Appendix A
GPS/IMU Processing Statistics
and
Flight Logs

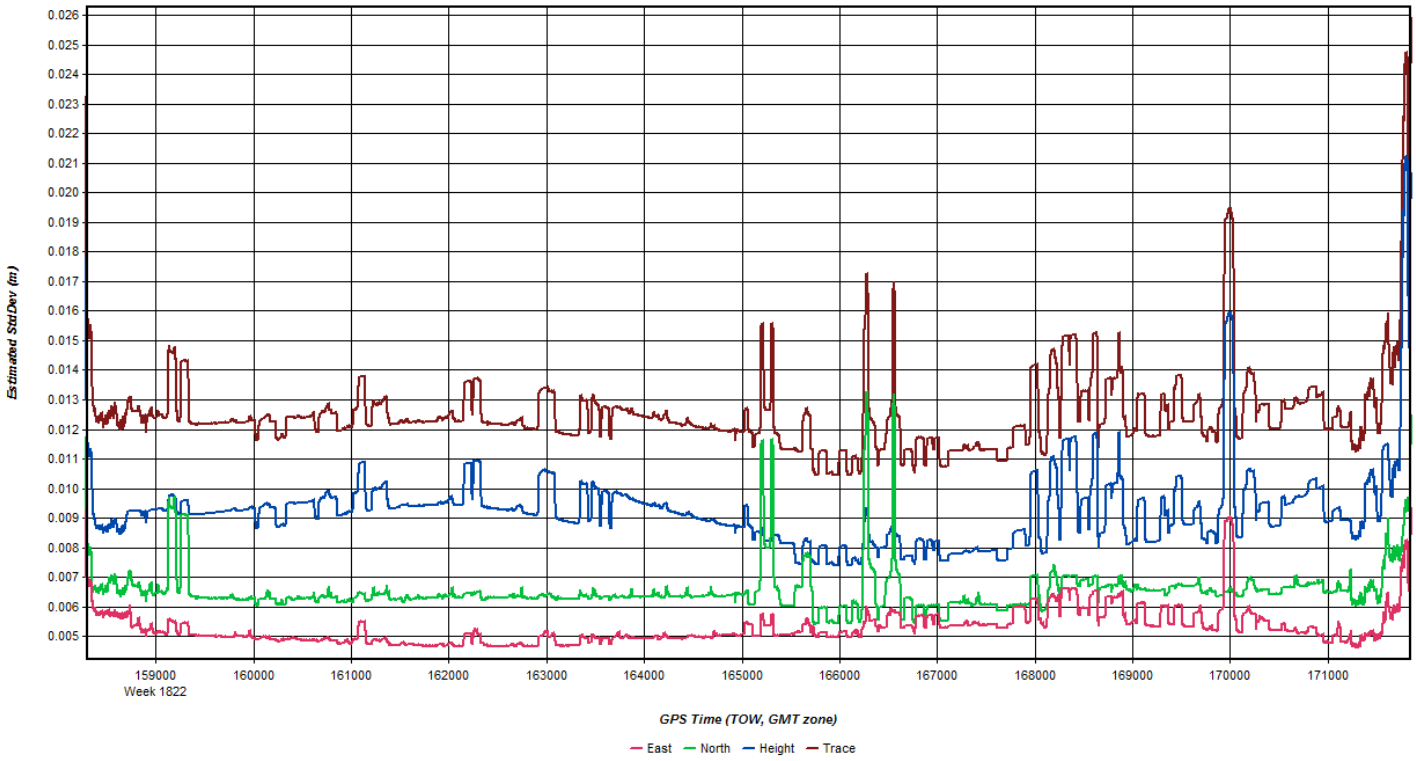
Lift GNSS Reports

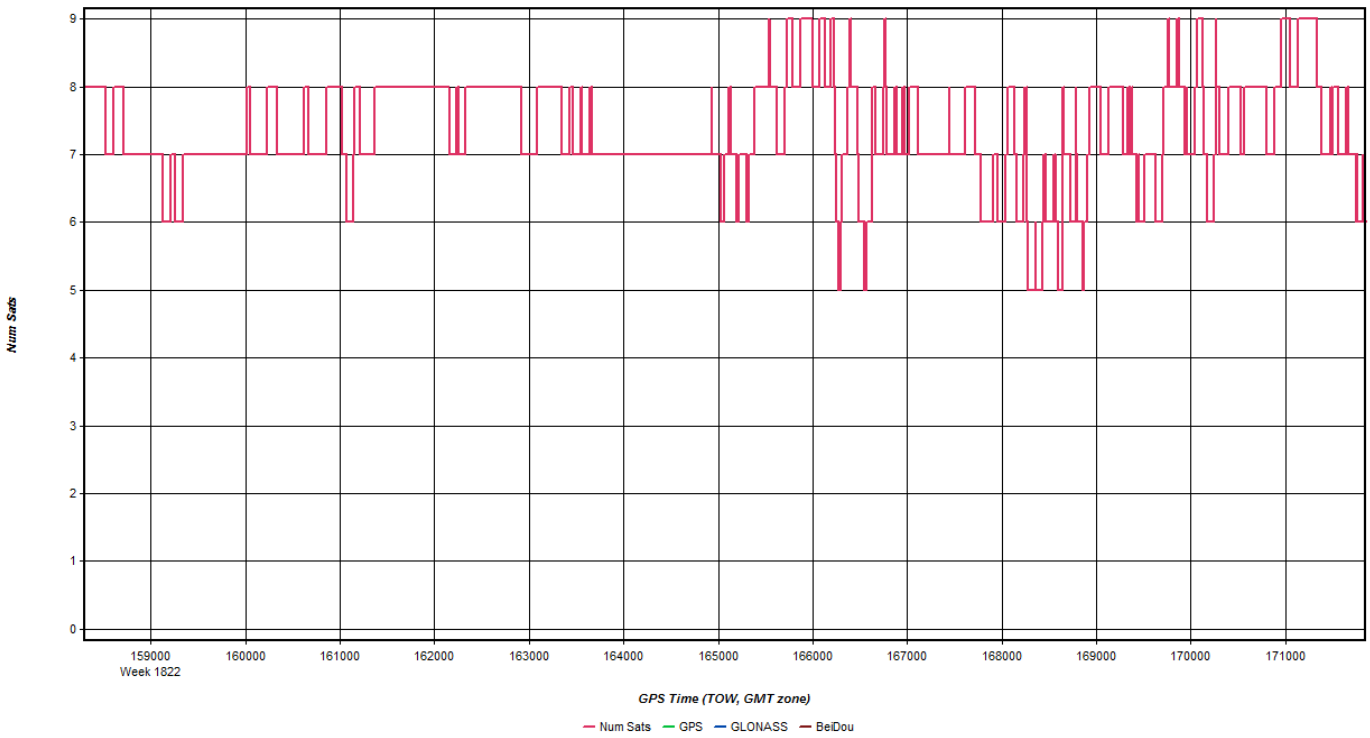
There were fifteen lifts, graph reports generated from processing software are found on the following pages.

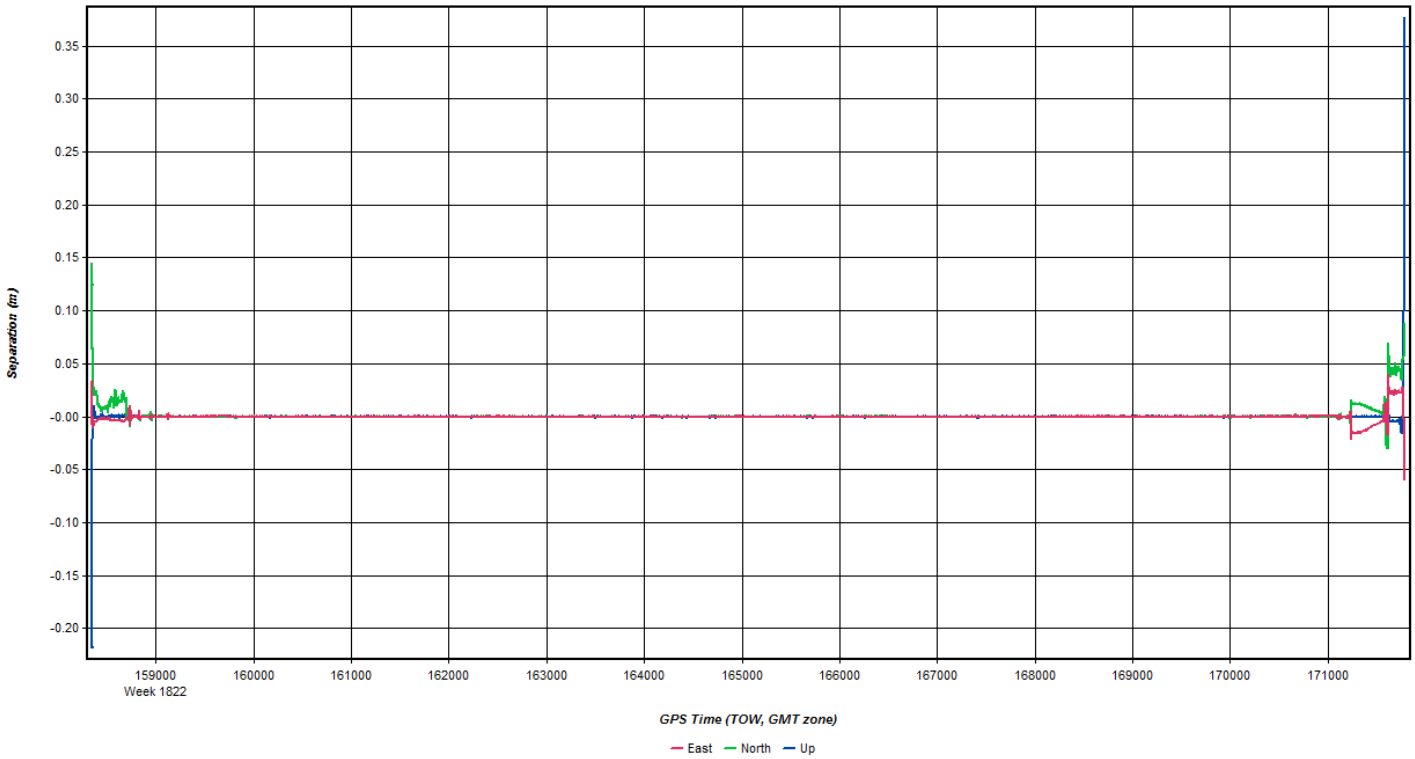
20141208A_7178
20141209A_7178
20141210A_7178
20141214A_7178
20141215A_7170
20141215A_7178
20141215B_7178
20141216A_7178
20141216B_7178
20150115A_7161
20150116A_7161
20150116A_7170
20150116B_7161
20150116C_7161
20150117A_7161

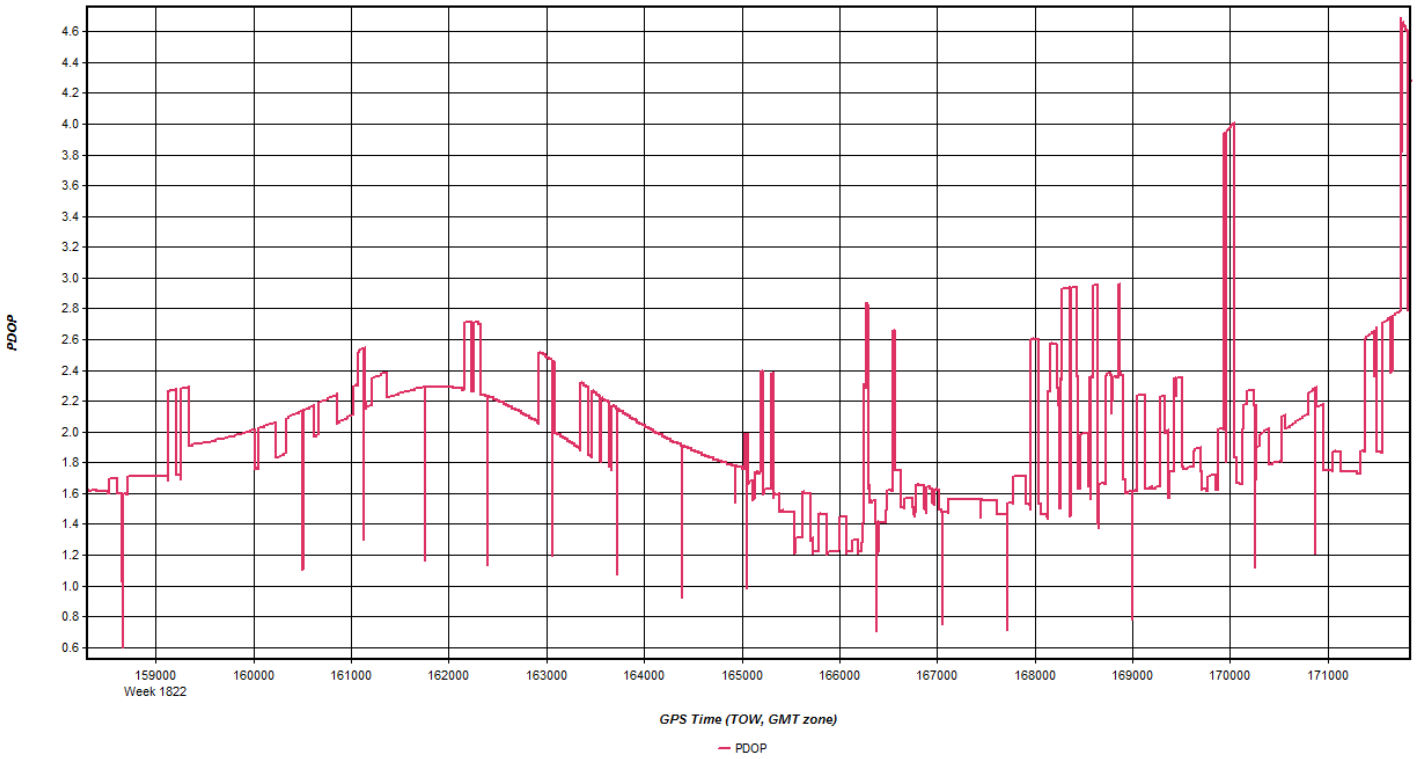
20141208A_7178

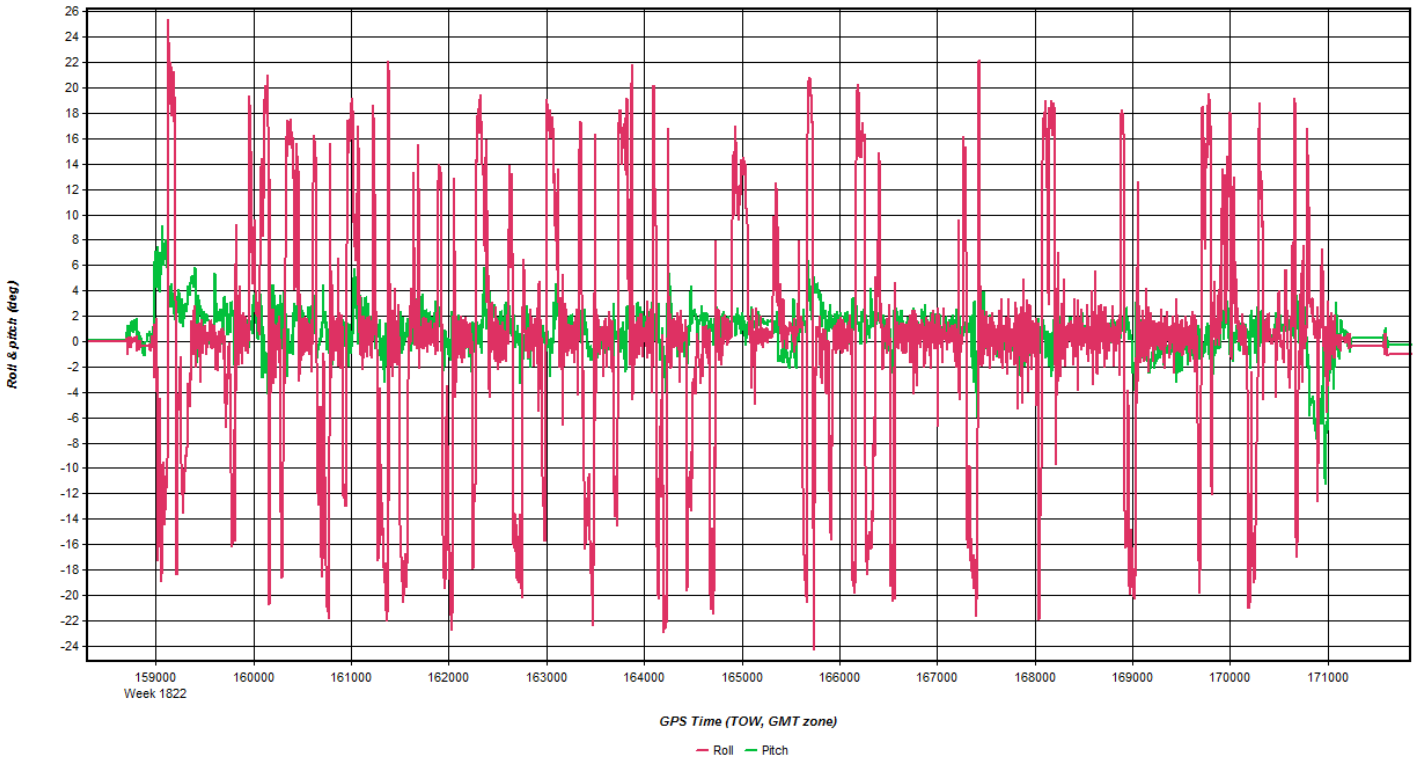

okLw
10 km

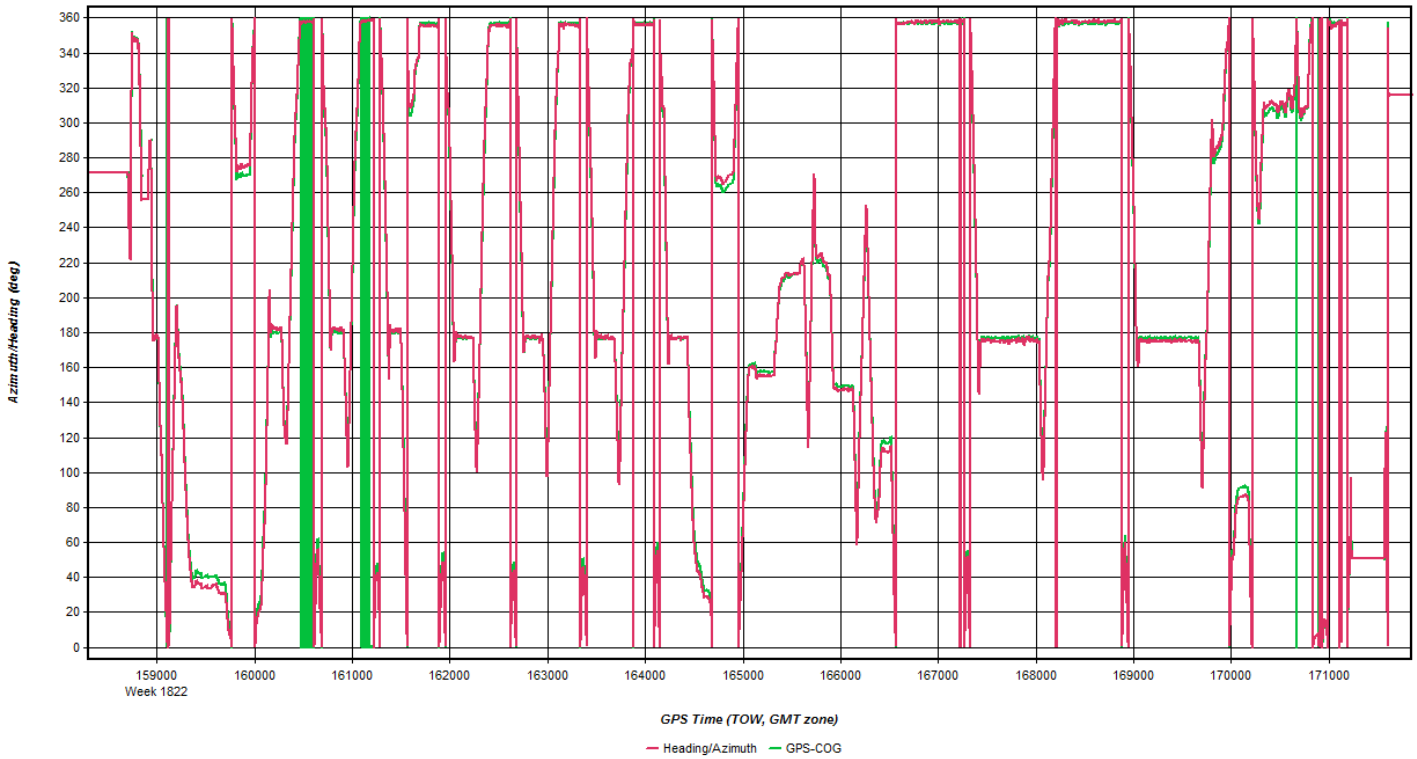

Estimated StdDev (m)
0.026
0.025
0.024
0.023
0.022
0.021
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
159000
Week 1822
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

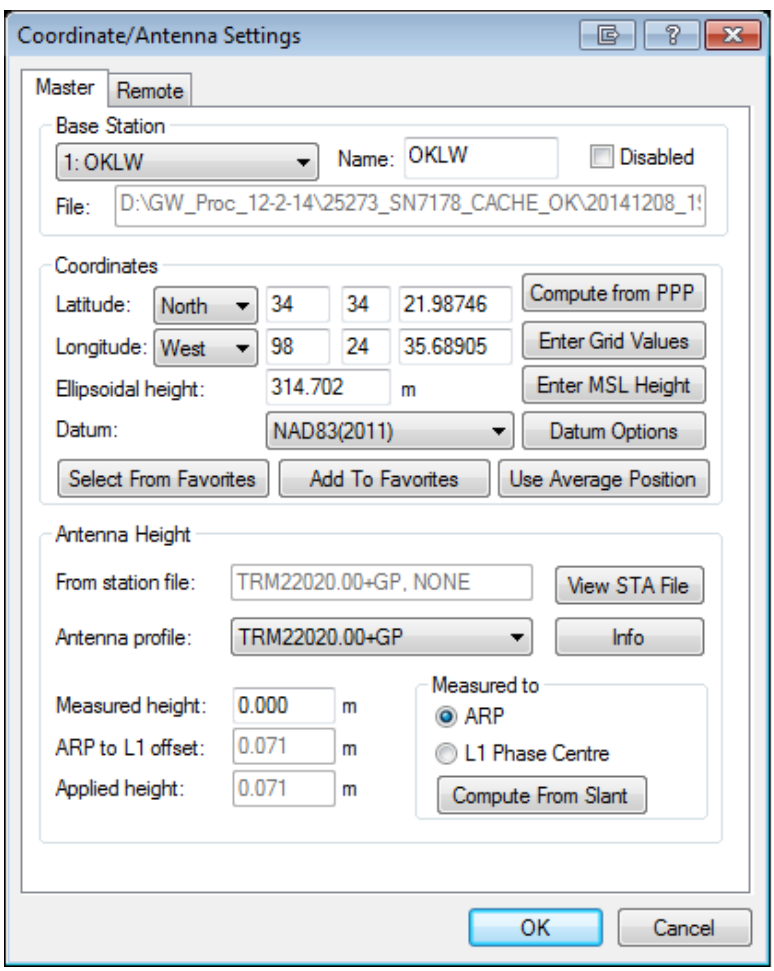

Num Sats
9
8
7
6
5
4
3
2
1
0
159000
Week 1822
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
159000
Week 1822
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
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
159000
Week 1822
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
PDOP


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
159000
Week 1822
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
159000
Week 1822
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\GW_Proc_12-2-14\25273_SN7178_CACHE_OK\20141208_1
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

CM [redacted]

MISSION: V 2014 1208 - 195122 | DATE: 12-08-2014 | LEICA ALS-70

PILOT: Mark Young | OPERATOR: Jonathan Swan | AIRCRAFT: N262AS

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273										2008			LAW→site 5632.8
USGS Cache	190	9006	266	133	35	40	193		5702	2024	2025		5635.7
Ok	189	9005	176	140					5708	2029	2030		
	188	9004	356	150					5698	2035	2036		3.4hrs total
	187	9003	176	152					5691	2040	2041		
	186	9002	356	150					5730	2044	2045		
	185	9001	176	150					5732	2050	2051		Validation complete
	001	1001	352	150					5804	2054	2057		2057
	002	1002	172	150					5786	2101	2103		
	003	1003	352	150					5830	2106	2109		
	004	1004	172	150					5844	2112	2115		
	005	1005	352	150					5870	2118	2122		
	006	1006	172	150				5793	5855	2125	2127		
	007	1007	352	150					5840	2131	2134		
	008	1008	172	150					5849	2137	2140		
	Xtie	VLoo1	260	150					5775	2145	2148		
	178	2075	353	150					5405	2217	2227		
	177	2074	173	150					5400	2230	2240		
17	176	2073	353	129					5368	2244	2254		

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
25273		18/2xties		2.9	0.5	✓	5min	5min	N Base
						WX SKC			S Base } Used
									Airport Base

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

1 of 2

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: V 20141208_195122

DATE: 12-08-14

LEICA ALS-70 [redacted]

PILOT: Mark Young

OPERATOR: Jonathan Swan

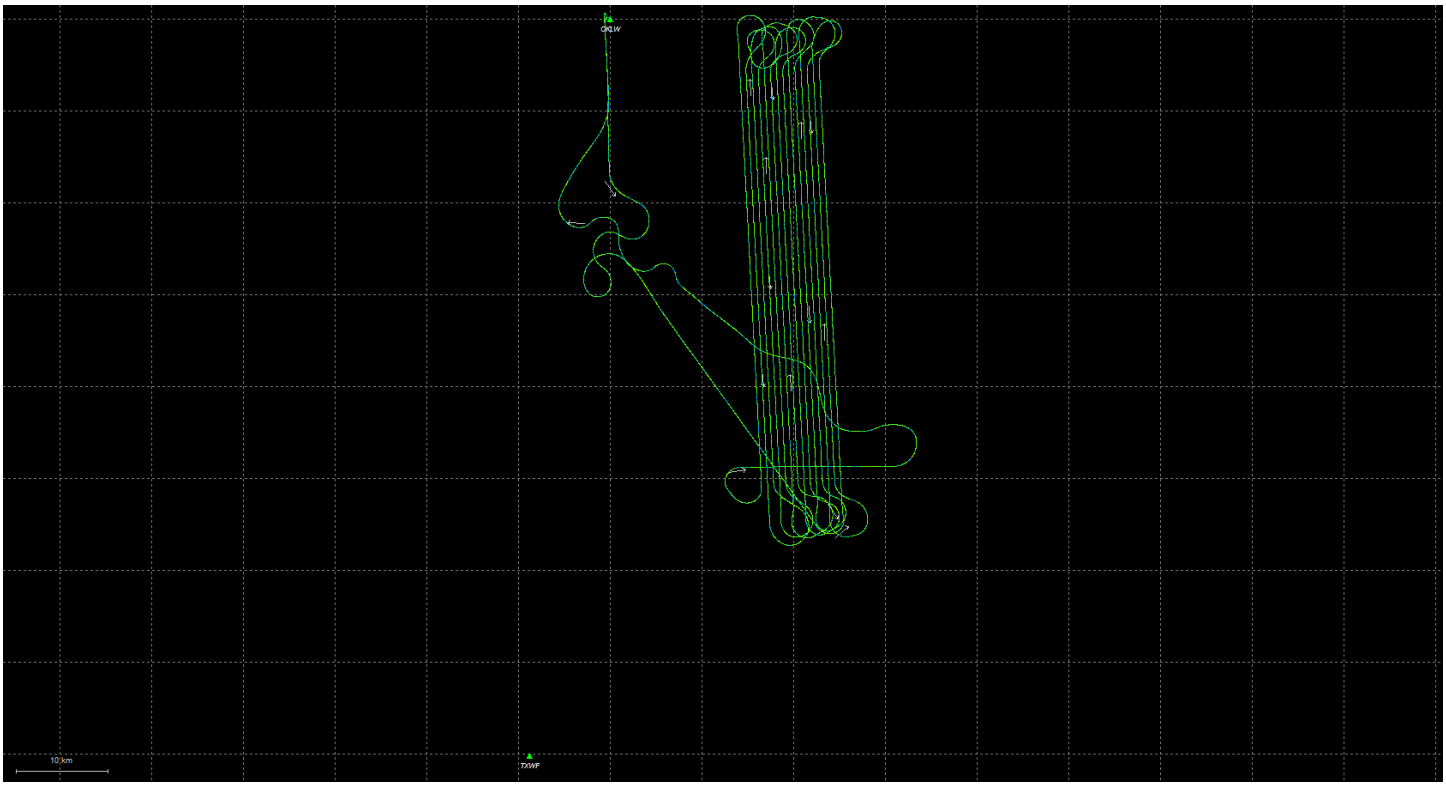
AIRCRAFT: N262AS

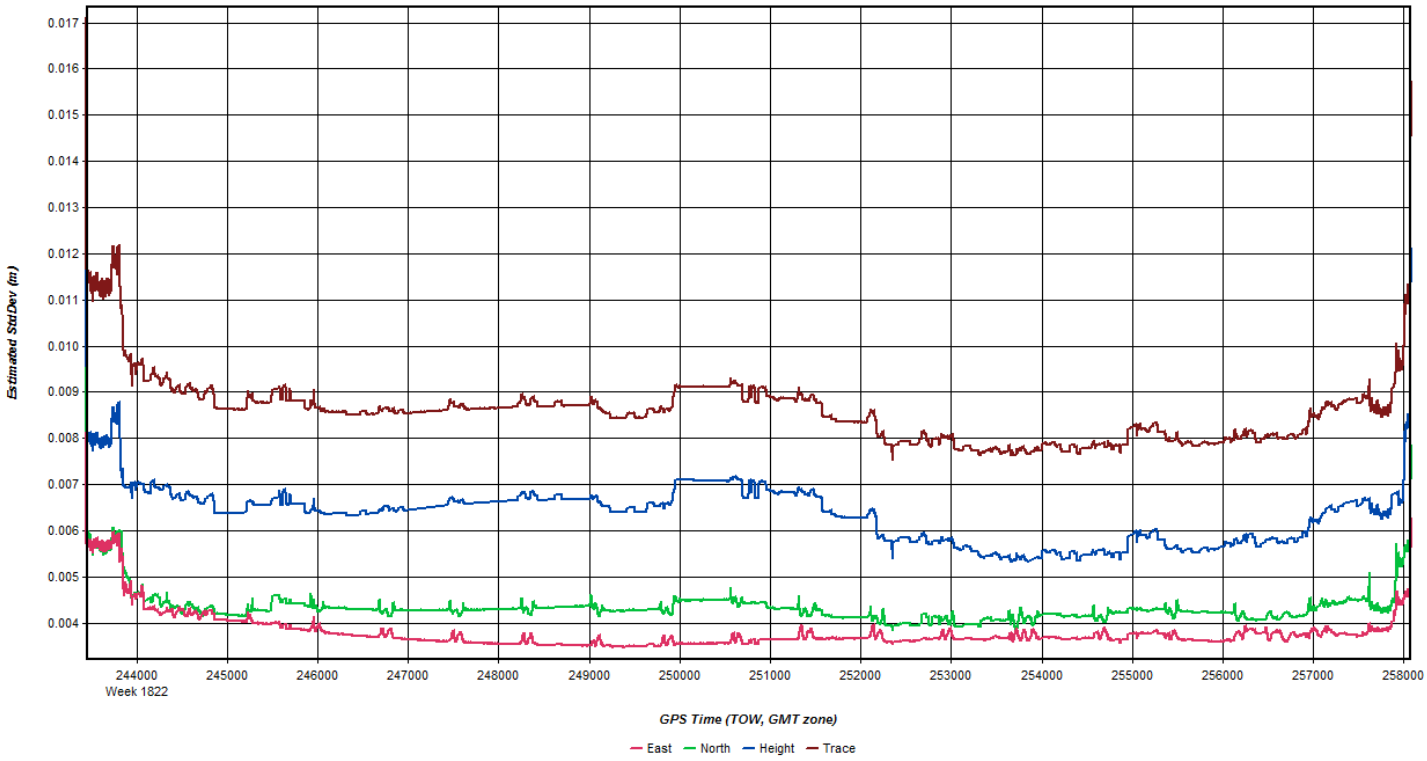
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273	175	2072	173	147	35	40	193		5395	2258	2308		
USGS Gache	Xtie	V100287		158	V	V	V		5400	2314	2316		
Ok													Return to KMAW

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
⊘ 25273		18/2Xtes		2.9	0.5	✓	5min	5min	North Base
○						WX SKC			South Base Used
○									Airport Base

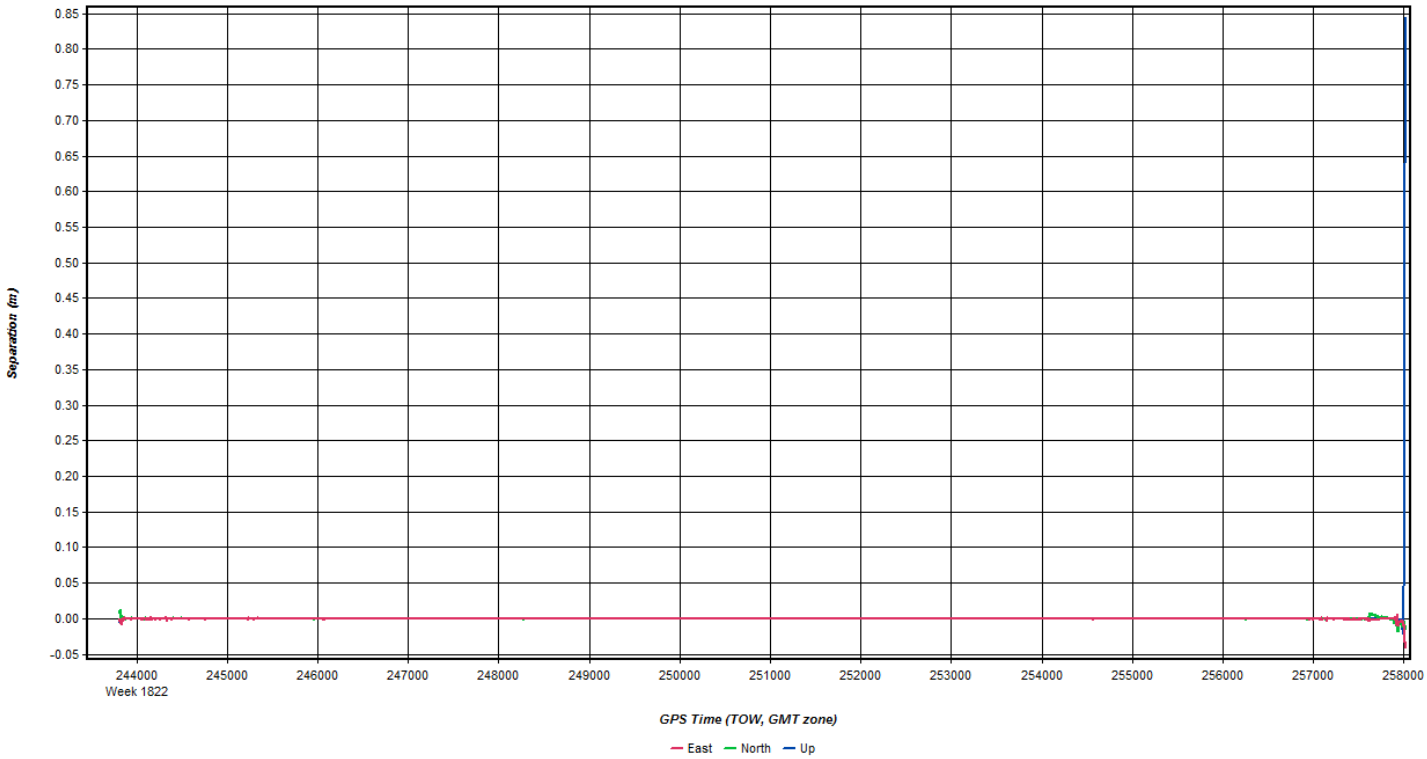
AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

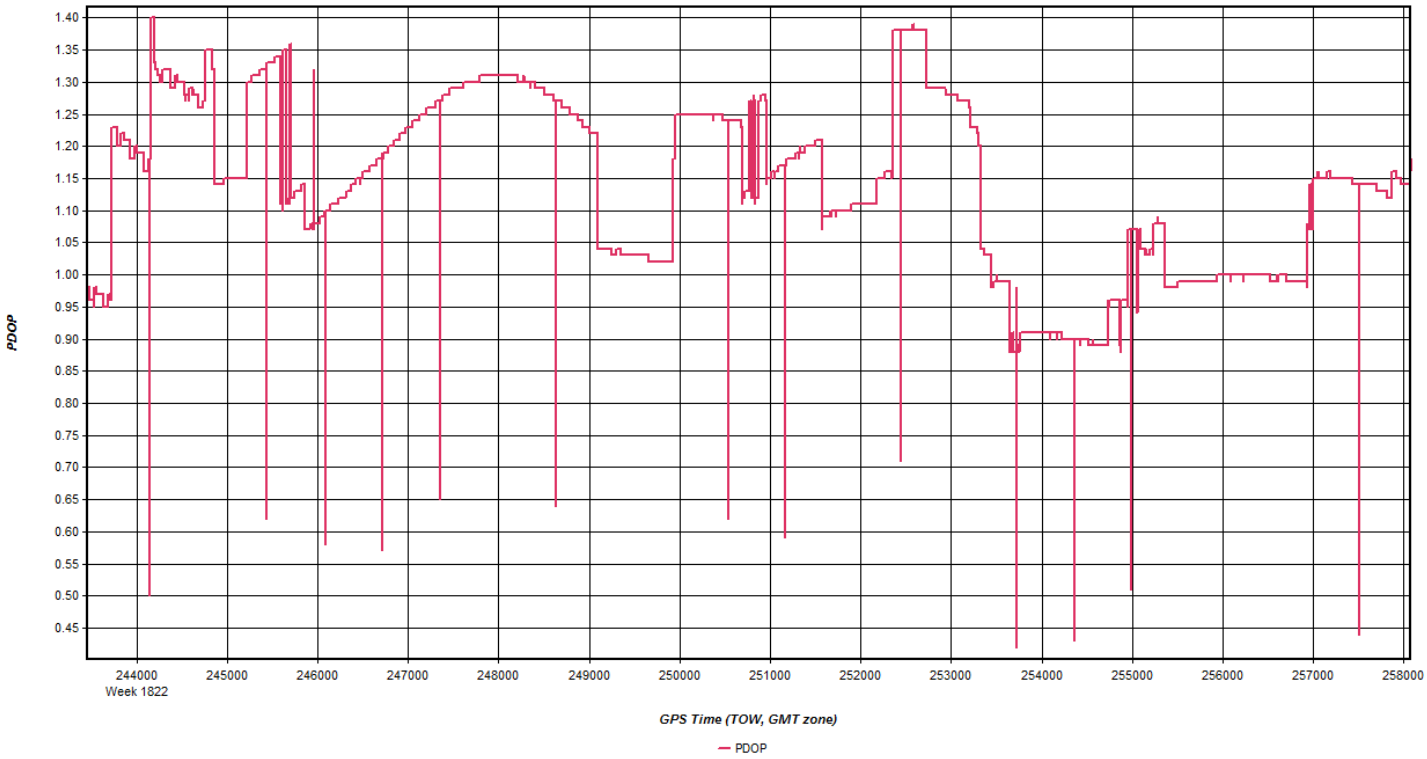
20141209A_7178

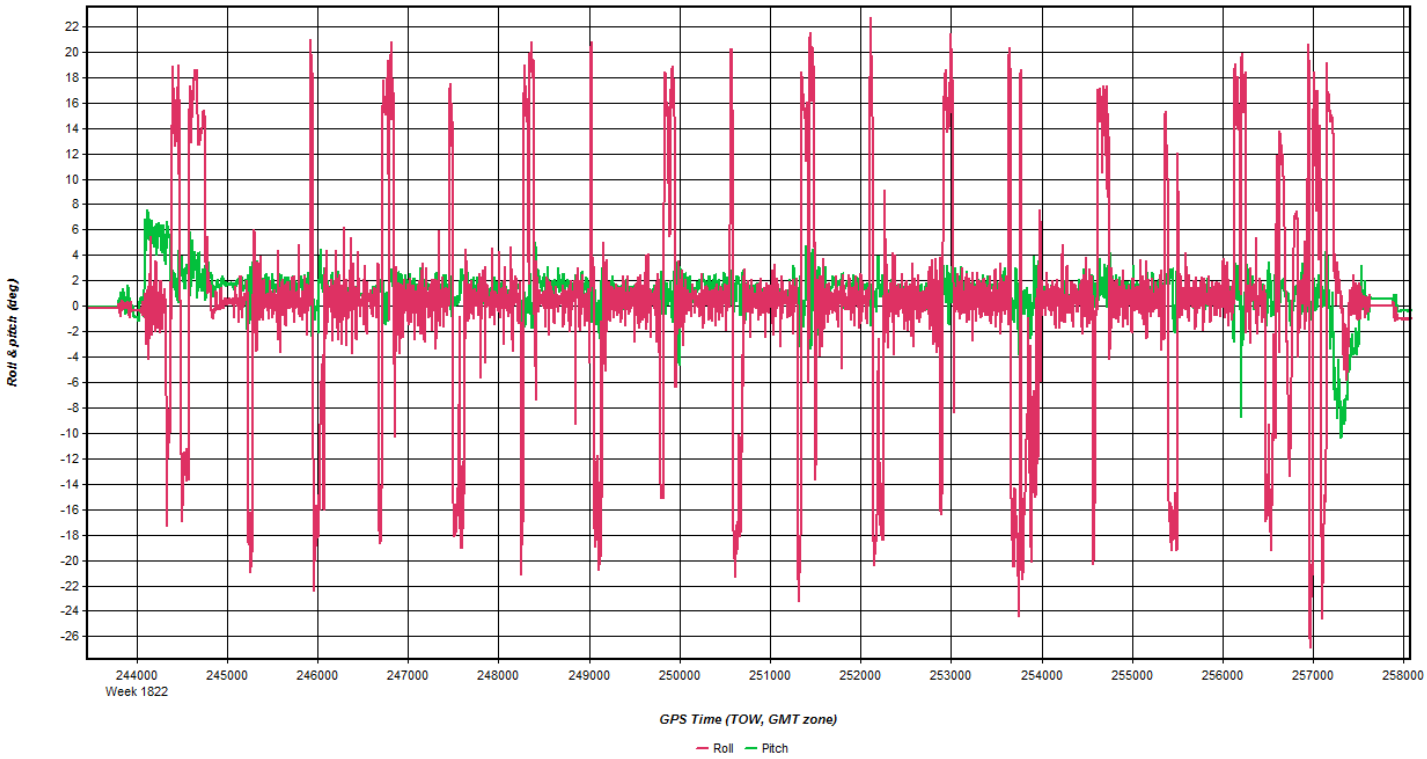

OKLW
10 km
TXWF

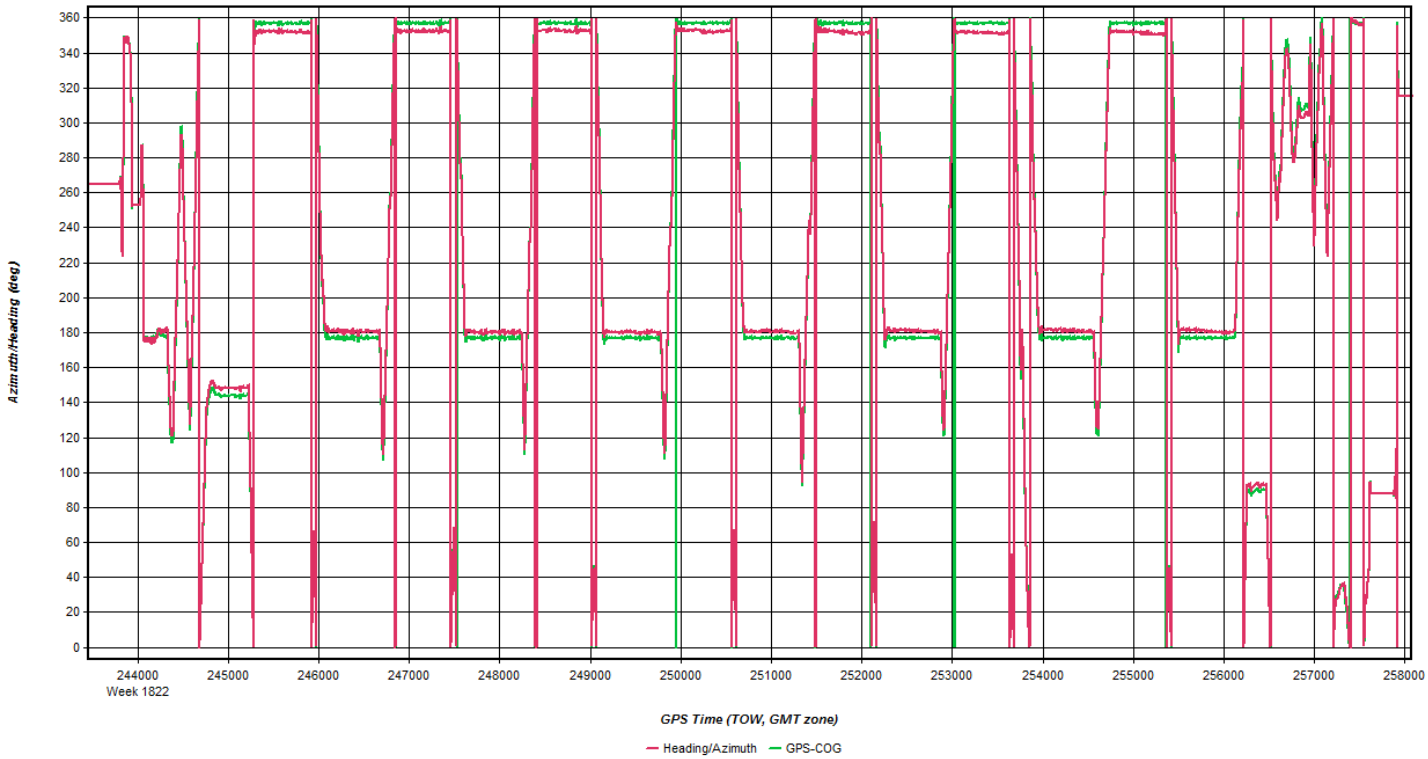

Estimated StdDev (m)
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
244000
Week 1822
245000
246000
247000
248000
249000
250000
251000
252000
253000
254000
255000
256000
257000
258000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

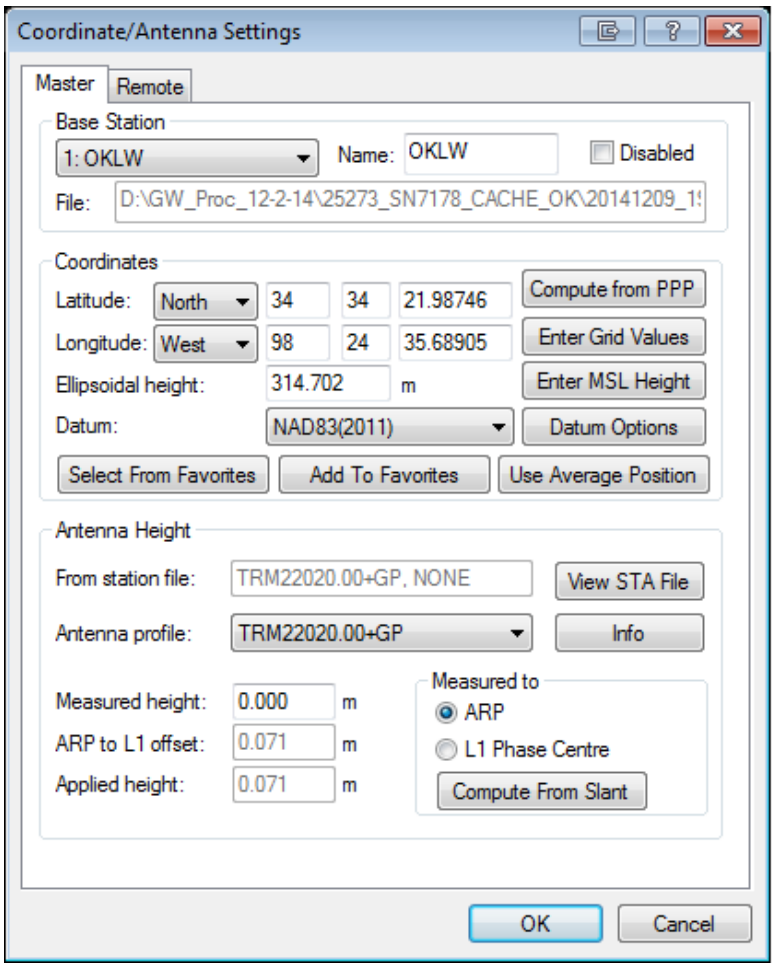

Num Sats
GPS Time (TOW, GMT zone)
Week 1822
Num Sats
GPS
GLONASS
BeiDou

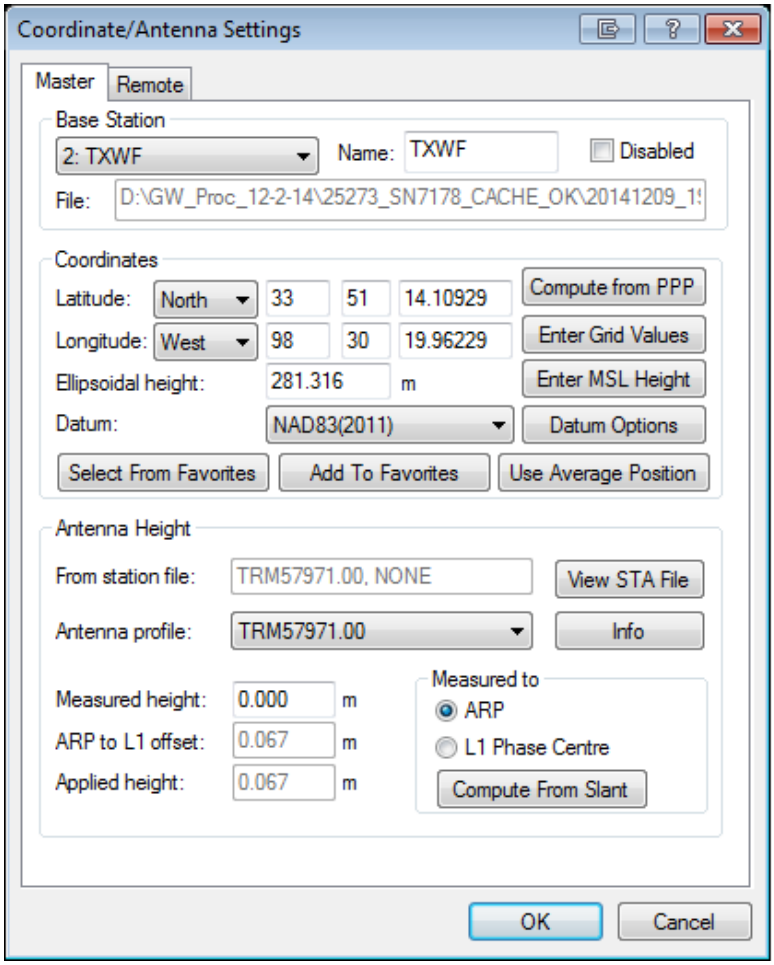

Separation (m)
GPS Time (TOW, GMT zone)
Week 1822
East
North
Up


PDOP
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
244000
Week 1822
245000
246000
247000
248000
249000
250000
251000
252000
253000
254000
255000
256000
257000
258000
GPS Time (TOW, GMT zone)
PDOP


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
244000
Week 1822
245000
246000
247000
248000
249000
250000
251000
252000
253000
254000
255000
256000
257000
258000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
244000
Week 1822
245000
246000
247000
248000
249000
250000
251000
252000
253000
254000
255000
256000
257000
258000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\GW_Proc_12-2-14\25273_SN7178_CACHE_OK\20141209_1
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\GW_Proc_12-2-14\25273_SN7178_CACHE_OK\20141209_1
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: V 20141209_193312

DATE: 12-09-14

LEICA ALS-70

PILOT: Mark Vany

OPERATOR: Jonathan Swan

AIRCRAFT: N2624S

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273	174	2071	352	146	35	40	193		5386	2008	2018		5635.7
USGS	173	2070	173	131					5363	2021	2030		5639.4
Cache ok	172	2069	352	149					5379	2034	2043		~~3.75~~
	171	2068	173	147					5372	2047	2057		3.7
	170	2067	352	145					5414	2100	2110		
	169	2066	173	143					5423	2112	2122		
	168	2065	352	148					5430	2126	2135		
	167	2064	173	147					5406	2139	2148		
	166	2063	352	156					5414	2152	2201		
	165	2062	173	152				5383	~~[illegible]~~	2205	2214		
	164	2061	353	149					5399	2217	2227		
	163	2060	173	145					5405	2233	2242		
	162	2059	353	150					5387	2246	2256		
	161	2058	173	151					5426	2259	2308		
	xtie	UL001-85		130					5460	2311	2314		
													Site -> KLAW

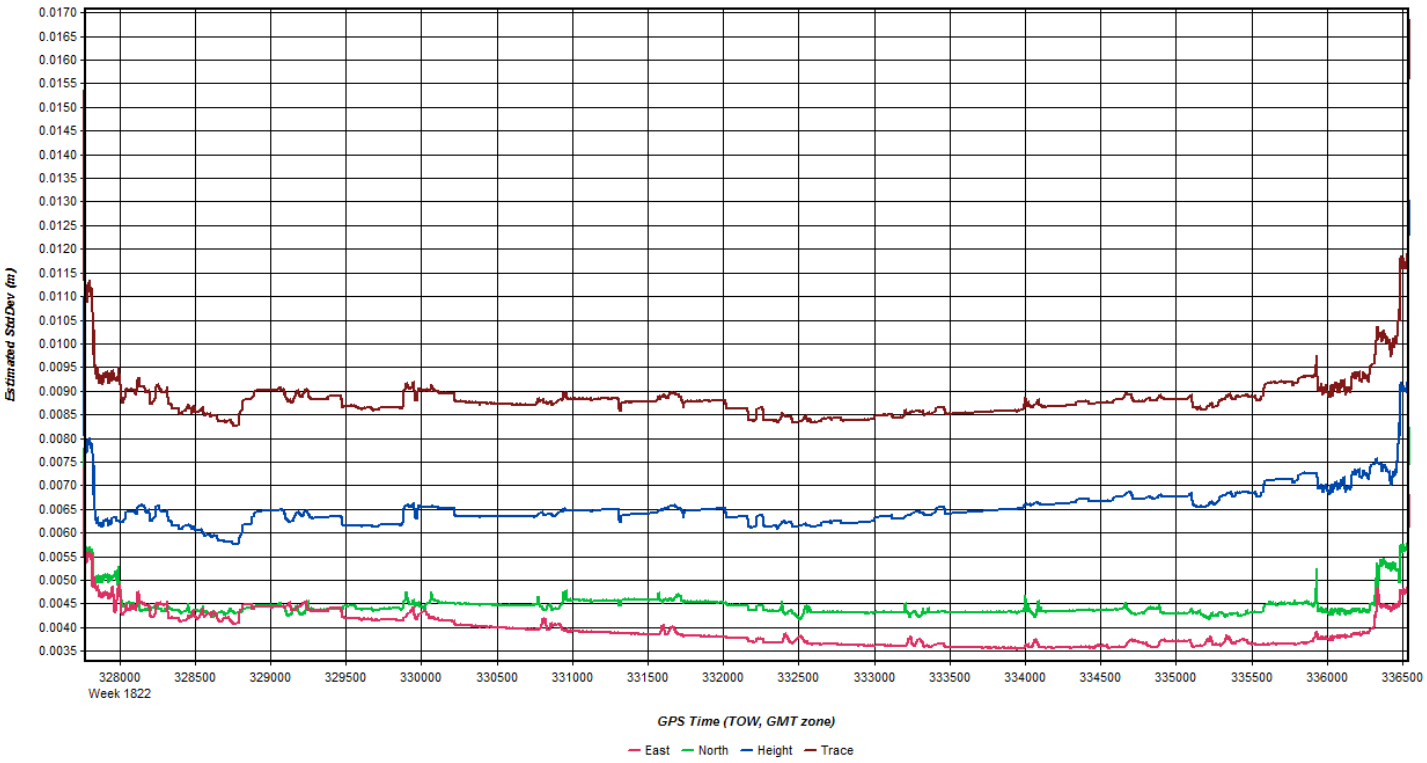
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
① 25273		14		3.1	0.6				* Morning and Early
○						WX Skc			Afternoon Fog *
○									

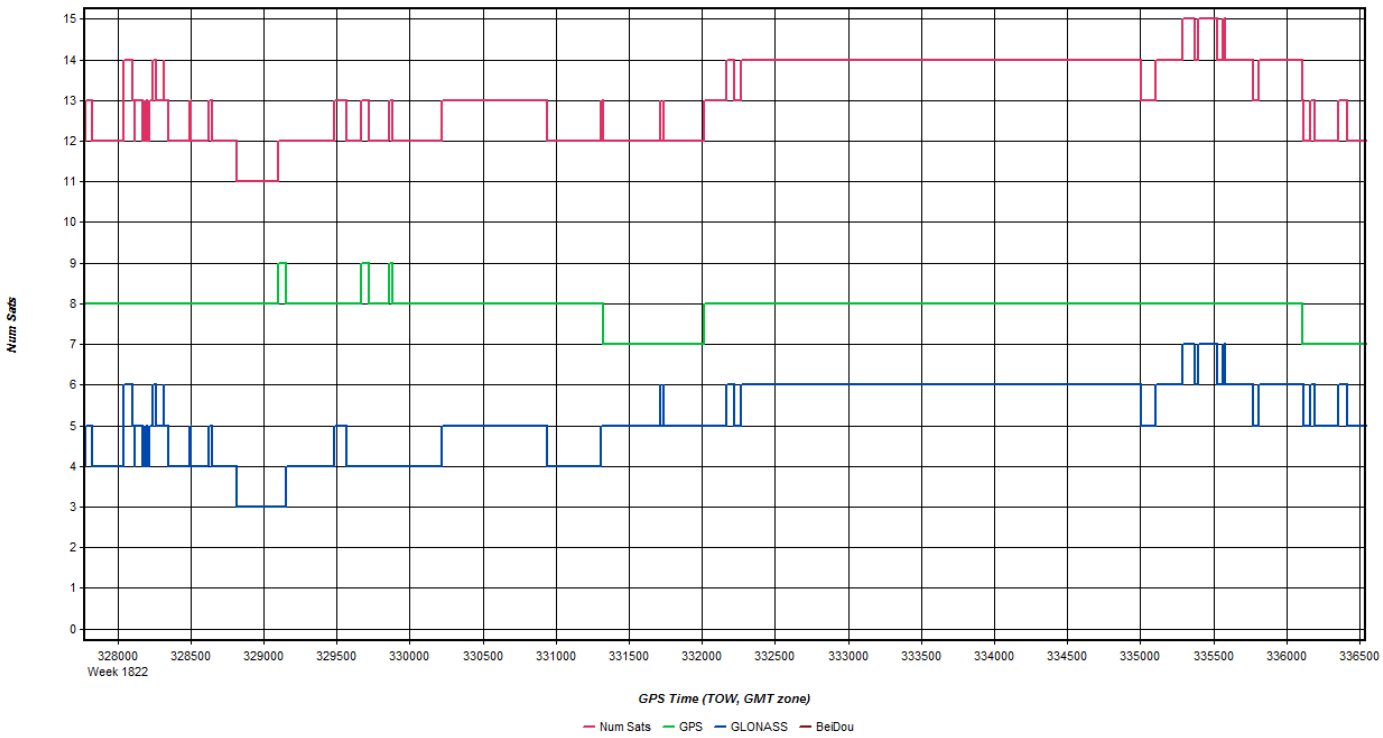
AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

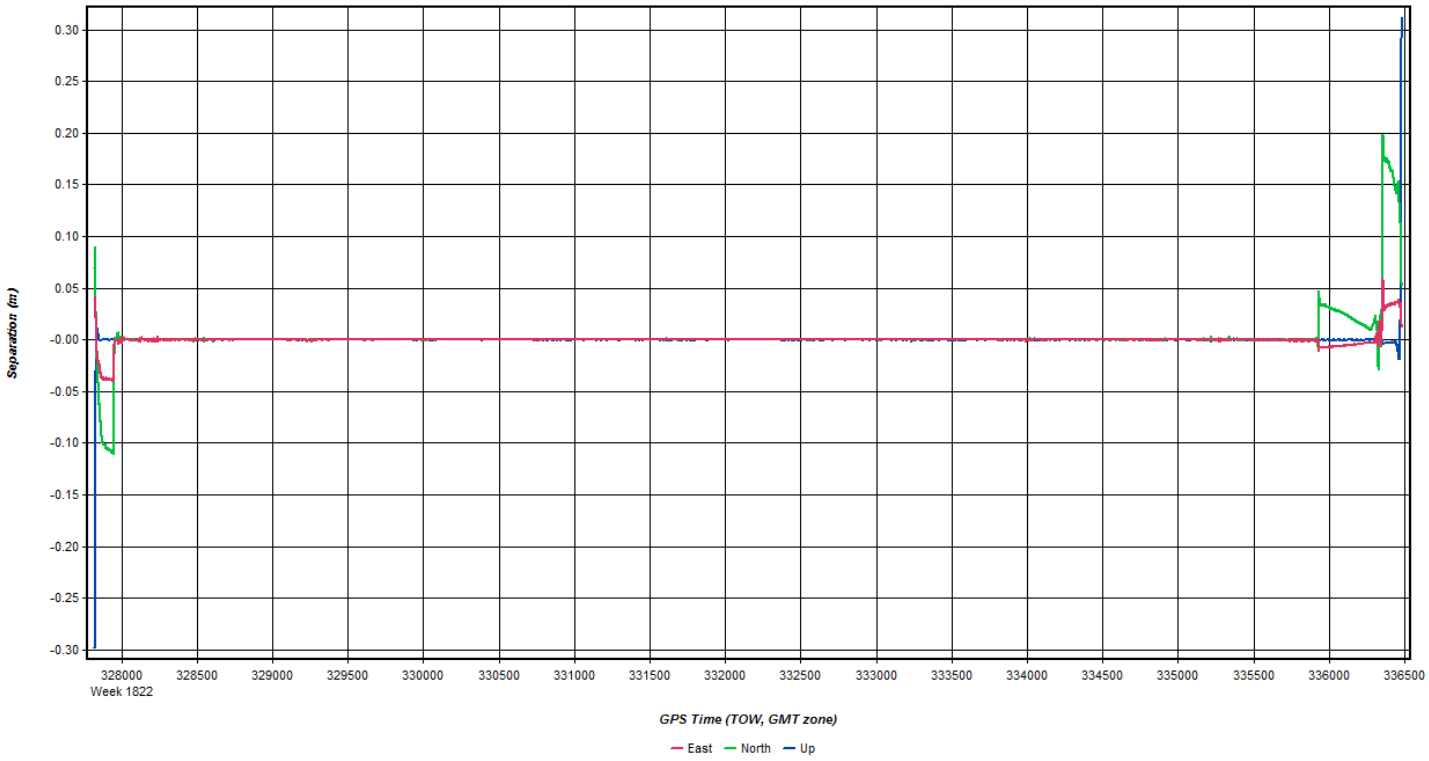
1 of 1

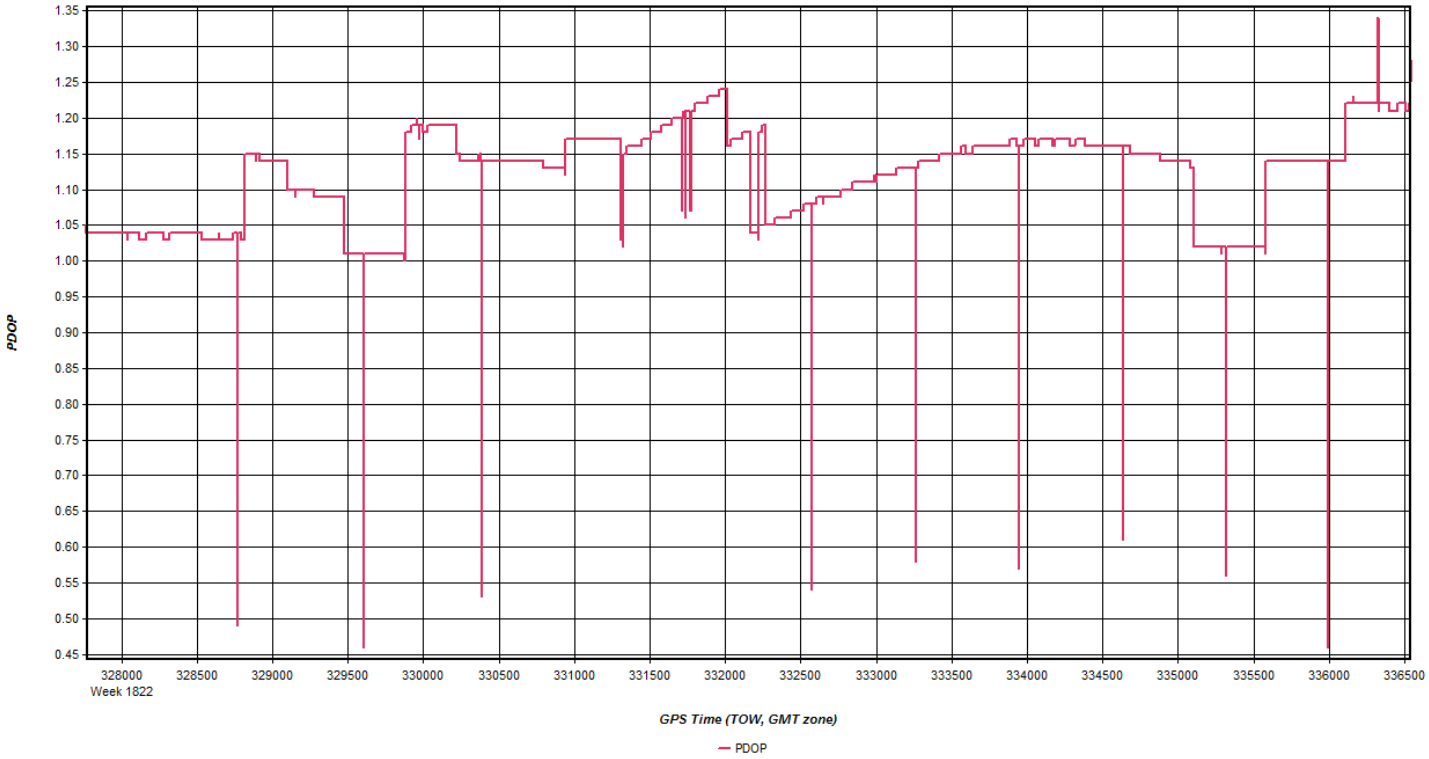
20141210A_7178

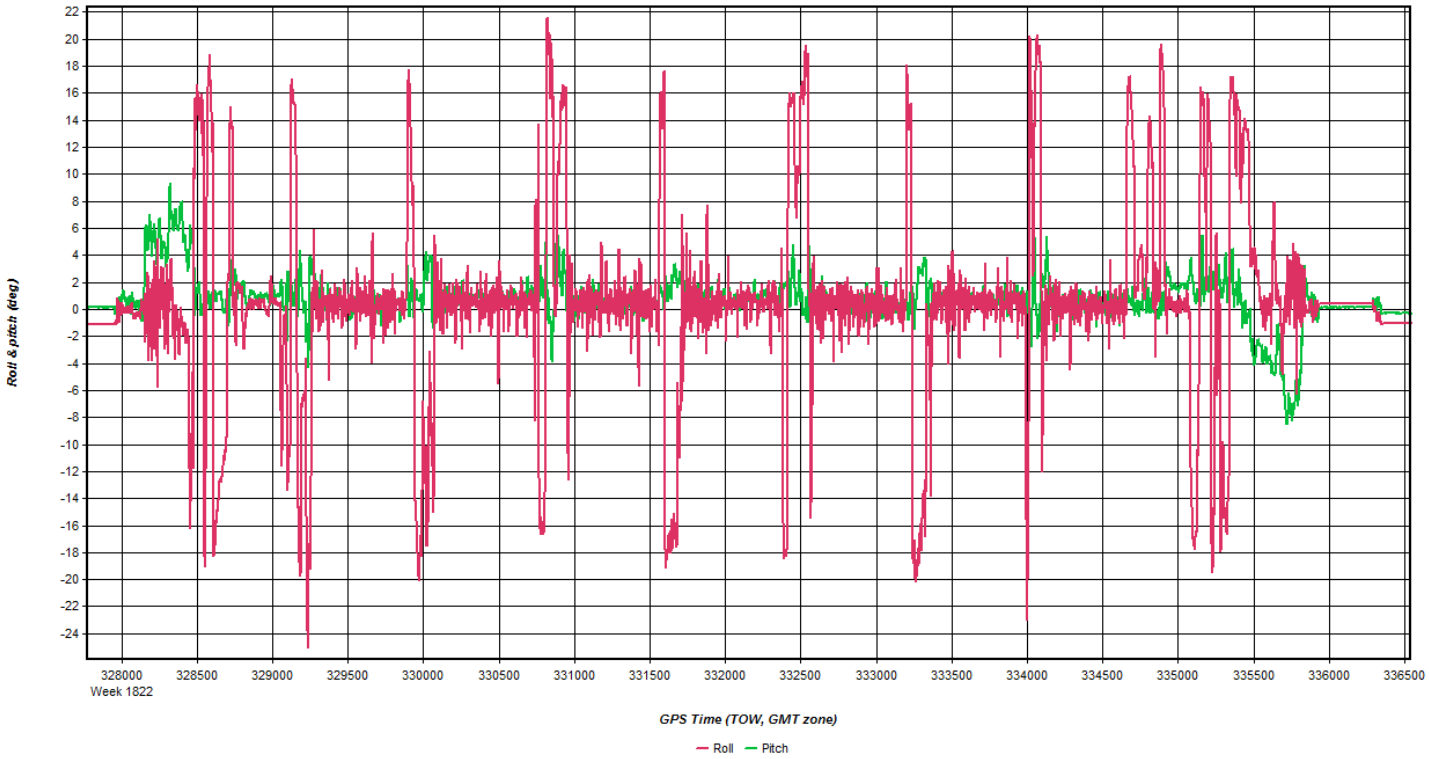

10 km

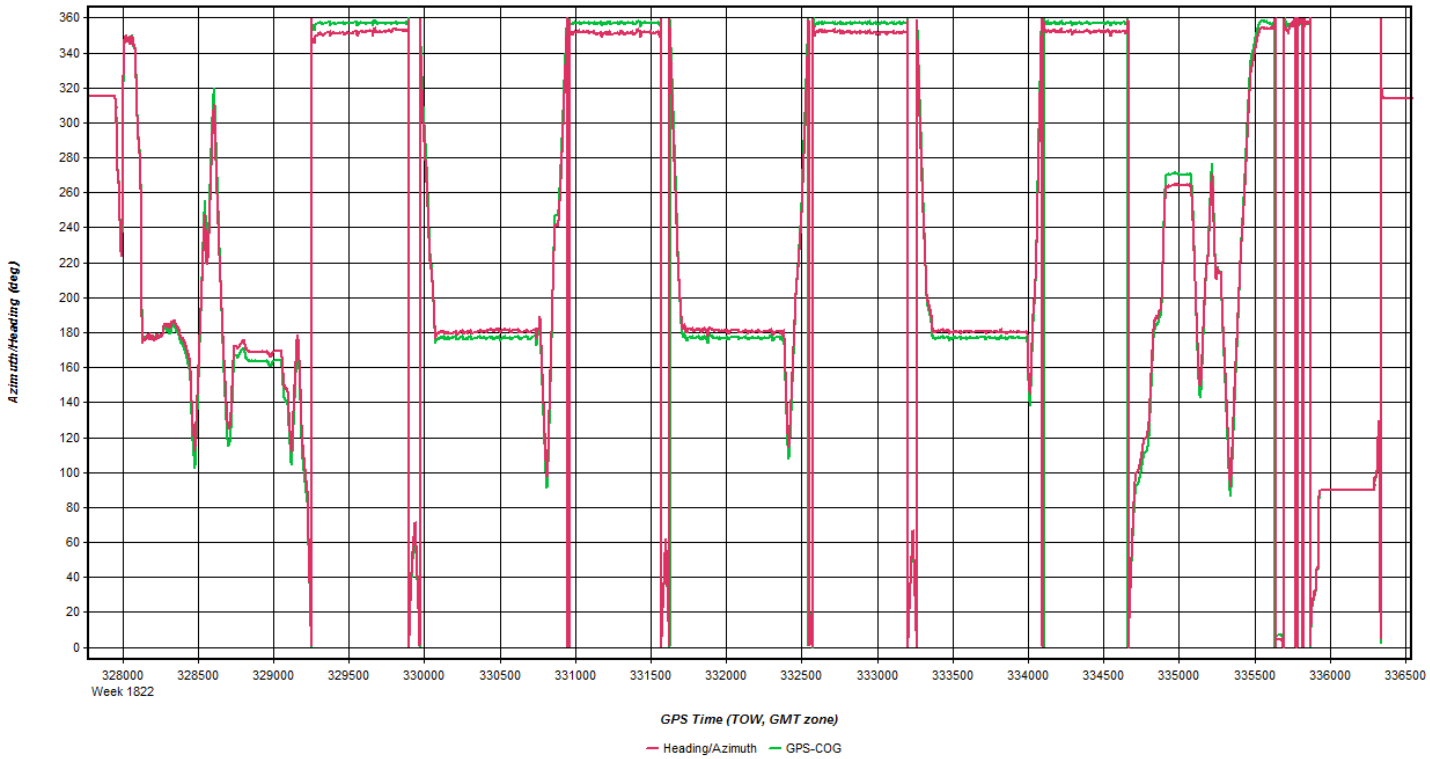

Estimated StdDev (m)
0.0170
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
328000
328500
329000
329500
330000
330500
331000
331500
332000
332500
333000
333500
334000
334500
335000
335500
336000
336500
Week 1822
GPS Time (TOW, GMT zone)
East
North
Height
Trace

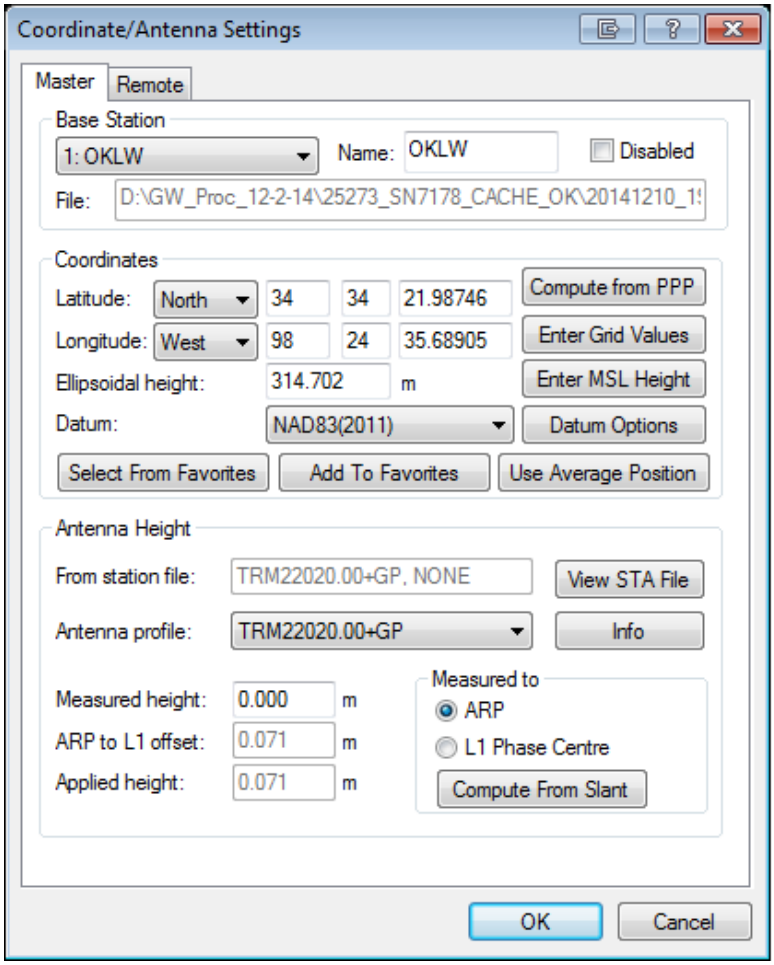

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
328000
Week 1822
328500
329000
329500
330000
330500
331000
331500
332000
332500
333000
333500
334000
334500
335000
335500
336000
336500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

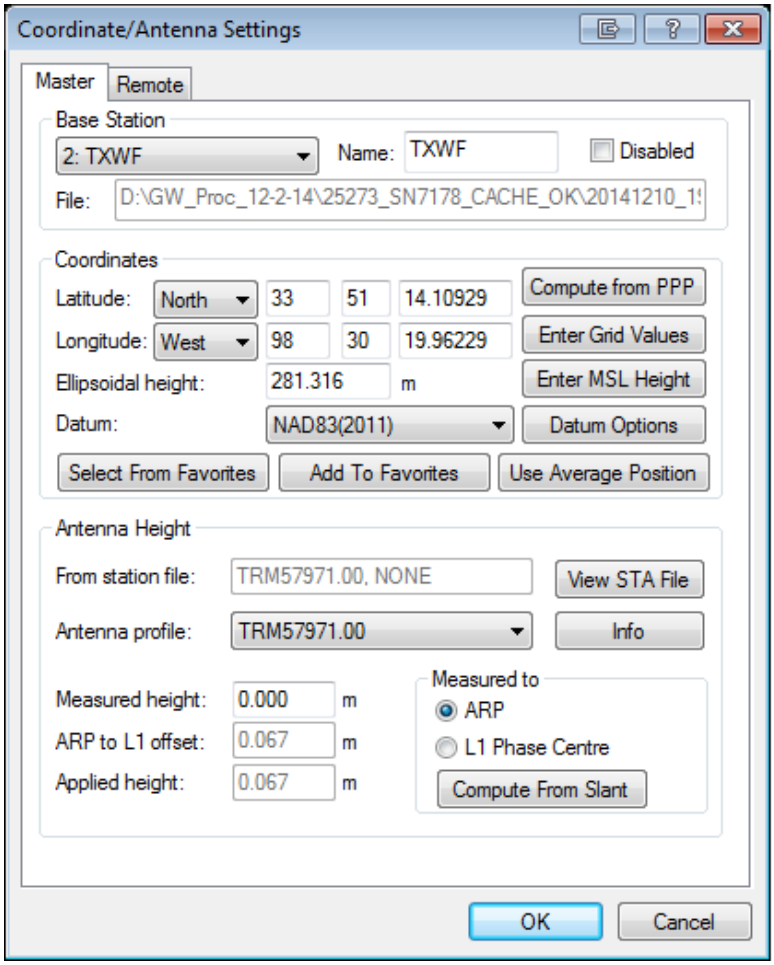

Separation (m)
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
328000
Week 1822
328500
329000
329500
330000
330500
331000
331500
332000
332500
333000
333500
334000
334500
335000
335500
336000
336500
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
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
328000
Week 1822
328500
329000
329500
330000
330500
331000
331500
332000
332500
333000
333500
334000
334500
335000
335500
336000
336500
GPS Time (TOW, GMT zone)
PDOP


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
328000
Week 1822
328500
329000
329500
330000
330500
331000
331500
332000
332500
333000
333500
334000
334500
335000
335500
336000
336500
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
328000
Week 1822
328500
329000
329500
330000
330500
331000
331500
332000
332500
333000
333500
334000
334500
335000
335500
336000
336500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\GW_Proc_12-2-14\25273_SN7178_CACHE_OK\20141210_1
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\GW_Proc_12-2-14\25273_SN7178_CACHE_OK\20141210_1
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: v 20141210190016 | DATE: 12-10-14 | LEICA ALS-70

PILOT: Mark Young | OPERATOR: Jonathan Swan | AIRCRAFT: N262AS

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25723	160	2057	352	143	35	40	193		5423	1928	1938		5639.4
USGS OK	159	2056	173	138					5395	1942	1952		5641.5
Cache	158	2055	352	131/147					5370	1956	2005		
	157	2054	172	133					5393	2009	2019		
	156	2053	352	130					5450	2023	2033		Ceilings Dropping
	155	2052	172	140					5407	2036	2047		Clouds Forming @ South end
Aborted *	154	2051	352	131/154	Abort				5353	2049	2057		* Eye Safety No Returns Aborted
	Xtie	ULoo1	267	131					5378	2101	2104		
													Site → LAW

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
Q 25723		6		1.5	0.6	✓	5min	5min	* No warning on ES Shroud
O						WX Higher Deck lowering and lower Q forming!			only noticed No Returns
O									South Base Station

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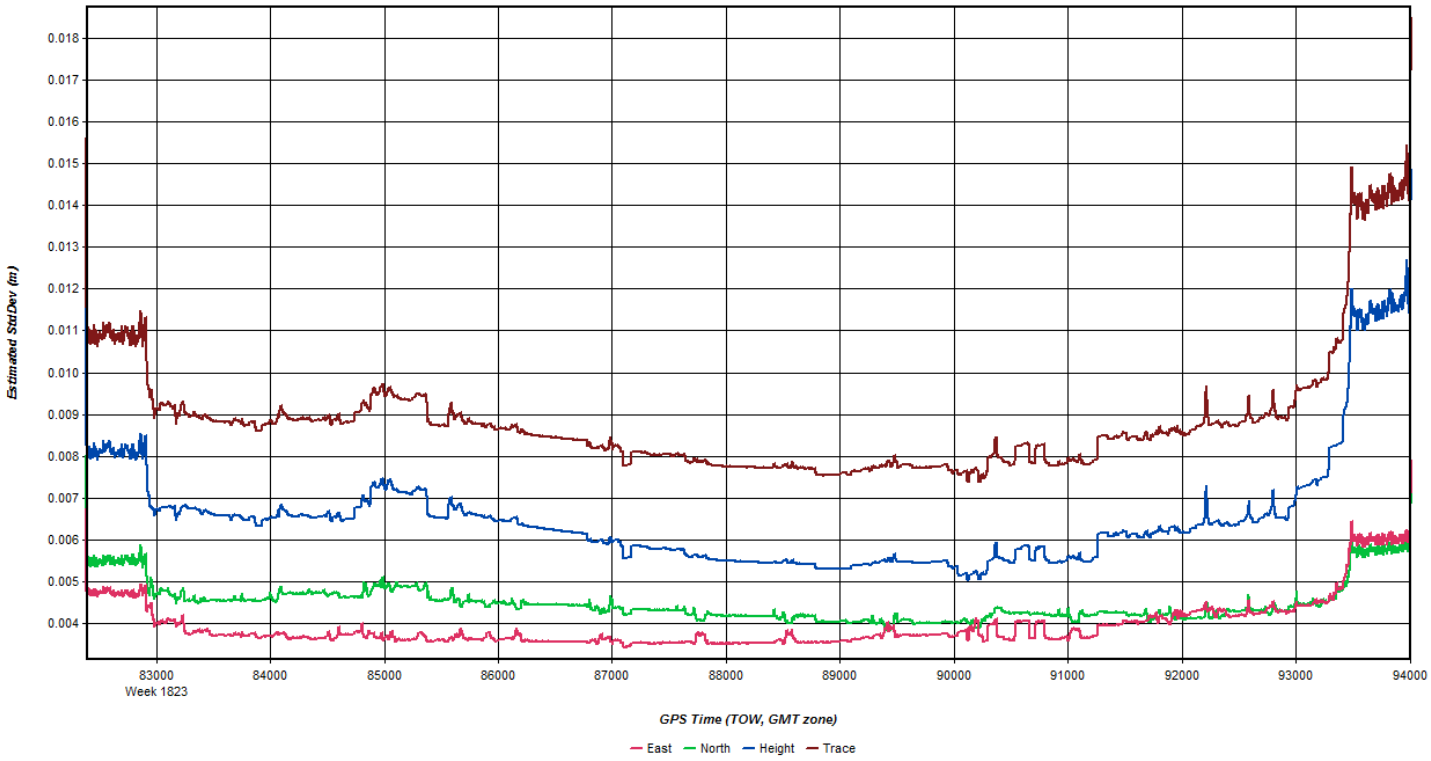
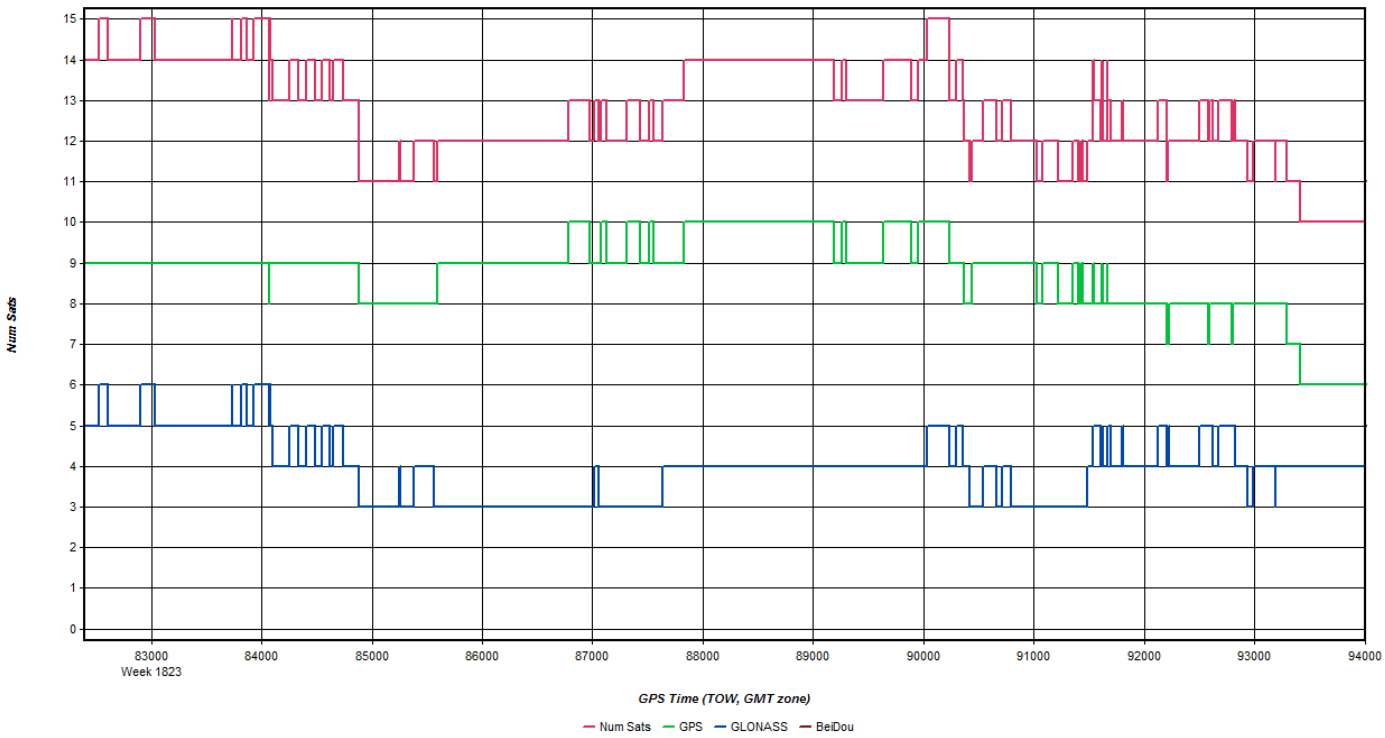
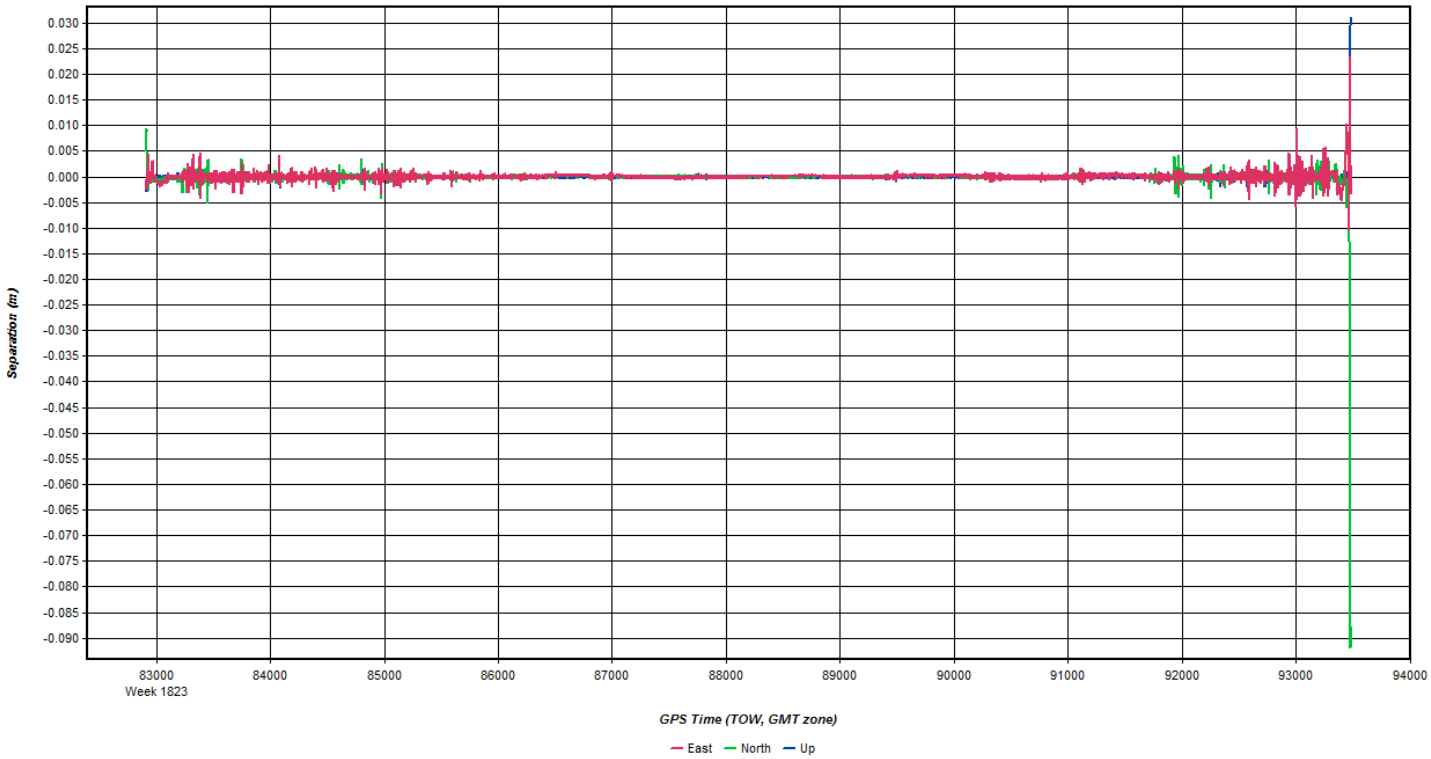
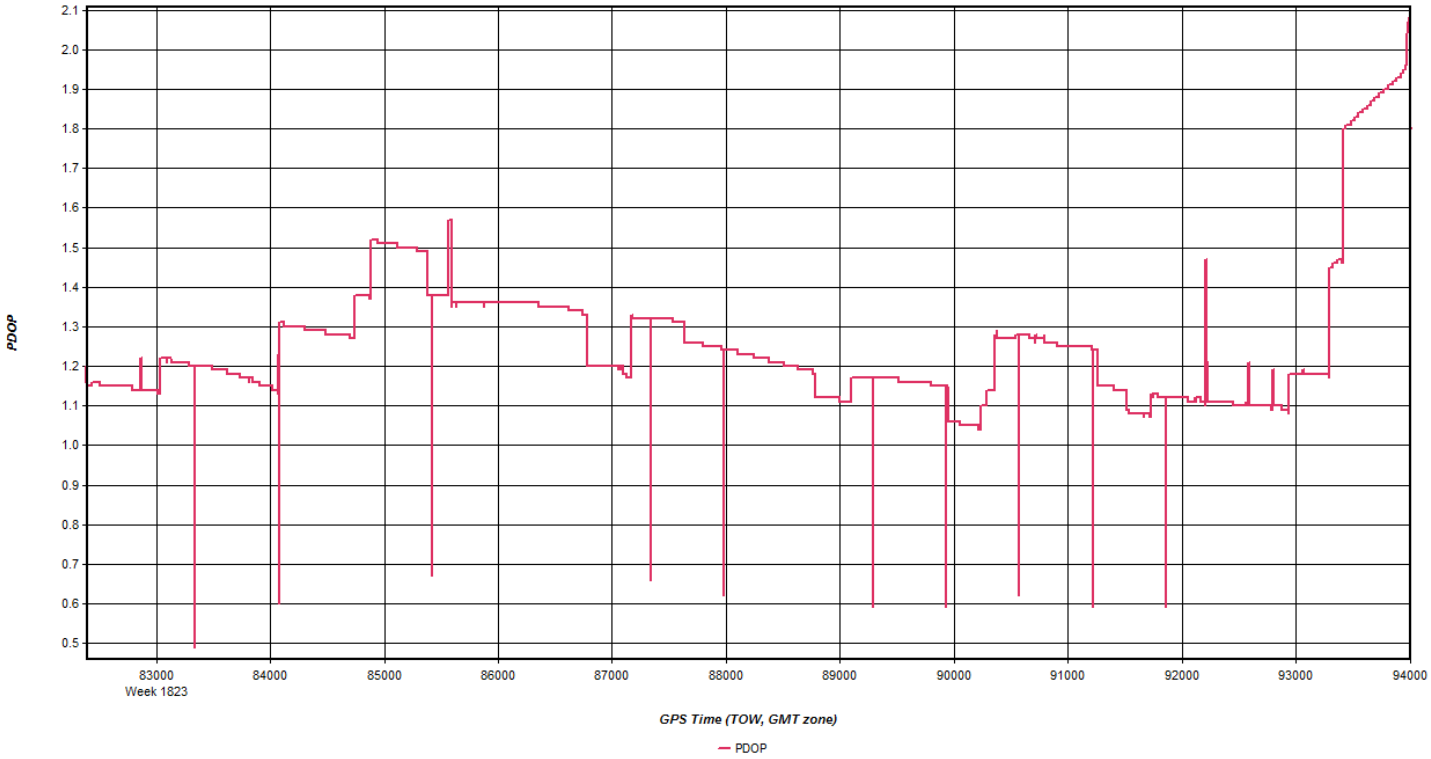
20141214A_7178

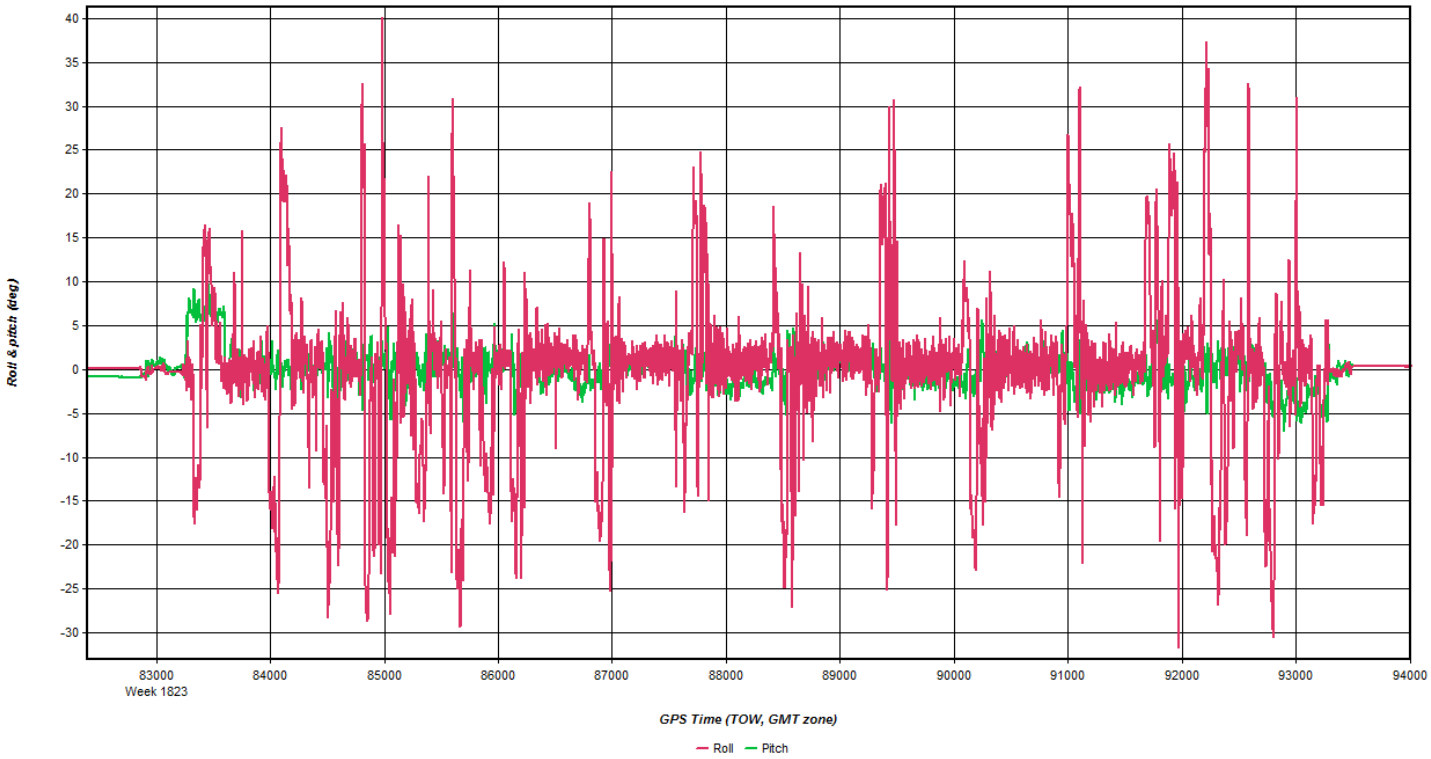

10 km

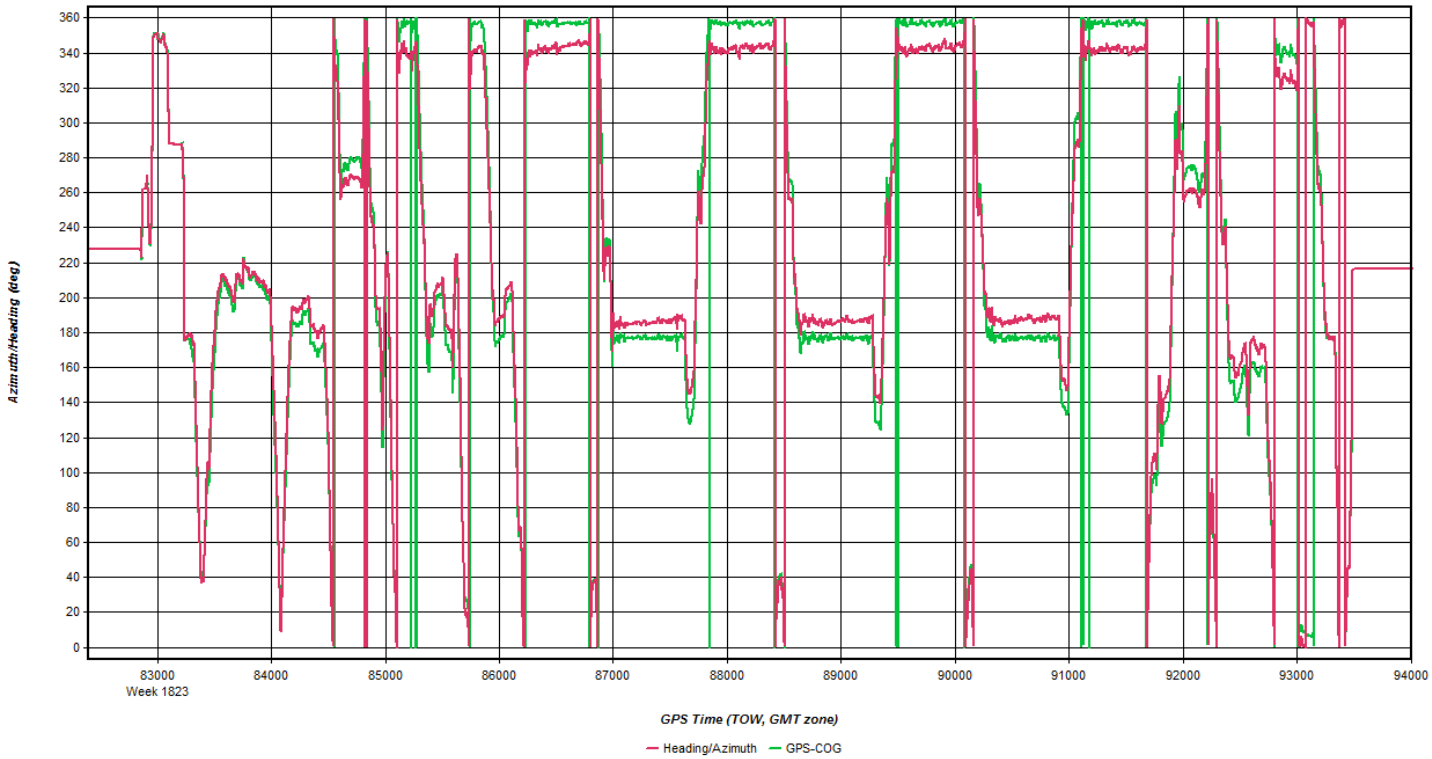

Estimated StdDev (m)
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
83000
Week 1823
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

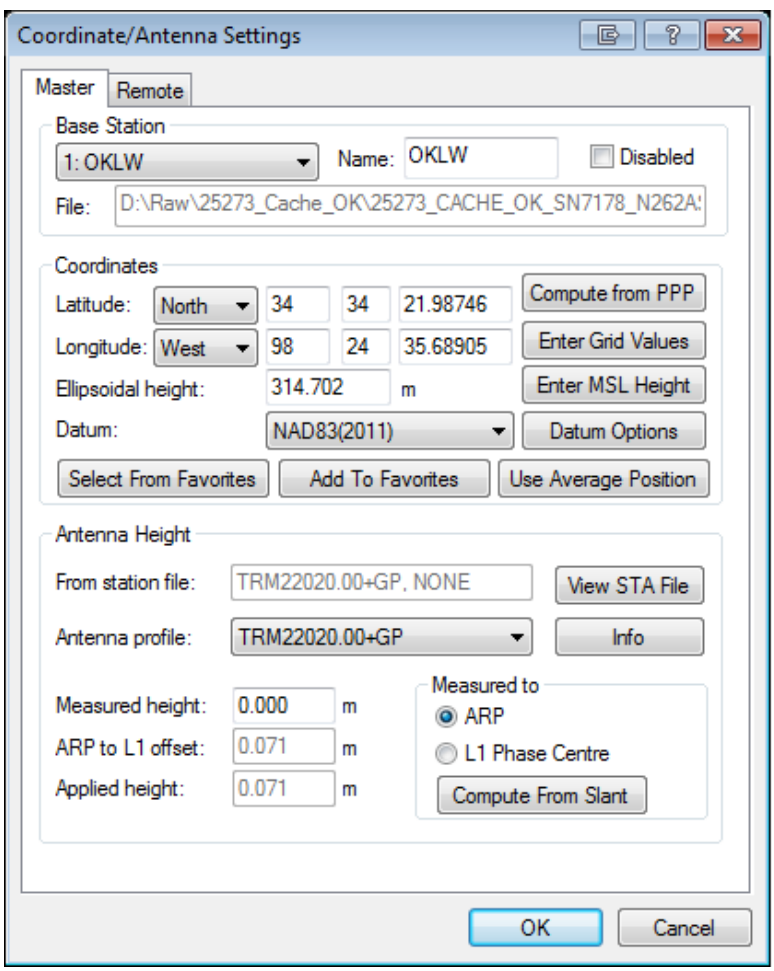

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
83000
Week 1823
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

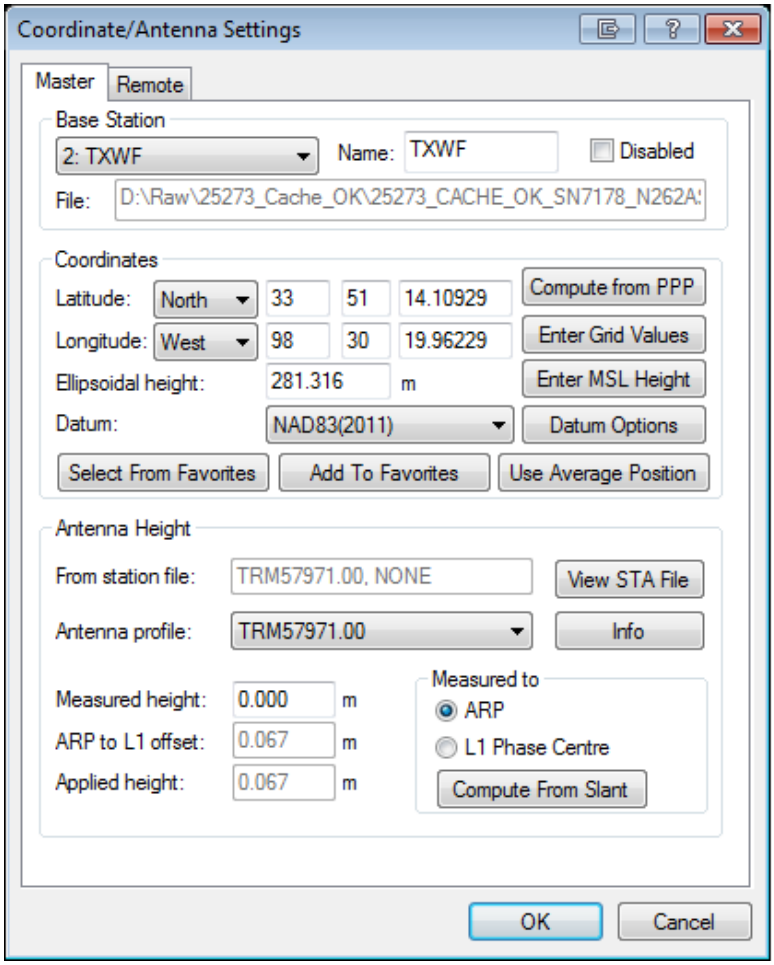

Separation (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
-0.075
-0.080
-0.085
-0.090
83000
Week 1823
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
83000
Week 1823
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
GPS Time (TOW, GMT zone)
PDOP


Roll & pitch (deg)
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
83000
Week 1823
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
83000
Week 1823
84000
85000
86000
87000
88000
89000
90000
91000
92000
93000
94000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\25273_CACHE_OK_SN7178_N262A
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\Raw\25273_Cache_OK\25273_CACHE_OK_SN7178_N262A
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: v 201212 14_225035

DATE: 12-14-14 Sunday

LEICA ALS-70

PILOT: Billy Phillips

OPERATOR: Jonathan Swan

AIRCRAFT: N262AS

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273	134	2031	353	Abort	35	40	193		5368	2339	2340		tootar off Abort 5641.5
US65	133	2030	353	156					5414	2349	2350		No Returns - Door Not open!
Cache Ok	134	2031	353	135					5382	2357	0006		
	133	2030	172	131					5475	0010	0020		
	132	2029	352	156					5494	0024	0034		
	131	2028	172	139					5495	0038	0047		
	130	2027	352	155					5408	0052	0100		
Refly as Able	129	2026	172	122					5400	0105	0115		Refly too high ✗?
	128	2025	352	130					5504	0119	0127		
	Xtie	Ulai	269	123					5414	0134	0136		
													Landing LAW
													5641.3
													5641.5
													2.8

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
1 25273		7		1.6	2.8	✓	5	5	
0					1.2	WX SKC			
0									

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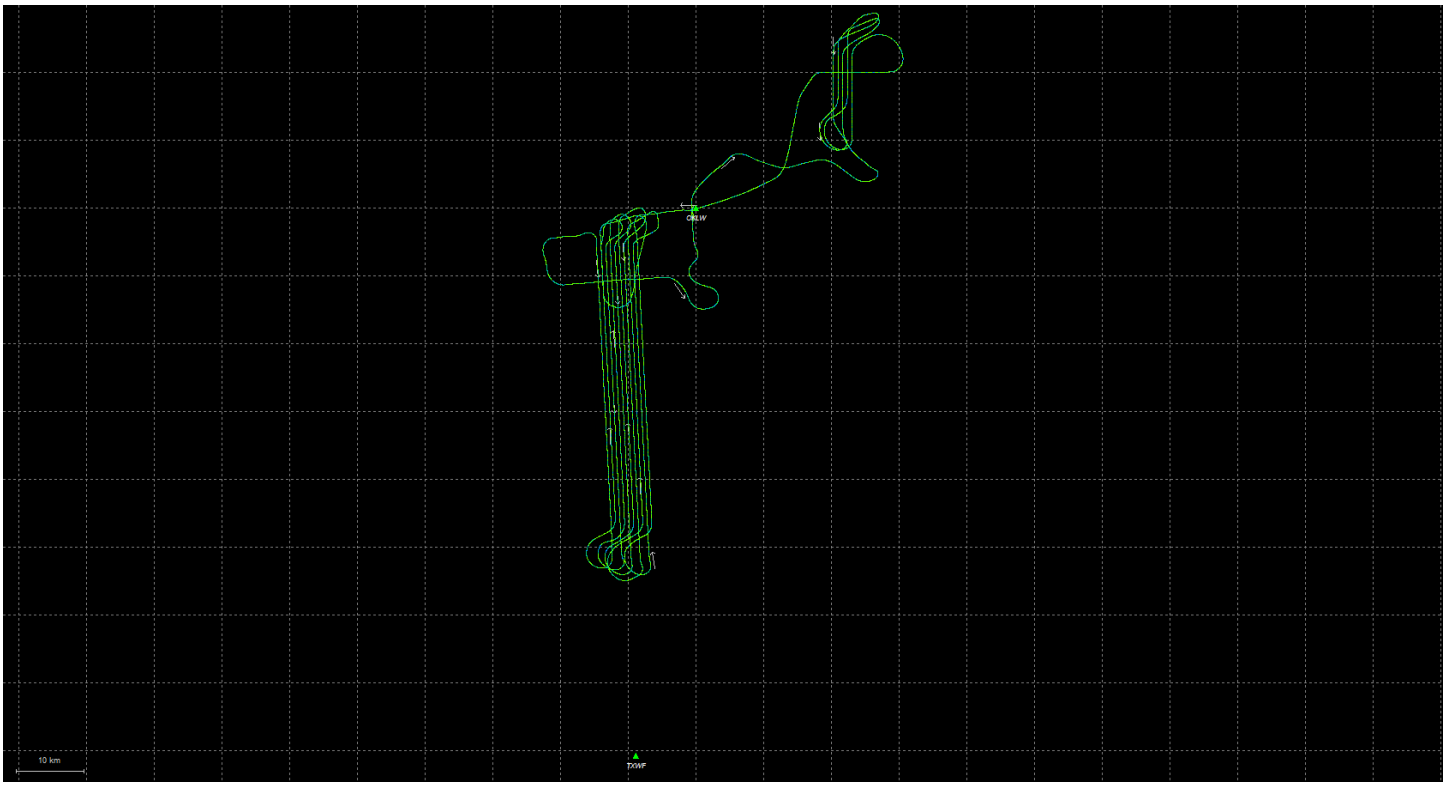
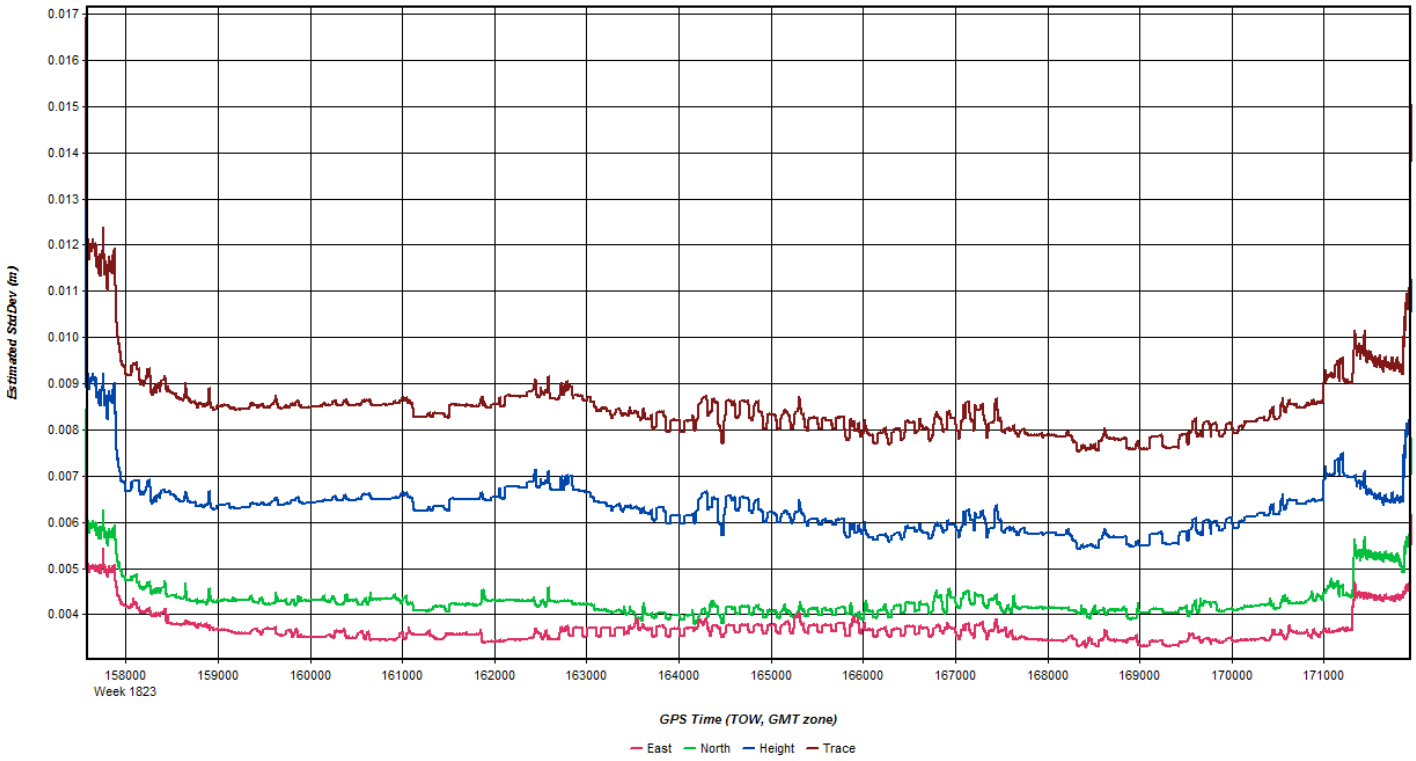
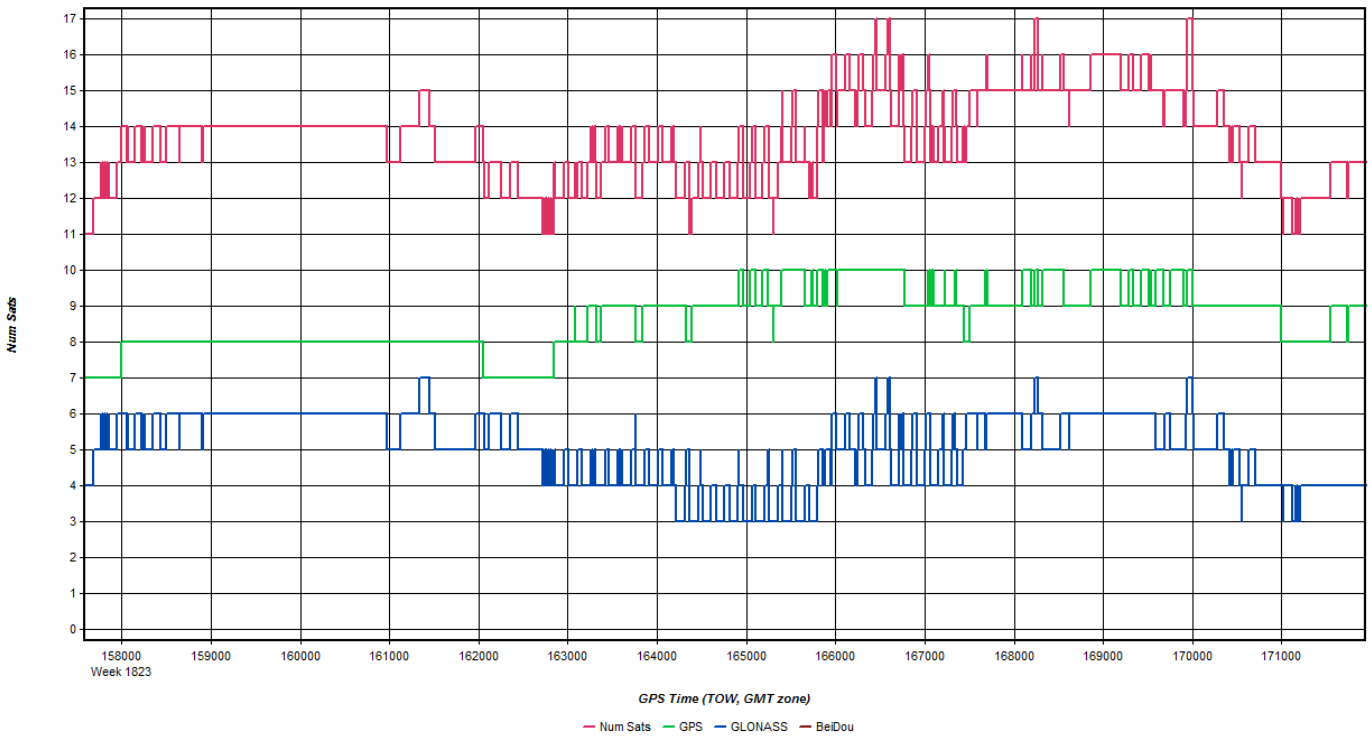
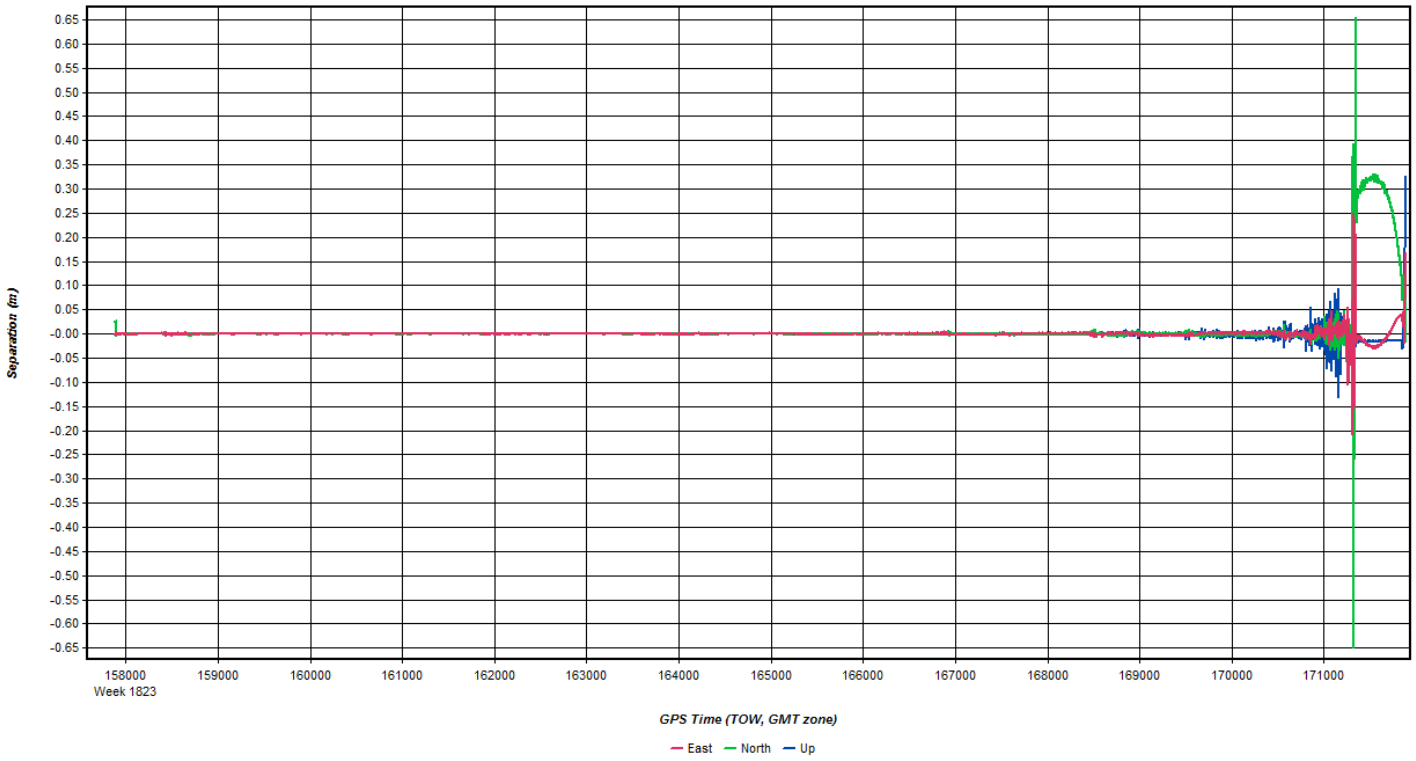
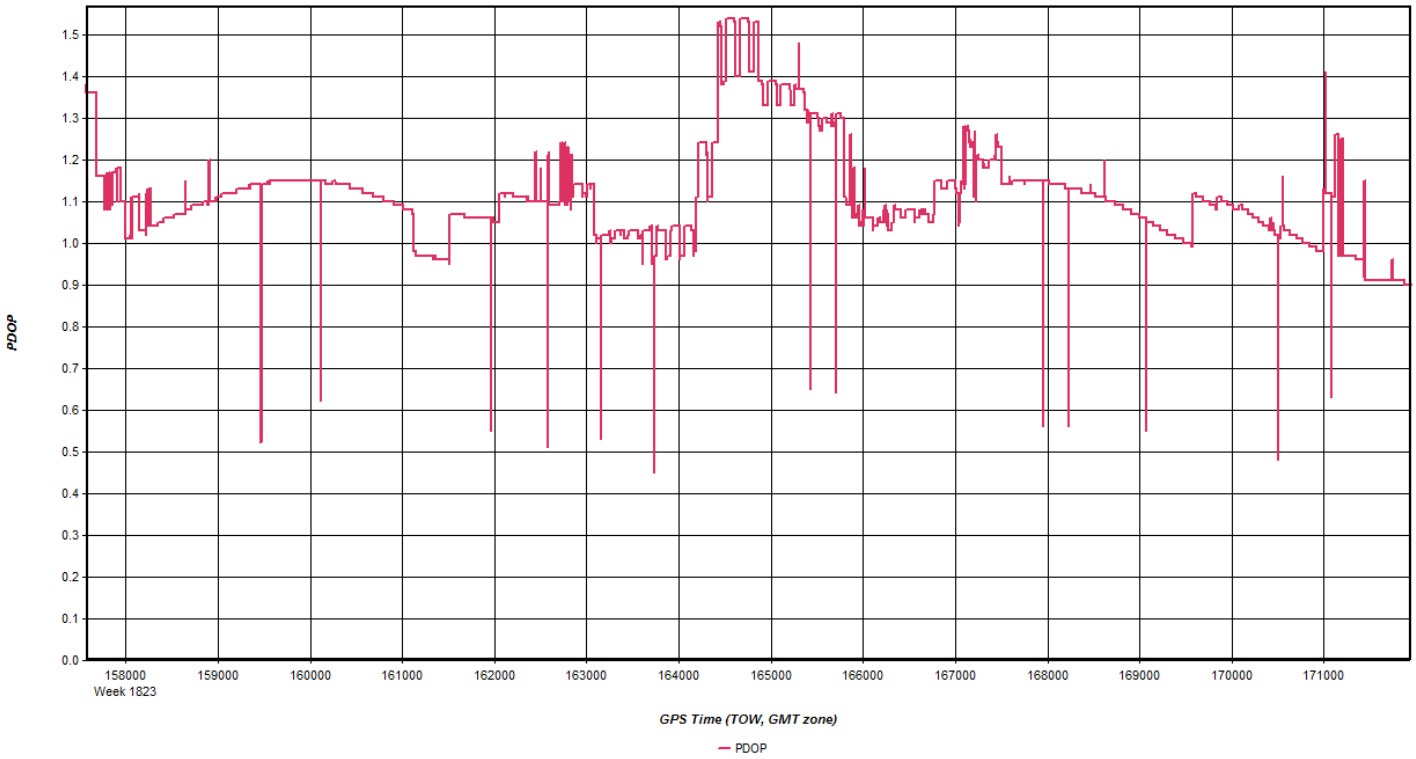
20141215A_7170

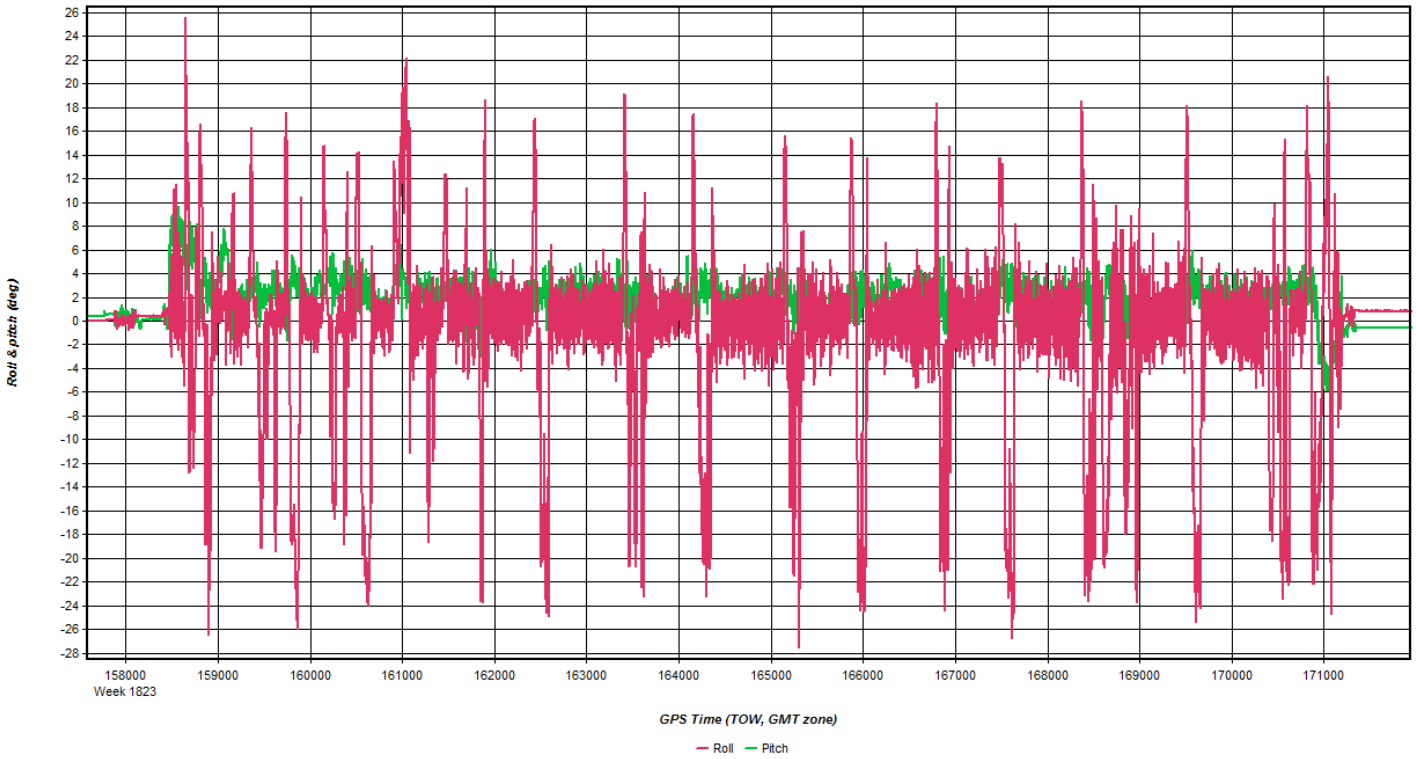

10 km
TXWF

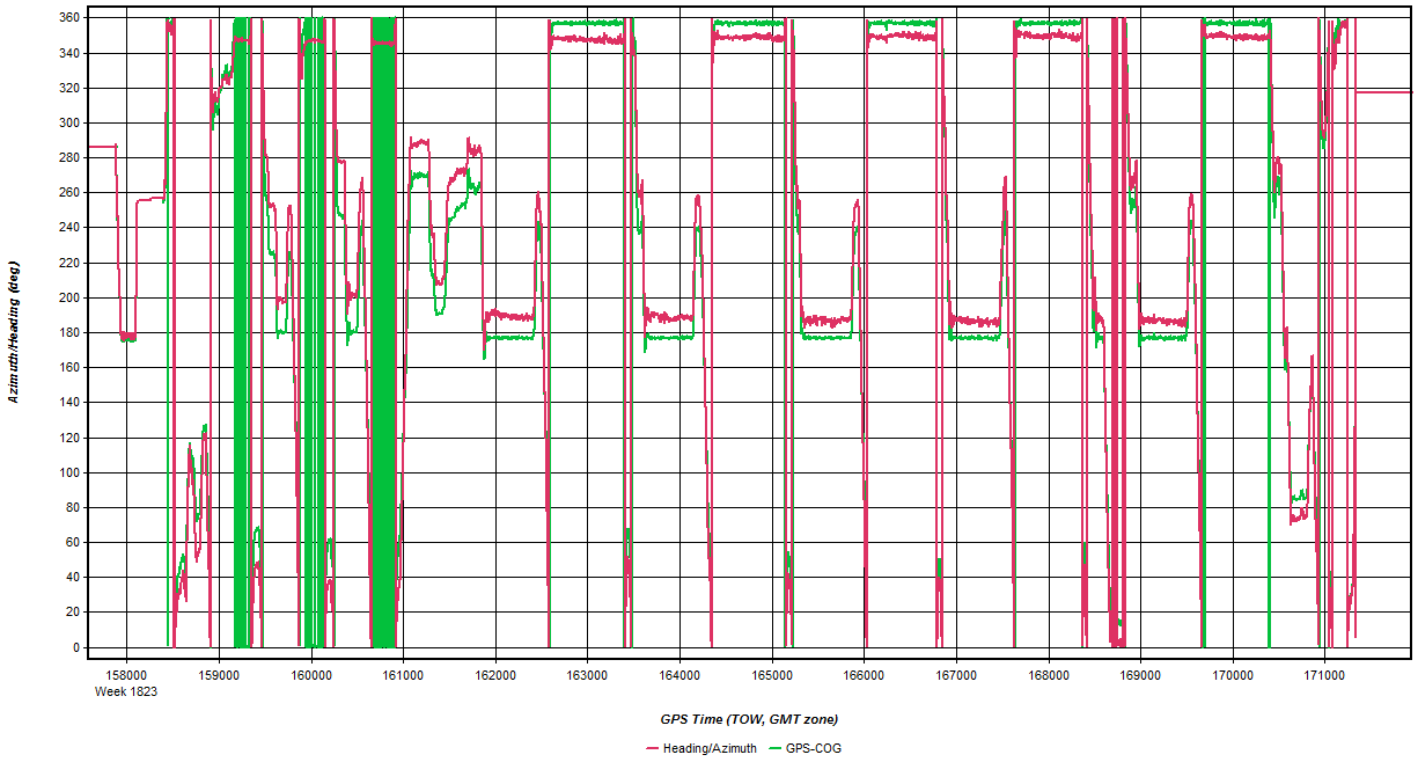

Estimated StdDev (m)
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
158000
Week 1823
159000
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

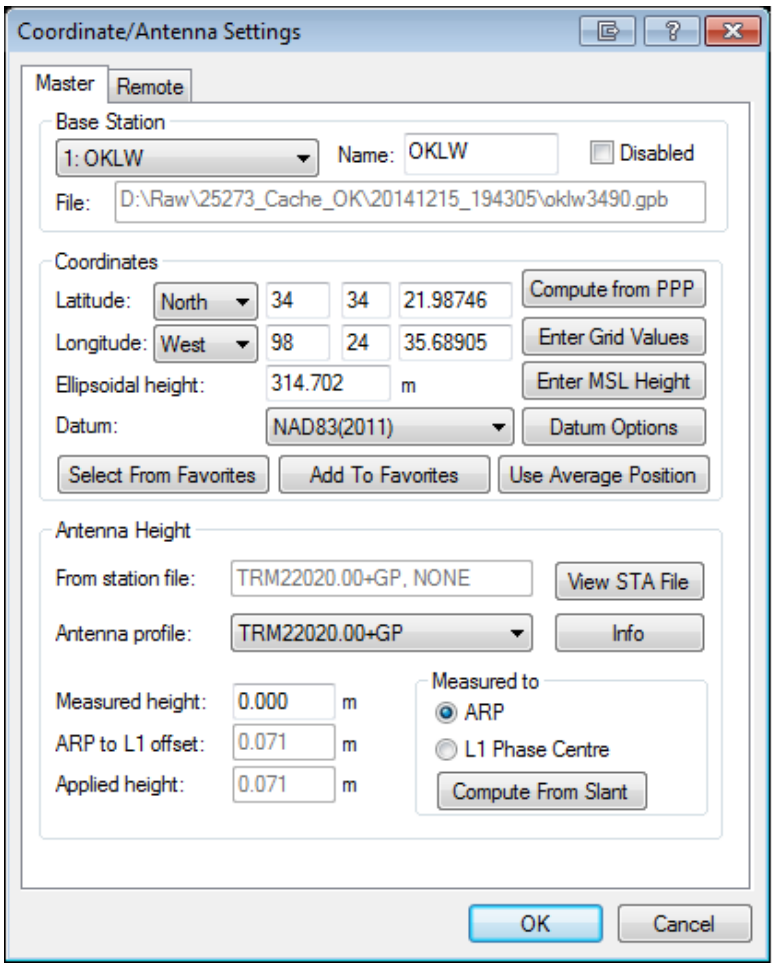

Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
158000
Week 1823
159000
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

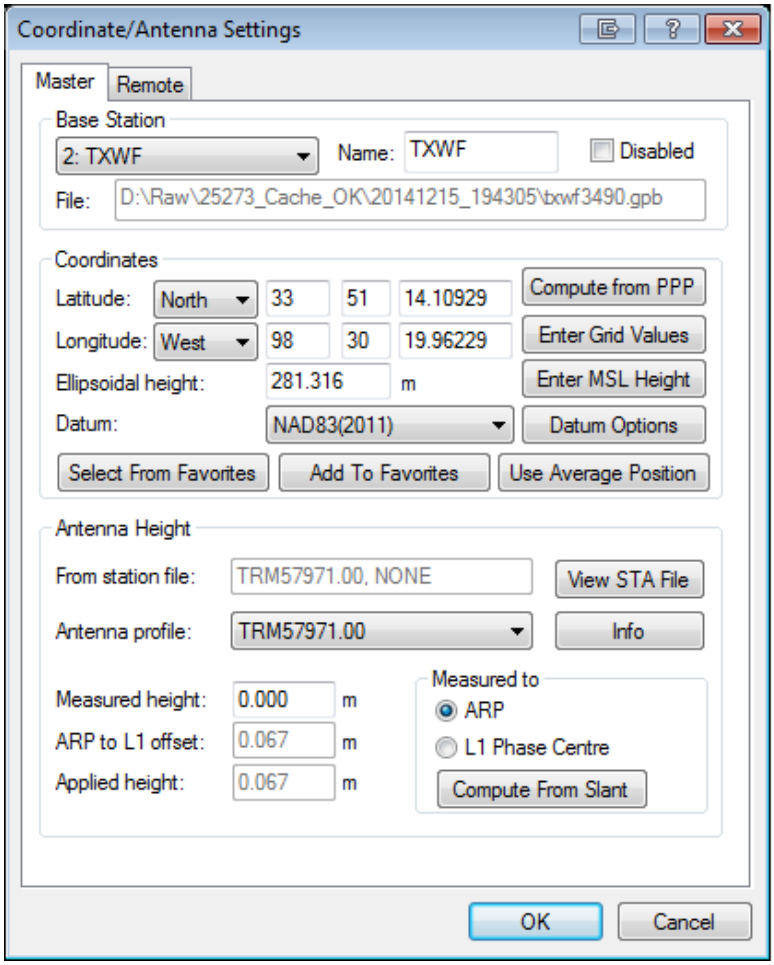

Separation (m)
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
-0.35
-0.40
-0.45
-0.50
-0.55
-0.60
-0.65
158000
Week 1823
159000
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
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
158000
Week 1823
159000
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
PDOP


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
158000
Week 1823
159000
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
158000
Week 1823
159000
160000
161000
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\20141215_194305\oklw3490.gpb
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\Raw\25273_Cache_OK\20141215_194305\txwf3490.gpb
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: 20141215_194305 | DATE: 12-15-14 | LEICA ALS-70 | JS1

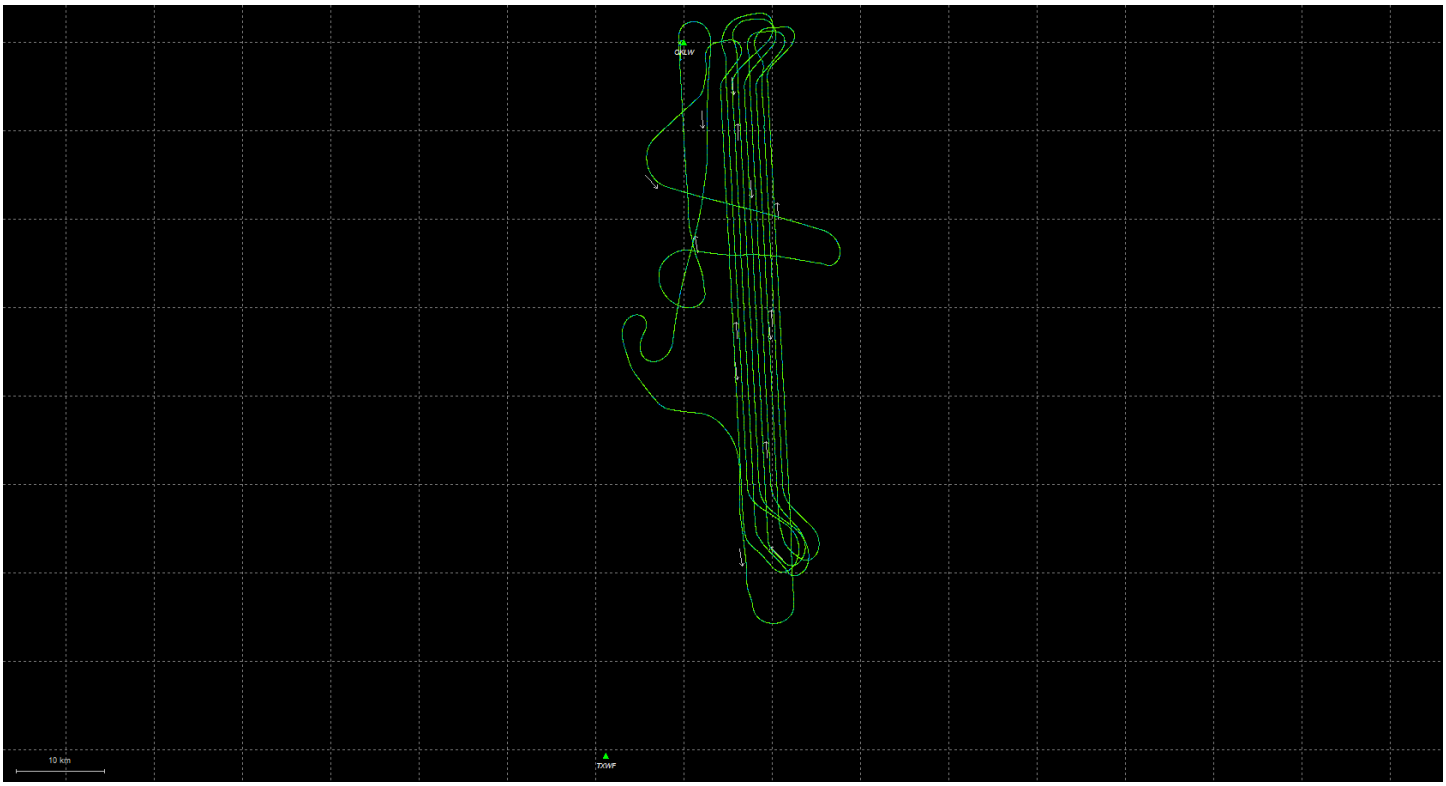
PILOT: SMELSER | OPERATOR: SCHOONE | AIRCRAFT: N22GE | SENSOR: 7170

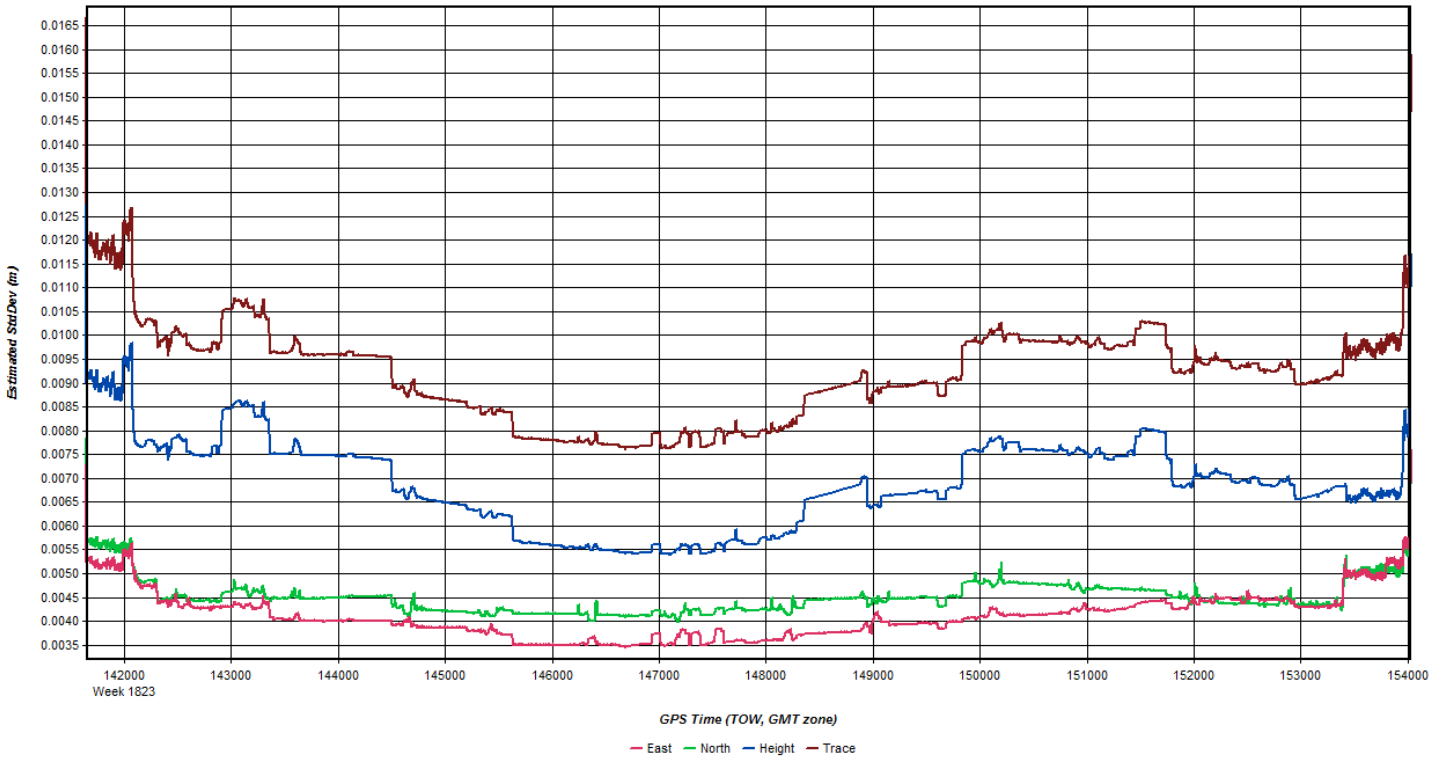
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	GPS TIME START	GPS TIME STOP	MM70 DRIVE	REMARKS
25273										15:36	18:18	3	FERRY: ELP → LAW 2.7
CACHE OK										19:46	20:13		FERRY: LAW → SITE .4
	104	9001	0	150	53	40	187	12.3	~~1437~~	20:13	20:15		
	105	9002	180						1427	20:20	20:21		
	106	9003	0						1421	20:26	20:28		
	107	9004	180						1428	20:33	20:34		
	108	9005	0						1474	20:39	20:41		
	109	9006	~~180~~ 230						~~1436~~ 1476	20:45	20:47		FLY OVER BASE STATION AT KLAW 20:54
	133	2024	177						1395	20:58	21:06		
	132	2023	357						1455	21:11	21:22		
	131	2022	177						1445	21:27	21:35		
10	130	2021	357						1457	21:40	21:52		
	129	2020	177						1426	21:55	22:04		
	128	2019	357						1455	22:08	22:19		
	127	2018	177						1416	22:22	22:30		
	126	2017	357						1442	22:35	22:45		
	125	2016	177						1414	22:56	23:04		
	124	2015	357						1456	23:08	23:19		
	X	2101	85						1438	23:24	23:26		FERRY: SITE → LAW 23:40 .3

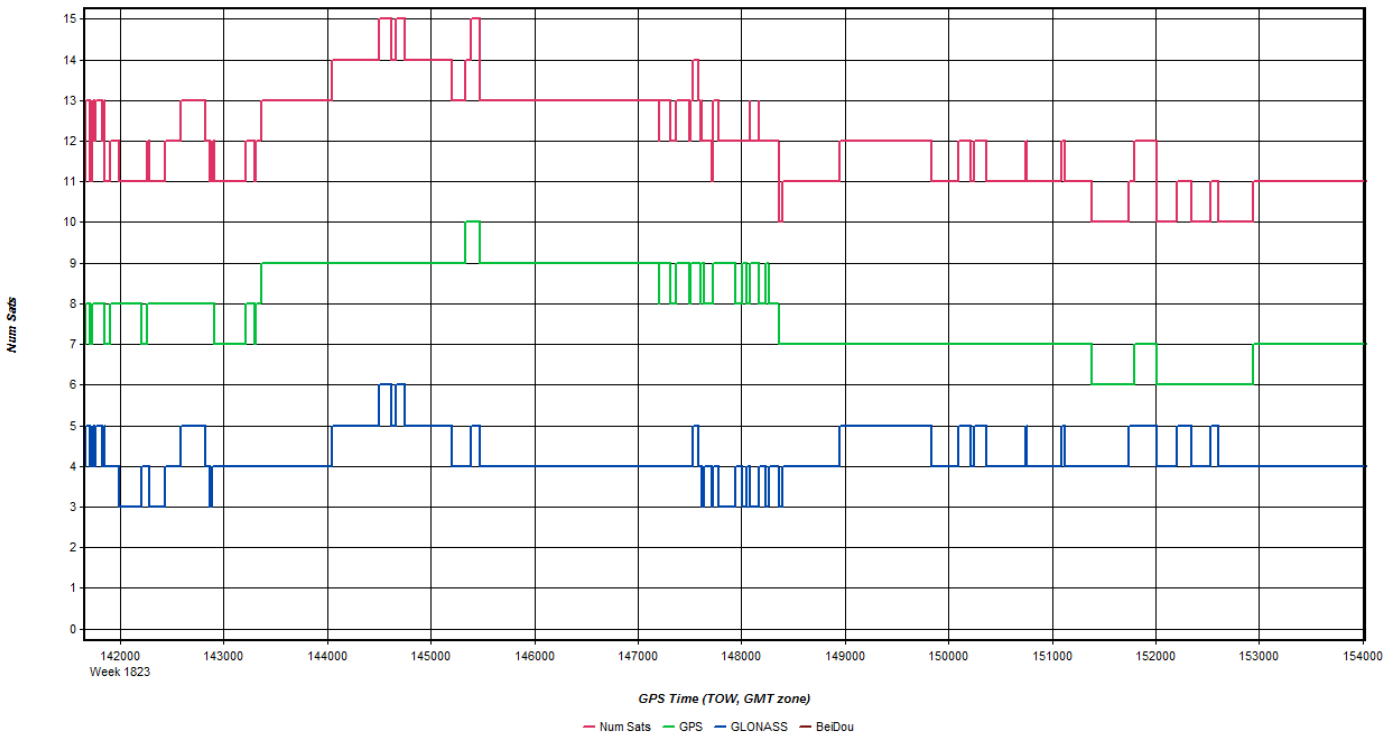
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
∅ 25273	184	39/14		3.2	3.4	3.9	19:46	23:40	
○					6.4	WX 29.95 ALTIMETER 30.02 SKC WINDS GUSTING AT 24 KTS			
○									

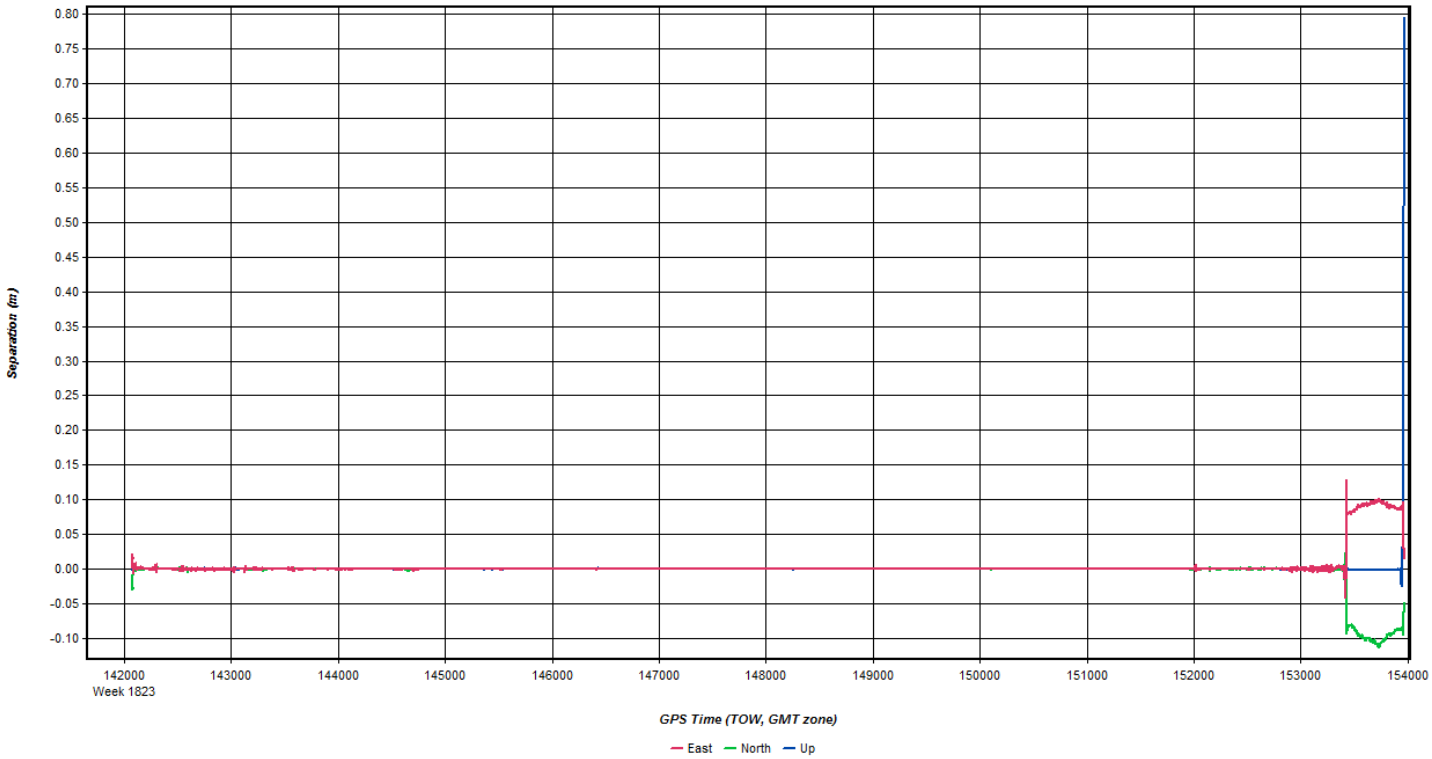
Quantum Spatial N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@quantumspatial.com

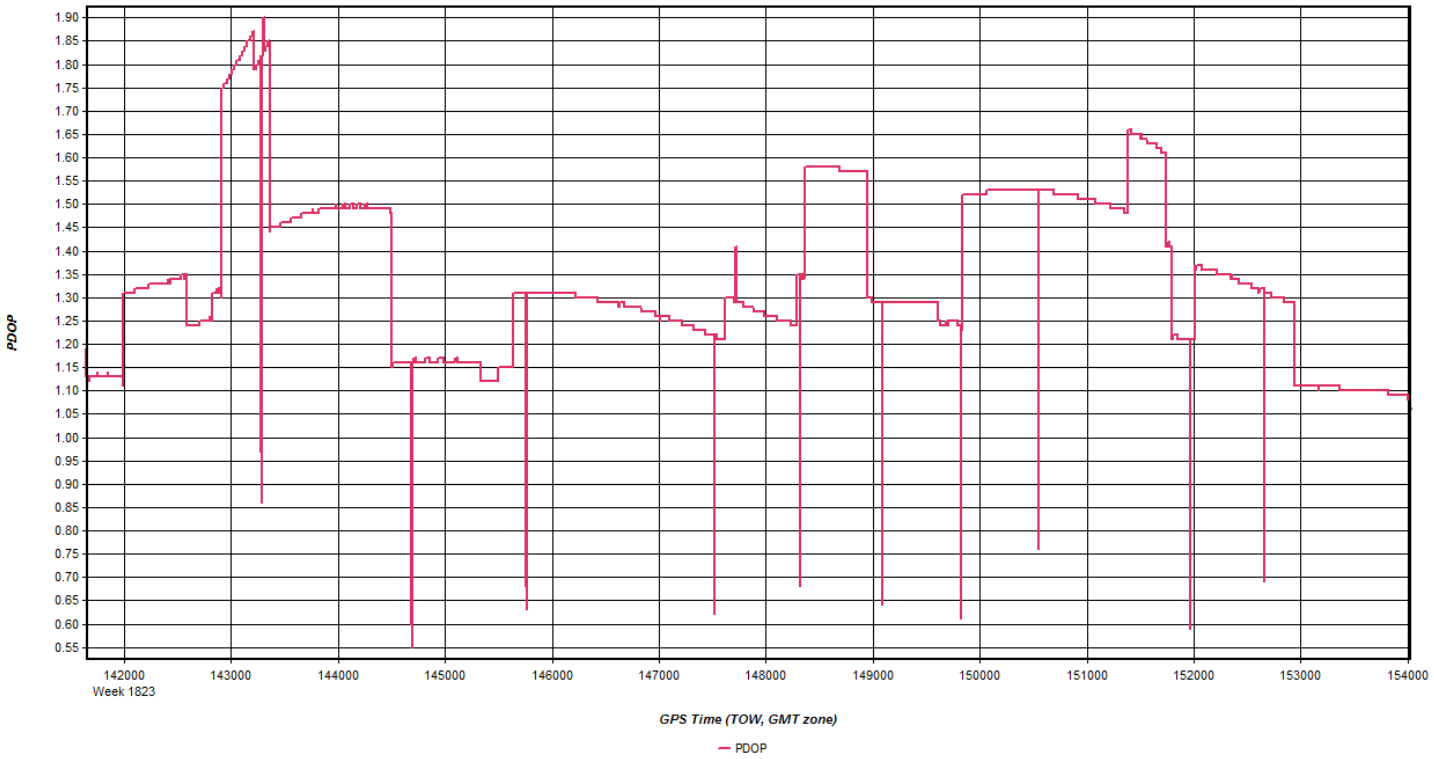
20141215A_7178

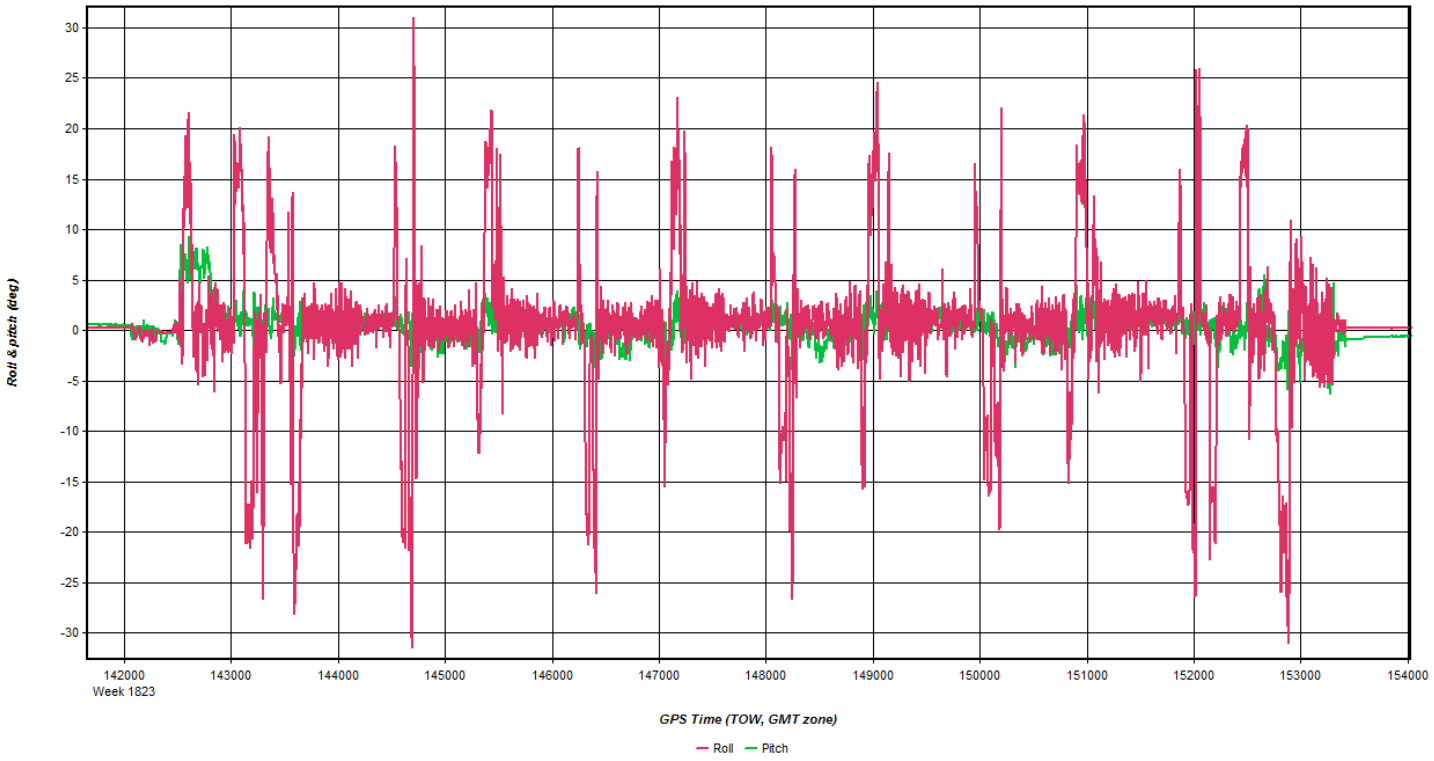

GKLW
10 km
TXWF

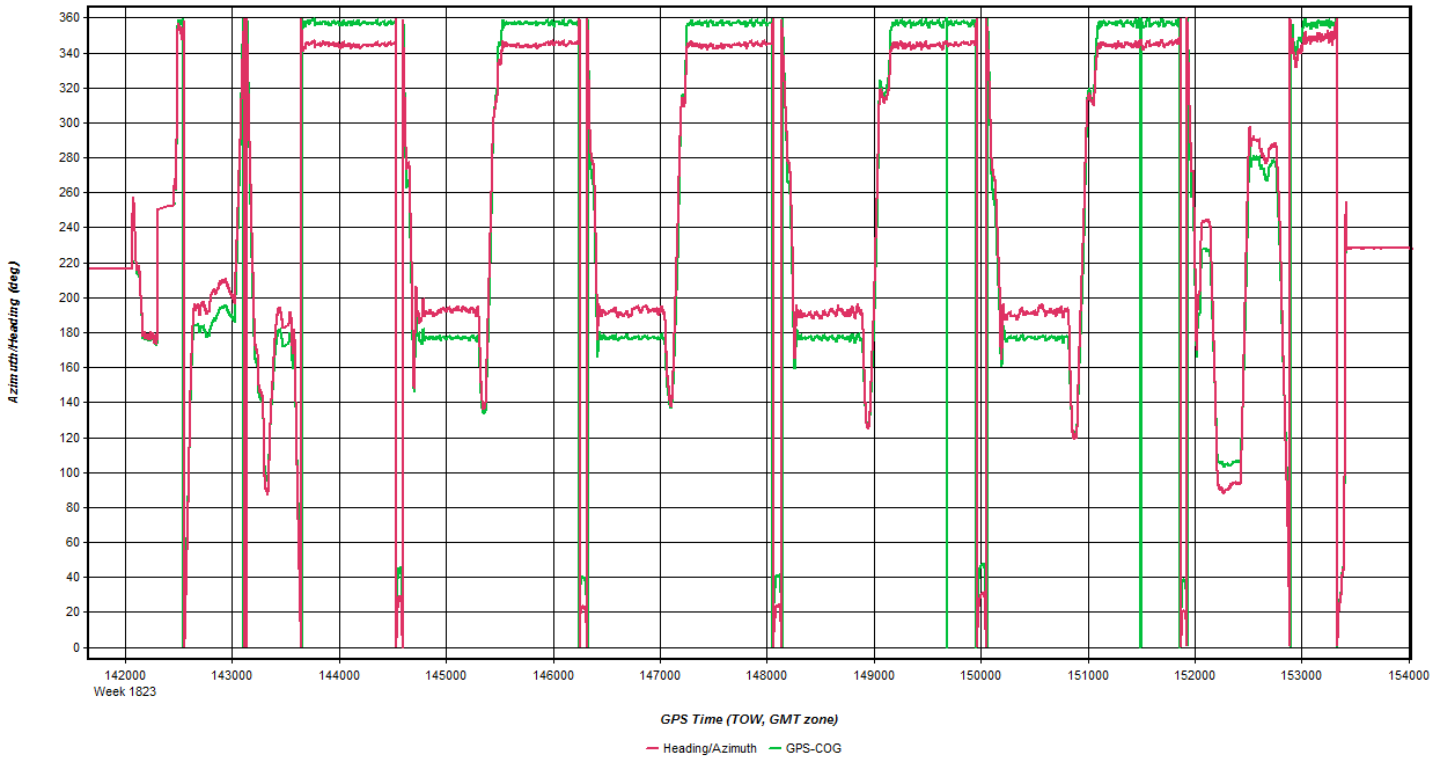

Estimated StdDev (m)
0.0165
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
142000
Week 1823
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

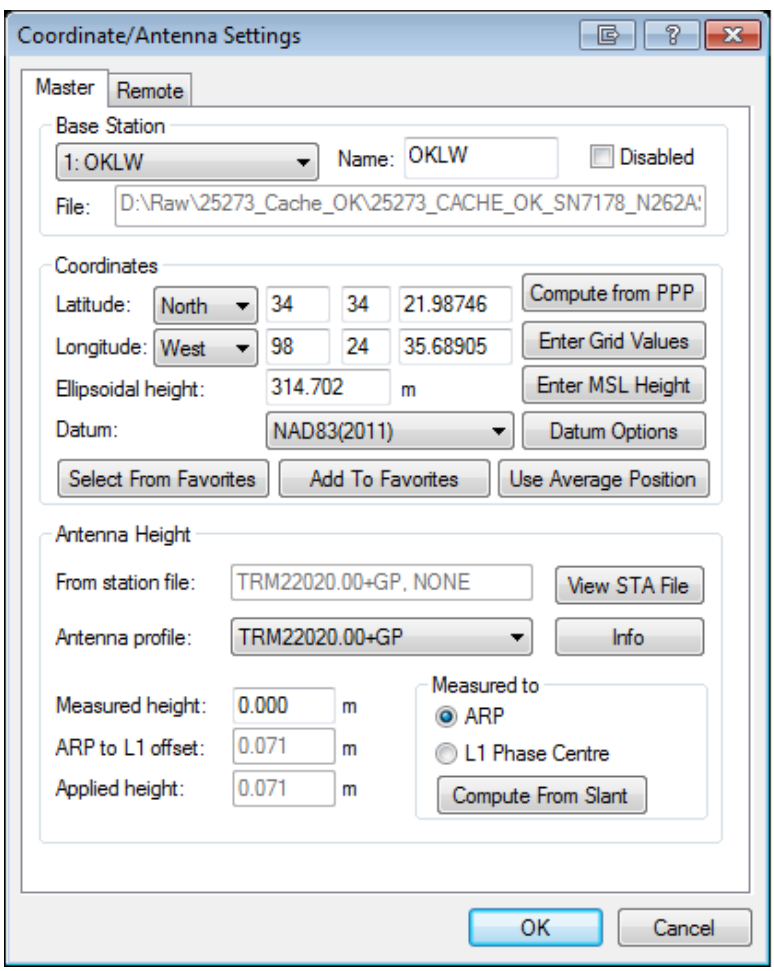

Num Sats
GPS Time (TOW, GMT zone)
Week 1823
Num Sats
GPS
GLONASS
BeiDou

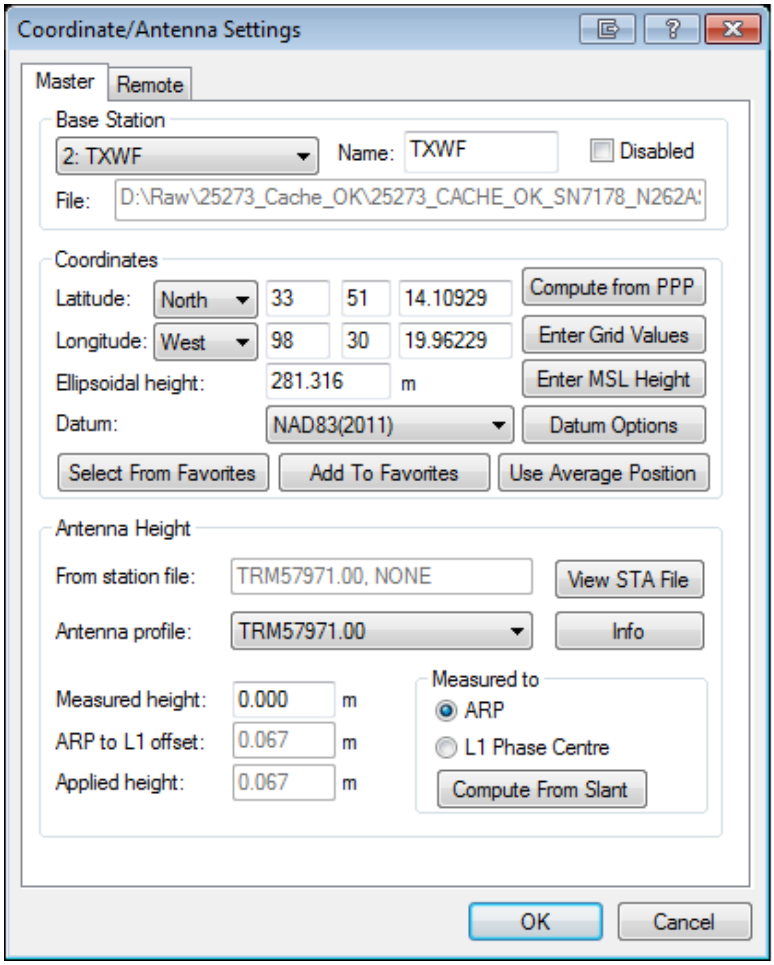

Separation (m)
GPS Time (TOW, GMT zone)
Week 1823
East
North
Up


PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
142000
Week 1823
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
PDOP


Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
142000
Week 1823
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
142000
Week 1823
143000
144000
145000
146000
147000
148000
149000
150000
151000
152000
153000
154000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\25273_CACHE_OK_SN7178_N262A
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\Raw\25273_Cache_OK\25273_CACHE_OK_SN7178_N262A
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: V 20141215_151811

DATE: 12-15-14

LEICA ALS-70

CM [redacted]

PILOT: Billy Phillips

OPERATOR: Jonathan Swan

AIRCRAFT N262AS

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273	154	2051	352	139	35	40	193		5410	1557	1608		5644.3
USGS Cache	153	2050	172	162					5400	1612	1621		Fast at Start 5647.3
ok	152	2049	352	141					5390	1625	1636		
	151	2048	172	140					5335	1641	1650		
2047	150	~~2047~~	352	115					5438	1655	1706		
	149	2046	172	140					5296	1711	1720		
	148	2045	352	120					5435	1726	1738		
	147	2044	172	166					5413	1742	1753		
	146	2043	352	115					5438	1759	1810		
	~~145~~	~~2042~~											
Xtic	UL001		101	153					5384	1816	1819		
													Landing to coordinate
													w 22GE @ KLAW
													5147.3
													5644.3
													3.0

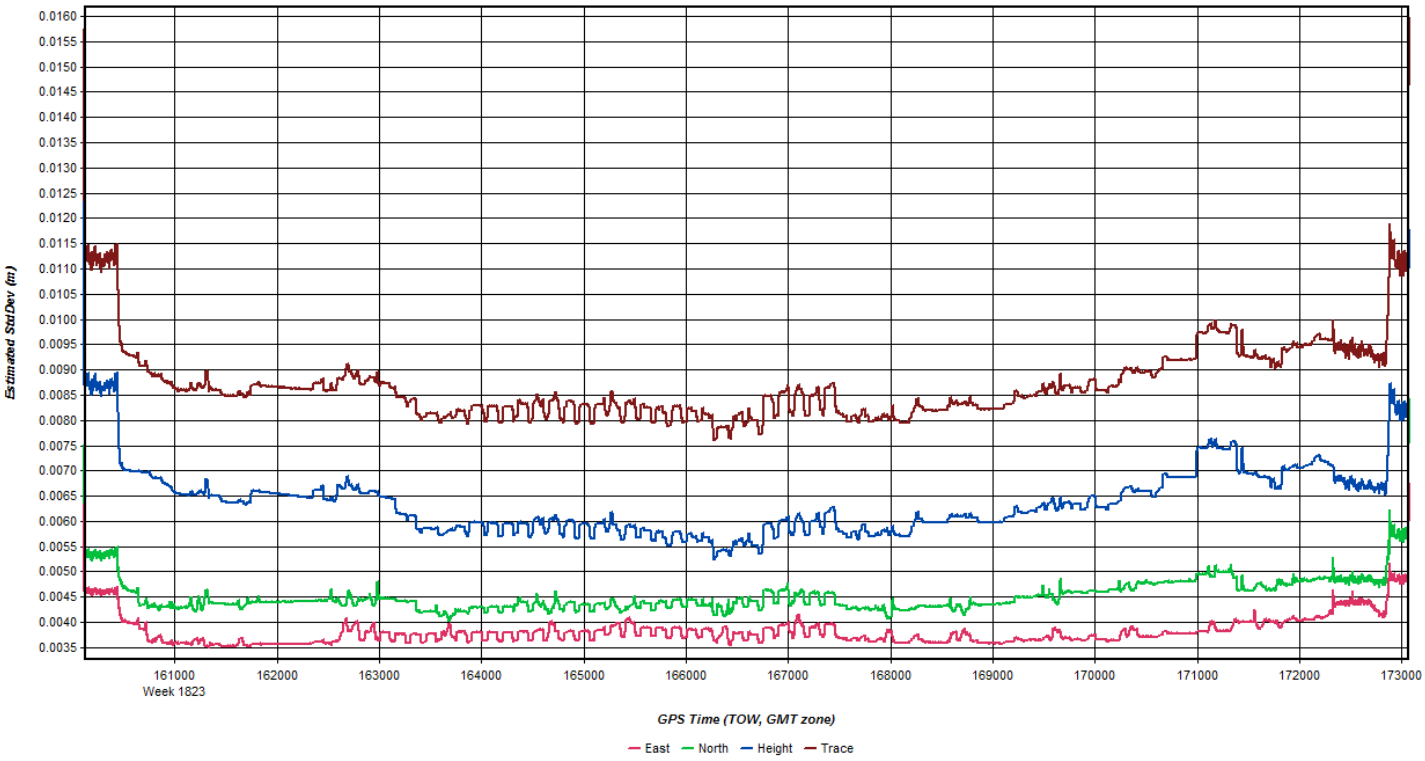
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP
⊘ 25273		9		2.4	0.6		5	5
○						WX SKC		
○								

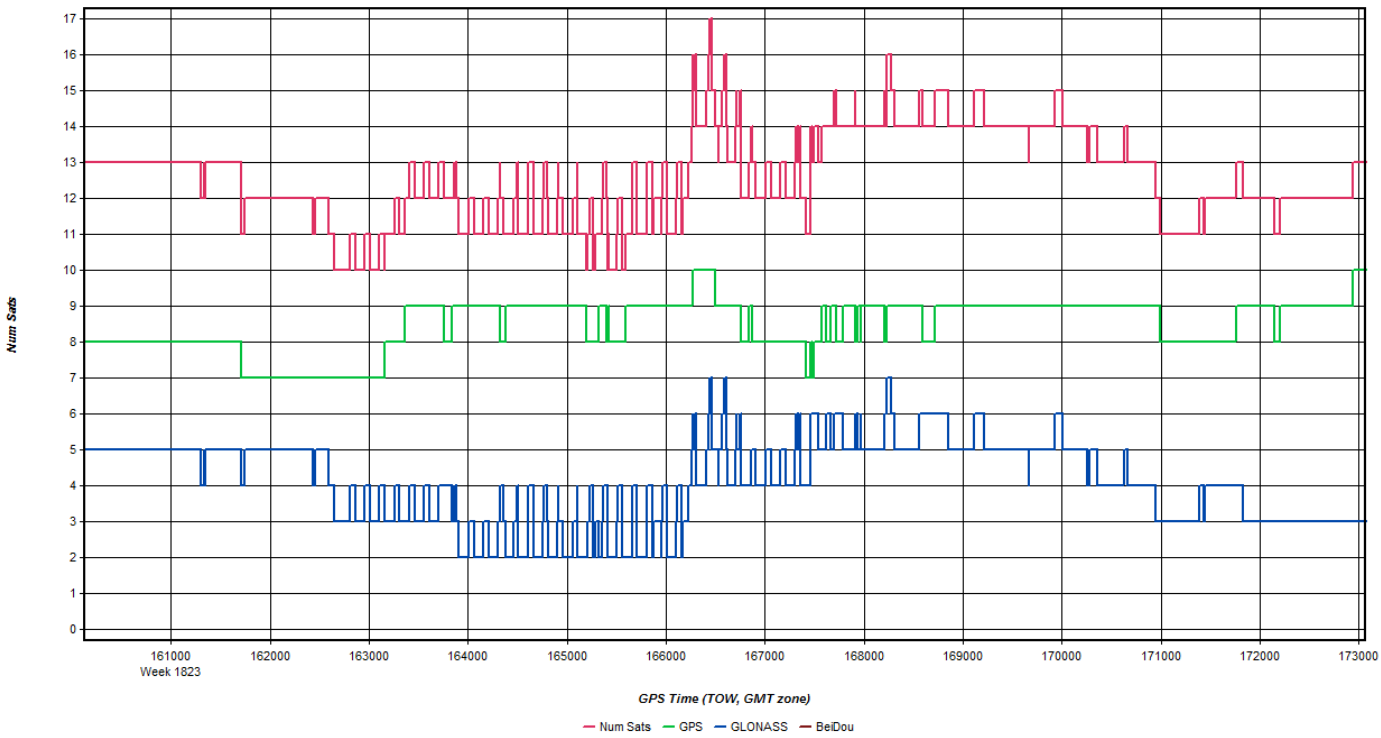
NOTES:

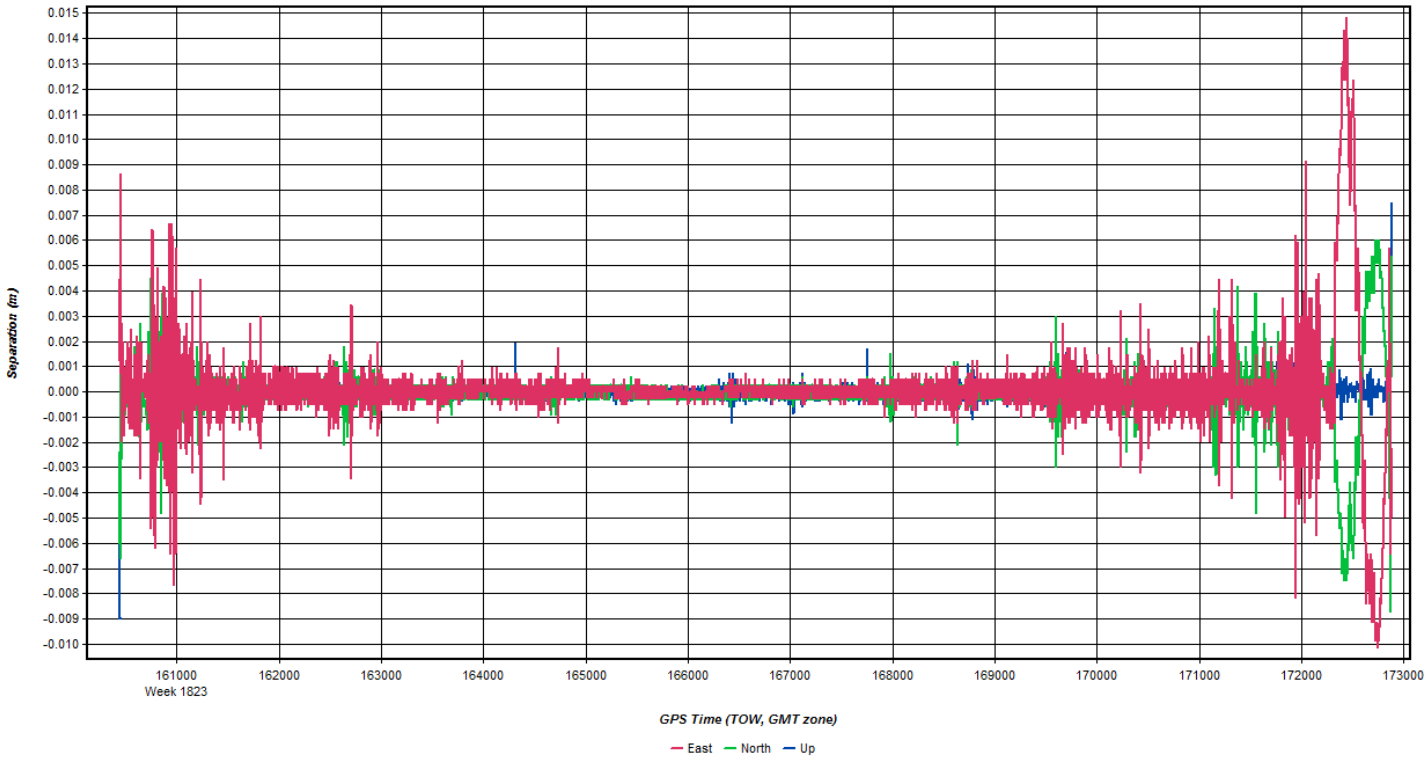
AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

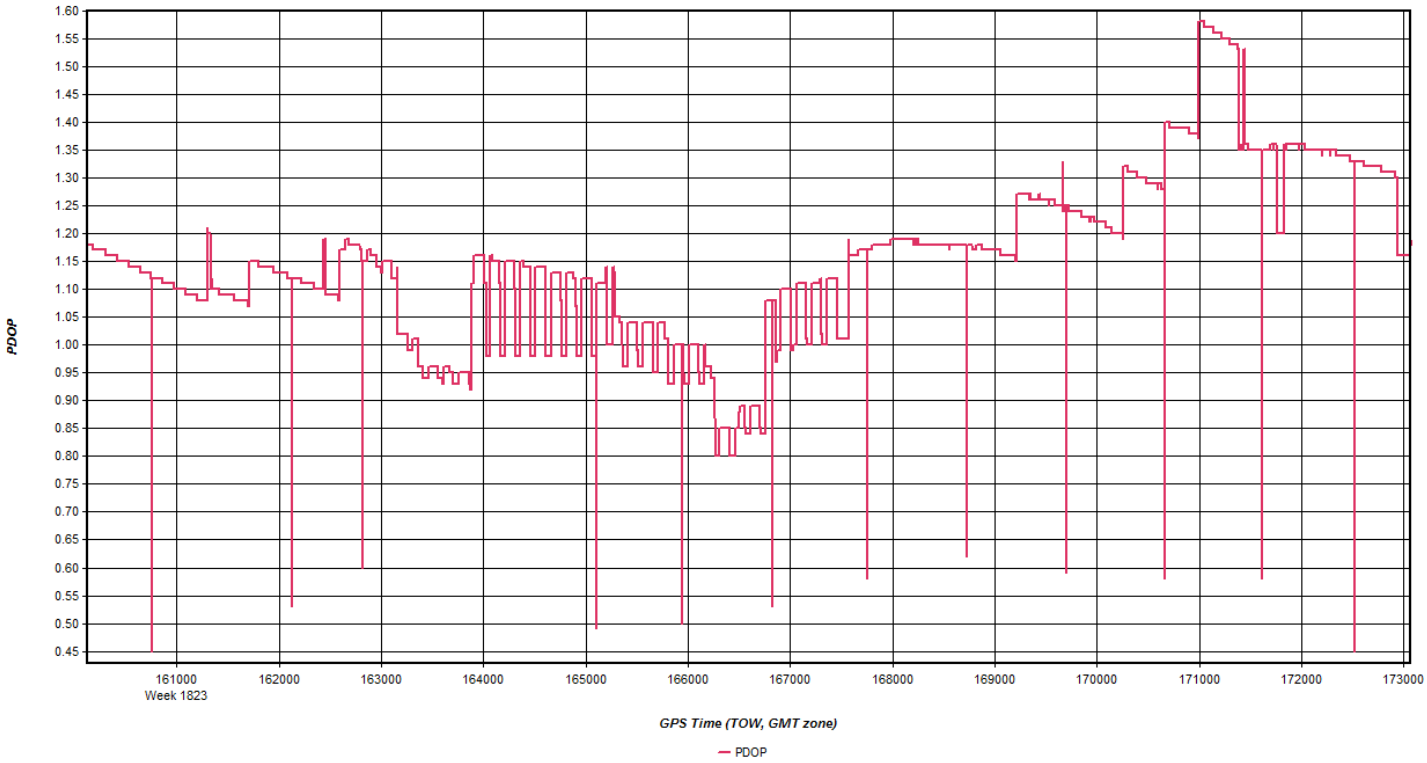
20141215B_7178

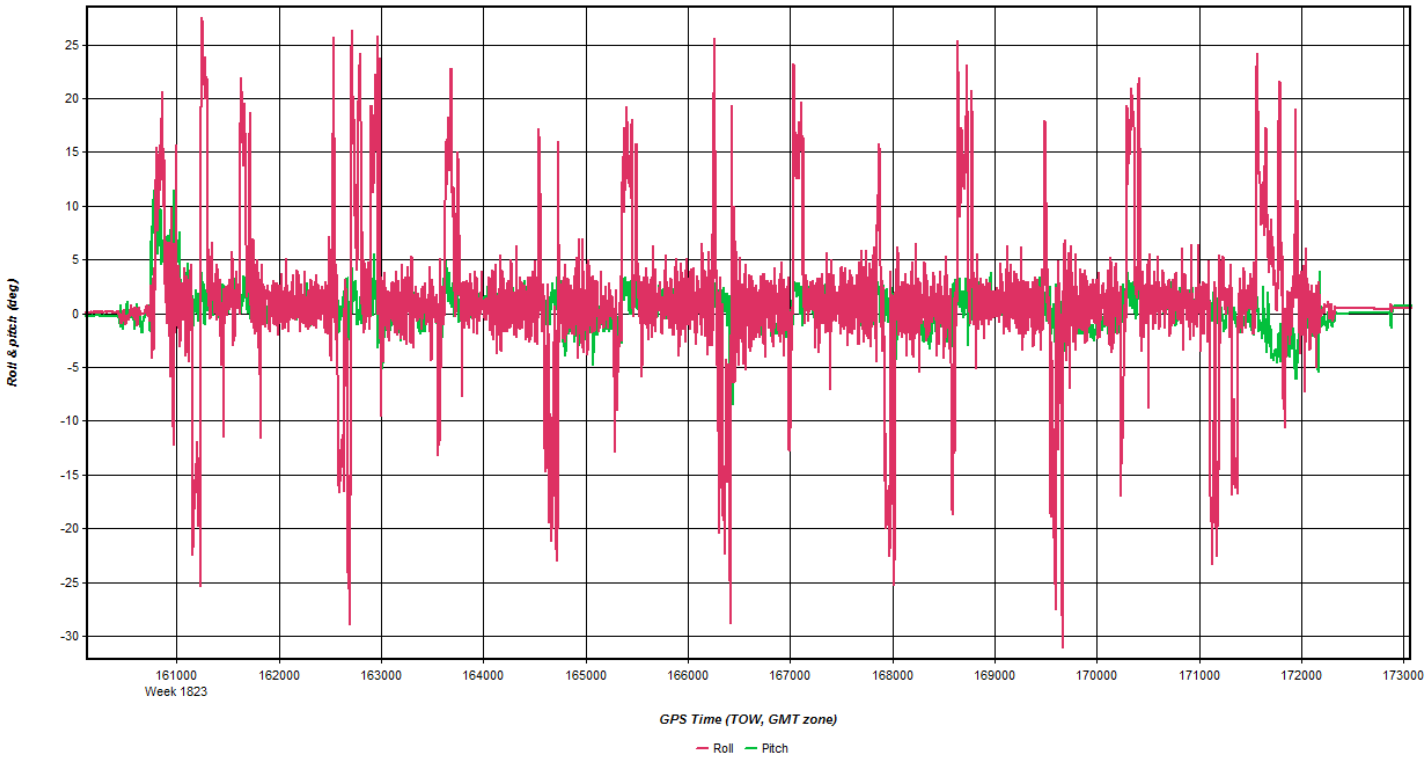

10 km
TXWF

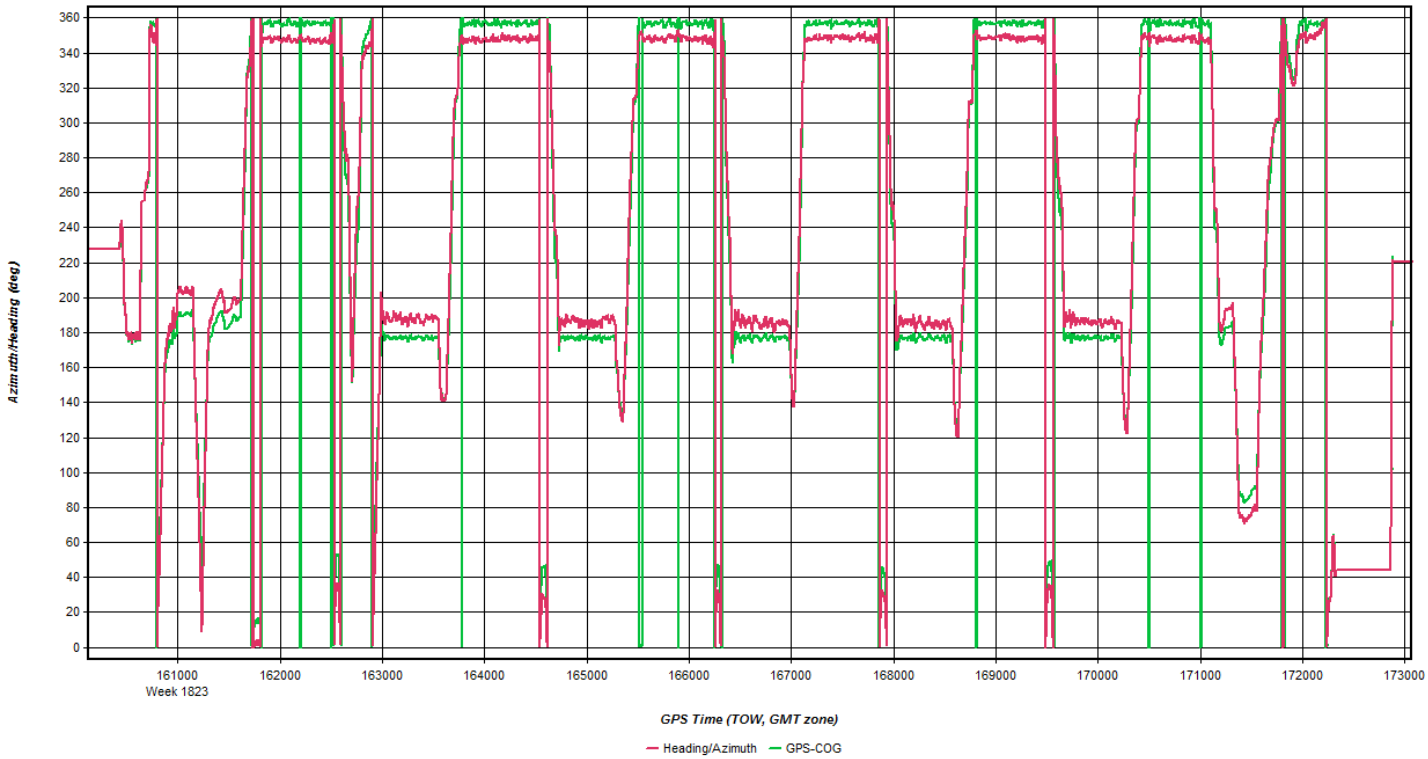

Estimated StdDev (m)
0.0160
0.0155
0.0150
0.0145
0.0140
0.0135
0.0130
0.0125
0.0120
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
0.0085
0.0080
0.0075
0.0070
0.0065
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
161000
Week 1823
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
172000
173000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

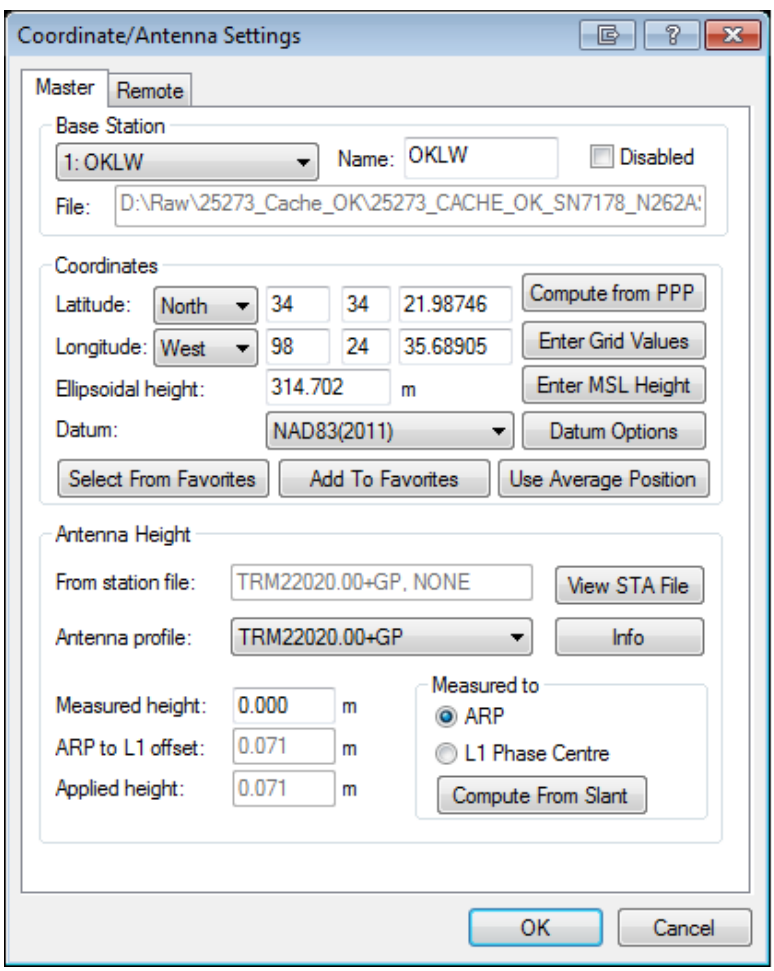

Num Sats
GPS Time (TOW, GMT zone)
Week 1823
Num Sats
GPS
GLONASS
BeiDou

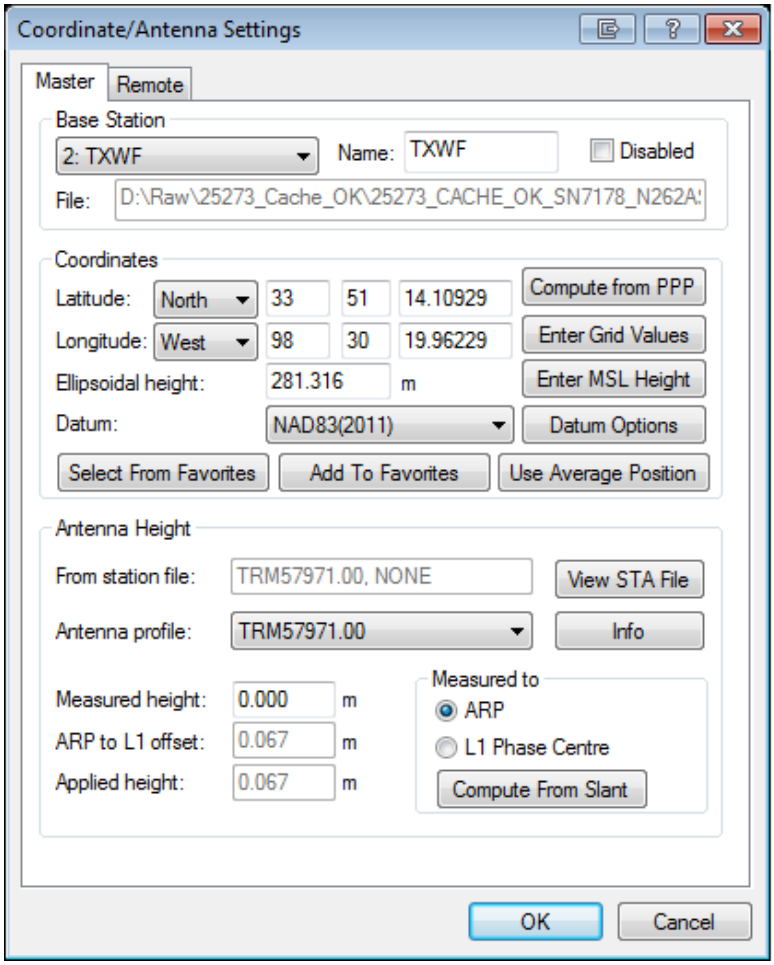

Separation (m)
GPS Time (TOW, GMT zone)
Week 1823
East
North
Up


PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
161000
Week 1823
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
172000
173000
GPS Time (TOW, GMT zone)
PDOP


Roll & pitch (deg)
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
161000
Week 1823
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
172000
173000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
161000
Week 1823
162000
163000
164000
165000
166000
167000
168000
169000
170000
171000
172000
173000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\25273_CACHE_OK_SN7178_N262A
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\Raw\25273_Cache_OK\25273_CACHE_OK_SN7178_N262A
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: V ~~20141~~ 20141215_202553

DATE: 12-15-14

LEICA ALS-70 [redacted]

PILOT: Billy Phillips

OPERATOR: Jonathan Swan

AIRCRAFT: N262AS

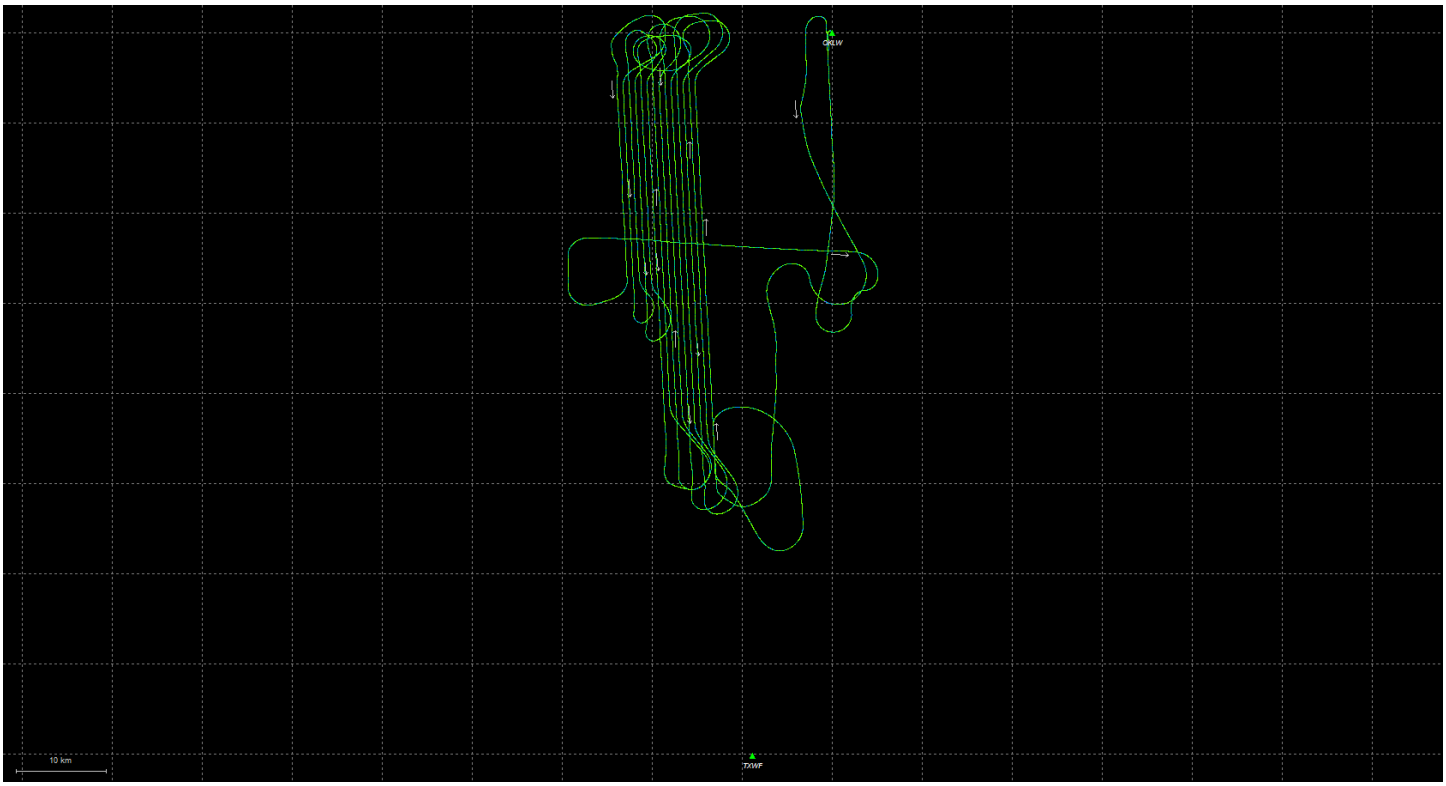
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273	145	2042	352	137	35	40	193		5482	2057	2108		5647.3
USGS Cache	144	2041	172	170					5406	2112	~~2147~~ 2022		5650.5
OK	143	2040	352	150					5484	2031	2142		
	142	2039	172	156					5440	2147	2154		
	141	2038	352	122					5443	~~[illegible]~~	~~[illegible]~~		2159-2110
	140	2037	172	133					5494	2214	2222		
	139	2036	352	126					5453	2227	2237		
	138	2035	172	148					5491	2241	2249		
	137	2034	352	128					5471	2253	2304		
	136	2033	172	152					5437	2307	2316		
	135	2032	352	128					5550	2322	2331		
Xtic	UL001		83						5433	2336			
													Landing KLAW
													5650.5
													5647.3
													3.2

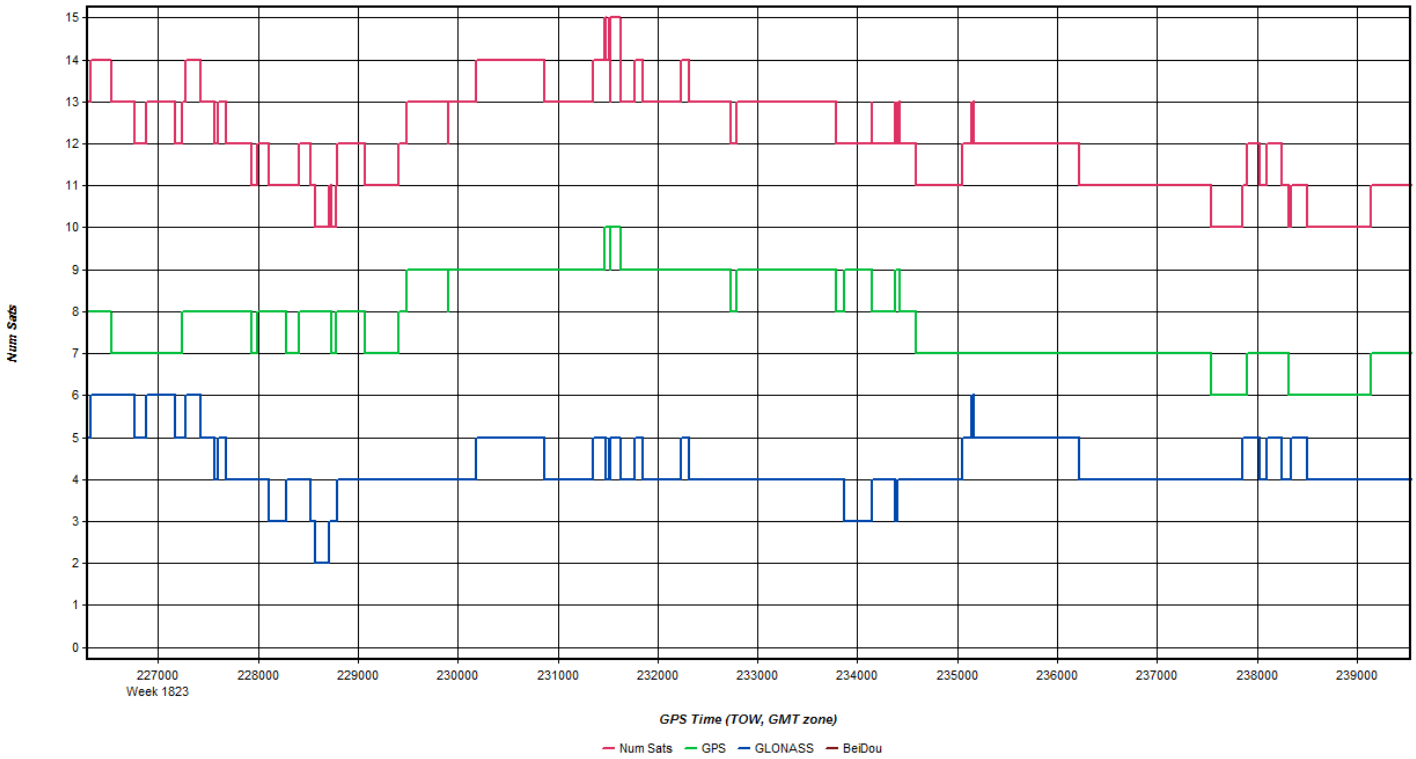
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP
⊘ 25273		11		2.6	0.6			
○						WX SKC		
○								

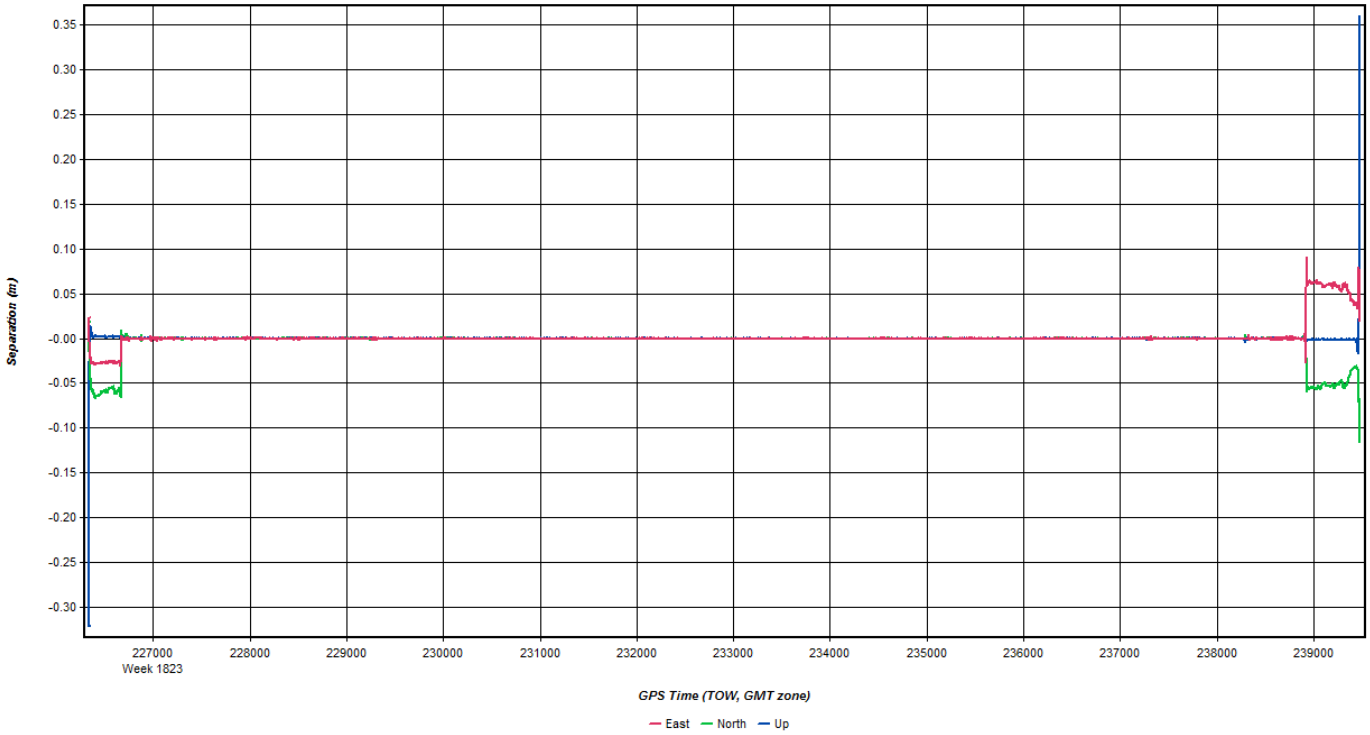
NOTES: Strong winds out of NW — some lines were fast at start!

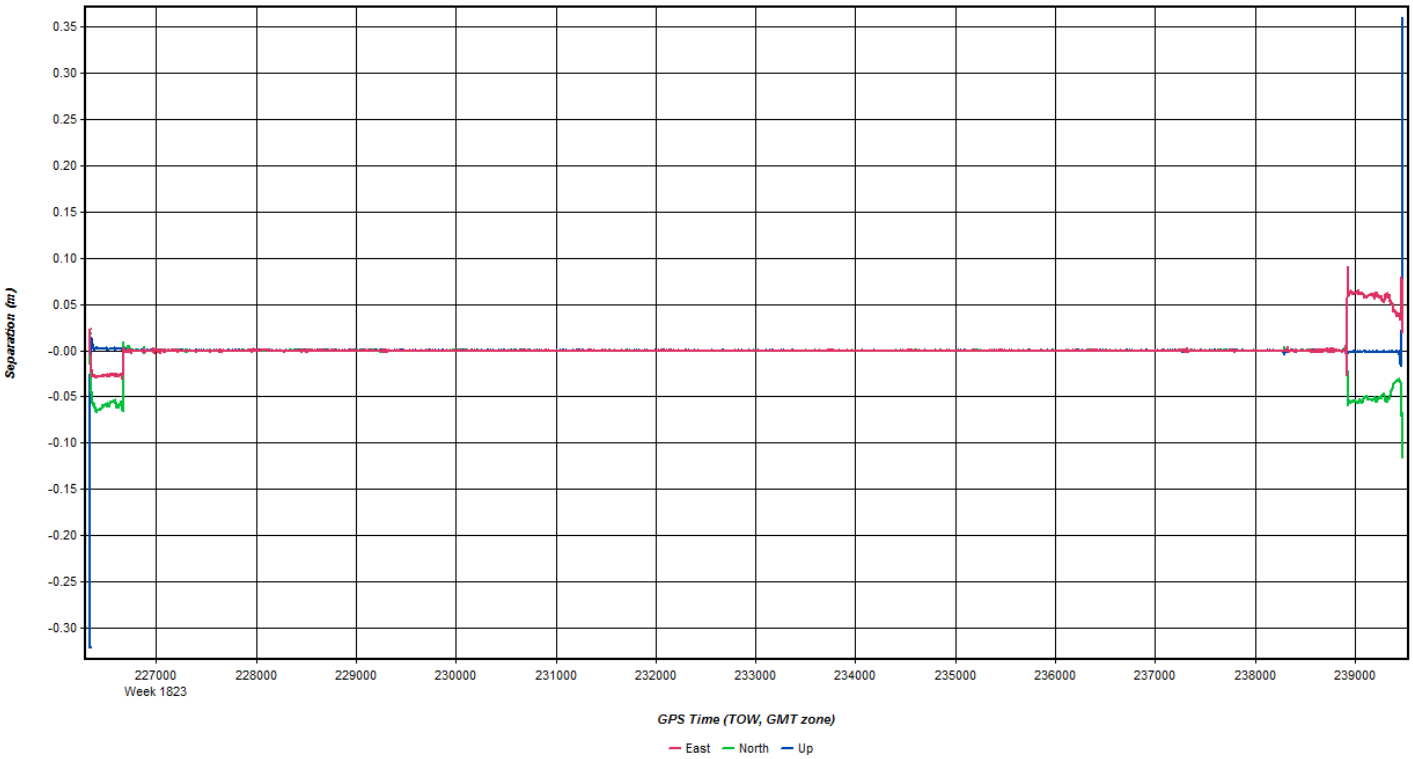
AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

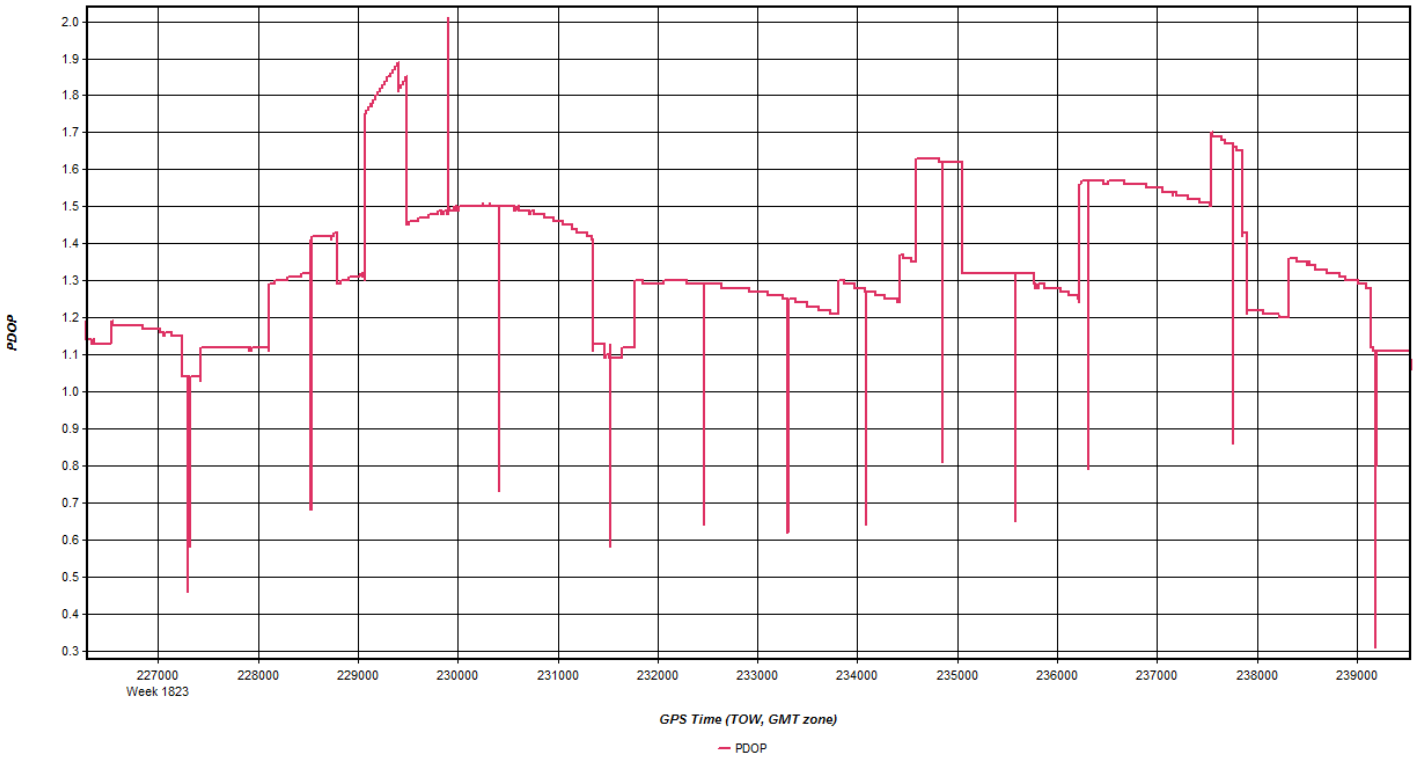
20141216A_7178

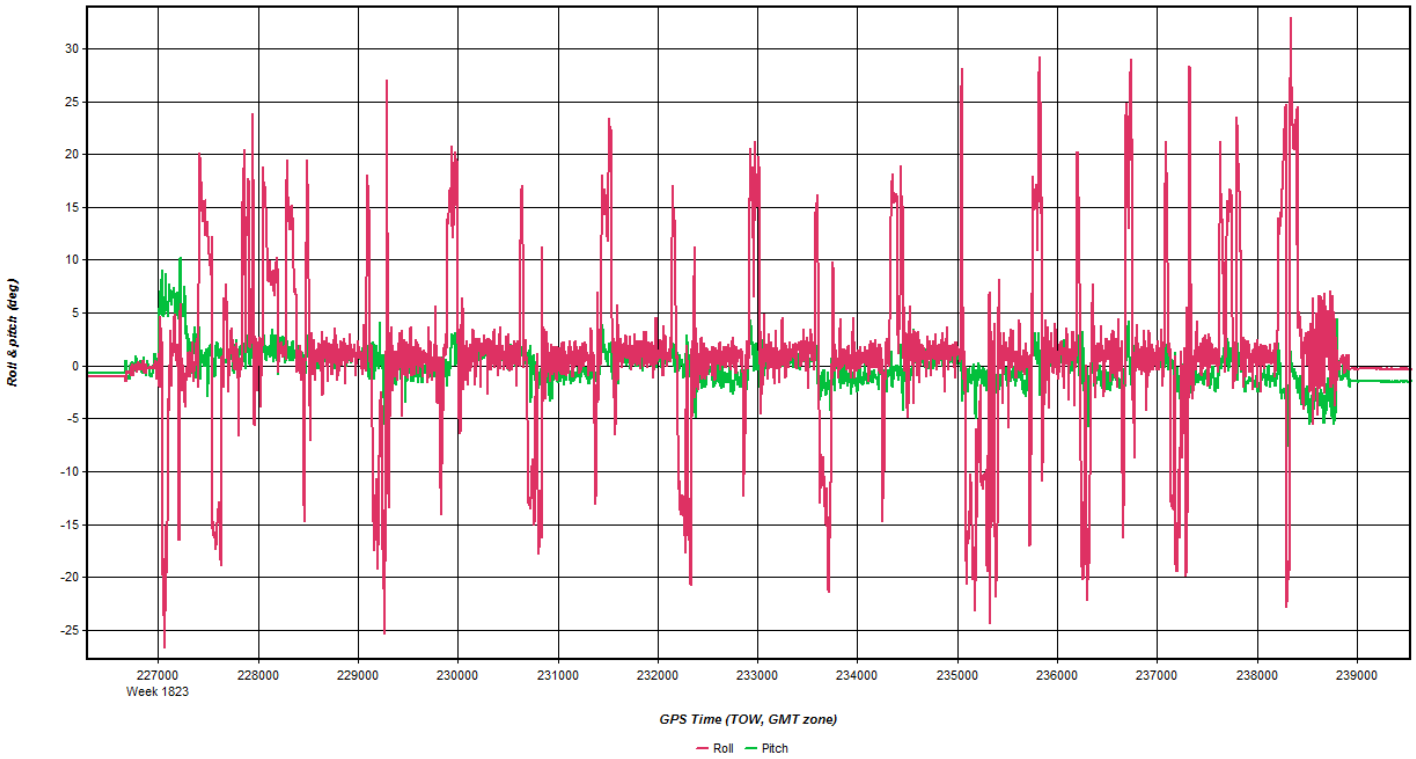

10 km

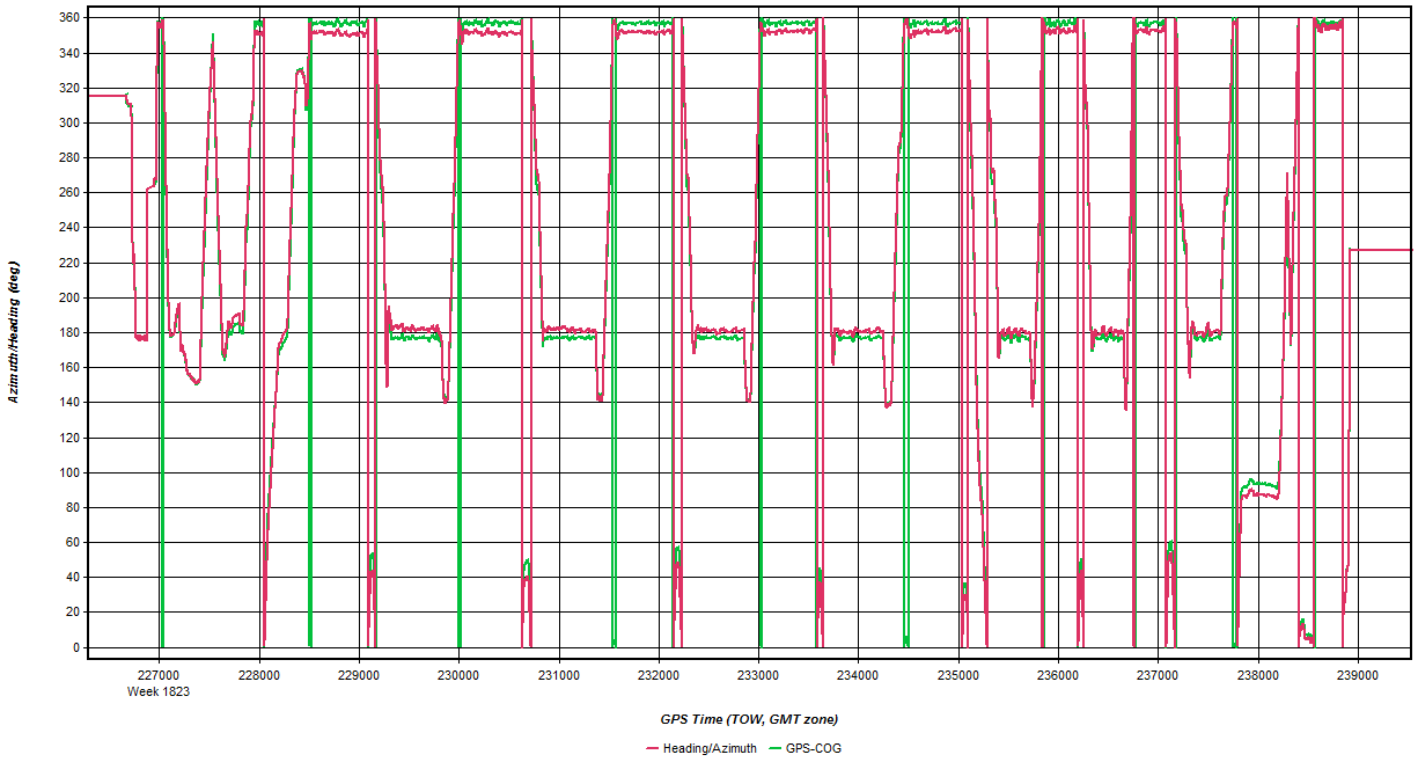

Num Sats
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
227000
Week 1823
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

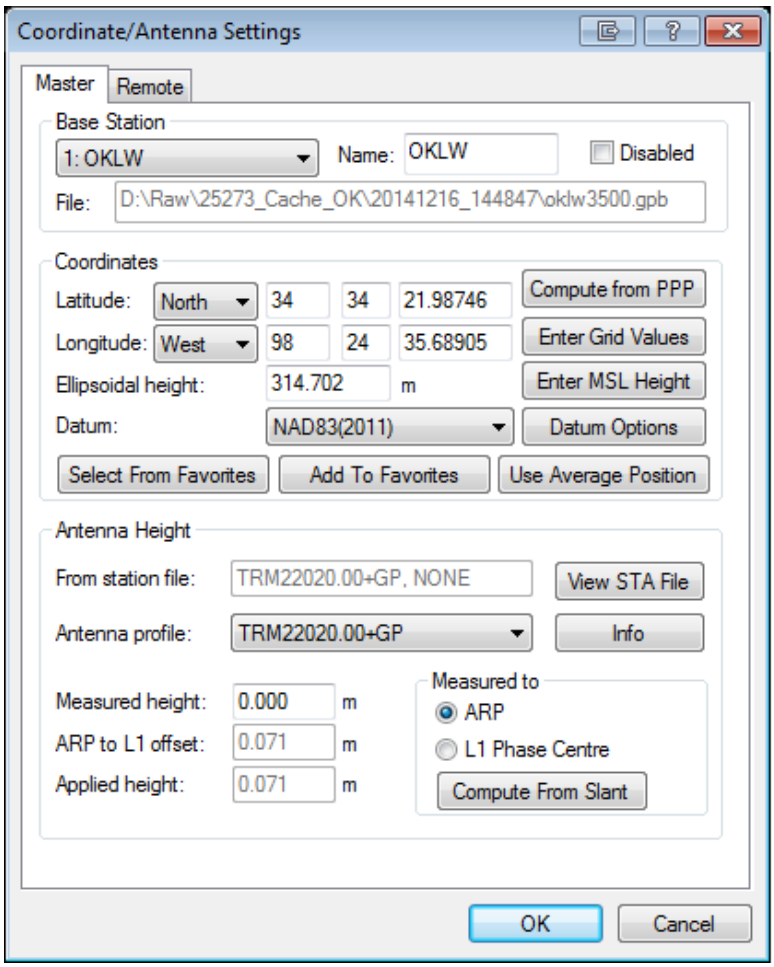

0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
Separation (m)
227000
Week 1823
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
GPS Time (TOW, GMT zone)
East
North
Up

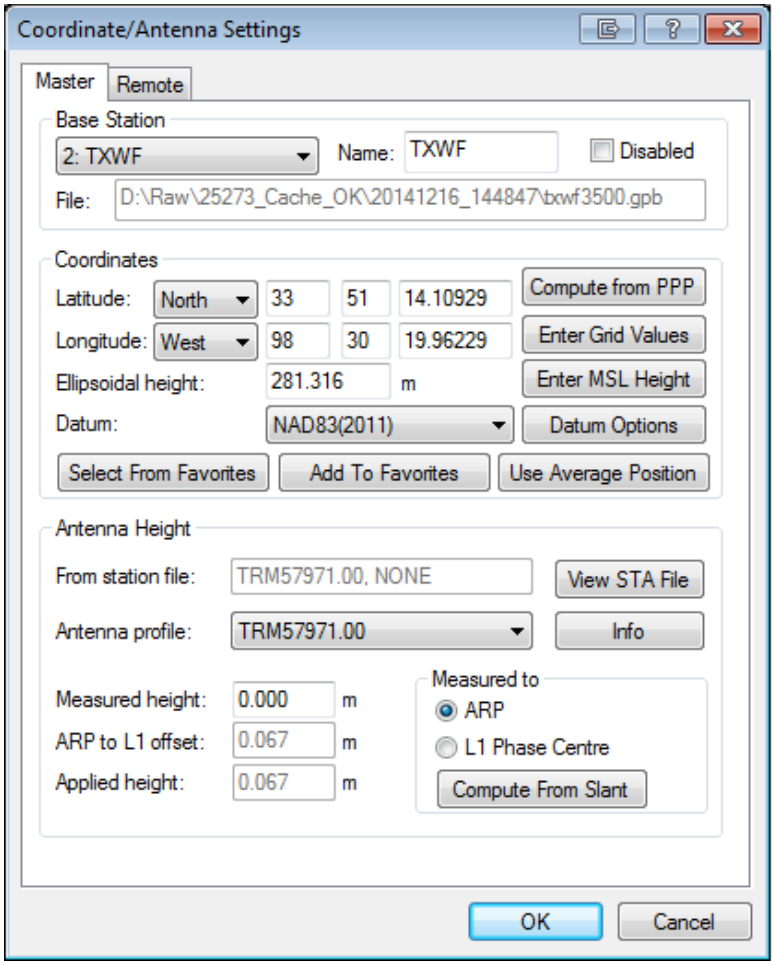

0.35
0.30
0.25
0.20
0.15
0.10
0.05
-0.00
-0.05
-0.10
-0.15
-0.20
-0.25
-0.30
Separation (m)
227000
Week 1823
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
227000
Week 1823
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
GPS Time (TOW, GMT zone)
PDOP


Roll & pitch (deg)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
227000
Week 1823
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
227000
Week 1823
228000
229000
230000
231000
232000
233000
234000
235000
236000
237000
238000
239000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\20141216_144847\oklw3500.gpb
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: TXWF
Name:
TXWF
Disabled
File:
D:\Raw\25273_Cache_OK\20141216_144847\txwf3500.gpb
Coordinates
Latitude:
North
33
51
14.10929
Compute from PPP
Longitude:
West
98
30
19.96229
Enter Grid Values
Ellipsoidal height:
281.316
m
Enter MSL Height
Datum:
NAD83(2011)
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

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: V 20141216_144847 DATE: 12-16-14 A Lift LEICA ALS-70

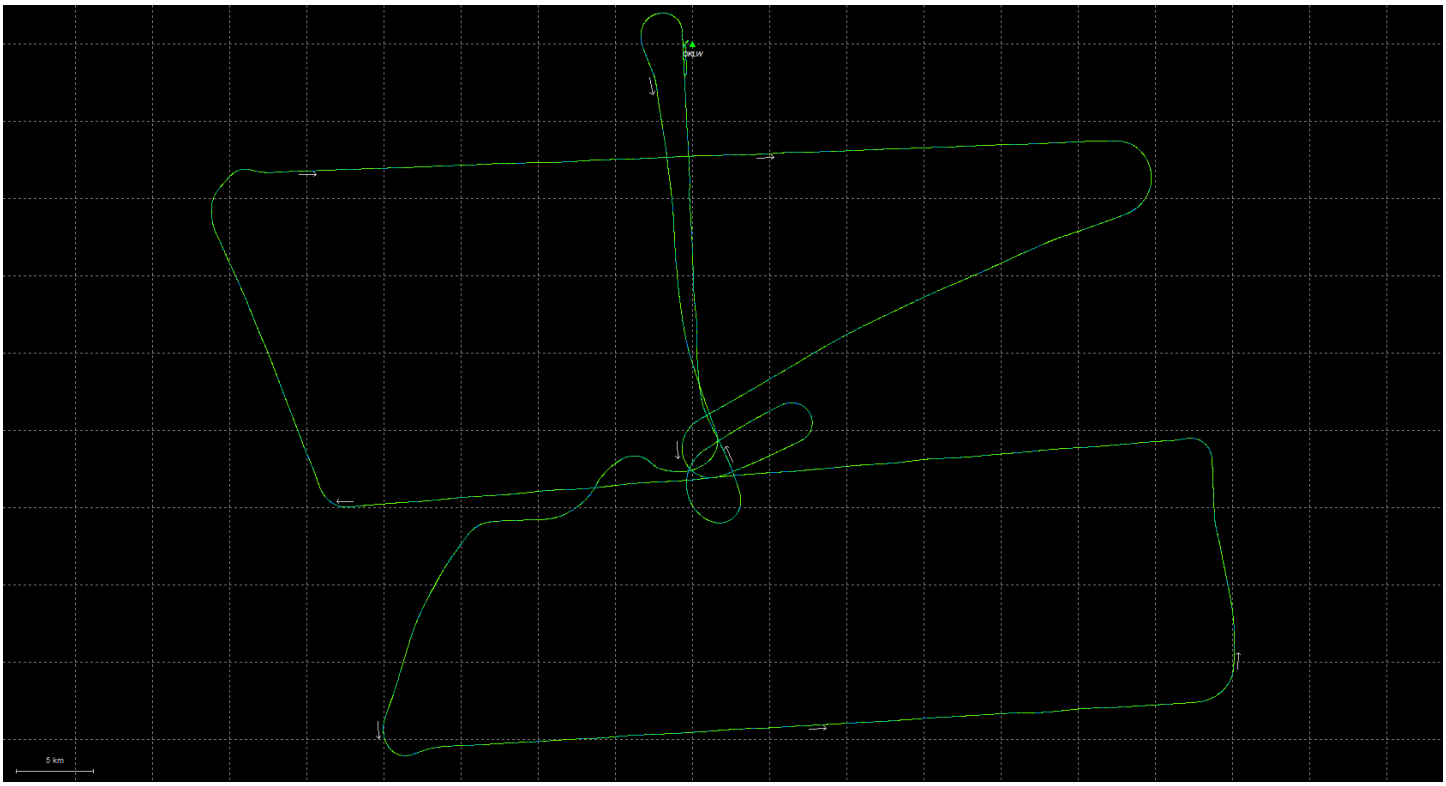
PILOT: Billy Phillips OPERATOR: Jonathan Swan AIRCRAFT: N662AS

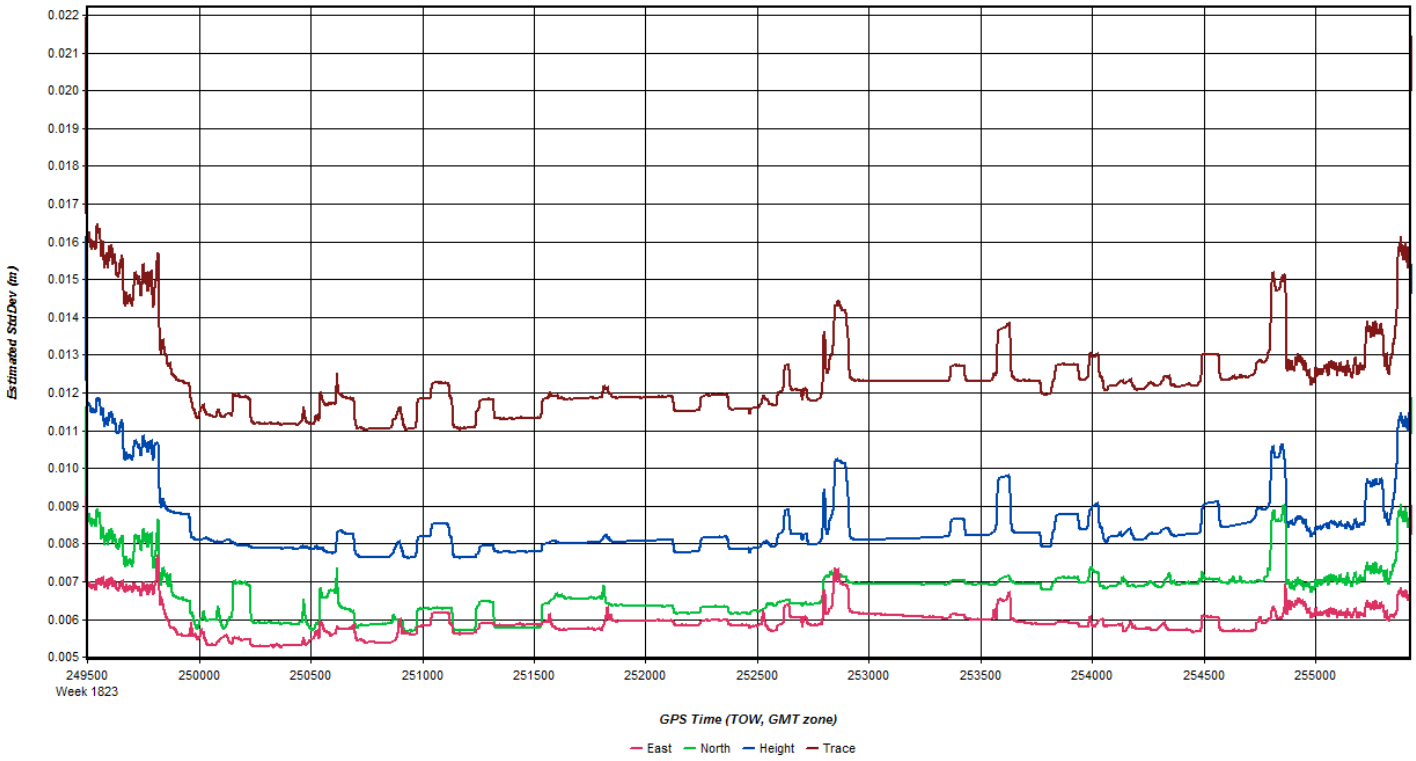
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273	117	2014	352	160	35	40	193		5500	1520	1521		Door Not open! 5650.5
USGS	117	2014	352	143					5510	1529	1537		5653.7
Cache	116	2013	172	150					5484	1542	1550		
	115	2012	352	150					5470	1554	1603		
	114	2011	172	150					5473	1607	1615		
	113	2010	352	150					5523	1620	1628		
	112	2009	172	150					5549	1633	1640		
	111	2008	352	150					5570	1644	1651		
	110	2007	172	153					5487	1655	1703		
	109	2006	352	155					5515	1708	1716		
	108	2005	172	149					5500	1723	1728		
	107	2004	352	155					5533	1731	1736		
	106	2003	172	153					5568	1740	1744		
	105	2002	352	157					5520	1746	1750		5653.7
	104	2001	172	156					5536	1755	1759		5650.5
Xtie	VL081		87	177					5587	1803	1809		3.2
													Landing KLAW

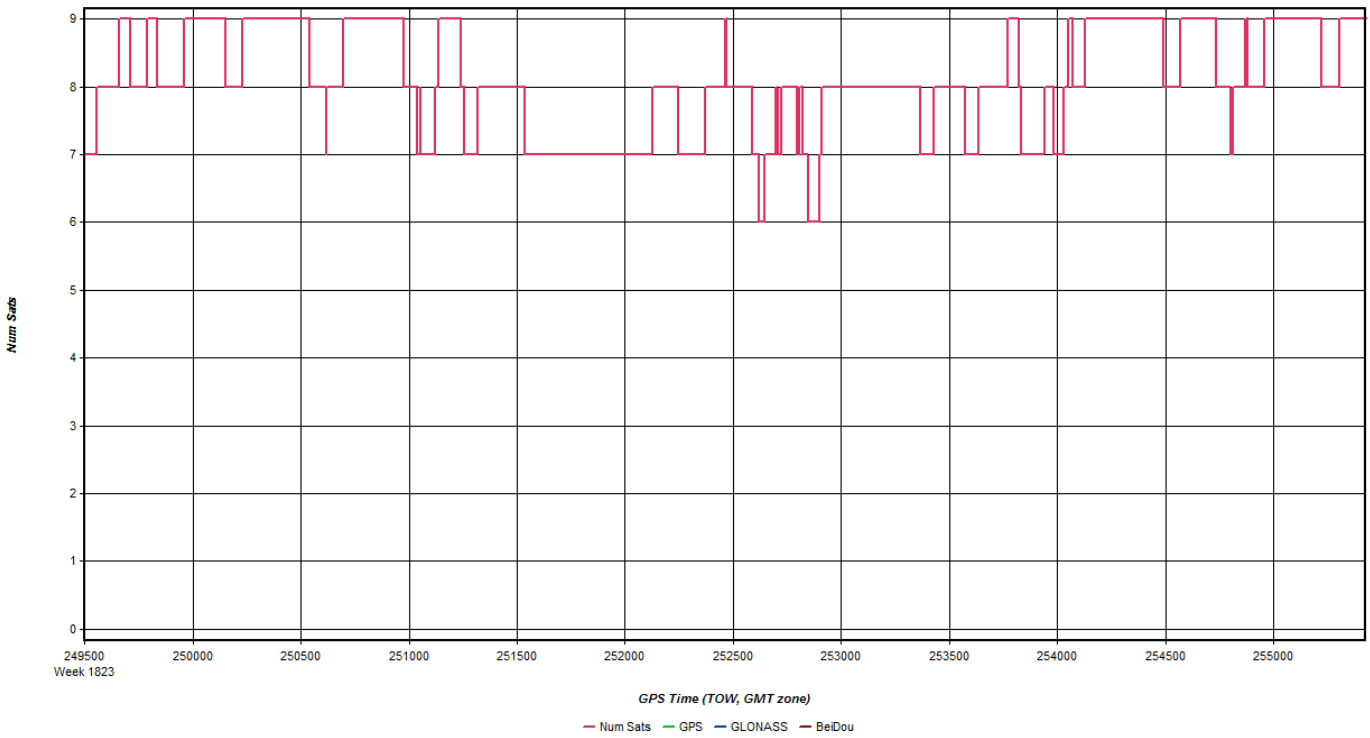
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
25273		14		2.6	0.6	✓	5	5	
						WX SKC			

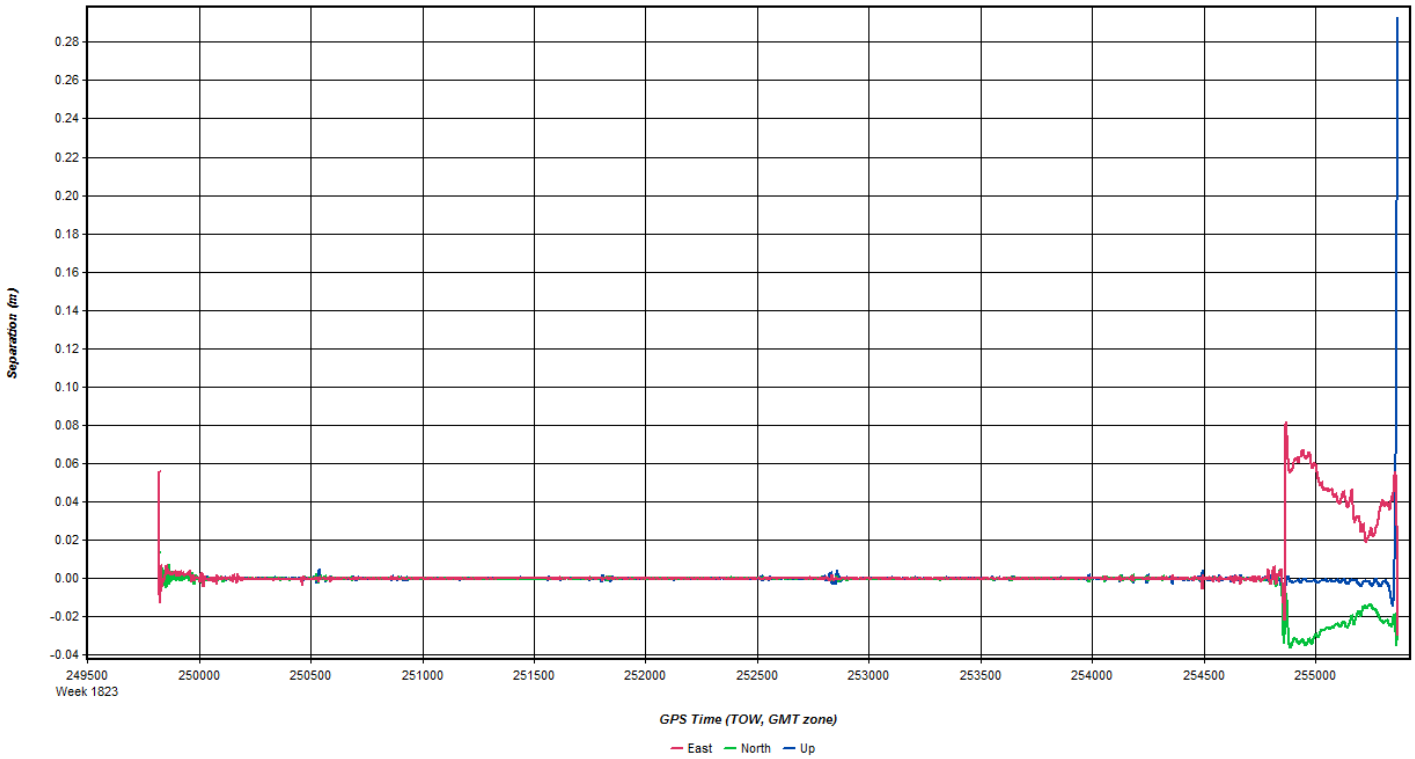
AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

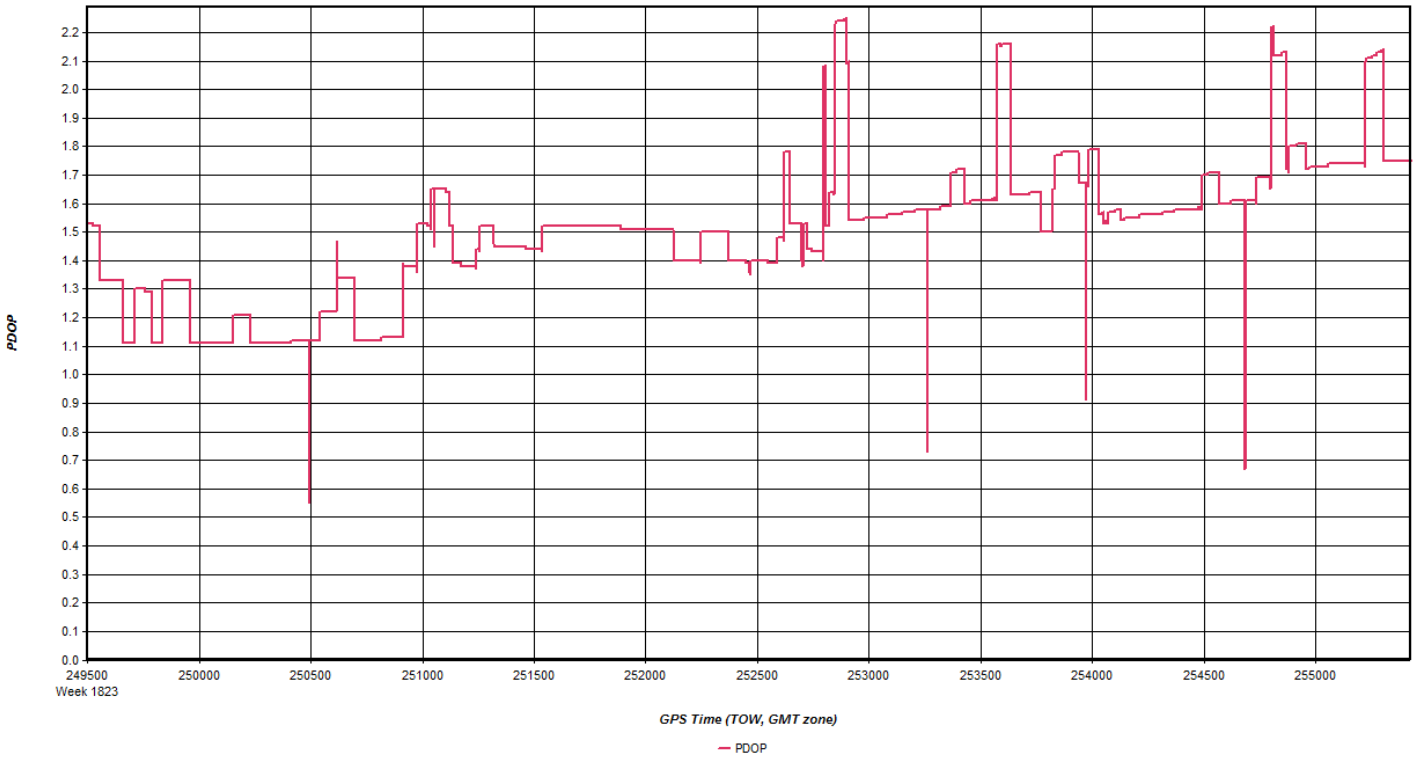
20141216B_7178

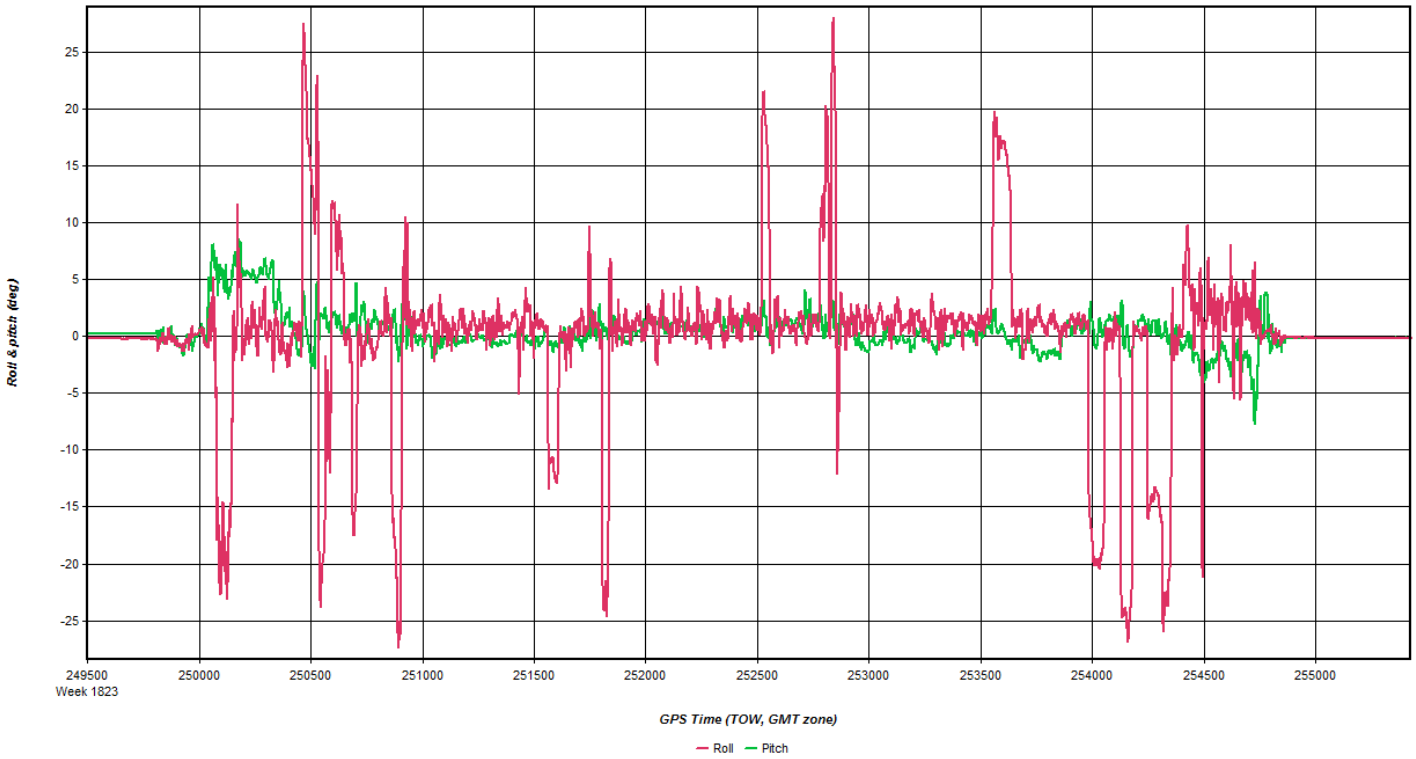

5 km

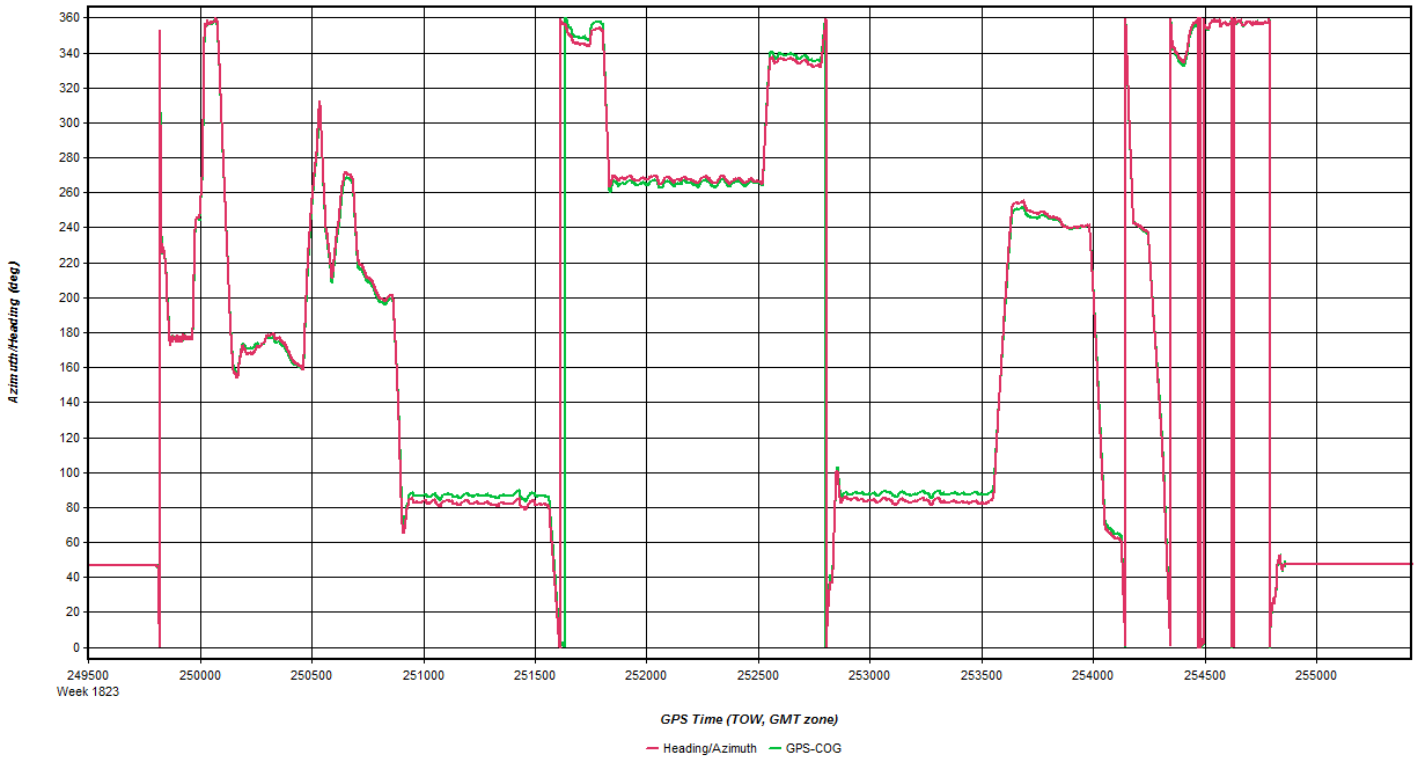

Estimated StdDev (m)
0.022
0.021
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
249500
Week 1823
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

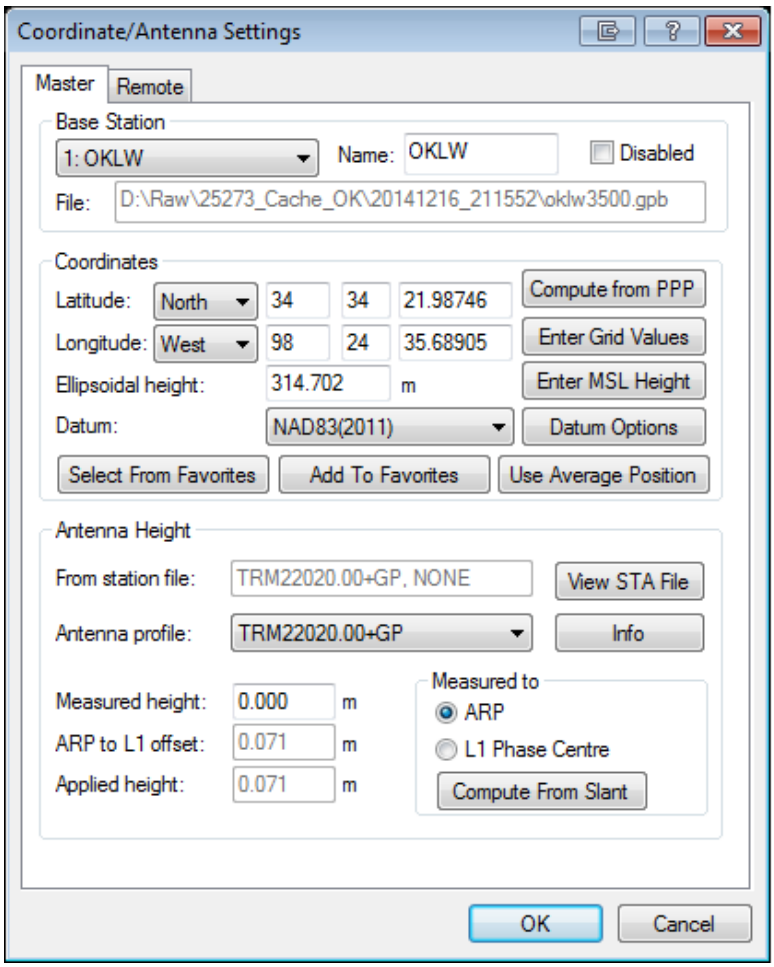

Num Sats
9
8
7
6
5
4
3
2
1
0
249500
Week 1823
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
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
249500
Week 1823
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
249500
Week 1823
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
GPS Time (TOW, GMT zone)
PDOP


Roll & pitch (deg)
25
20
15
10
5
0
-5
-10
-15
-20
-25
249500
Week 1823
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
249500
Week 1823
250000
250500
251000
251500
252000
252500
253000
253500
254000
254500
255000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\20141216_211552\oklw3500.gpb
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: V 201426_~~204302~~/211552 DATE: 12-16-14 B Lift LEICA ALS-70 [redacted]

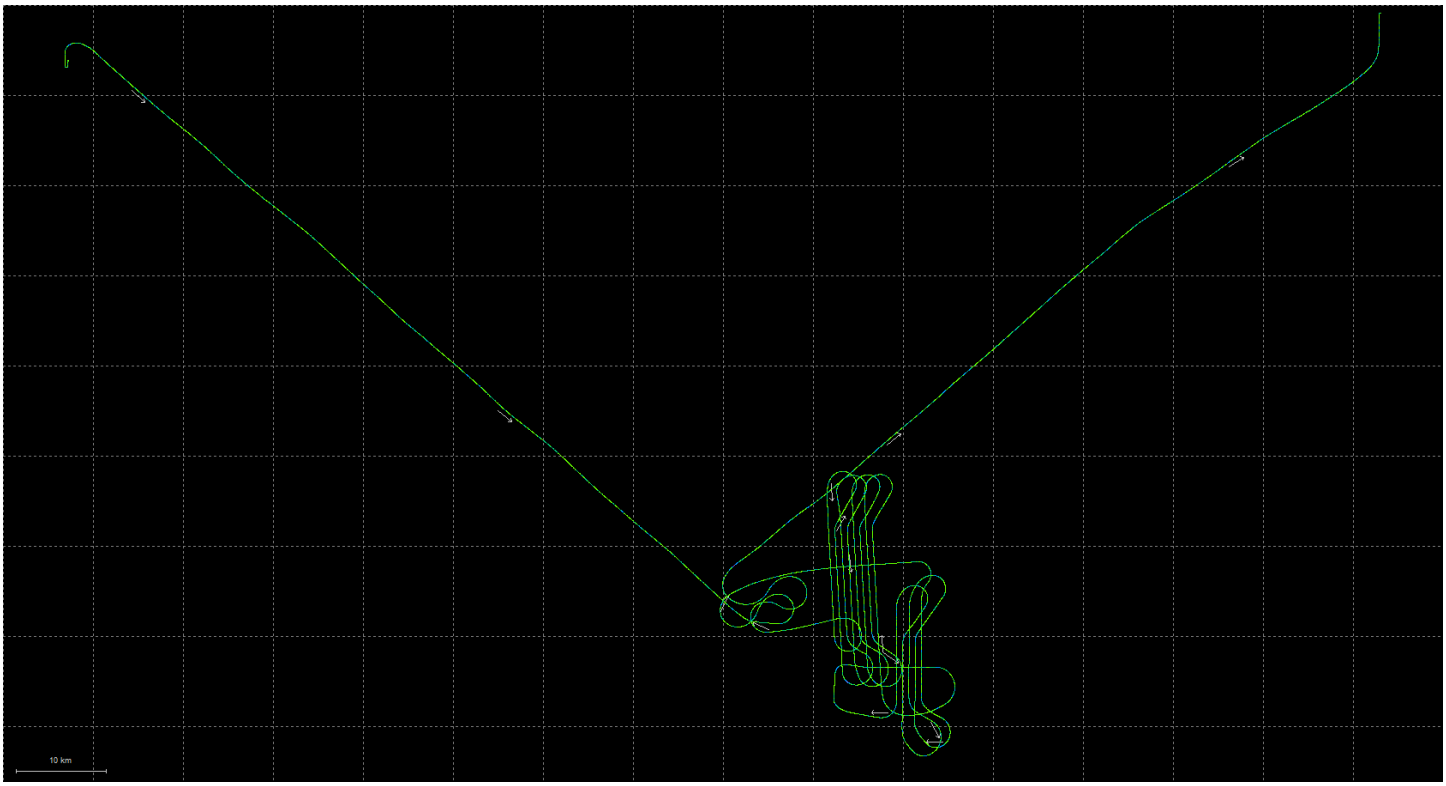
PILOT: Billy Phillips OPERATOR: Jonathan Swan AIRCRAFT: N262AS

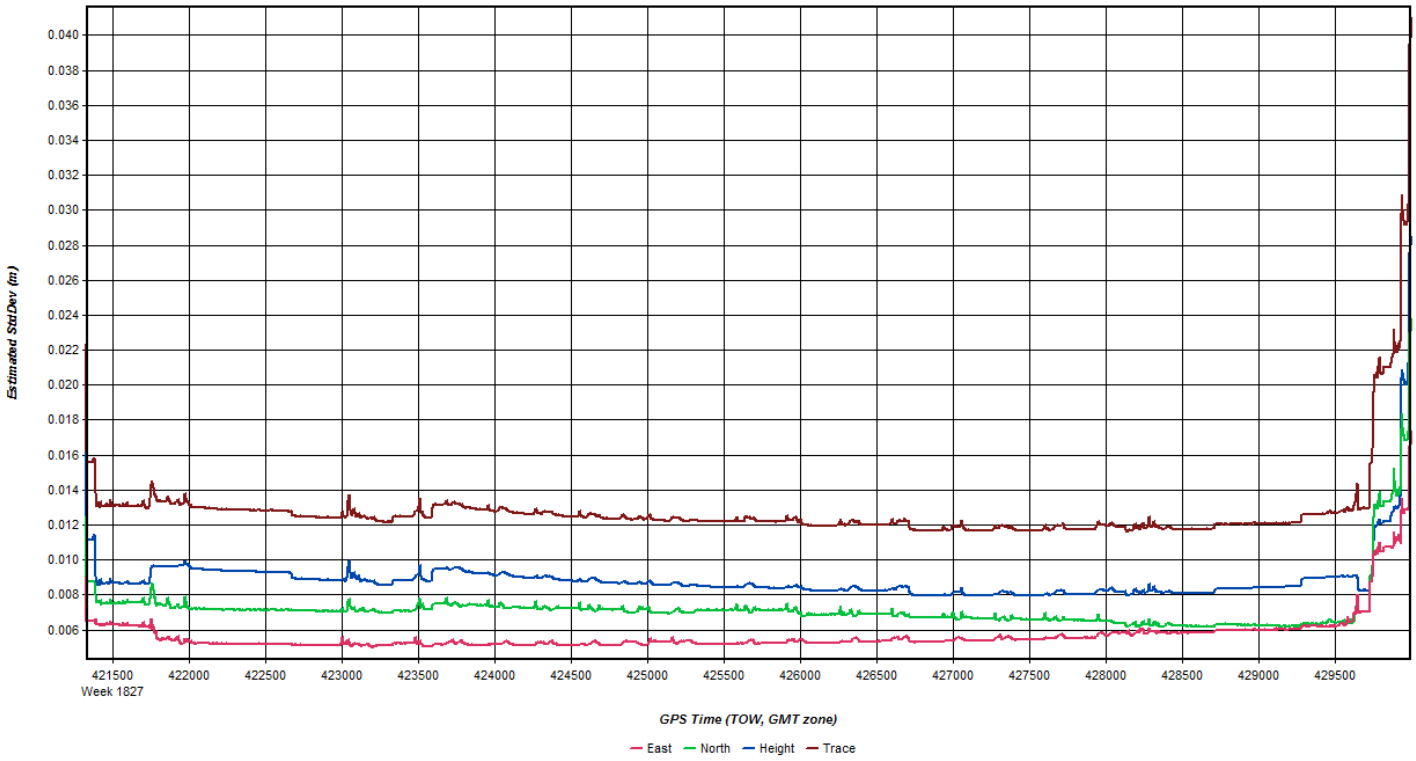
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273								Camera	Door	would	NOT	open!	5653.7
USGS								Landing	L	AW			5654.0
Cache Ok	101	1101	82	147					5535	2142	2152		
	102	1102	261	152					5505	2157	2208		
	103	1103	83	159					5582	2214	2225		possible smoke
													5655.3
													5653.7
													1.6
													Southern Block Complete

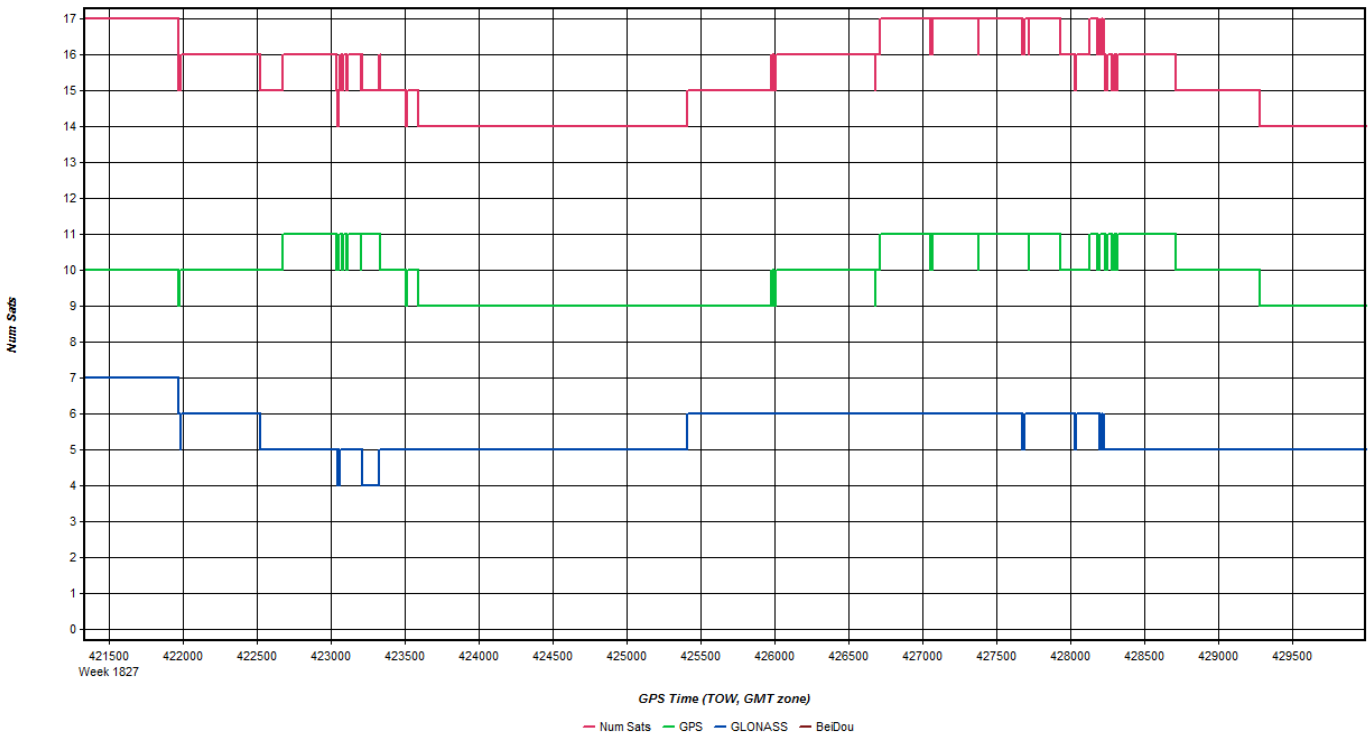
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
① 25273		3		1.1	0.5	✓	5	5	issue with Camera door!
○						WX skc			
○									

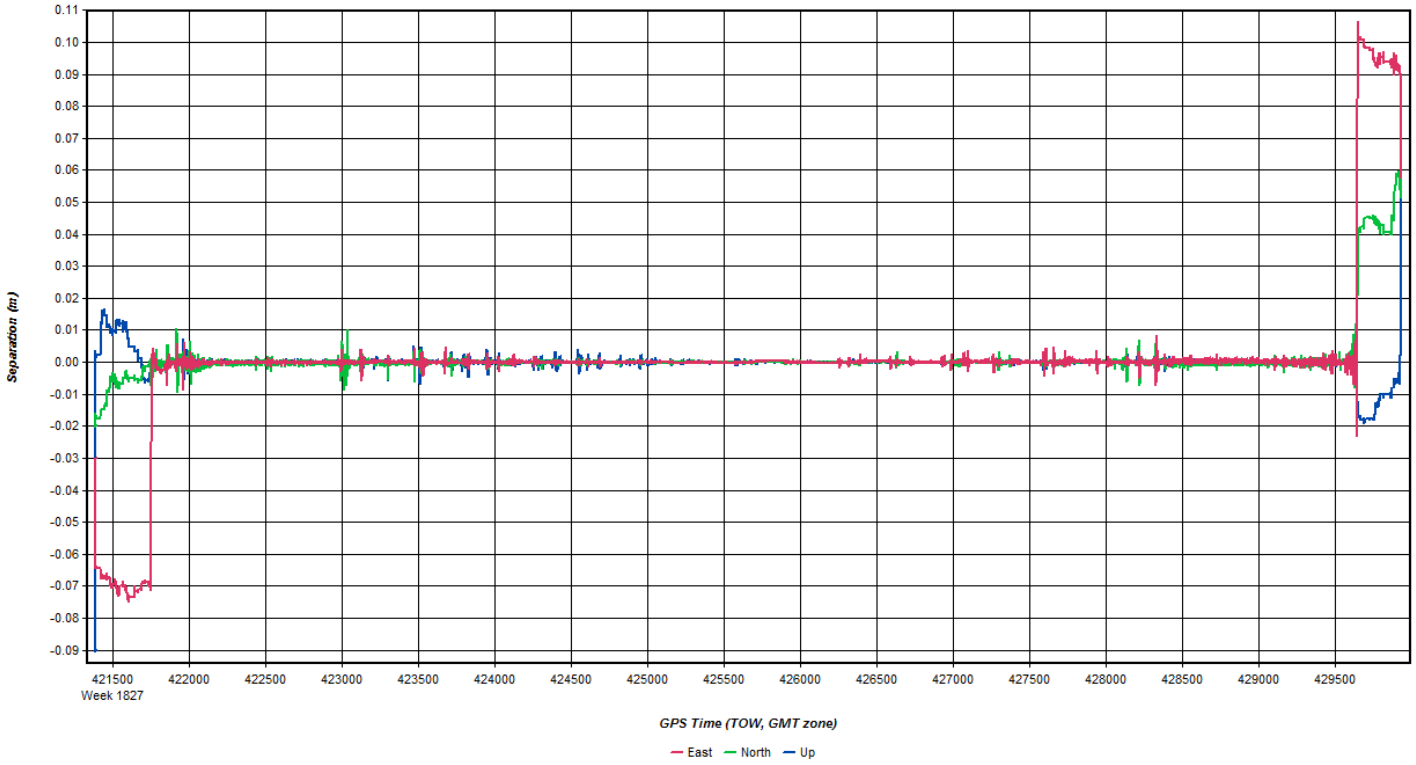
AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@aerometric.com

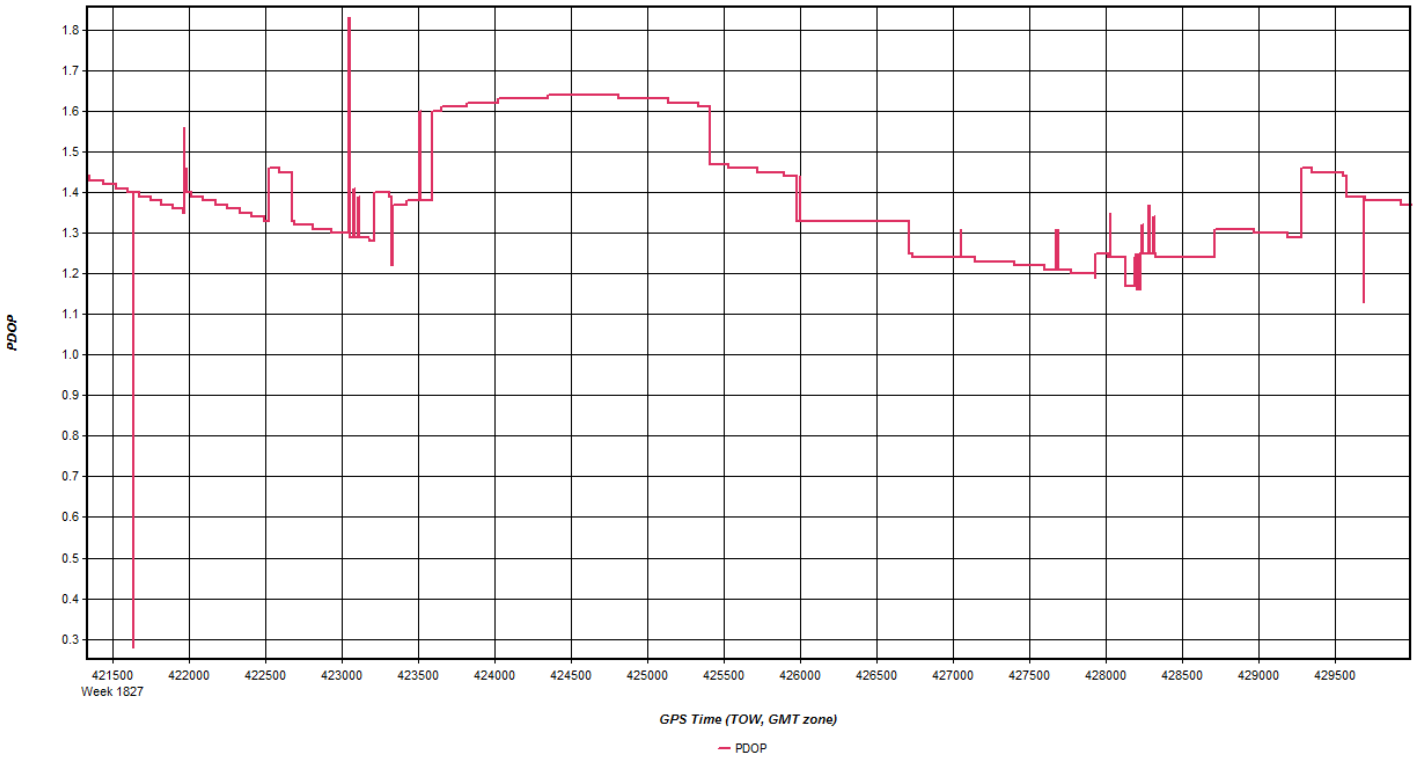
20150115A_7161

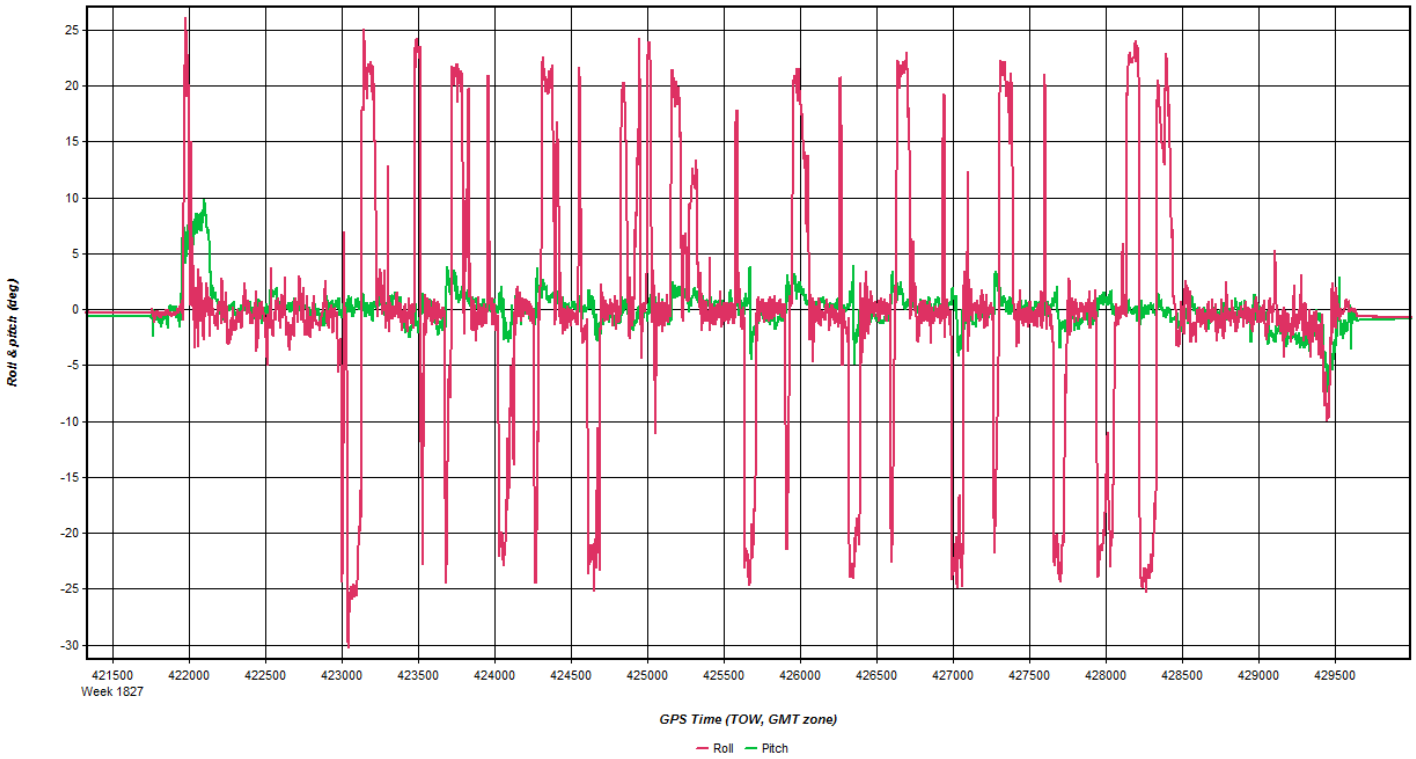

10 km

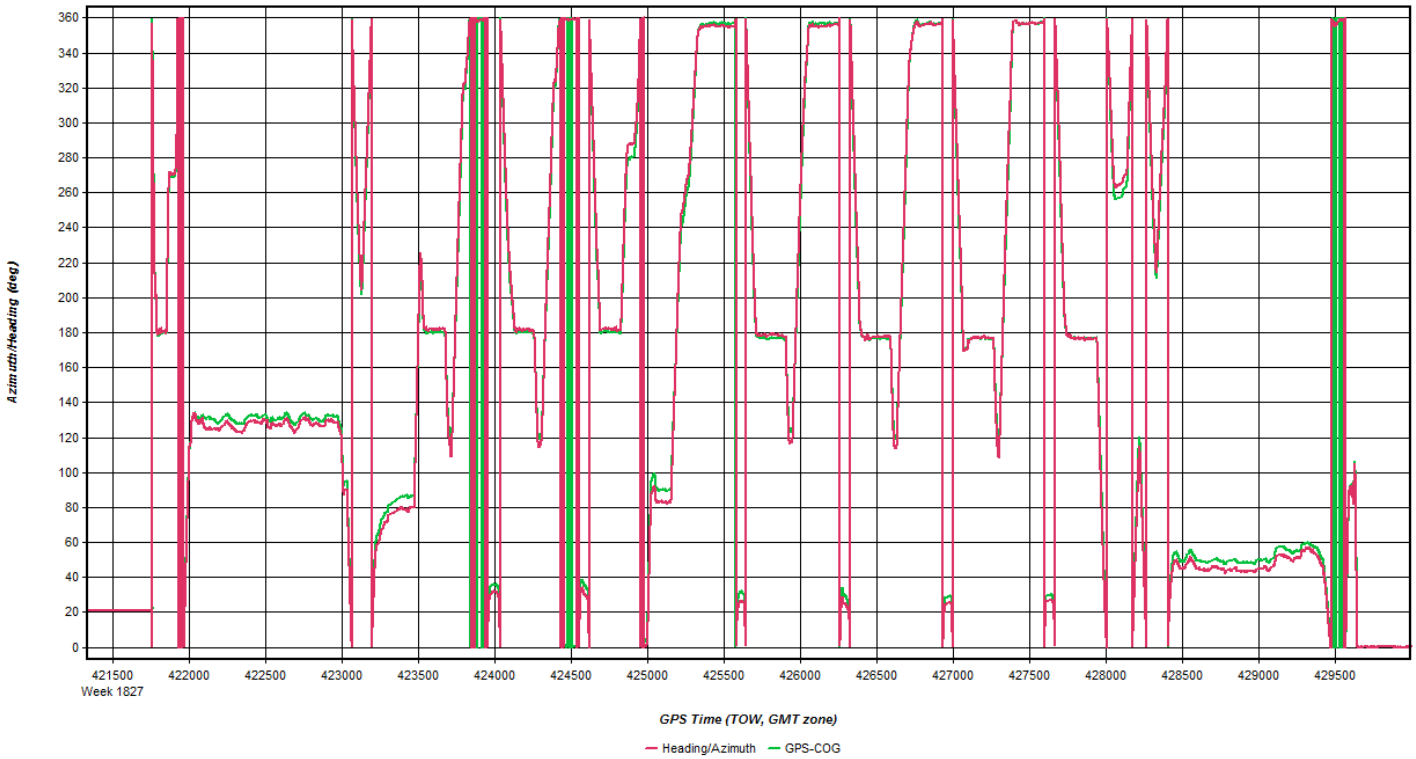

Estimated StdDev (m)
0.040
0.038
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
421500
Week 1827
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
East
North
Height
Trace


Num Sats
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
421500
Week 1827
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
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
421500
Week 1827
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
East
North
Up


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
421500
Week 1827
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
PDOP


Roll & pitch (deg)
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
421500
Week 1827
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
421500
Week 1827
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

V011515A

MISSION: V 20150115_205905 | DATE: 1 / 15 / 2015 | LEICA ALS-70-SN7161 | DI 1

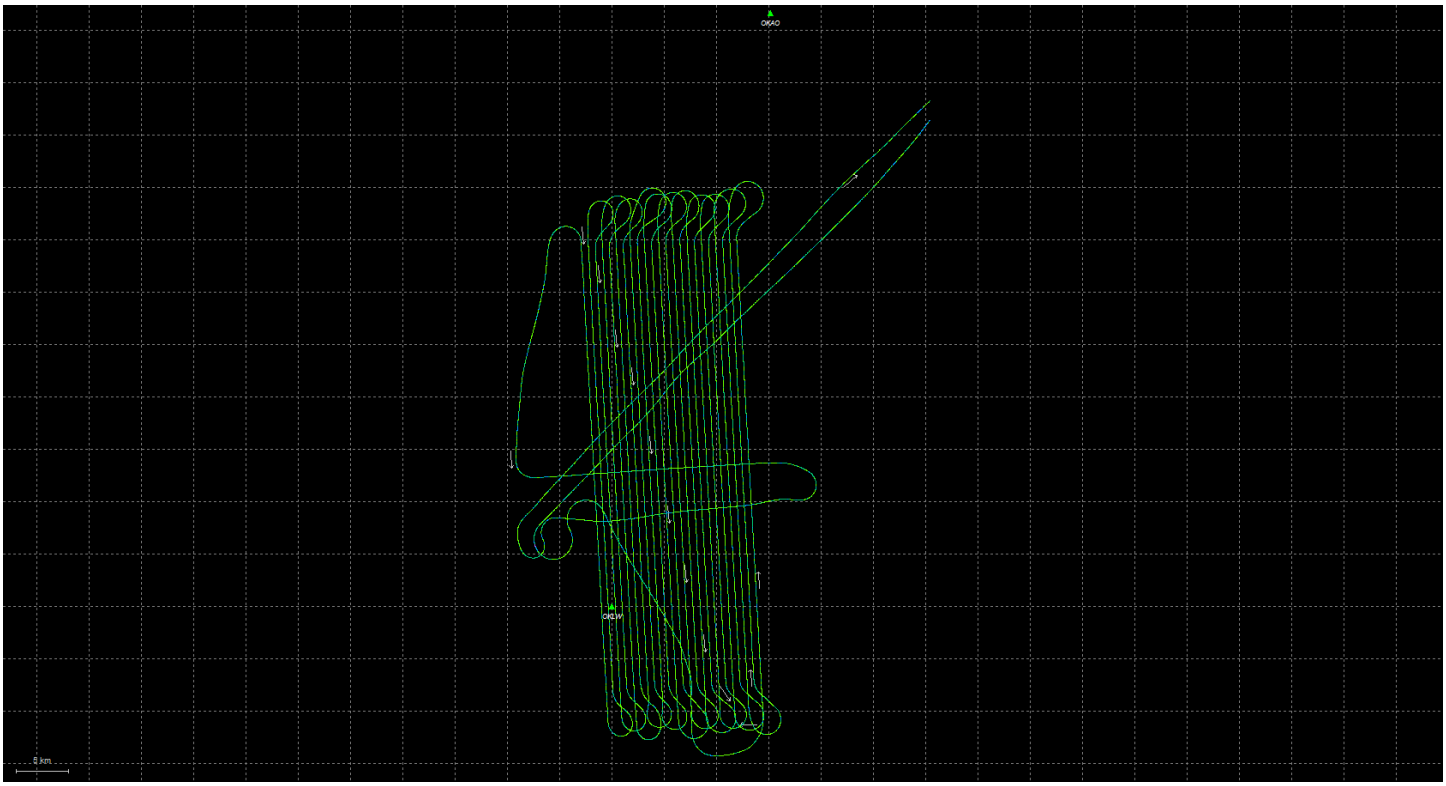
PILOT: Jacobson | OPERATOR: Iverson | Time: UTC | AIRCRAFT: 73TM

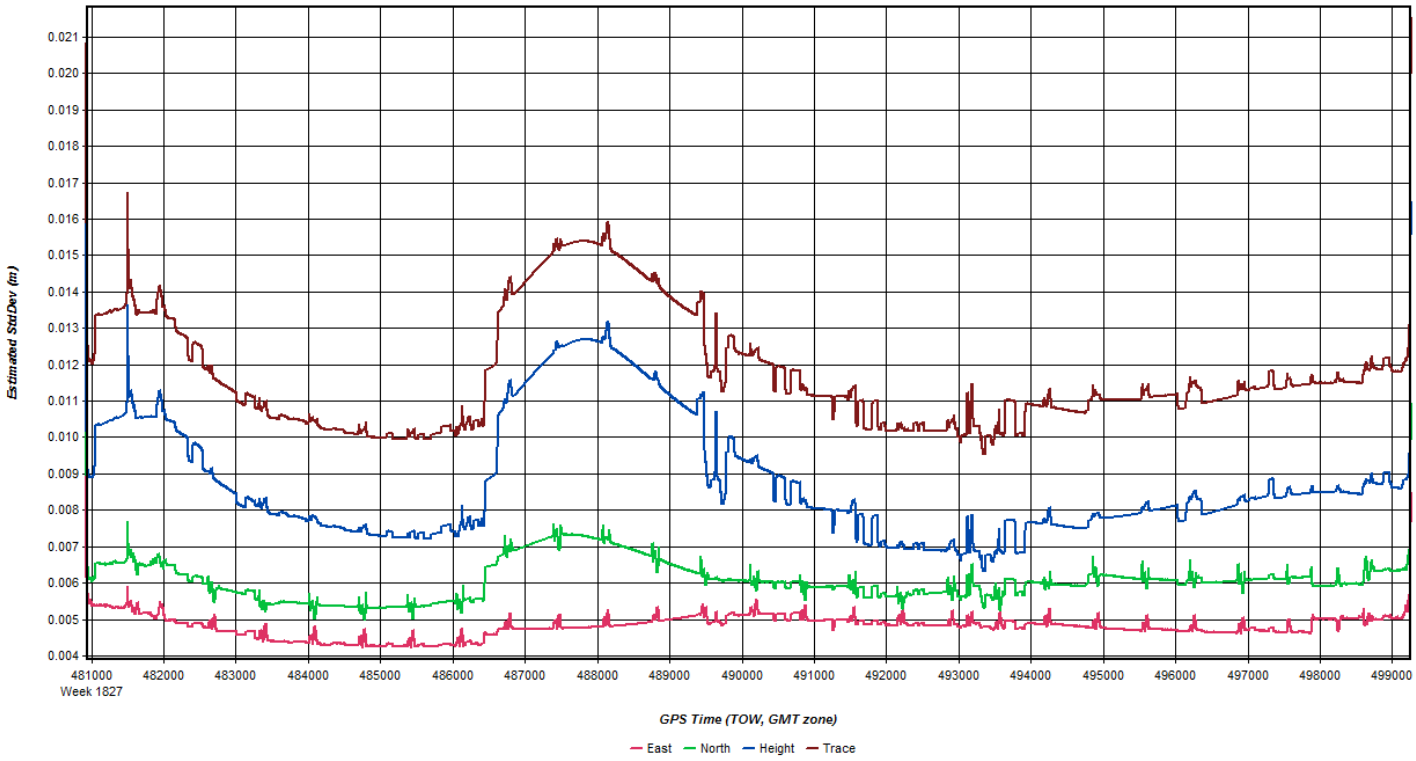
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
[redacted]					53	40	187	12/3		1653		18	Take OFF TUS 5597.4 Hobbs
25273											2025		Land CSM clinton, OK 5600.9 Hobbs
Cache OK										2112			Take OFF CSM,
		[redacted]	[redacted]		53	40	187	12/3				18	
		XF	E	160	53	40	187	12/3	5800	2135	2137	18	crossflight
		9005	S	153	53	40	187	12/3	5837	2139	2140	18	
		9004	N	147					5827	2144	2145		
		9003	S	151					5843	2149	2150		
		9002	N	150					5837	2154	2155		
		9001	S	150					5846	2158	2159		
		9006	E	152					5869	2204	2205		
		1001	N	144					5961	2210	2212		
		1002	S	152					5968	2215	2218		
		1003	N	145					5997	2221	2224		
		1004	S	154					5974	2227	2229		
		1005	N	146					5961	2232	2235		
		1006	S	152					5961	2238	2240		
		1007	N	147					5958	2243	2246		
		1008	S						5945	2249	2252		

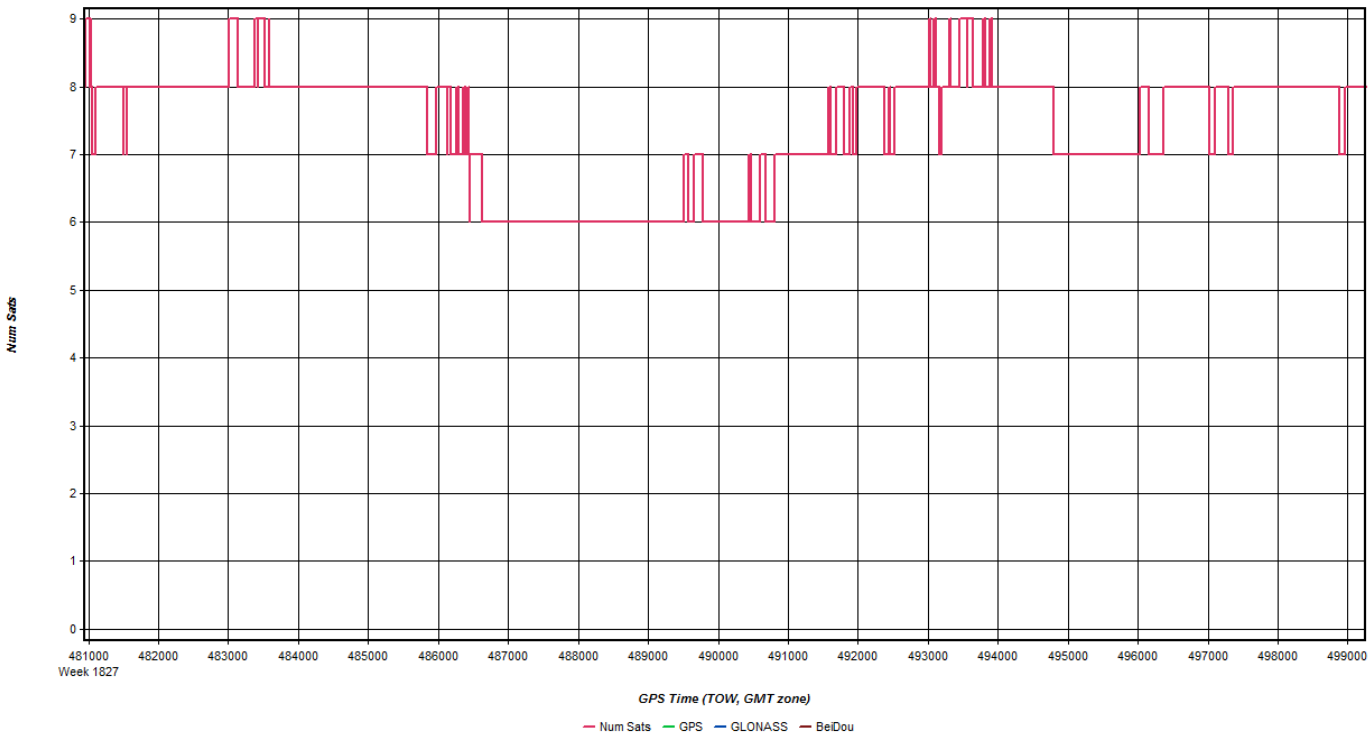
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
○ [redacted]							2103	2325		Land OKC 2318 5603.0 Hobbs
⊘ 25273		14		1.5	4.1	WX				
○										QSI - 4W2J

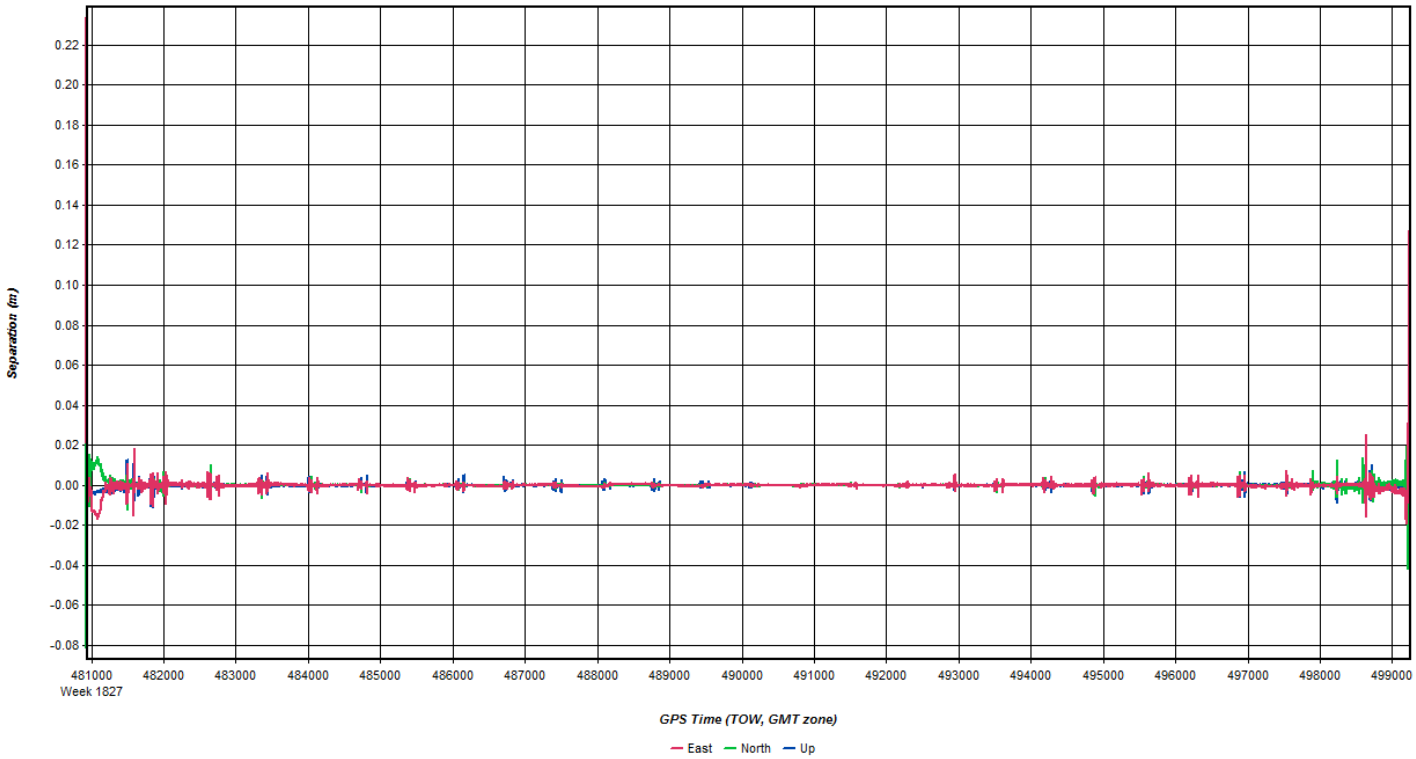
Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

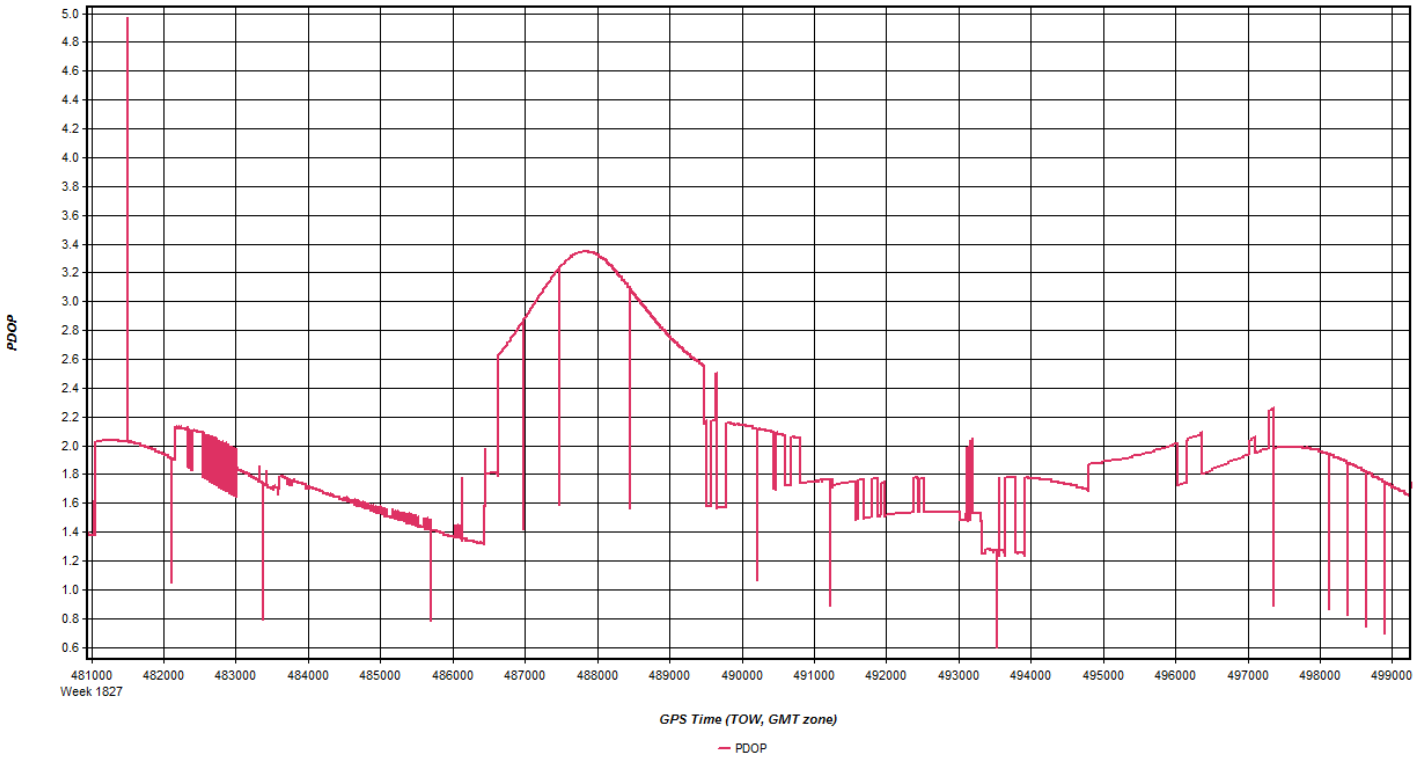
20150116A_7161

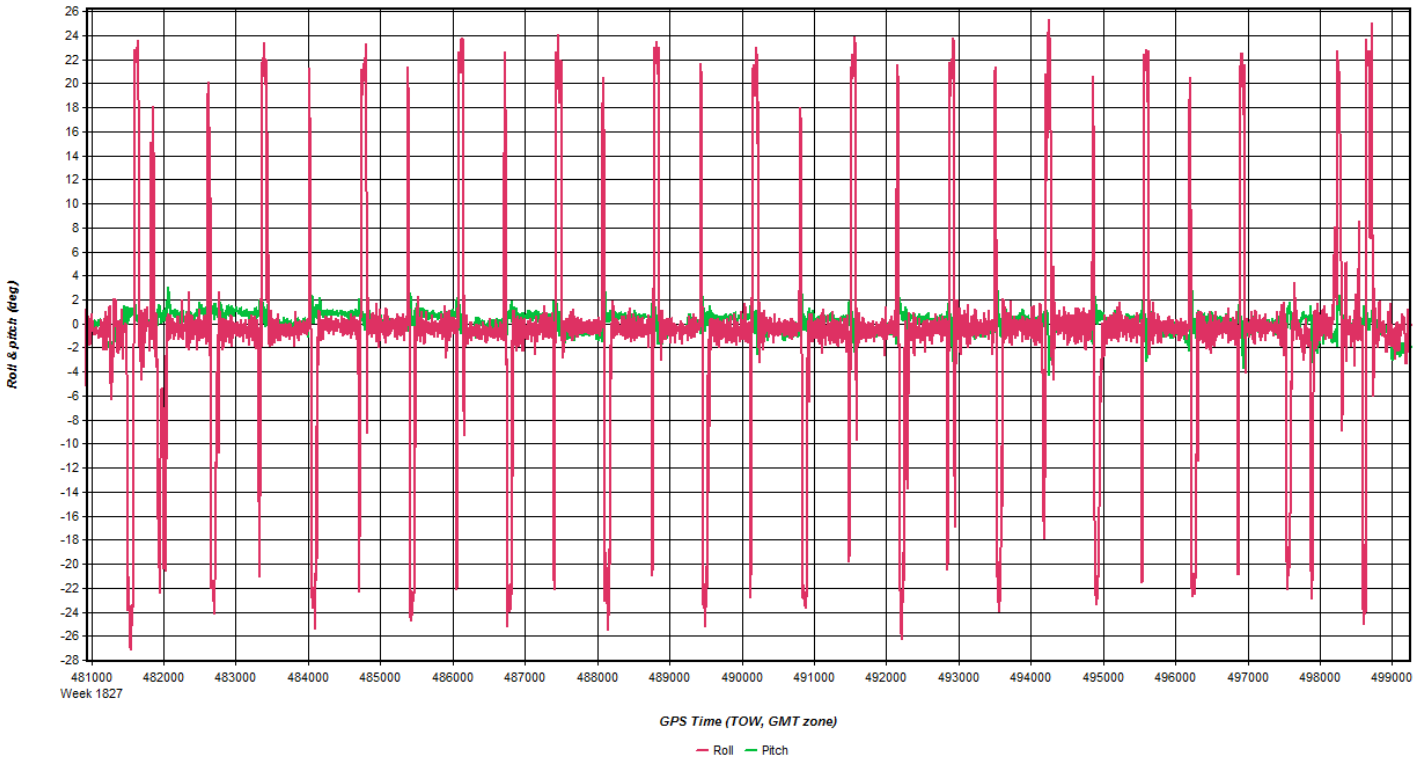

OKA0
OKA1
2 km

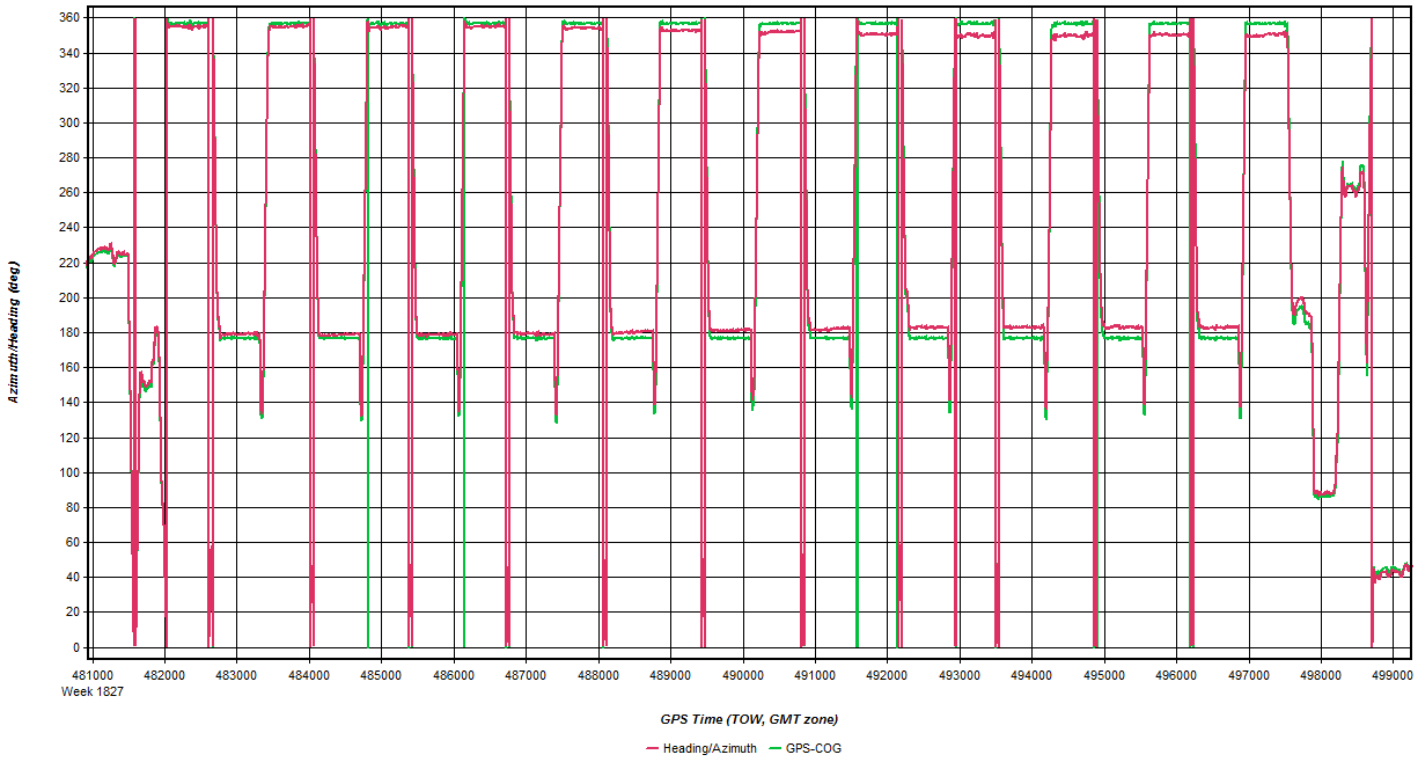

Estimated StdDev (m)
0.021
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
481000
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
497000
498000
499000
Week 1827
GPS Time (TOW, GMT zone)
East
North
Height
Trace

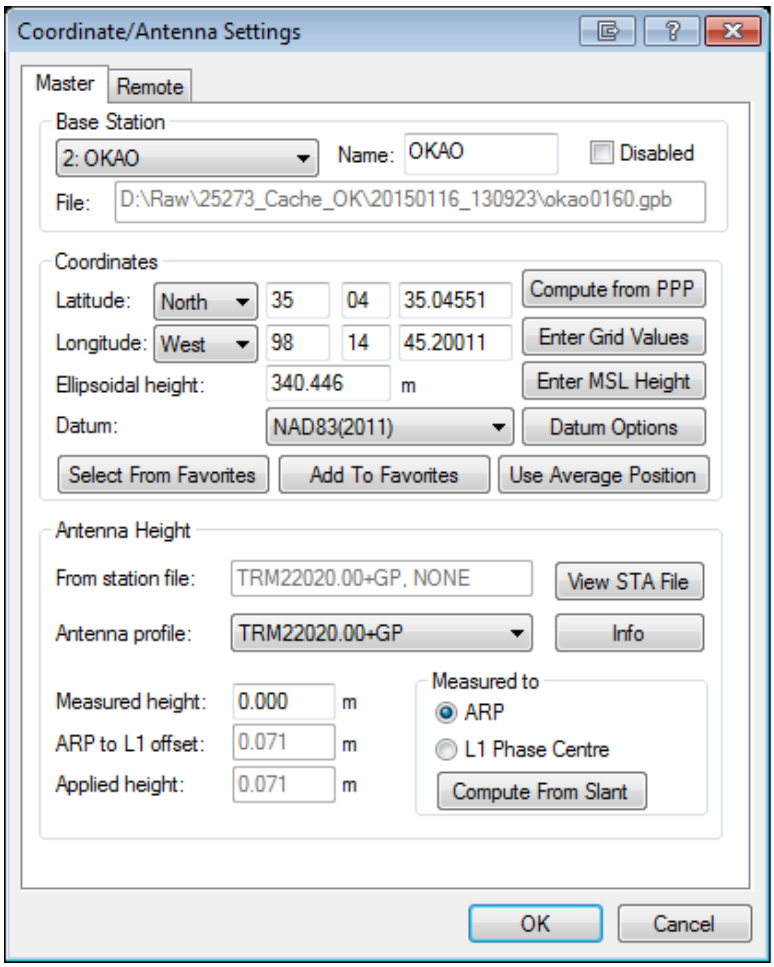

Num Sats
9
8
7
6
5
4
3
2
1
0
481000
Week 1827
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
497000
498000
499000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

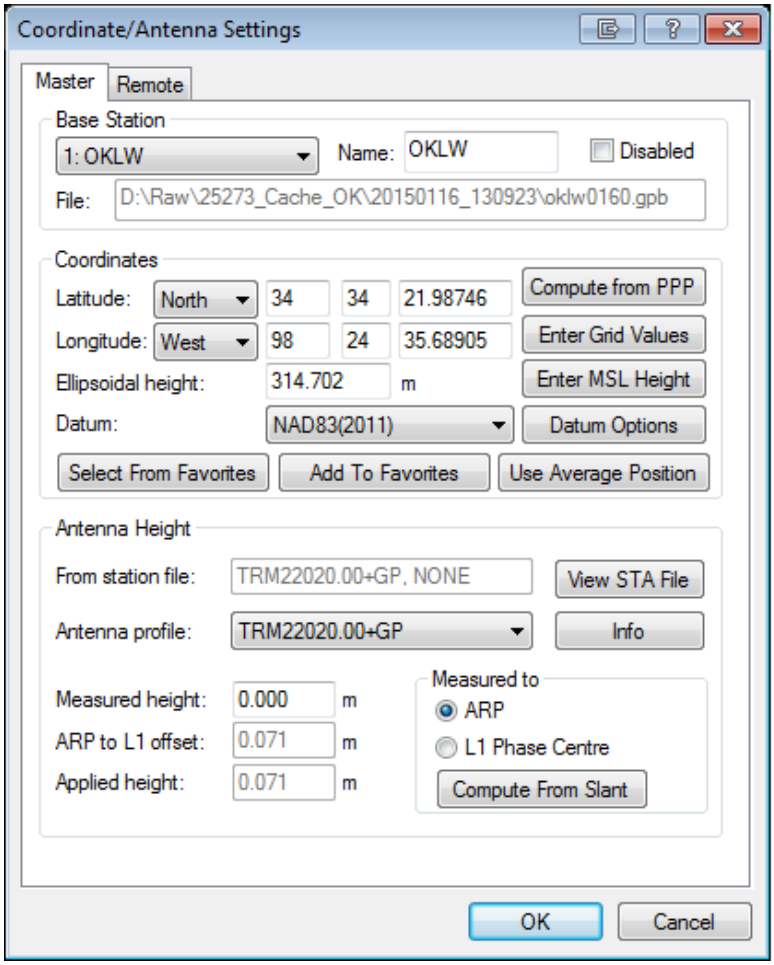

Separation (m)
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
481000
Week 1827
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
497000
498000
499000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
5.0
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
481000
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
497000
498000
499000
Week 1827
GPS Time (TOW, GMT zone)
PDOP


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
481000
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
497000
498000
499000
Week 1827
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
481000
Week 1827
482000
483000
484000
485000
486000
487000
488000
489000
490000
491000
492000
493000
494000
495000
496000
497000
498000
499000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
2: OKAO
Name:
OKAO
Disabled
File:
D:\Raw\25273_Cache_OK\20150116_130923\okao0160.gpb
Coordinates
Latitude:
North
35
04
35.04551
Compute from PPP
Longitude:
West
98
14
45.20011
Enter Grid Values
Ellipsoidal height:
340.446
m
Enter MSL Height
Datum:
NAD83(2011)
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM22020.00+GP, NONE
View STA File
Antenna profile:
TRM22020.00+GP
Info
Measured height:
0.000
m
ARP to L1 offset:
0.071
m
Applied height:
0.071
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name:
OKLW
Disabled
File:
D:\Raw\25273_Cache_OK\20150116_130923\oklw0160.gpb
Coordinates
Latitude:
North
34
34
21.98746
Compute from PPP
Longitude:
West
98
24
35.68905
Enter Grid Values
Ellipsoidal height:
314.702
m
Enter MSL Height
Datum:
NAD83(2011)
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM22020.00+GP, NONE
View STA File
Antenna profile:
TRM22020.00+GP
Info
Measured height:
0.000
m
ARP to L1 offset:
0.071
m
Applied height:
0.071
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG V01 1615A

MISSION: V 20150116_130923 | DATE: 1/16/2015 | LEICA ALS-70-SN7161 | DI 1

PILOT: Jacobson | OPERATOR: Iverson | AIRCRAFT: 73TM

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273										1321		18	Take OFF OKC 5603.0 Hobbs
Cache		1009	N	150	53	40	187	12/3	5755	1354	1403	18	
		1010	S	153					5755	1406	1414		
		1011	N	152					5761	1417	1426		
		1012	S	151					5768	1429	1438		
		1013	N	154					5771	1440	1449		
		1014	S	148					5758	1451	1500		
		1015	N	153					5748	1503	1511		
		1016	S	151					5748	1514	1523		
		1017	N	153					5748	1525	1534		
		1018	S	148					5748	1536	1545		
		1019	N	154					5754	1548	1556		
		1020	S	148					5738	1559	1608		
		1021	N	154					5719	1611	1619		
		1022	S	151					5705	1622	1630		
		1023	N	151					5709	1633	1642		
		1024	S	153					5705	1645	1653		
		1025	N	152					5712	1656	1704		
		1026	S	150					5712	1707	1716		

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
⊘ 25273		64	13	12.7	2.4	1313	1852		
○						WX			
○									QSI-4W2J

Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

V01 1615A + B

MISSION: V 20150116_130923

DATE: 1 / 16 / 2015

LEICA ALS-70-SN7161

DI 2

PILOT: Jacobson

OPERATOR: Iverson

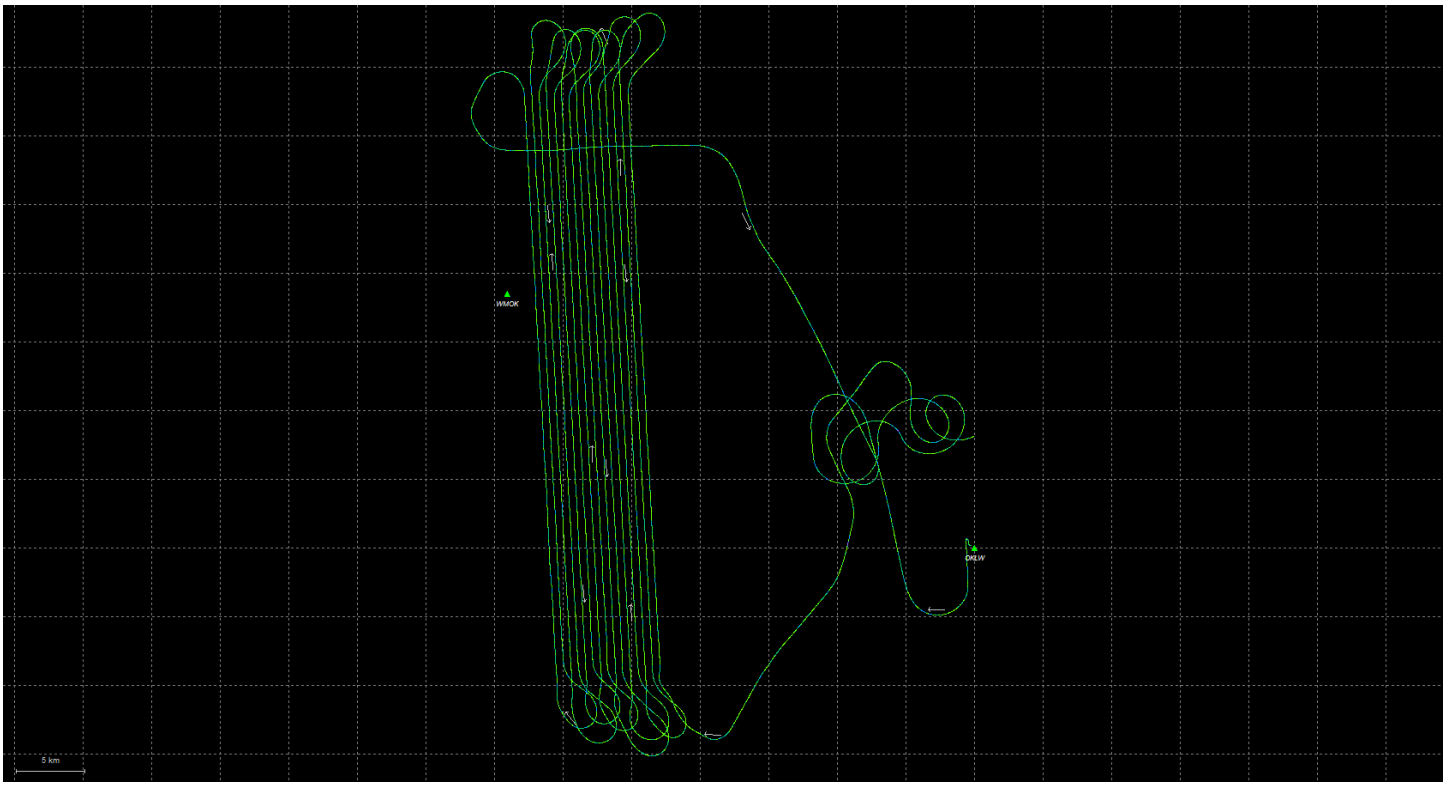
AIRCRAFT: 73TM

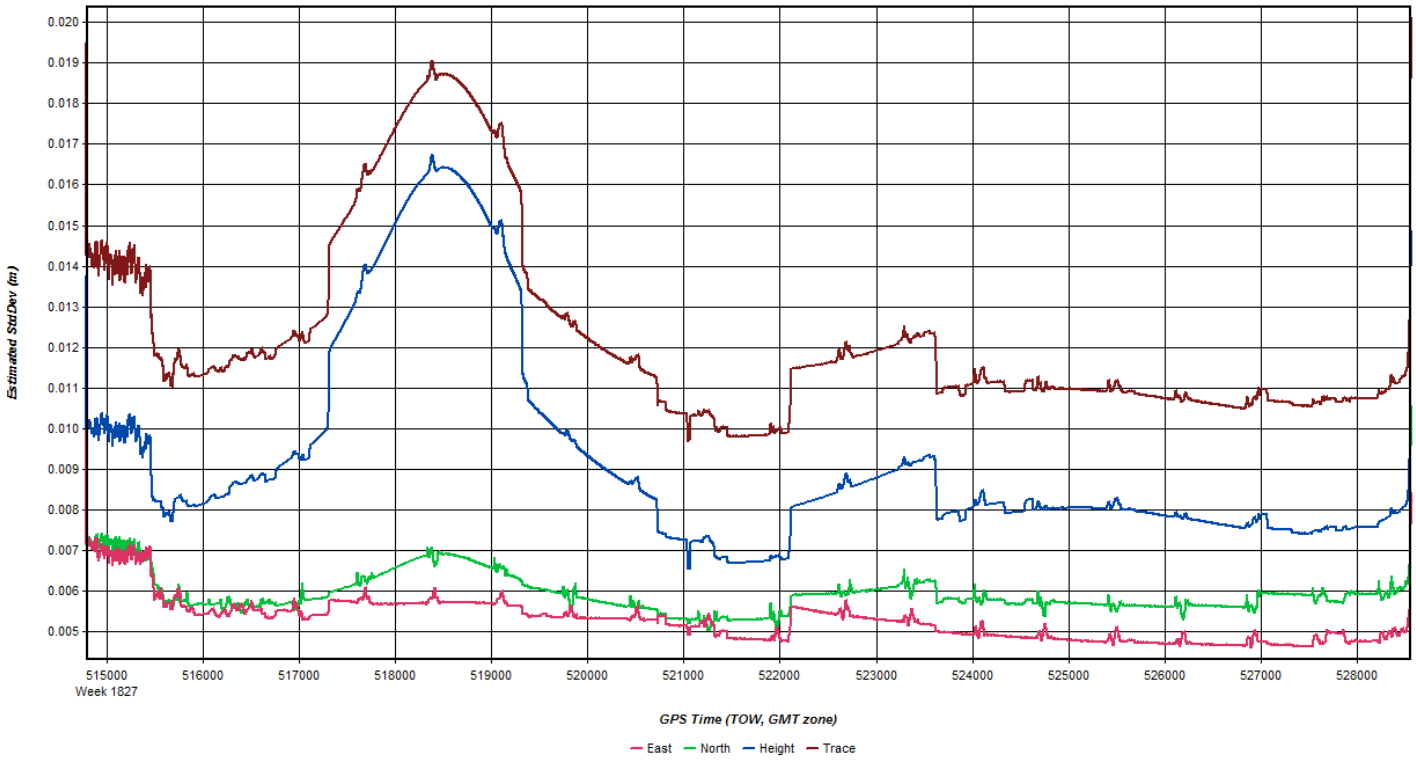
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273		1027	N	152	53	40	187	1213	5712	1718	1727	18	
Cache		1028	S	151					5712	1729	1738		
		1029	N	149					5715	1741	1749		
		1030	S	152					5728	1752	1800		
		1031	N	150					5735	1803	1812		
	XF	[redacted]	E	150					5660	1818	1823		cross flight
											1845		Land CHK 5608.4 Hobbs
										1944			TakeOff CHK V011615B
		1032	N	155	53	40	187	1213	5735	2009	2017	18	-20150116_193354
		1033	S	155					5738	2020	2029		
		1034	N	153					5741	2031	2040		
		1035	S	151					5748	2044	2051		
		1036	N	150					5761	2053	2102		
		1037	S	155					5771	2104	2112		
		1038	N	155					5774	2115	2124		
		1039	S	148					5787	2127	2135		
		1040	N	152					5794	2138	2146		
		1041	S	155					5784	2149	2158		
		1042	N	153					5791	2200	2208		

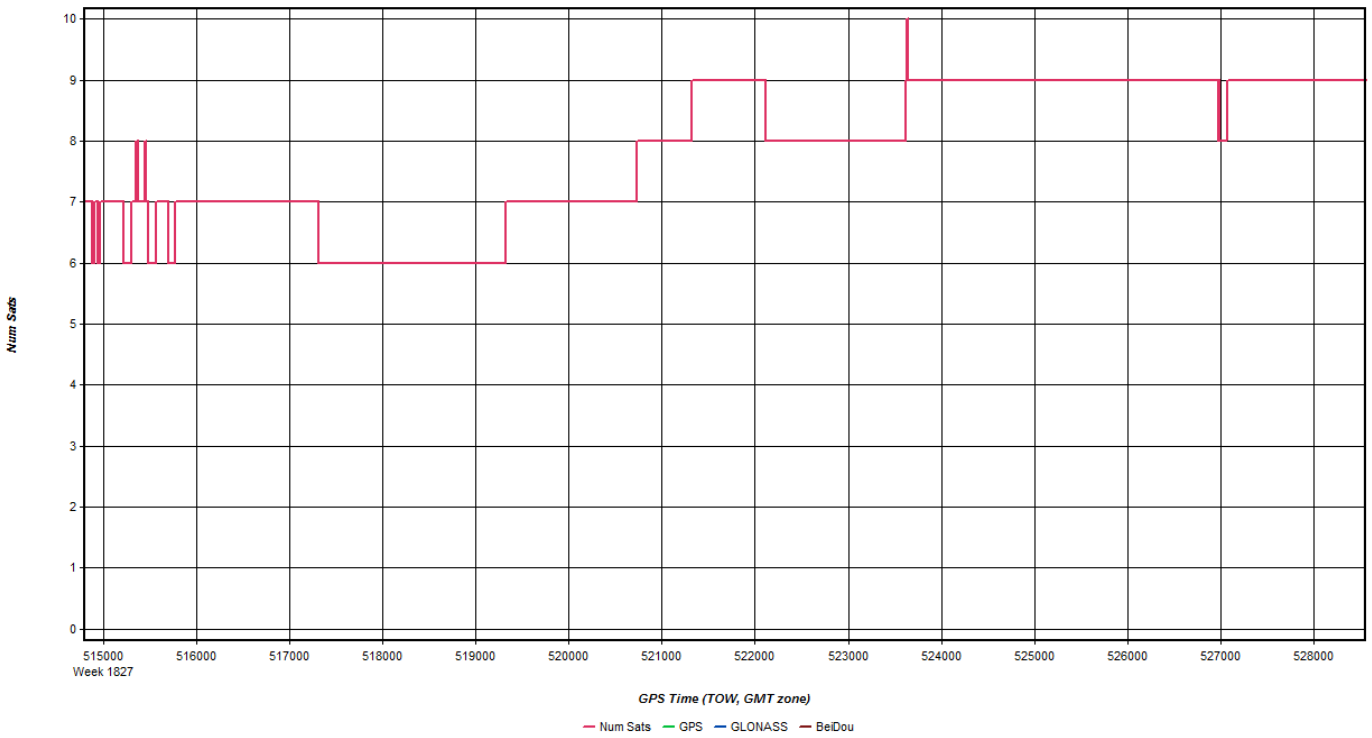
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
○							1938	0109		
○						WX	V011615B			
○										

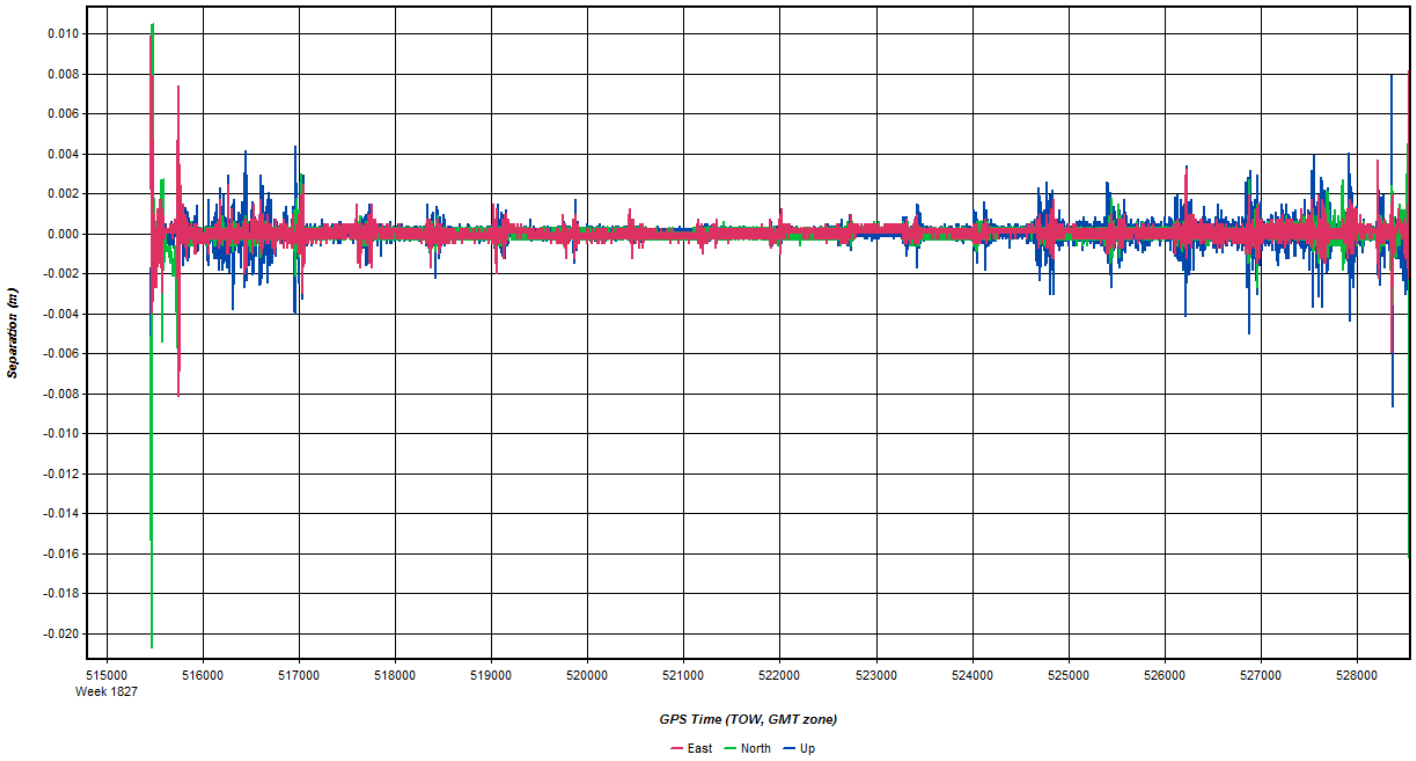
Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

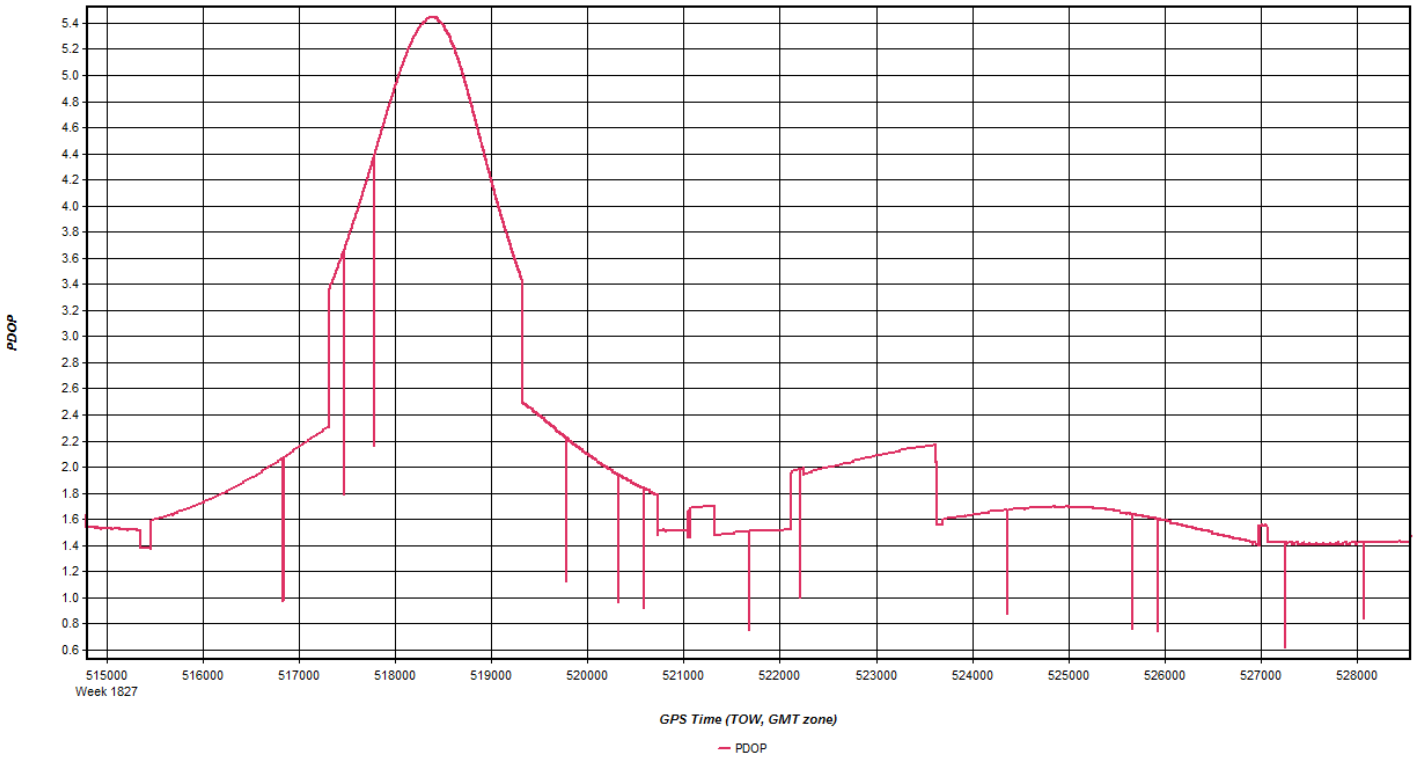
20150116A_7170

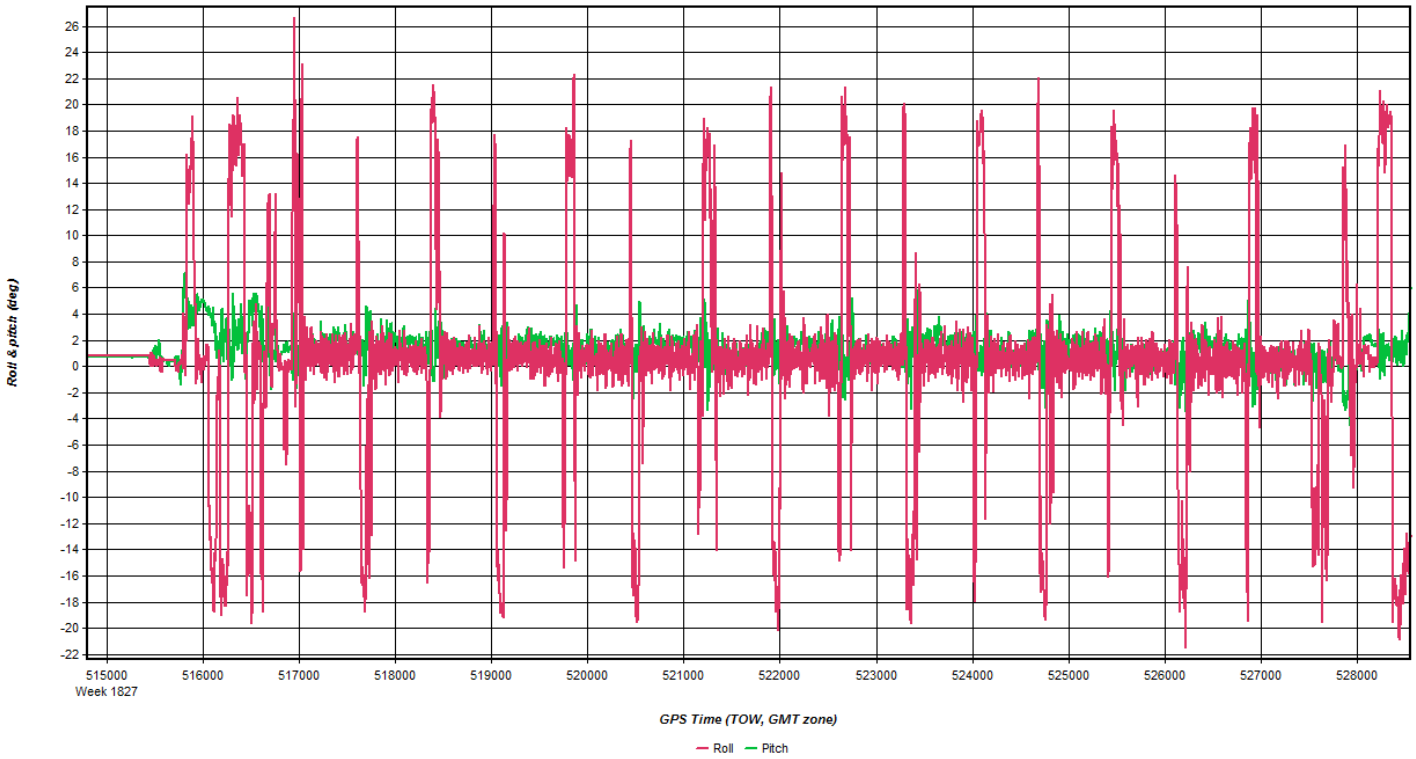

WMOK
DKLW
5 km

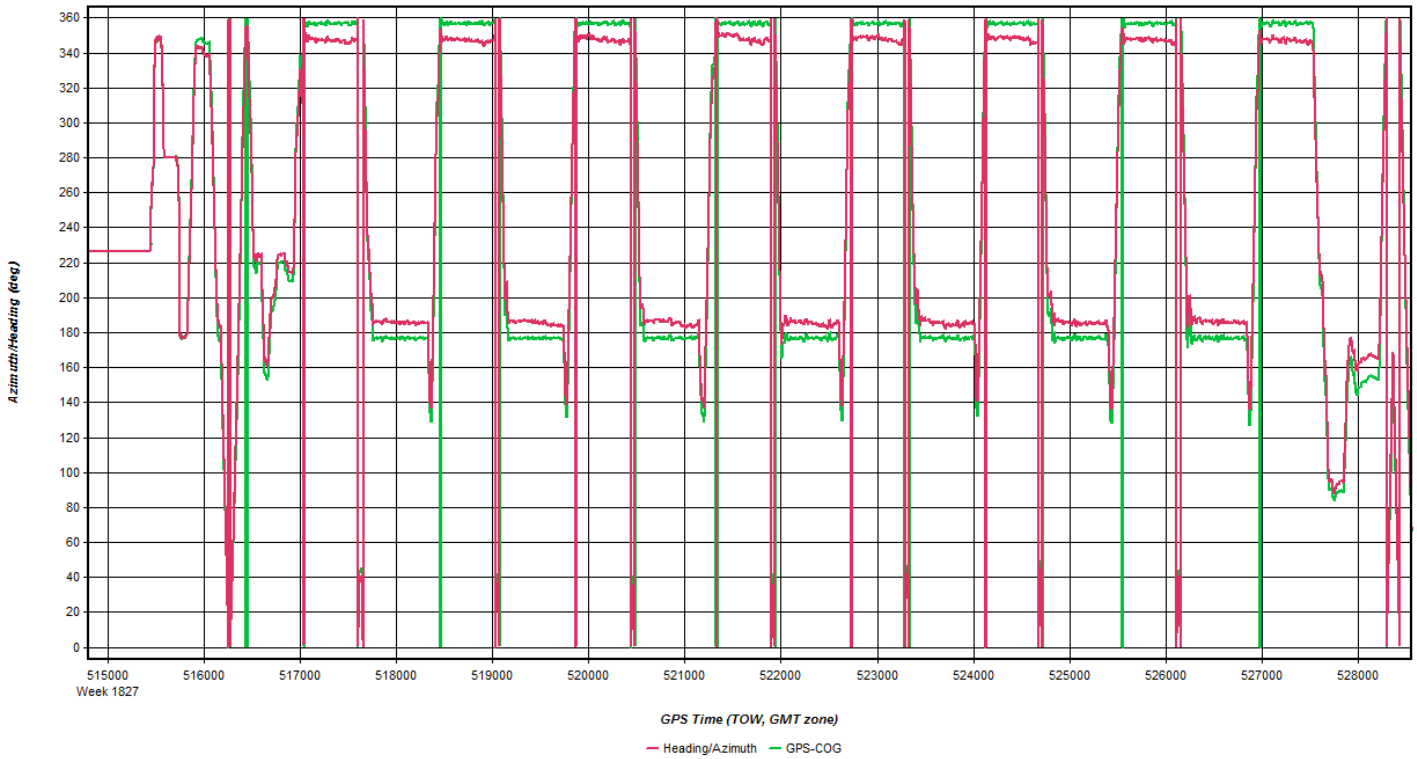

Estimated StdDev (m)
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
515000
Week 1827
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

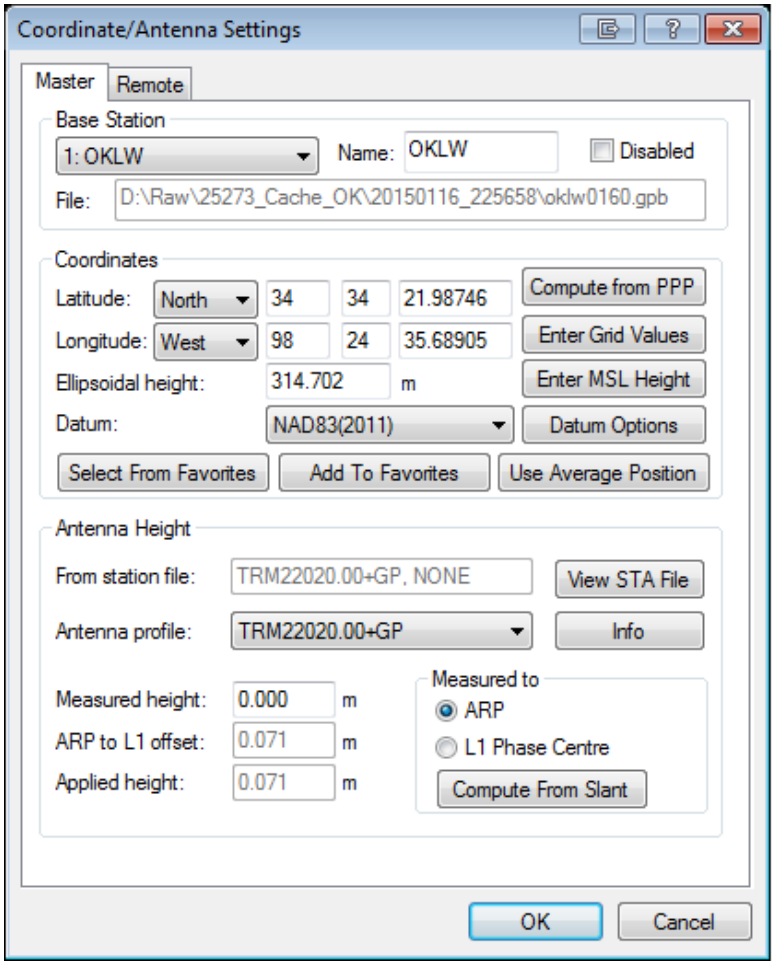

Num Sats
10
9
8
7
6
5
4
3
2
1
0
515000
Week 1827
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

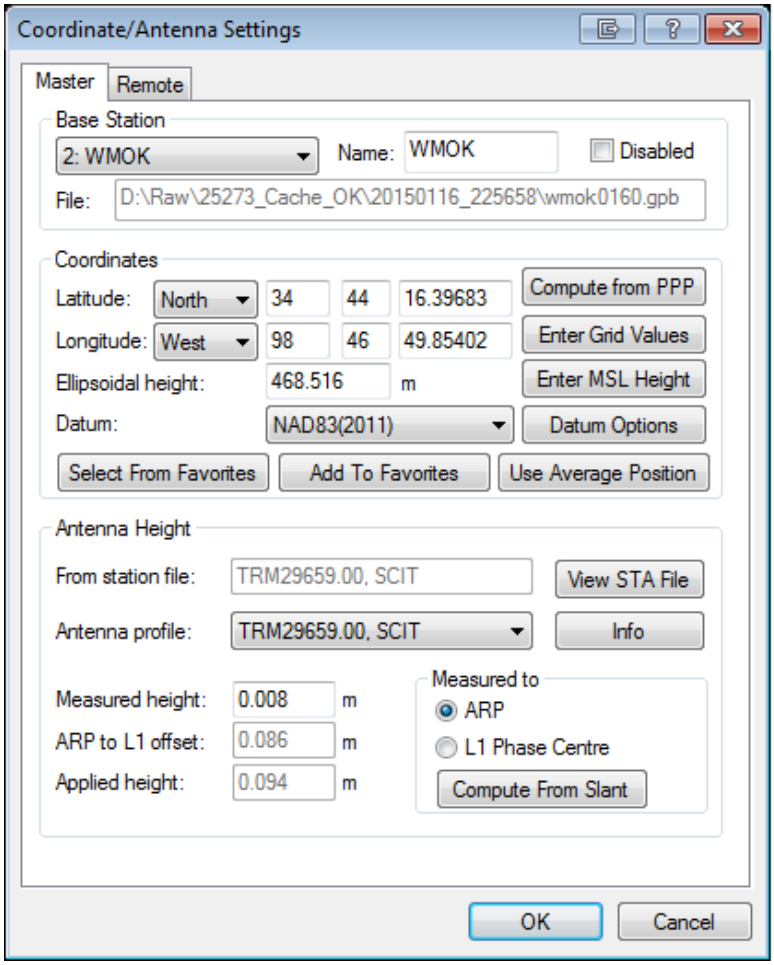

Separation (m)
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
515000
Week 1827
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
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
515000
Week 1827
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
GPS Time (TOW, GMT zone)
PDOP


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
515000
Week 1827
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
515000
Week 1827
516000
517000
518000
519000
520000
521000
522000
523000
524000
525000
526000
527000
528000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\20150116_225658\oklw0160.gpb
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: WMOK
Name:
WMOK
Disabled
File:
D:\Raw\25273_Cache_OK\20150116_225658\wmok0160.gpb
Coordinates
Latitude:
North
34
44
16.39683
Compute from PPP
Longitude:
West
98
46
49.85402
Enter Grid Values
Ellipsoidal height:
468.516
m
Enter MSL Height
Datum:
NAD83(2011)
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM29659.00, SCIT
View STA File
Antenna profile:
TRM29659.00, SCIT
Info
Measured height:
0.008
m
ARP to L1 offset:
0.086
m
Applied height:
0.094
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

MISSION: 20150116-225658 | DATE: 01-16-15 | LEICA ALS-70 | JSI

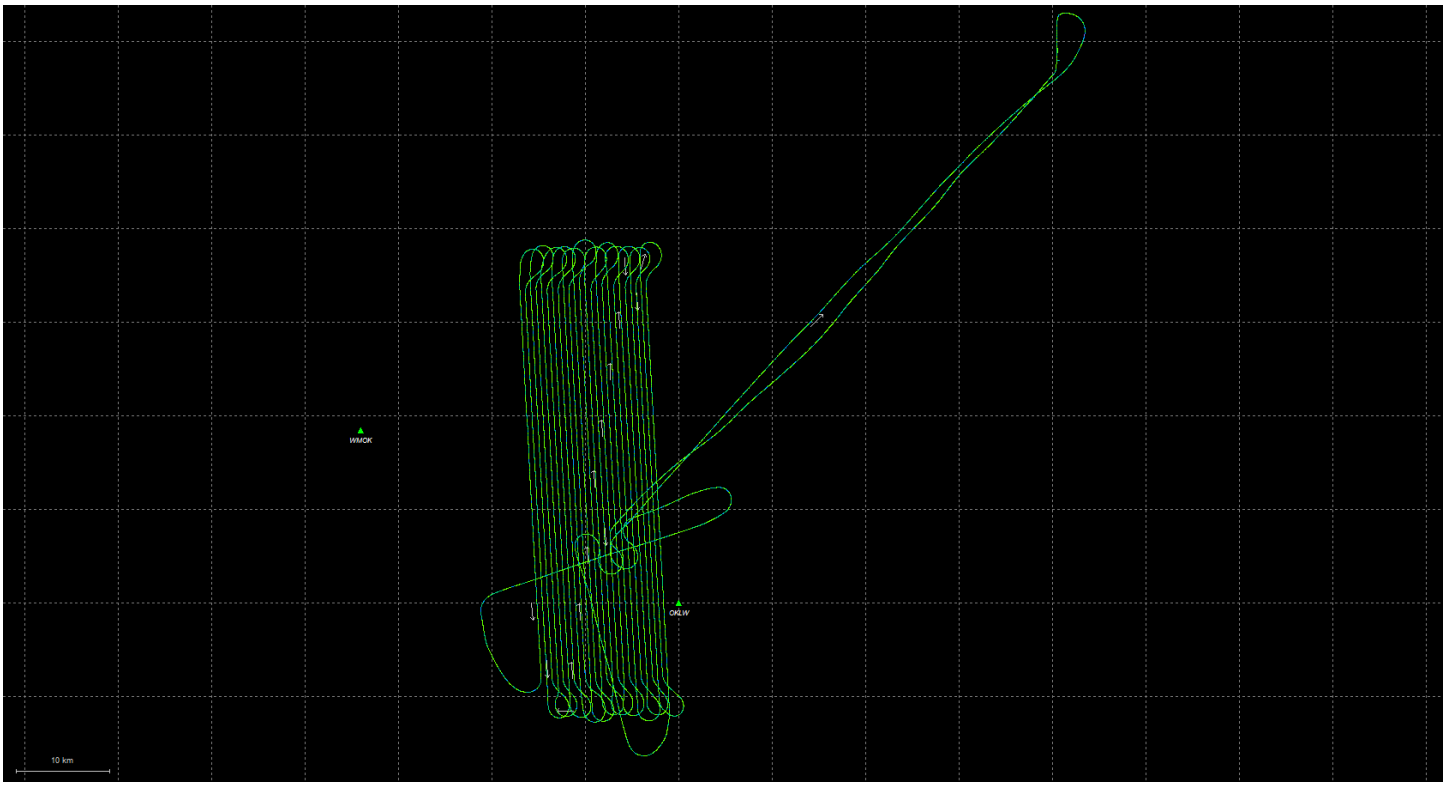
PILOT: BARHAM | OPERATOR: SCHOONE | AIRCRAFT: N22GE | SENSOR: 7170

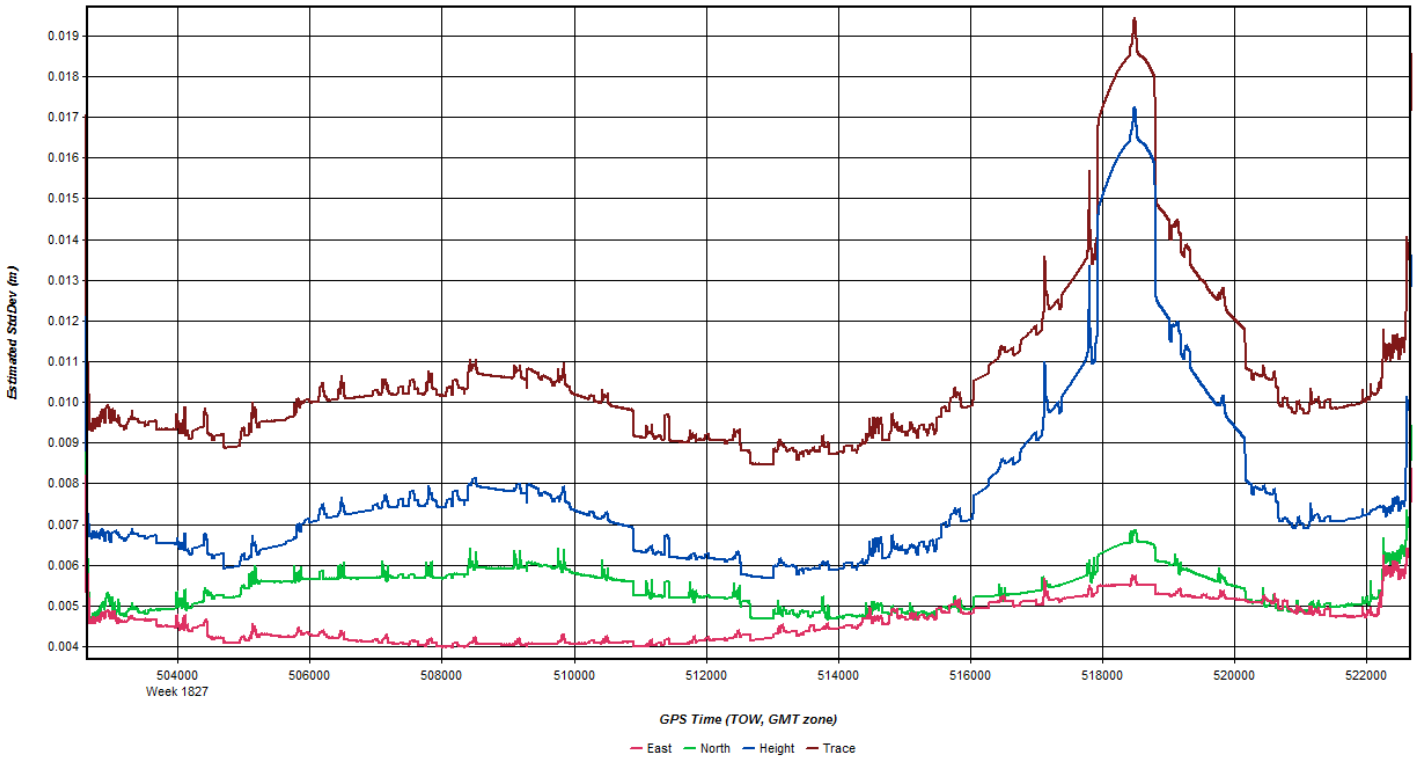
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (m)	GPS TIME START	GPS TIME STOP	MM70 DRIVE	REMARKS
25273										12:36	16:18	2	FERRY: RDU → ARG 3.7
CACHE, OK									27	19:00	21:40		FERRY: ARG → LAW 2.7
									1.3	22:59	23:37		FERRY: LAW → SITE FLY OVER BASE 23:20 .6
	70	1070	357	150	53	40	187	12-3	1524	23:37	23:46		
	71	1071	177							23:49	23:58		
	72	1072	357							00:01	00:09		
	73	1073	177							00:13	00:21		
5	74	1074	357							00:25	00:33		
	75	1075	177							00:36	00:45		
	76	1076	357							00:49	00:57		
	77	1077	177							01:00	01:09		
	78	1078	357							01:12	01:20		
10	79	1079	177							01:24	01:33		
	80	1080	357							01:35	01:44		
	81	1081	177							01:47	01:56		
	82	1082	357							01:59	02:08		
	83	1083	177							02:11	02:20		
15	84	1084	357							02:23	02:31		
	X	ULI	90							02:34	02:36		FLY OVER BASE 02:42 FERRY: SITE → OKC

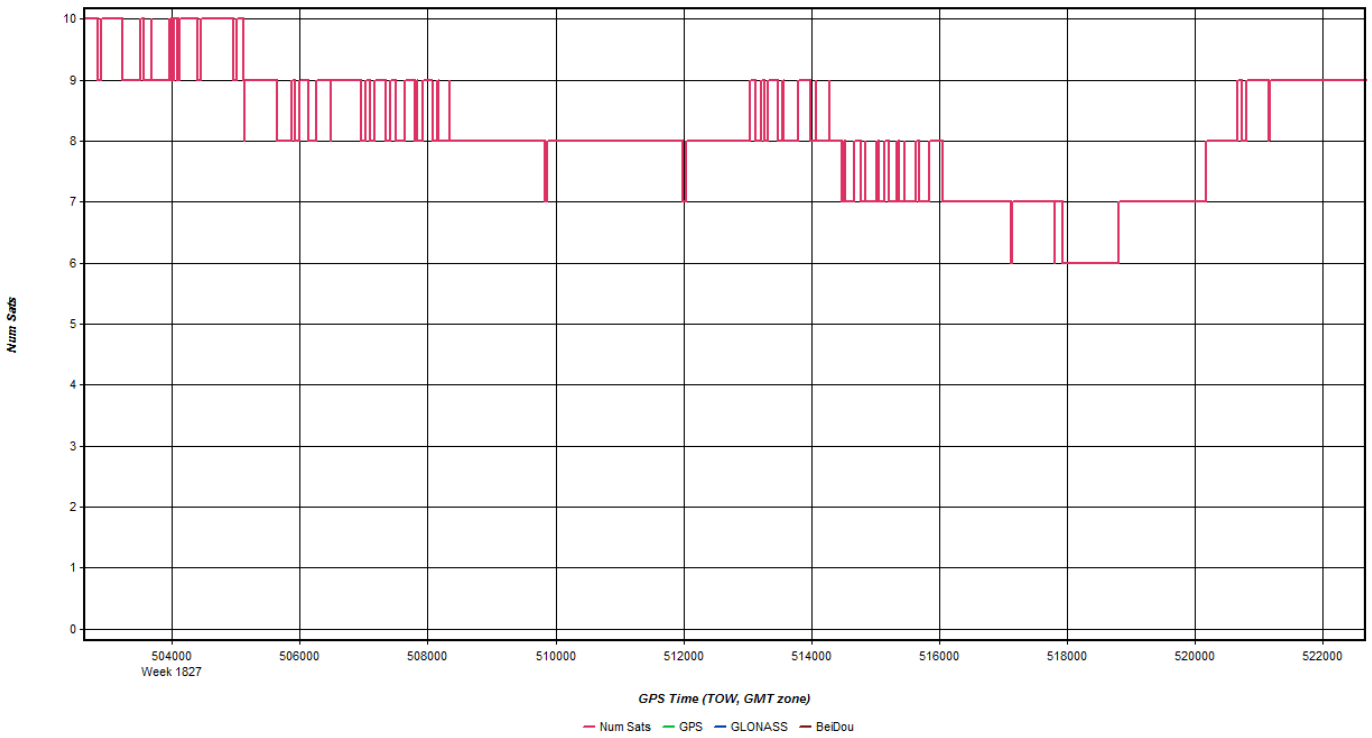
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
⊘ 25273		15		3.0	7.7	3.3	22:59	03:14		03:16 .7
○						WX 30.09				
○										

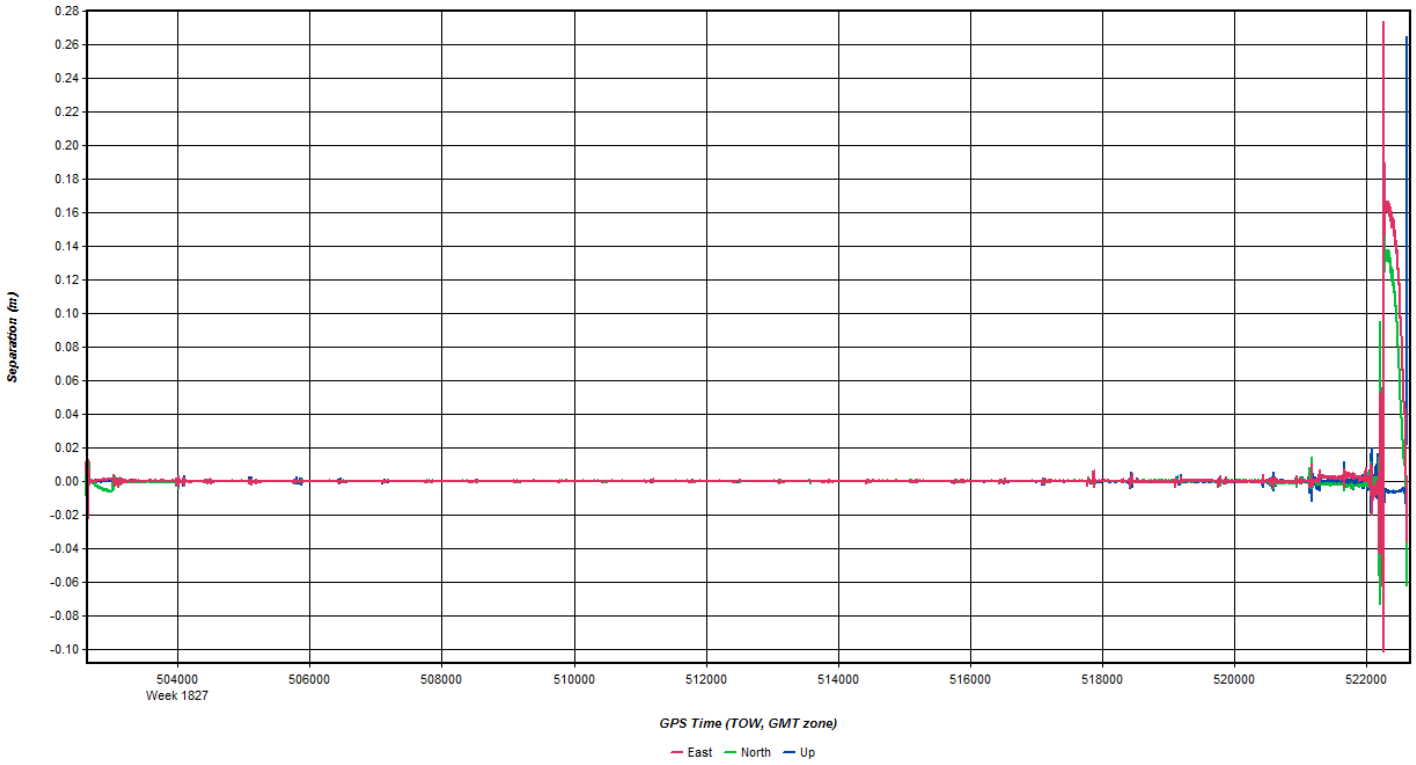
Quantum Spatial, N 6216 Resource Drive Sheboygan Falls, WI, 53085 PHONE: 920-467-2655 FAX: 888-253-6695 E-Mail: amephoto@quantumspatial.com

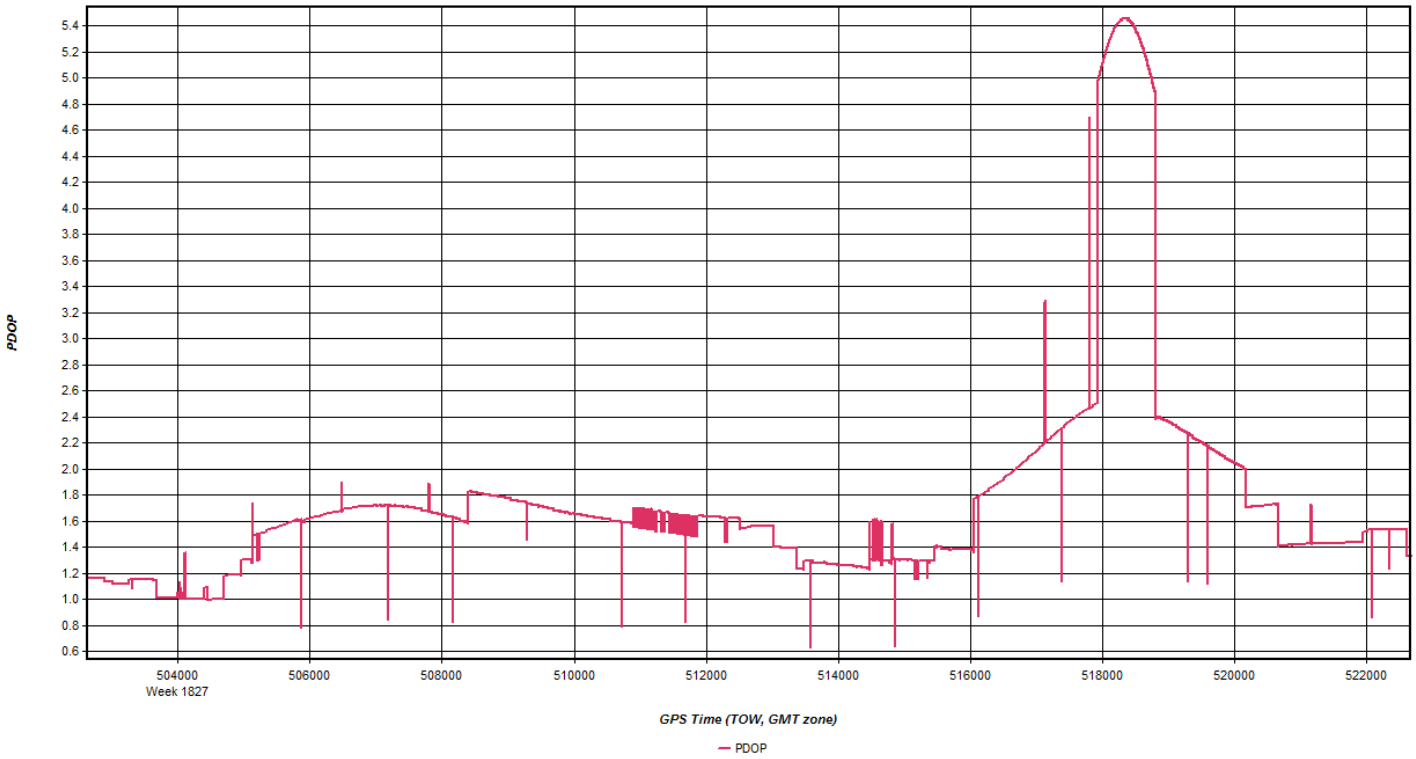
20150116B_7161

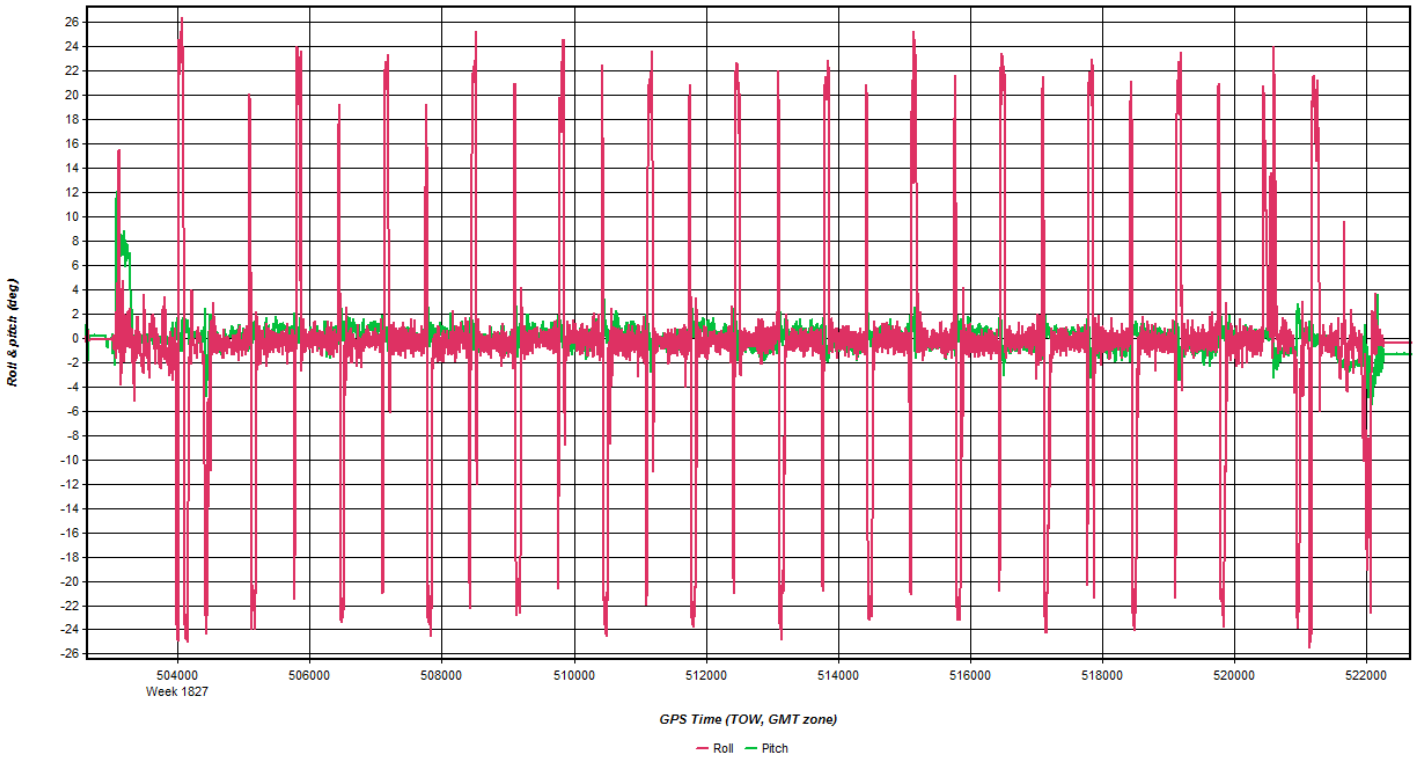

WMOK
OKLW
10 km

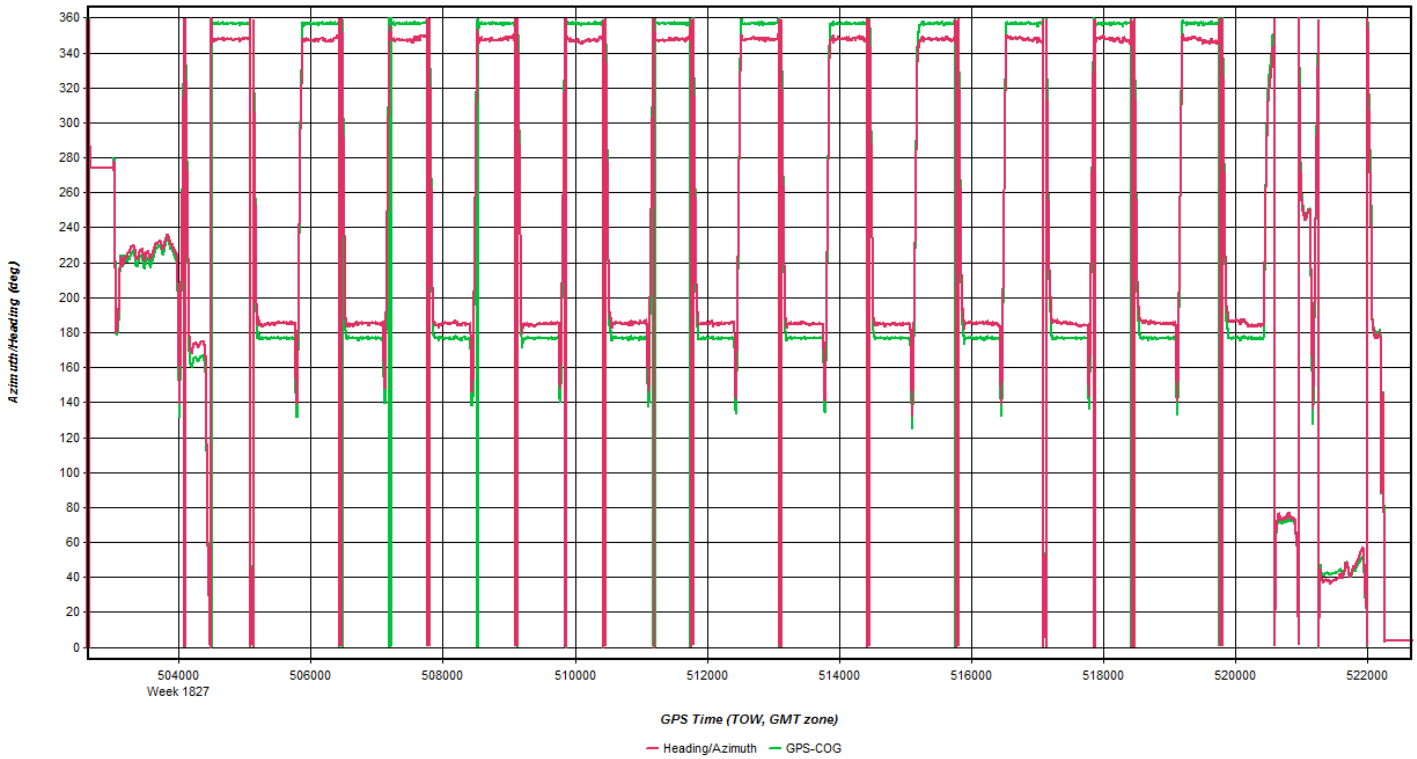

Estimated StdDev (m)
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
504000
Week 1827
506000
508000
510000
512000
514000
516000
518000
520000
522000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

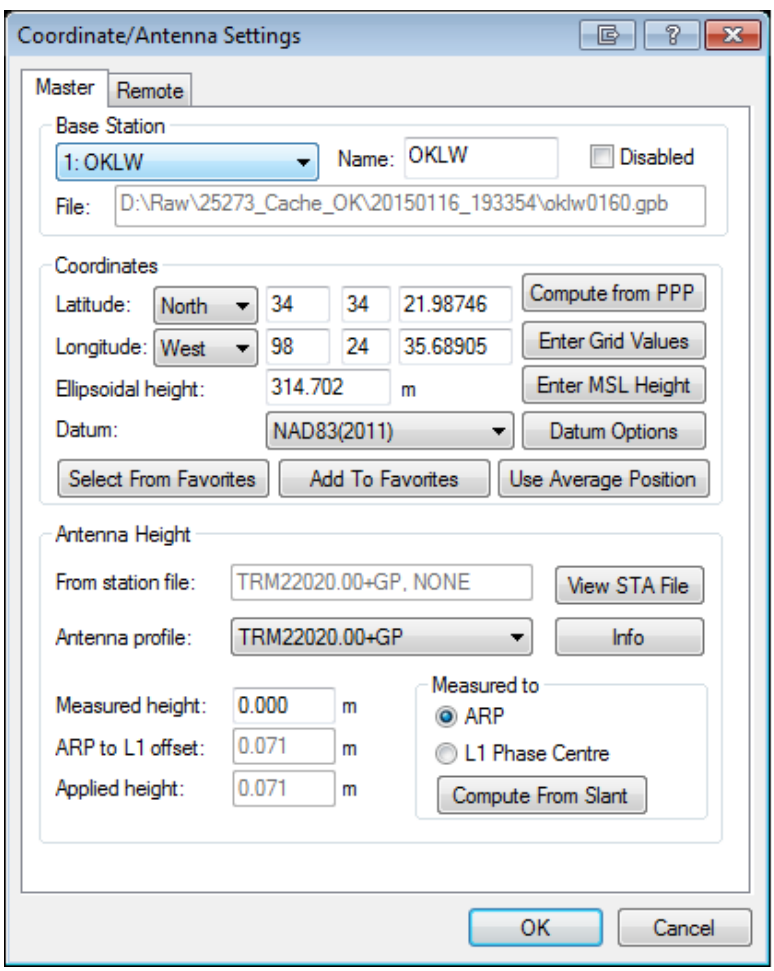

Num Sats
10
9
8
7
6
5
4
3
2
1
0
504000
Week 1827
506000
508000
510000
512000
514000
516000
518000
520000
522000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

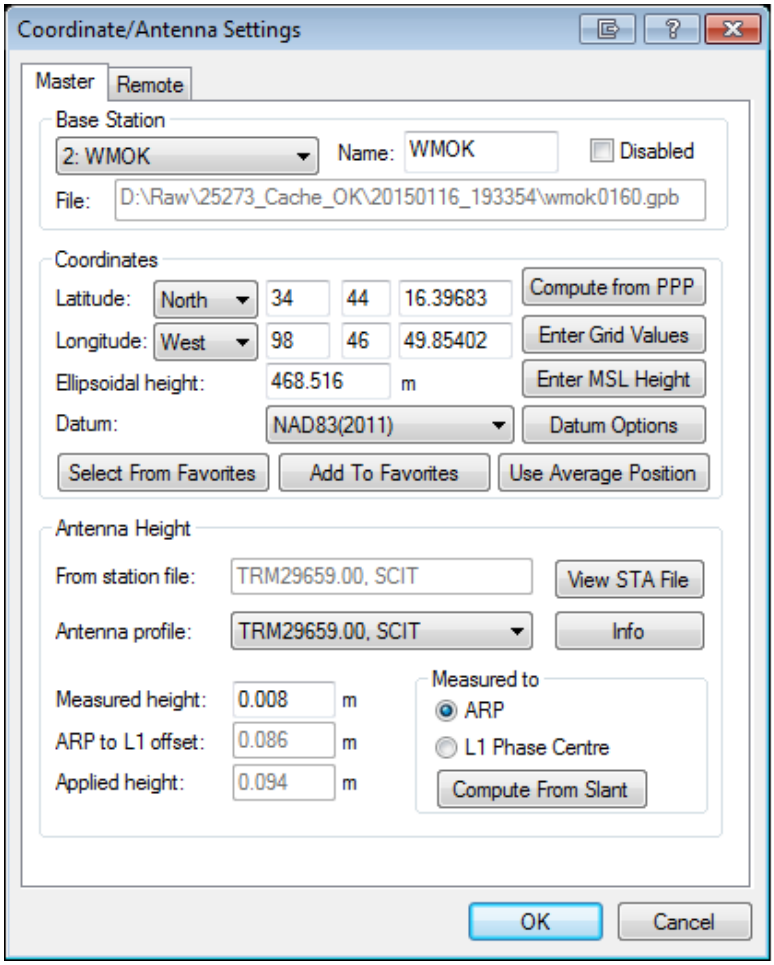

Separation (m)
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
504000
Week 1827
506000
508000
510000
512000
514000
516000
518000
520000
522000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
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
504000
Week 1827
506000
508000
510000
512000
514000
516000
518000
520000
522000
GPS Time (TOW, GMT zone)
PDOP


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
504000
Week 1827
506000
508000
510000
512000
514000
516000
518000
520000
522000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
504000
Week 1827
506000
508000
510000
512000
514000
516000
518000
520000
522000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\20150116_193354\oklw0160.gpb
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
2: WMOK
Name:
WMOK
Disabled
File:
D:\Raw\25273_Cache_OK\20150116_193354\wmok0160.gpb
Coordinates
Latitude:
North
34
44
16.39683
Compute from PPP
Longitude:
West
98
46
49.85402
Enter Grid Values
Ellipsoidal height:
468.516
m
Enter MSL Height
Datum:
NAD83(2011)
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM29659.00, SCIT
View STA File
Antenna profile:
TRM29659.00, SCIT
Info
Measured height:
0.008
m
ARP to L1 offset:
0.086
m
Applied height:
0.094
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

V01 1615A + B

MISSION: V 20150116_130923 | DATE: 1 / 16 / 2015 | LEICA ALS-70-SN7161 | DI 2

PILOT: Jacobson | OPERATOR: Iverson | AIRCRAFT: 73TM

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273		1027	N	152	53	40	187	1213	5712	1718	1727	18	
Cache		1028	S	151					5712	1729	1738		
		1029	N	149					5715	1741	1749		
		1030	S	152					5728	1752	1800		
		1031	N	150					5735	1803	1812		
	XF	[redacted]	E	150					5660	1818	1823		cross flight
											1845		Land CHK 5608.4 Hobbs
										1944			TakeOff CHK V011615B
		1032	N	155	53	40	187	1213	5735	2009	2017	18	-20150116_193354
		1033	S	155					5738	2020	2029		
		1034	N	153					5741	2031	2040		
		1035	S	151					5748	2044	2051		
		1036	N	150					5761	2053	2102		
		1037	S	155					5771	2104	2112		
		1038	N	155					5774	2115	2124		
		1039	S	148					5787	2127	2135		
		1040	N	152					5794	2138	2146		
		1041	S	155					5784	2149	2158		
		1042	N	153					5791	2200	2208		

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
○							1938	0109		
○						WX	V011615B			
○										

Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

V01 1615 B + C

MISSION: V 20150116_193354 | DATE: 1/16/2015 | LEICA ALS-70-SN7161 | DI 3

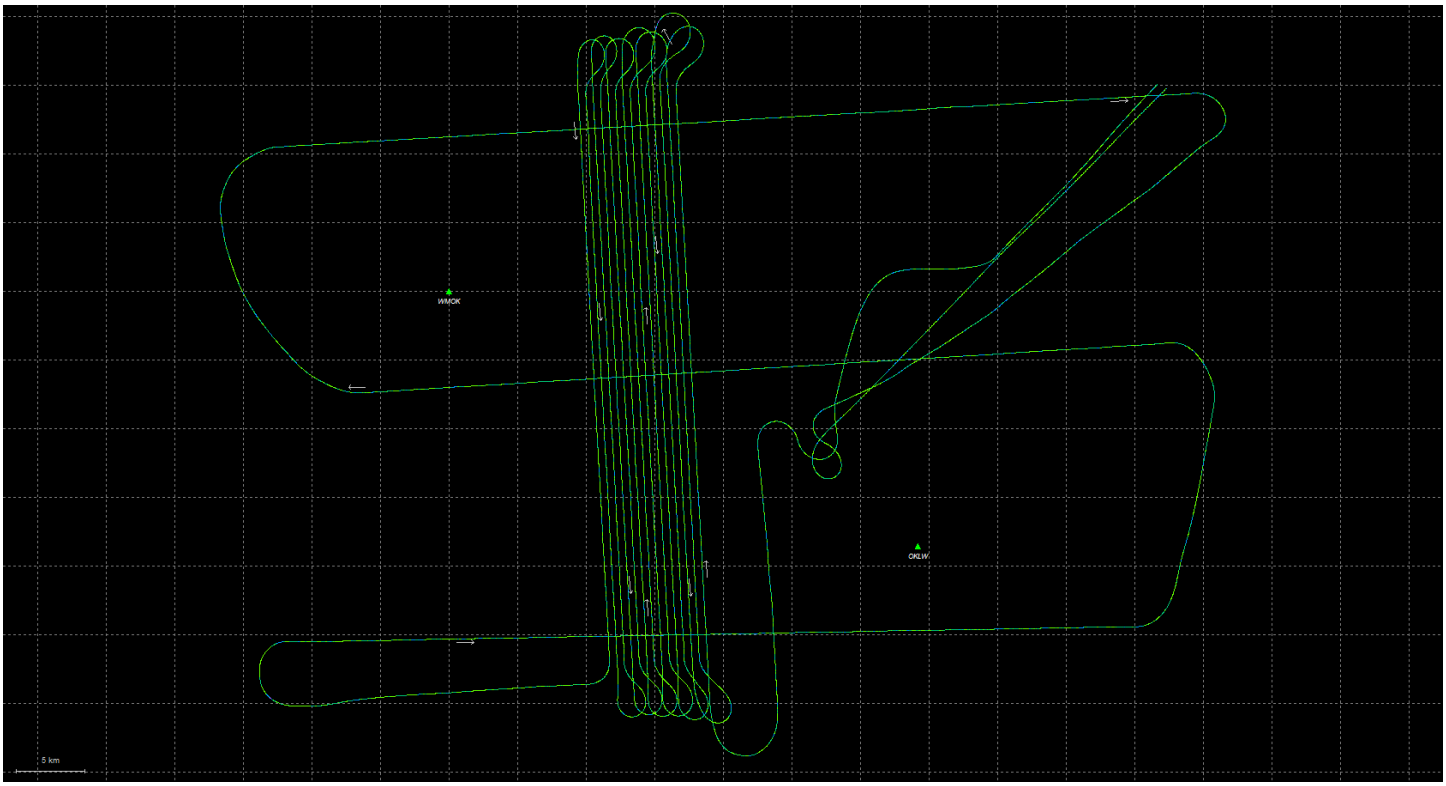
PILOT: Jacobson | OPERATOR: Iverson | AIRCRAFT: 73TM

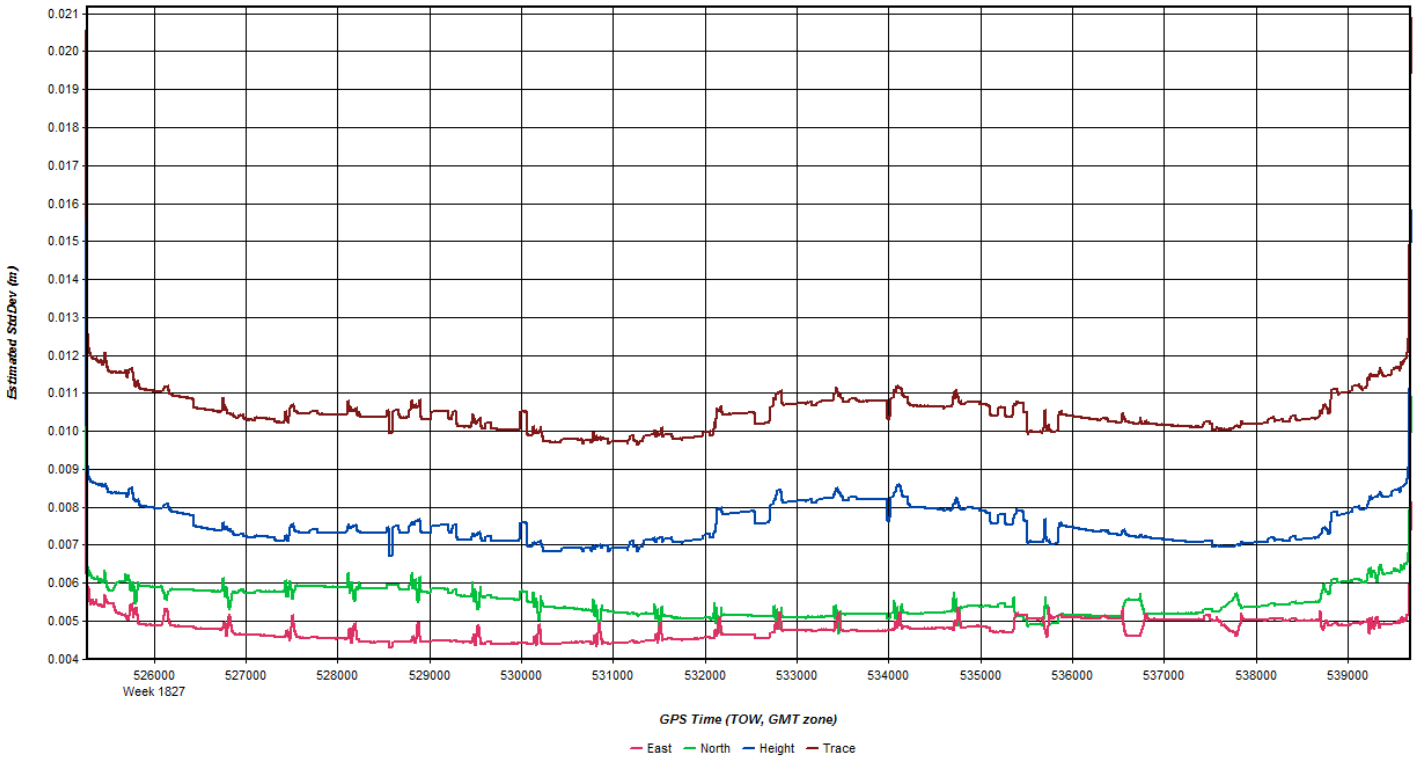
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273		1043	S	155	53	40	187	12/3	5787	2211	2219	18	
cache		1044	N	156					5801	2224	2231		
		1045	S	156					5791	2233	2242		
		1046	N	155					5778	2244	2253		
		1047	S	153					5787	2255	2304		
		1048	N	151					5781	2308	2316		
		1049	S	144					5790	2318	2327		
		1050	N	152					5804	2329	2337		
		1051	S	149					5814	2339	2349		
		1052	N	152					5797	2351	0000		
		1053	S	152					5784	0002	0010		
		1054	N	154					5784	0013	0022		
		1055	S	150					5784	0024	0033		
		XF	E	156					5765	0037	0042		crossflight
											0102		Land CHK 5613.7 Hobbs
										0145			Take OFF CHK
		1056	N	156					5781	0210	0218		– 20150117_013536
		1057	S	144					5791	0221	0230		
		1058	N	153					5794	0232	0241		

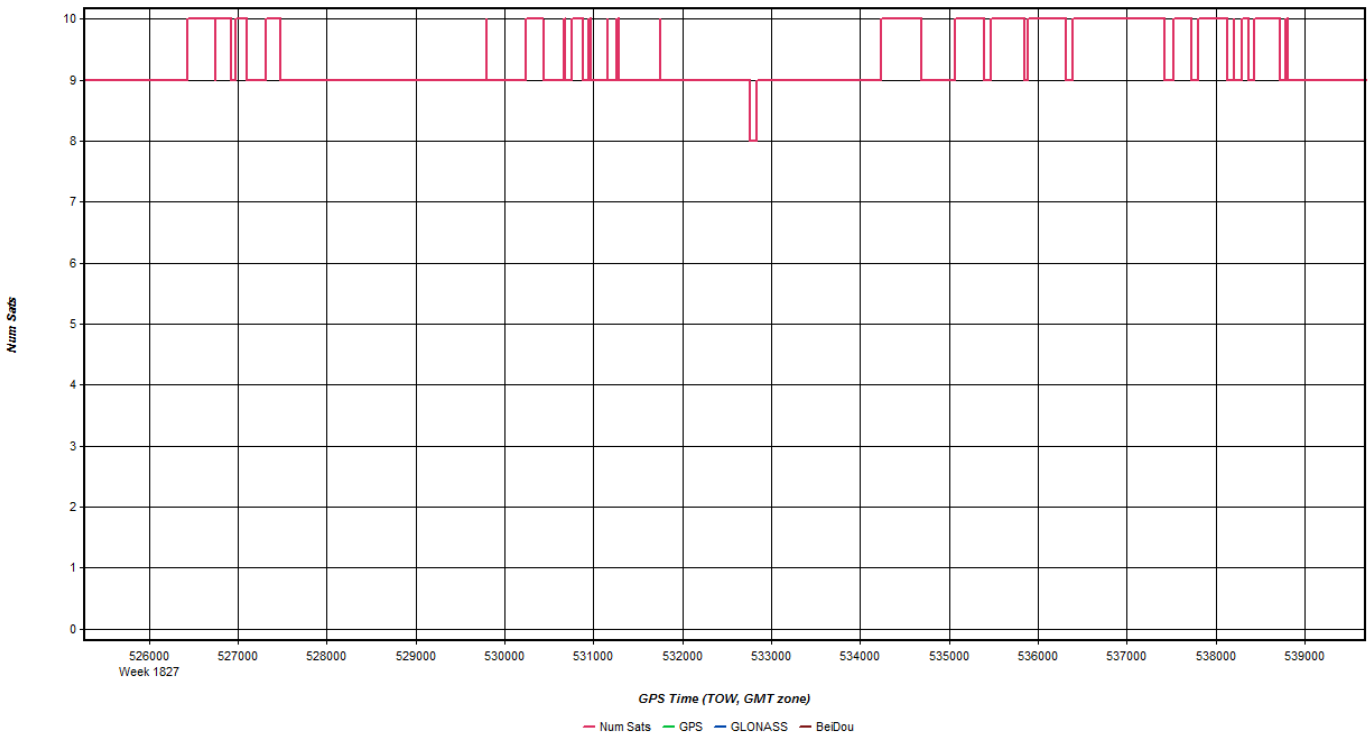
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
○						V011615 C	0139	0616		
○						WX				
○										

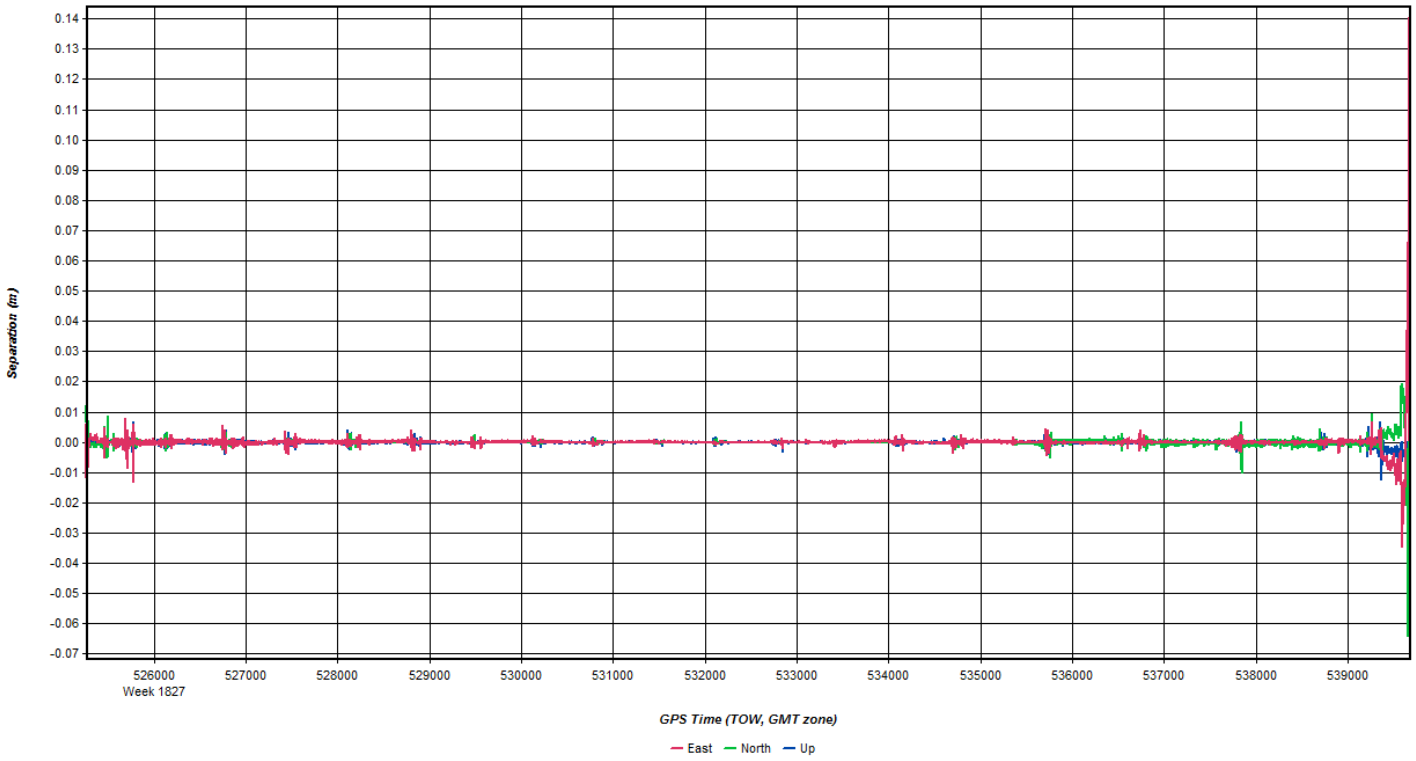
Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

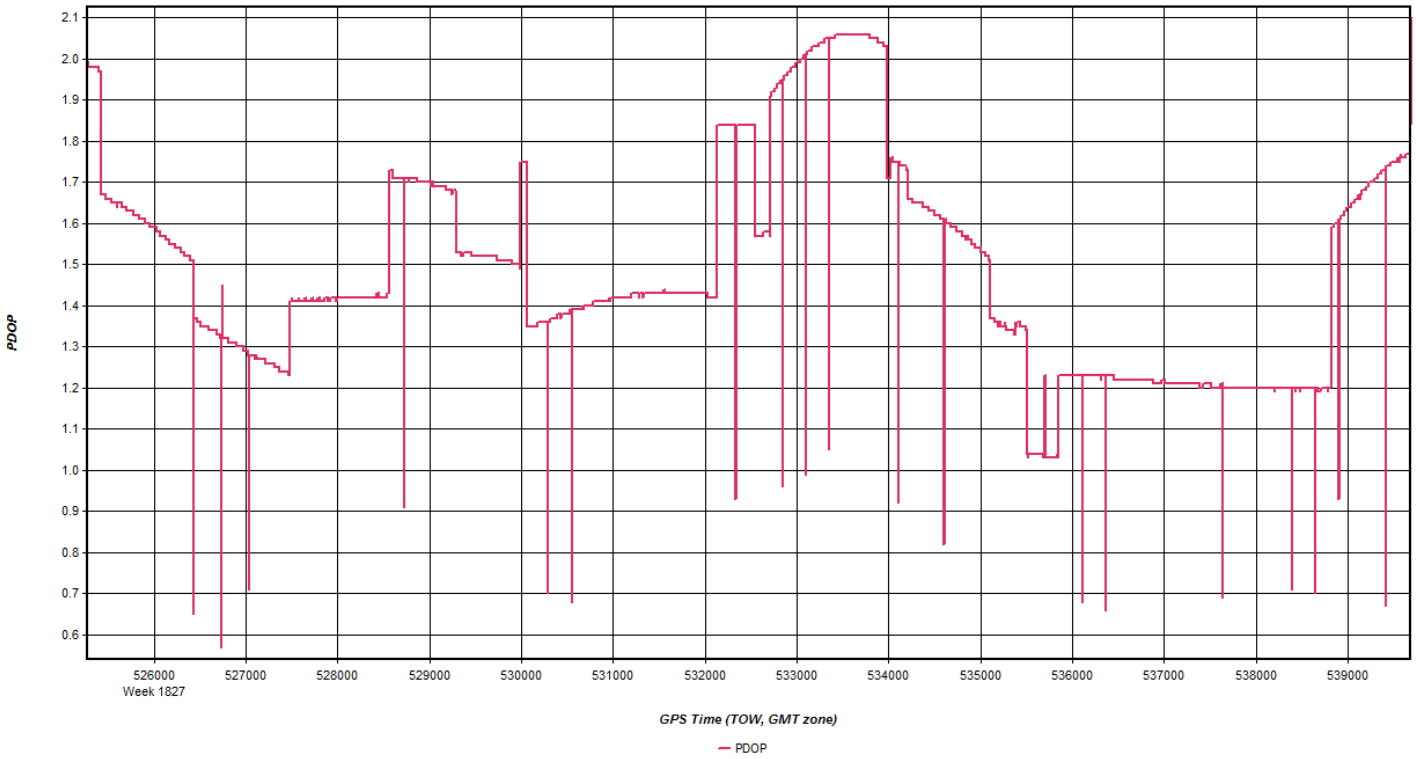
20150116C_7161

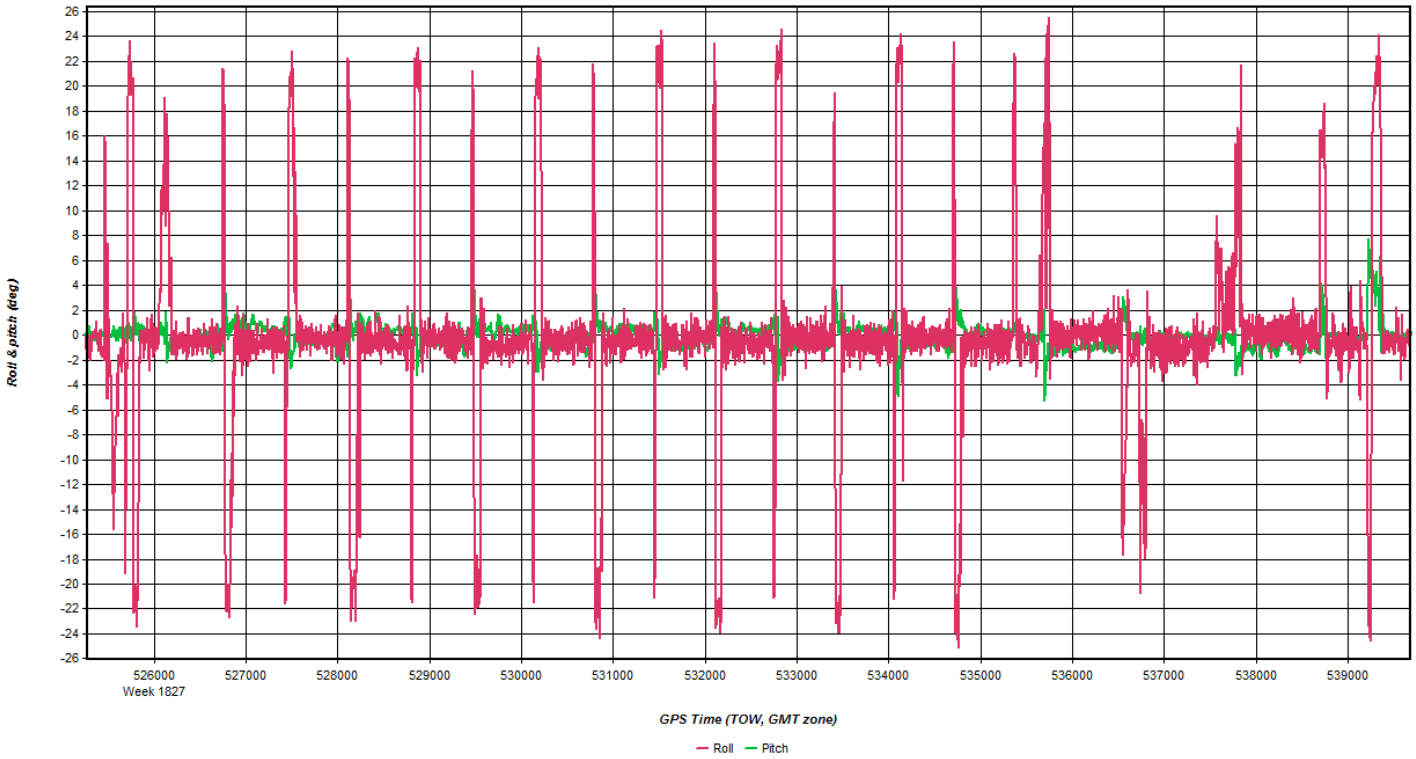

WMOK
CRLW
5 km

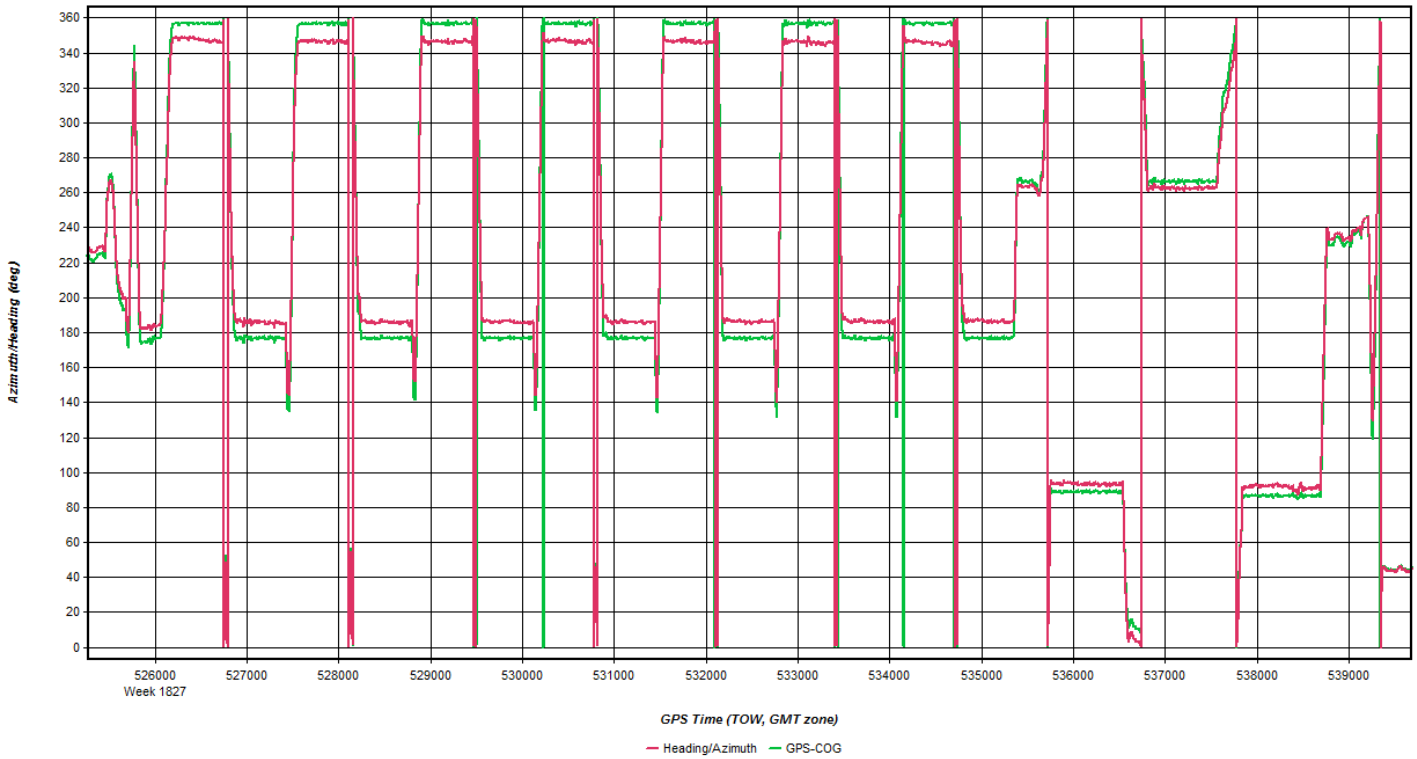

Estimated StdDev (m)
0.021
0.020
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.010
0.009
0.008
0.007
0.006
0.005
0.004
526000
Week 1827
527000
528000
529000
530000
531000
532000
533000
534000
535000
536000
537000
538000
539000
GPS Time (TOW, GMT zone)
East
North
Height
Trace

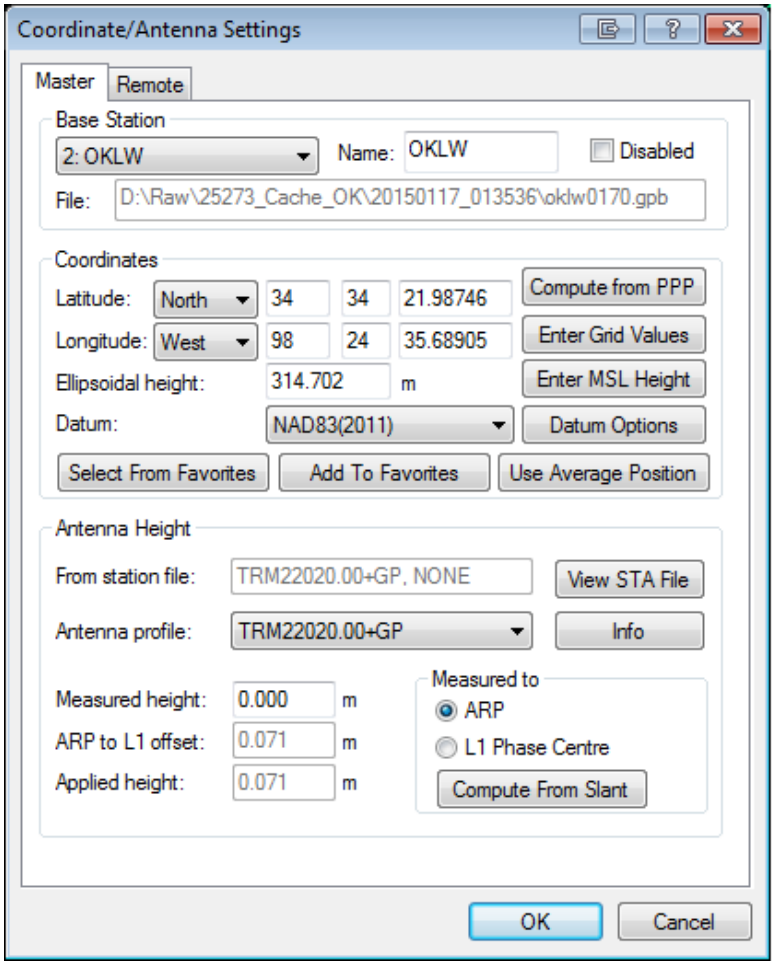

Num Sats
10
9
8
7
6
5
4
3
2
1
0
526000
Week 1827
527000
528000
529000
530000
531000
532000
533000
534000
535000
536000
537000
538000
539000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou

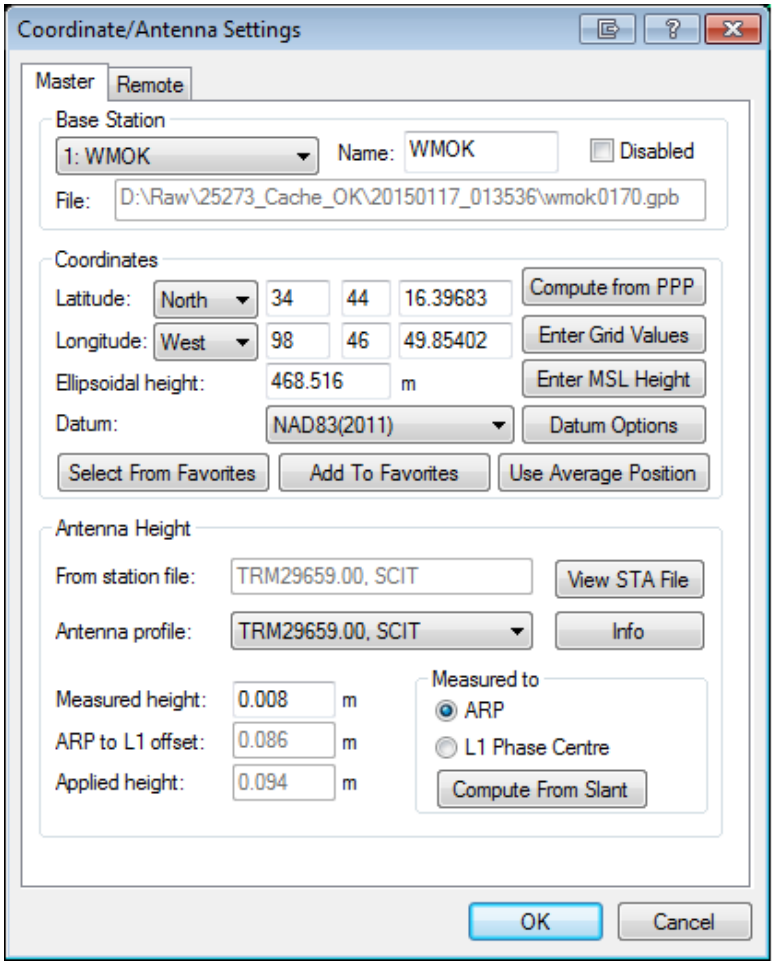

Separation (m)
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
526000
Week 1827
527000
528000
529000
530000
531000
532000
533000
534000
535000
536000
537000
538000
539000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
526000
Week 1827
527000
528000
529000
530000
531000
532000
533000
534000
535000
536000
537000
538000
539000
GPS Time (TOW, GMT zone)
PDOP


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
526000
Week 1827
527000
528000
529000
530000
531000
532000
533000
534000
535000
536000
537000
538000
539000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
526000
Week 1827
527000
528000
529000
530000
531000
532000
533000
534000
535000
536000
537000
538000
539000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
2: OKLW
Name: OKLW
Disabled
File: D:\Raw\25273_Cache_OK\20150117_013536\oklw0170.gpb
Coordinates
Latitude: North 34 34 21.98746
Longitude: West 98 24 35.68905
Ellipsoidal height: 314.702 m
Datum: NAD83(2011)
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: TRM22020.00+GP, NONE
View STA File
Antenna profile: TRM22020.00+GP
Info
Measured height: 0.000 m
ARP to L1 offset: 0.071 m
Applied height: 0.071 m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel


Coordinate/Antenna Settings
Master
Remote
Base Station
1: WMOK
Name:
WMOK
Disabled
File:
D:\Raw\25273_Cache_OK\20150117_013536\wmok0170.gpb
Coordinates
Latitude:
North
34
44
16.39683
Compute from PPP
Longitude:
West
98
46
49.85402
Enter Grid Values
Ellipsoidal height:
468.516
m
Enter MSL Height
Datum:
NAD83(2011)
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM29659.00, SCIT
View STA File
Antenna profile:
TRM29659.00, SCIT
Info
Measured height:
0.008
m
ARP to L1 offset:
0.086
m
Applied height:
0.094
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG

V01 1615 B + C

MISSION: V 20150116_193354 | DATE: 1/16/2015 | LEICA ALS-70-SN7161 | DI 3

PILOT: Jacobson | OPERATOR: Iverson | AIRCRAFT: 73TM

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273		1043	S	155	53	40	187	12/3	5787	2211	2219	18	
cache		1044	N	156					5801	2224	2231		
		1045	S	156					5791	2233	2242		
		1046	N	155					5778	2244	2253		
		1047	S	153					5787	2255	2304		
		1048	N	151					5781	2308	2316		
		1049	S	144					5790	2318	2327		
		1050	N	152					5804	2329	2337		
		1051	S	149					5814	2339	2349		
		1052	N	152					5797	2351	0000		
		1053	S	152					5784	0002	0010		
		1054	N	154					5784	0013	0022		
		1055	S	150					5784	0024	0033		
		XF	E	156					5765	0037	0042		crossflight
											0102		Land CHK 5613.7 Hobbs
										0145			Take OFF CHK
		1056	N	156					5781	0210	0218		– 20150117_013536
		1057	S	144					5791	0221	0230		
		1058	N	153					5794	0232	0241		

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
○						V011615 C	0139	0616		
○						WX				
○										

Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG V01 1615 C

MISSION: v 20150117_013536 | DATE: 1/16/2015 | LEICA ALS-70-SN7161 | DI 4

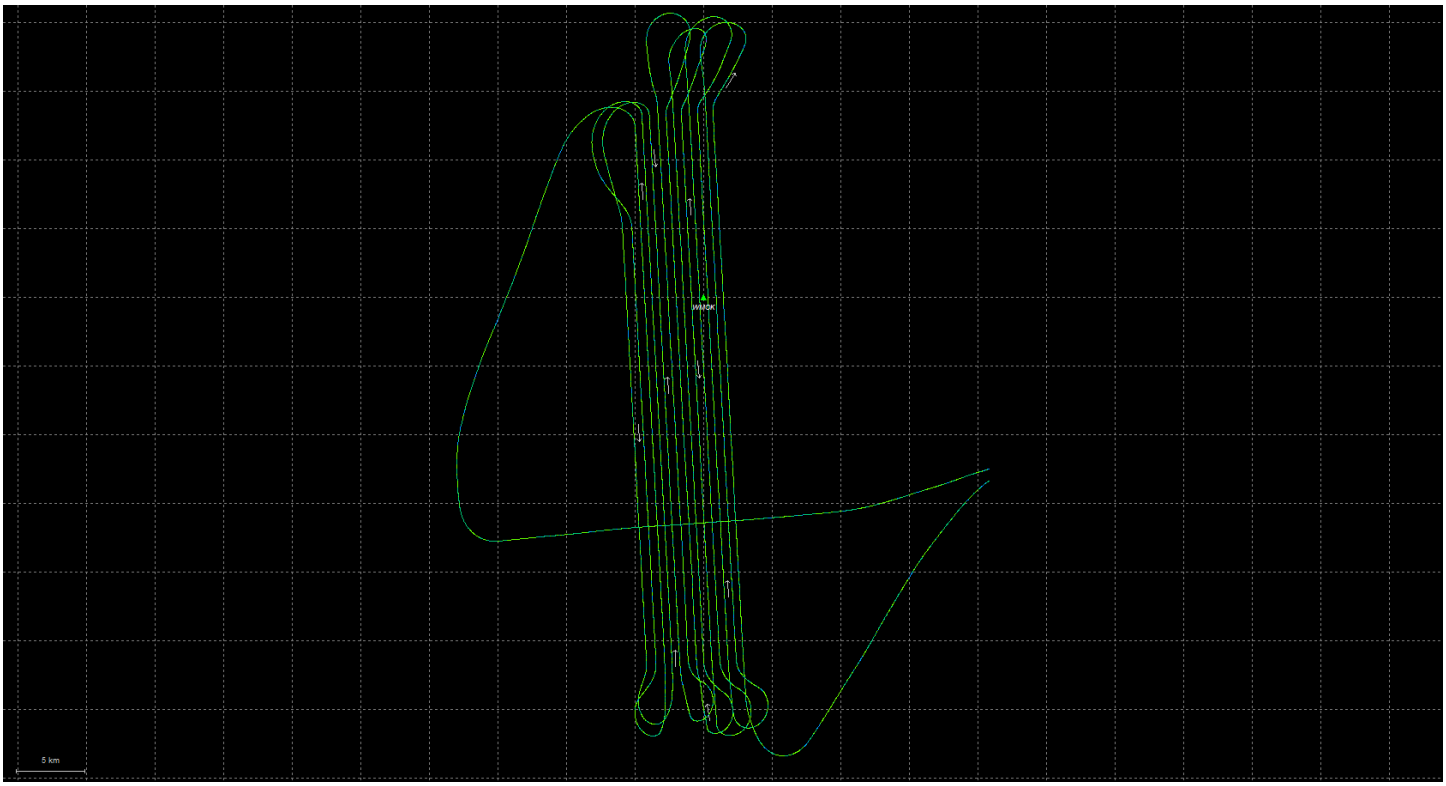
PILOT: Jacobson | OPERATOR: Iverson | AIRCRAFT: 73TM

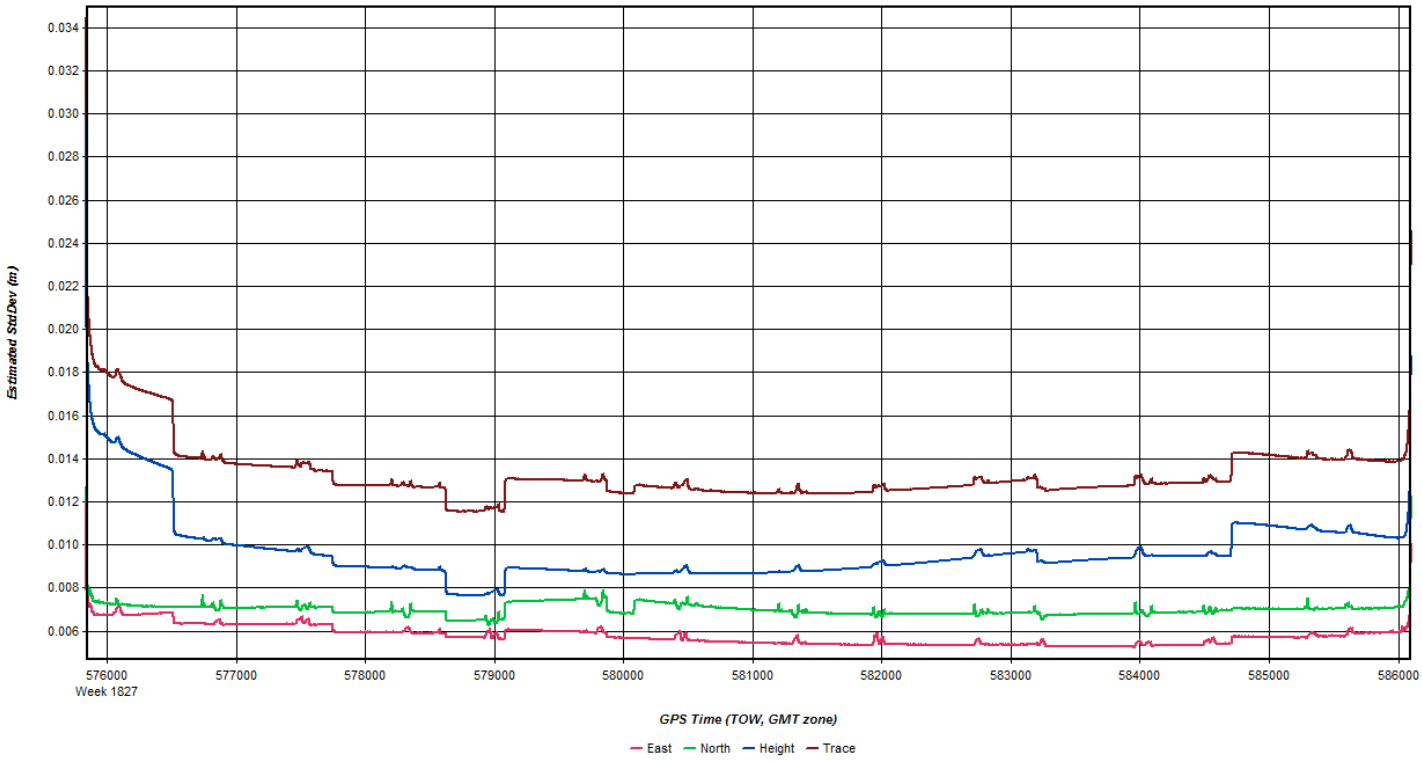
PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273		1059	S	146	53	40	187	12/3	5791	0244	0253	18	
Cache		1060	N	151					5794	0255	0304		
		1061	S	153					5791	0306	0315		
		1062	N	155					5794	0317	0326		
		1063	S	151					5800	0328	0337		
		1064	N	155					5801	0339	0347		
	1065	[redacted]	S	147					5801	0350	0358		
		1066	N	149					5814	0401	0409		
		1067	S	146					5814	0412	0420		
		1068	N	152					5823	0422	0431		
		1069	S	149					5833	0433	0442		
		1100	E	152					5708	0450	0502		
	1099	[redacted]	W	153					5801	0507	0519		
	1098	[redacted]	E	152					5902	0525	0537		
											0609		Land OKC [redacted]
													05618.1 Hobbs

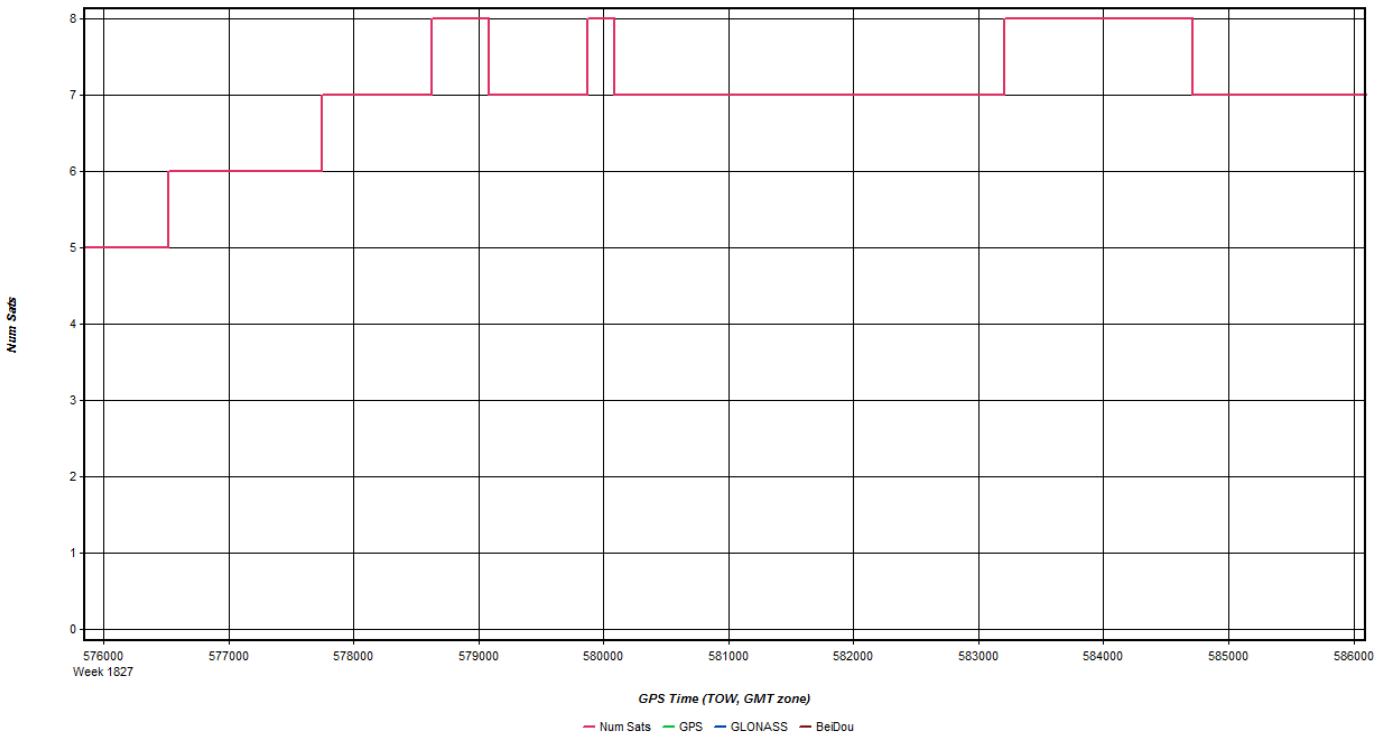
STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP		NOTES:
○										
○						WX				
○										

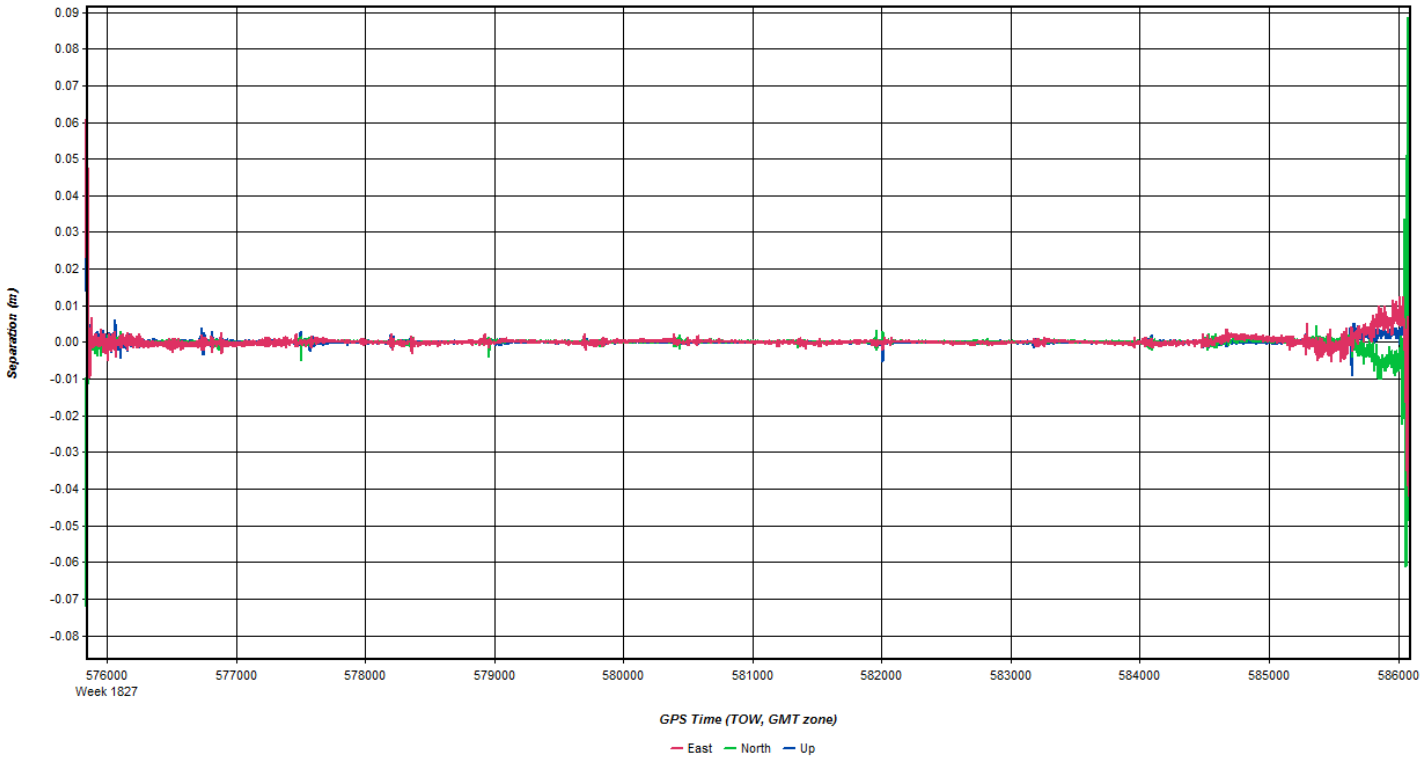
Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

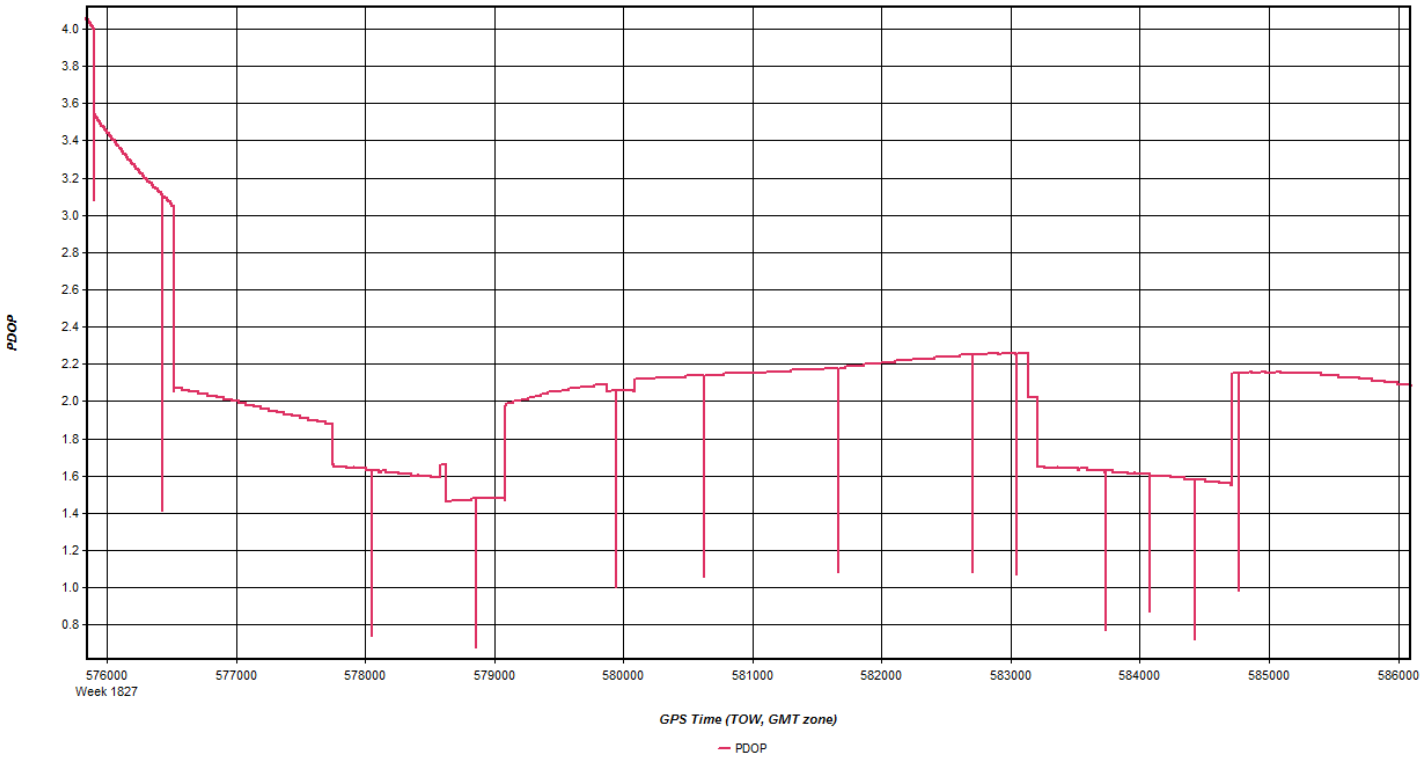
20150117A_7161

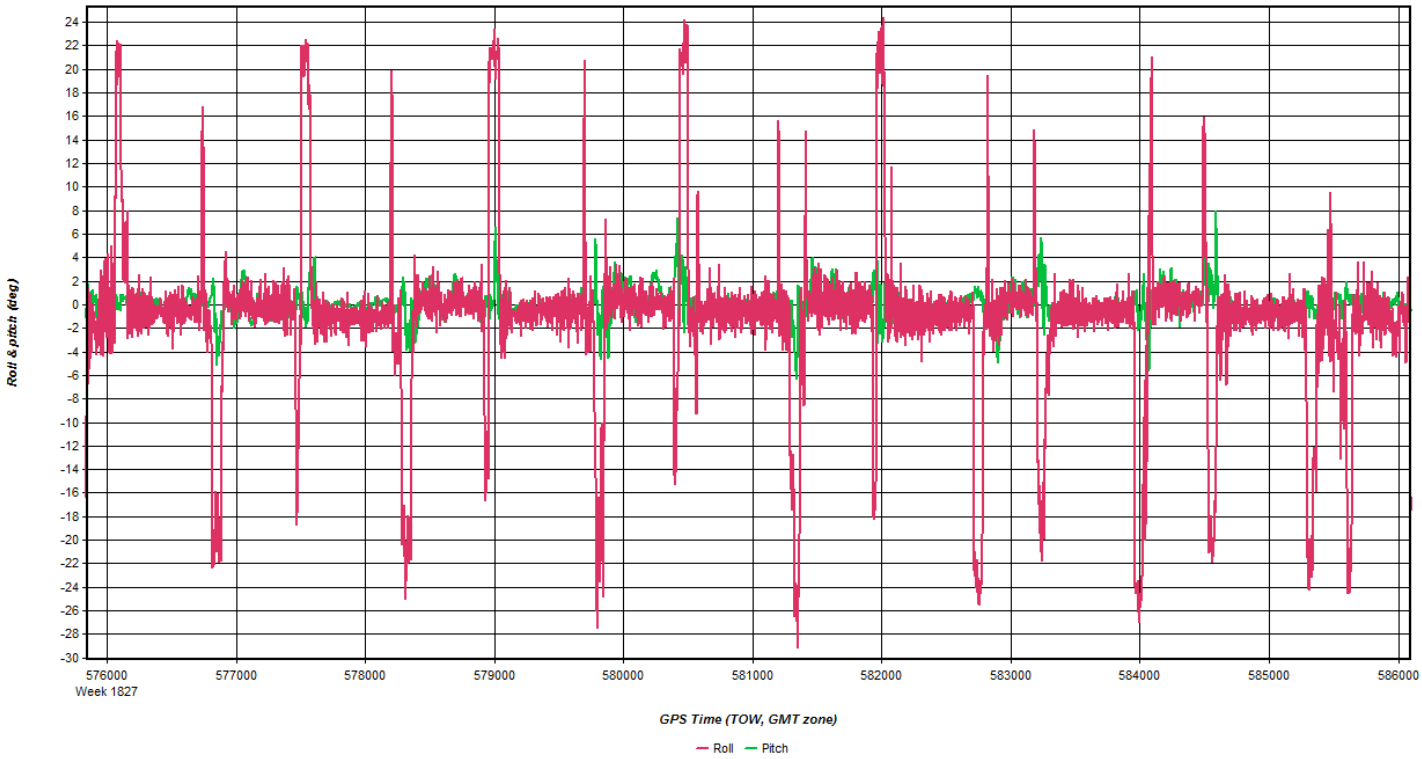

5 km


Estimated StdDev (m)
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
576000
Week 1827
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
GPS Time (TOW, GMT zone)
East
North
Height
Trace


Num Sats
8
7
6
5
4
3
2
1
0
576000
Week 1827
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
GPS Time (TOW, GMT zone)
Num Sats
GPS
GLONASS
BeiDou


Separation (m)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
576000
Week 1827
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
GPS Time (TOW, GMT zone)
East
North
Up


PDOP
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
576000
Week 1827
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
GPS Time (TOW, GMT zone)
PDOP


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
576000
Week 1827
577000
578000
579000
580000
581000
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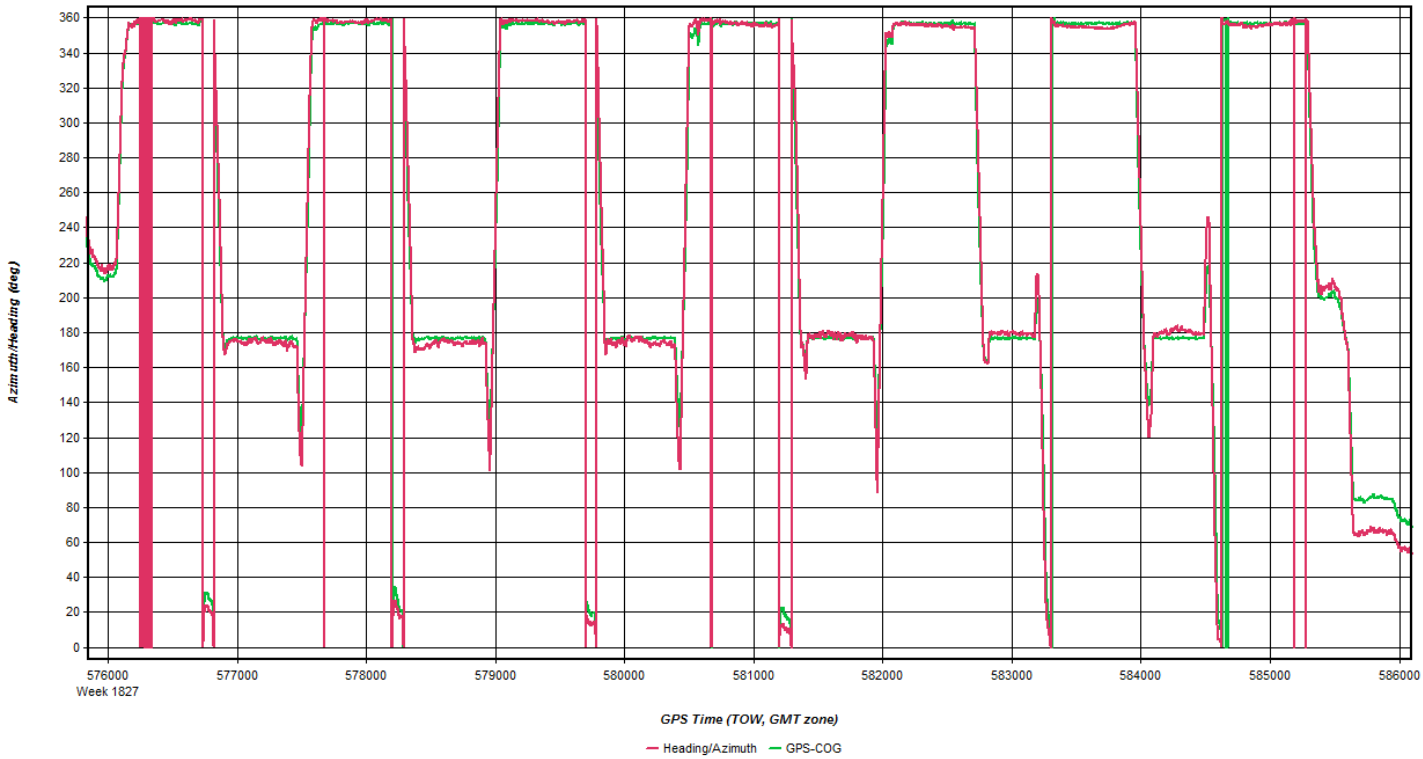
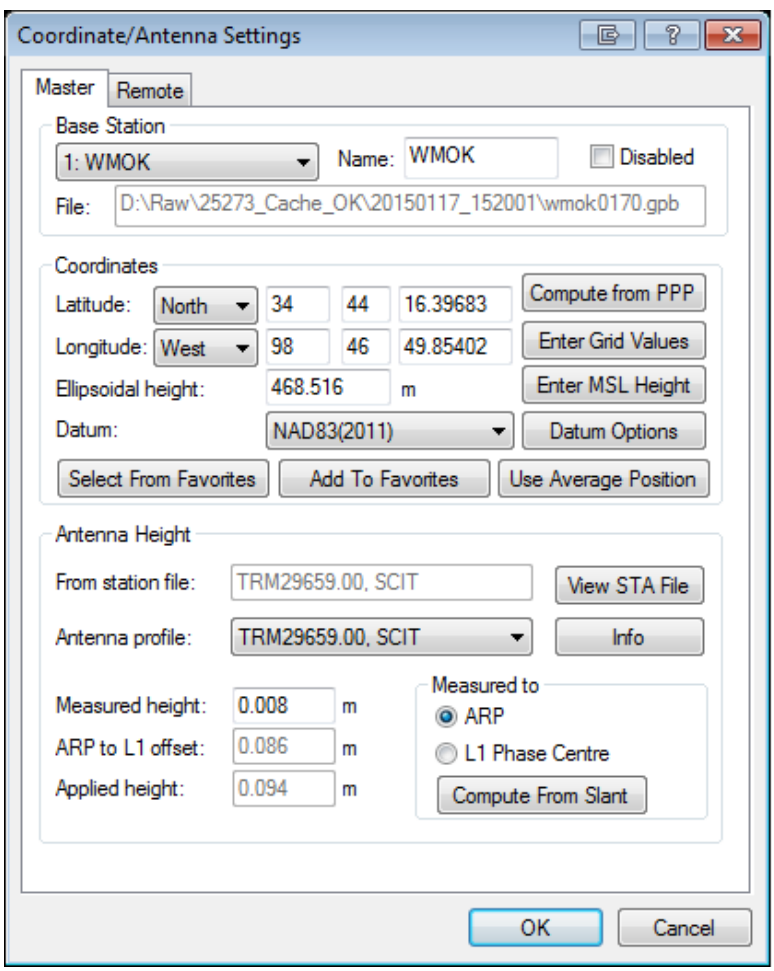
586000
GPS Time (TOW, GMT zone)
Roll
Pitch


Azimuth/Heading (deg)
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
576000
Week 1827
577000
578000
579000
580000
581000
582000
583000
584000
585000
586000
GPS Time (TOW, GMT zone)
Heading/Azimuth
GPS-COG


Coordinate/Antenna Settings
Master
Remote
Base Station
1: WMOK
Name:
WMOK
Disabled
File:
D:\Raw\25273_Cache_OK\20150117_152001\wmok0170.gpb
Coordinates
Latitude:
North
34
44
16.39683
Compute from PPP
Longitude:
West
98
46
49.85402
Enter Grid Values
Ellipsoidal height:
468.516
m
Enter MSL Height
Datum:
NAD83(2011)
Datum Options
Select From Favorites
Add To Favorites
Use Average Position
Antenna Height
From station file:
TRM29659.00, SCIT
View STA File
Antenna profile:
TRM29659.00, SCIT
Info
Measured height:
0.008
m
ARP to L1 offset:
0.086
m
Applied height:
0.094
m
Measured to
ARP
L1 Phase Centre
Compute From Slant
OK
Cancel

Flight Log

YYYYMMDD_TIME(GPS)

OPERATORS FLIGHT LOG V01 1715A

MISSION: V 20150117_152001 | DATE: 1/17/2015 | LEICA ALS-70-SN7161 | DI 1

PILOT: Jacobson | OPERATOR: Iverson | AIRCRAFT: 73TM

PROJECT NUMBER AND NAME	LINE No.	LINE Lbl	LINE Hdg	GND SPEED (KTS)	FREQ Hz	SCAN ANGLE	PRF kHz	FIXED GAIN	Flying Ht. (ft)	TIME START	TIME STOP	MM70 DRIVE	REMARKS (MPiA-Disabled/Enabled) (WF Settings)
25273					53	40	187	12/3		1531		18	Take OFF OKC 5618.1 Hobbs
cache, OK		1085	N	151					5883	1603	1612		bumpy
		1086	S	155					5879	1615	1624		
		1087	N	146					5879	1627	1636		
		1088	S	154					5876	1640	1648		
		1089	N	132					5883	1651	1701		
		1090	S	160					5892	1704	1712		
		1091	N	130					5899	1716	1726		bumpier
		1092	S	160					5902	1730	1738		
		1093	N	119					5889	1741	1752		
		1097	S	150					5869	1756	1759		
		1094	N	132					5883	1802	1812		
		1096	S	156					5866	1815	1821		
		1095	N	128					5869	1824	1834		
		XF	E	154					5930	184	1845		crossflight
											1925		Land ADA, OK 5622.0 Hobbs
										1956			Take OFF ADA, OK
											2302		Land Habersham, GA 5625.1 Hobbs
													Take OFF Habersham, GA

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START	STOP	NOTES:
⊗ 25273		13	Ø	2.8	1		1523	1931	
○ [redacted]						WX bumpy			
○									QSI-4W2J

Quantumspatial, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 888-253-6695** E-Mail: flight-log-distribution-list@aerometric.com

Appendix B
Survey Report

February 10, 2015

Field Survey Report of LiDAR Ground Control & QC Points

TO# 55 – FEMA R6 OK Cache QL2 LiDAR
USGS Contract: G10PC00026
USGS Task Order: G14PD01095
Photo Science Project No. 25273

1400 Independence Road
Rolla, Missouri 65401

Presented by

A Quantum Spatial Company

1410 Indian Trail Road
Norcross, Georgia 30093
770-564-9843

Contents of Report

Project Procedure Summary

Project Description

Photo Science, a Quantum Spatial company, was contracted by U.S. Geological Survey (USGS) under task order number G14PD01095 to field survey LiDAR calibration control points and quality control points in support of TO# 55 – FEMA R6 OK Cache QL2 LiDAR. There are 31 calibration points throughout the project area. There are 40 quality control points located within each of bare earth and tall weeds land classes throughout the project area. An additional 20 quality control points are located within the forest land class for a total of 100 quality control points.

Field Procedure

All field work was accomplished from December 1st, 2014 - January 4th, 2015. A RTK GPS survey was performed using a combination of up to three Leica GS15 GNSS receivers. Static baselines were also computed between base stations and/or CORS stations at selected locations within the AOI to strengthen the network. Each quality control point was set on a flat surface at least five meters away from any significant elevation change. Each point determined by RTK was observed twice from a minimum of two different base stations for total of at least four observations per point. Data sheets for each point were filled out with information including point type, general location, occupation time, equipment used, and photographs. Final coordinates, point ties, and RMSE values were filled in after the post processed network adjustment.

Office Procedure

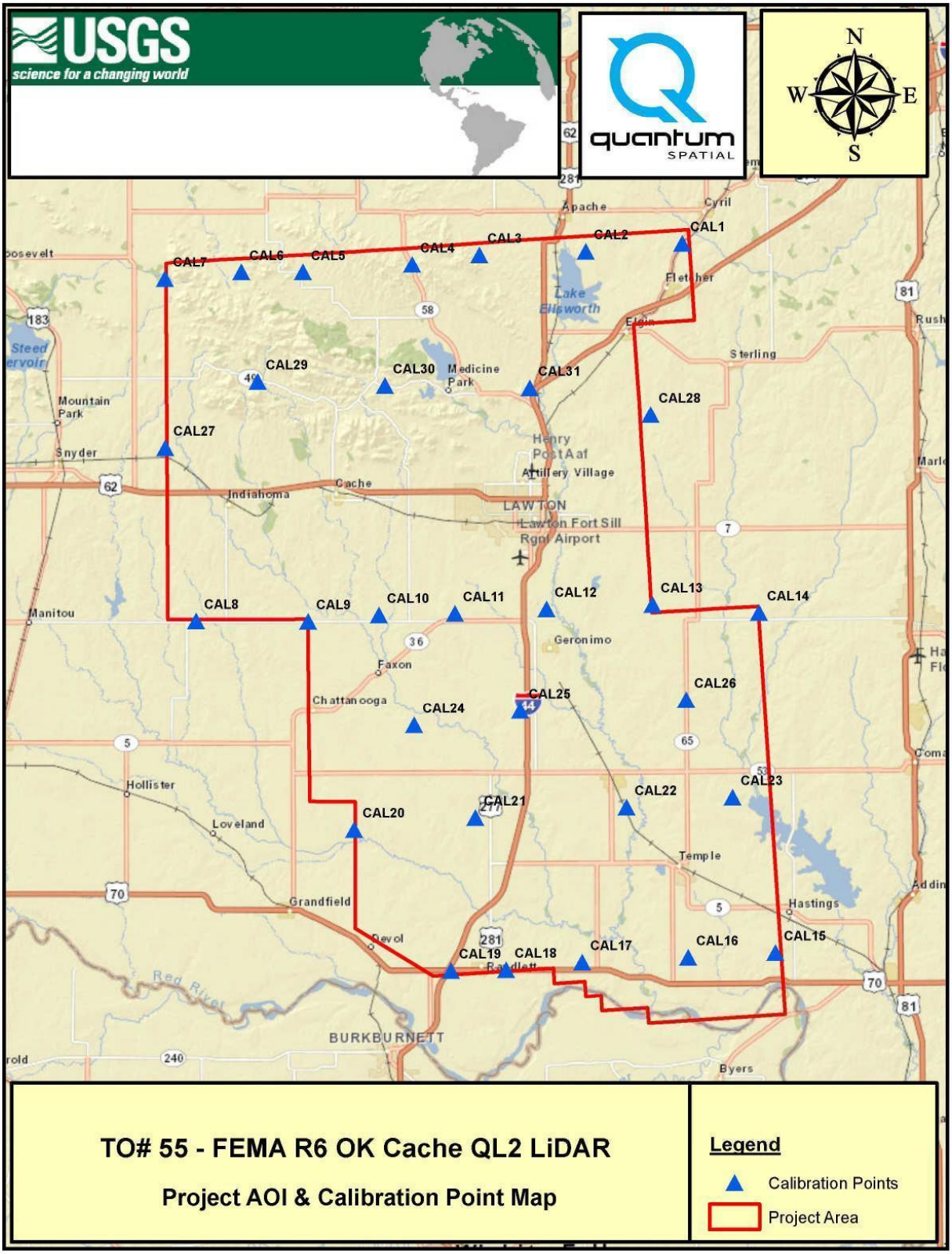
Upon completion of the field survey, the observations were input into Leica Geo Office (LGO) and CORS information was downloaded from NGS. Static baselines were computed between RTK base stations that shared common time and also with CORS stations in select areas. All baselines (with covariance matrixes) were output from LGO and input into Bitwise GeoLab for least square network adjustments. A minimum constrained adjustment was performed to determine network quality and misclosures to NGS NSRS control. The final network adjustment was run constraining to the CORS and NGS NSRS control to derive the final coordinate values.

Reporting Procedure

The North American Datum of 1983 (NAD83 (2011)), UTM Zone 14N projection was used for reporting the horizontal coordinates in meters. The vertical elevations are North American Vertical Datum of 1988 (NAVD 88) utilizing the GEOID12A model and are reported in meters.

The Horizontal RMSE at the 95% confidence level is 0.020 meter.
The Elevation RMSE at the 95% confidence level is 0.037 meter.
The 3-Dimensional RMSE at the 95% confidence level is 0.042 meter.

Project AOI & Point Maps


USGS
science for a changing world
quantum SPATIAL
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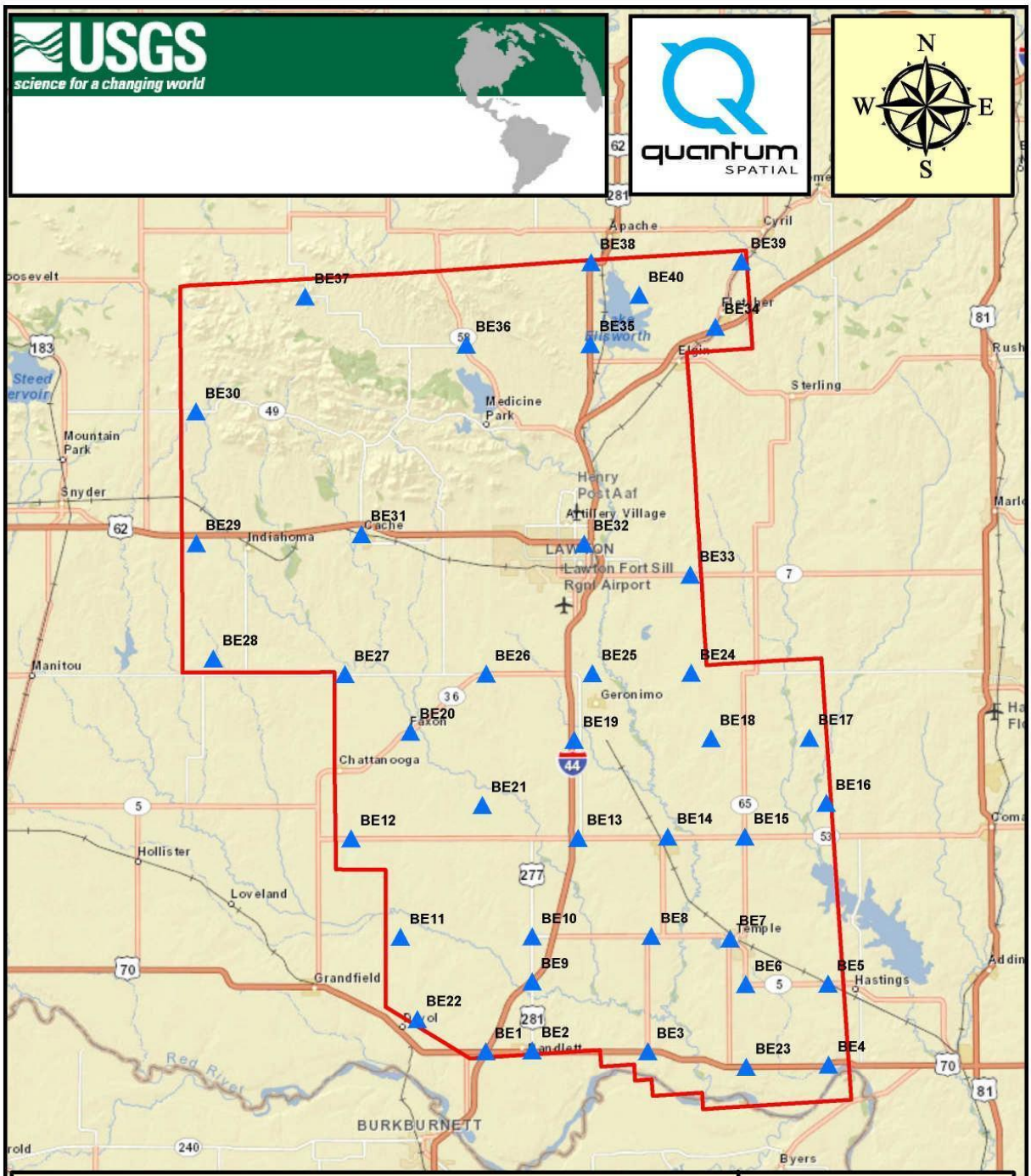
Apache
Cyril
Fletcher
Lake Ellsworth
Sterling
Medicine Park
Mountain Park
Snyder
Henry Post Aaf Artillery Village
Indiahoma
Cache
LAWTON
Lawton Fort Sill Rgnl Airport
Manitou
Geronimo
Faxon
Chattanooga
Hollister
Loveland
Temple
Grandfield
Hastings
Gevol
Randlett
BURKBURNETT
Byers
Red River
TO# 55 - FEMA R6 OK Cache QL2 LiDAR
Project AOI & Calibration Point Map
Legend
Calibration Points
Project Area

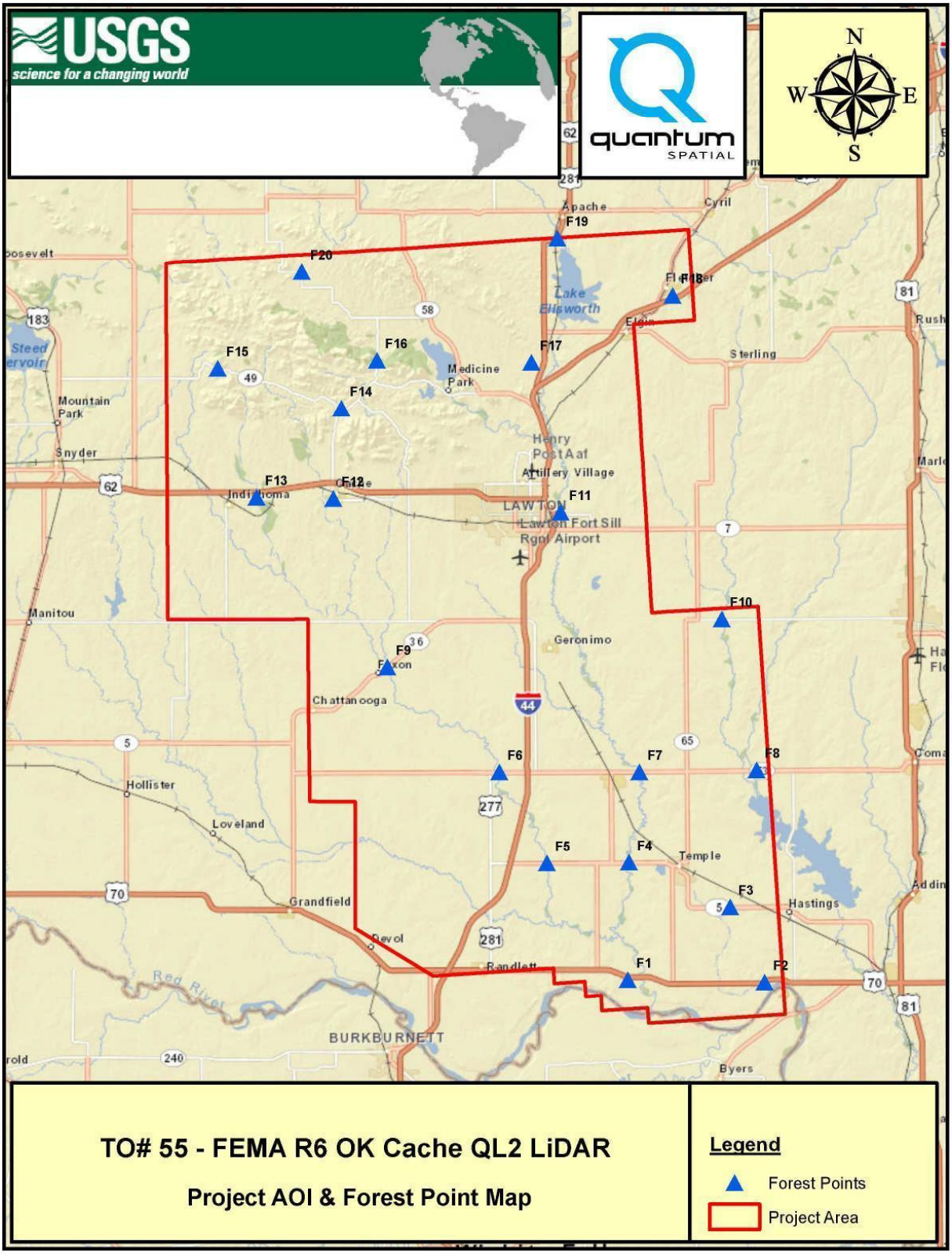


TO# 55 - FEMA R6 OK Cache QL2 LiDAR

Project AOI & Bare Earth Point Map

Legend

- Bare Earth Points
- Project Area


USGS
science for a changing world
quantum
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F15
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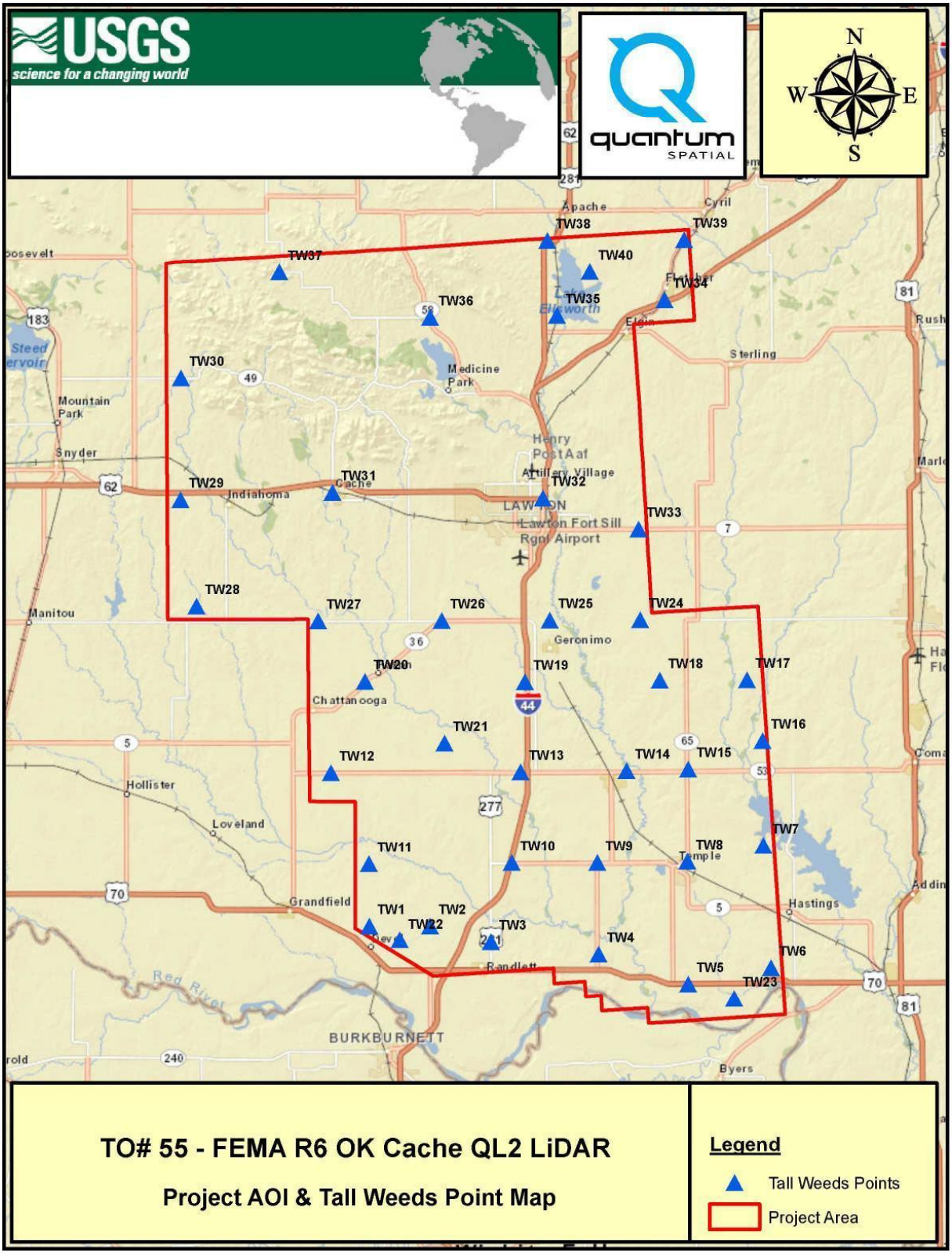
F17
F18
F19
F20
Apache
Cyril
Lake Ellsworth
Elgin
Sterling
Medicine Park
Mountain Park
Snyder
Henry Post Aaf
Artillery Village
LAWTON
Lawton Fort Sill Rgnl Airport
Indiahoma
Manitou
Geronimo
Chattanooga
Hollister
Loveland
Grandfield
Temple
Hastings
Randlett
Byers
BURKBURNETT
Red River
Steed Reservoir
TO# 55 - FEMA R6 OK Cache QL2 LiDAR
Project AOI & Forest Point Map
Legend
Forest Points
Project Area


USGS
science for a changing world
quantum SPATIAL
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Apache
Cyril
Sterling
Medicine Park
Mountain Park
Snyder
Indiahoma
Cache
Henry Post Aaf
Artillery Village
LAWTON
Lawton Fort Sill Rgnl Airport
Manitou
Geronimo
Chattanooga
Hollister
Loveland
Grandfield
Temple
Hastings
Randlett
Byers
BURKBURNETT
Red River
Steed Reservoir
Elgin
Flower
Rush
Marl
Coma
Addin
TO# 55 - FEMA R6 OK Cache QL2 LiDAR
Project AOI & Tall Weeds Point Map
Legend
Tall Weeds Points
Project Area

Final Point Coordinates

Calibration Point Coordinates

Horizontal Datum - NAD83(2011)
UTM Zone 14 North
Vertical Datum - NAVD 88
Geoid - GEOID12A
Units – Meters

POINT_ID	Northing	Easting	Elevation
CAL10	538523.599	3819140.965	338.335
CAL11	546585.178	3819287.163	343.876
CAL12	556257.570	3819778.152	316.272
CAL13	567487.320	3820249.158	332.949
CAL14	578744.052	3819373.306	337.750
CAL15	580510.784	3783381.783	289.012
CAL16	571269.961	3782863.154	286.470
CAL17	560042.972	3782340.404	294.920
CAL18	552014.354	3781562.398	312.982
CAL19	546151.221	3781454.961	320.738
CAL20	535928.794	3796399.650	315.065
CAL21	548761.700	3797656.668	319.764
CAL22	564749.039	3798759.080	301.741
CAL23	575963.746	3799837.003	314.890
CAL24	542277.426	3807493.381	334.281
CAL25	553493.102	3809009.443	325.296
CAL26	571059.803	3810142.021	331.283
CAL27	515917.955	3836776.236	431.661
CAL28	567291.299	3840316.342	352.784
CAL29	525717.390	3843827.181	515.343
CAL30	539159.365	3843404.677	488.826
CAL31	554516.952	3843136.905	360.231

Bare Earth Point Coordinates

Horizontal Datum - NAD83(2011)
UTM Zone 14 North
Vertical Datum - NAVD 88
Geoid - GEOID12A
Units – Meters

POINT_ID	Northing	Easting	Elevation
BE1	545830.135	3781563.268	319.645
BE2	550379.201	3781675.971	312.721
BE3	561674.710	3781599.500	302.503
BE4	579336.466	3780262.668	273.008
BE5	579283.465	3788181.915	311.686
BE6	571245.243	3788128.357	293.311
BE7	569711.588	3792576.797	305.976
BE8	562035.870	3792855.172	301.983
BE9	550356.574	3788400.786	298.665
BE10	550390.274	3792813.432	314.281
BE11	537508.415	3792756.376	316.684
BE12	532681.120	3802401.027	322.944
BE13	554846.753	3802449.693	316.438
BE14	563642.834	3802572.454	299.061
BE15	571149.381	3802561.070	325.107
BE16	579137.044	3805879.627	312.042
BE17	577459.146	3812264.285	321.808
BE18	567849.928	3812219.717	333.152
BE19	554469.101	3812080.218	325.985
BE20	538479.852	3812871.858	338.128
BE21	545490.472	3805676.851	320.367
BE22	539143.887	3784702.936	324.485
BE23	571290.884	3780039.000	287.135
BE24	565898.467	3818649.727	337.286
BE25	556249.688	3818583.805	327.303
BE26	545866.233	3818531.175	353.039
BE27	532074.961	3818495.935	356.541
BE28	519210.061	3820046.447	382.641
BE29	517556.119	3831296.054	403.519

BE30	517509.225	3844178.471	484.379
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BE33	565843.941	3828238.466	369.452
BE34	568261.562	3852413.314	418.917
BE35	556052.706	3850712.701	388.113
BE36	543945.685	3850666.030	437.526
BE37	528192.438	3855390.417	523.314
BE38	556118.901	3858773.991	388.876
BE39	570818.384	3858850.382	411.600
BE40	560846.190	3855530.565	381.935

Forest Point Coordinates

Horizontal Datum - NAD83(2011)
UTM Zone 14 North
Vertical Datum - NAVD 88
Geoid - GEOID12A
Units – Meters

POINT_ID	Northing	Easting	Elevation
F1	564874.833	3780468.288	272.171
F2	579370.468	3780245.178	269.043
F3	575700.427	3788173.343	283.245
F4	564978.081	3792935.937	283.861
F5	556299.016	3792867.101	290.581
F6	551275.913	3802512.317	303.359
F7	566097.229	3802515.874	294.569
F8	578484.639	3802724.205	293.004
F9	539447.690	3813618.386	327.925
F10	574807.288	3818692.290	310.418
F11	557777.892	3830025.278	326.788
F12	533693.265	3831454.677	379.732
F13	525601.620	3831567.473	391.380
F14	534551.370	3840988.348	450.802
F15	521499.955	3845199.002	545.632
F16	538315.364	3846045.534	482.814
F17	554661.869	3845869.979	362.800
F18	569594.289	3852936.089	410.269
F19	557440.106	3858997.739	377.659
F20	530390.333	3855467.375	518.745

Tall Weeds Point Coordinates

Horizontal Datum - NAD83(2011)
UTM Zone 14 North
Vertical Datum - NAVD 88
Geoid - GEOID12A
Units – Meters

POINT_ID	Northing	Easting	Elevation
TW1	537515.151	3786144.995	334.967
TW2	543966.919	3786161.781	306.184
TW3	550380.613	3784511.932	312.320
TW4	561800.121	3783197.910	281.870
TW5	571284.538	3780017.061	286.935
TW6	580017.810	3781773.309	303.813
TW7	579226.091	3794730.502	292.788
TW8	571196.810	3793000.435	307.525
TW9	561644.968	3792880.711	297.706
TW10	552577.669	3792876.351	306.522
TW11	537483.093	3792758.974	317.131
TW12	533470.845	3802408.493	335.607
TW13	553534.977	3802488.560	320.205
TW14	564740.029	3802639.136	301.984
TW15	571250.214	3802780.749	324.251
TW16	579119.724	3805792.791	311.118
TW17	577470.614	3812267.165	322.444
TW18	568259.149	3812227.619	338.060
TW19	553998.862	3812082.014	327.728
TW20	537074.045	3812089.139	336.954
TW21	545477.458	3805533.703	318.344
TW22	540753.230	3784699.227	324.892
TW23	576120.123	3778498.096	267.303
TW24	566192.356	3818641.483	336.317
TW25	556619.936	3818572.566	323.804
TW26	545182.297	3818538.470	350.040
TW27	532092.426	3818508.325	356.190
TW28	519223.128	3820049.394	382.525
TW29	517529.621	3831319.450	404.036

TW30	517579.184	3844184.534	484.510
TW31	533646.868	3832075.199	384.311
TW32	555875.818	3831506.034	346.108
TW33	565993.430	3828238.537	373.093
TW34	568775.530	3852443.787	408.261
TW35	557374.405	3850786.622	378.633
TW36	543964.412	3850605.597	435.634
TW37	527994.494	3855402.491	519.442
TW38	556361.719	3858743.327	389.792
TW39	570844.436	3858827.447	410.728
TW40	560850.383	3855460.526	381.146

Point Location & Quality Data Sheets

Calibration Point Data Sheets

Point ID	CAL1
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3858482.211	570625.129	410.521

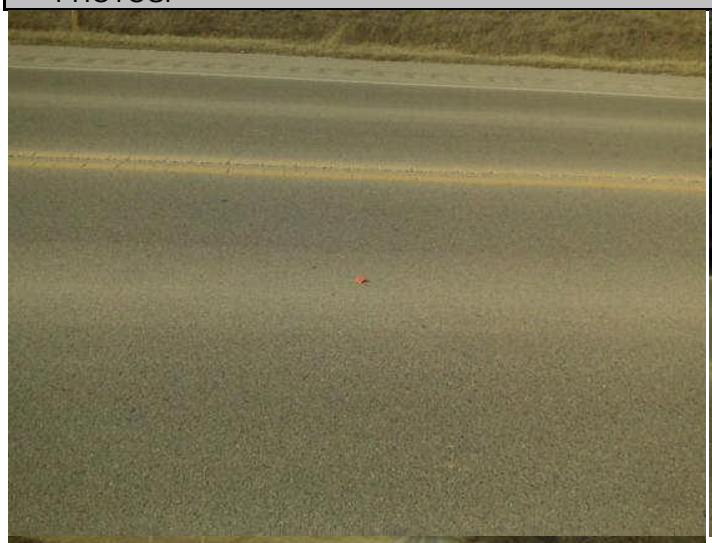
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

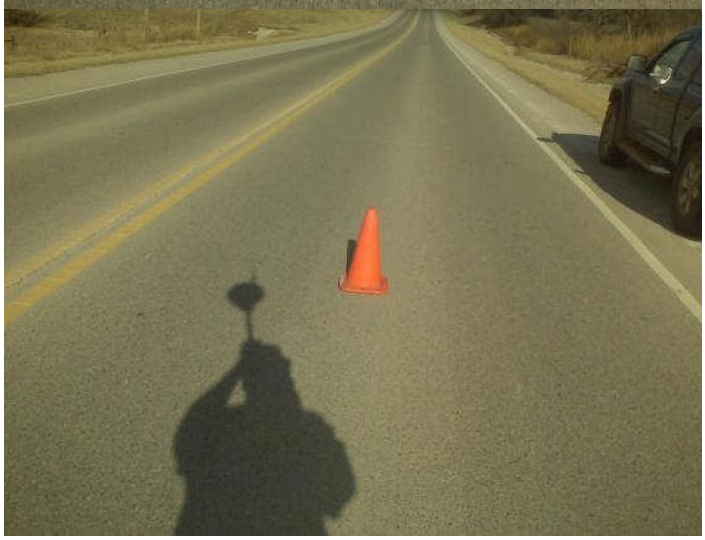
Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.025
RMSE Z: 0.016

PHOTOS:





Point ID	CAL2
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3857629.068	560412.356	400.516

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.013

PHOTOS:

Point ID	CAL3
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3857216.436	549162.796	449.059

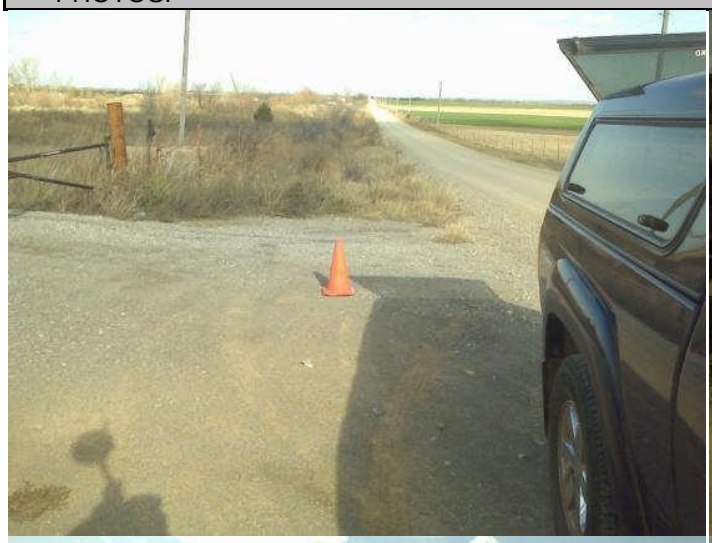
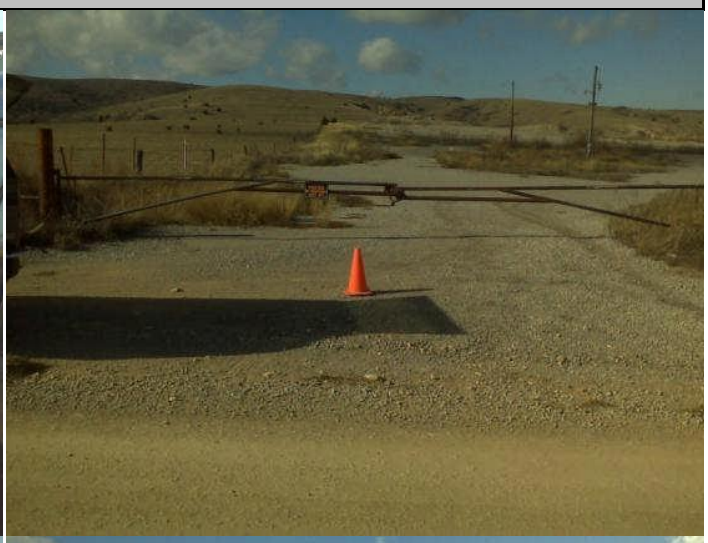
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

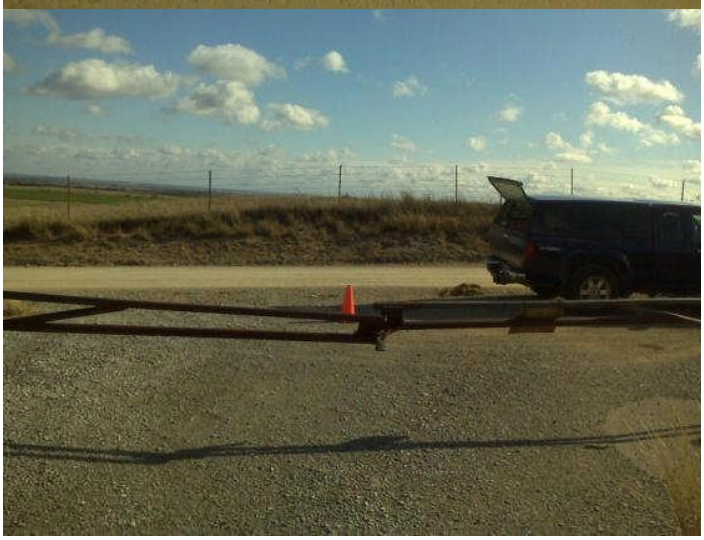
Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.017

PHOTOS:



Point ID	CAL4
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3856220.62	542035.469	493.647

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.012

PHOTOS:

Point ID	CAL5
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855427.013	530514.936	518.401

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.011

PHOTOS:

Point ID	CAL6
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855436.693	523961.385	541.829

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.015

PHOTOS:

Point ID	CAL7
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Kiowa
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3854707.747	515895.454	492.121

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.011
RMSE Z: 0.013

PHOTOS:




Point ID	CAL8
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Tillman
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818514.733	519205.87	381.969

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

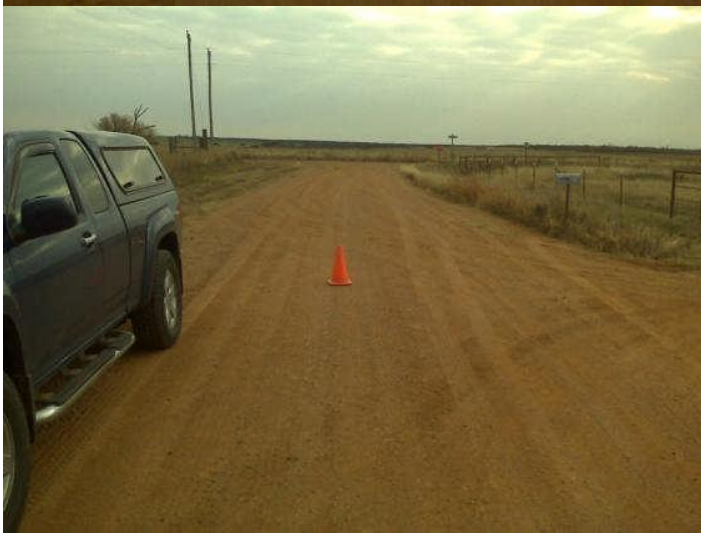
Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.026
RMSE Z: 0.014

PHOTOS:



Point ID	CAL9
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Tillman
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818479.837	531026.771	362.175

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.010

PHOTOS:

Point ID	CAL10
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3819140.965	538523.599	338.335

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.013

PHOTOS:

Point ID	CAL11
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3819287.163	546585.178	343.876

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.025
RMSE Z: 0.016

PHOTOS:




Point ID	CAL12
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3819778.152	556257.57	316.272

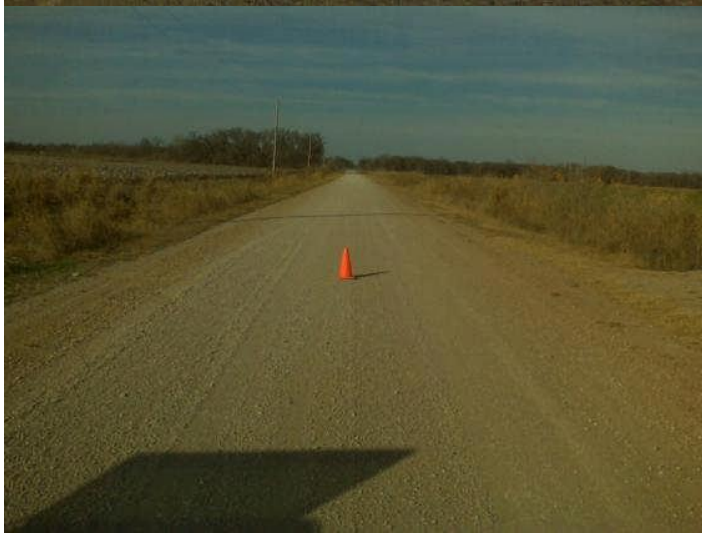
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.007

PHOTOS:



Point ID	CAL13
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3820249.158	567487.32	332.949

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.008

PHOTOS:

Point ID	CAL14
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3819373.306	578744.052	337.75

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.014

PHOTOS:

Point ID	CAL15
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Jefferson
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3783381.783	580510.784	289.012

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.011

PHOTOS:

Point ID	CAL16
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3782863.154	571269.961	286.47

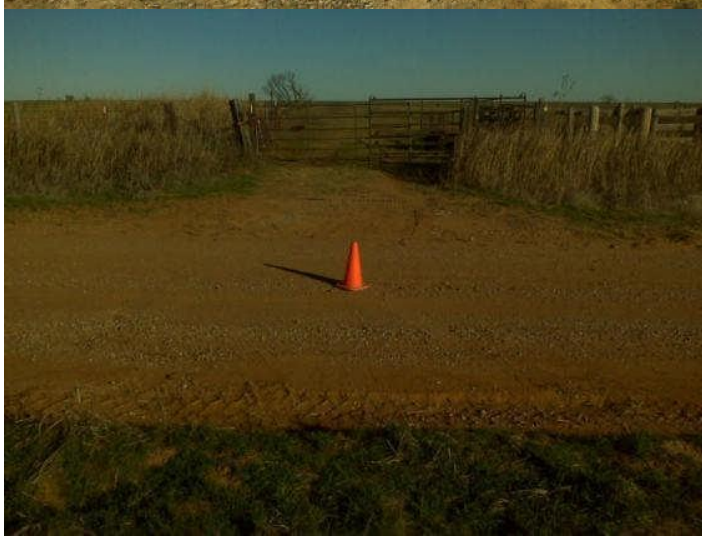
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.009

PHOTOS:



Point ID	CAL17
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3782340.404	560042.972	294.92

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

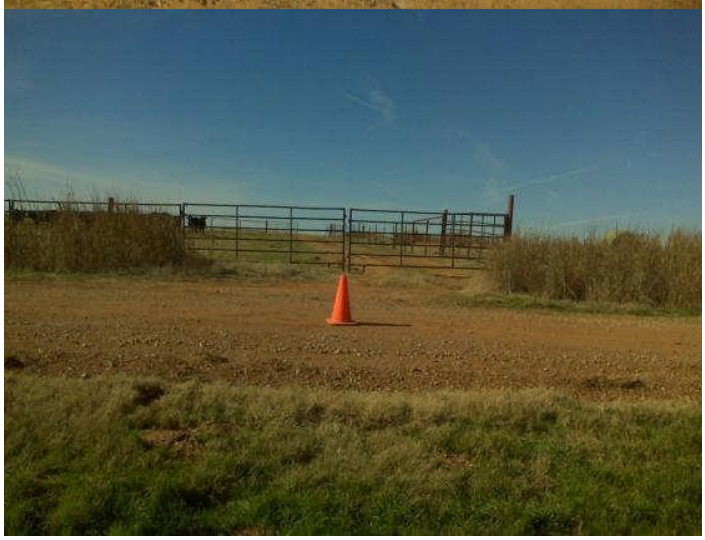
Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.010

PHOTOS:






Point ID	CAL18
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3781562.398	552014.354	312.982

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.013
RMSE Z: 0.009

PHOTOS:

Point ID	CAL19
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3781454.961	546151.221	320.738

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.012
RMSE Z: 0.008

PHOTOS:

Point ID	CAL20
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Tillman
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3796399.65	535928.794	315.065

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.009

PHOTOS:




Point ID	CAL21
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3797656.668	548761.7	319.764

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.006

PHOTOS:




Point ID	CAL22
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3798759.08	564749.039	301.741

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.009

PHOTOS:

Point ID	CAL23
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3799837.003	575963.746	314.89

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.025
RMSE Z: 0.011

PHOTOS:

Point ID	CAL24
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3807493.381	542277.426	334.281

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.011

PHOTOS:

Point ID	CAL25
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3809009.443	553493.102	325.296

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.011

PHOTOS:

Point ID	CAL26
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3810142.021	571059.803	331.283

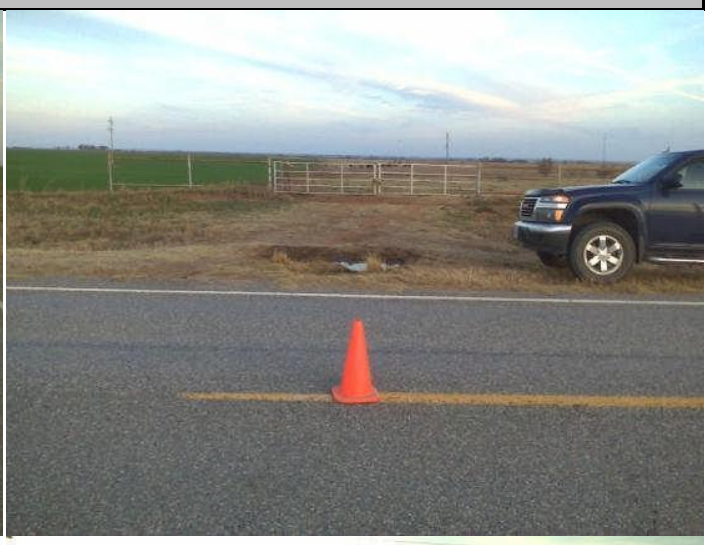
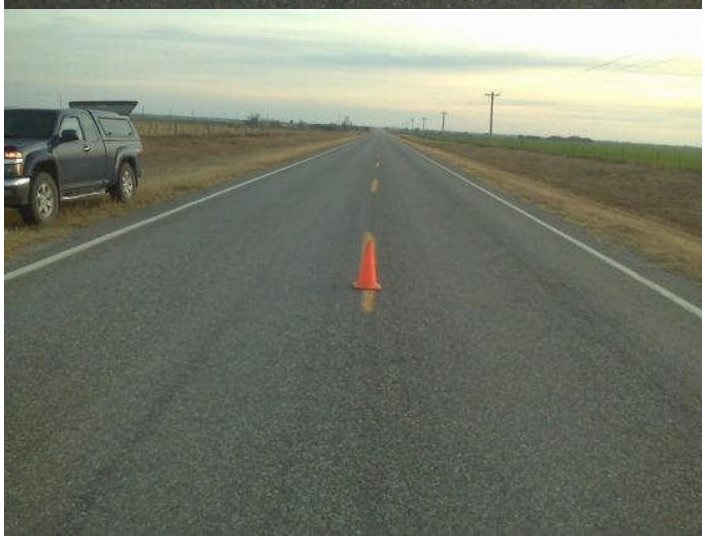
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.011

PHOTOS:


Point ID	CAL27
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Kiowa
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3836776.236	515917.955	431.661

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.011

PHOTOS:




Point ID	CAL28
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3840316.342	567291.299	352.784

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.015

PHOTOS:

Point ID	CAL29
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3843827.181	525717.39	515.343

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.009

PHOTOS:

Point ID	CAL30
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3843404.677	539159.365	488.826

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.011

PHOTOS:




Point ID	CAL31
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
X	LiDAR Ground Control
	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3843136.905	554516.952	360.231

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.016

PHOTOS:

Bare Earth Point Data Sheets

Point ID	BE1
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3781563.268	545830.135	319.645

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.012
RMSE Z: 0.008

PHOTOS:

Point ID	BE2
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3781675.971	550379.201	312.721

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.013
RMSE Z: 0.009

PHOTOS:

Point ID	BE3
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3781599.5	561674.71	302.503

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.010

PHOTOS:

Point ID	BE4
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Jefferson
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3780262.668	579336.466	273.008

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.014

PHOTOS:

Point ID	BE5
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Jefferson
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3788181.915	579283.465	311.686

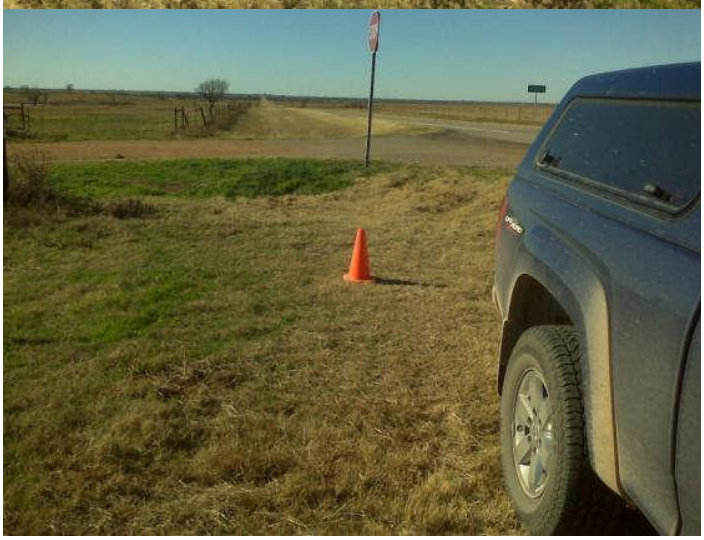
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.011

PHOTOS:



Point ID	BE6
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3788128.357	571245.243	293.311

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.010

PHOTOS:

Point ID	BE7
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792576.797	569711.588	305.976

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.007

PHOTOS:

Point ID	BE8
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792855.172	562035.87	301.983

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.009

PHOTOS:




Point ID	BE9
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3788400.786	550356.574	298.665

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.013
RMSE Z: 0.007

PHOTOS:




Point ID	BE10
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792813.432	550390.274	314.281

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.009

PHOTOS:

Point ID	BE11
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792756.376	537508.415	316.684

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.009

PHOTOS:

Point ID	BE12
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802401.027	532681.12	322.944

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.014

PHOTOS:




Point ID	BE13
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802449.693	554846.753	316.438

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.012
RMSE Z: 0.006

PHOTOS:

Point ID	BE14
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802572.454	563642.834	299.061

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.010

PHOTOS:

Point ID	BE15
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802561.07	571149.381	325.107

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.012

PHOTOS:

Point ID	BE16
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Stephens
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3805879.627	579137.044	312.042

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.010

PHOTOS:

Point ID	BE17
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812264.285	577459.146	321.808

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.020
RMSE Z: 0.013

PHOTOS:

Point ID	BE18
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812219.717	567849.928	333.152

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.008

PHOTOS:

Point ID	BE19
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812080.218	554469.101	325.985

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.023
RMSE Z: 0.011

PHOTOS:




Point ID	BE20
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812871.858	538479.852	338.128

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.009

PHOTOS:

Point ID	BE21
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3805676.851	545490.472	320.367

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.011

PHOTOS:

Point ID	BE22
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3784702.936	539143.887	324.485

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.010

PHOTOS:




Point ID	BE23
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3780039	571290.884	287.135

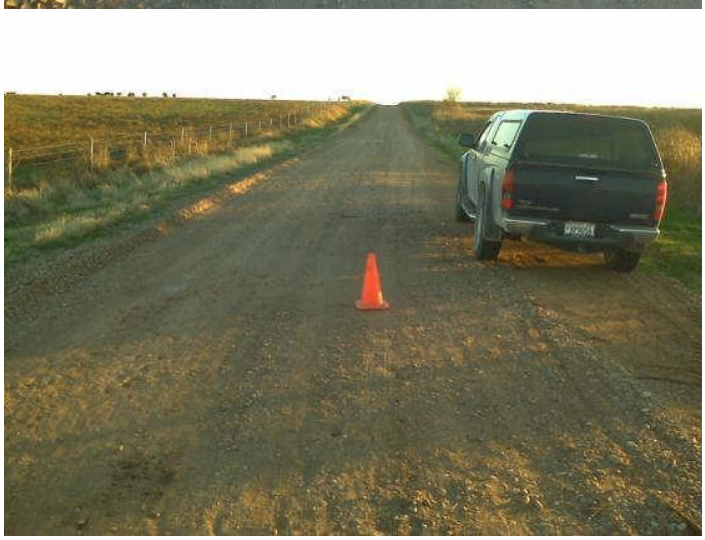
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

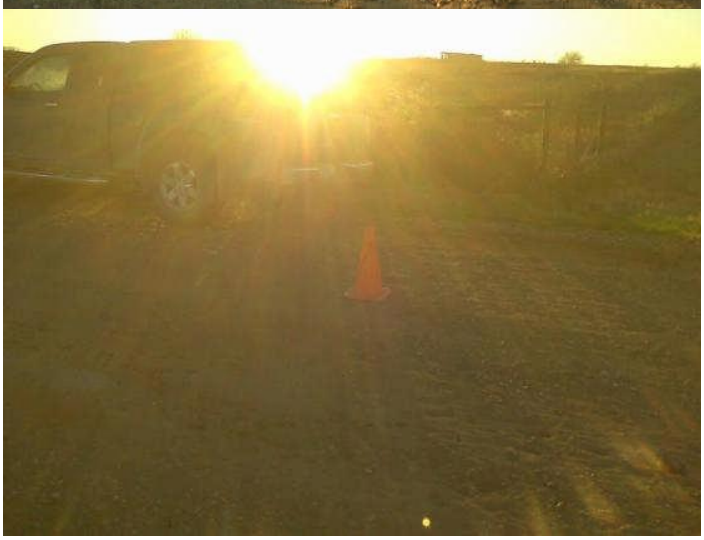
Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.013

PHOTOS:





Point ID	BE24
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818649.727	565898.467	337.286

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.009

PHOTOS:

Point ID	BE25
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818583.805	556249.688	327.303

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.008

PHOTOS:




Point ID	BE26
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818531.175	545866.233	353.039

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.013

PHOTOS:




Point ID	BE27
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818495.935	532074.961	356.541

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.026
RMSE Z: 0.015

PHOTOS:

Point ID	BE28
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3820046.447	519210.061	382.641

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.025
RMSE Z: 0.014

PHOTOS:

Point ID	BE29
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3831296.054	517556.119	403.519

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.010

PHOTOS:

Point ID	BE30
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3844178.471	517509.225	484.379

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.011

PHOTOS:

Point ID	BE31
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3832163.971	533688.208	385.53

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.009

PHOTOS:

Point ID	BE32
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3831236.873	555455.402	343.85

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.020
RMSE Z: 0.011

PHOTOS:

Point ID	BE33
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3828238.466	565843.941	369.452

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.009

PHOTOS:




Point ID	BE34
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3852413.314	568261.562	418.917

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.013

PHOTOS:

Point ID	BE35
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3850712.701	556052.706	388.113

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.015

PHOTOS:




Point ID	BE36
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3850666.03	543945.685	437.526

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.023
RMSE Z: 0.017

PHOTOS:

Point ID	BE37
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855390.417	528192.438	523.314

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.012

PHOTOS:

Point ID	BE38
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3858773.991	556118.901	388.876

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.013

PHOTOS:

Point ID	BE39
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3858850.382	570818.384	411.6

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.014

PHOTOS:

Point ID	BE40
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855530.565	560846.19	381.935

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.013

PHOTOS:

Forest Point Data Sheets

Point ID	F1
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3780468.288	564874.833	272.171

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.027
RMSE Z: 0.016

PHOTOS:

Point ID	F2
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Jefferson
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3780245.178	579370.468	269.043

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.078
RMSE Z: 0.061

PHOTOS:

Point ID	F3
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3788173.343	575700.427	283.245

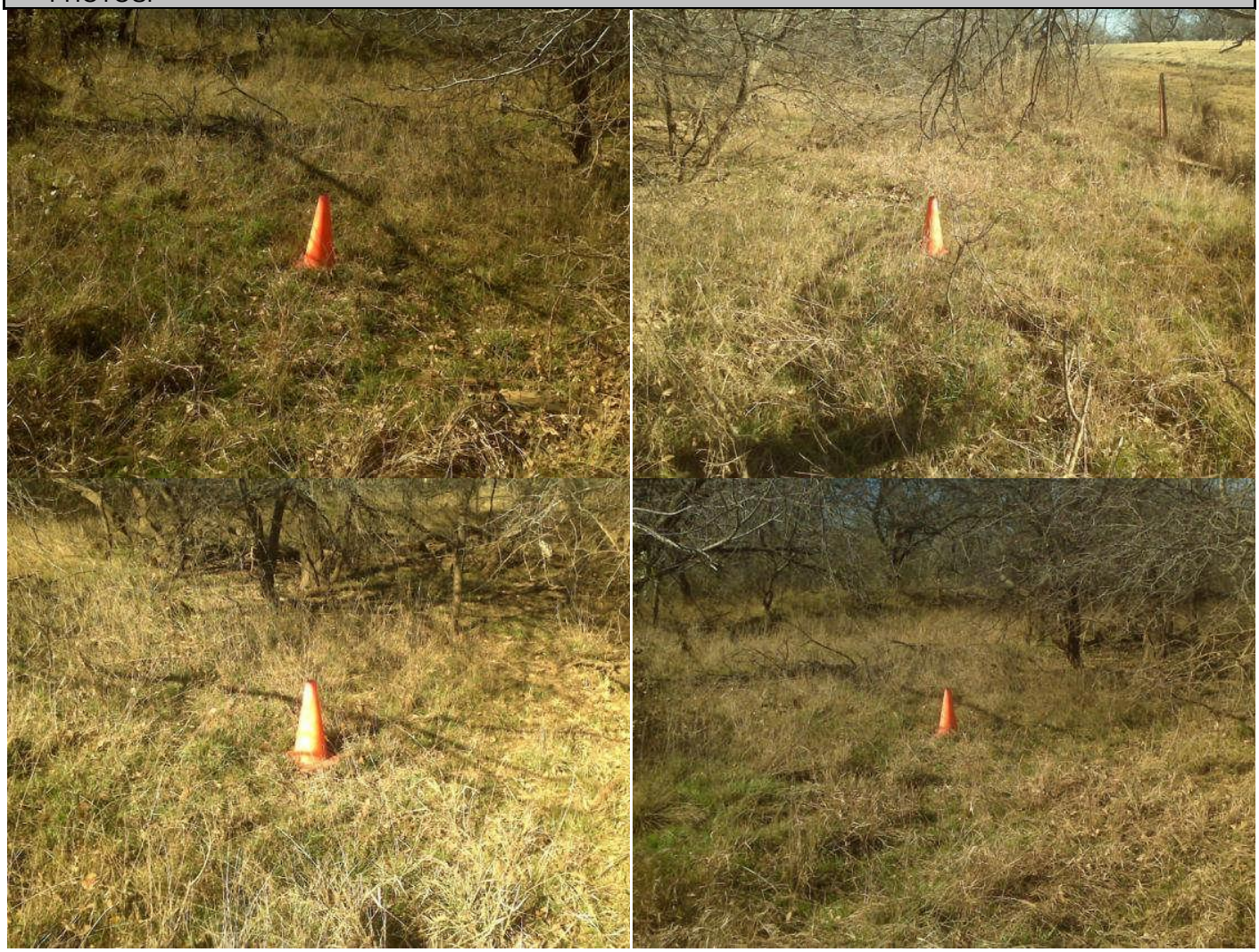
Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.032
RMSE Z: 0.015

PHOTOS:



Point ID	F4

	Aerial Target

Coordinate System

Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792935.937	564978.081	283.861

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.013

PHOTOS:

Point ID	F5
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792867.101	556299.016	290.581

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.020
RMSE Z: 0.012

PHOTOS:

Point ID	F6
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802512.317	551275.913	303.359

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

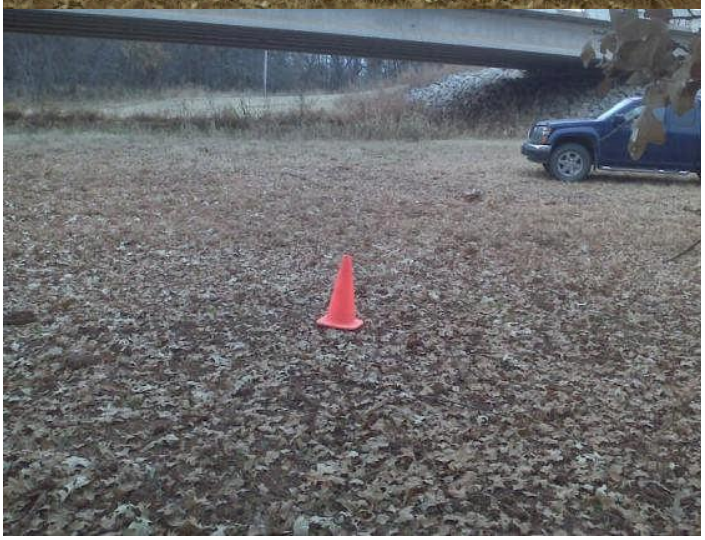
Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.028
RMSE Z: 0.016

PHOTOS:



Point ID	F7
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802515.874	566097.229	294.569

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.012

PHOTOS:

Point ID	F8
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802724.205	578484.639	293.004

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.027
RMSE Z: 0.013

PHOTOS:

Point ID	F9
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3813618.386	539447.69	327.925

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.012
RMSE Z: 0.009

PHOTOS:

Point ID	F10
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818692.29	574807.288	310.418

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.046
RMSE Z: 0.030

PHOTOS:

Point ID	F11
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3830025.278	557777.892	326.788

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.023
RMSE Z: 0.014

PHOTOS:

Point ID	F12
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3831454.677	533693.265	379.732

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.016

PHOTOS:

Point ID	F13
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3831567.473	525601.62	391.38

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.011

PHOTOS:

Point ID	F14
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3840988.348	534551.37	450.802

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.013

PHOTOS:

Point ID	F15
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3845199.002	521499.955	545.632

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.011

PHOTOS:

Point ID	F16
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3846045.534	538315.364	482.814

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.012

PHOTOS:

Point ID	F17

	Aerial Target

Coordinate System

Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3845869.979	554661.869	362.8

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.016

PHOTOS:

Point ID	F18
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3852936.089	569594.289	410.269

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.028
RMSE Z: 0.016

PHOTOS:




Quantum Spatial, Inc. – 1410 Indian Trail Rd., Norcross, GA 30093 – Ph. 770-564-9843 - www.quantumspatial.com

Point ID	F19
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3858997.739	557440.106	377.659

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.025
RMSE Z: 0.016

PHOTOS:

Point ID	F20
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855467.375	530390.333	518.745

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.012

PHOTOS:

Tall Weeds Point Data Sheets

Point ID	TW1
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3786144.995	537515.151	334.967

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.010

PHOTOS:




Point ID	TW2
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3786161.781	543966.919	306.184

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.009

PHOTOS:




Point ID	TW3
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3784511.932	550380.613	312.32

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.008

PHOTOS:




Point ID	TW4
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3783197.91	561800.121	281.87

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.012

PHOTOS:




Point ID	TW5
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3780017.061	571284.538	286.935

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.013

PHOTOS:

Point ID	TW6
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Jefferson
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3781773.309	580017.81	303.813

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.012

PHOTOS:




Point ID	TW7
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Jefferson
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3794730.502	579226.091	292.788

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.009

PHOTOS:




Point ID	TW8
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3793000.435	571196.81	307.525

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.007

PHOTOS:




Point ID	TW9
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792880.711	561644.968	297.706

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.009

PHOTOS:




Point ID	TW10
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792876.351	552577.669	306.522

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.006

PHOTOS:

Point ID	TW11
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3792758.974	537483.093	317.131

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.023
RMSE Z: 0.011

PHOTOS:

Point ID	TW12
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802408.493	533470.845	335.607

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.038
RMSE Z: 0.019

PHOTOS:

Point ID	TW13
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802488.56	553534.977	320.205

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.008

PHOTOS:

Point ID	TW14
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802639.136	564740.029	301.984

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.019
RMSE Z: 0.010

PHOTOS:

Point ID	TW15
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3802780.749	571250.214	324.251

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.011

PHOTOS:




Point ID	TW16
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Stephens
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3805792.791	579119.724	311.118

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.011

PHOTOS:

Point ID	TW17
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812267.165	577470.614	322.444

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.027
RMSE Z: 0.016

PHOTOS:

Point ID	TW18
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812227.619	568259.149	338.06

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.008

PHOTOS:

Point ID	TW19
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812082.014	553998.862	327.728

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.020
RMSE Z: 0.010

PHOTOS:

Point ID	TW20
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3812089.139	537074.045	336.954

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.008

PHOTOS:

Point ID	TW21
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3805533.703	545477.458	318.344

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.010

PHOTOS:

Point ID	TW22
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3784699.227	540753.23	324.892

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.008

PHOTOS:




Point ID	TW23
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Cotton
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3778498.096	576120.123	267.303

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.016

PHOTOS:




Point ID	TW24
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818641.483	566192.356	336.317

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.009

PHOTOS:

Point ID	TW25
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818572.566	556619.936	323.804

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.018
RMSE Z: 0.008

PHOTOS:




Point ID	TW26
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818538.47	545182.297	350.04

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.014
RMSE Z: 0.009

PHOTOS:

Point ID	TW27
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3818508.325	532092.426	356.19

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.025
RMSE Z: 0.014

PHOTOS:




Point ID	TW28
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3820049.394	519223.128	382.525

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.024
RMSE Z: 0.013

PHOTOS:




Point ID	TW29
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3831319.45	517529.621	404.036

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.020
RMSE Z: 0.010

PHOTOS:

Point ID	TW30
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3844184.534	517579.184	484.51

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.010

PHOTOS:




Point ID	TW31
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3832075.199	533646.868	384.311

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.013
RMSE Z: 0.008

PHOTOS:




Point ID	TW32
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3831506.034	555875.818	346.108

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.013

PHOTOS:

Point ID	TW33
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3828238.537	565993.43	373.093

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.009

PHOTOS:

Point ID	TW34
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3852443.787	568775.53	408.261

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.013

PHOTOS:




Point ID	TW35
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3850786.622	557374.405	378.633

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.016
RMSE Z: 0.014

PHOTOS:

Point ID	TW36
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3850605.597	543964.412	435.634

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.021
RMSE Z: 0.014

PHOTOS:




Point ID	TW37
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855402.491	527994.494	519.442

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.020
RMSE Z: 0.012

PHOTOS:

Point ID	TW38
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3858743.327	556361.719	389.792

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.022
RMSE Z: 0.015

PHOTOS:

Point ID	TW39
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Caddo
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3858827.447	570844.436	410.728

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.017
RMSE Z: 0.013

PHOTOS:




Point ID	TW40
Project No.	25273
Project Name	TO#55-OK Cache
State	Oklahoma
County	Comanche
Quad	

	Aerial Target
	LiDAR Ground Control
X	LiDAR QC Point
	New Control
	Photo ID
	Published Control

Coordinate System
NAD83(2011)
UTM - Zone 14N
NAVD88
GEOID12A
Meters

Northing	Easting	Elevation
3855460.526	560850.383	381.146

Operator	WJN
Receiver Model	Leica GS15
Receiver S/N	
Antenna Height	

Static Session	Network Adjusted
Date (MM-DD-YYYY)	2/10/2015
Start Time (UTC)	
End Time (UTC)	

Point Ties:

RMSE Hz: 0.015
RMSE Z: 0.013

PHOTOS: