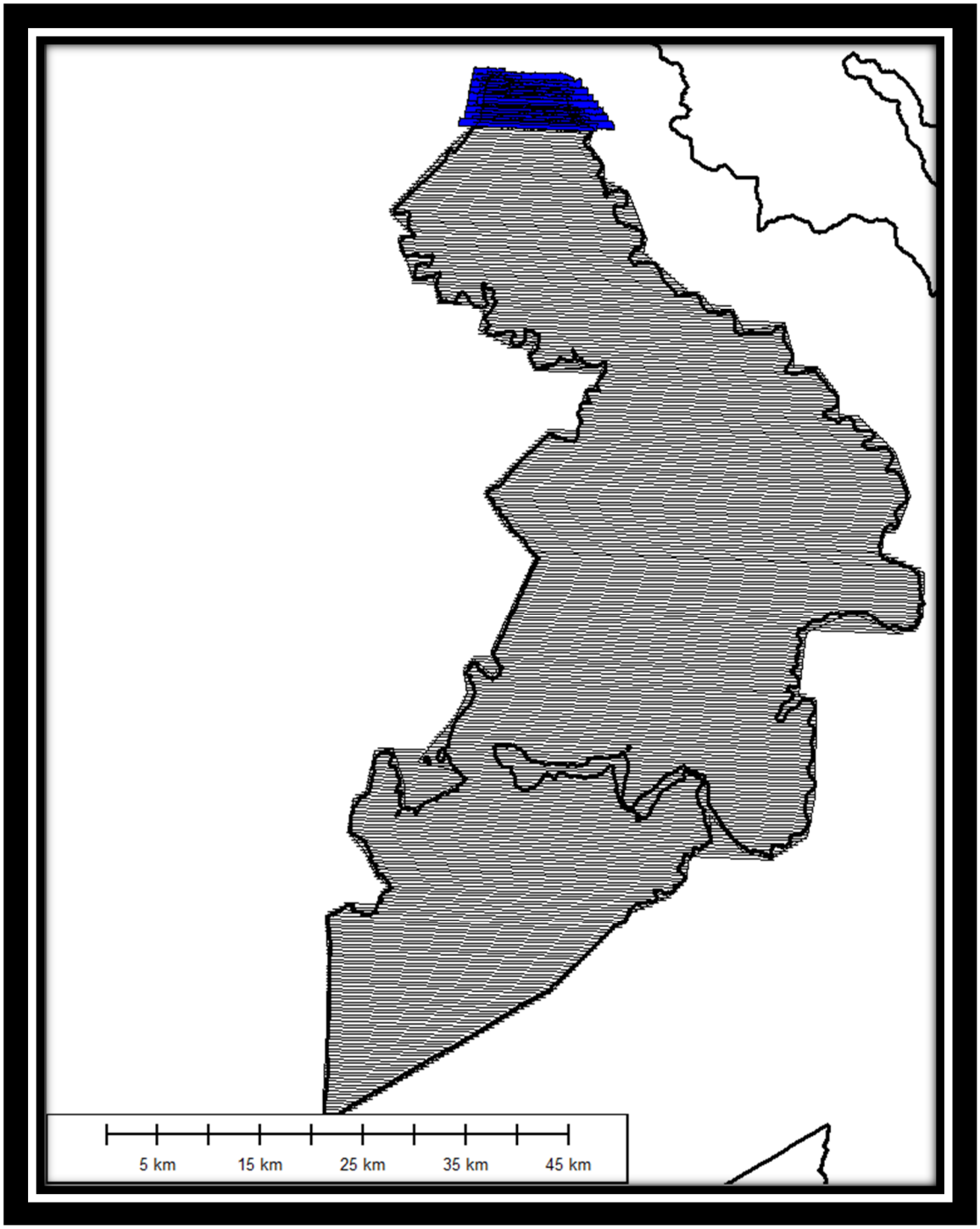
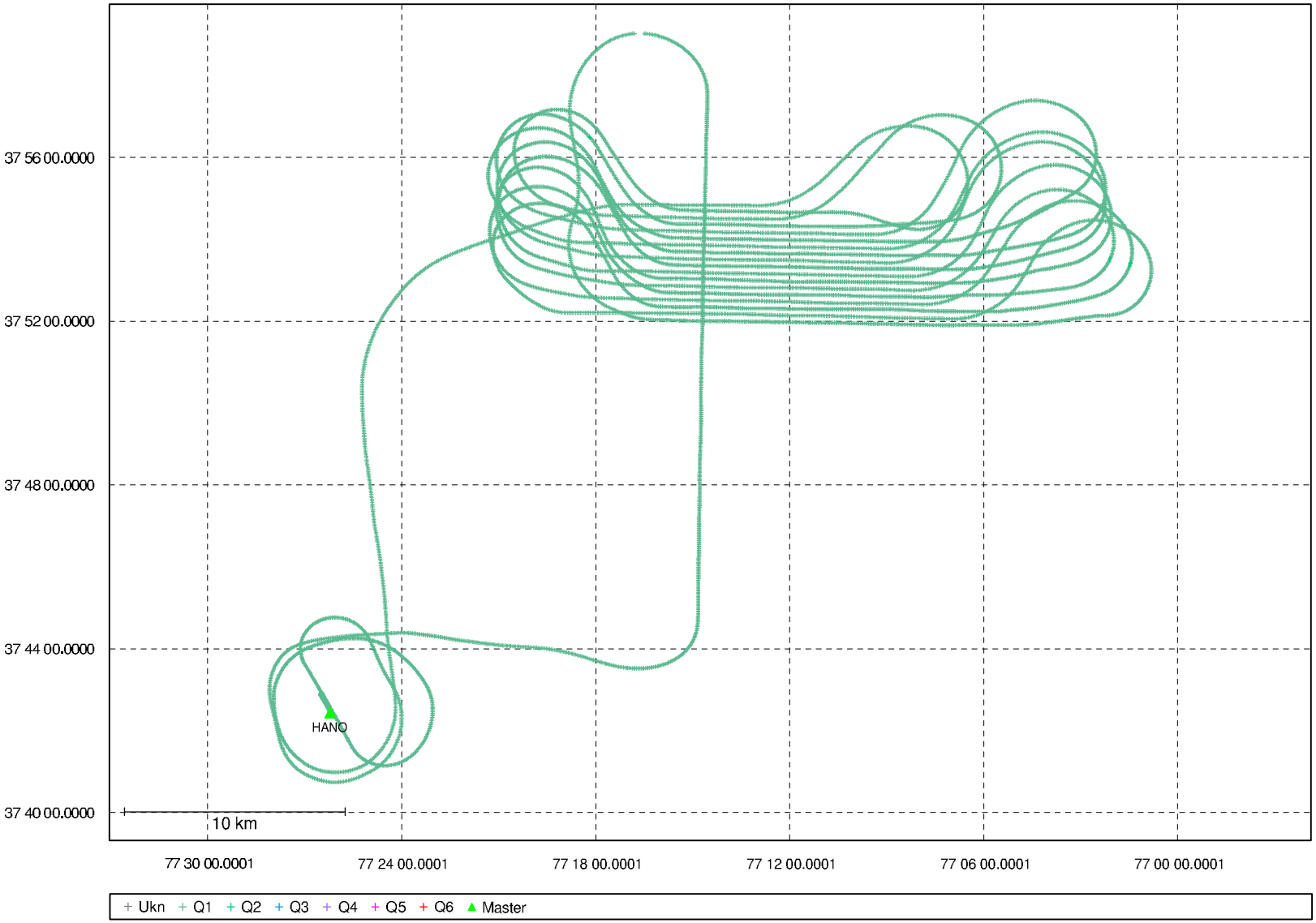
Mission: o511122a

2011 05 02



Combined - Map Run (2)



Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: G:\Projects\Va\North\122a\pos\GPS\11122a.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	105824
No processed position:	95253
Missing Fwd or Rev:	8
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0244 (m)
C/A Code:	0.98 (m)
L1 Doppler:	0.020 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.012 (m)
North:	0.008 (m)
Height:	0.026 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (10561 occurances):

East:	0.012 (m)
North:	0.006 (m)
Height:	0.025 (m)

Quality Number Percentages:

Q 1:	99.8 %
Q 2:	0.2 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 100.0 %

0.10 - 0.30 m: 0.0 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

Baseline Distances:

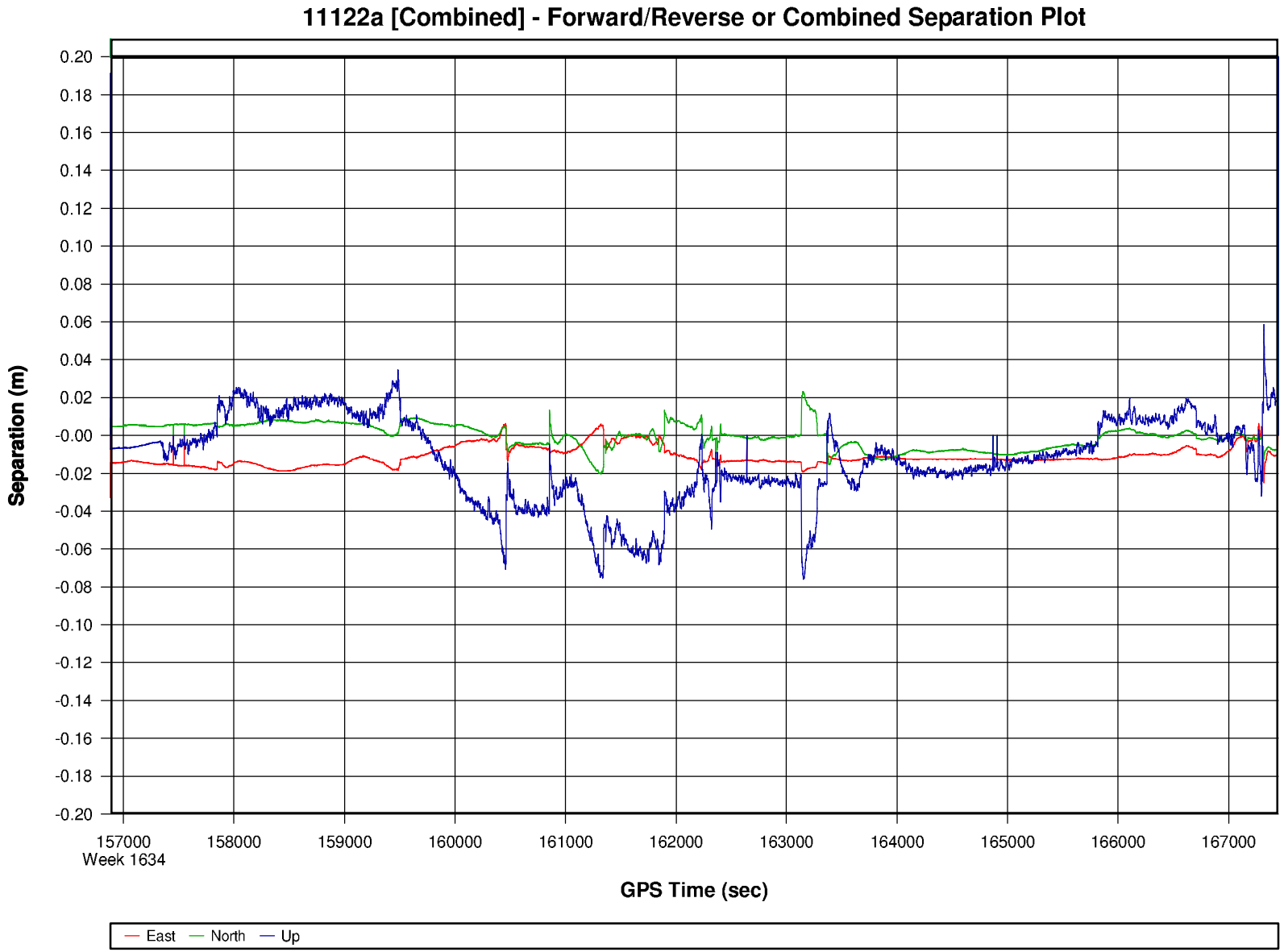
Maximum: 43.401 (km)

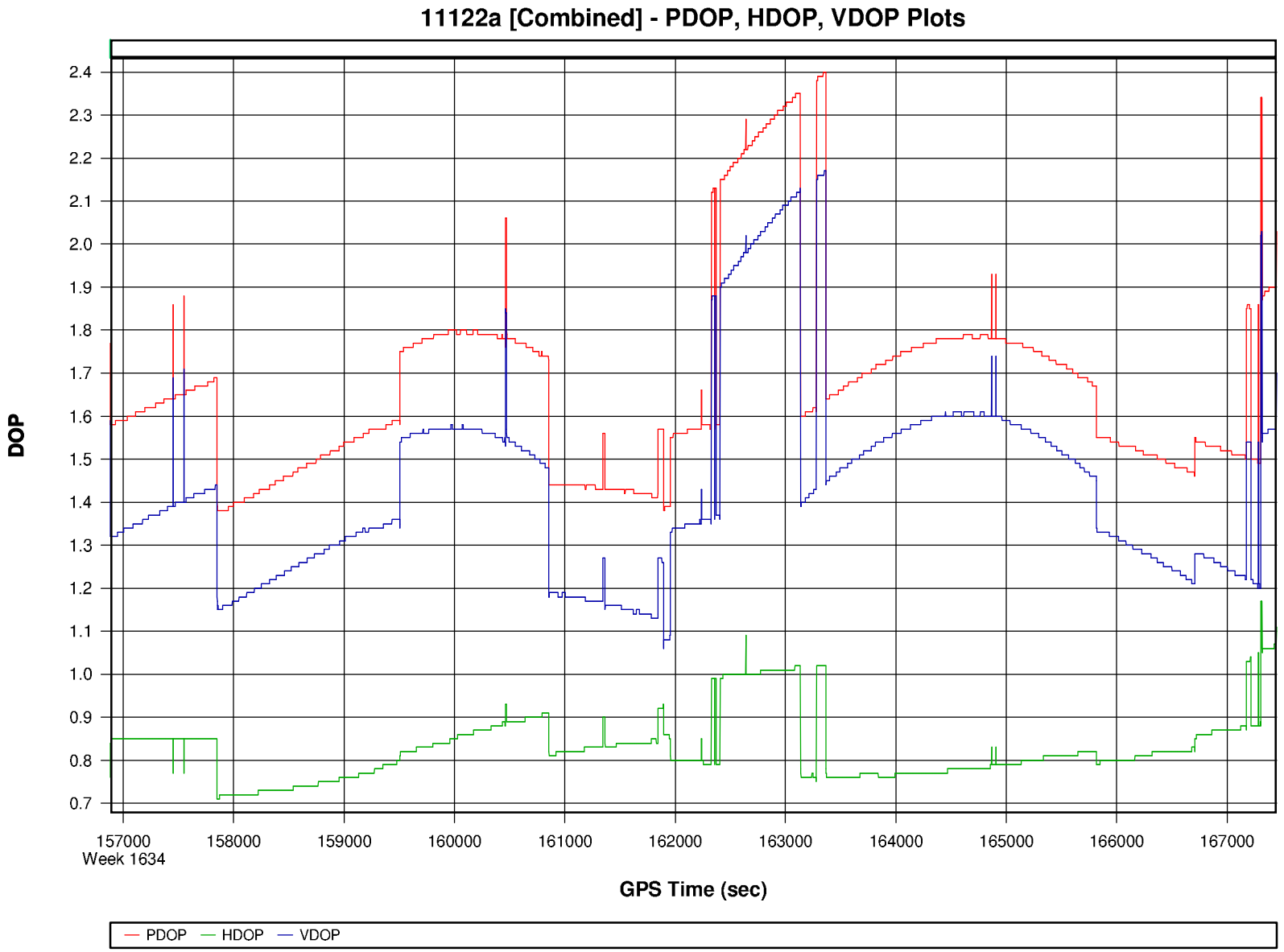
Minimum: 0.025 (km)

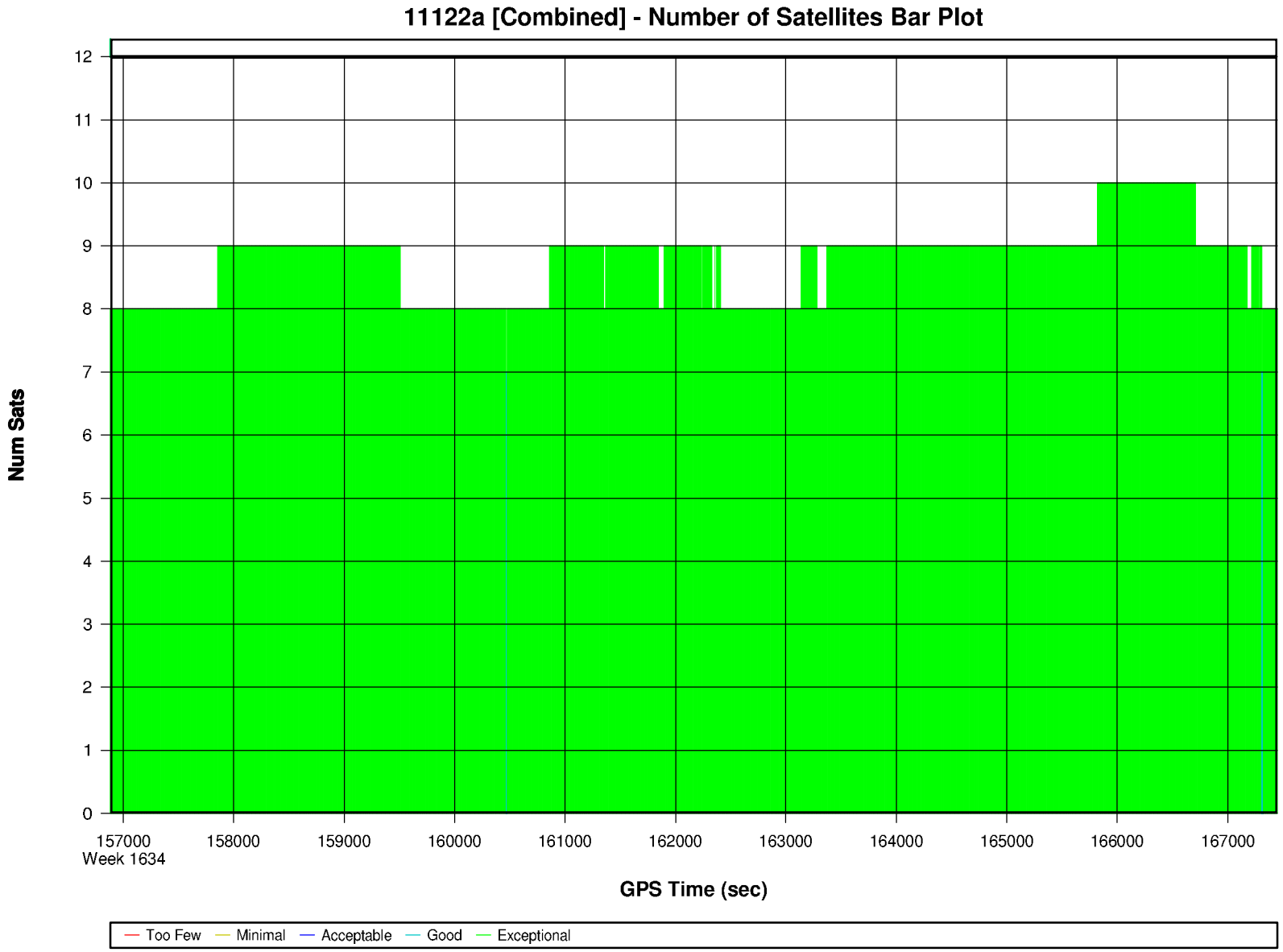
Average: 25.863 (km)

First Epoch: 0.061 (km)

Last Epoch: 0.278 (km)


11122a [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
157000
Week 1634
158000
159000
160000
161000
162000
163000
164000
165000
166000
167000
GPS Time (sec)
East
North
Up

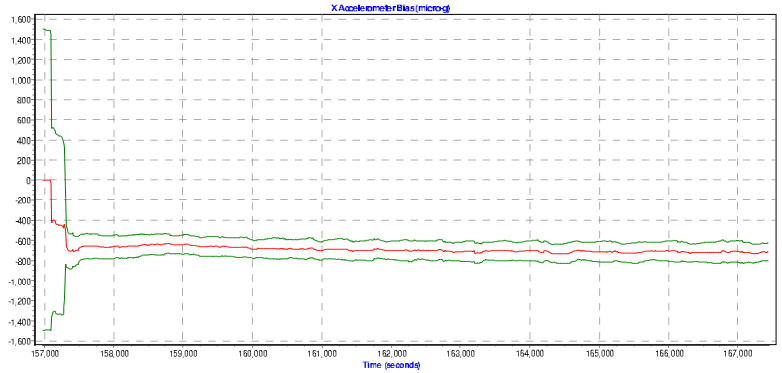

11122a [Combined] - PDOP, HDOP, VDOP Plots
DOP
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
157000
Week 1634
158000
159000
160000
161000
162000
163000
164000
165000
166000
167000
GPS Time (sec)
PDOP
HDOP
VDOP

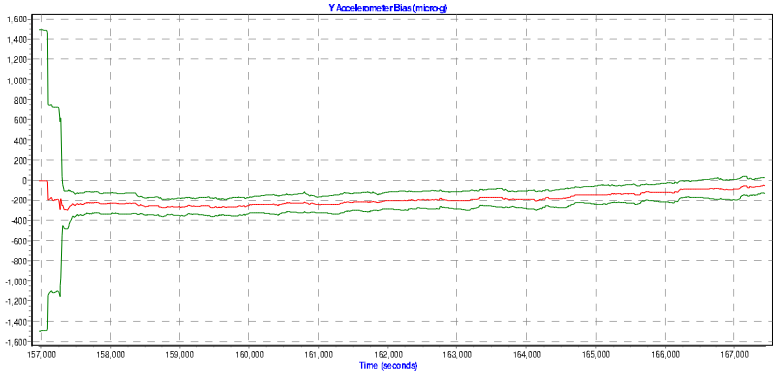

11122a [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
157000
Week 1634
158000
159000
160000
161000
162000
163000
164000
165000
166000
167000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

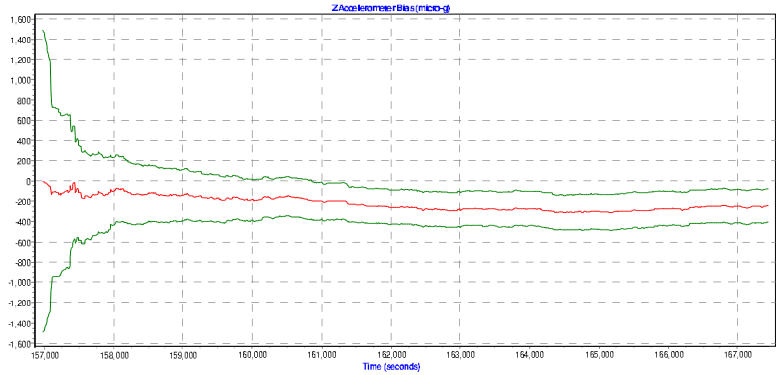
```
;   PROJECT:    G:\Projects\Va\North\122a\pos\GPS\11122a.gnv
;
;   DATE:       July 25/11  (date/time of processing)
;   TIME:       11:51:49
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(3)
PROCTIME = 11:50:31 07/25/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = HANO
MB_MASTER_FILE  = G:\Projects\Va\North\122a\Ground_Gps\log20090714_175927.gpb
MB_MASTER_POS   = 37 42 26.58275 -77 26 13.13327 28.5840
MB_MASTER_ANT   = 2.062
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = G:\Projects\Va\North\122a\pos\Extract\mgps_01.gpb
REMOTE_POS   = 37 42 25.11887 -77 26 14.78777 29.7200
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 103 108 113 124  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 10.0           ; Elevation mask (deg)
GRID         = UTM 1 0      ; Grid info

CYCLE_TEST  = BOTH            ; Cycle slip test method
STATIC_SLIP_TOL = 0.40       ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF         ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99              ; Base satellite (99-default)

TIMERANGE   = ALL 988400066.8 988410649.1 2 0 ; Processing time range
INTERVAL    = 0.10            ; Processing time interval (seconds)

PROCESS_DIR = FORWARD         ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                 ; True for processing both directions
WRITE_BAD_EPOCHS = OFF        ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000   ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL          ; Format for .fwd/rev file
DETAILED_SUM = ON             ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON           ; Print cycle slips to message log
SAVE_AMB = ON                 ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00    ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50            ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30           ; Time before Float KAR soln used (minutes)
KAR_CUBE     = 1.00   4.00    ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2     ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0       ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = IONO       ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000    ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON       ; Engage KAR while in static mode
KAR_USE_FAR   = ON       ; Allow KAR to go back in time past max. distances
```

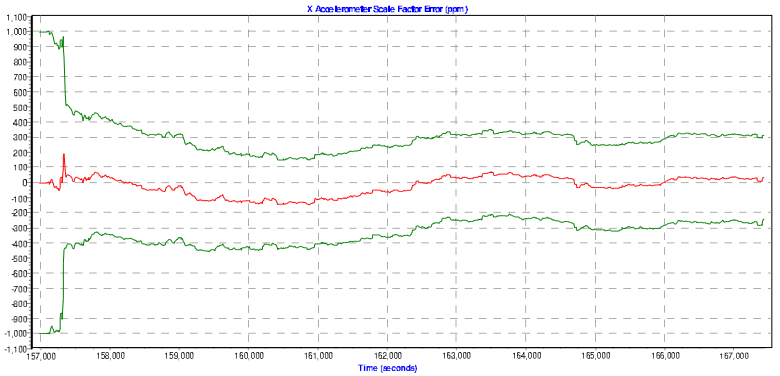
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0         ; KAR data storage interval
KAR_DISTANCE = 7.500 30.000      ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF            ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0        ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000     ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON       ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON    ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF             ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON             ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON     ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = ON  5.0 250.0   ; Engage KAR if <dist1, reset if >dist2 (km)

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1         ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1    ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = ON            ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF         ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0        ; Fixed static interval (s)
SPLIT_SS = OFF 120.0         ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST   = 4.0            ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400          ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF            ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF        ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF           ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF           ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE    = ELEV           ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE    = 4.0000         ; Code measurement standard deviation (m)
STD_PHASE   = 0.0200   ON    ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 1.0000   ON    ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP    = 15.0  5  1     ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST    = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL      = HANO     ON                      ; BLName UseMain(ON/OFF)
STD_RELTOL  = 4.00           ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF        ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0    ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH           ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0             ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON            ; ON/OFF
SP_SF_IONO    = 1             ; SF iono mode 0-off, 1-broadcast
SP_OTH_ERRORS = ON            ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF           ; ON if P1 to be used instead of CA (if availble)
```

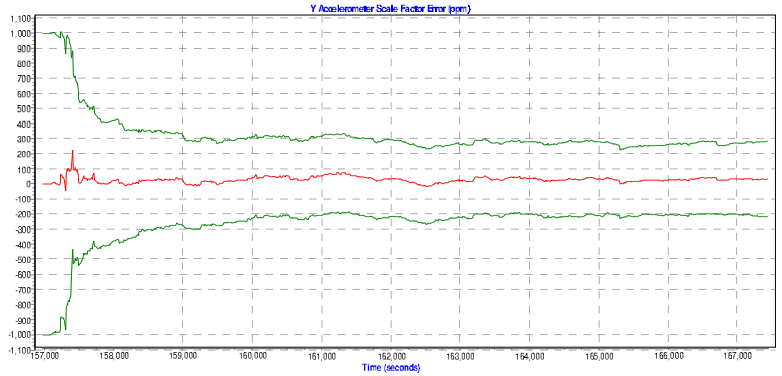
```
SP_CLK_MODE   = OFF           ; ON=Use ClockShift for time, OFF=use corrtime

; Combine settings (only used in API)


; Glonass Options
GLN_TOFF = ON 0.0000 1000.0000 0.000000


; PosPac commands (used by POSGPS Only)
POSPROC_FILE = X:\projects\terrapoint\va\11122a\pos\Extract\gps_proc_01.dat
POSPROC_TIME = 0.000000
POSPROC_LV = OFF 0.100

;Settings for Change static/kinematic status
ADDKIN = F X:\projects\terrapoint\va\11122a\pos\Extract\mgps_01.gpb
X:\projects\terrapoint\va\11122a\pos\Extract\lvstatic_01.txt 10.0 2.0 30.0 0.000 0
```

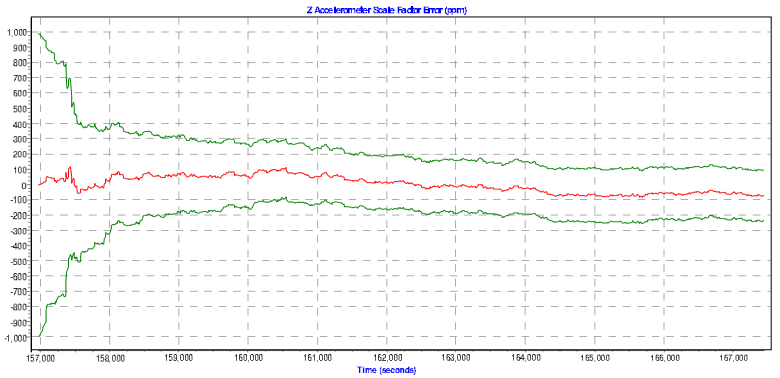






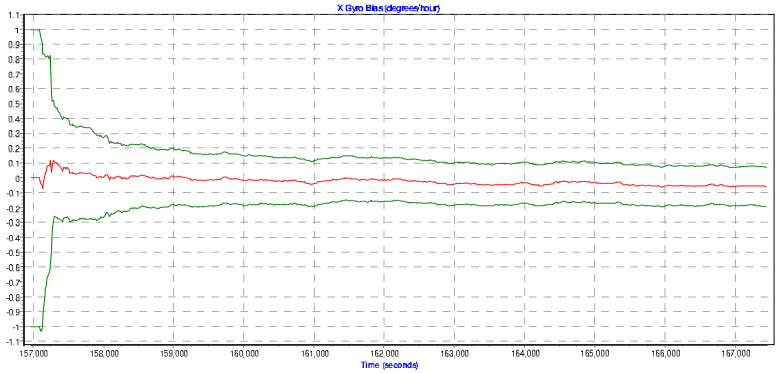


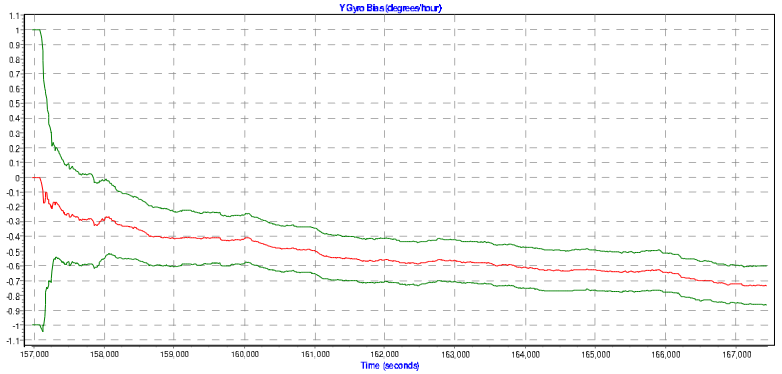


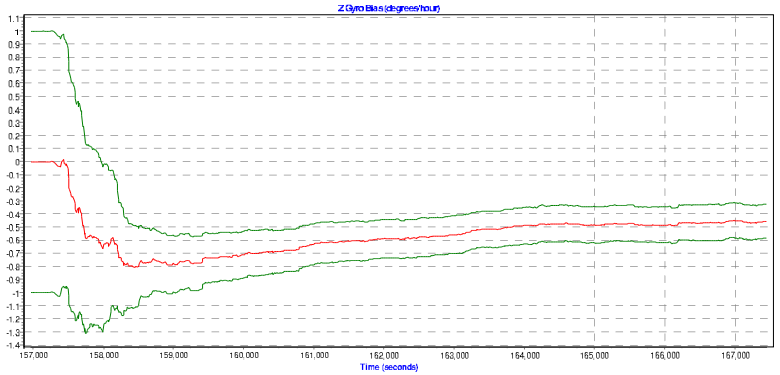


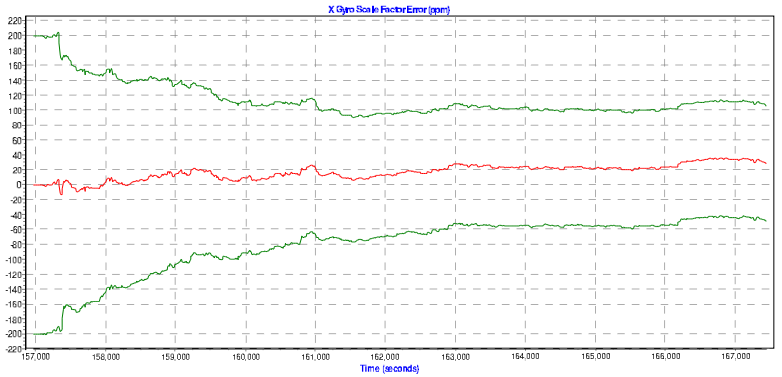
D:\Projects\Va\11122A\pos\Proc\ers_01.out

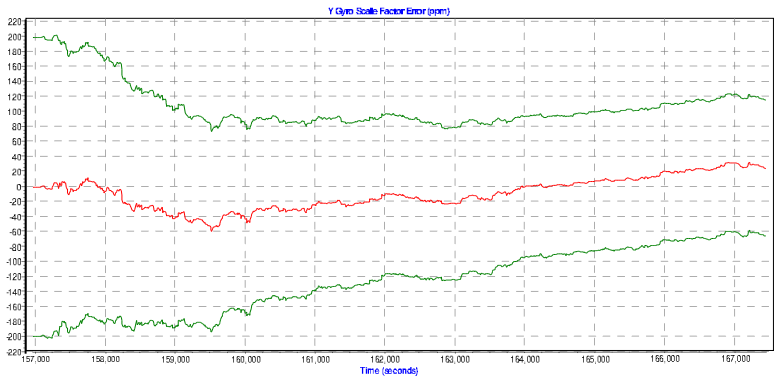
D:\Projects\Va\11122A\pos\Proc\rms_01.out

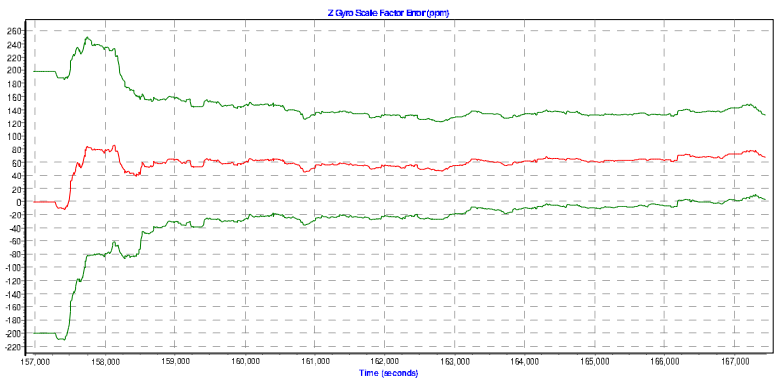












D:\Projects\Va\11122A\pos\Proc\ers_01.out

D:\Projects\Va\11122A\pos\Proc\rms_01.out

Daily Flight Log

Julian Date:	11122	Aircraft Tail #:	435H	Hobbs Beg:	
Local Date:	May 2	Pilot:	J. Melton		
Local Time:	3:32	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
1935Z	12260	12	CLR	27.	14.	3013

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

POS/AV File Name
11122A
ALTM-Logfile Name

Ground Station Data

Begin Static 1
End Static 1
Begin Static 2
End Static 2
Temp/Pressure (GND)
27c / 3013

POS/AV File Transfers

1st File	Last File

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
19:55	19:57	333	91	957	1.95	9	158.8	
20:01	20:03	332	271	977	2.00	9	131.2	
20:07	20:09	331	91	973	2.08	9	150.0	
20:13	20:16	330	271	948	2.13	9	128.0	
20:20	20:23	329	91	977	2.13	9	145.5	
20:28	20:32	328	271	934	2.07	10	117.8	
20:36	20:39	327	91	963	1.71	9	145.6	
20:42	20:47	326	271	953	1.74	9	125.4	
20:51	20:54	325	91	994	1.62	10	150.1	
20:59	21:03	324	271	932	1.65	10	119.9	
21:07	21:10	323	91	936	1.33	11	145.9	
21:15	21:19	322	271	937	1.45	10	121.7	
21:23	21:26	321	91	941	1.48	10	140.1	
21:31	21:34	320	271	928	1.89	9	127.7	
21:38	21:42	319	91	945	1.95	9	147.9	
21:46	21:51	318	271	928	2.00	9	119.9	
21:55	21:58	317	91	954	1.84	10	148.3	
22:03	22:07	316	271	932	1.87	10	128.1	
22:12	22:18	Crossline	181	959	1.85	10	126.7	

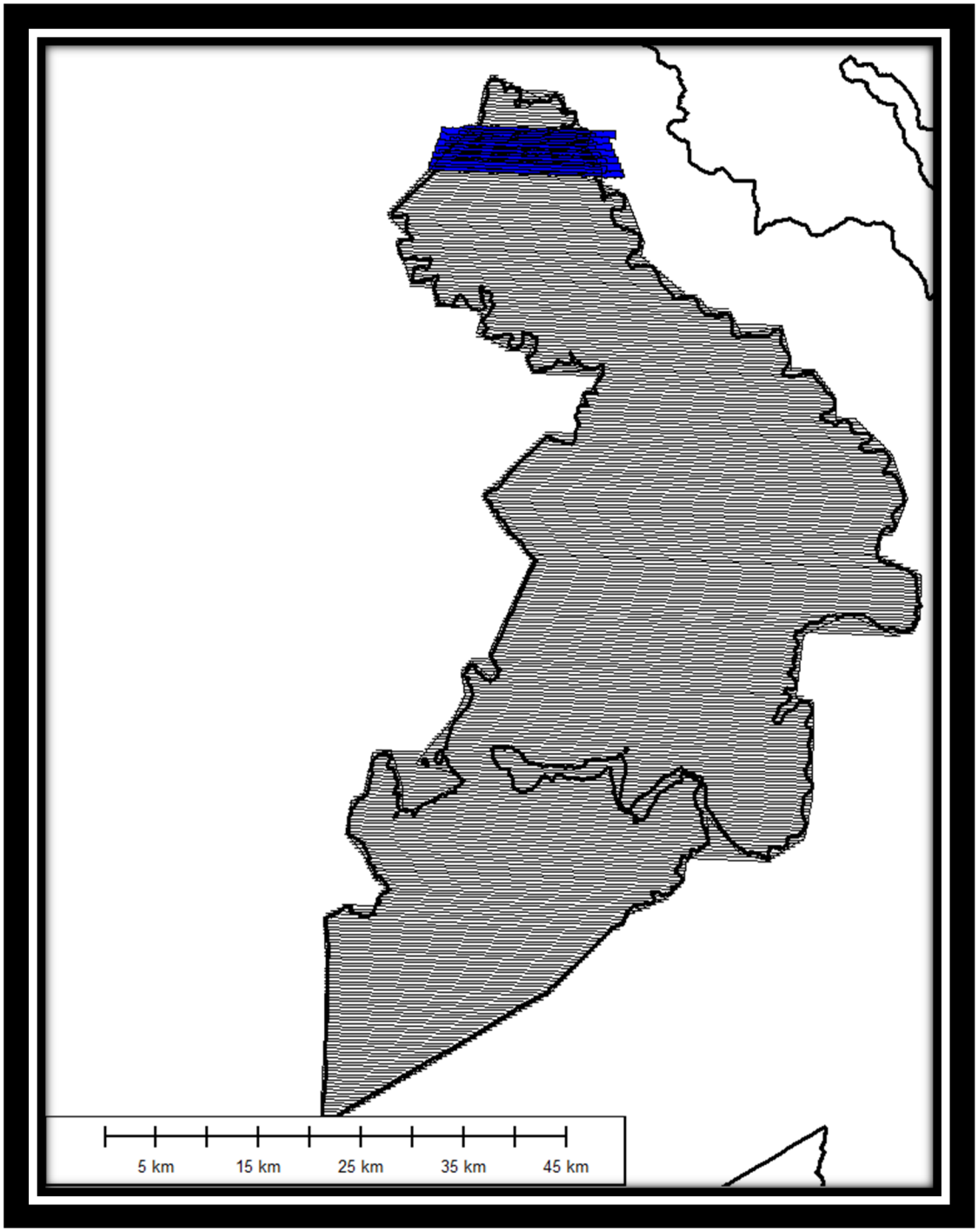
Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV Files to C
- [ ] Power-down ALTM Syst

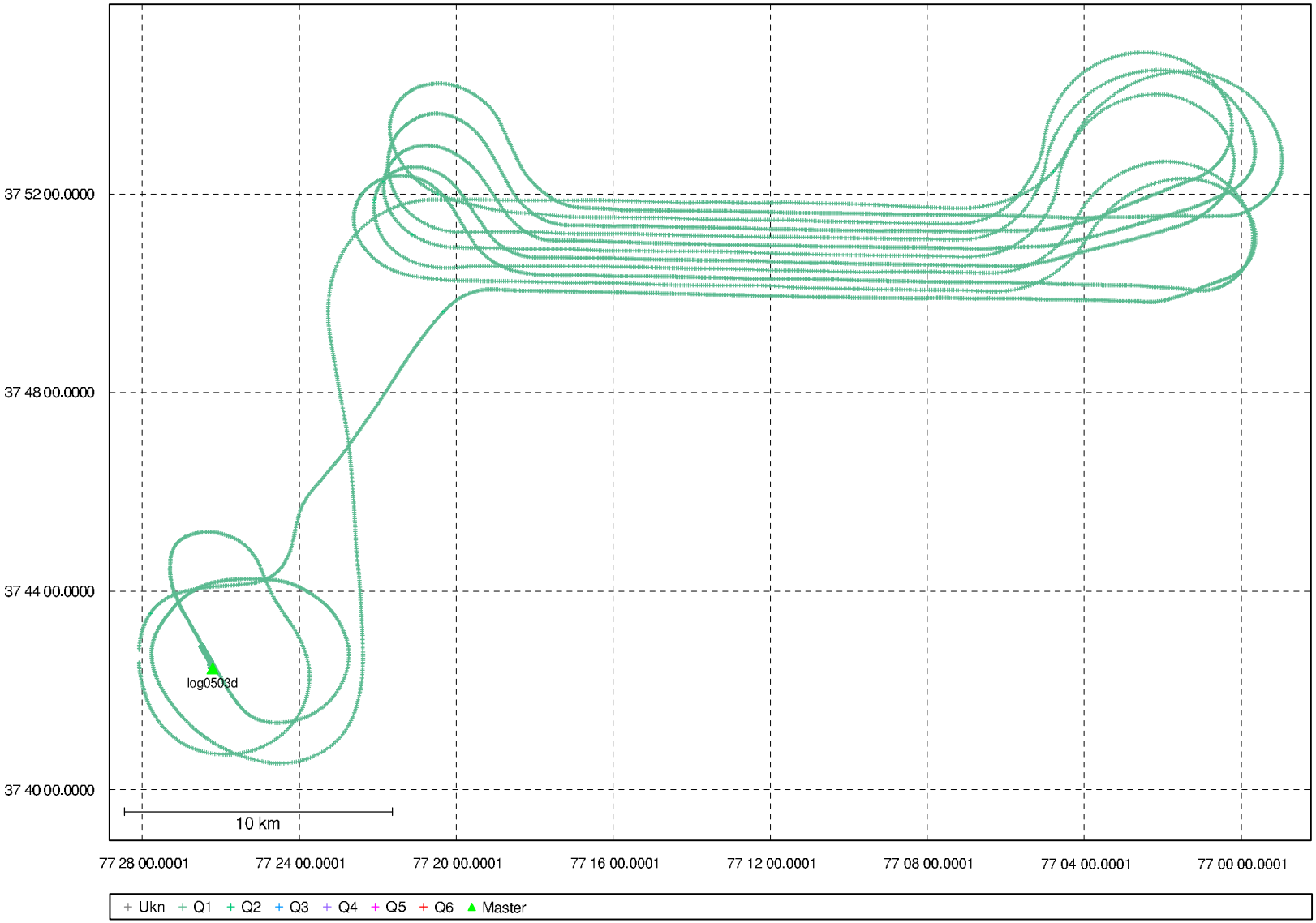
Daily Activity/Comments

Mission: o511122b

2011 05 02



Combined - Map Run (1)



Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: D:\Projects\Va\11122B\pos\GPS\11122b.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	85443
No processed position:	76910
Missing Fwd or Rev:	4
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0226 (m)
C/A Code:	1.00 (m)
L1 Doppler:	0.017 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.012 (m)
North:	0.026 (m)
Height:	0.024 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8527 occurances):

East:	0.009 (m)
North:	0.025 (m)
Height:	0.023 (m)

Quality Number Percentages:

Q 1:	99.8 %
Q 2:	0.2 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 100.0 %

0.10 - 0.30 m: 0.0 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

Baseline Distances:

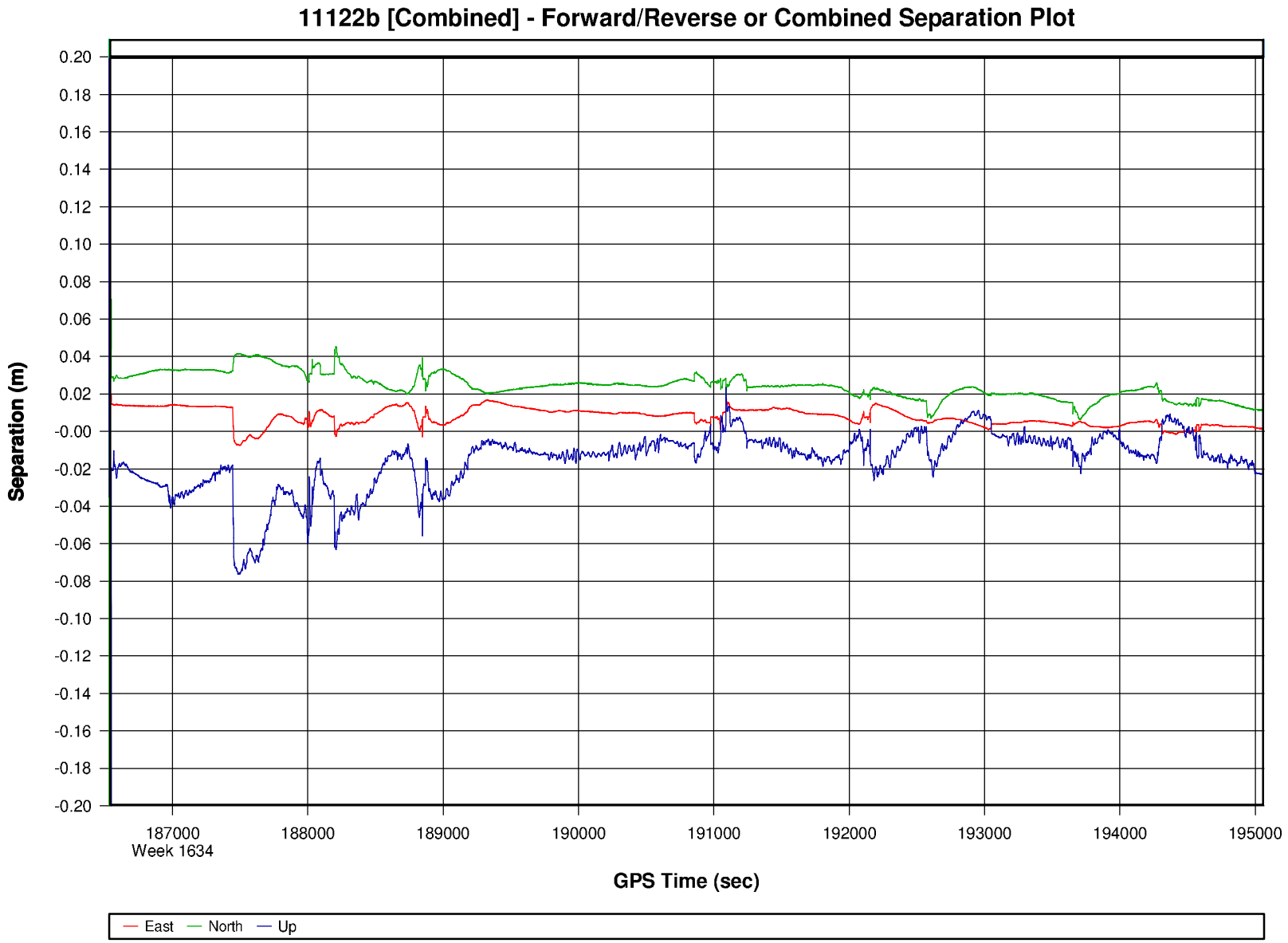
Maximum: 44.548 (km)

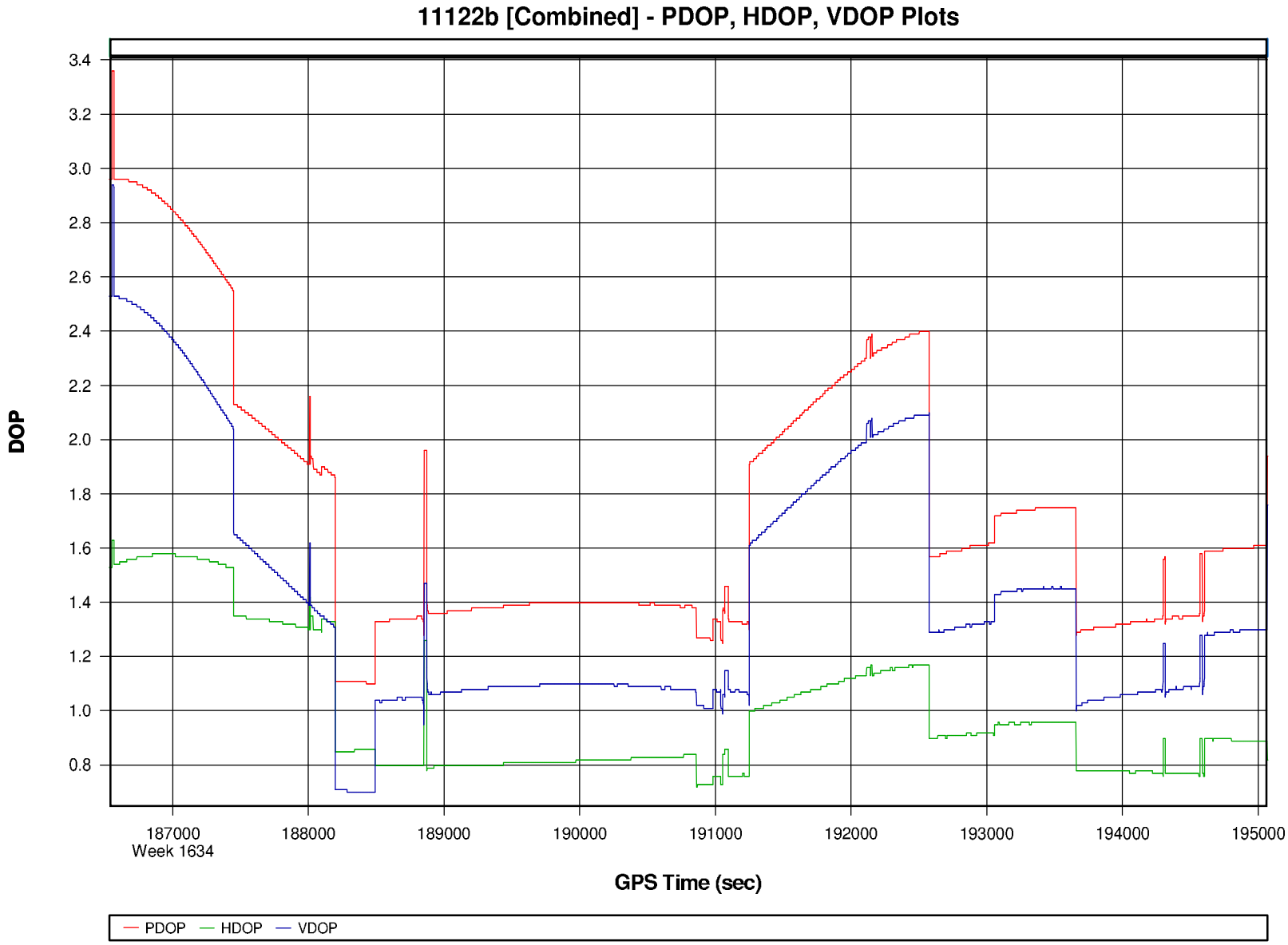
Minimum: 0.025 (km)

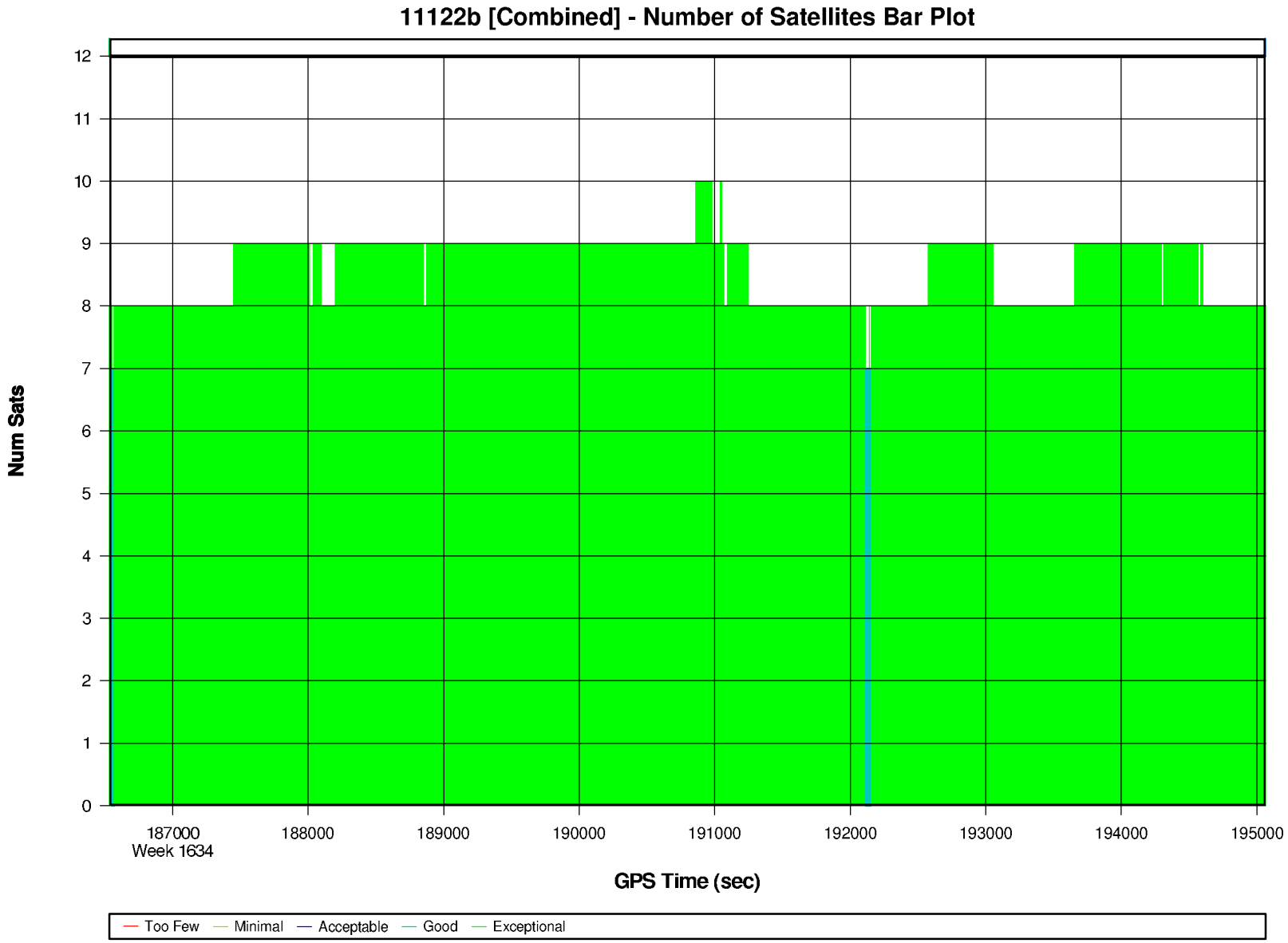
Average: 23.471 (km)

First Epoch: 0.101 (km)

Last Epoch: 0.155 (km)


11122b [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
187000
Week 1634
188000
189000
190000
191000
192000
193000
194000
195000
GPS Time (sec)
East
North
Up

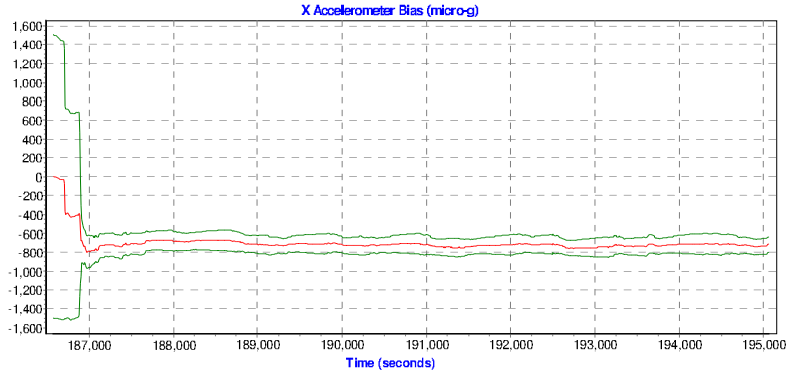

11122b [Combined] - PDOP, HDOP, VDOP Plots
DOP
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
187000
Week 1634
188000
189000
190000
191000
192000
193000
194000
195000
GPS Time (sec)
PDOP
HDOP
VDOP

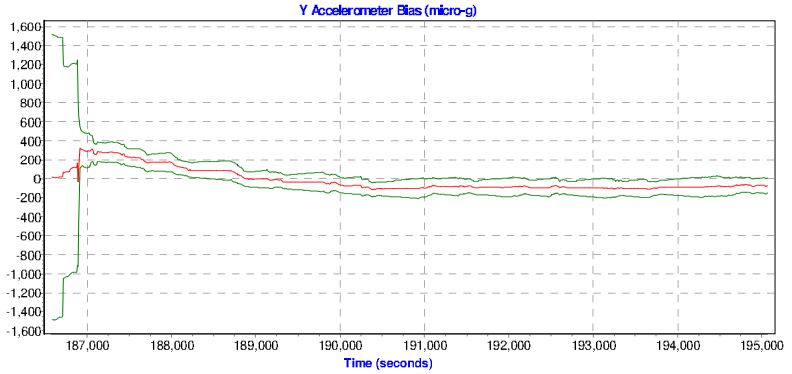

11122b [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
187000
Week 1634
188000
189000
190000
191000
192000
193000
194000
195000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

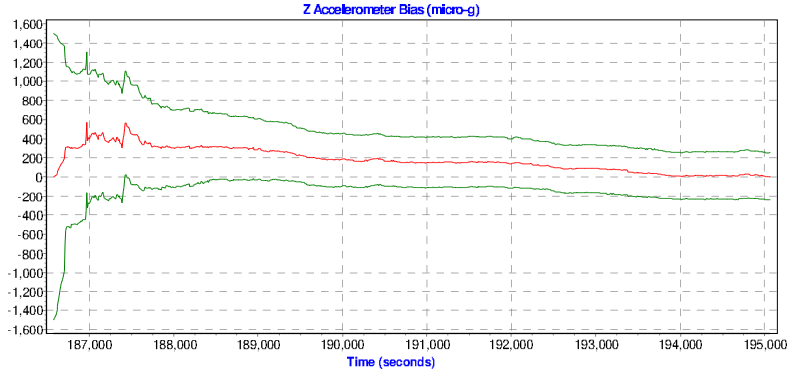
```
;   PROJECT:    G:\Projects\Va\North\122b\pos\GPS\11122b.gnv
;
;   DATE:       July 26/11  (date/time of processing)
;   TIME:       10:58:53
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(5)
PROCTIME = 10:57:49 07/26/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = log0503d
MB_MASTER_FILE  = G:\Projects\Va\North\122b\Ground_Gps\log0503d.gpb
MB_MASTER_POS   = 37 42 26.58275 -77 26 13.13327 28.5840
MB_MASTER_ANT   = 2.062
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = G:\Projects\Va\North\122b\pos\Extract\mgps_01.gpb
REMOTE_POS   = 37 42 28.03799 -77 26 16.86806 33.5026
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 103 108 113 124  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 10.0           ; Elevation mask (deg)
GRID         = UTM 1 0      ; Grid info

CYCLE_TEST  = BOTH            ; Cycle slip test method
STATIC_SLIP_TOL = 0.40       ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF         ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99              ; Base satellite (99-default)

TIMERANGE   = ALL 988429718.8 988438263.0 2 0 ; Processing time range
INTERVAL    = 0.10            ; Processing time interval (seconds)

PROCESS_DIR = FORWARD         ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                 ; True for processing both directions
WRITE_BAD_EPOCHS = OFF        ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000   ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL          ; Format for .fwd/rev file
DETAILED_SUM = ON             ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON           ; Print cycle slips to message log
SAVE_AMB = ON                 ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00     ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50             ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30           ; Time before Float KAR soln used (minutes)
KAR_CUBE     = 1.00   4.00     ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2      ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0       ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = IONO       ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000    ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON       ; Engage KAR while in static mode
KAR_USE_FAR   = ON       ; Allow KAR to go back in time past max. distances
```

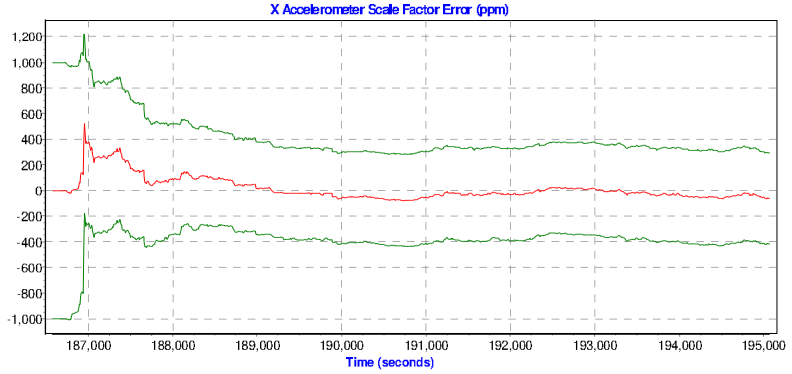
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0          ; KAR data storage interval
KAR_DISTANCE = 7.500 30.000       ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF             ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0         ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000      ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON       ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON     ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF             ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON             ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON     ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = ON  5.0 250.0   ; Engage KAR if <dist1, reset if >dist2 (km)

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1          ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1     ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = ON             ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF          ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0         ; Fixed static interval (s)
SPLIT_SS = OFF 120.0          ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST    = 4.0              ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400             ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF               ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF         ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF              ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF            ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE     = ELEV             ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE     = 4.0000           ; Code measurement standard deviation (m)
STD_PHASE    = 0.0200   ON      ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 1.0000    ON      ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP     = 15.0  5  1       ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST     = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL       = log0503d ON                        ; BLName UseMain(ON/OFF)
STD_RELTOL   = 4.00             ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF          ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0     ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH             ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0               ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON              ; ON/OFF
SP_SF_IONO    = 1               ; SF iono mode 0-off, 1-broadcast
SP_OTH_ERRORS = ON              ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF             ; ON if P1 to be used instead of CA (if availble)
```

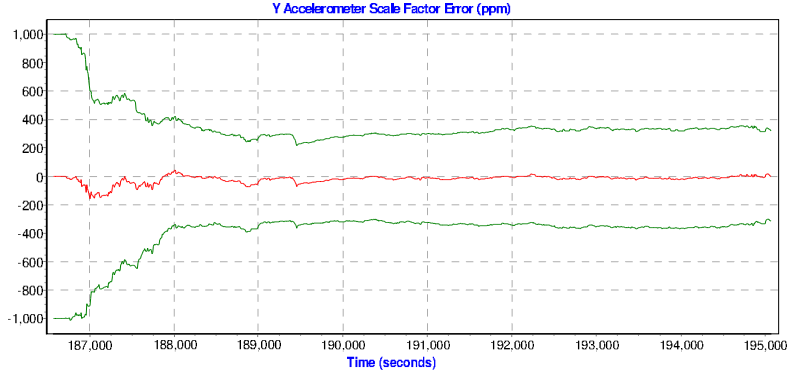
```
SP_CLK_MODE    = OFF            ; ON=Use ClockShift for time, OFF=use corrtime
```

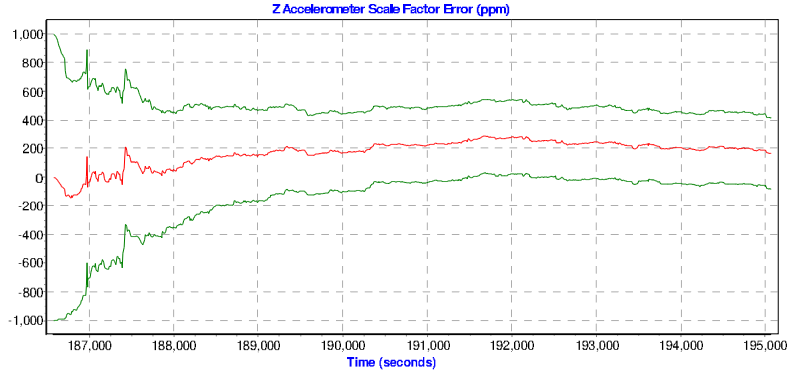






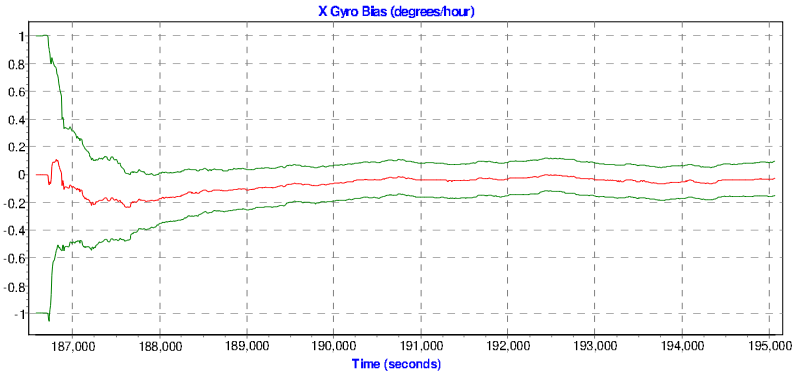


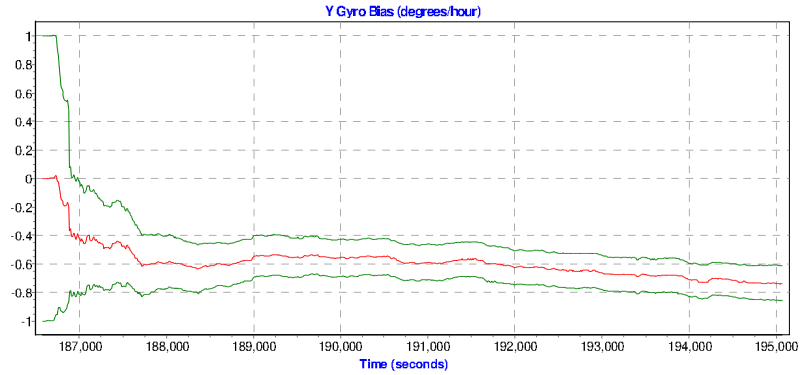


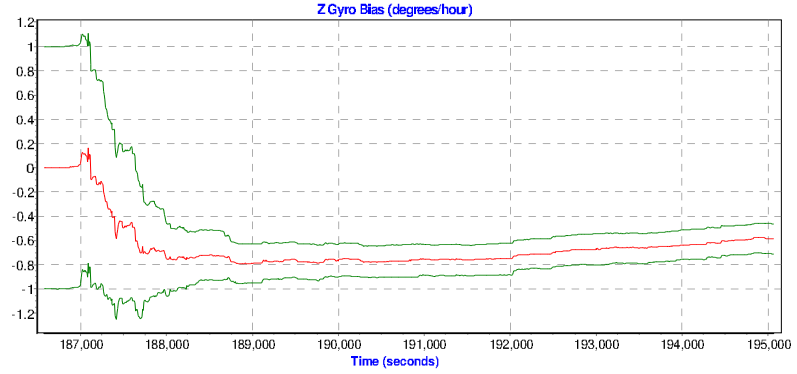


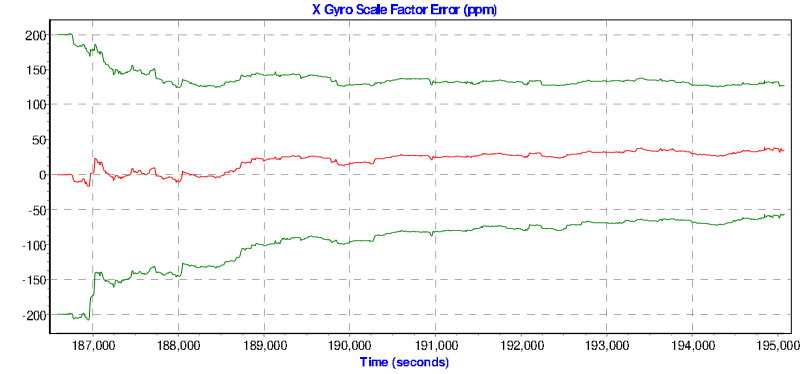
D:\Projects\Va\11122B\pos\Proc\ers_01.out

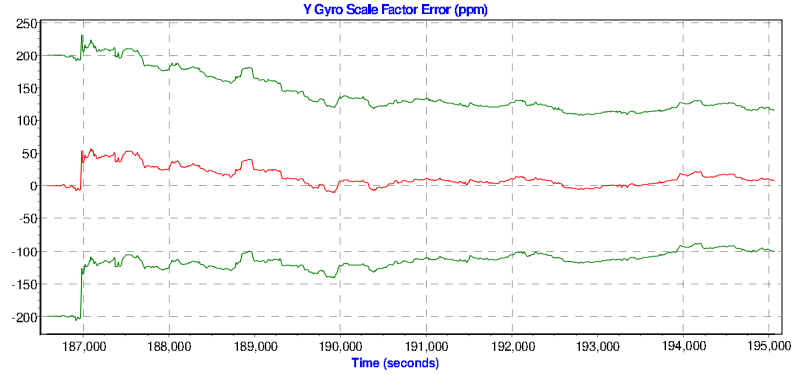
D:\Projects\Va\11122B\pos\Proc\rms_01.out

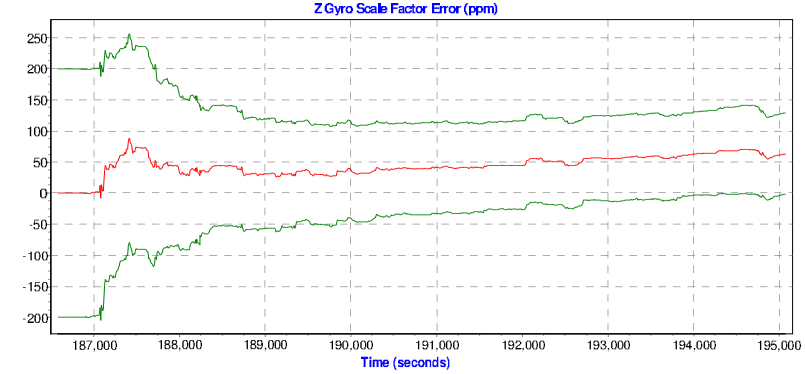












D:\Projects\Va\11122B\pos\Proc\ers_01.out

D:\Projects\Va\11122B\pos\Proc\rms_01.out

Daily Flight Log

Julian Date:	1122	Aircraft Tail #:	435H	Hobbs Beg:	
Local Date:	May 2	Pilot:	J. Melton		
Local Time:	11:44	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name
1122B
ALTM-Logfile Name

Ground Station Data
Begin Static 1
End Static 1
Begin Static 2
End Static 2
Temp/Pressure (GND)
21c / 3013

POS/AV File Transfers	
1st File	Last File

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
0347z	200 05	10	CLR	21c	14c	3013

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
04:08	04:12	315	91	945	1.55	10	161.8	
04:18	04:24	314	271	947	1.58	10	110.1	
04:27	04:31	313	91	981	1.75	9	158.2	
04:36	04:42	312	271	986	1.77	9	109.8	
04:46	04:50	311	91	951	1.58	10	157.1	
04:55	05:01	310	271	928	1.56	10	107.7	
05:04	05:09	309	91	939	1.48	10	160.2	
05:13	05:20	308	271	966	1.45	10	108.0	
05:23	05:27	307	91	942	1.68	9	158.8	
05:37	05:38	306	271	982	1.75	9	109.8	
05:41	05:46	305	91	932	1.45	10	154.7	
05:51	05:57	304	271	969	1.63	9	112.0	

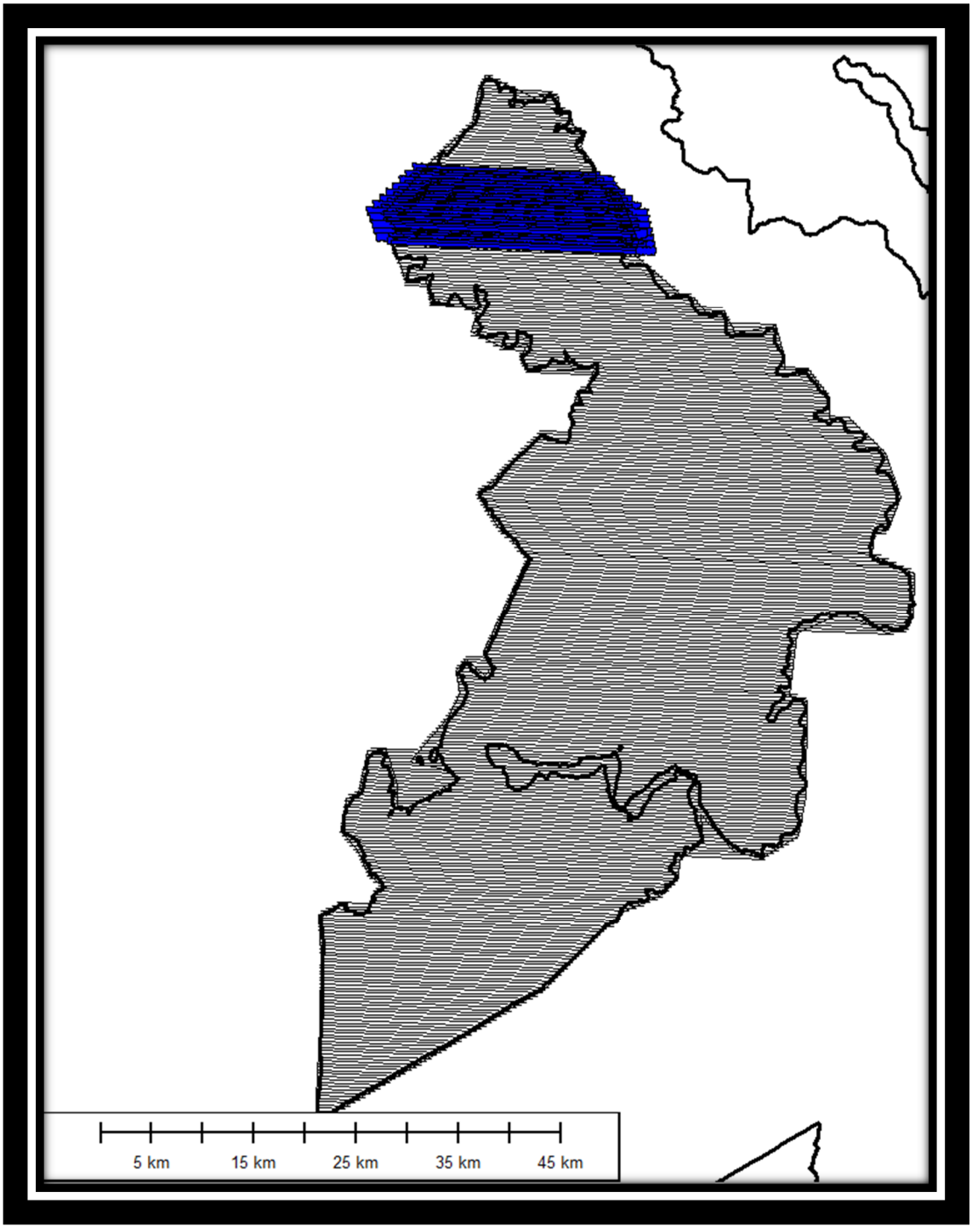
Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV Files to C
- [ ] Power-down ALTM Sys

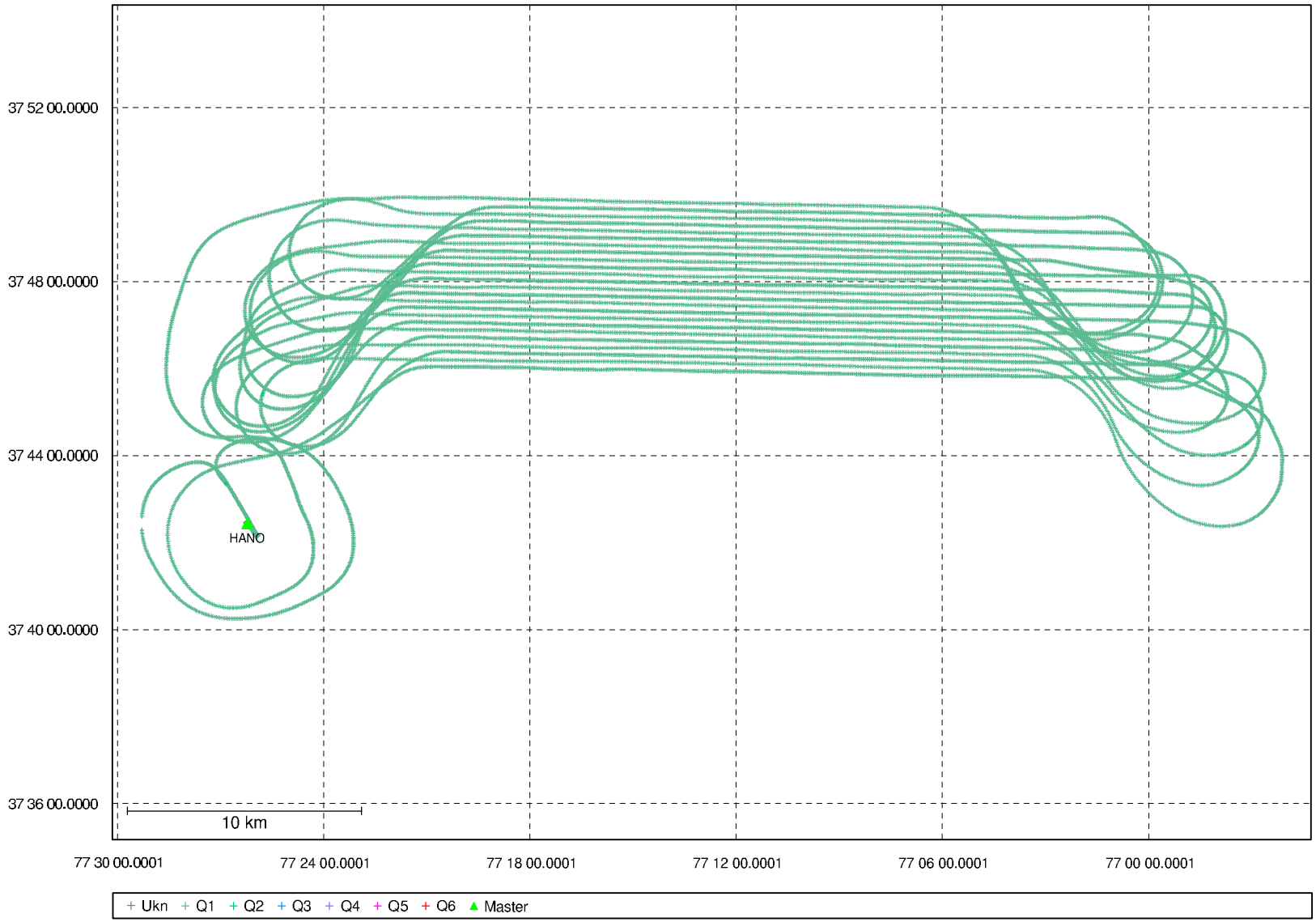
Daily Activity/Comments

Mission: o511124a

2011 05 04



Combined - Map Run (3)



Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: D:\Projects\Va\11124A\pos\GPS\11124a.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	176968
No processed position:	159284
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0208 (m)
C/A Code:	0.97 (m)
L1 Doppler:	0.017 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.009 (m)
North:	0.012 (m)
Height:	0.023 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (17679 occurances):

East:	0.006 (m)
North:	0.012 (m)
Height:	0.022 (m)

Quality Number Percentages:

Q 1:	99.8 %
Q 2:	0.2 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 89.4 %

0.10 - 0.30 m: 10.6 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 6.9 %

Baseline Distances:

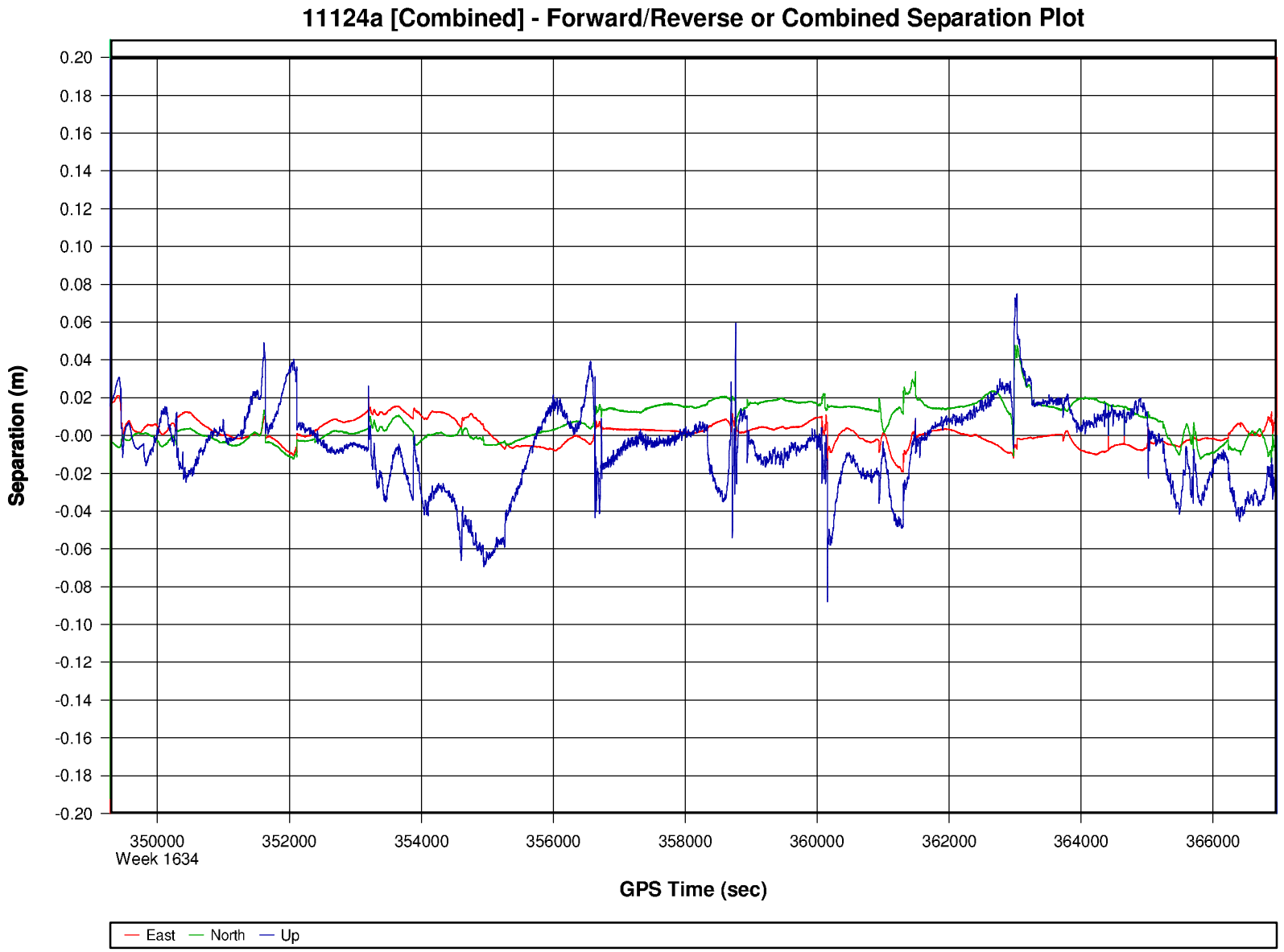
Maximum: 44.329 (km)

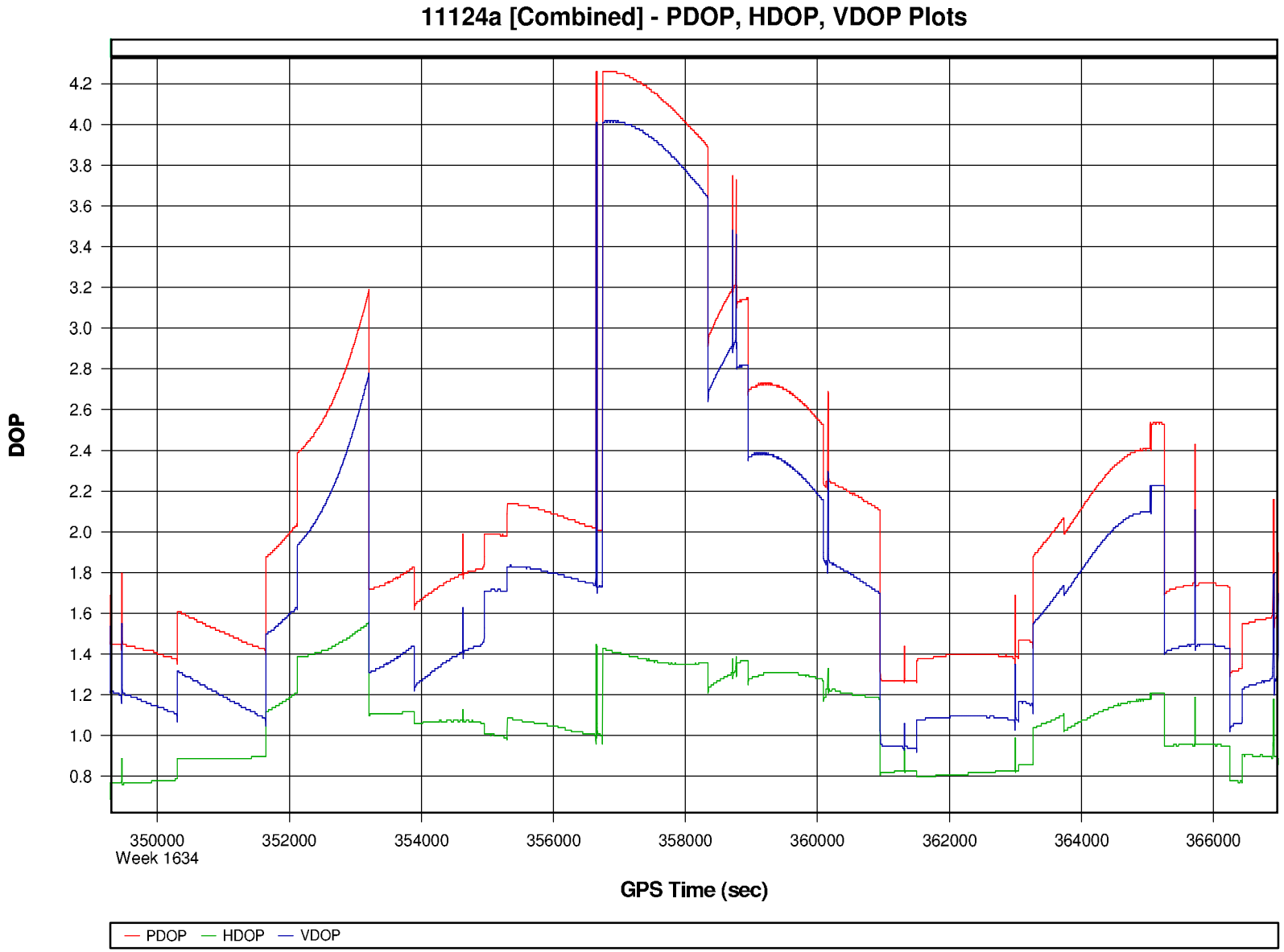
Minimum: 0.020 (km)

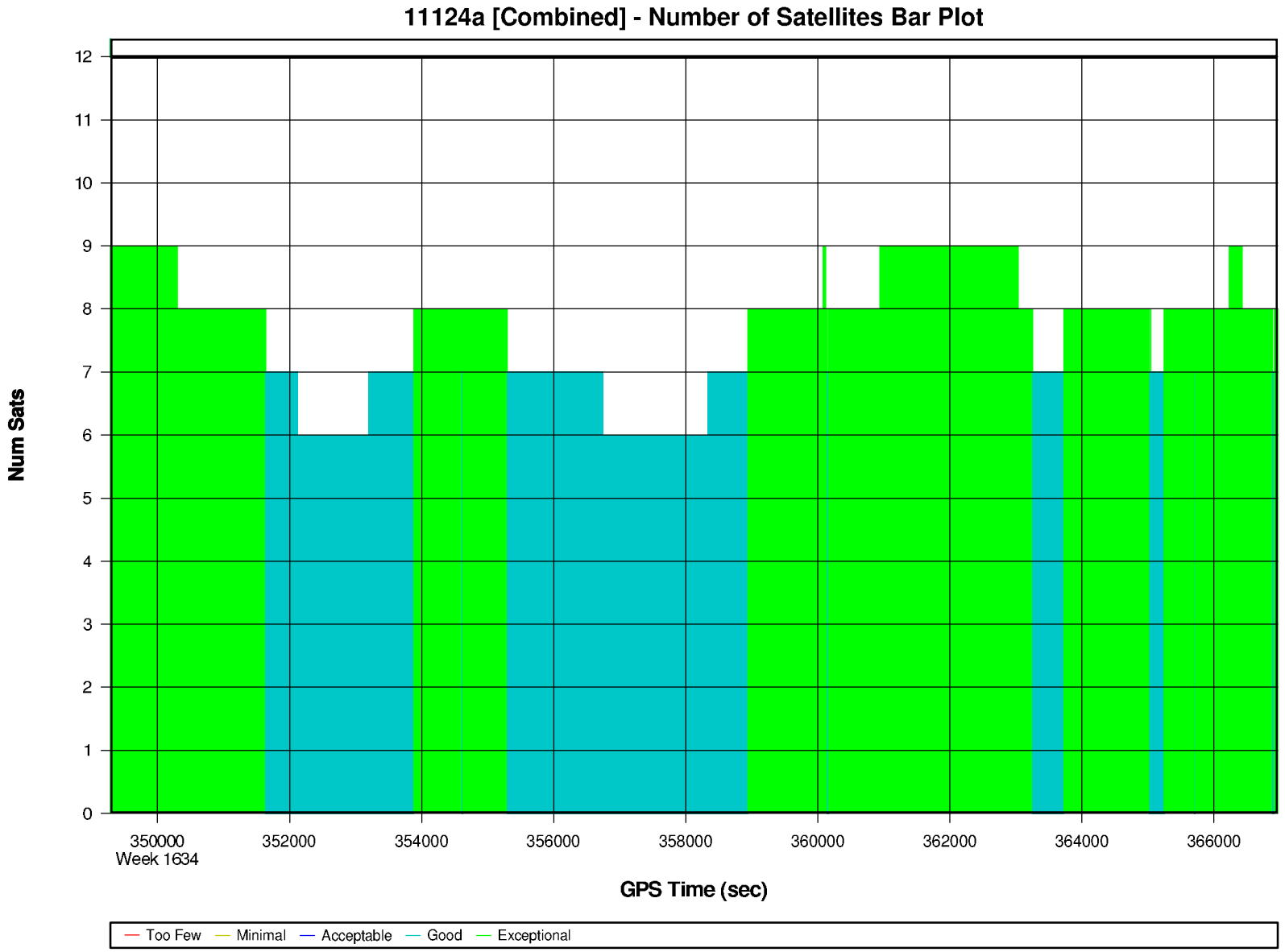
Average: 21.913 (km)

First Epoch: 0.090 (km)

Last Epoch: 0.066 (km)


11124a [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
350000
Week 1634
352000
354000
356000
358000
360000
362000
364000
366000
GPS Time (sec)
East
North
Up

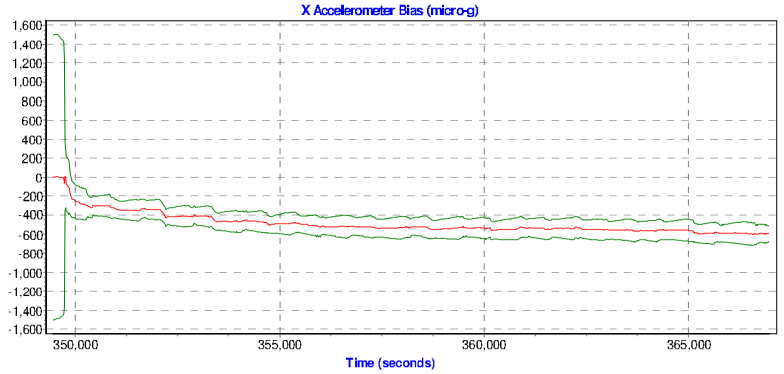

11124a [Combined] - PDOP, HDOP, VDOP Plots
DOP
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
350000
Week 1634
352000
354000
356000
358000
360000
362000
364000
366000
GPS Time (sec)
PDOP
HDOP
VDOP

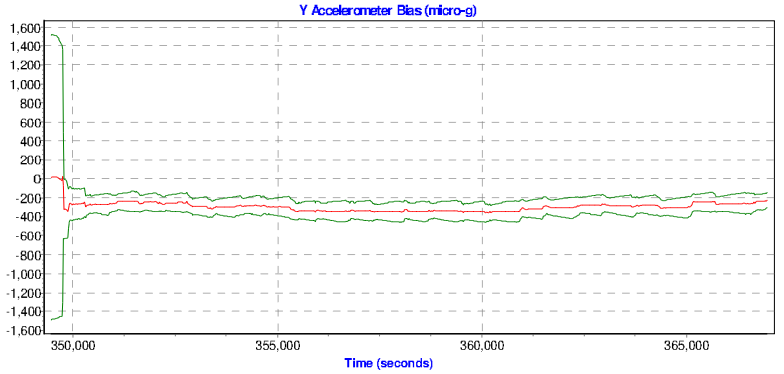

11124a [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
350000
Week 1634
352000
354000
356000
358000
360000
362000
364000
366000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

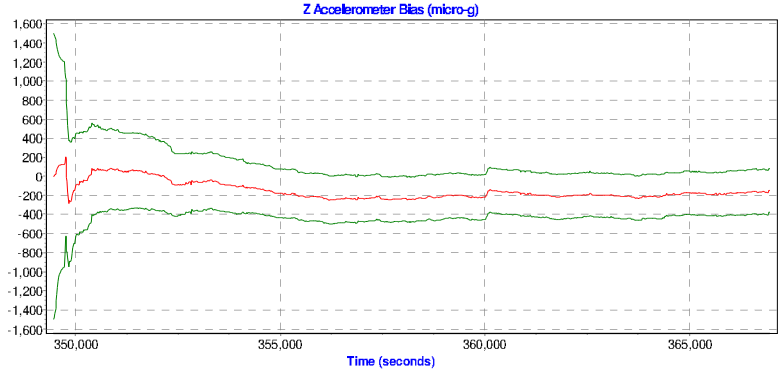
```
;   PROJECT:    G:\Projects\Va\North\11124a\pos\GPS\11124a.gnv
;
;   DATE:       July 26/11  (date/time of processing)
;   TIME:       11:29:51
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(8)
PROCTIME = 11:27:44 07/26/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = HANO
MB_MASTER_FILE  = G:\Projects\Va\North\11124a\Ground_Gps\Base\log20090716_204422.gpb
MB_MASTER_POS   = 37 42 26.58275 -77 26 13.13327 28.5840
MB_MASTER_ANT   = 2.062
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = G:\Projects\Va\North\11124a\pos\Extract\mgps_01.gpb
REMOTE_POS   = 37 42 27.59317 -77 26 16.66941 30.7403
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 103 108 113 124  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK   = 15.0           ; Elevation mask (deg)
GRID        = UTM 1 0      ; Grid info

CYCLE_TEST  = BOTH           ; Cycle slip test method
STATIC_SLIP_TOL = 0.40      ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF        ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99             ; Base satellite (99-default)

TIMERANGE   = ALL 988592468.2 988610164.9 2 0 ; Processing time range
INTERVAL    = 0.10           ; Processing time interval (seconds)

PROCESS_DIR = FORWARD        ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                ; True for processing both directions
WRITE_BAD_EPOCHS = OFF       ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000  ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL         ; Format for .fwd/rev file
DETAILED_SUM = ON            ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON          ; Print cycle slips to message log
SAVE_AMB = ON                ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00    ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50           ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30          ; Time before Float KAR soln used (minutes)
KAR_CUBE    = 1.00   4.00    ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2     ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0      ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = IONO      ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000   ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON      ; Engage KAR while in static mode
KAR_USE_FAR   = ON      ; Allow KAR to go back in time past max. distances
```

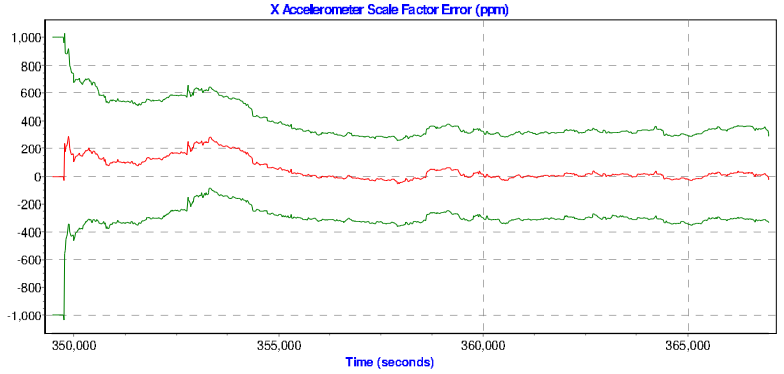
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0         ; KAR data storage interval
KAR_DISTANCE = 7.500 30.000      ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF            ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0        ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000     ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON       ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON    ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF             ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON             ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON     ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = ON  5.0 250.0   ; Engage KAR if <dist1, reset if >dist2 (km)

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1         ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1    ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = ON            ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF         ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0        ; Fixed static interval (s)
SPLIT_SS = OFF 120.0         ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST   = 4.0            ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400          ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF            ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF        ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF           ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF           ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE    = ELEV           ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE    = 4.0000         ; Code measurement standard deviation (m)
STD_PHASE   = 0.0200   ON    ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 1.0000   ON    ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP    = 15.0  5  1     ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST    = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL      = HANO     ON                      ; BLName UseMain(ON/OFF)
STD_RELTOL  = 4.00           ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF        ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0    ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH           ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0             ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON            ; ON/OFF
SP_SF_IONO    = 1             ; SF iono mode 0-off, 1-broadcast
SP_OTH_ERRORS = ON            ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF           ; ON if P1 to be used instead of CA (if availble)
```

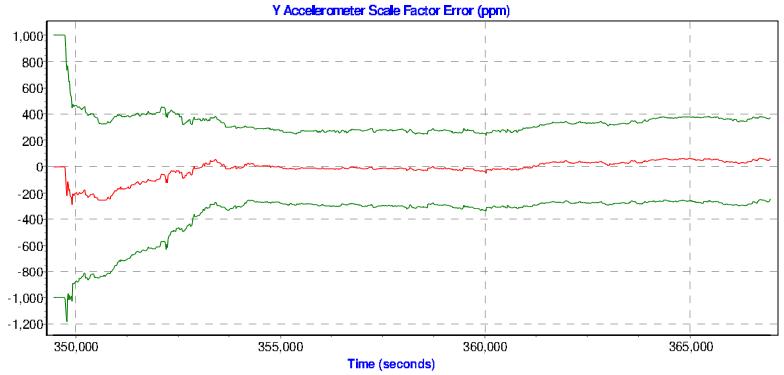
```
SP_CLK_MODE    = OFF            ; ON=Use ClockShift for time, OFF=use corrtime
```

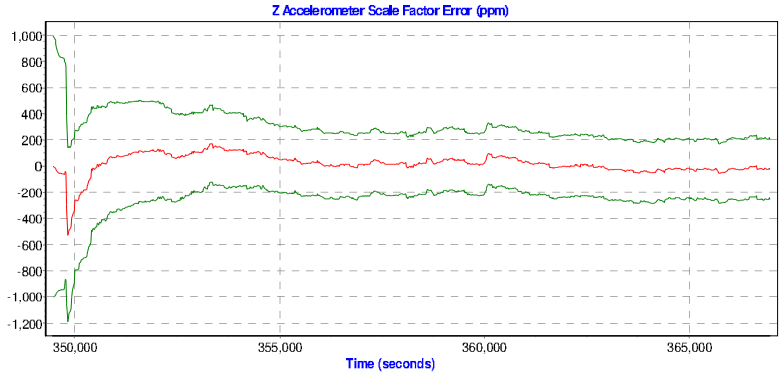






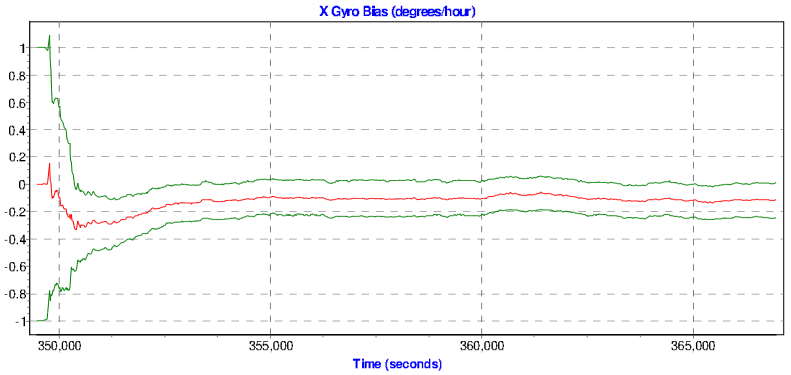


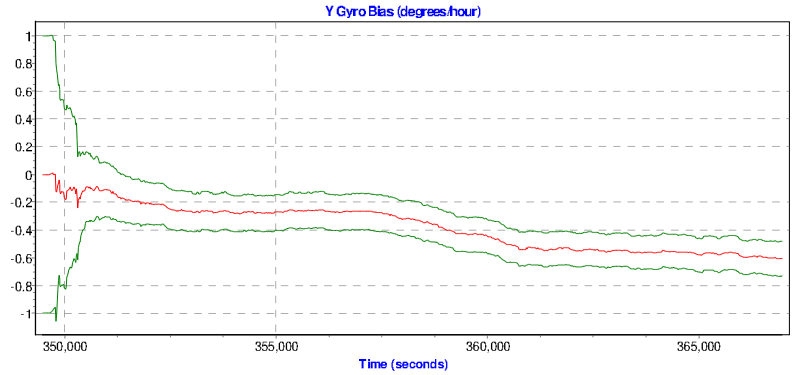


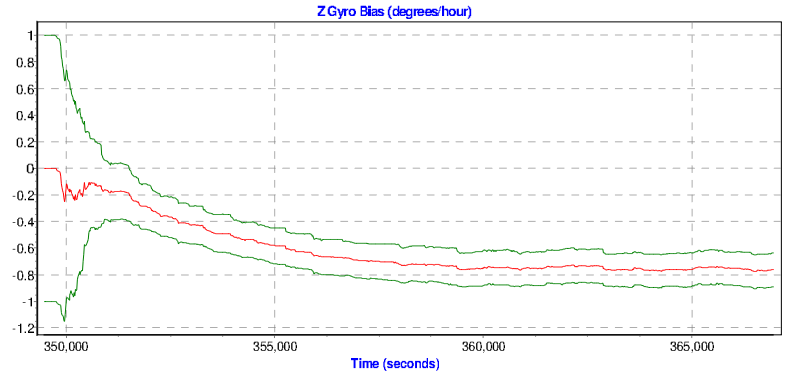


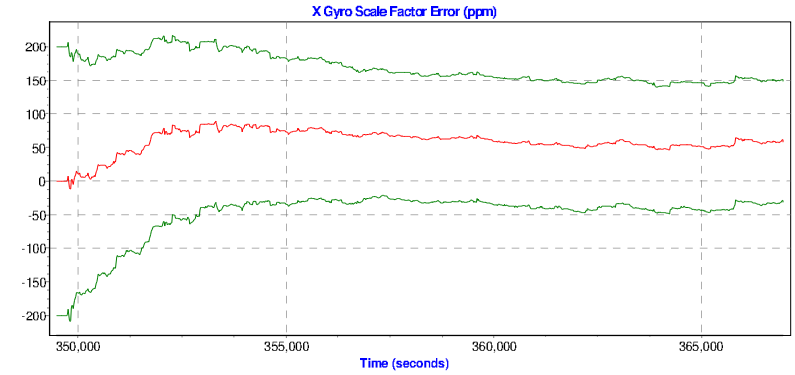
D:\Projects\Va\11124A\pos\Proc\ers_01.out

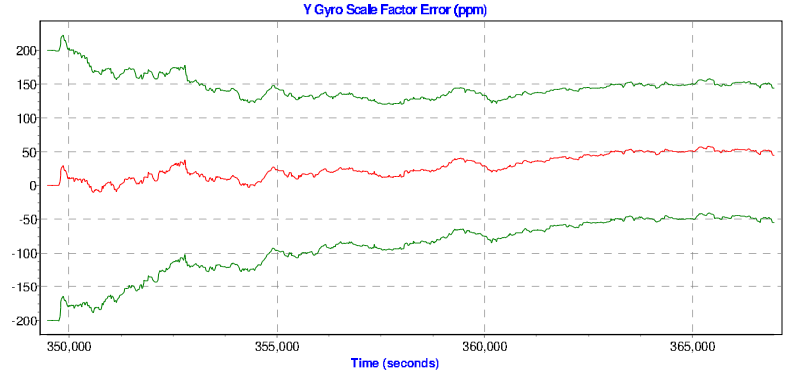
D:\Projects\Va\11124A\pos\Proc\rms_01.out

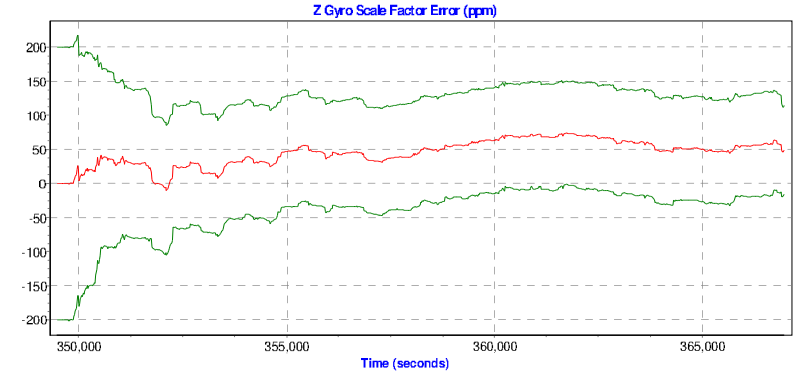












D:\Projects\Va\11124A\pos\Proc\ers_01.out

D:\Projects\Va\11124A\pos\Proc\rms_01.out

Daily Flight Log

Julian Date:	1124	Aircraft Tail #:	435H	Hobbs Beg:	
Local Date:	May 4	Pilot:	J. Melton		
Local Time:	8:55	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name	POS/AV File Transfers	
1124A	1st File	Last File
ALTM-Logfile Name		

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
0058Z	Calm	10	CLR	10C	6C	3016

Ground Station Data

Begin Static 1	End Static 1	Begin Static 2	End Static 2	Temp/Pressure (GND)
				10C / 3016

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
01:21	01:27	303	91	947	1.67	9	138.5	
01:31	01:37	302	271	969	1.43	10	129.1	
01:41	01:46	301	91	971	1.54	9	151.3	
01:50	01:57	300	271	950	1.39	10	122.0	
02:01	02:07	299	91	976	1.57	9	152.9	
02:11	02:18	298	271	950	2.06	8	122.9	
02:23	02:28	297	91	978	2.16	8	148.1	
02:33	02:40	296	271	957	2.23	8	119.2	
02:44	02:51	295	91	981	2.20	8	147.3	
02:55	03:03	294	271	950	2.08	8	118.8	
03:07	03:13	293	91	985	1.84	8	149.6	
03:17	03:26	292	271	970	1.41	10	117.6	
03:30	03:36	291	91	980	1.64	9	151.5	
03:41	03:49	290	271	951	3.19	8	114.5	
03:57	04:00	289	91	1000	1.48	10	159.7	
04:04	04:13	288	271	942	1.56	10	121.5	
04:17	04:24	287	91	978	1.59	10	145.1	
04:27	04:36	286	271	962	1.77	9	118.0	
04:40	04:47	285	91	951	1.57	10	137.9	
04:51	04:59	284	271	975	1.55	10	120.1	
05:03	05:10	283	91	968	1.48	10	149.1	
05:14	05:23	282	271	971	1.66	9	120.9	
05:26	05:32	281	91	961	1.75	9	154.9	

Daily Activity/Comments

Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV Files to C
- [ ] Power-down ALTM Syst

Daily Flight Log

Julian Date:	1124	Aircraft Tail #:	4354	Hobbs Beg:	
Local Date:	May 4	Pilot:	J. Melton		
Local Time:	8:55	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name	POS/AV File Transfers	
11244	1st File	LastFile
ALTM-Logfile Name		

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
0058Z	Clm	10	CLR	10c	06c	30.16

Ground Station Data

Begin Static 1	End Static 1	Begin Static 2	End Static 2	Temp/Pressure (GND)
				10c 30.16

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
05:38	05:44	280	271	460	1.45	10	113.8	

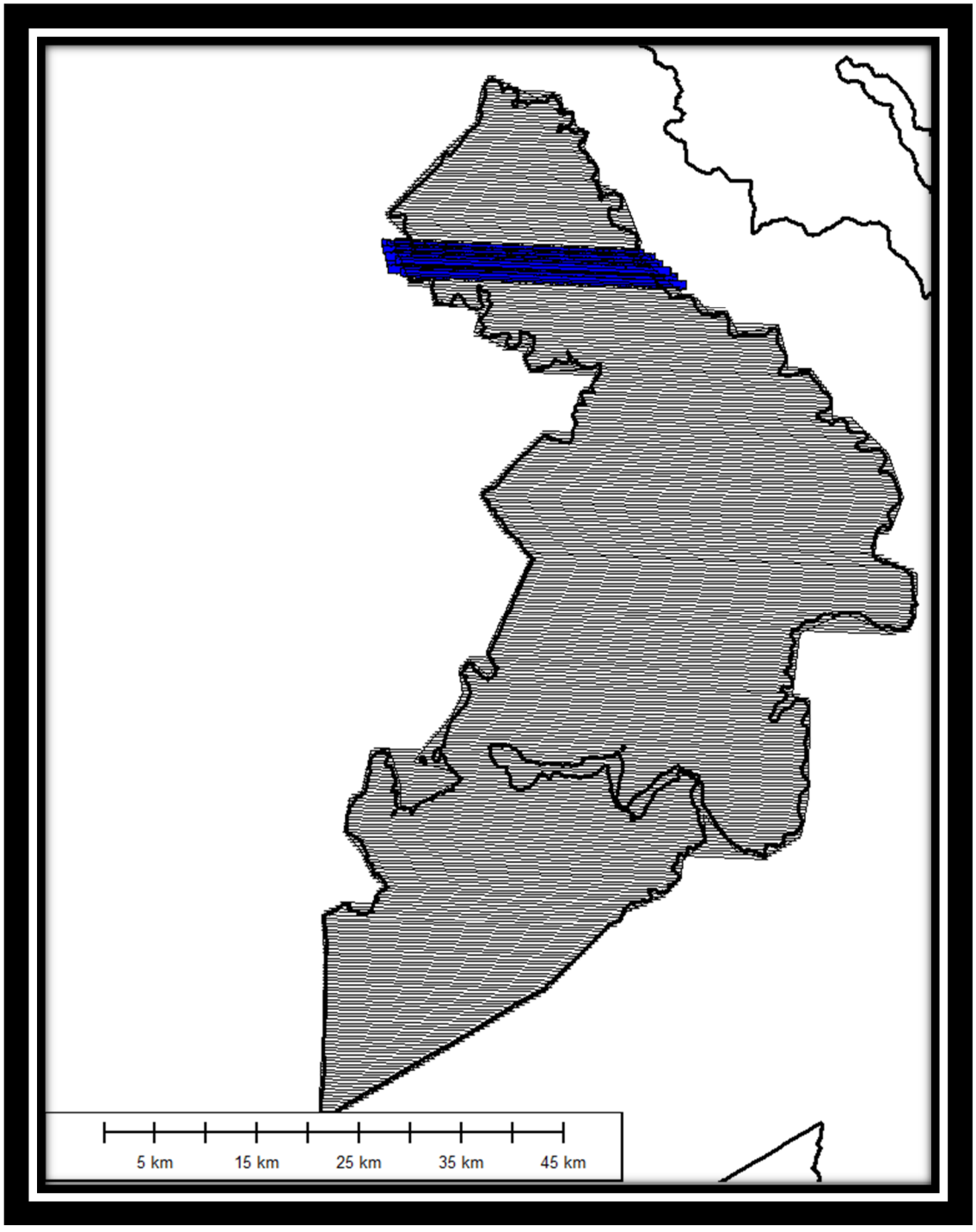
Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet ExplorerFTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV files to C
- [ ] Power-down ALTM Syst

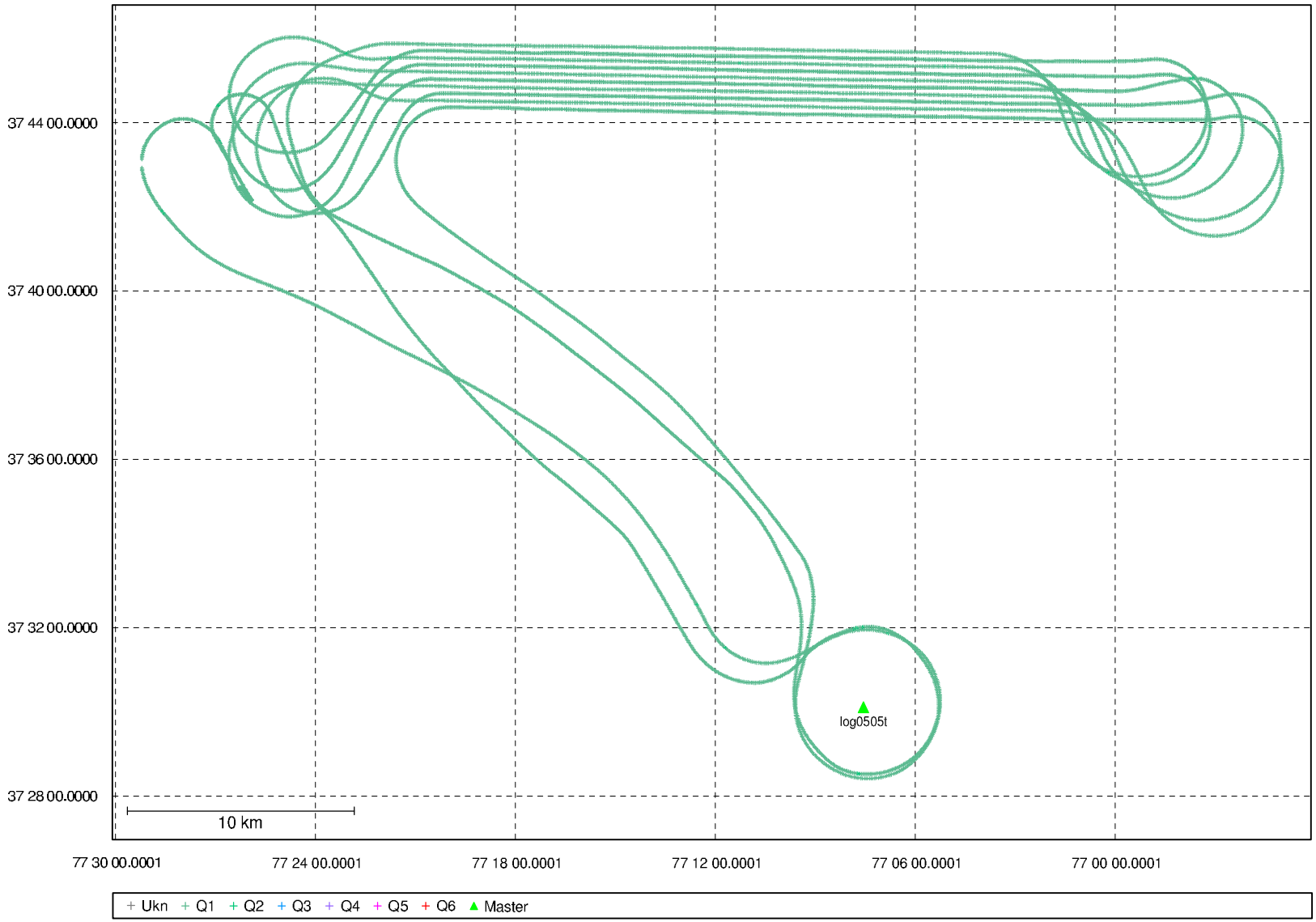
Daily Activity/Comments

Mission: o511125a

2011 05 05



Combined - Map Run (7)



Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: D:\Projects\Va\125\pos\GPS\125.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	103531
No processed position:	93190
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0216 (m)
C/A Code:	0.97 (m)
L1 Doppler:	0.020 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.089 (m)
North:	0.158 (m)
Height:	0.188 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (9279 occurances):

East:	0.029 (m)
North:	0.013 (m)
Height:	0.027 (m)

Quality Number Percentages:

Q 1:	99.7 %
Q 2:	0.3 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 100.0 %

0.10 - 0.30 m: 0.0 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

Baseline Distances:

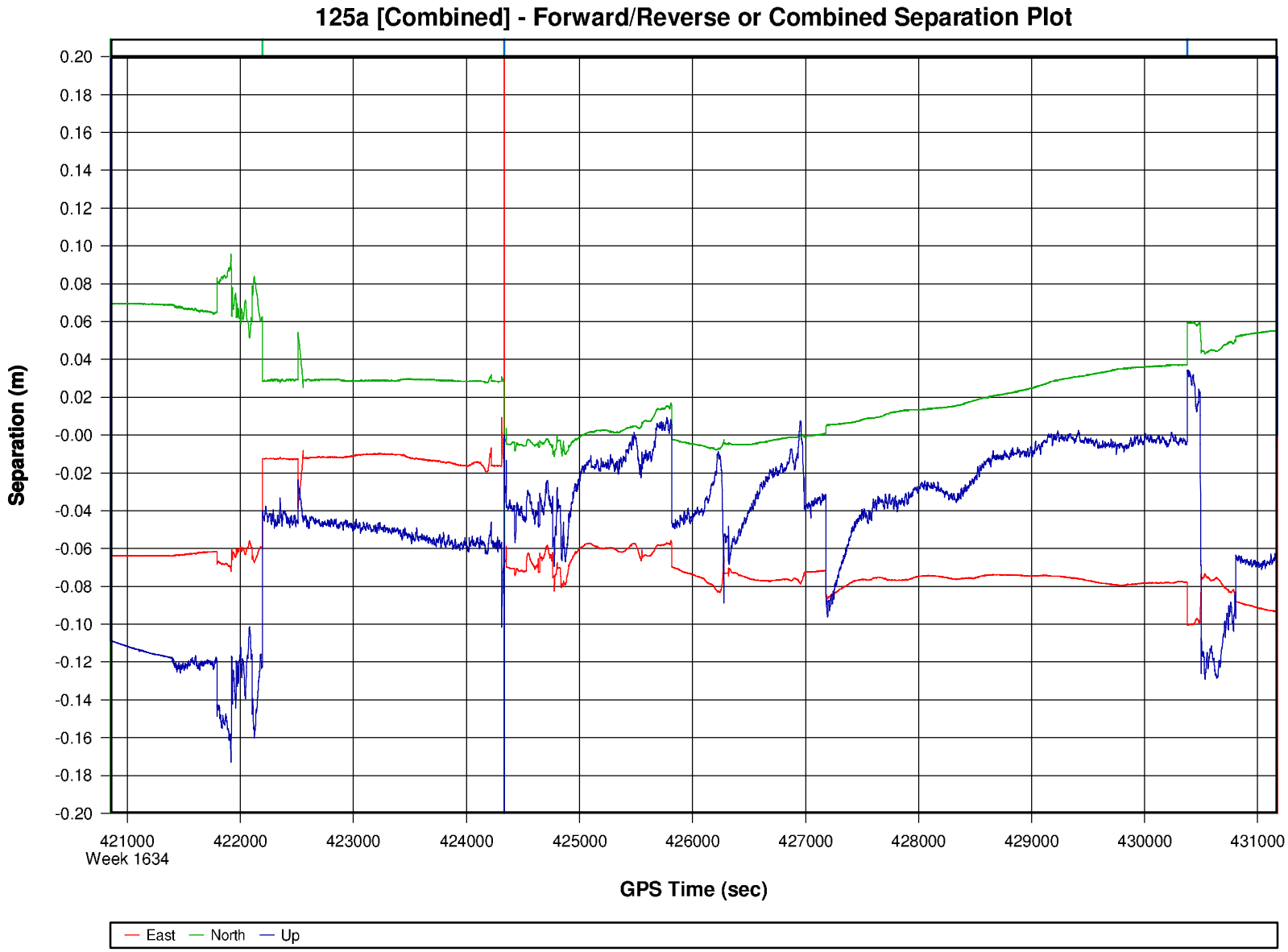
Maximum: 40.265 (km)

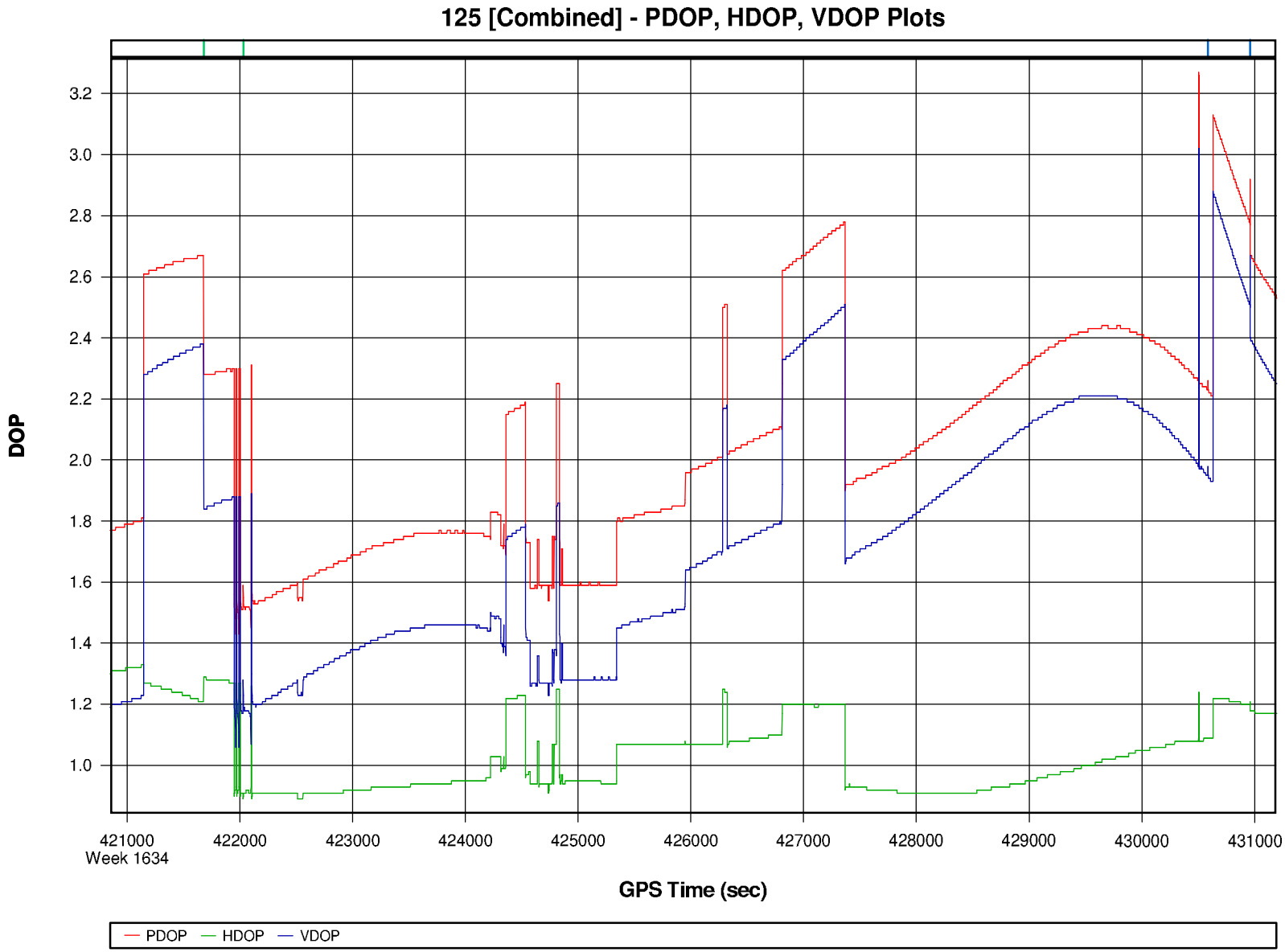
Minimum: 2.929 (km)

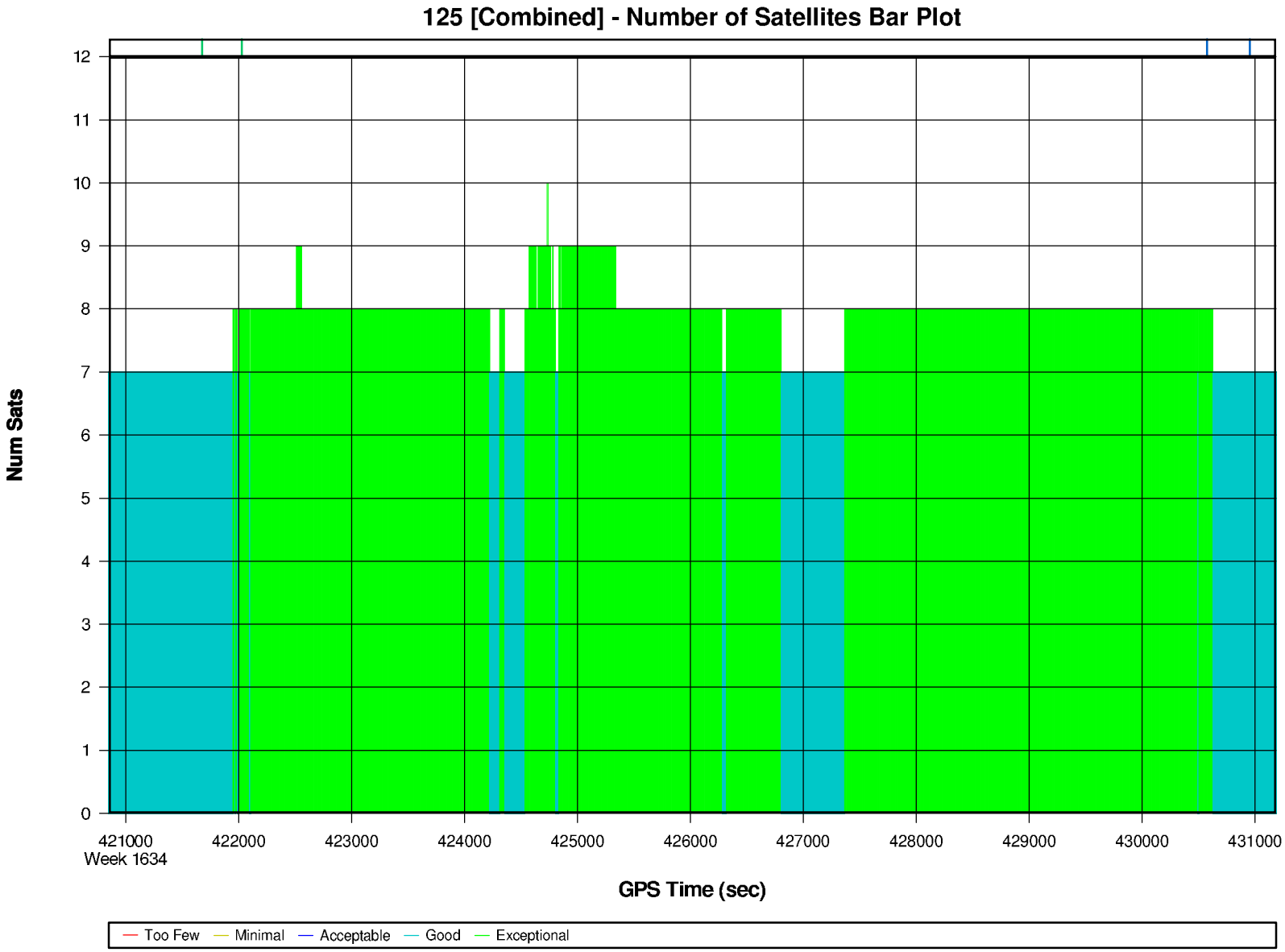
Average: 27.237 (km)

First Epoch: 35.781 (km)

Last Epoch: 36.338 (km)


125a [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
421000
Week 1634
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (sec)
East
North
Up

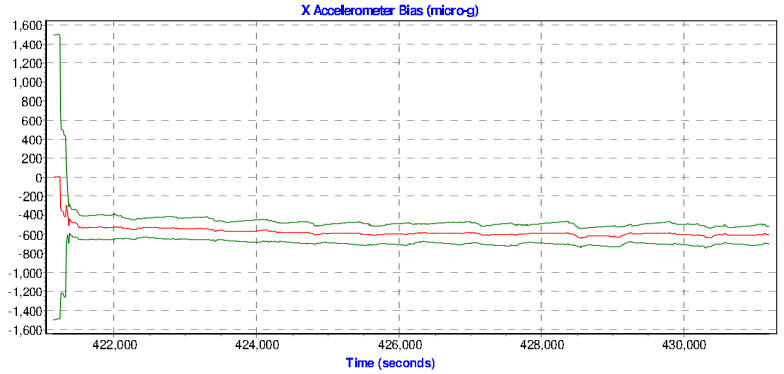

125 [Combined] - PDOP, HDOP, VDOP Plots
DOP
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
421000
Week 1634
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (sec)
PDOP
HDOP
VDOP

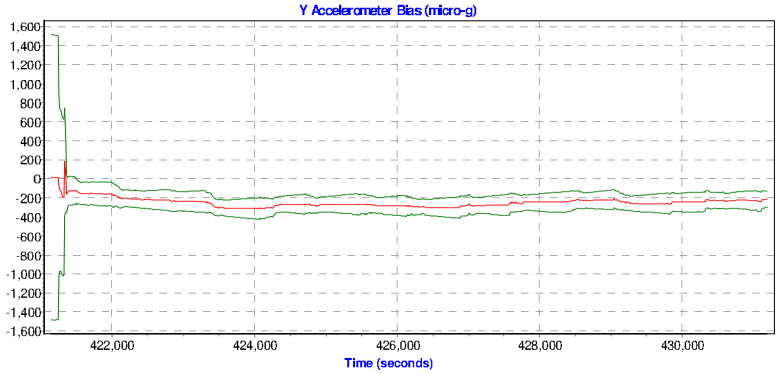

125 [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
421000
Week 1634
422000
423000
424000
425000
426000
427000
428000
429000
430000
431000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

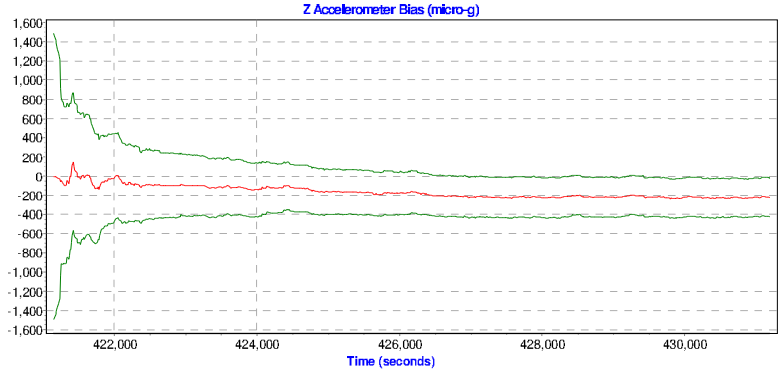
```
;   PROJECT:    D:\Projects\Va\Tpoint_bases\125a\GPS\125a.gnv
;
;   DATE:       July 26/11  (date/time of processing)
;   TIME:       11:54:26
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(7)
PROCTIME = 11:53:29 07/26/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = log0505t
MB_MASTER_FILE  = D:\Projects\Va\Tpoint_bases\126a\ground-gps\base6\log0505t.gpb
MB_MASTER_POS   = 37 30 06.65193 -77 07 33.81068 -0.1037
MB_MASTER_ANT   = 2.062
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = D:\Projects\Va\Tpoint_bases\125a\Extract\mgps_01.gpb
REMOTE_POS   = 37 42 27.07931 -77 26 16.60691 55.5628
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 105 108 111 126  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 14.0           ; Elevation mask (deg)
GRID         = UTM 17 0     ; Grid info

CYCLE_TEST  = BOTH            ; Cycle slip test method
STATIC_SLIP_TOL = 0.40       ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF         ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99              ; Base satellite (99-default)

TIMERANGE   = RANGE 988664045.0 988674375.0 2 0 ; Processing time range
INTERVAL    = 0.10            ; Processing time interval (seconds)

PROCESS_DIR = FORWARD         ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                 ; True for processing both directions
WRITE_BAD_EPOCHS = OFF        ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000   ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL          ; Format for .fwd/rev file
DETAILED_SUM = ON             ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON           ; Print cycle slips to message log
SAVE_AMB = ON                 ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00     ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50             ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30          ; Time before Float KAR soln used (minutes)
KAR_CUBE     = 1.00   4.00     ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2      ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0       ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = AUTO       ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000    ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON       ; Engage KAR while in static mode
KAR_USE_FAR   = ON       ; Allow KAR to go back in time past max. distances
```

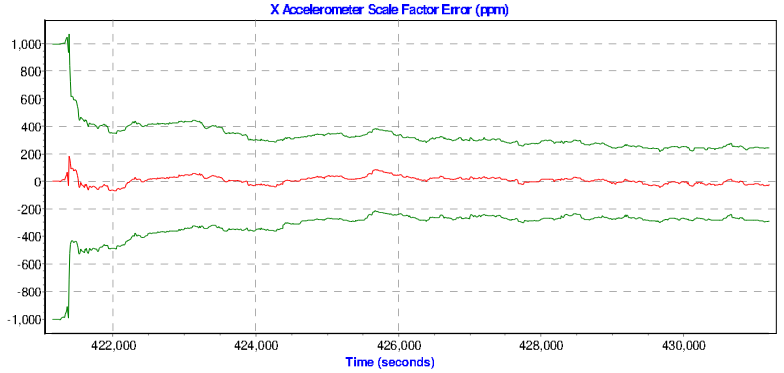
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0          ; KAR data storage interval
KAR_DISTANCE = 7.500 60.000       ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF             ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0         ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000      ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON       ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON     ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF             ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON             ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON     ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = OFF 5.0 60.0   ; Engage KAR if <dist1, reset if >dist2 (km)
USERKAR = 422194.0 FORWARD NORESET    ; Engage KAR at this time
USERKAR = 430377.0 REVERSE NORESET    ; Engage KAR at this time

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1         ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1    ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = OFF             ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF          ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0         ; Fixed static interval (s)
SPLIT_SS = OFF 120.0          ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST   = 4.0              ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400            ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF              ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF         ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF             ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF            ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE    = ELEV             ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE    = 4.0000           ; Code measurement standard deviation (m)
STD_PHASE   = 0.0200   ON      ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 1.0000   ON      ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP    = 15.0  5  1       ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST    = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL      = log0505t ON                       ; BLName UseMain(ON/OFF)
STD_RELTOL  = 4.00             ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF          ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0     ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH             ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0              ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON             ; ON/OFF
SP_SF_IONO    = 1              ; SF iono mode 0-off, 1-broadcast
```

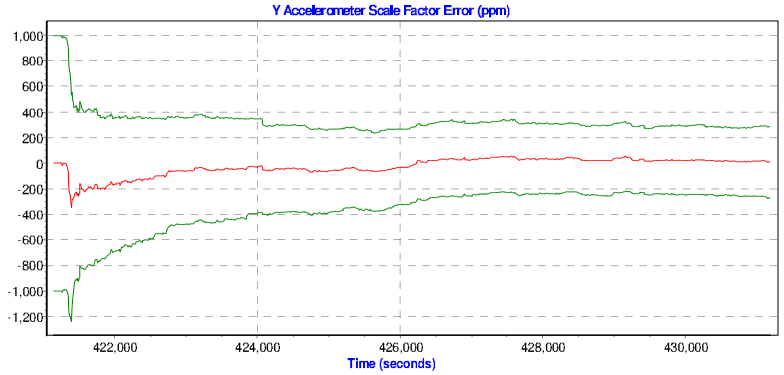
```
SP_OTH_ERRORS = ON            ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF           ; ON if P1 to be used instead of CA (if availble)
SP_CLK_MODE   = OFF           ; ON=Use ClockShift for time, OFF=use corrtime
```

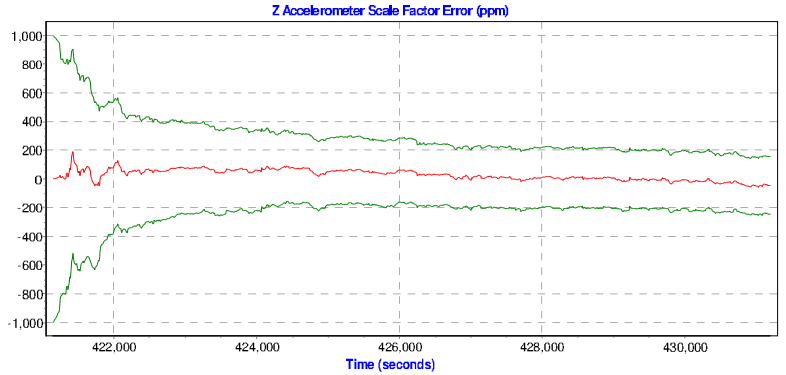






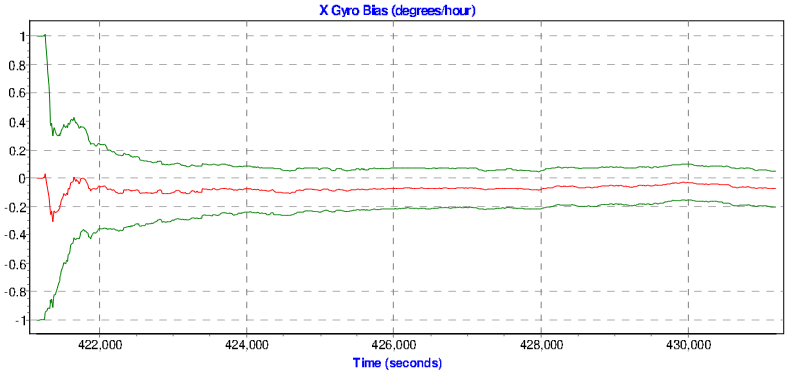


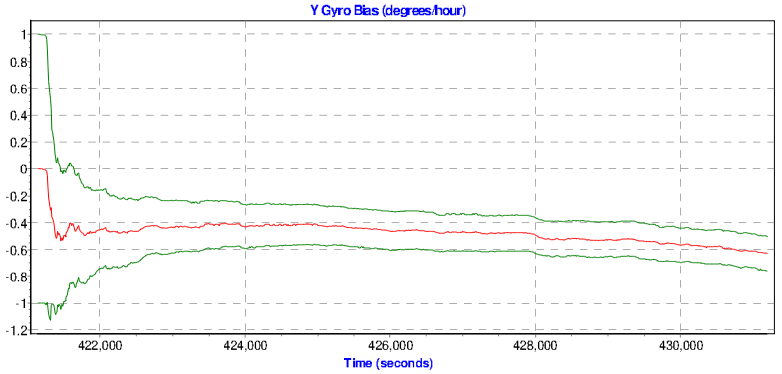


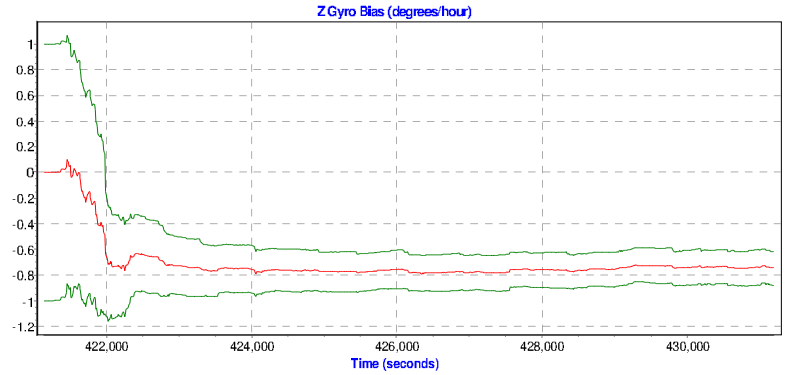


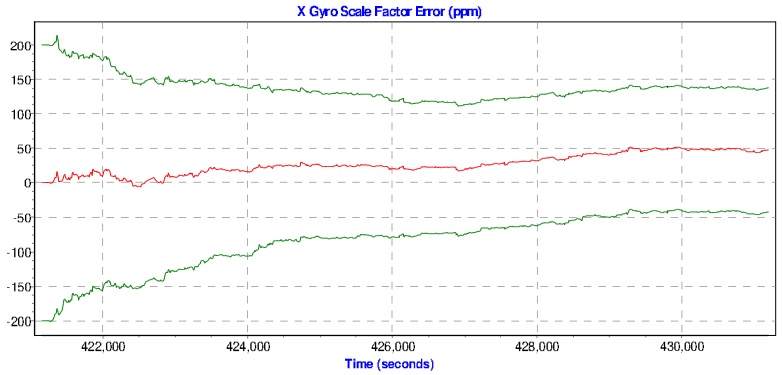
D:\Projects\Va\125\pos\Proc\ers_01.out

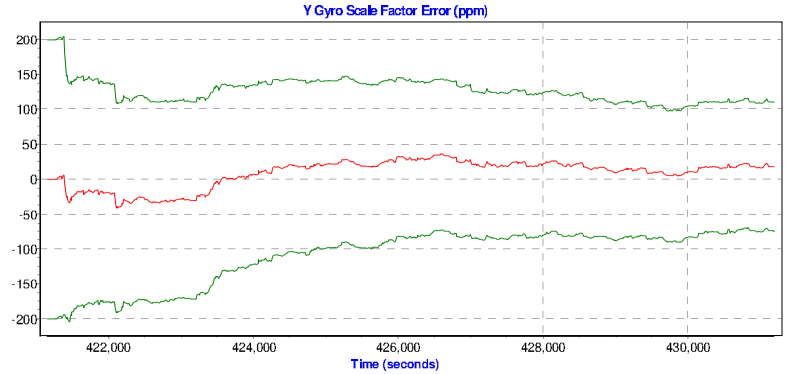
D:\Projects\Va\125\pos\Proc\rms_01.out

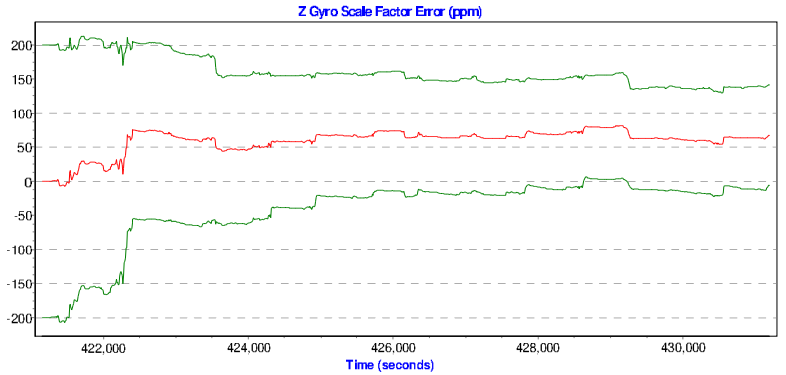












D:\Projects\Va\125\pos\Proc\ers_01.out
D:\Projects\Va\125\pos\Proc\rms_01.out

Daily Flight Log

Julian Date:	11125	Aircraft Tail #:	435H	Hobbs Beg:	
Local Date:	May 5	Pilot:	J. Melton		
Local Time:	4:59	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name
11125A
ALTM-Logfile Name

Ground Station Data
Begin Static 1
End Static 1
Begin Static 2
End Static 2
Temp/Pressure (GND)
19c / 3010

POS/AV File Transfers

1st File	Last File

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
2054z	240 07	10	CLR	19c	00c	3010

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
21:28	21:36	279	91	964	2.10	8	146.7	
21:39	21:47	278	271	990	2.20	9	127.8	
21:59	21:58	277	91	966	1.86	10	164.5	
22:02	22:10	276	271	969	1.83	10	124.0	
22:14	22:21	275	91	964	1.74	10	153.5	
22:25	22:34	274	271	953	1.49	10	128.8	
22:39	22:45	273	91	975	1.66	9	152.4	
22:50	22:58	272	271	978	1.68	9	119.9	
23:03	23:10	271	91	976	2.60	8	153.4	
23:14	23:23	270	271	963	2.67	8	125.1	

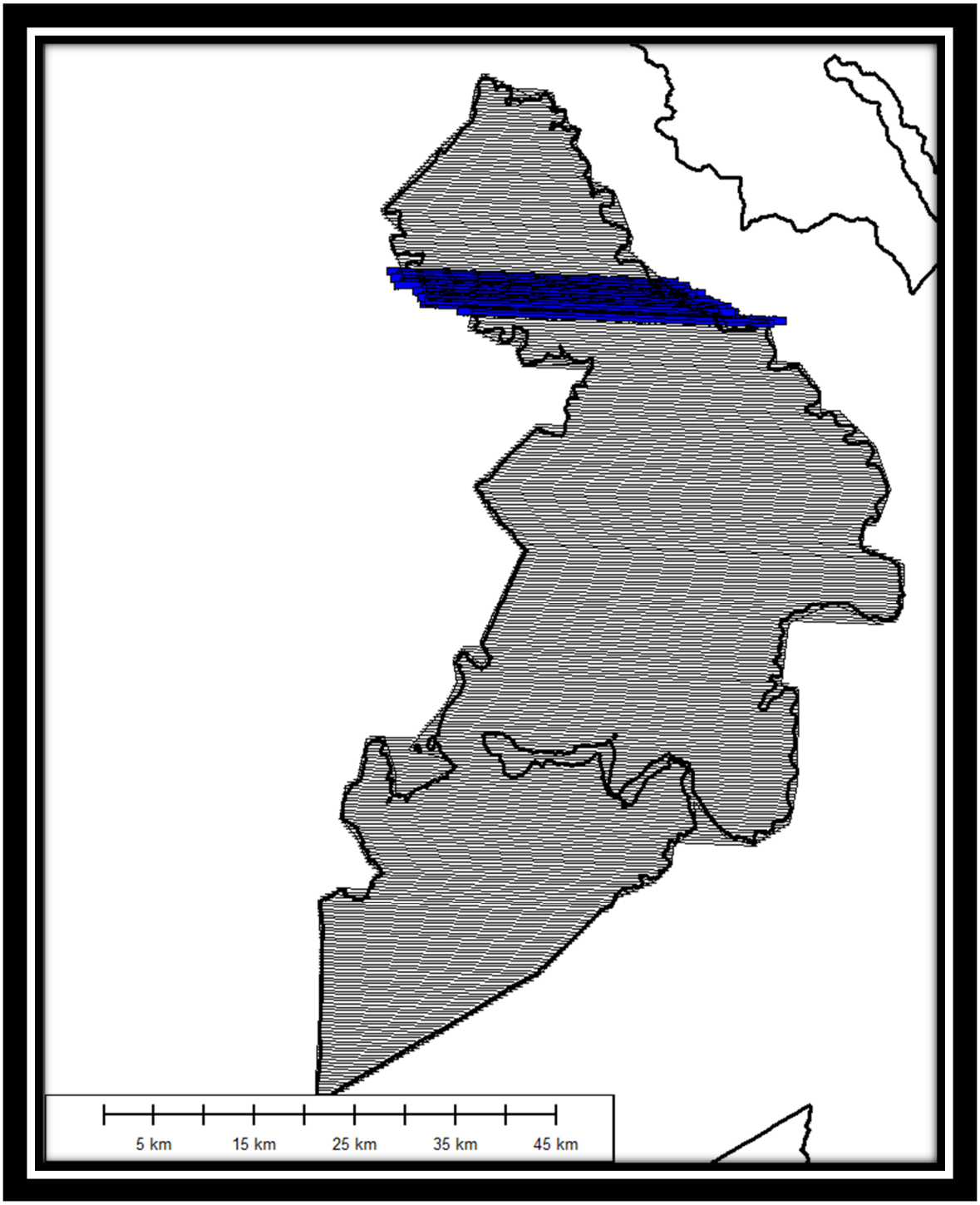
Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV files to C
- [ ] Power-down ALTM Syst

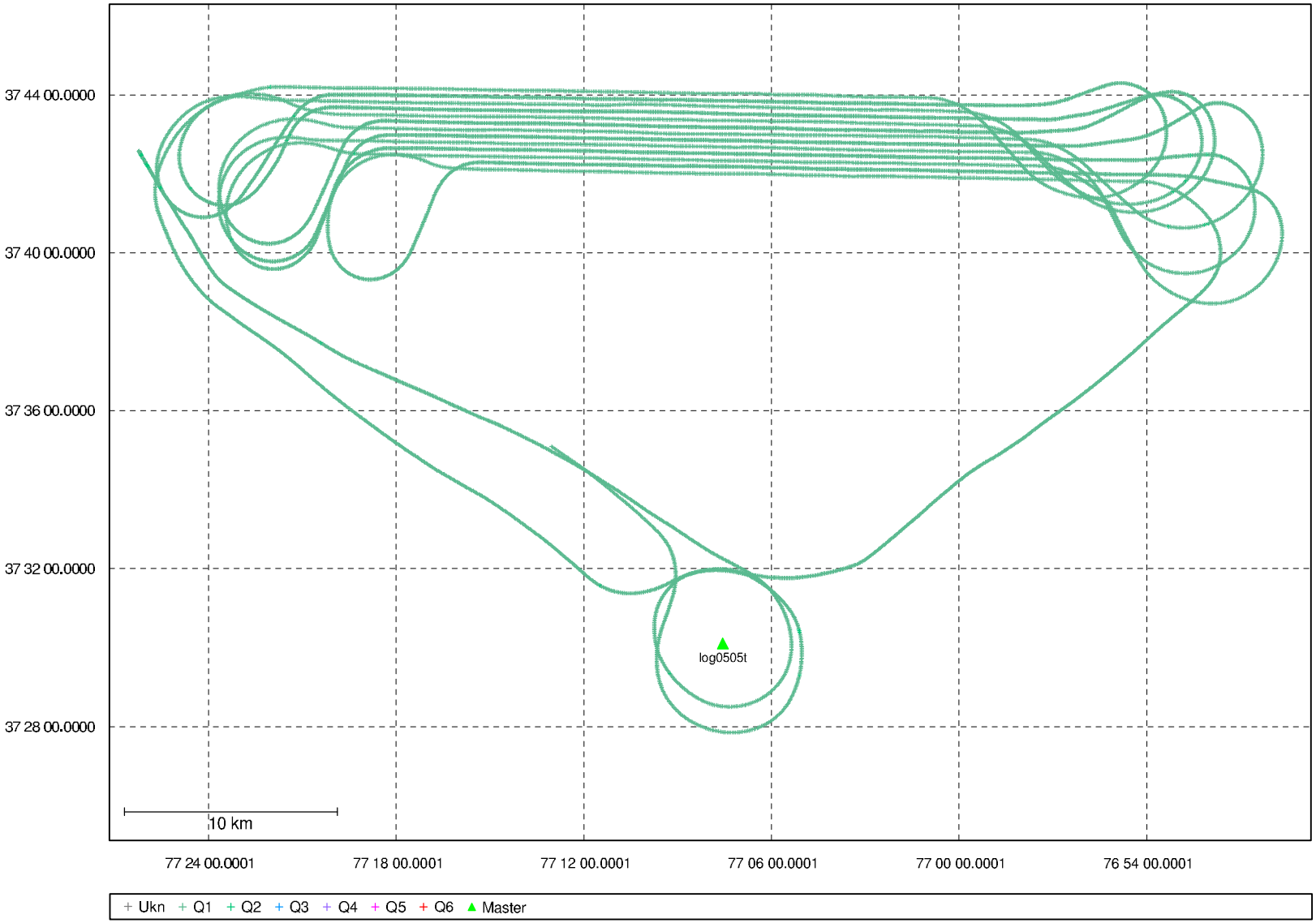
Daily Activity/Comments

Mission: o511126a

2011 05 06



Combined - Map Run (5)



Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: D:\Projects\Va\126\pos\GPS\11126a.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	121843
No processed position:	109670
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0223 (m)
C/A Code:	1.11 (m)
L1 Doppler:	0.018 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.026 (m)
North:	0.029 (m)
Height:	0.055 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (12005 occurances):

East:	0.009 (m)
North:	0.014 (m)
Height:	0.048 (m)

Quality Number Percentages:

Q 1:	99.6 %
Q 2:	0.4 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 98.7 %

0.10 - 0.30 m: 1.3 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

Baseline Distances:

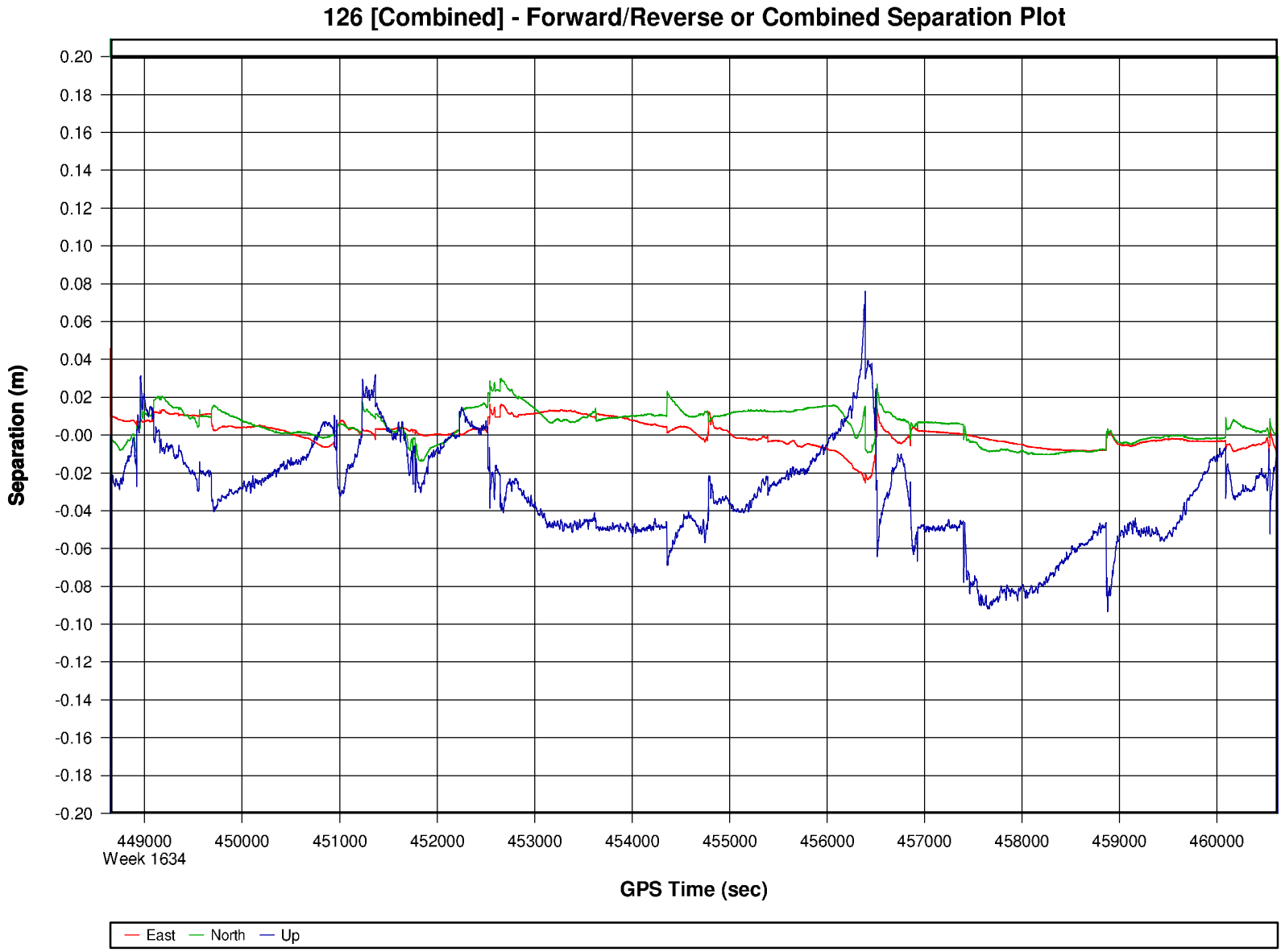
Maximum: 35.869 (km)

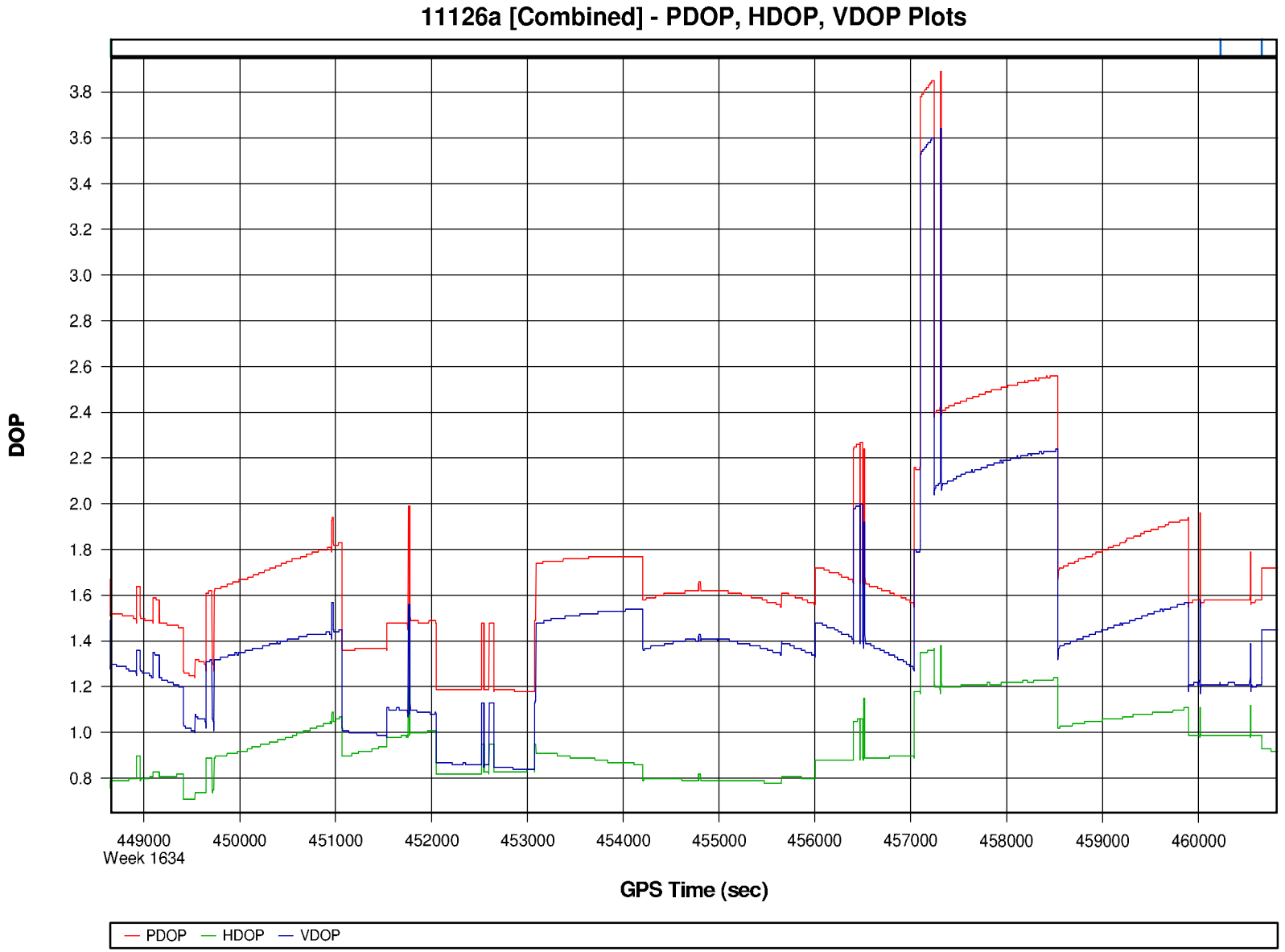
Minimum: 2.980 (km)

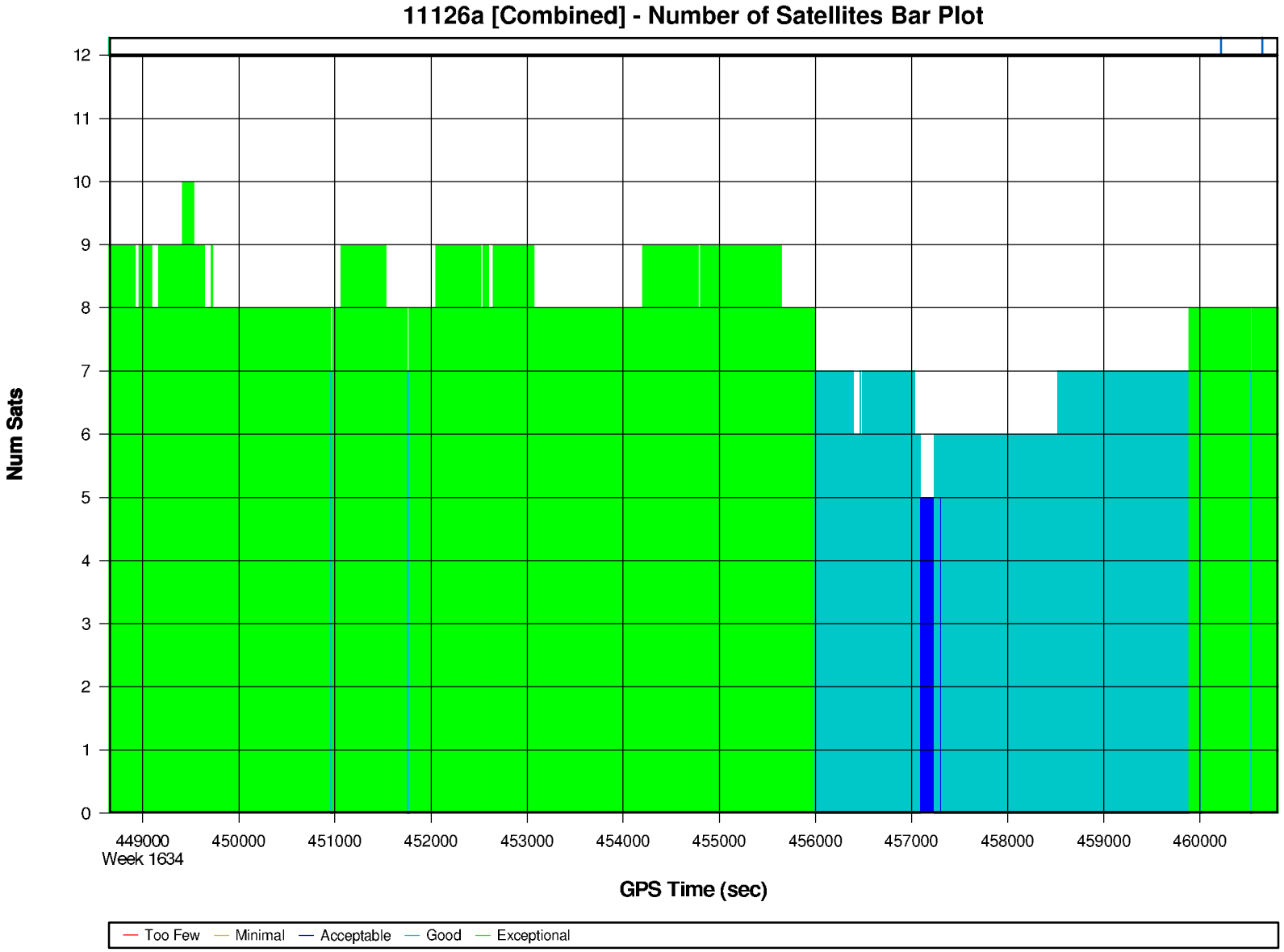
Average: 24.874 (km)

First Epoch: 12.286 (km)

Last Epoch: 35.856 (km)


126 [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
449000
Week 1634
450000
451000
452000
453000
454000
455000
456000
457000
458000
459000
460000
GPS Time (sec)
East
North
Up

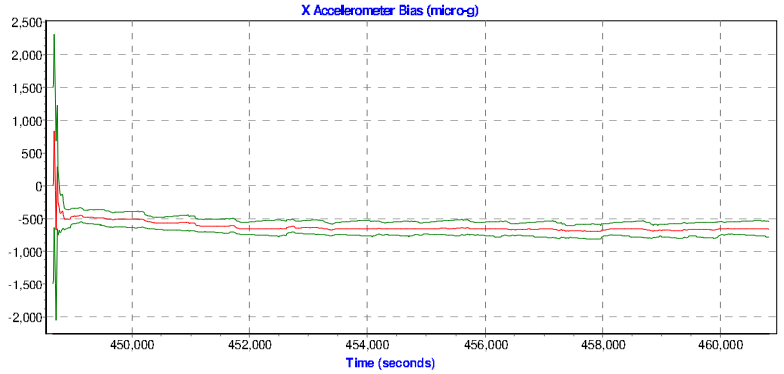

11126a [Combined] - PDOP, HDOP, VDOP Plots
DOP
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
449000
Week 1634
450000
451000
452000
453000
454000
455000
456000
457000
458000
459000
460000
GPS Time (sec)
PDOP
HDOP
VDOP

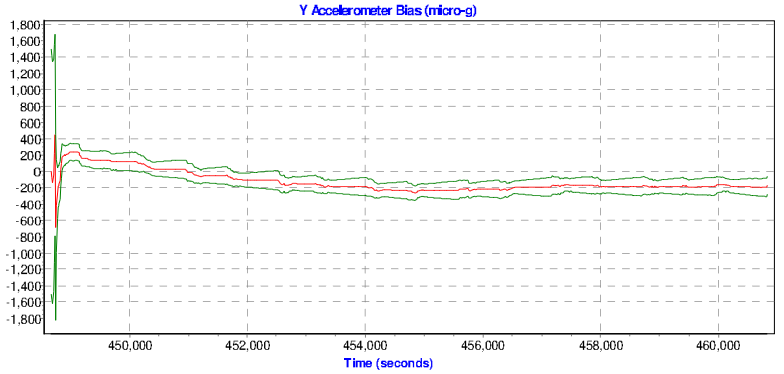

11126a [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
449000
Week 1634
450000
451000
452000
453000
454000
455000
456000
457000
458000
459000
460000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

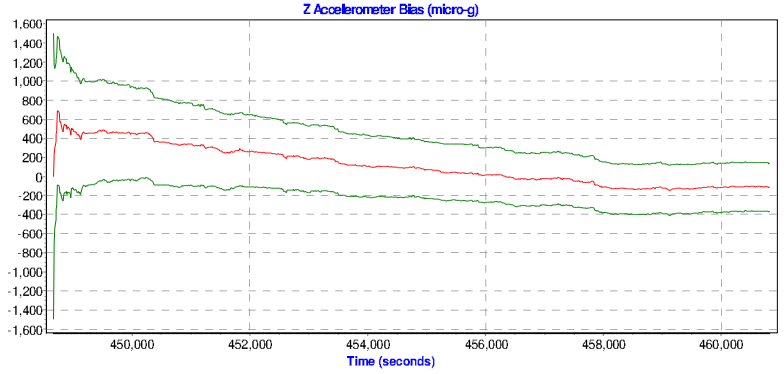
```
;   PROJECT:    D:\Projects\Va\Tpoint_bases\126a\GPS\126.gnv
;
;   DATE:       July 26/11  (date/time of processing)
;   TIME:       12:03:17
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(11)
PROCTIME = 12:02:14 07/26/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = log0505t
MB_MASTER_FILE  = D:\Projects\Va\Tpoint_bases\126a\ground-gps\base6\log0505t.gpb
MB_MASTER_POS   = 37 30 06.65193 -77 07 33.81068 -0.1037
MB_MASTER_ANT   = 2.062
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = D:\Projects\Va\Tpoint_bases\126a\Extract\mgps_01.gpb
REMOTE_POS   = 37 35 04.27252 -77 12 59.84240 950.4440
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 105 108 111 126  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 14.0           ; Elevation mask (deg)
GRID         = UTM 17 0     ; Grid info

CYCLE_TEST  = BOTH            ; Cycle slip test method
STATIC_SLIP_TOL = 0.40       ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF         ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99              ; Base satellite (99-default)

TIMERANGE   = RANGE 988691840.0 988703820.0 2 0 ; Processing time range
INTERVAL    = 0.10            ; Processing time interval (seconds)

PROCESS_DIR = FORWARD         ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                 ; True for processing both directions
WRITE_BAD_EPOCHS = OFF        ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000   ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL          ; Format for .fwd/rev file
DETAILED_SUM = ON             ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON           ; Print cycle slips to message log
SAVE_AMB = ON                 ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00    ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50            ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30          ; Time before Float KAR soln used (minutes)
KAR_CUBE    = 1.00   4.00    ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2     ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0       ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = AUTO       ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000   ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON       ; Engage KAR while in static mode
KAR_USE_FAR   = ON       ; Allow KAR to go back in time past max. distances
```

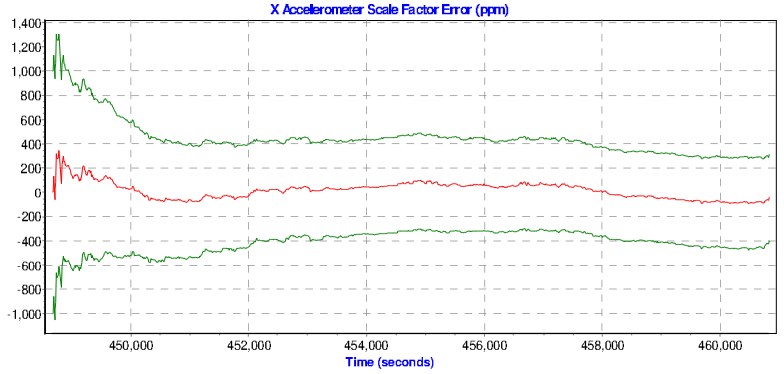
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0          ; KAR data storage interval
KAR_DISTANCE = 7.500 30.000       ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF             ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0         ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000      ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON       ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON     ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF             ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON             ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON     ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = OFF 5.0 60.0   ; Engage KAR if <dist1, reset if >dist2 (km)

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1         ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1    ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = OFF            ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF         ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0         ; Fixed static interval (s)
SPLIT_SS = OFF 120.0          ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST    = 4.0             ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400            ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF              ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF         ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF             ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF            ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE     = ELEV            ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE     = 3.0000          ; Code measurement standard deviation (m)
STD_PHASE    = 0.0150   ON     ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 1.0000   ON     ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP     = 15.0  5  1      ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST     = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL       = log0505t ON                      ; BLName UseMain(ON/OFF)
STD_RELTOL   = 4.00            ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF          ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0     ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH             ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0              ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON             ; ON/OFF
SP_SF_IONO    = 1              ; SF iono mode 0-off, 1-broadcast
SP_OTH_ERRORS = ON             ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF            ; ON if P1 to be used instead of CA (if availble)
```

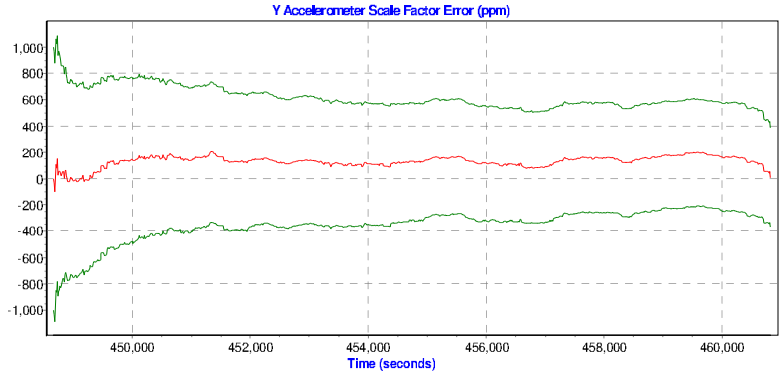
```
SP_CLK_MODE    = OFF            ; ON=Use ClockShift for time, OFF=use corrtime
```

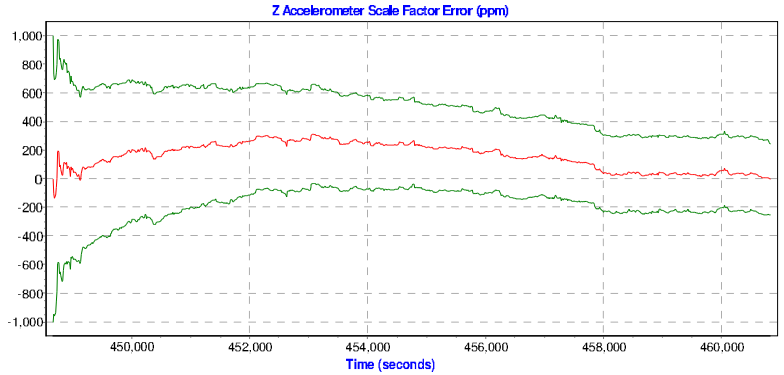






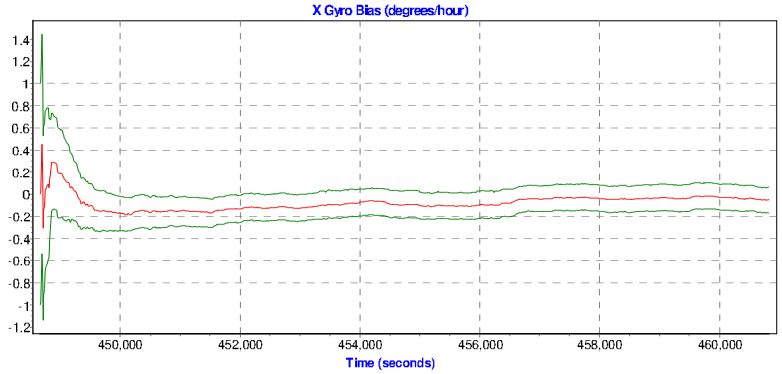


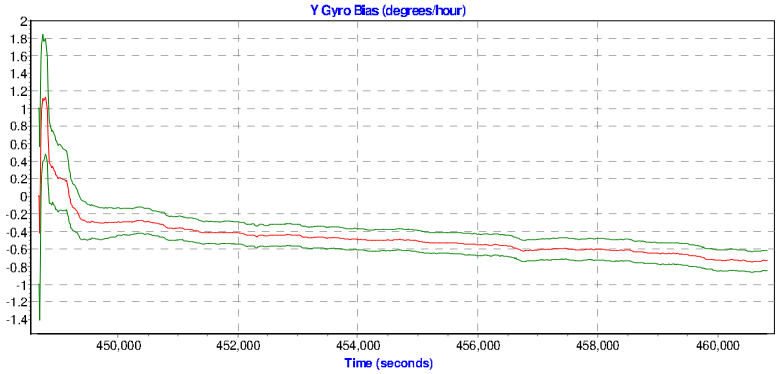


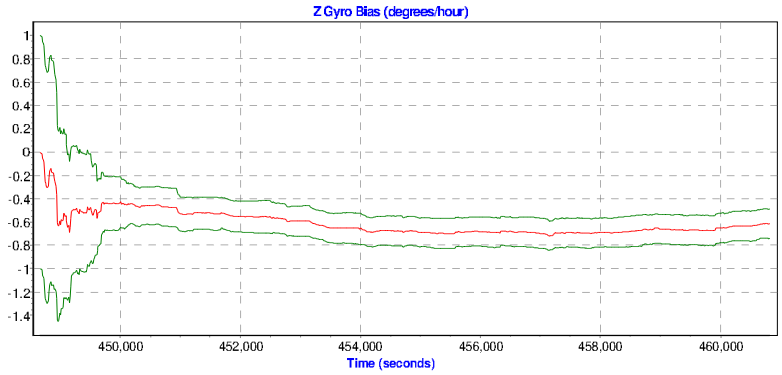


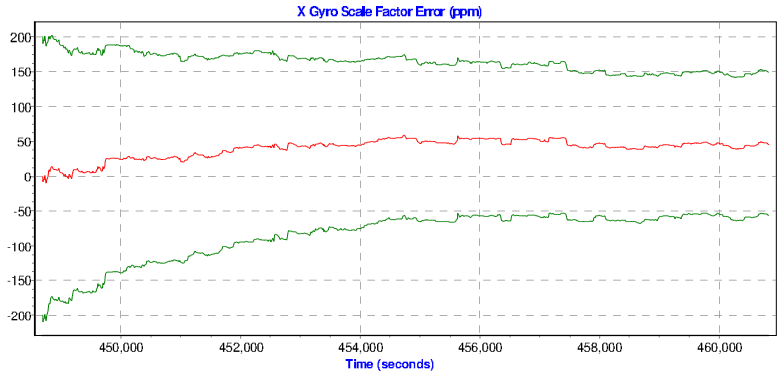
D:\Projects\Va\126\pos\Proc\ers_01.out

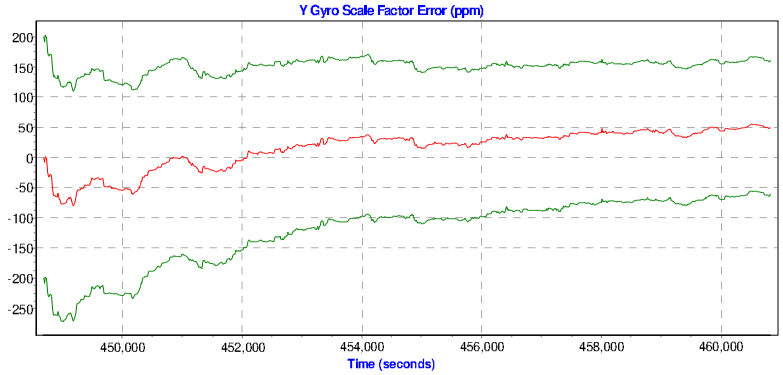
D:\Projects\Va\126\pos\Proc\rms_01.out

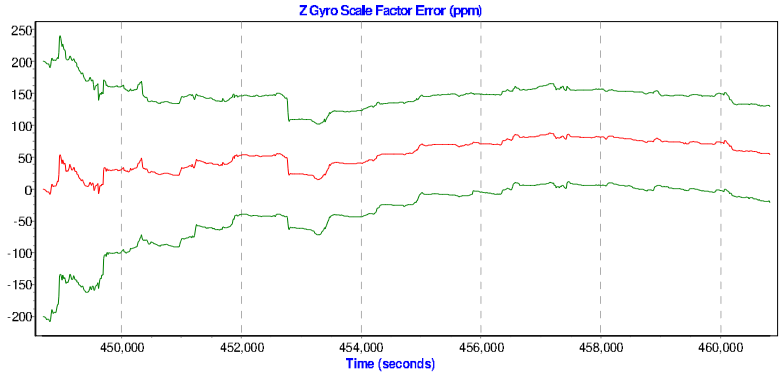












D:\Projects\Va\126\pos\Proc\ers_01.out

D:\Projects\Va\126\pos\Proc\rms_01.out

Daily Flight Log

Julian Date:	1126	Aircraft Tail #:	4354	Hobbs Beg:	
Local Date:	May 6.	Pilot:	J. Melton		
Local Time:	12:17	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name	POS/AV Transfers	
1126A	1st File	Last File
ALTM-Logfile Name		

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
0418z	clm	10	CLR	08c	06c	3009

Ground Station Data

Begin Static 1	End Static 1	Begin Static 2	End Static 2	Temp/Pressure (GND)
				08c / 3009

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
04:54	05:01	269	91	945	1.50	10	161.9	
05:06	05:15	268	271	947	1.33	11	119.1	
05:20	05:26	267	91	952	1.74	9	162.3	
05:31	05:41	266	271	960	1.45	10	120.7	
05:46	05:52	265	91	958	1.65	9	164.8	
05:57	06:06	264	271	940	1.59	10	120.2	
06:10	06:17	263	91	936	1.85	9	163.0	
06:23	06:32	262	271	947	1.80	9	118.4	
06:36	06:44	261	91	934	1.66	9	159.2	
06:48	06:58	260	271	985	1.51	11	121.0	
07:03	07:10	259	91	965	1.46	10	166.0	
07:14	07:24	258	271	953	1.72	8	116.9	
07:28	07:35	257	91	980	1.84	8	162.8	

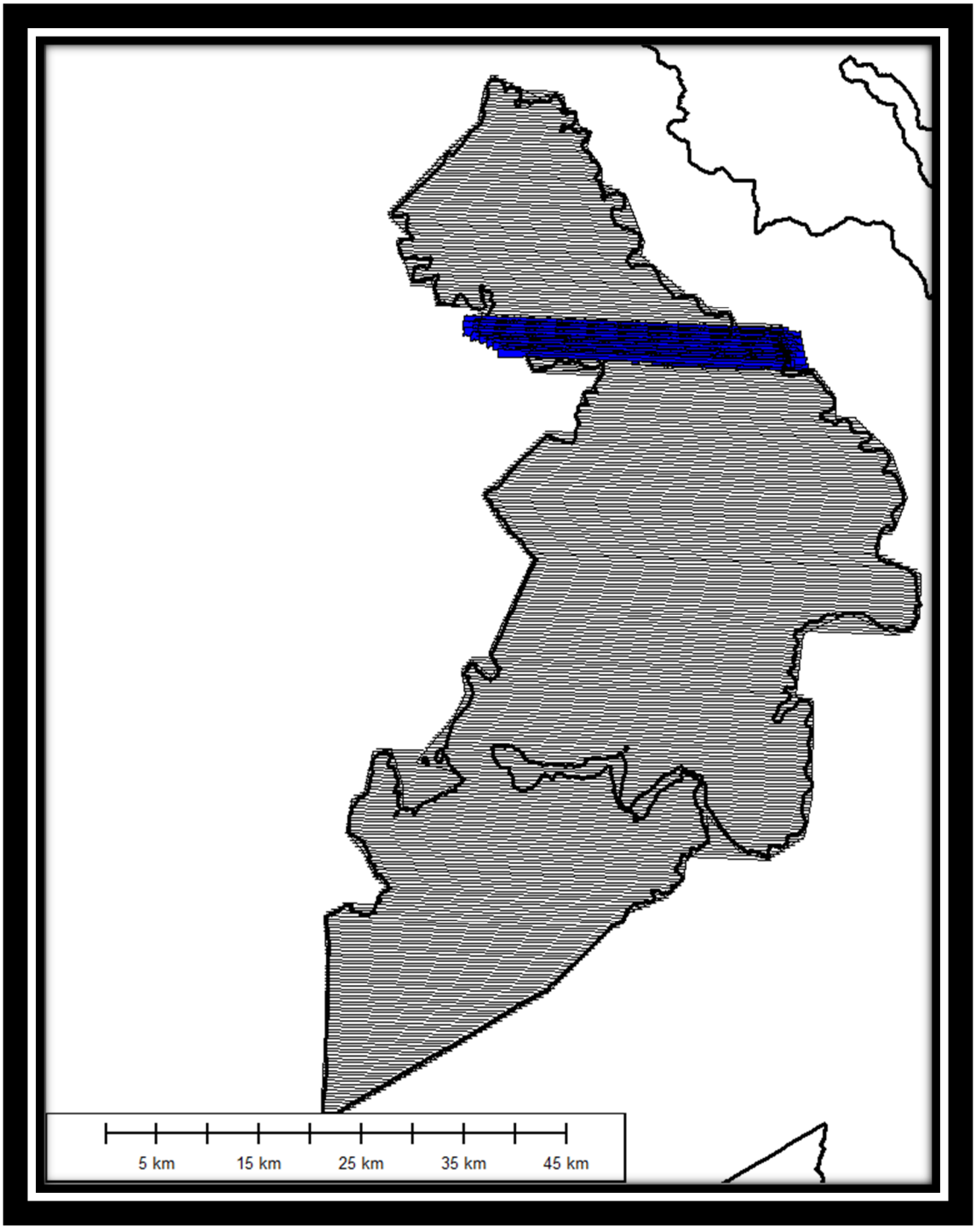
Daily Activity/Comments

Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV Files to C
- [ ] Power-down ALTM Syst

Mission: o511127b

2011 05 07



Combined - Map Run (4)

Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: D:\Projects\Va\Tpoint_bases\127b\GPS\127b.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	124300
No processed position:	111894
Missing Fwd or Rev:	4
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0194 (m)
C/A Code:	0.96 (m)
L1 Doppler:	0.028 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.063 (m)
North:	0.051 (m)
Height:	0.120 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (11485 occurances):

East:	0.016 (m)
North:	0.013 (m)
Height:	0.030 (m)

Quality Number Percentages:

Q 1:	99.8 %
Q 2:	0.2 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 100.0 %

0.10 - 0.30 m: 0.0 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

Baseline Distances:

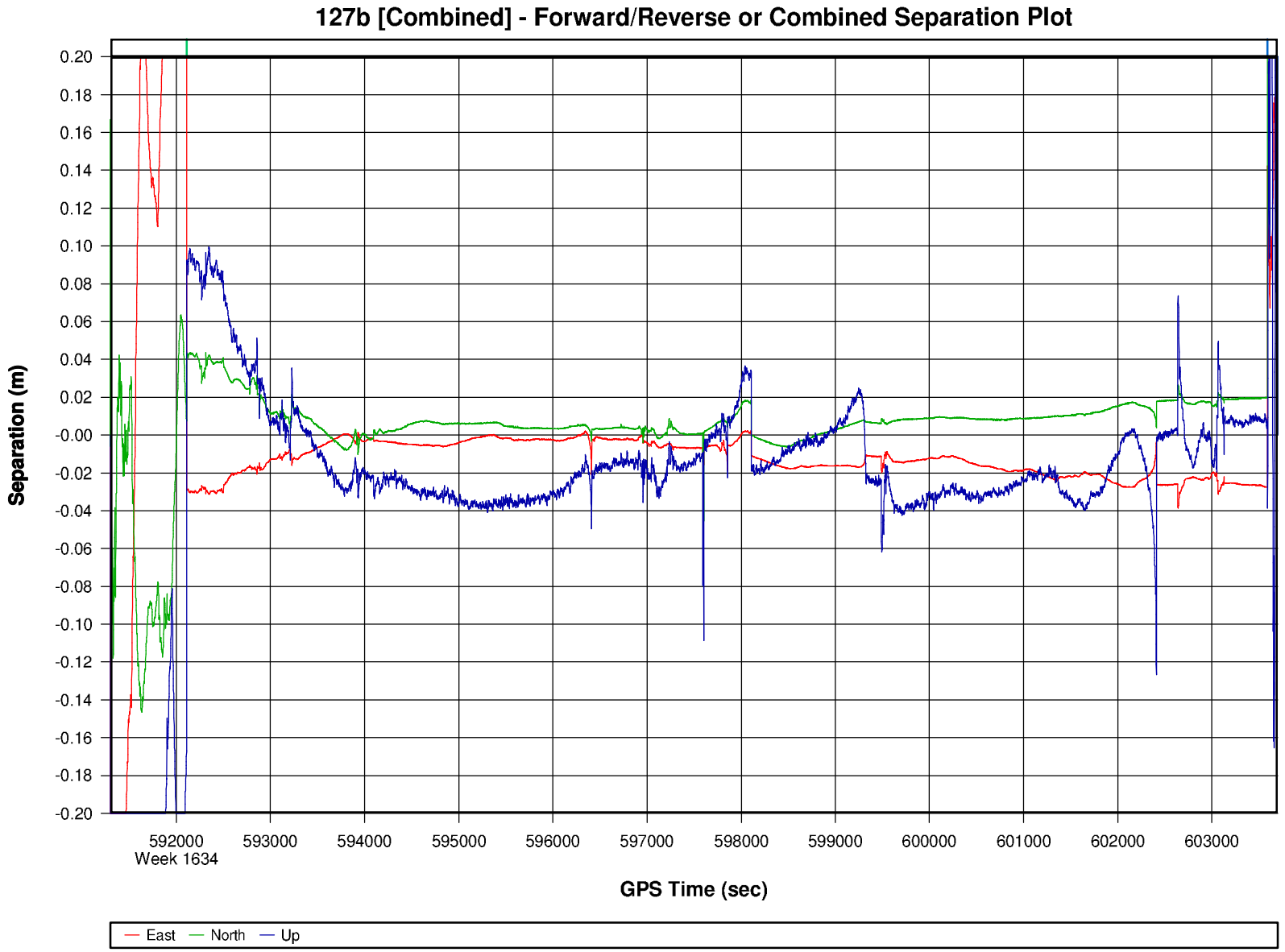
Maximum: 39.447 (km)

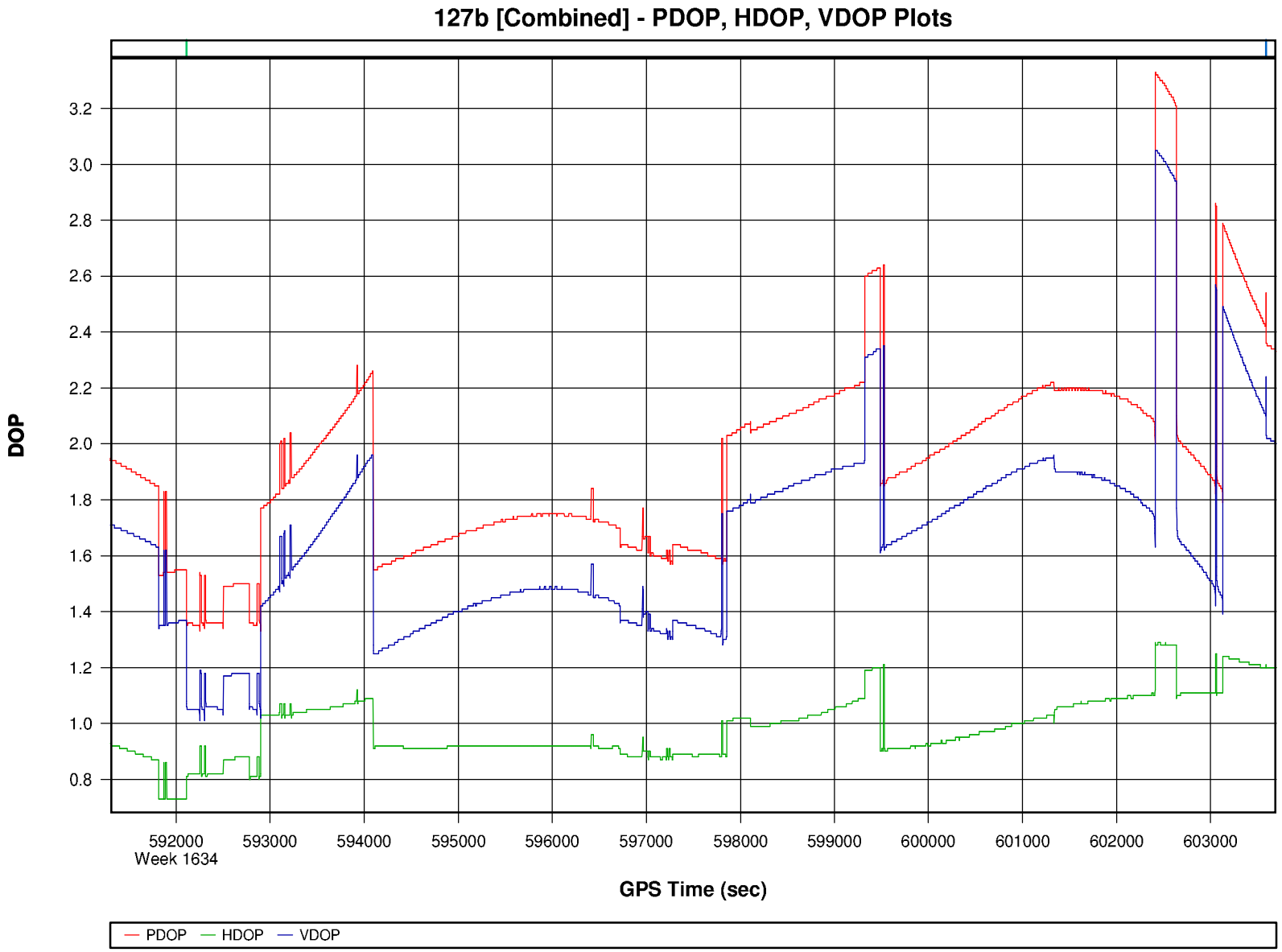
Minimum: 2.769 (km)

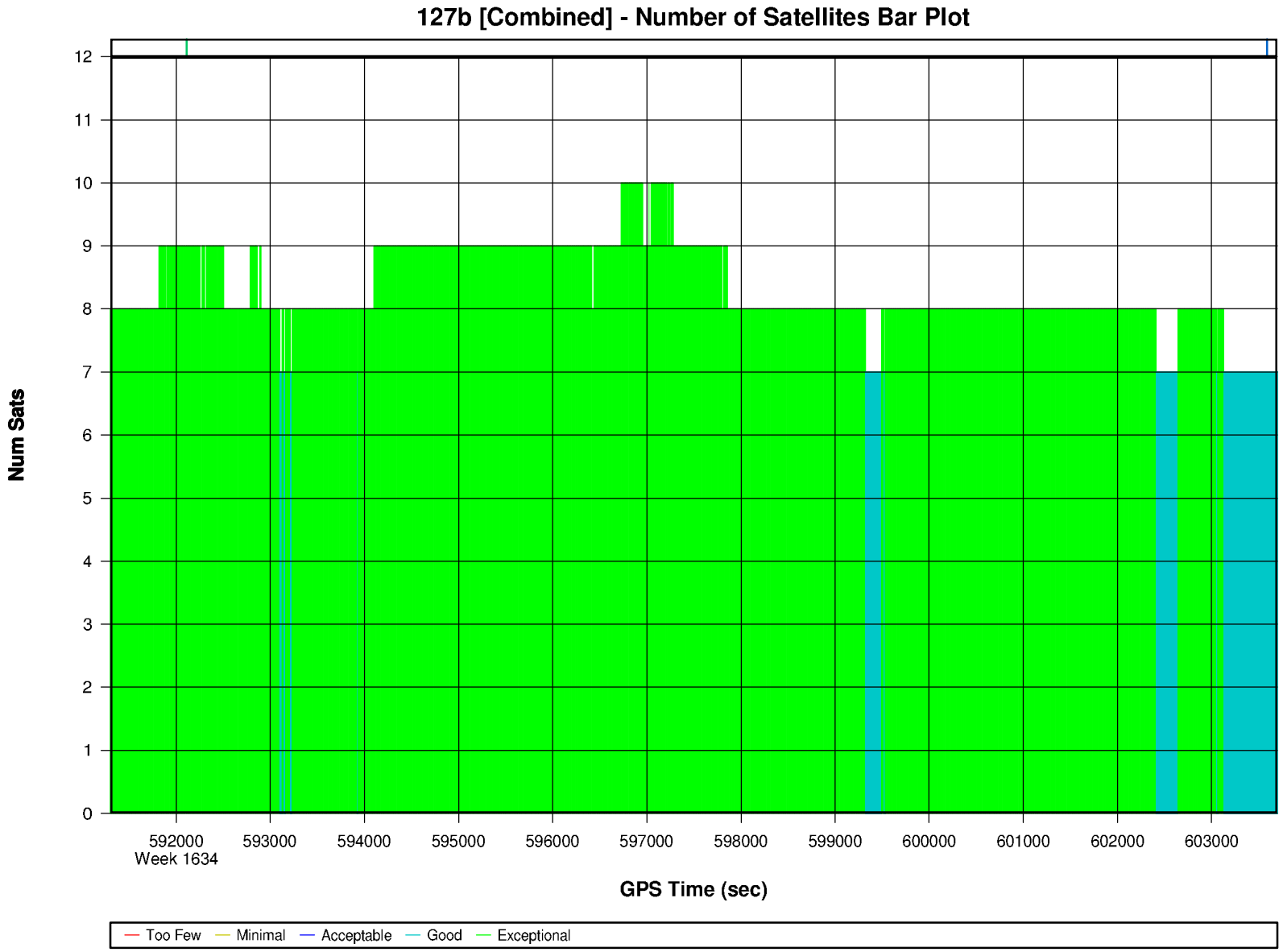
Average: 23.952 (km)

First Epoch: 35.813 (km)

Last Epoch: 35.564 (km)


127b [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
592000
Week 1634
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
GPS Time (sec)
East
North
Up

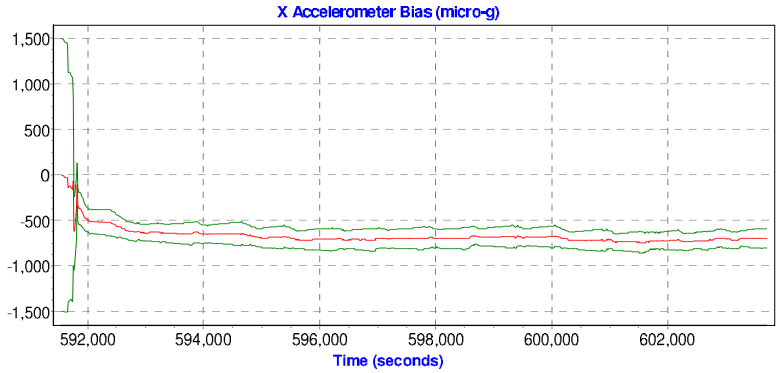

127b [Combined] - PDOP, HDOP, VDOP Plots
DOP
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
592000
Week 1634
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
GPS Time (sec)
PDOP
HDOP
VDOP

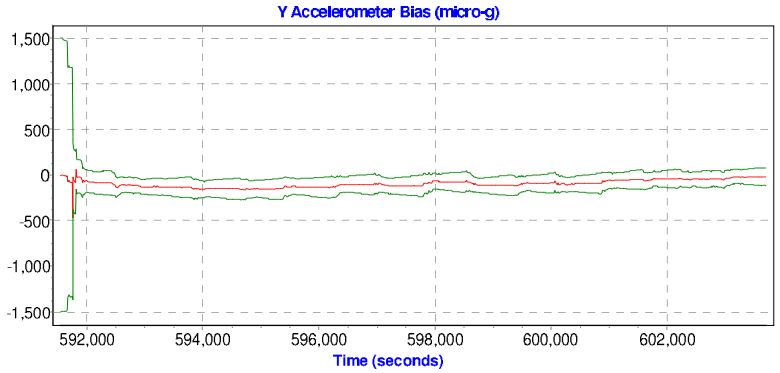

127b [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
592000
Week 1634
593000
594000
595000
596000
597000
598000
599000
600000
601000
602000
603000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

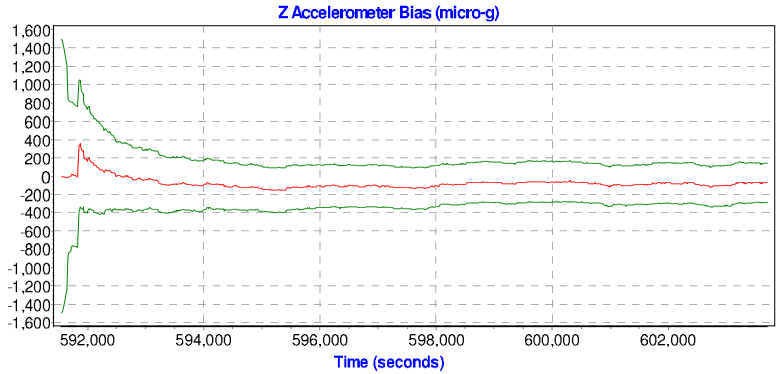
```
;   PROJECT:    D:\Projects\Va\Tpoint_bases\127b\GPS\127b.gnv
;
;   DATE:       July 26/11  (date/time of processing)
;   TIME:       13:11:30
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(6)
PROCTIME = 13:10:21 07/26/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = 1110306_0008127
MB_MASTER_FILE  = D:\Projects\Va\Tpoint_bases\127b\1110306_00081270.gpb
MB_MASTER_POS   = 37 30 06.65193 -77 07 33.81068 -0.1040
MB_MASTER_ANT   = 1.527
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = D:\Projects\Va\Tpoint_bases\127b\Extract\mgps_01.gpb
REMOTE_POS   = 37 42 29.65619 -77 26 16.30180 31.0132
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 105 108 111 126  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 14.0           ; Elevation mask (deg)
GRID         = UTM 17 0     ; Grid info

CYCLE_TEST  = BOTH            ; Cycle slip test method
STATIC_SLIP_TOL = 0.40       ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF         ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99              ; Base satellite (99-default)

TIMERANGE   = RANGE 988834495.0 988846900.0 2 0 ; Processing time range
INTERVAL    = 0.10            ; Processing time interval (seconds)

PROCESS_DIR = FORWARD         ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                 ; True for processing both directions
WRITE_BAD_EPOCHS = OFF        ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000   ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL          ; Format for .fwd/rev file
DETAILED_SUM = ON             ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON           ; Print cycle slips to message log
SAVE_AMB = ON                 ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00    ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50            ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30          ; Time before Float KAR soln used (minutes)
KAR_CUBE     = 1.00   4.00    ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2     ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0       ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = AUTO       ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000   ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON       ; Engage KAR while in static mode
KAR_USE_FAR   = ON       ; Allow KAR to go back in time past max. distances
```

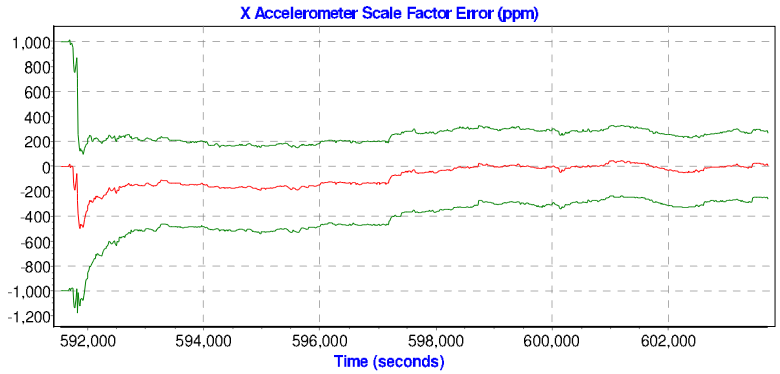
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0         ; KAR data storage interval
KAR_DISTANCE = 7.500 30.000      ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF            ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0        ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000     ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON      ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON    ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF            ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON            ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON    ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = OFF 5.0 60.0   ; Engage KAR if <dist1, reset if >dist2 (km)

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1        ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1    ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = OFF           ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF         ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0        ; Fixed static interval (s)
SPLIT_SS = OFF 120.0         ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST   = 4.0           ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400         ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF           ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF        ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF          ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF           ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE    = ELEV          ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE    = 4.0000        ; Code measurement standard deviation (m)
STD_PHASE   = 0.0200   ON    ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 0.2500   ON    ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP    = 15.0  5  1     ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST    = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL      = 1110306_0008127 ON                    ; BLName UseMain(ON/OFF)
STD_RELTOL  = 4.00          ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF       ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0    ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH          ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0           ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON          ; ON/OFF
SP_SF_IONO    = 1           ; SF iono mode 0-off, 1-broadcast
SP_OTH_ERRORS = ON          ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF         ; ON if P1 to be used instead of CA (if availble)
```

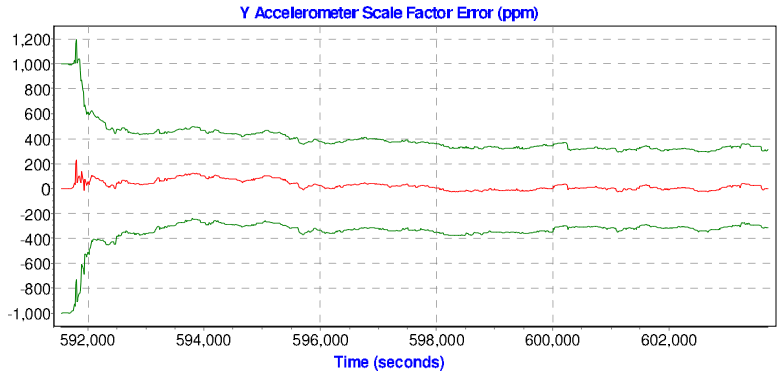
```
SP_CLK_MODE    = OFF            ; ON=Use ClockShift for time, OFF=use corrtime
```

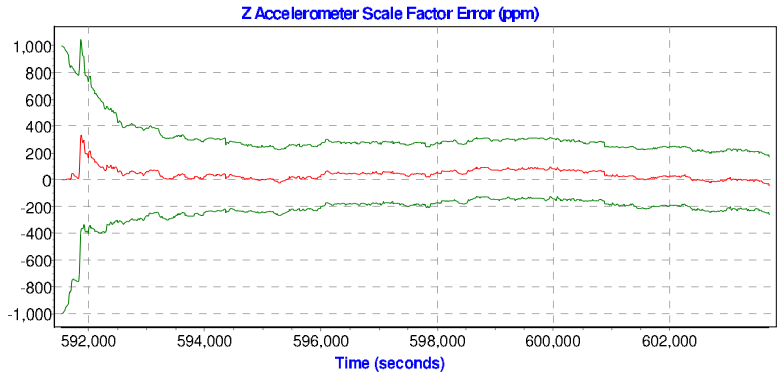




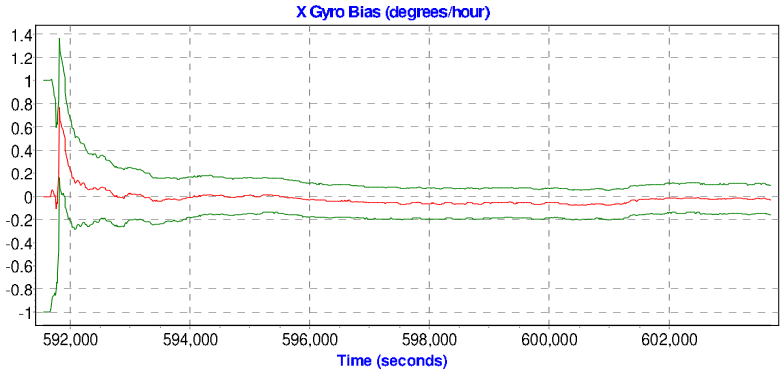


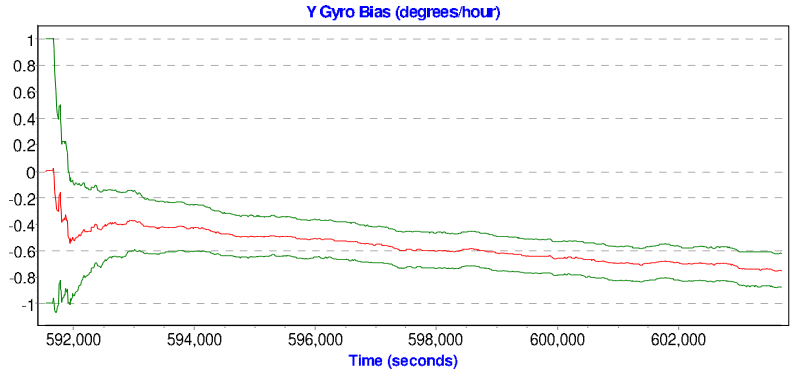


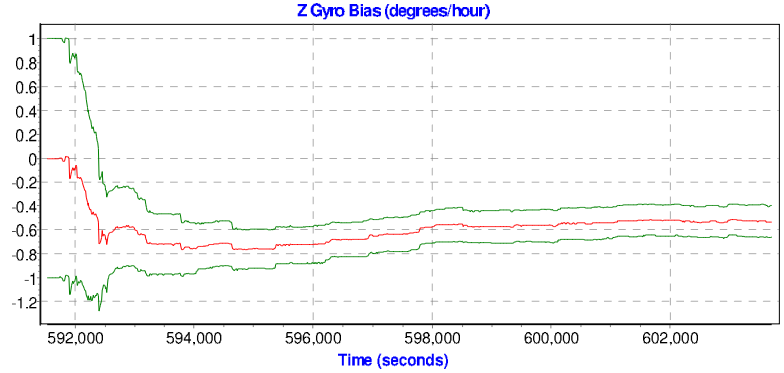


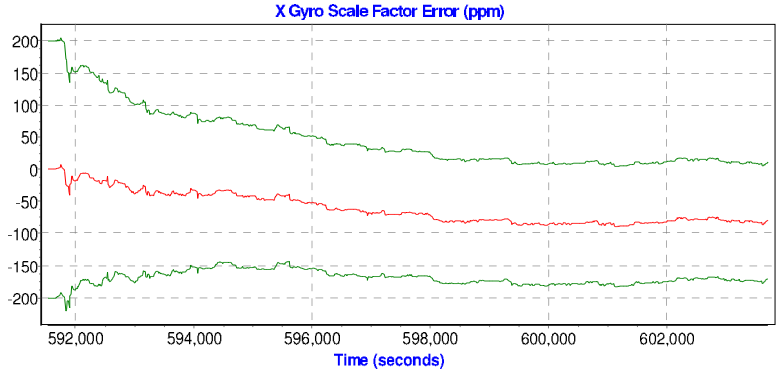


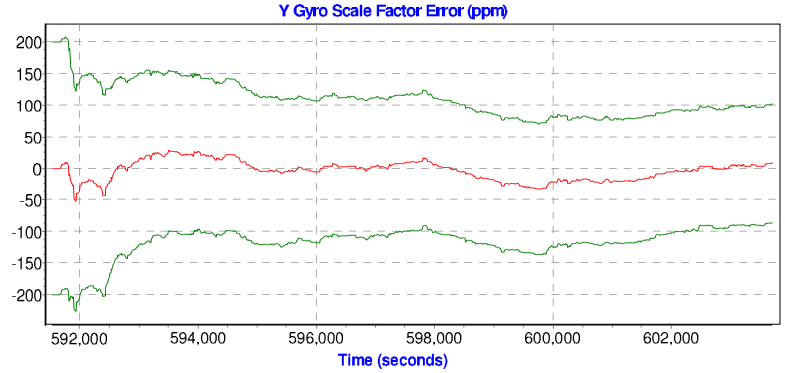
D:\Projects\Va\Tpoint_bases\127b\Proc\ers_01.out
D:\Projects\Va\Tpoint_bases\127b\Proc\rms_01.out

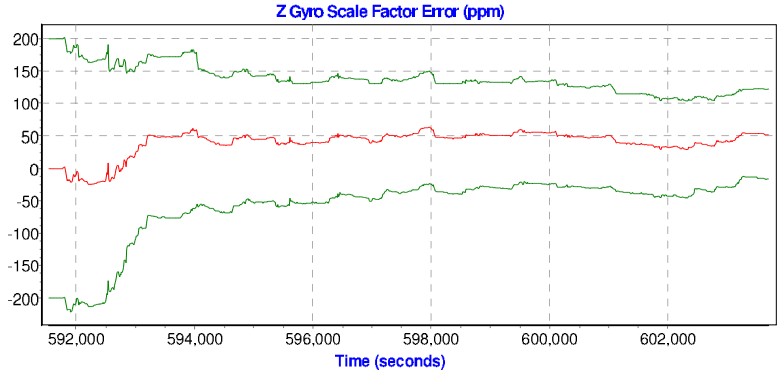












D:\Projects\Va\Tpoint_bases\127b\Proc\ers_01.out
D:\Projects\Va\Tpoint_bases\127b\Proc\rms_01.out

Daily Flight Log

Julian Date:	11207	Aircraft Tail #:	435H	Hobbs Beg:	
Local Date:	May 6	Pilot:	J. Melton		
Local Time:		Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name	POS/AV File Transfers	
11207 075	1st File	Last File
ALTM-Logfile Name		

Ground Station Data

Begin Static 1
End Static 1
Begin Static 2
End Static 2
Temp/Pressure (GND)
12994

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
0147z	190 04	missing	missing	12c	09c	2994

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
02:24	02:34	99	98	978	2.22	8	164.2	
02:39	02:54	100	278	963	2.08	8	119.7	
02:58	03:08	101	98	977	1.90	8	163.2	
03:13	03:28	102	278	1009	1.14	10	115.5	
03:33	03:43	103	98	970	3.22	8	163.4	
03:48	04:04	104	278	998	1.48	10	120.2	
04:08	04:20	105	98	937	1.54	10	161.7	
04:24	04:40	106	278	997	1.73	9	123.4	
04:44	04:54	107	98	997	1.53	10	168.5	
05:01	05:17	108	278	982	1.44	10	126.9	
05:21	05:34	109	98	967	1.43	10	143.5	
05:38	05:54	110	278	992	1.47	10	129.5	
05:58	06:11	111	98	951	1.60	10	150.2	

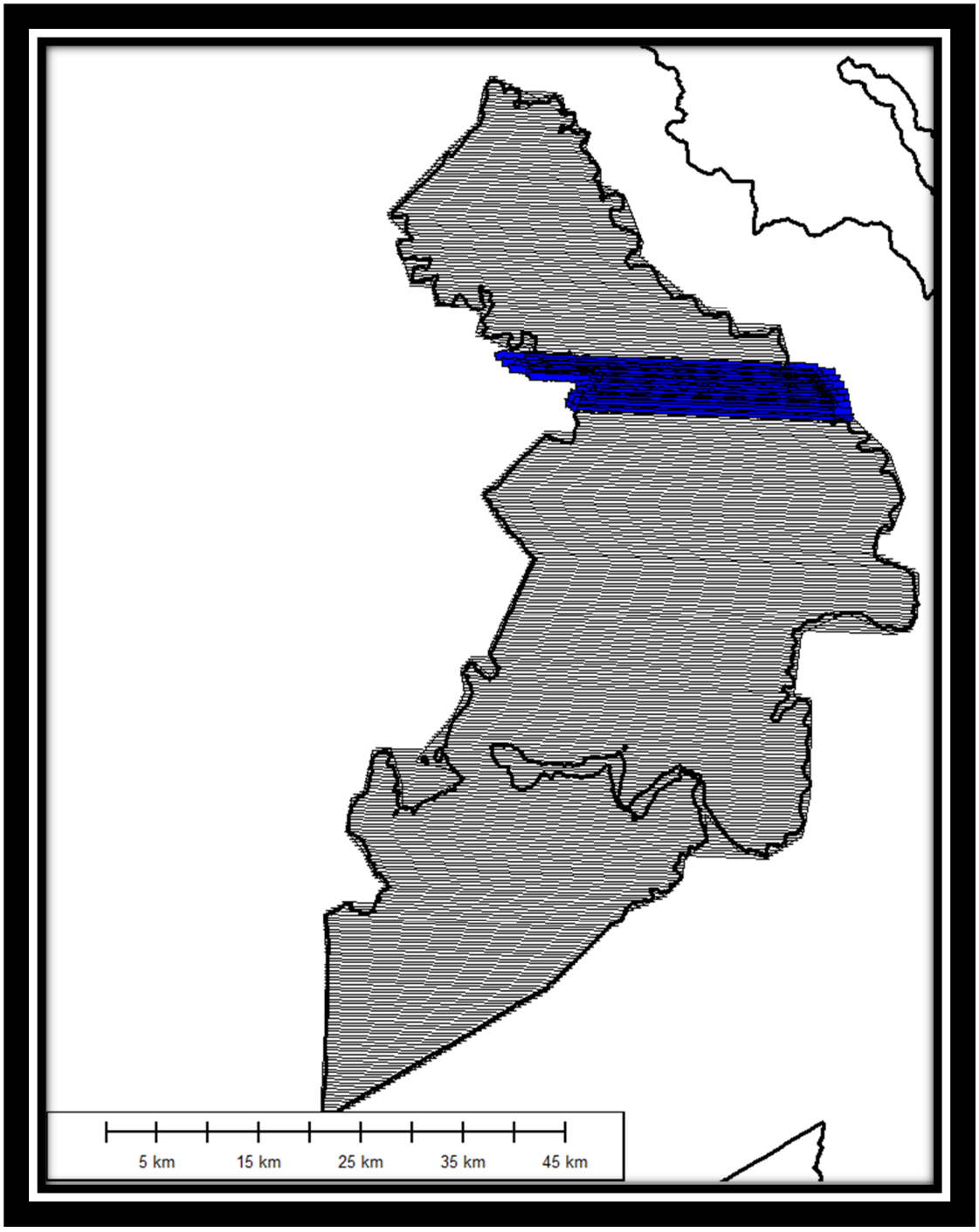
Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc carc
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV Files to C
- [ ] Power-down ALTM Sys

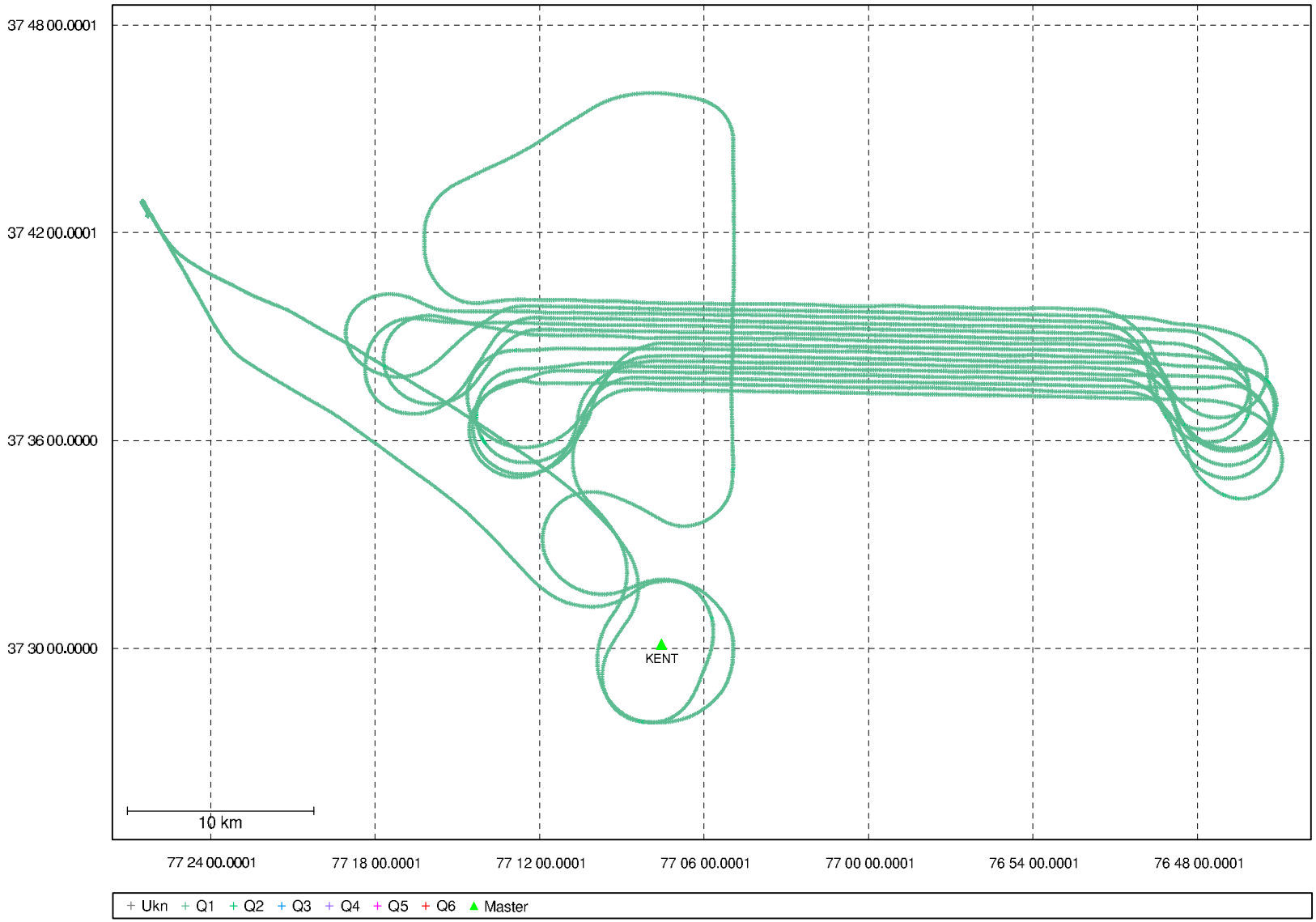
Daily Activity/Comments

Mission: o511129a

2011 05 09



Combined - Map Run (1)



Processing Summary Information

Program: POSGPS
Version: 4.30.3108
Project: D:\Projects\Va\129\pos\GPS\11129a.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	144630
No processed position:	130179
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0220 (m)
C/A Code:	1.06 (m)
L1 Doppler:	0.017 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.052 (m)
North:	0.059 (m)
Height:	0.057 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (13636 occurances):

East:	0.010 (m)
North:	0.013 (m)
Height:	0.022 (m)

Quality Number Percentages:

Q 1:	99.7 %
Q 2:	0.3 %
Q 3:	0.0 %
Q 4:	0.0 %

Q 5: 0.0 %

Q 6: 0.0 %

Position Standard Deviation Percentages:

0.00 - 0.10 m: 94.5 %

0.10 - 0.30 m: 5.5 %

0.30 - 1.00 m: 0.0 %

1.00 - 5.00 m: 0.0 %

5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 5.3 %

Baseline Distances:

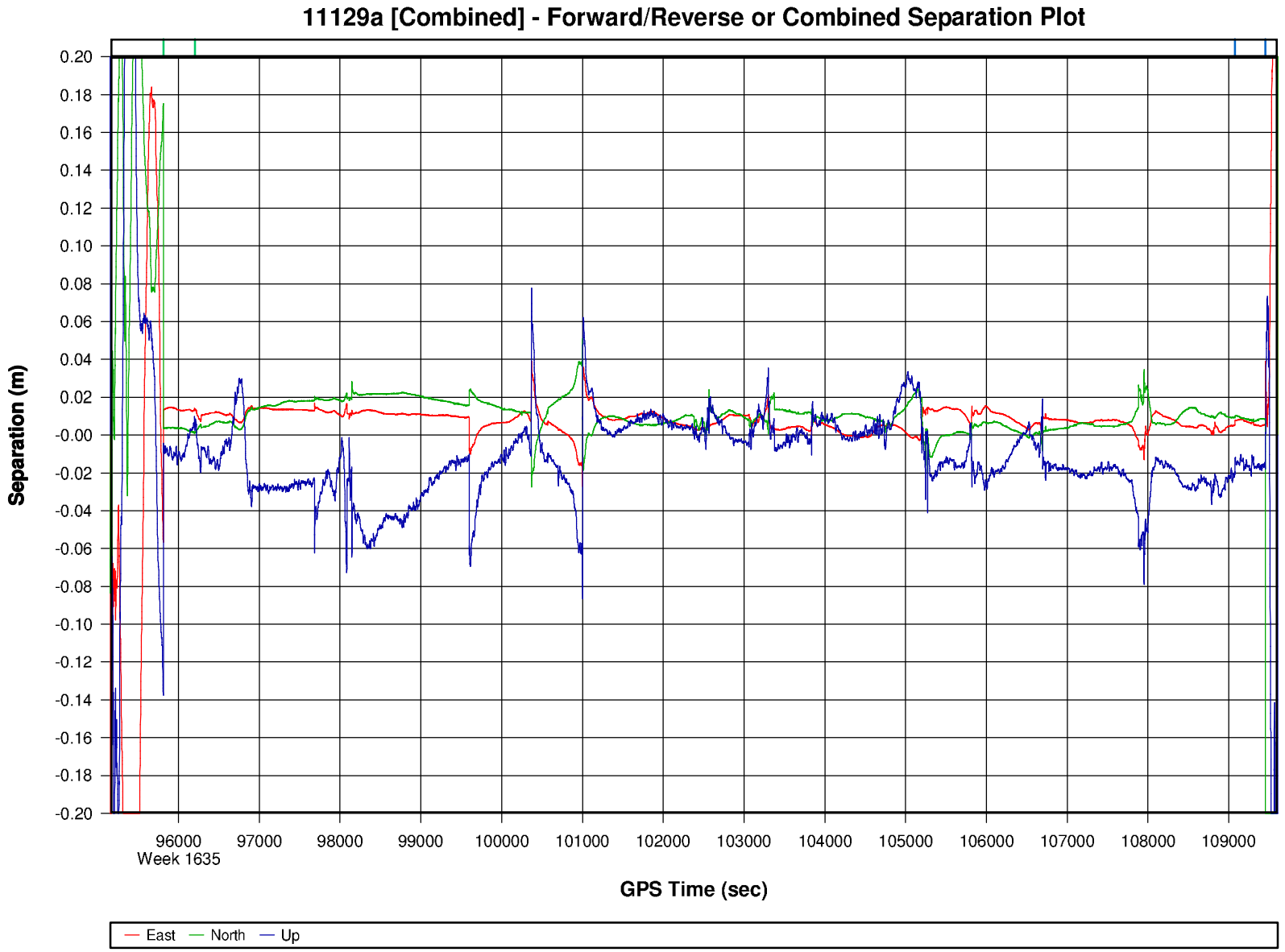
Maximum: 36.576 (km)

Minimum: 2.417 (km)

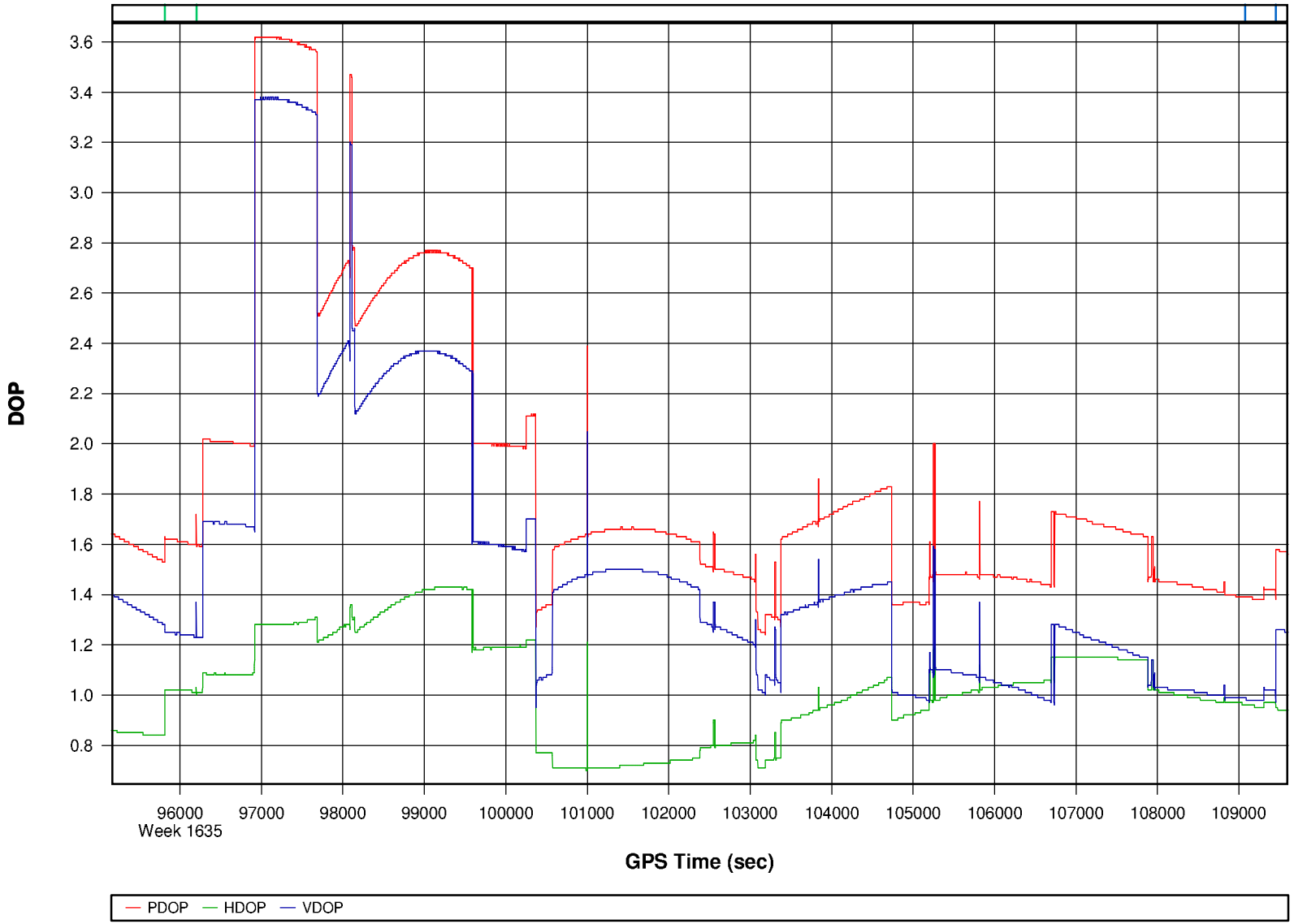
Average: 21.410 (km)

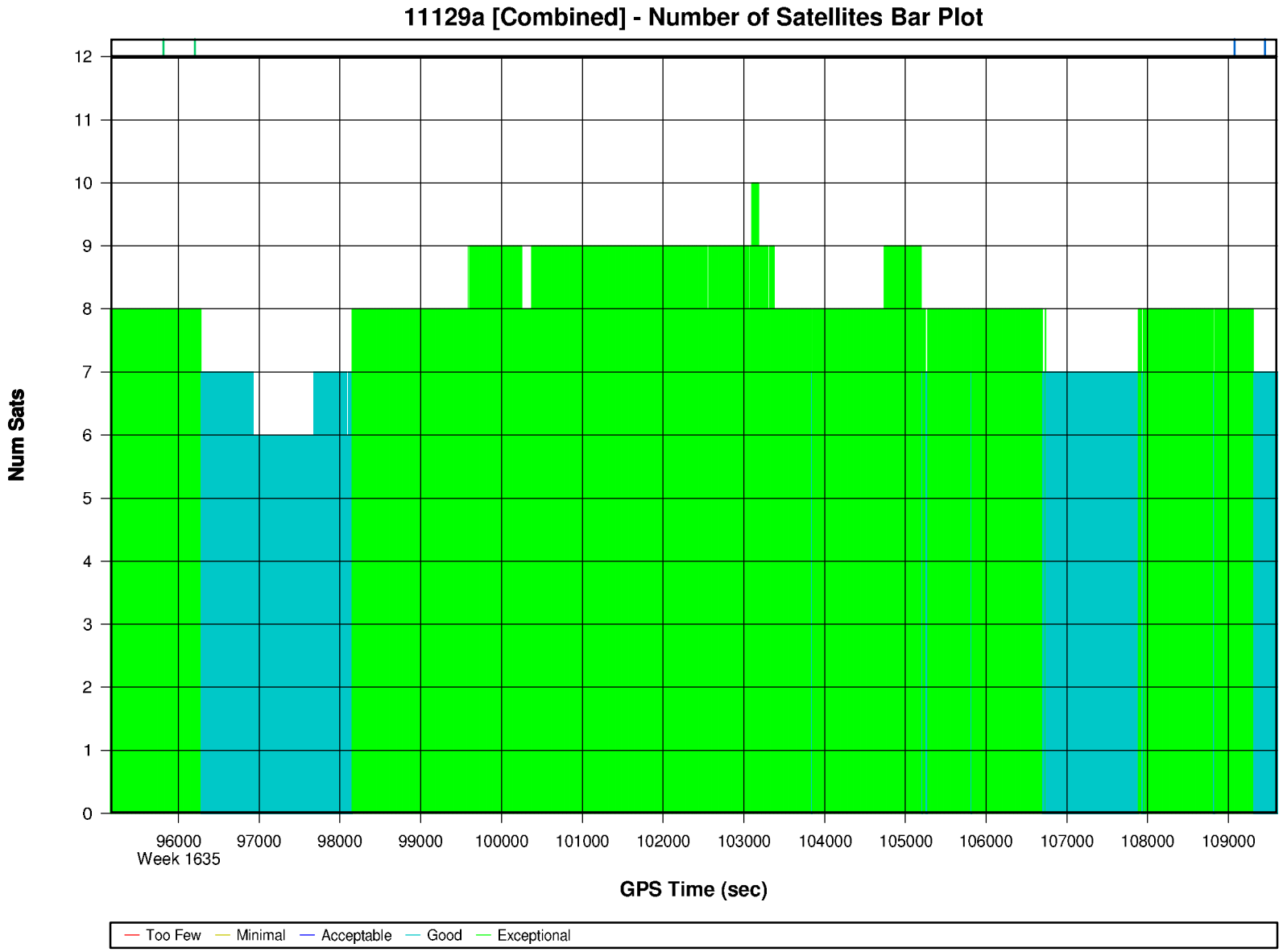
First Epoch: 35.833 (km)

Last Epoch: 35.858 (km)


11129a [Combined] - Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
96000
Week 1635
97000
98000
99000
100000
101000
102000
103000
104000
105000
106000
107000
108000
109000
GPS Time (sec)
East
North
Up

11129a [Combined] - PDOP, HDOP, VDOP Plots

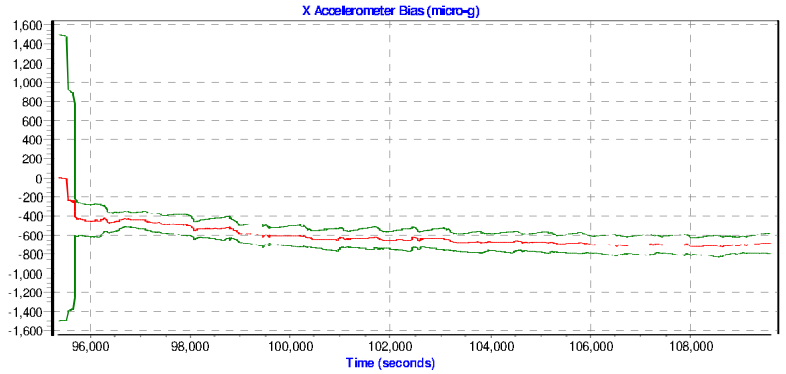


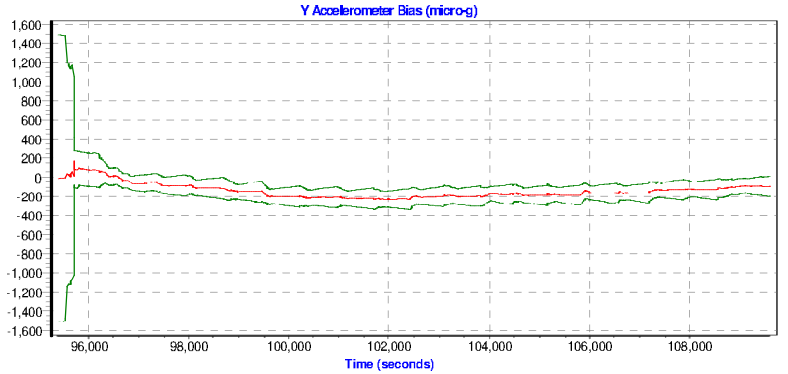

11129a [Combined] - Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
96000
Week 1635
97000
98000
99000
100000
101000
102000
103000
104000
105000
106000
107000
108000
109000
GPS Time (sec)
Too Few
Minimal
Acceptable
Good
Exceptional

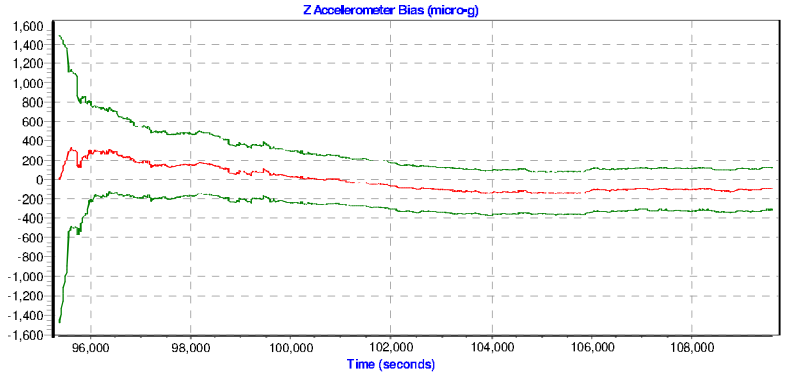
```
;   PROJECT:    G:\Projects\Va\North\129\pos\GPS\11129a.gnv
;
;   DATE:       July 26/11  (date/time of processing)
;   TIME:       13:21:12
;   CREATED BY: POSGPS Version 4.30.3108
;

VERSION  = 4.30.3108
PROCUSER = Unknown
PROCDESC = Run*(3)
PROCTIME = 13:19:28 07/26/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = KENT
MB_MASTER_FILE  = G:\Projects\Va\North\129\ground-gps\base6\log20090721_010603.gpb
MB_MASTER_POS   = 37 30 06.65193 -77 07 33.81068 -0.1037
MB_MASTER_ANT   = 2.062
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = G:\Projects\Va\North\129\pos\Extract\mgps_01.gpb
REMOTE_POS   = 37 42 29.17339 -77 26 17.75872 30.7247
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 103 108 113 124  ; Processing modes (POSGPS only)

DATUM = WGS84 AUTO          ;  Processing Datum
INPDATUM = ON WGS84 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 10.0           ; Elevation mask (deg)
GRID         = UTM 1 0      ; Grid info

CYCLE_TEST  = BOTH            ; Cycle slip test method
STATIC_SLIP_TOL = 0.40       ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF         ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99              ; Base satellite (99-default)

TIMERANGE   = ALL 988943141.5 988957604.4 2 0 ; Processing time range
INTERVAL    = 0.10            ; Processing time interval (seconds)

PROCESS_DIR = FORWARD         ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                 ; True for processing both directions
WRITE_BAD_EPOCHS = OFF        ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000   ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = NORMAL          ; Format for .fwd/rev file
DETAILED_SUM = ON             ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON           ; Print cycle slips to message log
SAVE_AMB = ON                 ; Should ambiguities be saved

; KAR settings--second values for dual frequency/widelane
KAR_MIN_TIME = 8.00 1.00     ; Min. time for KAR, L1 and L2 (minutes)
KAR_MIN_ADD = 1.50             ; minutes/10-km added to KAR_MIN_TIME
KAR_MAX_TIME = 30           ; Time before Float KAR soln used (minutes)
KAR_CUBE     = 1.00   4.00     ; KAR cube size (m)
KAR_COV_L2  = ON 3.000 0.2      ; Use covariance for L2 KAR, StdDev factor, offset(m)
KAR_MAX_DOP =   9.0       ; Cutoff DD_DOP value for KAR to work
KAR_L2_NOISE = IONO       ; L2 noise model: AUTO, IONO, HIGH MEDIUM or LOW
KAR_IONO_DIST = 5.0000    ; Distance for choosing between HIGH and IONO noise (AUTO
noise only) - km
KAR_STATIC    = ON       ; Engage KAR while in static mode
KAR_USE_FAR   = ON       ; Allow KAR to go back in time past max. distances
```

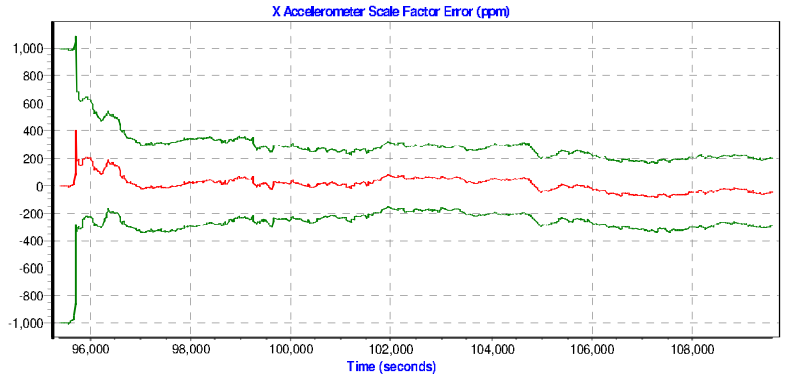
```
KAR_EPOCH_SIZE =   30.0   15.0 AUTO ; Computation interval for KAR
KAR_EPOCH_FILTER =    5.0          ; KAR data storage interval
KAR_DISTANCE = 7.500 30.000       ; KAR cutoff distance (km)
KAR_EXACT_INTERVAL = OFF             ; ON if KAR to restrict data to KAR_EPOCH_FILTER
ISSUE_KAR_DOP = OFF  25.0         ; Issue KAR when DOP drops below value
ISSUE_KAR_TIME = OFF   15.000      ; Issue KAR when DOP drops below value
KAR_DIST_WEIGHT = ON       ; ON if distance weighting to be used
KAR_STRICT_TOL = OFF ON     ; RMS(ON/OFF), REL(ON/OFF) -- ON if stricter tolerances
to be used
KAR_FAST = OFF OFF             ; Fast KAR search, second param for 5 satellites
KAR_REFINE = ON             ; Refine L1/L2 KAR search
KAR_MB_NEAREST = ON     ; ON if only nearest b/l to be searched (MB mode only)
ISSUE_KAR_DIST = ON  5.0 250.0   ; Engage KAR if <dist1, reset if >dist2 (km)

;Fixed static solution options
FIX_CUBE = AUTOREDUCE 0.500 1.500 -1   ; Fixed solution search area options
FIX_L2_NOISE = AUTO -1         ; Fixed solution L2 noise model
FIX_IONO_DIST = 5.000 -1     ; Distance for switching to Iono model for AUTO L2 noise
FIX_REFINE  = ON             ; Refine L1/L2 fixed solution
FIX_STRICT  = OFF OFF          ; Stricter RMS and reliability tolerances
FIX_INTERVAL = 15.0         ; Fixed static interval (s)
SPLIT_SS = OFF 120.0          ; Break static sessions if gap larger than value (s)
FIX_AUTO = 180.0 40.000 600.0 12.000 ON ; DFMinT(s), DFMaxD(km) SFMinT(s) SFMaxD(km)
ON/OFF

; use PCODE, L2 for amb. res., L2 for iono.(OFF/RELATIVE/FREE), correct C/A for
iono.
DUAL_FREQUENCY = OFF ON FREE OFF
IONO_DIST    = 4.0              ; Engage Relative iono. after this dist. (km)
L2_SLIP_TOL = 0.400             ; Small cycle slip tolerance on L2 (cycles)
L2_LOCKTIME = OFF               ; ON if L2 locktime variable to be used
USE_PCODE = OFF OFF         ; Use P1 and use P2 flags (ON/OFF)
SF_IONO_MODE = OFF              ; ON if IONEX or ICD iono model to be used fo SF
L2MAIN = OFF            ; Enable L2 as primary frequency

; New measurement standard deviation (weighting) settings
STD_MODE     = ELEV             ; Measurement weighting mode
(ELEV/CN0/STANDARD/ADAPTIVE)
STD_CODE     = 4.0000           ; Code measurement standard deviation (m)
STD_PHASE    = 0.0200   ON      ; Carrier meas SD (m) (ON/OFF refers to adjustment for
L3)
STD_DOPPLER = 1.0000    ON      ; Doppler meas stddev (m/s) (ON/OFF referes to
auto-doppler setting)
STD_REJECT  = NORMAL 3.0 3.0 3.0 6.0 4.5 ; LevelStr CodeRej PhaseRej DopplerRej
CodeReset PhaseReset
STD_SKIP     = 15.0  5  1       ; dMaxRejSec, nSkipCodeEpochs, nSkipPhaseEpochs
STD_DIST     = LOW    1.0 7.5 ; Distance effects (OFF/HIGH/MEDIUM/LOW/MANUAL)
ManHzPPM ManVtPPM
STD_BL       = KENT     ON                        ; BLName UseMain(ON/OFF)
STD_RELTOL   = 4.00             ; Reliability tolerance for rejecting outliers

;Miscellaneous options
WRITE_RESIDUALS = OFF          ; Create binary value file (.fbv,.rbv)
LOCKTIME_CUTOFF = 12.0     ; Carrier Locktime cutoff (seconds)
DYNAMICS = AUTO HIGH             ; constraint on vehicle dynamics

; Single point processing options
SP_PROC_MODE  = 0               ; 0-auto, 1-sf, 2-df
SP_CA_VALUES  =   3.00  15.00 ; C/A Sd (m), C/A Rej Tol (m)
SP_AVG_STATIC = ON              ; ON/OFF
SP_SF_IONO    = 1               ; SF iono mode 0-off, 1-broadcast
SP_OTH_ERRORS = ON              ; Increase meas. stdev for other errors (ON/OFF)
SP_P1_OVER_CA = OFF             ; ON if P1 to be used instead of CA (if availble)
```

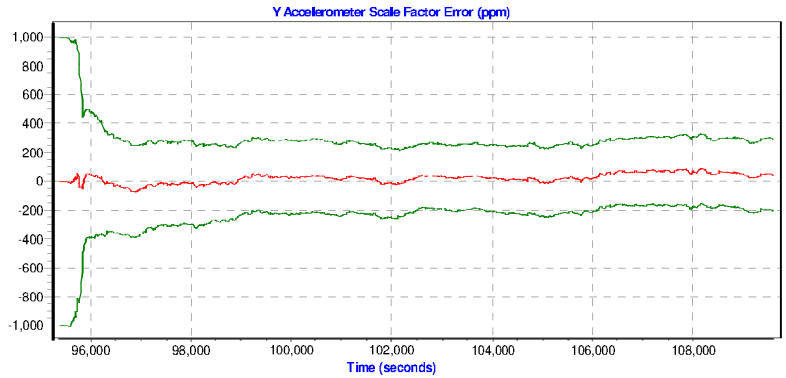
```
SP_CLK_MODE    = OFF            ; ON=Use ClockShift for time, OFF=use corrtime
```

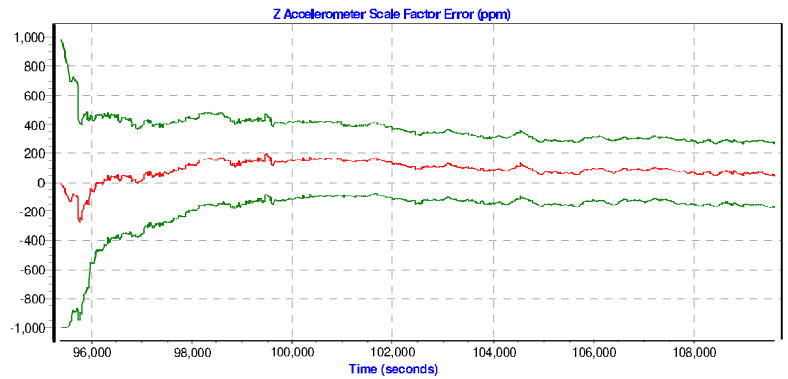






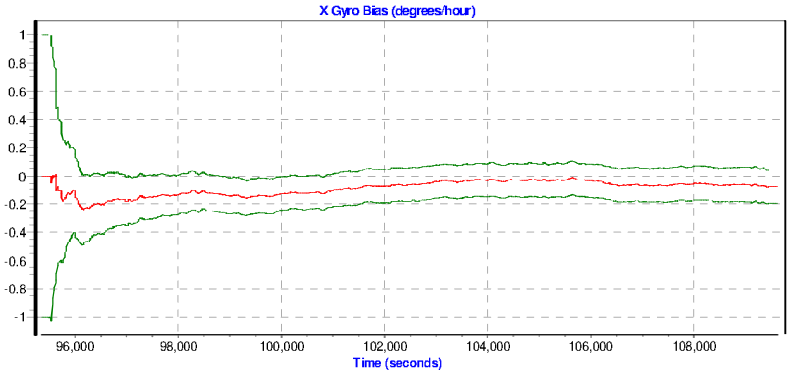


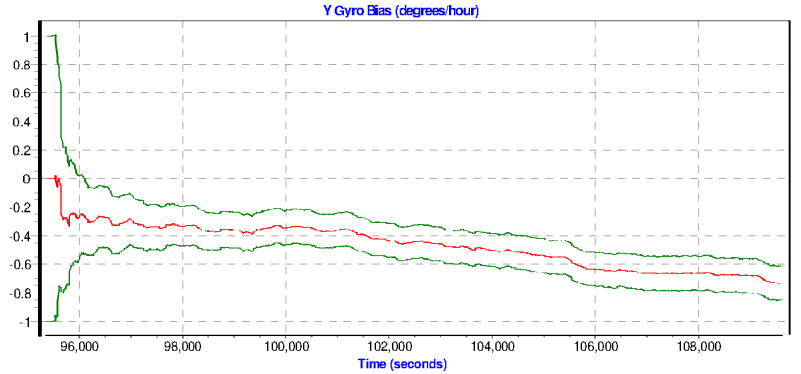


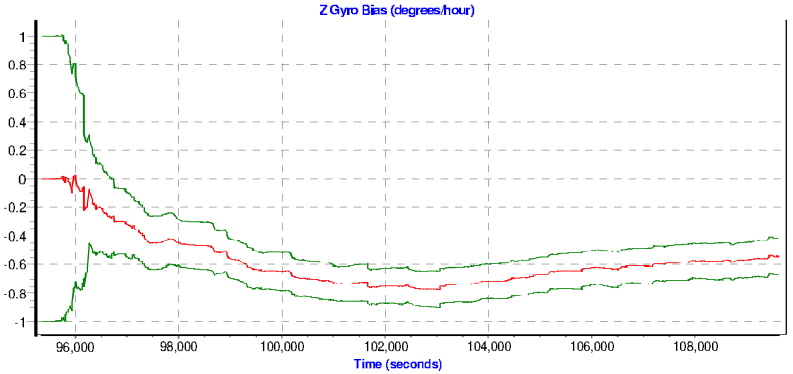


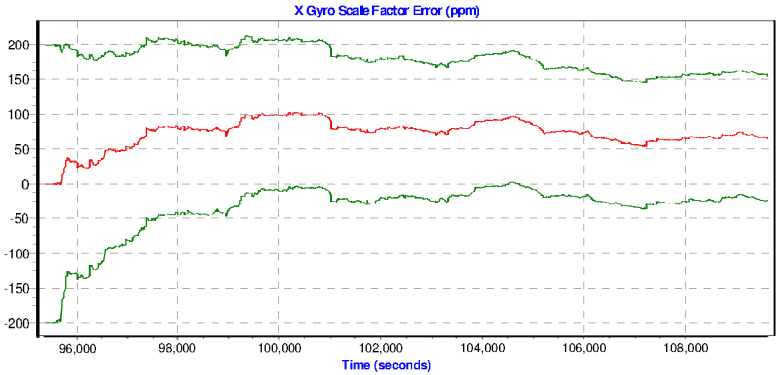
D:\Projects\Va\129\pos\Proc\ers_01.out

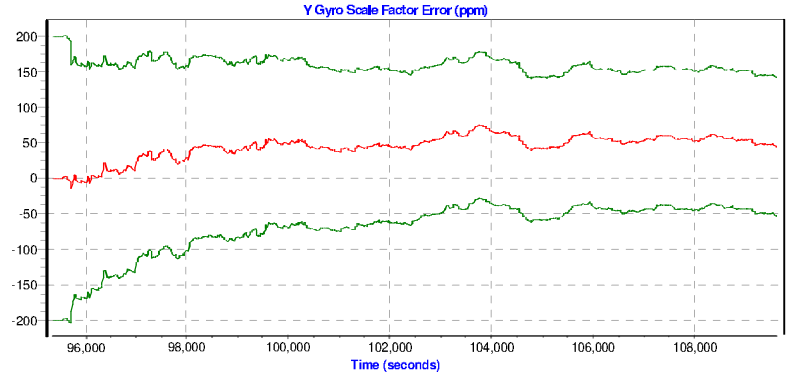
D:\Projects\Va\129\pos\Proc\rms_01.out

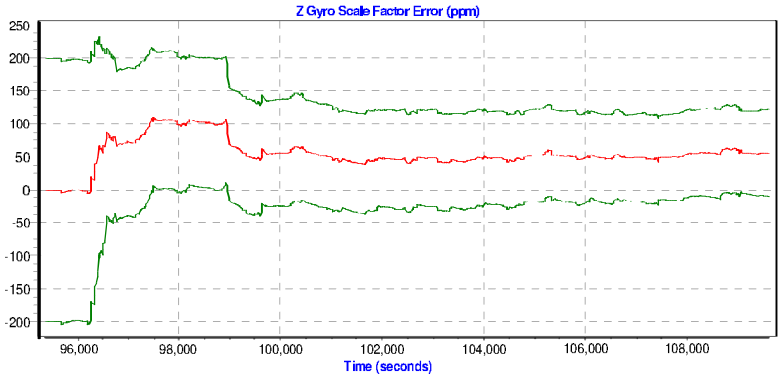












D:\Projects\Va\129\pos\Proc\ers_01.out

D:\Projects\Va\129\pos\Proc\rms_01.out

Daily Flight Log

Julian Date:	11129	Aircraft Tail #:	435H	Hobbs Beg:	
Local Date:	May 8	Pilot:	J. Melton		
Local Time:	10:20	Airport ID:	KOFP	Hobbs End:	
Time Zone:	EDT	Operator:	J. Hunter		

POS/AV File Name	POS/AV File Transfers	
11129A	1st File	Last File
ALTM-Logfile Name		

Weather

Time	Wind	Visibility	Sky Cond.	Temp	Dew Pt	Alt
0232	Clm	10	CLR	13c	11c	2996

Ground Station Data

Begin Static 1	End Static 1	Begin Static 2	End Static 2	Temp/Pressure (GND)
				13c 12996

Flight Plan

Plans Flown	Client	Laser Pulse	Scan Rate	Scan Angle	Desired Range	Speed KTS

Start	Stop	Flight Line	HDG	Range	PDOP	SV	Speed (kts)	Comments
02:53	02:58	crossline	358	990	1.48	9	128.3	
03:03	03:11	245	91	953	1.42	10	141.7	
03:15	03:24	244	271	953	2.82	8	136.4	
03:28	03:36	243	91	932	2.84	9	146.2	
03:41	03:49	242	271	972	1.51	10	135.5	
03:53	04:00	441	91	936	1.58	10	144.6	
04:06	04:15	240	271	946	1.77	9	128.3	
04:19	04:26	239	91	964	1.57	10	141.8	
04:30	04:37	238	271	982	1.56	10	135.8	
04:42	04:49	237	91	968	1.50	10	142.6	
04:53	05:00	236	271	932	1.37	11	140.5	
05:04	05:12	235	91	937	1.72	9	141.0	
05:15	05:23	234	271	942	1.78	9	142.8	
05:27	05:34	233	91	950	2.00	9	136.7	
05:38	05:45	252	271	920	2.00	8	140.8	
05:49	05:57	231	91	961	1.82	9	142.7	
06:00	06:08	230	271	985	1.97	8	152.1	

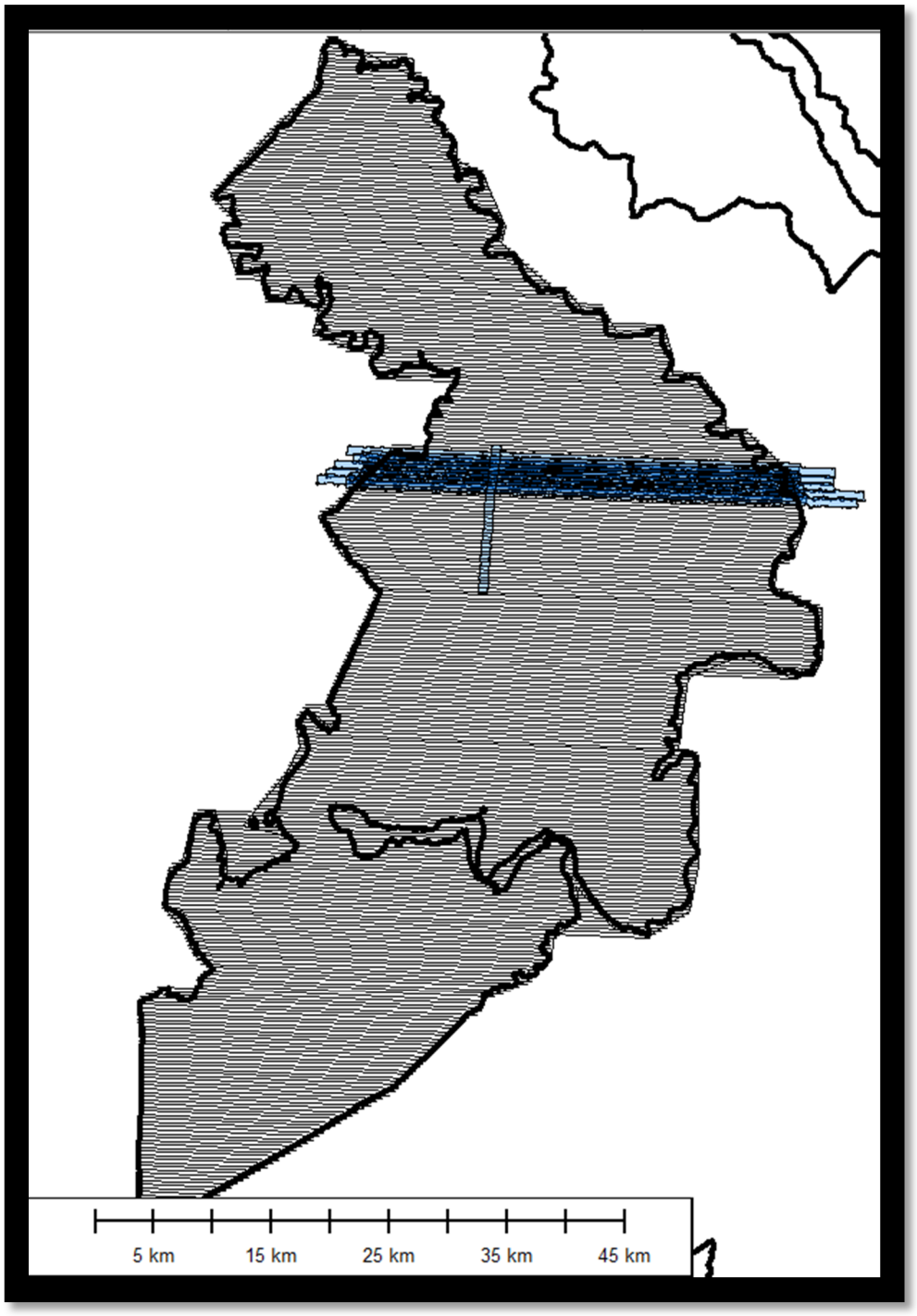
Check-off When Complete

- [ ] Power up ALTM Laser Syst
- [ ] Boot Laptop/Open Prograr
- [ ] POS/AV
- [ ] ALTM/NAV
- [ ] Internet Explorer FTP:
- [ ] Delete old POS/AV files from PC
- [ ] Achieve fine alignment
- [ ] Start logging to pc card
- [ ] Collect 5-min Static
- [ ] Configure ALTM
- [ ] Verify Full NAV
- [ ] Shutters open at 2000ft A
- [ ] Two 10-second Test Fir
- [ ] Roll Comp Line
- [ ] Flight-lines flown
- [ ] Roll Comp Line
- [ ] Copy all but last 2 POS/AV to C
- [ ] Close Shutters
- [ ] Collect 5 min. Static
- [ ] Stop Logging to PC Ca
- [ ] Copy Remaining POS/AV files to C
- [ ] Power-down ALTM Syst

Daily Activity/Comments

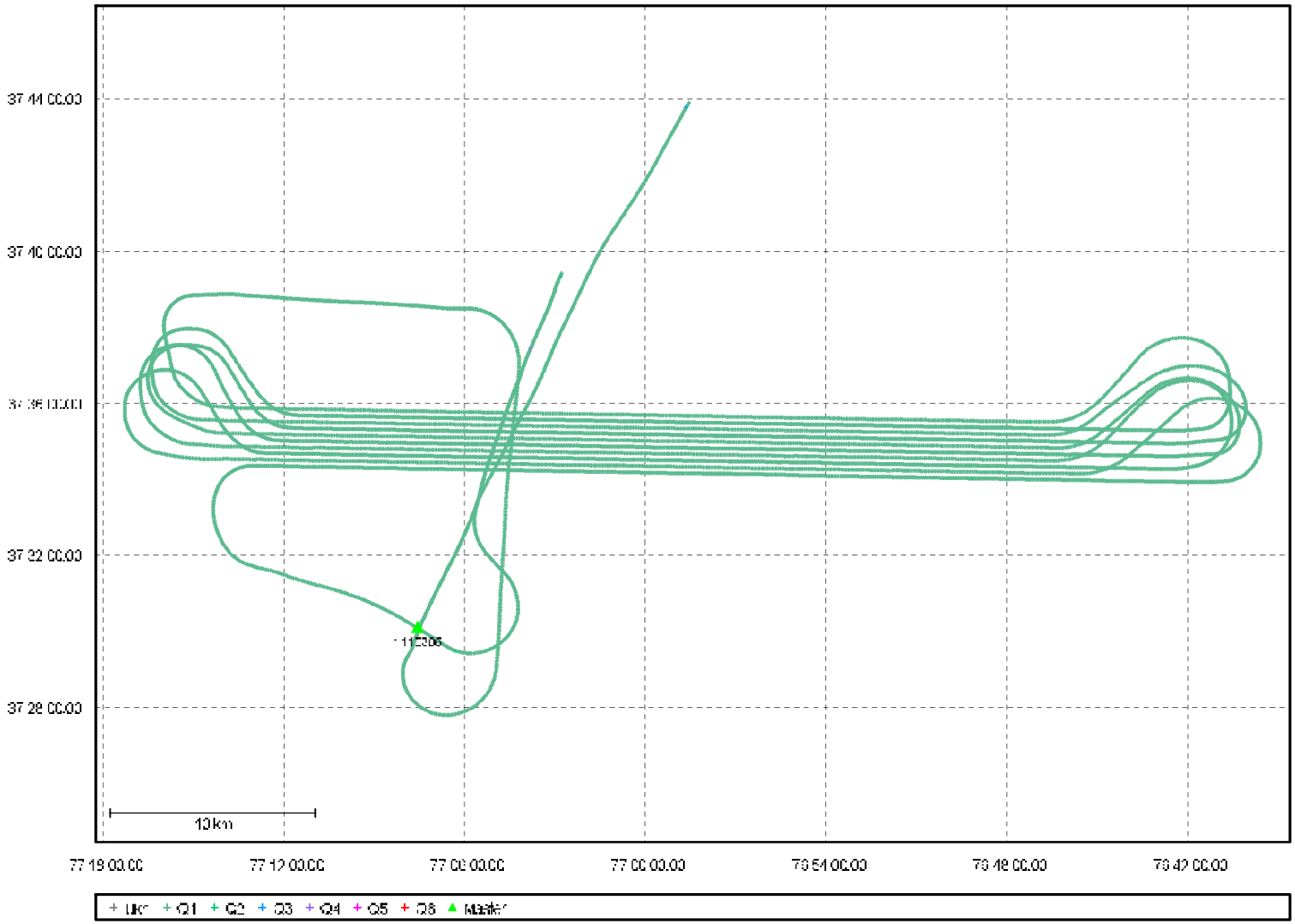
Mission: o211126a

2011 05 06



Combined - Map Run (3)

Geographic [illegible]



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: H:\range back va\o211126a\3_Processed\GPS\o211126a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:
- Total in GPB file: 114951
- No processed position: 105863
- Missing Fwd or Rev: 663
- With bad C/A code: 0
- With bad L1 Phase: 0

Measurement RMS Values:
- L1 Phase: 0.0116 (m)
- C/A Code: 0.82 (m)
- L1 Doppler: 0.026 (m/s)

Fwd/Rev Separation RMS Values:
- East: 0.017 (m)
- North: 0.010 (m)
- Height: 0.046 (m)

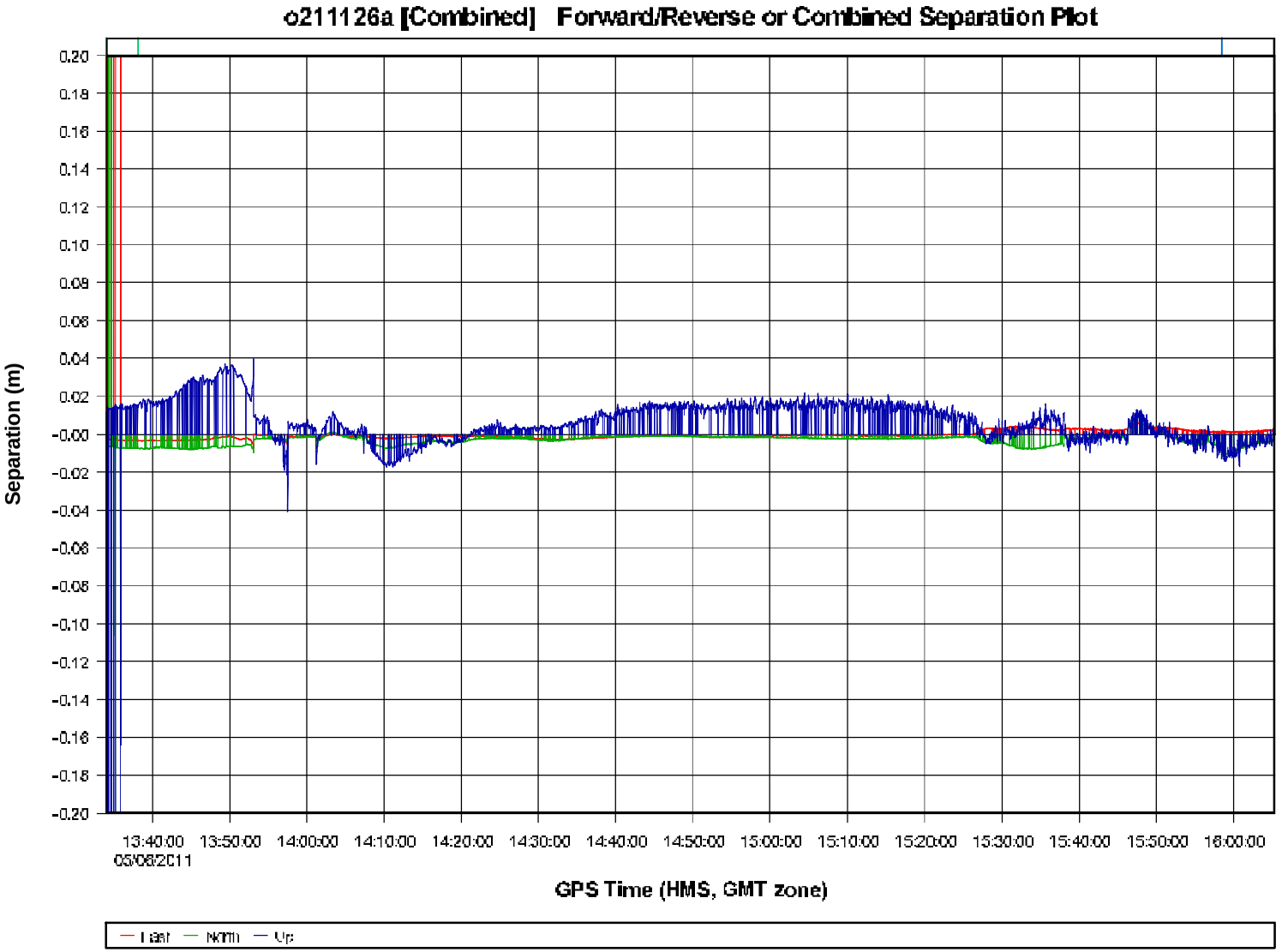
Fwd/Rev Sep. RMS for 25%-75% weighting (8411 occurances):
- East: 0.002 (m)
- North: 0.004 (m)
- Height: 0.013 (m)

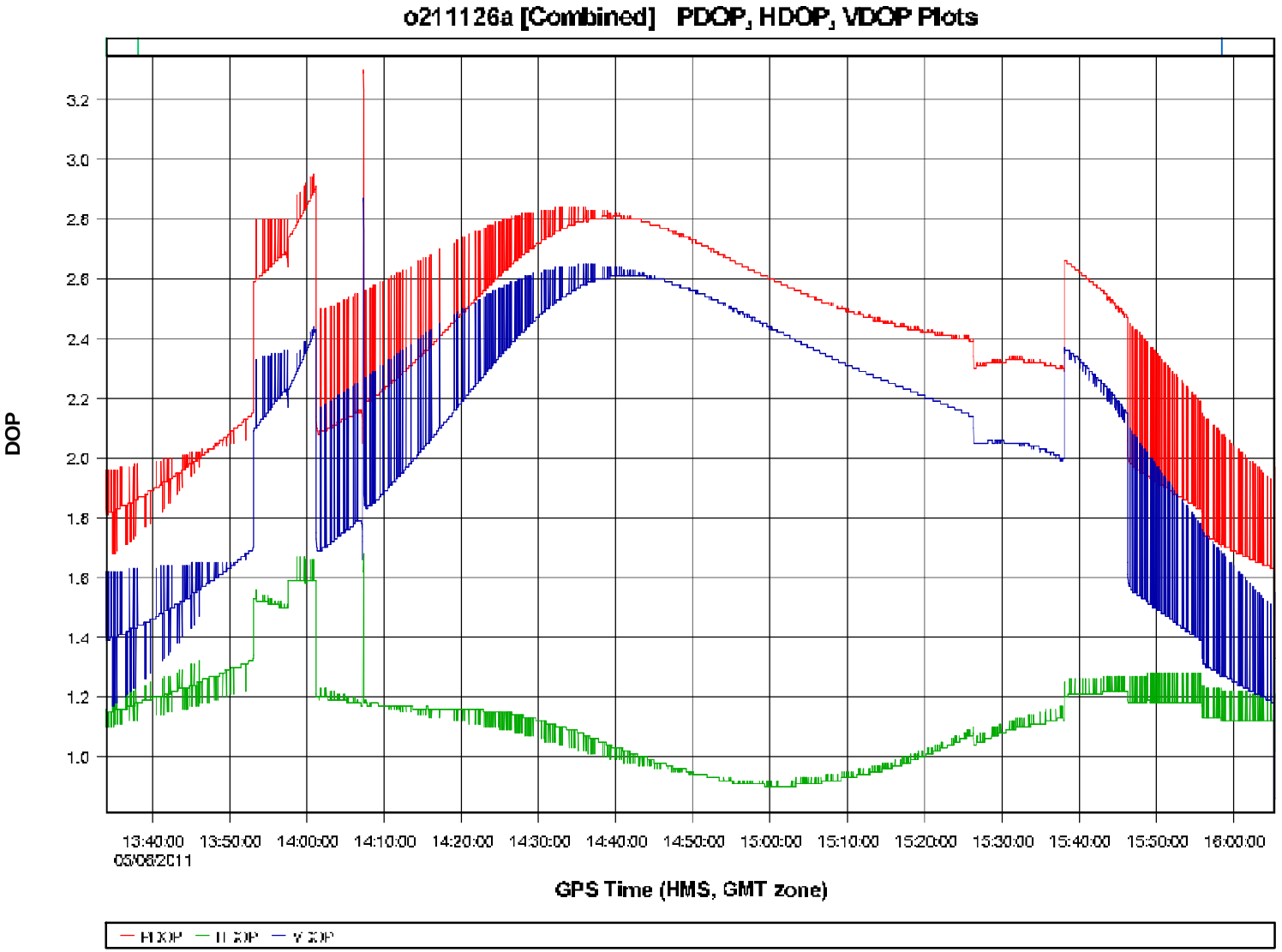
Quality Number Percentages:
- Q 1: 99.9 %
- Q 2: 0.0 %
- Q 3: 0.0 %
- Q 4: 0.0 %
- Q 5: 0.0 %
- Q 6: 0.0 %

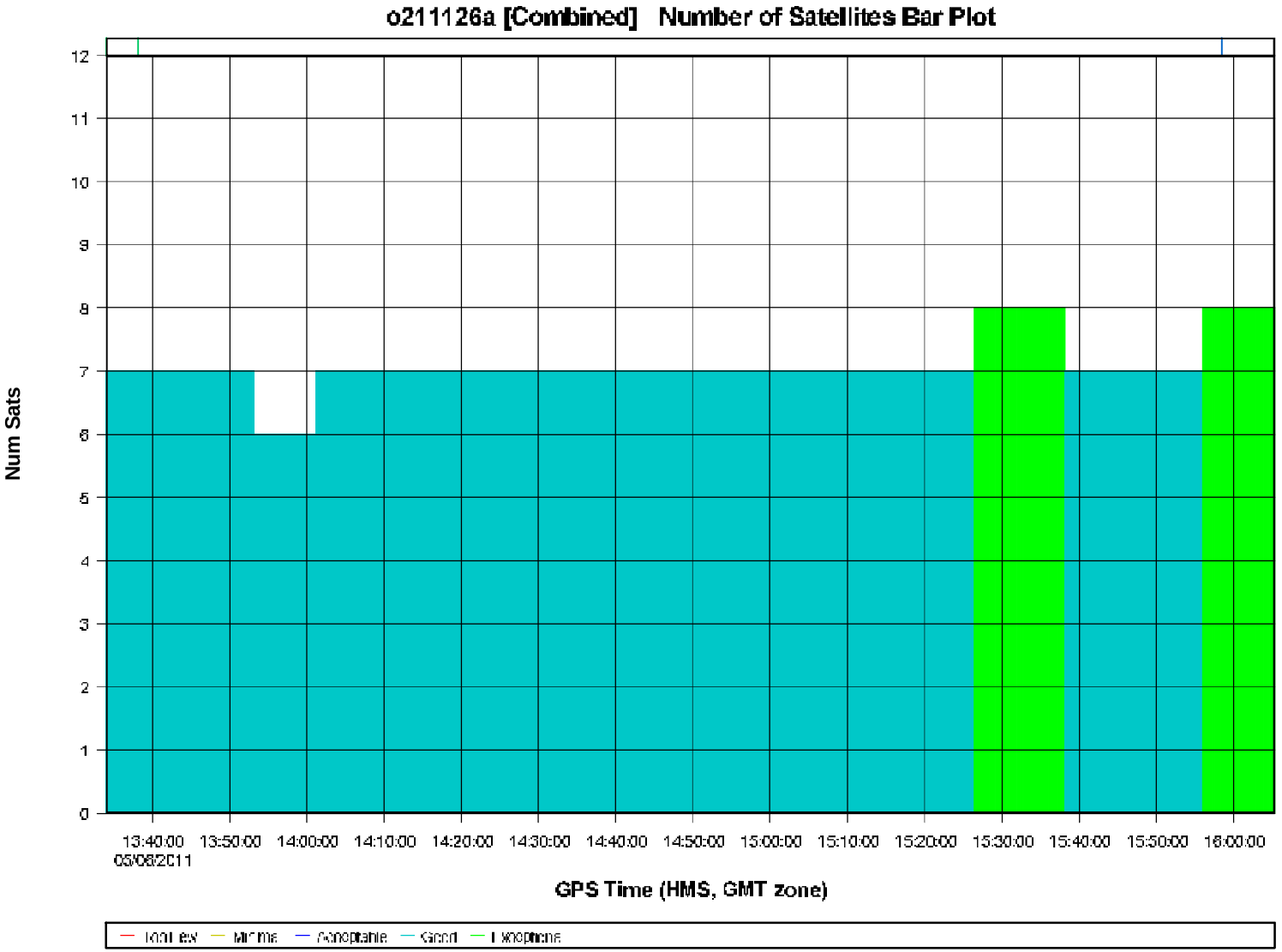
Position Standard Deviation Percentages:
- 0.00 - 0.10 m: 99.7 %
- 0.10 - 0.30 m: 0.2 %
- 0.30 - 1.00 m: 0.0 %
- 1.00 - 5.00 m: 0.0 %
- 5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:
- DOP over Tol: 0.0 %

Baseline Distances:
- Maximum: 42.251 (km)
- Minimum: 0.931 (km)
- Average: 19.185 (km)
- First Epoch: 18.640 (km)
- Last Epoch: 28.767 (km)

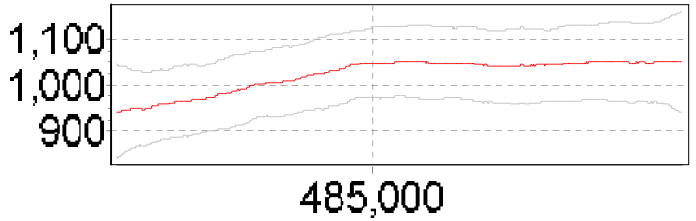

o211126a [Combined] Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
13:40:00 13:50:00 14:00:00 14:10:00 14:20:00 14:30:00 14:40:00 14:50:00 15:00:00 15:10:00 15:20:00 15:30:00 15:40:00 15:50:00 16:00:00
05/08/2011
GPS Time (HMS, GMT zone)
East
North
Up


o211126a [Combined] PDOP, HDOP, VDOP Plots
DOP
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
13:40:00 13:50:00 14:00:00 14:10:00 14:20:00 14:30:00 14:40:00 14:50:00 15:00:00 15:10:00 15:20:00 15:30:00 15:40:00 15:50:00 16:00:00
05/08/2011
GPS Time (HMS, GMT zone)
HDOP
VDOP

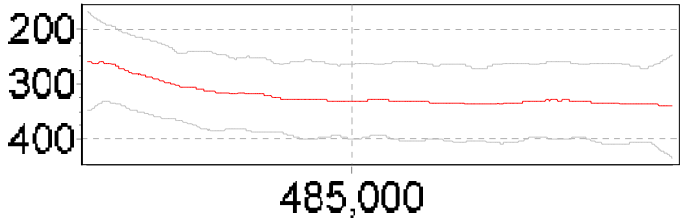

o211126a [Combined] Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
13:40:00
05/08/2011
13:50:00
14:00:00
14:10:00
14:20:00
14:30:00
14:40:00
14:50:00
15:00:00
15:10:00
15:20:00
15:30:00
15:40:00
15:50:00
16:00:00
GPS Time (HMS, GMT zone)
Acceptable
Good

```
;   PROJECT:    H:\range back va\o211126a\3_Processed\GPS\o211126a.cfg
;
;   DATE:       May 11/11  (date/time of processing)
;   TIME:       16:51:52
;   CREATED BY: GrafNav Version 7.80.2517
;

VERSION  = 7.80.2517
PROCUSER = Unknown
PROCDESC = Run*(4)
PROCTIME = 16:49:28 05/11/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = 1110306
MB_MASTER_FILE  =
H:\range*back*va\o211126a\1_RawData\original_PDC_files\1110306_00081260.gpb
MB_MASTER_POS   = 37 30 06.65193 -77 07 33.81068 -0.1040
MB_MASTER_ANT   = 1.561 0.001 1.527 1 _TP_SOK600 0
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  = H:\range*back*va\o211126a\3_Processed\Extract\mgps_o211126a.gpb
REMOTE_POS   = 37 51 39.62873 -76 53 55.64386 6.9574
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 103 108 113 126  ; Processing modes (GrafNav only)

DATUM = NAD83 AUTO         ;  Processing Datum
INPDATUM = ON NAD83 AUTO   ;  Input Datum (ON=Use processing datum)
ELEV_MASK   = 15.0          ; Elevation mask (deg)
GRID        = UTM 15 31     ; Grid info

CYCLE_TEST  = BOTH           ; Cycle slip test method
STATIC_SLIP_TOL = 0.40      ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF        ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99             ; Base satellite (99-default)

TIMERANGE   = RANGE 988724036.0 988733123.0 2 0 ; Processing time range
INTERVAL    = 0.10           ; Processing time interval (seconds)

PROCESS_DIR = FORWARD        ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                ; True for processing both directions
WRITE_BAD_EPOCHS = OFF       ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000  ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = EXTENDED       ; Format for .fwd/rev file
DETAILED_SUM = ON            ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON          ; Print cycle slips to message log
SAVE_AMB = ON                ; Should ambiguities be saved
```

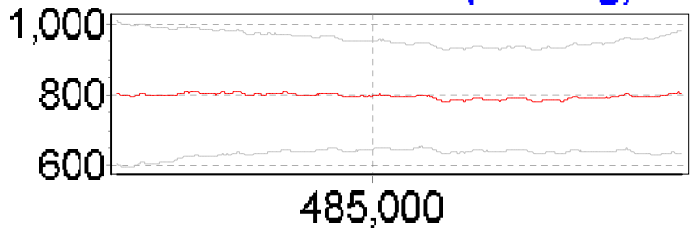
X Accelerometer Bias (micro-g)



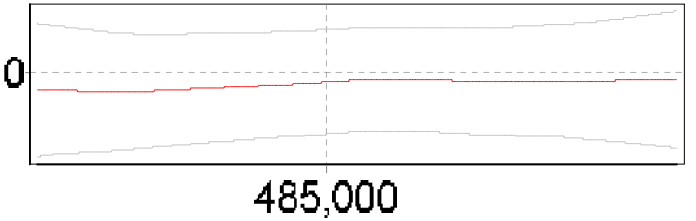
Y Accelerometer Bias (micro-g)



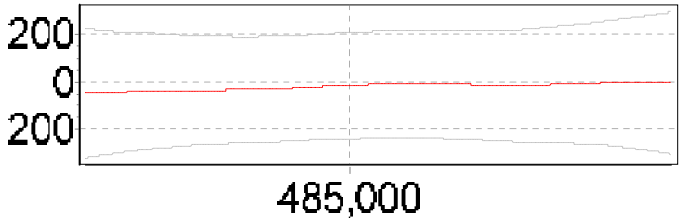
Z Accelerometer Bias (micro-g)



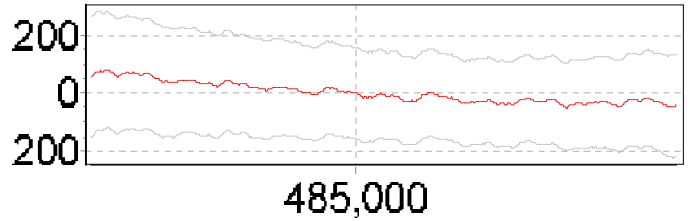
Accelerometer Scale Factor Error (ppm



Accelerometer Scale Factor Error (ppm

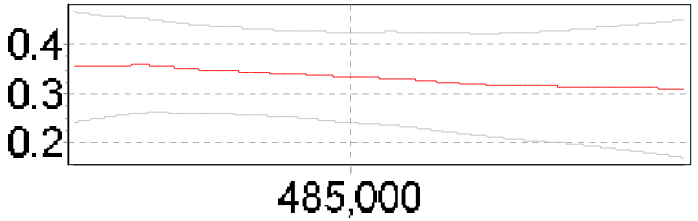


Accelerometer Scale Factor Error (ppm

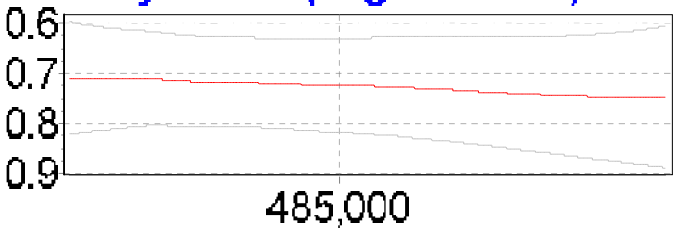


H:\range beck work\211126a\3_Processed\Procsmers_c211126a.out
H:\range beck work\211126a\3_Processed\Procsmrms_c211126a.out

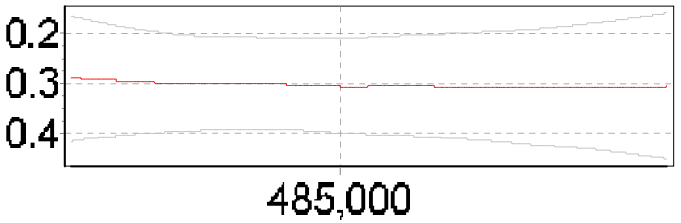
X Gyro Bias (degrees/hour)



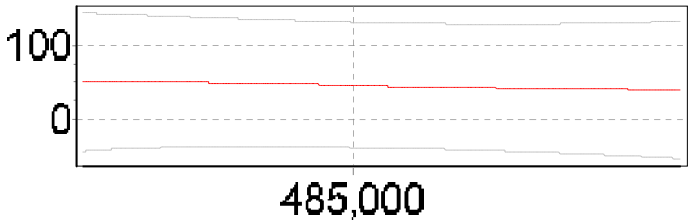
Y Gyro Bias (degrees/hour)



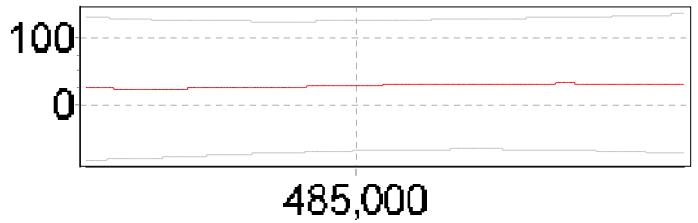
Z Gyro Bias (degrees/hour)



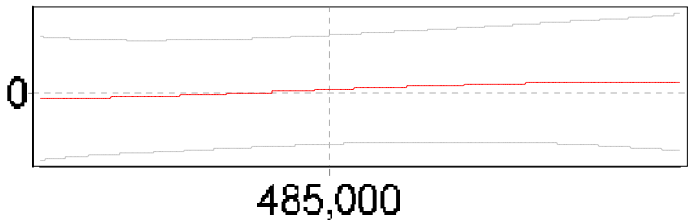
X Gyro Scale Factor Error (ppm)



Y Gyro Scale Factor Error (ppm)



Z Gyro Scale Factor Error (ppm)



H:\range beck vak\211126a\3_Processed\Procsmers_c211126a.out
H:\range beck vak\211126a\3_Processed\Procsmrms_c211126a.out

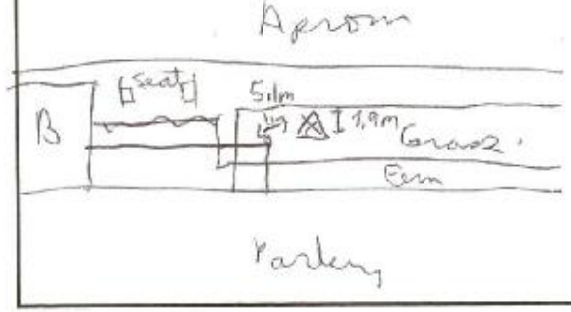
GPS Base Log Sheet

Terrapoint

Station ID:	1110306	Project #:	11103V	Missions:	021126a/

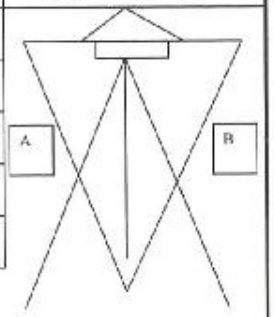
Project Name:	Fema VA	Calender Date:	6/5/2011	Julian Day	126
Approx. Coordinates WGS 84	N		W		
Description of Mark (Take Photos)					
Monument is: ☒ Flush with ground ☐ Above ground ____ cm ☐ Below ground ____ cm					
Location & Access					

Obstructions & Additional Notes



GPS Observation - MAIN

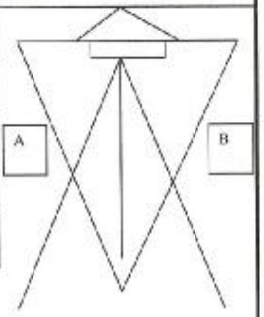
Rx Make / Model	GSR2600	Serial #	0008
Ant Make / Model	SK600	Serial #	0007
Operator	AC		
Session Time (GPS) Start	12 27 60		
Session Time (GPS) End			
Slant Ht Before: A:	1.527	B:	1.527
Slant Ht After: A:	1.527	B:	1.527
Correction			
Phase Center			
Data File Name			



☒ m ☐ in ☐ use GrafNav Profile

GPS Observation - Back-Up

Rx Make / Model		Serial #	
Ant Make / Model		Serial #	
Operator			
Session Time (GPS) Start			
Session Time (GPS) End			
Slant Ht Before: A:		B:	
Slant Ht After: A:		B:	
Correction			
Phase Center			
Data File Name			



☐ m ☐ in ☐ use GrafNav Profile

Projec	11103V	Session	02111260

[ght Log

Terrapoint

Date	May 6	Julian Day	126
Project	Fema VA	Aircraft	315A
Staging		Call Sign	315A
Survey Block	South Block	Pilot	W.M Cuy
Lines Complete		Operator	Everett
		Observer	
Mission Objective			

ALMIS/Optech	
System #	02
Laser Scanner	02
Camera/Lens SN	
Shutter Speed	
Photo Freq.	
IMU	
GPS Rx	
Data Drive	

Additional Notes:

Outside Temp @ TO: 47 Outside Pressure @ TO: 30.05

Outside Temp @ LA: Outside Pressure @ LA:

Aircraft Block Time ☐ Times confirmed with pilot		
Engine On (Hobbs) 9.10	Takeoff 9.25	(120L) x (Total fit hrs)
Engine Off (Hobbs) 12.30	Landing 12.48	FBO $ / Litre
Total hrs (Hobbs) 3.4	Total hrs	Approx. Fuel Cost

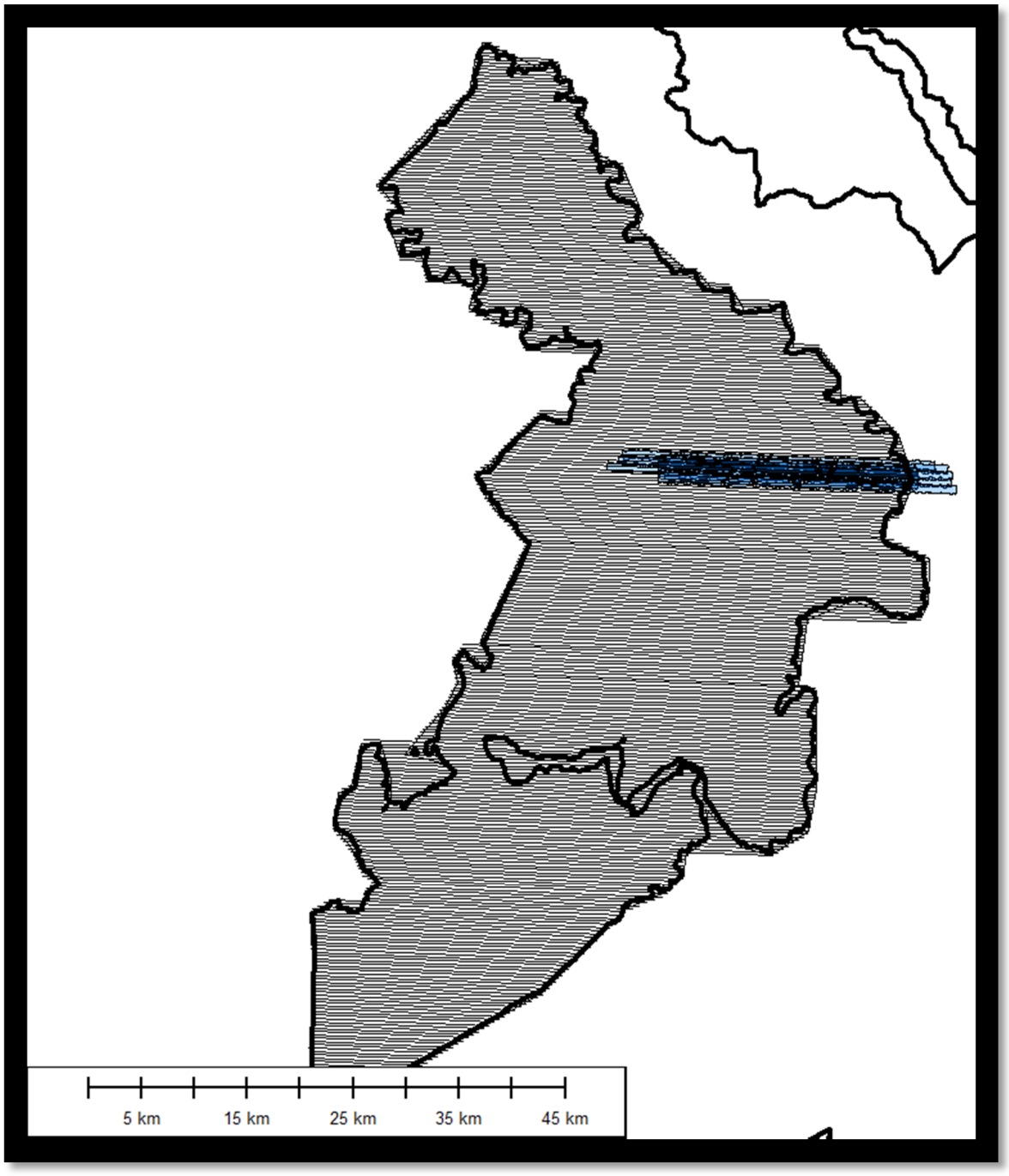
Mission Plan	
Flying Height AGL 3000	Scan Angle (Optech) 22
Ground Speed 150	Mirror Scan Rate 40
First/Last/Alternating Return	Laser Pulse Rate 70

Static & KAR GPS // INS Alignment		
Time ☐GPS	Start	End
Pre Mission		
KAR Base		
KAR Base		
Post Mission		

Flight Plan Line #	LIDAR File Name	Flight Direction	GPS / UTC Time		Flight Aborted		Photo Evens / Comments Please periocically record: Outside Temp Cabin Temp: Laser Temp: Cabin (Watts):
			Start	End	Time	NM to End	
Cross		N	13 40	13 47			
220		E	13 44	13 57			
219		W	14 01	14 12			
218		E	14 15	1423			
217		W	14 27	1437			
216		E	14 41	1448			
215		W	14 52	15 02			
214		E	15 06	15 14			
213		W	15 20	15 28			
212		E	15 32	14 40			
211		W	15 44	15 50			

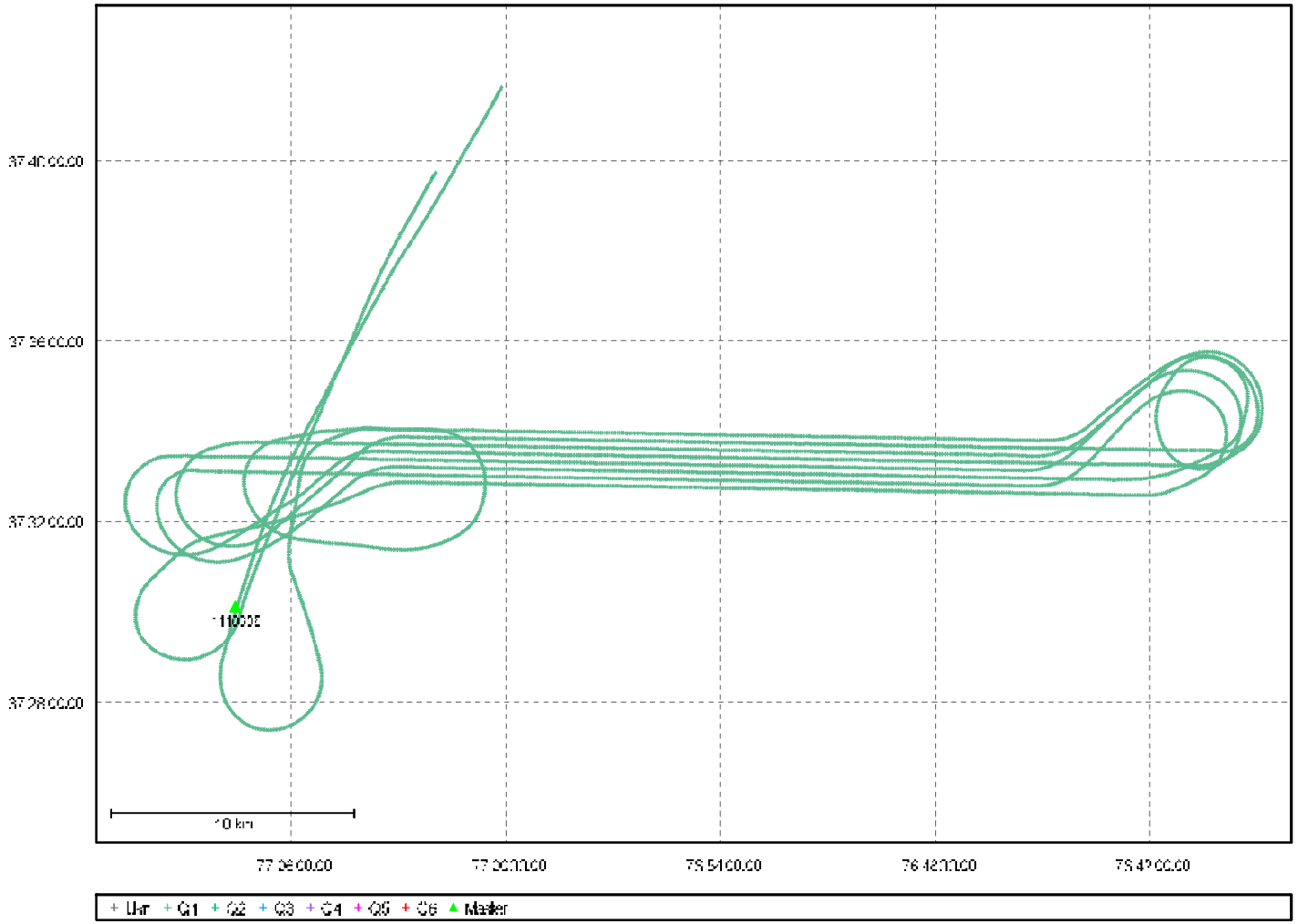
Mission: o211127c

2011 05 07



Combined - Map Run (3)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: H:\range back va\o211127b\3_Processed for o211127c\GPS\o211127c.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:
     Total in GPB file: 119016
     No processed position: 112563
     Missing Fwd or Rev: 4
     With bad C/A code: 0
     With bad L1 Phase: 0

Measurement RMS Values:
     L1 Phase: 0.0130 (m)
     C/A Code: 0.67 (m)
     L1 Doppler: 0.029 (m/s)

Fwd/Rev Separation RMS Values:
     East: 0.008 (m)
     North: 0.006 (m)
     Height: 0.016 (m)

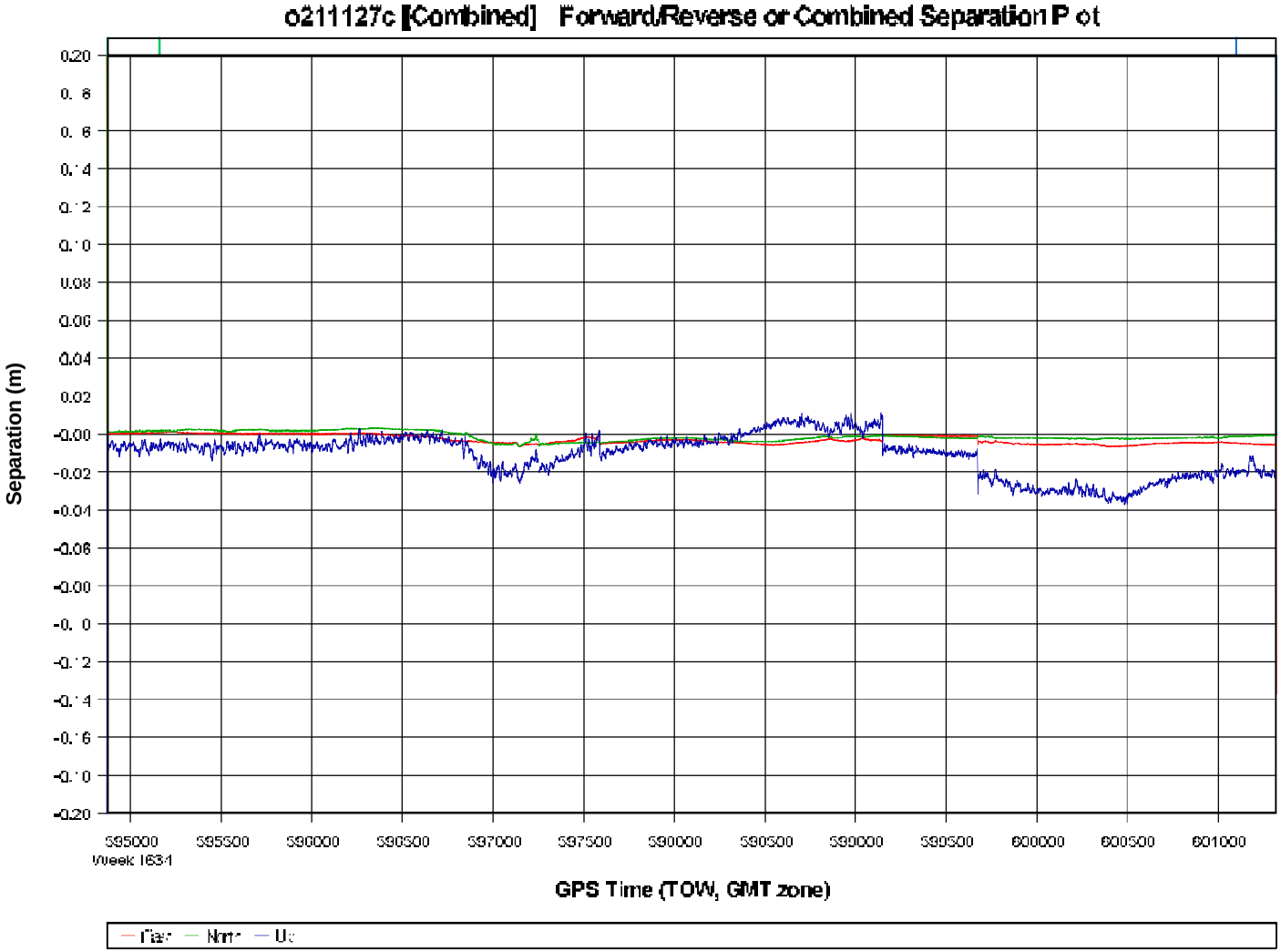
Fwd/Rev Sep. RMS for 25%-75% weighting (6447 occurances):
     East: 0.004 (m)
     North: 0.003 (m)
     Height: 0.015 (m)

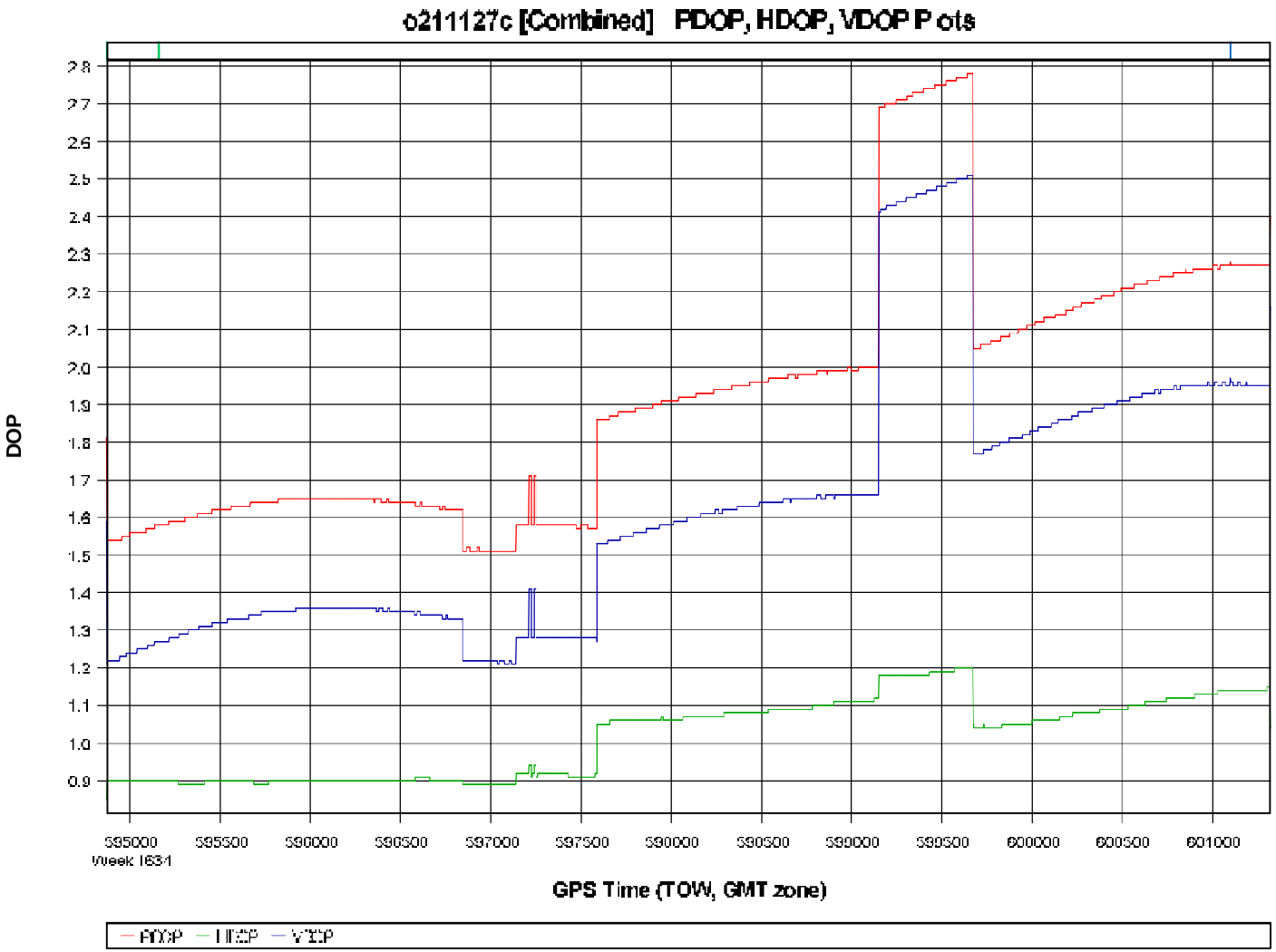
Quality Number Percentages:
     Q 1: 99.9 %
     Q 2: 0.1 %
     Q 3: 0.0 %
     Q 4: 0.0 %
     Q 5: 0.0 %
     Q 6: 0.0 %

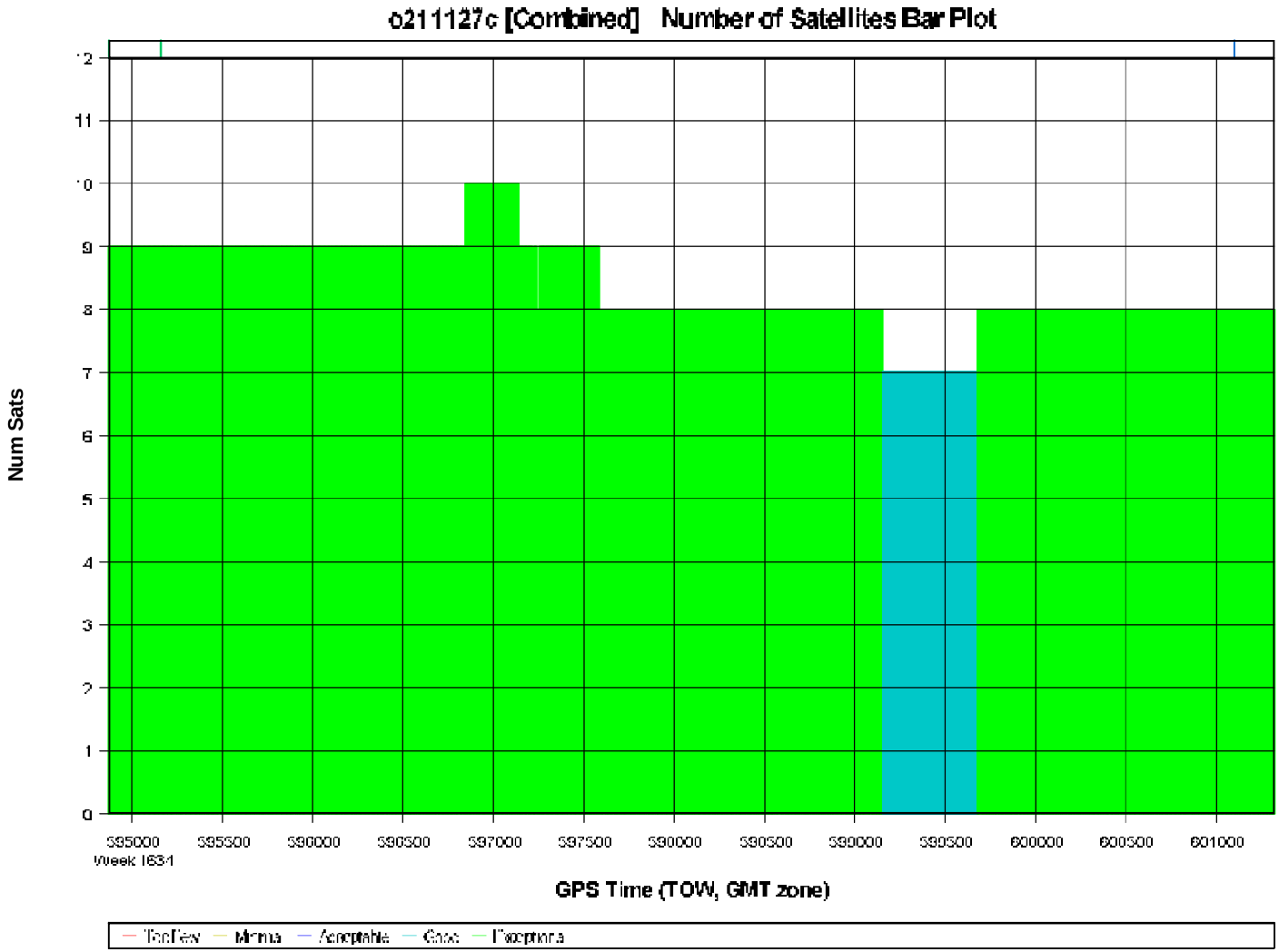
Position Standard Deviation Percentages:
     0.00 - 0.10 m: 100.0 %
     0.10 - 0.30 m: 0.0 %
     0.30 - 1.00 m: 0.0 %
     1.00 - 5.00 m: 0.0 %
     5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:
     DOP over Tol: 0.0 %

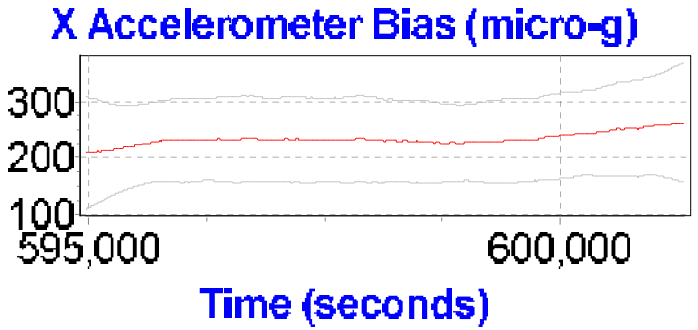
Baseline Distances:
     Maximum: 43.112 (km)
     Minimum: 1.008 (km)
     Average: 19.246 (km)
     First Epoch: 23.958 (km)
     Last Epoch: 19.605 (km)

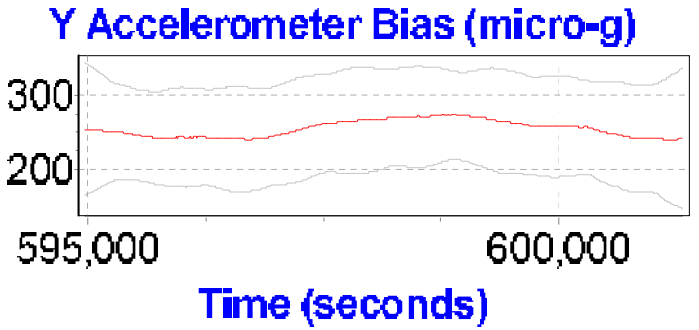

o211127c [Combined] Forward/Reverse or Combined Separation Plot
Separation (m)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
-0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
-0.16
-0.18
-0.20
595000
595500
596000
596500
597000
597500
598000
598500
599000
599500
600000
600500
601000
Week 1634
GPS Time (TOW, GMT zone)

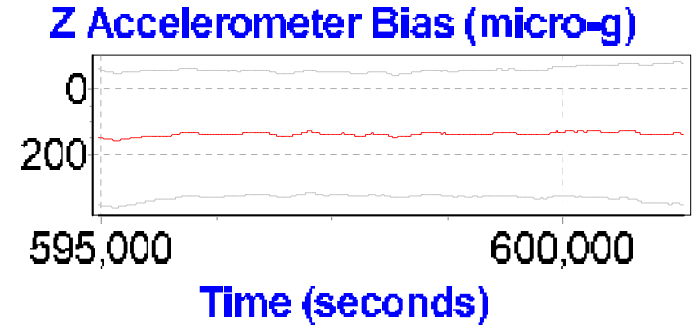

o211127c [Combined] PDOP, HDOP, VDOP Plots
DOP
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
595000
595500
596000
596500
597000
597500
598000
598500
599000
599500
600000
600500
601000
Week 1631
GPS Time (TOW, GMT zone)
PDOP
HDOP
VDOP

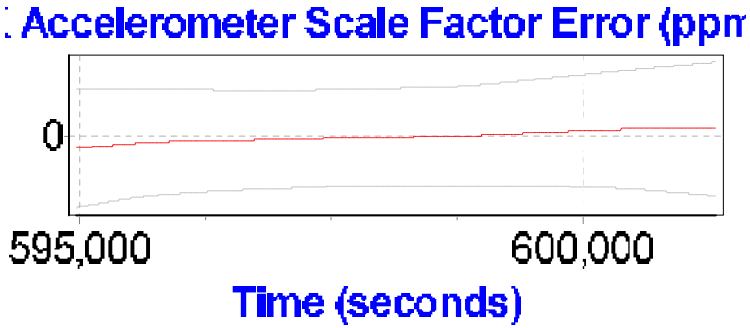

o211127c [Combined] Number of Satellites Bar Plot
Num Sats
12
11
10
9
8
7
6
5
4
3
2
1
0
595000
595500
596000
596500
597000
597500
598000
598500
599000
599500
600000
600500
601000
Week 1634
GPS Time (TOW, GMT zone)
Tooflew
Minma
Acceptable
Good
Exceptiona

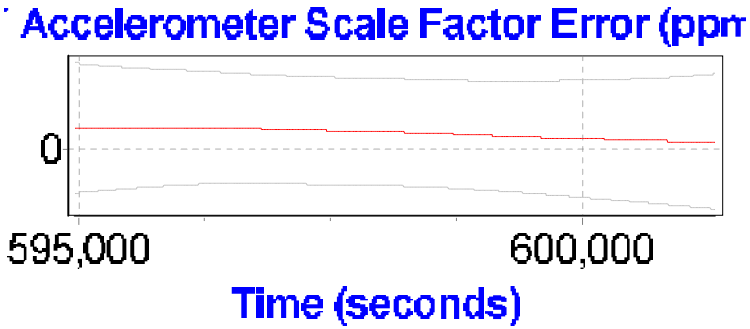
```
;   PROJECT:    H:\range back va\o211127b\3_Processed for o211127c\GPS\o211127c.cfg
;
;   DATE:       May 11/11  (date/time of processing)
;   TIME:       10:26:43
;   CREATED BY: GrafNav Version 7.80.2517
;

VERSION  = 7.80.2517
PROCUSER = Unknown
PROCDESC = Run*(5)
PROCTIME = 10:25:33 05/11/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = 1110306
MB_MASTER_FILE  =
H:\range*back*va\o211127b\1_RawData\original_PDC_files\1110306_00081270.gpb
MB_MASTER_POS   = 37 30 06.65193 -77 07 33.81068 -0.1040
MB_MASTER_ANT   = 1.561 0.001 1.527 1 _TP_SOK600 0
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE  =
H:\range*back*va\o211127b\3_Processed*for*o211127c\Extract\mgps_o211127c.gpb
REMOTE_POS   = 37 51 39.75385 -76 53 55.14738 9.3343
REMOTE_ANT   = 0.000

; General settings
PROCESS_MODE = 103 108 113 126  ; Processing modes (GrafNav only)

DATUM = NAD83 AUTO         ;  Processing Datum
INPDATUM = ON NAD83 AUTO   ;  Input Datum (ON=Use processing datum)
ELEV_MASK   = 15.0          ; Elevation mask (deg)
GRID        = UTM 15 31     ; Grid info

CYCLE_TEST  = BOTH          ; Cycle slip test method
STATIC_SLIP_TOL = 0.40      ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF        ; Use doppler meas. for phase, for code-only

BASE_SAT    = 99            ; Base satellite (99-default)

TIMERANGE   = RANGE 988838069.0 988844523.0 2 0 ; Processing time range
INTERVAL    = 0.10          ; Processing time interval (seconds)

PROCESS_DIR = FORWARD       ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON               ; True for processing both directions
WRITE_BAD_EPOCHS = OFF      ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000 ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = EXTENDED      ; Format for .fwd/rev file
DETAILED_SUM = ON           ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON         ; Print cycle slips to message log
SAVE_AMB = ON               ; Should ambiguities be saved
```

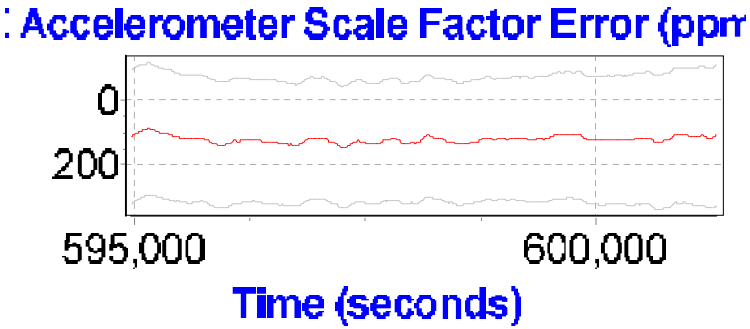




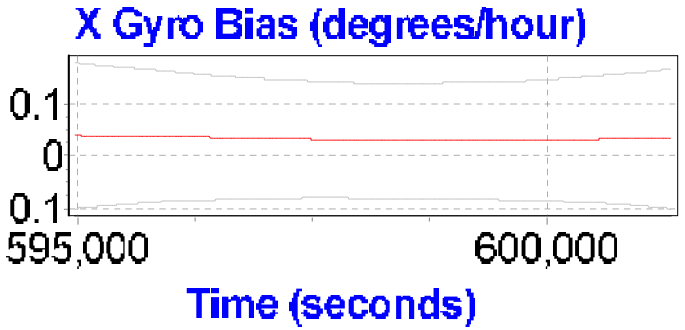


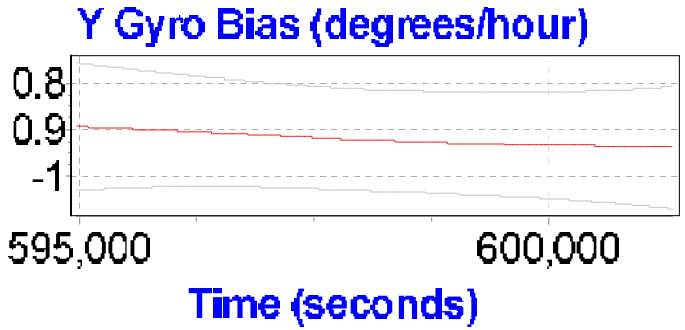


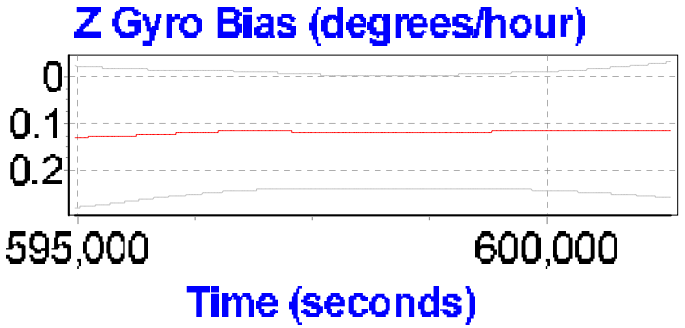


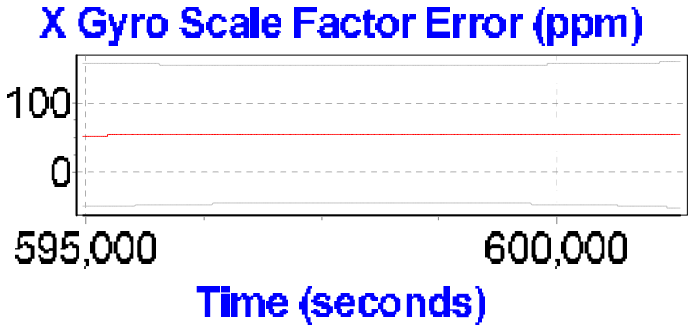


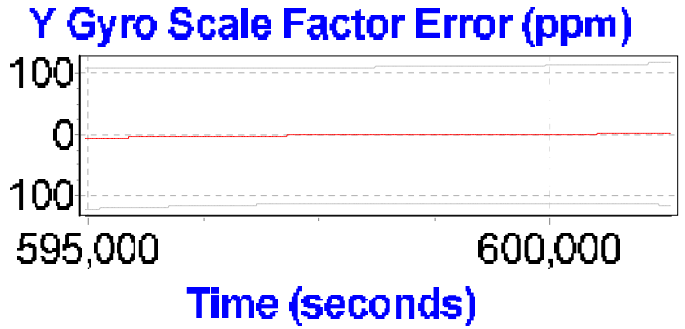
H:\rangebeck vark\211127b\3_Processed for c211127c\Proc\smars c211127c.out
H:\rangebeck vark\211127b\3_Processed for c211127c\Proc\smms c211127c.out

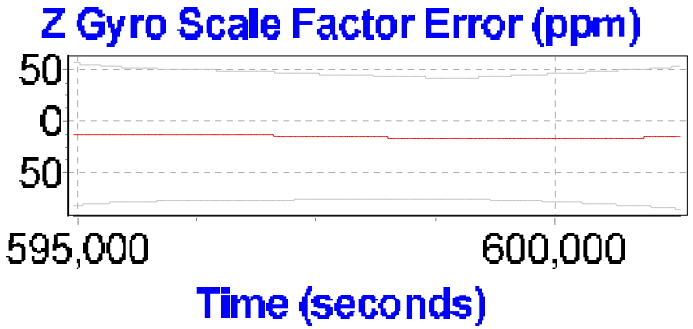












H:\rangebeck vak\211127b\3_Processed for c211127c\Proc\smars c211127c.out
H:\rangebeck vak\211127b\3_Processed for c211127c\Proc\smms c211127c.out

Proj #		Session	021126 1C

Flight Log

Terrapoint

Date		Julian Day	
Project		Aircraft	
Staging		Cal. Site	
Survey Block	North / South	Pilot	
Lines Complete		Operator	
		Observer	
Mission Objective			

Camera/Epoch	
System #	
Laser Scanner	
Camera/Lens SN	
Shutter Speed	
Photo Freq	
IMU	
GPS Rx	
Data Drive	

Additional Notes:

Outside Temp @ TO: 74 Outside Pressure @ TO: 24137

Outside Temp @ LA: Outside Pressure @ LA:

Aircraft Block Time ☐ Times confirmed with pilot

Mission Plan

Static & KAR GPS / IMS Alignment

Engine On (Hobbs)	Takeoff	(12JL) Total Hrs
1600	1618	
Engine Off (Hobbs)	Landing	PBC $ / Line
	1841	
Total hrs (Hobbs)	Total hrs	Approx. Fuel Cost
	9	

Flying Height AGL	Scan Angle (Opposite)
7000	22
Ground Speed	Mirror Scan Rate
150	40
First/Last/All Returning Return	Laser Pulse Rate
	7
GPS / UTC Time	Flight Aborted

Time	GPS	Start	End
Pre Mission			
KAR Base			
KAR Base			
Post Mission			
	Event / Comments		

Please periodically record

Flight Plan Line #	LIDAR File Name	Flight Direction	Start	End	Time	NM to End	Temp:	Cabin Temp:
		E	2034	2041			Photo	
140	North plan		2050	2058			Outside Laser Temp:	Output (Watts):
209	" P	E					Mid Right Line	
210	"	W	21 20	21 30				
204	South plan	E	21 35	21 45				
	"	W	21 50	21 57				
	"	E	22 07	22 09				
208	"	W	22 11	22 14				
207	"	E	22 26	22 32				
206	"	W	22 38	22 43				
205	"	E	22 47	22 53				

Page ___ of ___

GPS Base Log Sheet

Terrapoint

Station ID:	110306	Project #:	111030	Missions:	

Project Name: Loma VA Calendar Date: 7/5/2011 Julian Day: 127

Approx. Coordinates WGS 84 N W

Description of Mark (Take Photos)

Location & Access Monument is: ☐ Flush ☐ with ground ☐ Above ground _____ cm ☐ Below ground _____ cm

GPS Observation - MAIN

Rx Make / Model: GR2600 Serial #: 2004

Ant Make / Model: SK600 Serial #: 2007

Operator: AC

Session Time (GPS) Start: 11:2000 End:

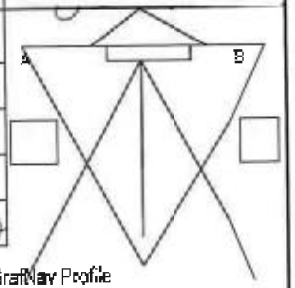
Slant Ht Before: A: B:

Slant Ht After: A: 1.522 B: 1.52

Correction

Phase Center ☐ m ☐ in ☐ use GrafNav Profile

Data File Name



& Notes

Obstructions Additional

GPS Observation - Back-Up

Rx Make / Model Serial #

Ant Make / Model Serial #

Operator

Session Time (GPS) Start End

Slant Ht Before: A: B:

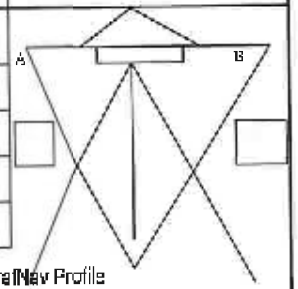
Slant Ht After: A: B:

Correction

Phase Center ☐ m ☐ in ☐ use GrafNav Profile

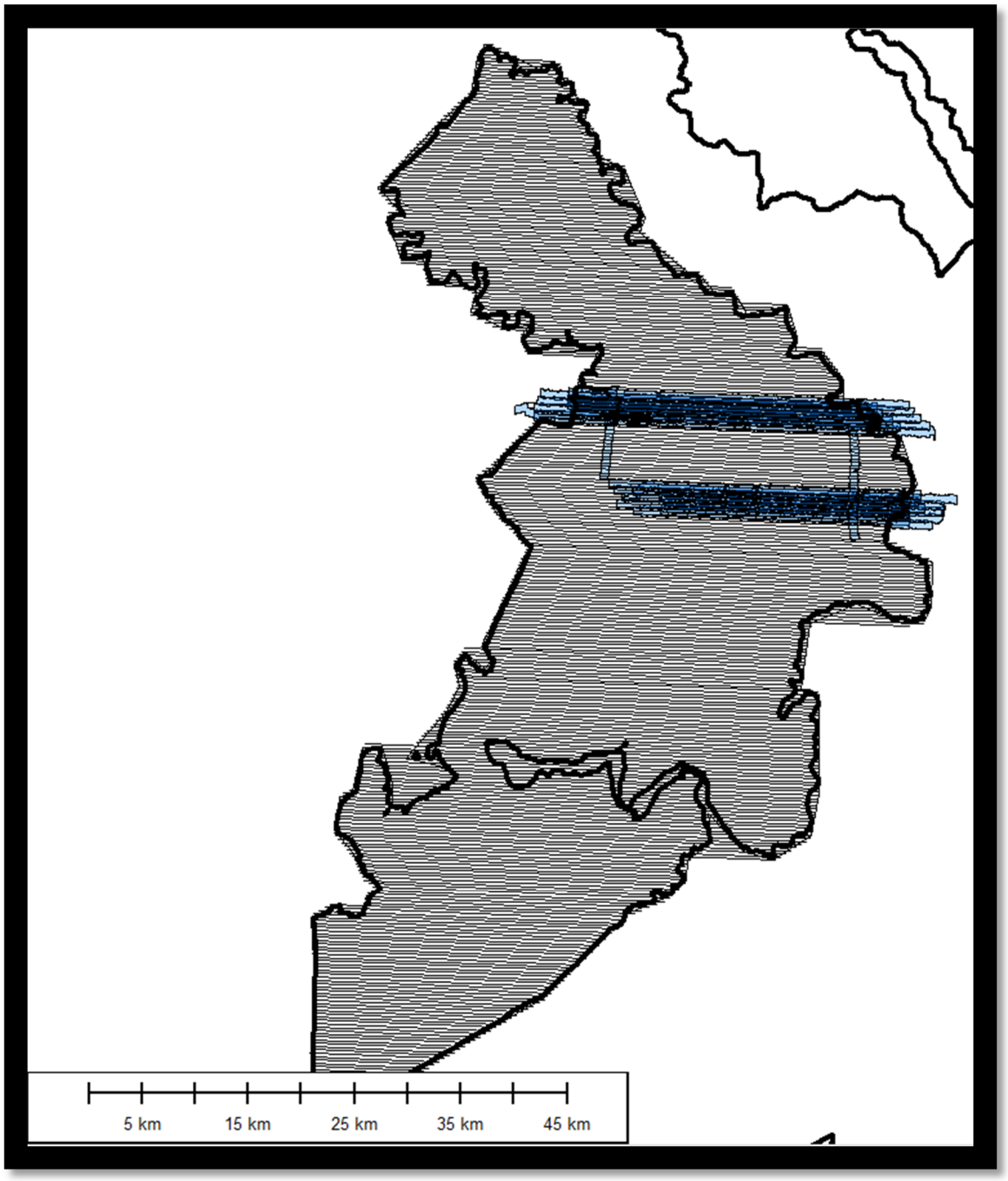
File Name

Data



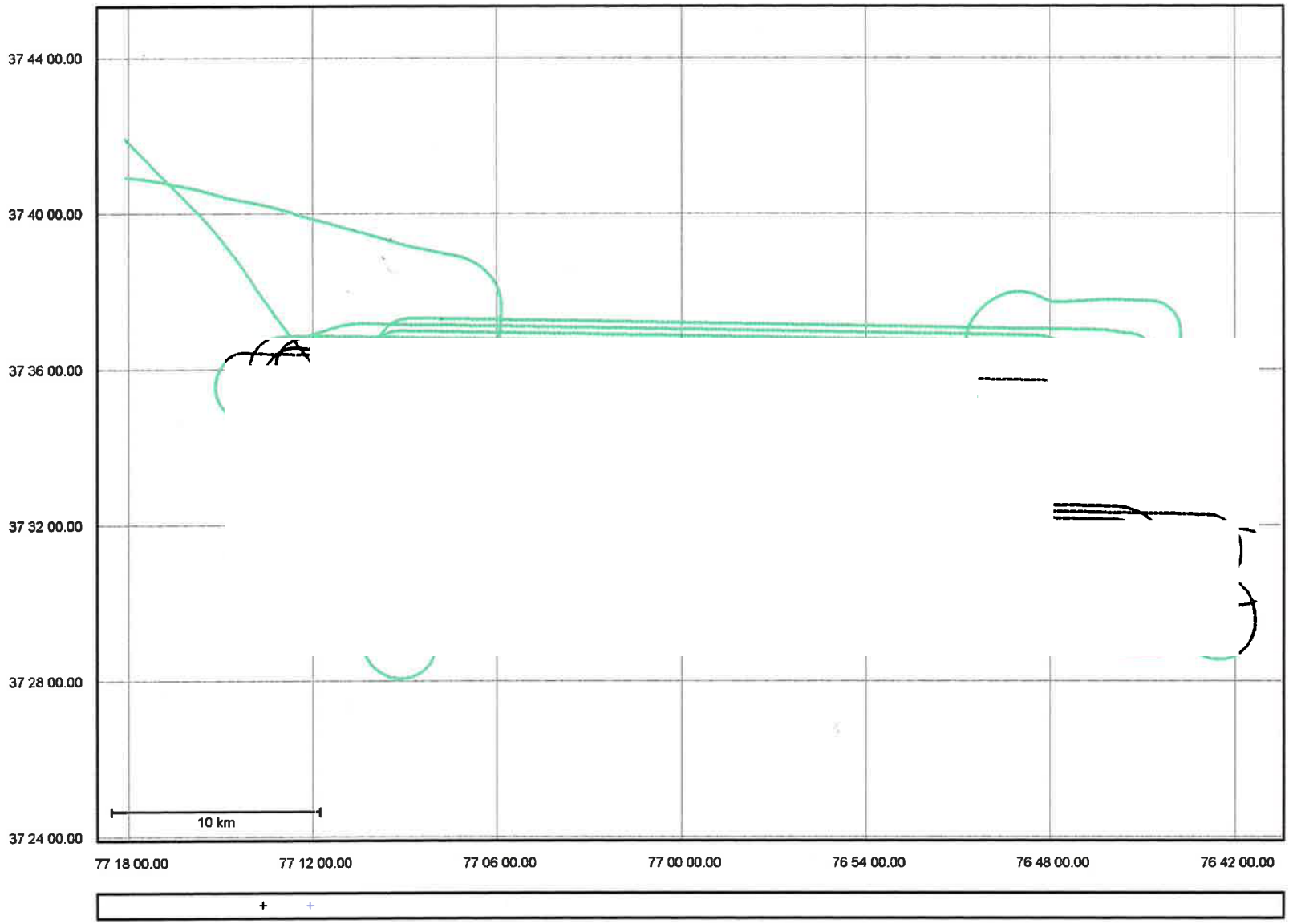
Mission: o211130a

2011 05 10



Combined - Map Run (2)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: H:\range back va\o211130a\3_Processed\GPS\o211130a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:
Total in GPB file: 142164
No processed position: 129498
Missing Fwd or Rev: 4
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:
L1 Phase: 0.0122 (m)
C/A Code: 0.73 (m)
L1 Doppler: 0.029 (m/s)

Fwd/Rev Separation RMS Values:
East: 0.012 (m)
North: 0.007 (m)
Height: 0.016 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (12660 occurances):
East: 0.012 (m)
North: 0.005 (m)
Height: 0.014 (m)

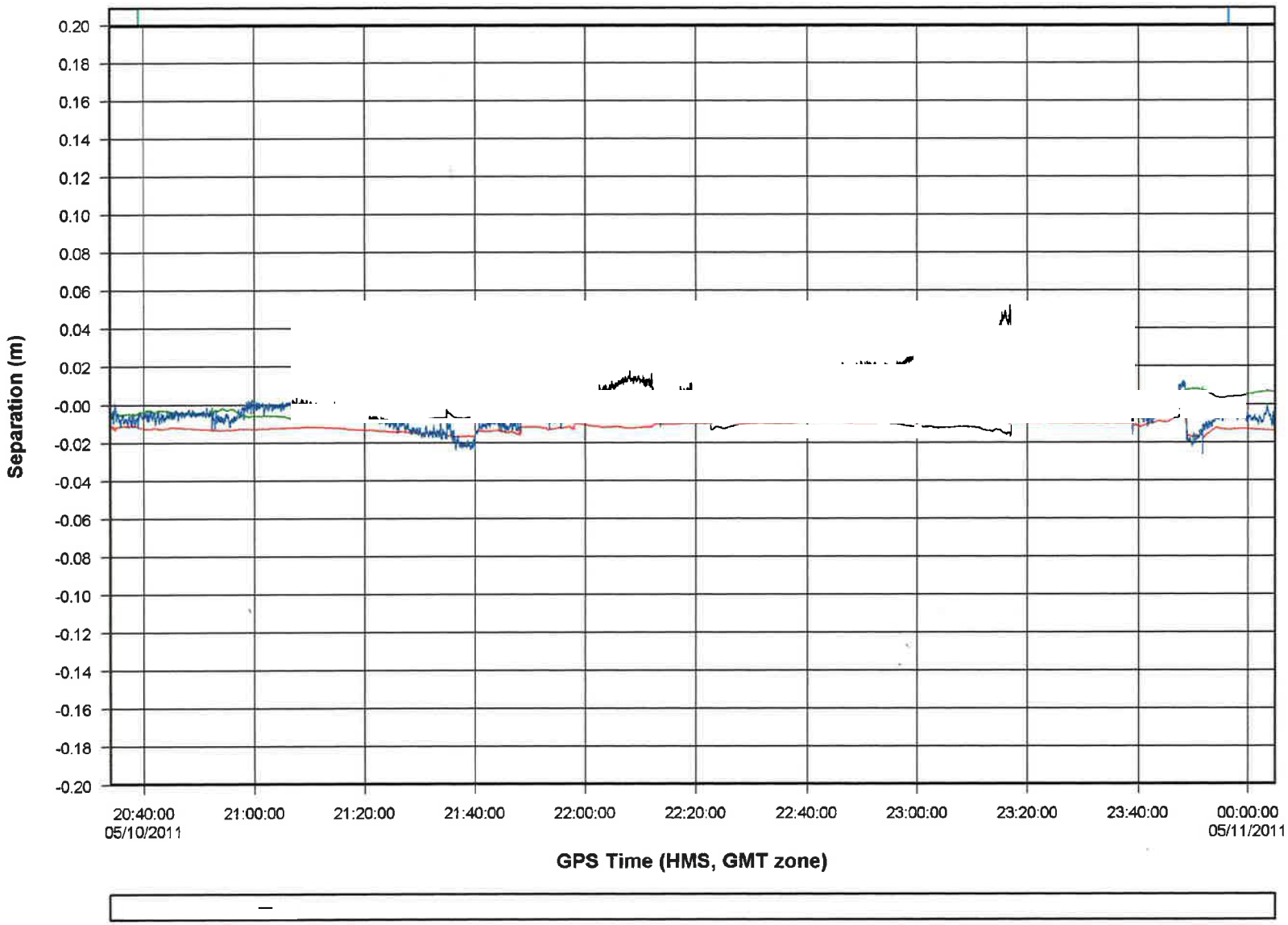
Quality Number Percentages:
Q 1: 99.9 %
Q 2: 0.1 %
Q 3: 0.0 %
Q 4: 0.0 %
Q 5: 0.0 %
Q 6: 0.0 %

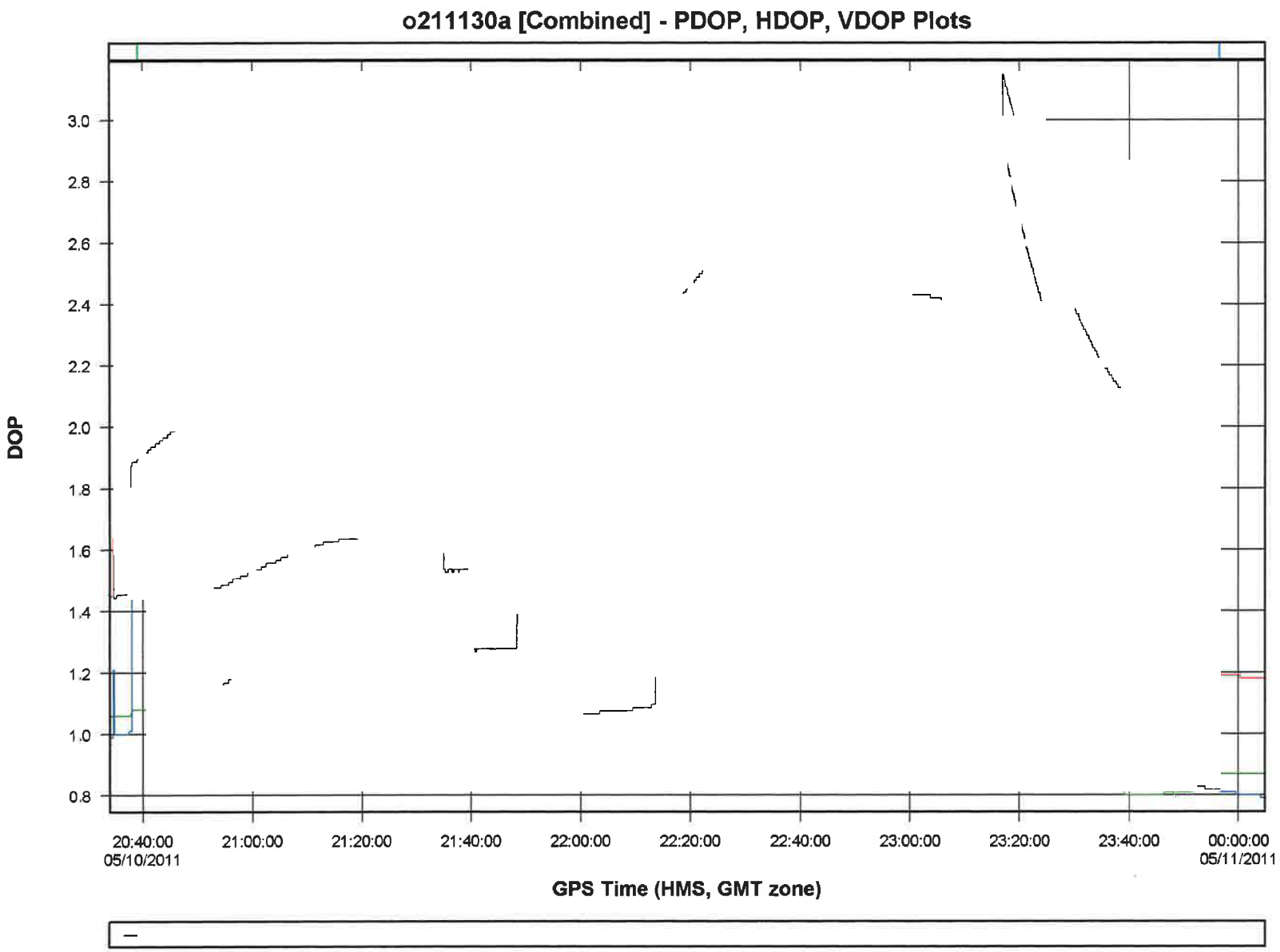
Position Standard Deviation Percentages:
0.00 - 0.10 m: 100.0 %
0.10 - 0.30 m: 0.0 %
0.30 - 1.00 m: 0.0 %
1.00 - 5.00 m: 0.0 %
5.00 m + over: 0.0 %

Percentages of epochs with DD_DOP over 10.00:
DOP over Tol: 0.0 %

Baseline Distances:
Maximum: 39.694 (km)
Minimum: 1.004 (km)
Average: 19.790 (km)
First Epoch: 26.906 (km)
Last Epoch: 29.160 (km)

o211130a [Combined] - Forward/Reverse or Combined Separation Plot




o211130a [Combined] - PDOP, HDOP, VDOP Plots
DOP
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
20:40:00
05/10/2011
21:00:00
21:20:00
21:40:00
22:00:00
22:20:00
22:40:00
23:00:00
23:20:00
23:40:00
00:00:00
05/11/2011
GPS Time (HMS, GMT zone)

o211130a [Combined] - Number of Satellites Bar Plot

```
;   PROJECT:     H:\range back va\o211130a\3_Processed\GPS\o211130a.cfg
;
;   DATE:        May 11/11  (date/time of processing)
;   TIME:        17:18:37
;   CREATED BY: GrafNav Version 7.80.2517
;

VERSION  = 7.80.2517
PROCUSER = Unknown
PROCDESC = Run*(3)
PROCTIME = 17:15:47 05/11/2011

; Master station # 1 information
MB_MASTER_INDEX = 0
MB_MASTER_NAME  = 1110306
MB_MASTER_FILE  =
H:\range*back*va\o211130a\1_RawData\original_PDC_files\00081301.gpb
MB_MASTER_POS    = 37 30 06.65193 -77 07 33.81068 -0.1040
MB_MASTER_ANT    = 1.629 0.001 1.595 1 _TP_SOK600 0
MB_MASTER_DISABLE = OFF

; Remote station information
REMOTE_FILE   = H:\range*back*va\o211130a\3_Processed\Extract\mgps_o211130a.gpb
REMOTE_POS    = 37 42 32.19925 -77 26 19.21017 27.5907
REMOTE_ANT    = 0.000

; General settings
PROCESS_MODE = 103 108 113 126  ; Processing modes (GrafNav only)

DATUM = NAD83 AUTO          ;  Processing Datum
INPDATUM = ON NAD83 AUTO    ;  Input Datum (ON=Use processing datum)
ELEV_MASK    = 15.0          ; Elevation mask (deg)
GRID         = UTM 15 31     ; Grid info

CYCLE_TEST  = BOTH           ; Cycle slip test method
STATIC_SLIP_TOL = 0.40      ; slip tolerance in static mode (cycles)
USE_DOPPLER = ON OFF        ; Use doppler meas. for phase, for code-only

BASE_SAT     = 99            ; Base satellite (99-default)

TIMERANGE    = RANGE 989094826.0 989107496.0 2 0 ; Processing time range
INTERVAL     = 0.10          ; Processing time interval (seconds)

PROCESS_DIR = FORWARD        ; Process direction (FORWARD/REVERSE)
BOTH_DIR = ON                ; True for processing both directions
WRITE_BAD_EPOCHS = OFF       ; Save bad data to .fwd/rev file (ON/OFF)
NOWRITE_HIGH = OFF 6 20.000  ; Don't write epoch with high statistics (q, stdev-m)
OUTPUT_MODE = EXTENDED       ; Format for .fwd/rev file
DETAILED_SUM = ON            ; Detailed Static/KAR Summary header
WRITE_SLIP_MSG = ON          ; Print cycle slips to message log
SAVE_AMB = ON                ; Should ambiguities be saved
```

X Accelerometer Bias (micro-g)

900
800

Time (seconds)

Y Accelerometer Bias (micro-g)

-200
-300
-400

Time (seconds)

Z Accelerometer Bias (micro-g)

8
600

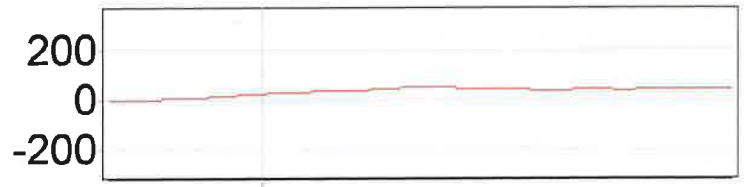
Time (seconds)

Accelerometer Scale Factor Error (ppm

200
0
-200

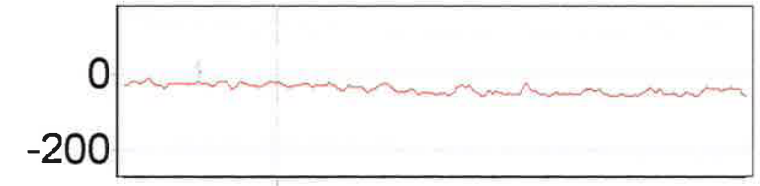
Time (seconds)

Accelerometer Scale Factor Error (ppm



Time (seconds)

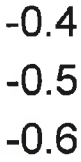
Accelerometer Scale Factor Error (ppm



Time (seconds)

H:\range back va\o211130a\3_Processed\Proc\smers_o211130a.out
H:\range back va\o211130a\3_Processed\Proc\smrms_o211130a.out

X Gyro Bias (degrees/hour)

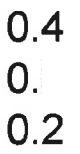


Time (seconds)

Y Gyro Bias (degrees/hour)

Time (seconds)

Z Gyro Bias (degrees/hour)

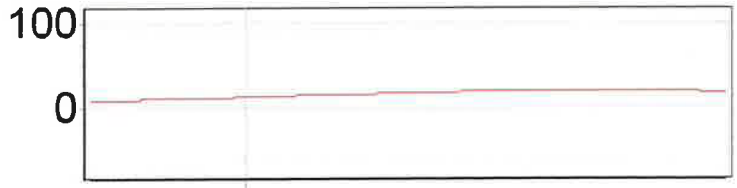


Time (seconds)

X Gyro Scale Factor Error (ppm)

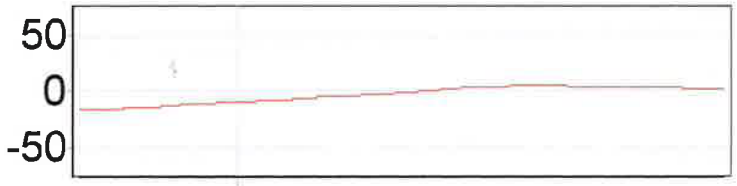
Time (seconds)

Y Gyro Scale Factor Error (ppm)



Time (seconds)

Z Gyro Scale Factor Error (ppm)



Time (seconds)

H:\range back va\o211130a\3_Processed\Proc\smers_o211130a.out
H:\range back va\o211130a\3_Processed\Proc\smrms_o211130a.out

Project 111030 Session 021130a Flight Log

Terrapoint

Flight Plan Line #	LIDAR File Name	Flight Direction	GPS / UTC Time Start	GPS / UTC Time End	Flight Aborted Time	Flight Aborted NM to End	Photo Evens / Comments Please period cally record: Outside Temp: Lase Temp	Cabin Temp: Output (Watts)
	615			23 7				
	618							
	2011							
	Stab							
		E	2048	2052				
		W	2105					
196		E	2111	2115				
19		W	2117	2127				
183		E	2126	2133				
189		W	2142	2142				
200		E	2145	21				
201			2156	2201				
		E	2204	2210				
0.65		N	2214					
			2242					
		W		2250				
		E	2253					
			2304					
				2				
			2331	3				
2			2357	2				
2		W	2346	2				
		N	2357	20				

Page ___ of ___

GPS Base Log Sheet

Terrapoint

Station ID:	1110306	Project #:	11106	Missions:	a/11130a

Project Name:	Fema VA	Calender Date:	May 10/2011	Julian Day	130
Approx. Coordinates WGS 84	N		W		
Description of Mark (Take Photos)					

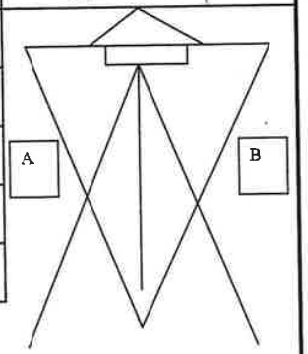
Monument is: ☐ Flush with ground ☒ Above ground _____ cm ☐ Below ground _____ cm

Location & Access

Obstructions & Additional Notes

GPS Observation - MAIN

Rx Make / Model	GSR2600	Serial #	0008
Ant Make / Model	SK600	Serial #	0007
Operator	AC		
Session Time (GPS) Start	133700		
Session Time (GPS) End			
Slant Ht Before: A:	1.595	B:	1.595
Slant Ht After: A:	1.595	B:	1.595
Correction			
Phase Center		☑ m ☐ in ☐ use GrafNav Profile	
Data File Name			



GPS Observation - Back-Up

Rx Make / Model		Serial #	
Ant Make / Model		Serial #	
Operator			
Session Time (GPS) Start			
Session Time (GPS) End			
Slant Ht Before: A:		B:	
Slant Ht After: A:		B:	
Correction			
Phase Center		☐ m ☐ in ☐ use GrafNav Profile	
Data File Name