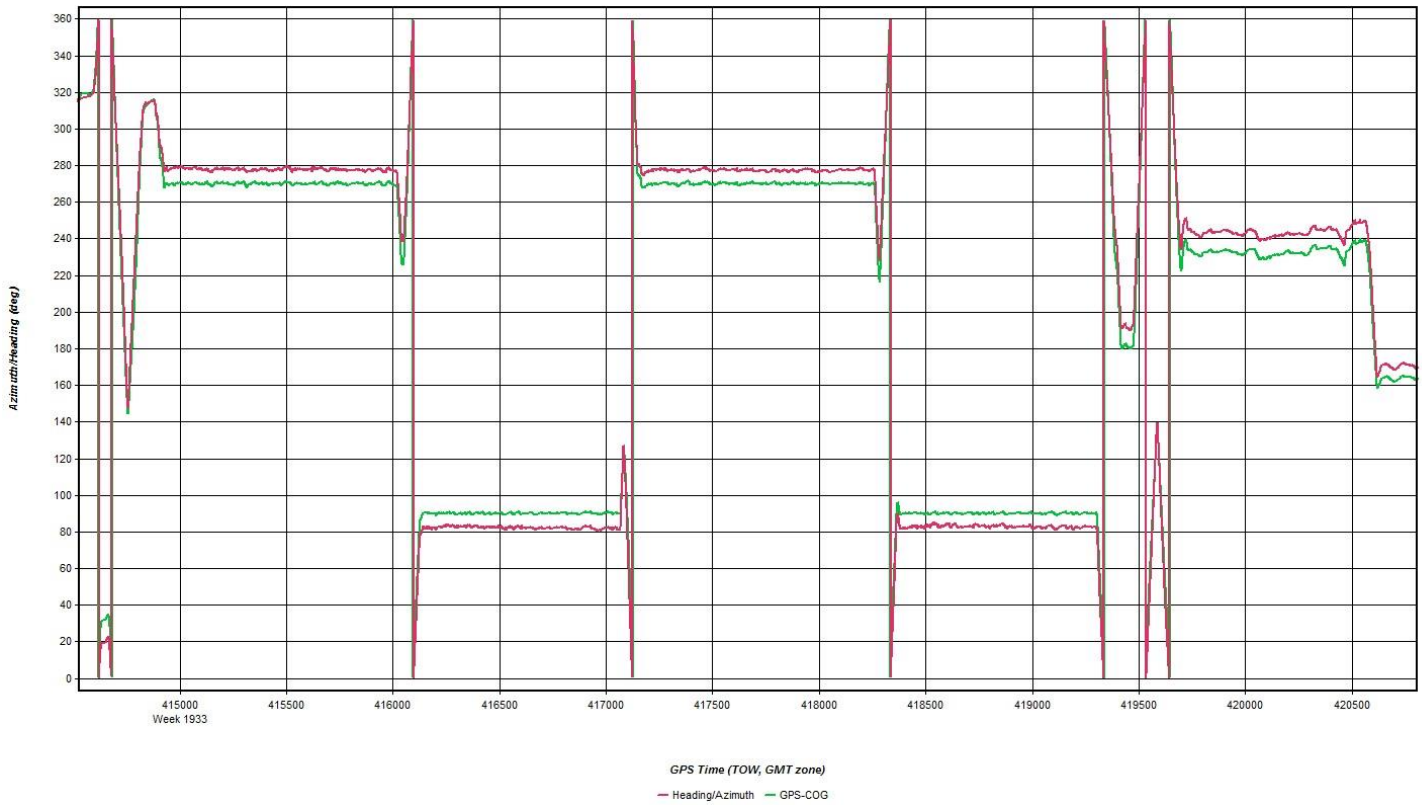

Coordinate/Antenna Settings
Master
Remote
Base Station
3: V113
Name: V113
Disabled
File: F:\20170126_Red_River_2\VRS\V1130260 (resampled).gpb
Coordinates
Latitude: North 33 32 15.41003
Longitude: West 94 29 50.51989
Ellipsoidal height: 100.005 m
Datum: WGS84
Compute from PPP
Enter Grid Values
Enter MSL 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

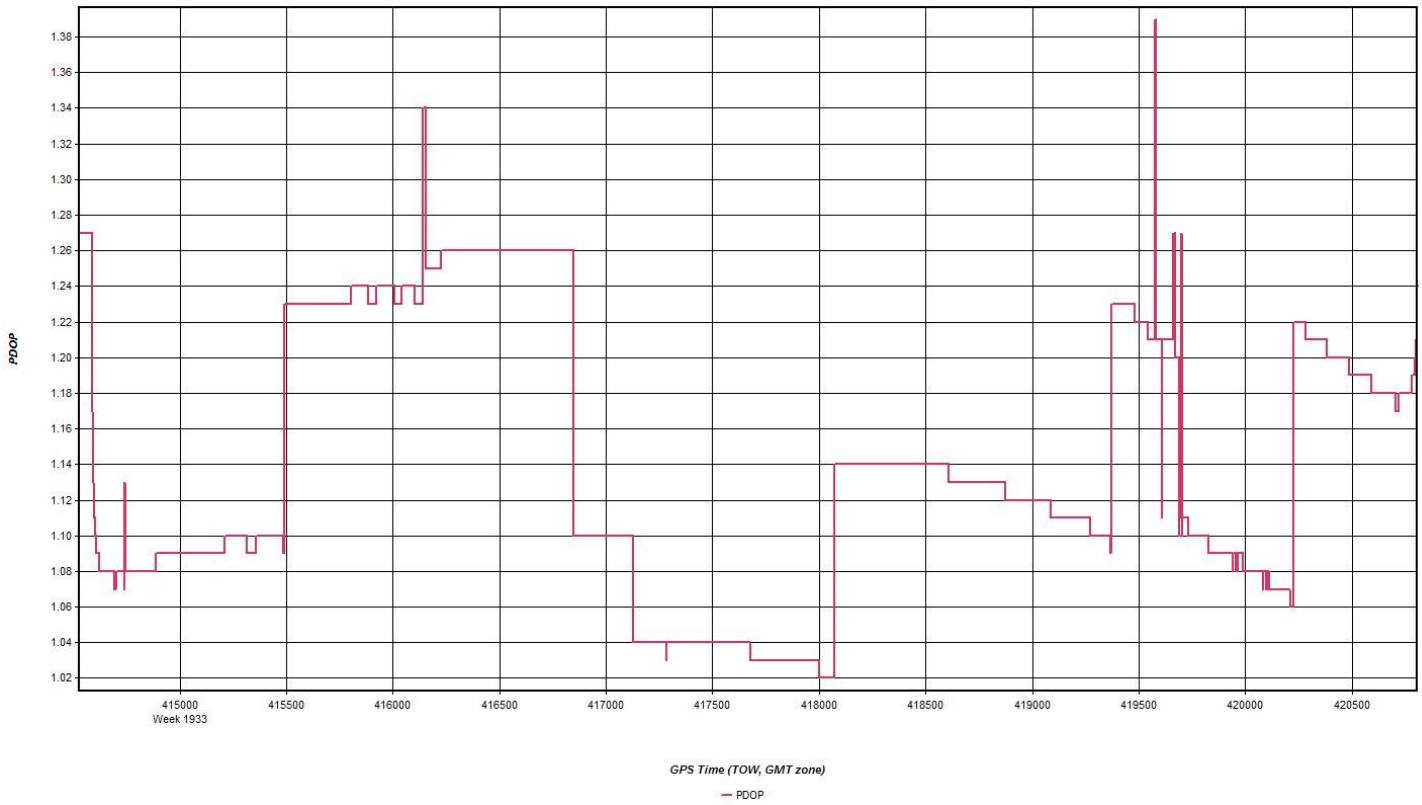
Jan 26, 2017-B (N812TB, SN7178)

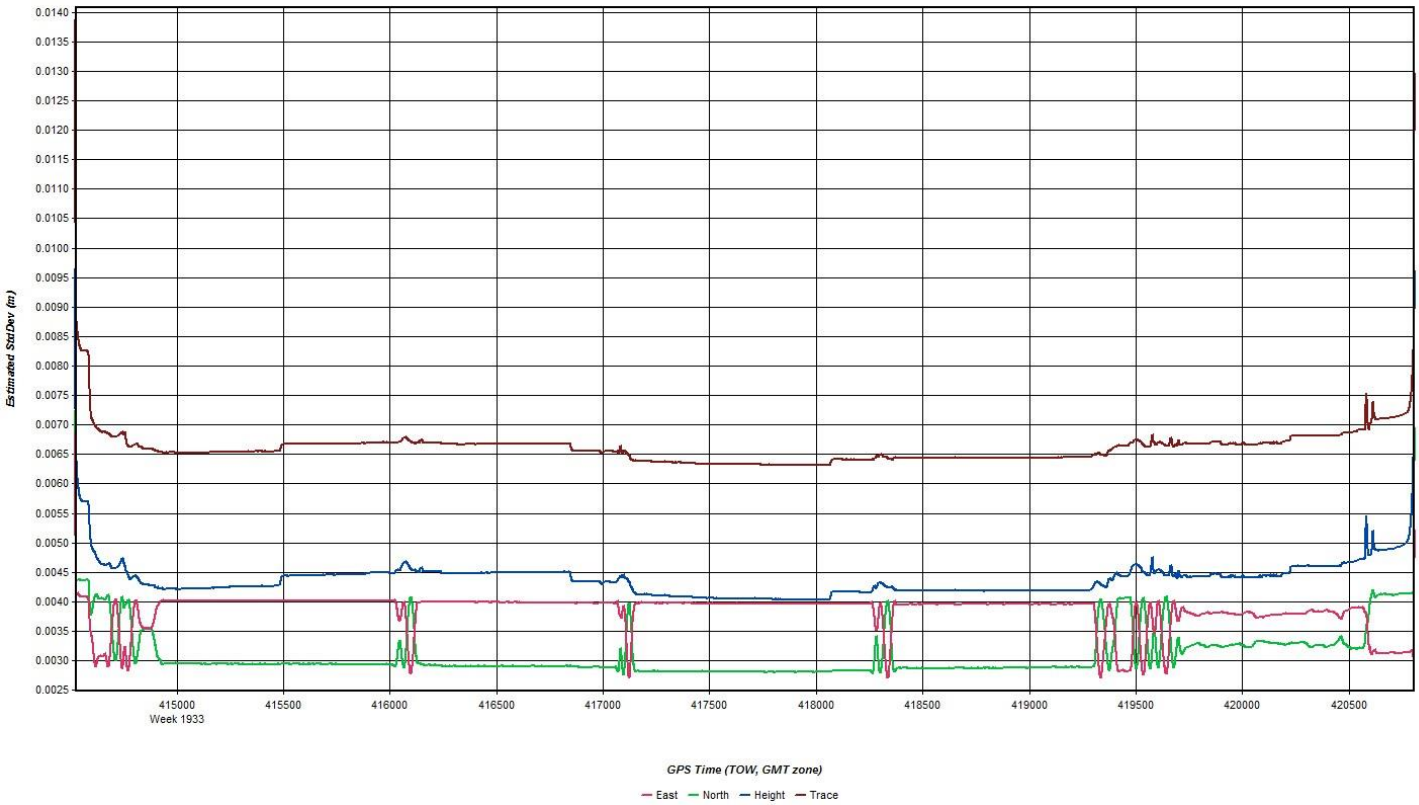


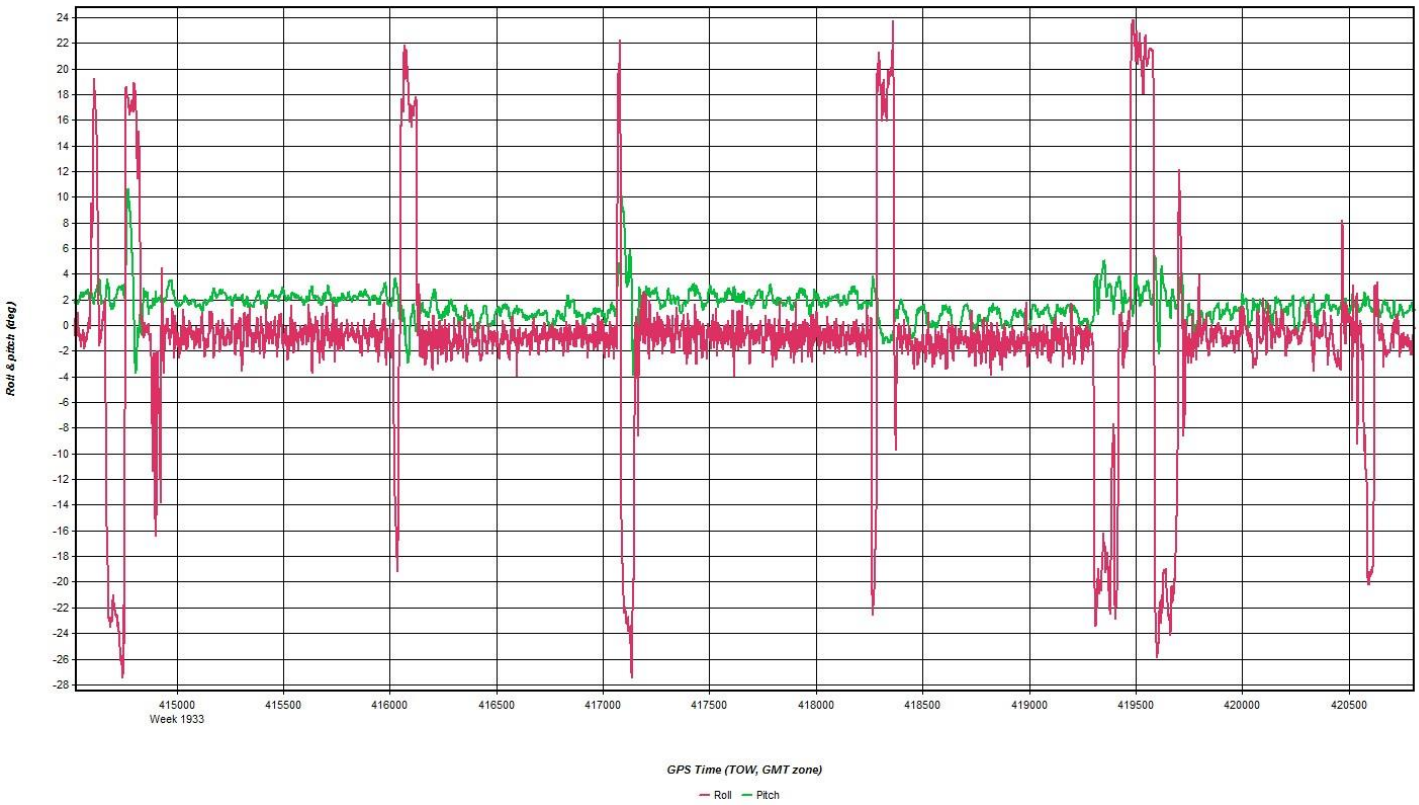

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

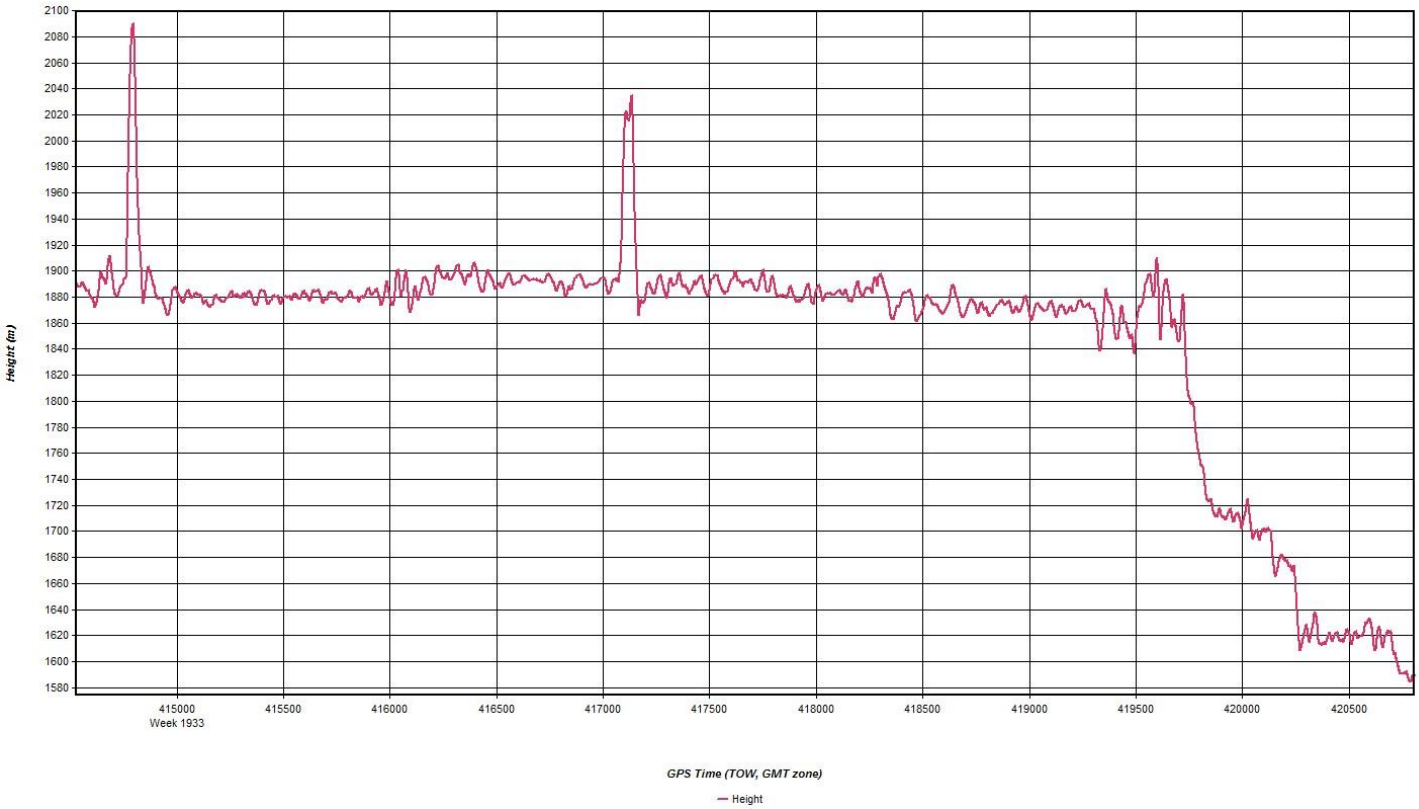

0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
Separation (m)
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
East
North
Up

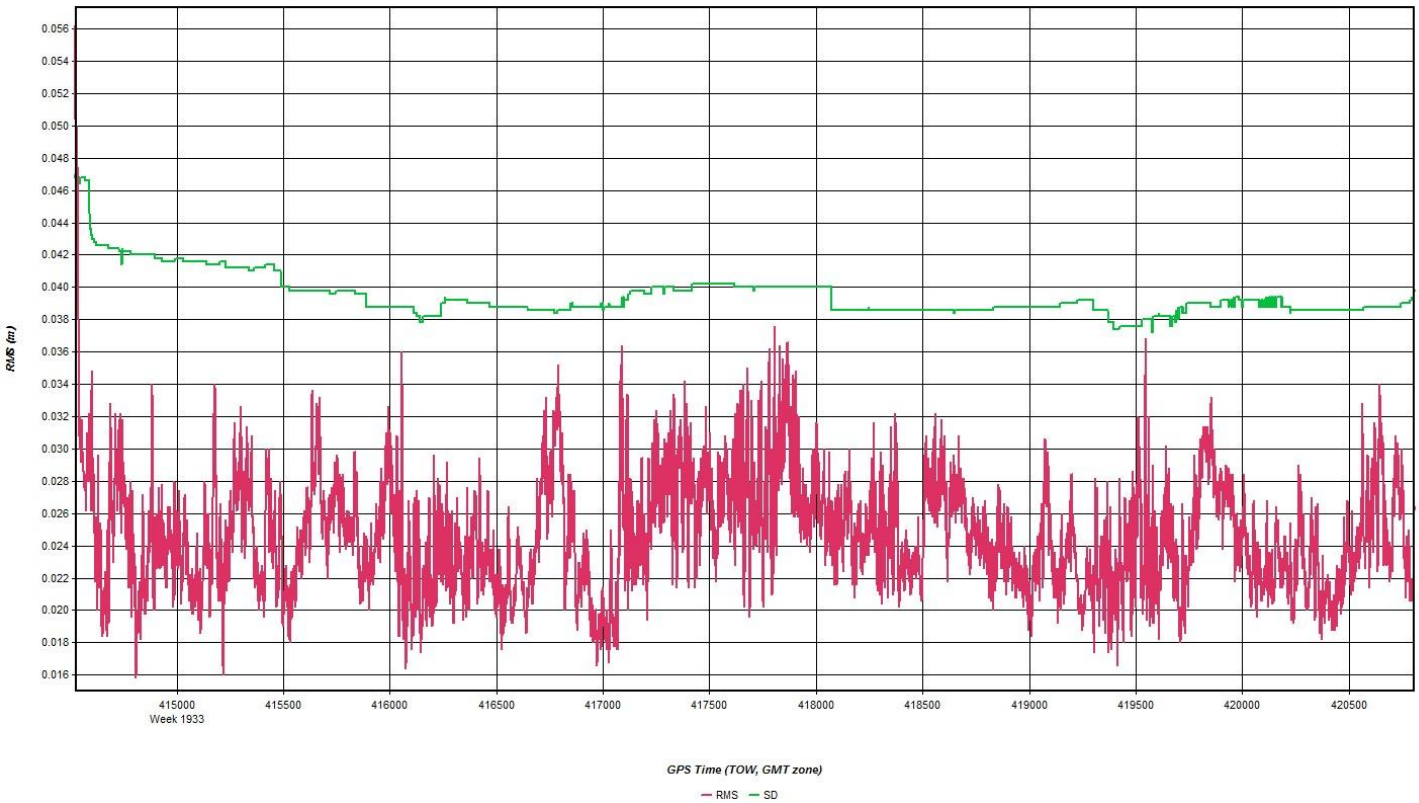

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

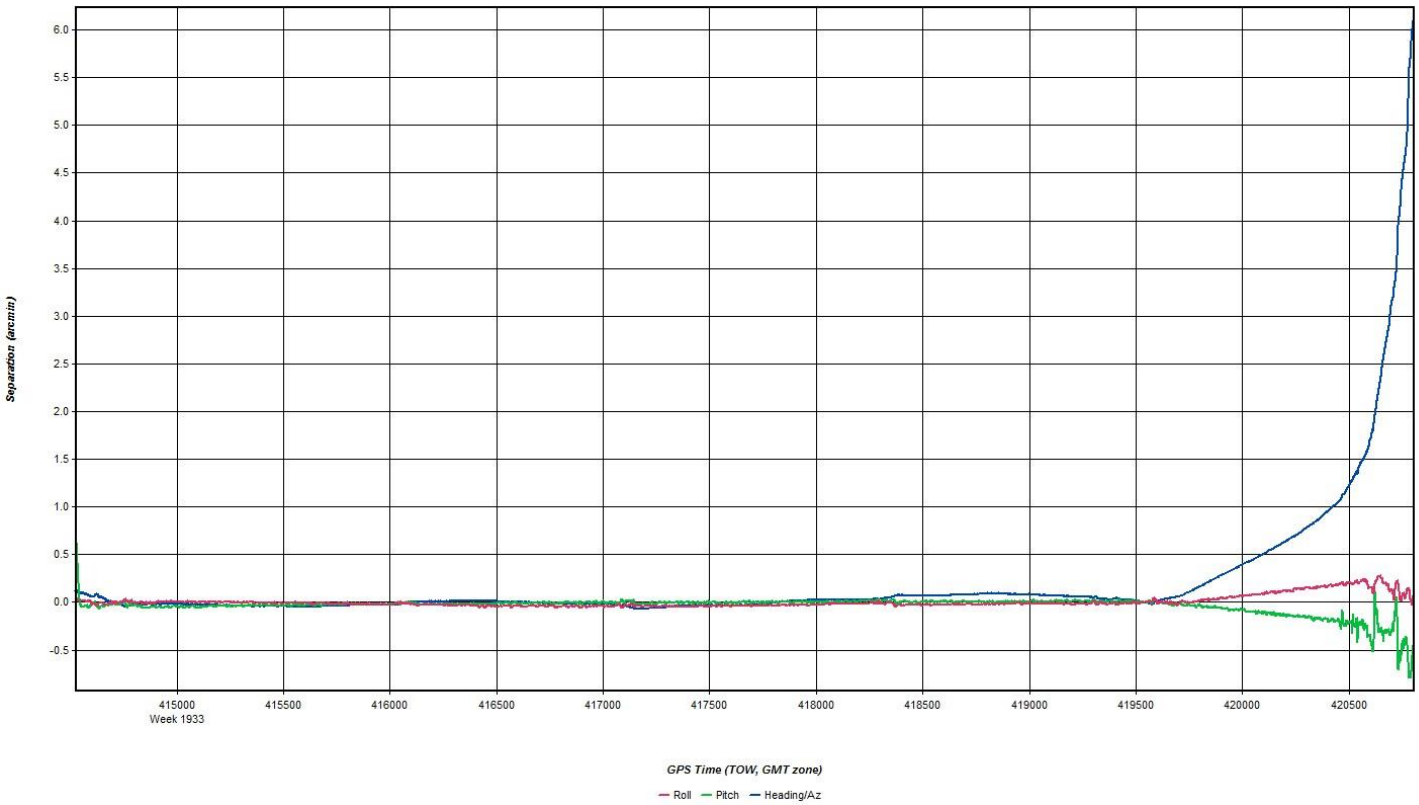

PDOP
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
PDOP

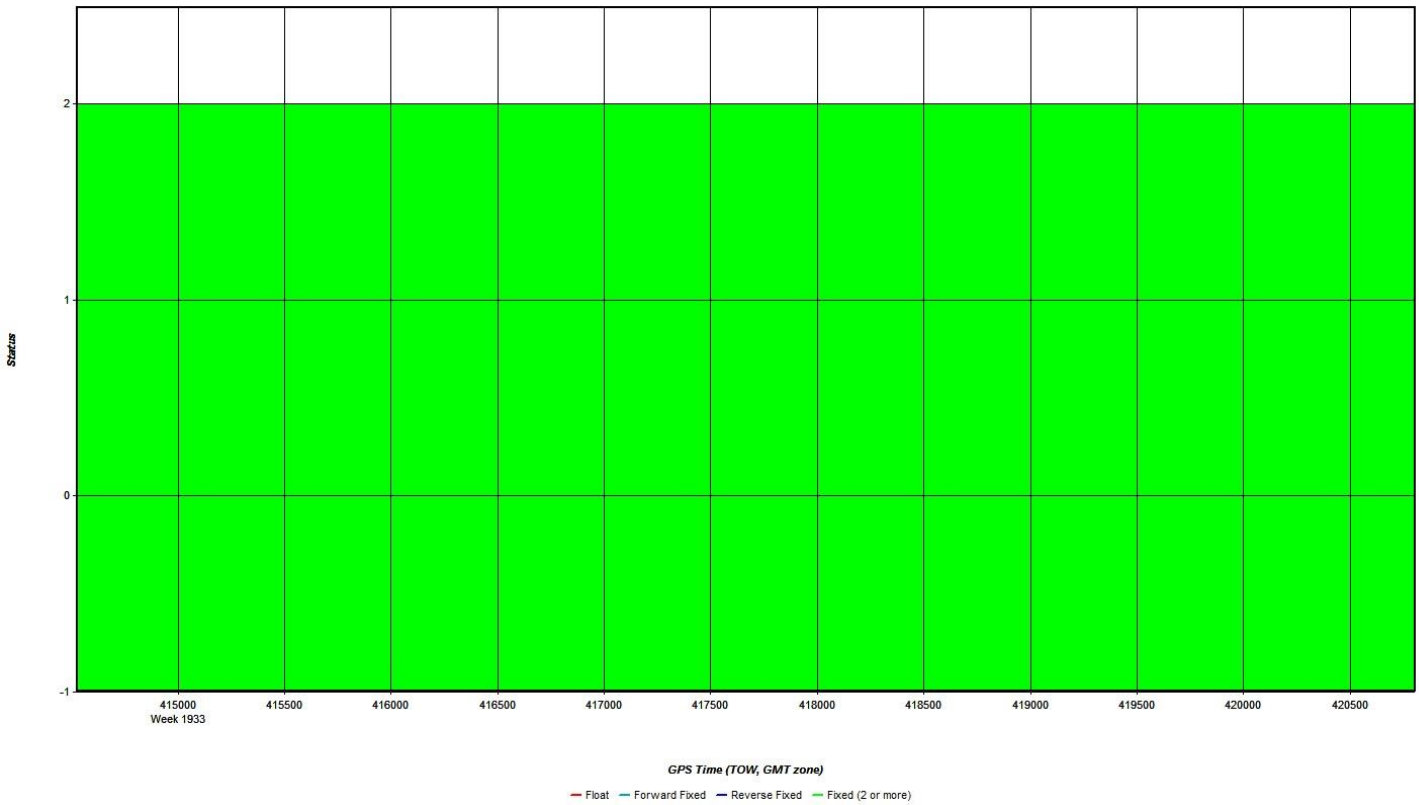

Estimated StdDev (m)
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

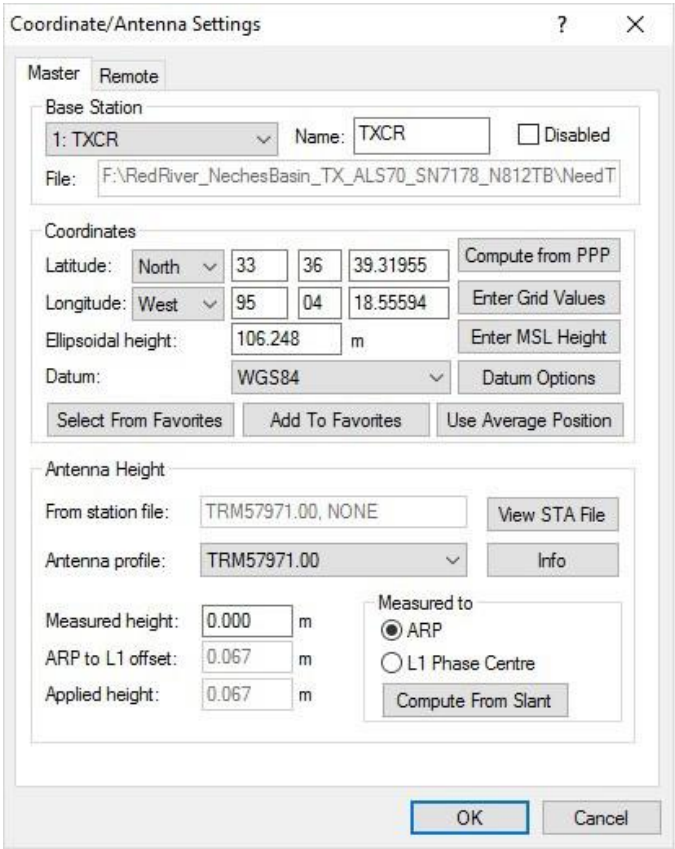

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
Roll
Pitch

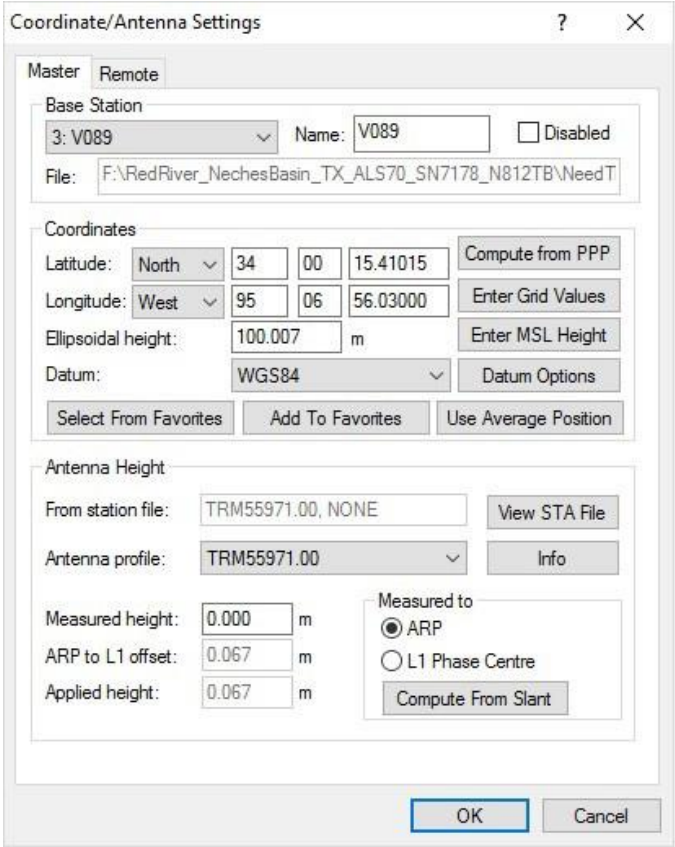

Height (m)
2100
2080
2060
2040
2020
2000
1980
1960
1940
1920
1900
1880
1860
1840
1820
1800
1780
1760
1740
1720
1700
1680
1660
1640
1620
1600
1580
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
Height

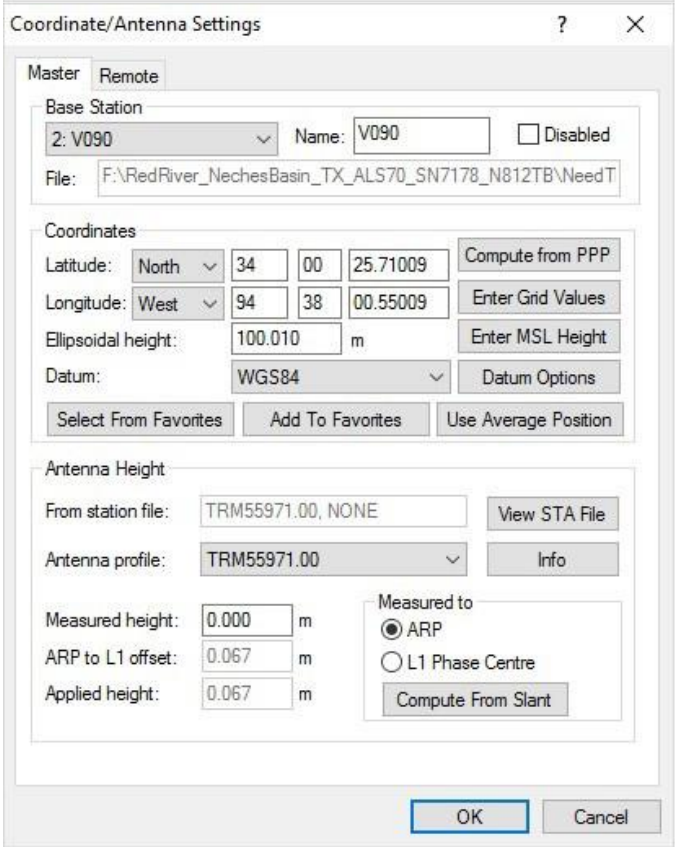

RMS (m)
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
RMS
SD

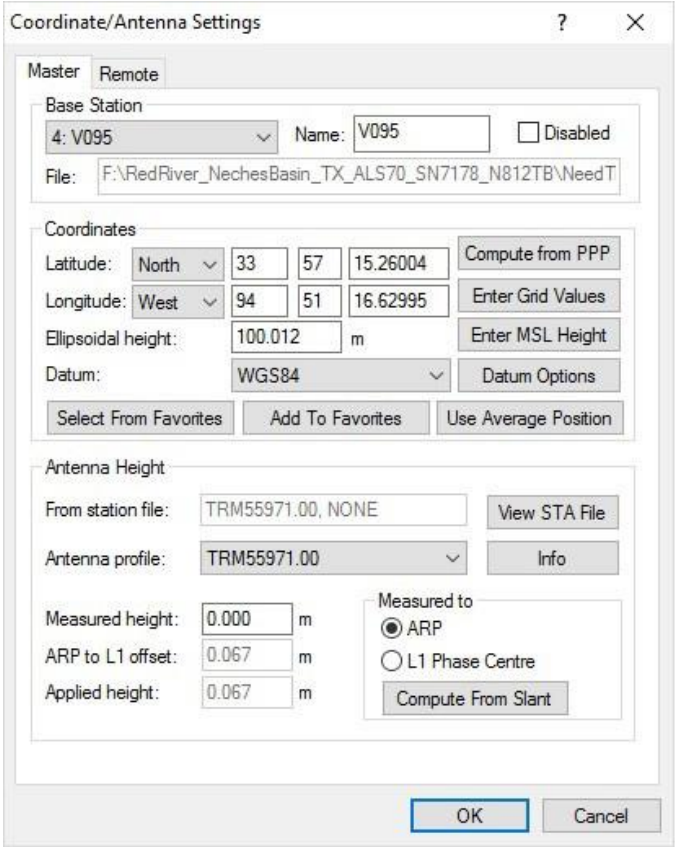

Separation (arcmin)
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
415000
Week 1933
415500
416000
416500
417000
417500
418000
418500
419000
419500
420000
420500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name:
TXCR
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
33
36
39.31955
Compute from PPP
Longitude:
West
95
04
18.55594
Enter Grid Values
Ellipsoidal height:
106.248
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: V089
Name: V089
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 34 00 15.41015
Longitude: West 95 06 56.03000
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


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V090
Name: V090
Disabled
File: F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude: North 34 00 25.71009
Longitude: West 94 38 00.55009
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: 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: V095
Name:
V095
Disabled
File:
F:\RedRiver_NechesBasin_TX_ALS70_SN7178_N812TB\NeedT
Coordinates
Latitude:
North
33
57
15.26004
Compute from PPP
Longitude:
West
94
51
16.62995
Enter Grid Values
Ellipsoidal height:
100.012
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

Flight Log

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 1-26-17 B

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

Project: Red River TX Proj #: 29377 Flight Mgmt File: 20170126-183922

Aircraft: N812TB Begin Hobbs: 4294.7 End Hobbs: 4297.1 Total: 2.4 Pilot: JBillington Co-Pilot: Tech: JSwan

Dep Apt: KTXK Dep Time (Lcl): 1251 (Z): 1851 Arr Apt: KGGG Arr Time (Local): 319 (Z): 16 Tot Time Aloft:

CORS: Y / N Sta 1: TXTE 1851 Sta 2: Flyovers: (Y) / (N) If Y, times: Sta1) Sta2)

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

Gd Temp beg: 8 °c End: 10 °c OAT beg: -1 °c End: -2 °c Altimeter begin: 3025 end: 3025

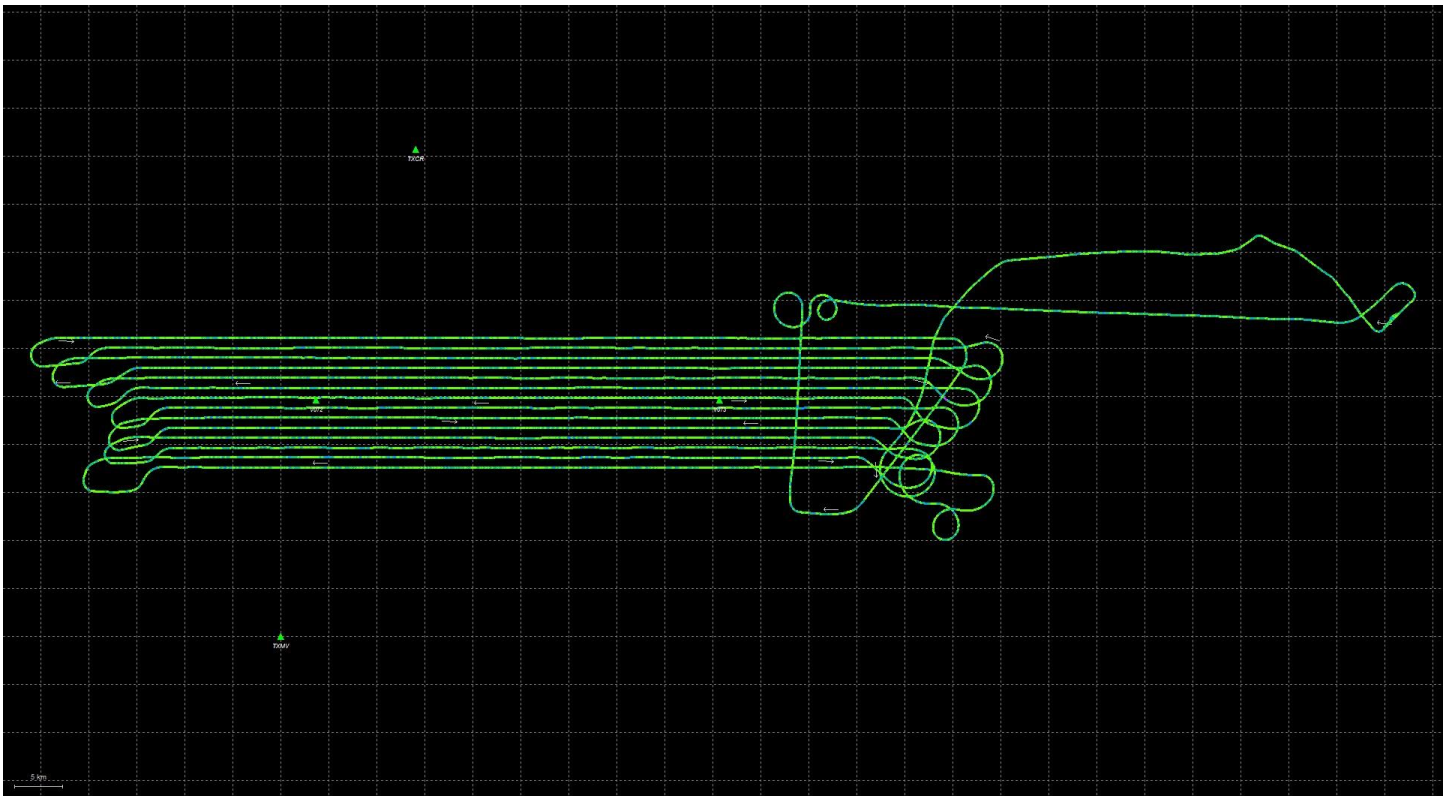
LIDAR	Type A1571	Serial # 7181	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 40	Scan Freq 53	MpIA Y / N	Pulses In Air	Pulse Rate 295	Power	PPSM

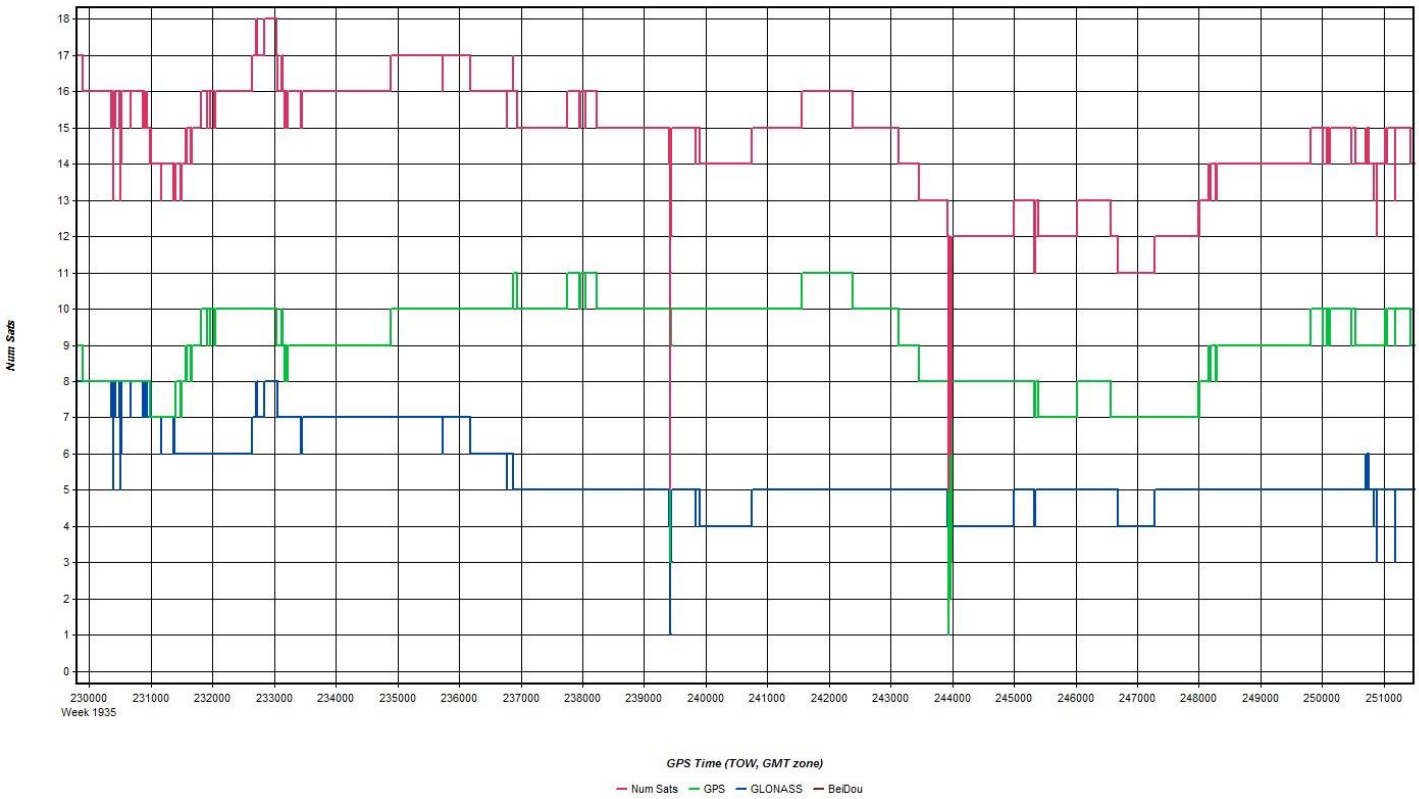
Beg GB 437 End GB 410 Ter GB 27 Storage Name/#

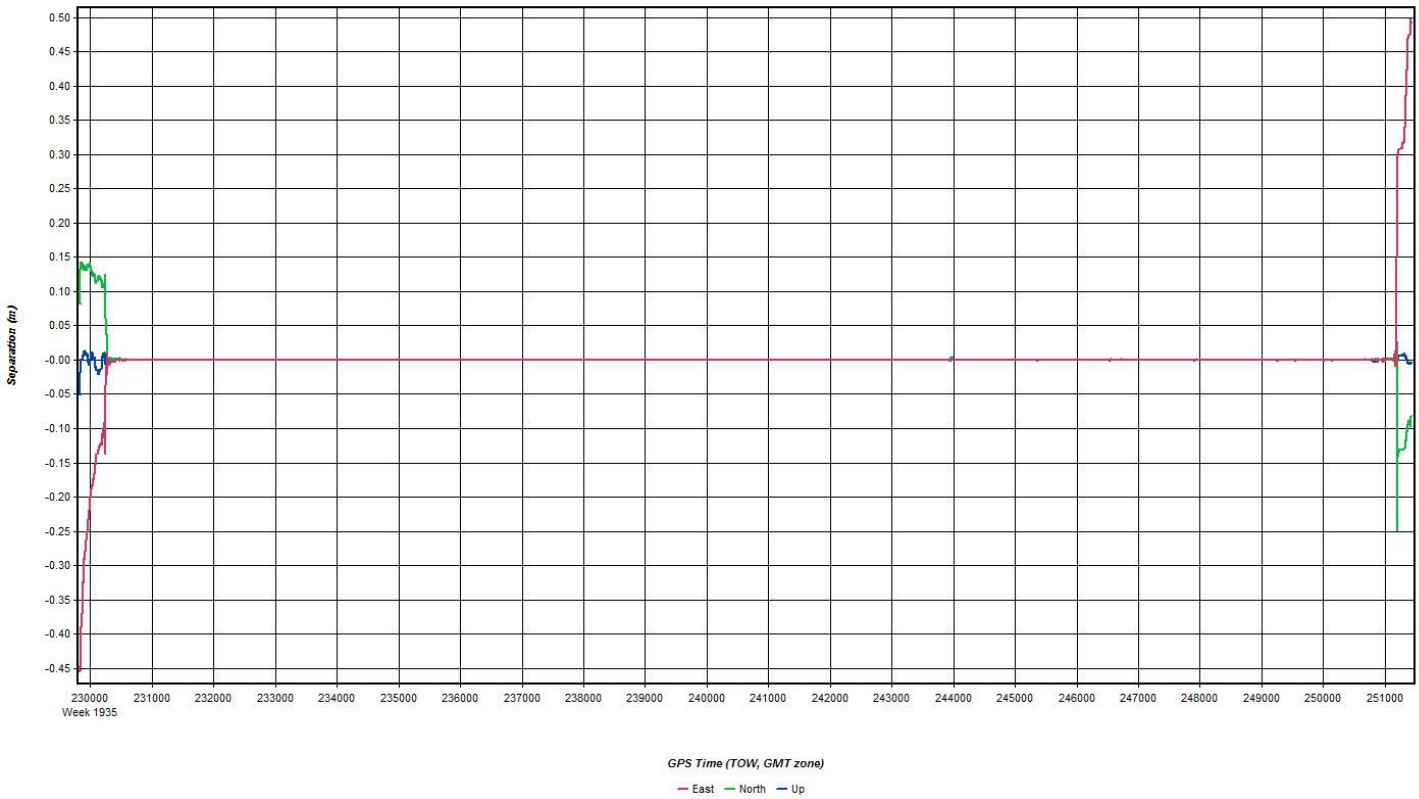
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,+,-)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		1851	1914						TXK → Fig 8's (1910–1914)
104	270	1915	1933	132	1.4/16	6172	+9	0	
103	90	1935	1950	156	1.2/19	6213	-8	0	
102	270	1952	2010	135	1.2/18	6197	+9	0	
101	90	2012	2028	159	1.2/17	6142	-8	0	
Xtie	180	2030	2030	176	1.2/17	6150	Ø	0	Fig 8's (2031–2036) — TXCR (2048)
									Return to KGGG for crew swap
									IDabel Complete!
									B Hobbs = 2.4
									online = 1.3
									mob = 1.1
									1-26 Total Hobbs = 6.3
									online = 4.1
									mob = 2.2

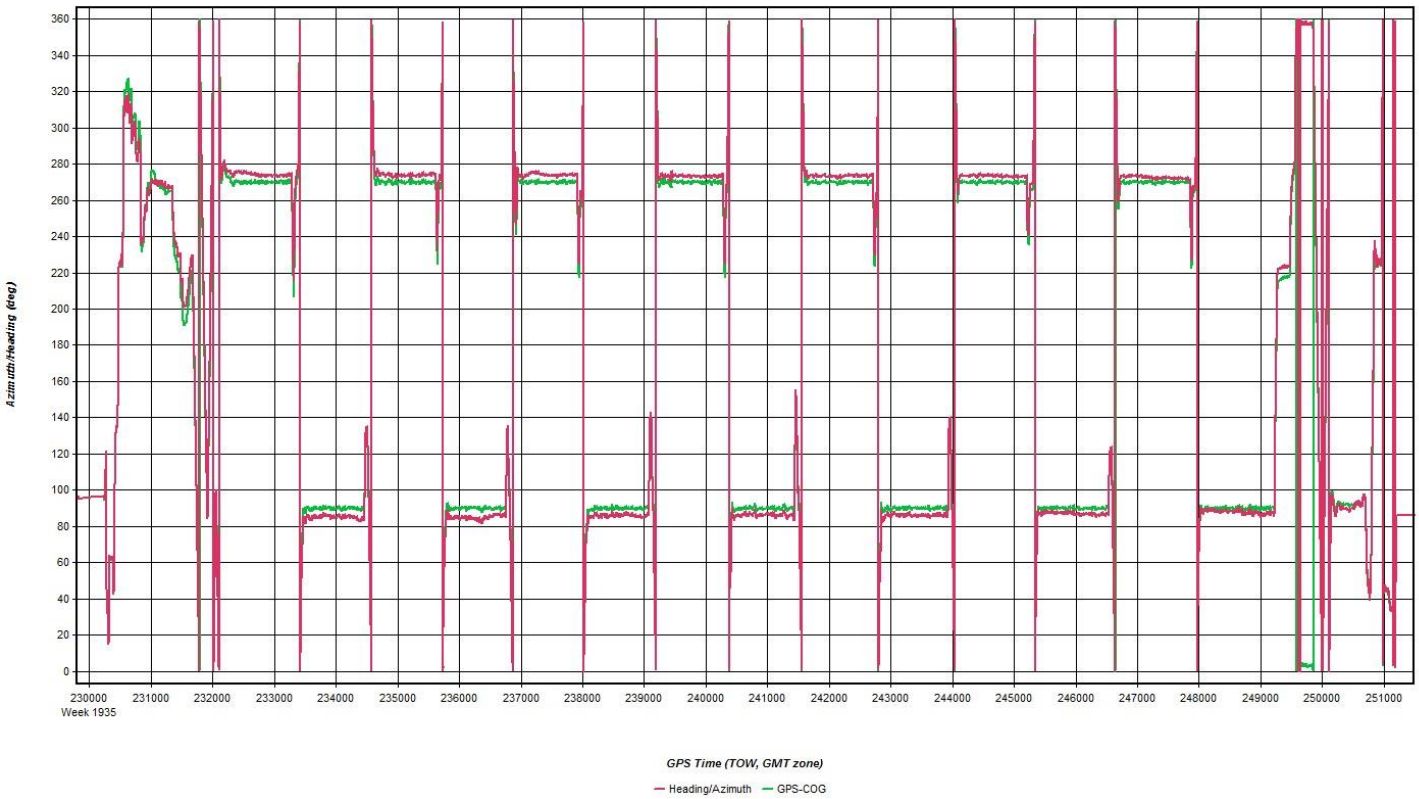
Total Proj Lines: Lines Flown: Lines Remain: Online Time: 1.3 Mob Time: 1.1 Notes:

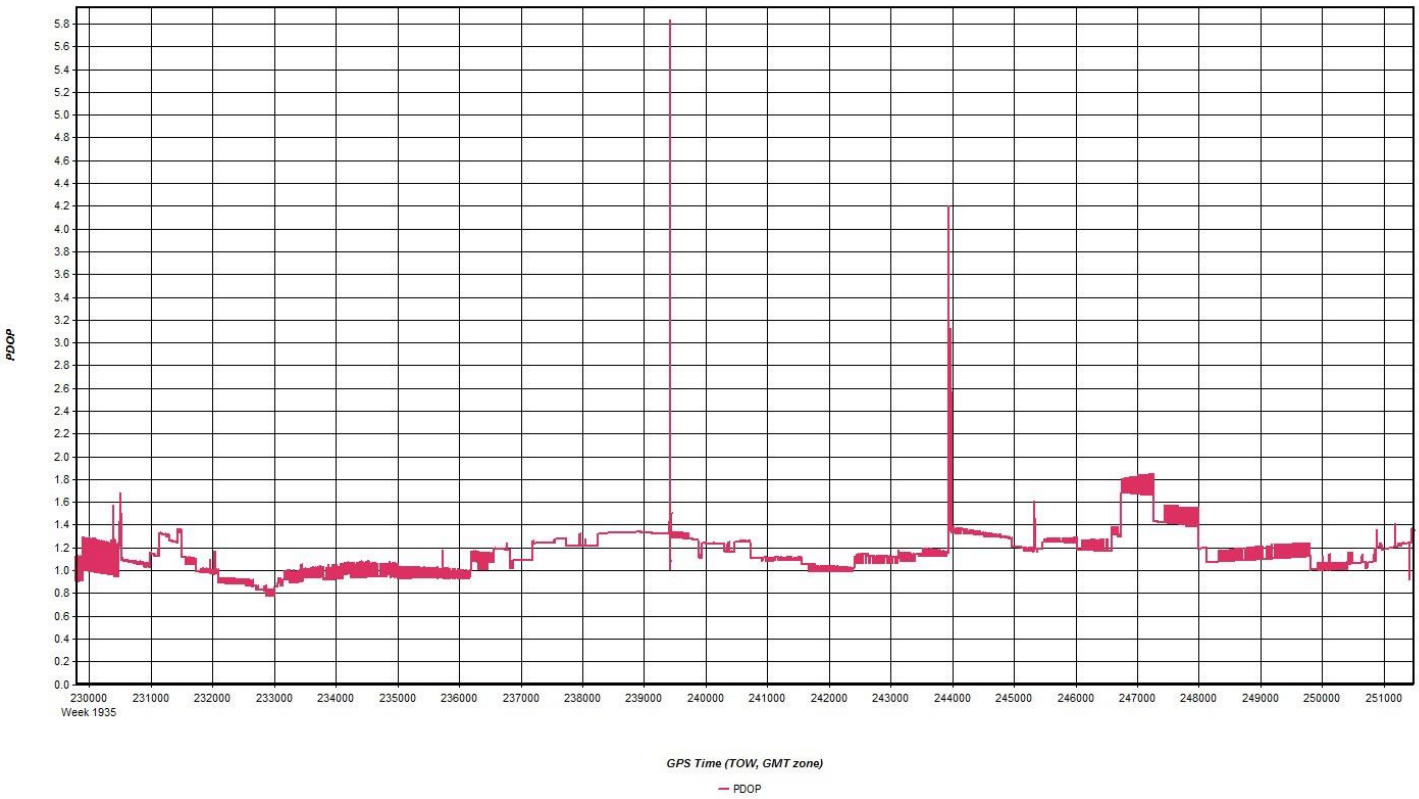
Feb 7, 2017-A (N246MP, SN8227)

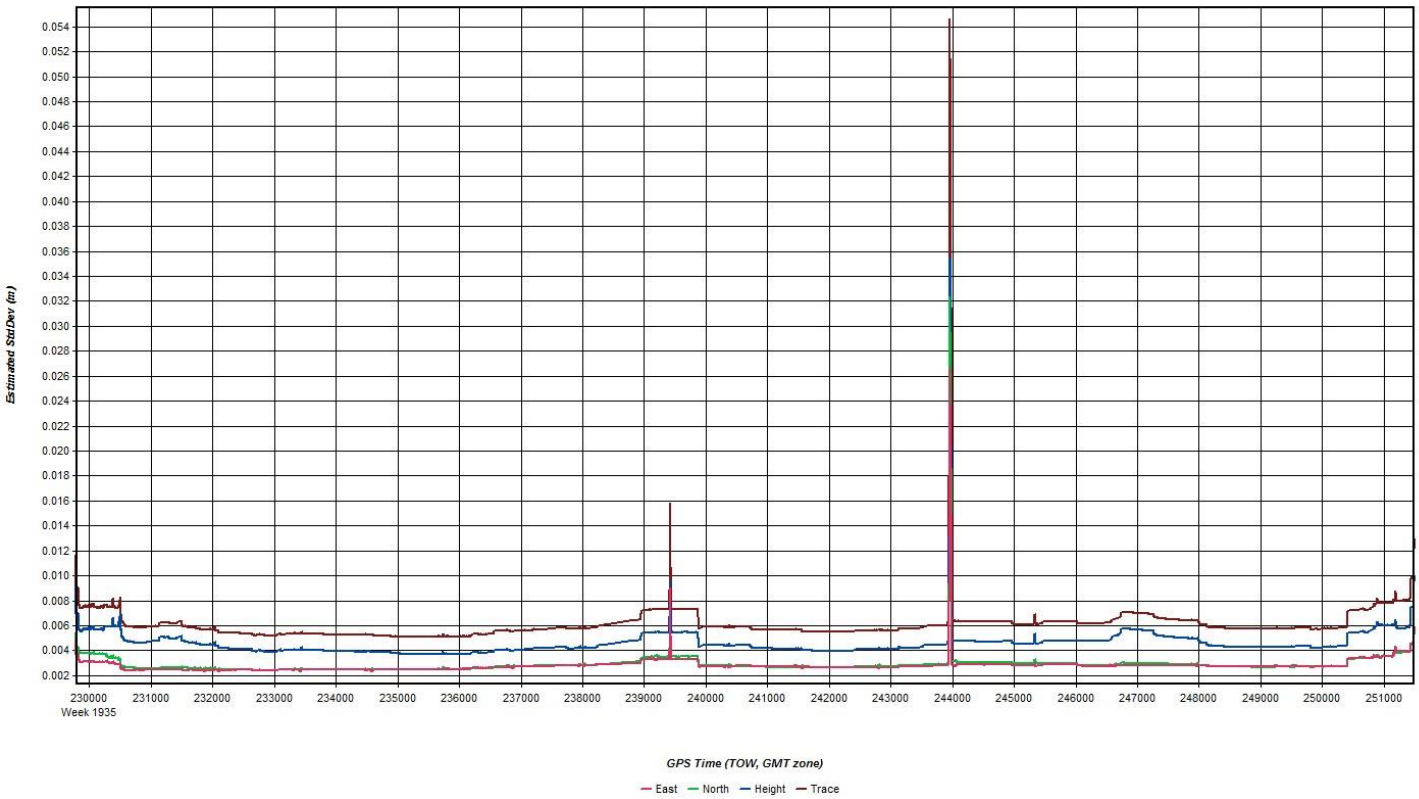


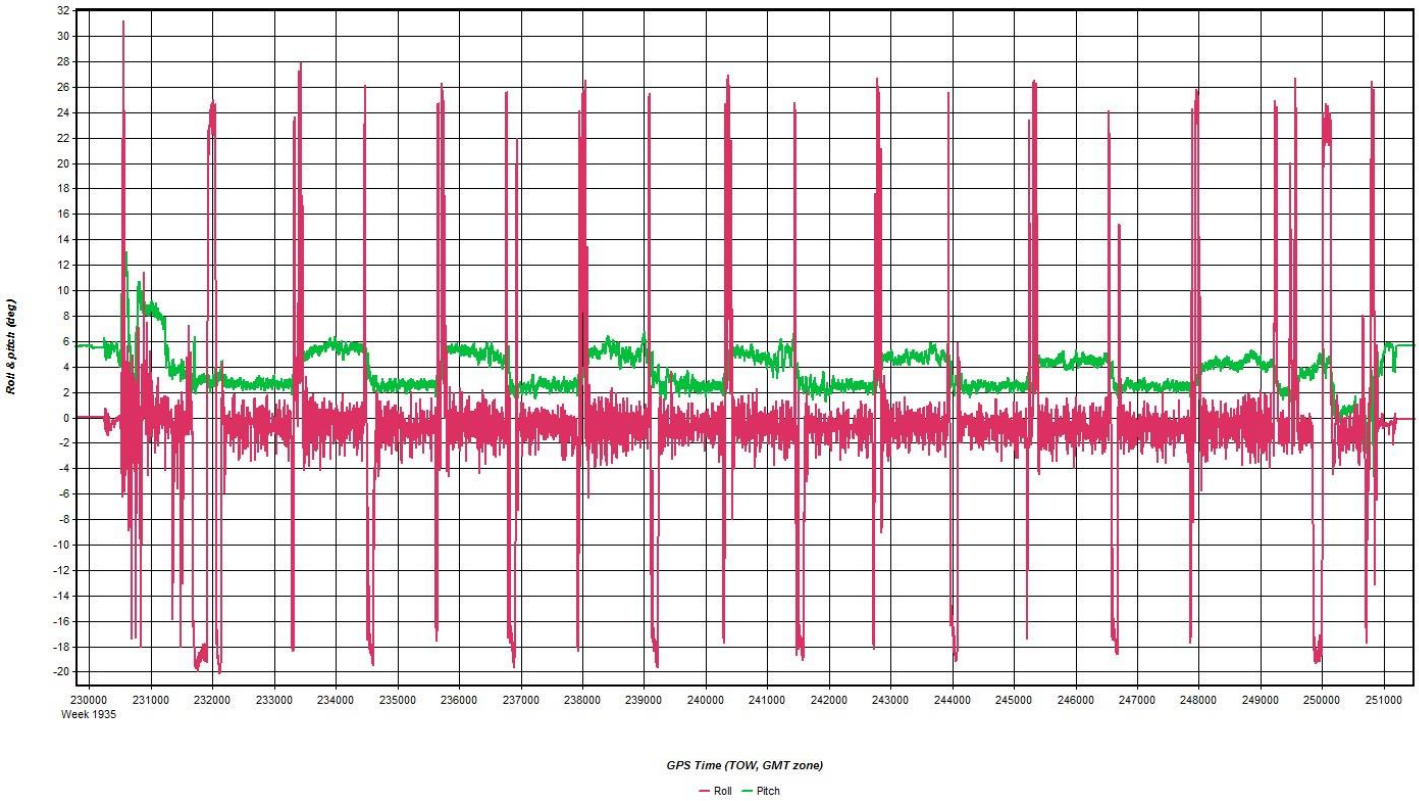

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
Week 1935
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

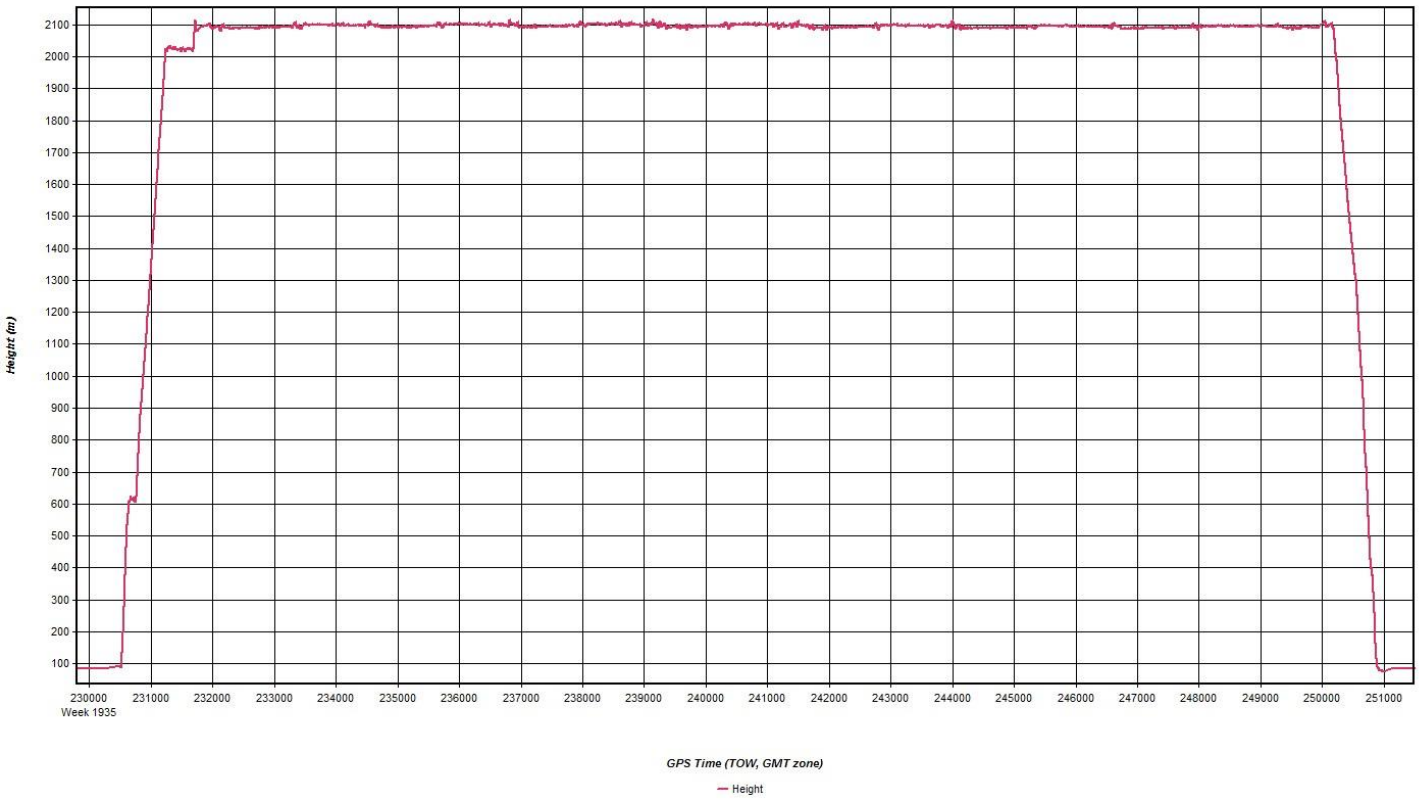

Separation (m)
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
East
North
Up

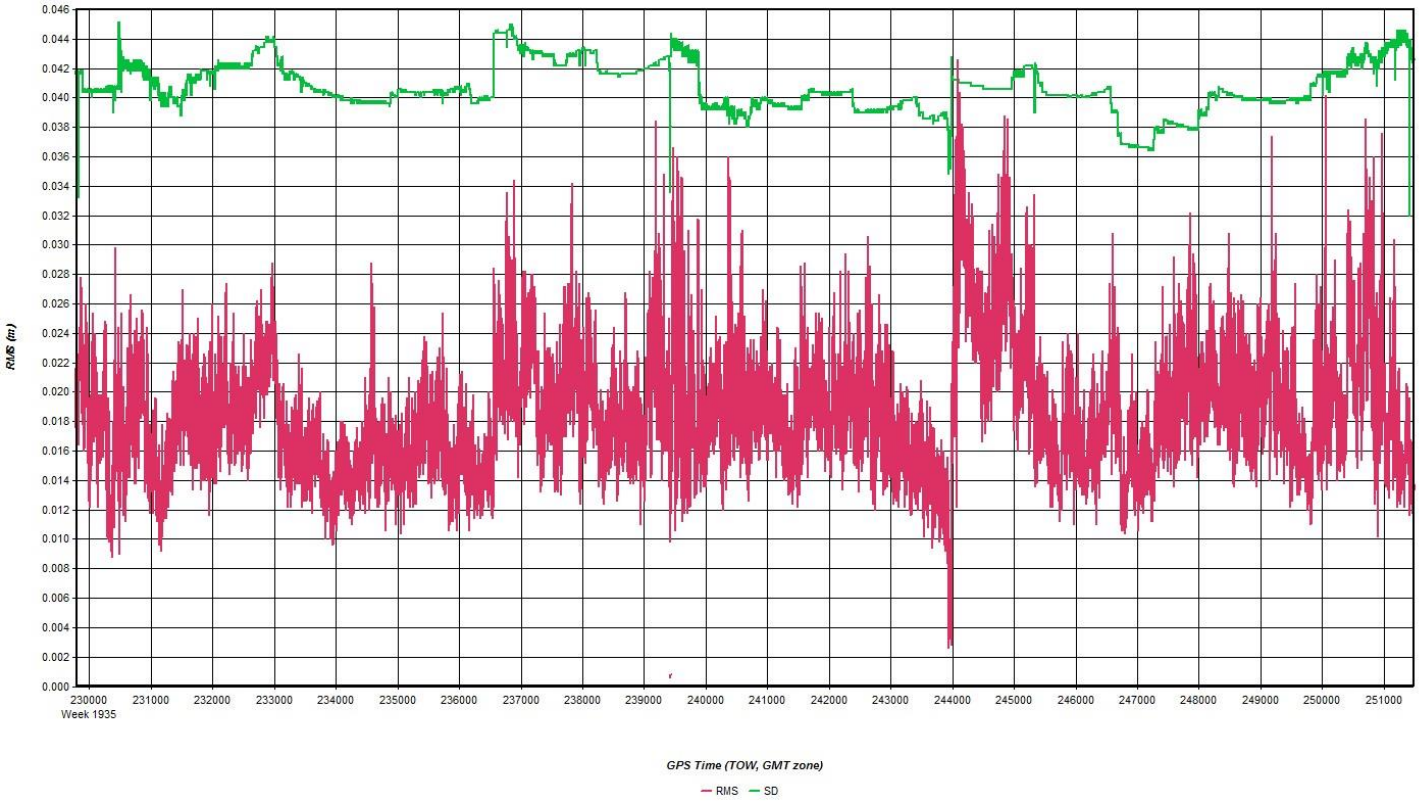

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
Week 1935
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

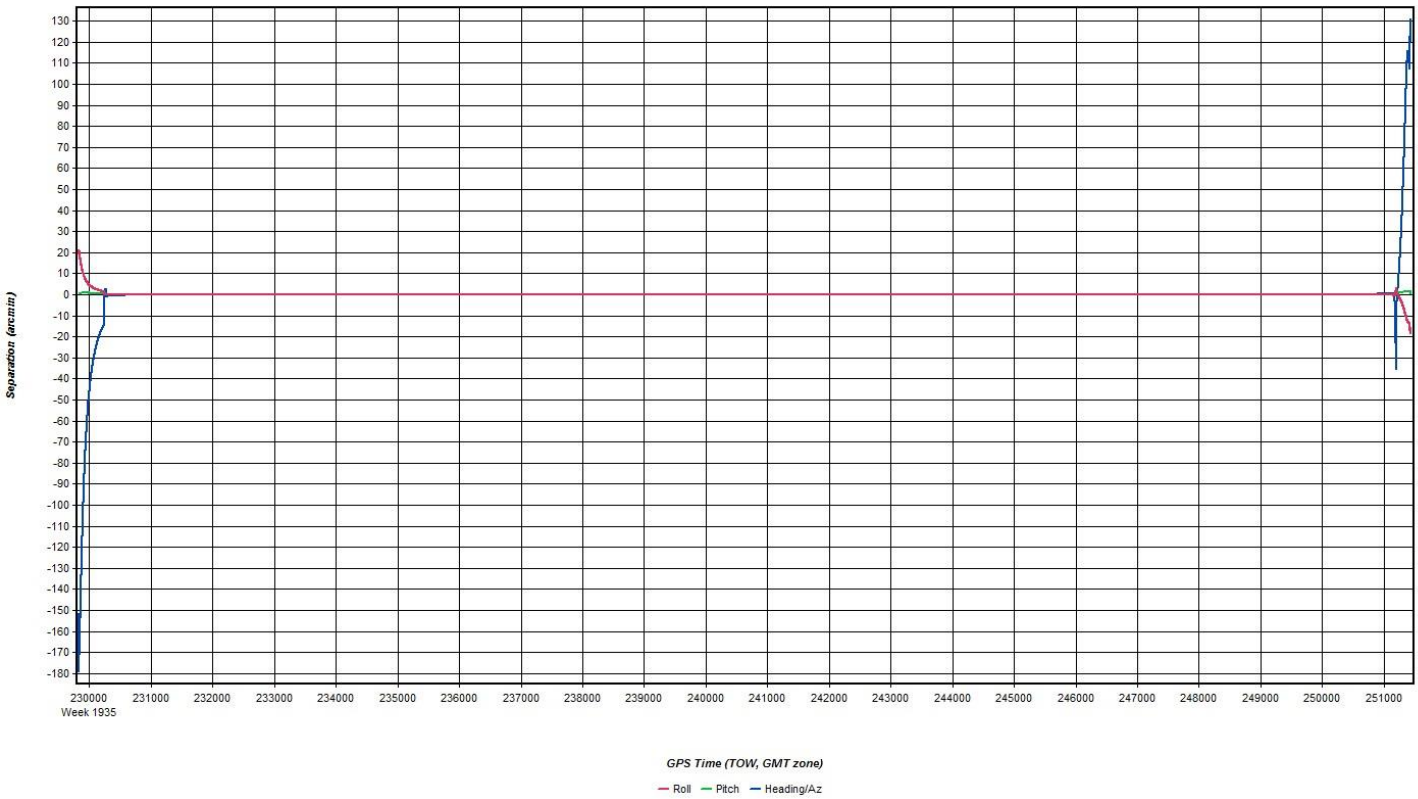

PDOP
5.8
5.6
5.4
5.2
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
PDOP

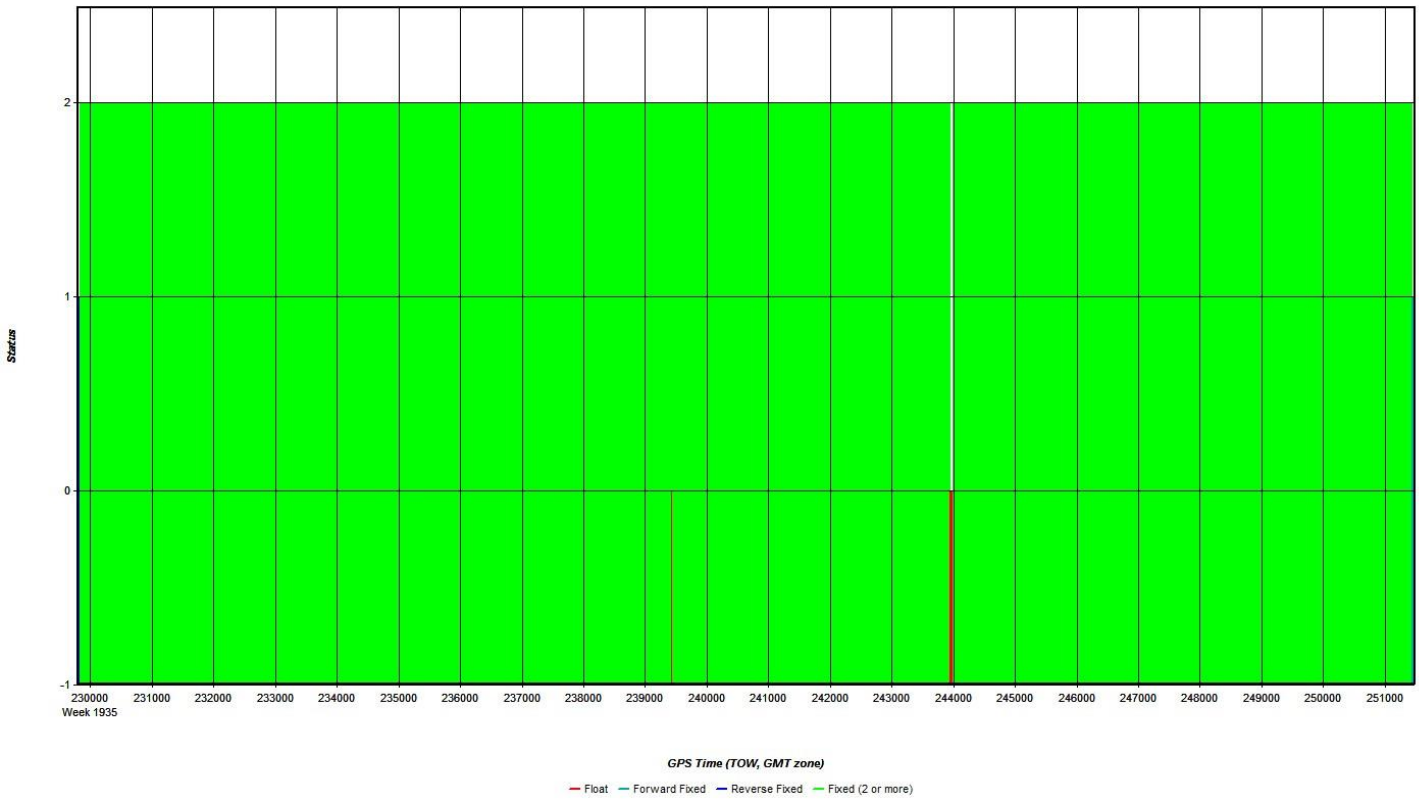

Estimated StdDev (m)
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

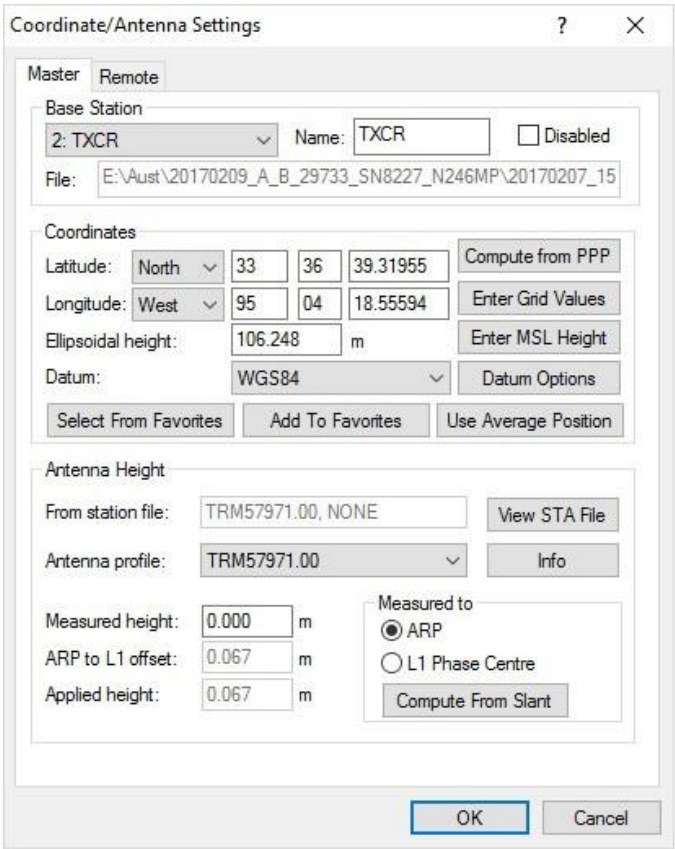

Roll & pitch (deg)
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
Roll
Pitch

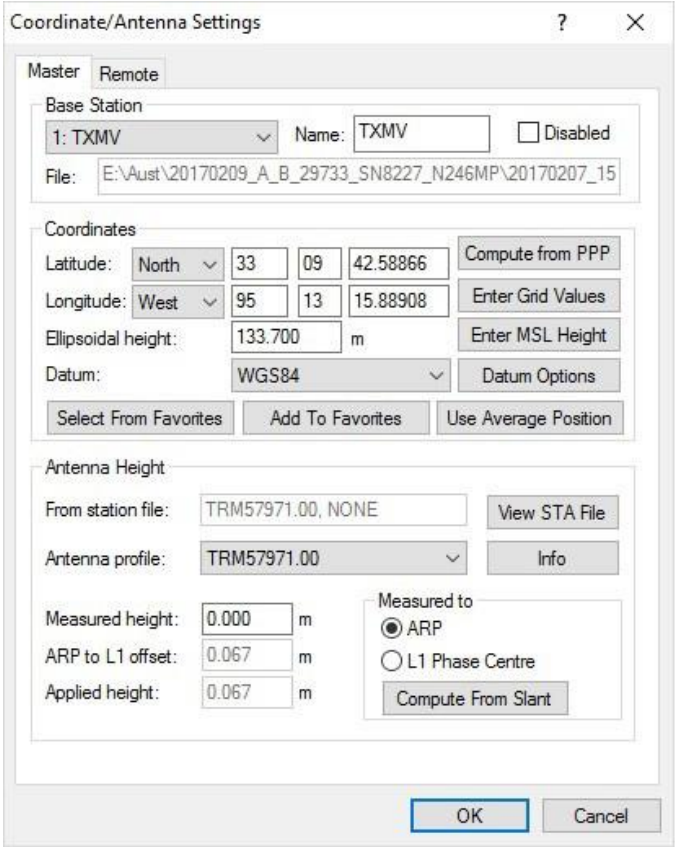

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
Height

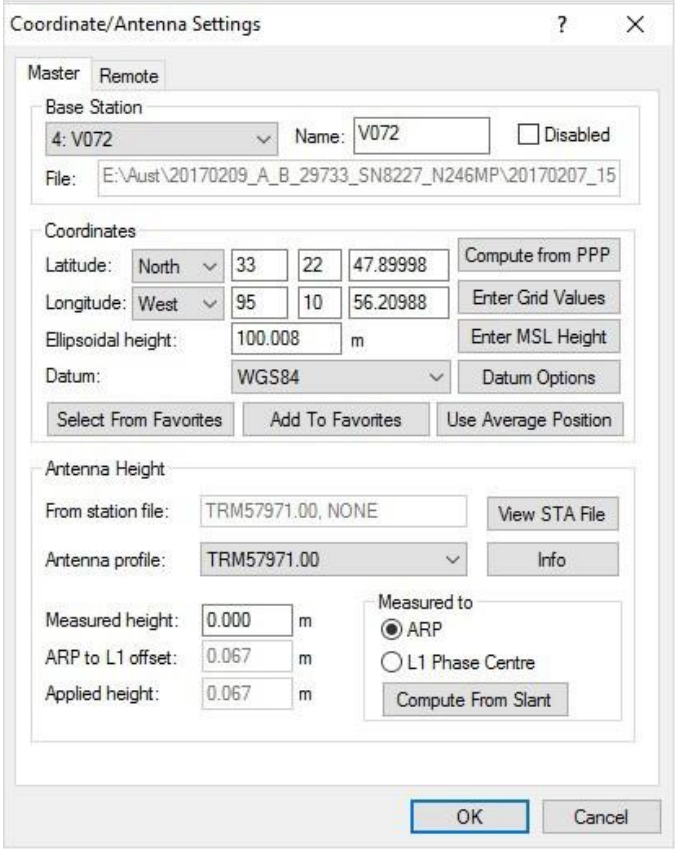

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
RMS
SD

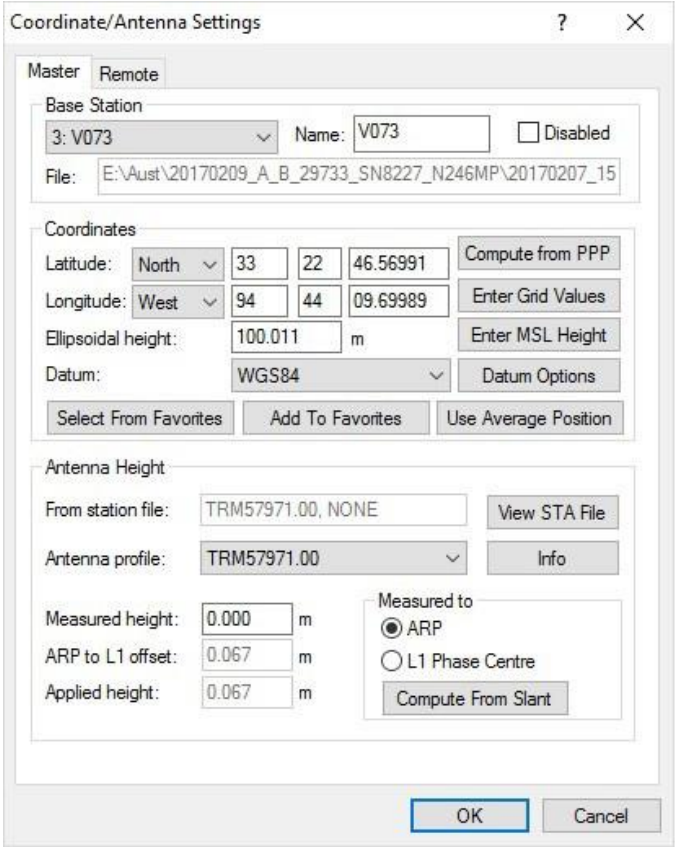

Separation (arcmin)
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
230000
Week 1935
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
Week 1935
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXCR
Name:
TXCR
Disabled
File:
E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_15
Coordinates
Latitude:
North
33
36
39.31955
Compute from PPP
Longitude:
West
95
04
18.55594
Enter Grid Values
Ellipsoidal height:
106.248
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: TXMV
Name: TXMV
Disabled
File: E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_15
Coordinates
Latitude: North 33 09 42.58866
Longitude: West 95 13 15.88908
Ellipsoidal height: 133.700 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: V072
Name: V072
Disabled
File: E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_15
Coordinates
Latitude: North 33 22 47.89998
Longitude: West 95 10 56.20988
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
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: V073
Name:
V073
Disabled
File:
E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_15
Coordinates
Latitude:
North
33
22
46.56991
Compute from PPP
Longitude:
West
94
44
09.69989
Enter Grid Values
Ellipsoidal height:
100.011
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:

Life: A B C D E Pg ___ of ___

Project: RED RIVER LIDAR Proj #: 29733 Flight Mgmt File: 20170207. 154805

Aircraft: 246MP Begin Hobbs: 1262.3 End Hobbs: 1268.0 Total: 5.7 Pilot: C MCDONALD Co-Pilot: Tech: M Rus

Dep Apt: KTYK Dep Time (Lcl): 10:00 (Z): 1625 Arr Apt: KTYK Arr Time (Local): 3:46 (Z): 2146 Tot Time Aloft: 5.7

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)

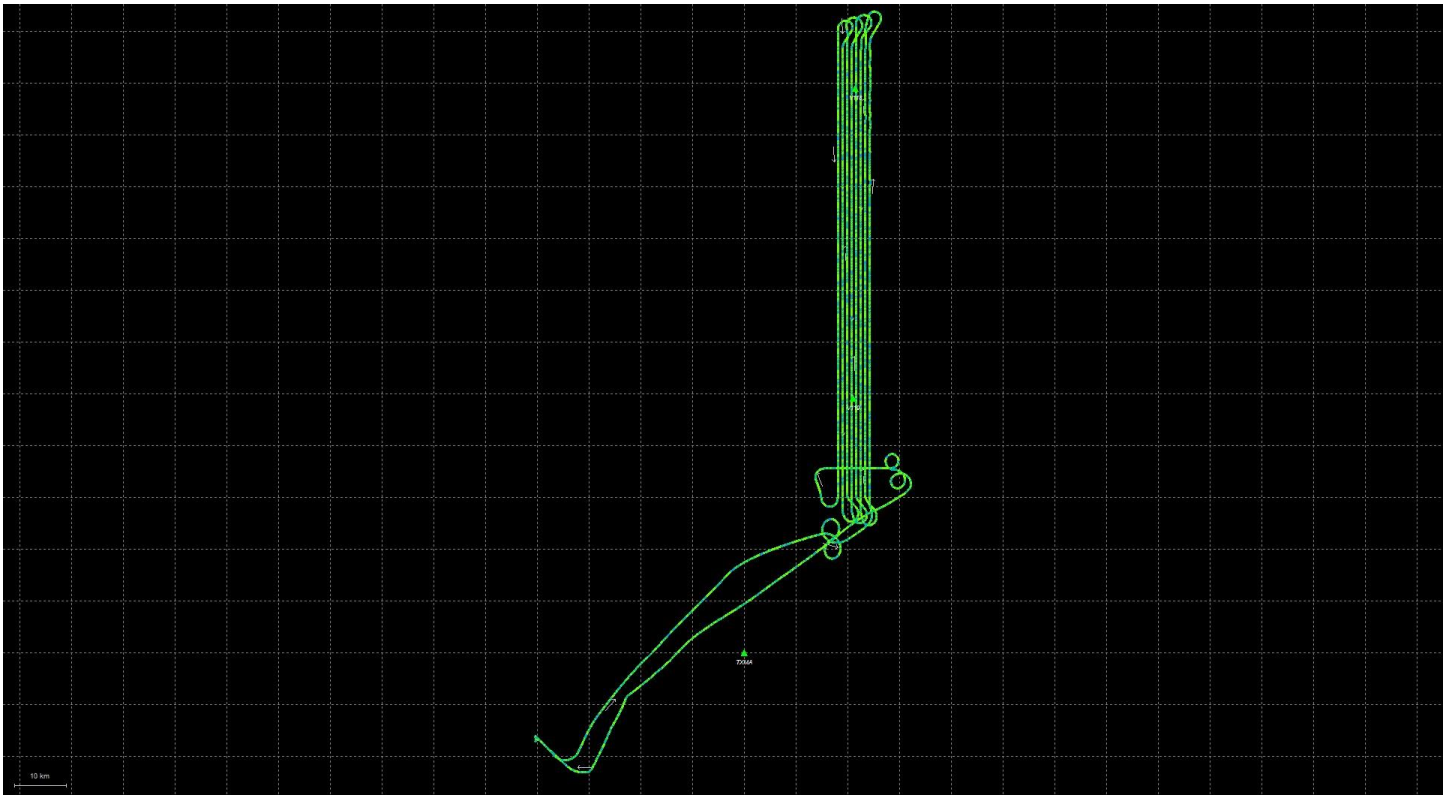
Gd Temp beg: 21 °c End: 26 °c OAT beg: 10 °c End: °c Altimeter begin: 29.69 end: 29.68

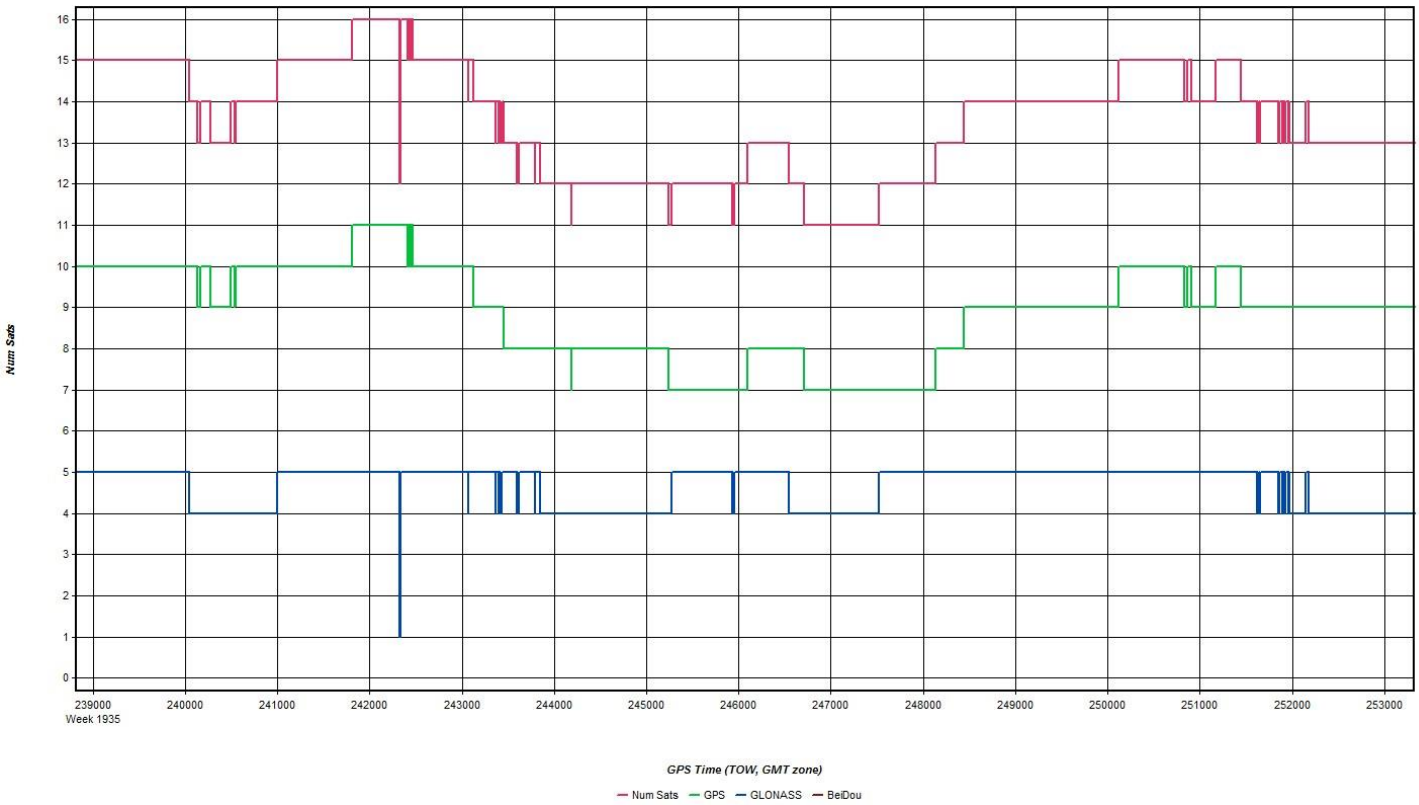
LiDAR											
Type	ALS80	Serial #	8227	Alt AGL	Alt AMSL 6.9'	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Bag GB	671	Storage Name/#
FOV	40	Scan Freq	52	MpIA (Y) / N	Pulses in Air	Pulse Rate 396	Power 100	PPSM	End GB	531	
									Tot GB	140	

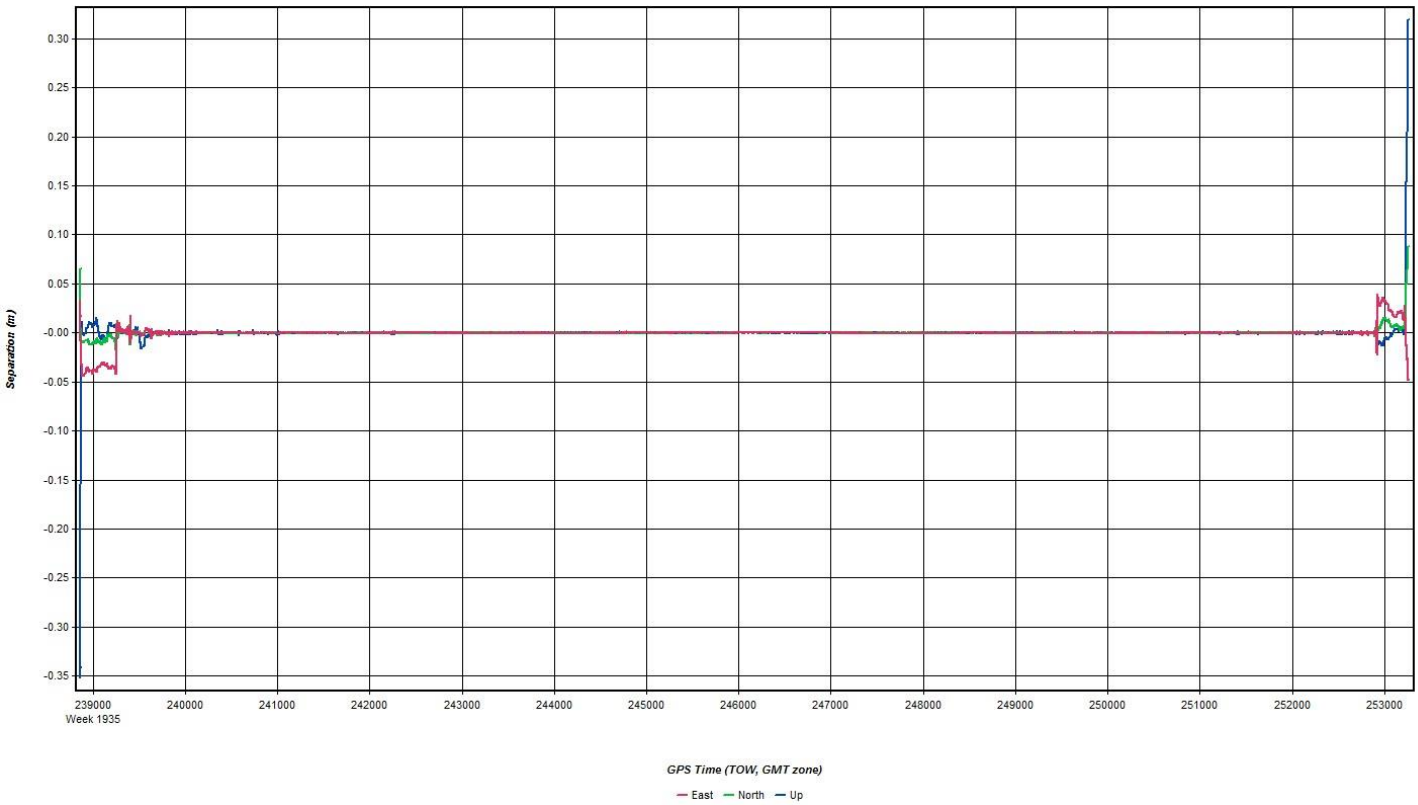
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
254	W	1632	1647	145	1.0\24	6.9			FIGURE 8's 16:25 WINDS 281° @ 30 KTS
253	E	1652	1707	152	1.0\22	6.9			
252	W	1711	1727	151	1.2\20	6.9			
251	E	1730	1745	146	1.2\20	6.9			
250	W	1749	1804	150	1.0\20	6.9			
249	E	1808	1824	148	1.1\21	6.9			
248	W	1828	1844	149	1.4\17	6.9			
247	E	1847	1903	145	1.1\20	6.9			
246	W	1907	1924	148	1.2\19	6.9			
245	E	1927	1945	147	1.2\18	6.9			
244	W	1948	2006	143	1.3\17	6.9			
243	E	2010	2028	147	1.4\16	6.9			
242	W	2032	2050	152	1.3\16	6.9			
241	E	2054	2113	151	1.3\16	6.9			
4001	N	2119	2124	145	1.2\18	6.9			MANUAL CROSSFLIGHT
									FIGURE 8's 21:28

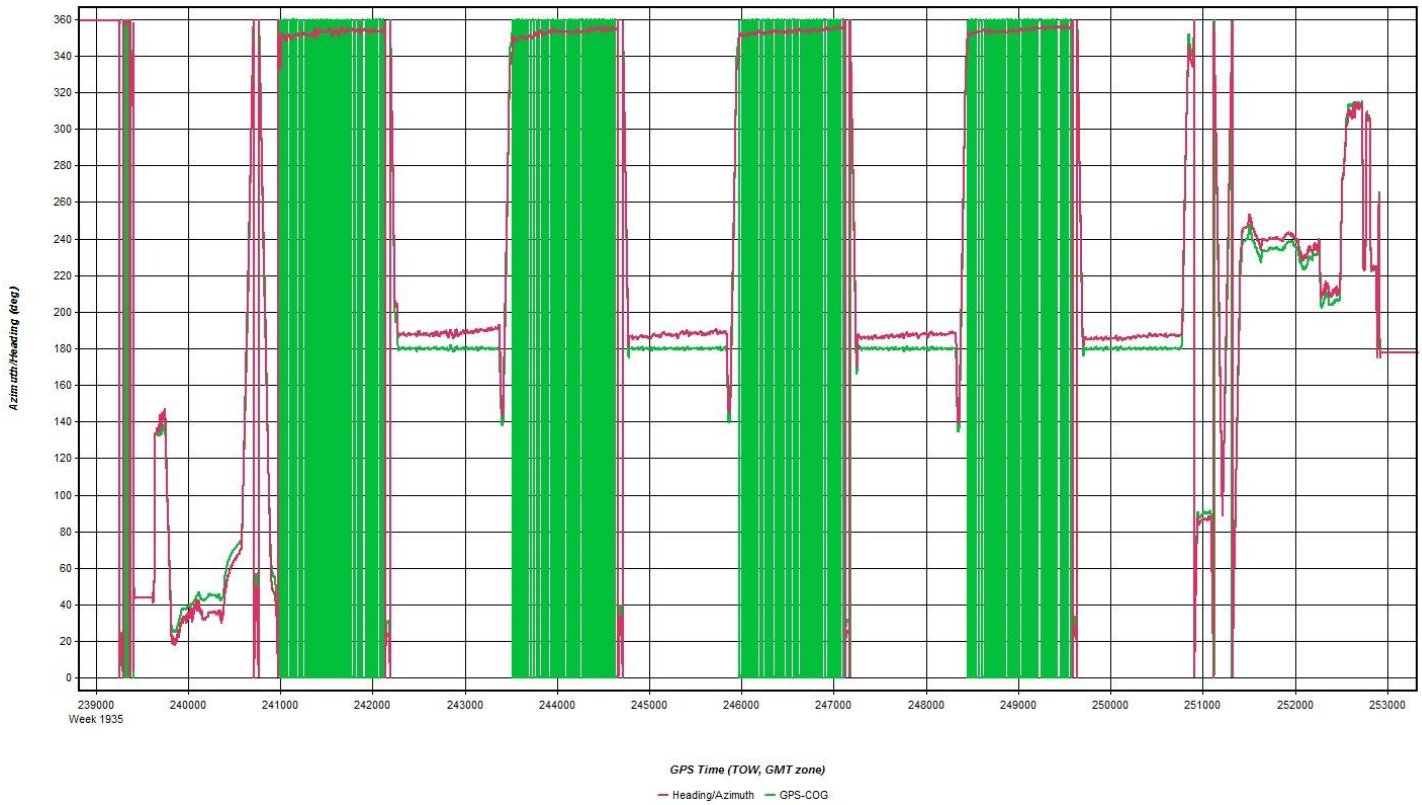
Total Proj Lines: Lines Flown: 14 Lines Remain: 7 OnLine Time: 5 Mob Time: .7 Notes:

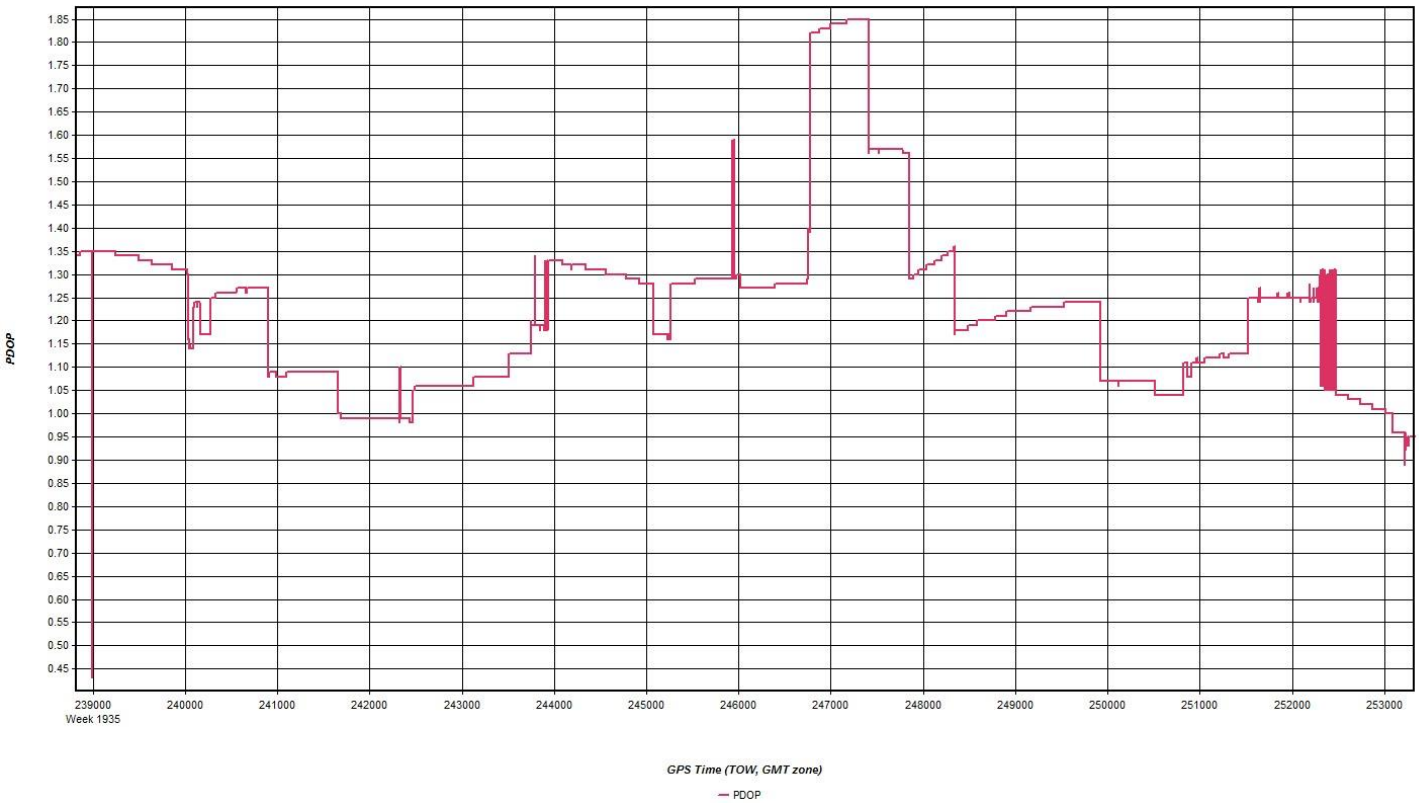
Feb 7, 2017-A (N812TB, SN7178)

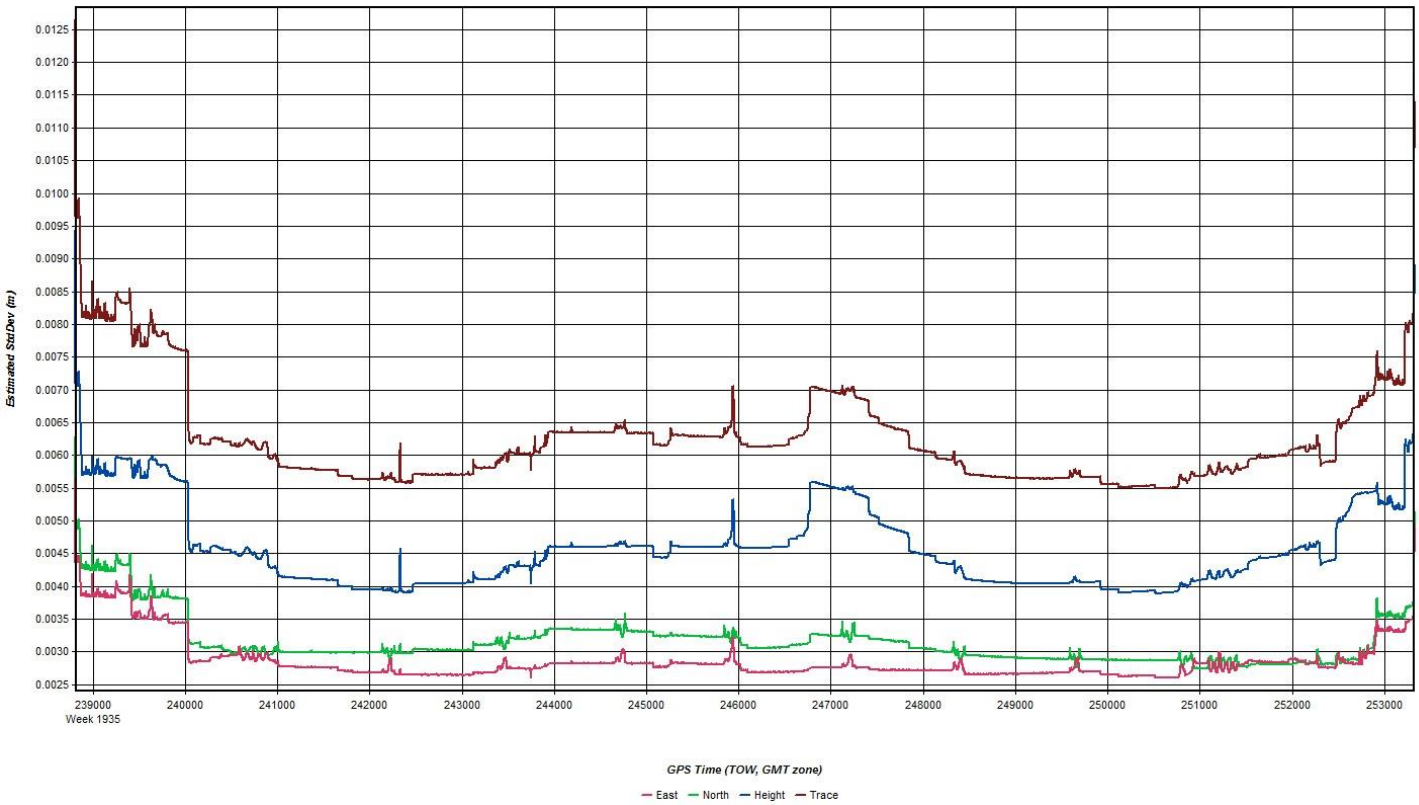


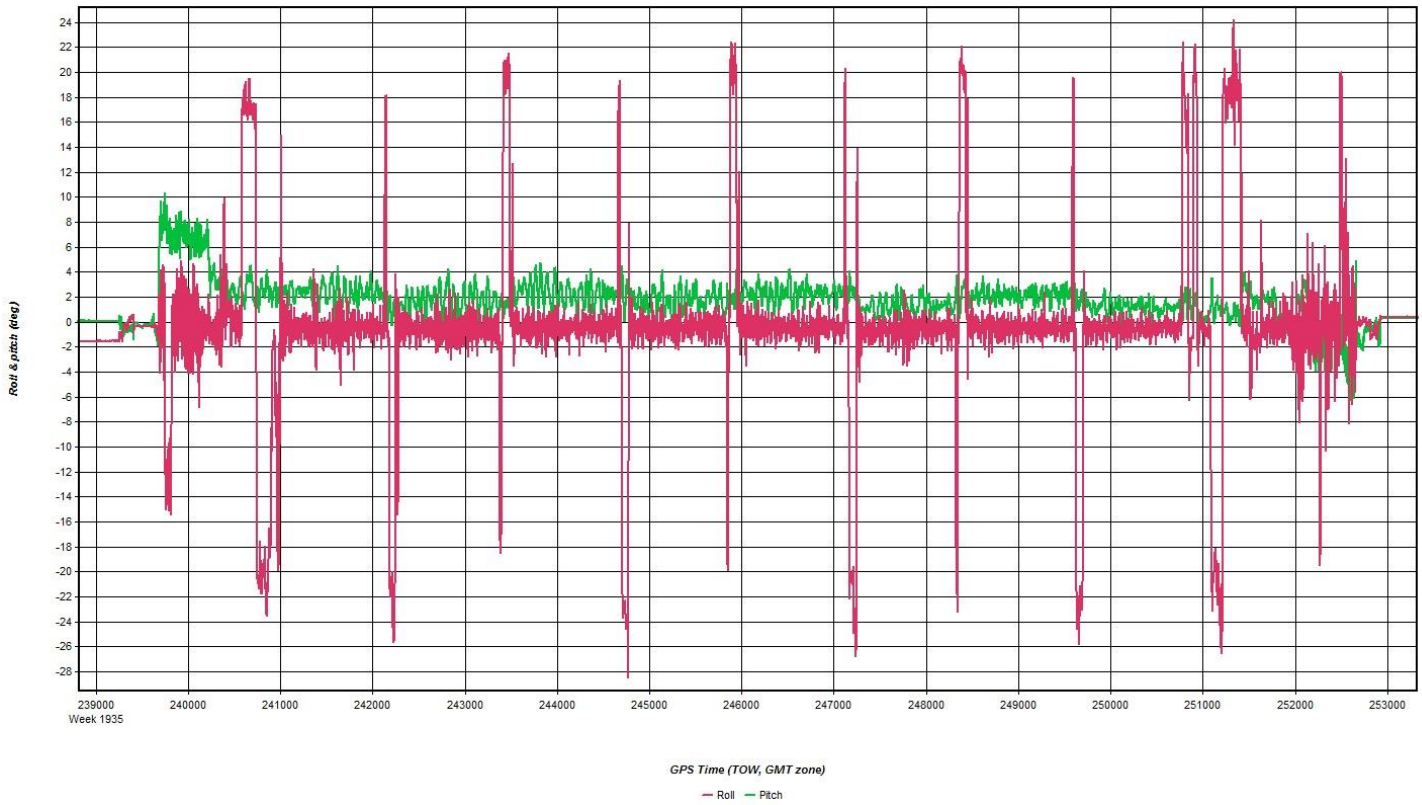

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

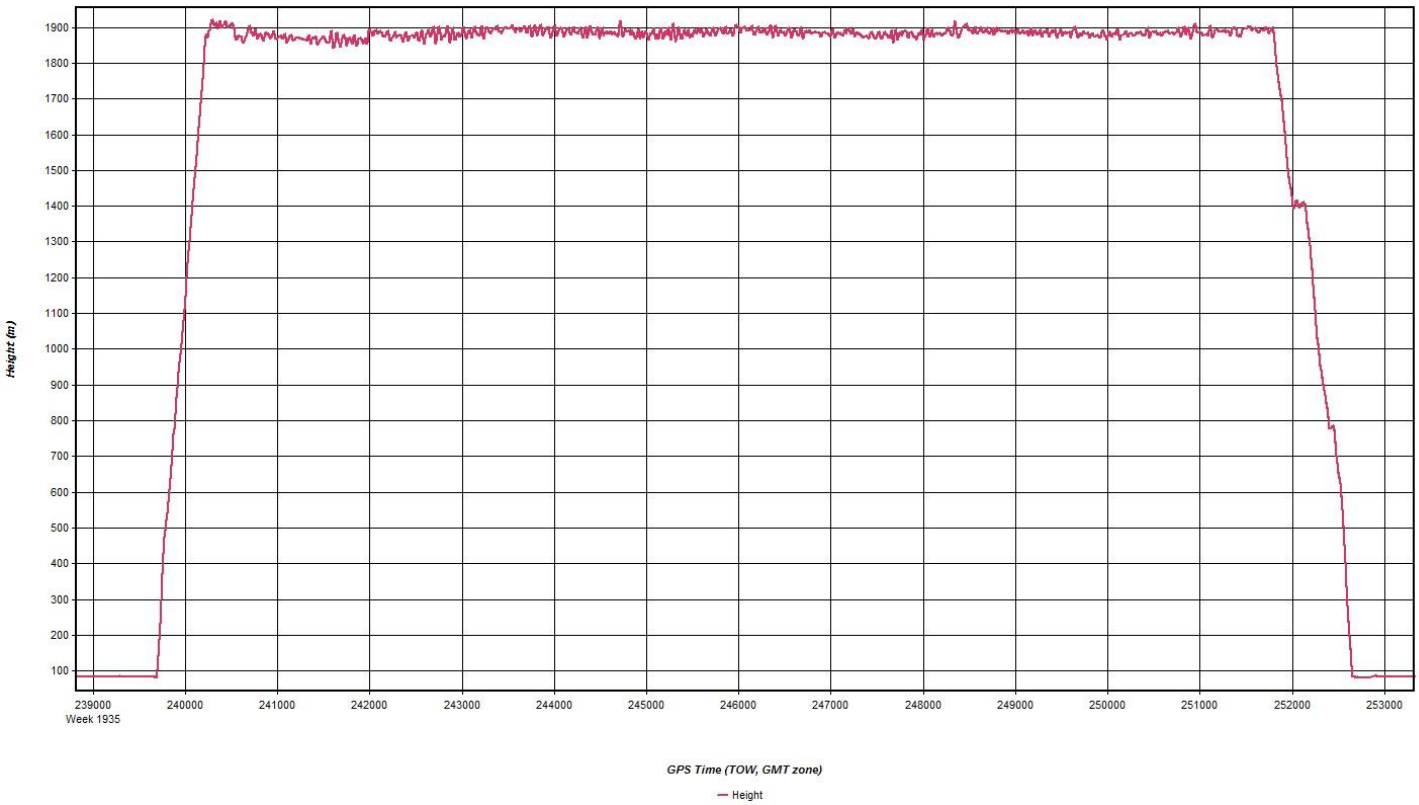

0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
Separation (m)
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
East
North
Up

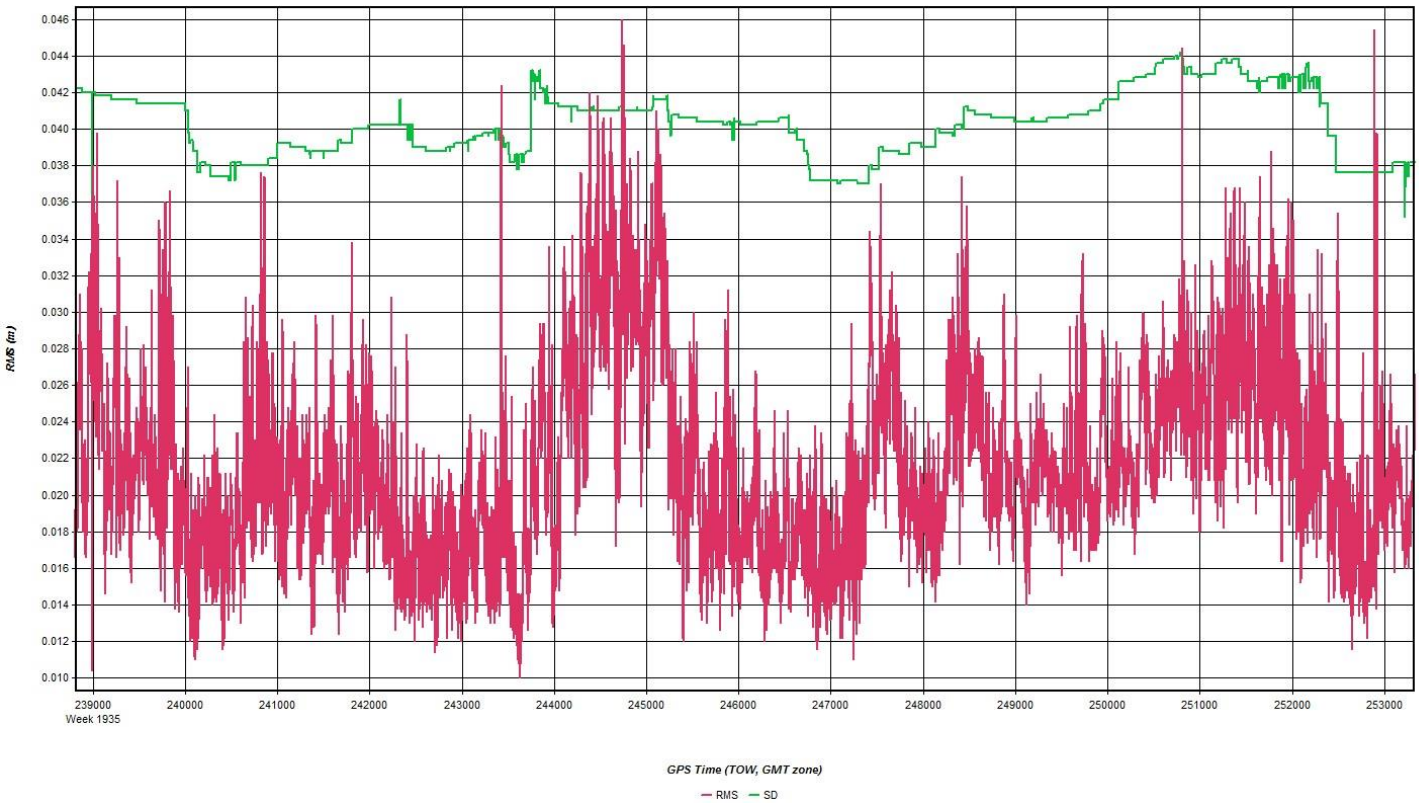

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

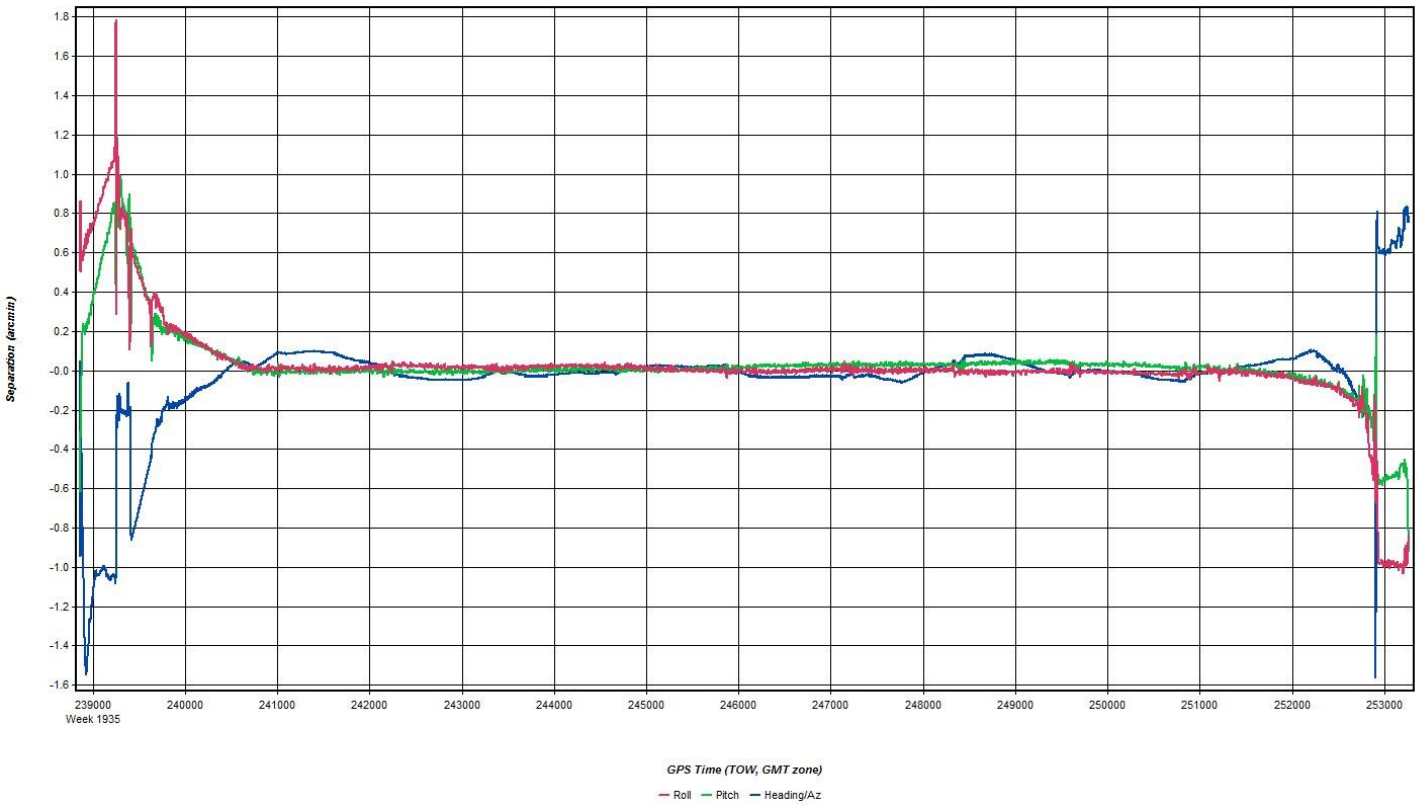

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
PDOP

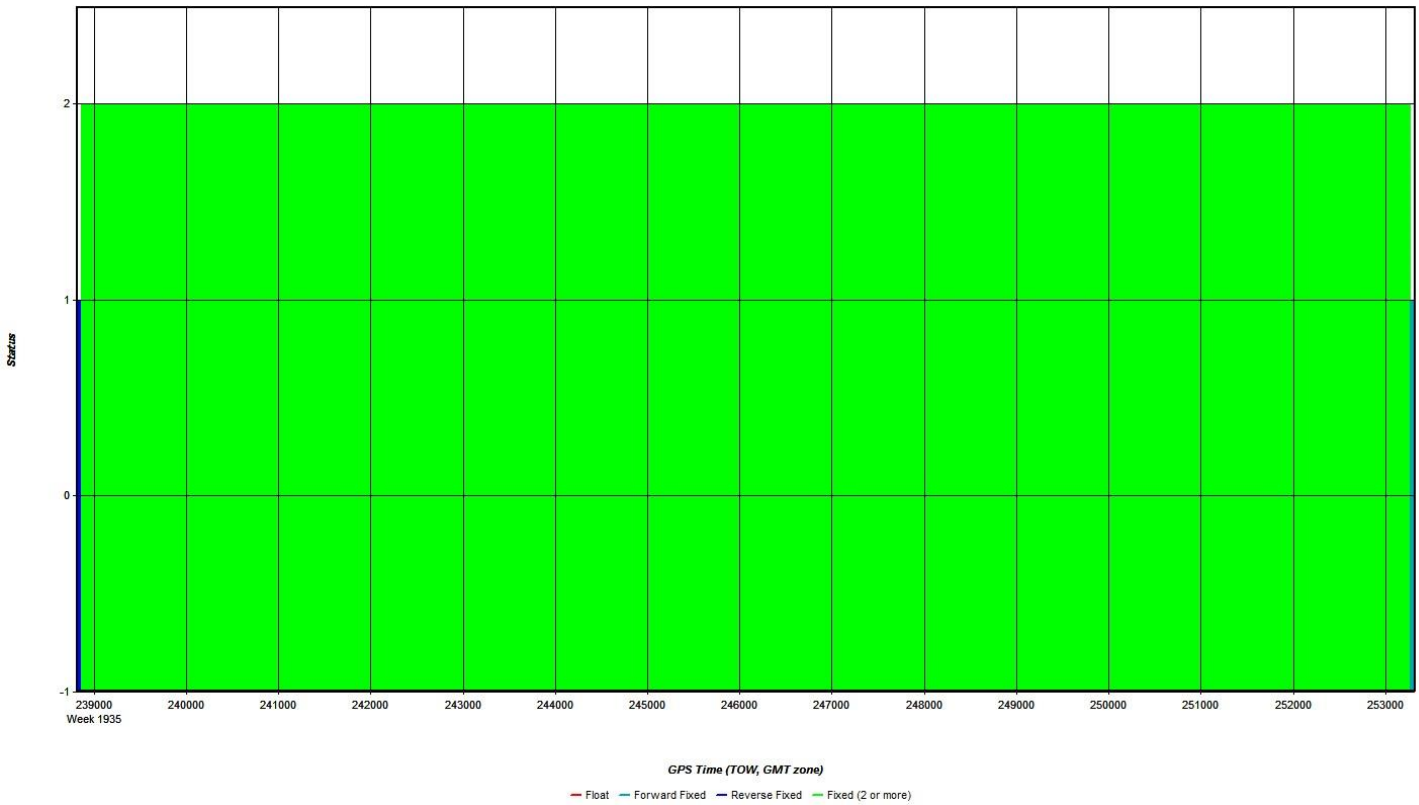

Estimated StdDev (m)
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

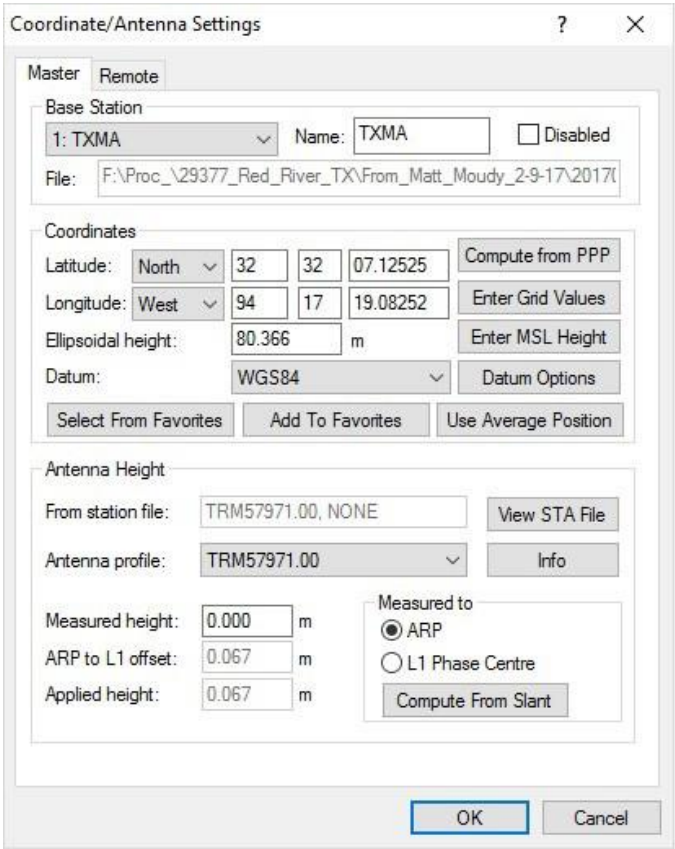

Roll & pitch (deg)
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
Roll
Pitch

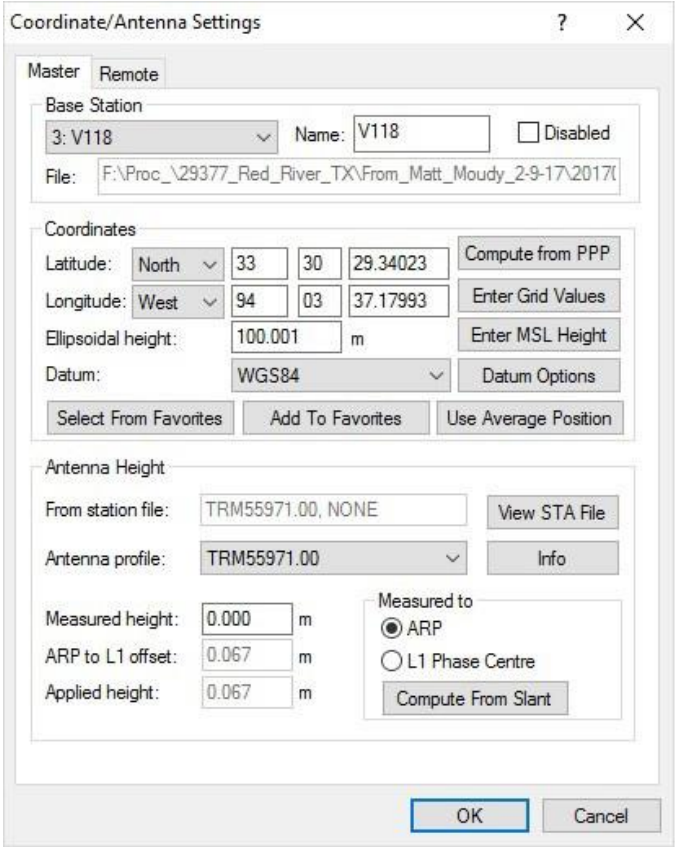

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
Height

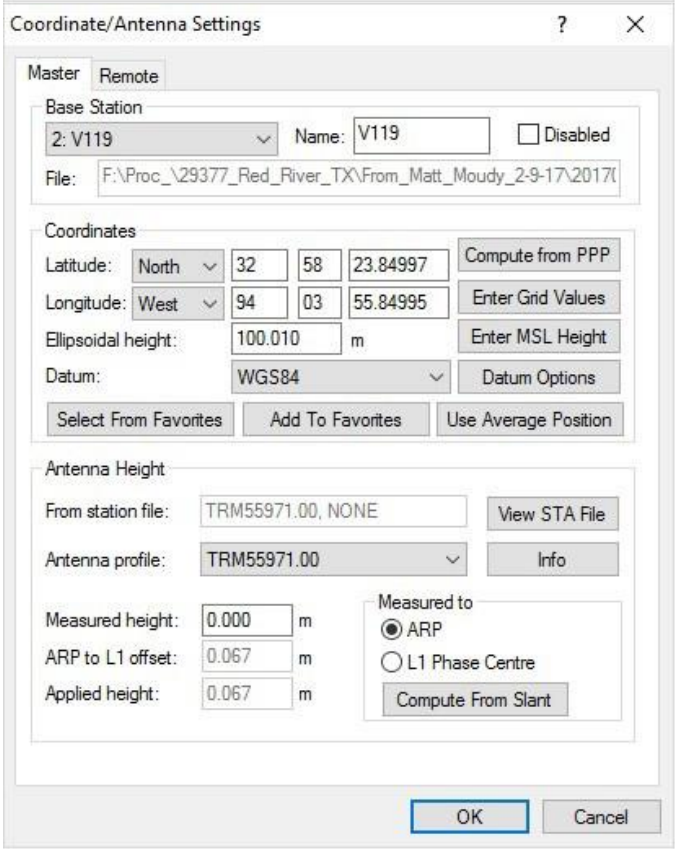

RMS (m)
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
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
-1.4
-1.6
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
239000
Week 1935
240000
241000
242000
243000
244000
245000
246000
247000
248000
249000
250000
251000
252000
253000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-9-17\2017(
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
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: V118
Name: V118
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-9-17\2017(
Coordinates
Latitude: North 33 30 29.34023
Longitude: West 94 03 37.17993
Ellipsoidal height: 100.001 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: V119
Name: V119
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-9-17\2017(
Coordinates
Latitude: North 32 58 23.84997
Longitude: West 94 03 55.84995
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: 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

120 #2

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-7-17

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

Project: RED RIVER, TX FEMA HALE MILLER Proj #: 29377 Flight Mgmt File: RedRiver_20FSPPSM_ALS70P3

Aircraft: N812TB Begin Hobbs: 4346.1 End Hobbs: 4349.7 Total: 3.6 Pilot: RADTKE Co-Pilot: – Tech: MOUDY

Dep Apt: GGG Dep Time (Lcl): 1234 (Z): 1834 Arr Apt: GGG Arr Time (Local): 1610 (Z): 2210 Tot Time Aloft: 3:36

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)

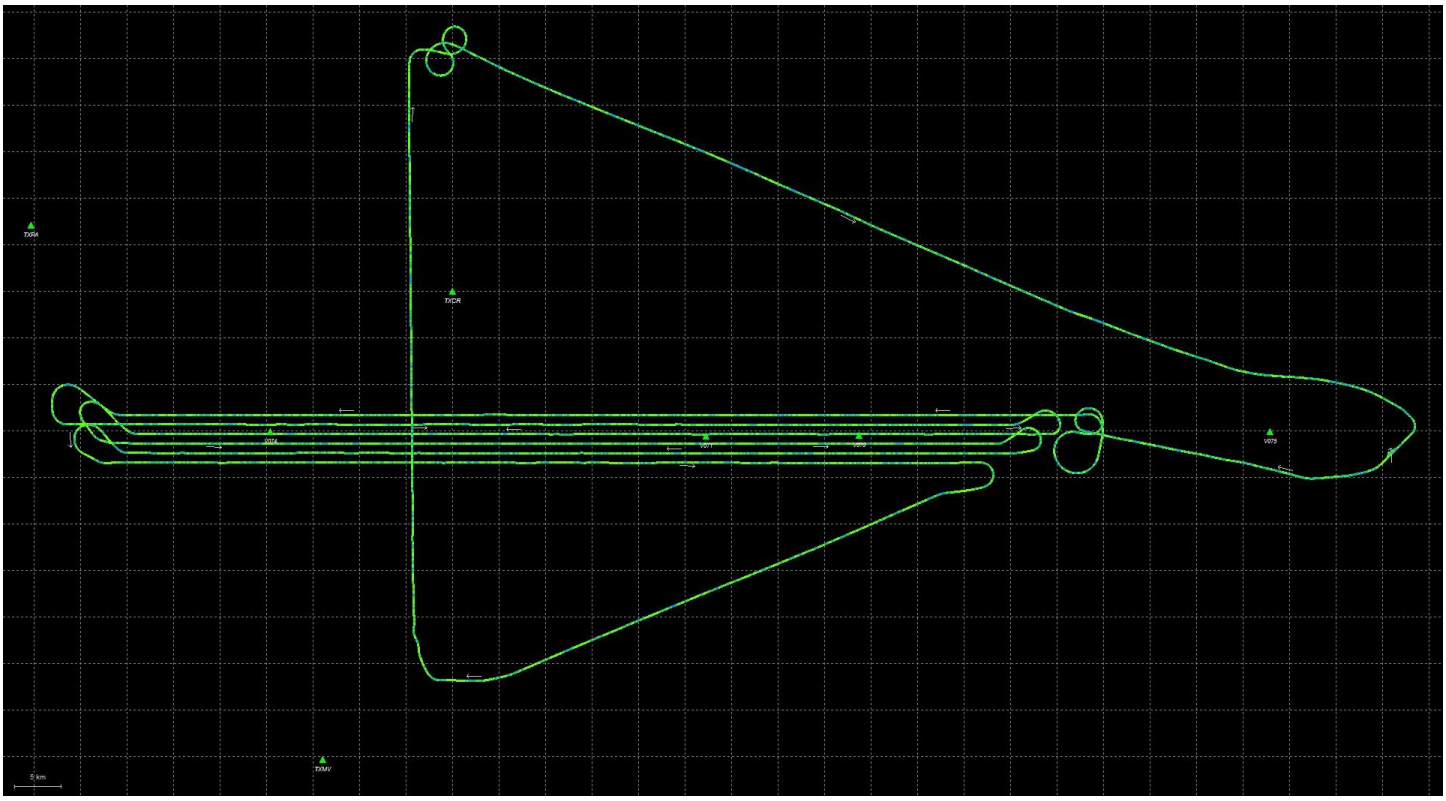
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

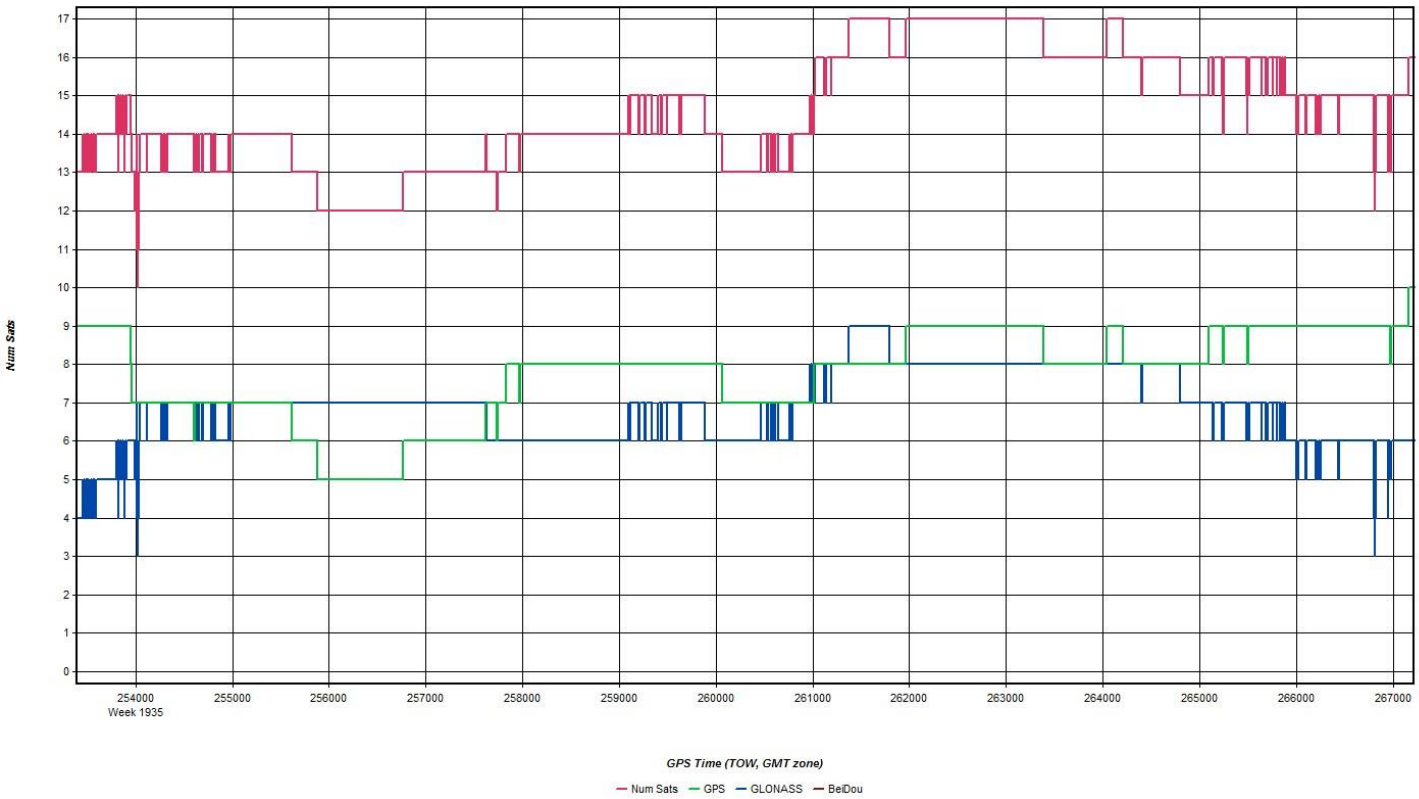
LiDAR	Type ALS70	Serial # 7178	Alt AGL ±5700'	Alt AMSL ±6200'	Avg Terr Ht ±500'	Max Gdspd 150KTS	Avg Pt Spacing 0.59M	Beg GB 122	Storage Name/# 7178 SSD4
	FOV 40%	Scan Freq 53Hz	MpIA (Y) / N	Pulses In Air 2	Pulse Rate 295KHz	Power 100%	PPSM 2.83	End GB 180	
								Tot GB 58	

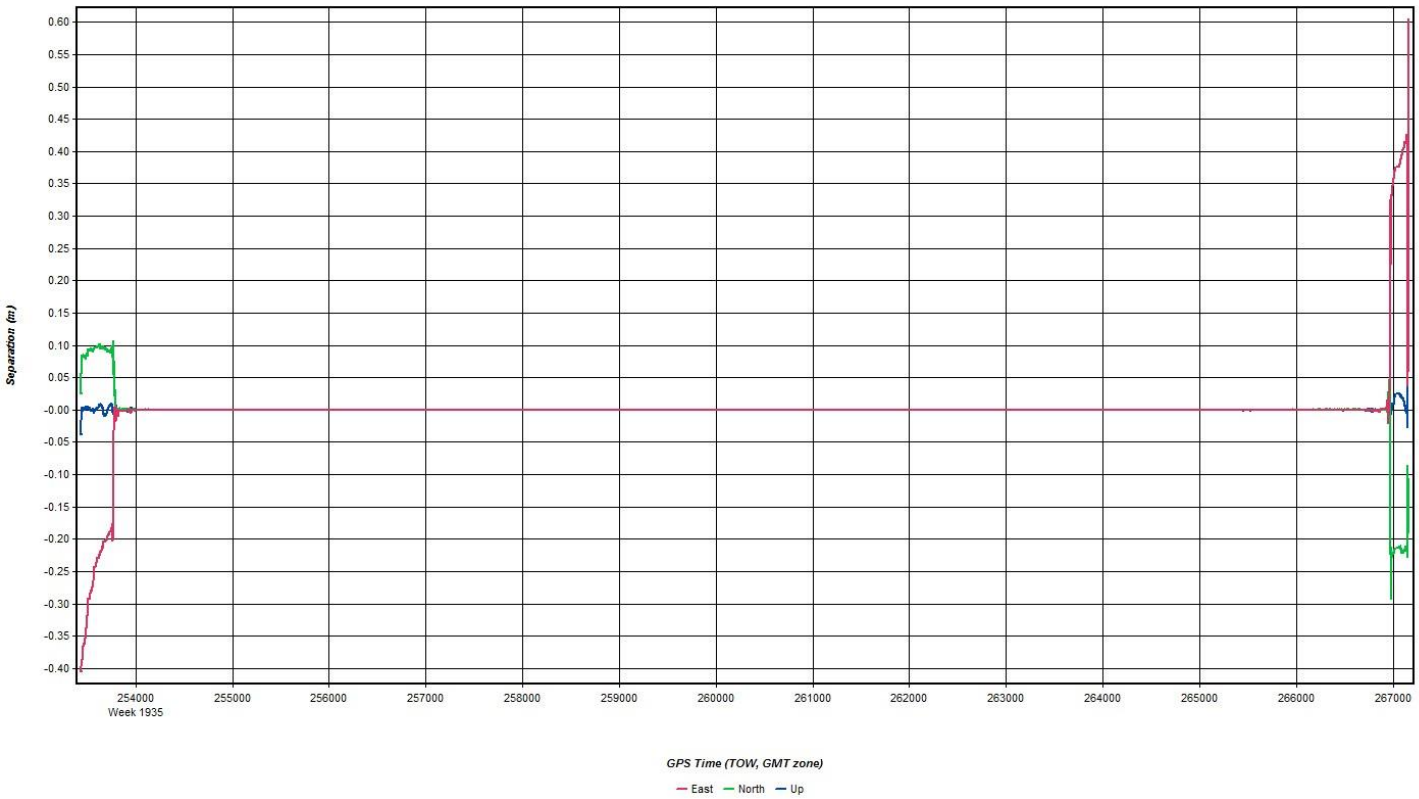
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, –, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
464	360	1857	1915	153	1.2/18	6130	11	–	
463	180	1918	1935	153	1.3/17	6150	8	–	
462	360	1939	1957	152	1.3/15	6180	10	–	
461	180	2000	2016	170	1.4/14	6170	7	–	
460	360	2020	2038	149	1.3/15	6210	10	–	
459	180	2041	2058	165	1.1/16	6170	7	–	
458	360	2101	2119	153	1.2/15	6200	8	–	
457	180	2122	2139	163	1.1/18	6170	5	–	
TIE	090	2142	2144	166	1.1/18	6210	2	–	-MANUAL TIE LINE

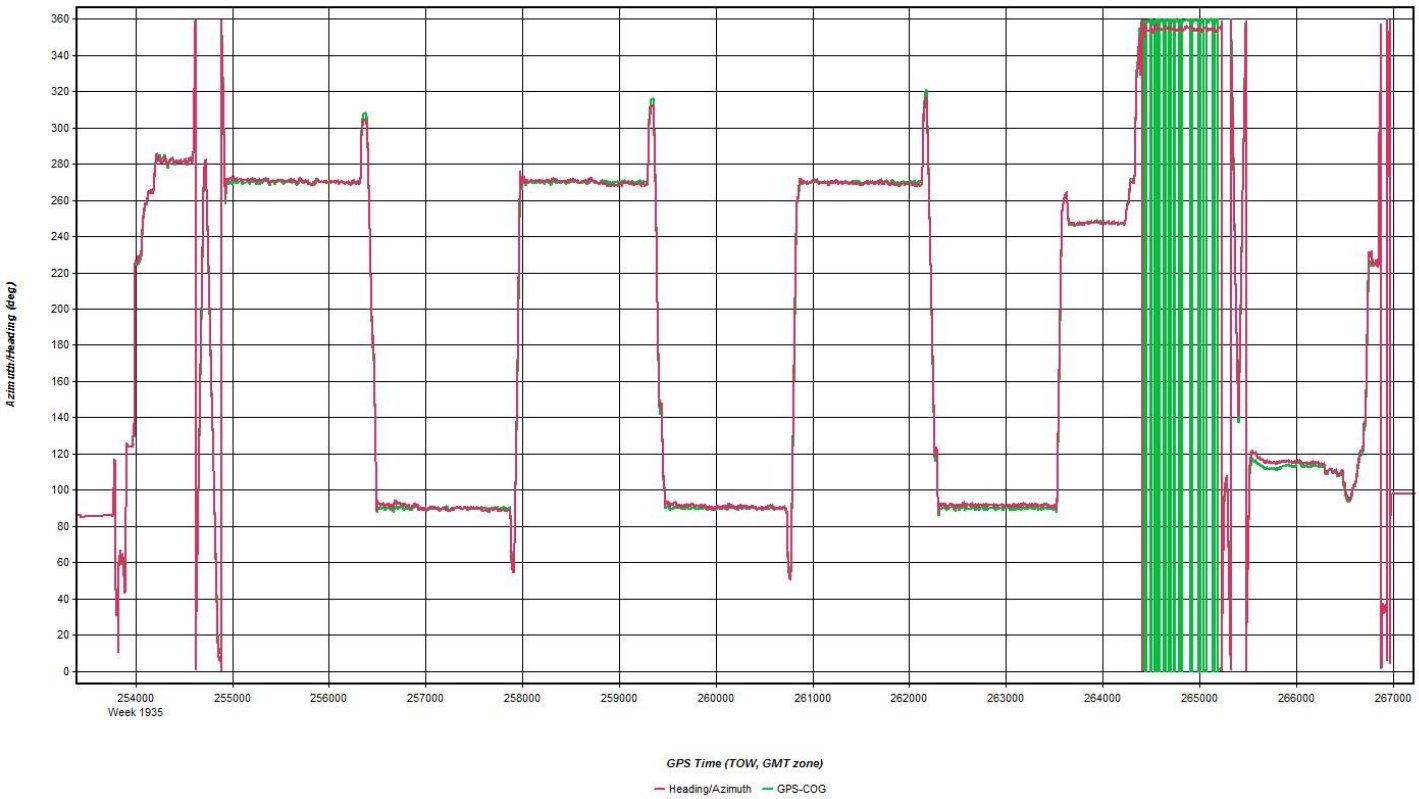
Total Proj Lines: Lines Flown: Lines Remain: Online Time: 2.75 (2.8) Mob Time: 0.75 (0.8) Notes:

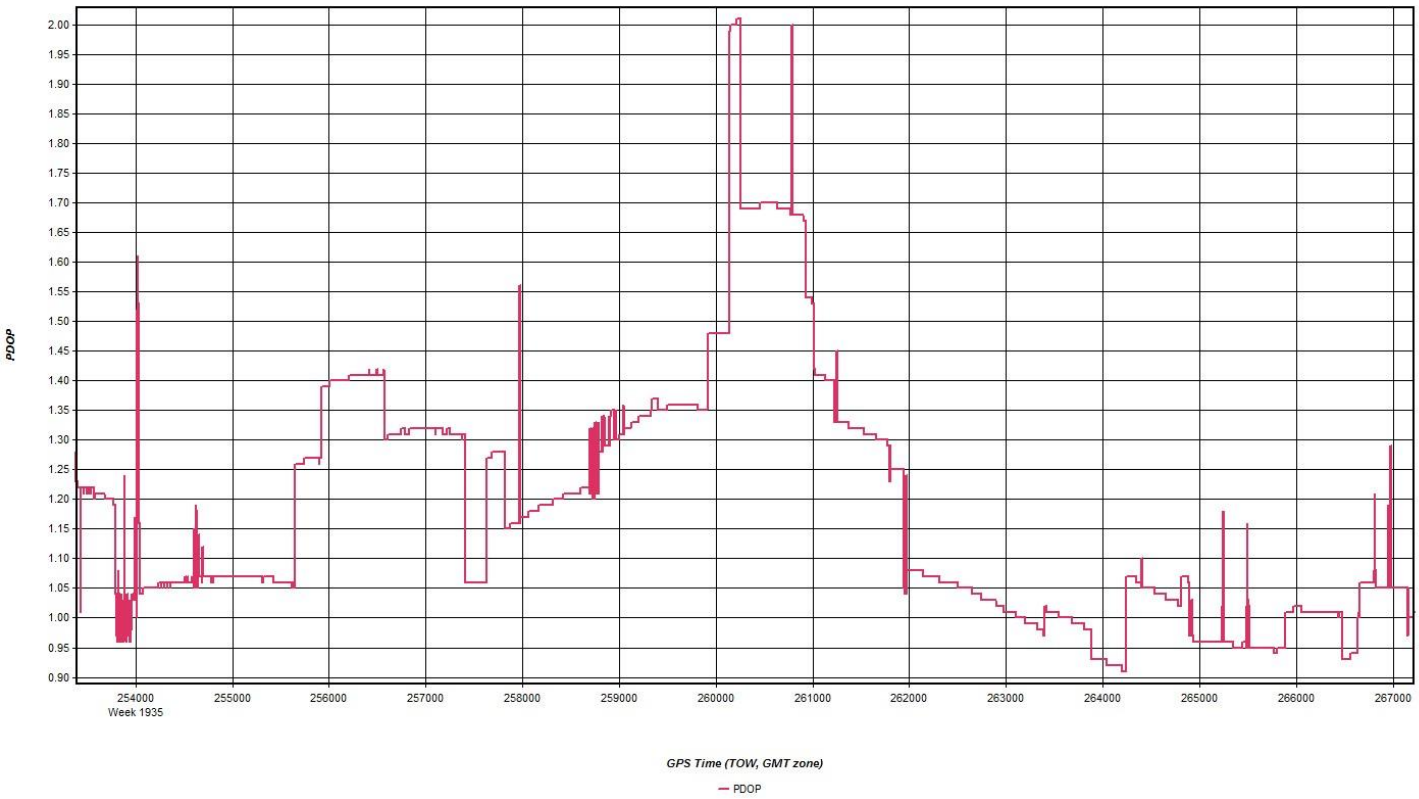
Feb 7, 2017-B (N246MP, SN8227)

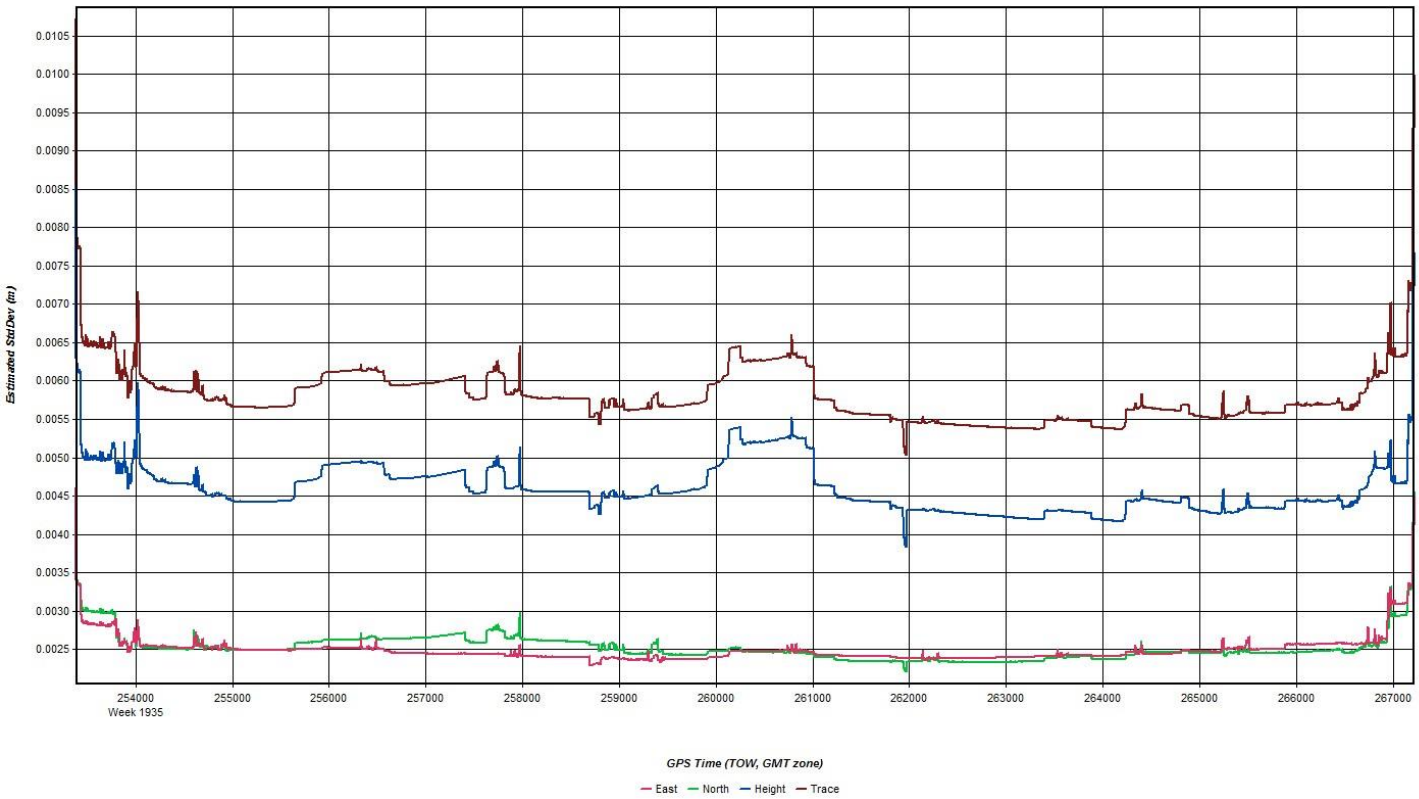


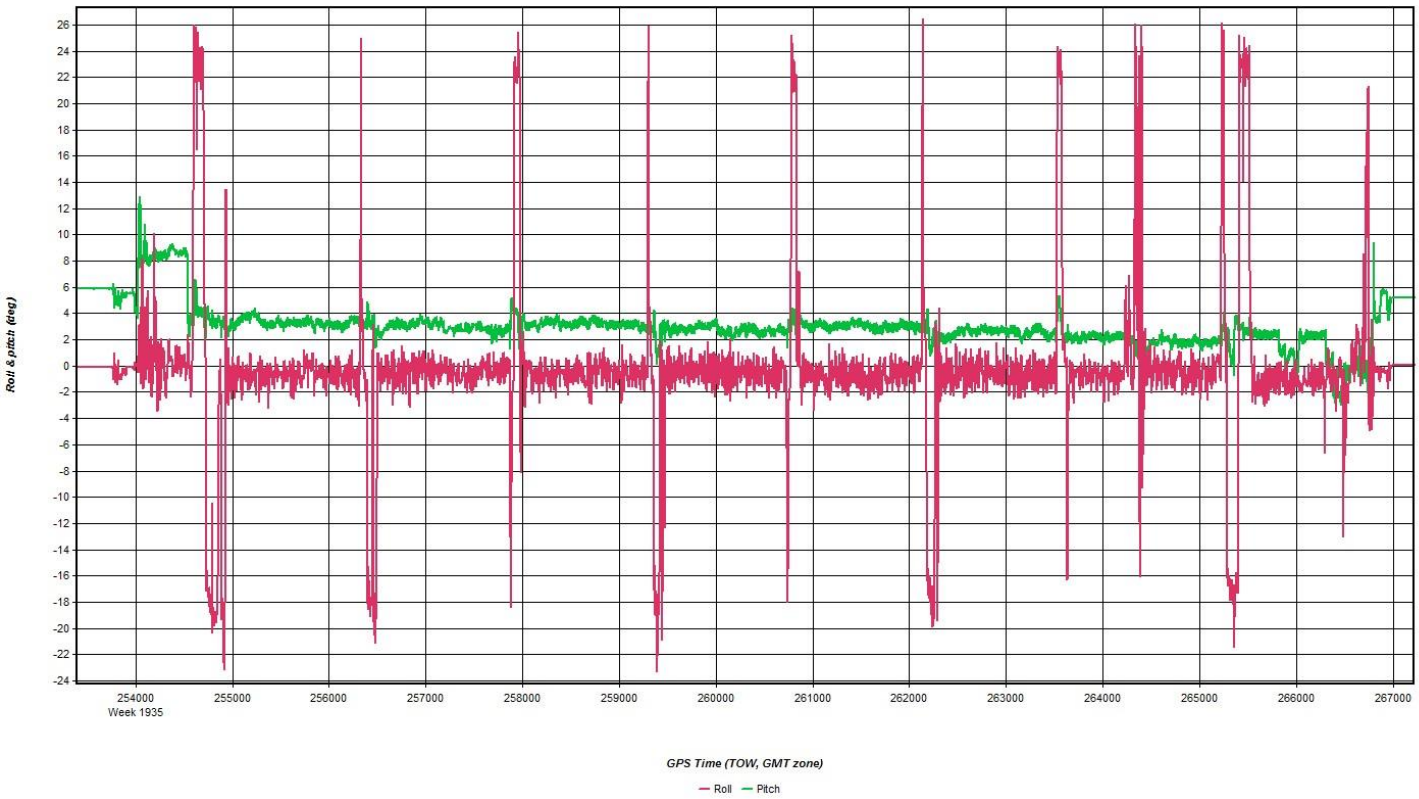

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

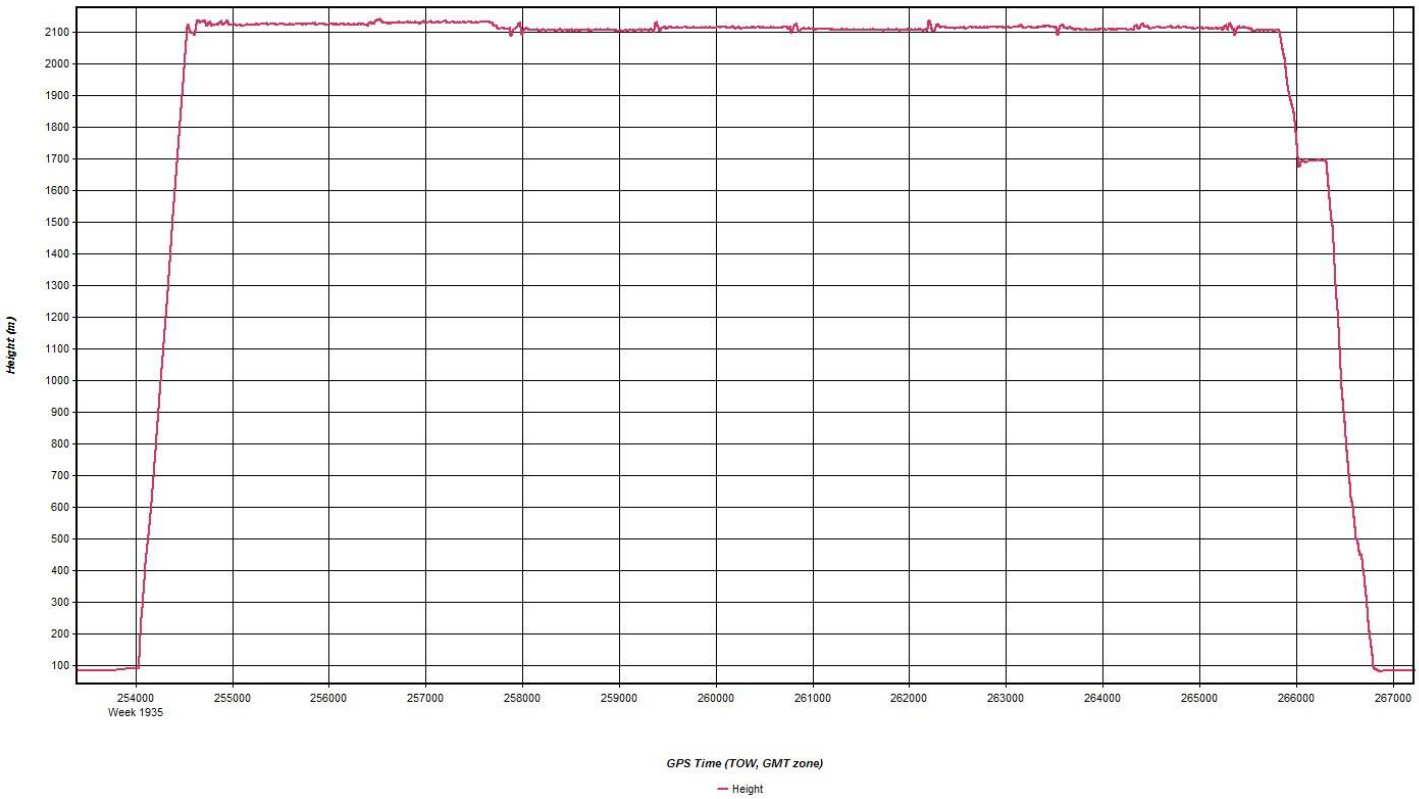

Separation (m)
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
East
North
Up

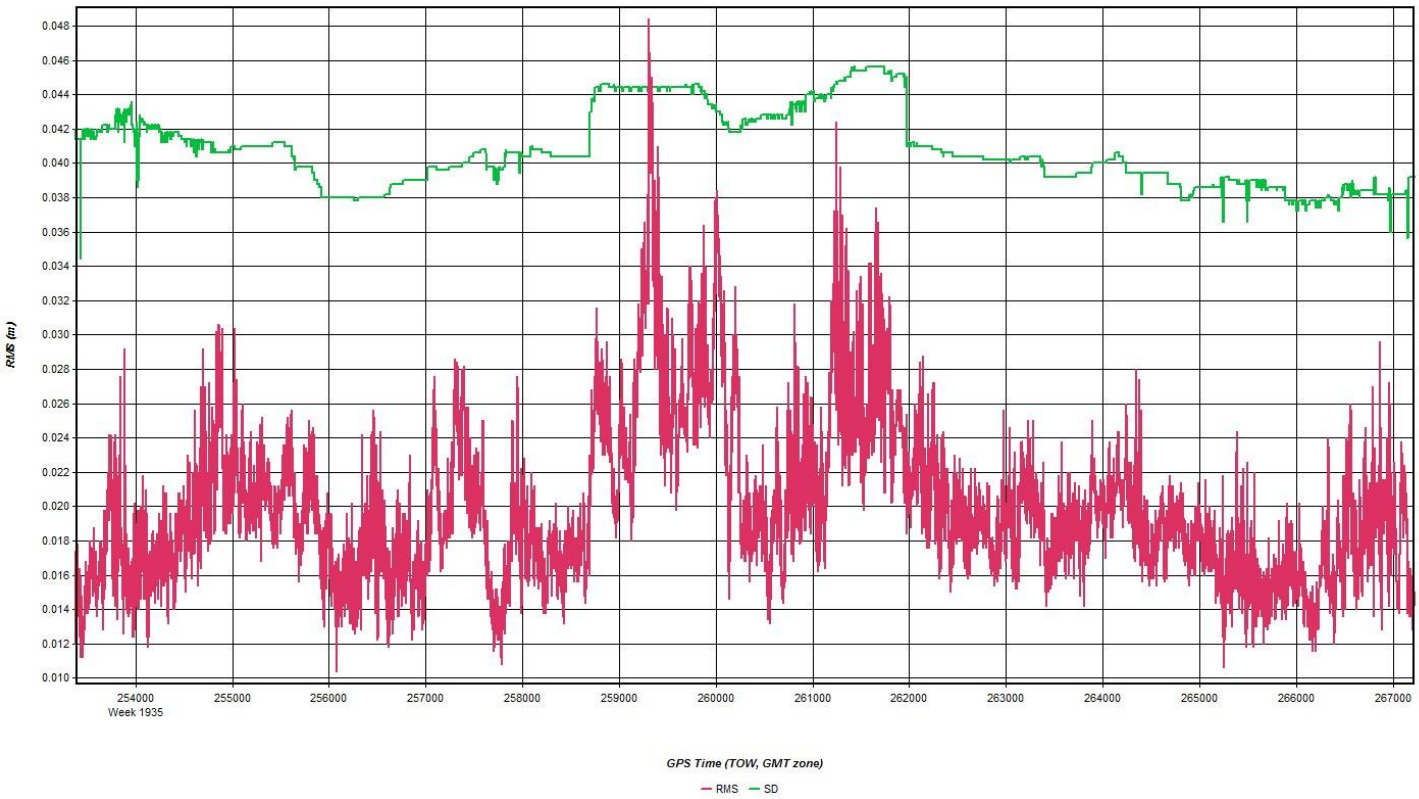

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

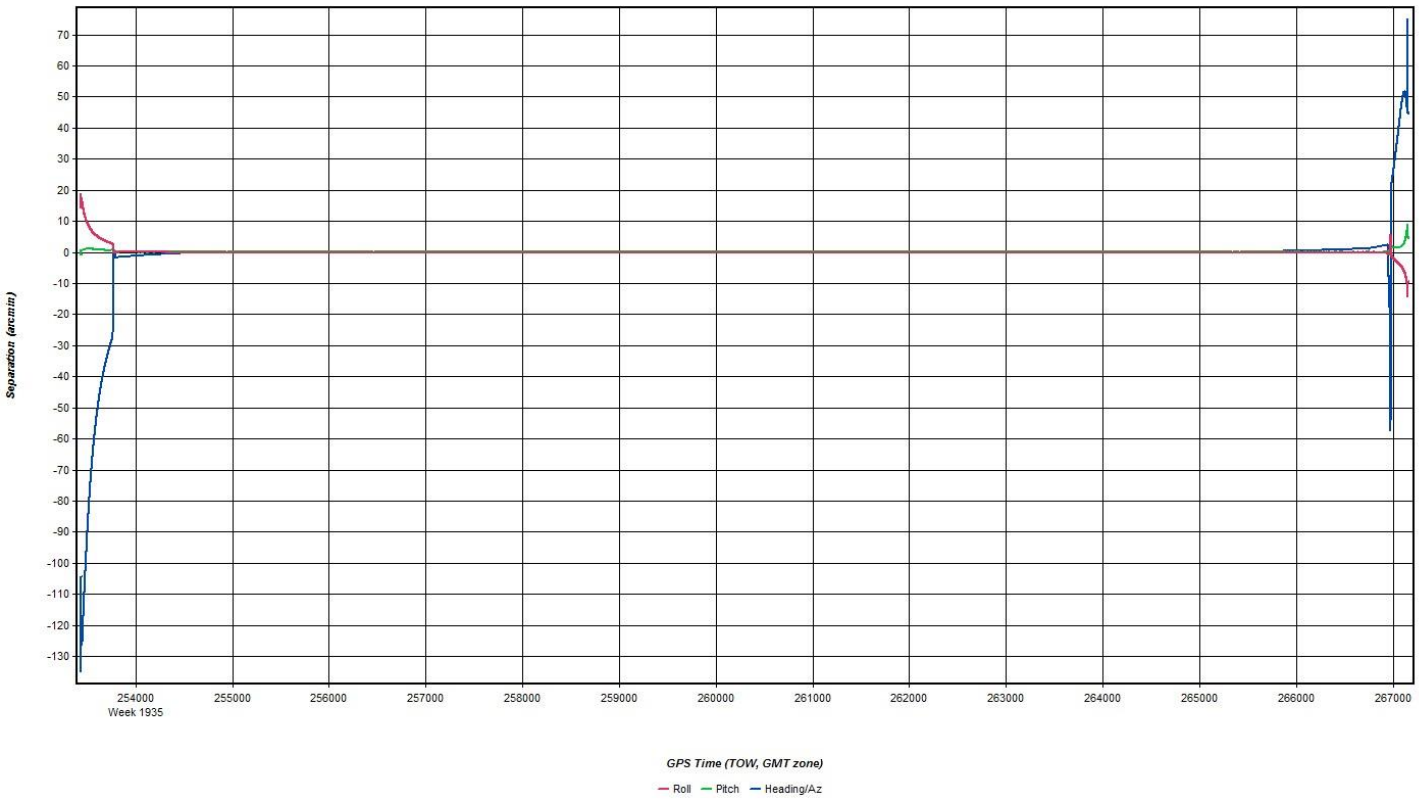

PDOP
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
PDOP

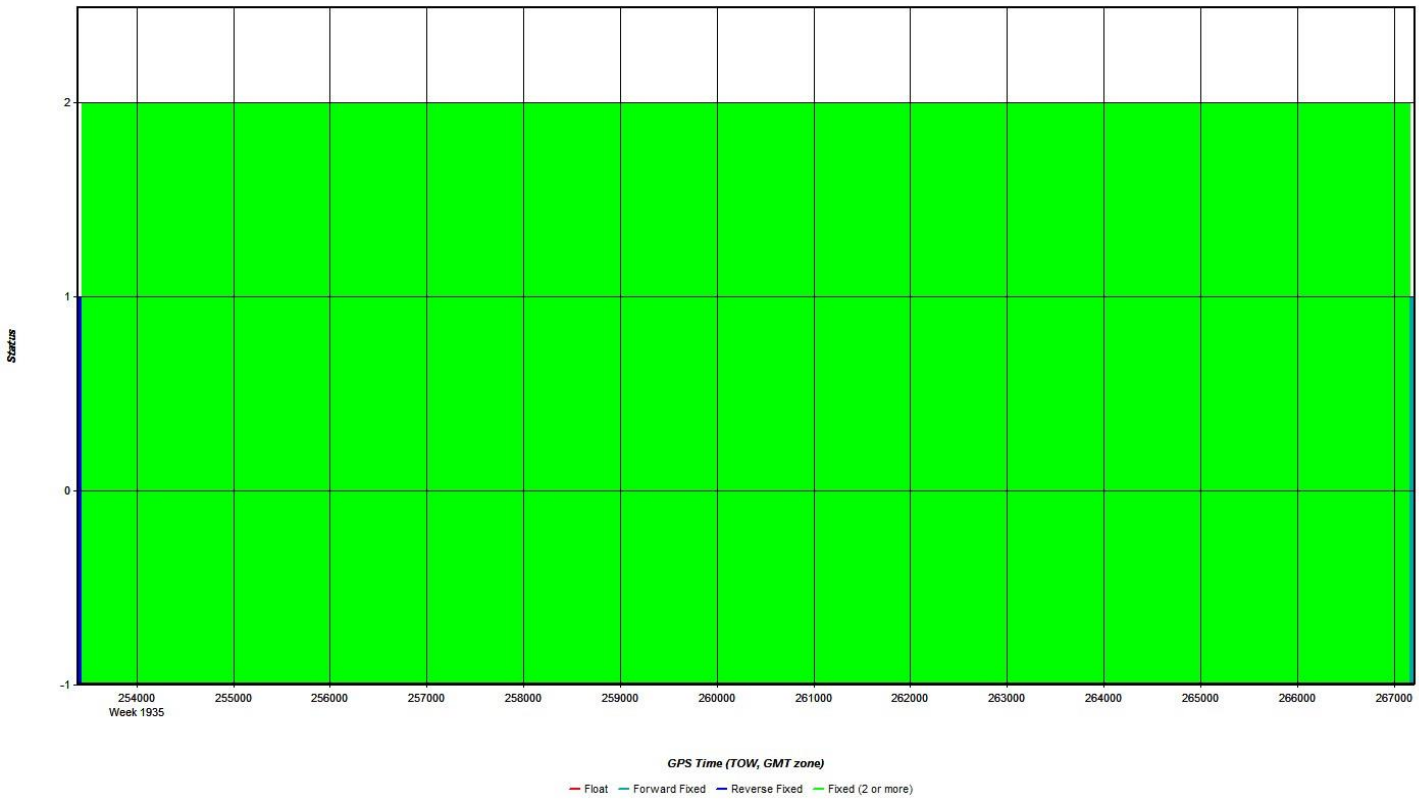

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

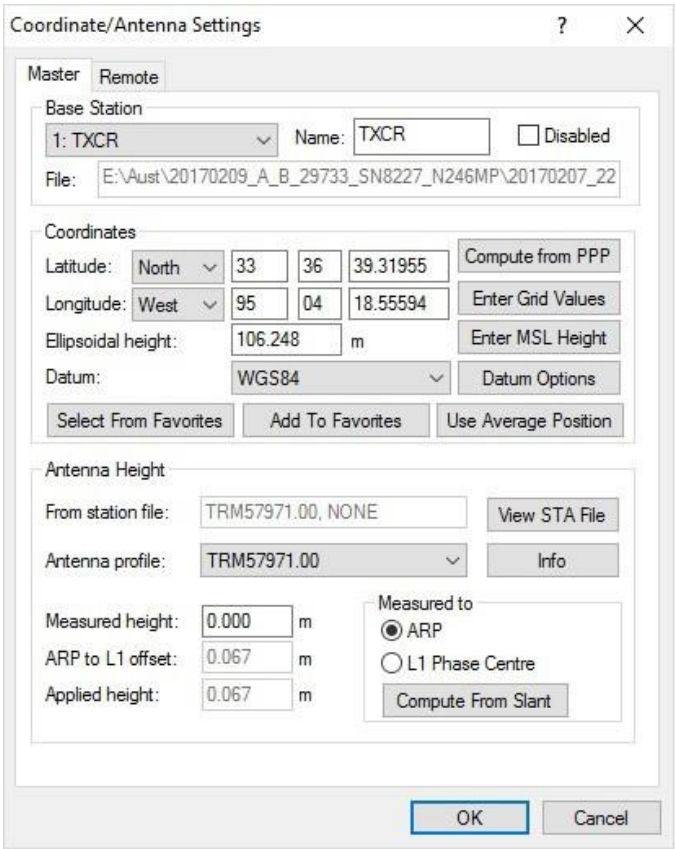

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
Roll
Pitch

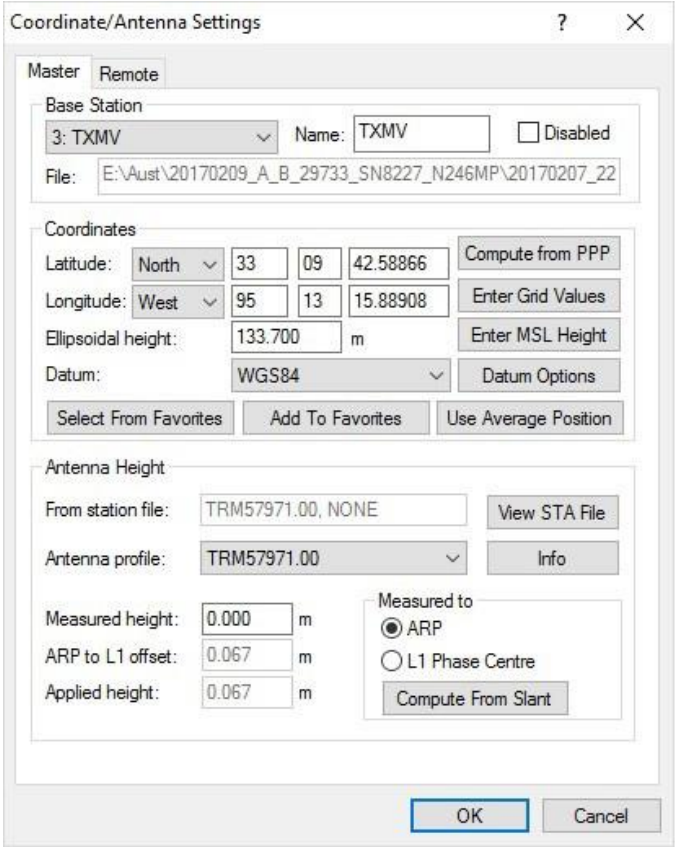

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
Height

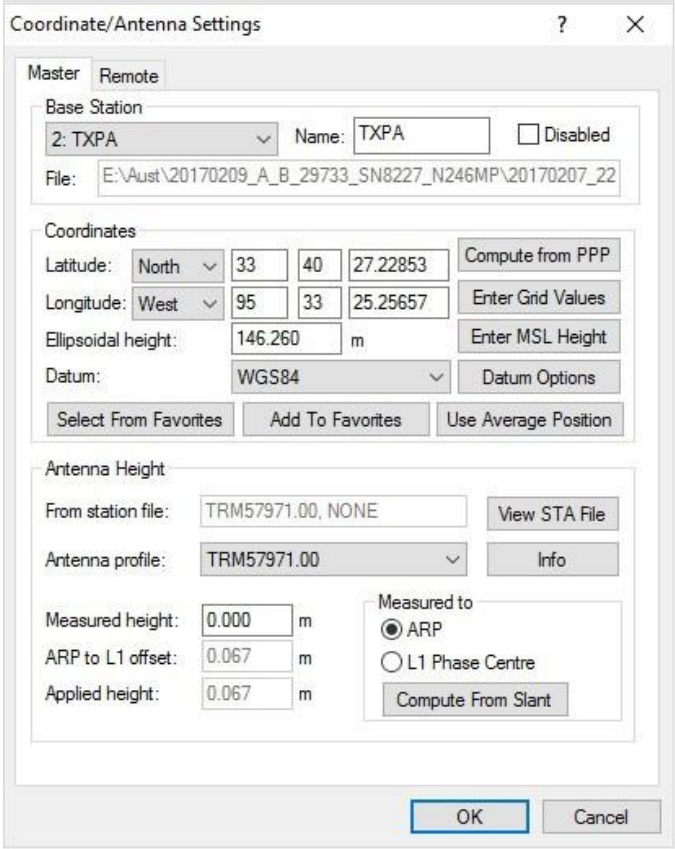

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
RMS
SD

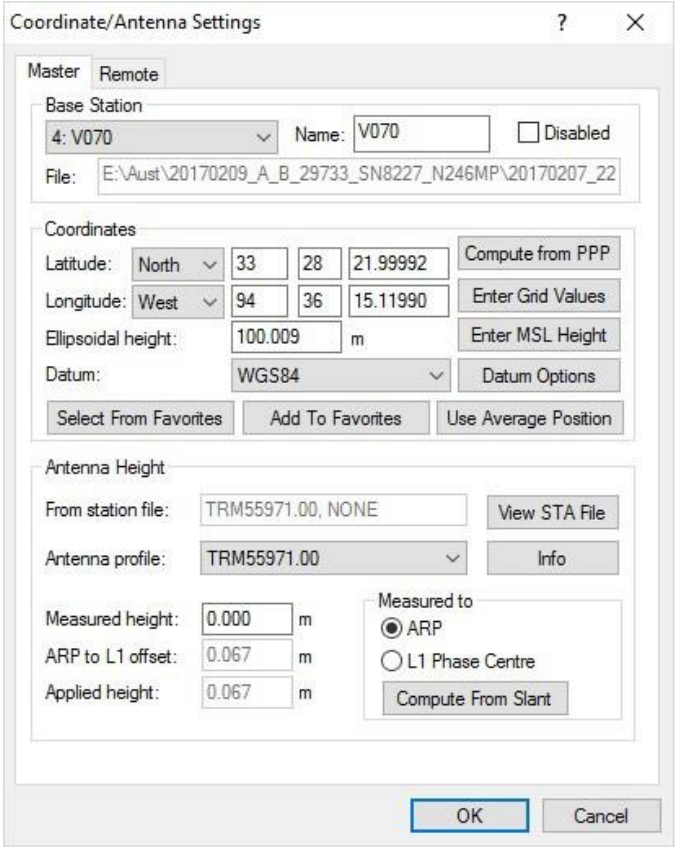

Separation (arcmin)
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az

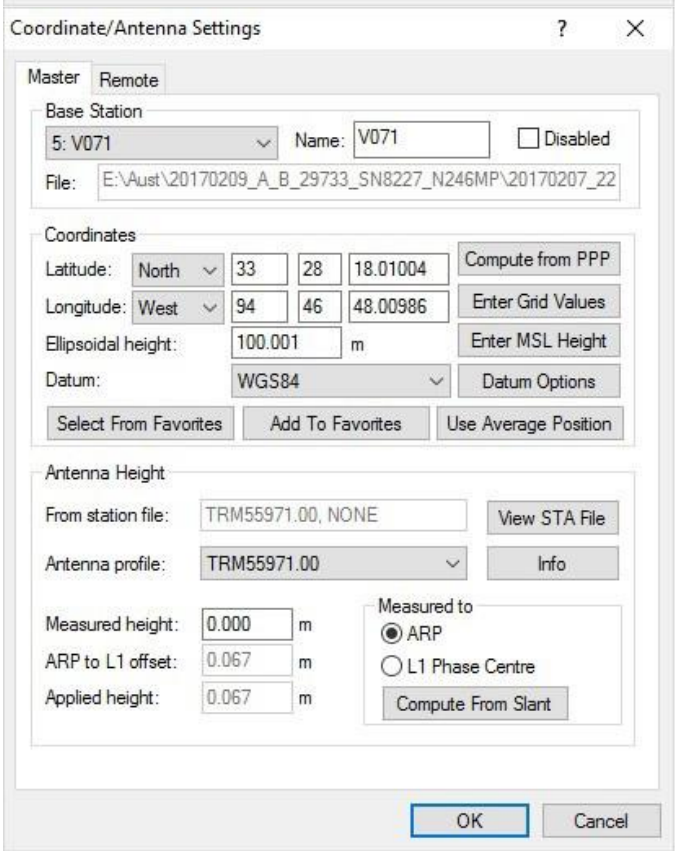

Status
2
1
0
-1
254000
Week 1935
255000
256000
257000
258000
259000
260000
261000
262000
263000
264000
265000
266000
267000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)

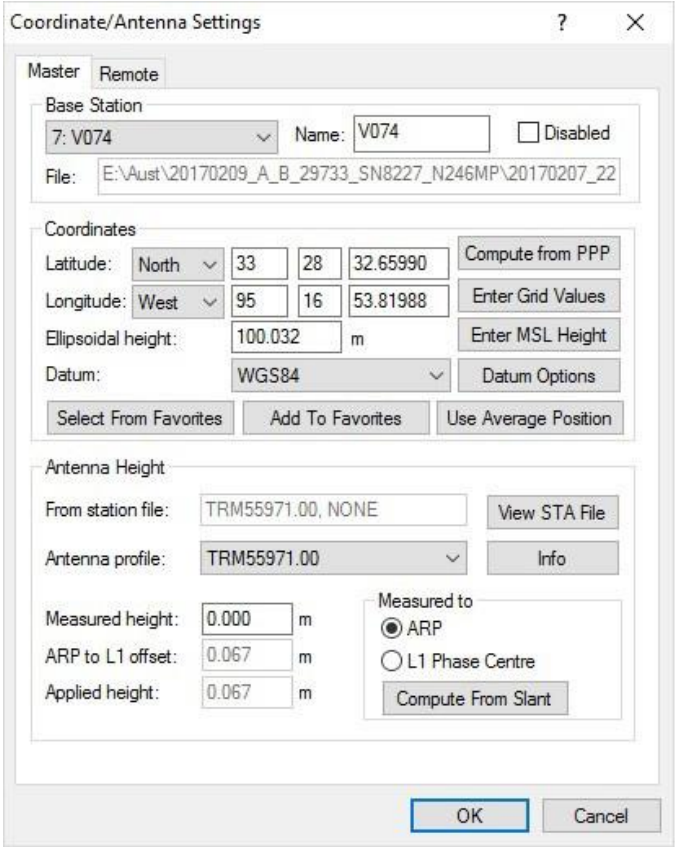

Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXCR
Name:
TXCR
Disabled
File:
E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude:
North
33
36
39.31955
Compute from PPP
Longitude:
West
95
04
18.55594
Enter Grid Values
Ellipsoidal height:
106.248
m
Enter MSL Height
Datum:
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

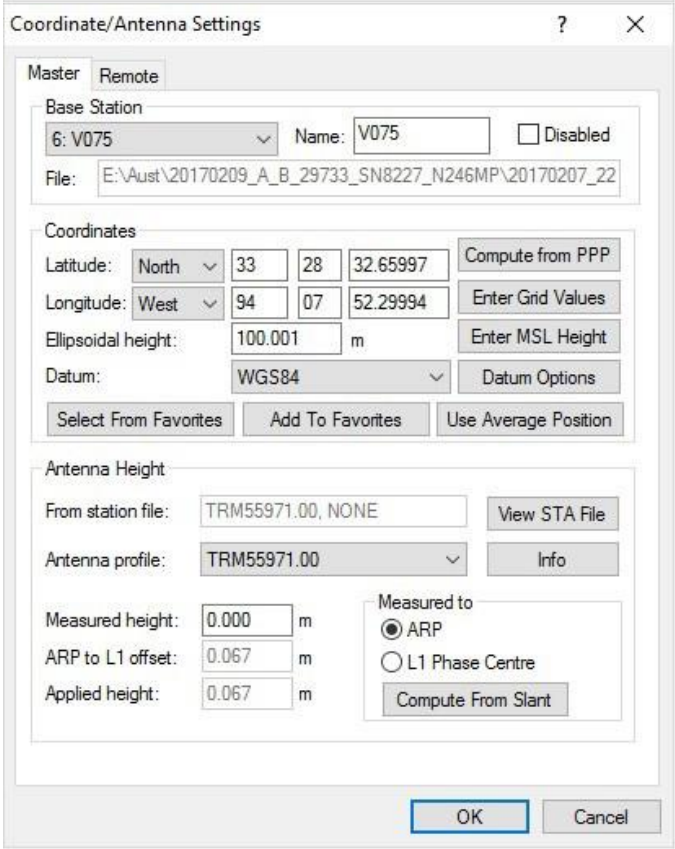

Coordinate/Antenna Settings
Master
Remote
Base Station
3: TXMV
Name:
TXMV
Disabled
File:
E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude:
North
33
09
42.58866
Compute from PPP
Longitude:
West
95
13
15.88908
Enter Grid Values
Ellipsoidal height:
133.700
m
Enter MSL Height
Datum:
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
2: TXPA
Name:
TXPA
Disabled
File:
E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude:
North
33
40
27.22853
Compute from PPP
Longitude:
West
95
33
25.25657
Enter Grid Values
Ellipsoidal height:
146.260
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
4: V070
Name: V070
Disabled
File: E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude: North 33 28 21.99992
Longitude: West 94 36 15.11990
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
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: V071
Name: V071
Disabled
File: E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude: North 33 28 18.01004
Longitude: West 94 46 48.00986
Ellipsoidal height: 100.001 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
7: V074
Name: V074
Disabled
File: E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude: North 33 28 32.65990
Longitude: West 95 16 53.81988
Ellipsoidal height: 100.032 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
6: V075
Name: V075
Disabled
File: E:\Aust\20170209_A_B_29733_SN8227_N246MP\20170207_22
Coordinates
Latitude: North 33 28 32.65997
Longitude: West 94 07 52.29994
Ellipsoidal height: 100.001 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: 2-7-2017

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

Project: Red River Proj #: 29377 Flight Mgmt File: 020717-B-29377-8227-N246MP

Aircraft: 246MP Begin Hobbs: 1268.0 End Hobbs: 1271.5 Total: Pilot: Jones Co-Pilot: Tech: Coy

Dep Apt: TKX Dep Time (Lcl): 4:30 (Z): 22:30 Arr Apt: TKX Arr Time (Local): 8:05 (Z): 02:05 Tot Time Aloft: 3.5

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: 26 °c End: °c OAT beg: +10 °c End: +9 °c Altimeter begin: 2968 end: 2968

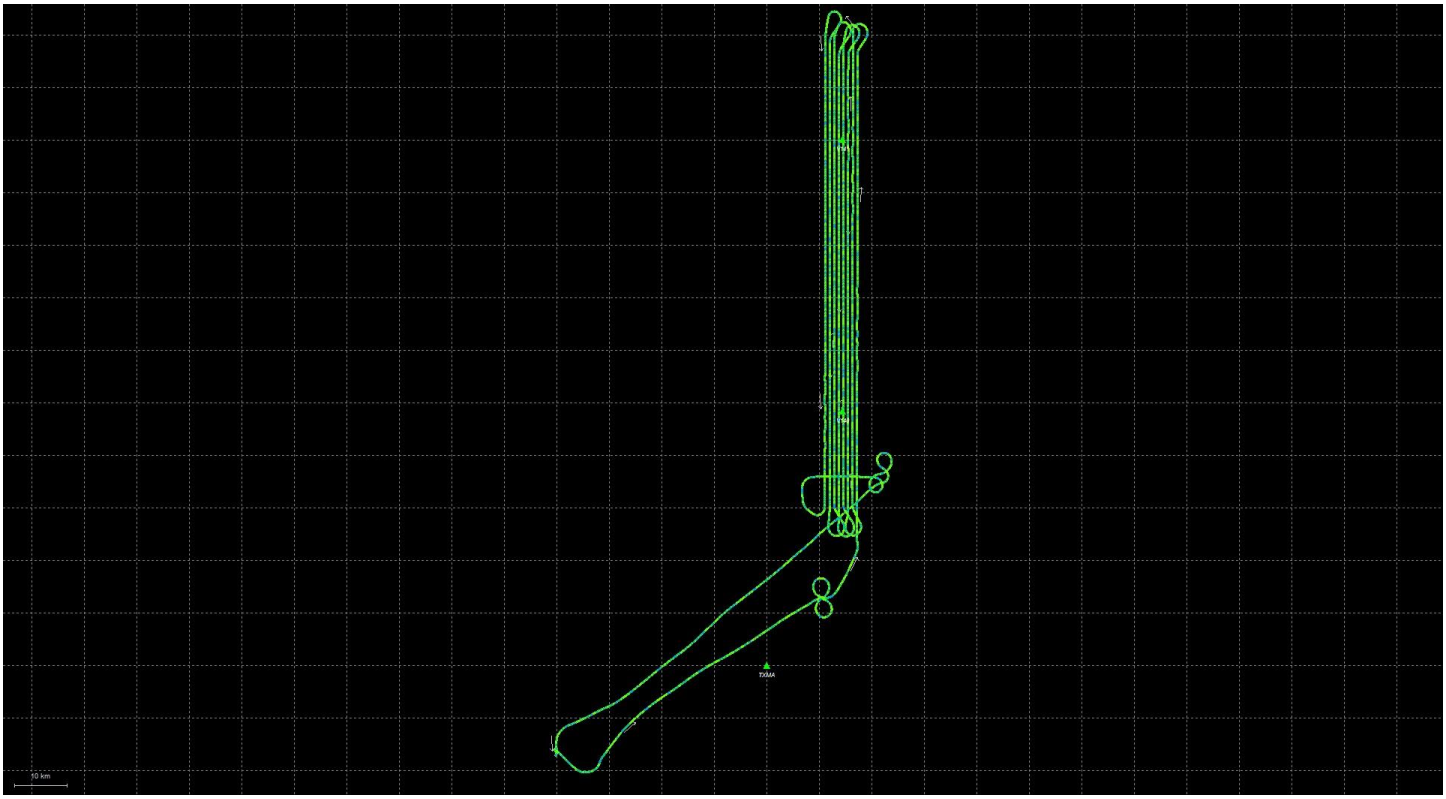
LiDAR	Type: ALS80	Serial #: 8227	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd: 140	Avg Pt Spacing
	FOV: 40	Scan Freq: 58.0	MpIA Y / (N)	Pulses In Air: 3	Pulse Rate: 396	Power: 100%	PPSM

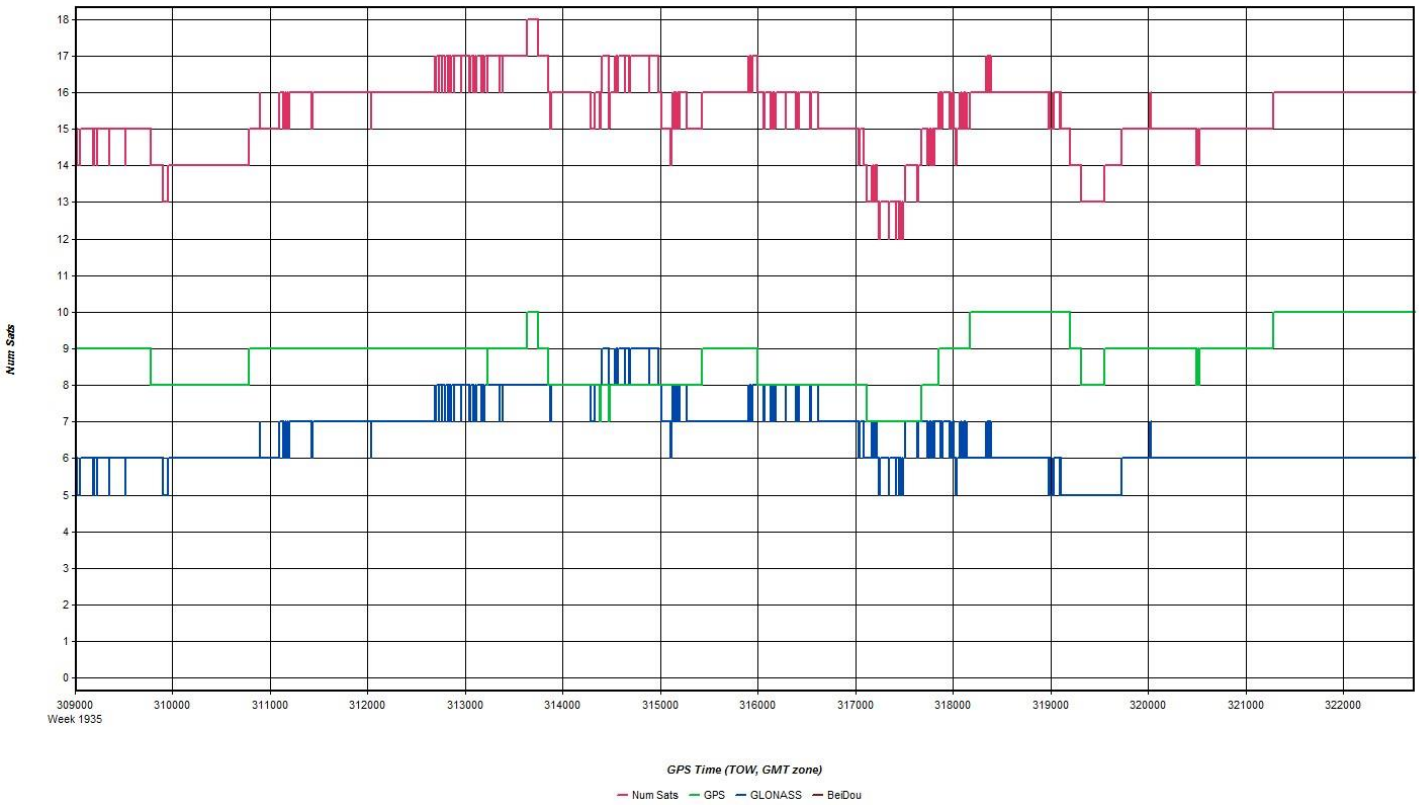
Beg GB	End GB	Tot GB	Storage Name/#
745	666	79	

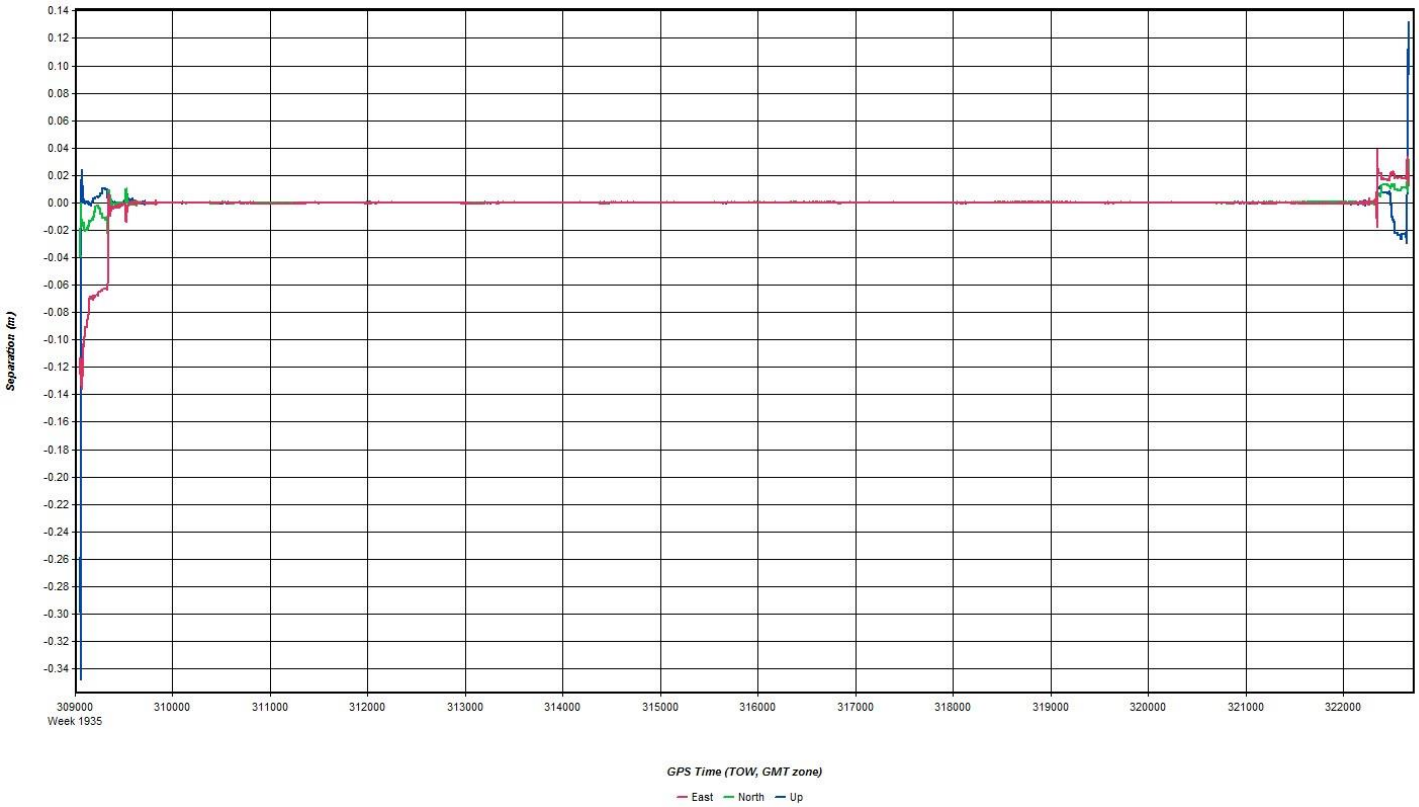
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
									Static Start 22:23 Fig 8's 22:44 22:28
235	268	2250	2311	144	1.4/17	6960		0	Less than 10% Drops
236	087	2315	2337	145	1.1/20	6985		0	
237	268	2340	0001	145	1.2/18	6915		0	
238	087	0005	00:24	145	1.3/18	6950		0	
239	268	0028	0048	144	1.1/21	6920		0	
240	087	0052	01:11	152	1.3/21	6935		0	
299	357	01:27	01:39	144	1.1/21	6935		0	Cross line Planned
									Lost IMU 01:25 for Seconds Before Planned Tie line
									Fig 8's 01:41 Static Stop 02:08 - 02:13

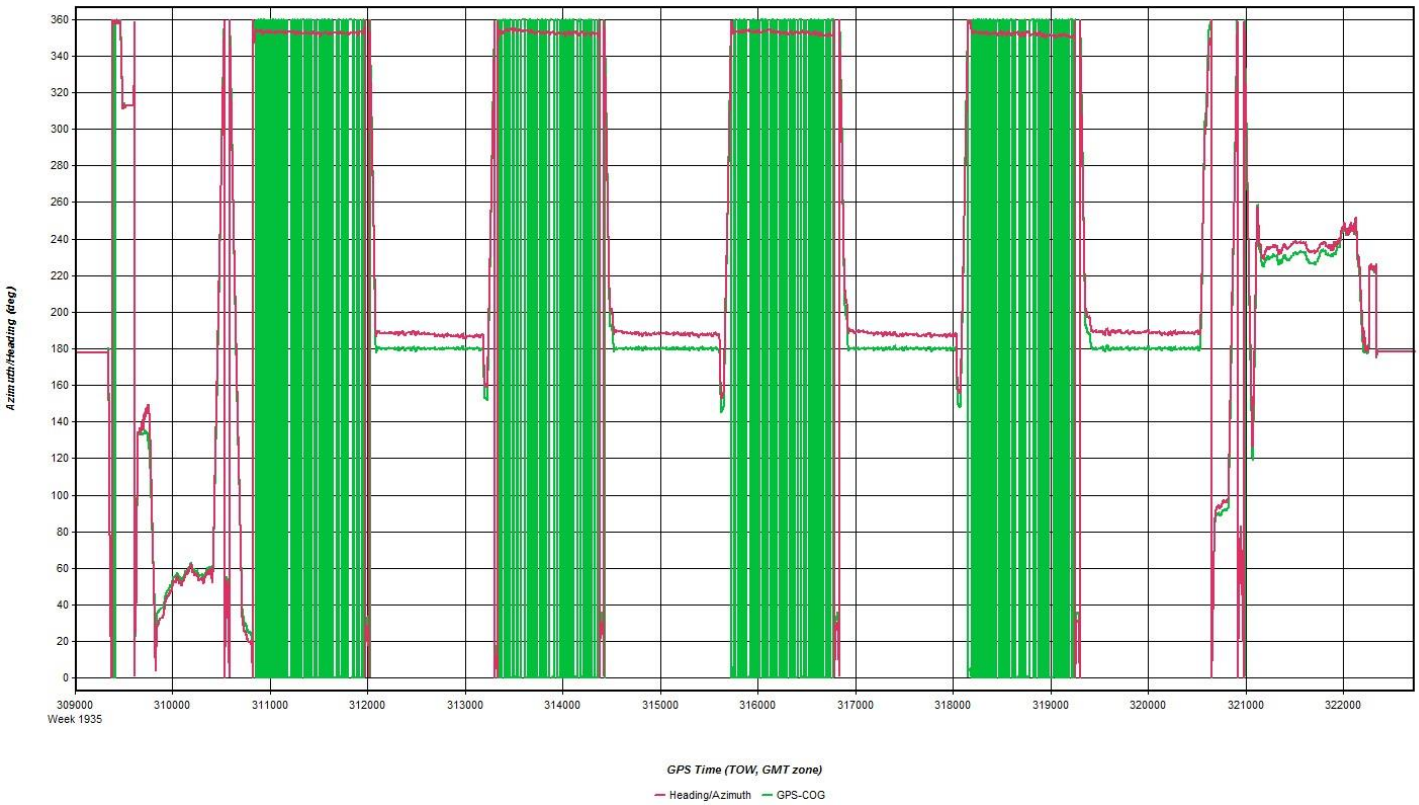
Total Proj Lines: Lines Flown: 7 Lines Remain: 0 Online Time: 3.0 Mob Time: .50 Notes: High Thin overcast

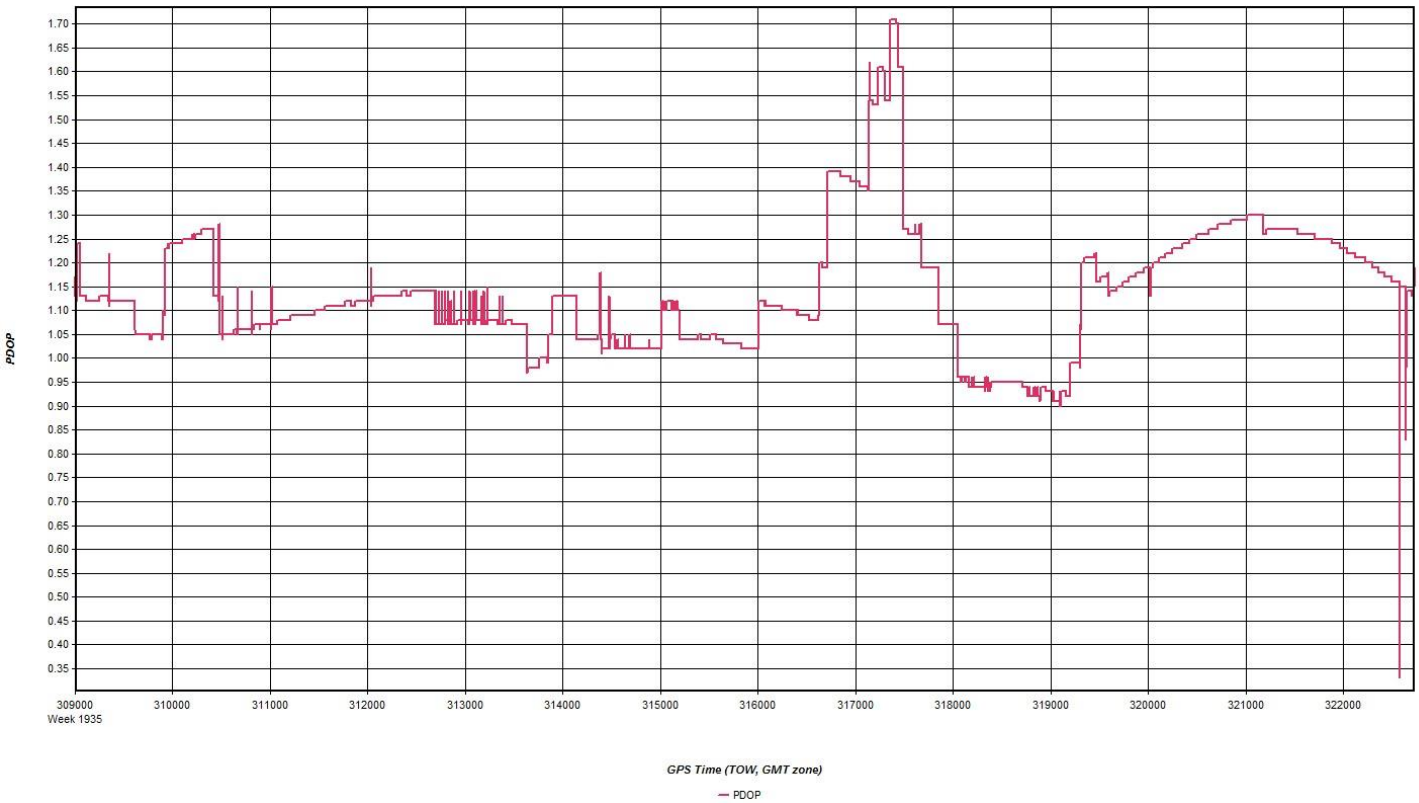
Feb 8, 2017-A (N812TB, SN7178)

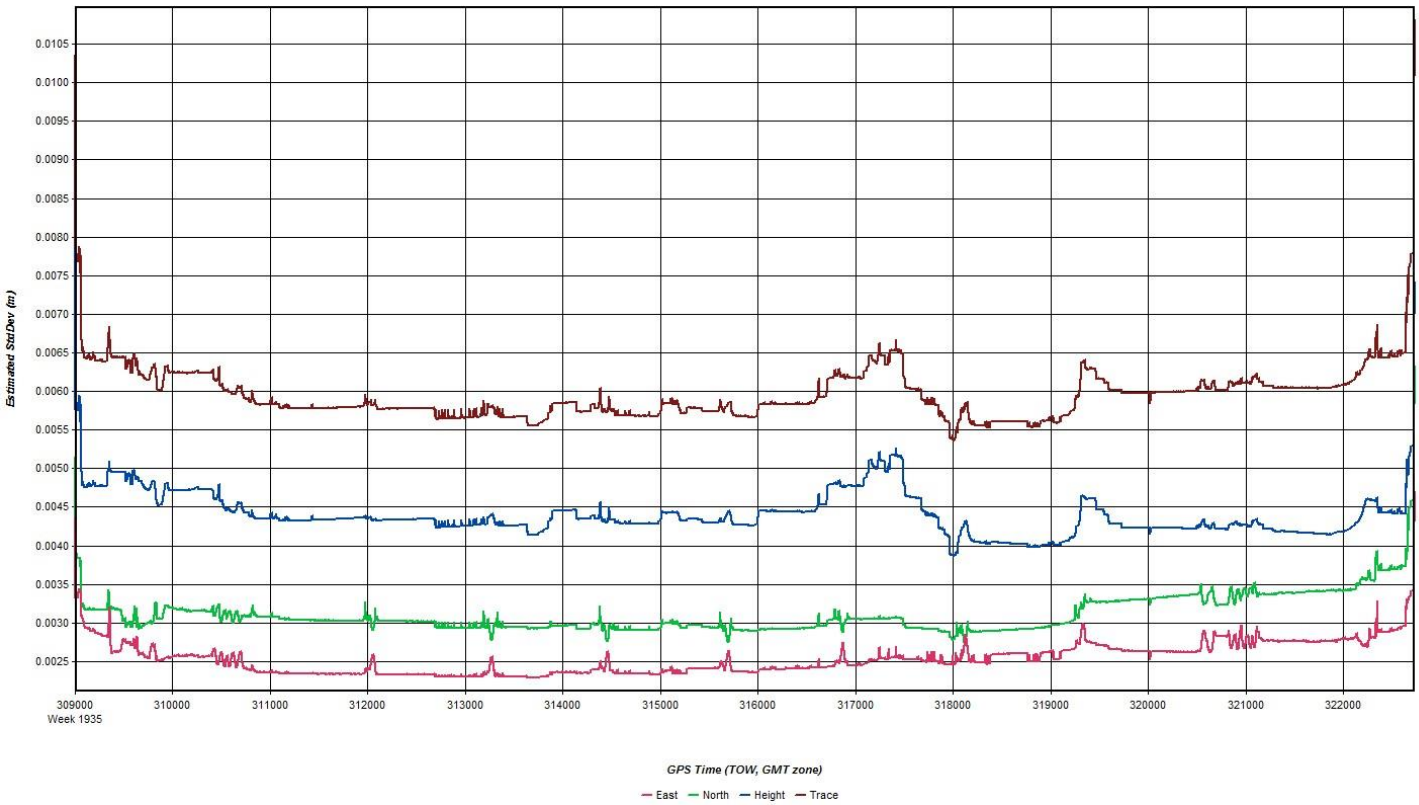


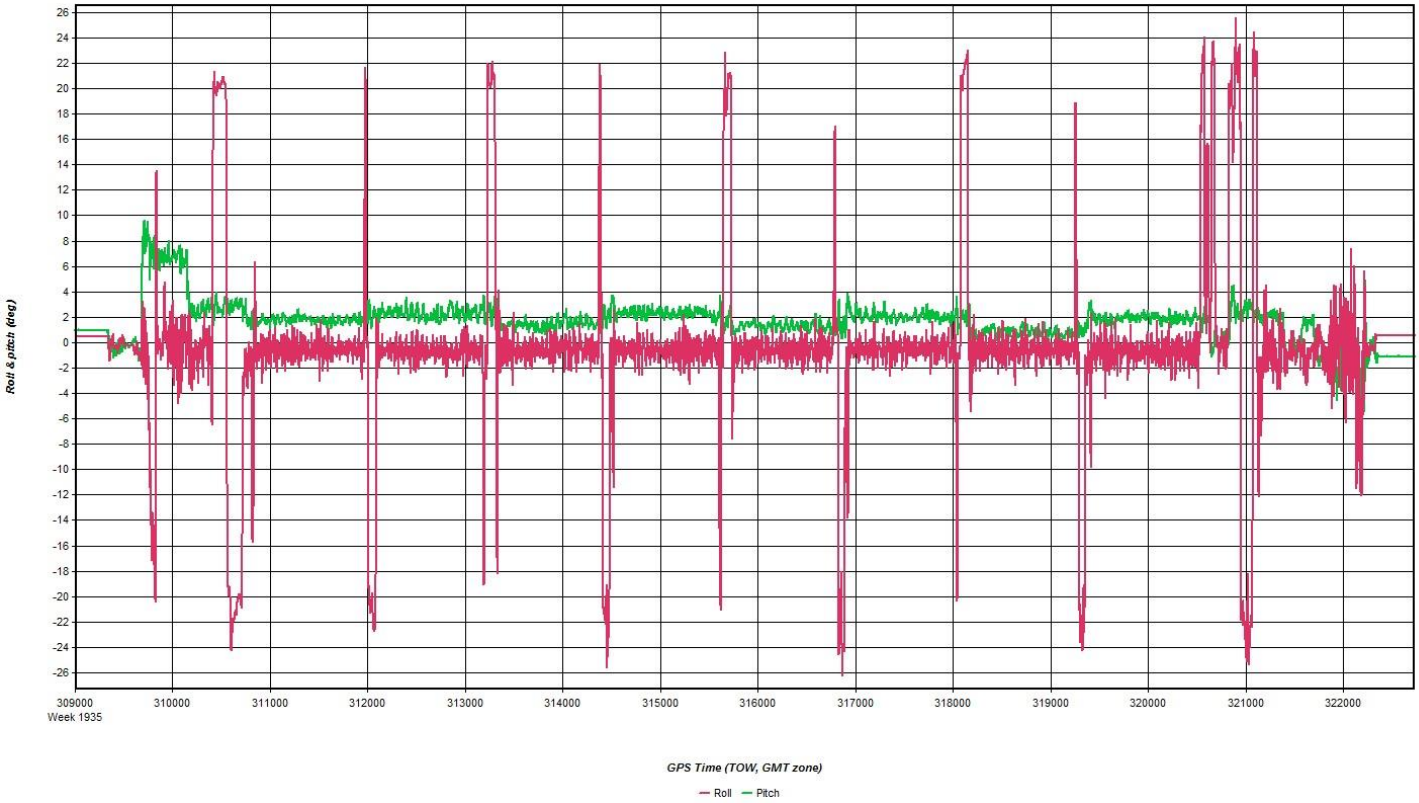

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

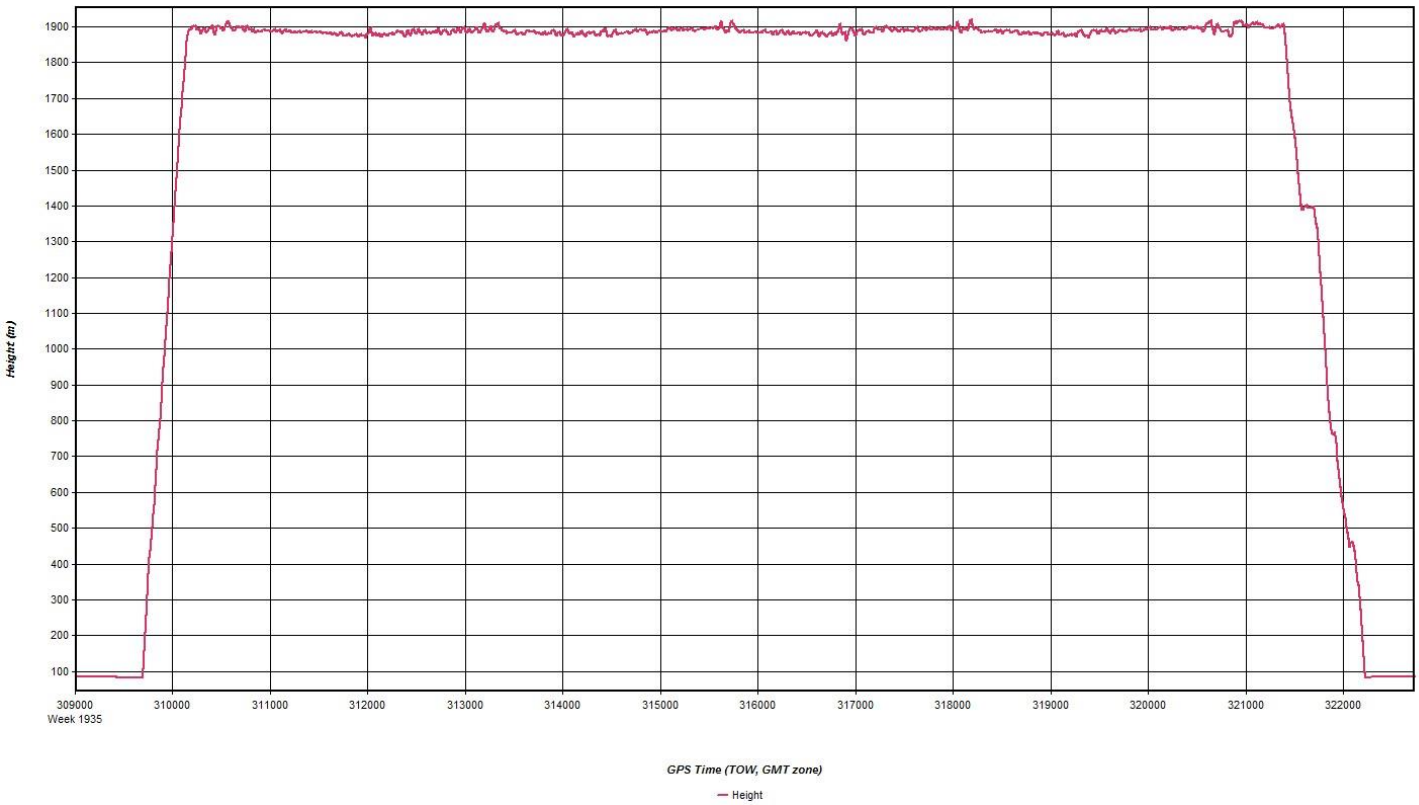

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
East
North
Up

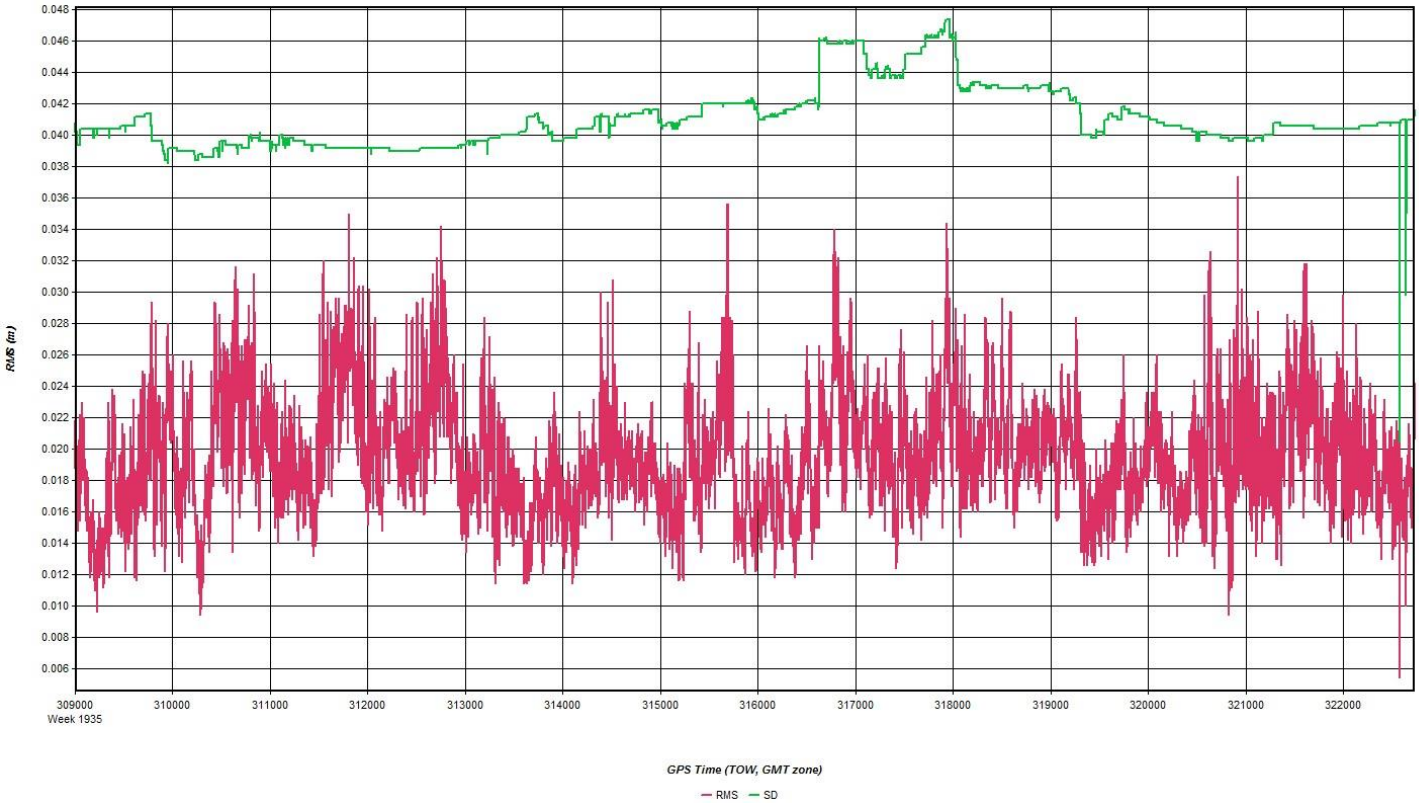

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

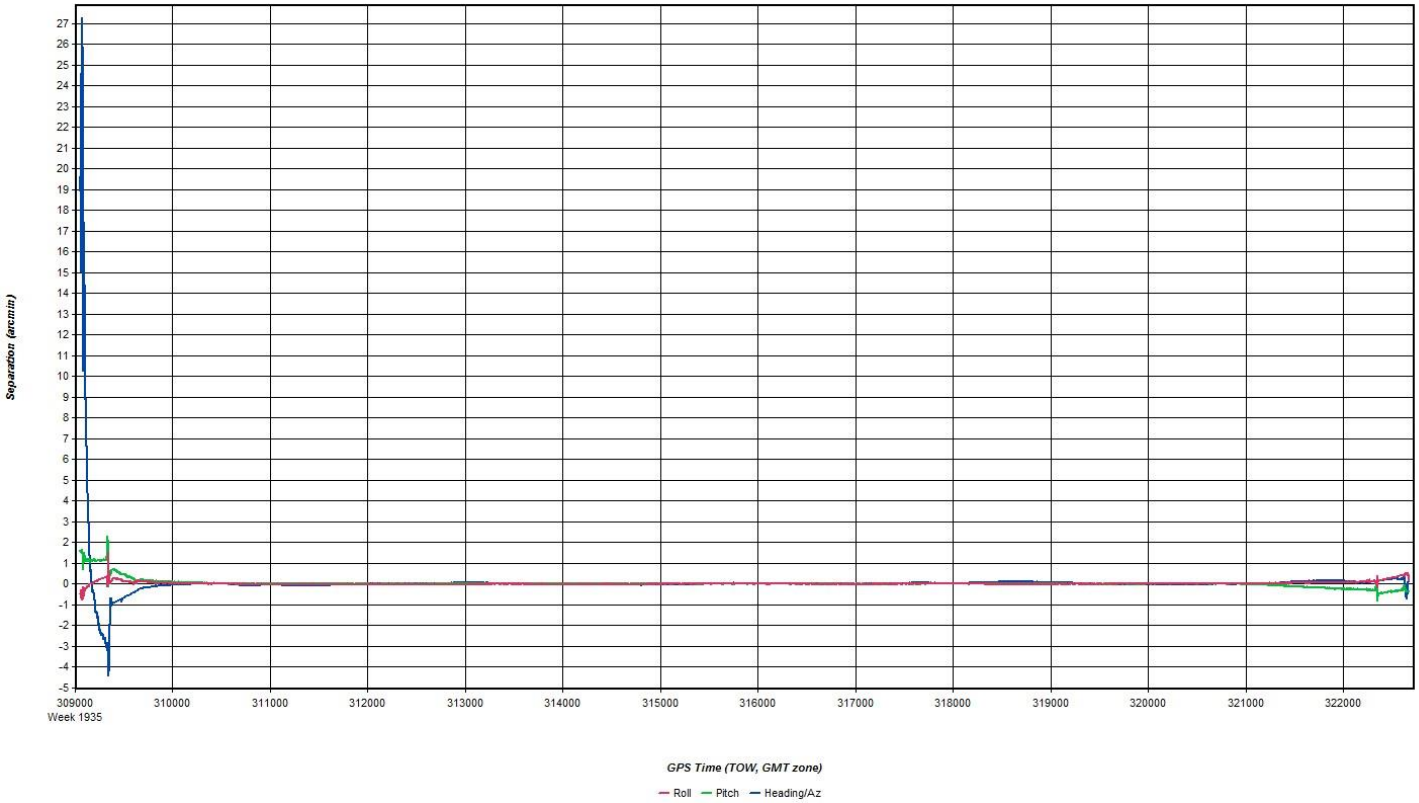

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
PDOP

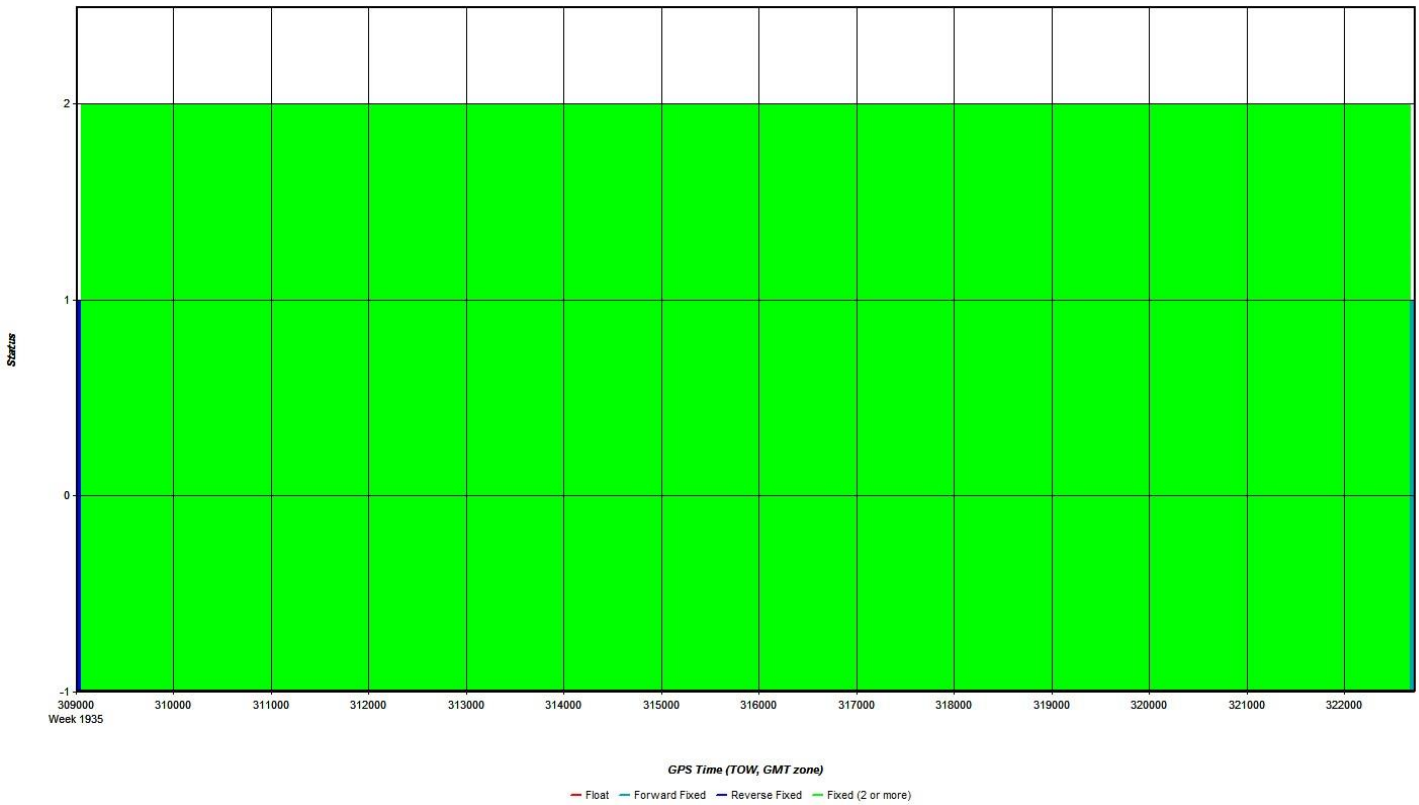

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

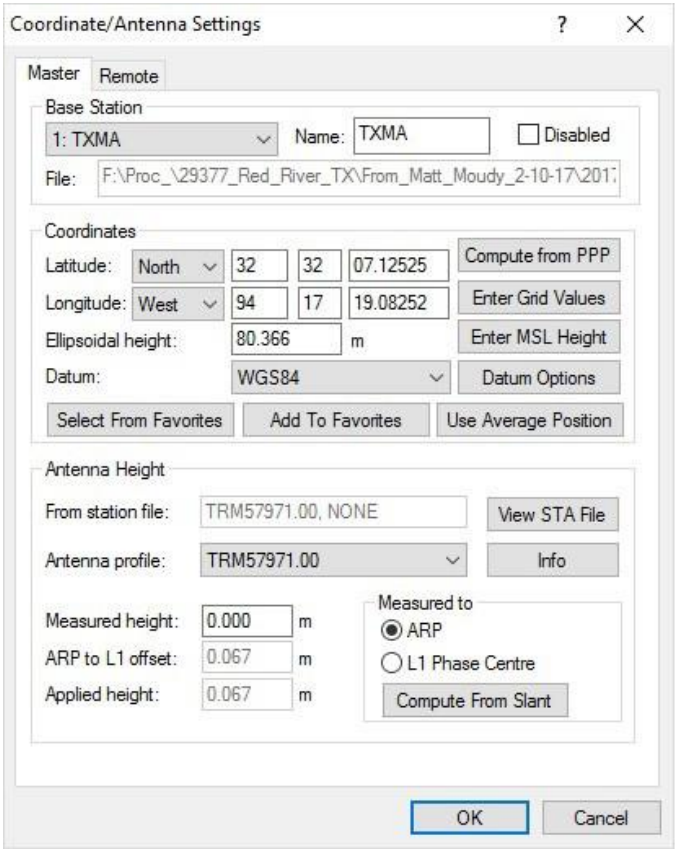

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
Roll
Pitch

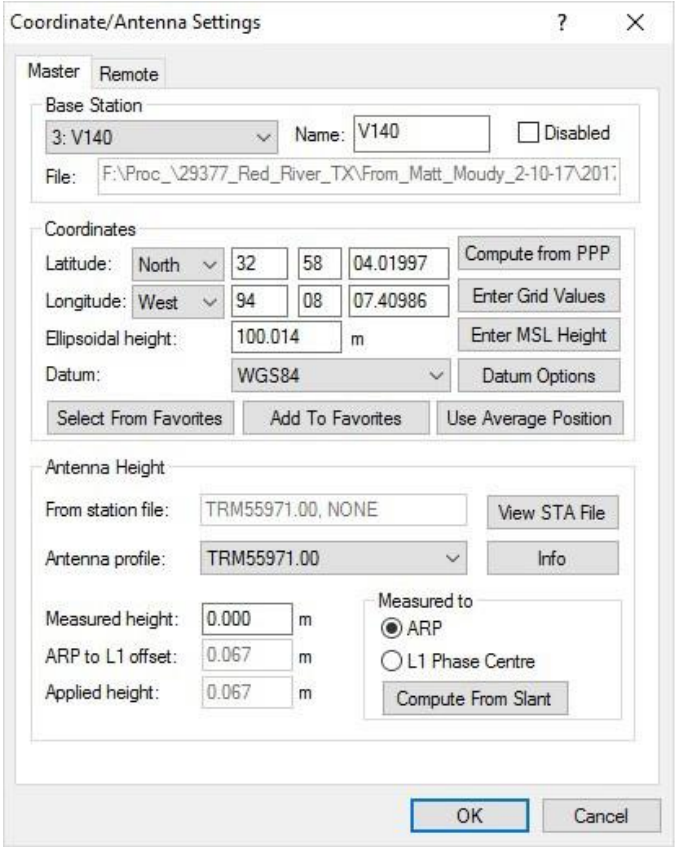

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
Height

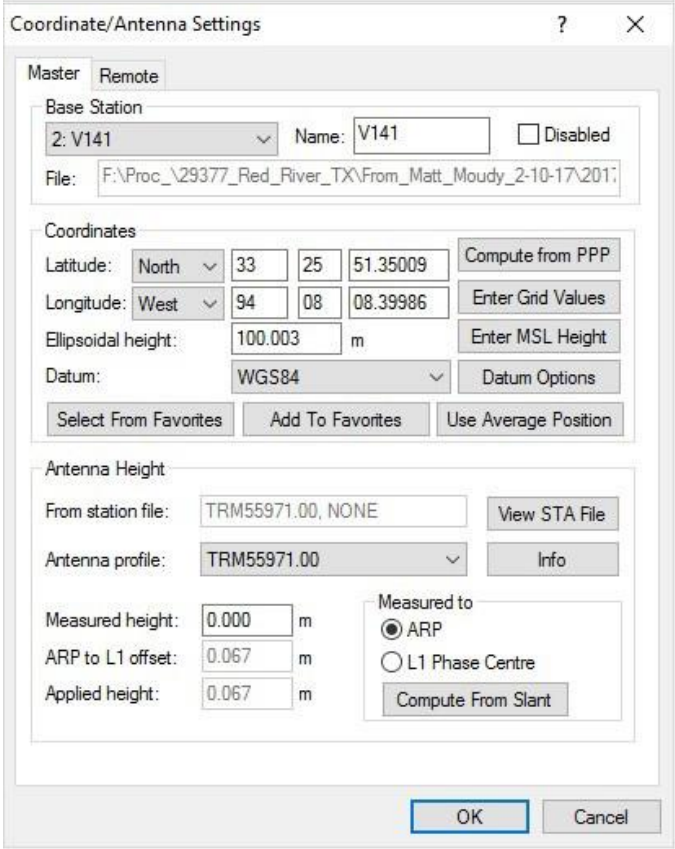

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
27
26
25
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
-3
-4
-5
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
309000
Week 1935
310000
311000
312000
313000
314000
315000
316000
317000
318000
319000
320000
321000
322000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-10-17\201
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
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: V140
Name: V140
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-10-17\201
Coordinates
Latitude: North 32 58 04.01997
Longitude: West 94 08 07.40986
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: 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: V141
Name: V141
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-10-17\201
Coordinates
Latitude: North 33 25 51.35009
Longitude: West 94 08 08.39986
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: 2-8-17

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

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

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

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)

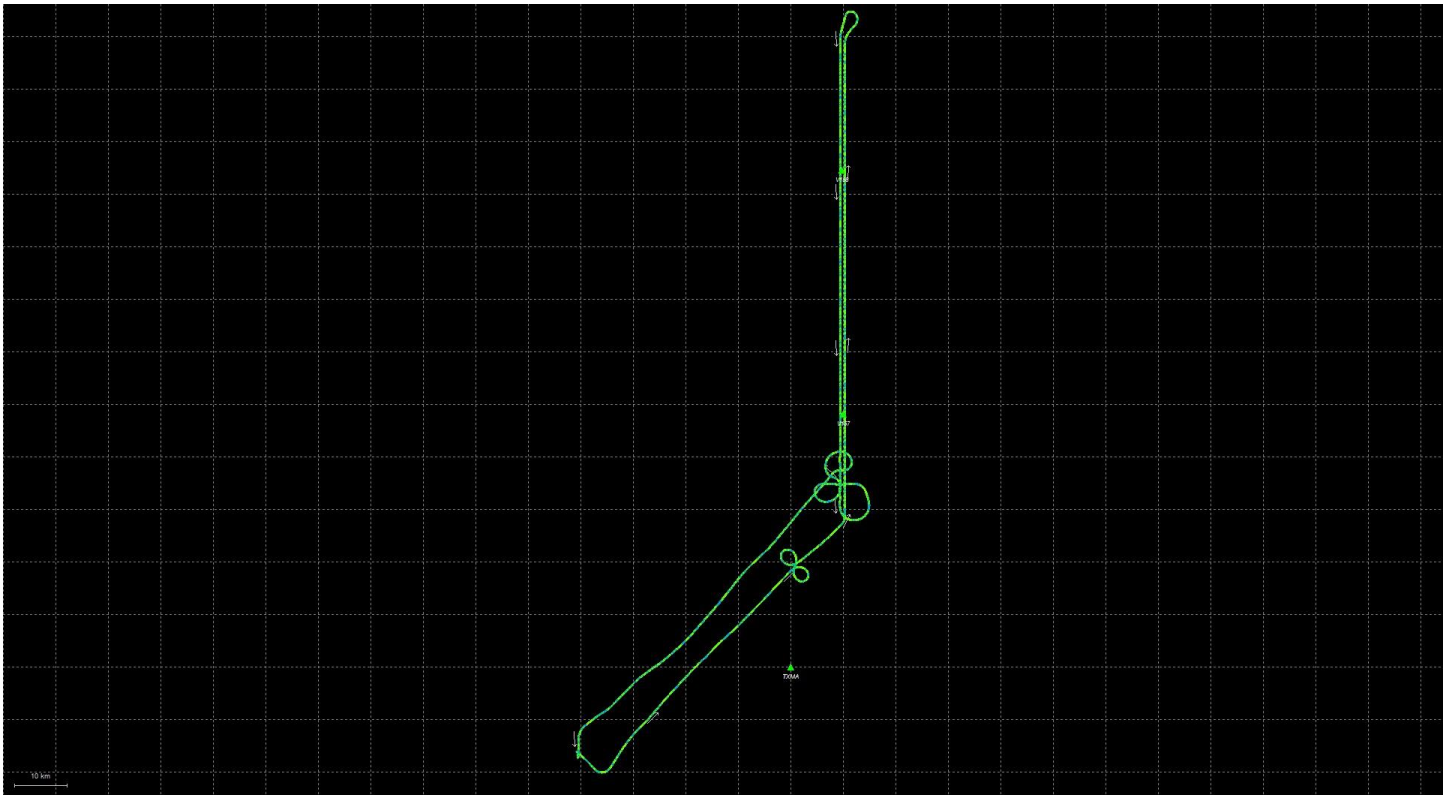
Gd Temp beg: °c End: °c OAT beg: °c End: °c Altimeter begin: end:

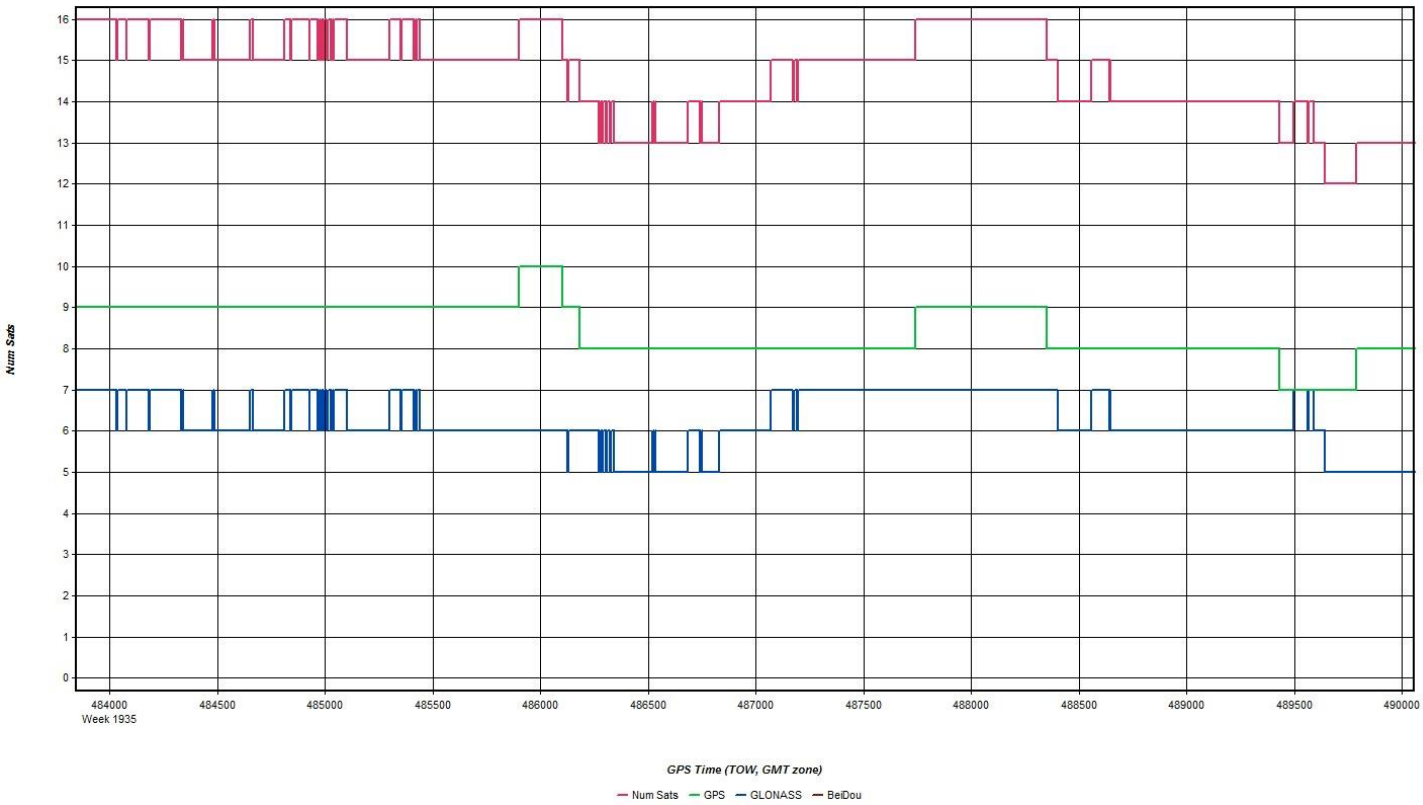
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/#
	ALS70	7178	± 5700'	± 6200'	± 500'	150 KTS	0.59M	180	238	58	7178 5504
	FOV 40%	Scan Freq 53Hz	MpiA (Y) / N	Pulses In Air 2	Pulse Rate 295 KHz	Power 100%	PPSM 2.83				

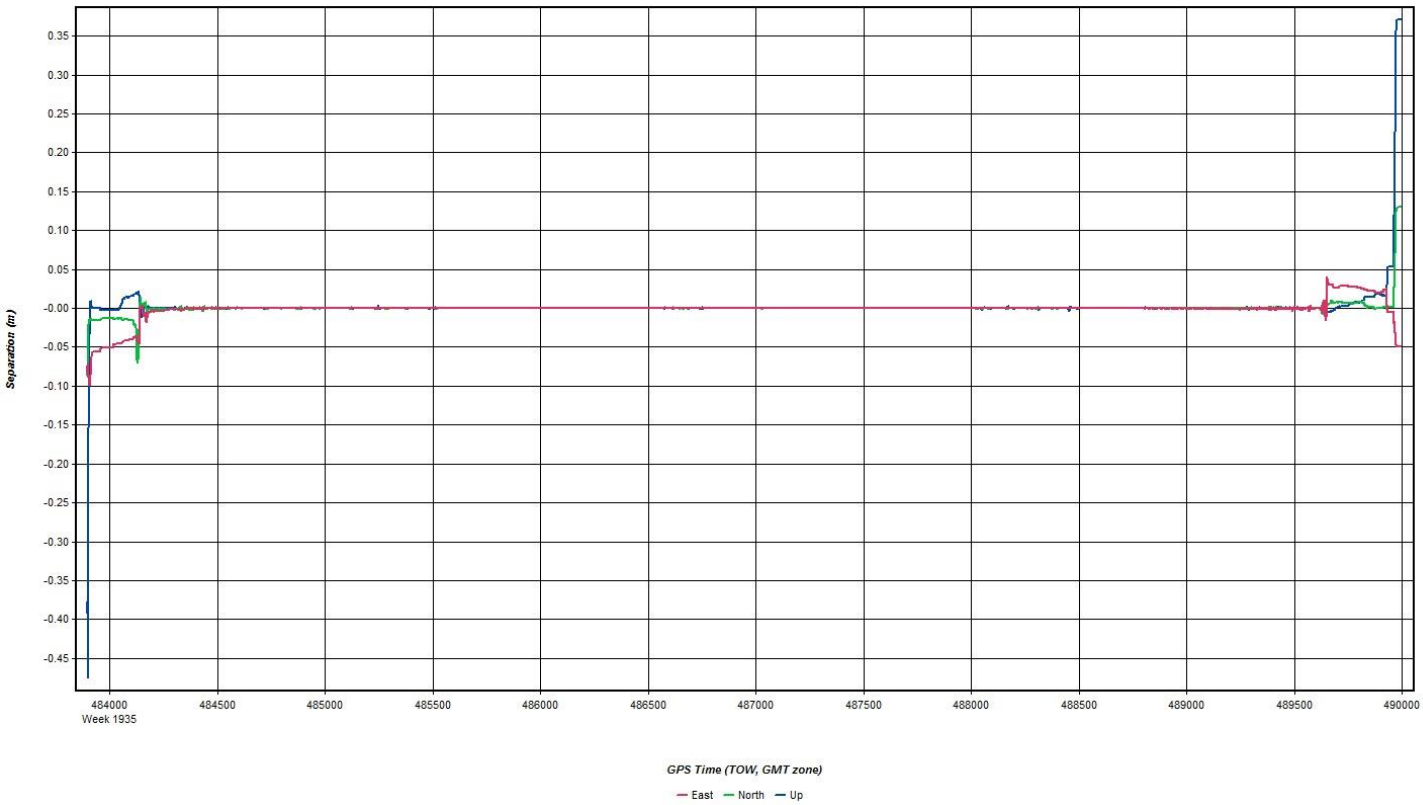
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
456	360	1421	1439	159	1.2/18	6200	7	0	
455	180	1442	1459	154	1.3/18	6170	8	0	
454	360	1502	1519	165	1.3/19	6190	7	0	
453	180	1522	1539	153	1.1/20	6170	9	0	
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	1.0/26	6210	10	0	
TIE	090	1704	1706	170	1.2/18	6260	4	0	– MANUAL TIE LINE

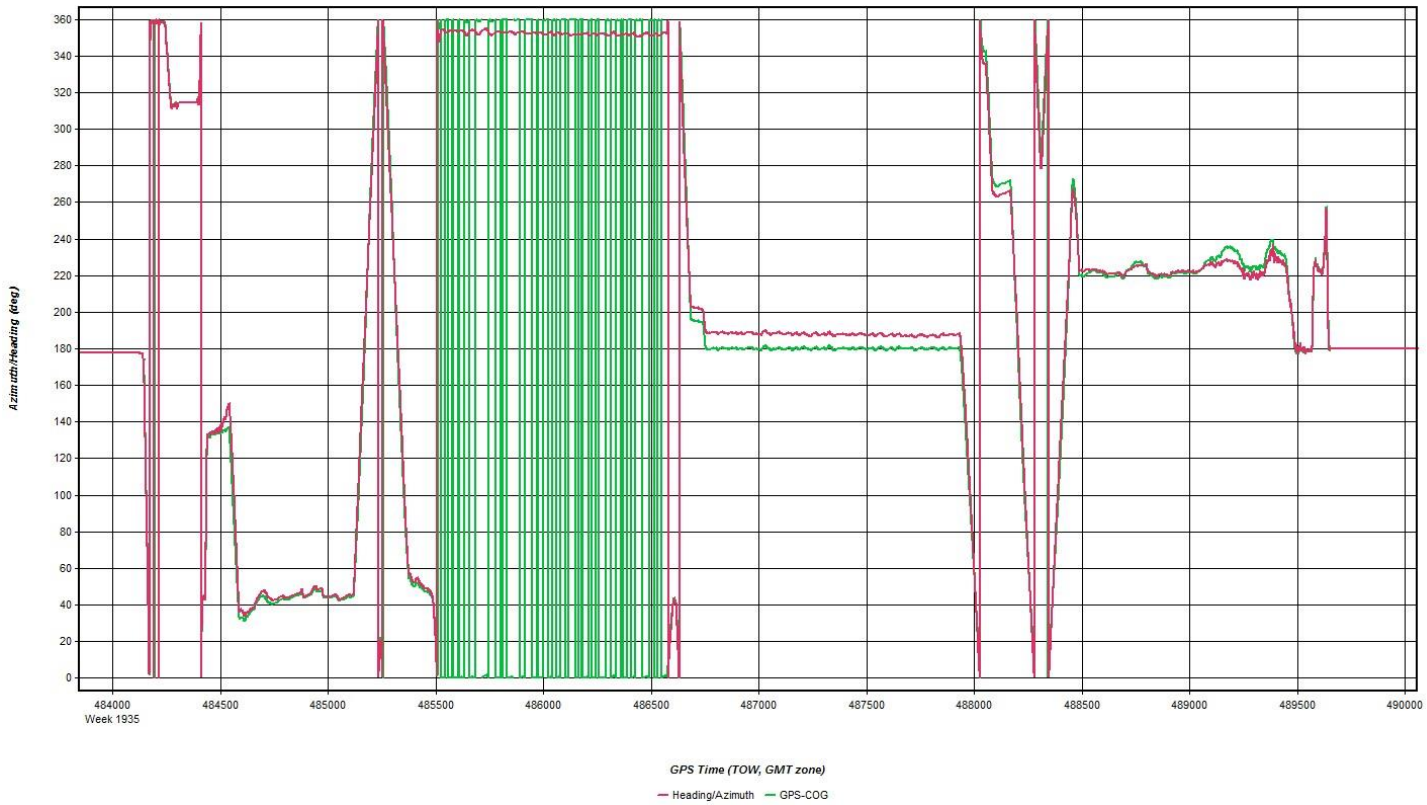
Total Proj Lines: Lines Flown: 8 Lines Remain: 38 Online Time: 2.75 Mob Time: 0.75 Notes:

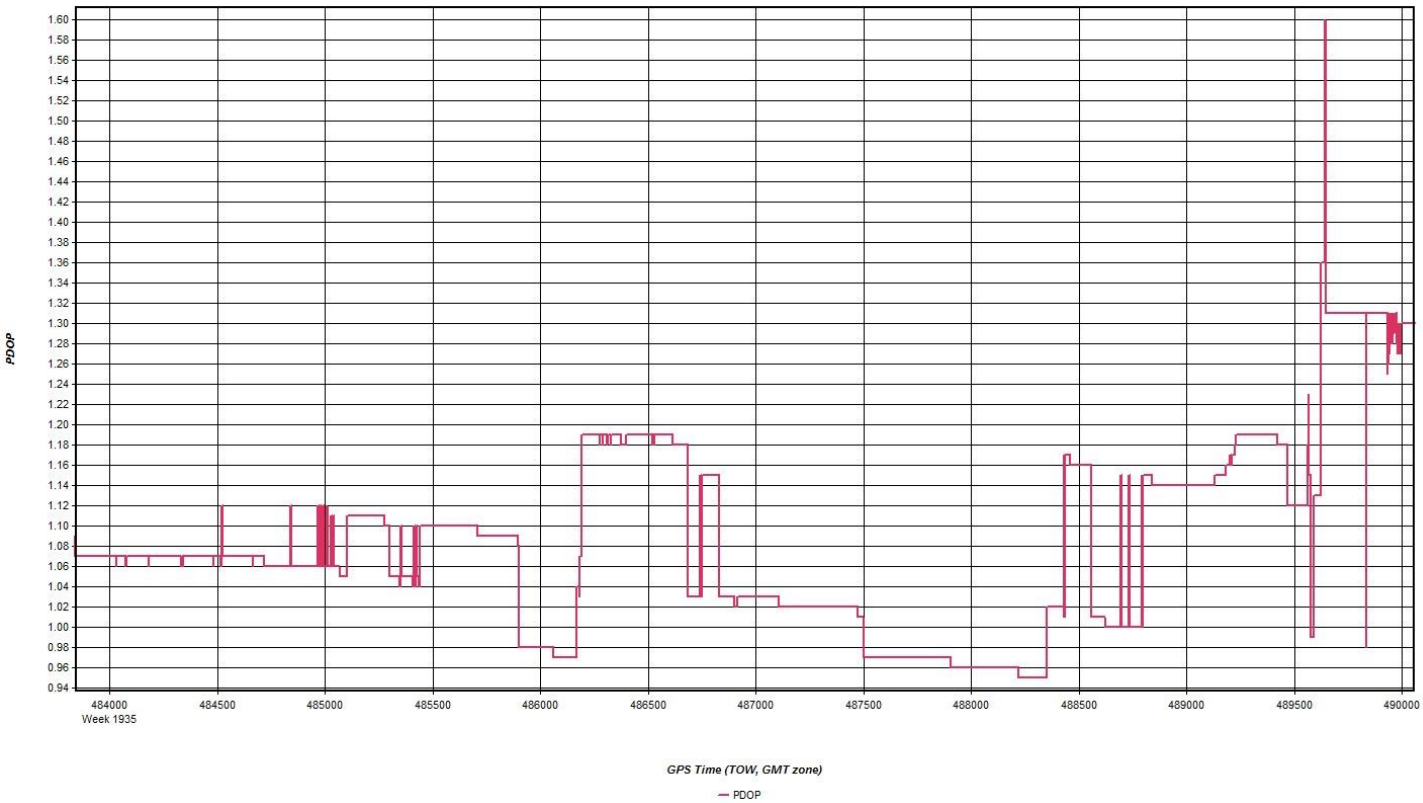
Feb 10, 2017-A (N812TB, SN7178)

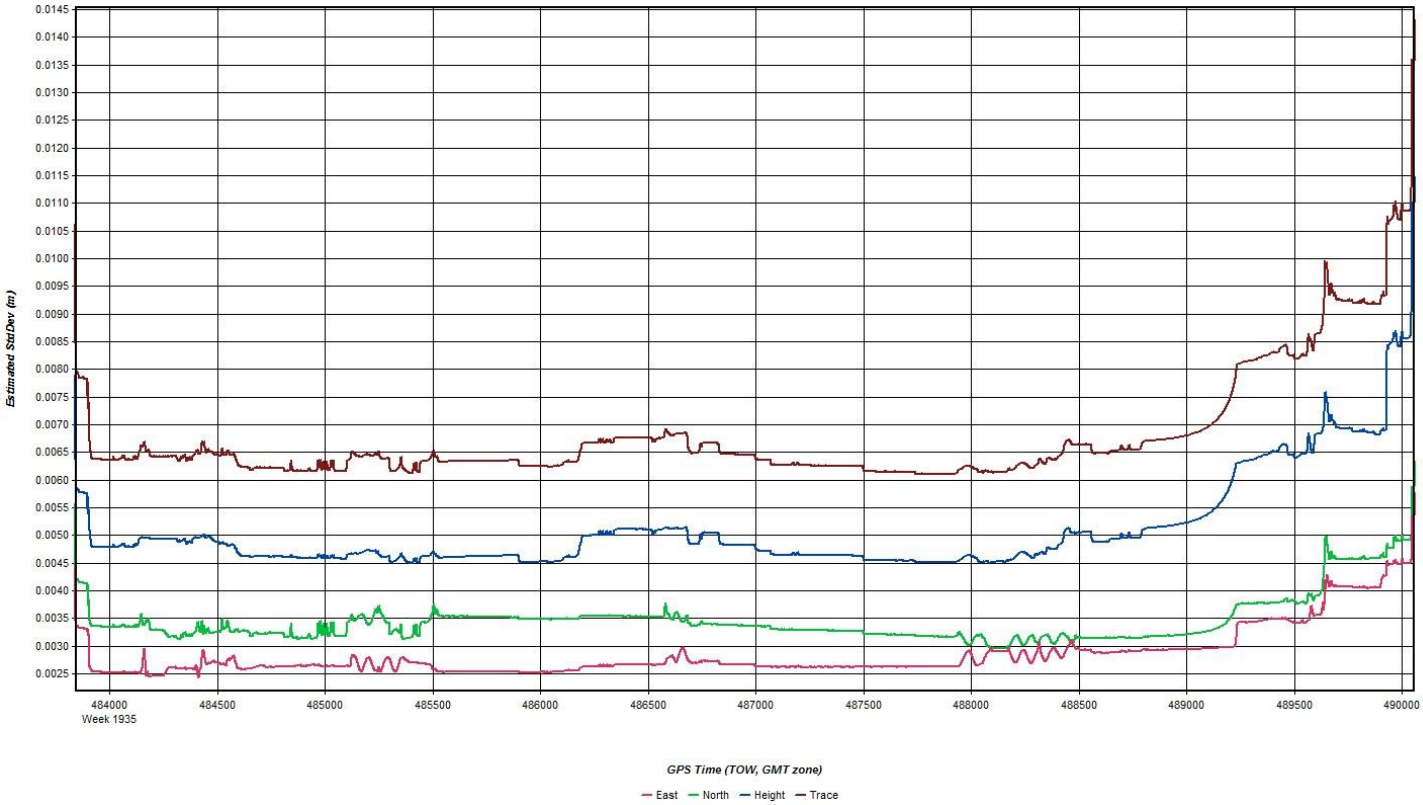


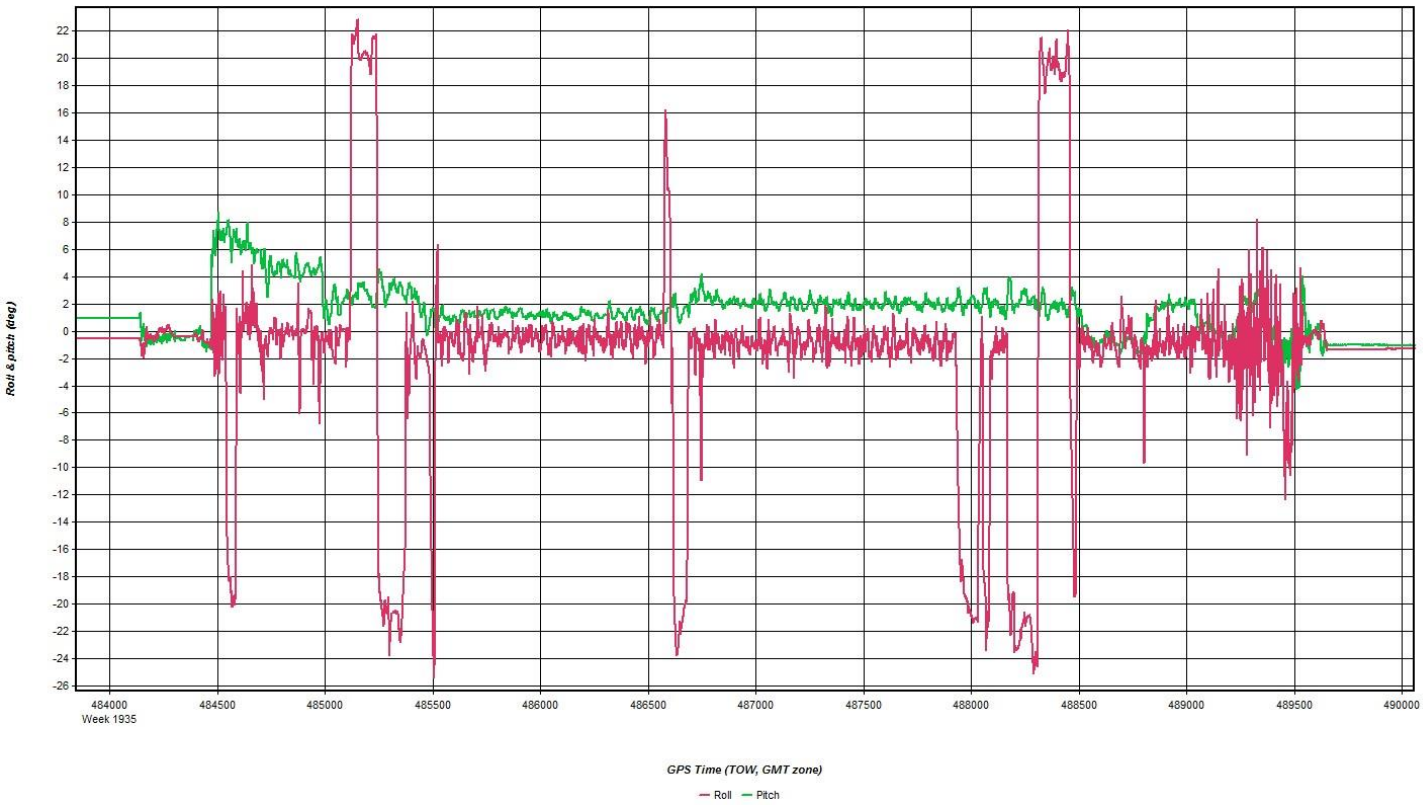

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

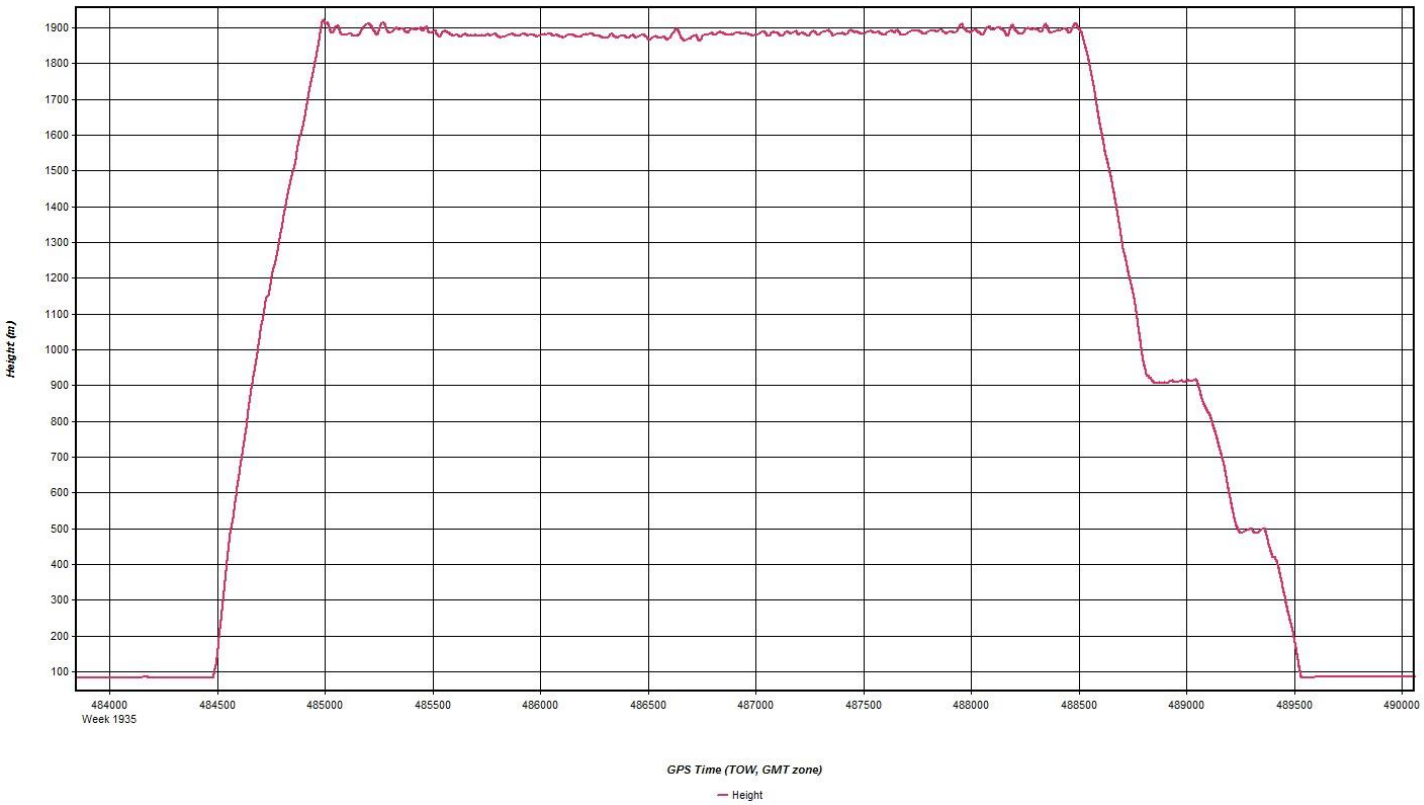

0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
Separation (m)
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
East
North
Up

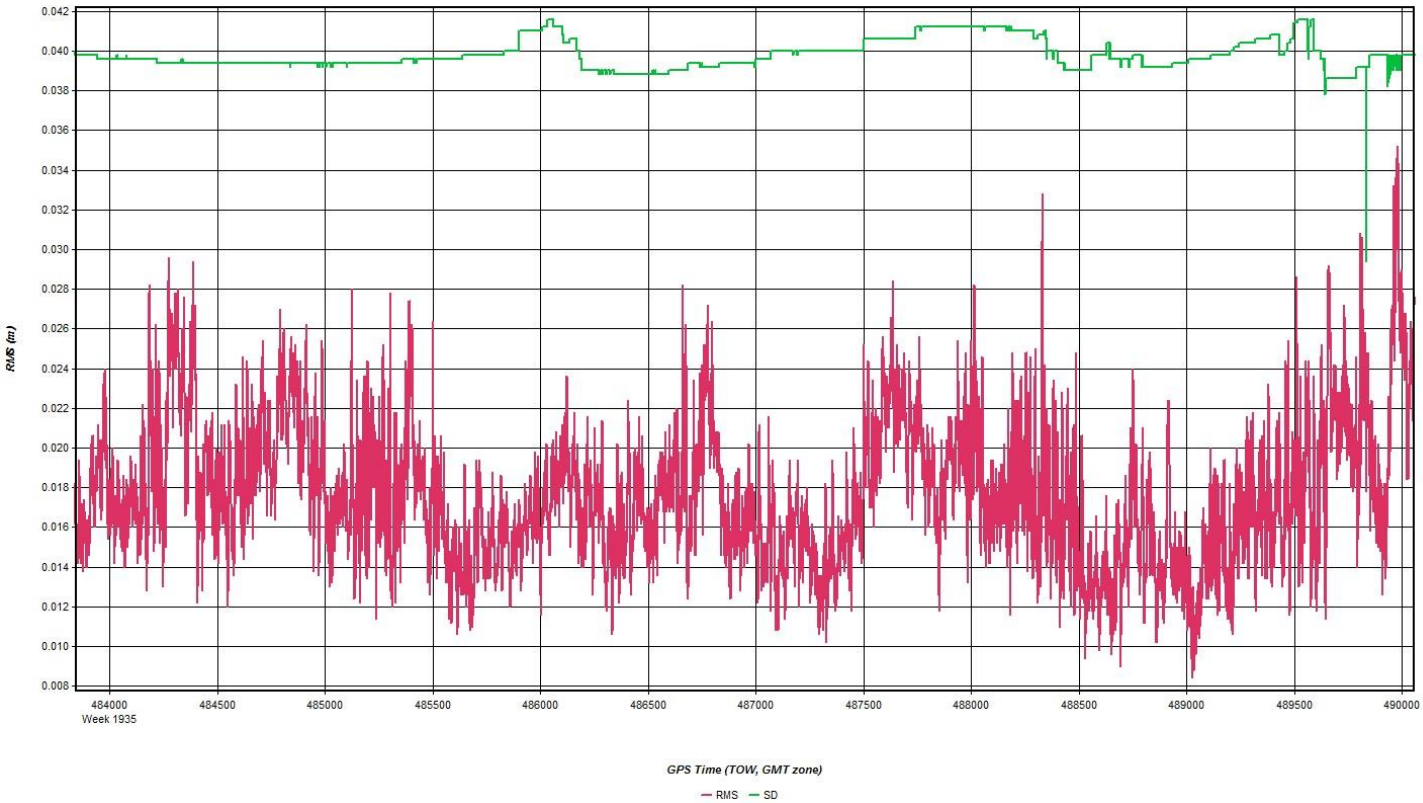

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

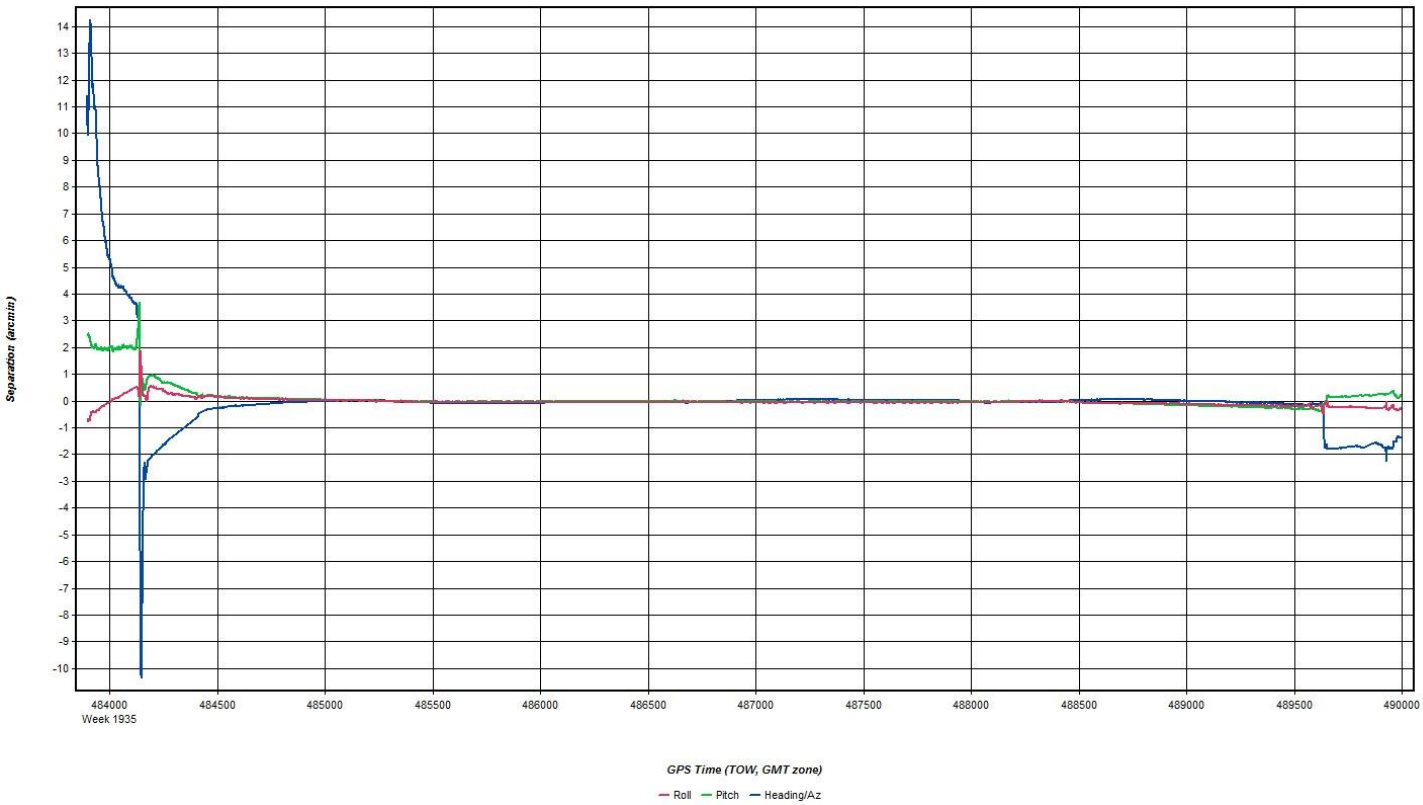

PDOP
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
PDOP

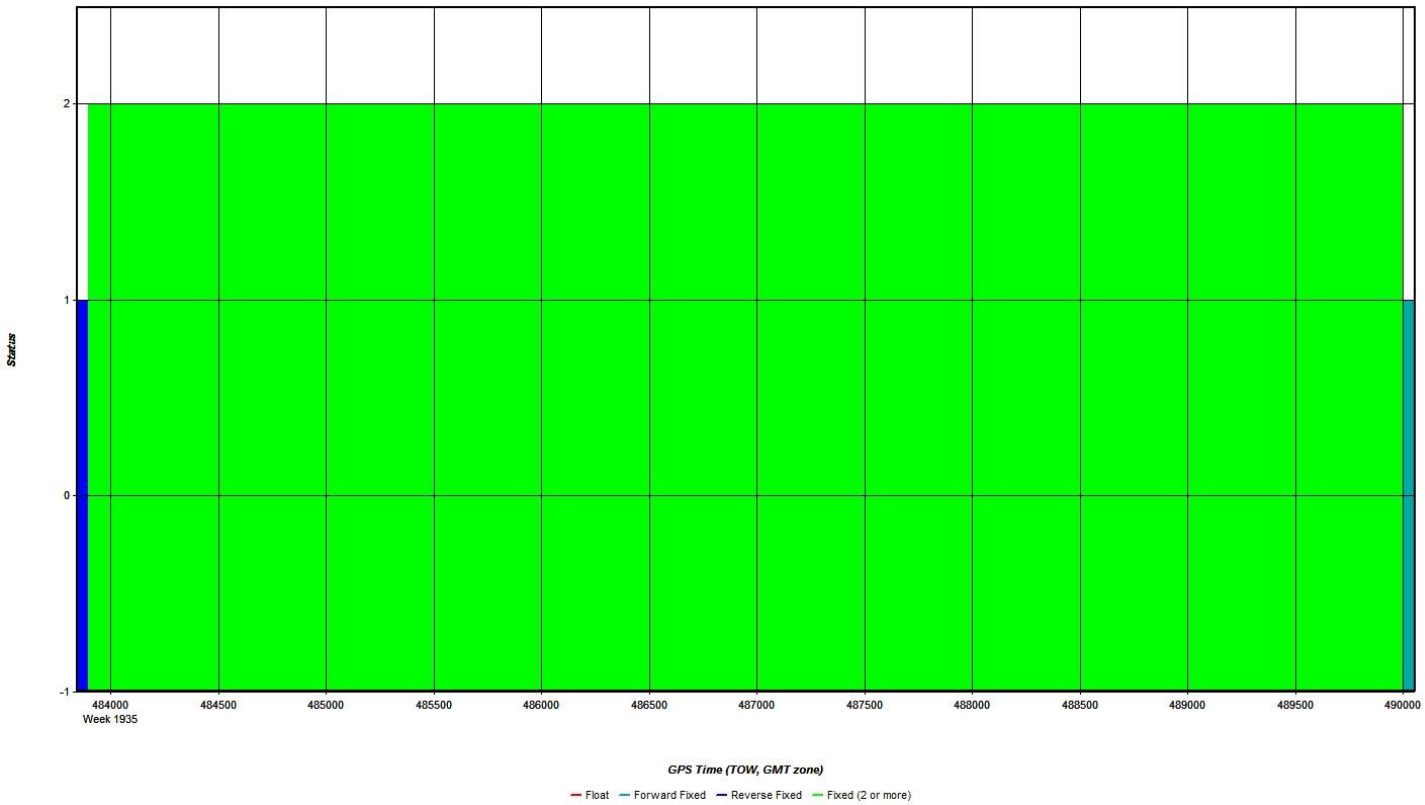

Estimated StdDev (m)
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

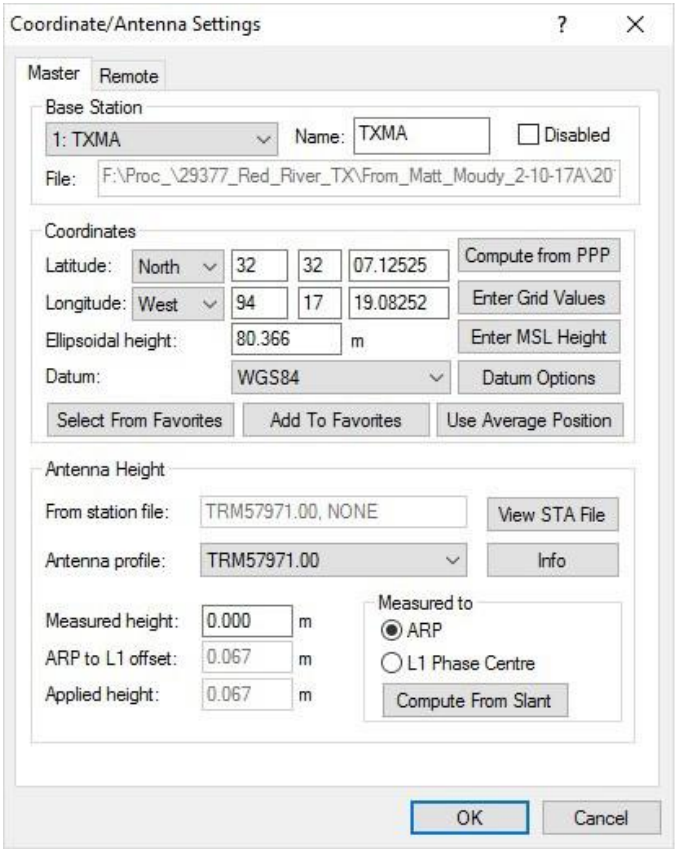

Roll & pitch (deg)
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
Roll
Pitch

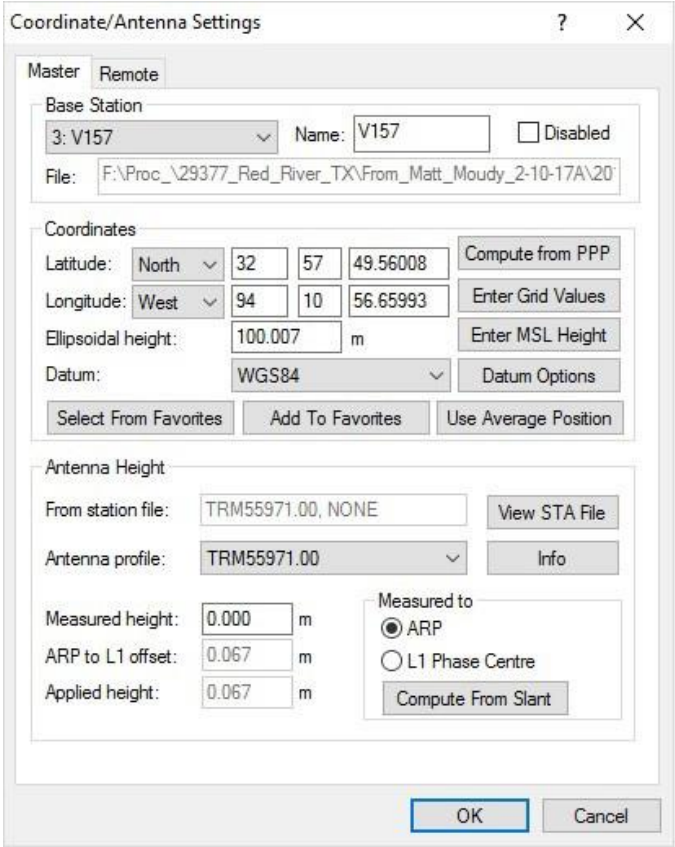

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
Height

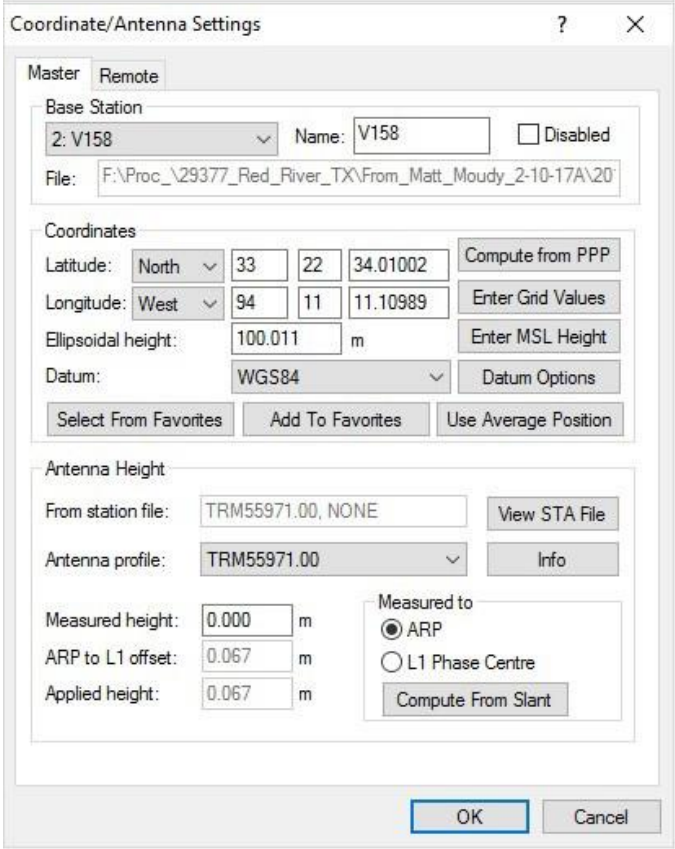

0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
RMS (m)
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
484000
Week 1935
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name:
TXMA
Disabled
File:
F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-10-17A\20
Coordinates
Latitude:
North
32
32
07.12525
Compute from PPP
Longitude:
West
94
17
19.08252
Enter Grid Values
Ellipsoidal height:
80.366
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: V157
Name: V157
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-10-17A\20
Coordinates
Latitude: North 32 57 49.56008
Longitude: West 94 10 56.65993
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


Coordinate/Antenna Settings
Master
Remote
Base Station
2: V158
Name: V158
Disabled
File: F:\Proc_\29377_Red_River_TX\From_Matt_Moudy_2-10-17A\20
Coordinates
Latitude: North 33 22 34.01002
Longitude: West 94 11 11.10989
Ellipsoidal height: 100.011 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: 2-10-17

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

Project: RED RIVER, TX FEMA HALL MILLER Proj #: 29377 Flight Mgmt File: REDRIVER_2PISPASM_ALS70SN3 20176210_142128

Aircraft: N912TB Begin Hobbs: 4362.5 End Hobbs: 4363.9 Total: 1.4 Pilot: RADTKE Co-Pilot: – Tech: MOUDY

Dep Apt: CGC Dep Time (Lcl): 0833 (Z): 1433 Arr Apt: CGC Arr Time (Local): 0958 (Z): 1558 Tot Time Aloft: 1:25

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:

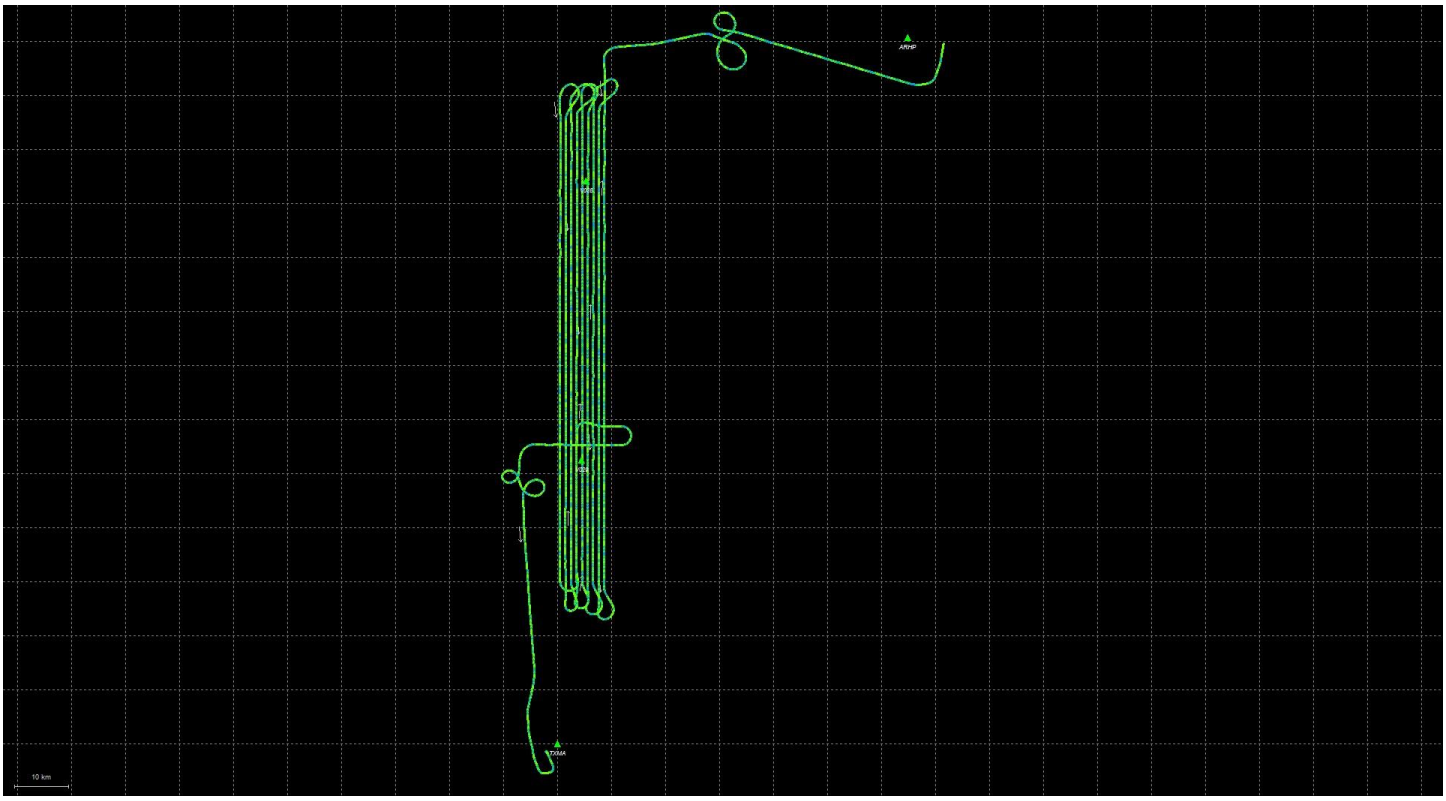
LiDAR										
Type	ALS70	Serial #	7178	Alt AGL	± 5700'	Alt AMSL	± 6200'	Avg Terr Ht	± 500'	Max Gdspd 150 KTS	Avg Pt Spacing 0.59M
FOV	40%	Scan Freq	53 Hz	MpIA (Y) / N		Pulses in Air	2	Pulse Rate	295 KHz	Power 100%	PPSM 2.83

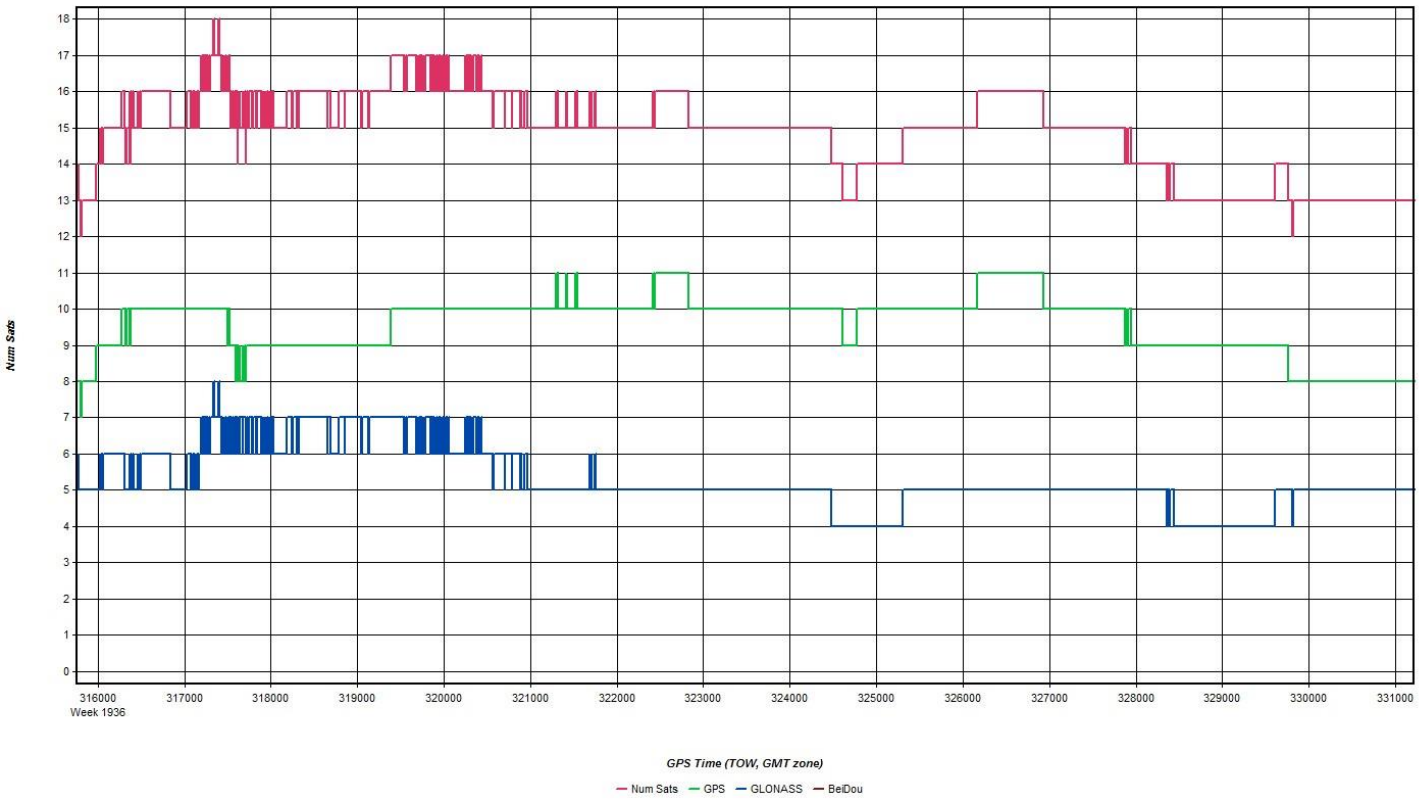
Beg GB	End GB	Tot GB	Storage Name/#
390	405	15	7178 5504

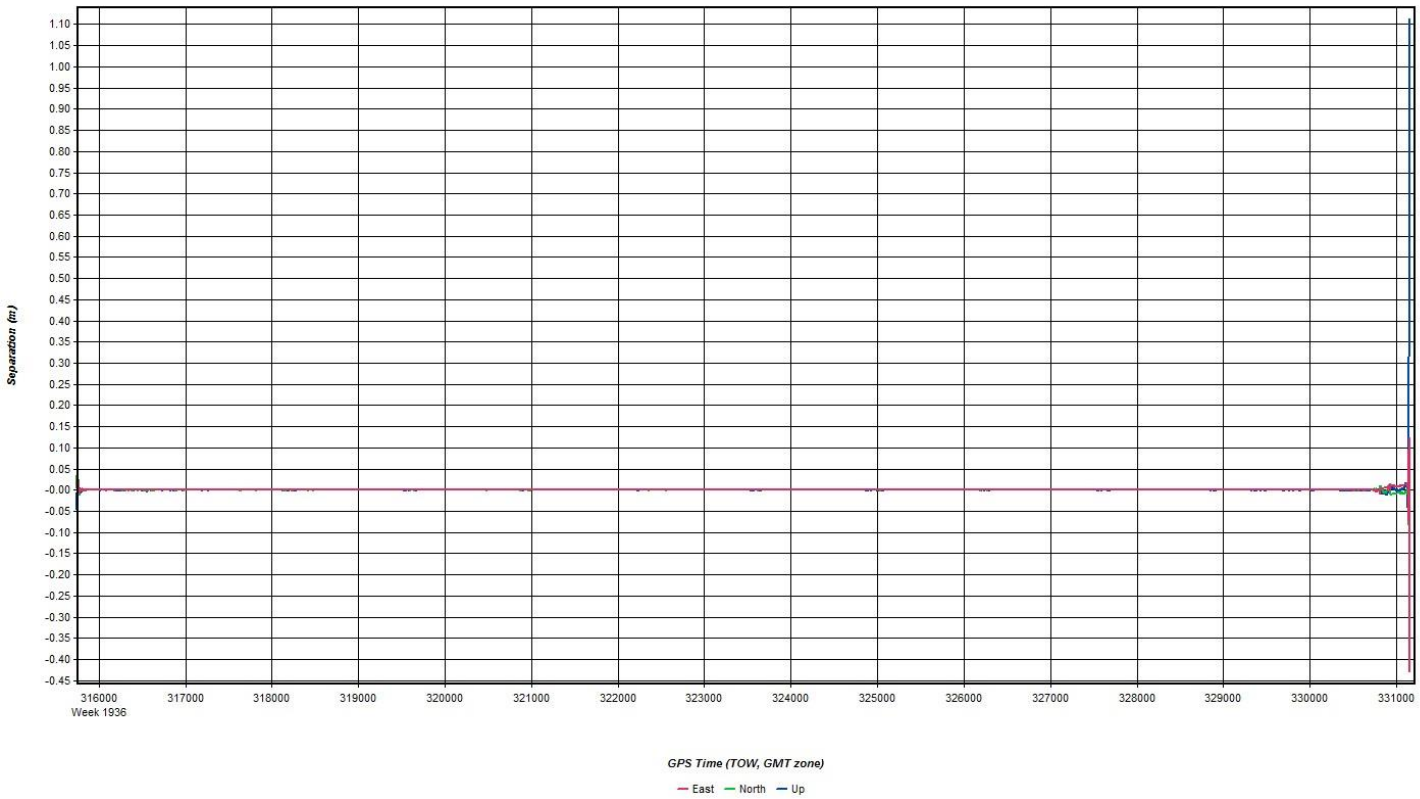
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0, –, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
448	360	1451	1509	165	1.2/18	6210	7	0	
447	180	1512	1531	136	1.1/19	6190	8	0	
TIE	270	1534	1535	147	1.3/17	6230	5	0	- MANUAL TIE LINE

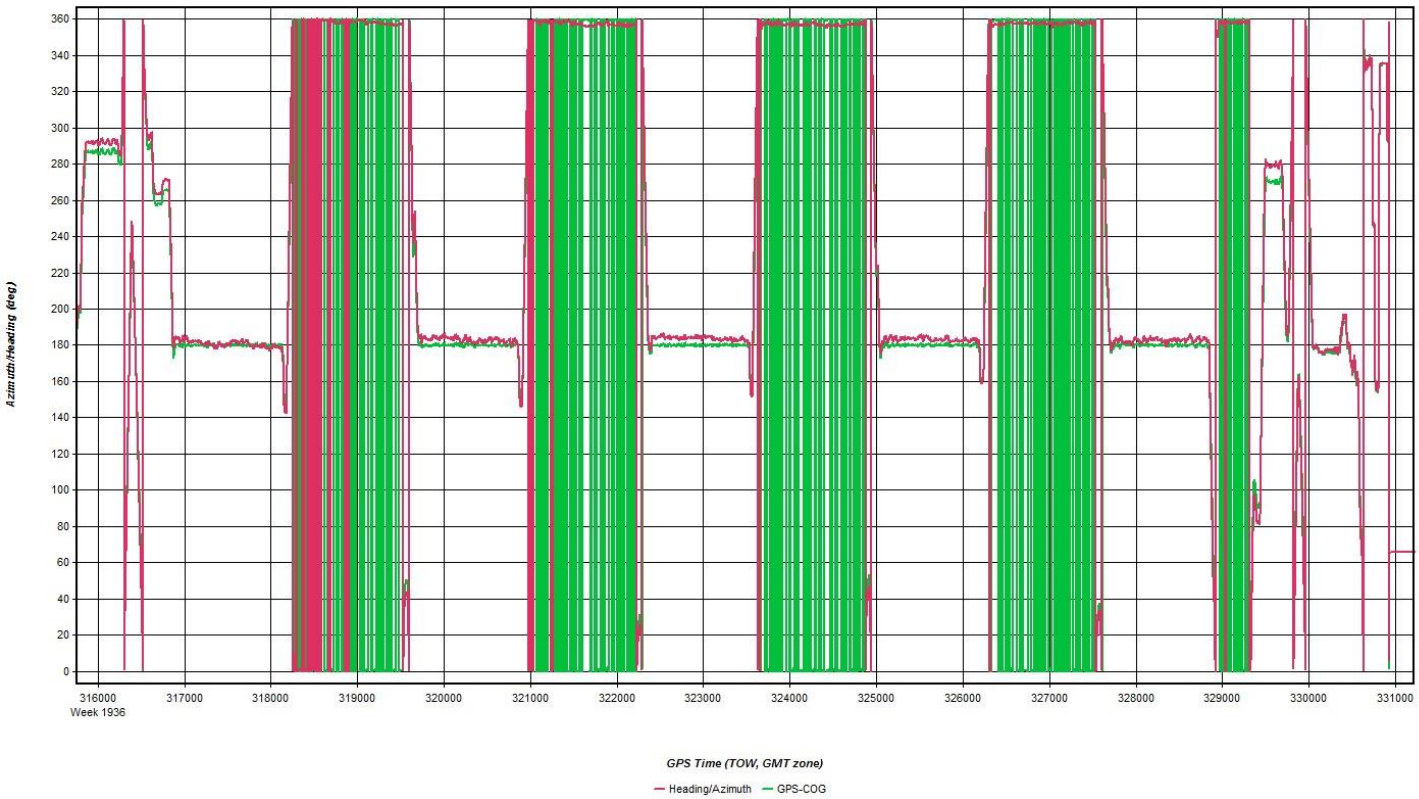
Total Proj Lines: Lines Flown: 2 Lines Remain: OnLine Time: 0.8 Mob Time: 0.6 Notes:

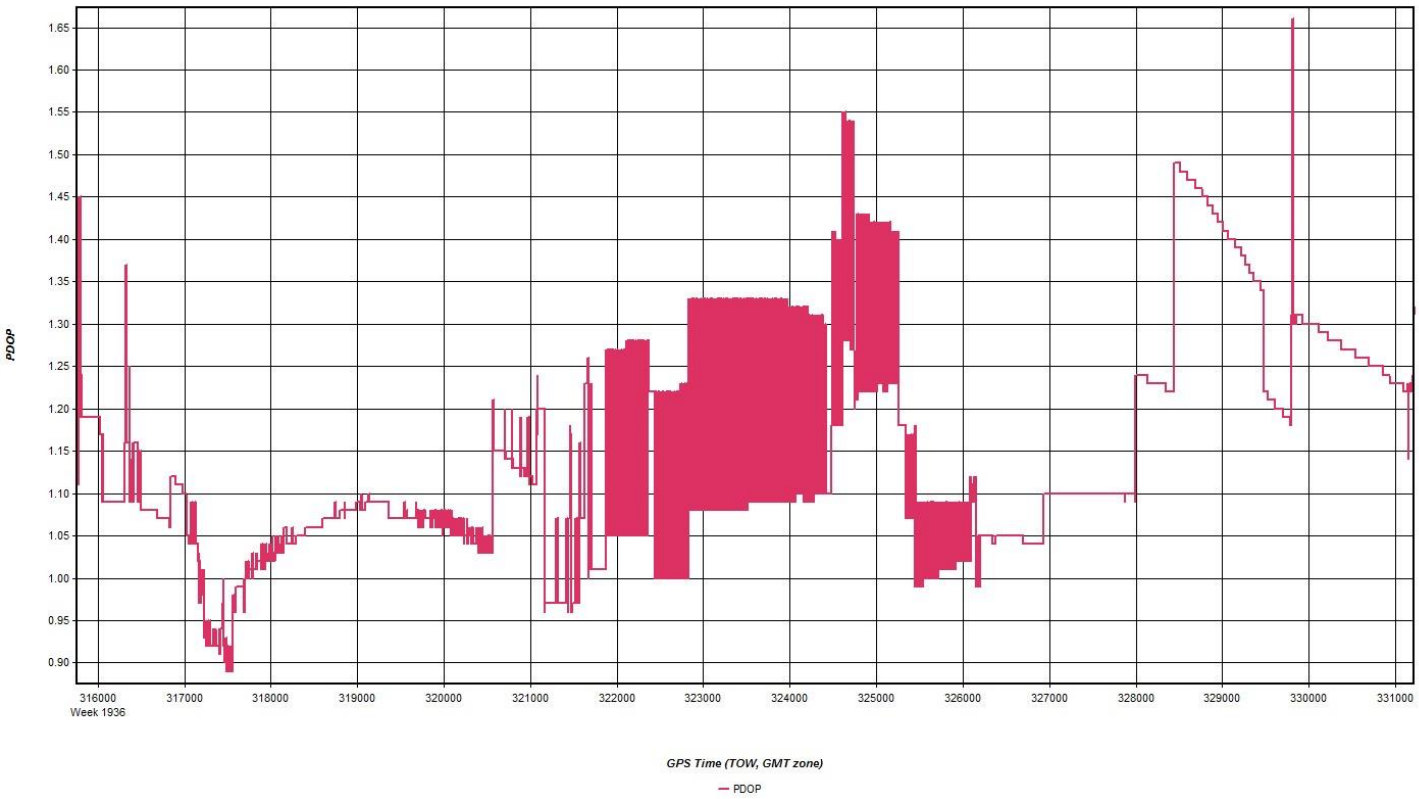
Feb 15, 2017-A (N246MP, SN8227)

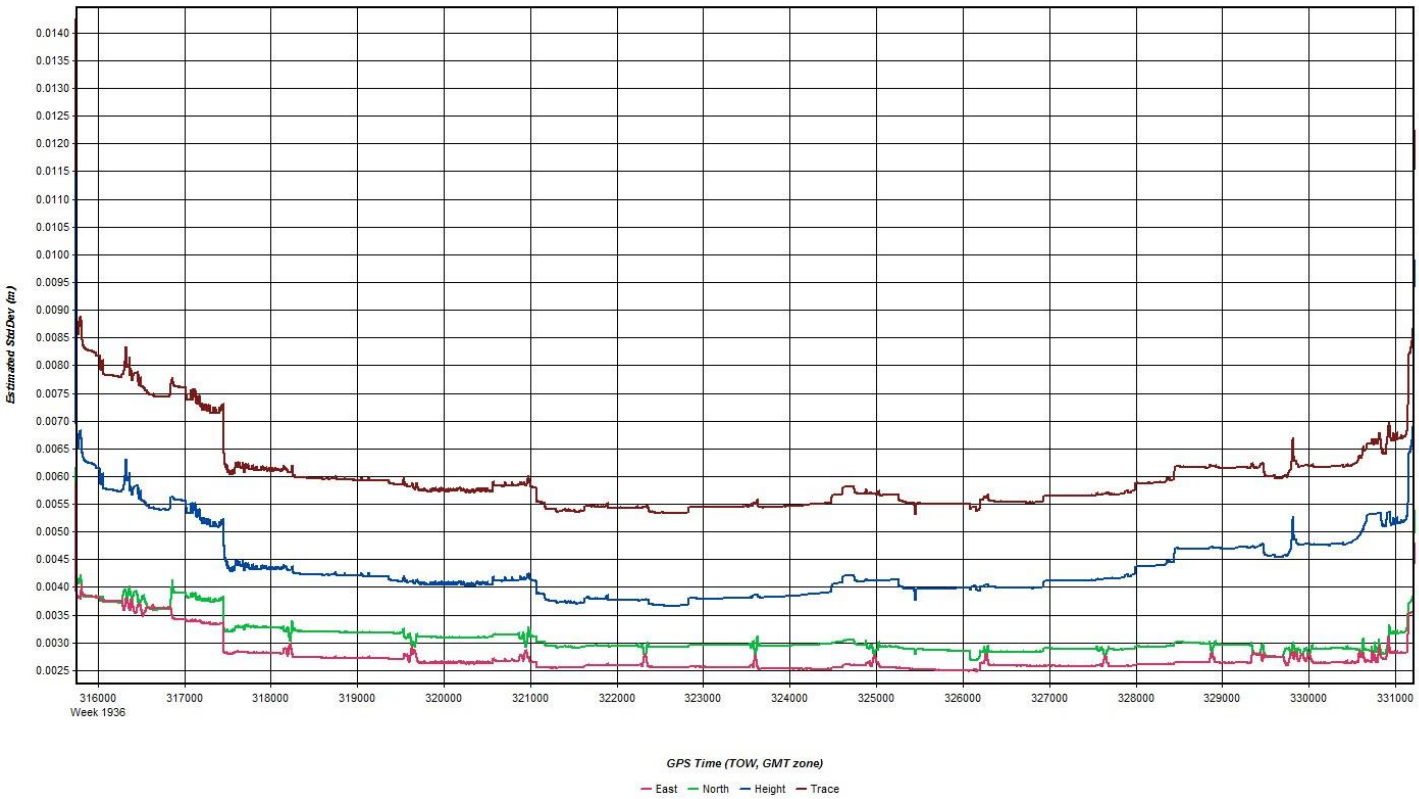


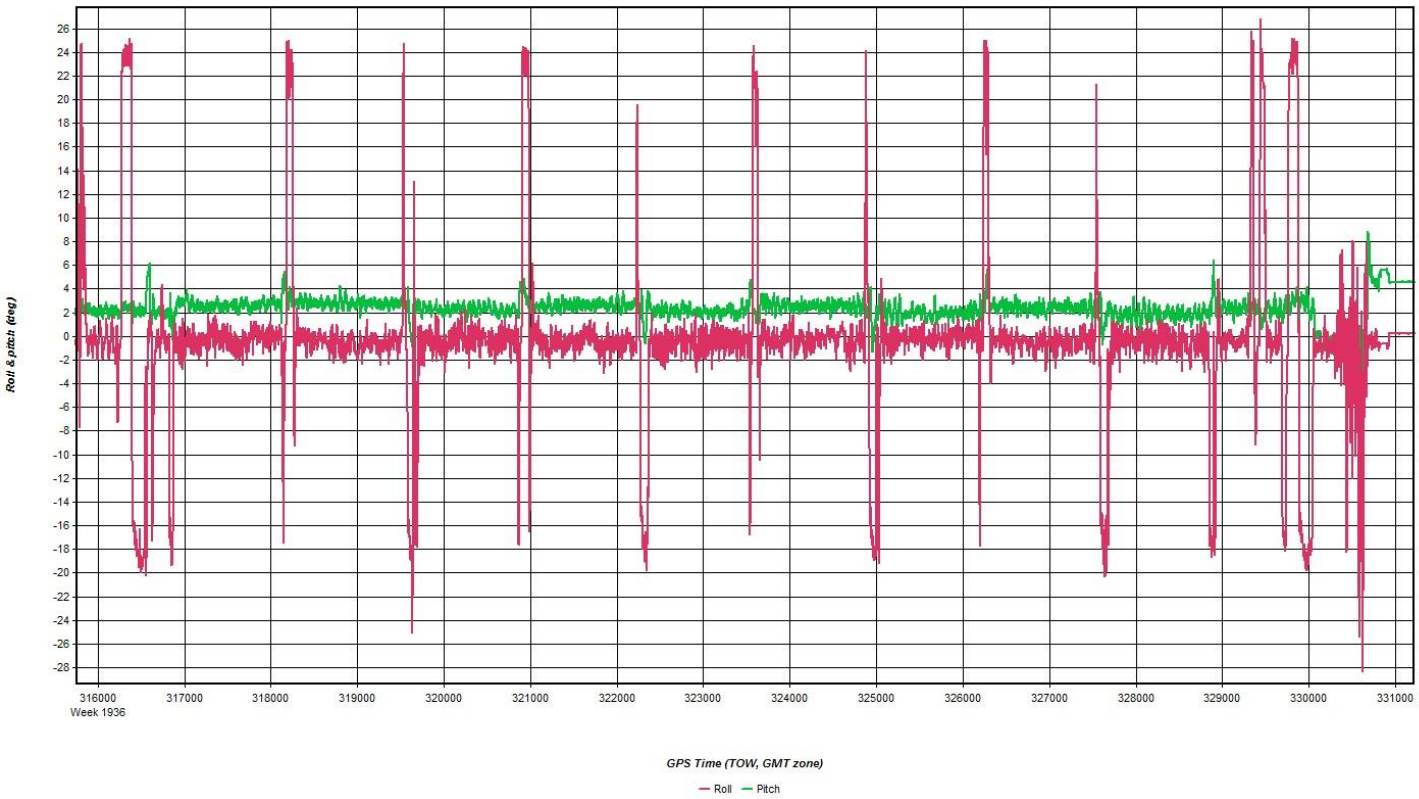

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

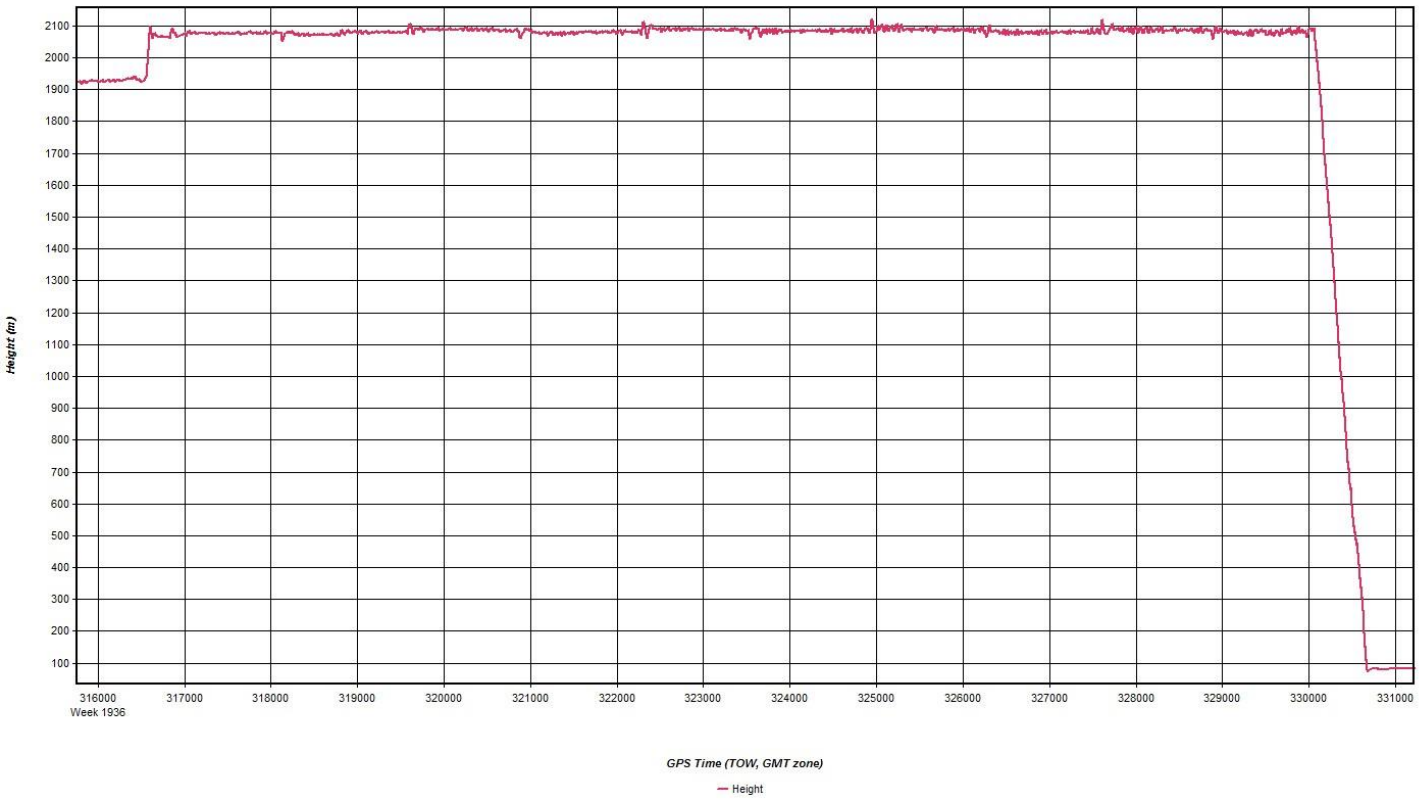

Separation (m)
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
East
North
Up

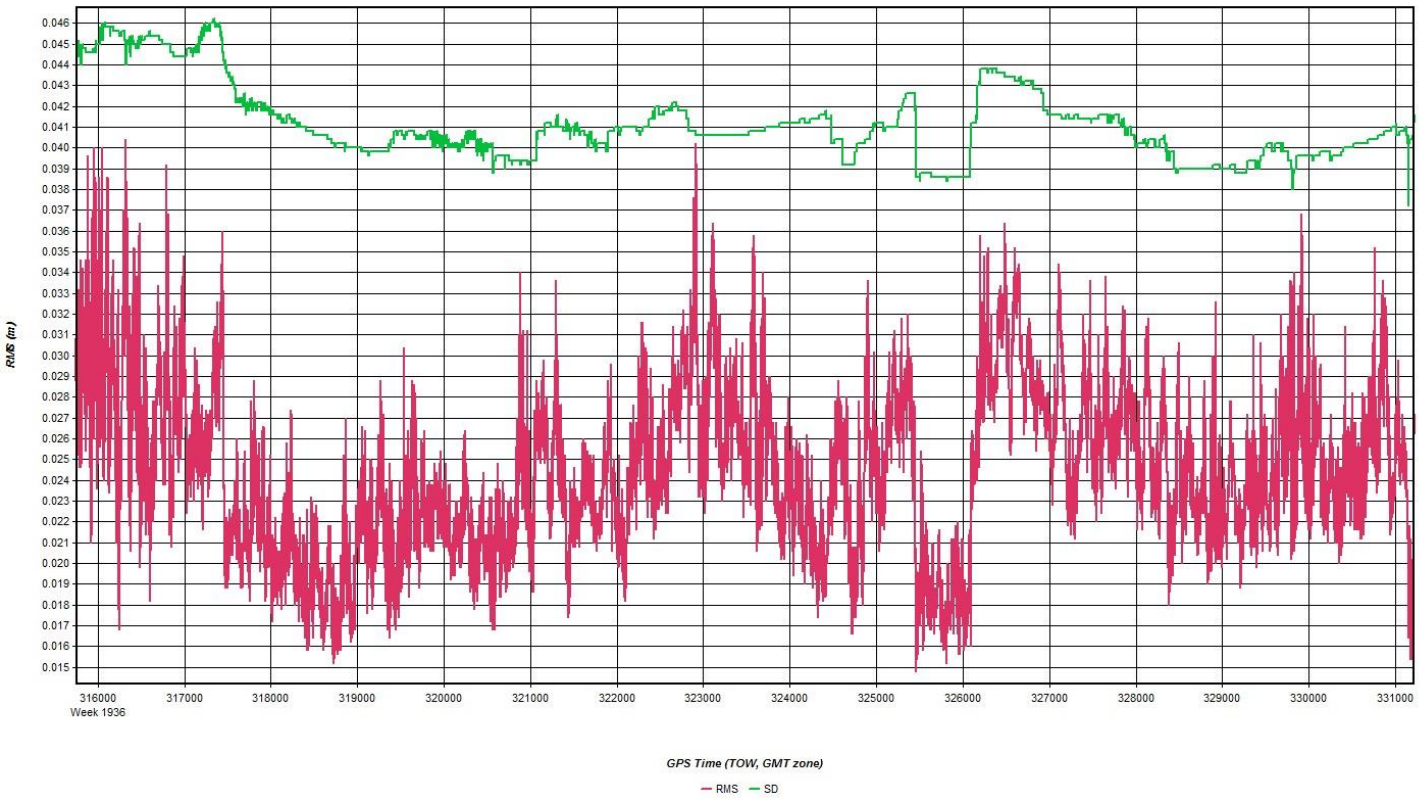

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

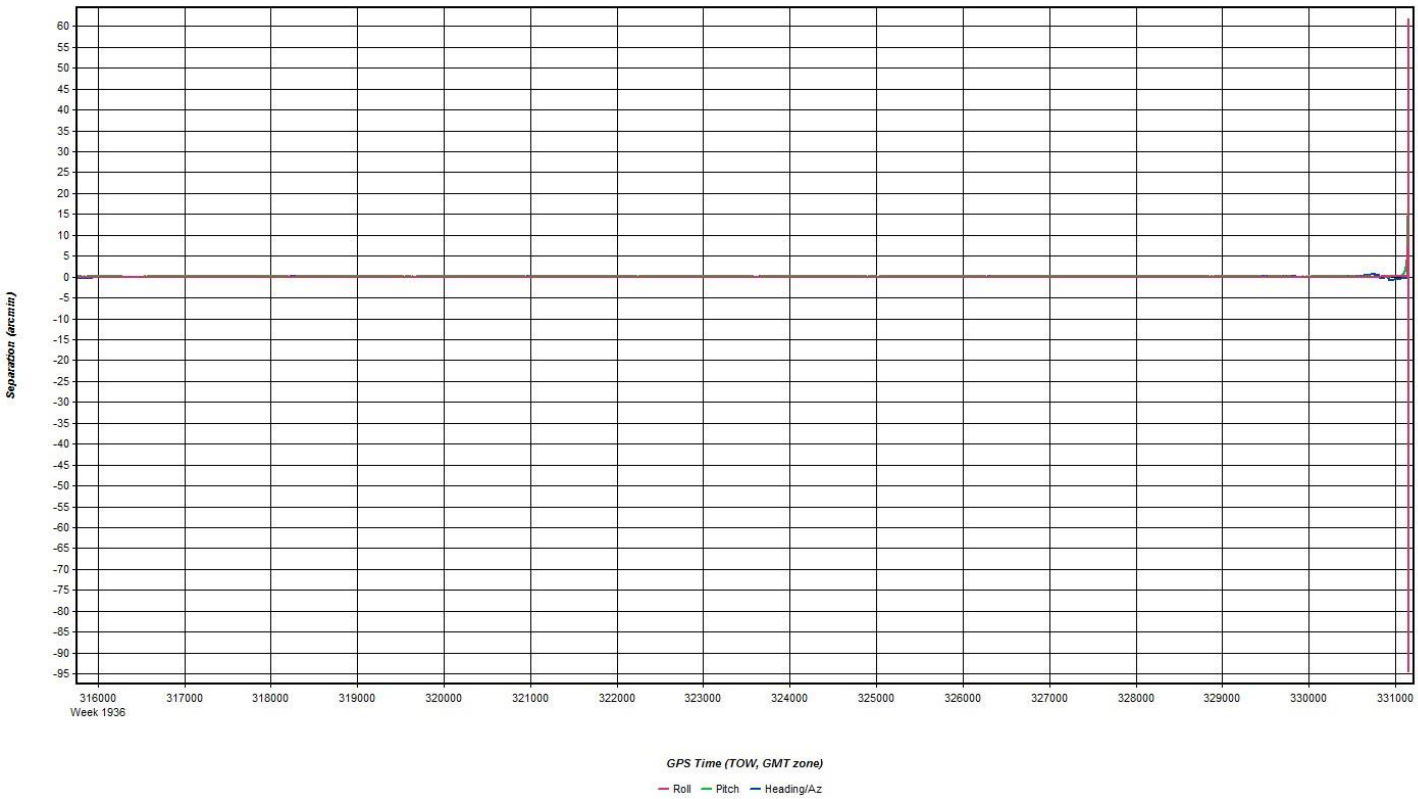

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
PDOP

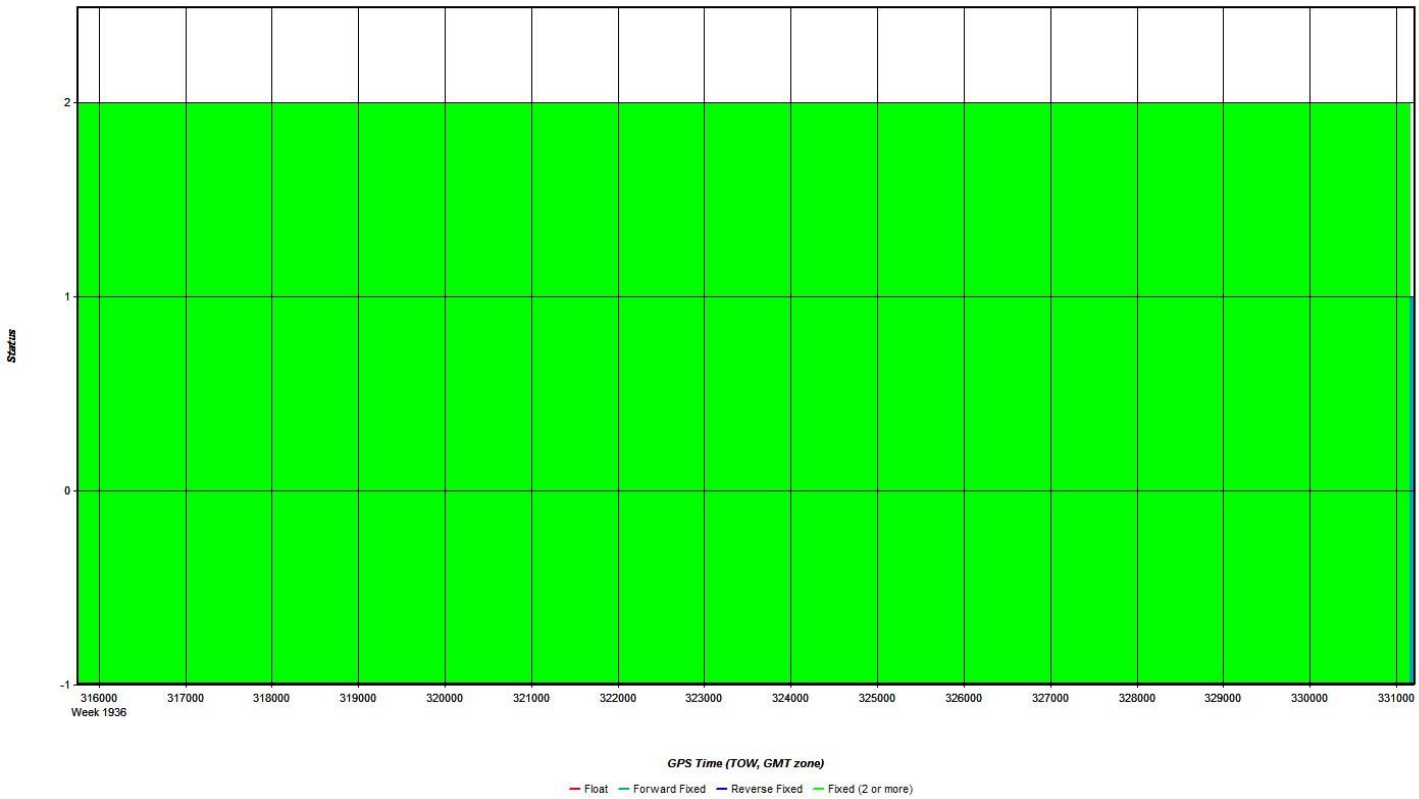

Estimated StdDev (m)
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

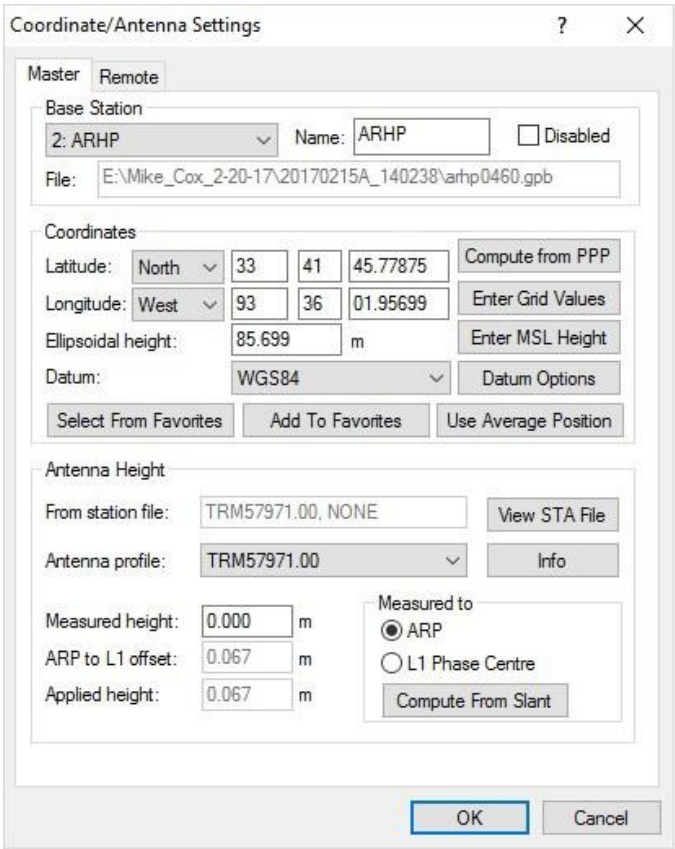

Roll & pitch (deg)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
Roll
Pitch

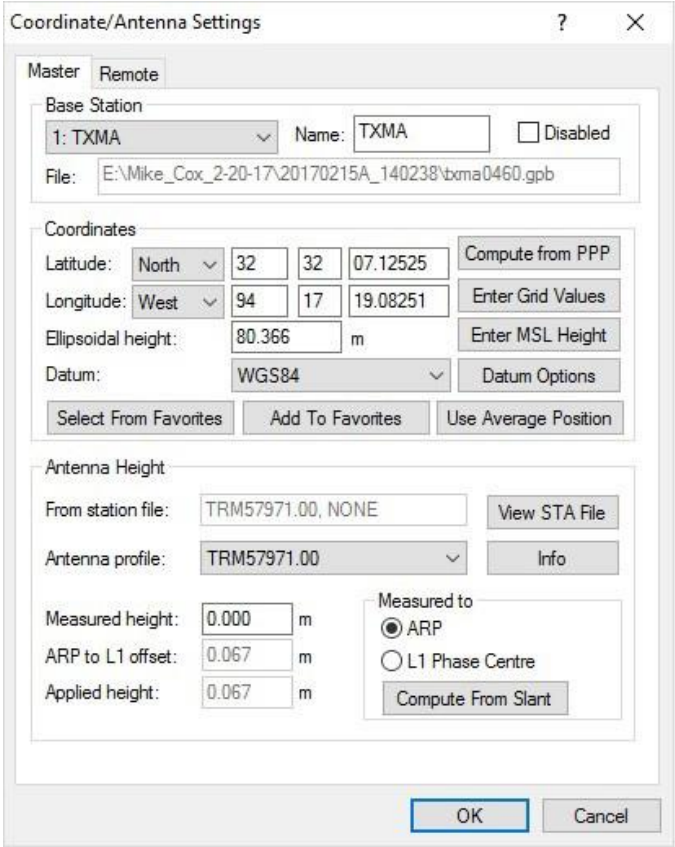

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
Height

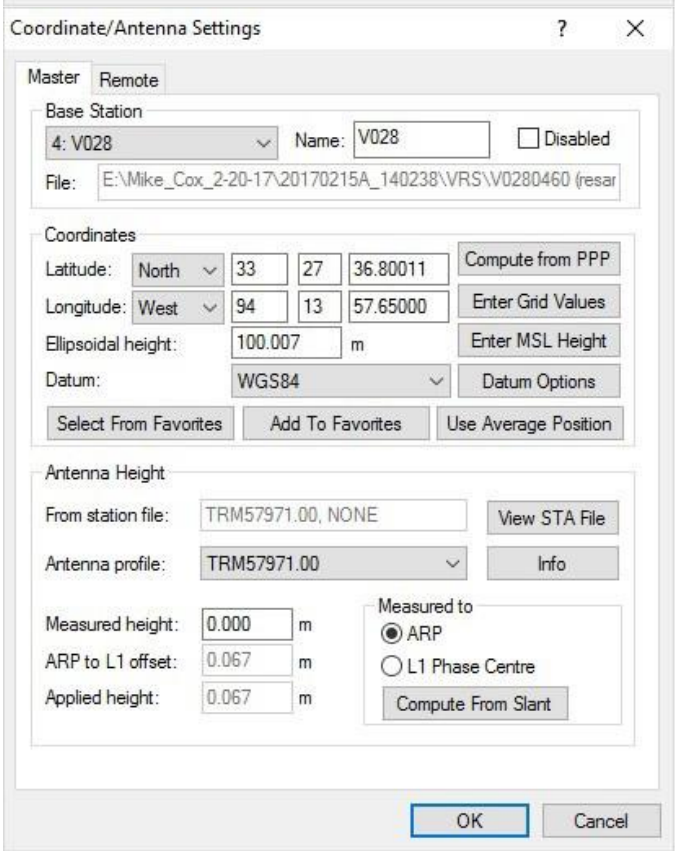

RMS (m)
0.046
0.045
0.044
0.043
0.042
0.041
0.040
0.039
0.038
0.037
0.036
0.035
0.034
0.033
0.032
0.031
0.030
0.029
0.028
0.027
0.026
0.025
0.024
0.023
0.022
0.021
0.020
0.019
0.018
0.017
0.016
0.015
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
RMS
SD

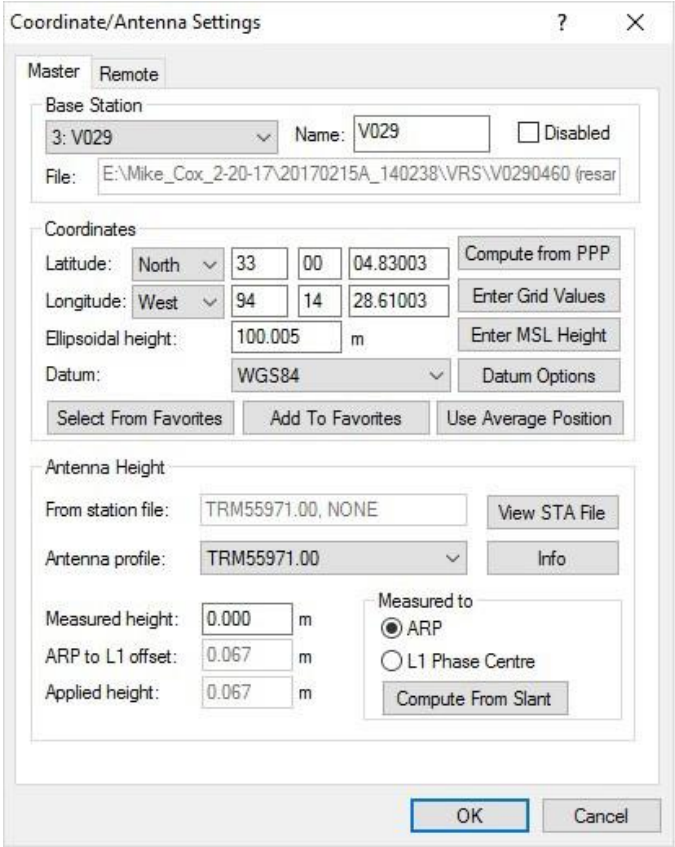

Separation (arcmin)
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90
-95
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
316000
Week 1936
317000
318000
319000
320000
321000
322000
323000
324000
325000
326000
327000
328000
329000
330000
331000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
2: ARHP
Name:
ARHP
Disabled
File:
E:\Mike_Cox_2-20-17\20170215A_140238\arhp0460.gpb
Coordinates
Latitude:
North
33
41
45.77875
Compute from PPP
Longitude:
West
93
36
01.95699
Enter Grid Values
Ellipsoidal height:
85.699
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: TXMA
Name: TXMA
Disabled
File: E:\Mike_Cox_2-20-17\20170215A_140238\txma0460.gpb
Coordinates
Latitude: North 32 32 07.12525
Longitude: West 94 17 19.08251
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
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: V028
Name: V028
Disabled
File: E:\Mike_Cox_2-20-17\20170215A_140238\VRS\V0280460 (resar
Coordinates
Latitude: North 33 27 36.80011
Longitude: West 94 13 57.65000
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
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: V029
Name:
V029
Disabled
File:
E:\Mike_Cox_2-20-17\20170215A_140238\VRS\V0290460 (resar
Coordinates
Latitude:
North
33
00
04.83003
Compute from PPP
Longitude:
West
94
14
28.61003
Enter Grid Values
Ellipsoidal height:
100.005
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

Flight Log

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 3-15-2017
Lift: (A) B C D E Pg __ of 1

Project: TX FEMA Proj #: 29377 Flight Mgmt File: 29377-518227-Hall-Miller

Aircraft: N246MP Begin Hobbs: 1314.5 End Hobbs: 1320.1 Total: Pilot: Jones Co-Pilot: Tech: Cox

Dep Apt: BBG Dep Time (Lcl): 8:15 (Z): 14:15 Arr Apt: ASL Arr Time (Local): 19:50 (Z): 1:50 Tot Time Aloft: 5.6

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)

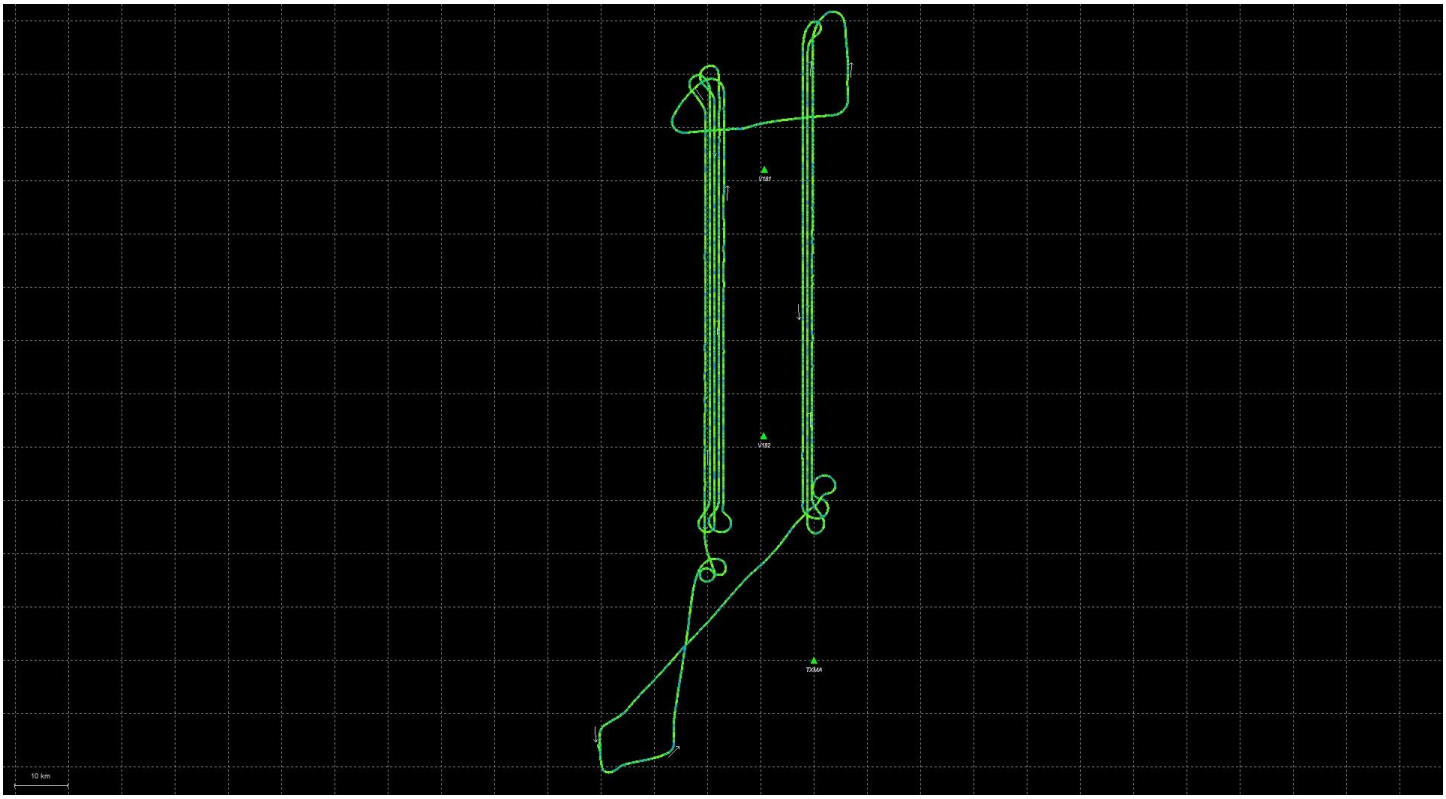
Gd Temp beg: 1 °c End: 15 °c OAT beg: °c End: °c Altimeter begin: 3007 end: 3009

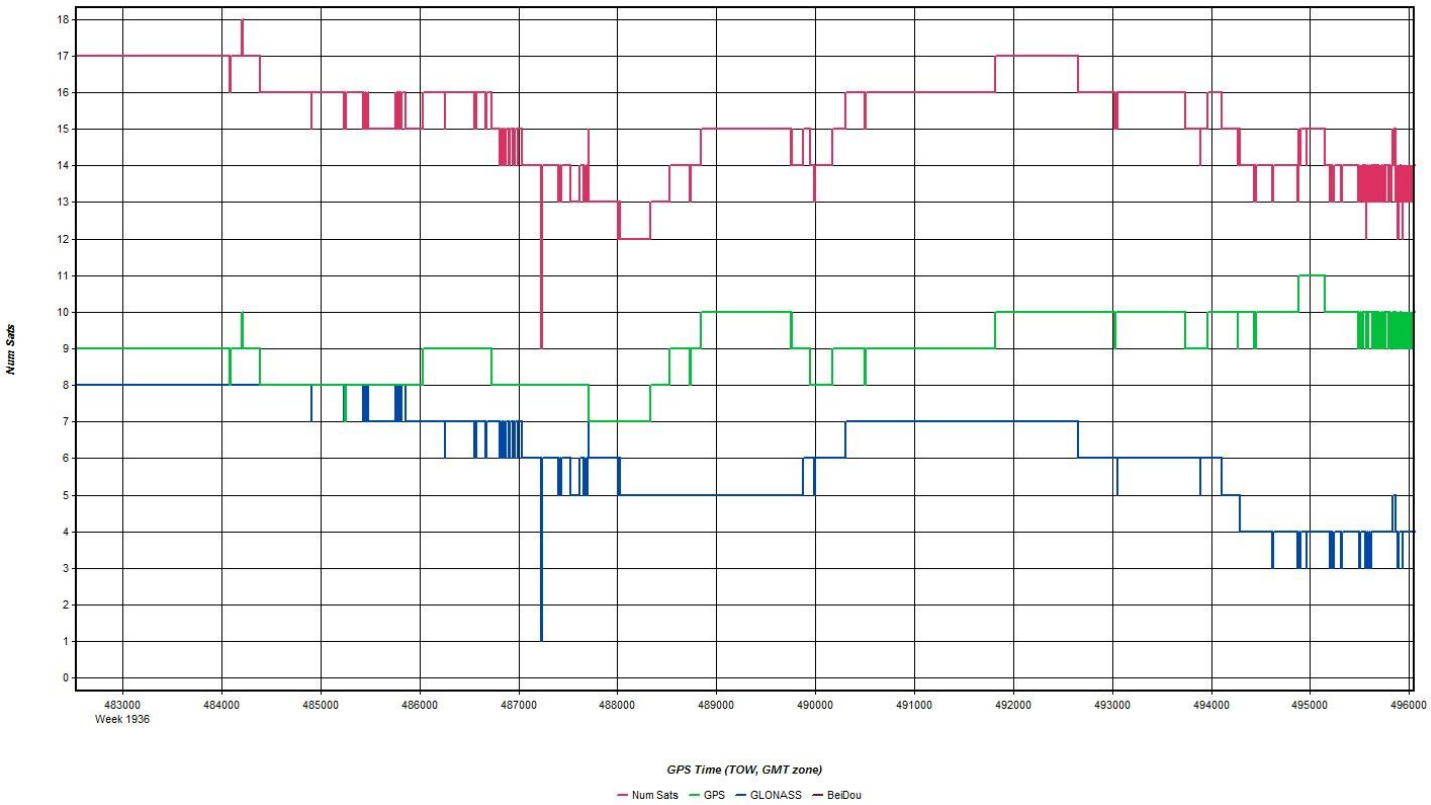
LIDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/#
	ALS80	8227		6800				452	346	106	2
	FOV 40	Scan Freq 52	MpIA Y / (N)	Pulses In Air 3	Pulse Rate 396.4	Power 100%	PPSM				

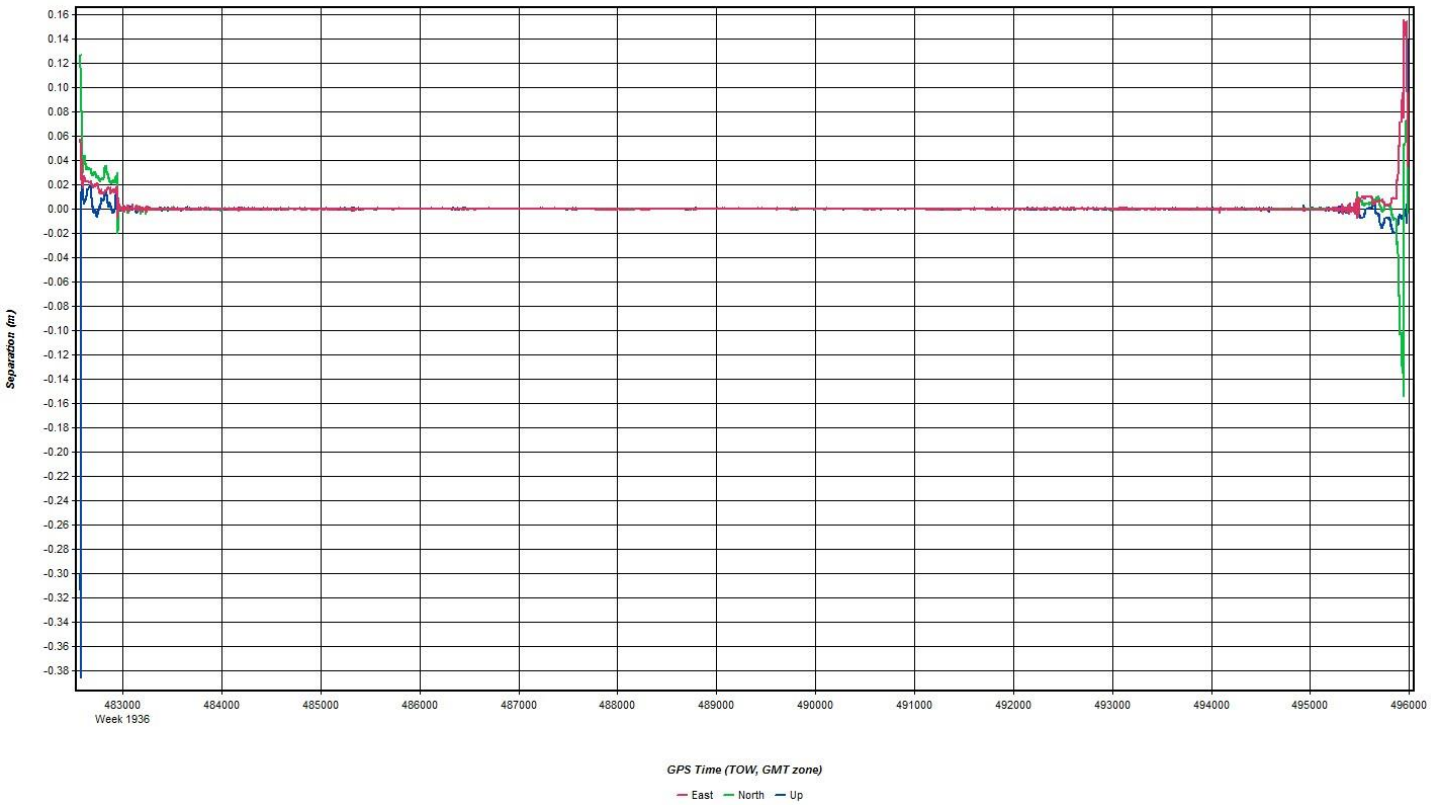
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0, -, +)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
440	178	1602	1621	145	1.0/20	6795		0	Less Than 10% Drops Static Start 14:05-14:10 Fig 8's 15:52
439	358	1625	1655	136	1.1/17	6806		0	
438	178	1648	1707	146	1.3/18	6850		0	
437	358	1710	1730	140	1.1/19	6812		1	
436	178	1733	1751	144	1.1/19	6864		0	
435	358	1754	1813	136	1.4/18	6853		0	Cld 8.5 FSE
434	178	1817	1836	146	1.1/19	6887		0	
433	358	1839	1858	133	1.2/17	6831		0	
432	178	1902	1920	144	1.3/16	6834		0	
435	358	1923	1928	134	1.2/16	6830		0	Left FSE 4 to 15
1-8	269	1931	1934	154	1.4/15	6838		0	Tie line Unplanned
									Fig 8's 19:36
									Static Stop 19:53-1958

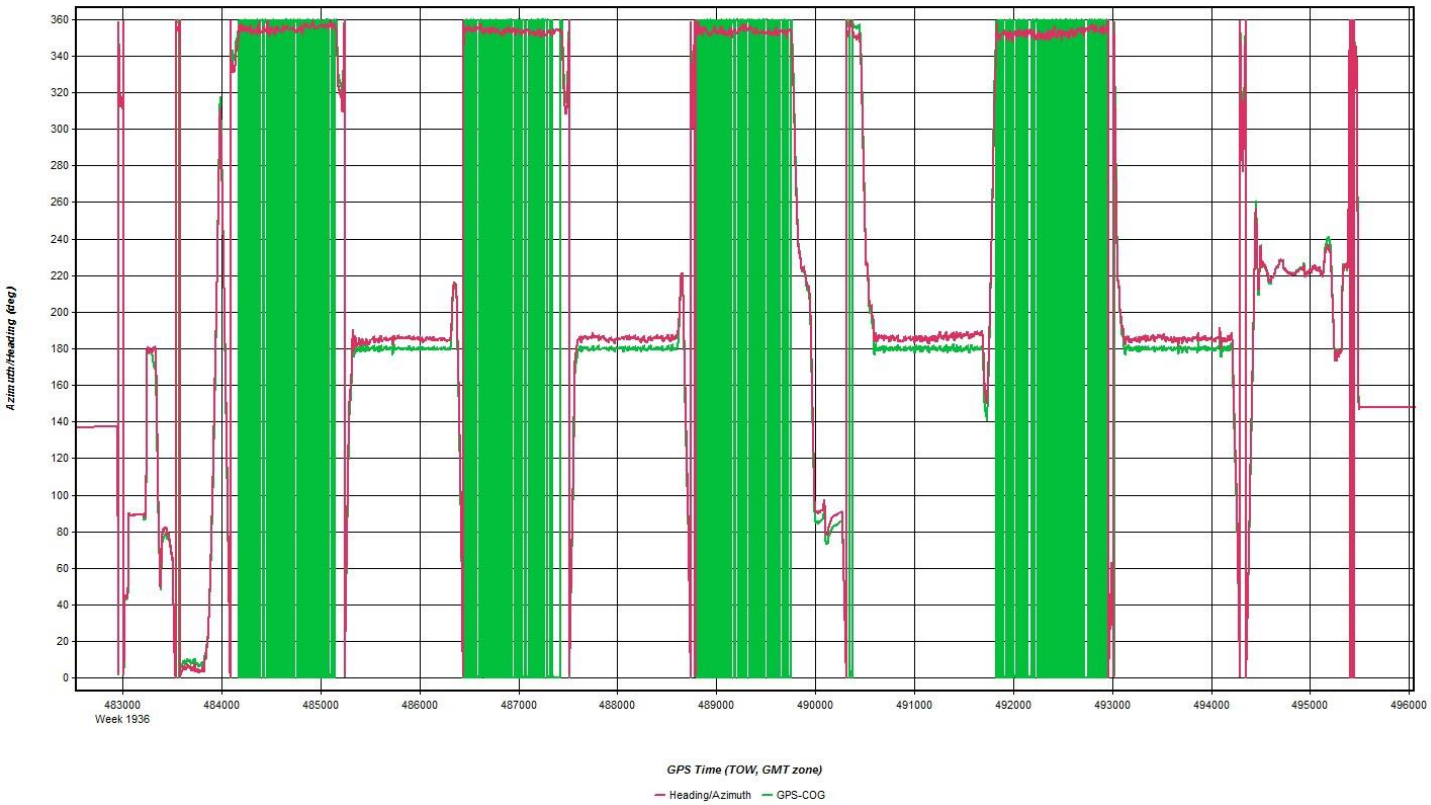
Total Proj Lines: 56 Lines Flown: 8 Lines Remain: 26 OnLine Time: 3.30 Mob Time: 2.6 Notes:

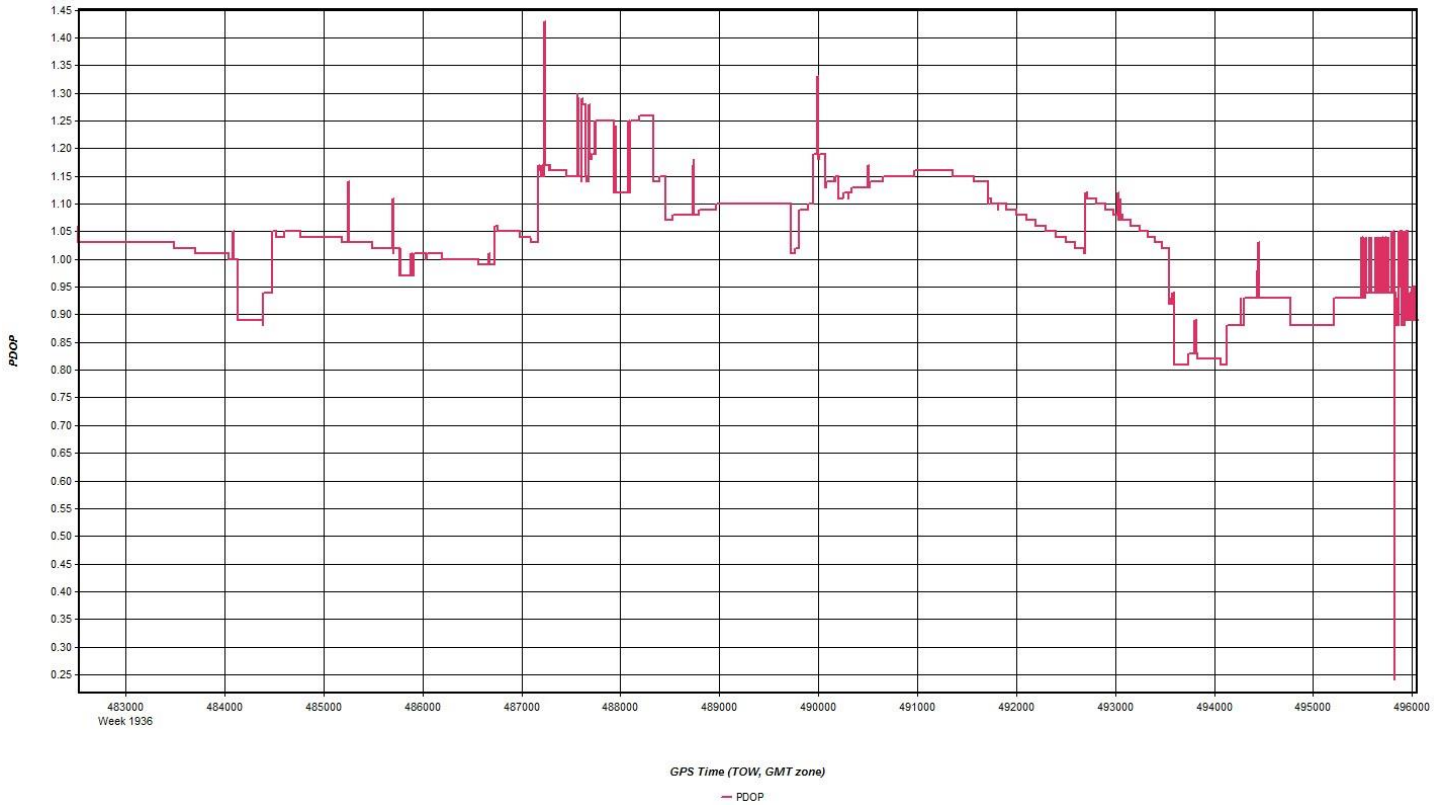
Feb 17, 2017-A (N73TM, SN7178)

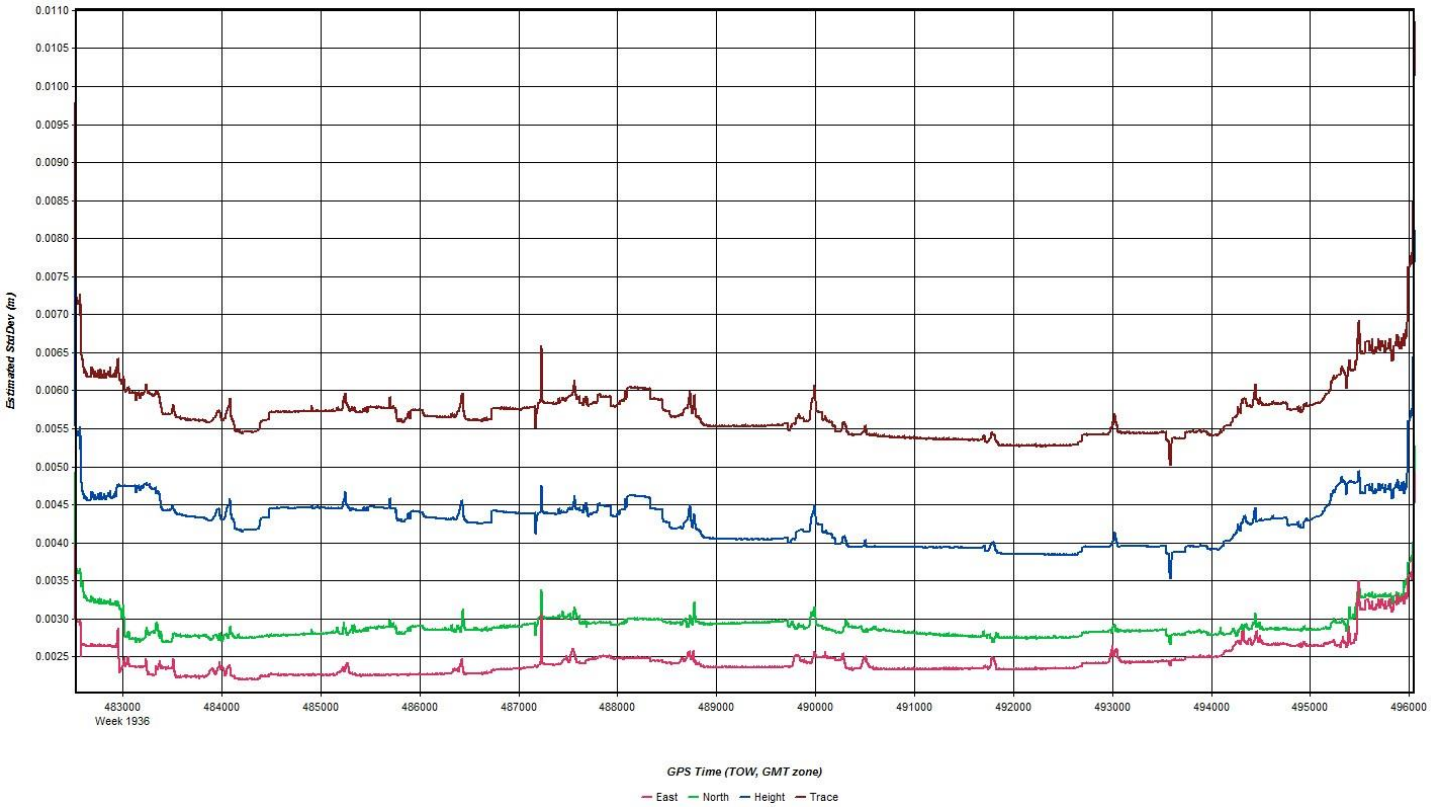


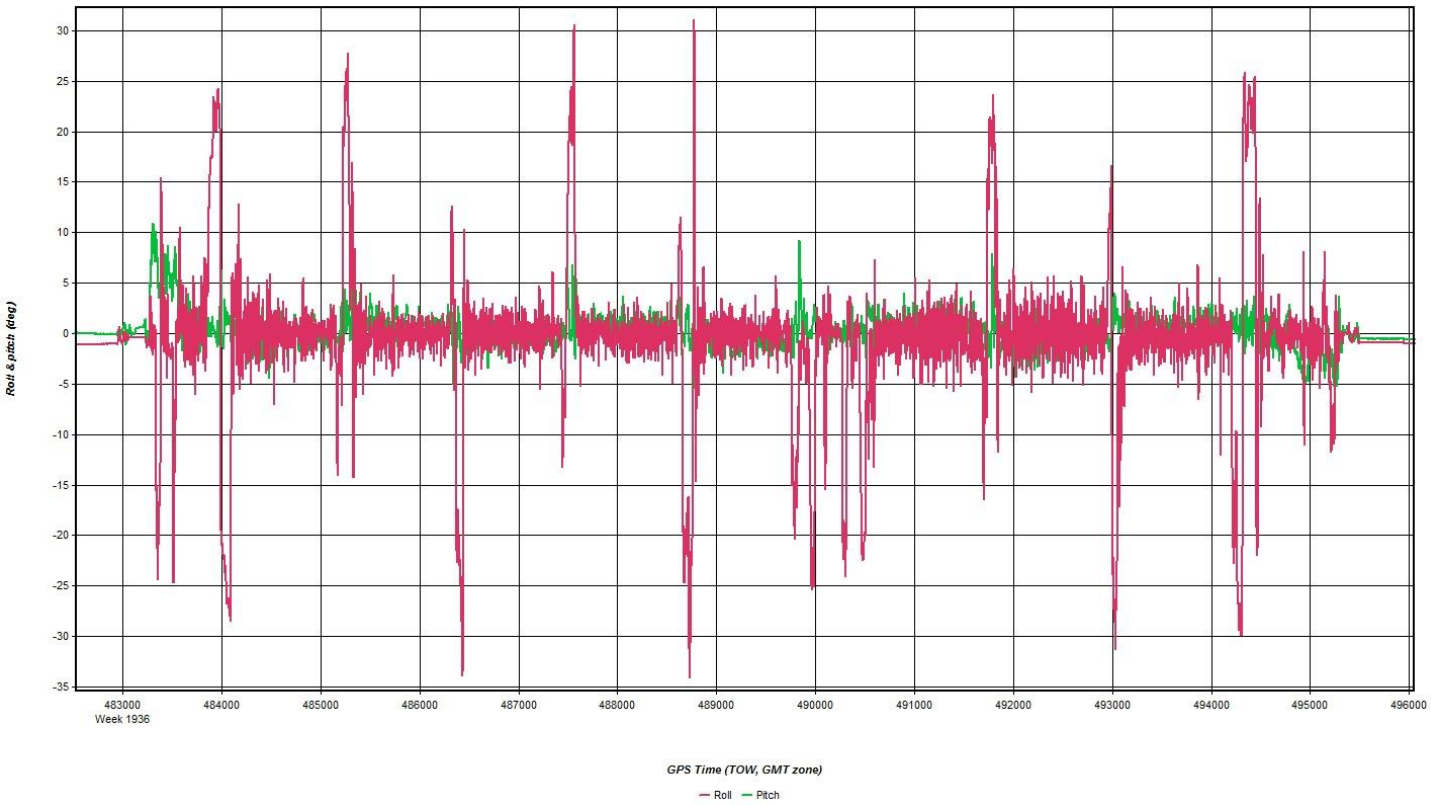

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

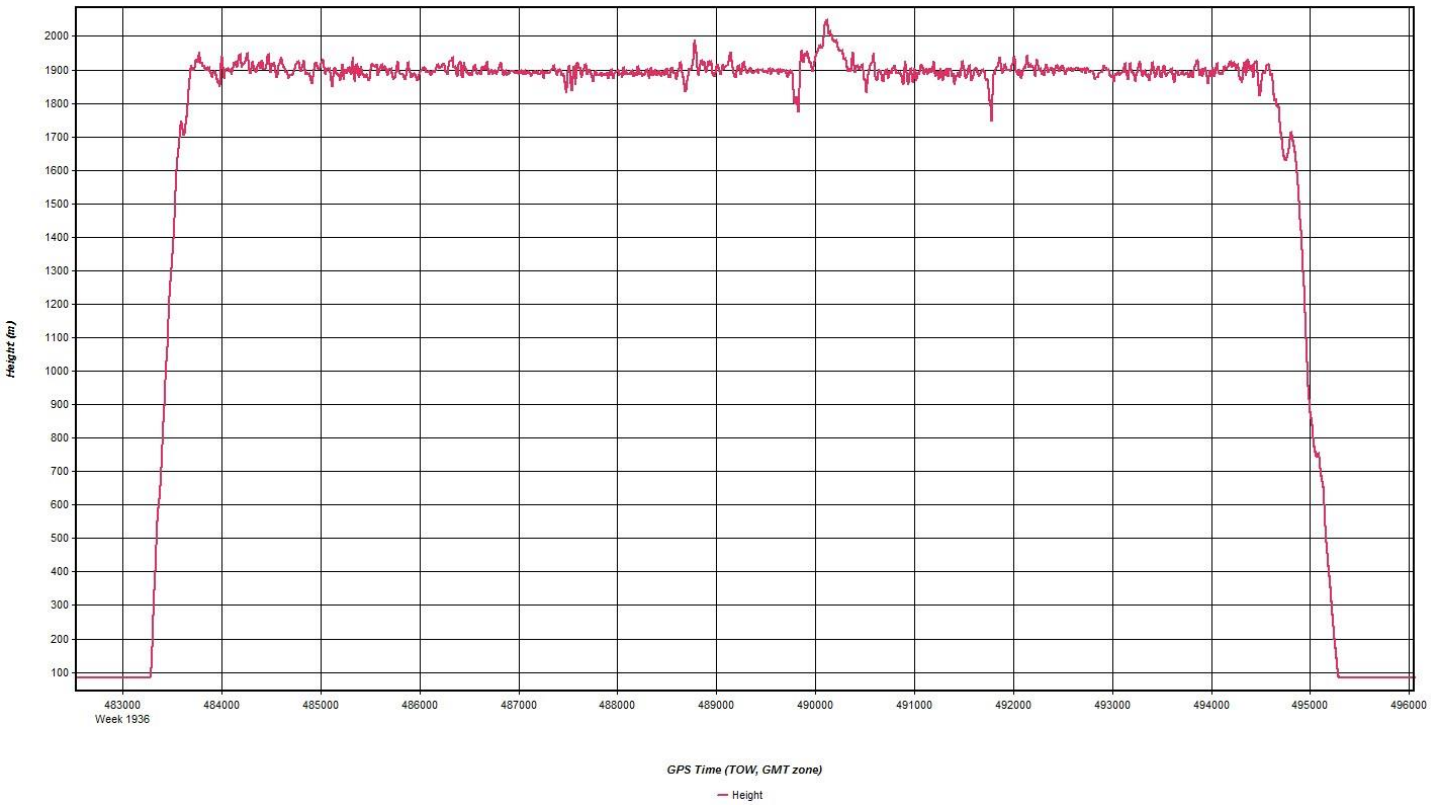

Separation (m)
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
-0.38
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
East
North
Up

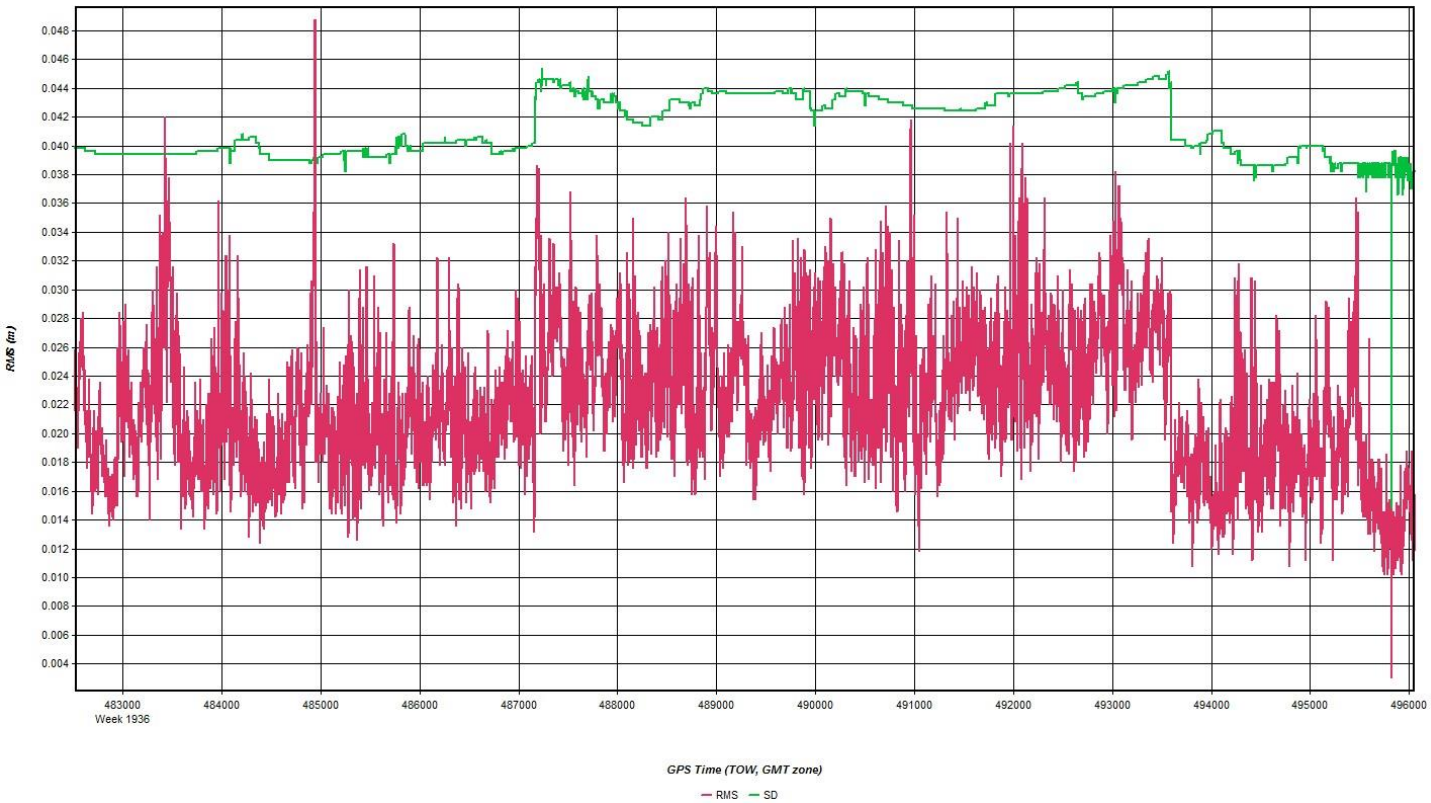

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

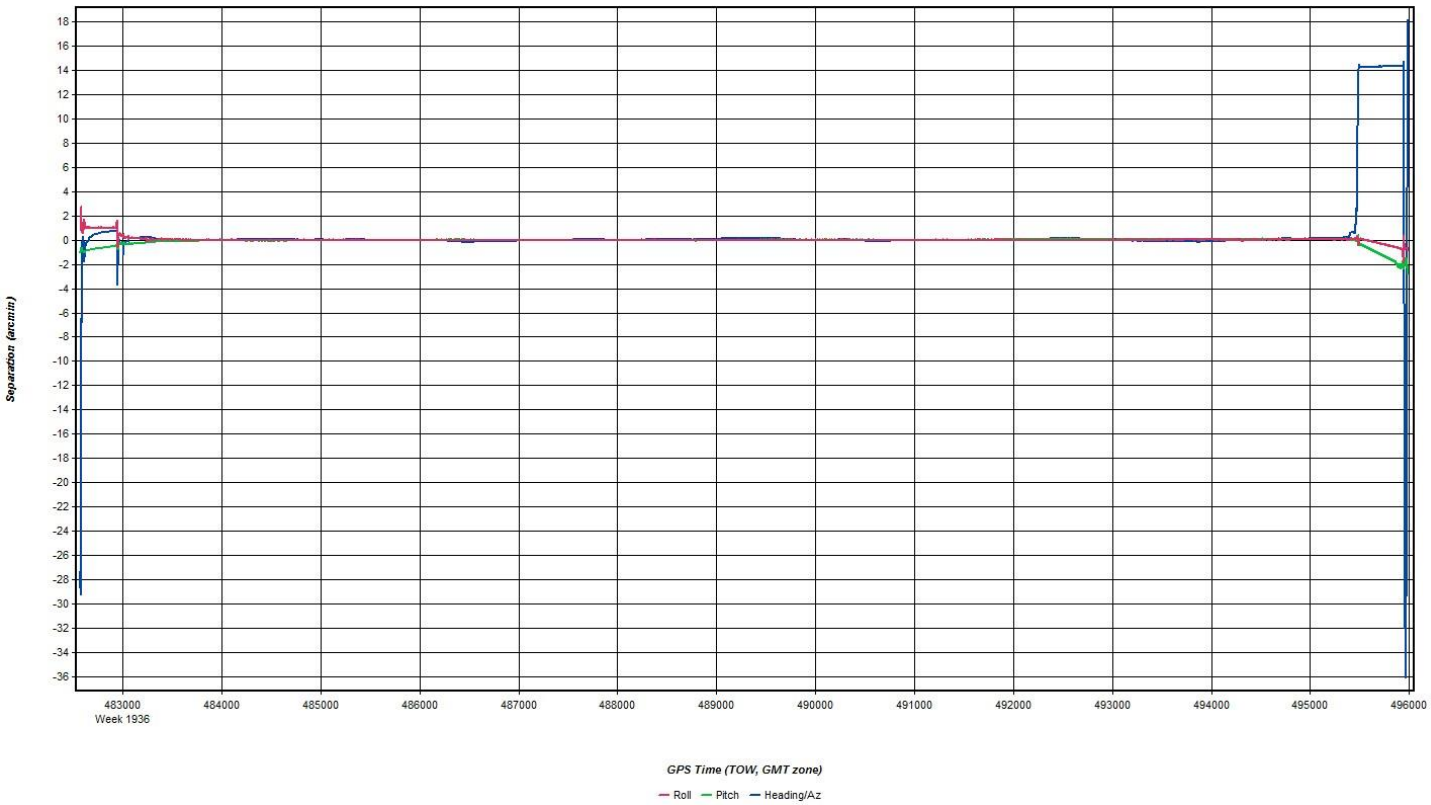

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
PDOP

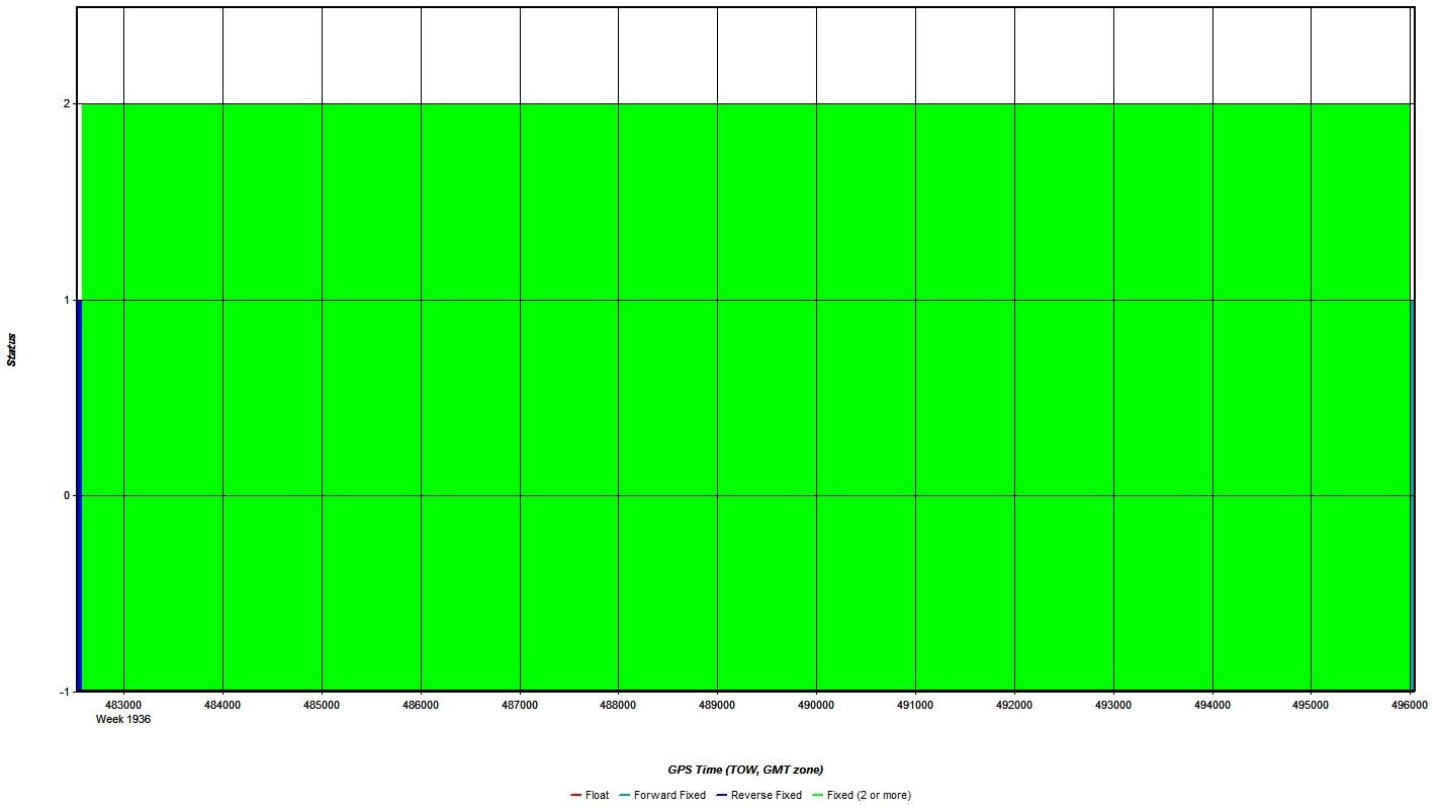

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

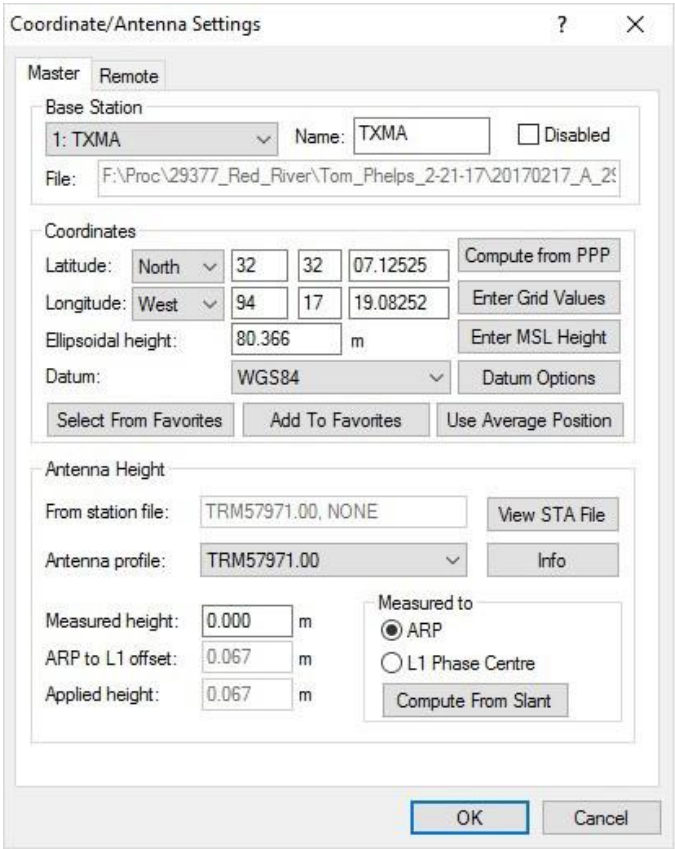

Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
Roll
Pitch

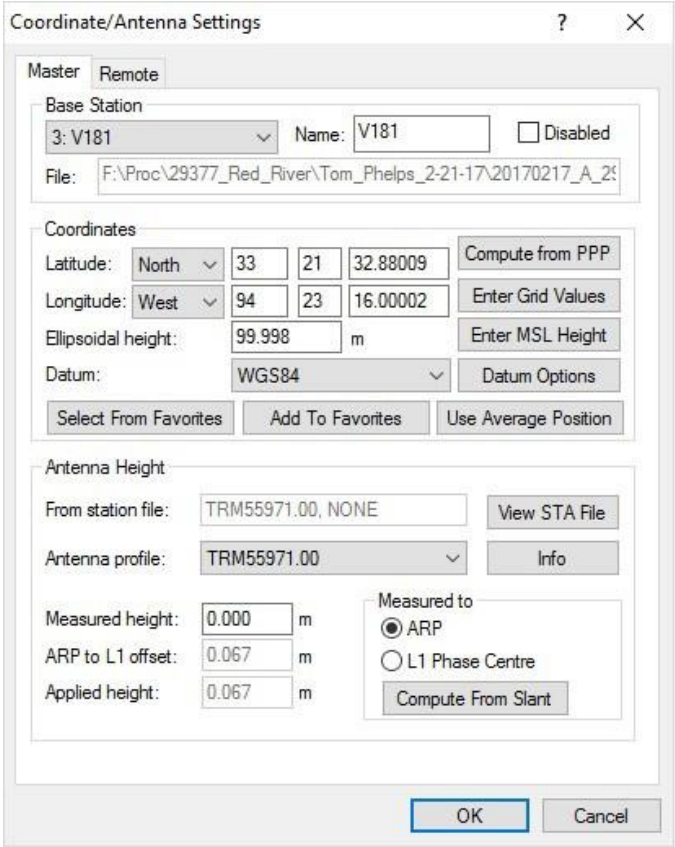

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
Height

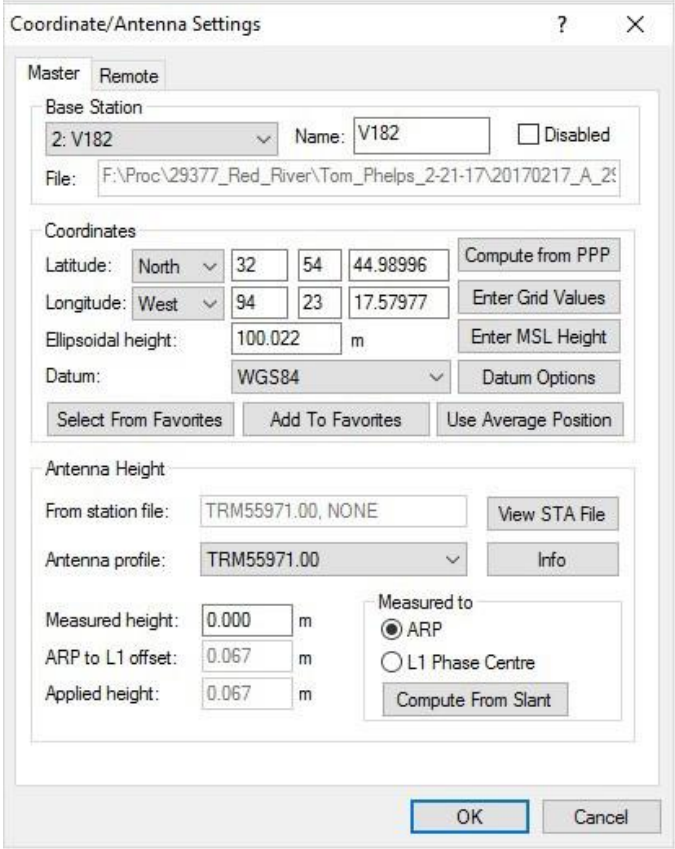

RMS (m)
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
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
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
483000
Week 1936
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: F:\Proc\29377_Red_River\Tom_Phelps_2-21-17\20170217_A_2
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
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: V181
Name: V181
Disabled
File: F:\Proc\29377_Red_River\Tom_Phelps_2-21-17\20170217_A_2
Coordinates
Latitude: North 33 21 32.88009
Longitude: West 94 23 16.00002
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: V182
Name: V182
Disabled
File: F:\Proc\29377_Red_River\Tom_Phelps_2-21-17\20170217_A_2
Coordinates
Latitude: North 32 54 44.98996
Longitude: West 94 23 17.57977
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

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-17-17

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

Project: RED RIVER LIDAR Proj #: 29517 Flight Mgmt File: 20170217_135926

Aircraft: 73TM Begin Hobbs: 6563.5 End Hobbs: 6566.8 Total: 3.3 Pilot: J NELSON Co-Pilot: Tech: M AUST

Dep Apt: GGG Dep Time (Lcl): 8:05 (Z): 14:05 Arr Apt: GGG Arr Time (Local): 11:45 (Z): 1745 Tot Time Aloft:

CORS: Y / N Sta 1: TXIM 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: 13 °c OAT beg: °c End: °c Altimeter begin: 29.97 end: 29.97

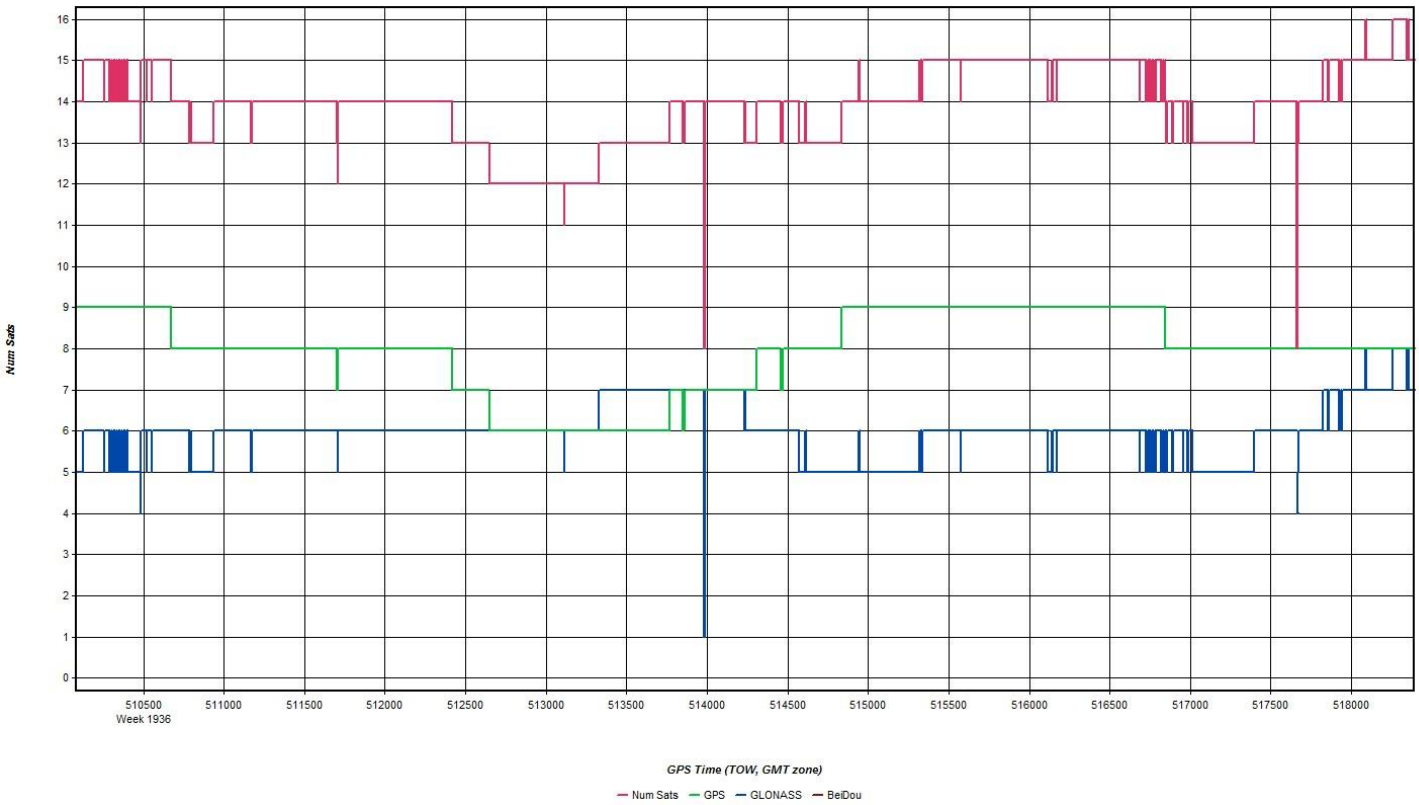
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	ALS70	7178		6.2'			
	FOV 40	Scan Freq 53	MpIA (Y) / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM 2.8+

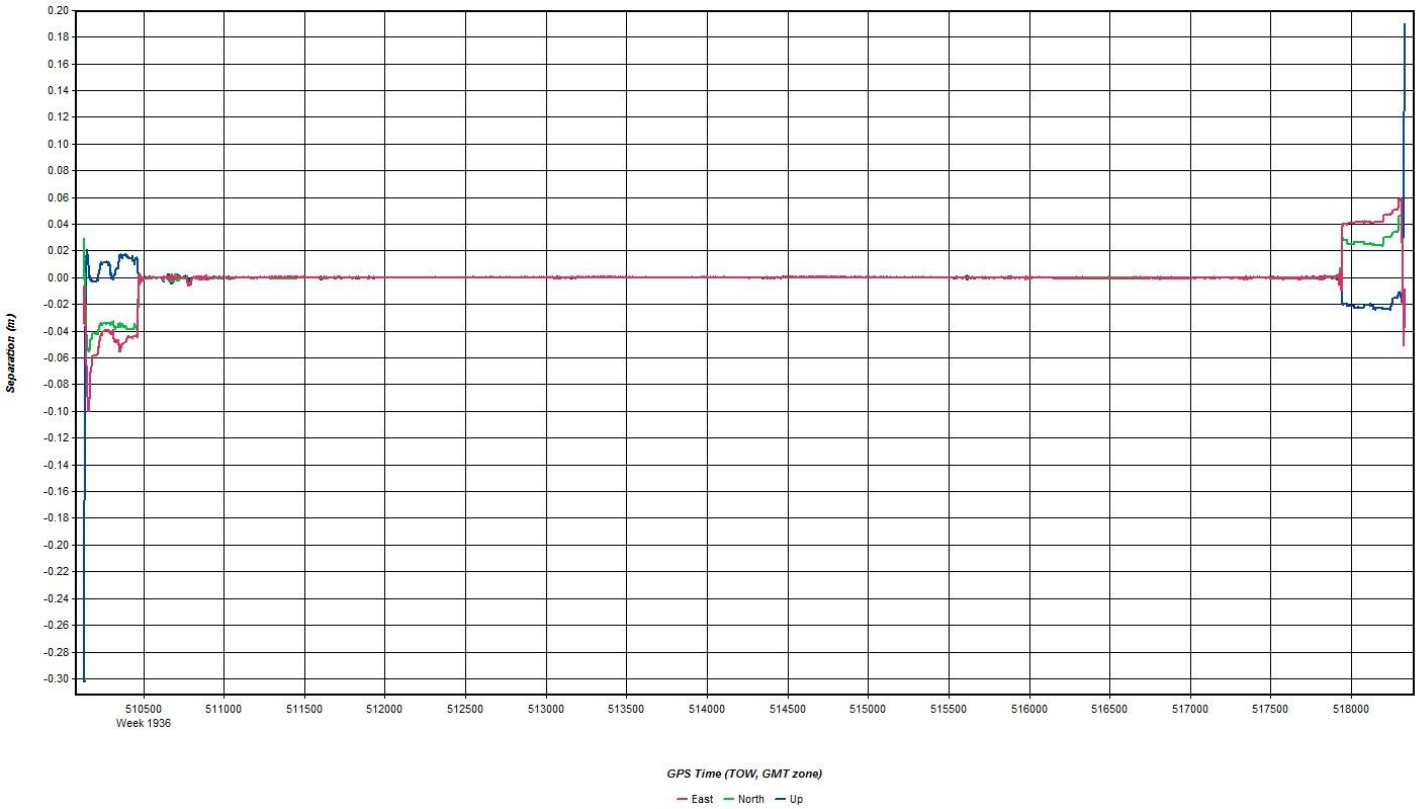
Beg GB	End GB	Tot GB	Storage Name/#
348	292	56	3

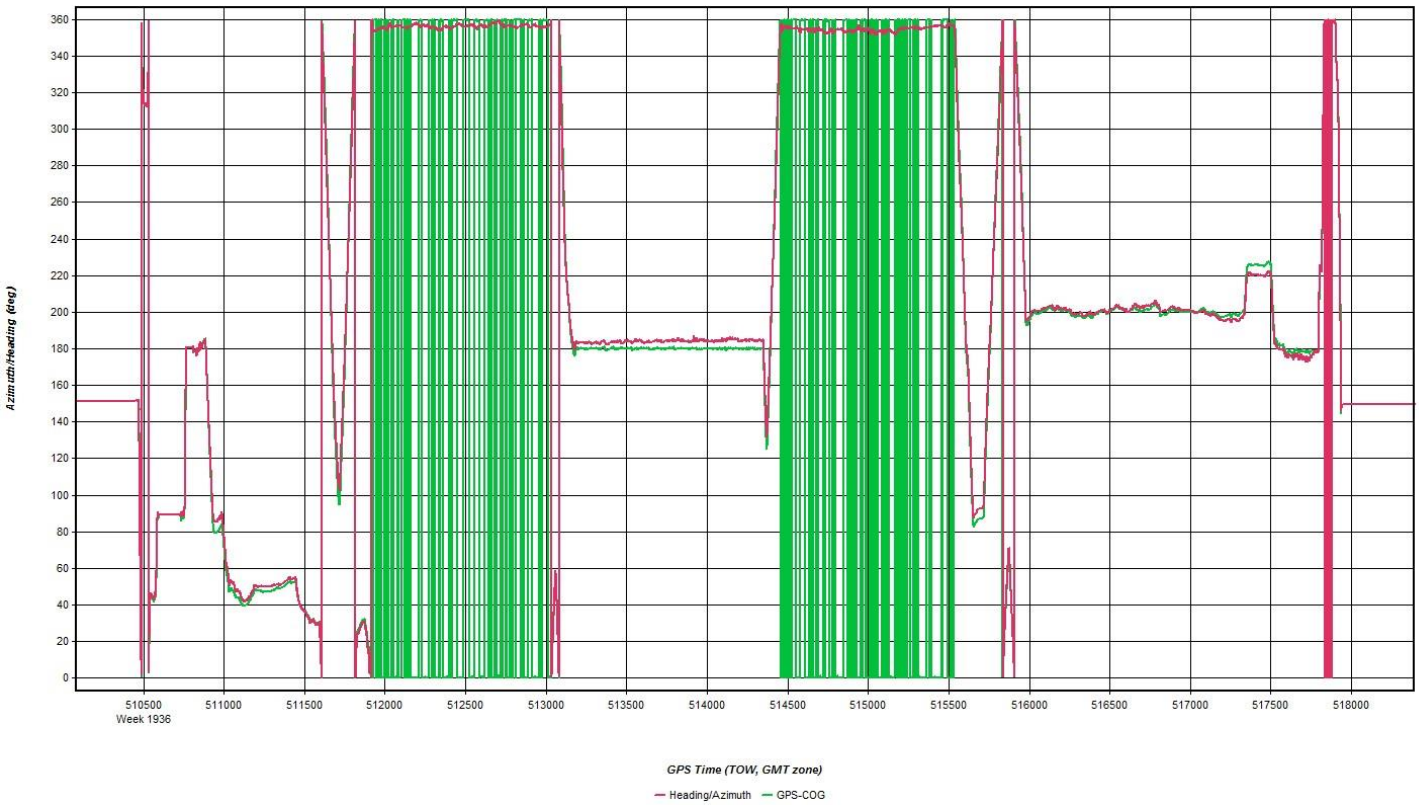
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
413	N	1430	1446	150	1.2/19	6.2			FIGURE 8's 14:25
414	S	1449	1504	150	1.3/18	6.2			
415	N	1508	1523	156	1.3/18	6.2			
416	S	1527	1543	147	1.0/21	6.2			
417	N	1546	1602	147	1.0/20	6.2			GETTING SOME LIGHT RAIN
41L001	E	1606	1611	193	1.0/20	6.5			MANUAL CROSS FLIGHT
436	S	1616	1634	154	1.0/19	6.2			SOME VERY LIGHT RAIN
435	N	1637	1655	152	1.3/18	6.2			SOME VERY LIGHT RAIN
434	S	1658	1716	150	1.1/19	6.2			

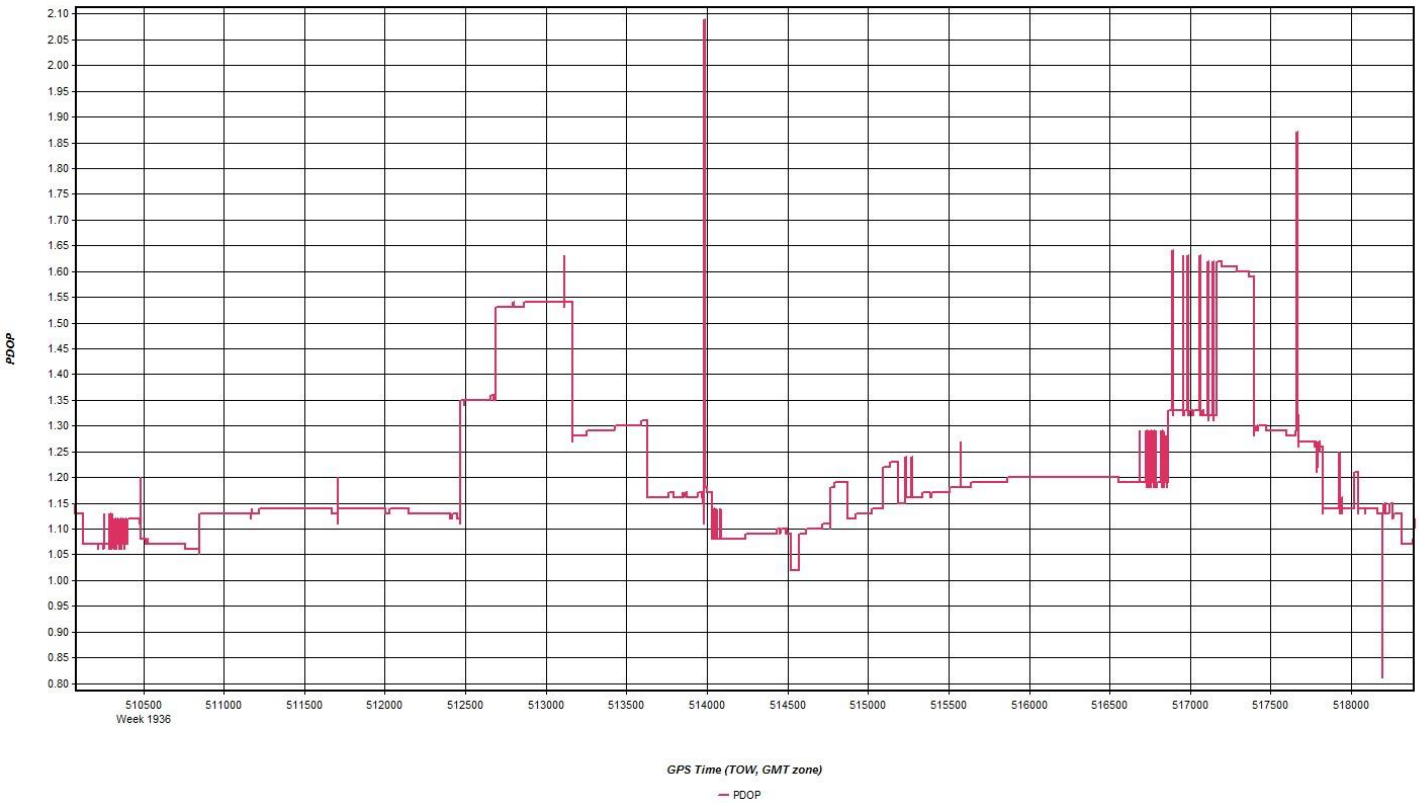
Total Proj Lines: Lines Flown: 8 Lines Remain: Online Time: 2.75 Mob Time: .6 Notes:

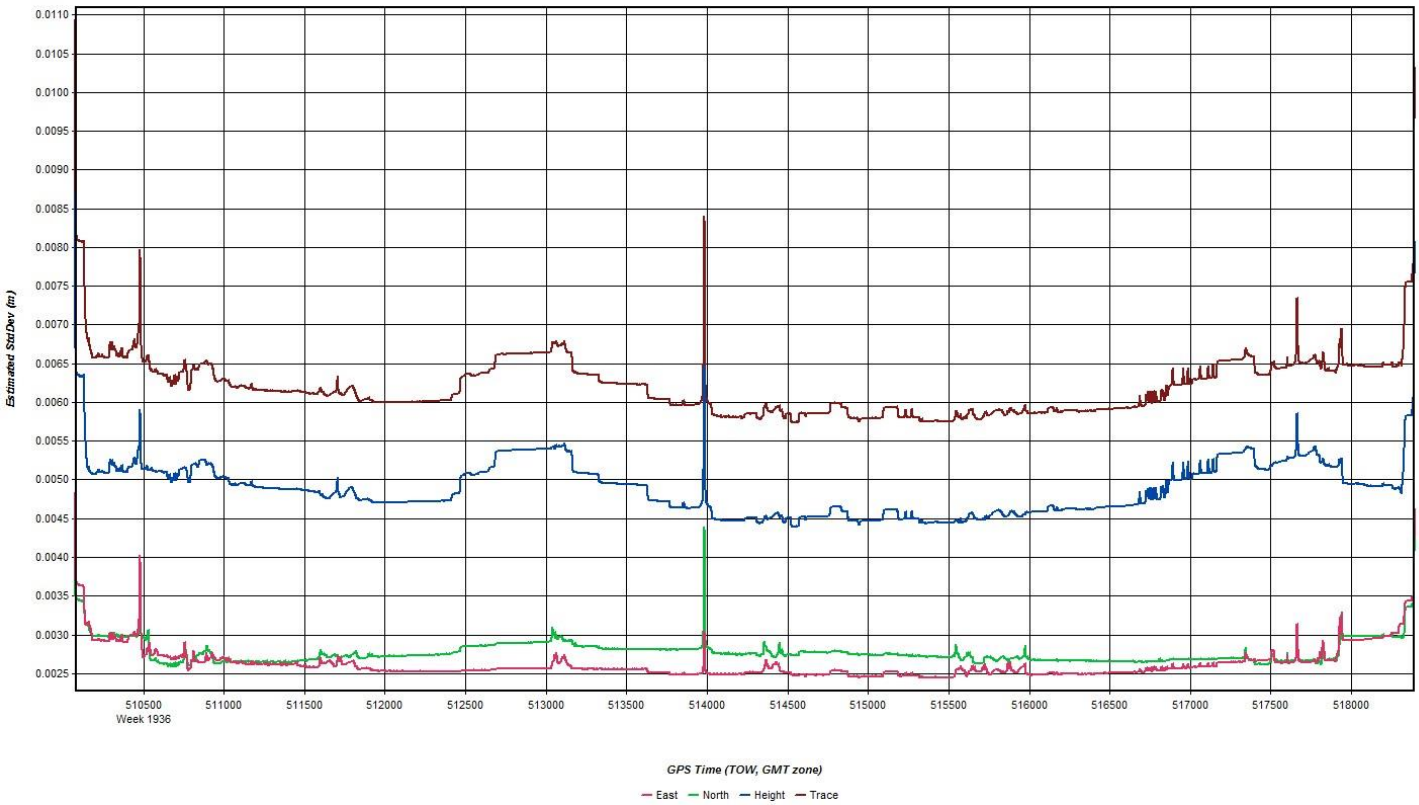
Feb 17, 2017-A1 (N73TM, SN7178)

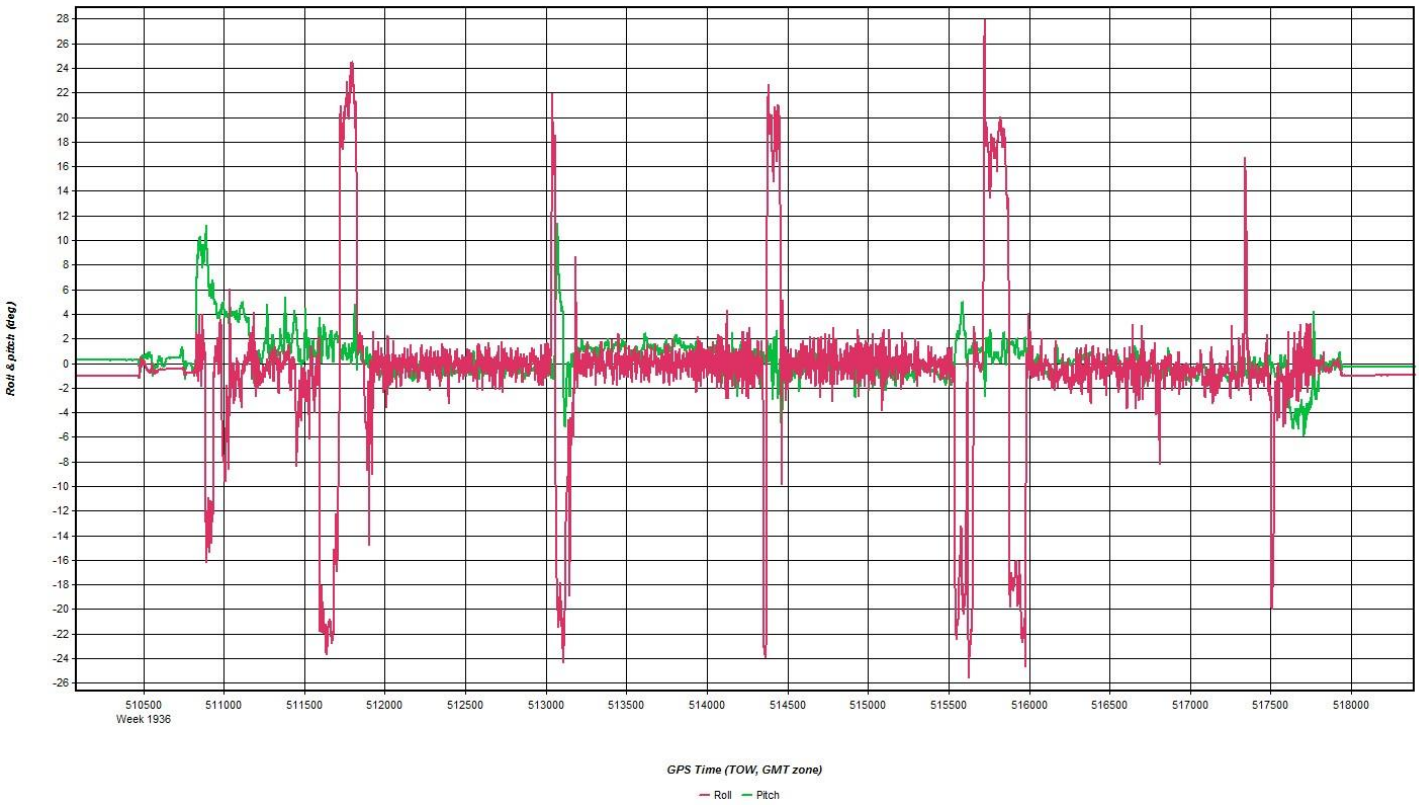

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

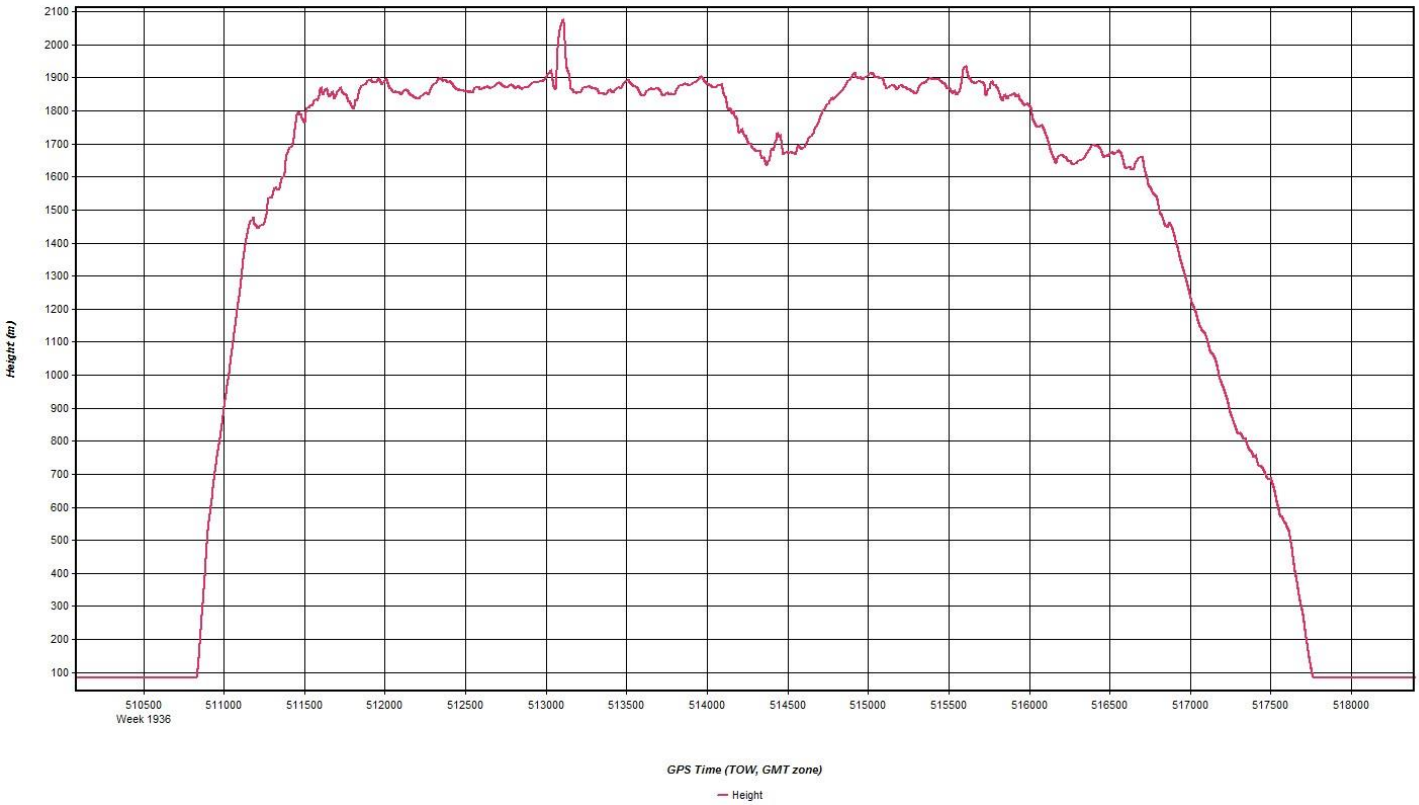

Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
East
North
Up

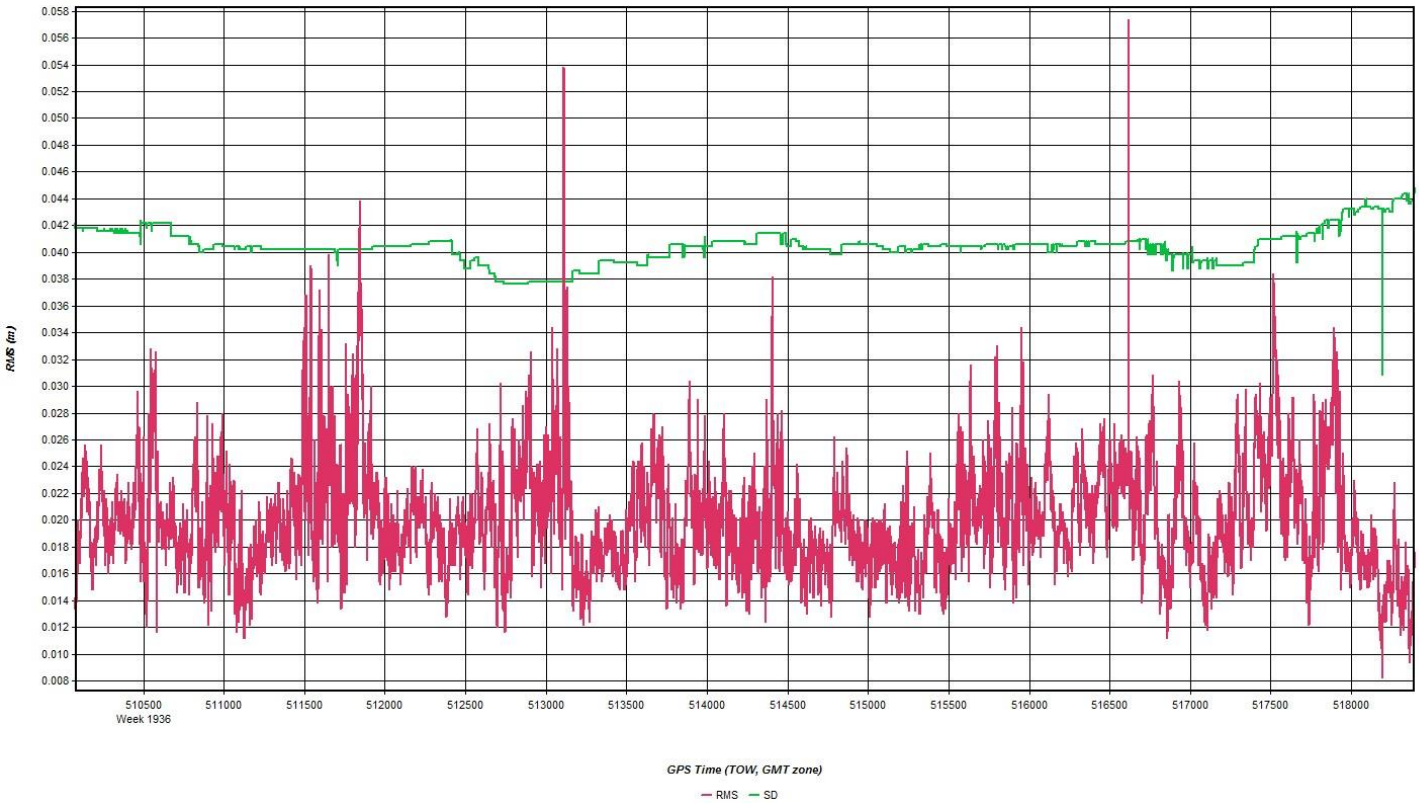

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

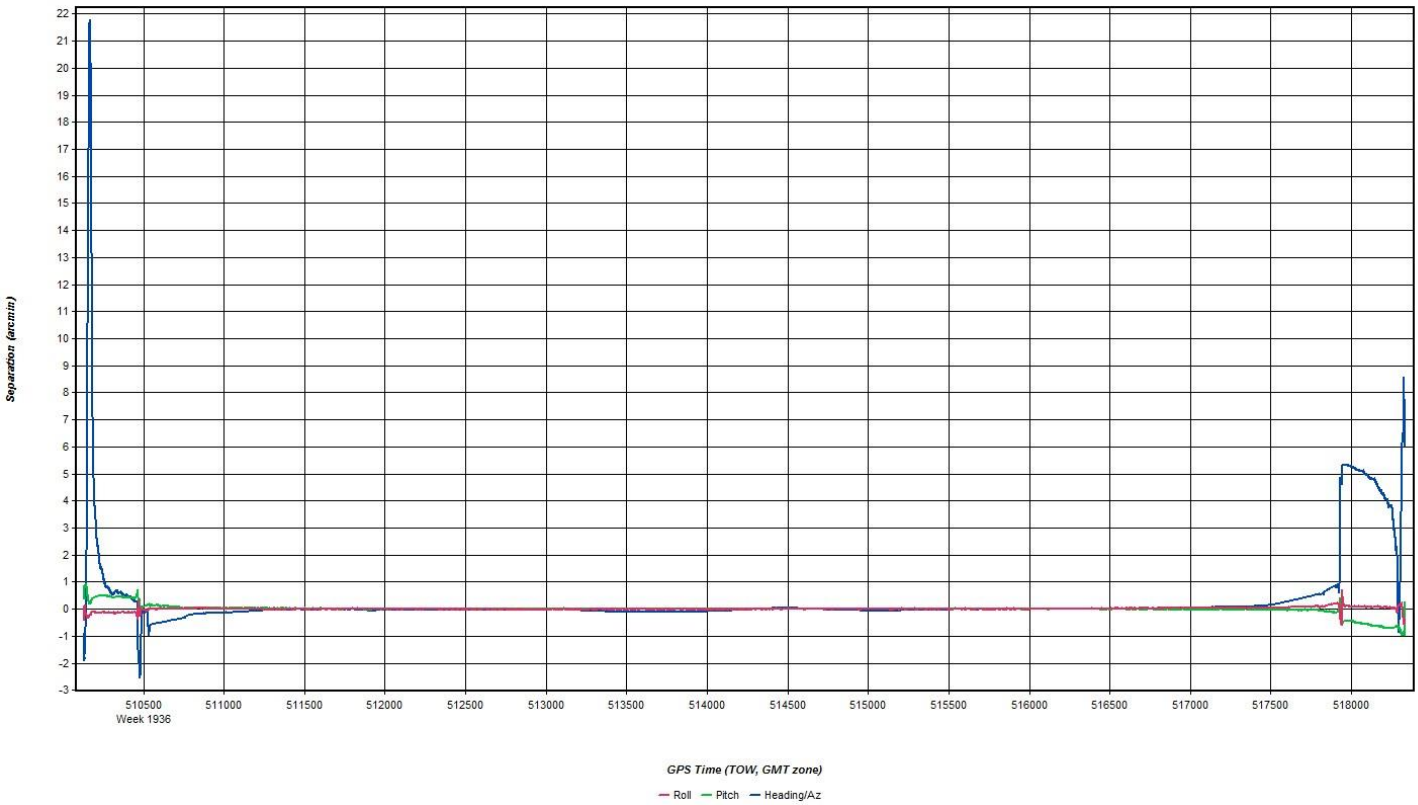

PDOP
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
PDOP

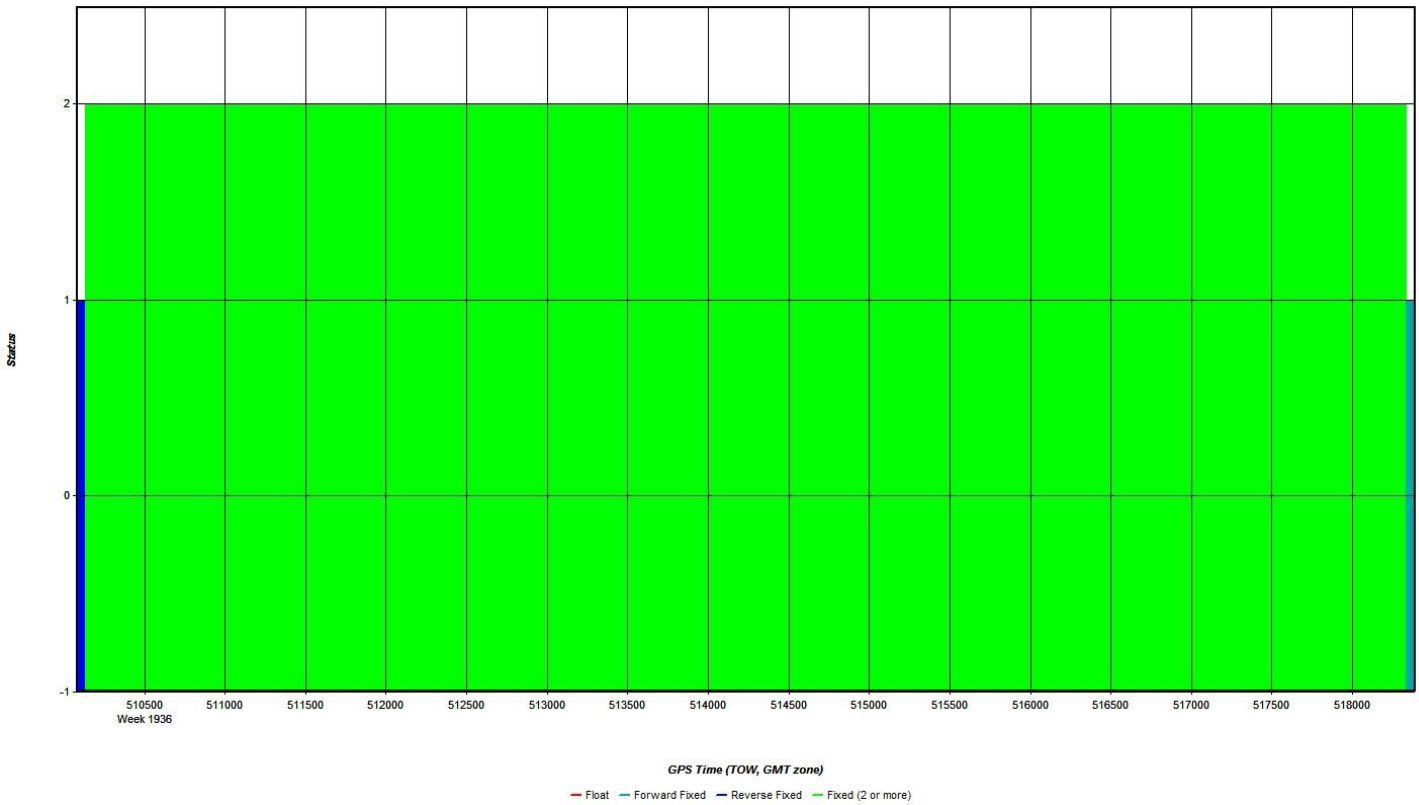

Estimated StdDev (m)
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

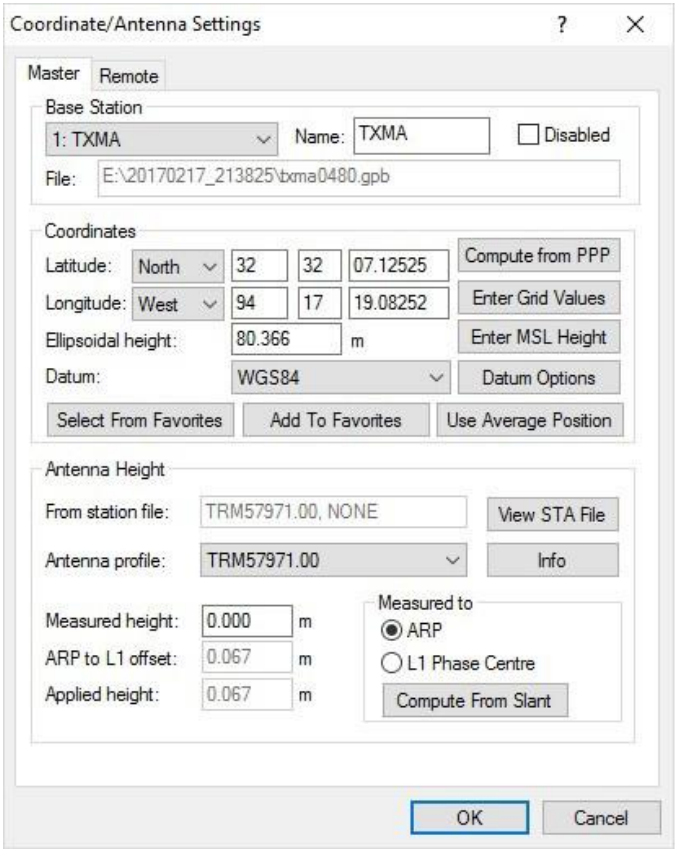

Roll & pitch (deg)
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
Roll
Pitch

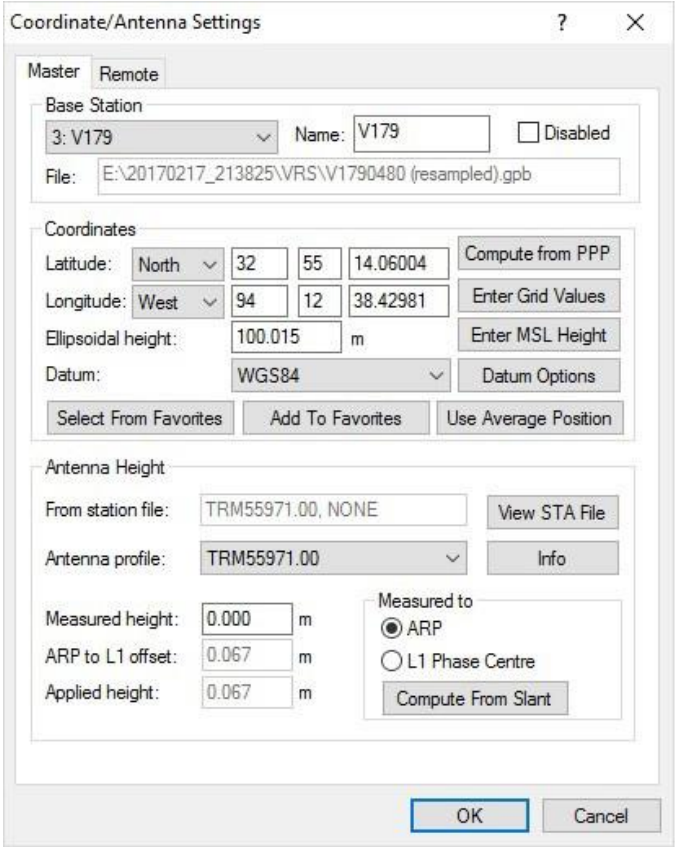

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
Height

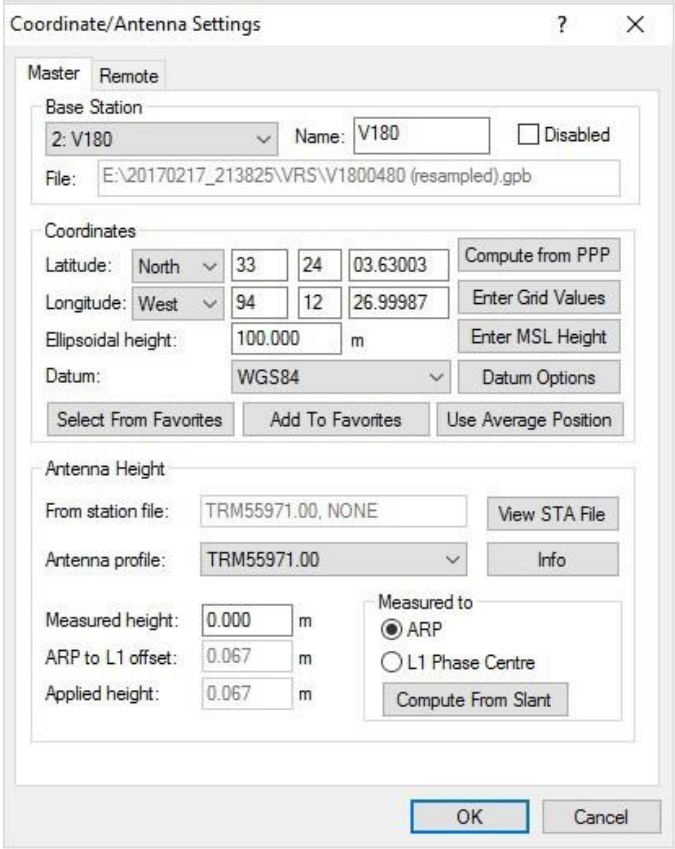

RMS (m)
0.058
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arcmin)
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
-3
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
510500
Week 1936
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: E:\20170217_213825\txma0480.gpb
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
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: V179
Name: V179
Disabled
File: E:\20170217_213825\VRS\V1790480 (resampled).gpb
Coordinates
Latitude: North 32 55 14.06004
Longitude: West 94 12 38.42981
Ellipsoidal height: 100.015 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: V180
Name: V180
Disabled
File: E:\20170217_213825\VRS\V1800480 (resampled).gpb
Coordinates
Latitude: North 33 24 03.63003
Longitude: West 94 12 26.99987
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

20170217 – 213825

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

(email Log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2/17/17 A1

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

Project: USGS RED RIVER Proj #: 29377 Flight Mgmt File: 29377_SN7178_2PTS PPSm_HALL_MILL

Aircraft: N73TM Begin Hobbs: 6568.7 End Hobbs: 6570.6 Total: 1.9 Pilot: JOSEY Co-Pilot: — Tech: Tom

Dep Apt: KGGG Dep Time (Lcl): 3:54 (Z): 21:54 Arr Apt: KGGG Arr Time (Local): 5:50 (Z): 23:50 Tot Time Aloft: 1:56

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	End GB	Tot GB	Storage Name/#
	ALS-70	7178	1850 m					347			
	FOV 40 (34?)	Scan Freq 53.4	MpIA (N) / N	Pulses In Air	Pulse Rate 294.6	Power	PPSM 2.84				

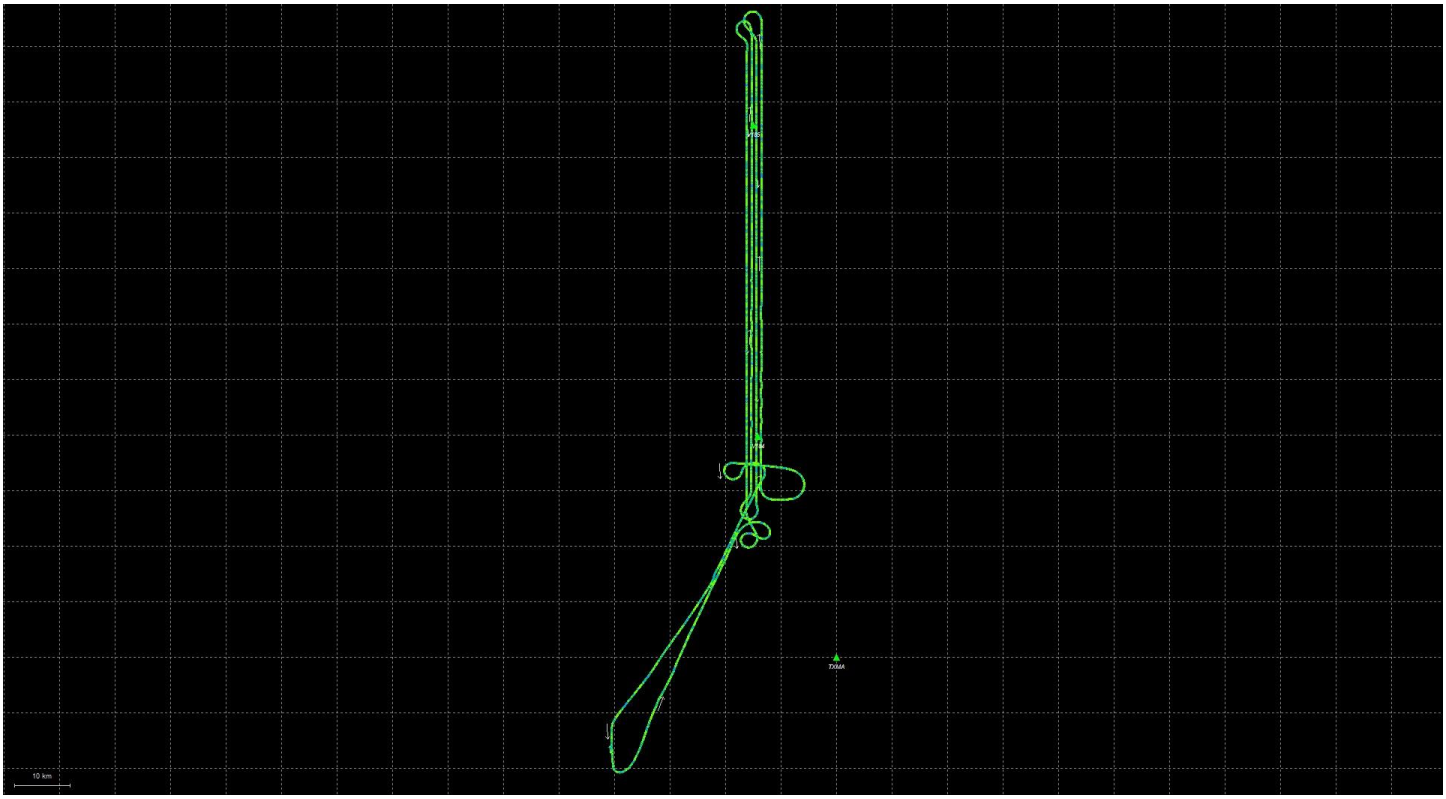
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
		3:36	4:12		FIG 8	@ 22:04			FERRY: GGG → FIG. 8 → SITE 0.6
446	N	22:12	22:30	150	1.3/16	6188	—	0	LOW CLOUDS JUST S. OF PROJECT + JUST W. OF LINE
445	S	22:33	22:52	150	1.2/18	↓	—	0	S 11mi ~~3 MILE~~ N.G. REFLY 650' LOW S. END
444	N	22:54	23:12	↓	1.3/17	↓	—	0	VIRGA S. S 18 650' LOW
X FLT	E	23:14	23:14	↓	↓	—	—	—	
FIG. 8		5:18	6:00						FERRY: SITE → GGG 0.7
									CEILING LOWER THAN PROJECT ALTITUDE MOVED ON SITE FROM THE SOUTH... RTB.

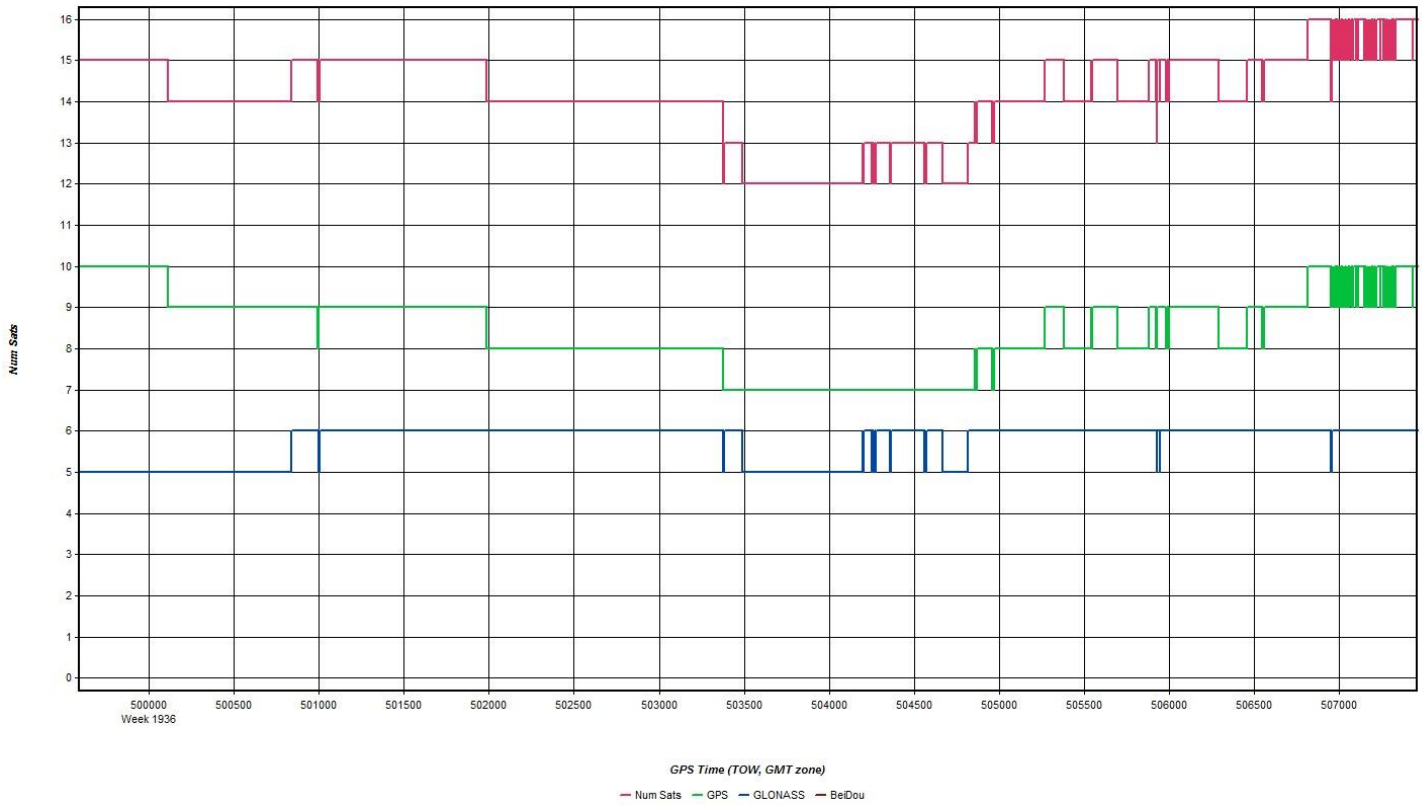
Total Proj Lines: 99 Lines Flown: 3 (2.5) Lines Remain: 19 + REFLY Online Time: 1.1 Mob Time: 1.3 Notes:

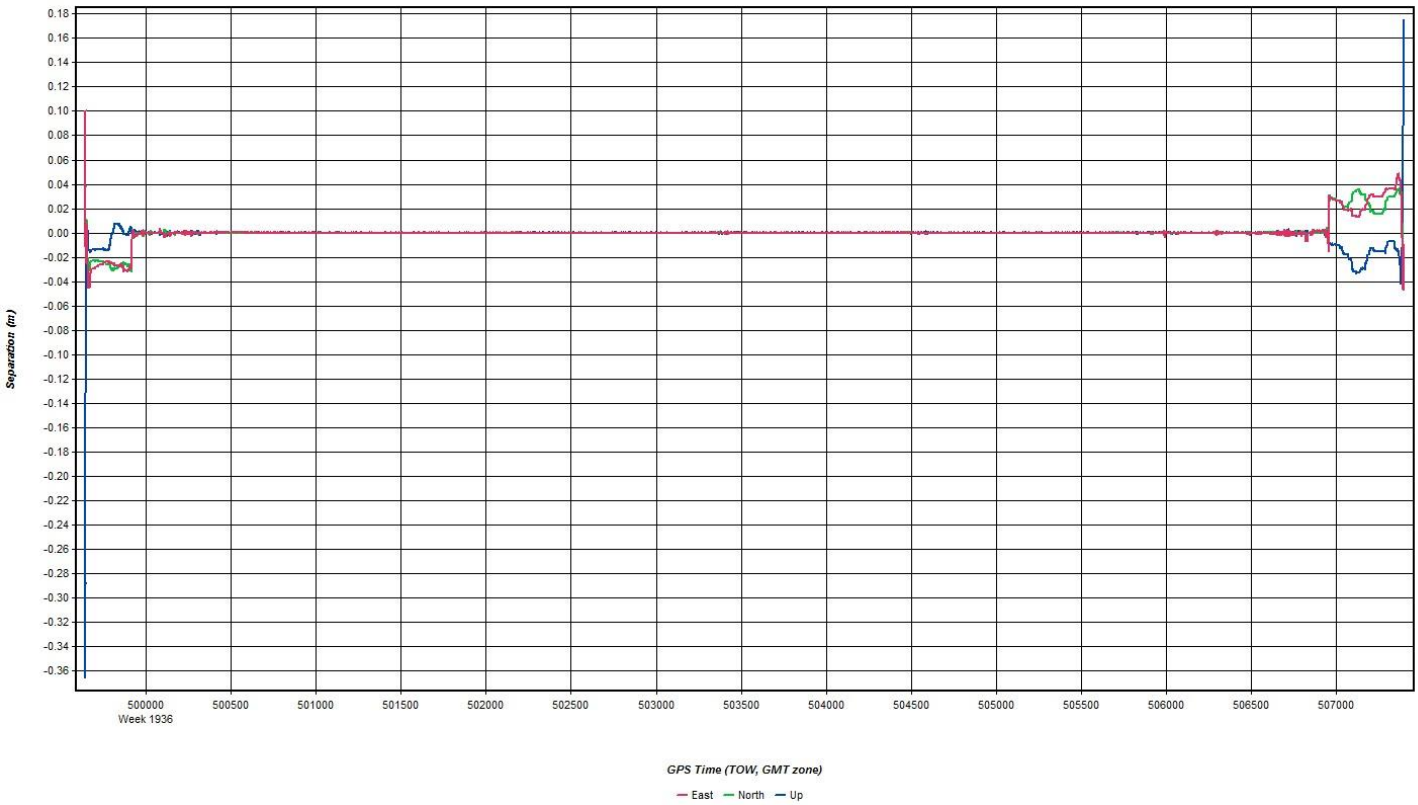
HALL-MILLER

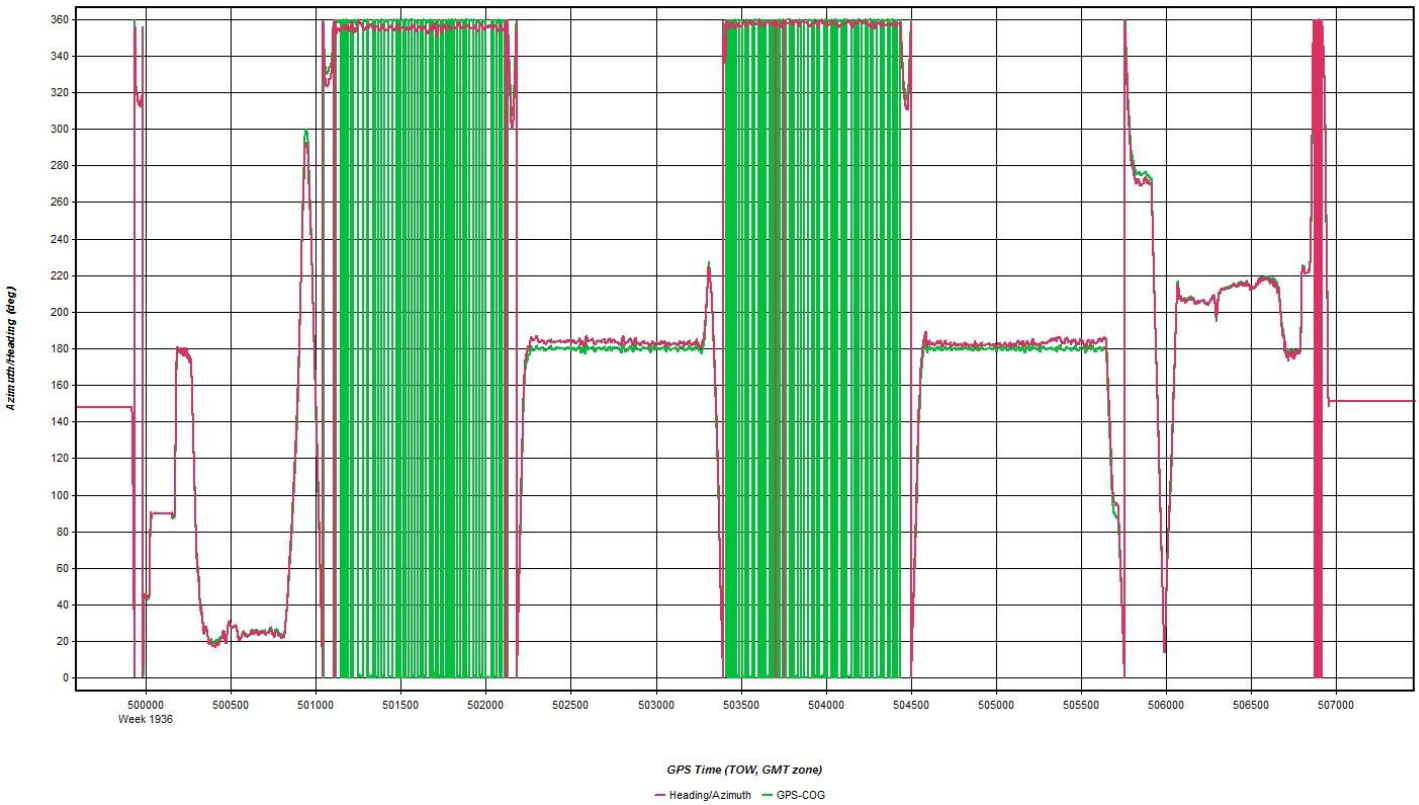
WITH REFLYS CALLED

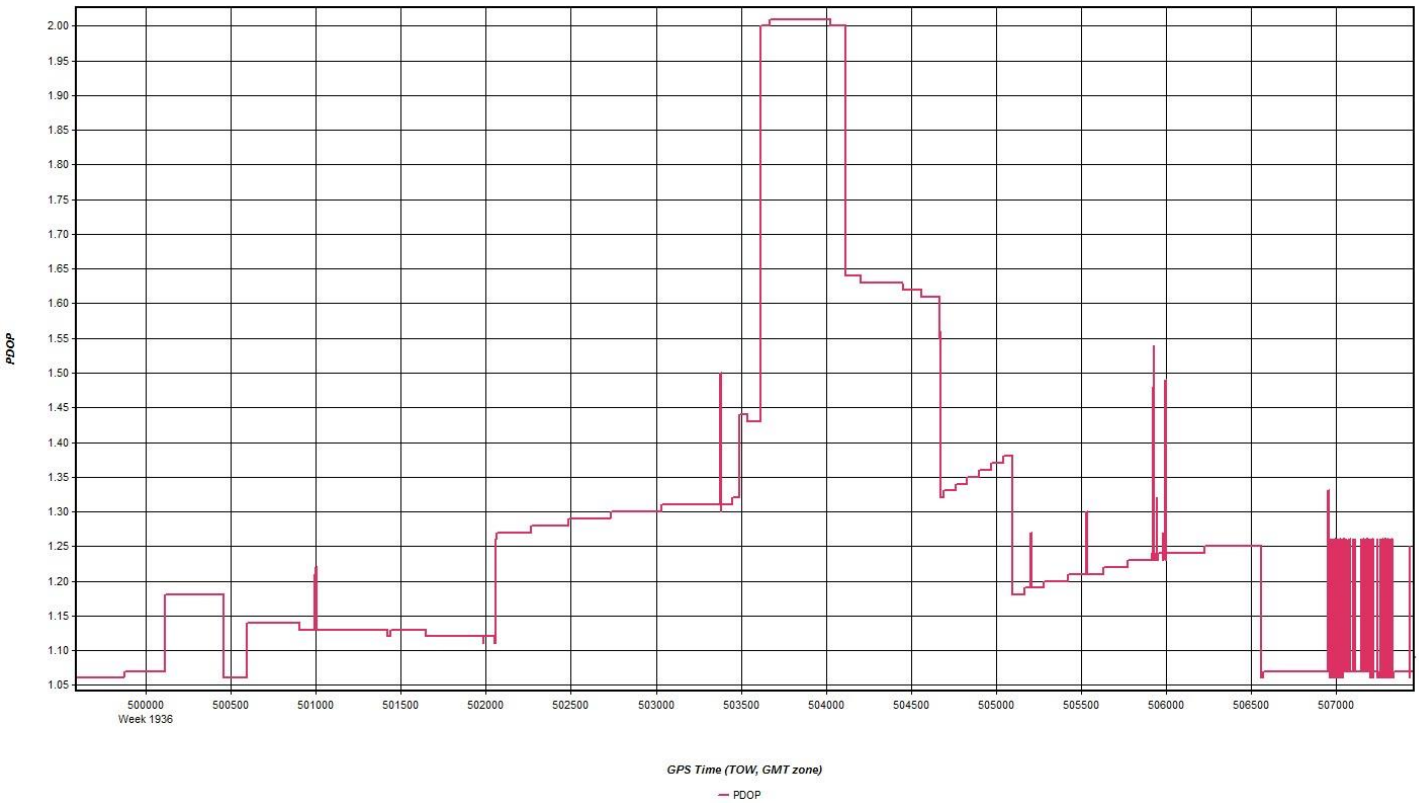
Feb 17, 2017-B (N73TM, SN7178)

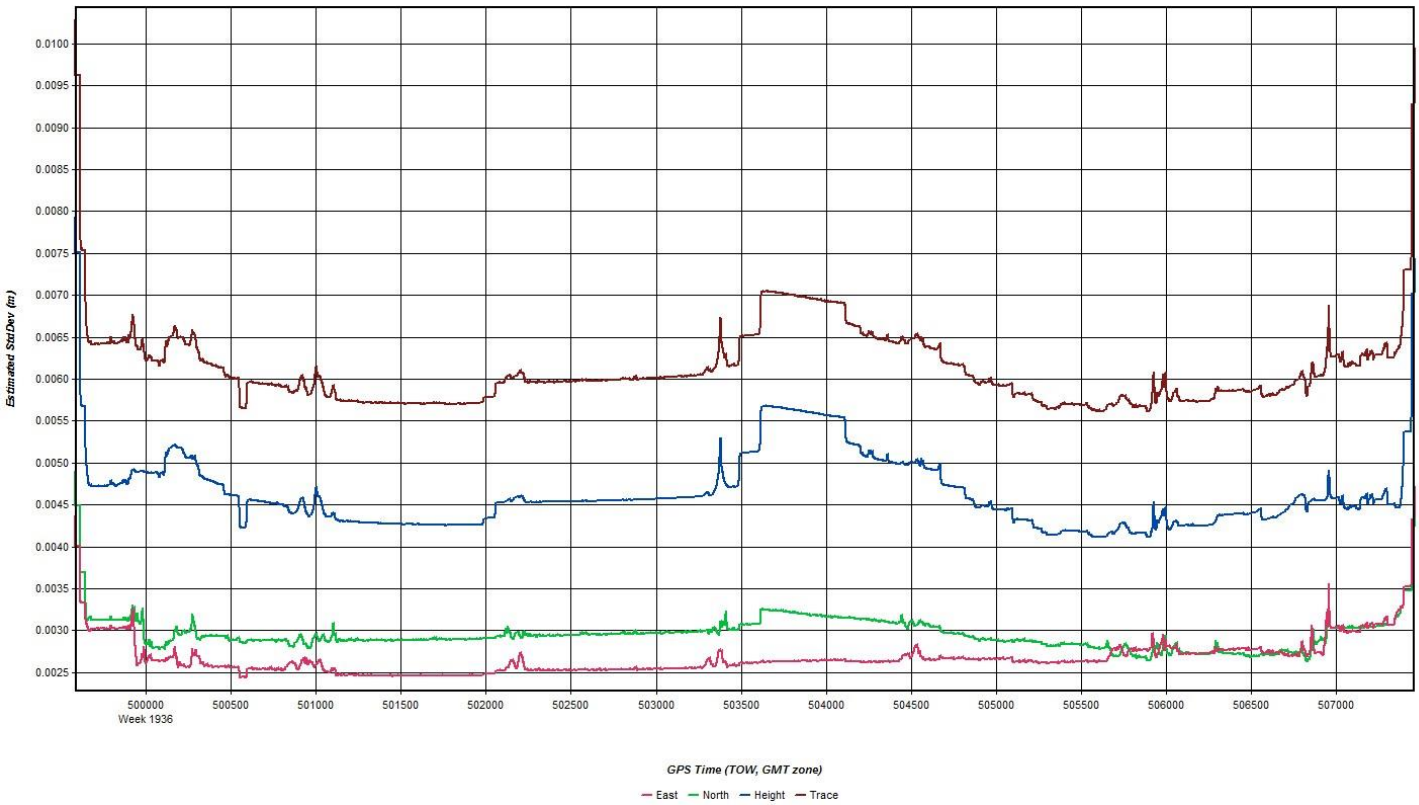


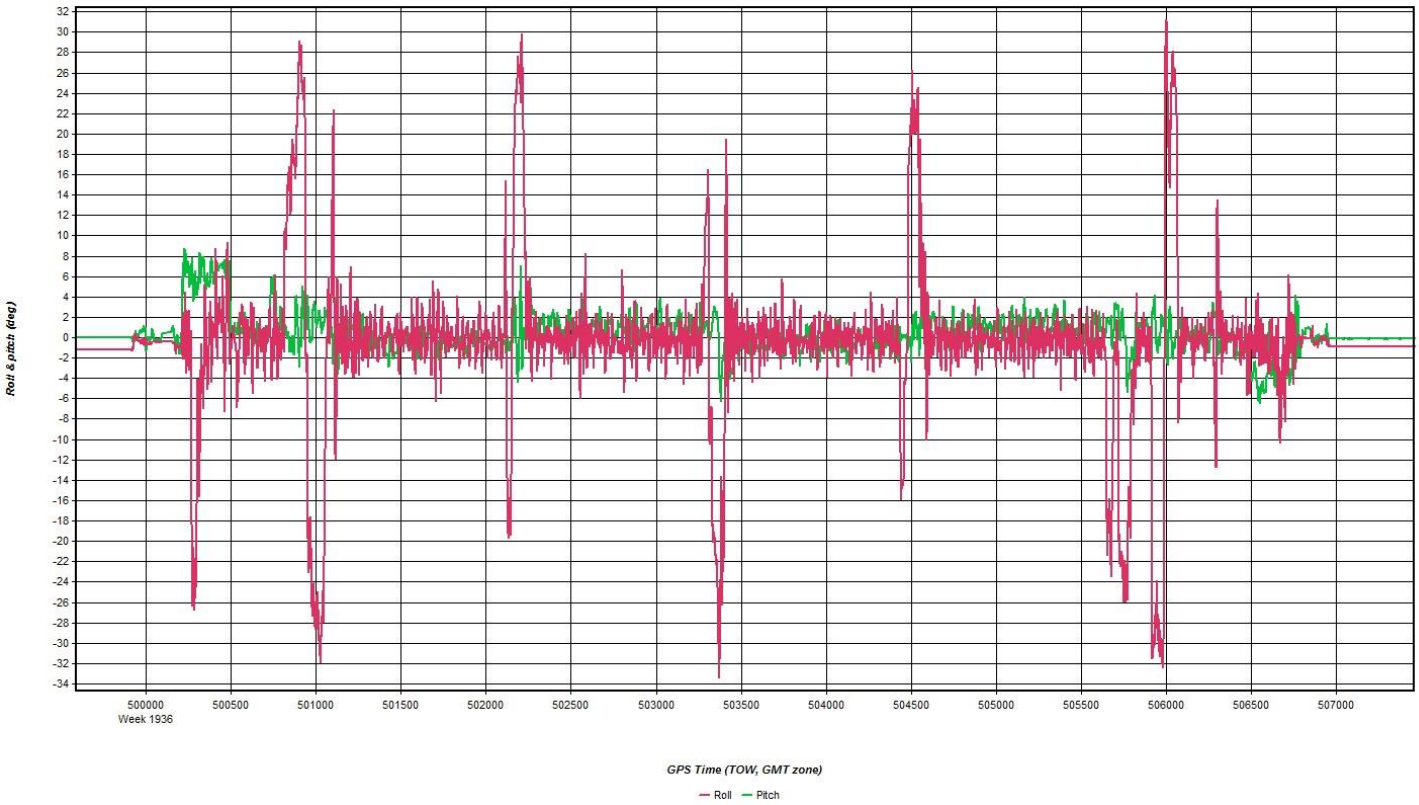

Num Sats
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

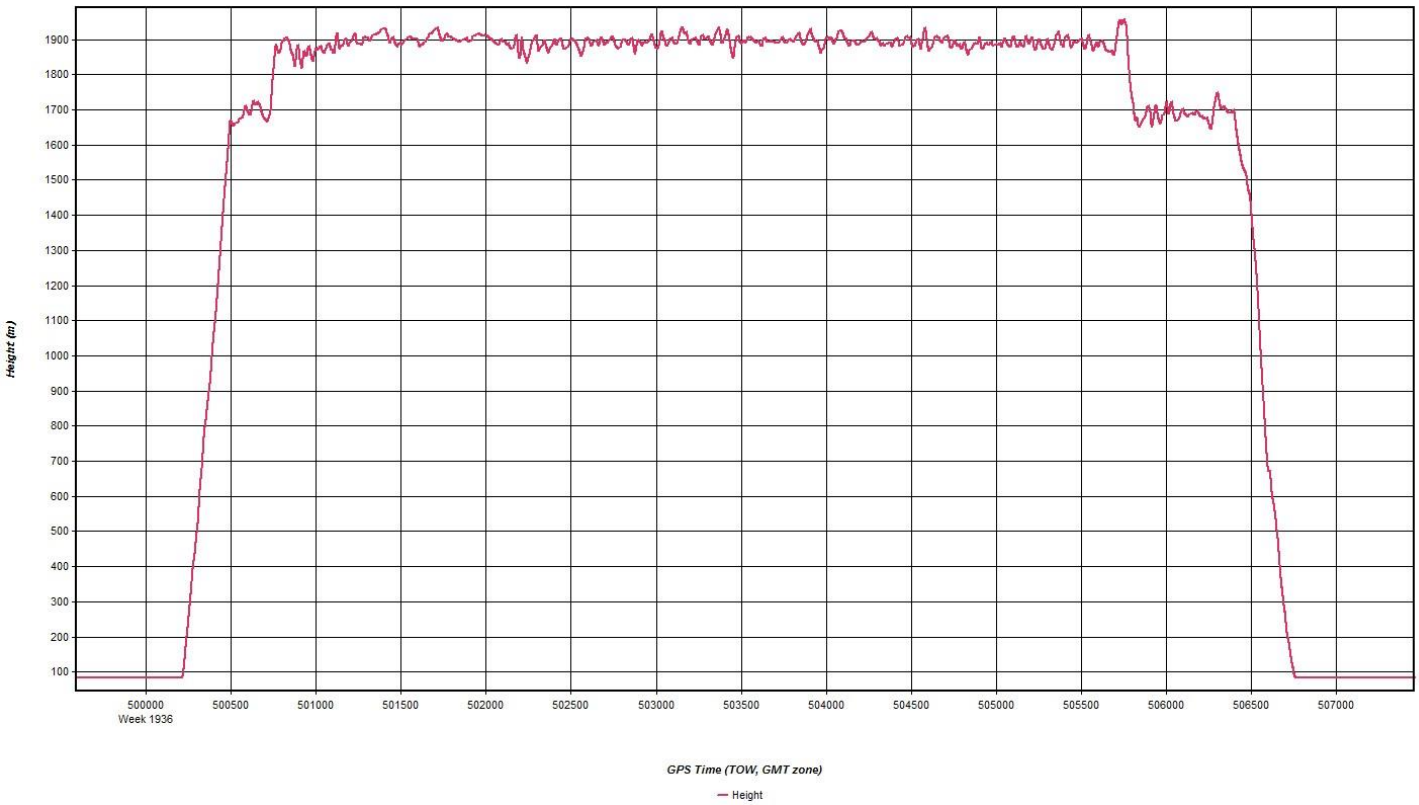

Separation (m)
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
-0.32
-0.34
-0.36
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
East
North
Up

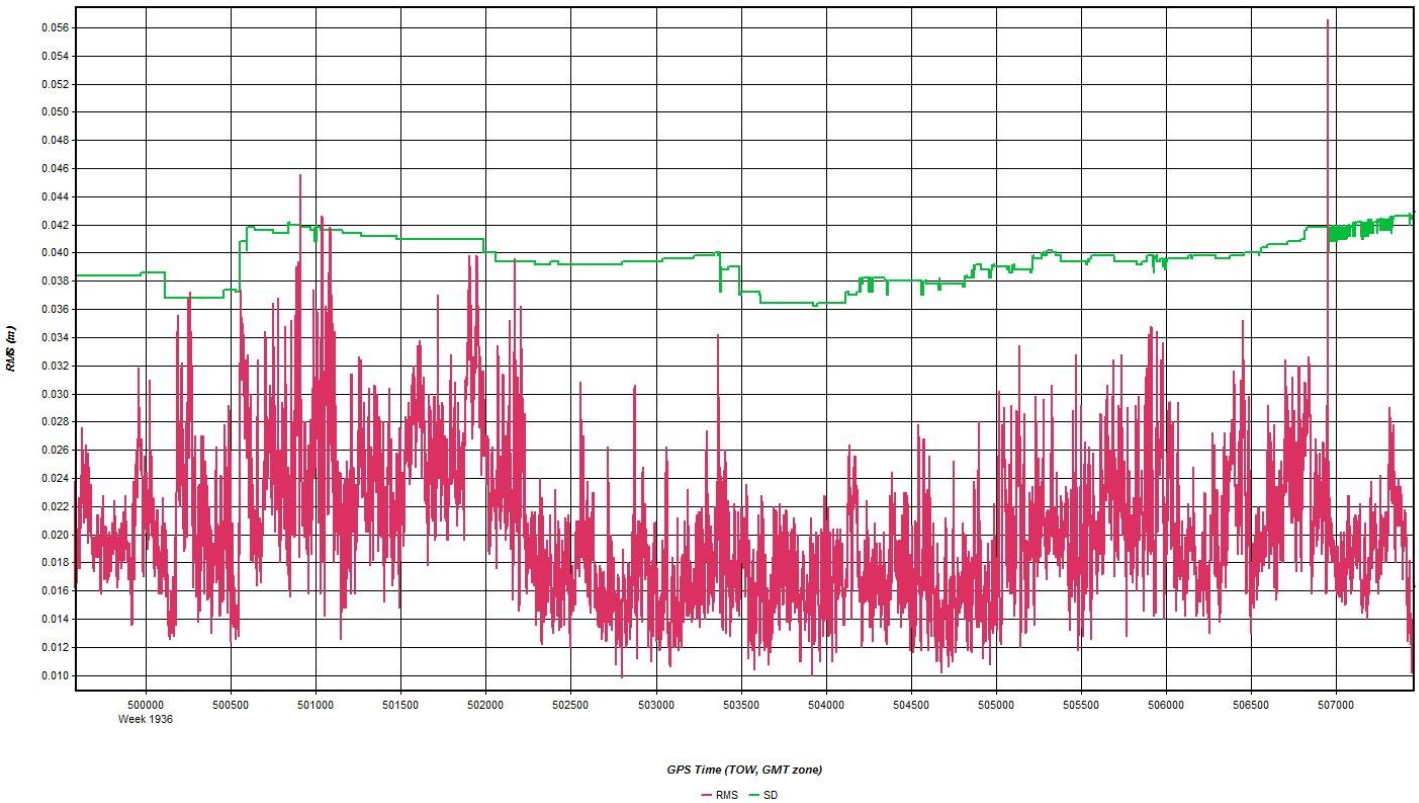

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

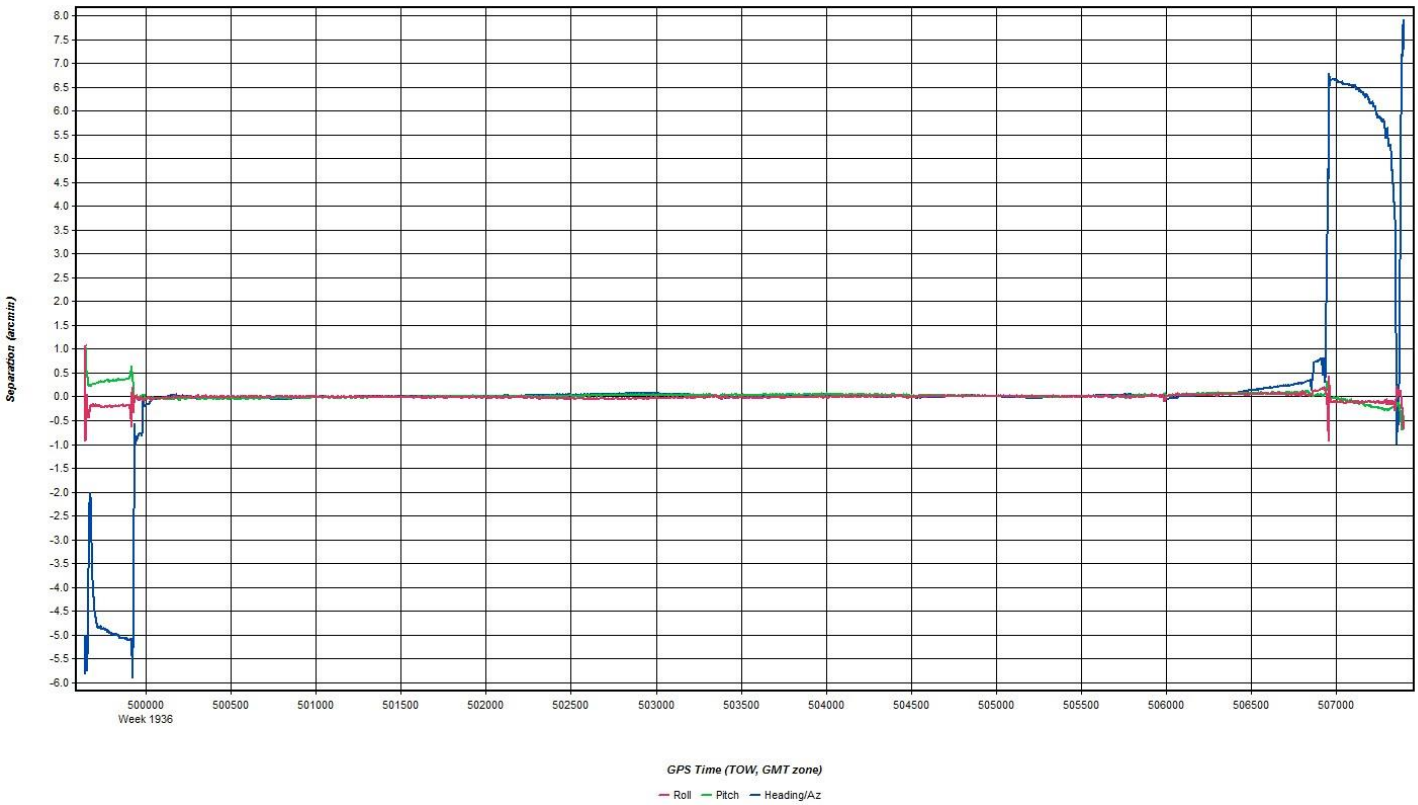

PDOP
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
PDOP

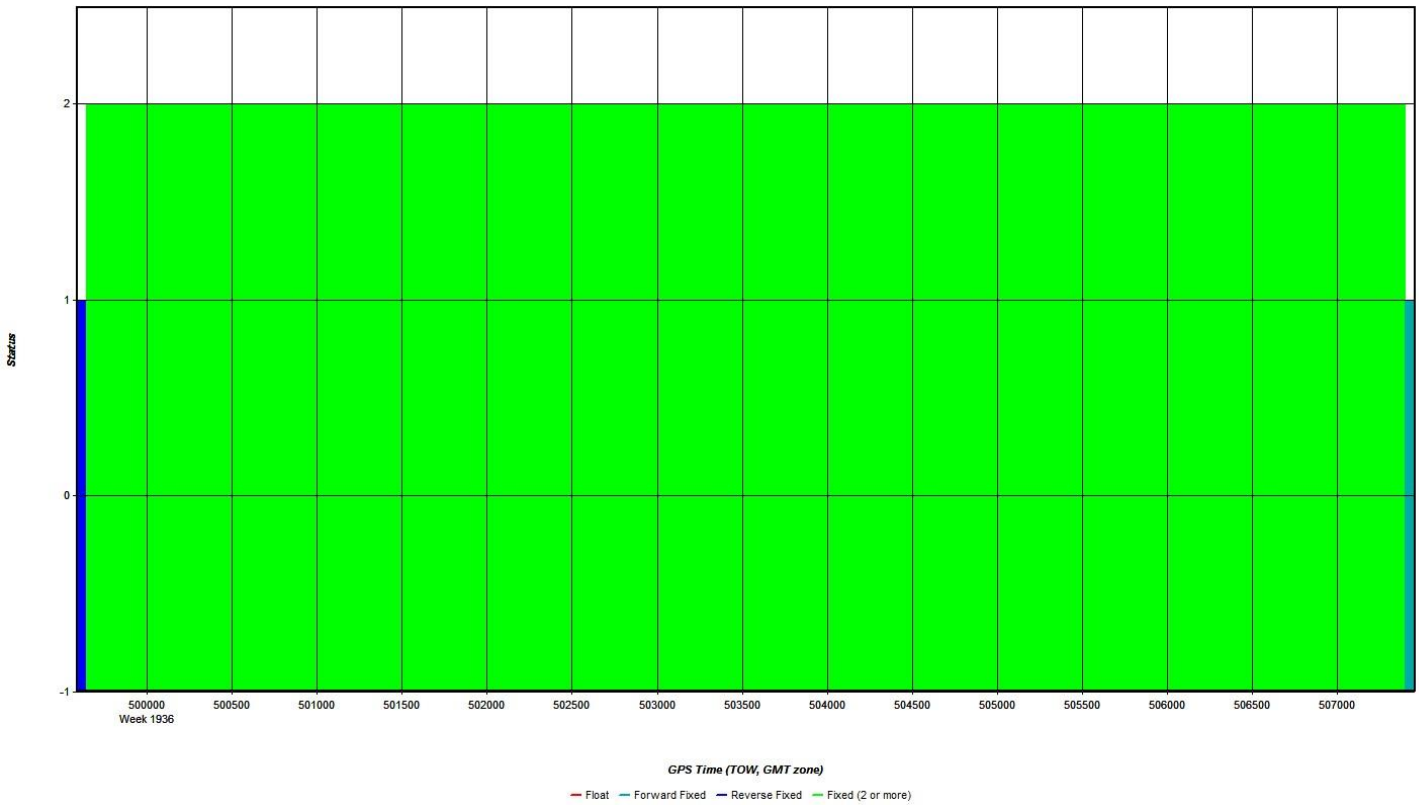

Estimated StdDev (m)
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

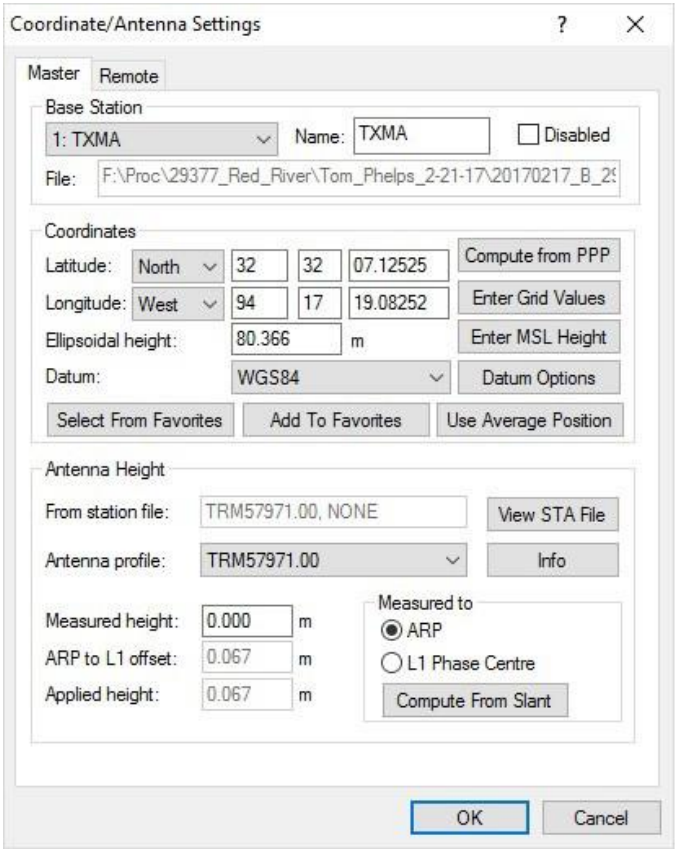

Roll & pitch (deg)
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-34
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
Roll
Pitch

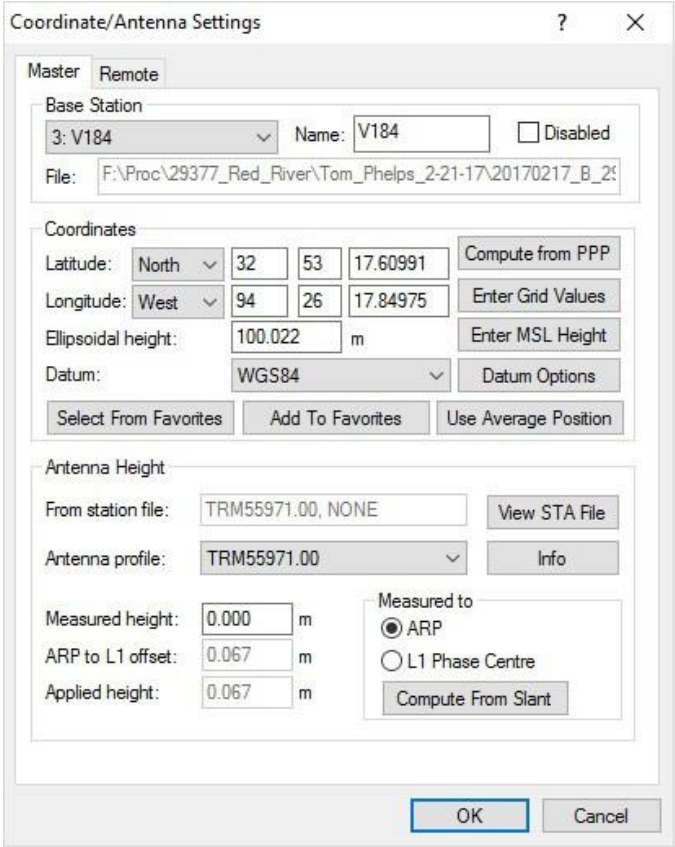

Height (m)
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
Height

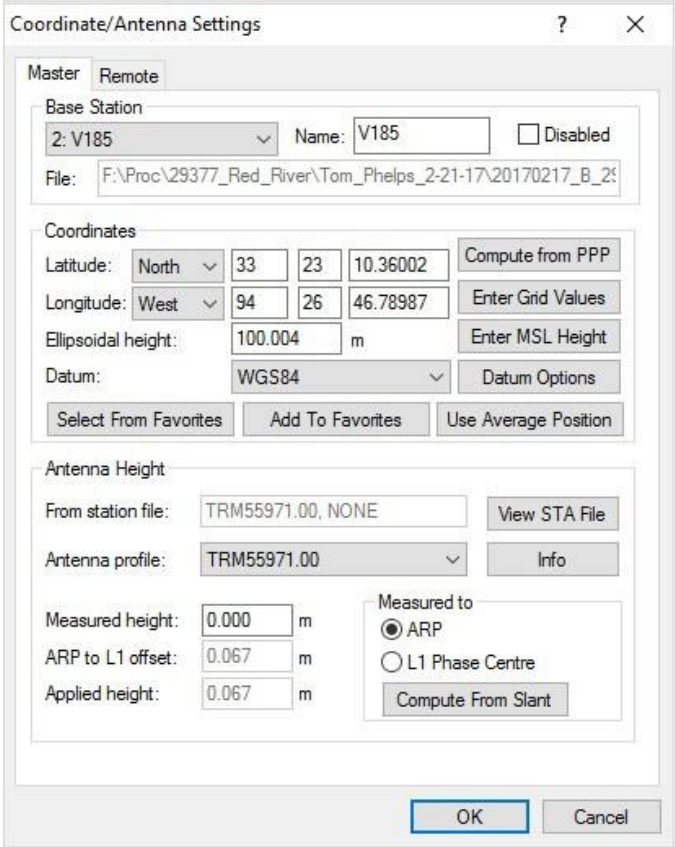

RMS (m)
0.056
0.054
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
RMS
SD


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
-5.0
-5.5
-6.0
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
500000
Week 1936
500500
501000
501500
502000
502500
503000
503500
504000
504500
505000
505500
506000
506500
507000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: F:\Proc\29377_Red_River\Tom_Phelps_2-21-17\20170217_B_2
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
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: V184
Name: V184
Disabled
File: F:\Proc\29377_Red_River\Tom_Phelps_2-21-17\20170217_B_2
Coordinates
Latitude: North 32 53 17.60991
Longitude: West 94 26 17.84975
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
2: V185
Name: V185
Disabled
File: F:\Proc\29377_Red_River\Tom_Phelps_2-21-17\20170217_B_2
Coordinates
Latitude: North 33 23 10.36002
Longitude: West 94 26 46.78987
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
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: 2-17-17

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

Project: RED RIVER LIDAR Proj #: 29377 Flight Mgmt File: 20170217_184340

Aircraft: 73TM Begin Hobbs: 6566.8 End Hobbs: 6568.7 Total: 1.9 Pilot: J NELSON Co-Pilot: Tech: M AUST

Dep Apt: GGG Dep Time (Lcl): 12:50 (Z): 1850 Arr Apt: GGG Arr Time (Local): (Z): Tot Time Aloft:

CORS: Y / N Sta 1: TXMA 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)

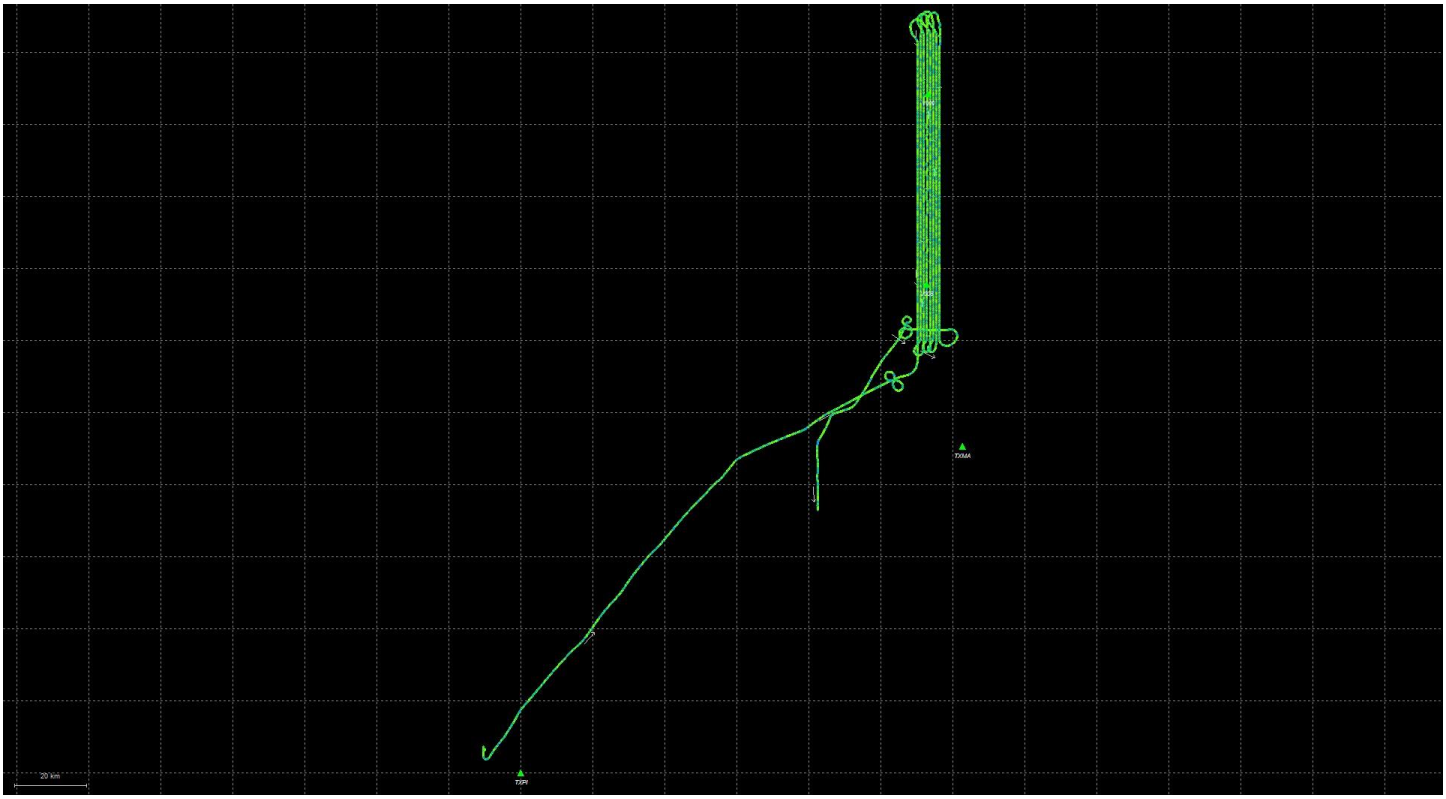
Gd Temp beg: 15 °c End: 20 °c OAT beg: °c End: °c Altimeter begin: 29.94 end: 29.90

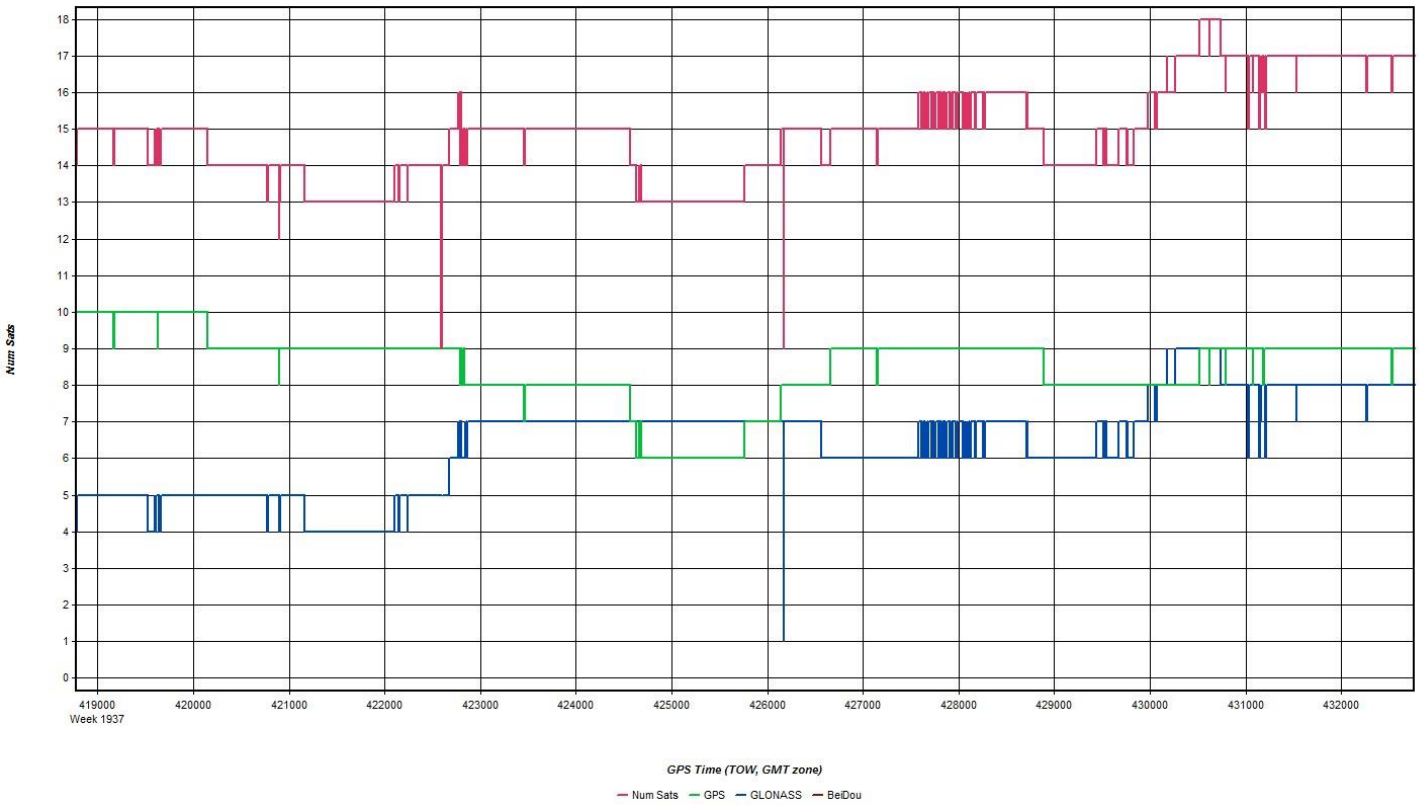
LiDAR											
Type	ALS70	Serial #	7178	Alt AGL	Alt AMSL 6.2'	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB 292	End GB	Storage Name/# 3
FOV	40	Scan Freq	53	MpIA (Y) / N	Pulses in Air	Pulse Rate 295	Power 100	PPSM 2.8+		Tot GB	

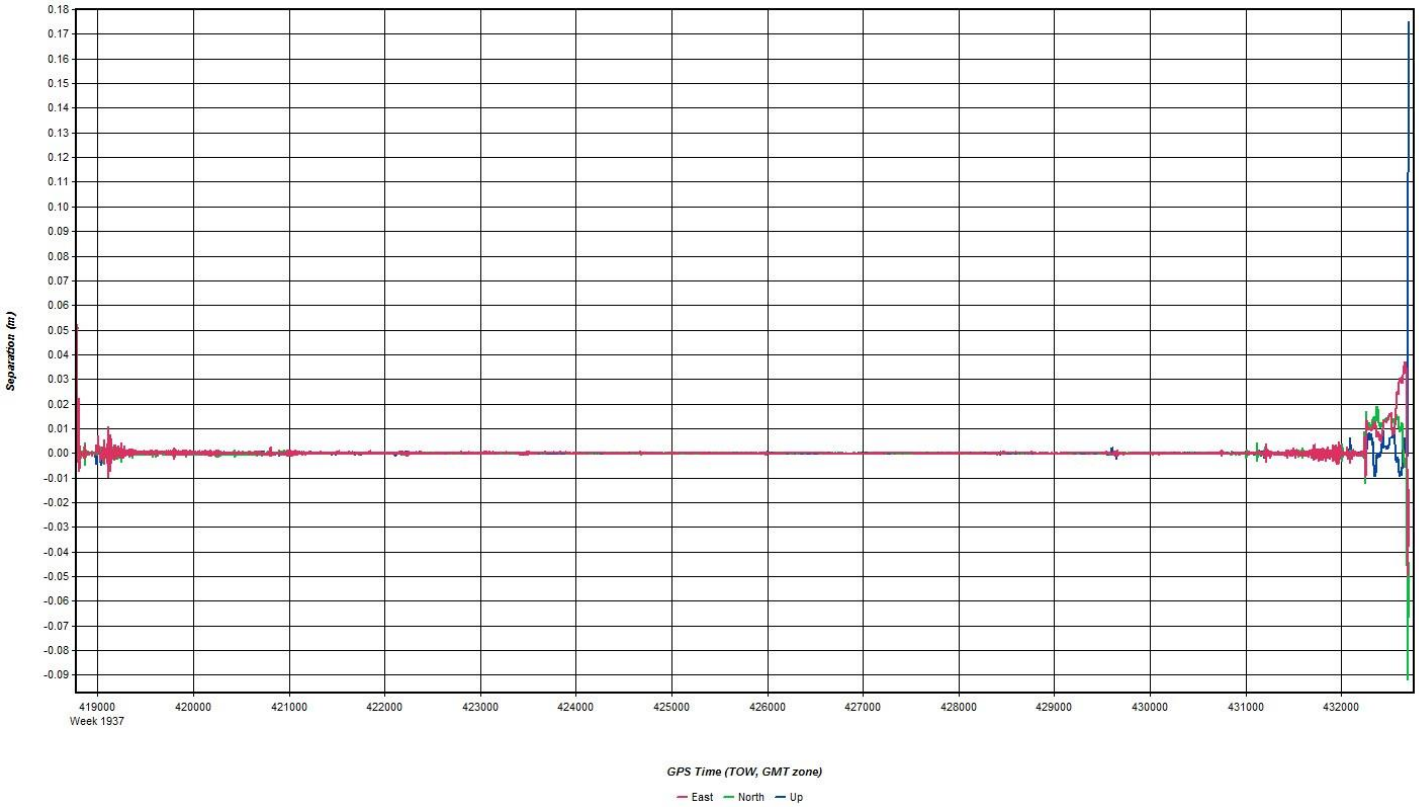
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
418	N	1912	1928	150	1.2/16	6.2			CLOUD DECK ABOUT 500' ABOVE US- LIGHT RAIN
419	S	1931	1948	149	1.4/15	6.2			LIGHT RAIN
420	N	1950	2006	150	1.2/15	6.2			
421	S	2009	2027	150	1.3/15	6.2			LIGHT RAIN
4C001	W	2030	2031	174	1.1/17	5.4			MANUAL CROSSFLIGHT

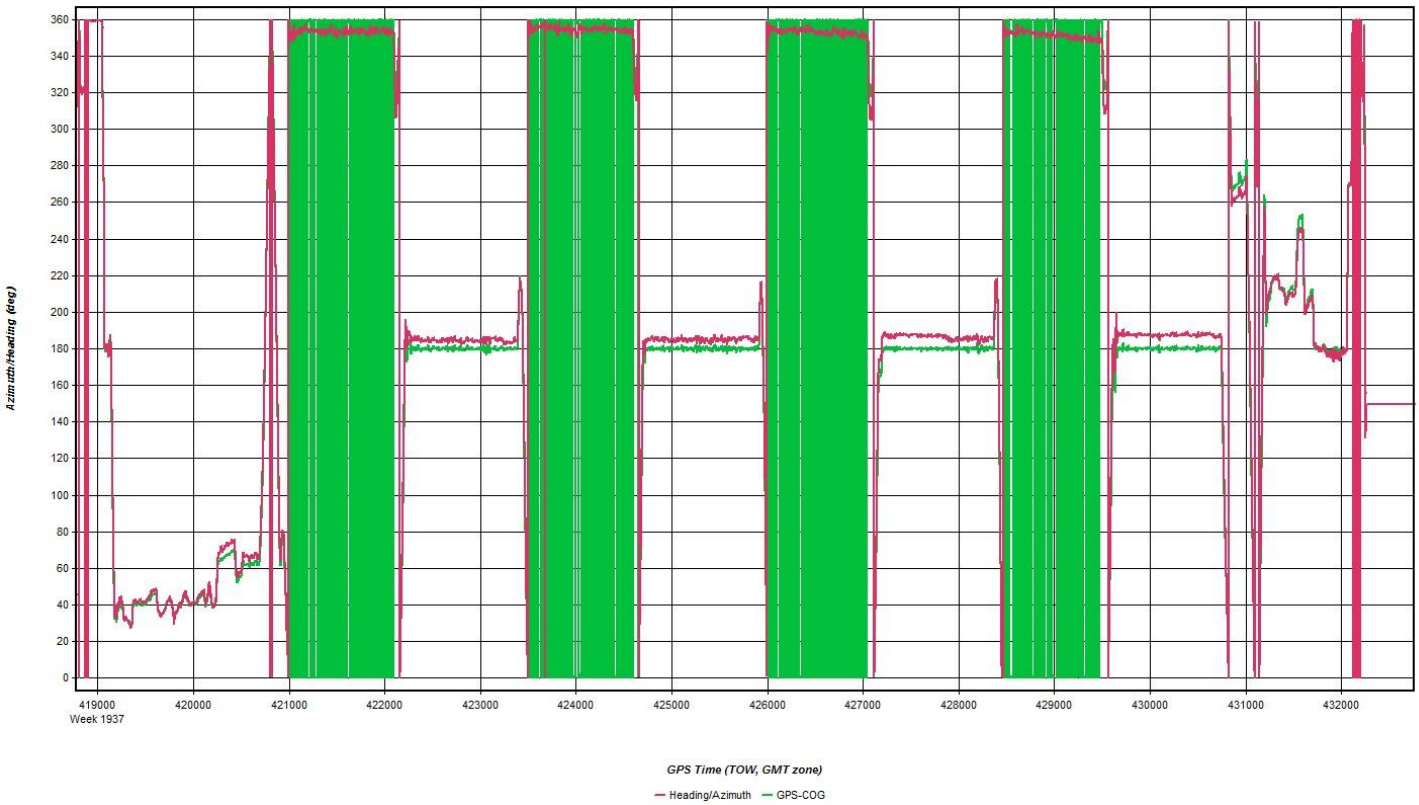
Total Proj Lines: Lines Flown: Lines Remain: Online Time: 1.25 Mob Time: .75 Notes:

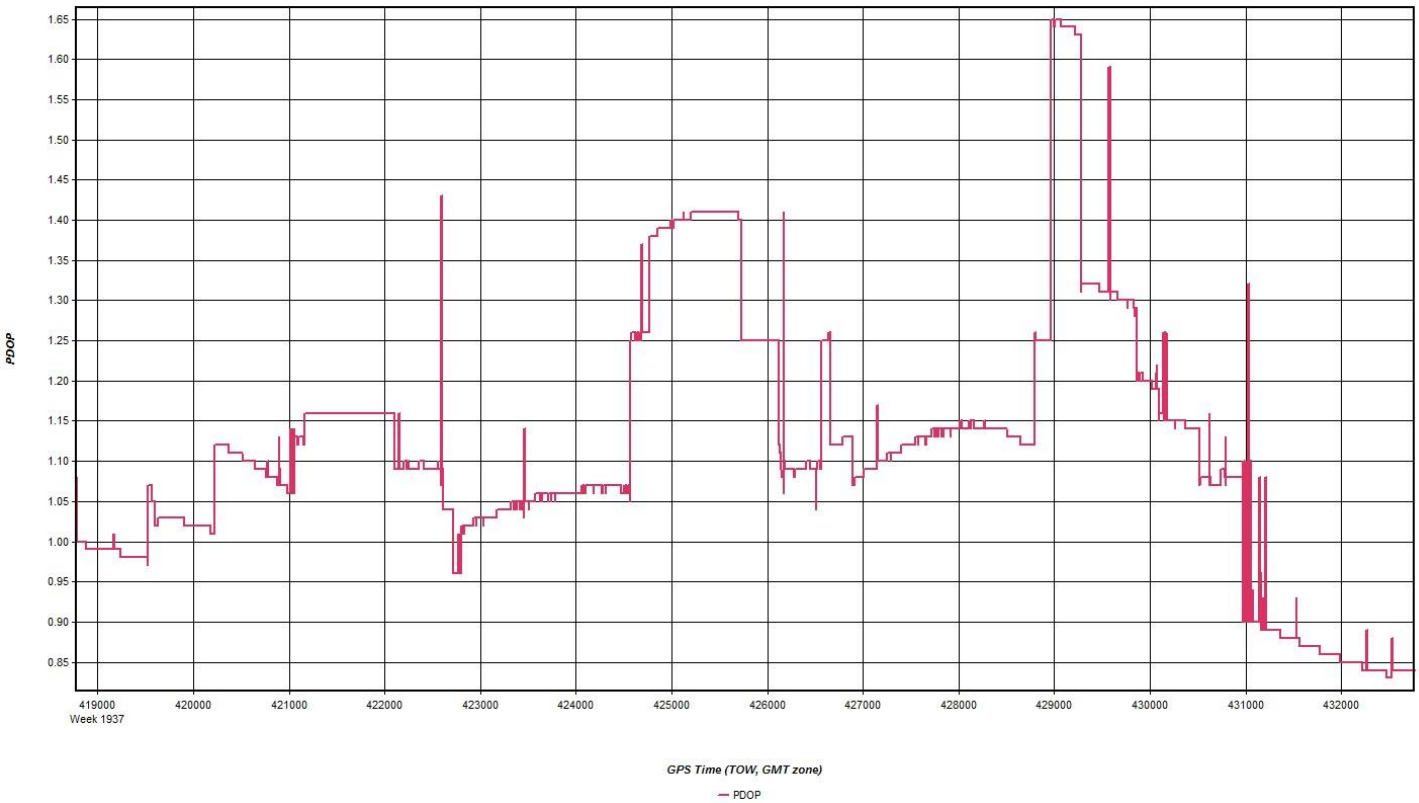
Feb 23, 2017-B (N73TM, SN7178)

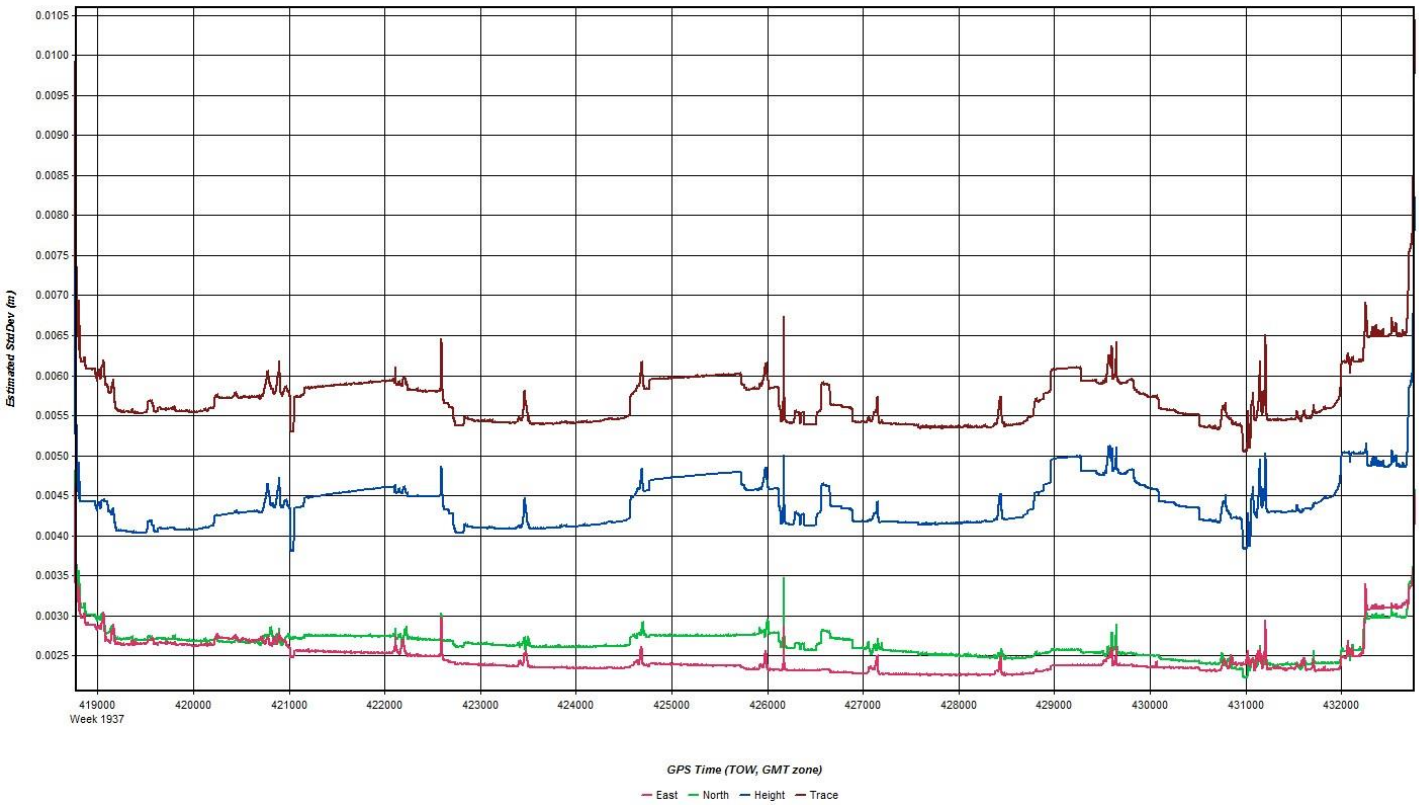


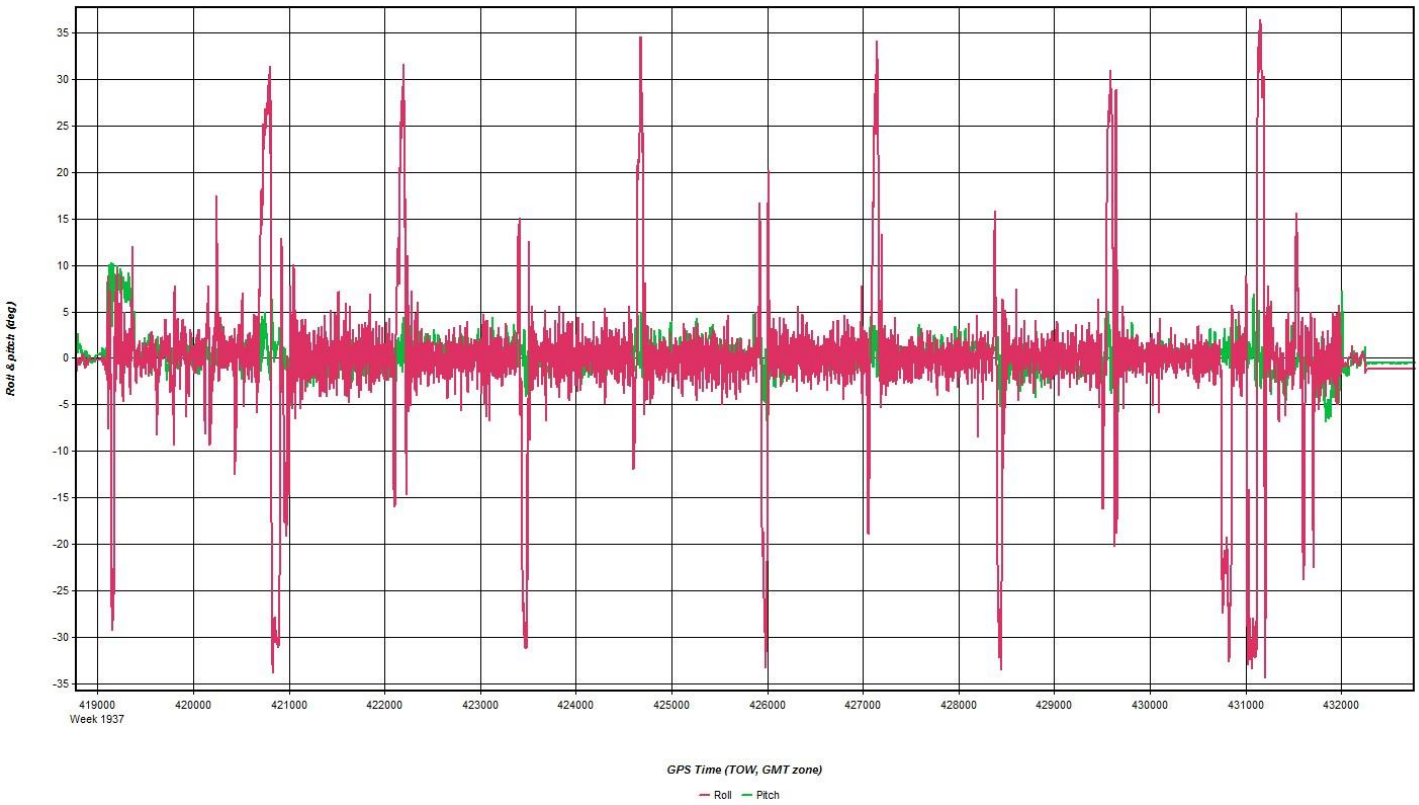

Num Sats
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

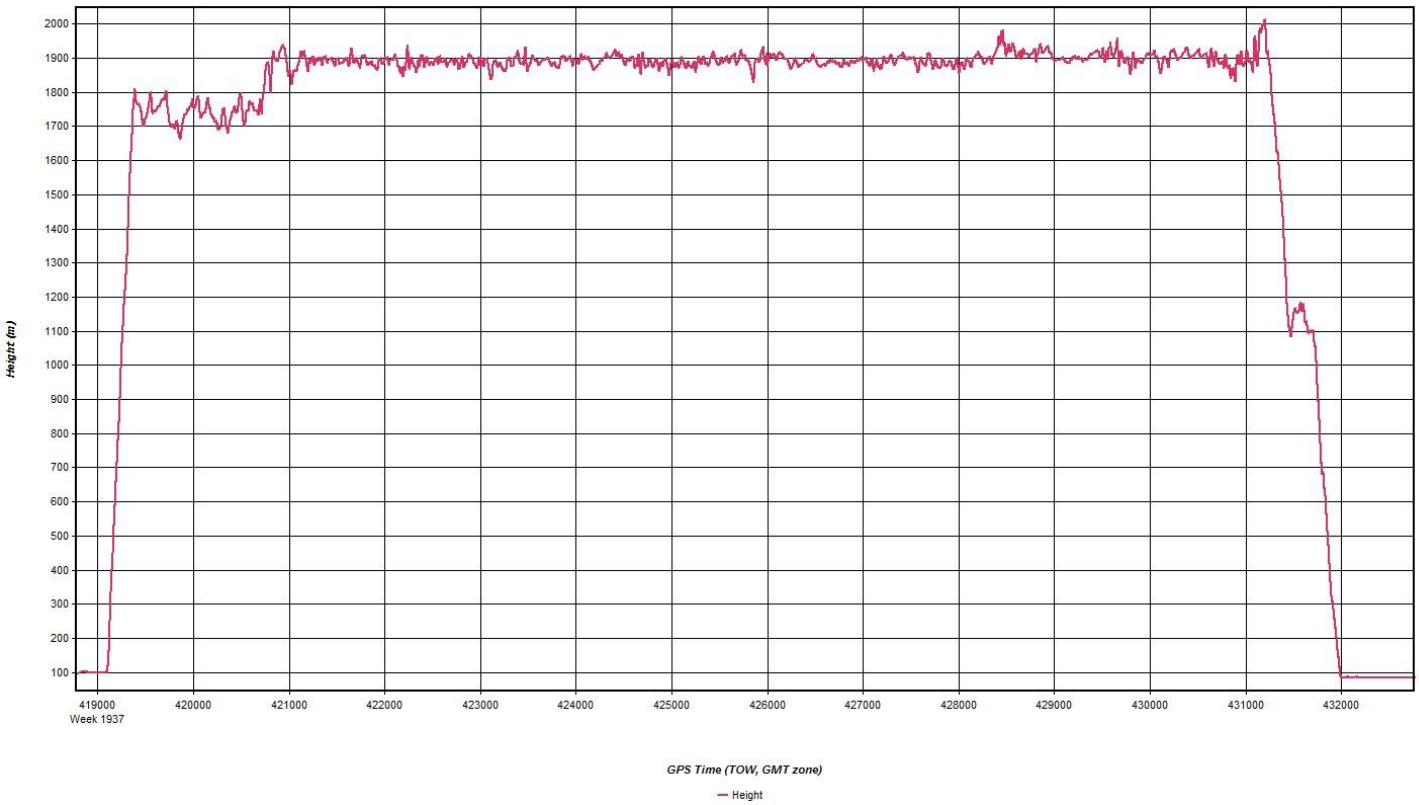

Separation (m)
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
East
North
Up

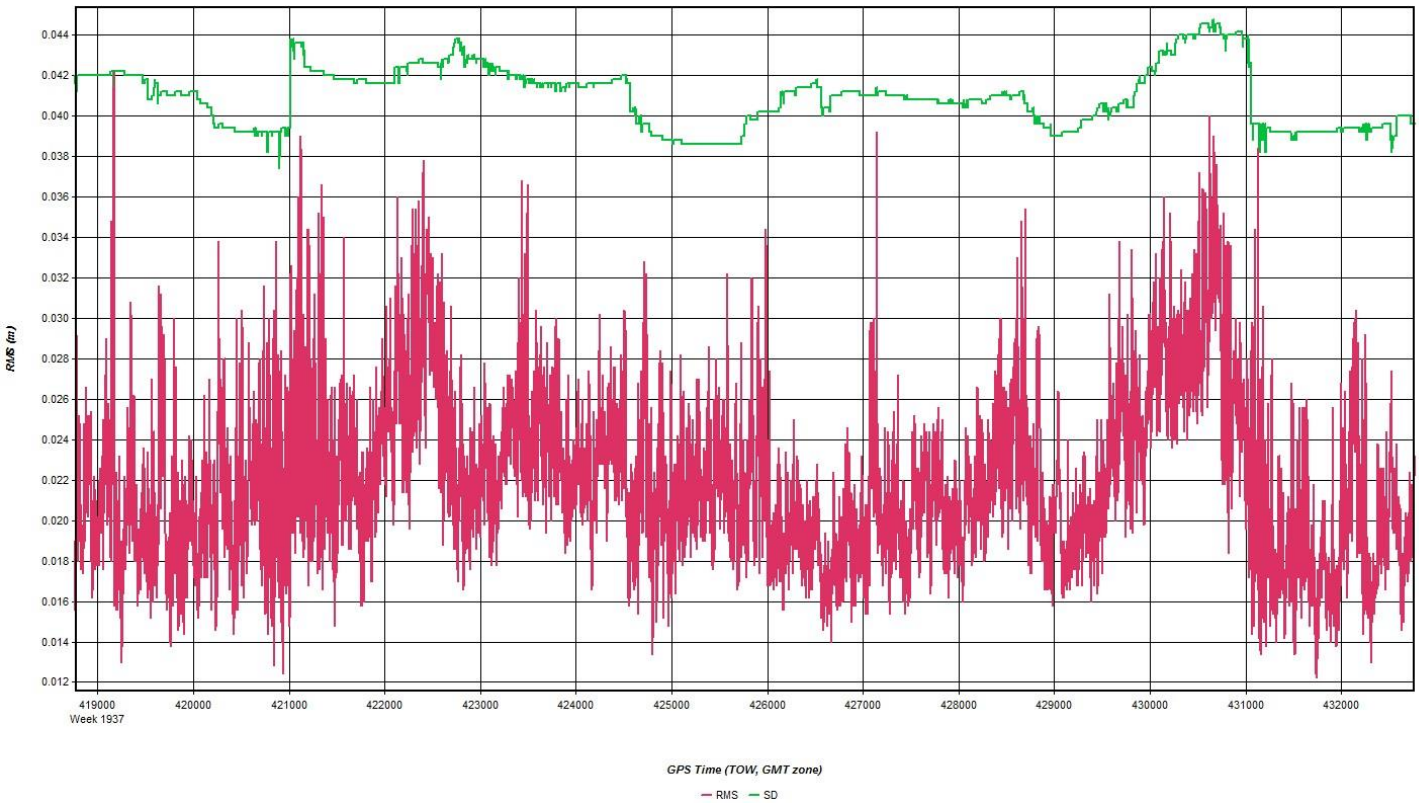

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

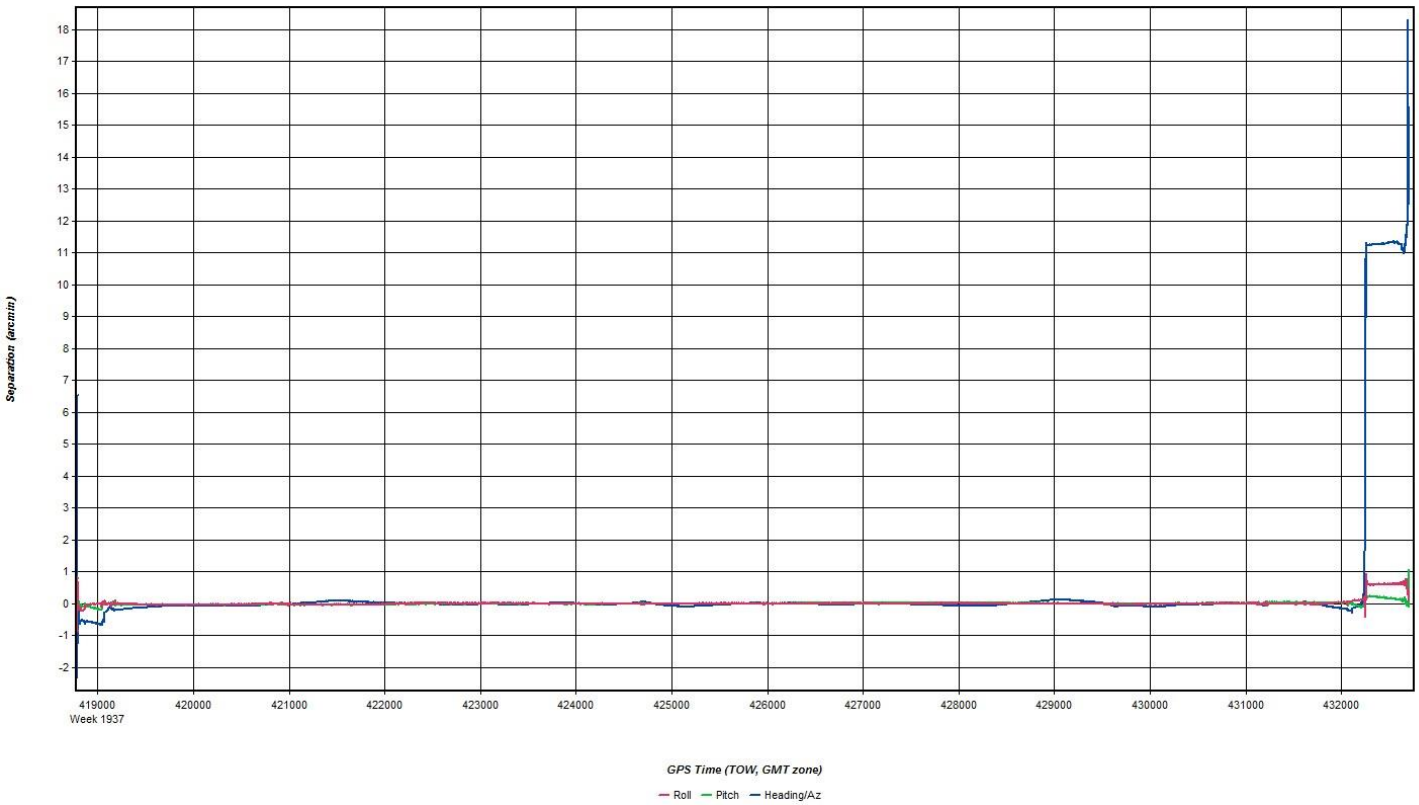

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
PDOP

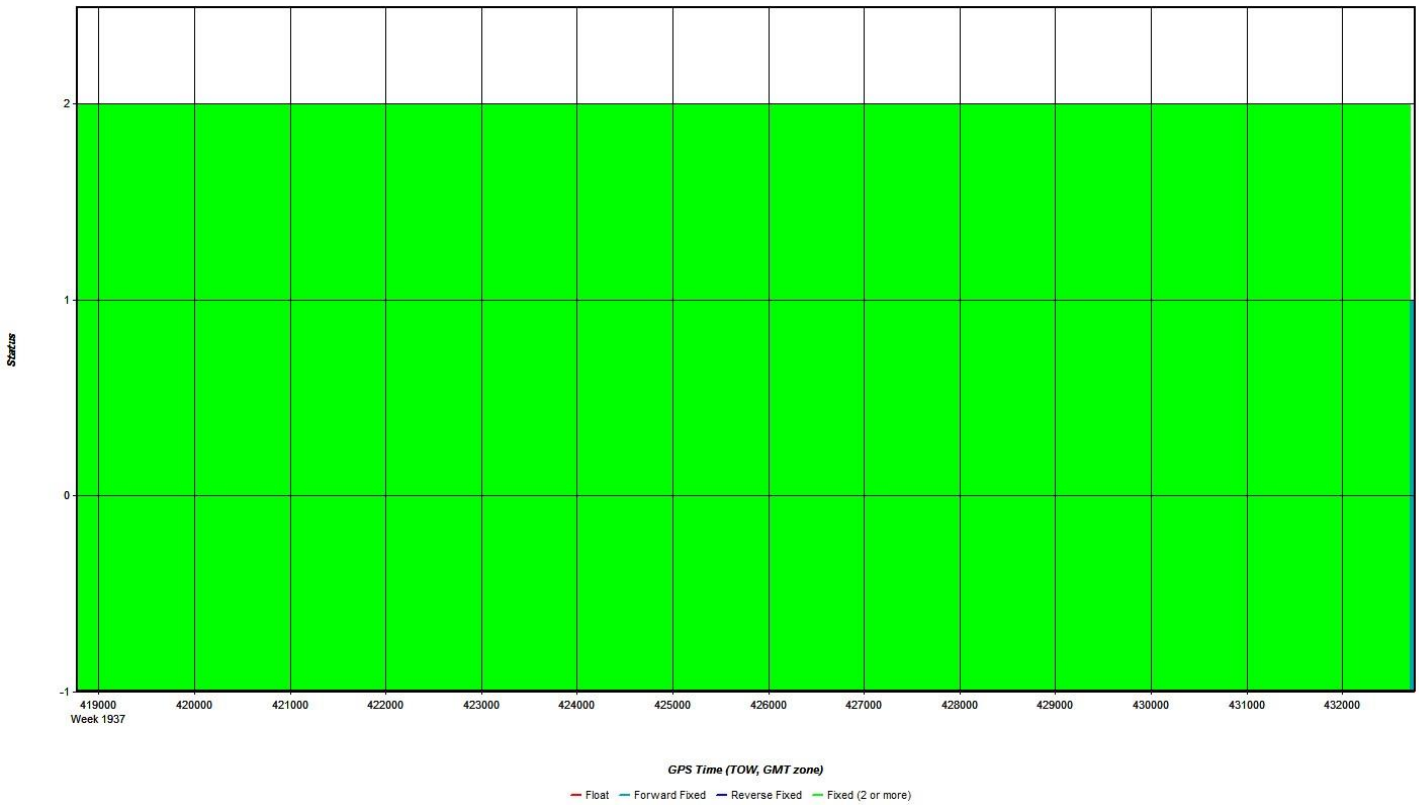

Estimated StdDev (m)
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

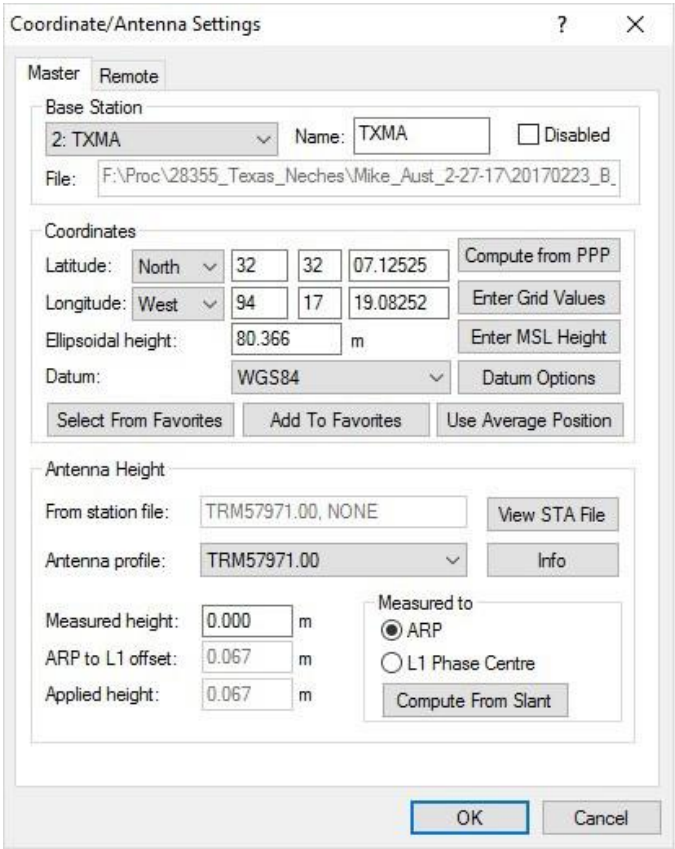

Roll & pitch (deg)
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Roll
Pitch

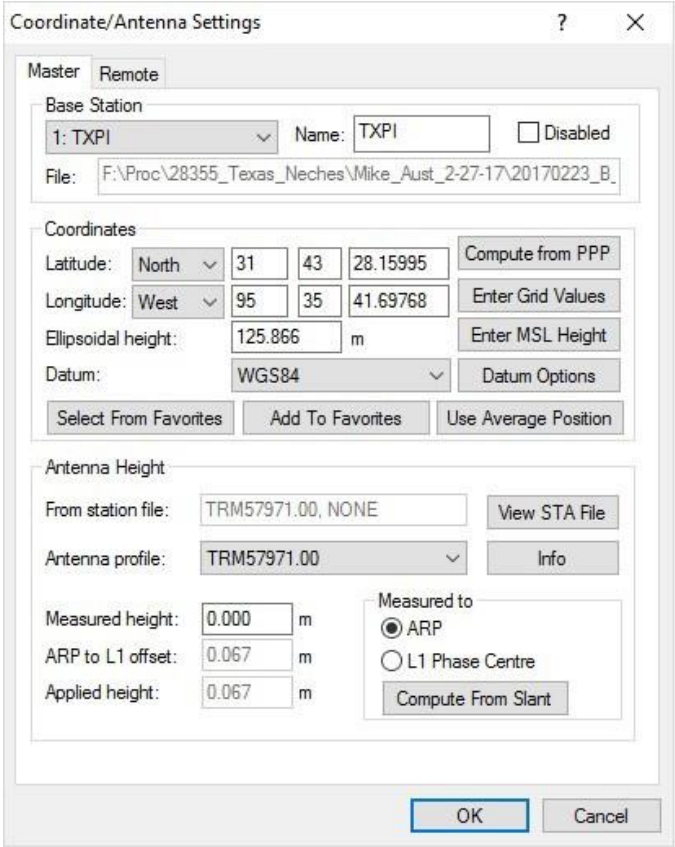

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Height

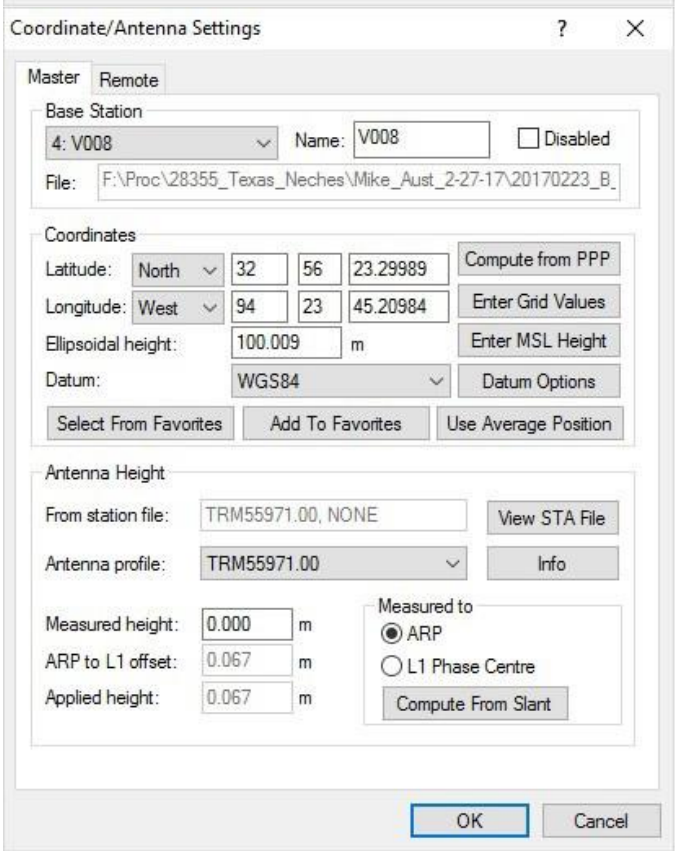

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
RMS
SD

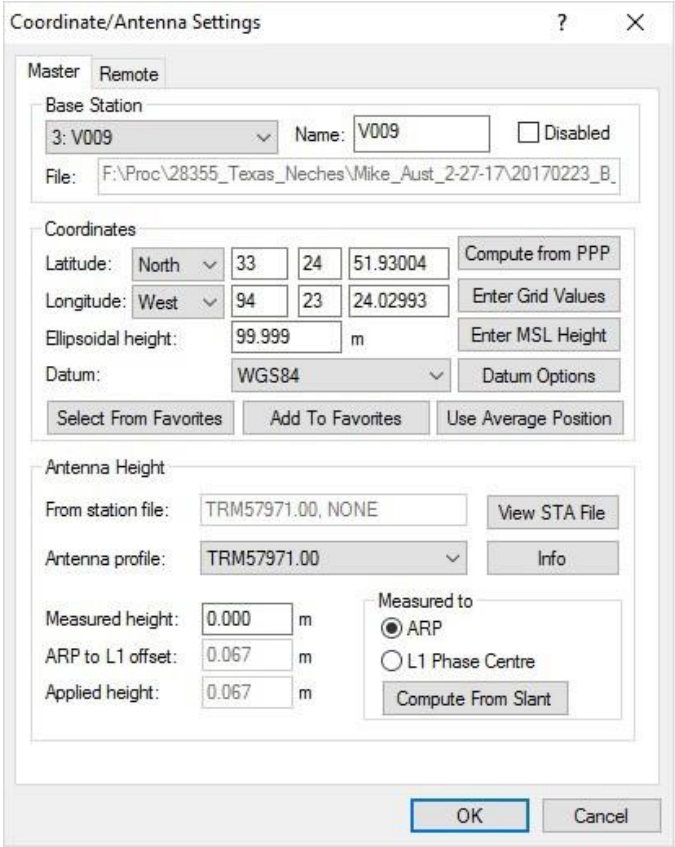

Separation (arcmin)
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
419000
Week 1937
420000
421000
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
432000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
419000
Week 1937
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: TXMA
Name:
TXMA
Disabled
File:
F:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_B_
Coordinates
Latitude:
North
32
32
07.12525
Compute from PPP
Longitude:
West
94
17
19.08252
Enter Grid Values
Ellipsoidal height:
80.366
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: F:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_B_
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: V008
Name: V008
Disabled
File: F:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_B_
Coordinates
Latitude: North 32 56 23.29989
Longitude: West 94 23 45.20984
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
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: V009
Name:
V009
Disabled
File:
F:\Proc\28355_Texas_Neches\Mike_Aust_2-27-17\20170223_B_
Coordinates
Latitude:
North
33
24
51.93004
Compute from PPP
Longitude:
West
94
23
24.02993
Enter Grid Values
Ellipsoidal height:
99.999
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: 2-23-17
Lift: A (B) C D E Pg 1 of 1

Project: RED RIVER LIDAR Proj #: 29377 Flight Mgmt File: 20170223 201638

Aircraft: 73TM Begin Hobbs: 6580.6 End Hobbs: 6584.1 Total: 3.5 Pilot: J NELSON Co-Pilot: Tech: M AUST

Dep Apt: PSN Dep Time (Lcl): 2:15 (Z): 20:15 Arr Apt: GGG Arr Time (Local): 6:05 (Z): 00:05 Tot Time Aloft: 3.5

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)

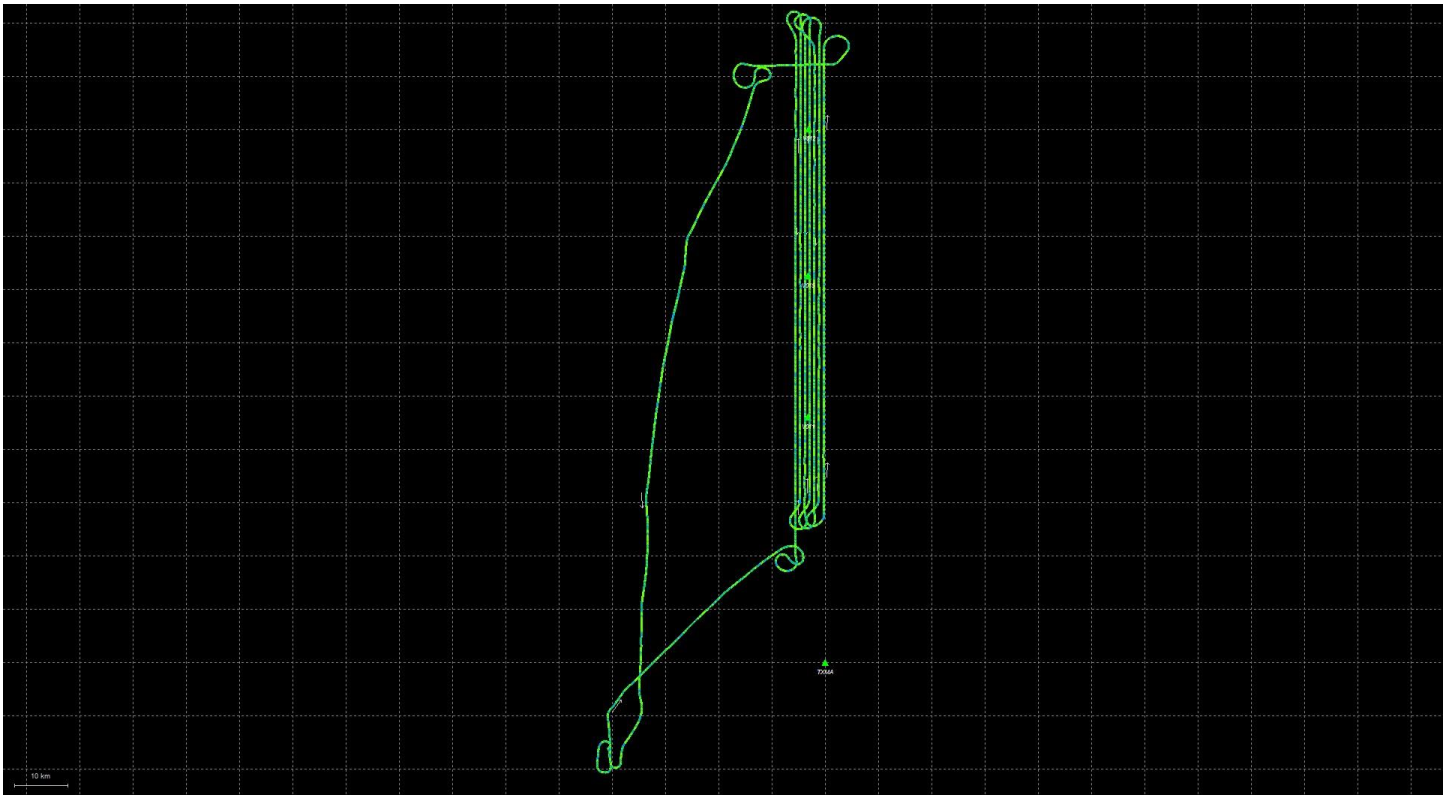
Gd Temp beg: 29 °c End: 28 °c OAT beg: °c End: °c Altimeter begin: 29.64 end: 29.57

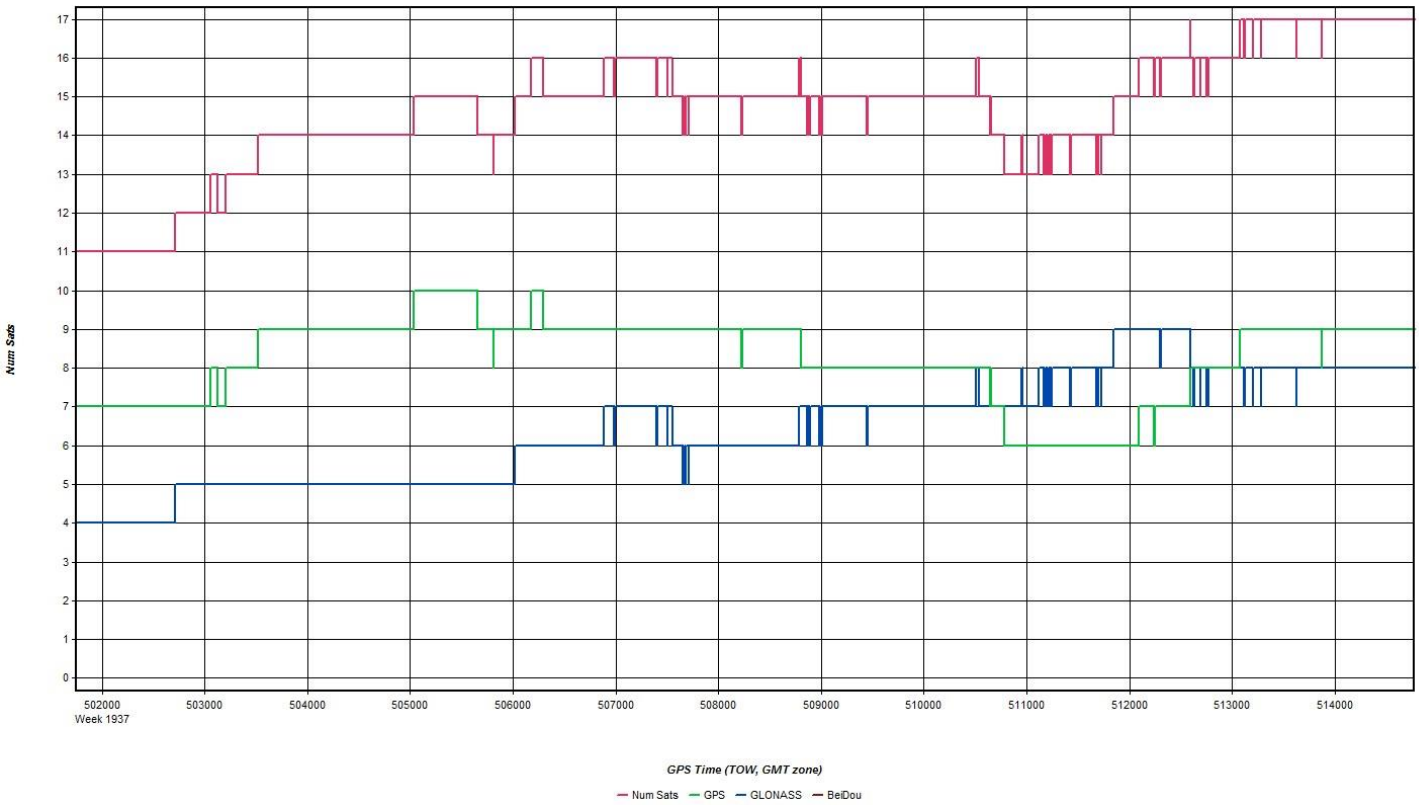
LiDAR	Type	Serial #	Alt AGL	Alt AMSL	Avg Terr Ht	Max Gdspd	Avg Pt Spacing	Beg GB	End GB	Tot GB	Storage Name/#
	ALS70	7178		6.2'					341		3
	FOV 40	Scan Freq 53	MpiA (Y) / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM				

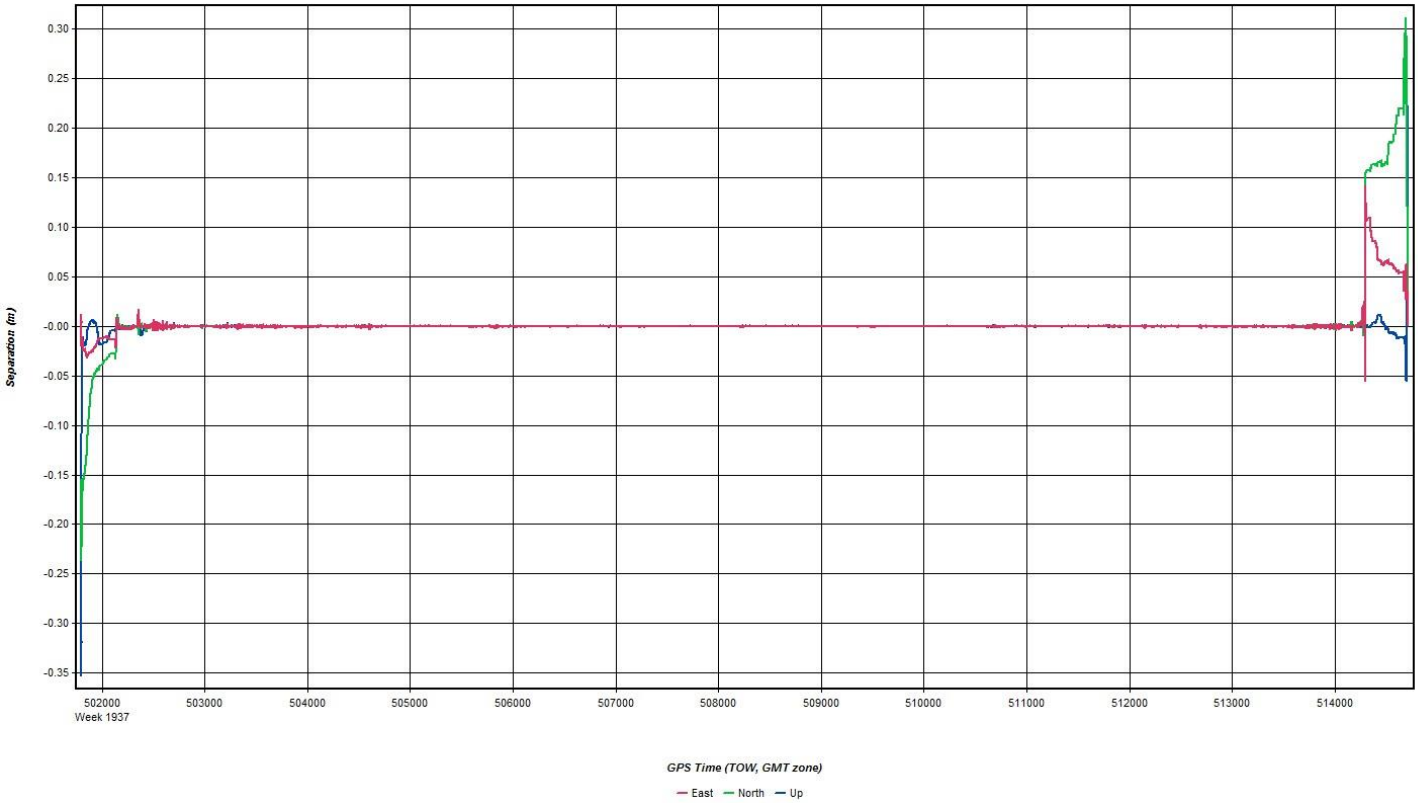
Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/#Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
422	N	2057	2114	156	1.2/17	6.2			
423	S	2117	2136	136	1.2/18	6.2			
424	N	2138	2152	148	1.3/17	6.2			
425	S	2159	2218	140	1.2/17	6.2			
426	N	2220	2236	156	1.2/18	6.2			
427	S	2240	2259	141	1.3/17	6.2			
428	N	2302	2318	158	1.3/18	6.2			
429	S	2320	2338	148	1.1/19	6.2			
WL001	W	2340	2342	158	1.3/18	6.1			TIE LINE

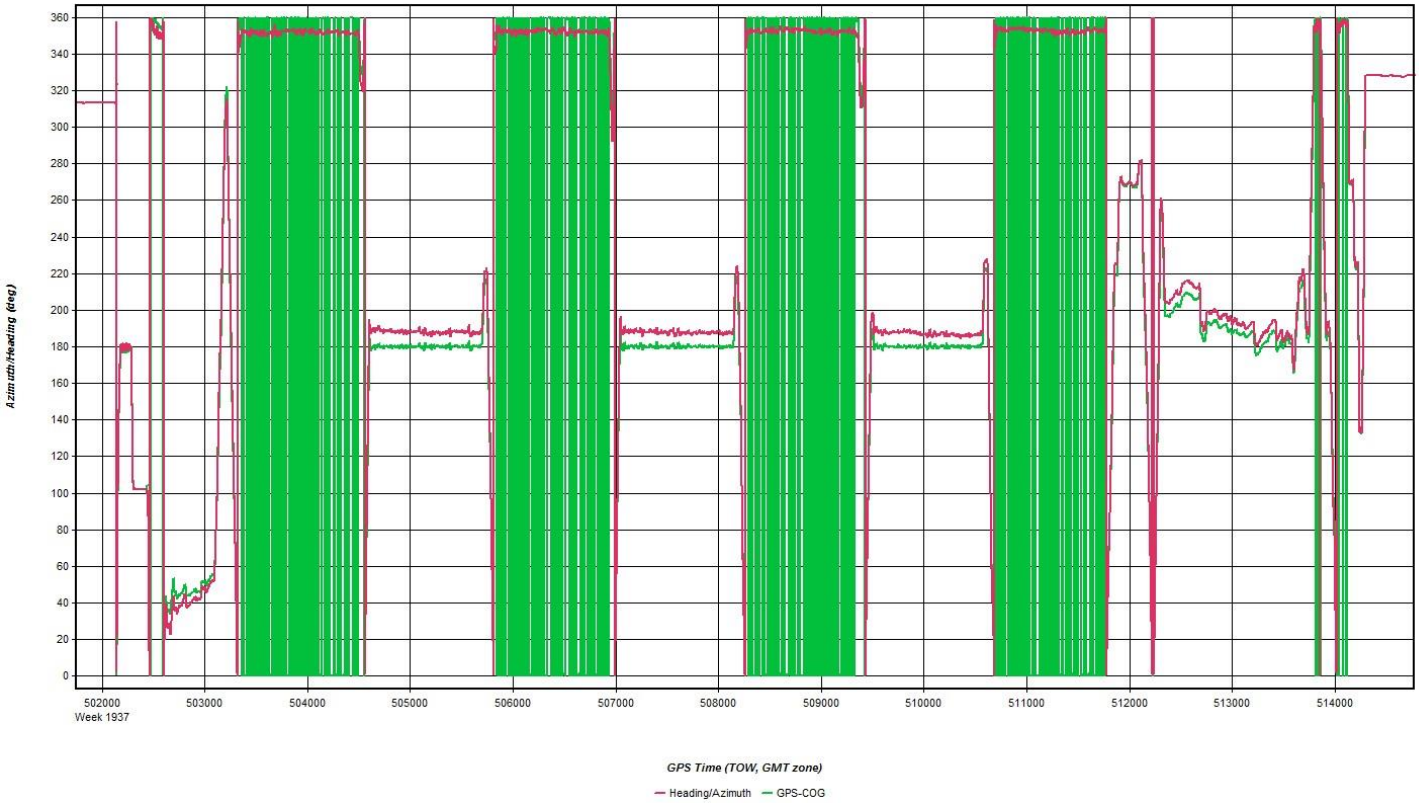
Total Proj Lines: Lines Flown: 8 Lines Remain: 4 Online Time: 2.75 Mob Time: .75 Notes:

Feb 24, 2017-A (N73TM, SN7178)

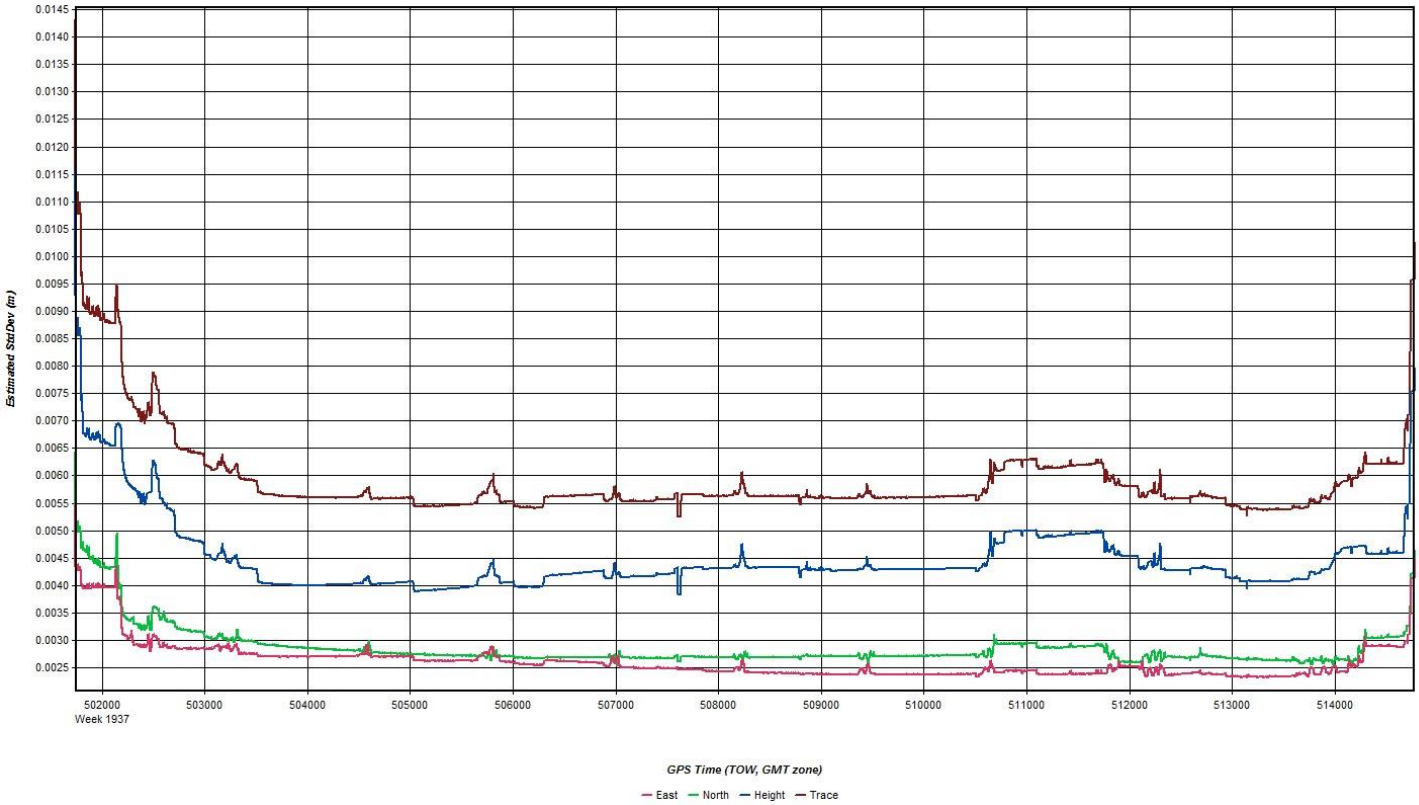


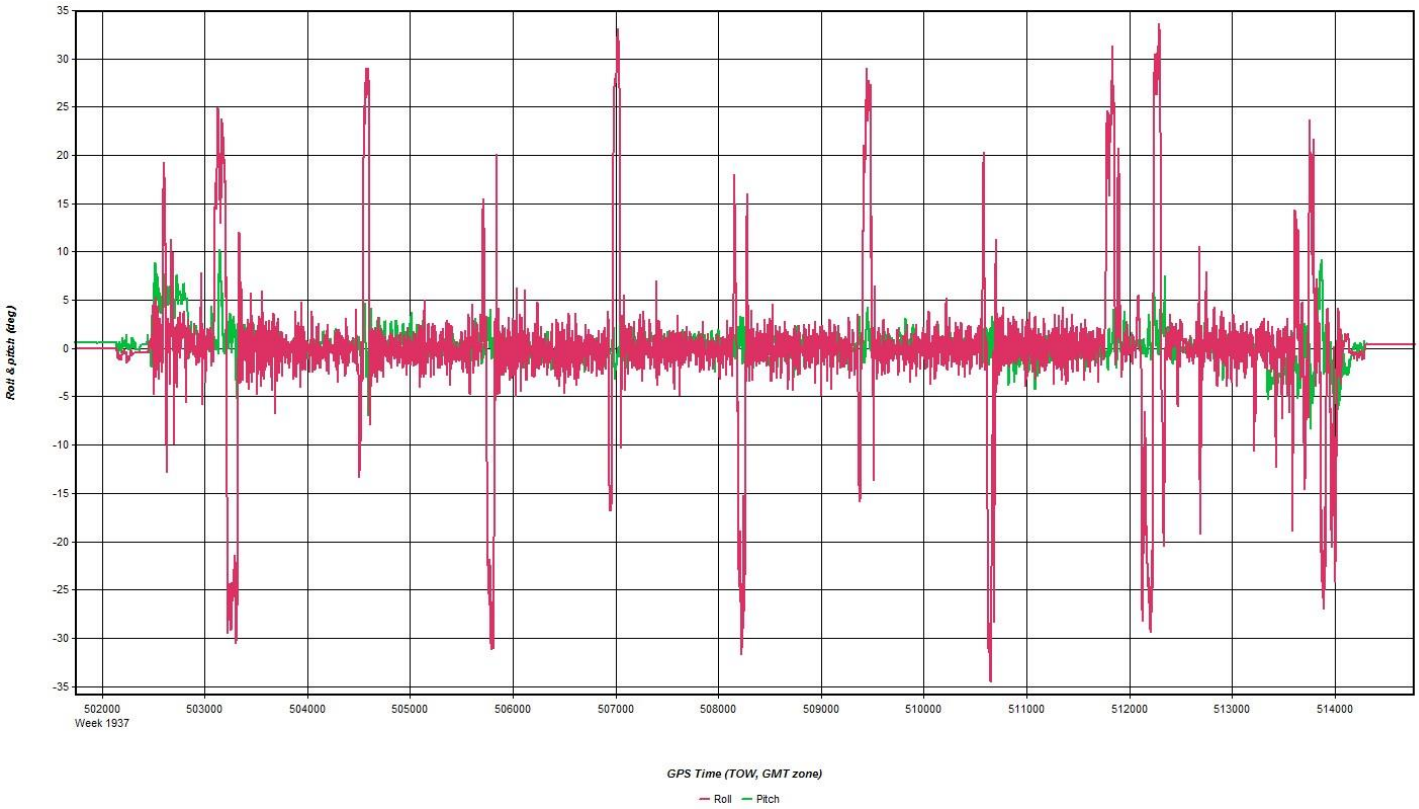

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

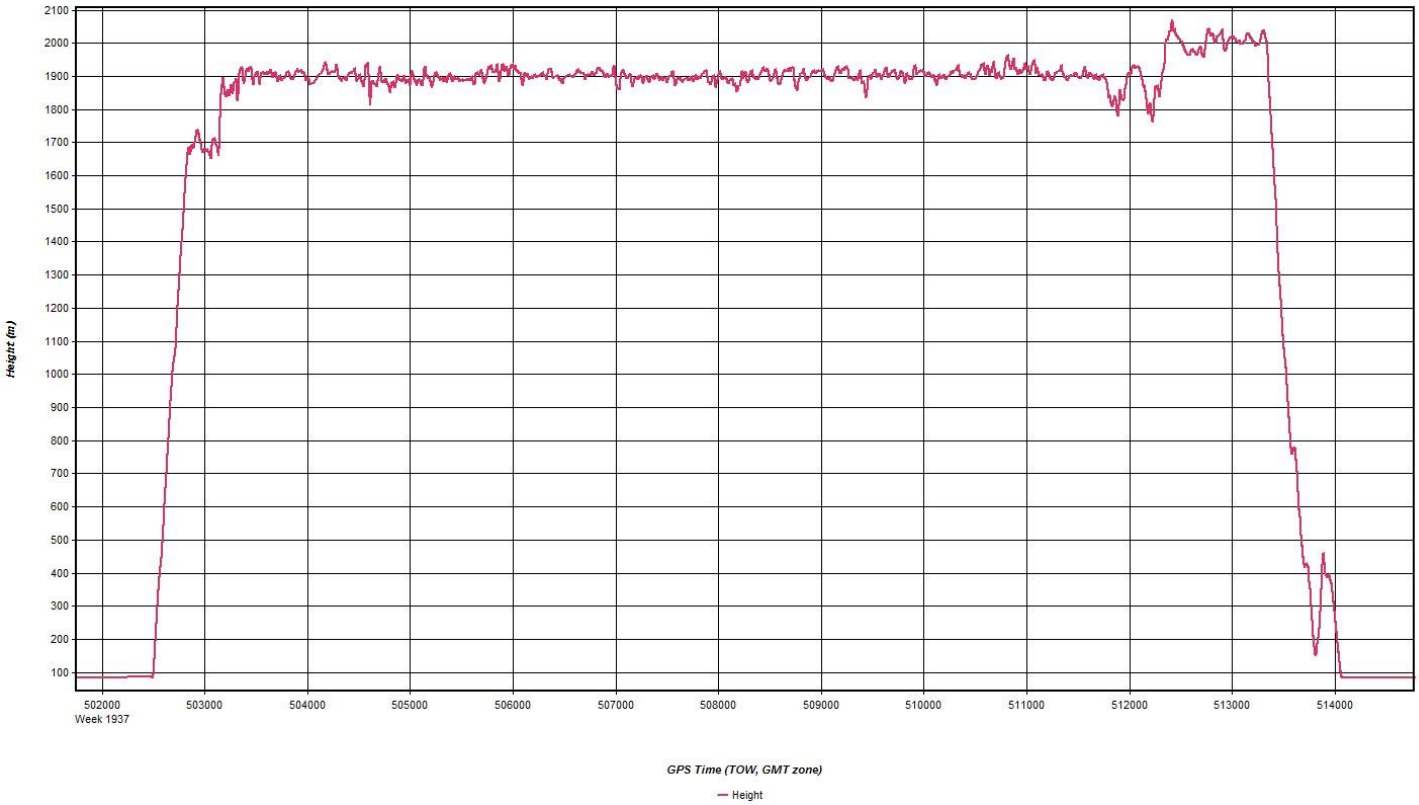

0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
Separation (m)
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
East
North
Up

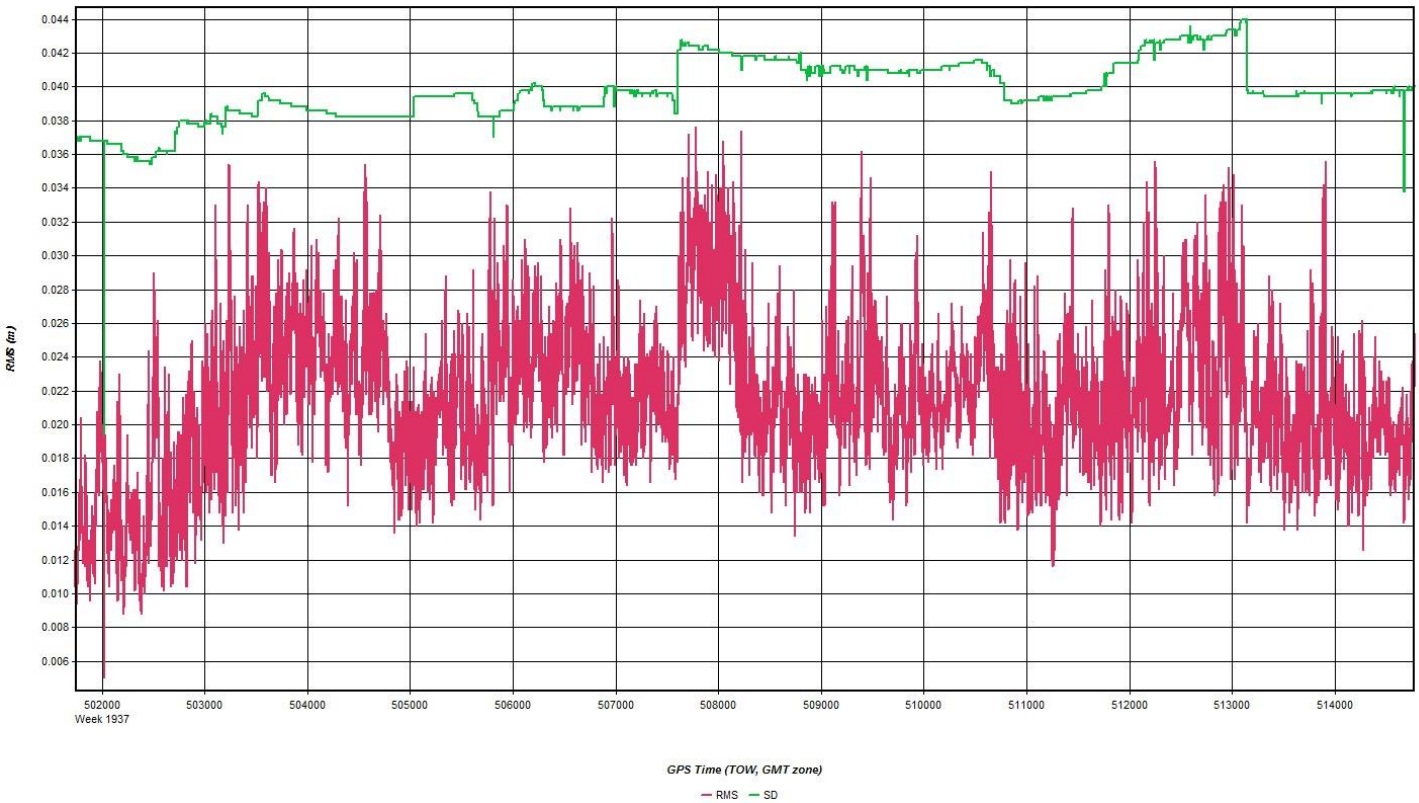

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

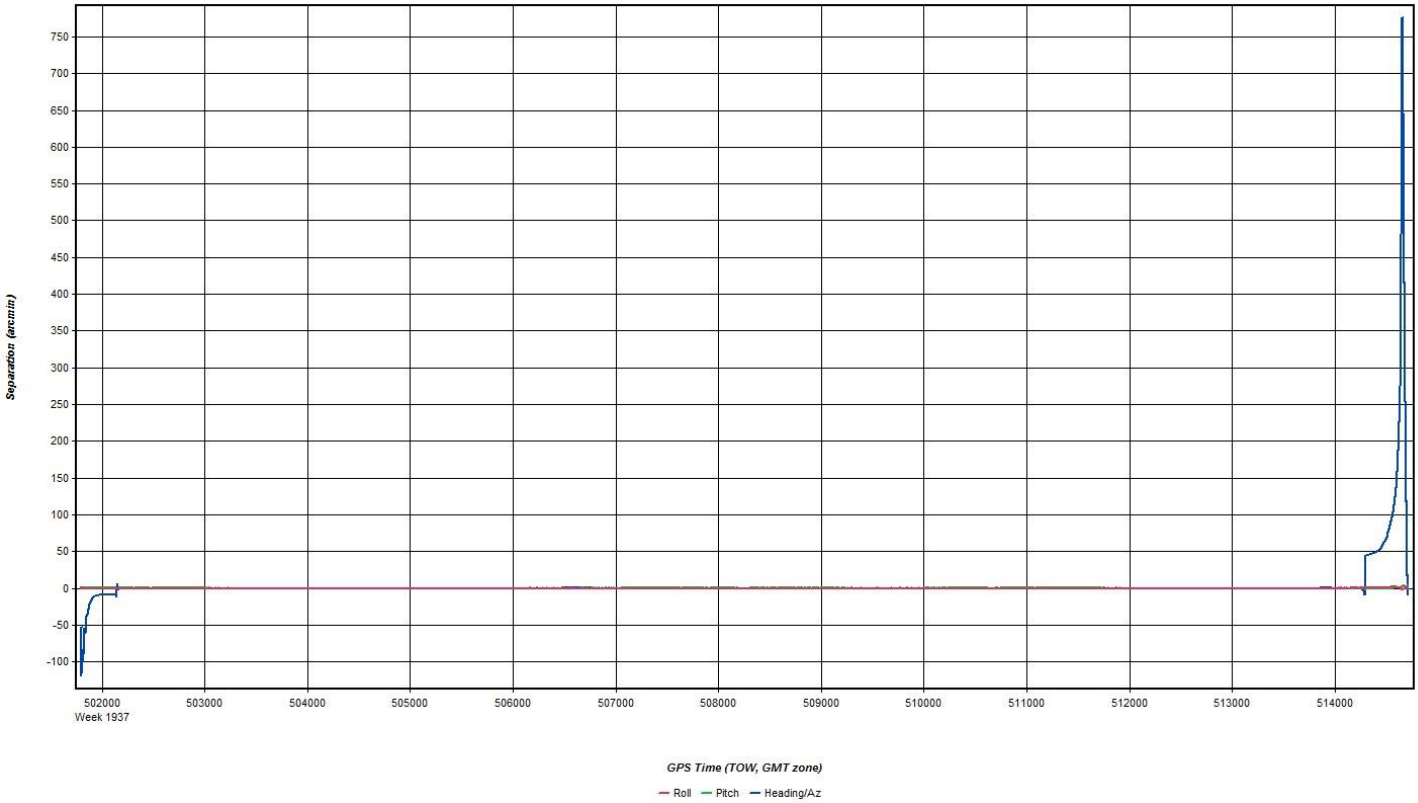

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
PDOP

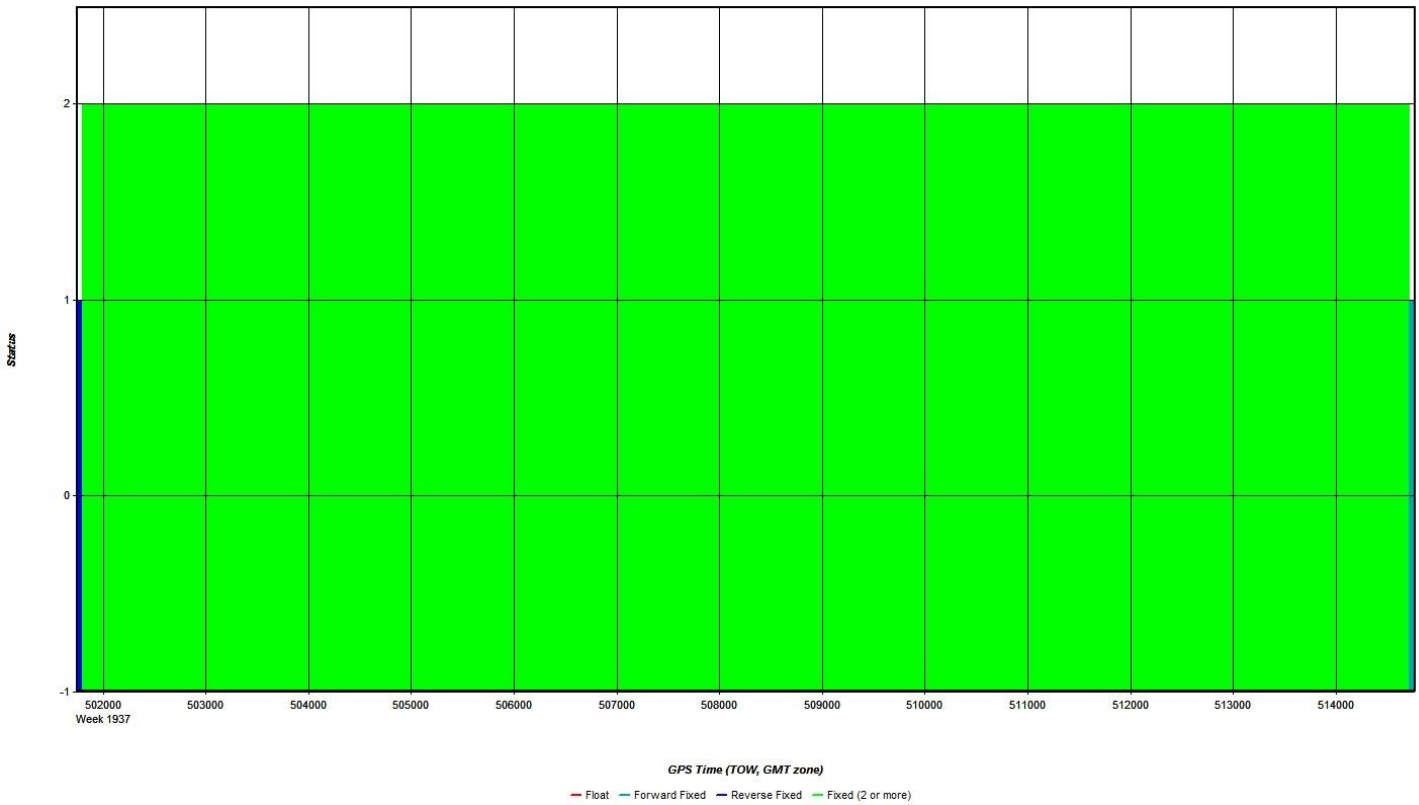

Estimated StdDev (m)
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

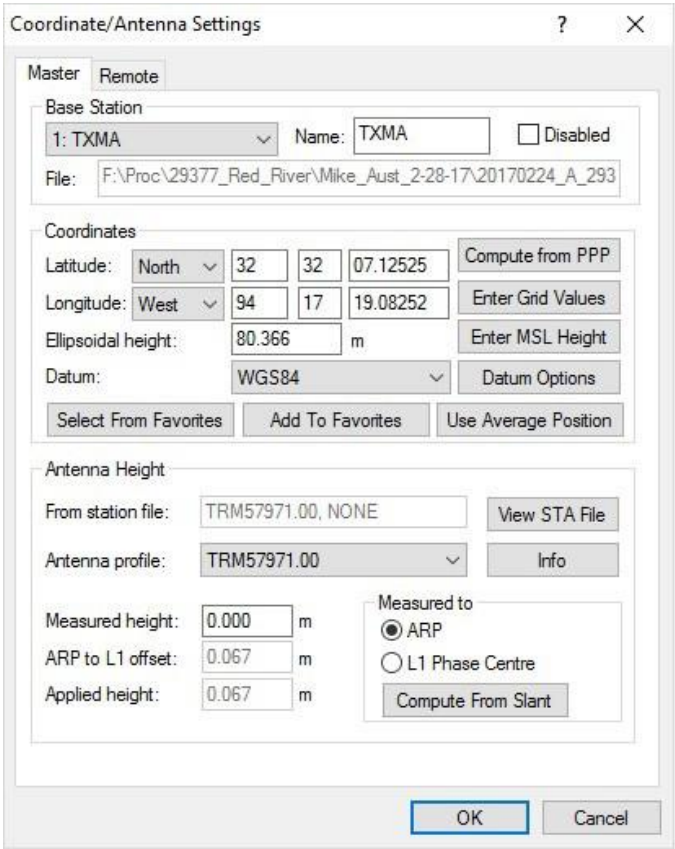

Roll & pitch (deg)
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
Roll
Pitch

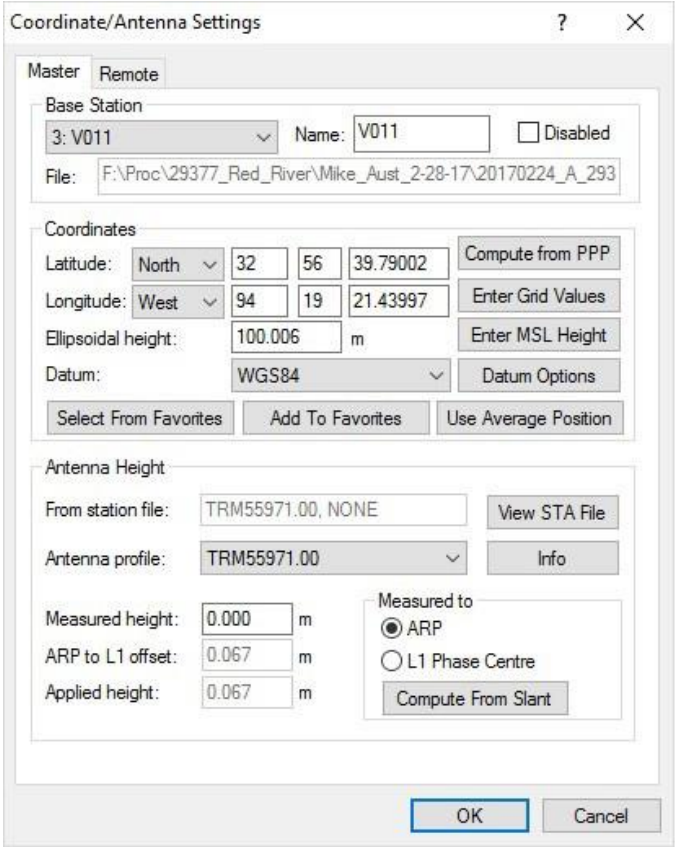

Height (m)
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
Height

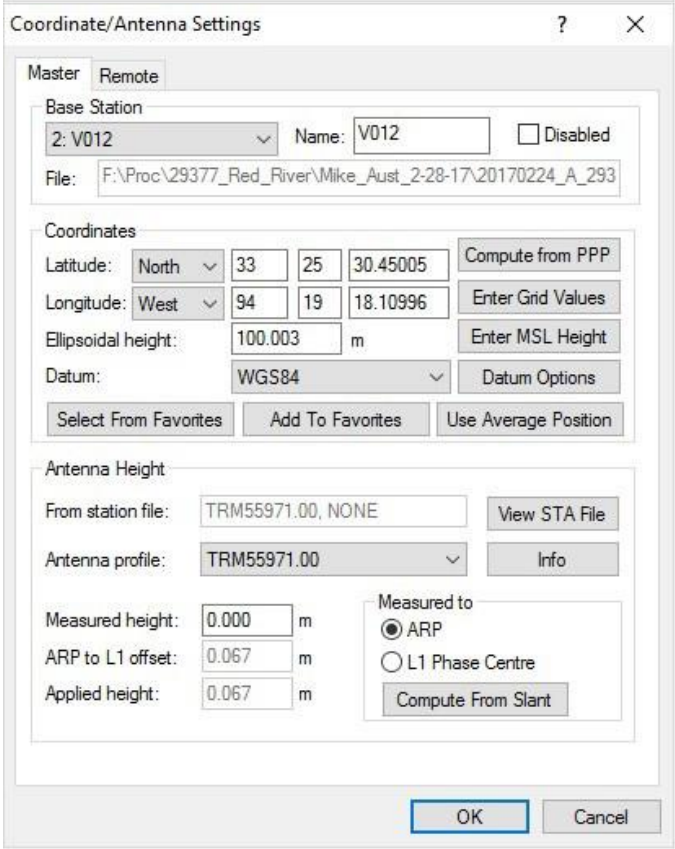

RMS (m)
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
RMS
SD

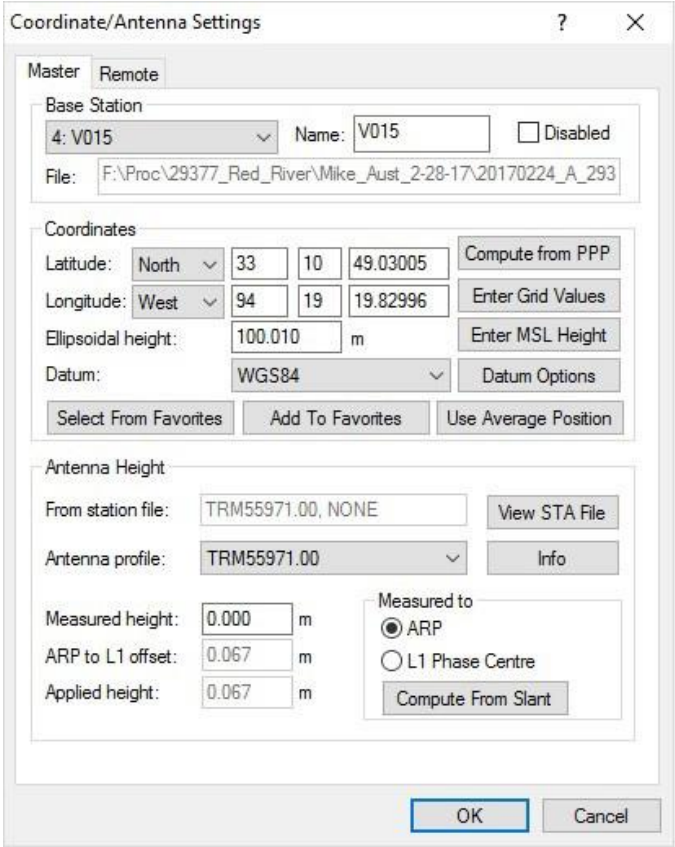

Separation (arcmin)
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
-50
-100
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
502000
Week 1937
503000
504000
505000
506000
507000
508000
509000
510000
511000
512000
513000
514000
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name:
TXMA
Disabled
File:
F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170224_A_293
Coordinates
Latitude:
North
32
32
07.12525
Compute from PPP
Longitude:
West
94
17
19.08252
Enter Grid Values
Ellipsoidal height:
80.366
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: V011
Name: V011
Disabled
File: F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170224_A_293
Coordinates
Latitude: North 32 56 39.79002
Longitude: West 94 19 21.43997
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: 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: V012
Name: V012
Disabled
File: F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170224_A_293
Coordinates
Latitude: North 33 25 30.45005
Longitude: West 94 19 18.10996
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


Coordinate/Antenna Settings
Master
Remote
Base Station
4: V015
Name:
V015
Disabled
File:
F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170224_A_293
Coordinates
Latitude:
North
33
10
49.03005
Compute from PPP
Longitude:
West
94
19
19.82996
Enter Grid Values
Ellipsoidal height:
100.010
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

Flight Log

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

(email log daily to flight_log_distribution_list@quantumspatial.com)

Date: 2-24-17

Lift A B C D E Pg 1 of 1

Project: RED RIVER LIDAR Proj #: 29377 Flight Mgmt File: 20170224-191924

Aircraft: 73TM Begin Hobbs: 6584.1 End Hobbs: 6587.3 Total: 3.2 Pilot: J MEILSON Co-Pilot: Tech: M AUST

Dep Apt: GGG Dep Time (Lcl): 1:25 (Z): 1925 Arr Apt: GGG Arr Time (Local): 4:55 (Z): 22:55 Tot Time Aloft:

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

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

Gd Temp beg: 19 °c End: 21 °c OAT beg: °c End: °c Altimeter begin: 29.70 end: 2978

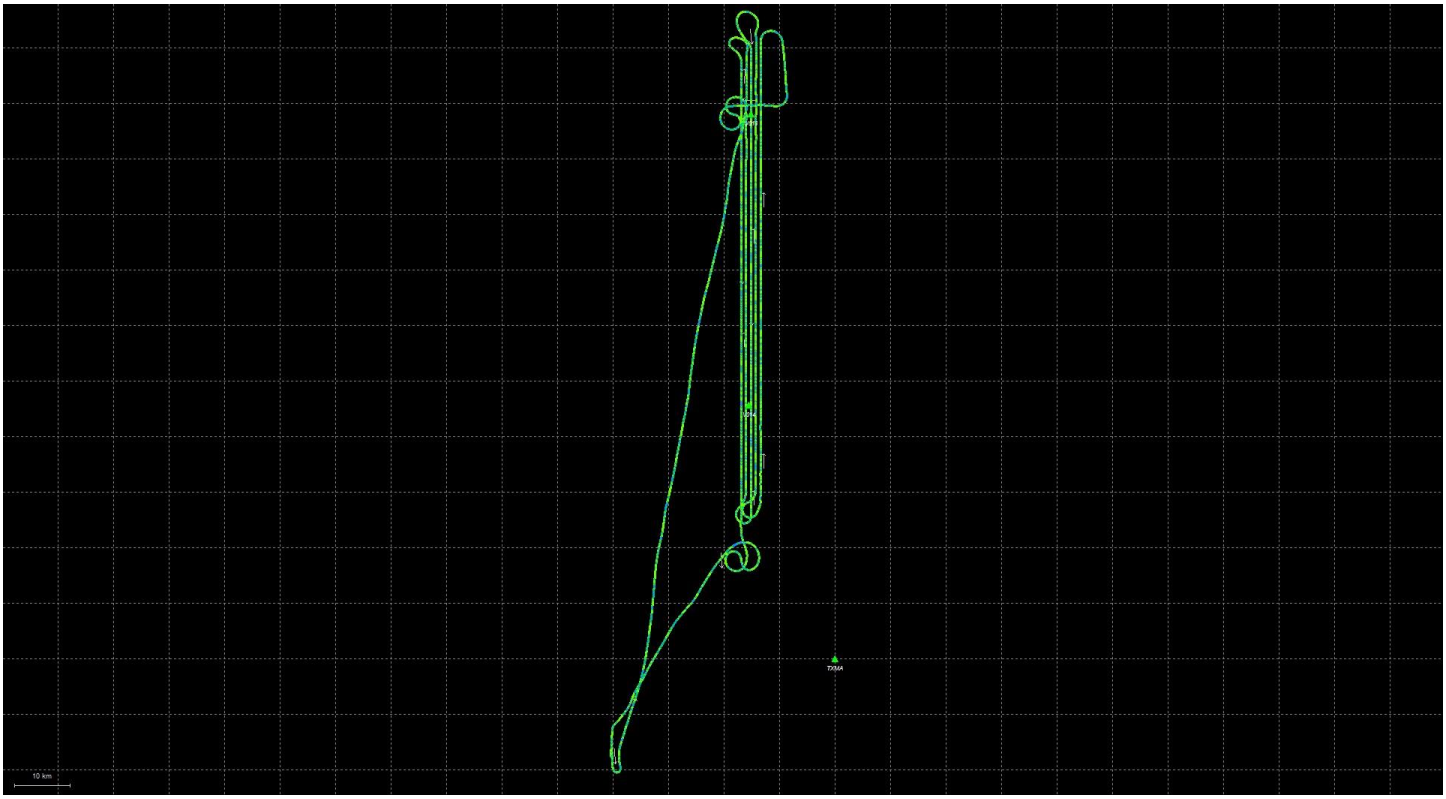
LiDAR	Type ALS70	Serial # 7178	Alt AGL	Alt AMSL 6.2	Avg Terr Ht	Max Gdspd	Avg Pt Spacing
	FOV 40	Scan Freq 53	MpIA (Y) / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM

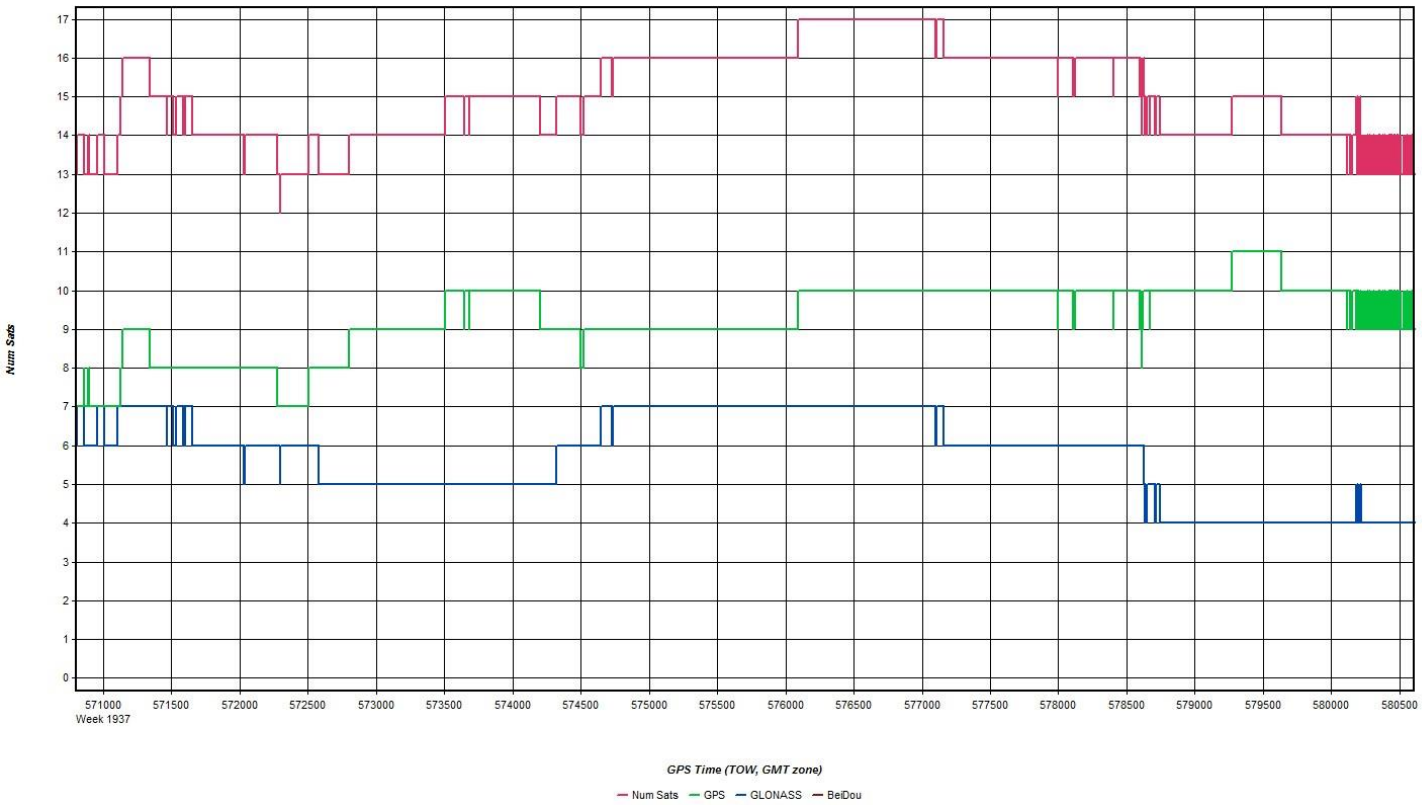
Kts 292 Storage Number 3

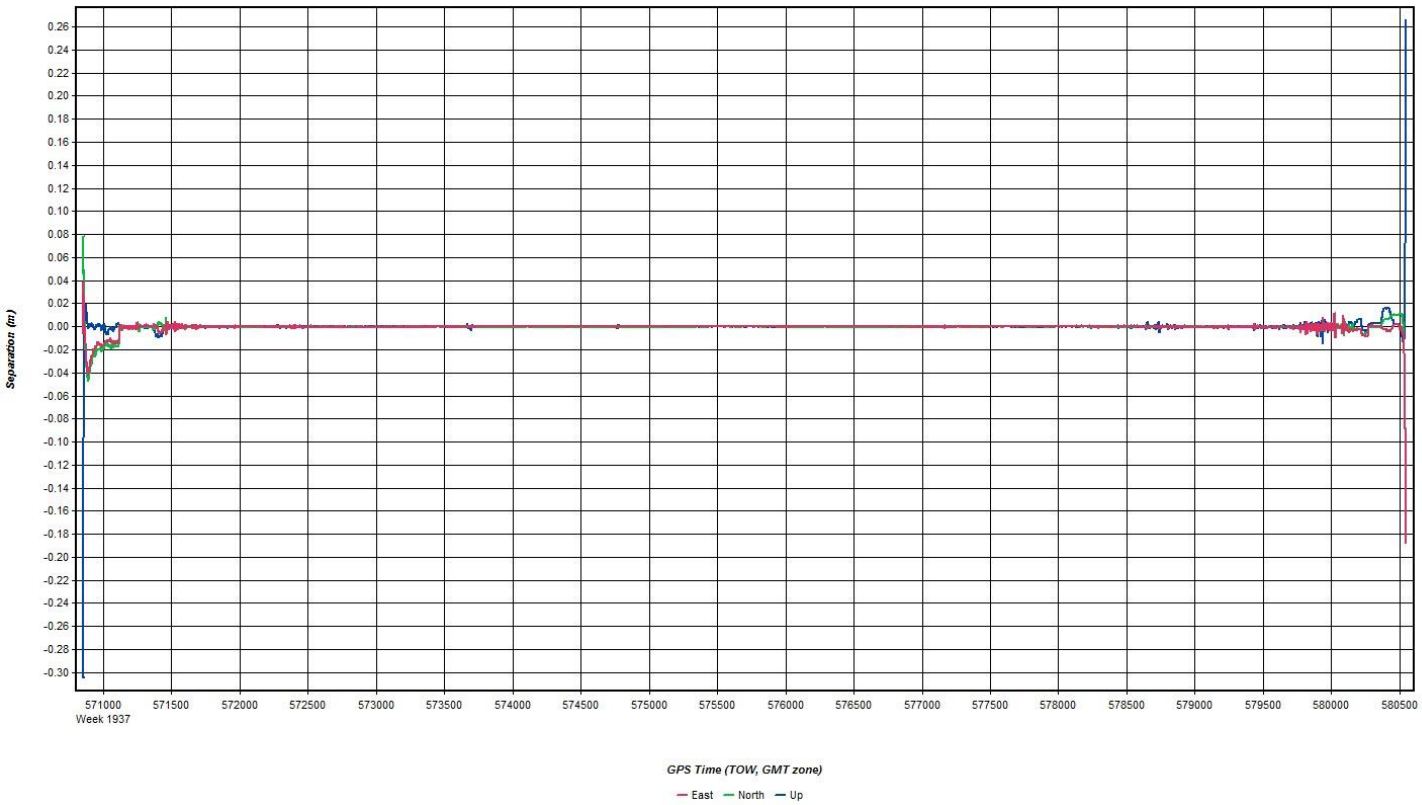
Line #	Hdg	Start (UTC)	End (UTC)	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
430	N	1950	2008	158	1.3/15	6.2			
431	S	2010	2027	158	1.1/17	6.2			
432	N	2030	2048	156	1.0/20	6.2			
433	S	2051	2108	154	1.2/19	6.2			
434	N	2111	2129	153	1.1/19	6.2			REFLIGHT FROM 2-17-17
435	S	2132	2149	159	1.3/17	6.2			REFLIGHT FROM 2-17-17
436	N	2151	2209	164	1.4/17	6.2			REFLIGHT FROM 2-17-17
(400)	W	2211	2213	142	1.2/18	6.2			CROSSFLIGHT
									REFLIGHTS 417-421 HAVE SMOKE

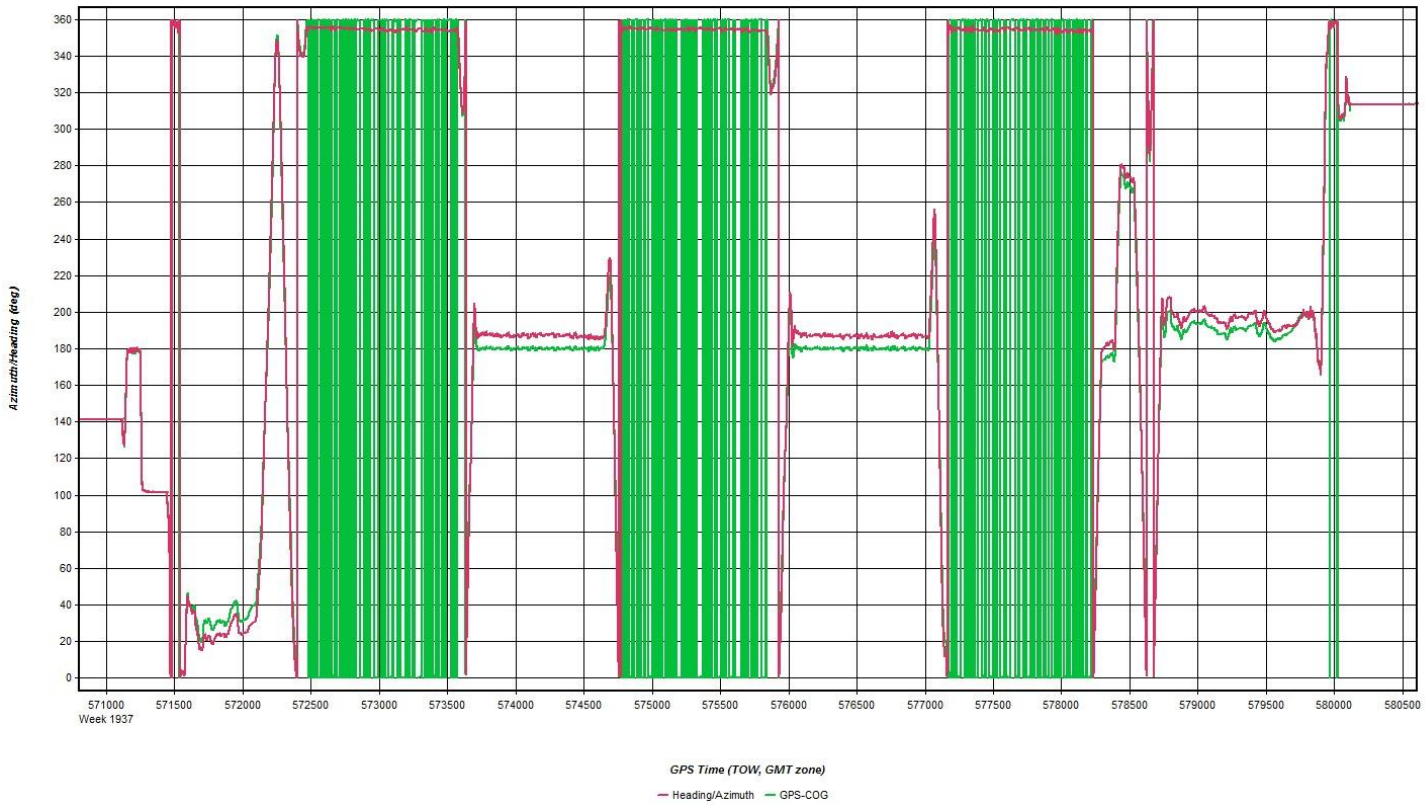
Total Proj Lines: Lines Flown: Lines Remain: Online Time: 2.5 Mob Time: .75 Notes:

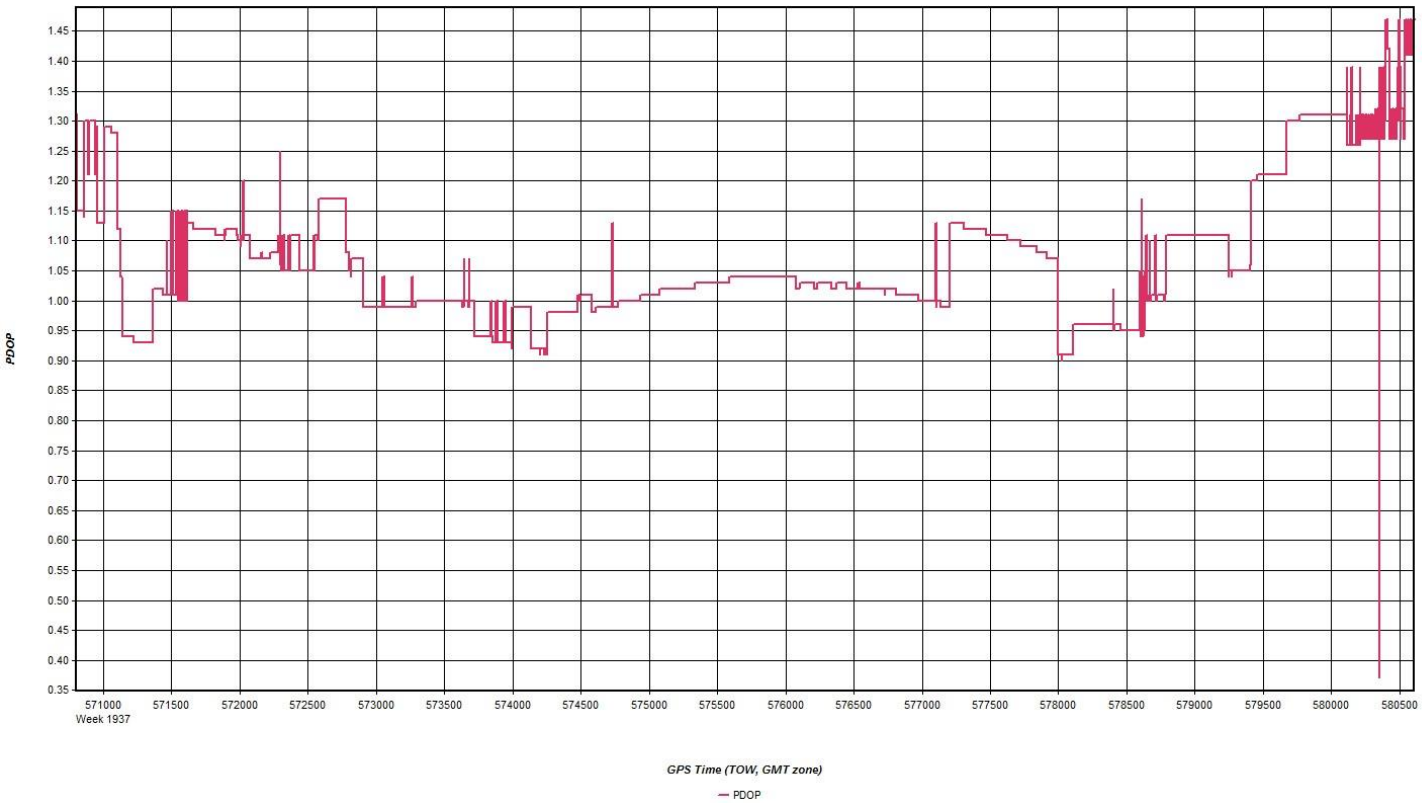
Feb 25, 2017-A (N73TM, SN7178)

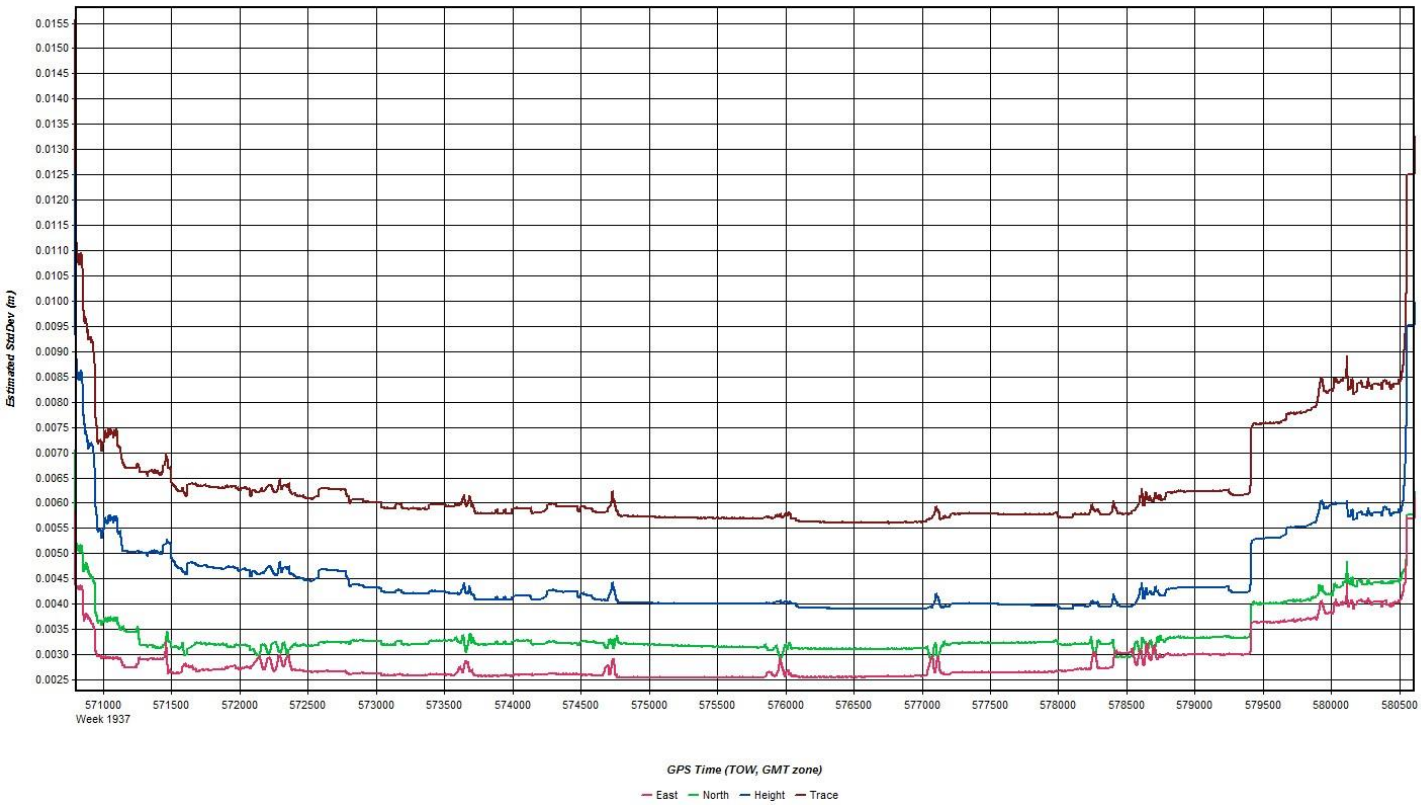


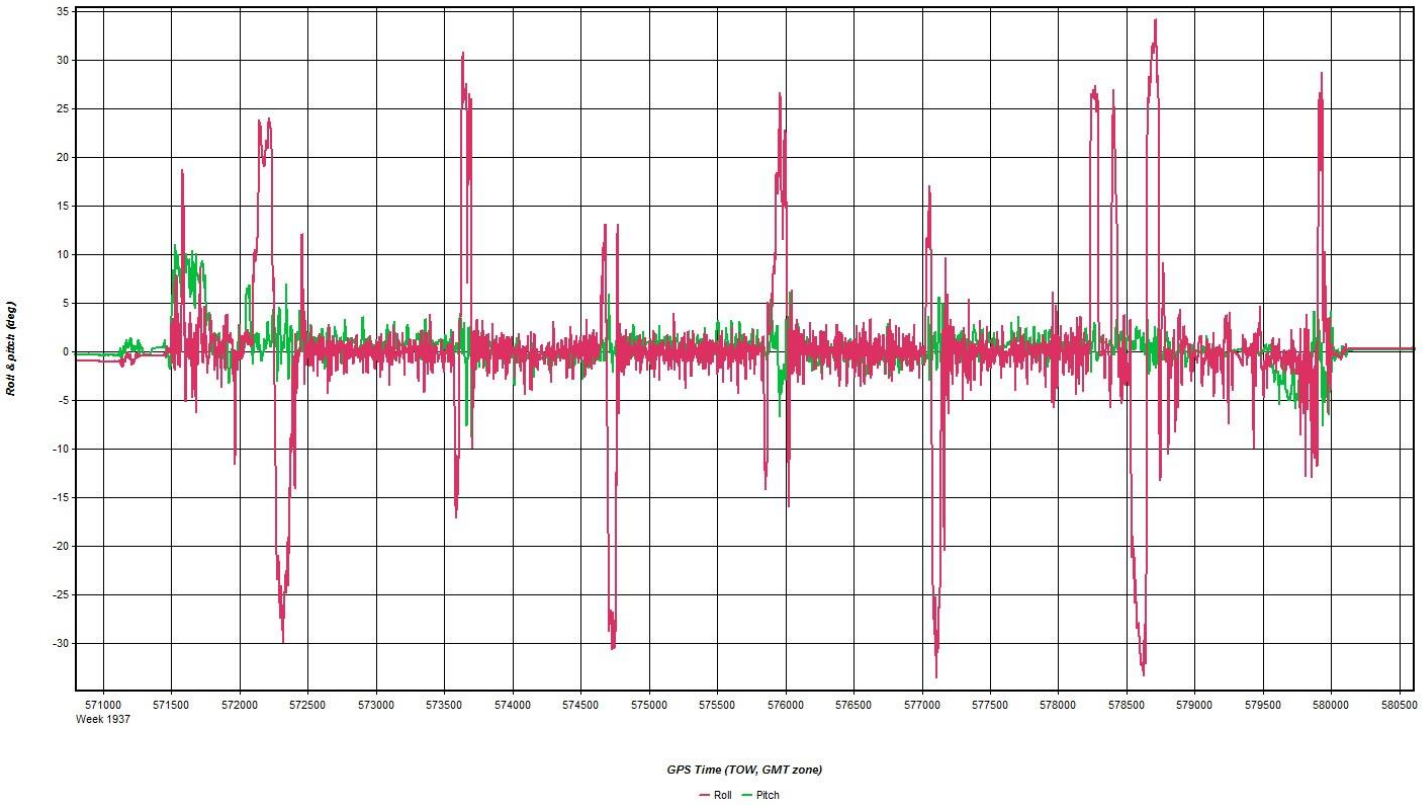

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

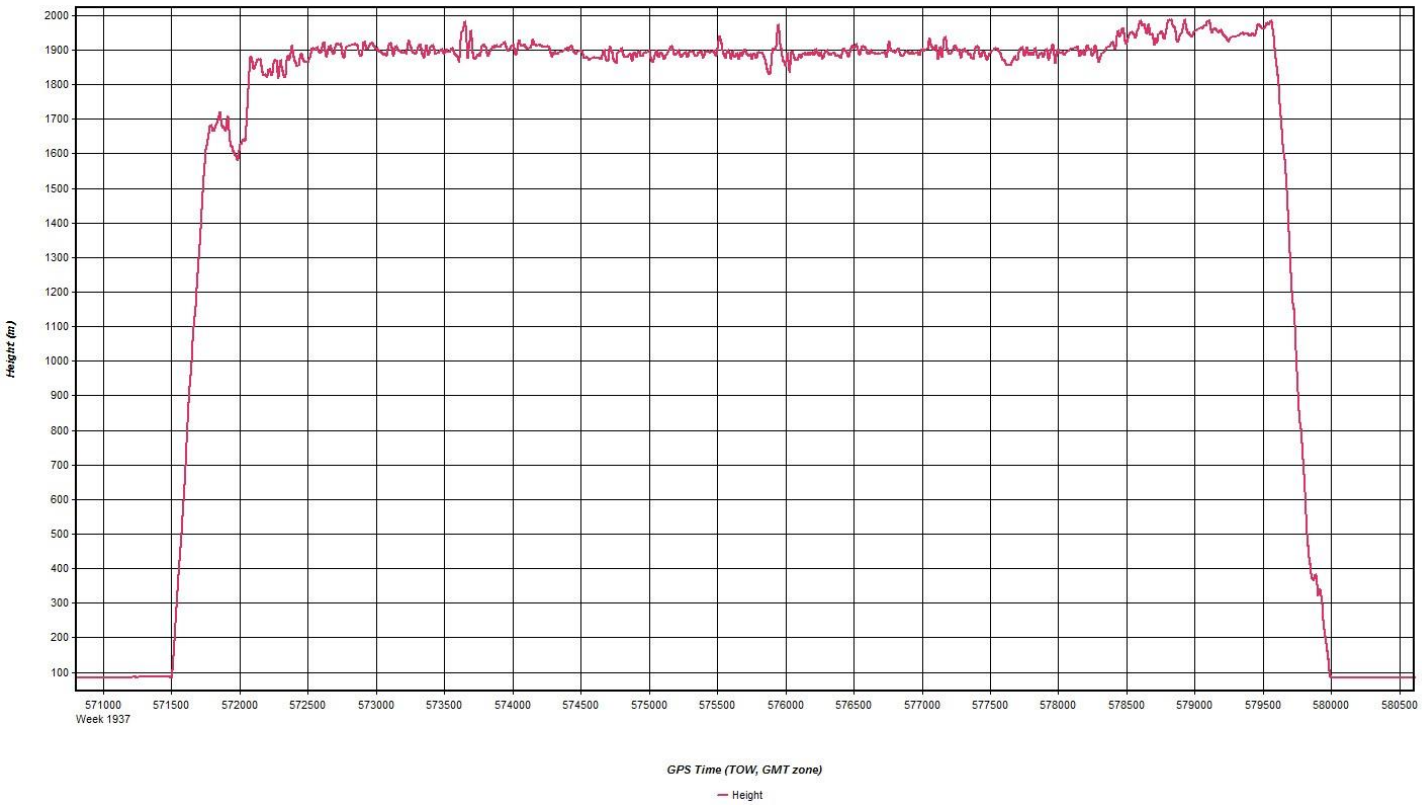

Separation (m)
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
-0.22
-0.24
-0.26
-0.28
-0.30
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
East
North
Up

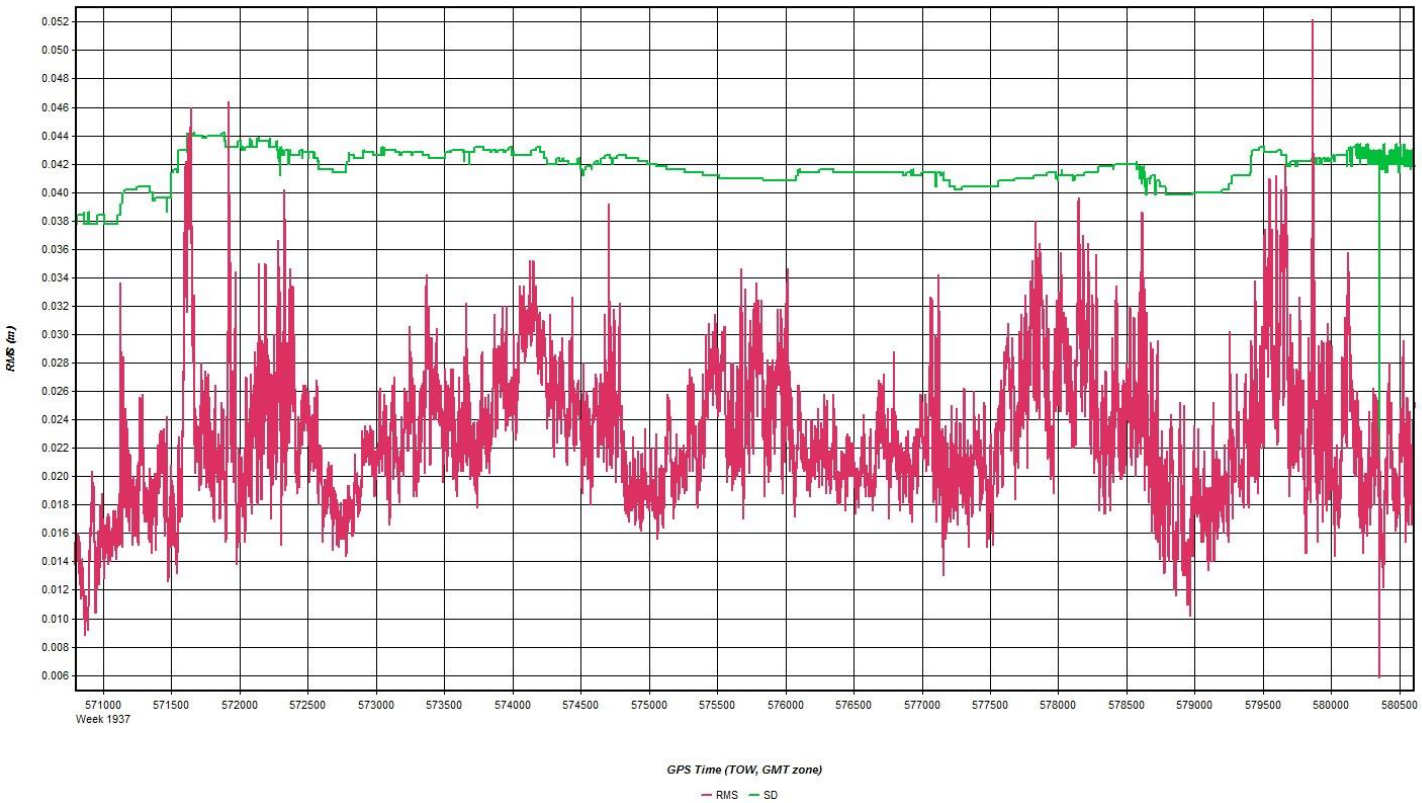

Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

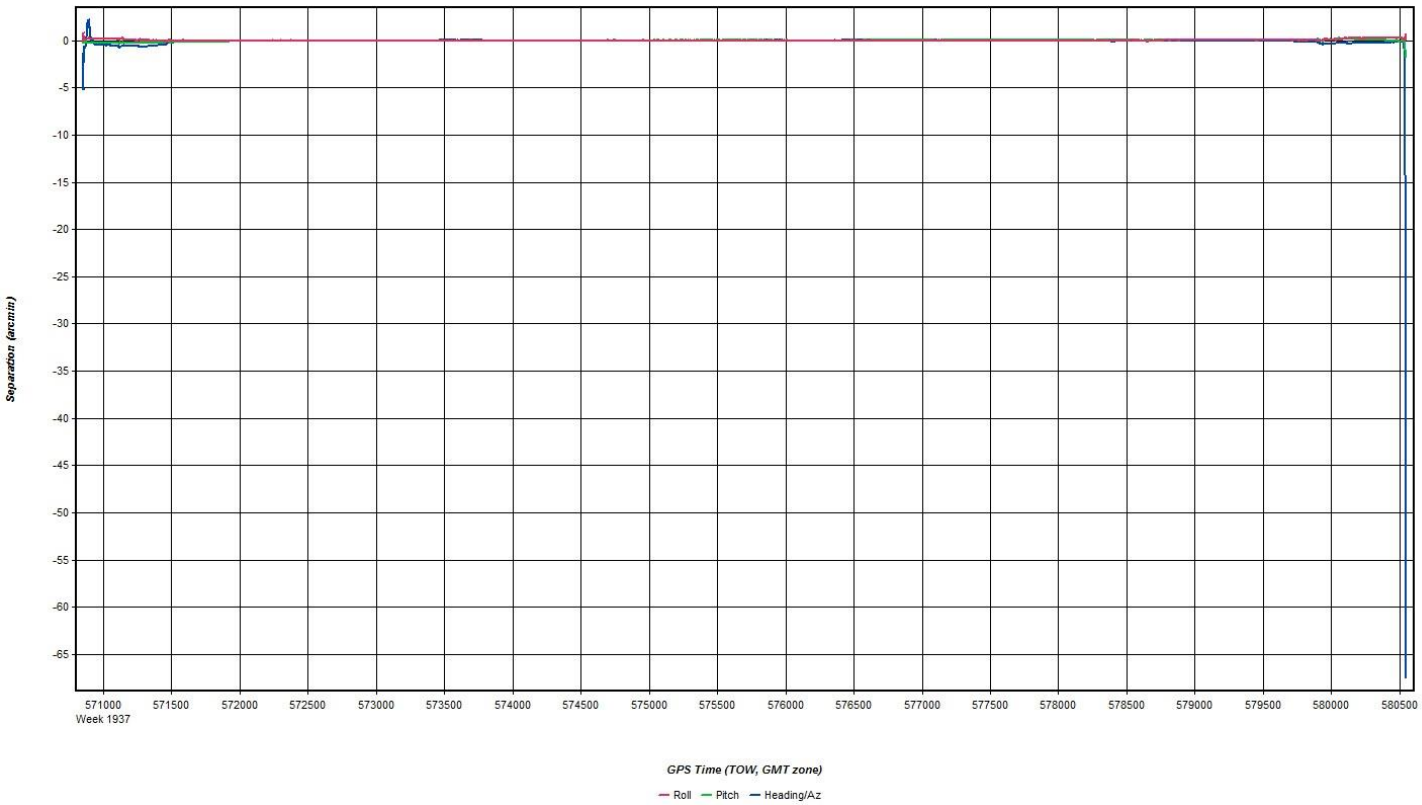

PDOP
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
PDOP

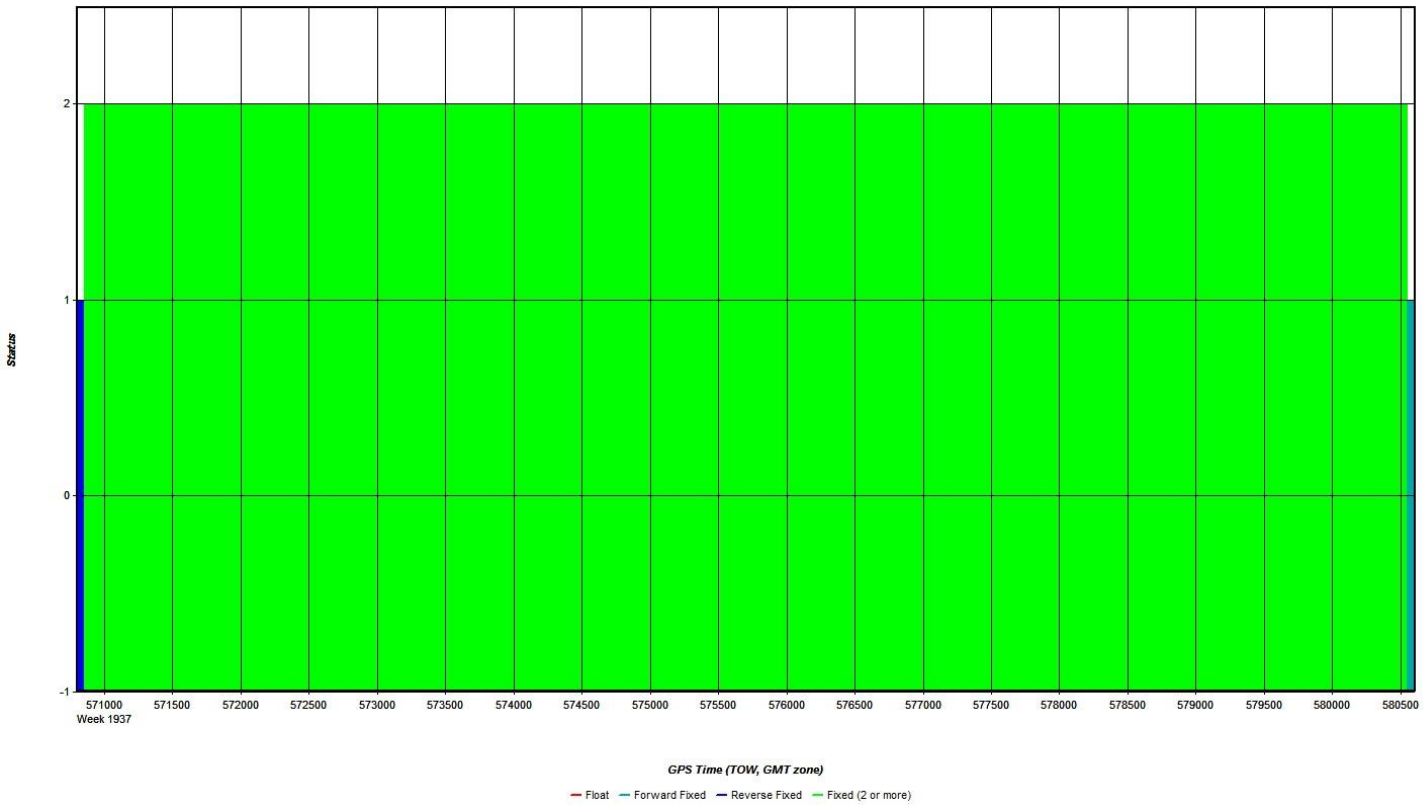

Estimated StdDev (m)
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
East
North
Height
Trace

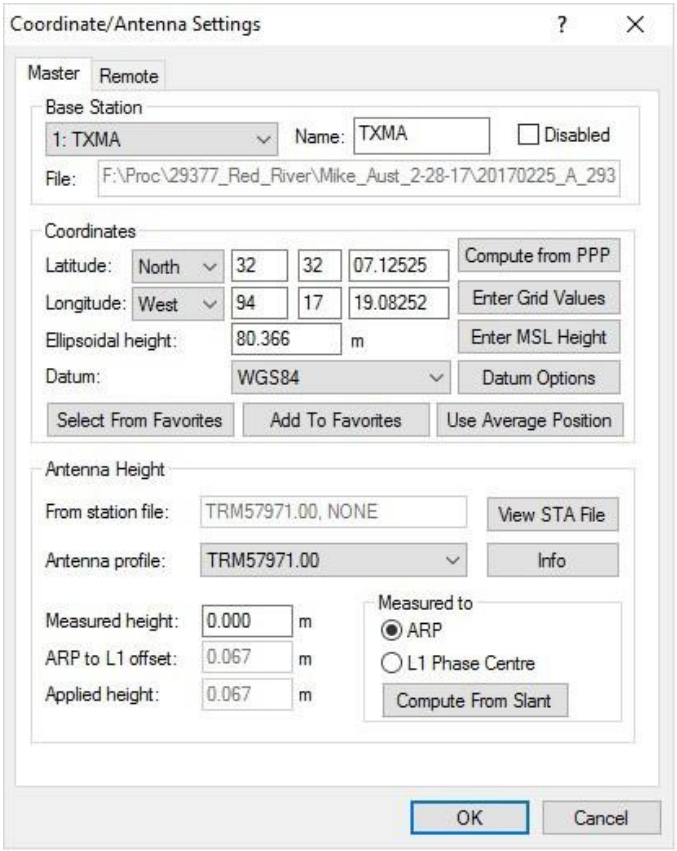

Roll & pitch (deg)
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
Roll
Pitch

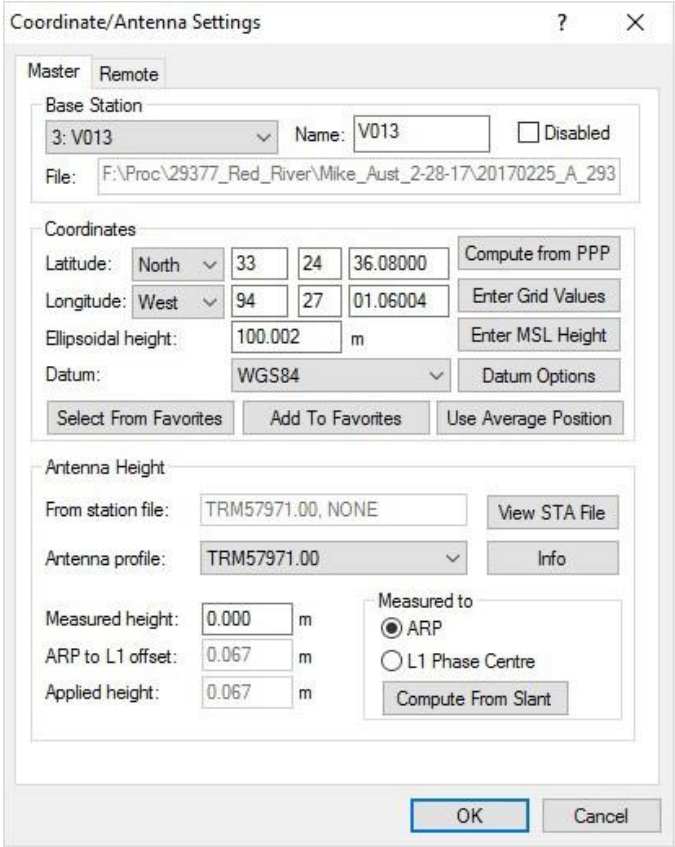

Height (m)
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
Height

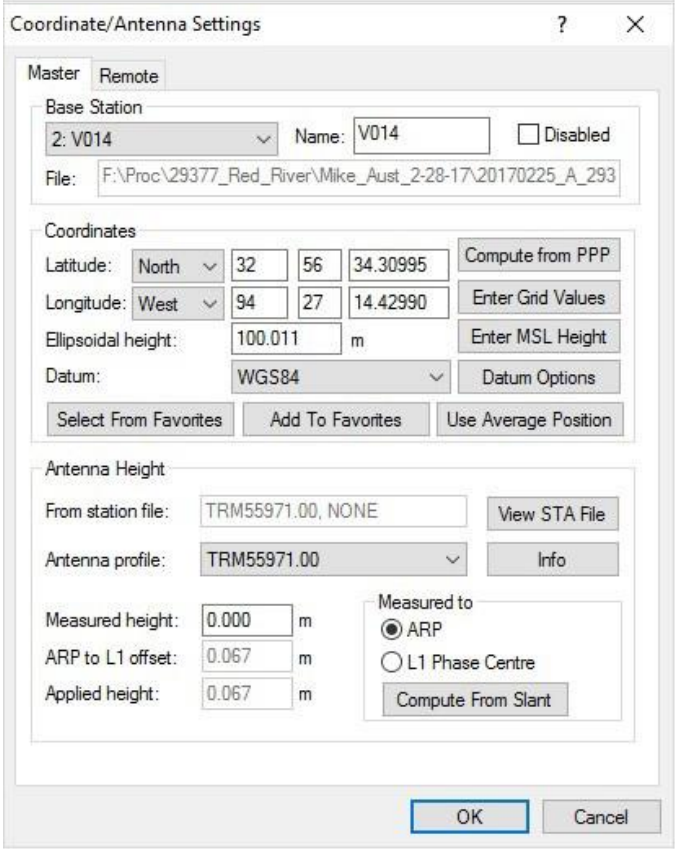

RMS (m)
0.052
0.050
0.048
0.046
0.044
0.042
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
RMS
SD


Separation (arc:min)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
Roll
Pitch
Heading/Az


Status
2
1
0
-1
571000
Week 1937
571500
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
579000
579500
580000
580500
GPS Time (TOW, GMT zone)
Float
Forward Fixed
Reverse Fixed
Fixed (2 or more)


Coordinate/Antenna Settings
Master
Remote
Base Station
1: TXMA
Name: TXMA
Disabled
File: F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170225_A_293
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
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: V013
Name: V013
Disabled
File: F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170225_A_293
Coordinates
Latitude: North 33 24 36.08000
Longitude: West 94 27 01.06004
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: 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: V014
Name: V014
Disabled
File: F:\Proc\29377_Red_River\Mike_Aust_2-28-17\20170225_A_293
Coordinates
Latitude: North 32 56 34.30995
Longitude: West 94 27 14.42990
Ellipsoidal height: 100.011 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: 2-25-17

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

Project: RED RIVER LIDAR **Proj #:** 27377 **Flight Mgmt File:** 20170225 143042

Aircraft: 73TM **Begin Hobbs:** 6587.3 **End Hobbs:** 6589.7 **Total:** 2.4 **Pilot:** J NELSON **Co-Pilot:** **Tech:** M ALIST

Dep Apt: GGG **Dep Time (Lcl):** 8:30 **(Z):** 14:30 **Arr Apt:** GGG **Arr Time (Local):** 11:10 **(Z):** 17:10 **Tot Time Aloft:** 2.4

CORS: Y / N **Sta 1:** TXAA **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: 5 °c **End:** °c **OAT beg:** °c **End:** °c **Altimeter begin:** 30.18 **end:**

LiDAR										
Type ALS70	Serial # 7178	Alt AGL	Alt AMSL 6.2	Avg Terr Ht	Max Gdspd	Avg Pt Spacing		Beg GB 241	End GB 206	Tot GB 35
FOV 40	Scan Freq 53	MpIA (Y) / N	Pulses In Air	Pulse Rate 295	Power 100	PPSM		Storage Name/# 3		

Line #	Hdg	Start (UTC):	End (UTC):	Gd Spd	PDOP/# Sats	GPS Altitude	Crab	Turb (0,-,+)	FLIGHT LINE NOTES – visibility, clouds, smoke, partial, etc.
417	N	1502	1519	141	1.0/21	6.2			REFLIGHTS FROM 2-17-17
418	S	1522	1537	146	1.0/20	6.2			WINDS 315° @ 26 kts
419	N	1540	1557	148	1.0/20	6.2			327° @ 29 kts
420	S	1600	1616	154	1.2/18	6.2			312° @ 25 kts
421	N	1619	1637	148	1.1/19	6.2			321° @ 26 kts
4C001	W	1640	1641	150	1.1/19	6.2			MANUAL CROSSTIE

Total Proj Lines: **Lines Flown:** **Lines Remain:** **Online Time:** 1.75 **Mob Time:** .75 **Notes:**