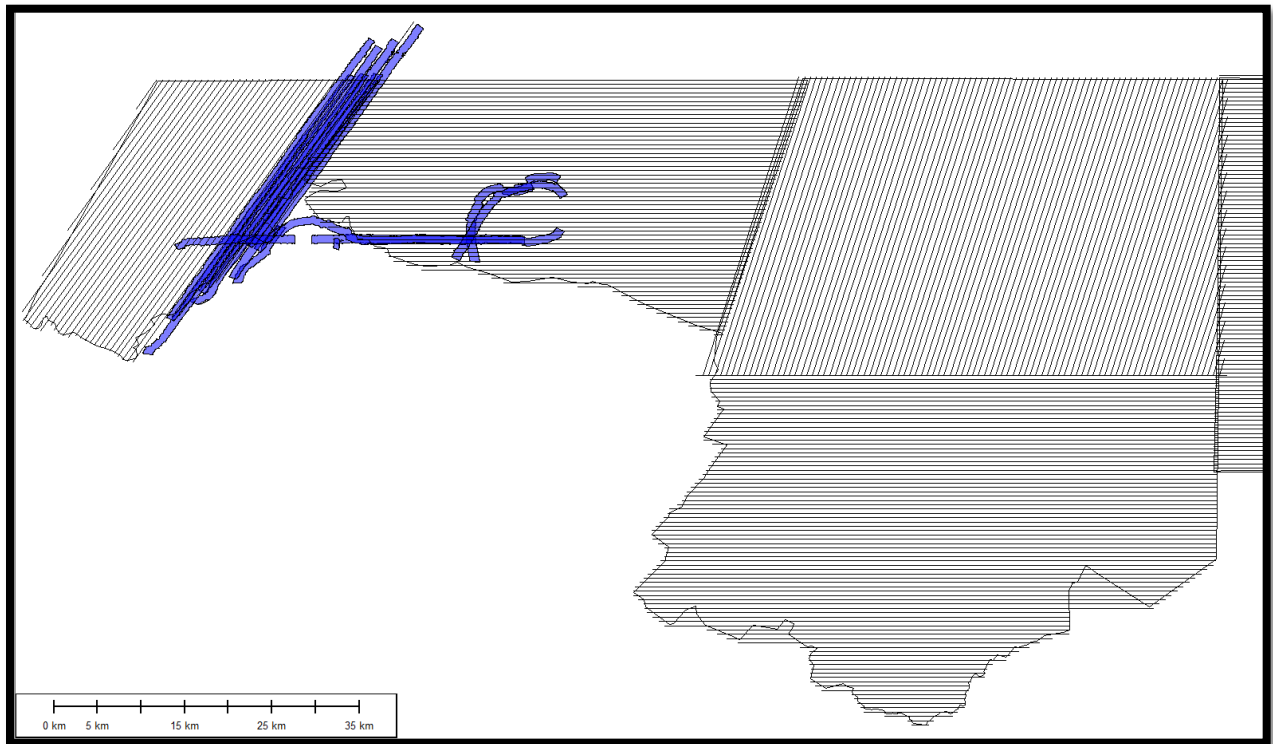


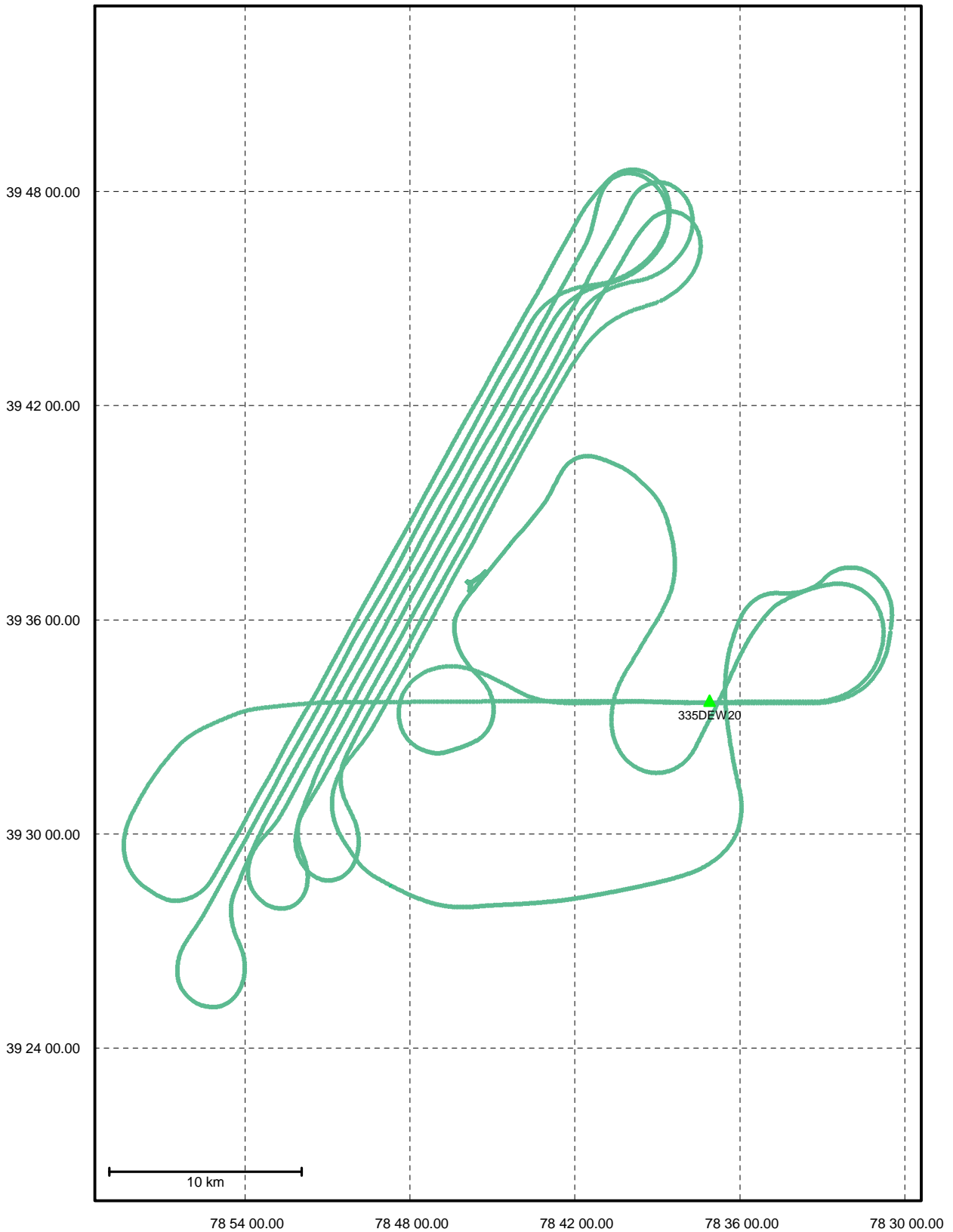
Mission: o112029a

January 29, 2012



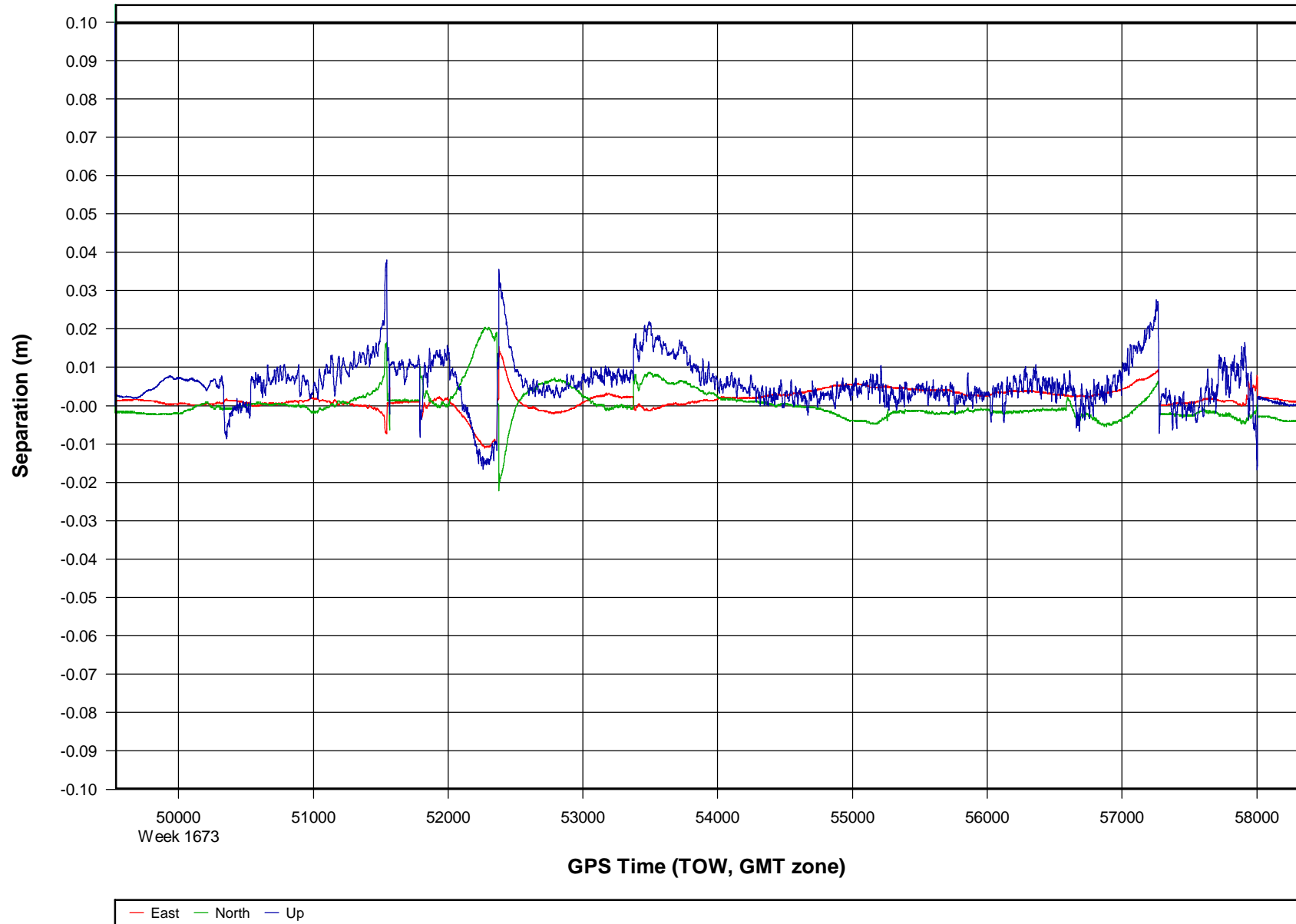
Combined - Map Run (1)

Geographic, DMS



+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

o112029a [Combined] - Forward/Reverse or Combined Separation Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA\2_Operations\6_Missions\o112029a\3_Processed
\GPS\o112029a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	87949
No processed position:	79175
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0156 (m)
C/A Code:	0.72 (m)
L1 Doppler:	0.027 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.004 (m)
North:	0.009 (m)
Height:	0.011 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8769 occurrences):

East:	0.003 (m)
North:	0.004 (m)
Height:	0.008 (m)

Quality Number Percentages:

Q 1:	100.0 %
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:	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 %

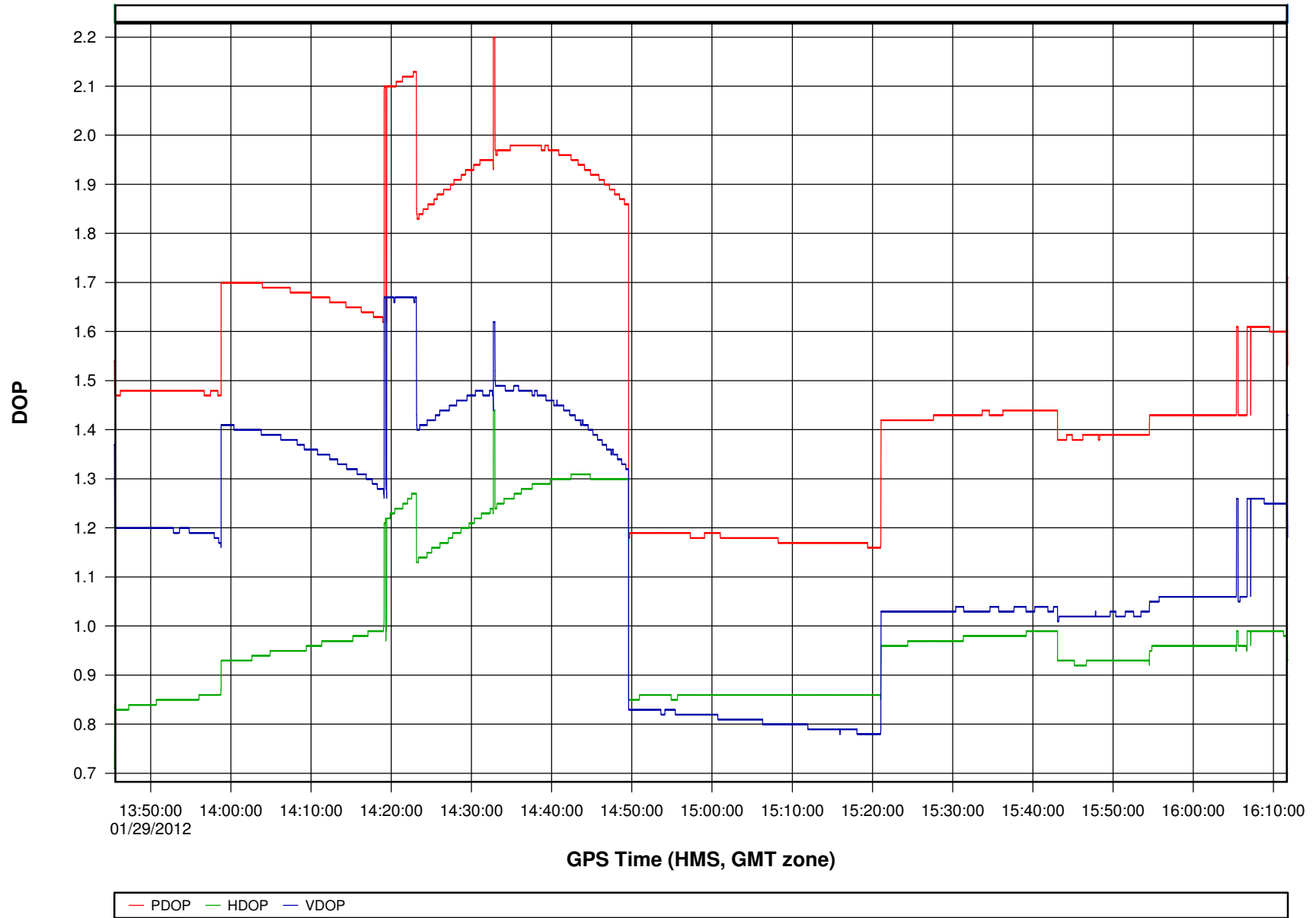
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol:	0.0 %
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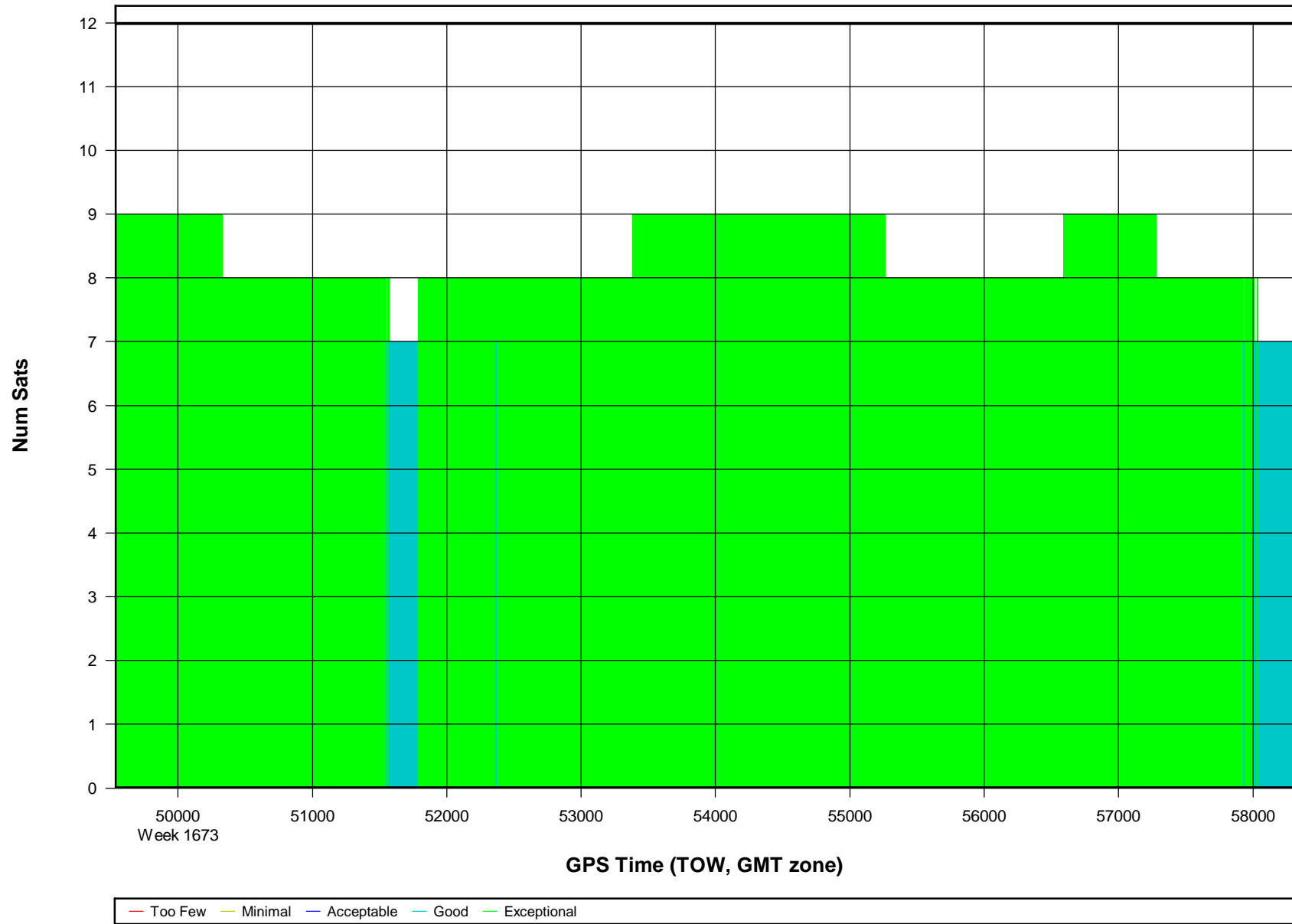
Baseline Distances:

Maximum:	31.563 (km)
Minimum:	1.096 (km)
Average:	17.051 (km)
First Epoch:	14.038 (km)
Last Epoch:	14.011 (km)

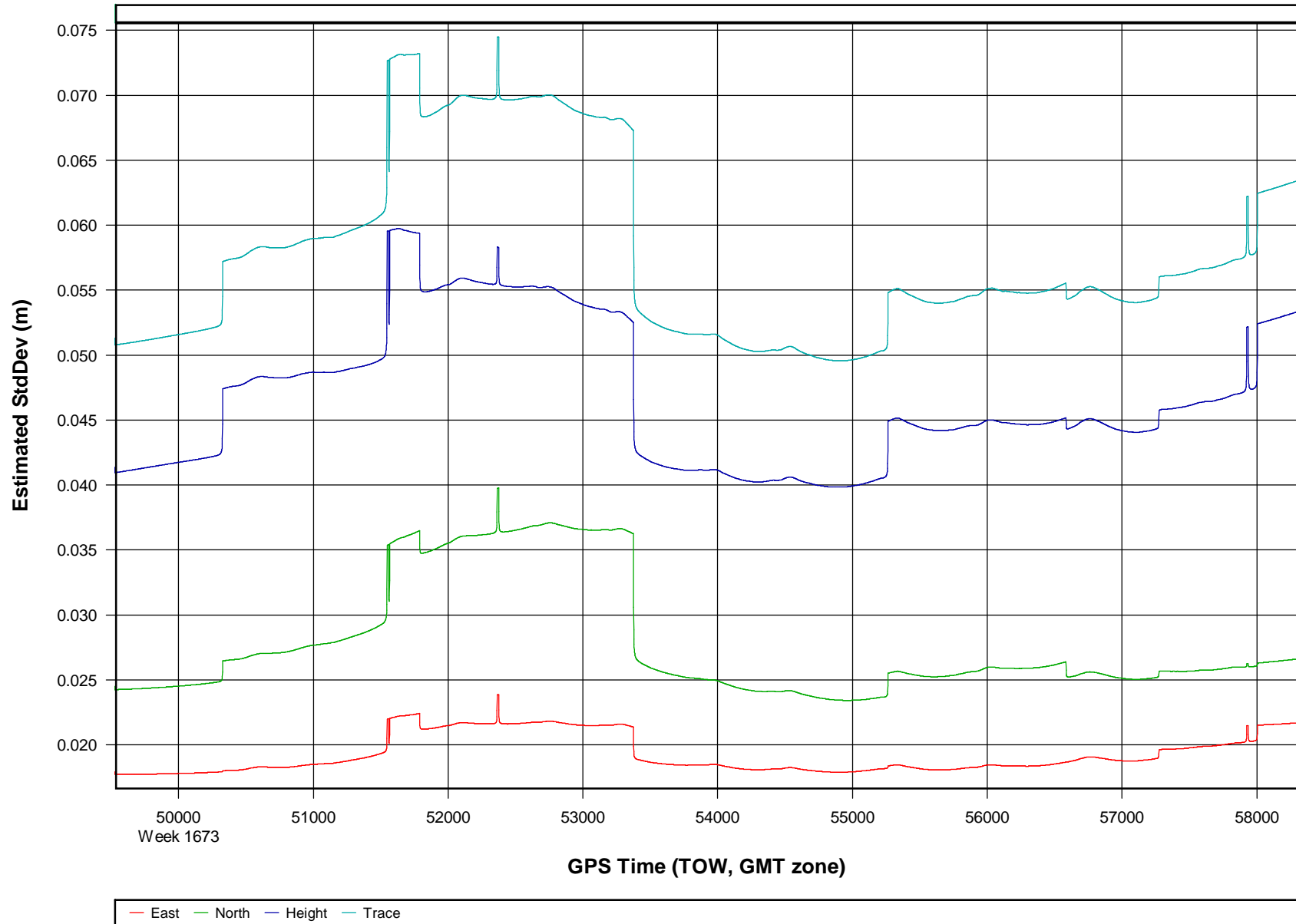
o112029a [Combined] - PDOP, HDOP, VDOP Plots



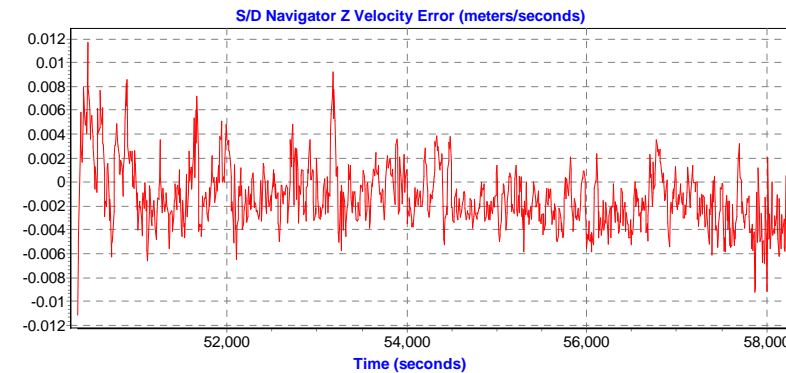
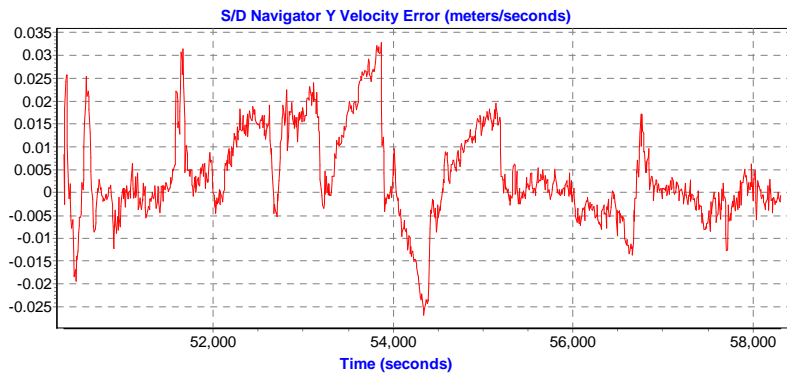
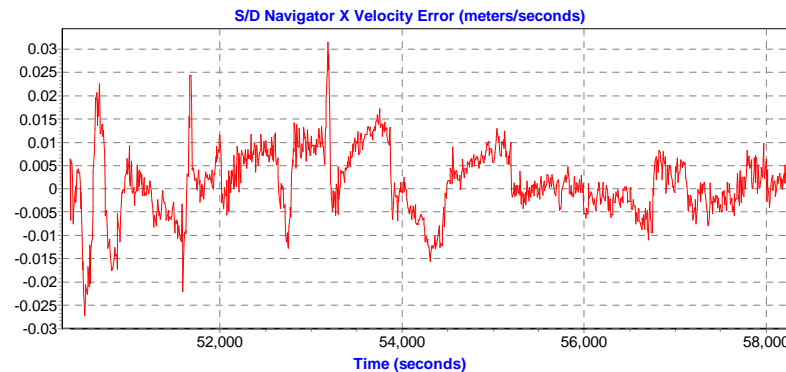
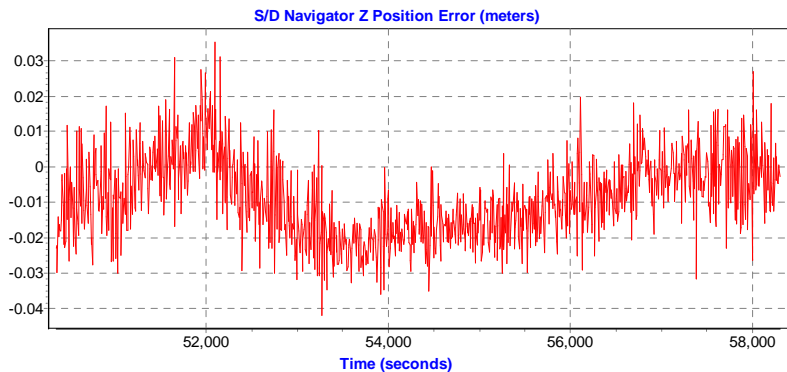
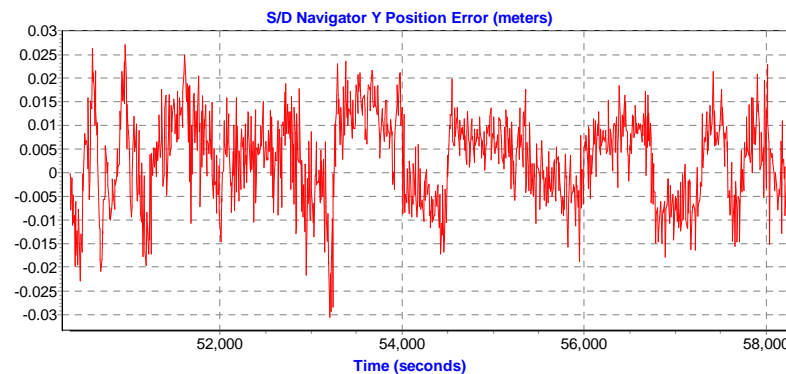
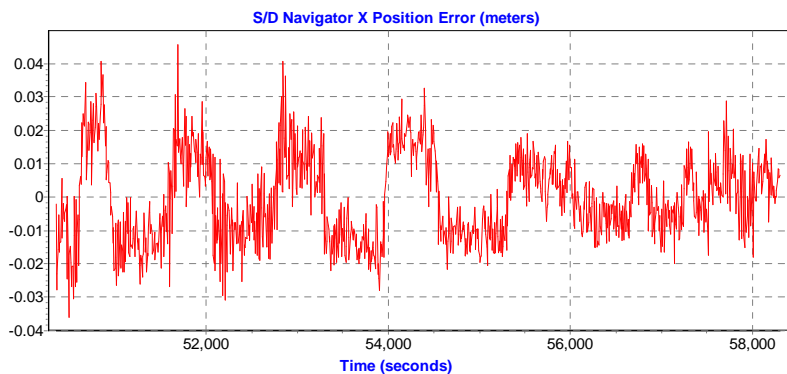
o112029a [Combined] - Number of Satellites Bar Plot

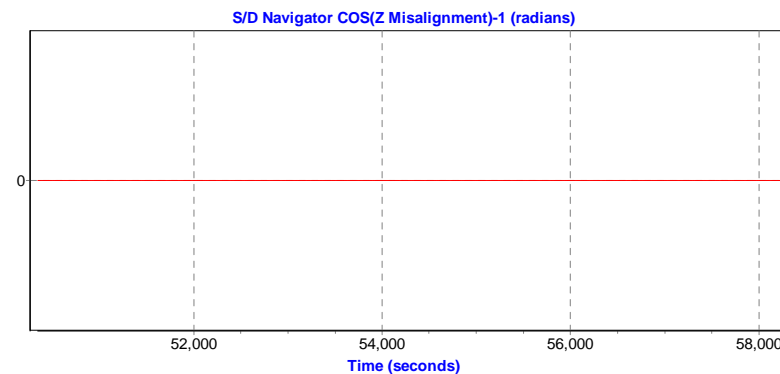
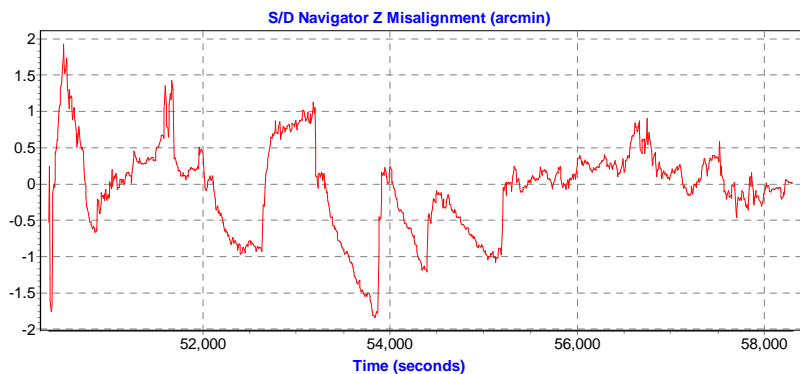
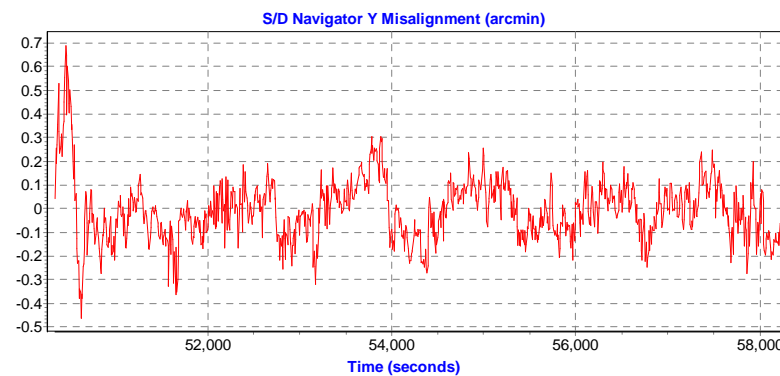
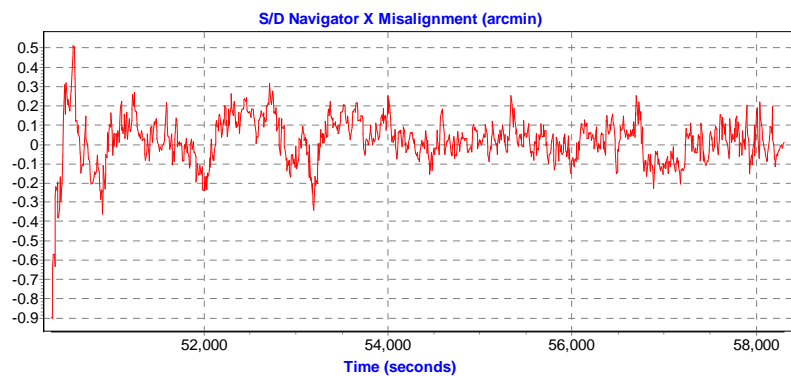


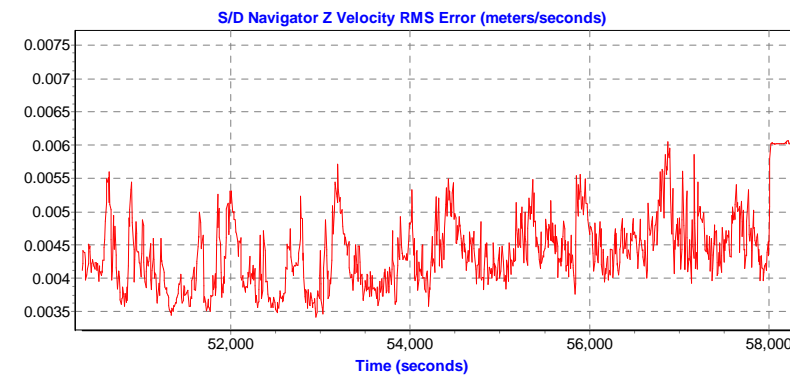
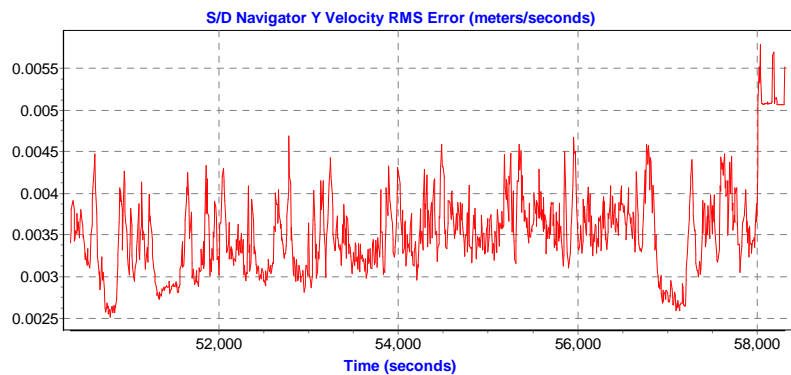
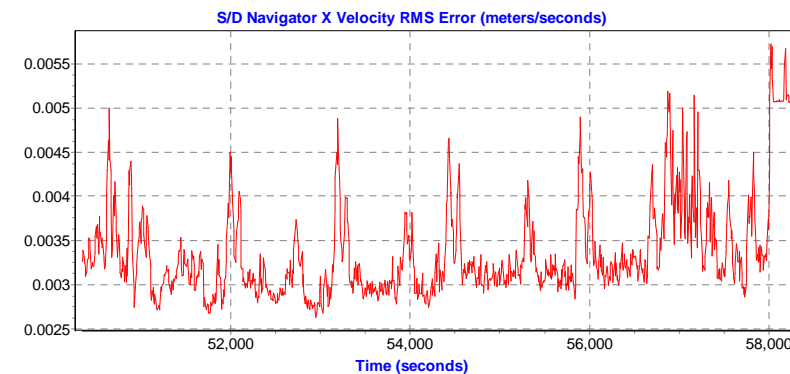
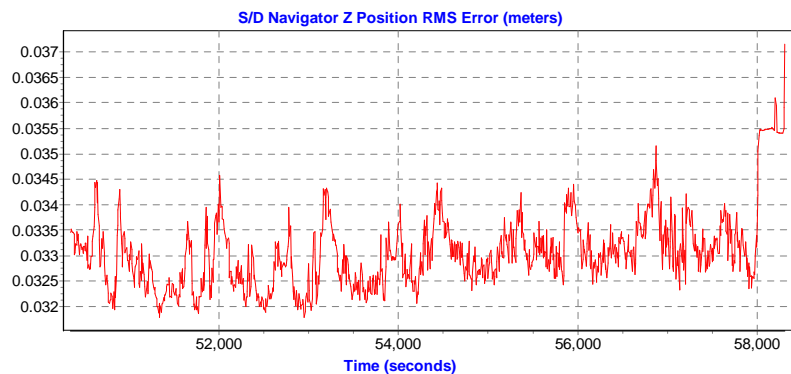
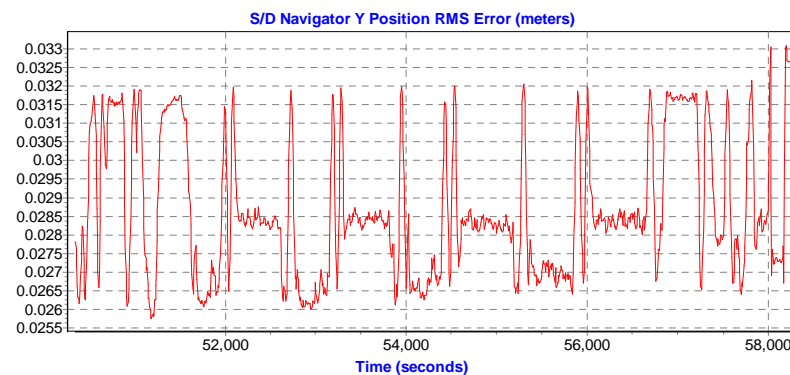
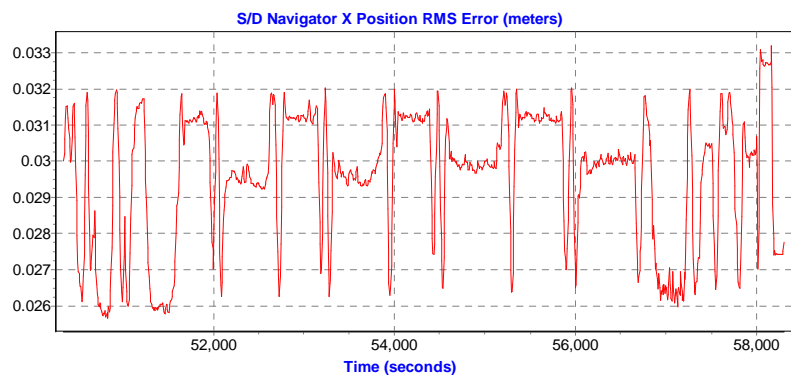
o112029a [Combined] - Estimated Position Accuracy Plot

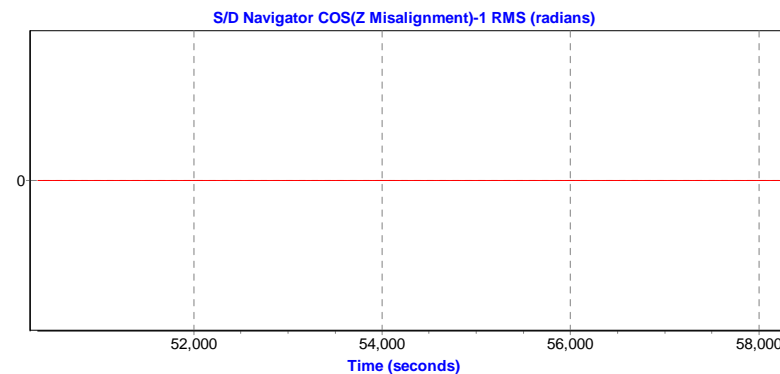
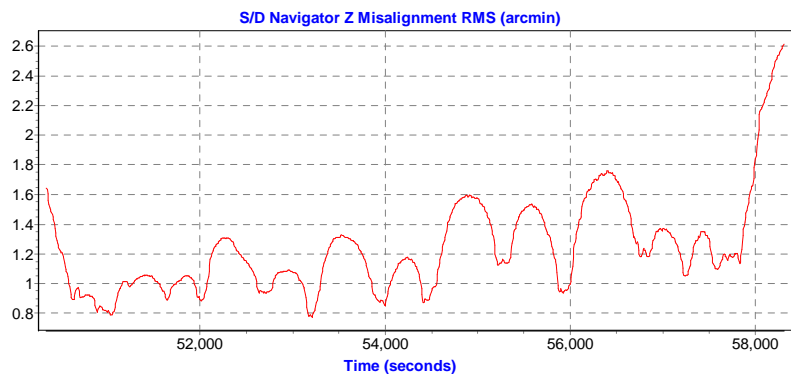
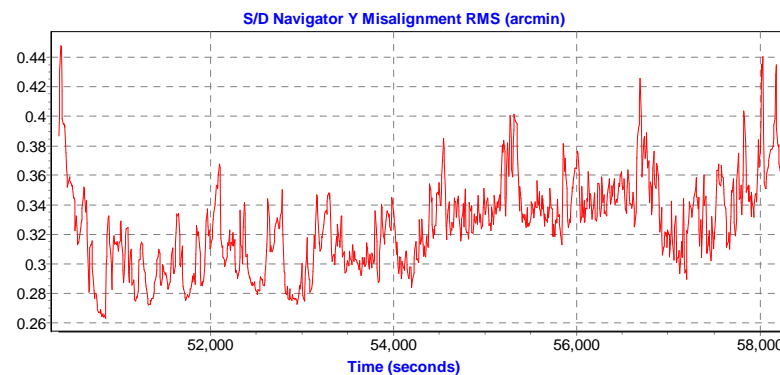
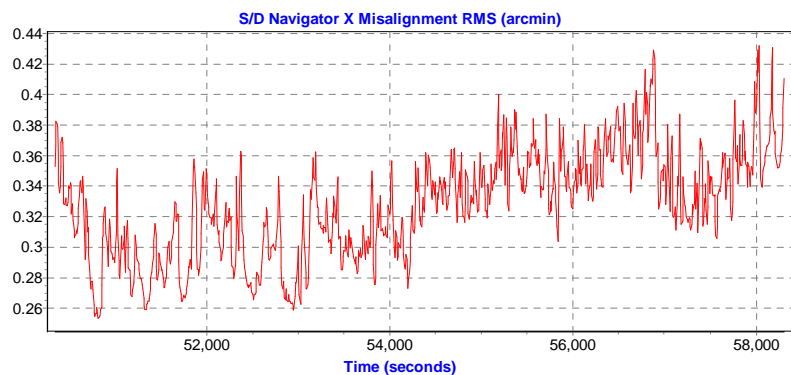


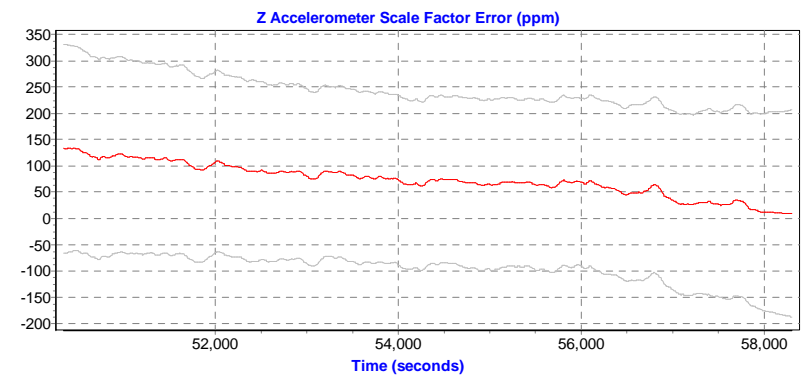
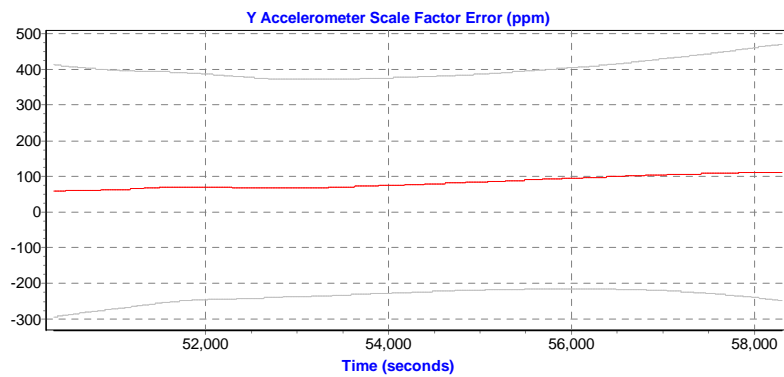
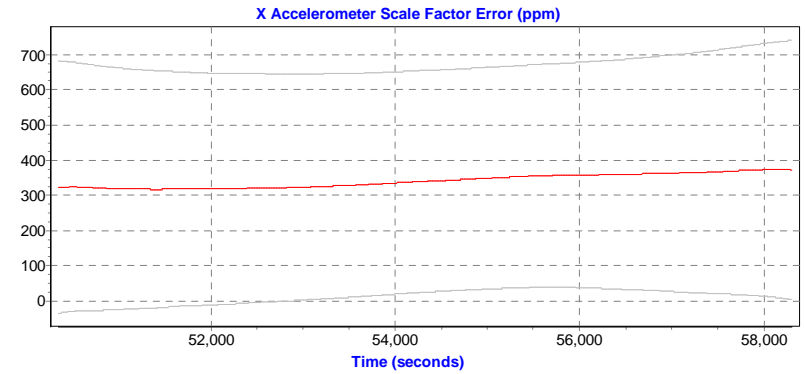
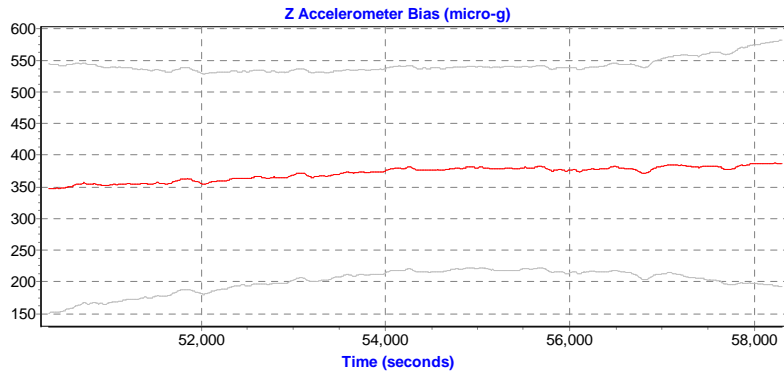
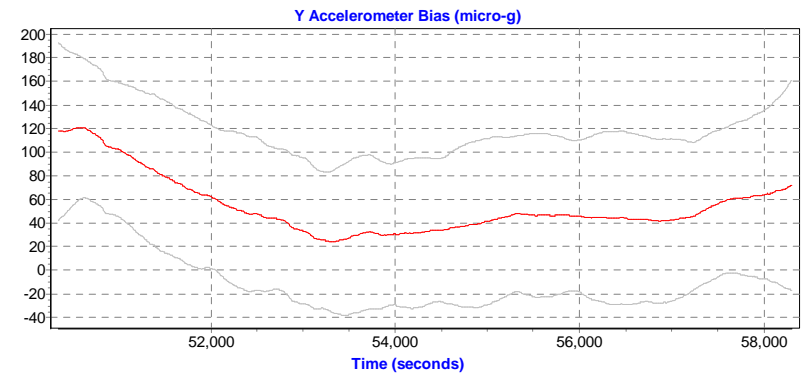
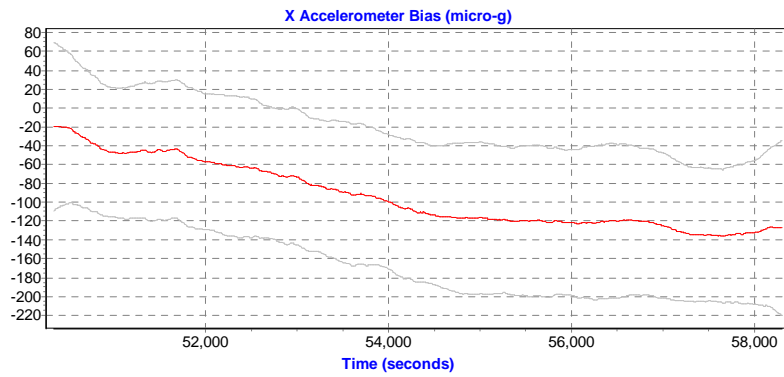
Estimated Errors and RMS

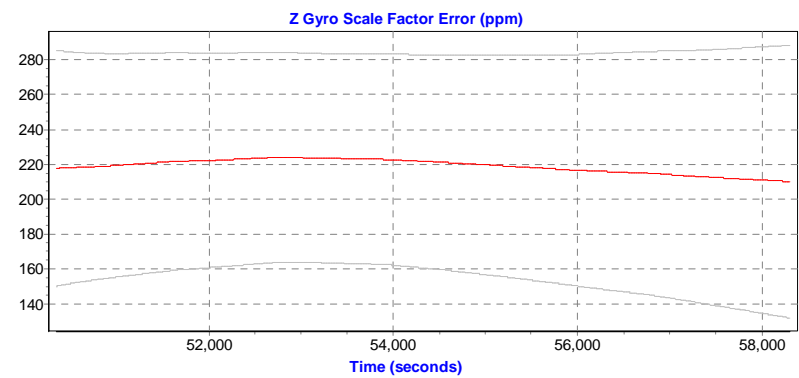
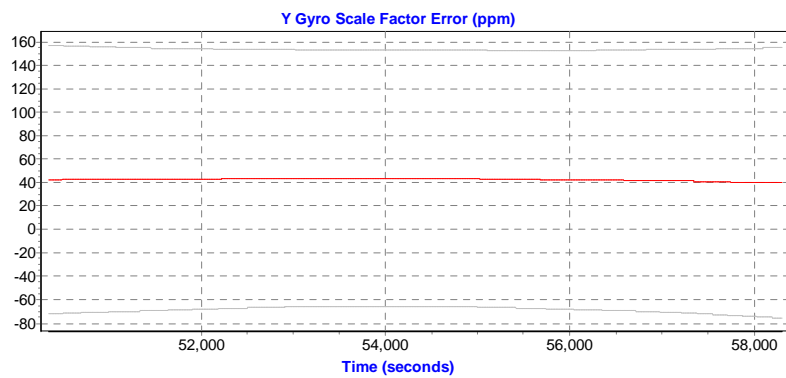
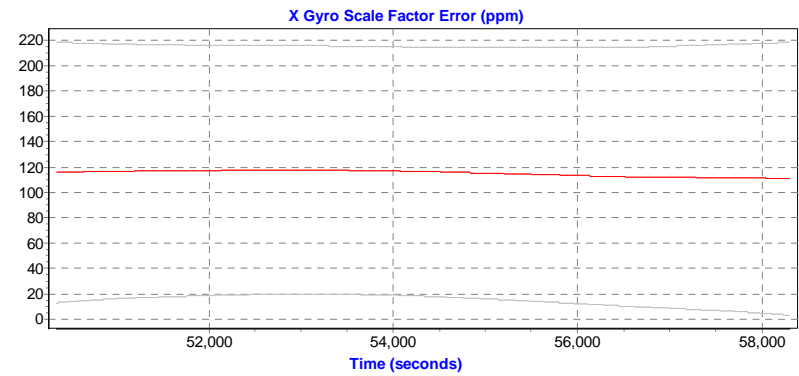
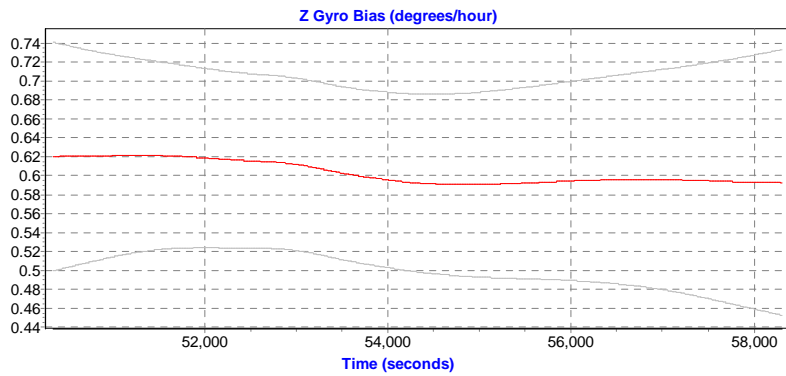
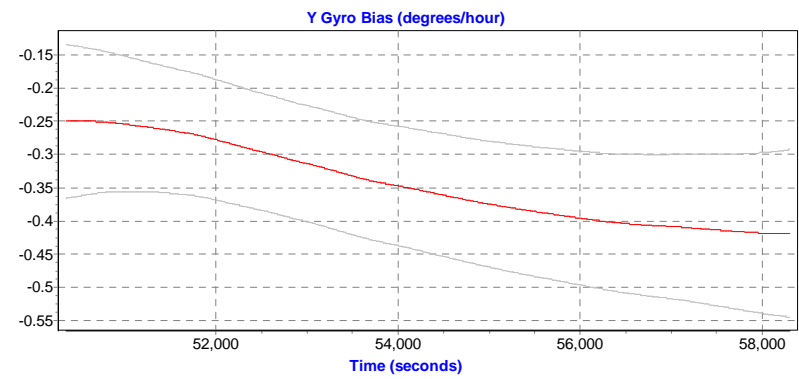
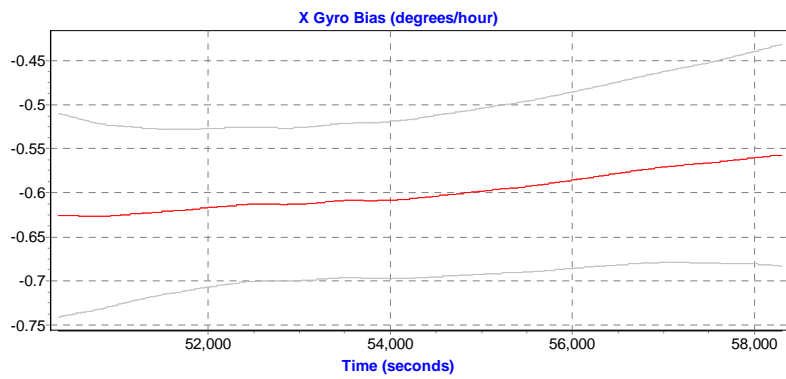


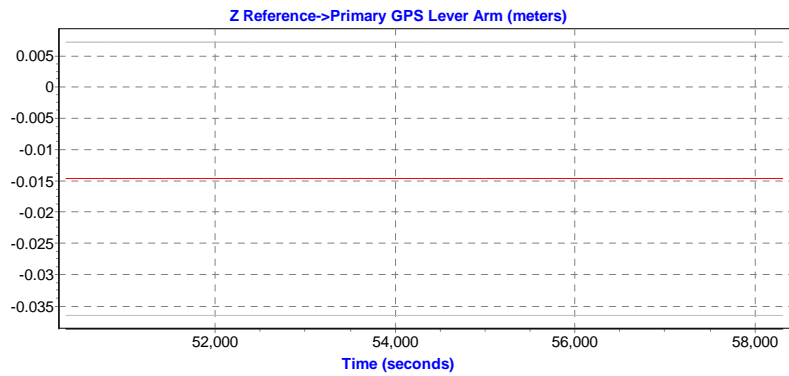
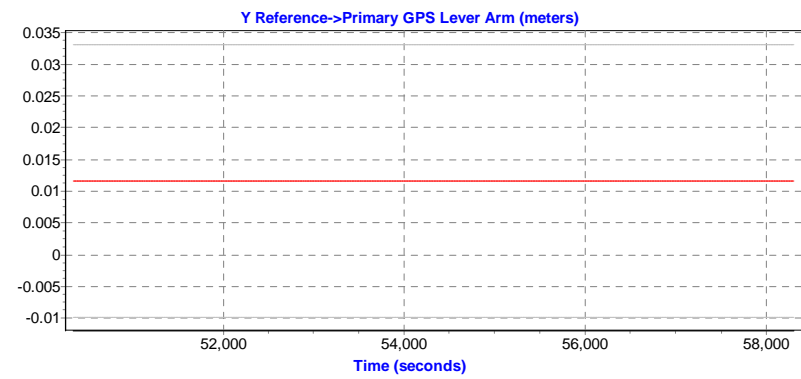
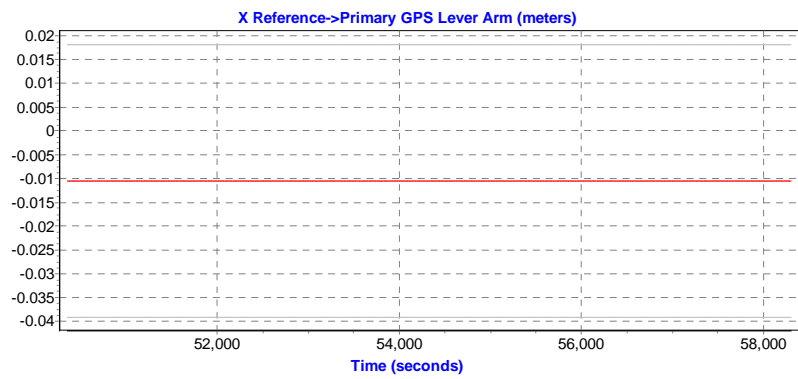






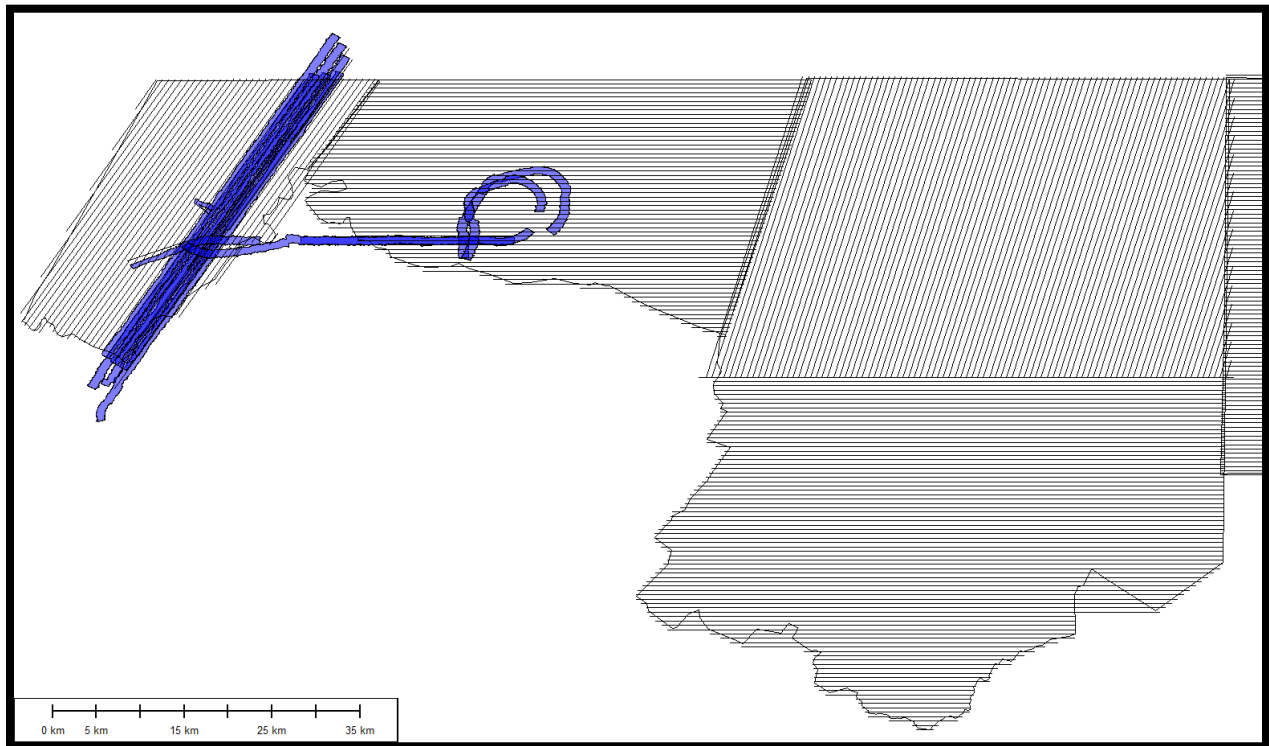






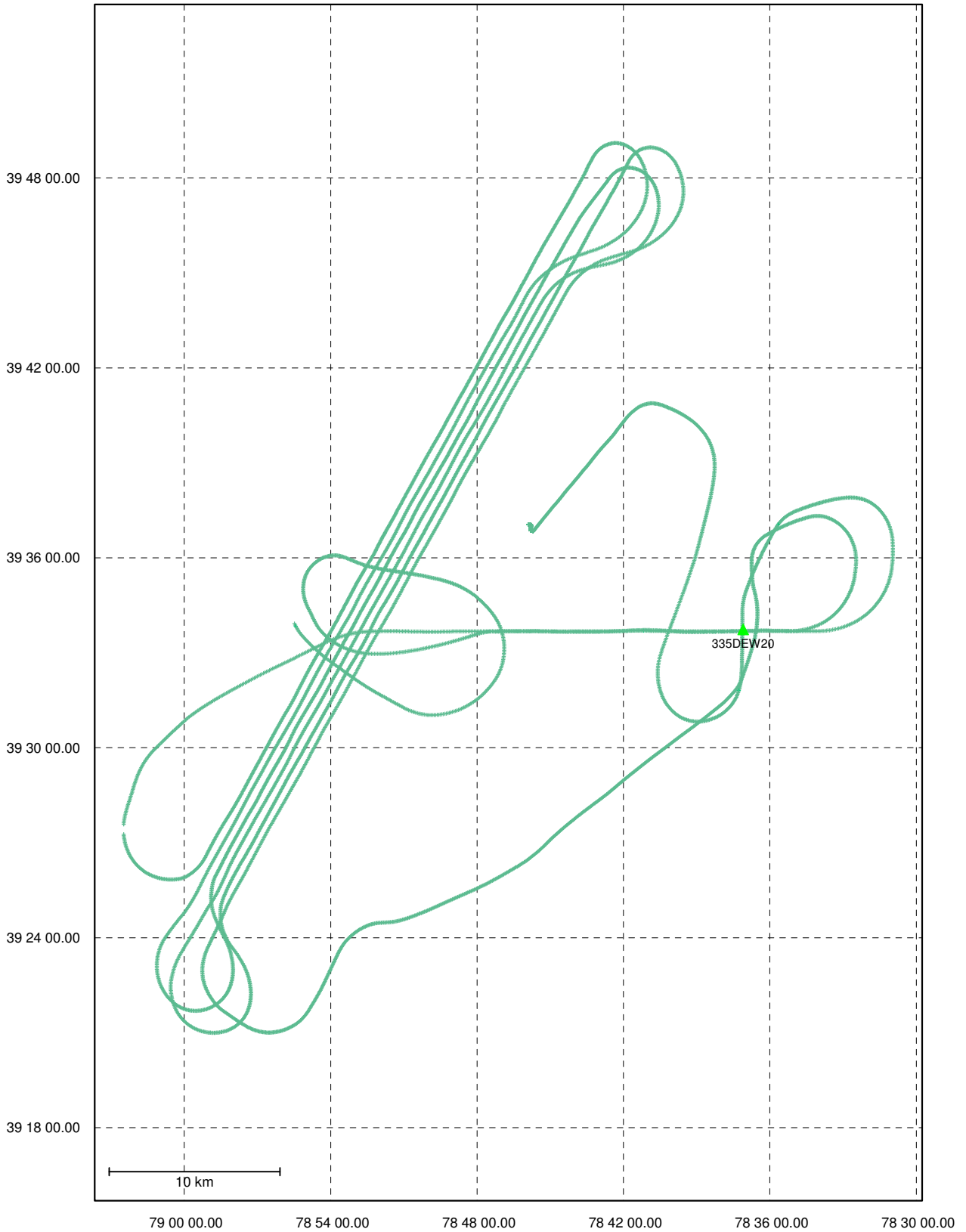
Mission: o112029b

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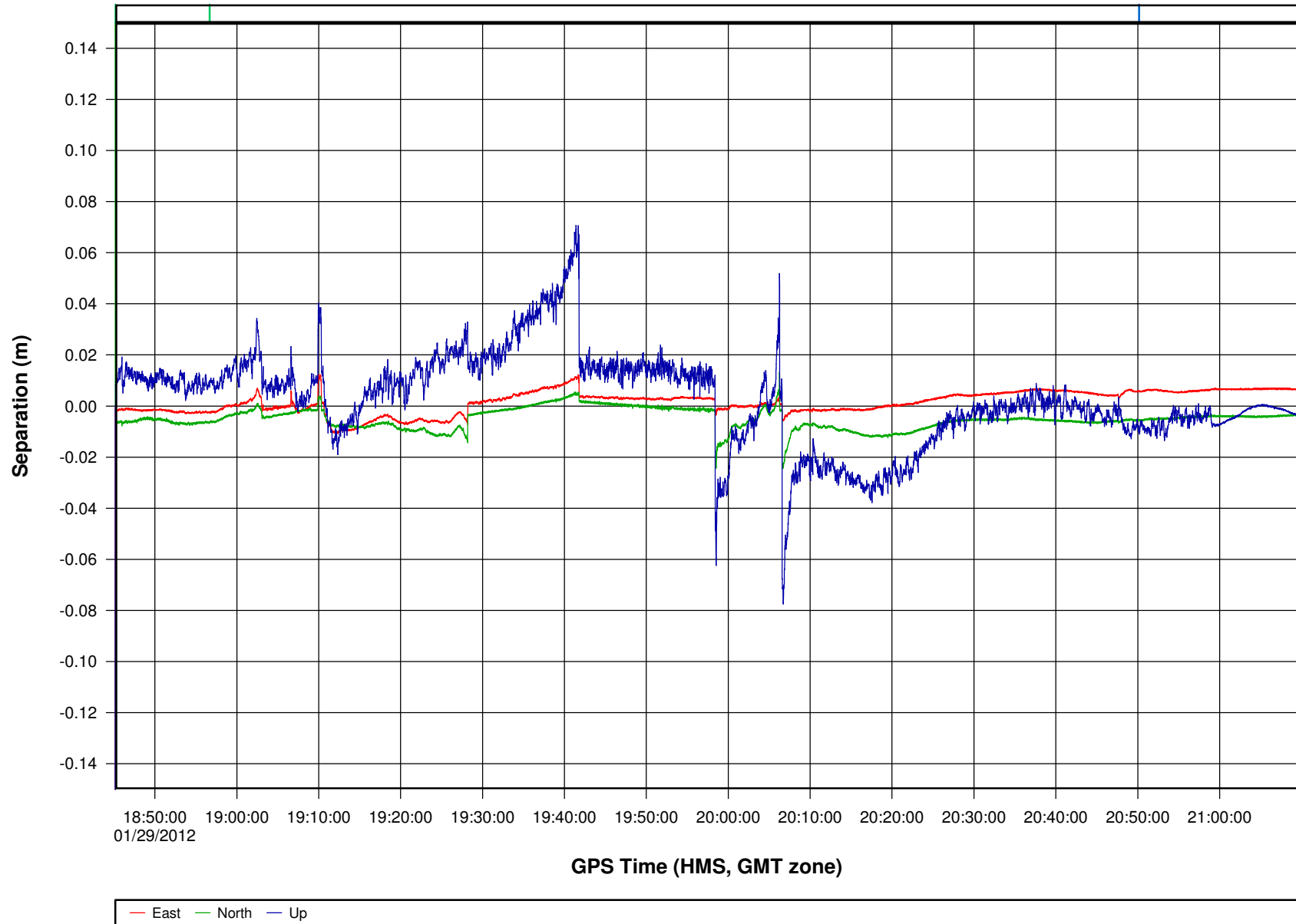
Combined - Map Run (5)

Geographic, DMS



+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

o112029b [Combined] - Forward/Reverse or Combined Separation Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: L:\335DEW11
USGS_MD_VA_lidar\2_Operations\6_Missions\o112029b\3_Processed\GPS\o112029
b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file: 86816
No processed position: 78147
Missing Fwd or Rev: 3
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:

L1 Phase: 0.0144 (m)
C/A Code: 0.75 (m)
L1 Doppler: 0.028 (m/s)

Fwd/Rev Separation RMS Values:

East: 0.008 (m)
North: 0.008 (m)
Height: 0.020 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8664 occurrences):

East: 0.005 (m)
North: 0.006 (m)
Height: 0.018 (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: 99.8 %
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:

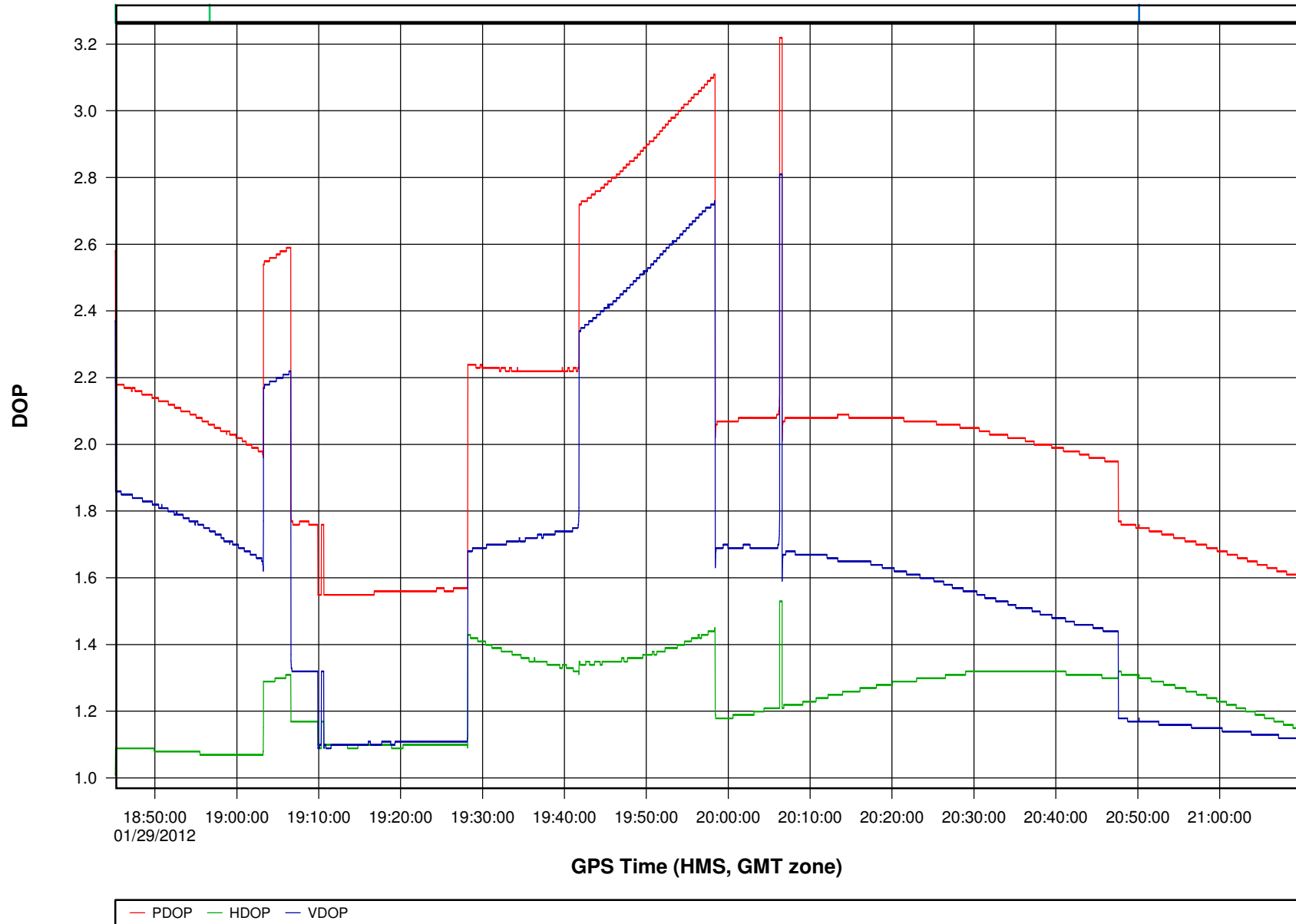
DOP over Tol: 0.0 %

Baseline Distances:

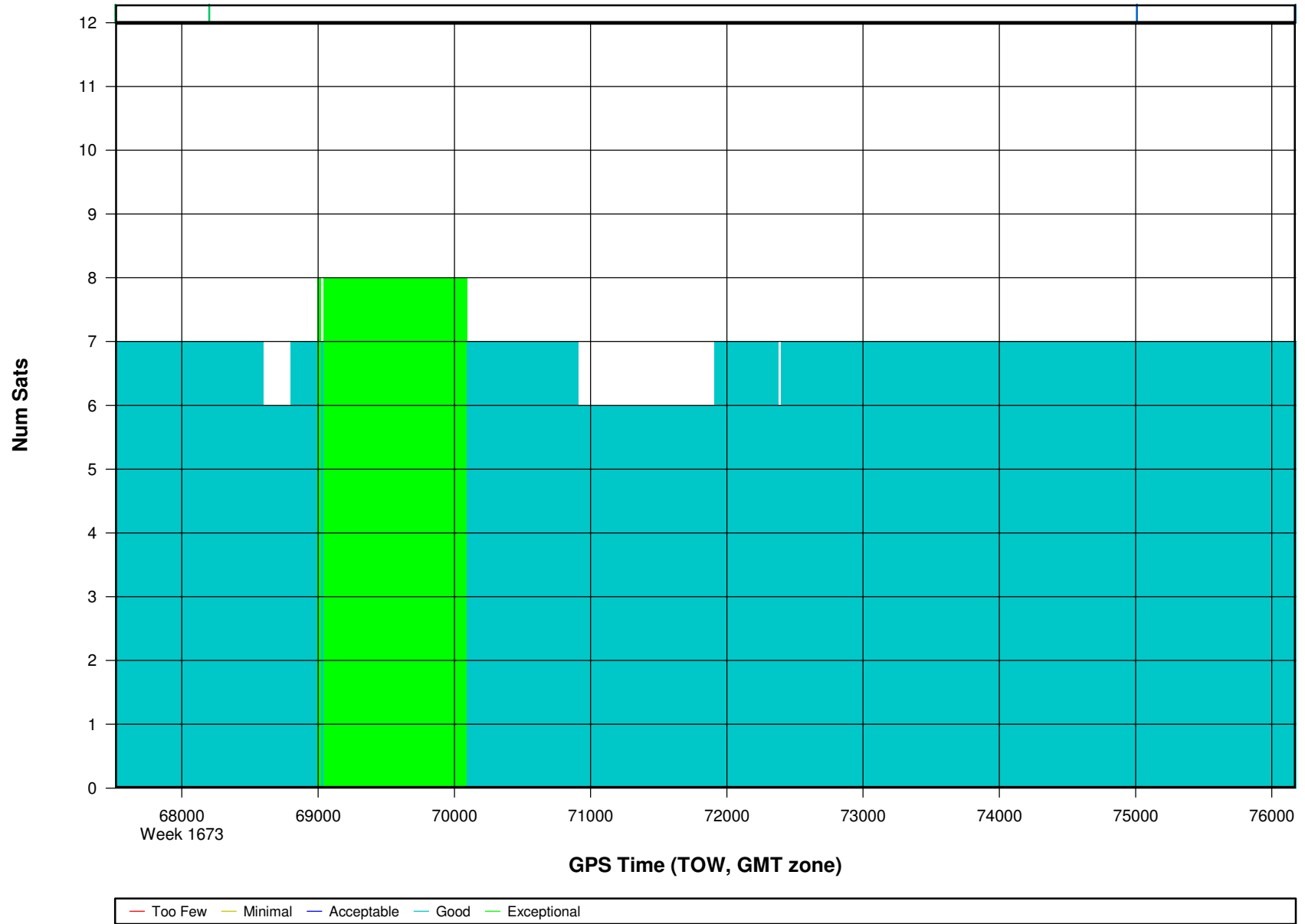
Maximum: 40.110 (km)
Minimum: 1.060 (km)
Average: 20.978 (km)

First Epoch: 26.363 (km)
Last Epoch: 14.003 (km)

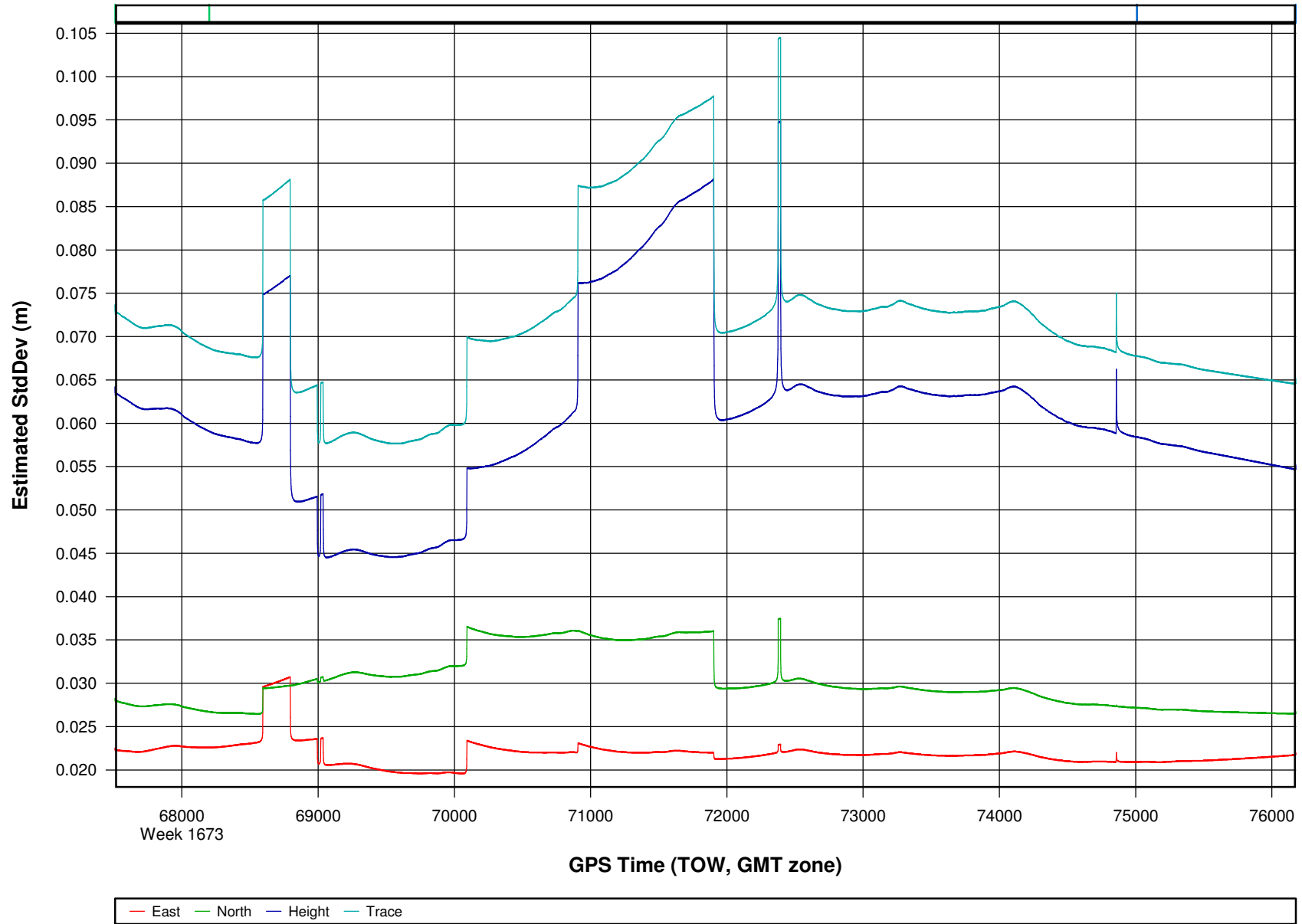
o112029b [Combined] - PDOP, HDOP, VDOP Plots



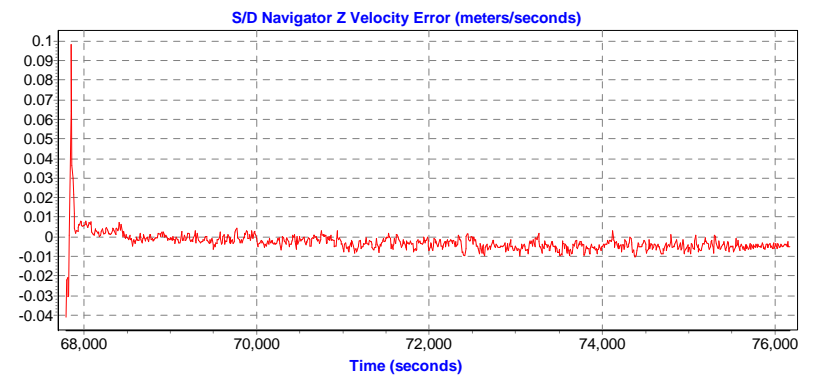
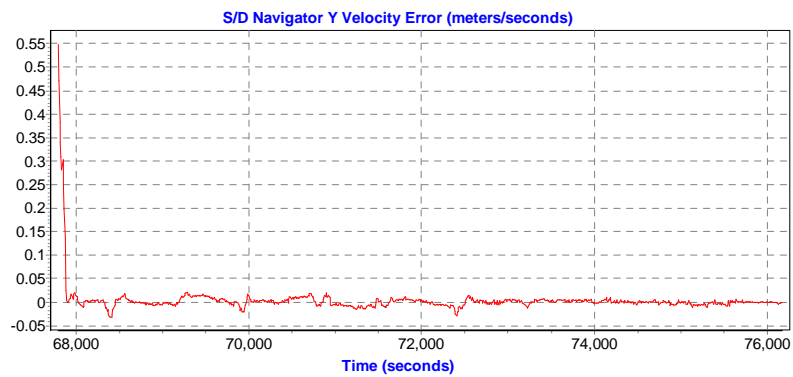
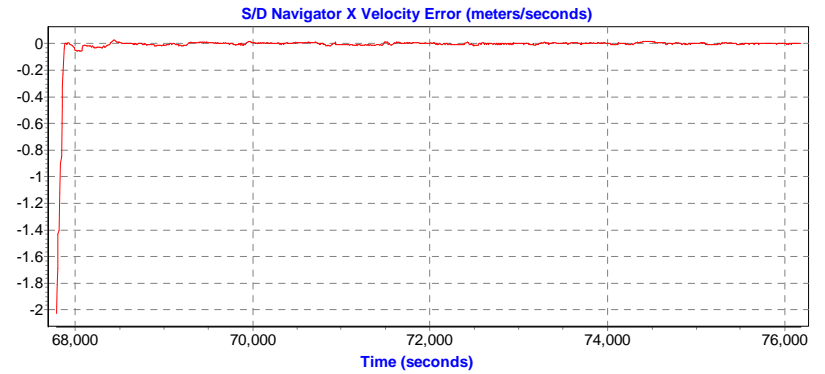
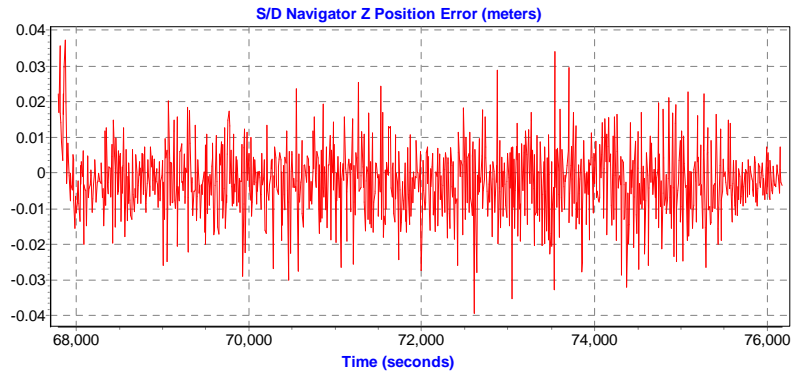
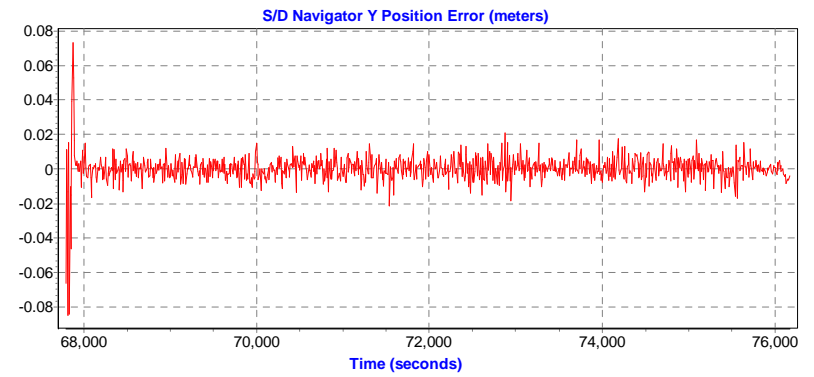
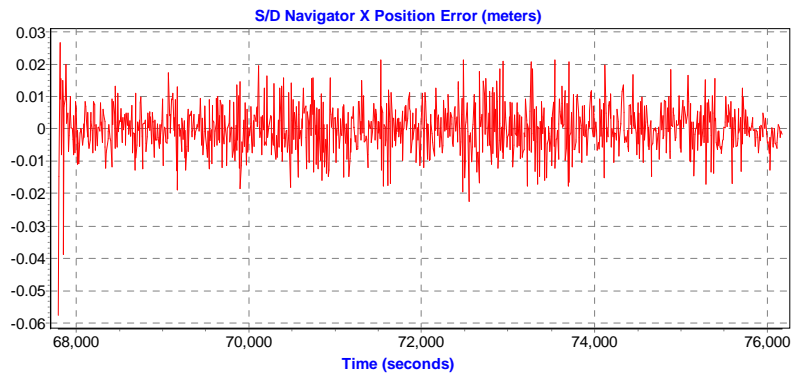
o112029b [Combined] - Number of Satellites Bar Plot

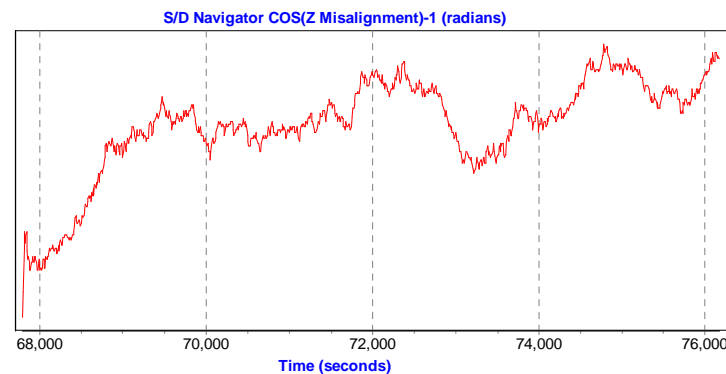
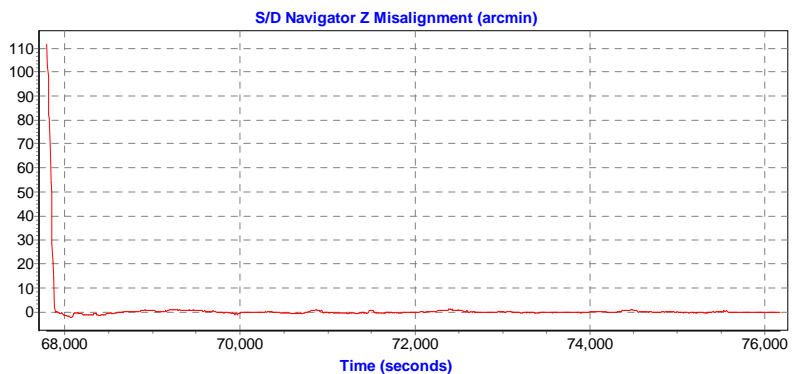
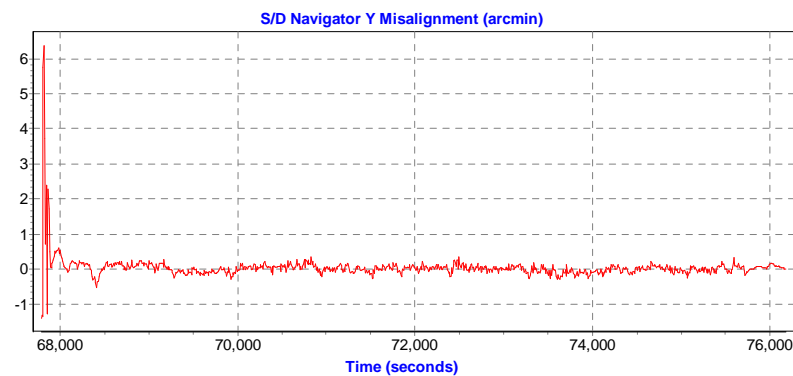
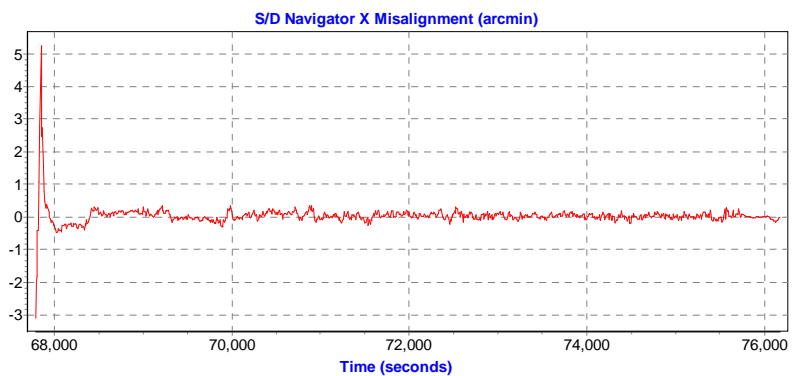


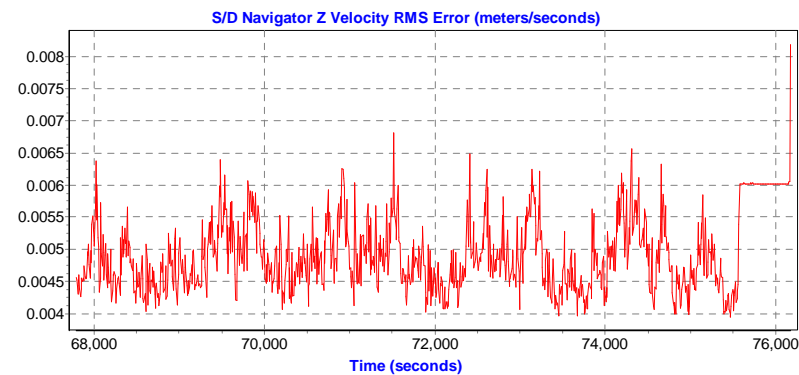
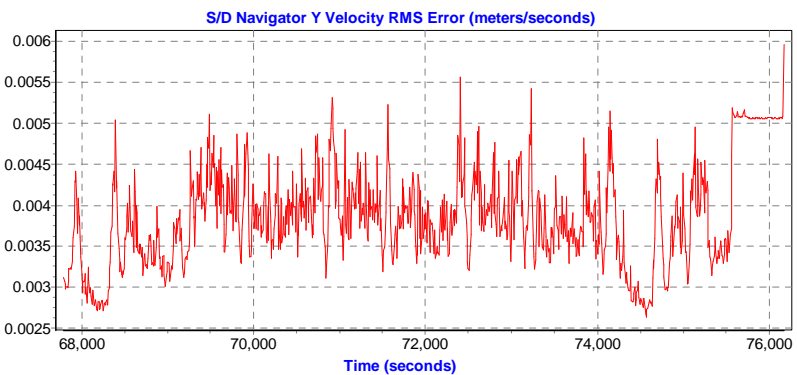
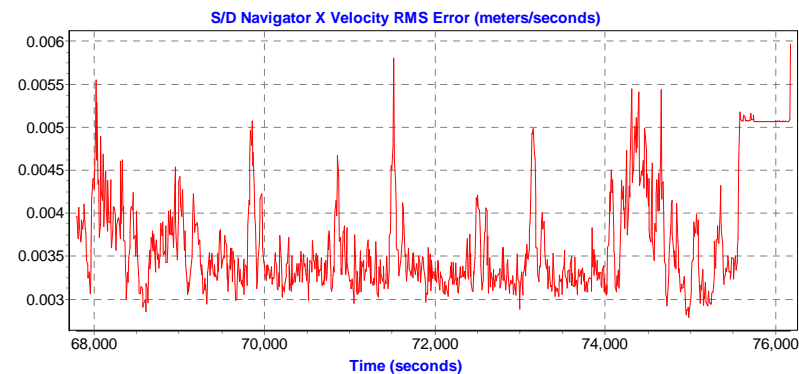
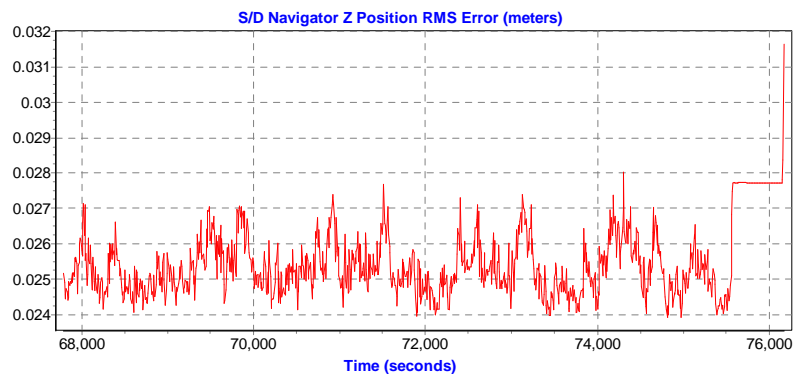
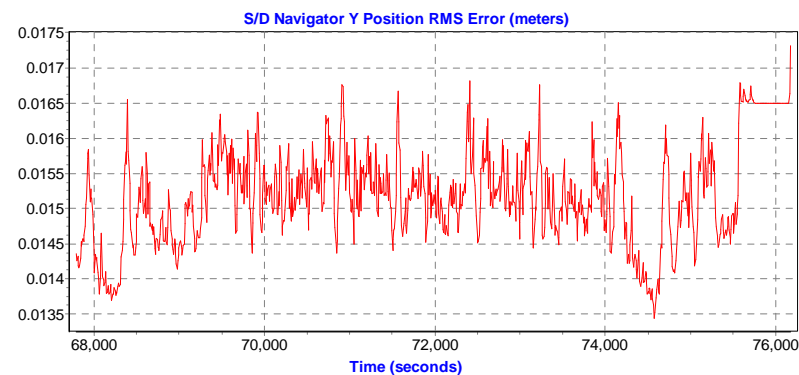
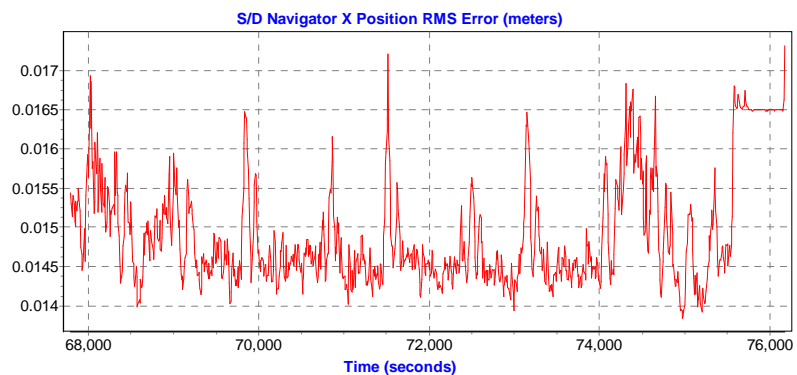
o112029b [Combined] - Estimated Position Accuracy Plot

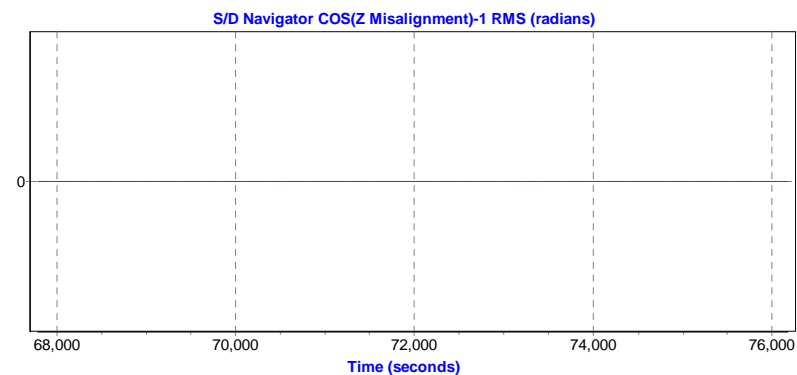
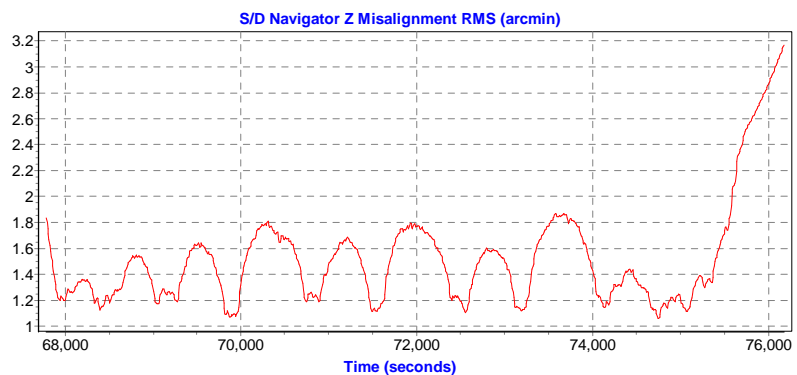
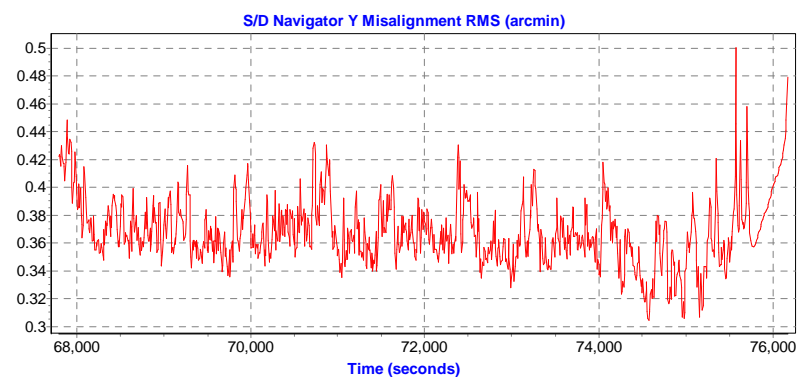
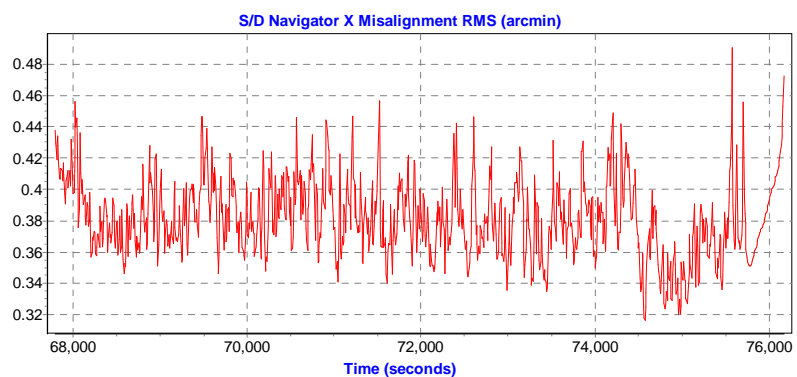


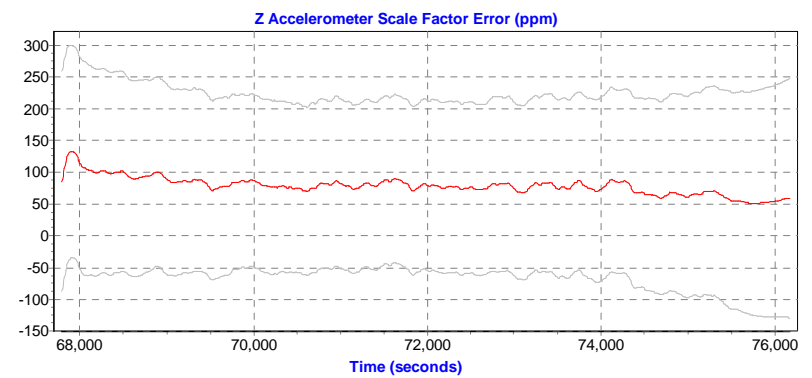
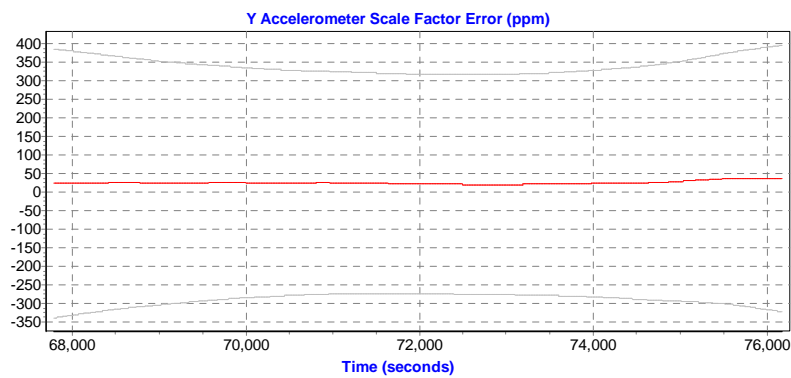
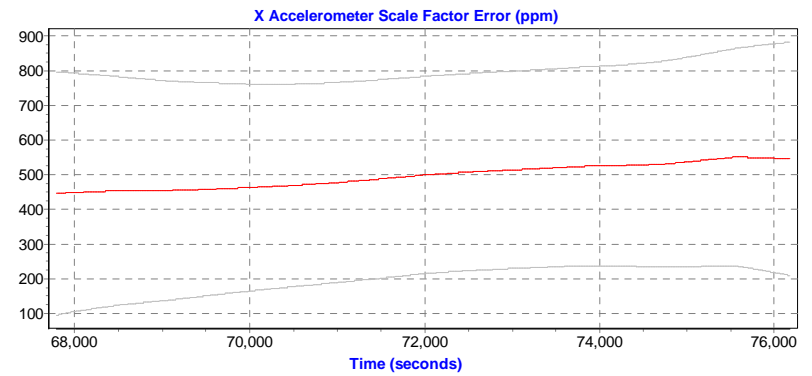
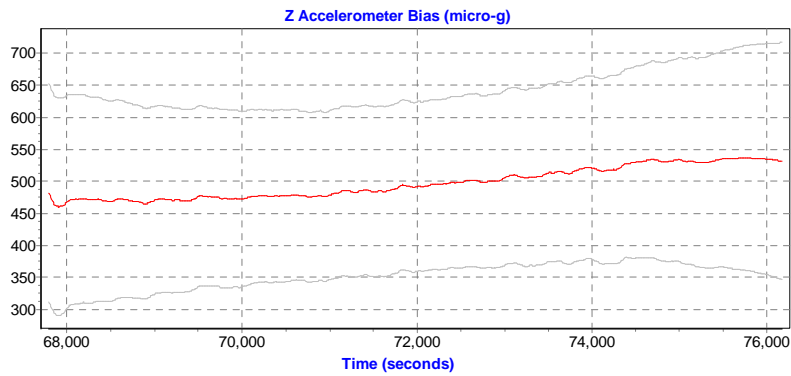
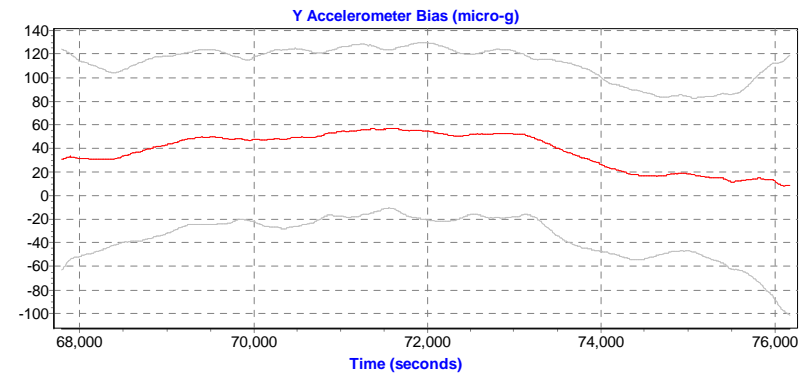
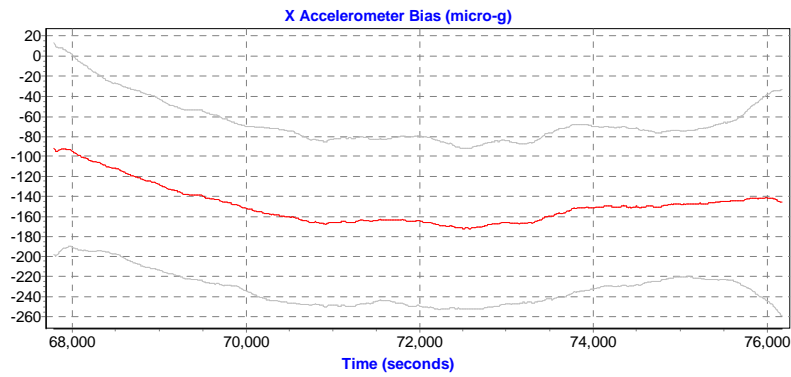
Estimated Errors and RMS

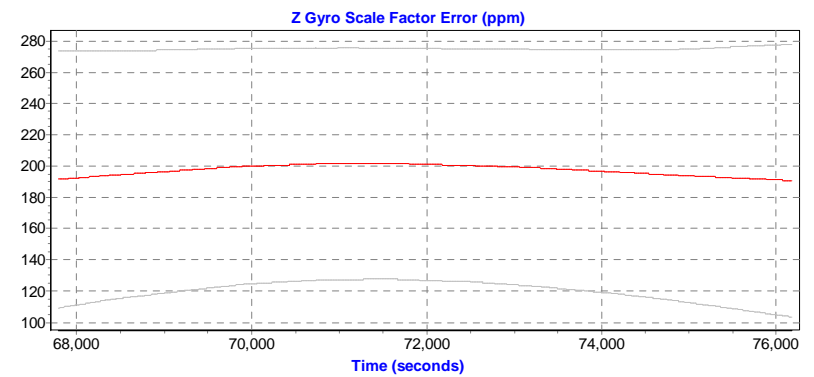
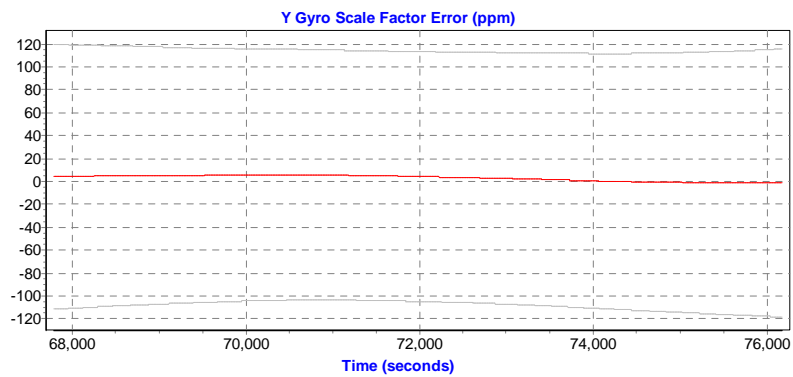
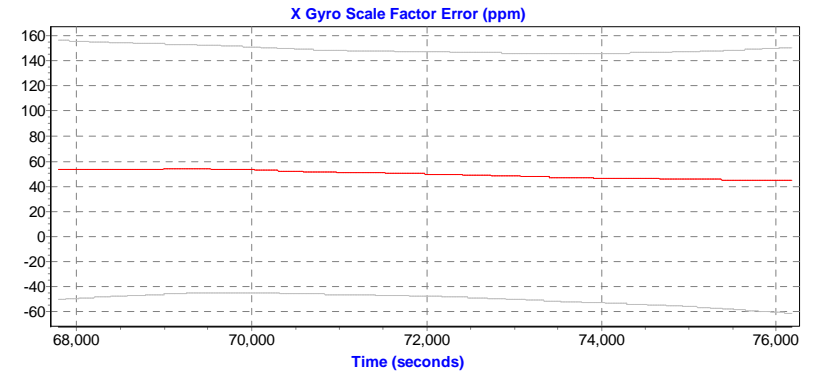
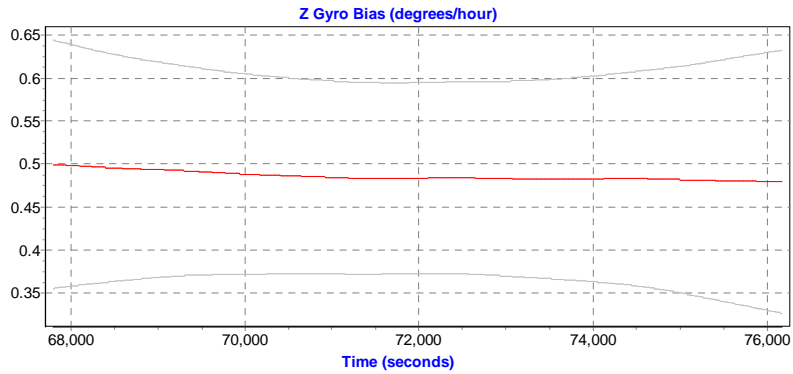
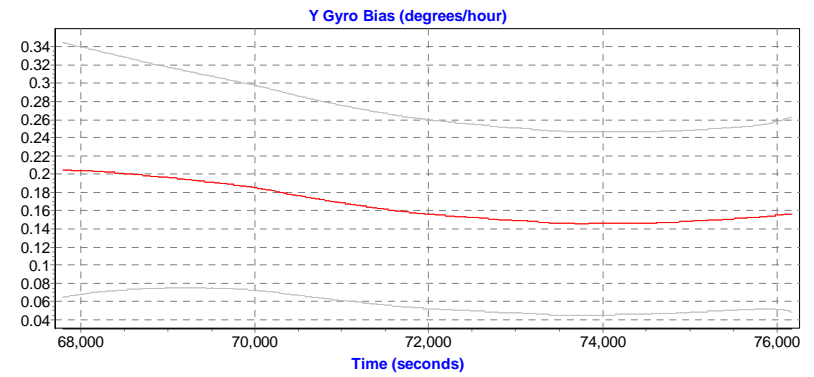
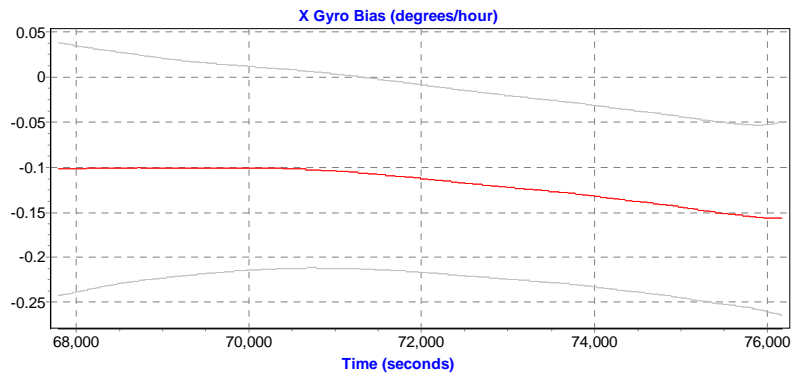






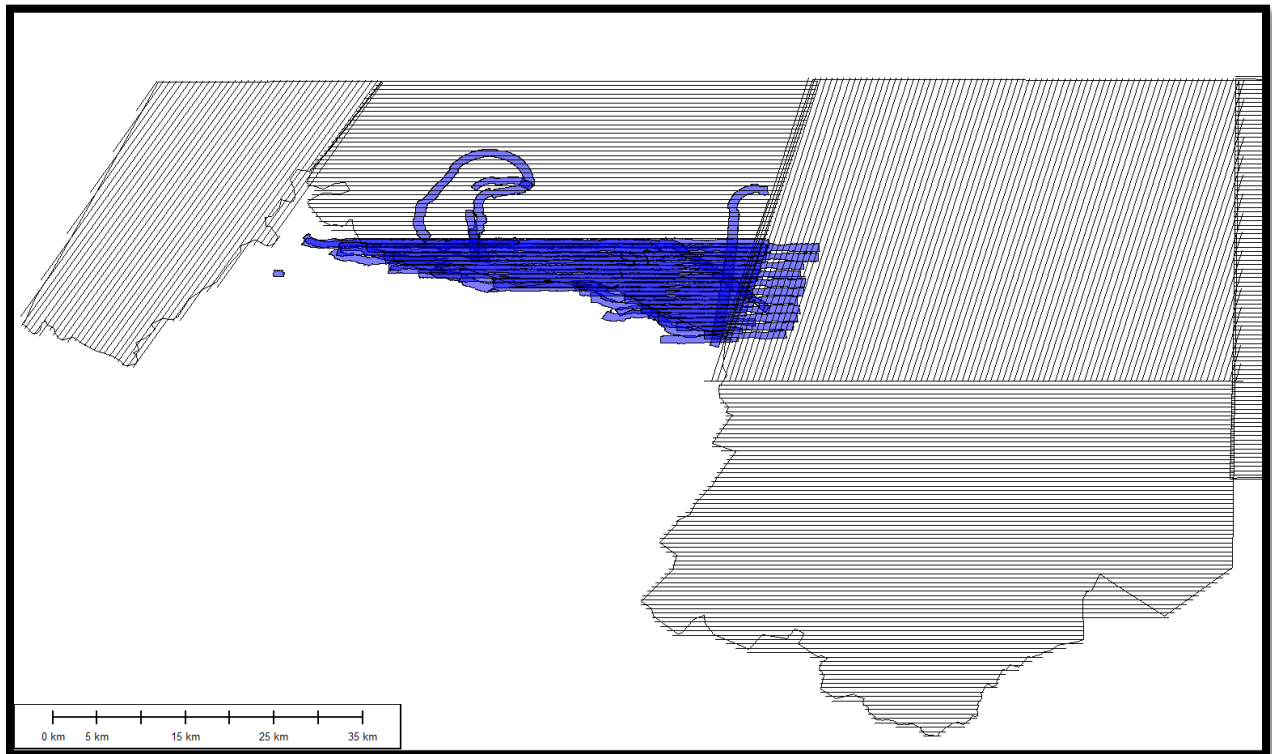






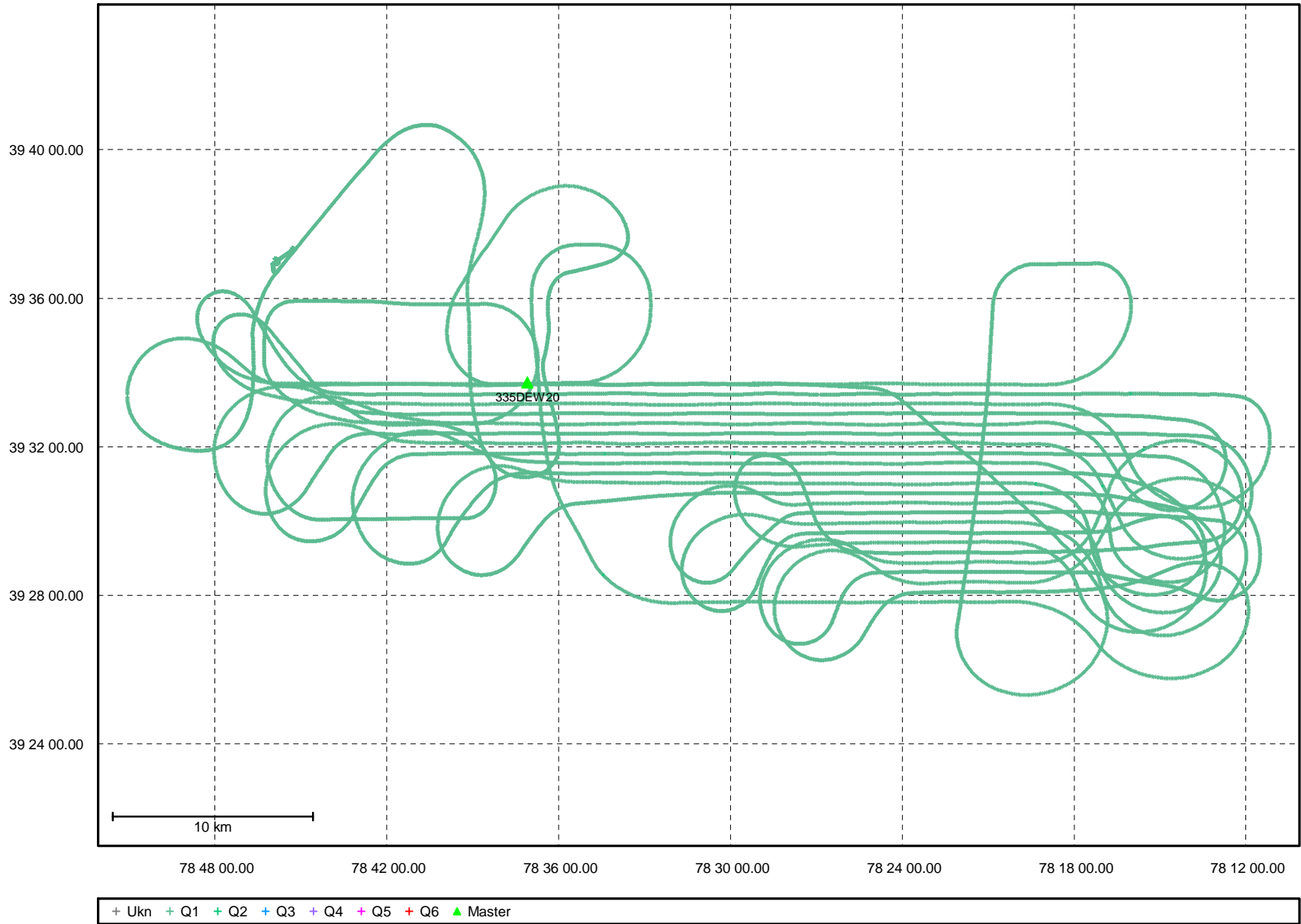
Mission: o112030a

January 30, 2012

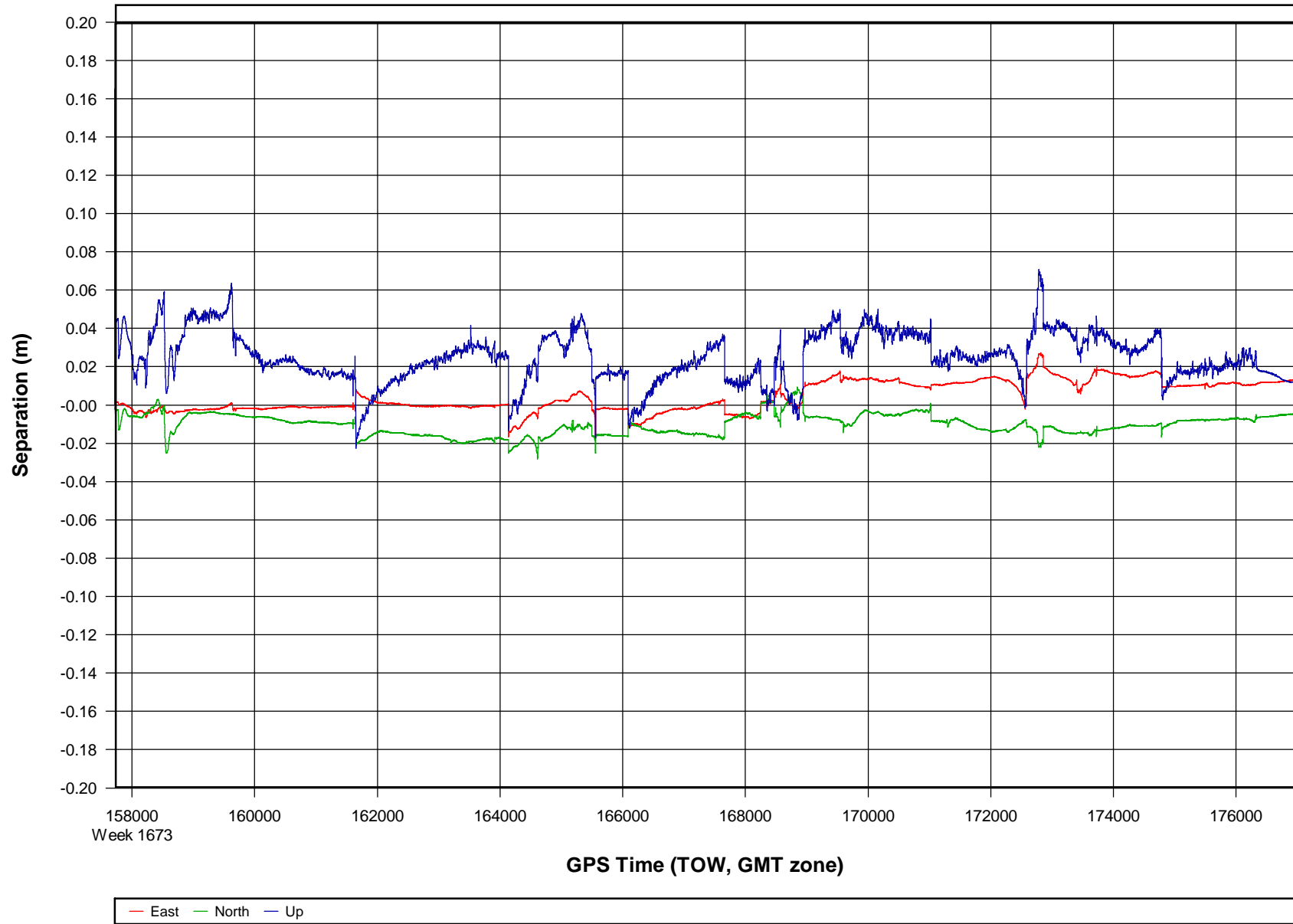


Combined - Map Run (1)

Geographic, DMS



o112030a [Combined] - Forward/Reverse or Combined Separation Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA\2_Operations\6_Missions\o112030a\3_Processed
\GPS\o112030a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	192659
No processed position:	173415
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0167 (m)
C/A Code:	0.70 (m)
L1 Doppler:	0.029 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.009 (m)
North:	0.013 (m)
Height:	0.030 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (19239 occurrences):

East:	0.009 (m)
North:	0.012 (m)
Height:	0.028 (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 %

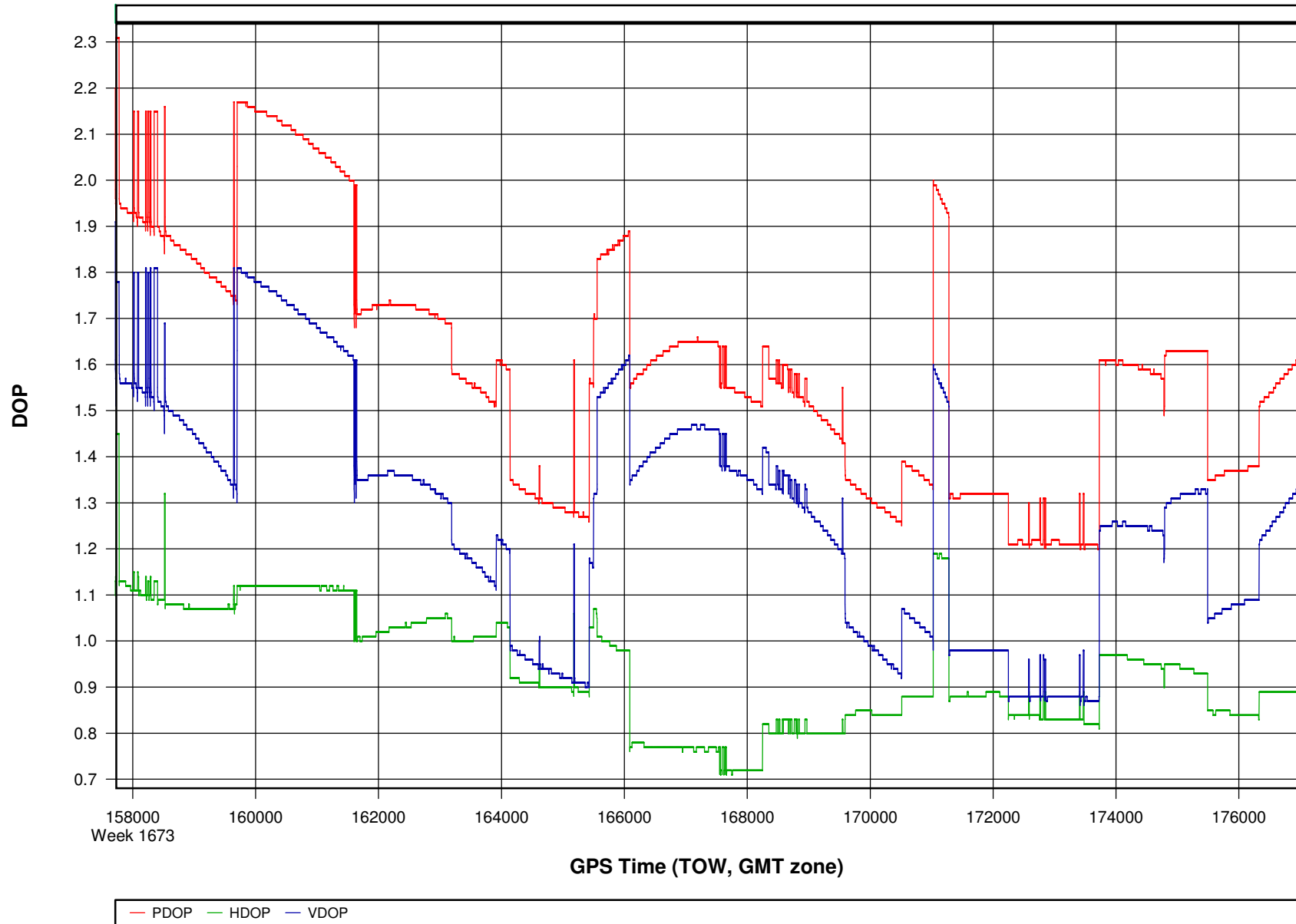
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol:	0.0 %
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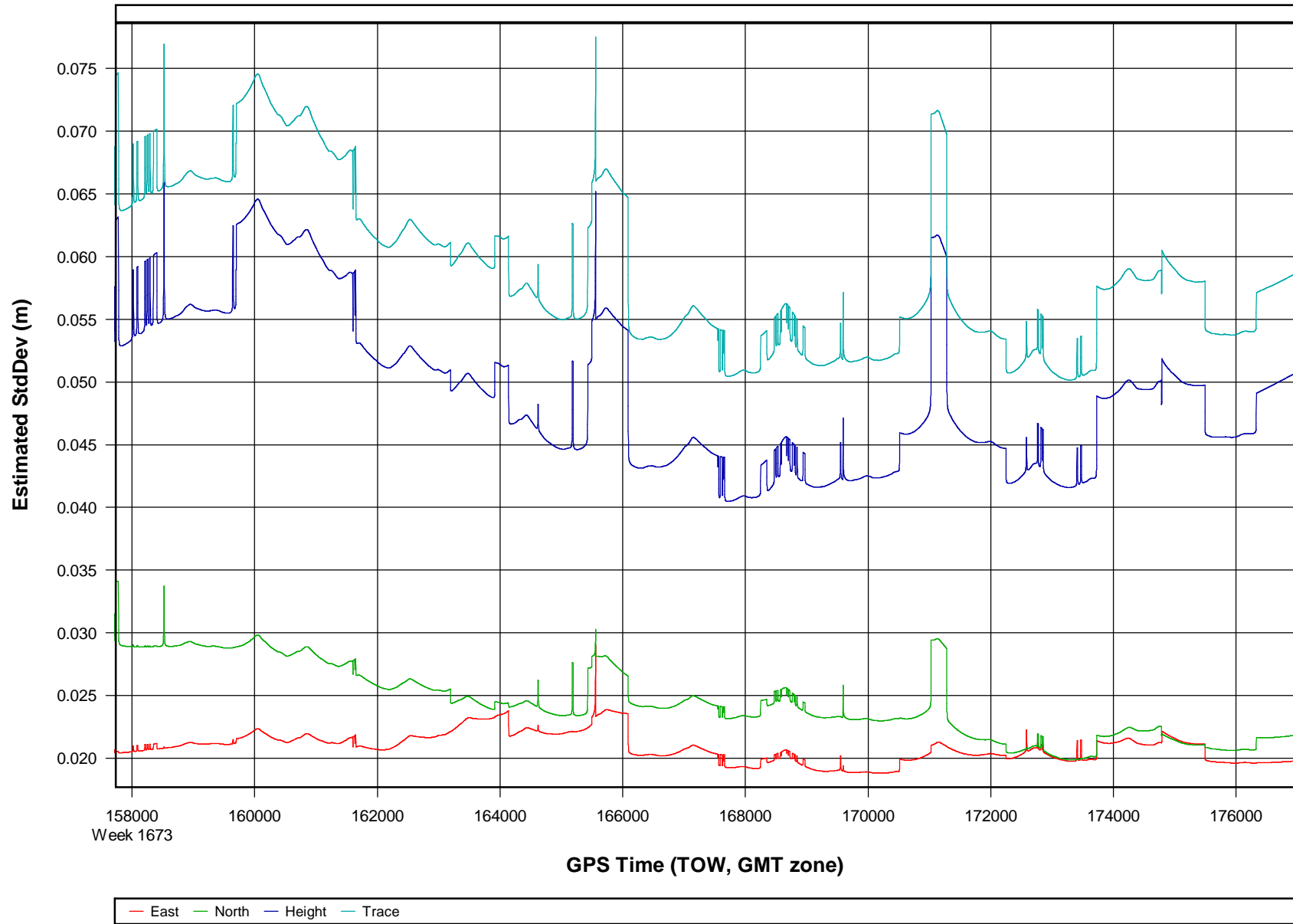
Baseline Distances:

Maximum:	37.998 (km)
Minimum:	1.013 (km)
Average:	17.252 (km)
First Epoch:	14.034 (km)
Last Epoch:	13.987 (km)

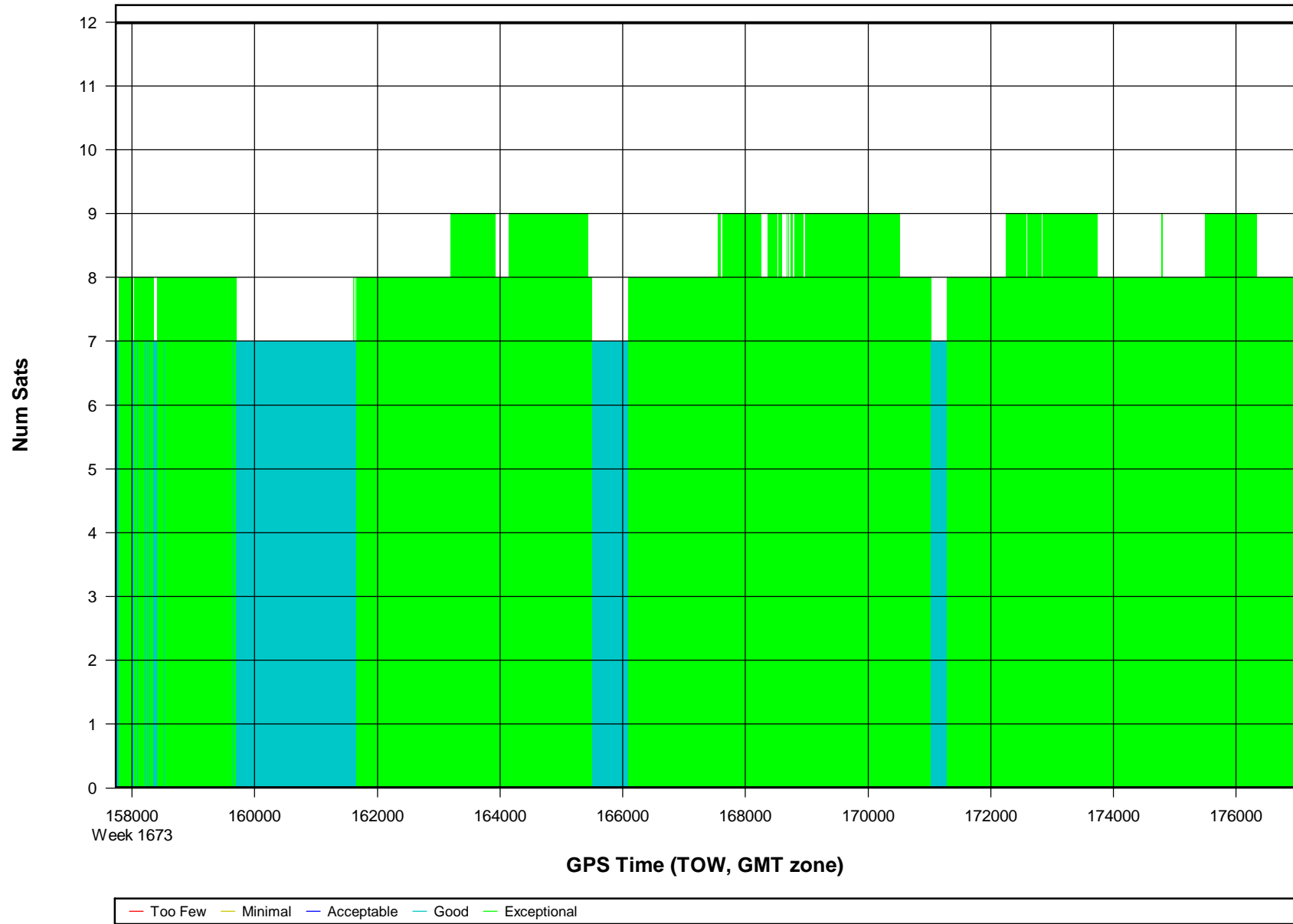
o112030a [Combined] - PDOP, HDOP, VDOP Plots



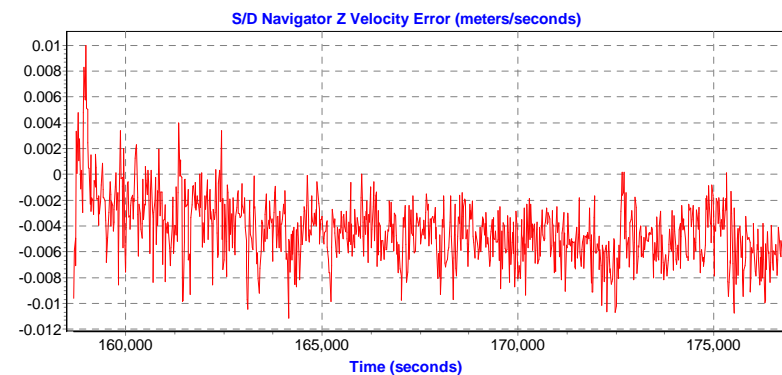
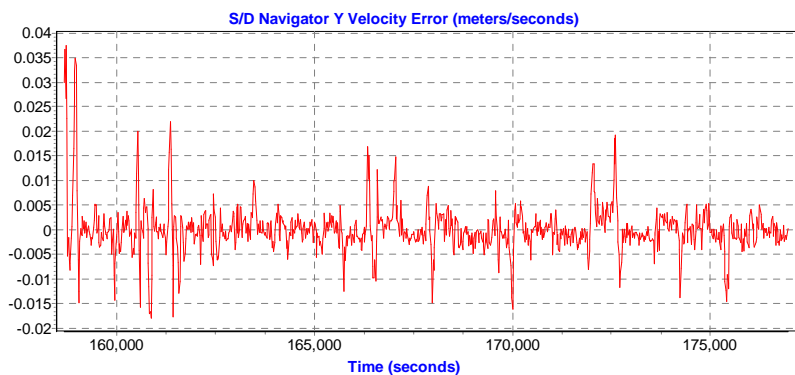
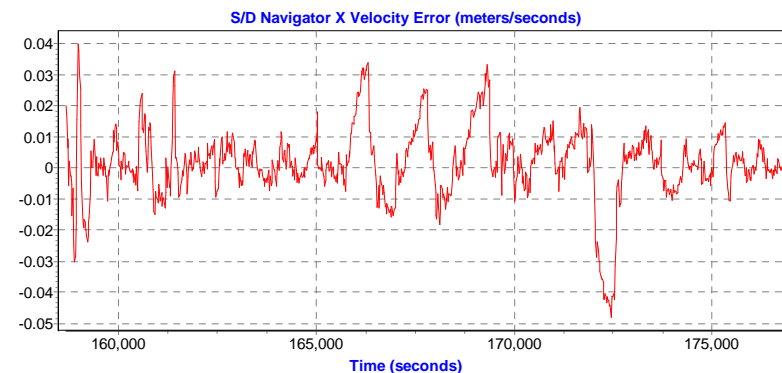
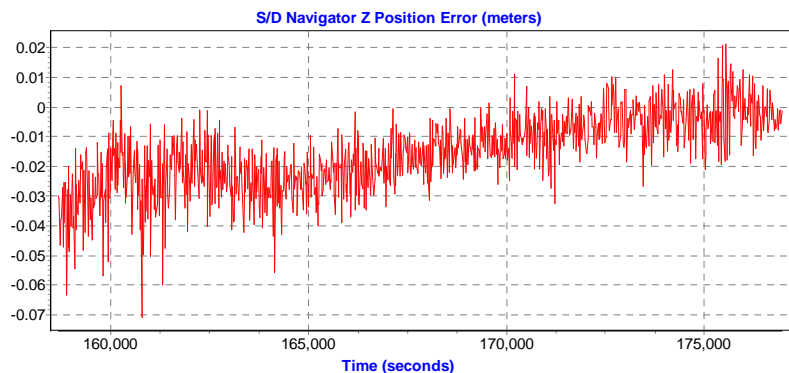
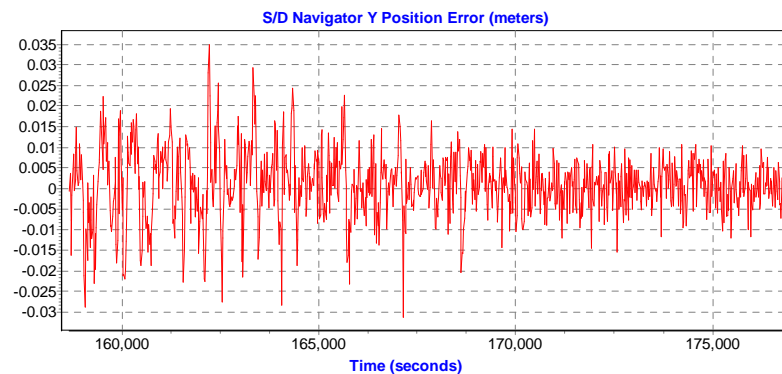
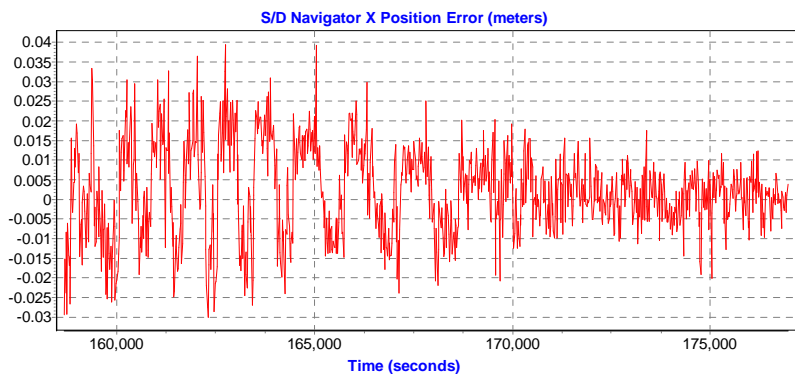
o112030a [Combined] - Estimated Position Accuracy Plot

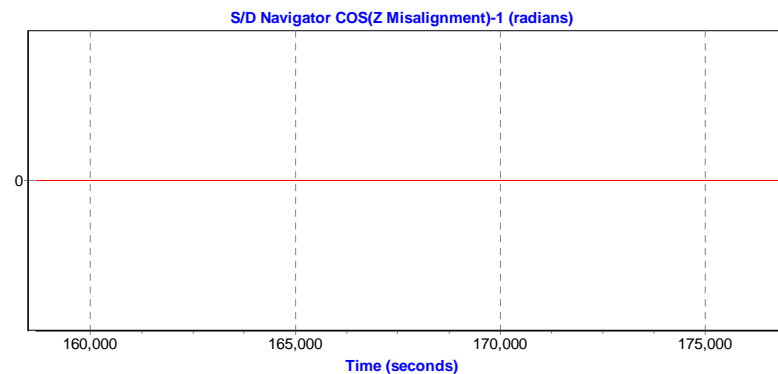
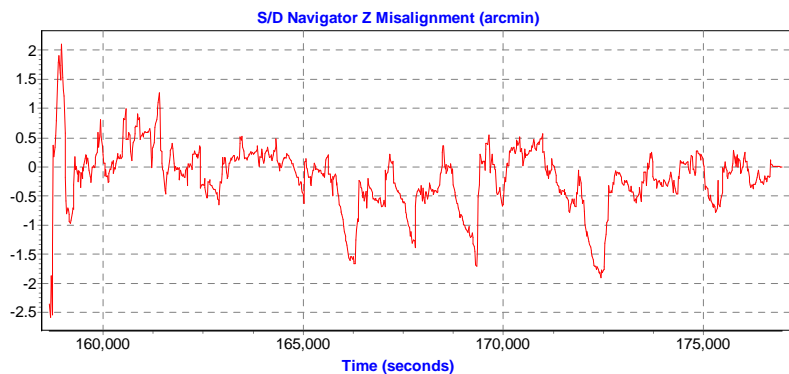
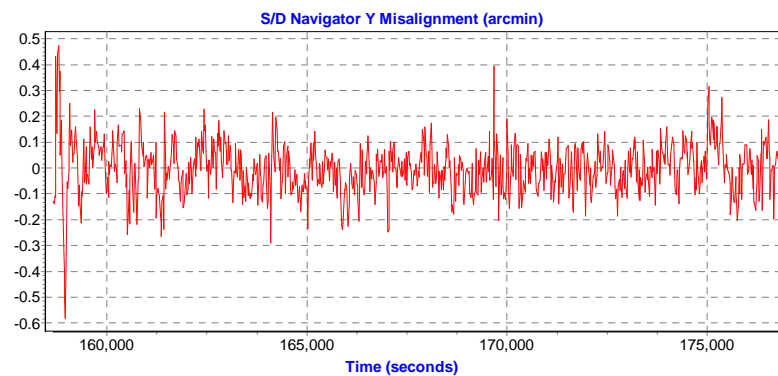
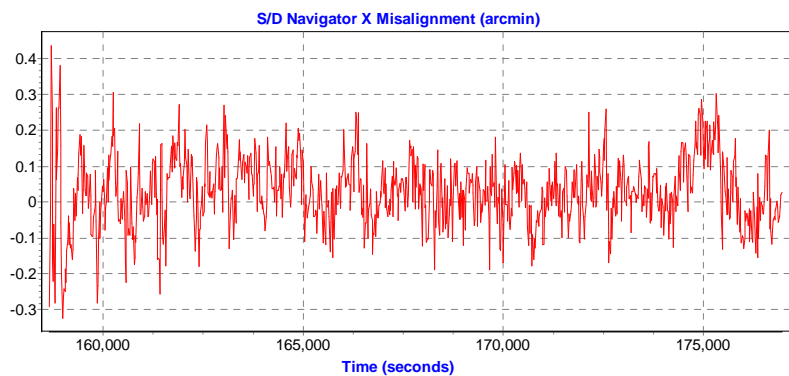


o112030a [Combined] - Number of Satellites Bar Plot

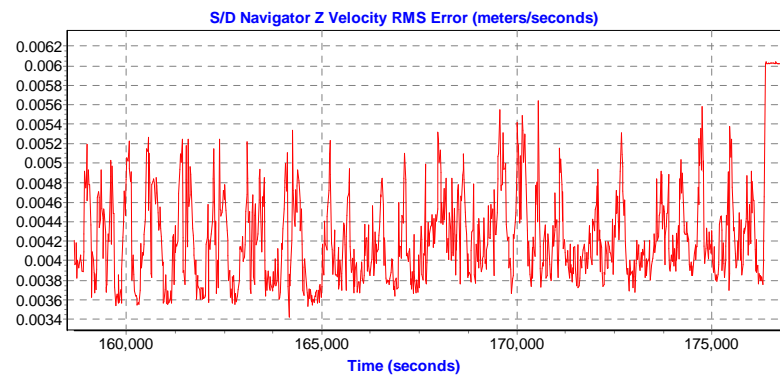
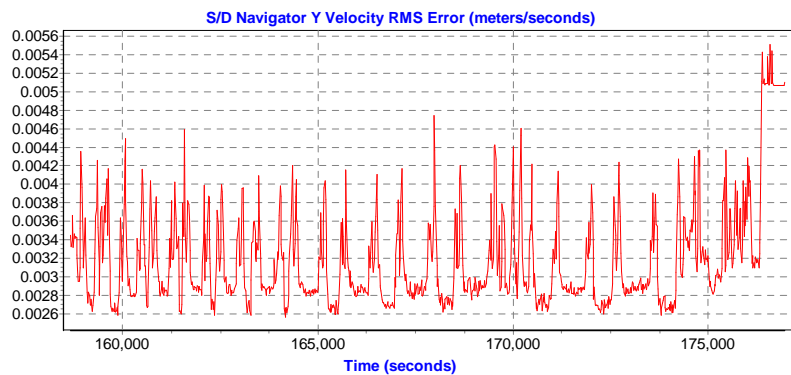
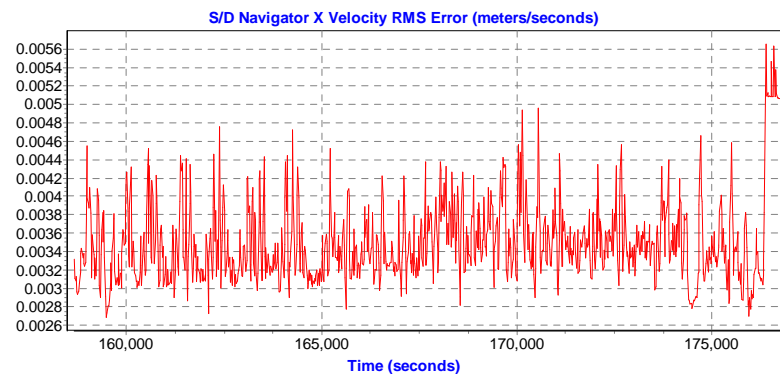
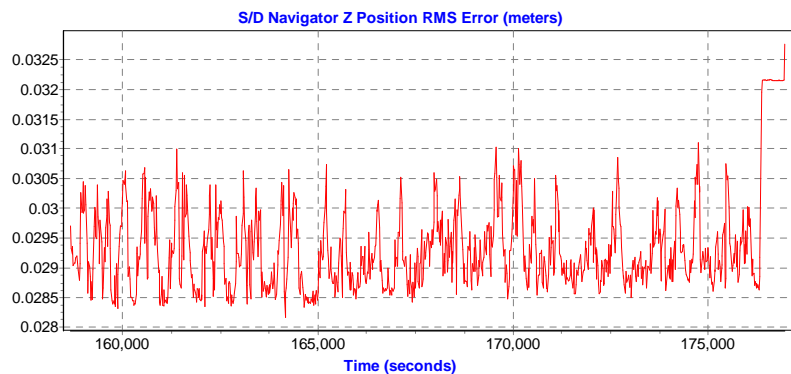
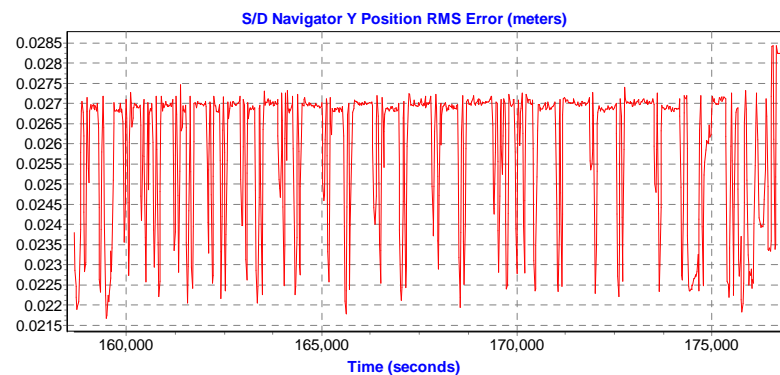
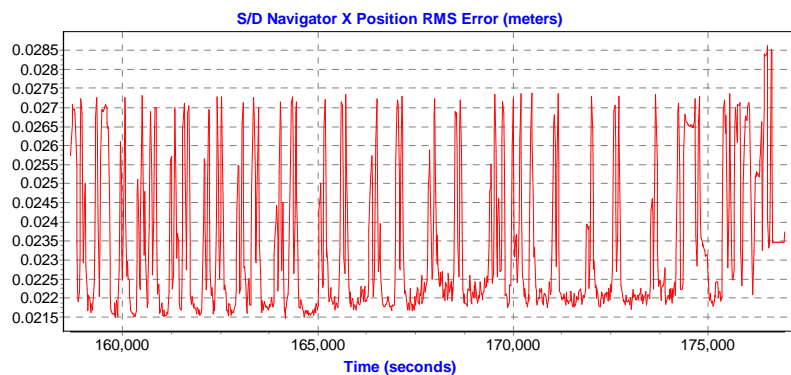


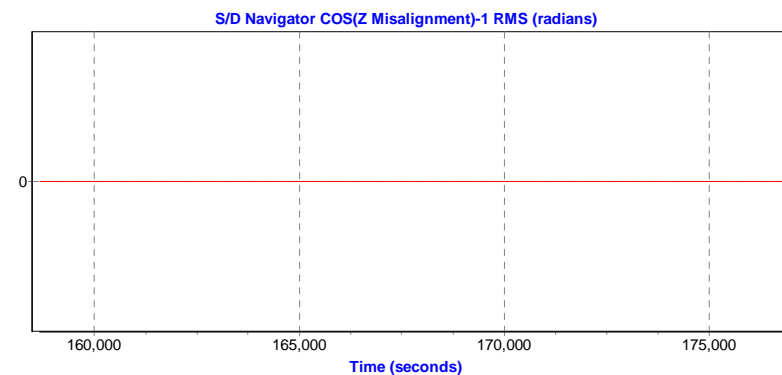
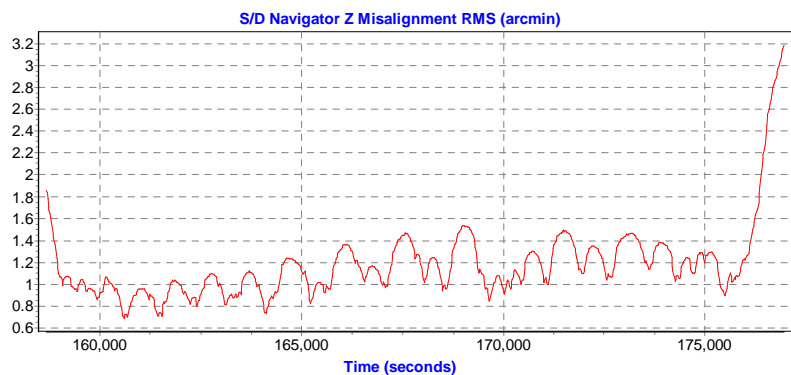
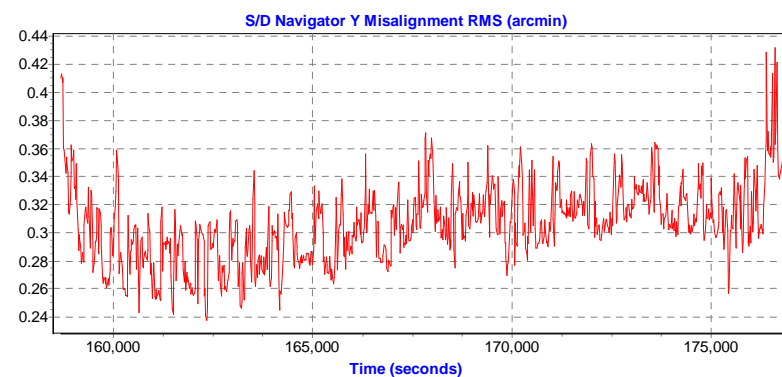
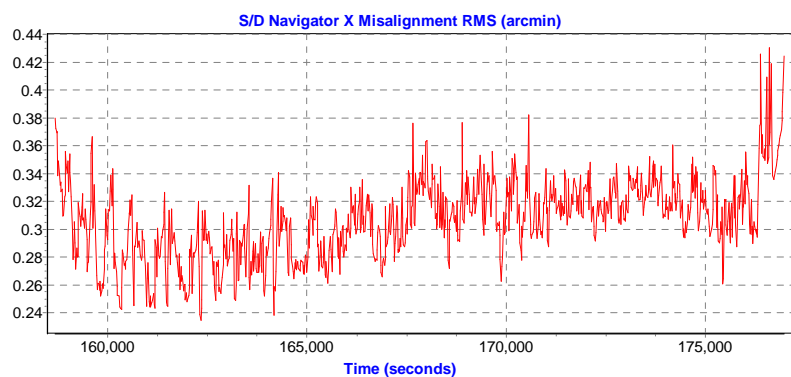
Estimated Errors and RMS

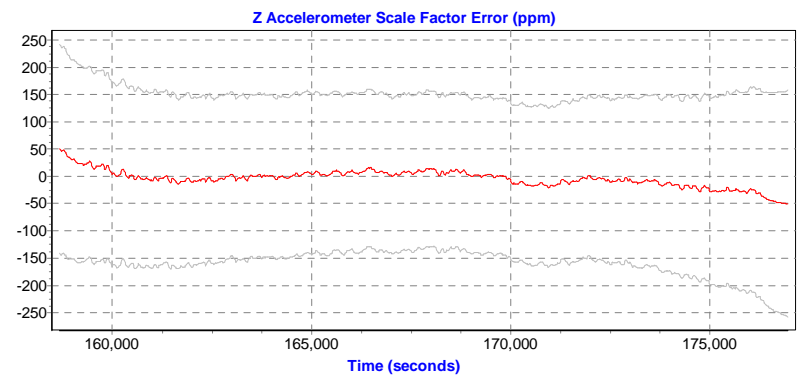
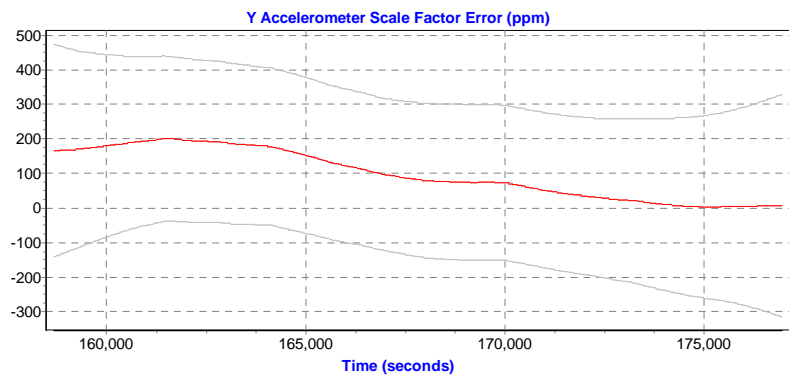
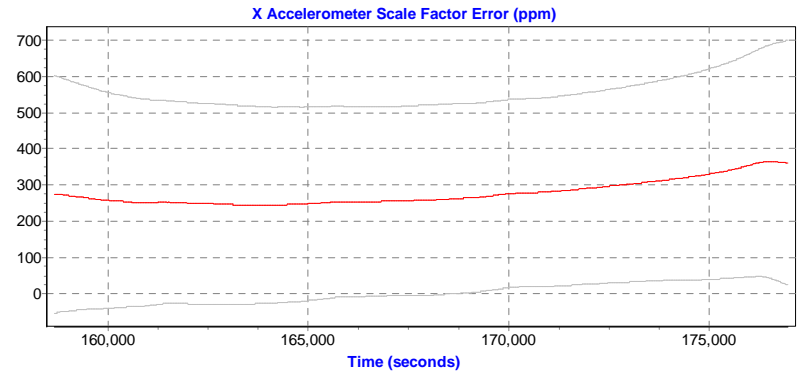
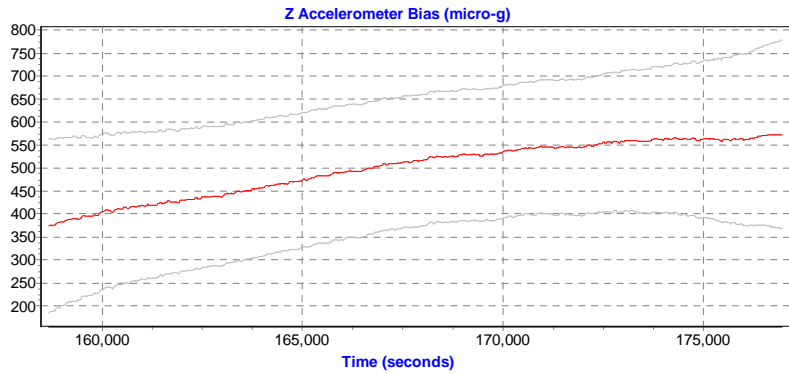
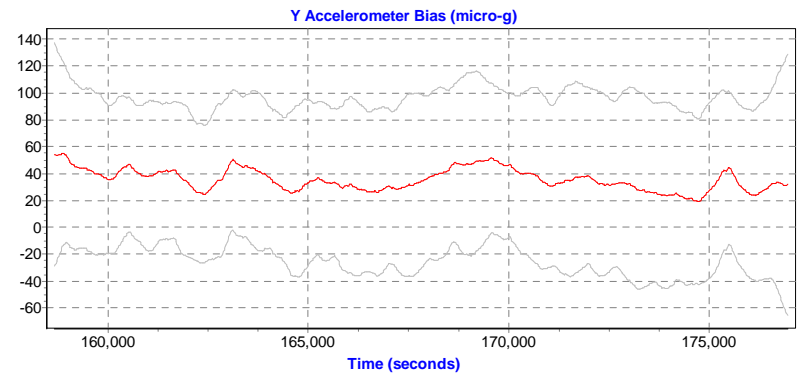
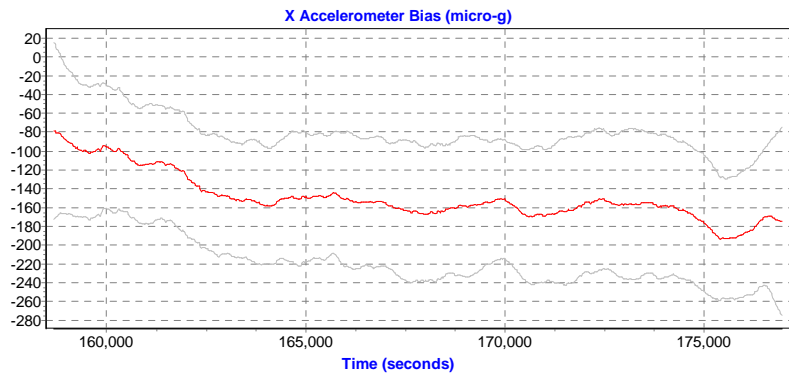


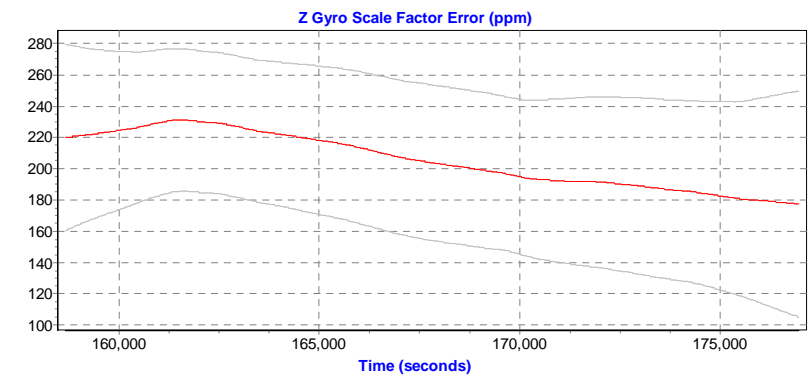
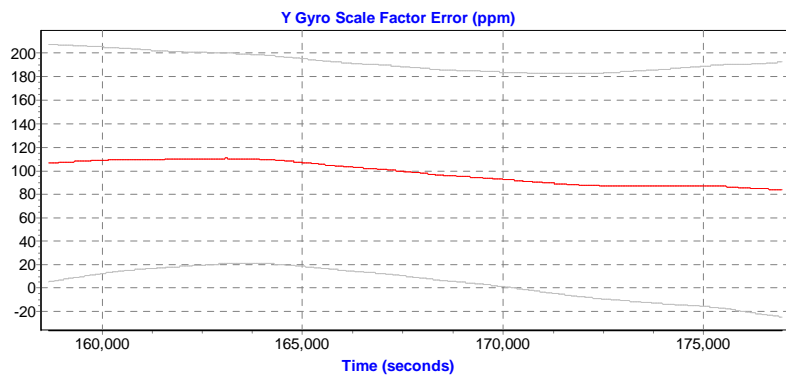
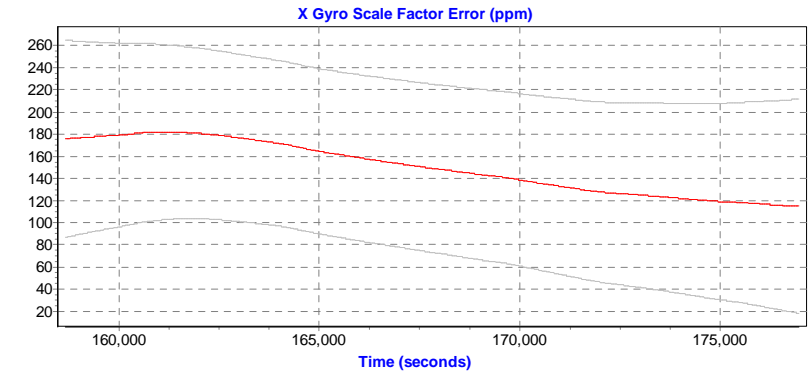
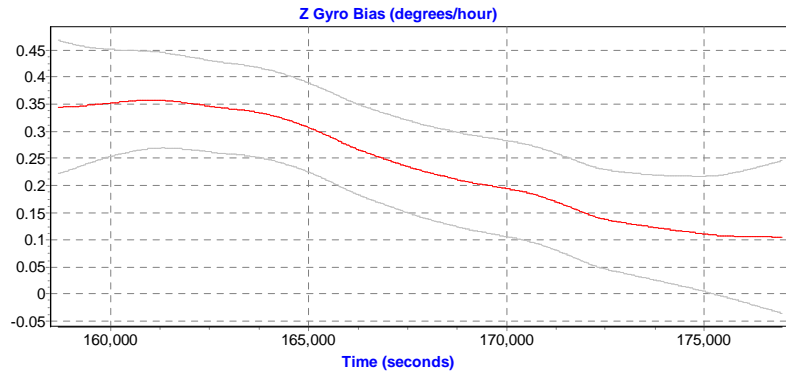
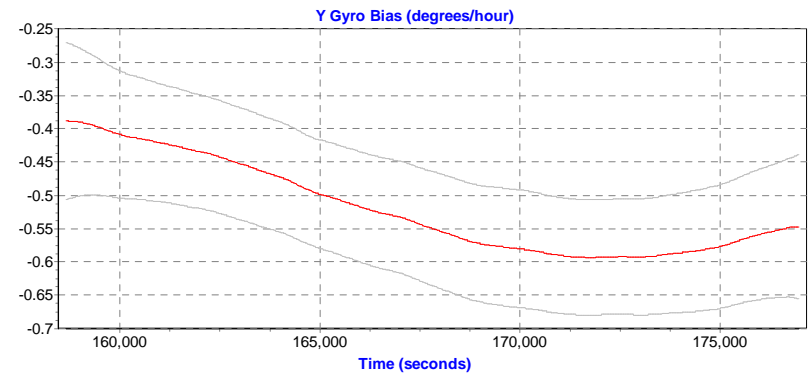
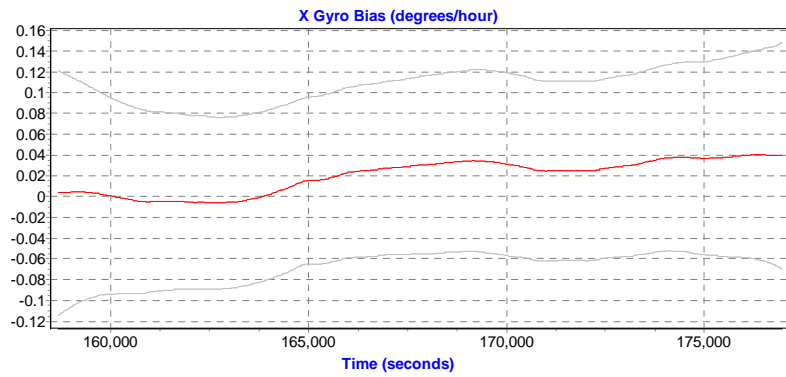


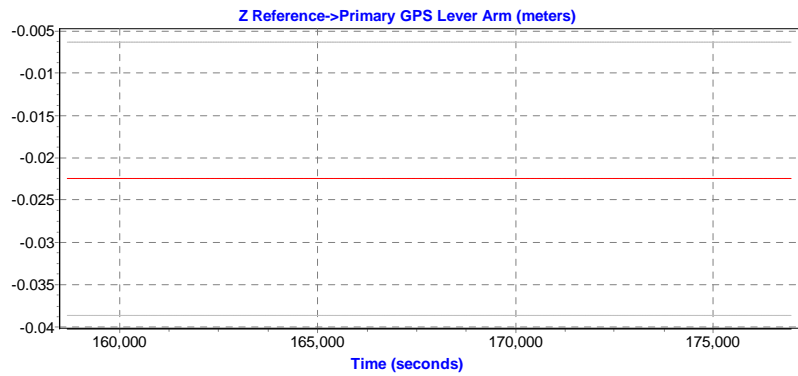
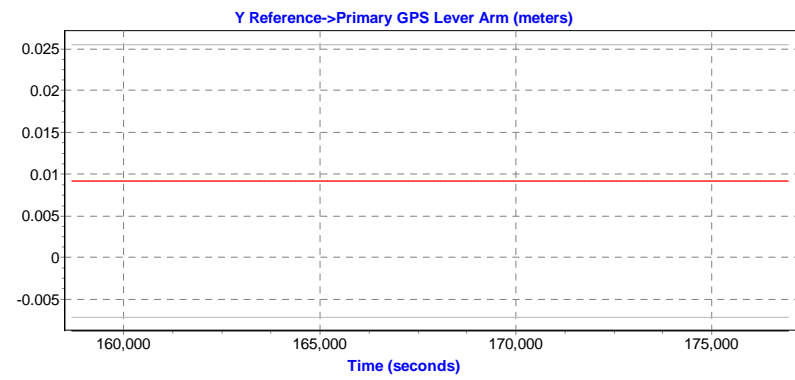
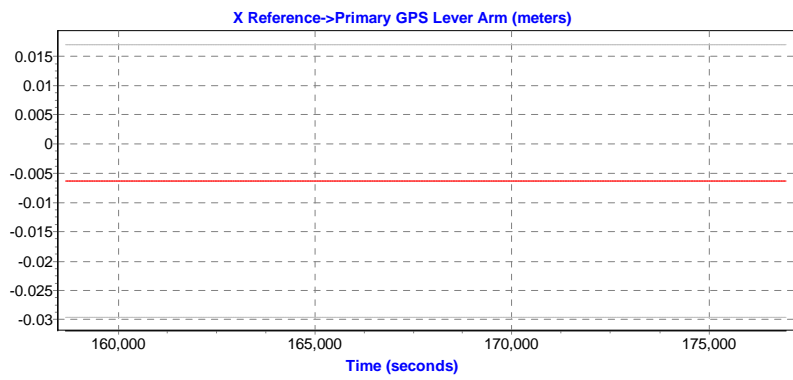
RMS Estimation Uncertainties





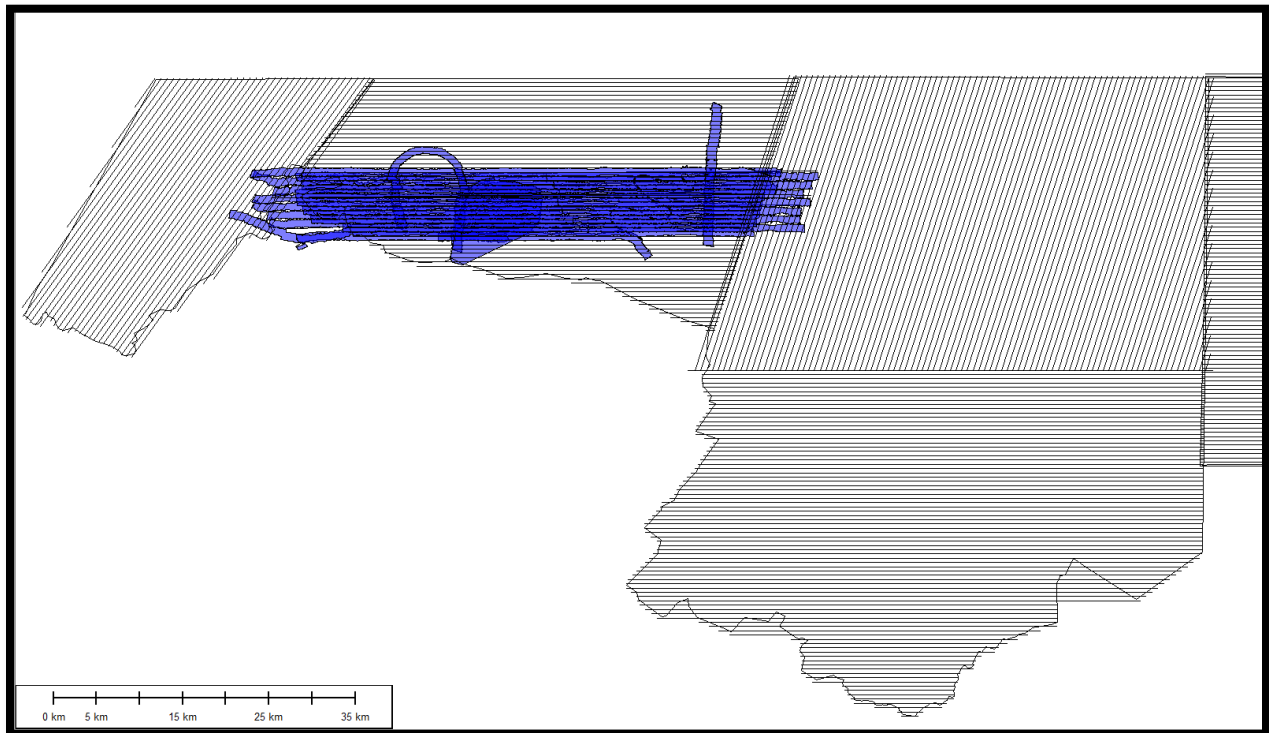






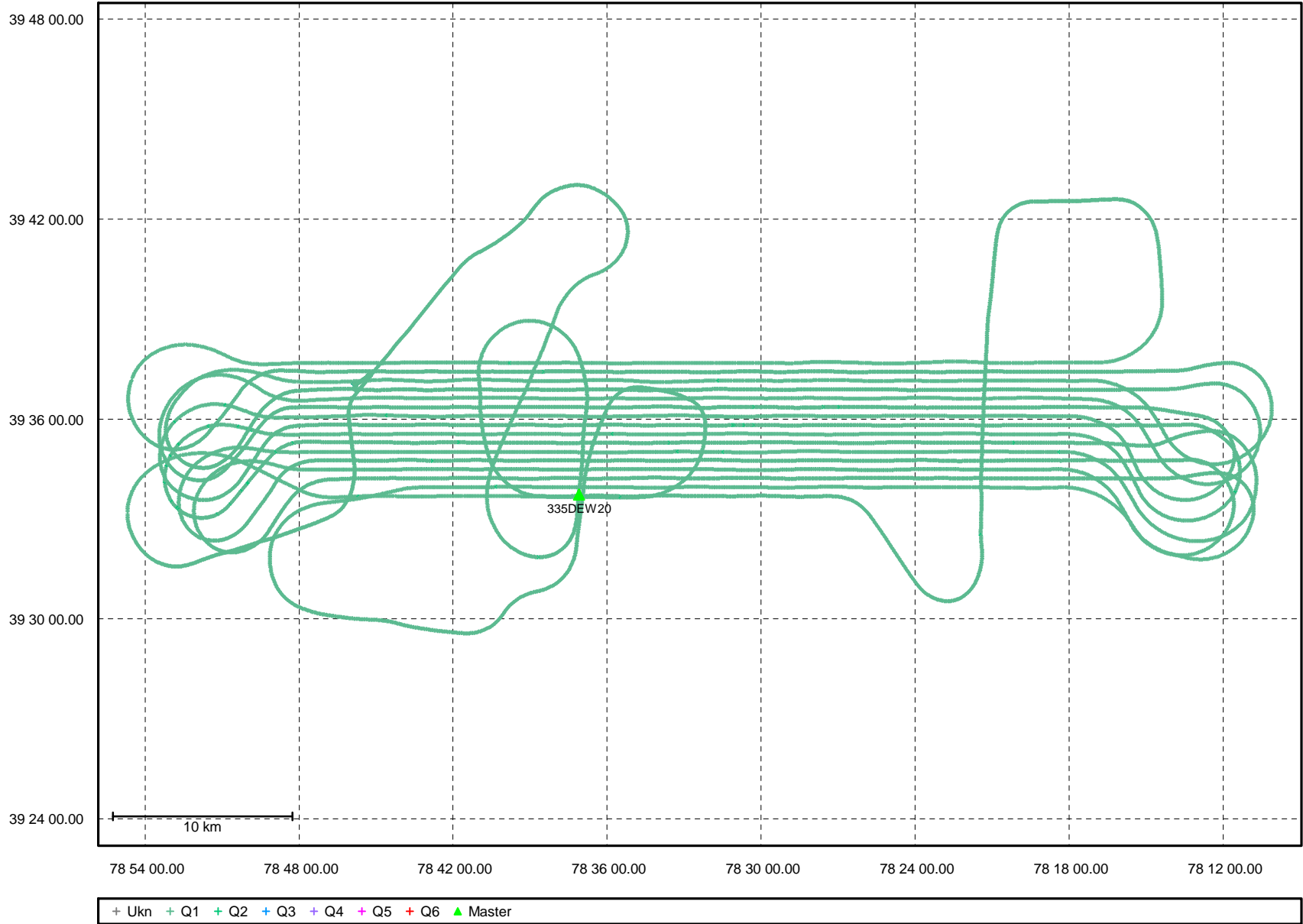
Mission: o112031a

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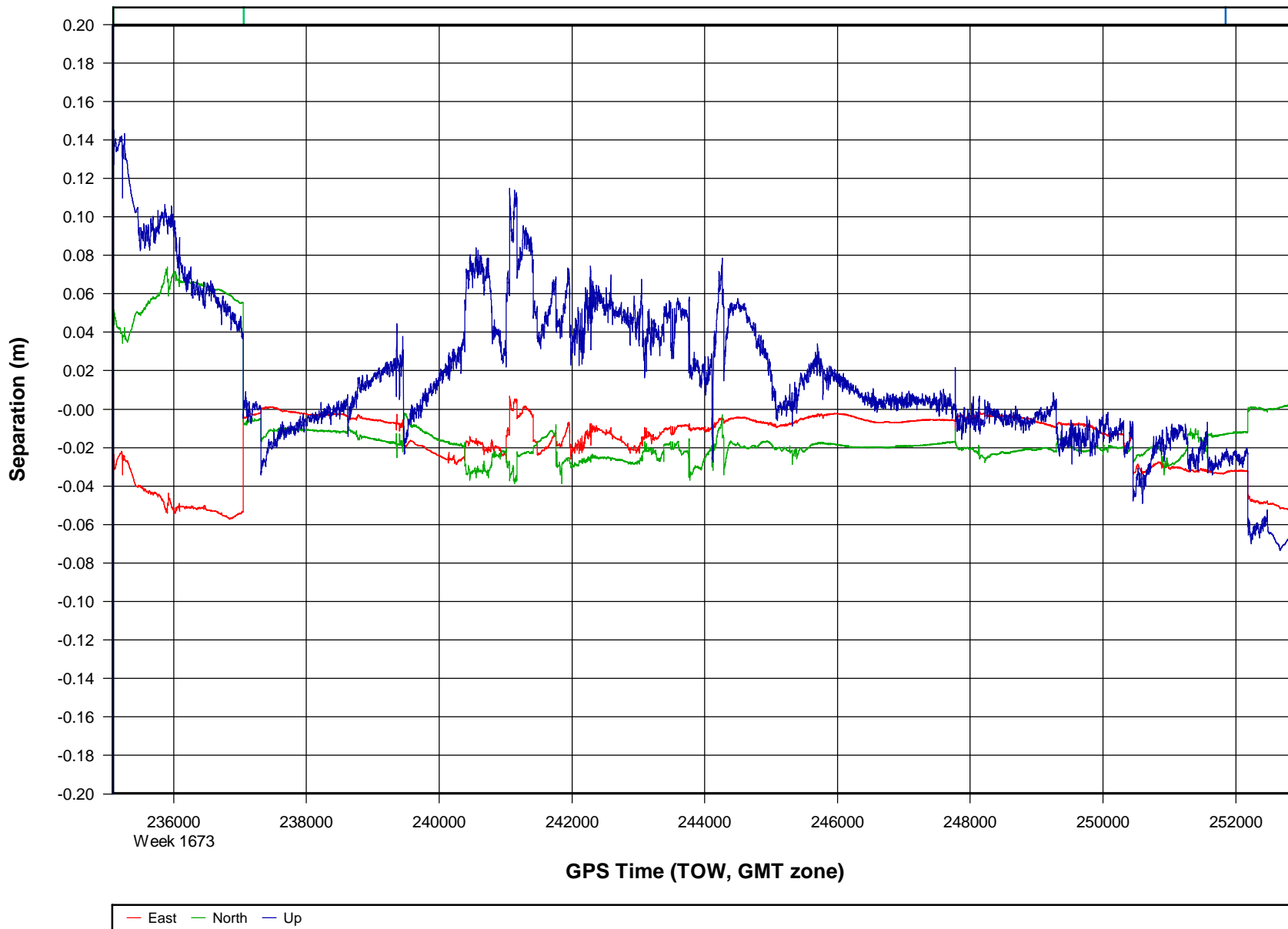


Combined - Map Run (2)

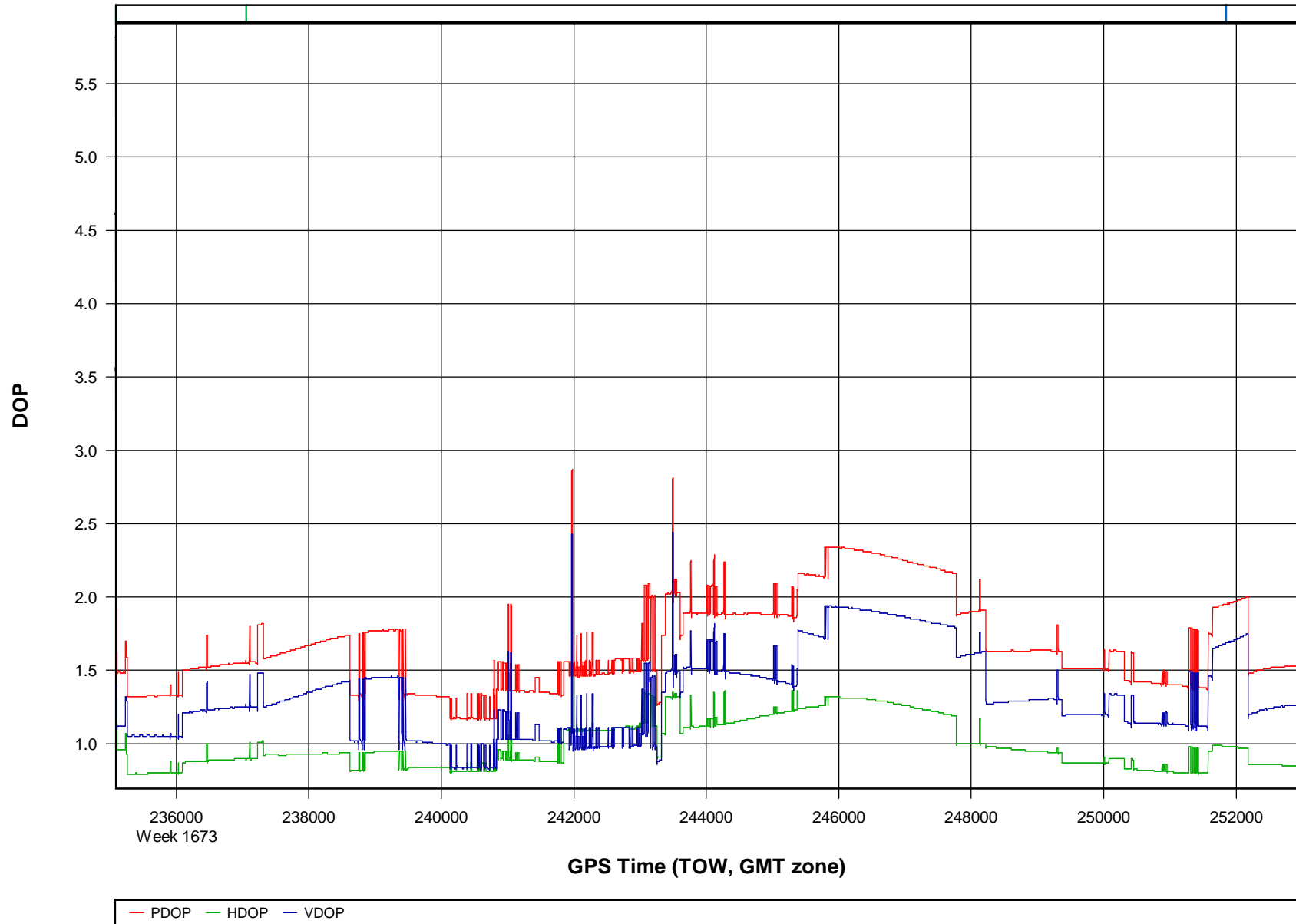
Geographic, DMS



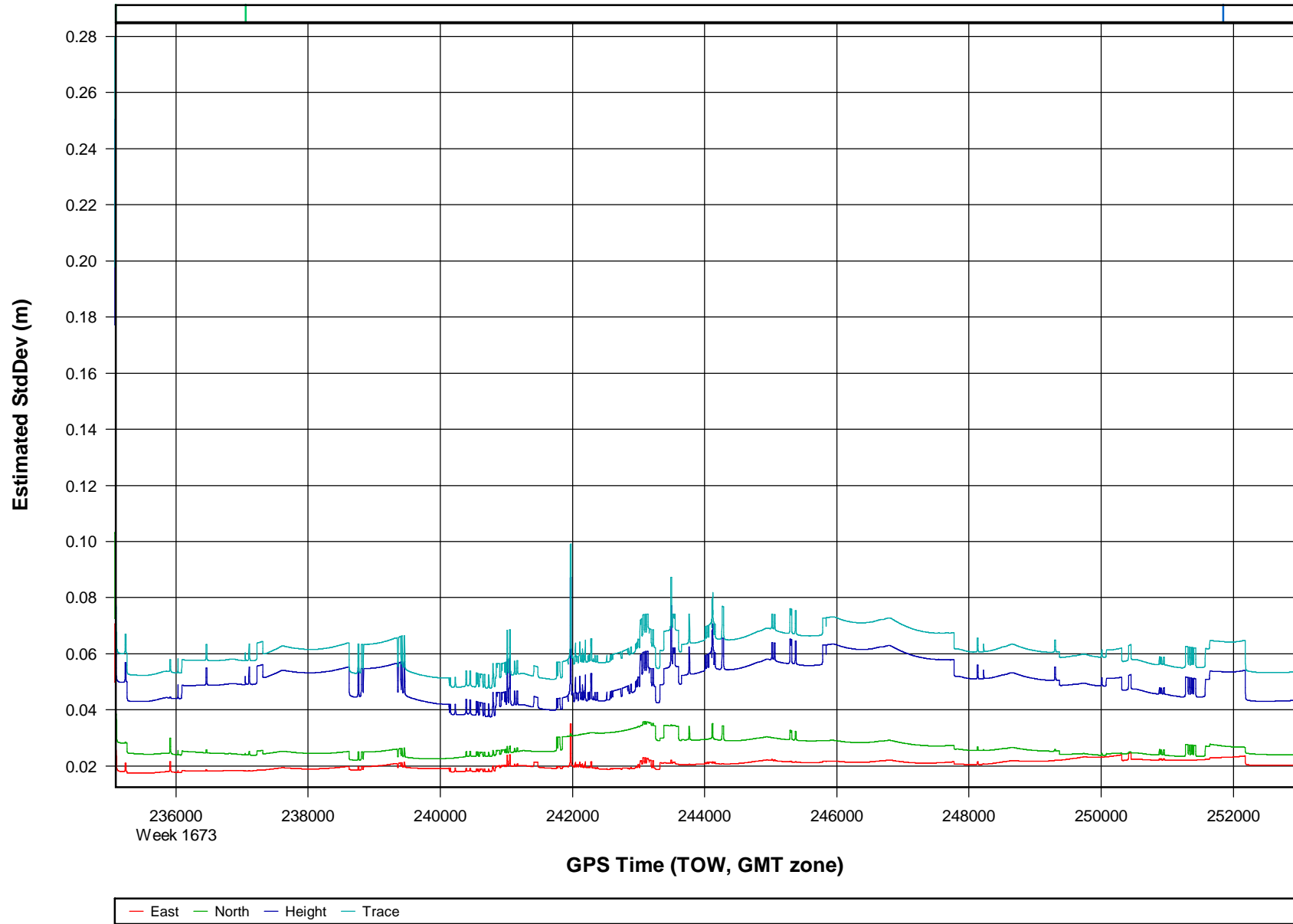
o112031a [Combined] - Forward/Reverse or Combined Separation Plot



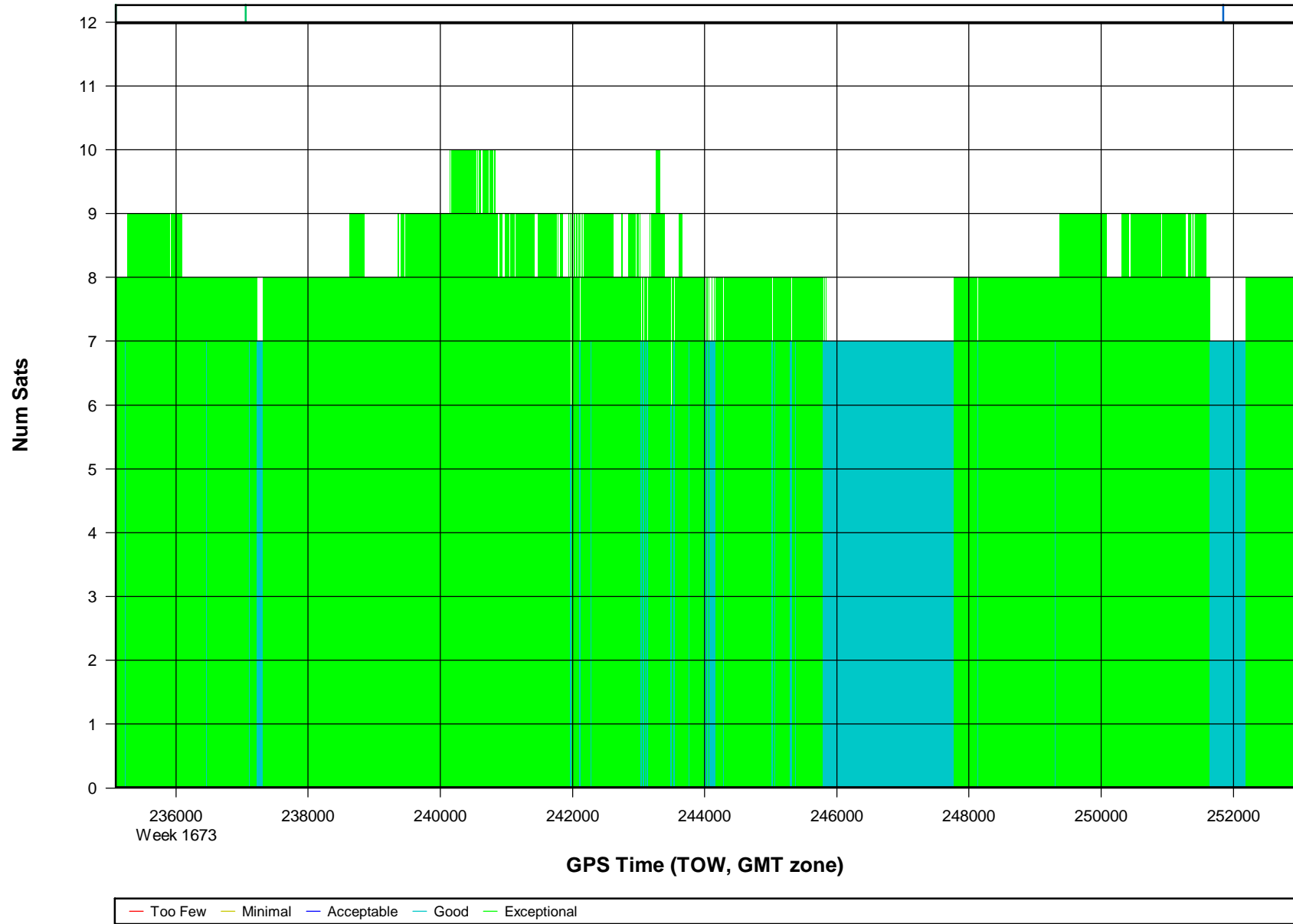
o112031a [Combined] - PDOP, HDOP, VDOP Plots

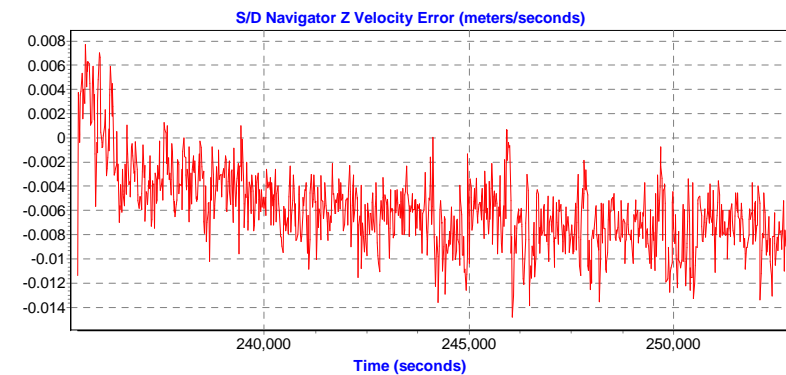
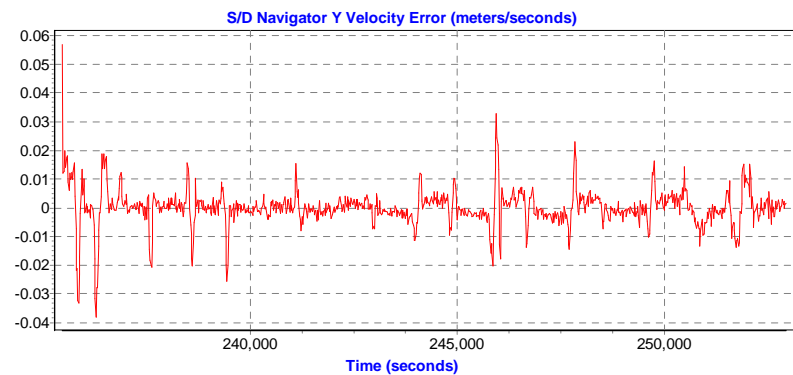
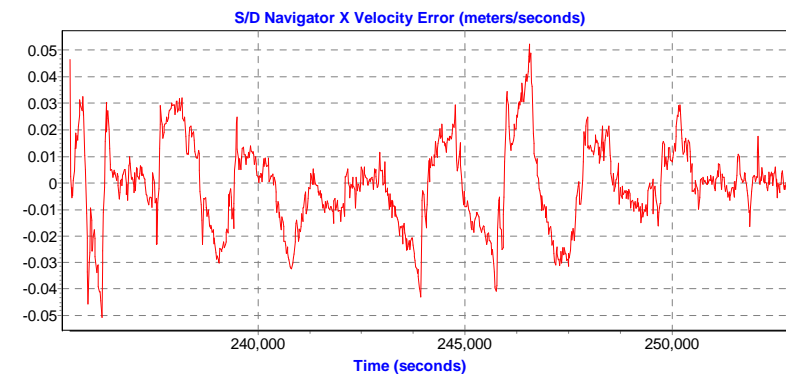
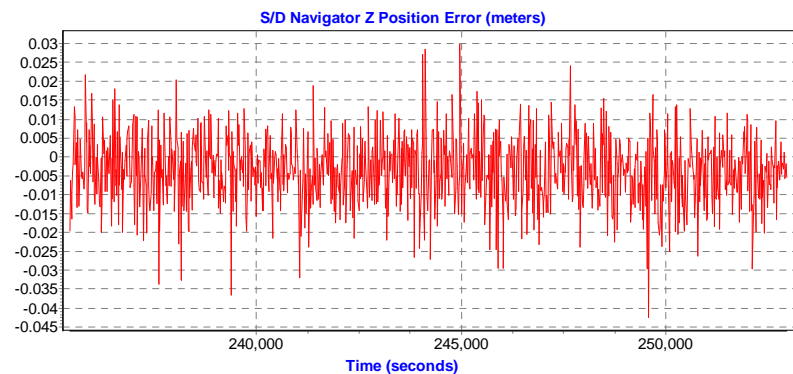
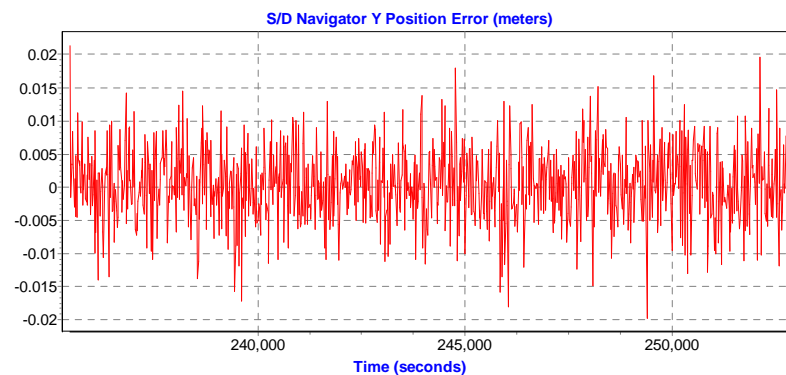
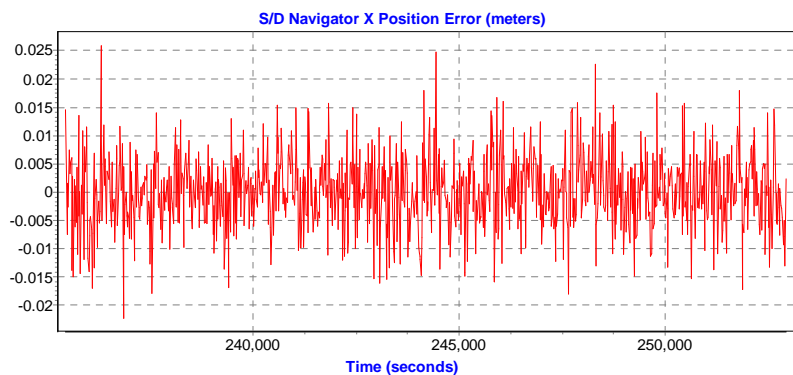


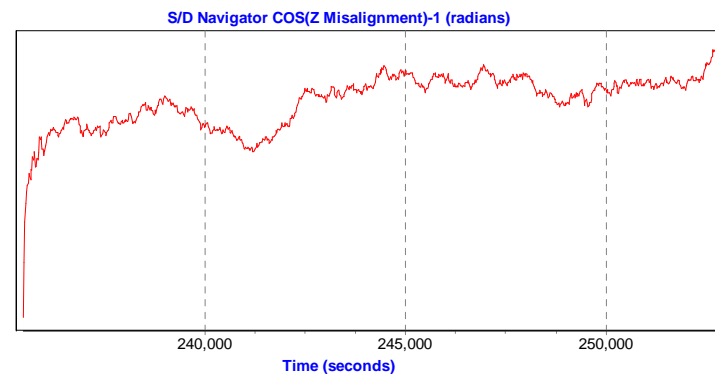
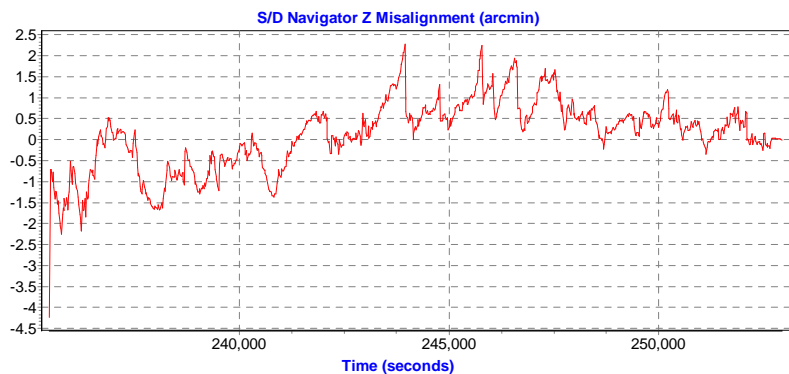
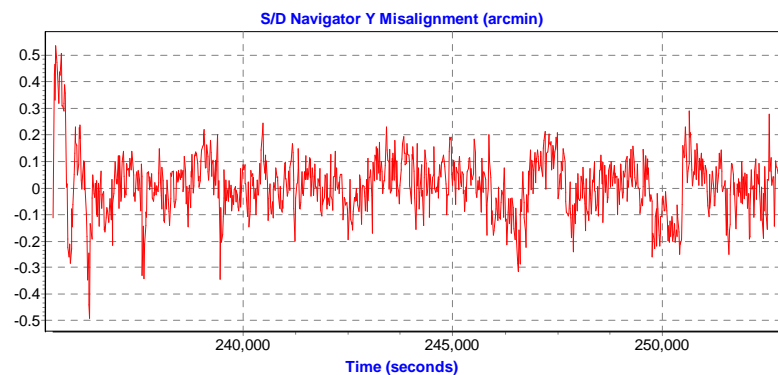
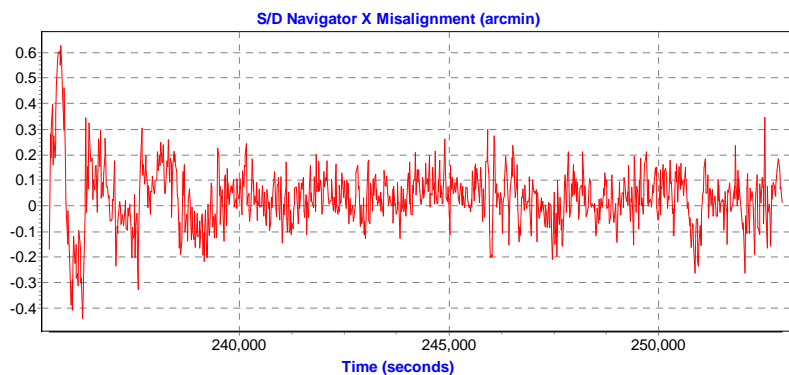
o112031a [Combined] - Estimated Position Accuracy Plot

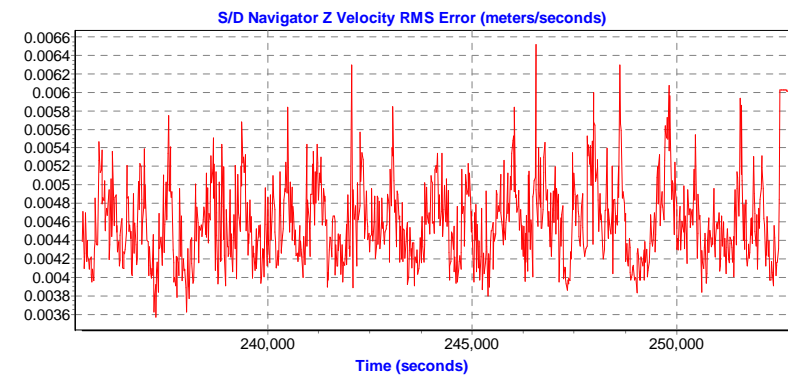
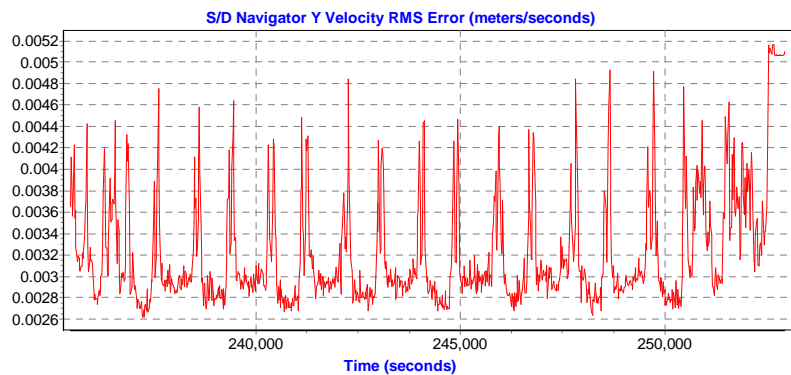
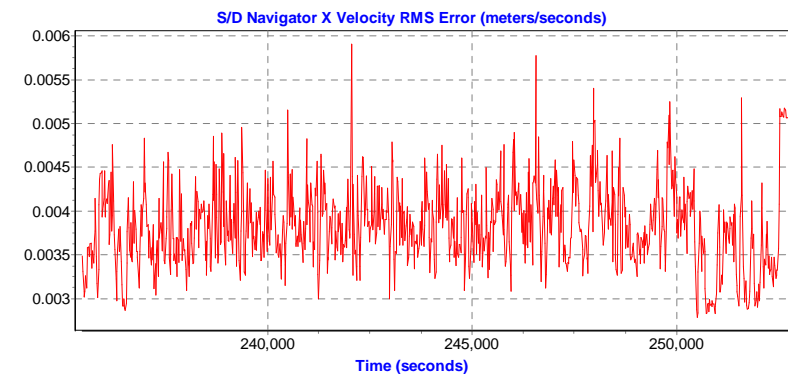
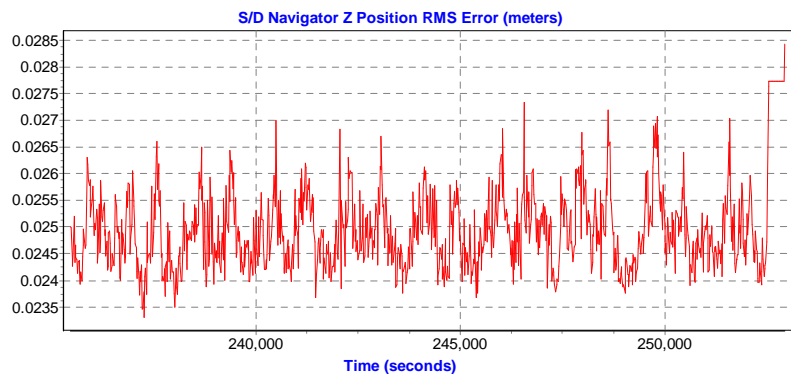
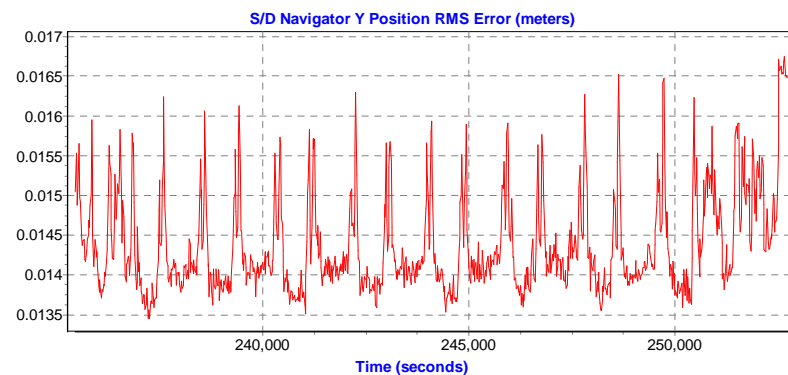
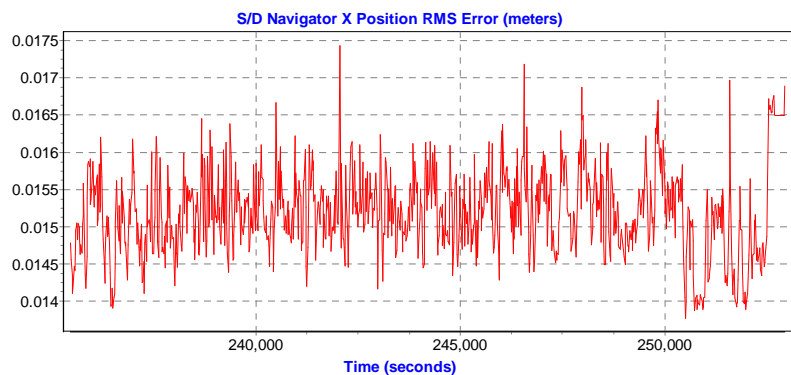


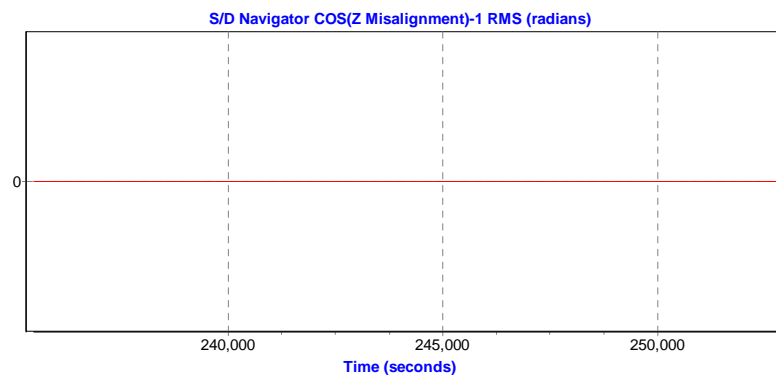
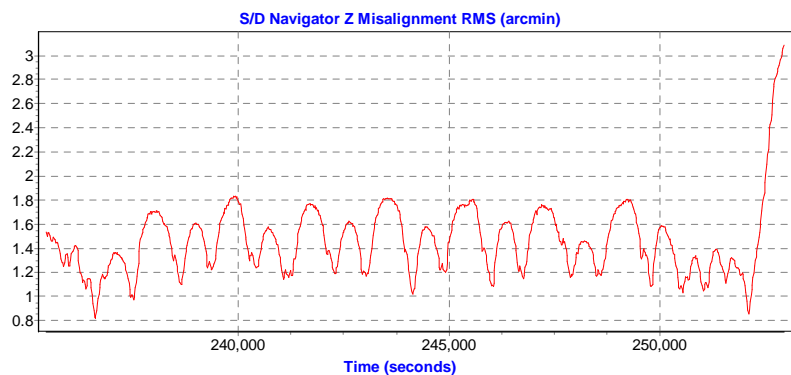
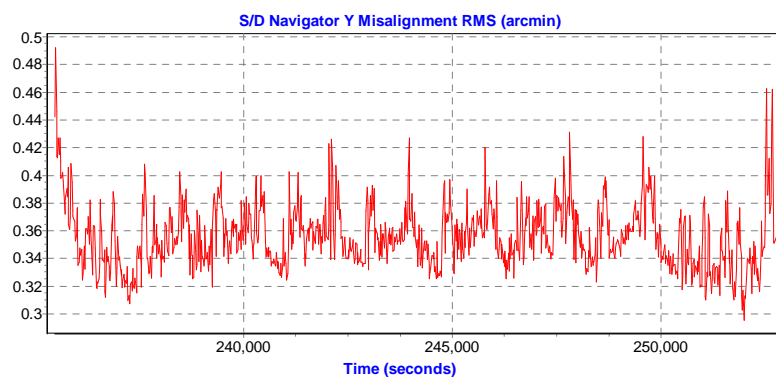
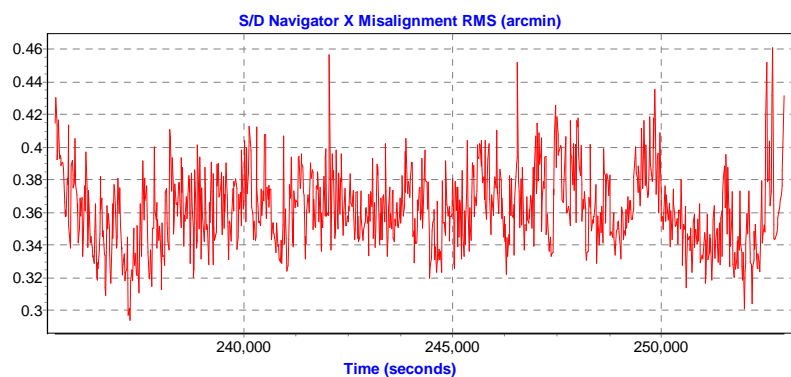
o112031a [Combined] - Number of Satellites Bar Plot

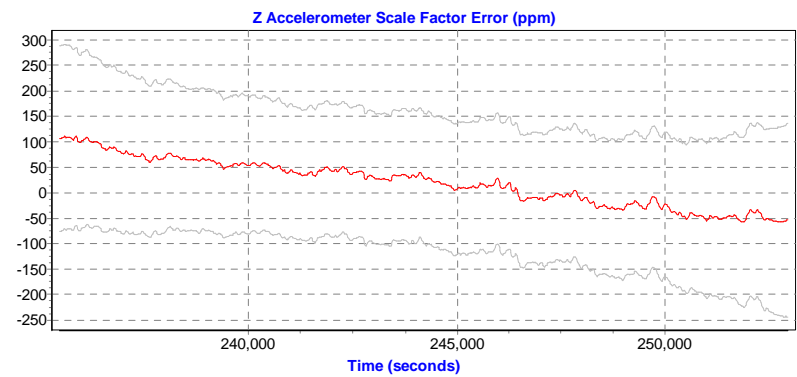
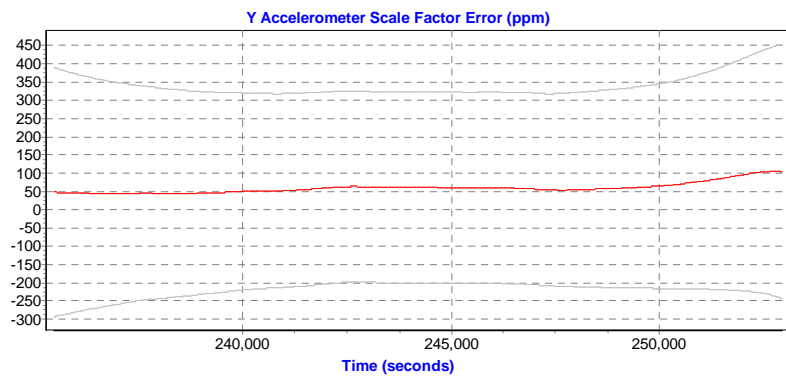
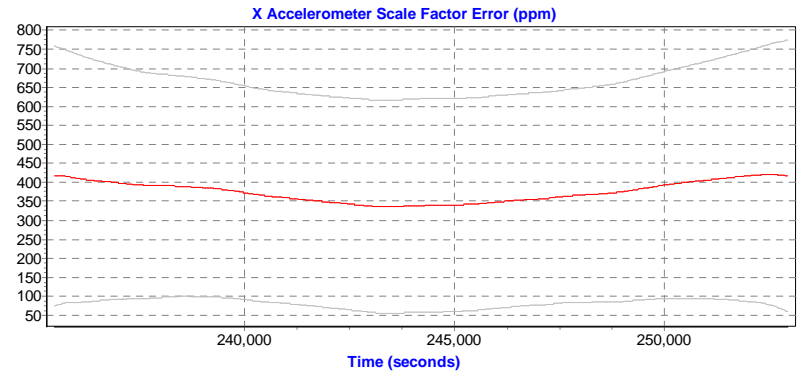
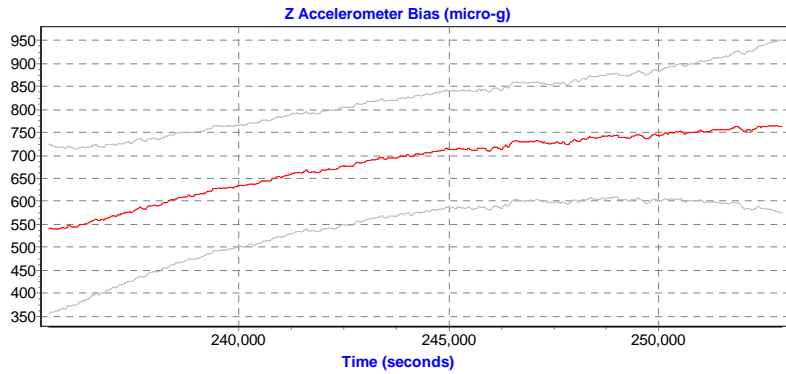
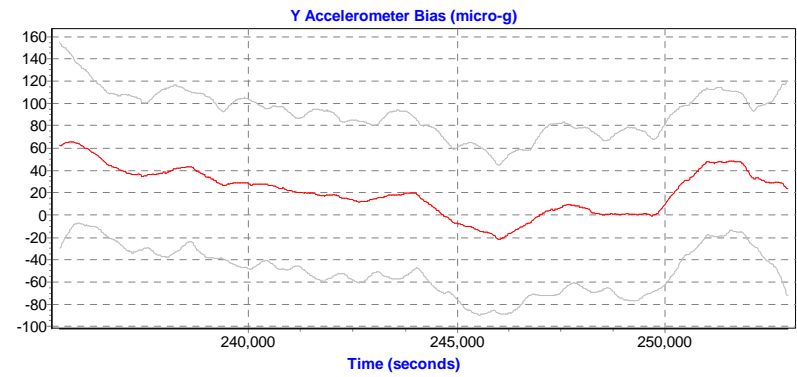
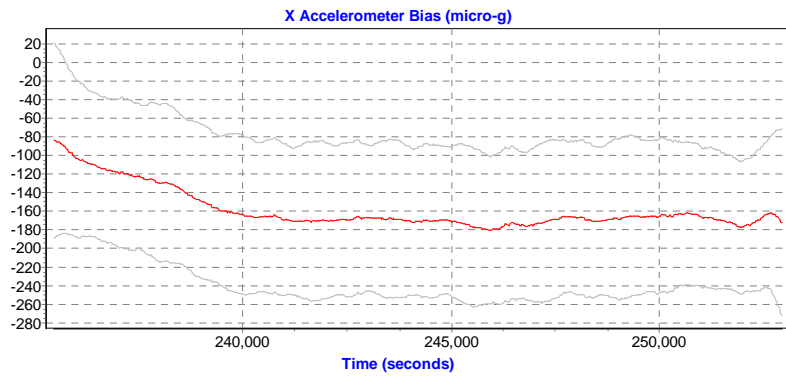


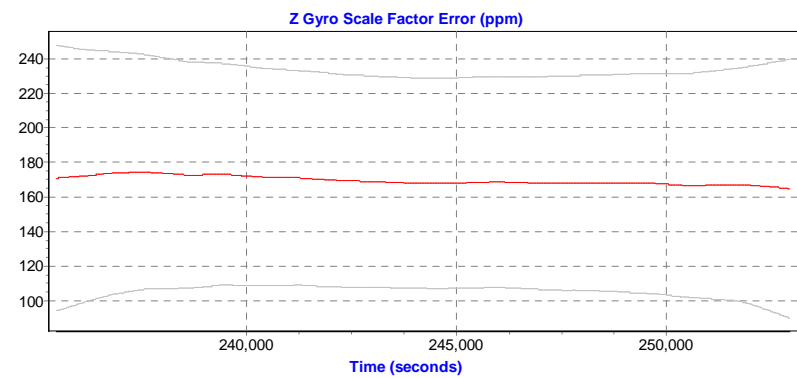
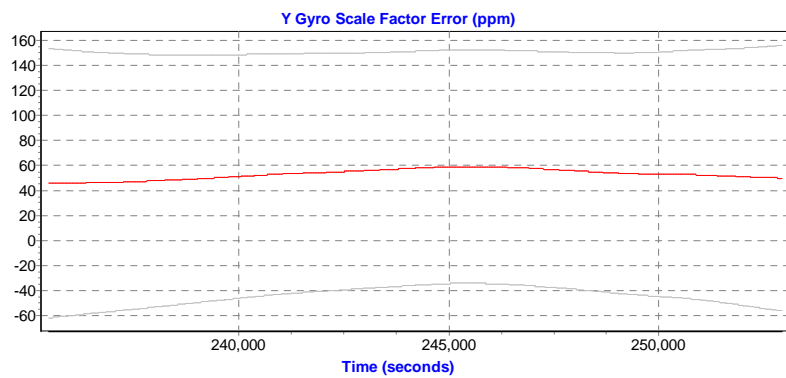
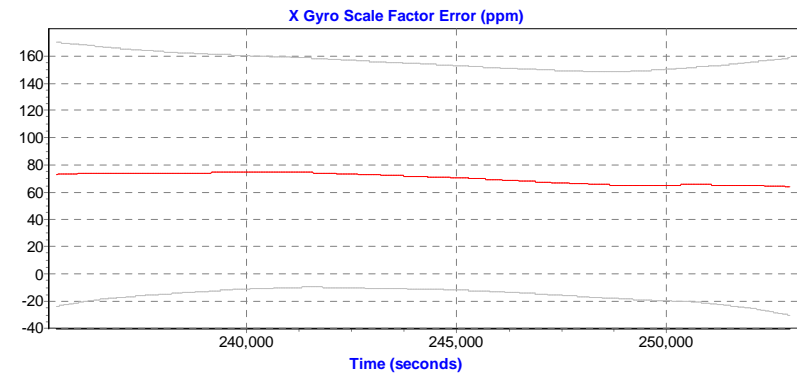
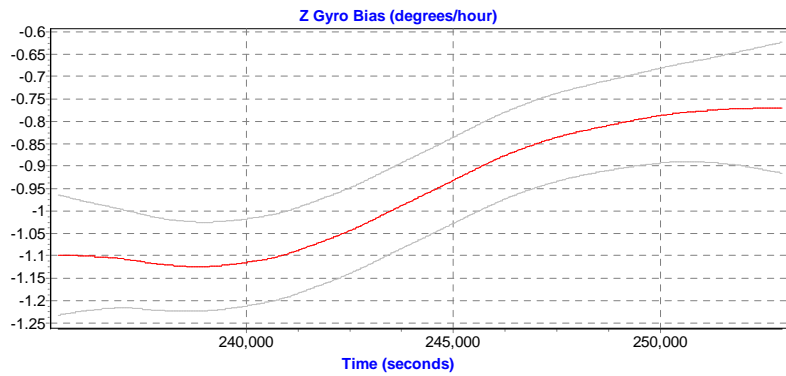
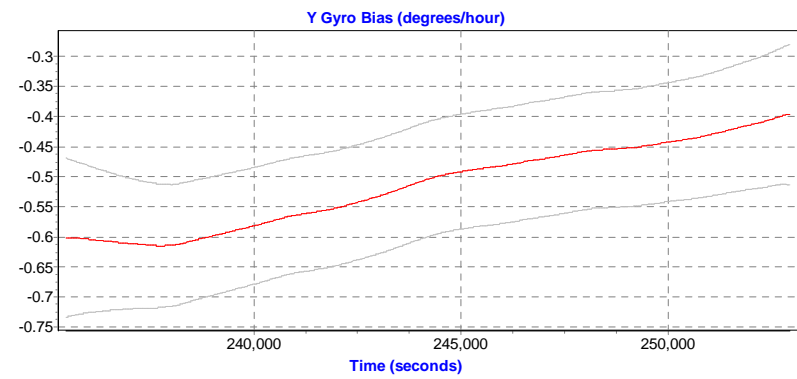
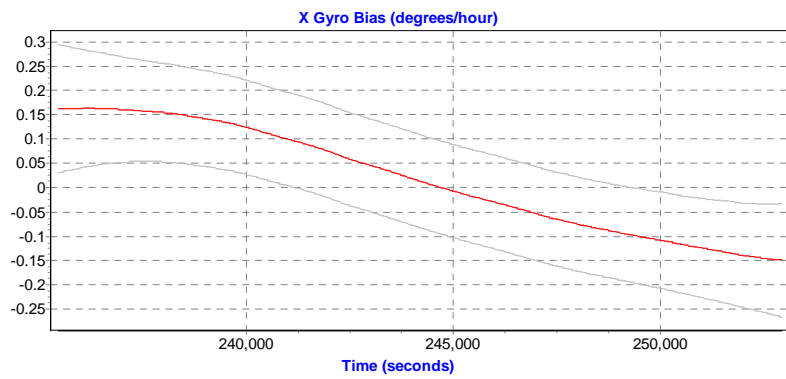






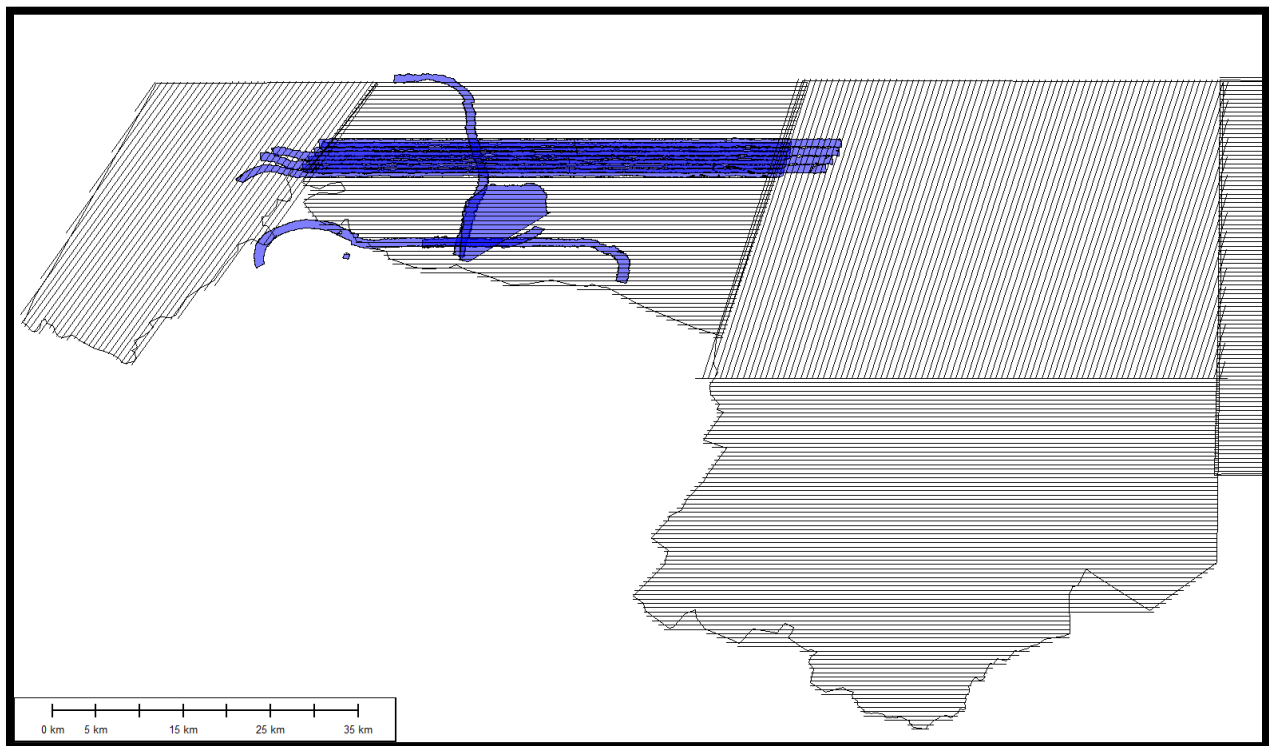






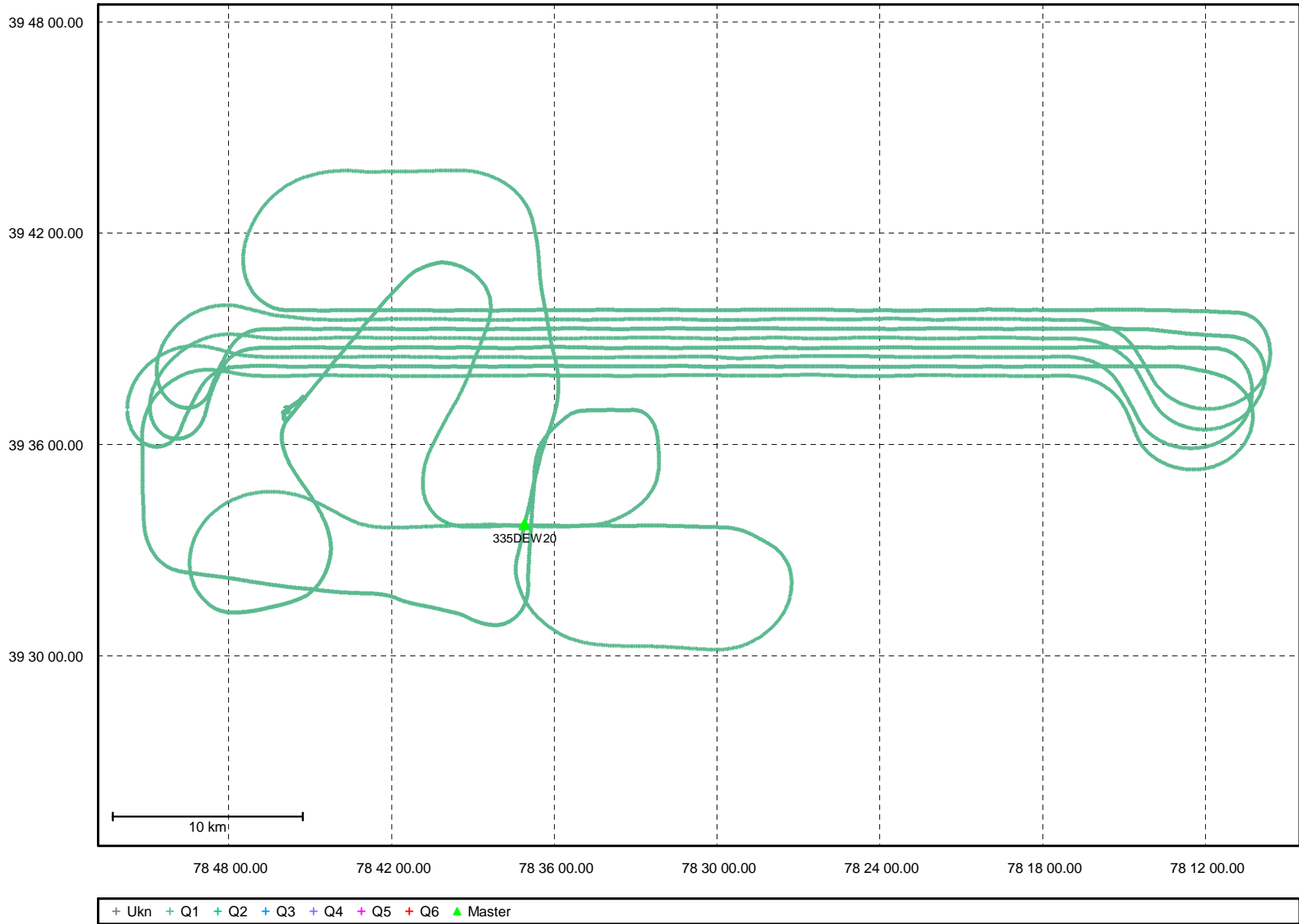
Mission: o112031b

January 31, 2012

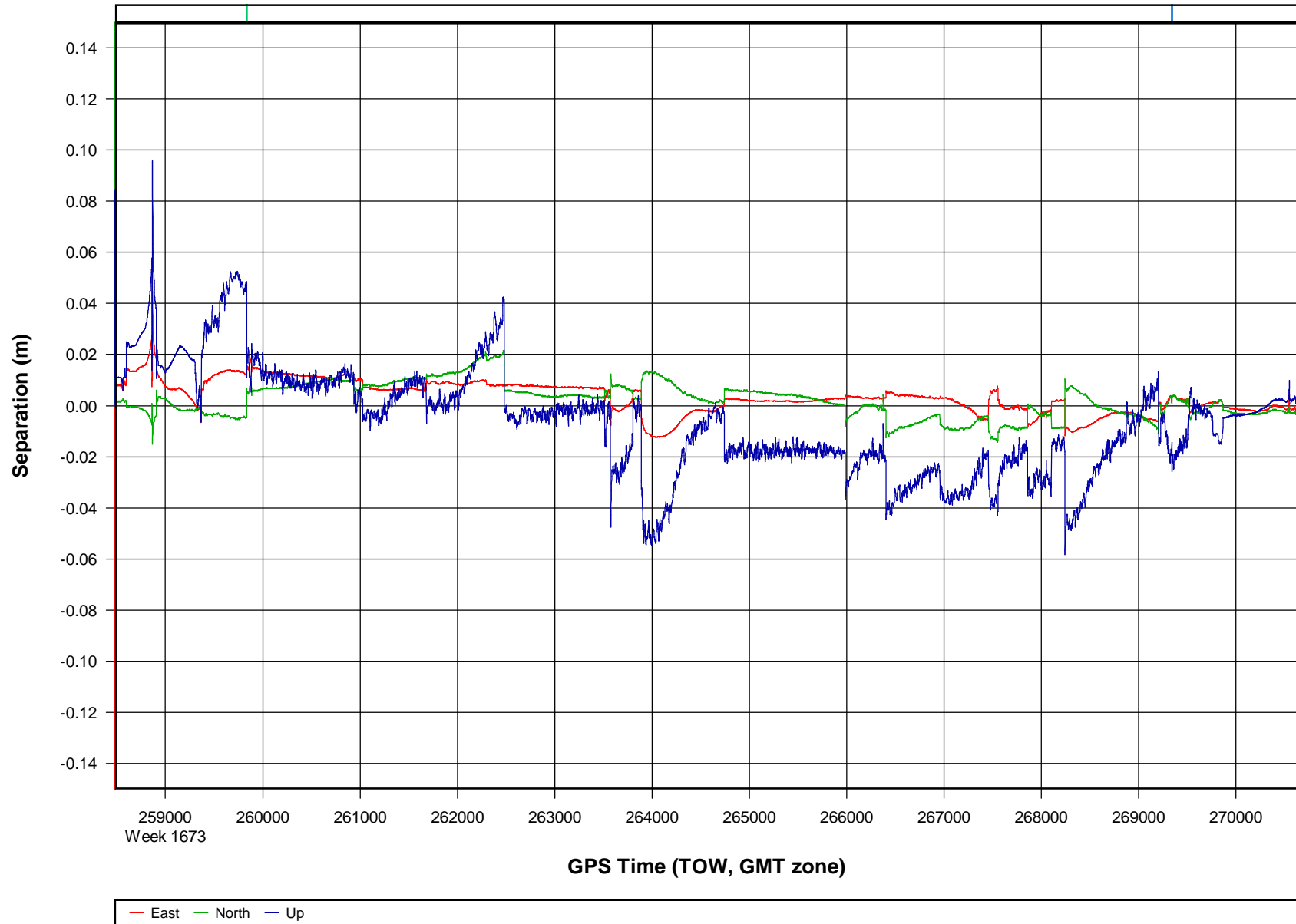


Combined - Map Run (2)

Geographic, DMS



o112031b [Combined] - Forward/Reverse or Combined Separation Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA\2_Operations\6_Missions\o112031b\3_Processed
\GPS\o112031b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	121777
No processed position:	109611
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0180 (m)
C/A Code:	0.68 (m)
L1 Doppler:	0.032 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.008 (m)
North:	0.008 (m)
Height:	0.022 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (12161 occurrences):

East:	0.007 (m)
North:	0.007 (m)
Height:	0.021 (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 %

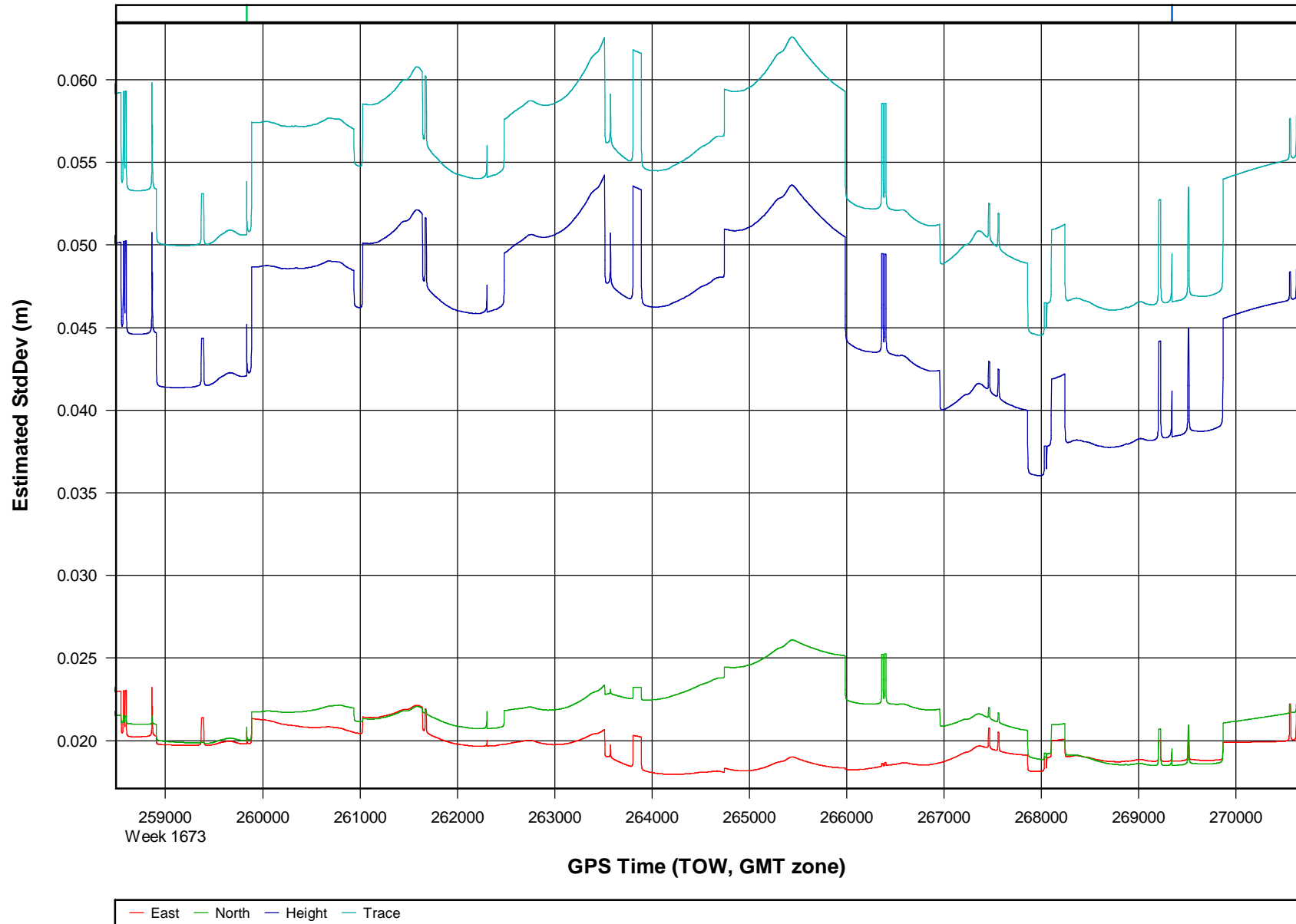
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol:	0.0 %
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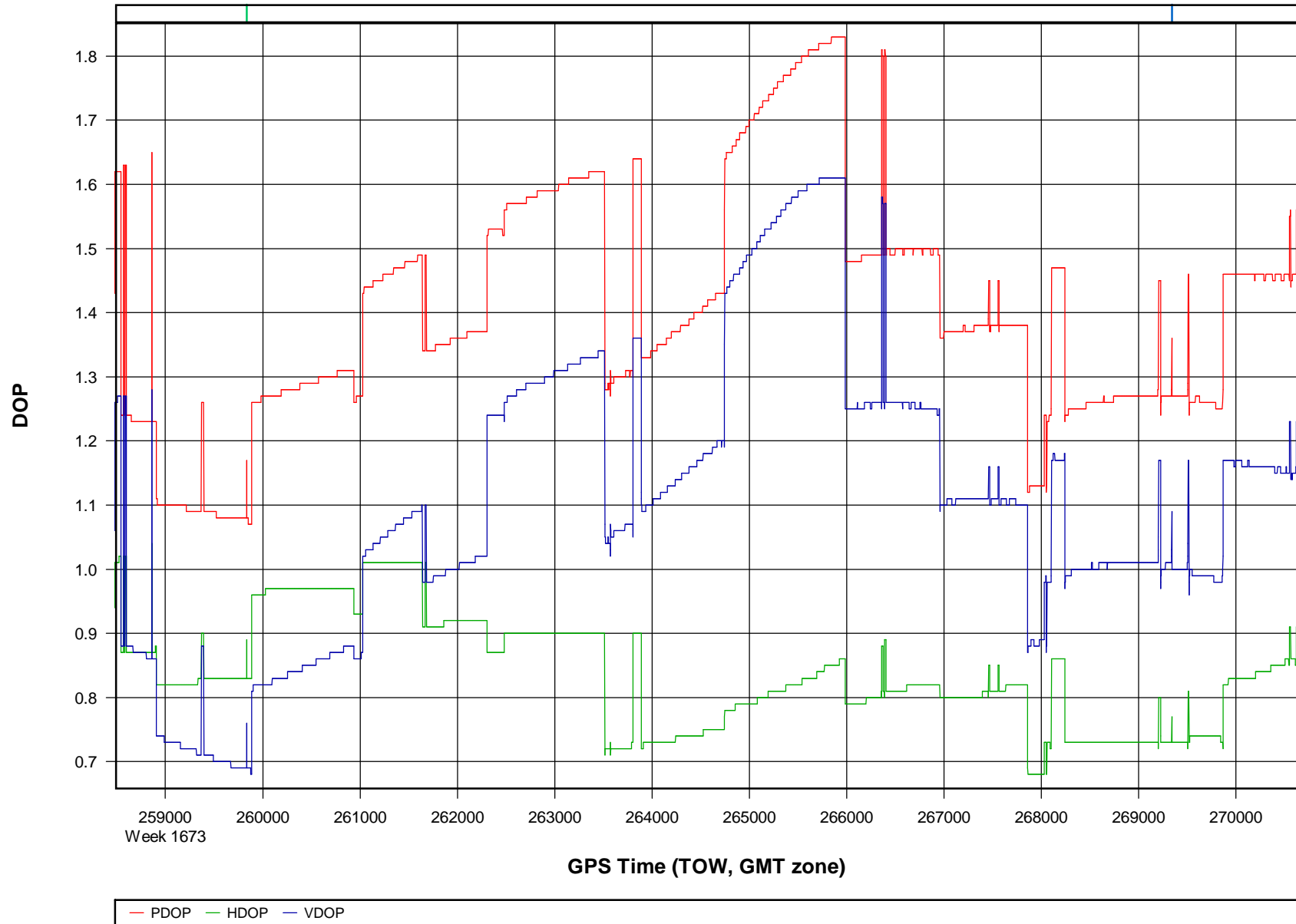
Baseline Distances:

Maximum:	40.443 (km)
Minimum:	1.109 (km)
Average:	17.014 (km)
First Epoch:	14.034 (km)
Last Epoch:	13.976 (km)

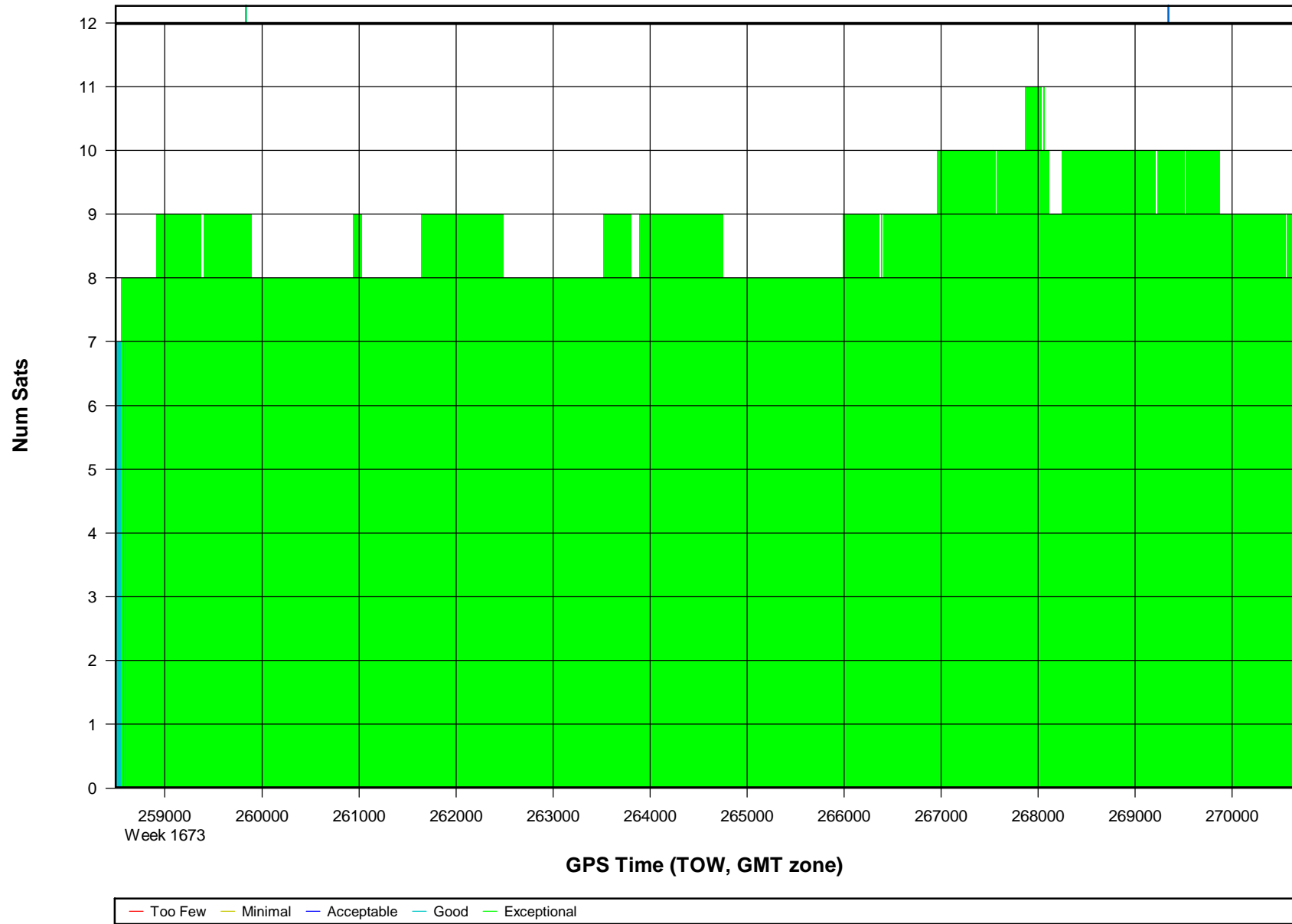
o112031b [Combined] - Estimated Position Accuracy Plot

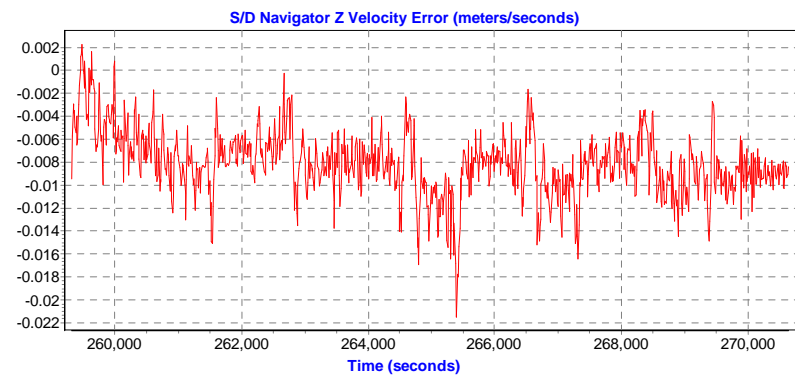
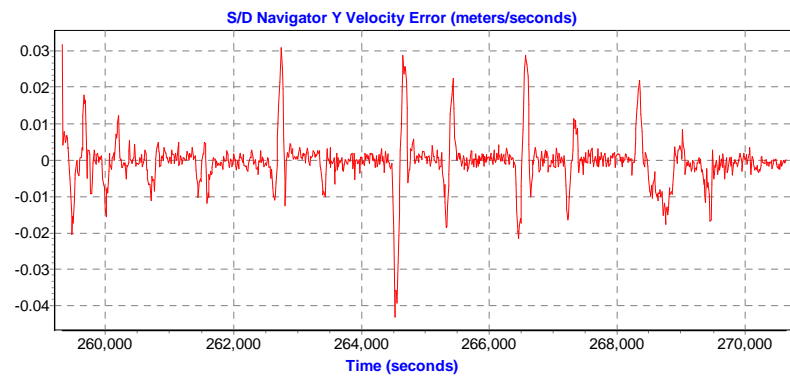
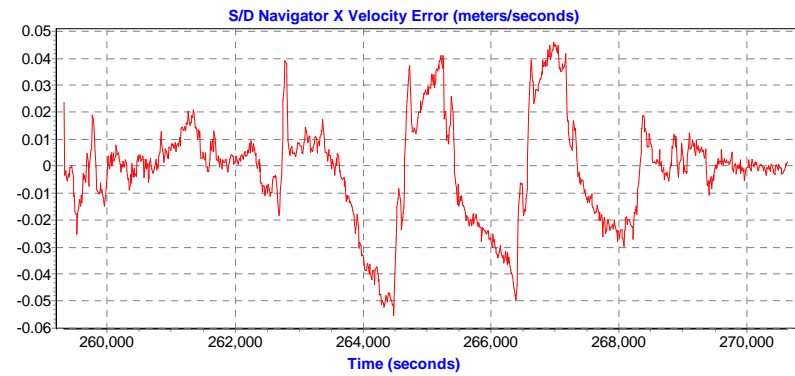
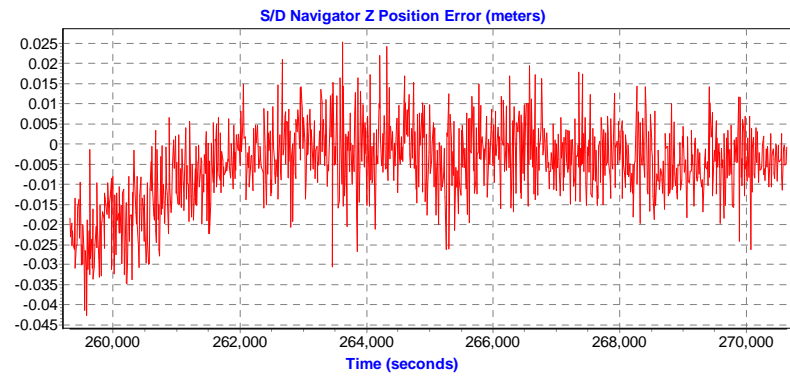
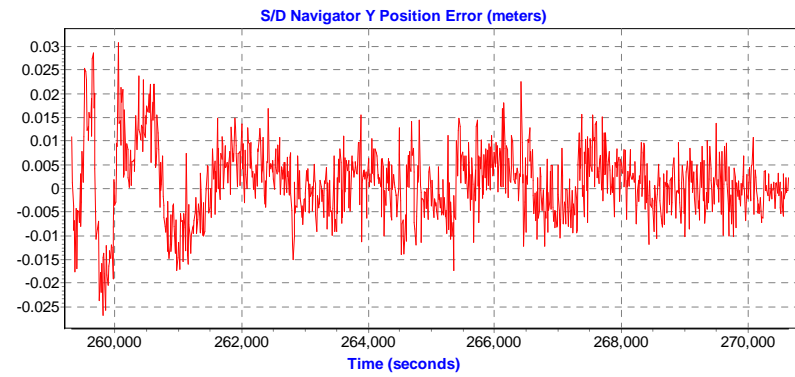
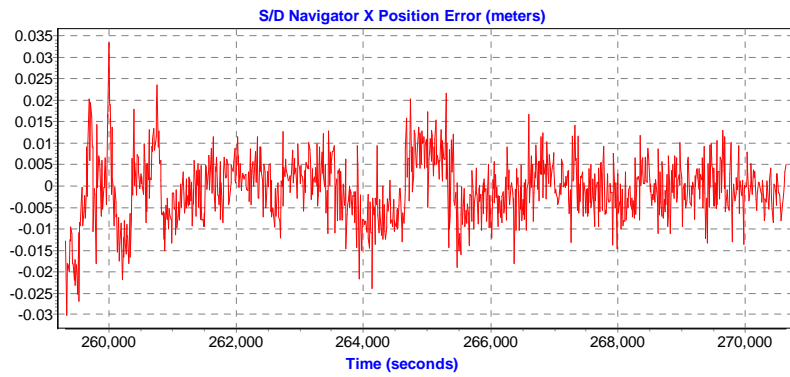


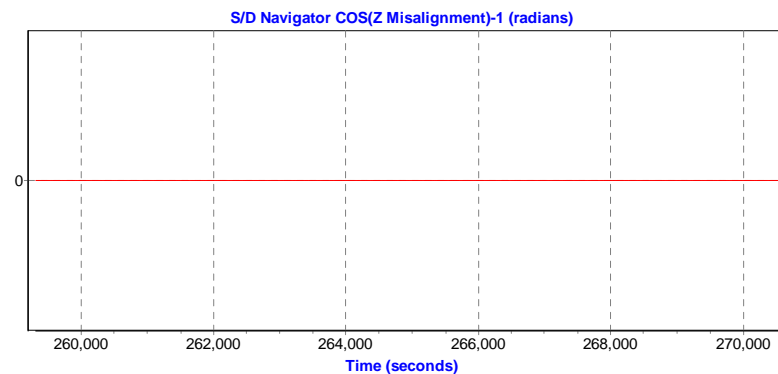
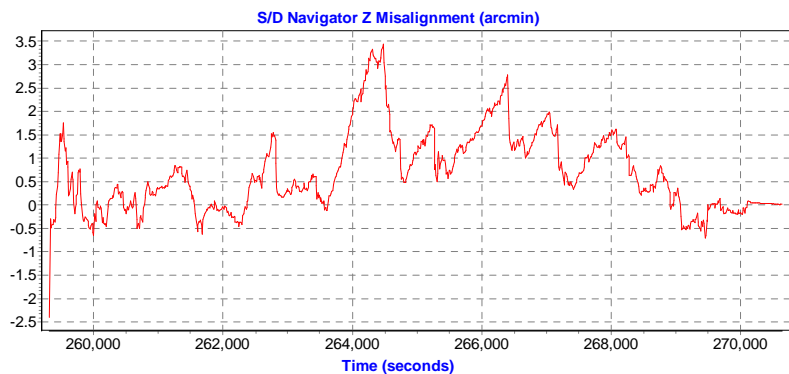
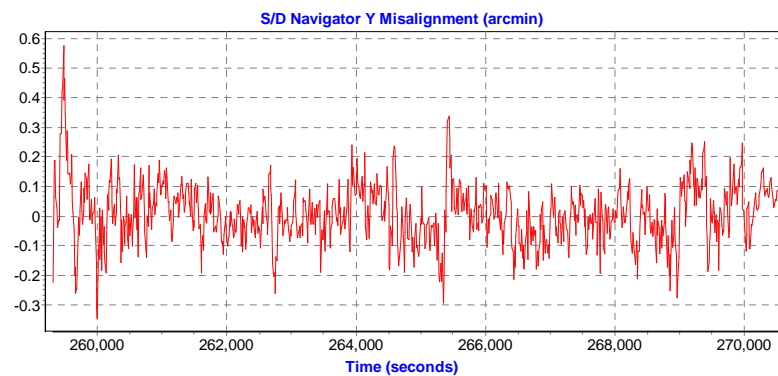
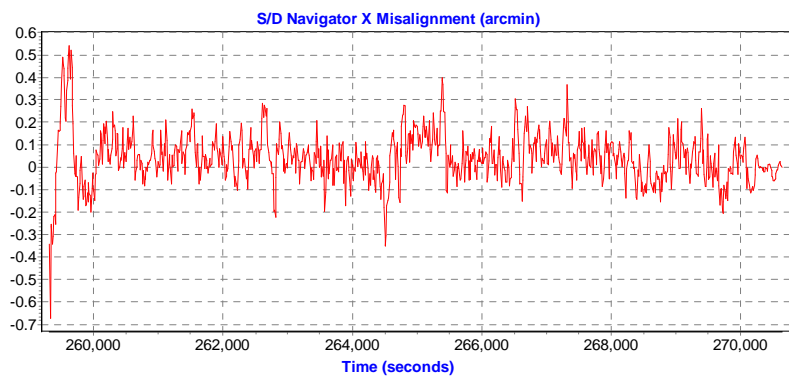
o112031b [Combined] - PDOP, HDOP, VDOP Plots



o112031b [Combined] - Number of Satellites Bar Plot





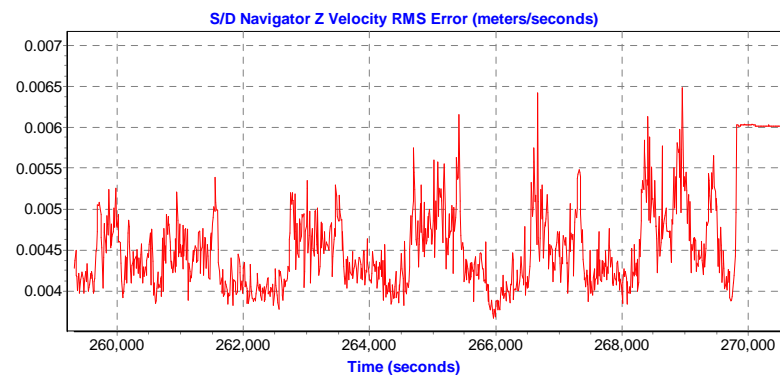
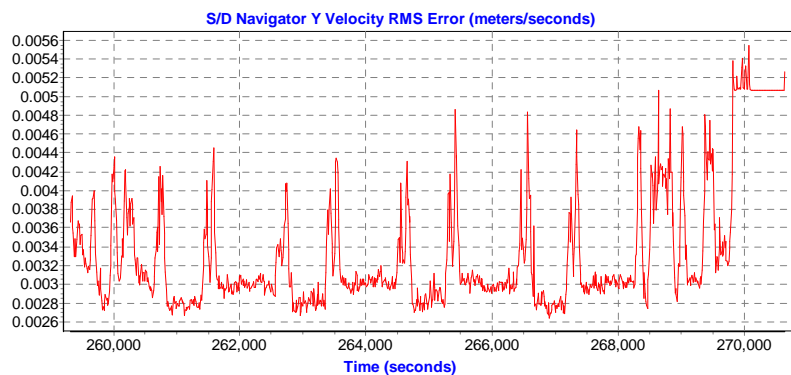
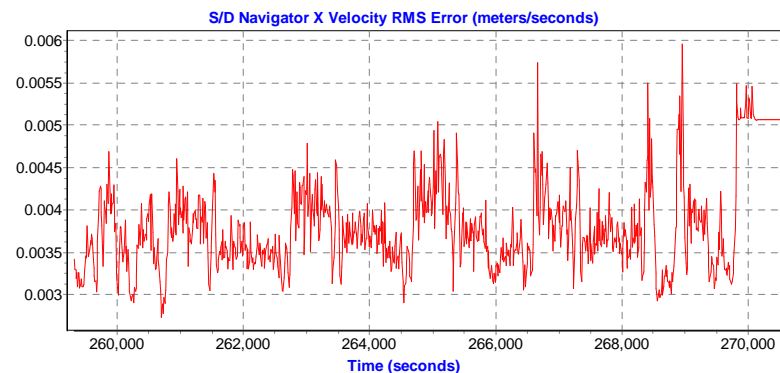
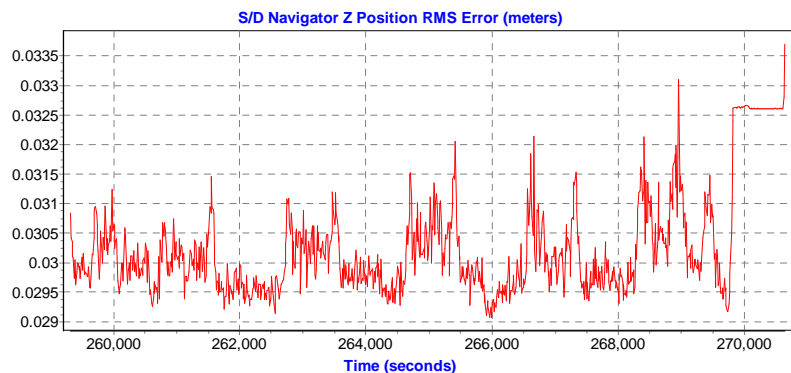
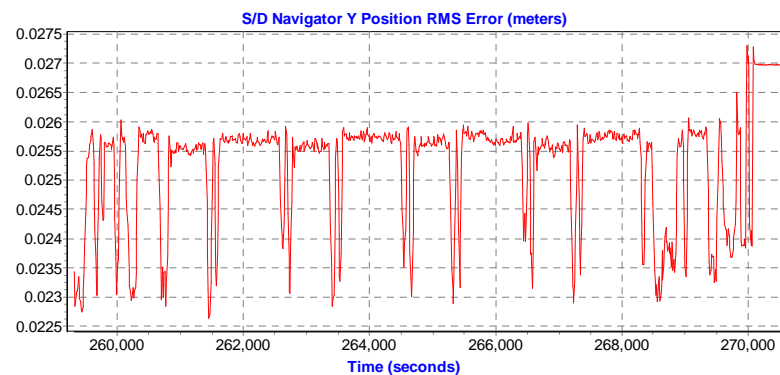
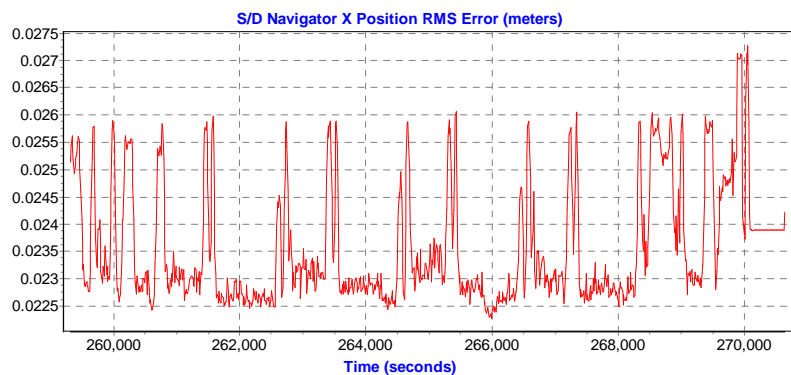


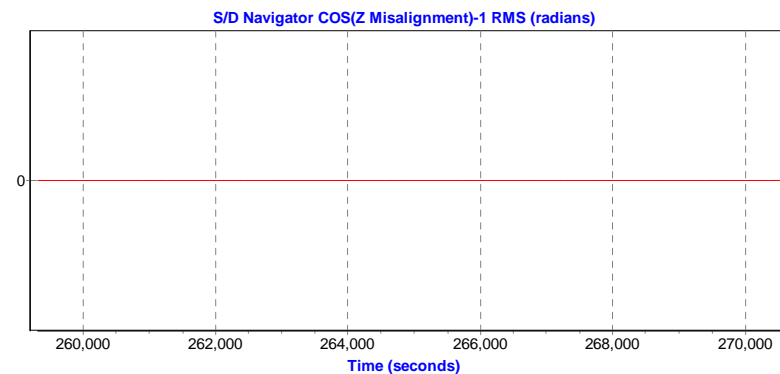
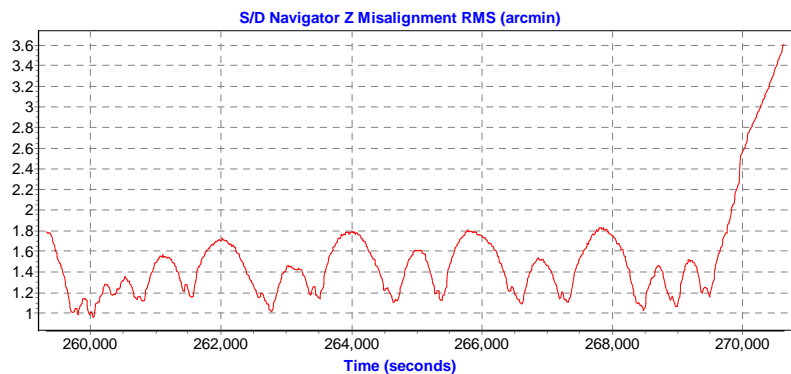
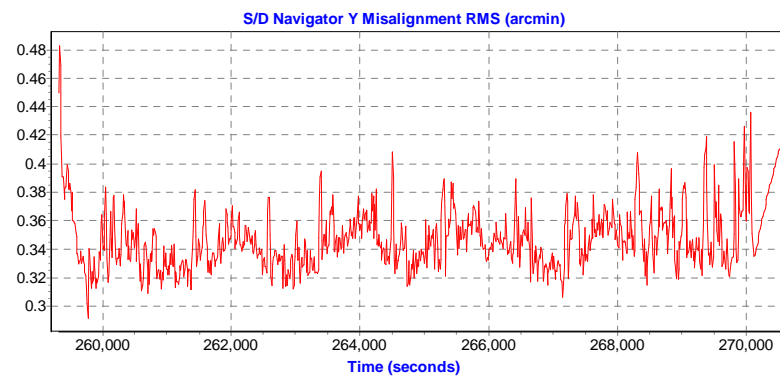
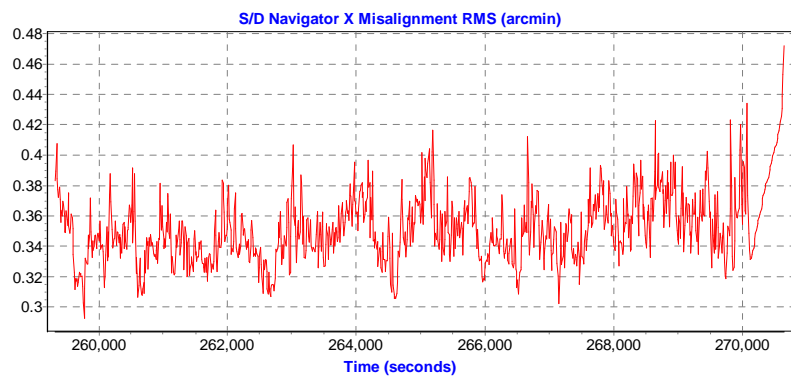
RMS Estimation Uncertainties

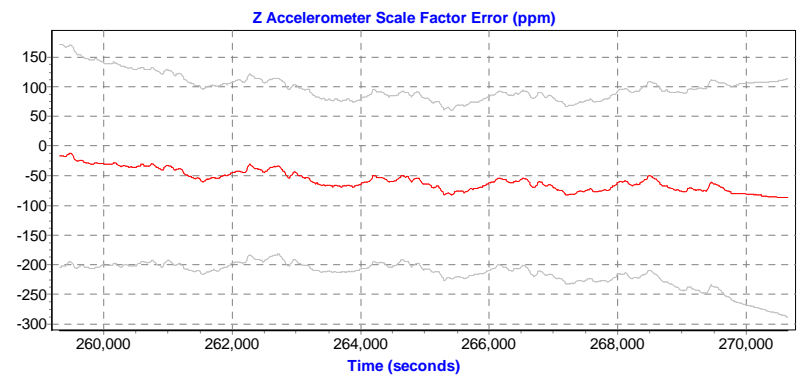
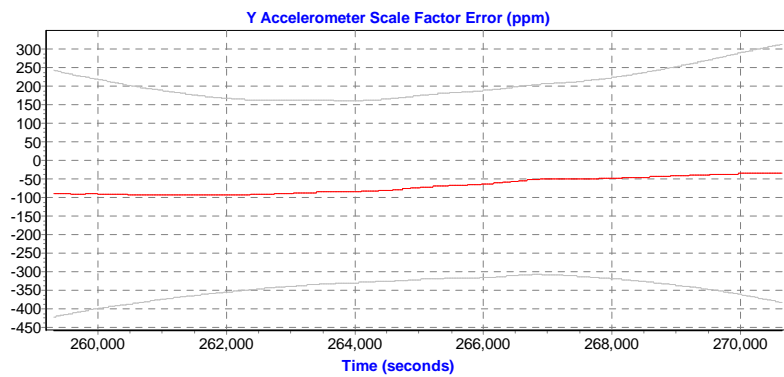
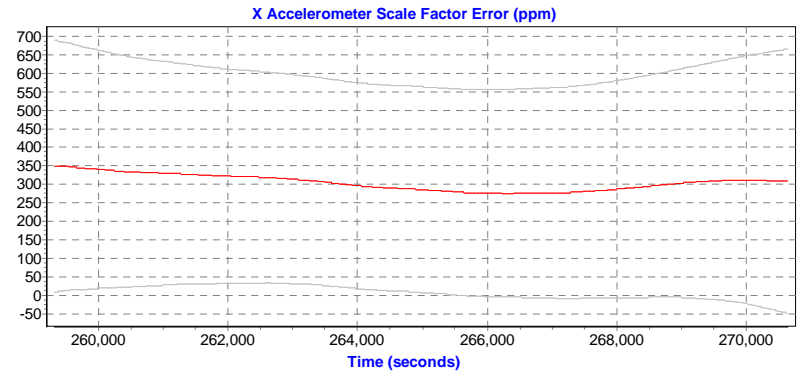
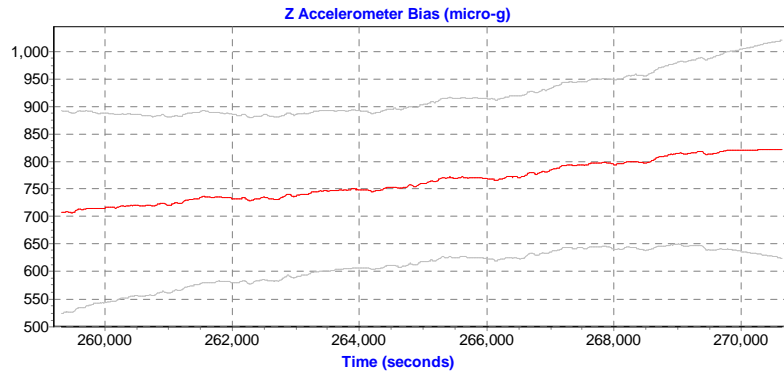
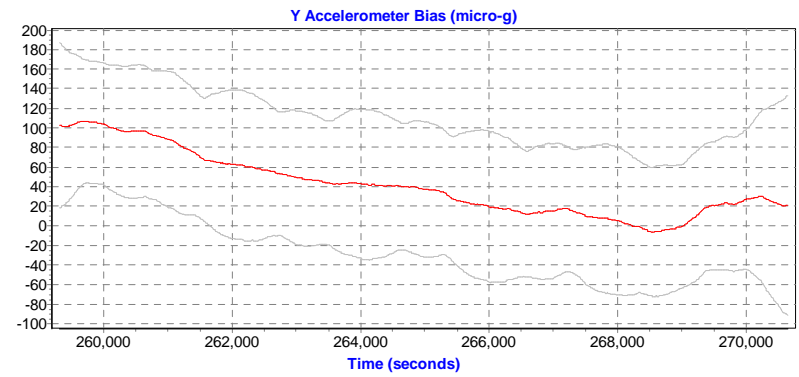
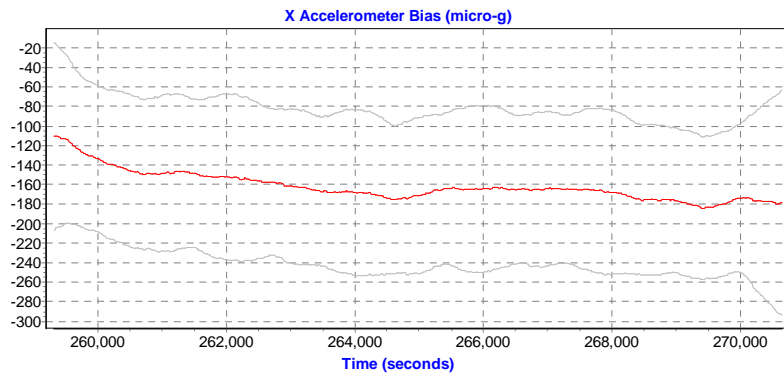
POSPac Version 4.3

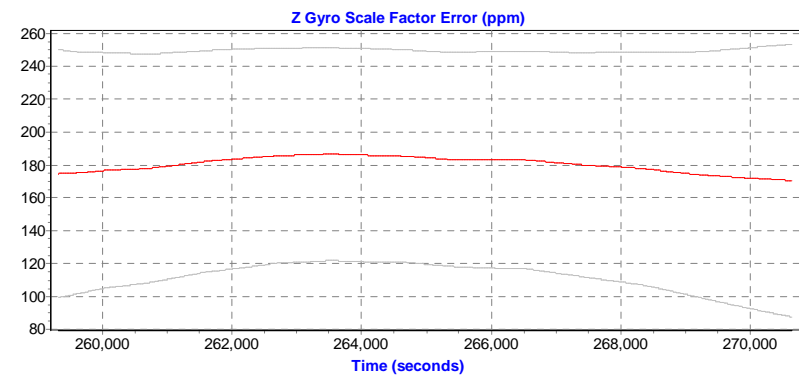
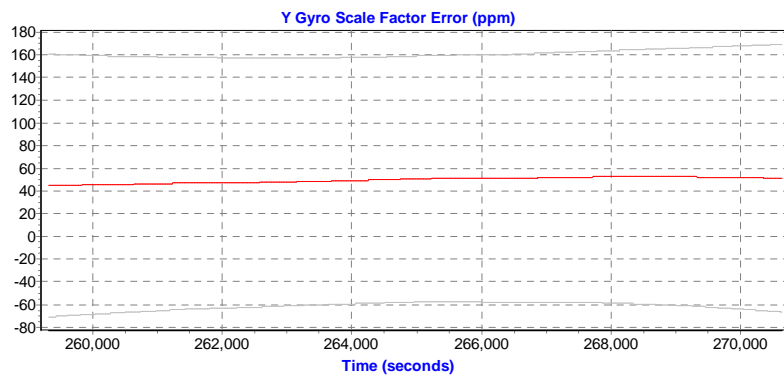
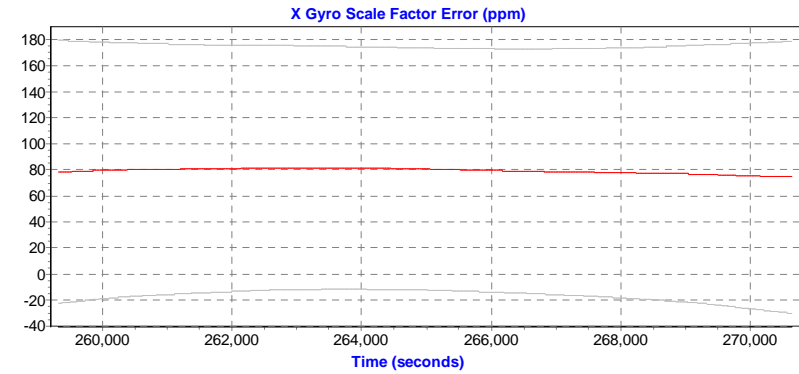
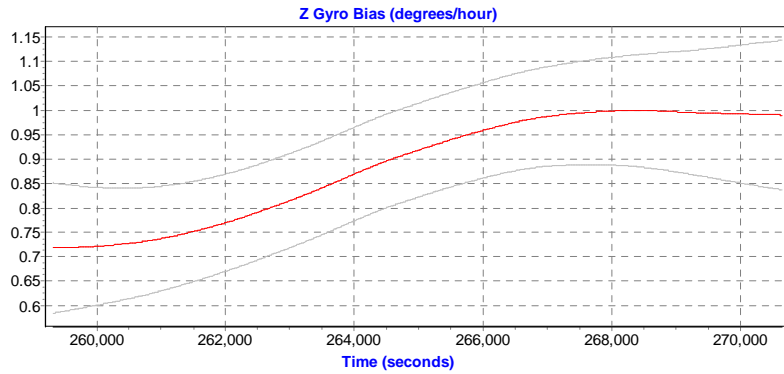
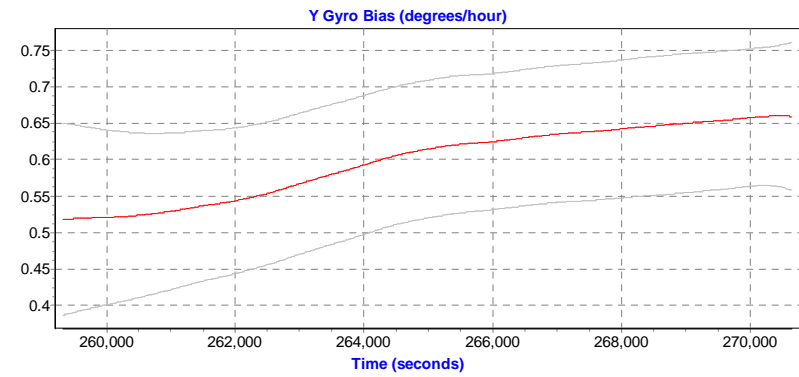
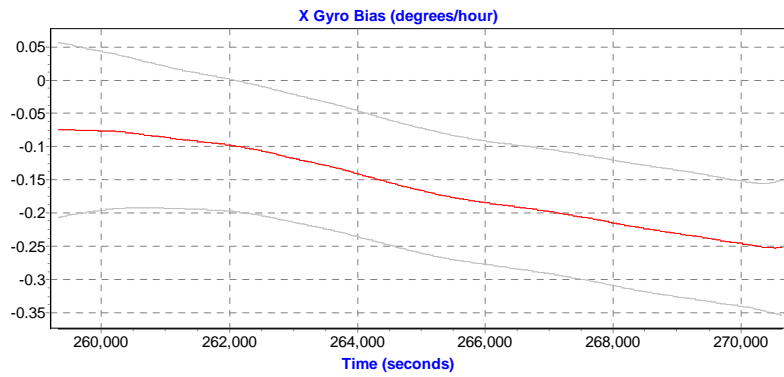
- 1 -

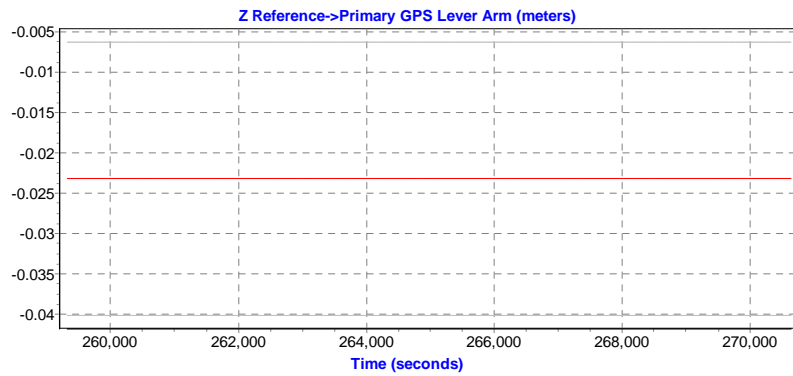
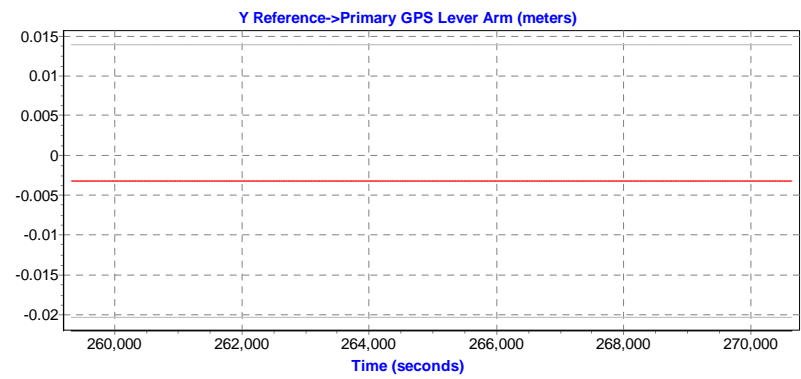
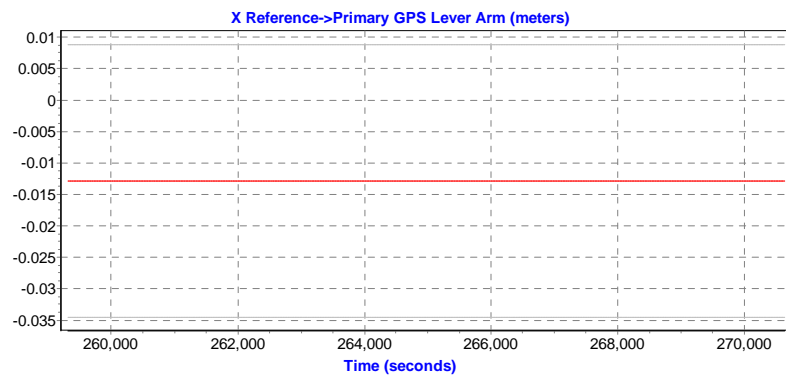
2/1/2012 - 4:04:57 PM





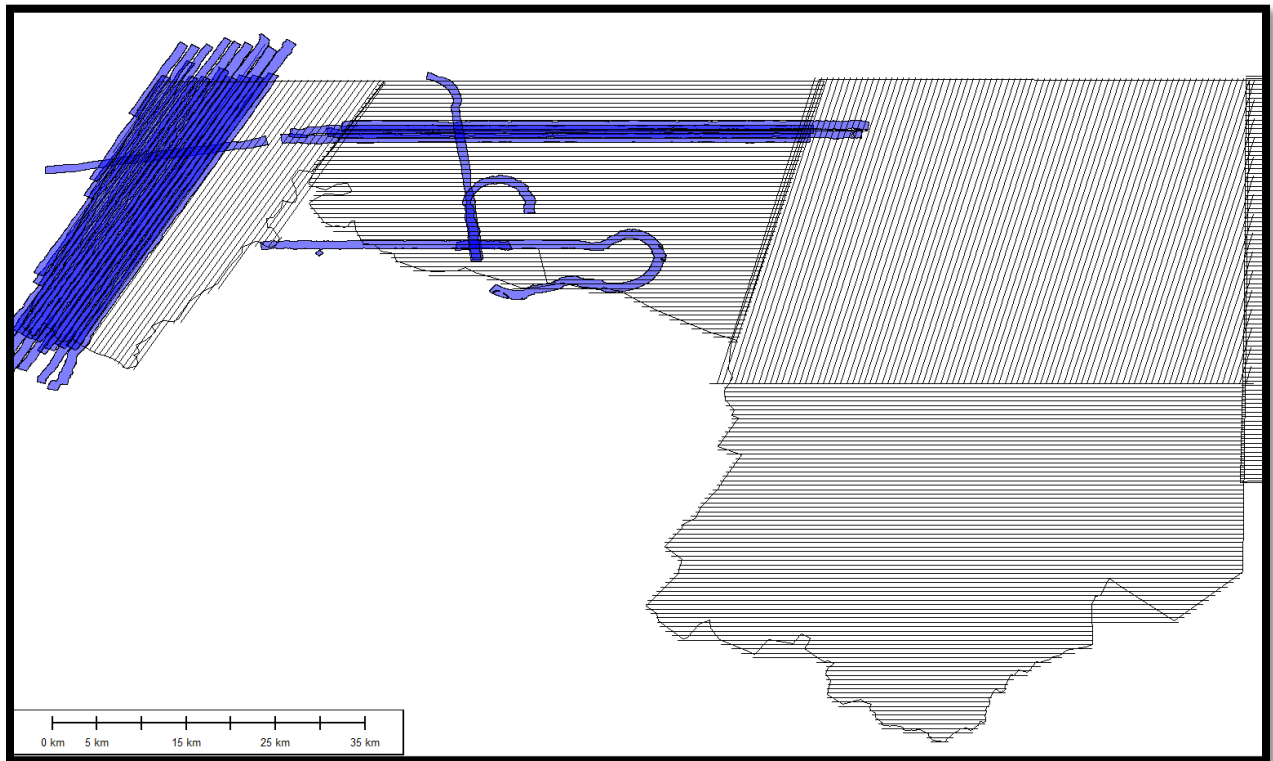






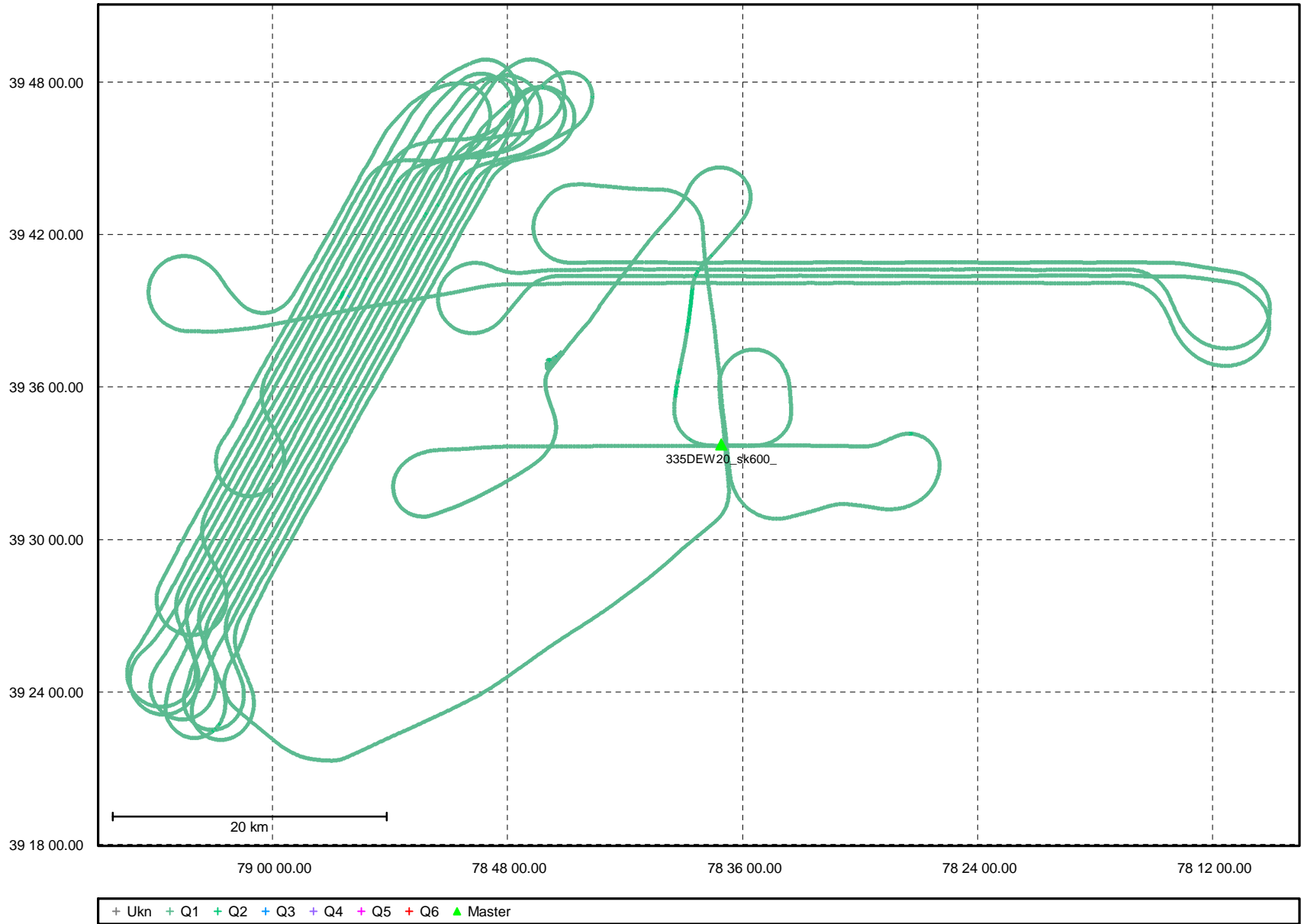
Mission: o112034a

February 3, 2012

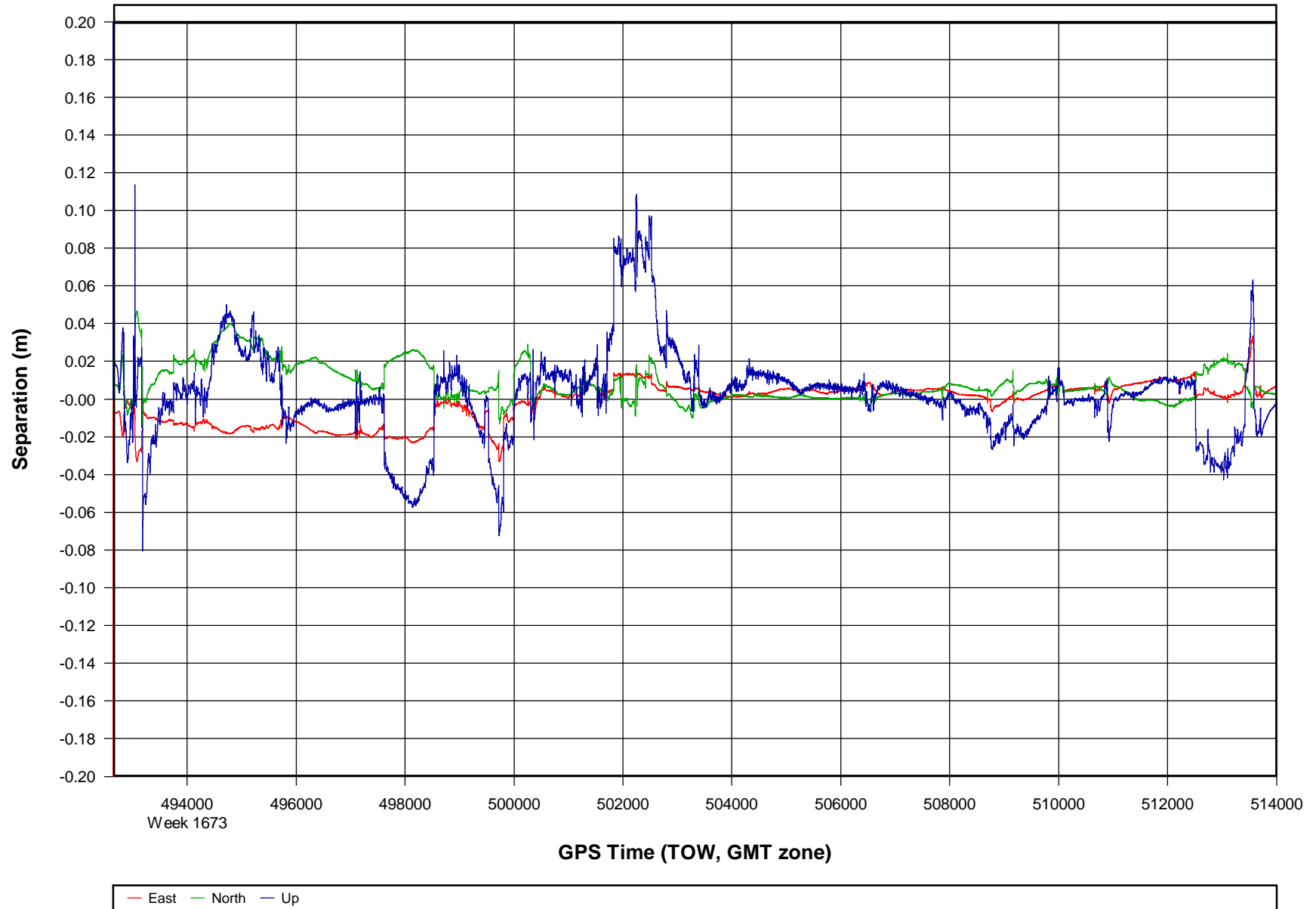


Combined - Map Run (2)

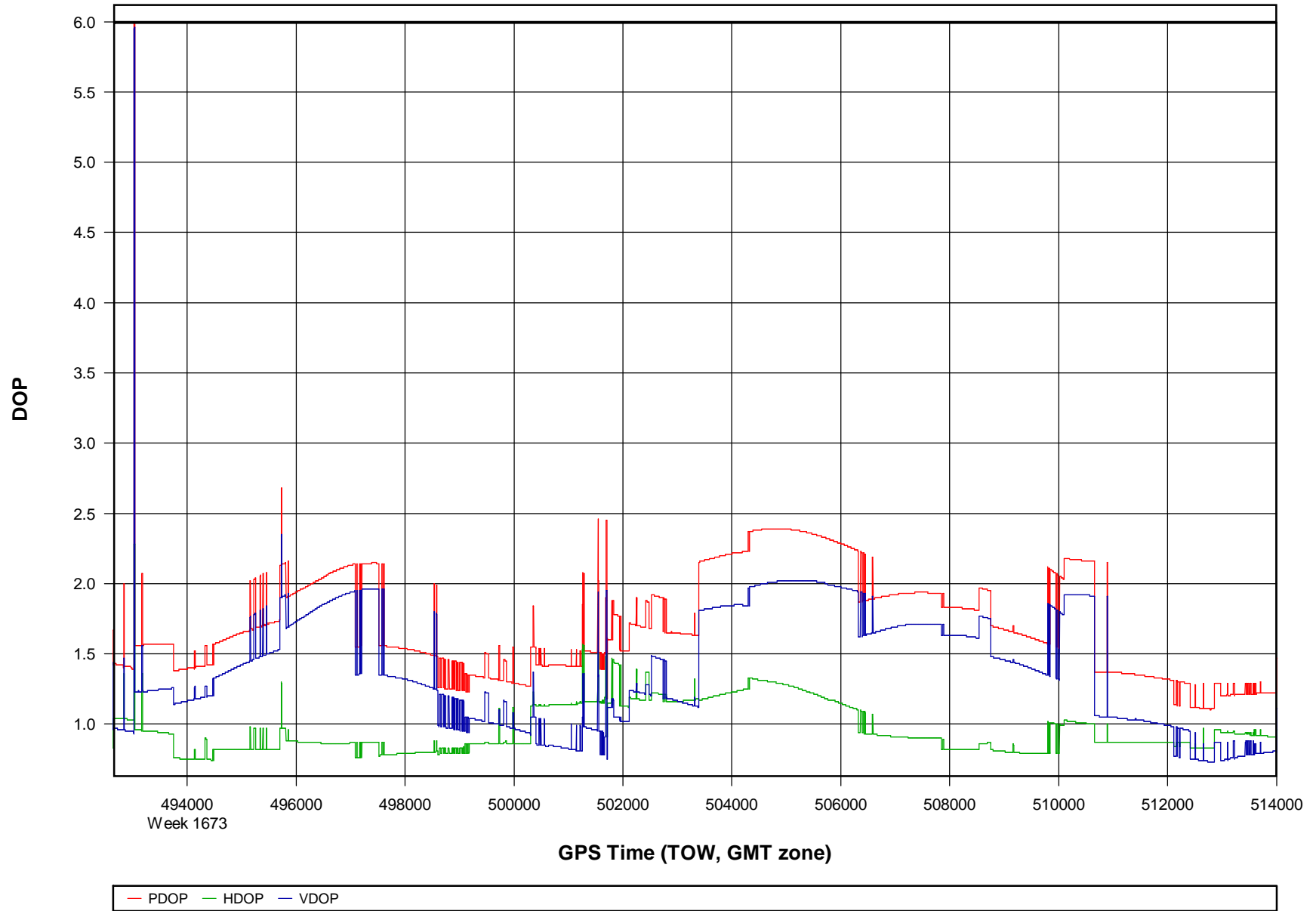
Geographic, DMS



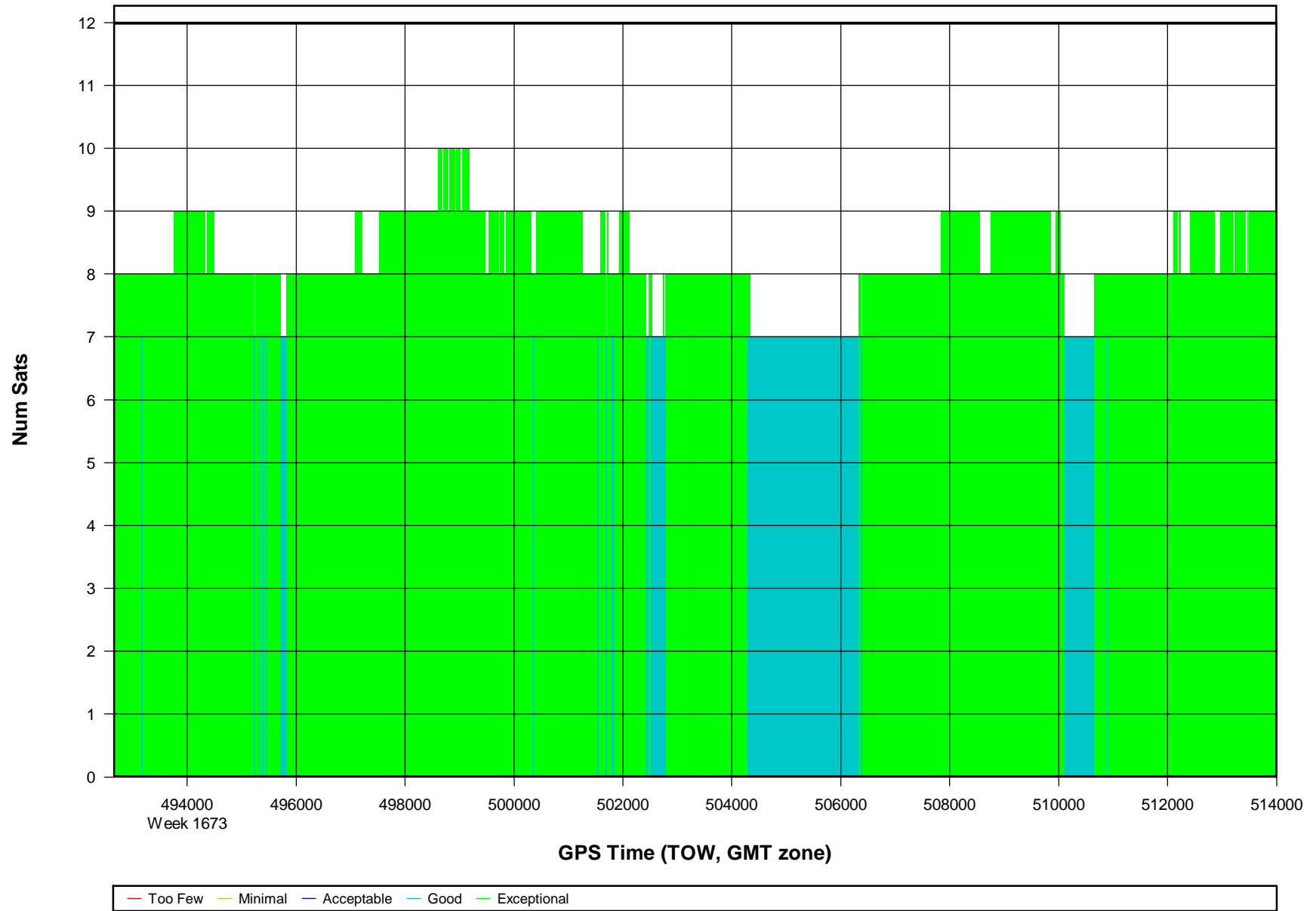
o112034a [Combined] - Forward/Reverse or Combined Separation Plot



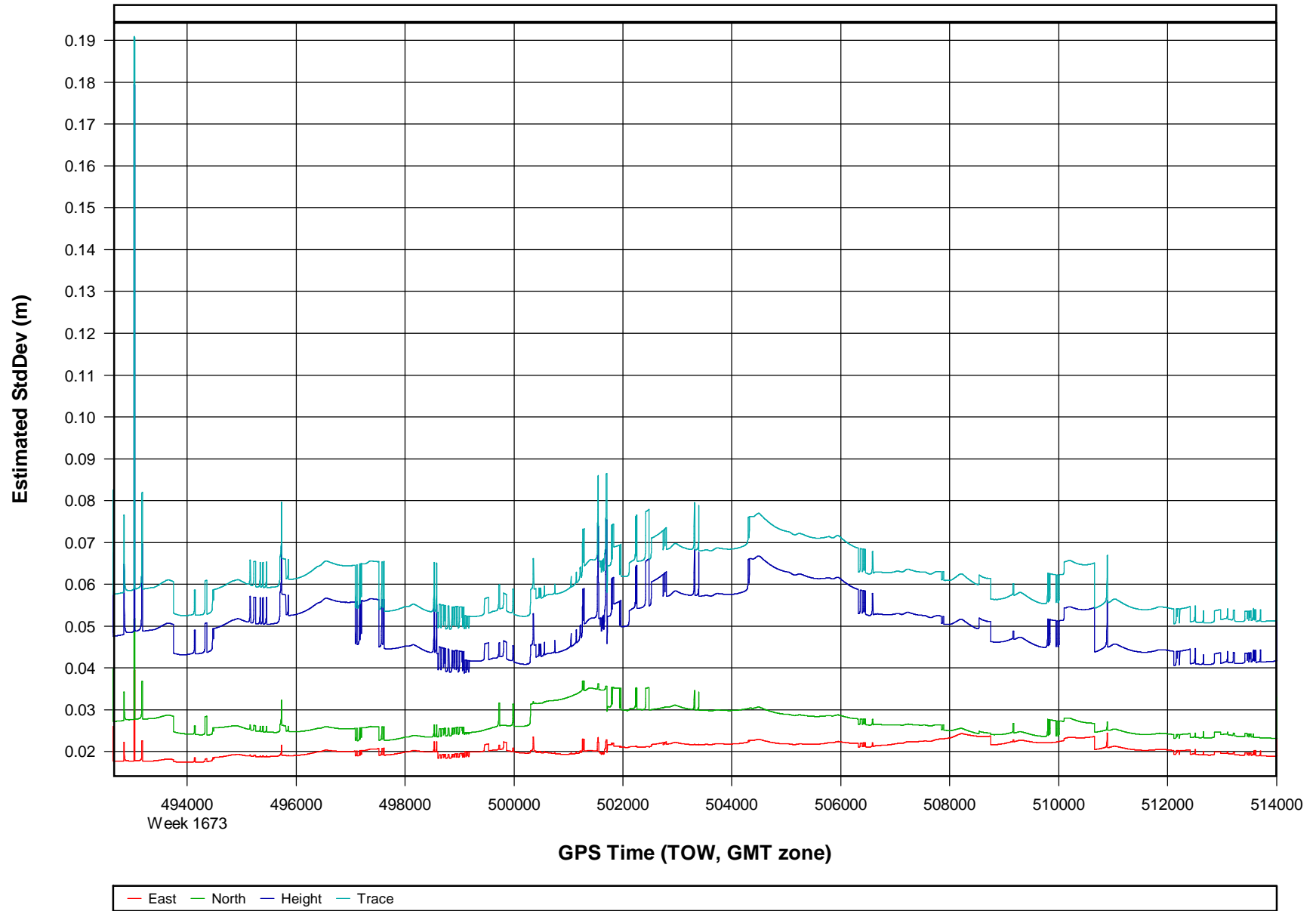
o112034a [Combined] - PDOP, HDOP, VDOP Plots



o112034a [Combined] - Number of Satellites Bar Plot



o112034a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112034a\3_Processed\GPS\o112034a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	213795
No processed position:	192439
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0183 (m)
C/A Code:	0.78 (m)
L1 Doppler:	0.036 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.011 (m)
North:	0.015 (m)
Height:	0.026 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (12 occurrences):

East:	0.005 (m)
North:	0.005 (m)
Height:	0.004 (m)

Quality Number Percentages:

Q 1:	99.3 %
Q 2:	0.6 %
Q 3:	0.0 %
Q 4:	0.0 %
Q 5:	0.0 %
Q 6:	0.0 %

Position Standard Deviation Percentages:

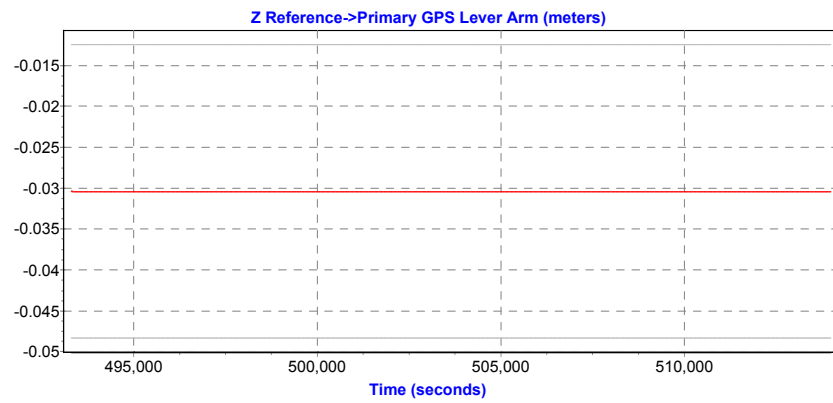
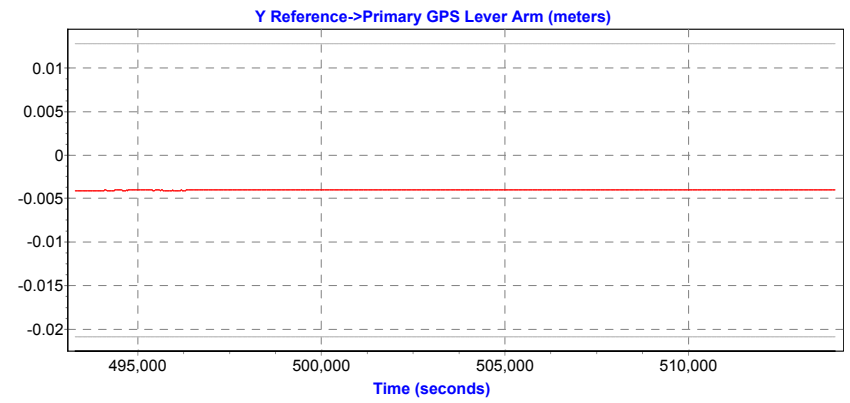
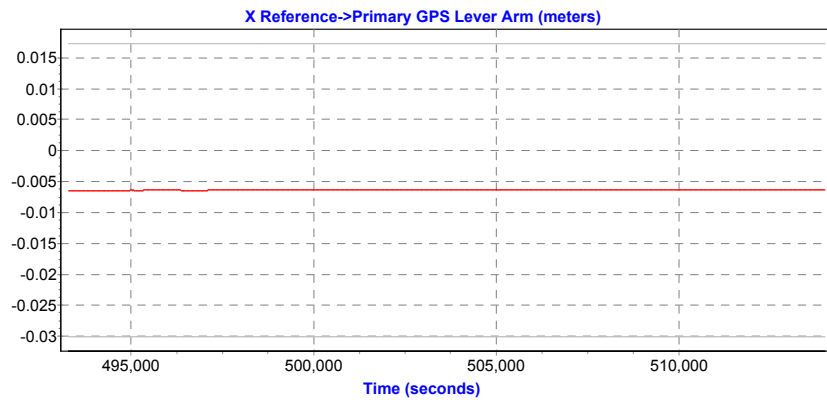
0.00 - 0.10 m:	99.9 %
0.10 - 0.30 m:	0.1 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

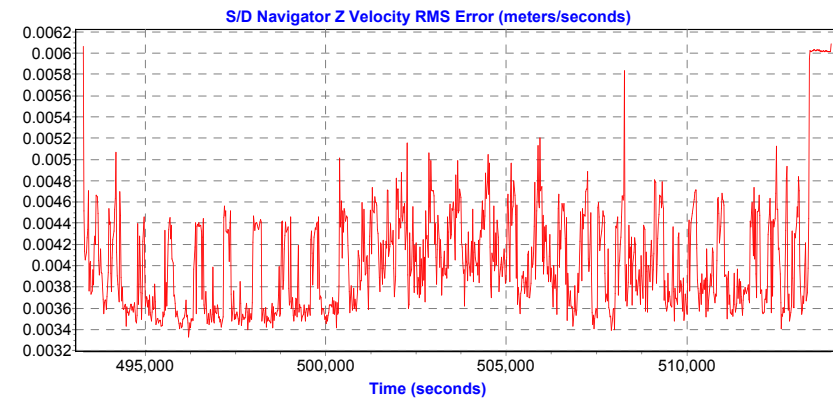
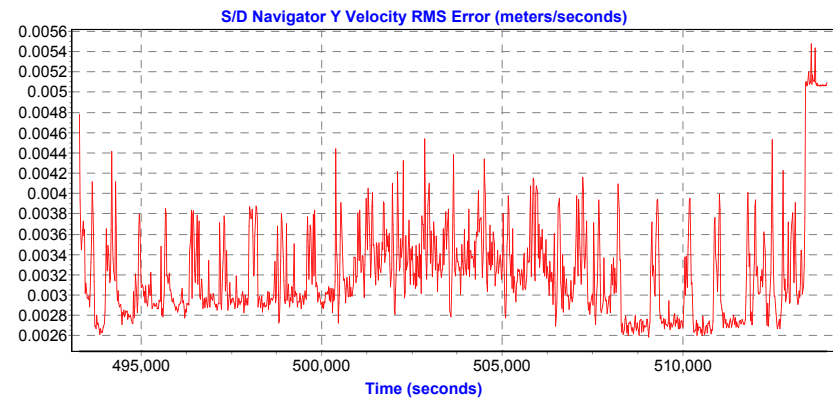
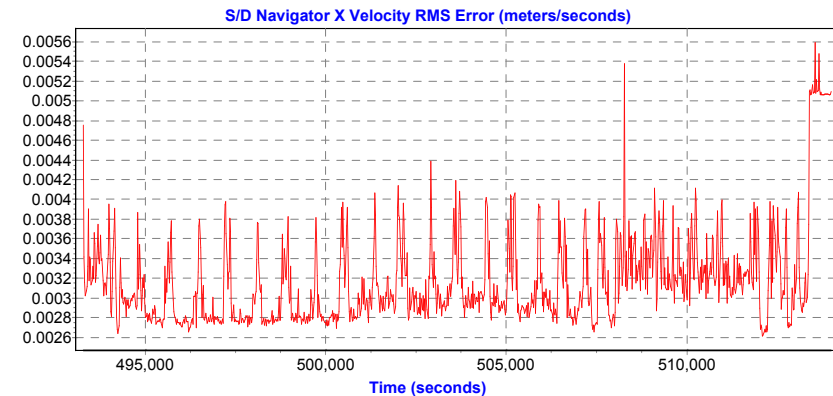
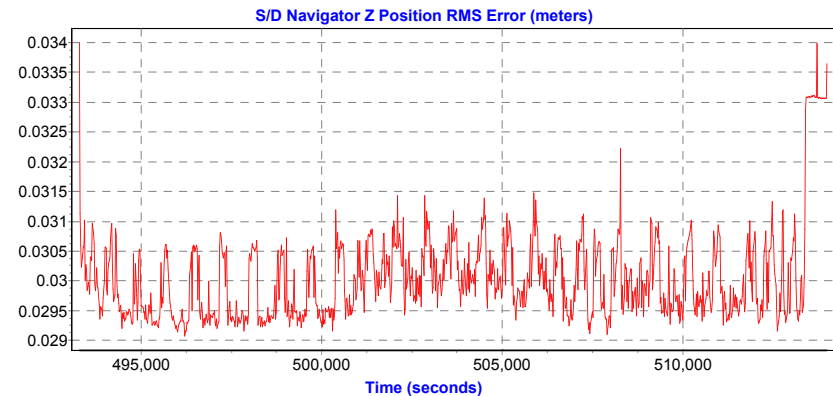
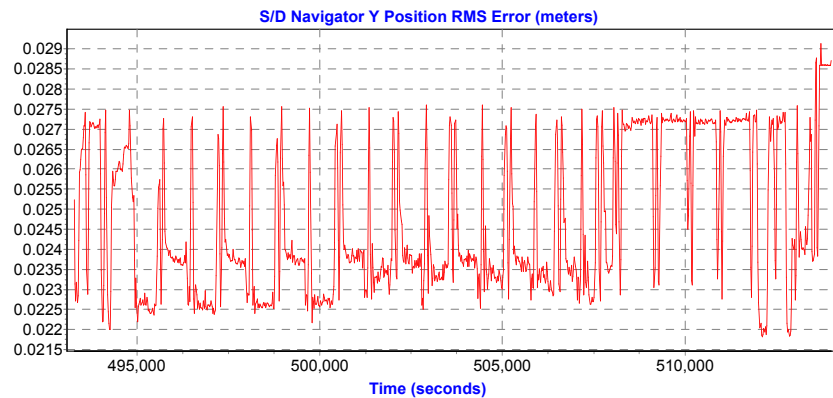
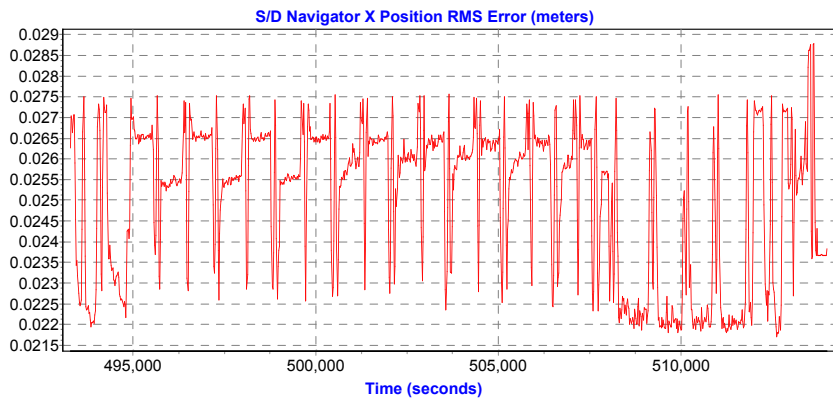
Percentages of epochs with DD_DOP over 10.00:

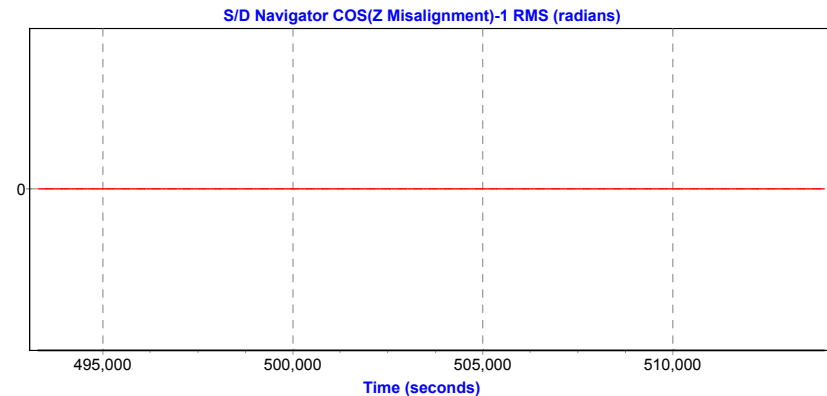
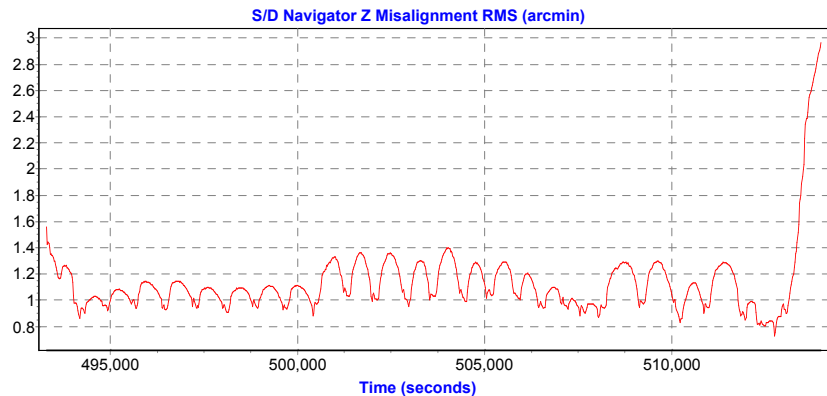
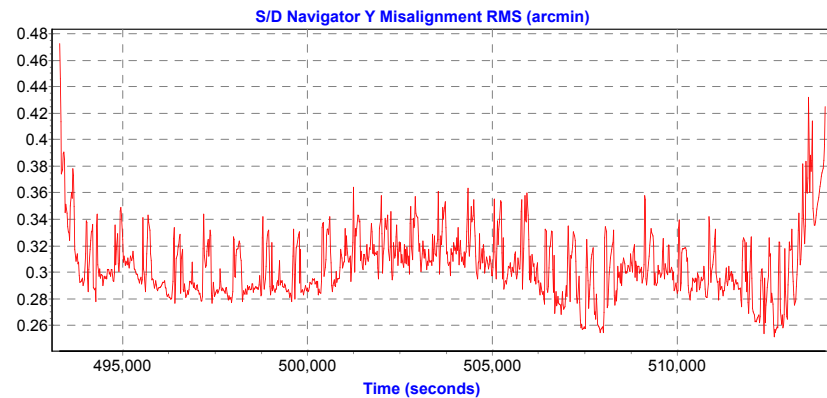
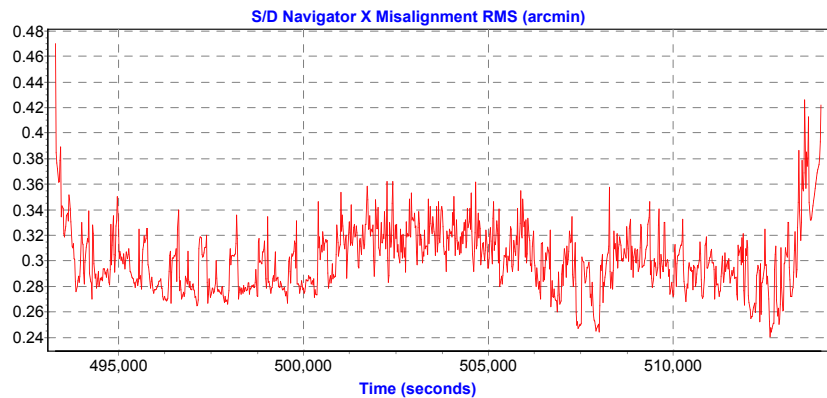
DOP over Tol:	0.1 %
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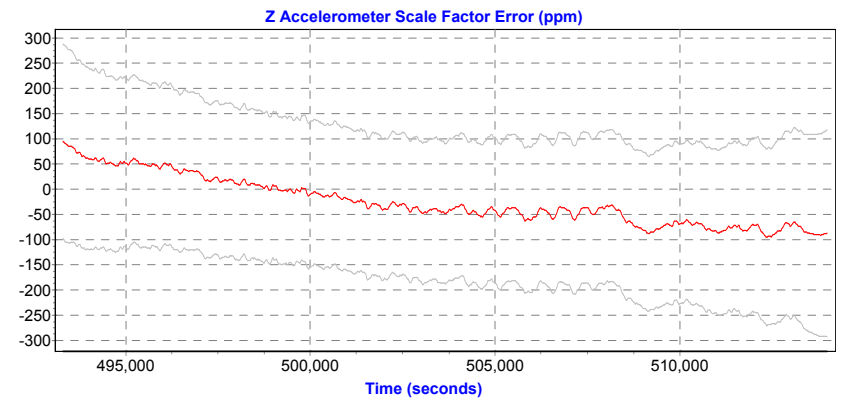
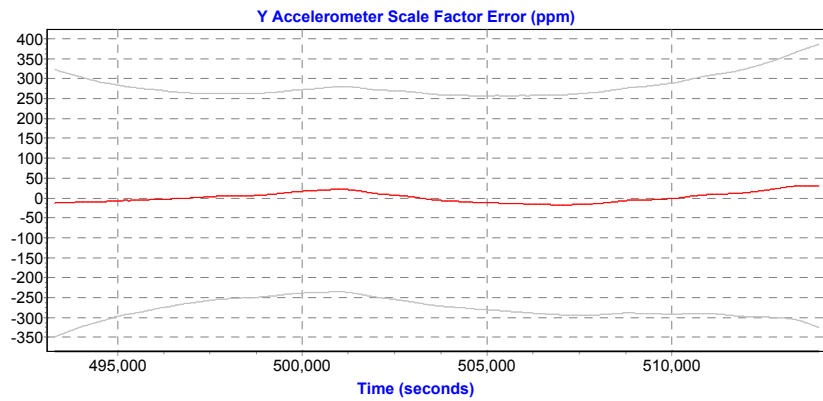
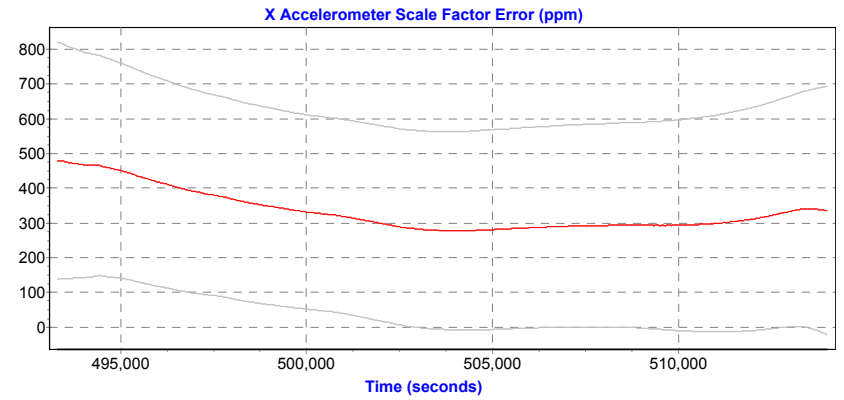
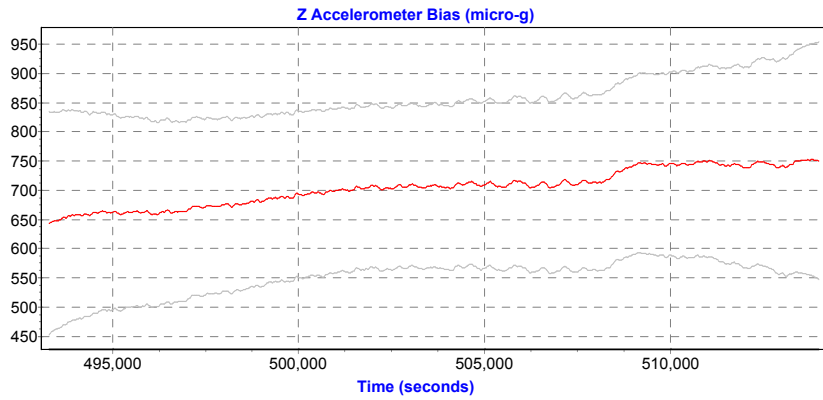
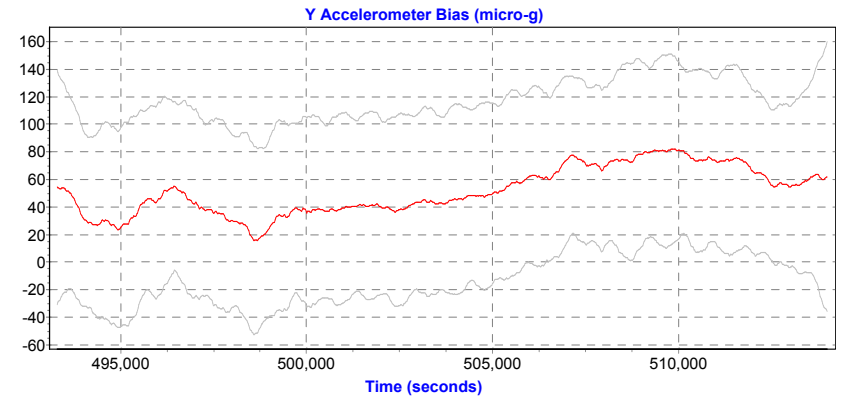
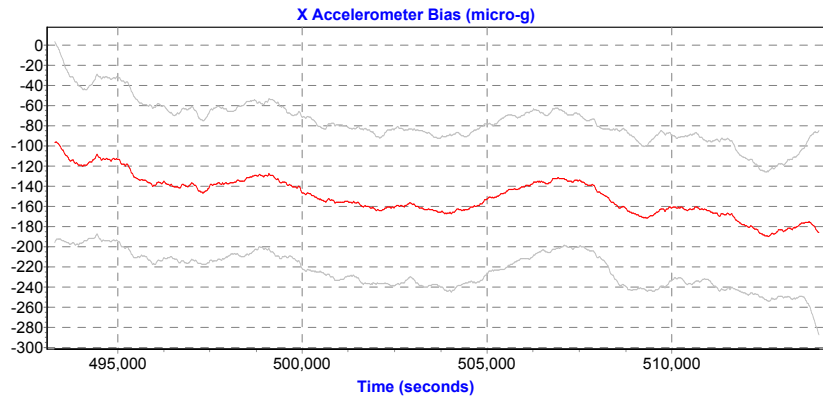
Baseline Distances:

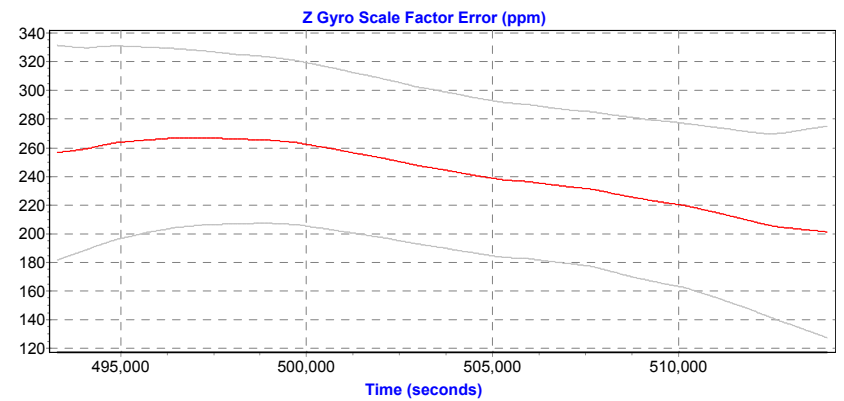
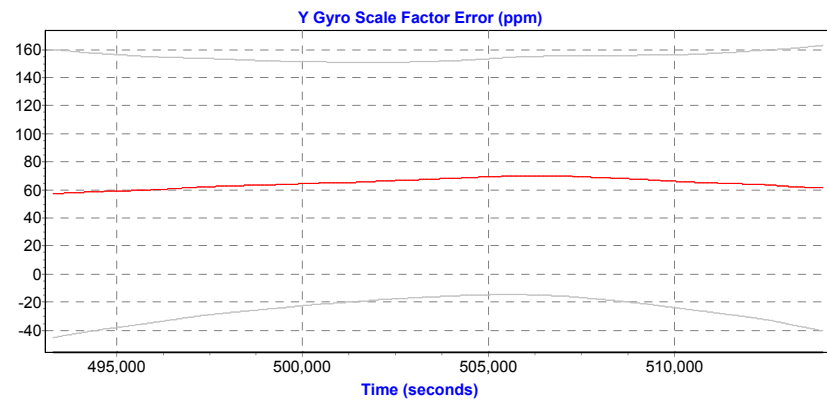
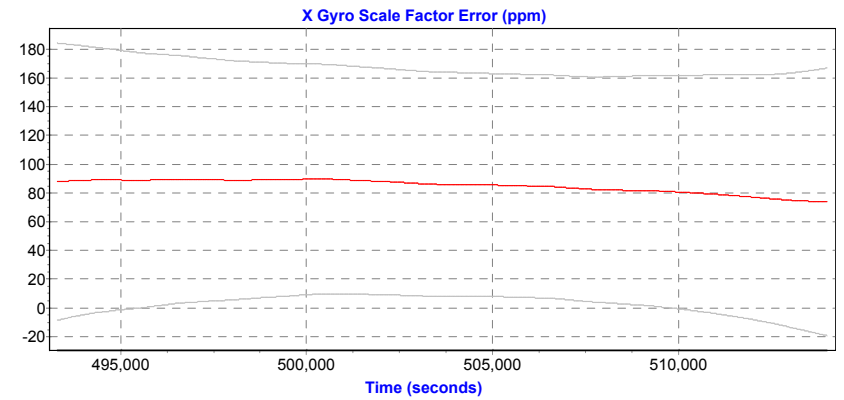
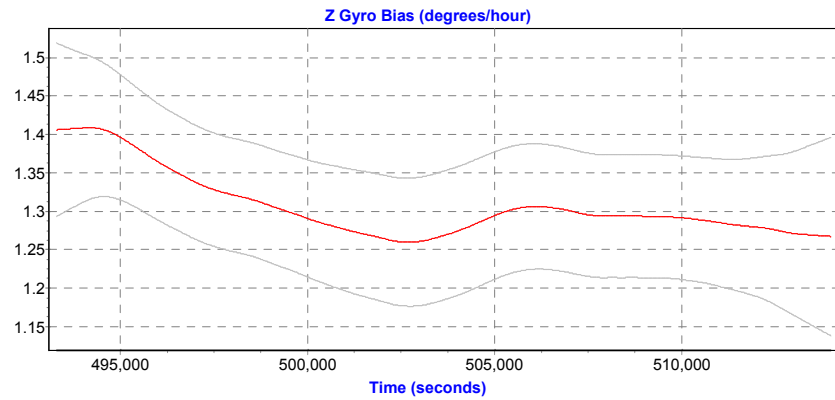
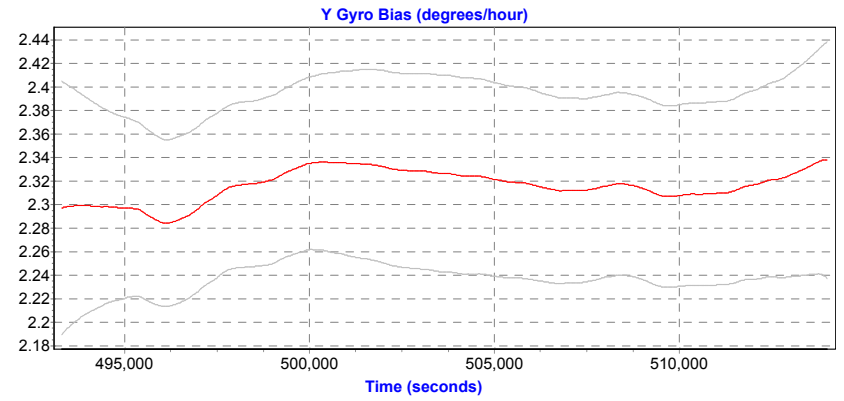
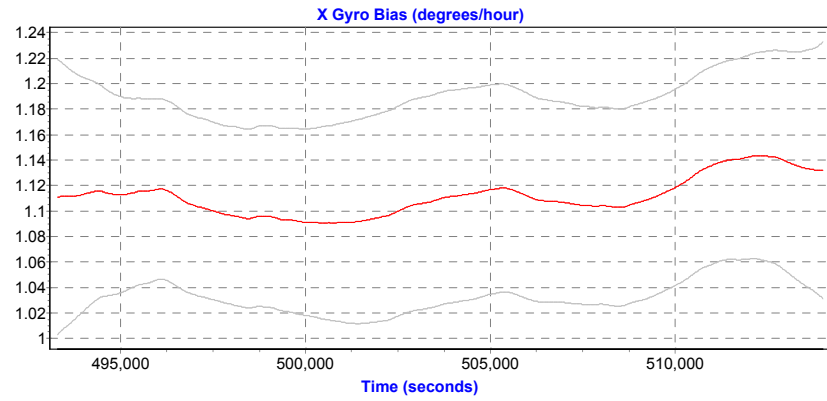
Maximum:	46.757 (km)
Minimum:	1.130 (km)
Average:	27.134 (km)
First Epoch:	14.042 (km)
Last Epoch:	13.982 (km)











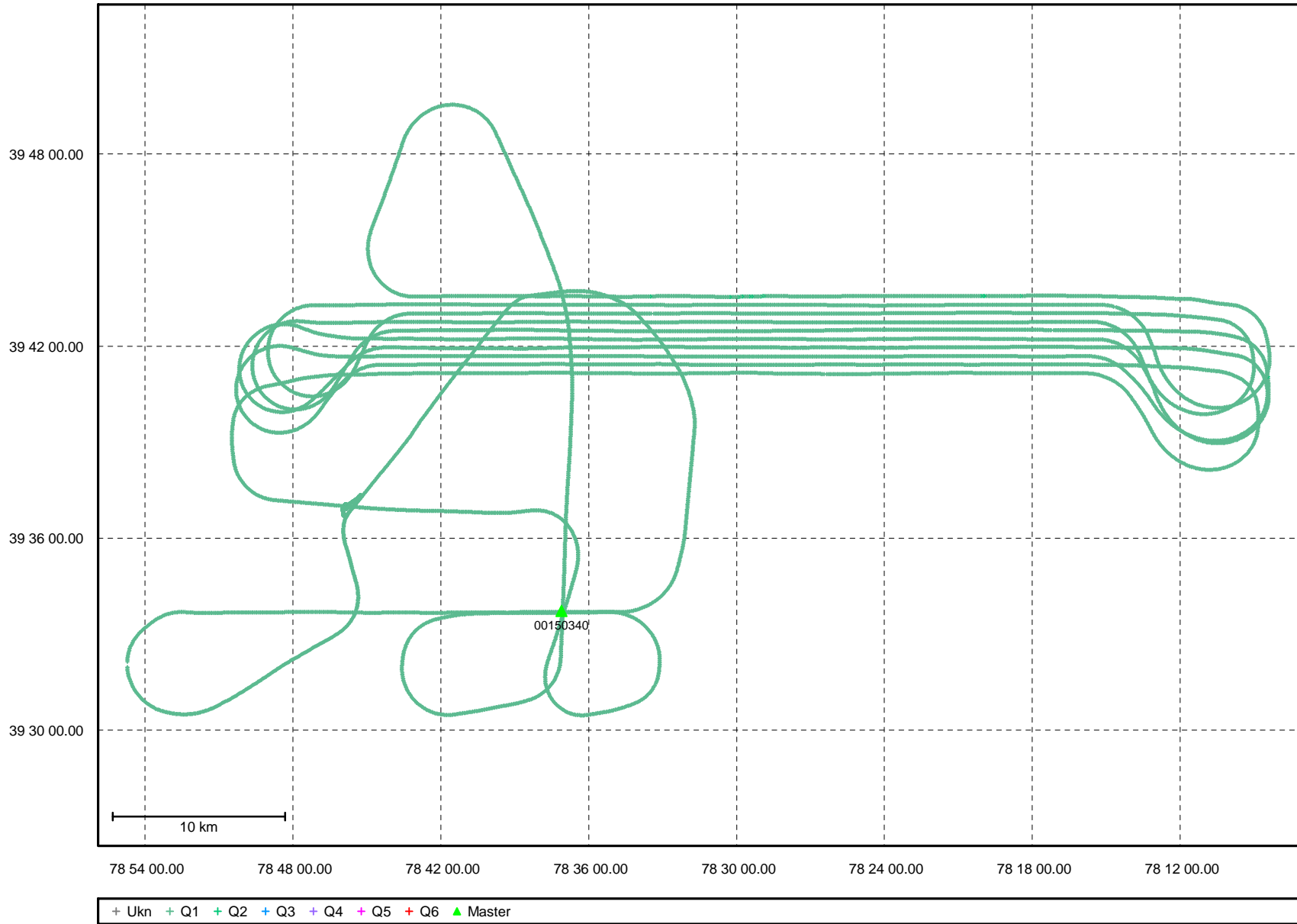
Mission: o112034b

February 3, 2012

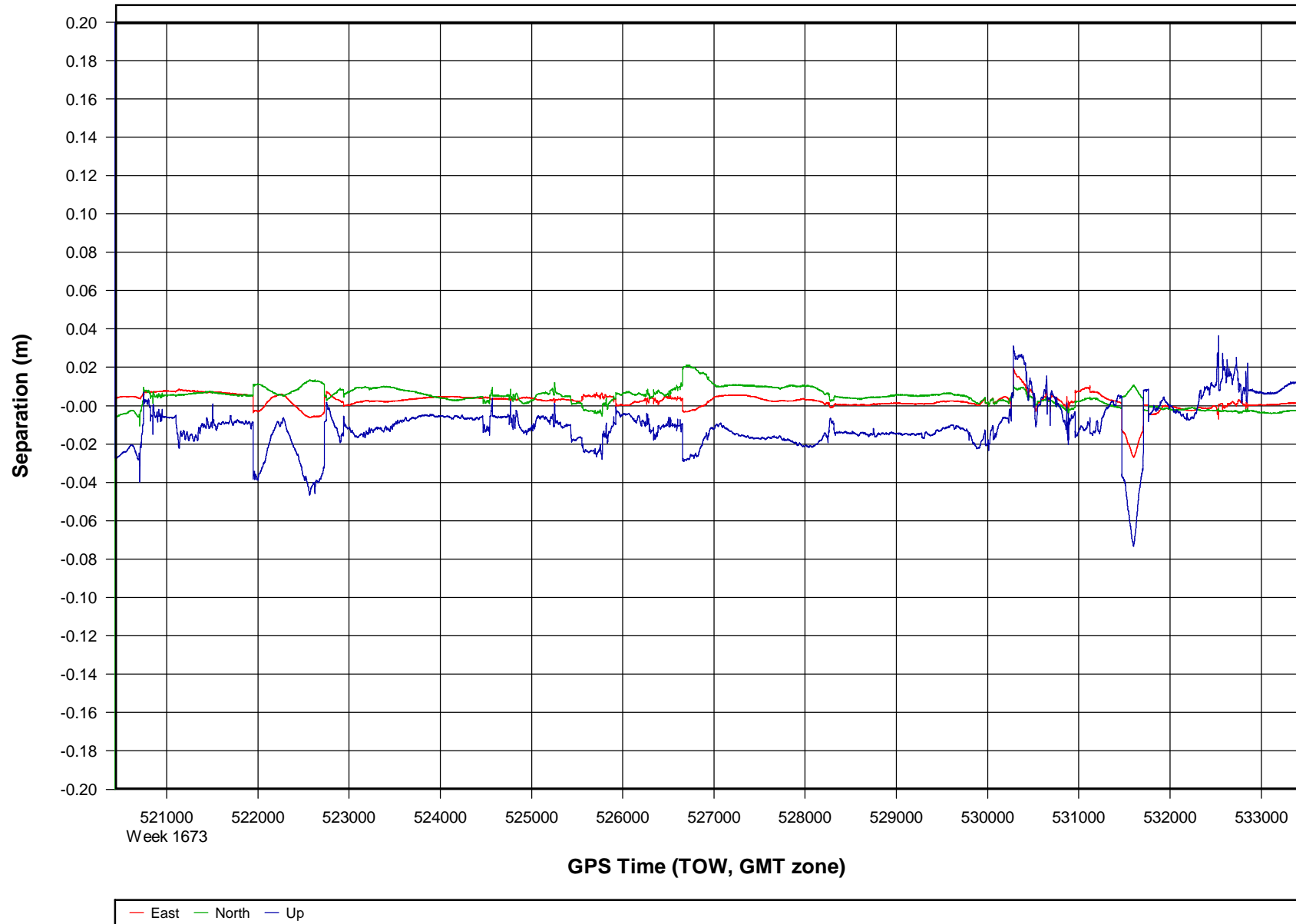


Combined - Map Run (1)

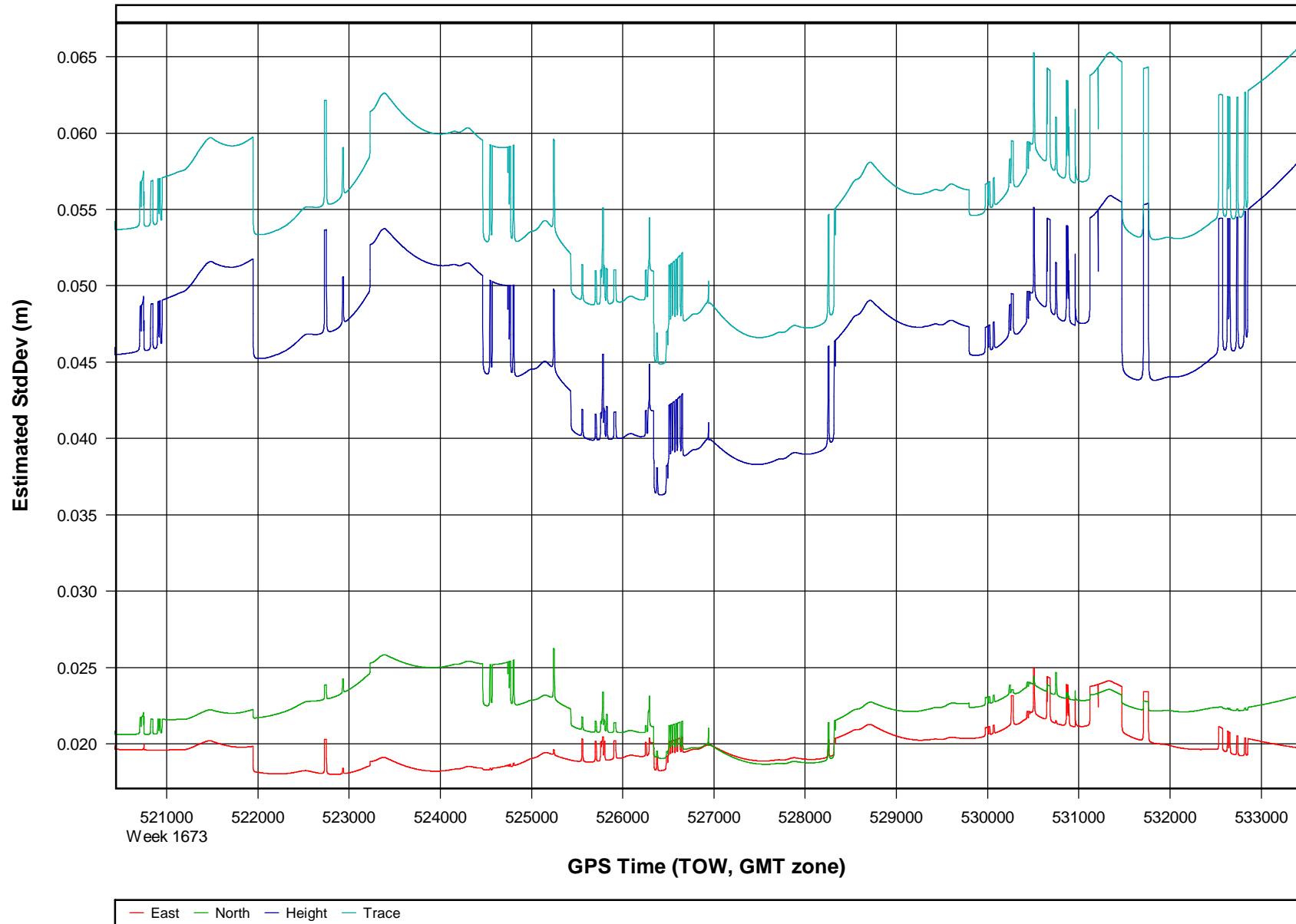
Geographic, DMS



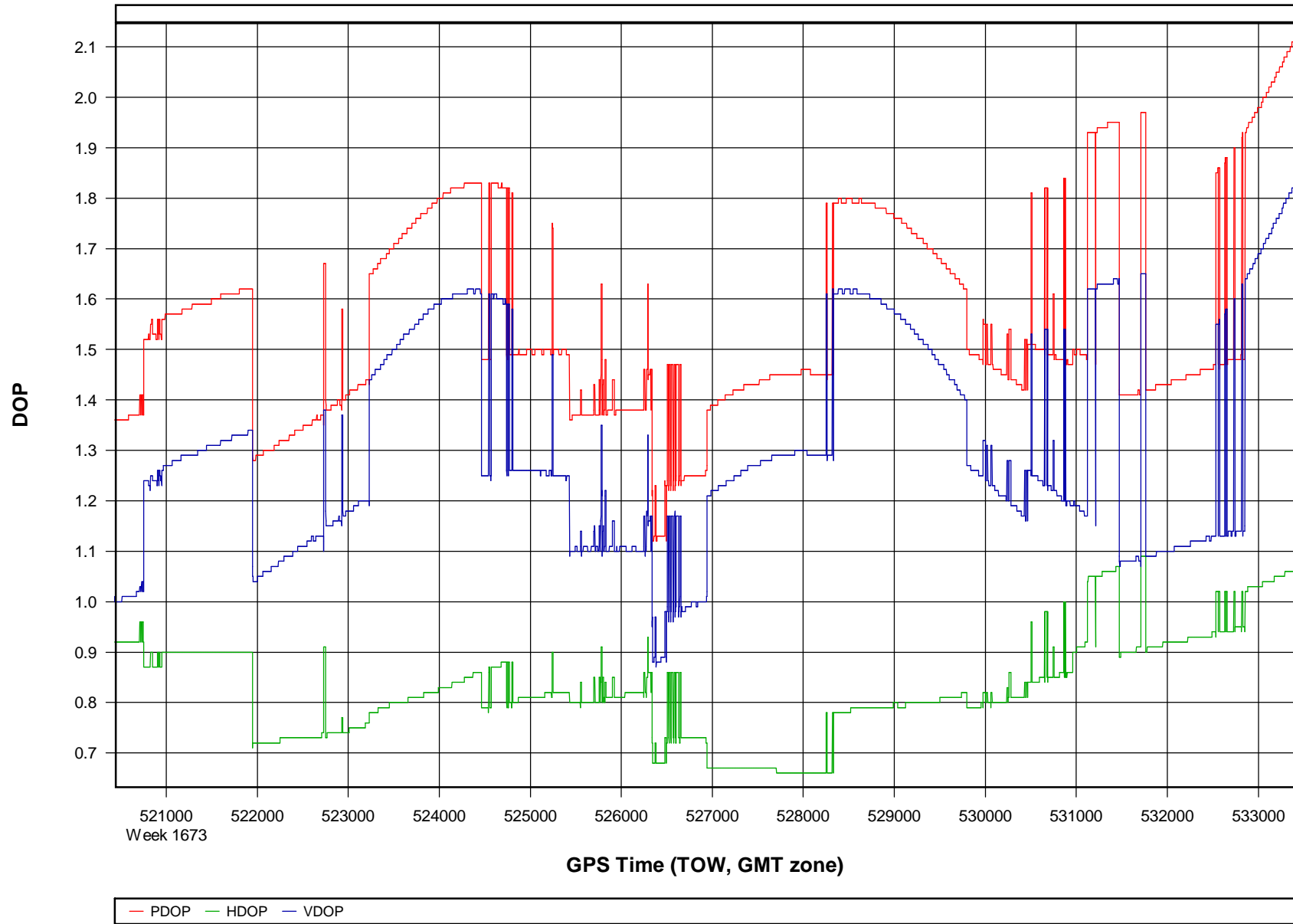
o112034b [Combined] - Forward/Reverse or Combined Separation Plot



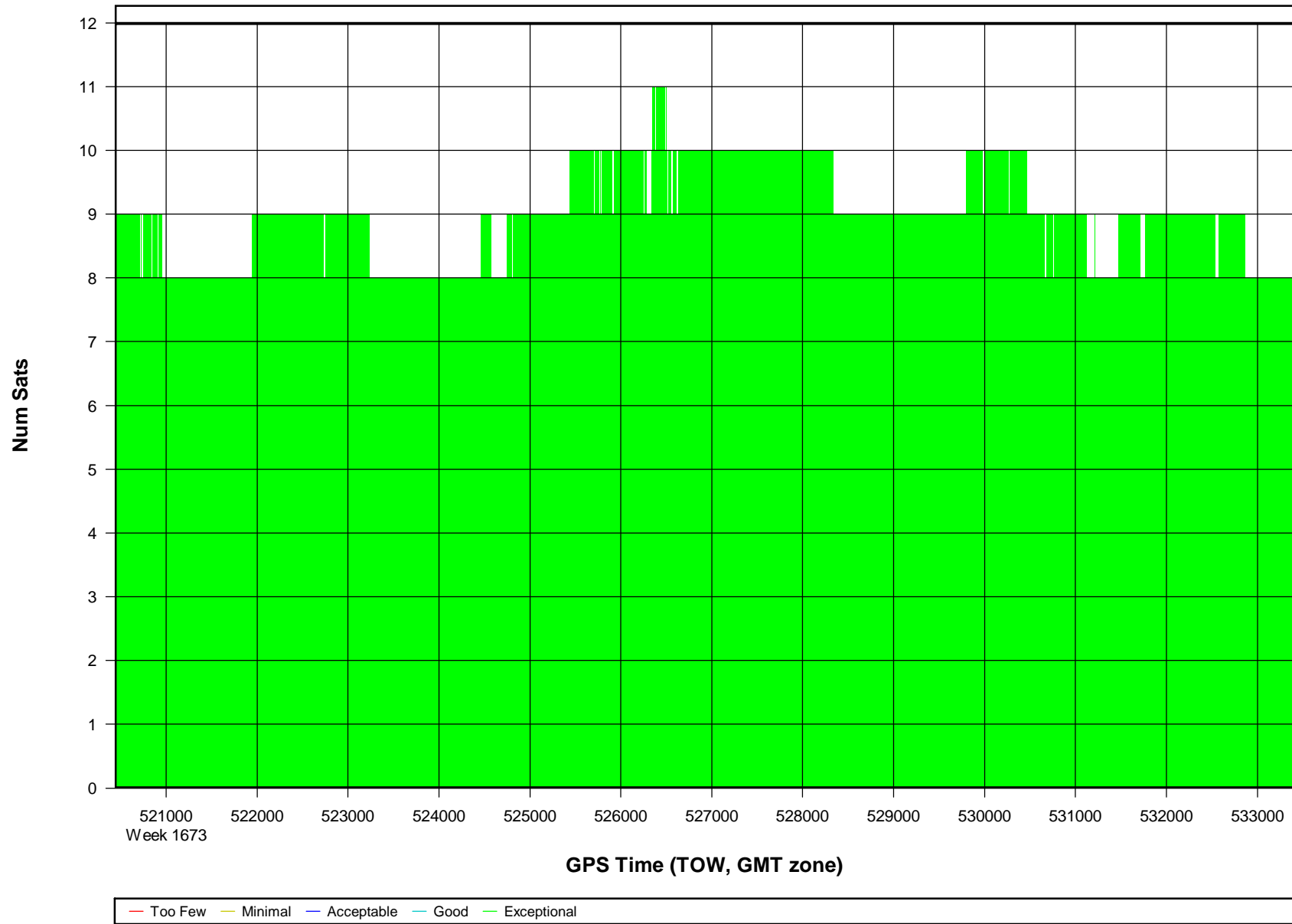
o112034b [Combined] - Estimated Position Accuracy Plot



o112034b [Combined] - PDOP, HDOP, VDOP Plots



o112034b [Combined] - Number of Satellites Bar Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112034b\3_Processed\GPS\o112034b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	129914
No processed position:	116944
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0158 (m)
C/A Code:	0.70 (m)
L1 Doppler:	0.034 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.005 (m)
North:	0.009 (m)
Height:	0.018 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (12965 occurrences):

East:	0.005 (m)
North:	0.007 (m)
Height:	0.016 (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:

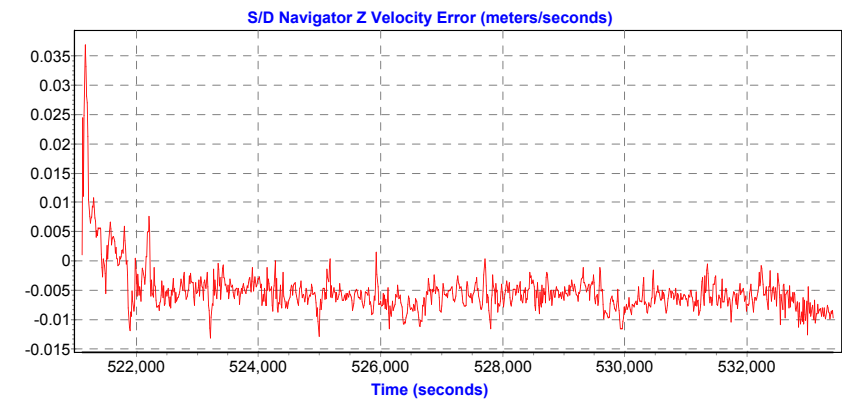
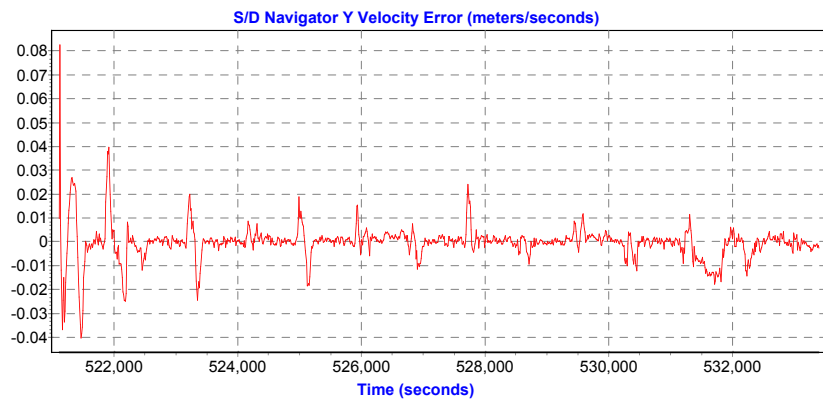
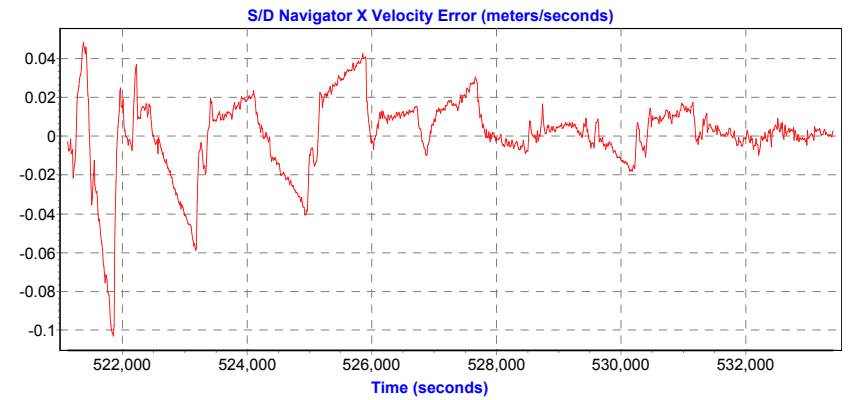
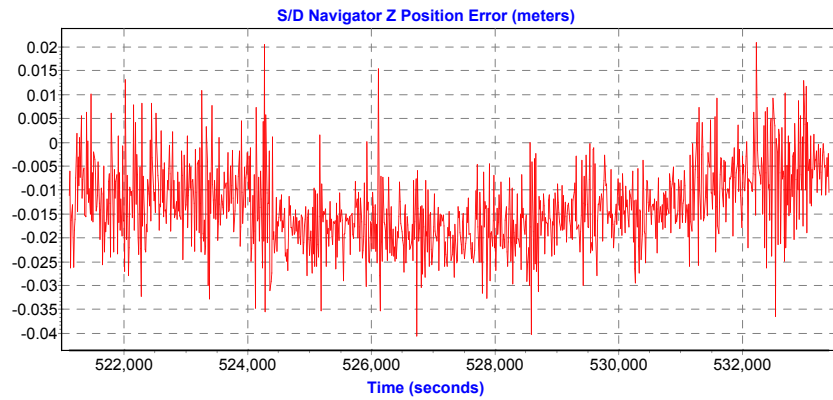
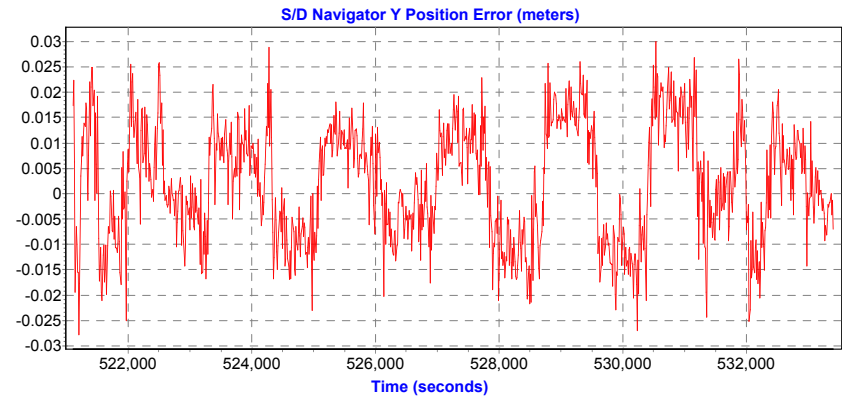
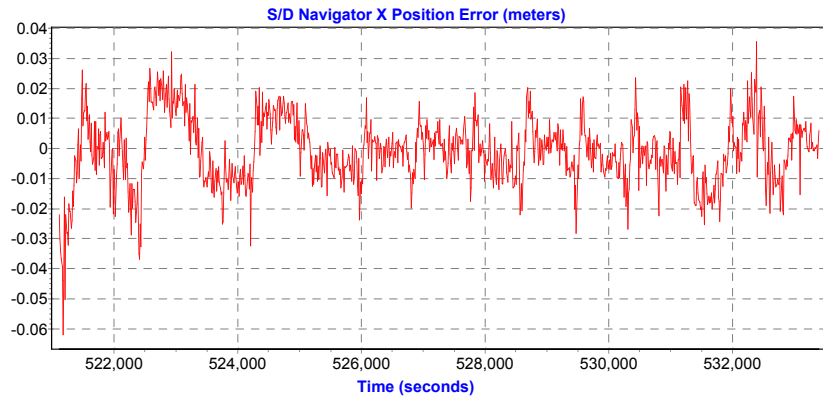
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

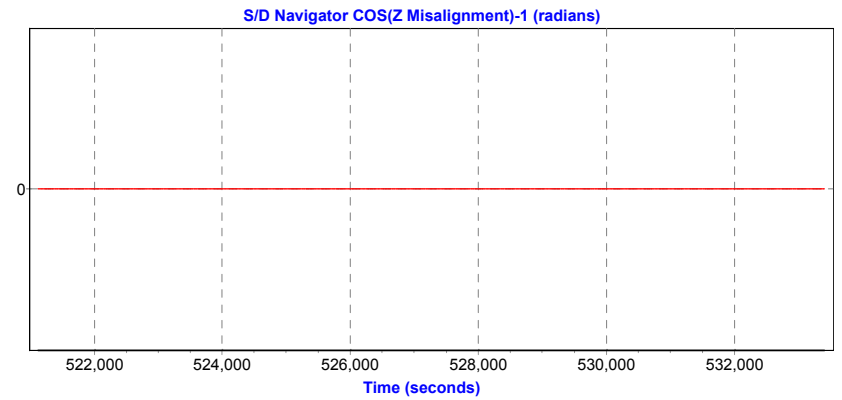
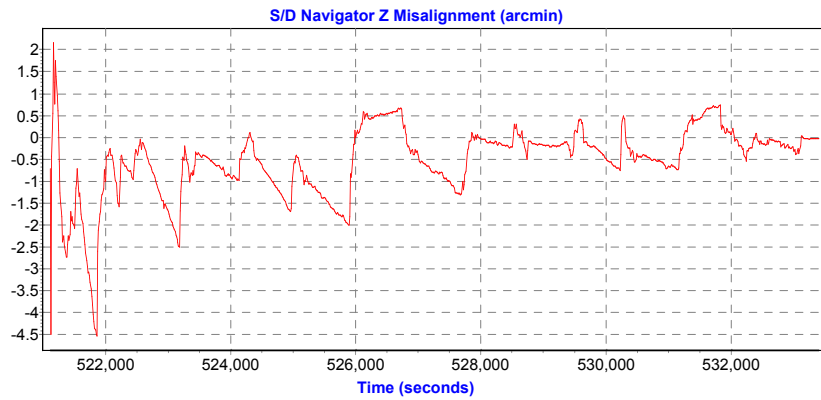
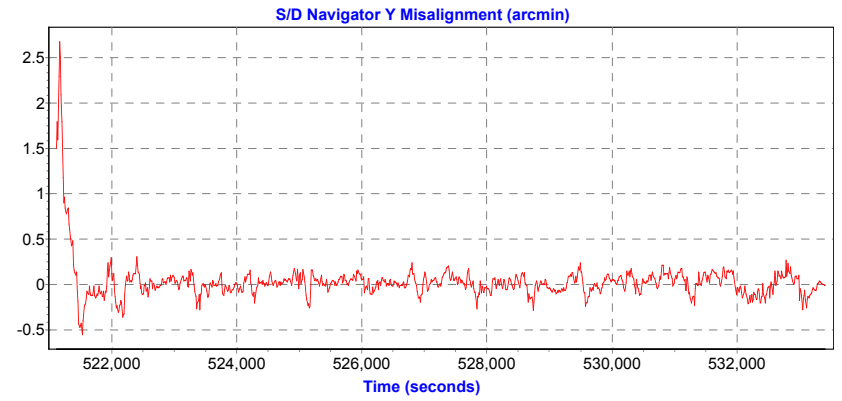
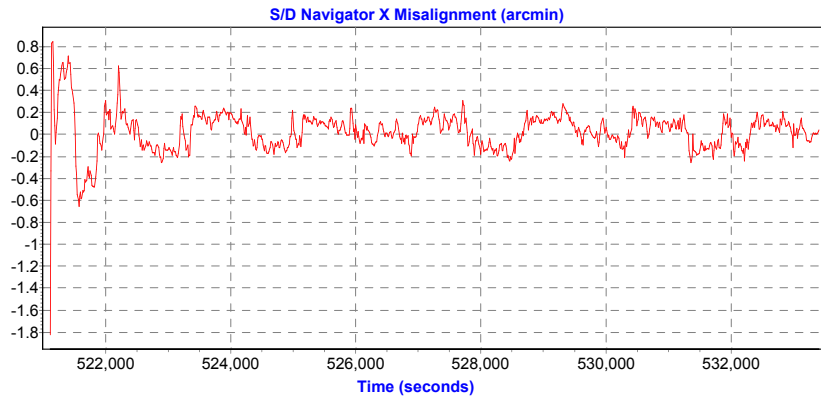
Percentages of epochs with DD_DOP over 10.00:

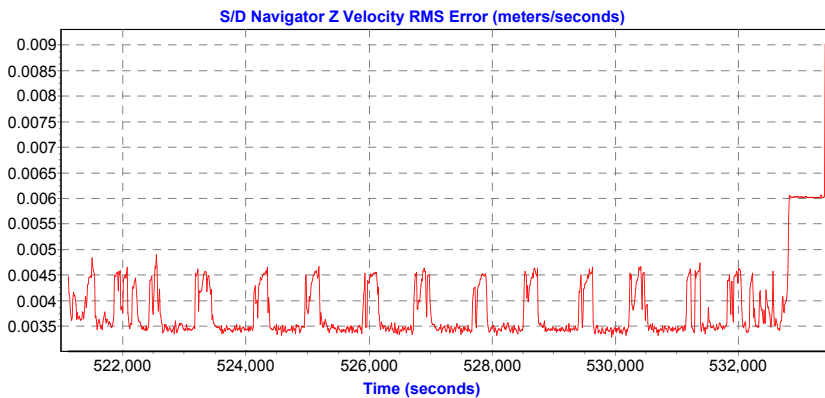
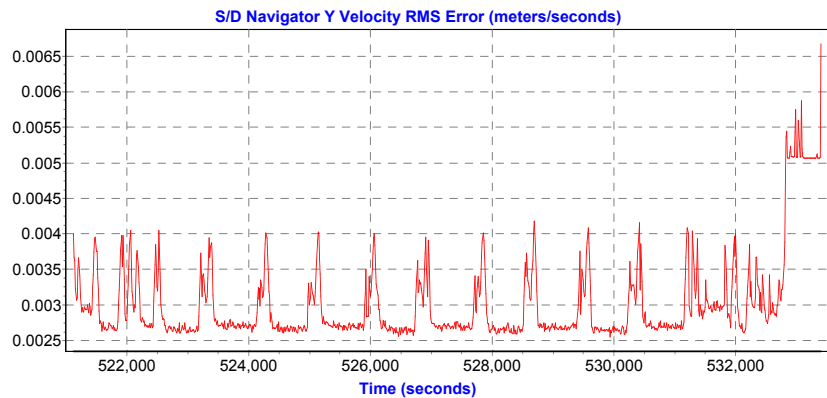
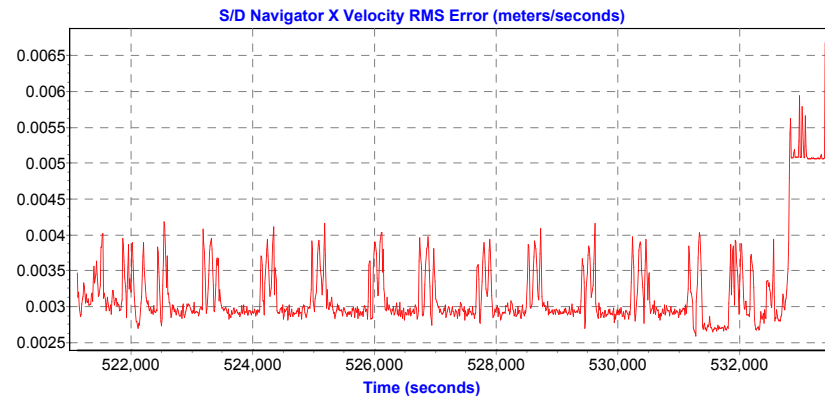
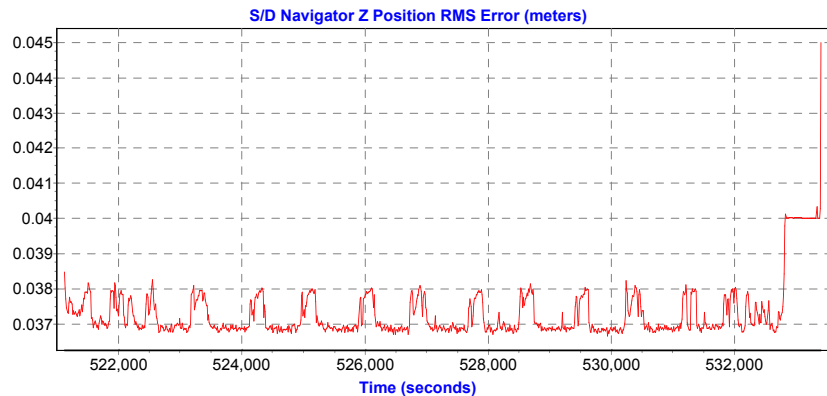
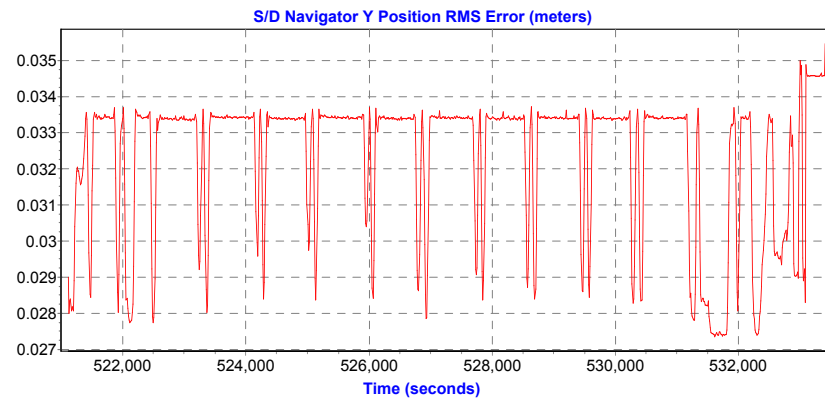
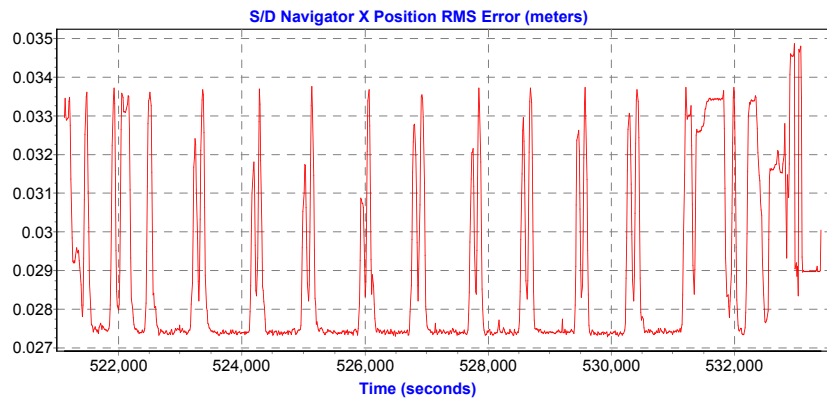
DOP over Tol:	0.0 %
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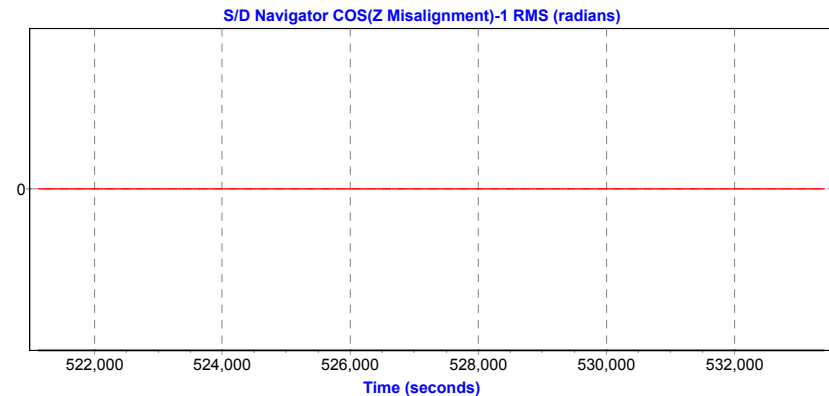
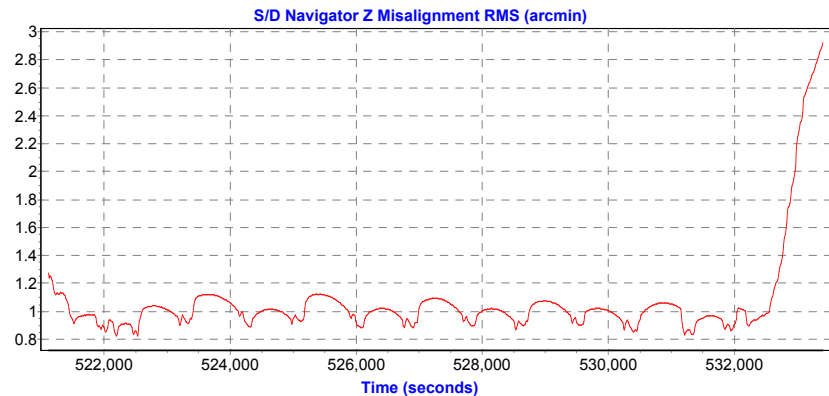
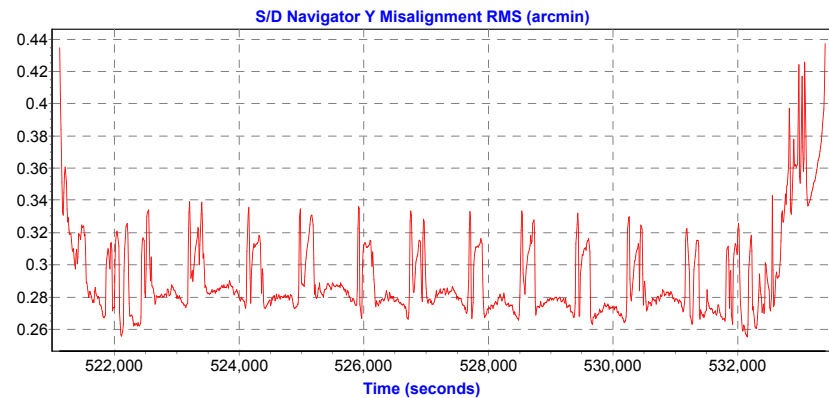
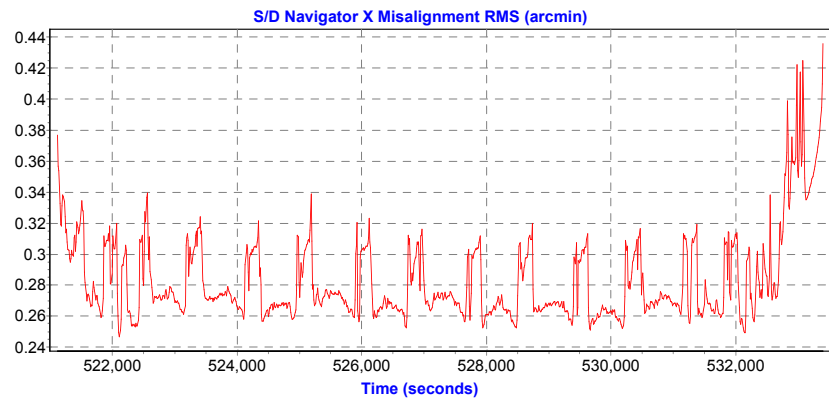
Baseline Distances:

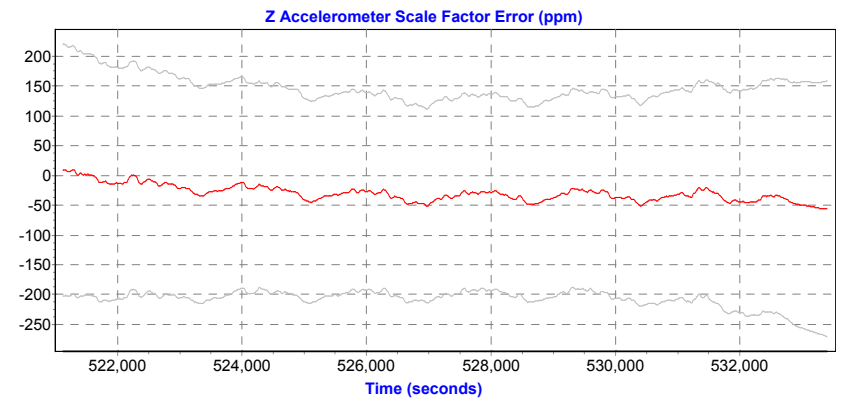
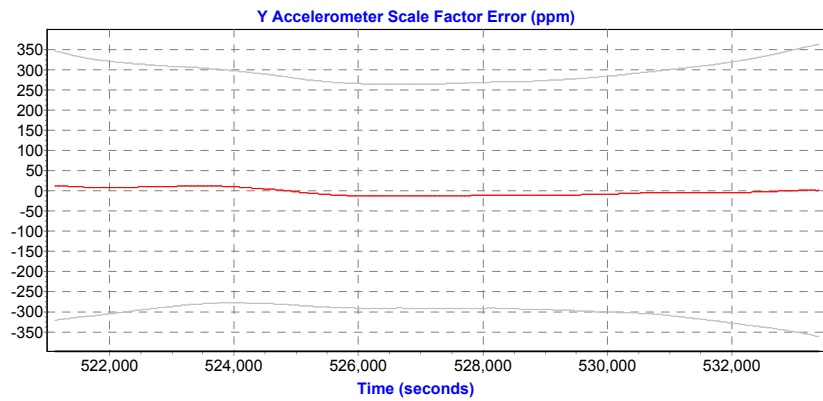
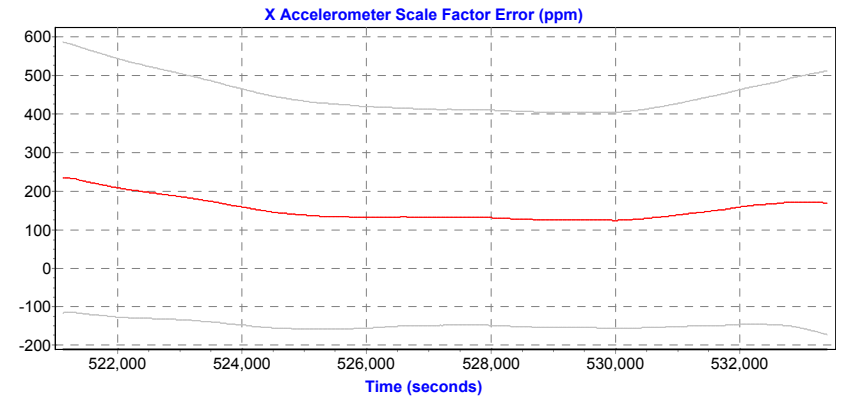
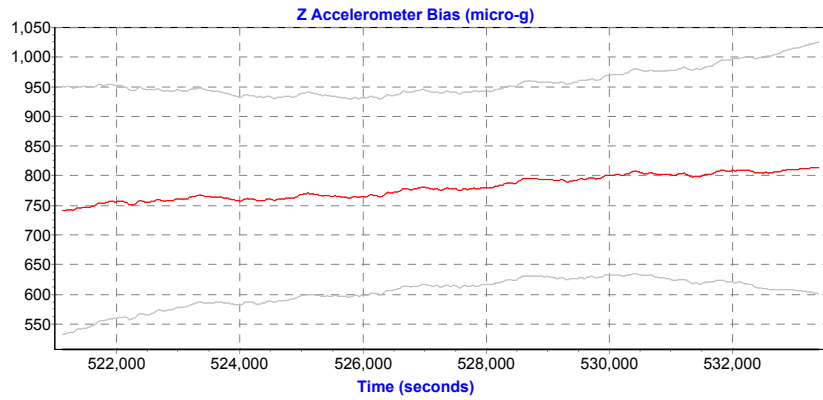
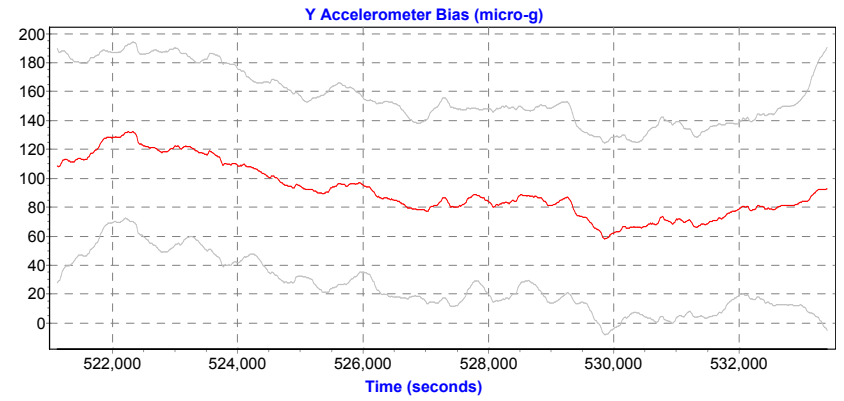
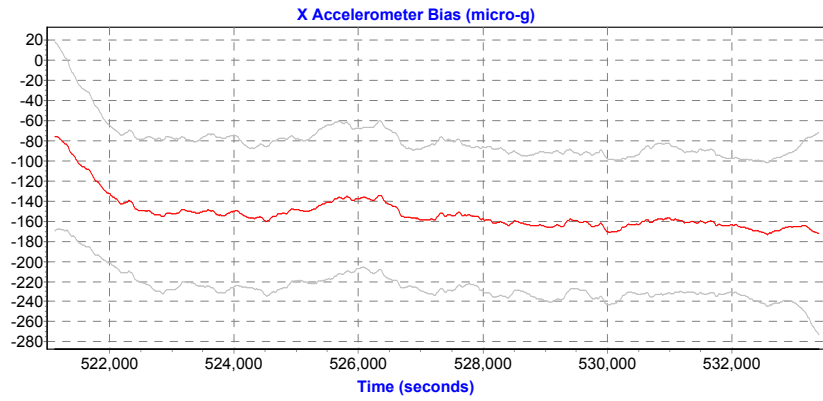
Maximum:	43.932 (km)
Minimum:	1.131 (km)
Average:	21.081 (km)
First Epoch:	14.034 (km)
Last Epoch:	13.972 (km)

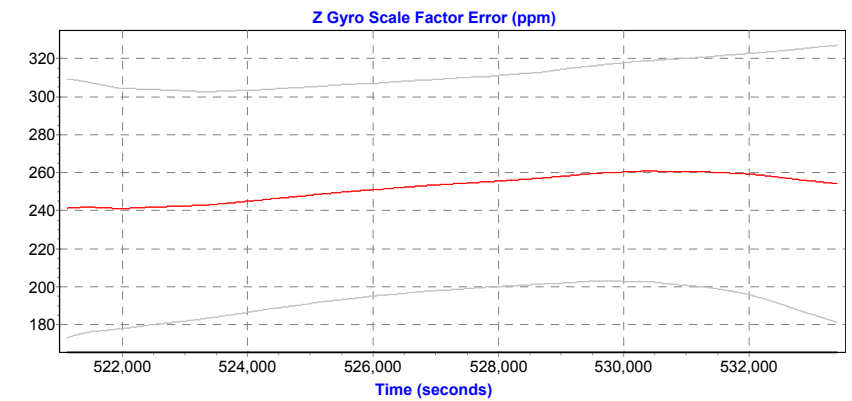
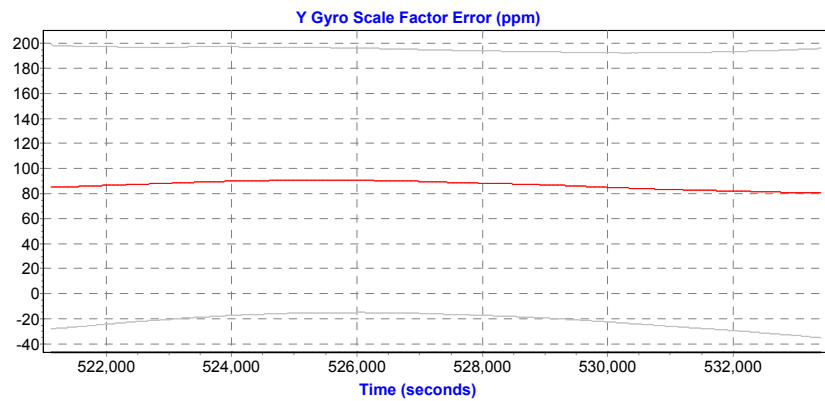
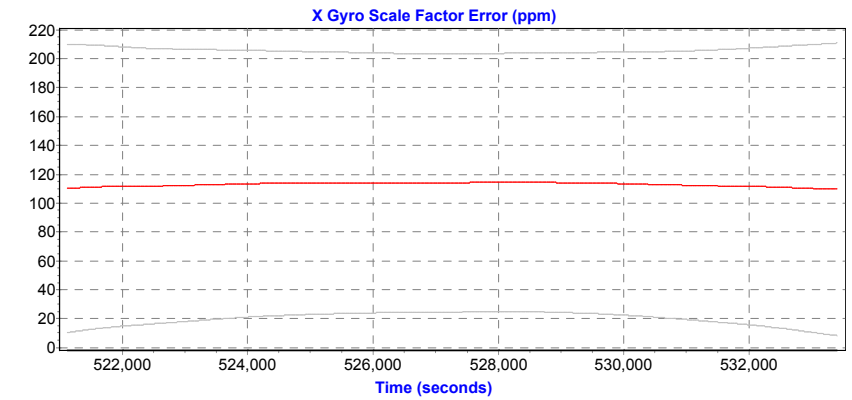
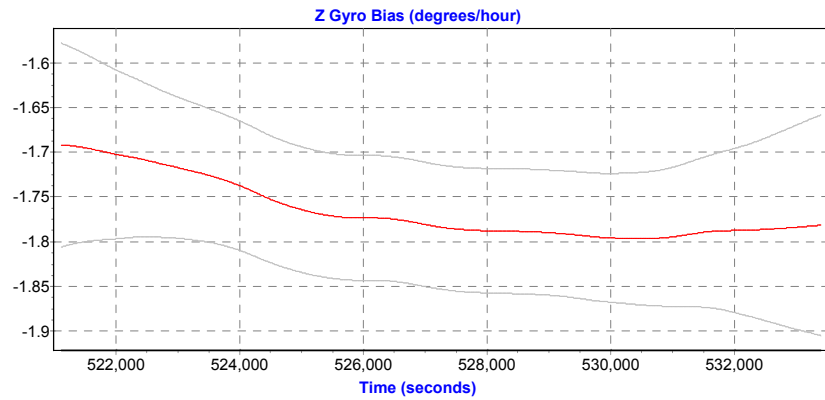
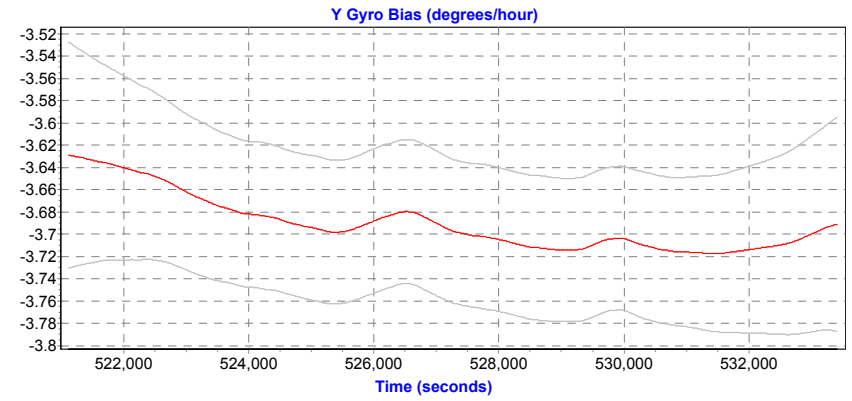
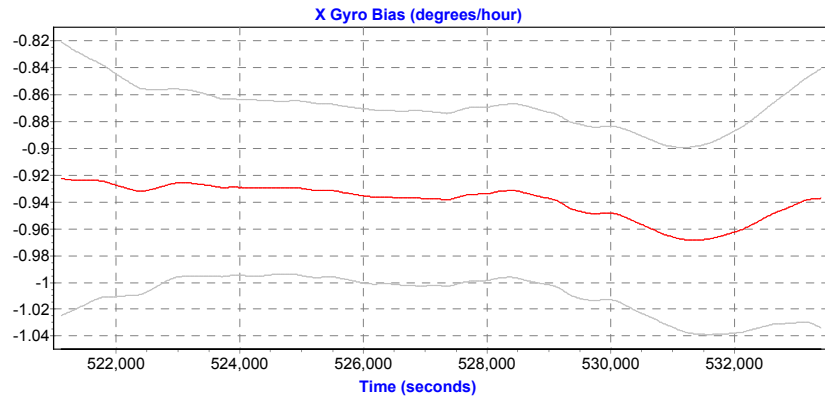


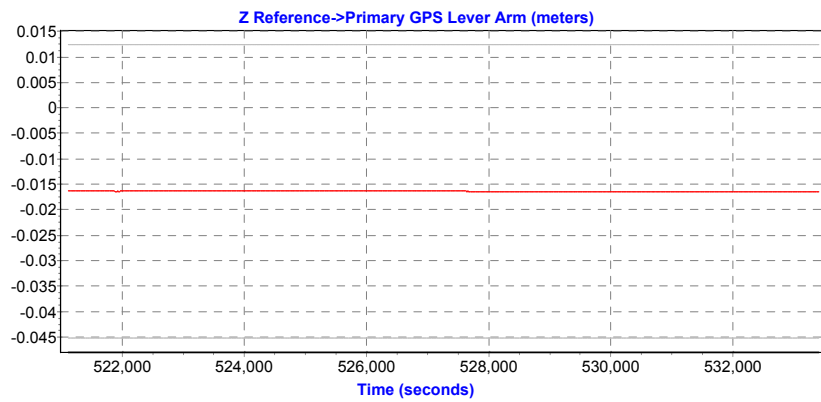
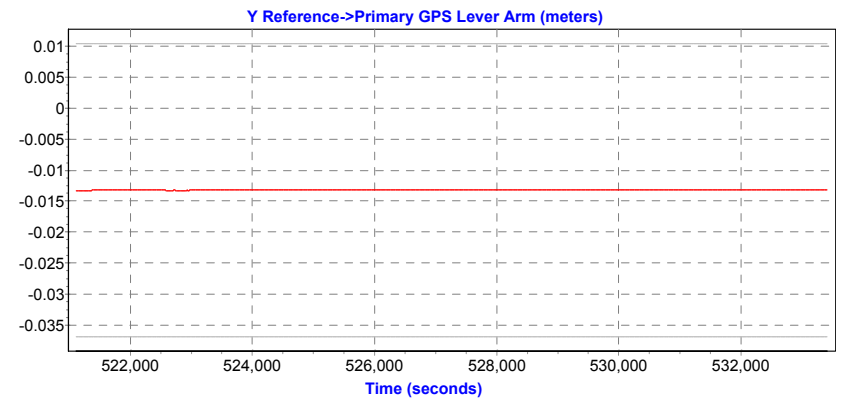
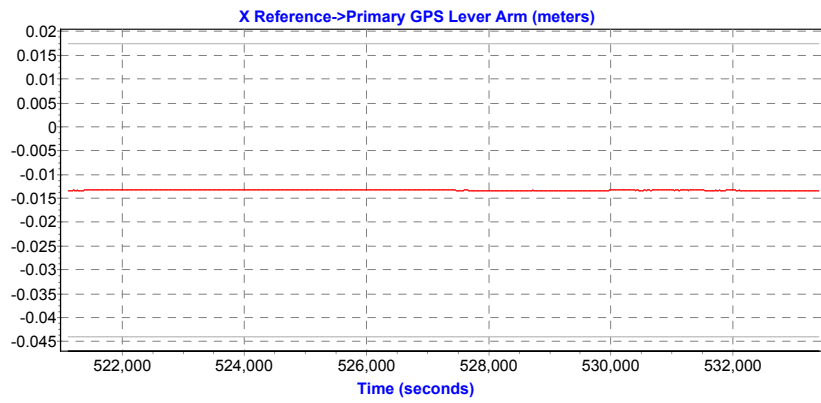






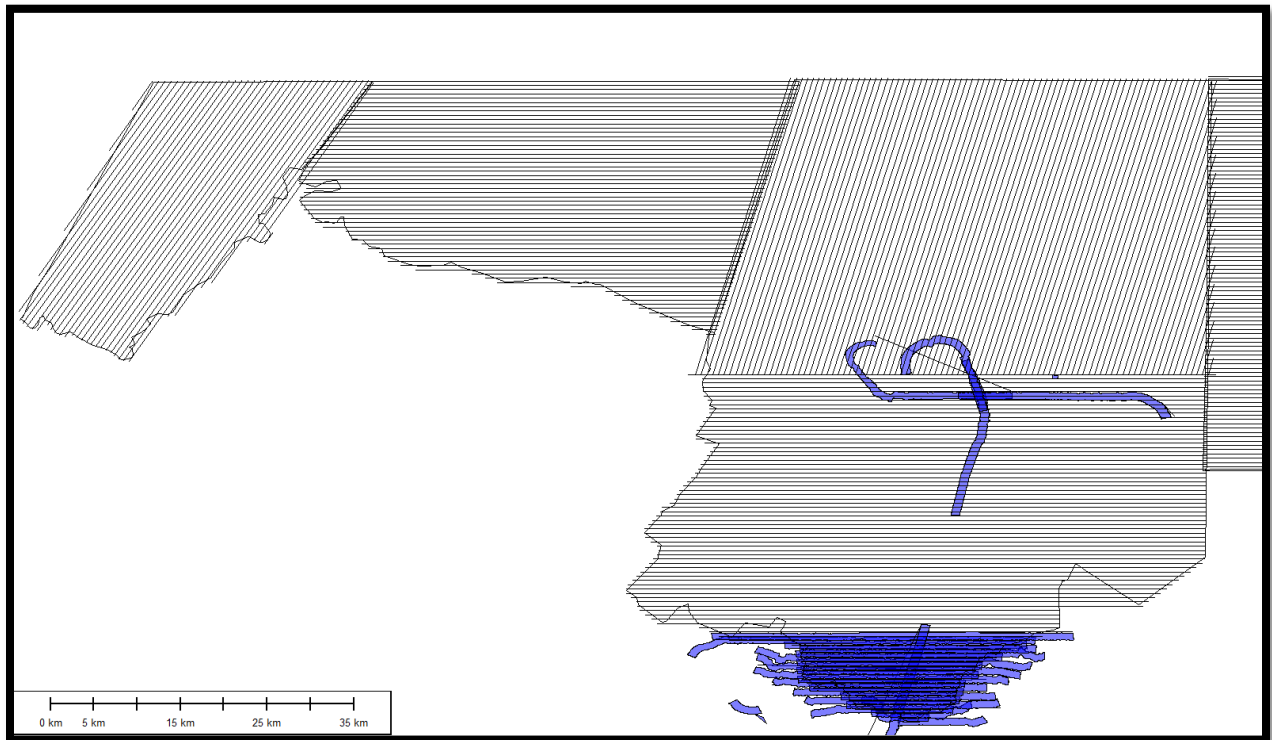






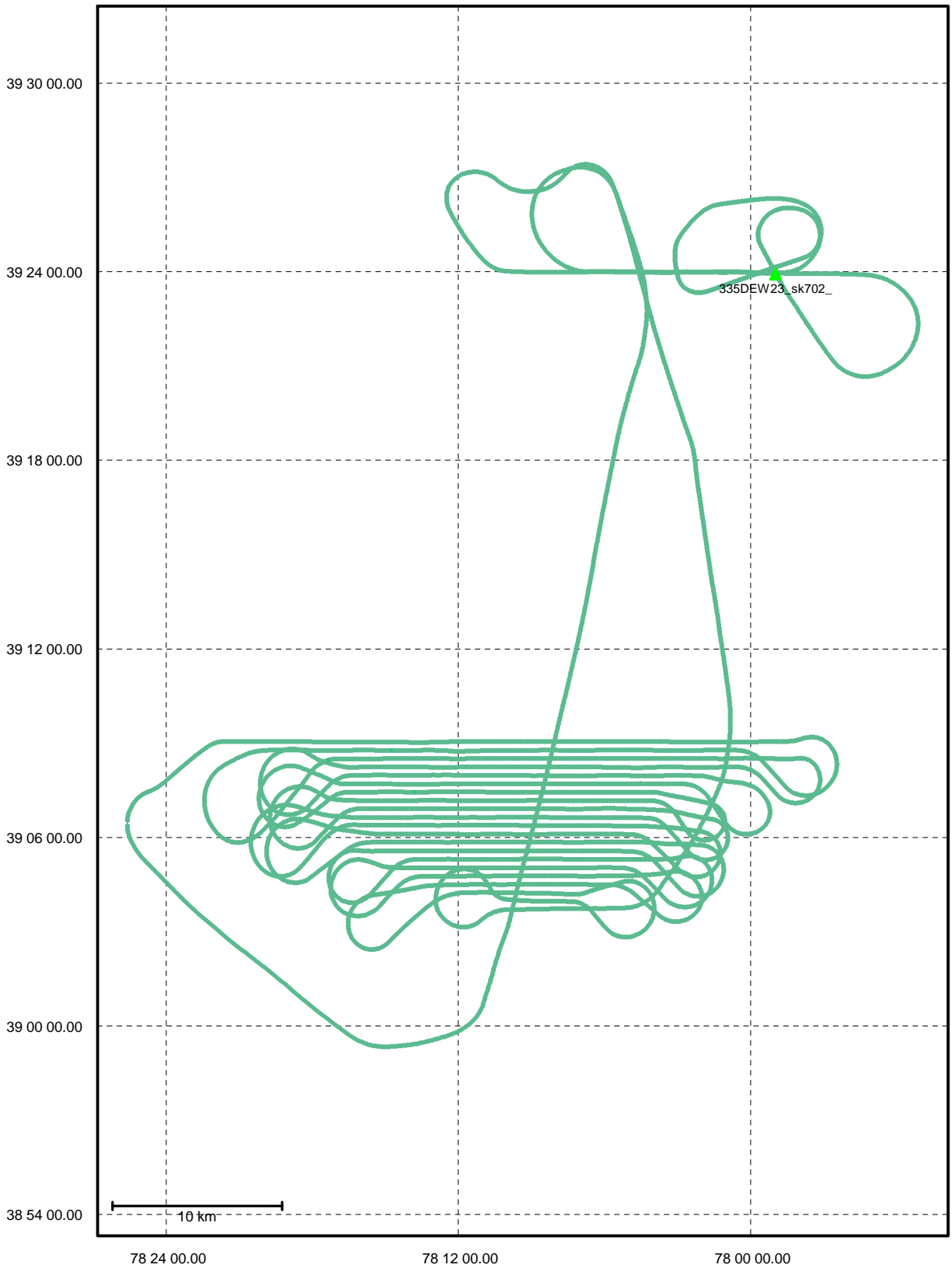
Mission: o112045a

February 14, 2012



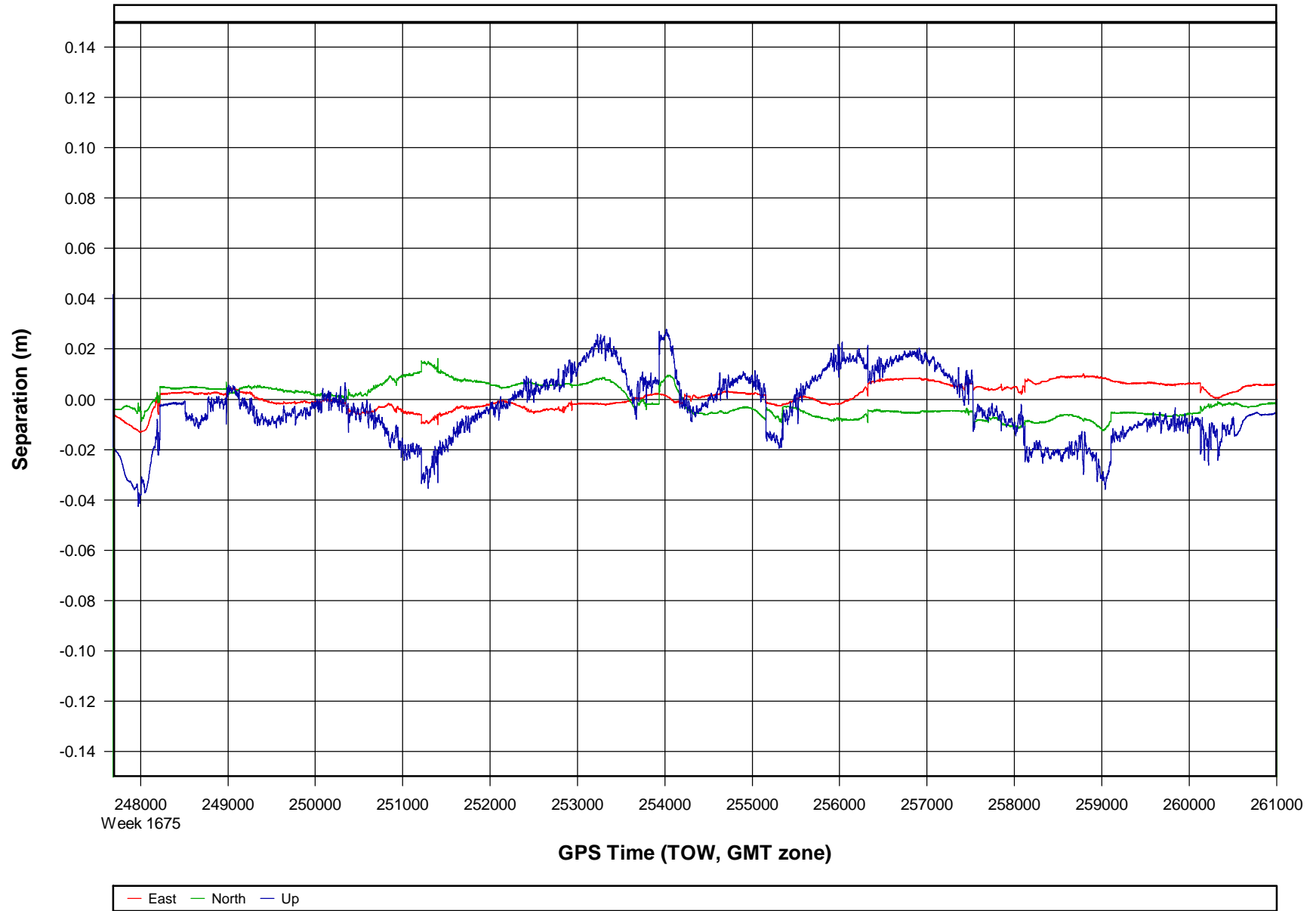
Combined - Map Run (1)

Geographic, DMS

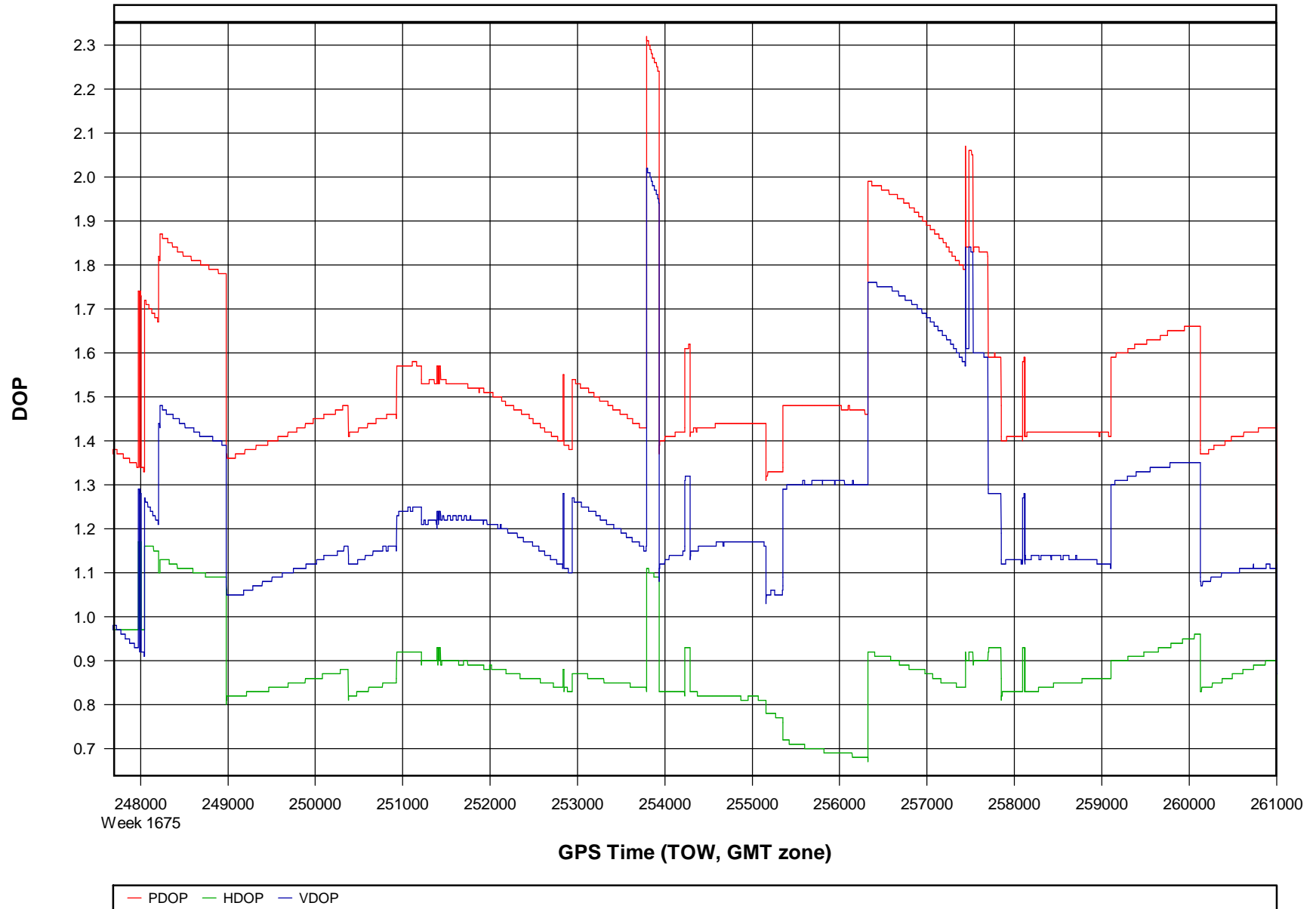


- + Ukn
- + Q1
- + Q2
- + Q3
- + Q4
- + Q5
- + Q6
- ▲ Master

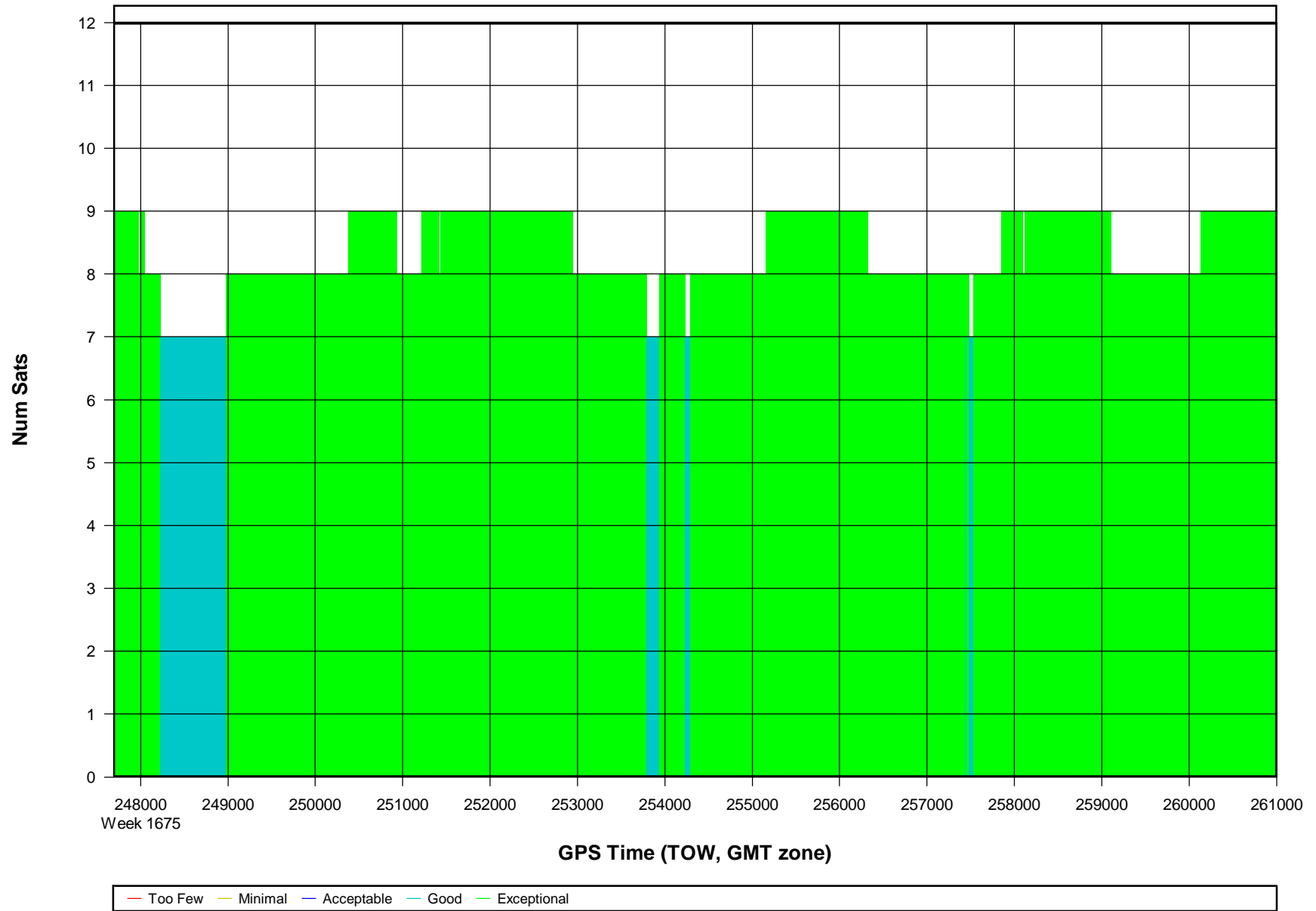
o112045a [Combined] - Forward/Reverse or Combined Separation Plot



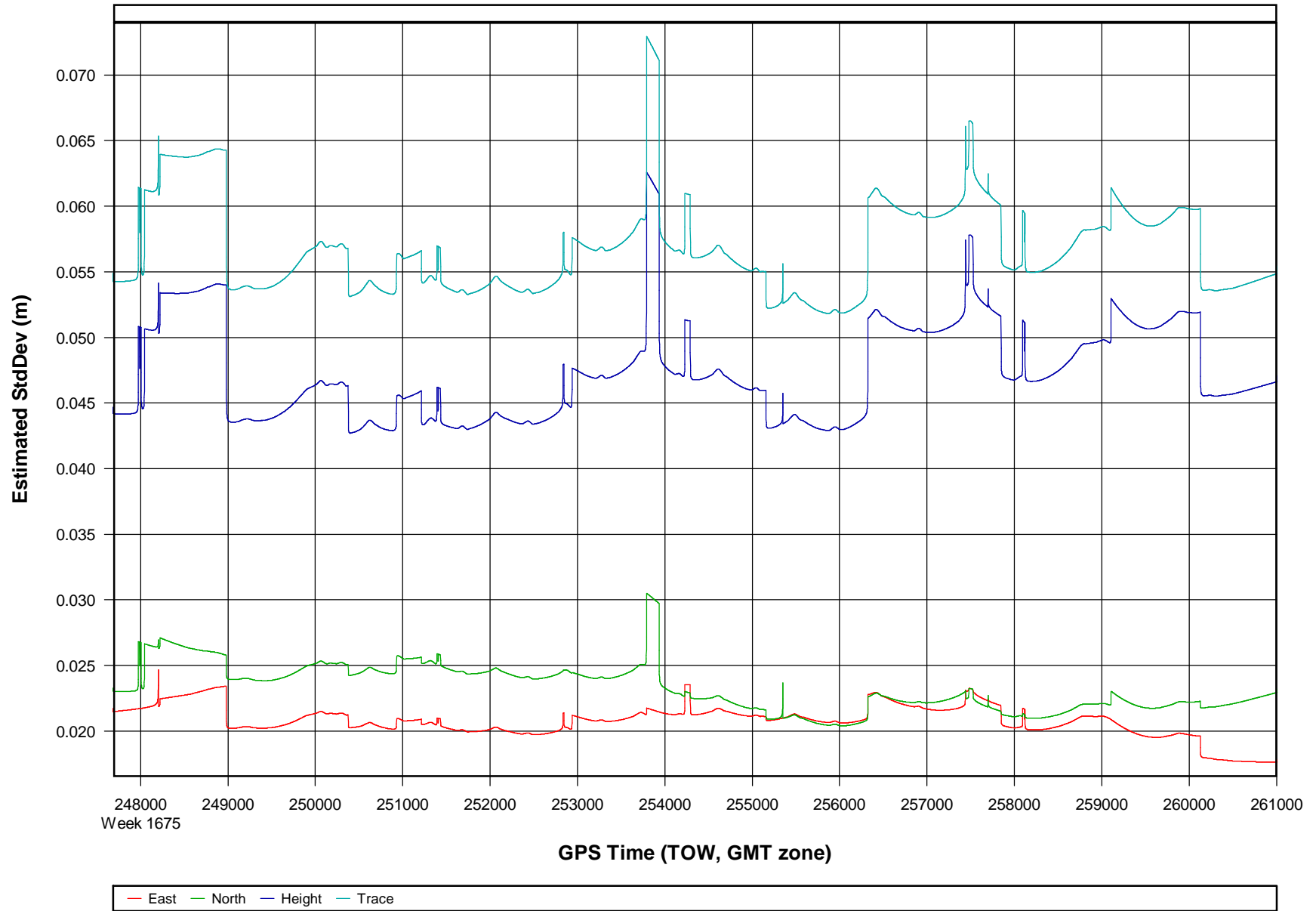
o112045a [Combined] - PDOP, HDOP, VDOP Plots



o112045a [Combined] - Number of Satellites Bar Plot



o112045a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112045a\3_Processed\GPS\o112045a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	133324
No processed position:	120003
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0171 (m)
C/A Code:	0.70 (m)
L1 Doppler:	0.028 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.005 (m)
North:	0.007 (m)
Height:	0.014 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (13316 occurrences):

East:	0.005 (m)
North:	0.006 (m)
Height:	0.014 (m)

Quality Number Percentages:

Q 1:	100.0 %
Q 2:	0.0 %
Q 3:	0.0 %
Q 4:	0.0 %
Q 5:	0.0 %
Q 6:	0.0 %

Position Standard Deviation Percentages:

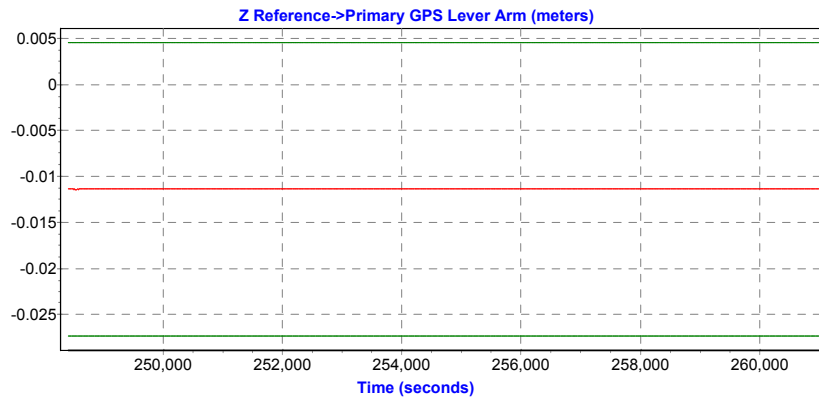
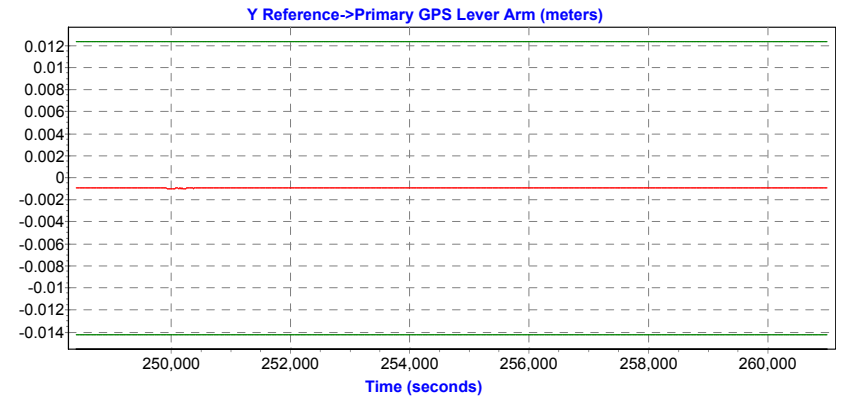
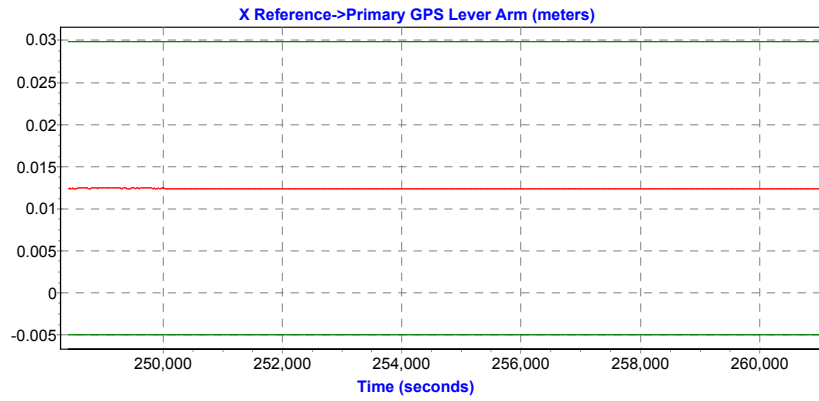
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

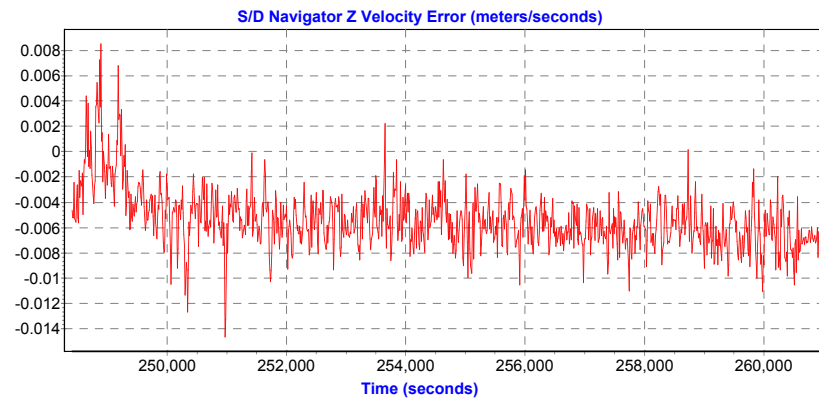
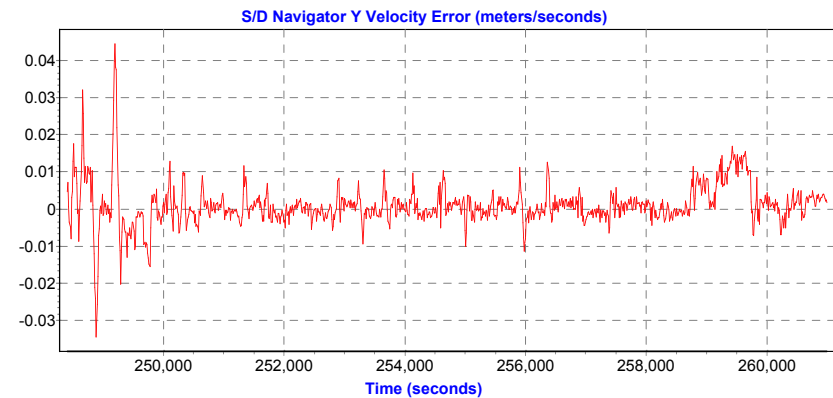
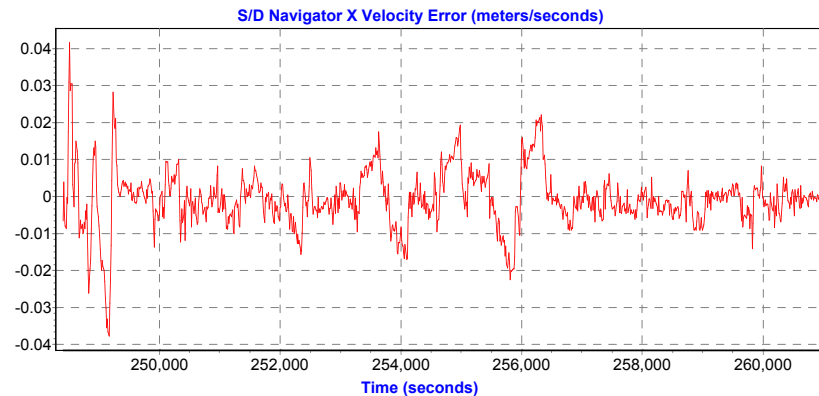
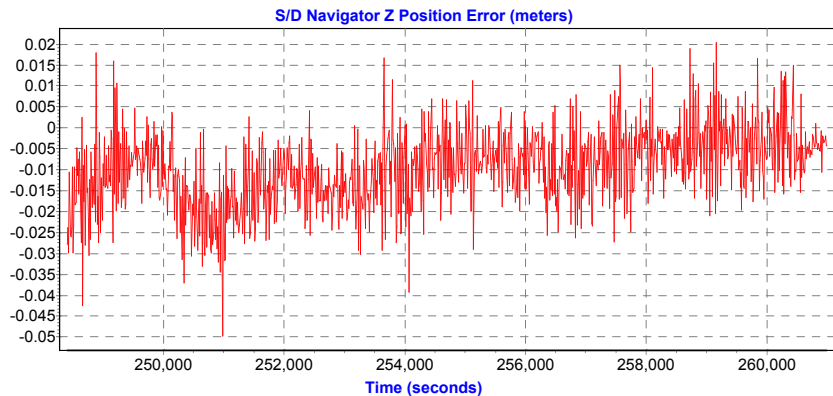
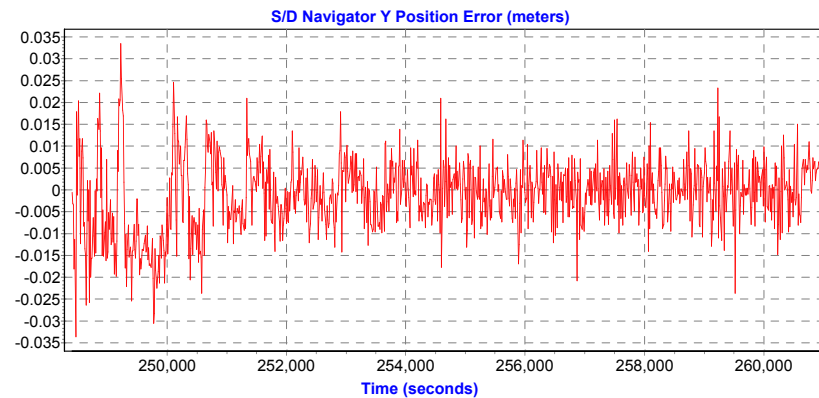
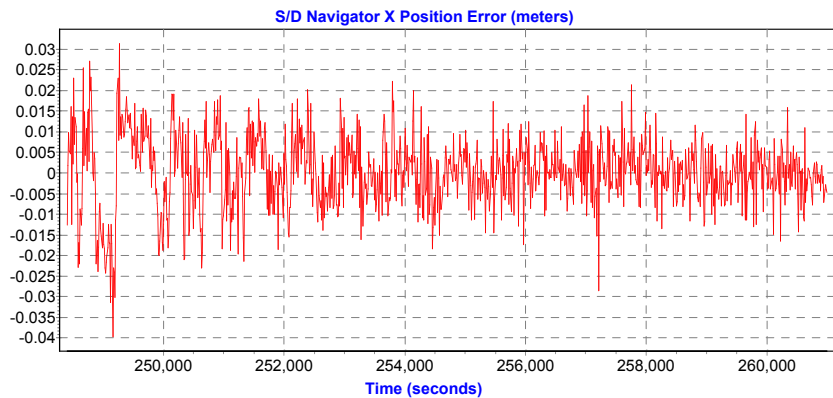
Percentages of epochs with DD_DOP over 10.00:

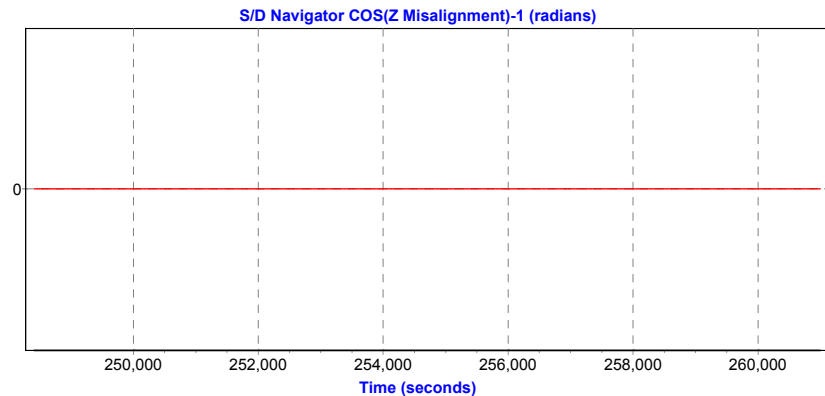
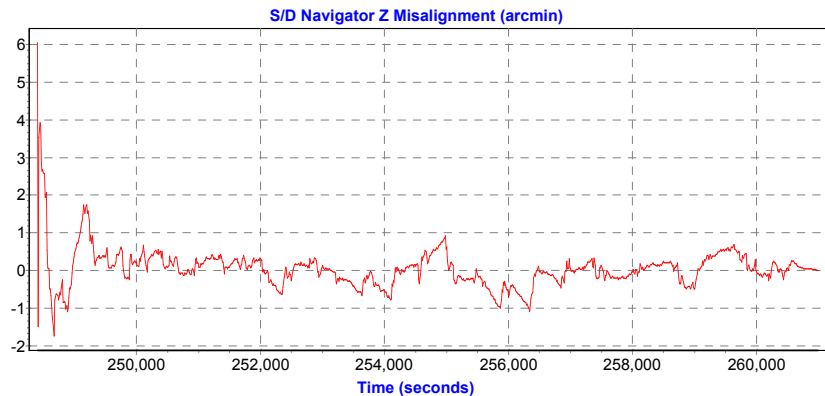
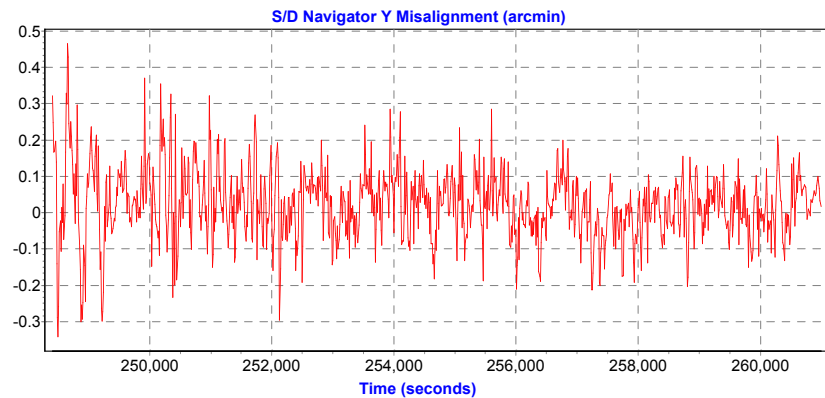
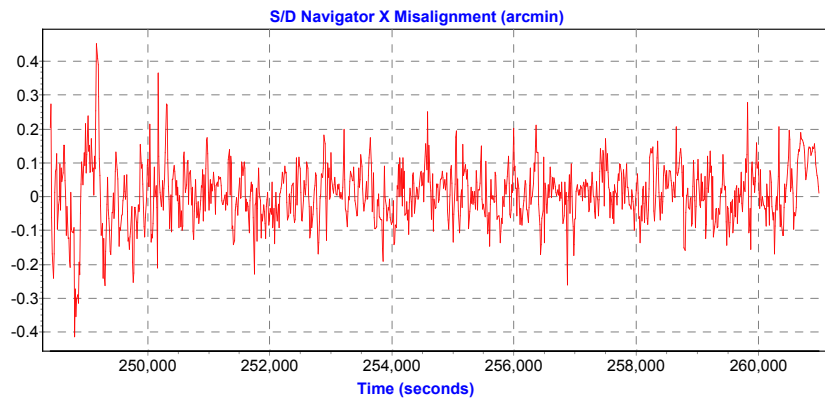
DOP over Tol:	0.0 %
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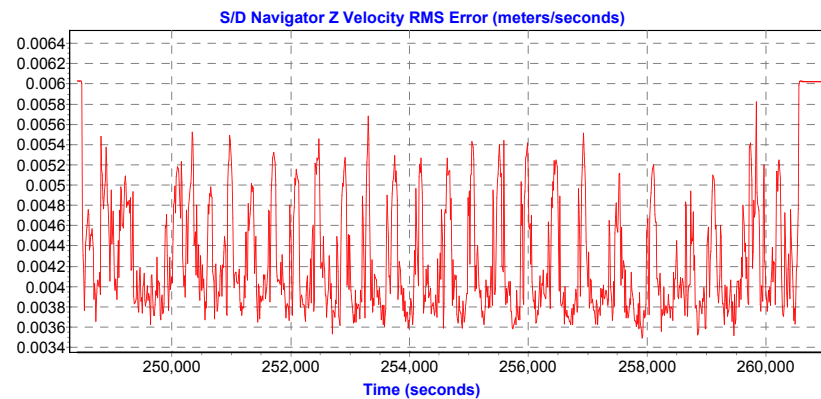
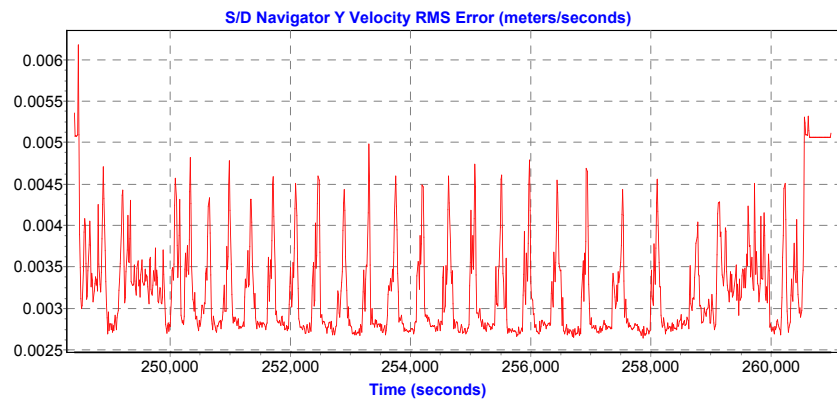
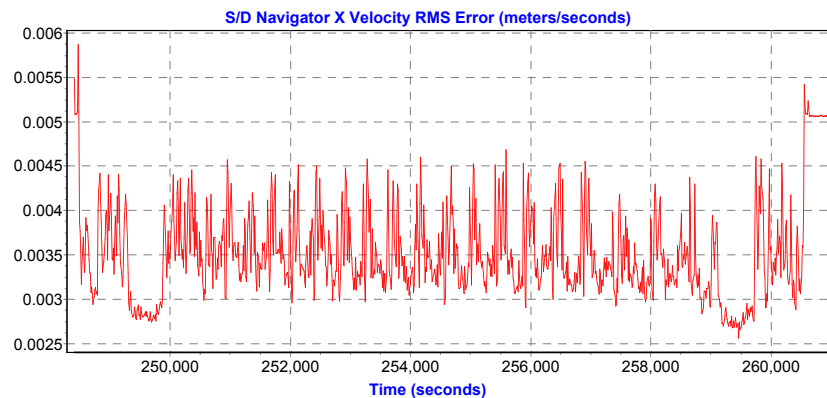
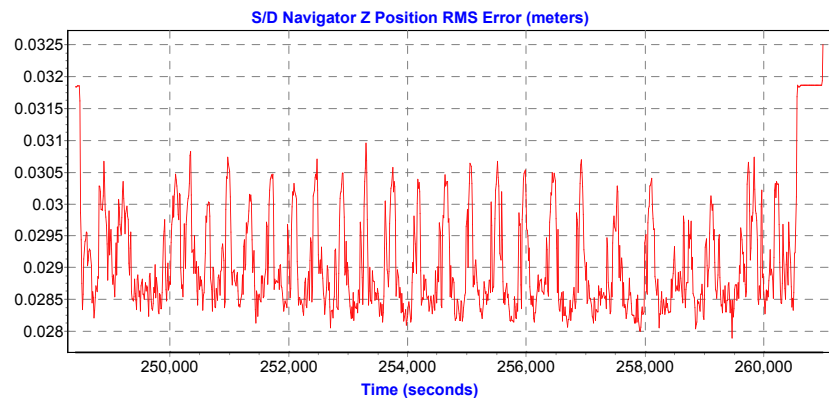
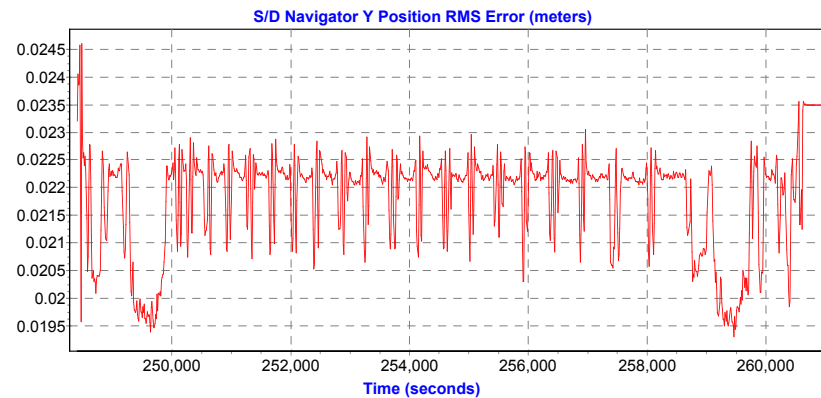
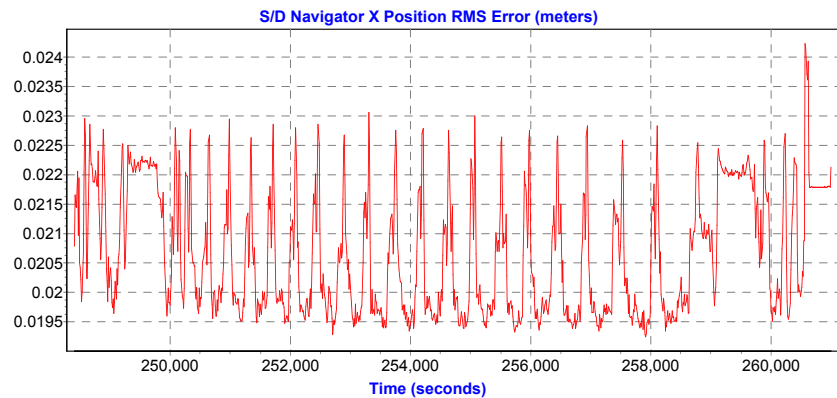
Baseline Distances:

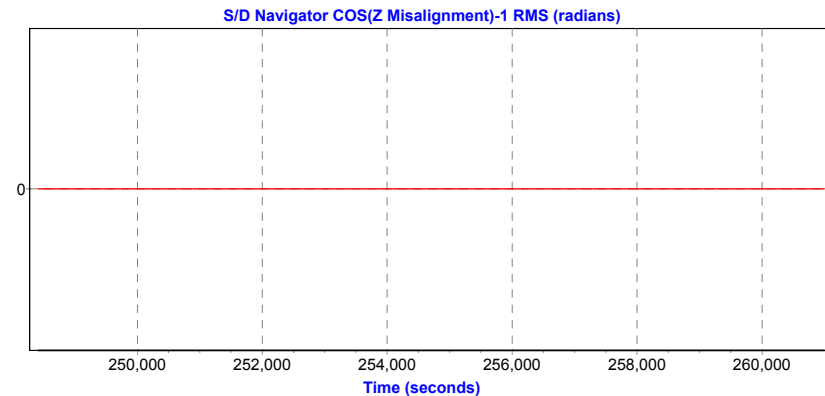
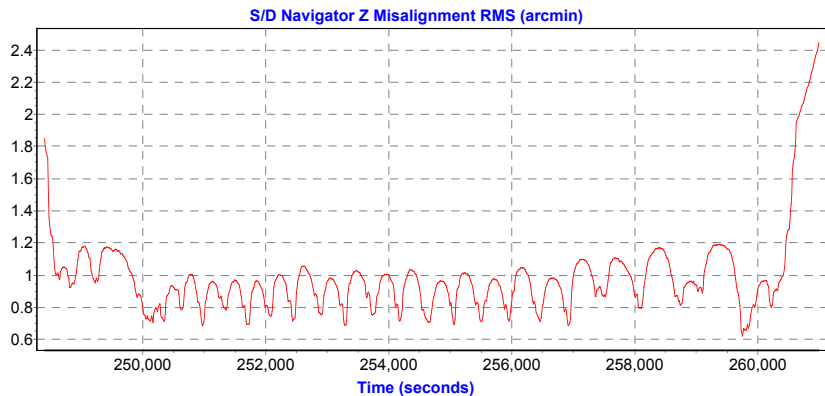
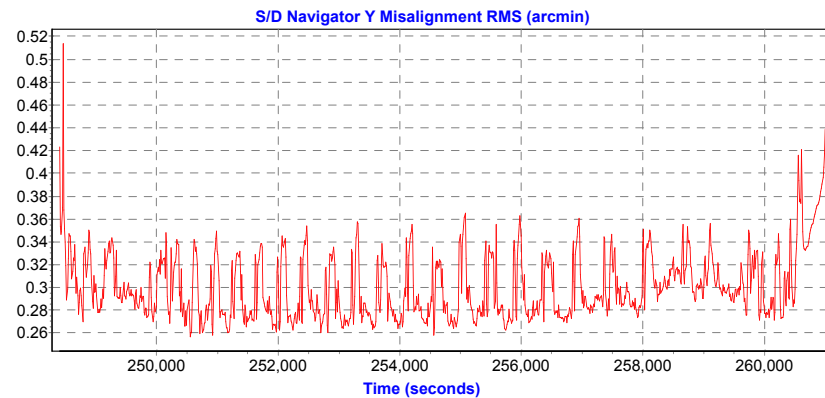
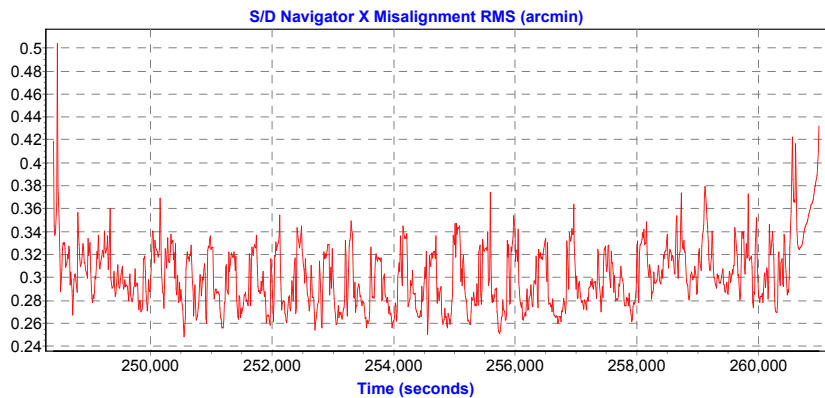
Maximum:	51.439 (km)
Minimum:	0.095 (km)
Average:	28.696 (km)
First Epoch:	0.099 (km)
Last Epoch:	0.095 (km)

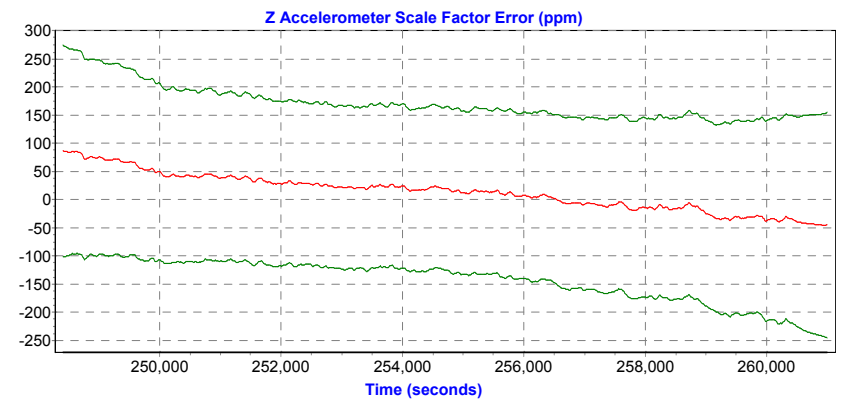
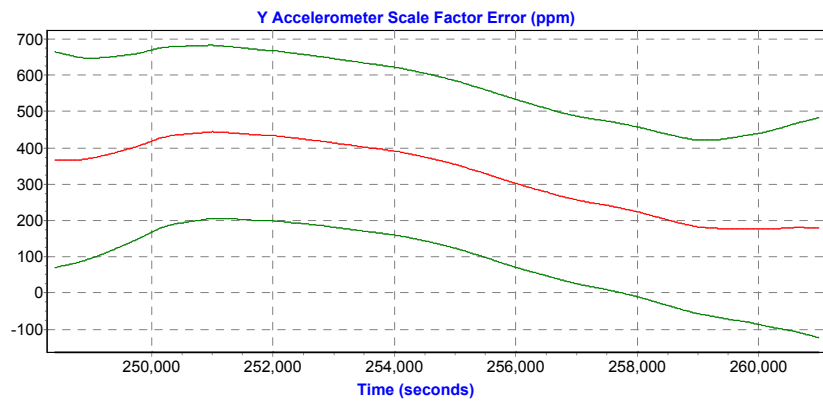
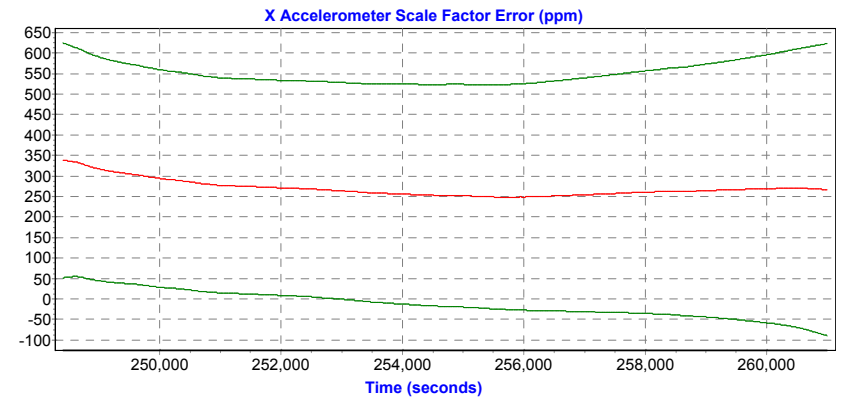
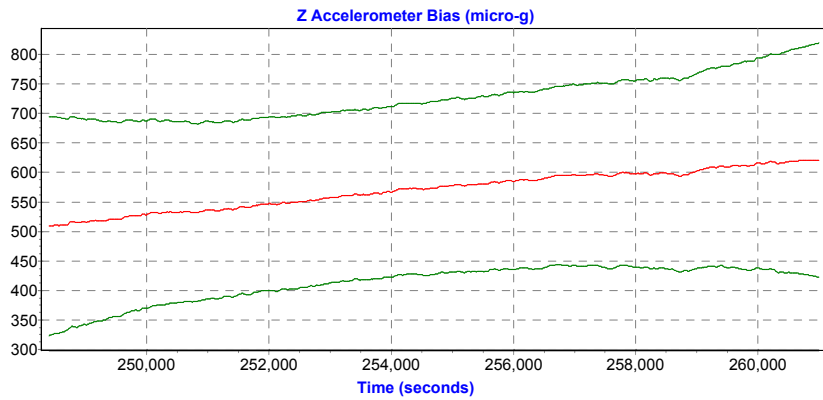
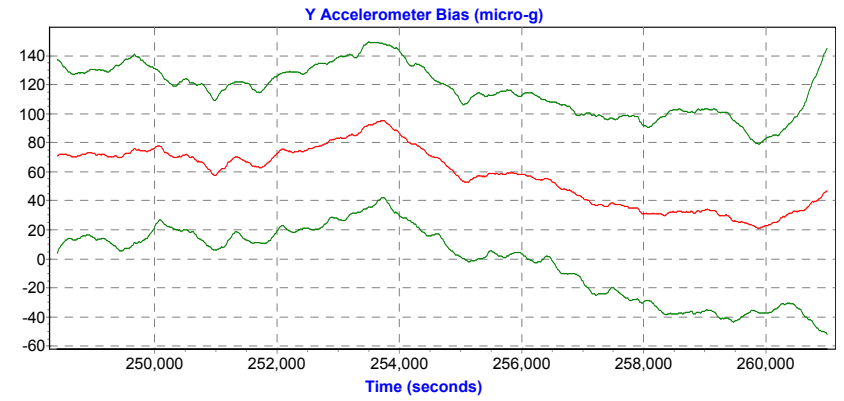
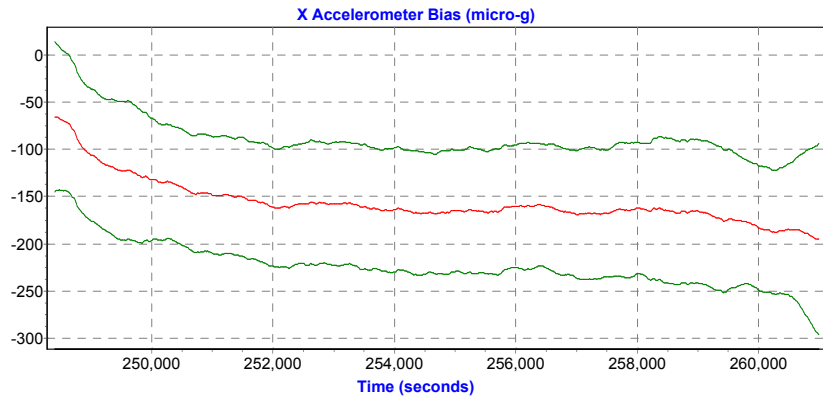


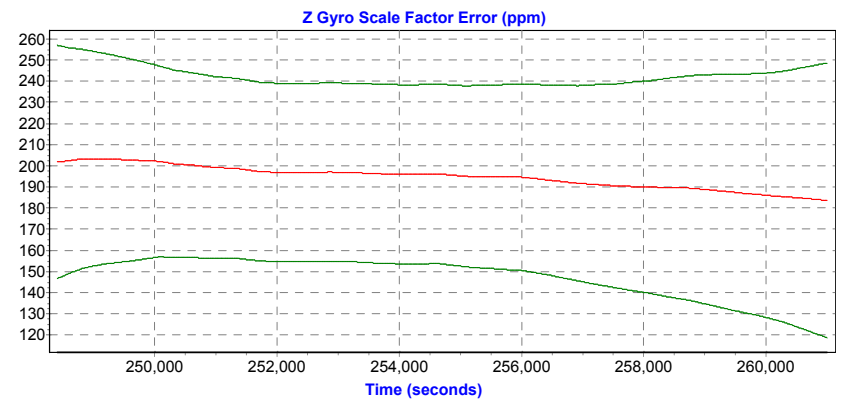
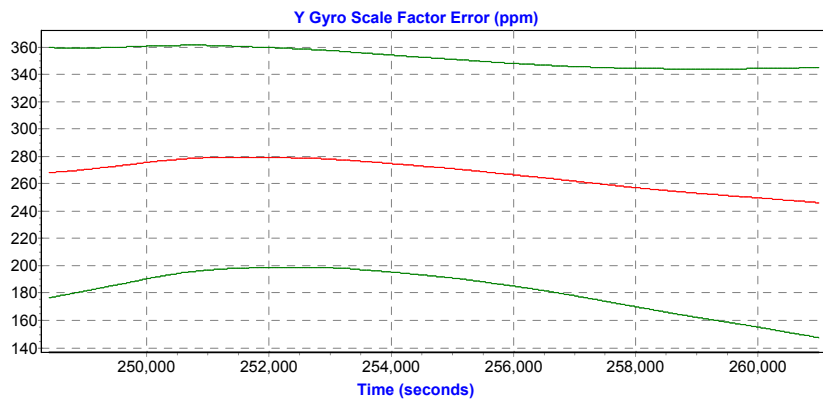
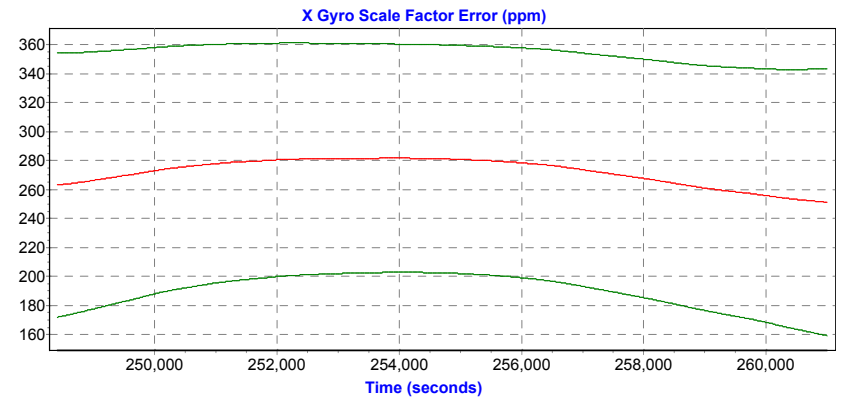
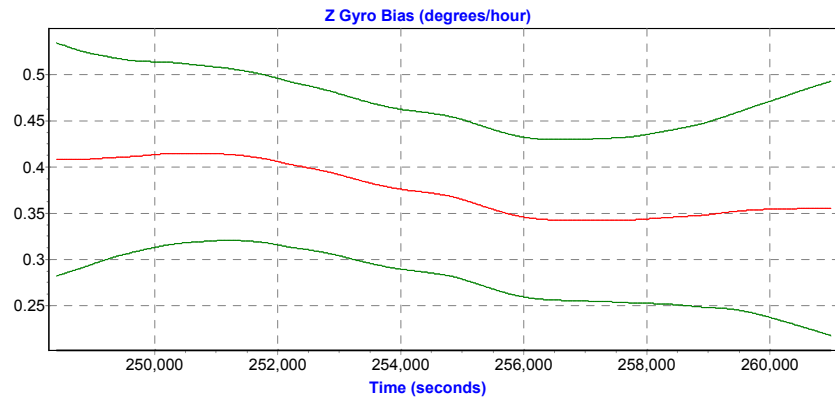
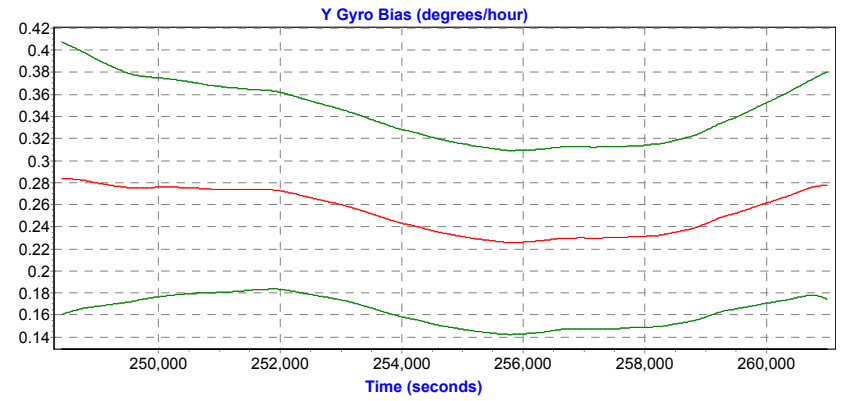
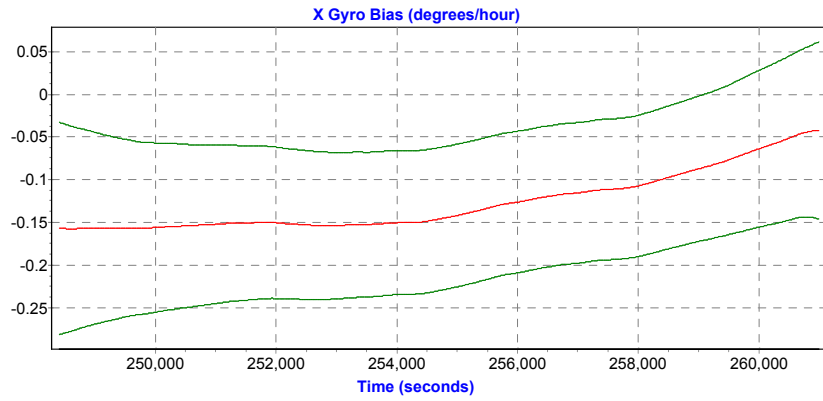






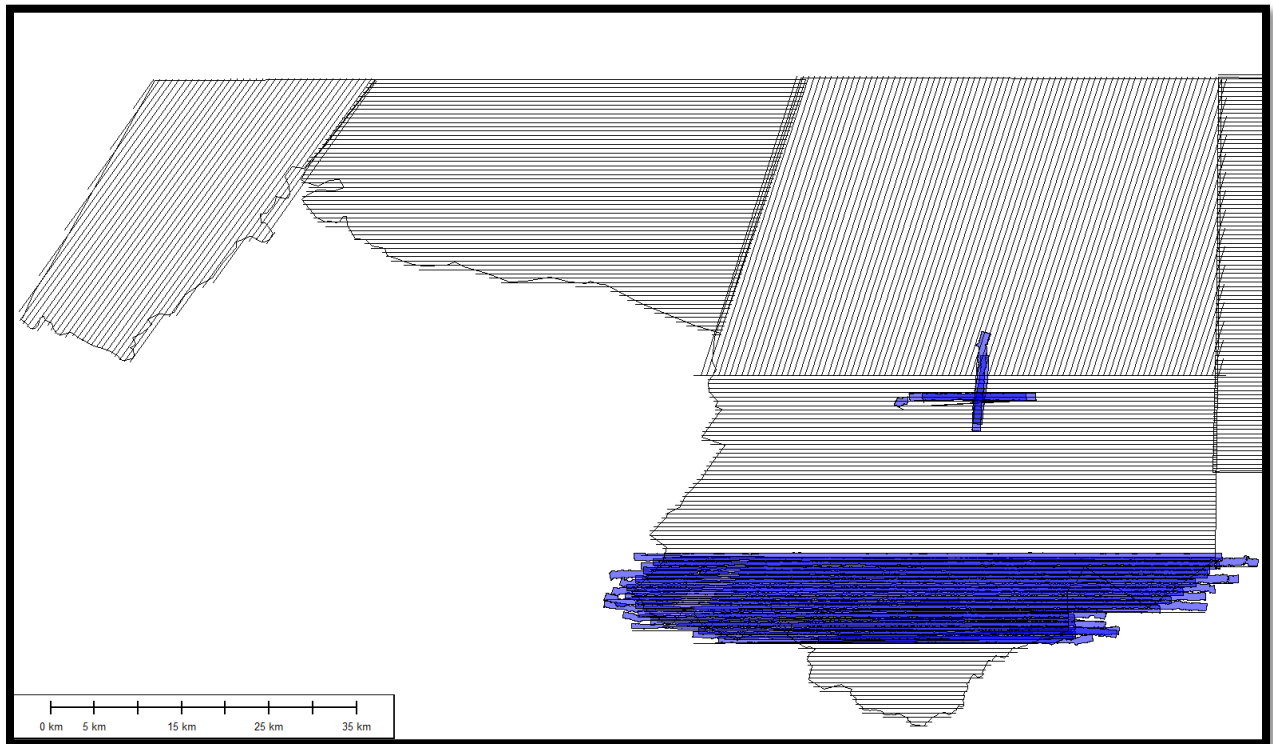






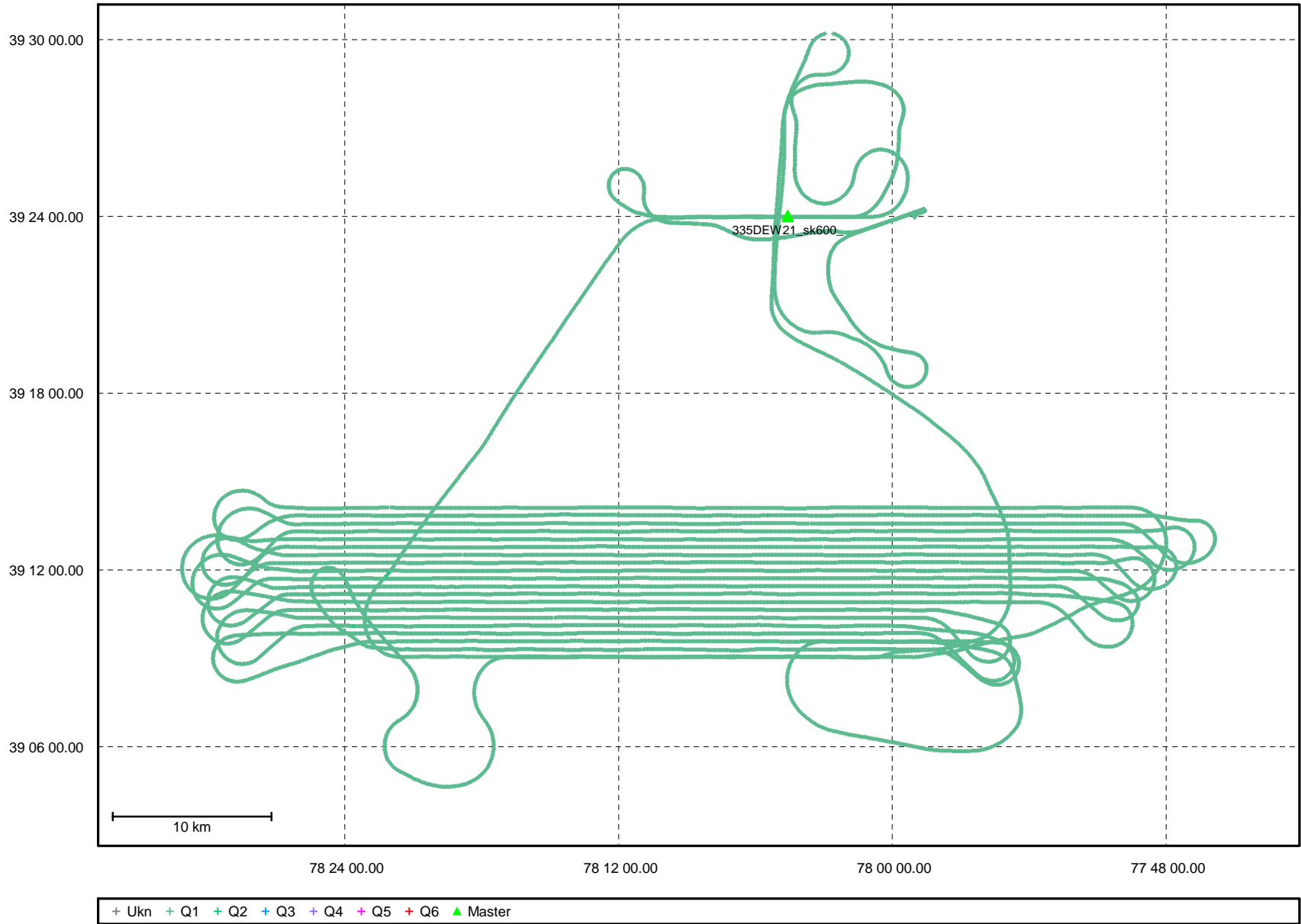
Mission: o112046a

February 15, 2012

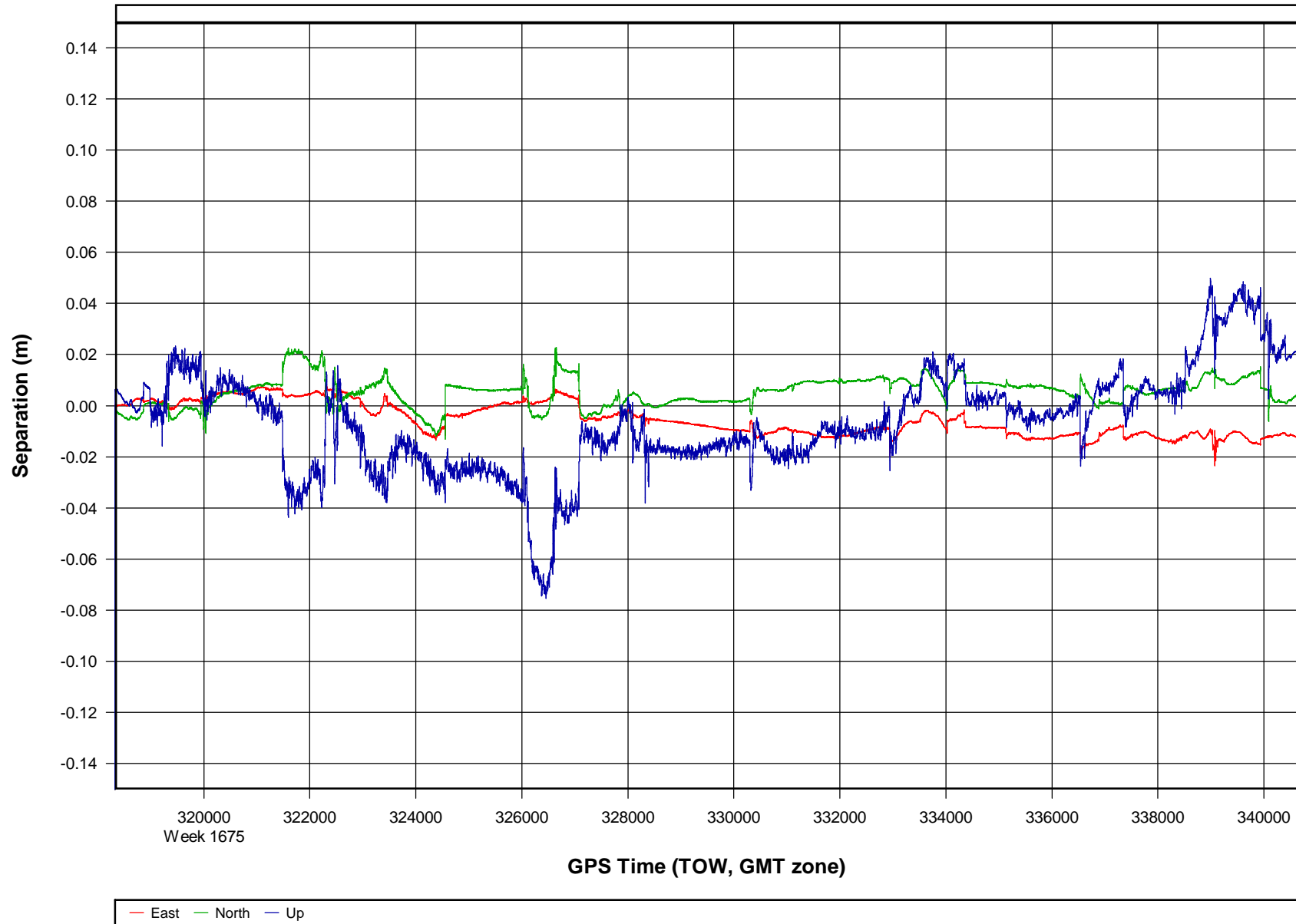


Combined - Map Run (1)

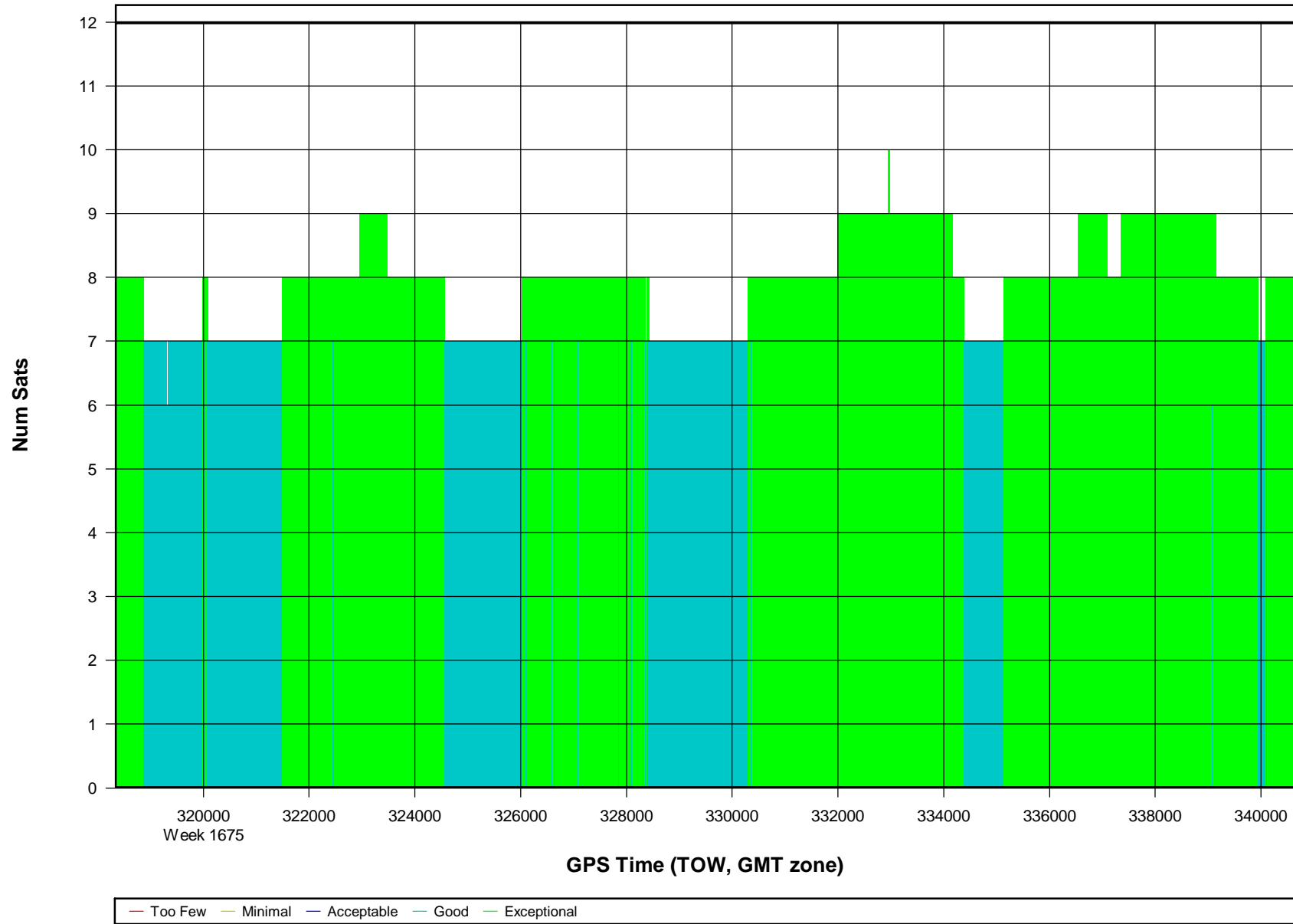
Geographic, DMS



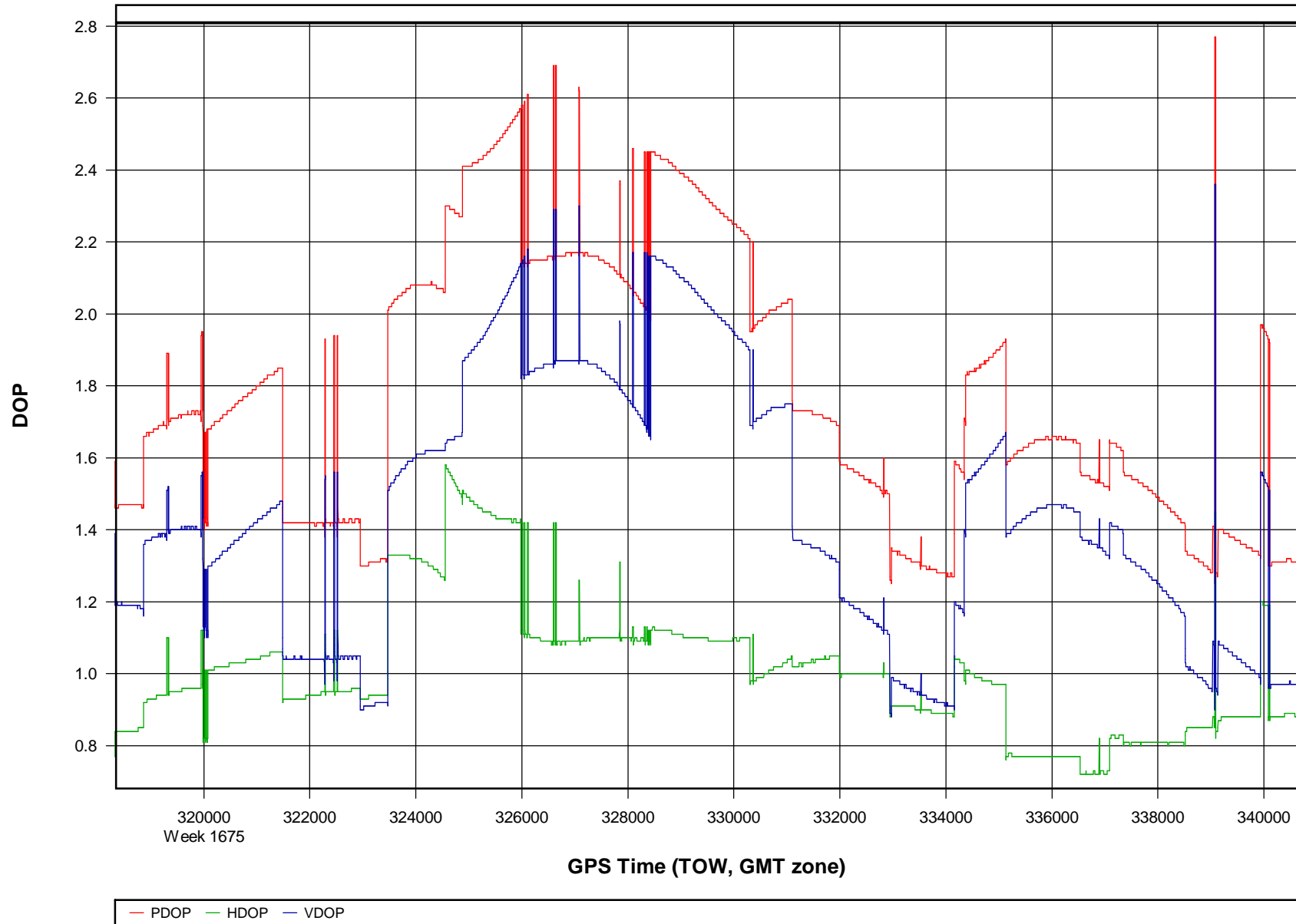
o112046a [Combined] - Forward/Reverse or Combined Separation Plot



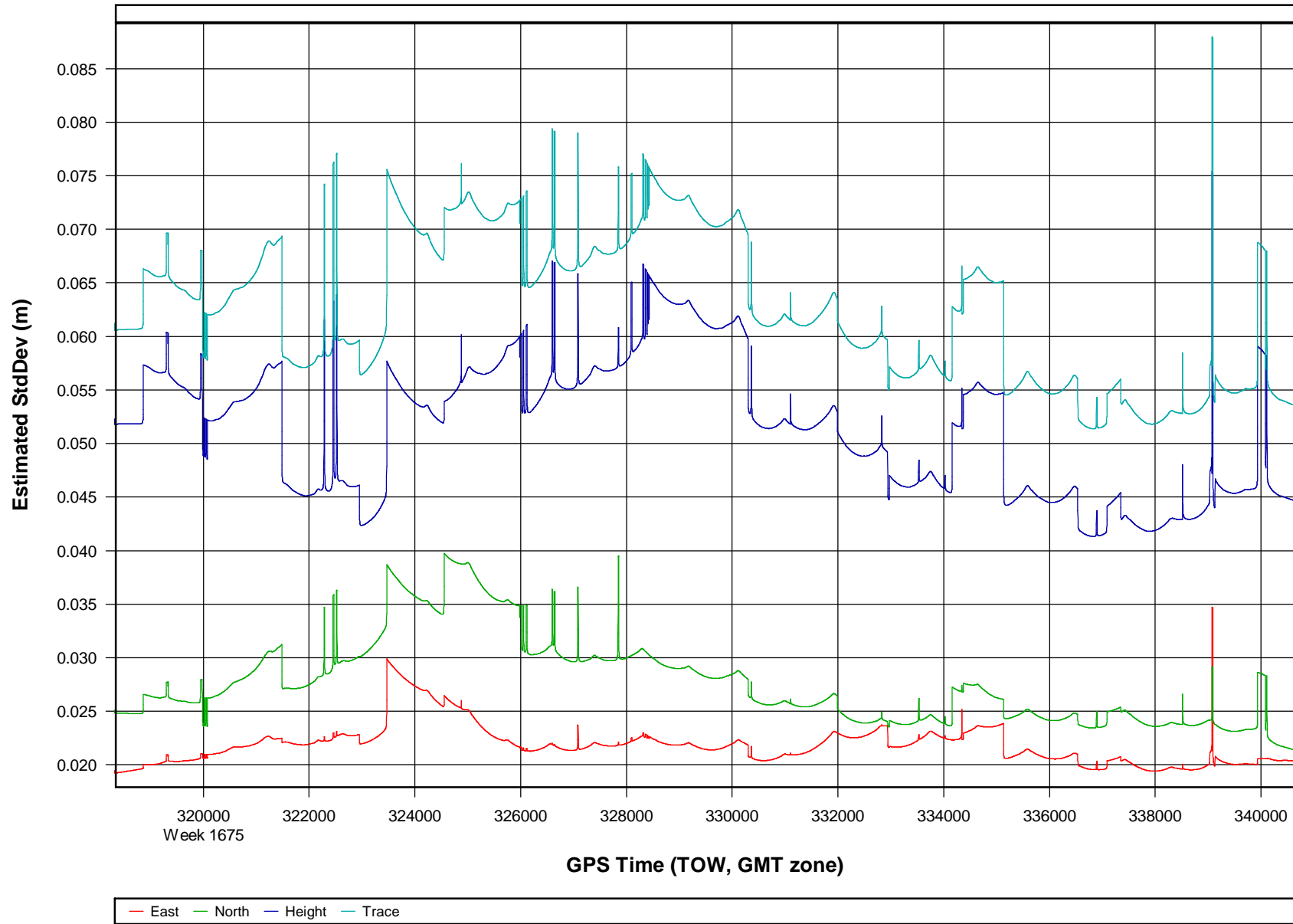
o112046a [Combined] - Number of Satellites Bar Plot



o112046a [Combined] - PDOP, HDOP, VDOP Plots



o112046a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112046a\3_Processed\GPS\o112046a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	223455
No processed position:	201140
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0149 (m)
C/A Code:	0.66 (m)
L1 Doppler:	0.030 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.009 (m)
North:	0.008 (m)
Height:	0.022 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (22310 occurrences):

East:	0.008 (m)
North:	0.008 (m)
Height:	0.021 (m)

Quality Number Percentages:

Q 1:	100.0 %
Q 2:	0.0 %
Q 3:	0.0 %
Q 4:	0.0 %
Q 5:	0.0 %
Q 6:	0.0 %

Position Standard Deviation Percentages:

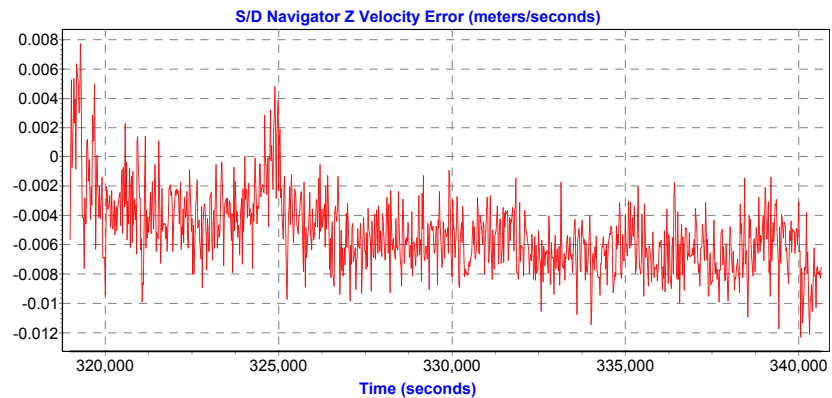
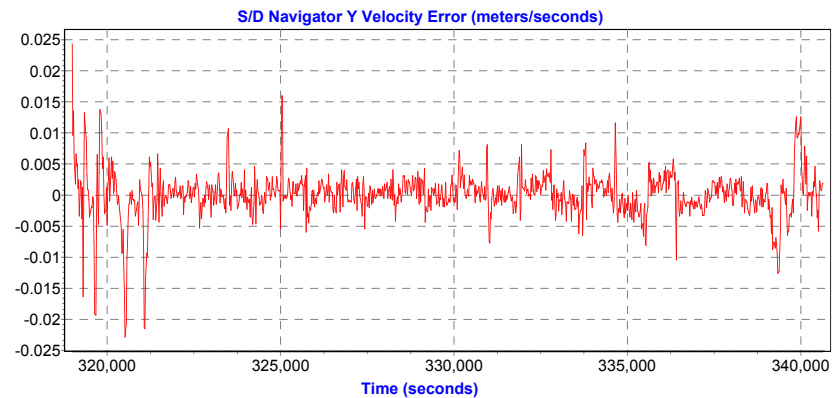
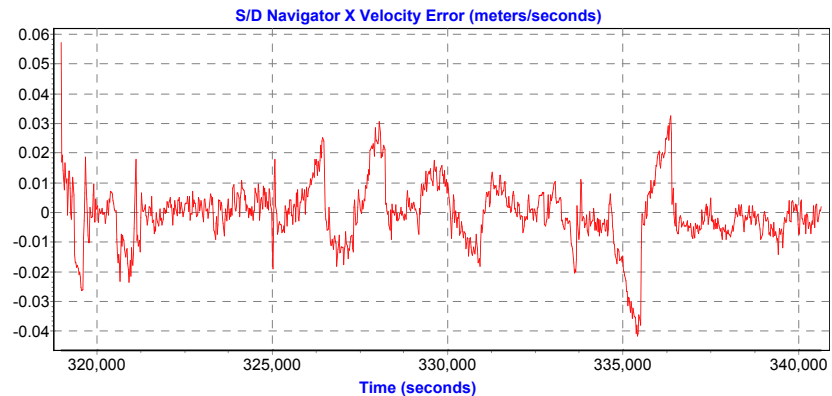
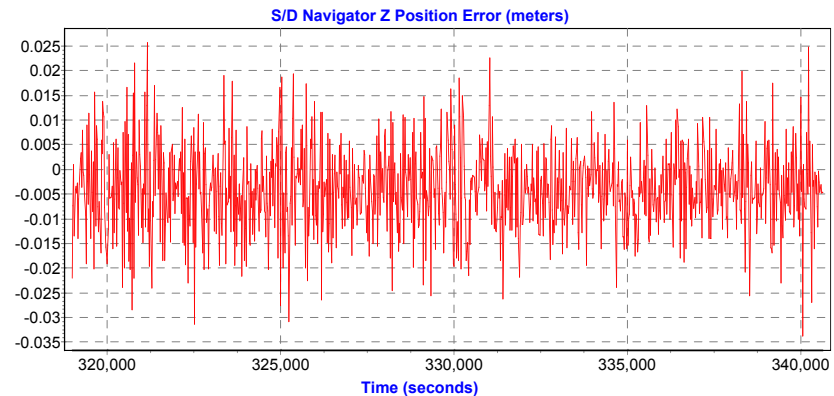
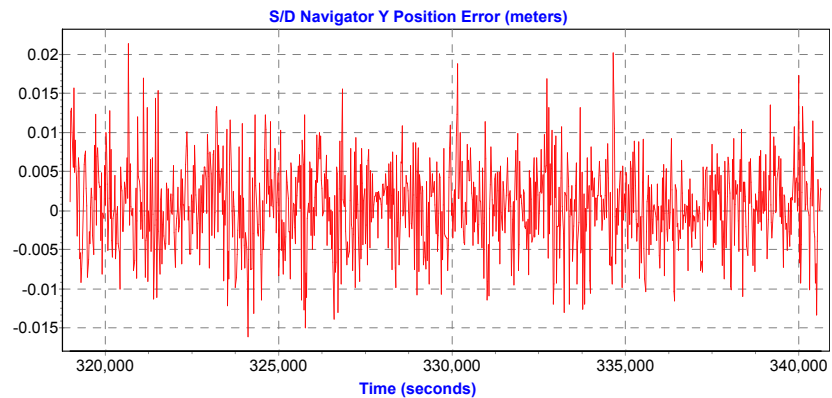
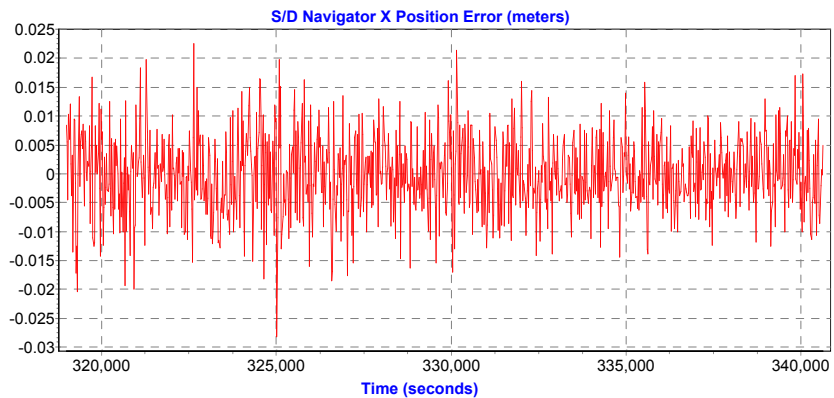
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

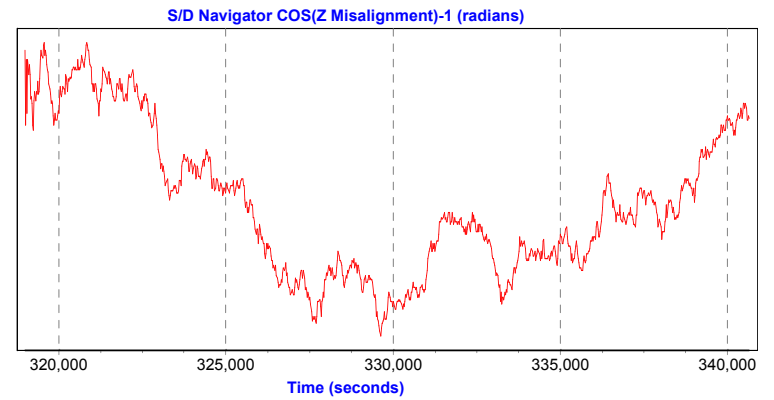
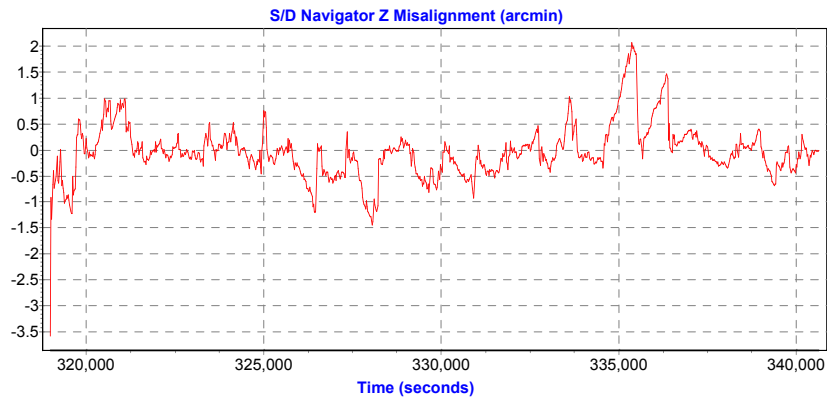
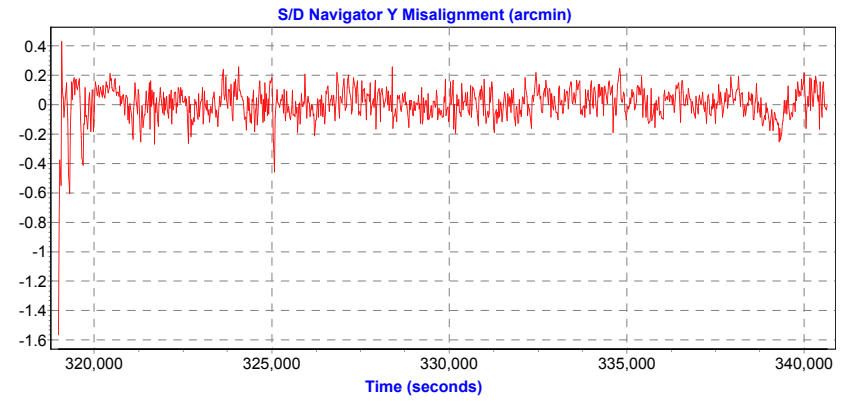
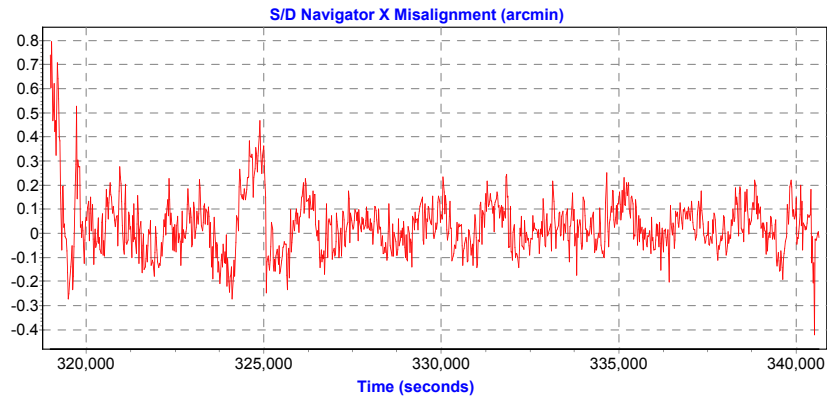
Percentages of epochs with DD_DOP over 10.00:

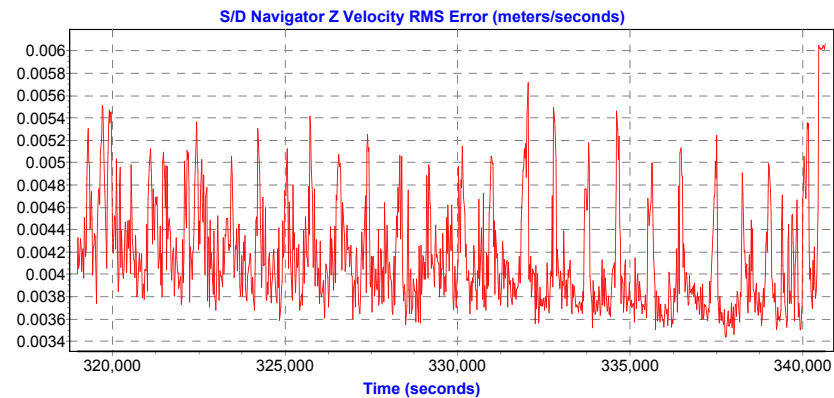
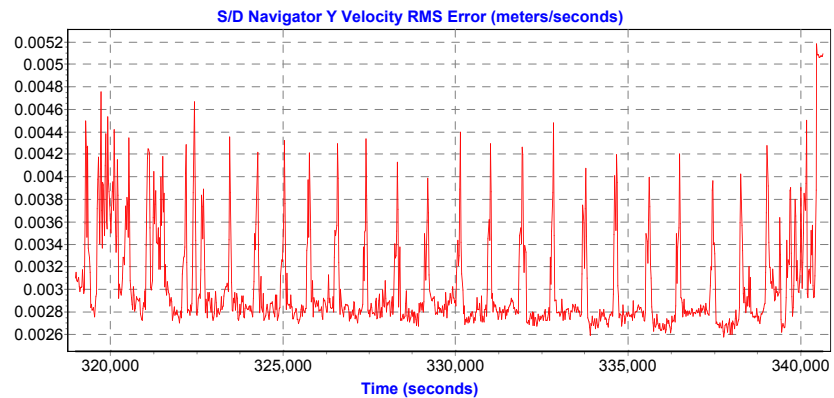
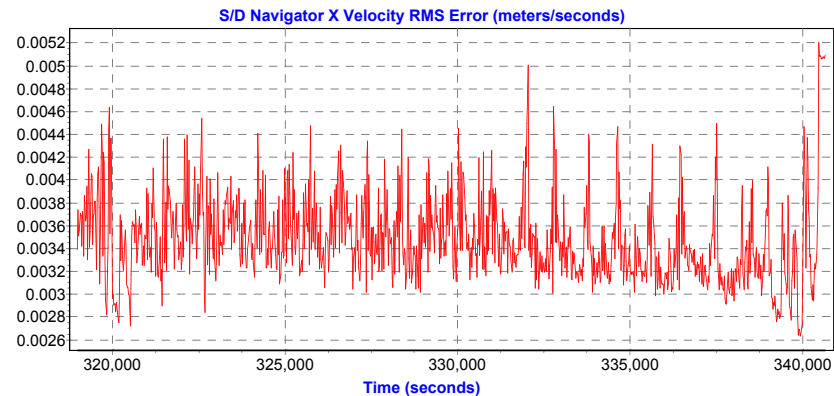
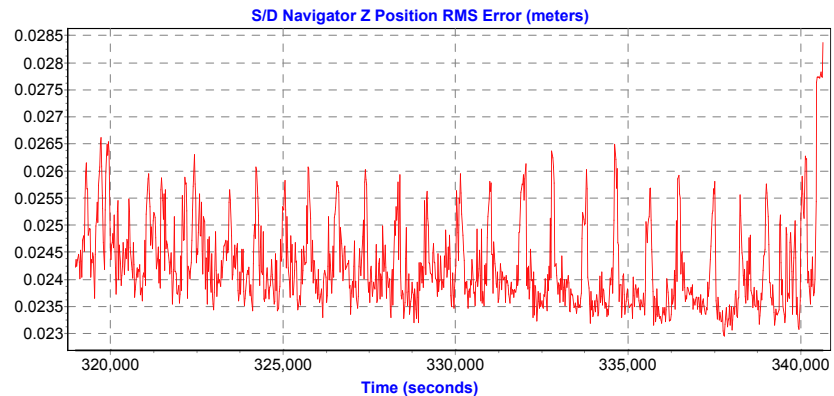
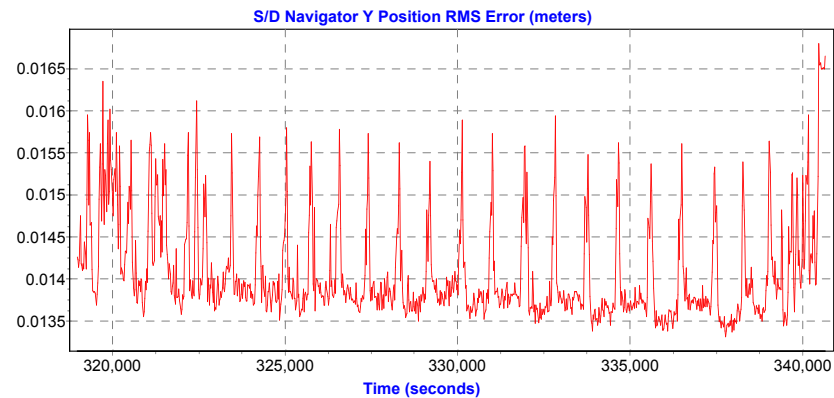
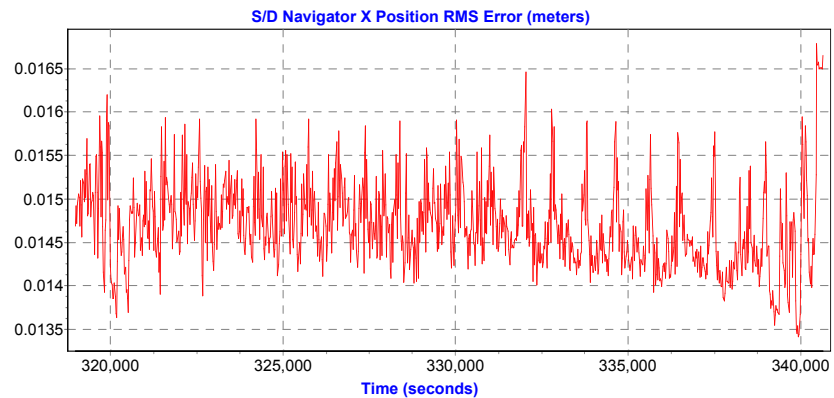
DOP over Tol:	0.0 %
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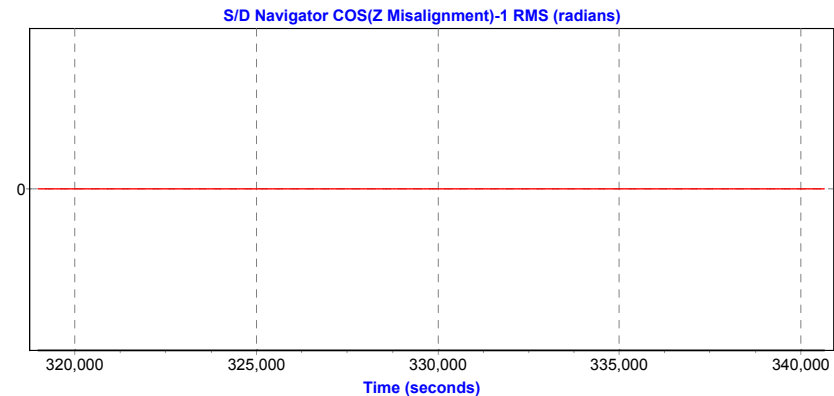
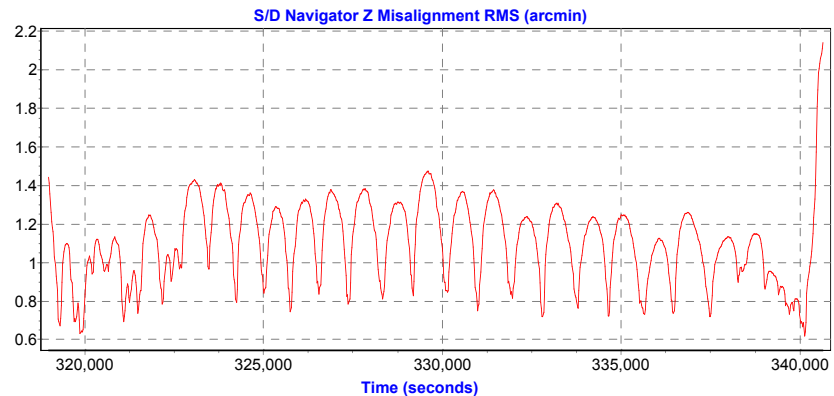
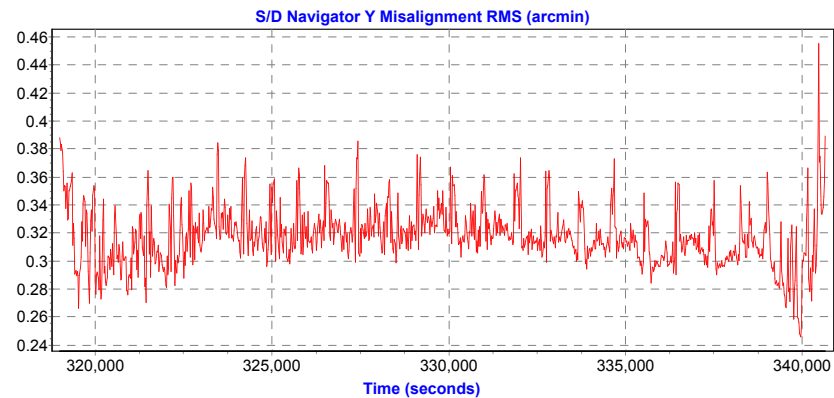
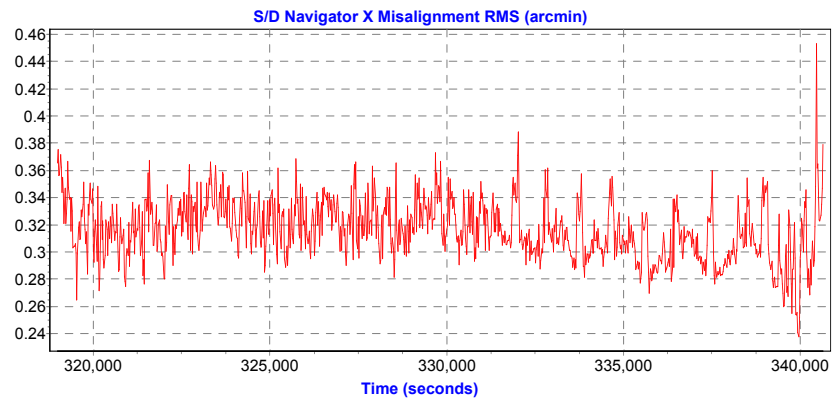
Baseline Distances:

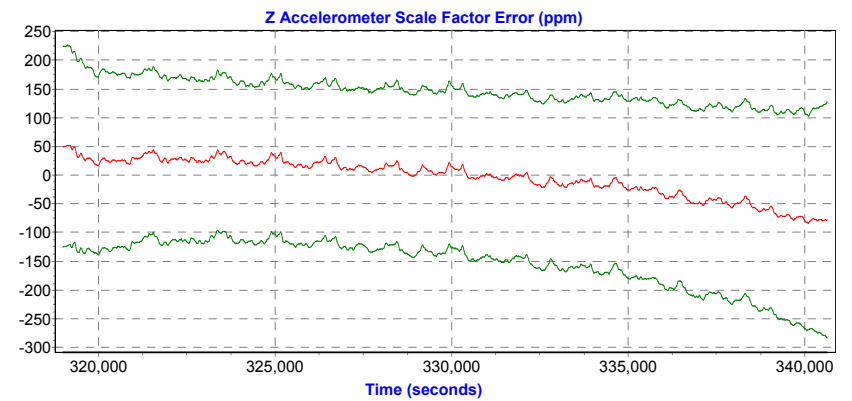
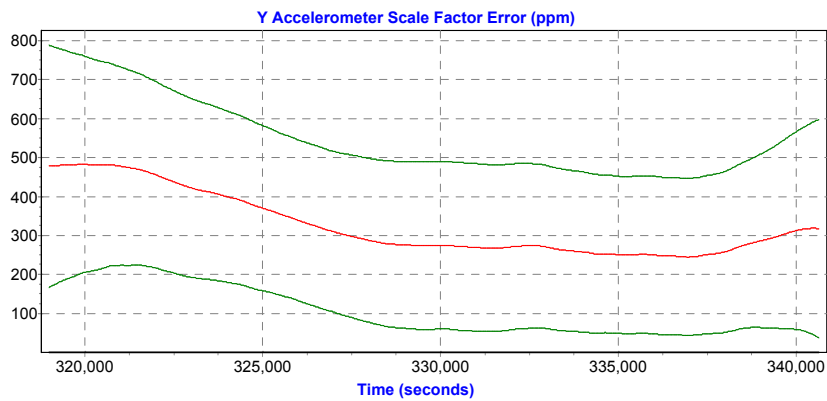
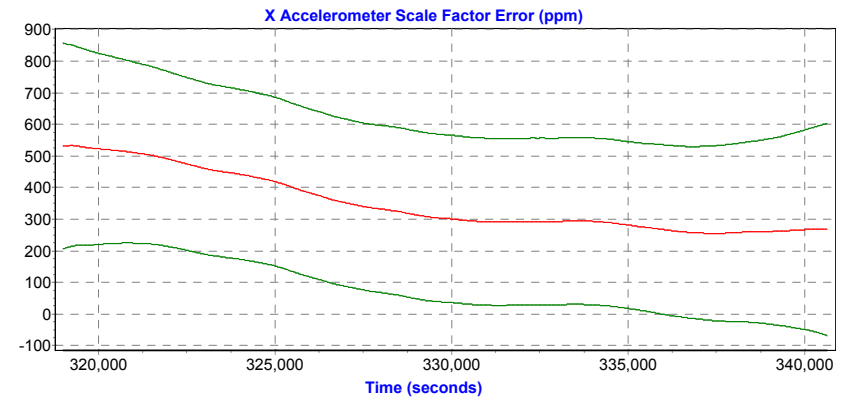
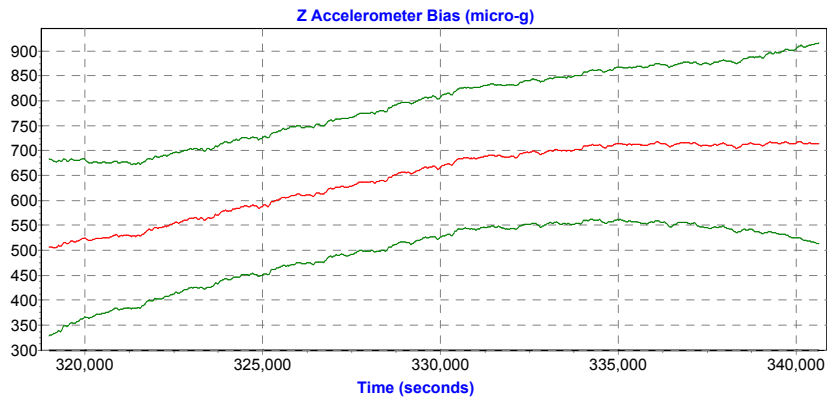
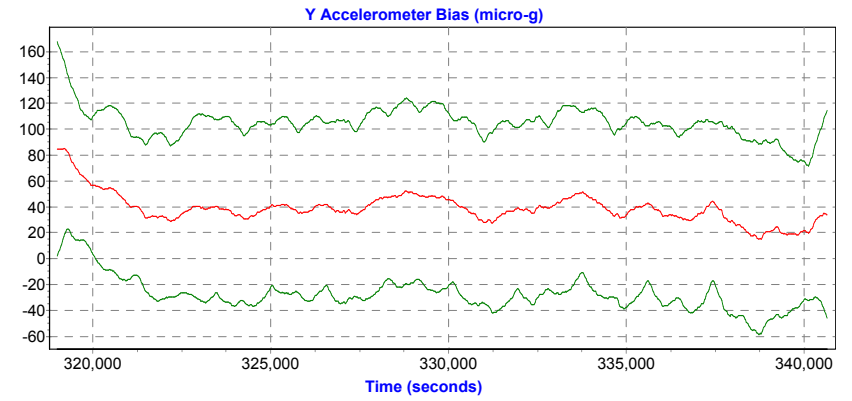
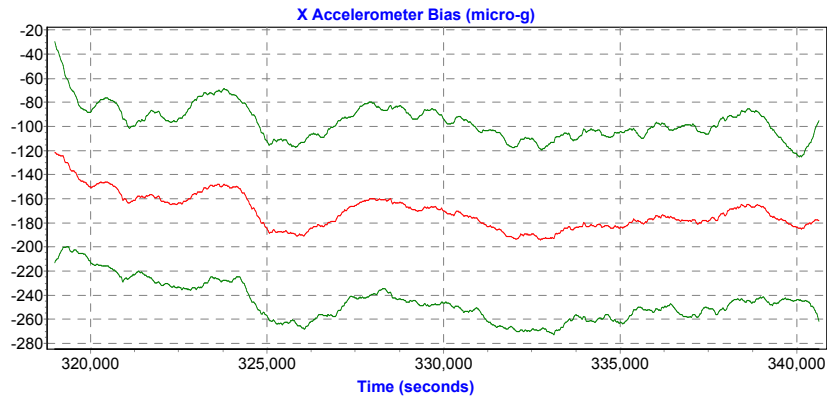
Maximum:	45.959 (km)
Minimum:	0.921 (km)
Average:	25.999 (km)
First Epoch:	8.017 (km)
Last Epoch:	8.011 (km)

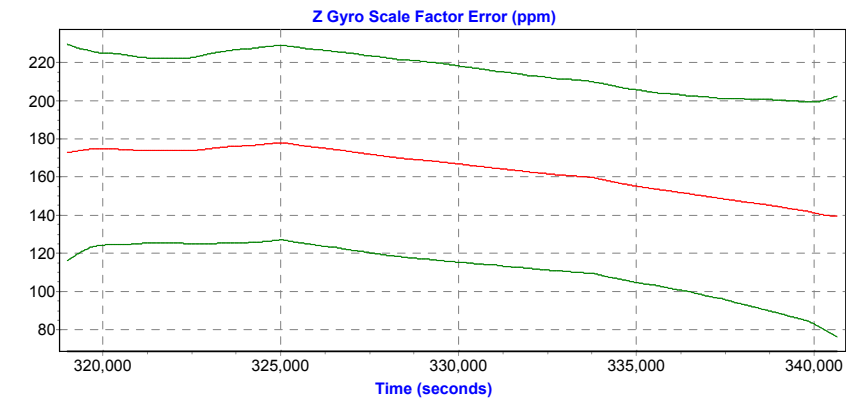
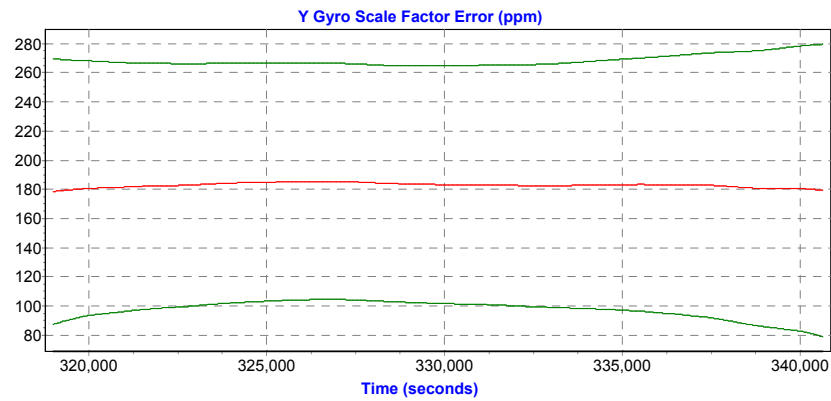
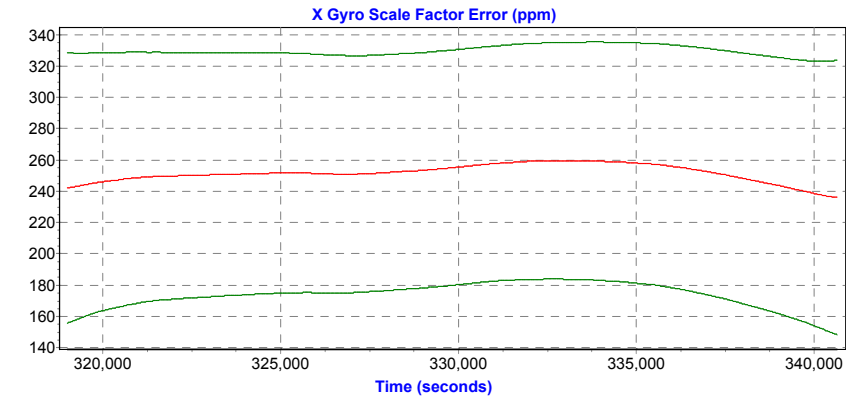
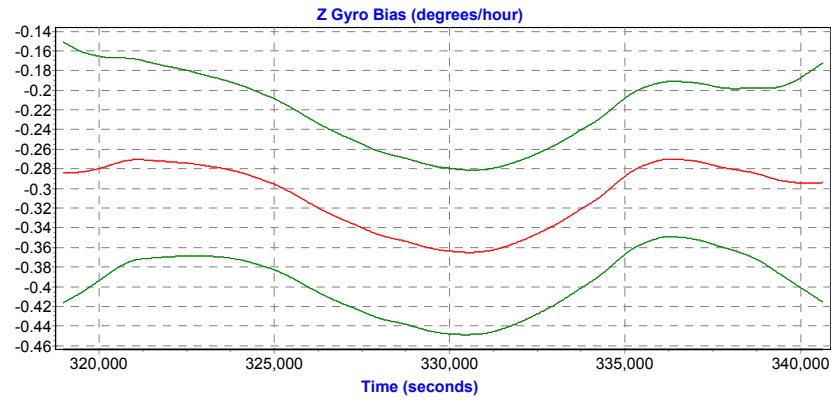
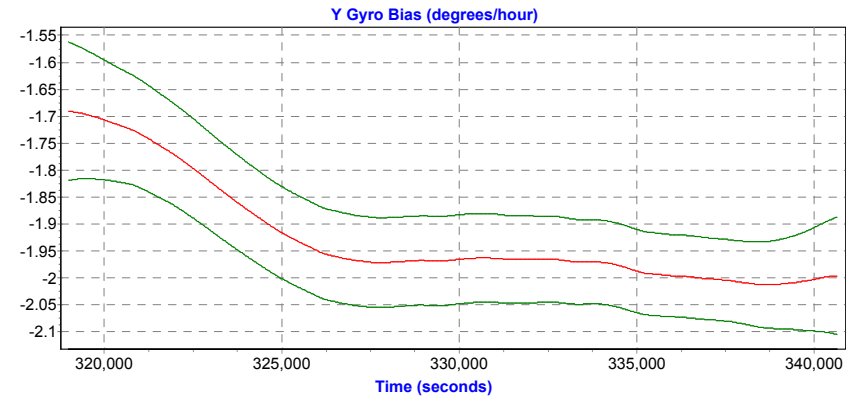
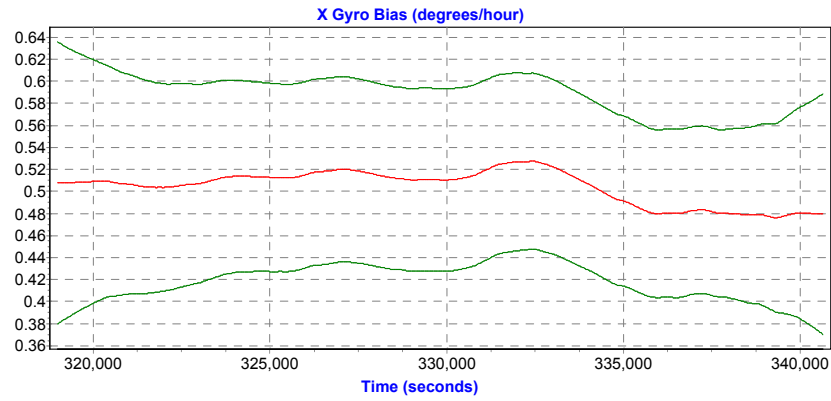






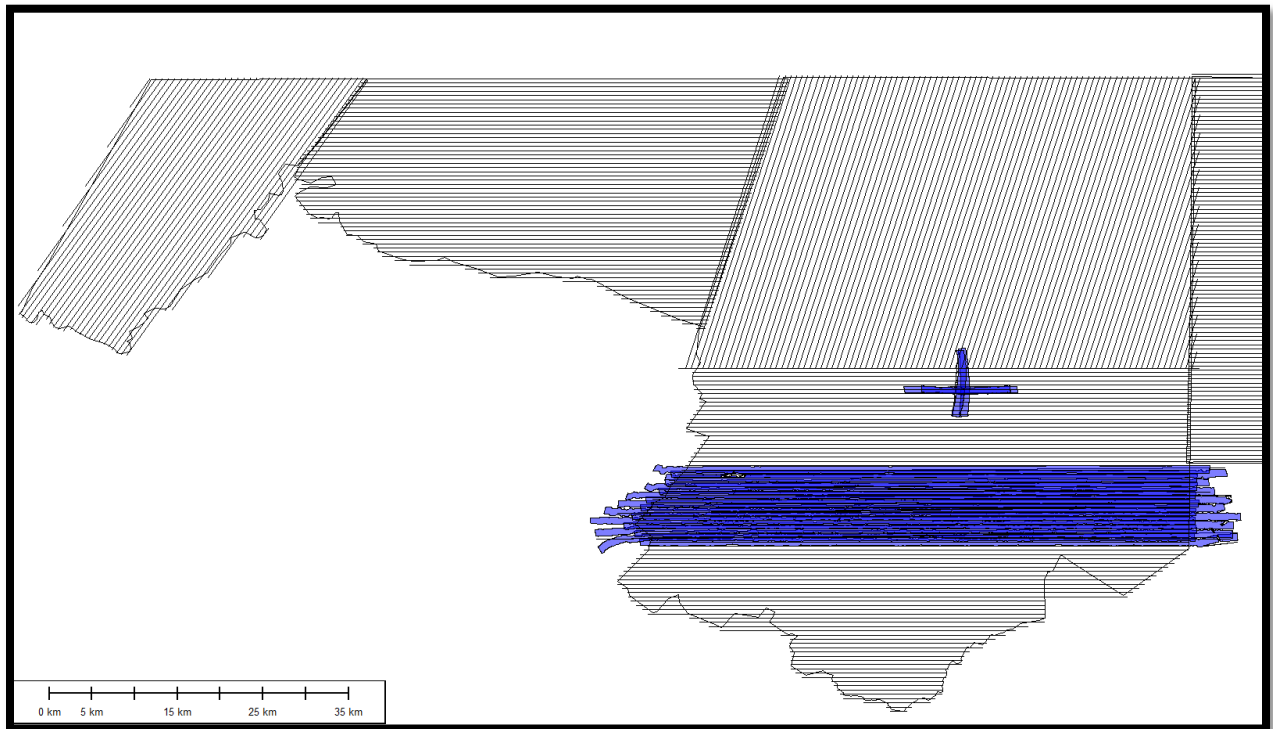






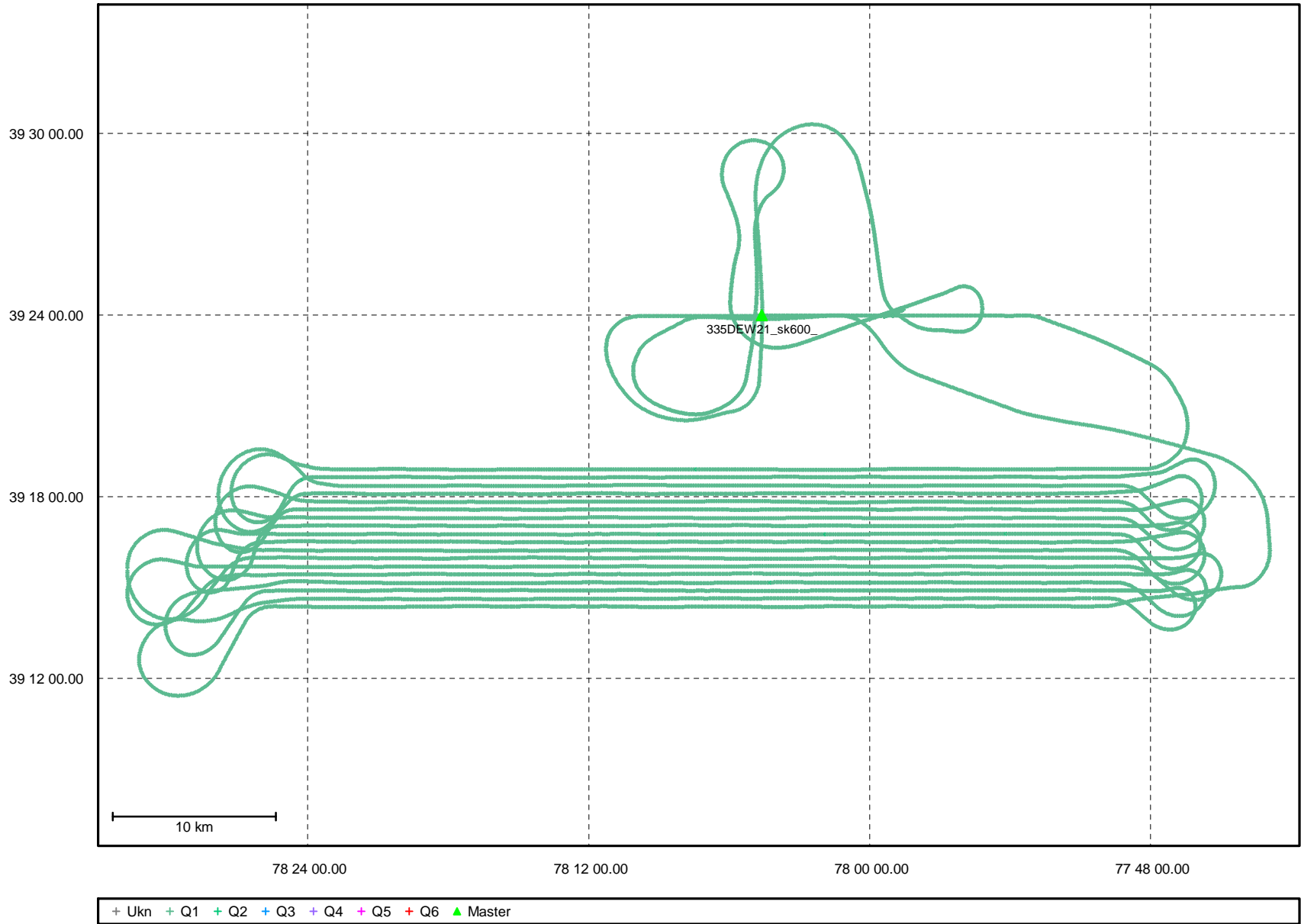
Mission: o112046b

February 15, 2012

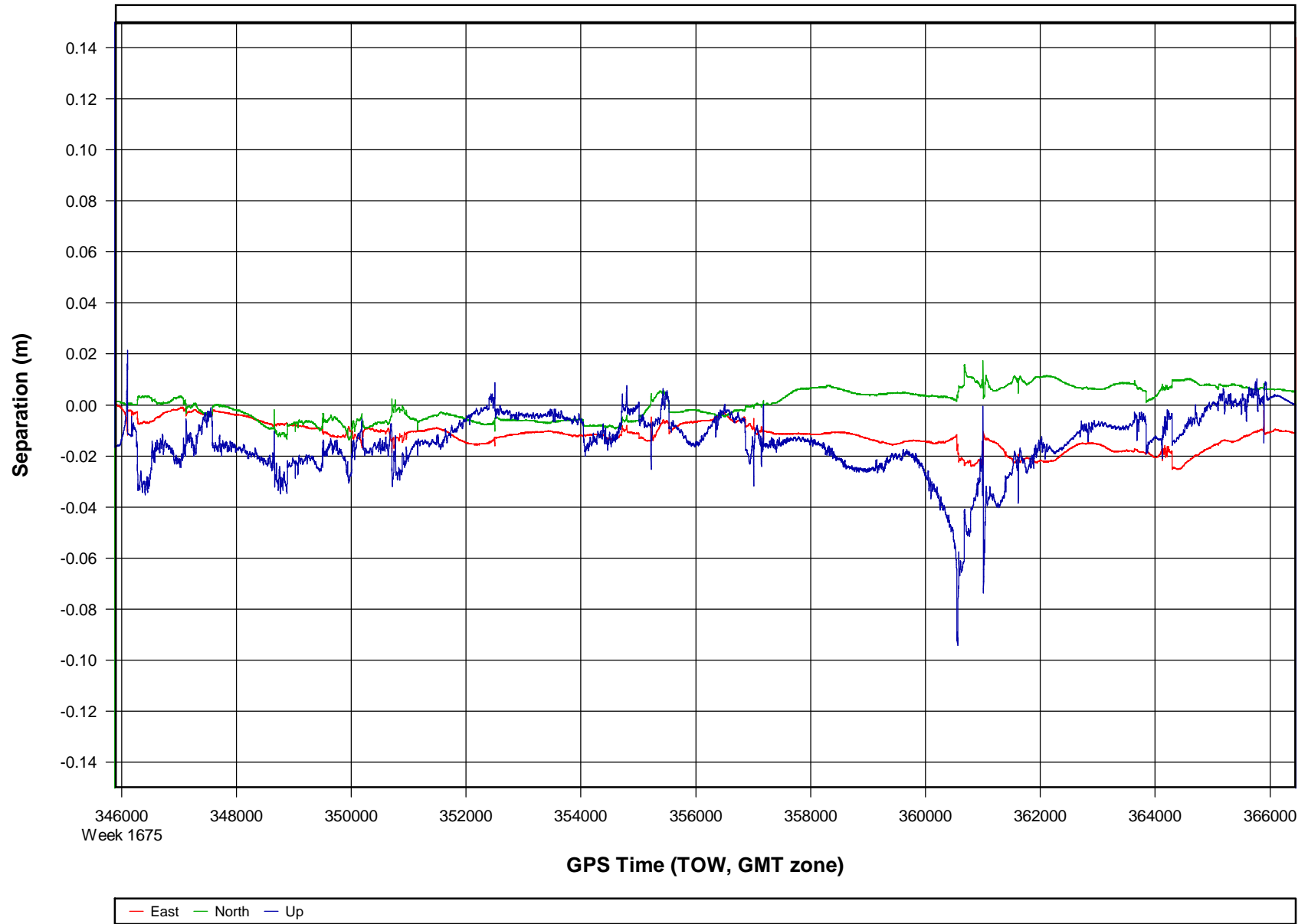


Combined - Map Run (1)

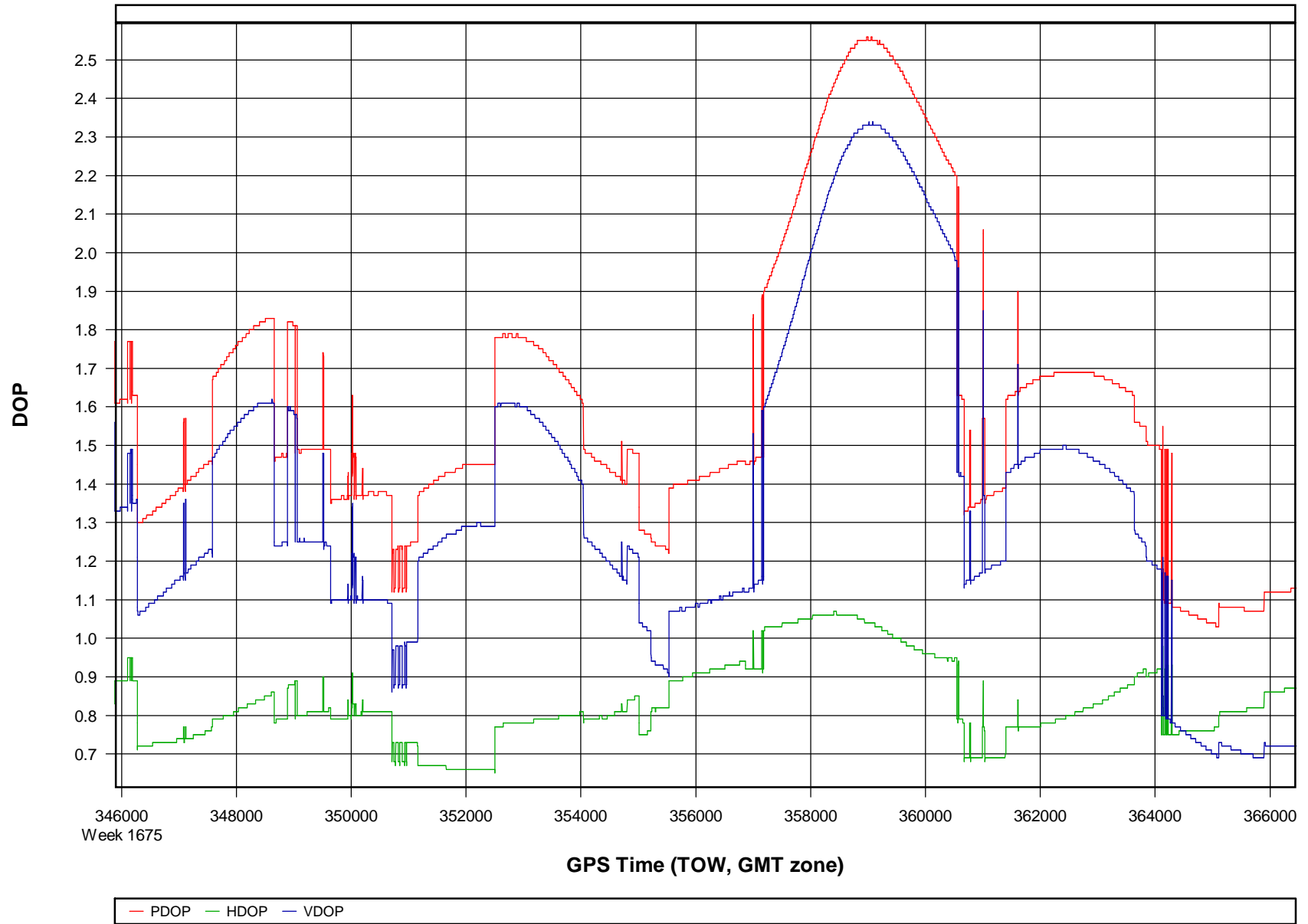
Geographic, DMS



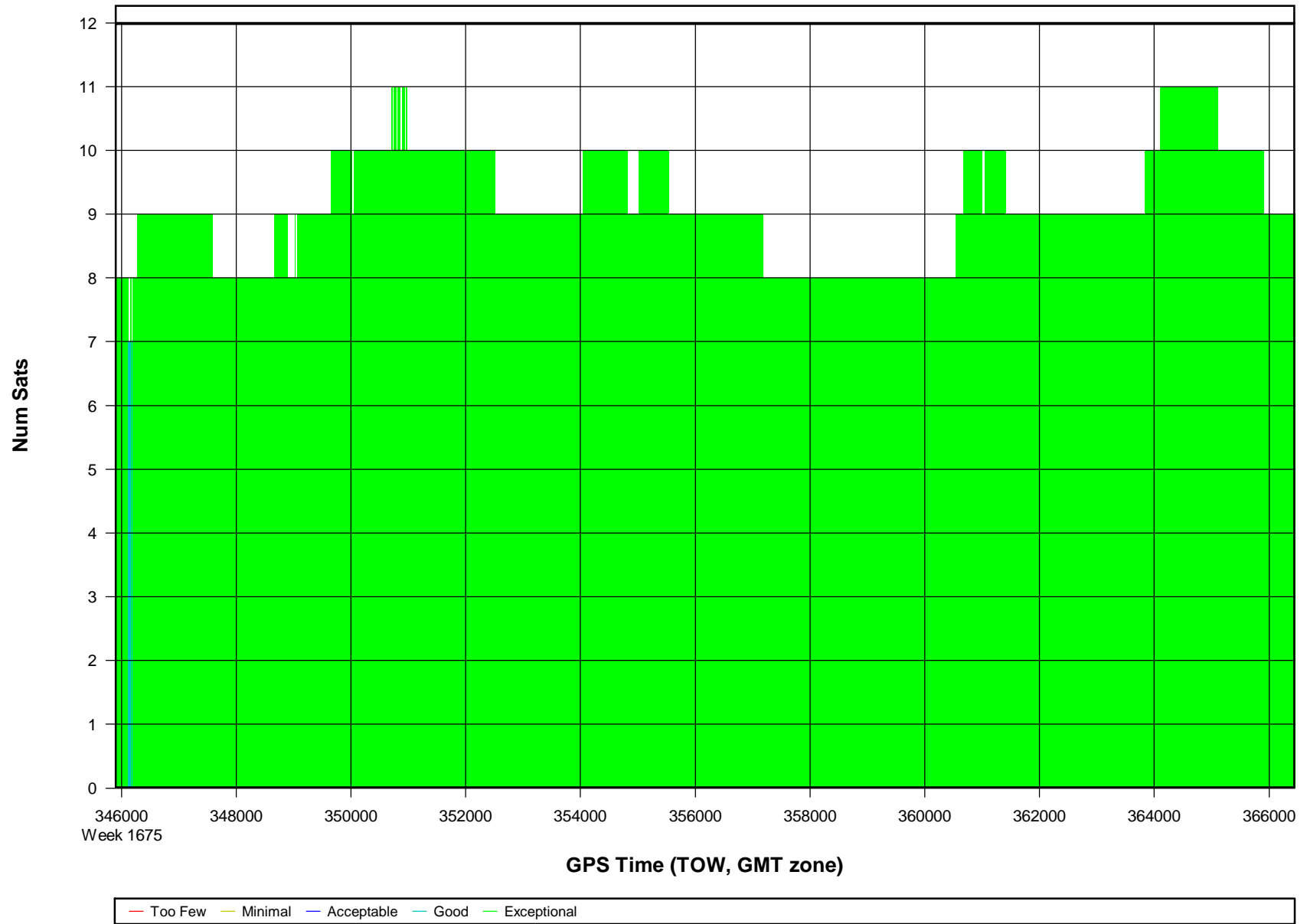
o112046b [Combined] - Forward/Reverse or Combined Separation Plot



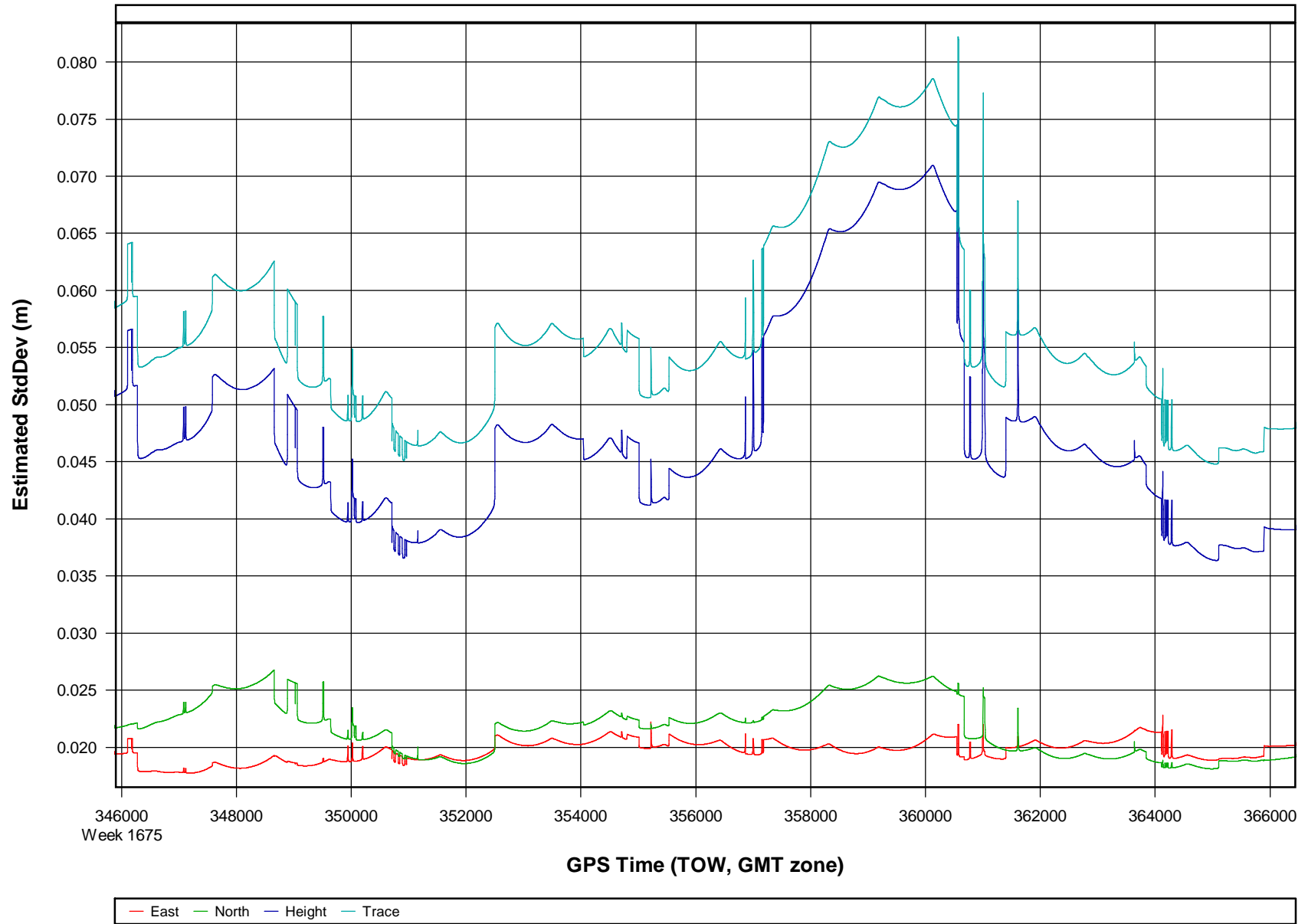
o112046b [Combined] - PDOP, HDOP, VDOP Plots



o112046b [Combined] - Number of Satellites Bar Plot



o112046b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112046b\3_Processed\GPS\o112046b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	205849
No processed position:	185283
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0145 (m)
C/A Code:	0.65 (m)
L1 Doppler:	0.029 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.013 (m)
North:	0.007 (m)
Height:	0.019 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (20561 occurrences):

East:	0.013 (m)
North:	0.006 (m)
Height:	0.018 (m)

Quality Number Percentages:

Q 1:	100.0 %
Q 2:	0.0 %
Q 3:	0.0 %
Q 4:	0.0 %
Q 5:	0.0 %
Q 6:	0.0 %

Position Standard Deviation Percentages:

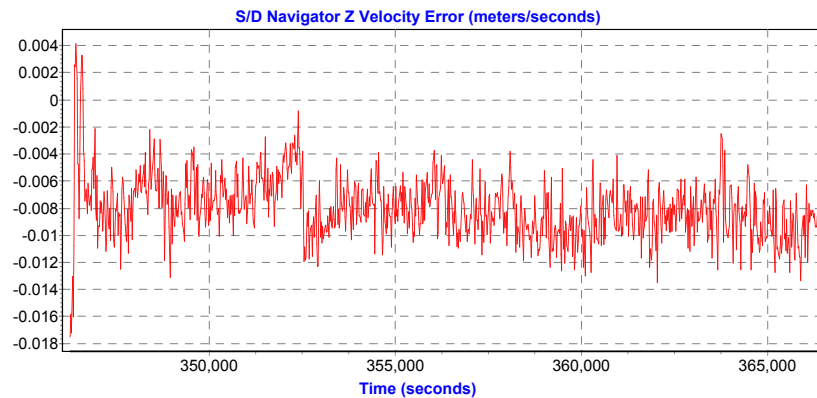
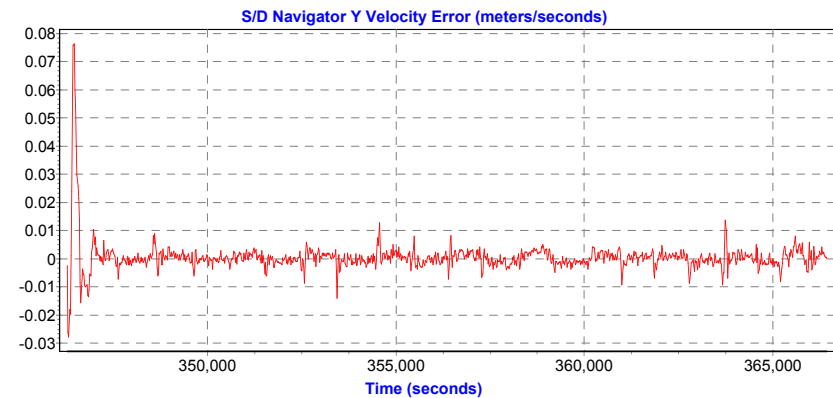
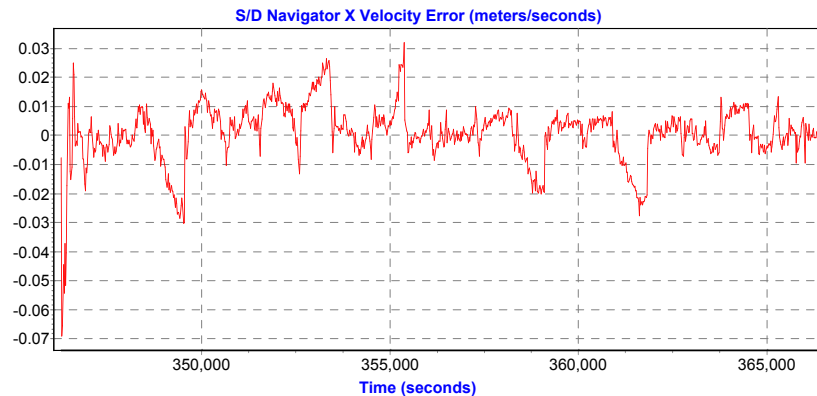
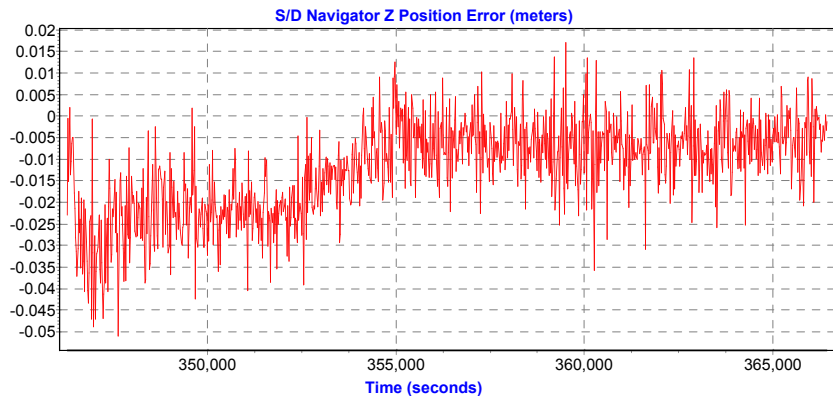
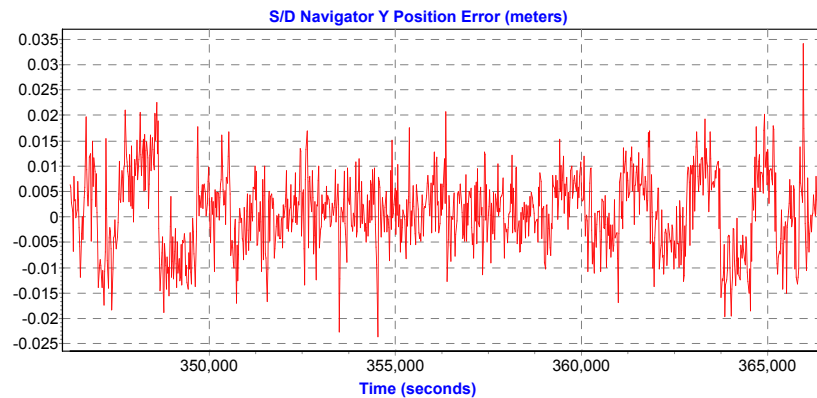
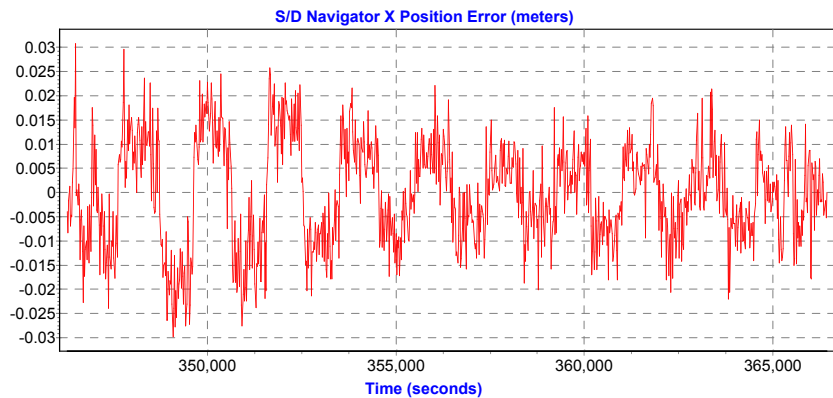
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

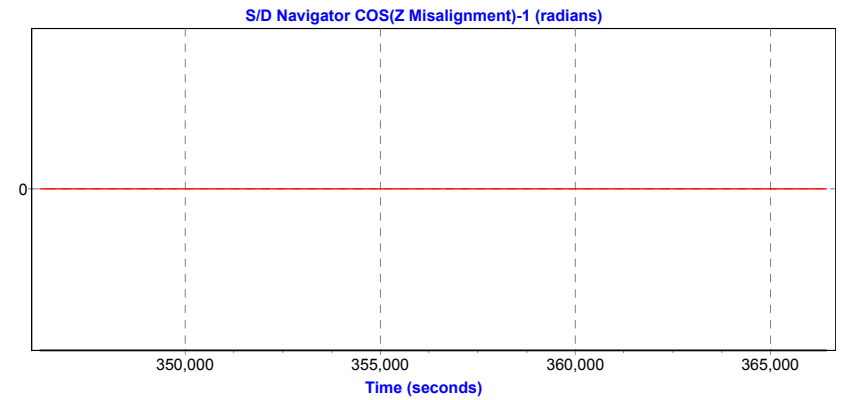
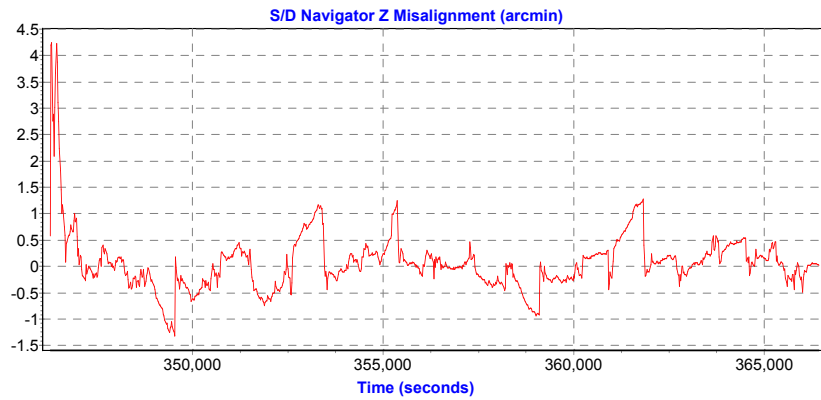
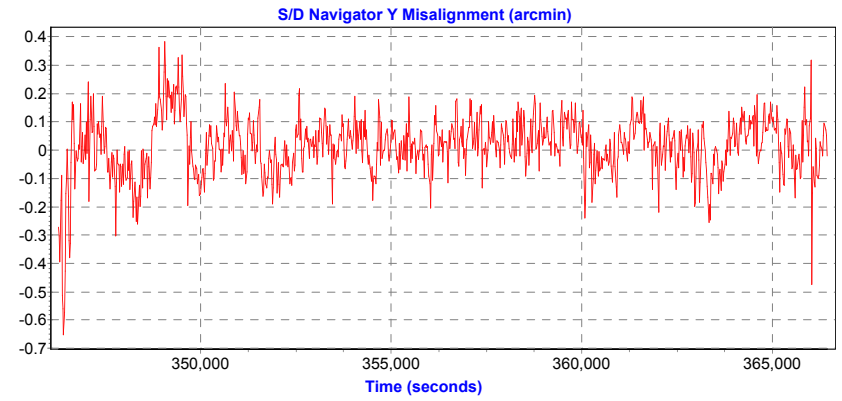
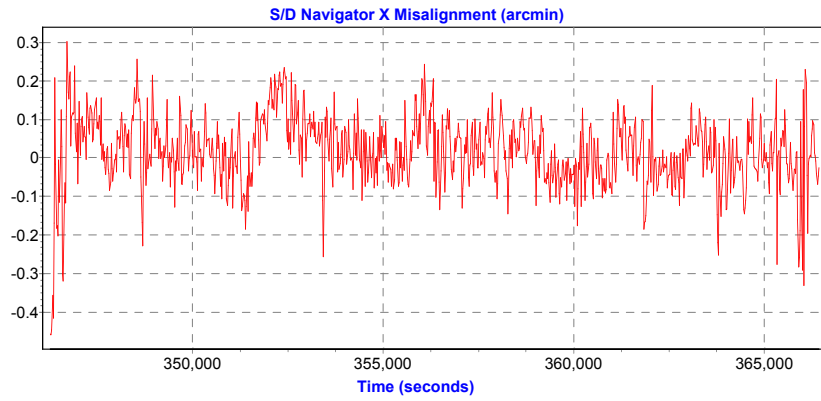
Percentages of epochs with DD_DOP over 10.00:

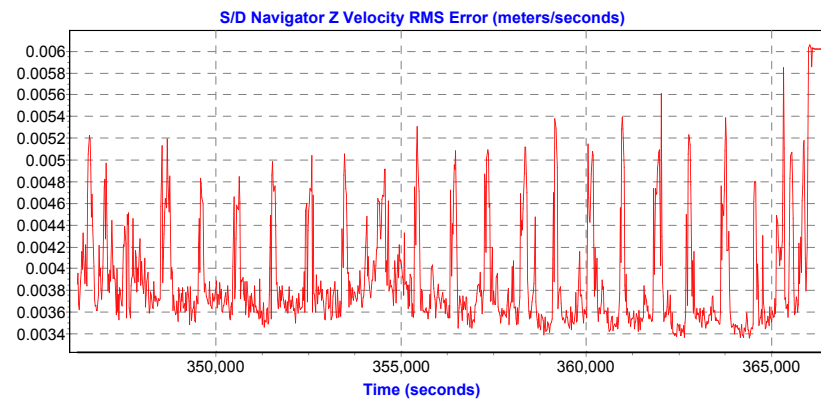
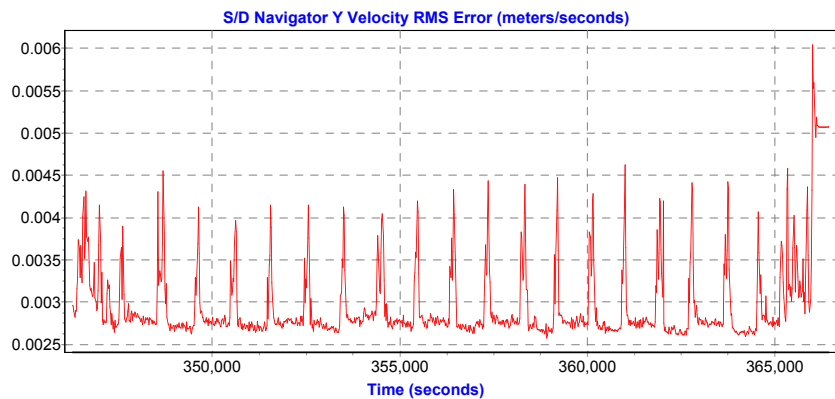
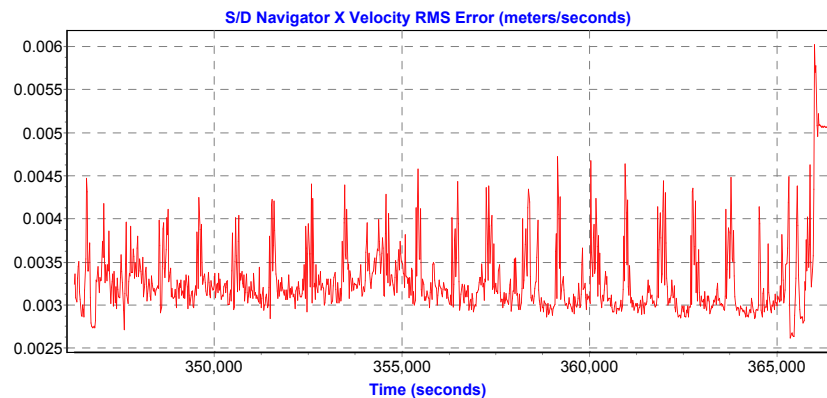
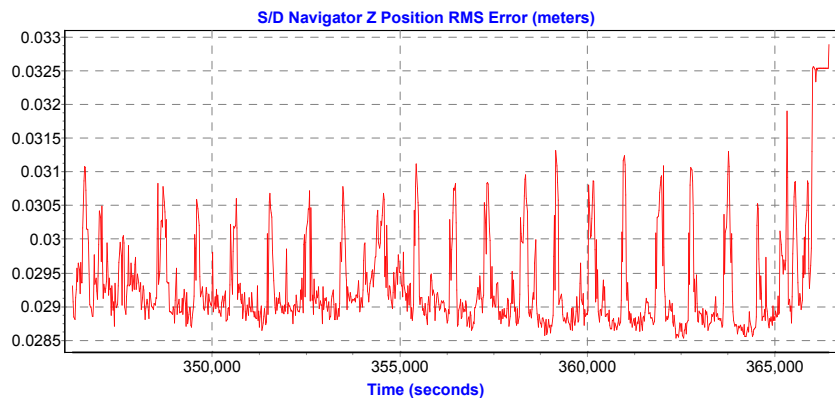
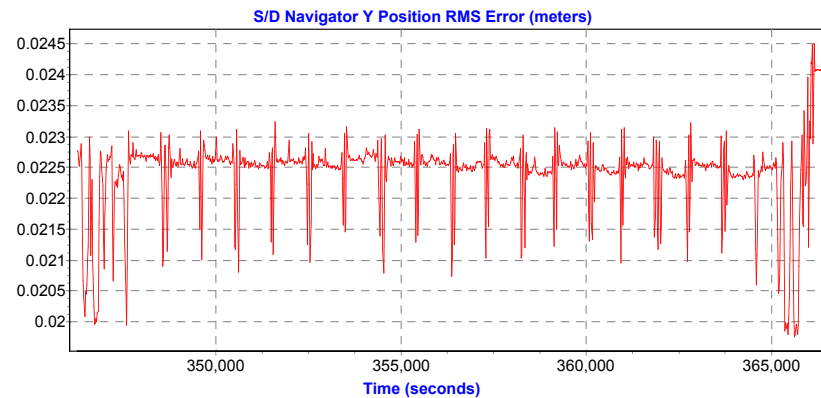
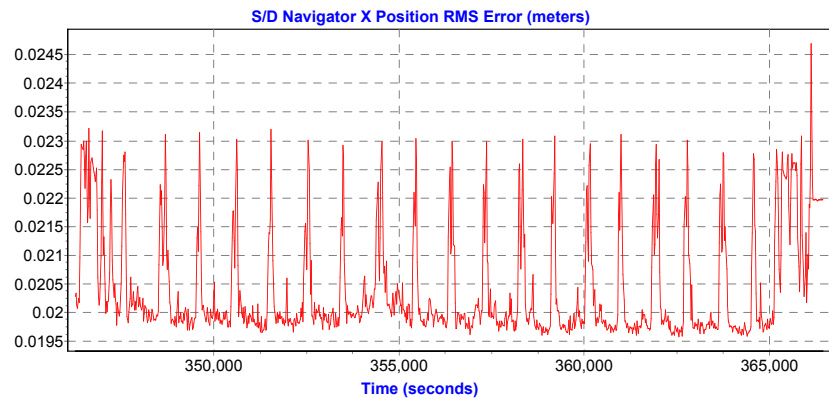
DOP over Tol:	0.0 %
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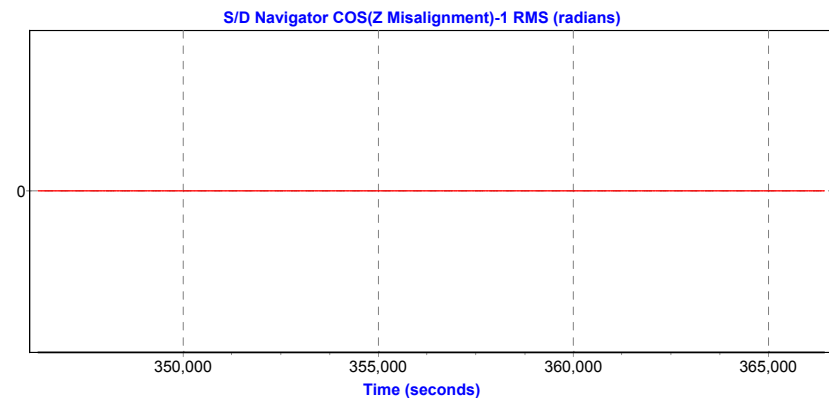
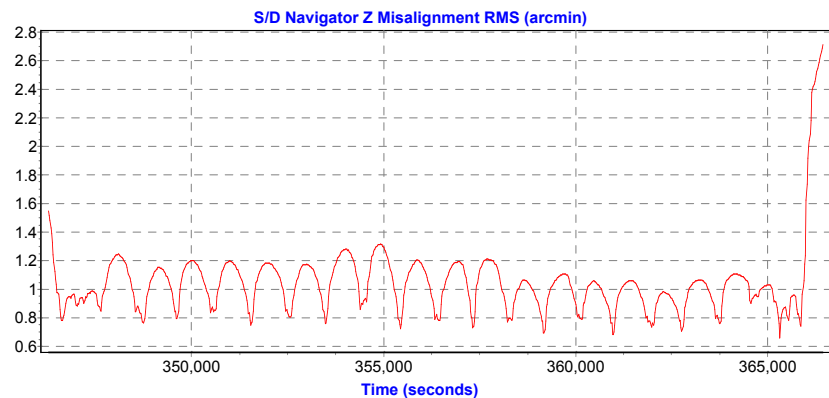
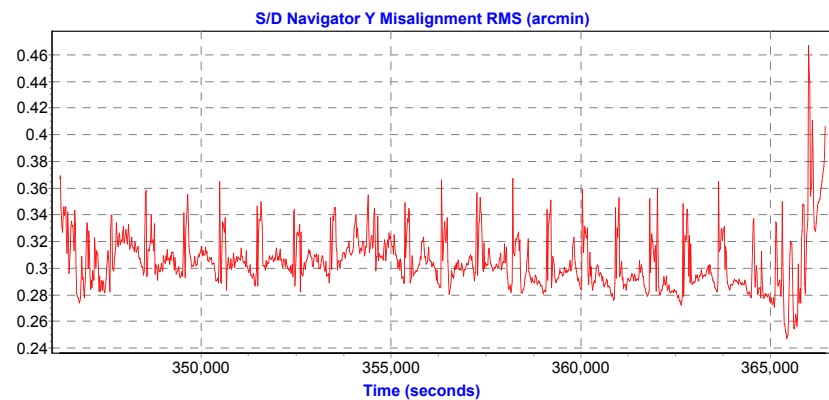
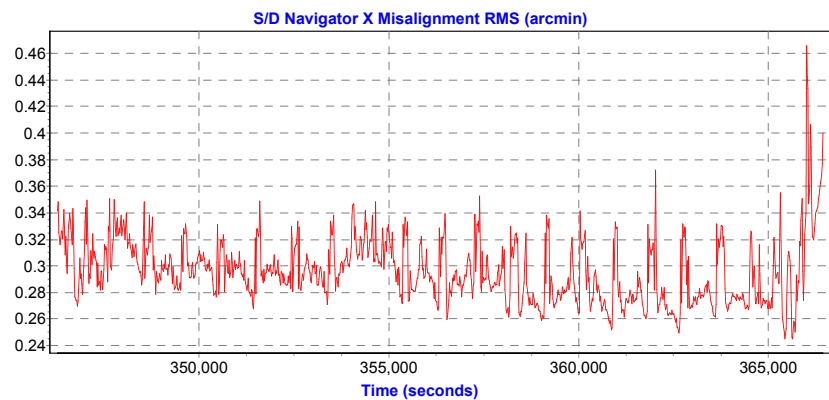
Baseline Distances:

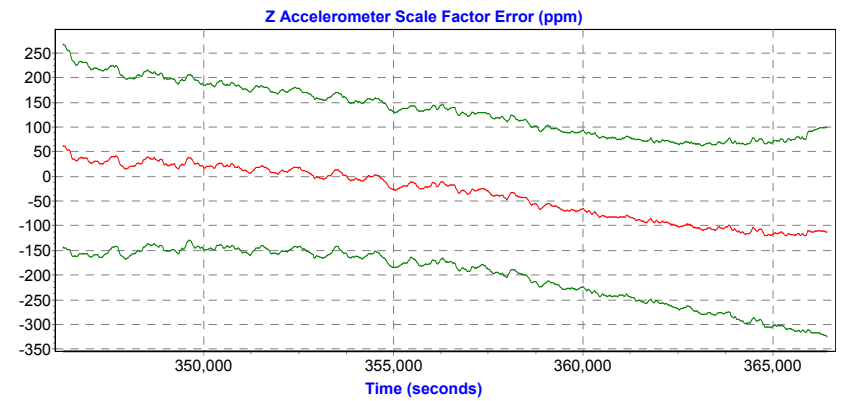
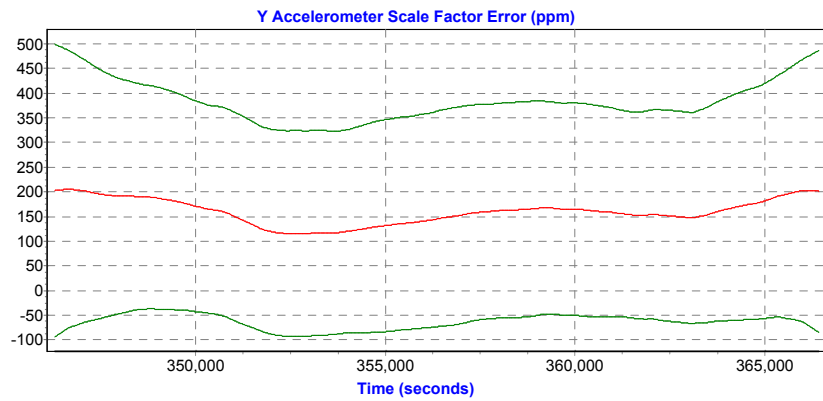
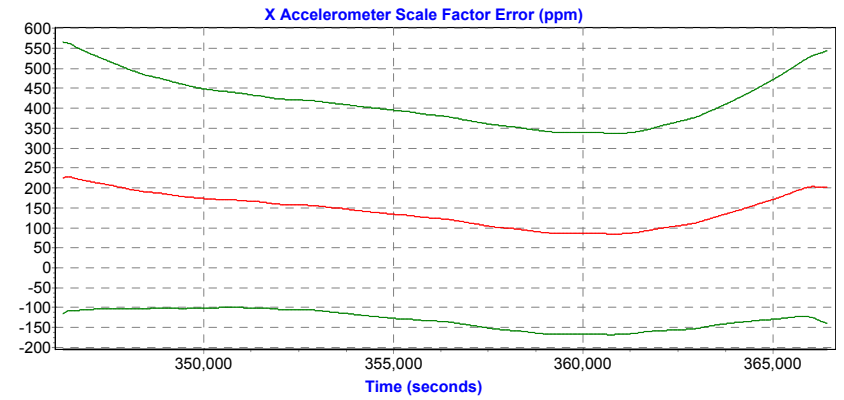
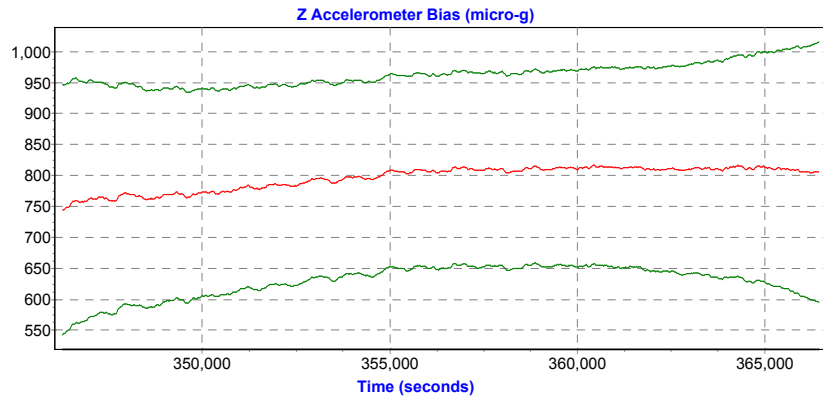
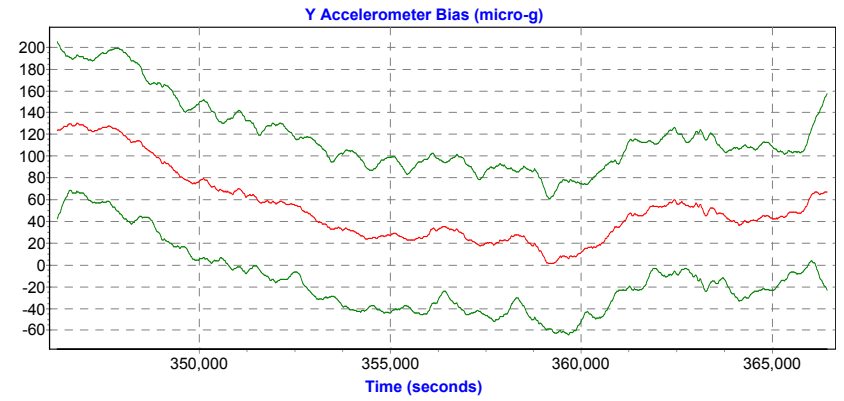
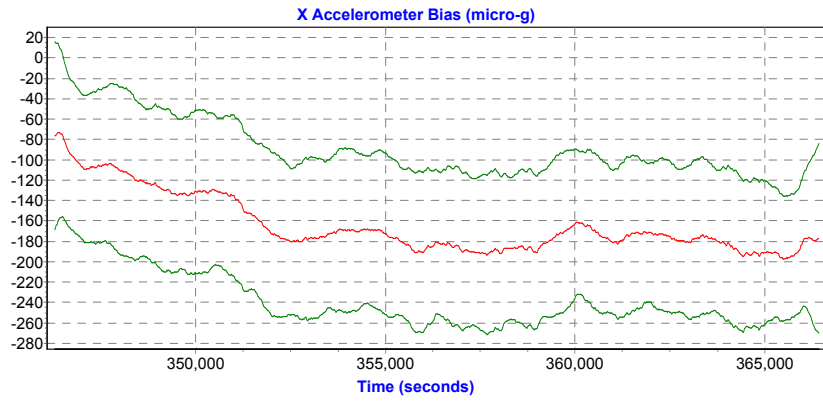
Maximum:	43.951 (km)
Minimum:	0.882 (km)
Average:	20.606 (km)
First Epoch:	8.032 (km)
Last Epoch:	8.008 (km)

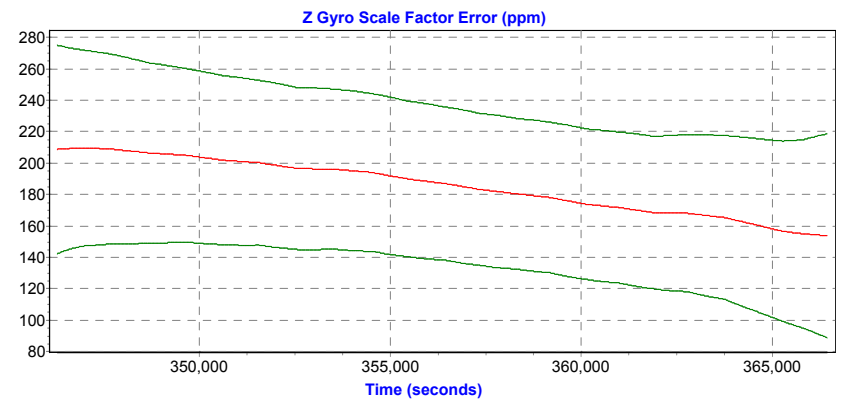
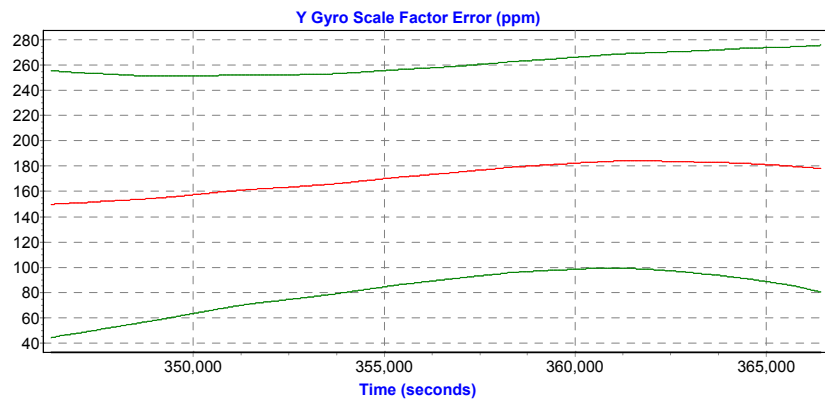
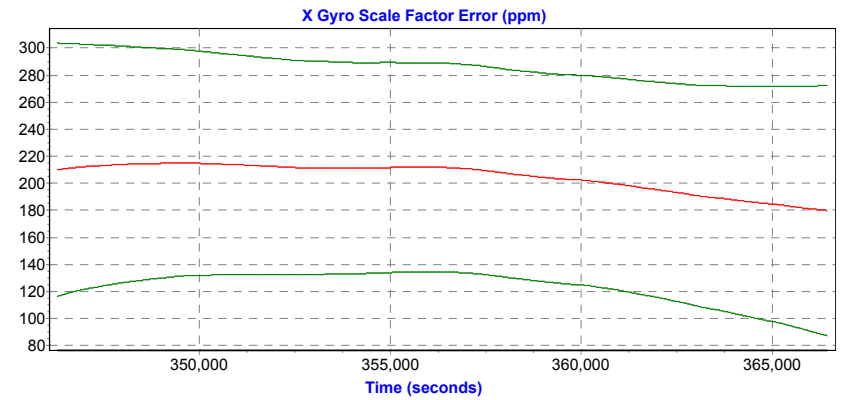
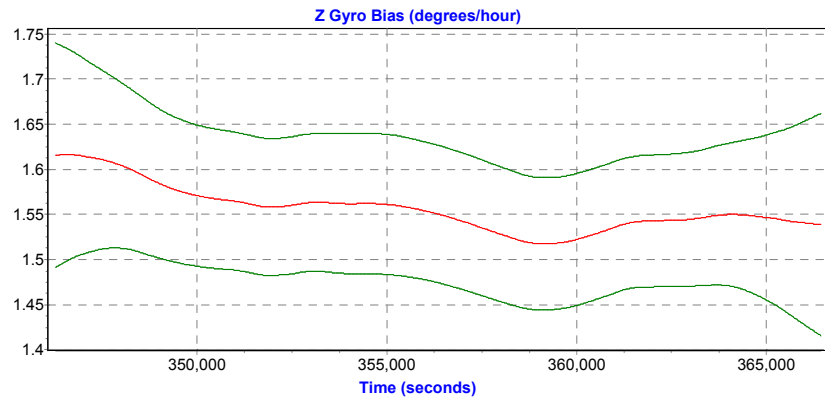
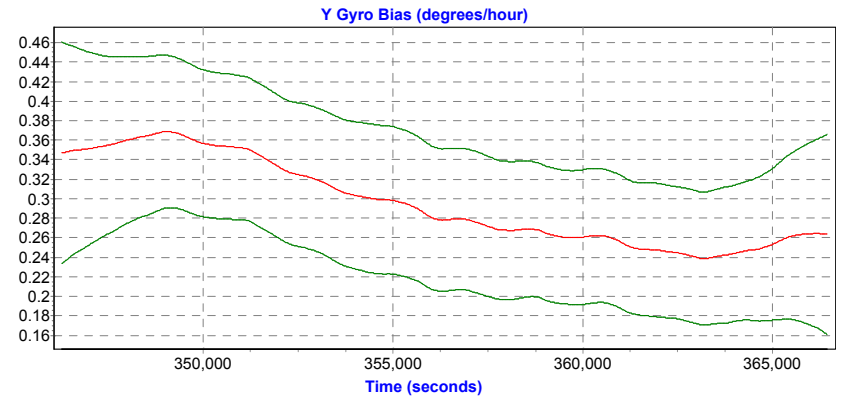
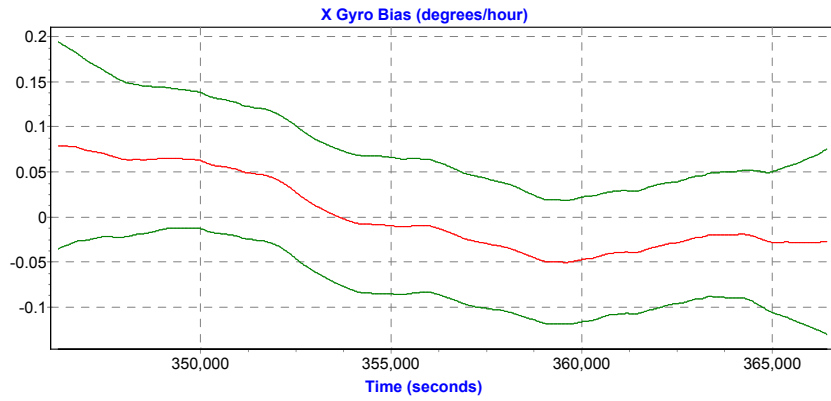






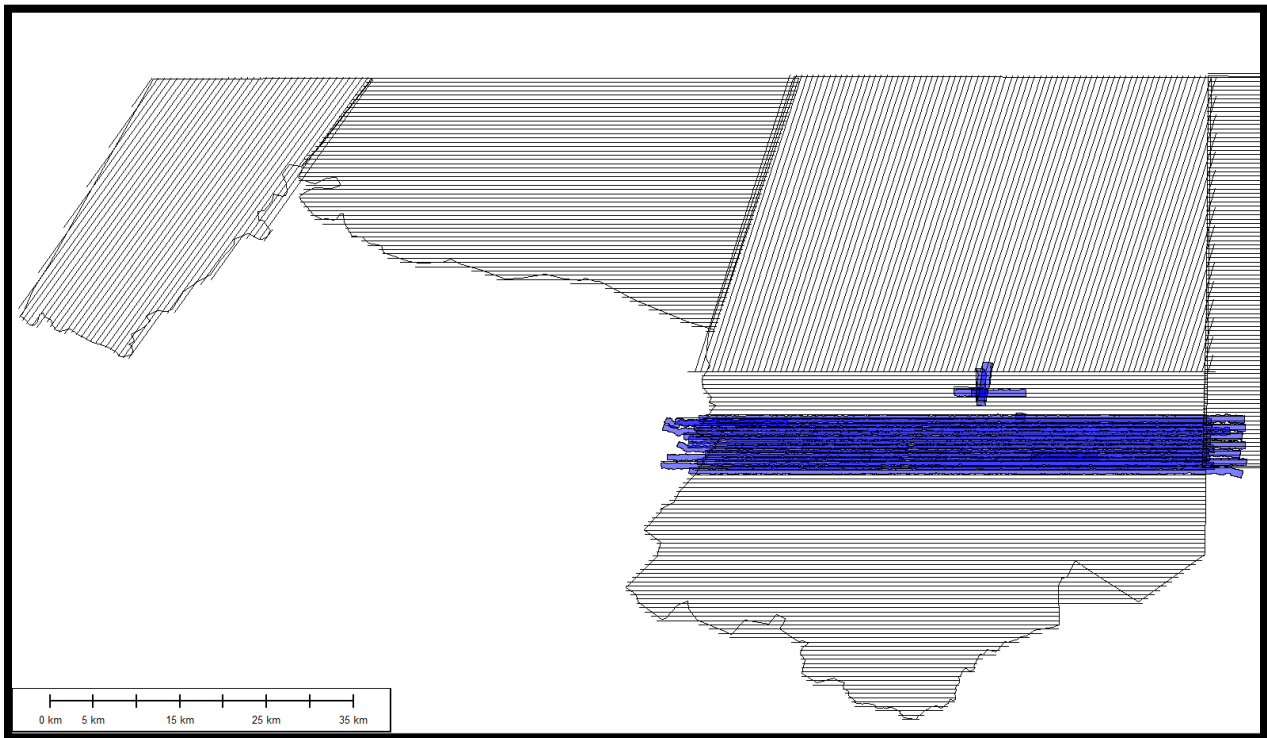






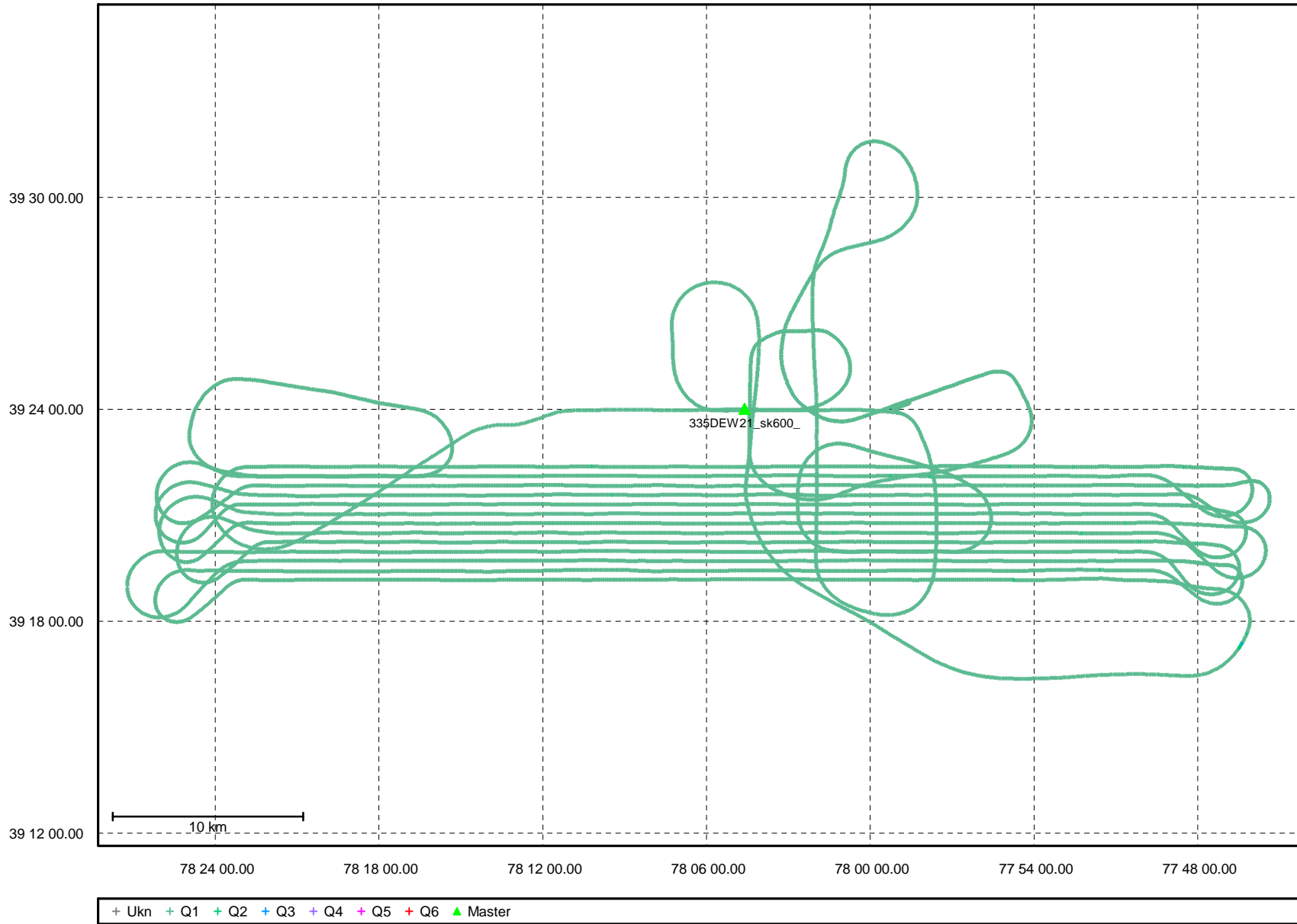
Mission: o112048a

February 17, 2012

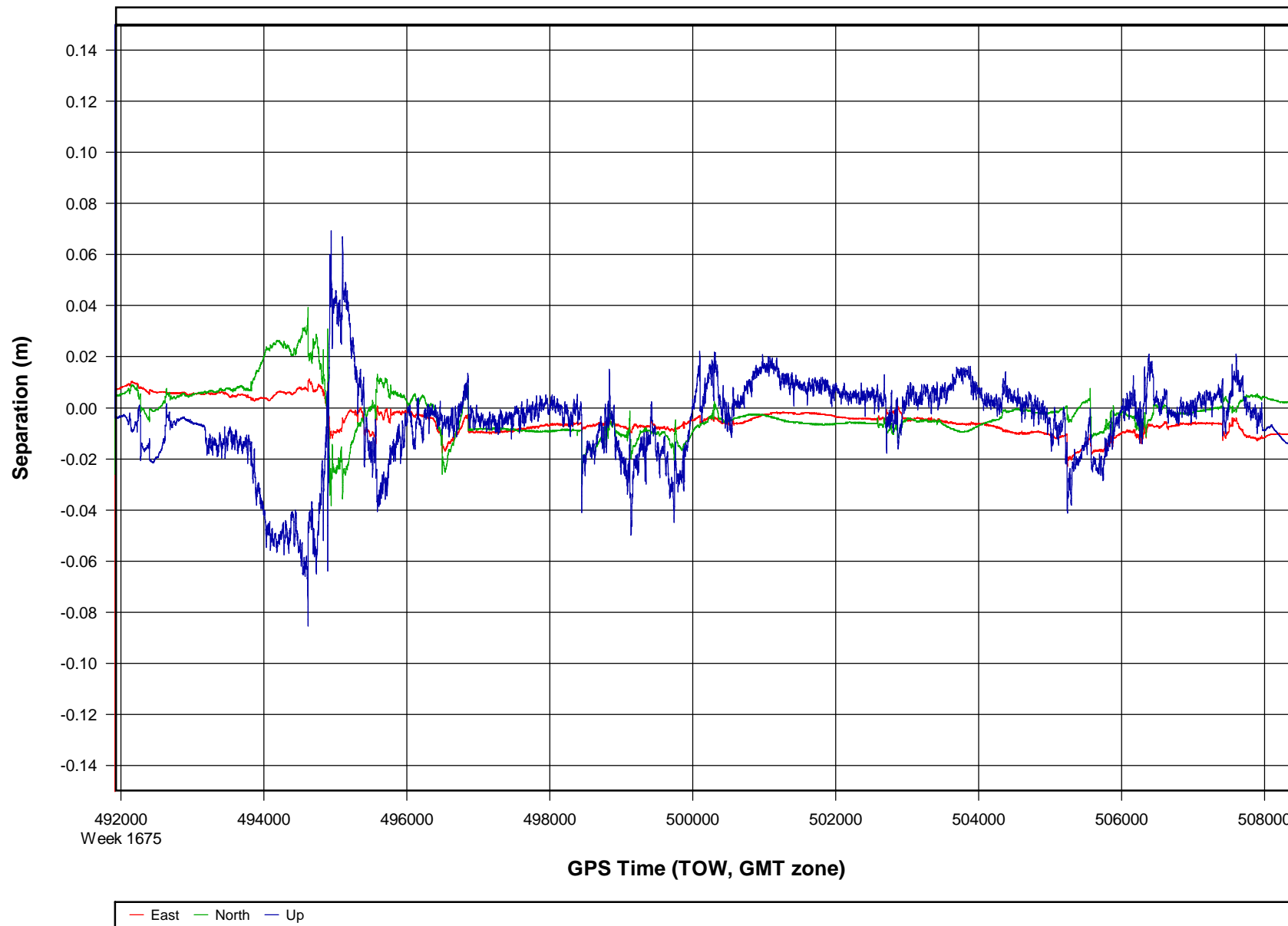


Combined - Map Run (1)

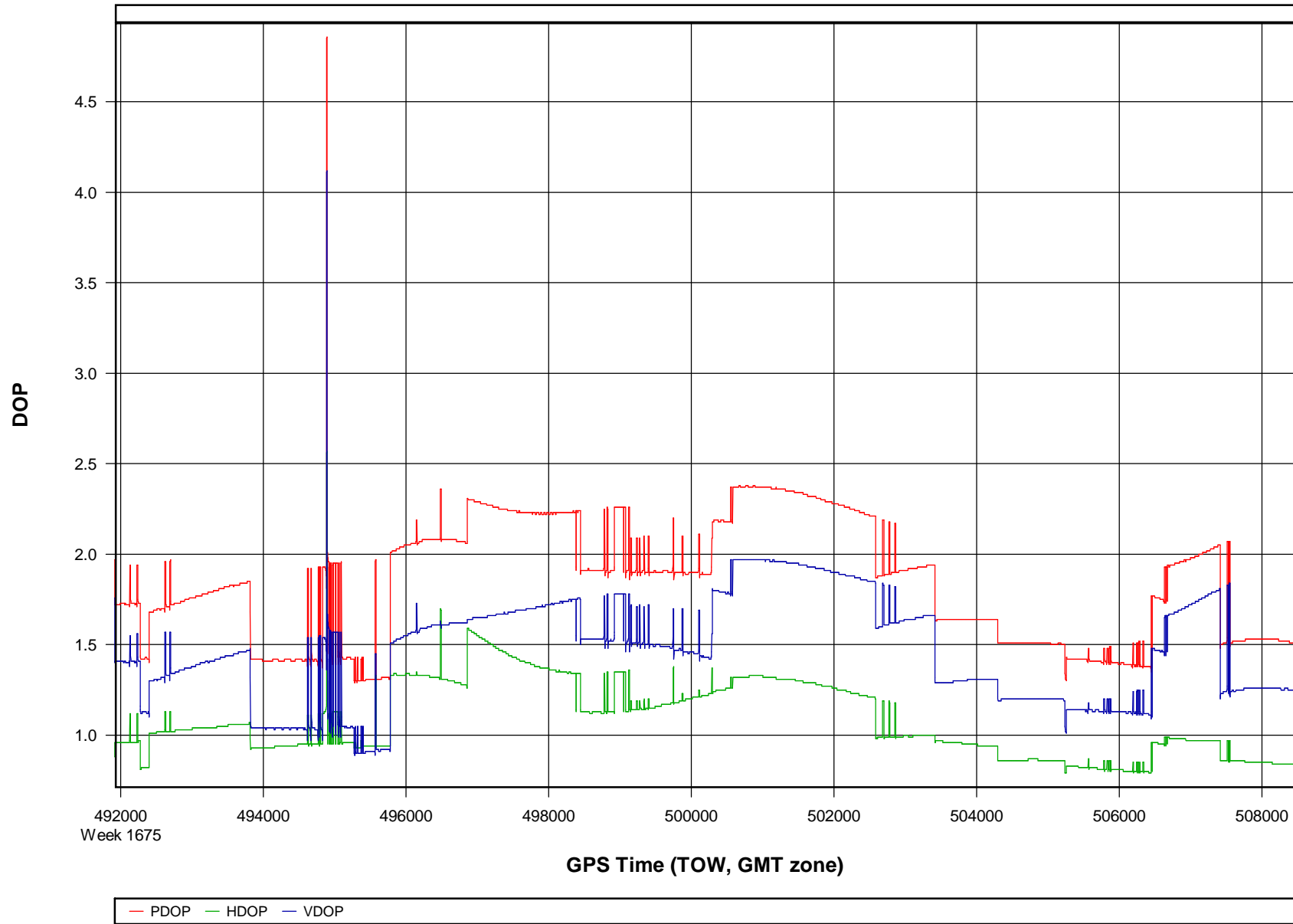
Geographic, DMS



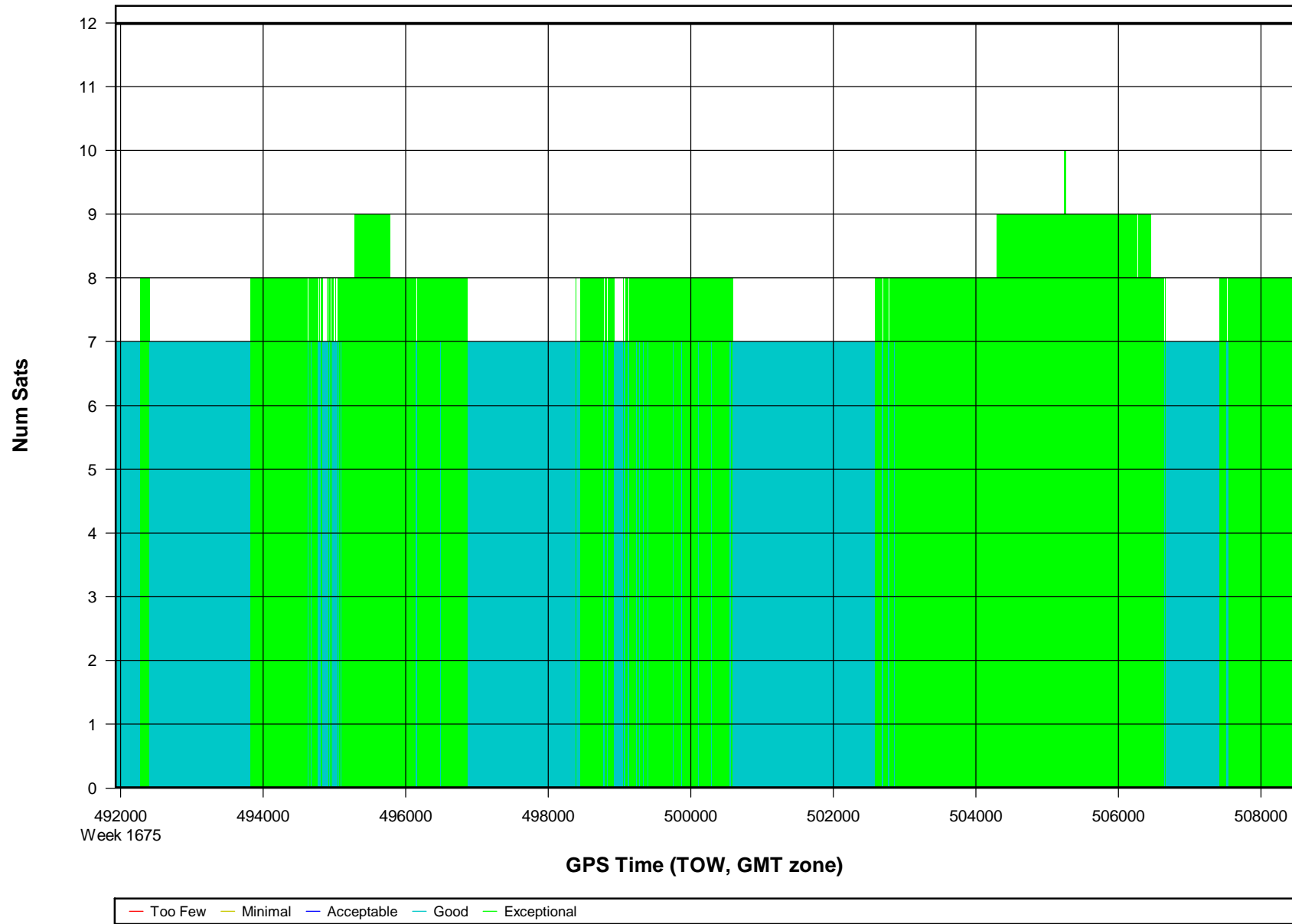
o112048a [Combined] - Forward/Reverse or Combined Separation Plot



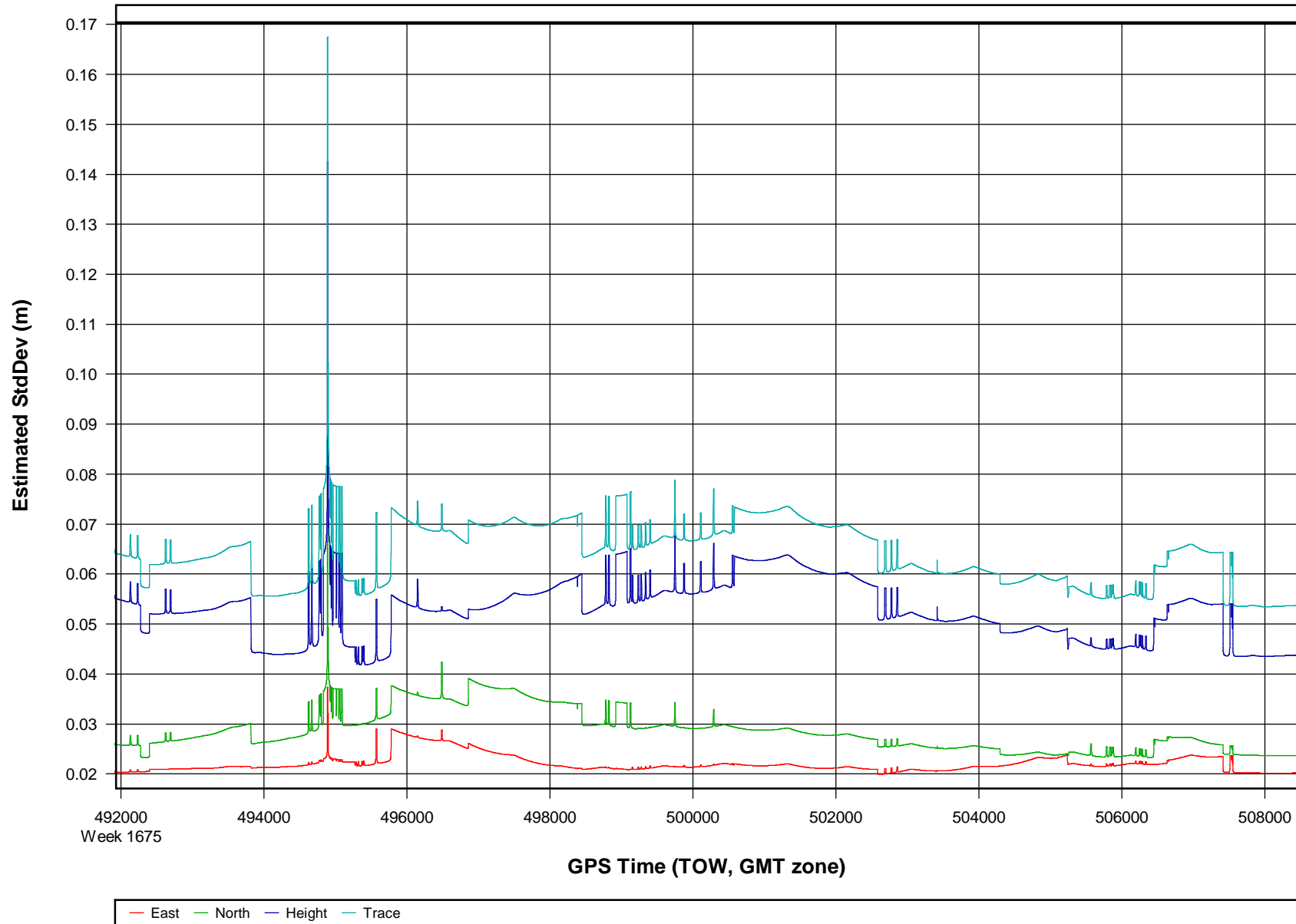
o112048a [Combined] - PDOP, HDOP, VDOP Plots



o112048a [Combined] - Number of Satellites Bar Plot



o112048a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112048a\3_Processed\GPS\o112048a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	165735
No processed position:	149174
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0144 (m)
C/A Code:	0.69 (m)
L1 Doppler:	0.035 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.008 (m)
North:	0.009 (m)
Height:	0.019 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (16554 occurrences):

East:	0.008 (m)
North:	0.009 (m)
Height:	0.017 (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:

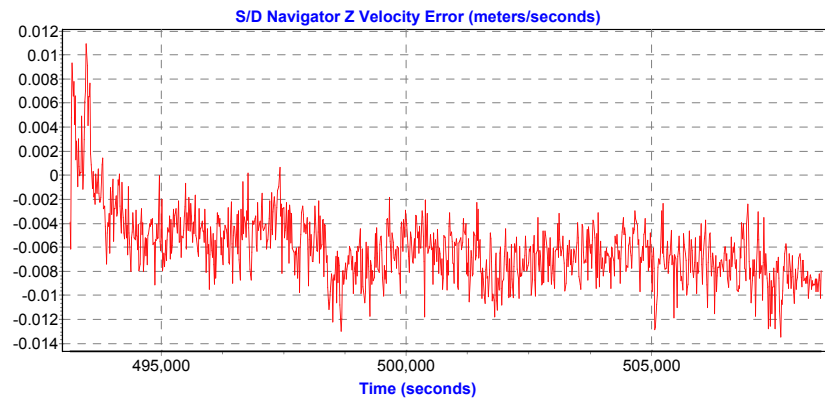
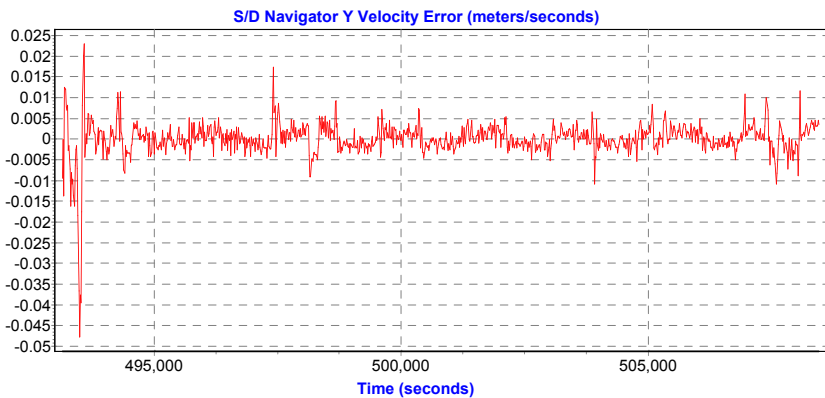
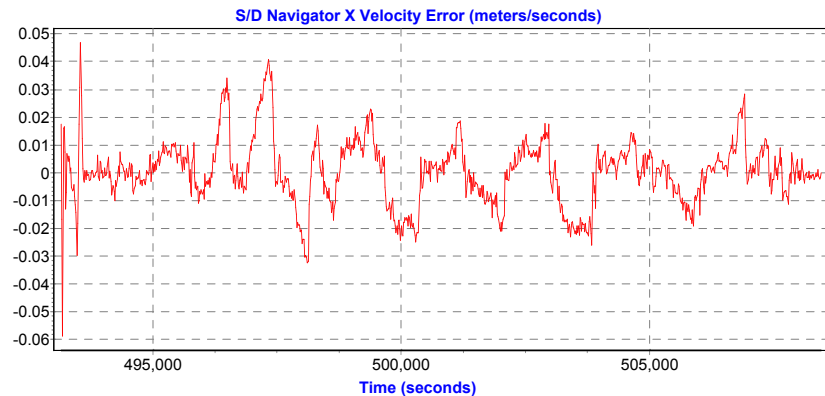
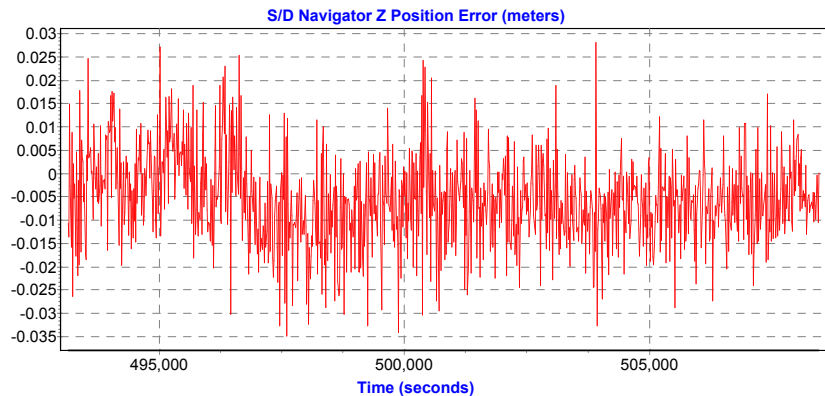
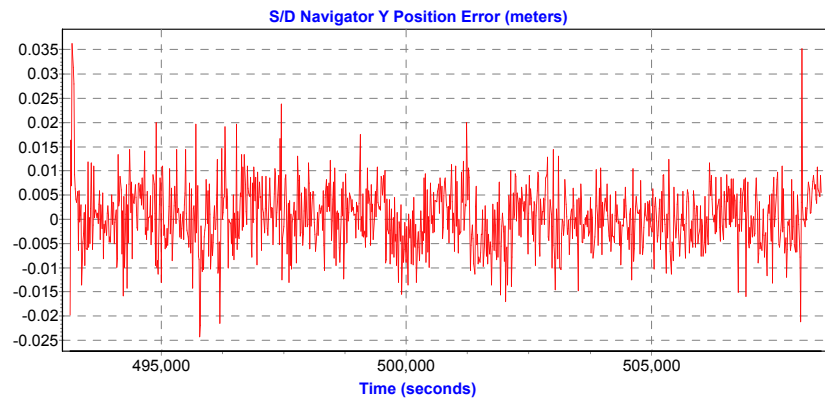
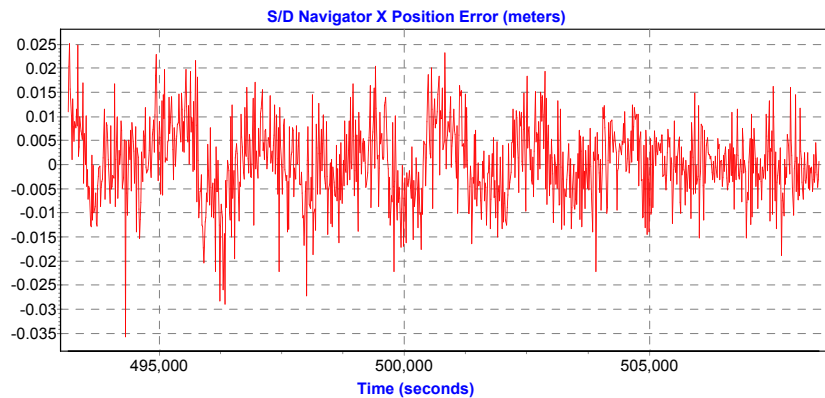
0.00 - 0.10 m:	99.9 %
0.10 - 0.30 m:	0.1 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

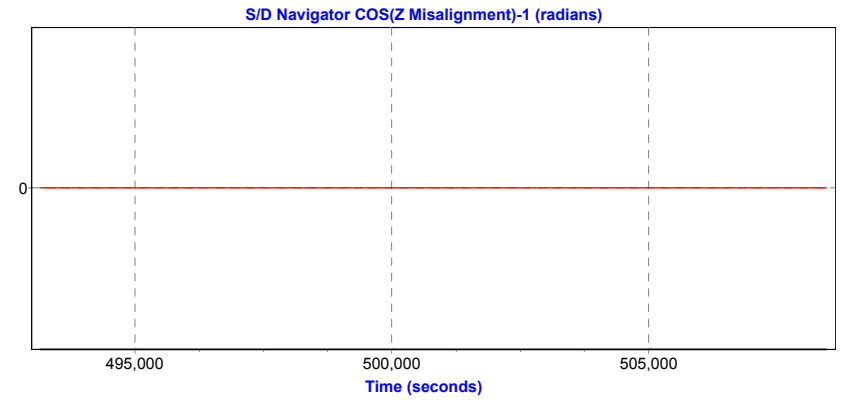
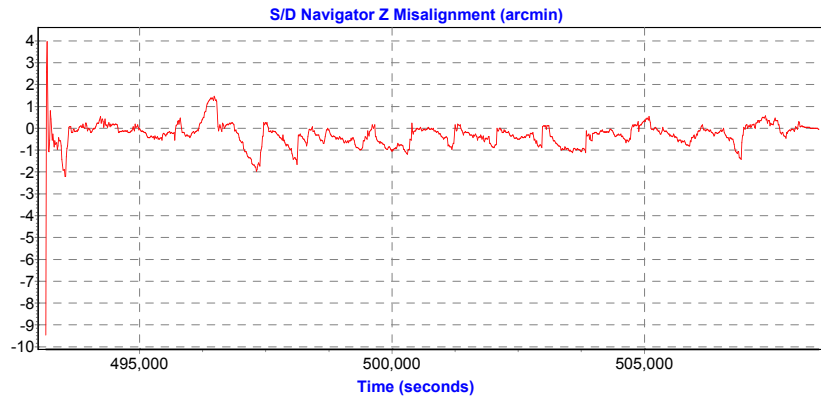
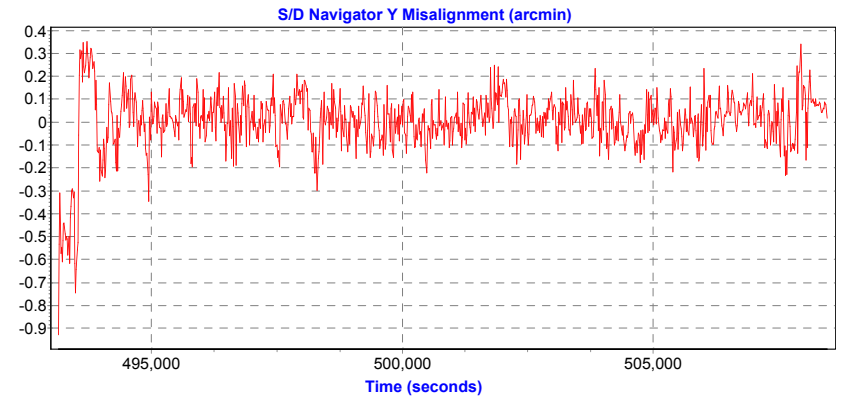
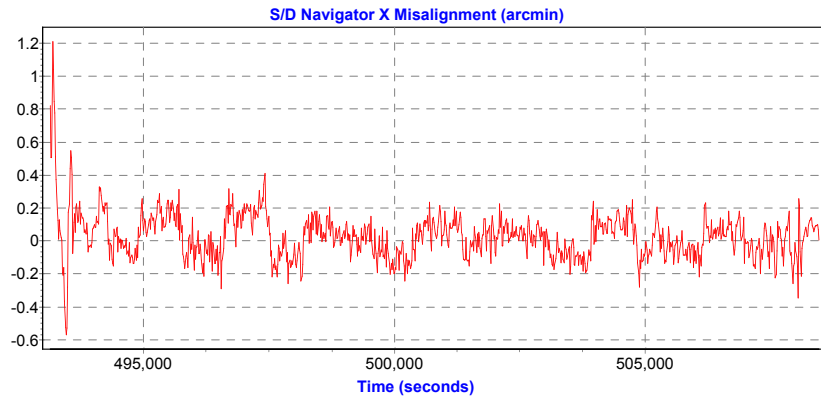
Percentages of epochs with DD_DOP over 10.00:

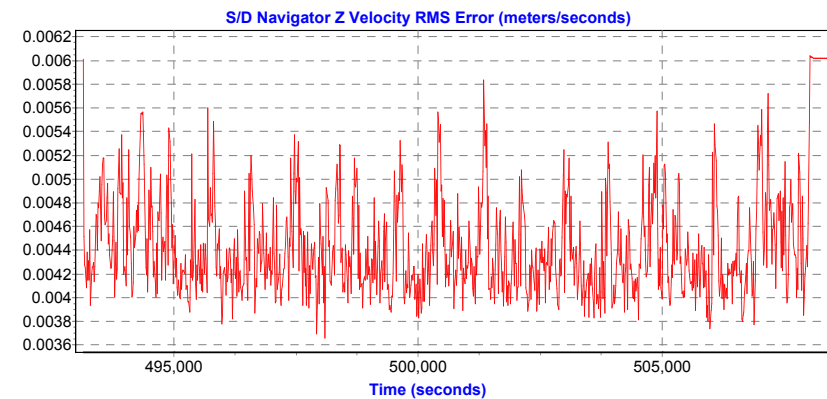
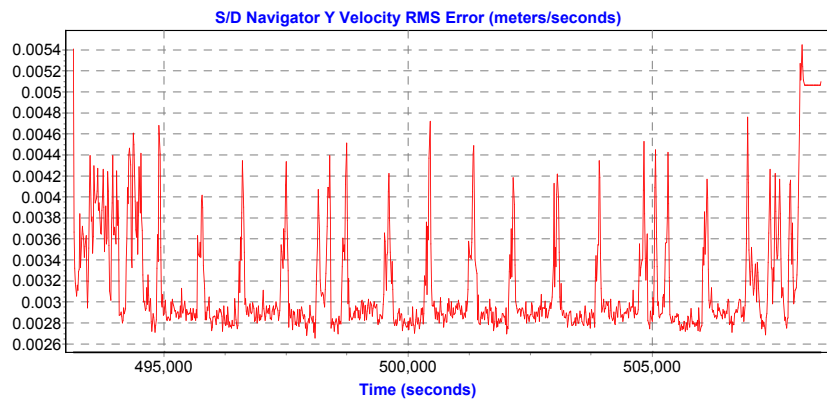
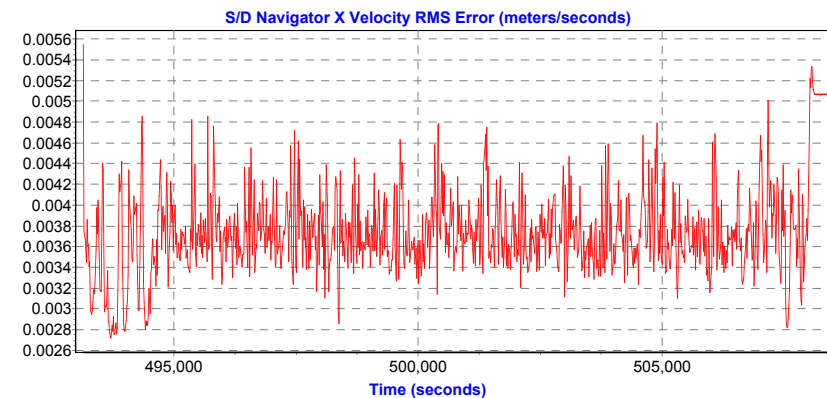
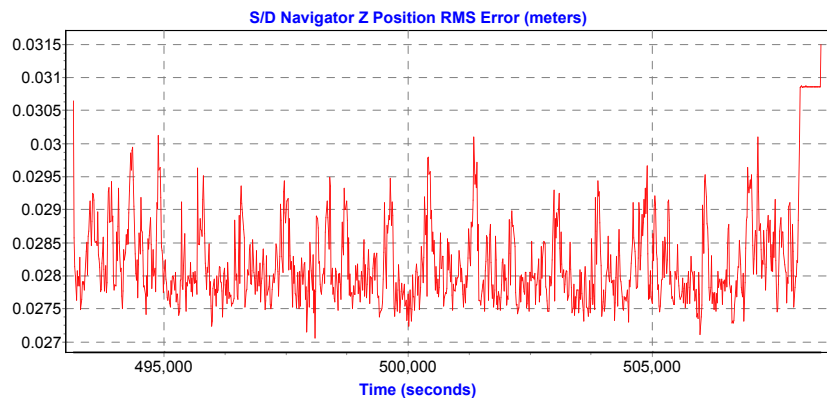
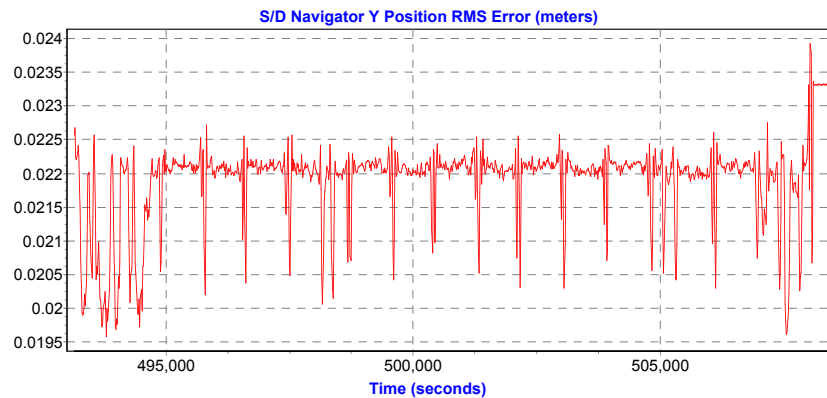
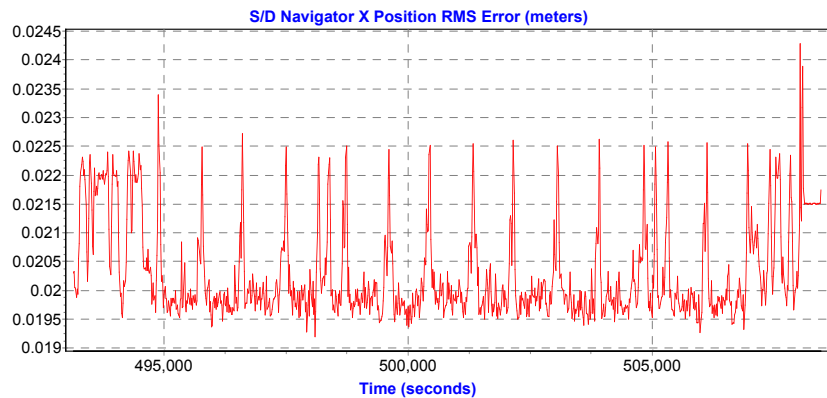
DOP over Tol:	0.0 %
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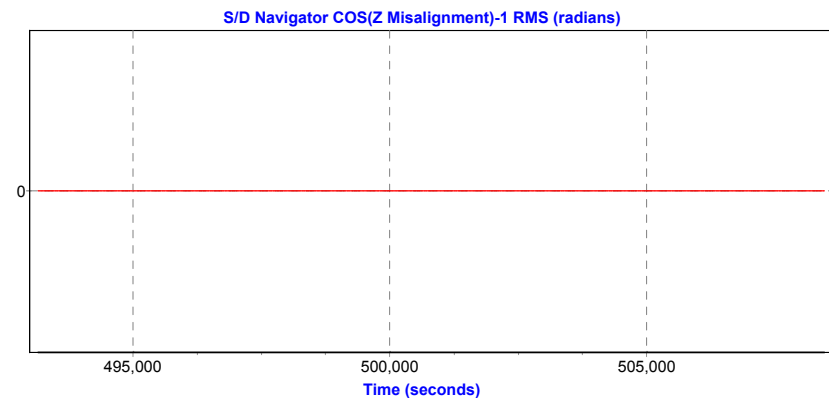
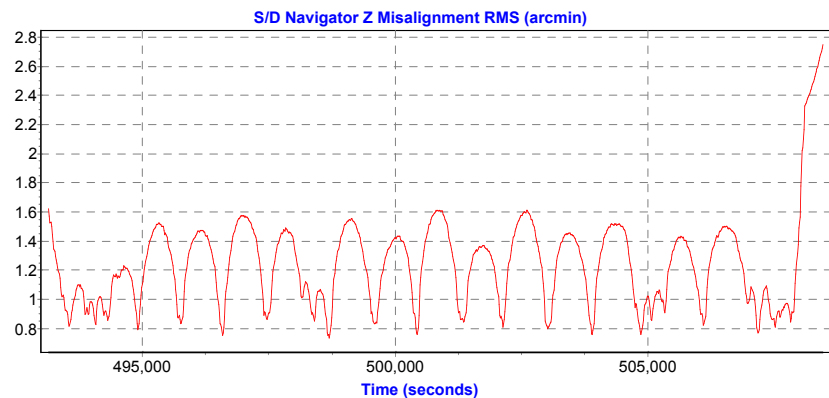
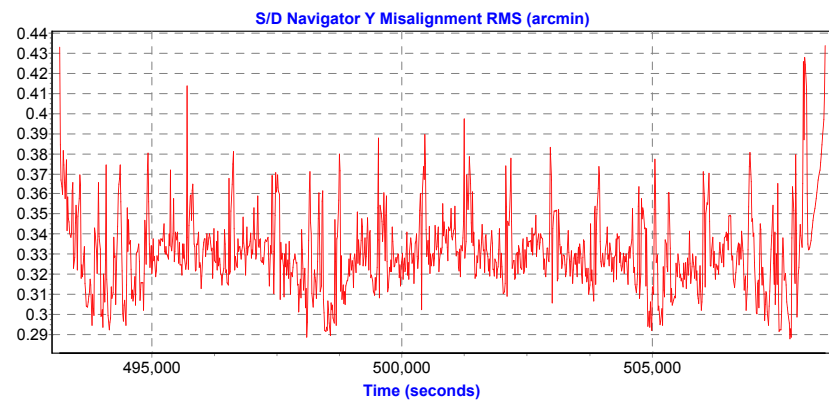
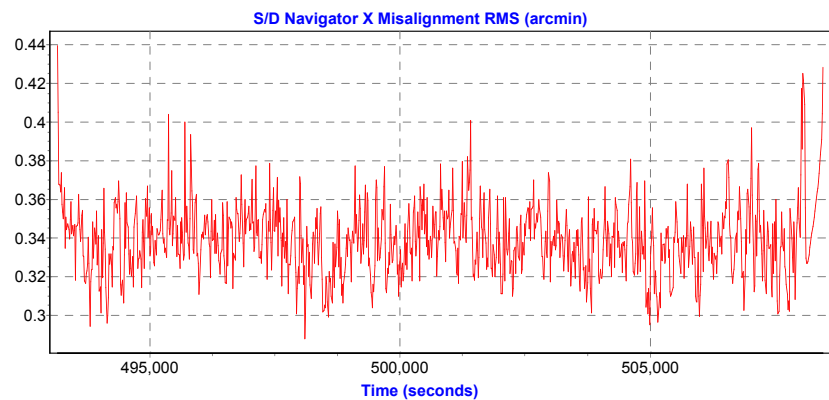
Baseline Distances:

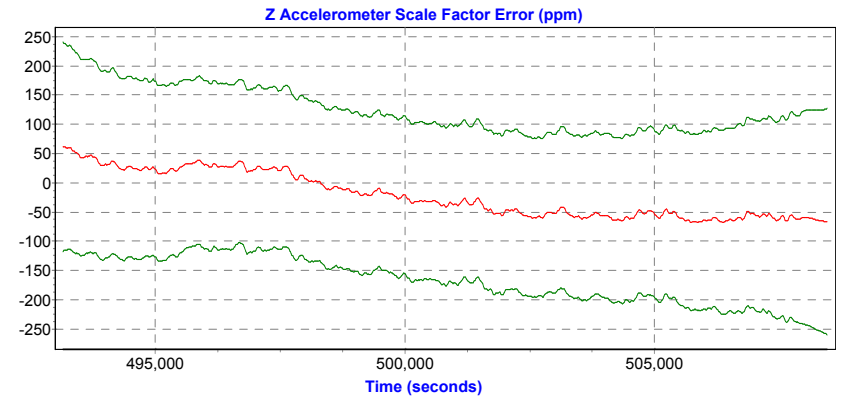
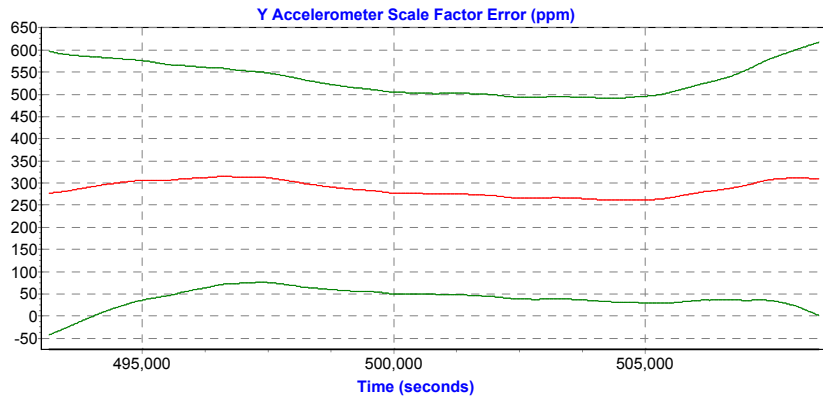
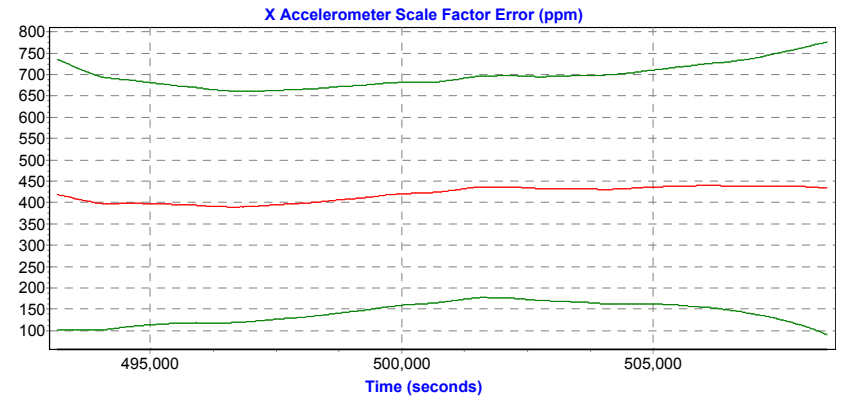
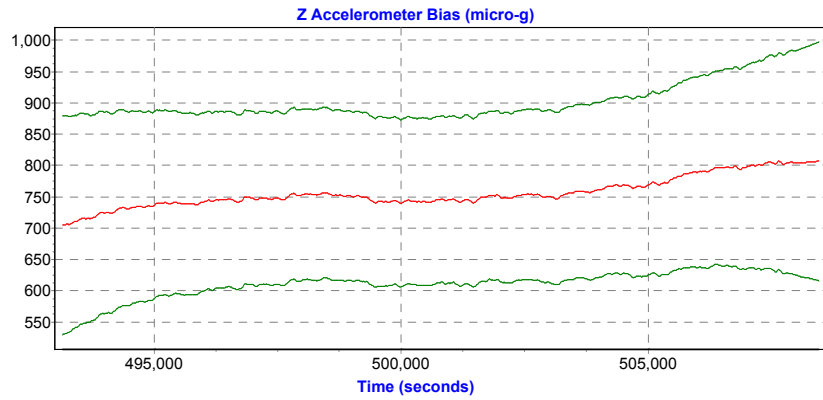
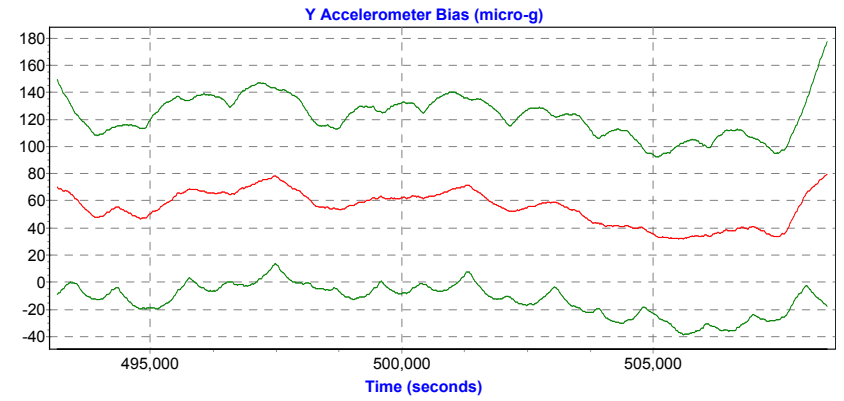
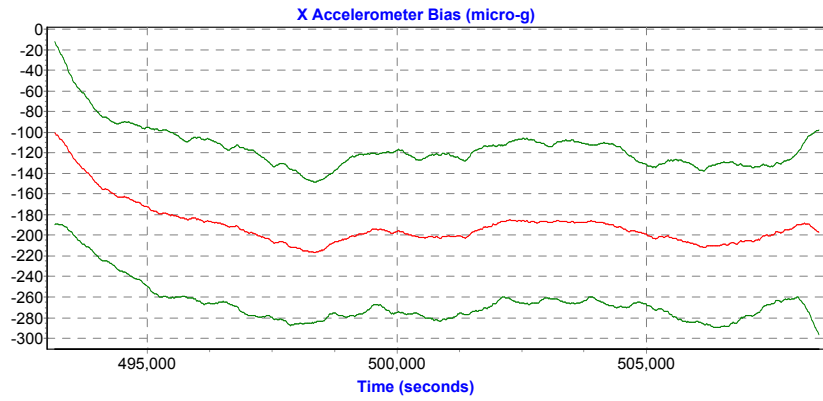
Maximum:	33.900 (km)
Minimum:	0.942 (km)
Average:	14.822 (km)
First Epoch:	8.015 (km)
Last Epoch:	8.007 (km)

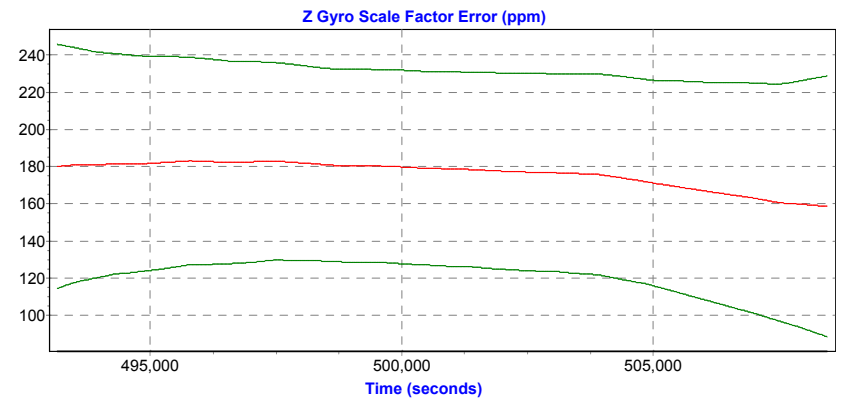
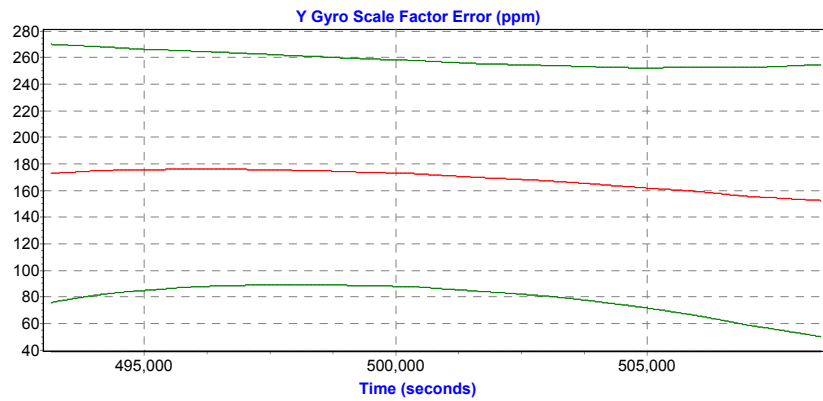
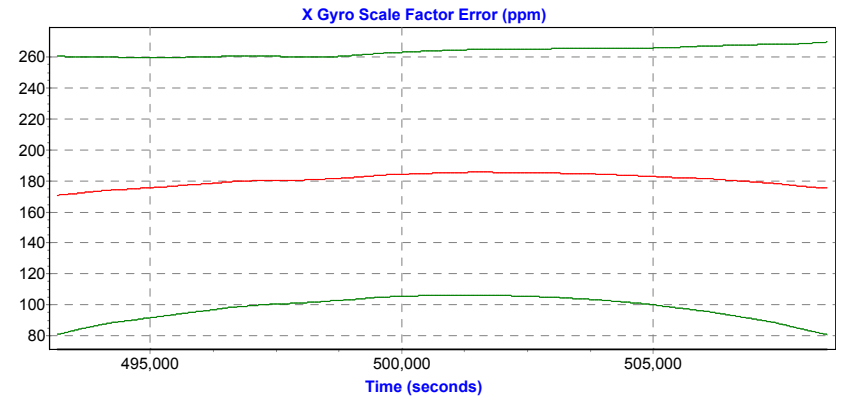
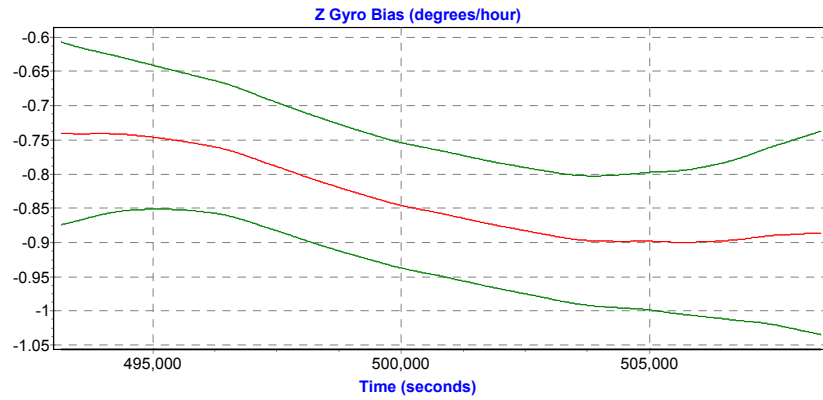
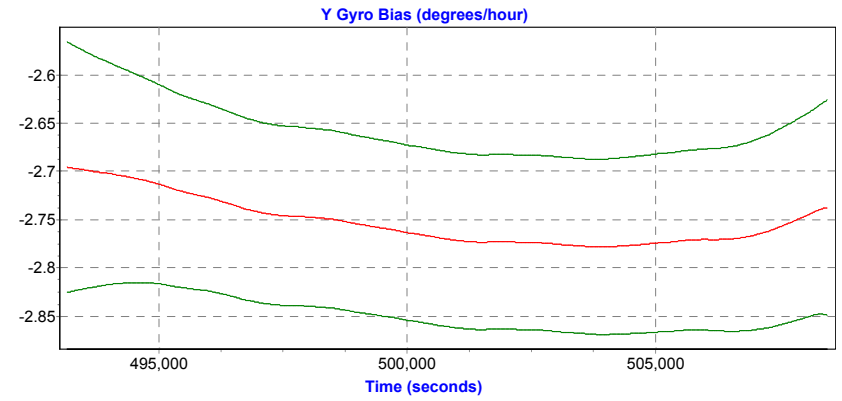
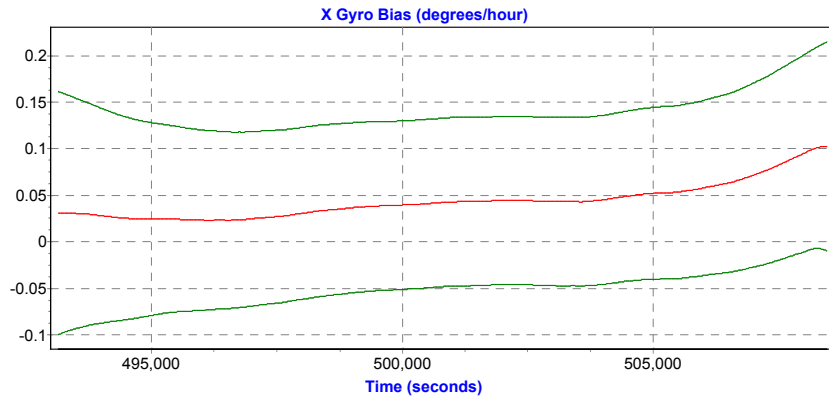






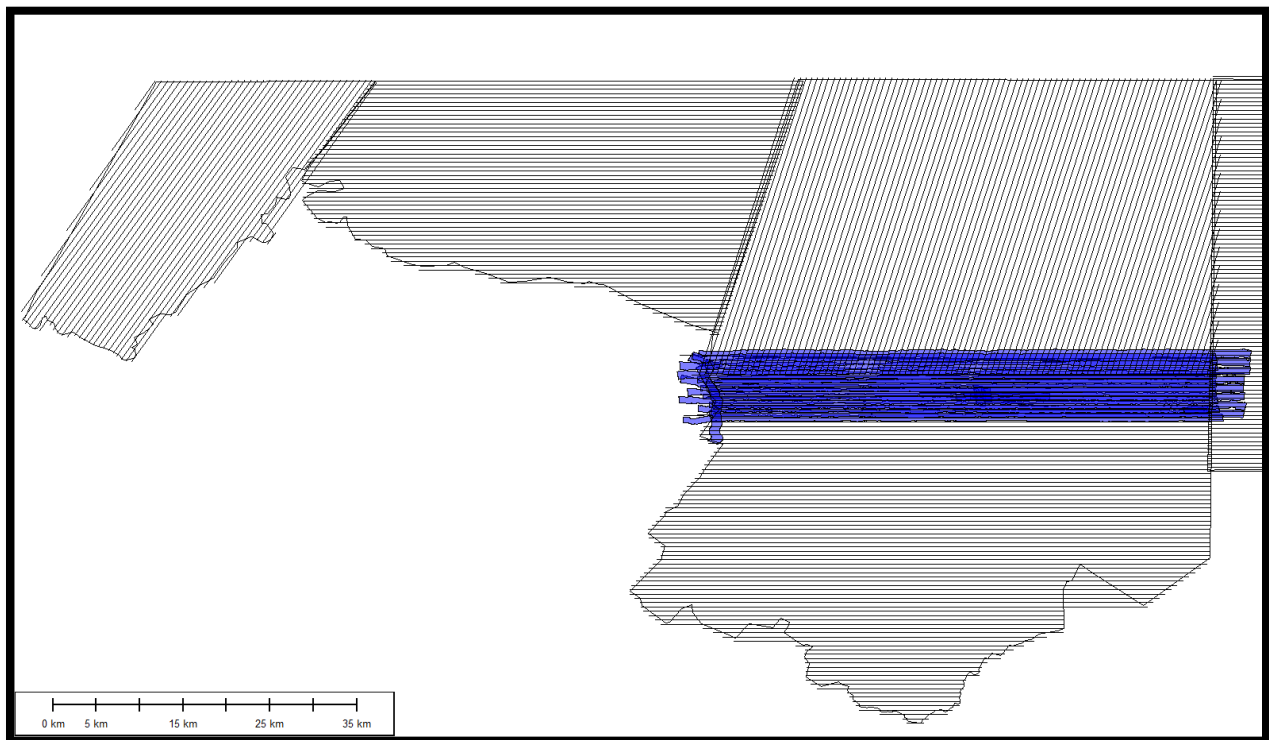






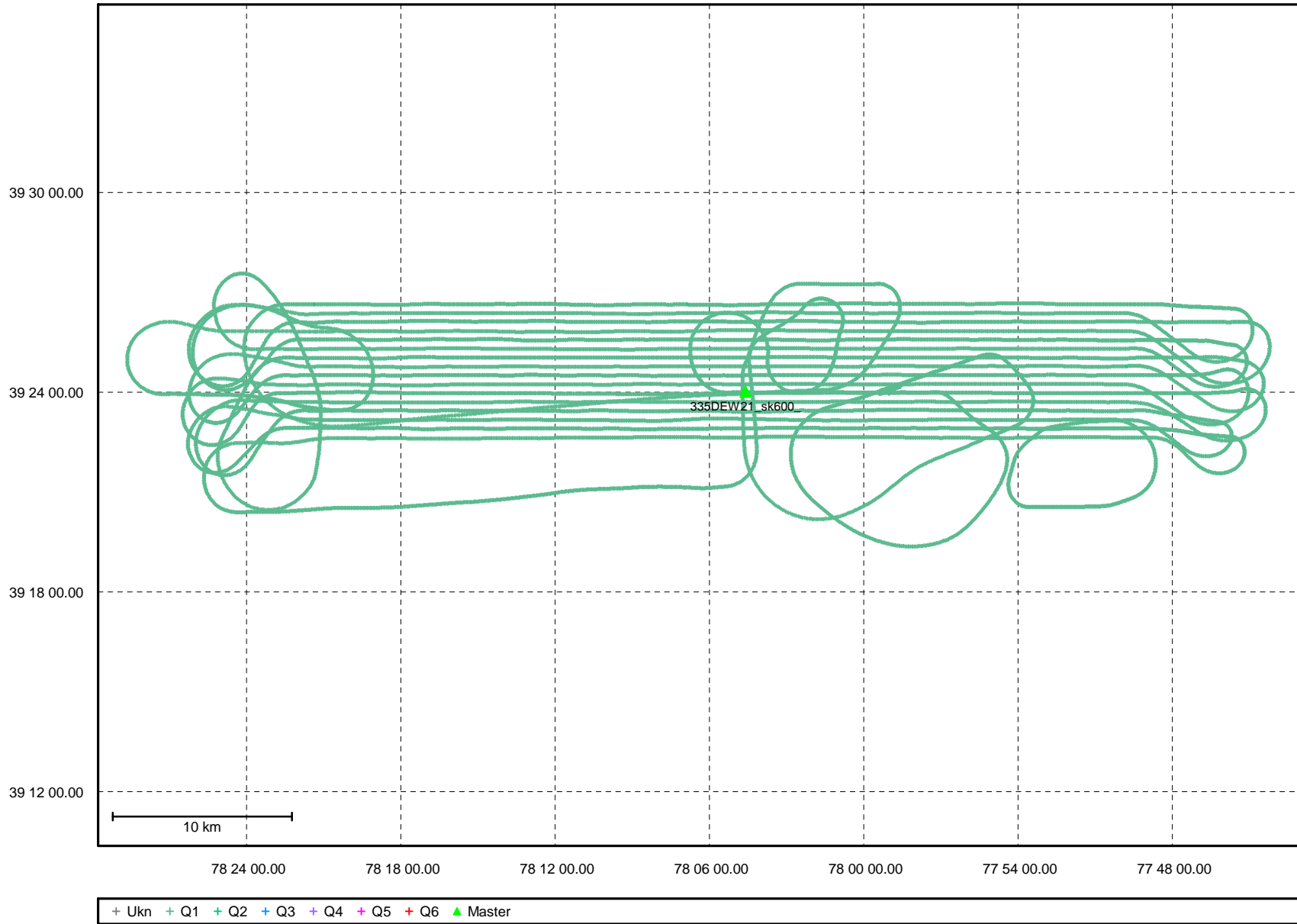
Mission: o112048b

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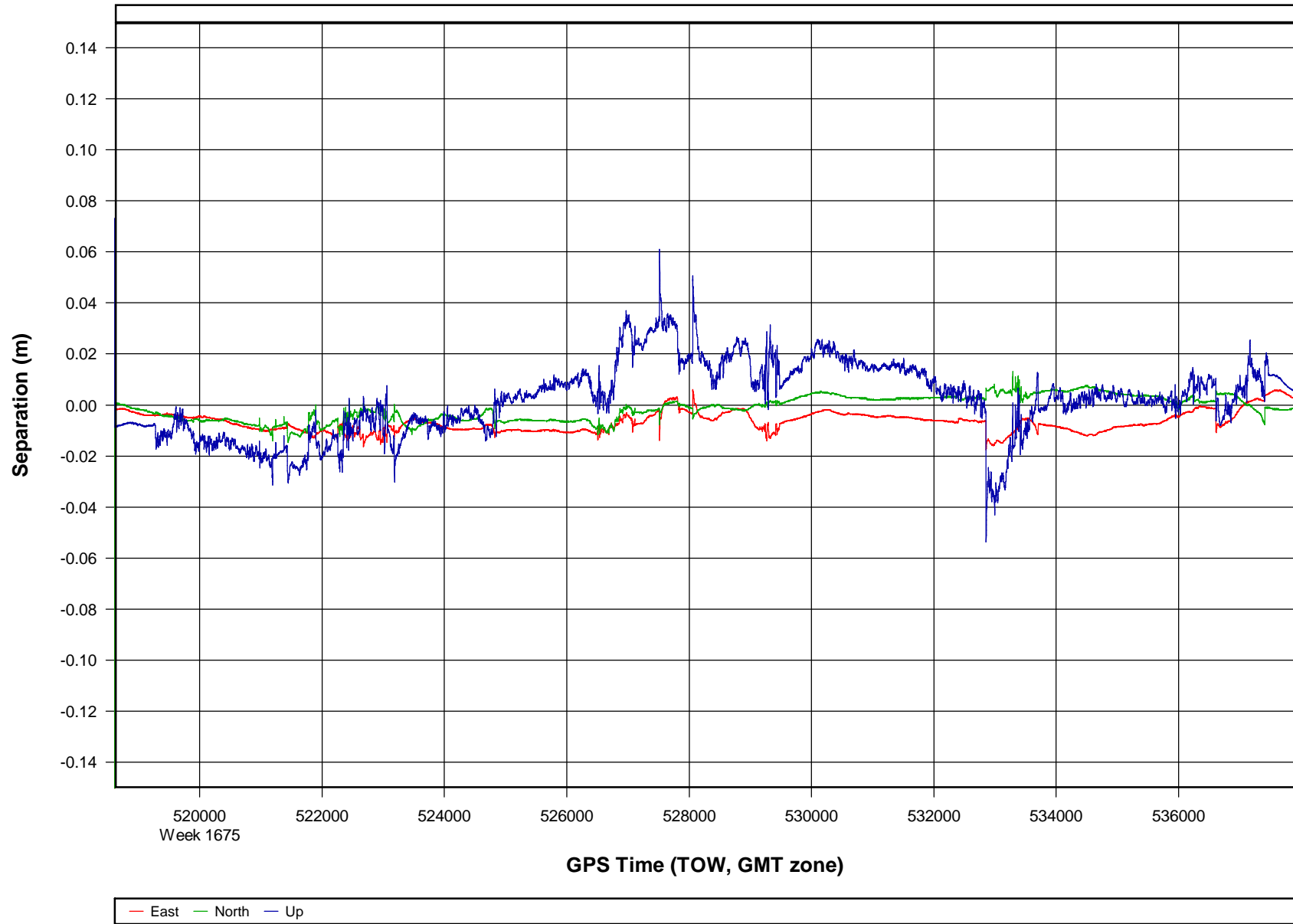


Combined - Map Run (1)

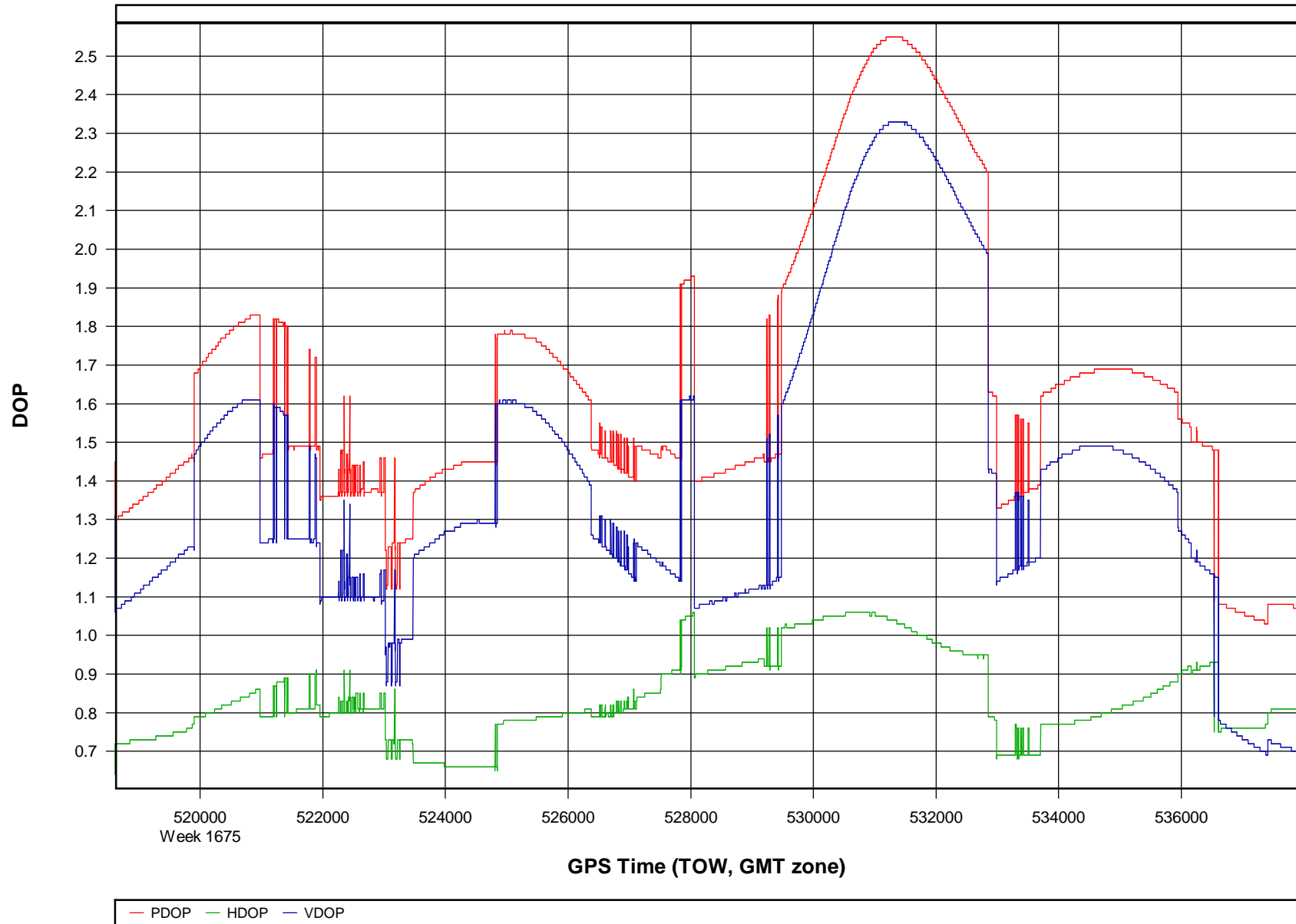
Geographic, DMS



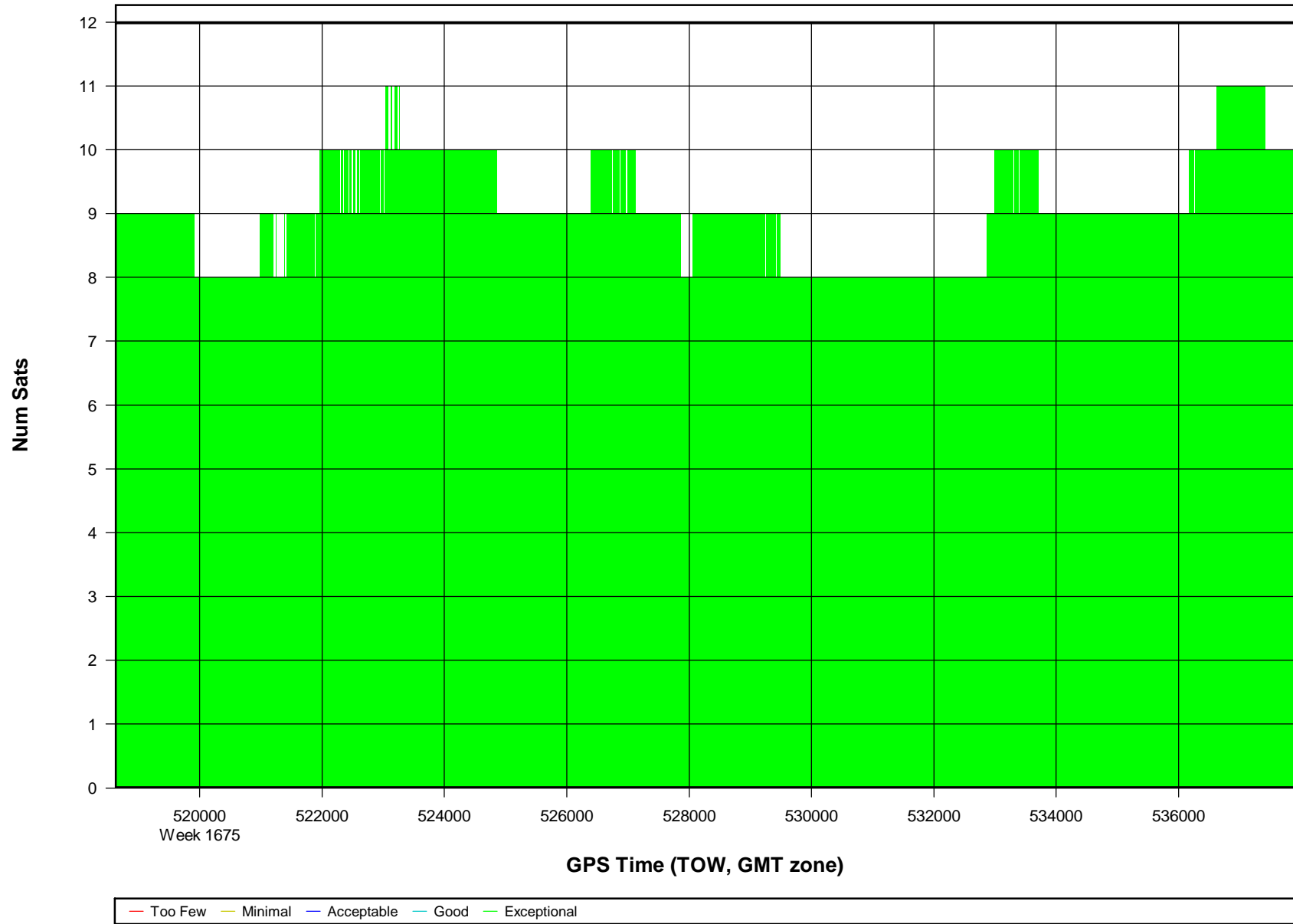
o112048b [Combined] - Forward/Reverse or Combined Separation Plot



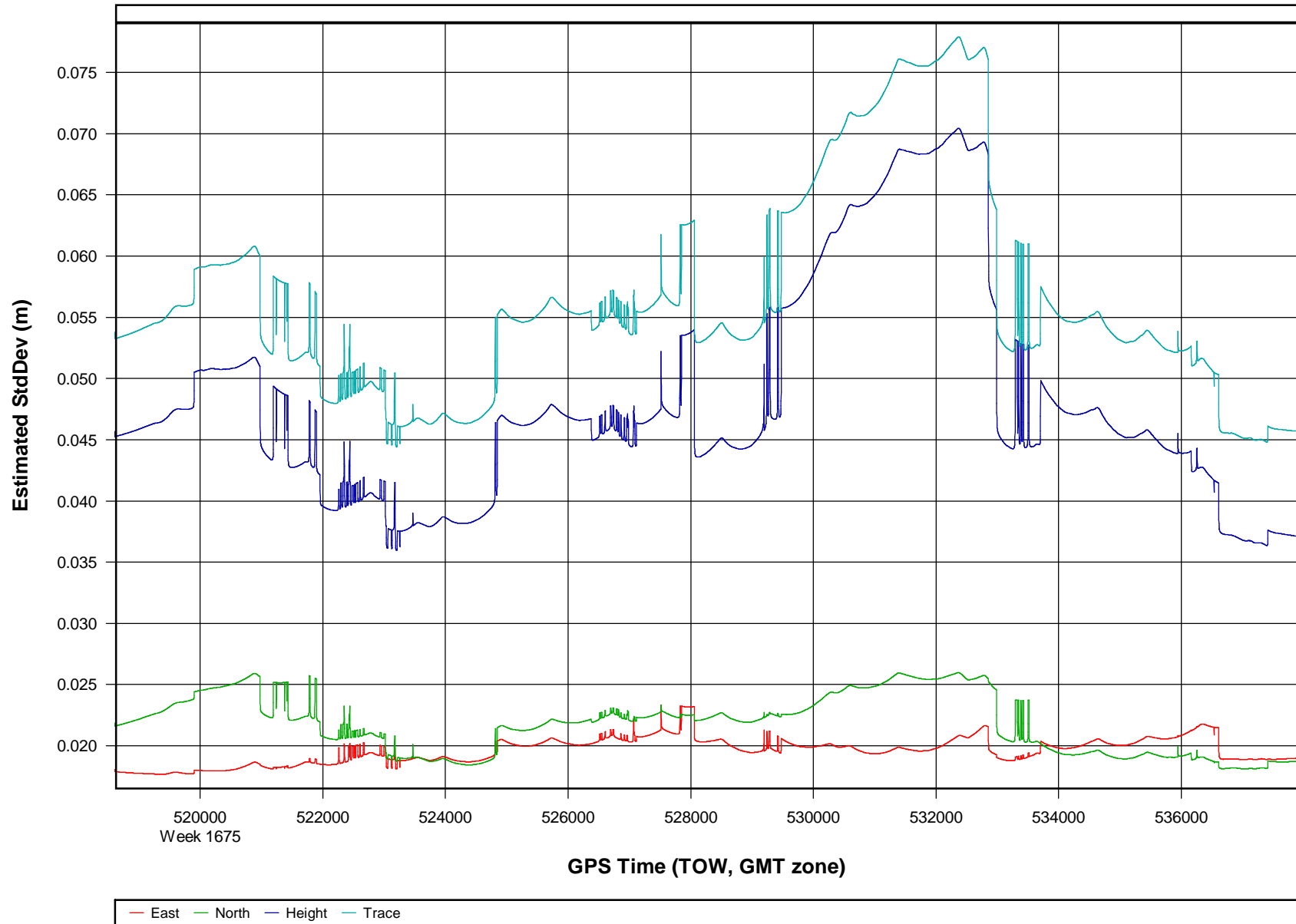
o112048b [Combined] - PDOP, HDOP, VDOP Plots



o112048b [Combined] - Number of Satellites Bar Plot



o112048b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112048b\3_Processed\GPS\o112048b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	193165
No processed position:	173860
Missing Fwd or Rev:	4
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0141 (m)
C/A Code:	0.66 (m)
L1 Doppler:	0.034 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.008 (m)
North:	0.006 (m)
Height:	0.015 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (19299 occurrences):

East:	0.008 (m)
North:	0.005 (m)
Height:	0.014 (m)

Quality Number Percentages:

Q 1:	100.0 %
Q 2:	0.0 %
Q 3:	0.0 %
Q 4:	0.0 %
Q 5:	0.0 %
Q 6:	0.0 %

Position Standard Deviation Percentages:

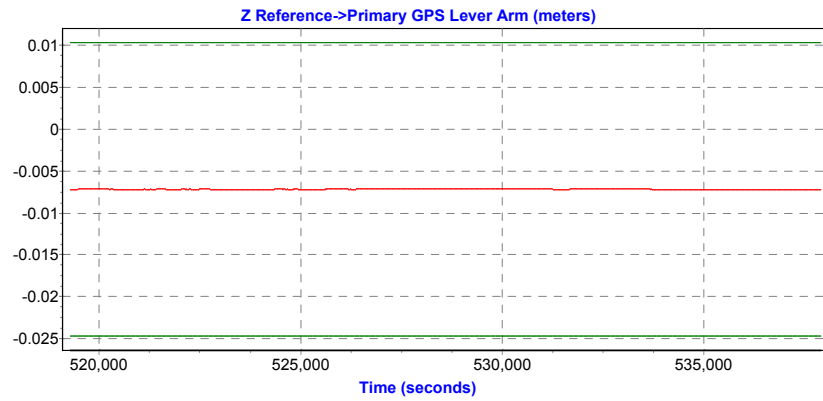
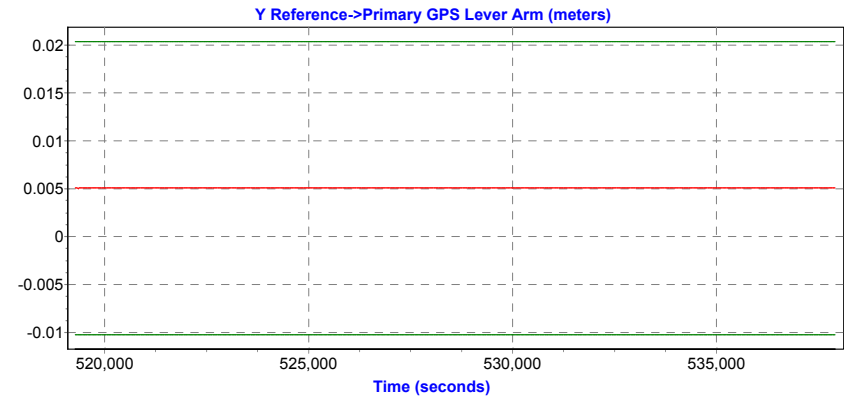
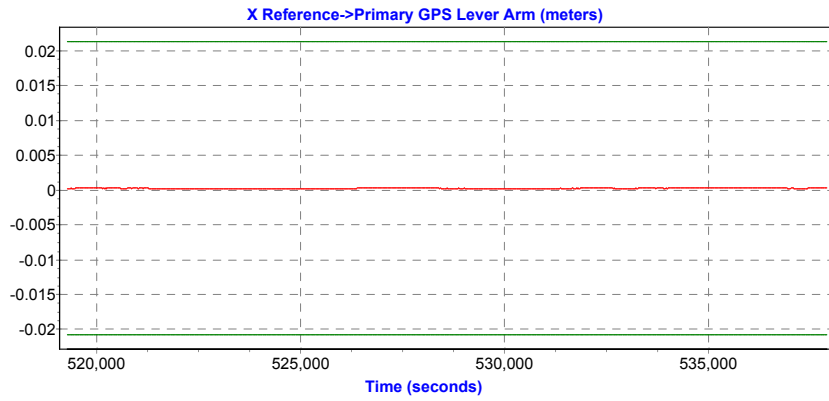
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

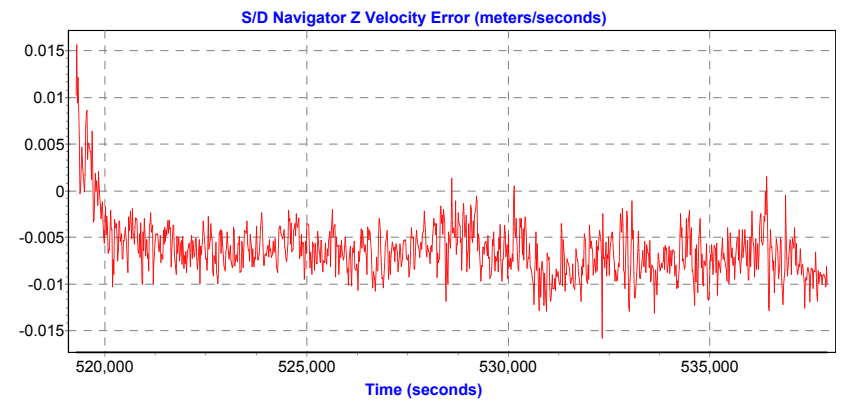
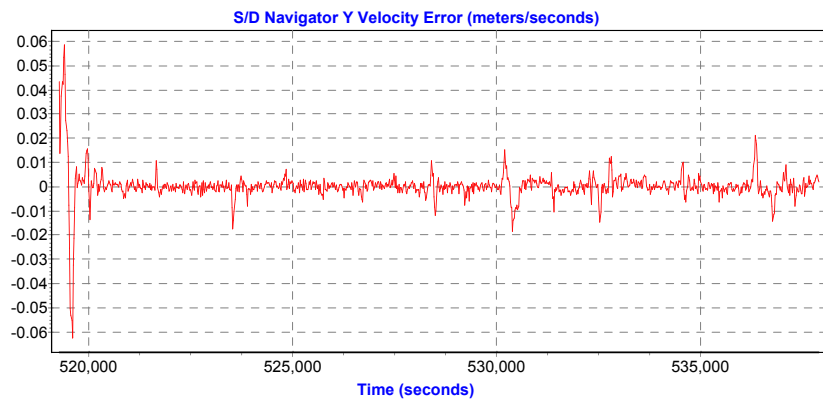
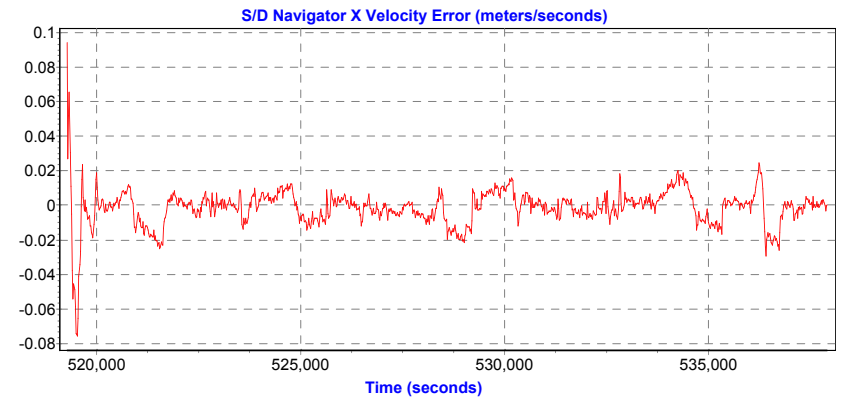
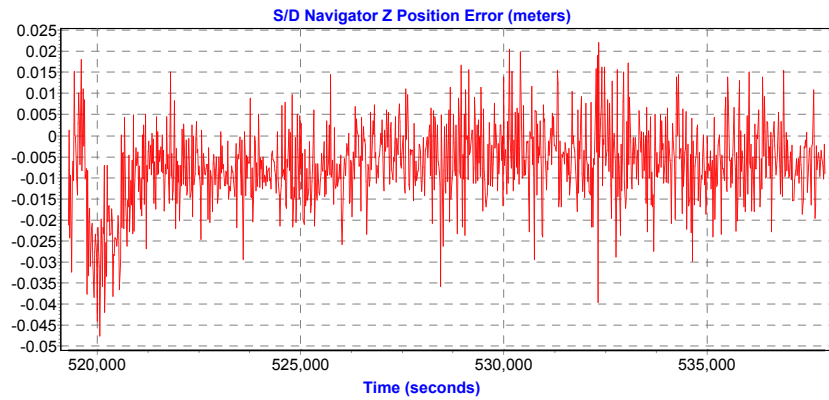
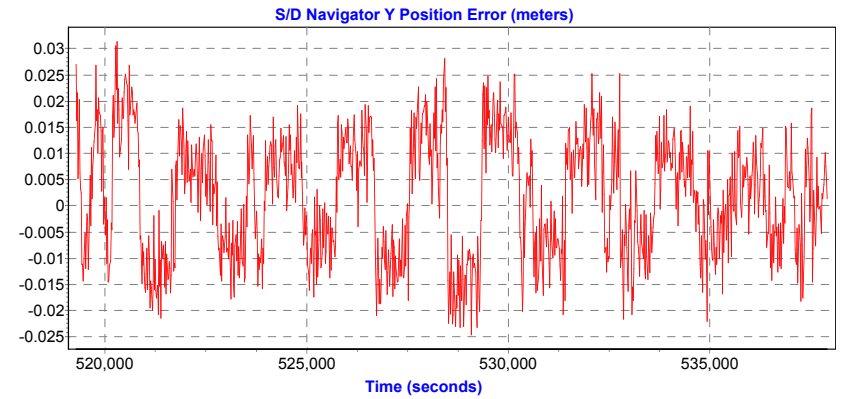
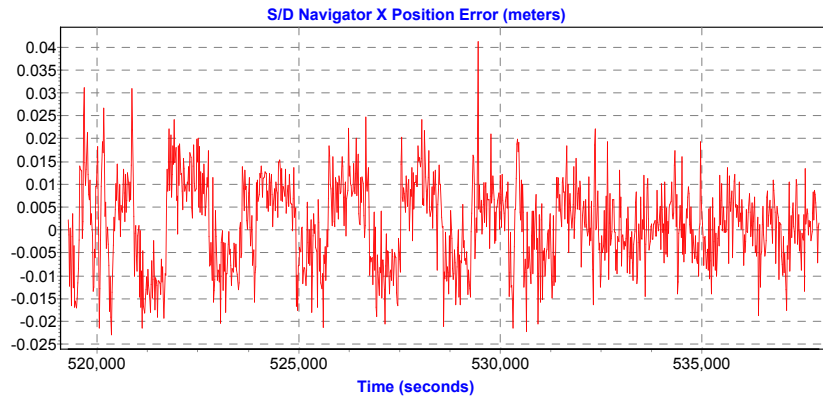
Percentages of epochs with DD_DOP over 10.00:

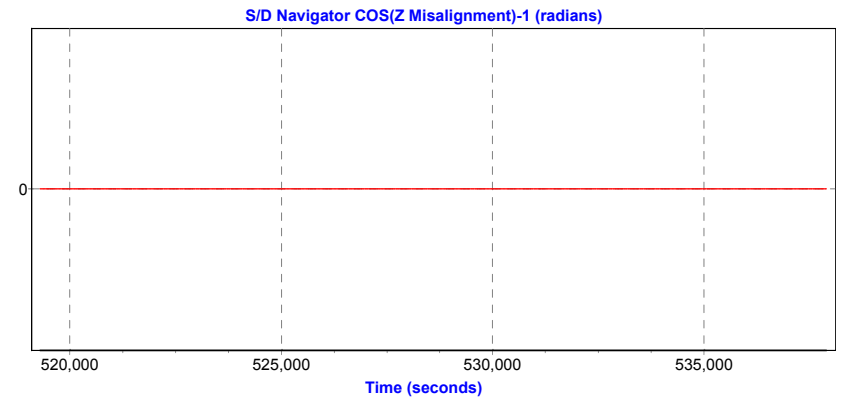
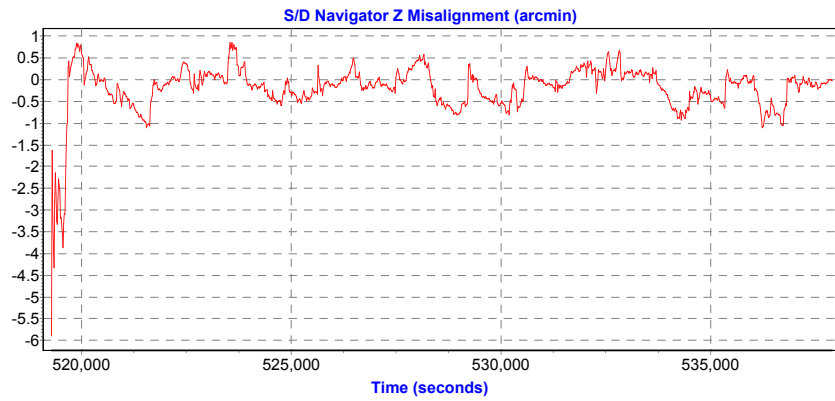
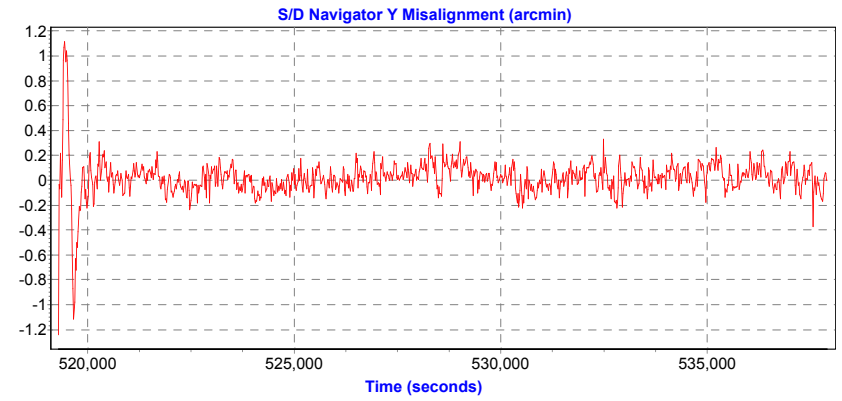
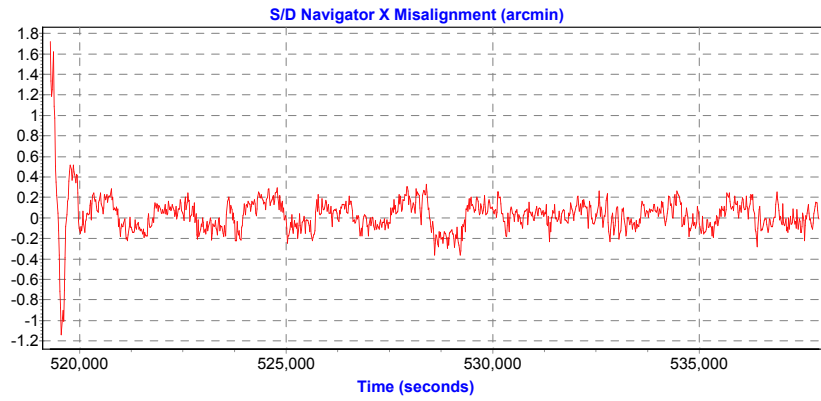
DOP over Tol:	0.0 %
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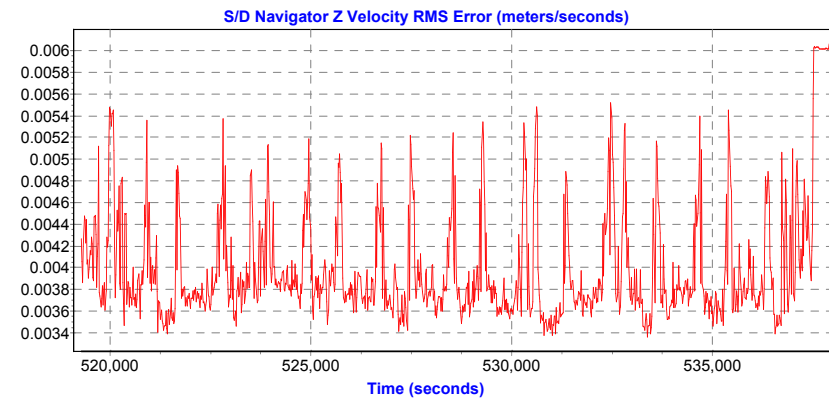
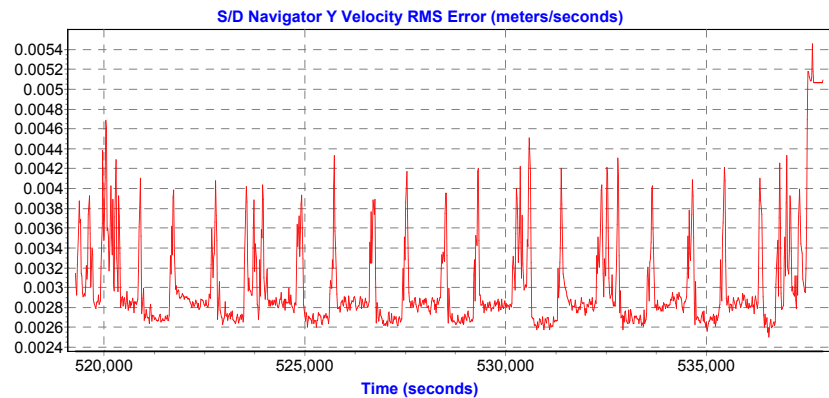
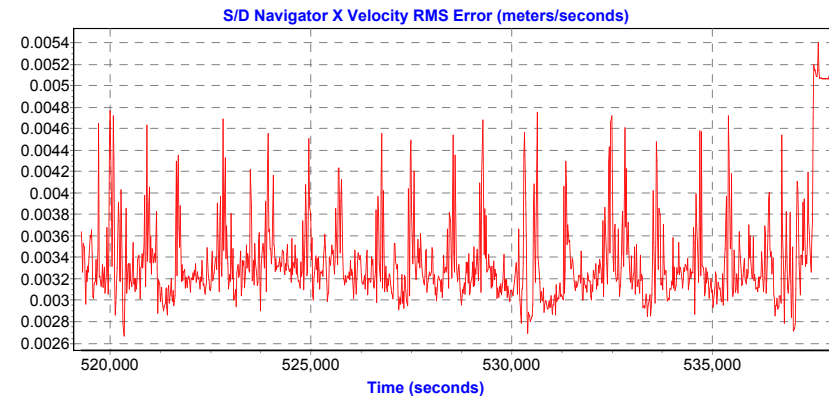
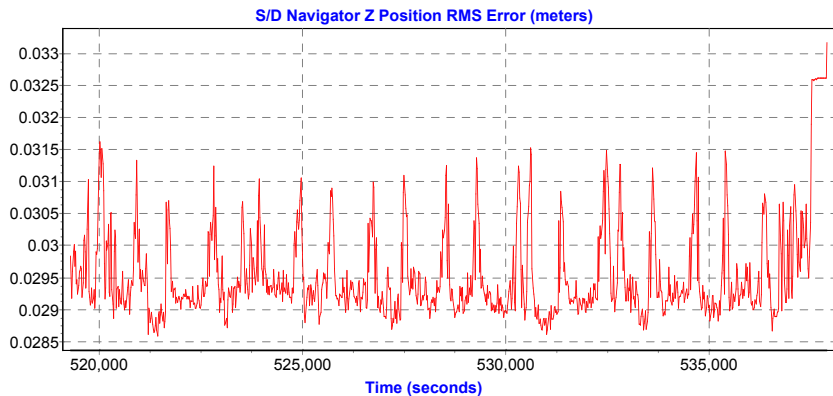
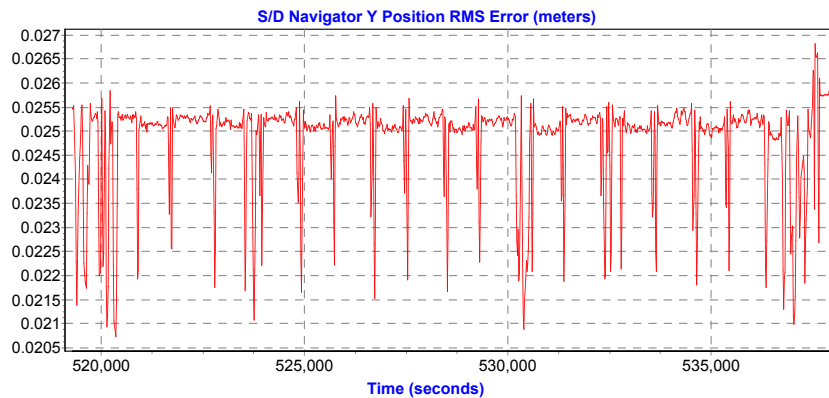
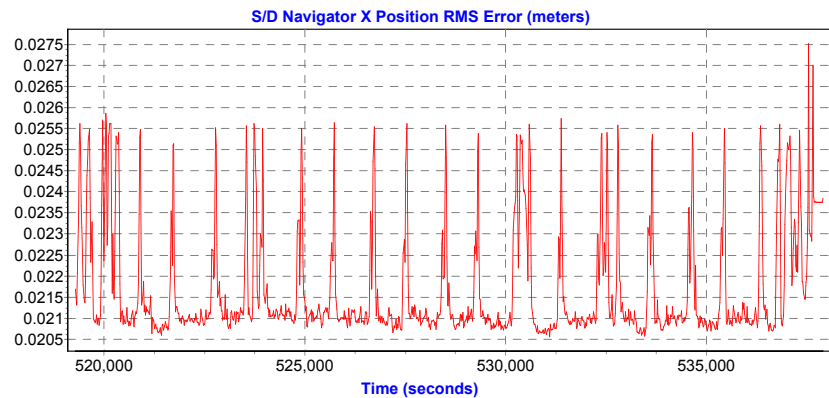
Baseline Distances:

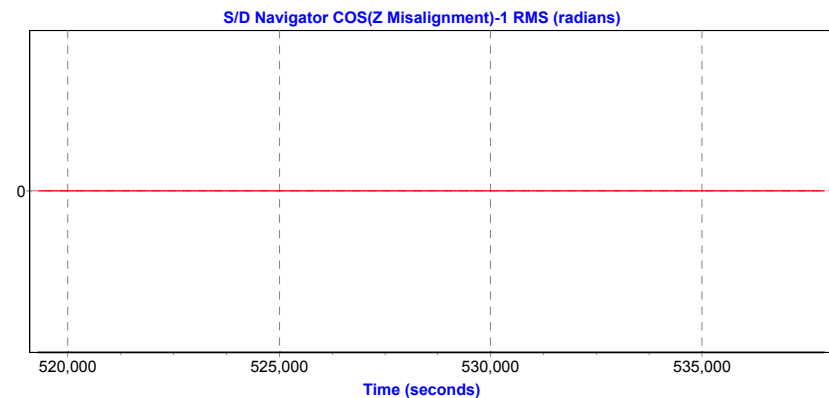
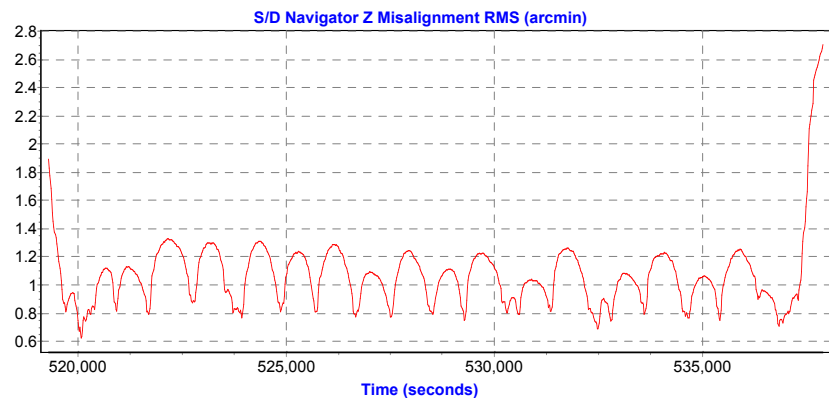
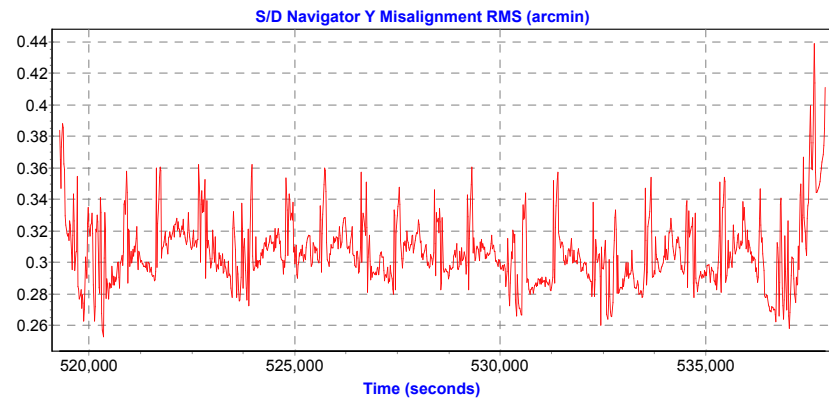
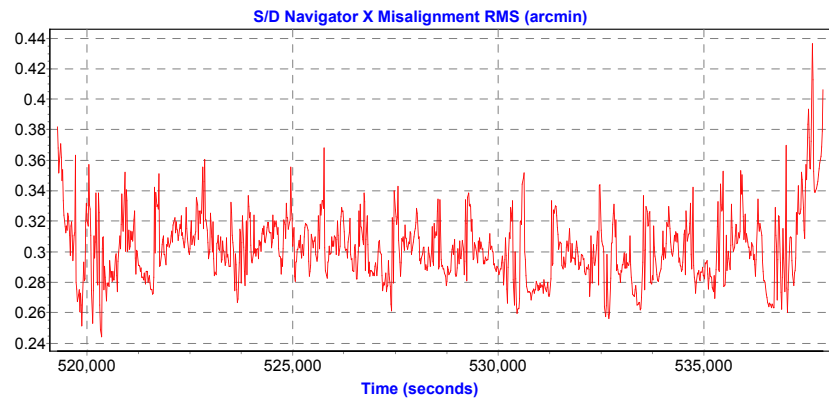
Maximum:	34.598 (km)
Minimum:	0.891 (km)
Average:	15.006 (km)
First Epoch:	8.032 (km)
Last Epoch:	8.019 (km)

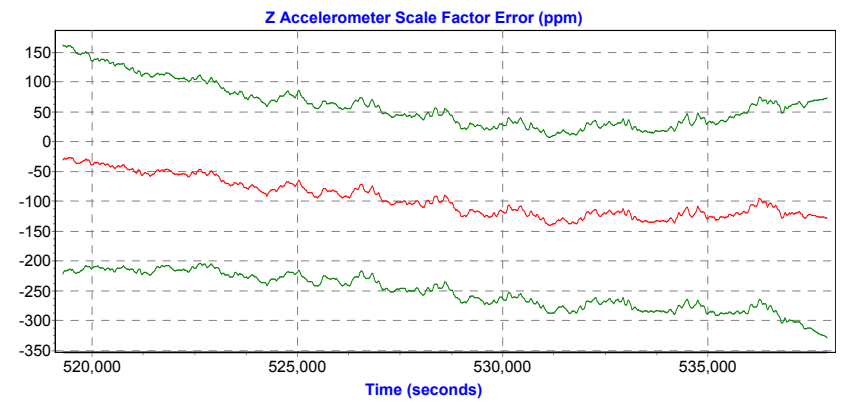
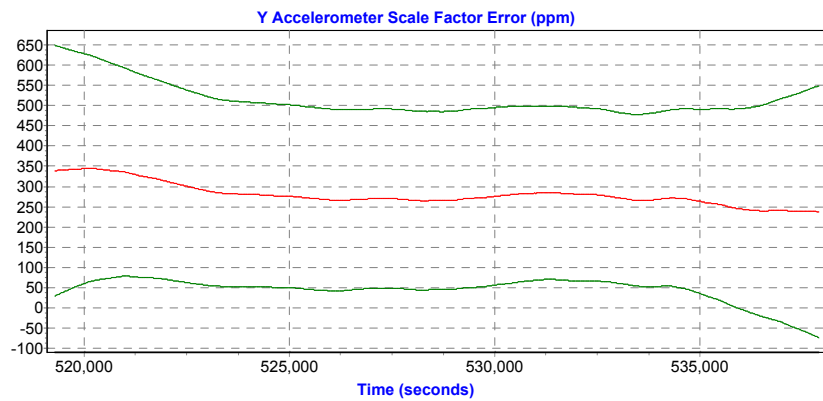
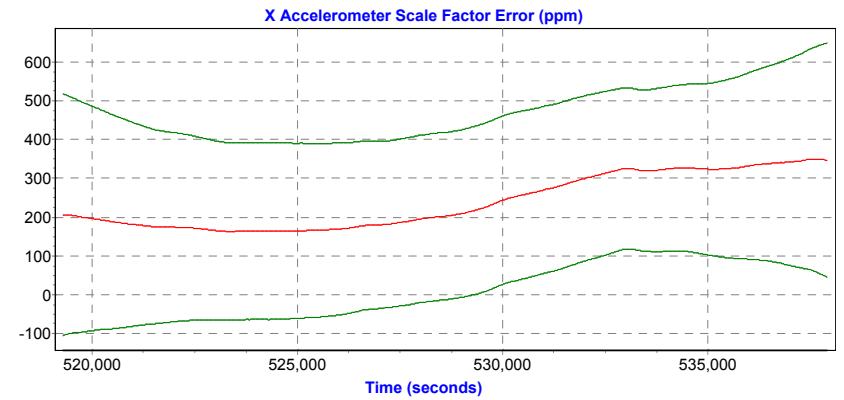
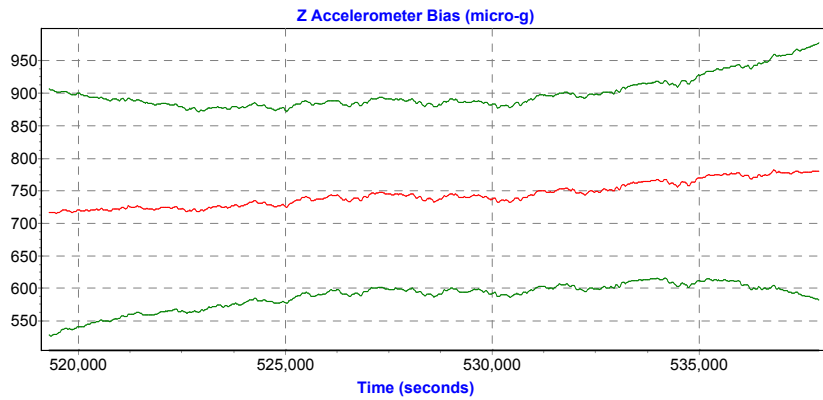
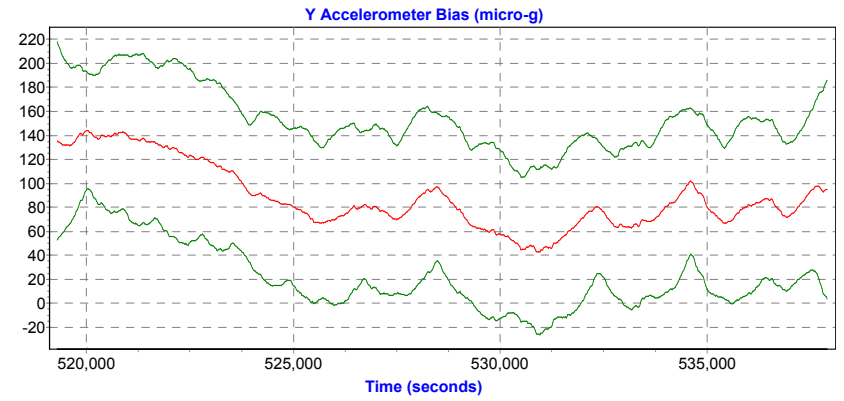
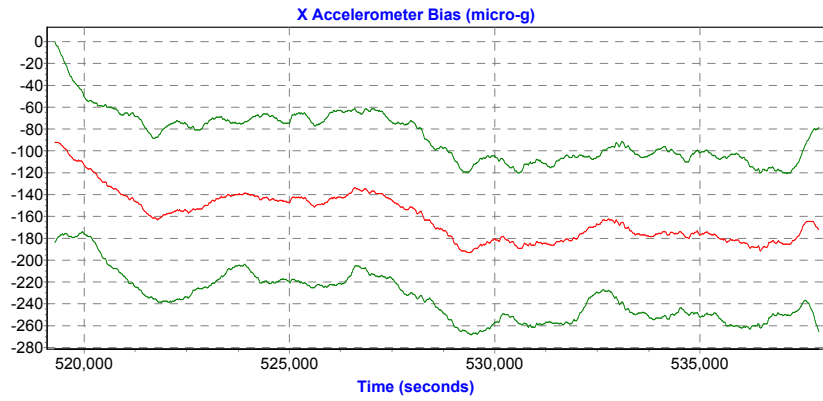


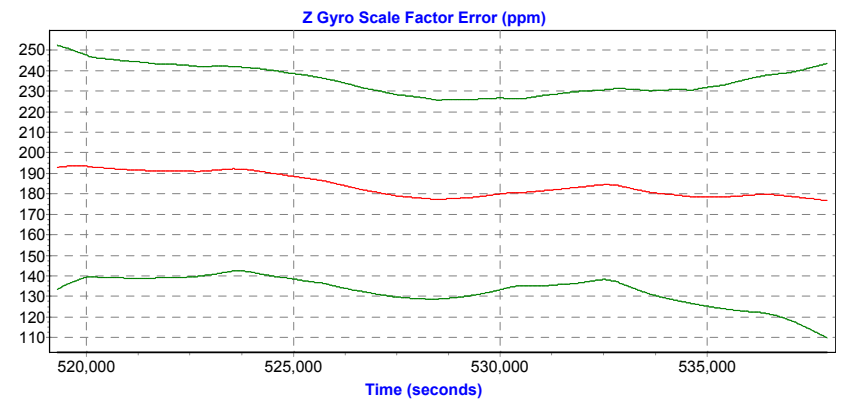
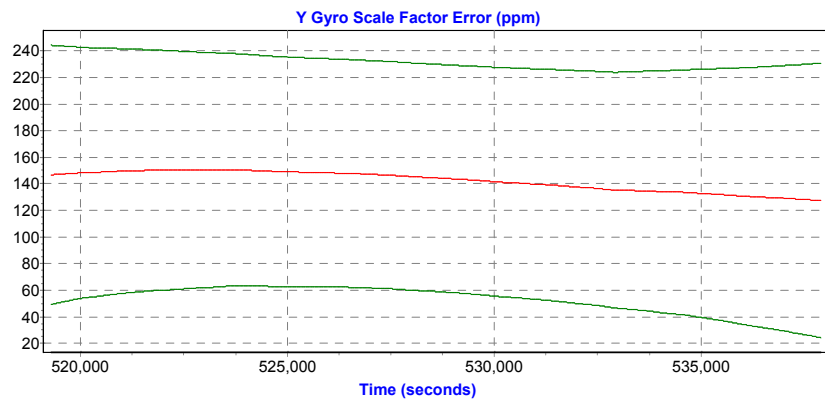
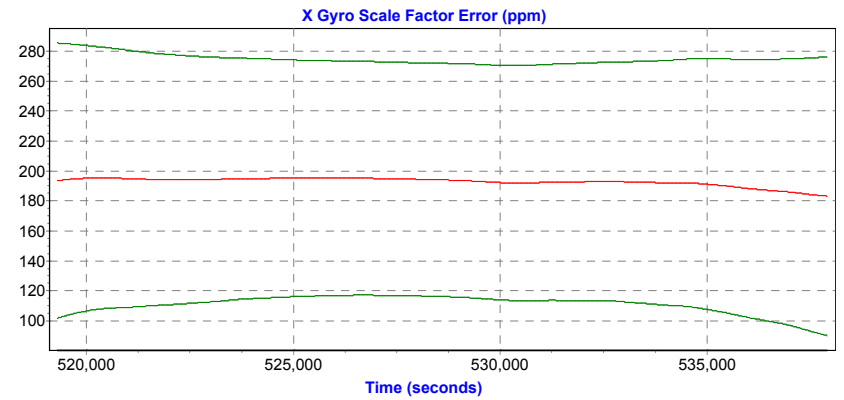
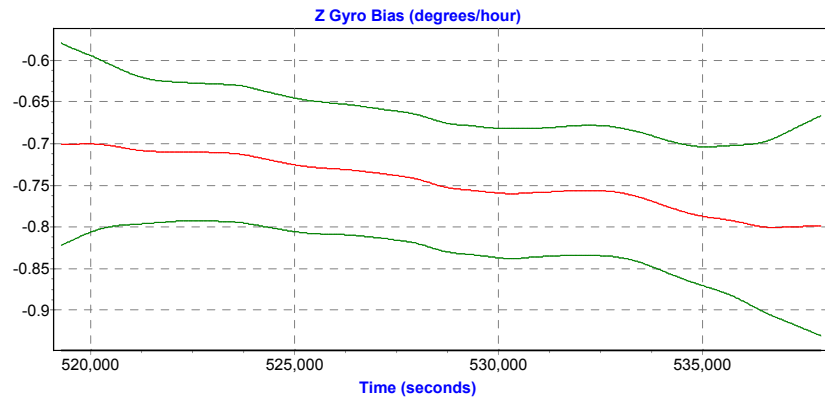
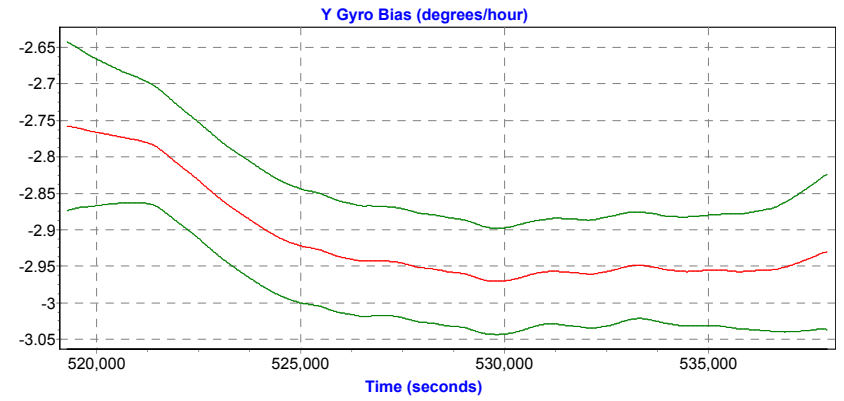
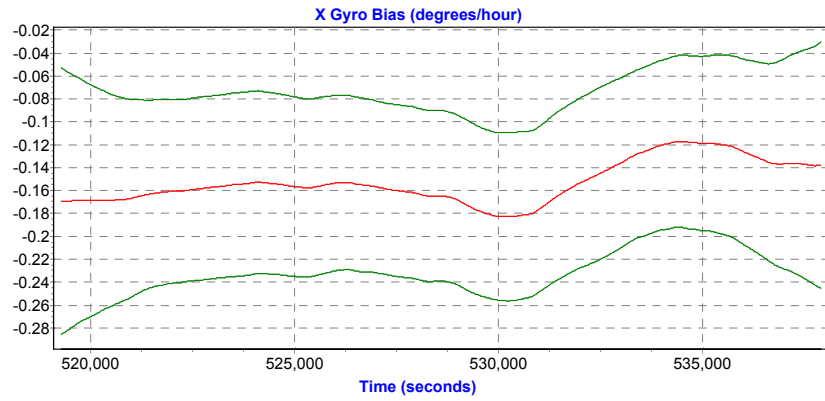






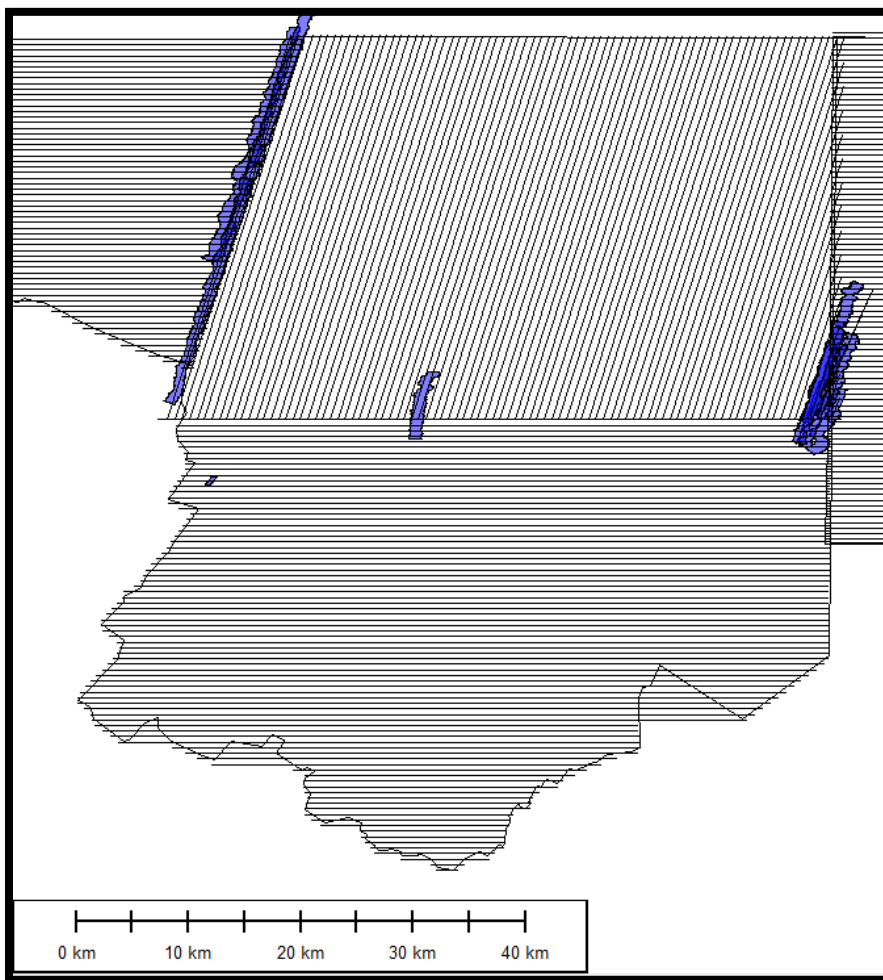






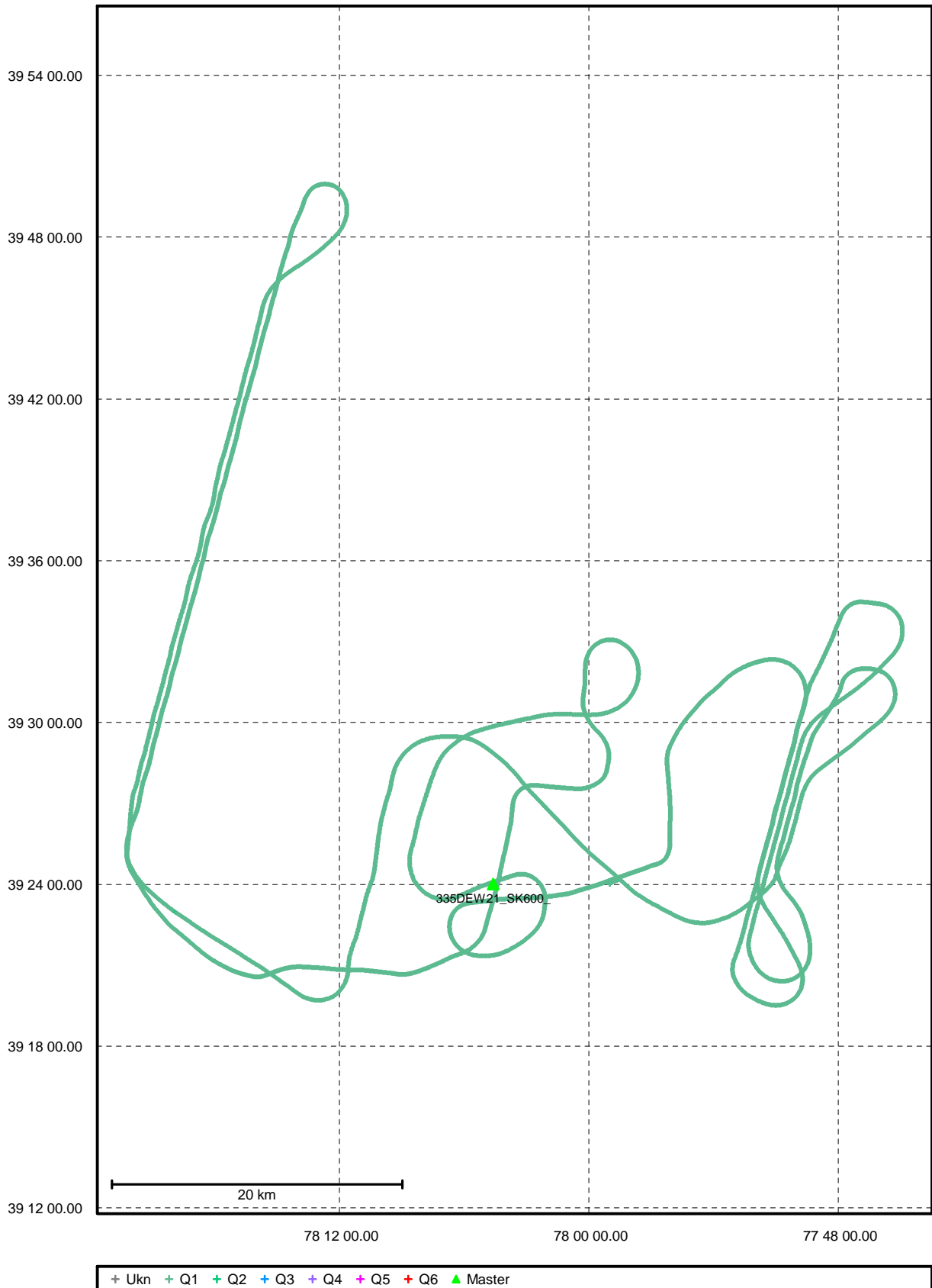
Mission: o112049a

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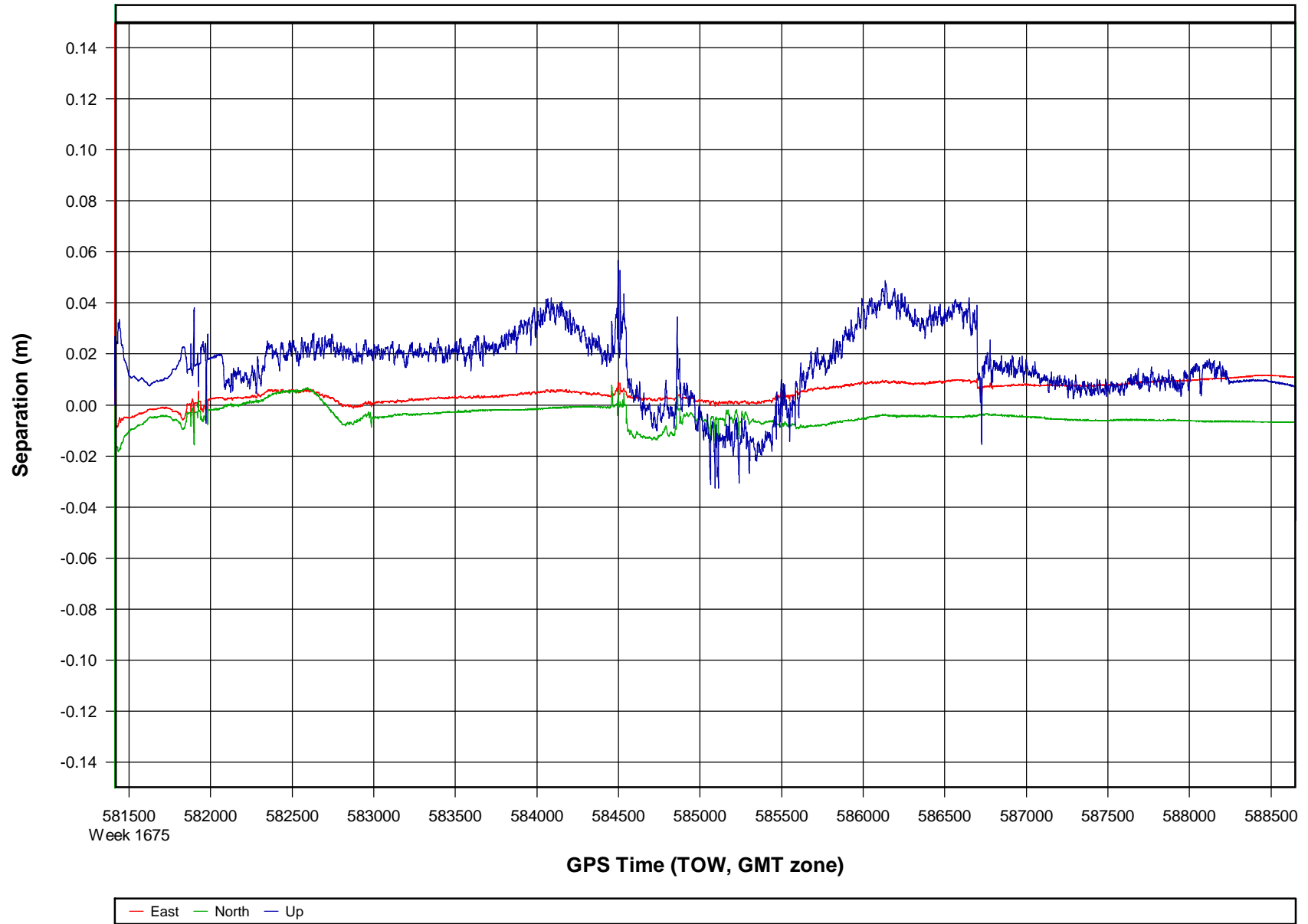


Combined - Map Run (1)

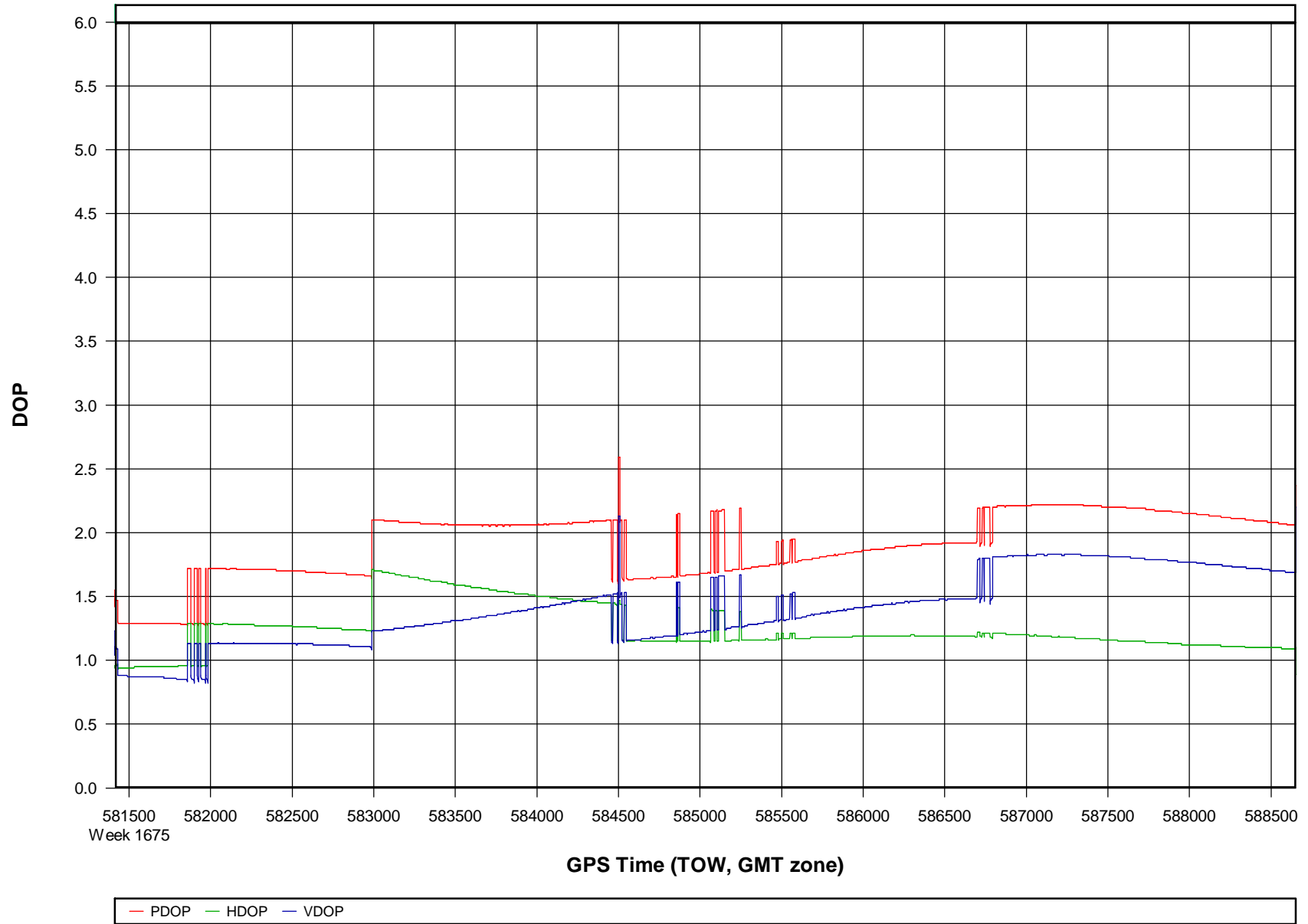
Geographic, DMS



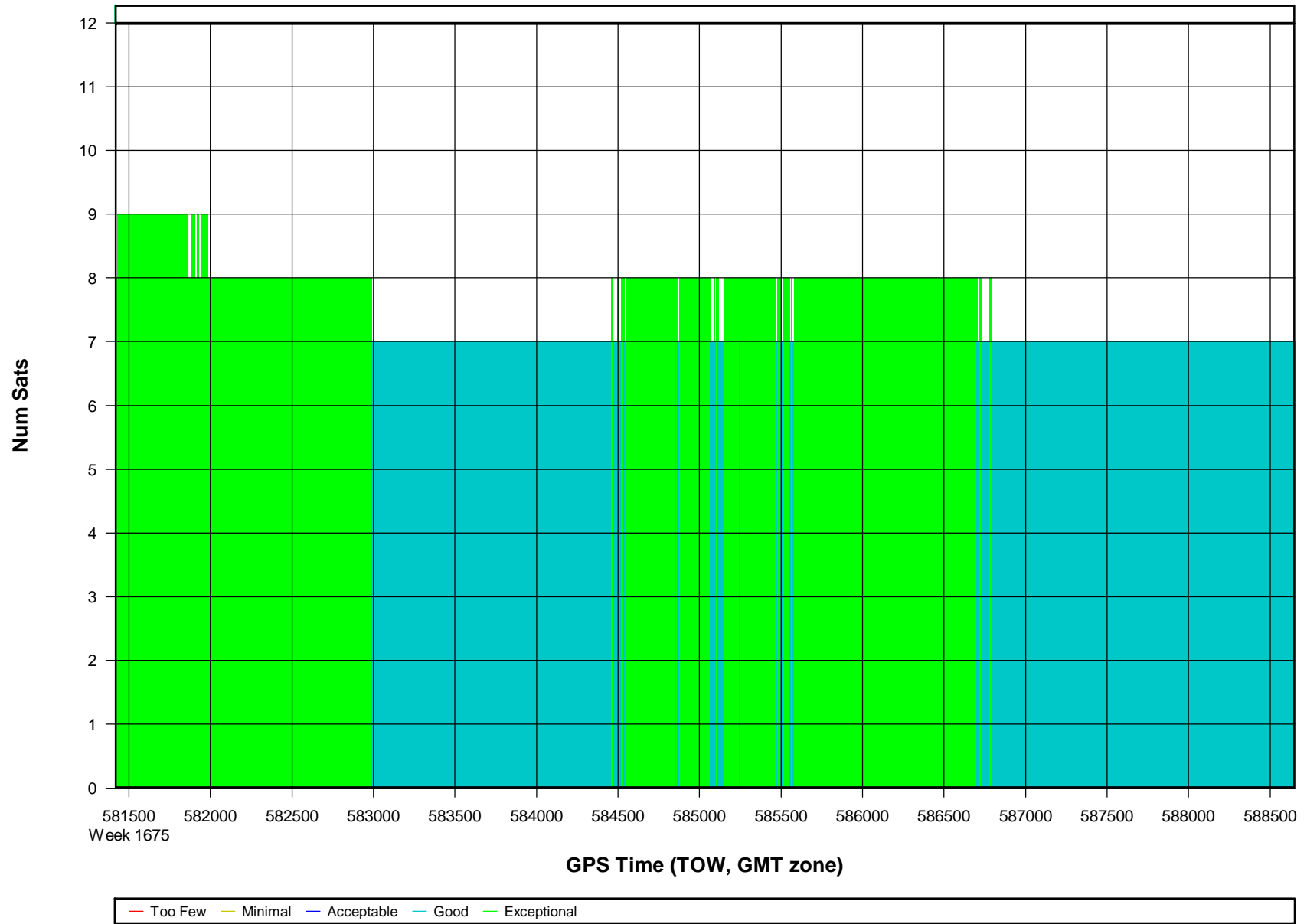
o112049a [Combined] - Forward/Reverse or Combined Separation Plot



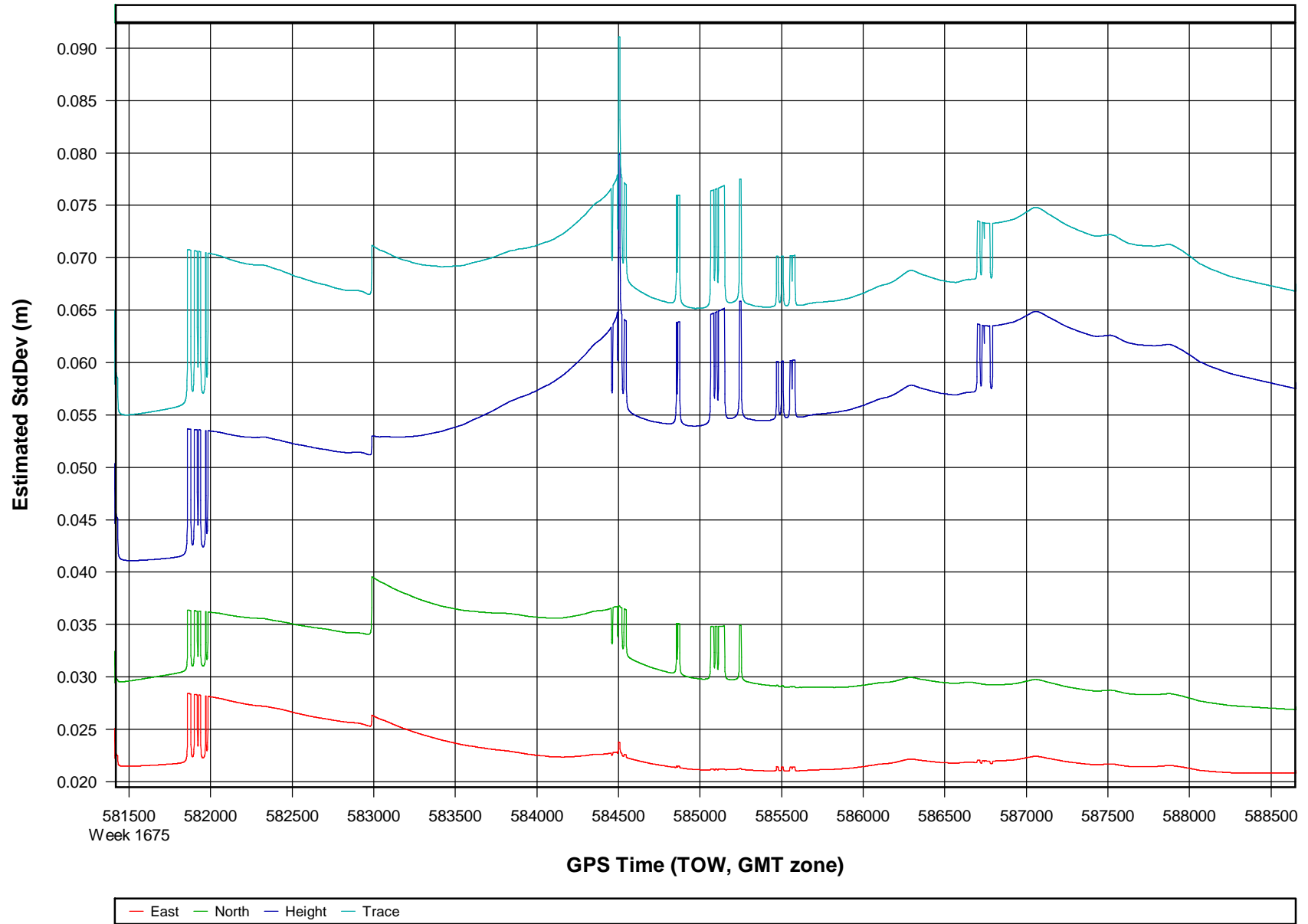
o112049a [Combined] - PDOP, HDOP, VDOP Plots



o112049a [Combined] - Number of Satellites Bar Plot



o112049a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112049a\3_Pro
cessed\GPS\o112049a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	72556
No processed position:	65313
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0152 (m)
C/A Code:	0.70 (m)
L1 Doppler:	0.034 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.007 (m)
North:	0.010 (m)
Height:	0.020 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (7238 occurrences):

East:	0.006 (m)
North:	0.006 (m)
Height:	0.020 (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:

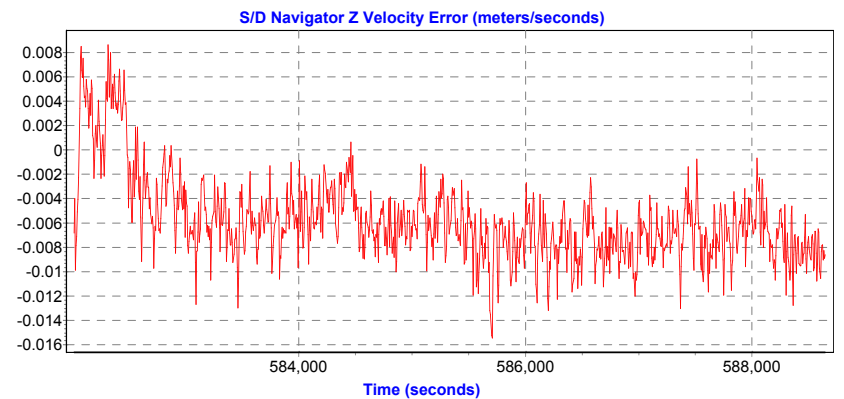
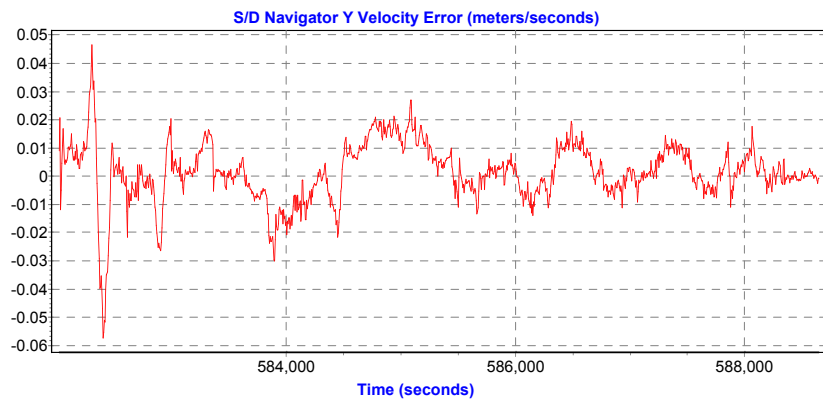
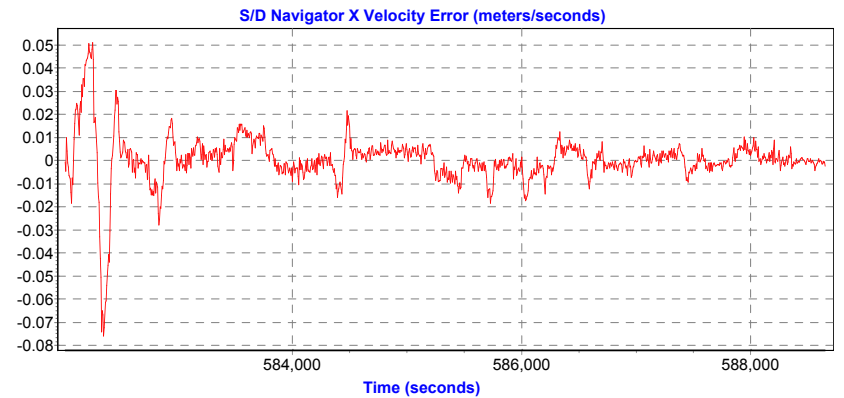
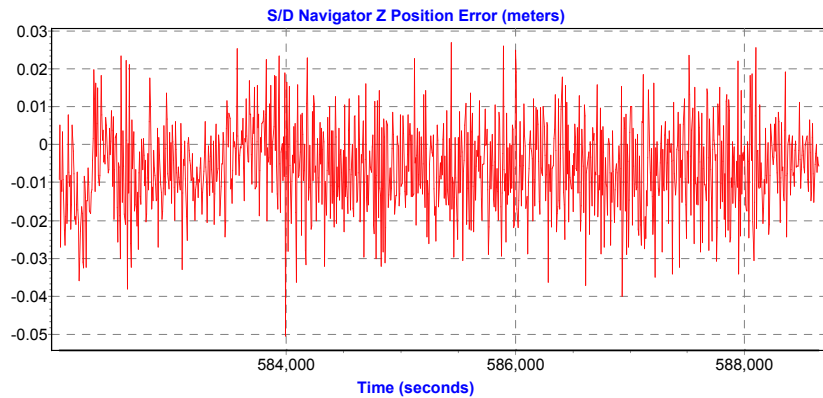
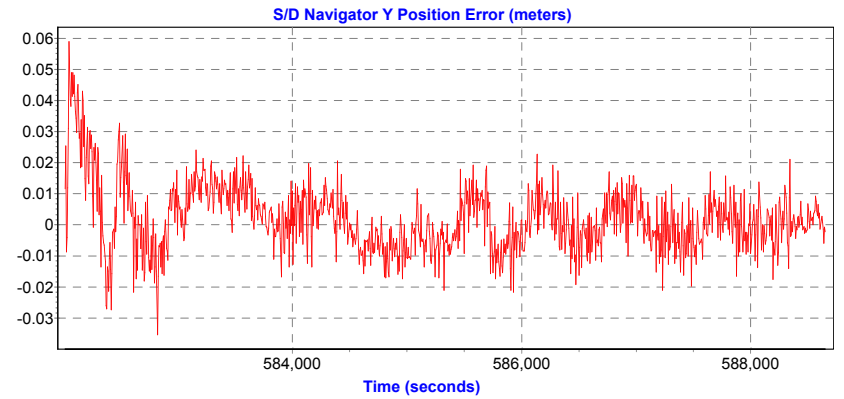
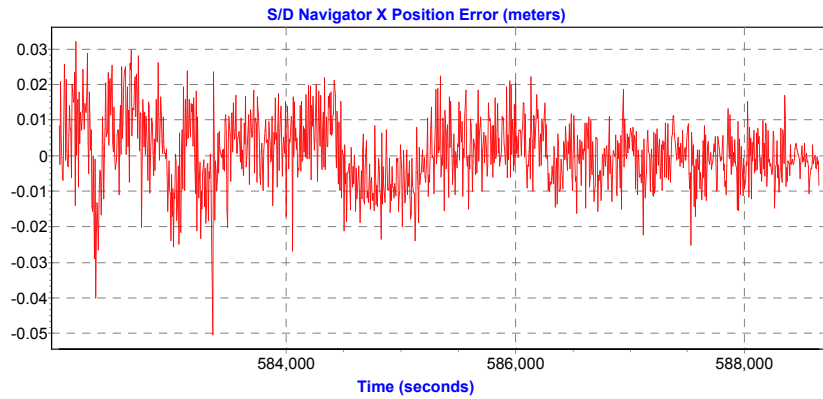
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

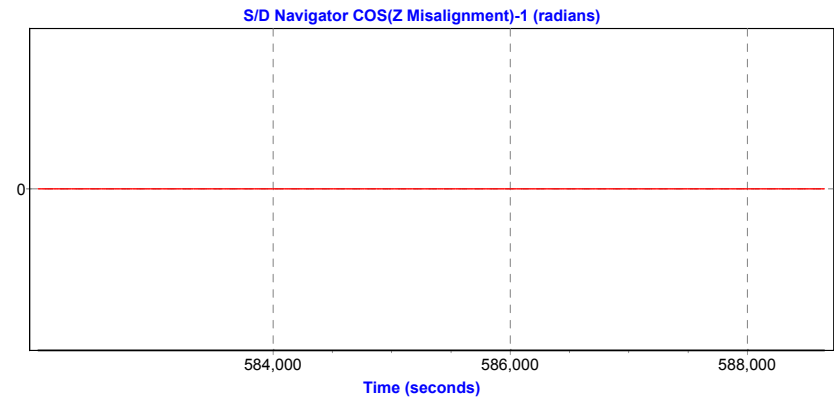
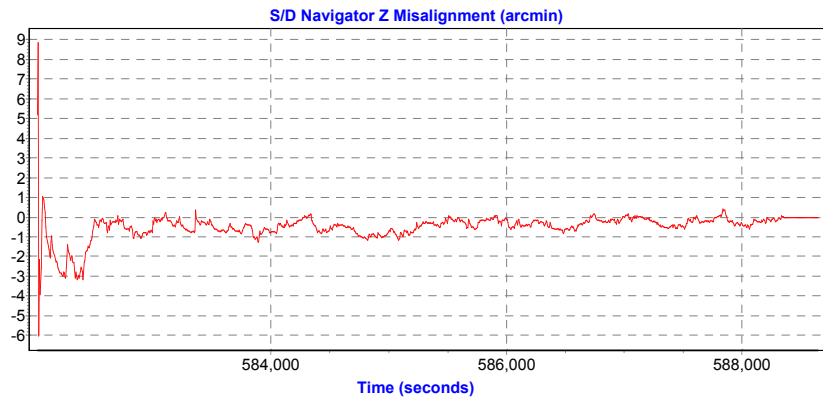
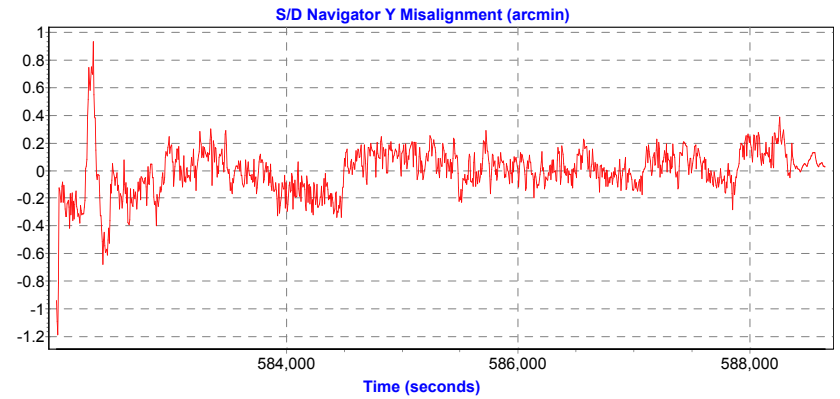
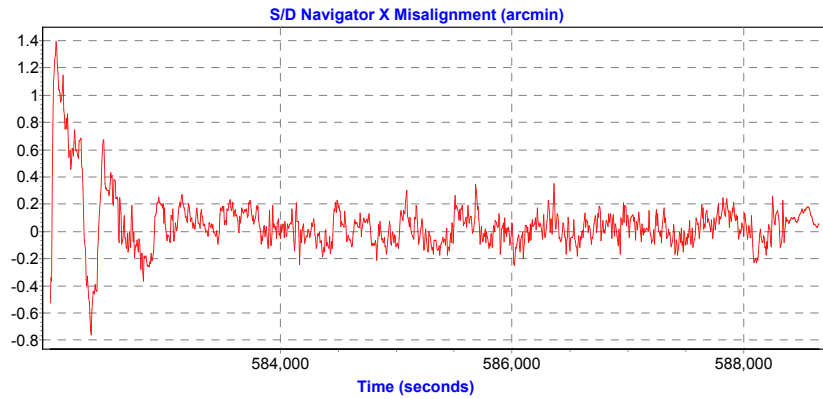
Percentages of epochs with DD_DOP over 10.00:

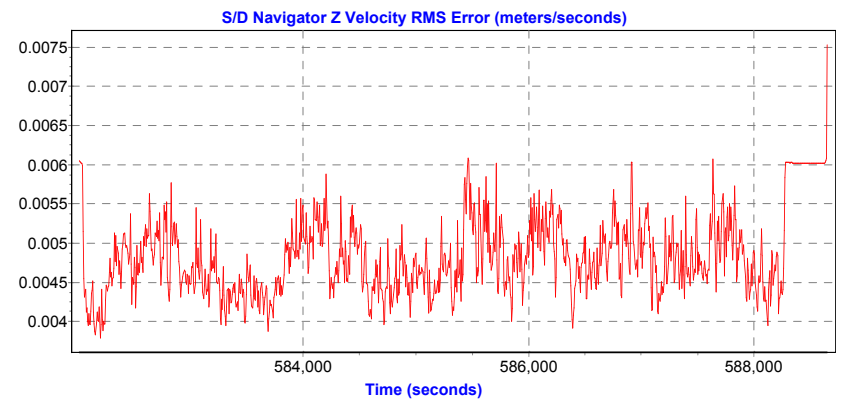
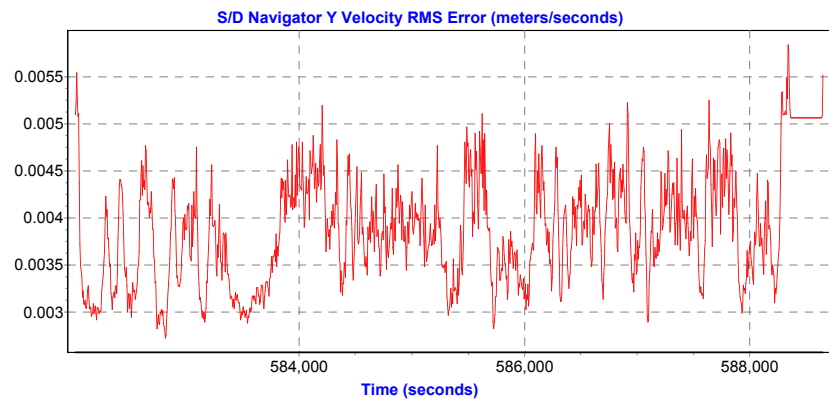
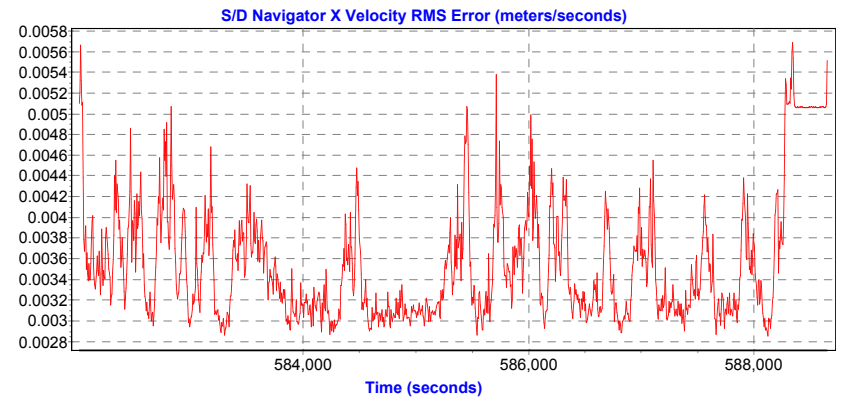
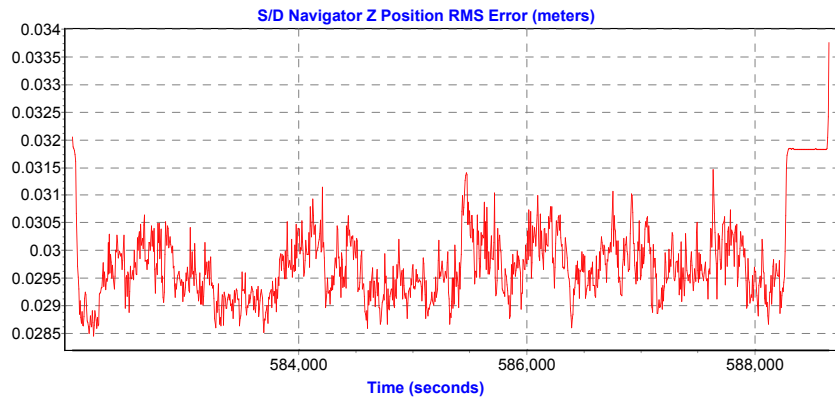
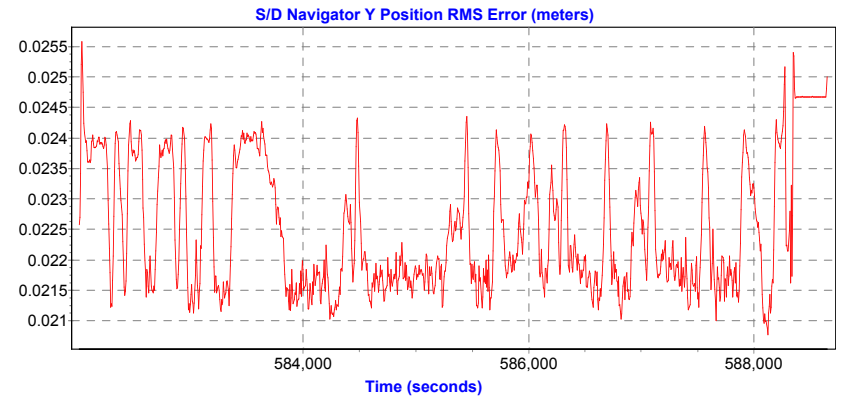
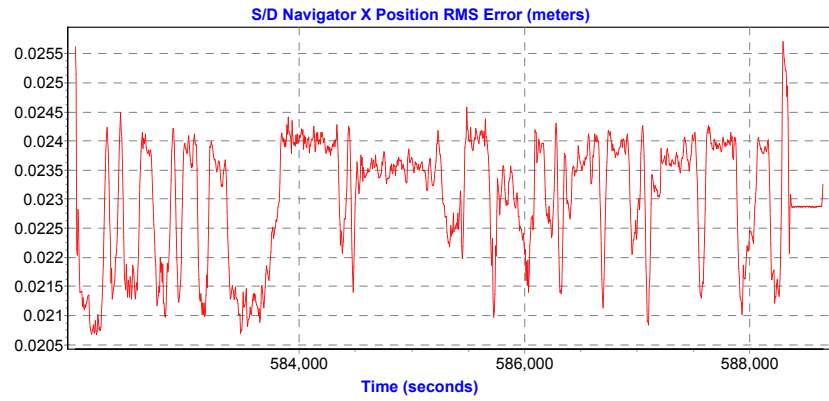
DOP over Tol:	0.0 %
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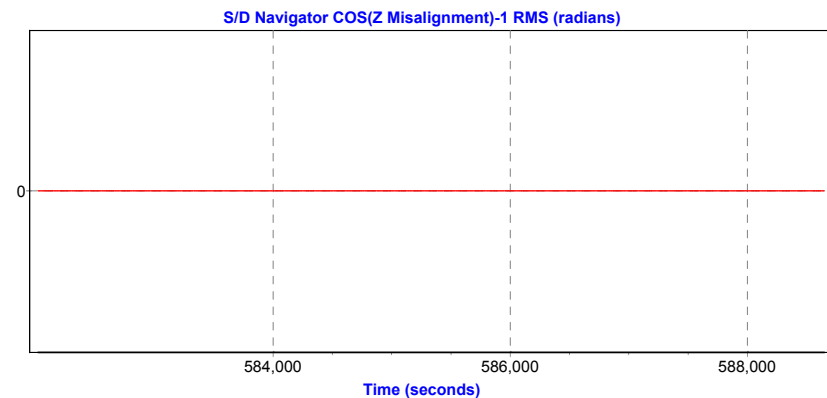
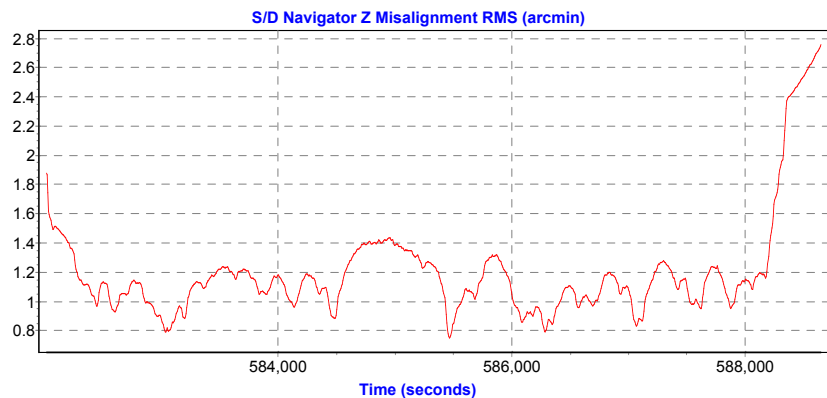
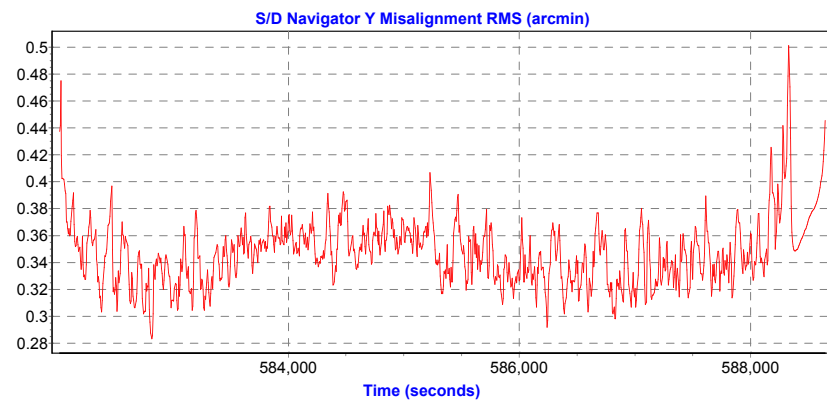
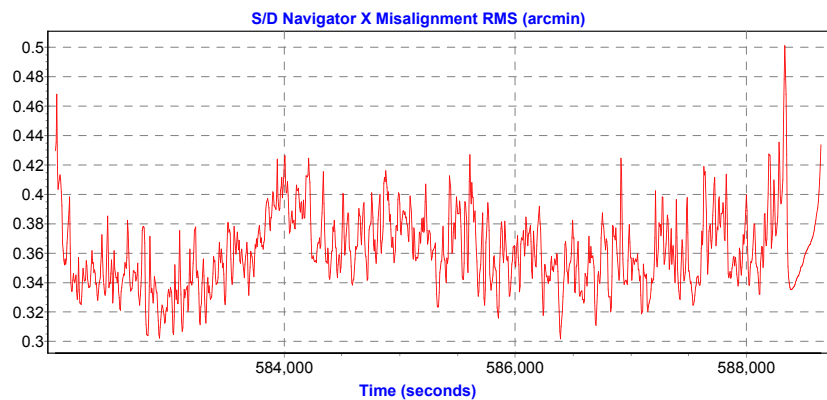
Baseline Distances:

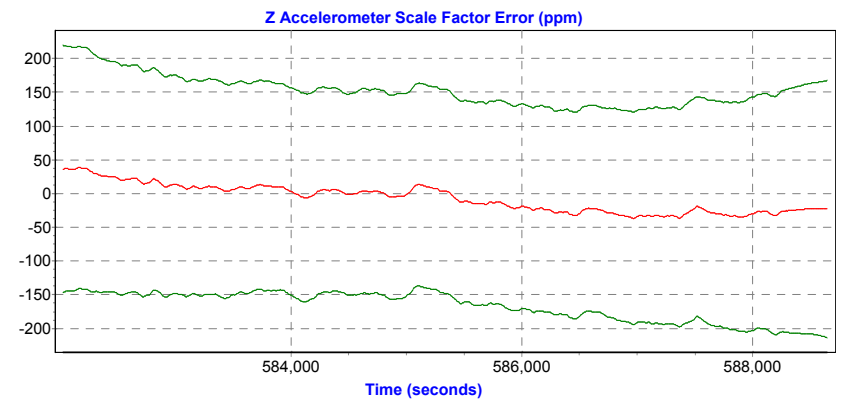
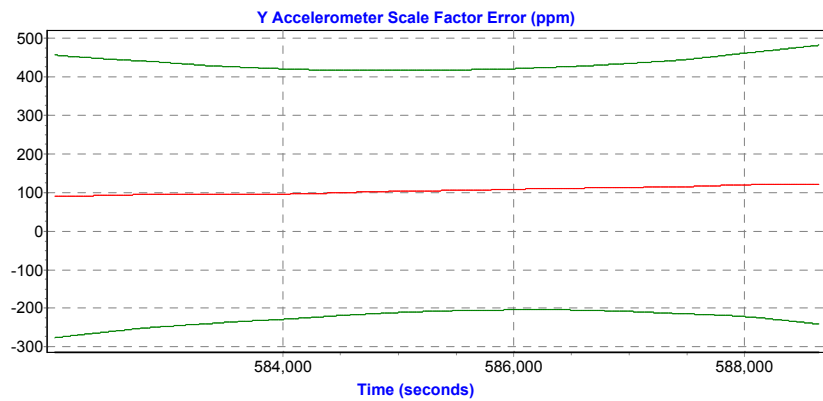
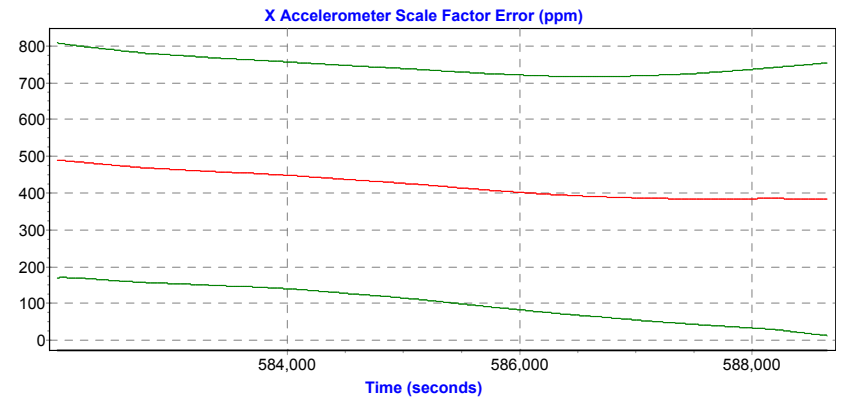
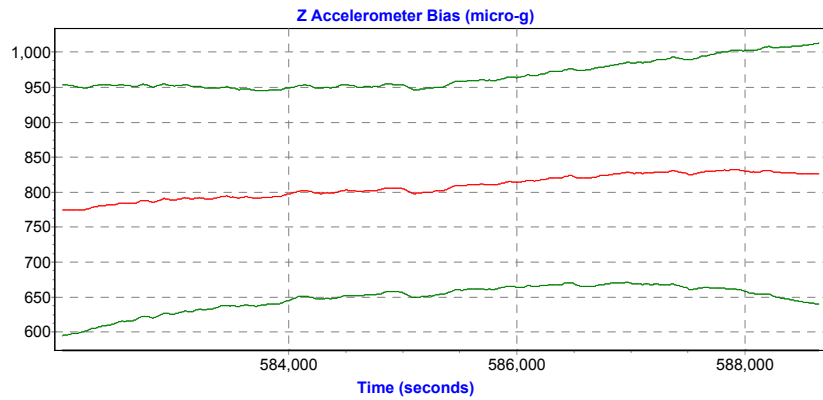
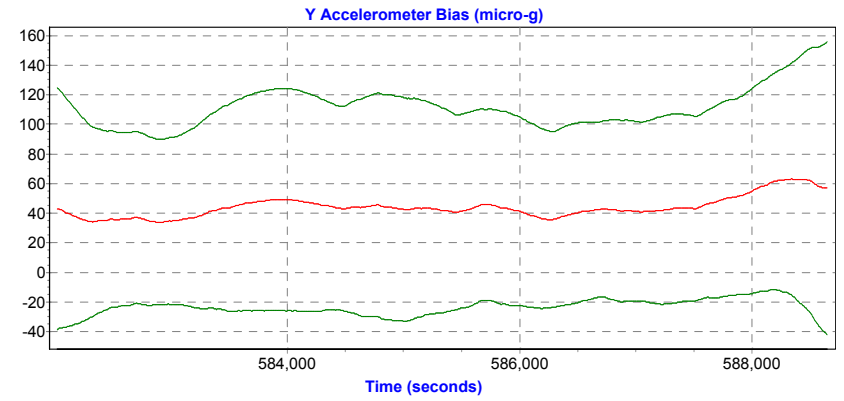
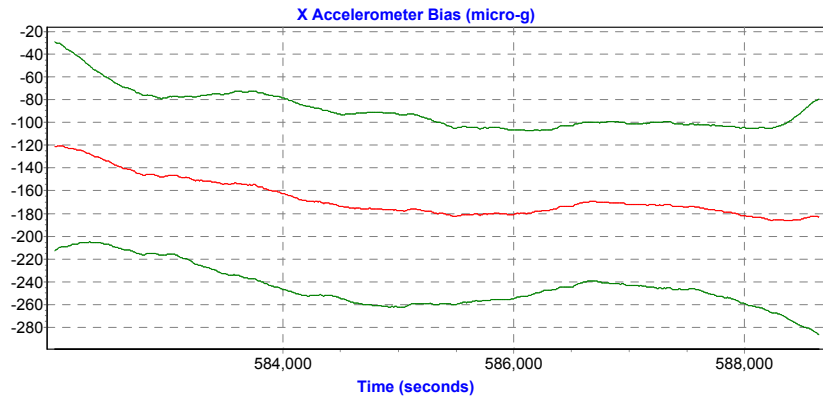
Maximum:	49.477 (km)
Minimum:	1.123 (km)
Average:	18.208 (km)
First Epoch:	8.069 (km)
Last Epoch:	8.046 (km)

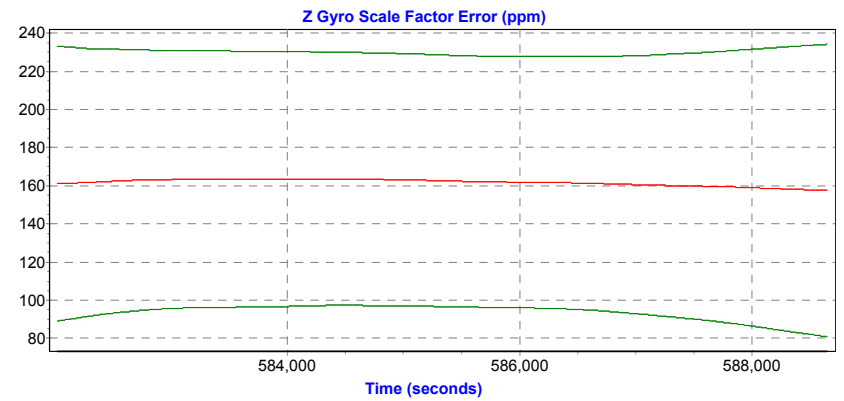
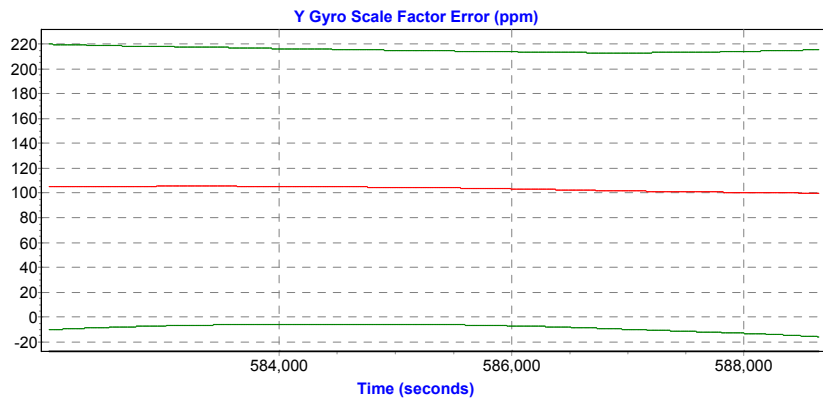
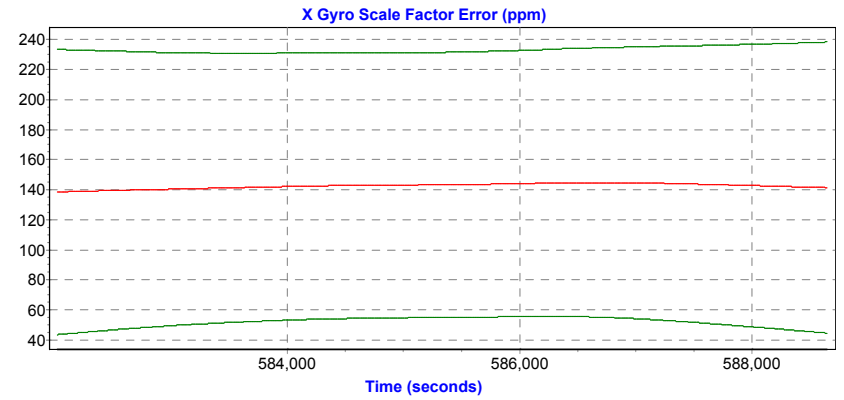
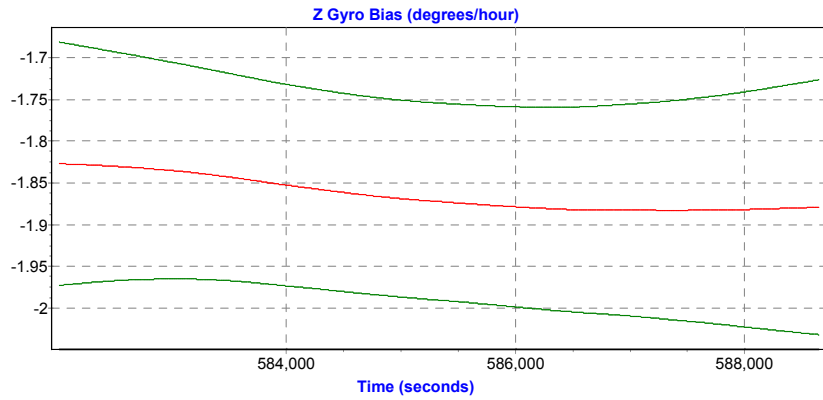
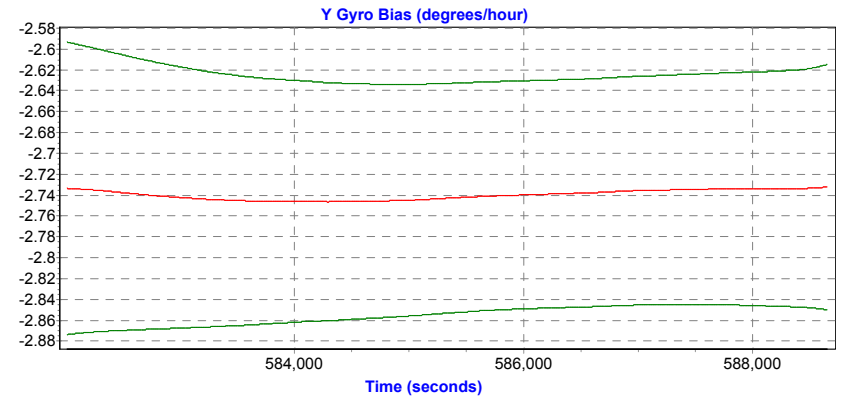
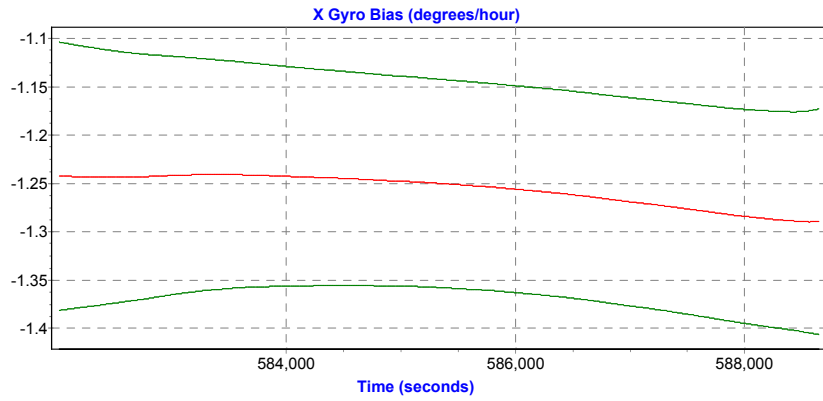






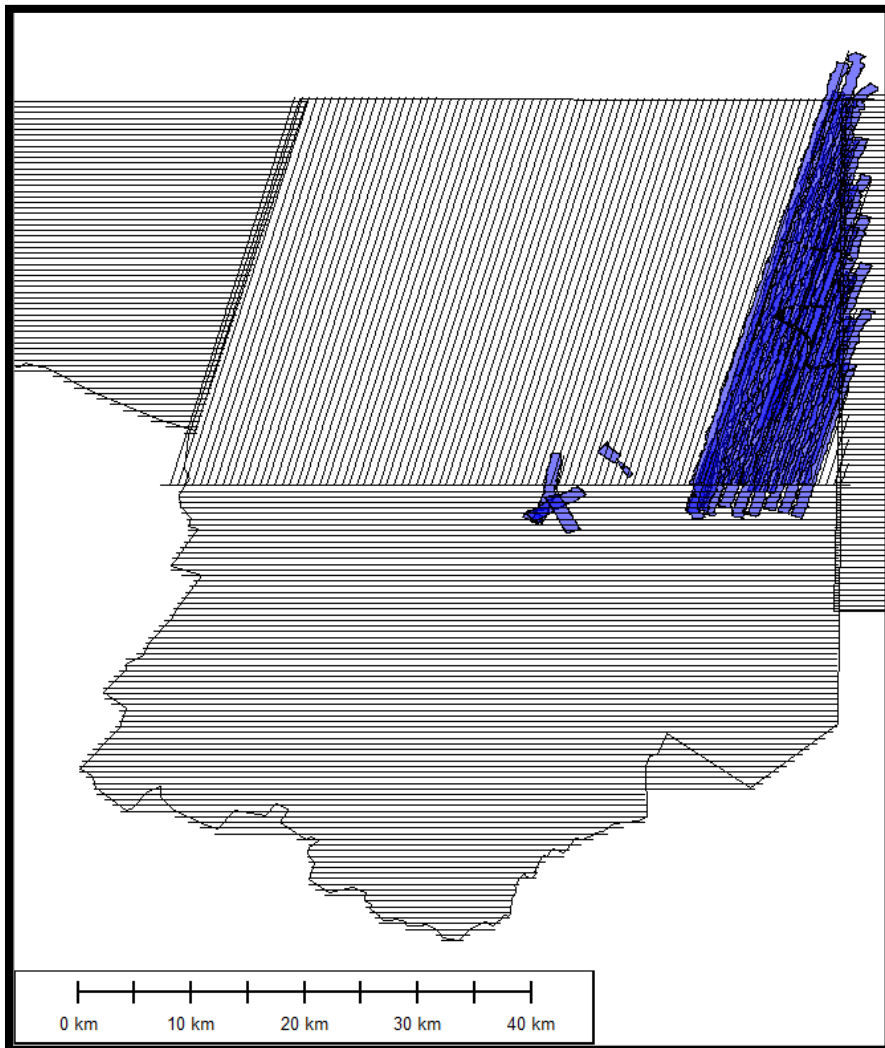






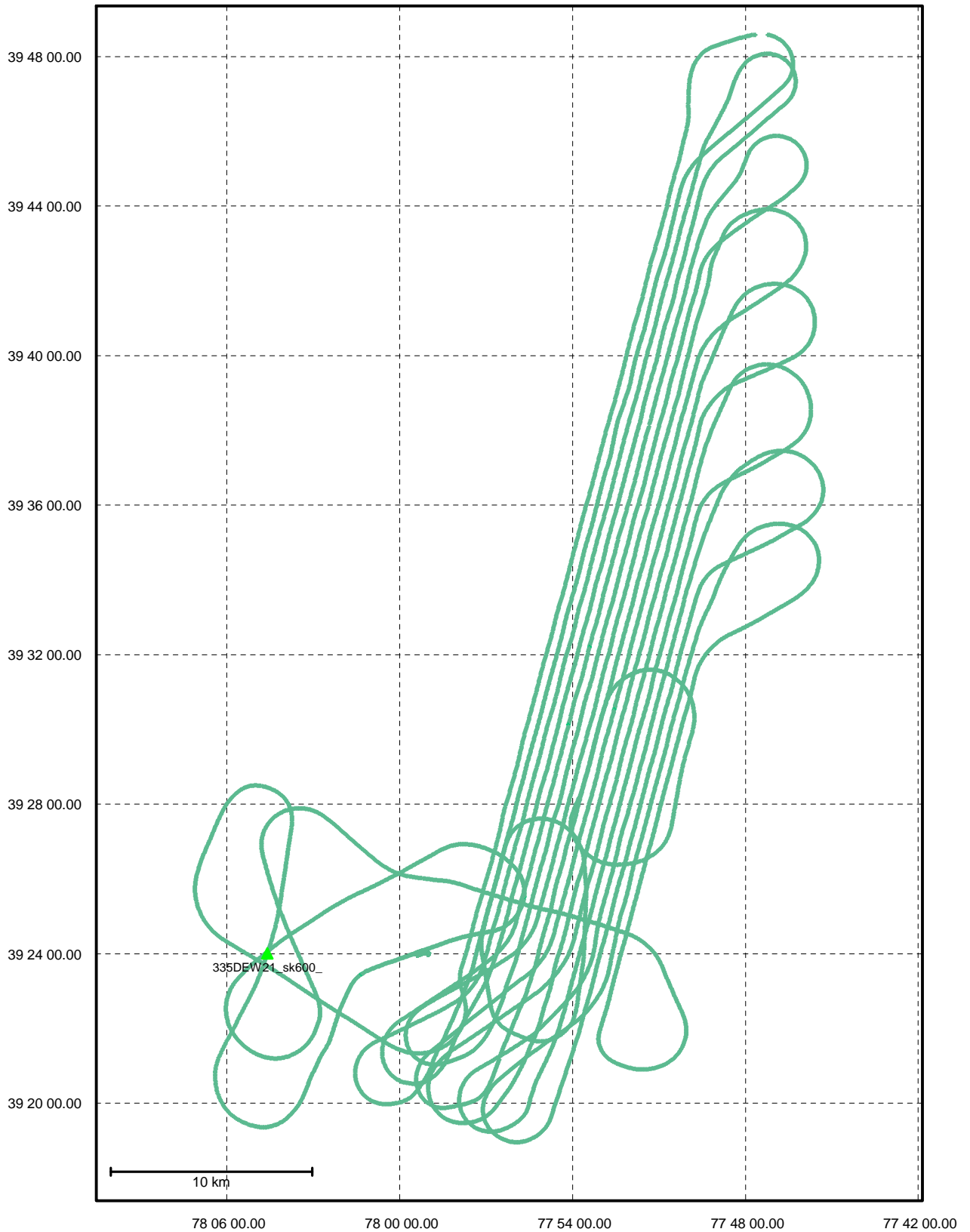
Mission: o112050a

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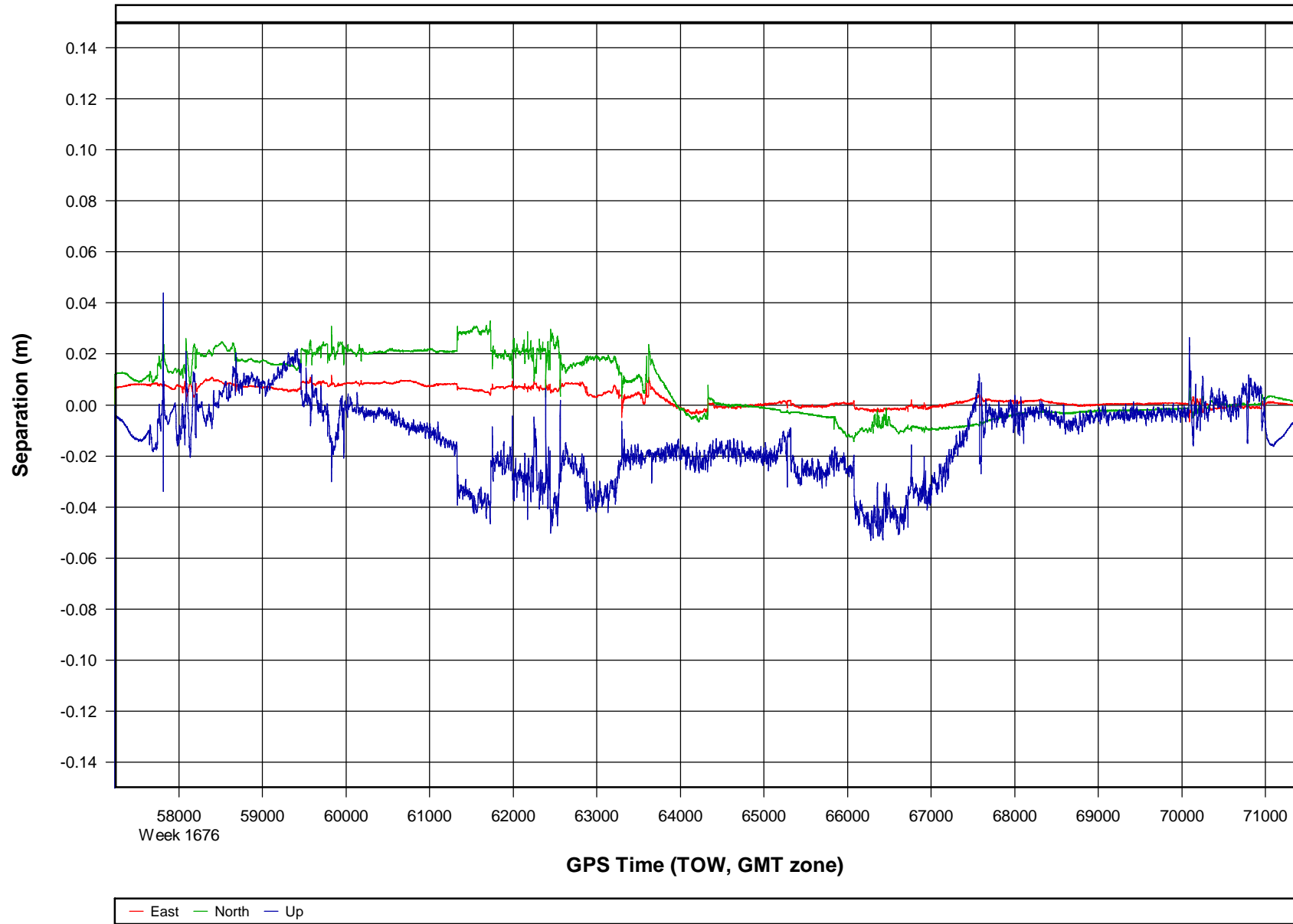
Combined - Map Run (1)

Geographic, DMS

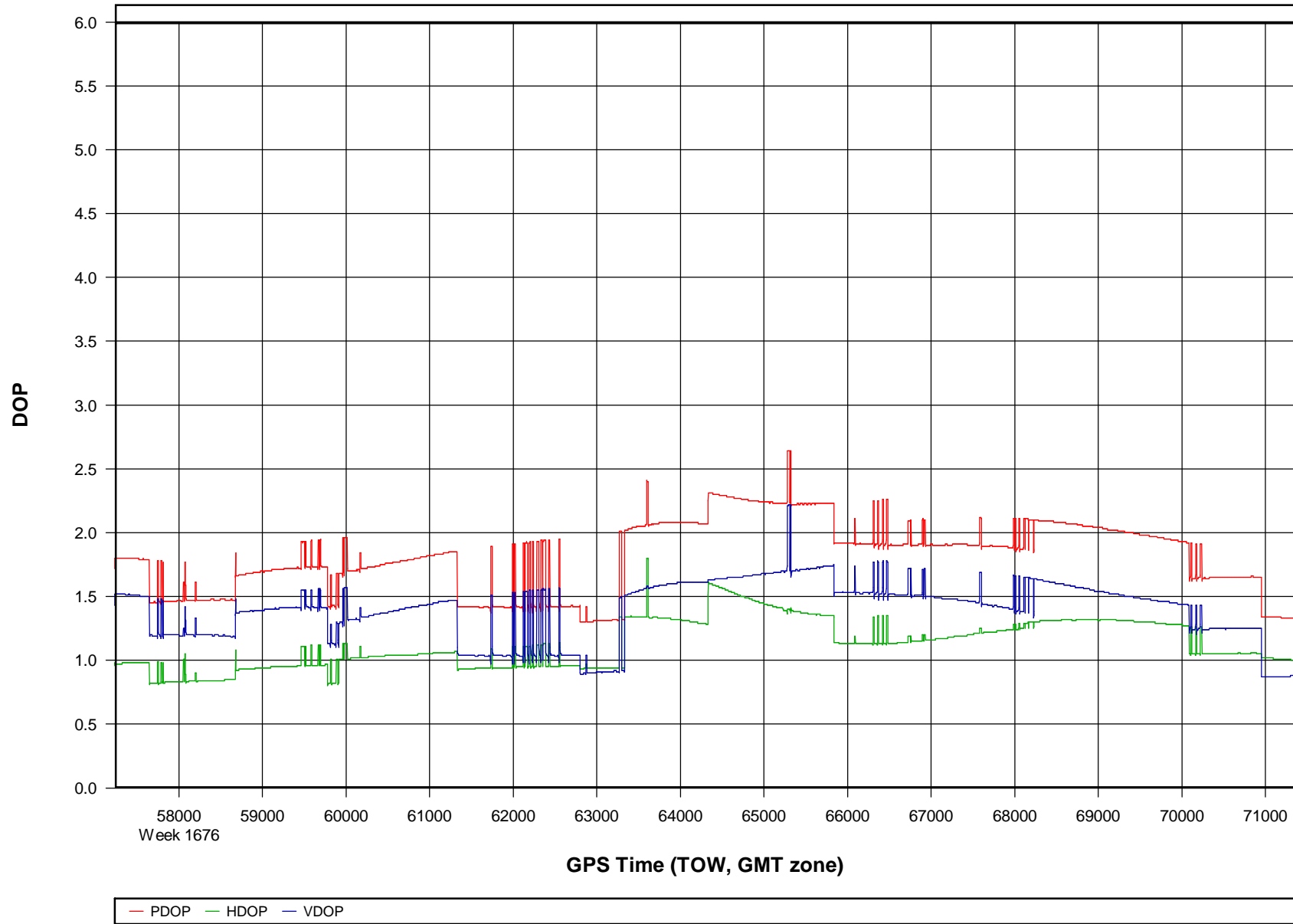


+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

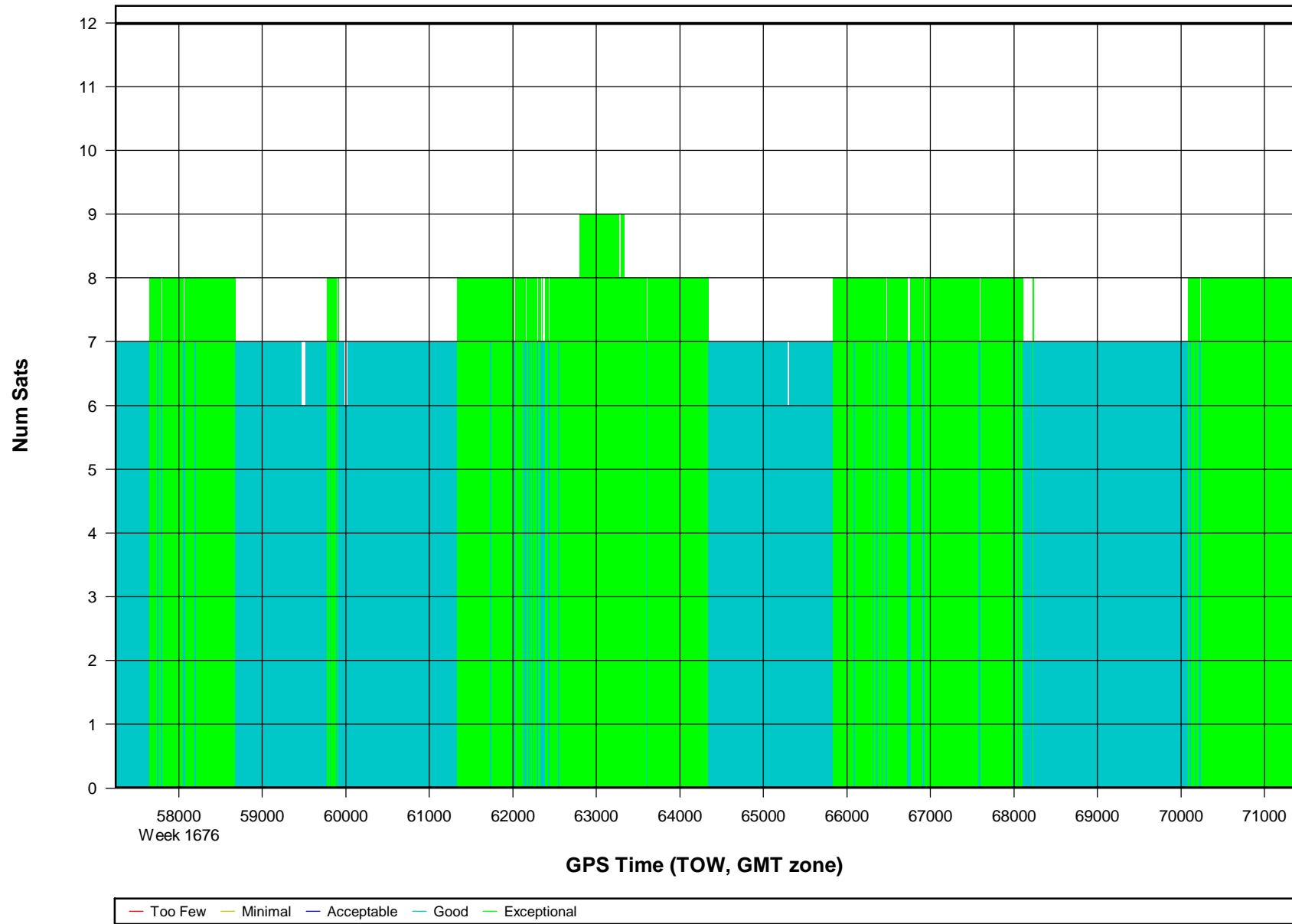
o112050a [Combined] - Forward/Reverse or Combined Separation Plot



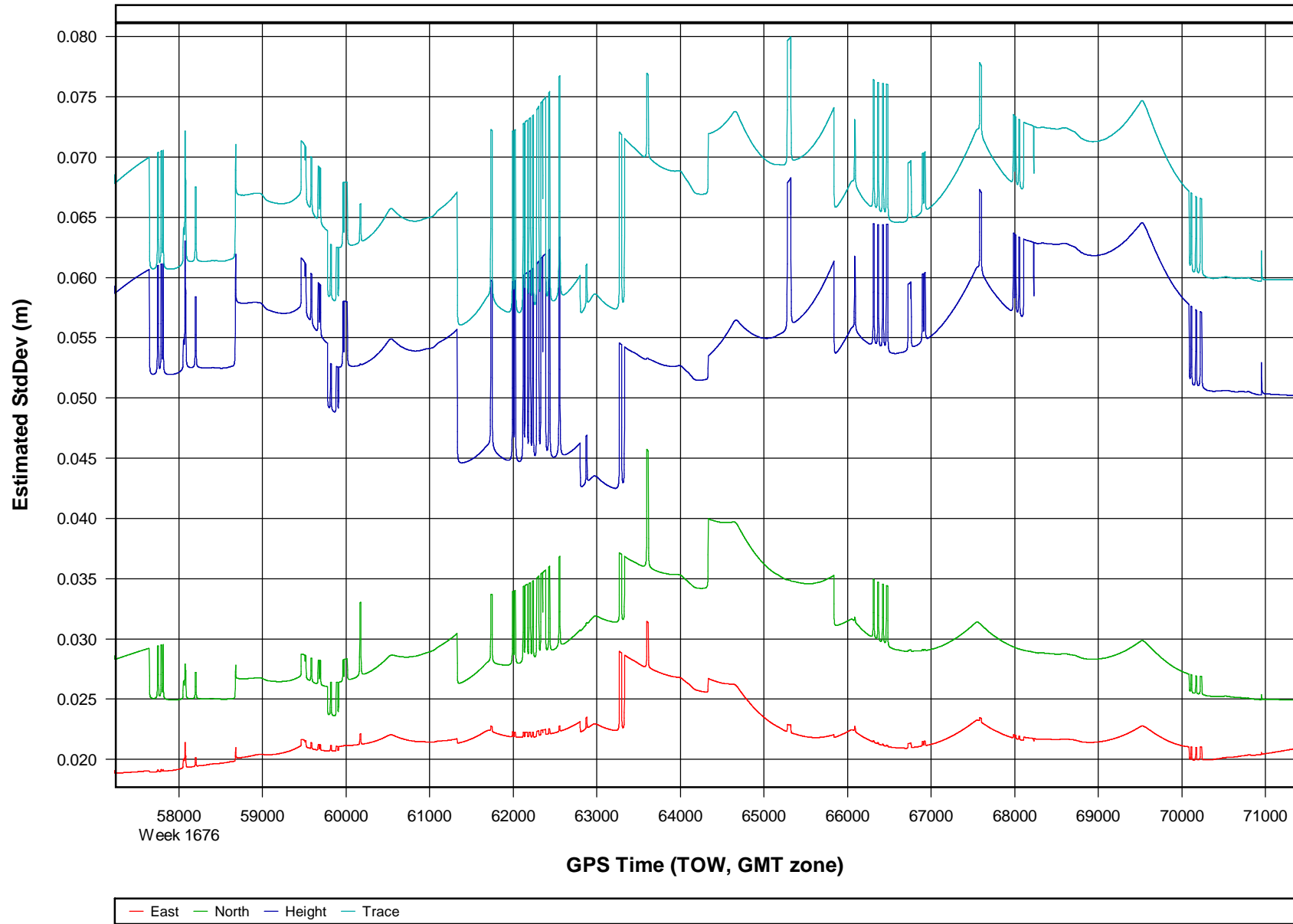
o112050a [Combined] - PDOP, HDOP, VDOP Plots



o112050a [Combined] - Number of Satellites Bar Plot



o112050a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112050a\3_Pro
cessed\GPS\o112050a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	141423
No processed position:	127295
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0143 (m)
C/A Code:	0.74 (m)
L1 Doppler:	0.036 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.005 (m)
North:	0.014 (m)
Height:	0.021 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (14123 occurrences):

East:	0.005 (m)
North:	0.014 (m)
Height:	0.020 (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:

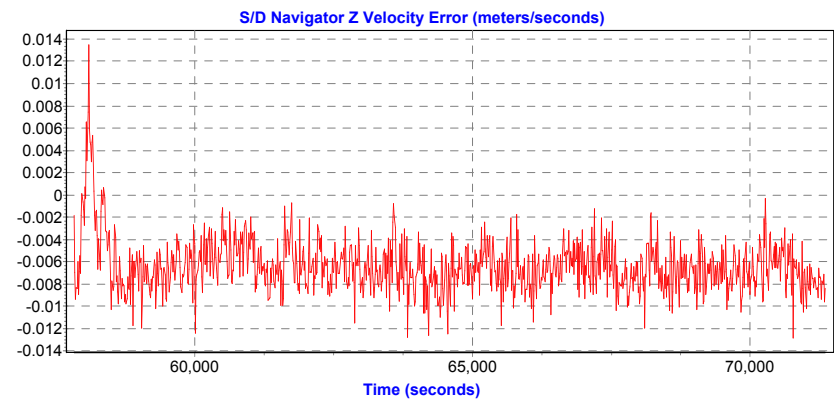
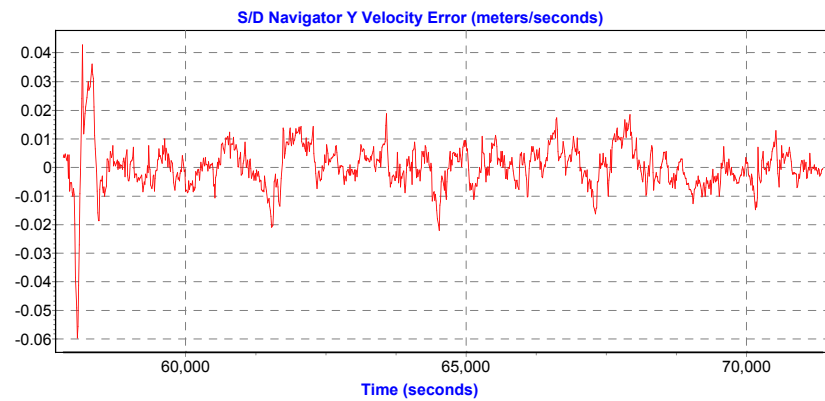
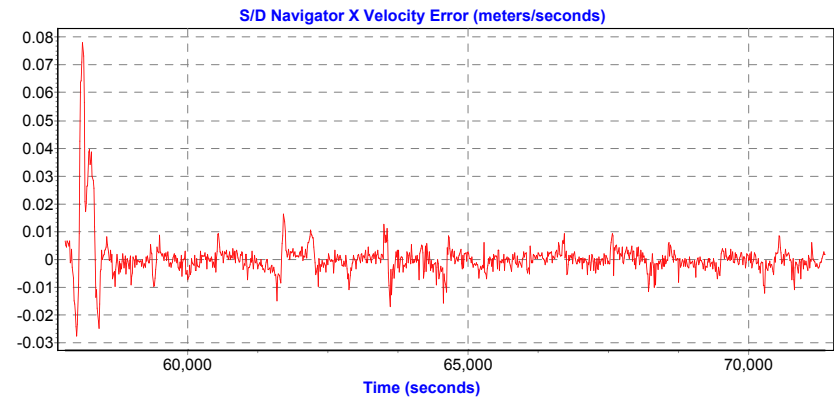
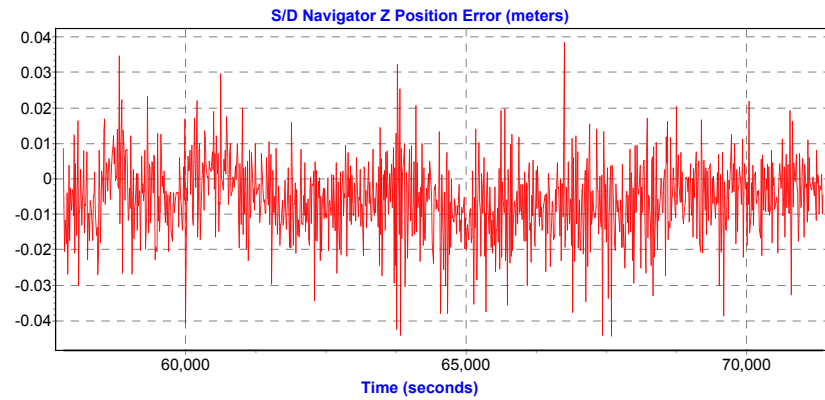
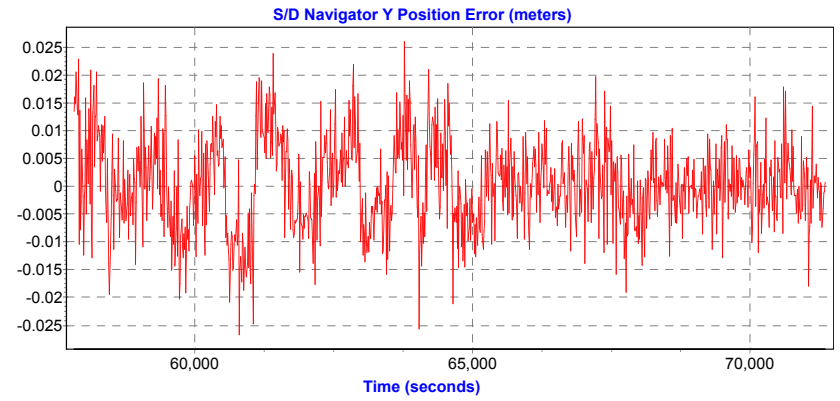
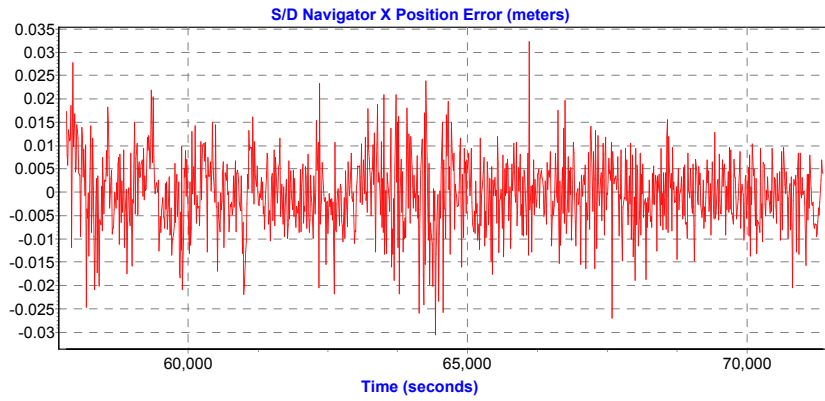
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

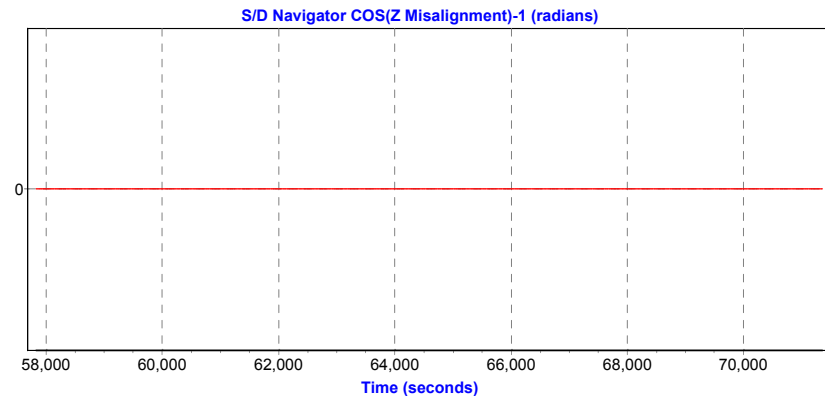
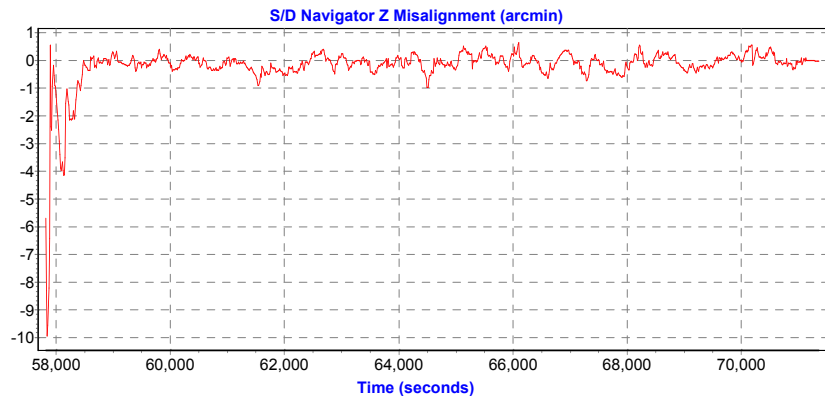
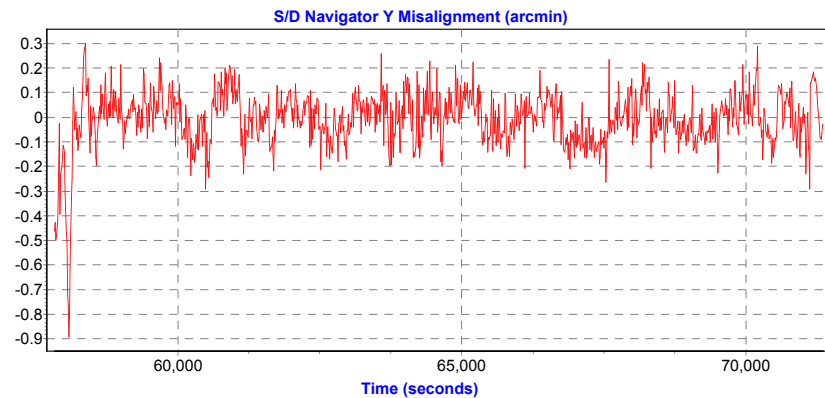
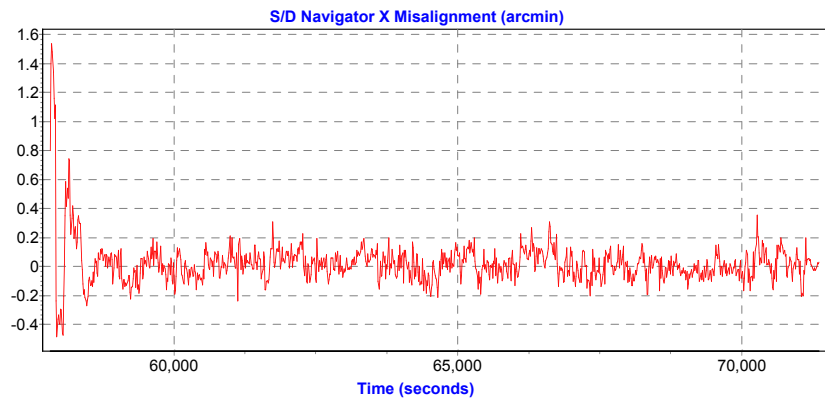
Percentages of epochs with DD_DOP over 10.00:

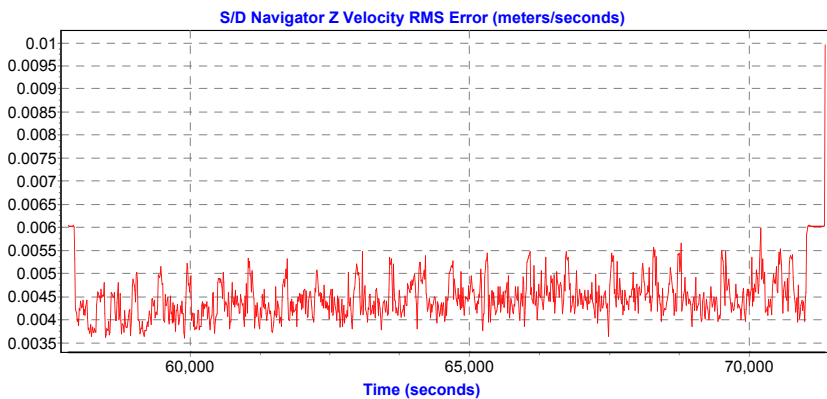
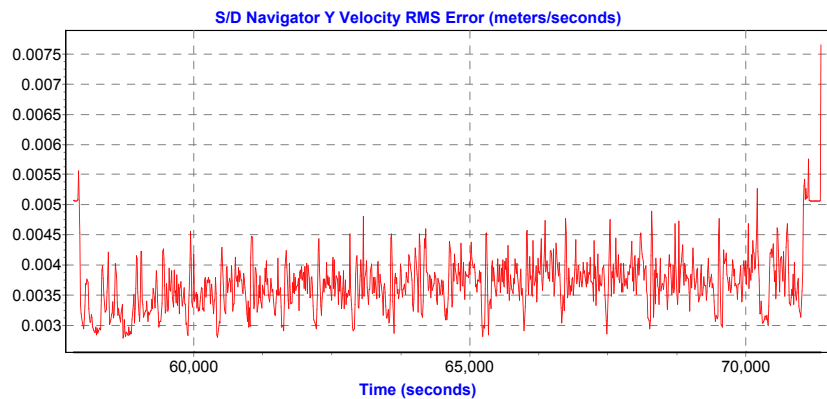
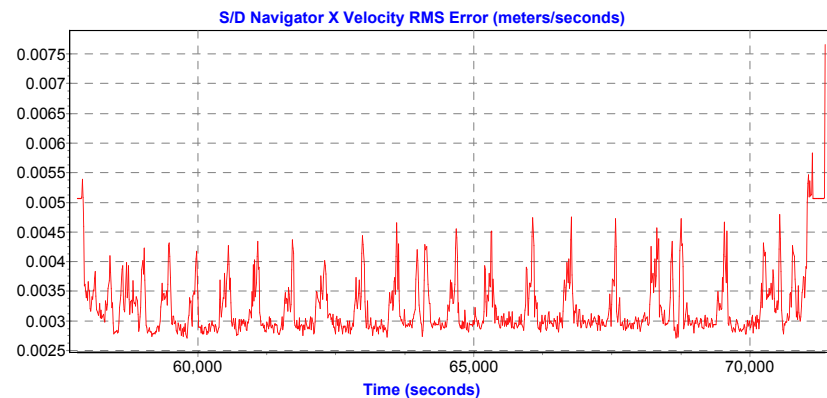
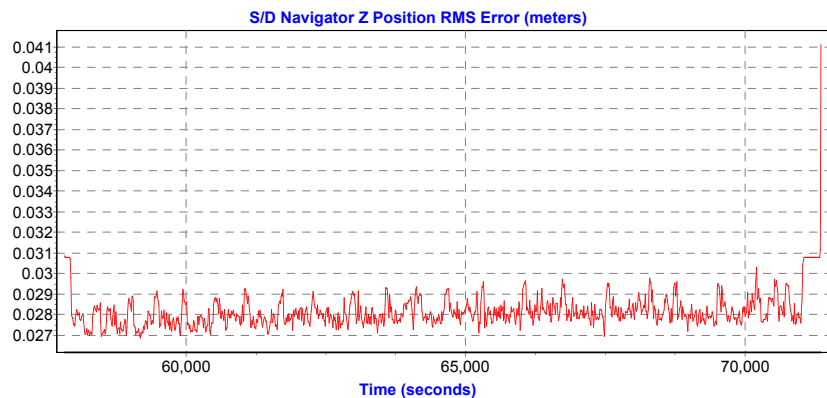
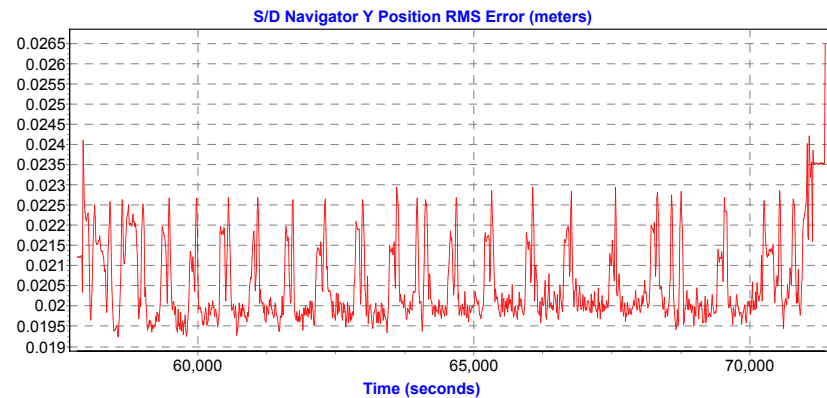
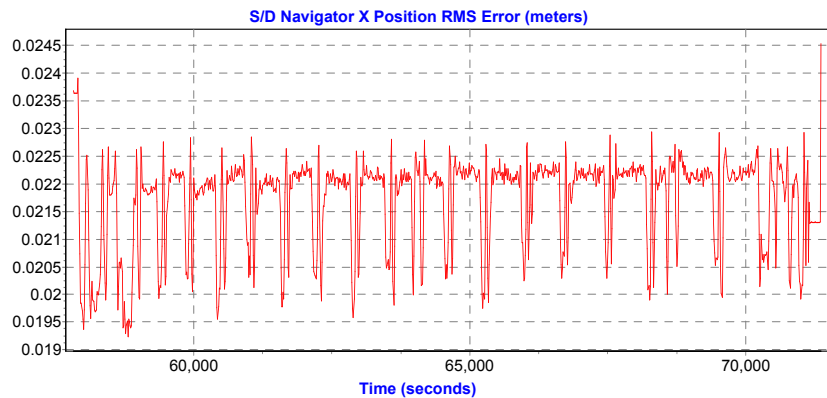
DOP over Tol:	0.0 %
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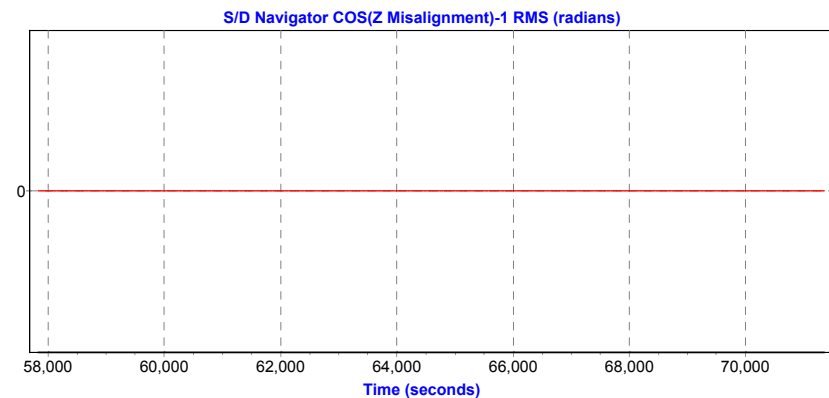
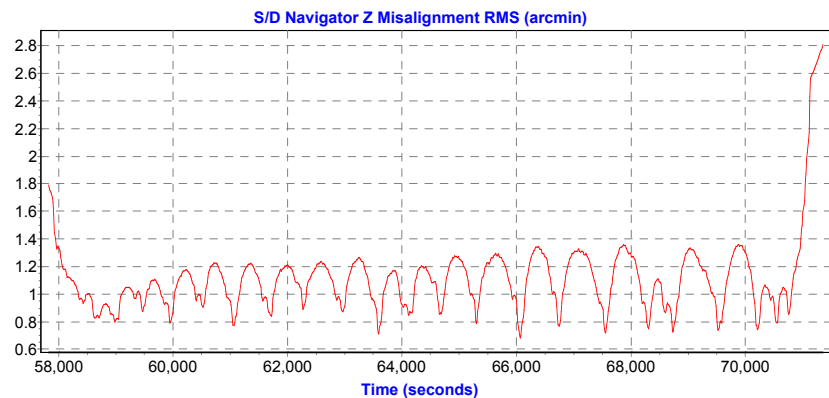
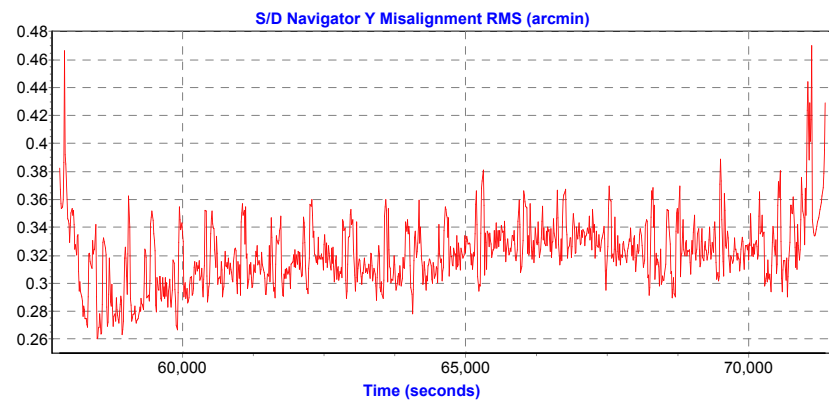
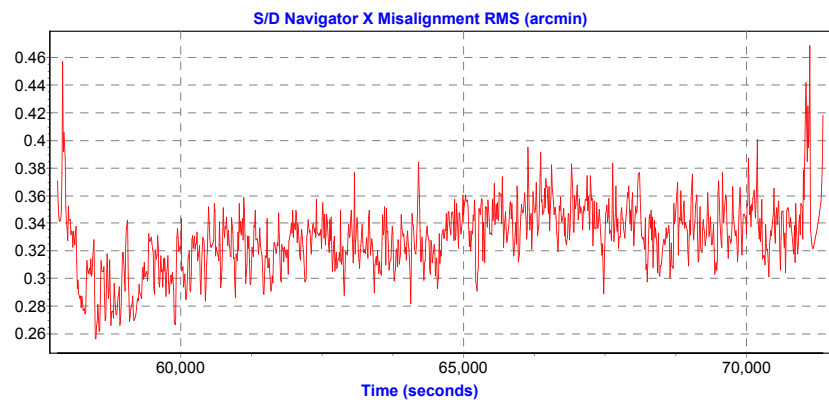
Baseline Distances:

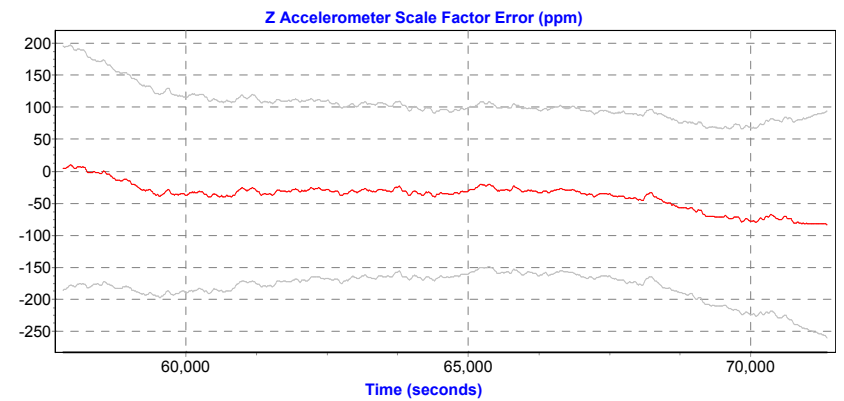
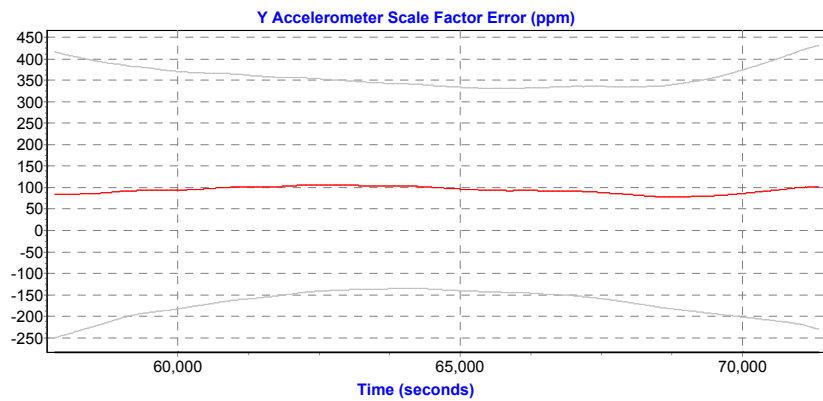
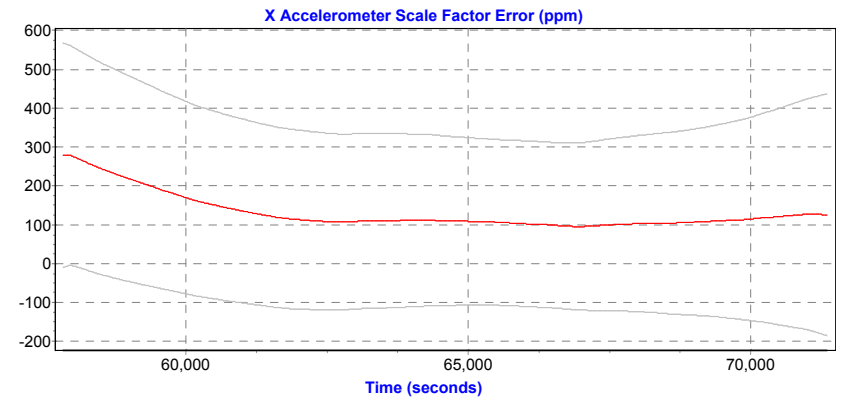
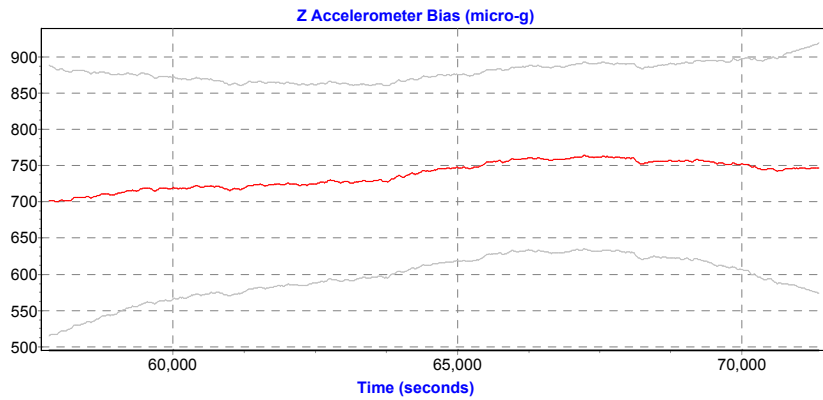
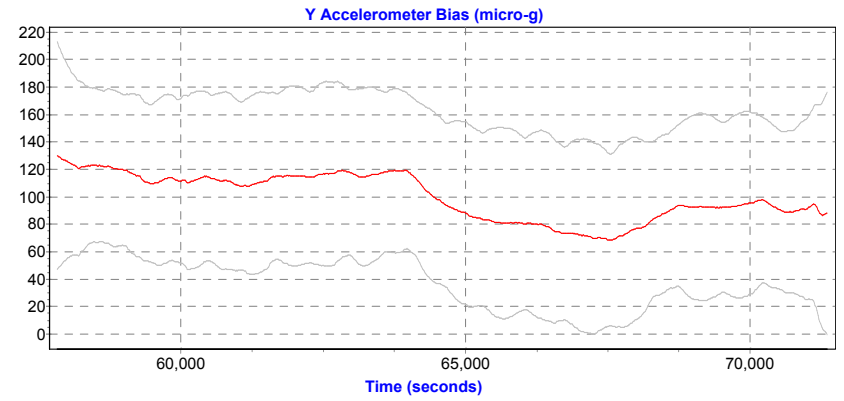
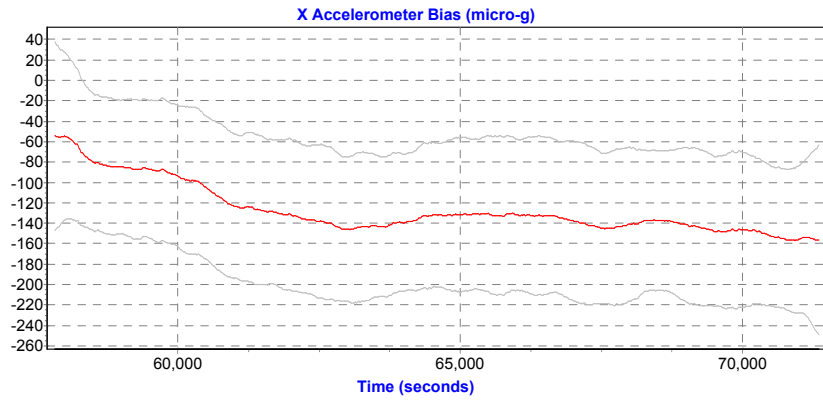
Maximum:	51.924 (km)
Minimum:	0.927 (km)
Average:	20.691 (km)
First Epoch:	8.015 (km)
Last Epoch:	8.039 (km)

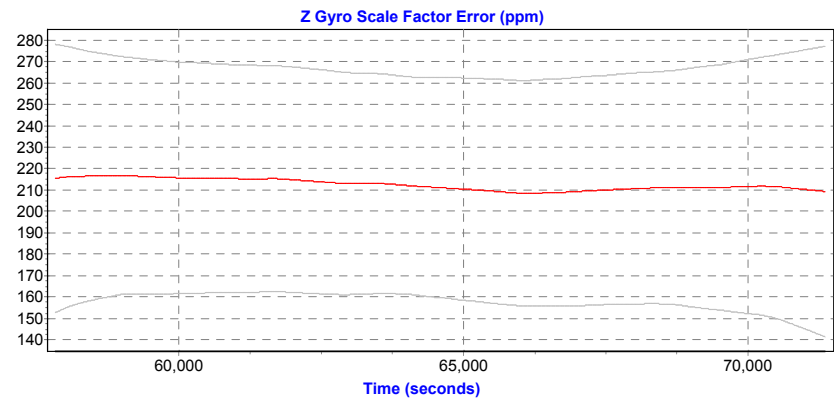
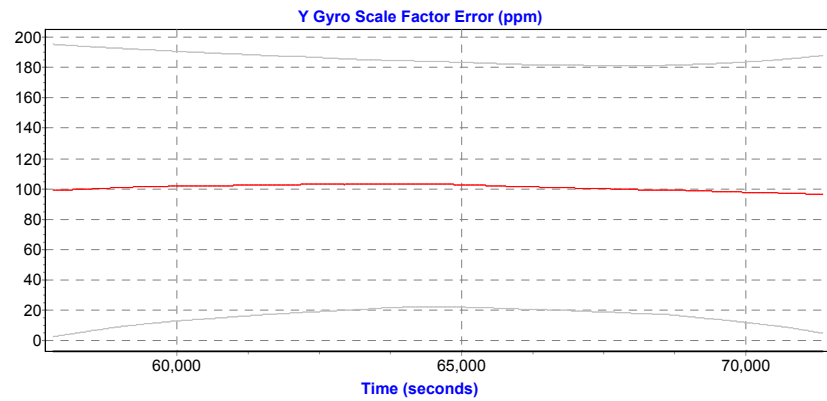
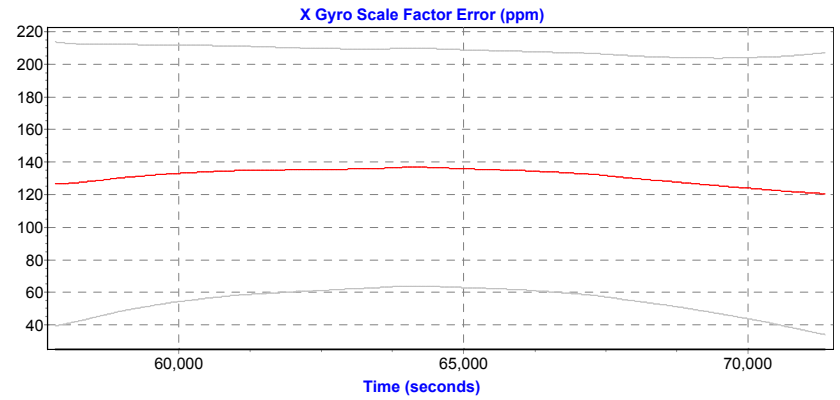
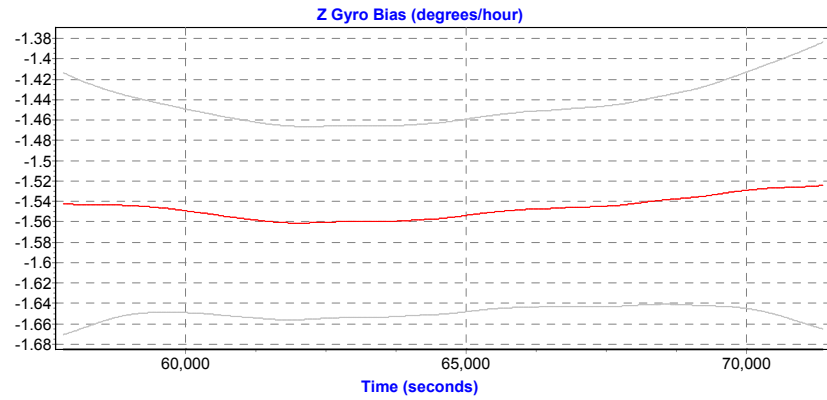
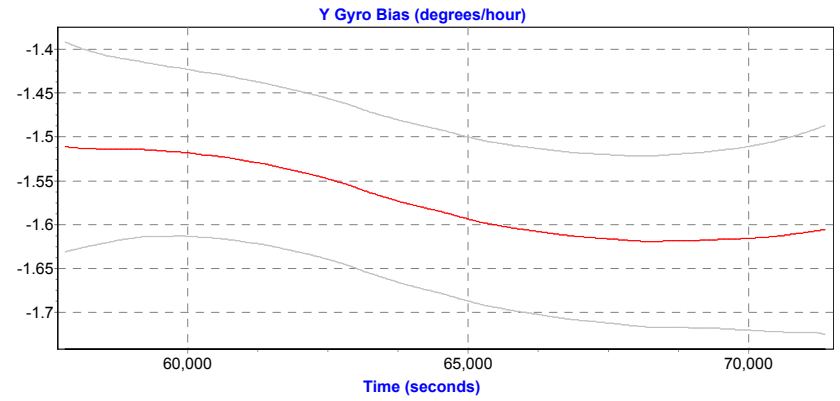
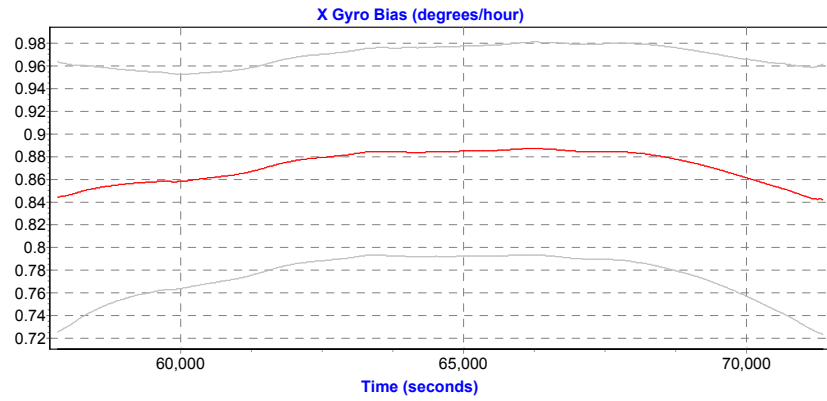






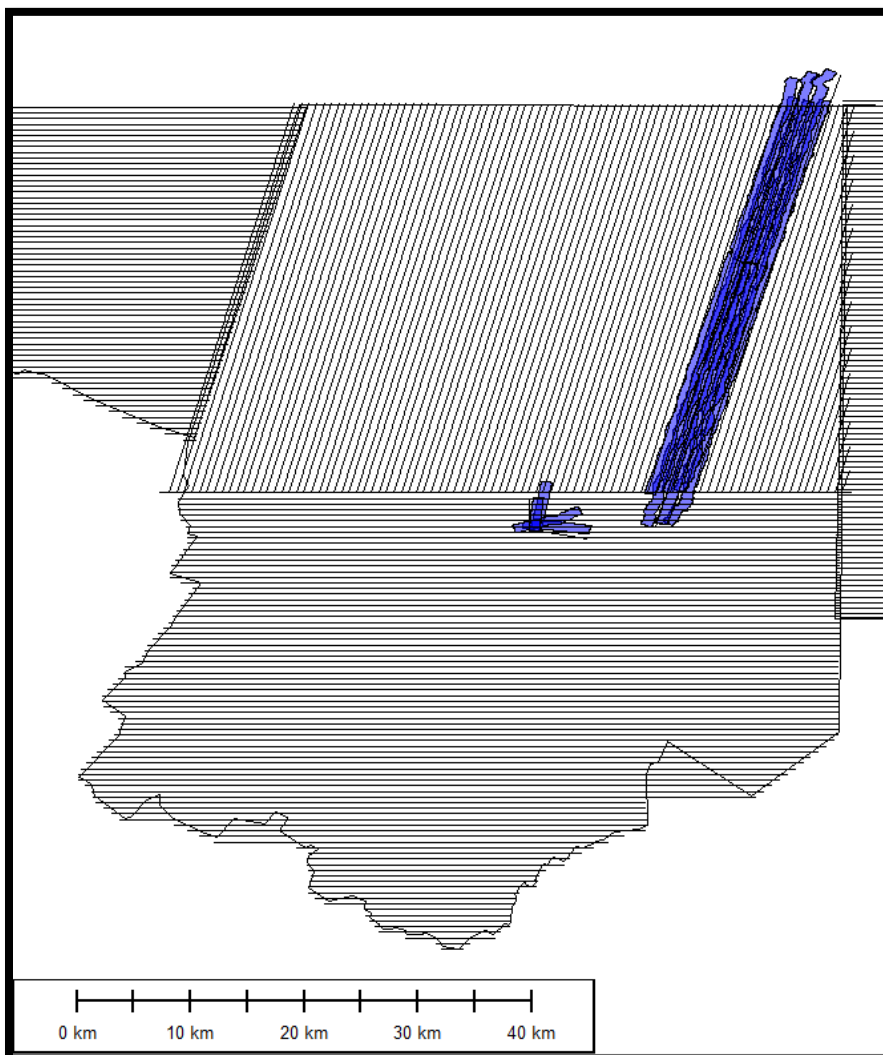






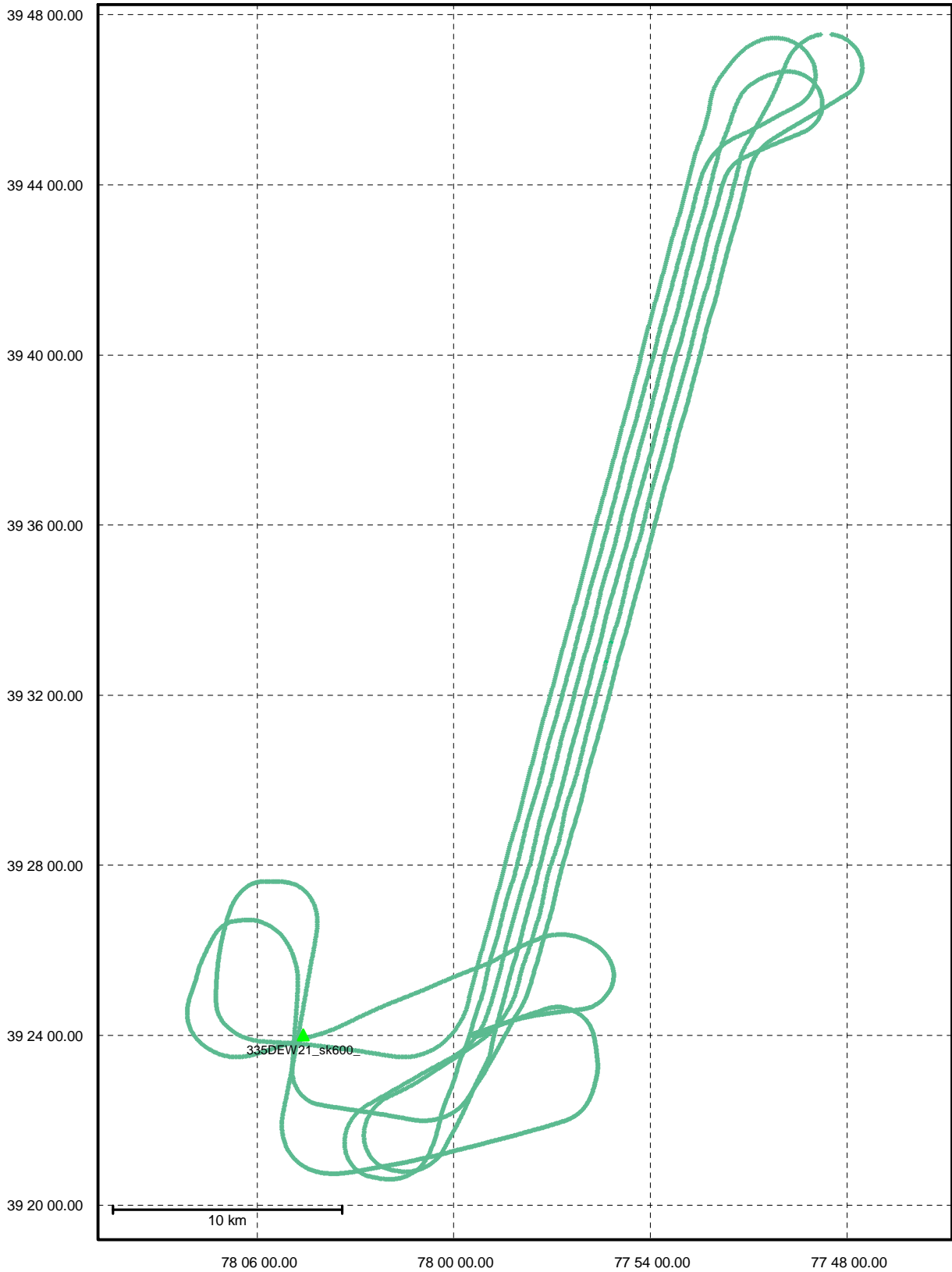
Mission: o112050b

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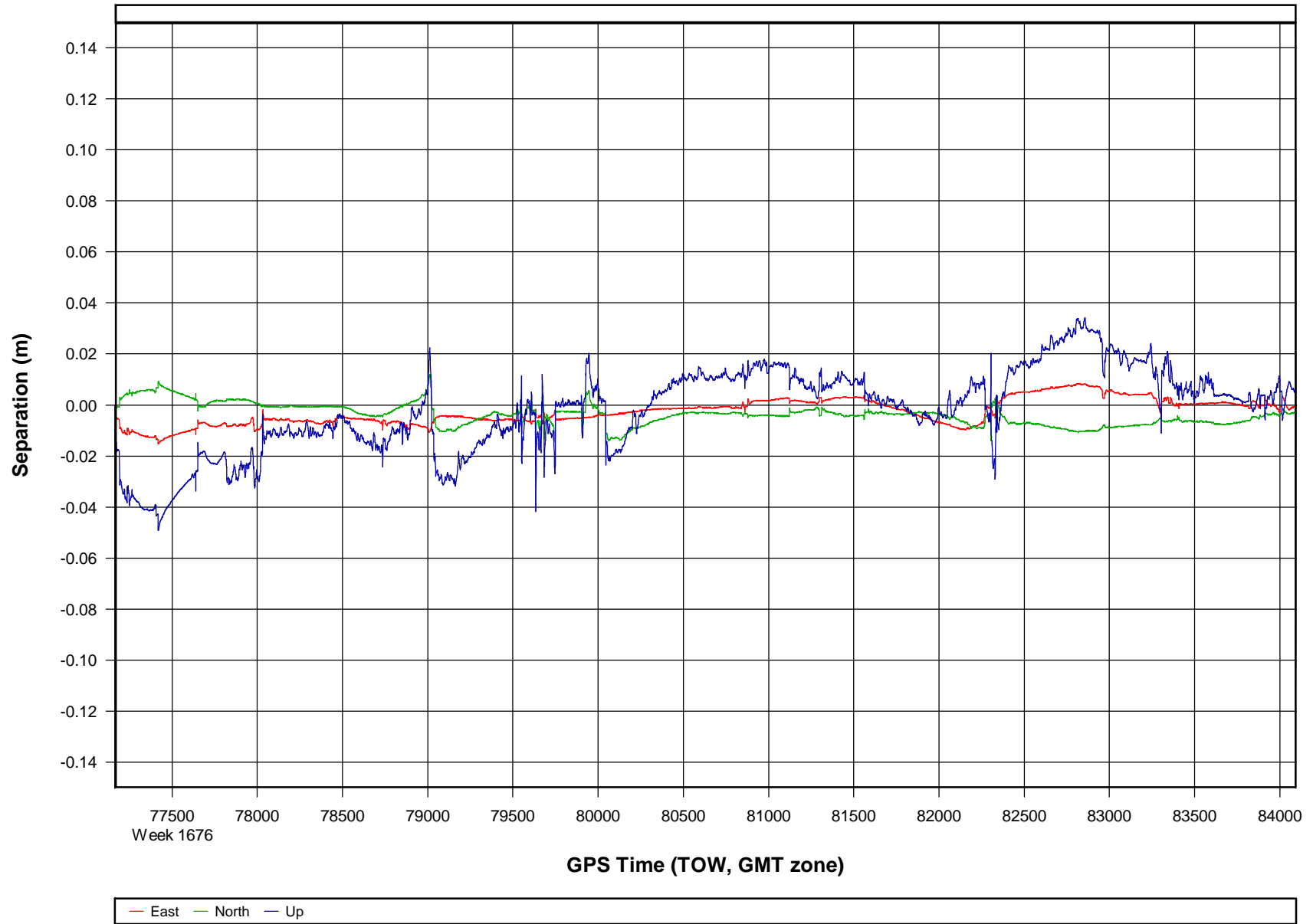
Combined - Map Run (1)

Geographic, DMS

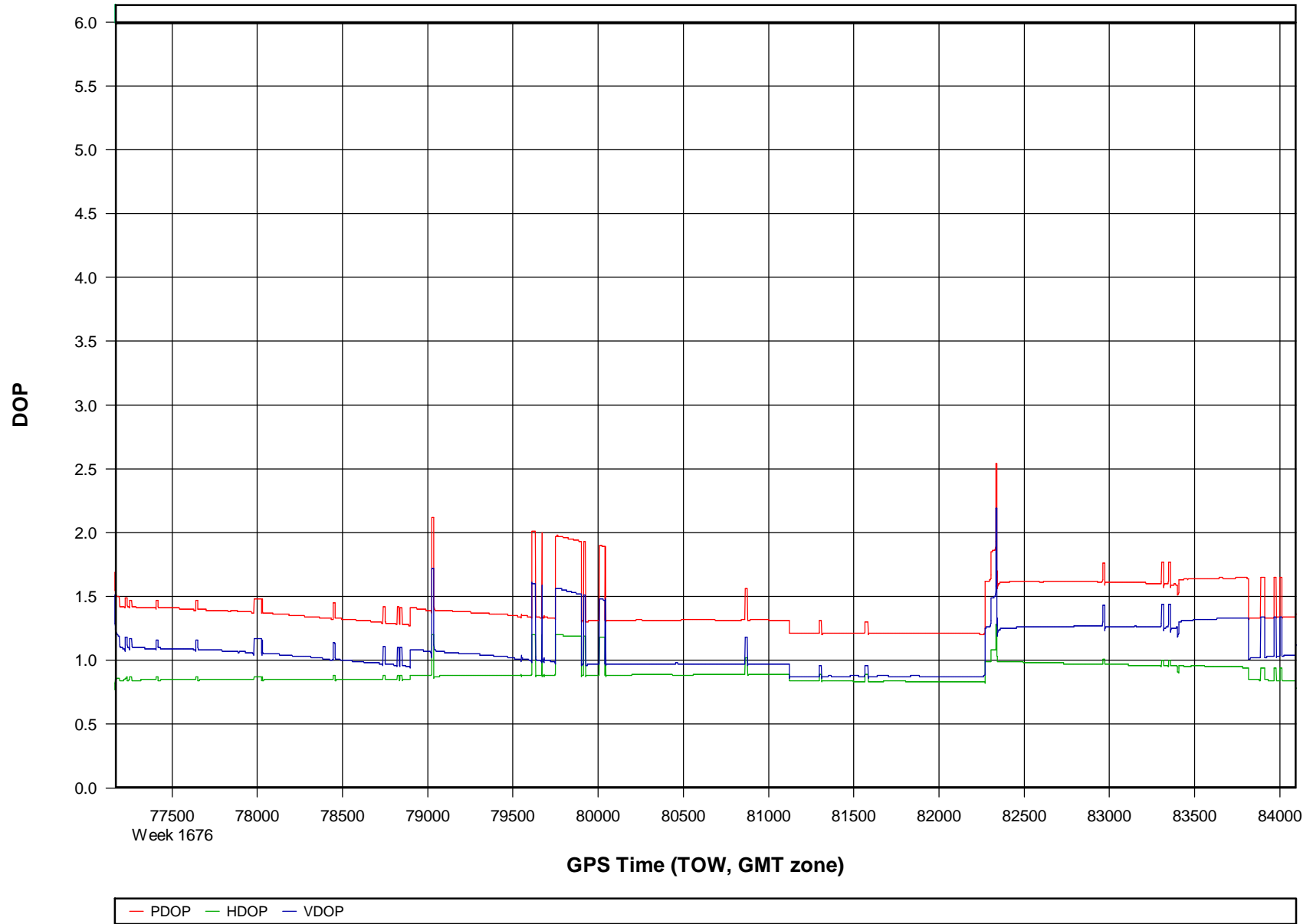


+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

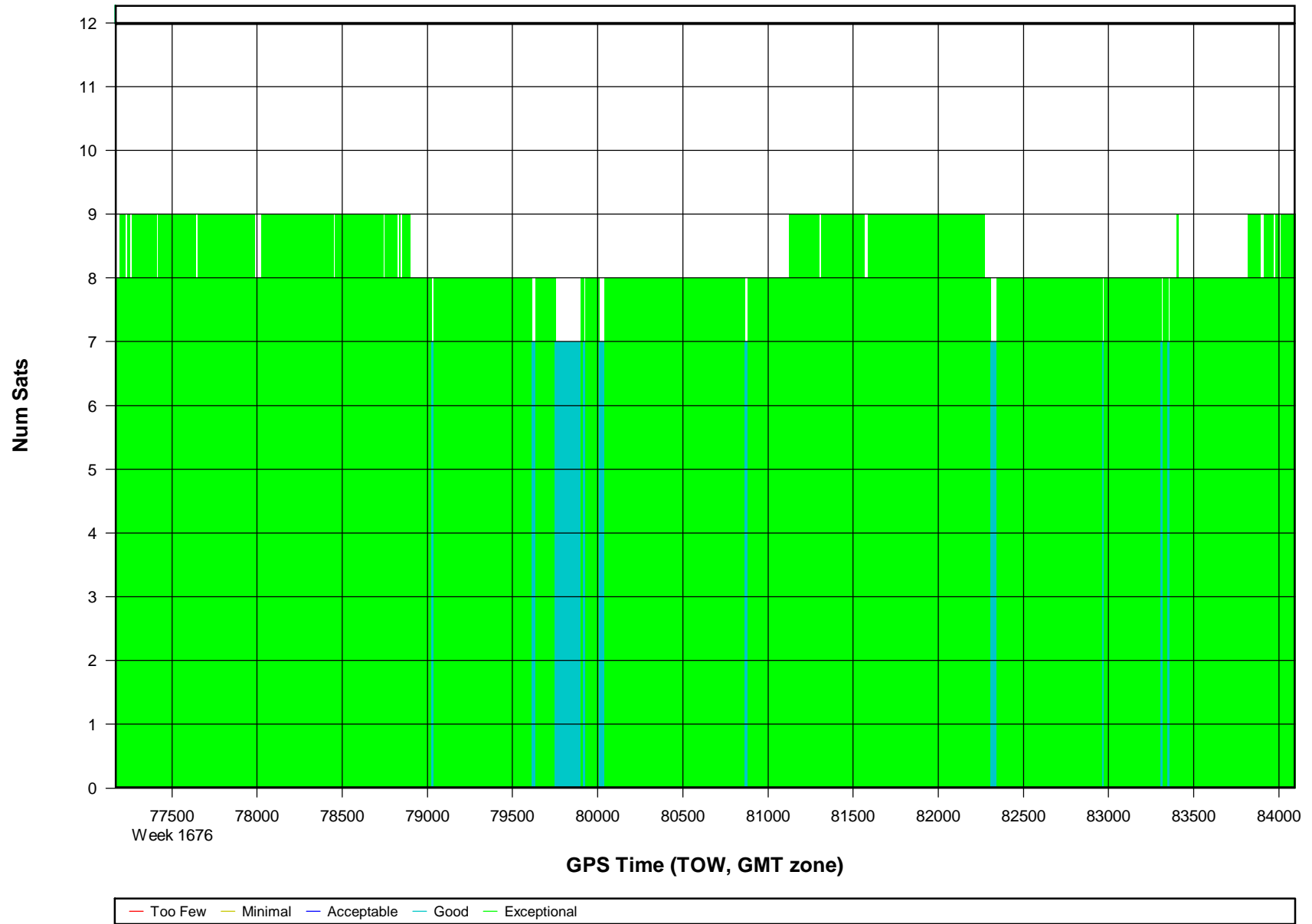
o112050b [Combined] - Forward/Reverse or Combined Separation Plot



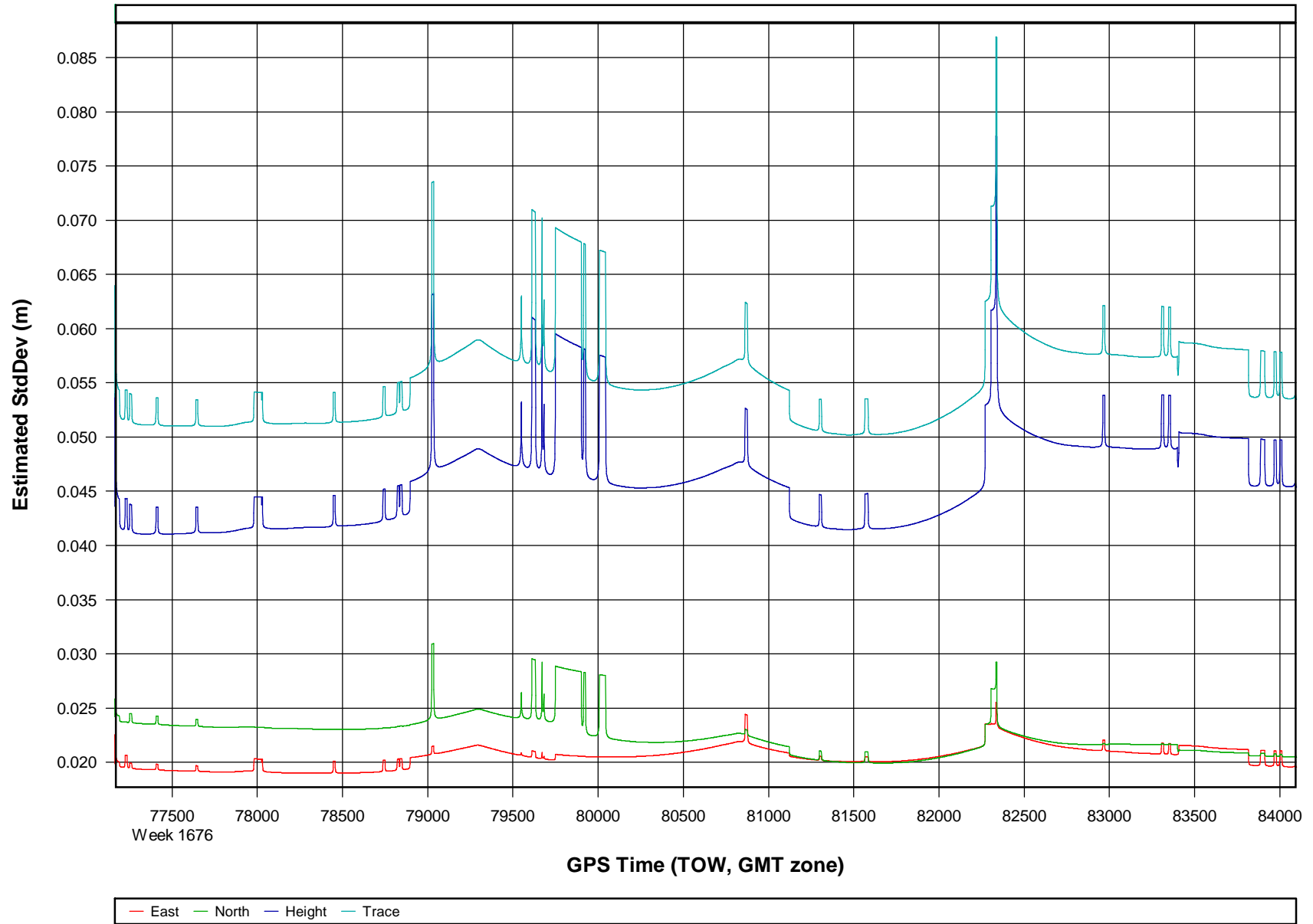
o112050b [Combined] - PDOP, HDOP, VDOP Plots



o112050b [Combined] - Number of Satellites Bar Plot



o112050b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112050b\3_Processed\GPS\o112050b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	69469
No processed position:	62534
Missing Fwd or Rev:	4
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0143 (m)
C/A Code:	0.70 (m)
L1 Doppler:	0.035 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.007 (m)
North:	0.006 (m)
Height:	0.020 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (6929 occurrences):

East:	0.006 (m)
North:	0.006 (m)
Height:	0.017 (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:

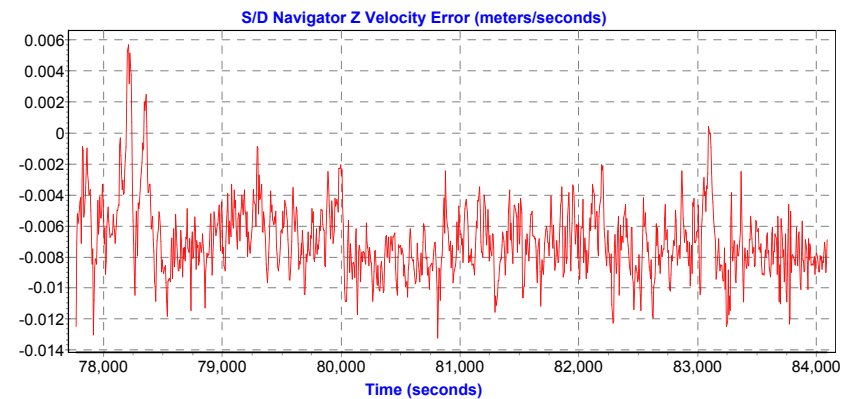
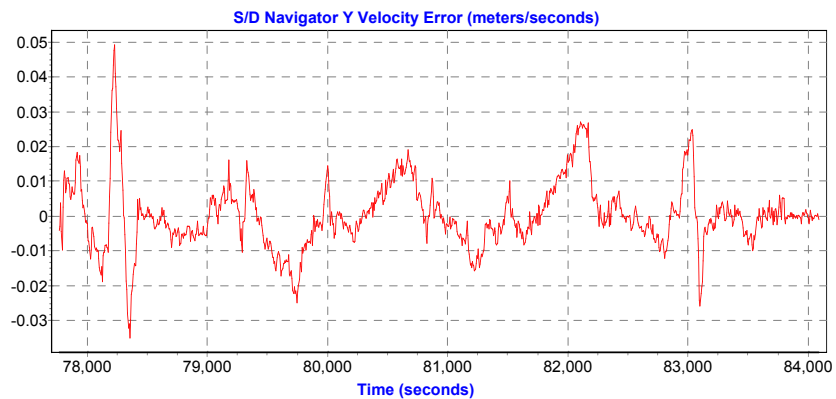
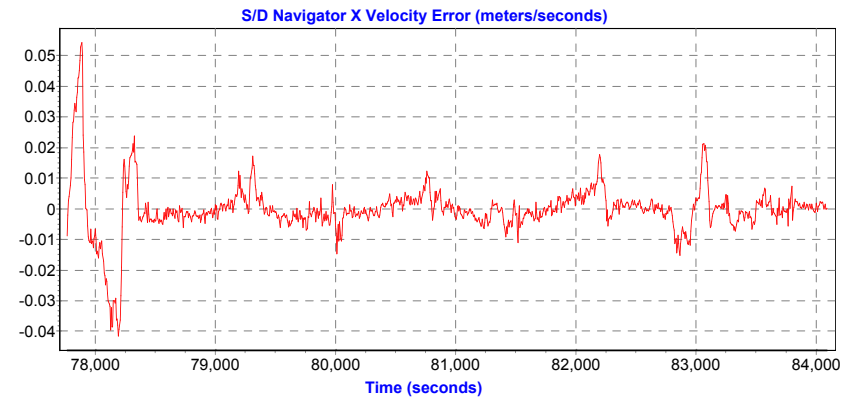
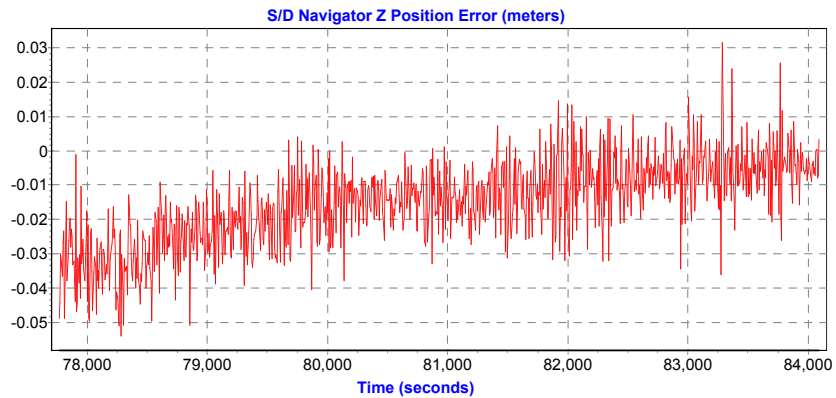
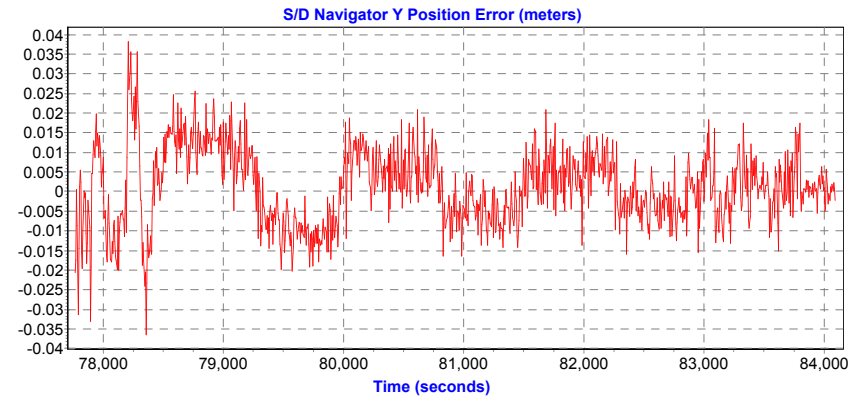
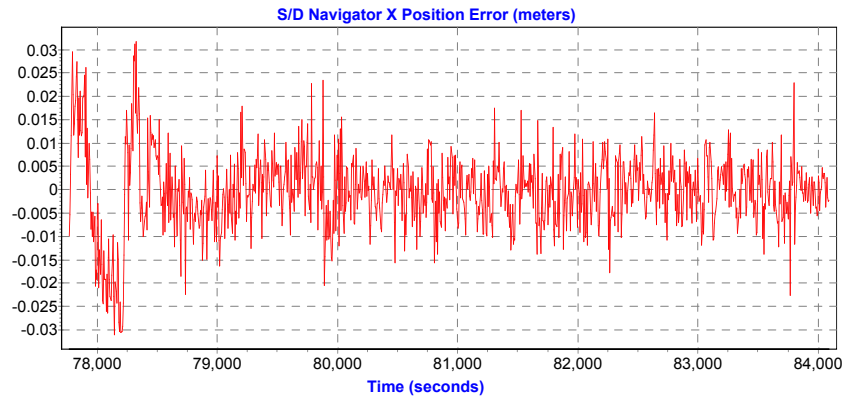
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

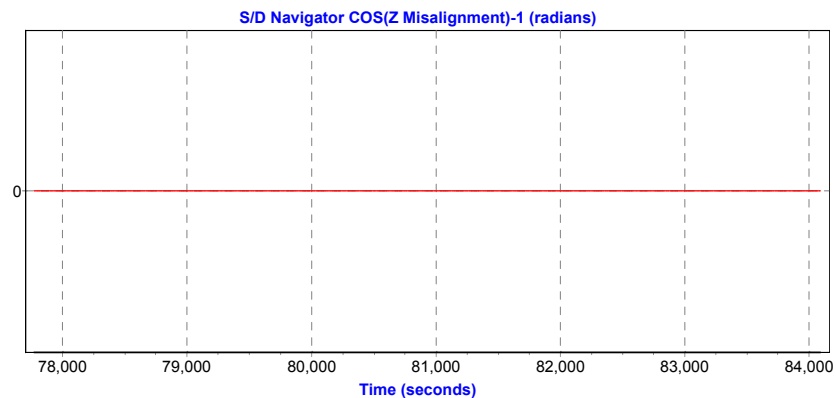
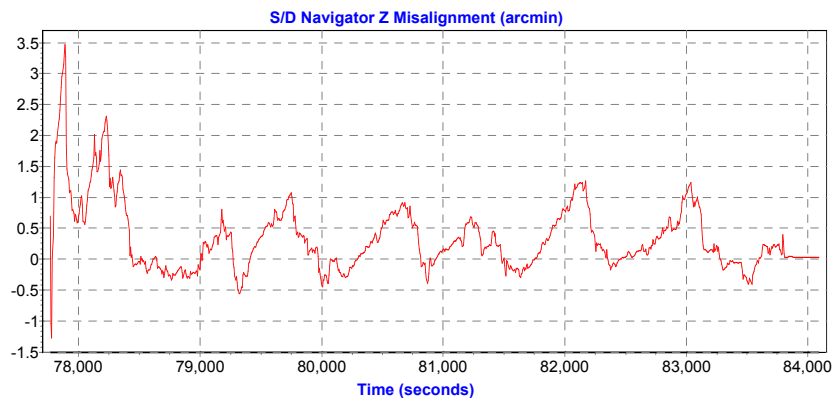
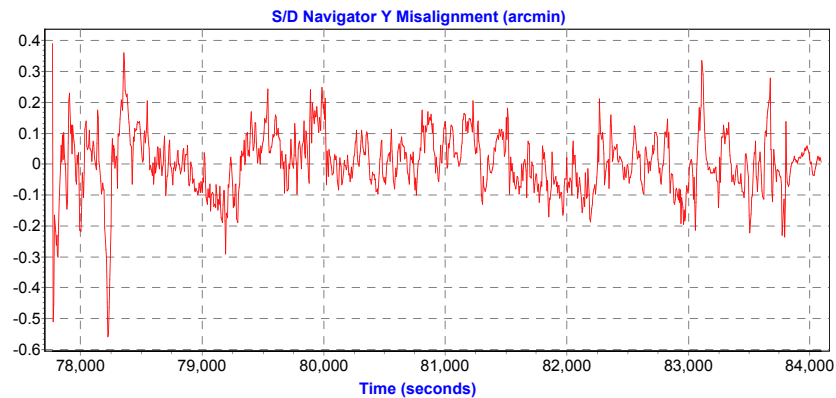
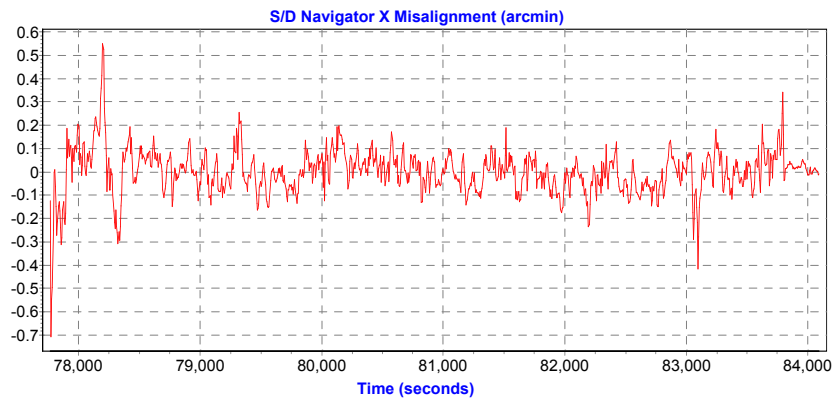
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol:	0.0 %
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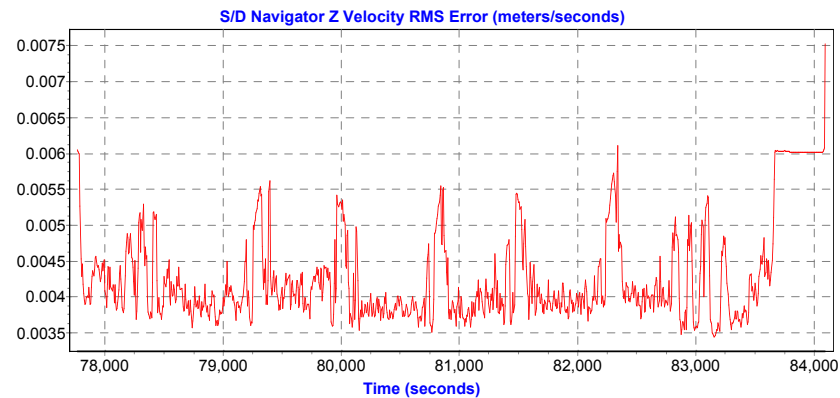
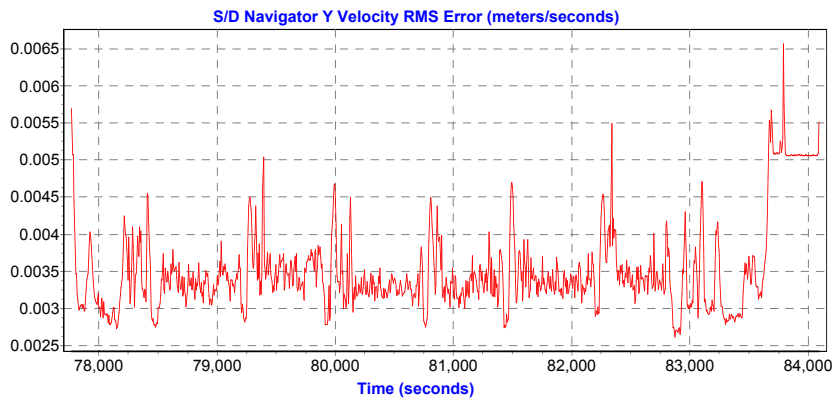
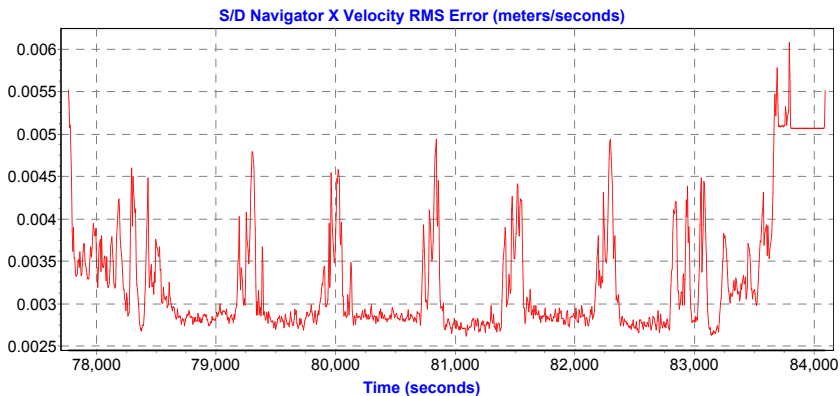
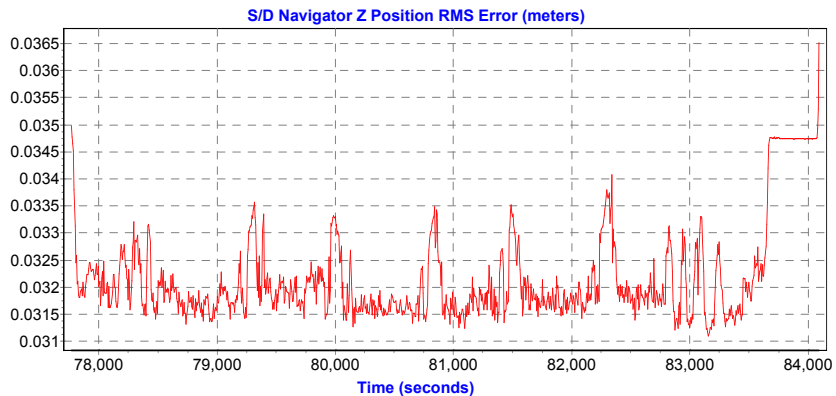
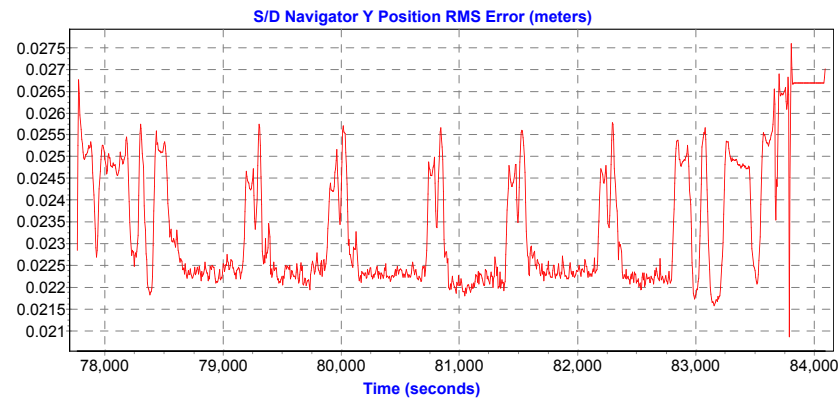
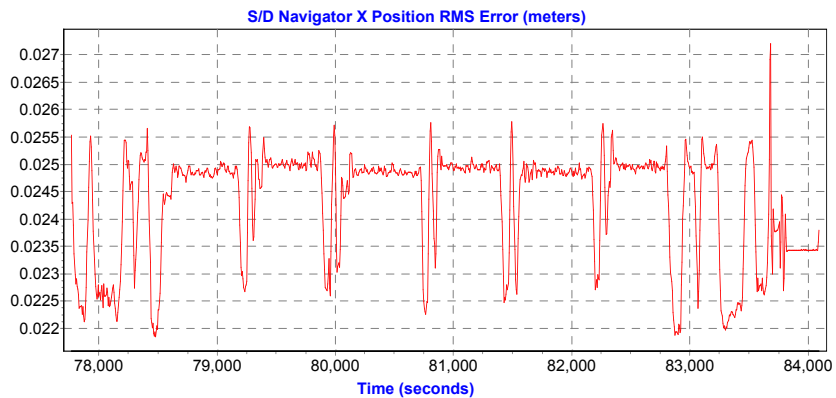
Baseline Distances:

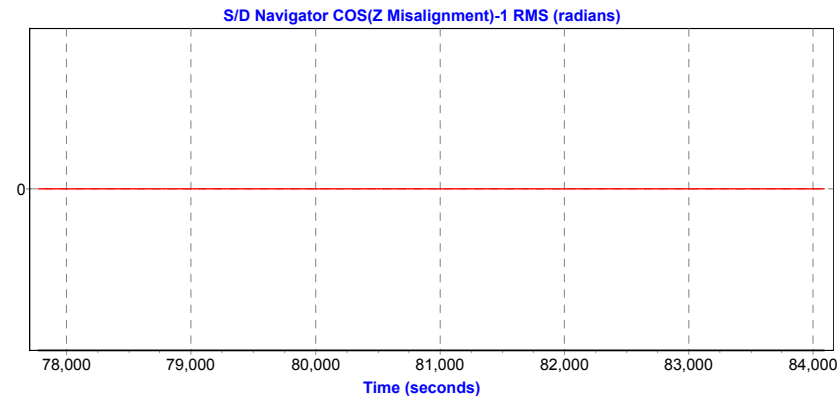
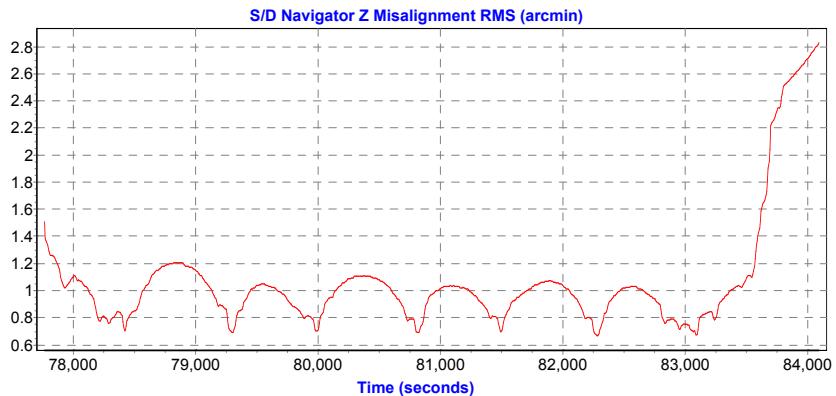
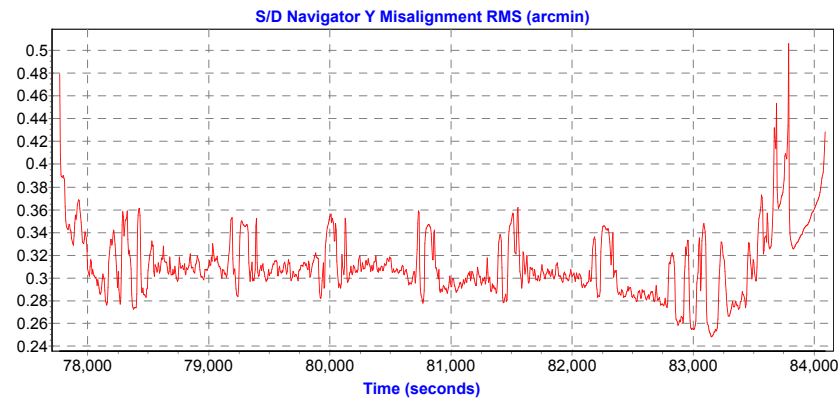
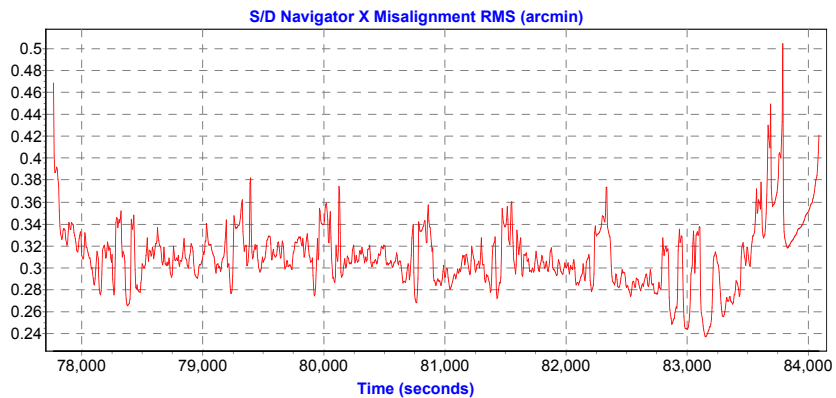
Maximum:	49.394 (km)
Minimum:	0.901 (km)
Average:	17.862 (km)
First Epoch:	8.039 (km)
Last Epoch:	8.047 (km)

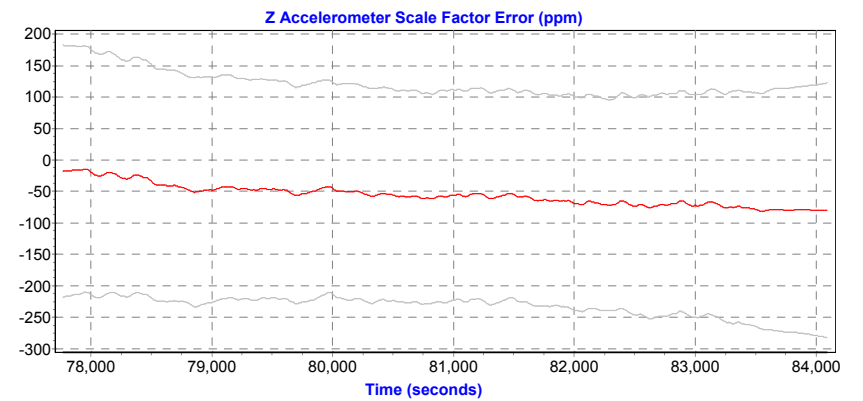
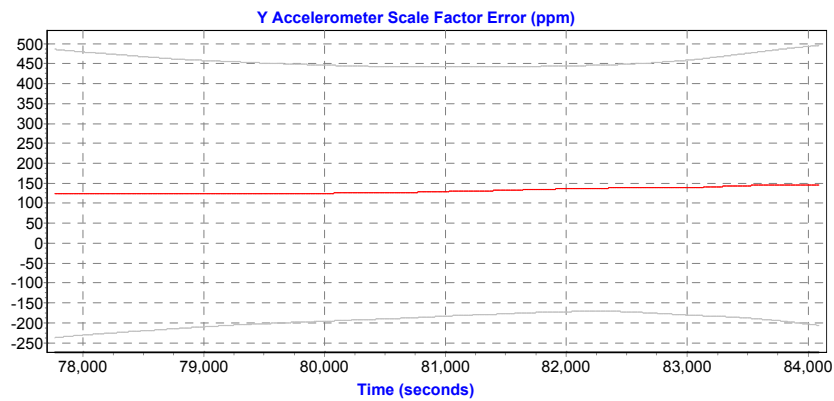
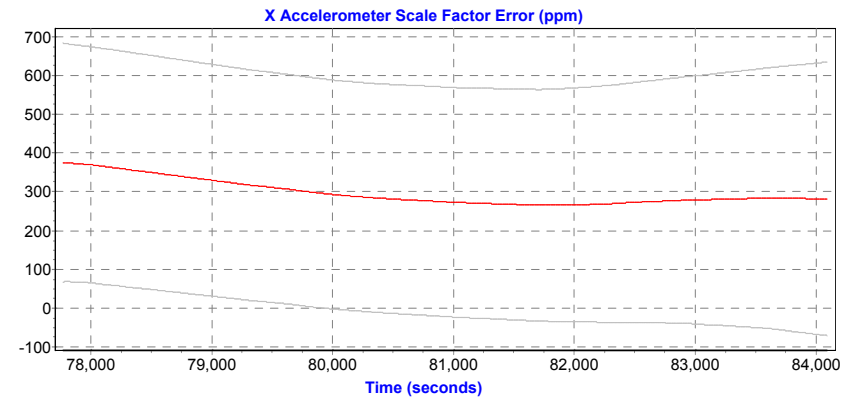
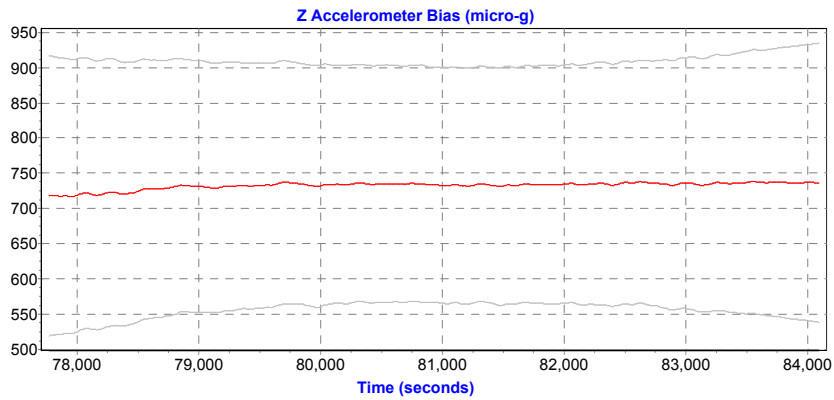
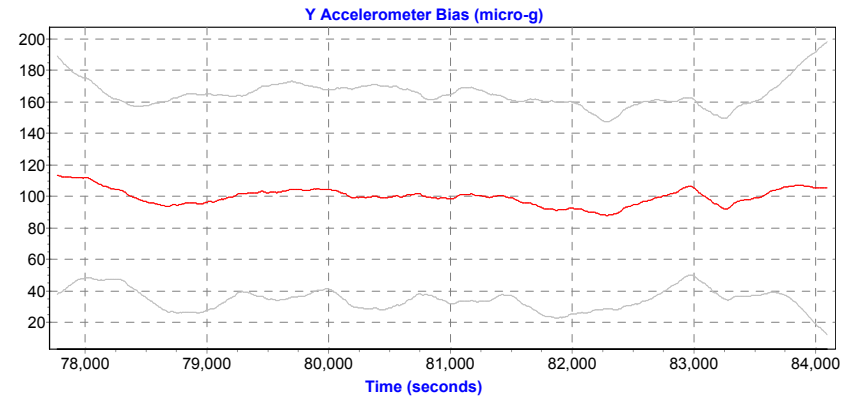
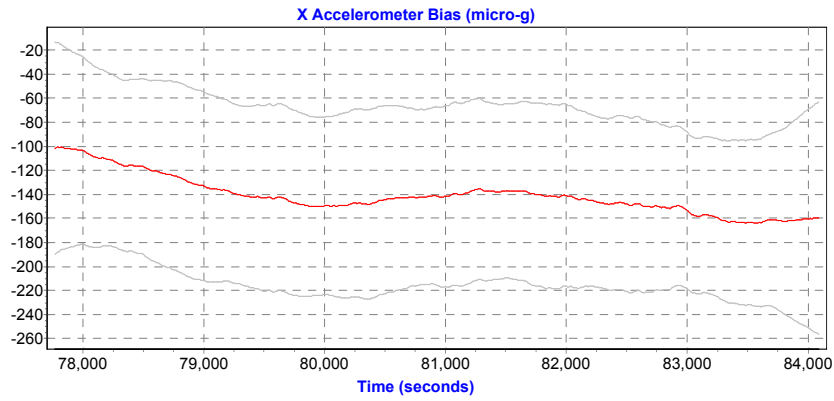


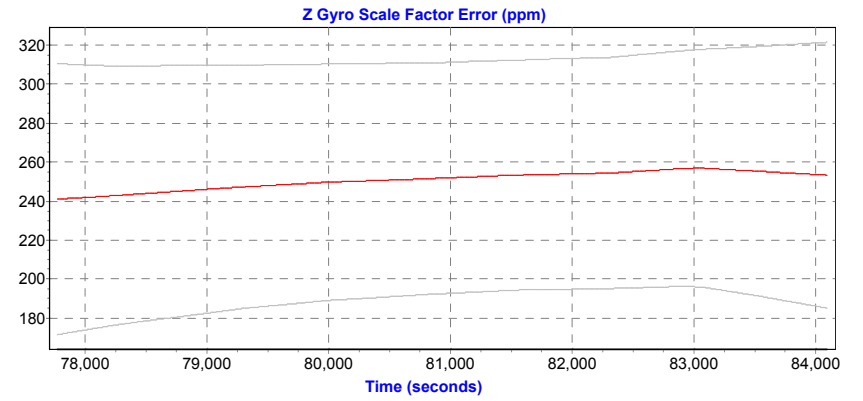
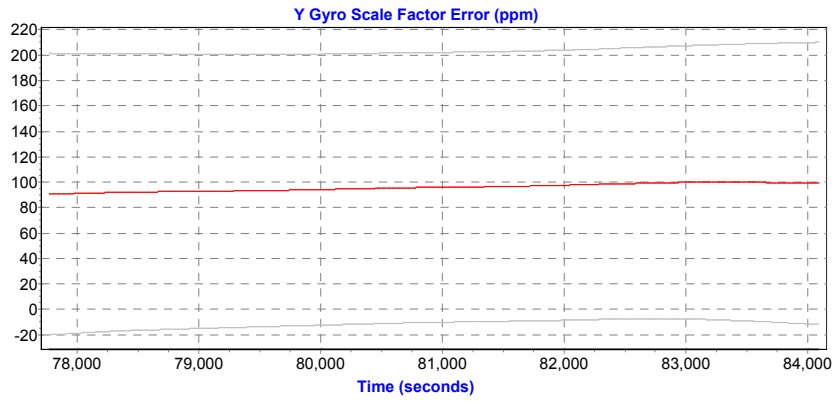
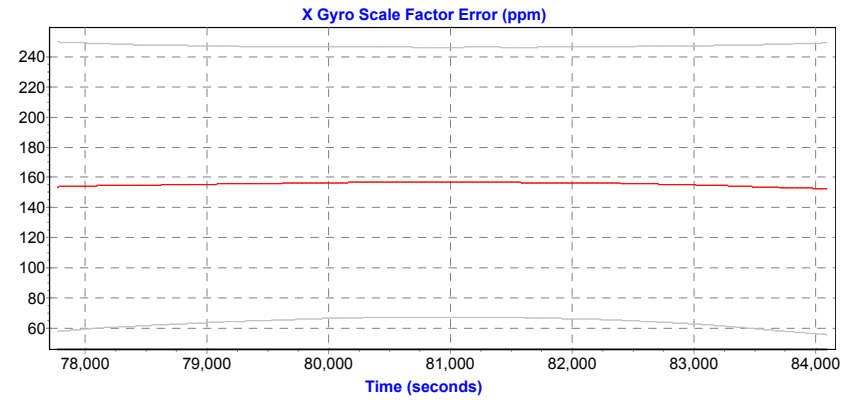
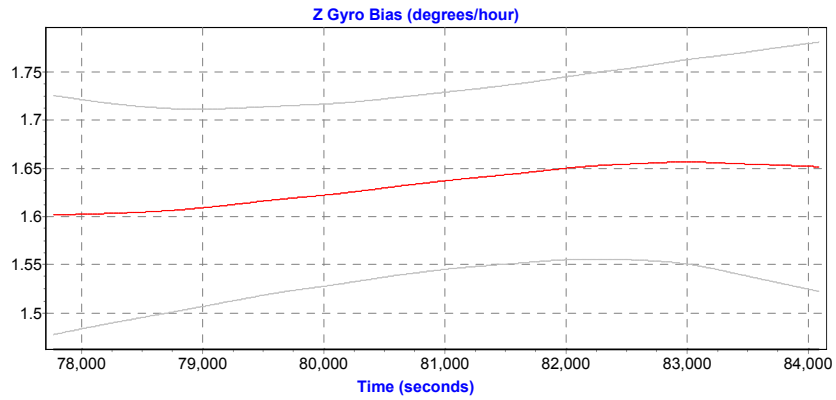
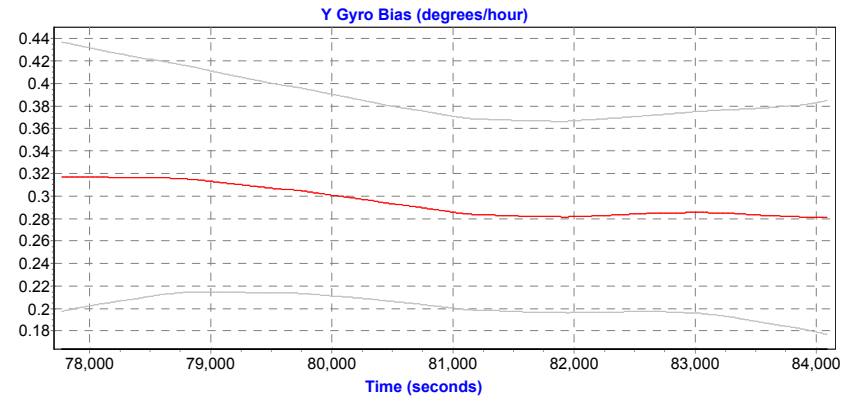
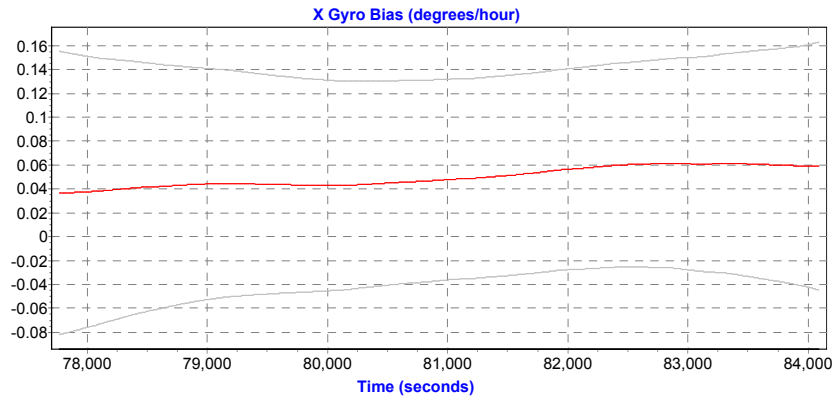


RMS Estimation Uncertainties



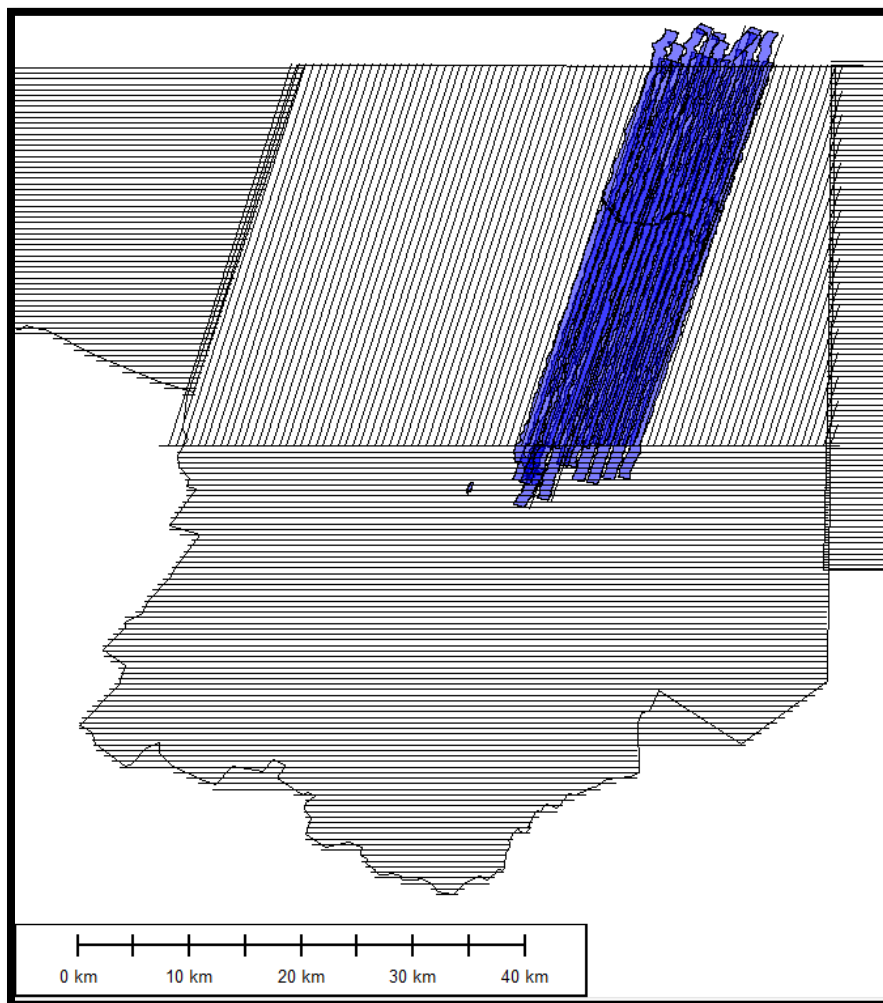






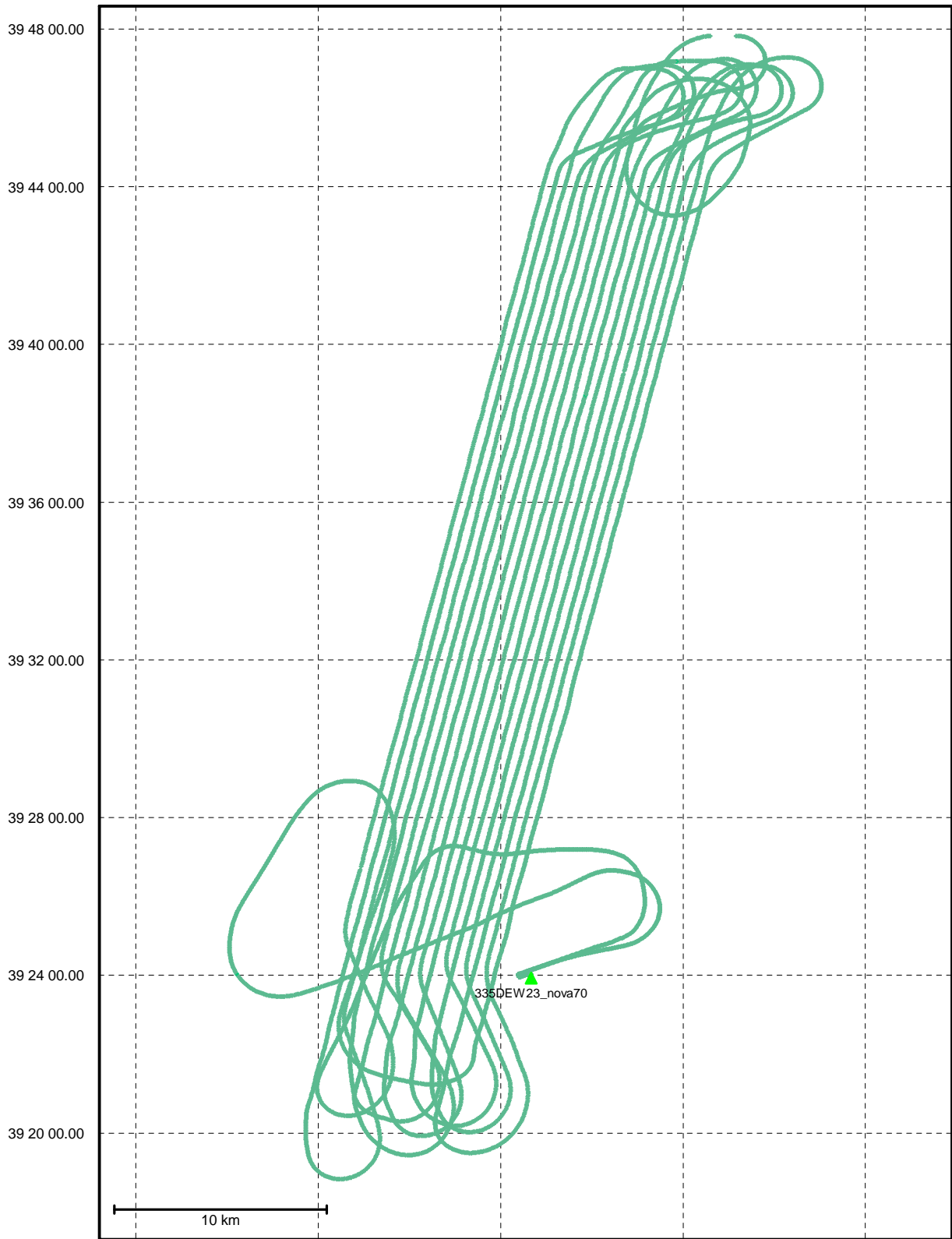
Mission: o112051a

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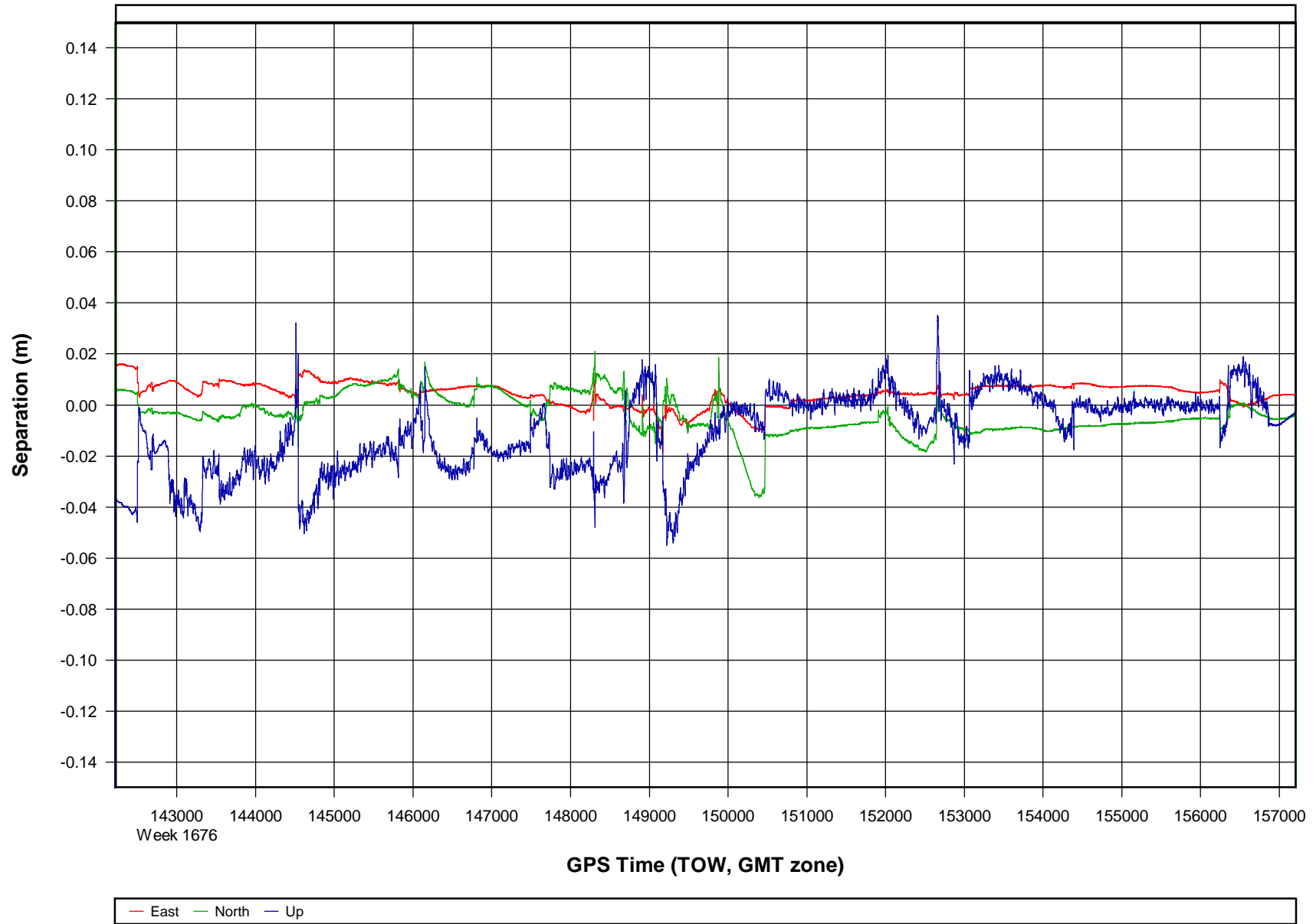
Combined - Map Run (1)

Geographic, DMS

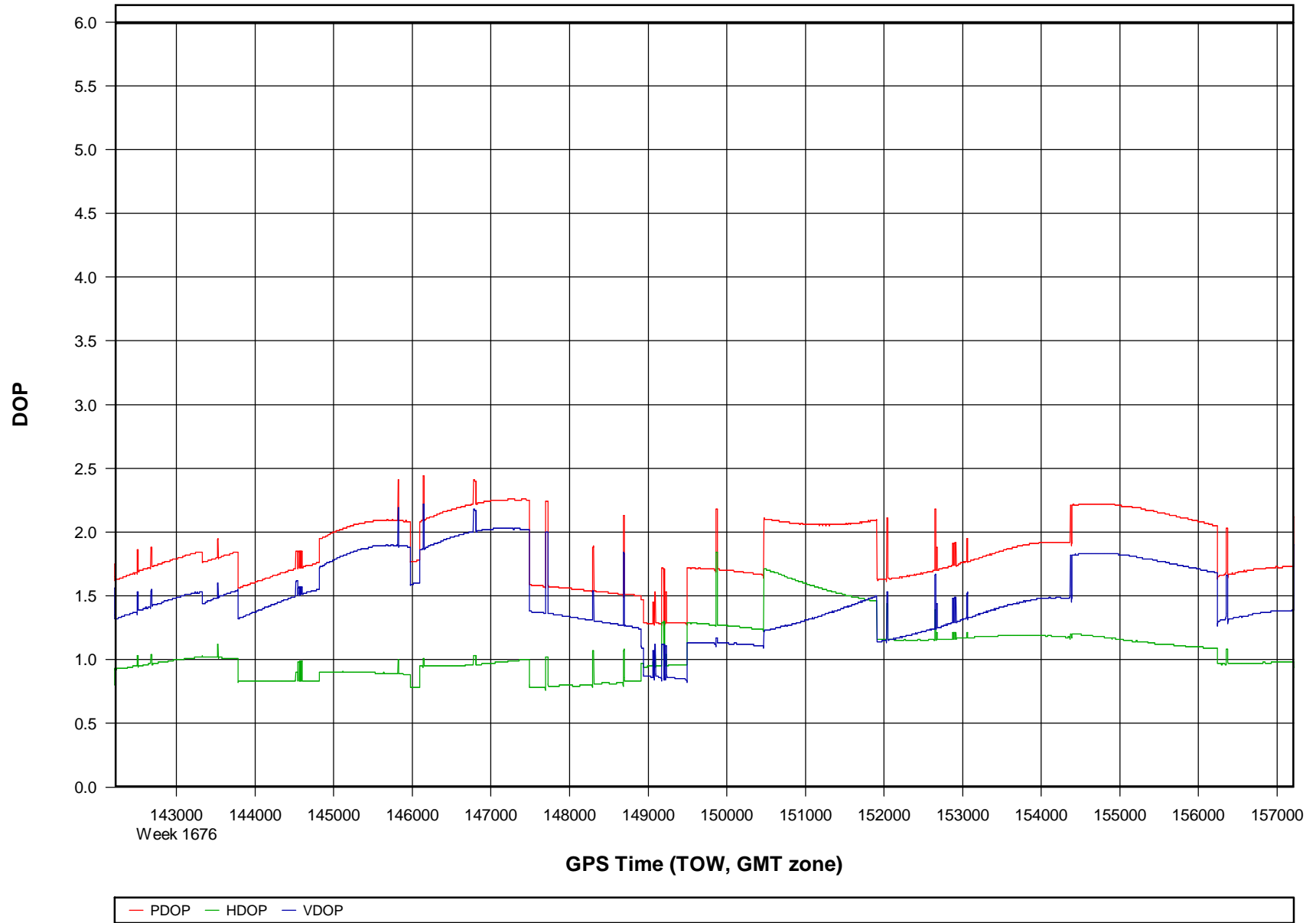


+ Ukn	+ Q1	+ Q2	+ Q3	+ Q4	+ Q5	+ Q6	▲ Master
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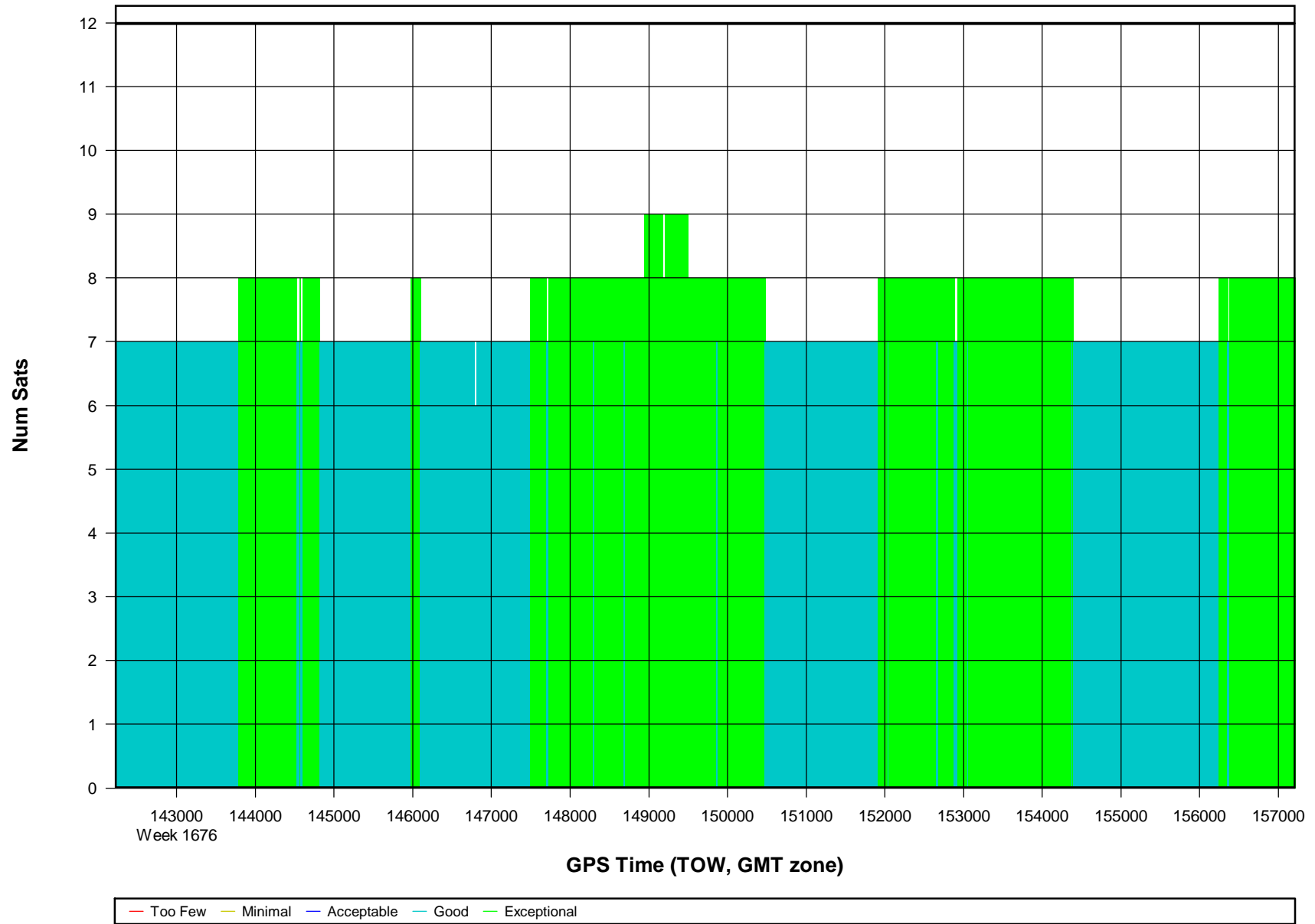
o112051a_335DEW23 [Combined] - Forward/Reverse or Combined Separation Plot



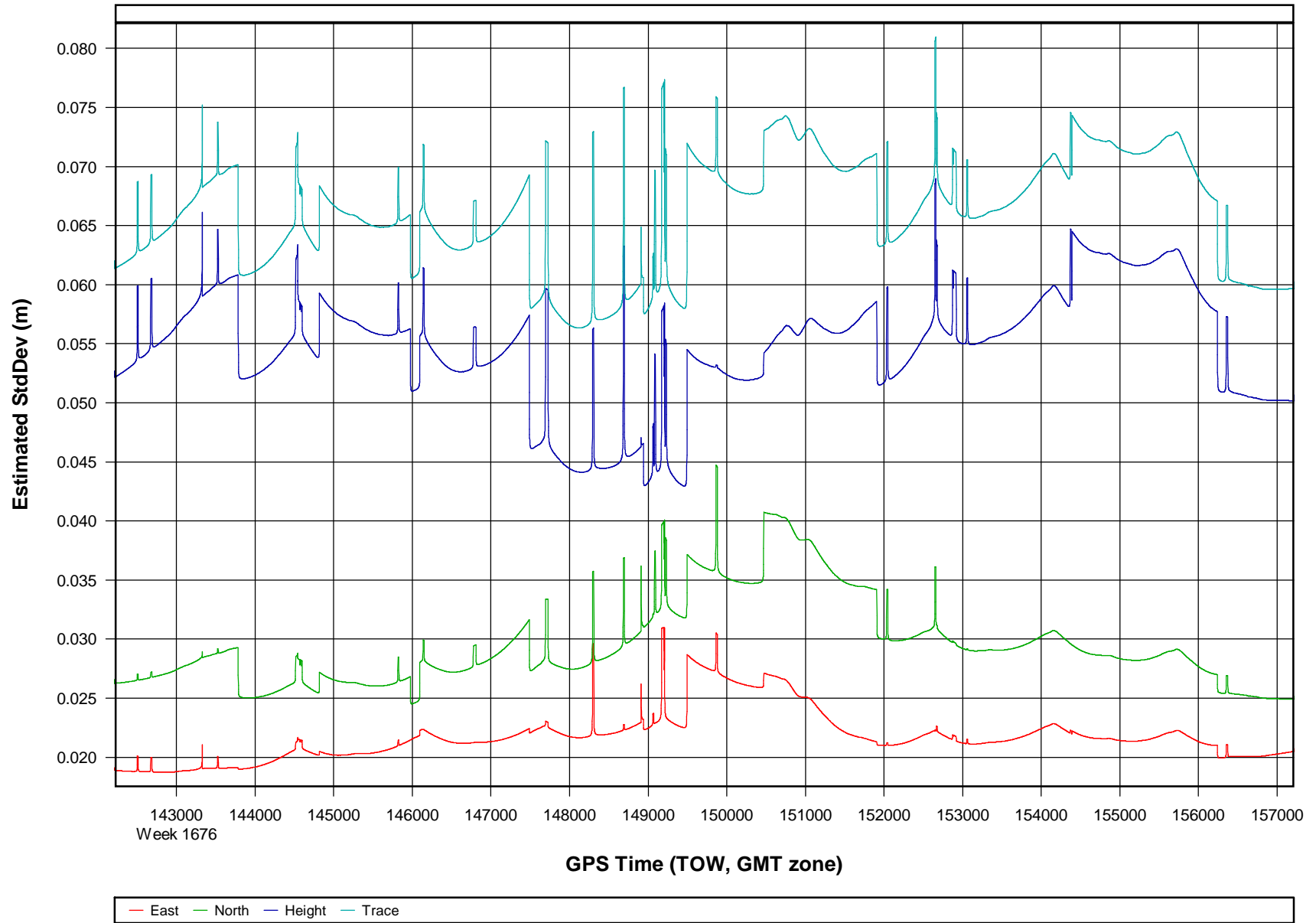
o112051a_335DEW23 [Combined] - PDOP, HDOP, VDOP Plots



o112051a [Combined] - Number of Satellites Bar Plot



o112051a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112051a\3_Pro
cessed\GPS\o112051a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	150197
No processed position:	135197
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0155 (m)
C/A Code:	0.72 (m)
L1 Doppler:	0.028 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.008 (m)
North:	0.010 (m)
Height:	0.020 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (14995 occurrences):

East:	0.006 (m)
North:	0.009 (m)
Height:	0.019 (m)

Quality Number Percentages:

Q 1:	100.0 %
Q 2:	0.0 %
Q 3:	0.0 %
Q 4:	0.0 %
Q 5:	0.0 %
Q 6:	0.0 %

Position Standard Deviation Percentages:

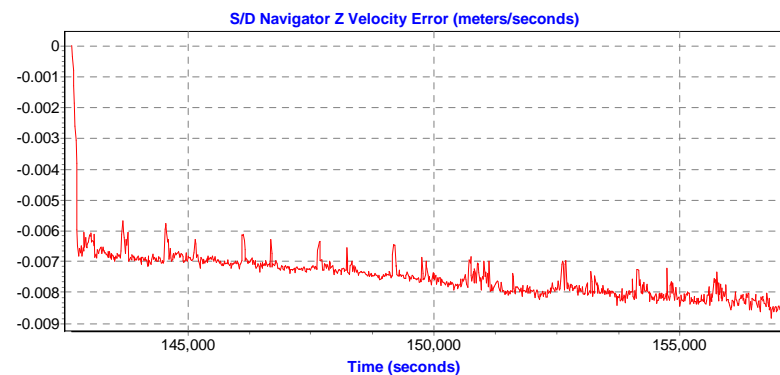
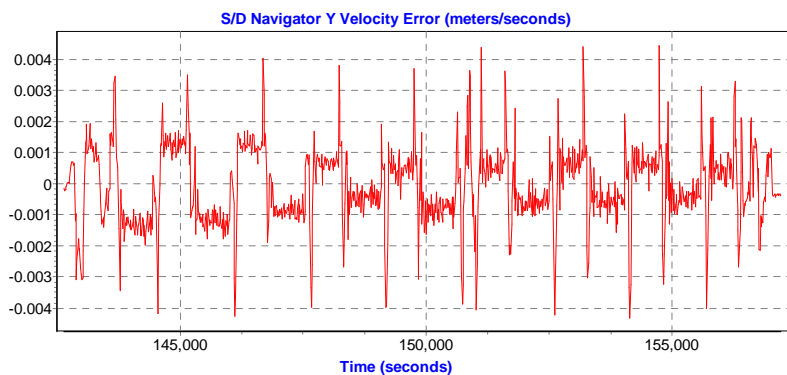
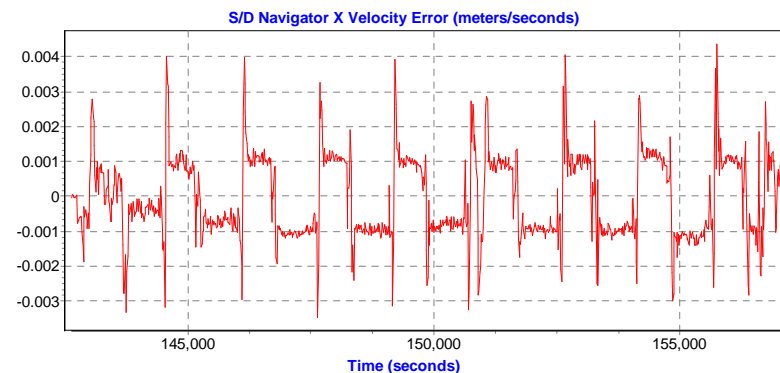
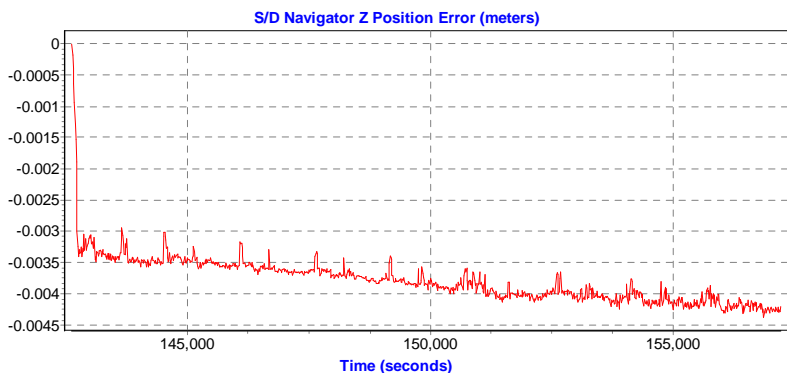
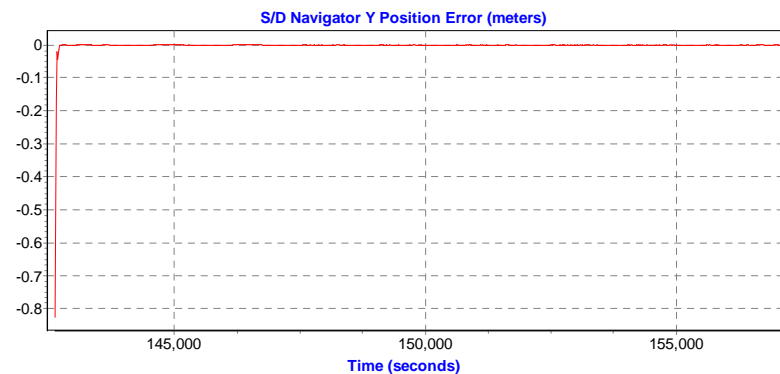
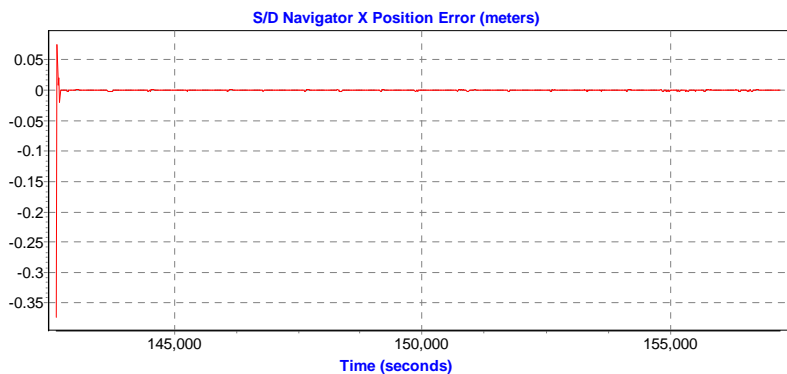
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

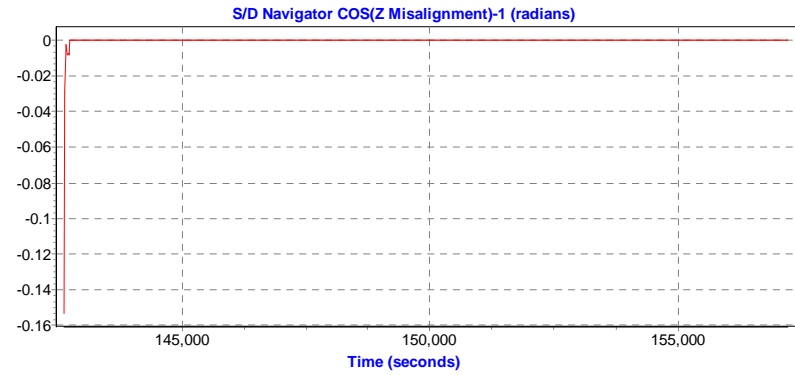
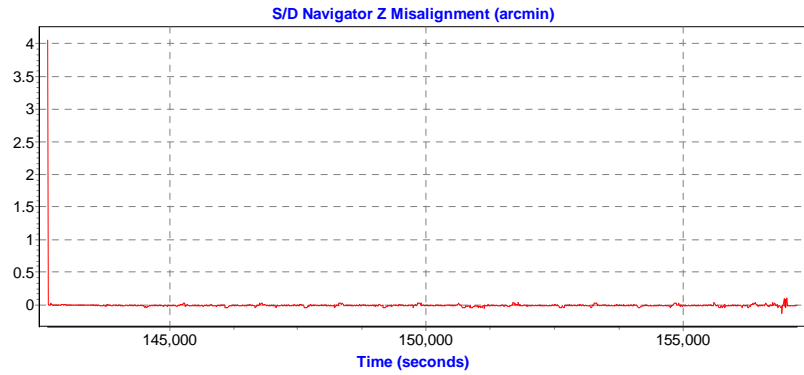
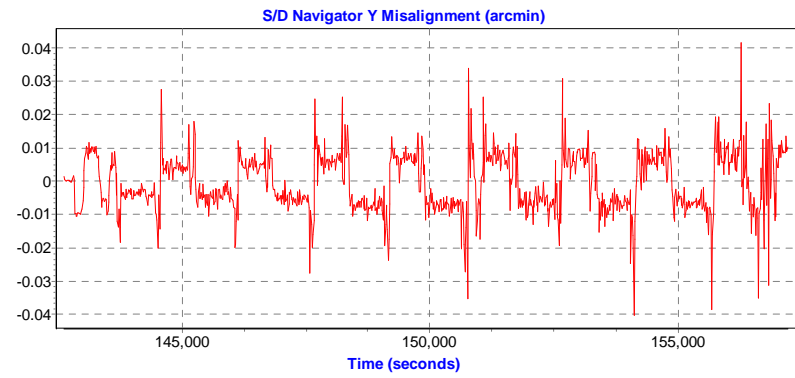
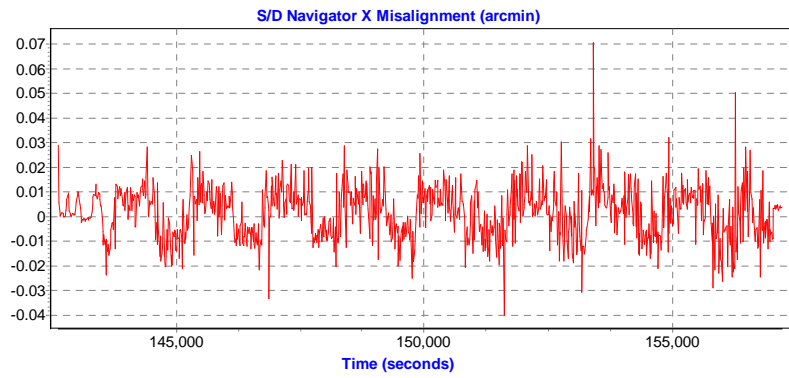
Percentages of epochs with DD_DOP over 10.00:

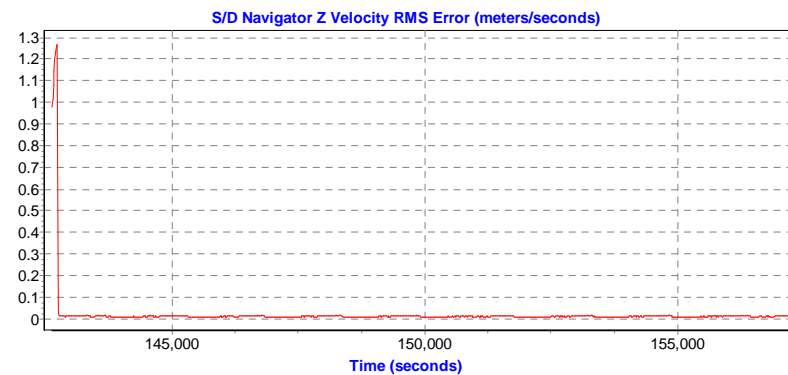
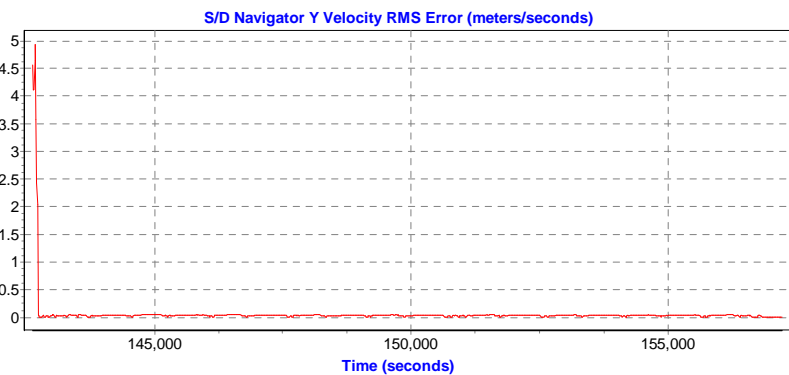
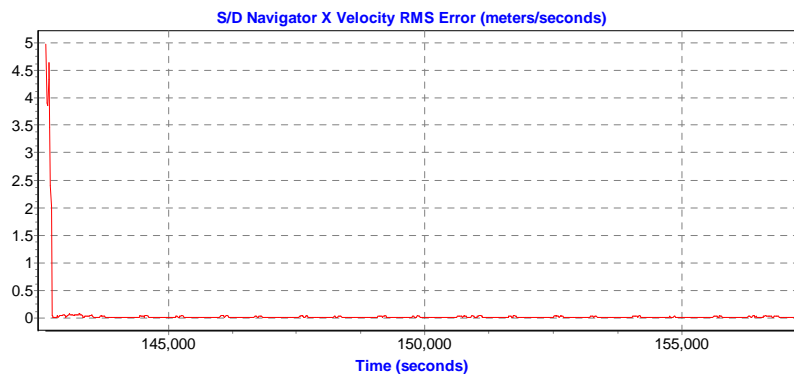
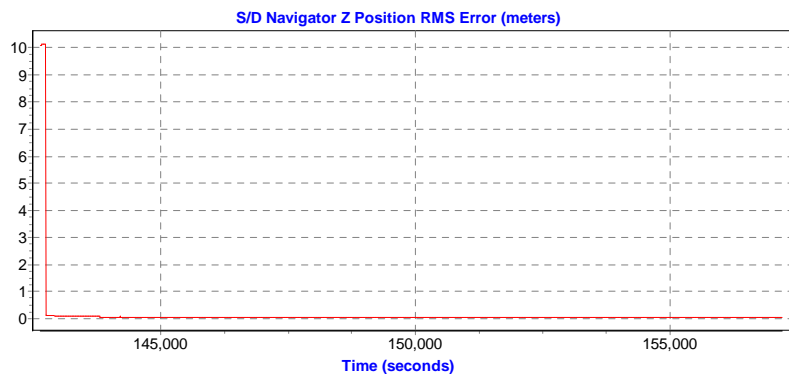
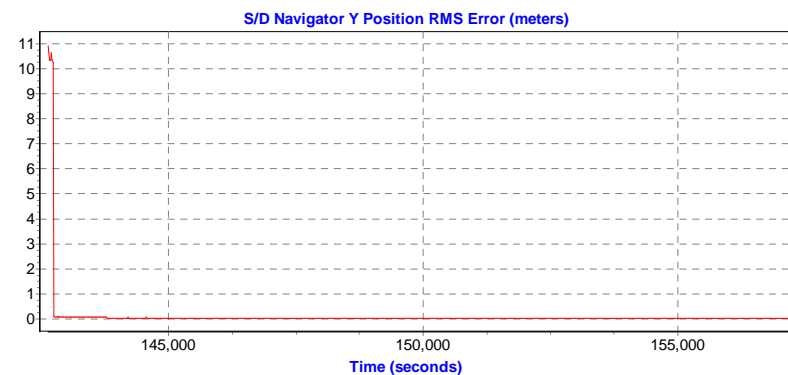
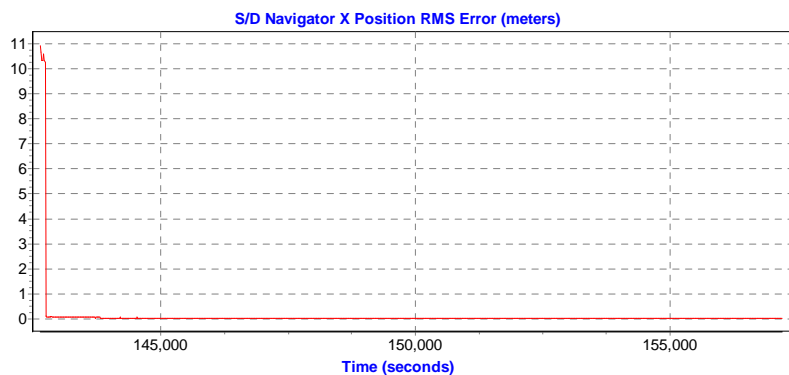
DOP over Tol:	0.0 %
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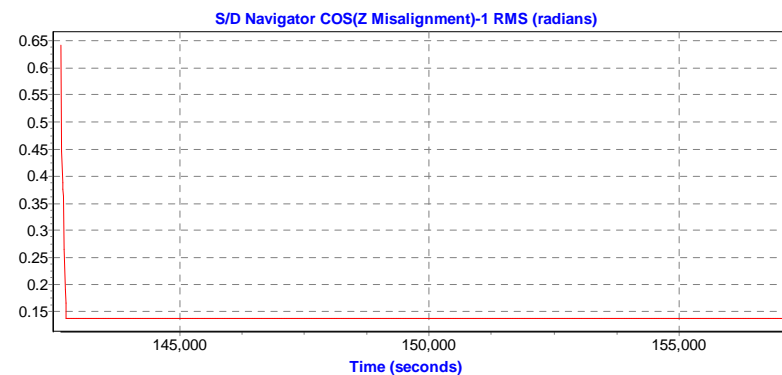
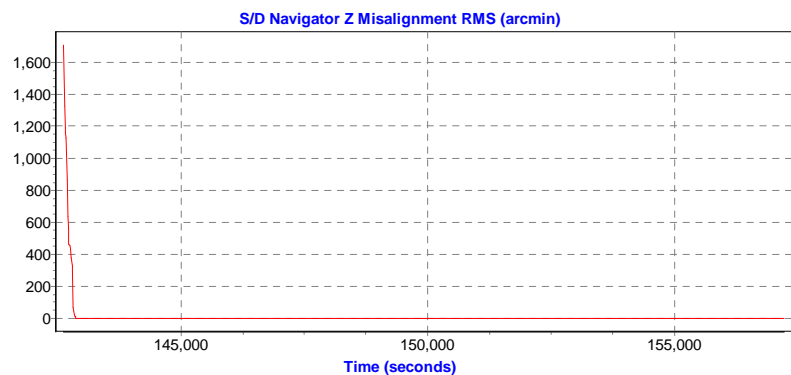
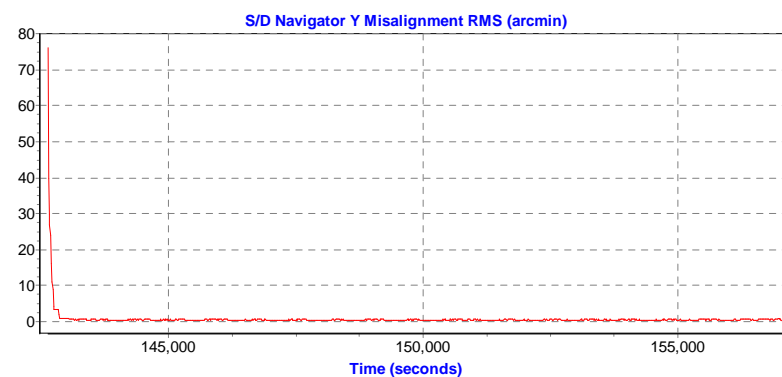
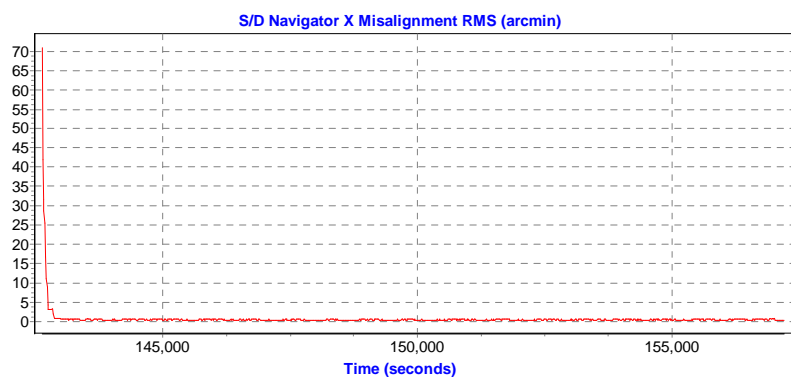
Baseline Distances:

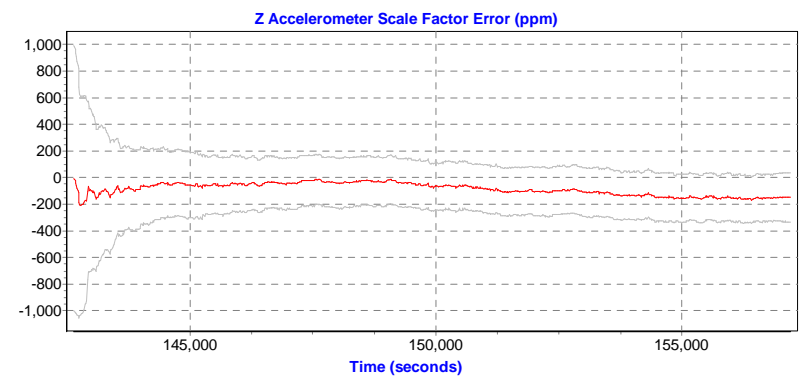
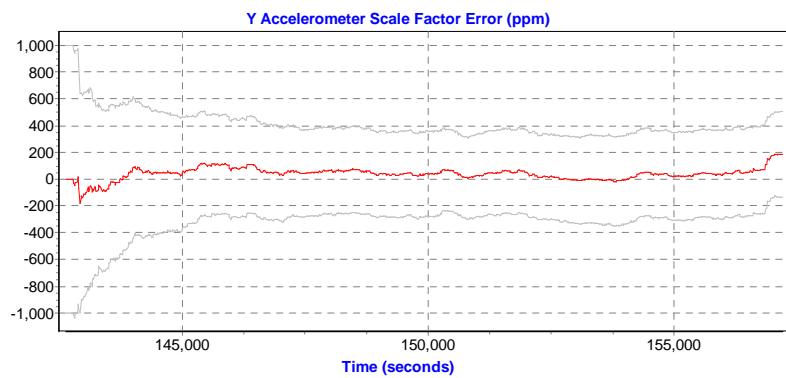
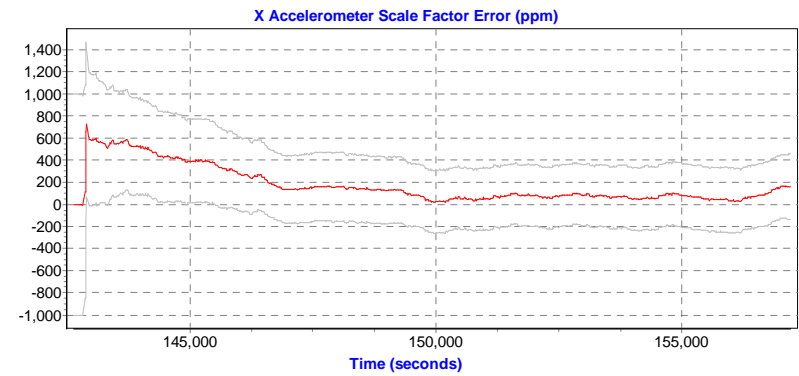
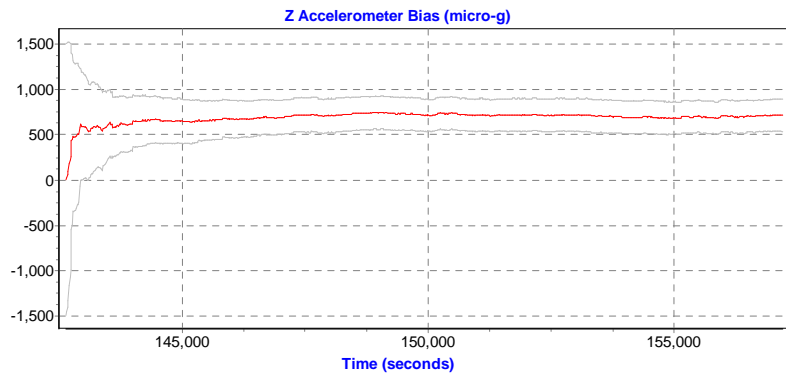
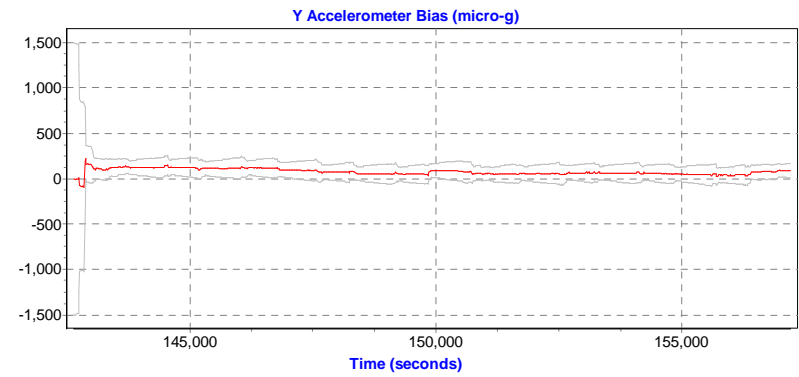
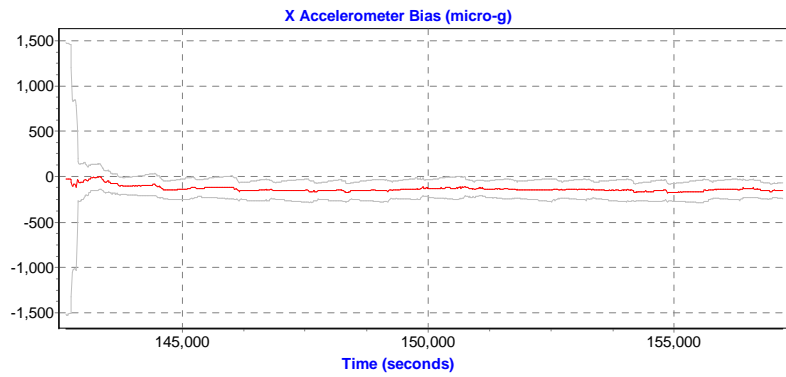
Maximum:	45.321 (km)
Minimum:	0.069 (km)
Average:	18.827 (km)
First Epoch:	0.098 (km)
Last Epoch:	0.070 (km)

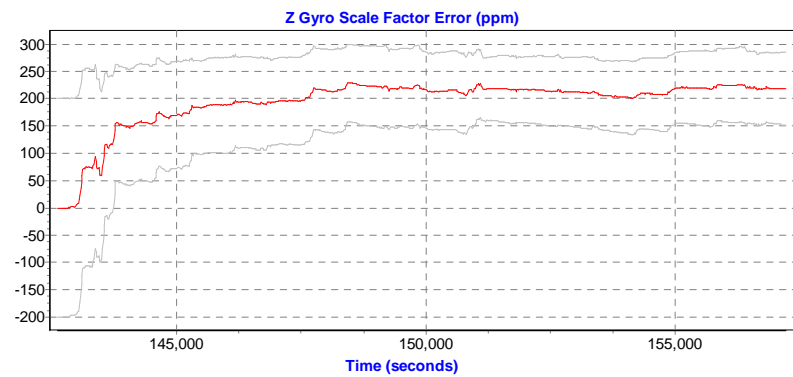
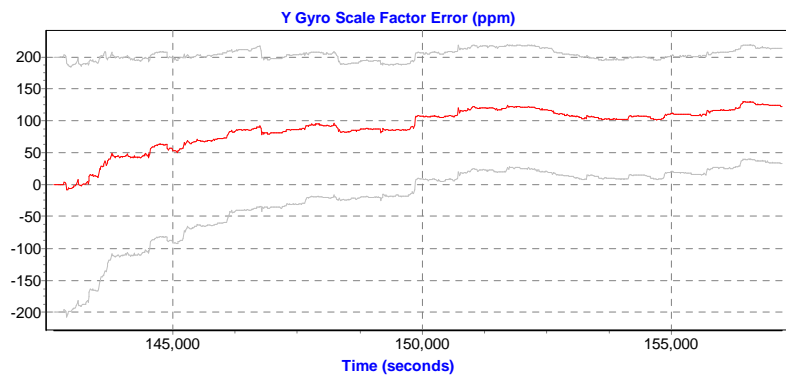
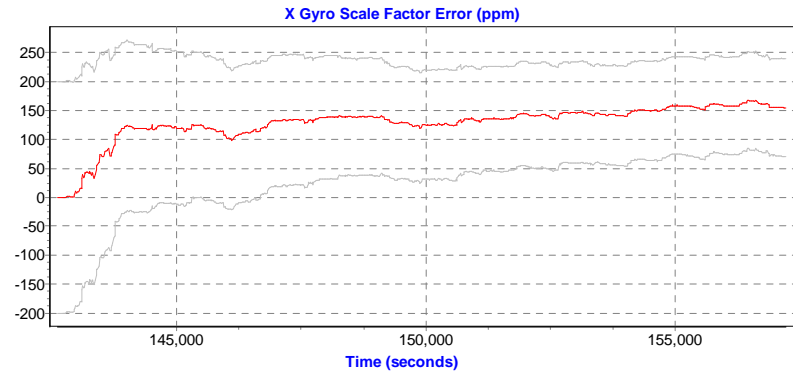
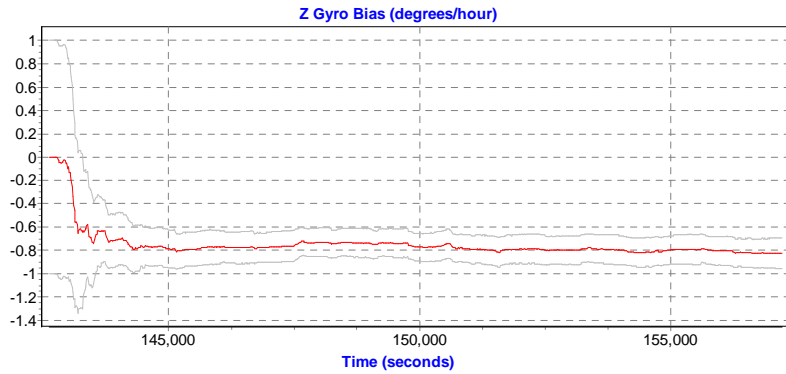
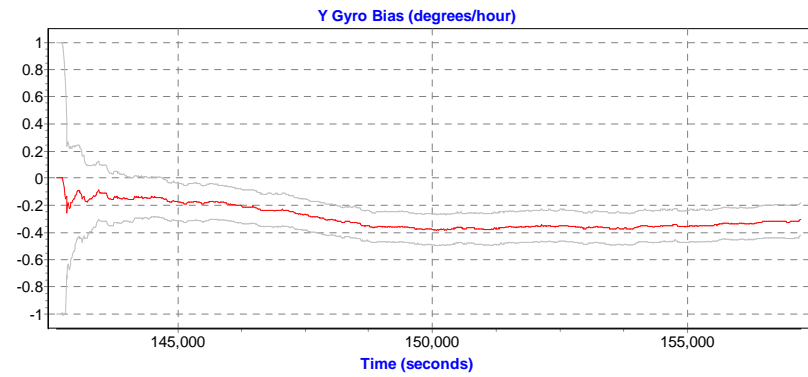
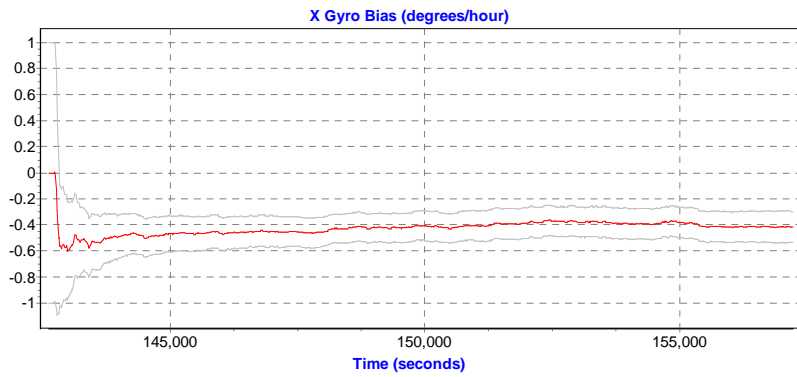


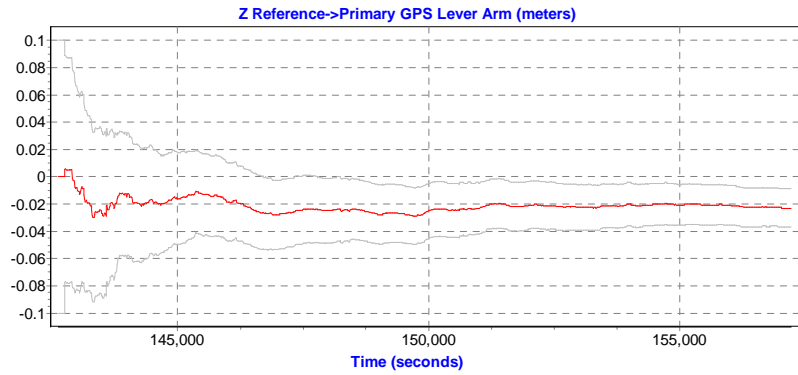
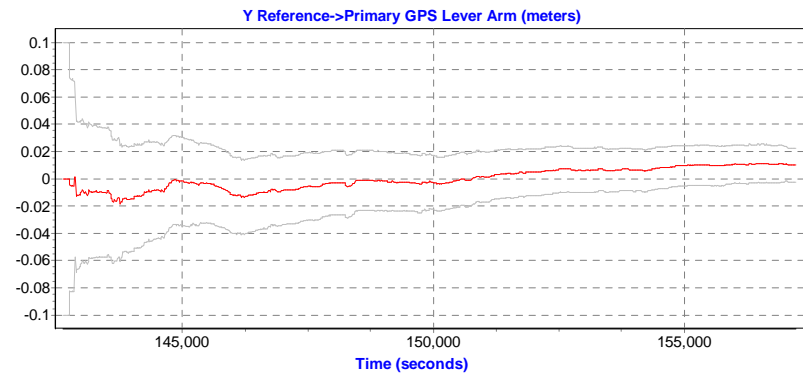
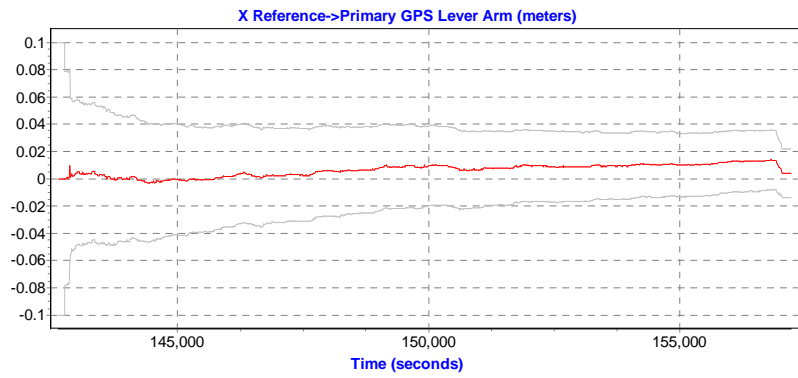






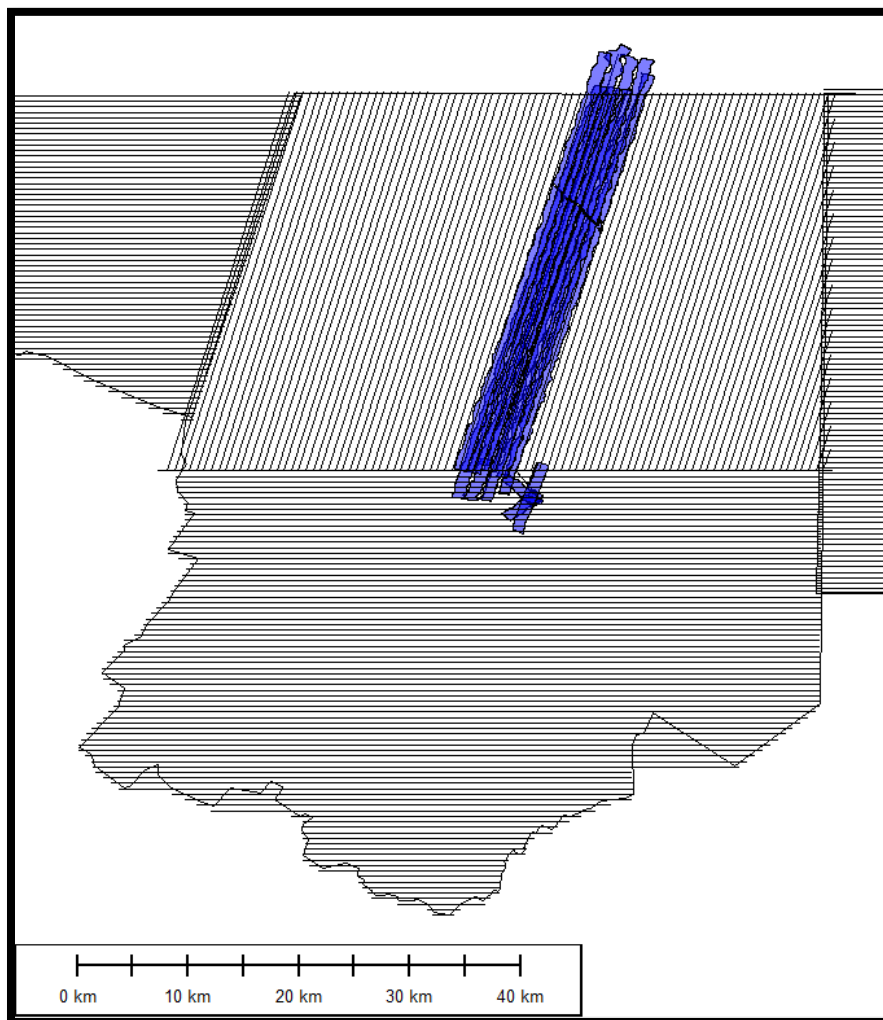






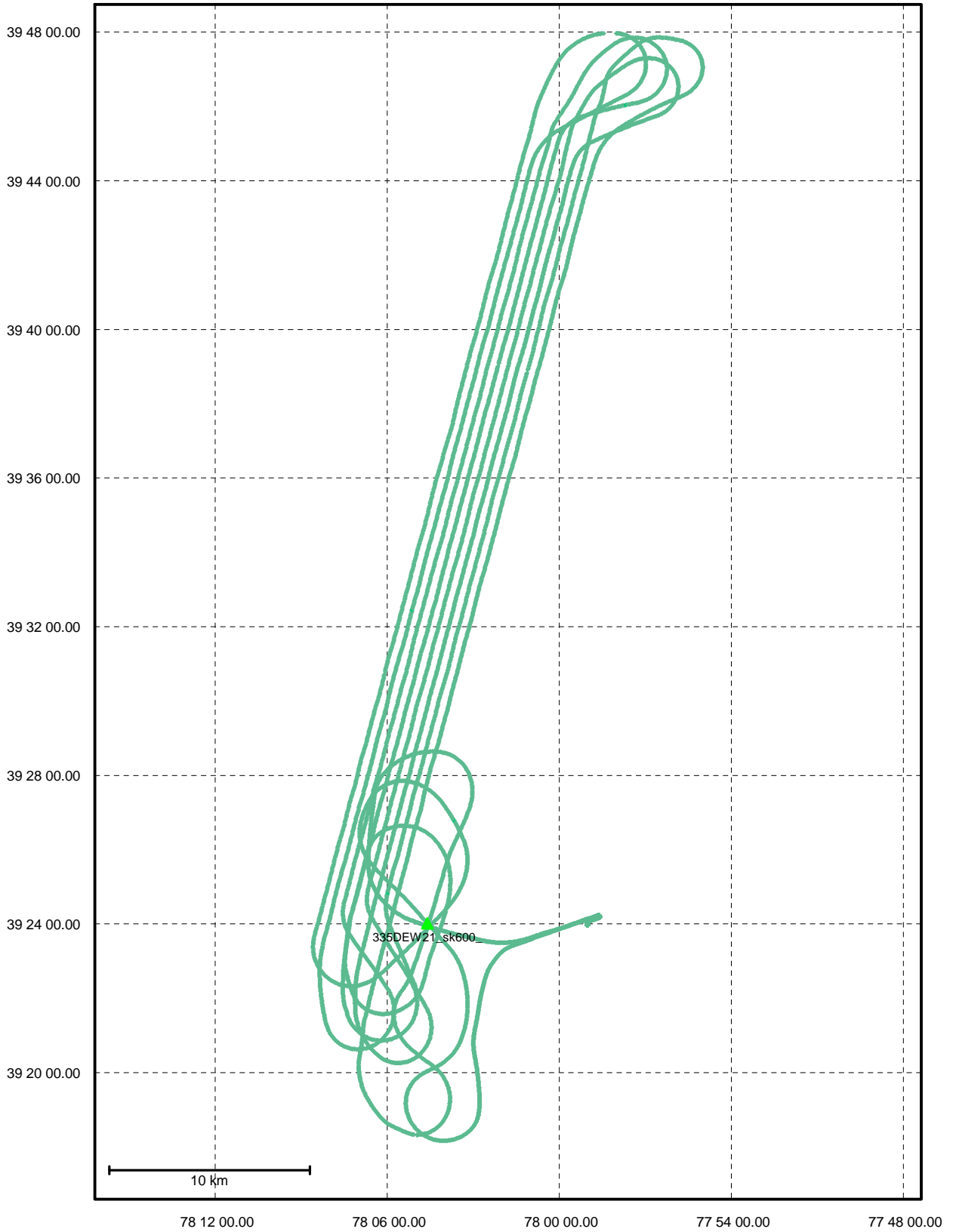
Mission: o112051b

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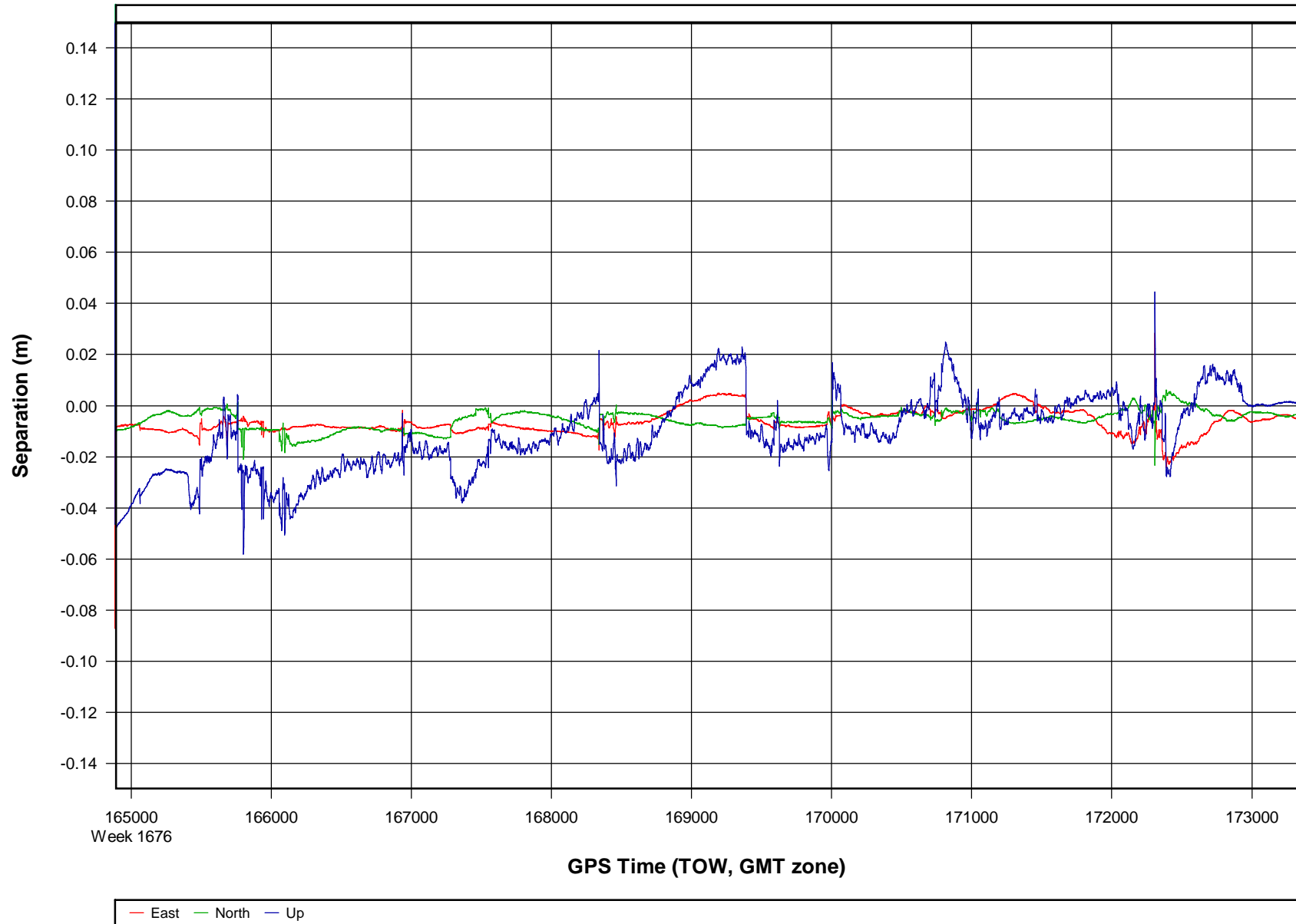
Combined - Map Run (1)

Geographic, DMS

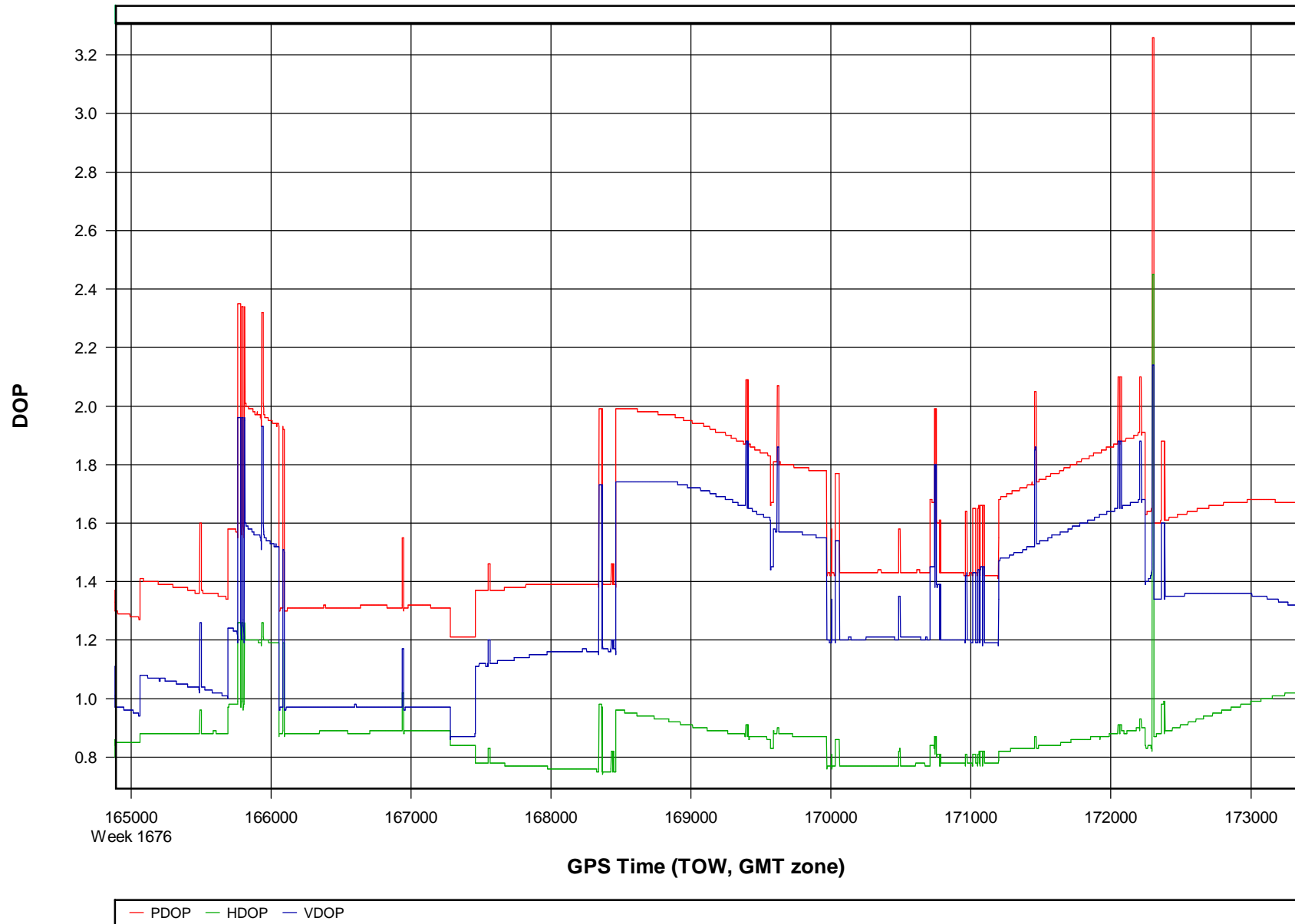


- + Ukn
- + Q1
- + Q2
- + Q3
- + Q4
- + Q5
- + Q6
- ▲ Master

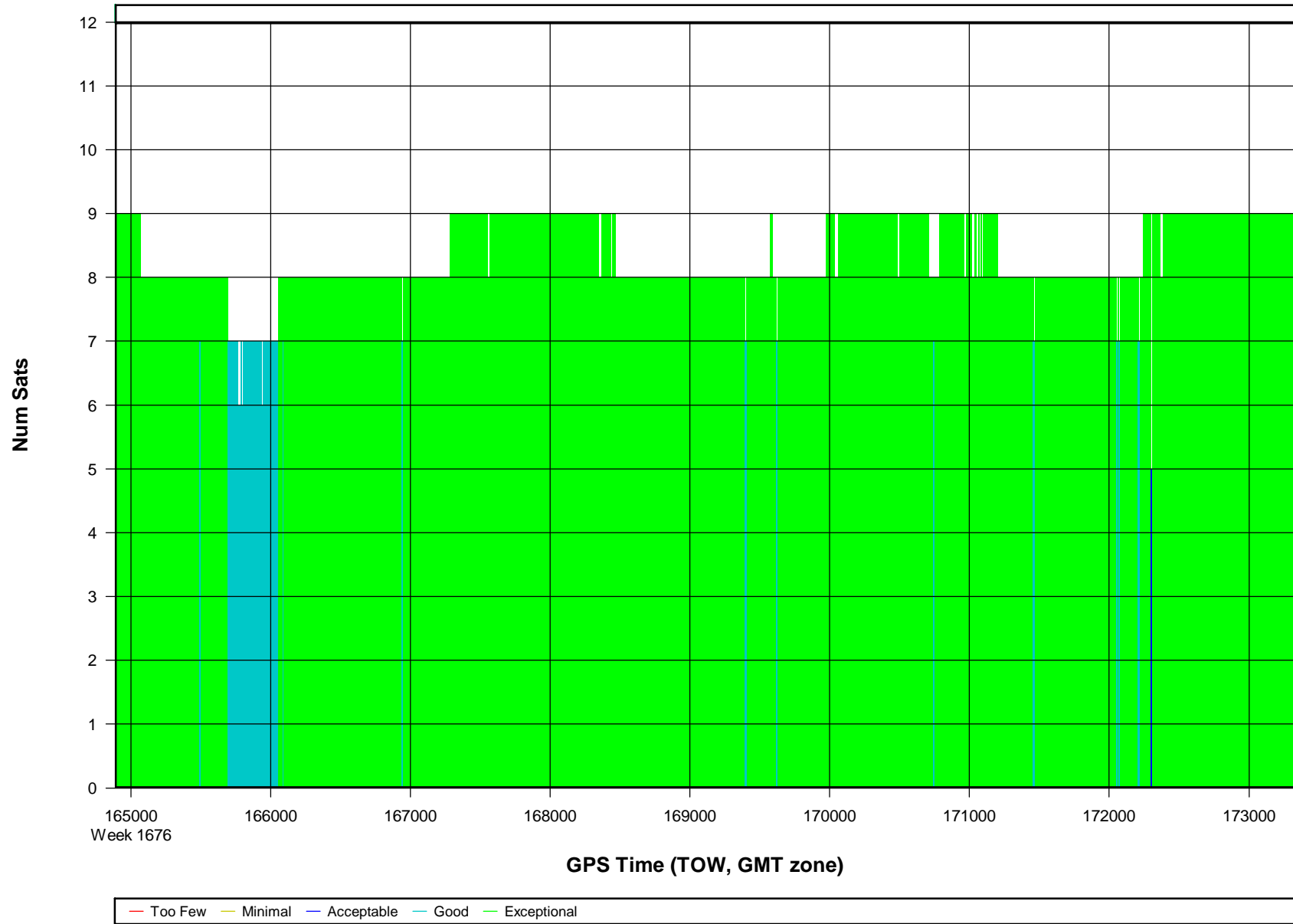
o112051b [Combined] - Forward/Reverse or Combined Separation Plot



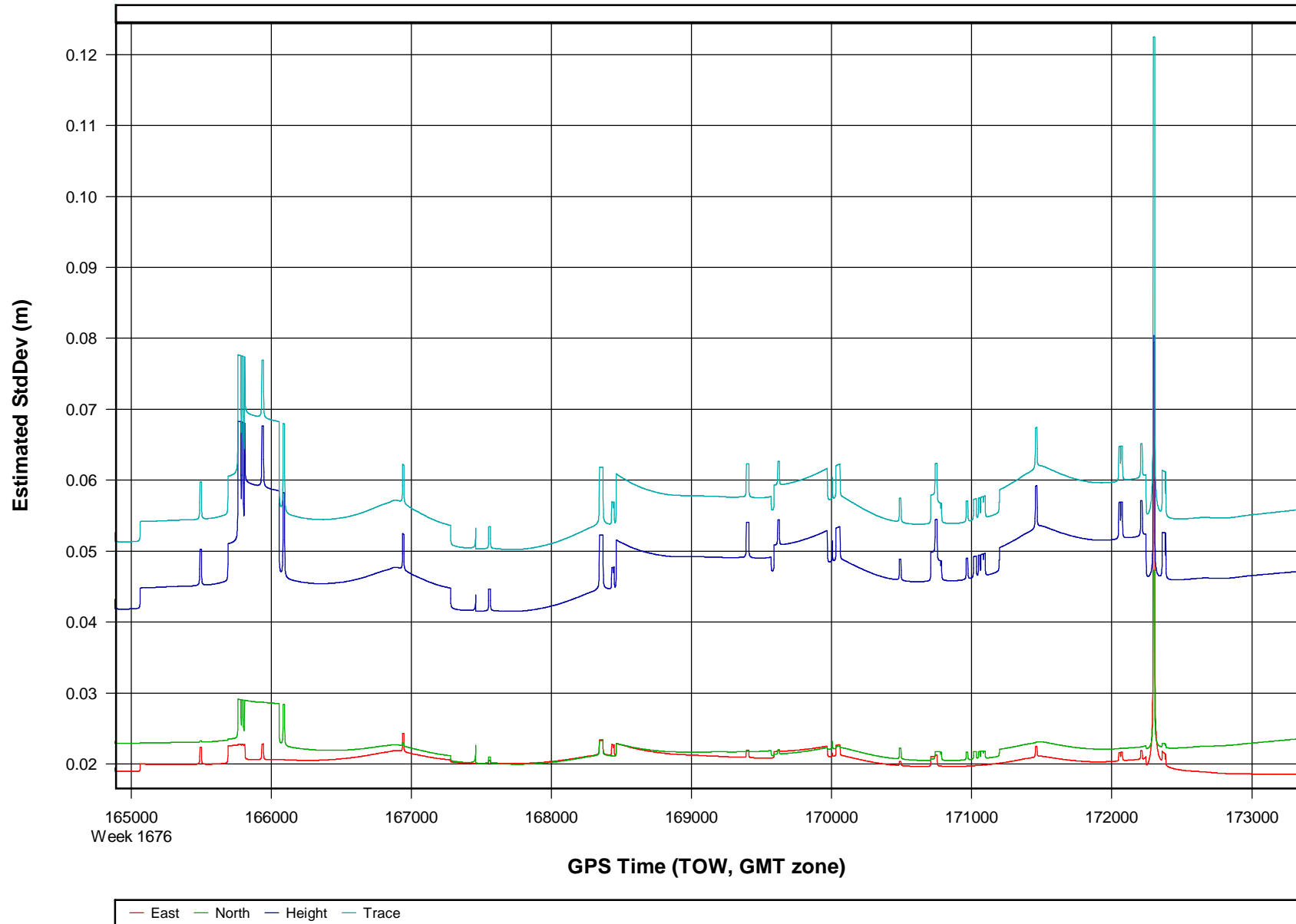
o112051b [Combined] - PDOP, HDOP, VDOP Plots



o112051b [Combined] - Number of Satellites Bar Plot



o112051b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112051b\3_Pro
cessed\GPS\o112051b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	84623
No processed position:	76179
Missing Fwd or Rev:	4
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0158 (m)
C/A Code:	0.74 (m)
L1 Doppler:	0.036 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.009 (m)
North:	0.008 (m)
Height:	0.019 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8434 occurrences):

East:	0.008 (m)
North:	0.006 (m)
Height:	0.018 (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:	99.9 %
0.10 - 0.30 m:	0.1 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

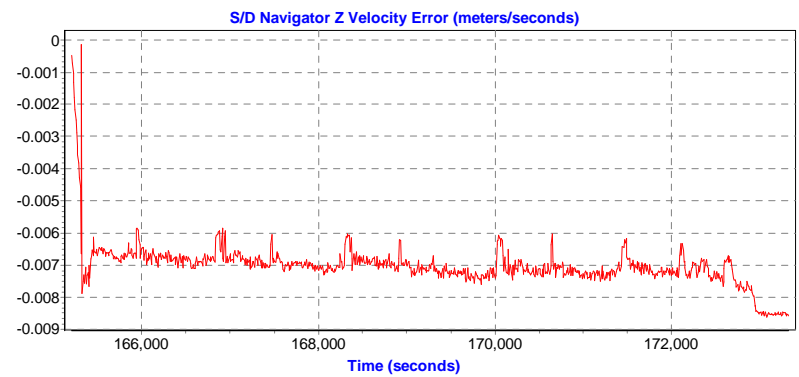
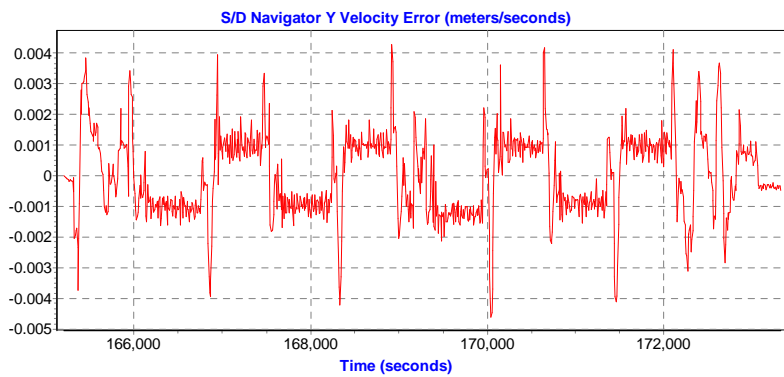
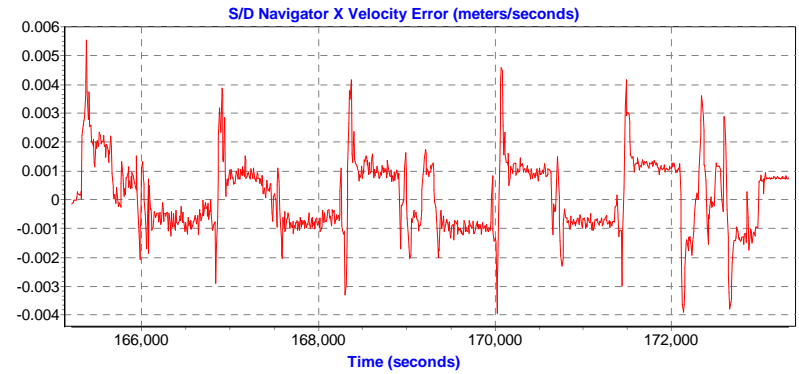
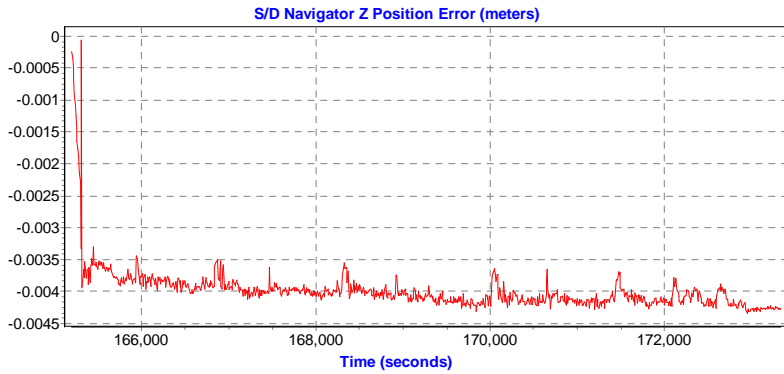
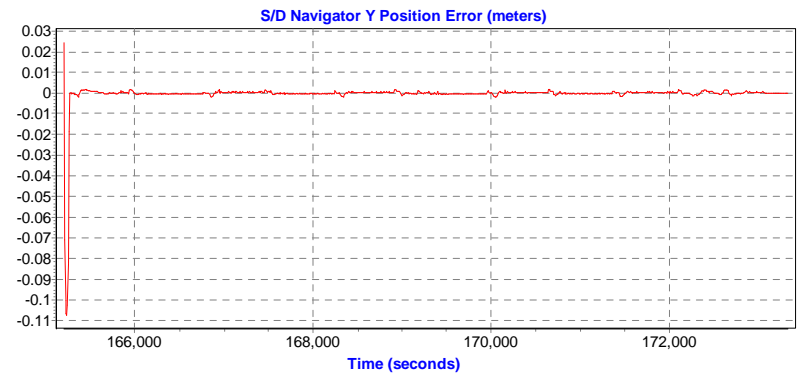
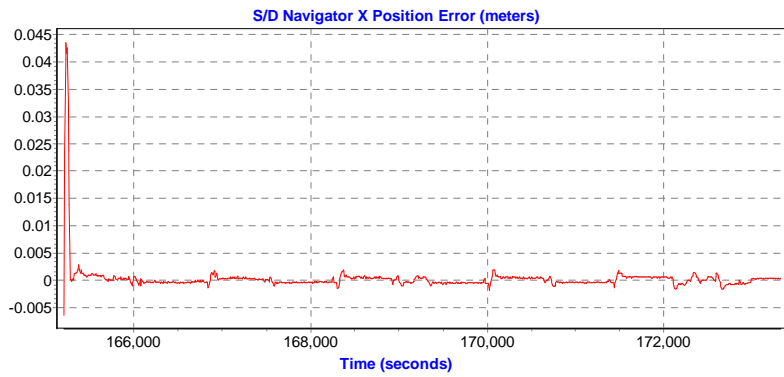
Percentages of epochs with DD_DOP over 10.00:

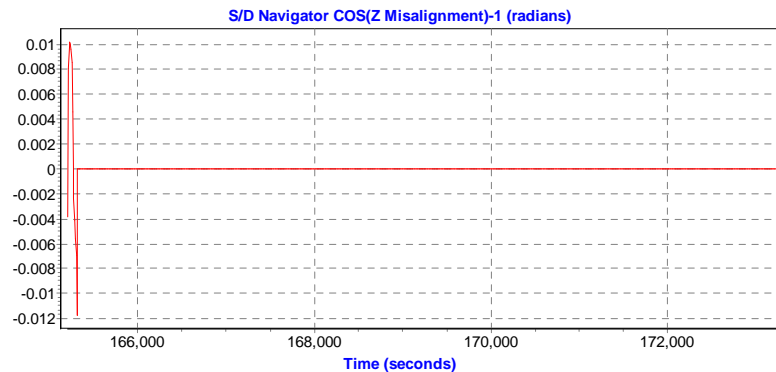
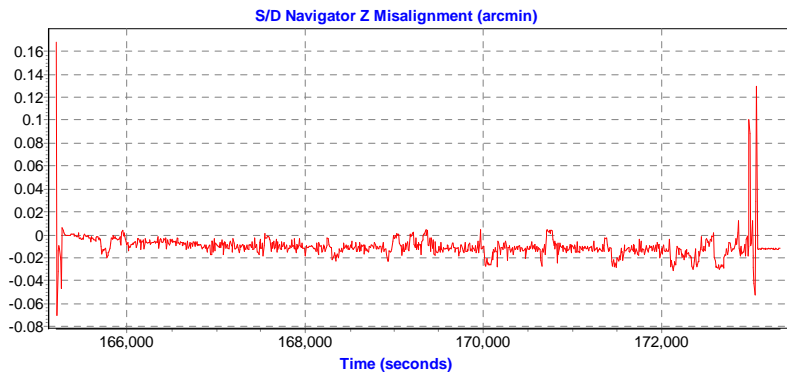
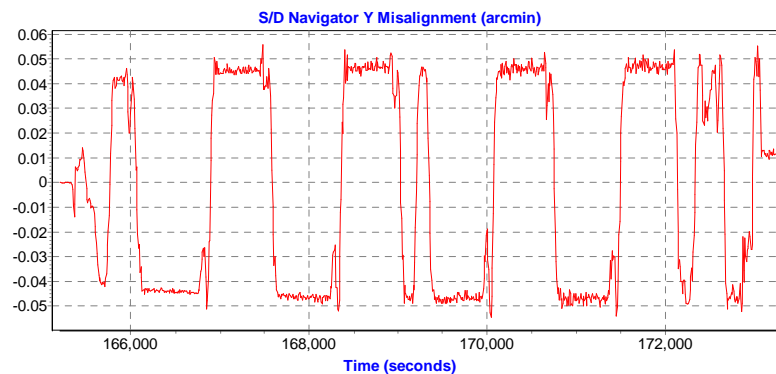
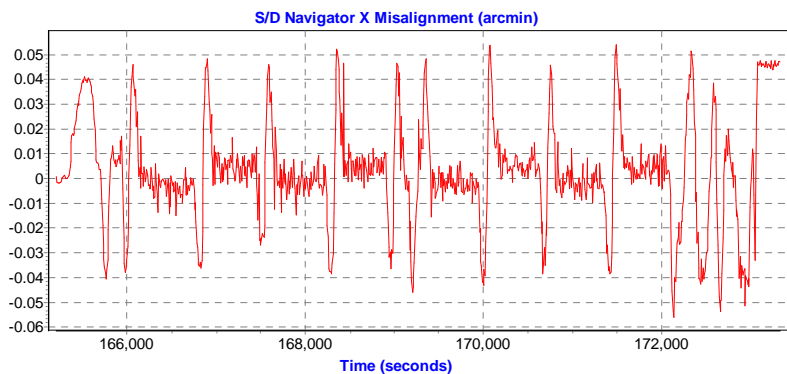
DOP over Tol:	0.0 %
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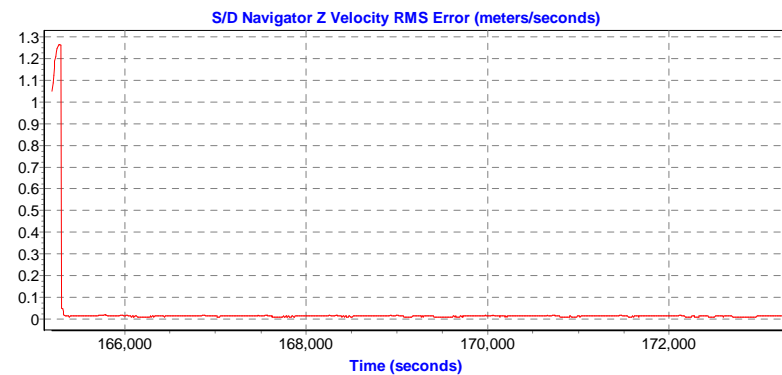
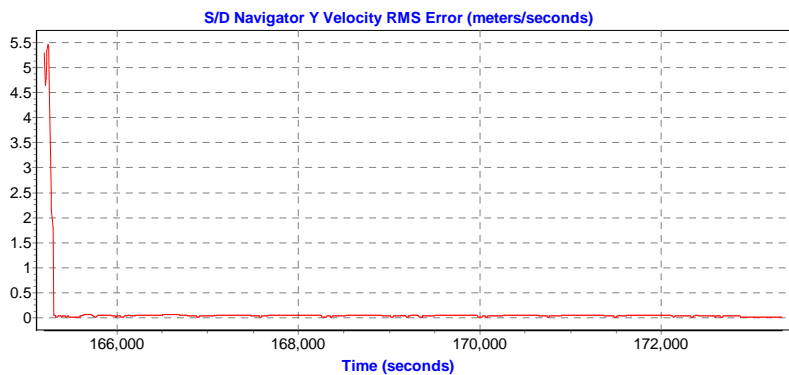
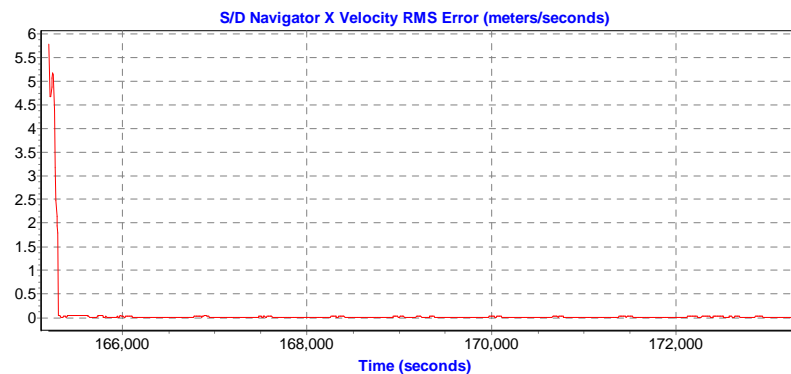
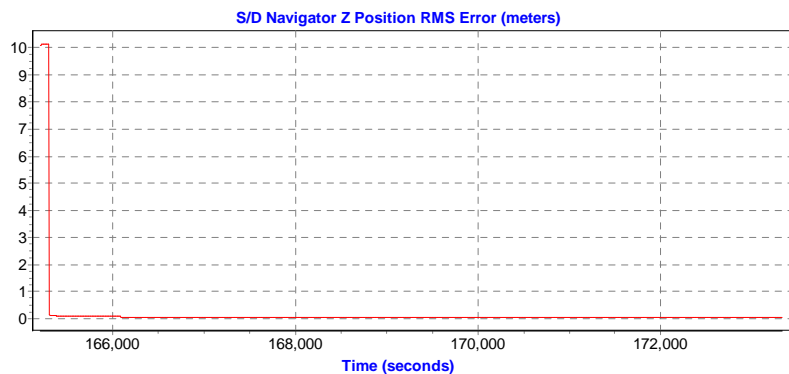
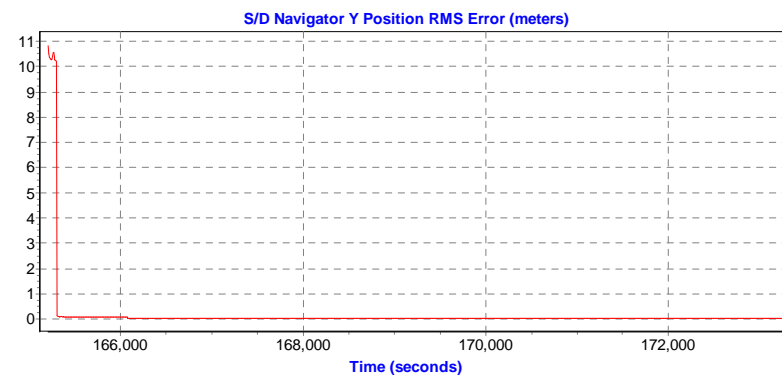
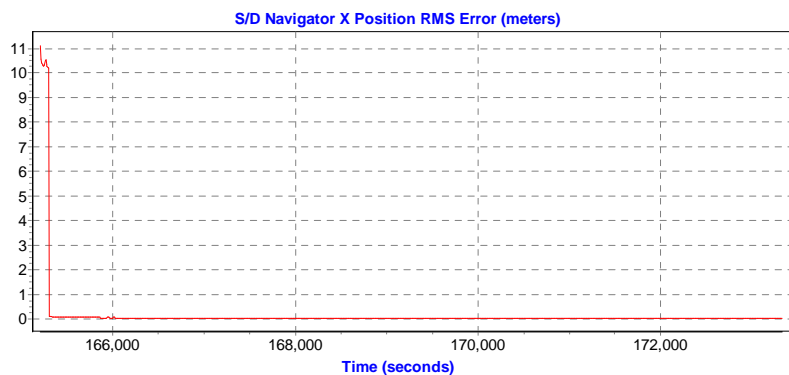
Baseline Distances:

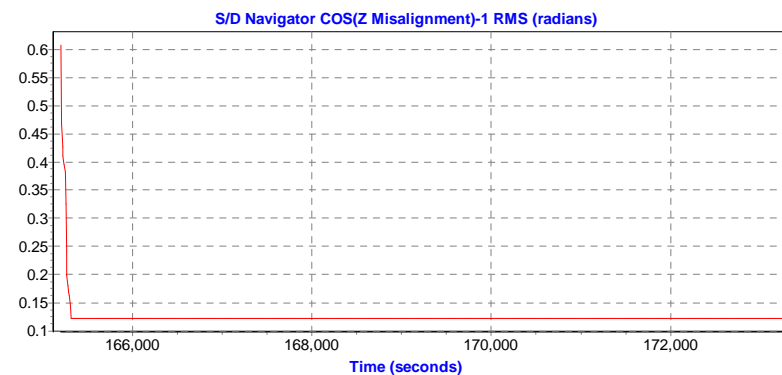
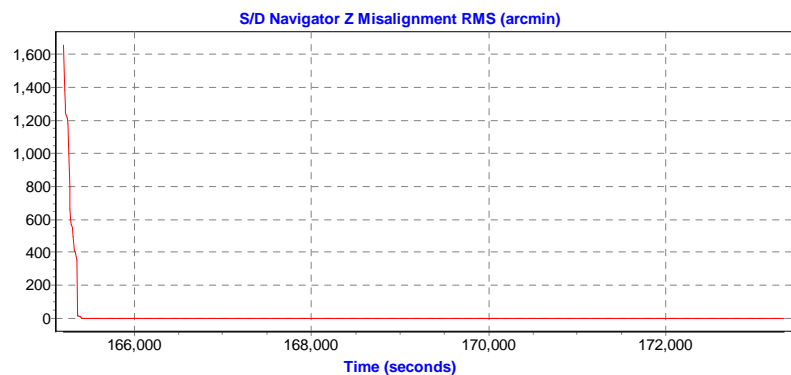
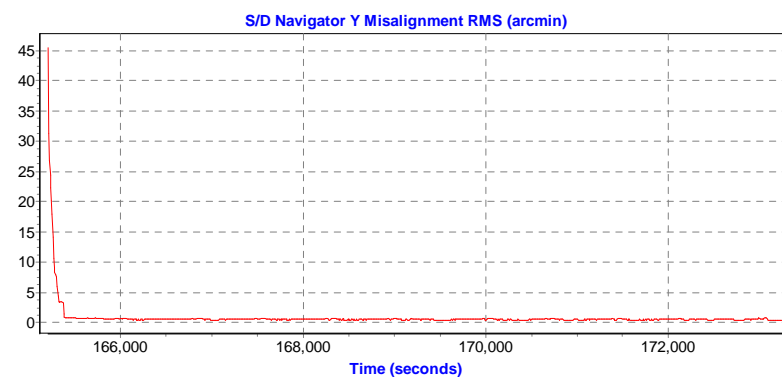
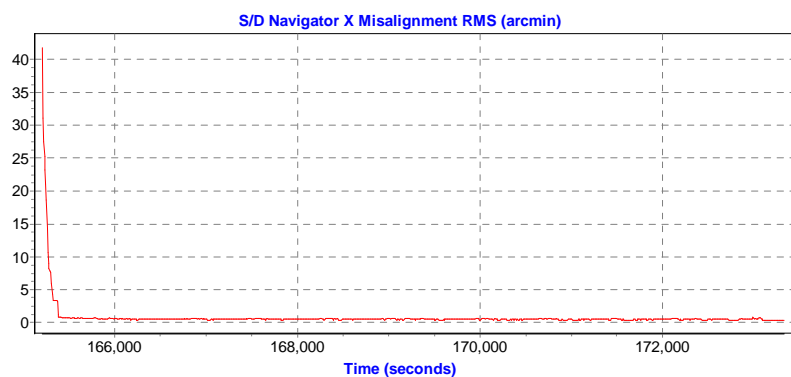
Maximum:	45.767 (km)
Minimum:	0.618 (km)
Average:	16.394 (km)
First Epoch:	8.008 (km)
Last Epoch:	8.017 (km)

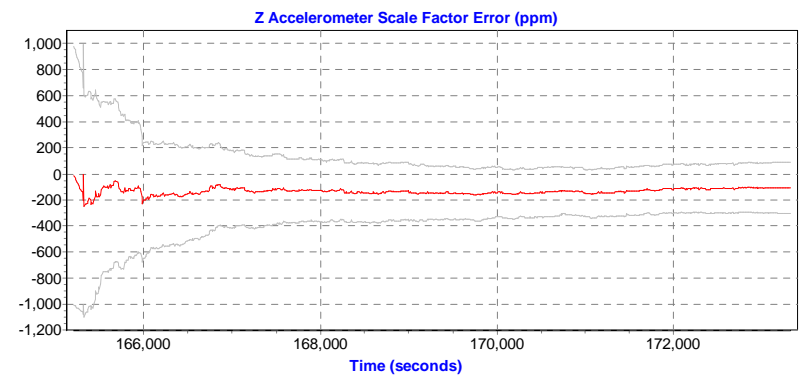
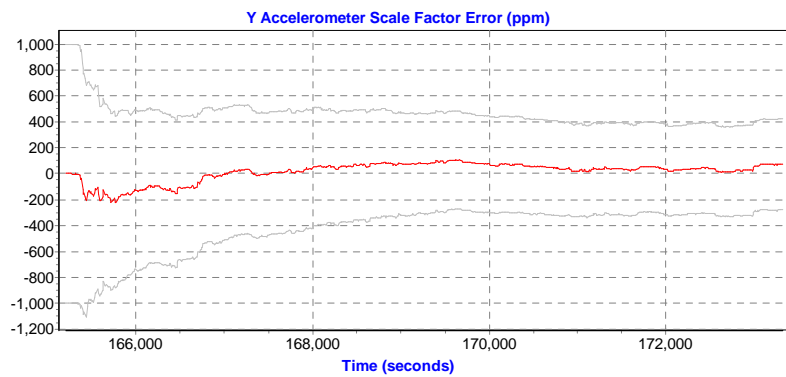
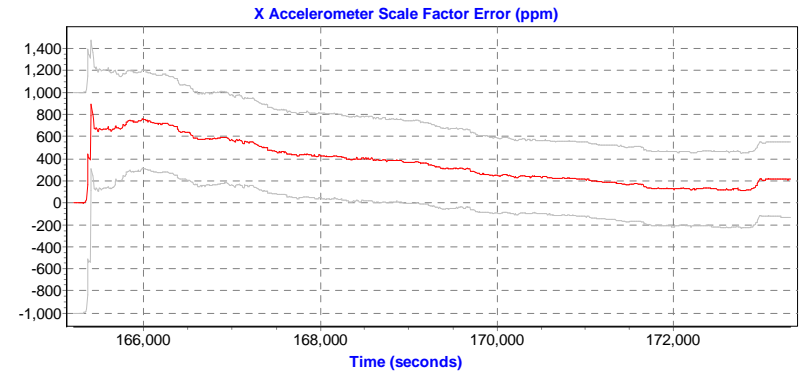
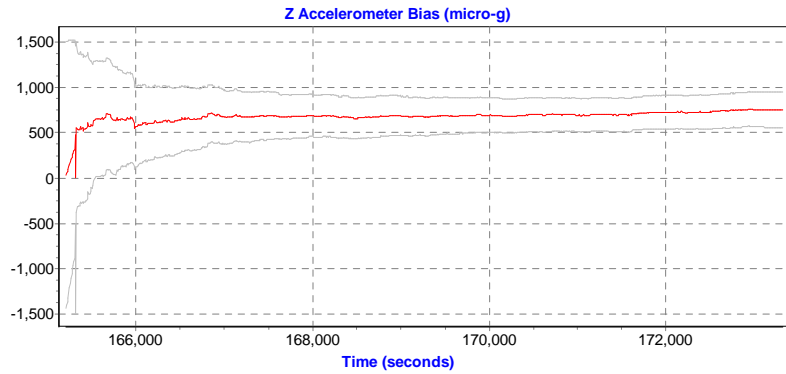
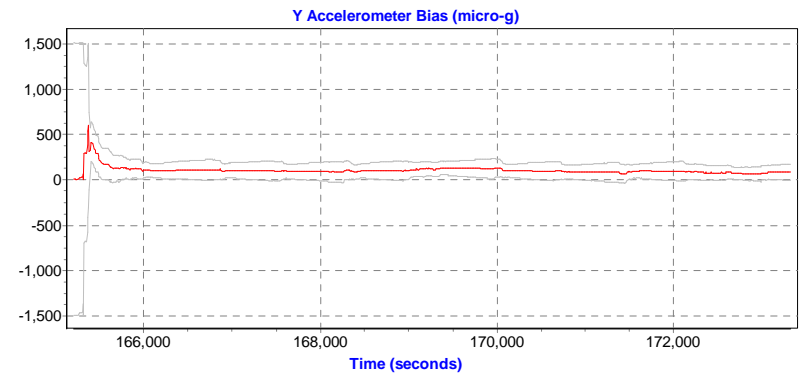
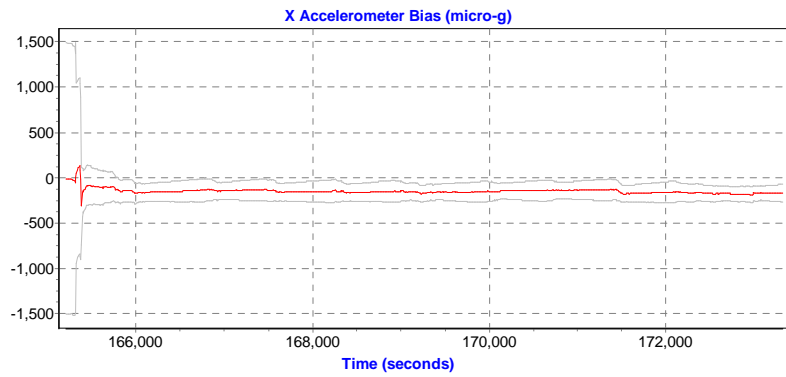
Estimated Errors and RMS

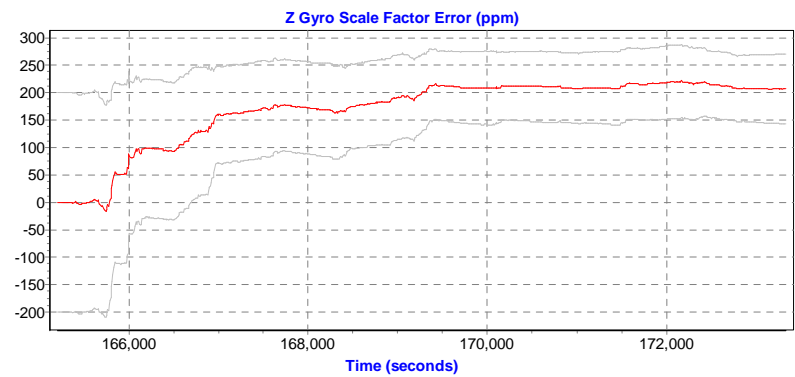
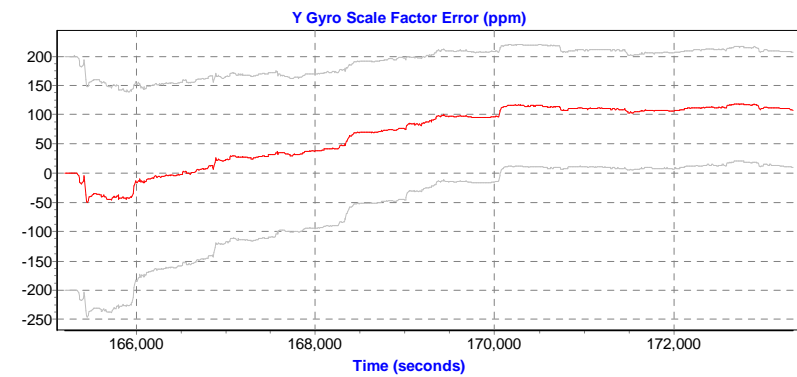
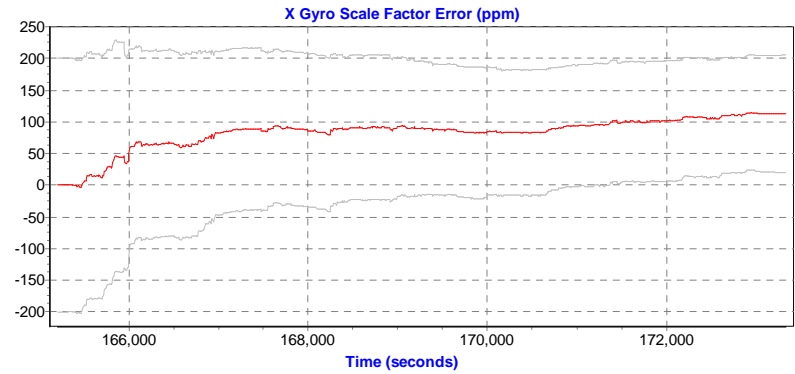
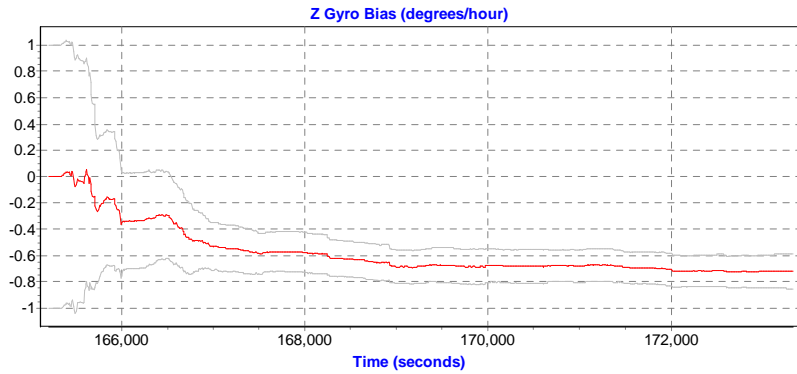
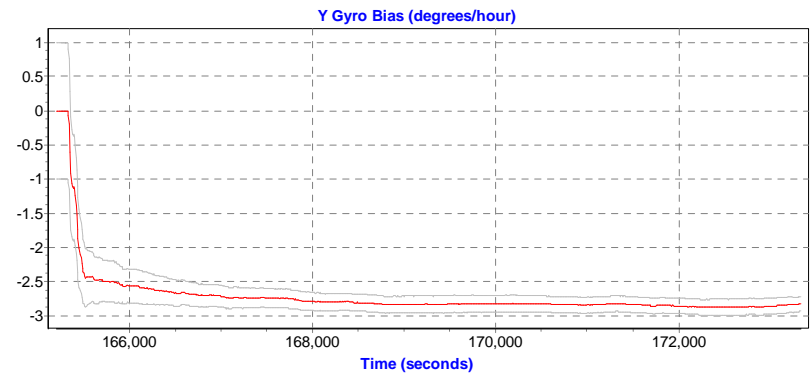
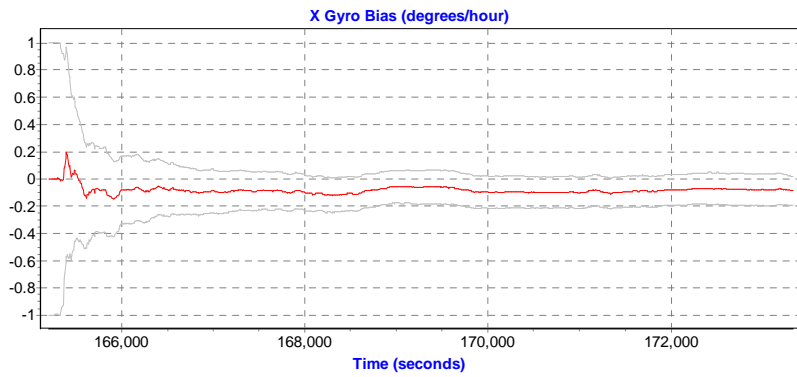


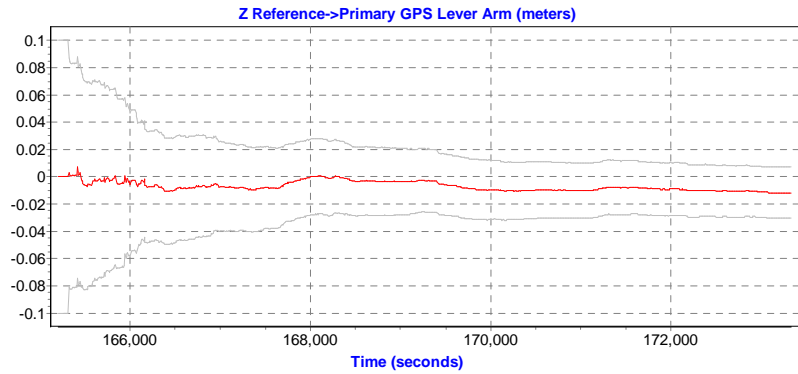
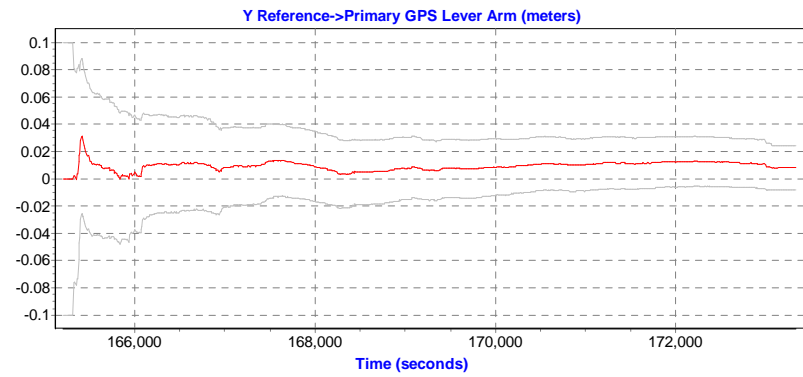
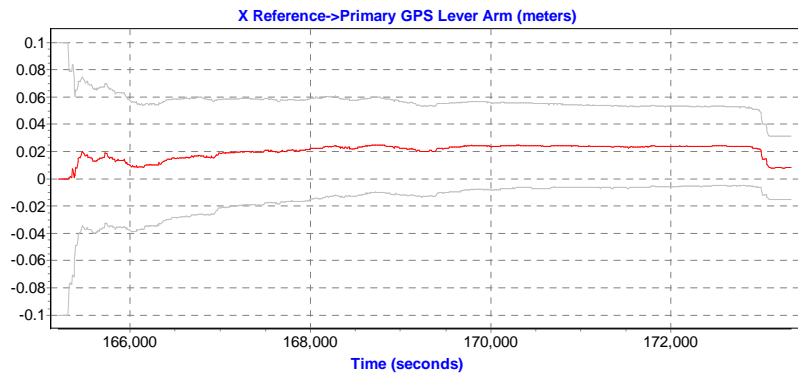






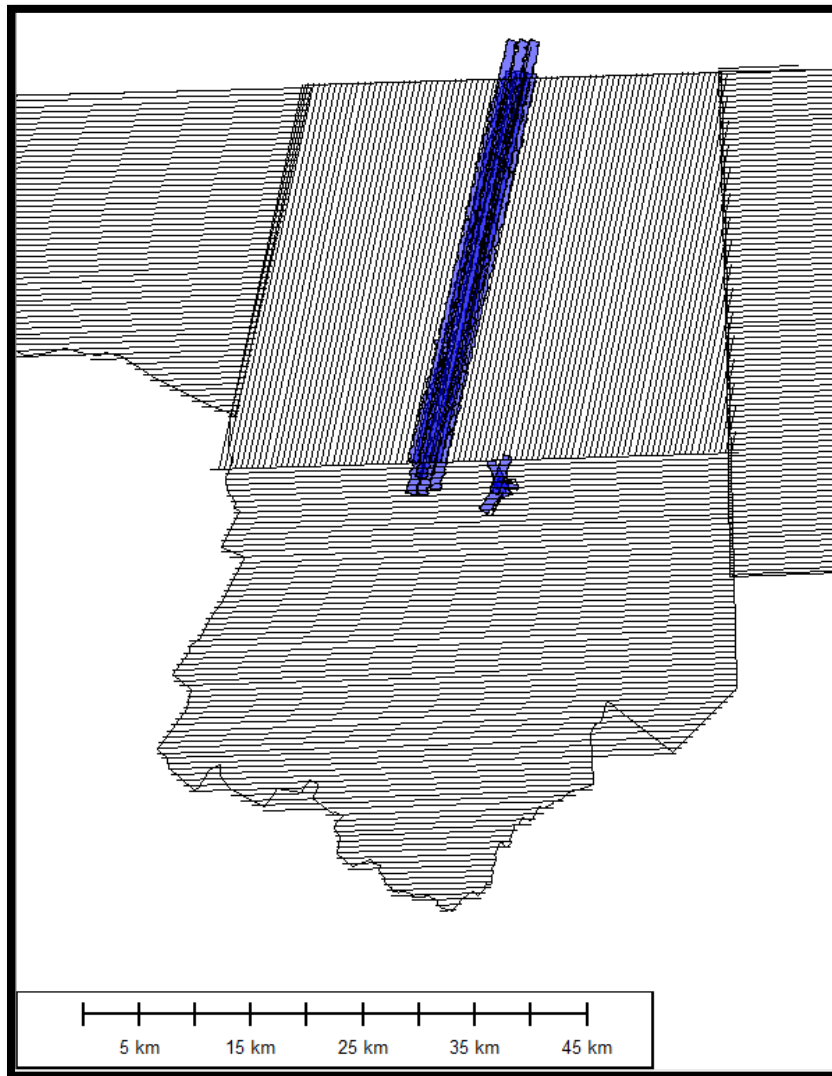






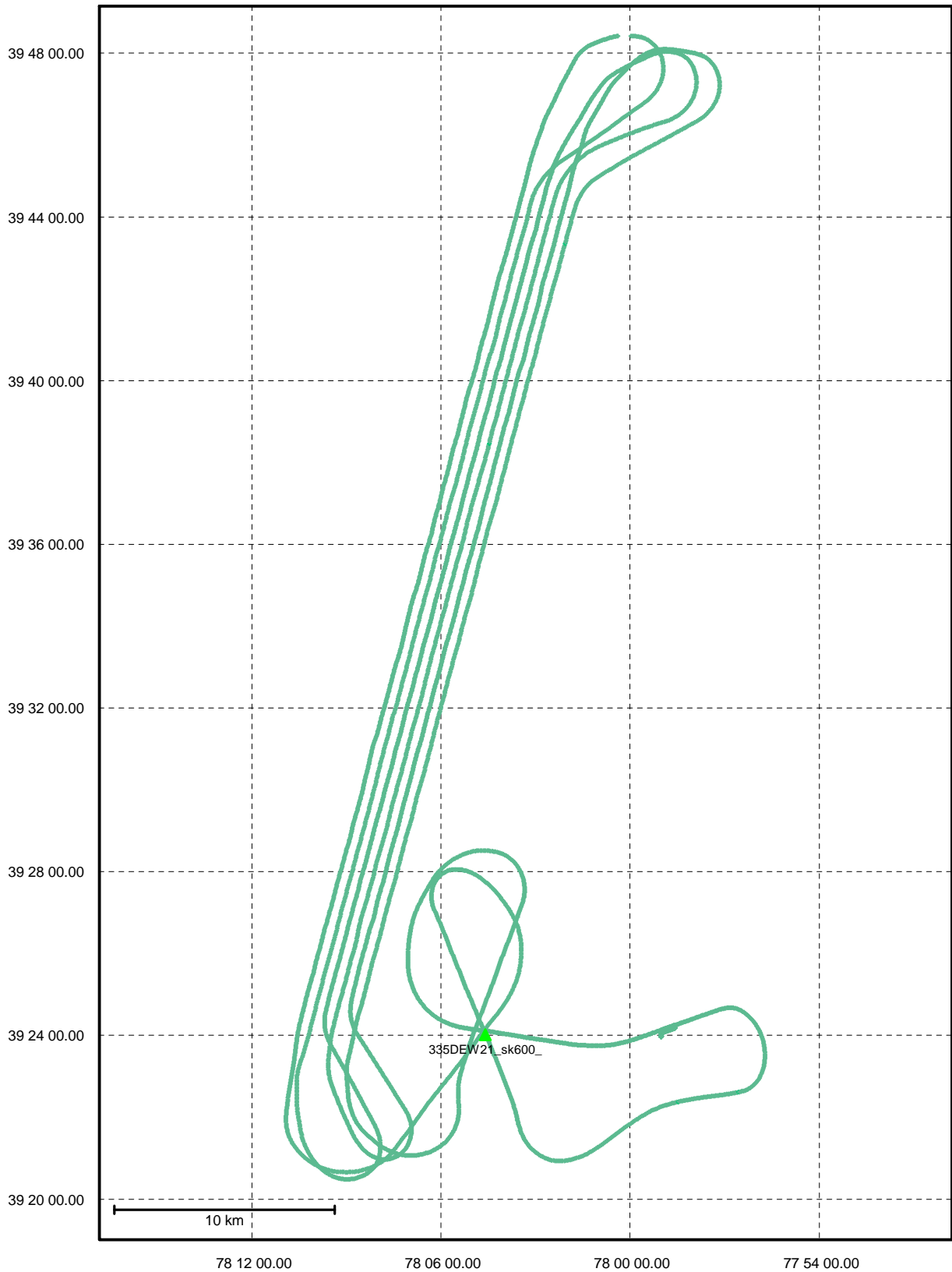
Mission: o112053a

February 22, 2012



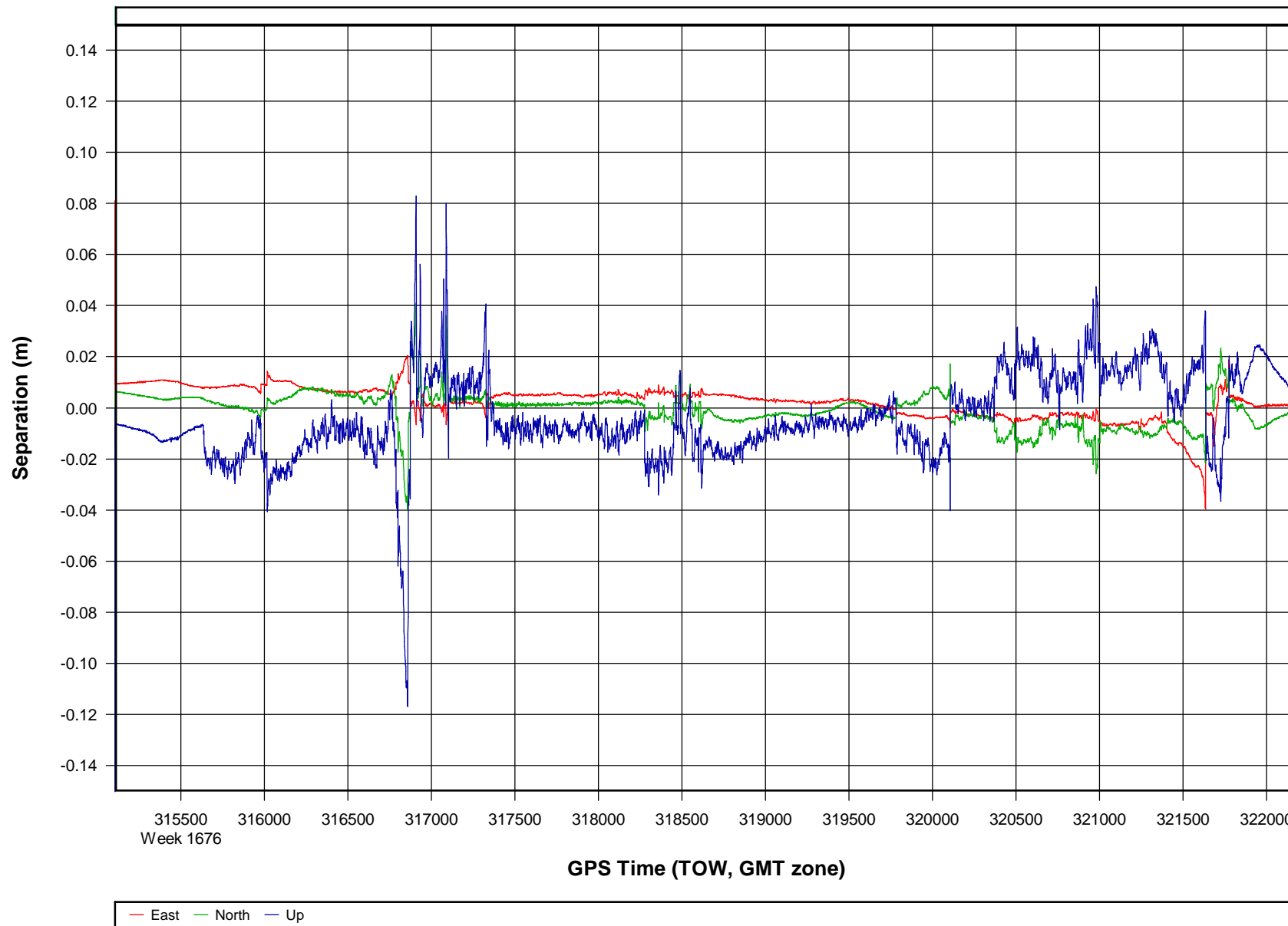
Combined - Map Run (1)

Geographic, DMS

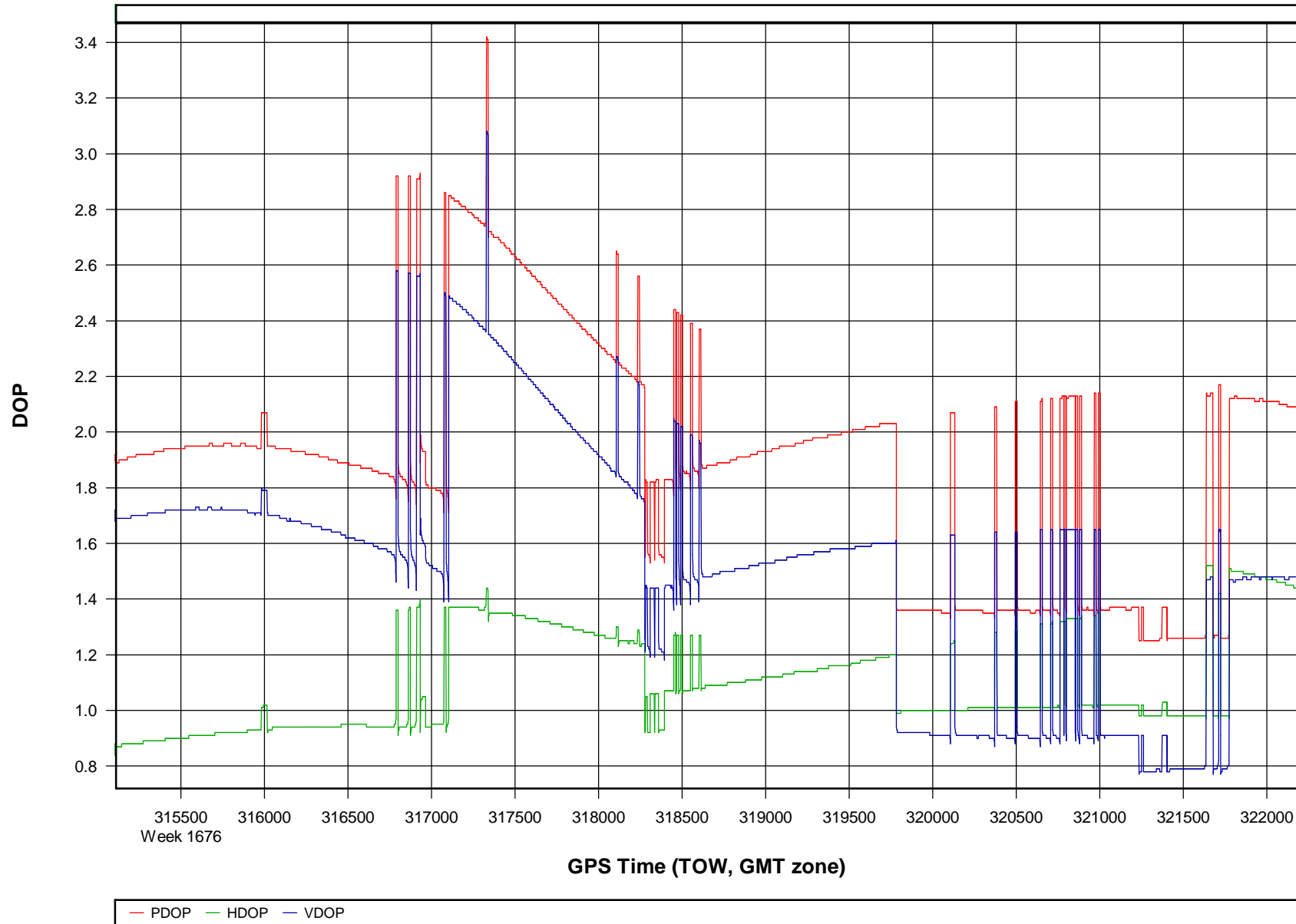


- + Ukn
- + Q1
- + Q2
- + Q3
- + Q4
- + Q5
- + Q6
- ▲ Master

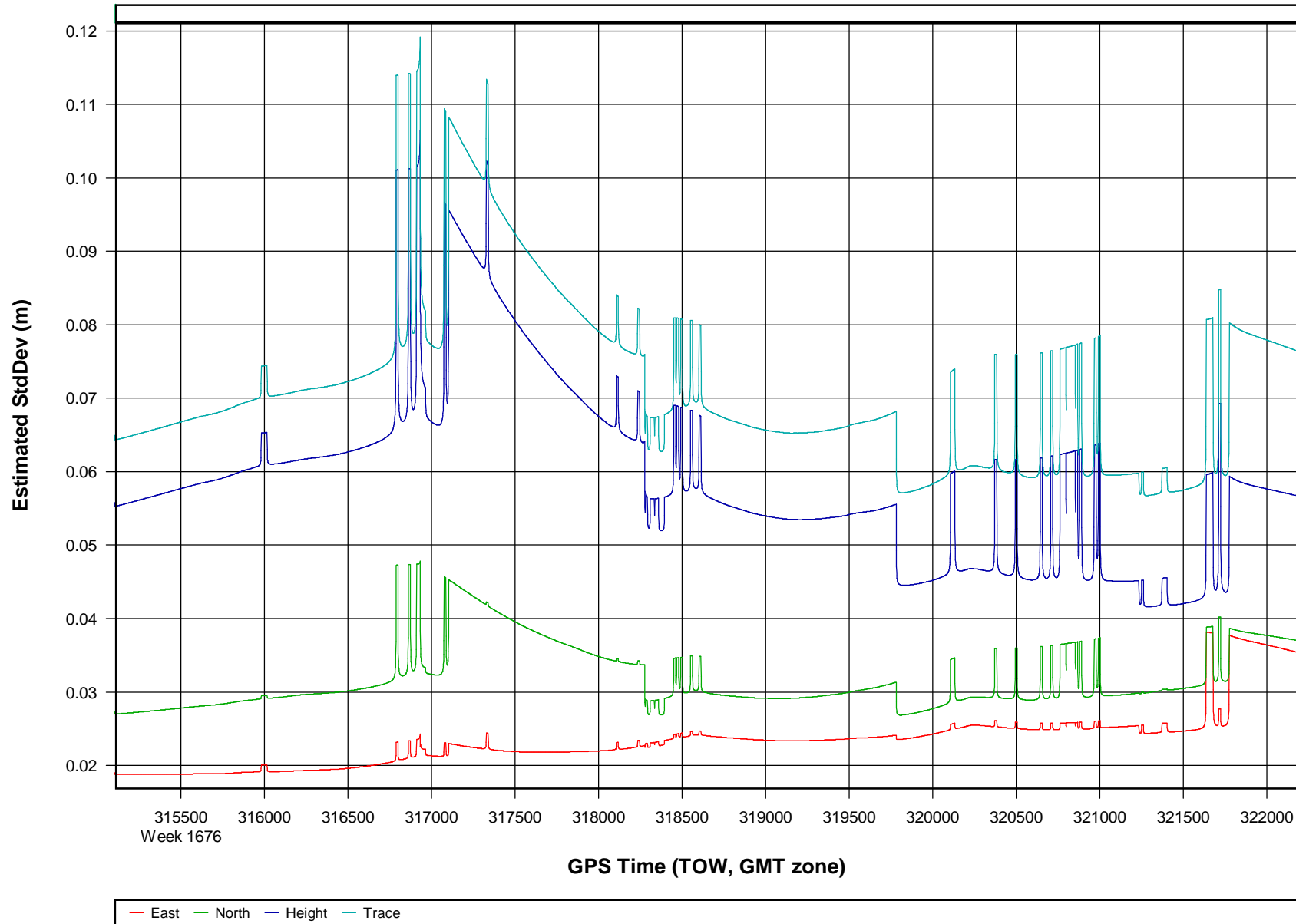
o112053a [Combined] - Forward/Reverse or Combined Separation Plot



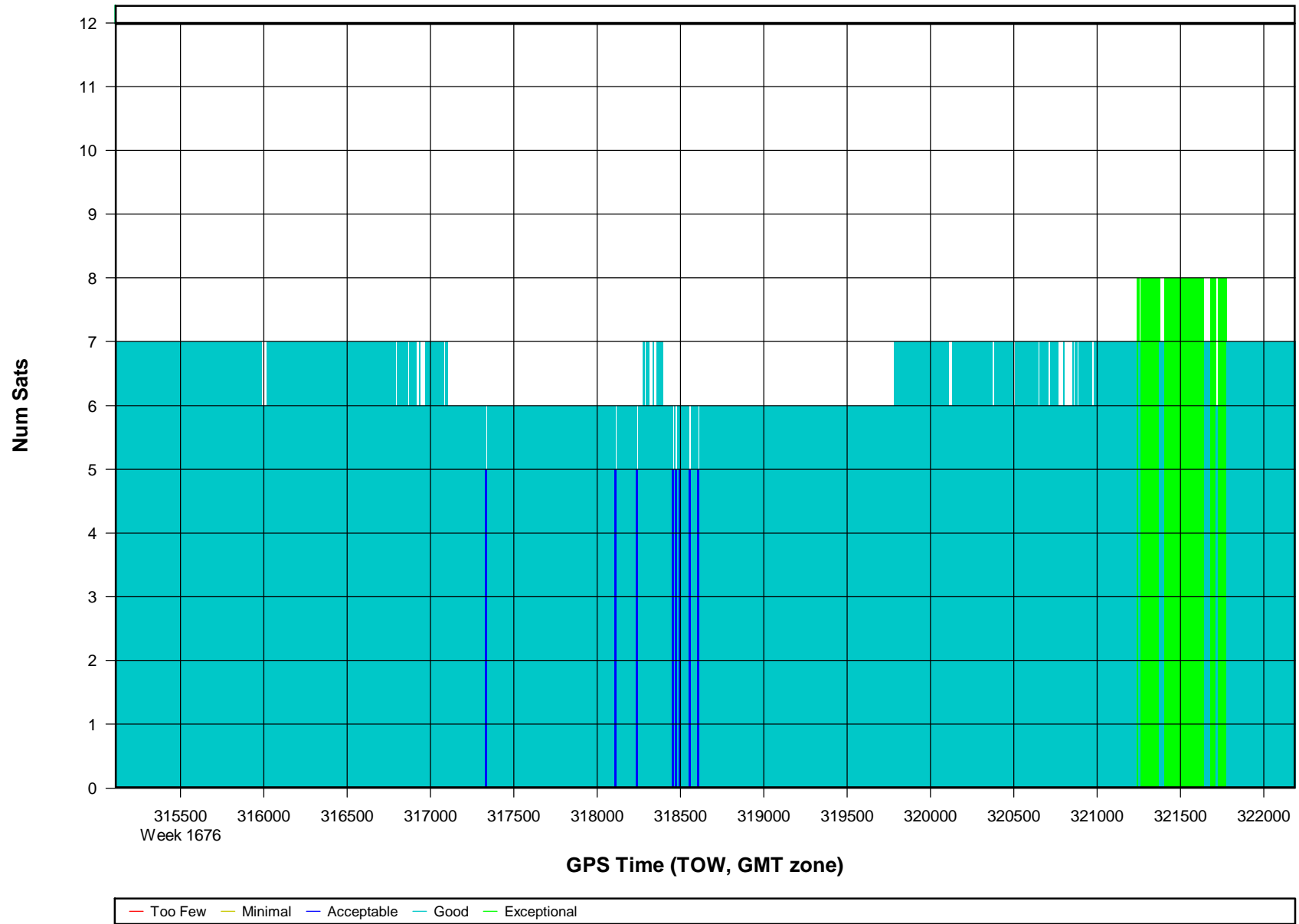
o112053a [Combined] - PDOP, HDOP, VDOP Plots



o112053a [Combined] - Estimated Position Accuracy Plot



o112053a [Combined] - Number of Satellites Bar Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112053a\3_Processed\GPS\o112053a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	70989
No processed position:	63902
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0152 (m)
C/A Code:	0.80 (m)
L1 Doppler:	0.038 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.007 (m)
North:	0.007 (m)
Height:	0.019 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (7082 occurrences):

East:	0.007 (m)
North:	0.007 (m)
Height:	0.017 (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:	96.0 %
0.10 - 0.30 m:	4.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

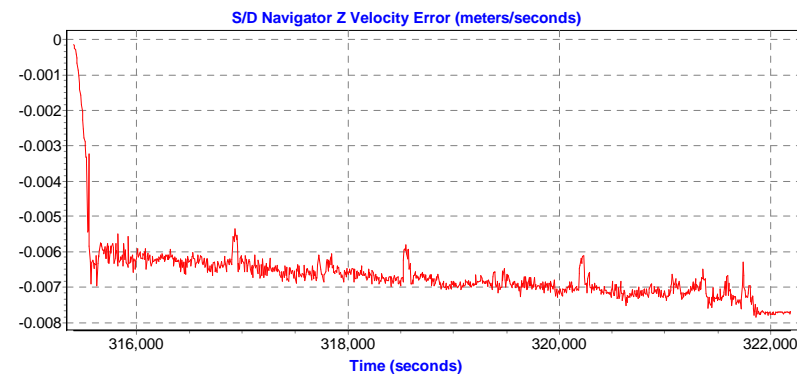
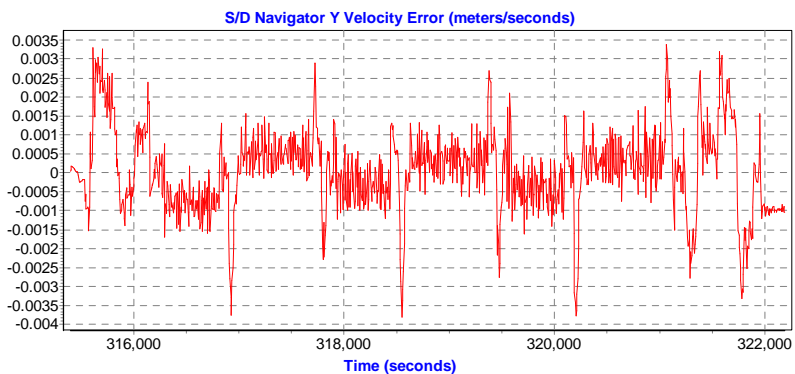
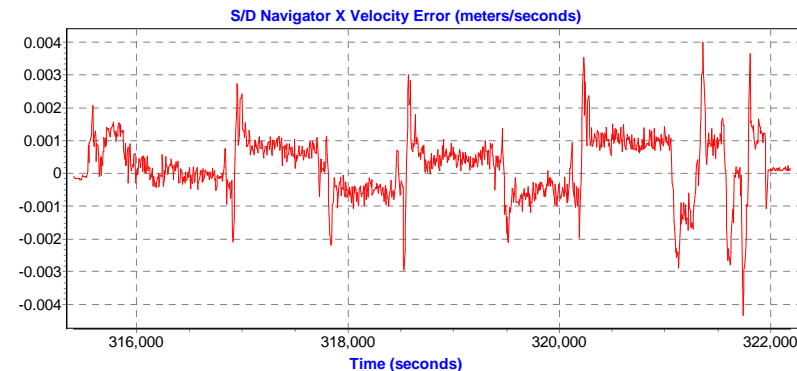
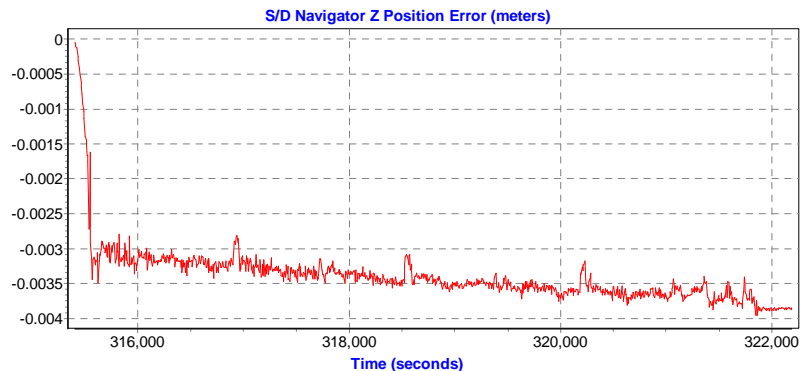
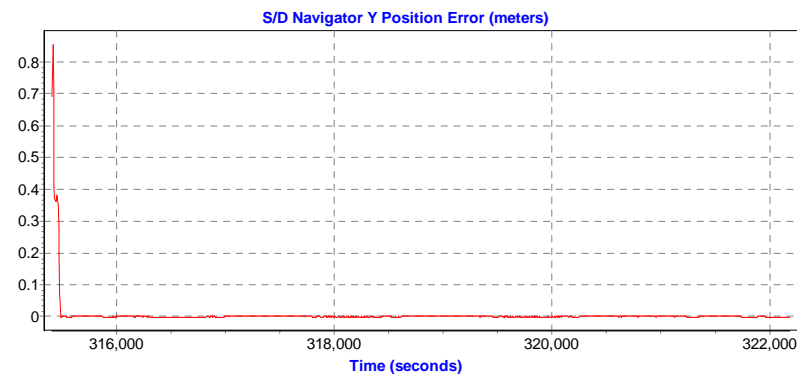
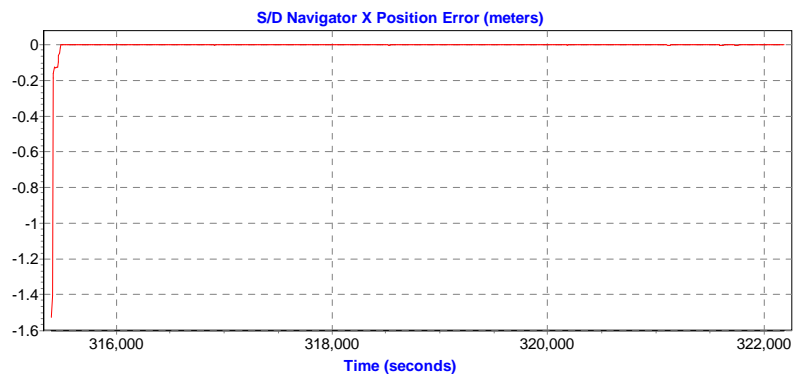
Percentages of epochs with DD_DOP over 10.00:

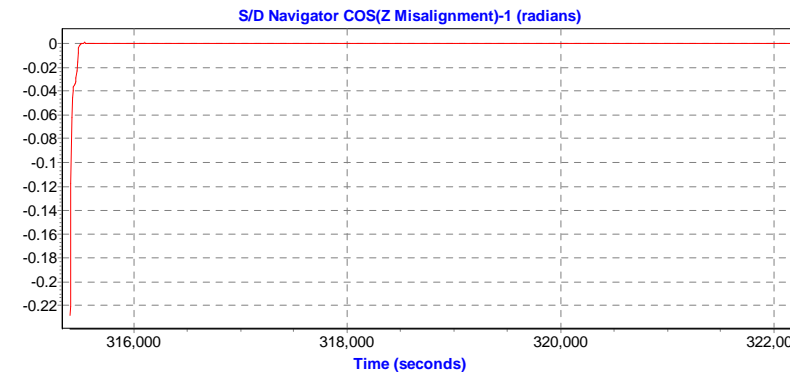
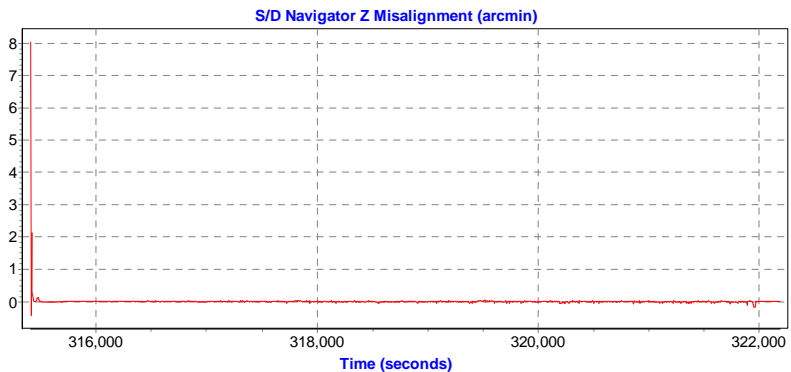
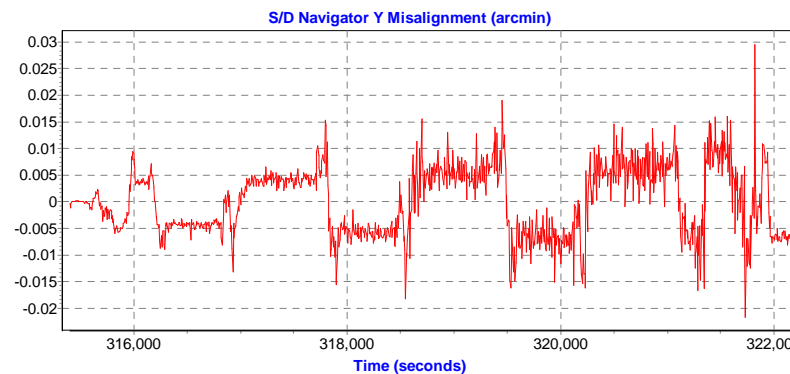
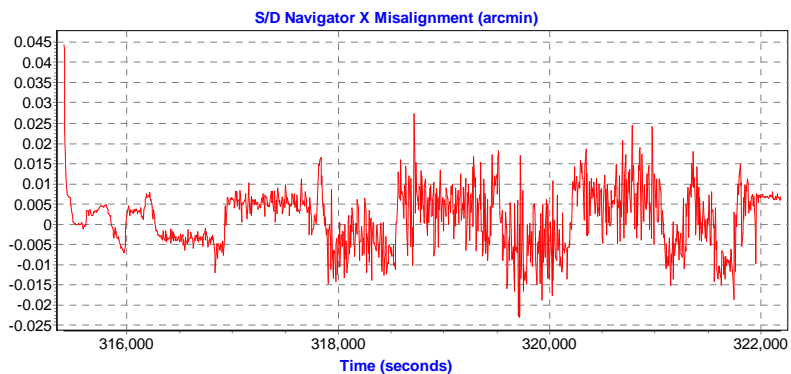
DOP over Tol:	0.0 %
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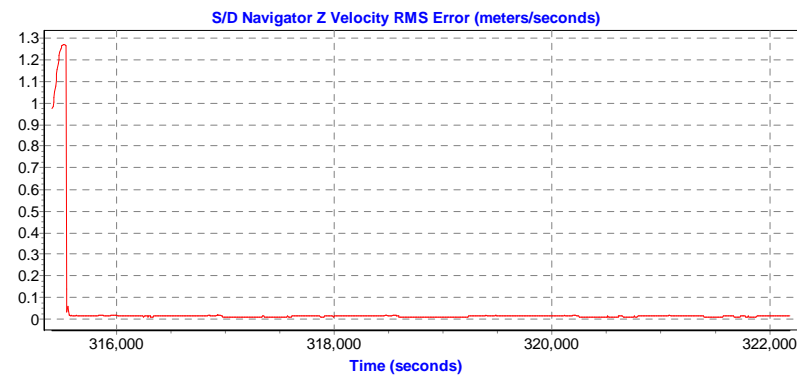
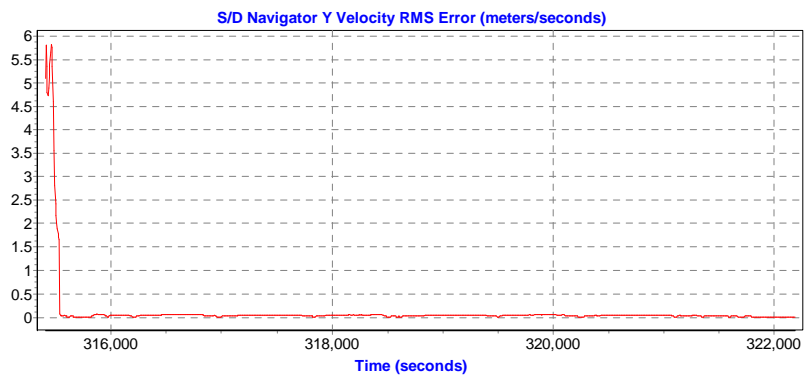
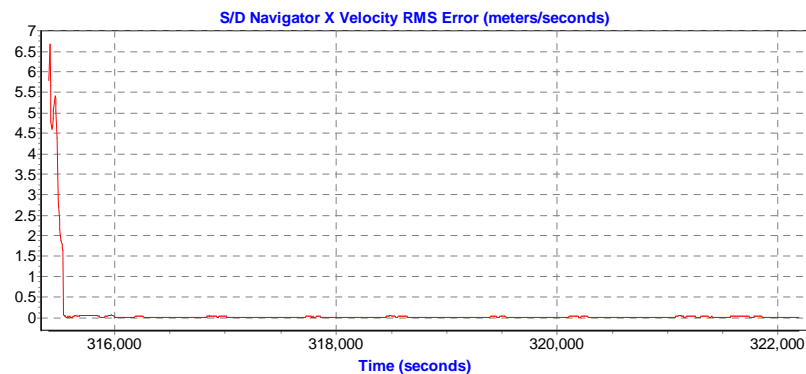
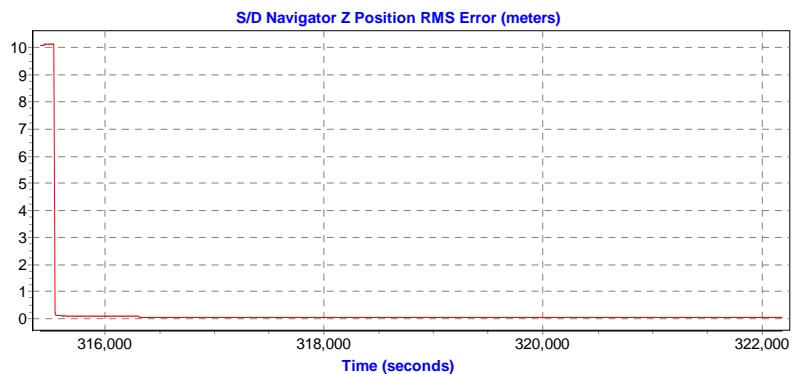
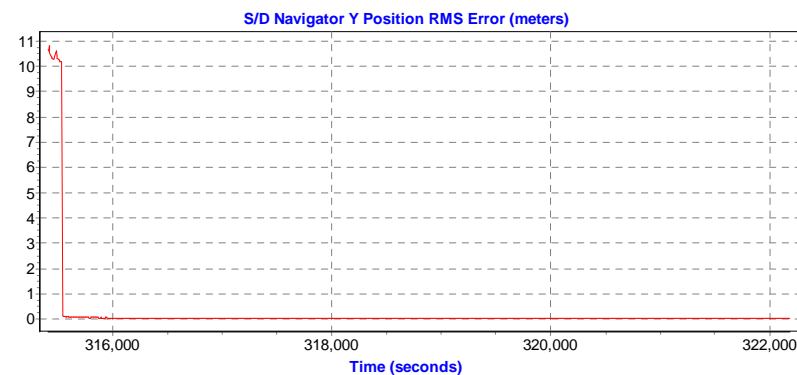
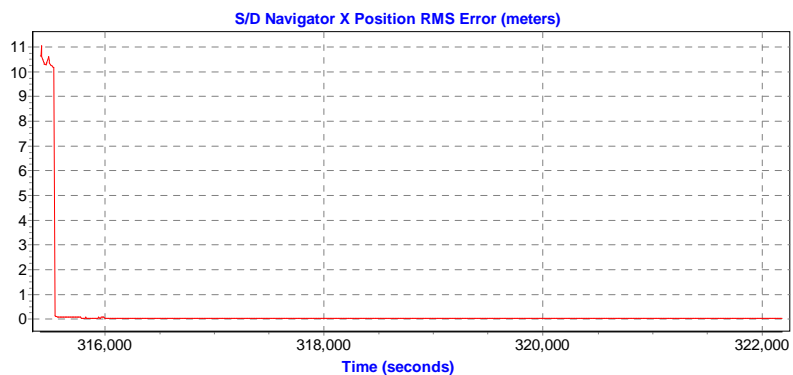
Baseline Distances:

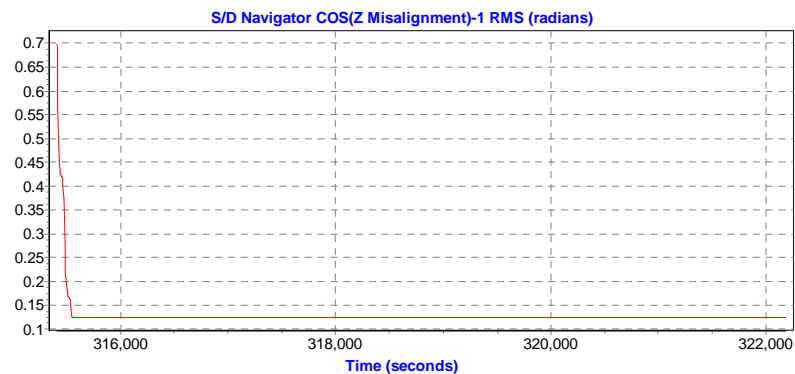
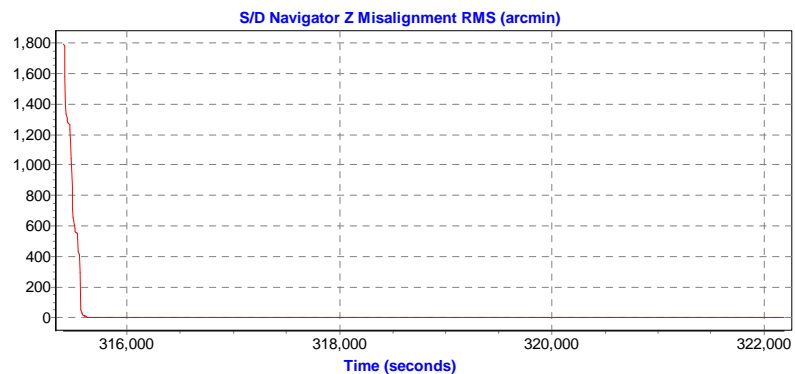
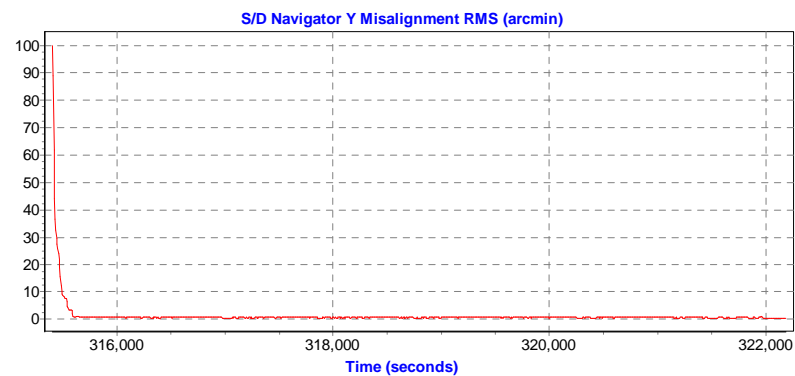
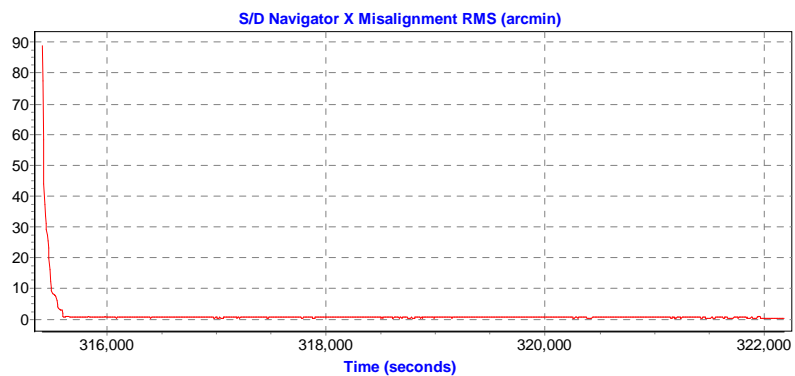
Maximum:	45.684 (km)
Minimum:	0.664 (km)
Average:	17.563 (km)
First Epoch:	8.015 (km)
Last Epoch:	8.016 (km)

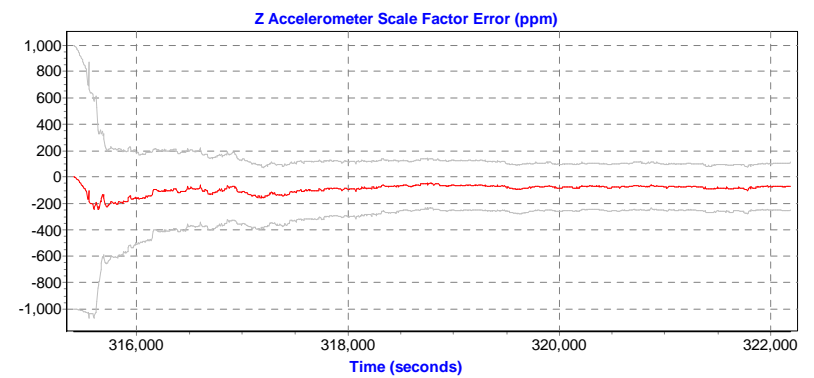
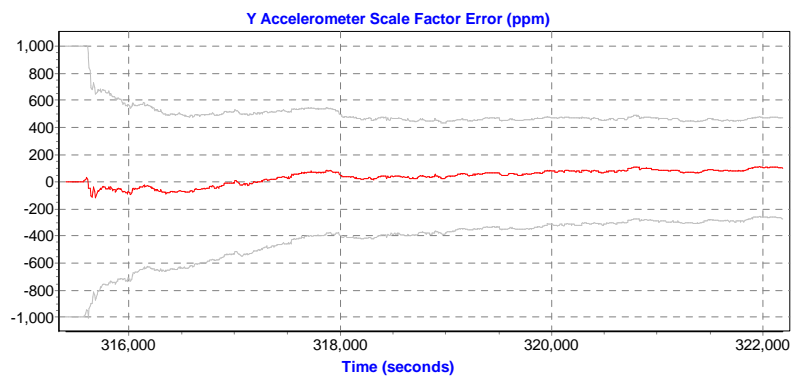
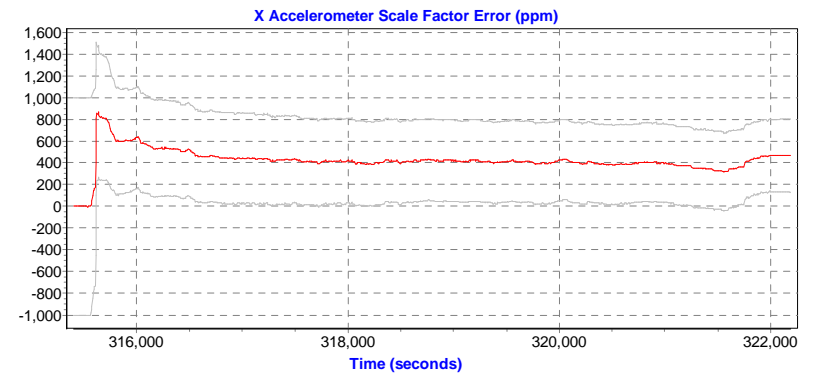
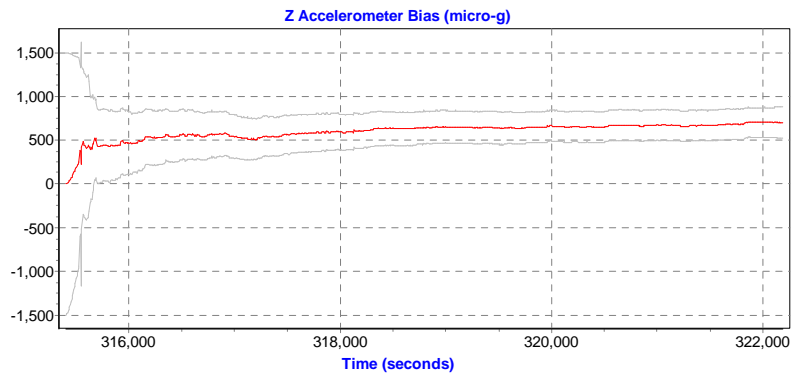
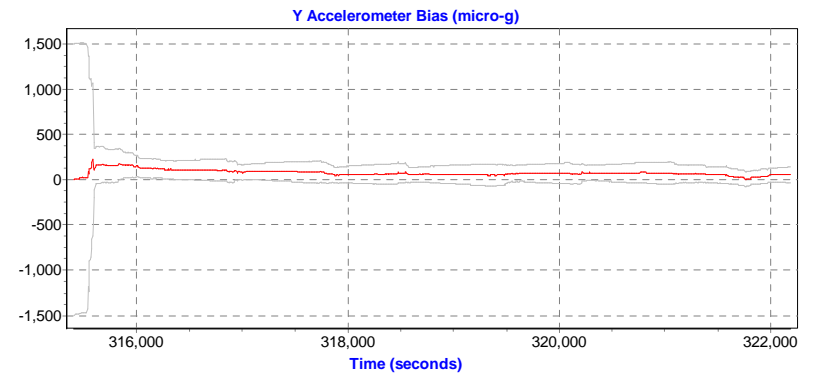
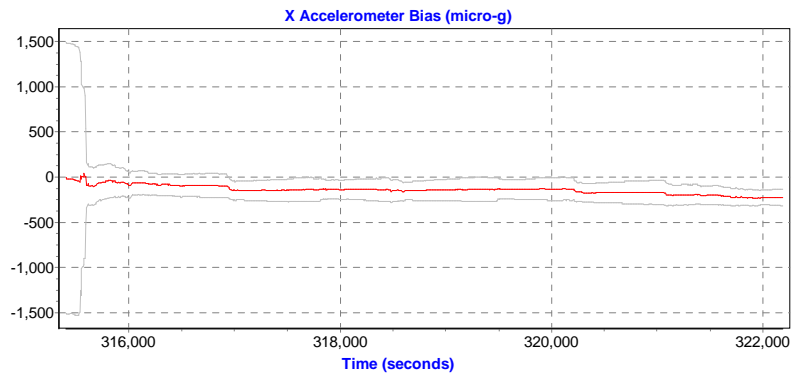
Estimated Errors and RMS

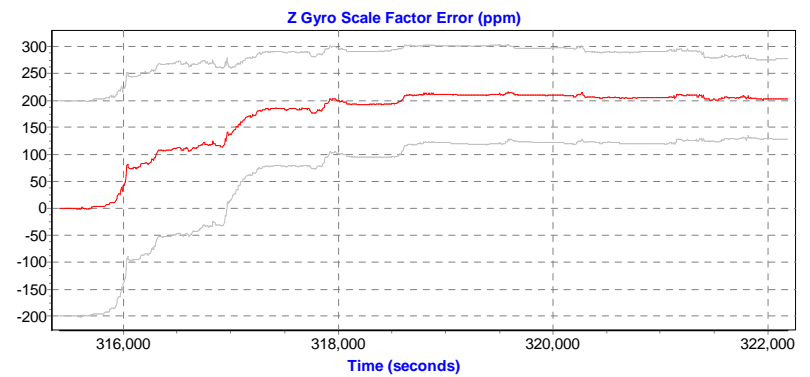
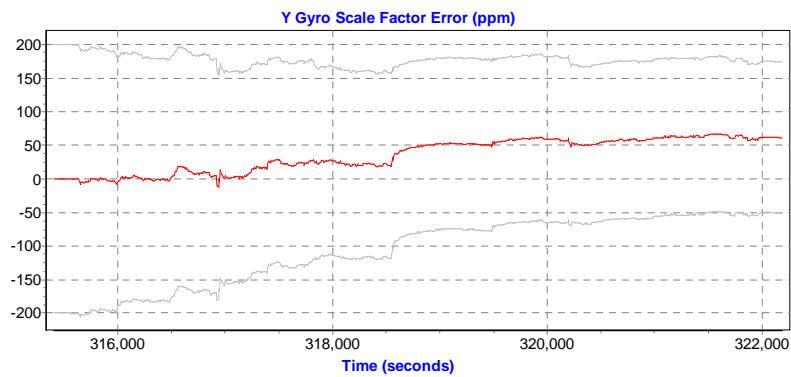
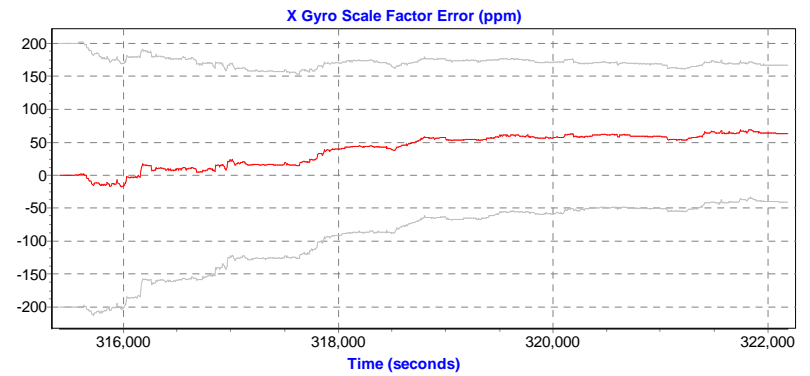
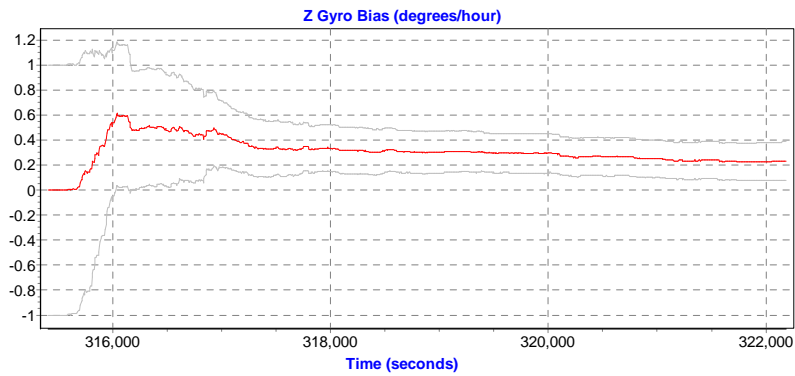
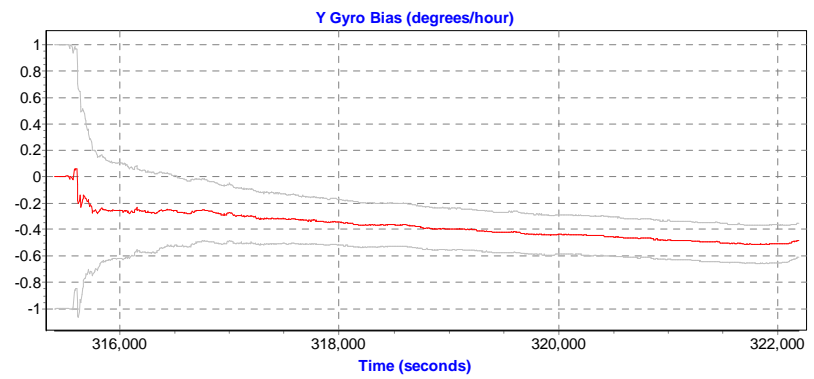
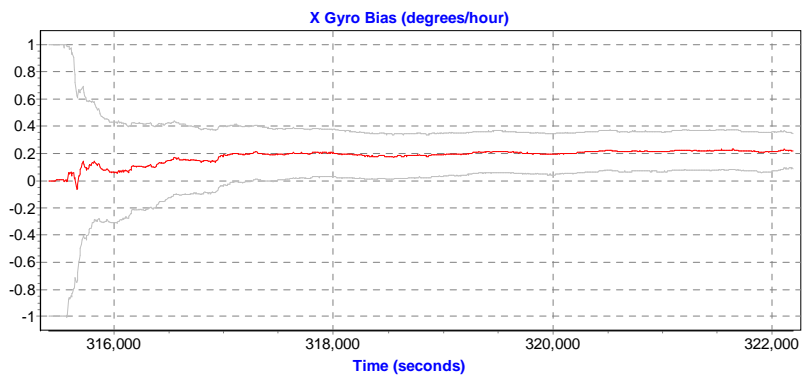


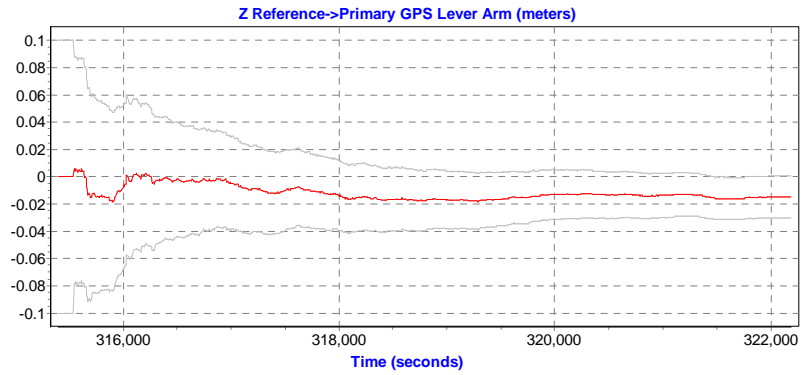
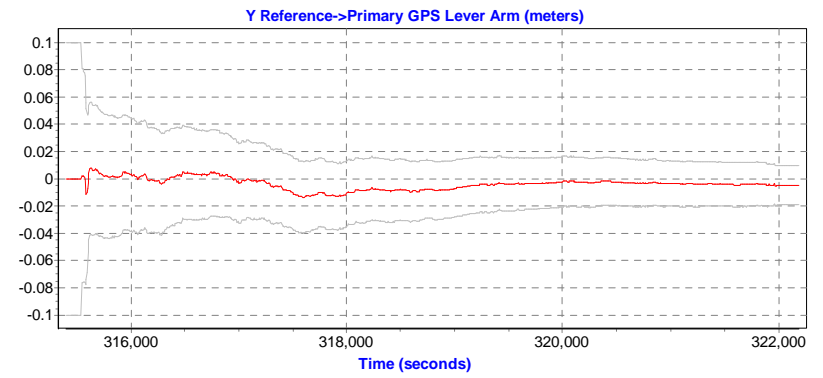
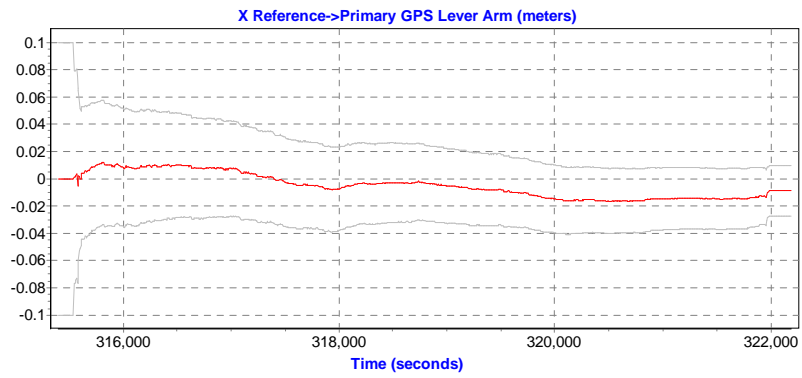






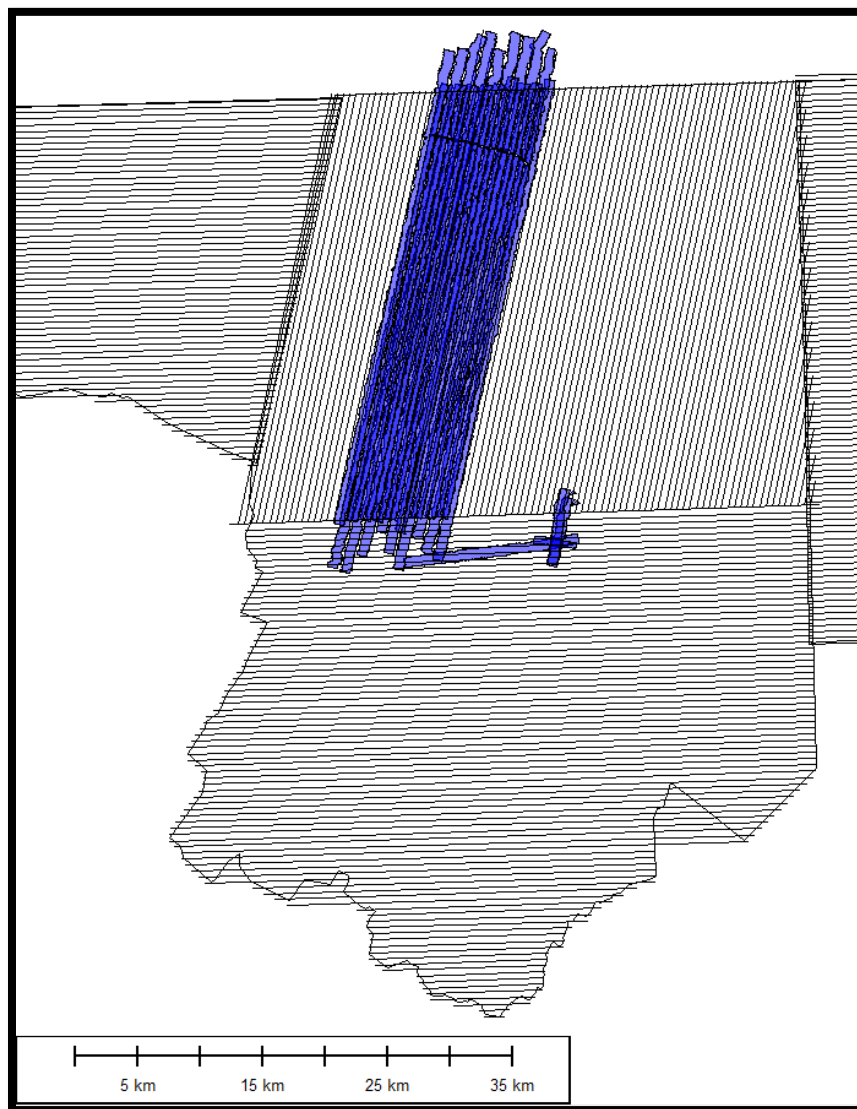






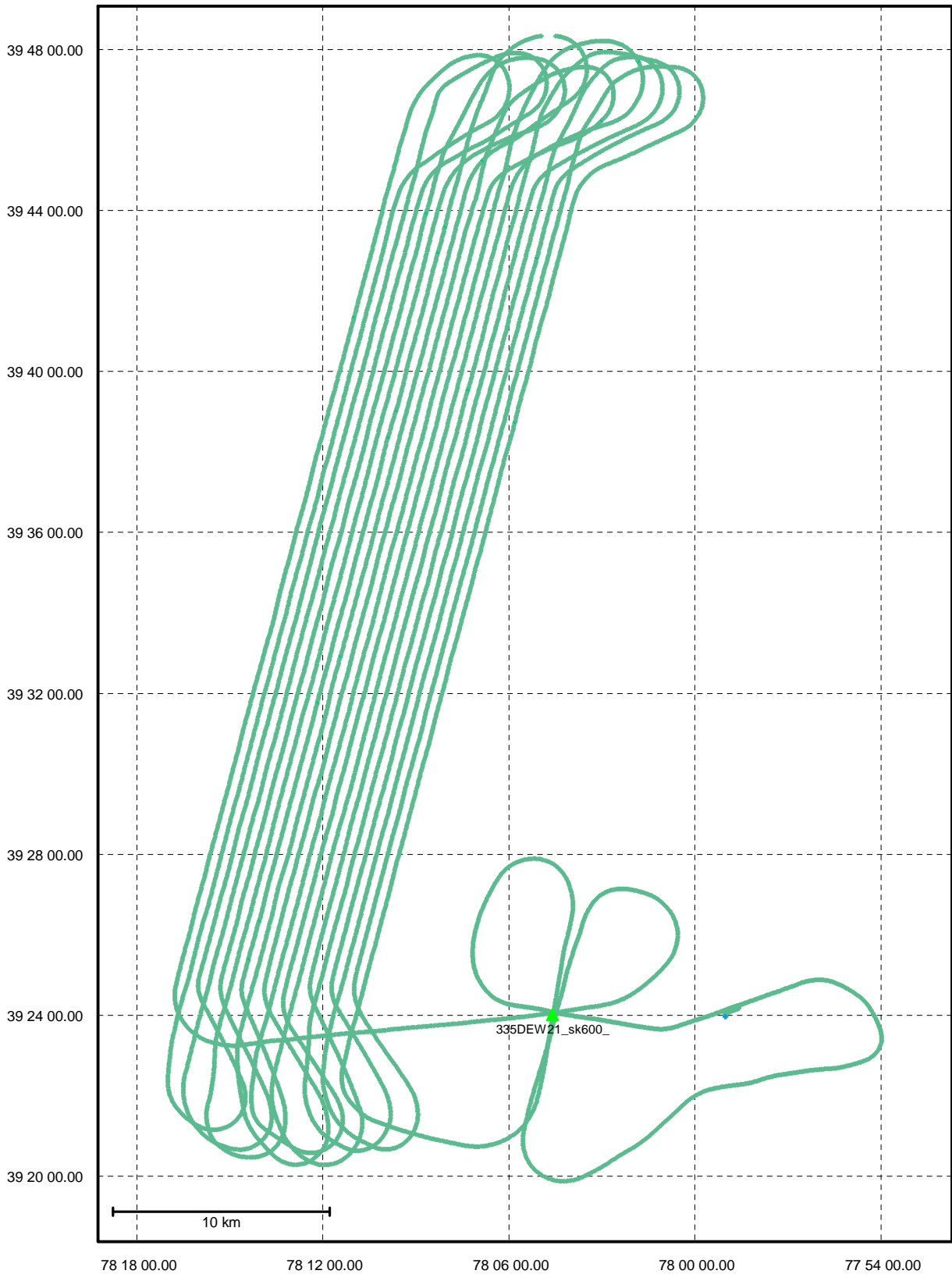
Mission: o112057a

February 26, 2012



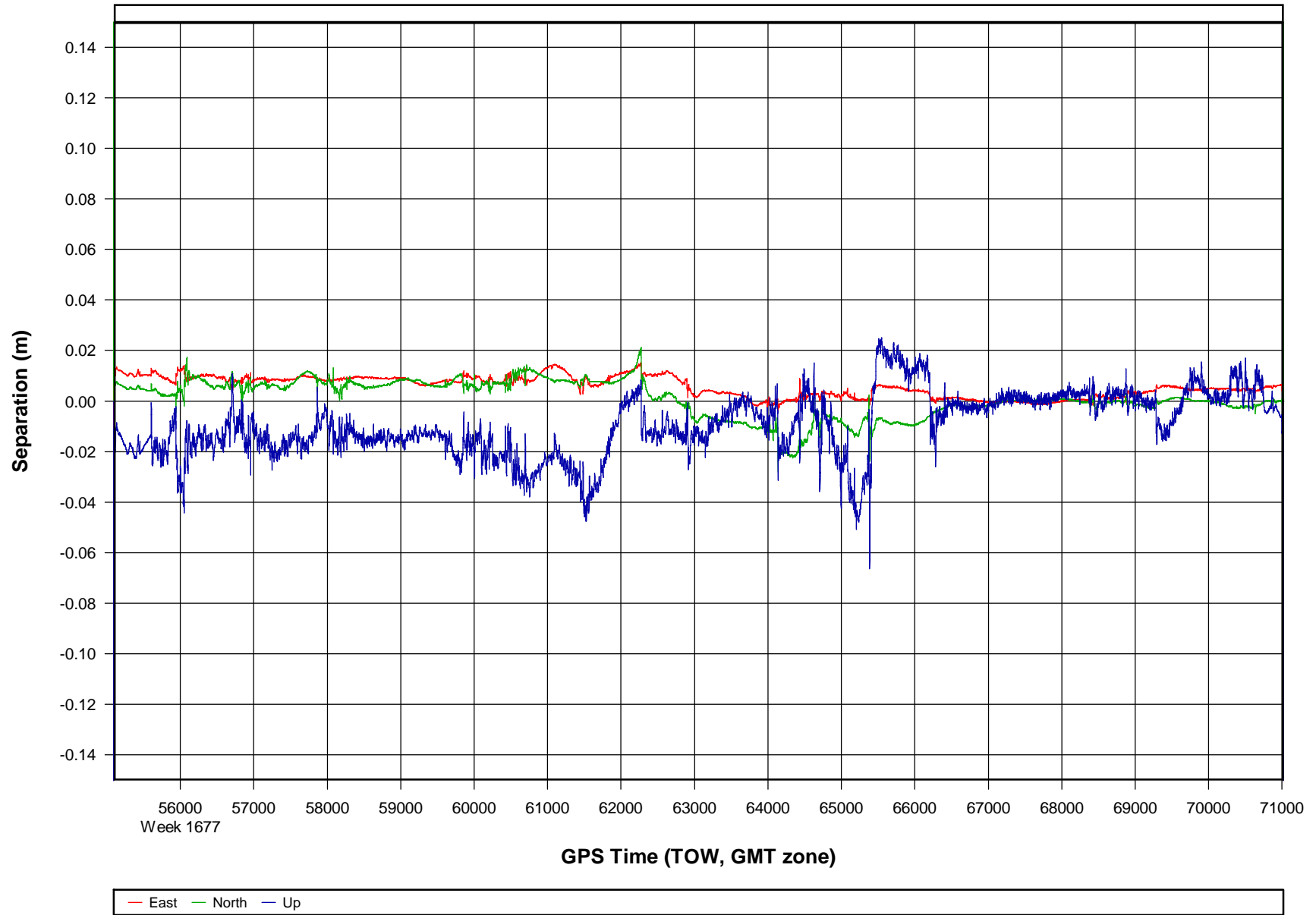
Combined - Map Run (1)

Geographic, DMS

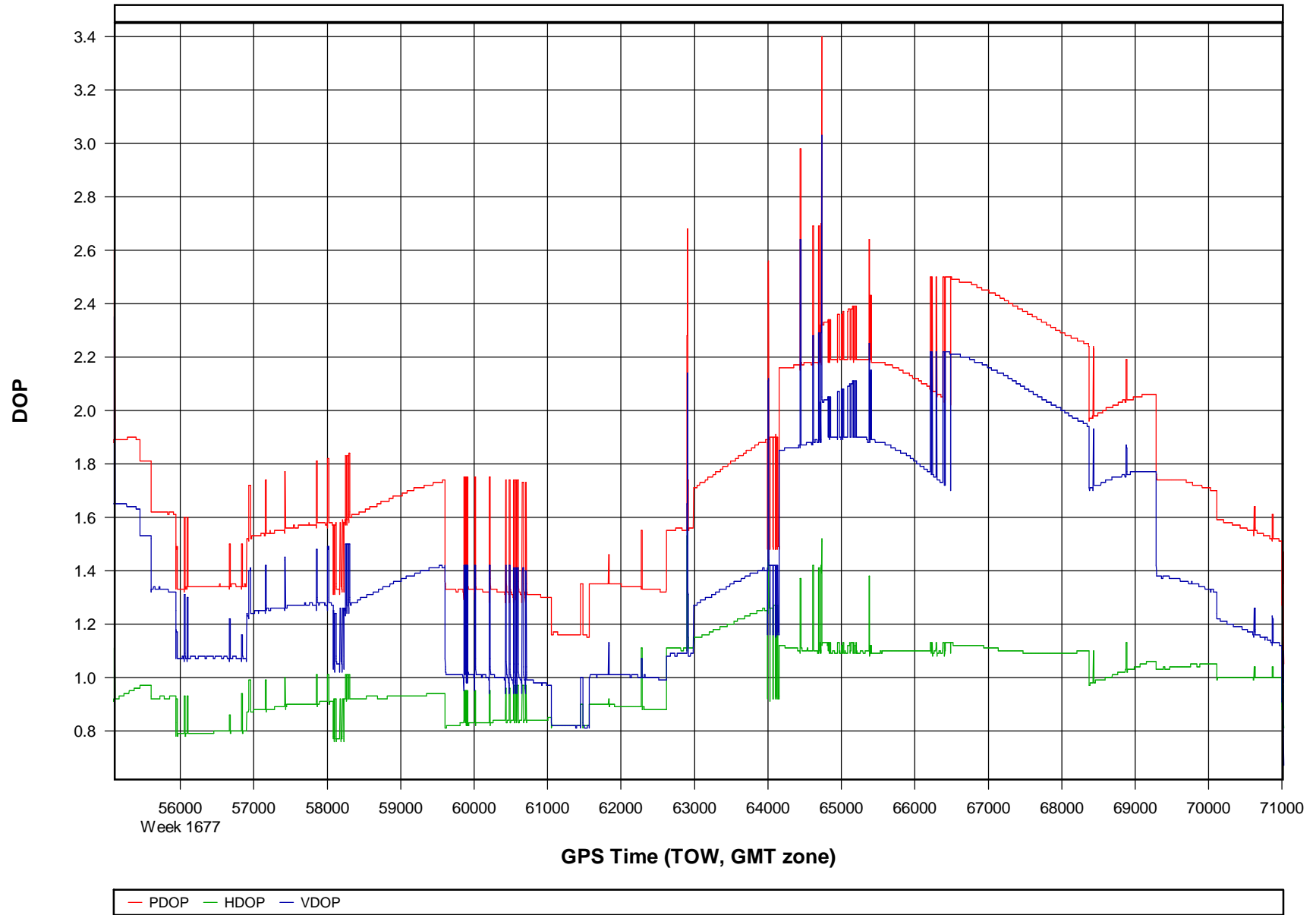


+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

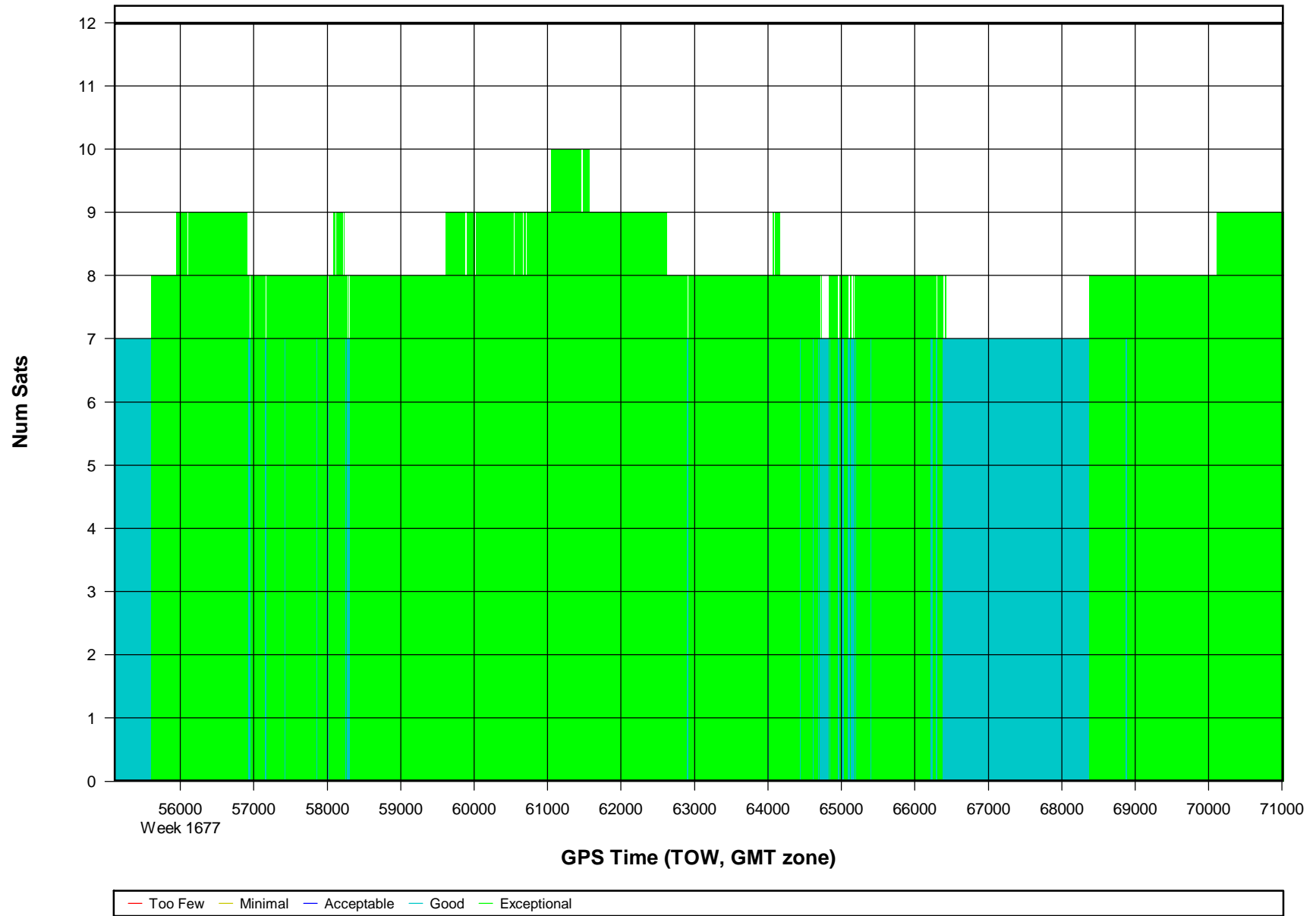
o112057a [Combined] - Forward/Reverse or Combined Separation Plot



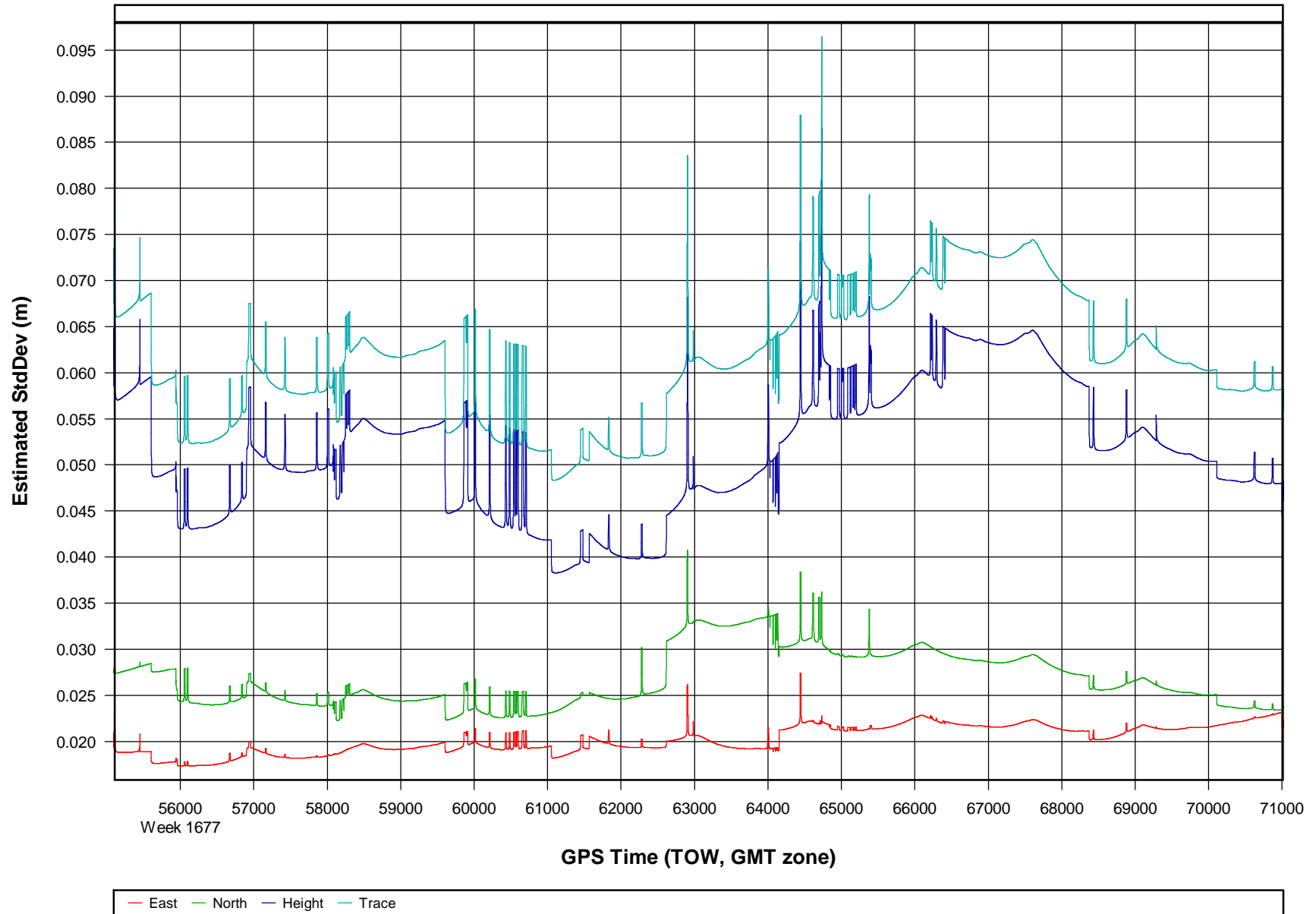
o112057a [Combined] - PDOP, HDOP, VDOP Plots



o112057a [Combined] - Number of Satellites Bar Plot



o112057a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112057a\3_Processed\GPS\o112057a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	159432
No processed position:	143501
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0151 (m)
C/A Code:	0.75 (m)
L1 Doppler:	0.036 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.008 (m)
North:	0.010 (m)
Height:	0.019 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (15926 occurrences):

East:	0.007 (m)
North:	0.007 (m)
Height:	0.016 (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 %

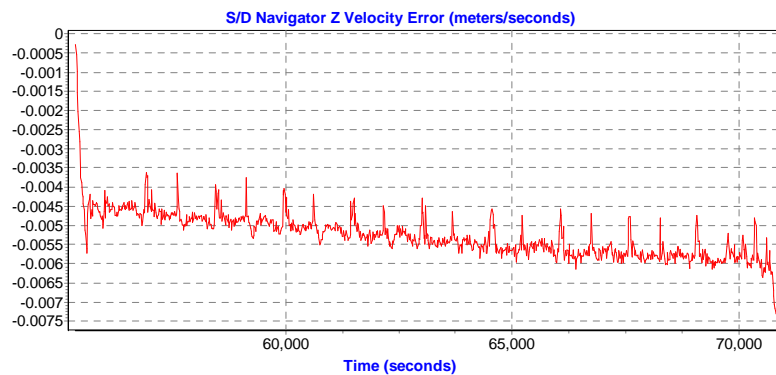
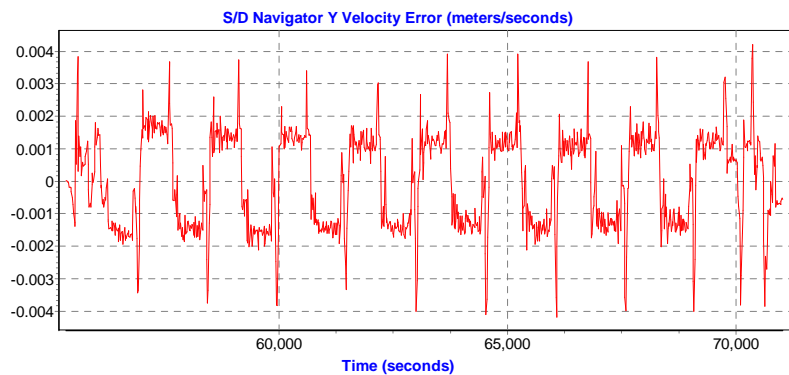
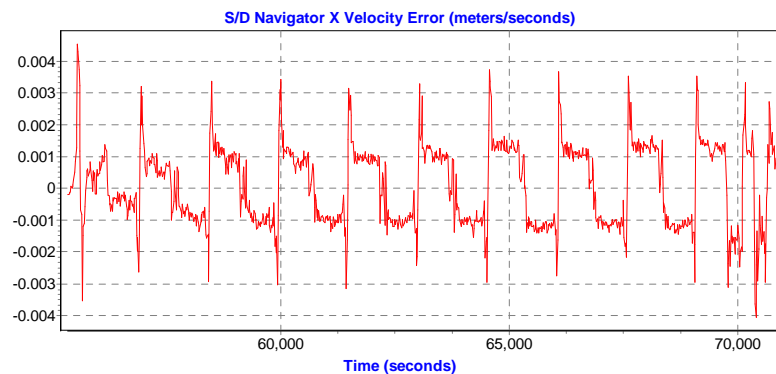
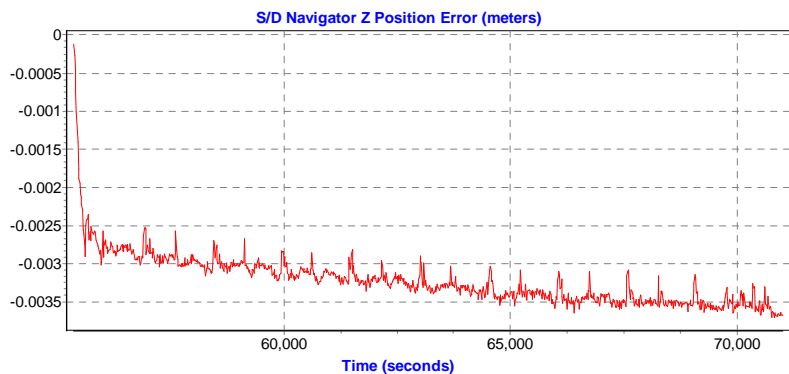
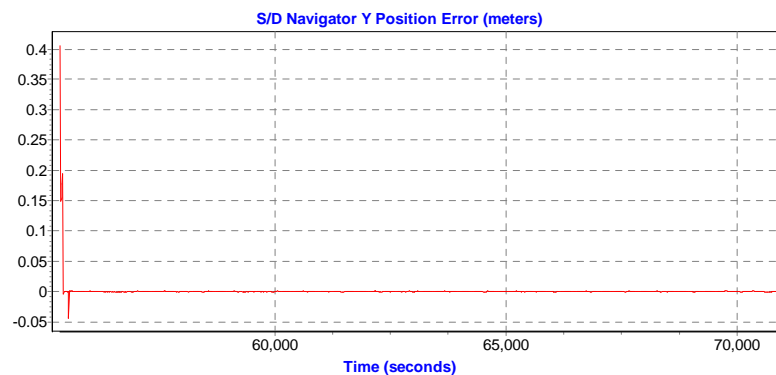
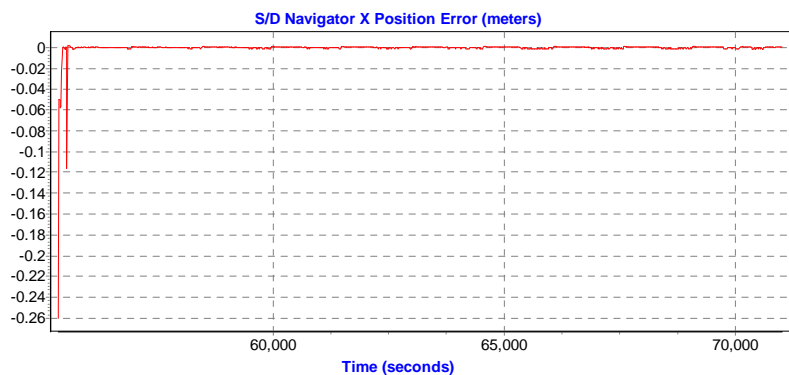
Percentages of epochs with DD_DOP over 10.00:

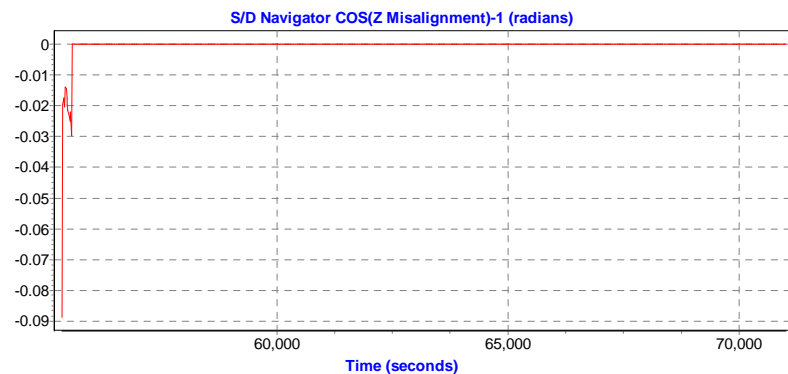
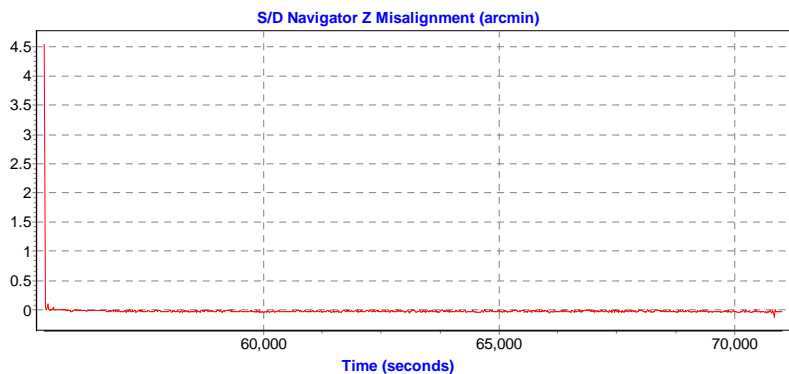
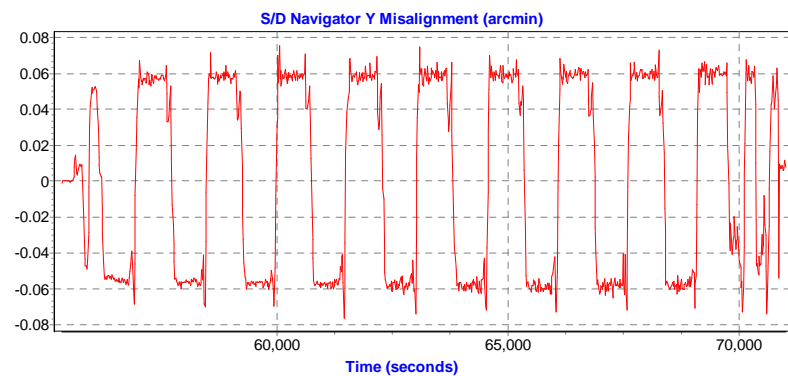
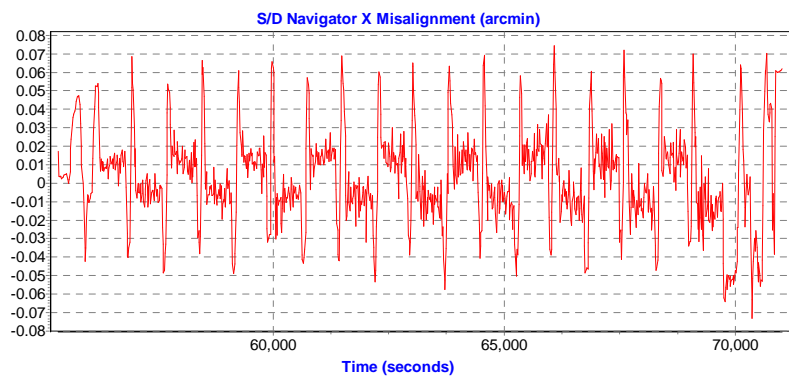
DOP over Tol:	0.0 %
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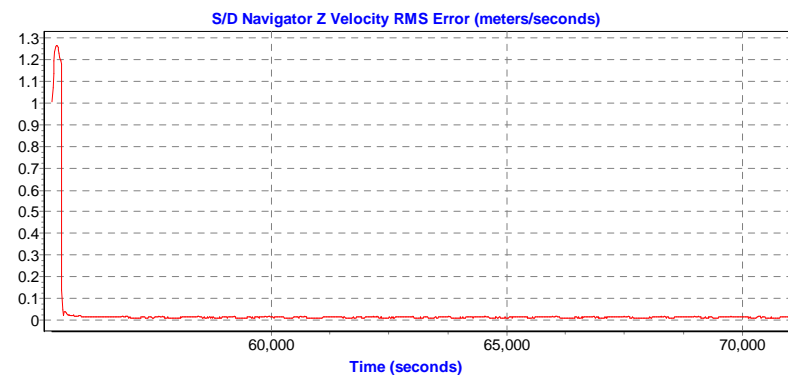
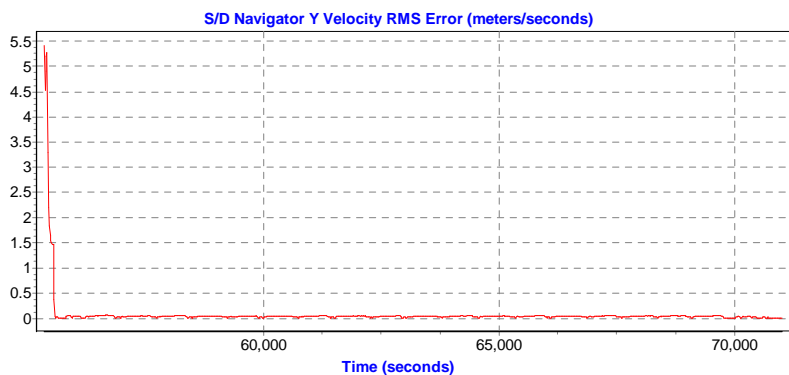
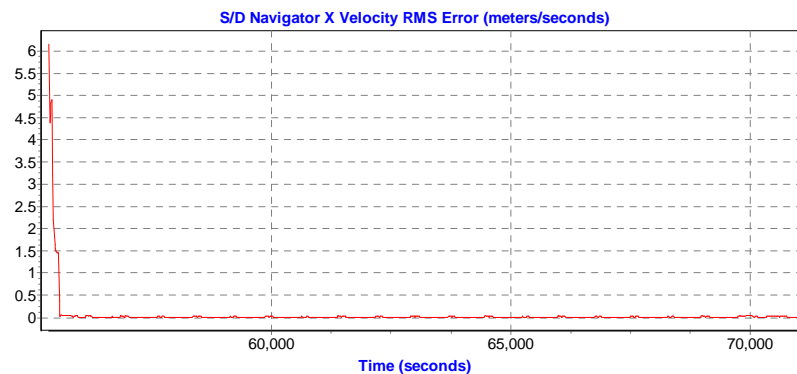
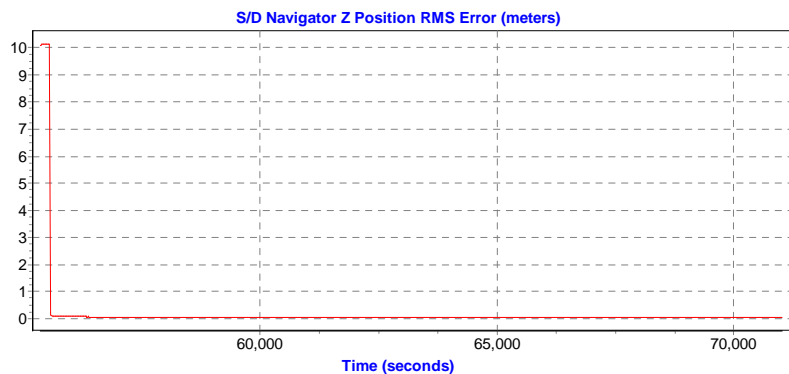
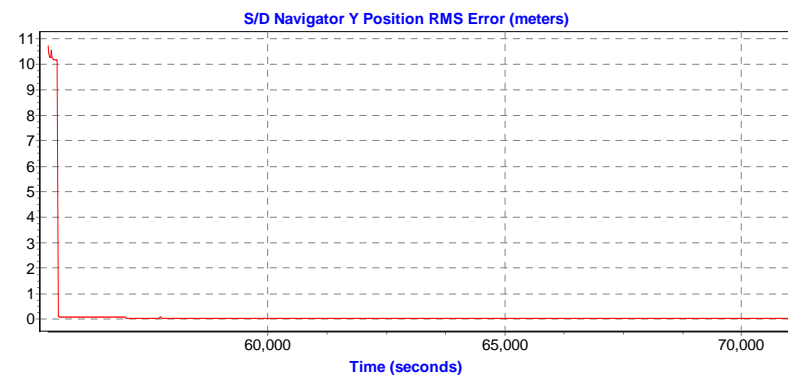
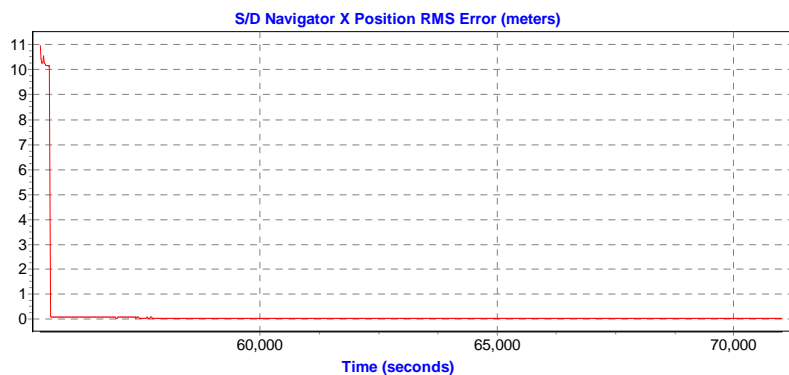
Baseline Distances:

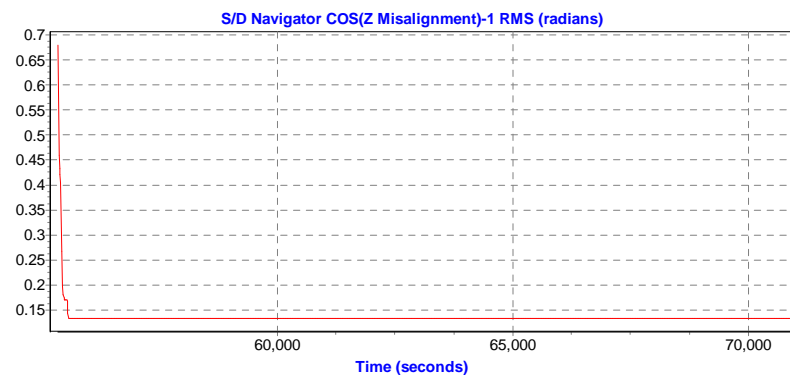
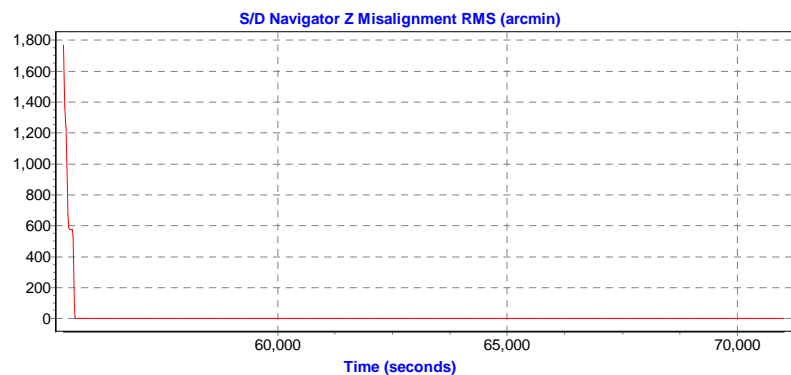
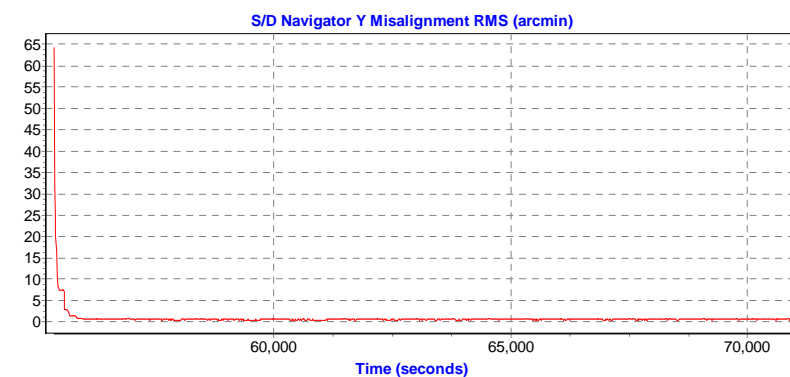
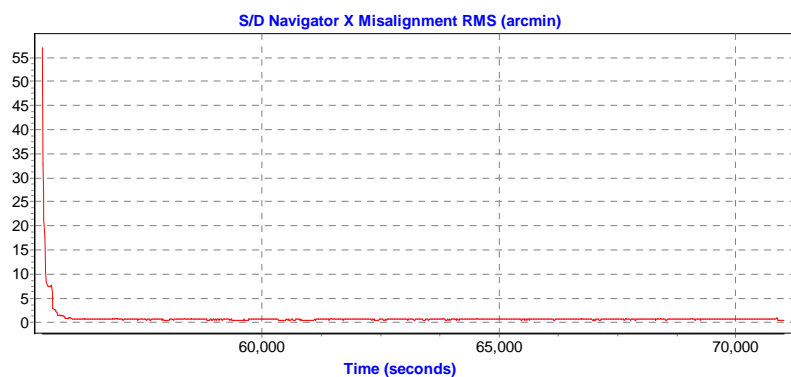
Maximum:	45.046 (km)
Minimum:	0.664 (km)
Average:	21.696 (km)
First Epoch:	8.014 (km)
Last Epoch:	8.016 (km)

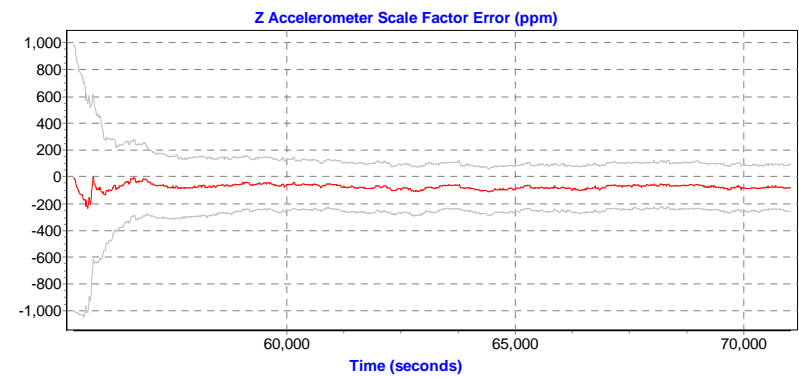
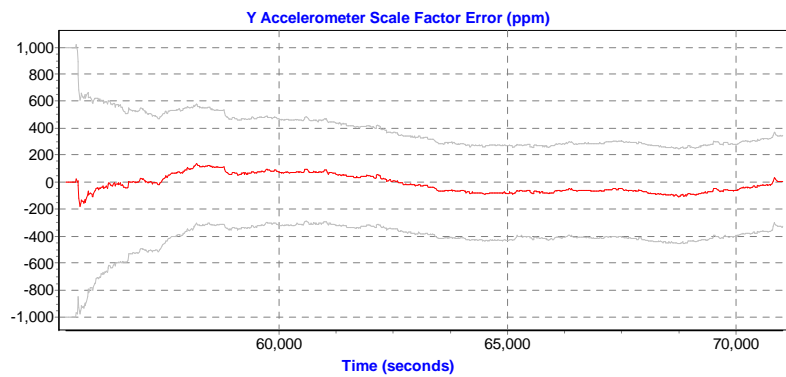
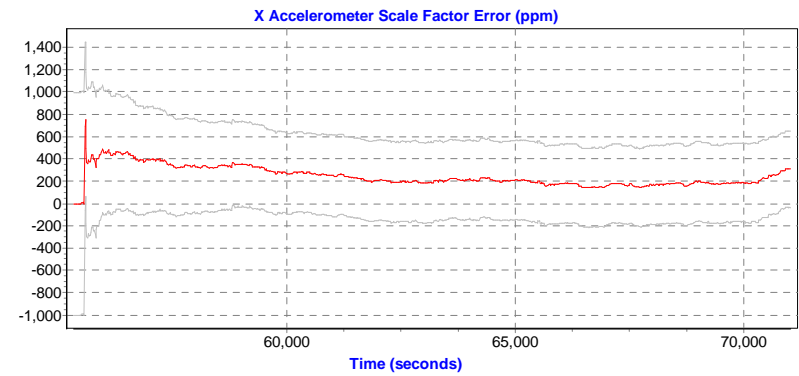
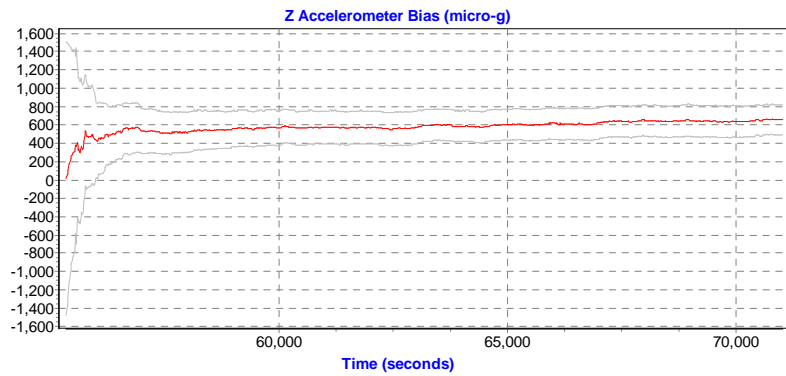
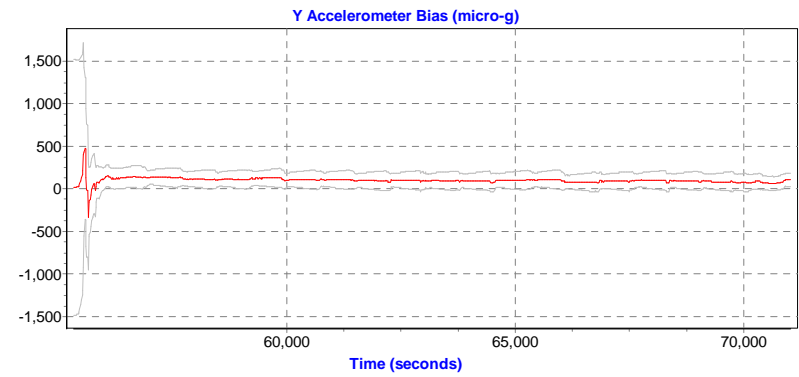
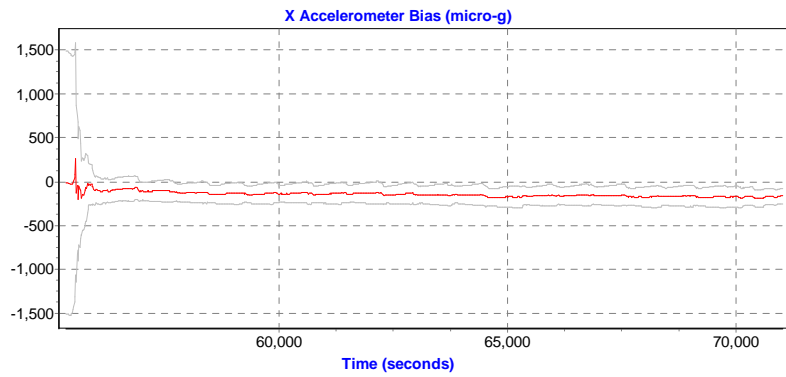
Estimated Errors and RMS

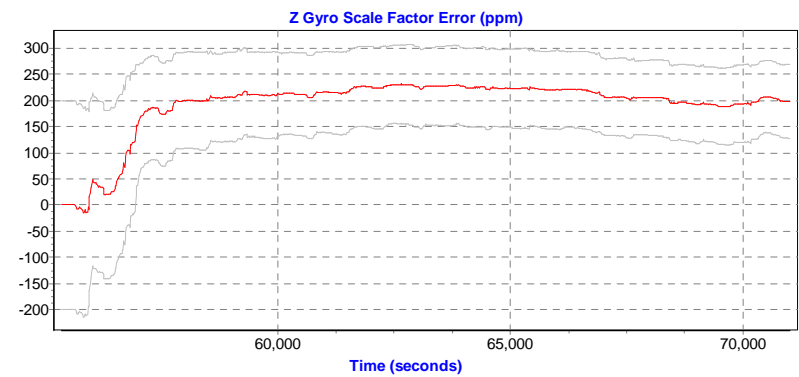
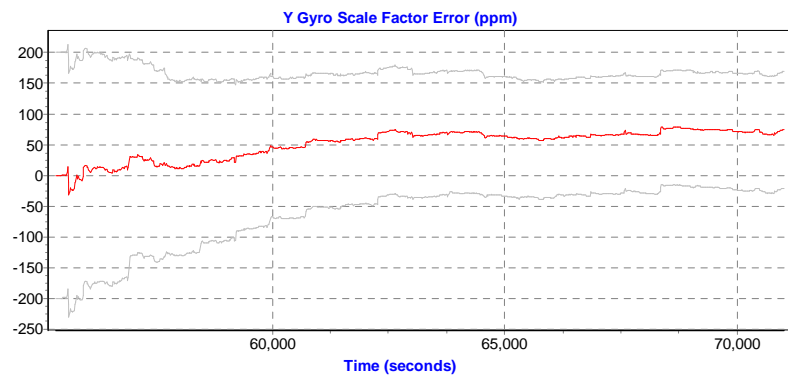
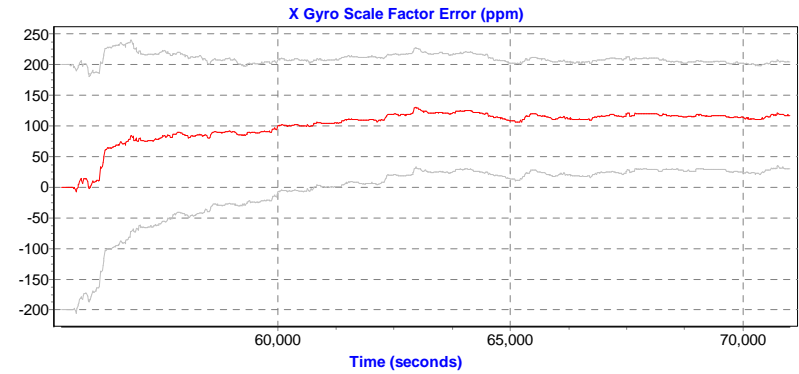
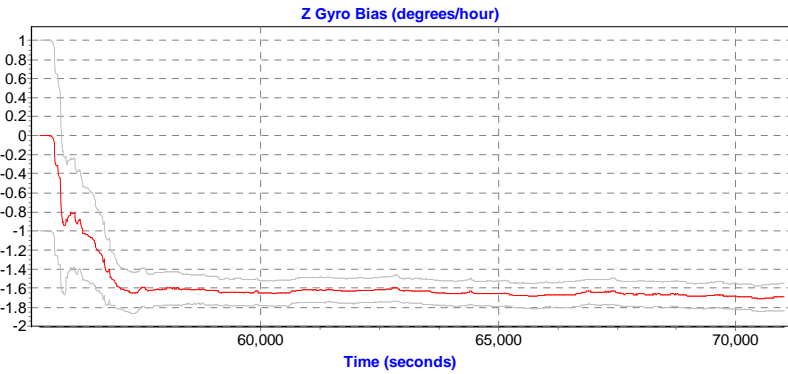
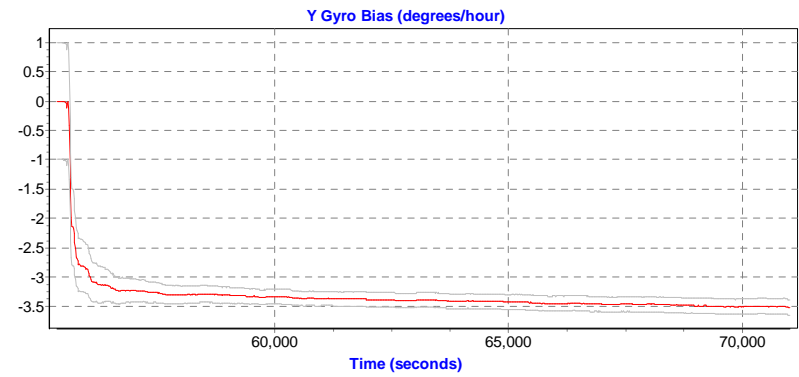
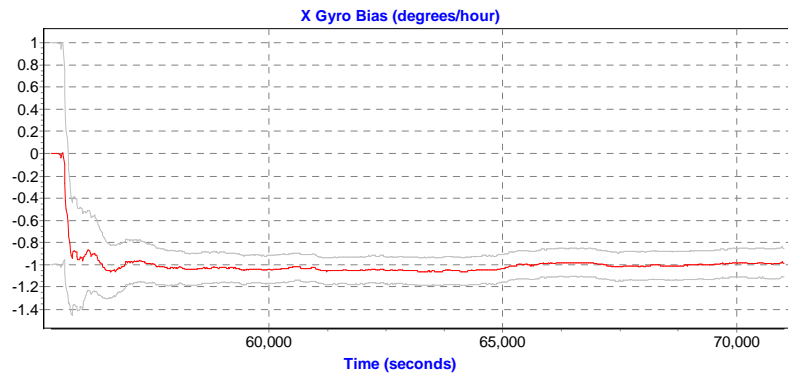


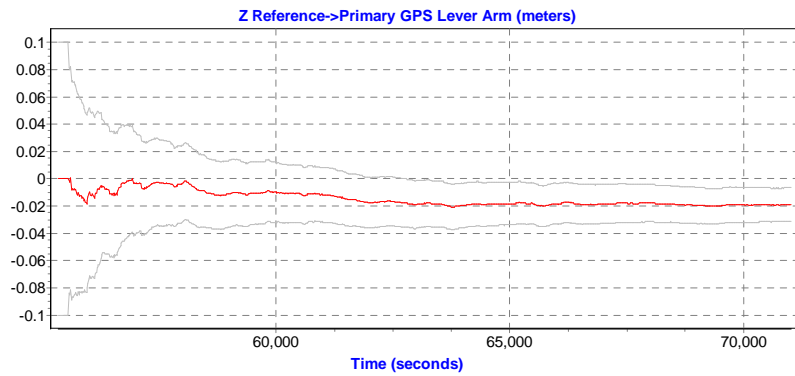
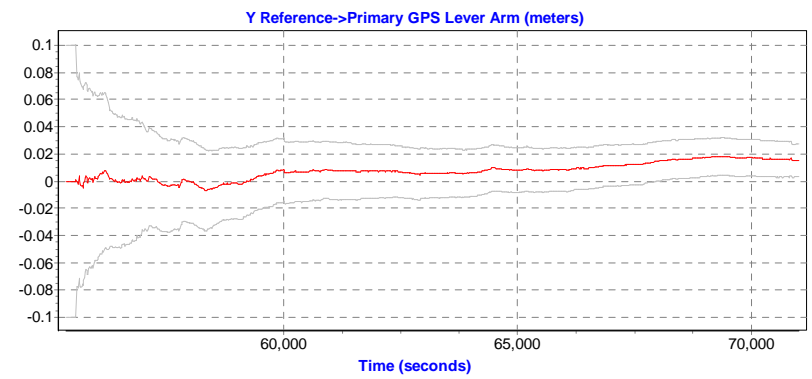
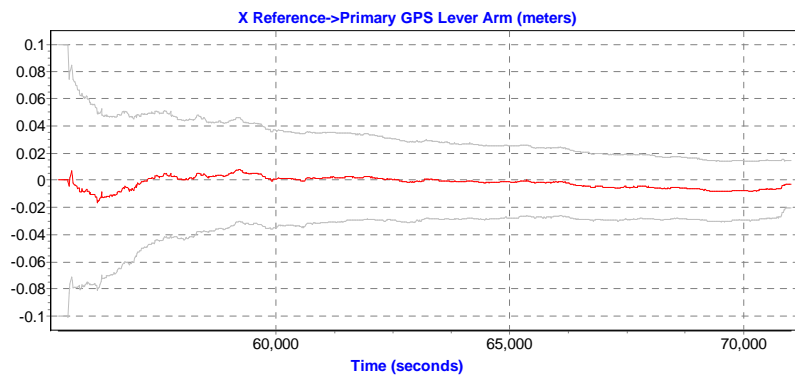






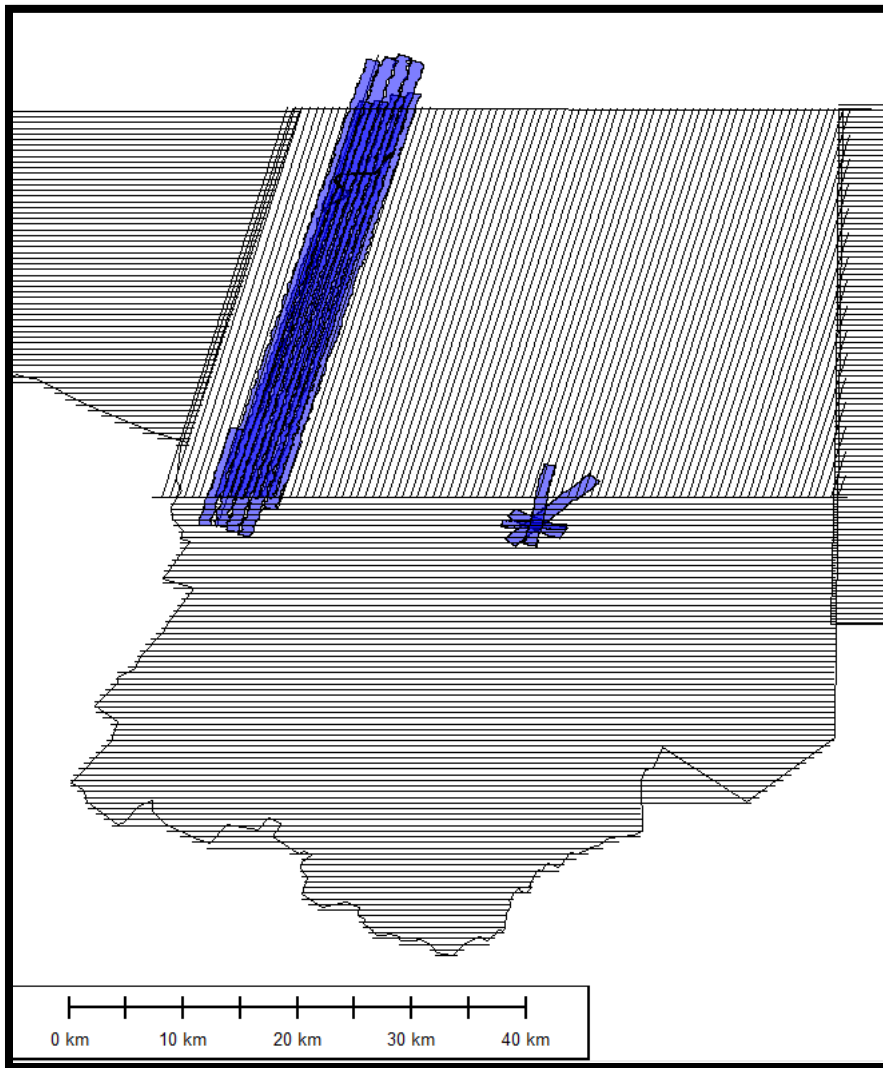






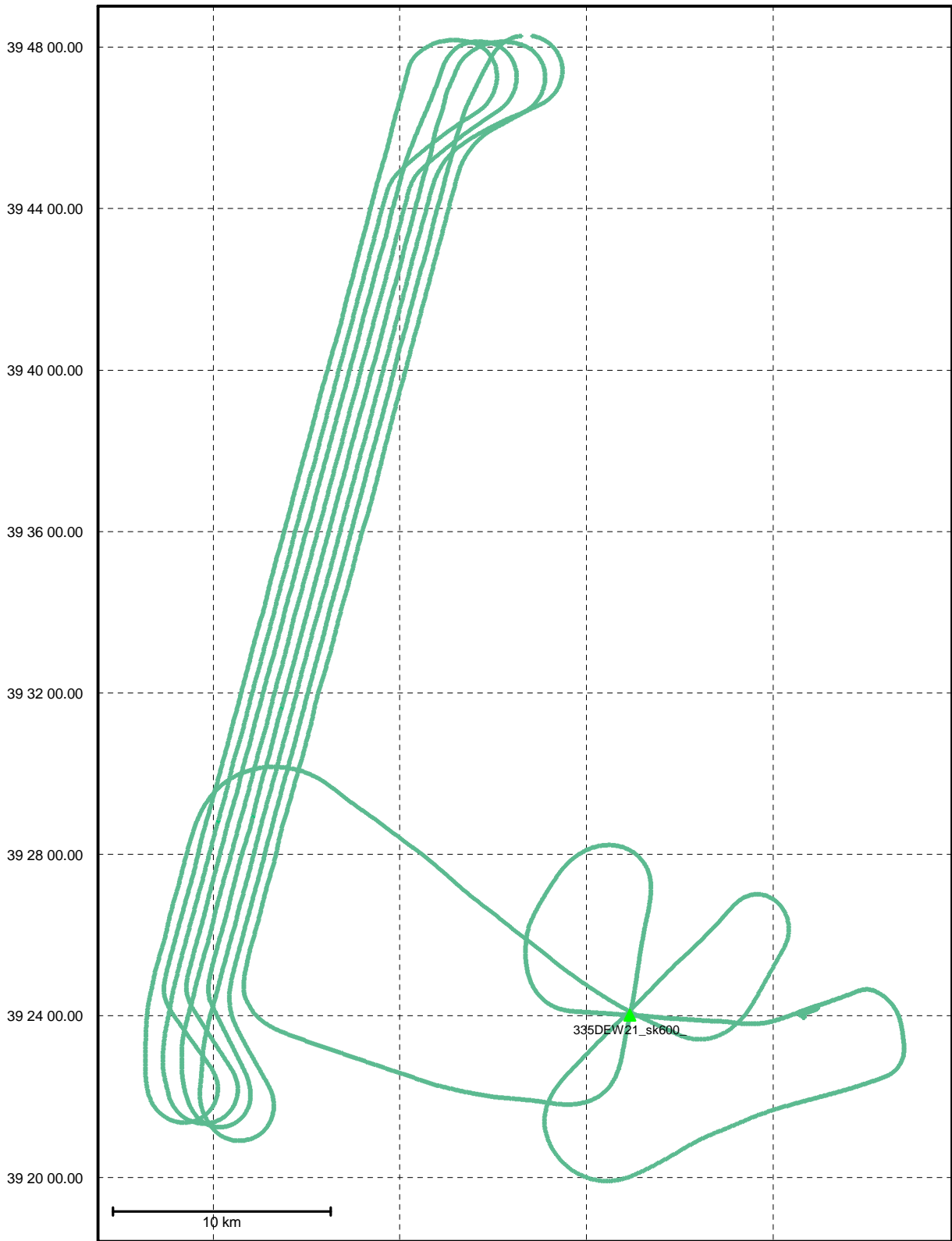
Mission: o112057b

February 26, 2012



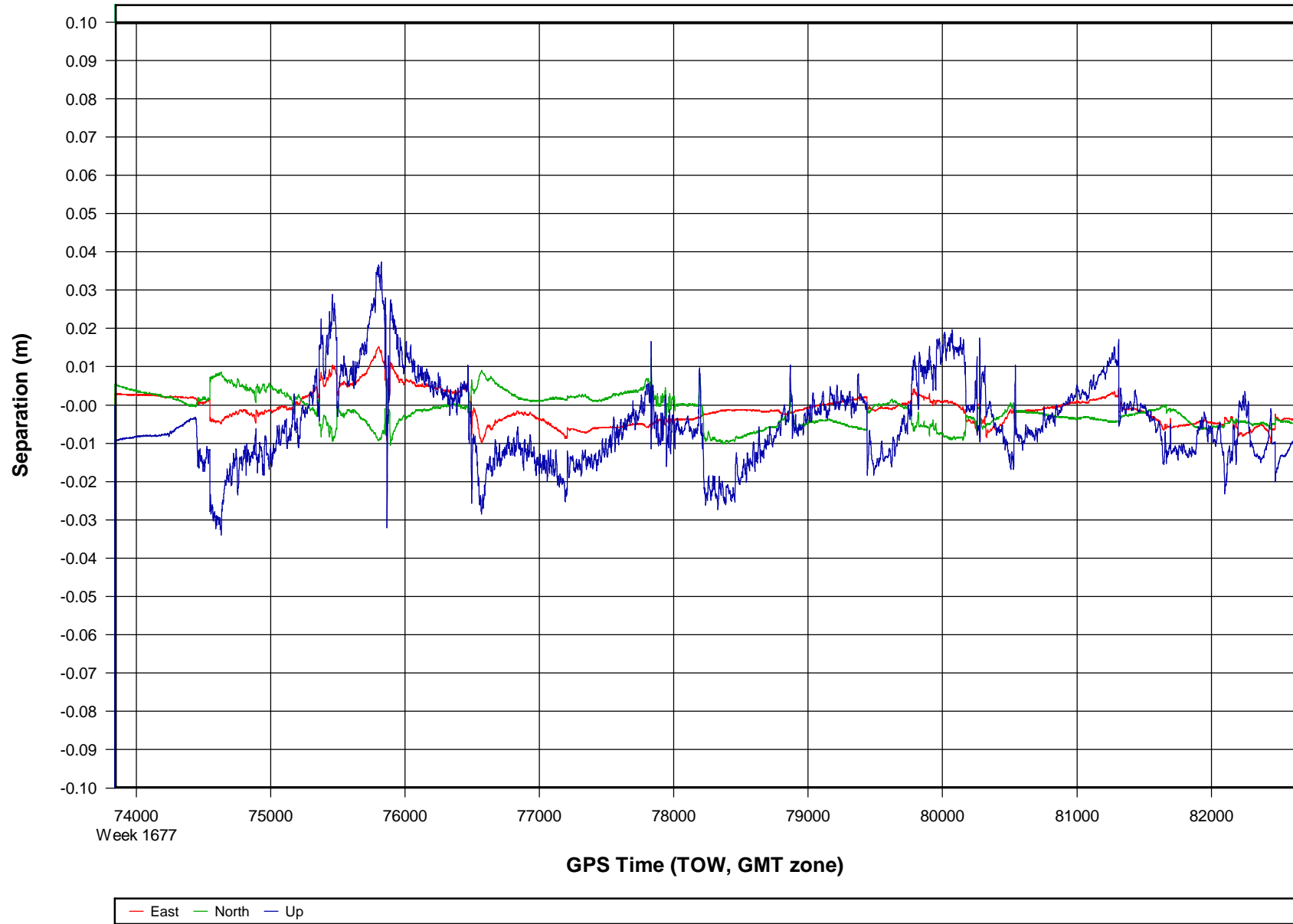
Combined - Map Run (1)

Geographic, DMS

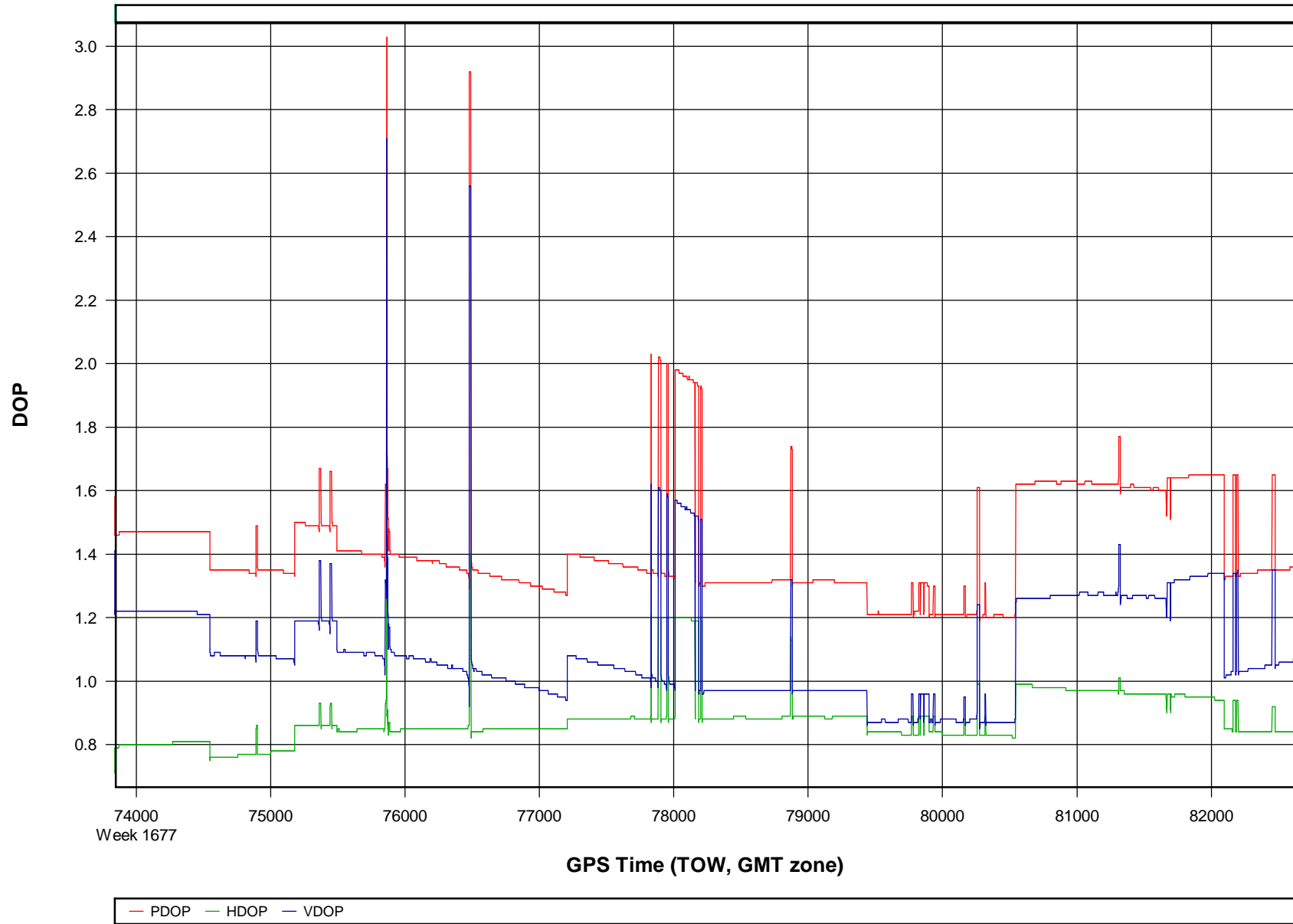


- + Ukn
- + Q1
- + Q2
- + Q3
- + Q4
- + Q5
- + Q6
- ▲ Master

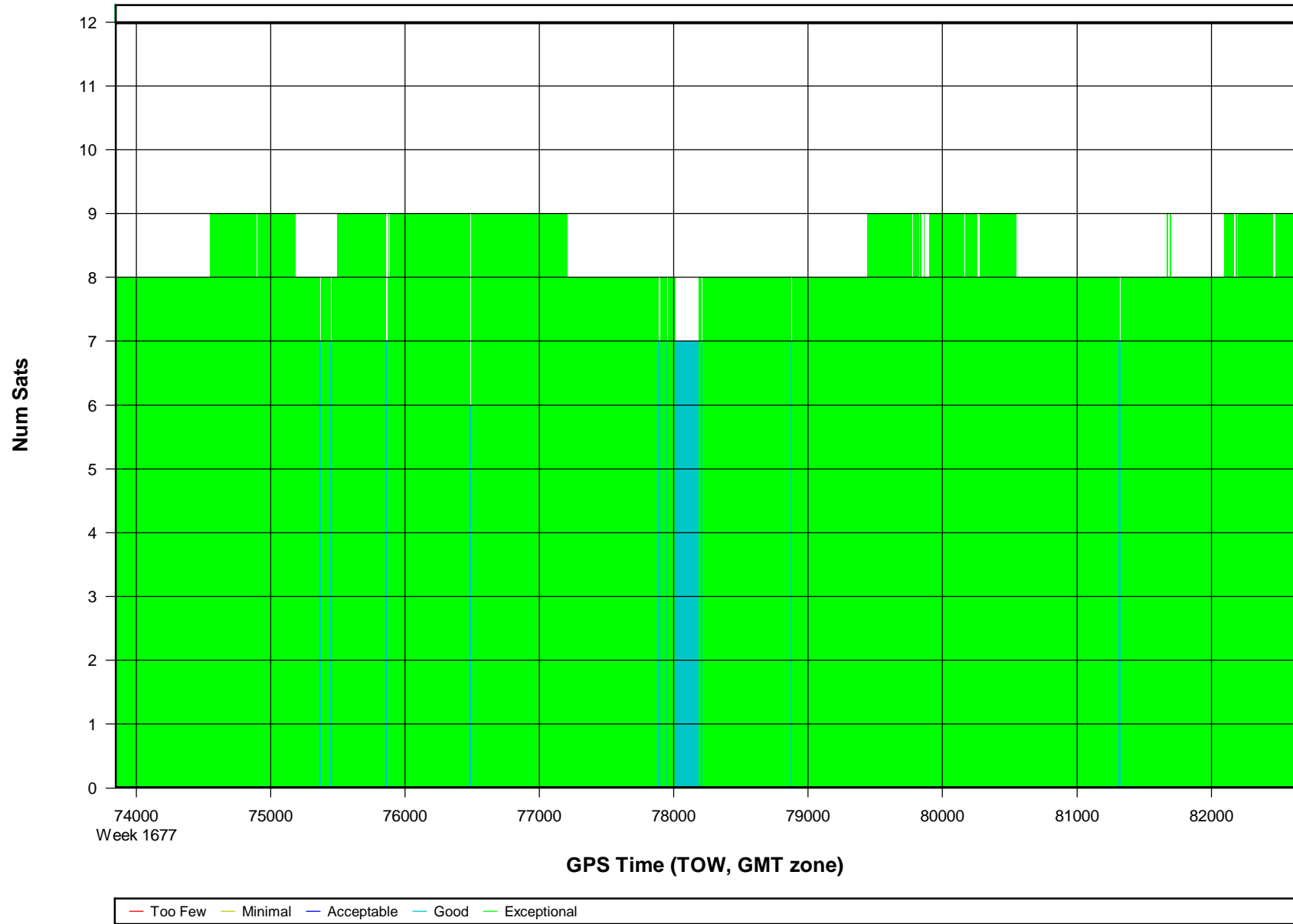
o112057b [Combined] - Forward/Reverse or Combined Separation Plot



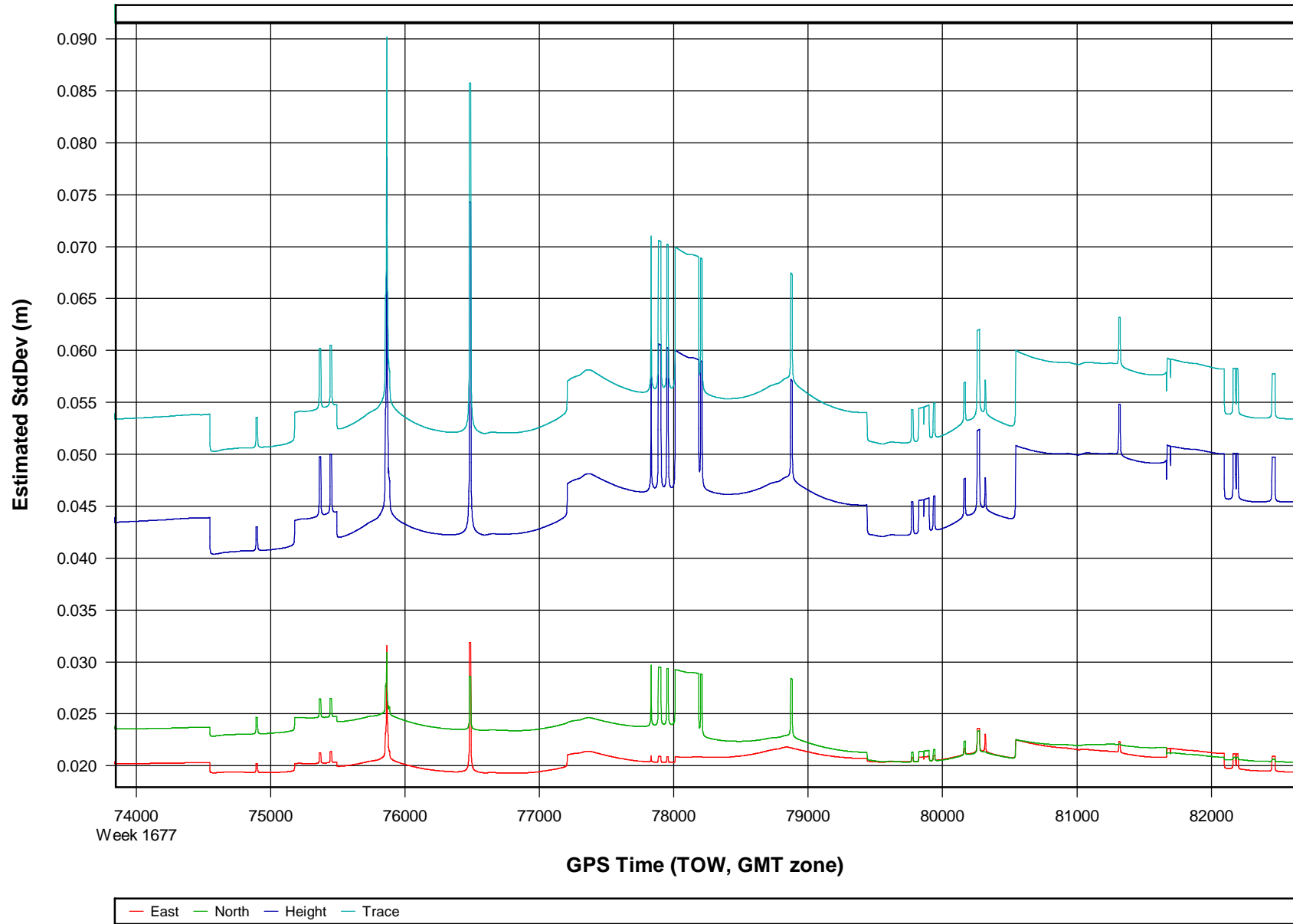
o112057b [Combined] - PDOP, HDOP, VDOP Plots



o112057b [Combined] - Number of Satellites Bar Plot



o112057b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: D:\Projects\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112057b\3_Processed\GPS\o112057b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	88020
No processed position:	79230
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0156 (m)
C/A Code:	0.69 (m)
L1 Doppler:	0.036 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.004 (m)
North:	0.005 (m)
Height:	0.015 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8785 occurrences):

East:	0.004 (m)
North:	0.004 (m)
Height:	0.012 (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:

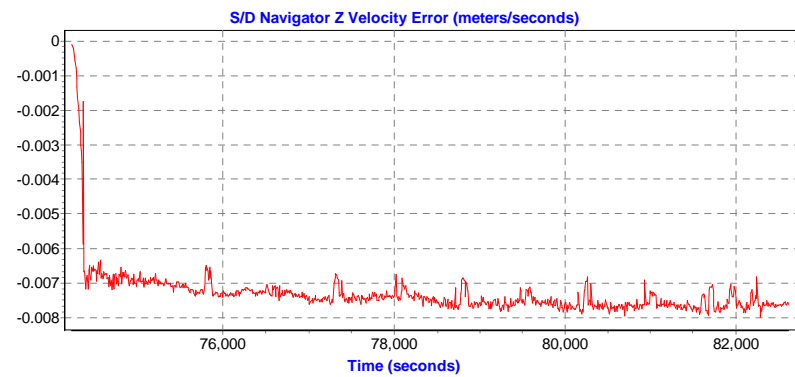
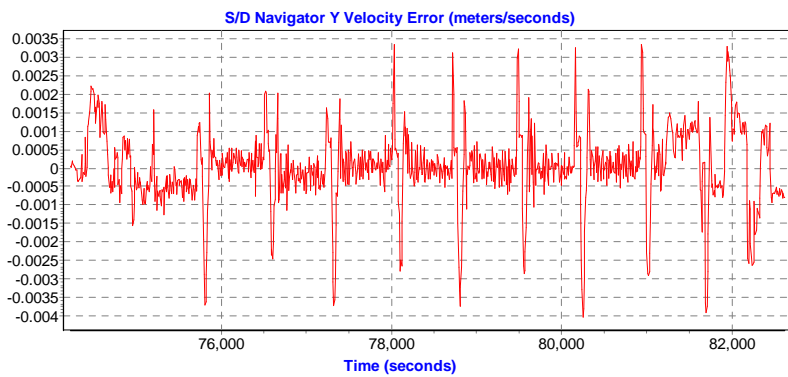
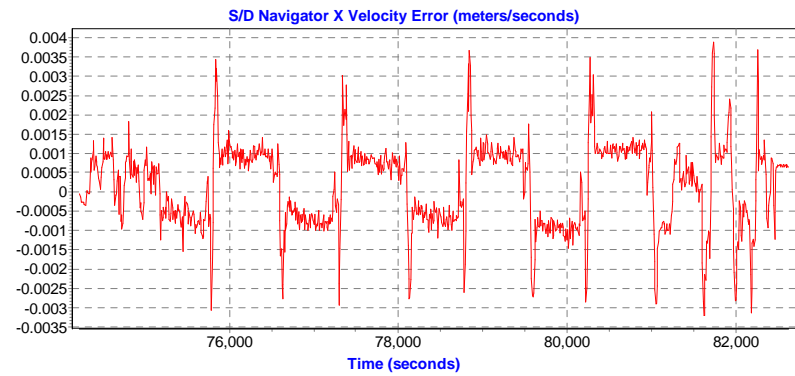
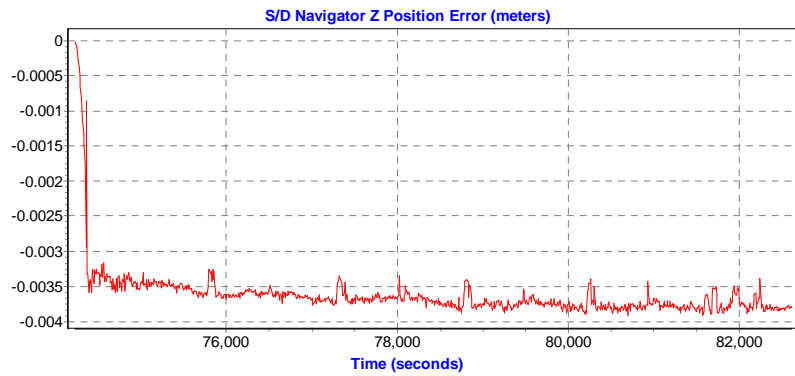
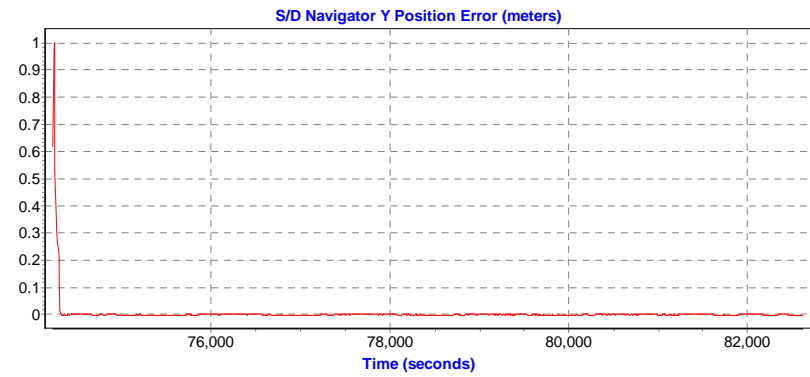
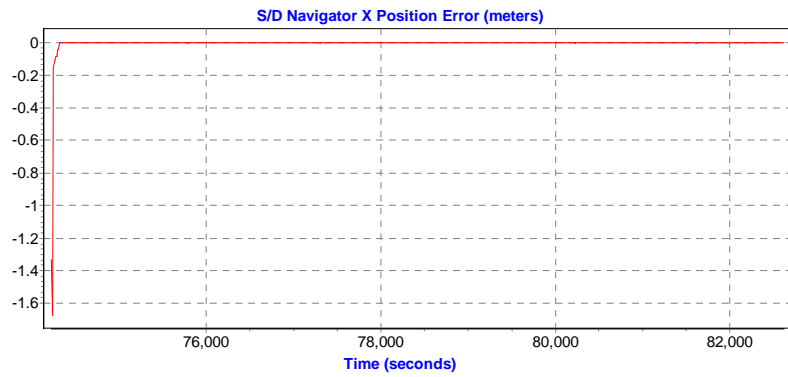
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

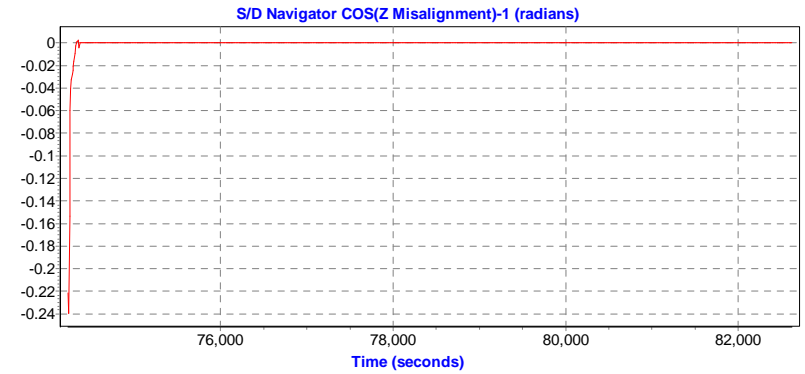
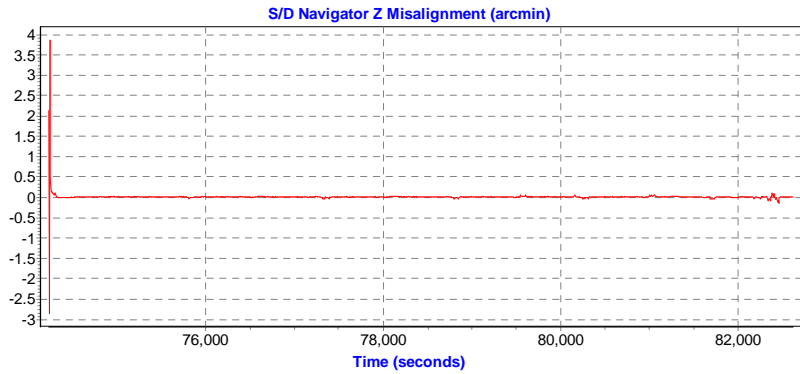
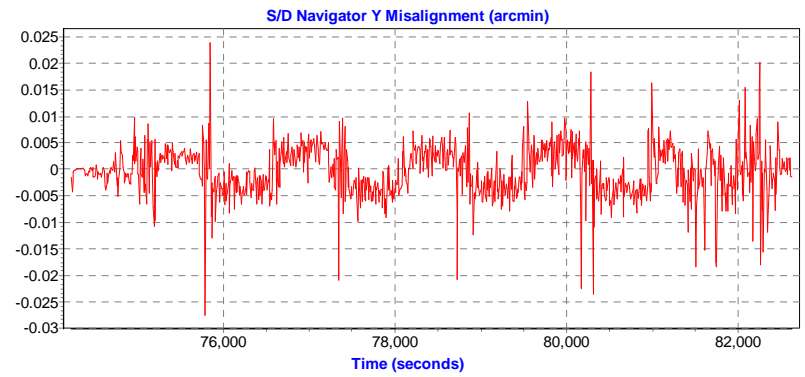
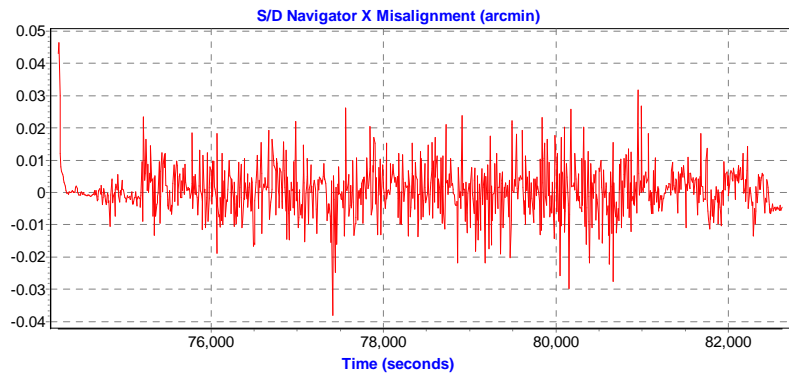
Percentages of epochs with DD_DOP over 10.00:

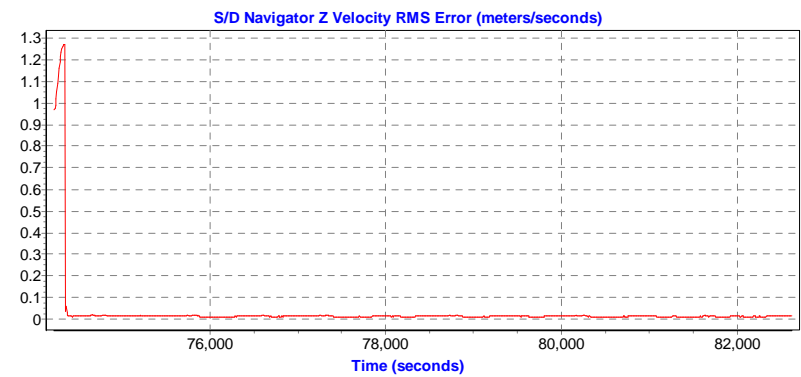
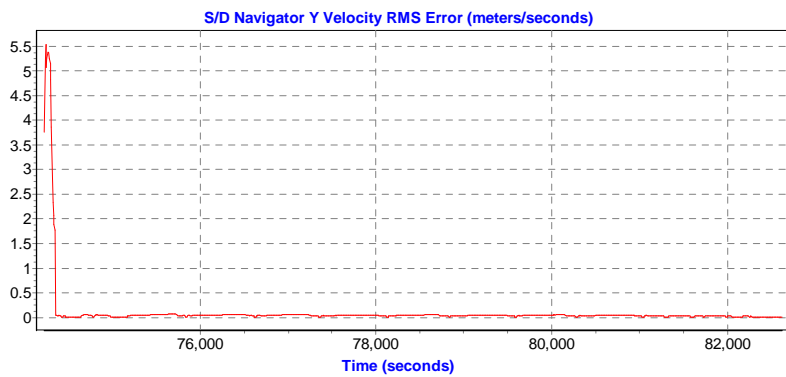
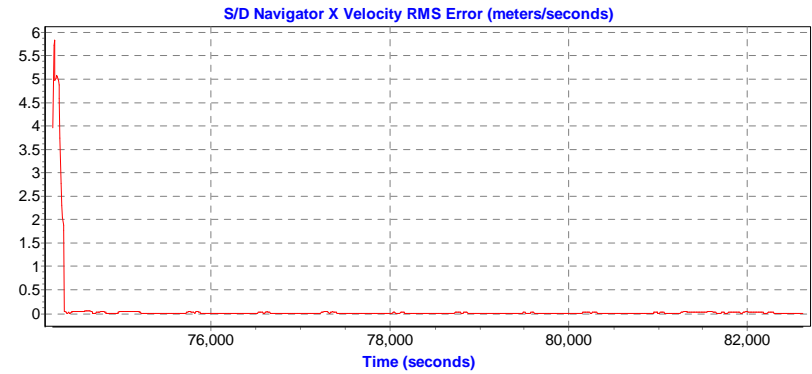
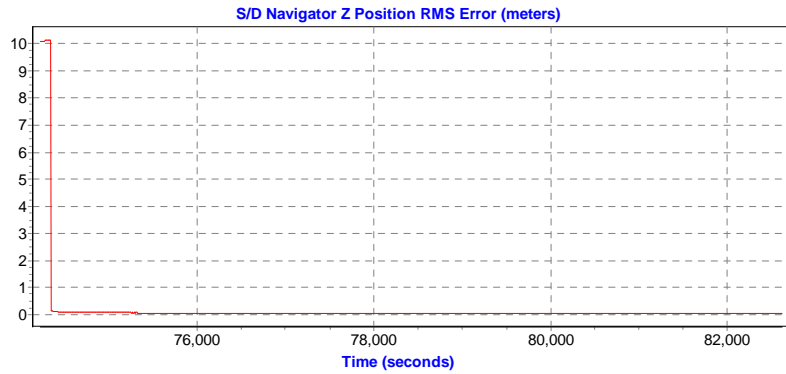
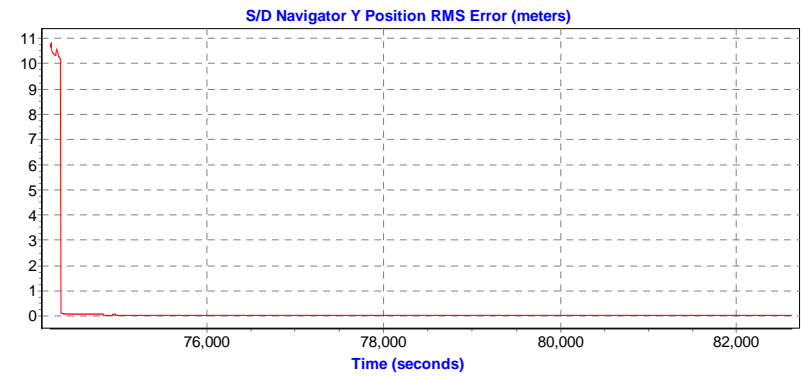
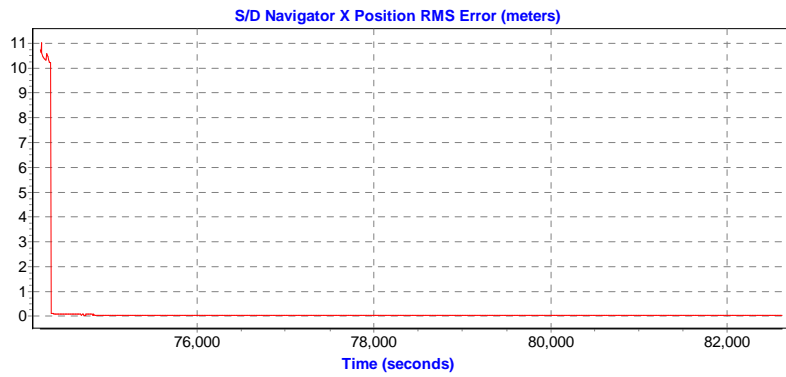
DOP over Tol:	0.0 %
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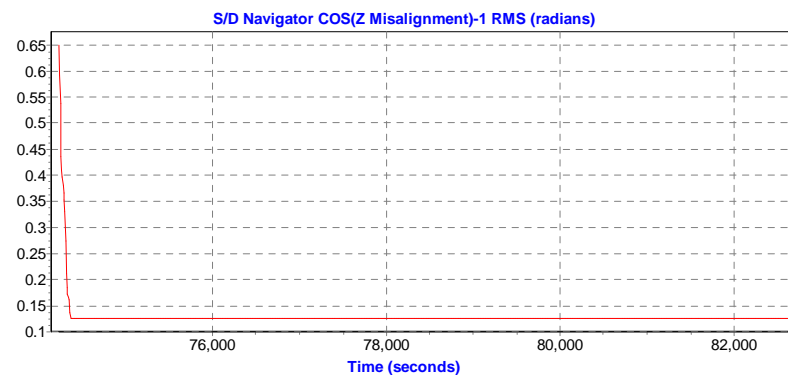
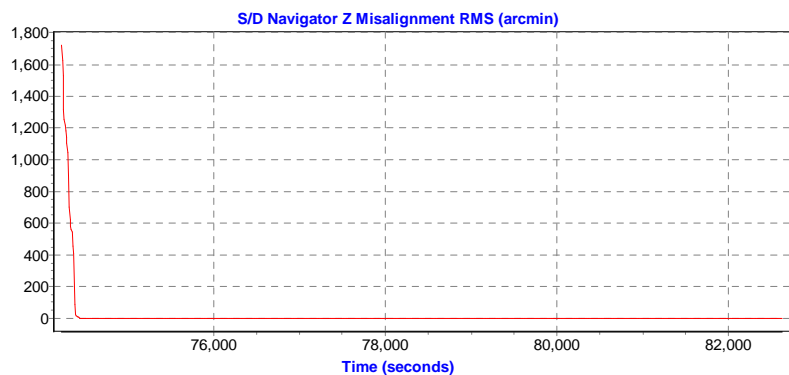
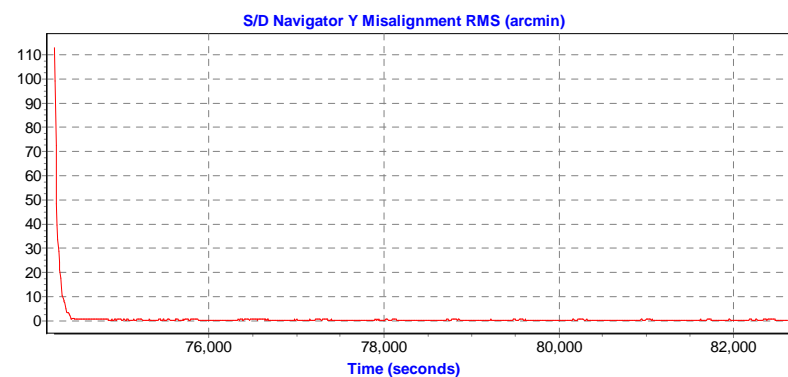
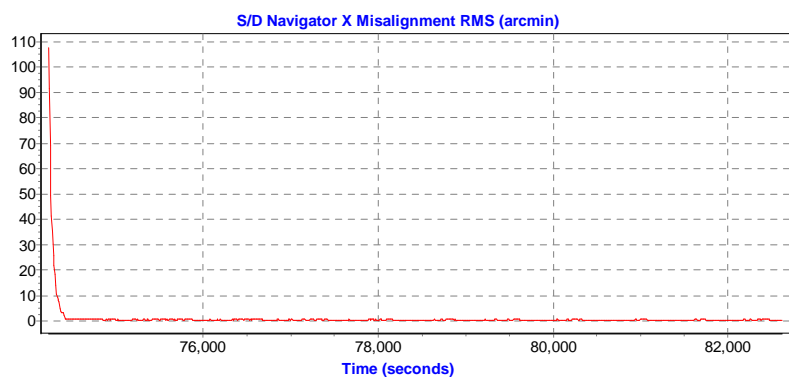
Baseline Distances:

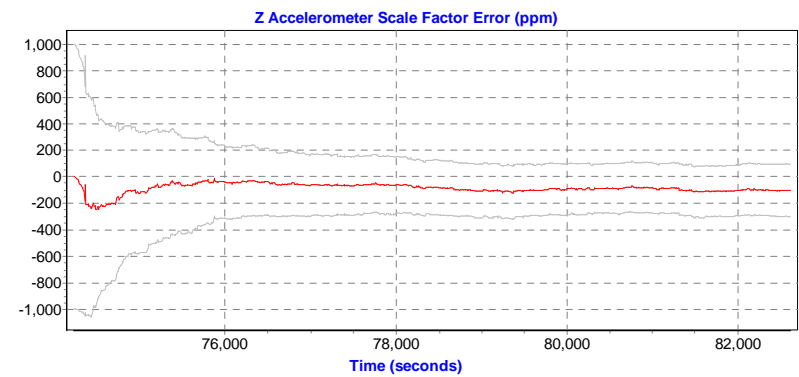
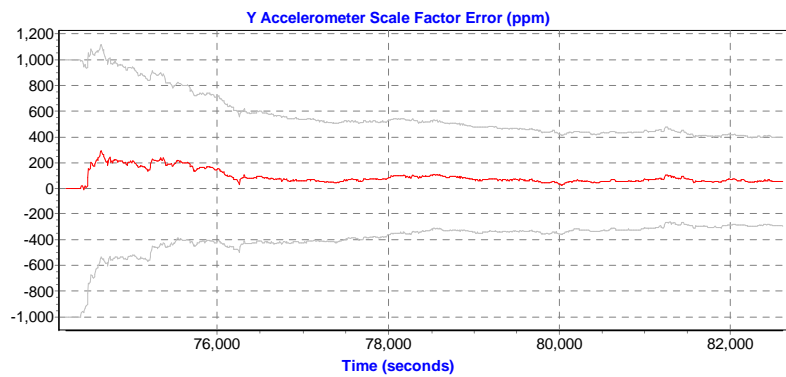
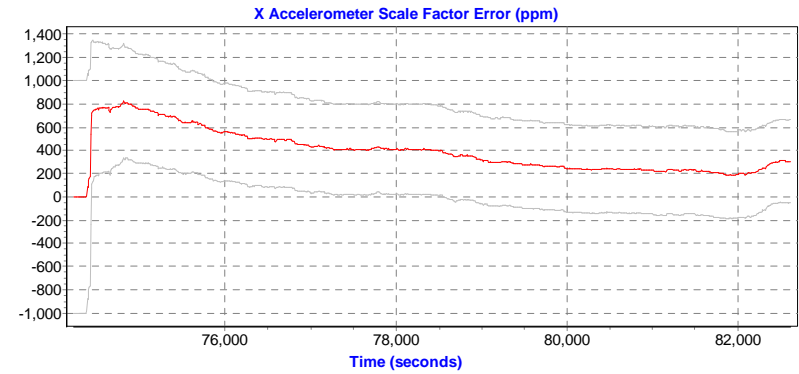
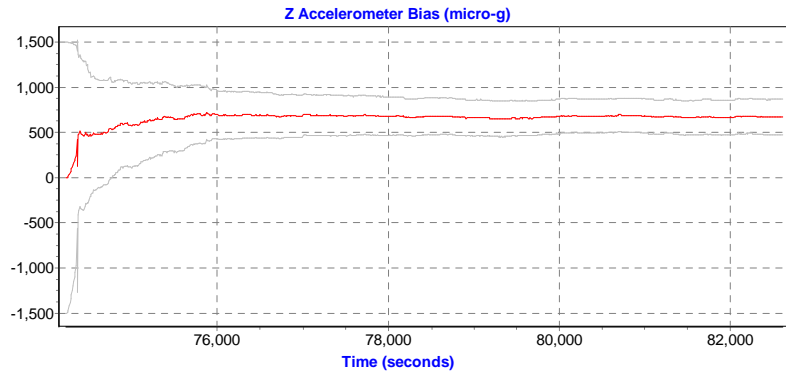
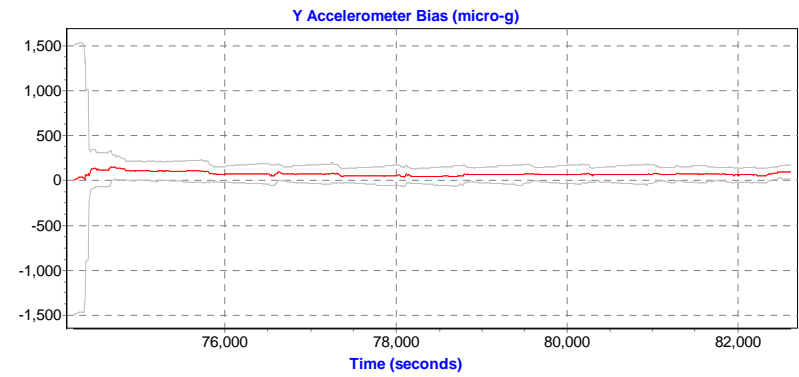
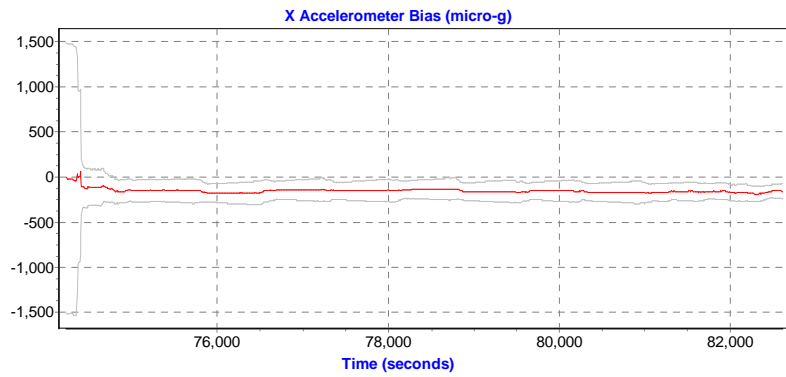
Maximum:	45.505 (km)
Minimum:	0.649 (km)
Average:	21.598 (km)
First Epoch:	8.016 (km)
Last Epoch:	8.016 (km)

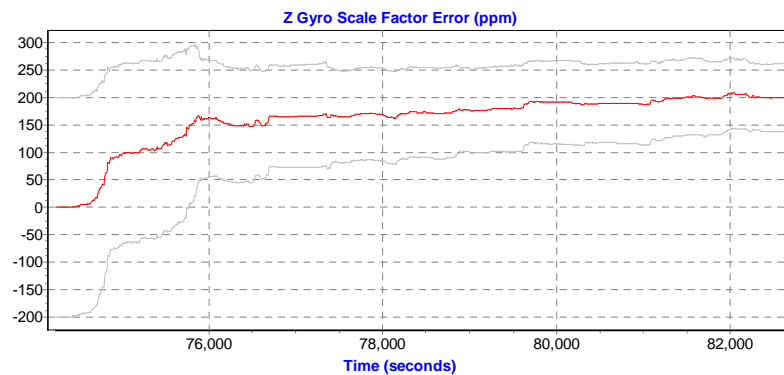
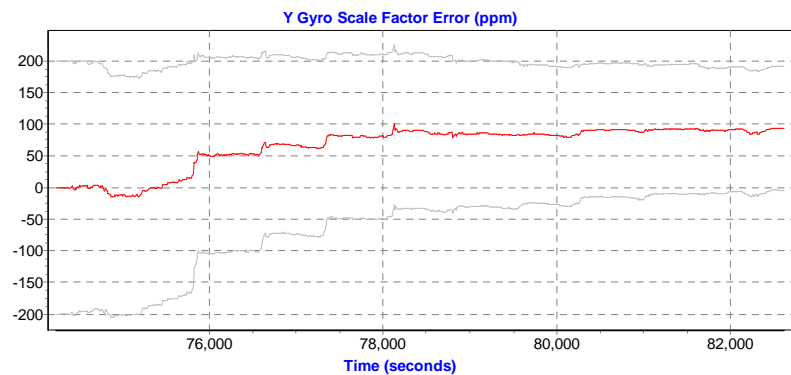
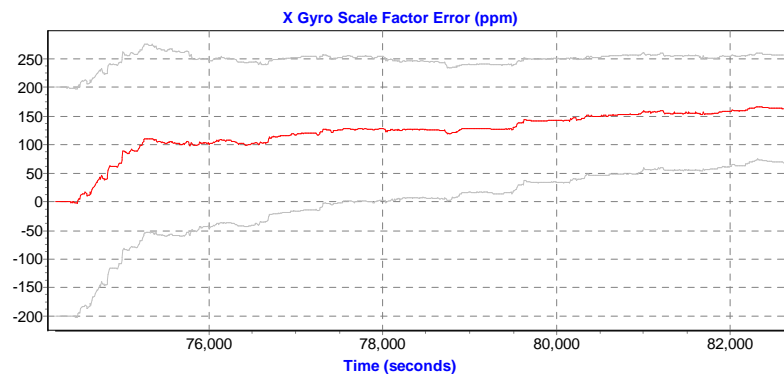
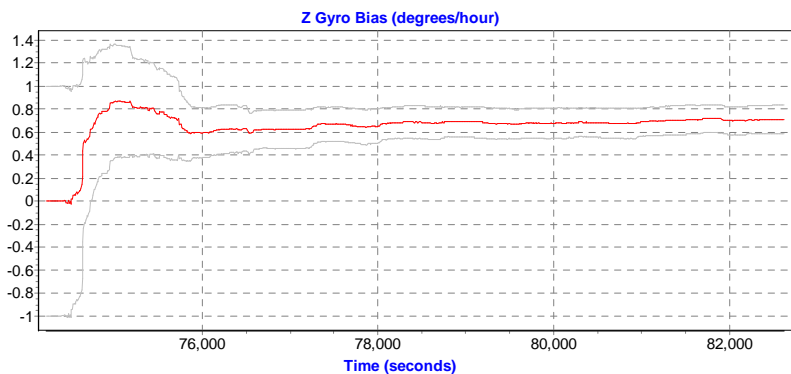
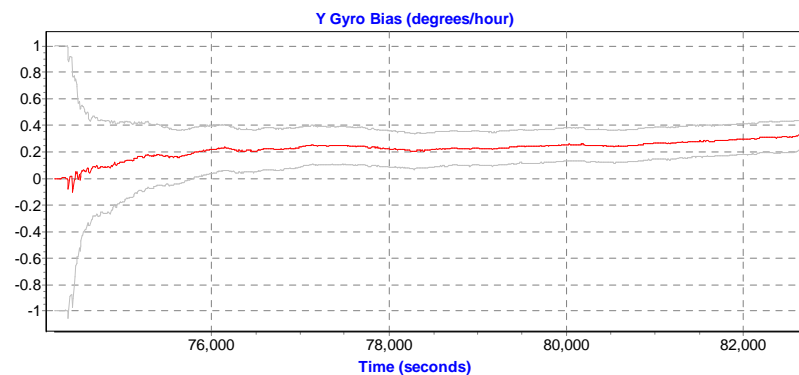
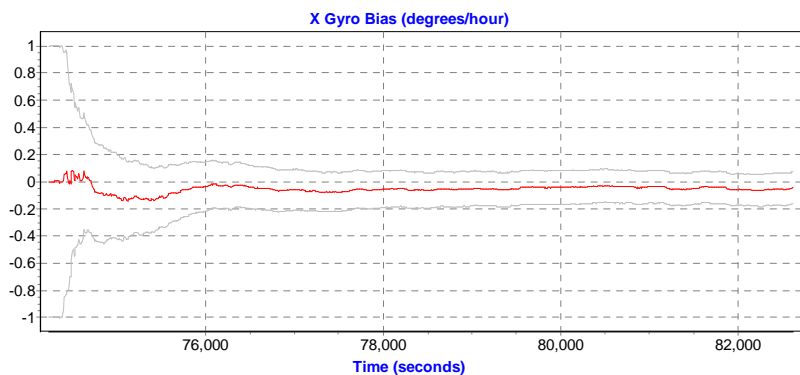


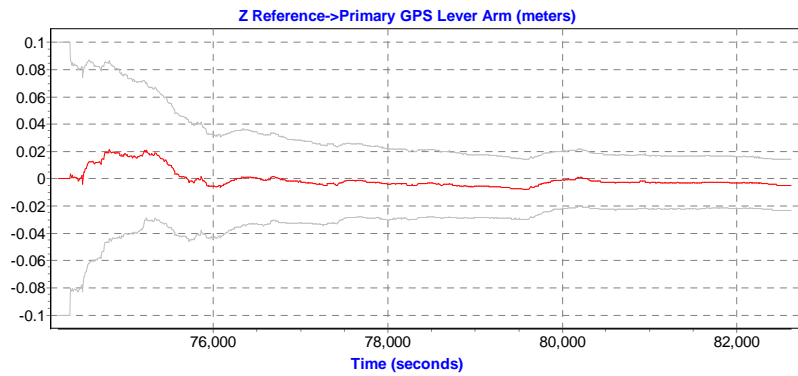
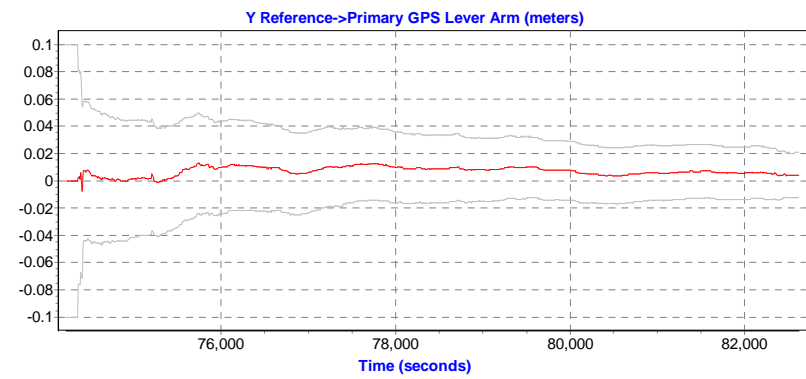
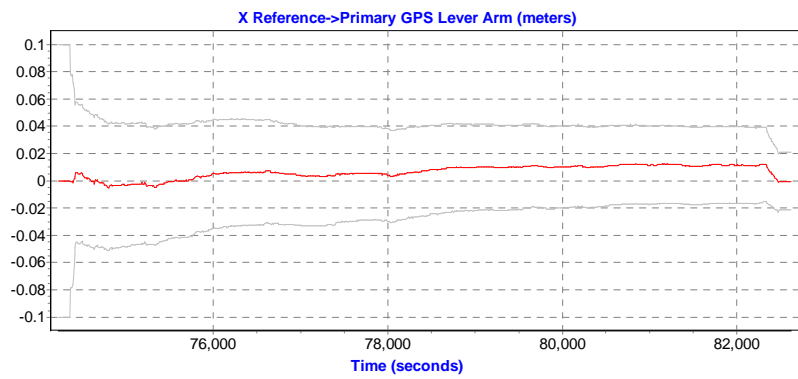






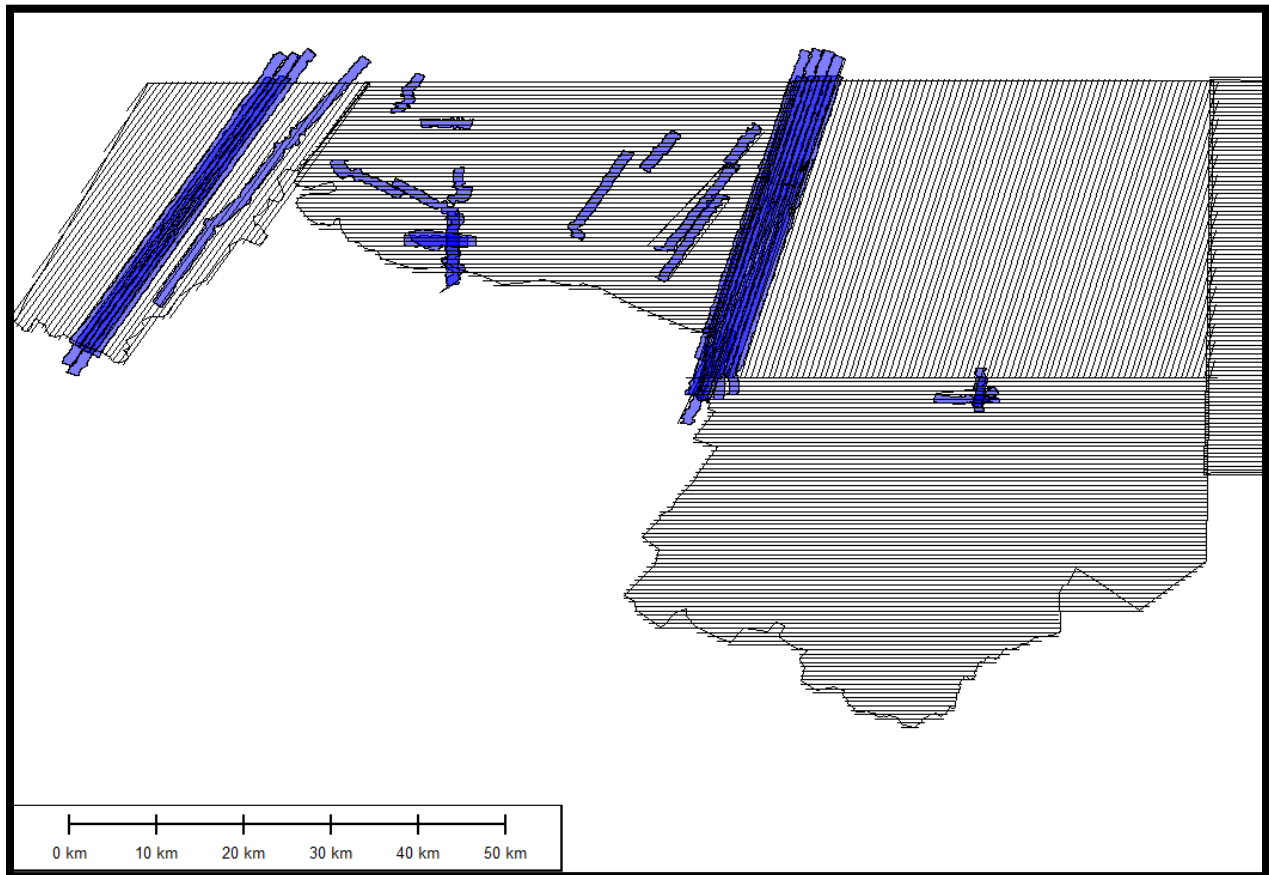






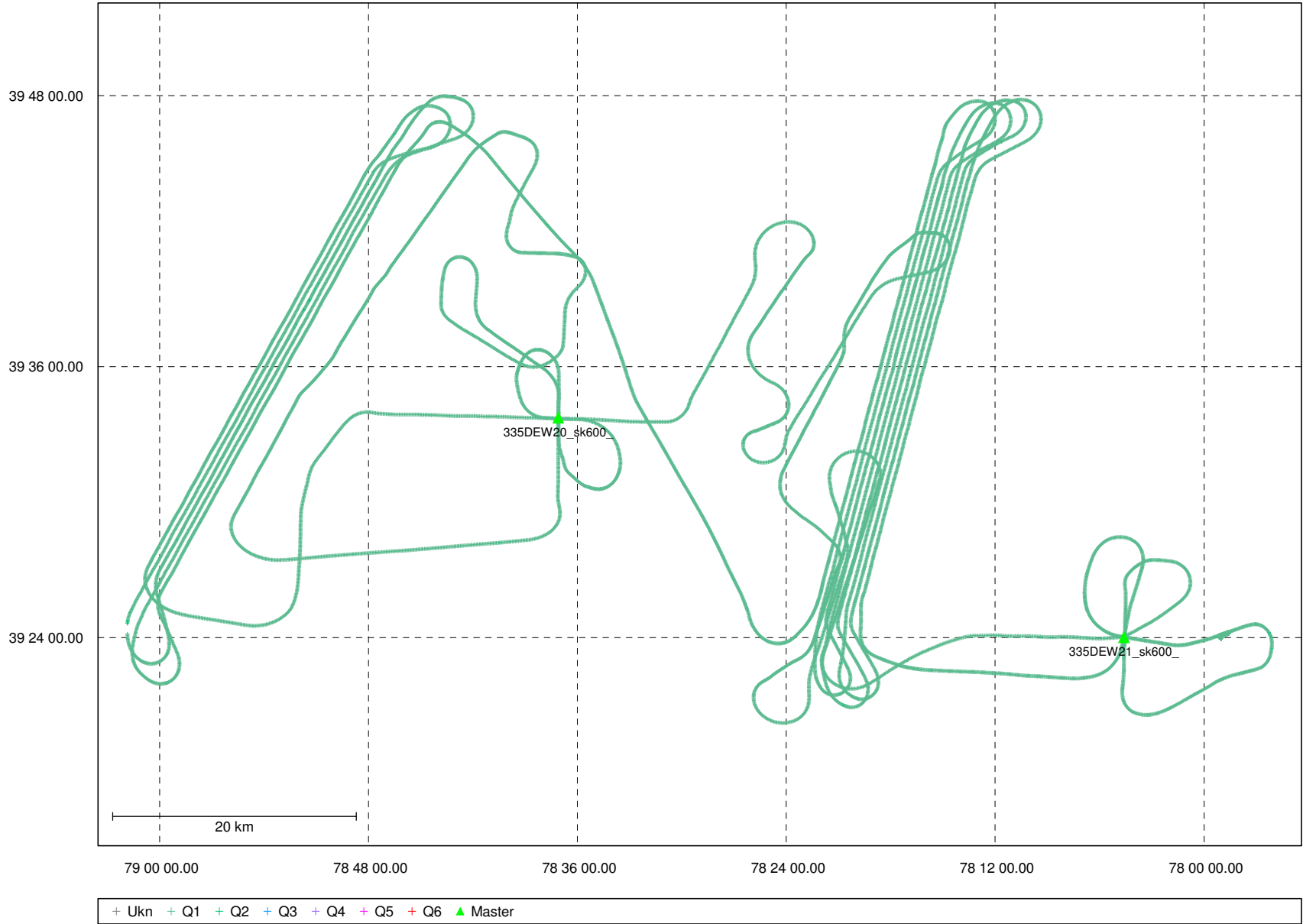
Mission: o112066a

March 06, 2012



Combined - Map Run (3)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: L:\335DEW11
USGS_MD_VA_lidar\2_Operations\6_Missions\o112066a\3_Processed\GPS\GPS\o112066a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file: 185846
No processed position: 167273
Missing Fwd or Rev: 3
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:

L1 Phase: 0.0186 (m)
C/A Code: 0.64 (m)
L1 Doppler: 0.033 (m/s)

Fwd/Rev Separation RMS Values:

East: 0.013 (m)
North: 0.021 (m)
Height: 0.049 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (18513 occurrences):

East: 0.008 (m)
North: 0.016 (m)
Height: 0.034 (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 %

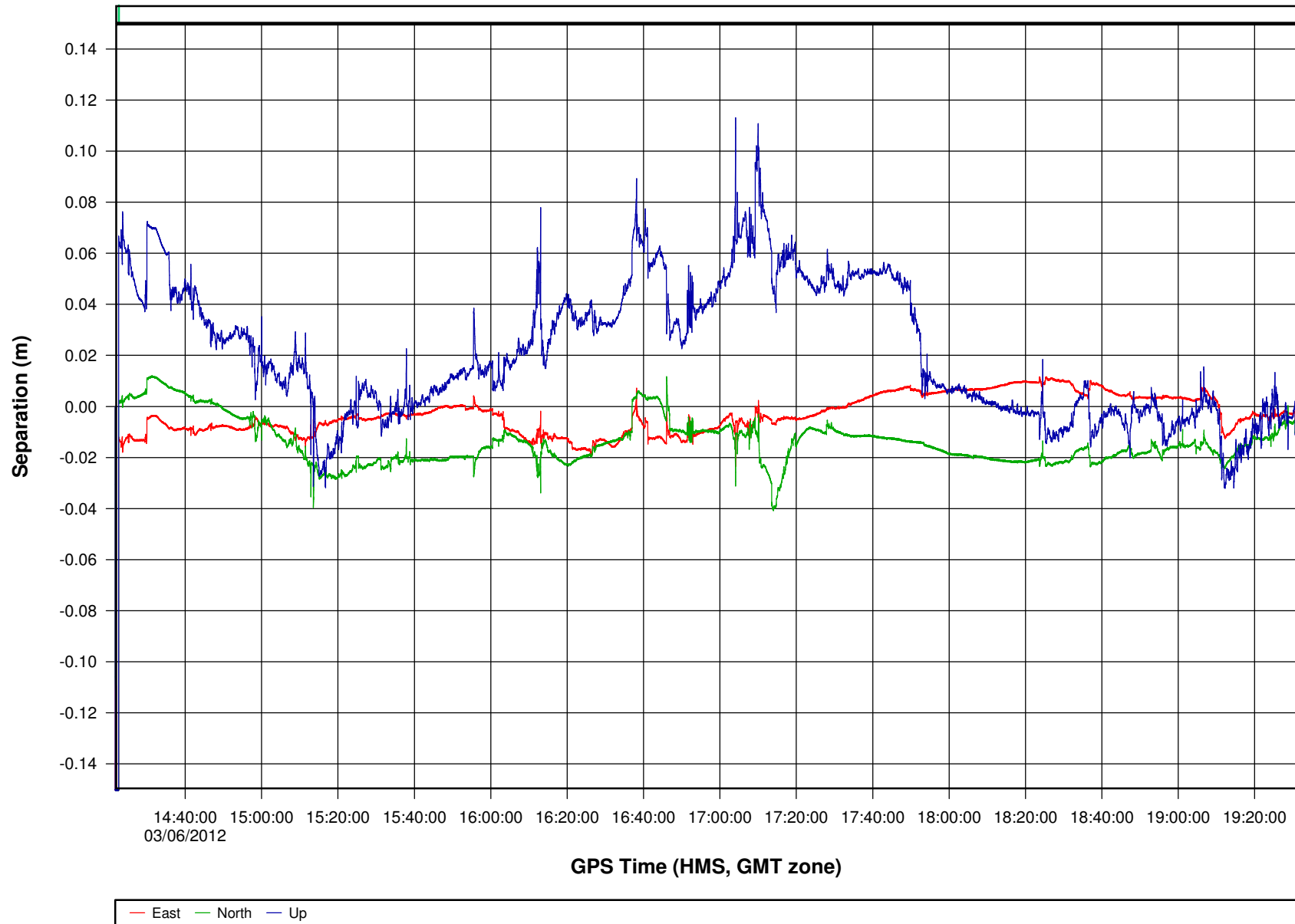
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

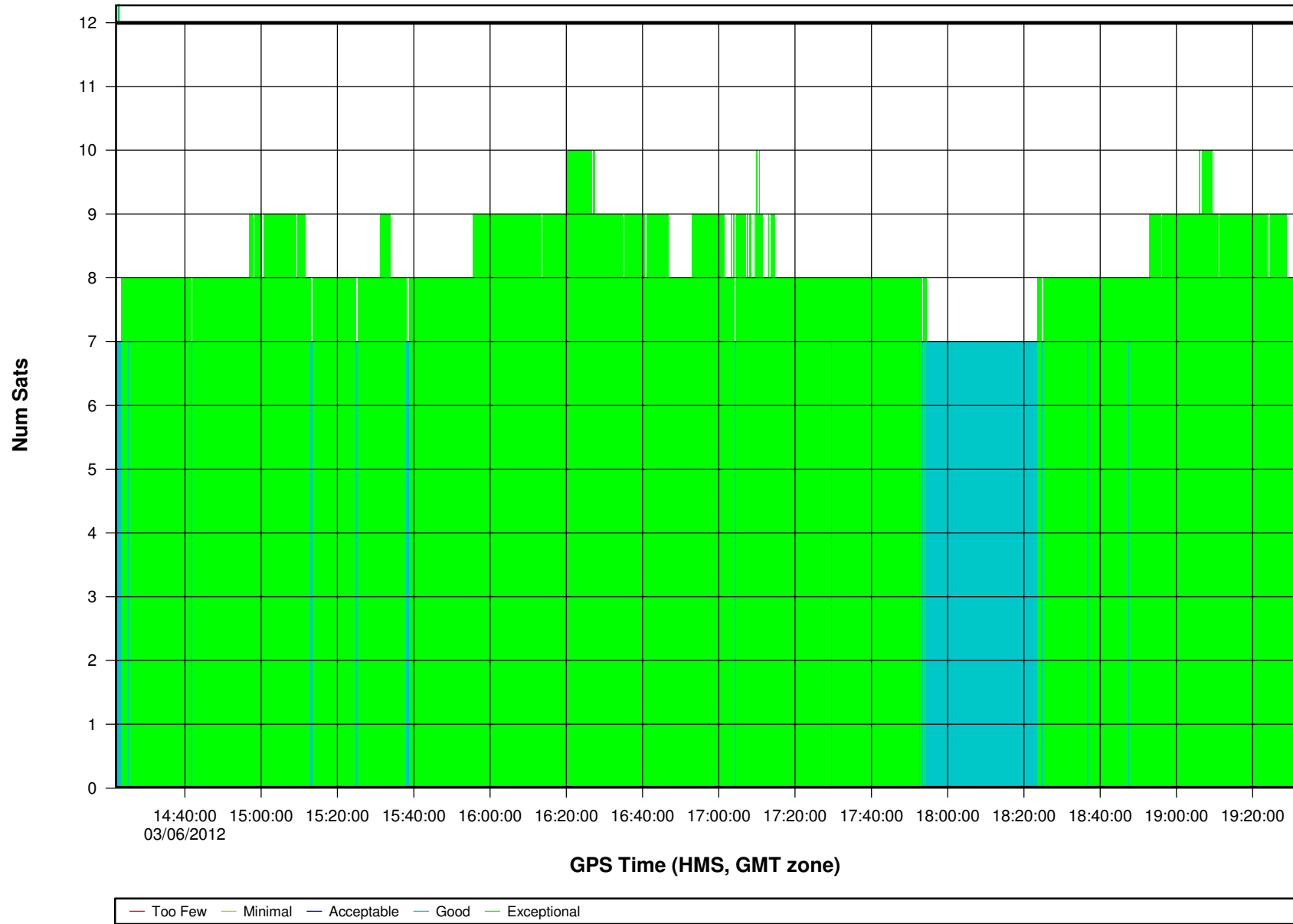
Baseline Distances:

Maximum: 56.408 (km)
Minimum: 1.305 (km)
Average: 26.453 (km)
First Epoch: 30.228 (km)
Last Epoch: 30.086 (km)

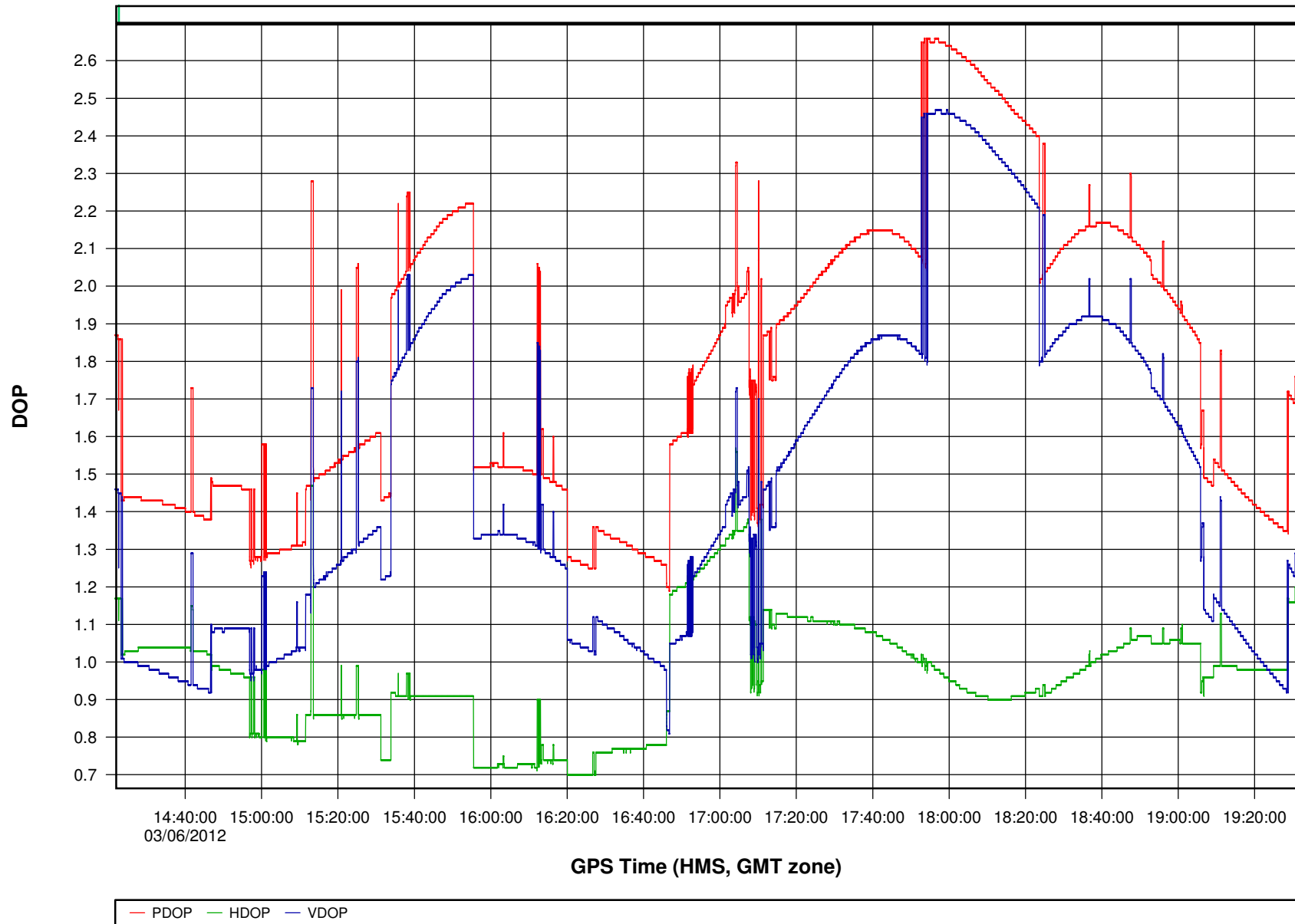
o112066a [Combined] - Forward/Reverse or Combined Separation Plot

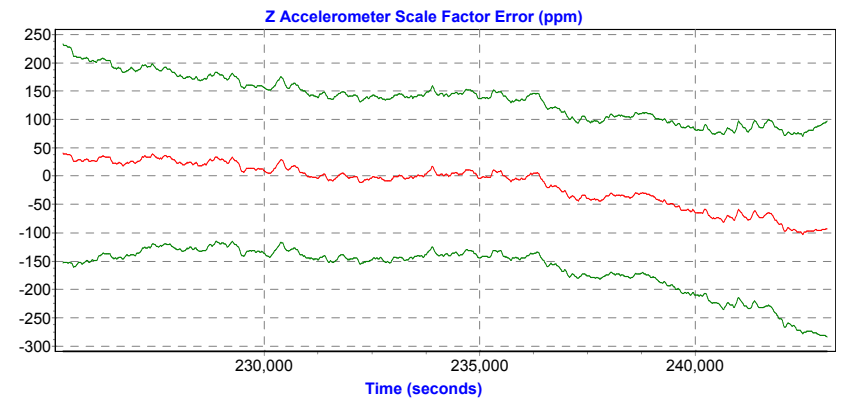
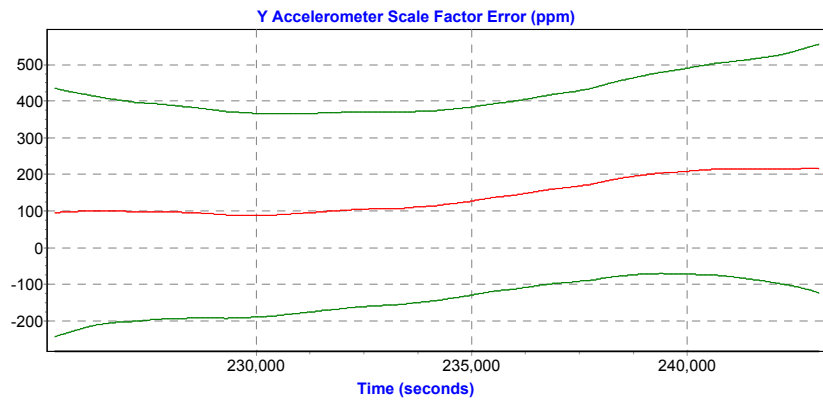
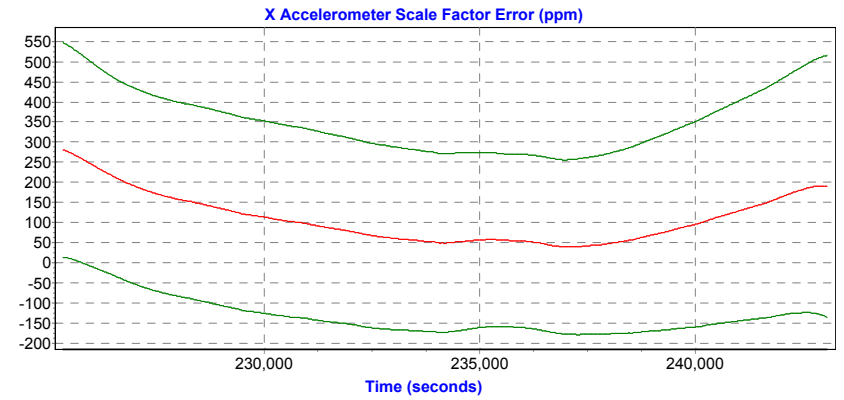
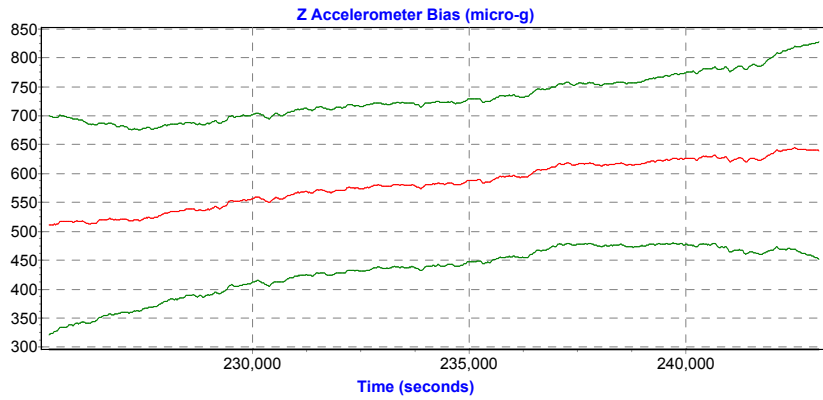
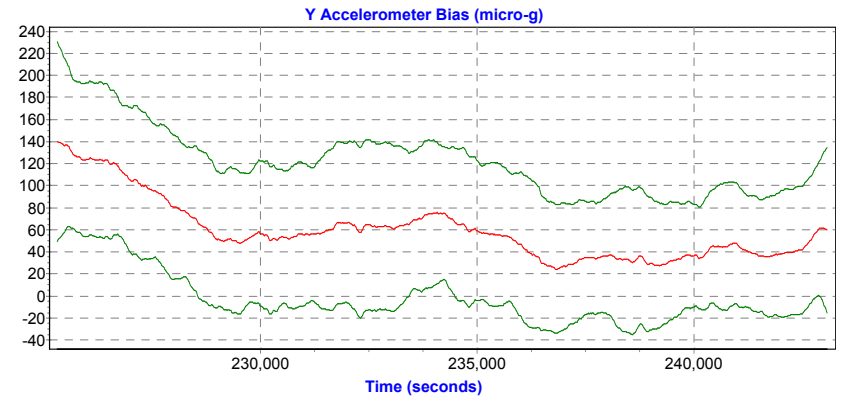
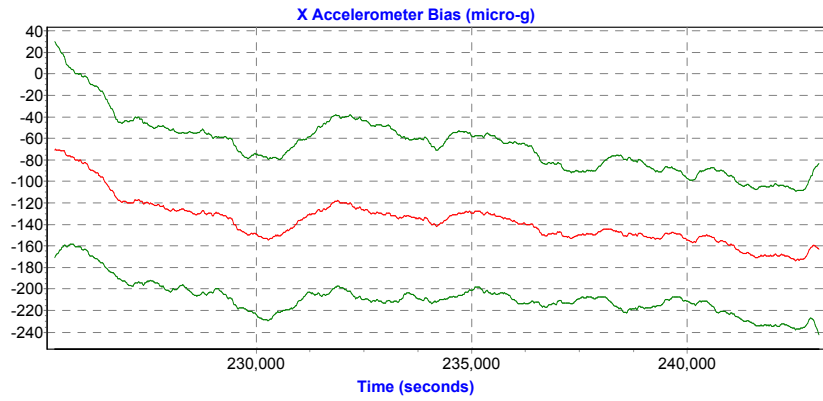


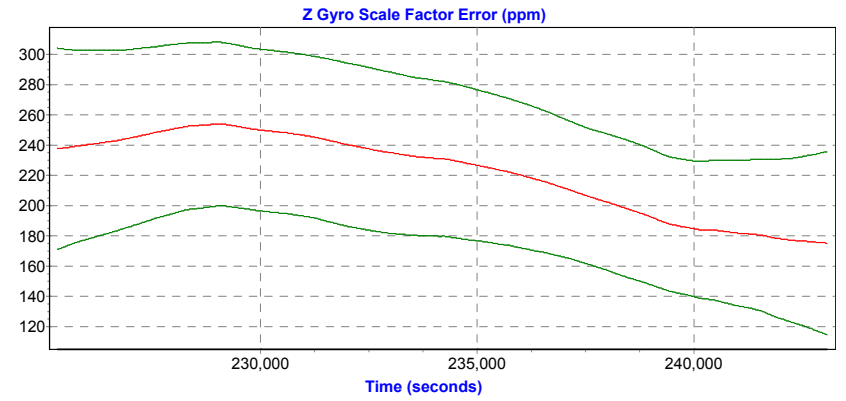
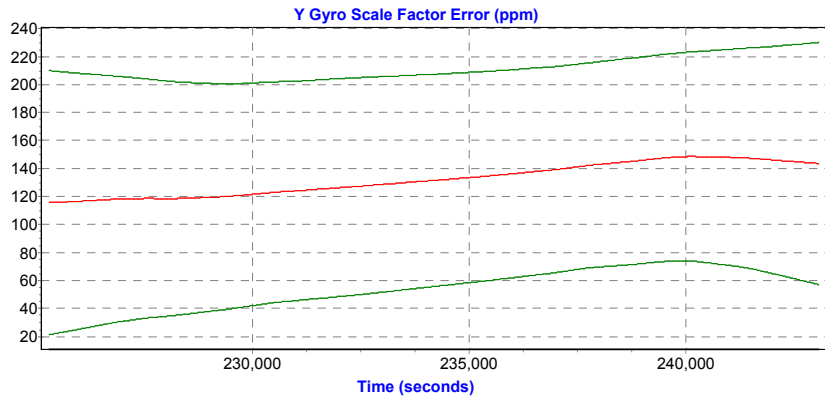
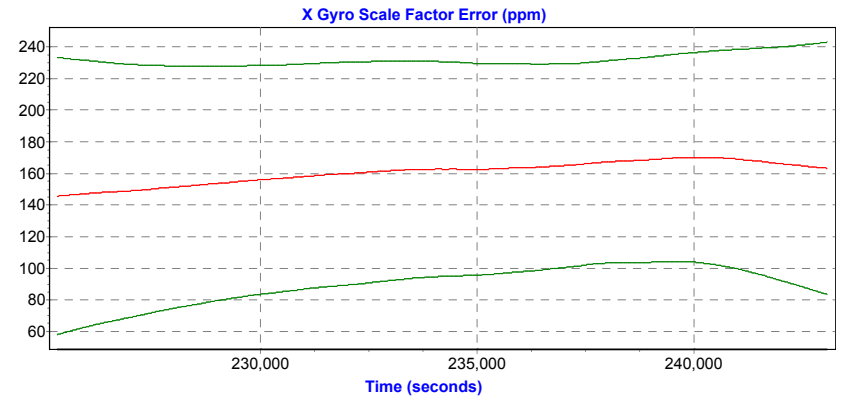
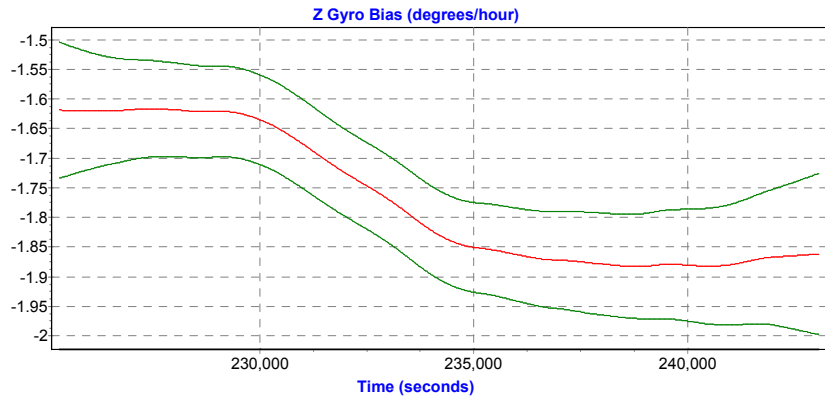
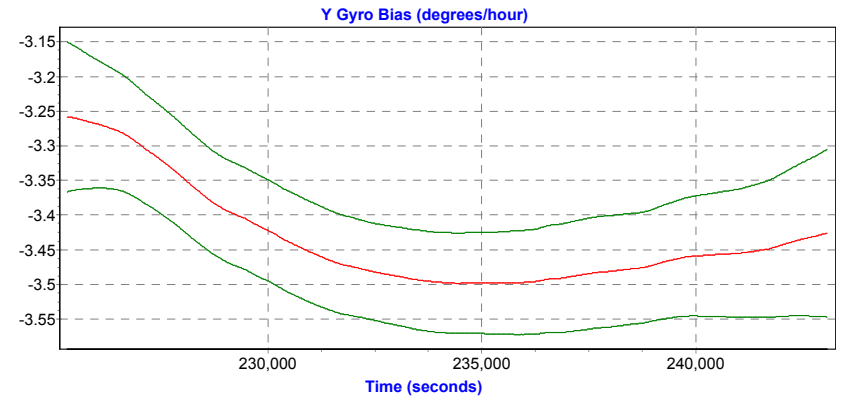
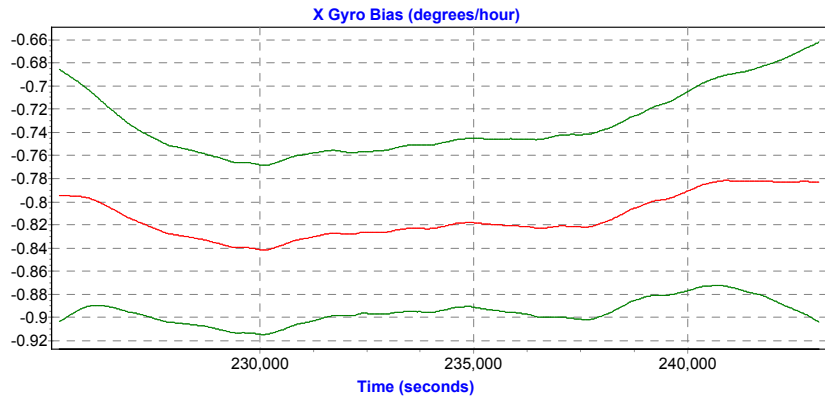
o112066a [Combined] - Number of Satellites Bar Plot

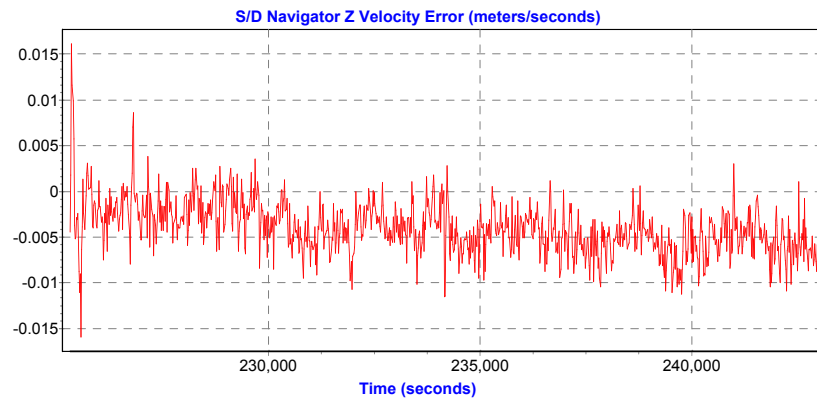
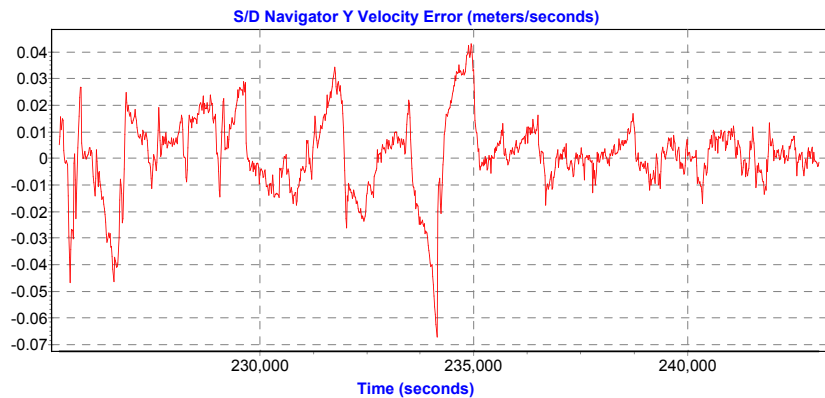
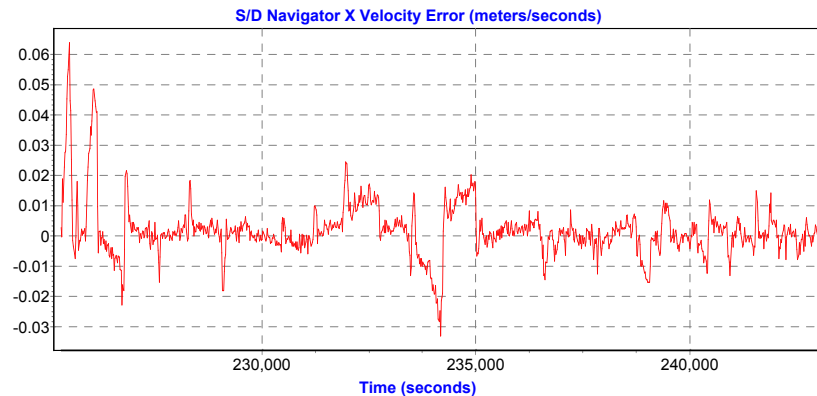
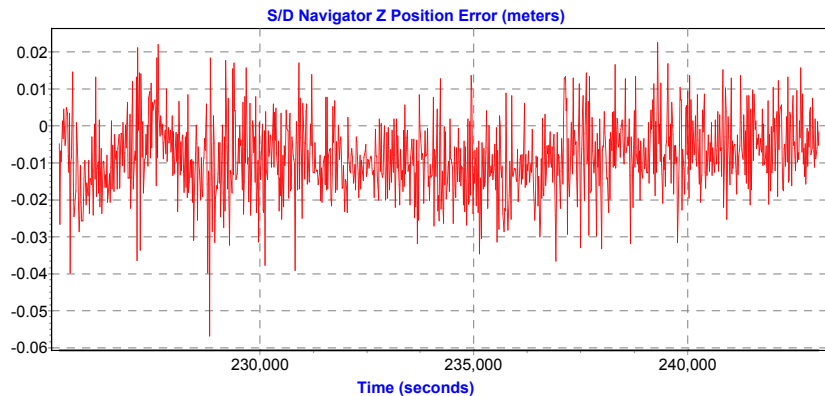
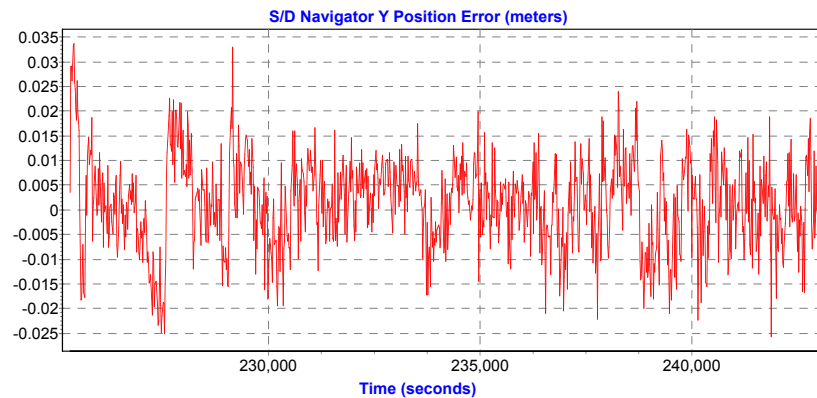
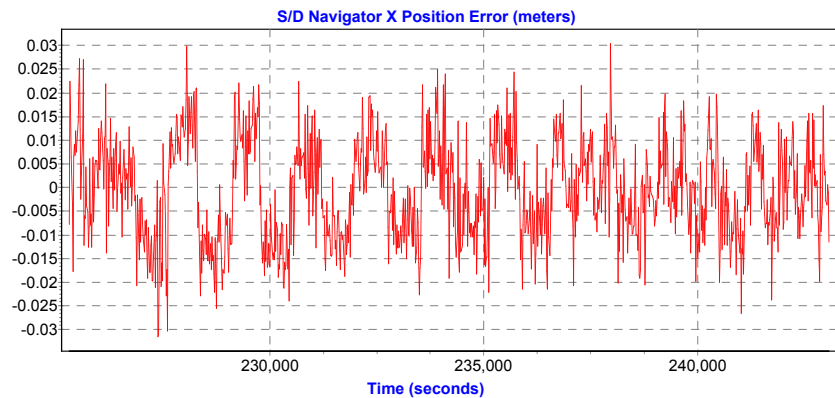


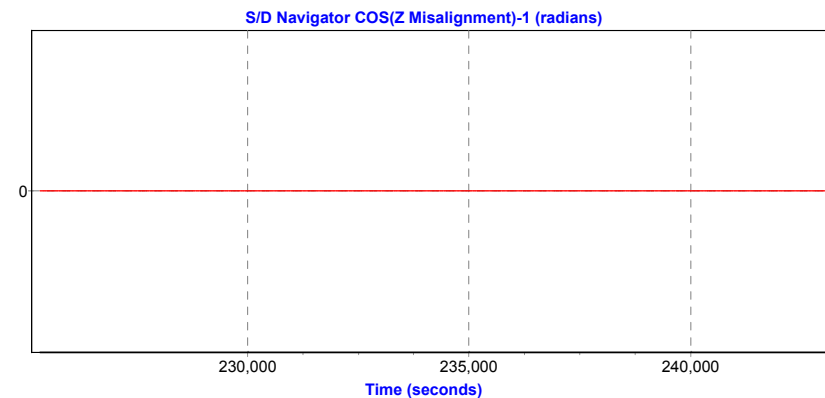
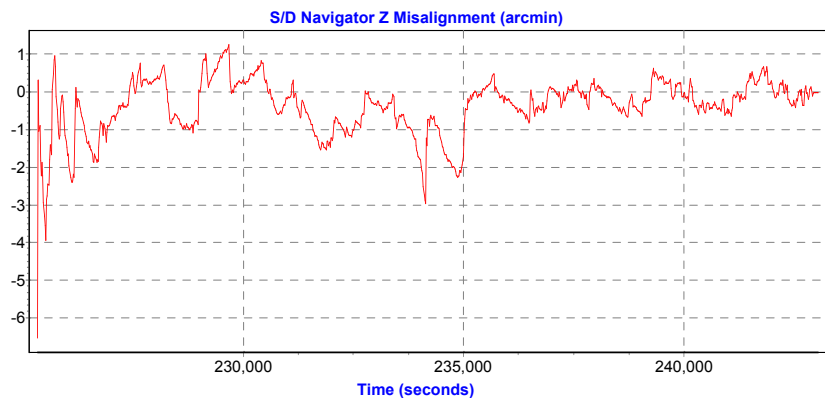
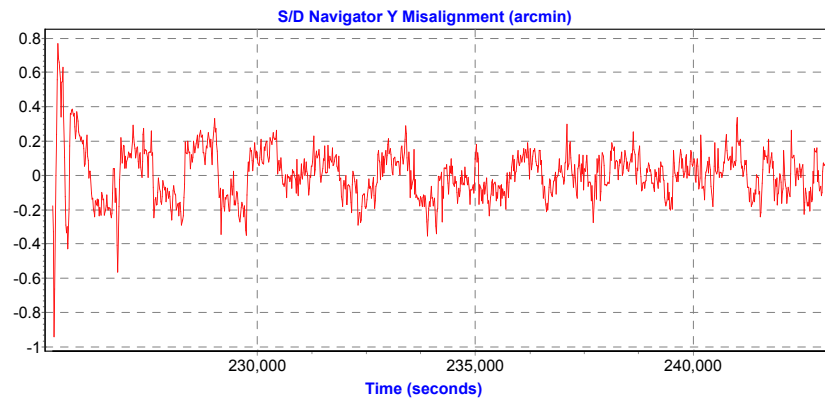
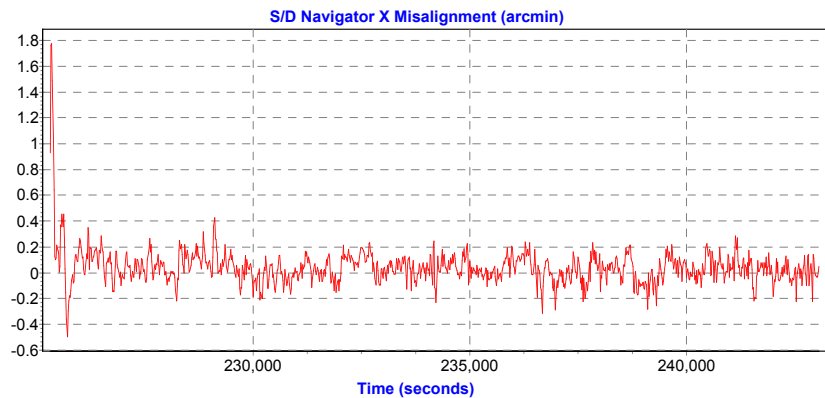
o112066a [Combined] - PDOP, HDOP, VDOP Plots

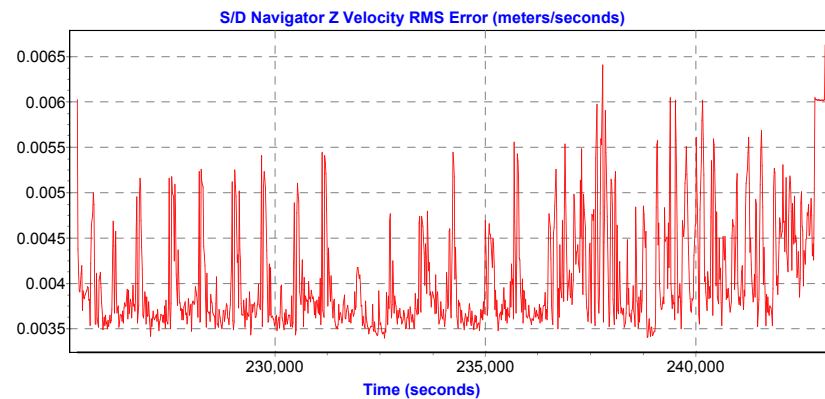
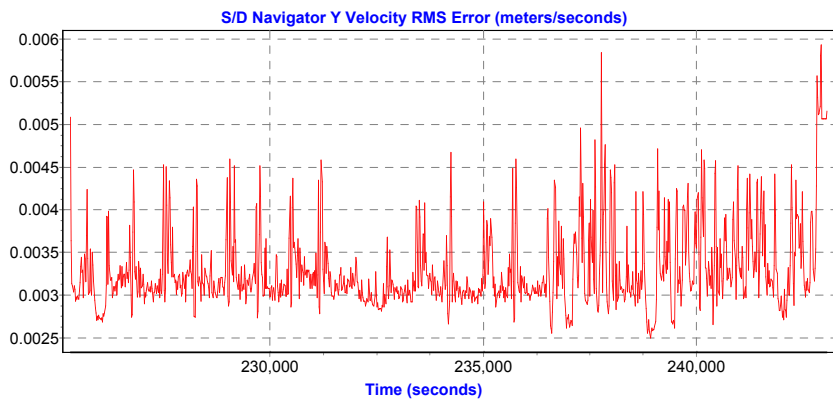
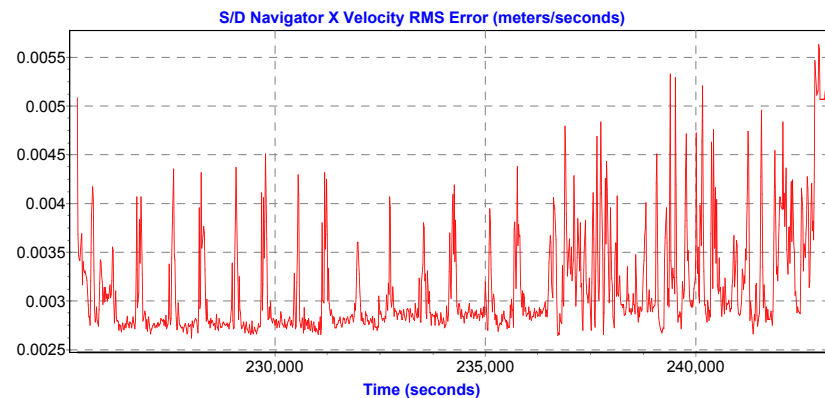
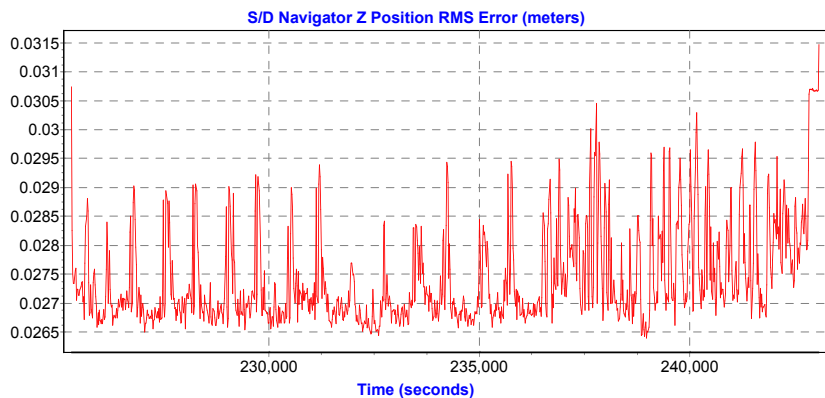
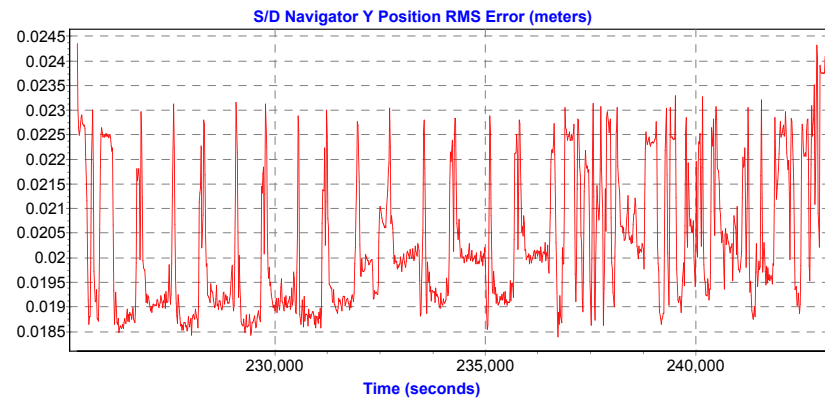
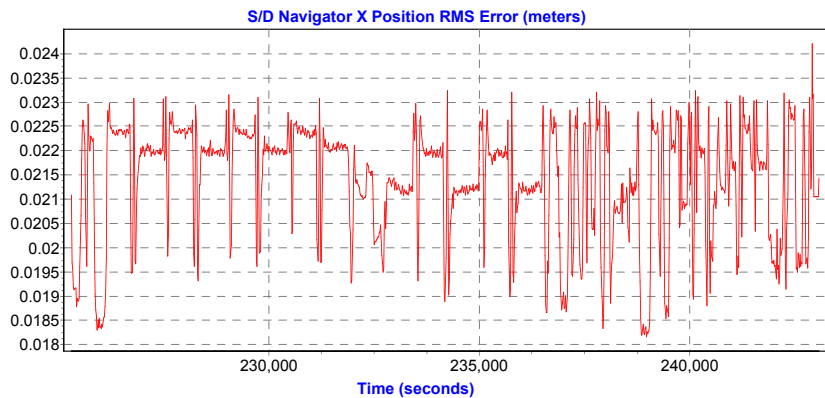


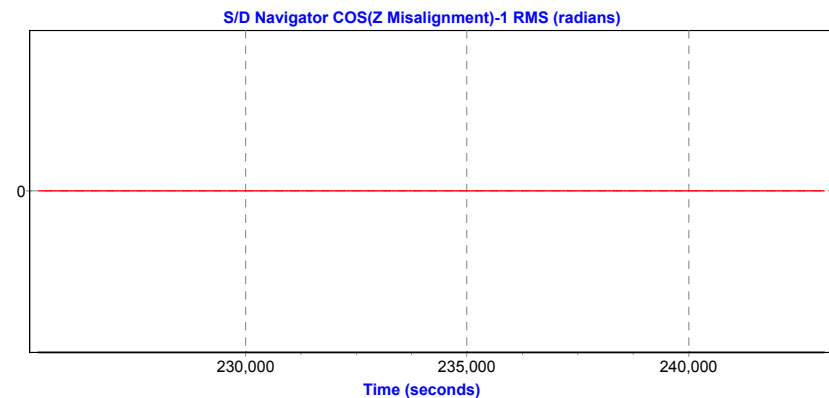
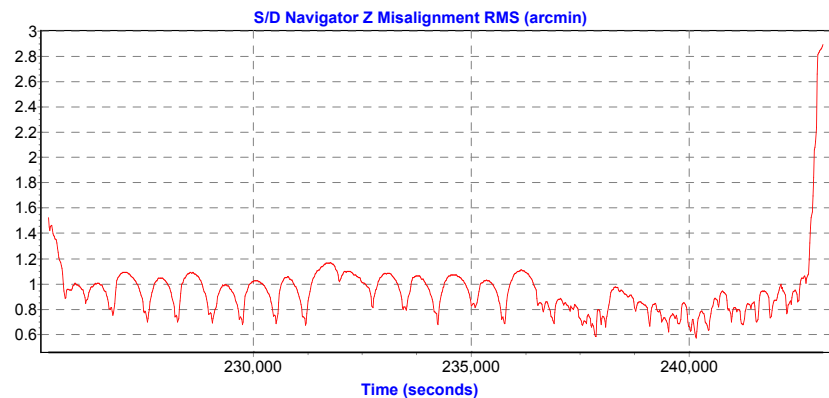
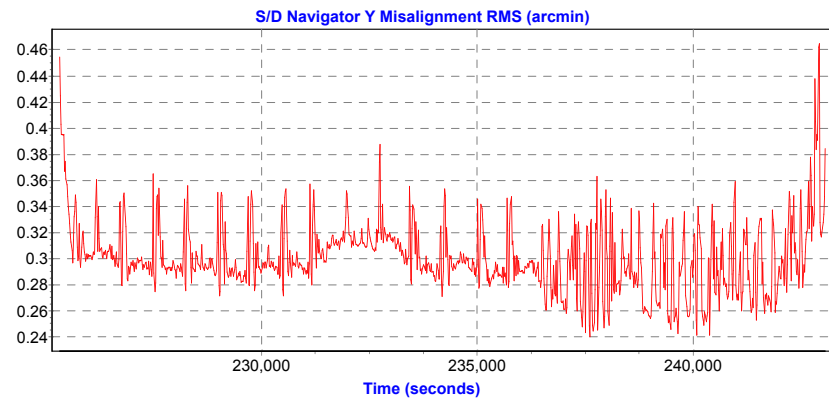
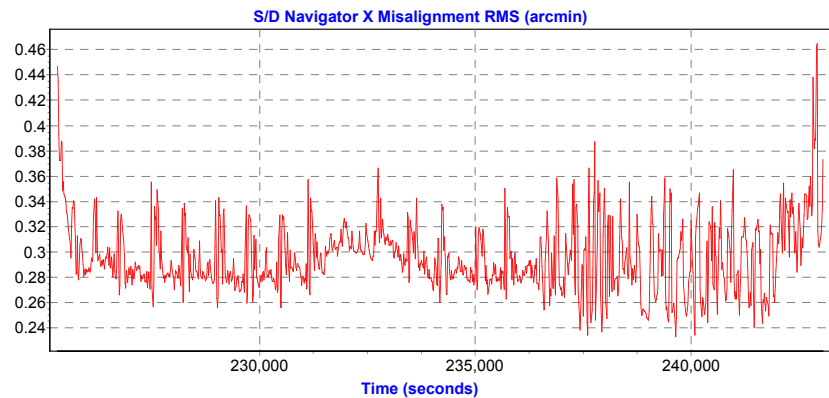






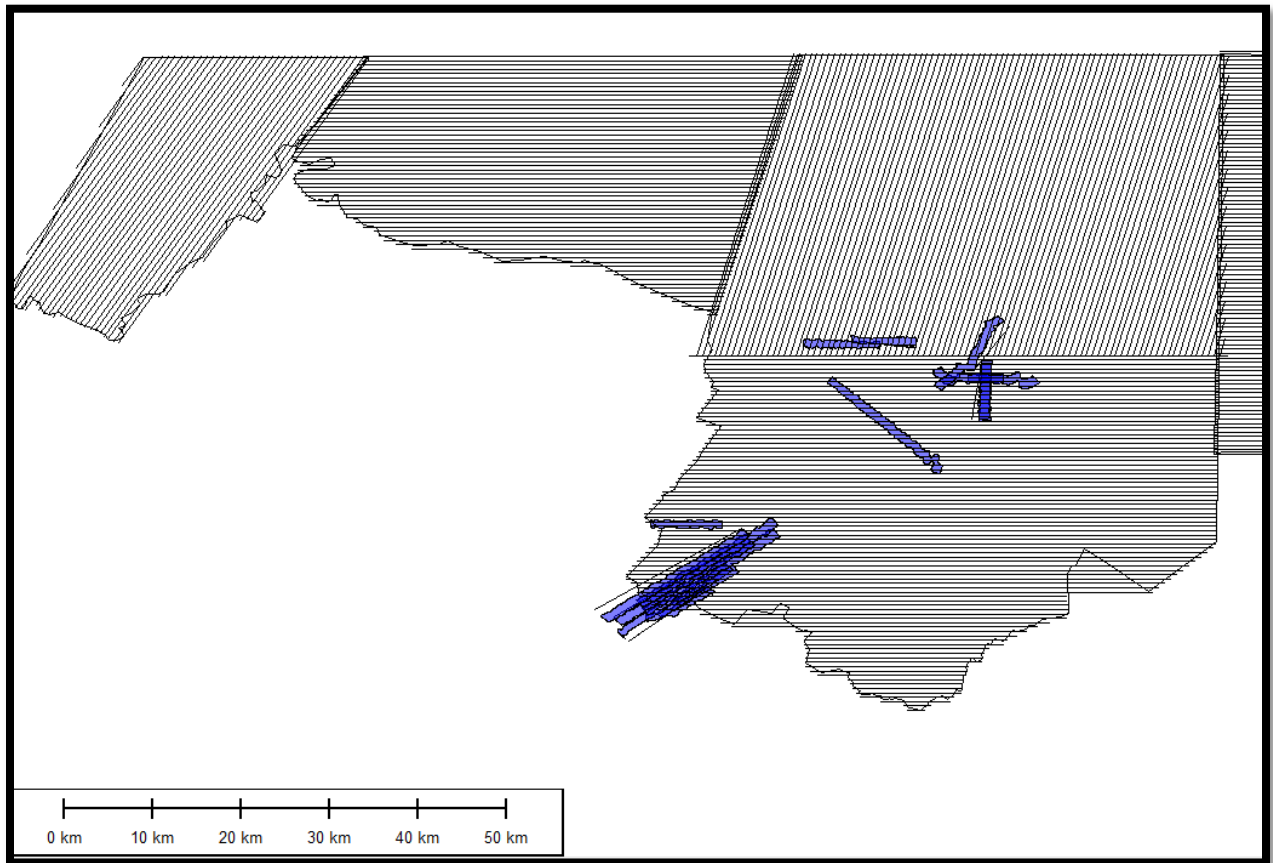






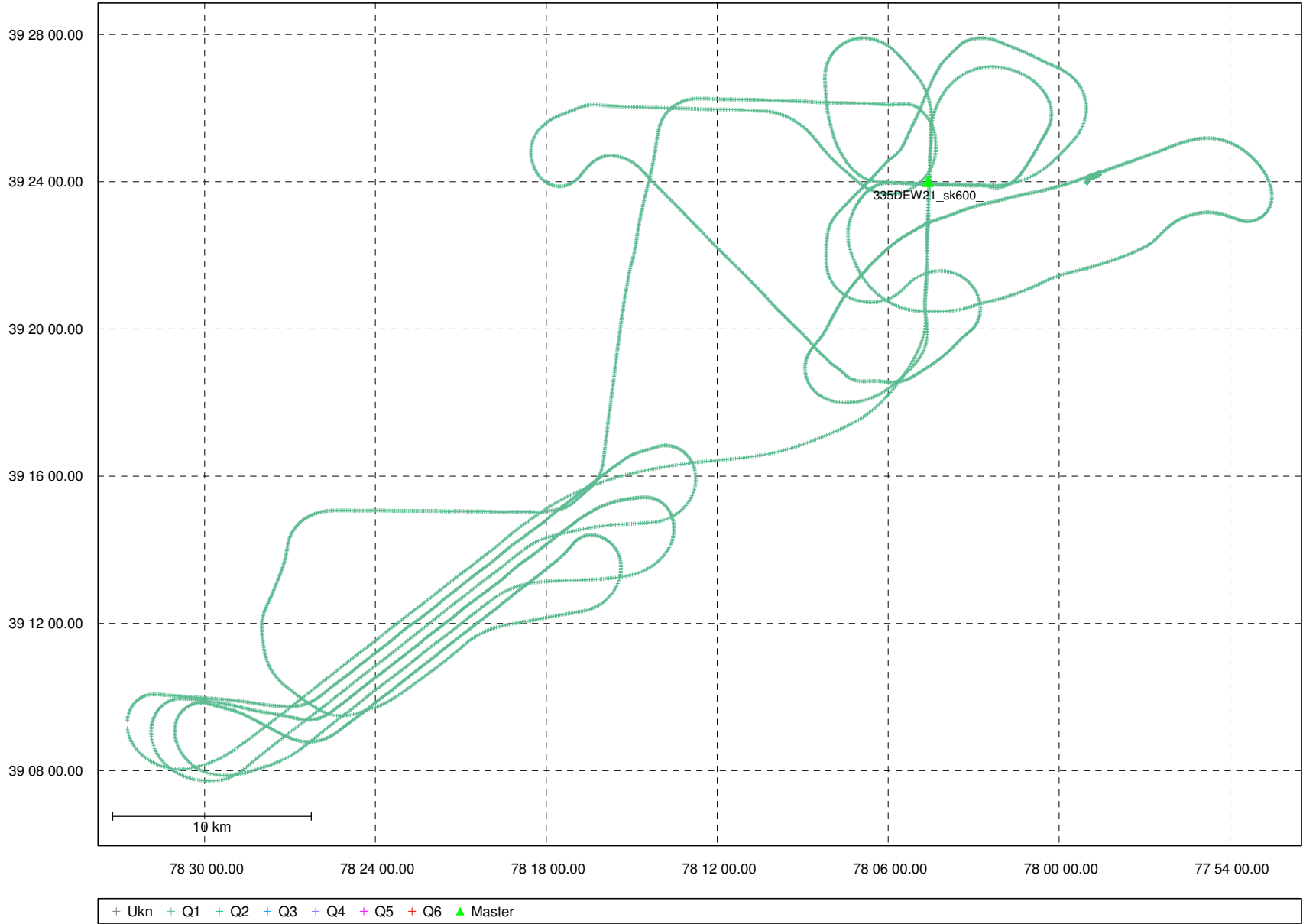
Mission: o112066b

March 06, 2012

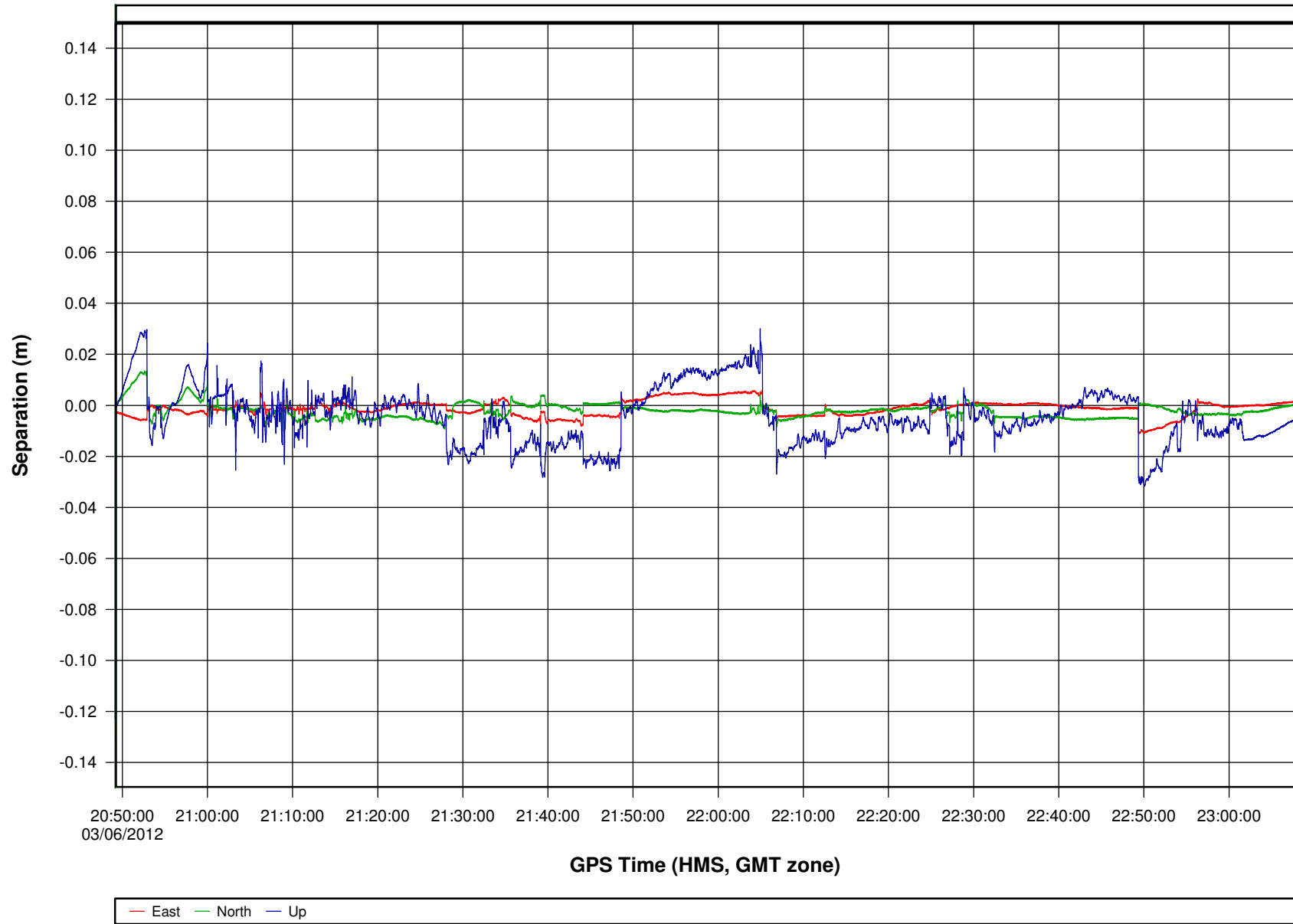


Combined - Map Run (1)

Geographic, DMS



o112066b [Combined] - Forward/Reverse or Combined Separation Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: L:\335DEW11 USGS_MD_VA_lidar\2_Operations\6_Missions\o112066b\3_Processed\GPS\
GPS\o112066b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	83328
No processed position:	75014
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0164 (m)
C/A Code:	0.72 (m)
L1 Doppler:	0.037 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.004 (m)
North:	0.008 (m)
Height:	0.013 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8309 occurrences):

East:	0.003 (m)
North:	0.004 (m)
Height:	0.011 (m)

Quality Number Percentages:

Q 1:	100.0 %
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:	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 %

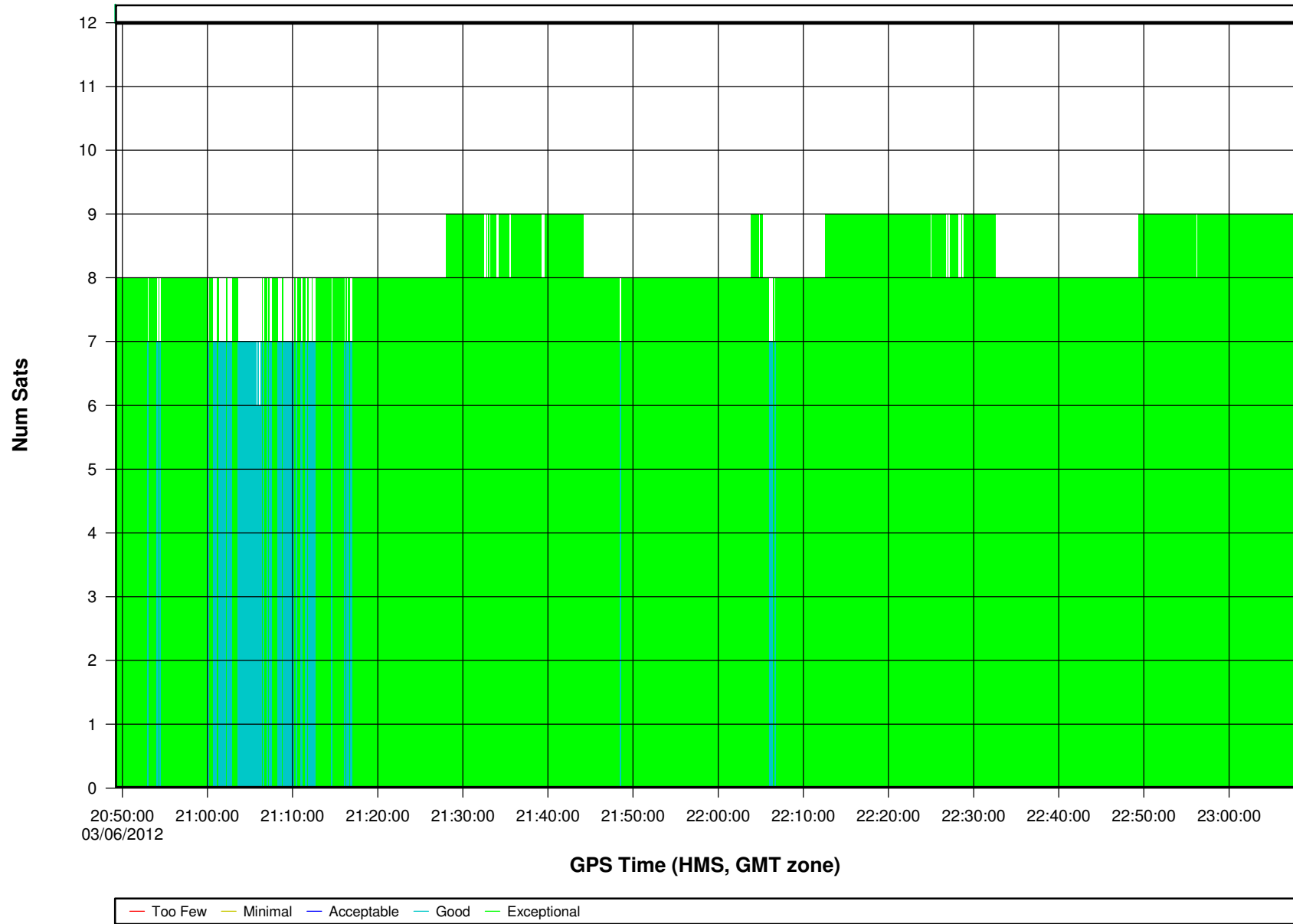
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol:	0.0 %
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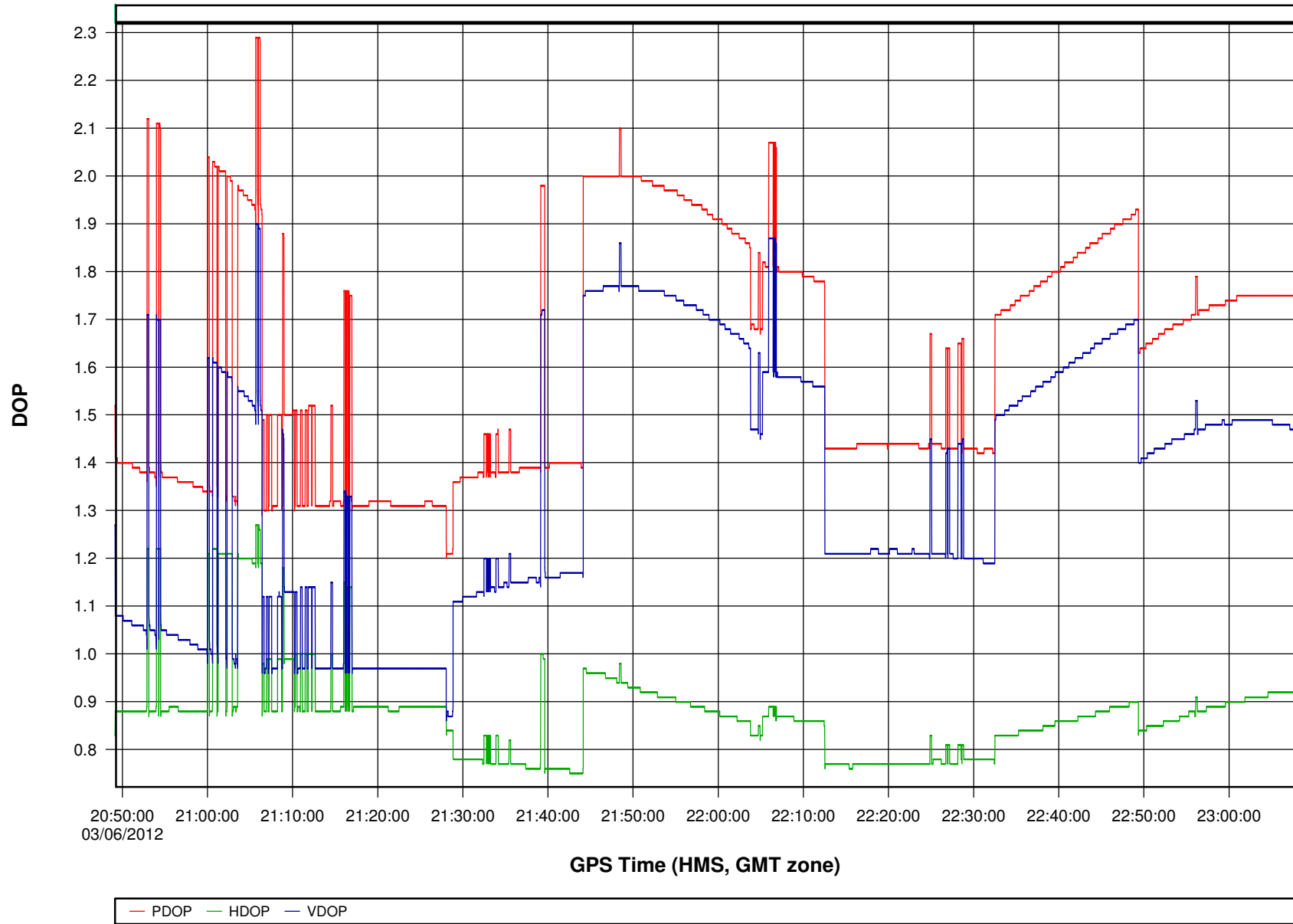
Baseline Distances:

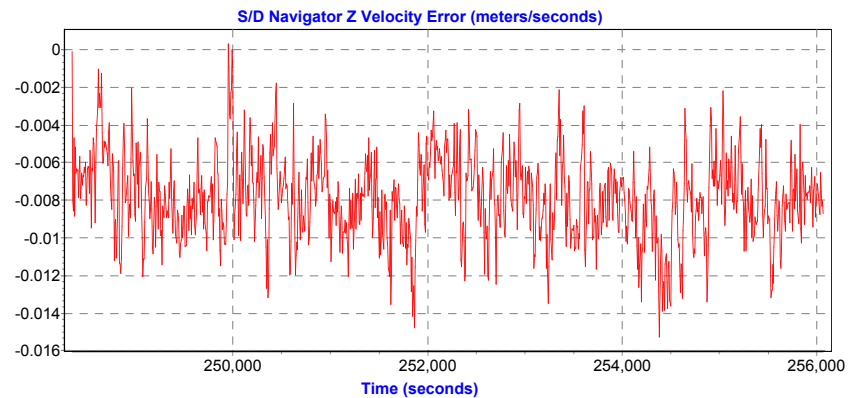
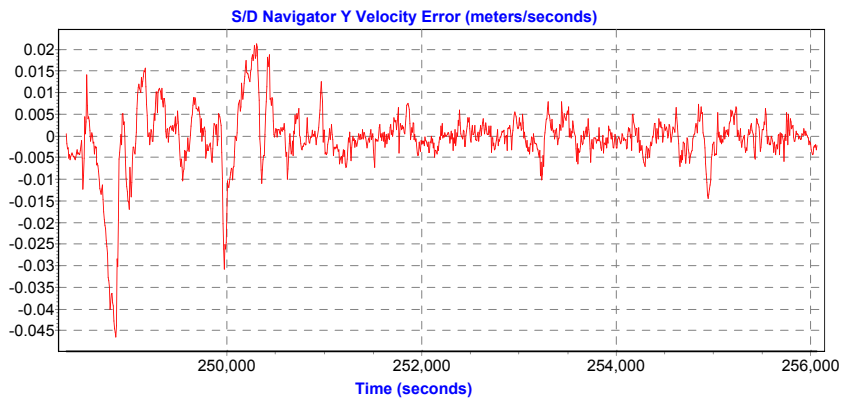
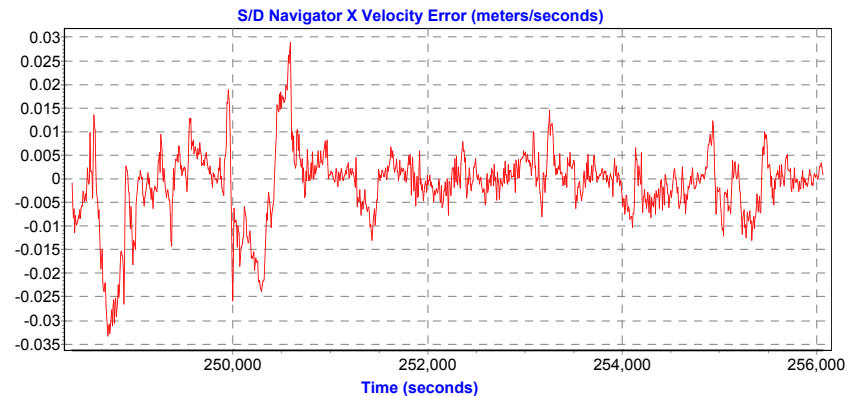
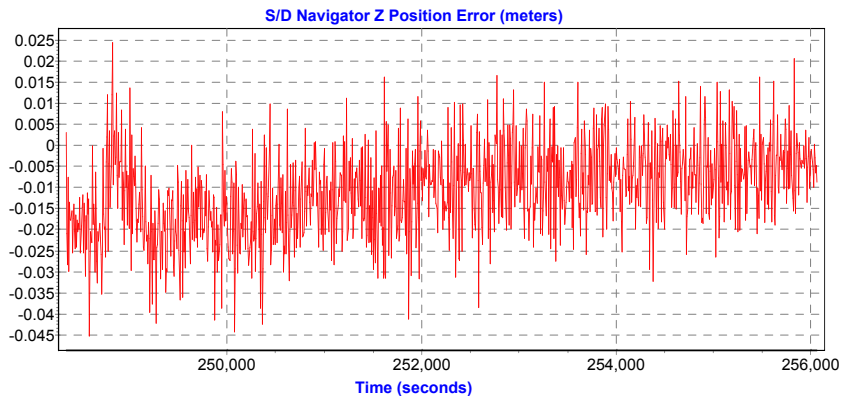
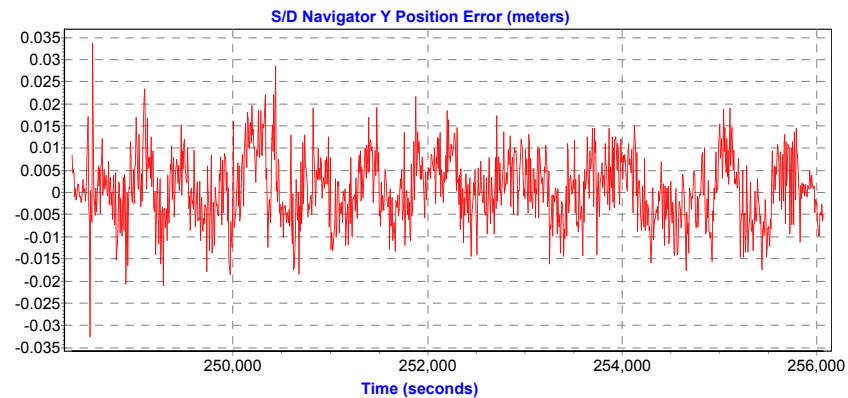
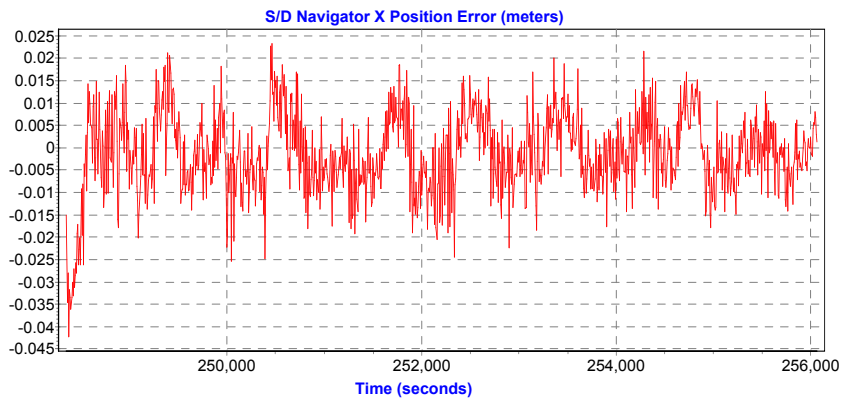
Maximum:	49.153 (km)
Minimum:	1.095 (km)
Average:	18.771 (km)
First Epoch:	8.018 (km)
Last Epoch:	8.017 (km)

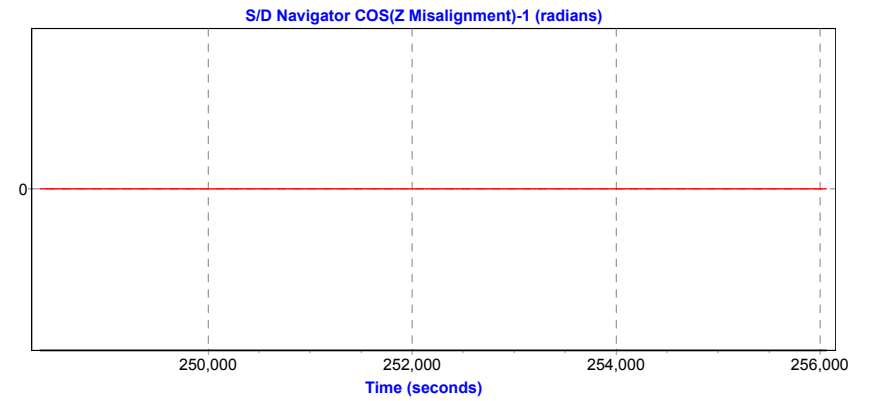
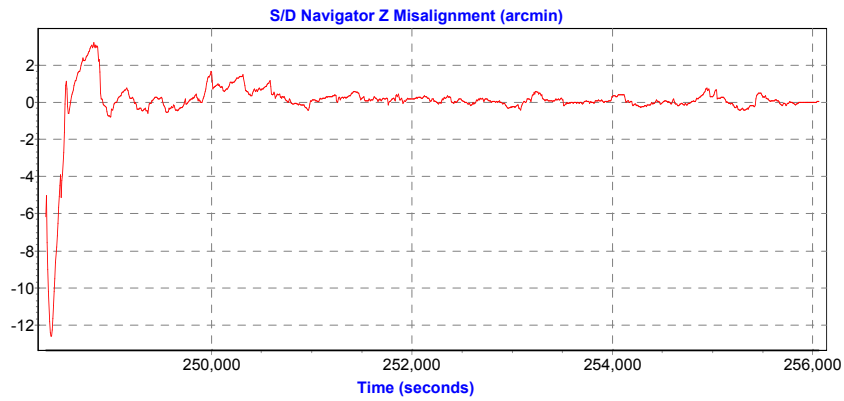
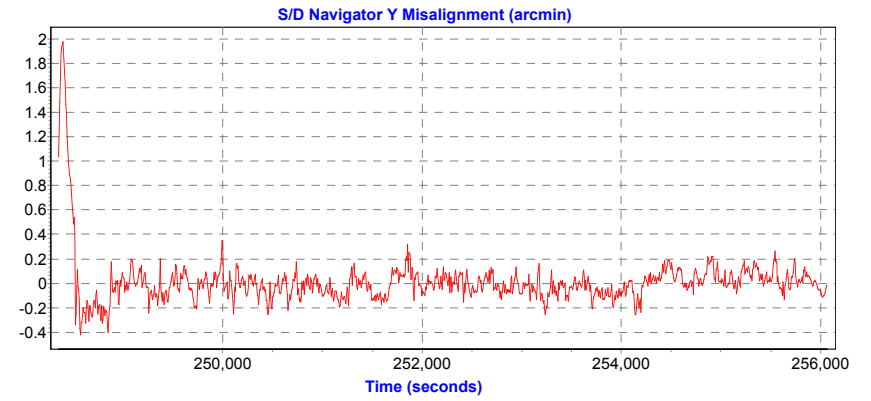
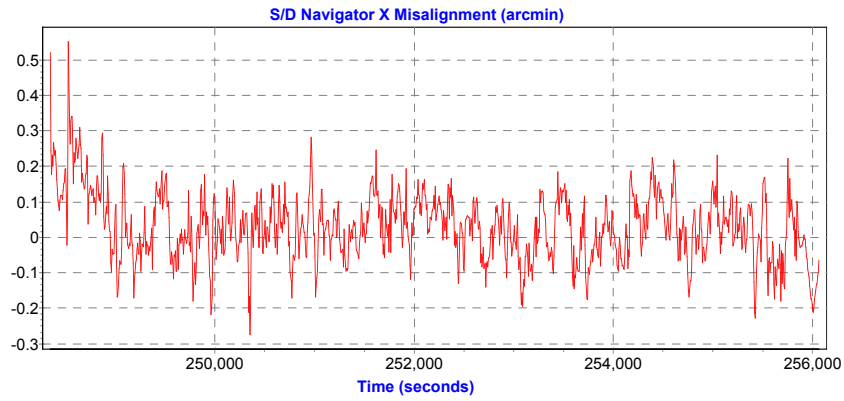
o112066b [Combined] - Number of Satellites Bar Plot

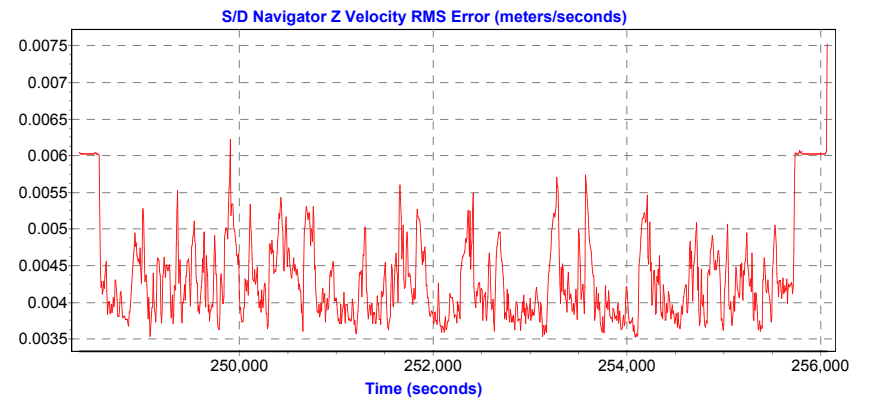
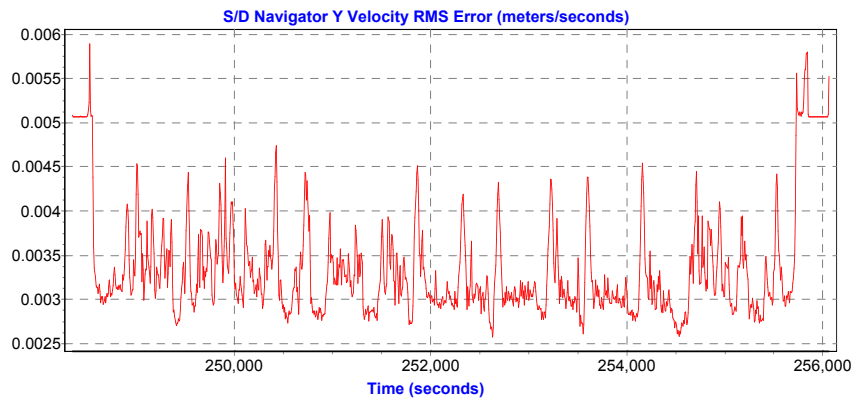
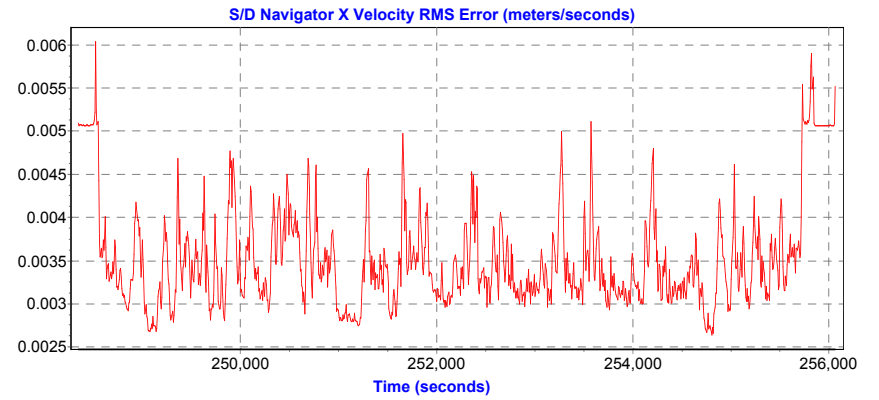
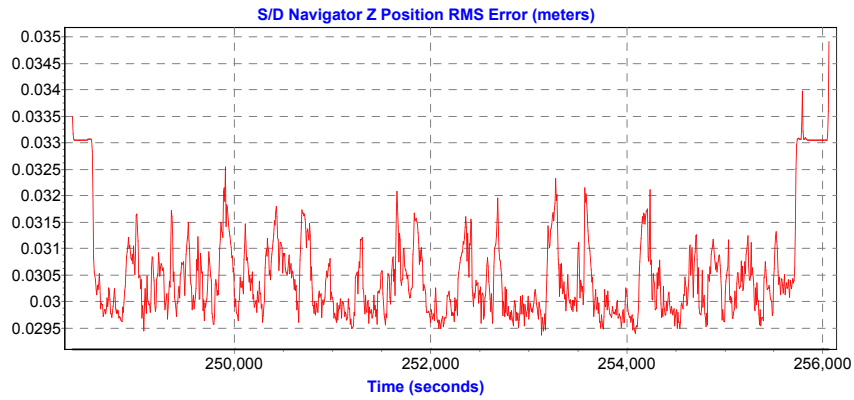
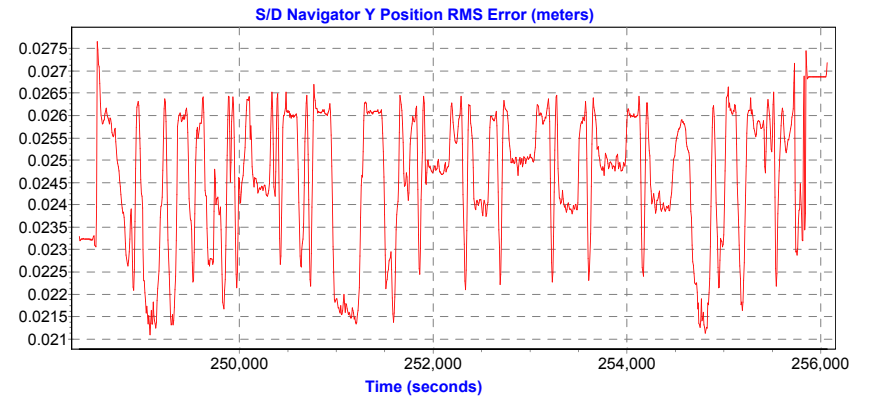
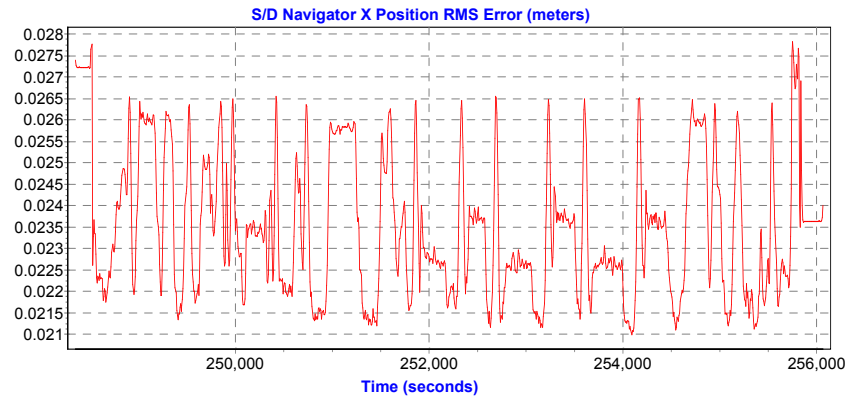


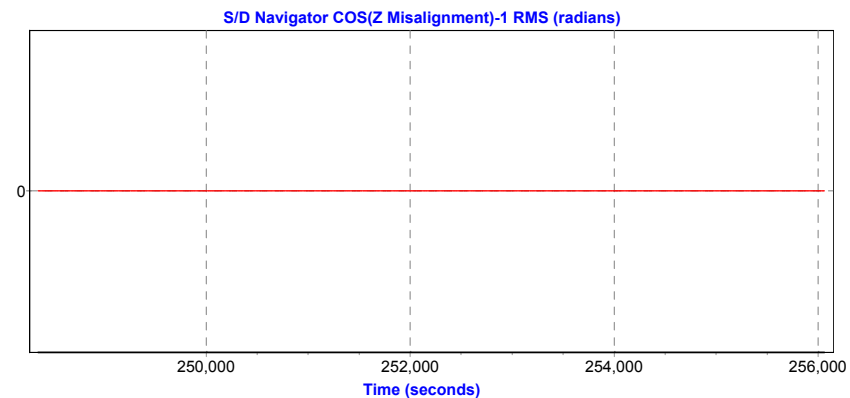
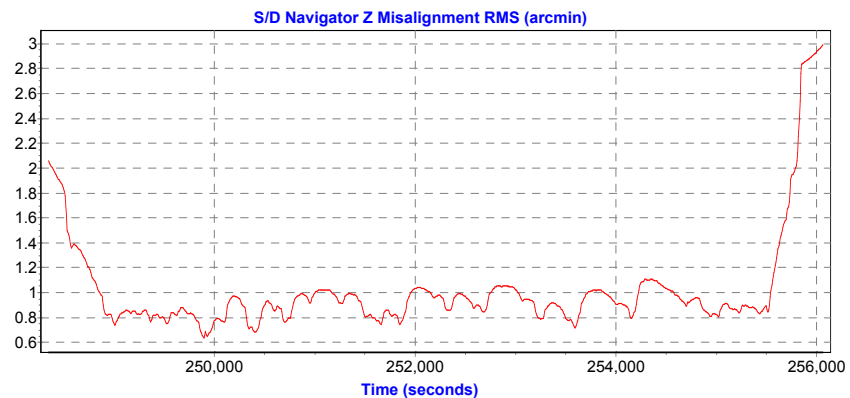
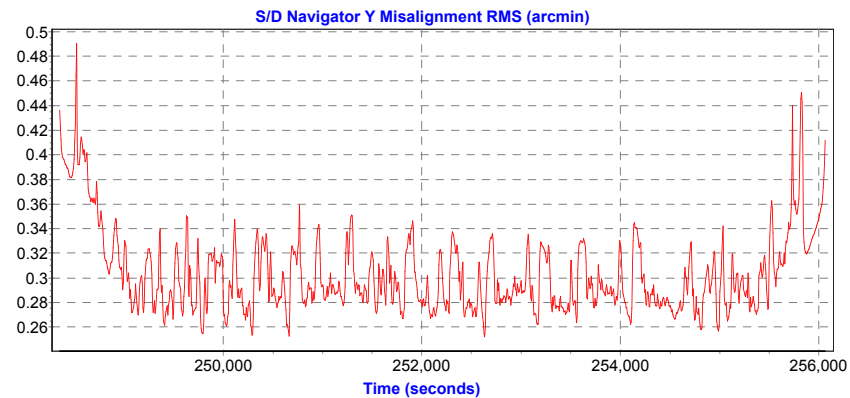
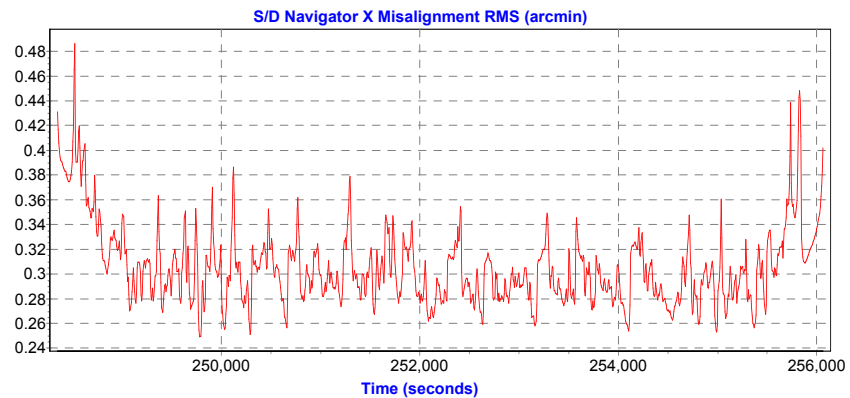
o112066b [Combined] - PDOP, HDOP, VDOP Plots

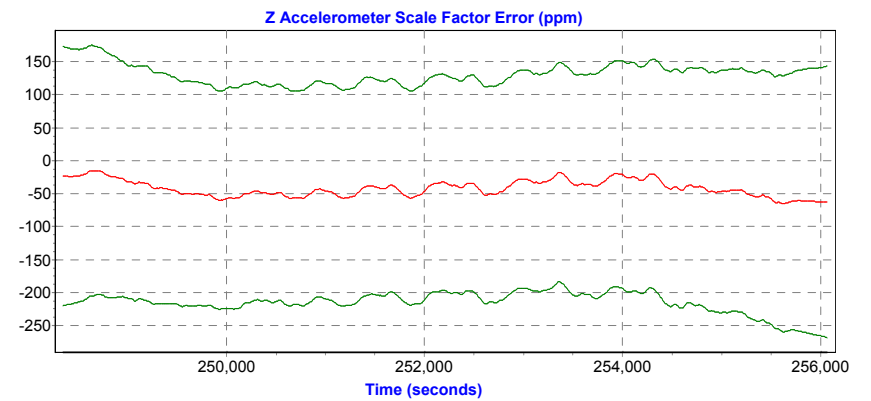
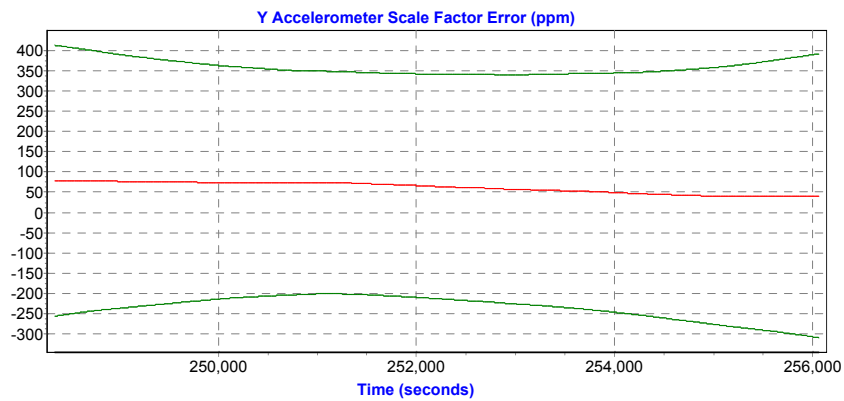
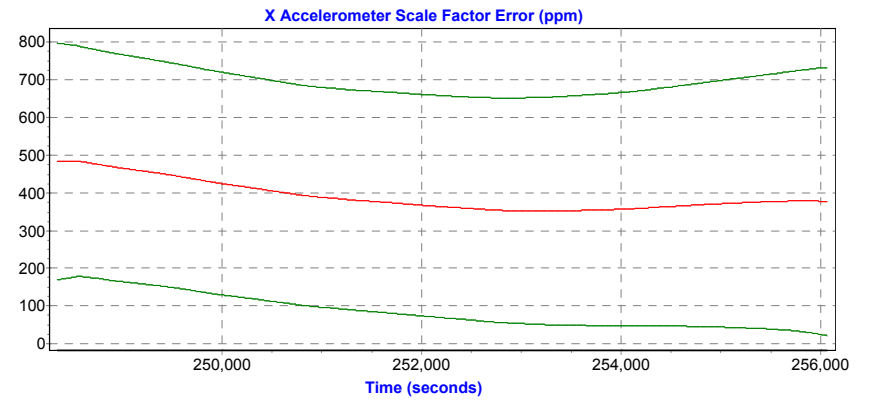
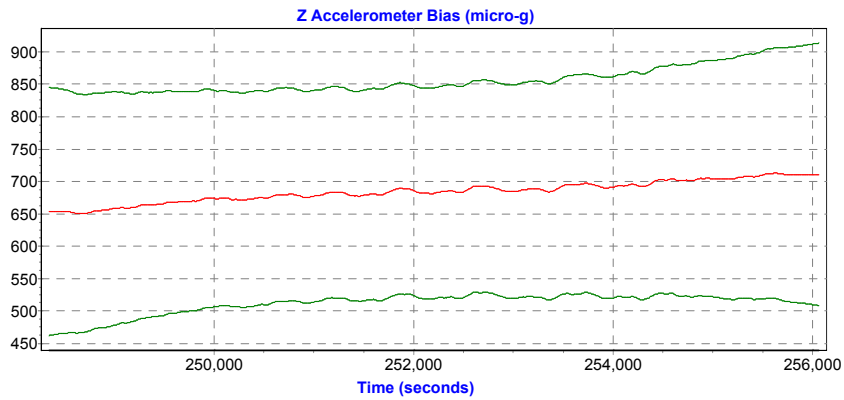
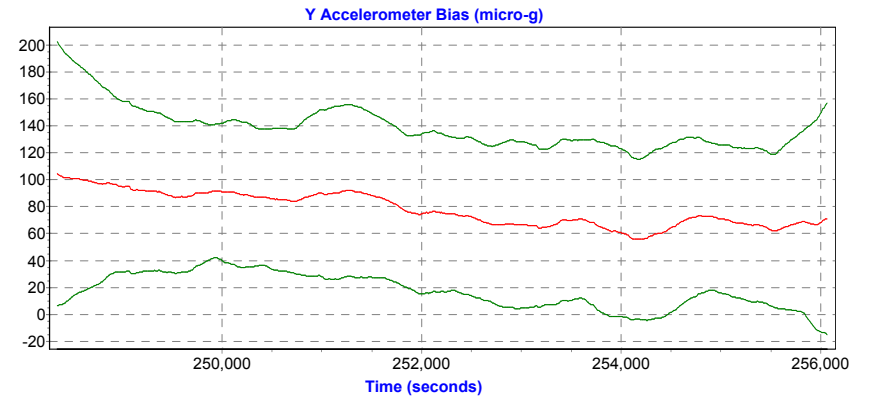
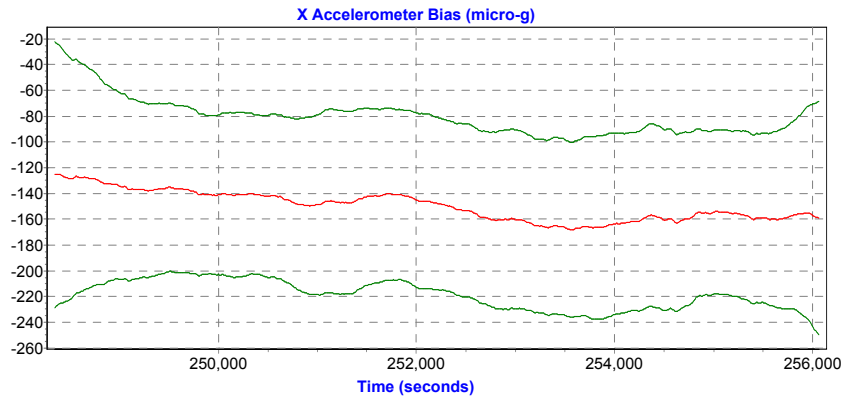


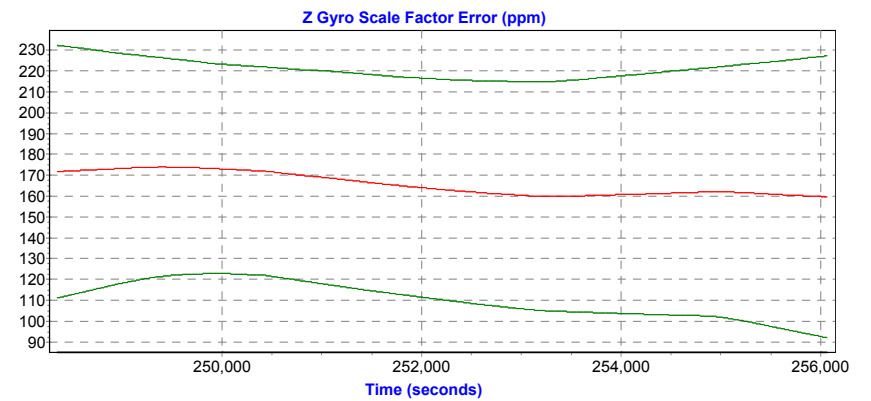
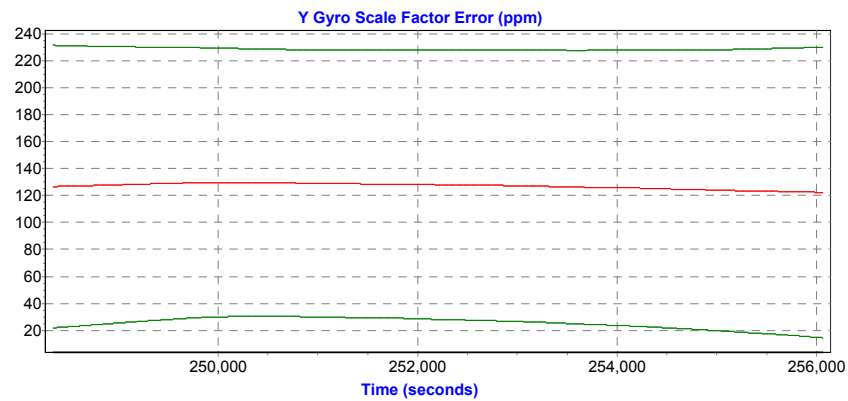
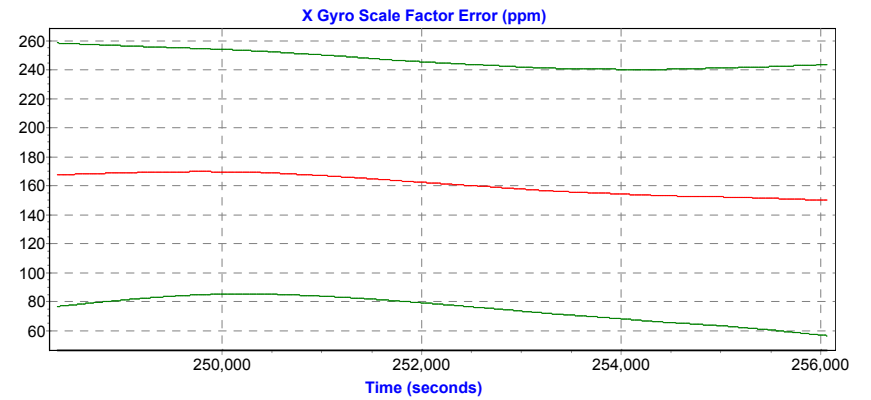
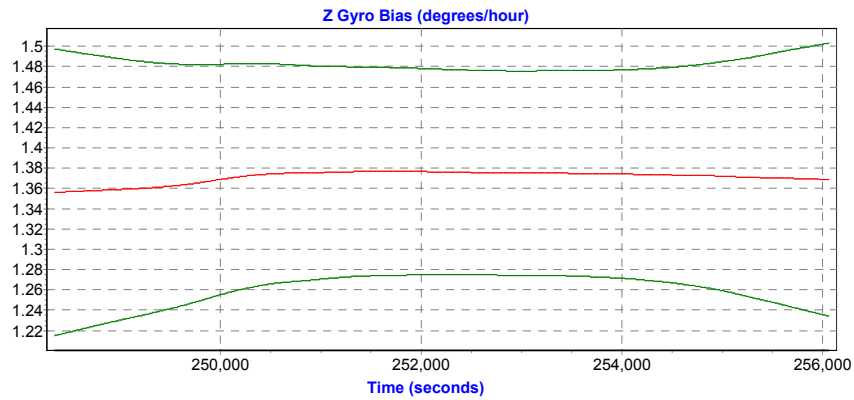
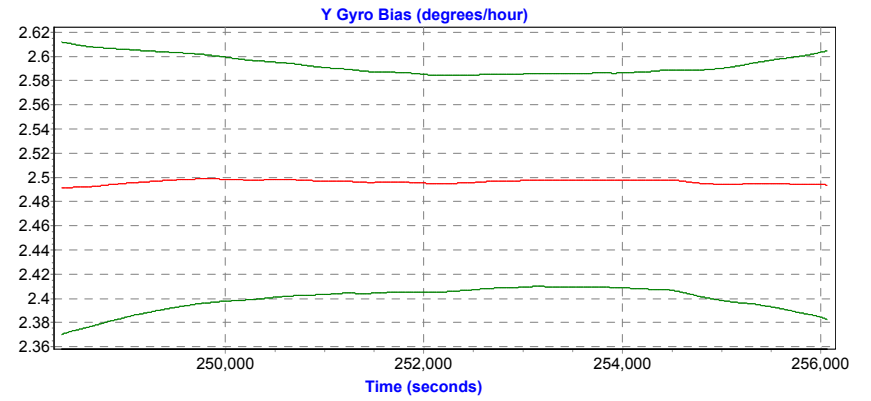
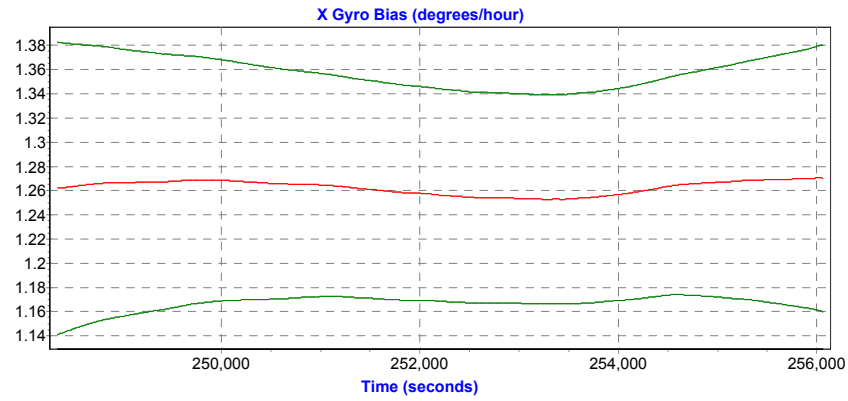






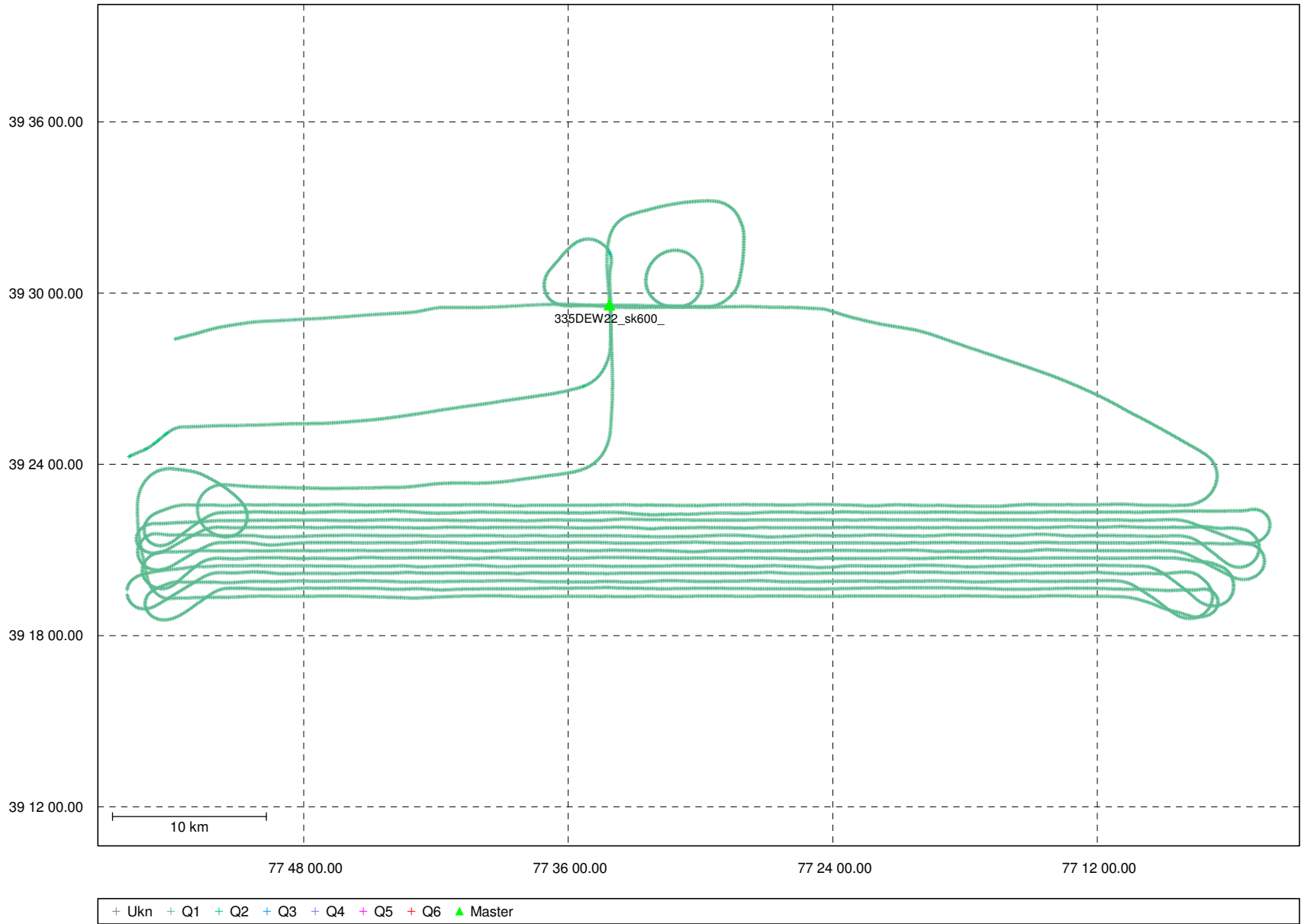






Combined - Map Run (3)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: L:\335DEW11
USGS_MD_VA_lidar\2_Operations\6_Missions\o112070a\3_Processed\GPS\o112070a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file: 168738
No processed position: 153121
Missing Fwd or Rev: 4
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:

L1 Phase: 0.0166 (m)
C/A Code: 0.82 (m)
L1 Doppler: 0.029 (m/s)

Fwd/Rev Separation RMS Values:

East: 0.027 (m)
North: 0.024 (m)
Height: 0.045 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (15572 occurances):

East: 0.026 (m)
North: 0.023 (m)
Height: 0.039 (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: 98.3 %
0.10 - 0.30 m: 1.7 %
0.30 - 1.00 m: 0.0 %
1.00 - 5.00 m: 0.0 %
5.00 m + over: 0.0 %

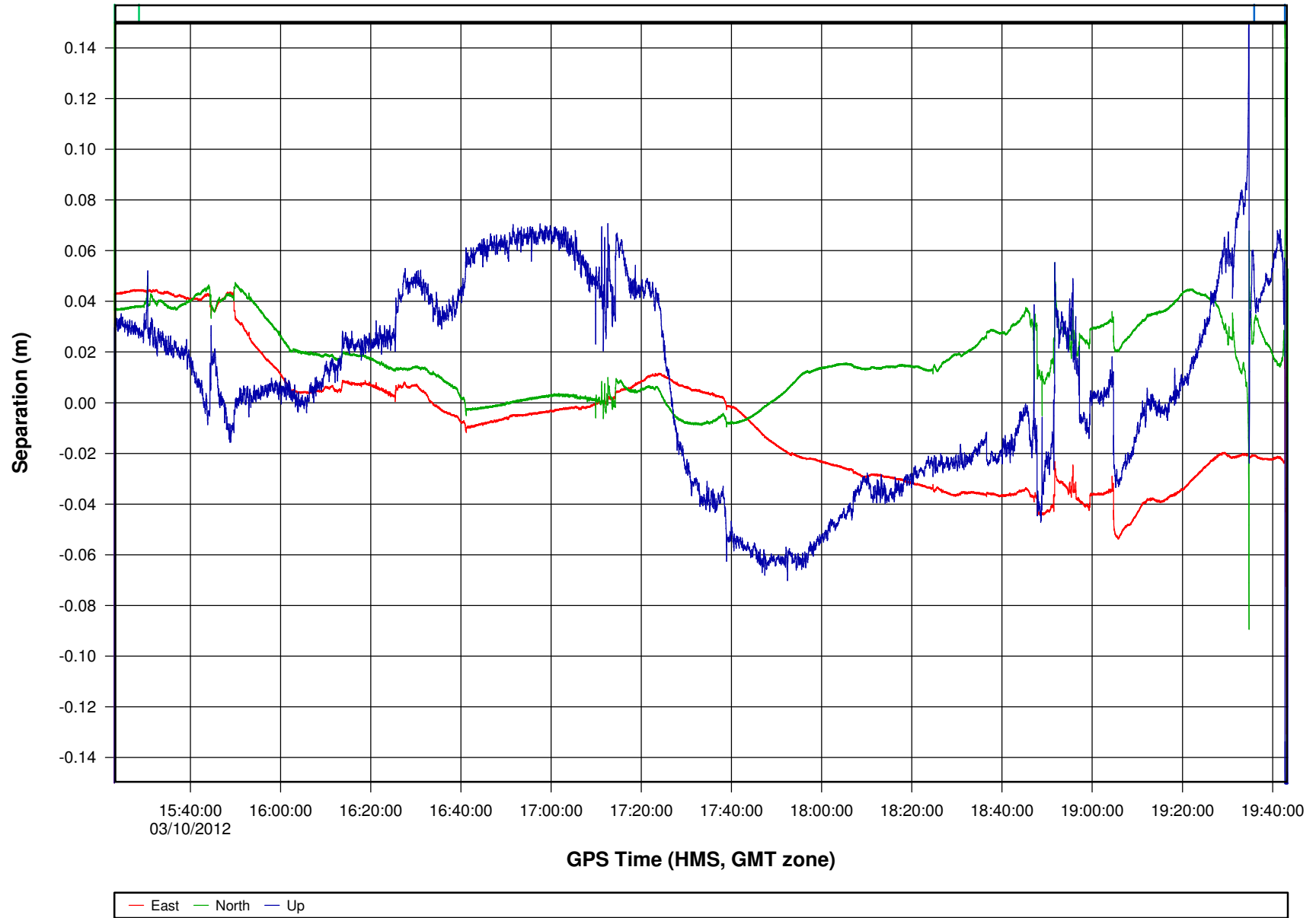
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.0 %

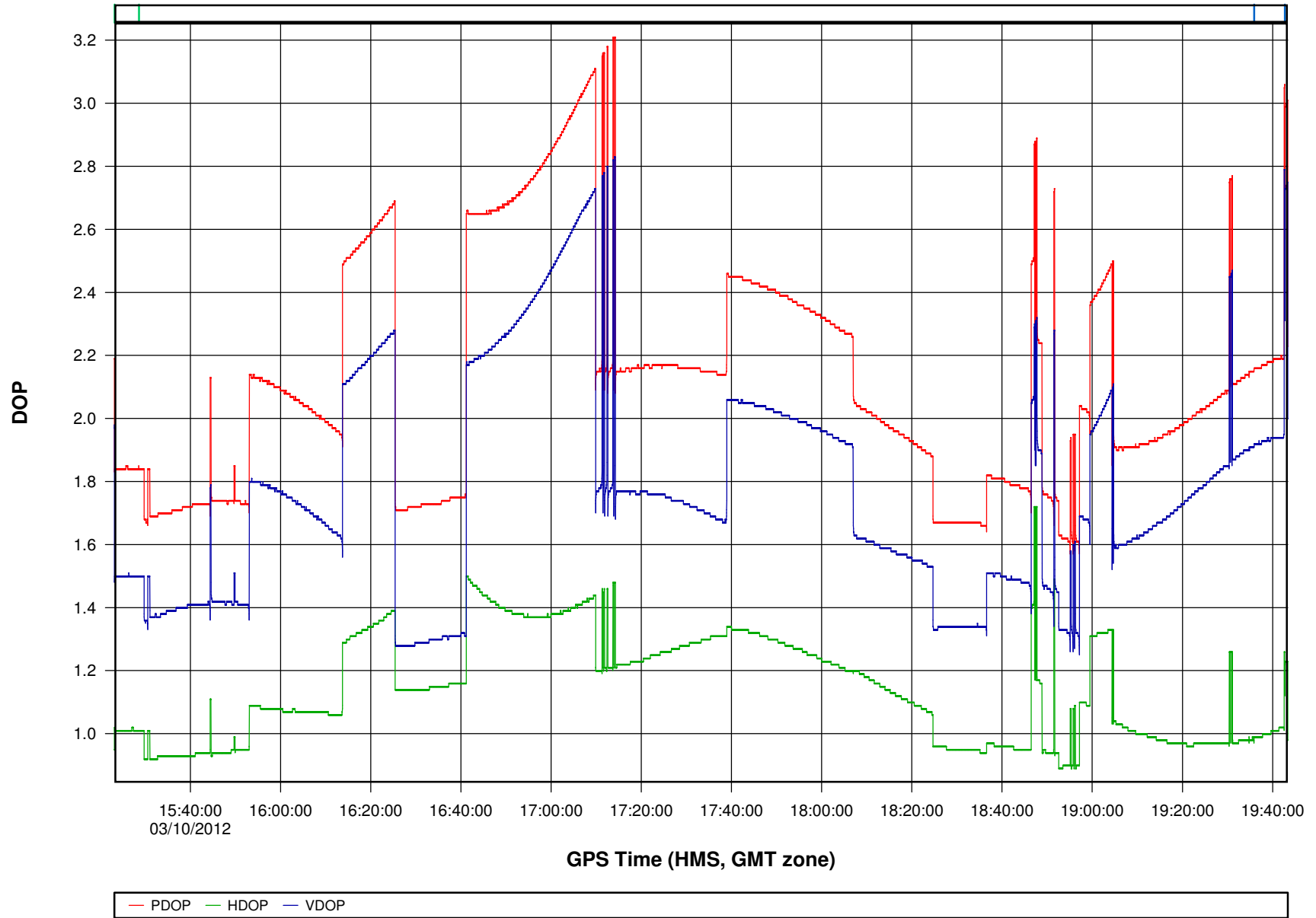
Baseline Distances:

Maximum: 45.872 (km)
Minimum: 0.916 (km)
Average: 24.003 (km)
First Epoch: 28.360 (km)
Last Epoch: 32.787 (km)

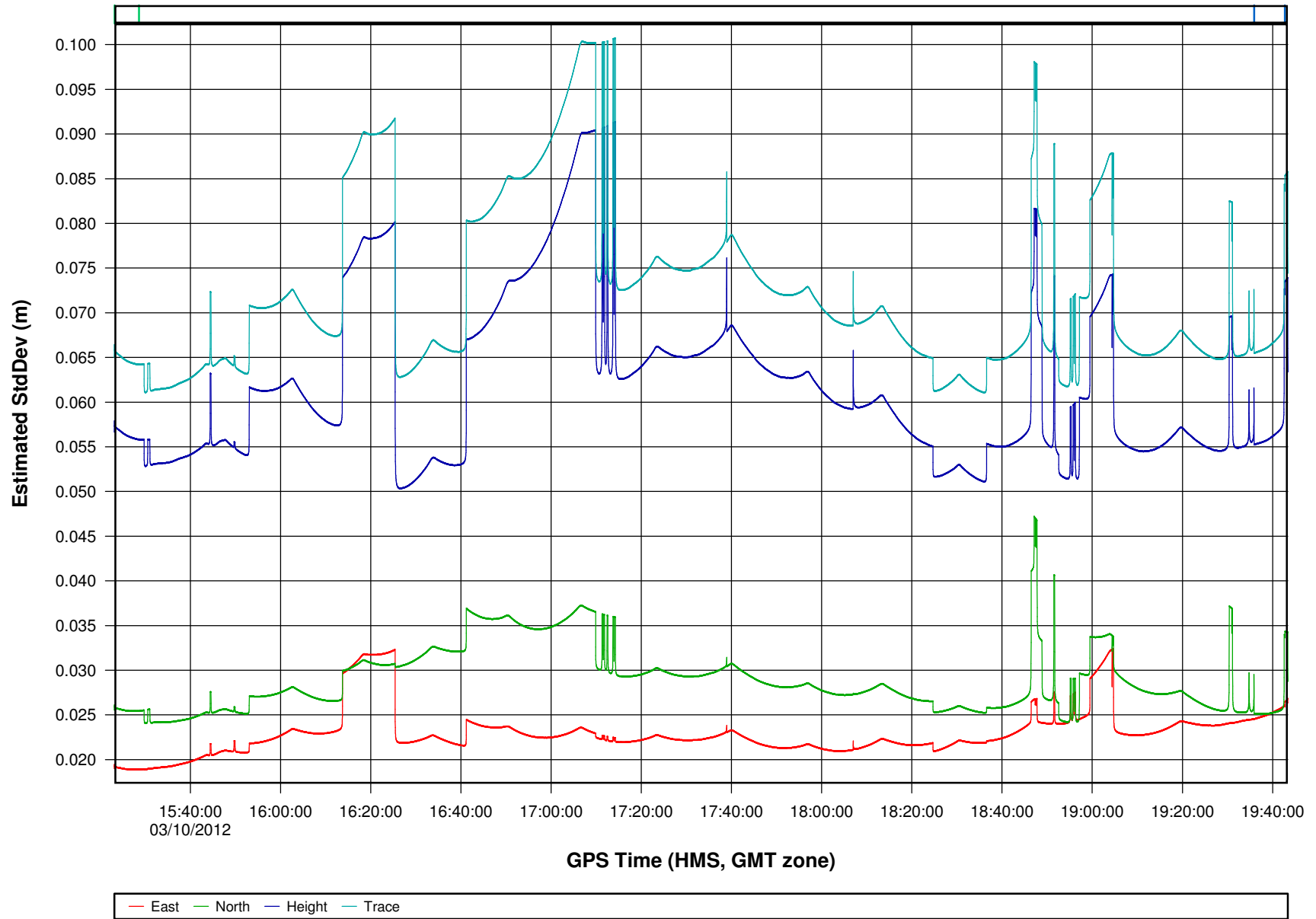
o112070a [Combined] - Forward/Reverse or Combined Separation Plot



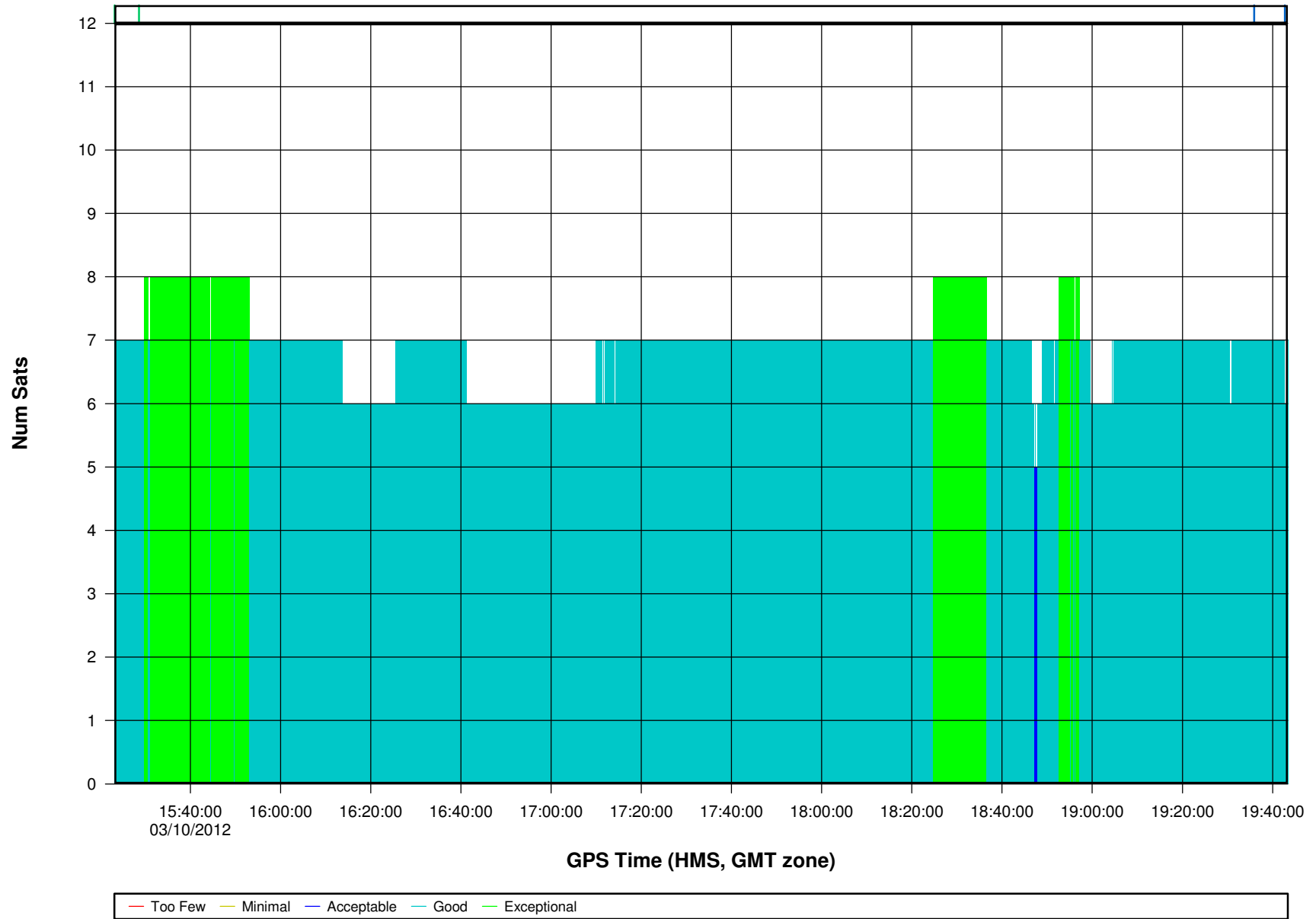
o112070a [Combined] - PDOP, HDOP, VDOP Plots



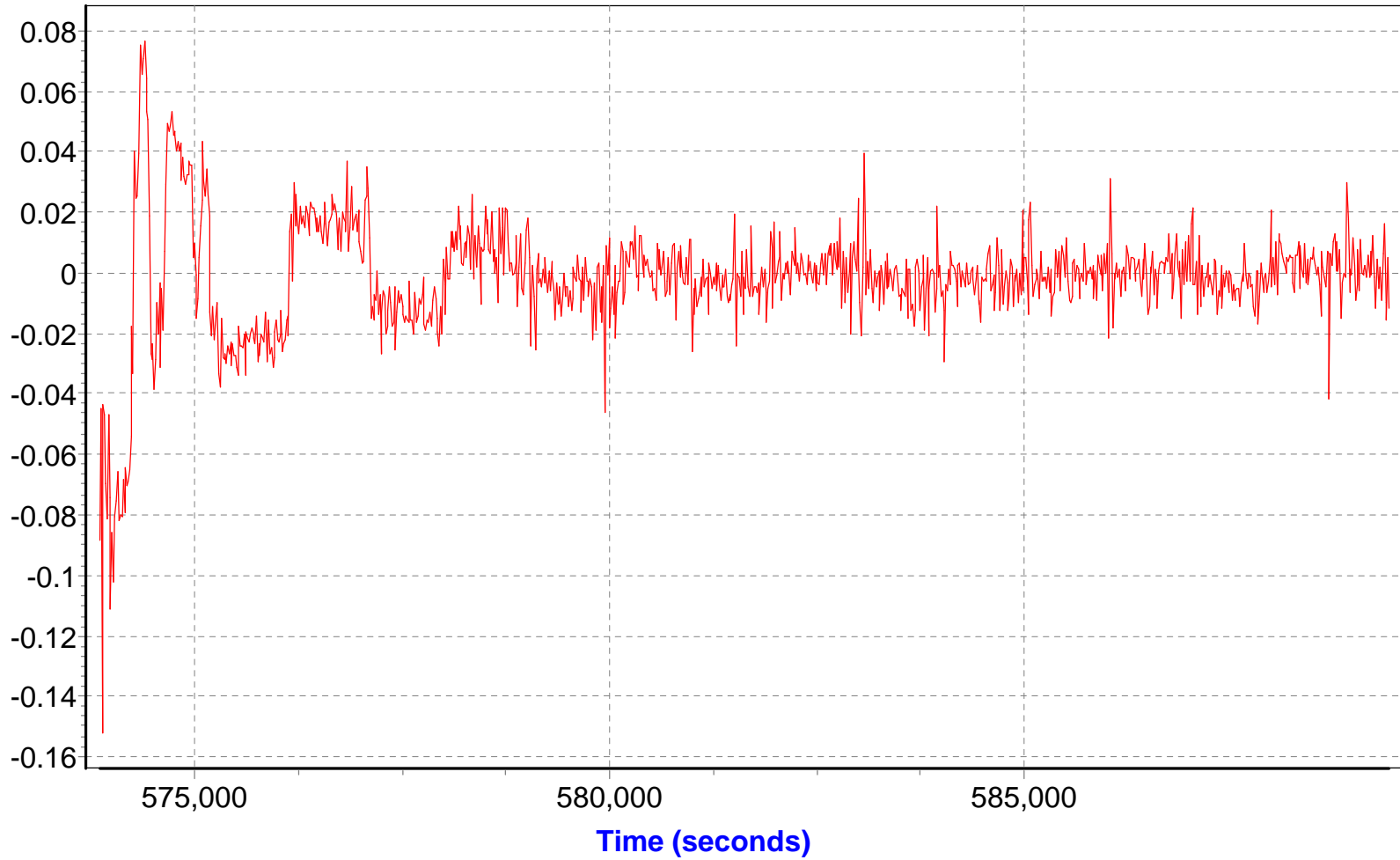
o112070a [Combined] - Estimated Position Accuracy Plot

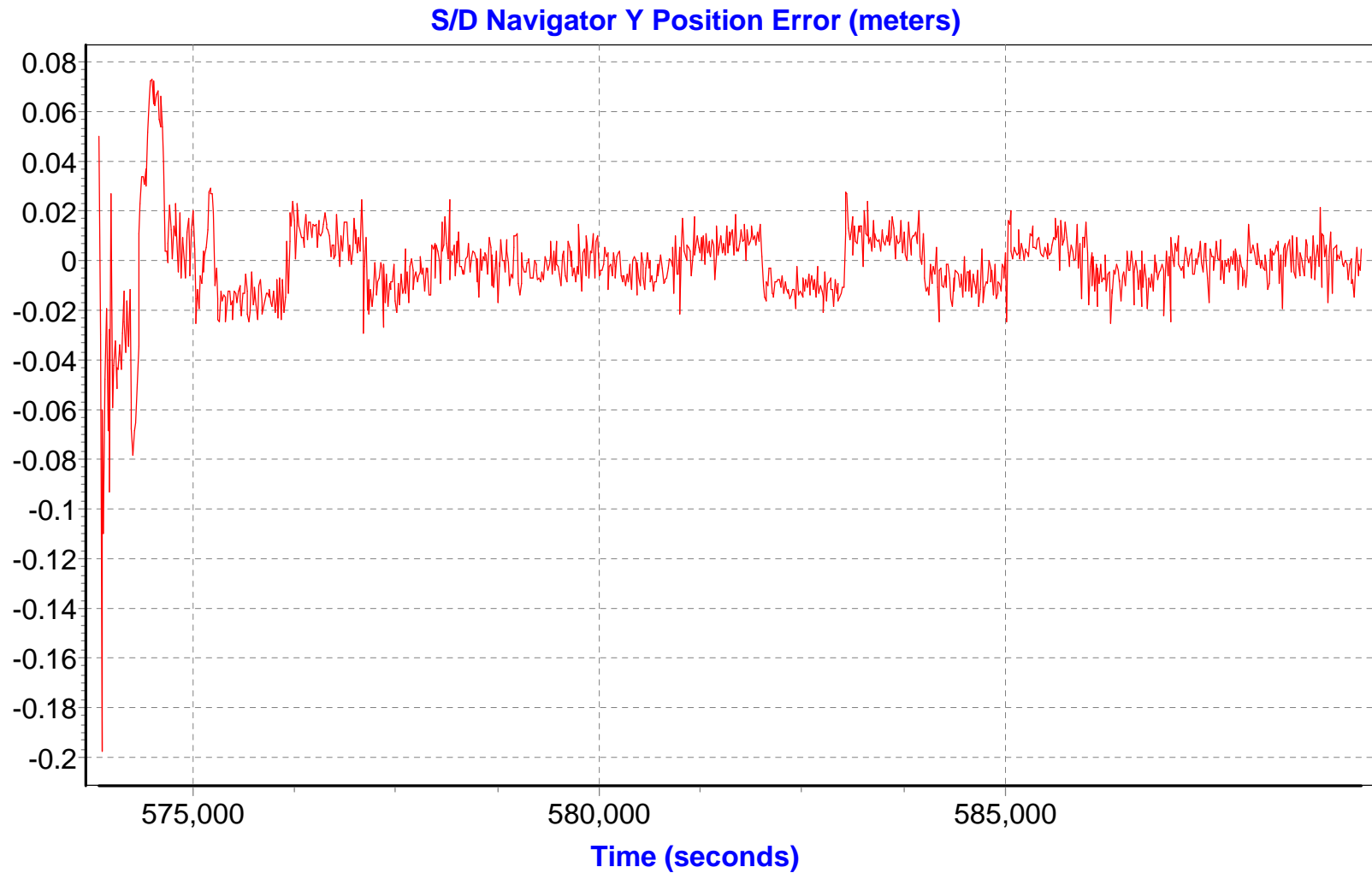


o112070a [Combined] - Number of Satellites Bar Plot

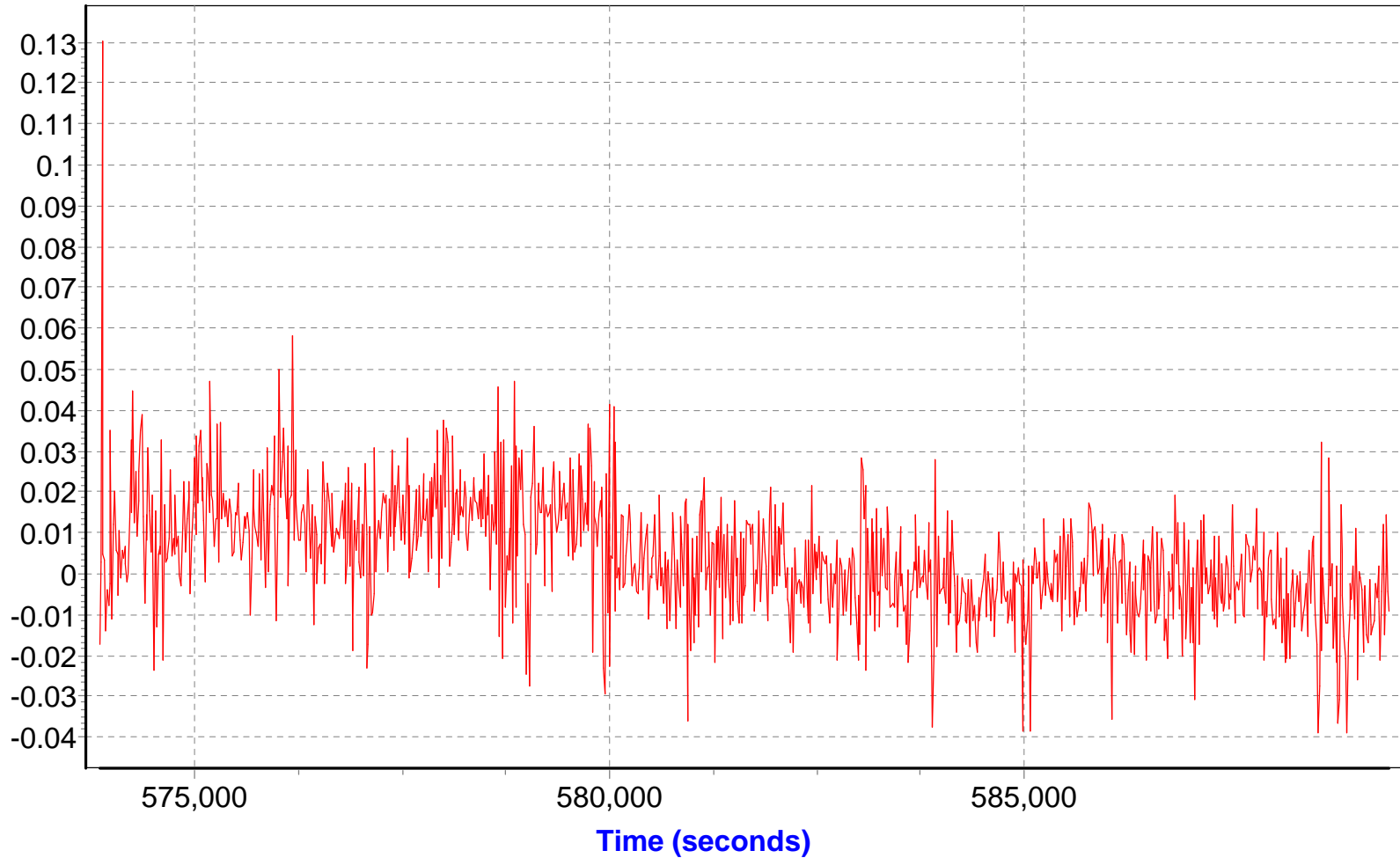


S/D Navigator X Position Error (meters)

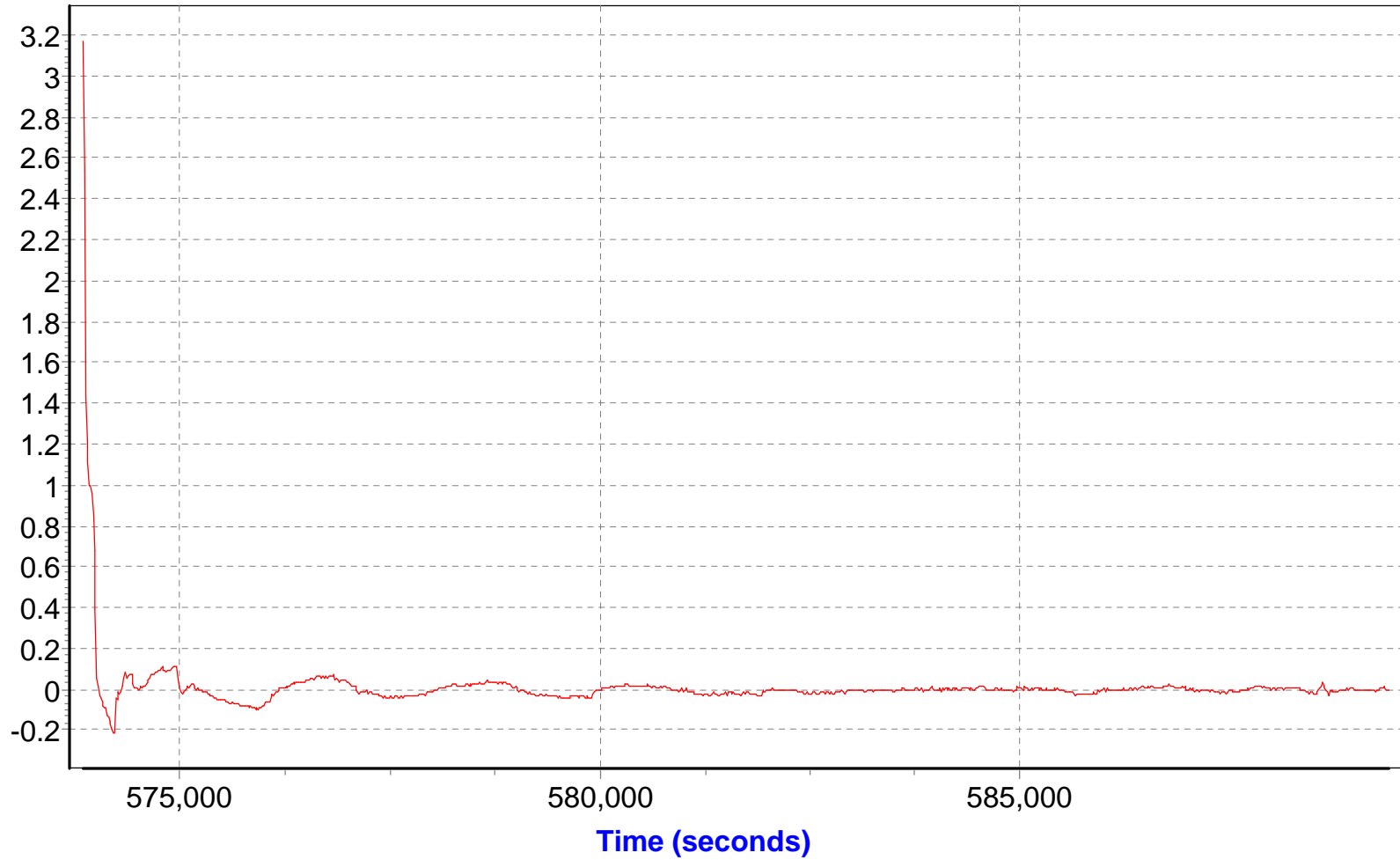




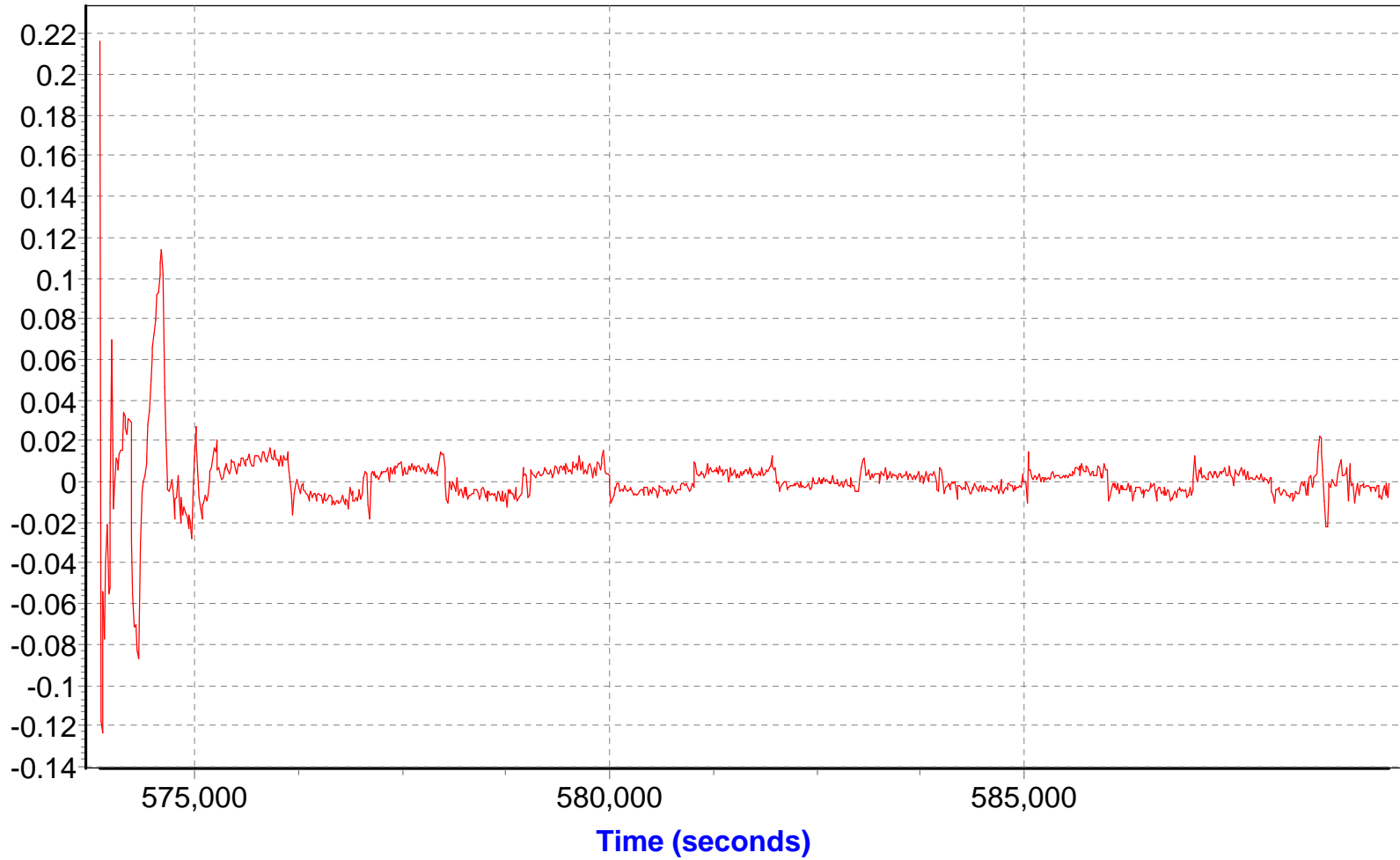
S/D Navigator Z Position Error (meters)



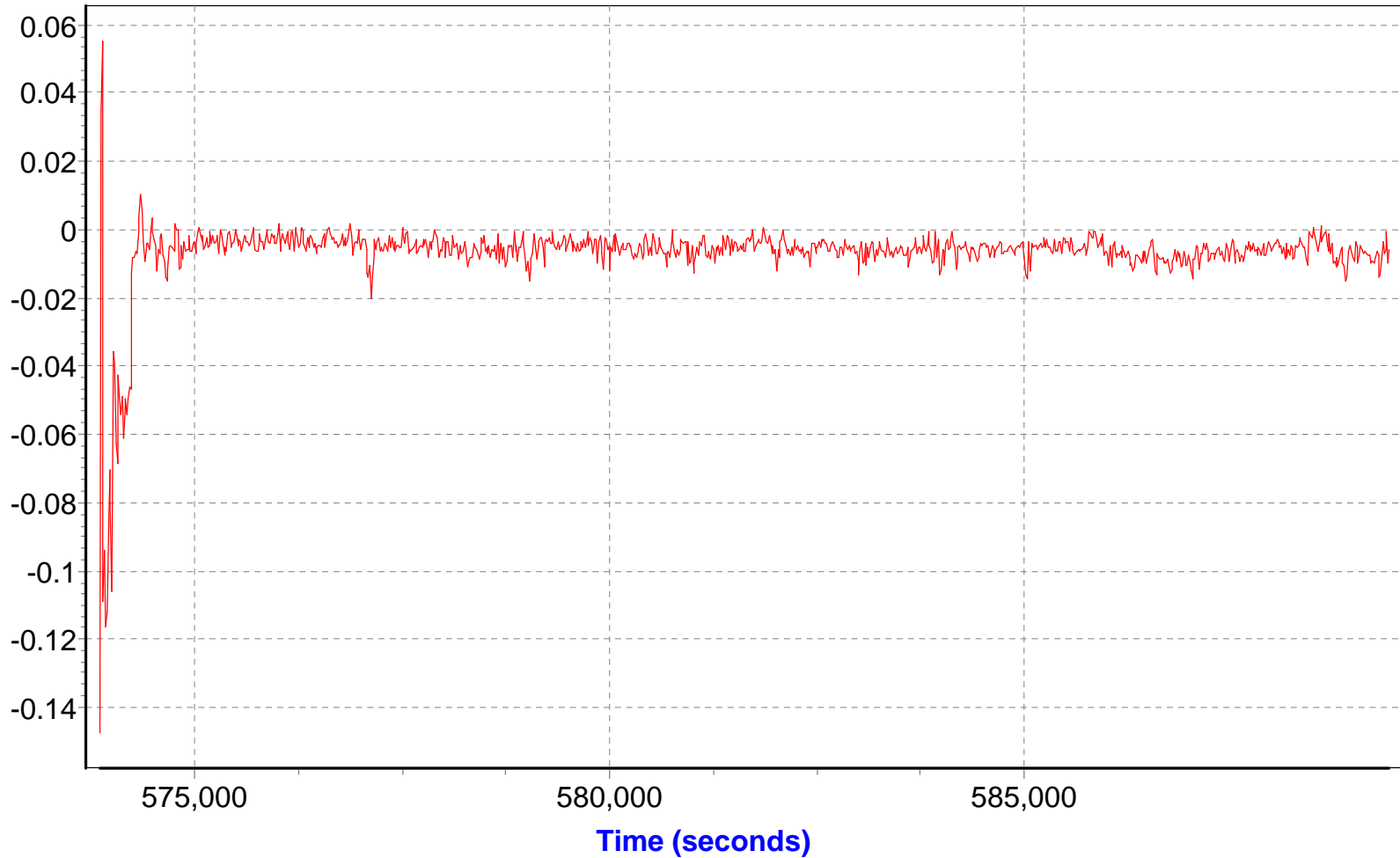
S/D Navigator X Velocity Error (meters/seconds)



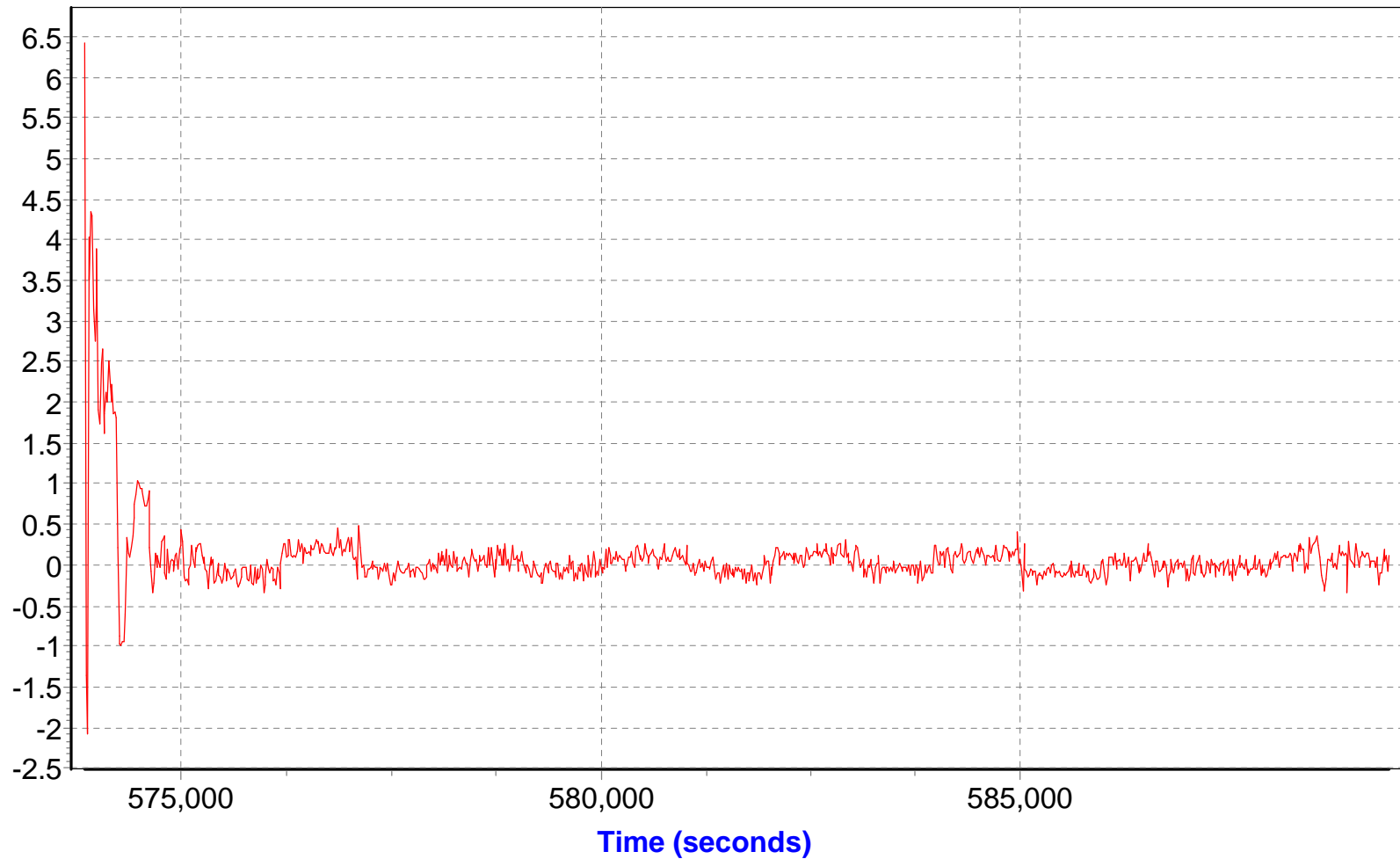
S/D Navigator Y Velocity Error (meters/seconds)

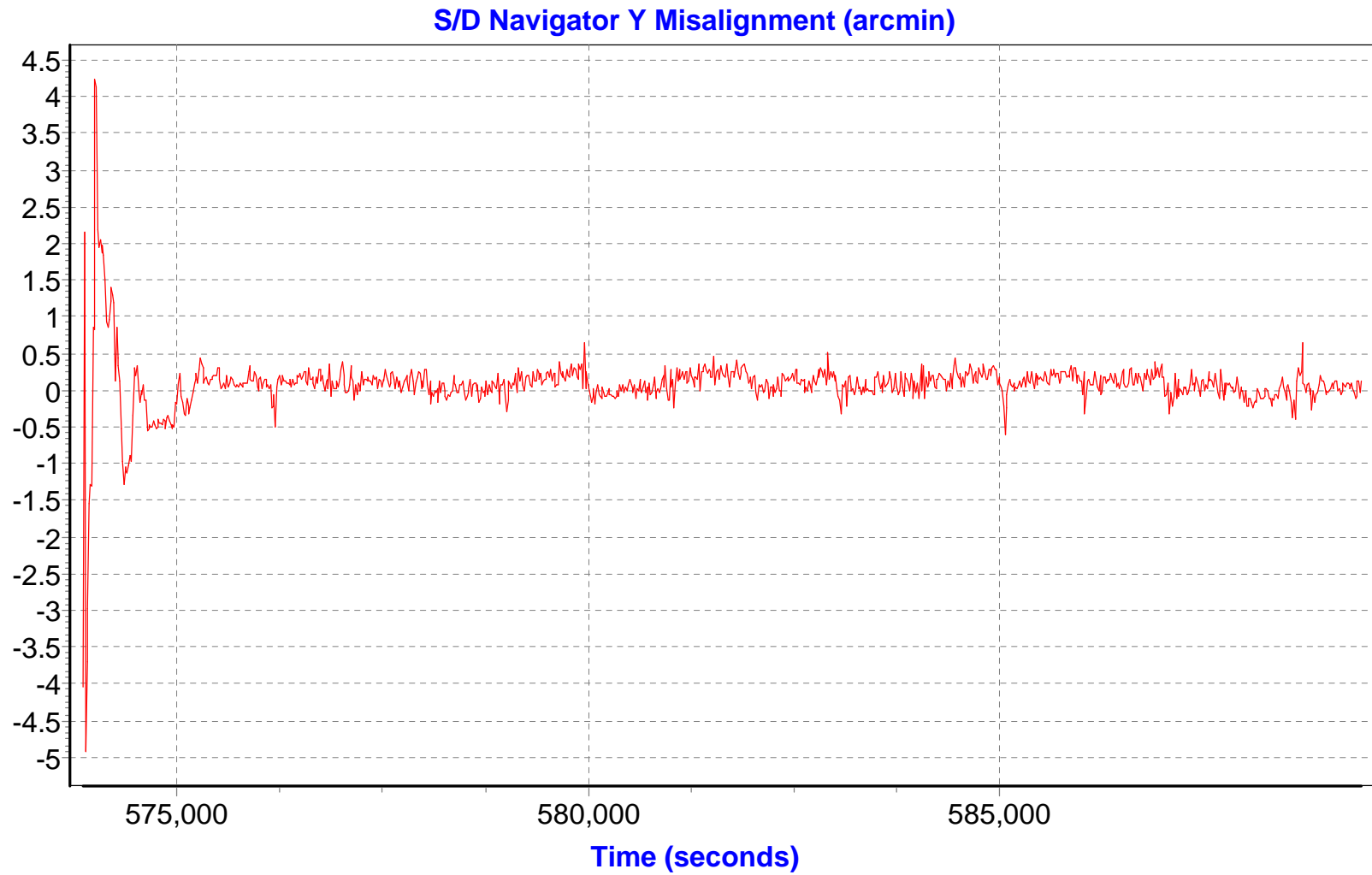


S/D Navigator Z Velocity Error (meters/seconds)

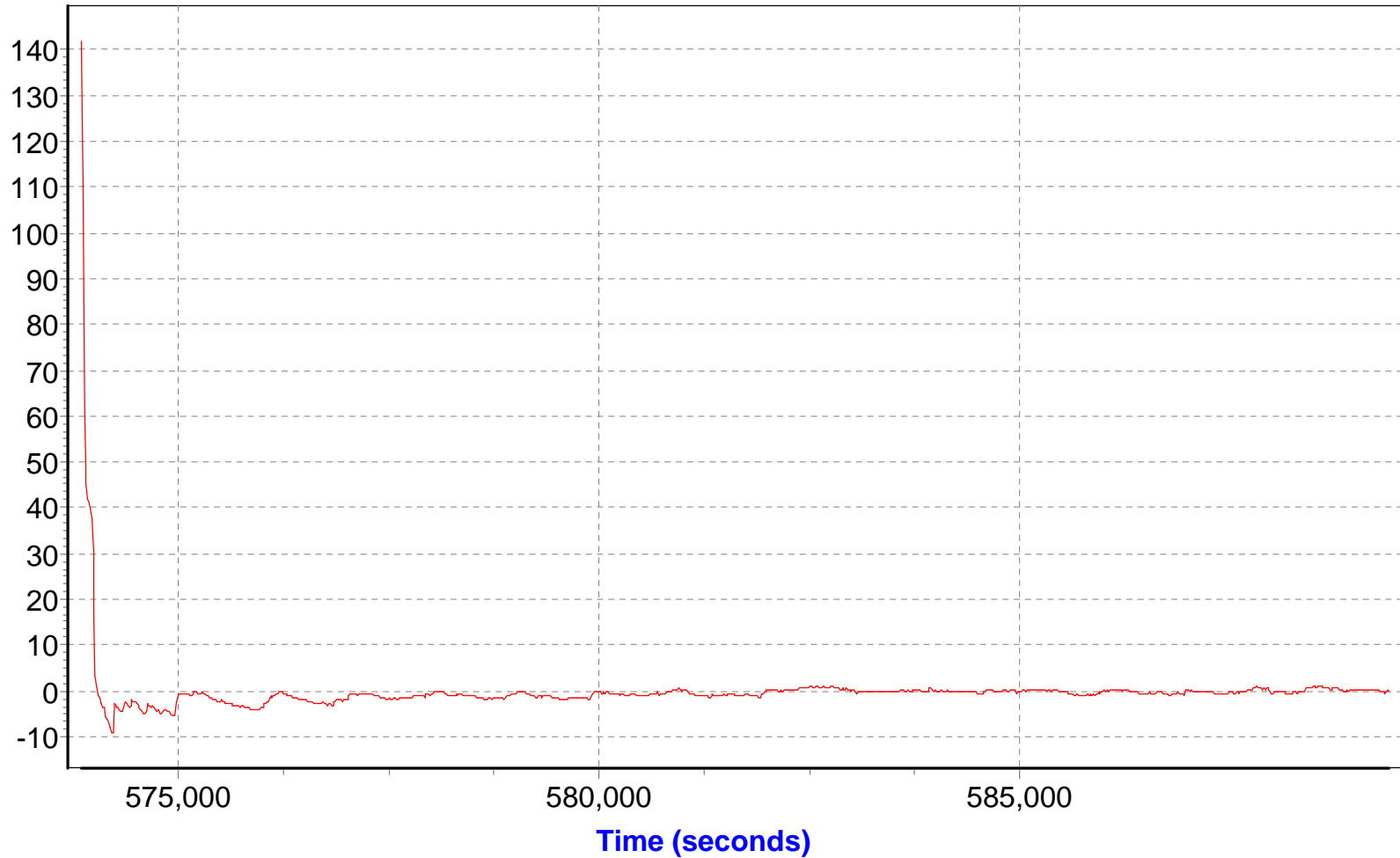


S/D Navigator X Misalignment (arcmin)

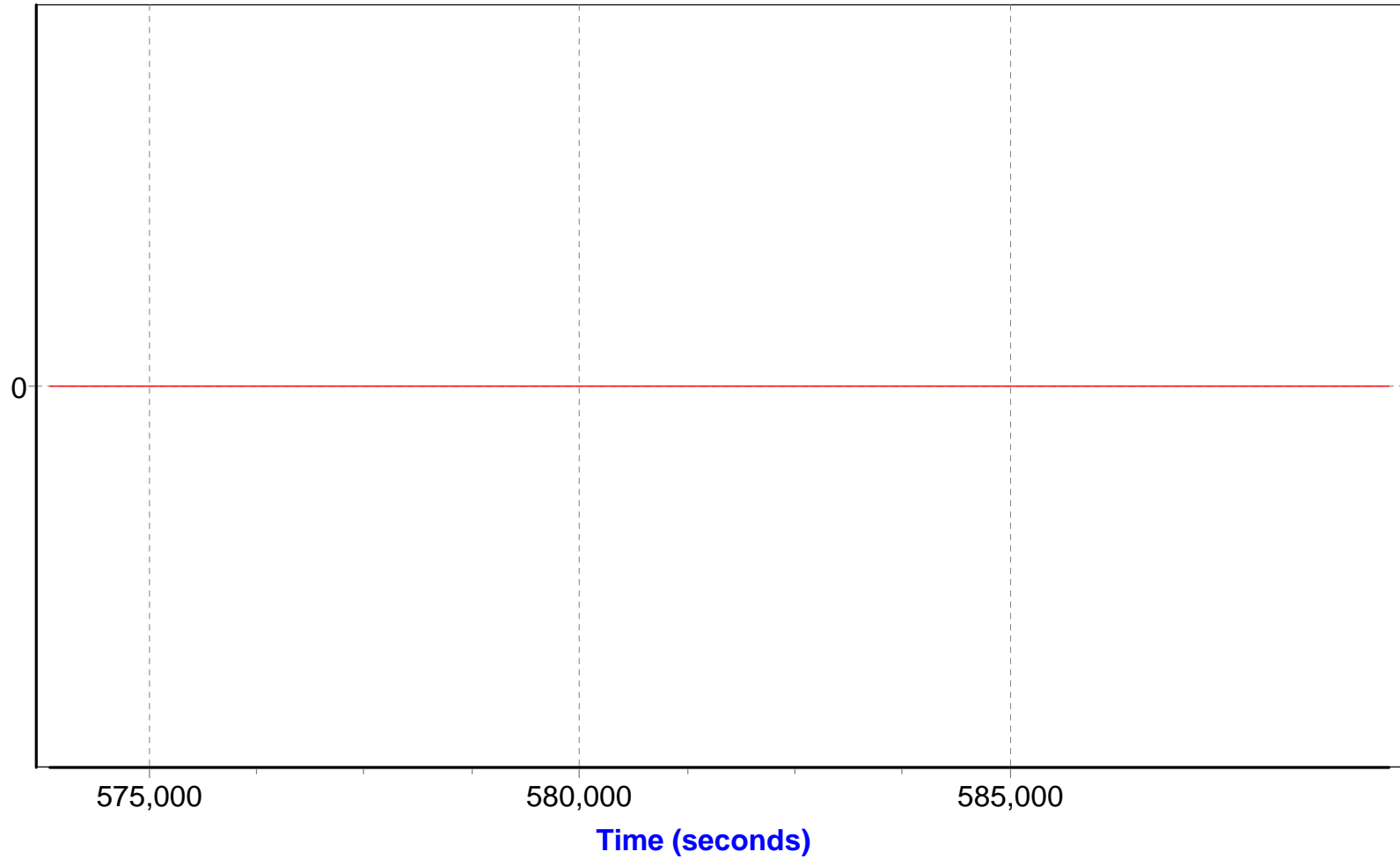


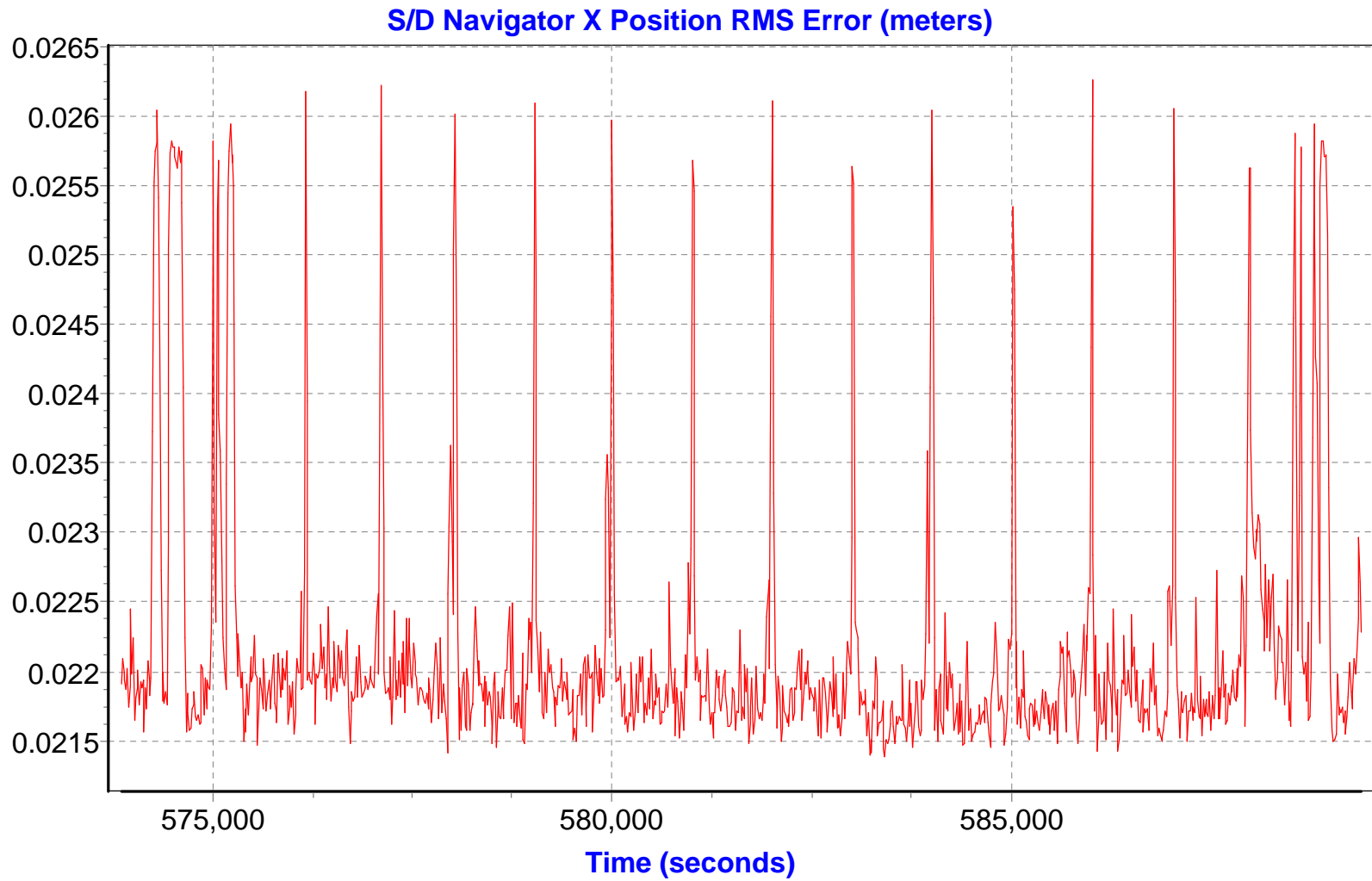


S/D Navigator Z Misalignment (arcmin)

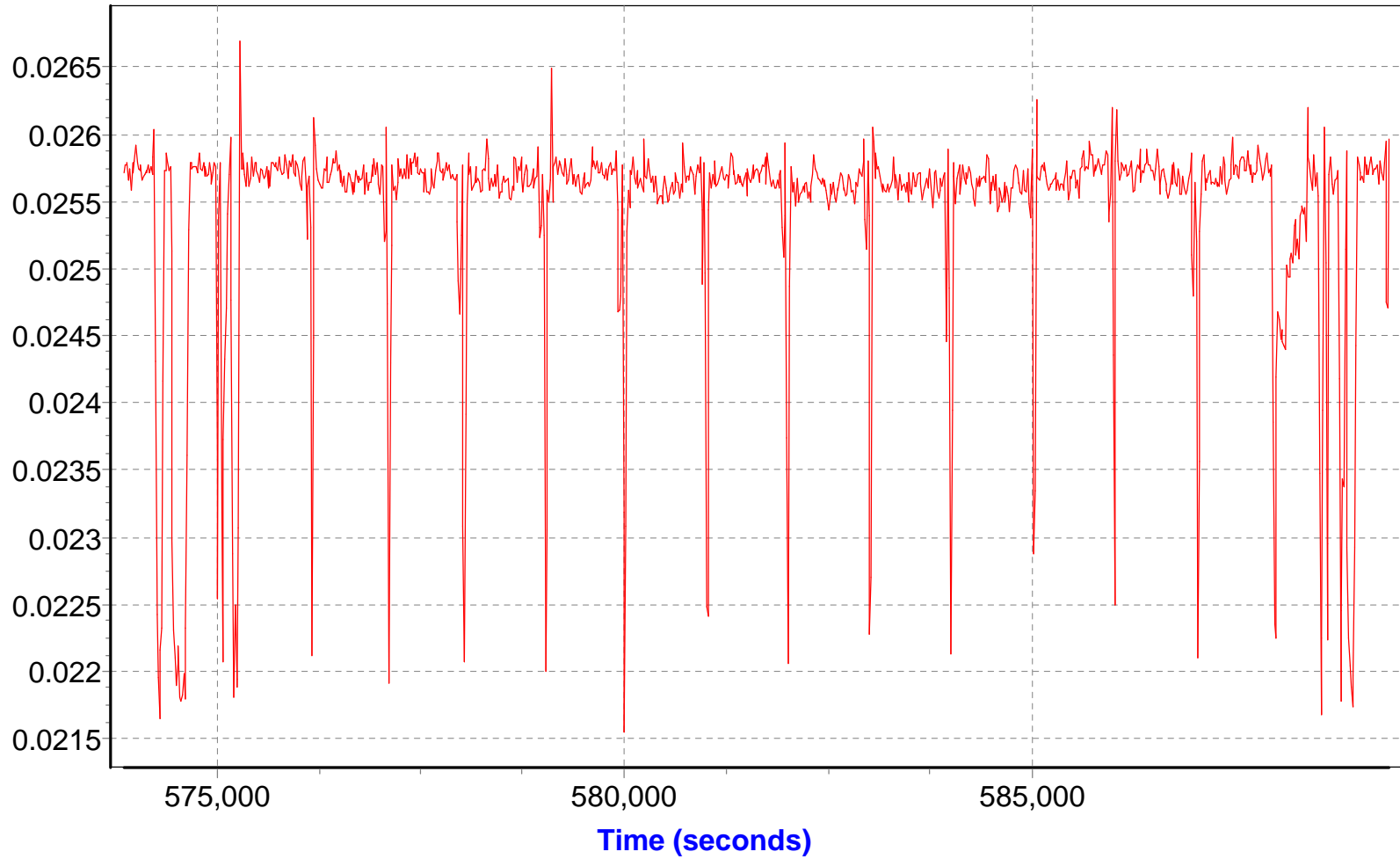


S/D Navigator COS(Z Misalignment)-1 (radians)

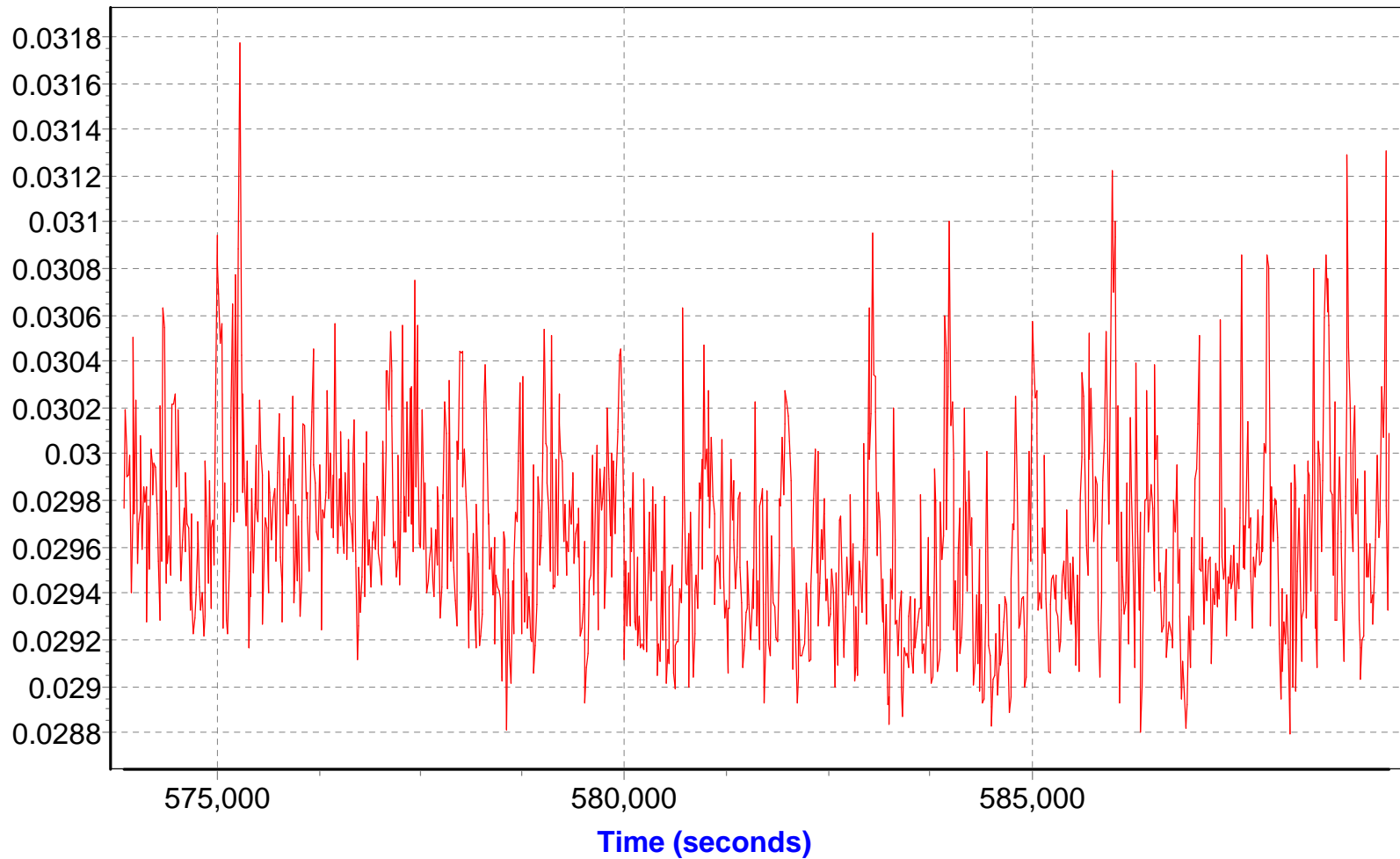


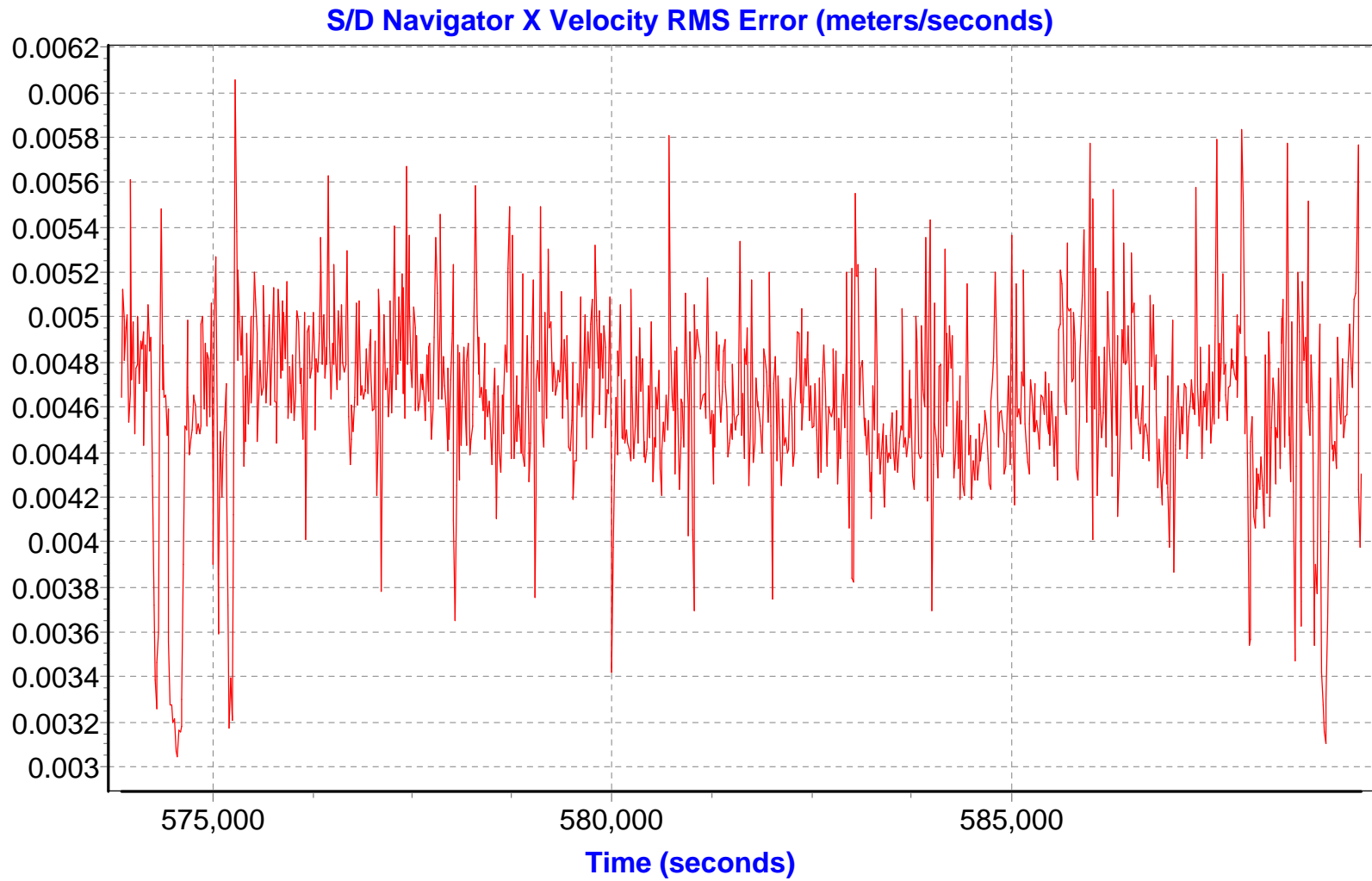


S/D Navigator Y Position RMS Error (meters)

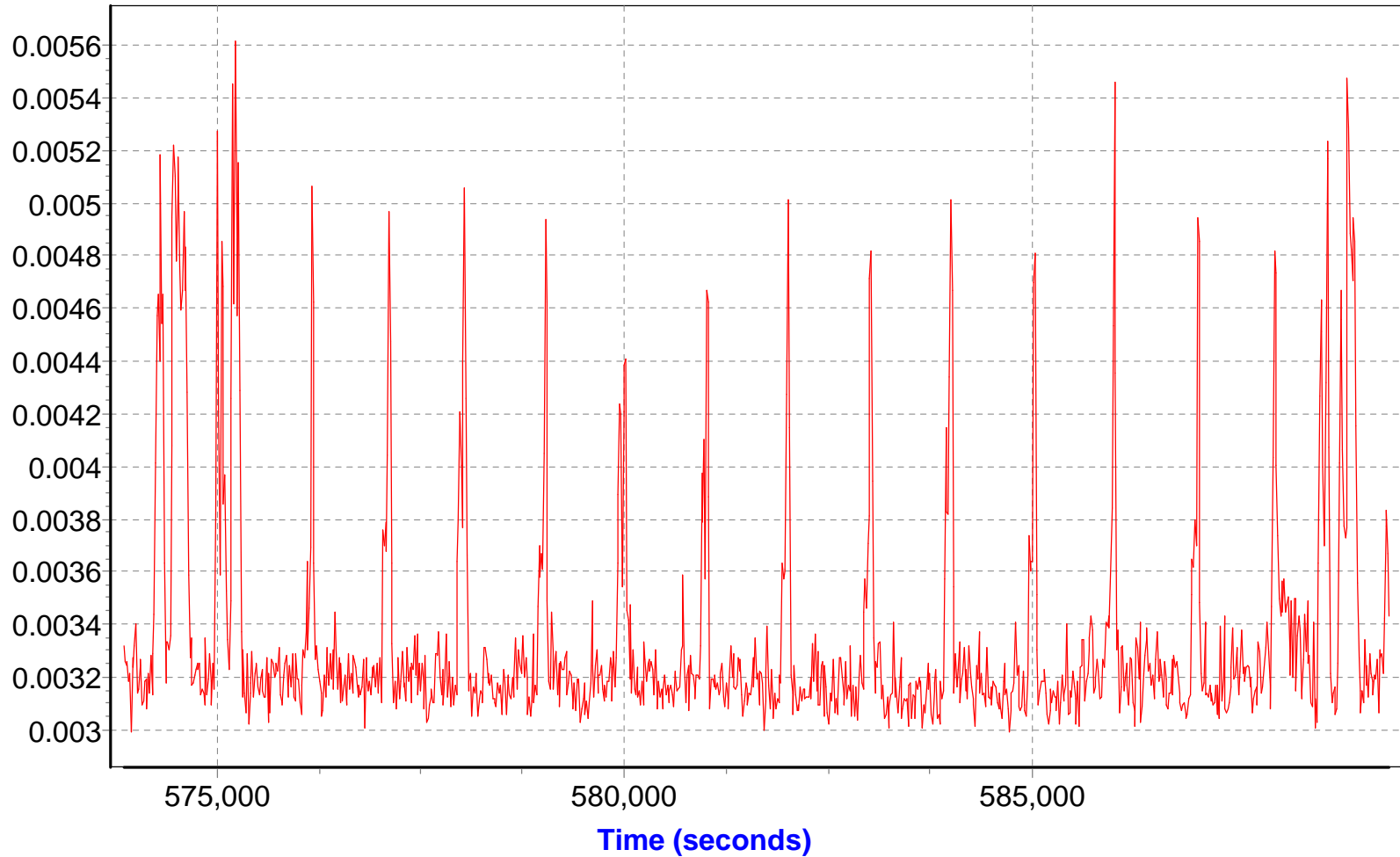


S/D Navigator Z Position RMS Error (meters)

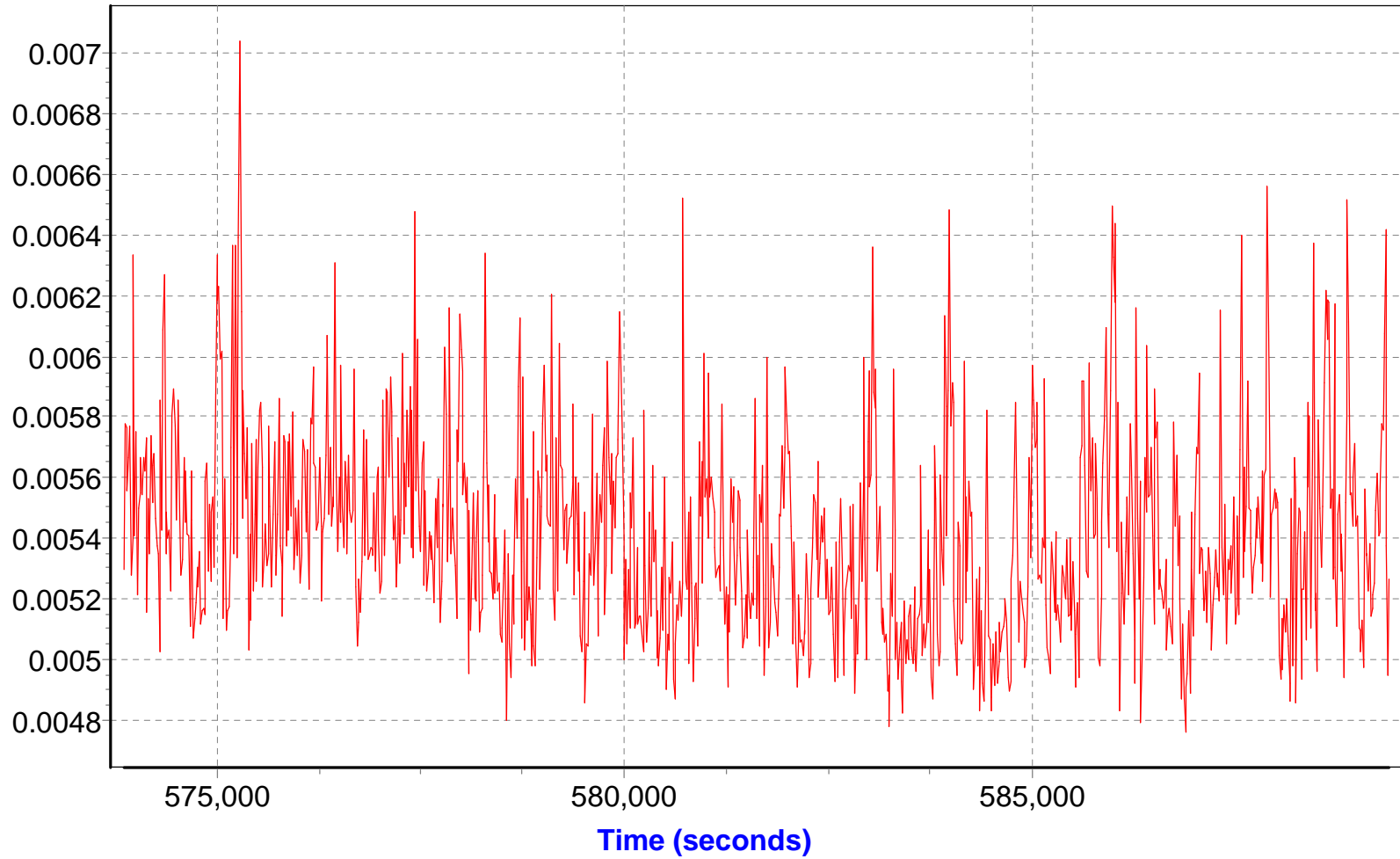




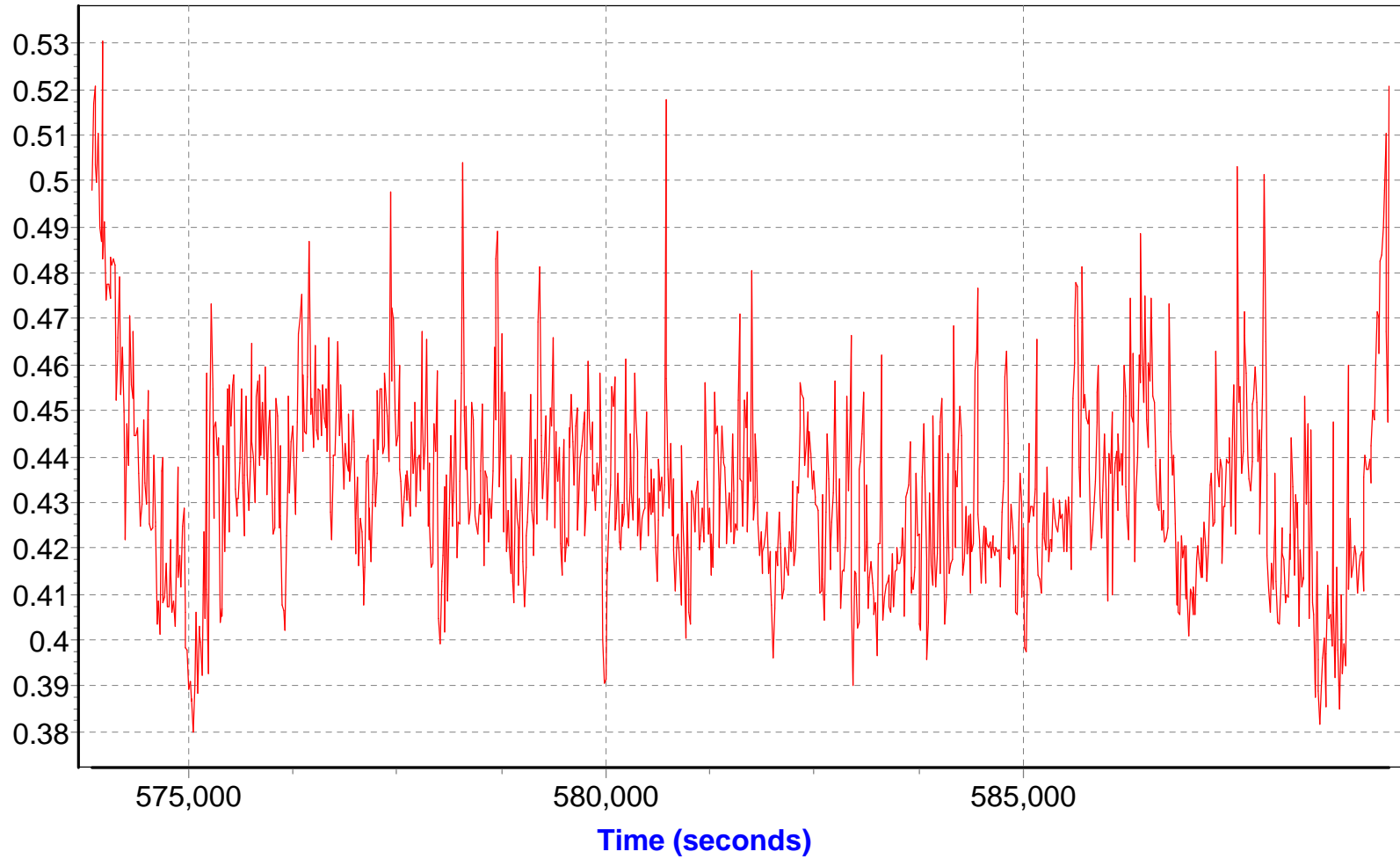
S/D Navigator Y Velocity RMS Error (meters/seconds)

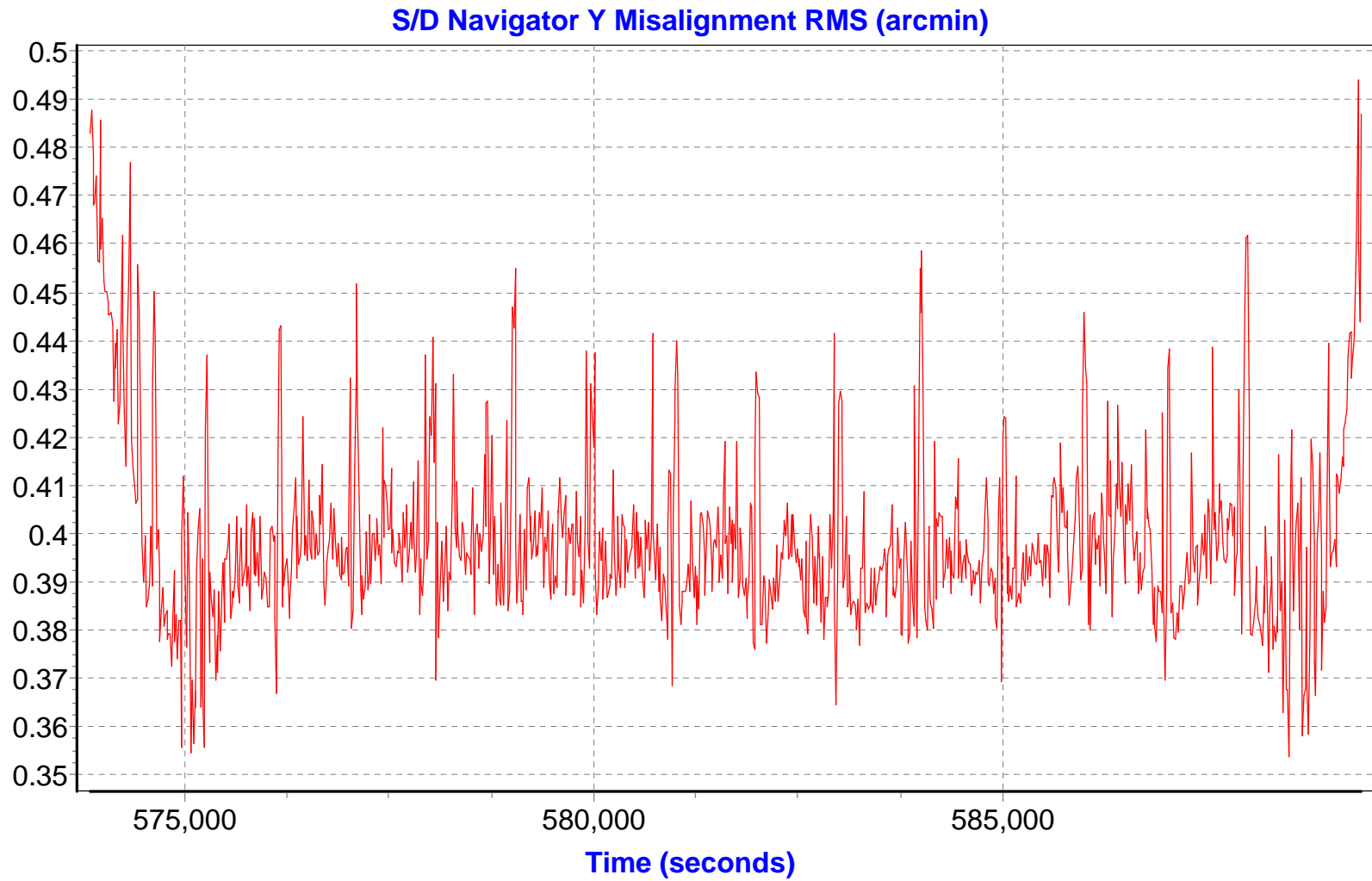


S/D Navigator Z Velocity RMS Error (meters/seconds)

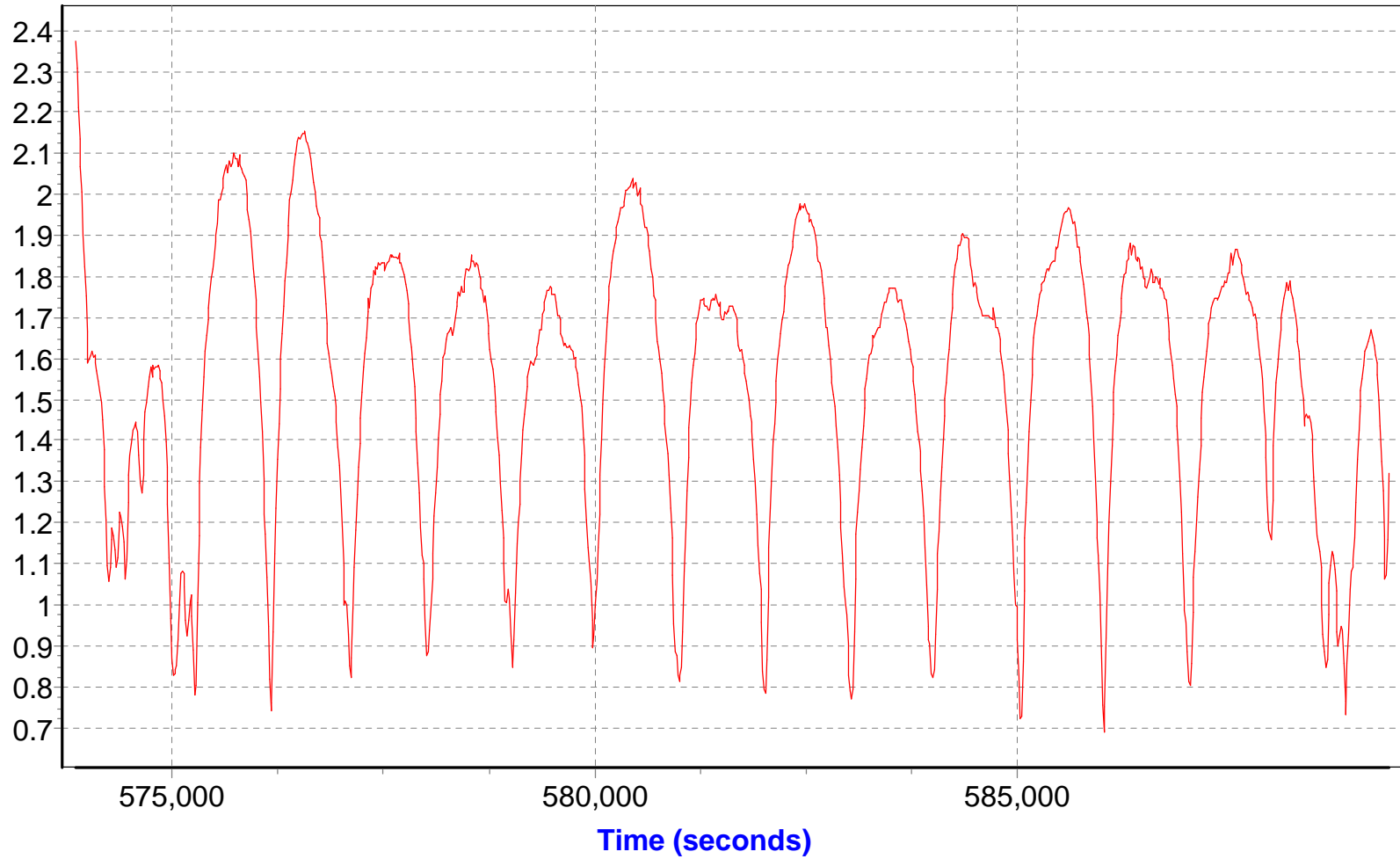


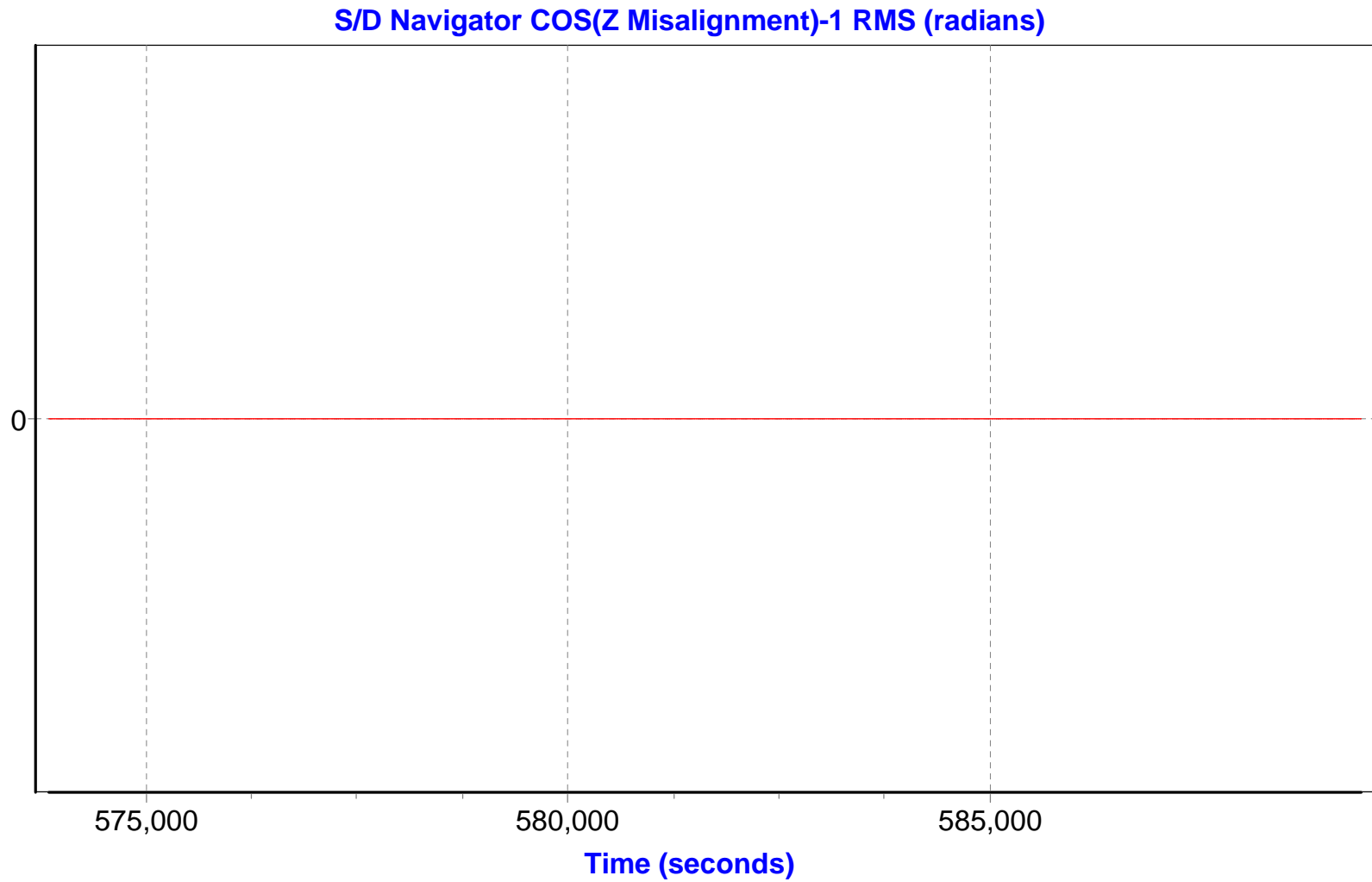
S/D Navigator X Misalignment RMS (arcmin)

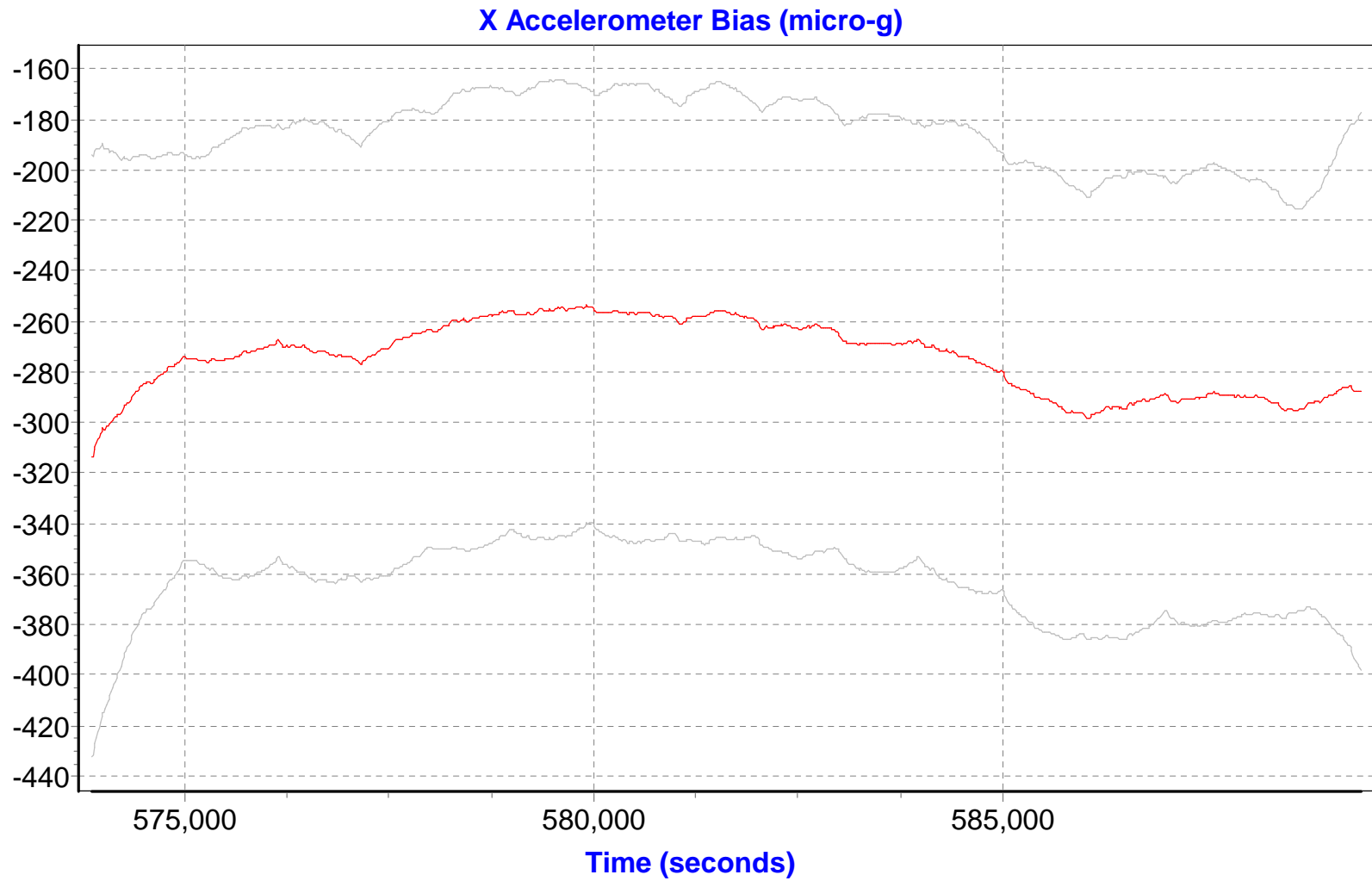




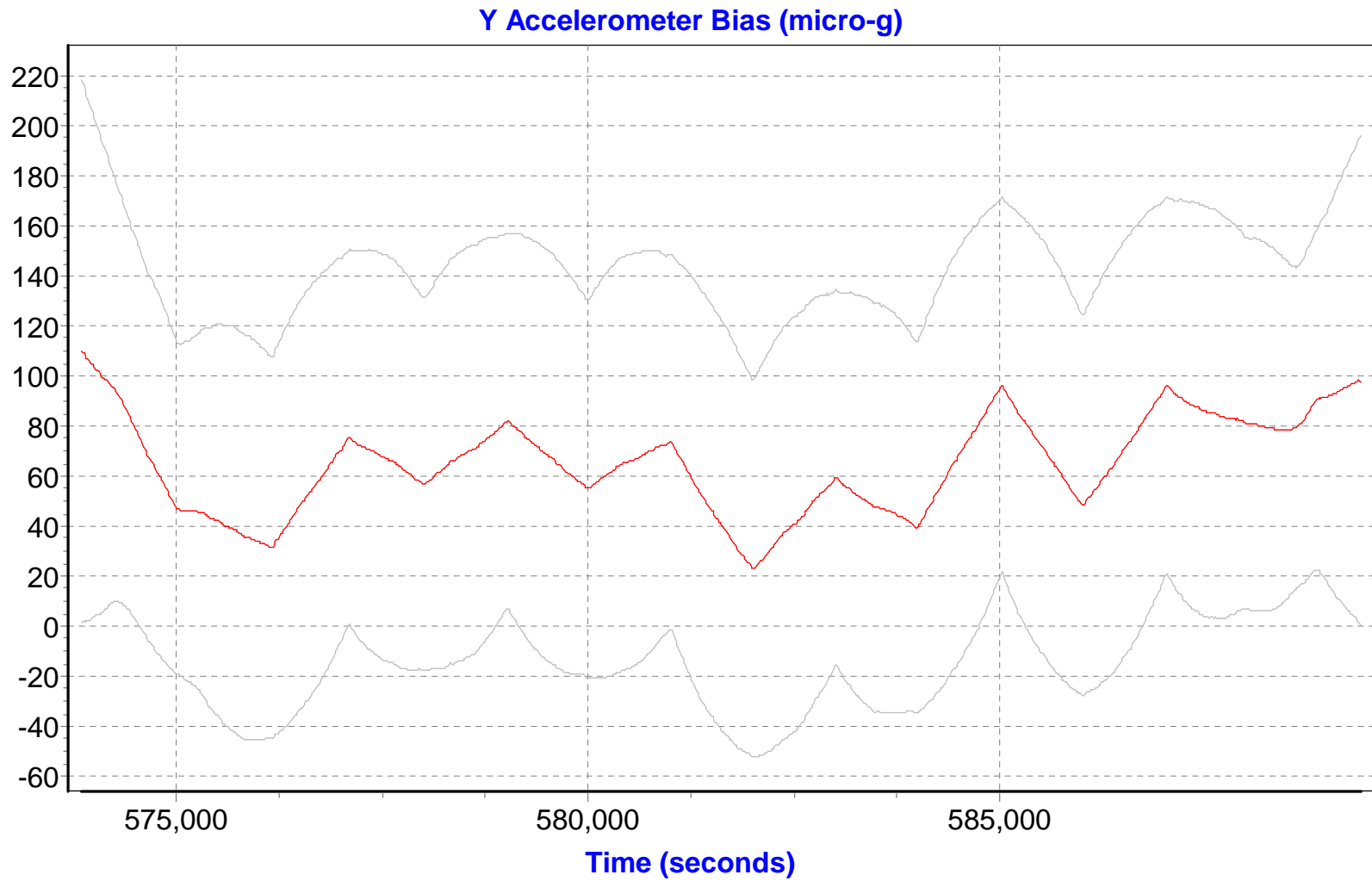
S/D Navigator Z Misalignment RMS (arcmin)





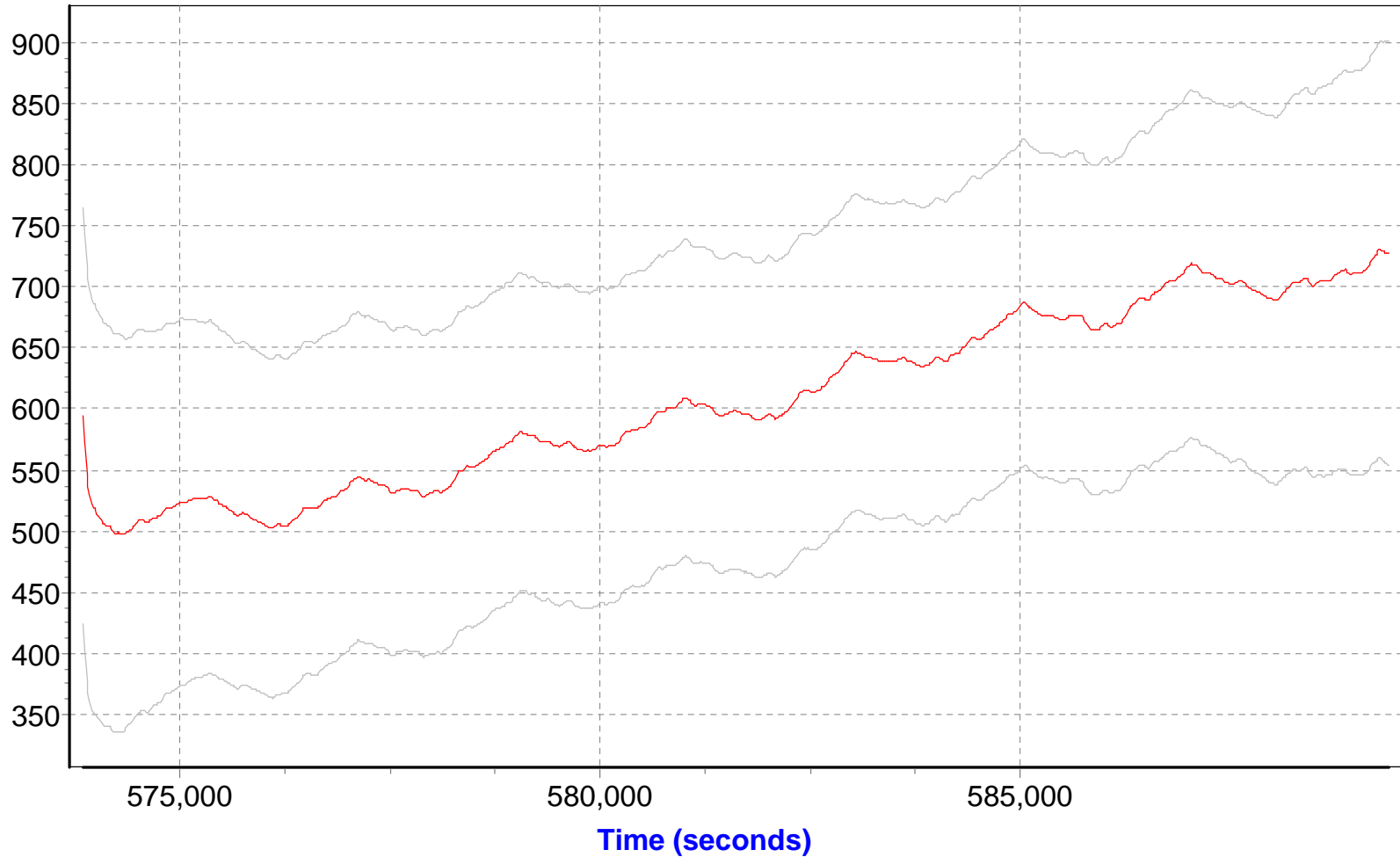


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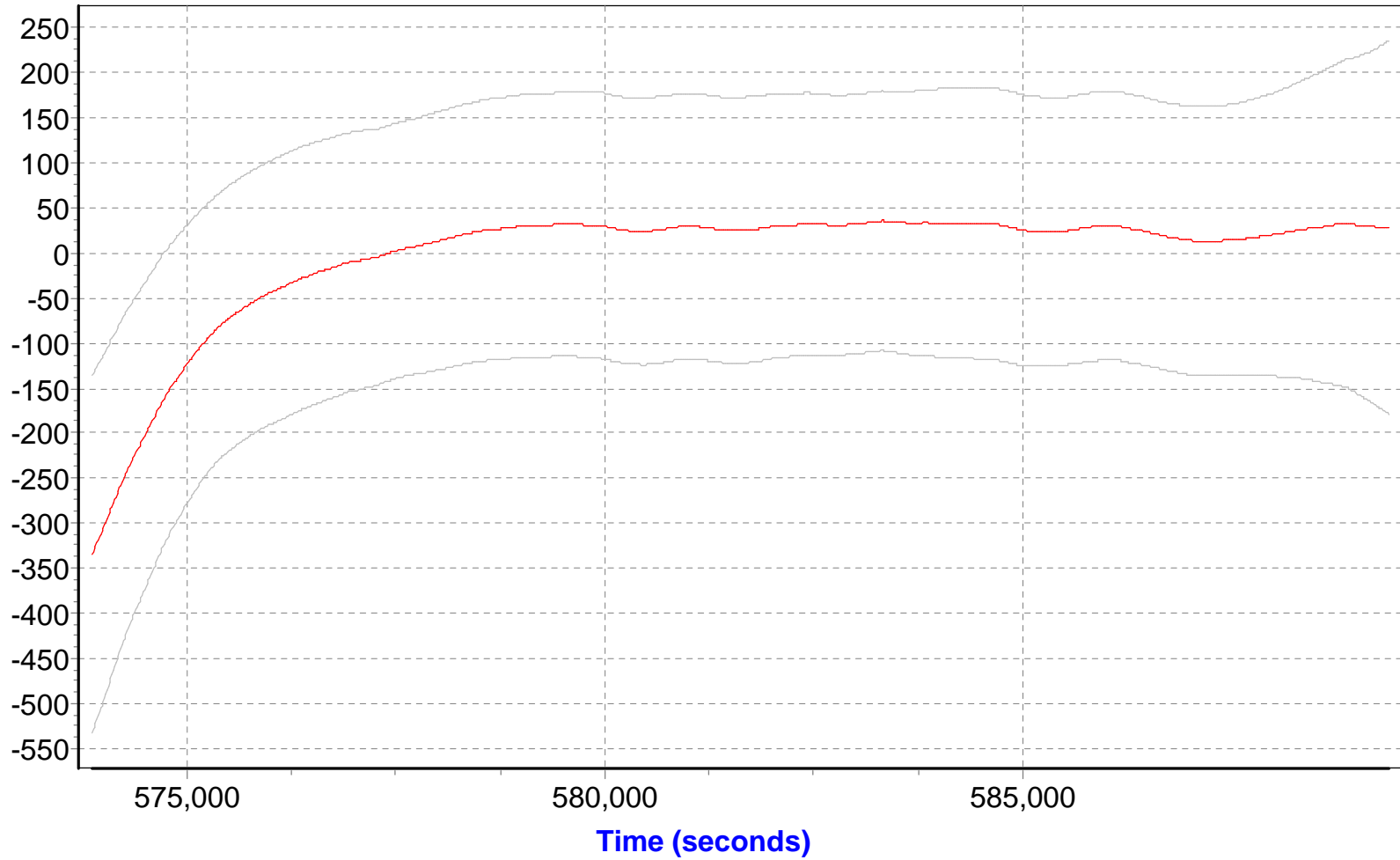
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Z Accelerometer Bias (micro-g)

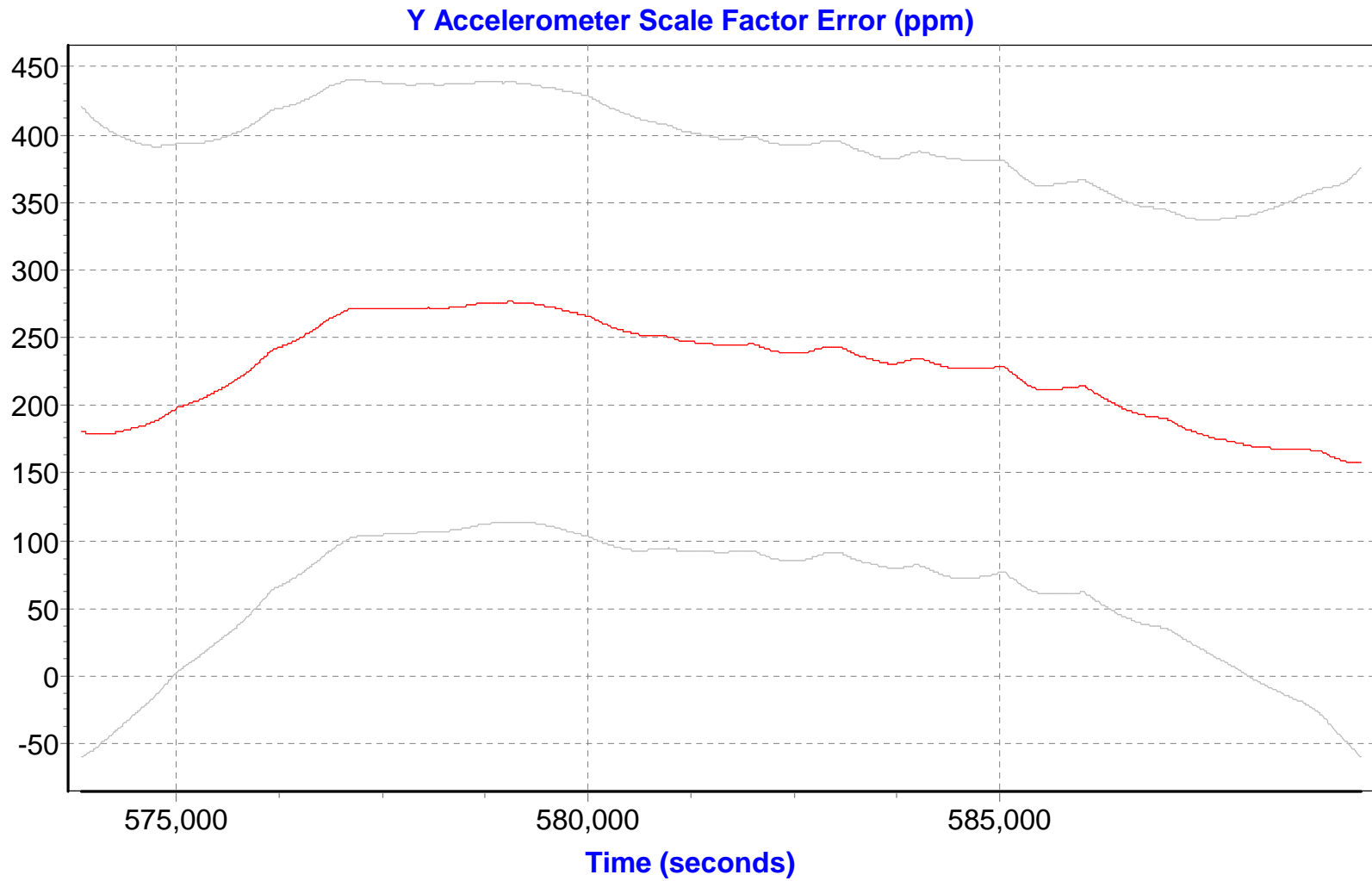


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X Accelerometer Scale Factor Error (ppm)

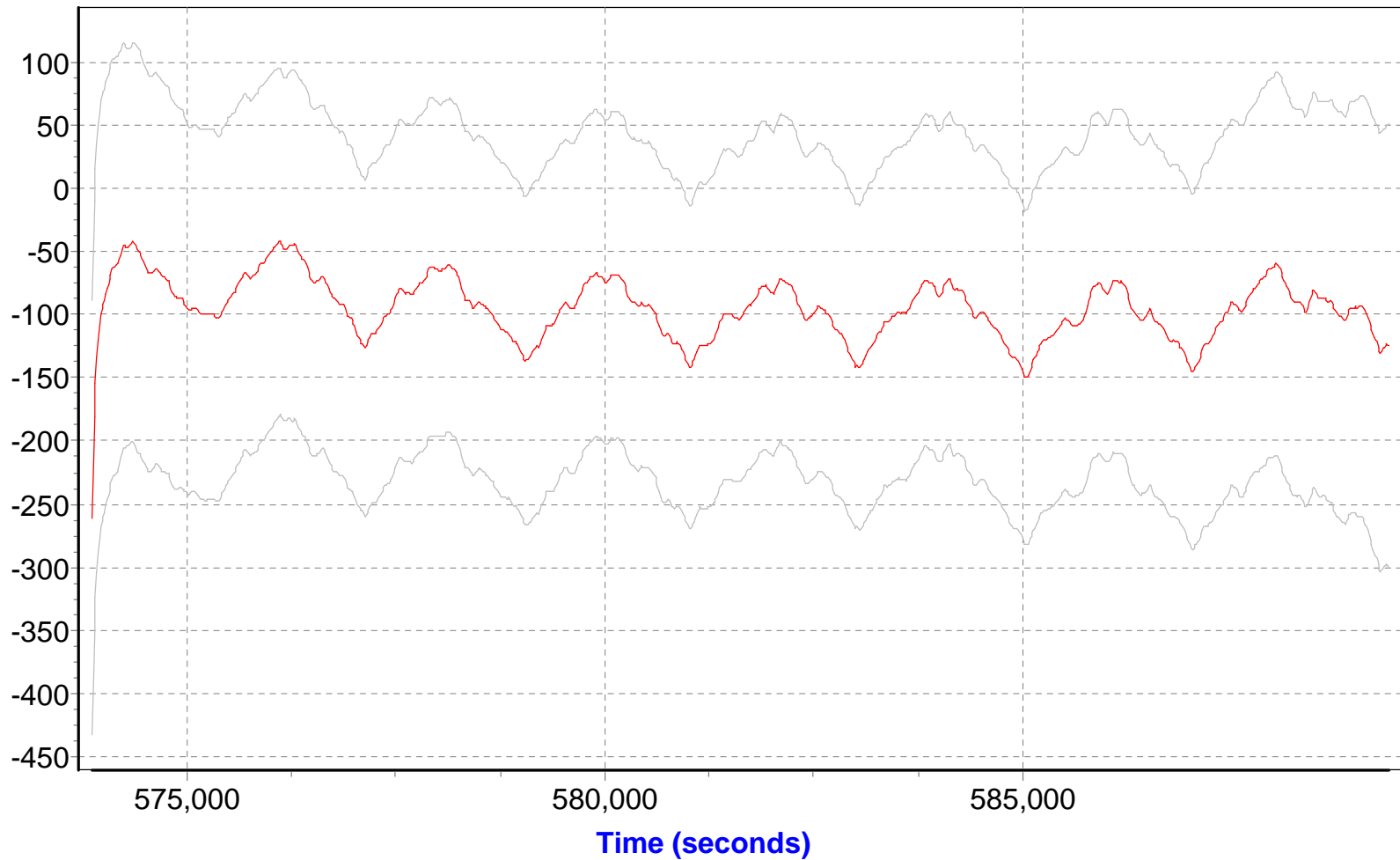


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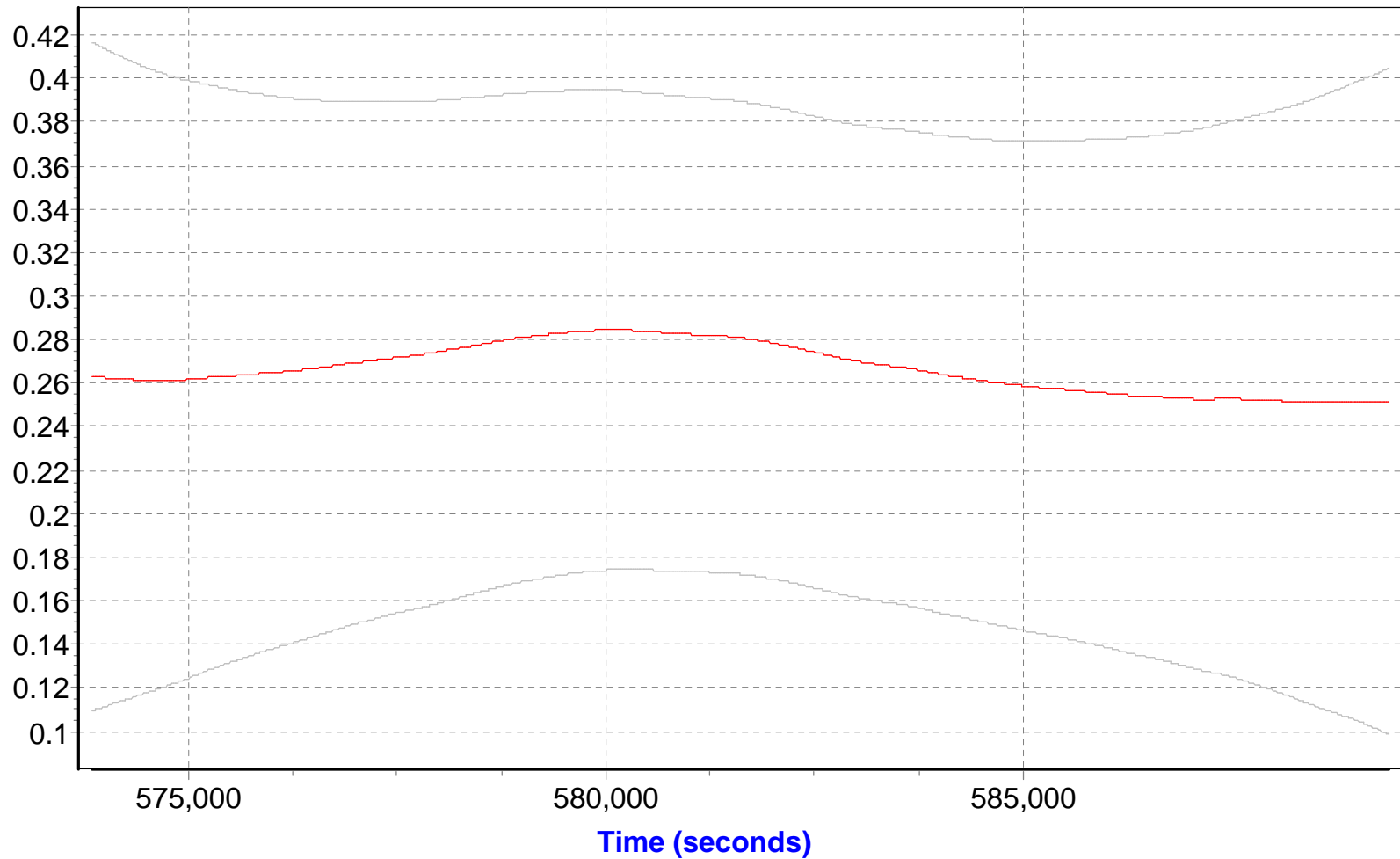
Z Accelerometer Scale Factor Error (ppm)



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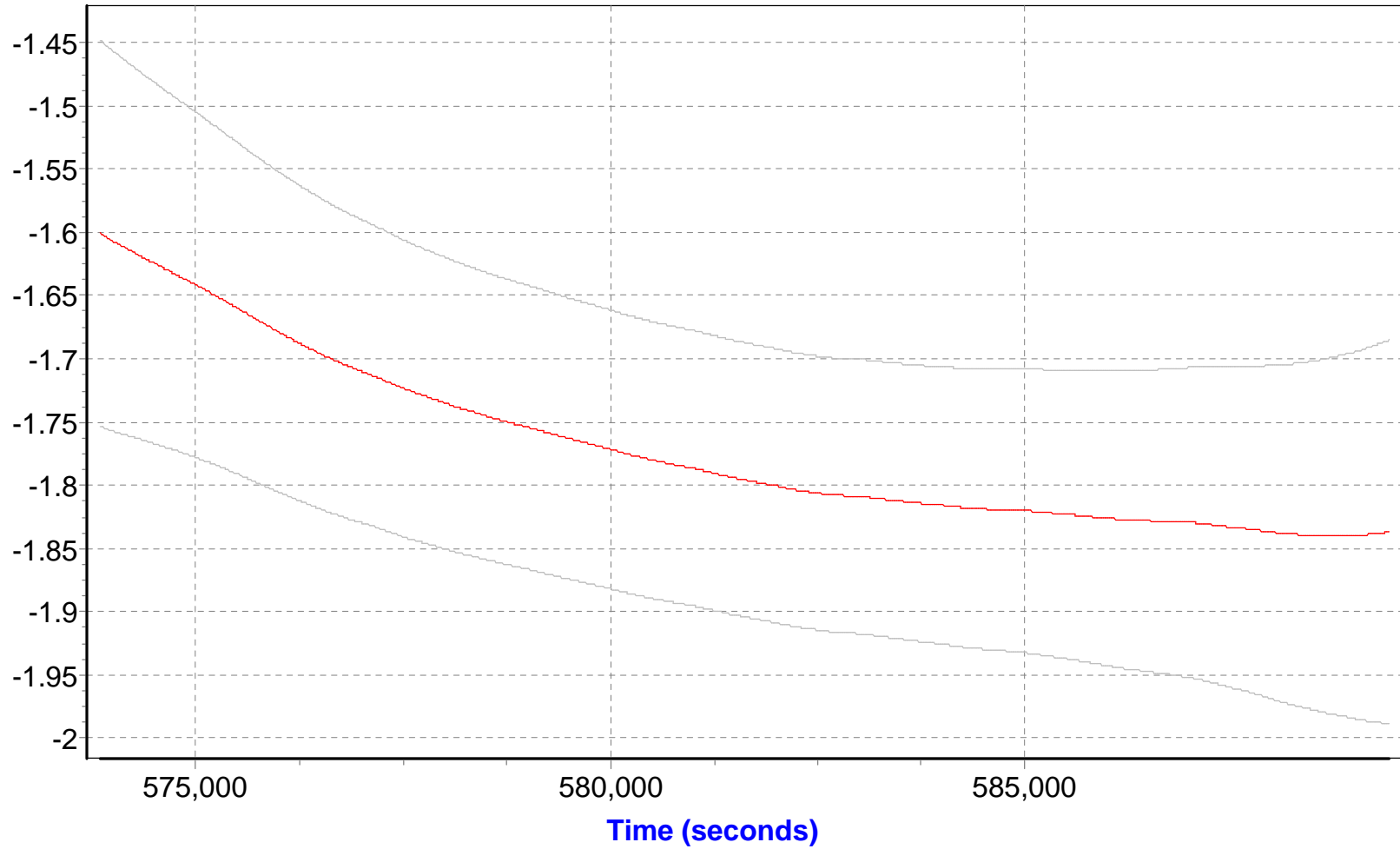
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X Gyro Bias (degrees/hour)

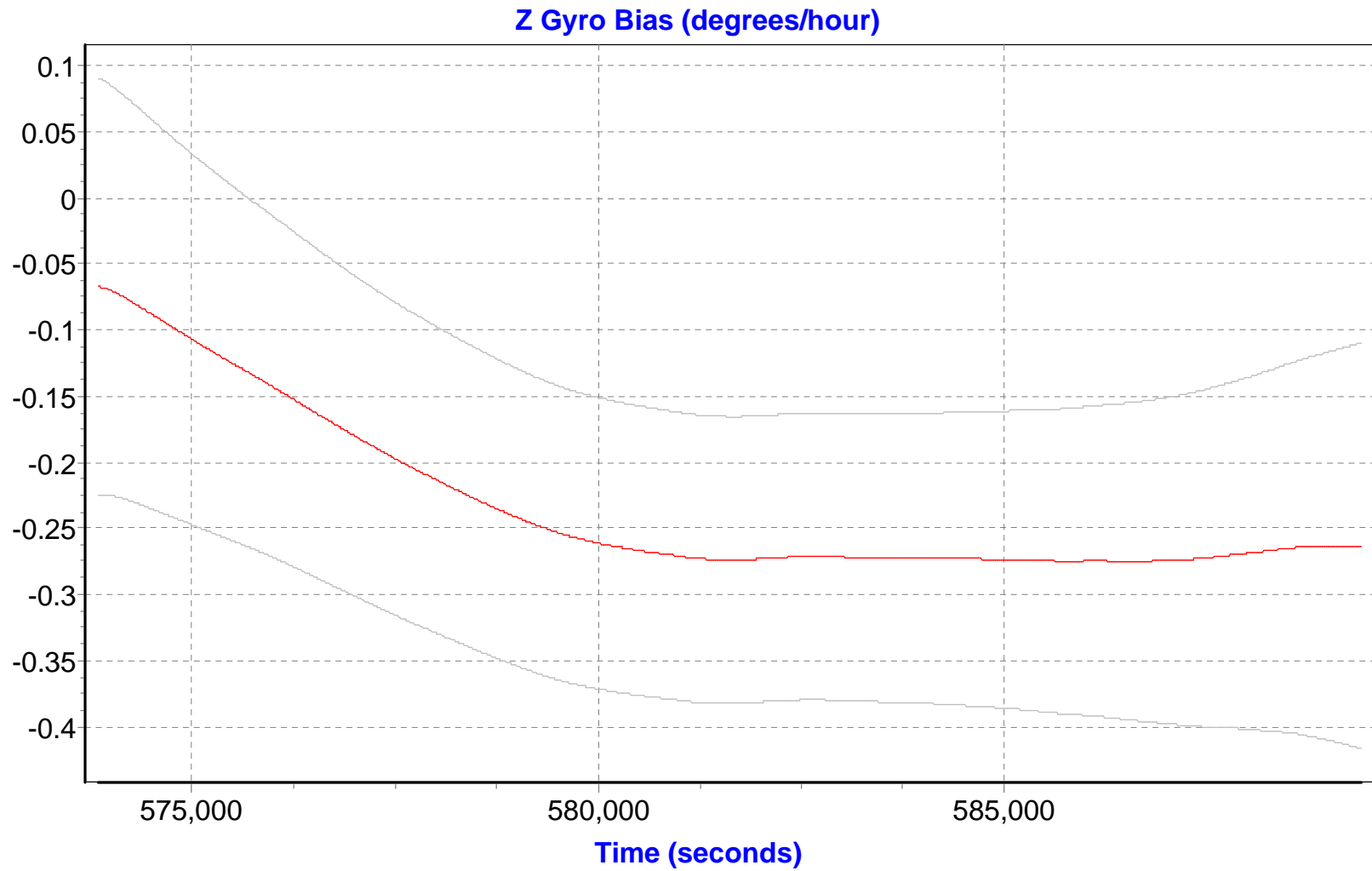


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Y Gyro Bias (degrees/hour)

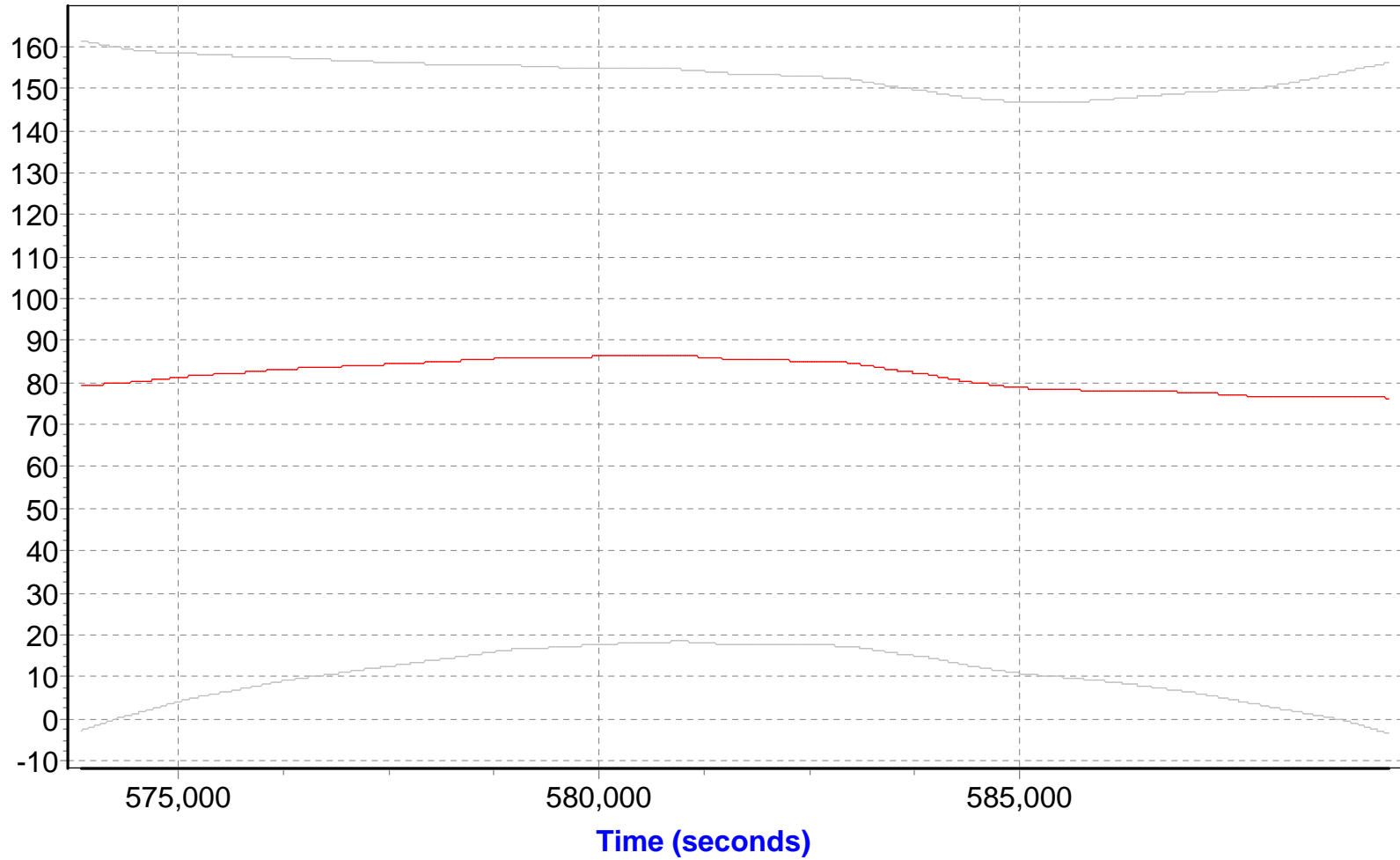


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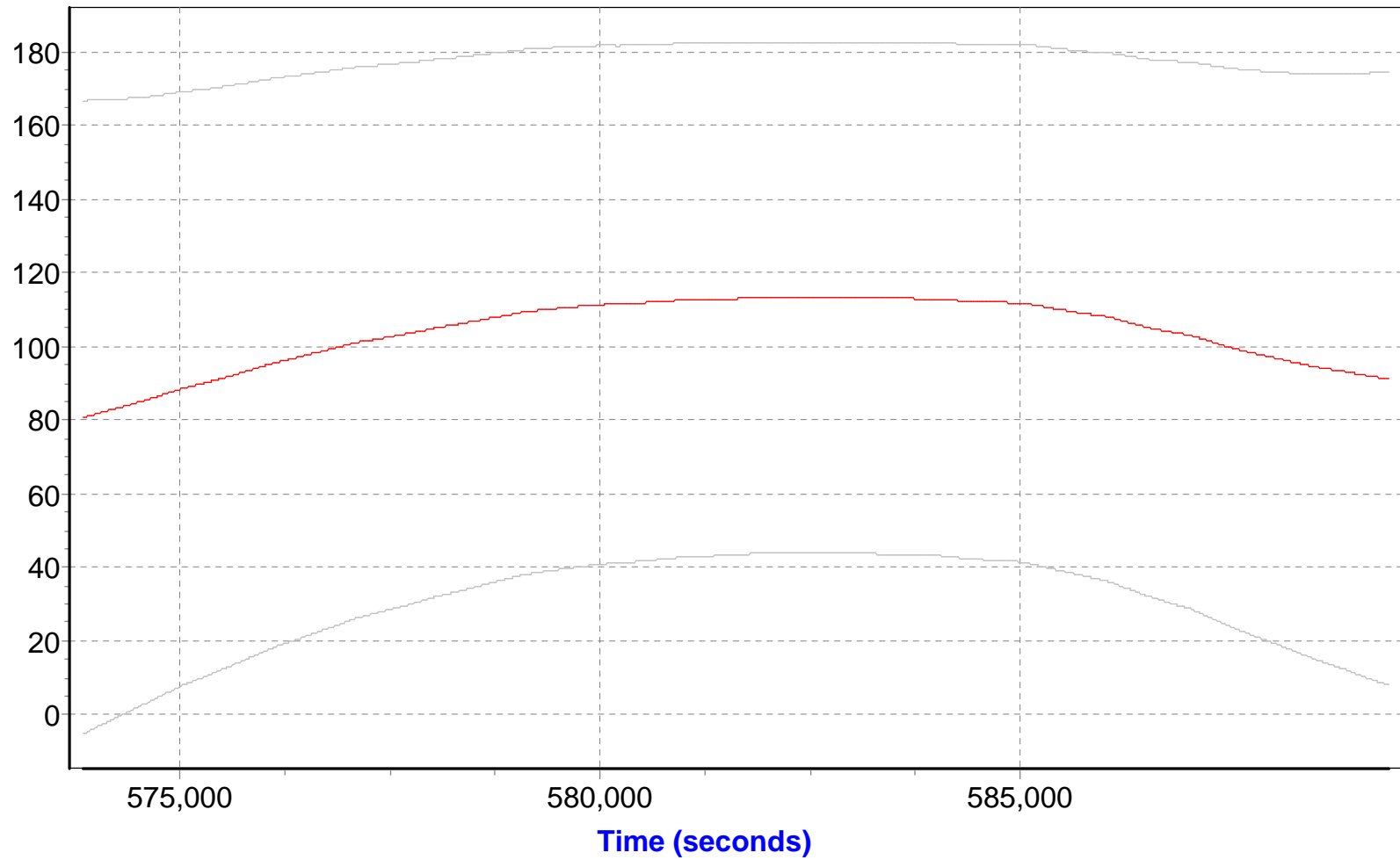
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X Gyro Scale Factor Error (ppm)



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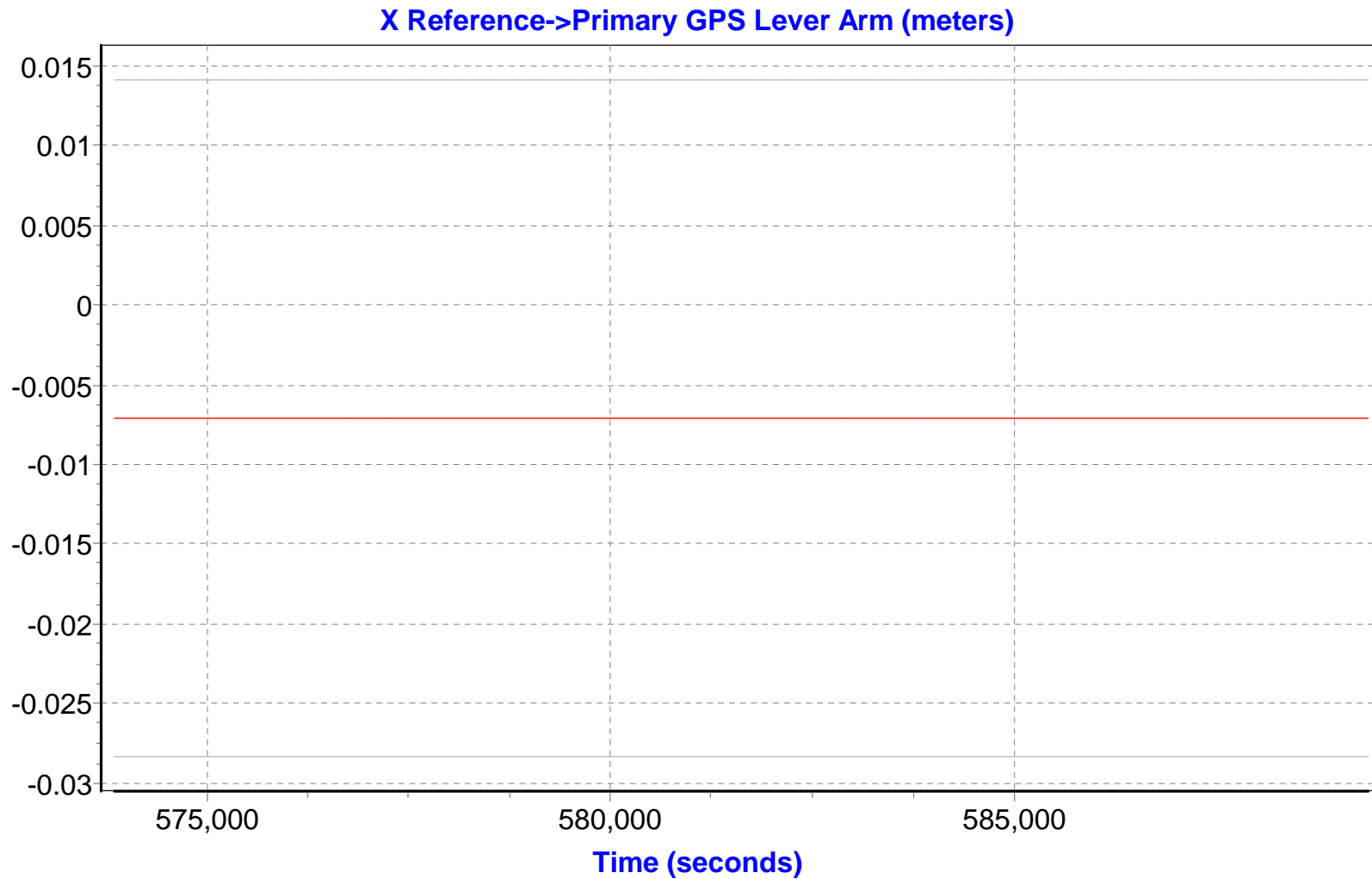
Y Gyro Scale Factor Error (ppm)



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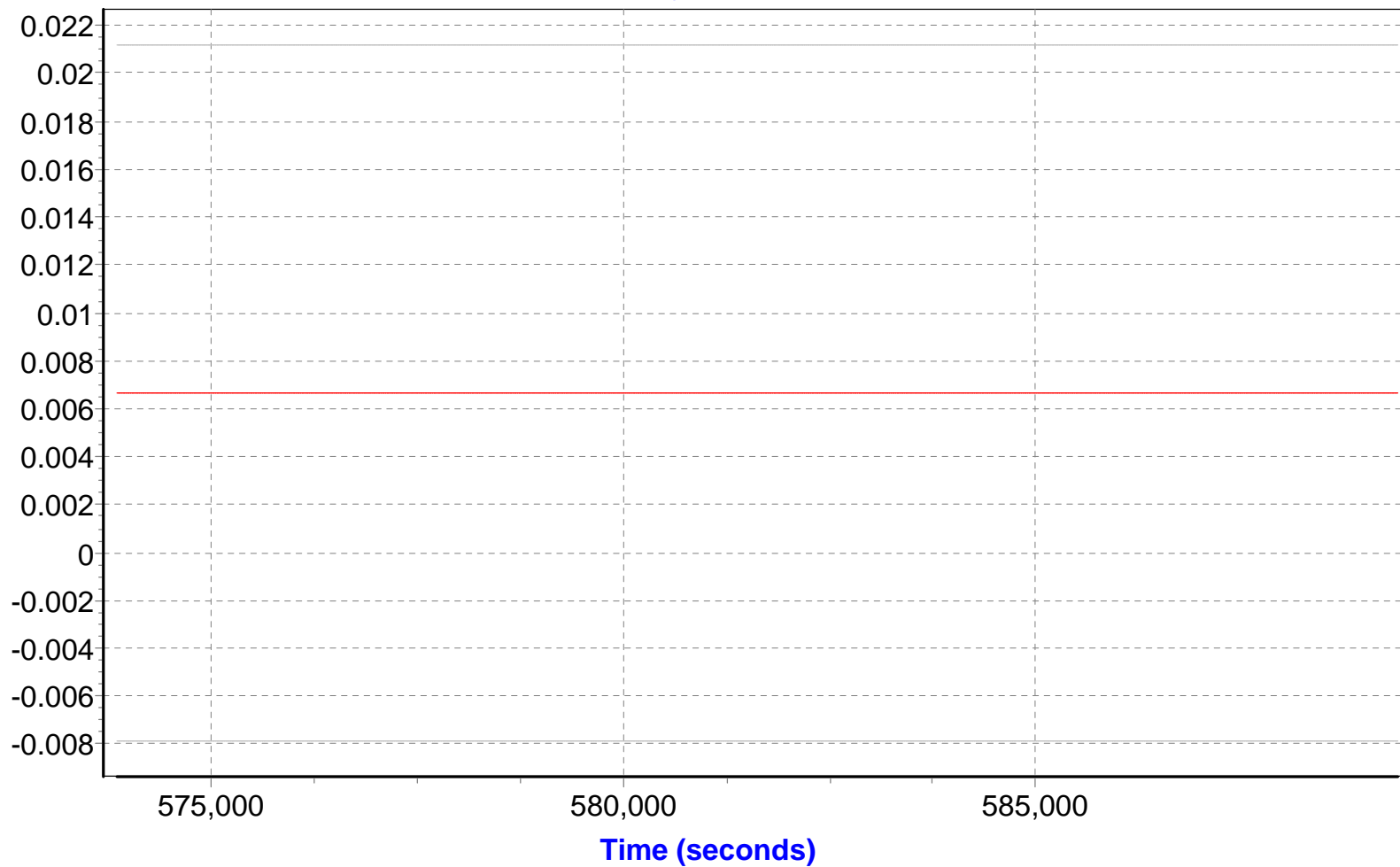


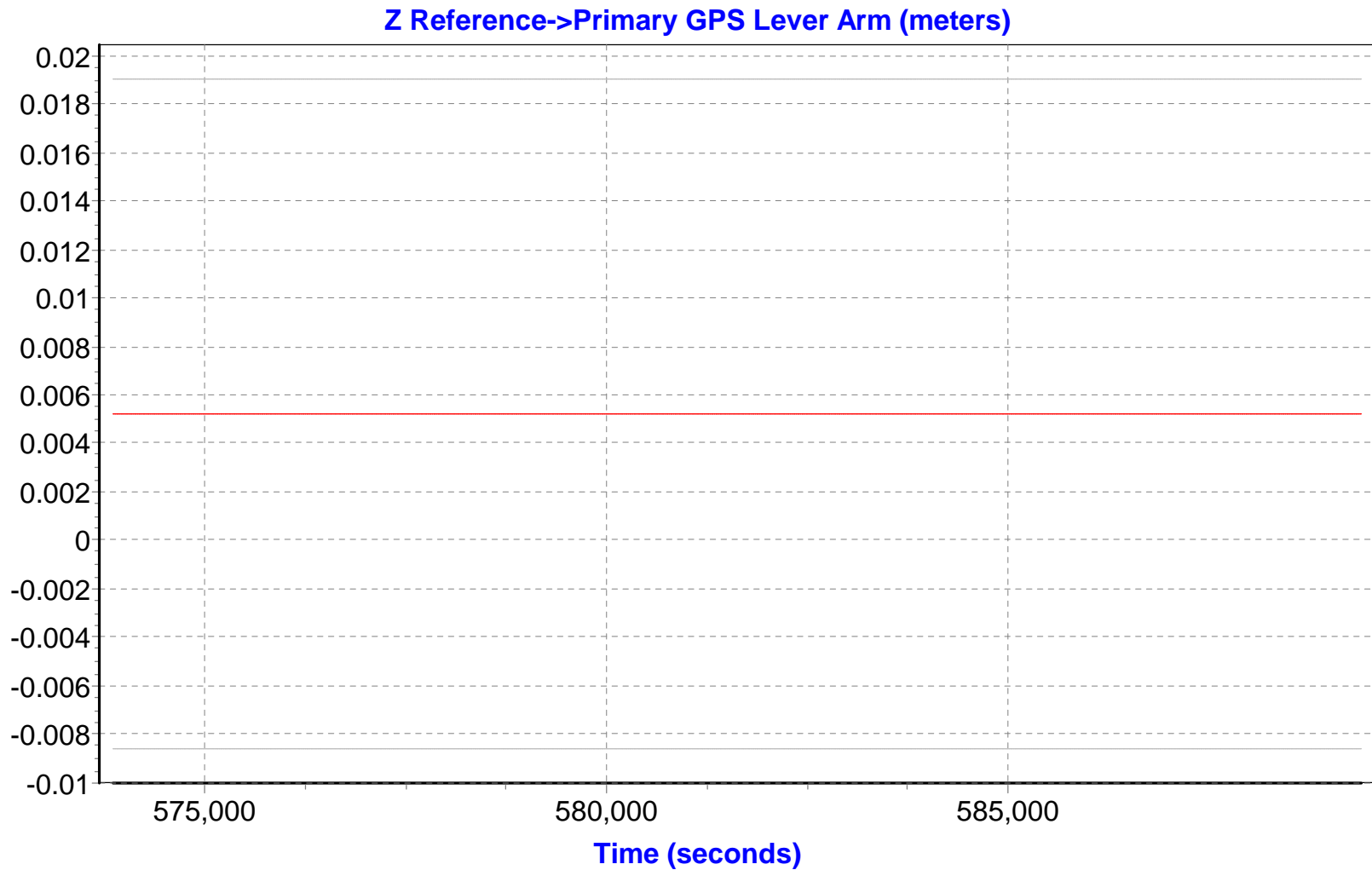
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I:\o112070a\3_Processed\Extract\smers_o112070a.dat
I:\o112070a\3_Processed\Extract\smrms_o112070a.dat

Y Reference->Primary GPS Lever Arm (meters)

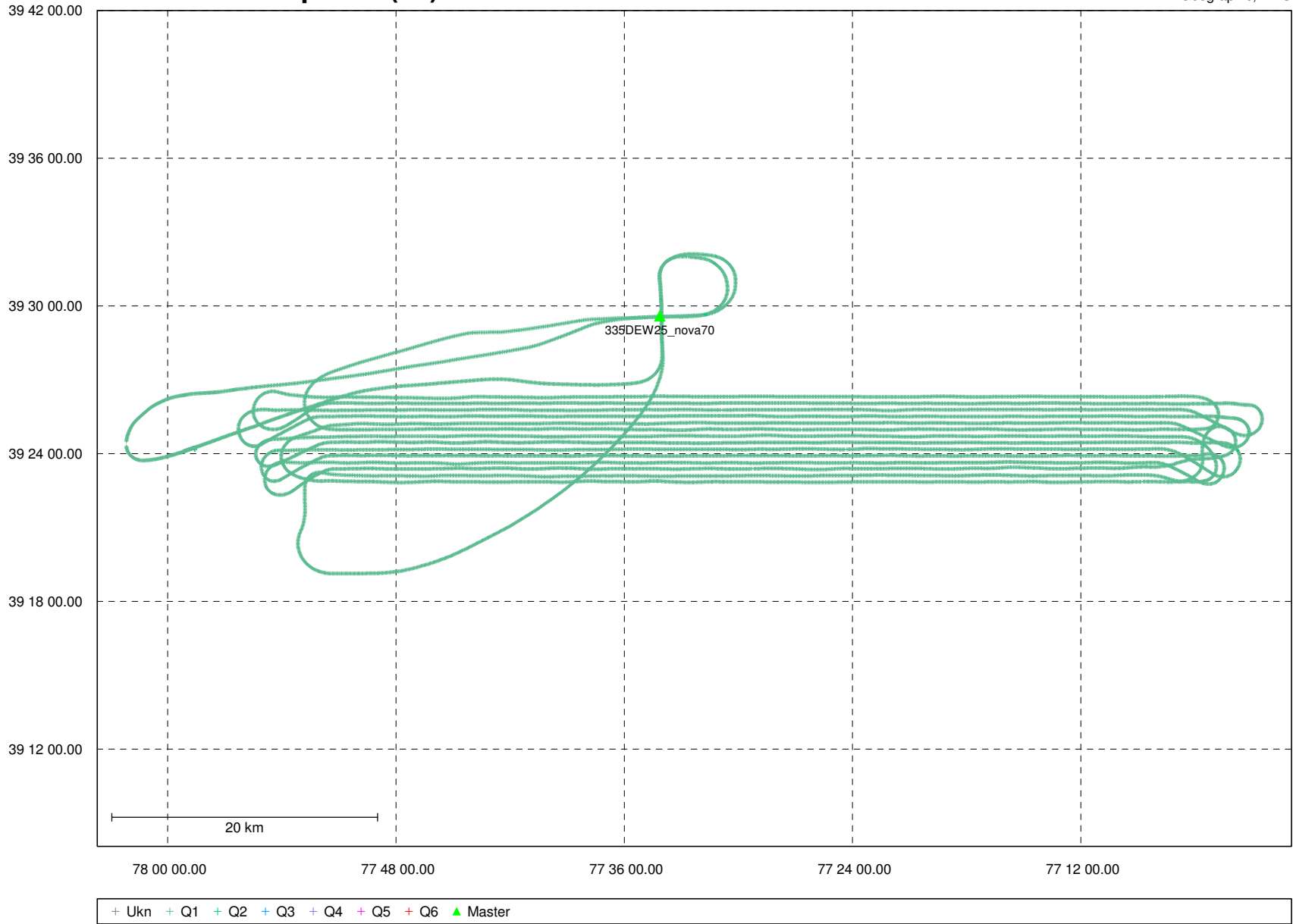




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Combined - Map Run (38)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: L:\335DEW11
USGS_MD_VA_lidar\2_Operations\6_Missions\o112070b\3_Processed\GPS\o112070b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file: 172420
No processed position: 155203
Missing Fwd or Rev: 3
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:

L1 Phase: 0.0188 (m)
C/A Code: 0.69 (m)
L1 Doppler: 0.027 (m/s)

Fwd/Rev Separation RMS Values:

East: 0.022 (m)
North: 0.022 (m)
Height: 0.041 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (17212 occurrences):

East: 0.022 (m)
North: 0.022 (m)
Height: 0.040 (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: 99.7 %
0.10 - 0.30 m: 0.3 %
0.30 - 1.00 m: 0.0 %
1.00 - 5.00 m: 0.0 %
5.00 m + over: 0.0 %

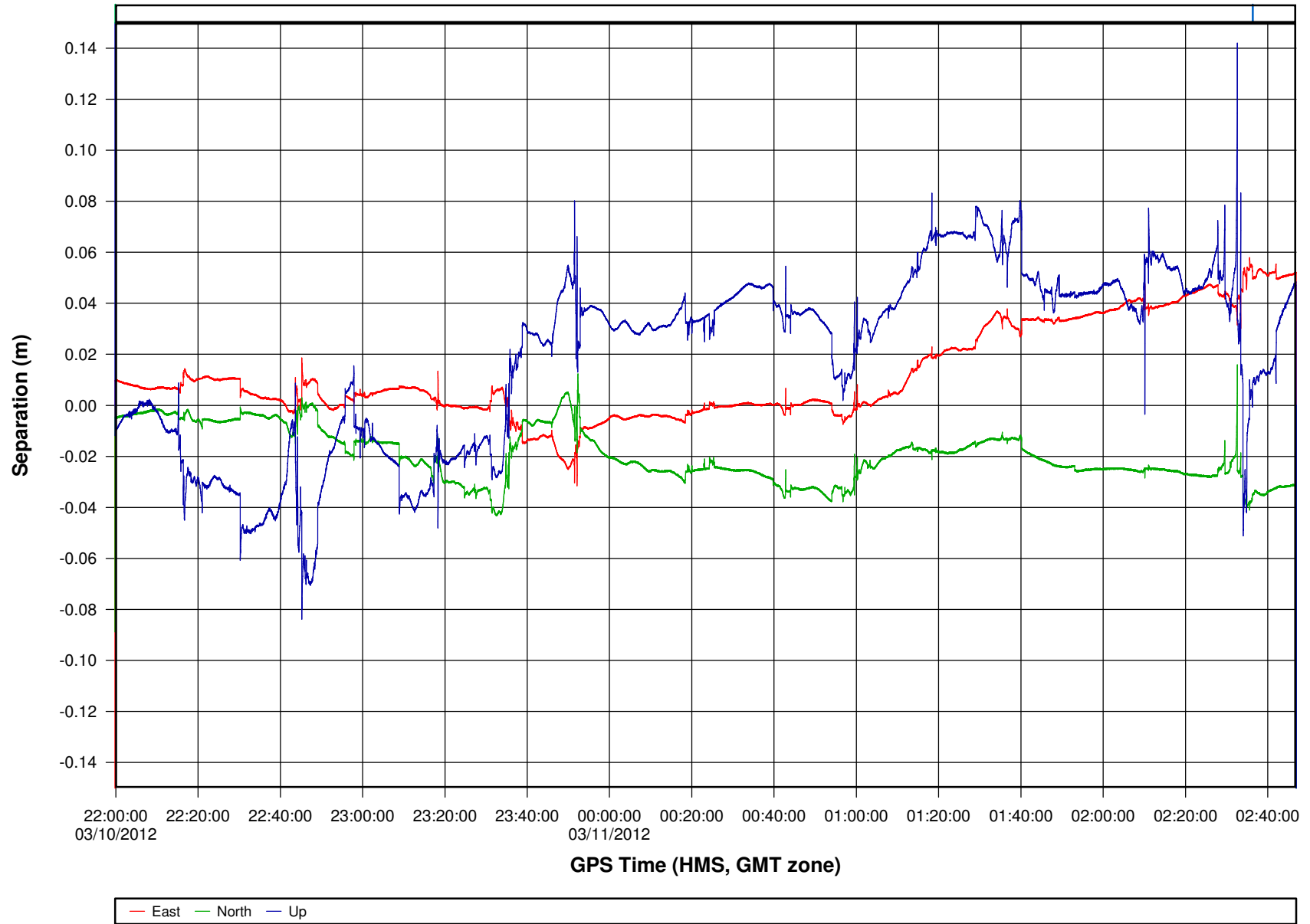
Percentages of epochs with DD_DOP over 10.00:

DOP over Tol: 0.3 %

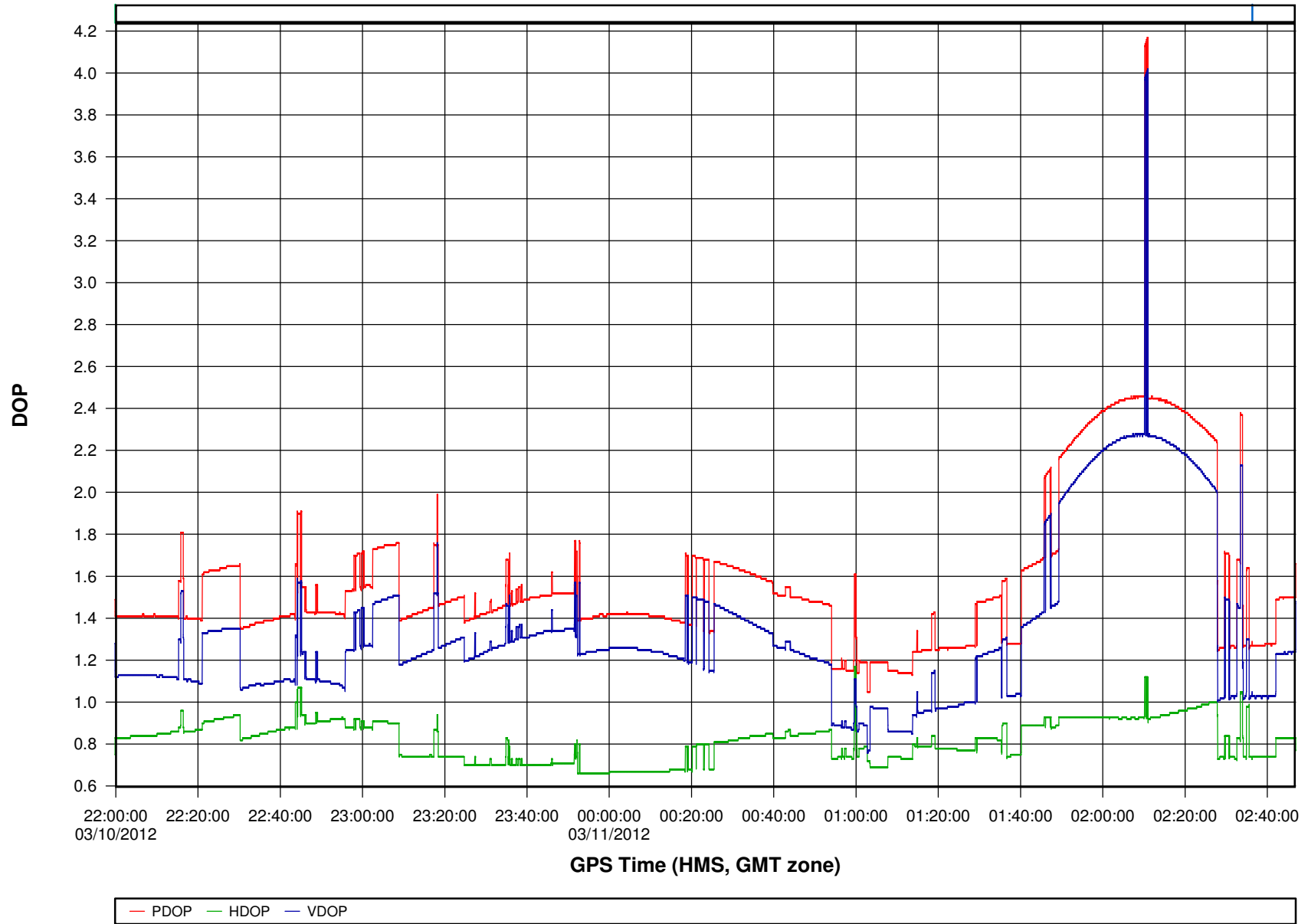
Baseline Distances:

Maximum: 46.096 (km)
Minimum: 1.112 (km)
Average: 22.017 (km)
First Epoch: 36.492 (km)
Last Epoch: 37.331 (km)

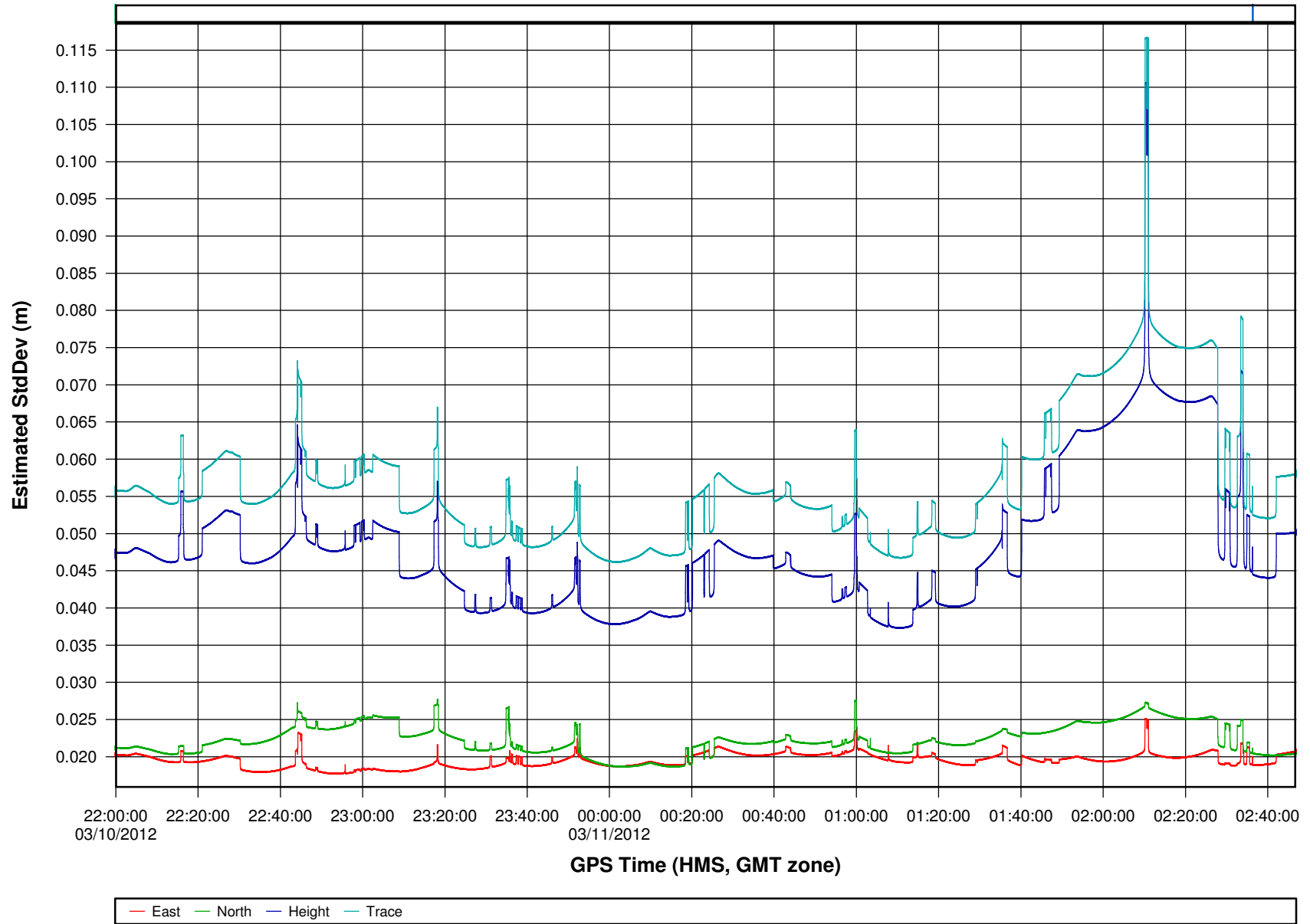
o112070b [Combined] - Forward/Reverse or Combined Separation Plot



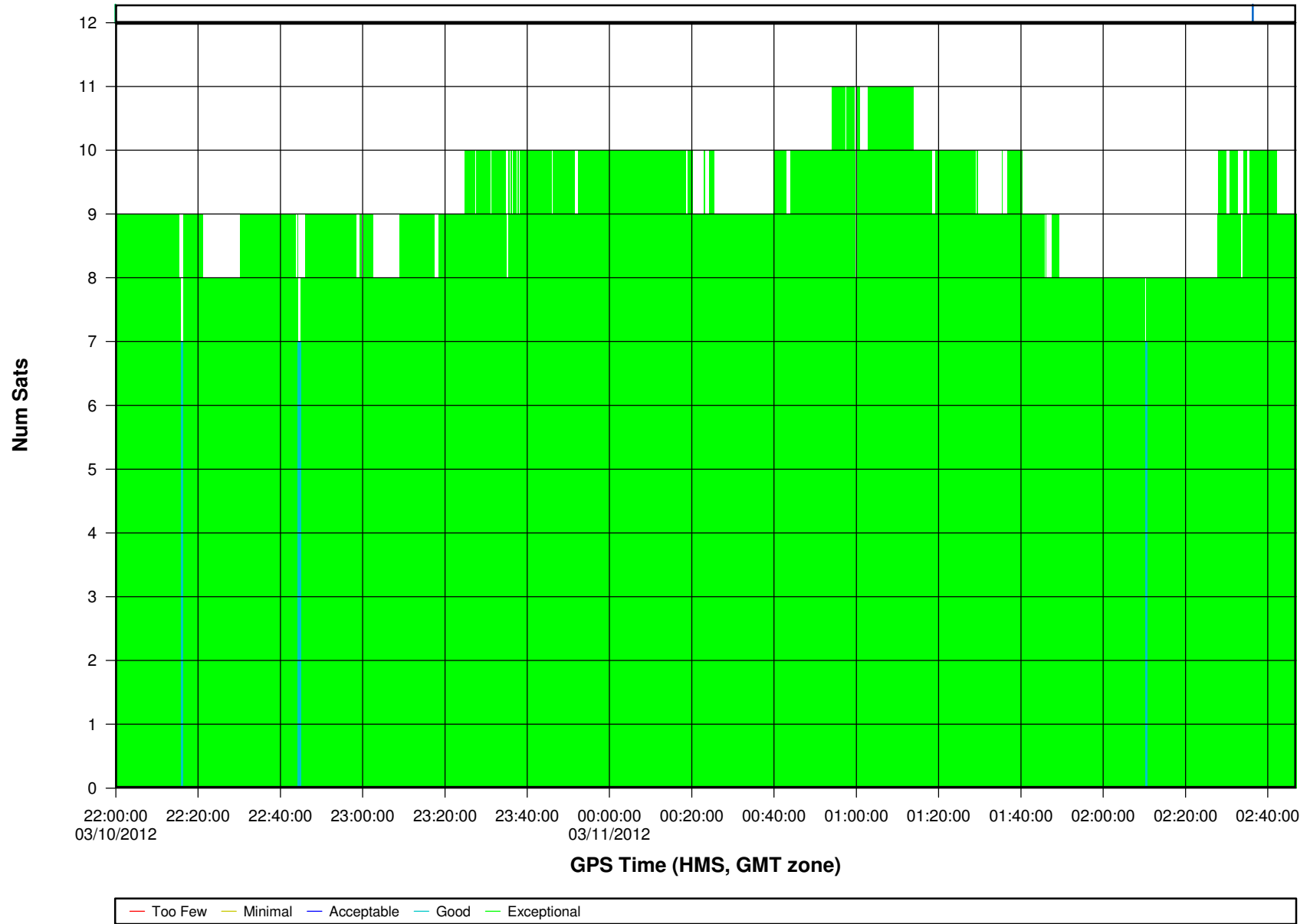
o112070b [Combined] - PDOP, HDOP, VDOP Plots



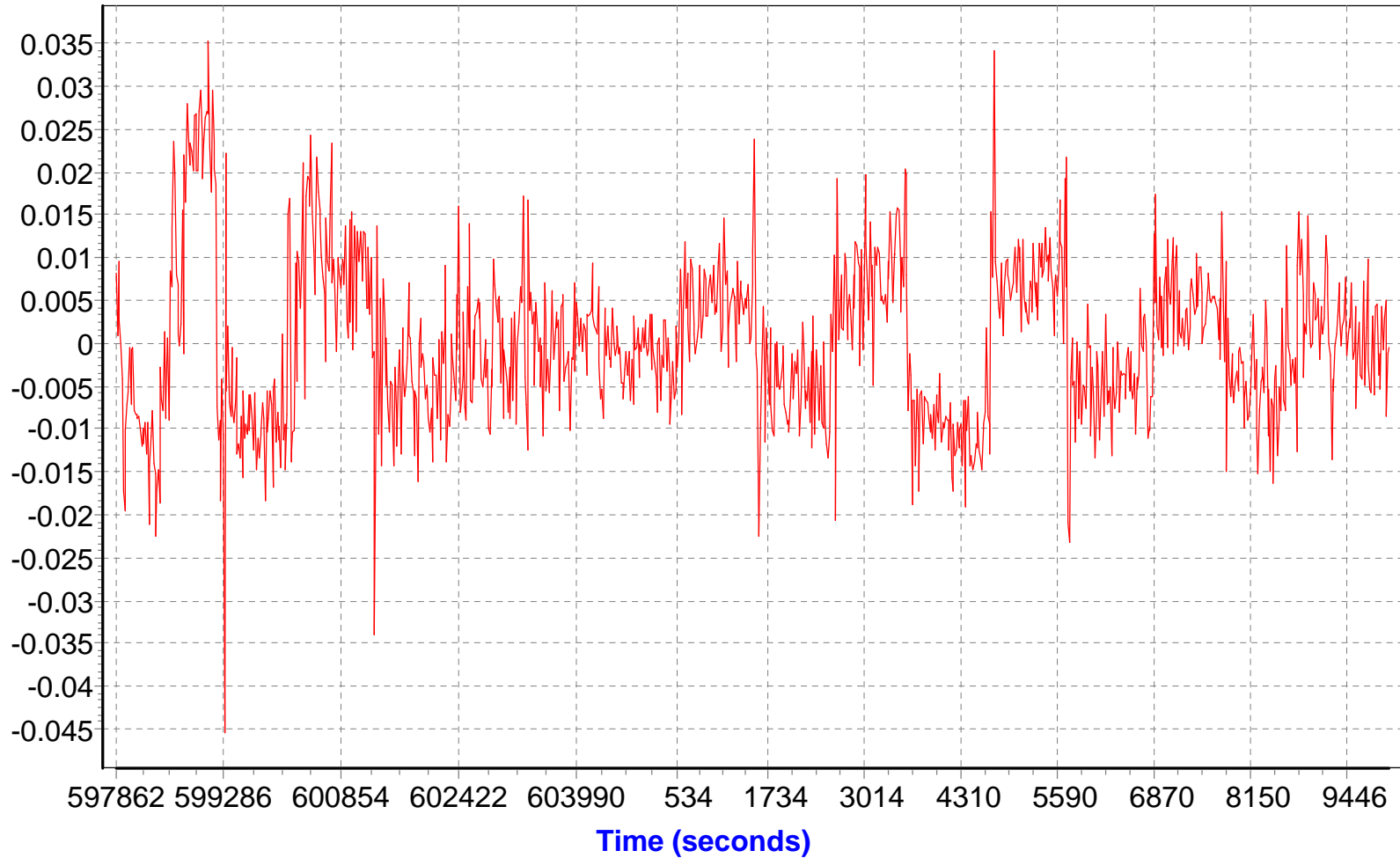
o112070b [Combined] - Estimated Position Accuracy Plot



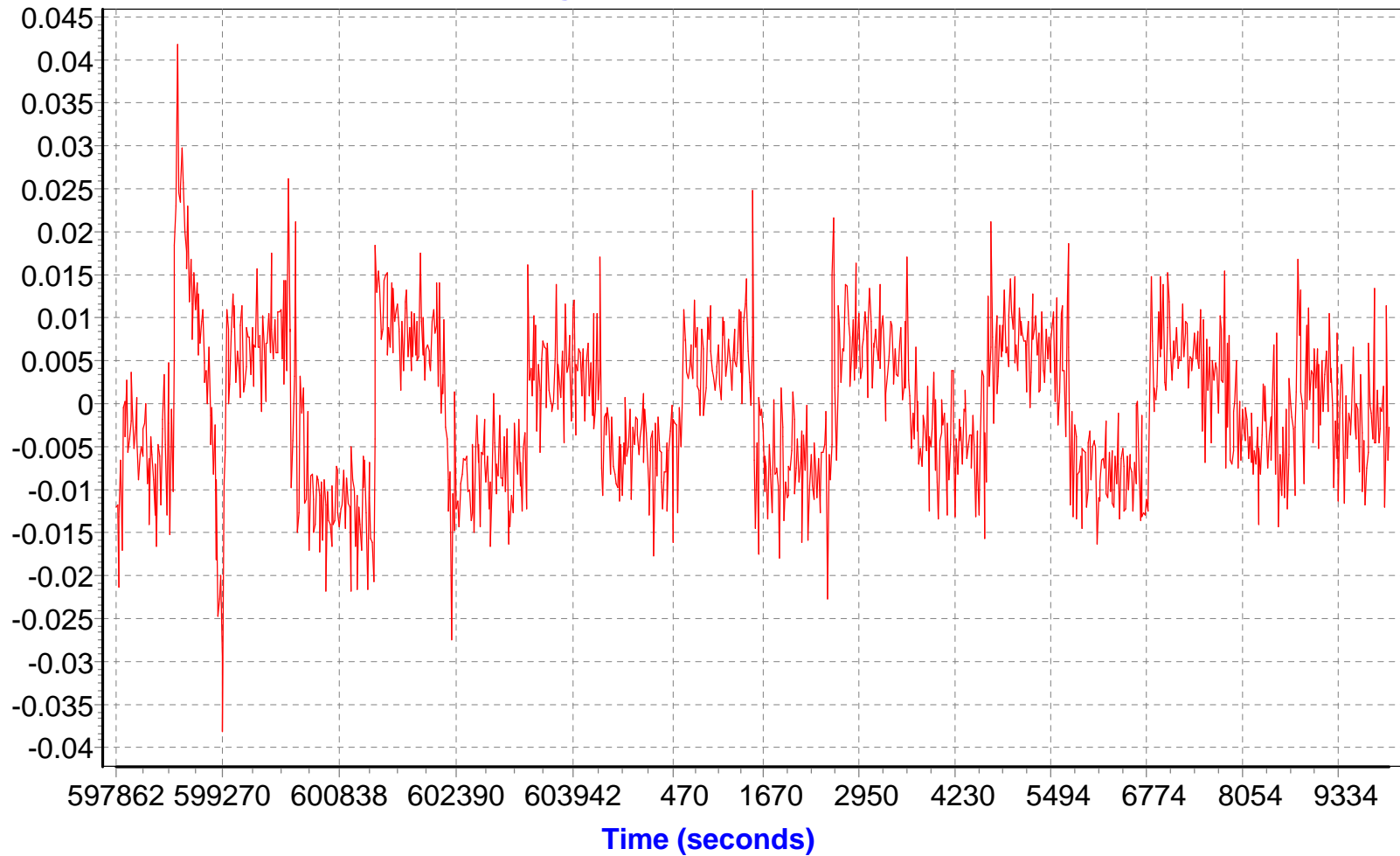
o112070b [Combined] - Number of Satellites Bar Plot



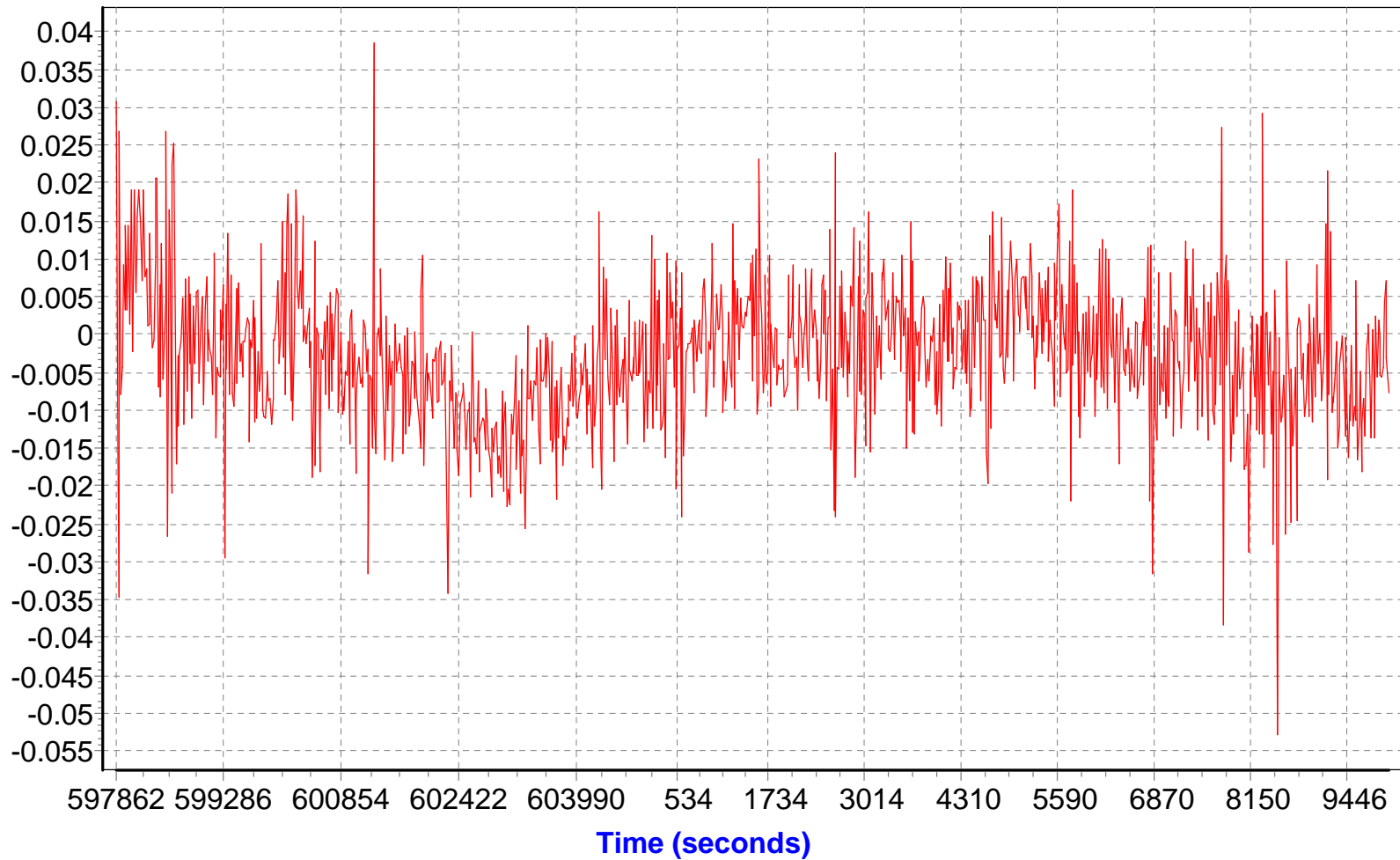
S/D Navigator X Position Error (meters)



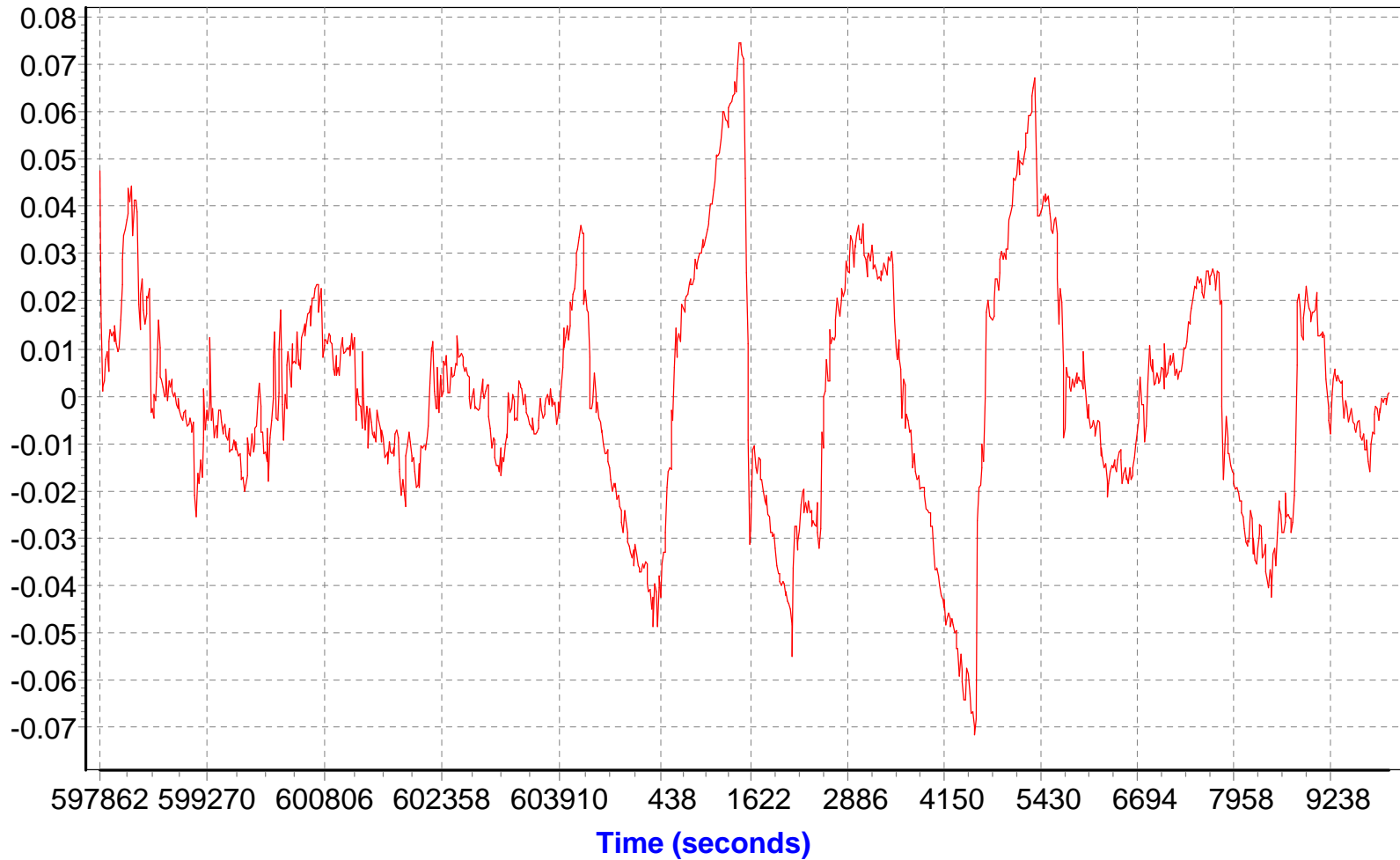
S/D Navigator Y Position Error (meters)



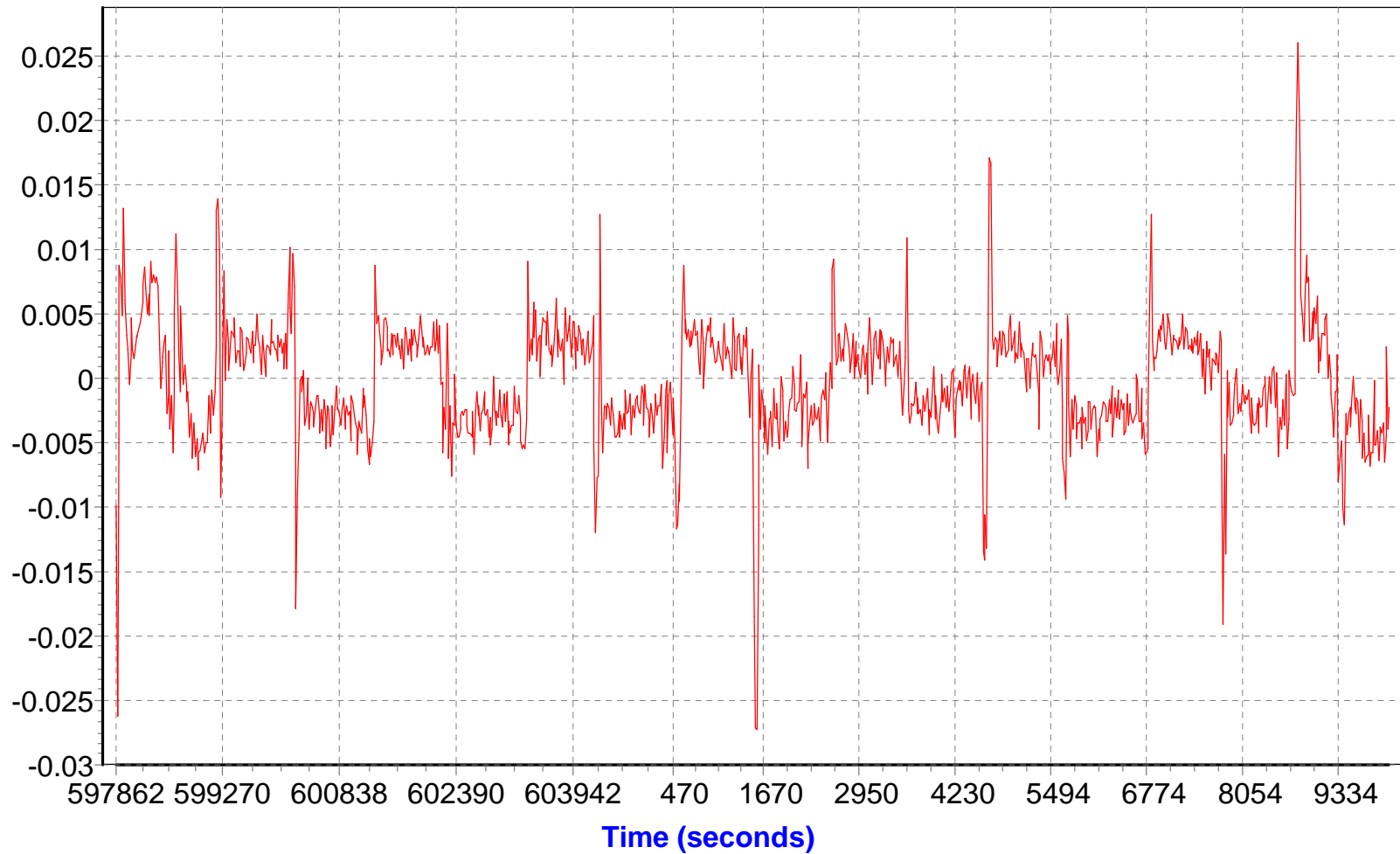
S/D Navigator Z Position Error (meters)



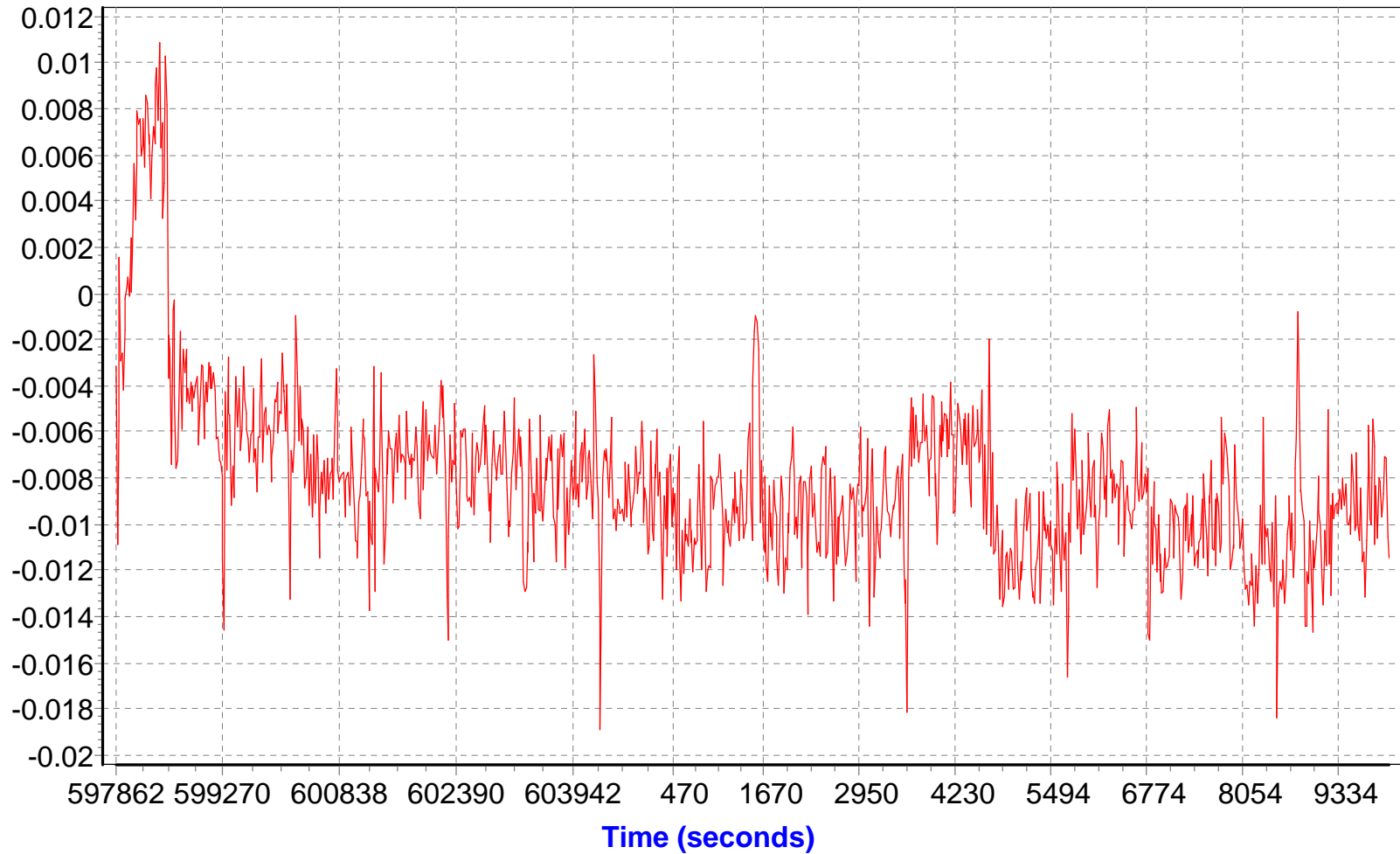
S/D Navigator X Velocity Error (meters/seconds)

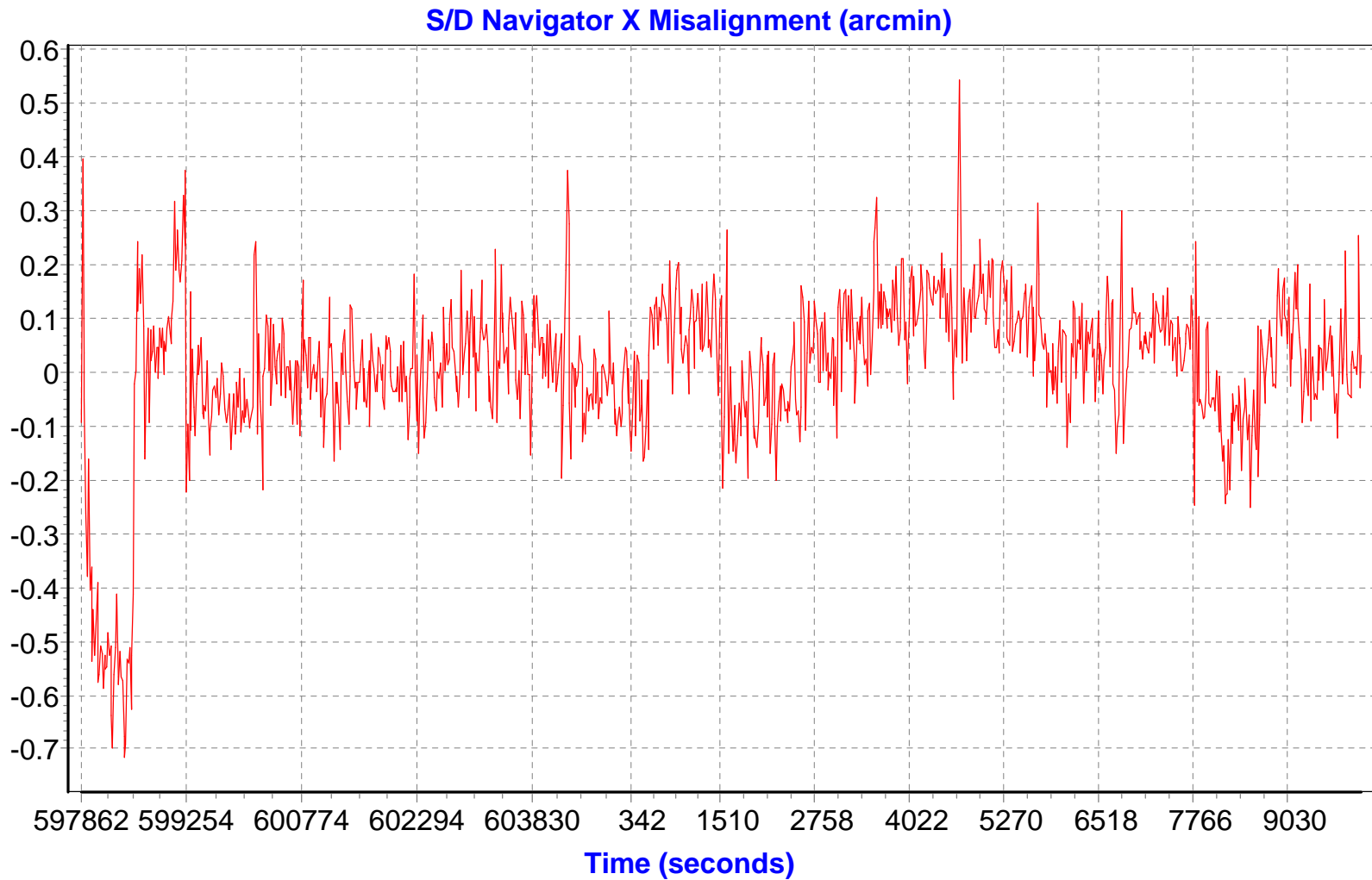


S/D Navigator Y Velocity Error (meters/seconds)

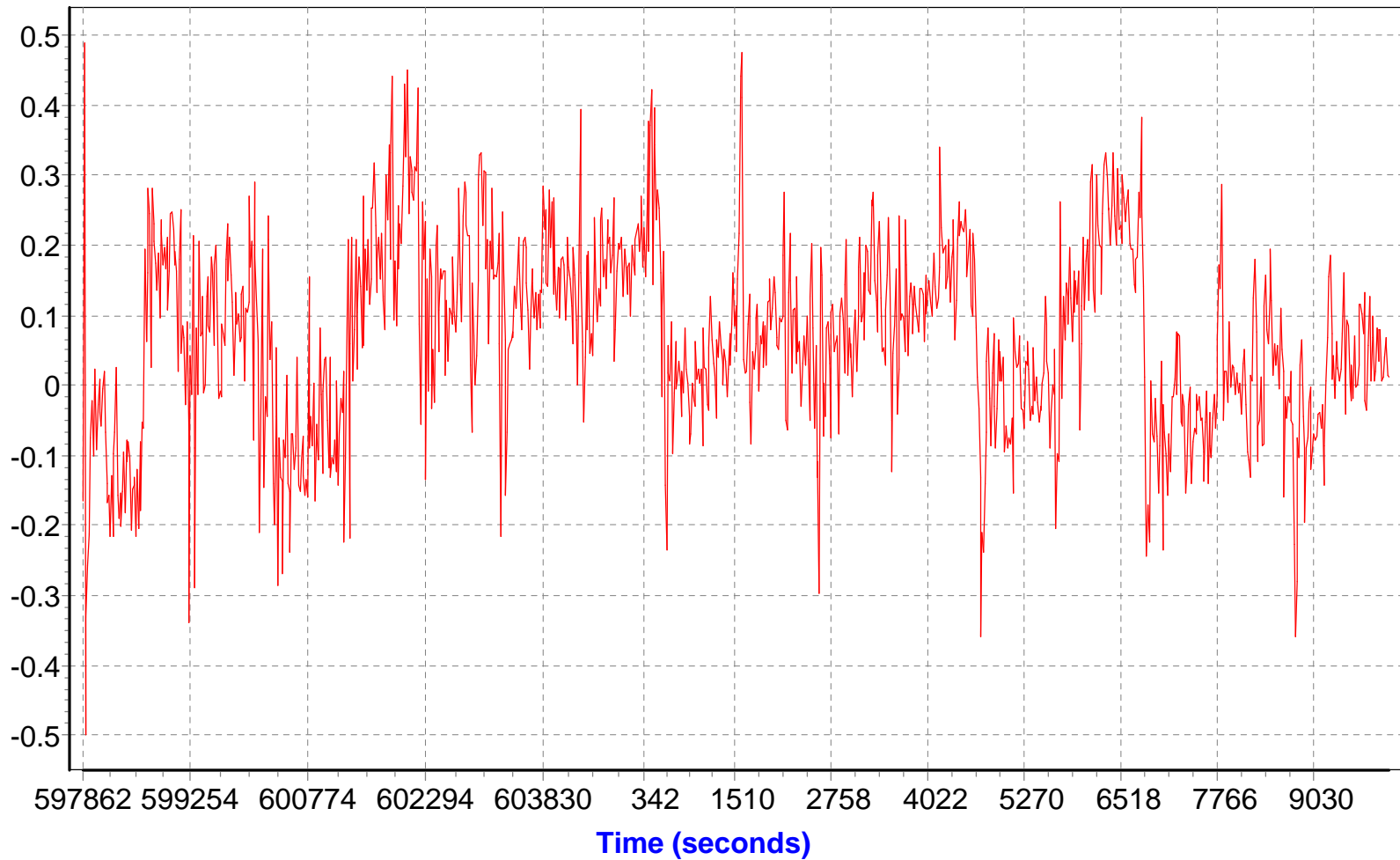


S/D Navigator Z Velocity Error (meters/seconds)

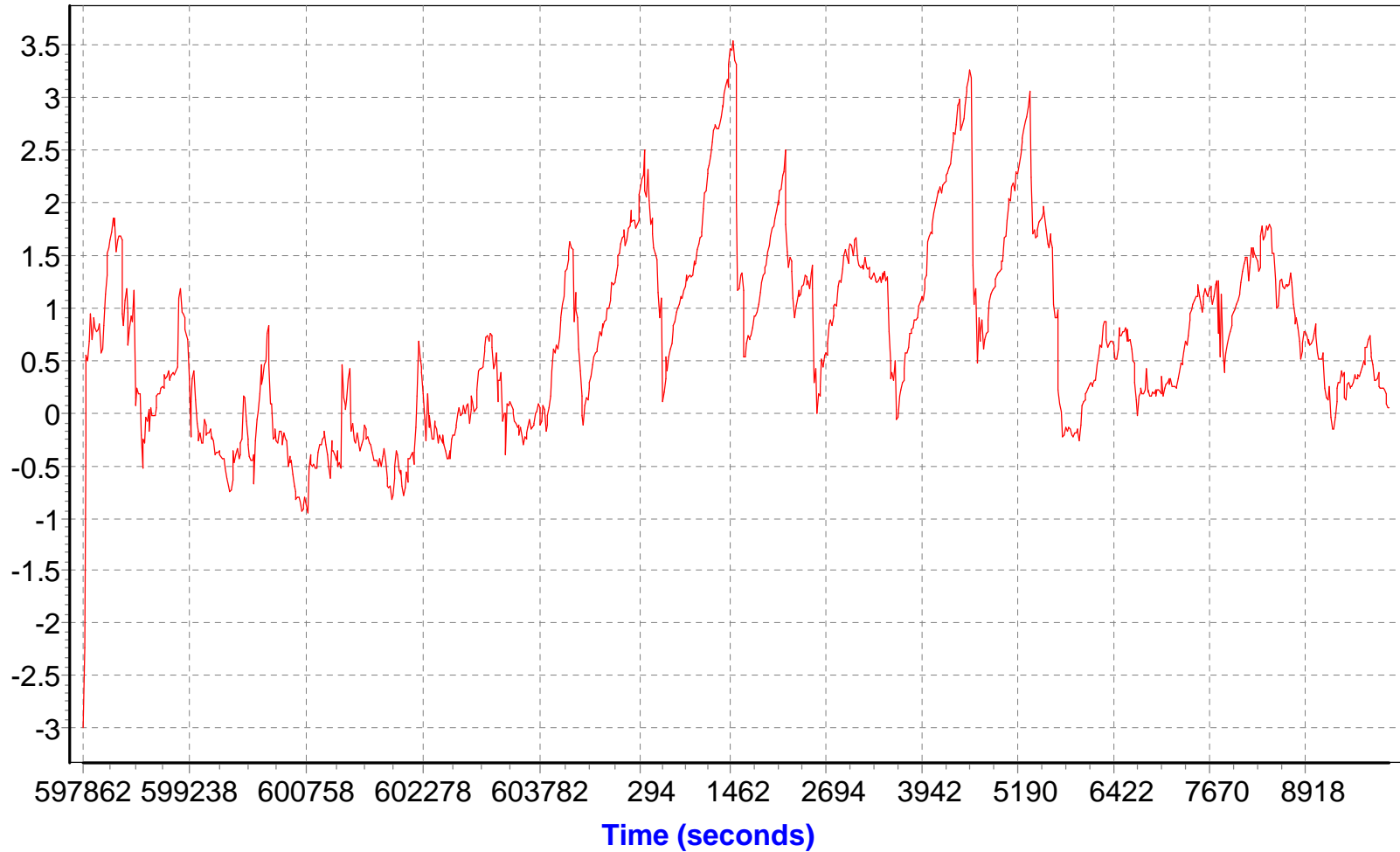




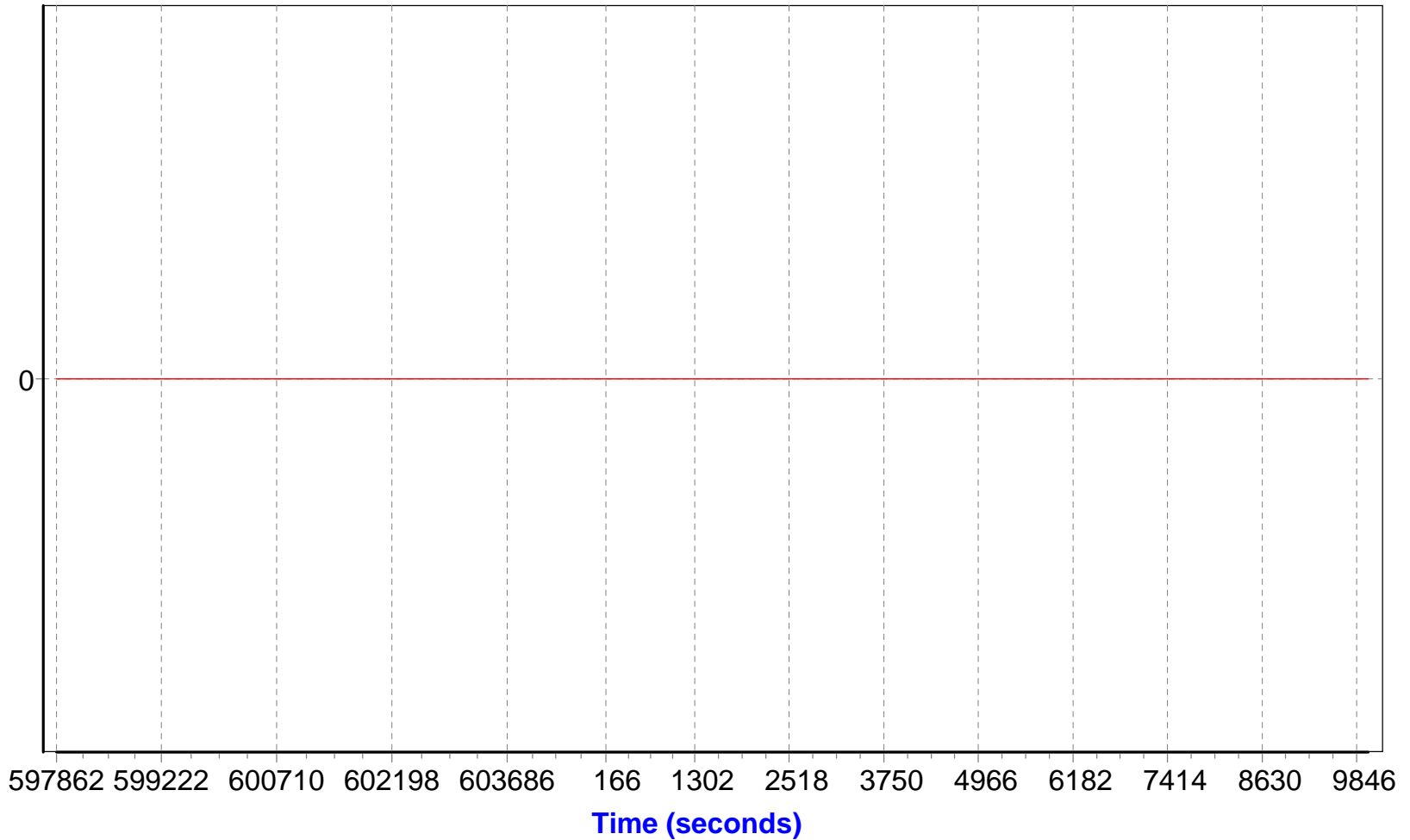
S/D Navigator Y Misalignment (arcmin)



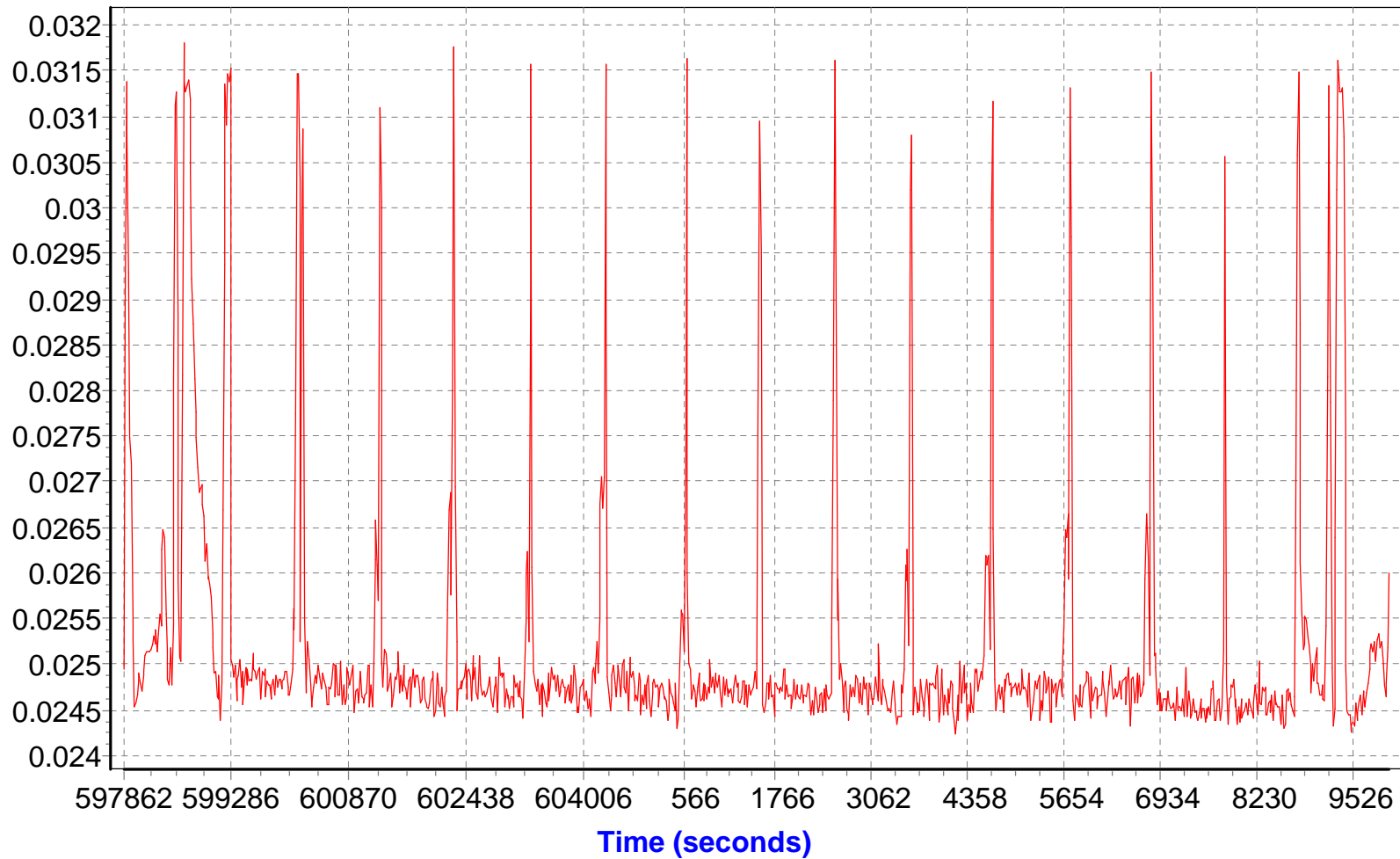
S/D Navigator Z Misalignment (arcmin)



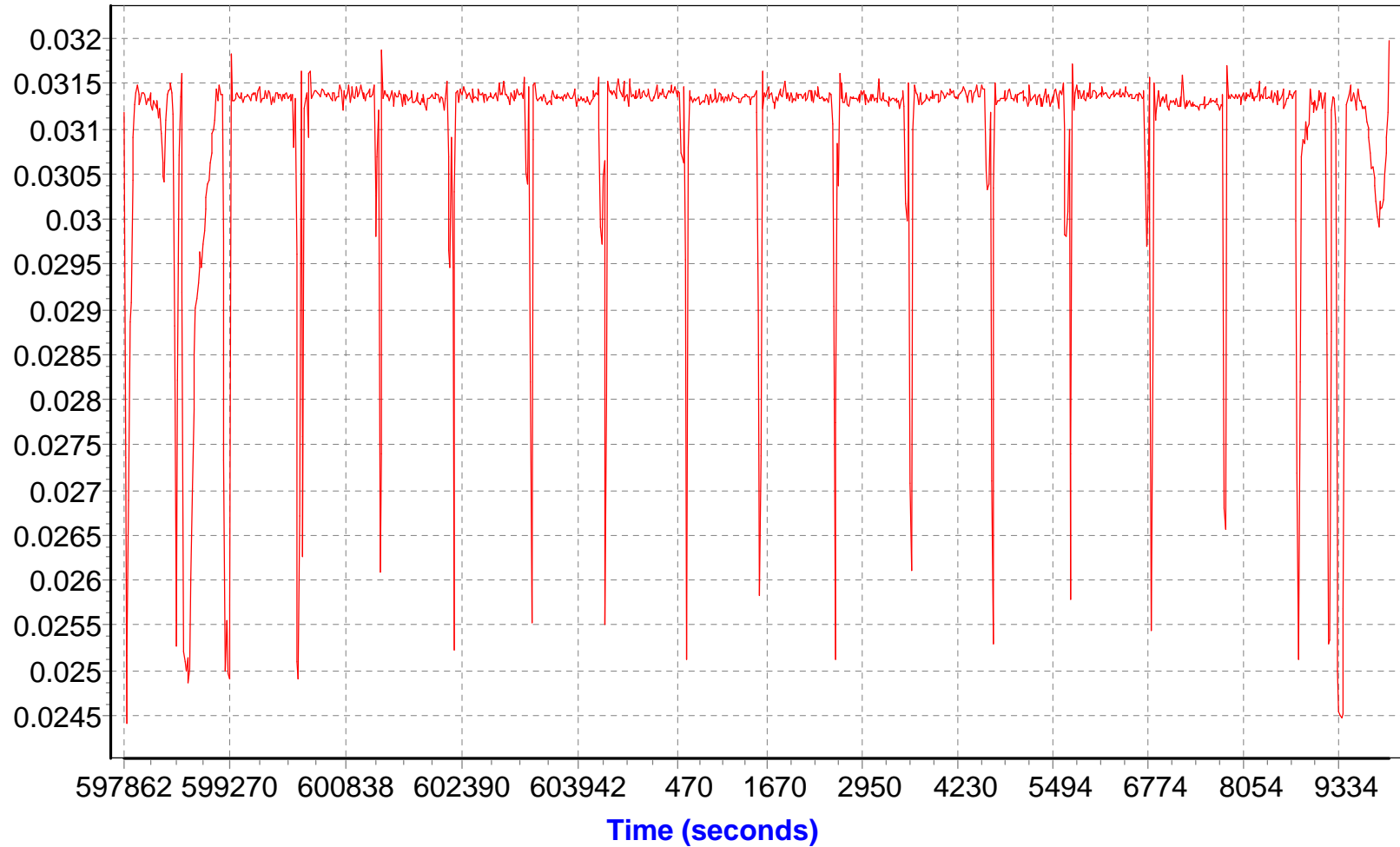
S/D Navigator COS(Z Misalignment)-1 (radians)



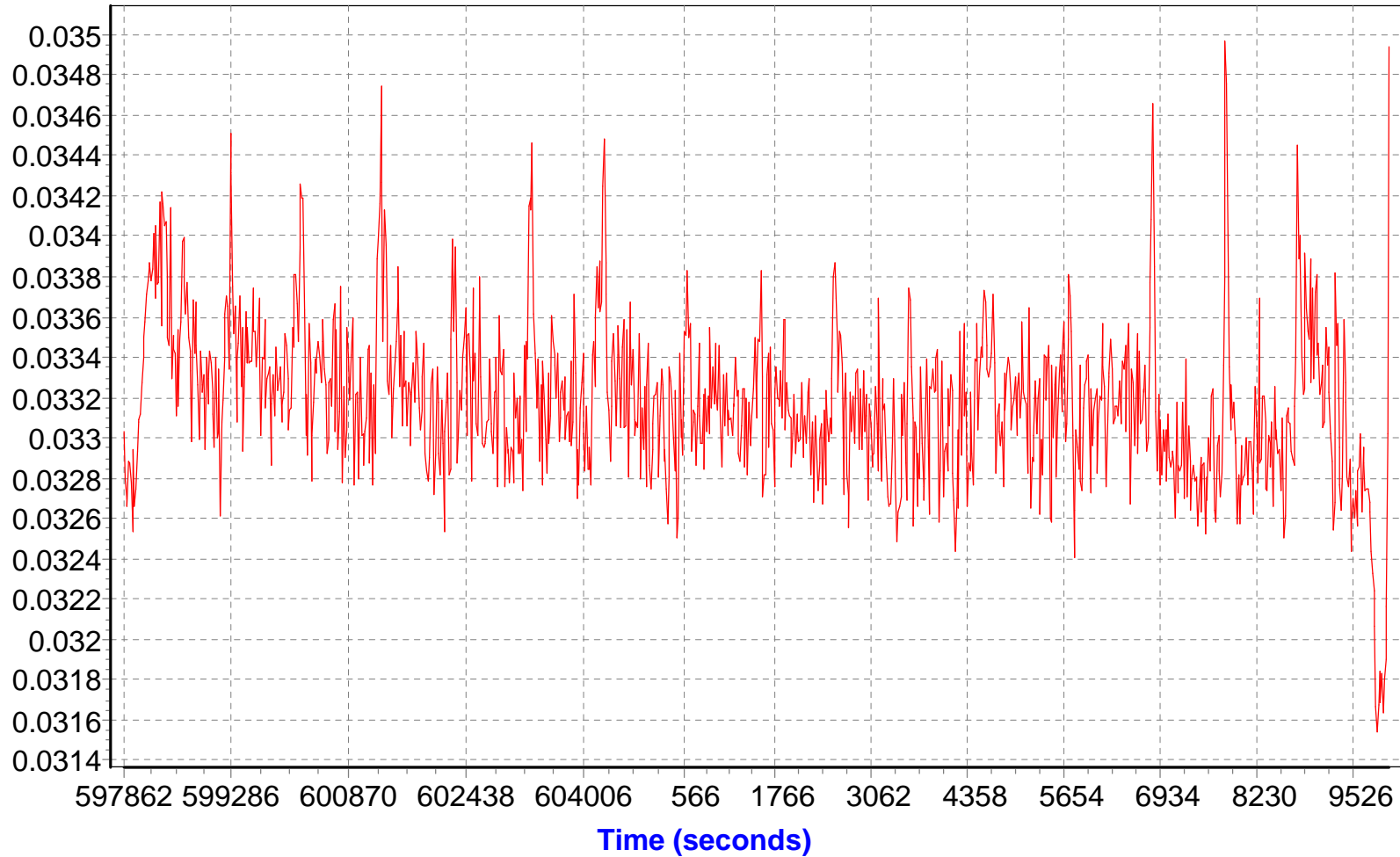
S/D Navigator X Position RMS Error (meters)



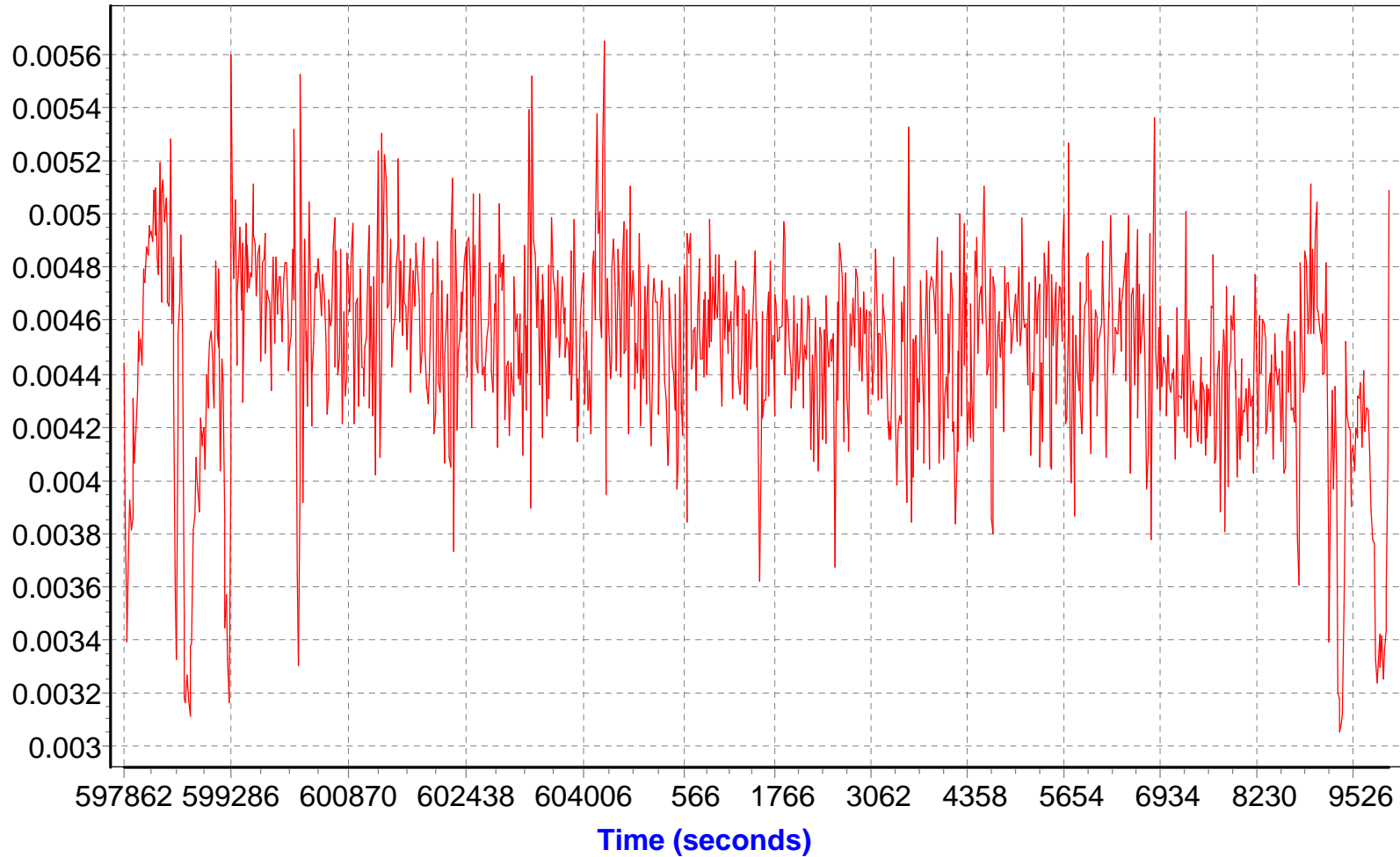
S/D Navigator Y Position RMS Error (meters)



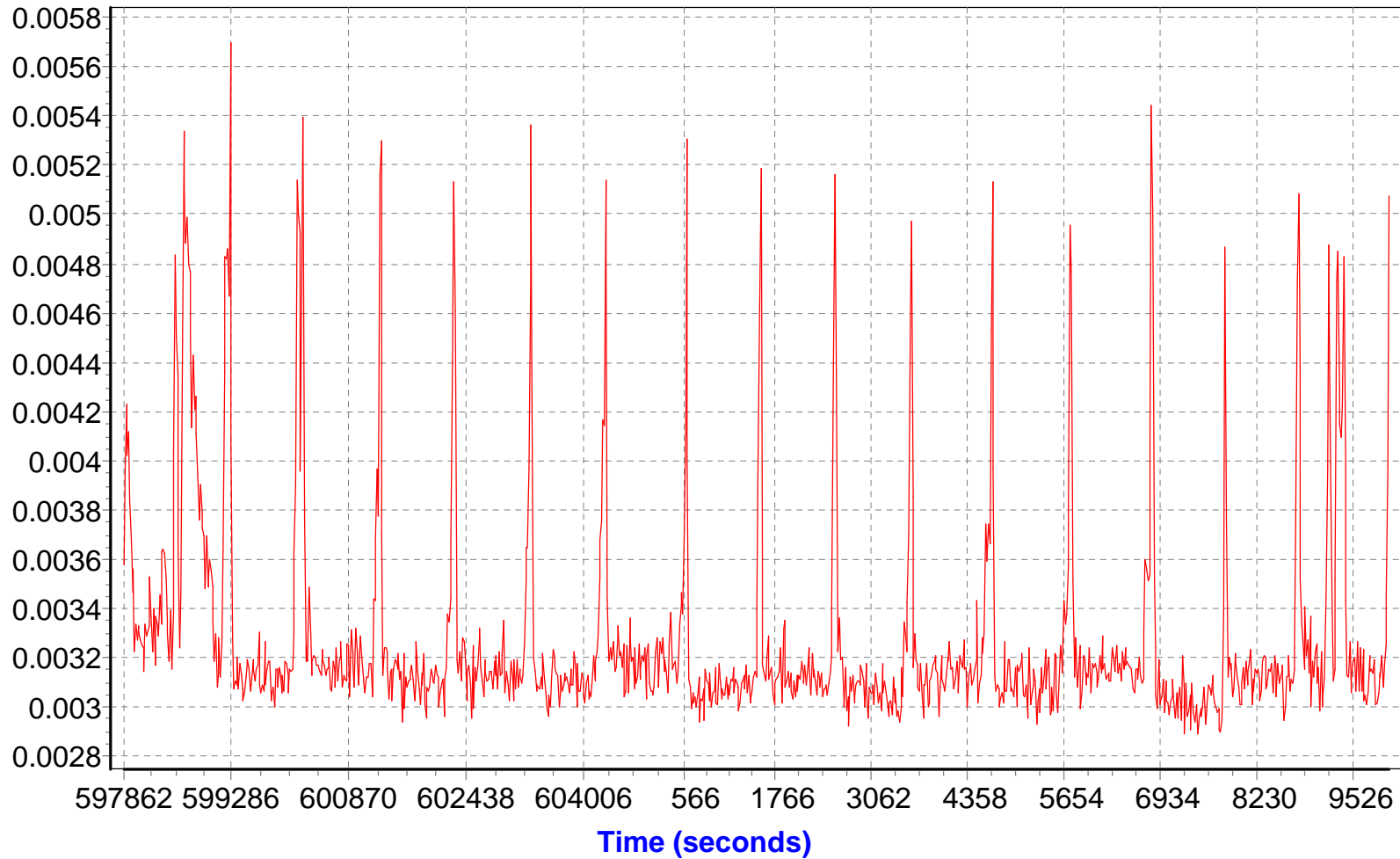
S/D Navigator Z Position RMS Error (meters)



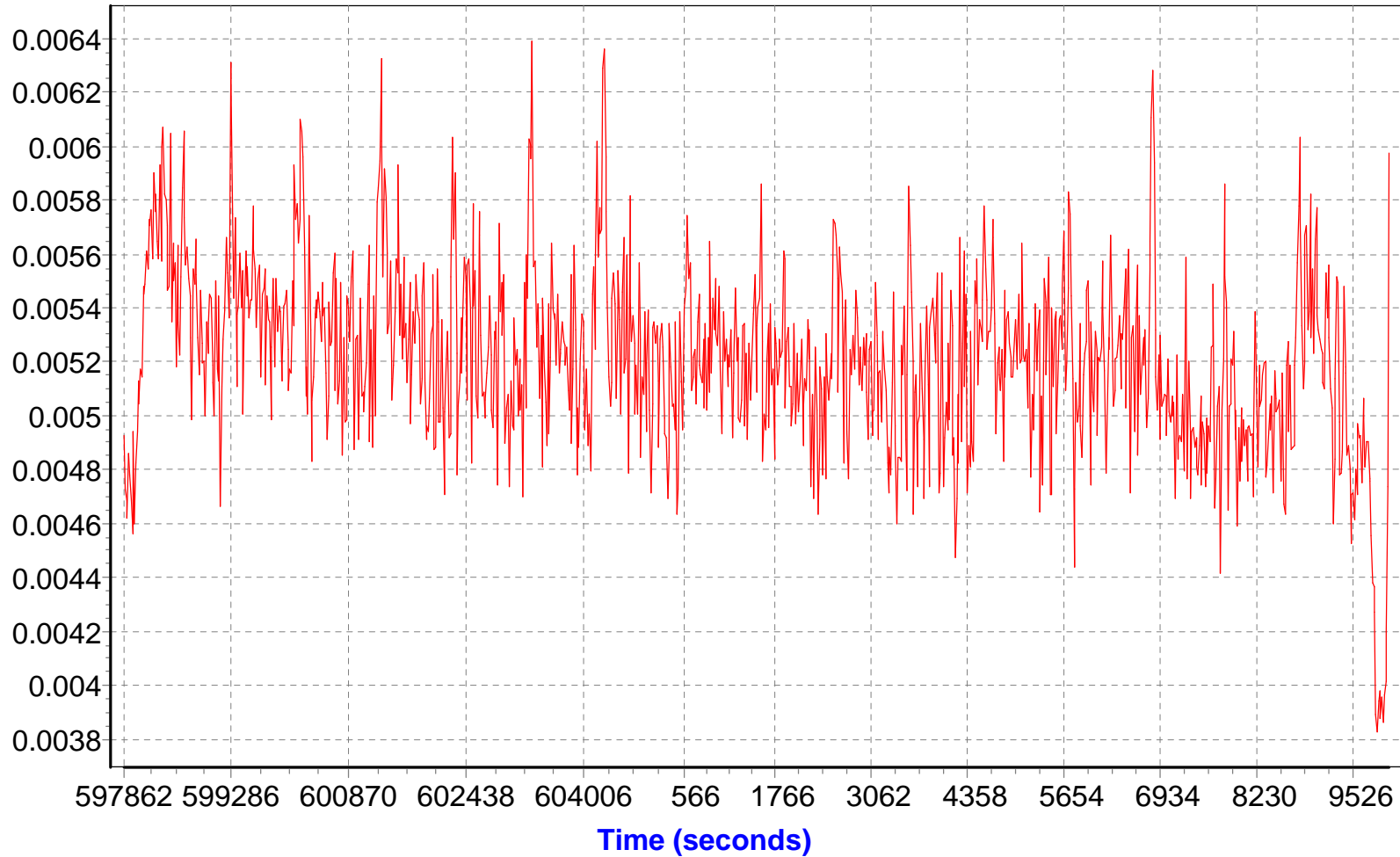
S/D Navigator X Velocity RMS Error (meters/seconds)



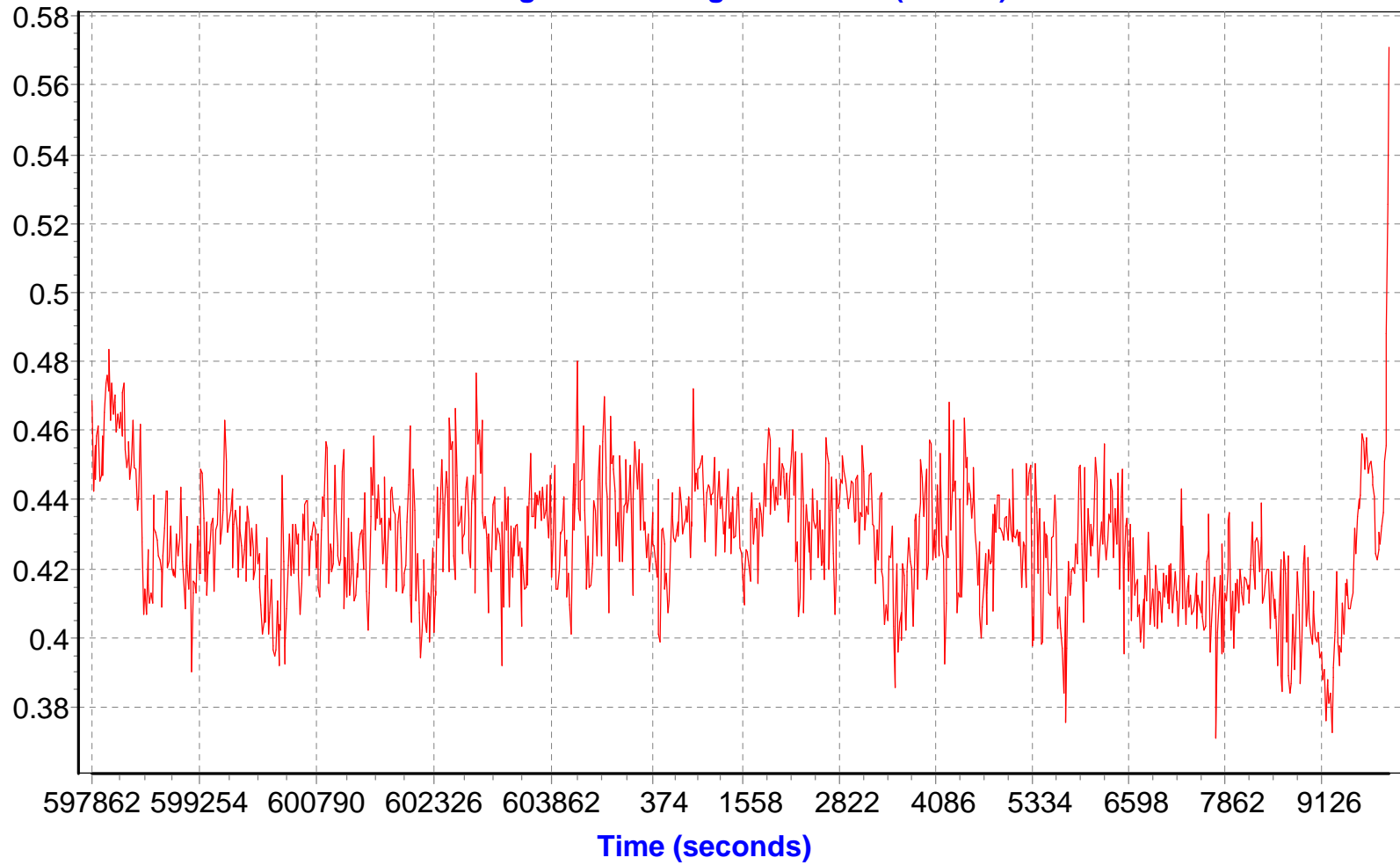
S/D Navigator Y Velocity RMS Error (meters/seconds)



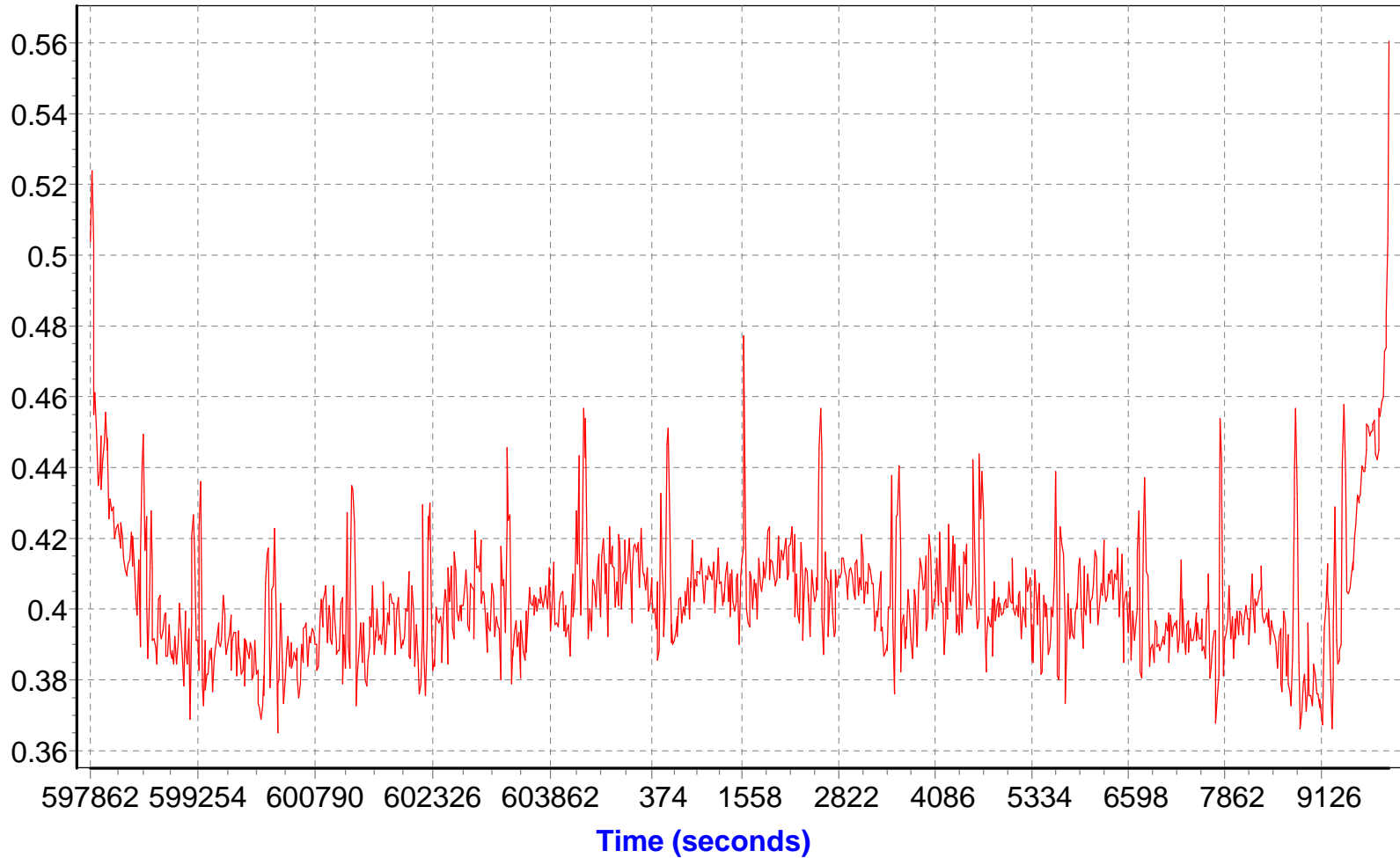
S/D Navigator Z Velocity RMS Error (meters/seconds)



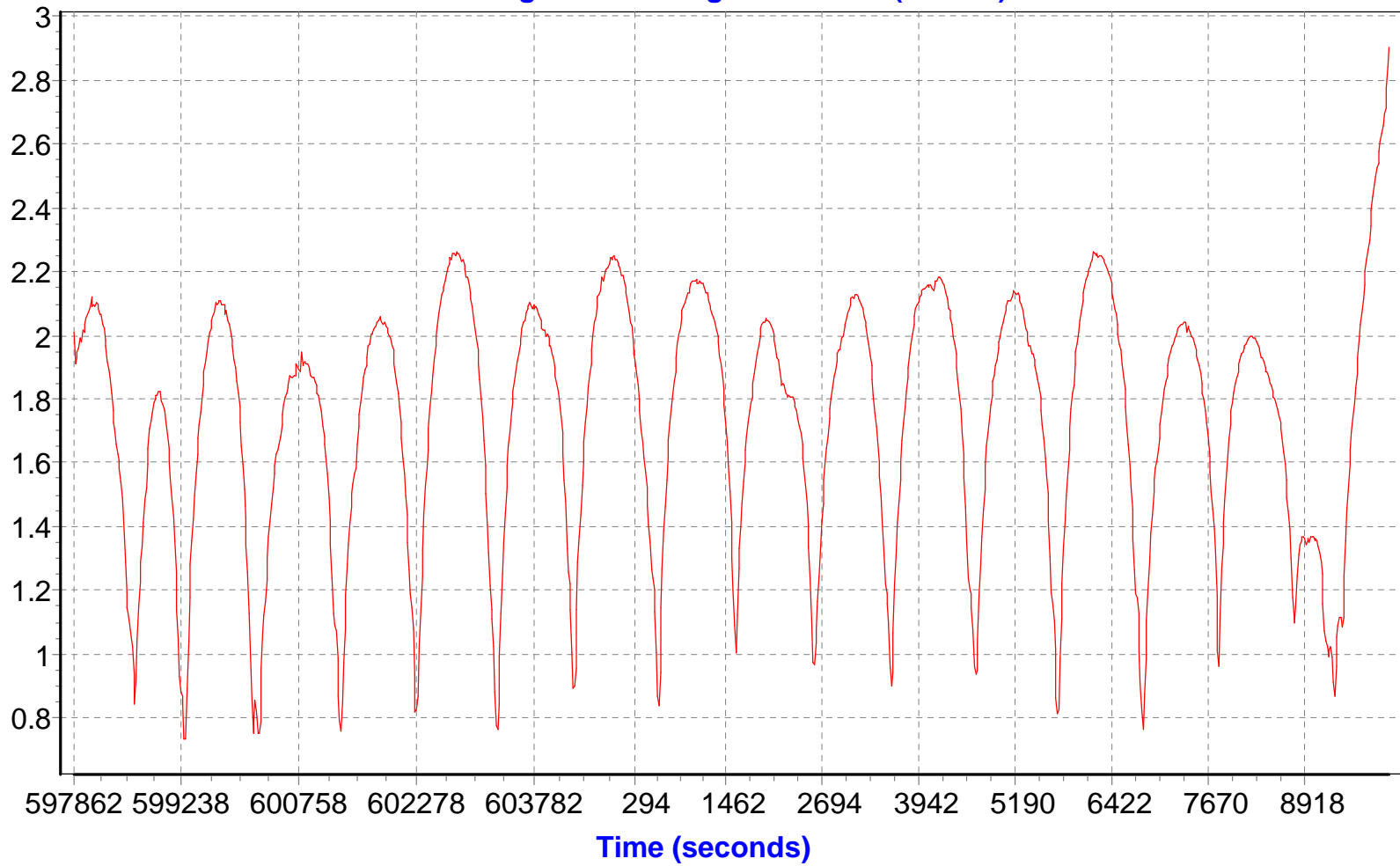
S/D Navigator X Misalignment RMS (arcmin)



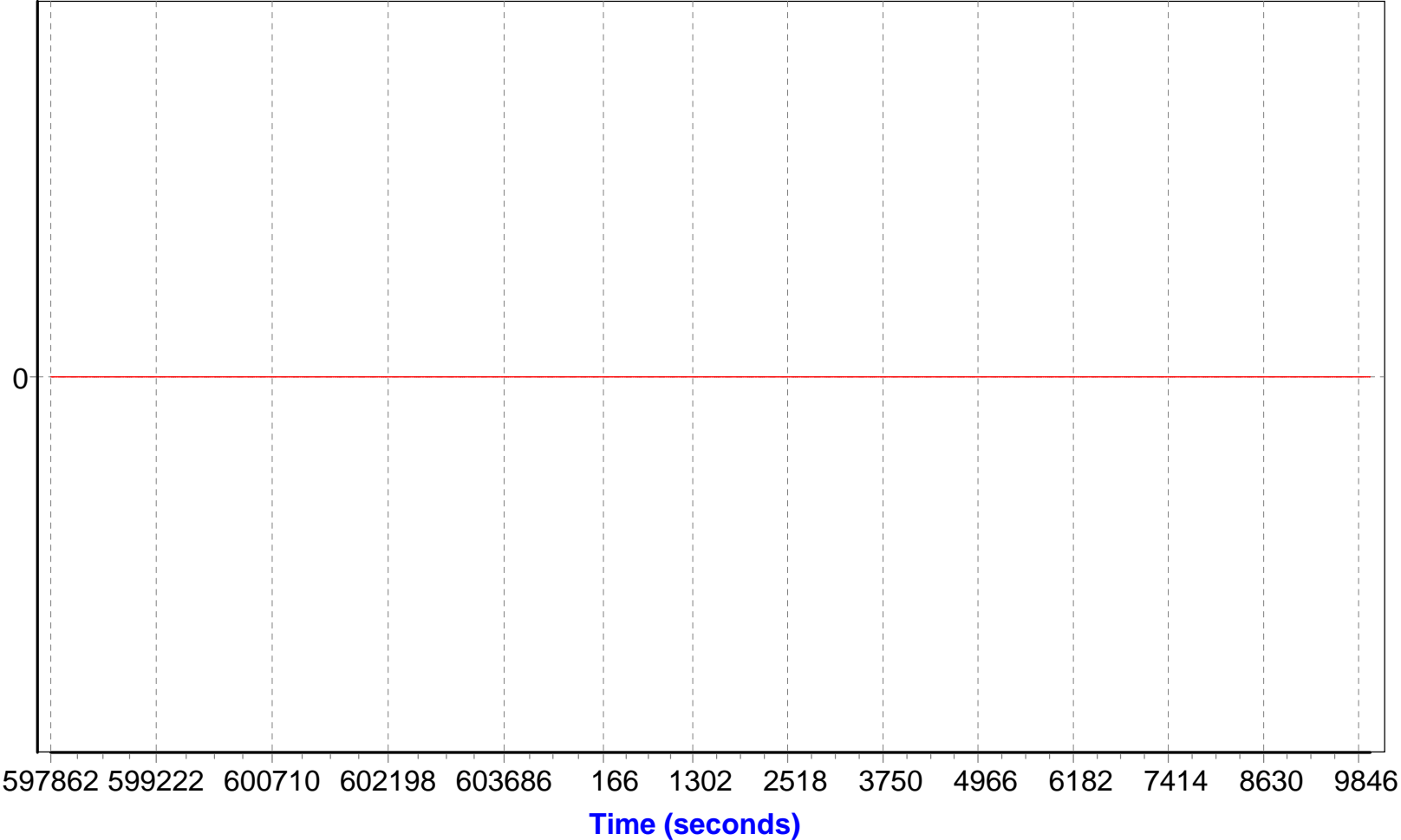
S/D Navigator Y Misalignment RMS (arcmin)



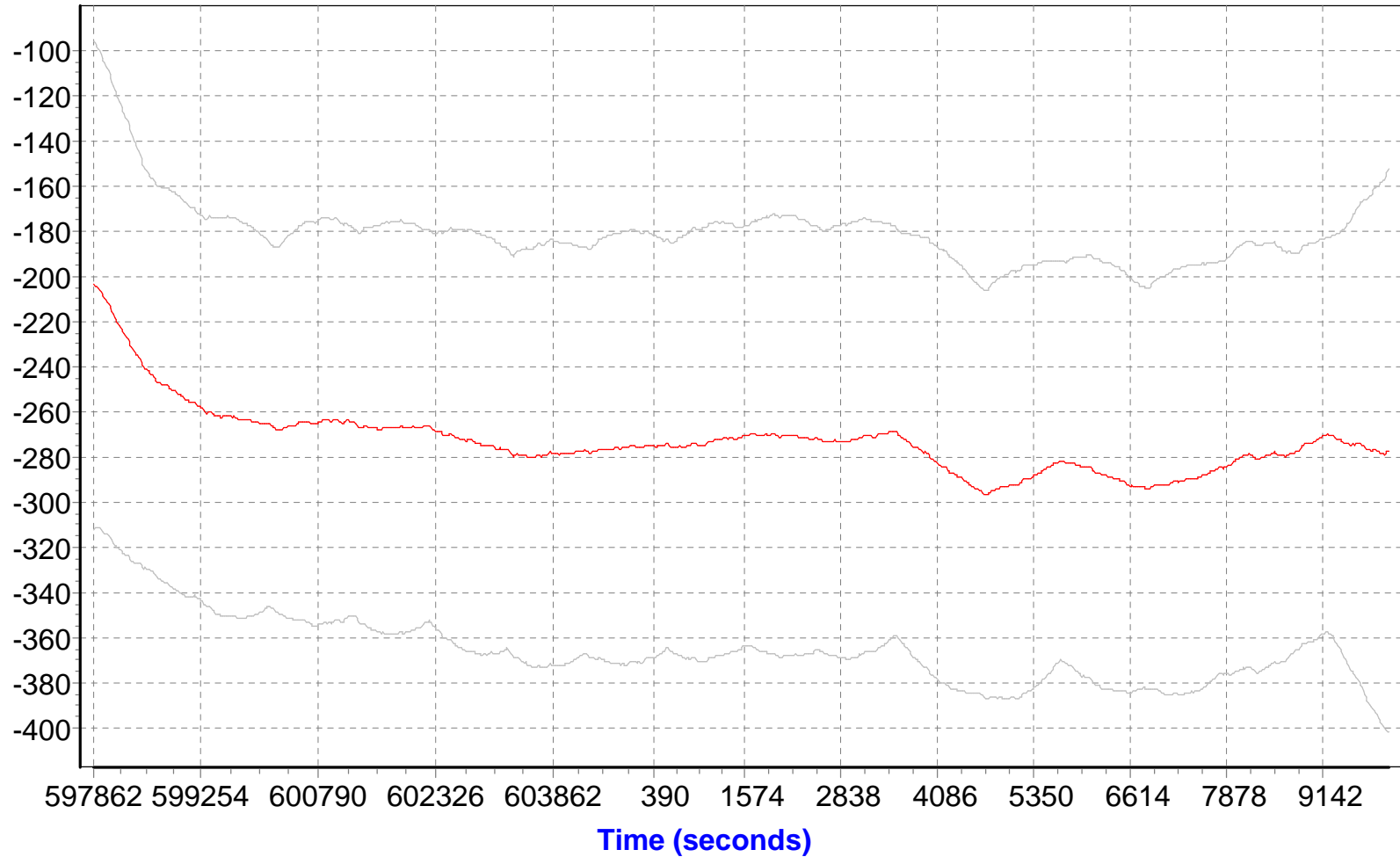
S/D Navigator Z Misalignment RMS (arcmin)



S/D Navigator COS(Z Misalignment)-1 RMS (radians)

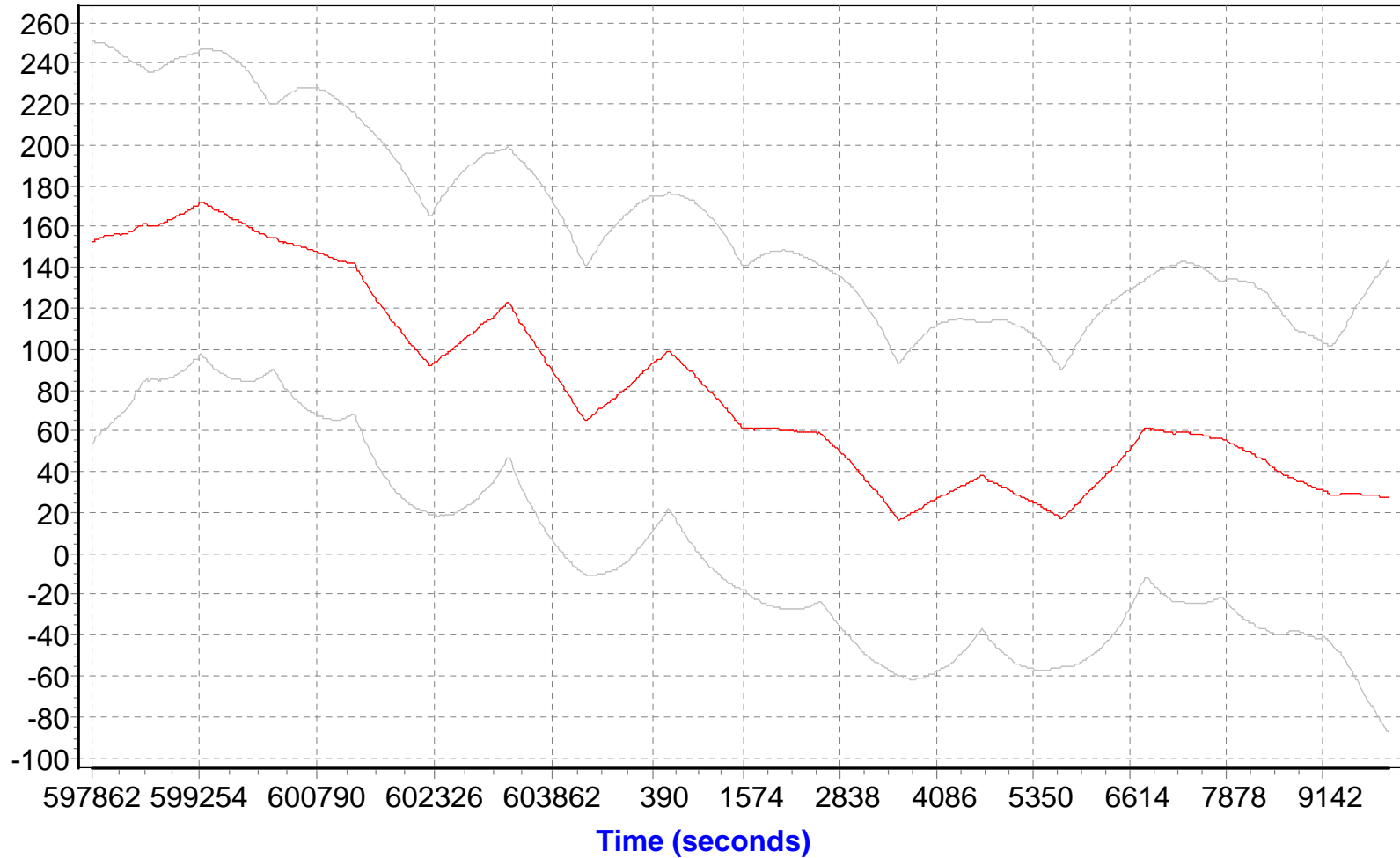


X Accelerometer Bias (micro-g)



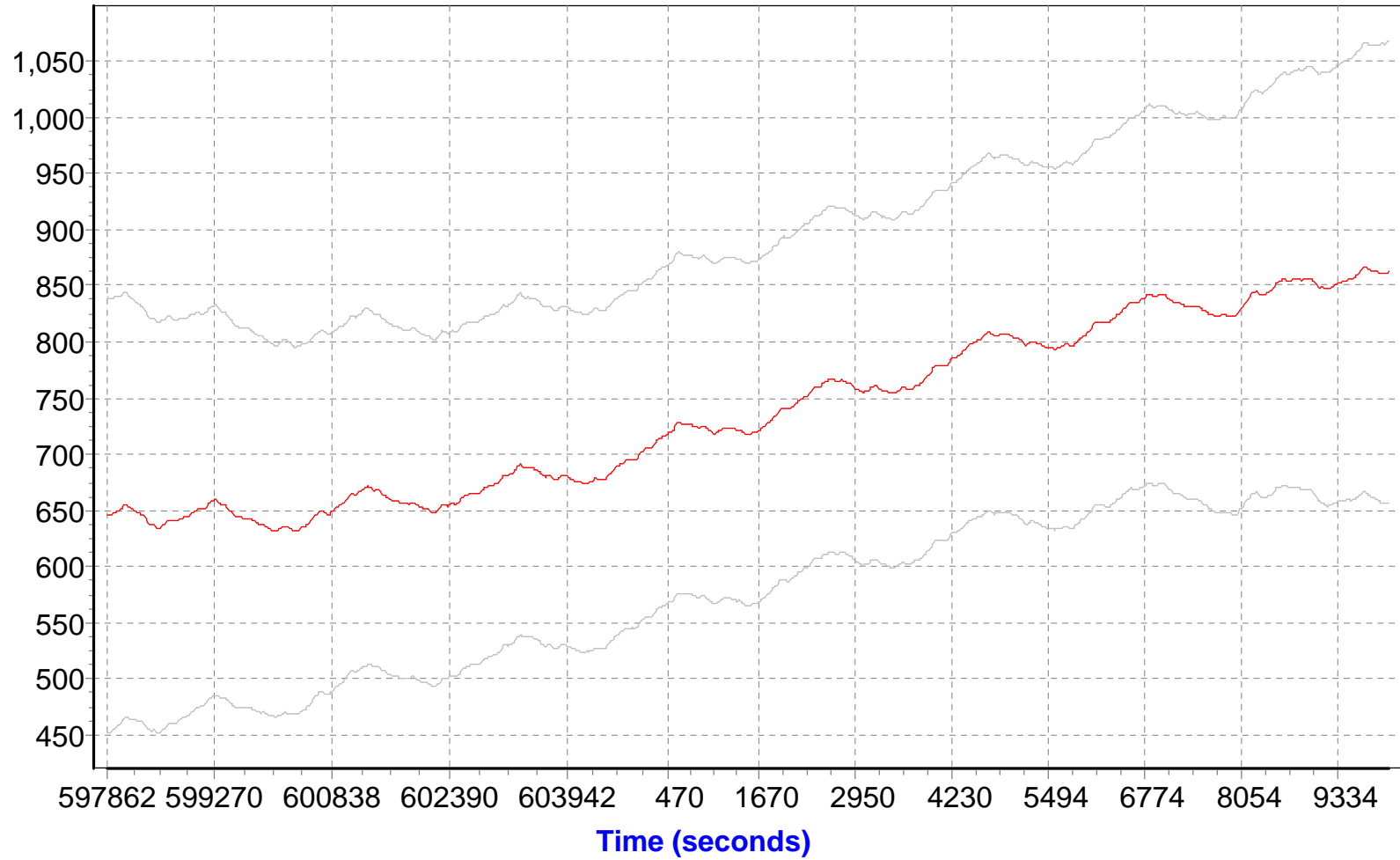
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Y Accelerometer Bias (micro-g)



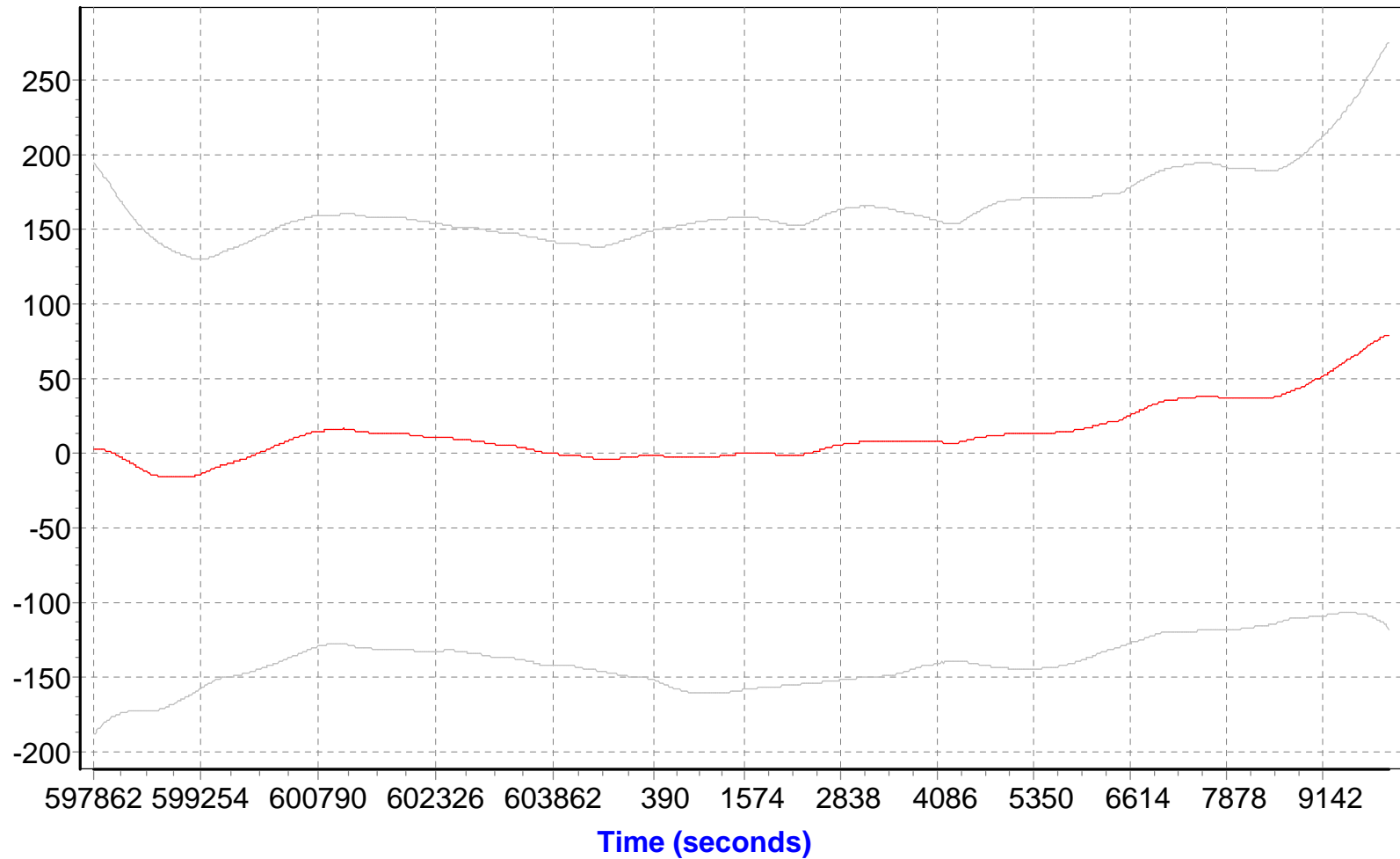
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Z Accelerometer Bias (micro-g)



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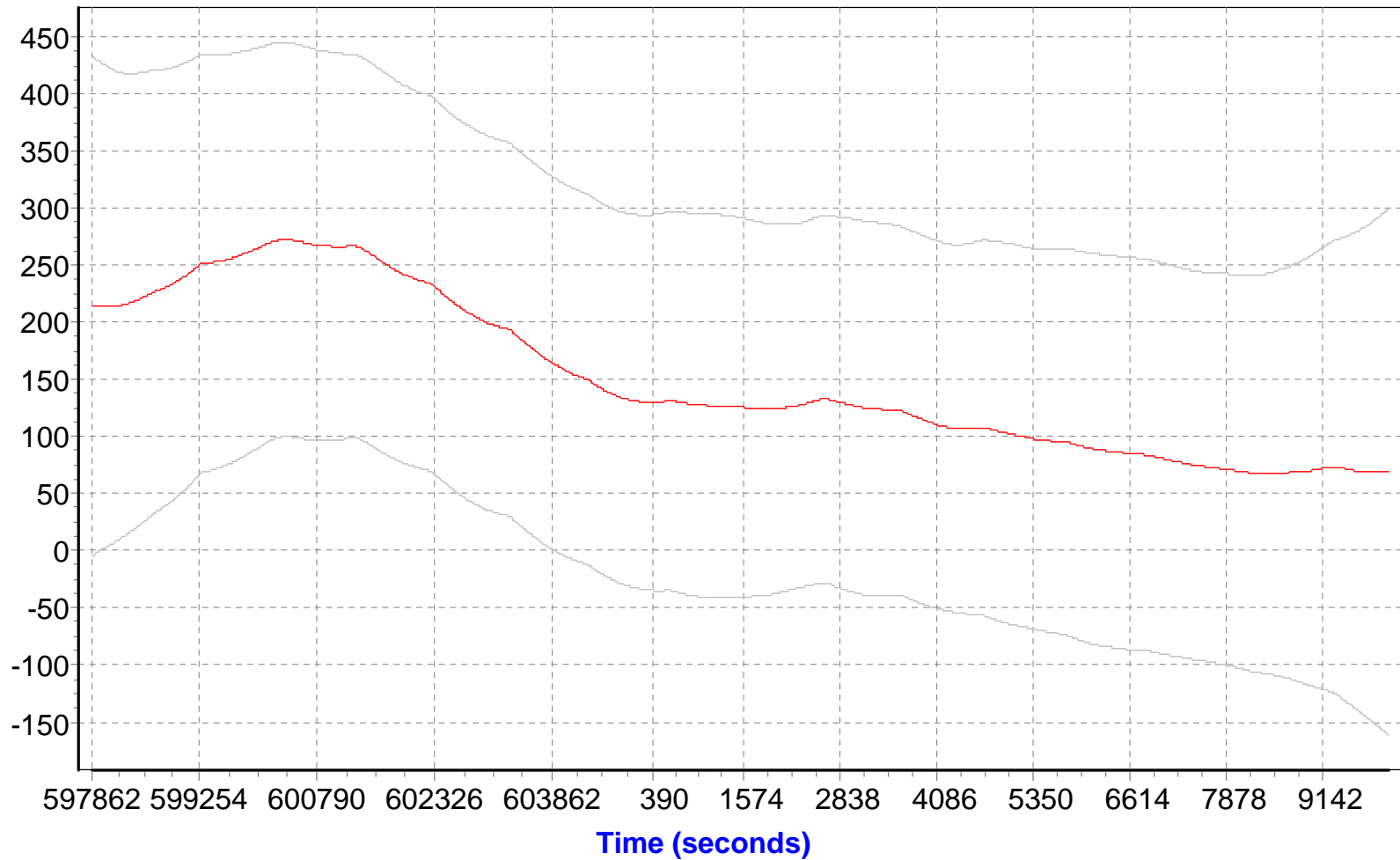
X Accelerometer Scale Factor Error (ppm)



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I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

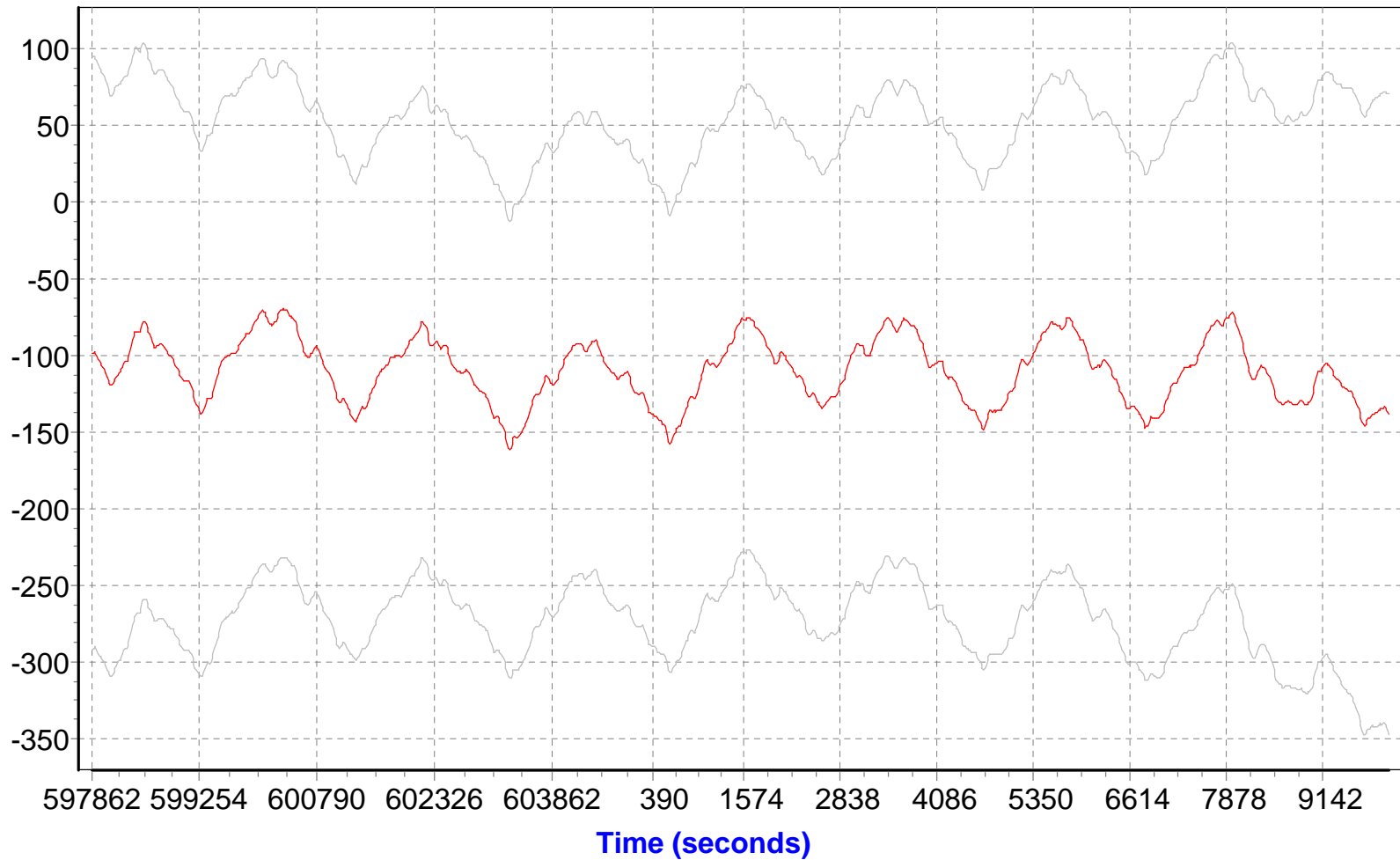
Y Accelerometer Scale Factor Error (ppm)



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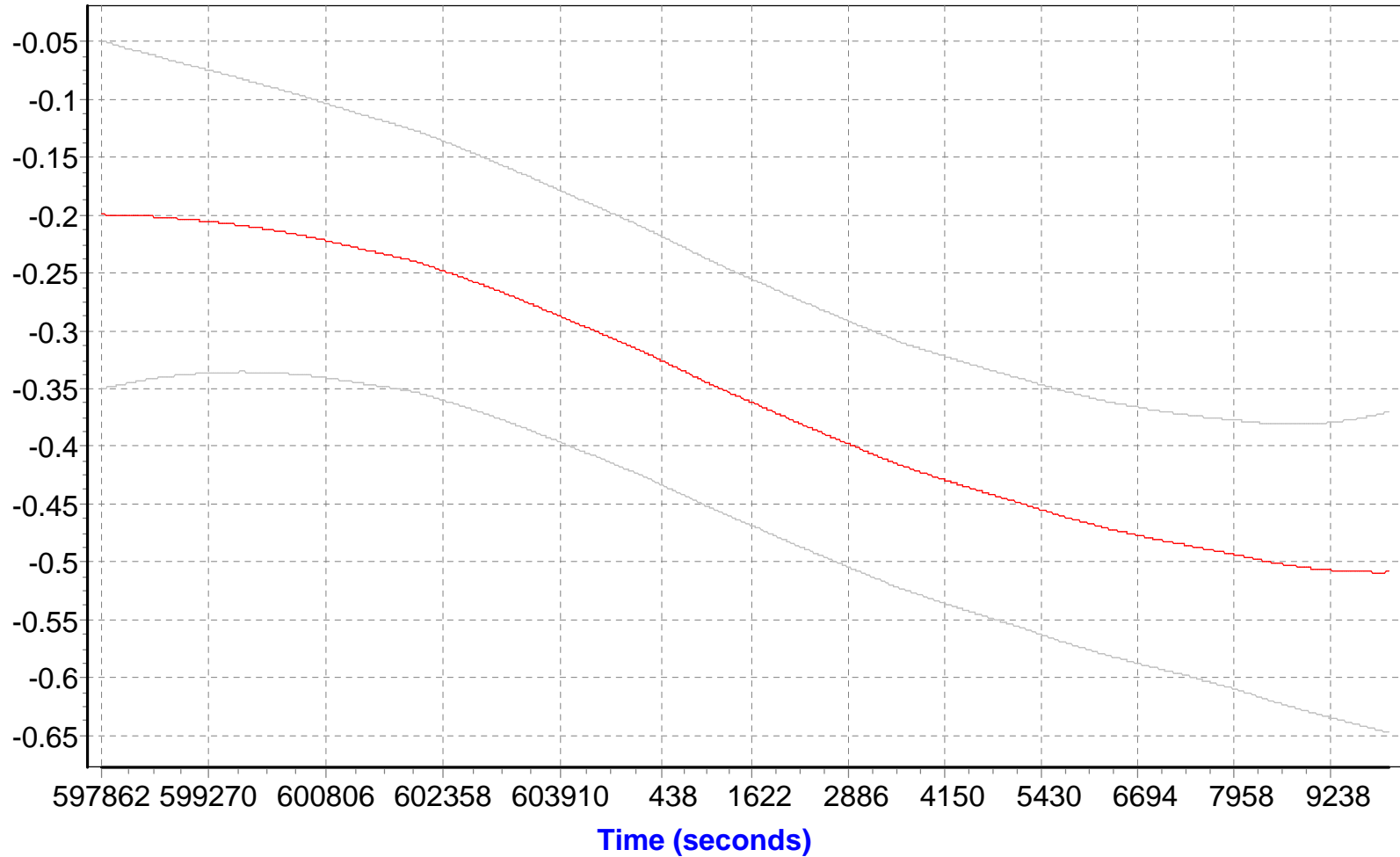
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Z Accelerometer Scale Factor Error (ppm)



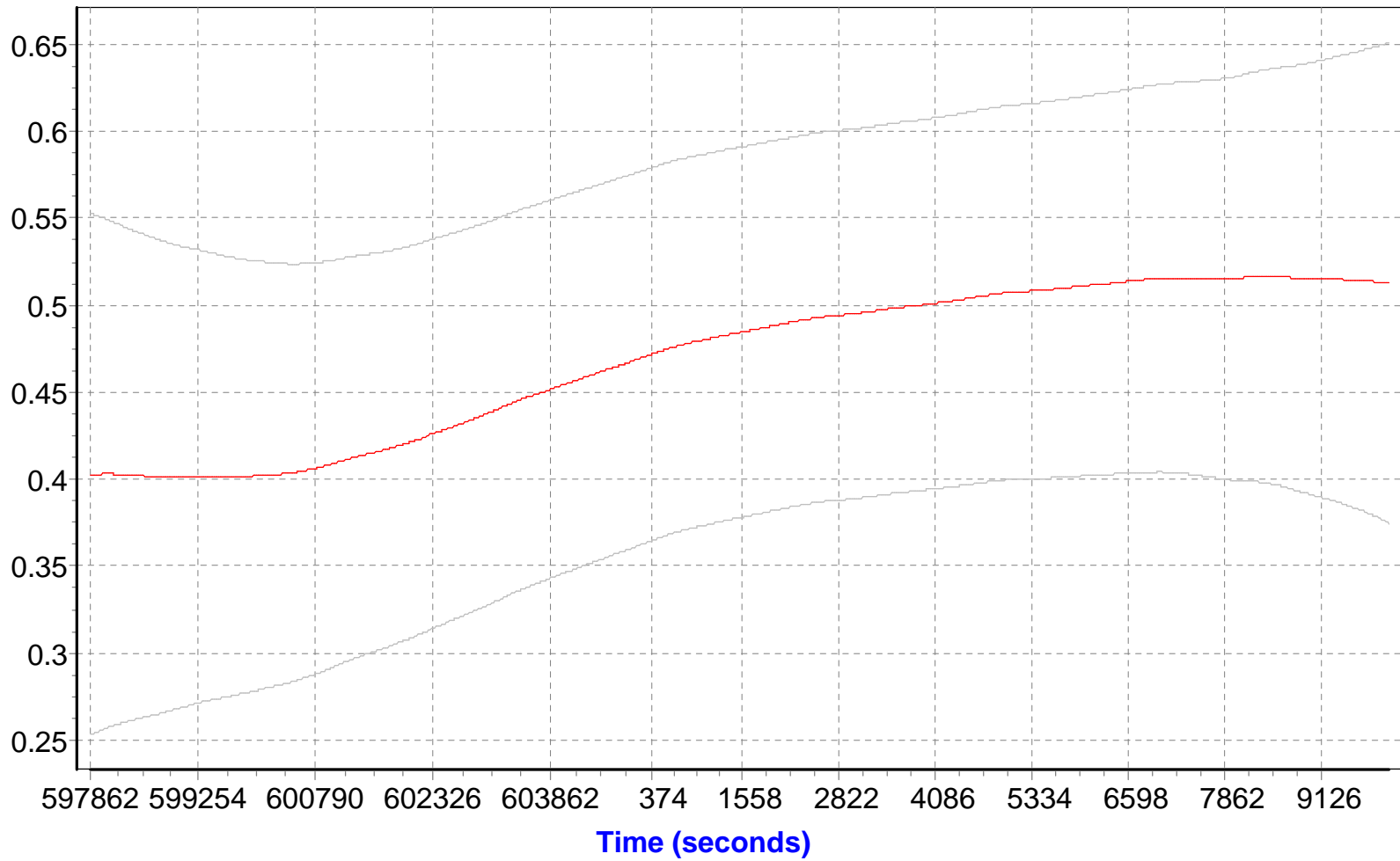
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I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

X Gyro Bias (degrees/hour)



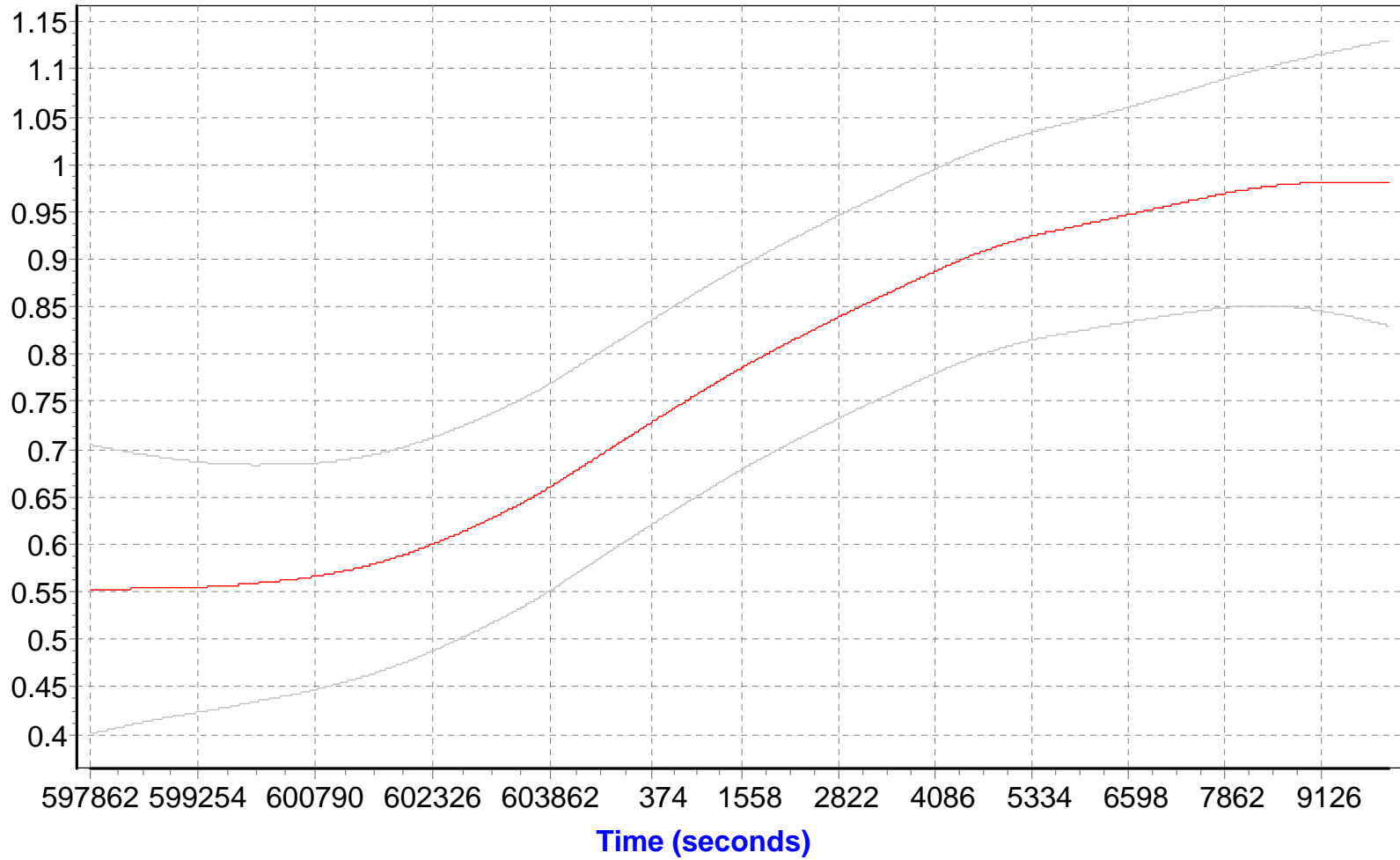
I:\o112070b\3_Processed\Extract\smers_o112070b.dat
I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

Y Gyro Bias (degrees/hour)



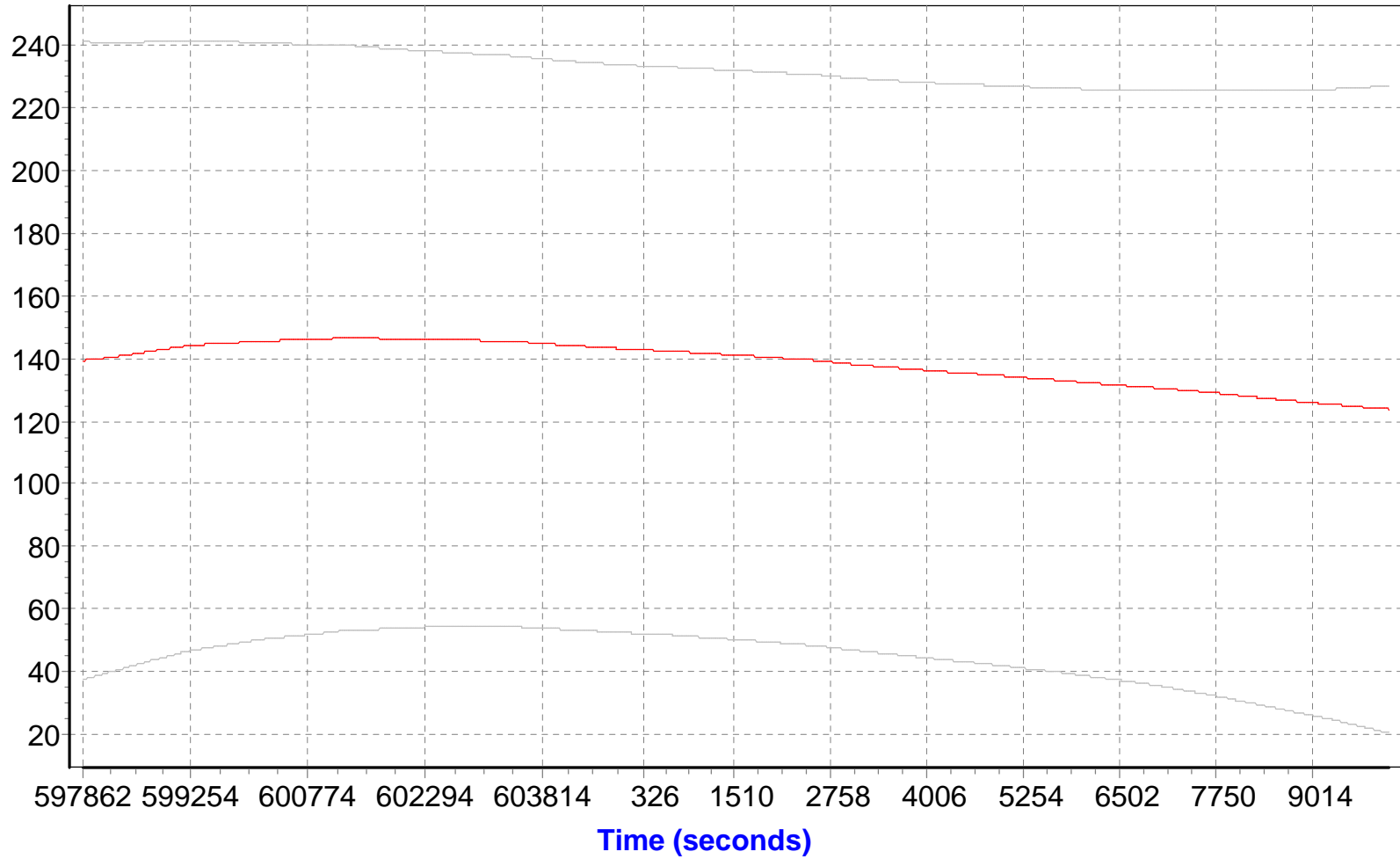
I:\o112070b\3_Processed\Extract\smers_o112070b.dat
I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

Z Gyro Bias (degrees/hour)



I:\o112070b\3_Processed\Extract\smers_o112070b.dat
I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

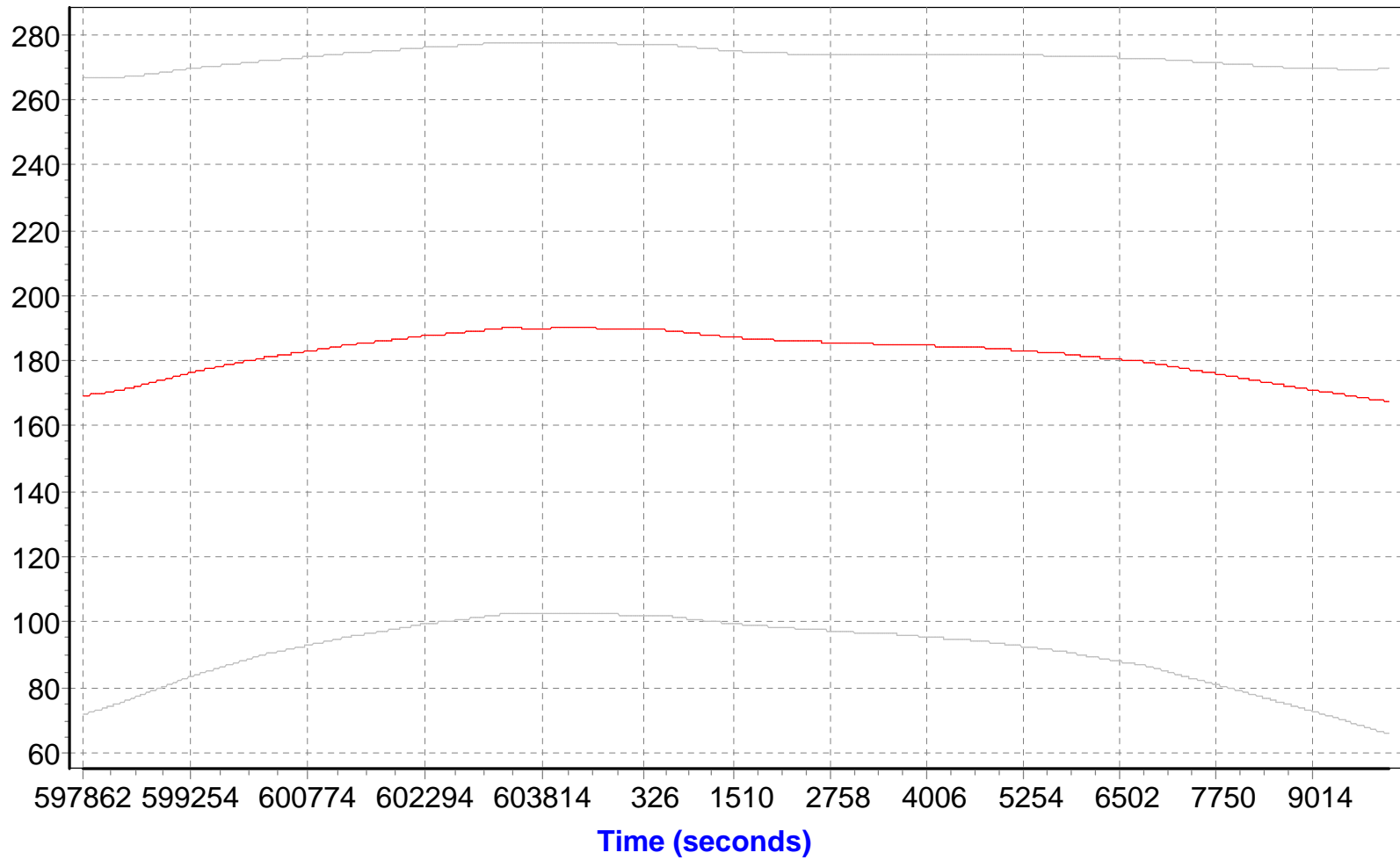
X Gyro Scale Factor Error (ppm)



I:\o112070b\3_Processed\Extract\smers_o112070b.dat

I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

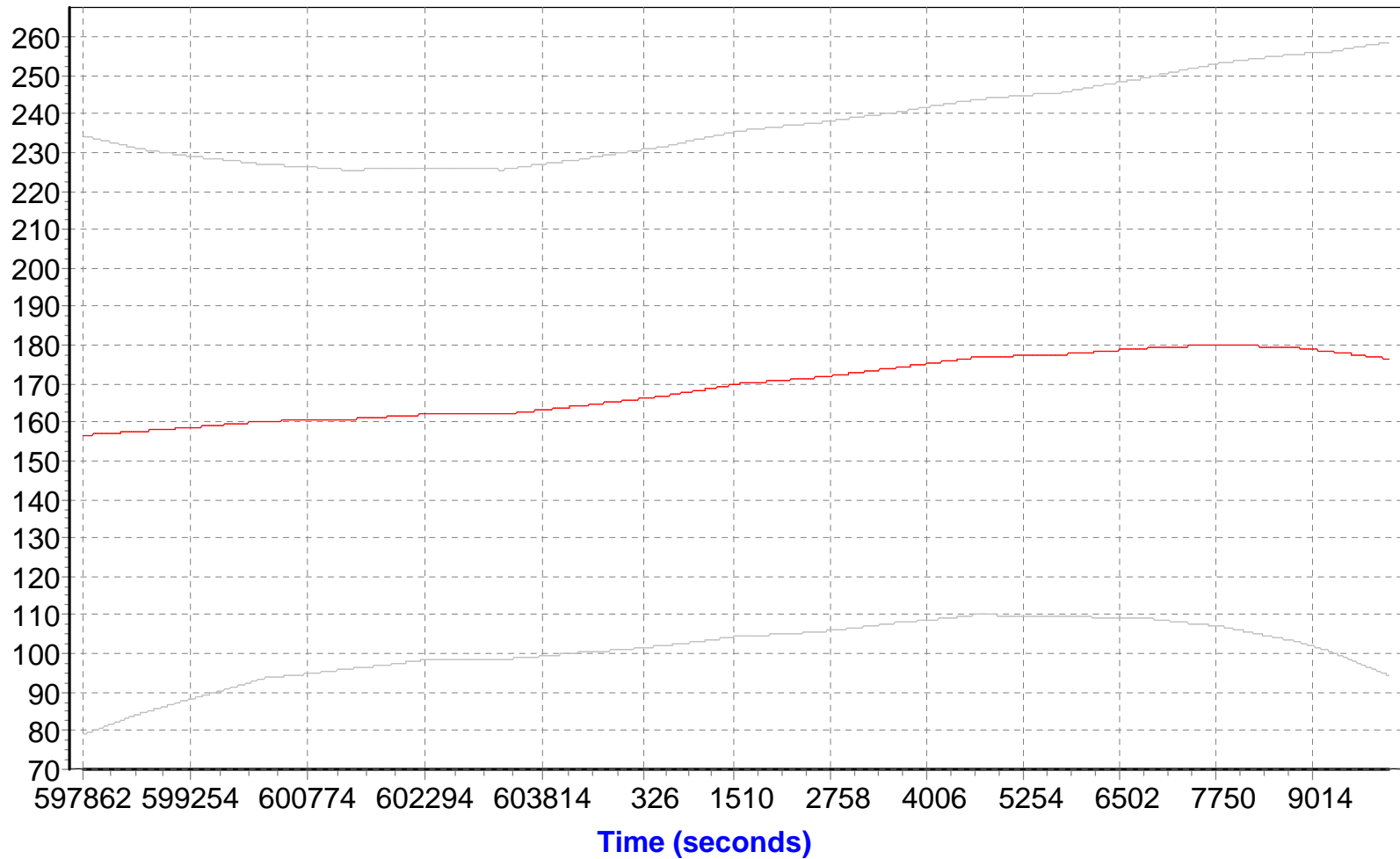
Y Gyro Scale Factor Error (ppm)



I:\o112070b\3_Processed\Extract\smers_o112070b.dat

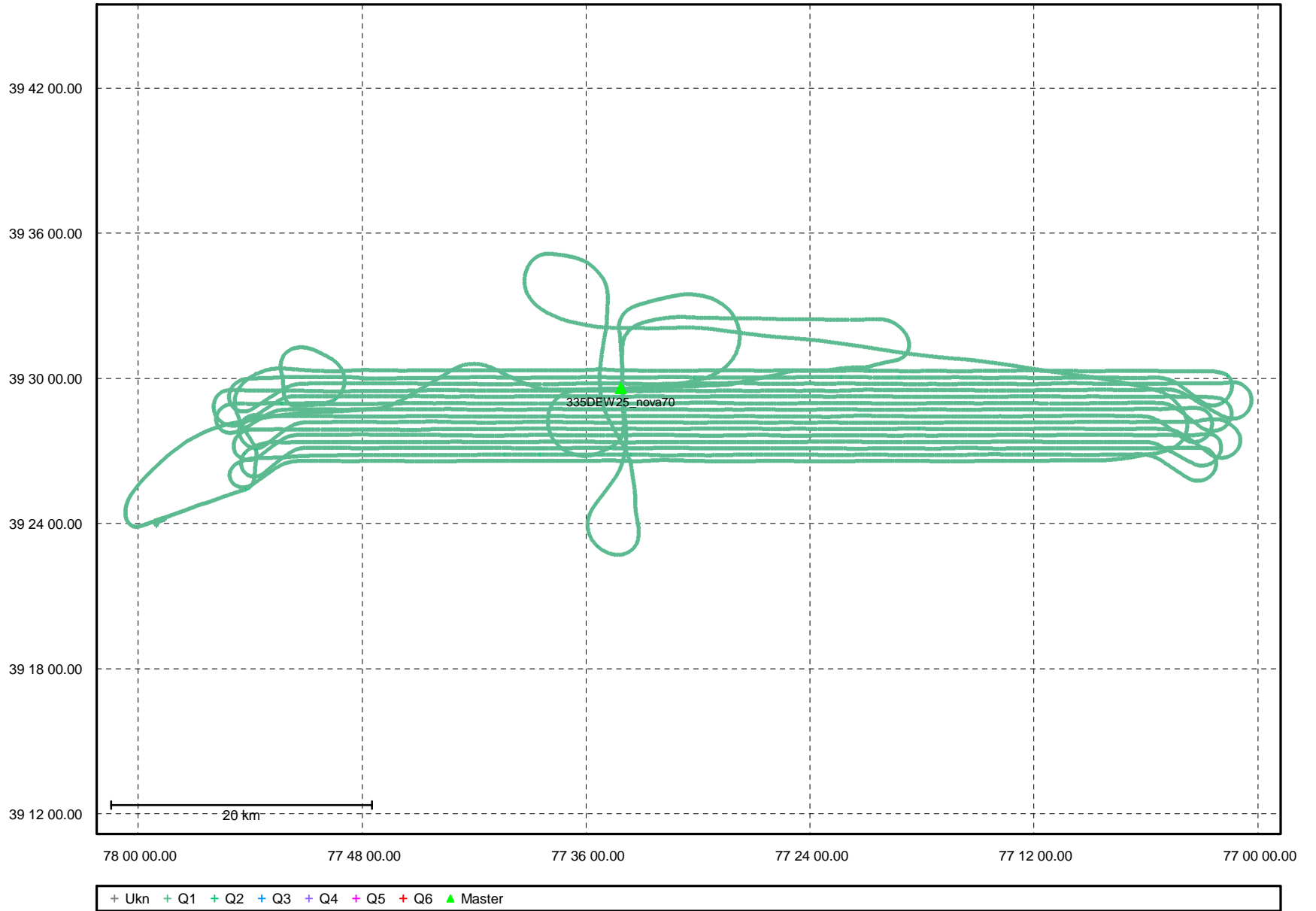
I:\o112070b\3_Processed\Extract\smrms_o112070b.dat

Z Gyro Scale Factor Error (ppm)

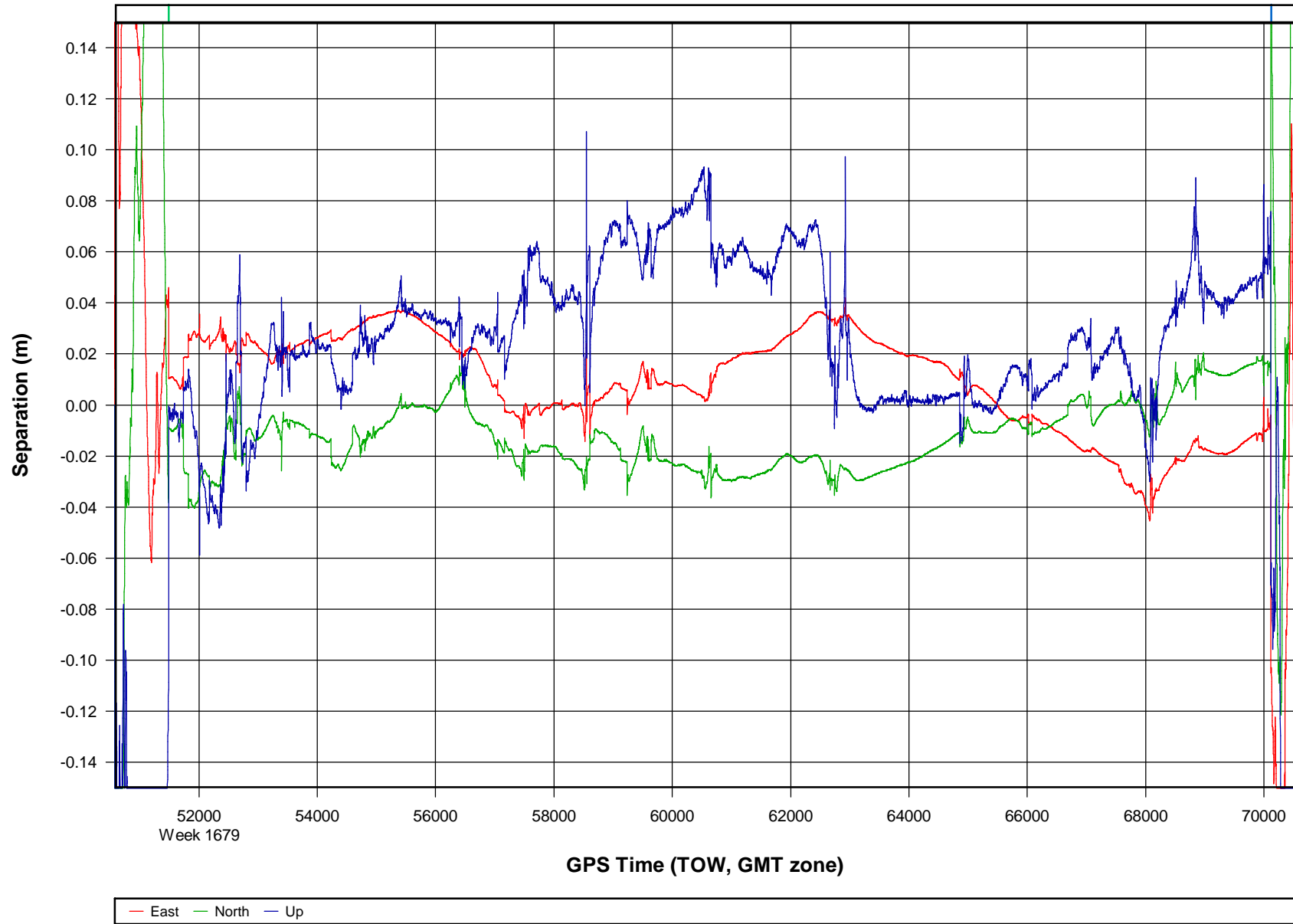


Combined - Map Run (1)

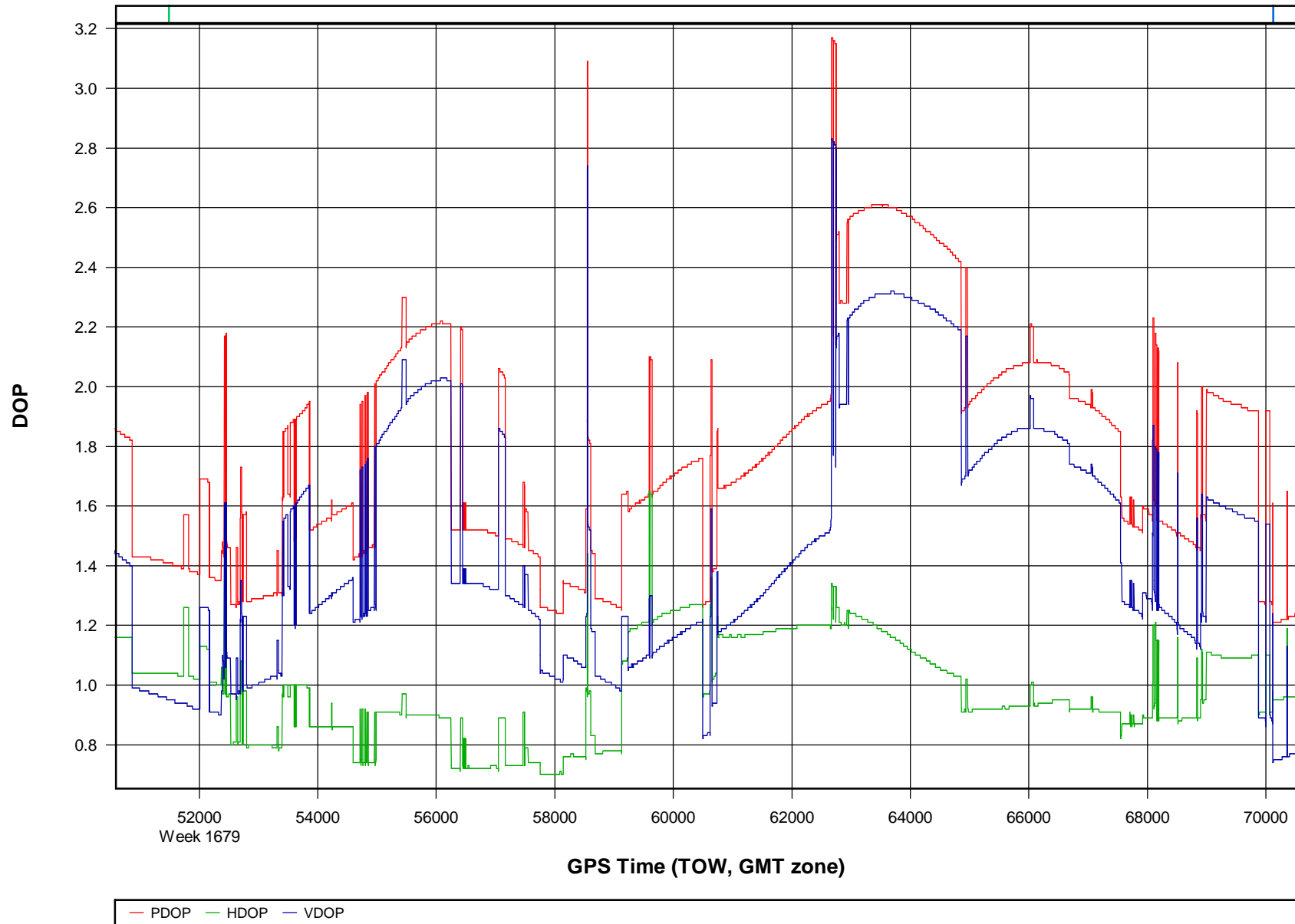
Geographic, DMS



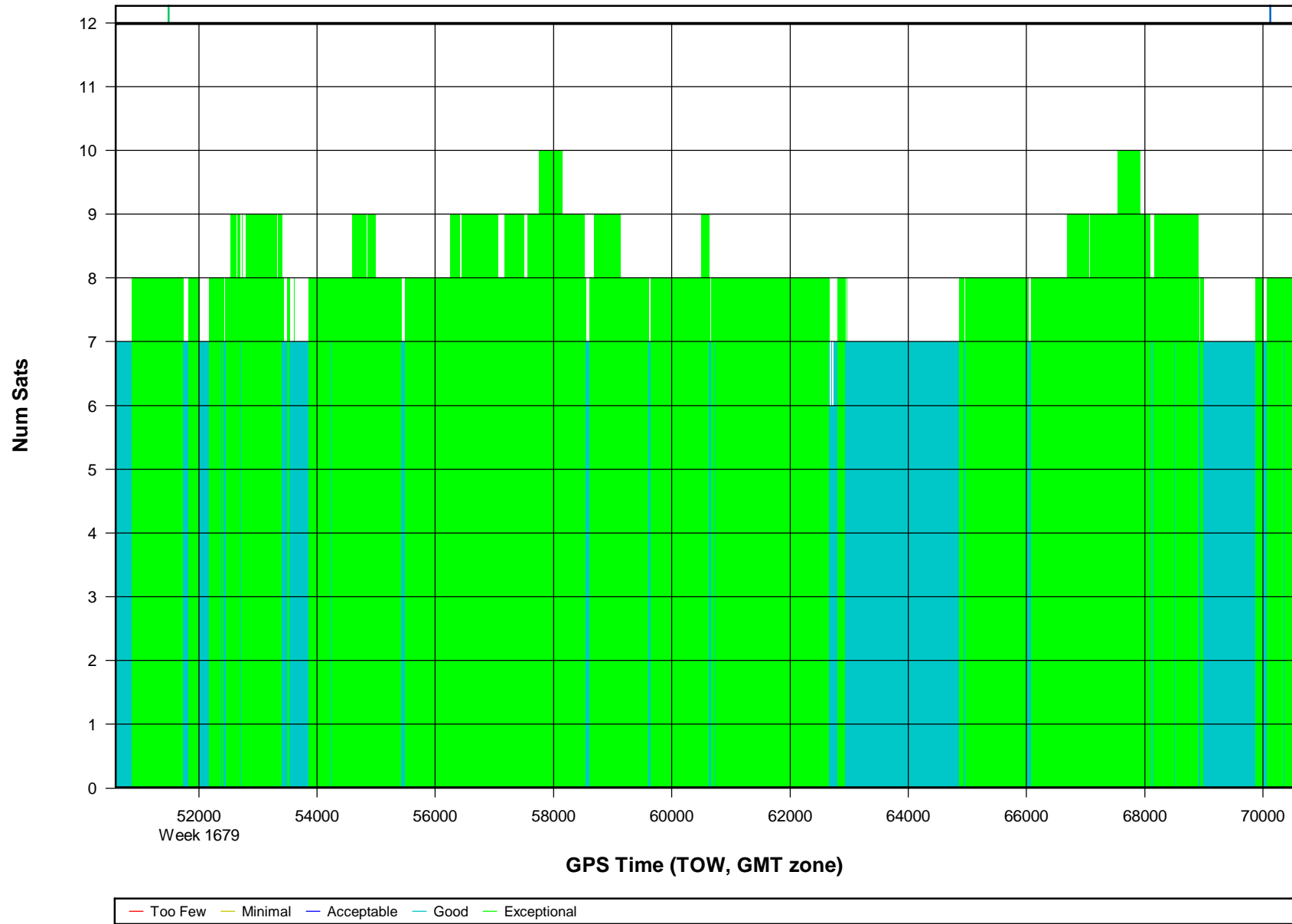
o112071a [Combined] - Forward/Reverse or Combined Separation Plot



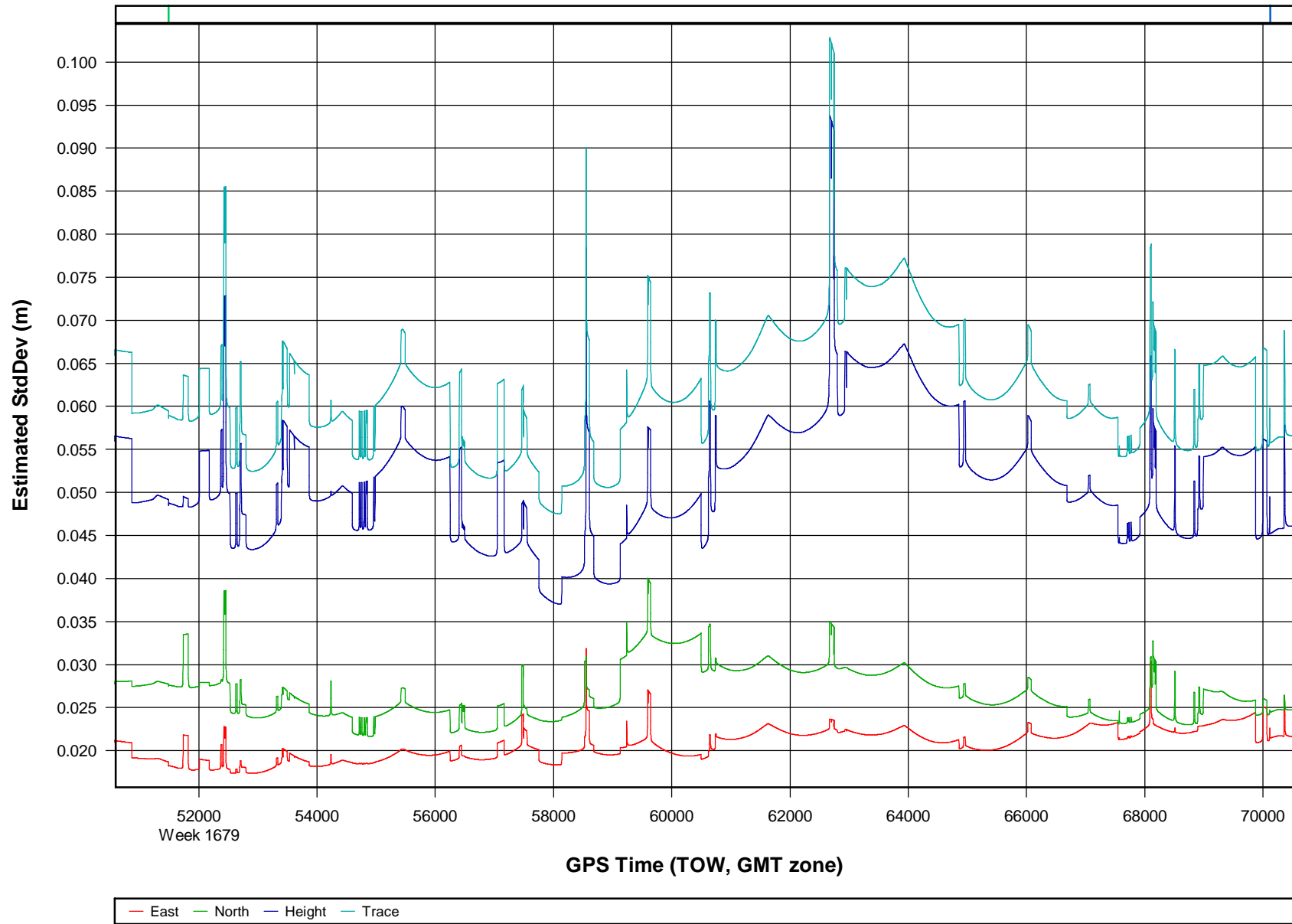
o112071a [Combined] - PDOP, HDOP, VDOP Plots



o112071a [Combined] - Number of Satellites Bar Plot



o112071a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: E:\Projects\335DEW11_USGS_MD_VA_cont\2_Operations\6_Missions\o112071a\3_Processed\GPS\o112071a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file: 199757
No processed position: 179811
Missing Fwd or Rev: 3
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:

L1 Phase: 0.0189 (m)
C/A Code: 0.74 (m)
L1 Doppler: 0.027 (m/s)

Fwd/Rev Separation RMS Values:

East: 0.038 (m)
North: 0.064 (m)
Height: 0.117 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (18614 occurrences):

East: 0.021 (m)
North: 0.018 (m)
Height: 0.039 (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: 99.7 %
0.10 - 0.30 m: 0.3 %
0.30 - 1.00 m: 0.0 %
1.00 - 5.00 m: 0.0 %
5.00 m + over: 0.0 %

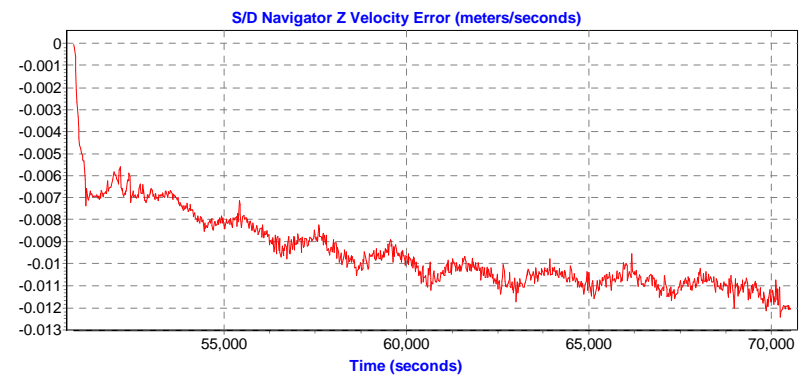
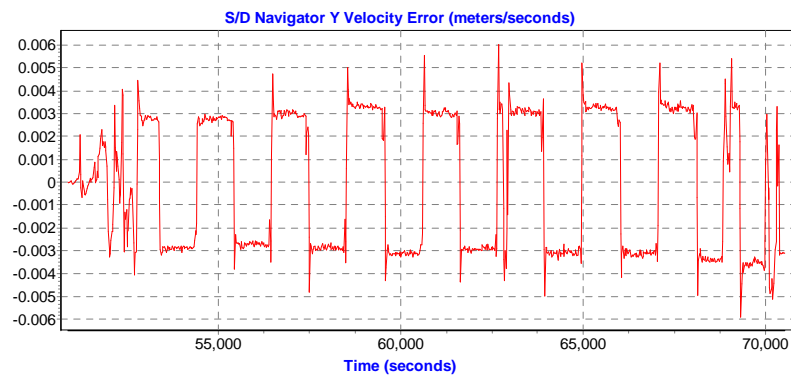
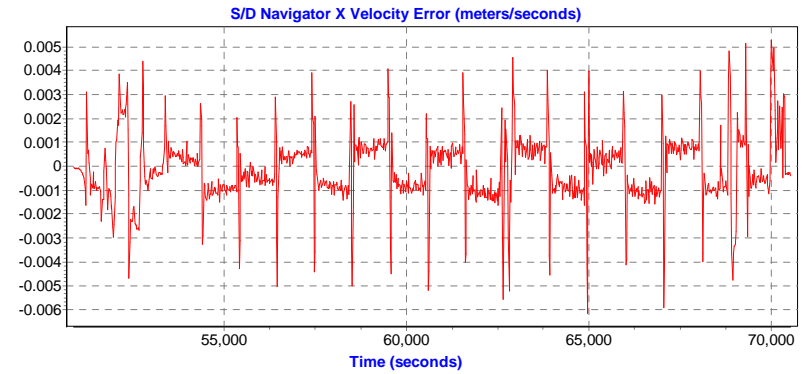
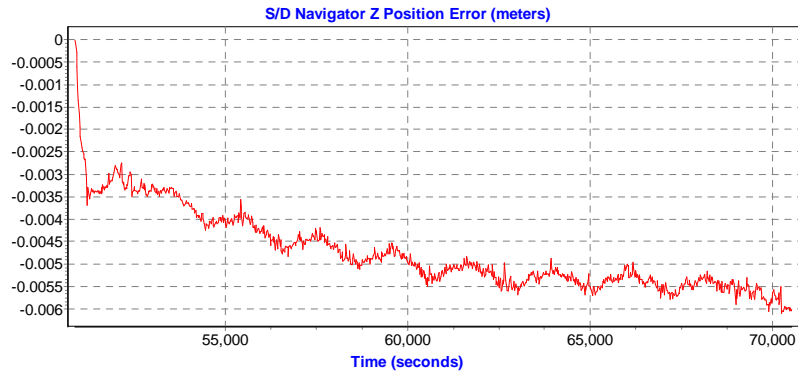
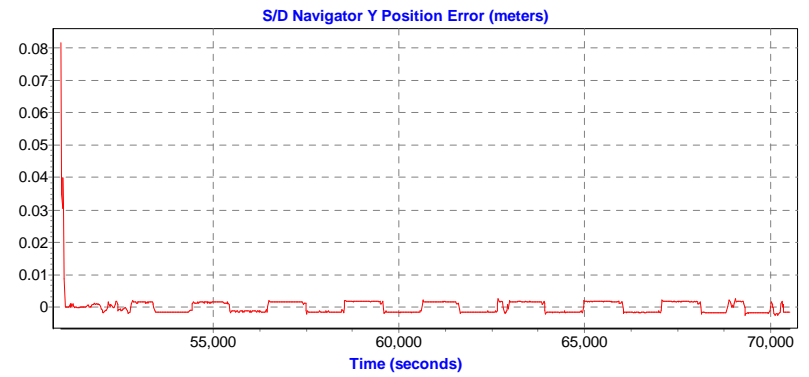
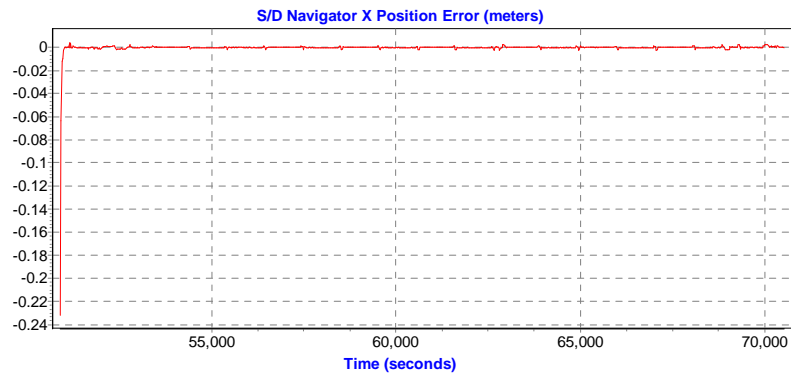
Percentages of epochs with DD_DOP over 10.00:

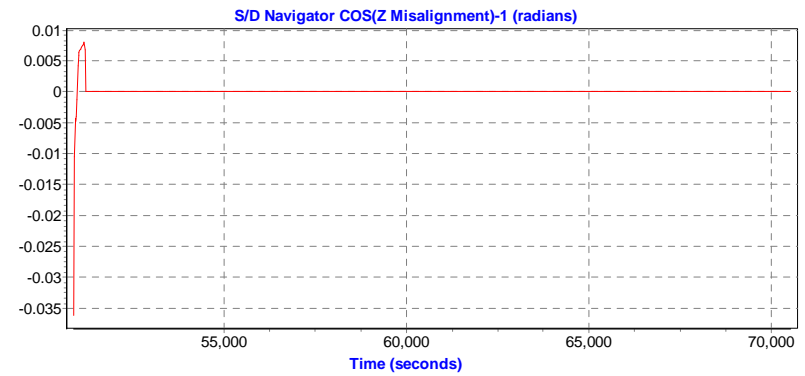
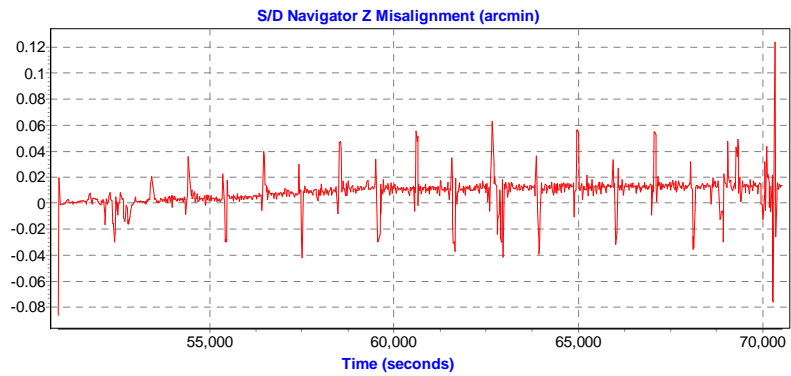
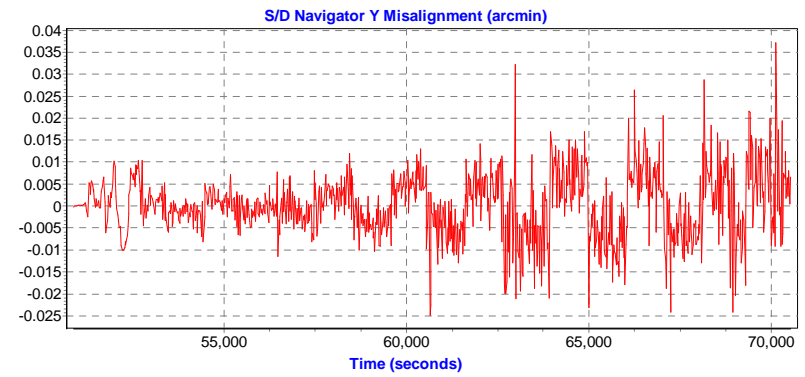
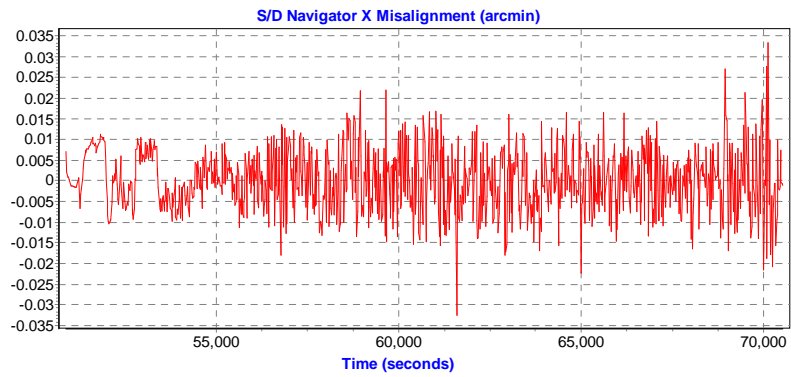
DOP over Tol: 0.0 %

Baseline Distances:

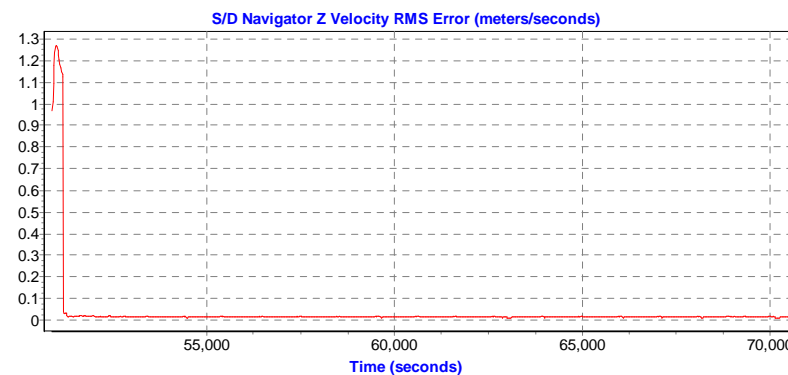
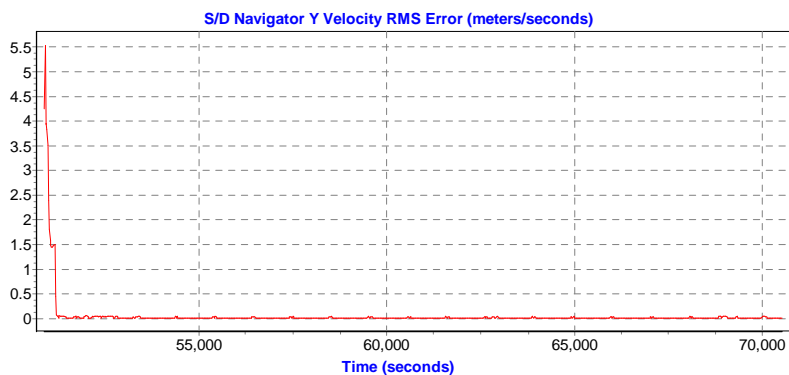
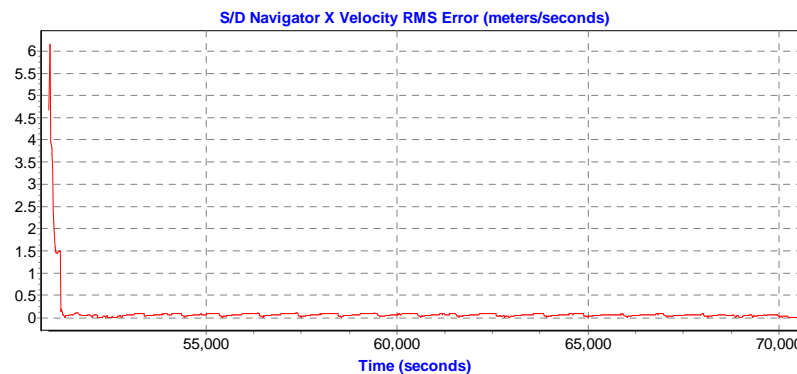
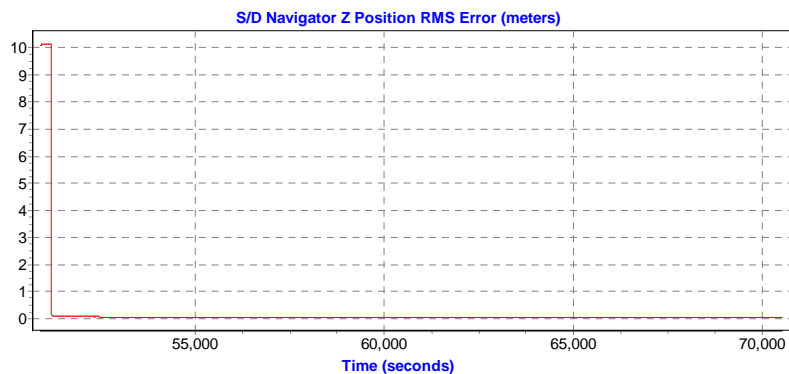
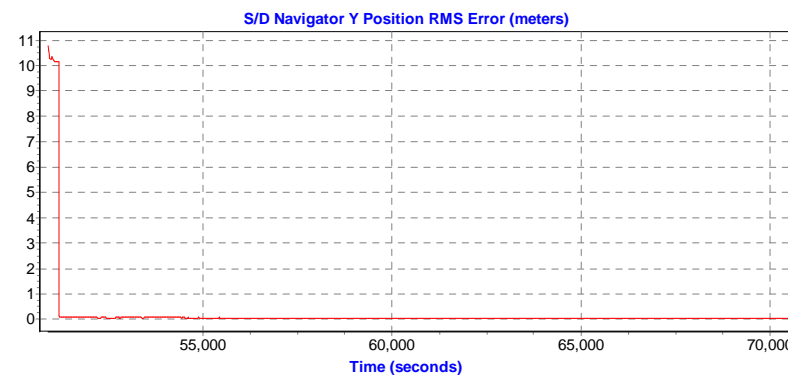
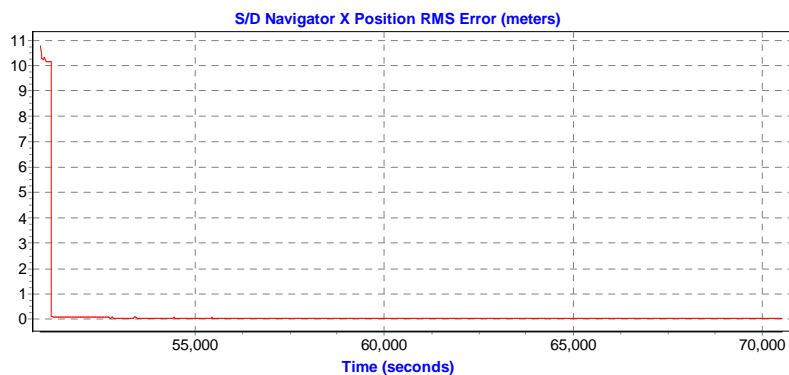
Maximum: 48.471 (km)
Minimum: 1.095 (km)
Average: 20.945 (km)
First Epoch: 37.215 (km)
Last Epoch: 37.207 (km)

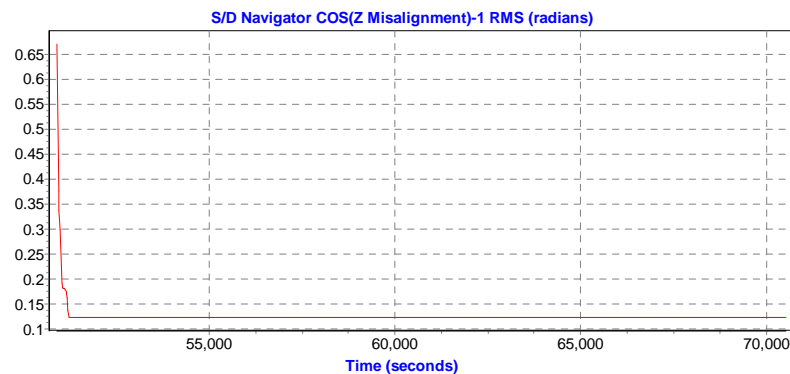
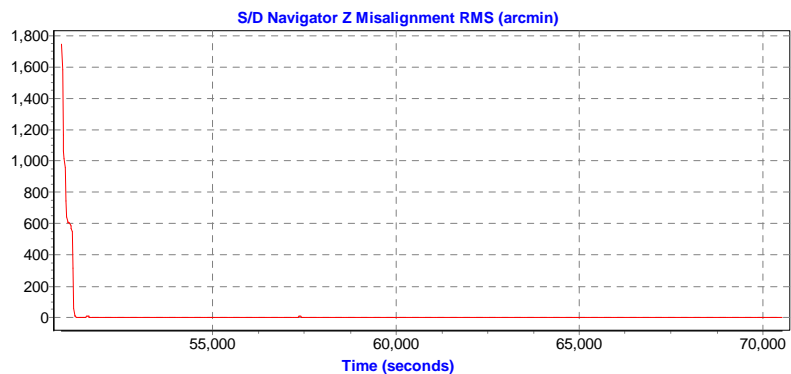
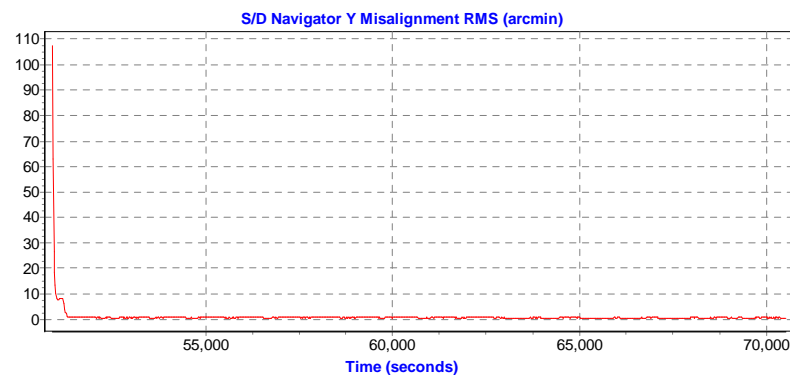
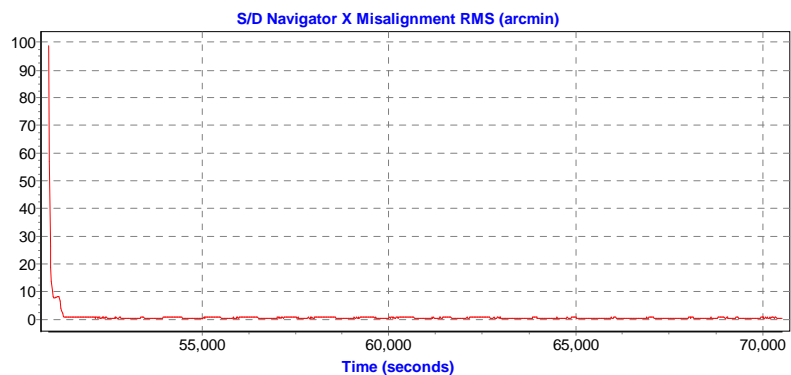
Estimated Errors and RMS

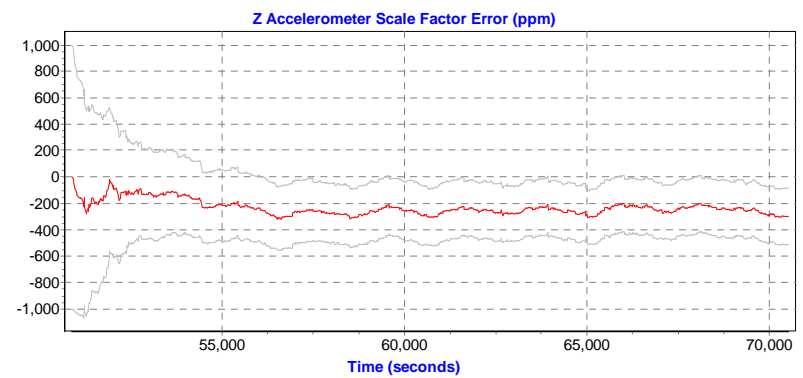
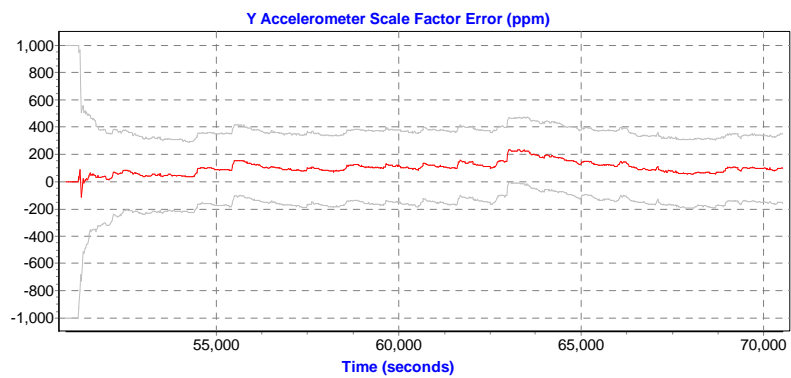
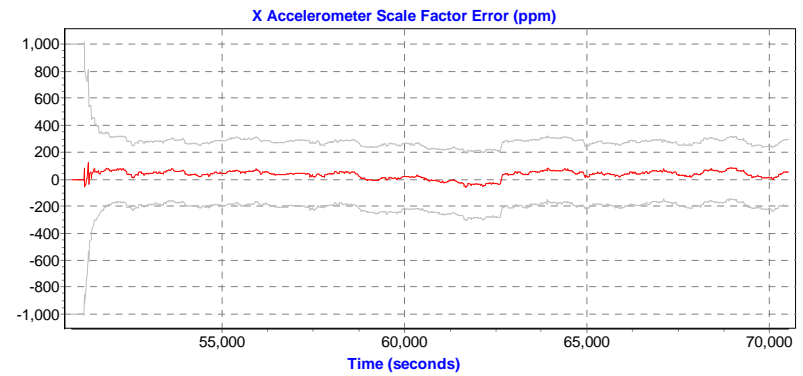
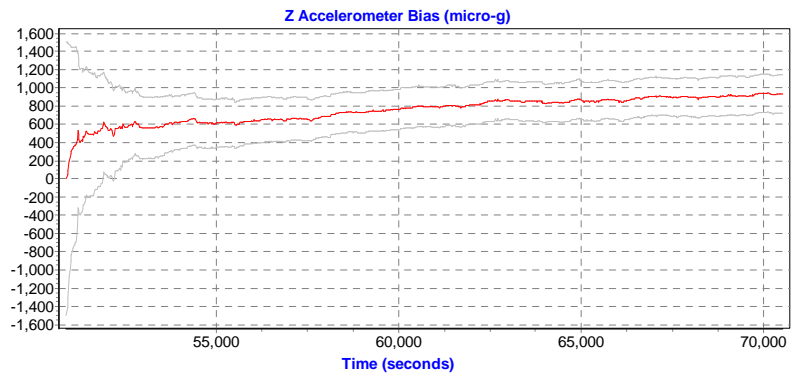
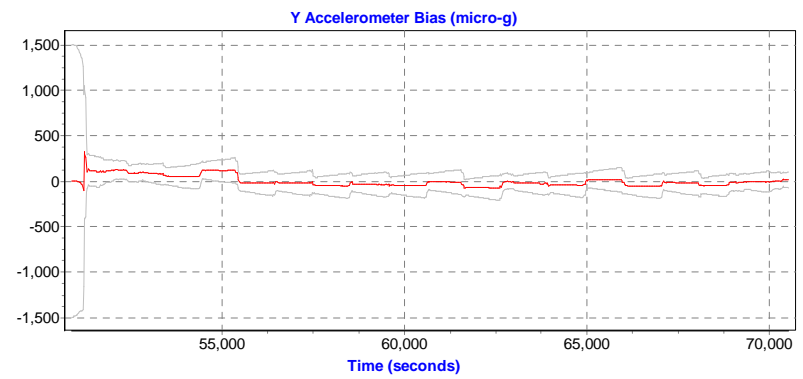
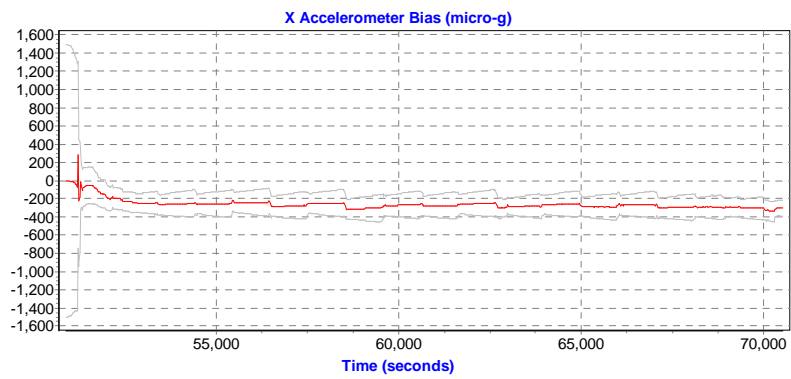


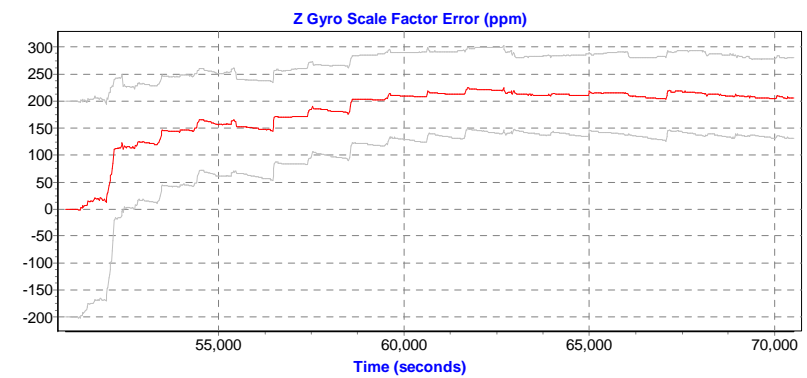
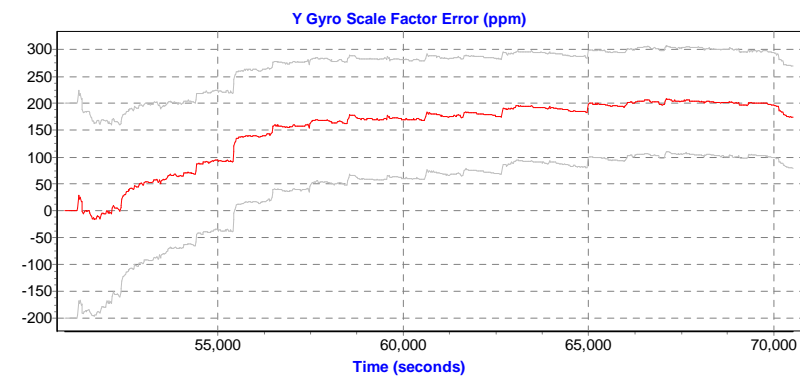
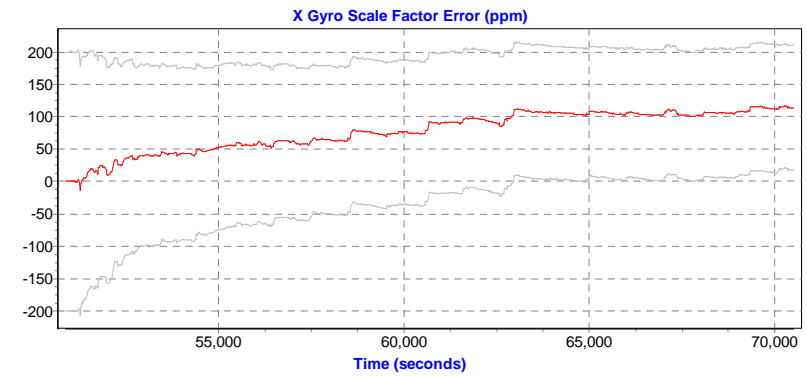
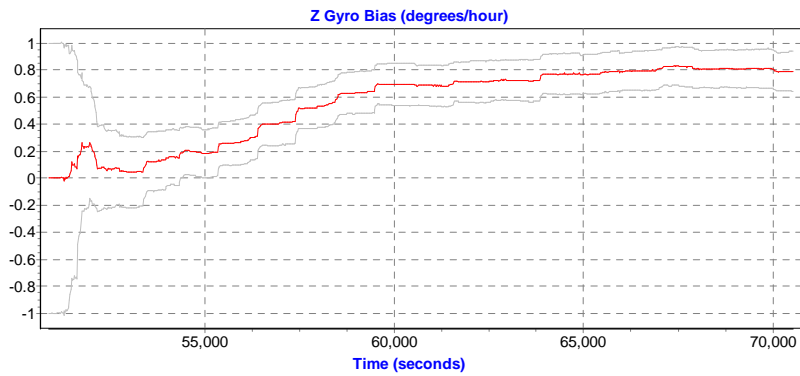
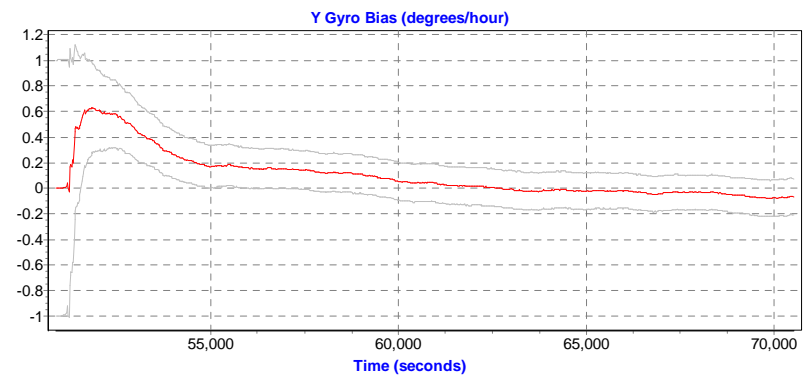
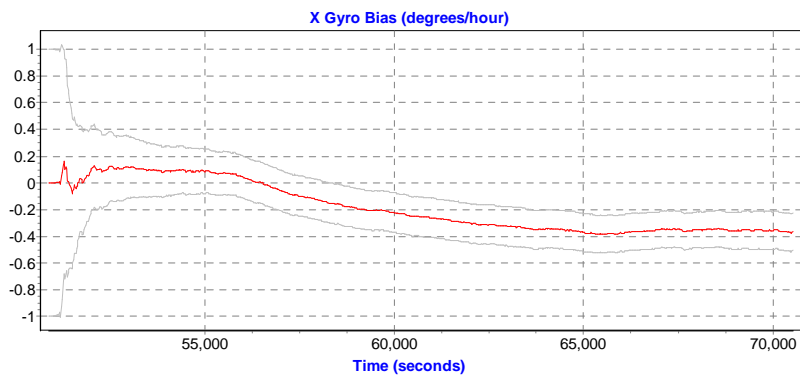


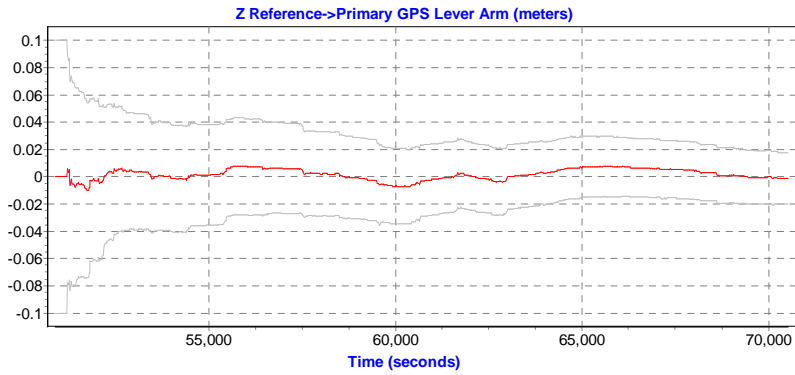
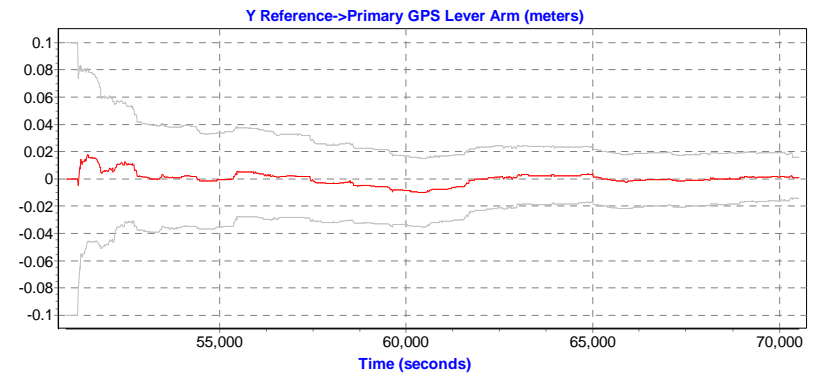
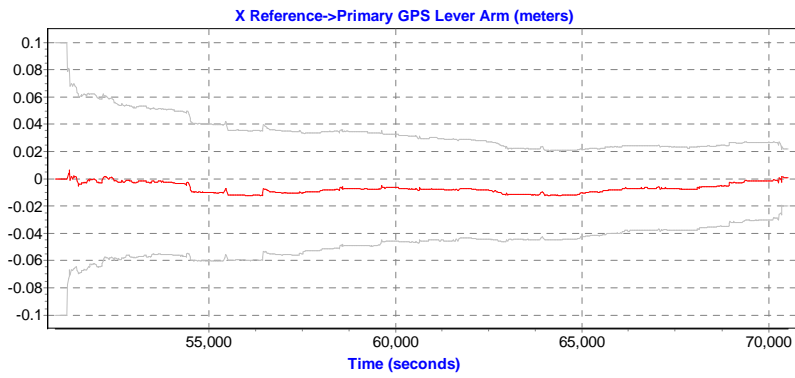
RMS Estimation Uncertainties





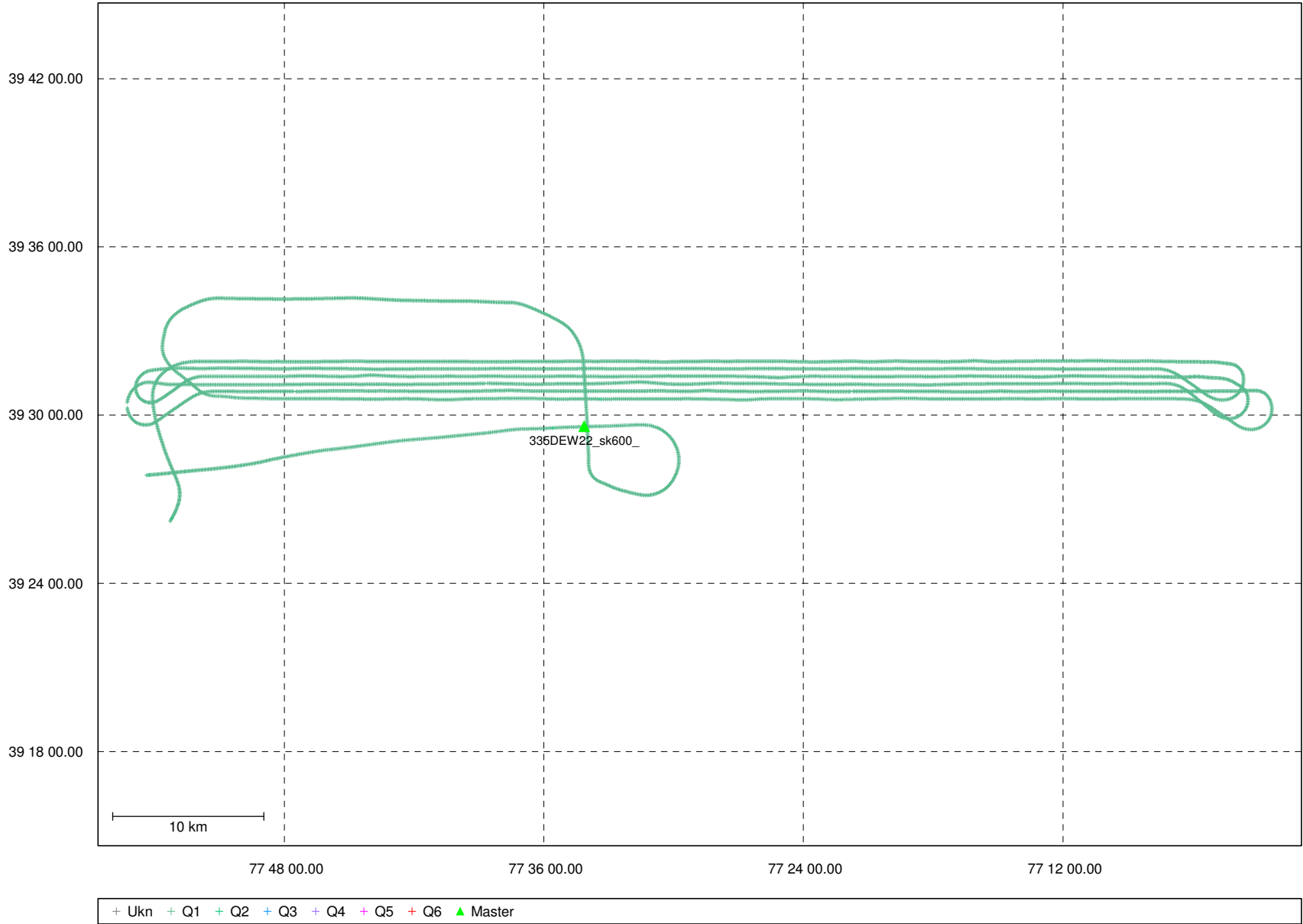






Combined - Map Run (4)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: I:\o112071b\3_Processed\GPS\o112071b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:
Total in GPB file: 92575
No processed position: 85276
Missing Fwd or Rev: 4
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:
L1 Phase: 0.0173 (m)
C/A Code: 0.75 (m)
L1 Doppler: 0.033 (m/s)

Fwd/Rev Separation RMS Values:
East: 0.013 (m)
North: 0.017 (m)
Height: 0.027 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (7293 occurrences):
East: 0.012 (m)
North: 0.017 (m)
Height: 0.026 (m)

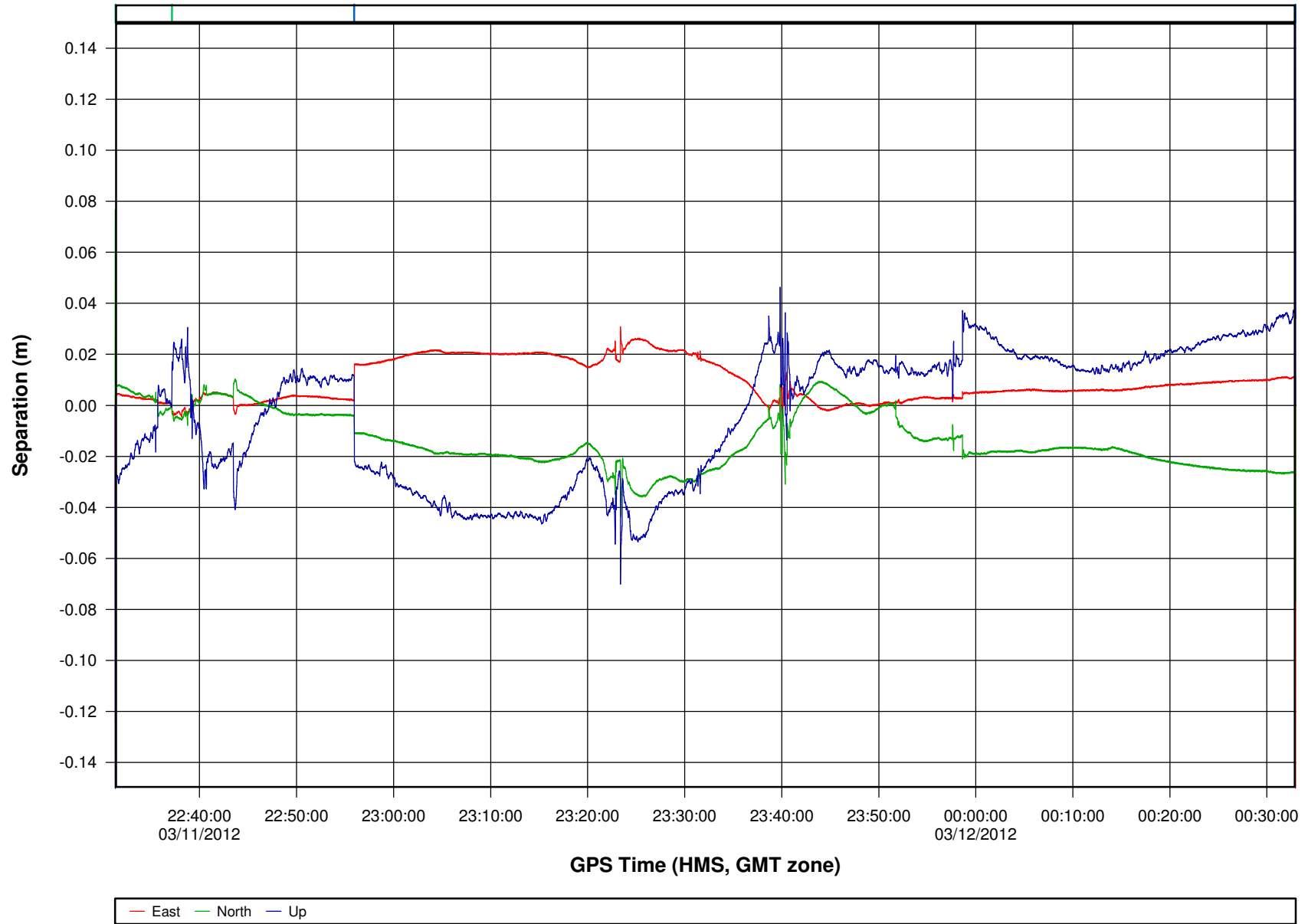
Quality Number Percentages:
Q 1: 99.9 %
Q 2: 0.1 %
Q 3: 0.0 %
Q 4: 0.0 %
Q 5: 0.0 %
Q 6: 0.0 %

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 %

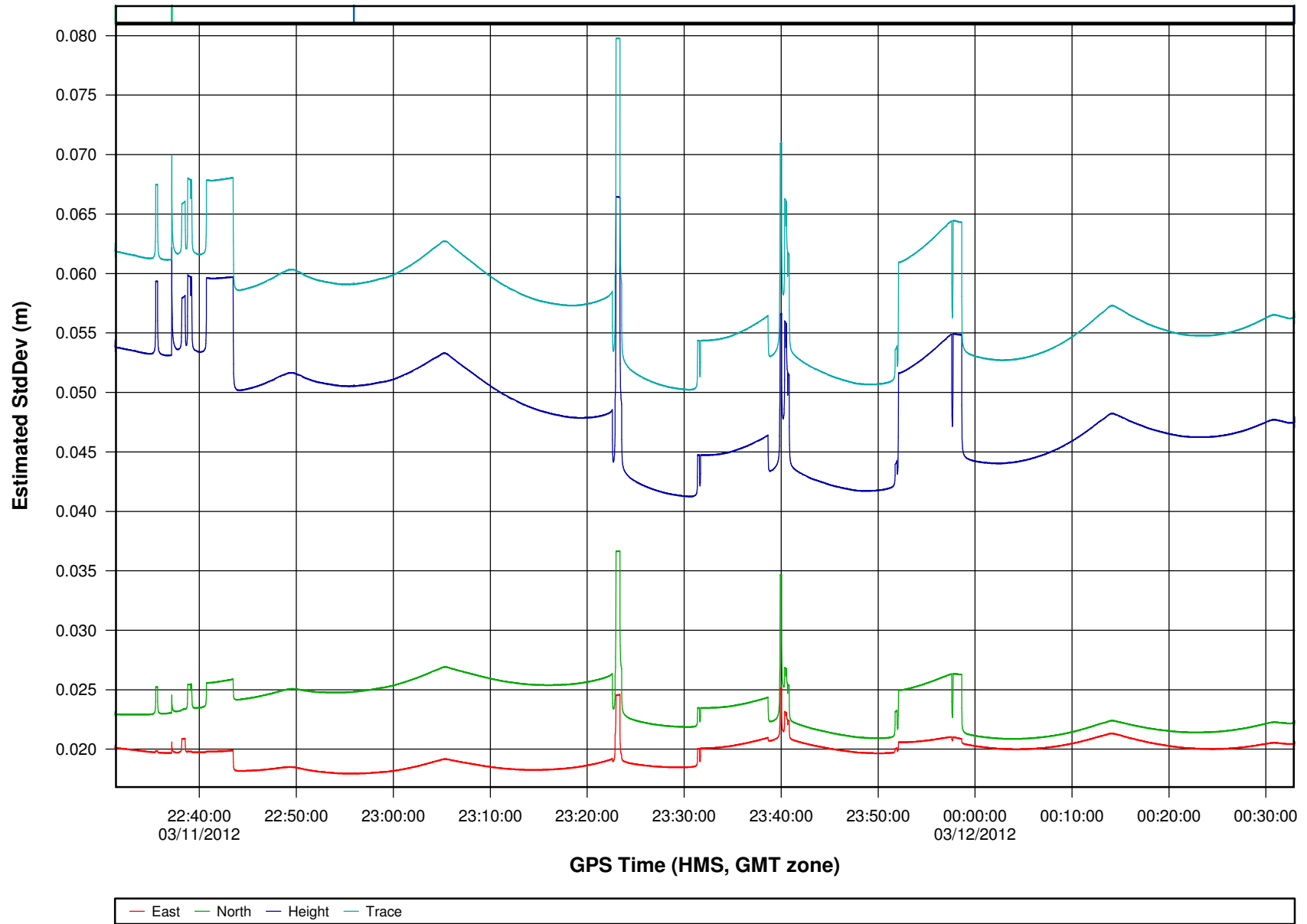
Percentages of epochs with DD_DOP over 10.00:
DOP over Tol: 0.0 %

Baseline Distances:
Maximum: 45.608 (km)
Minimum: 1.160 (km)
Average: 19.458 (km)
First Epoch: 29.216 (km)
Last Epoch: 28.164 (km)

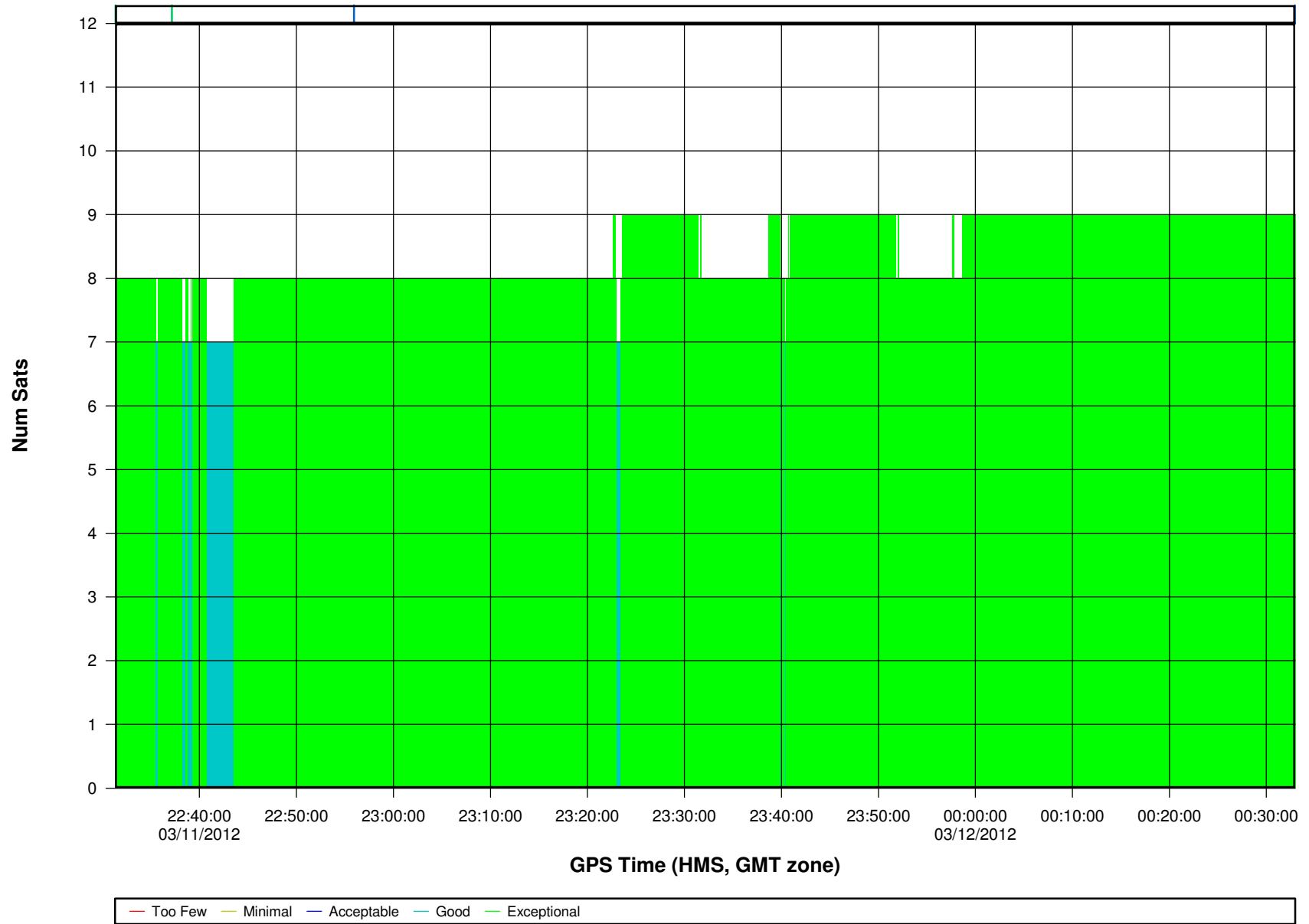
o112071b [Combined] - Forward/Reverse or Combined Separation Plot



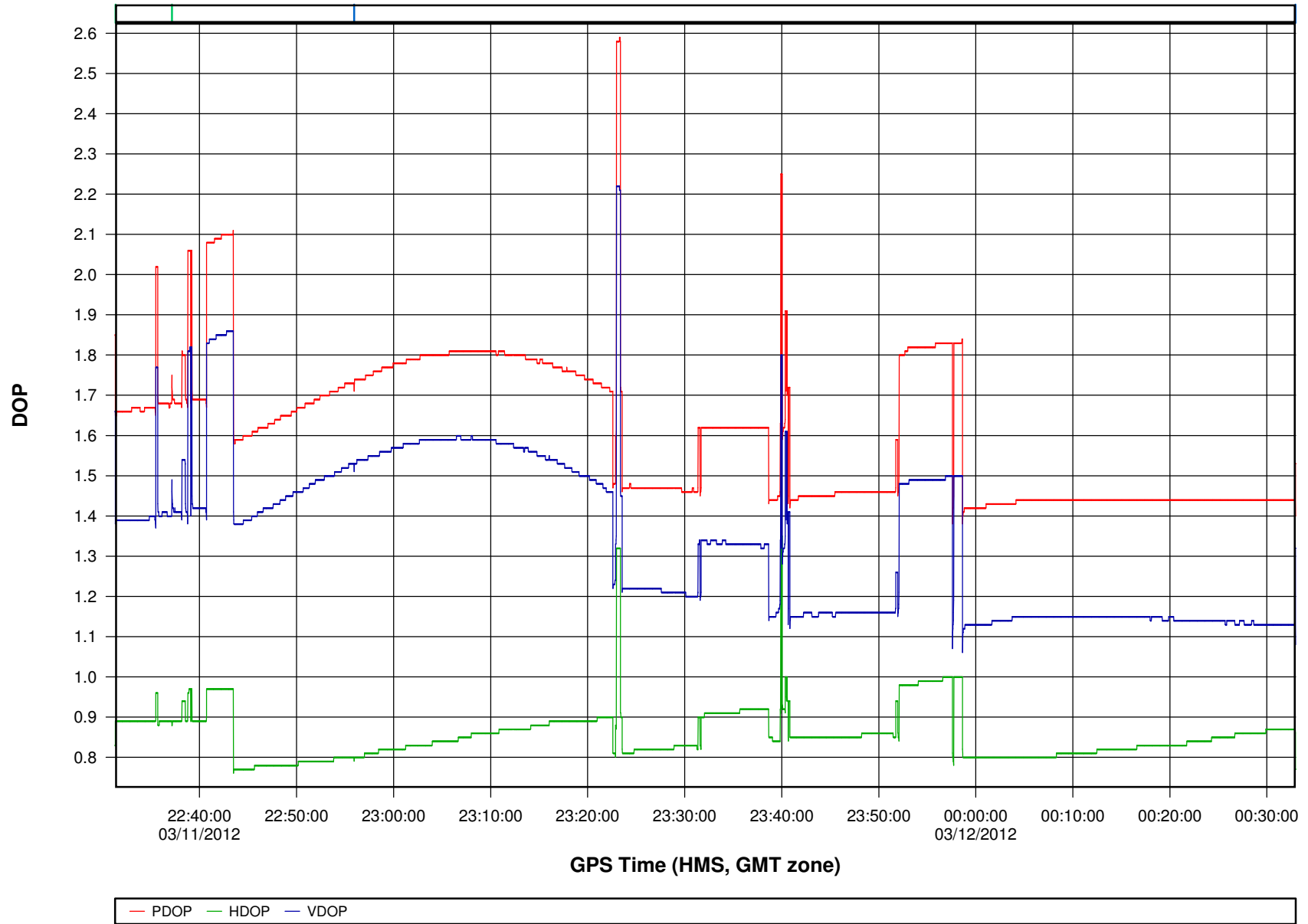
o112071b [Combined] - Estimated Position Accuracy Plot

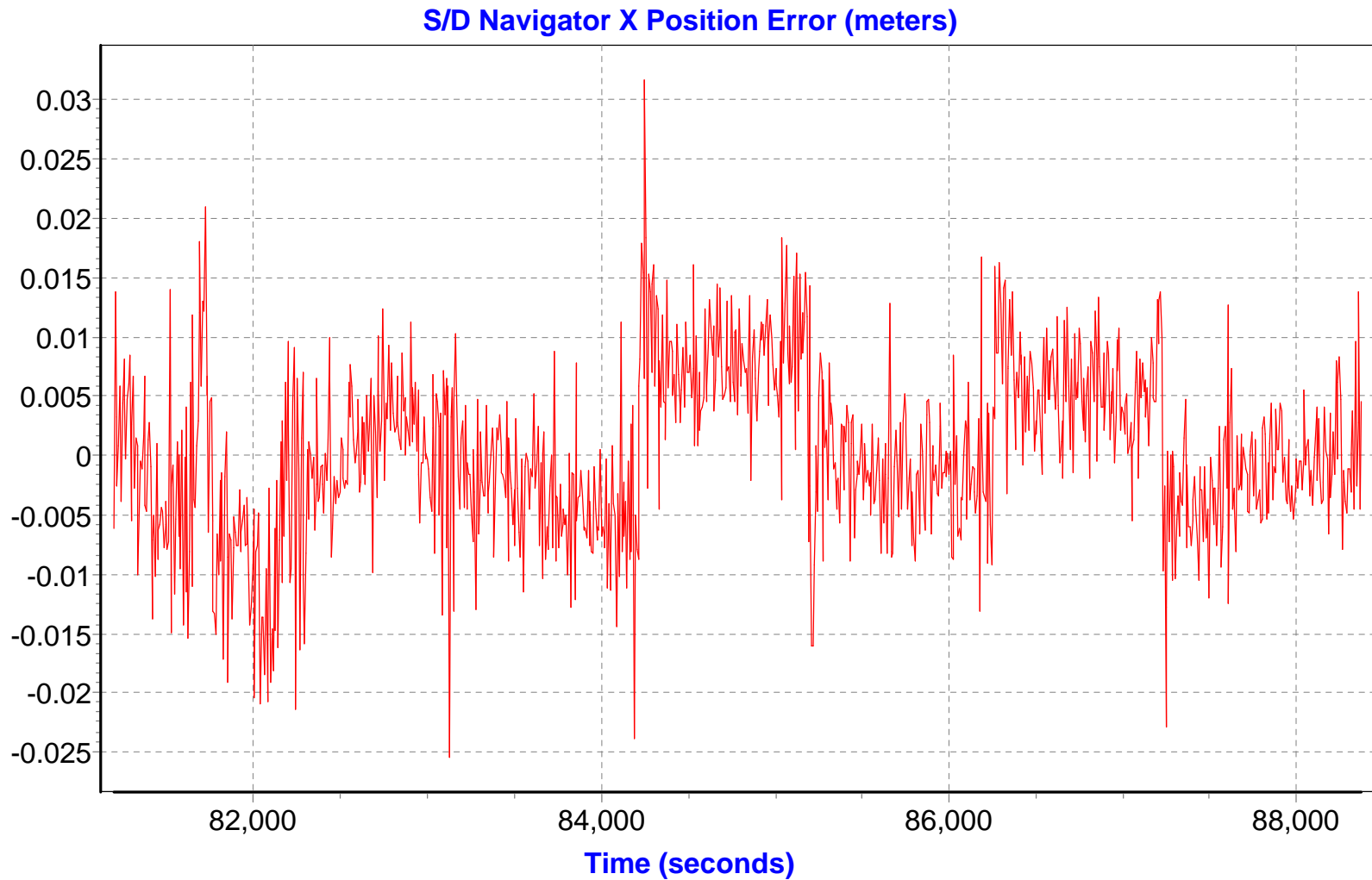


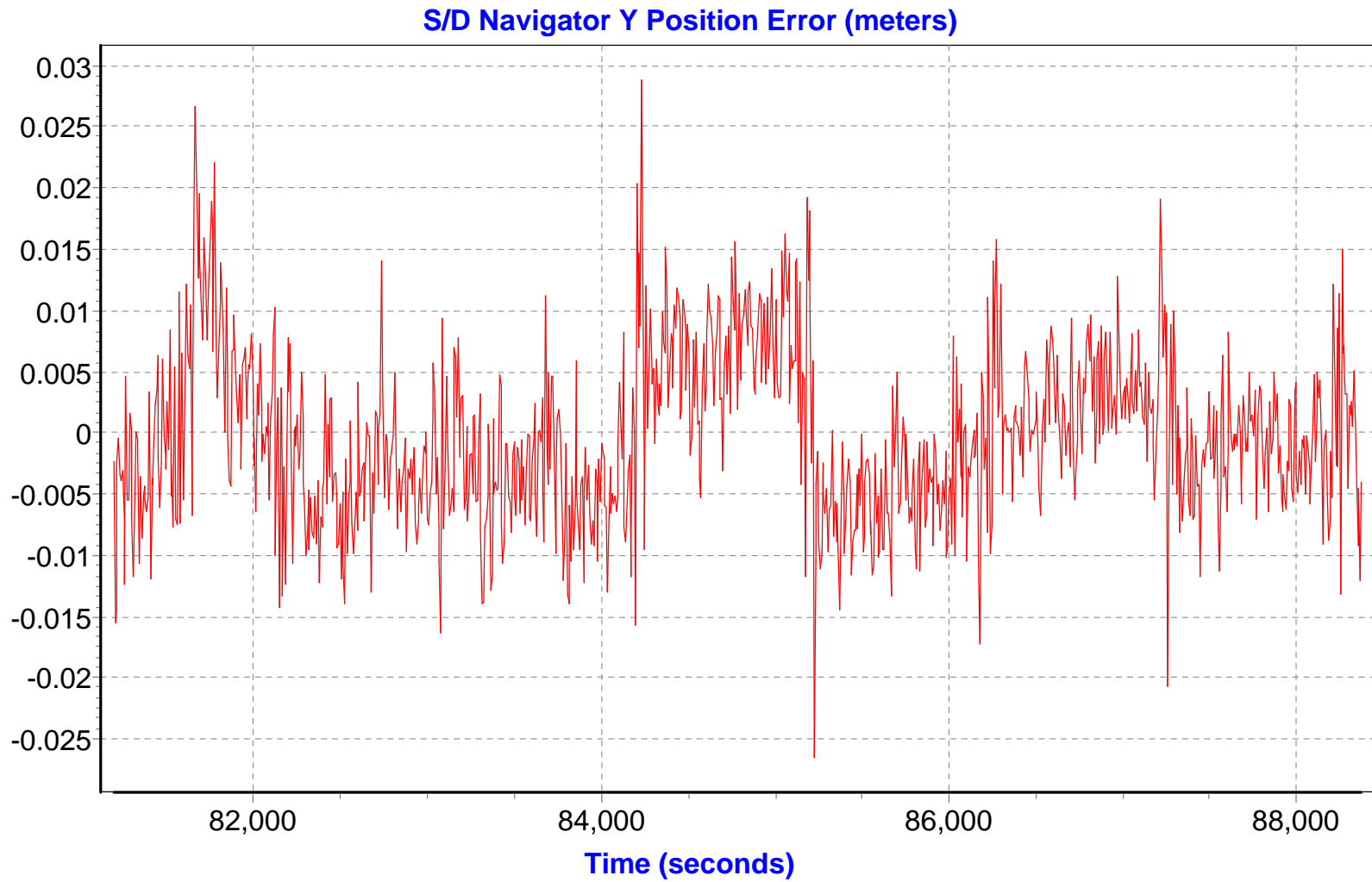
o112071b [Combined] - Number of Satellites Bar Plot

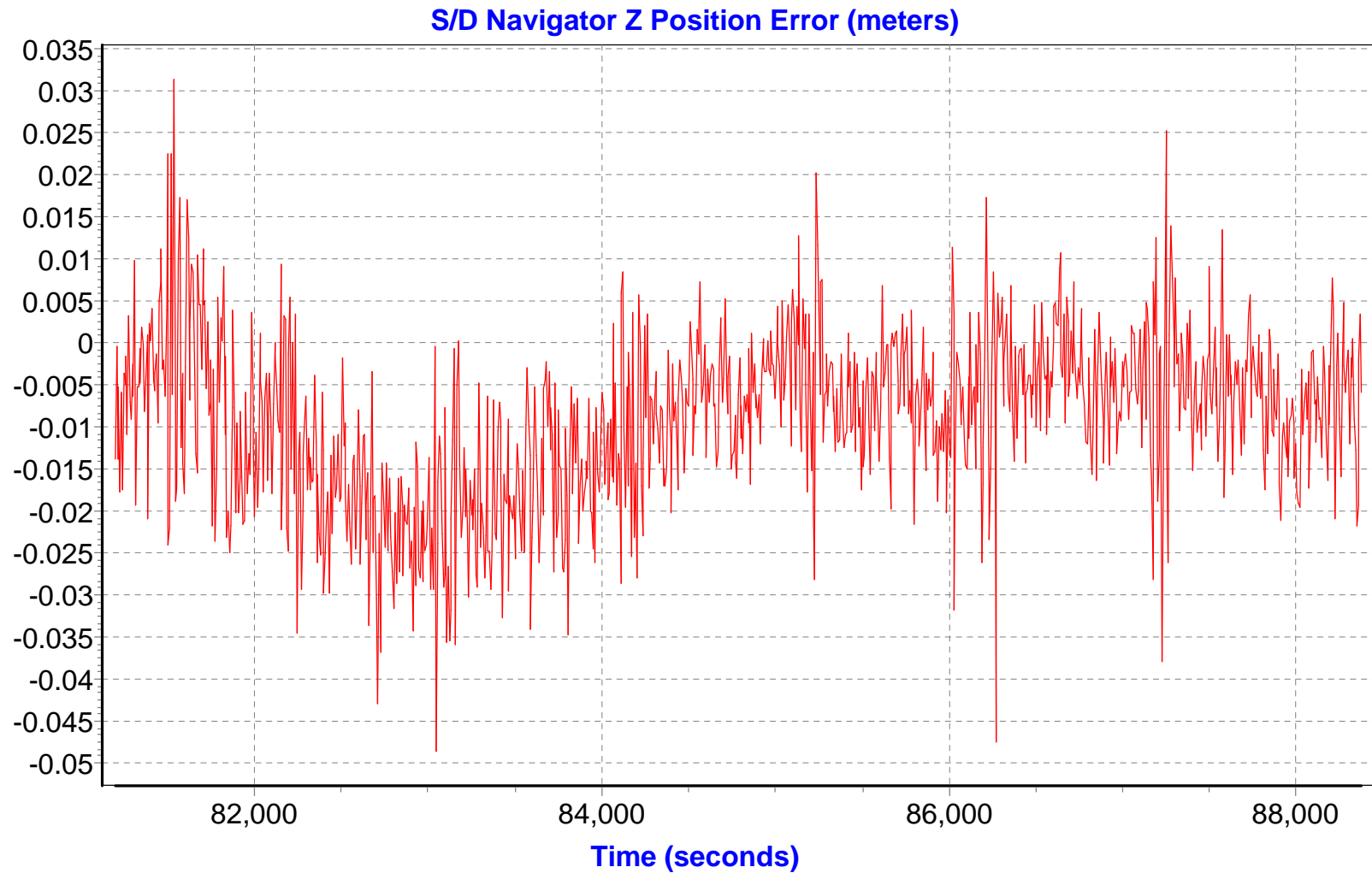


o112071b [Combined] - PDOP, HDOP, VDOP Plots

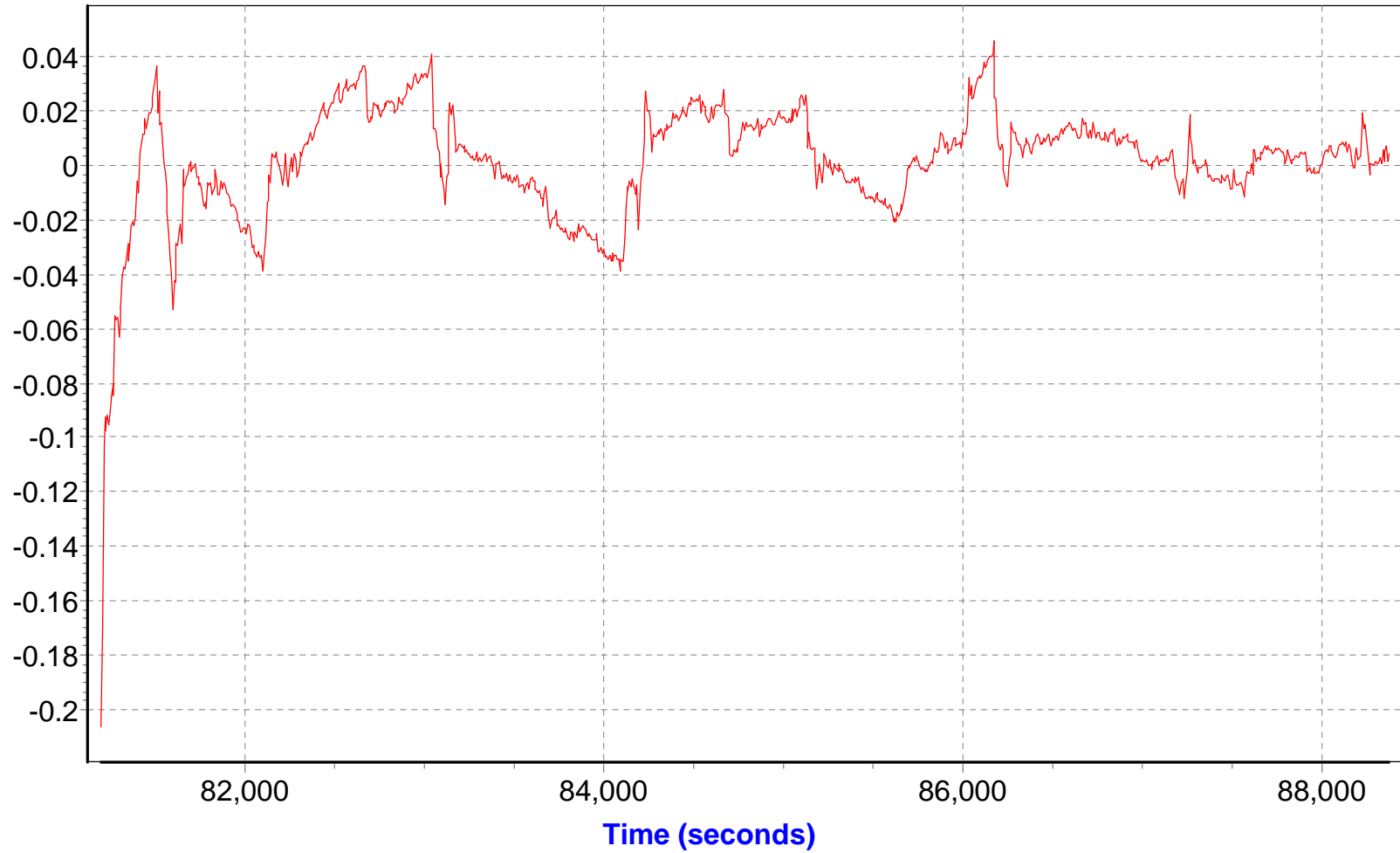




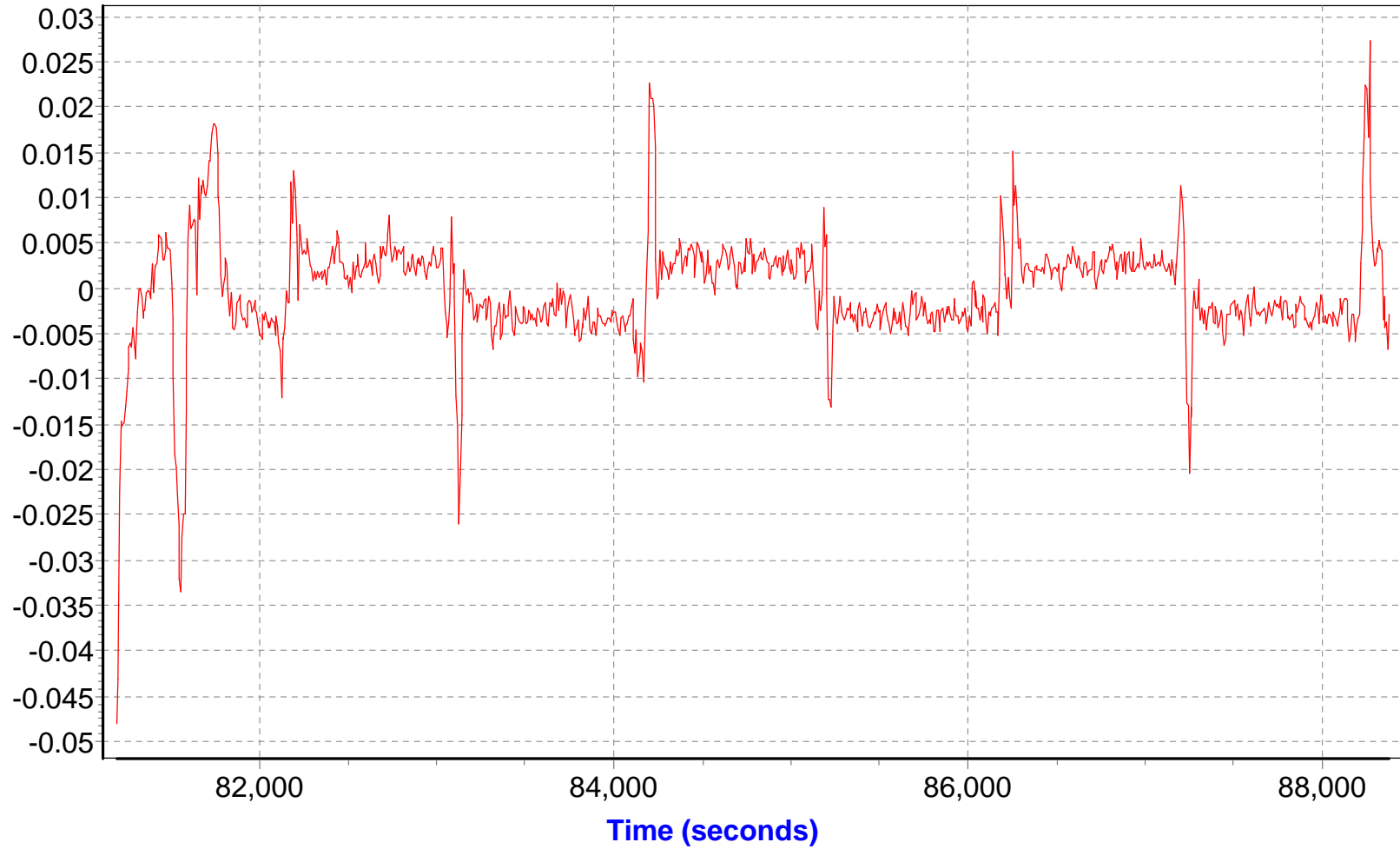




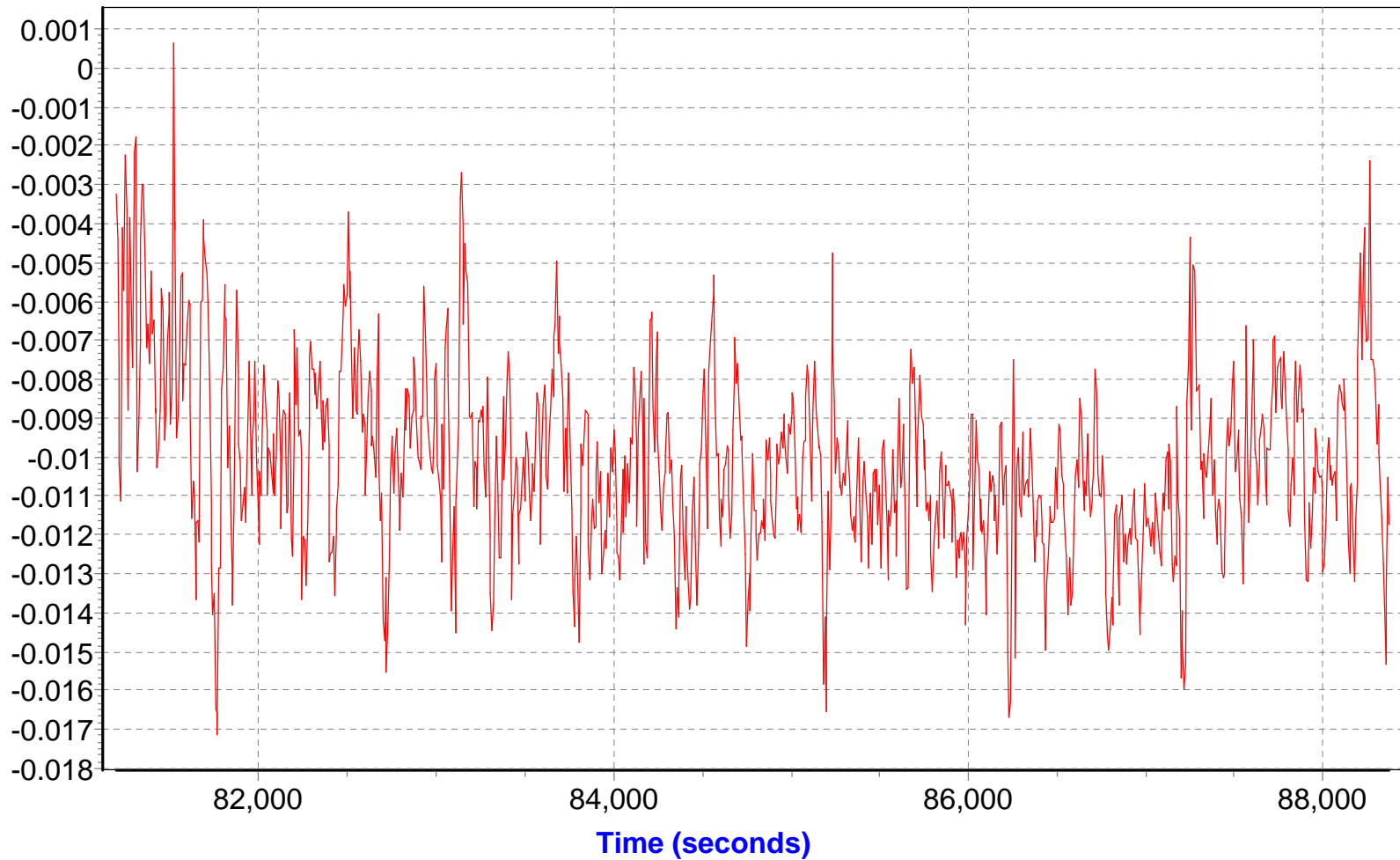
S/D Navigator X Velocity Error (meters/seconds)

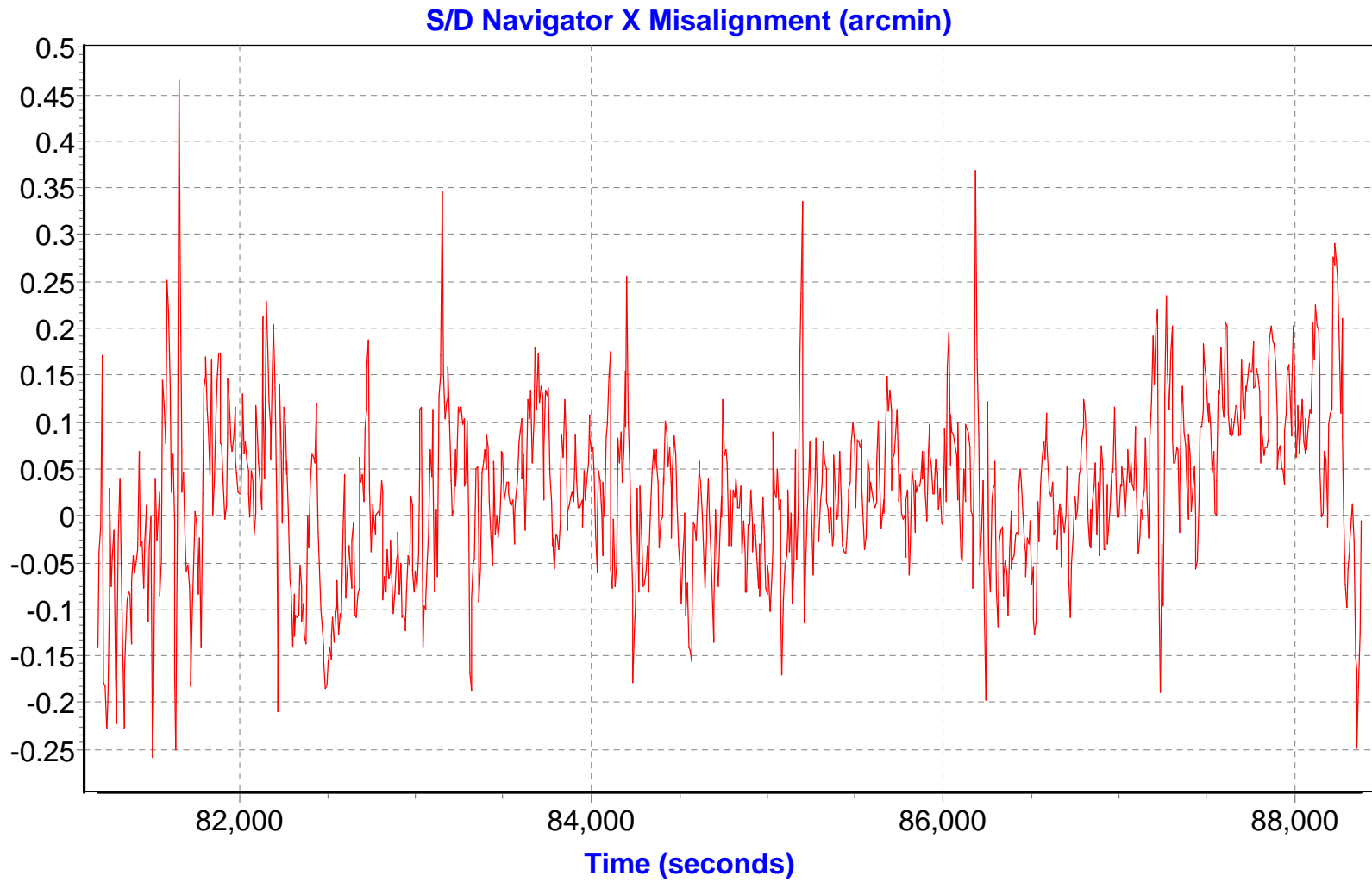


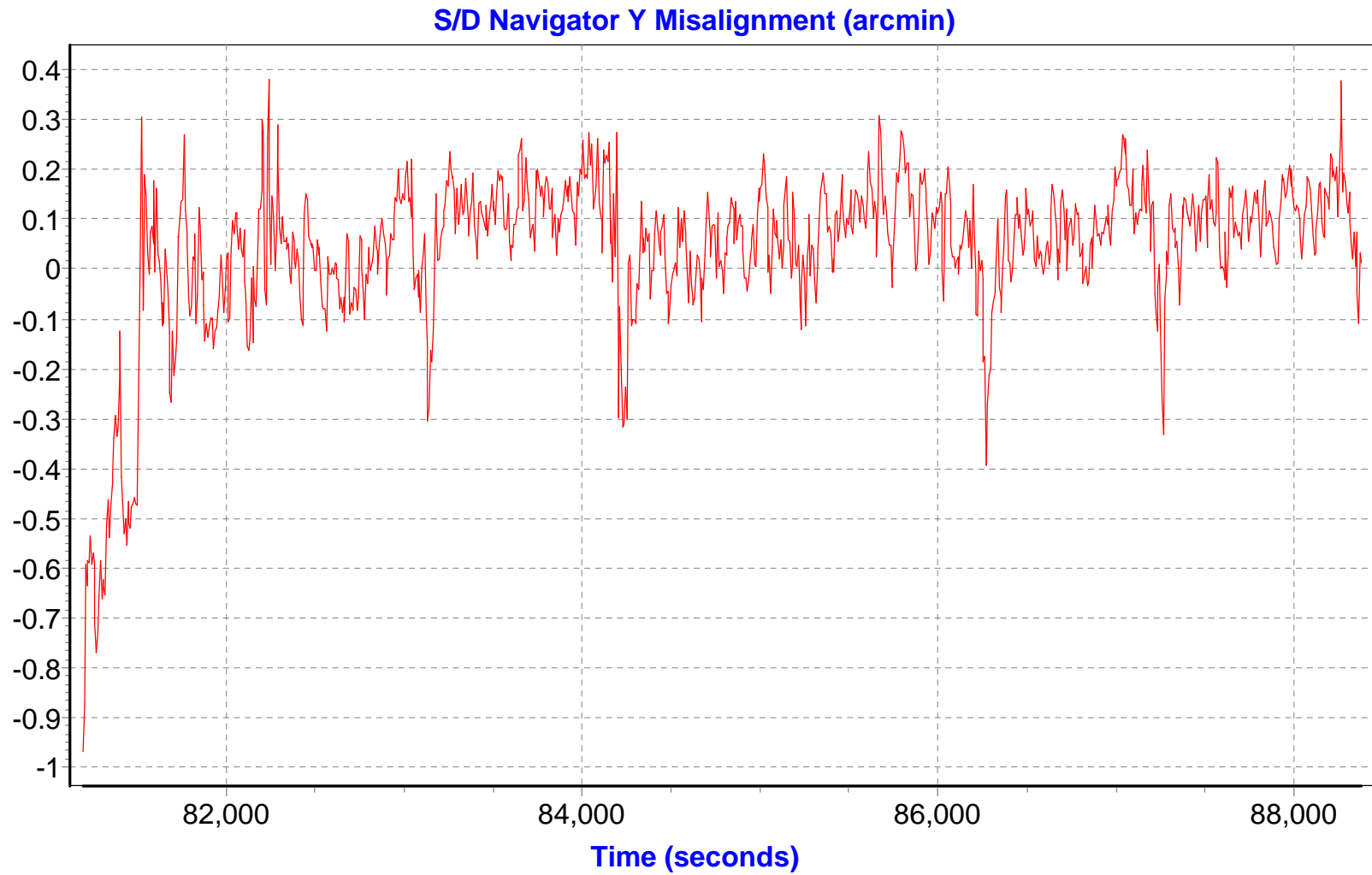
S/D Navigator Y Velocity Error (meters/seconds)

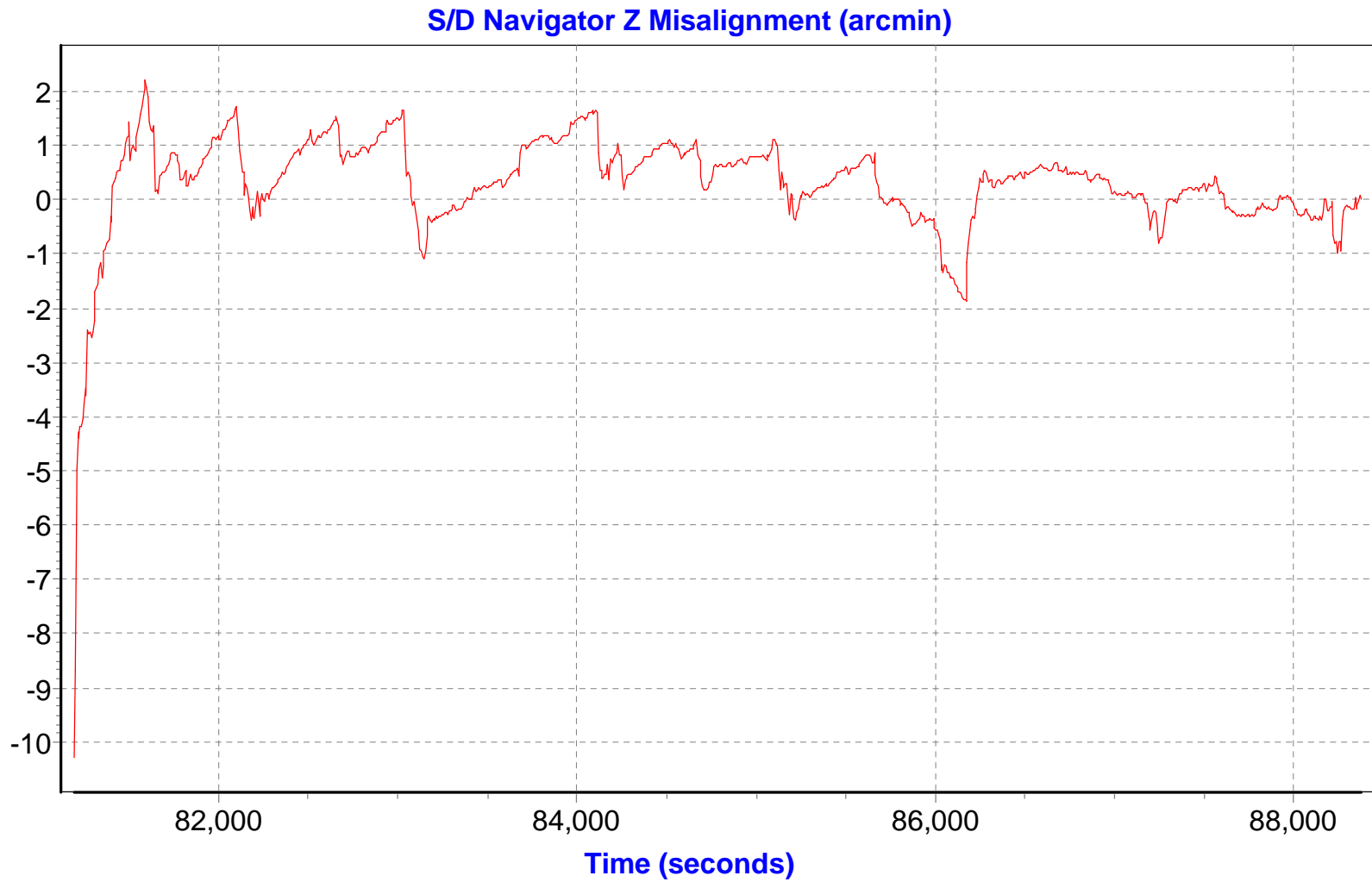


S/D Navigator Z Velocity Error (meters/seconds)

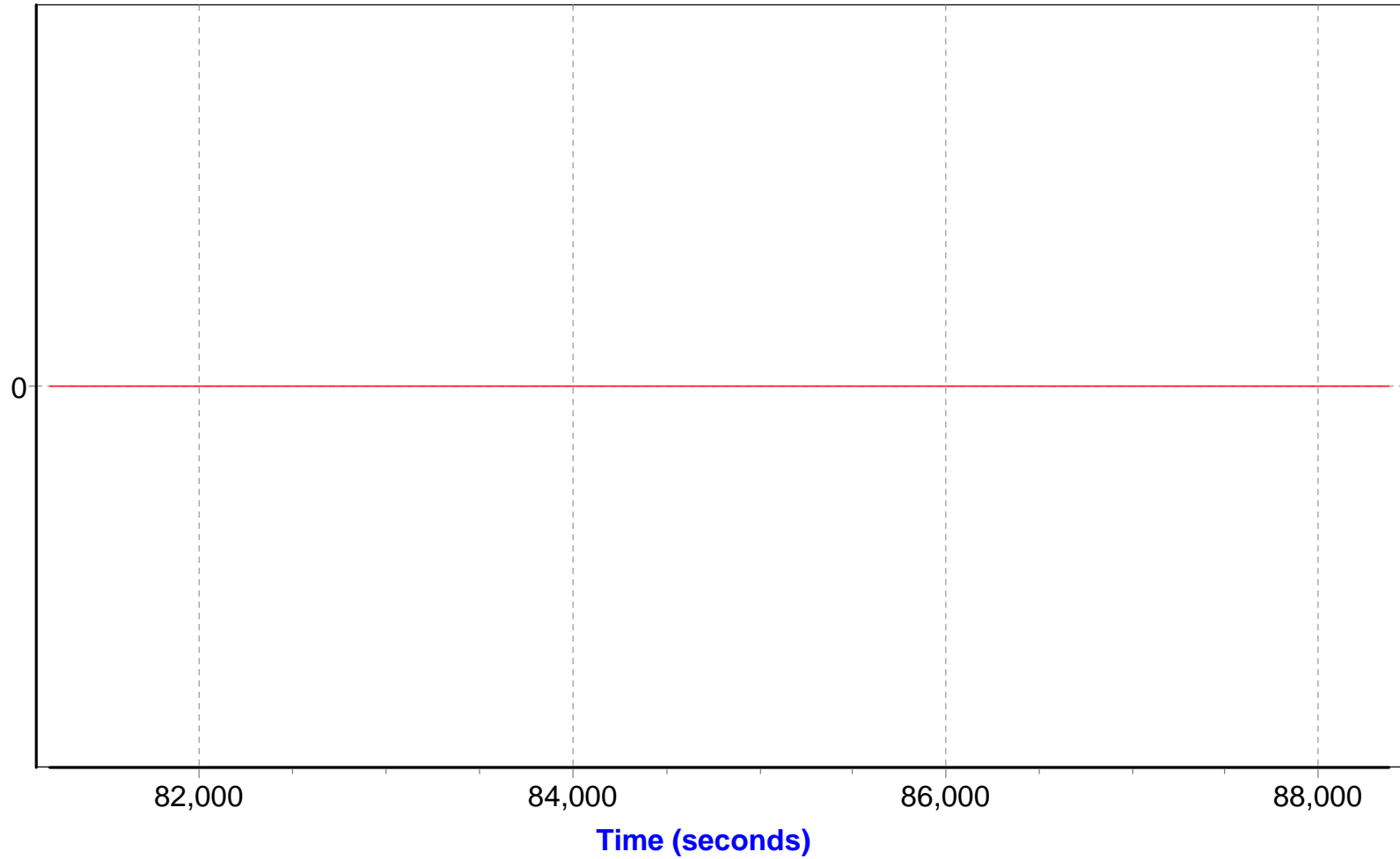




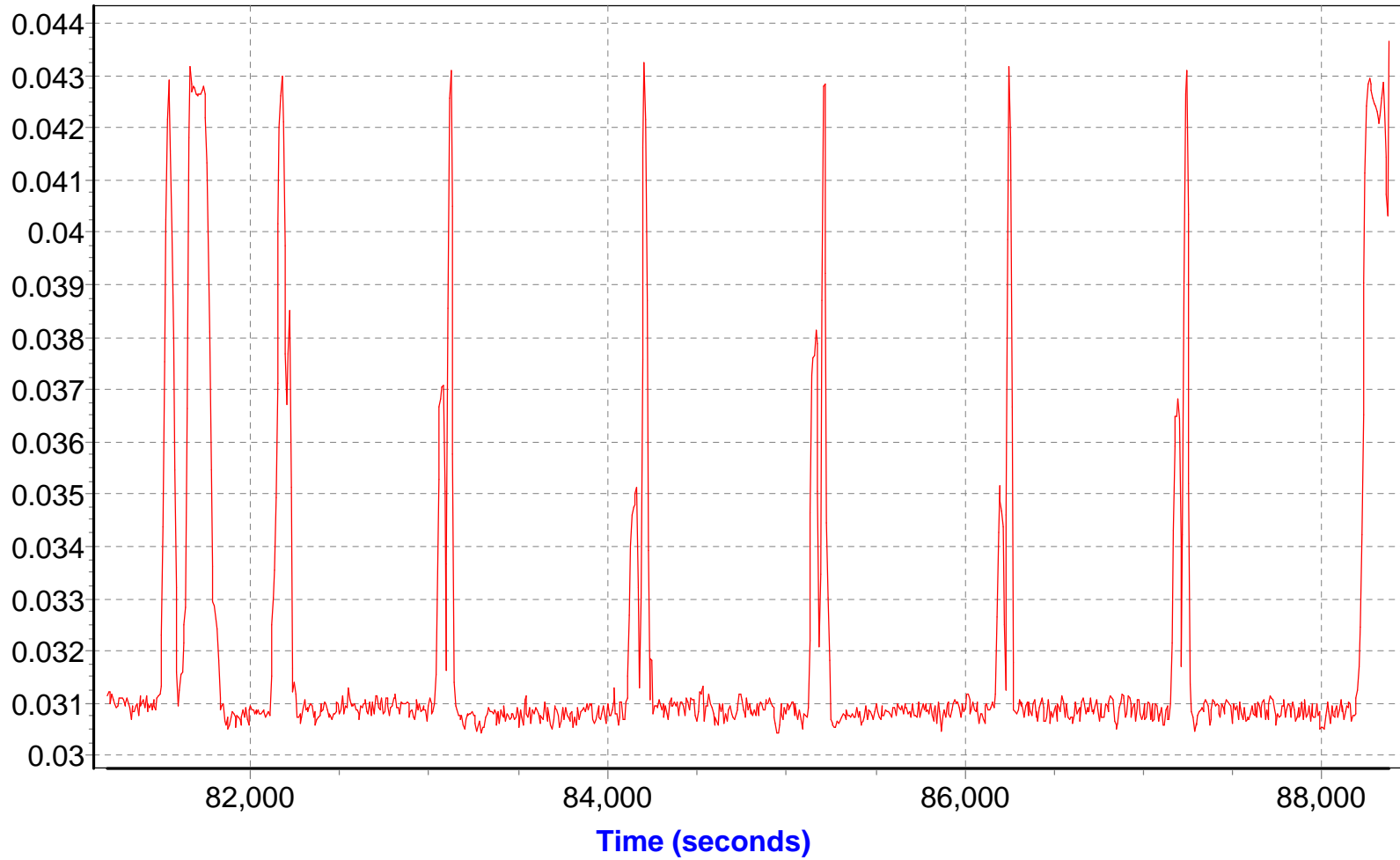




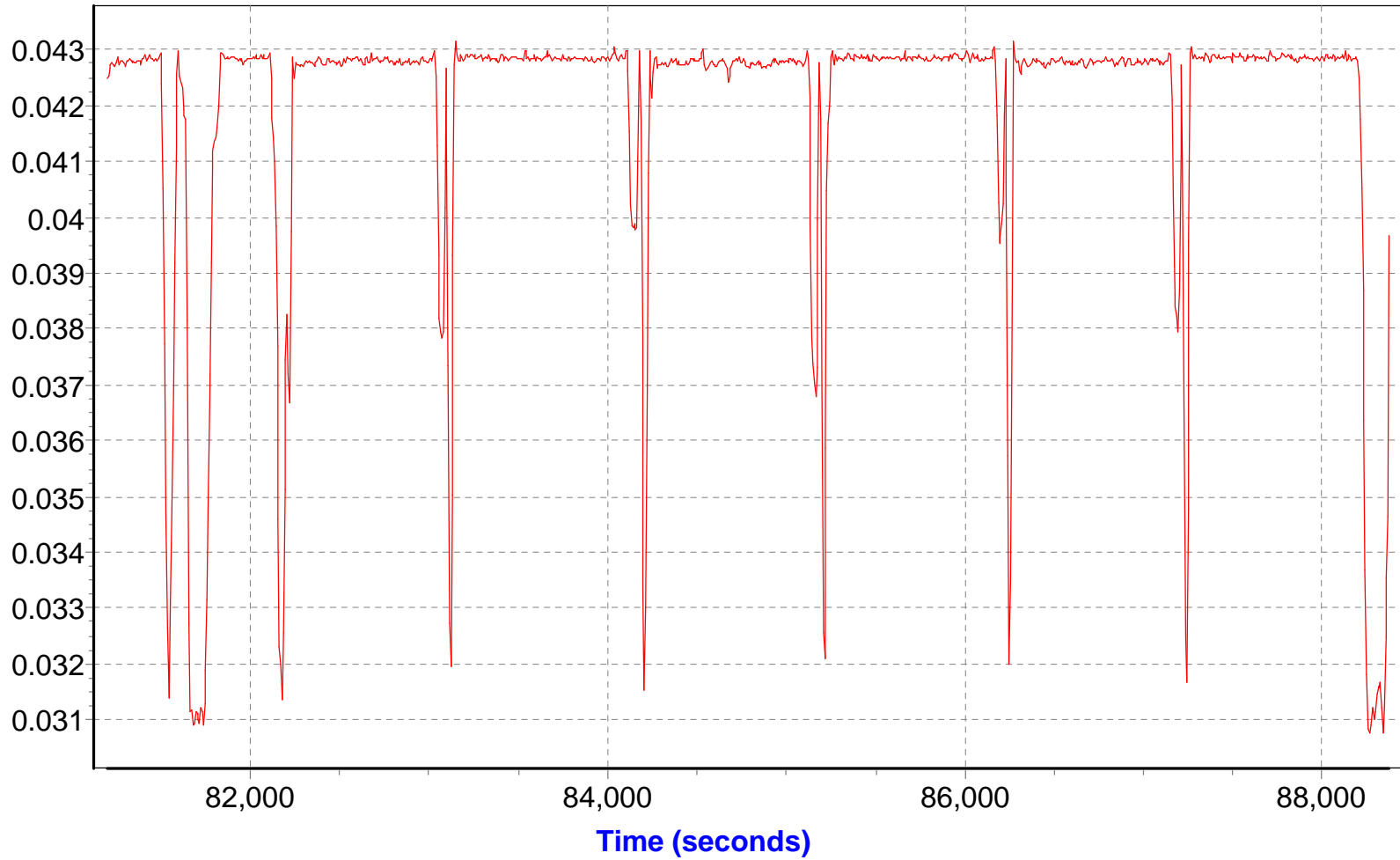
S/D Navigator COS(Z Misalignment)-1 (radians)



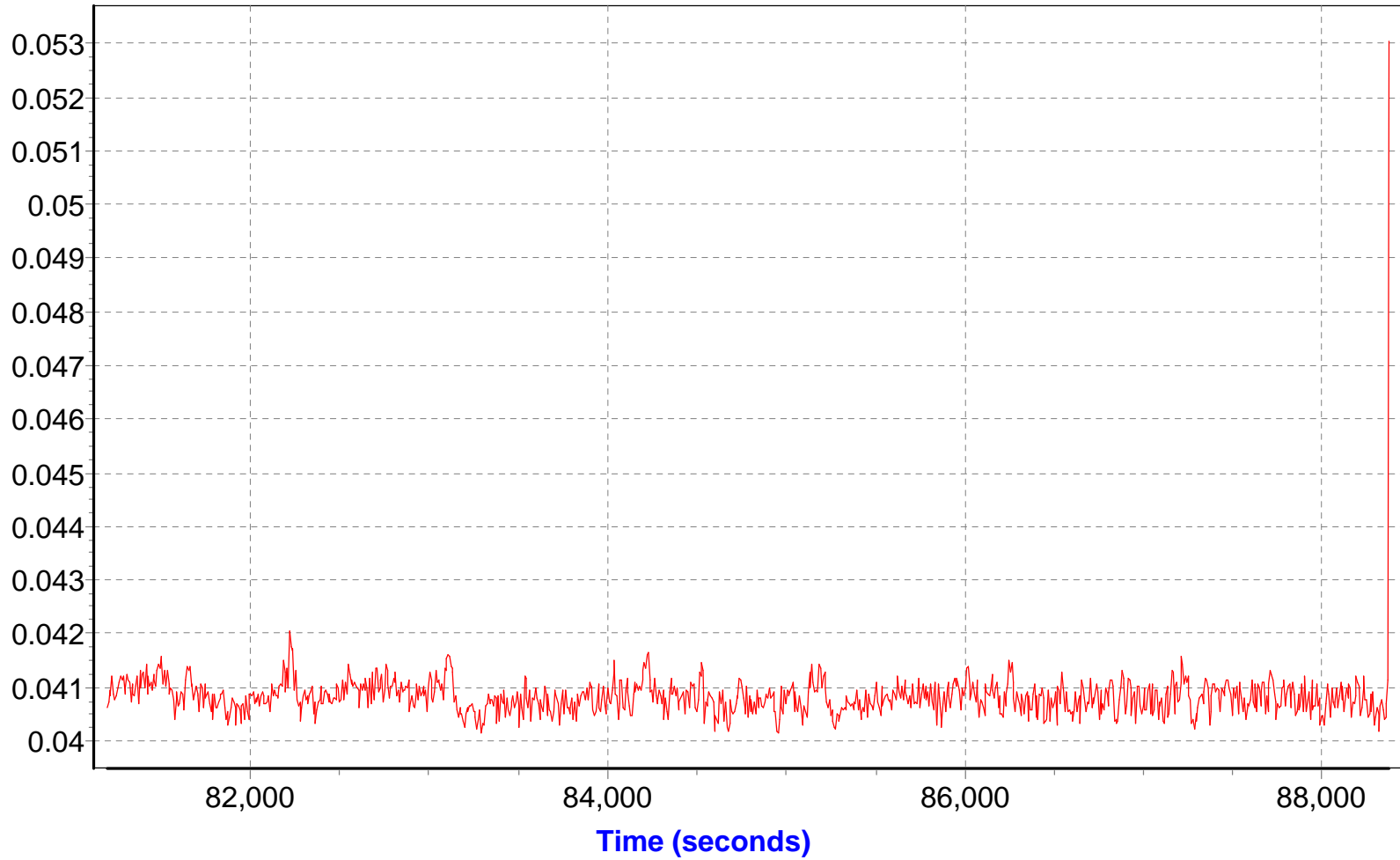
S/D Navigator X Position RMS Error (meters)



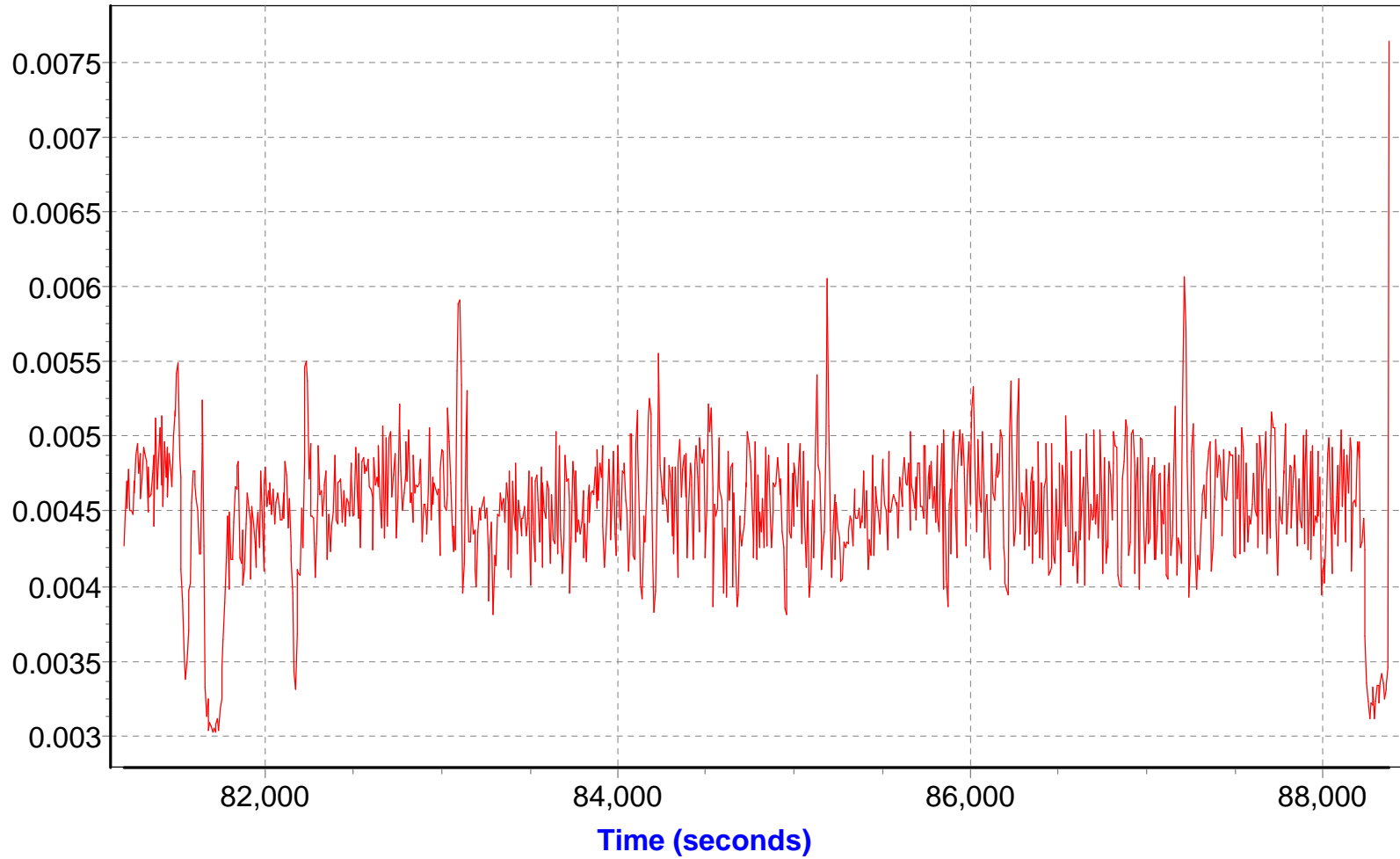
S/D Navigator Y Position RMS Error (meters)

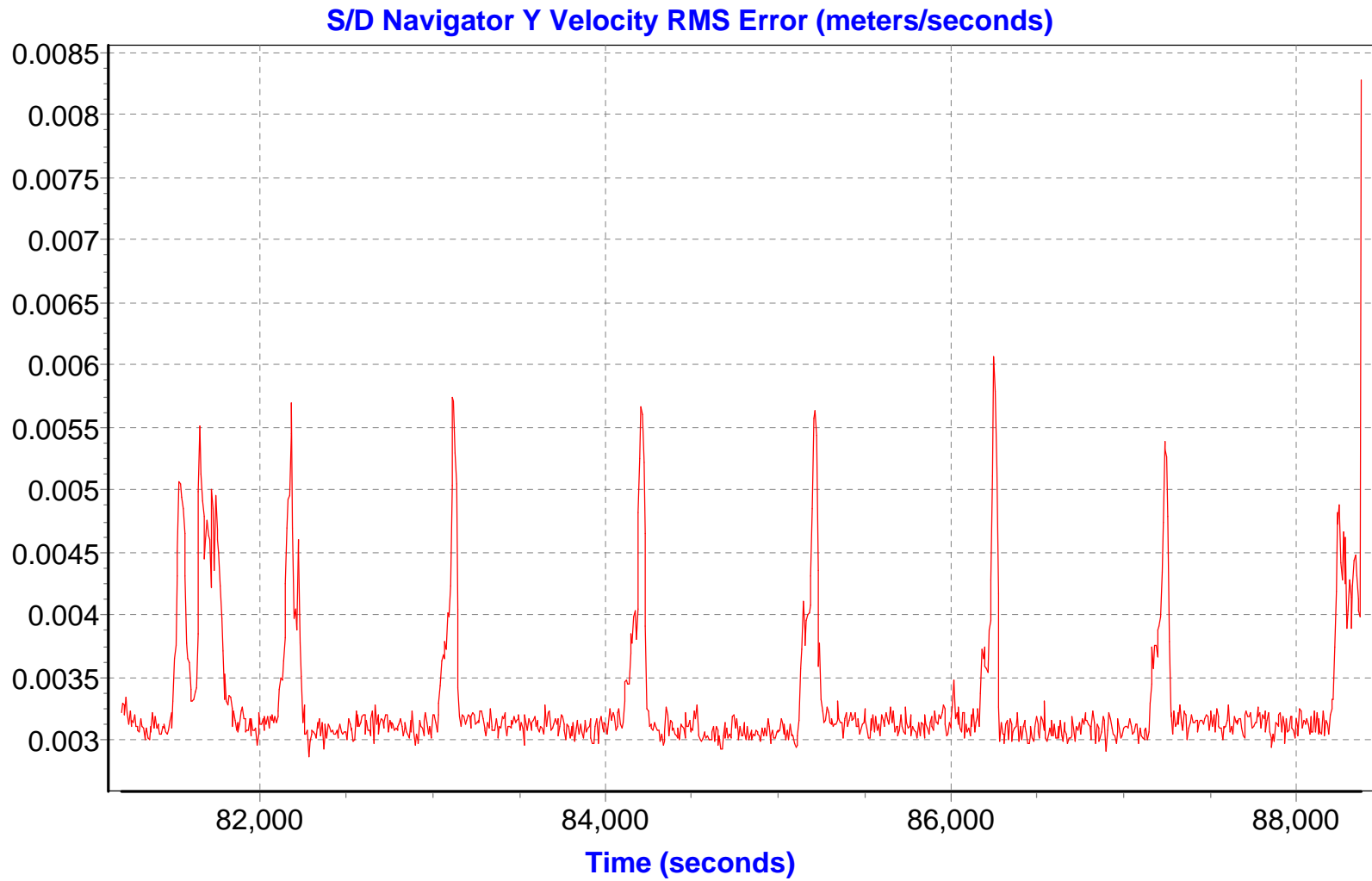


S/D Navigator Z Position RMS Error (meters)

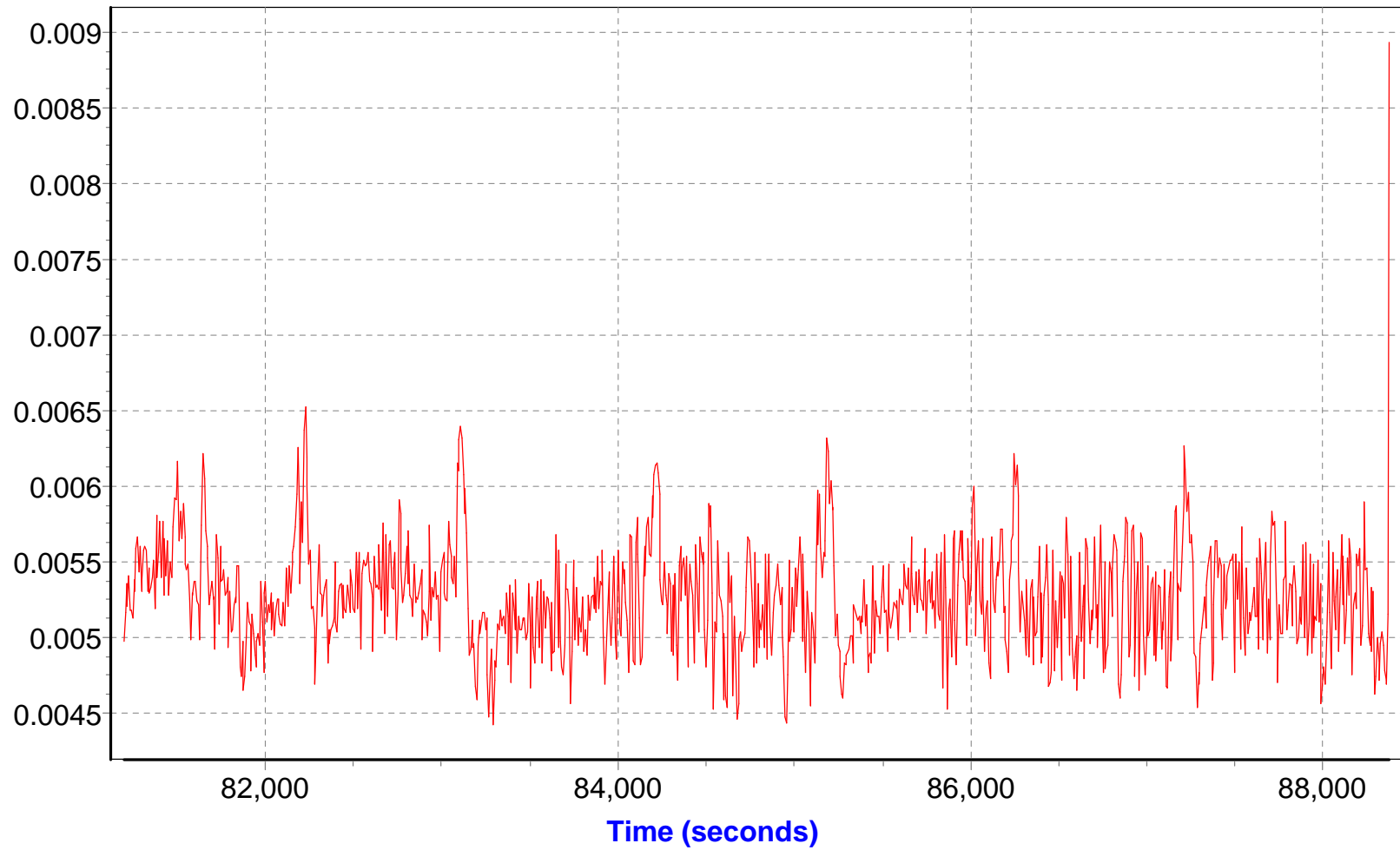


S/D Navigator X Velocity RMS Error (meters/seconds)

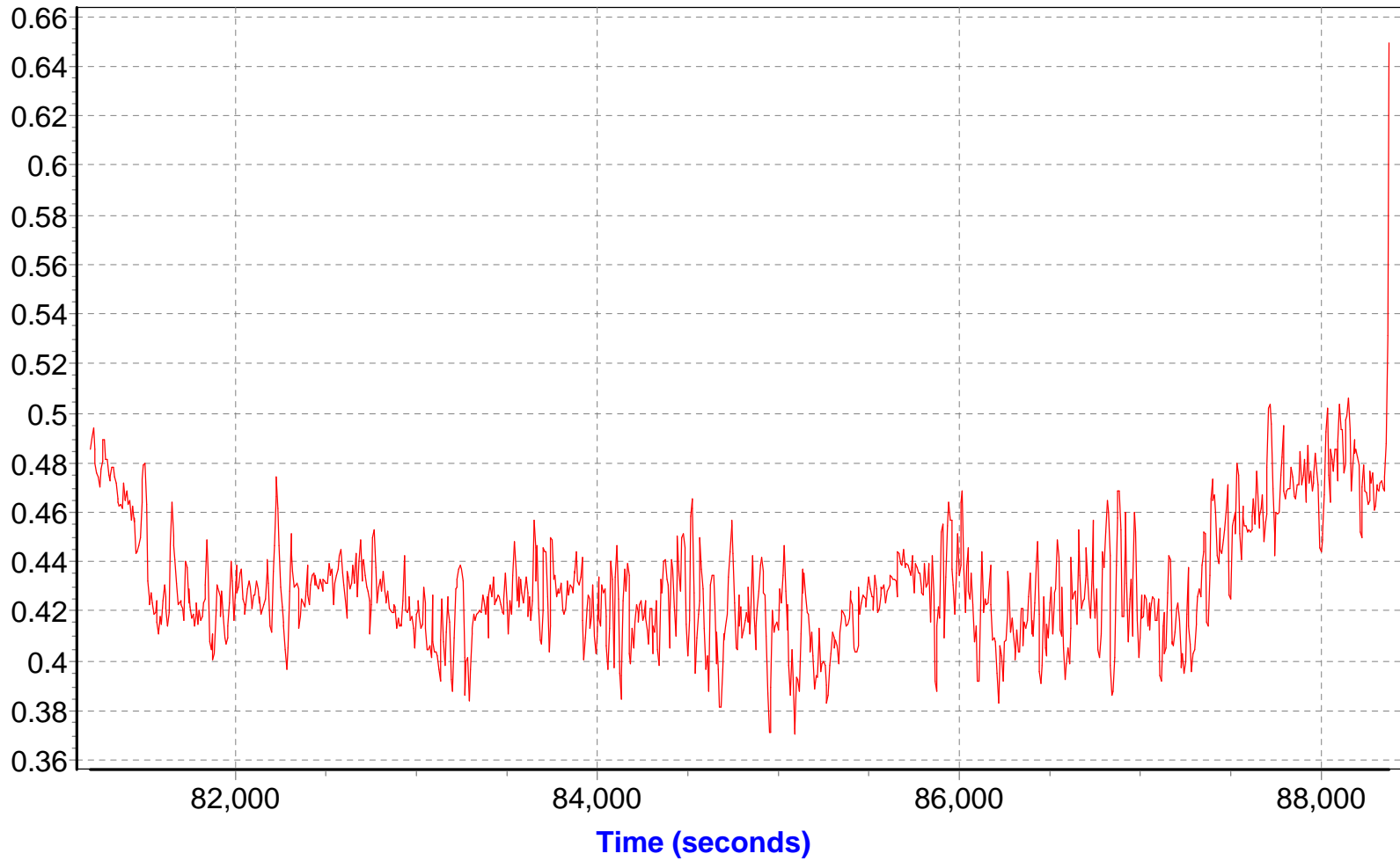




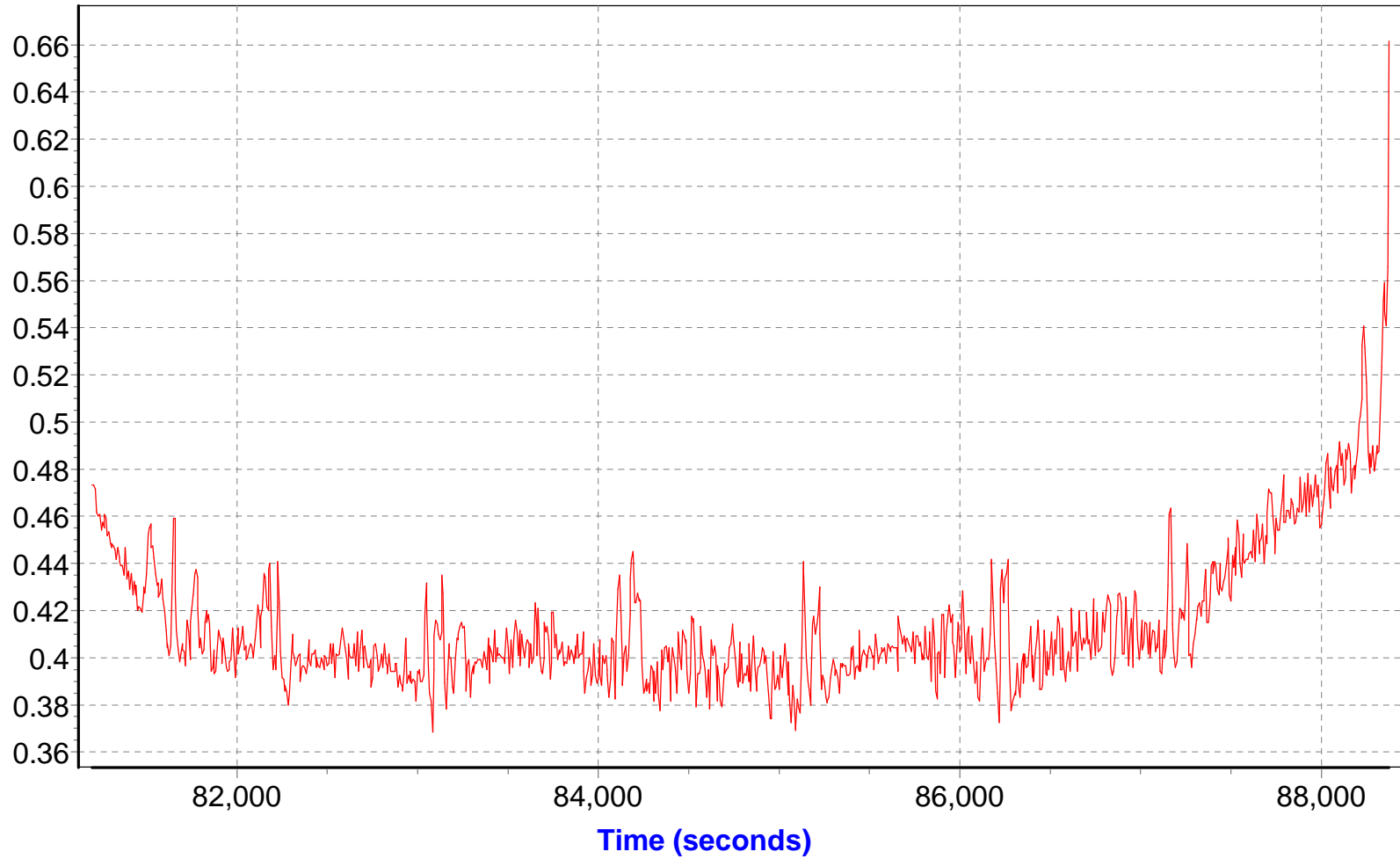
S/D Navigator Z Velocity RMS Error (meters/seconds)



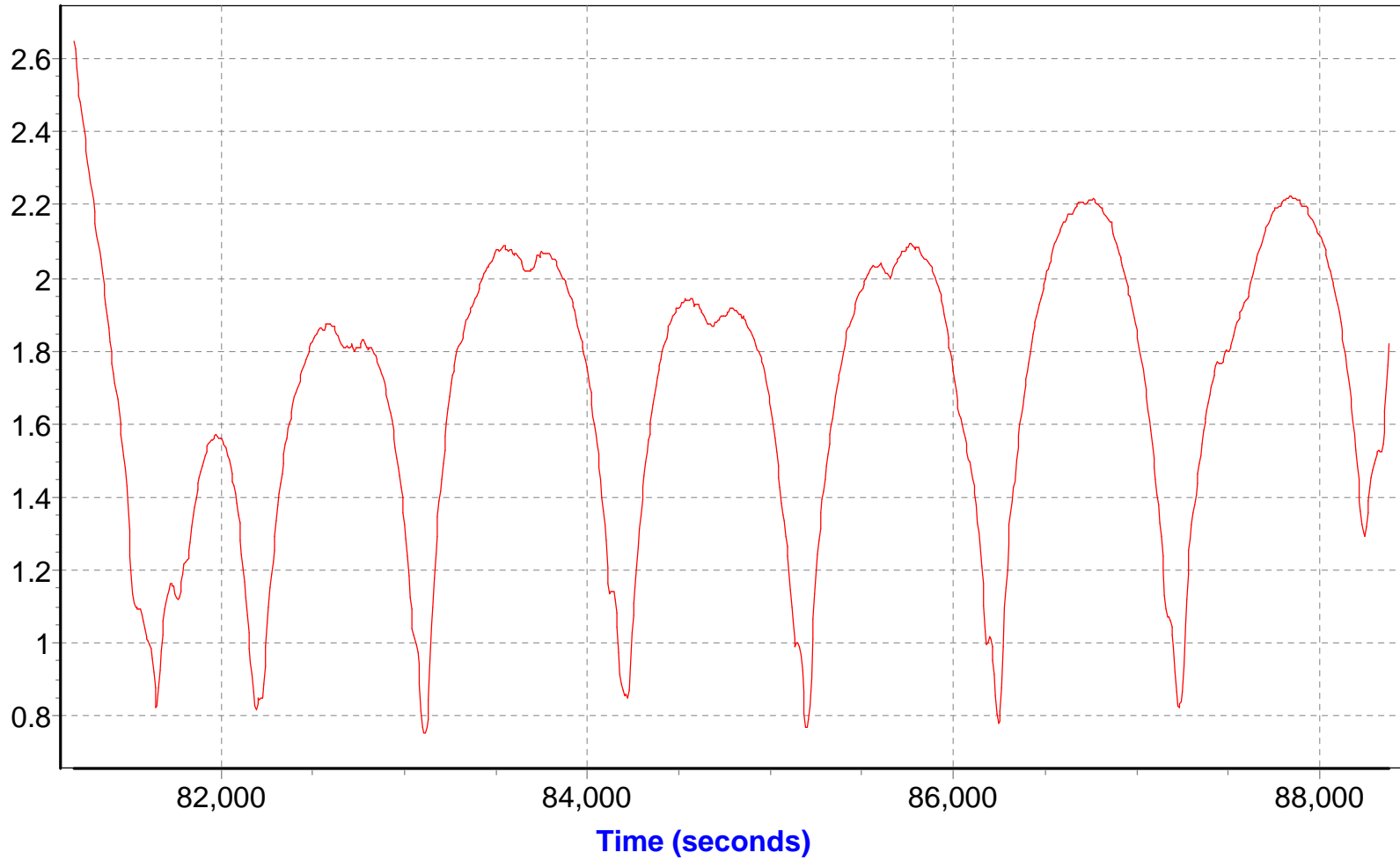
S/D Navigator X Misalignment RMS (arcmin)

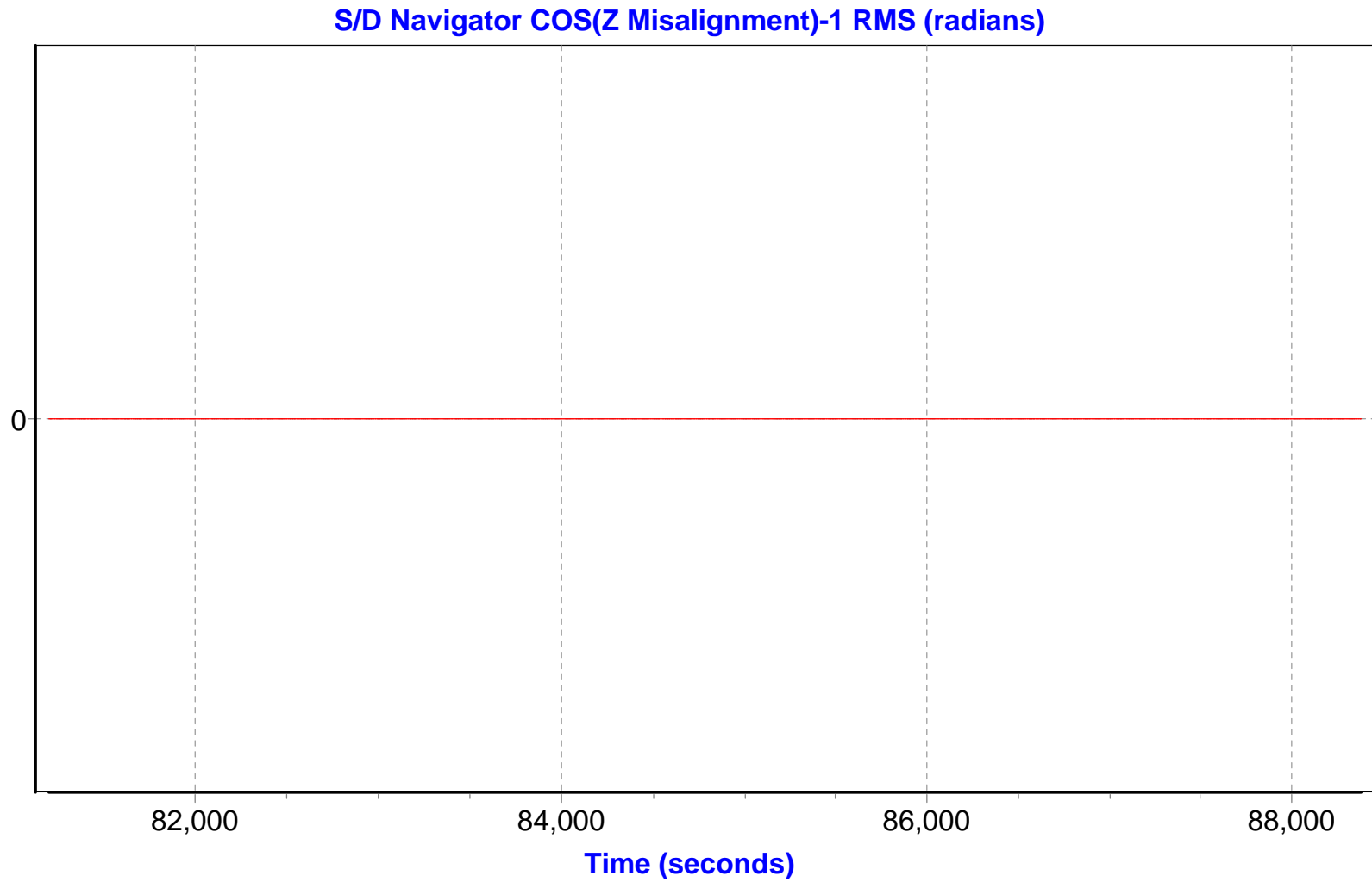


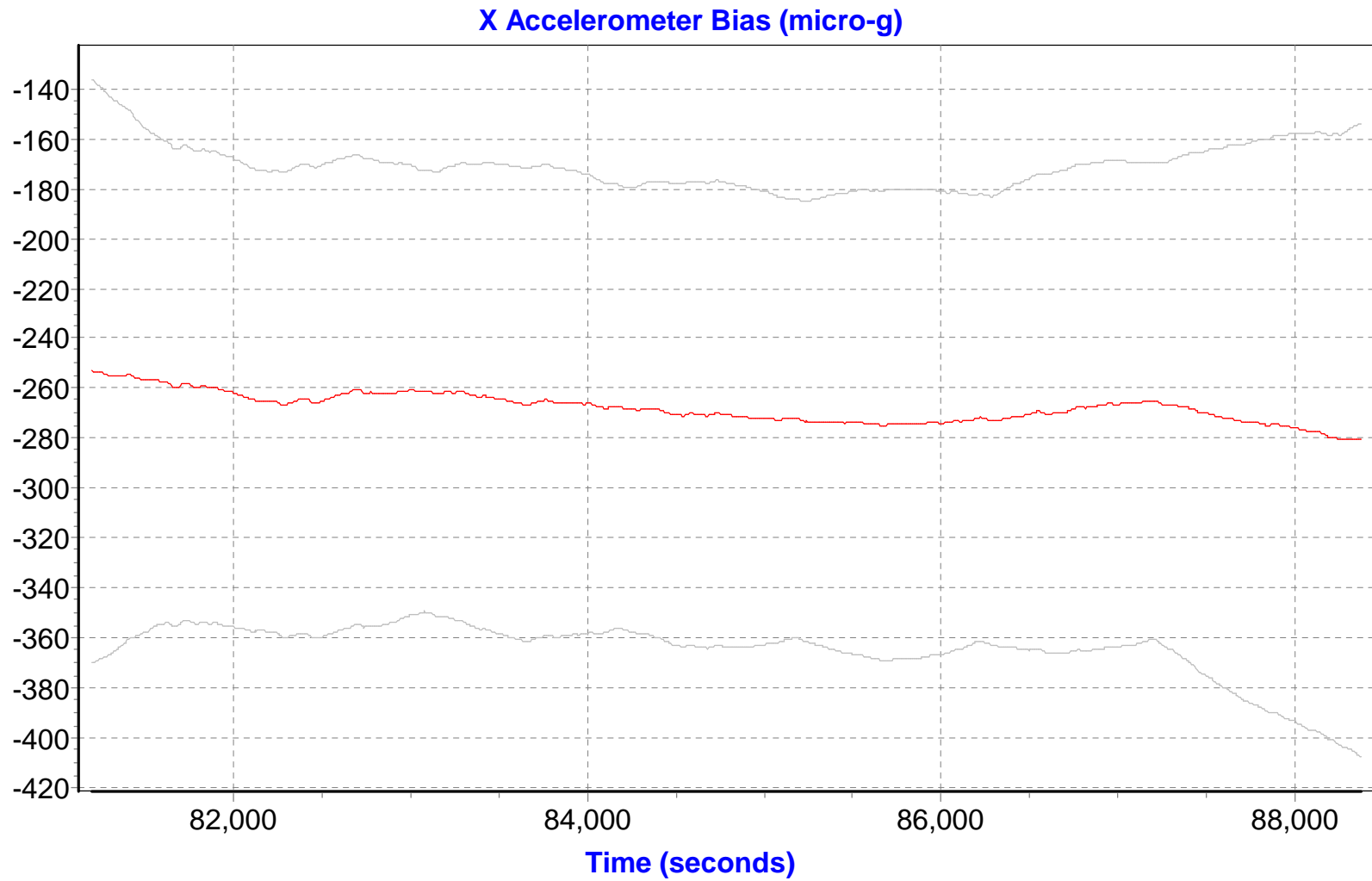
S/D Navigator Y Misalignment RMS (arcmin)



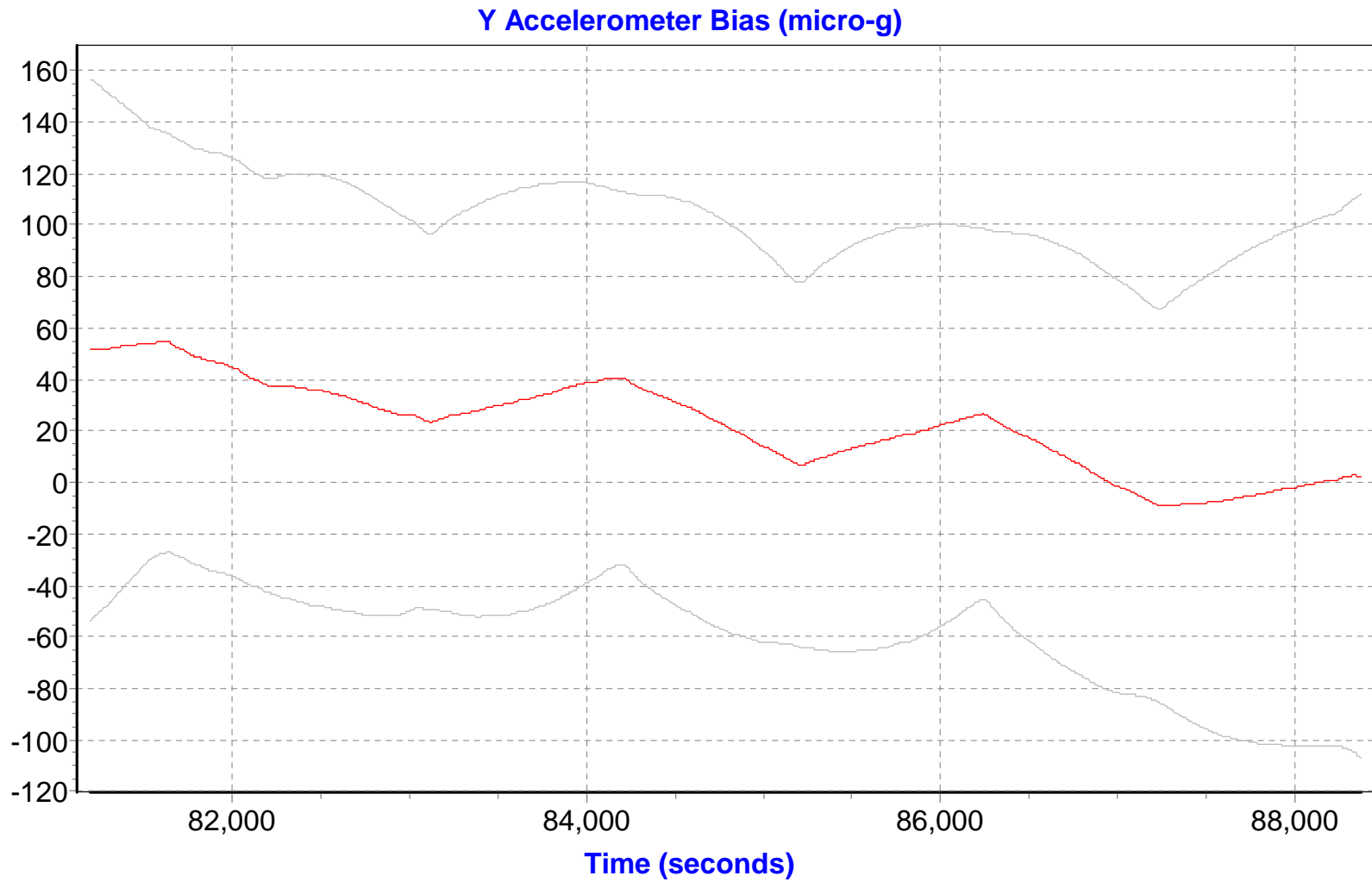
S/D Navigator Z Misalignment RMS (arcmin)



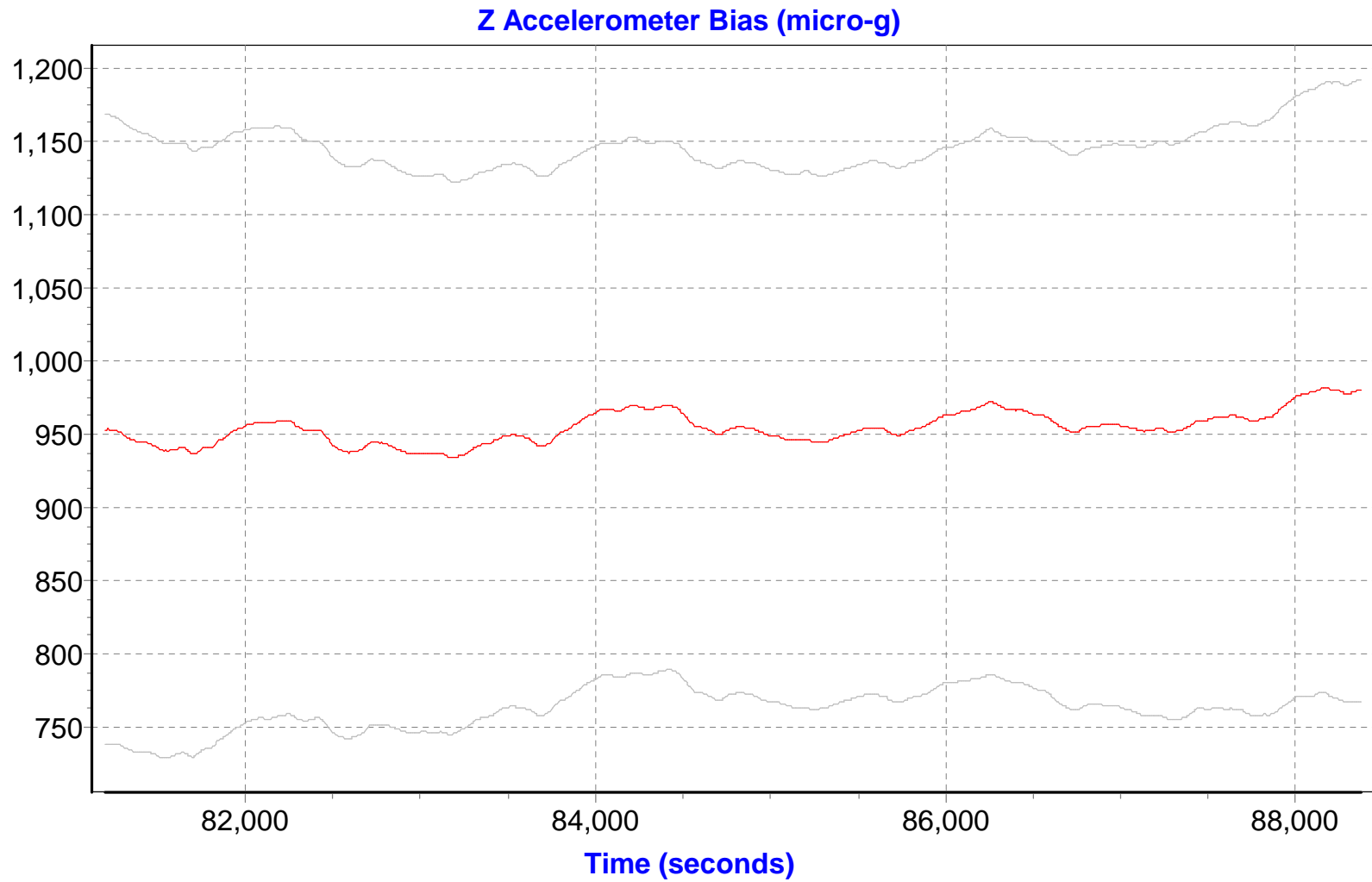




I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

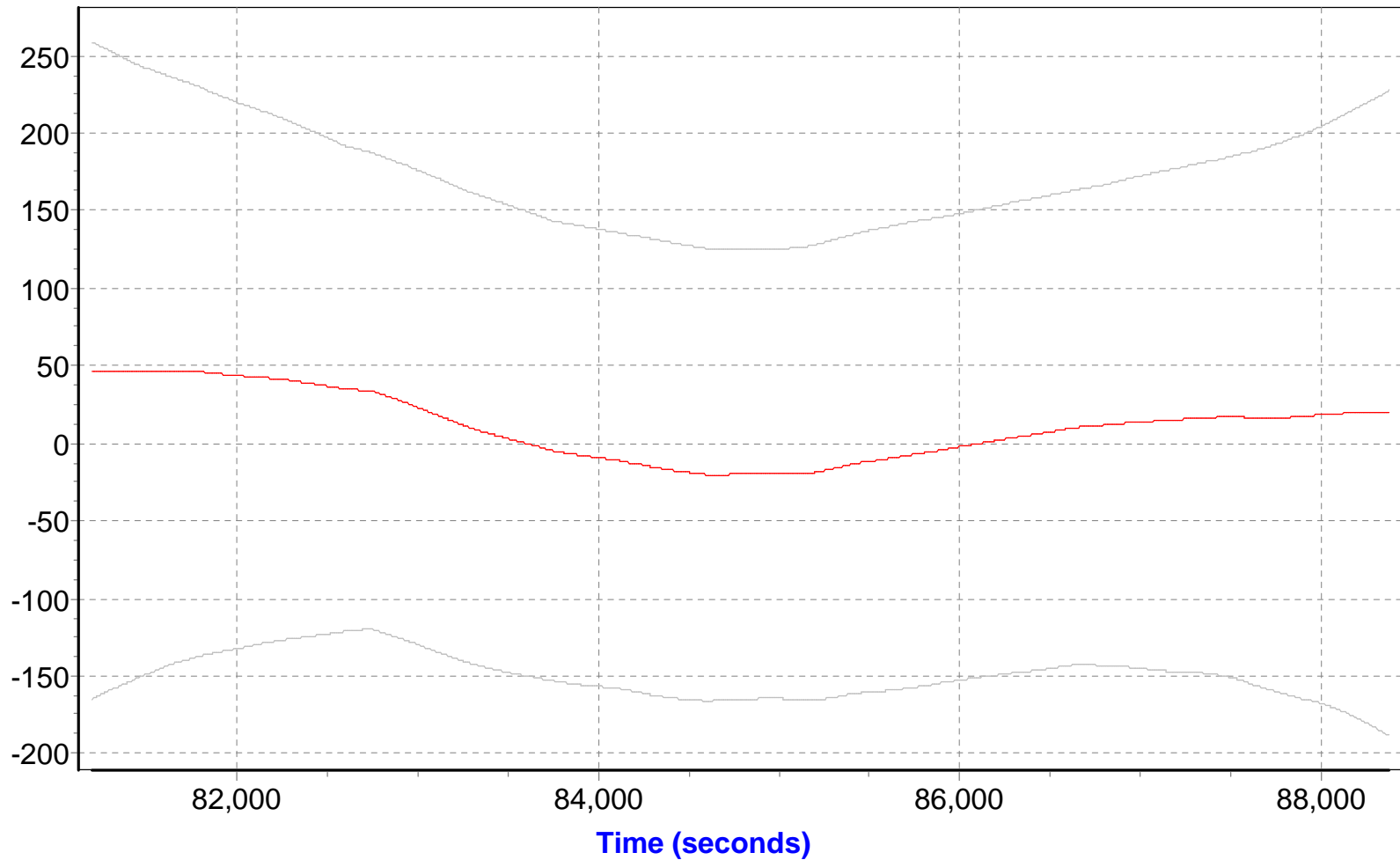


I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

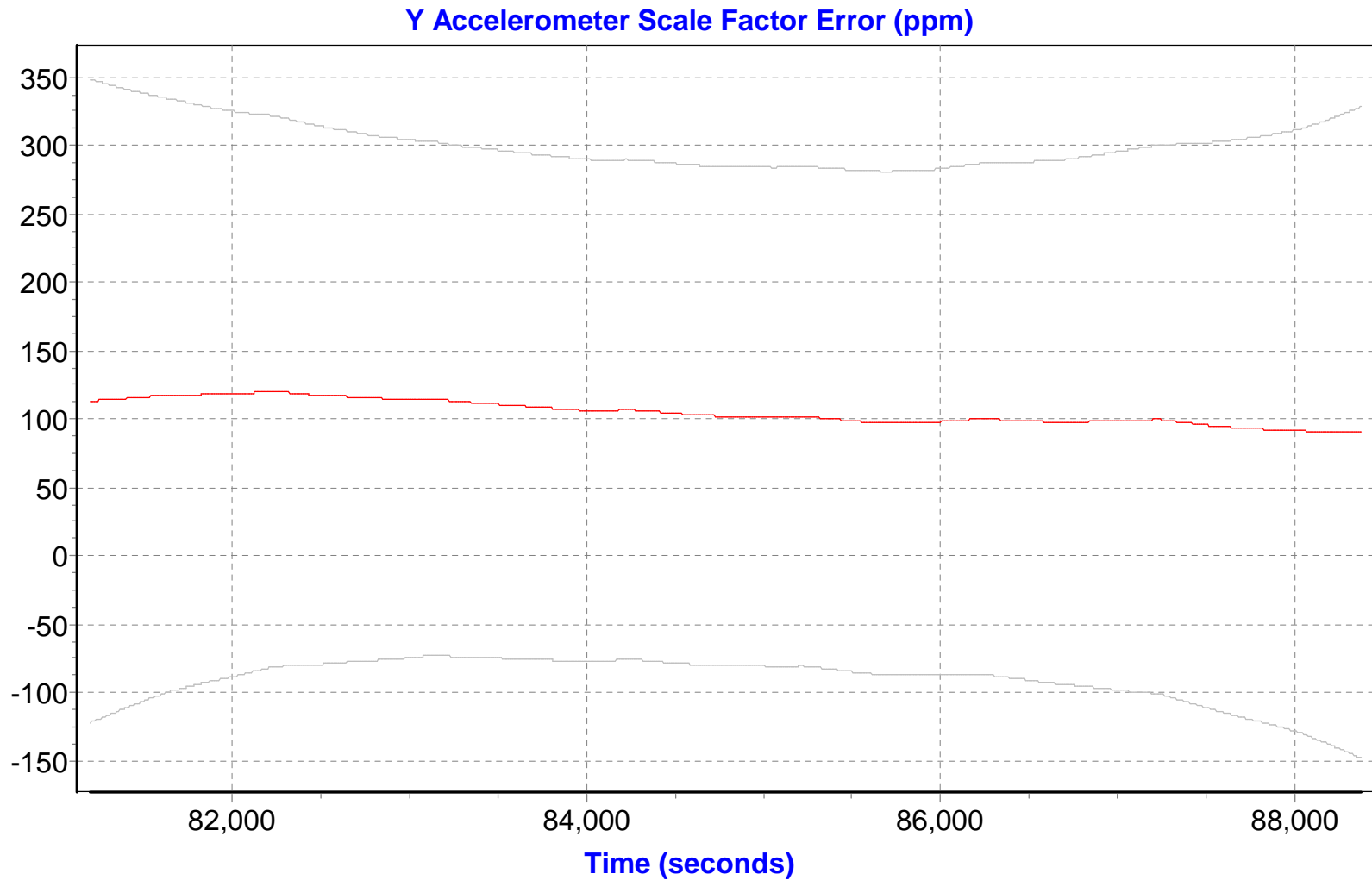


I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

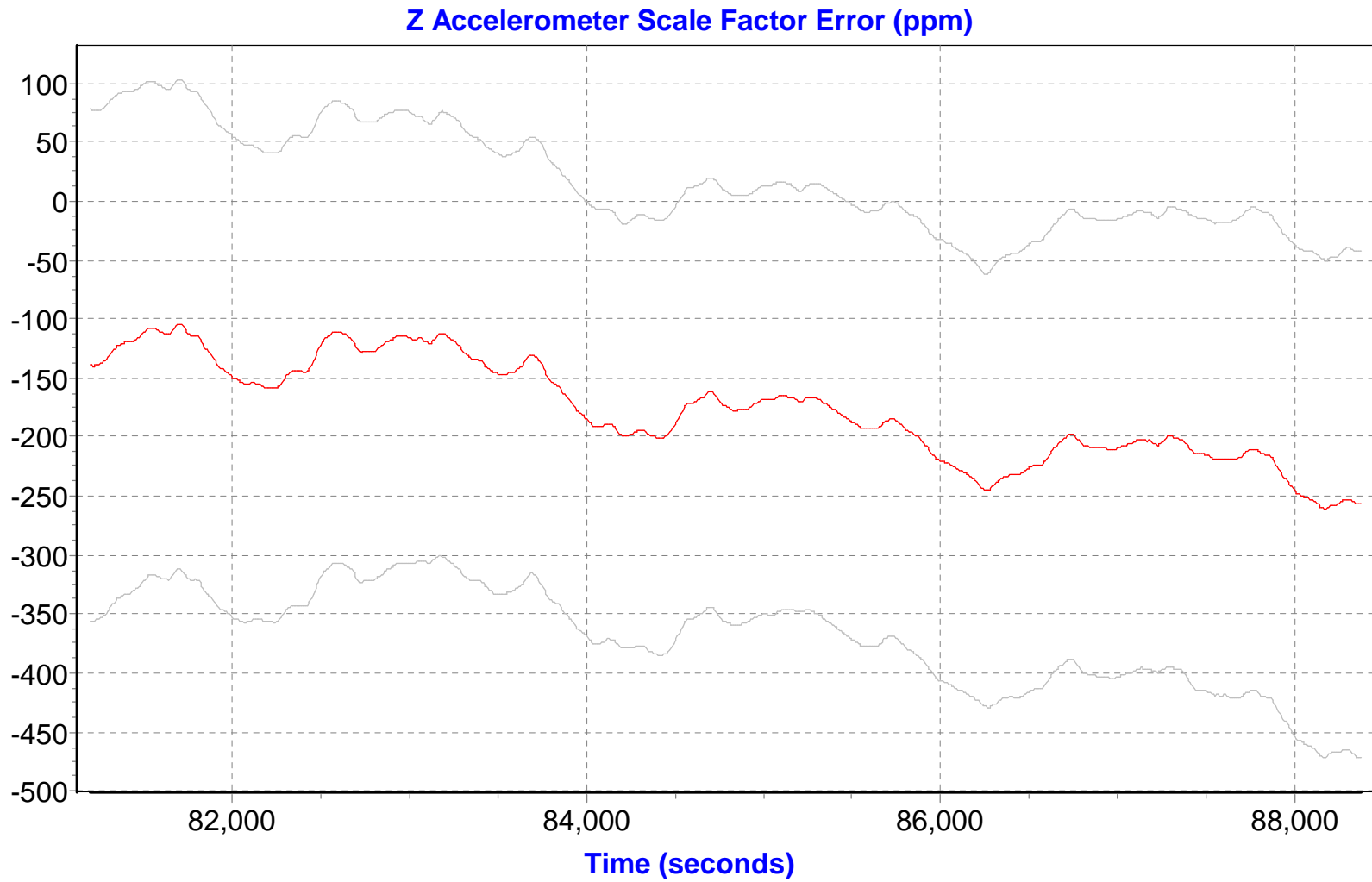
X Accelerometer Scale Factor Error (ppm)



I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

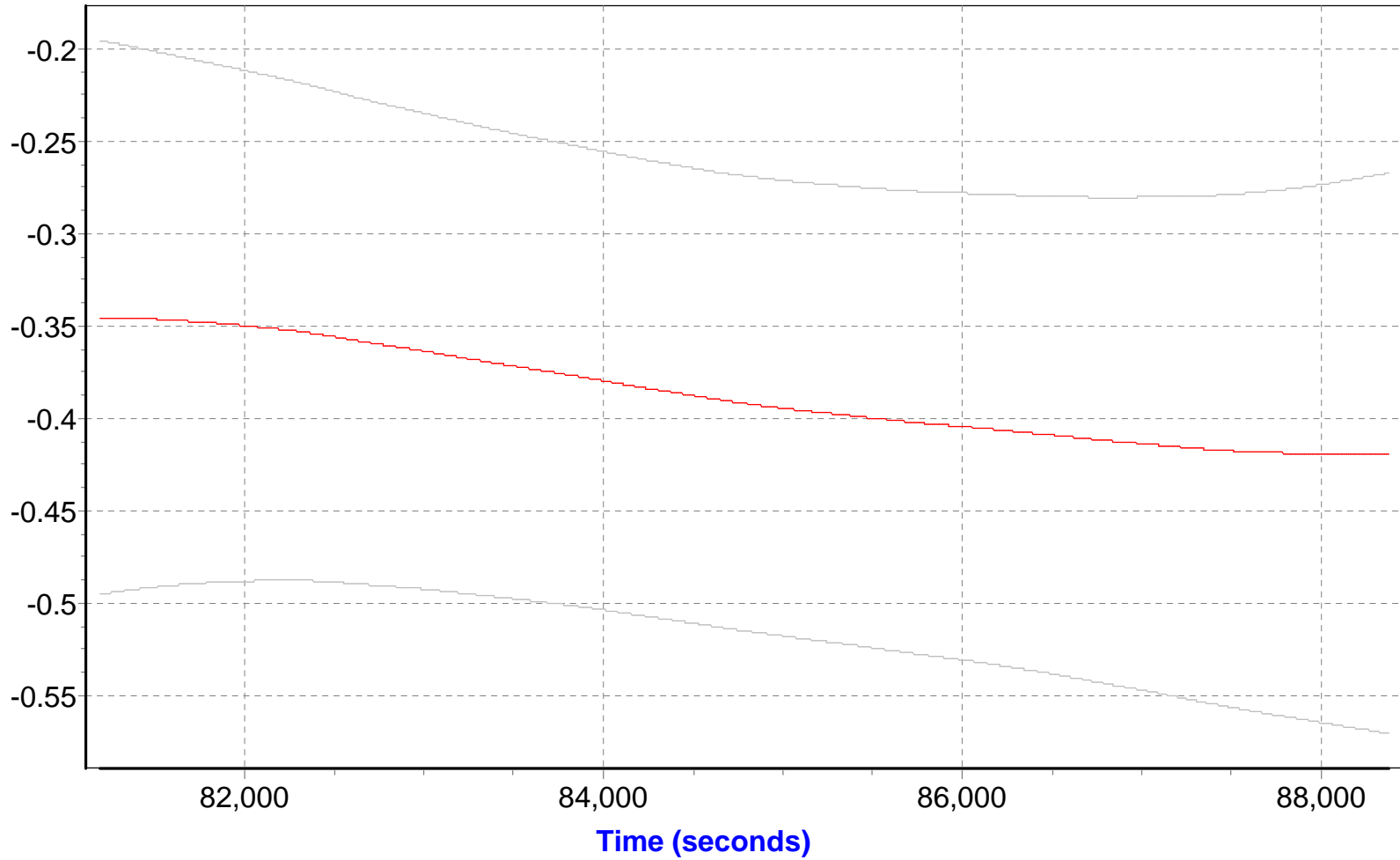


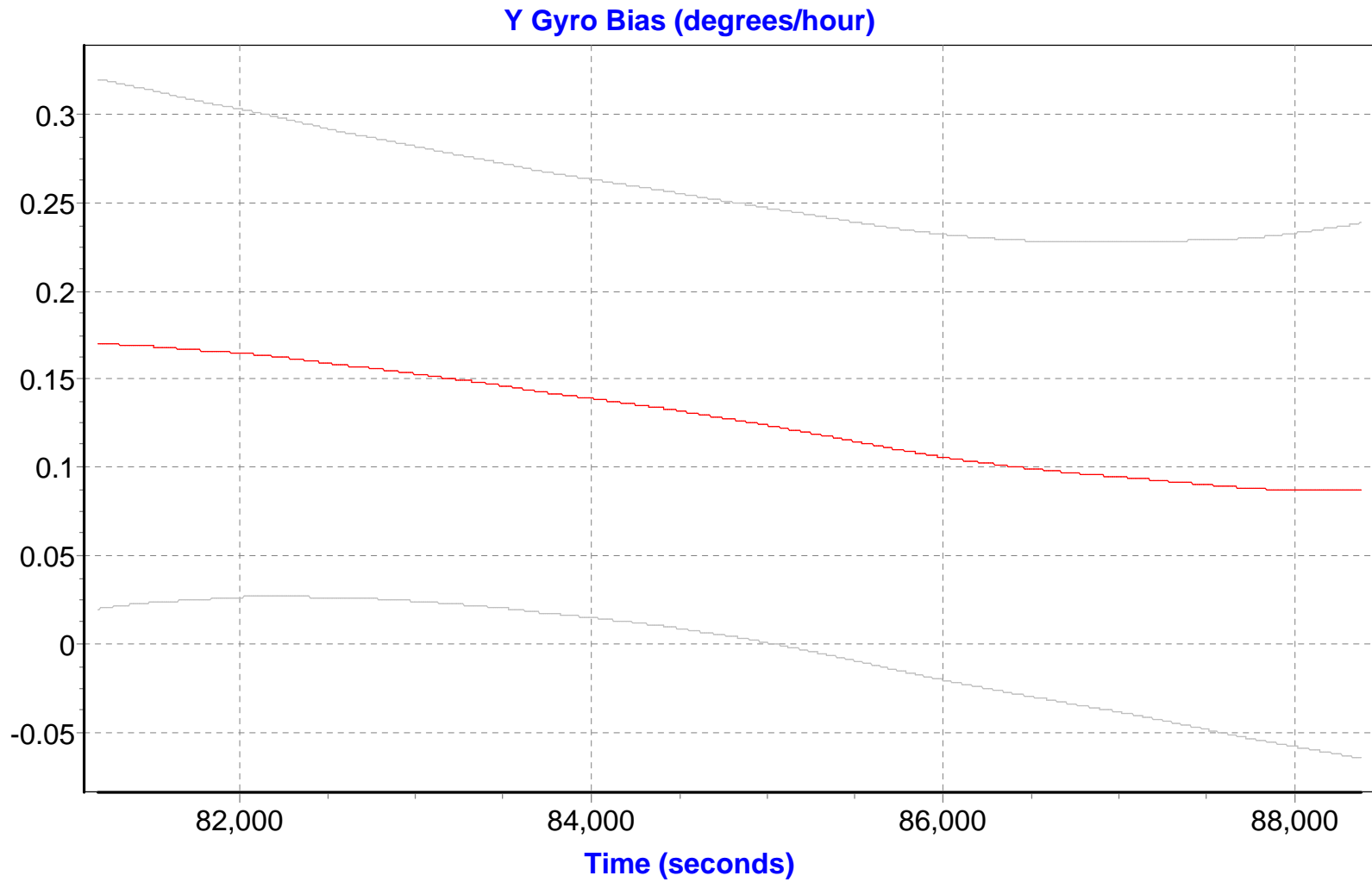
I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat



I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

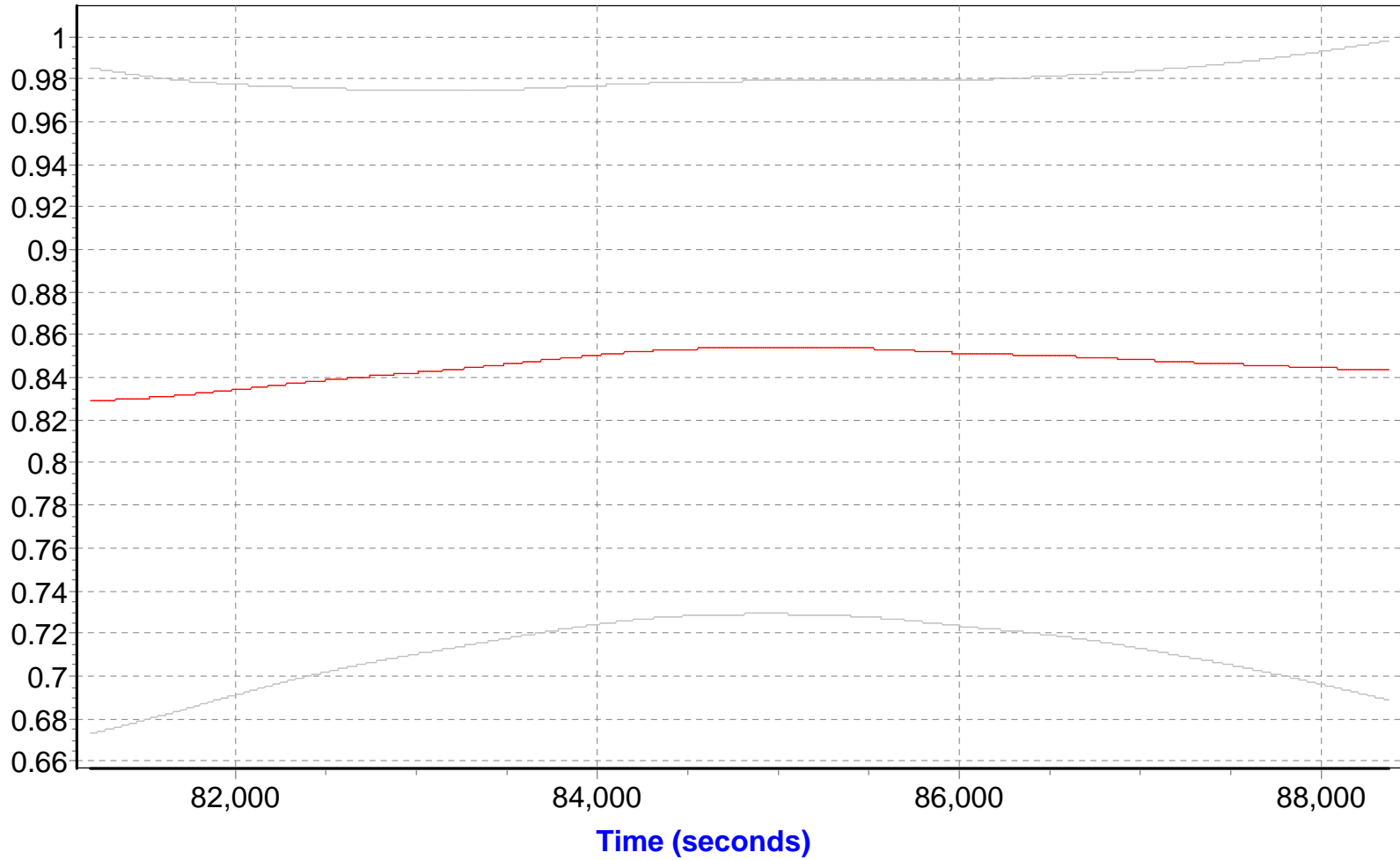
X Gyro Bias (degrees/hour)



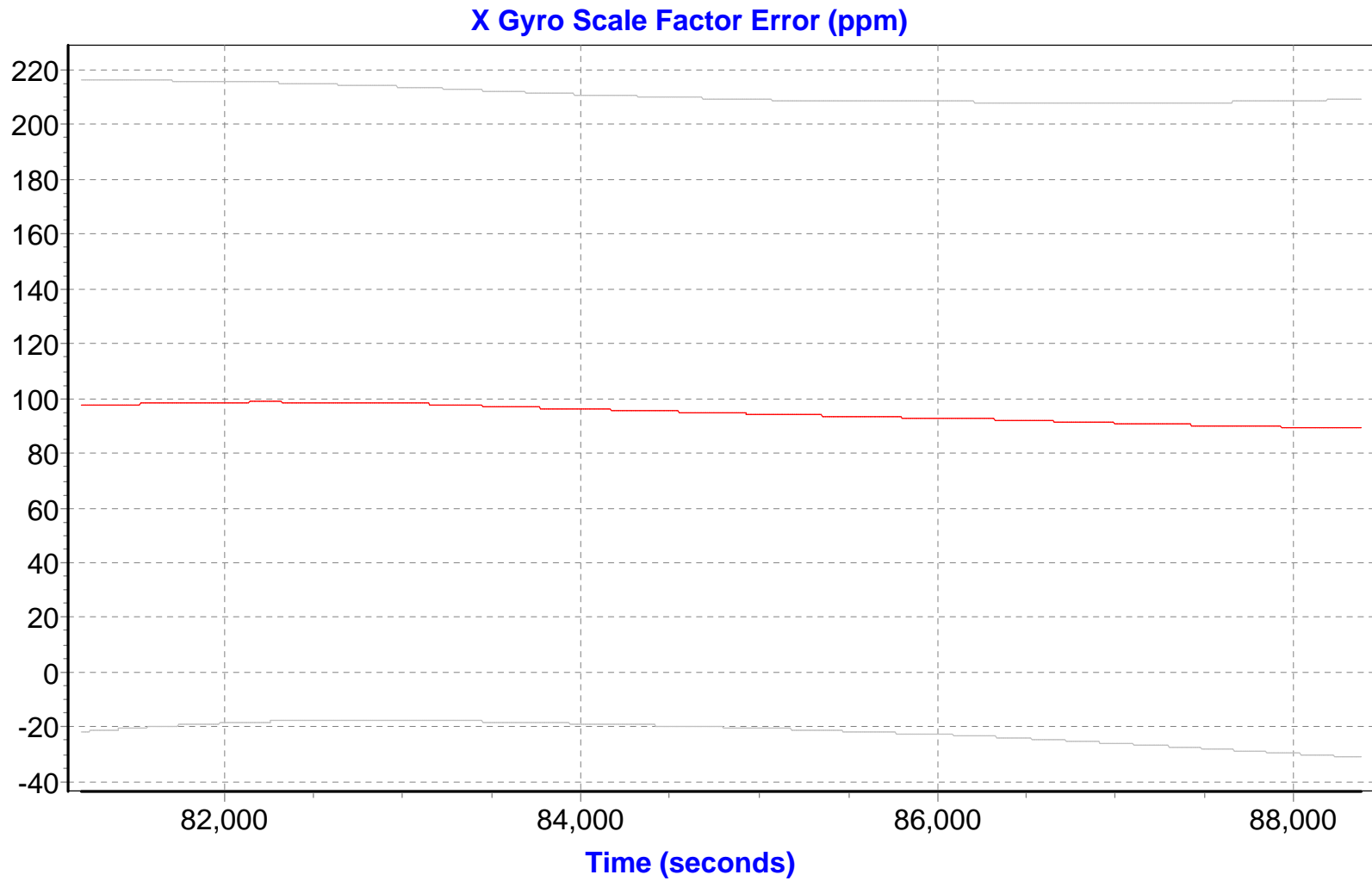


I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

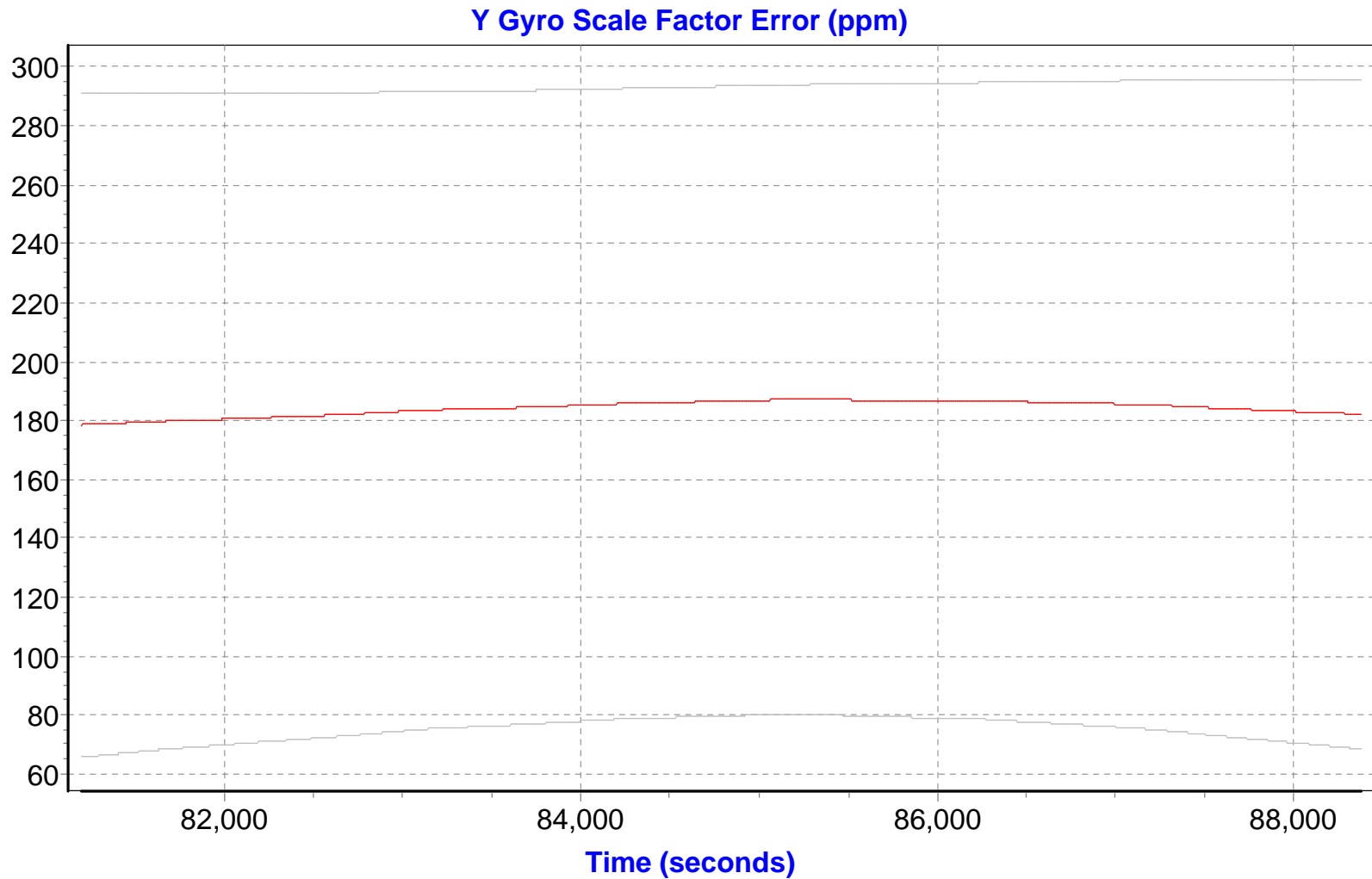
Z Gyro Bias (degrees/hour)



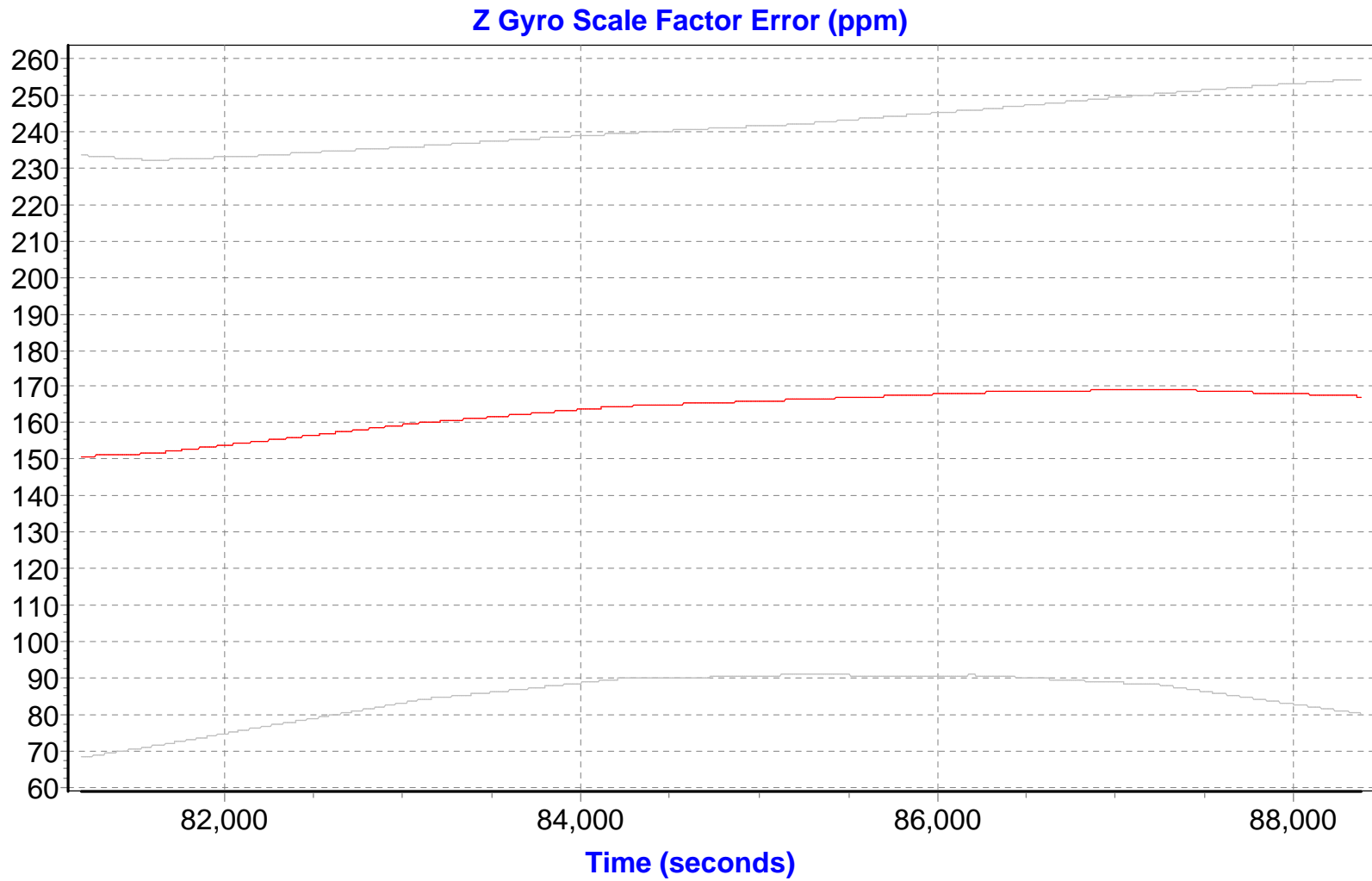
I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat



I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat



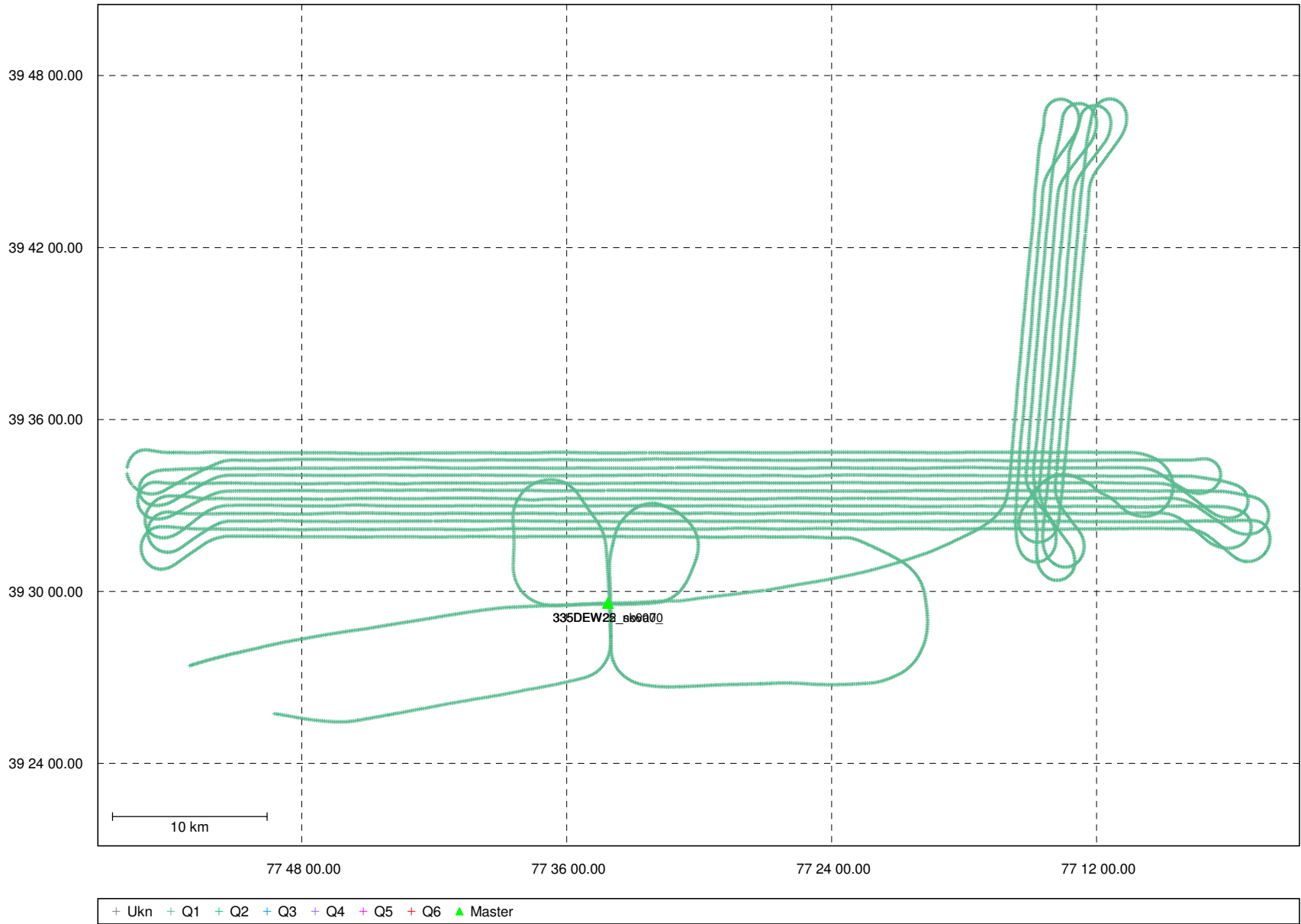
I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat



I:\o112071b\3_Processed\Extract\smers_o112071b.dat
I:\o112071b\3_Processed\Extract\smrms_o112071b.dat

Combined - Map Run (6)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project:
E:\Projects\335DEW11_USGS_MD_VA_cont\2_Operations\6_Missions\o112072a\3_Processed\GPS\o112072a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:
Total in GPB file: 183809
No processed position: 165457
Missing Fwd or Rev: 3
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:
L1 Phase: 0.0179 (m)
C/A Code: 0.80 (m)
L1 Doppler: 0.036 (m/s)

Fwd/Rev Separation RMS Values:
East: 0.032 (m)
North: 0.067 (m)
Height: 0.117 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (16985 occurrences):
East: 0.019 (m)
North: 0.023 (m)
Height: 0.045 (m)

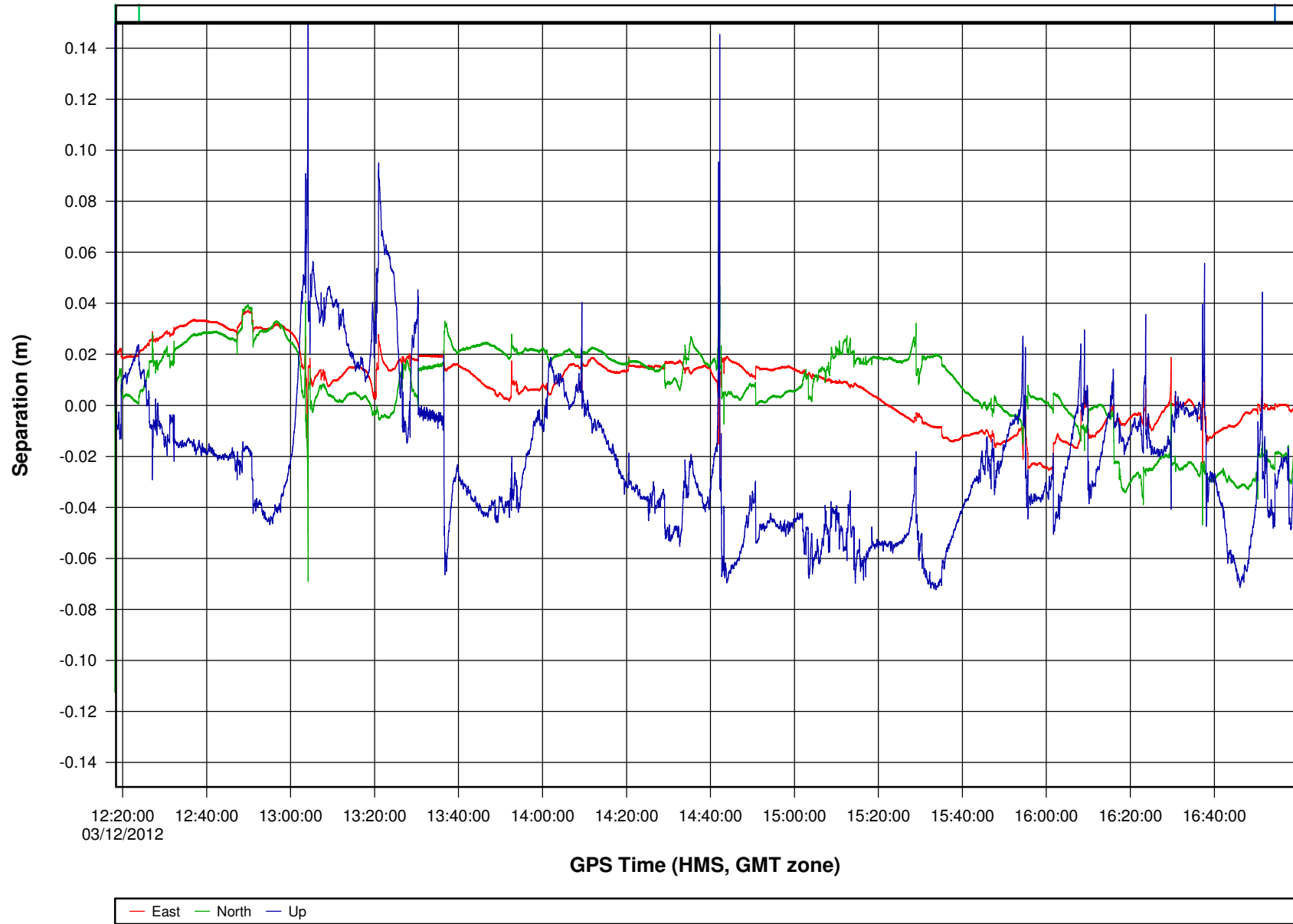
Quality Number Percentages:
Q 1: 98.0 %
Q 2: 2.0 %
Q 3: 0.0 %
Q 4: 0.0 %
Q 5: 0.0 %
Q 6: 0.0 %

Position Standard Deviation Percentages:
0.00 - 0.10 m: 95.9 %
0.10 - 0.30 m: 4.1 %
0.30 - 1.00 m: 0.0 %
1.00 - 5.00 m: 0.0 %
5.00 m + over: 0.0 %

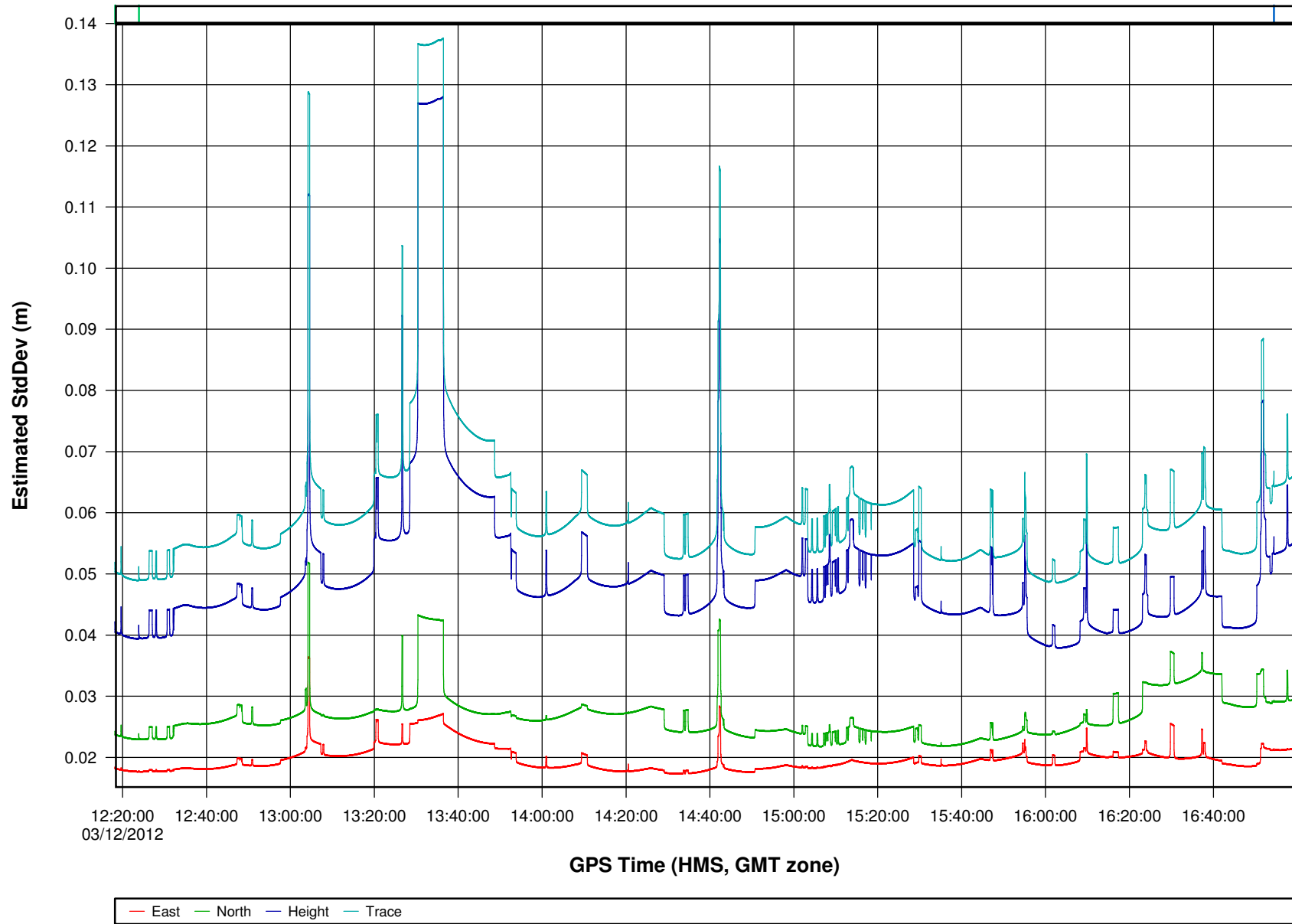
Percentages of epochs with DD_DOP over 10.00:
DOP over Tol: 3.4 %

Baseline Distances:
Maximum: 46.329 (km)
Minimum: 1.029 (km)
Average: 23.437 (km)
First Epoch: 37.147 (km)
Last Epoch: 37.173 (km)

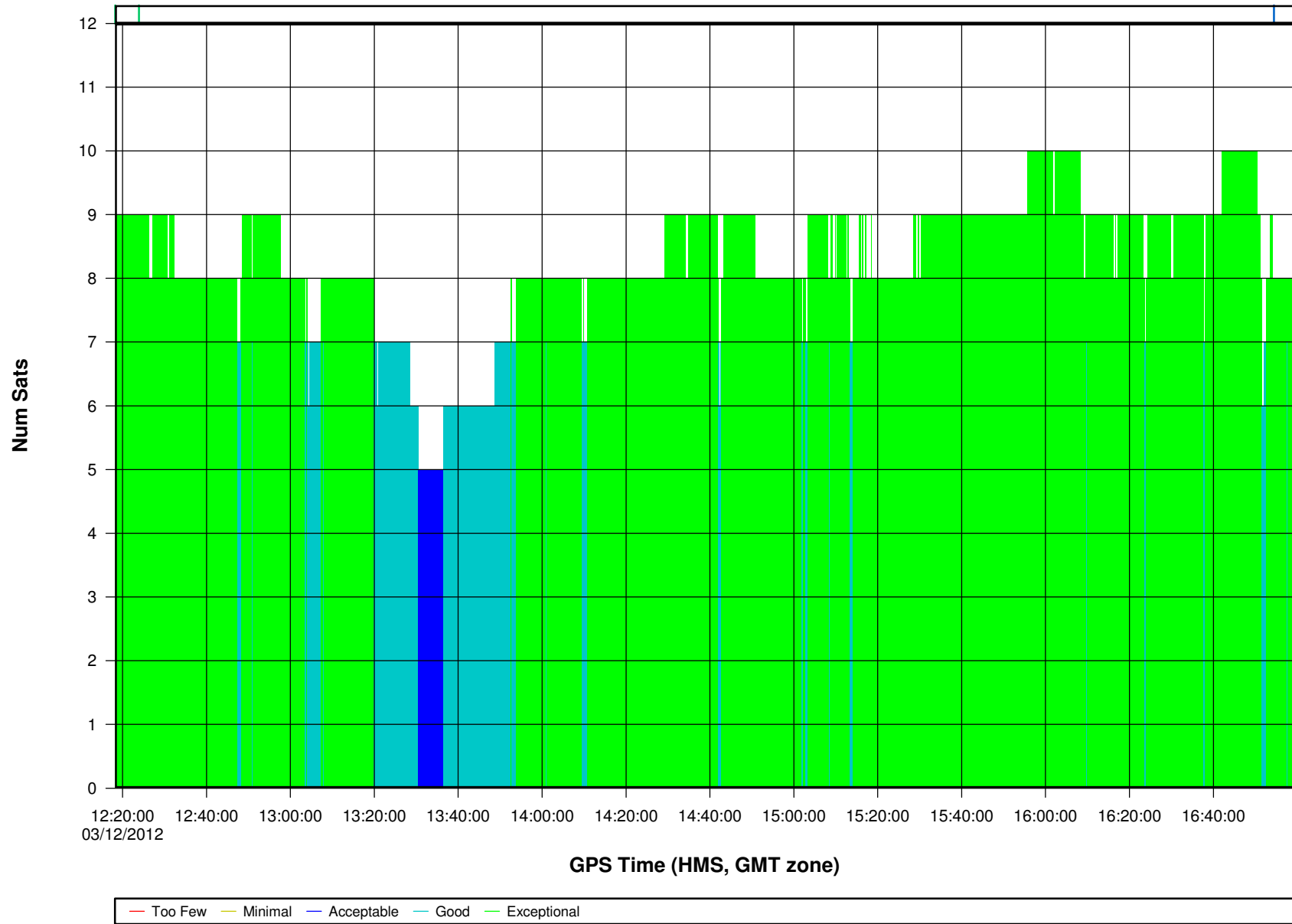
o112072a [Combined] - Forward/Reverse or Combined Separation Plot



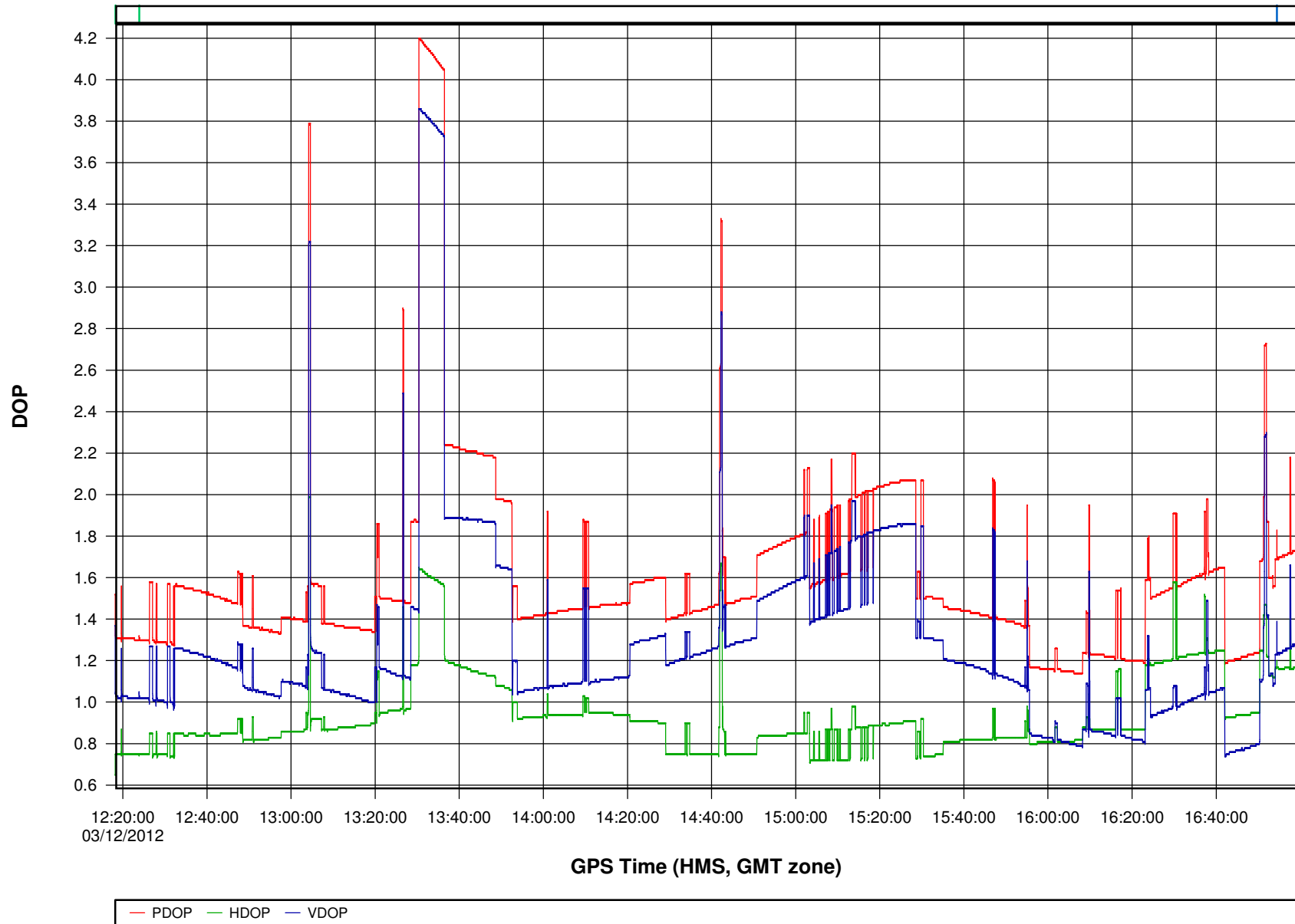
o112072a [Combined] - Estimated Position Accuracy Plot



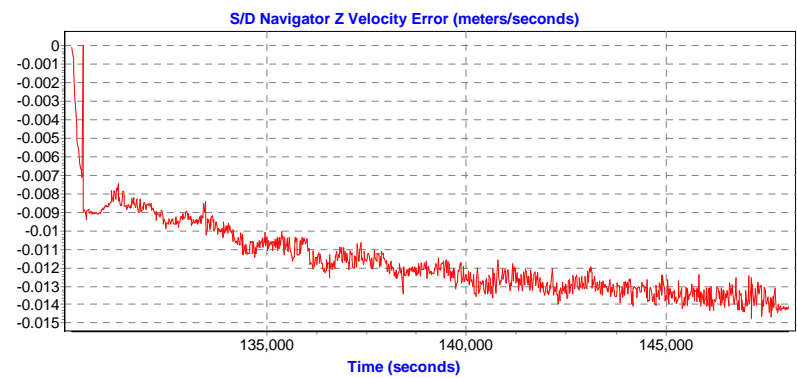
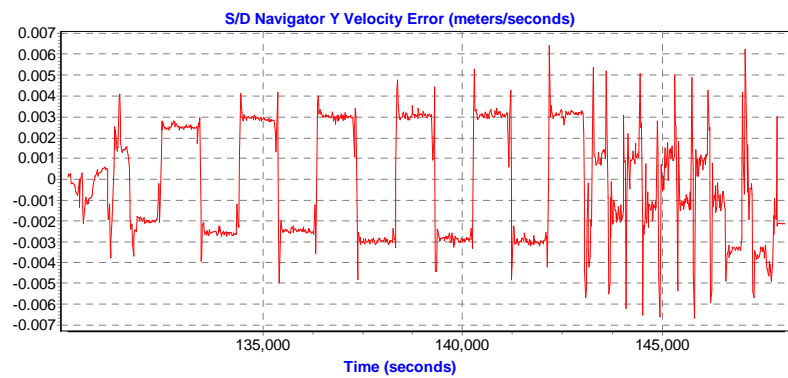
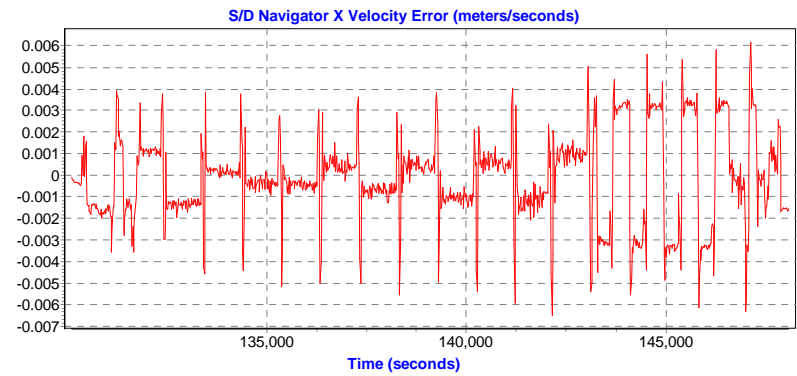
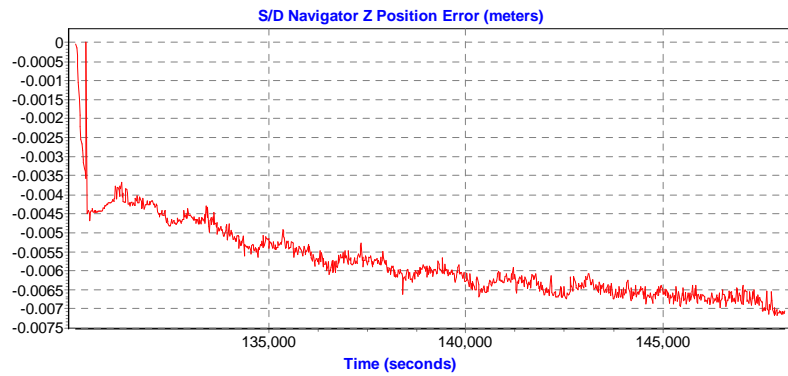
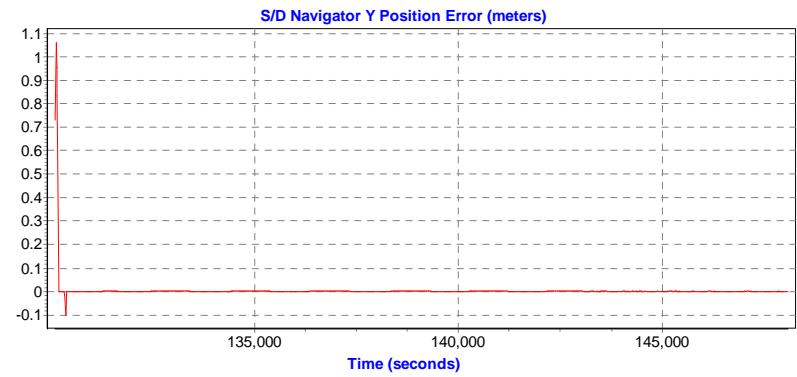
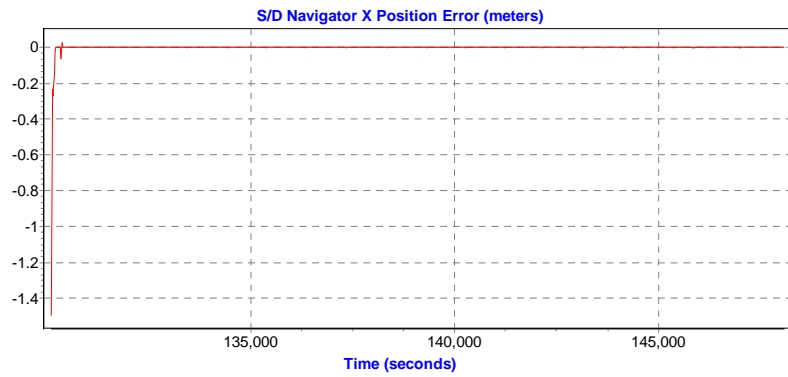
o112072a [Combined] - Number of Satellites Bar Plot

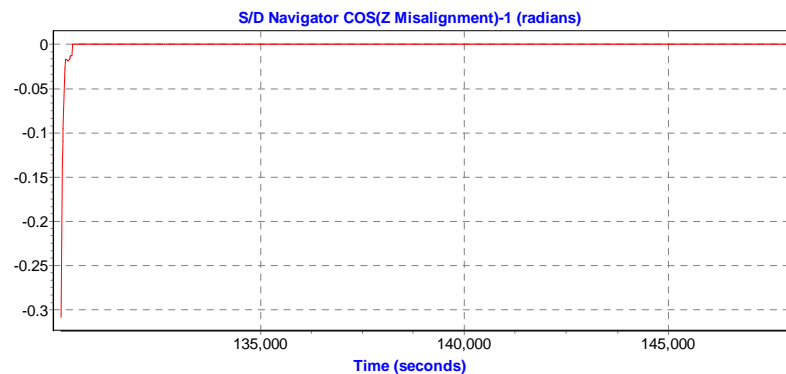
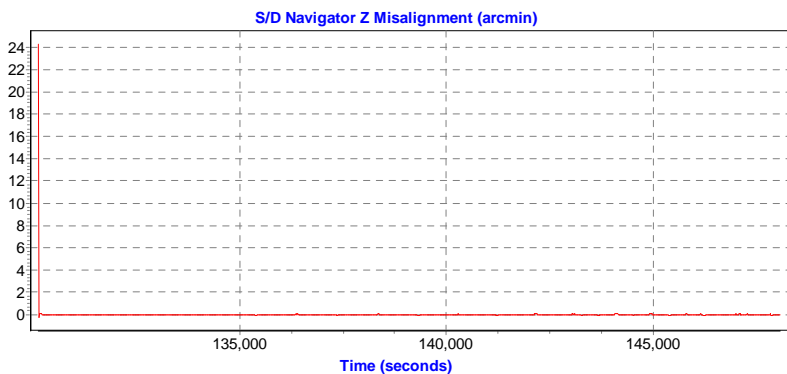
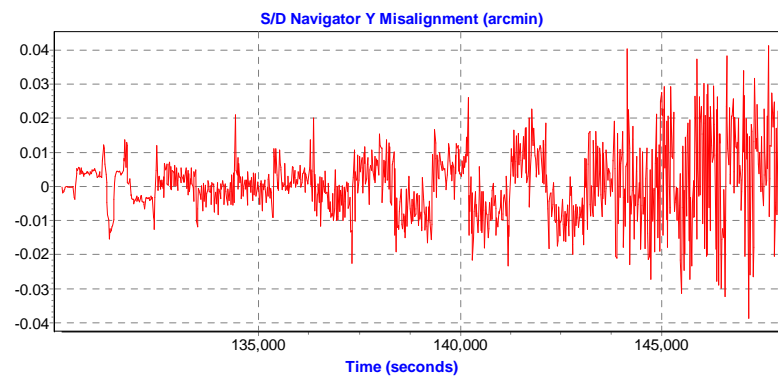
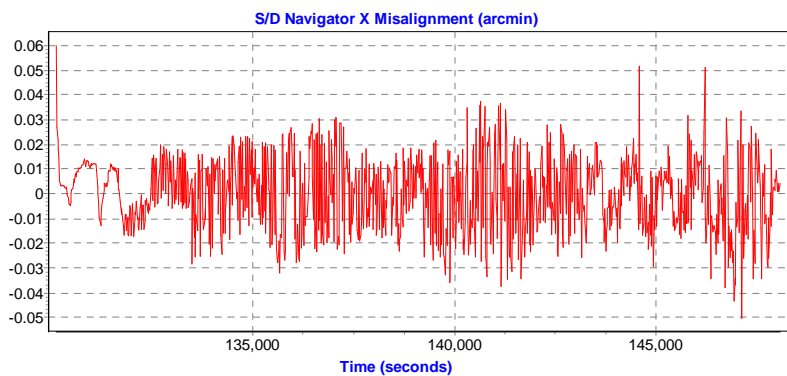


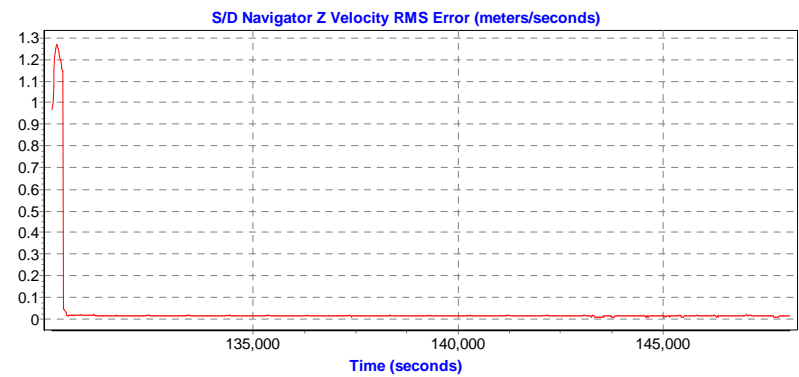
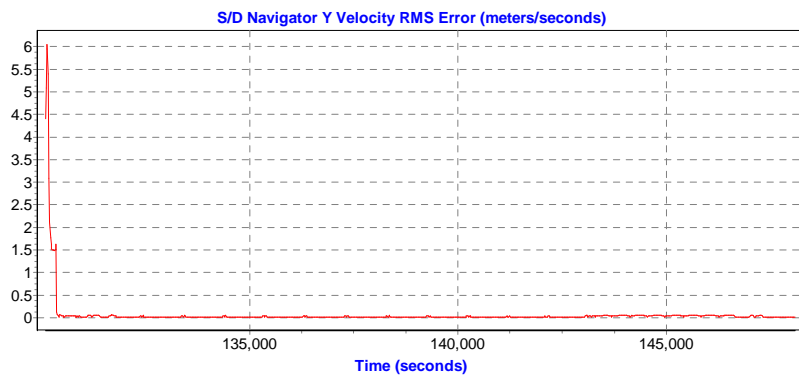
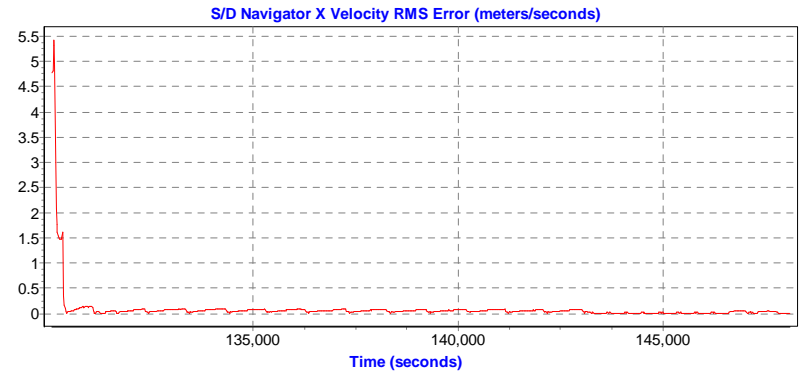
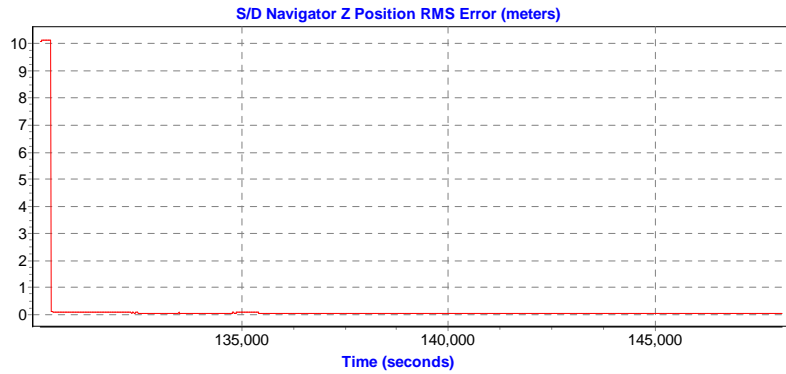
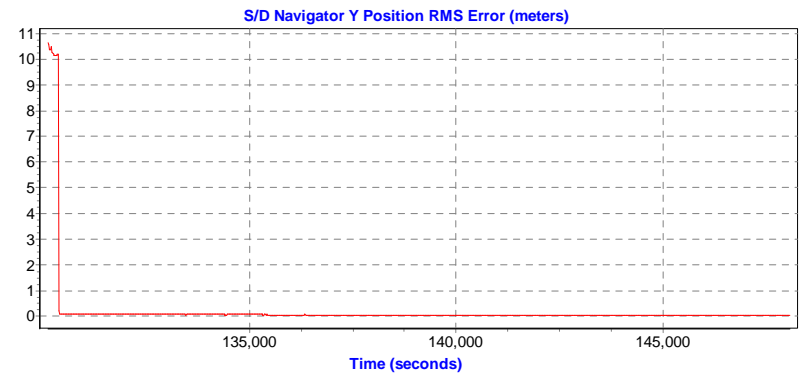
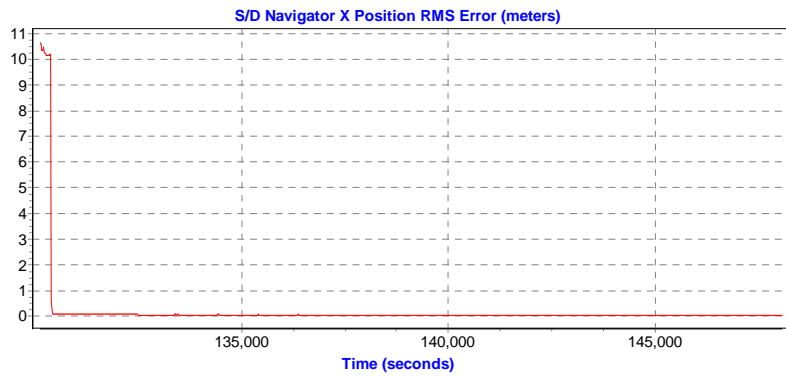
o112072a [Combined] - PDOP, HDOP, VDOP Plots

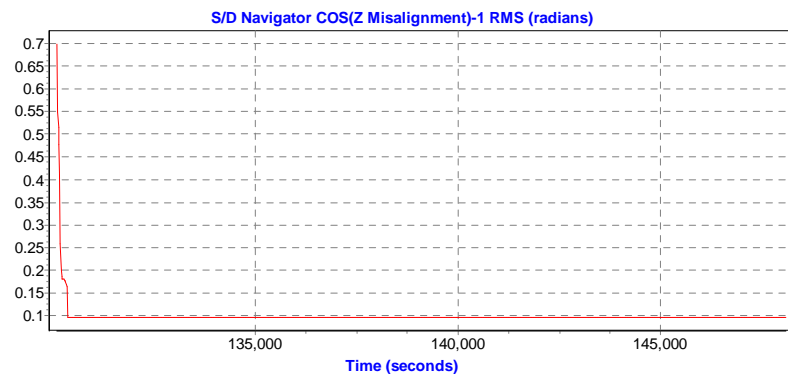
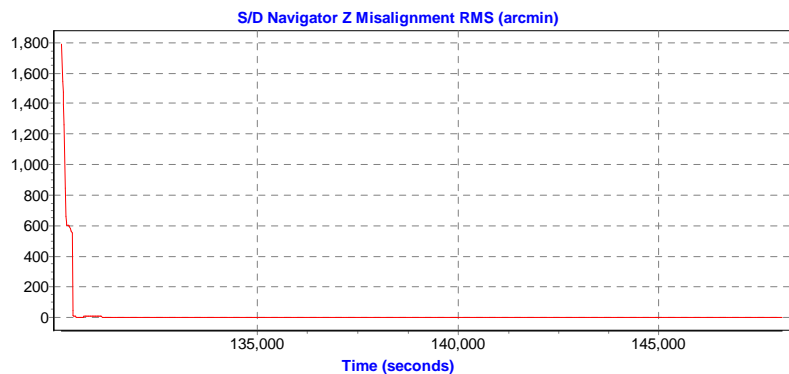
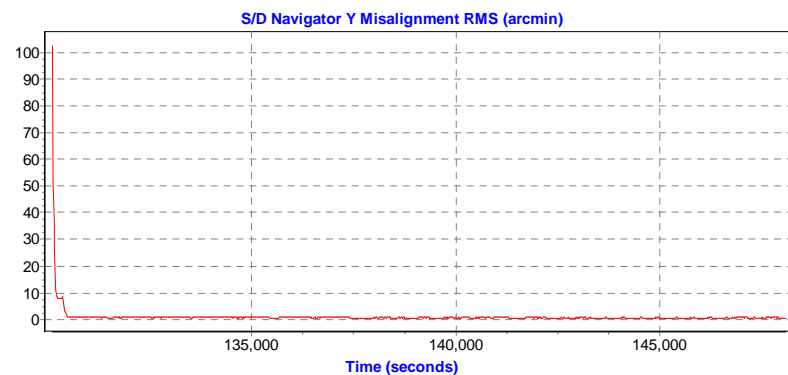
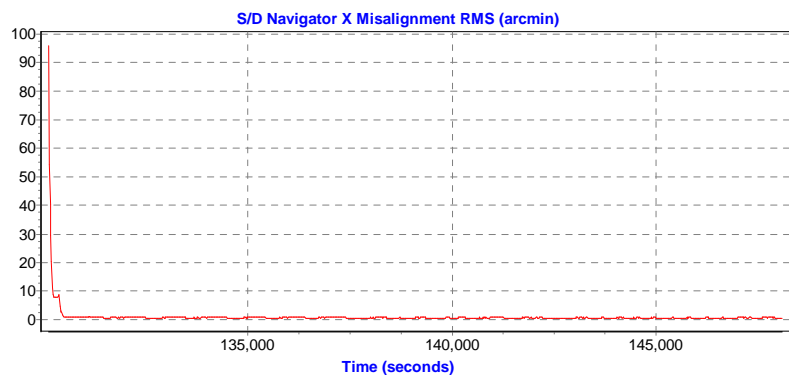


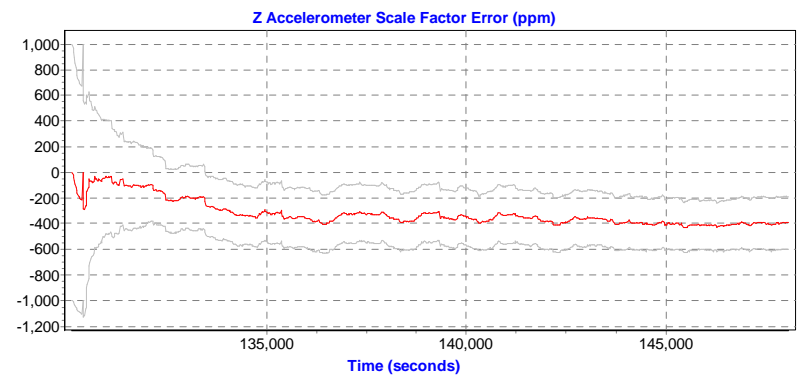
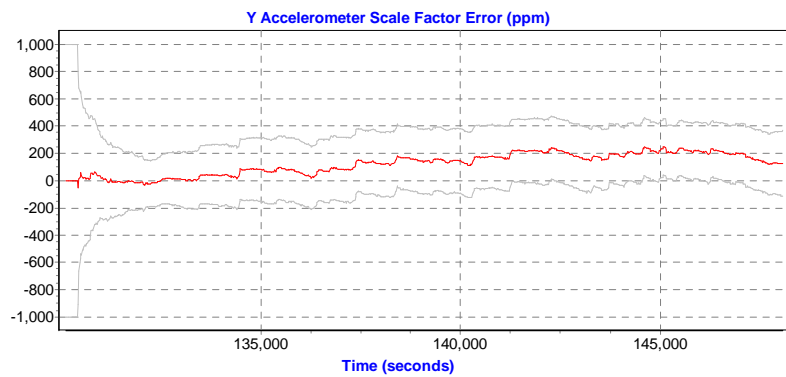
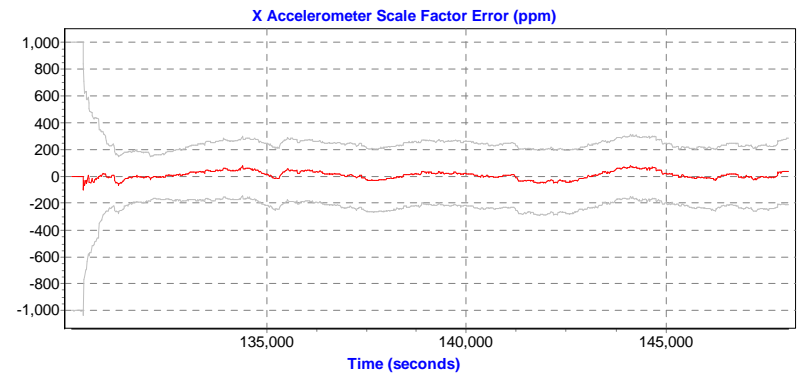
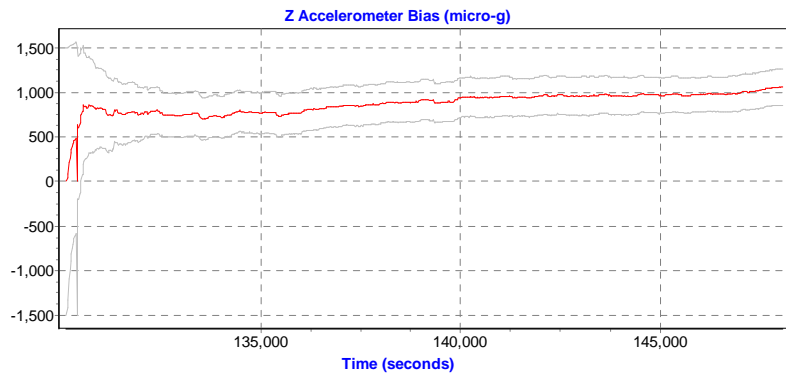
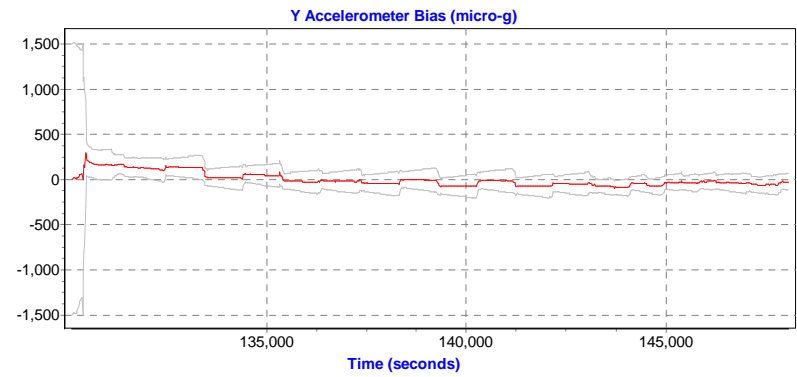
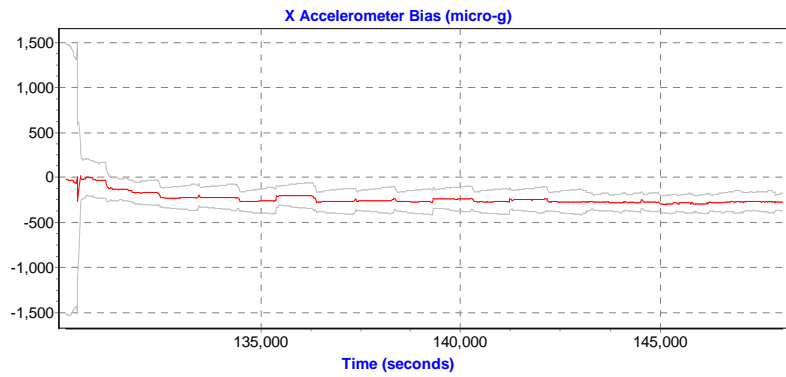
Estimated Errors and RMS

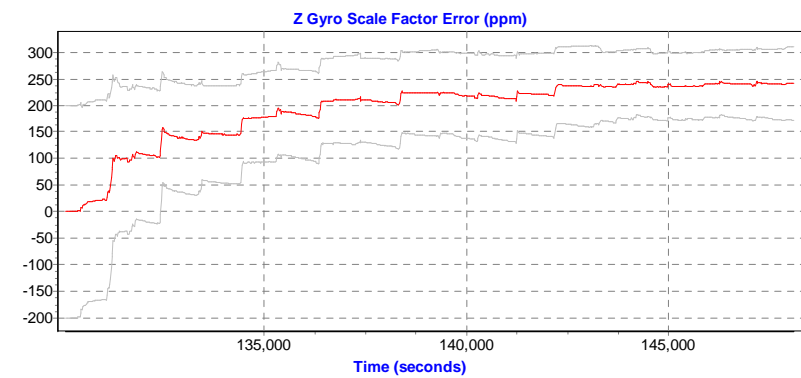
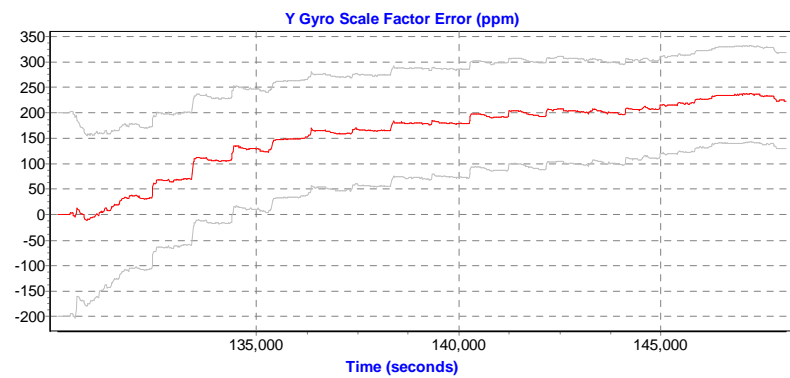
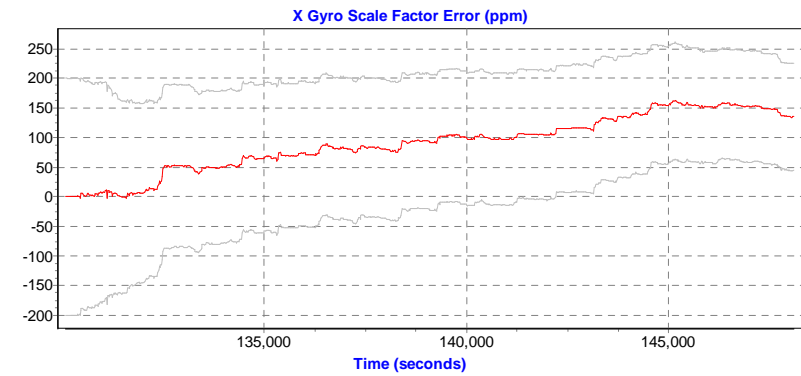
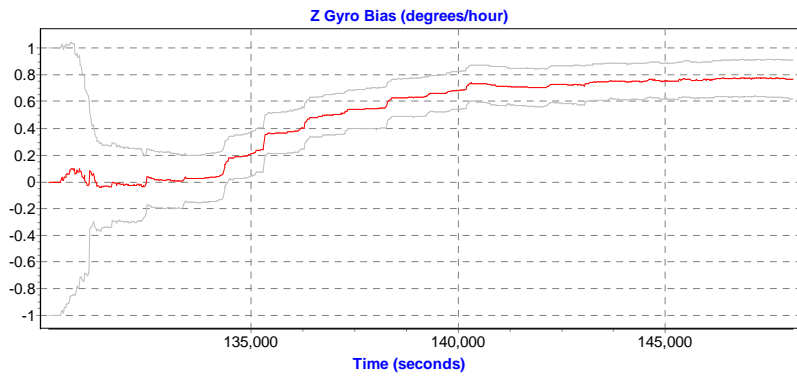
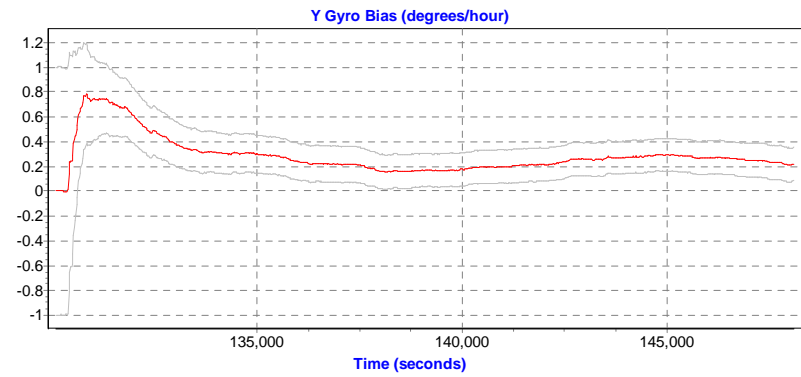
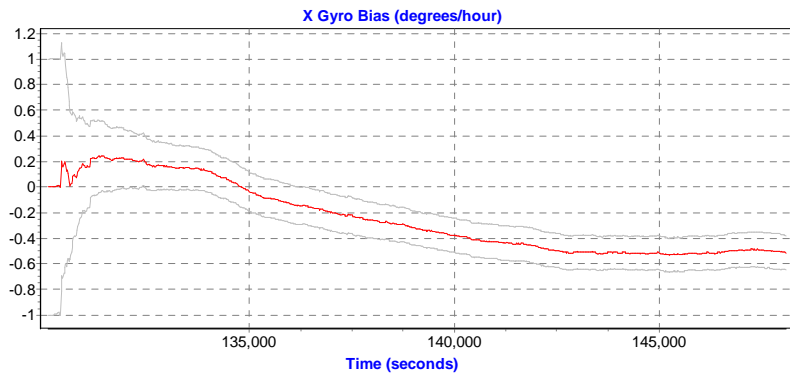


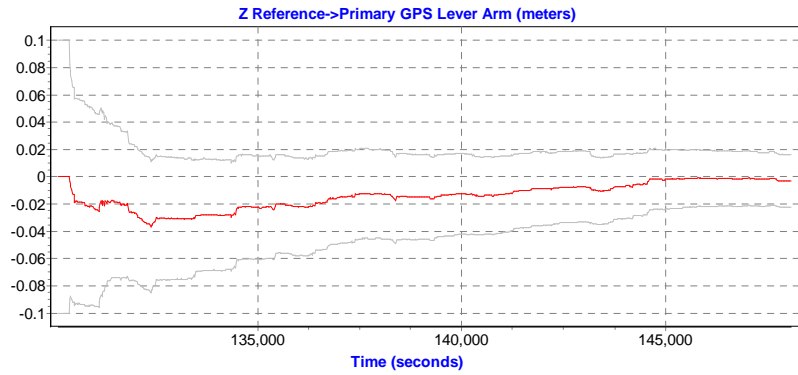
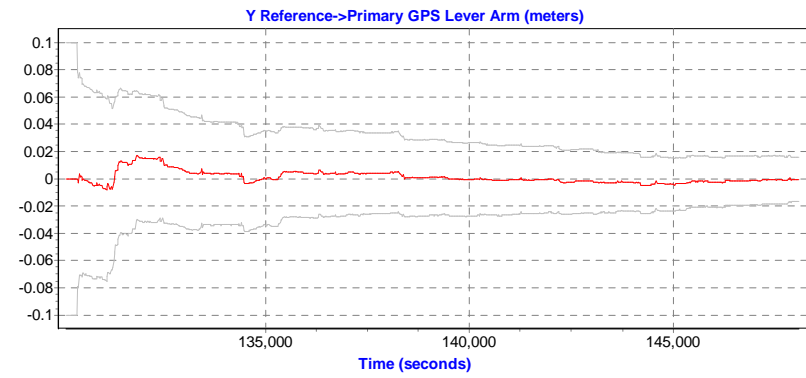
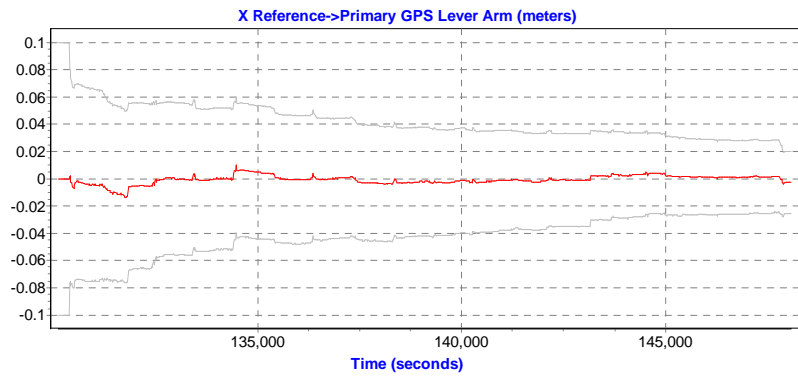






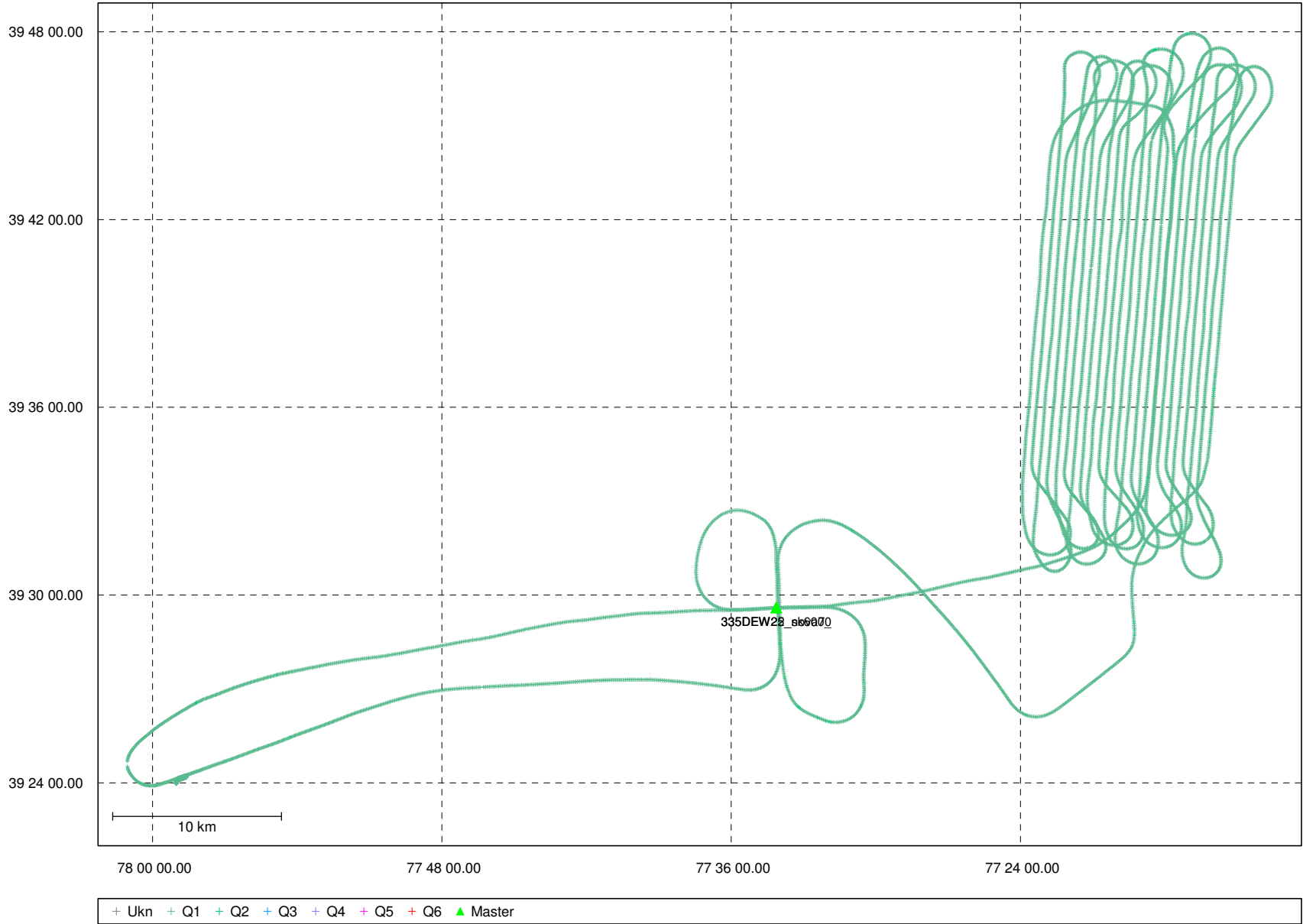






Combined - Map Run (8)

Geographic, DMS



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: I:\o112072b\3_Processed\GPS\o112072b.gnv

Solution Type: Combined Fwd/Rev

Number of Epochs:
Total in GPB file: 137450
No processed position: 123726
Missing Fwd or Rev: 4
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:
L1 Phase: 0.0179 (m)
C/A Code: 0.82 (m)
L1 Doppler: 0.036 (m/s)

Fwd/Rev Separation RMS Values:
East: 0.063 (m)
North: 0.077 (m)
Height: 0.124 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (12371 occurrences):
East: 0.019 (m)
North: 0.009 (m)
Height: 0.027 (m)

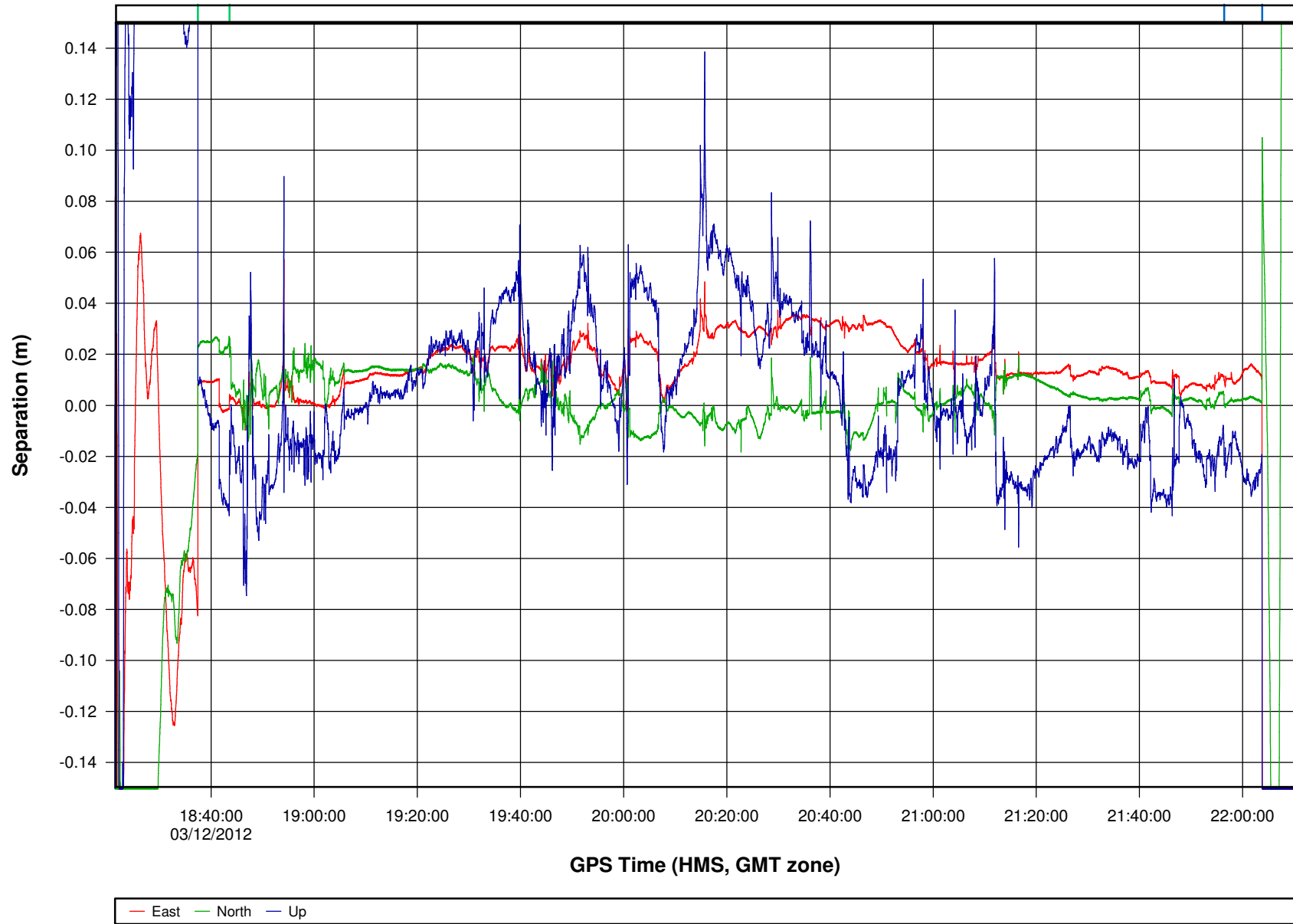
Quality Number Percentages:
Q 1: 99.3 %
Q 2: 0.7 %
Q 3: 0.0 %
Q 4: 0.0 %
Q 5: 0.0 %
Q 6: 0.0 %

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 %

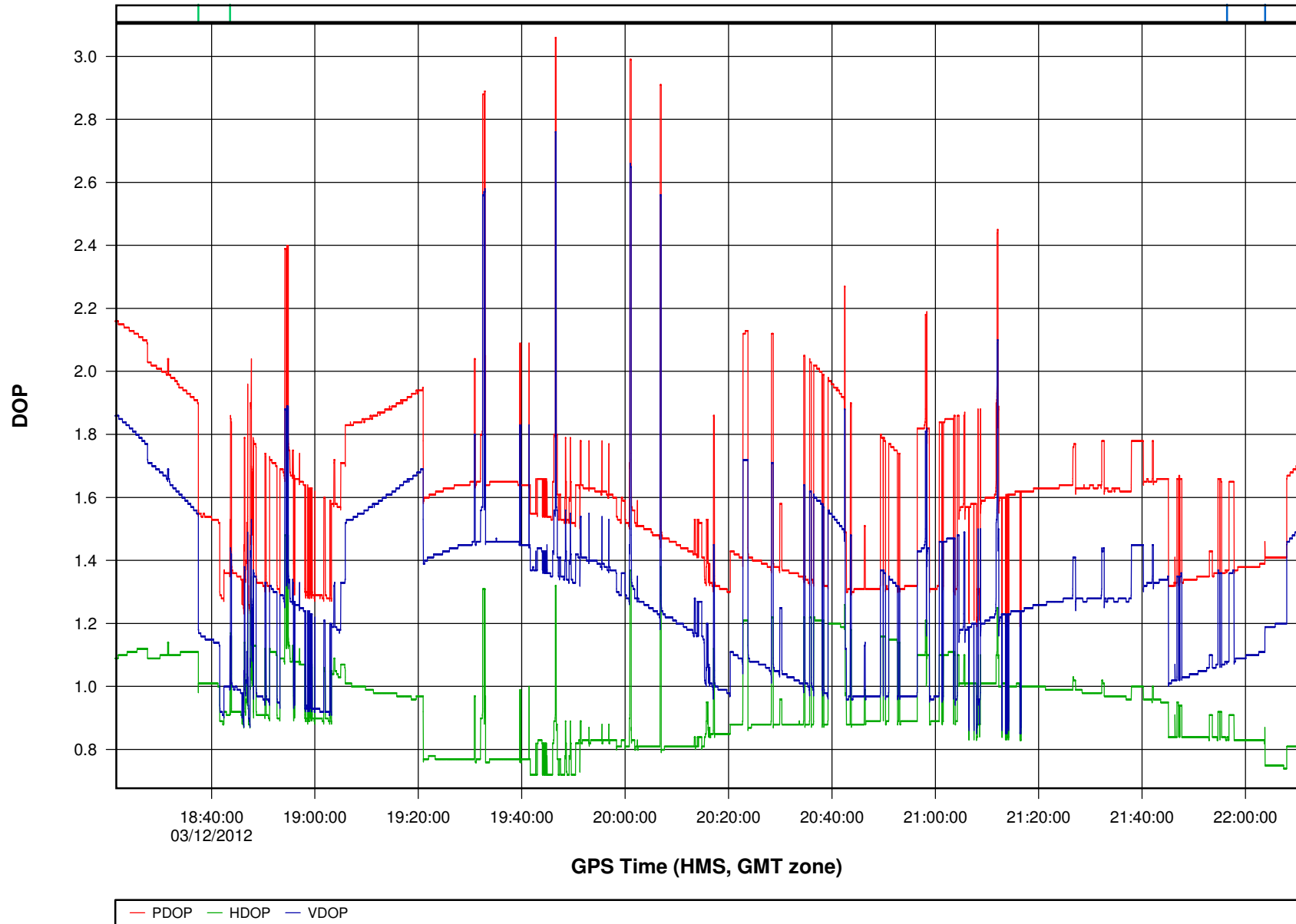
Percentages of epochs with DD_DOP over 10.00:
DOP over Tol: 0.0 %

Baseline Distances:
Maximum: 42.993 (km)
Minimum: 1.011 (km)
Average: 26.714 (km)
First Epoch: 37.173 (km)
Last Epoch: 37.183 (km)

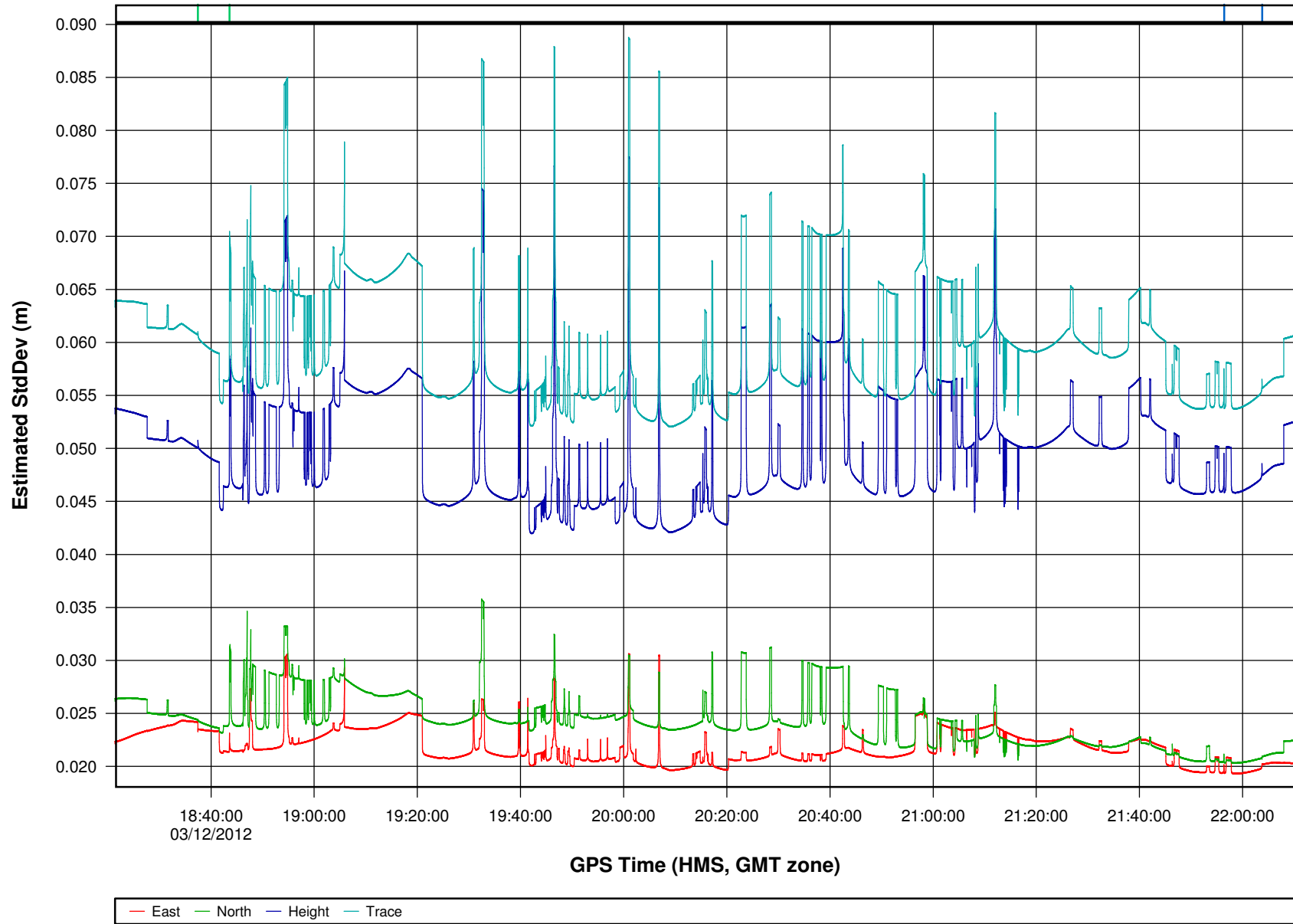
o112072b [Combined] - Forward/Reverse or Combined Separation Plot



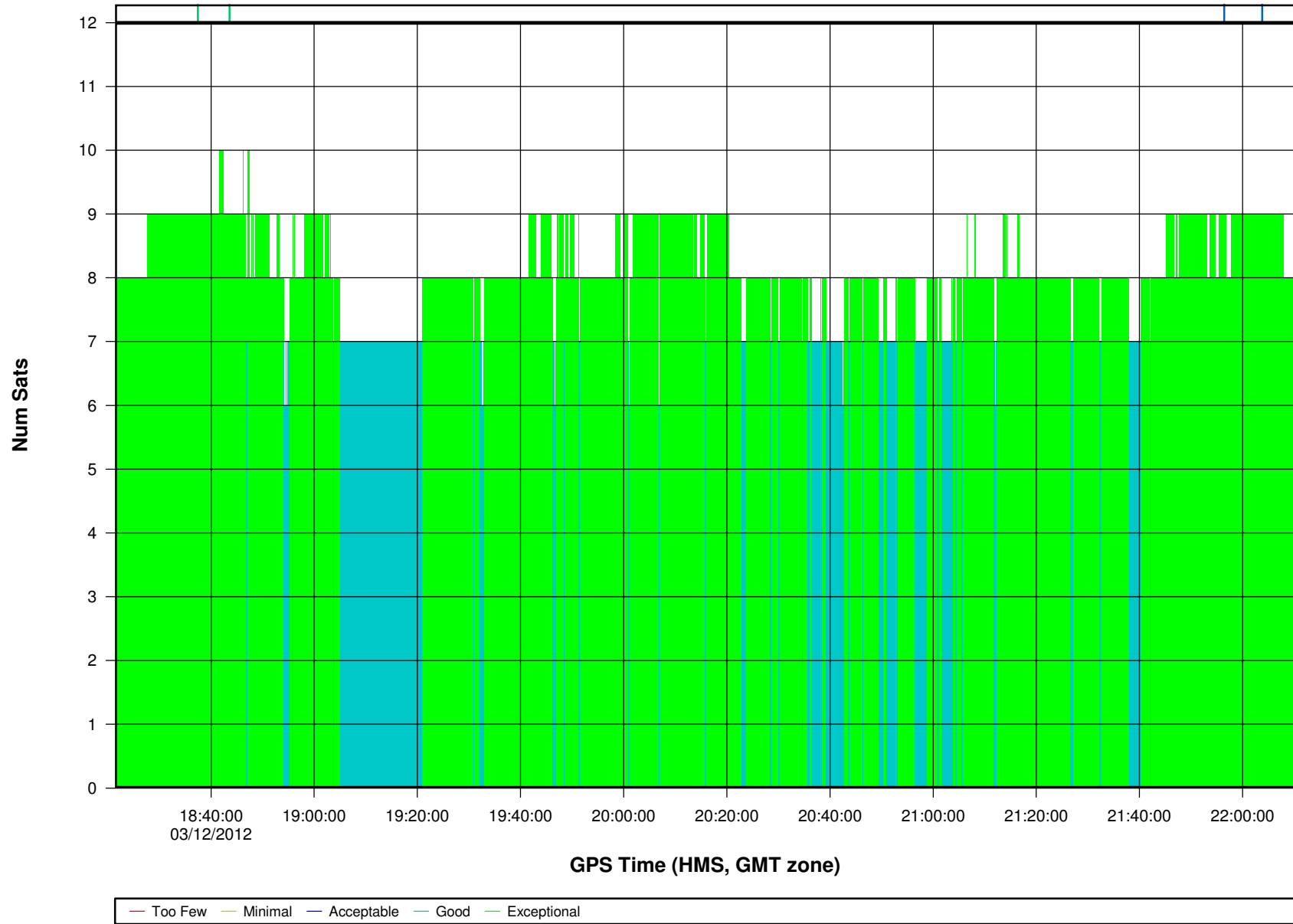
o112072b [Combined] - PDOP, HDOP, VDOP Plots



o112072b [Combined] - Estimated Position Accuracy Plot



o112072b [Combined] - Number of Satellites Bar Plot

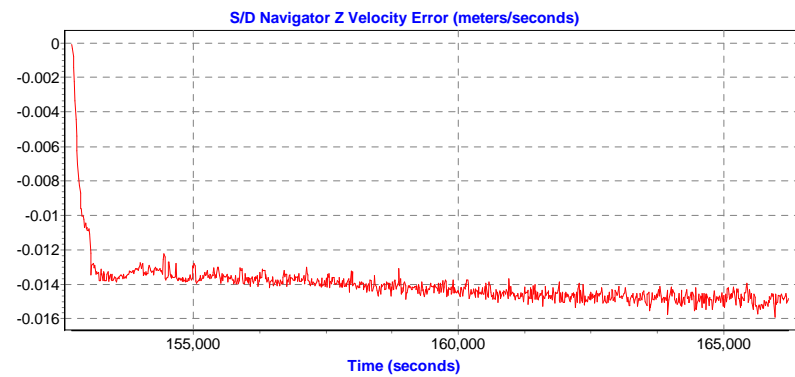
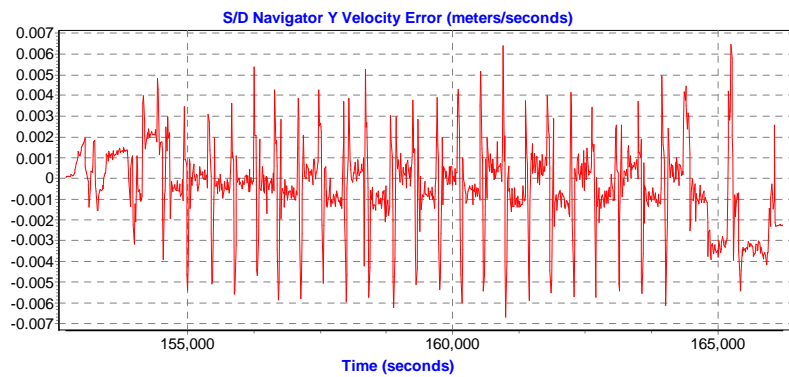
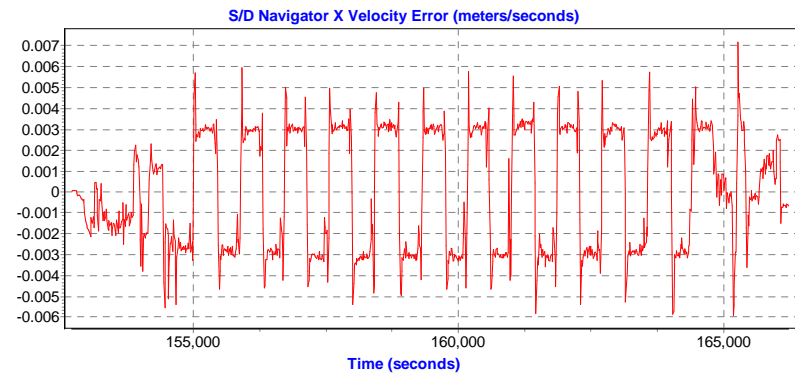
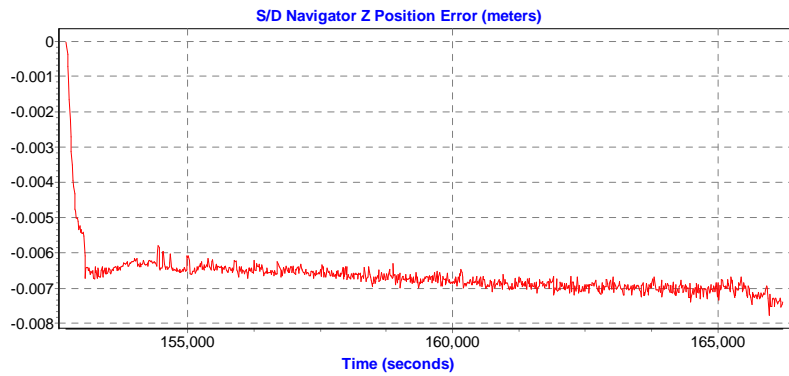
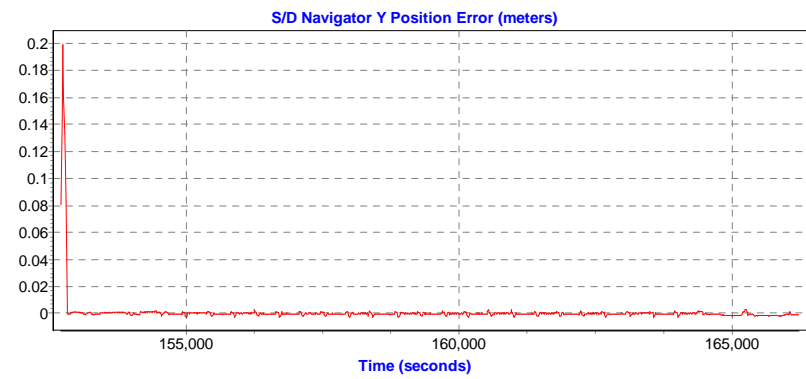
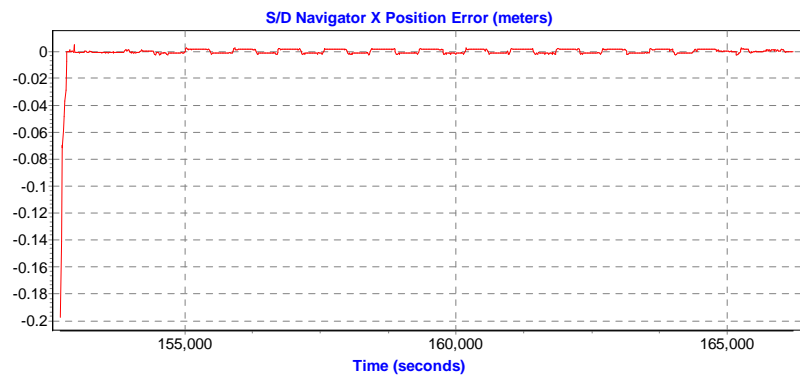


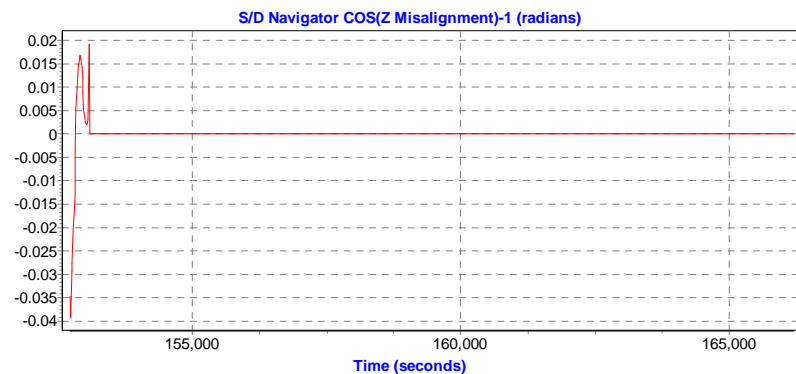
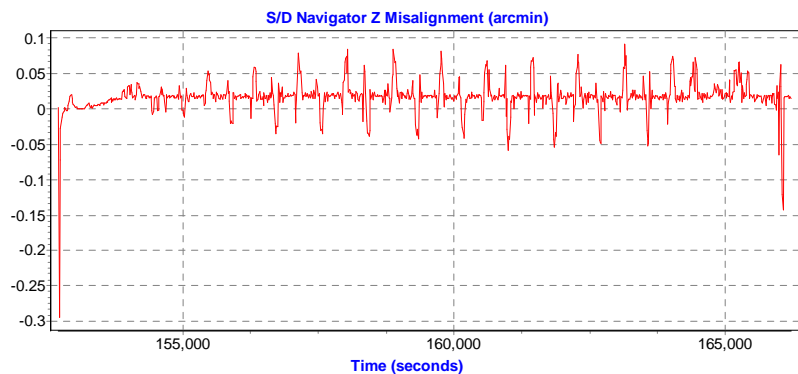
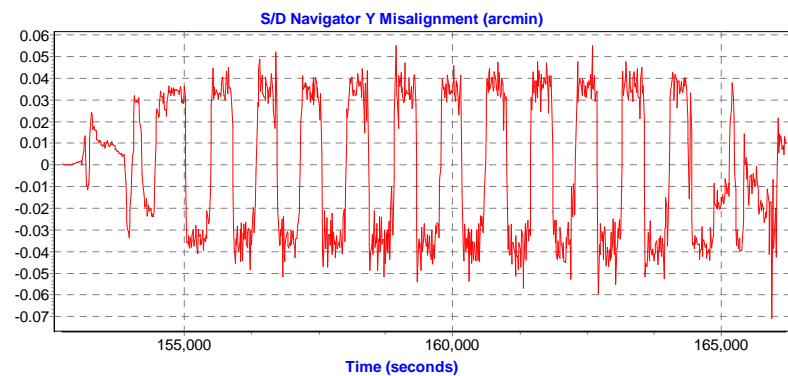
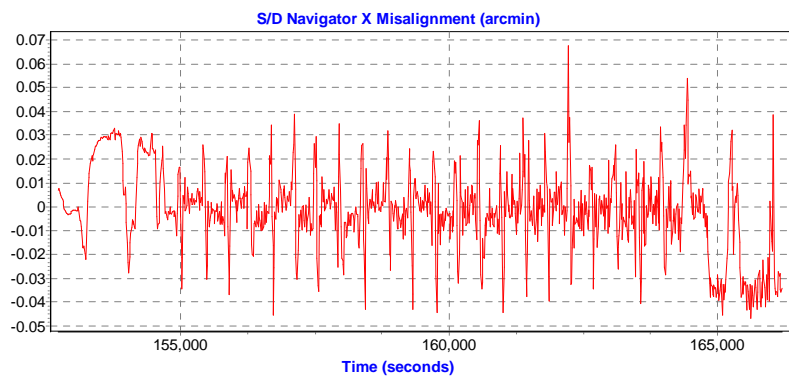
Estimated Errors and RMS

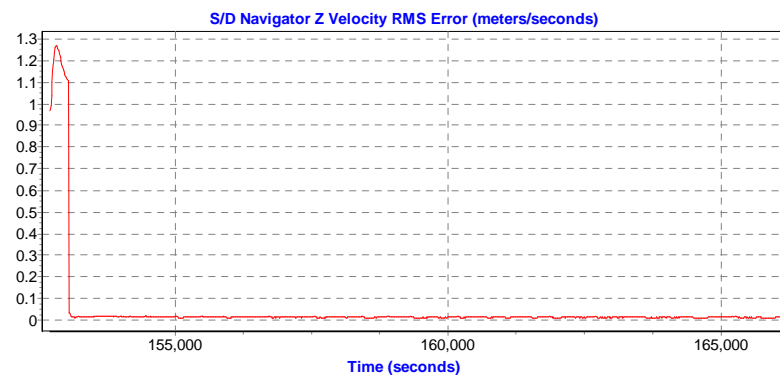
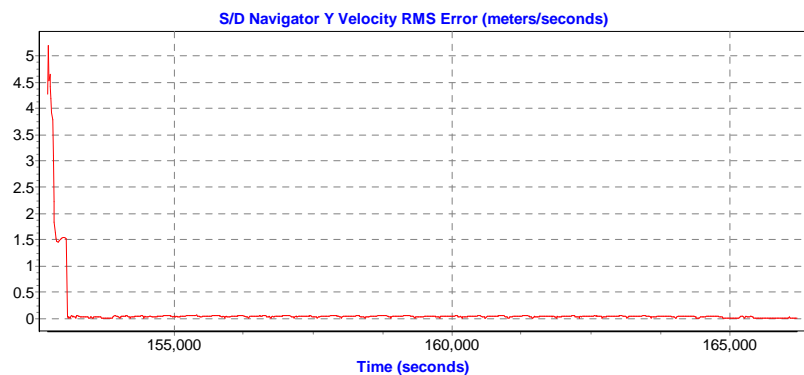
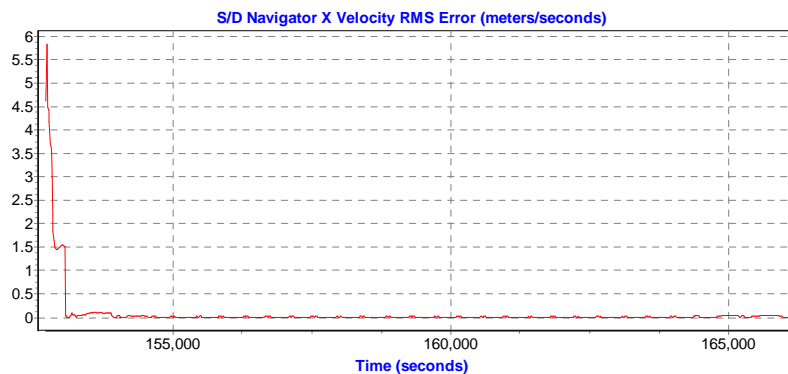
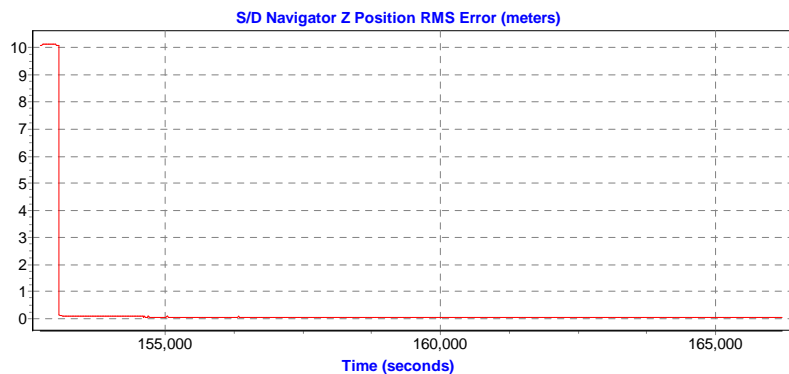
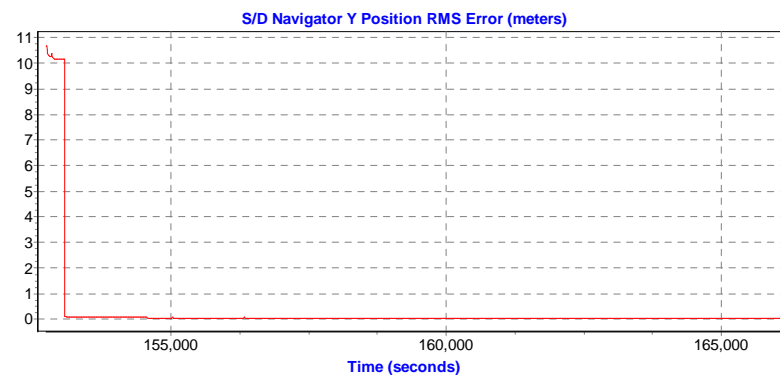
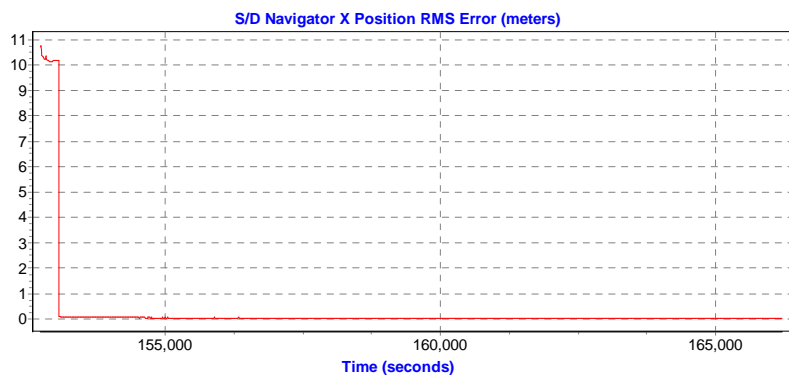
POSPac Version 4.3

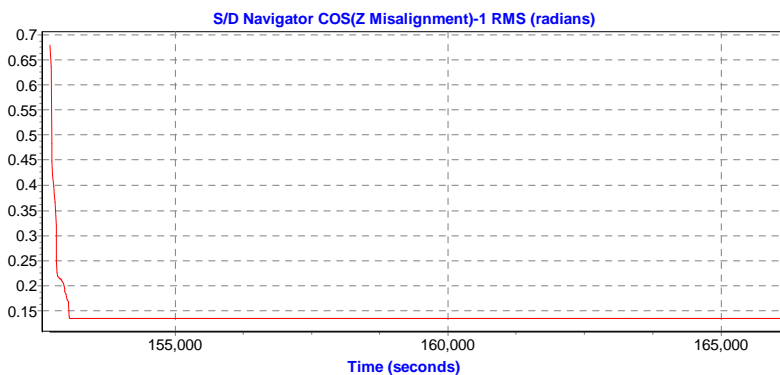
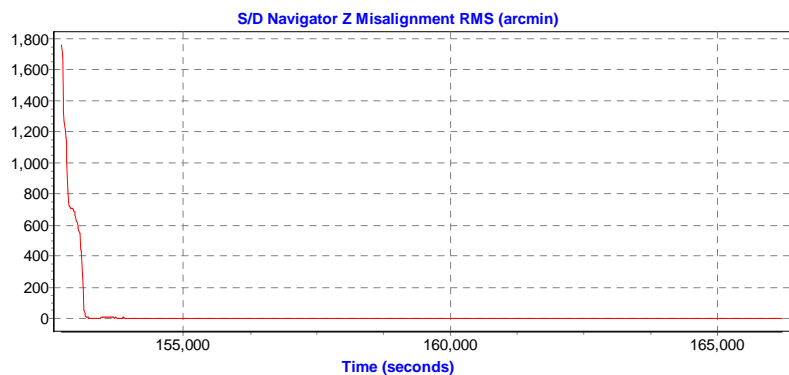
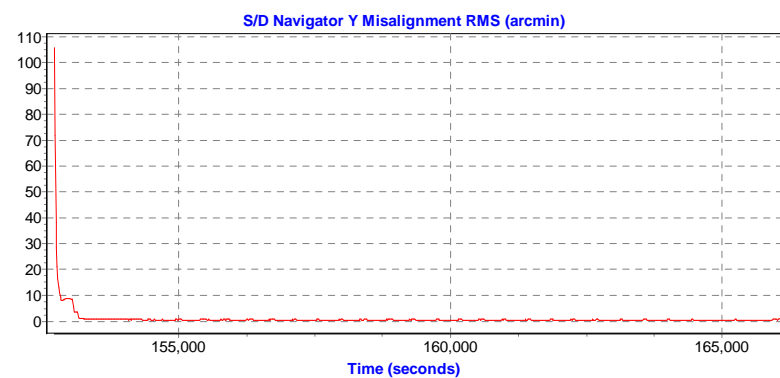
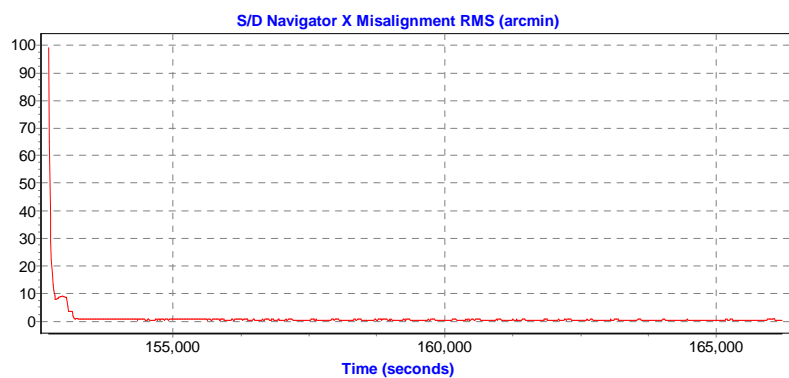
- 1 -

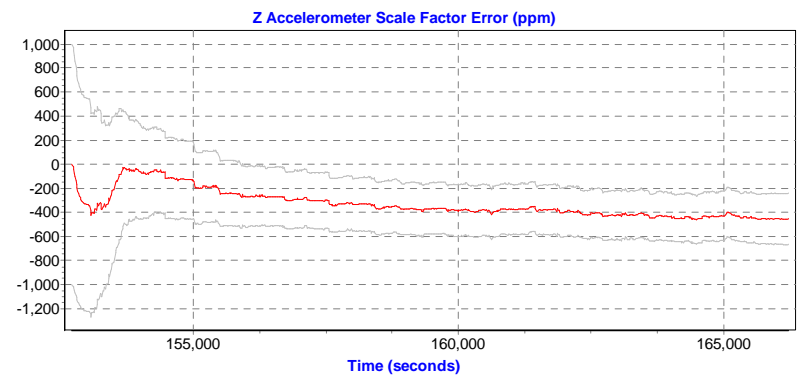
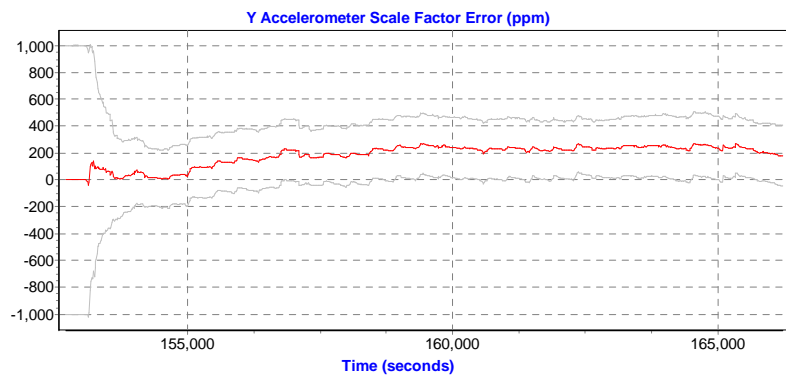
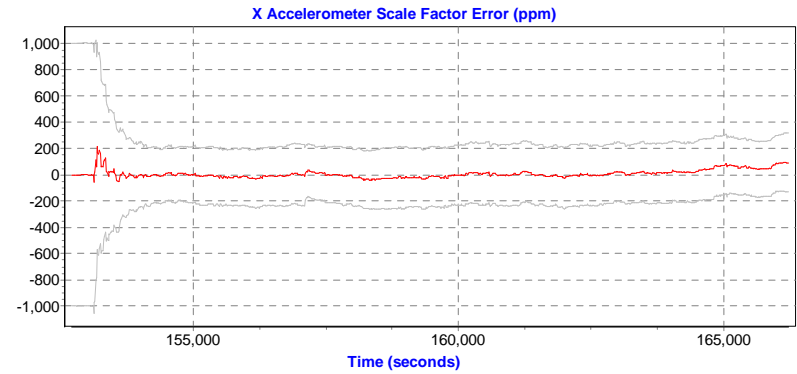
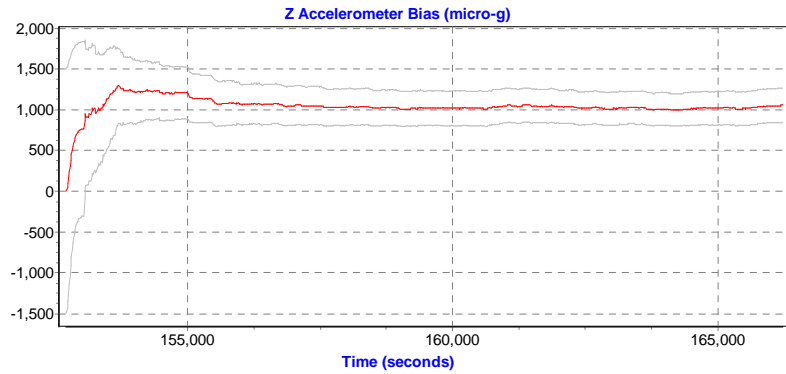
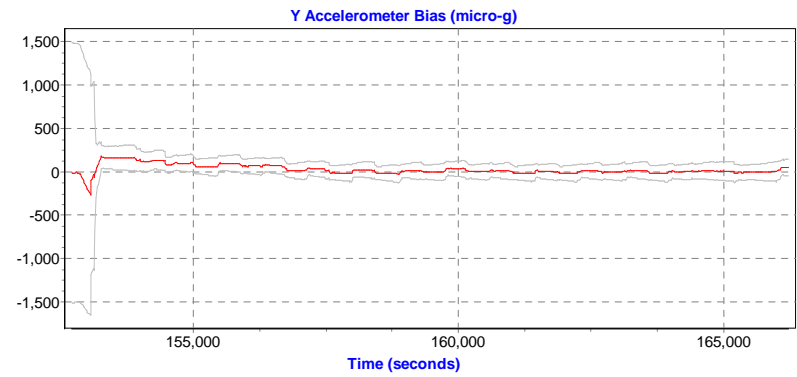
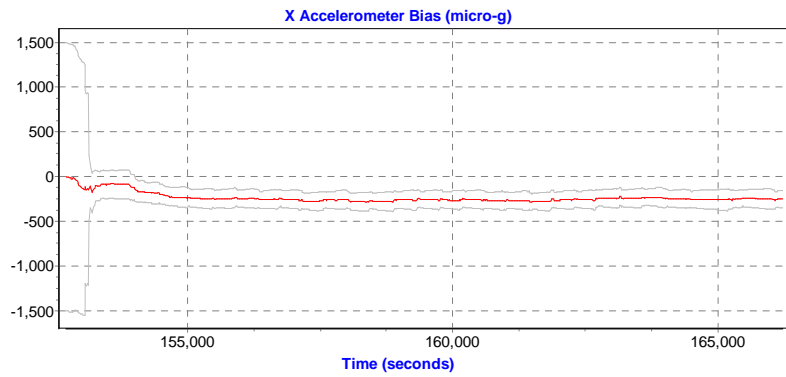
3/13/2012 - 2:02:12 PM

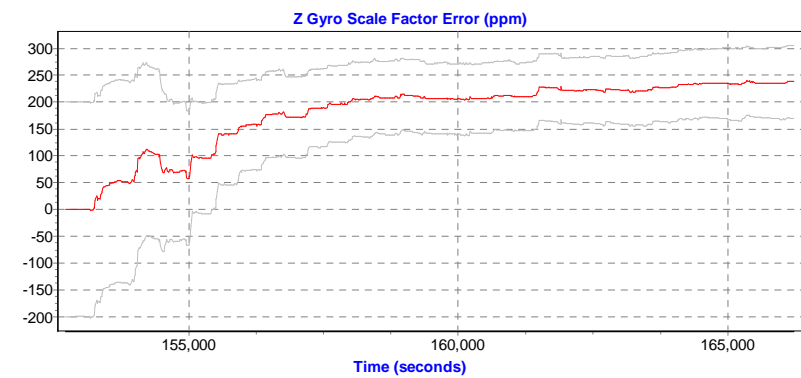
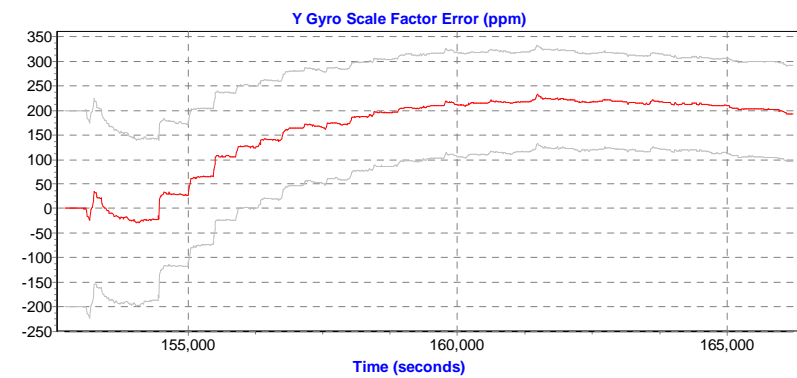
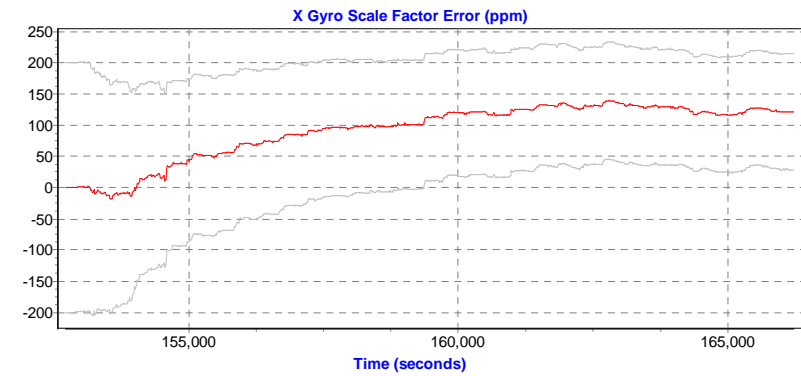
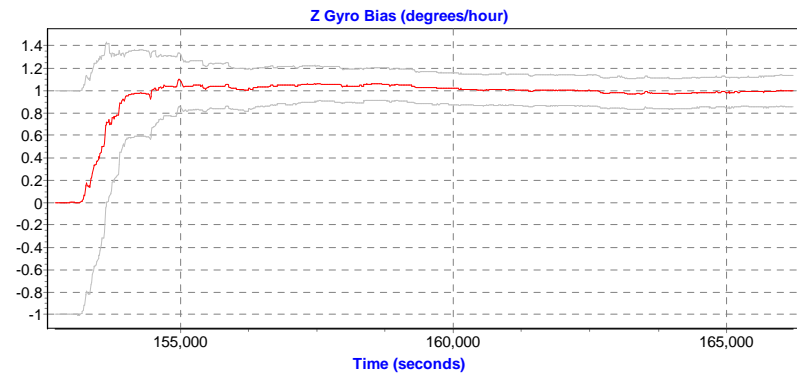
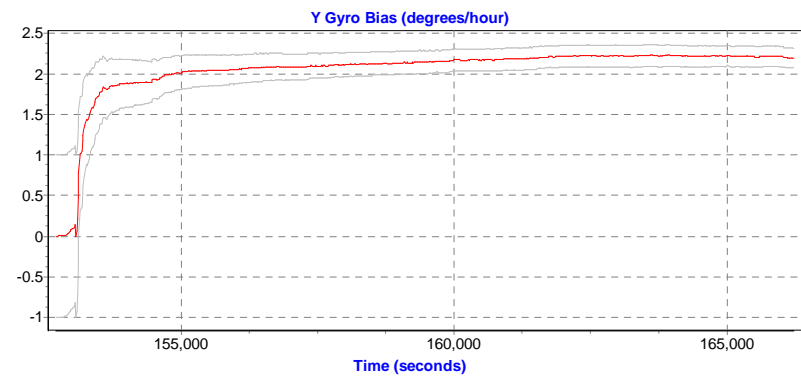
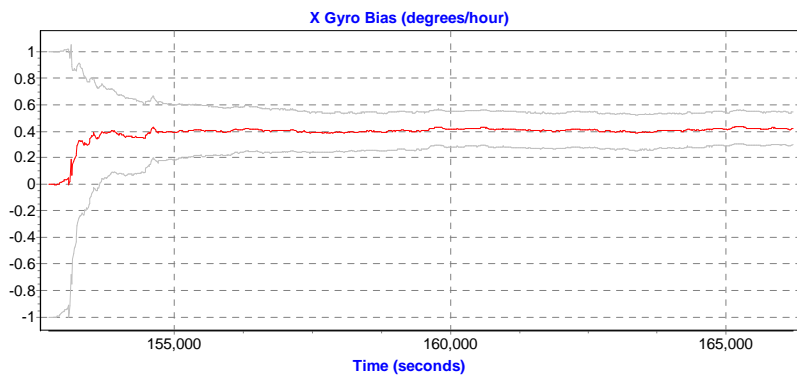


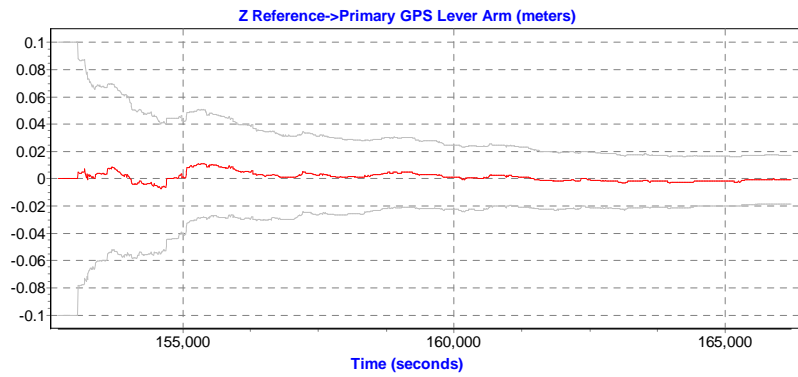
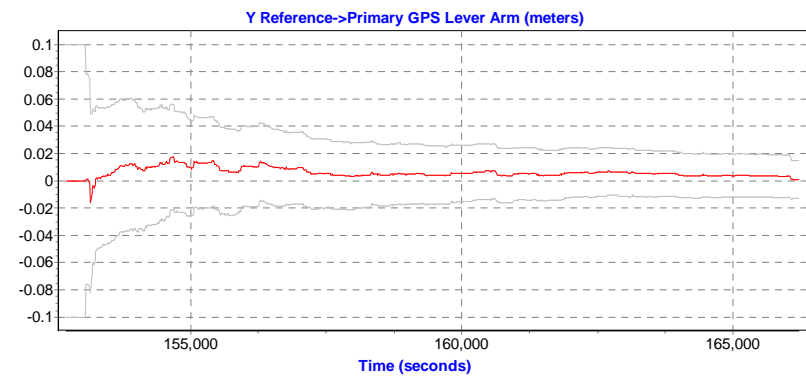
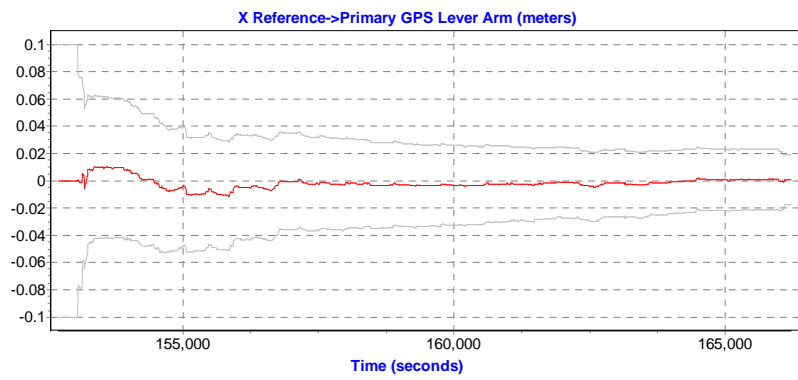






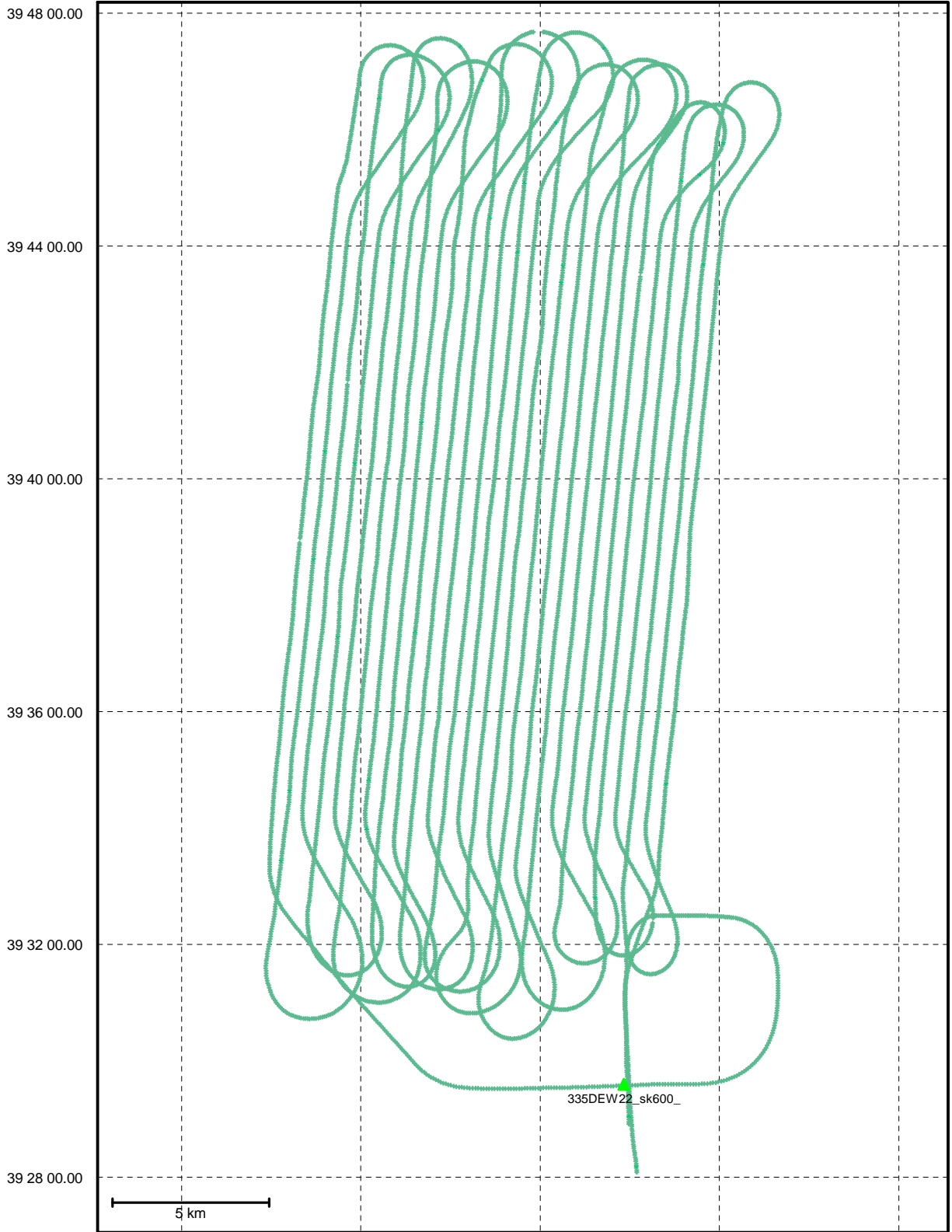






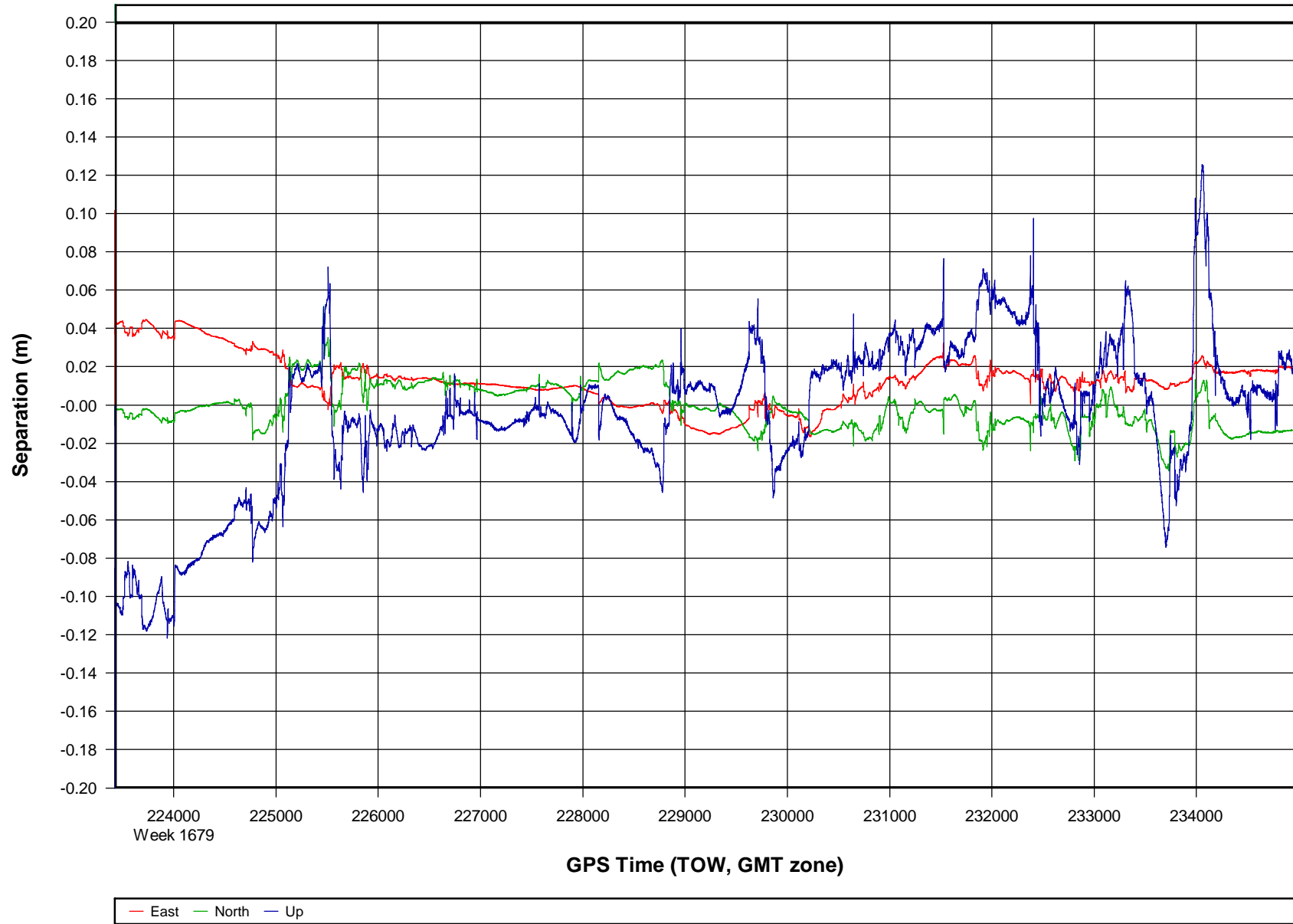
Combined - Map Run (16)

Geographic, DMS

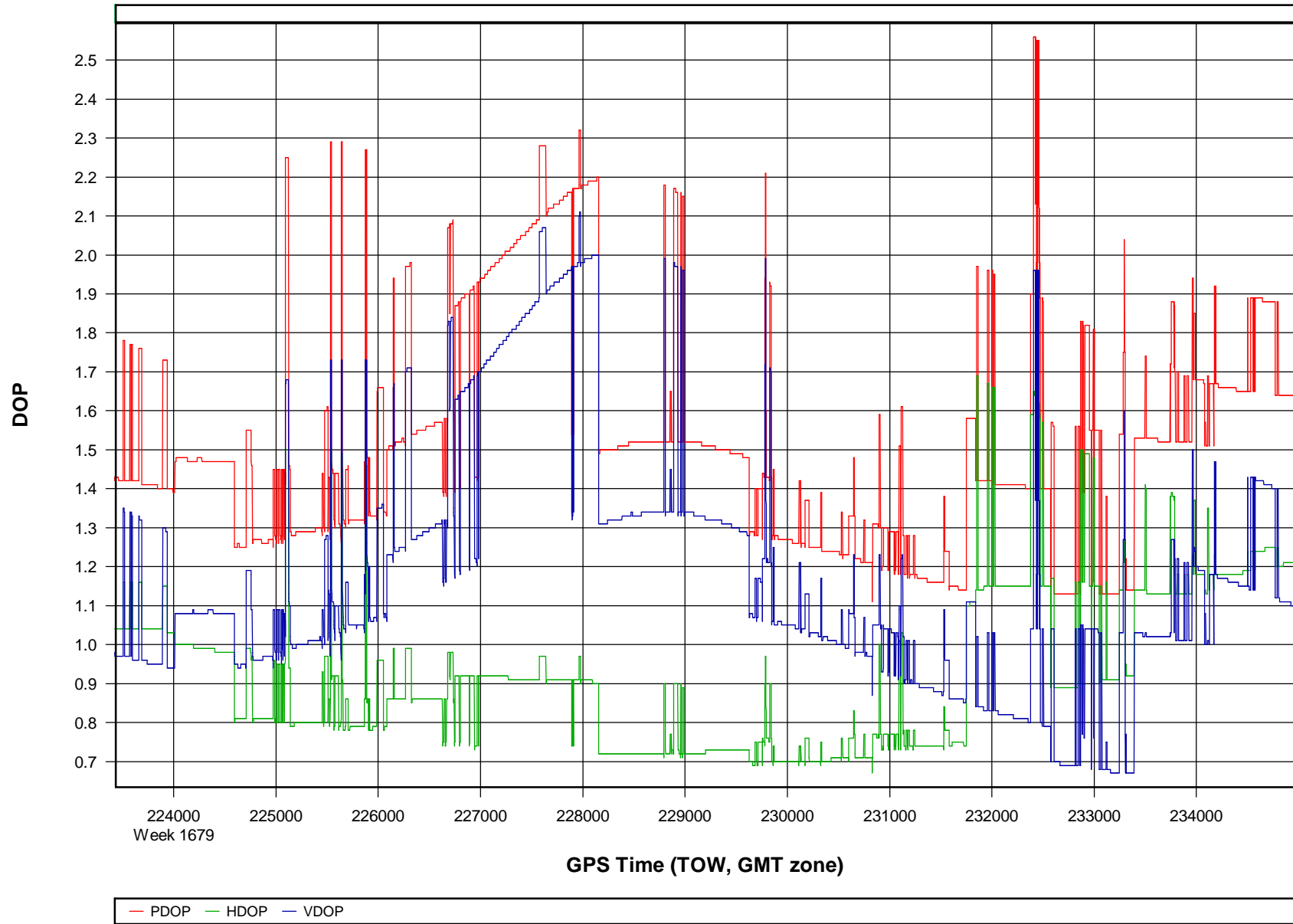


+ Ukn	+ Q1	+ Q2	+ Q3	+ Q4	+ Q5	+ Q6	▲ Master
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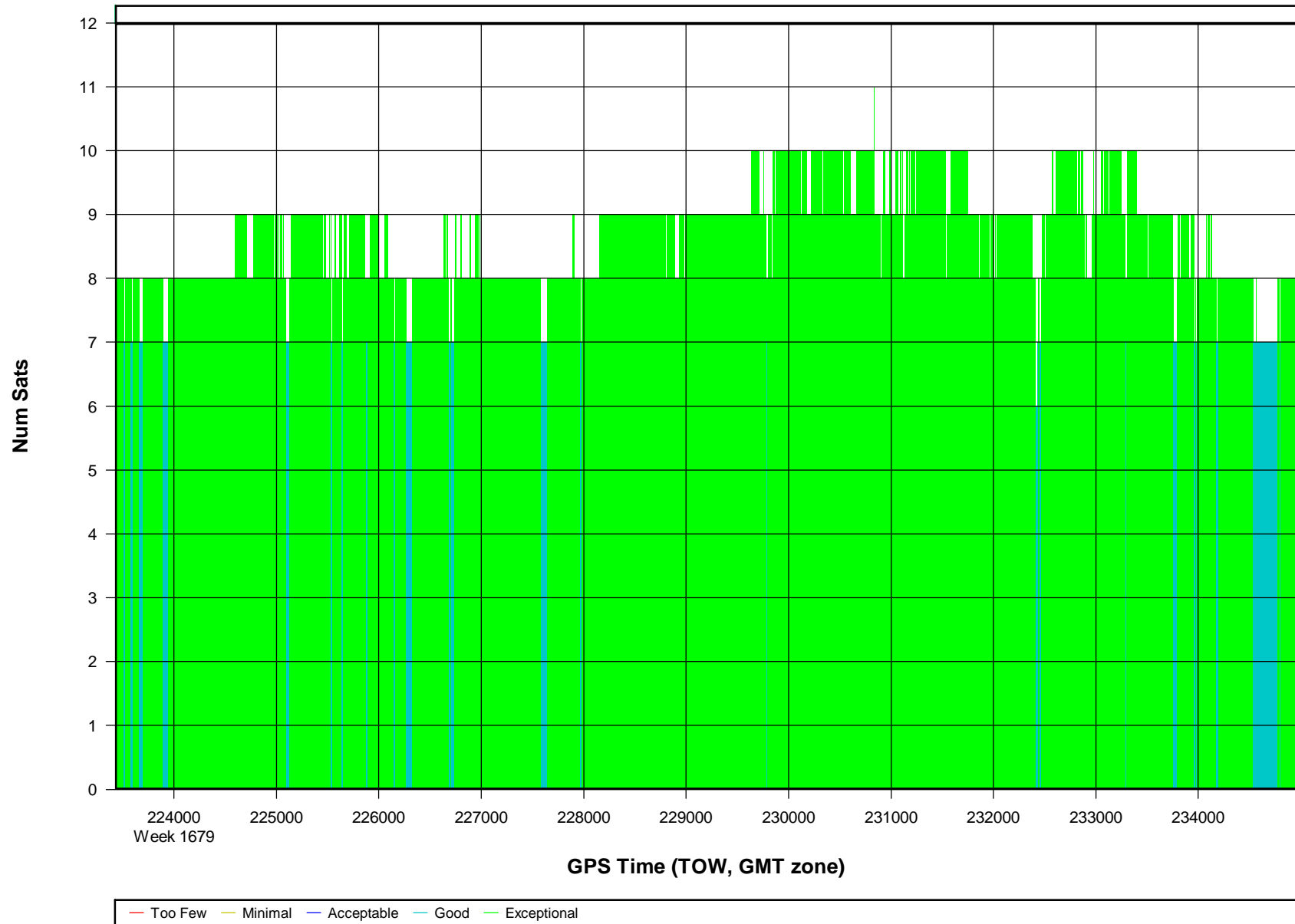
o112073a [Combined] - Forward/Reverse or Combined Separation Plot



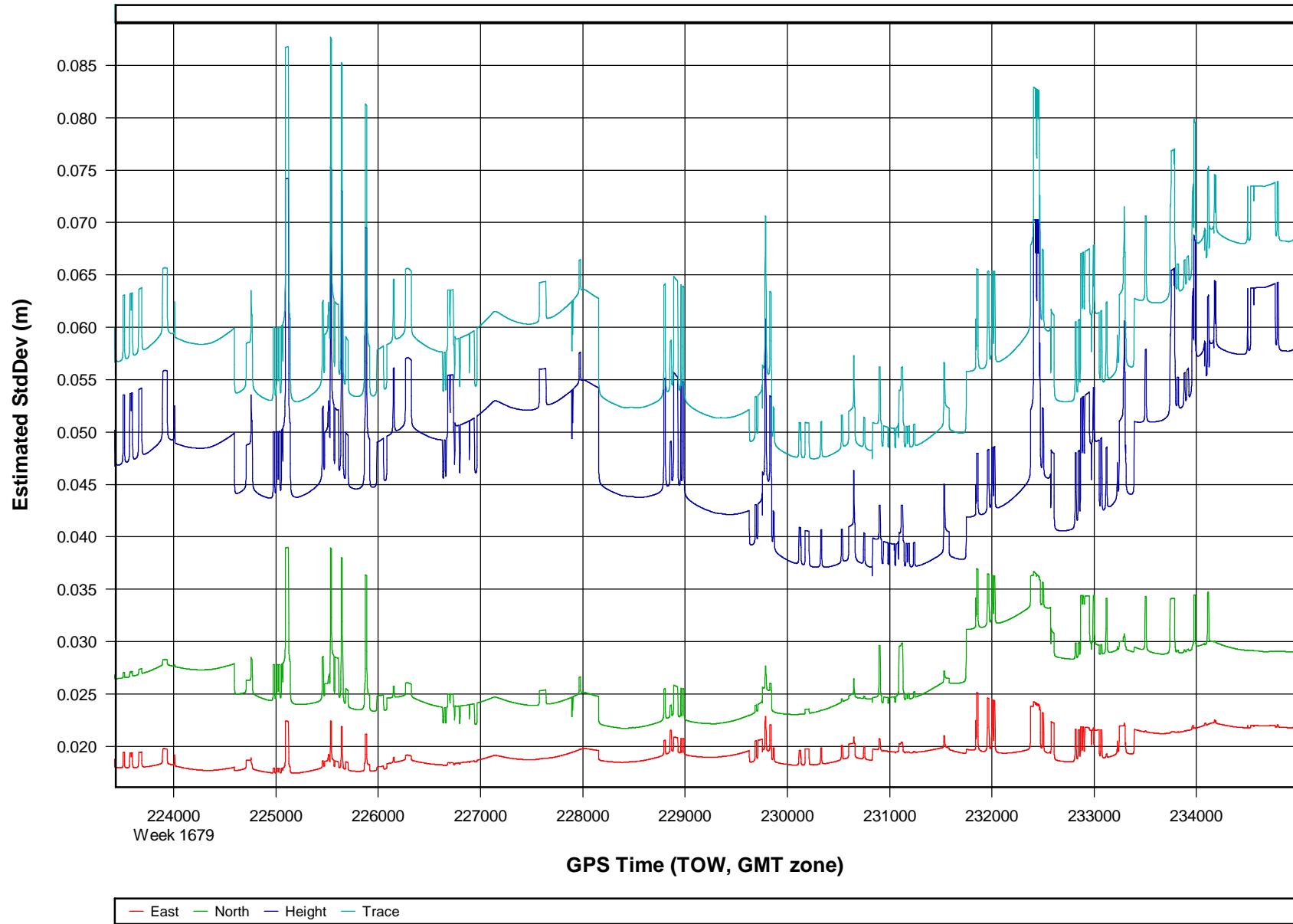
o112073a [Combined] - PDOP, HDOP, VDOP Plots



o112073a [Combined] - Number of Satellites Bar Plot



o112073a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: POSGNSS
Version: 4.40.2710
Project: I:\335
DEW\2_Operations\6_Missions\o112073a\3_Processed\GPS\o112073a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file: 143576
No processed position: 132033
Missing Fwd or Rev: 4
With bad C/A code: 0
With bad L1 Phase: 0

Measurement RMS Values:

L1 Phase: 0.0214 (m)
C/A Code: 0.80 (m)
L1 Doppler: 0.039 (m/s)

Fwd/Rev Separation RMS Values:

East: 0.019 (m)
North: 0.012 (m)
Height: 0.041 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (11537 occurrences):

East: 0.018 (m)
North: 0.012 (m)
Height: 0.040 (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 %

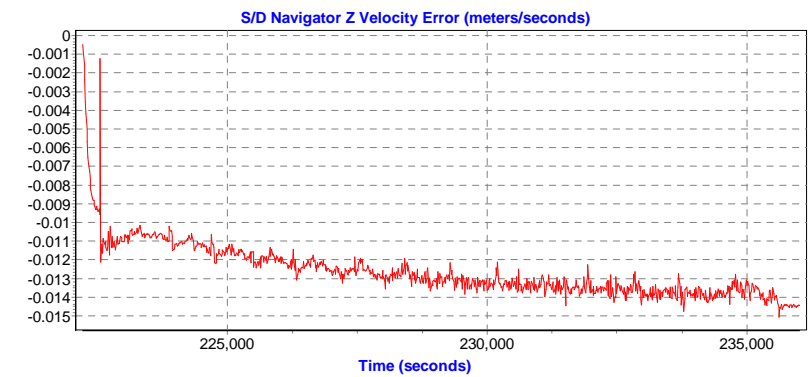
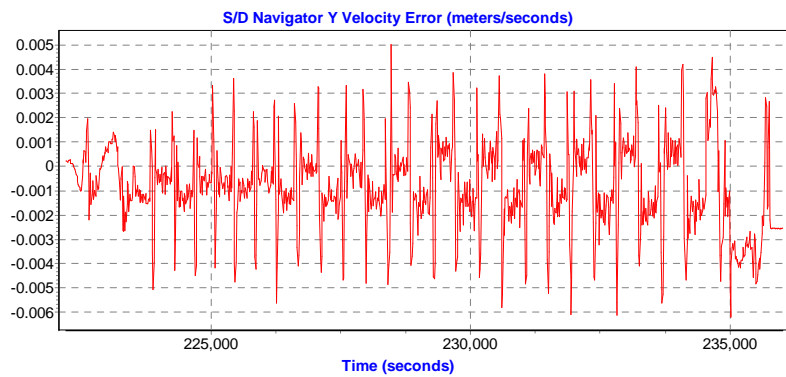
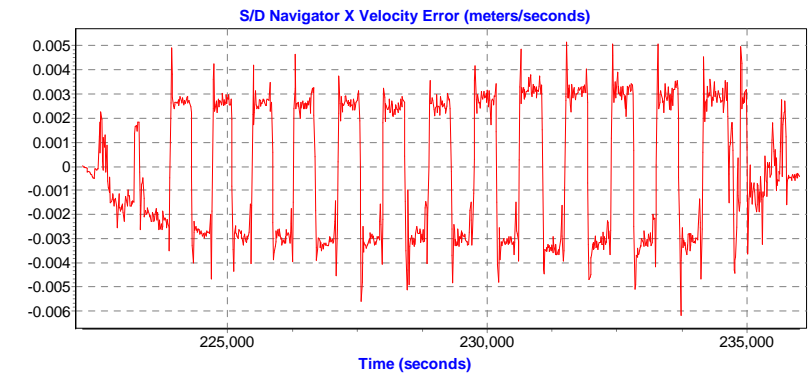
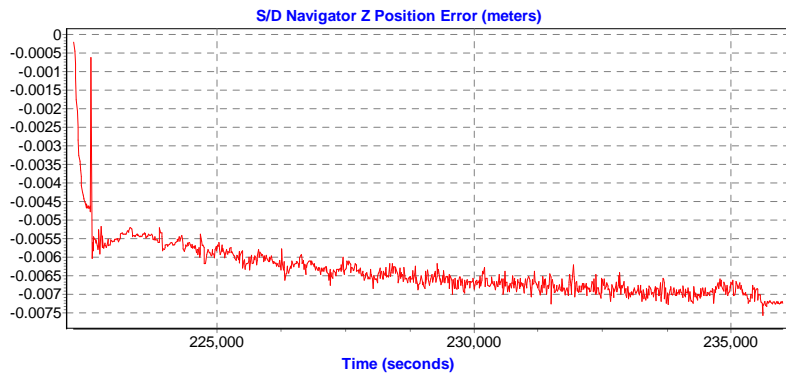
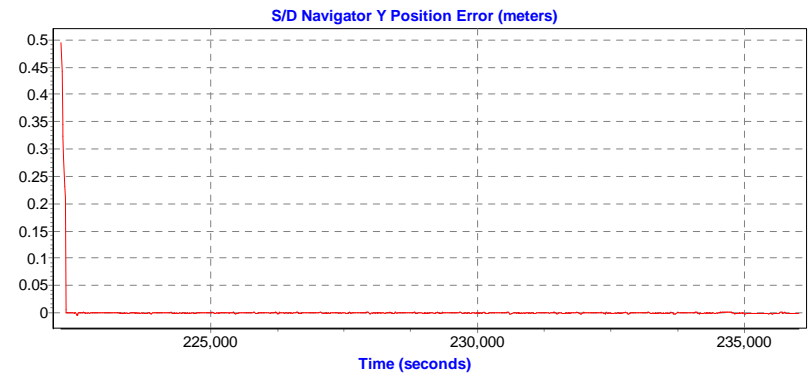
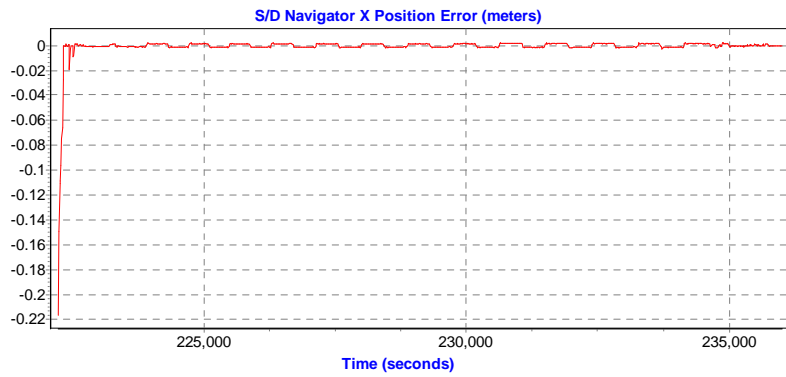
Percentages of epochs with DD_DOP over 10.00:

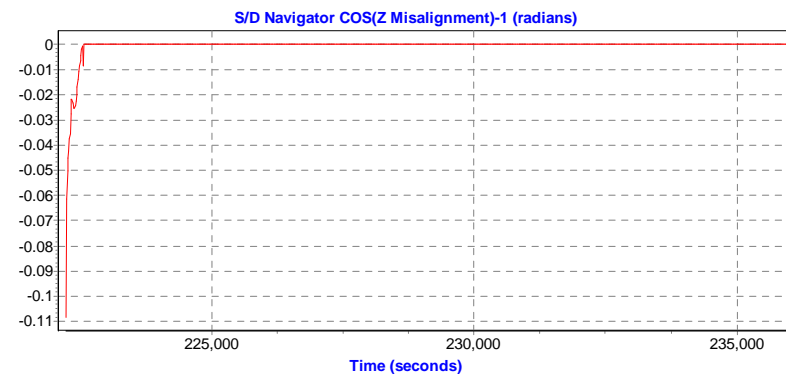
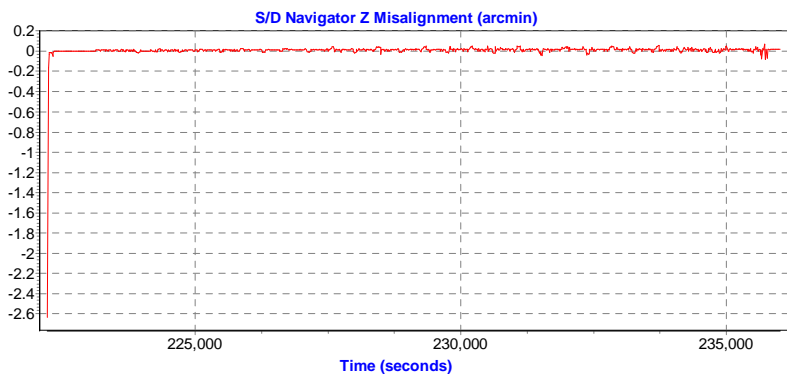
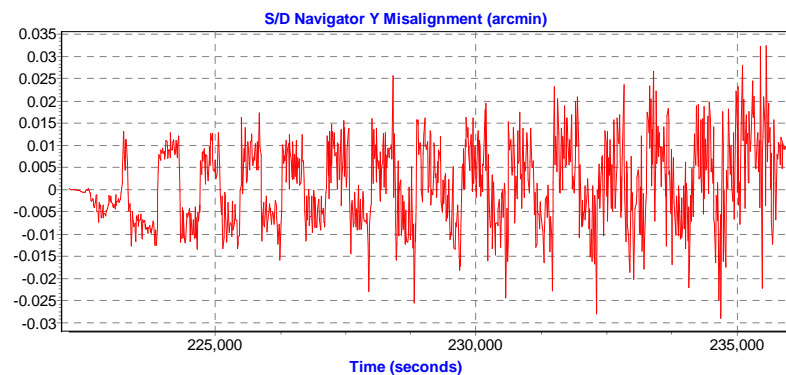
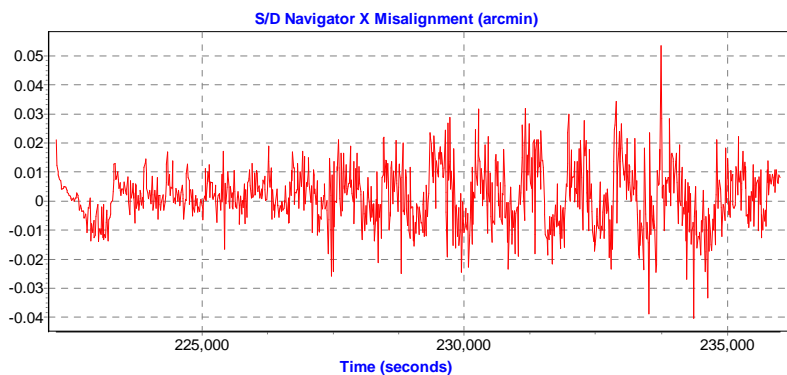
DOP over Tol: 0.0 %

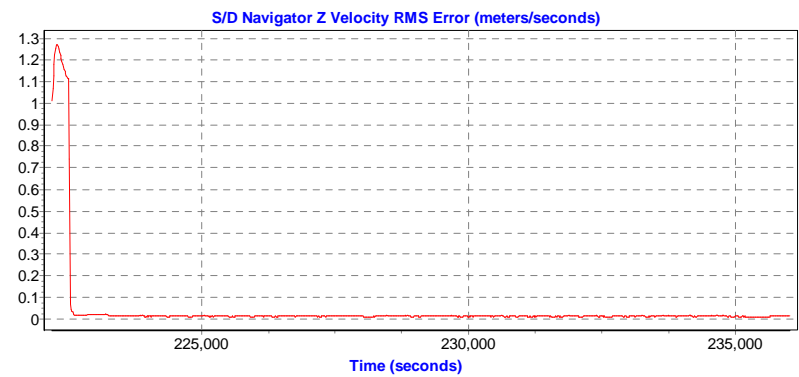
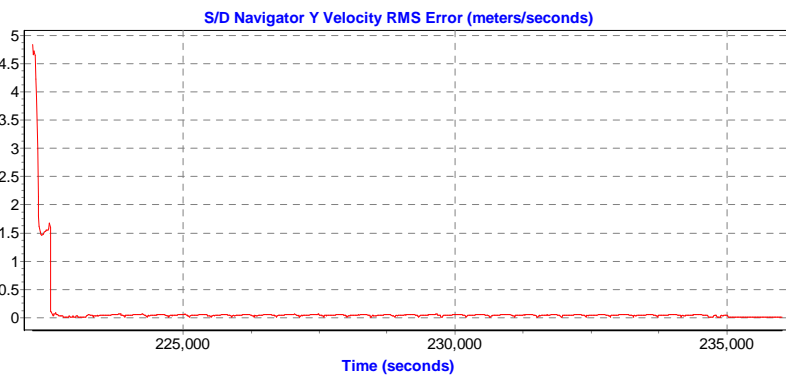
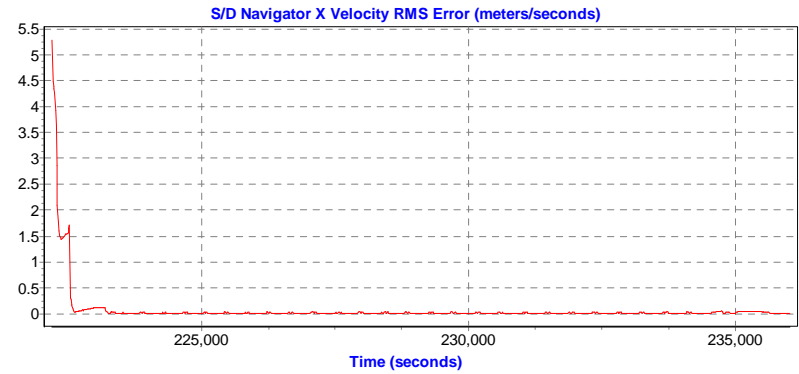
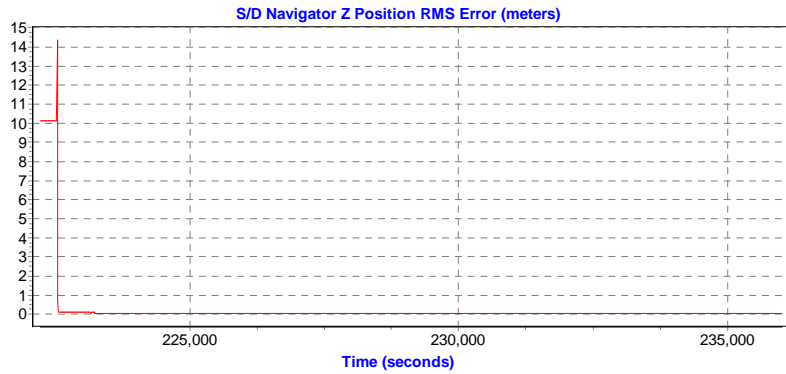
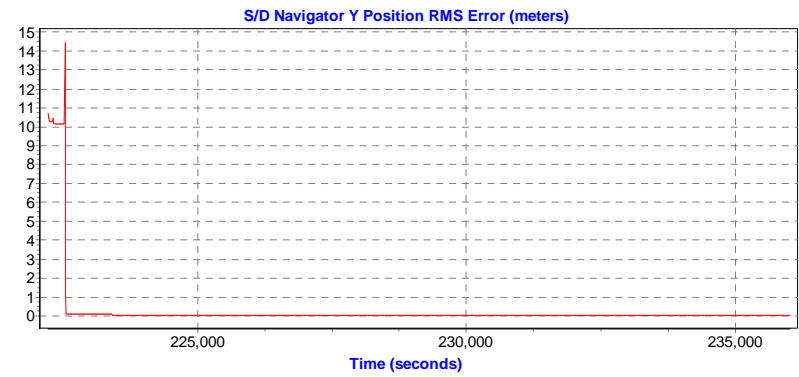
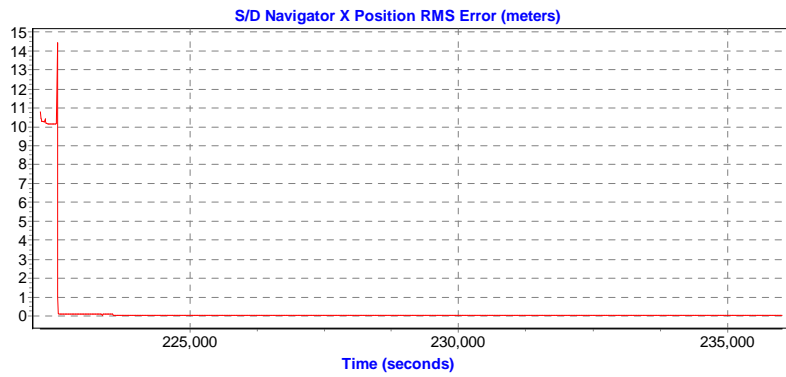
Baseline Distances:

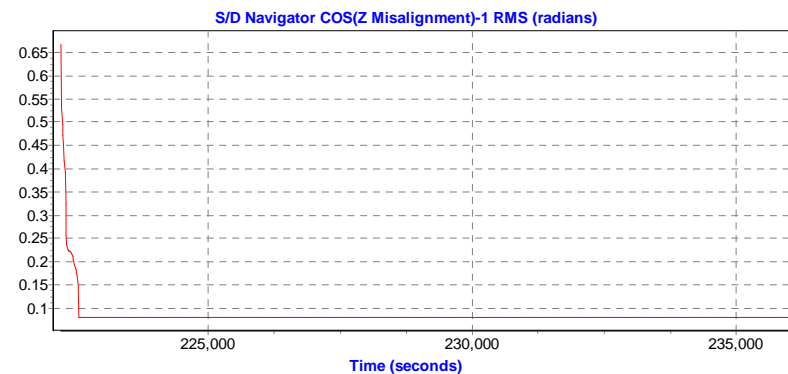
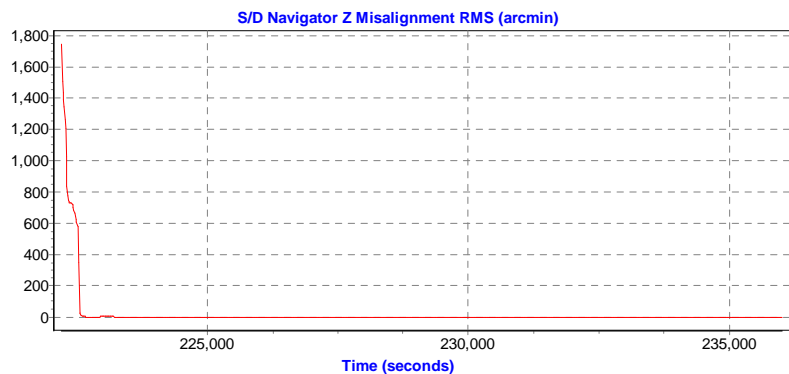
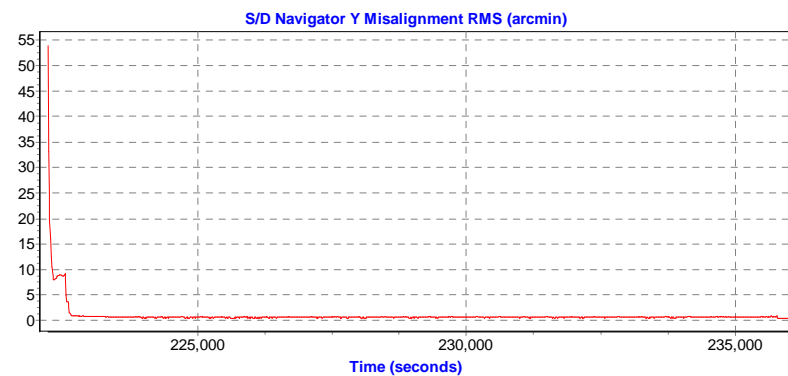
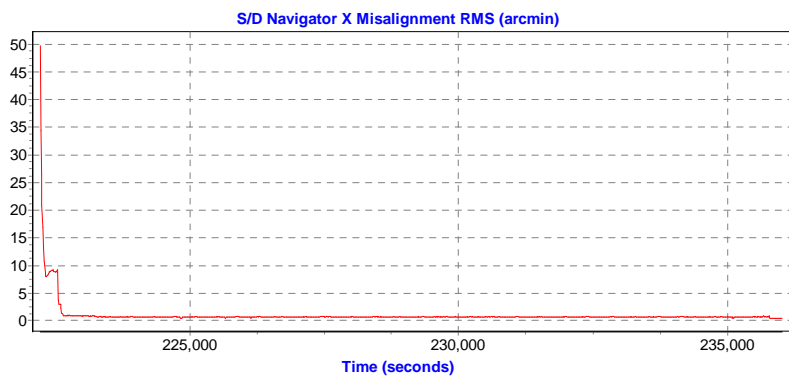
Maximum: 33.896 (km)
Minimum: 0.959 (km)
Average: 18.400 (km)
First Epoch: 2.995 (km)
Last Epoch: 1.598 (km)

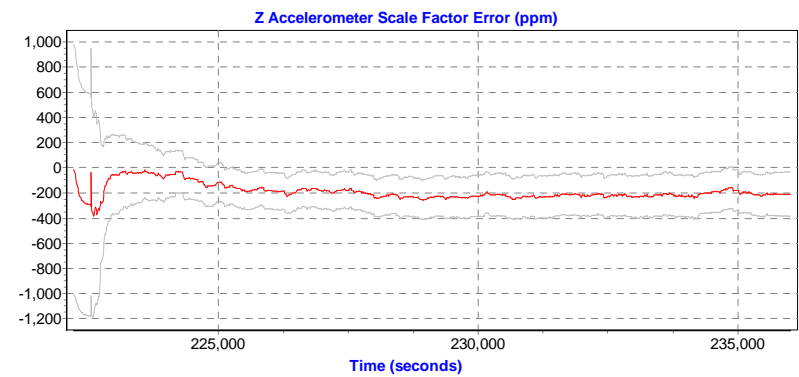
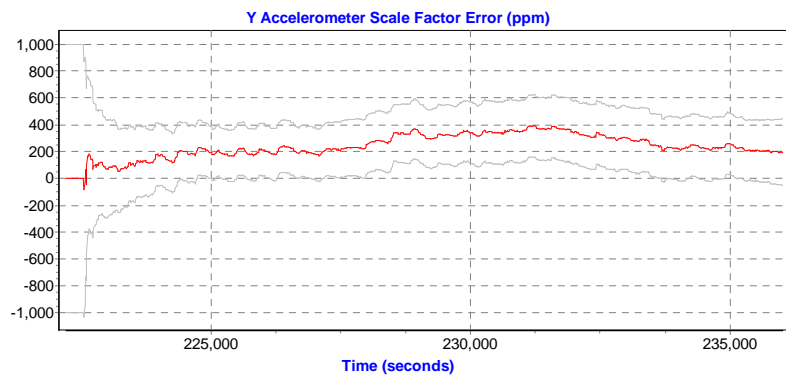
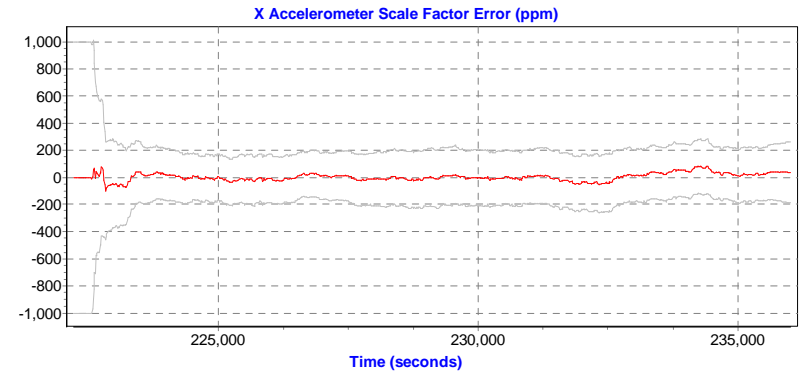
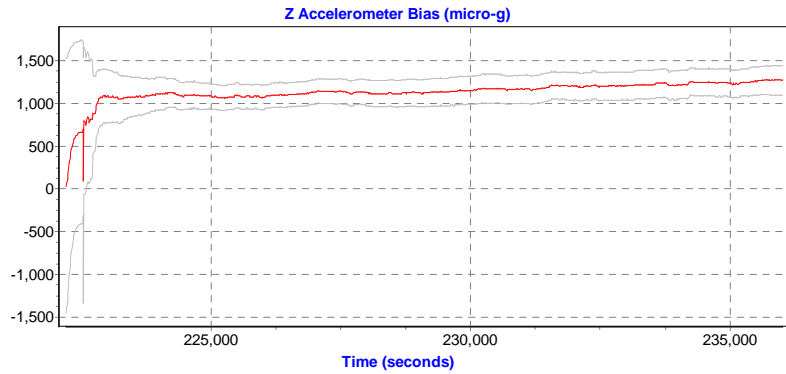
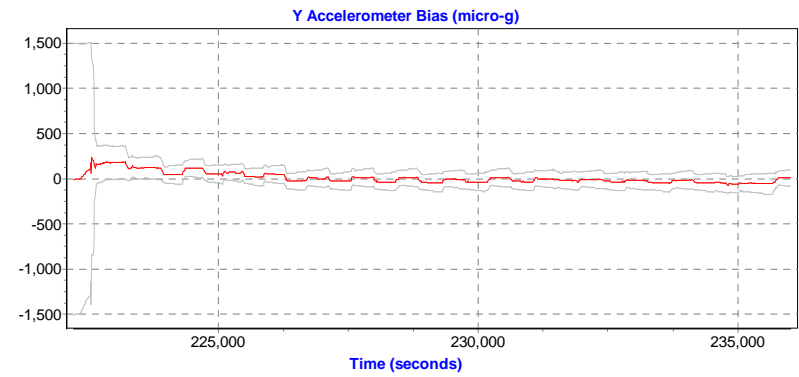
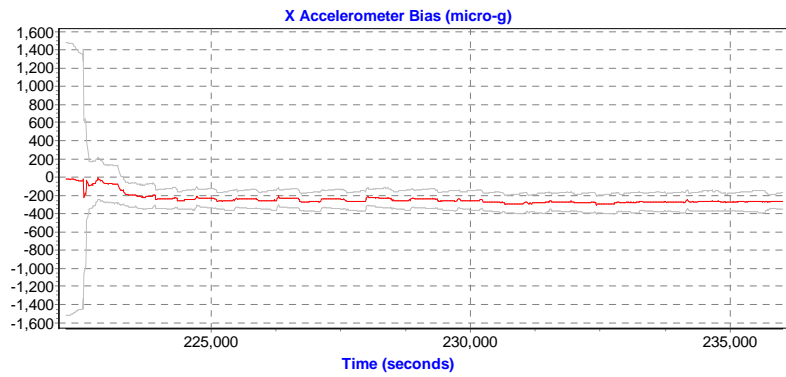
Estimated Errors and RMS

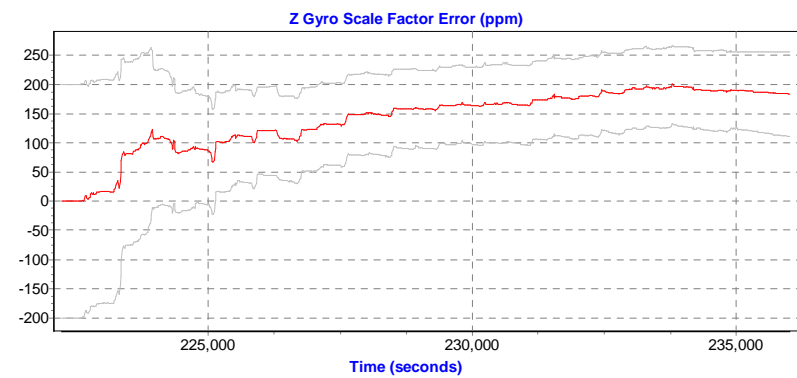
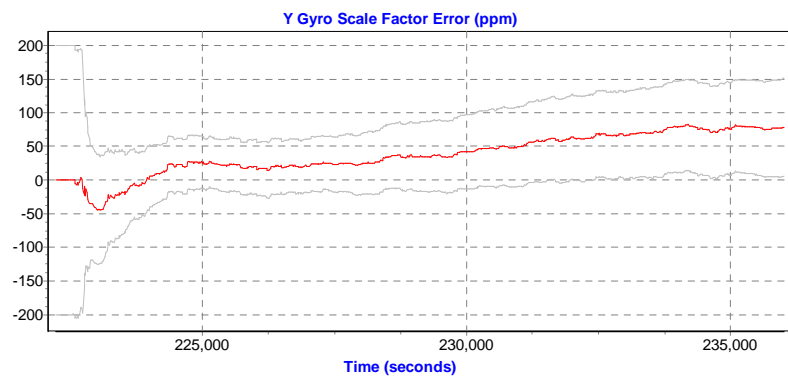
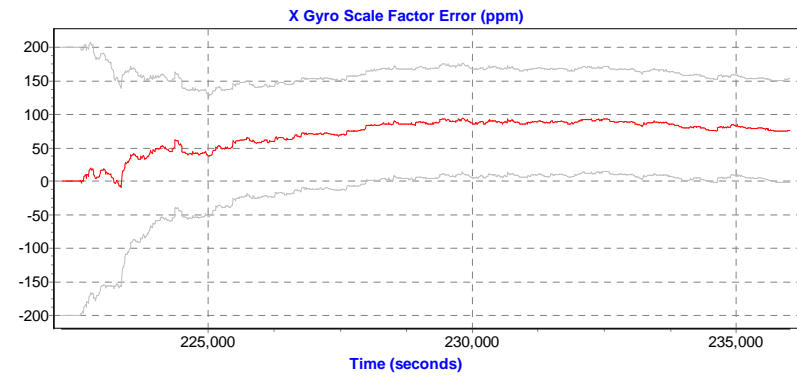
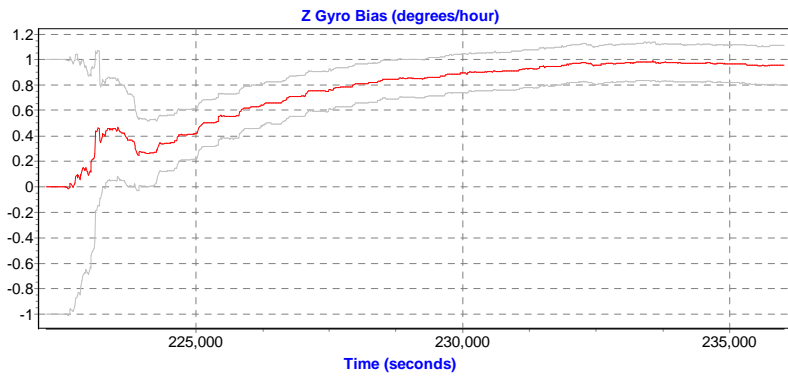
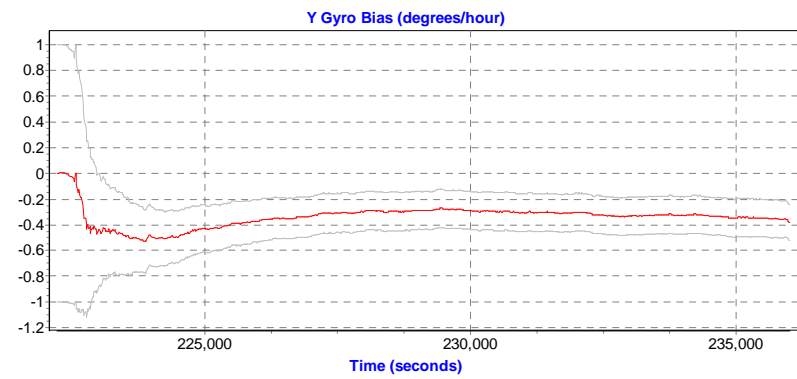
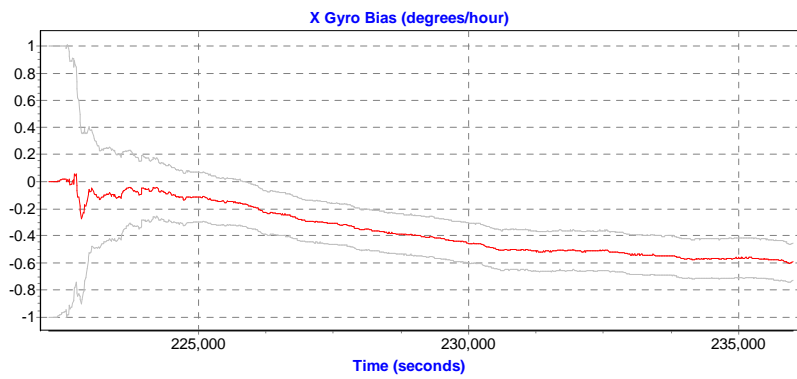


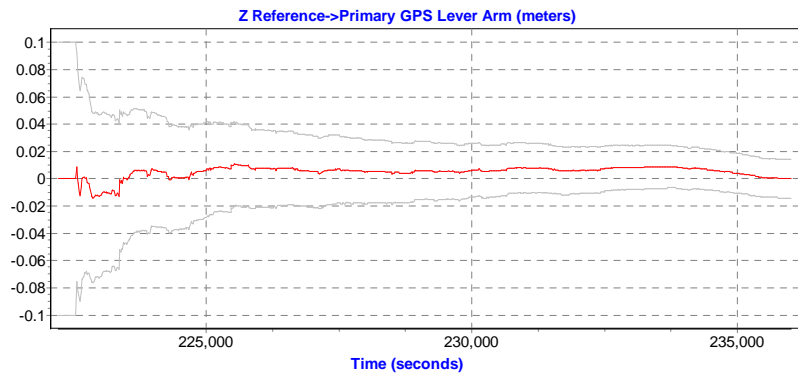
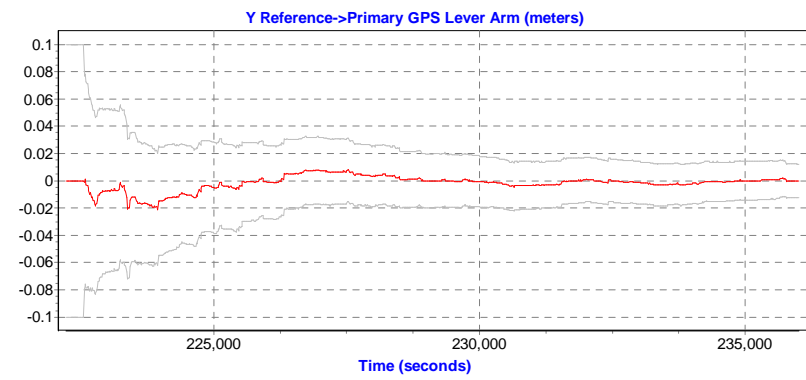
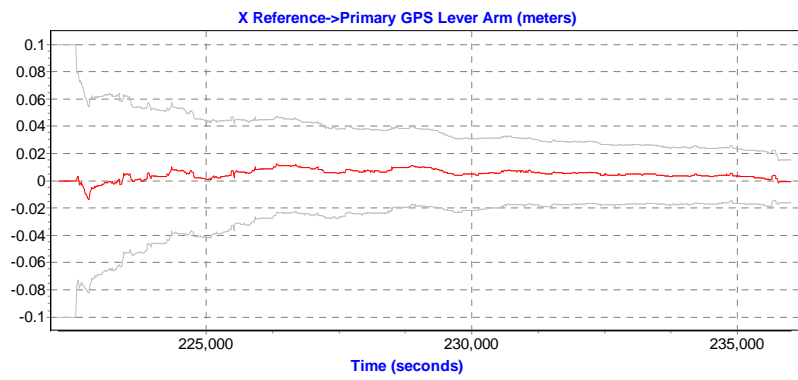






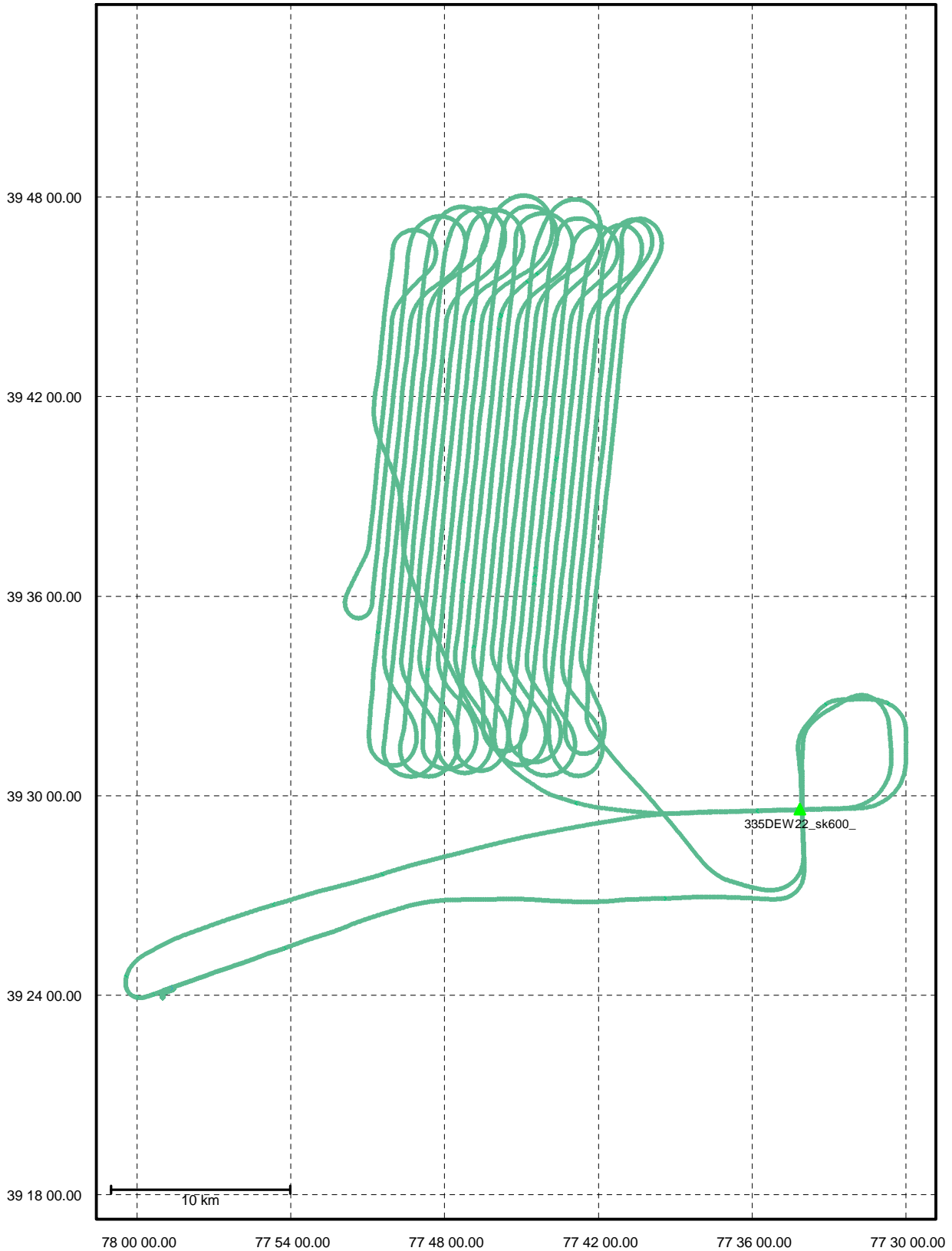






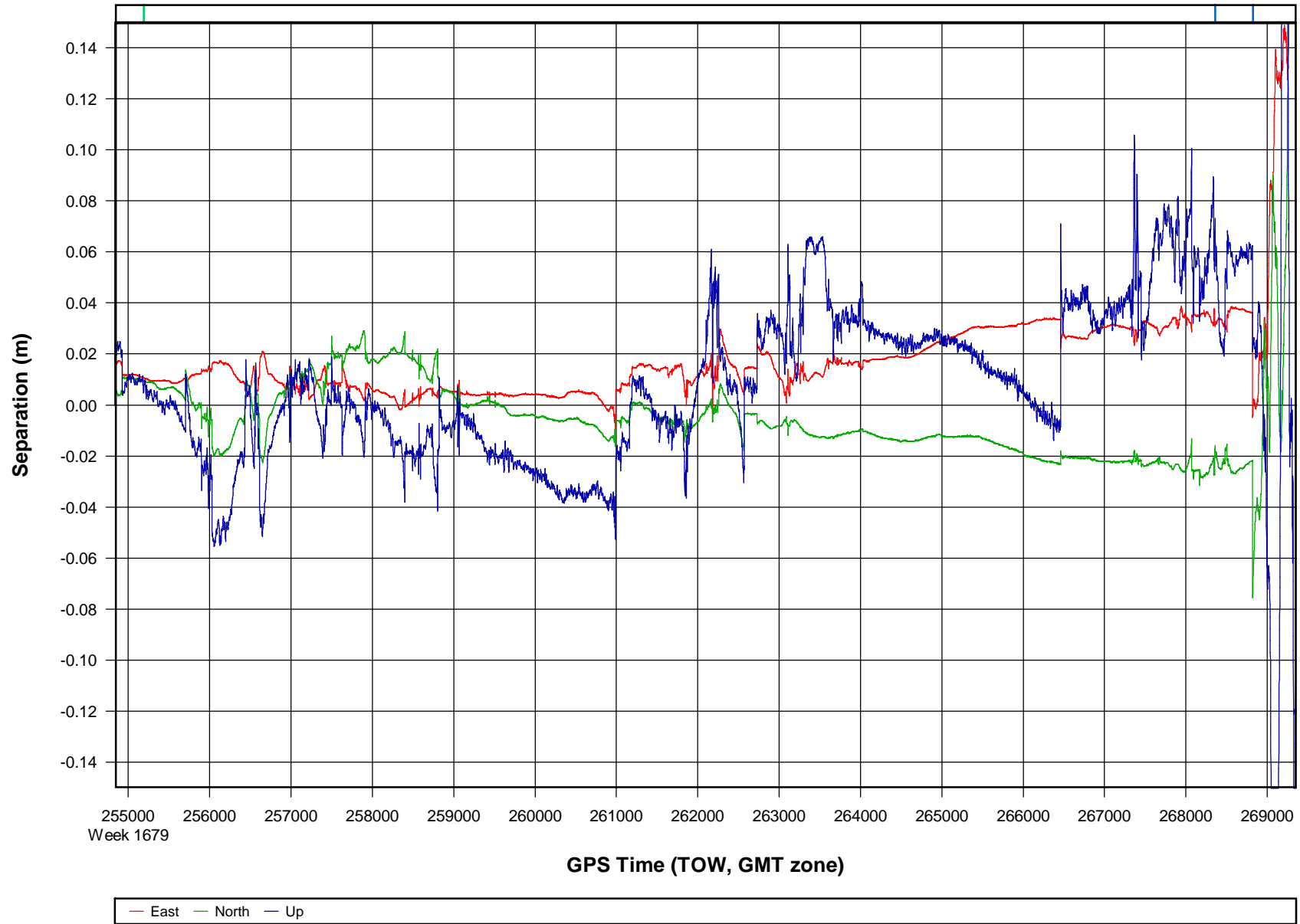
Combined - Map Run (1)

Geographic, DMS

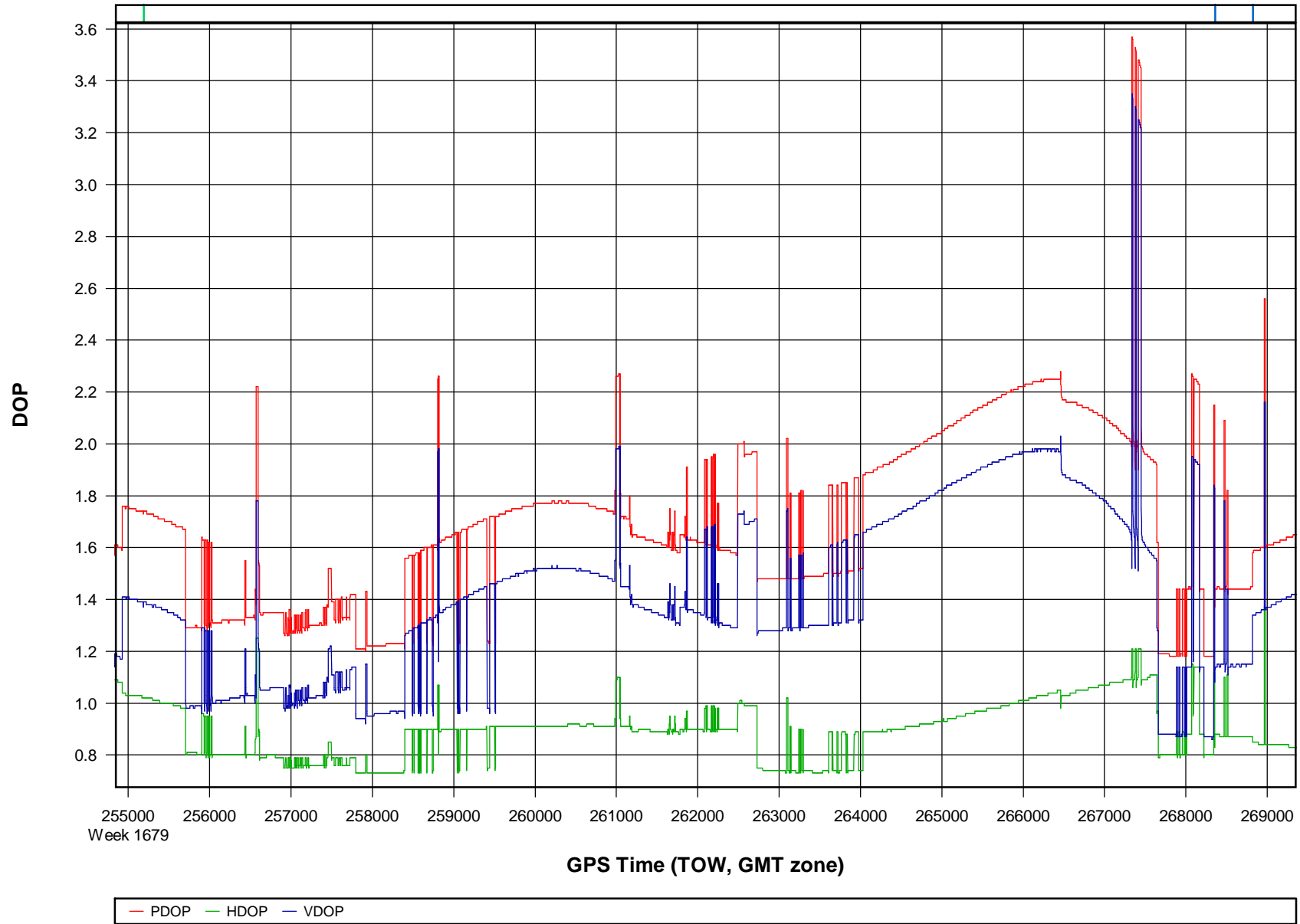


+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

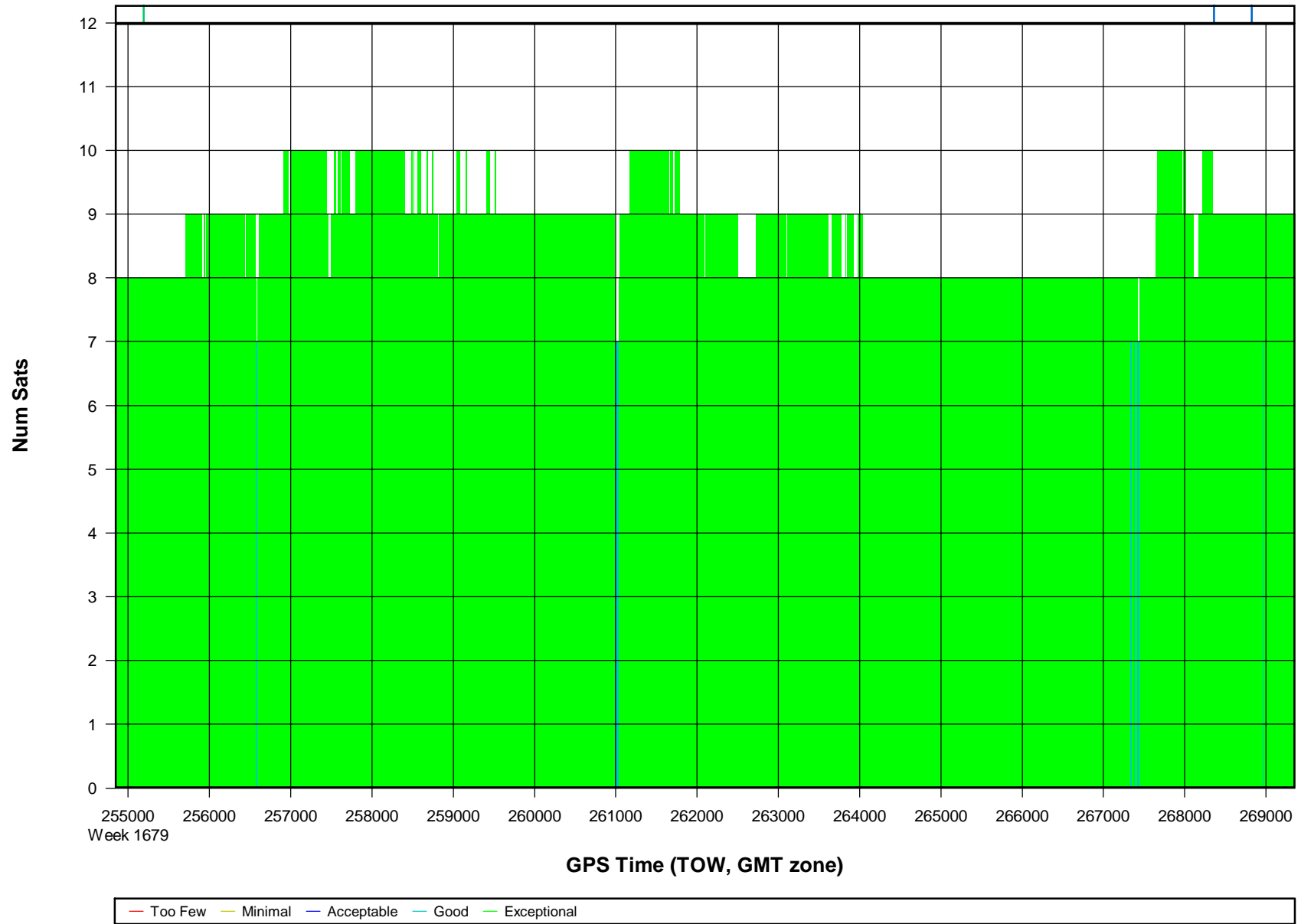
o112073b [Combined] - Forward/Reverse or Combined Separation Plot



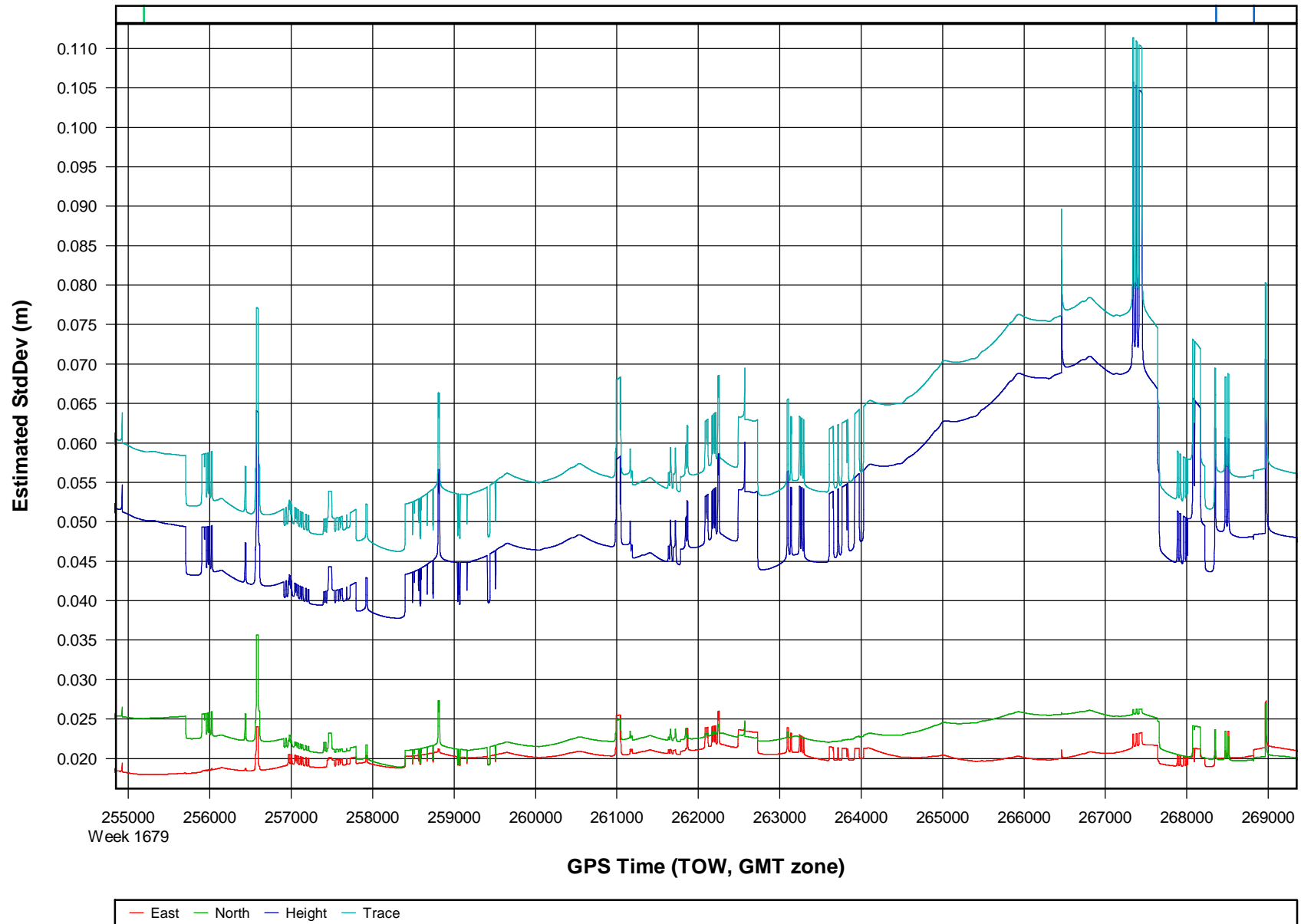
o112073b [Combined] - PDOP, HDOP, VDOP Plots



o112073b [Combined] - Number of Satellites Bar Plot



o112073b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: E:\Projects\335DEW11_USGS_MD_VA_cont\2_Operations\6_Missions\o112073b\3_Processed\GPS\o112073b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	152418
No processed position:	137891
Missing Fwd or Rev:	4
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0201 (m)
C/A Code:	0.73 (m)
L1 Doppler:	0.032 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.032 (m)
North:	0.023 (m)
Height:	0.046 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (13985 occurrences):

East:	0.019 (m)
North:	0.014 (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:

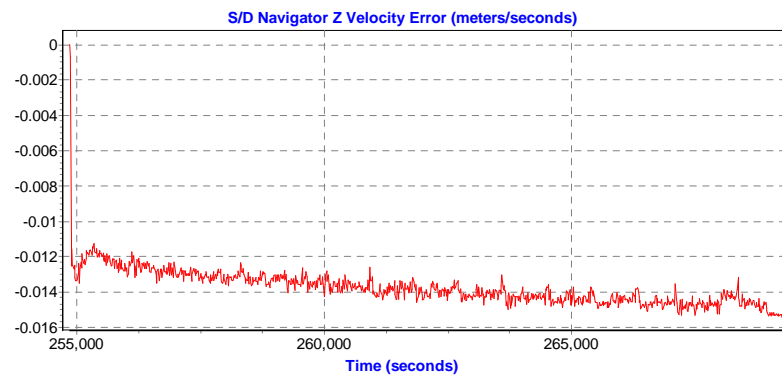
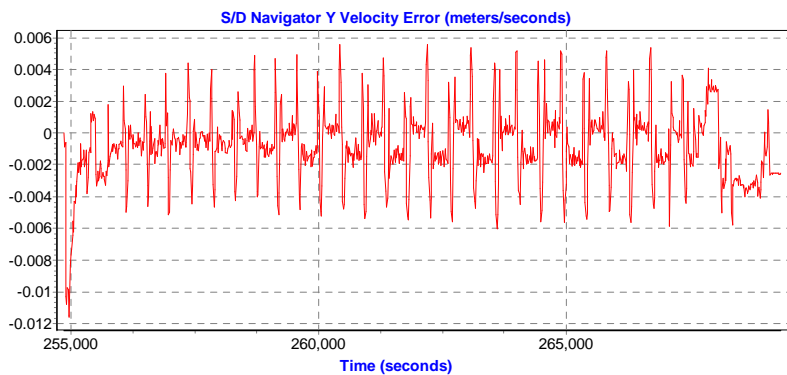
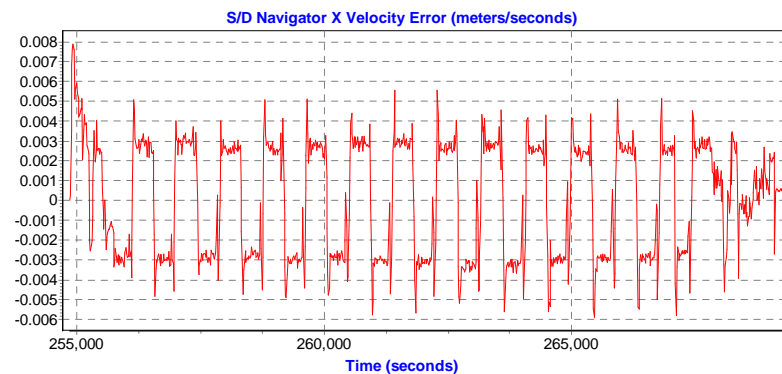
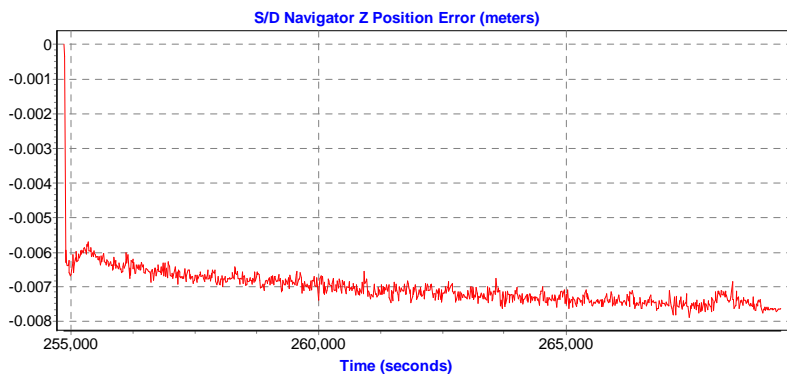
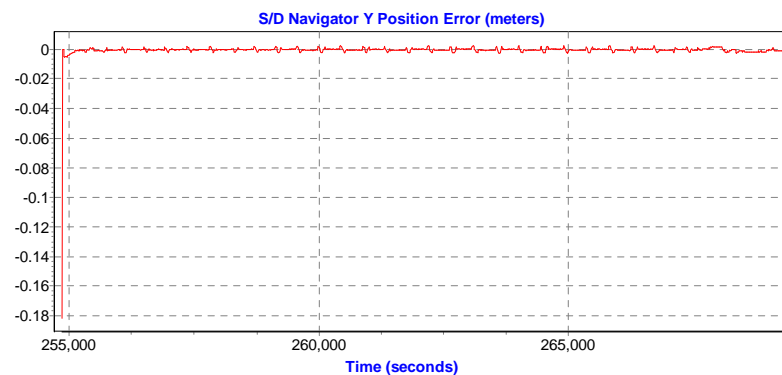
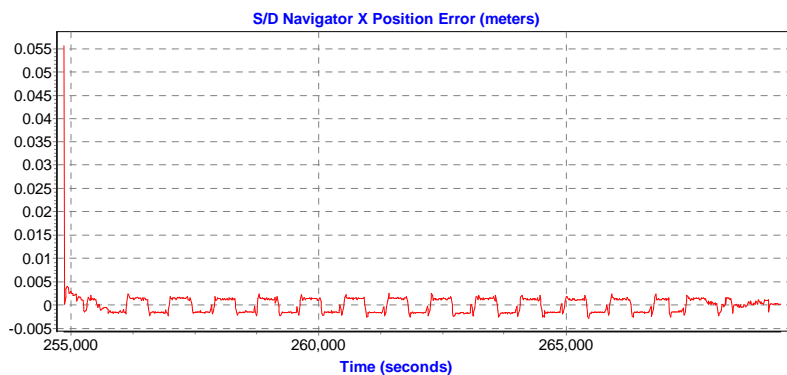
0.00 - 0.10 m:	99.6 %
0.10 - 0.30 m:	0.4 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

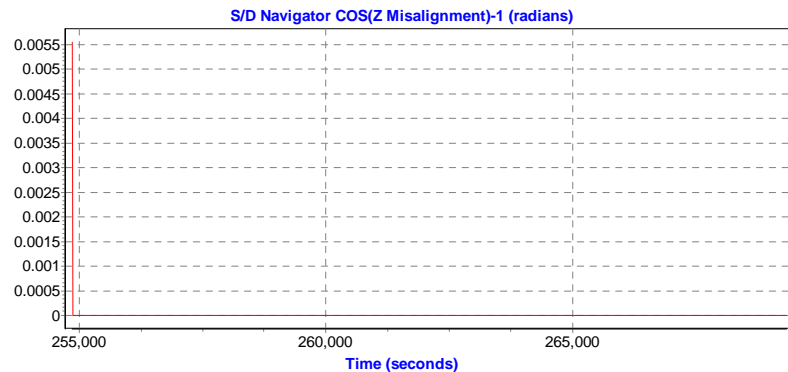
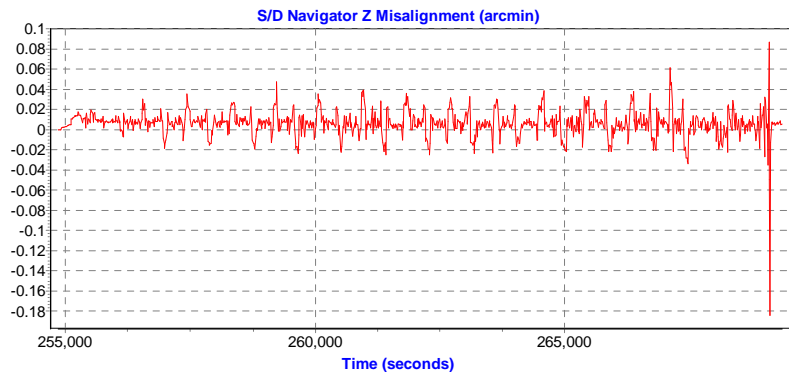
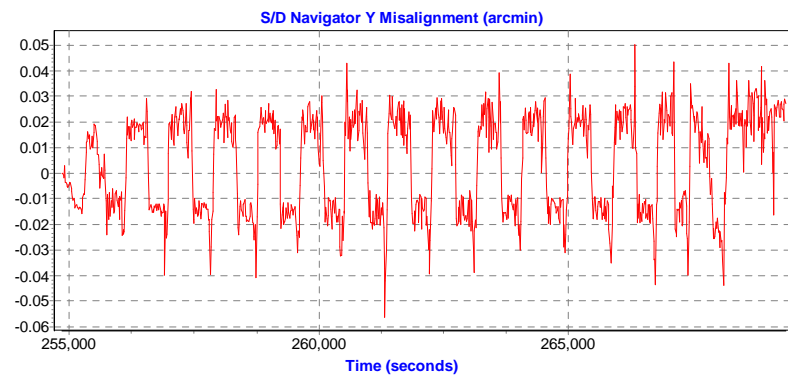
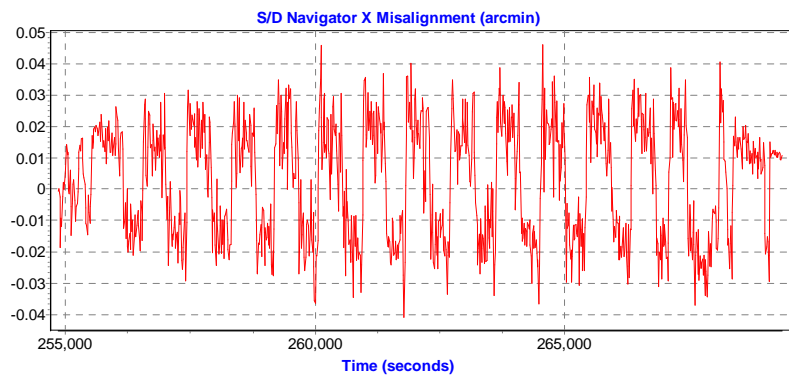
Percentages of epochs with DD_DOP over 10.00:

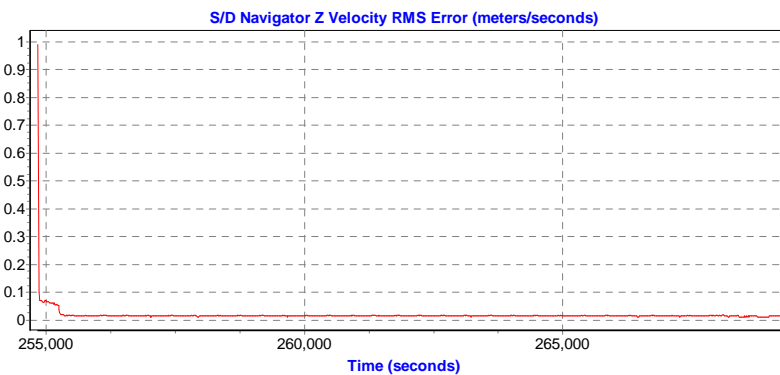
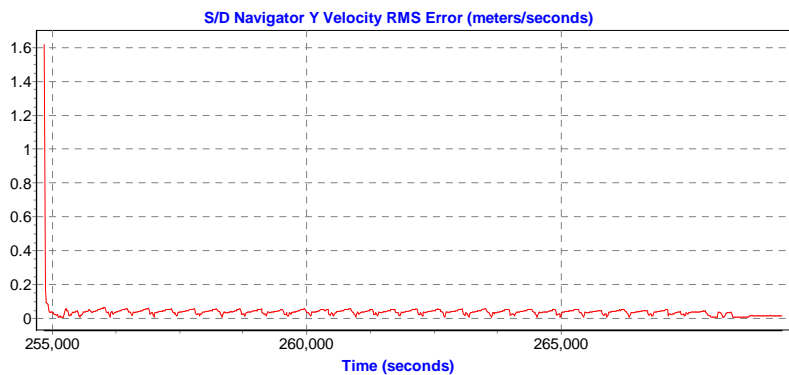
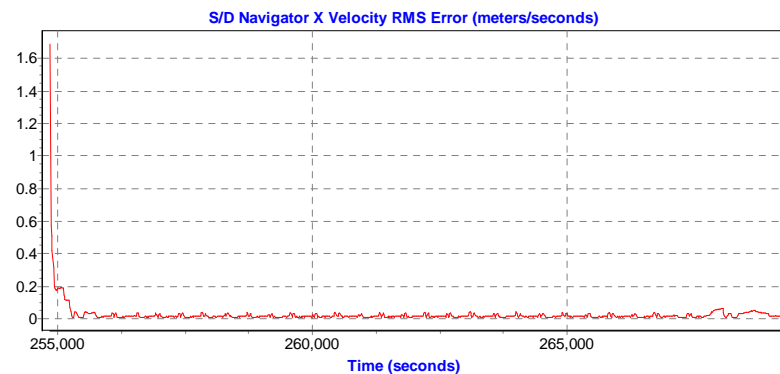
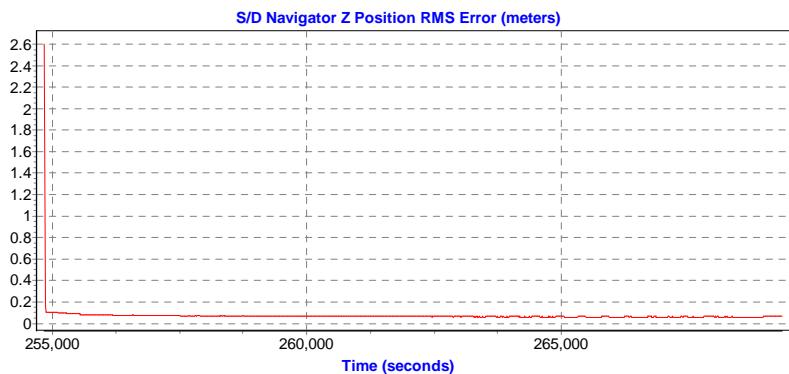
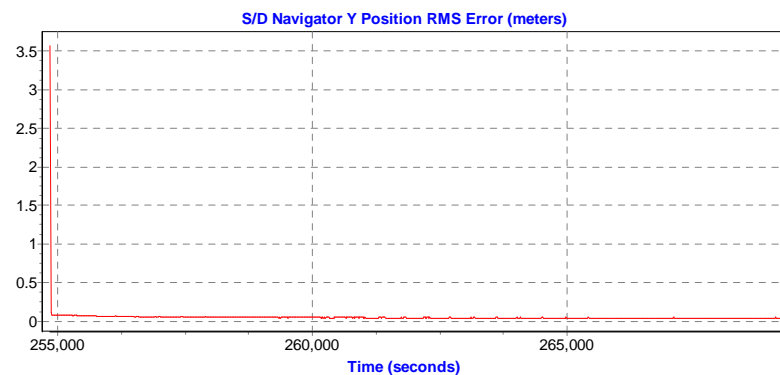
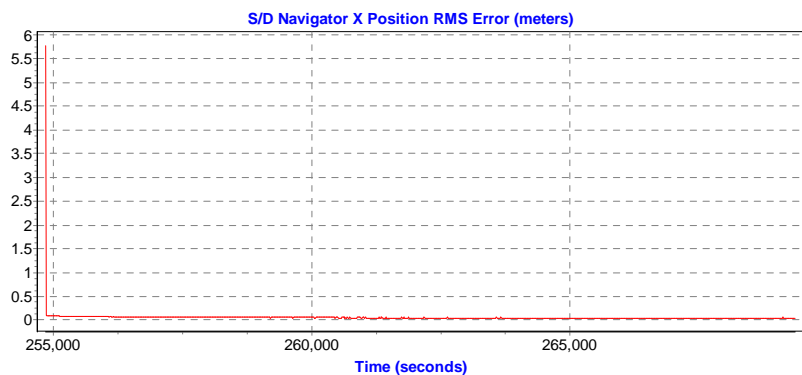
DOP over Tol:	0.0 %
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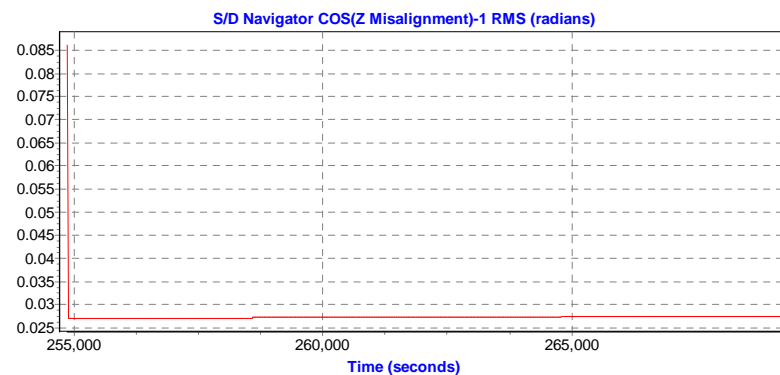
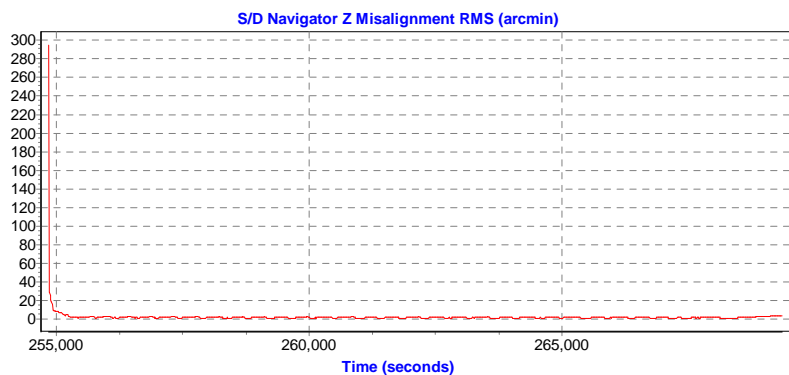
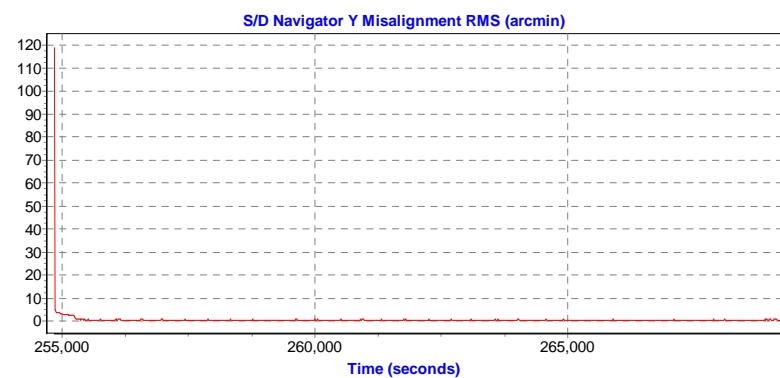
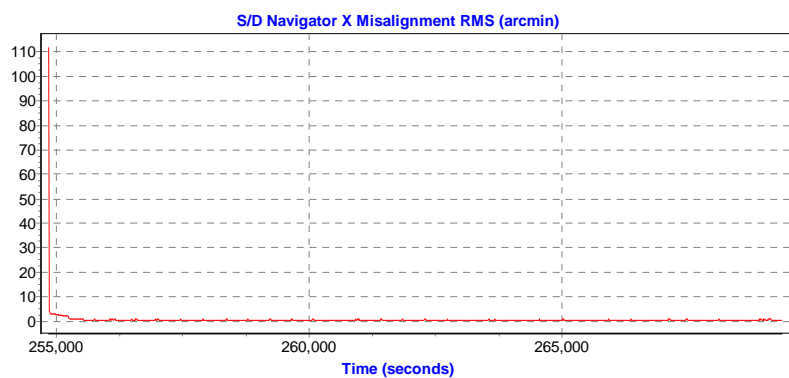
Baseline Distances:

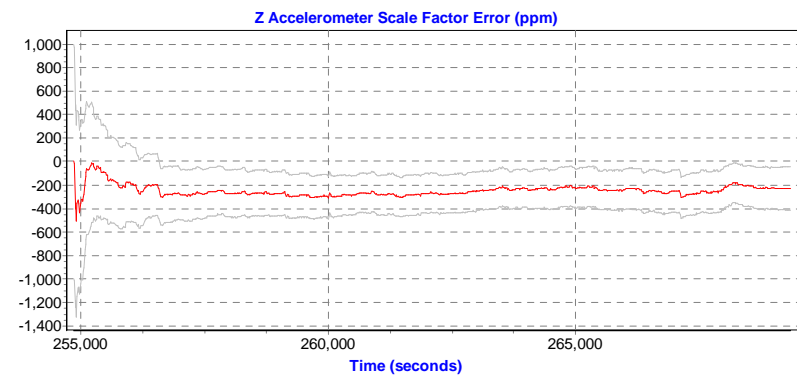
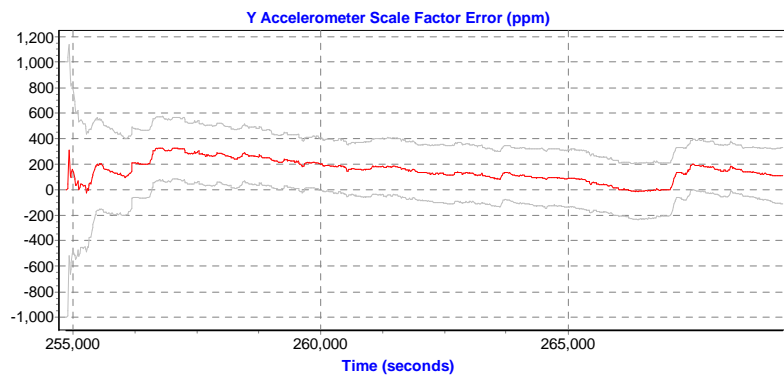
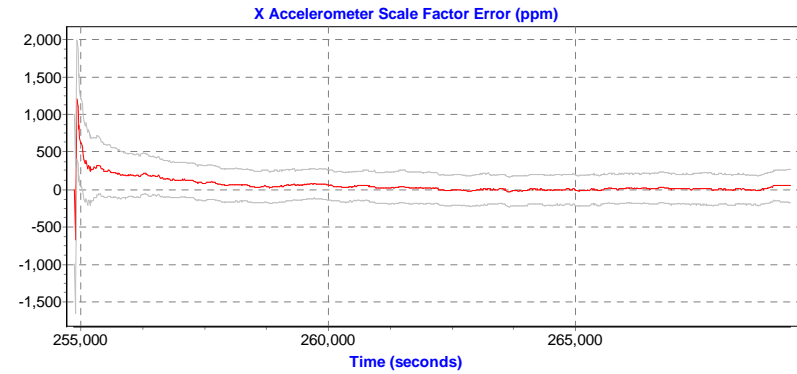
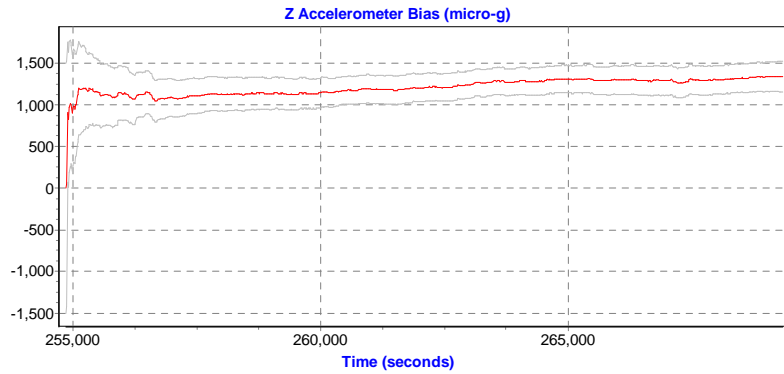
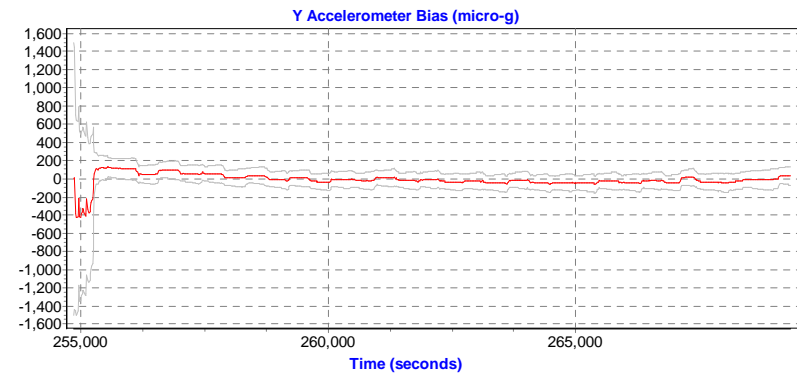
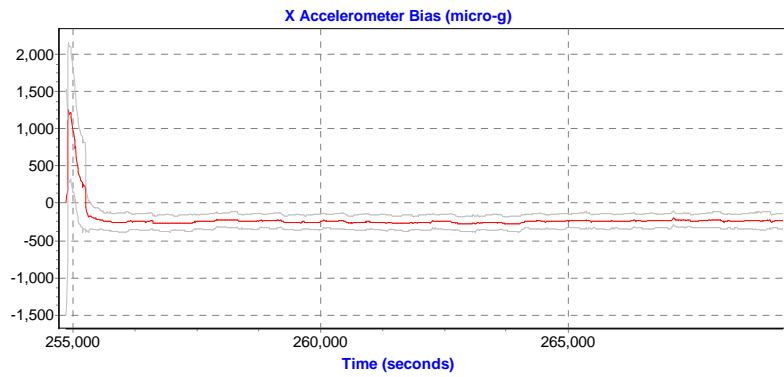
Maximum:	38.984 (km)
Minimum:	0.998 (km)
Average:	24.371 (km)
First Epoch:	29.898 (km)
Last Epoch:	37.210 (km)

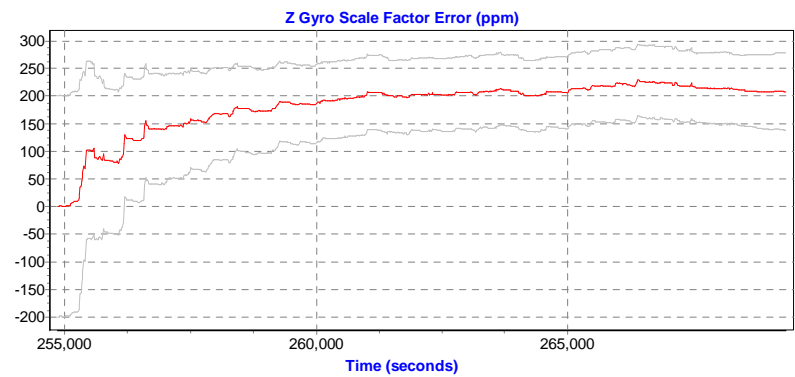
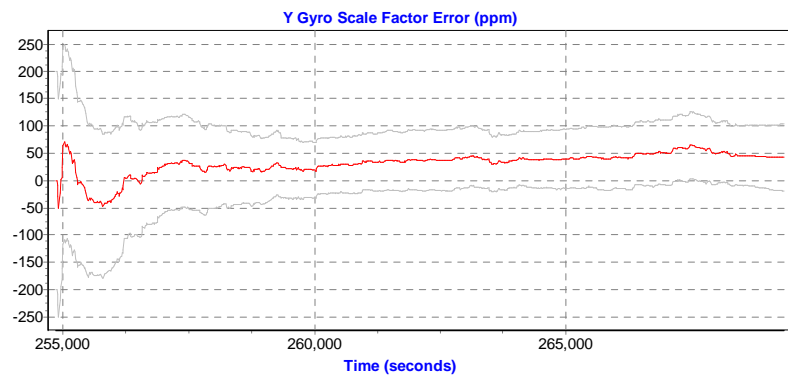
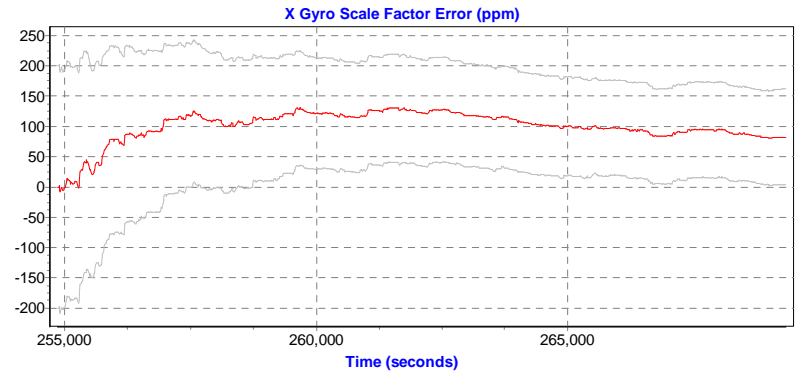
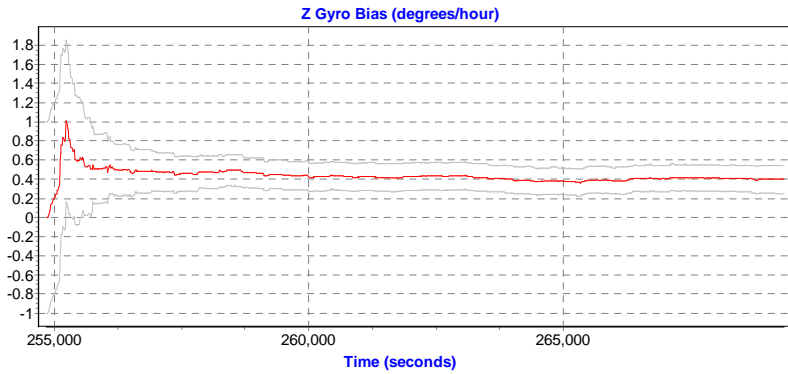
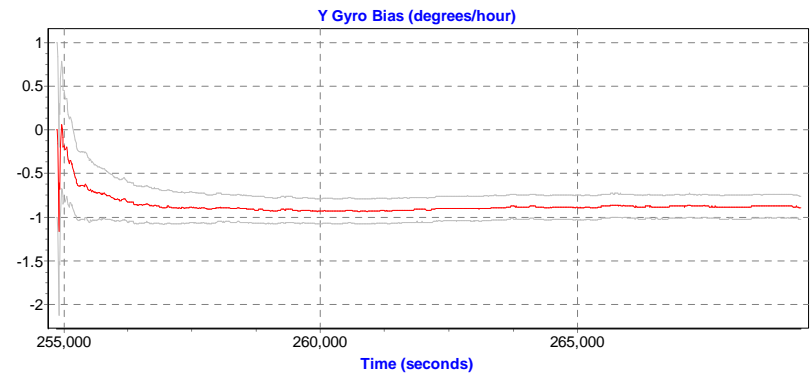
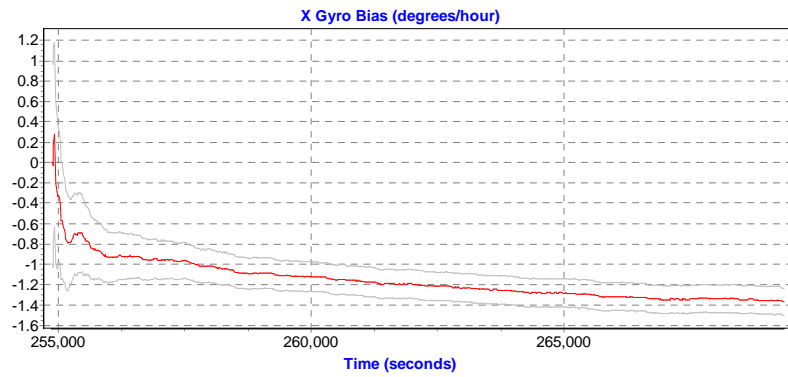


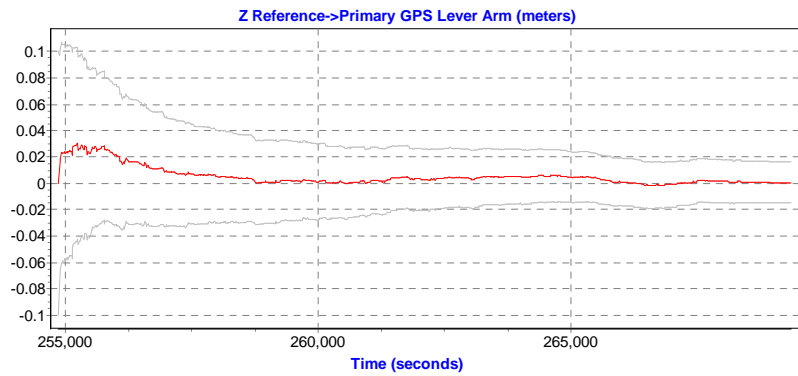
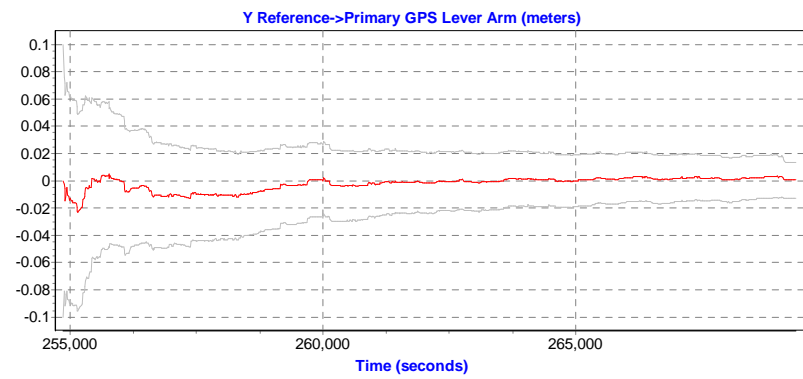
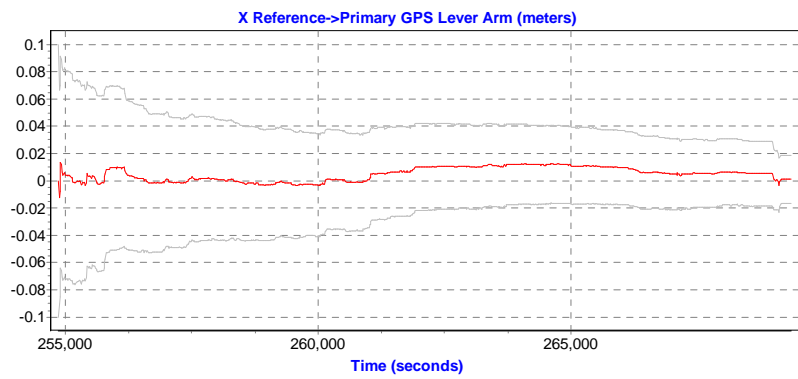






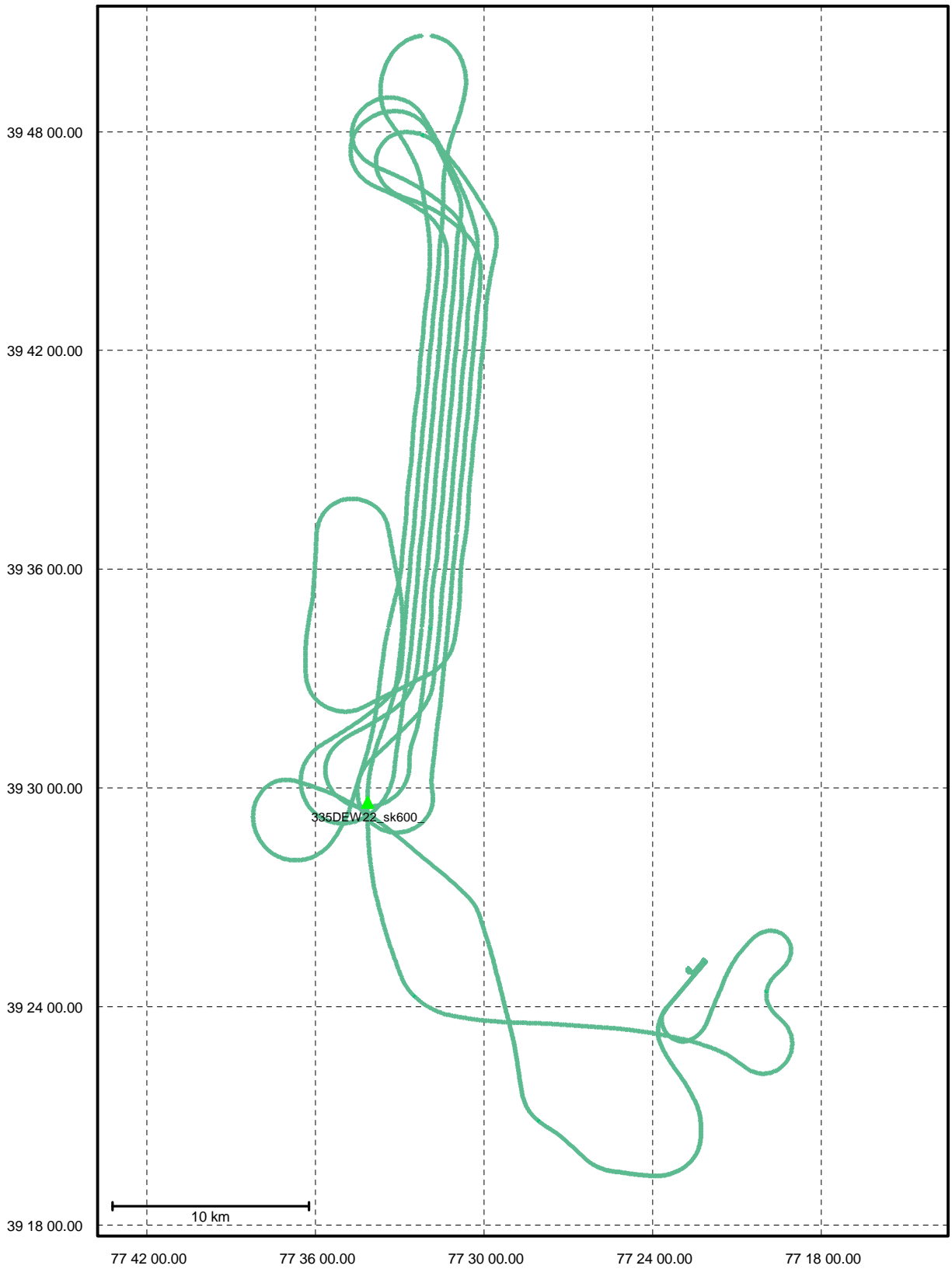






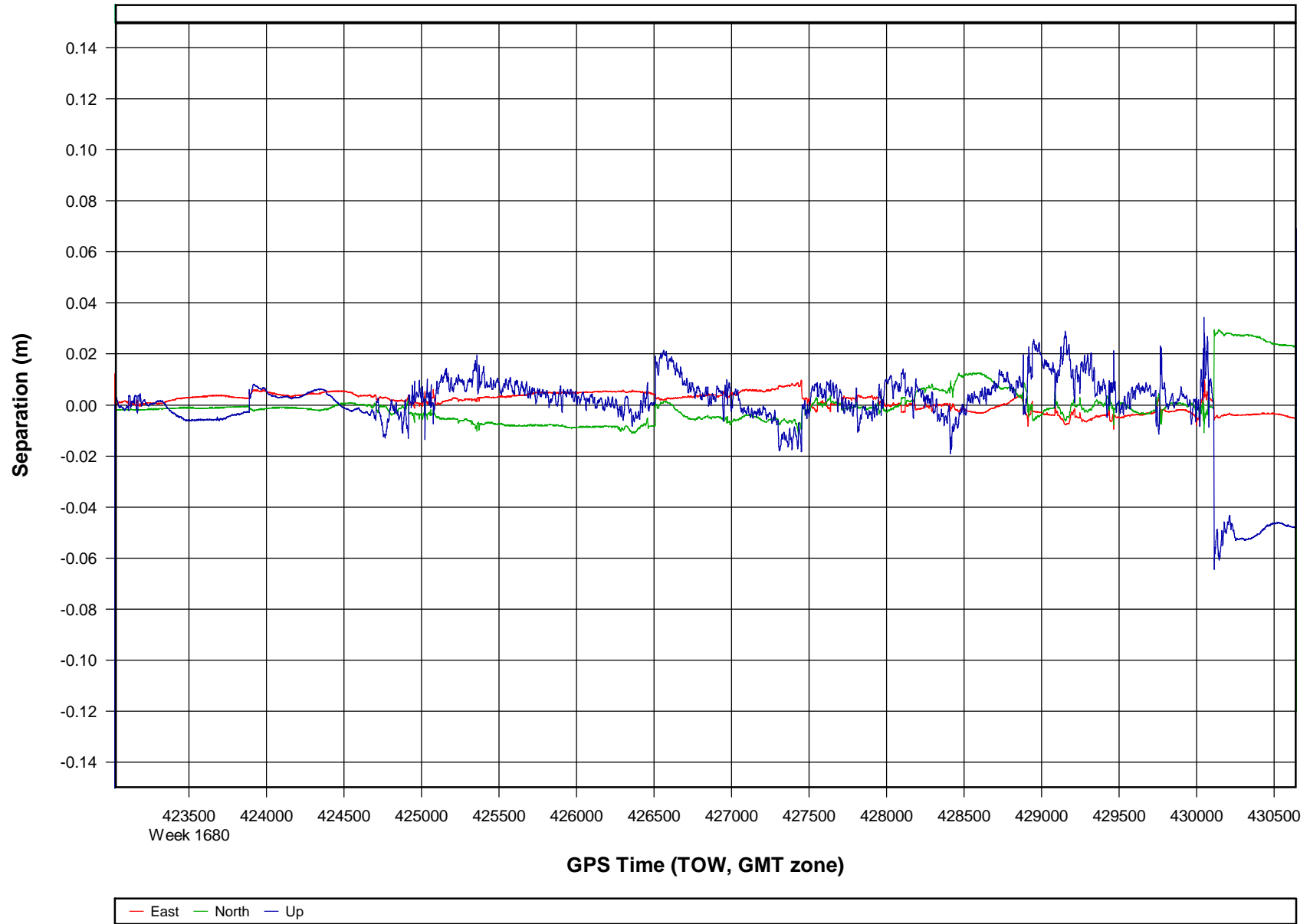
Combined - Map Run (1)

Geographic, DMS

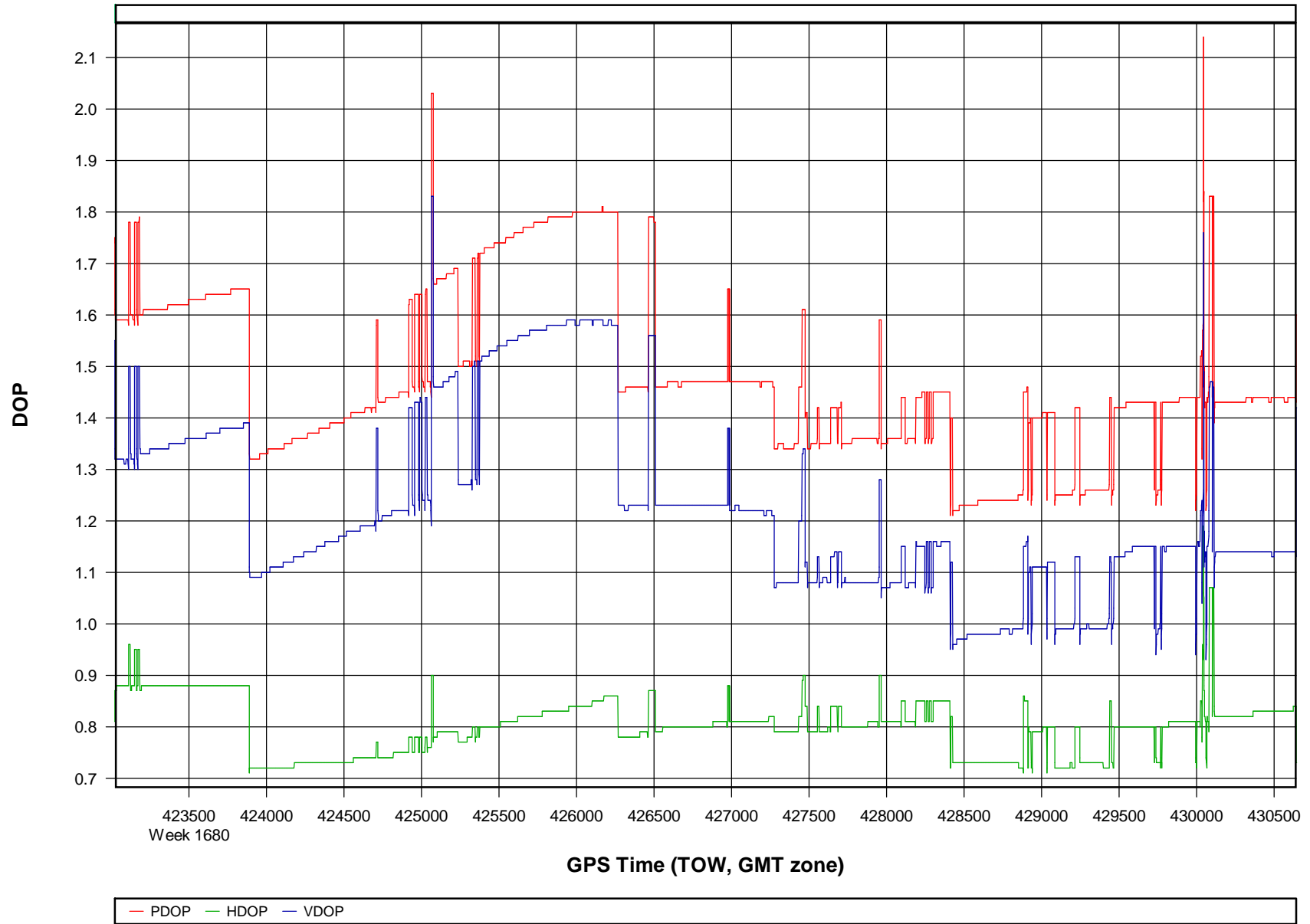


+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

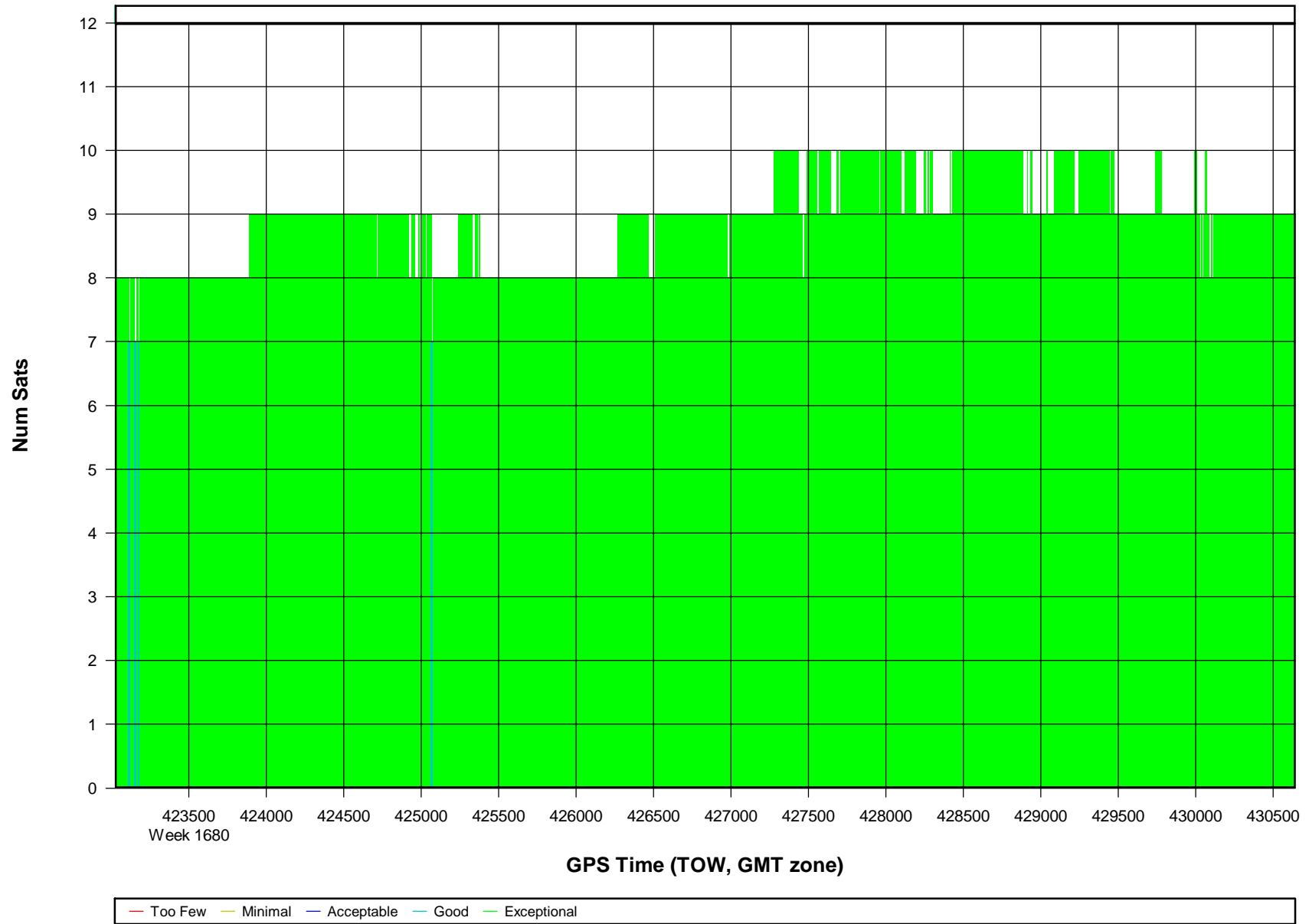
o112082a [Combined] - Forward/Reverse or Combined Separation Plot



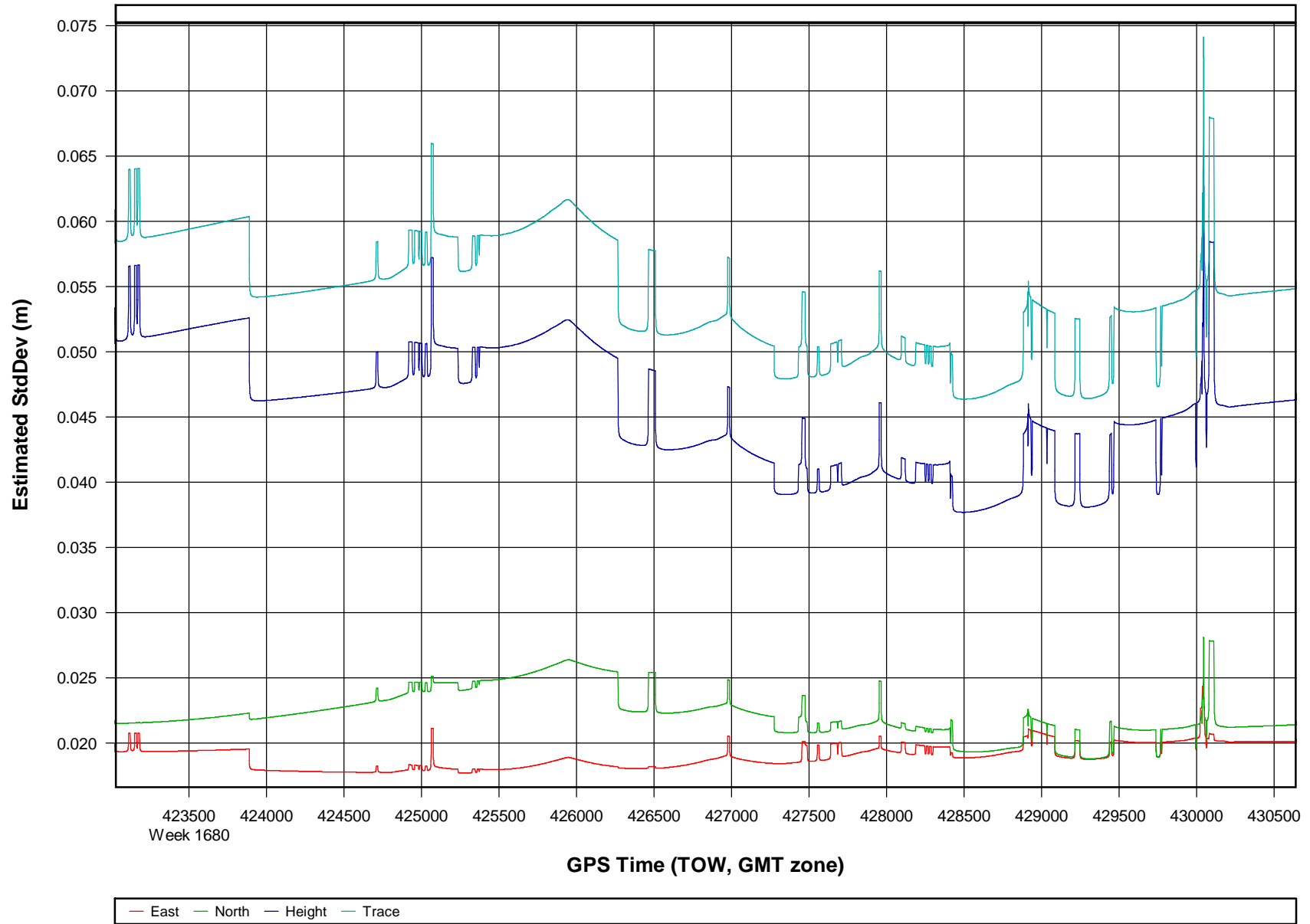
o112082a [Combined] - PDOP, HDOP, VDOP Plots



o112082a [Combined] - Number of Satellites Bar Plot



o112082a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: E:\Projects\335DEW11_USGS_MD_VA_cont\2_Operations\6_Missions\o112082a\3_Processed\GPS\o112082a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	76361
No processed position:	68740
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0172 (m)
C/A Code:	0.76 (m)
L1 Doppler:	0.031 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.004 (m)
North:	0.009 (m)
Height:	0.016 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (7616 occurrences):

East:	0.004 (m)
North:	0.008 (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:

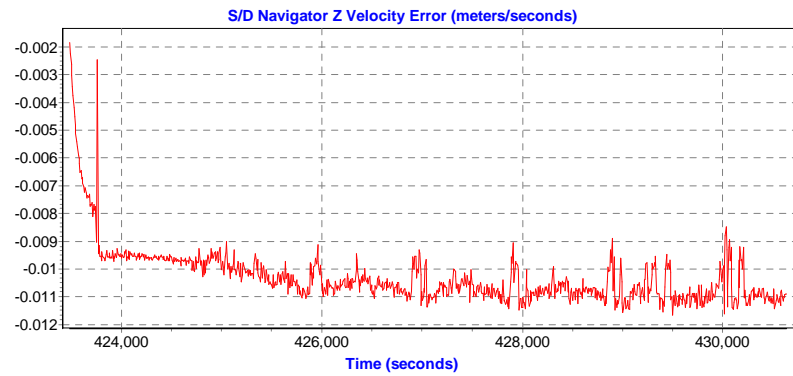
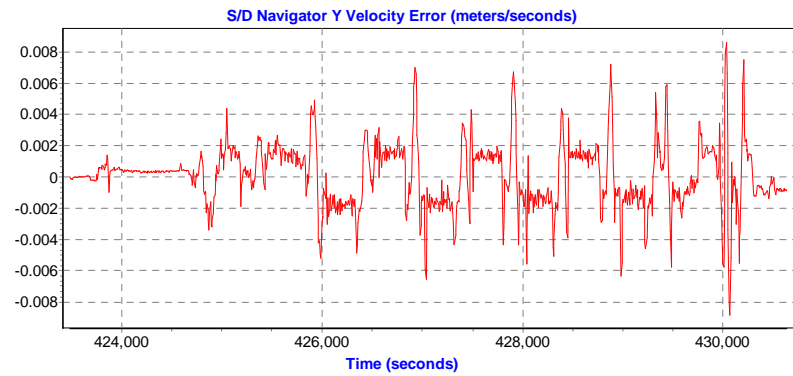
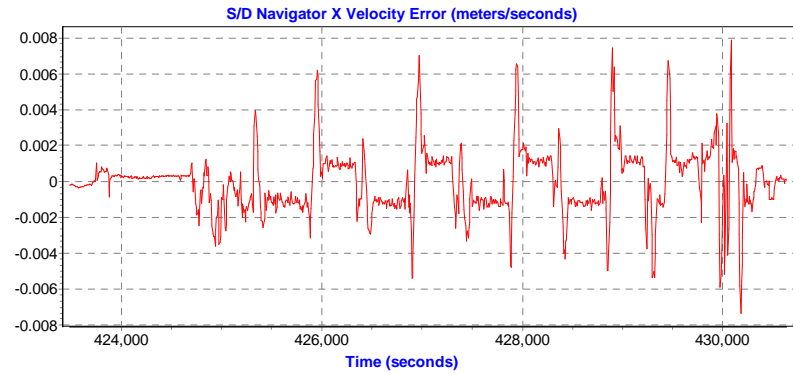
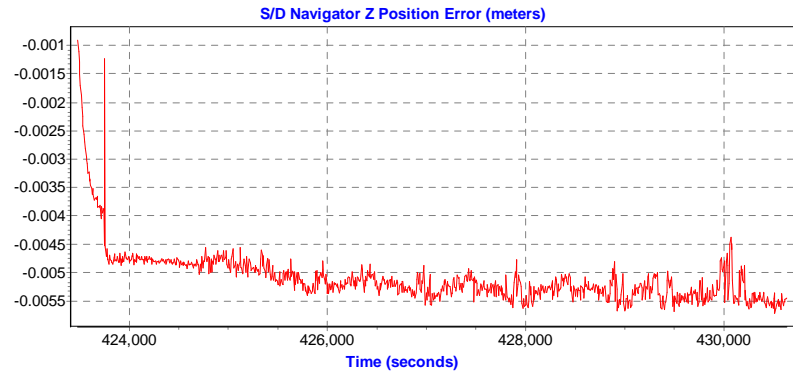
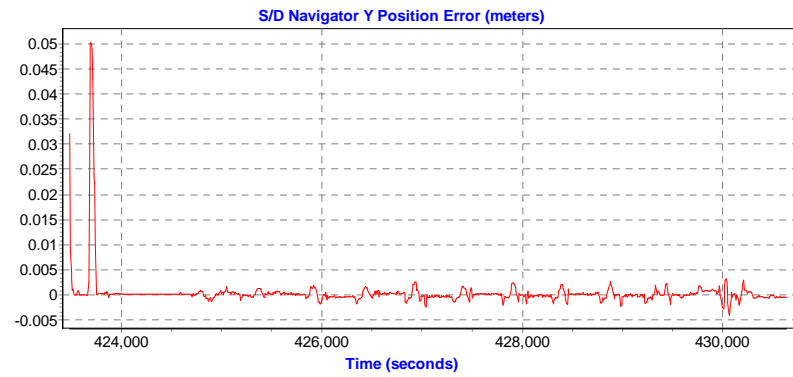
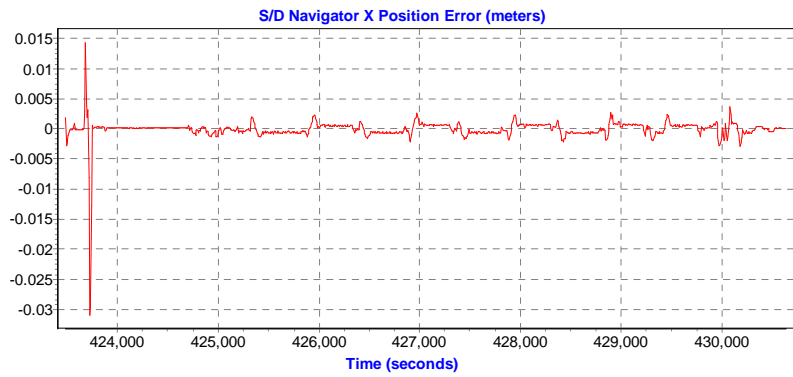
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

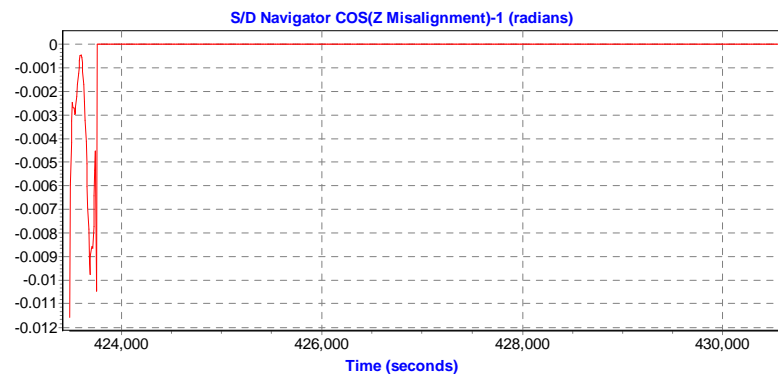
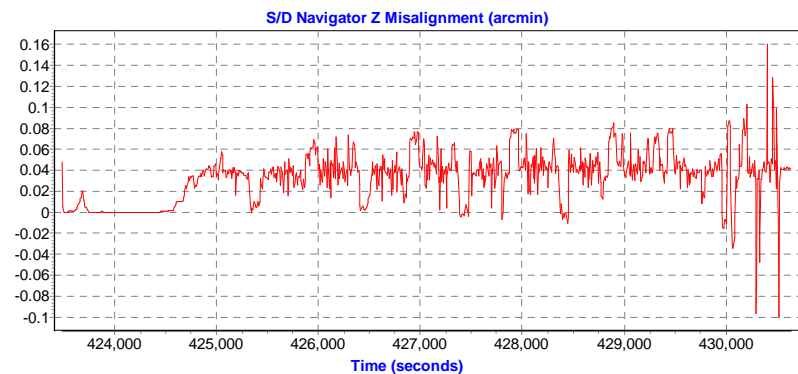
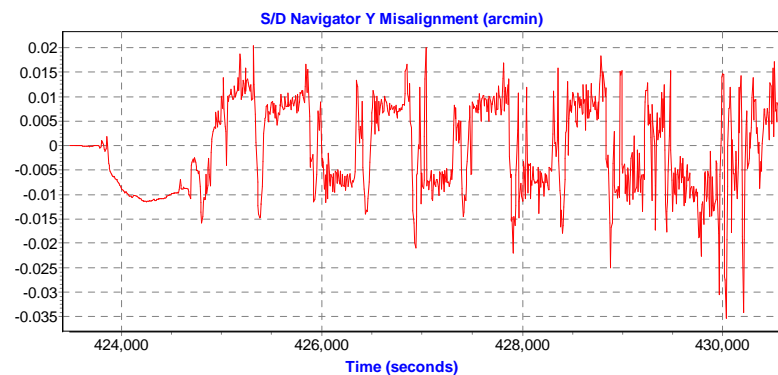
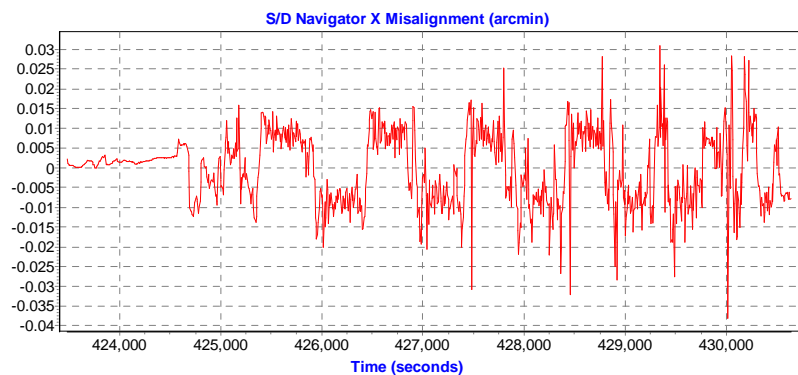
Percentages of epochs with DD_DOP over 10.00:

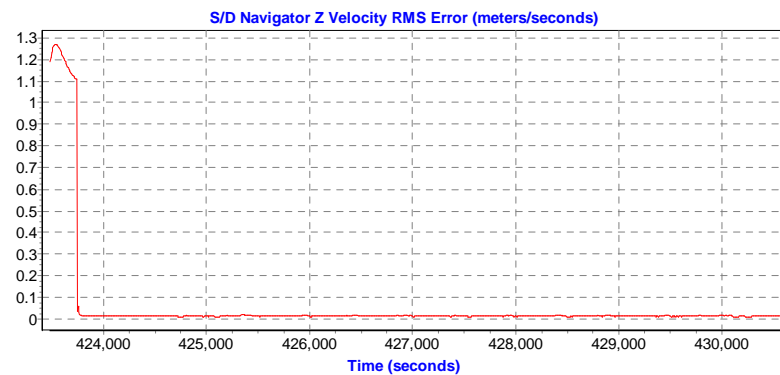
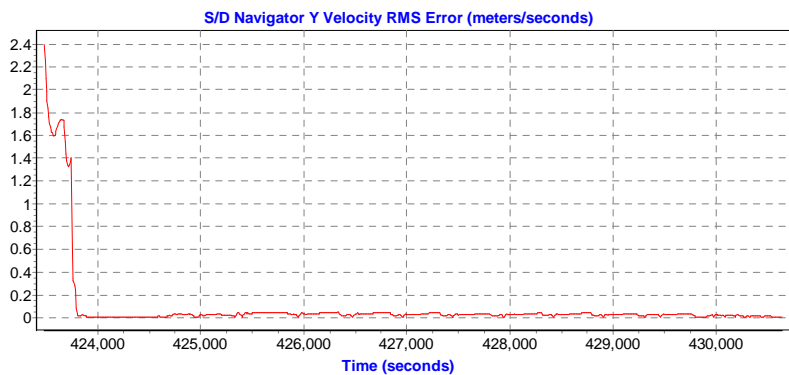
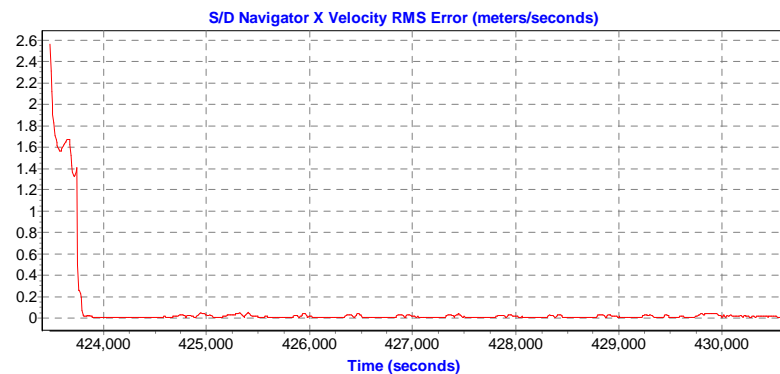
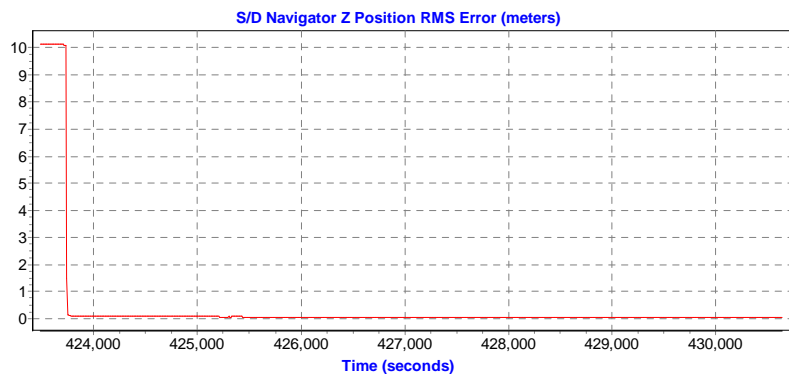
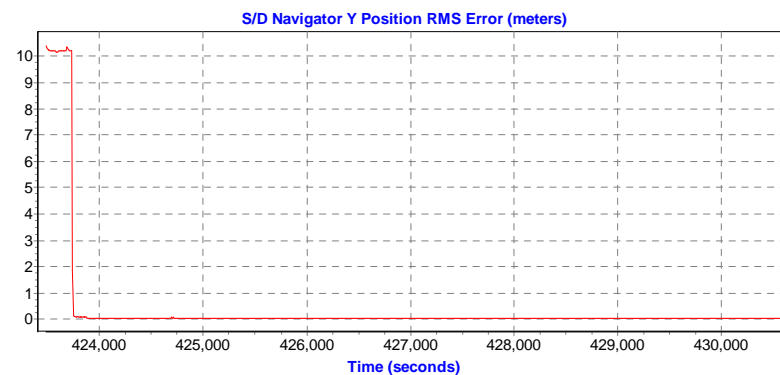
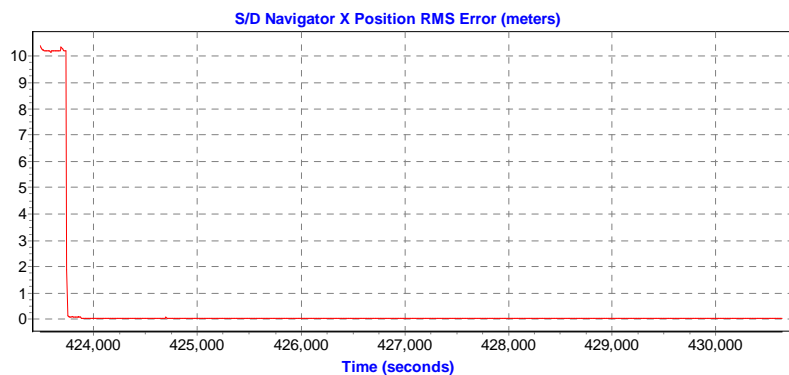
DOP over Tol:	0.0 %
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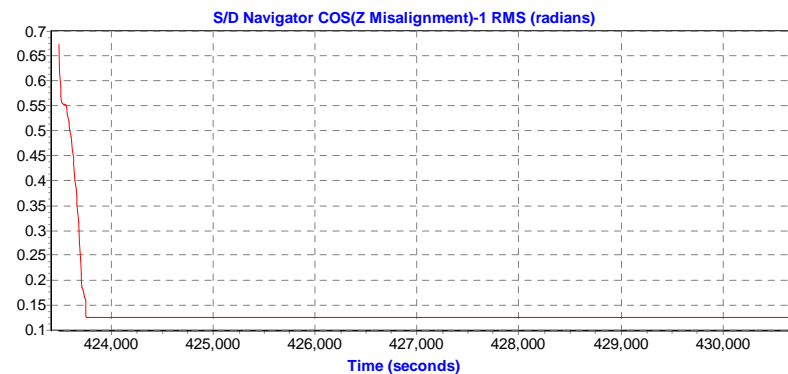
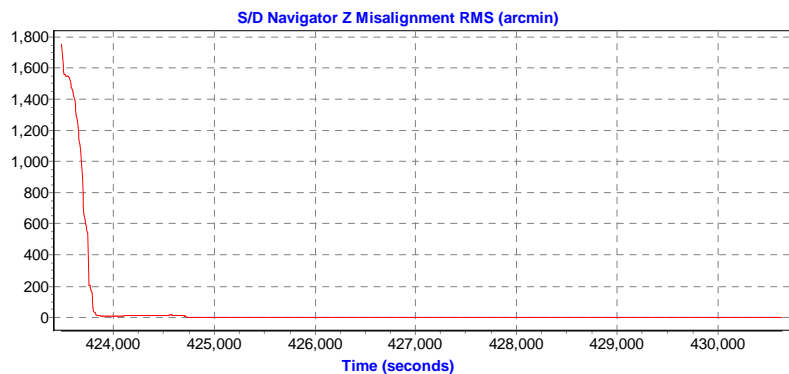
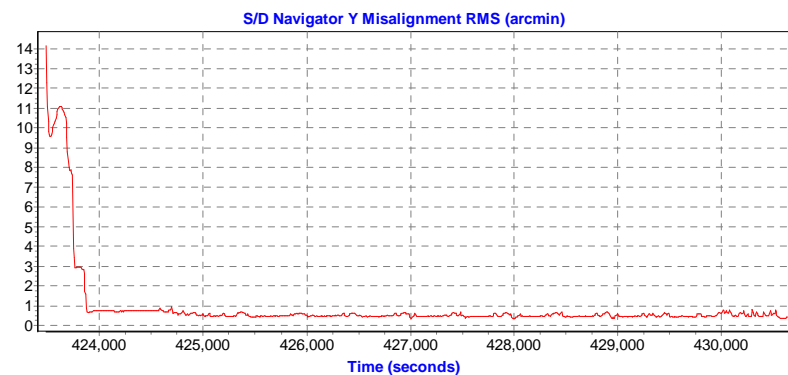
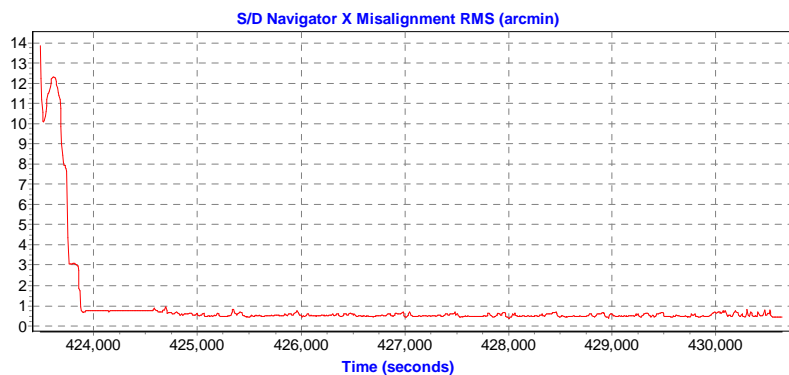
Baseline Distances:

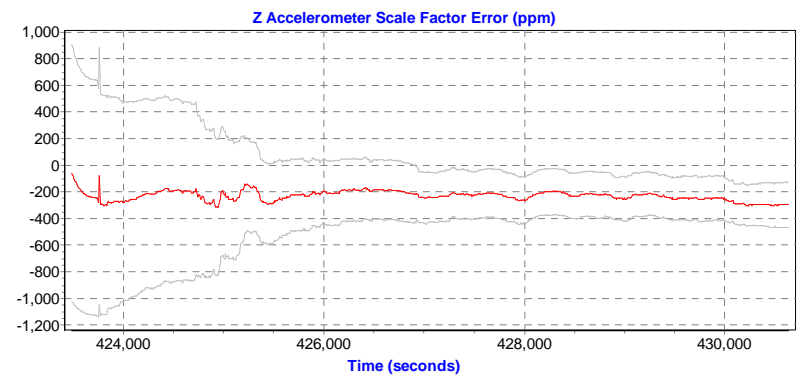
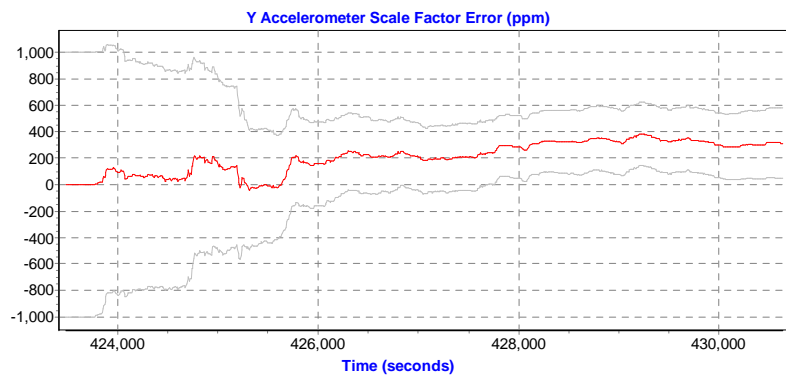
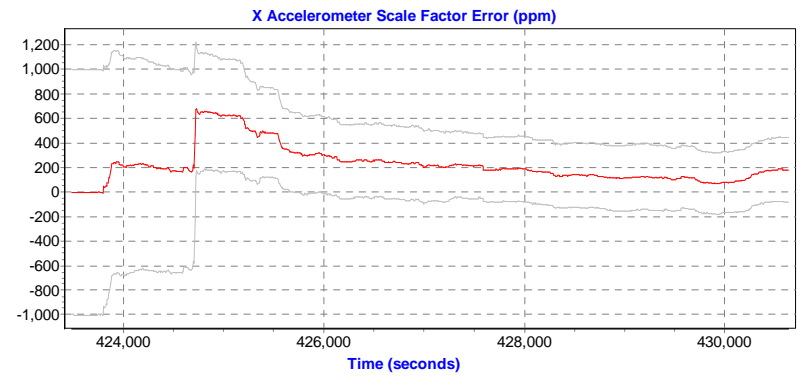
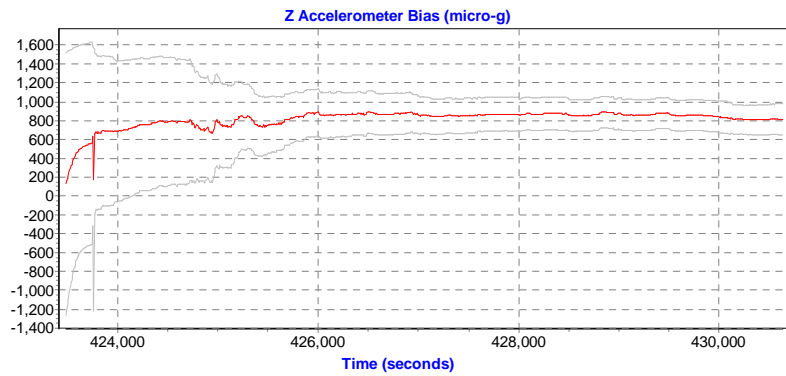
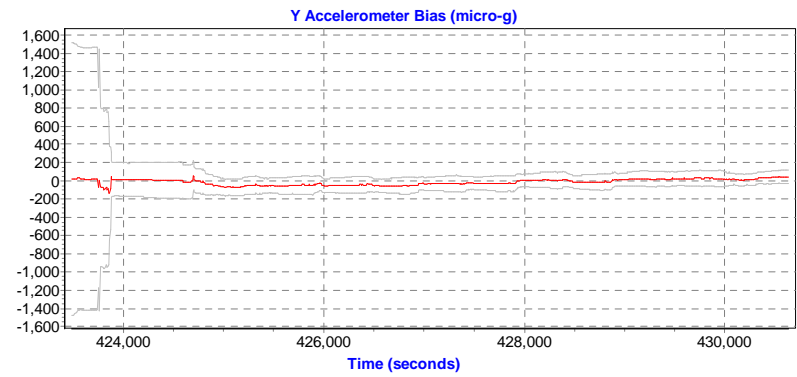
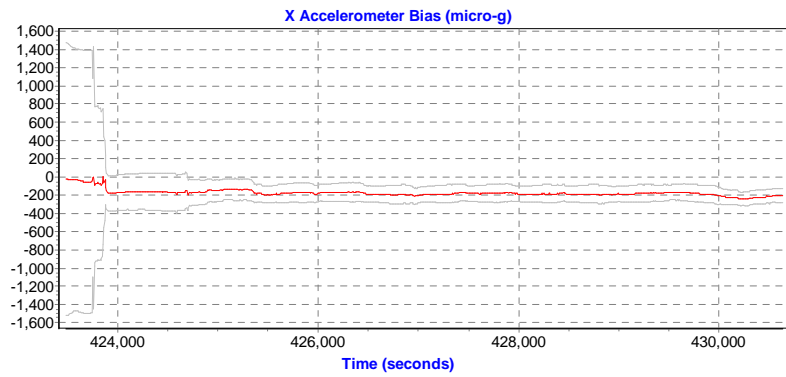
Maximum:	39.072 (km)
Minimum:	1.201 (km)
Average:	17.522 (km)
First Epoch:	18.421 (km)
Last Epoch:	18.392 (km)

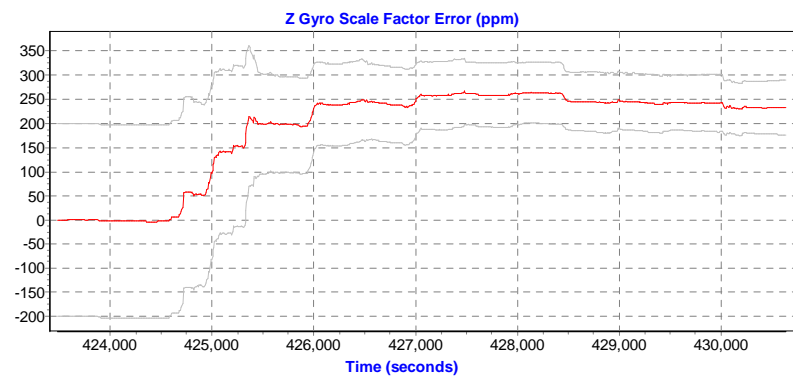
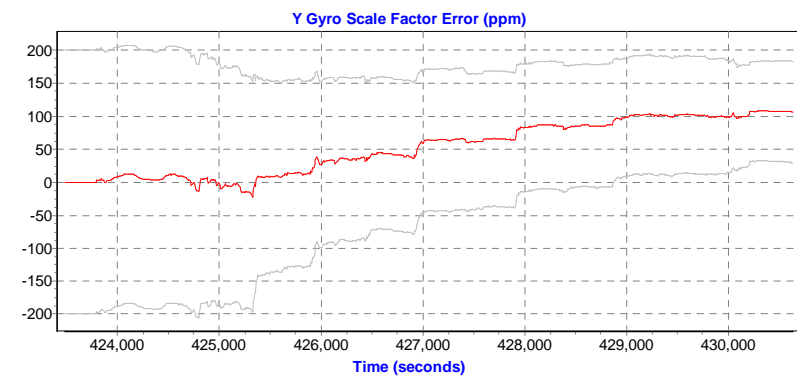
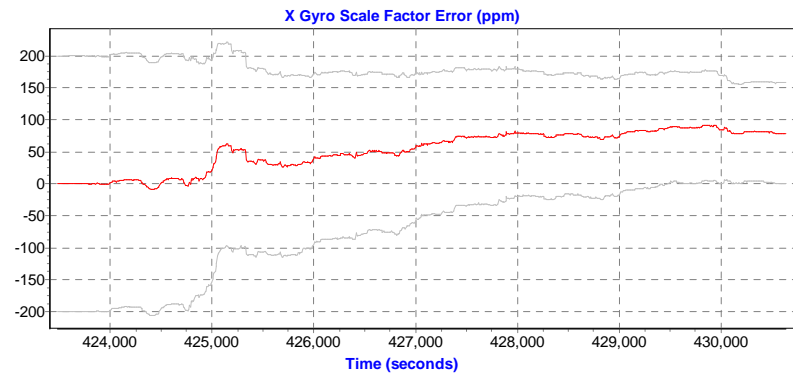
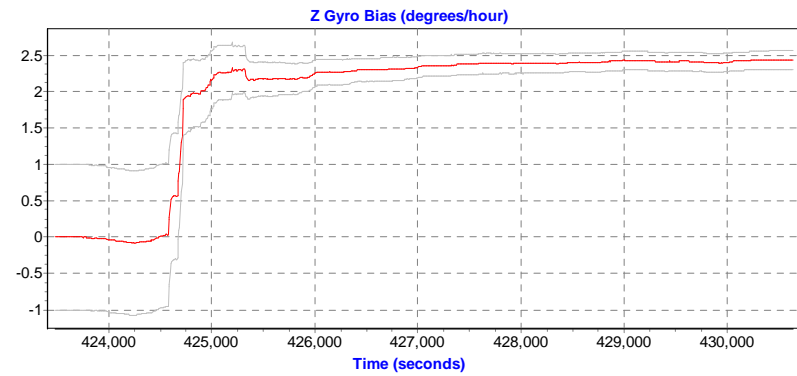
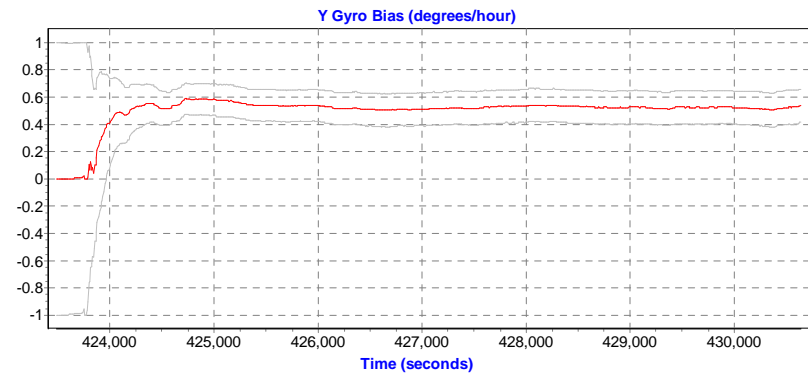
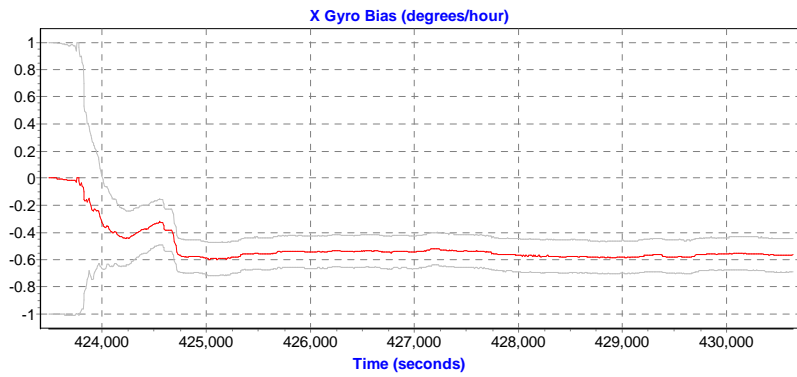


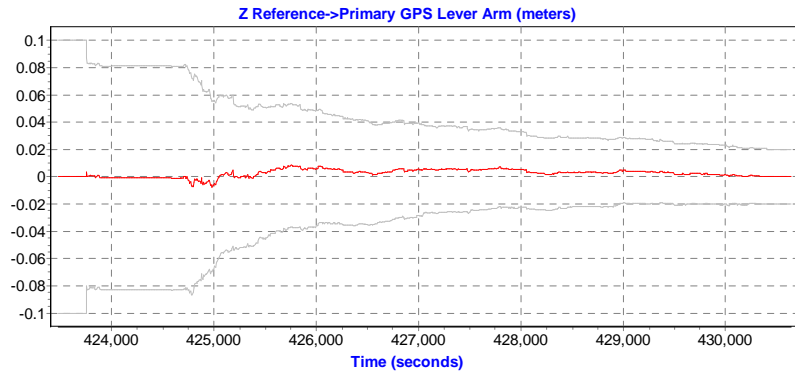
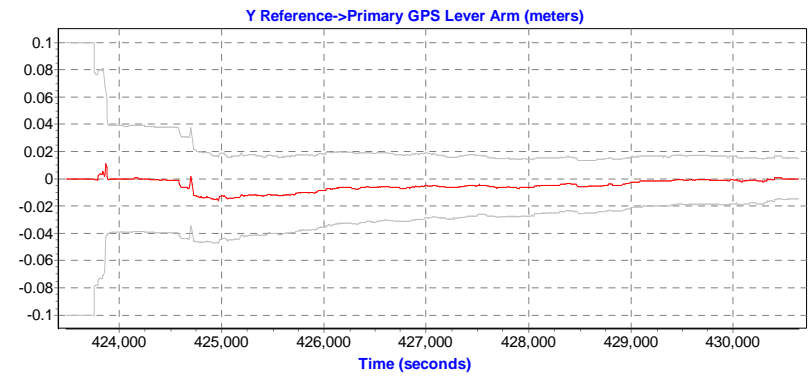
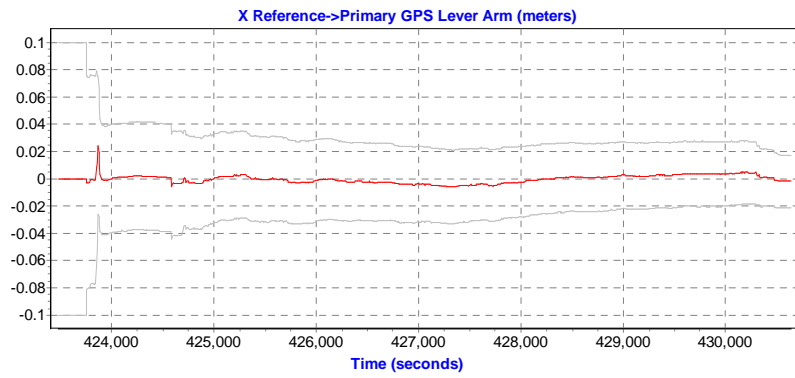






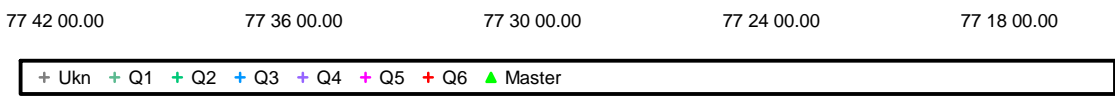
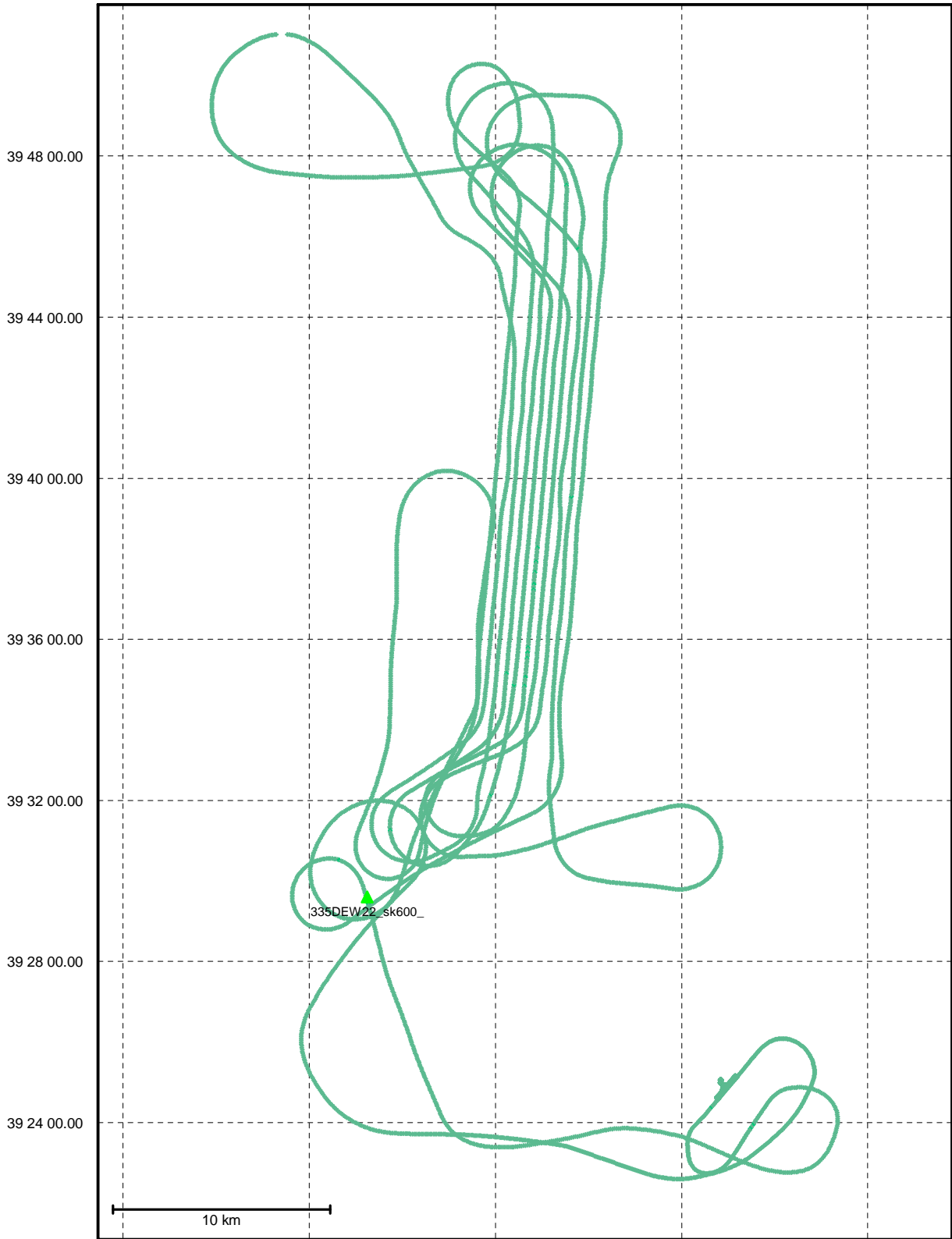




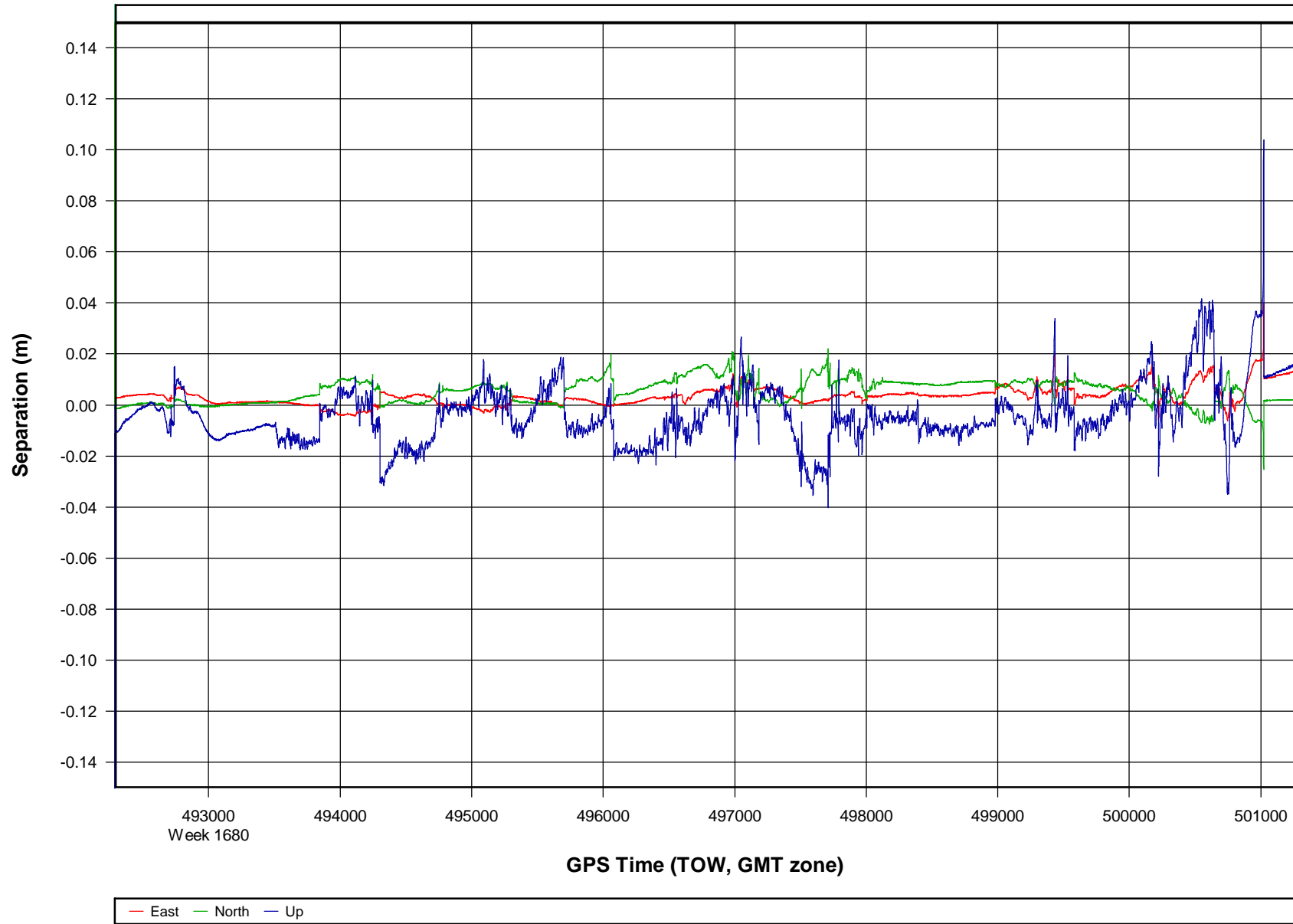


Combined - Map Run (1)

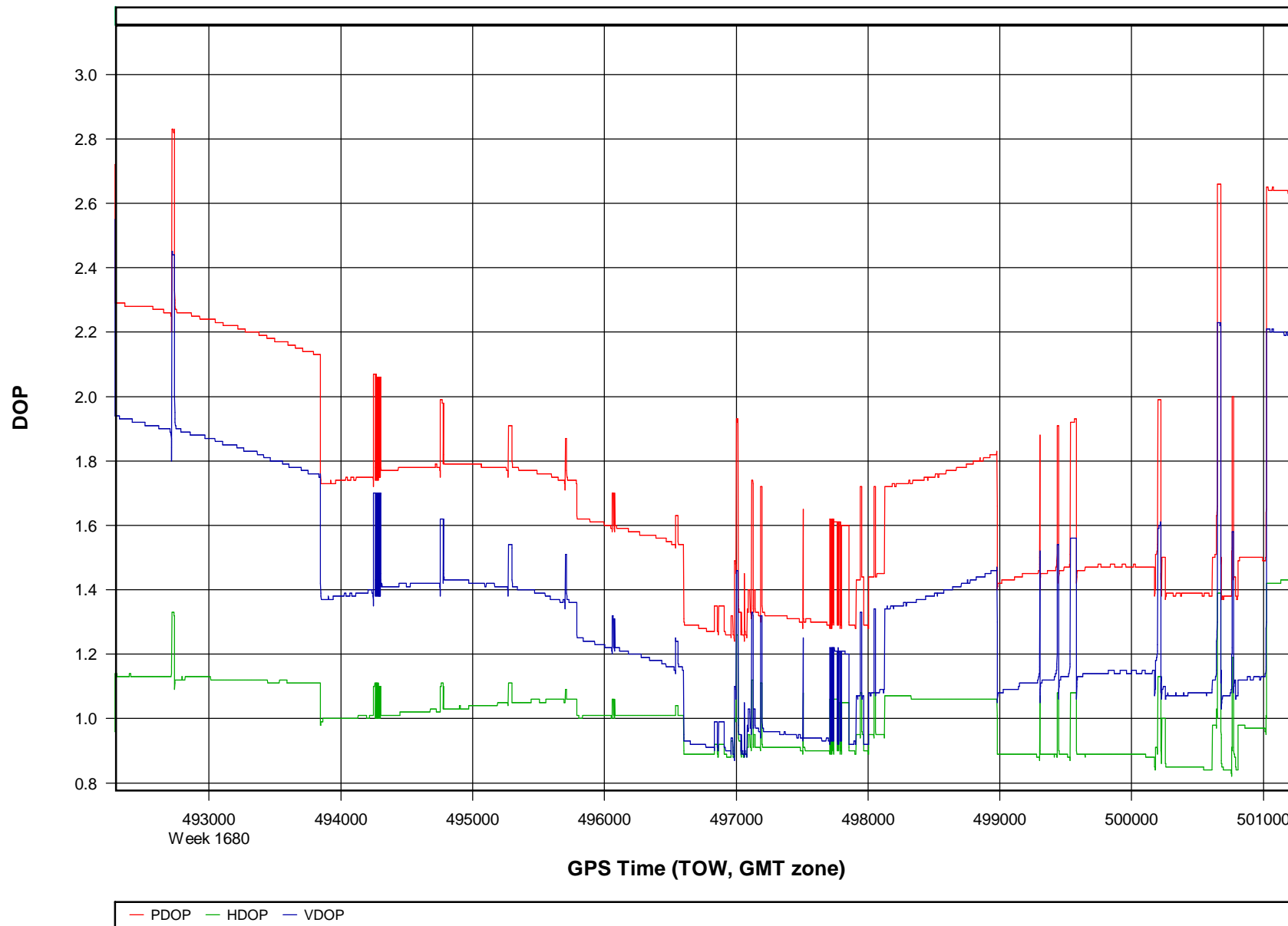
Geographic, DMS



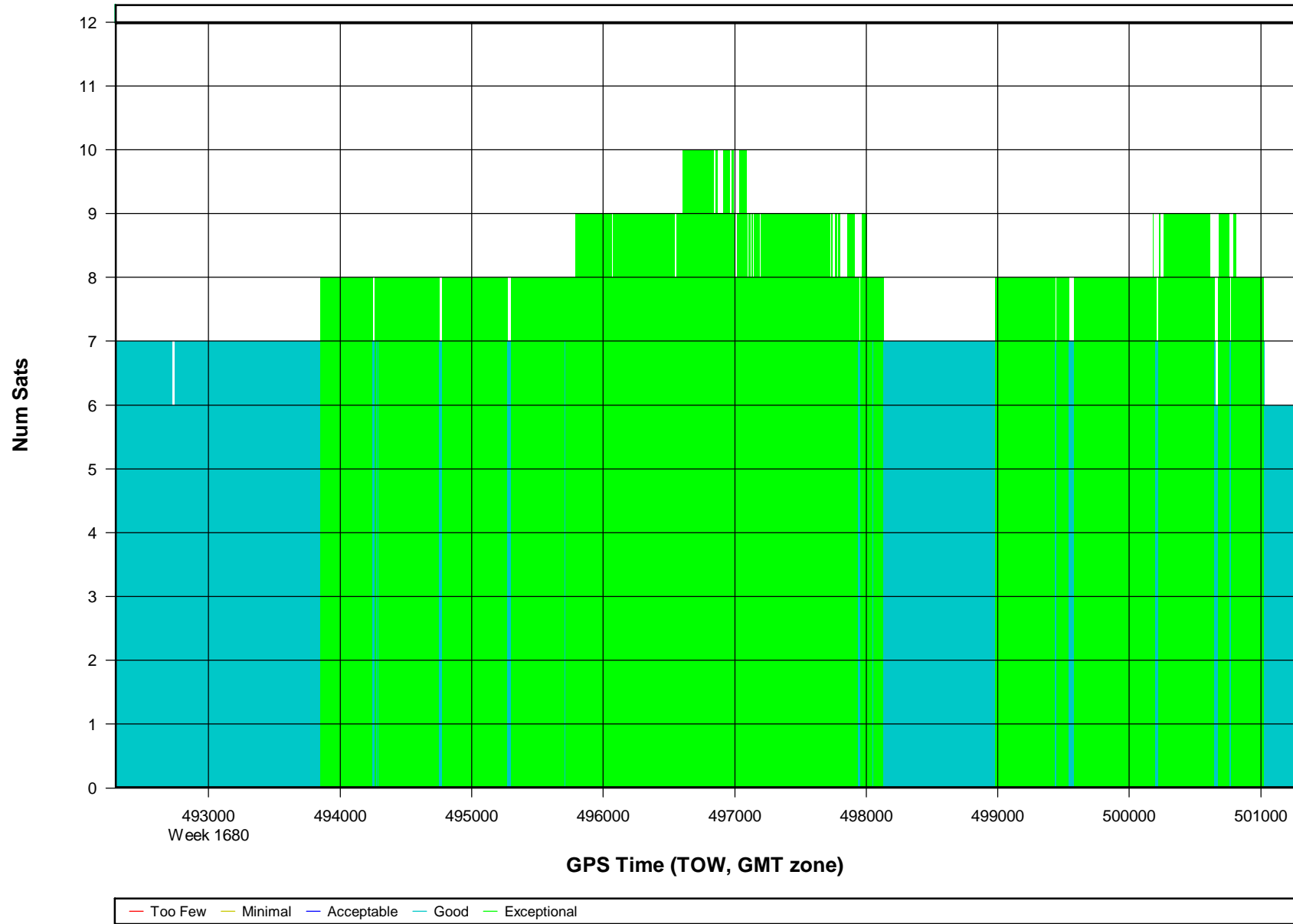
o112083a [Combined] - Forward/Reverse or Combined Separation Plot



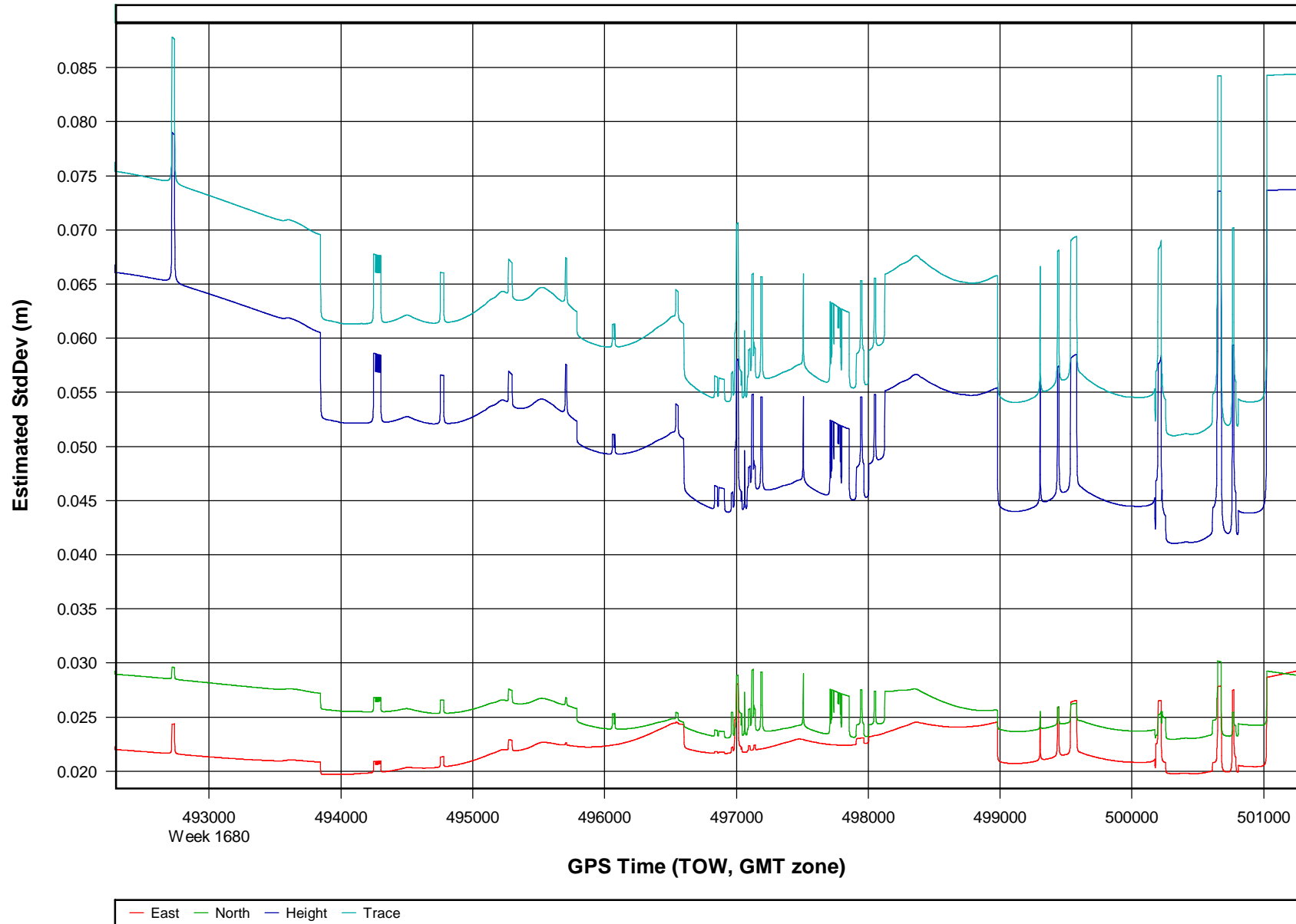
o112083a [Combined] - PDOP, HDOP, VDOP Plots



o112083a [Combined] - Number of Satellites Bar Plot



o112083a [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: E:\Projects\335DEW11_USGS_MD_VA_cont\2_Operations\6_Missions\o112083a\3_Processed\GPS\o112083a.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	89925
No processed position:	80945
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0154 (m)
C/A Code:	0.74 (m)
L1 Doppler:	0.030 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.010 (m)
North:	0.011 (m)
Height:	0.035 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (8975 occurrences):

East:	0.005 (m)
North:	0.007 (m)
Height:	0.012 (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:

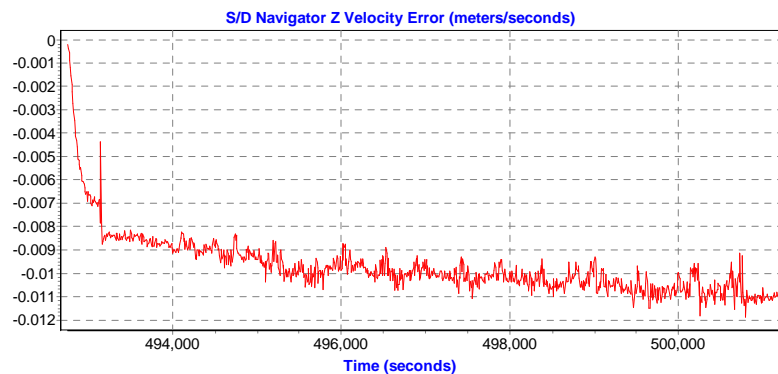
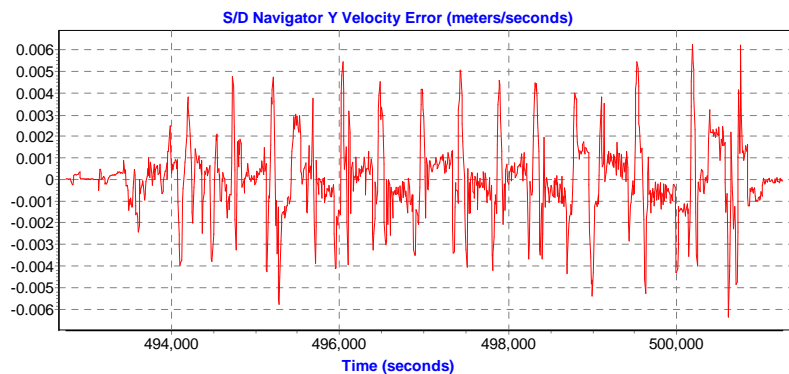
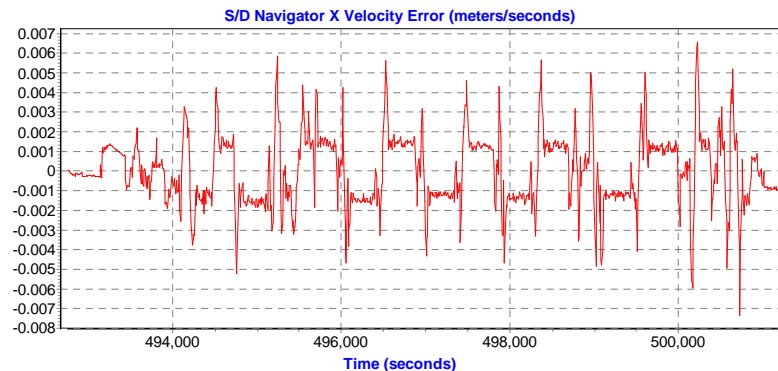
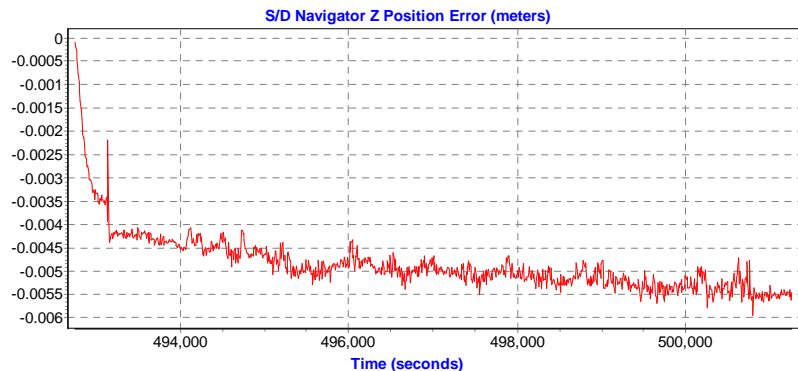
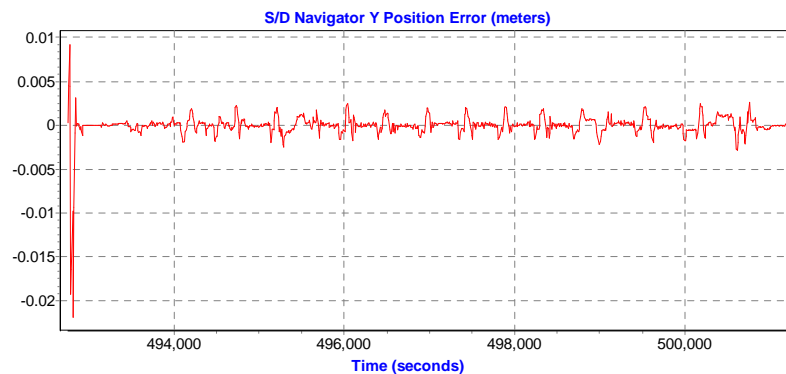
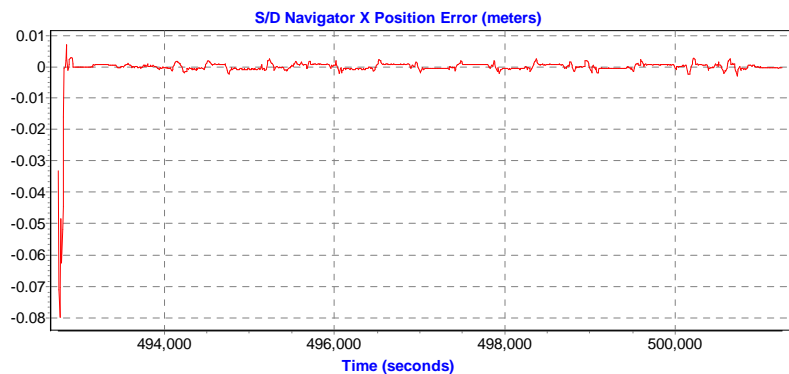
0.00 - 0.10 m:	100.0 %
0.10 - 0.30 m:	0.0 %
0.30 - 1.00 m:	0.0 %
1.00 - 5.00 m:	0.0 %
5.00 m + over:	0.0 %

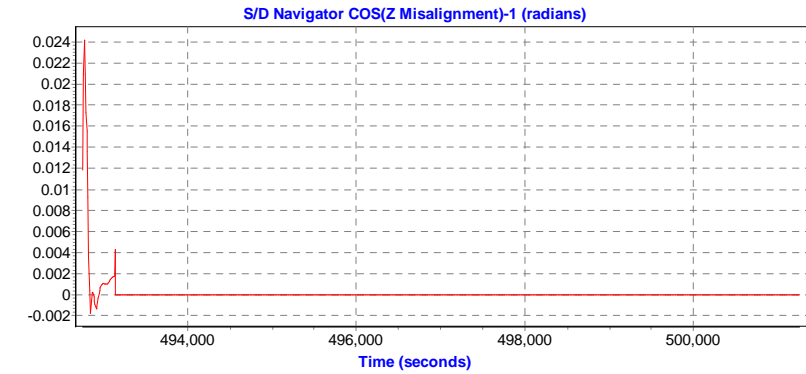
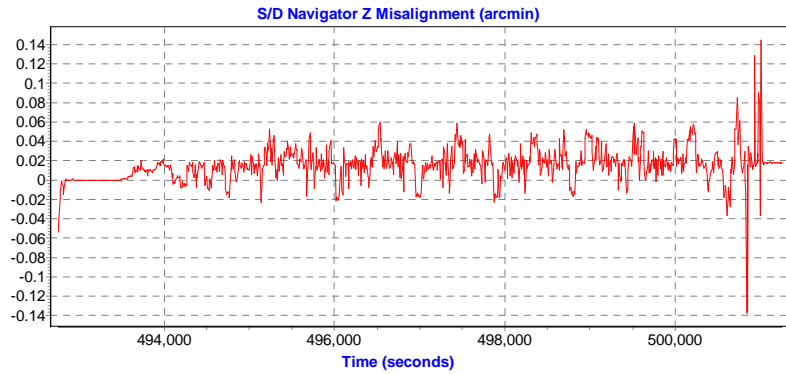
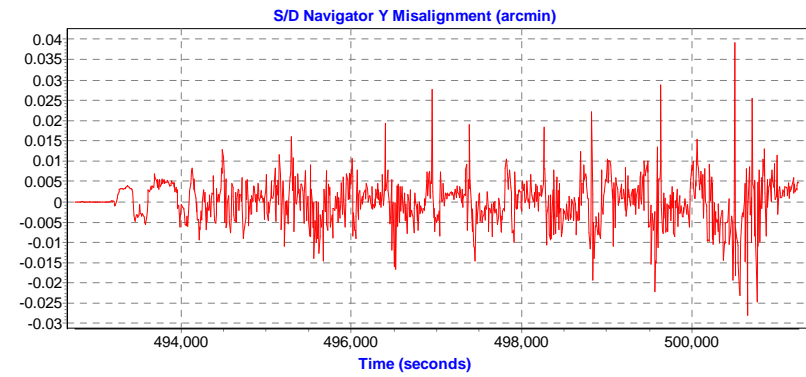
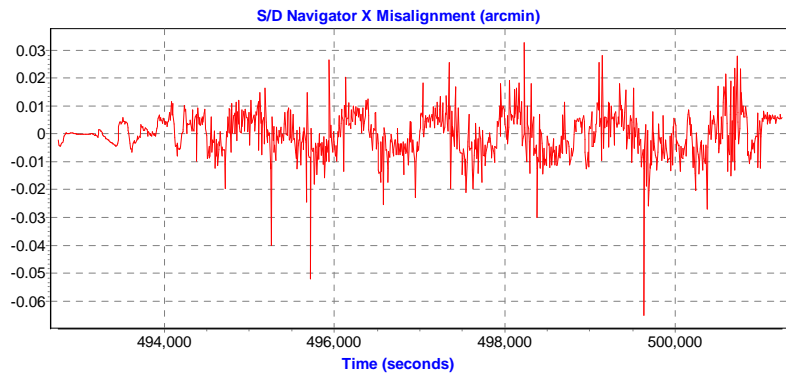
Percentages of epochs with DD_DOP over 10.00:

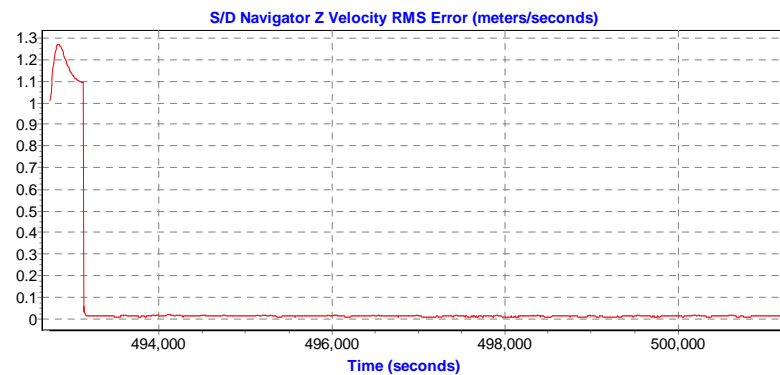
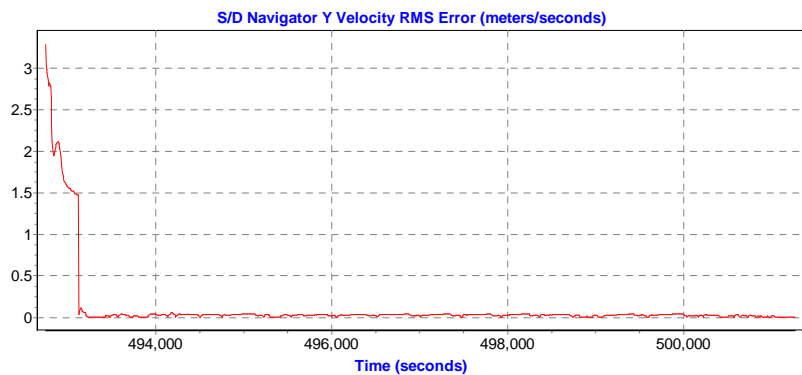
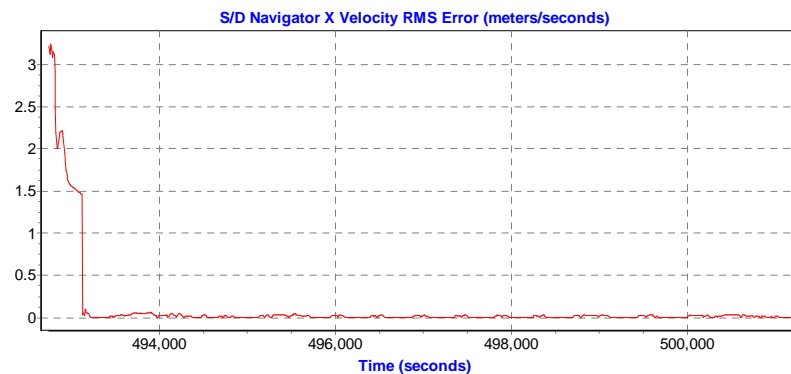
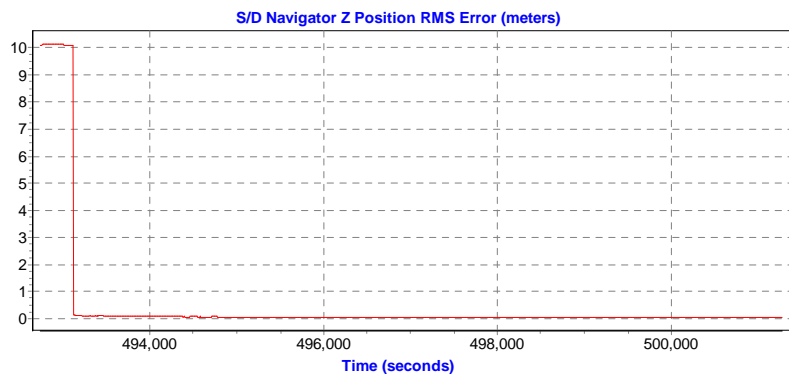
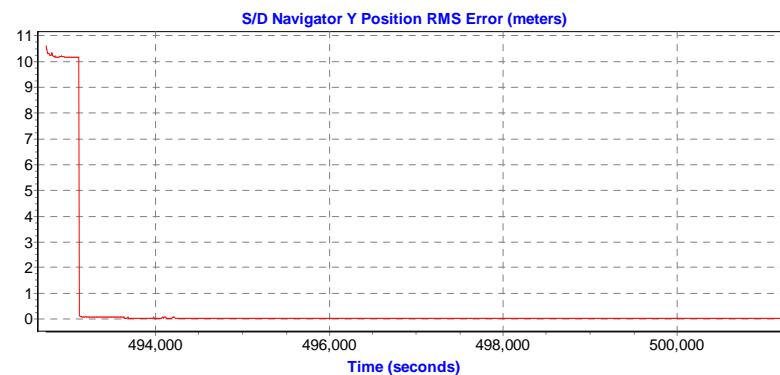
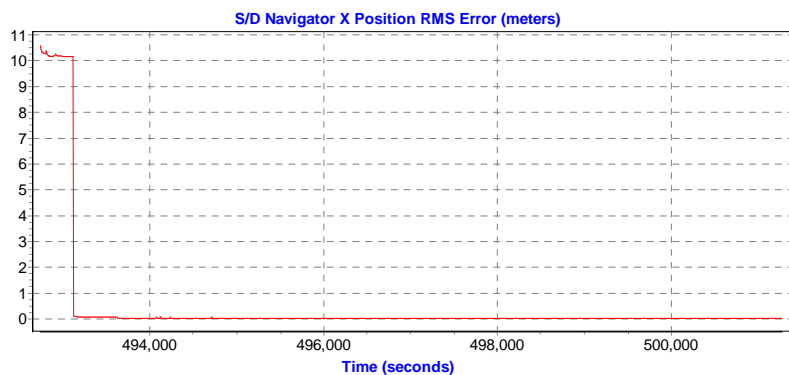
DOP over Tol:	0.0 %
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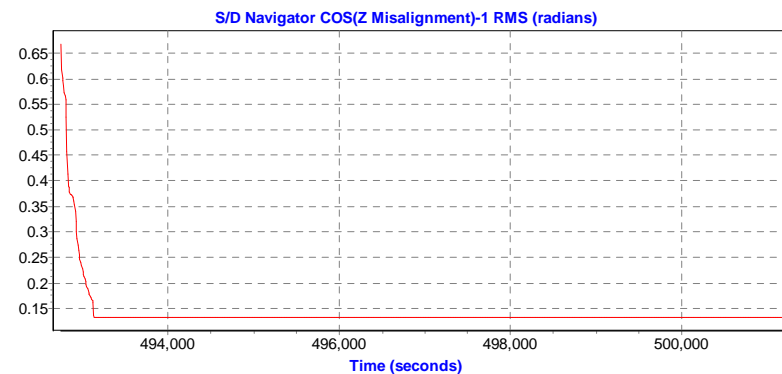
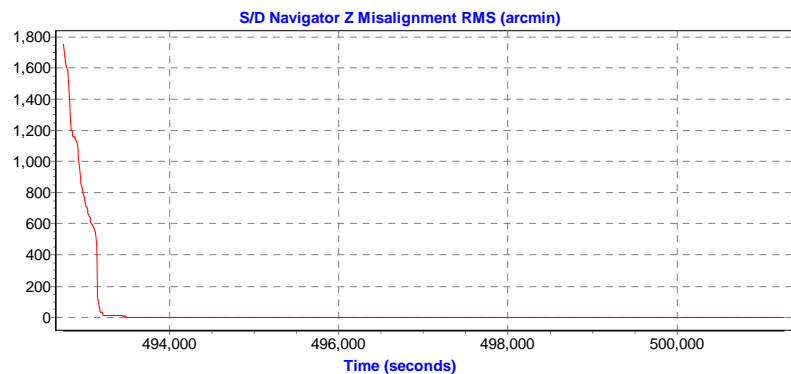
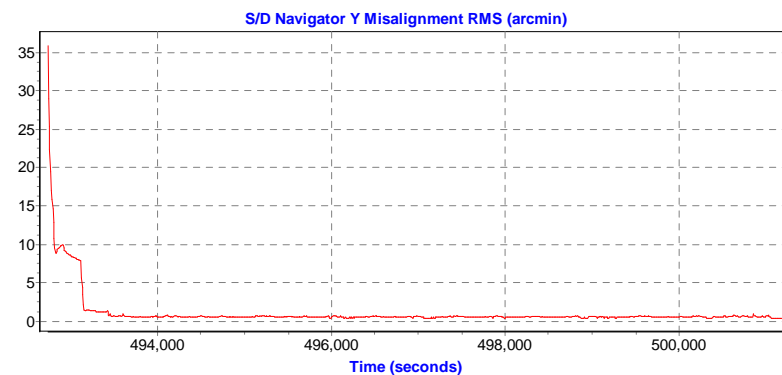
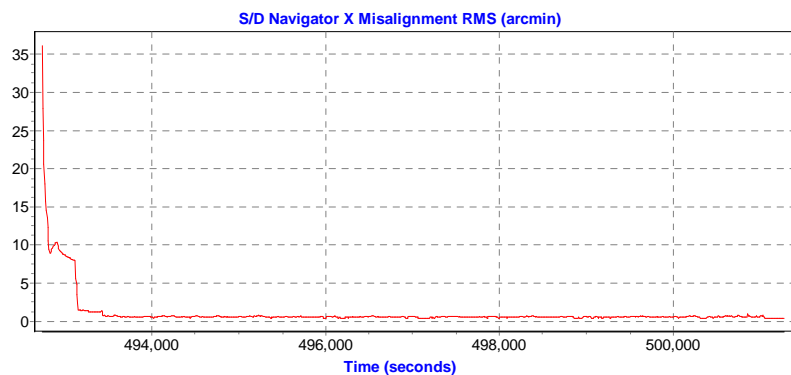
Baseline Distances:

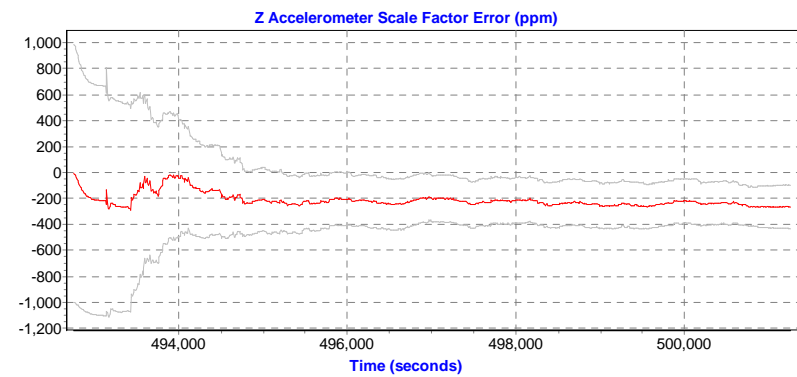
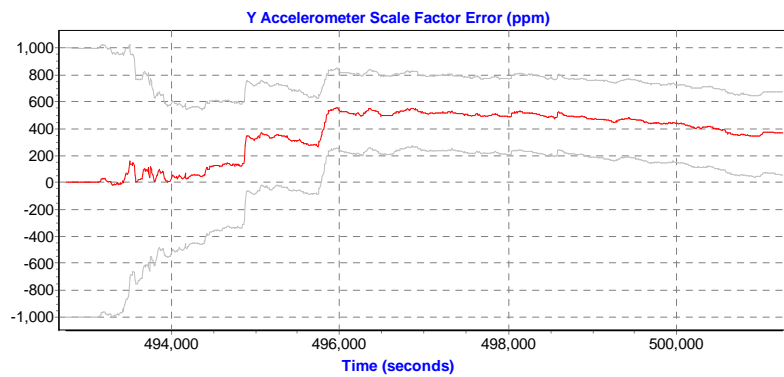
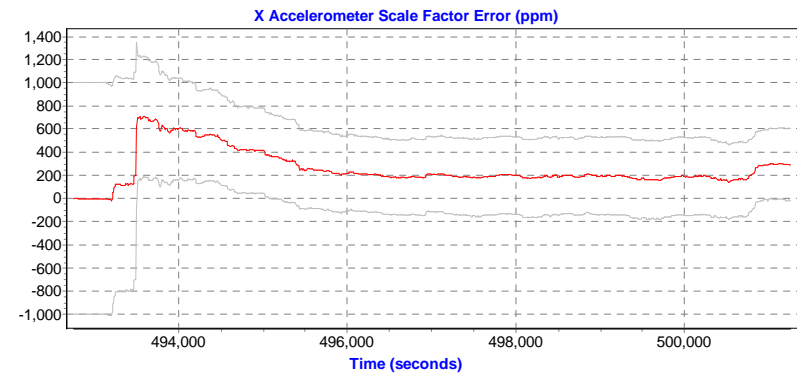
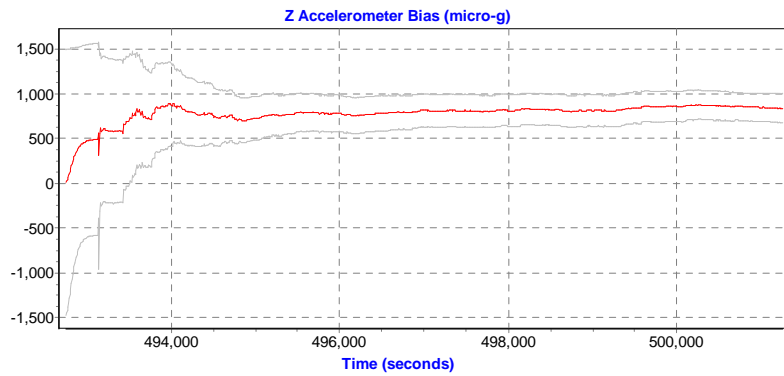
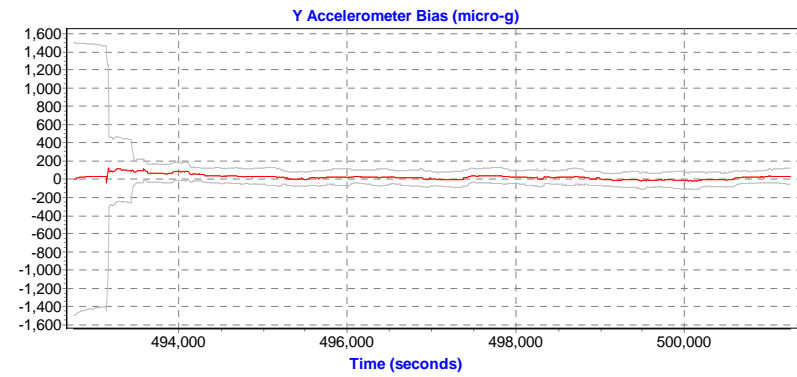
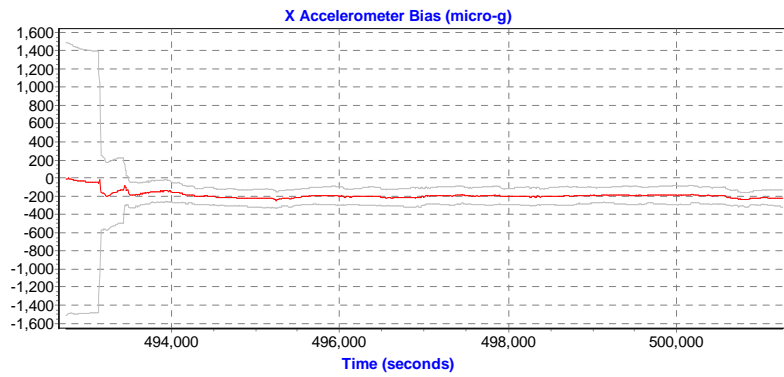
Maximum:	39.887 (km)
Minimum:	1.378 (km)
Average:	18.665 (km)
First Epoch:	18.392 (km)
Last Epoch:	18.416 (km)

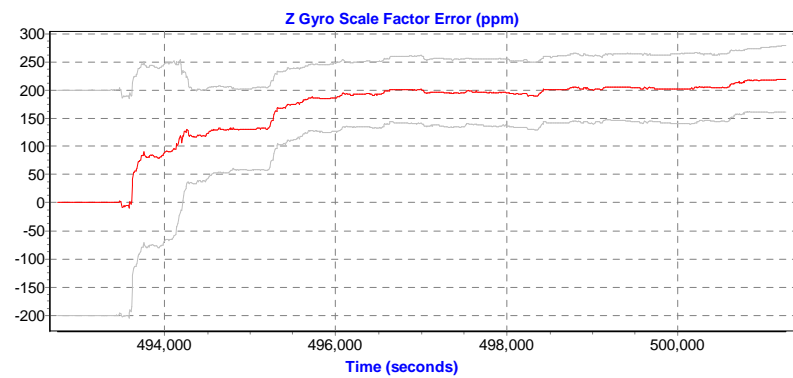
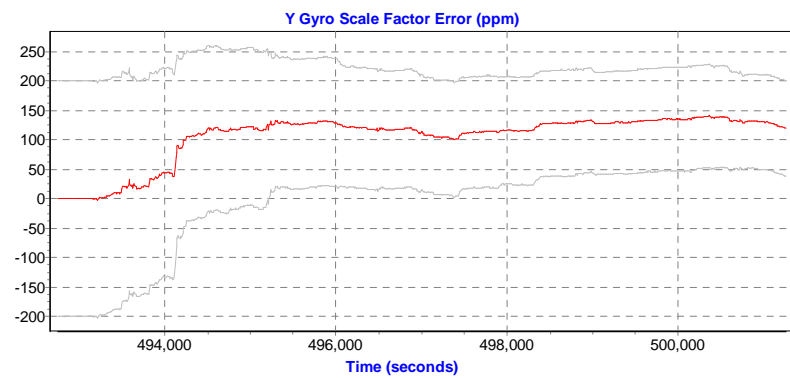
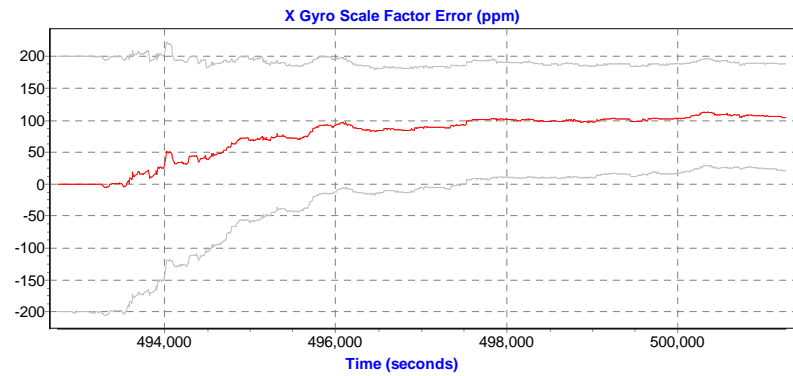
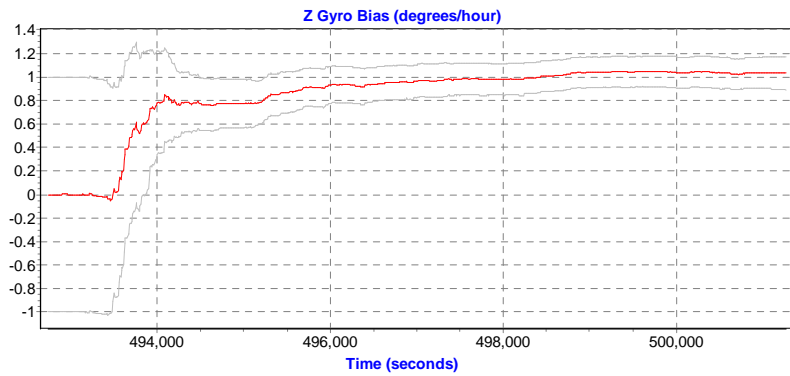
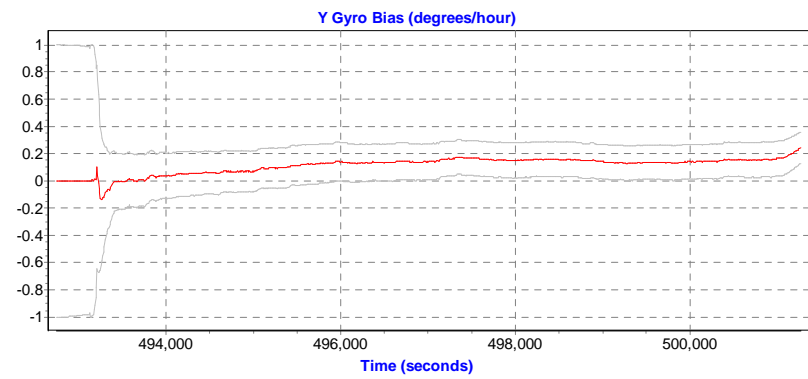
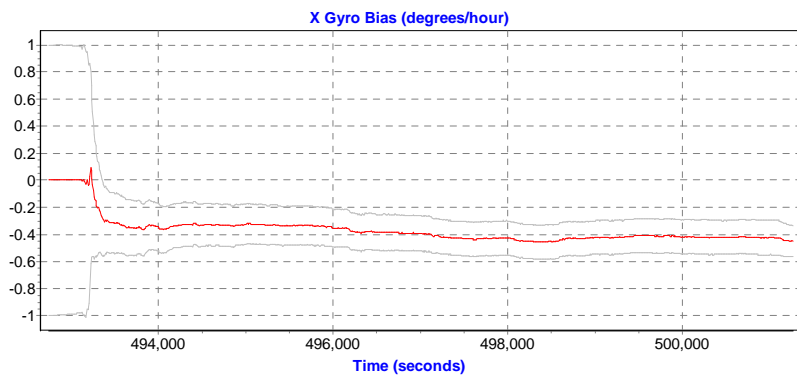


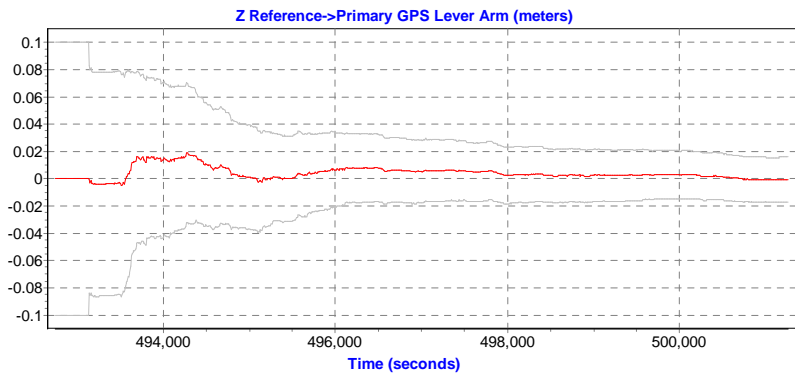
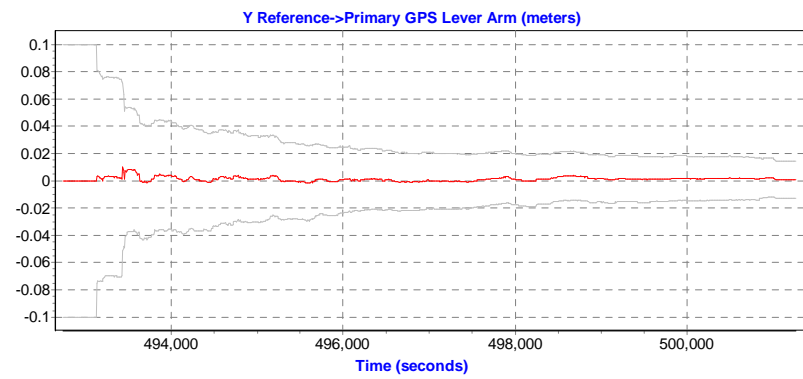
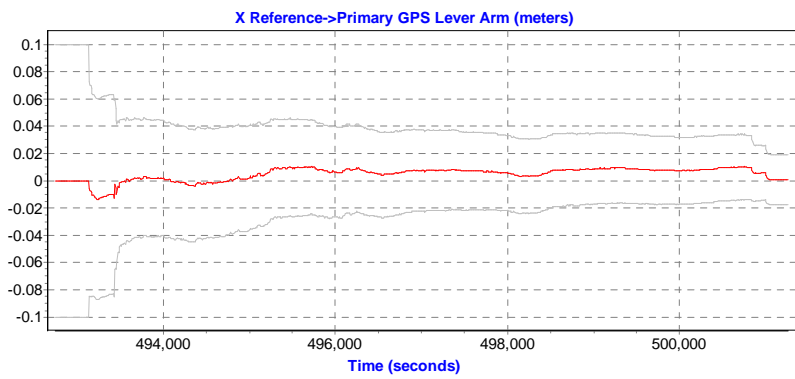






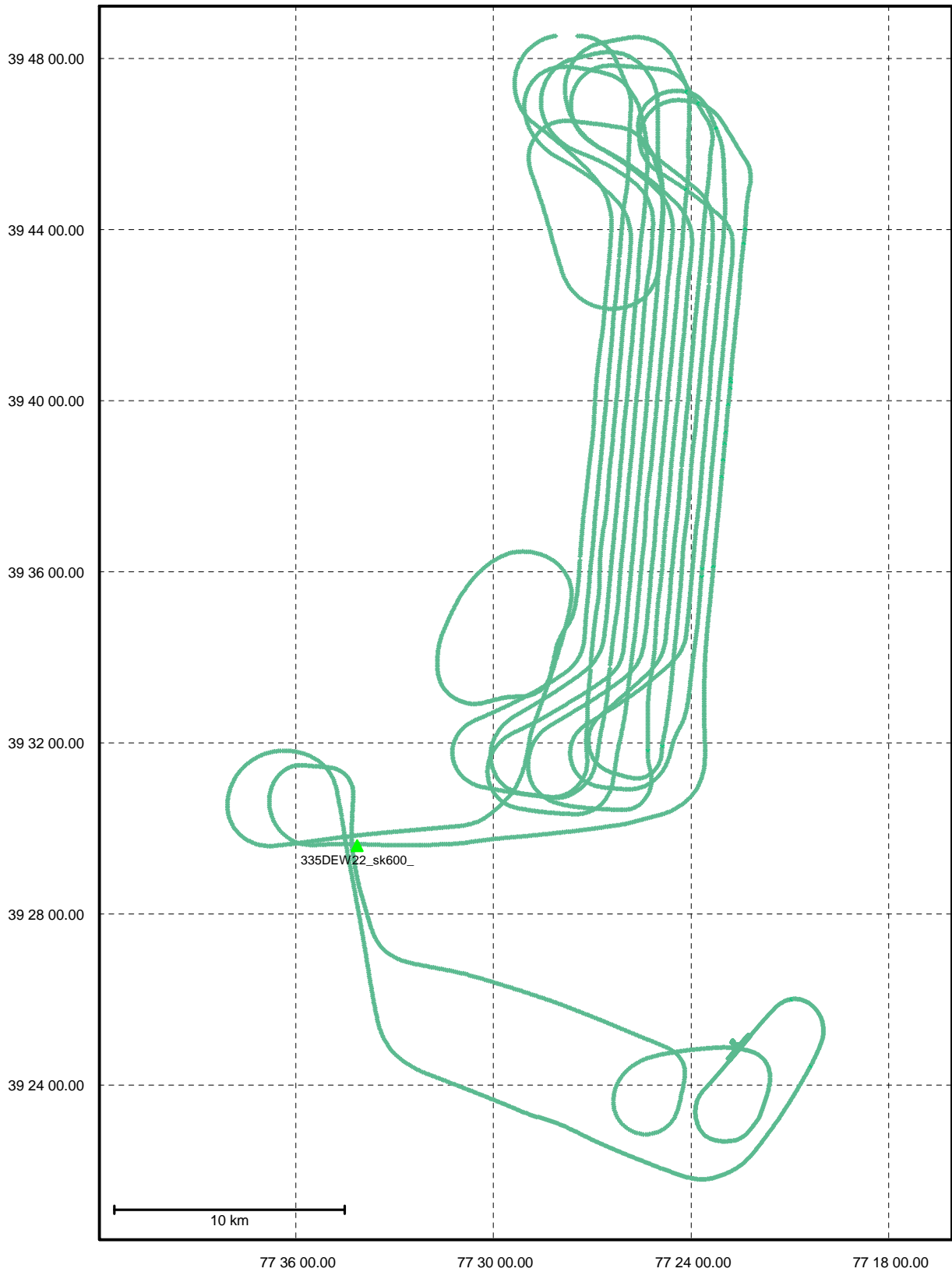






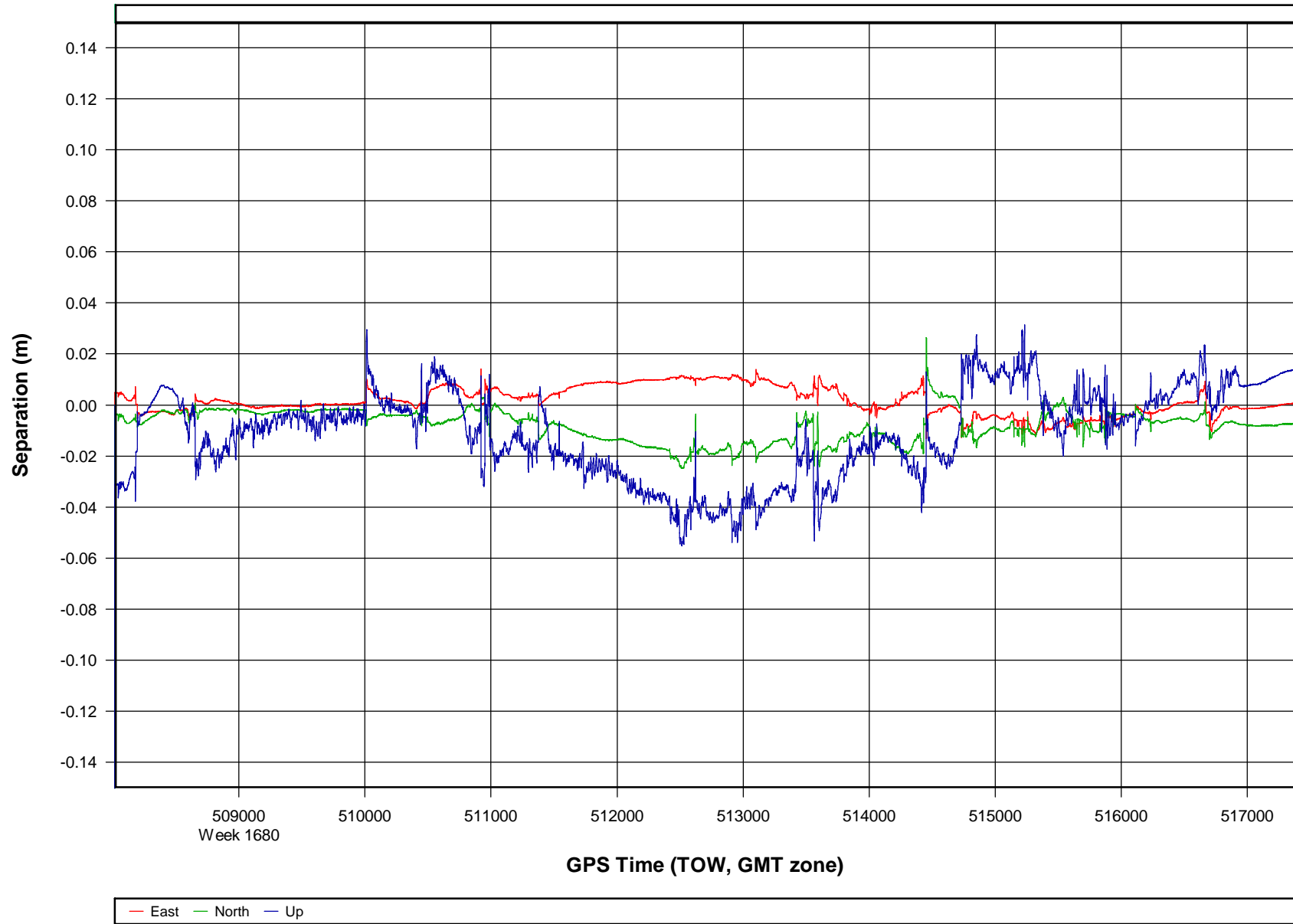
Combined - Map Run (1)

Geographic, DMS

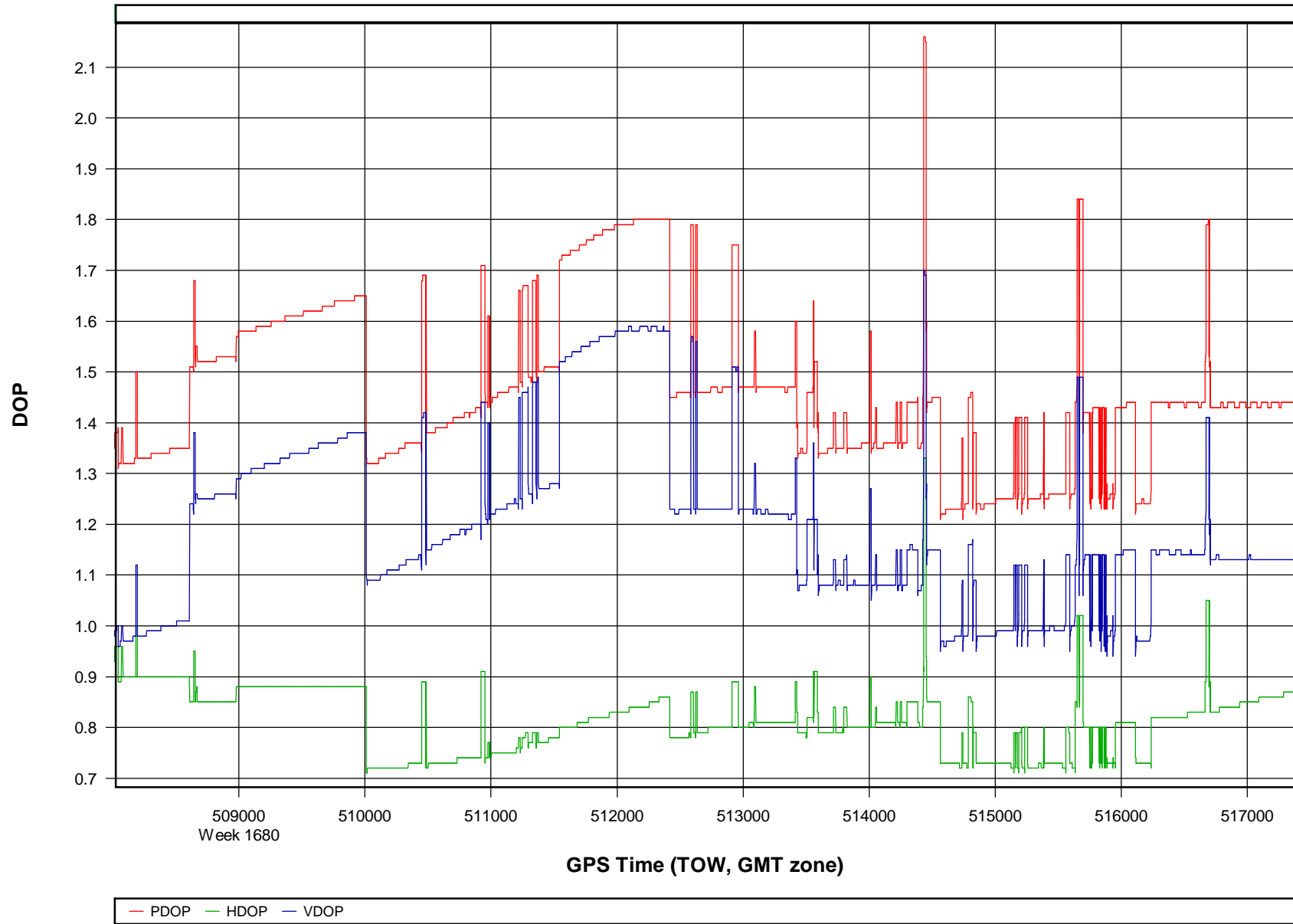


+ Ukn + Q1 + Q2 + Q3 + Q4 + Q5 + Q6 ▲ Master

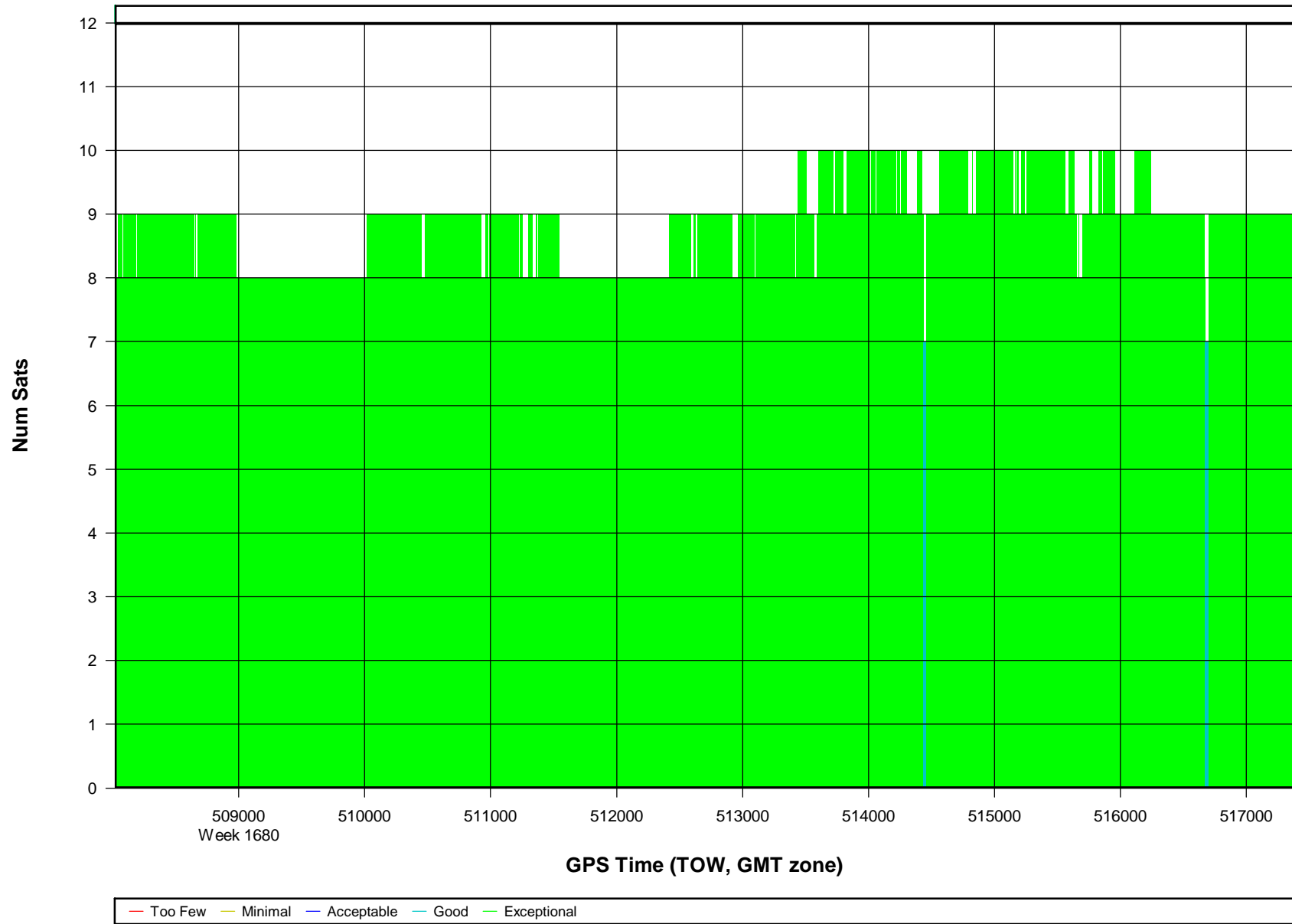
o112083b [Combined] - Forward/Reverse or Combined Separation Plot



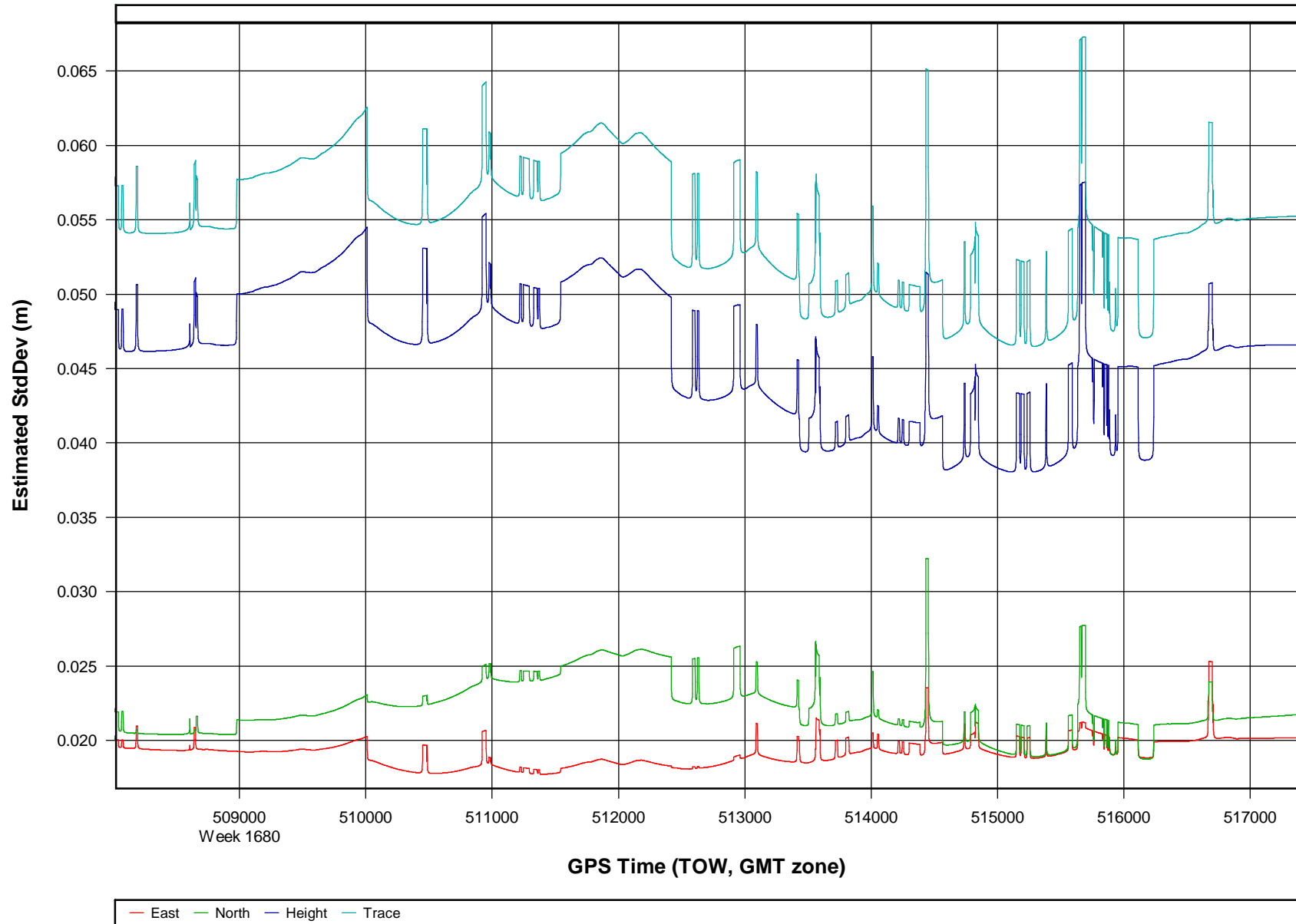
o112083b [Combined] - PDOP, HDOP, VDOP Plots



o112083b [Combined] - Number of Satellites Bar Plot



o112083b [Combined] - Estimated Position Accuracy Plot



Processing Summary Information

Program: GrafNav
Version: 7.80.2517
Project: E:\Projects\335DEW11_USGS_MD_VA_cont\2_Operations\6_Missions\o112083b\3_Processed\GPS\o112083b.cfg

Solution Type: Combined Fwd/Rev

Number of Epochs:

Total in GPB file:	93829
No processed position:	84464
Missing Fwd or Rev:	3
With bad C/A code:	0
With bad L1 Phase:	0

Measurement RMS Values:

L1 Phase:	0.0161 (m)
C/A Code:	0.75 (m)
L1 Doppler:	0.031 (m/s)

Fwd/Rev Separation RMS Values:

East:	0.007 (m)
North:	0.010 (m)
Height:	0.027 (m)

Fwd/Rev Sep. RMS for 25%-75% weighting (9360 occurrences):

East:	0.006 (m)
North:	0.010 (m)
Height:	0.020 (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 %
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Baseline Distances:

Maximum:	37.155 (km)
Minimum:	1.068 (km)
Average:	19.977 (km)
First Epoch:	18.416 (km)
Last Epoch:	18.397 (km)

