

## General Information

### Mission Information

Project name	13866
Processing date	2022-06-24 19:36:46
Mission date	2022-04-16 13:54:38
Mission duration	05:58:37.000
Processing mode	IN-Fusion PP-RTX

### Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N7881
IMU type	57
Receiver type	BD982
Antenna type	AV39

## Project File List

### Rover Data Files

File name	File type
20220416.000	POS Data
20220416.001	POS Data
20220416.002	POS Data
20220416.003	POS Data
20220416.004	POS Data
20220416.005	POS Data
20220416.006	POS Data
20220416.007	POS Data
20220416.008	POS Data
20220416.009	POS Data
20220416.010	POS Data
20220416.011	POS Data
20220416.012	POS Data
20220416.013	POS Data
20220416.014	POS Data
20220416.015	POS Data
20220416.016	POS Data
20220416.017	POS Data
20220416.018	POS Data
20220416.019	POS Data
20220416.020	POS Data
20220416.021	POS Data
20220416.022	POS Data
20220416.023	POS Data
20220416.024	POS Data
20220416.025	POS Data
20220416.026	POS Data
20220416.027	POS Data
20220416.028	POS Data
20220416.029	POS Data
20220416.030	POS Data
20220416.031	POS Data
20220416.032	POS Data
20220416.033	POS Data
20220416.034	POS Data
20220416.035	POS Data
20220416.036	POS Data
20220416.037	POS Data
20220416.038	POS Data
20220416.039	POS Data
20220416.040	POS Data
20220416.041	POS Data
20220416.042	POS Data
20220416.043	POS Data
20220416.044	POS Data
20220416.045	POS Data
20220416.046	POS Data
20220416.047	POS Data

### Input Files

File Name	File Type
Ephm1060.22g	GLONASS Broadcast Ephemeris
Ephm1060.22n	GPS Broadcast Ephemeris

### Output Files

Filename	File type
sbet_13866.out	SBET Trajectory File
eo_13866.txt	ZI Imaging POSEO Output

Filename	File type
sbet_13866_NAD83(2011).out	Custom Smoothed BET Export Output

## Rover Data Summary

First raw data file	20220416.000		
Last raw data file	20220416.047		
Start GPS week	2205		
Start time	568477.259 (04/16/2022 13:54:37)		
End time	589992.236 (04/16/2022 19:53:12)		
Start of fine alignment	569309.351 (04/16/2022 14:08:29)		
Available subsystems	Primary GNSS, IMU		
POS Event Input	None		
Correction data	None		
<b>IMU Installation Lever Arms &amp; Mounting Angles</b>			
Reference to IMU lever arm (m)	-0.230	-0.010	-0.133
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.126	-0.066	-1.071
Reference to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

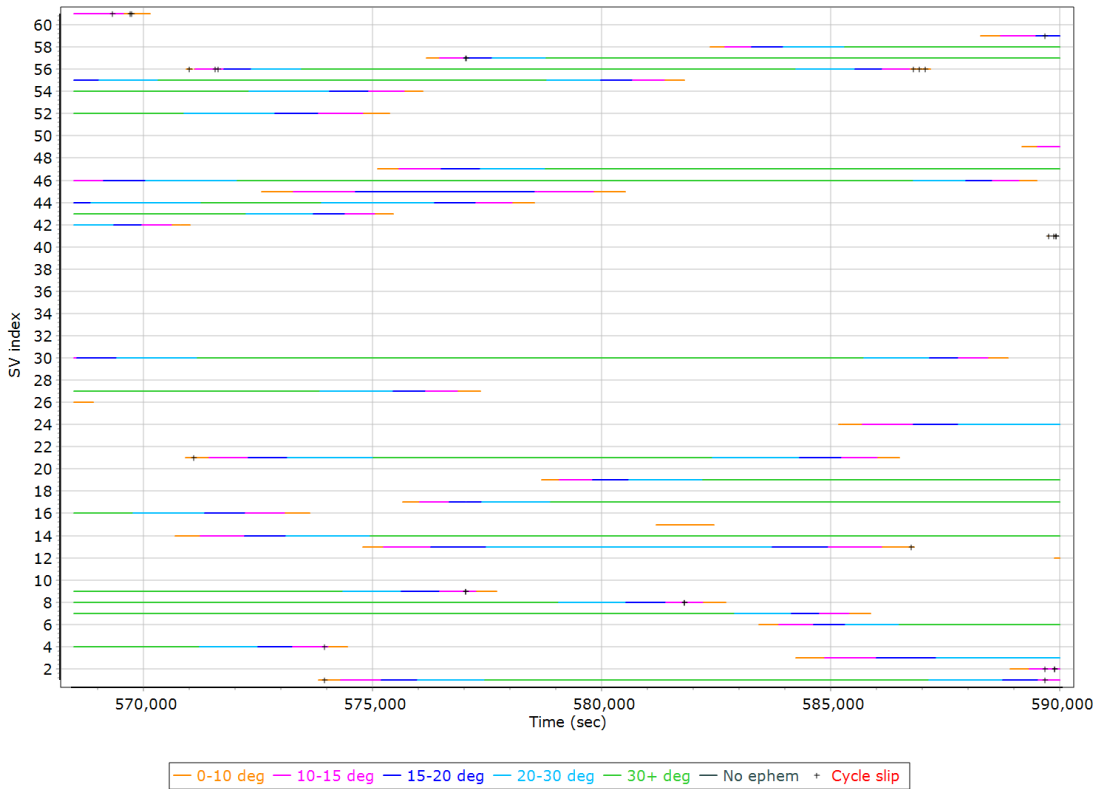
## Rover Data QC

### Raw IMU Import QC Summary

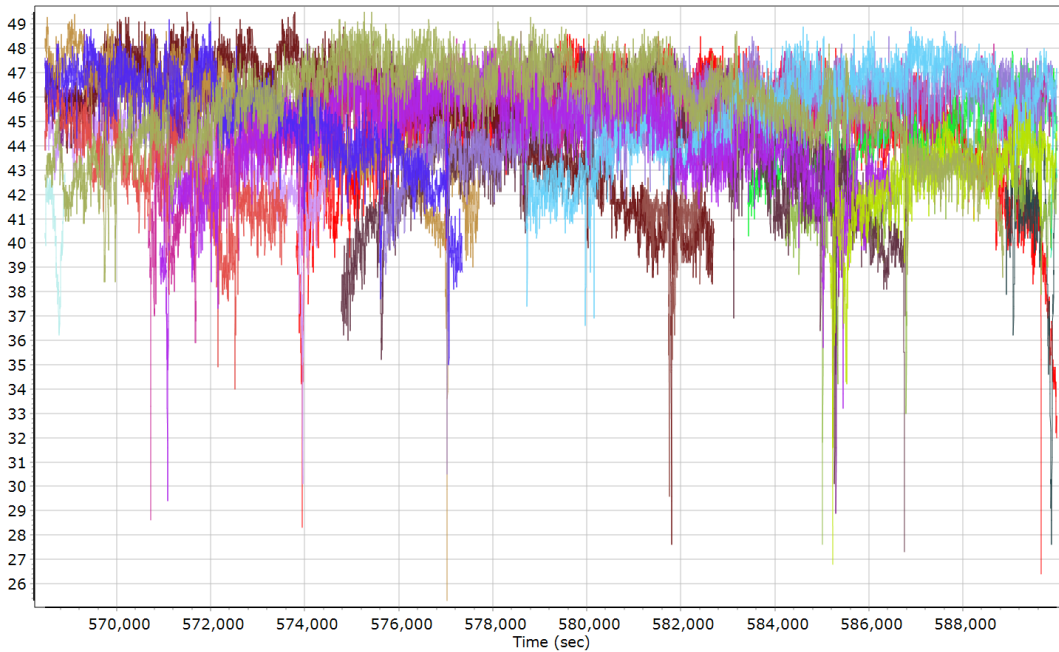
IMU data input file	imu_13866.dat
IMU data check log file	imudt_13866.log
IMU Records Processed	4302704
Termination Status	Normal
IMU Anomalies	0

## Primary Observables & Satellite Data

### GPS/GLONASS L1 Satellite Lock/Elevation

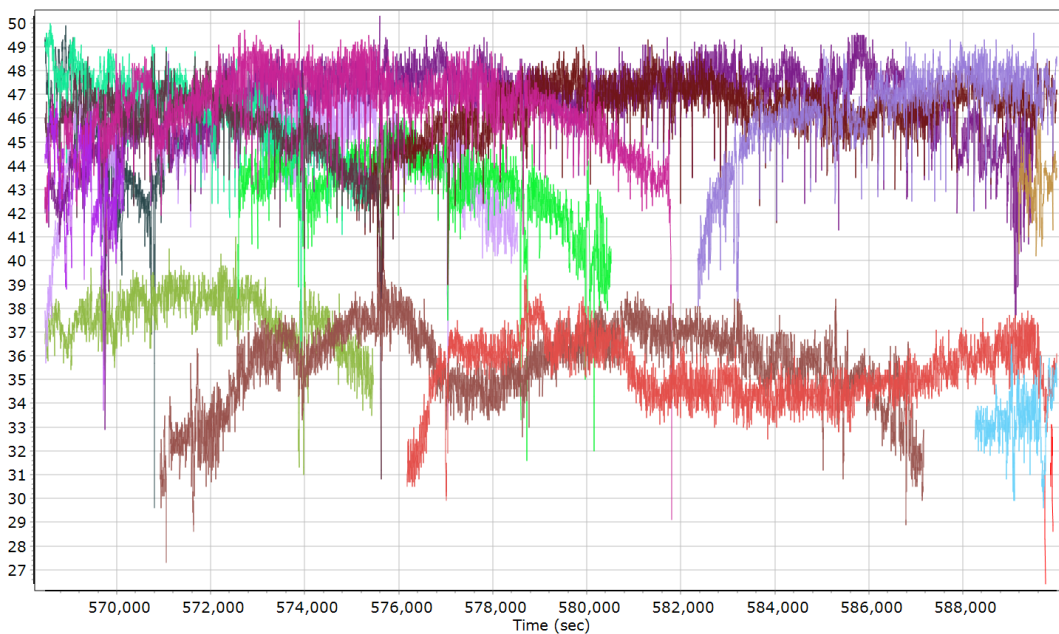


### GPS L1 SNR



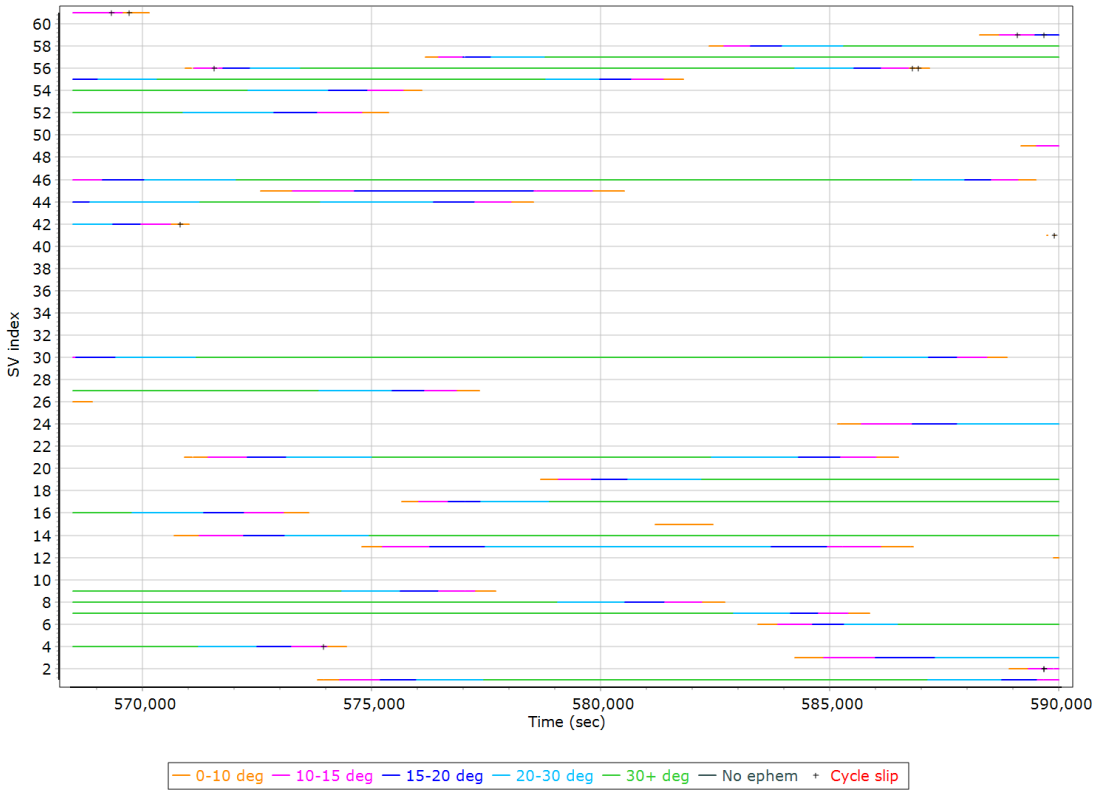
- |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|
| GPS PRN 01 L1 SNR (dB/Hz) | GPS PRN 02 L1 SNR (dB/Hz) | GPS PRN 03 L1 SNR (dB/Hz) | GPS PRN 04 L1 SNR (dB/Hz) |
| GPS PRN 06 L1 SNR (dB/Hz) | GPS PRN 07 L1 SNR (dB/Hz) | GPS PRN 08 L1 SNR (dB/Hz) | GPS PRN 09 L1 SNR (dB/Hz) |
| GPS PRN 12 L1 SNR (dB/Hz) | GPS PRN 13 L1 SNR (dB/Hz) | GPS PRN 14 L1 SNR (dB/Hz) | GPS PRN 15 L1 SNR (dB/Hz) |
| GPS PRN 16 L1 SNR (dB/Hz) | GPS PRN 17 L1 SNR (dB/Hz) | GPS PRN 19 L1 SNR (dB/Hz) | GPS PRN 21 L1 SNR (dB/Hz) |
| GPS PRN 24 L1 SNR (dB/Hz) | GPS PRN 26 L1 SNR (dB/Hz) | GPS PRN 27 L1 SNR (dB/Hz) | GPS PRN 30 L1 SNR (dB/Hz) |

### GLONASS L1 SNR

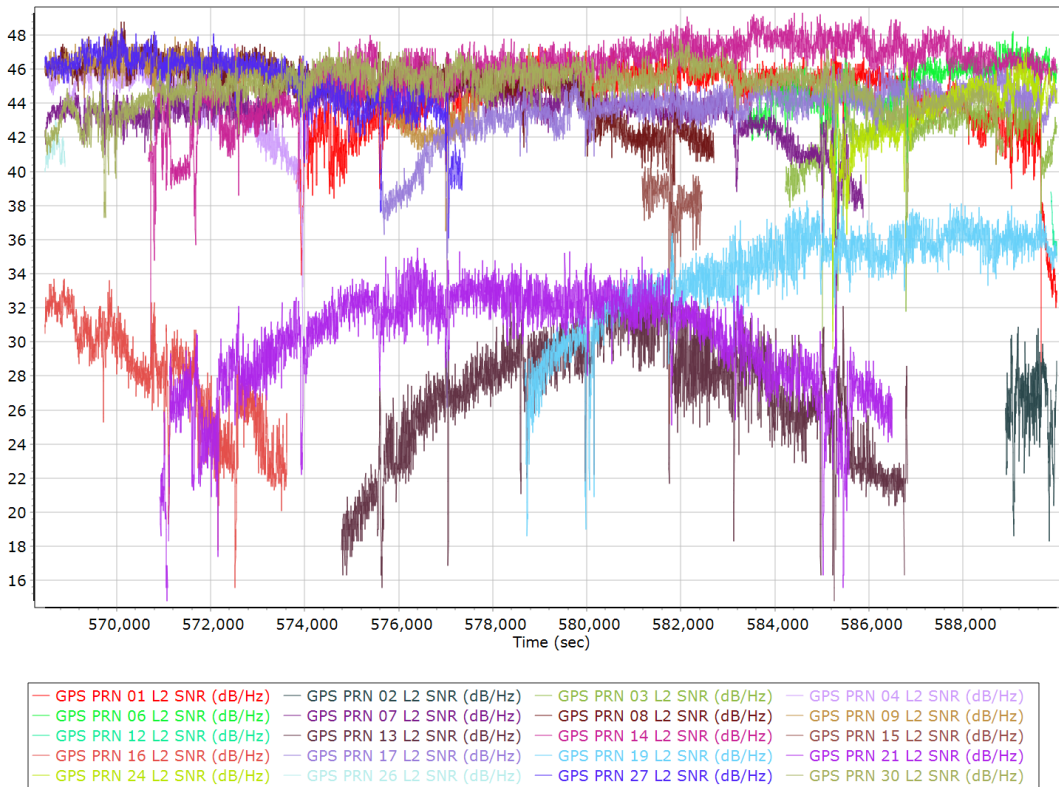


- |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| GLONASS 04 L1 SNR (dB/Hz) | GLONASS 05 L1 SNR (dB/Hz) | GLONASS 06 L1 SNR (dB/Hz) |
| GLONASS 07 L1 SNR (dB/Hz) | GLONASS 08 L1 SNR (dB/Hz) | GLONASS 09 L1 SNR (dB/Hz) |
| GLONASS 10 L1 SNR (dB/Hz) | GLONASS 12 L1 SNR (dB/Hz) | GLONASS 15 L1 SNR (dB/Hz) |
| GLONASS 17 L1 SNR (dB/Hz) | GLONASS 18 L1 SNR (dB/Hz) | GLONASS 19 L1 SNR (dB/Hz) |
| GLONASS 20 L1 SNR (dB/Hz) | GLONASS 21 L1 SNR (dB/Hz) | GLONASS 22 L1 SNR (dB/Hz) |
| GLONASS 24 L1 SNR (dB/Hz) |                           |                           |

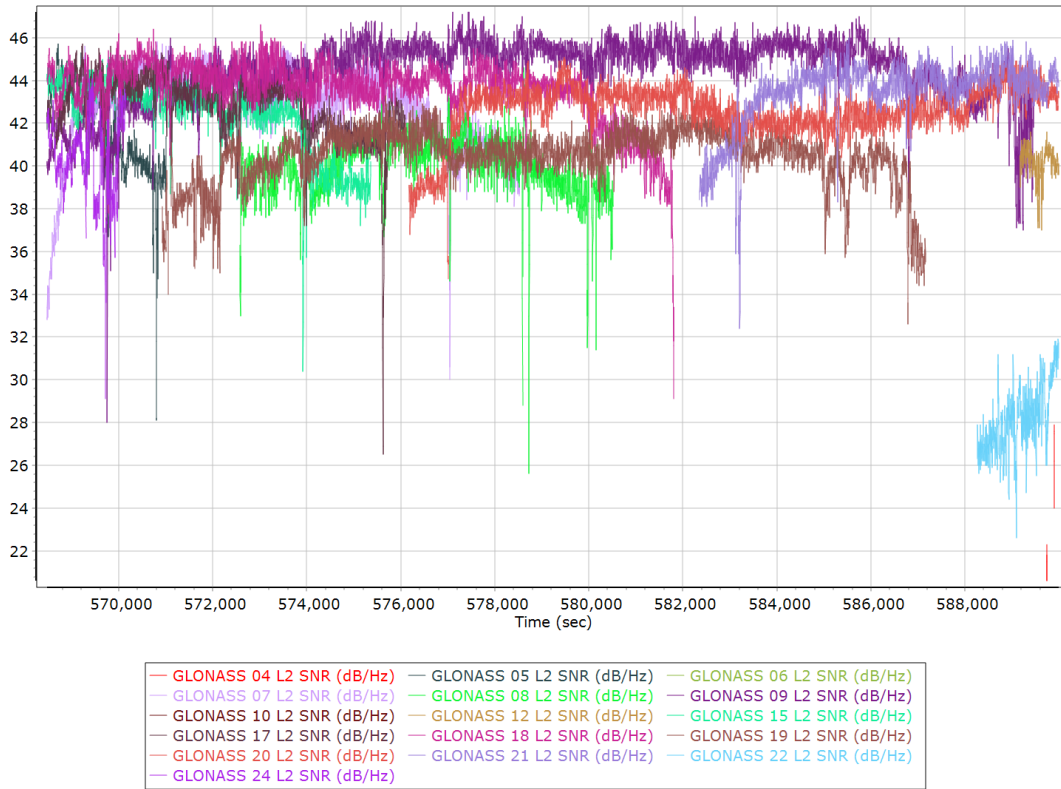
### GPS/GLONASS L2 Satellite Lock/Elevation



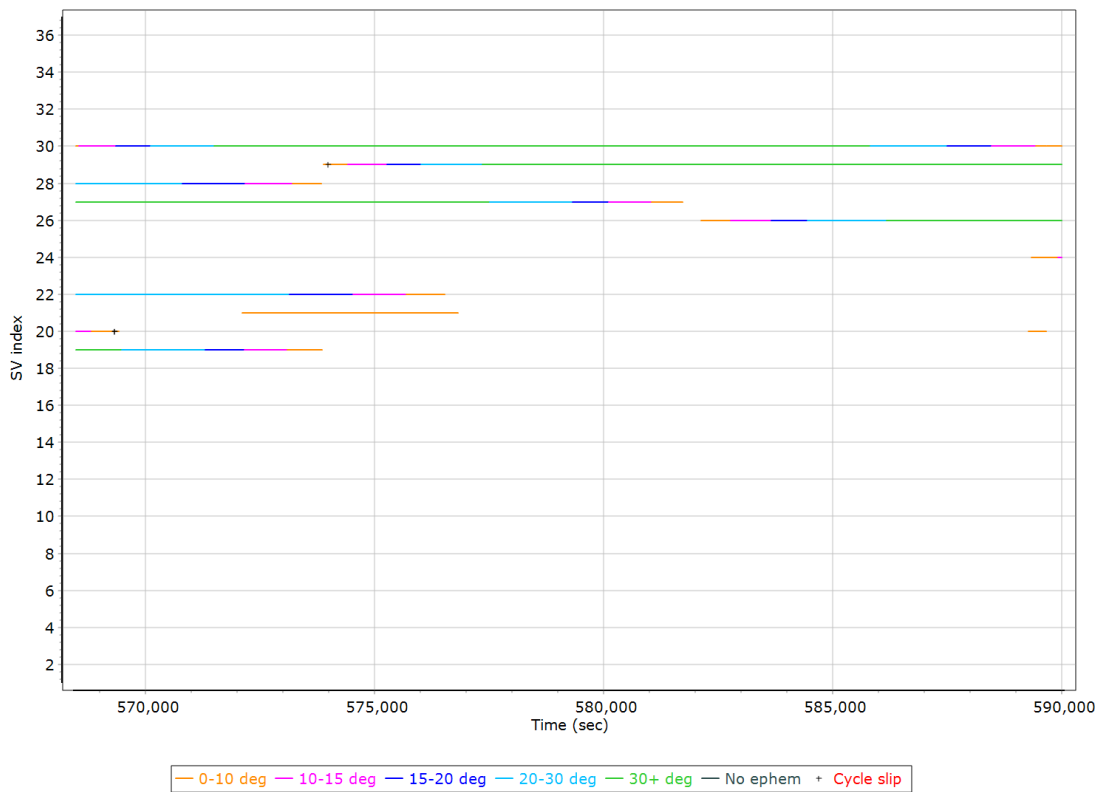
### GPS L2 SNR



### GLONASS L2 SNR

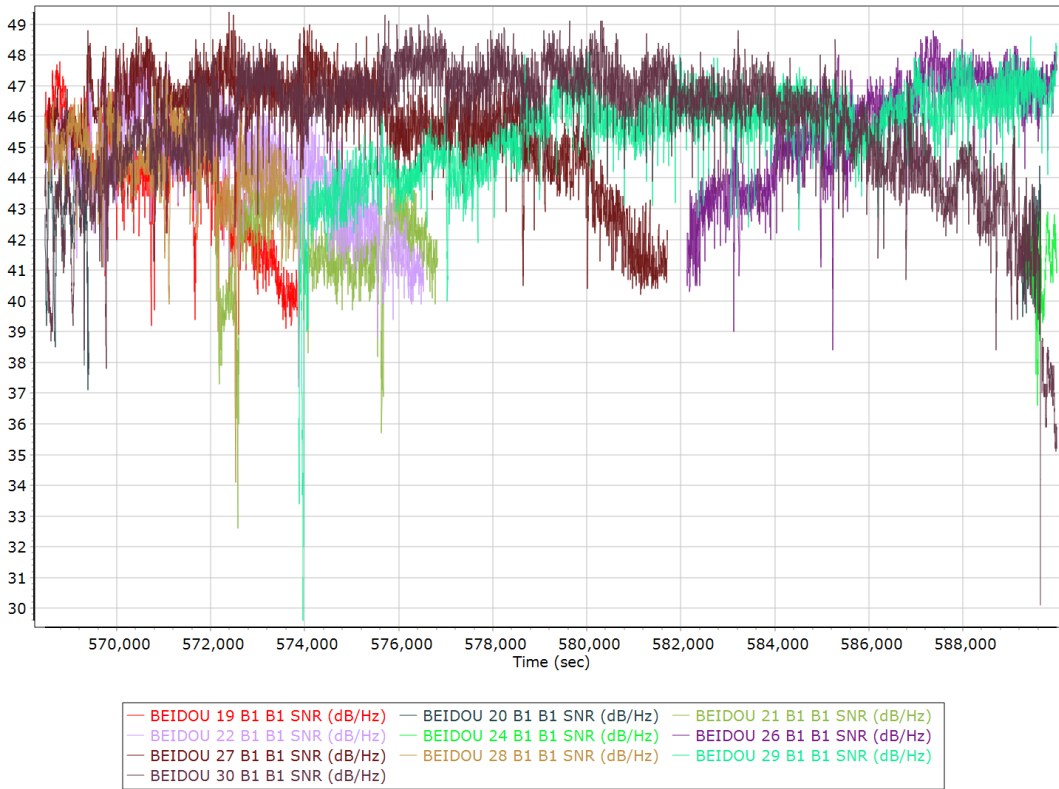


### BEIDOU Satellite Lock/Elevation

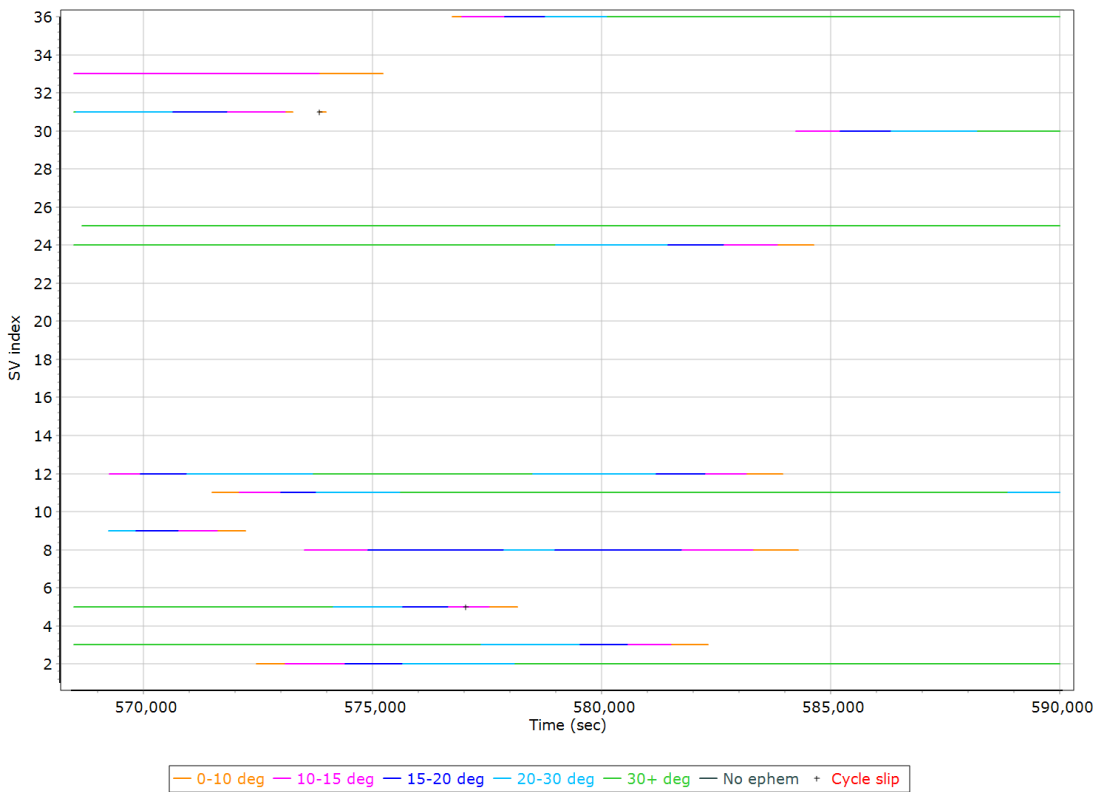




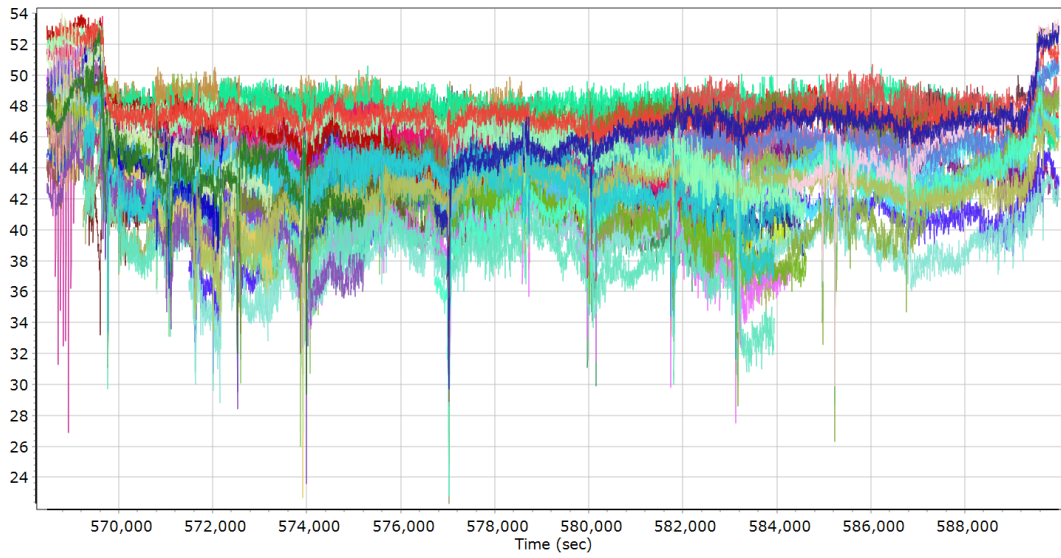
### BEIDOU SNR



### GALILEO Satellite Lock/Elevation



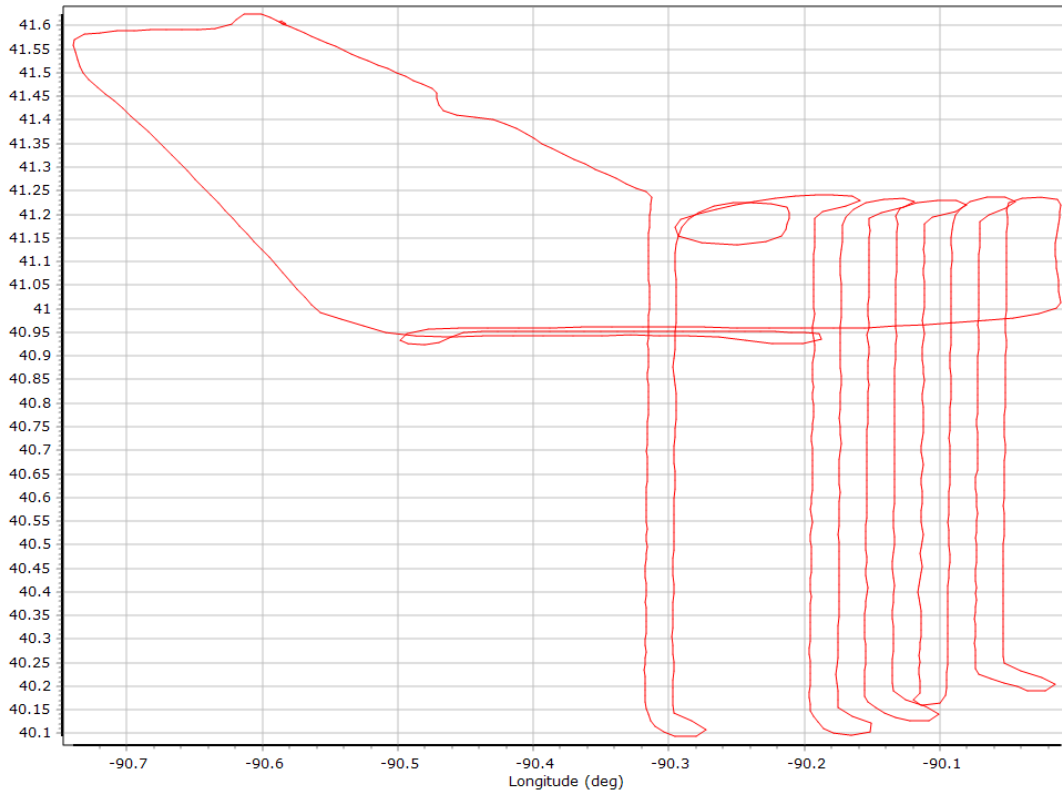
## GALILEO SNR



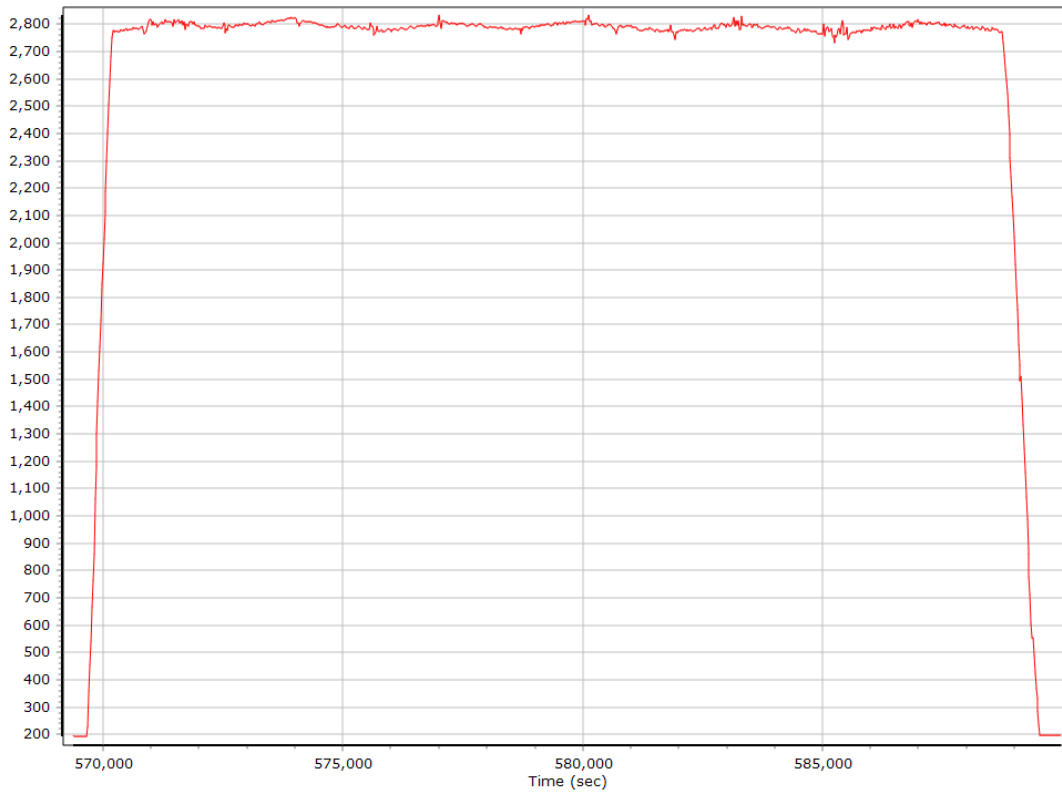
- |   |   |
|---|---|
| — GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) |
| — GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) |
| — GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) |
| — GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) |
| — GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) |
| — GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) |
| — GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz) | — GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)    |
| — GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)    | — GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)    |
| — GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)    | — GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)    |
| — GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)    | — GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)    |

## Smoothed Trajectory Information

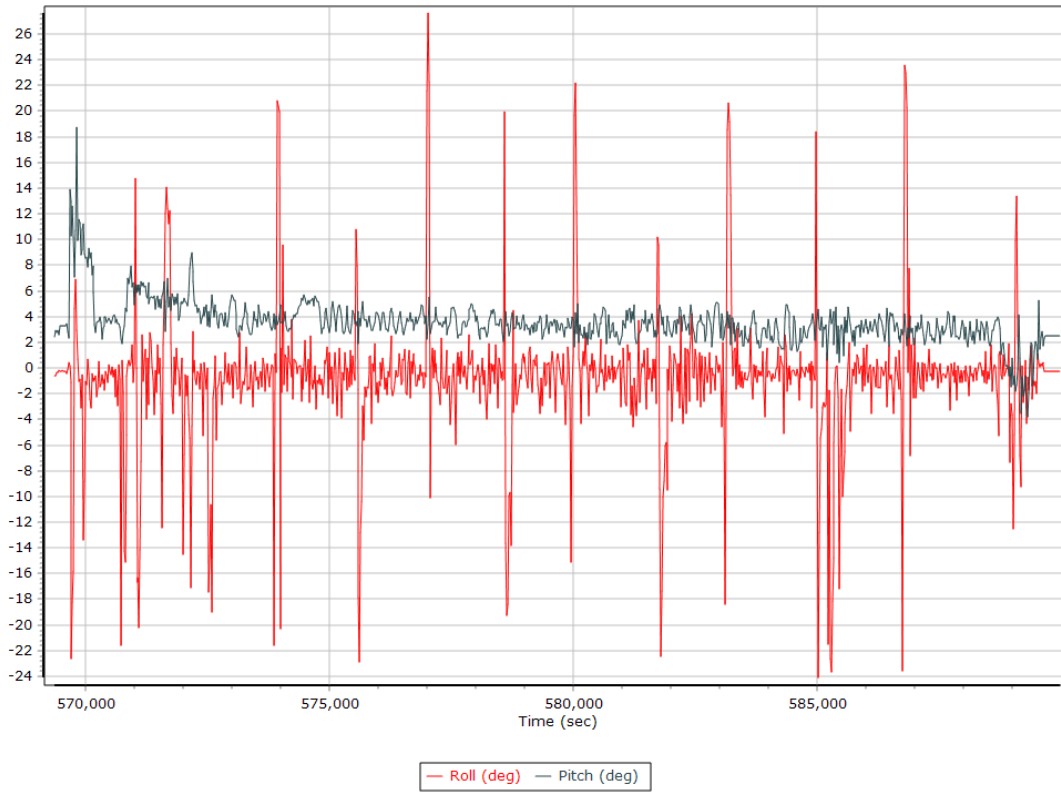
### Top View



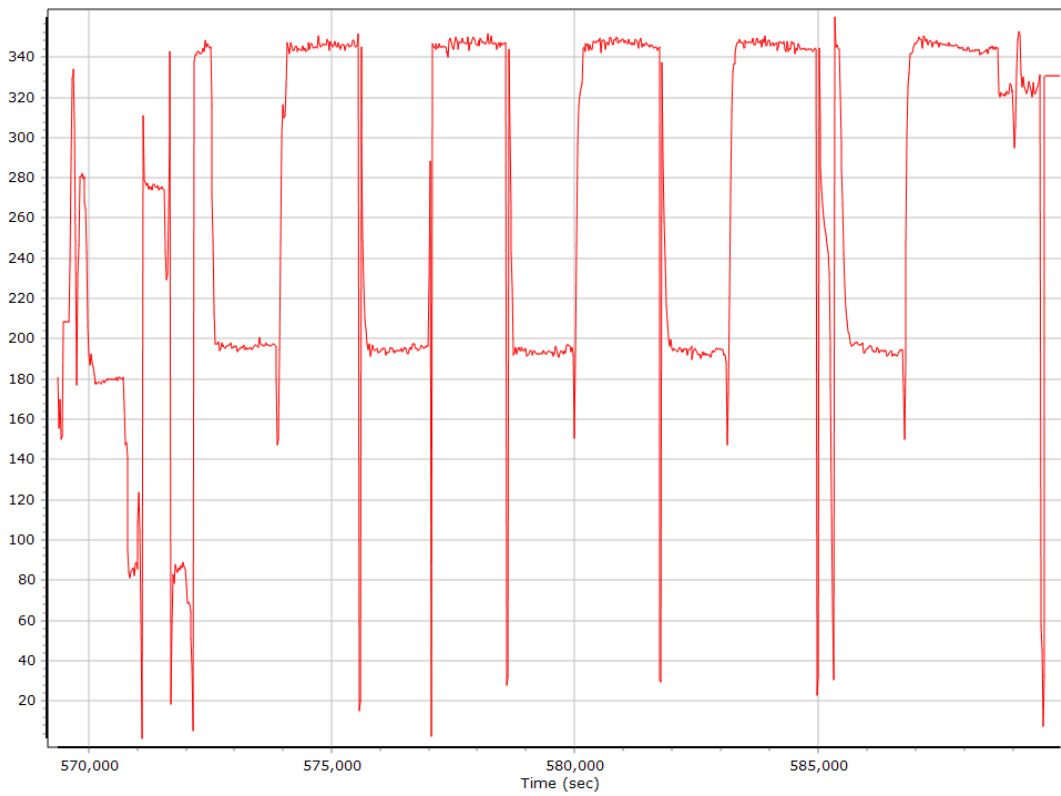
### Altitude



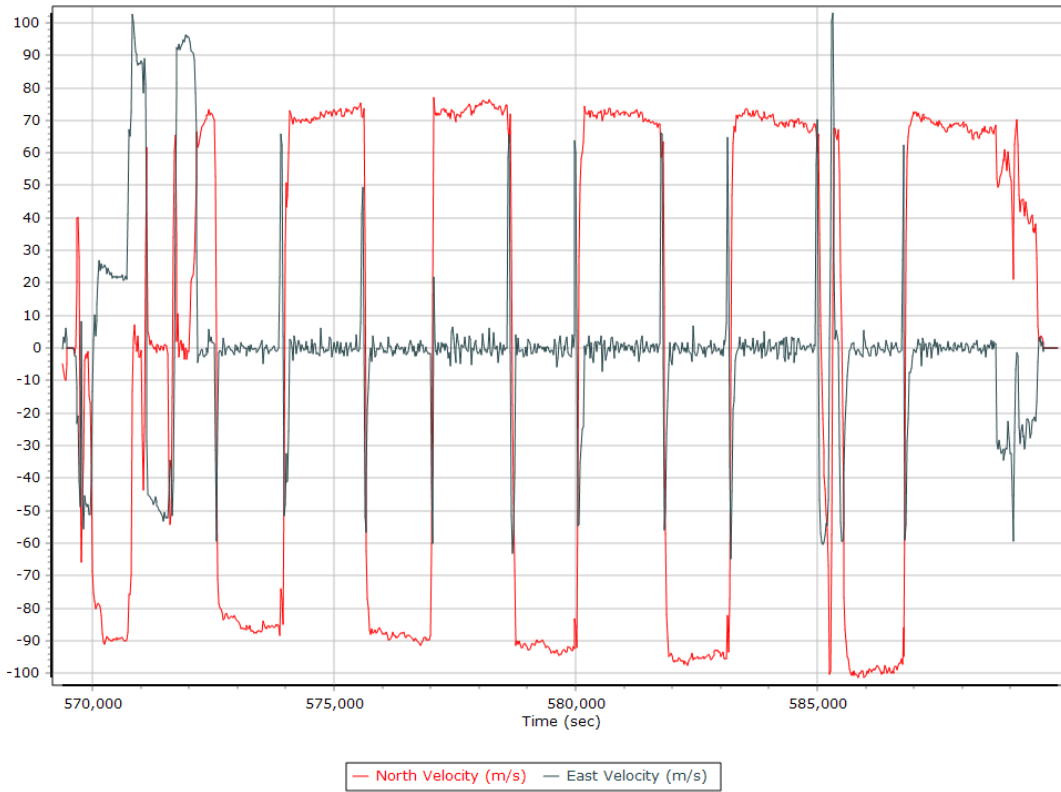
## Roll/Pitch



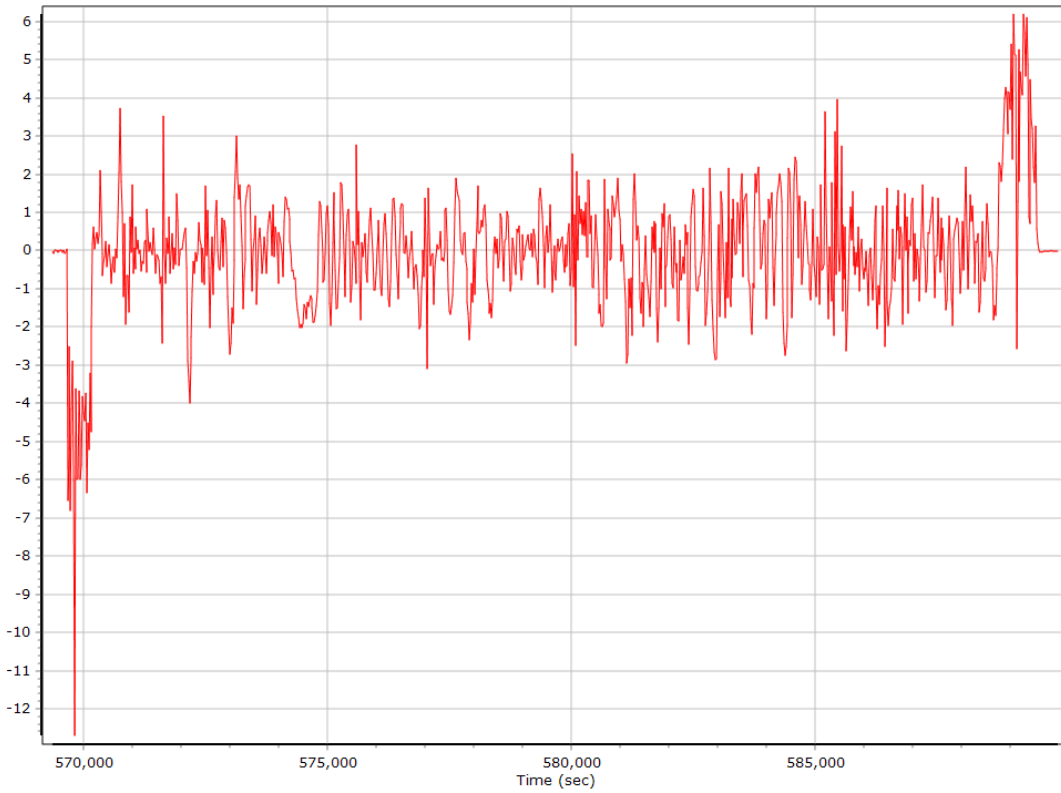
## Heading



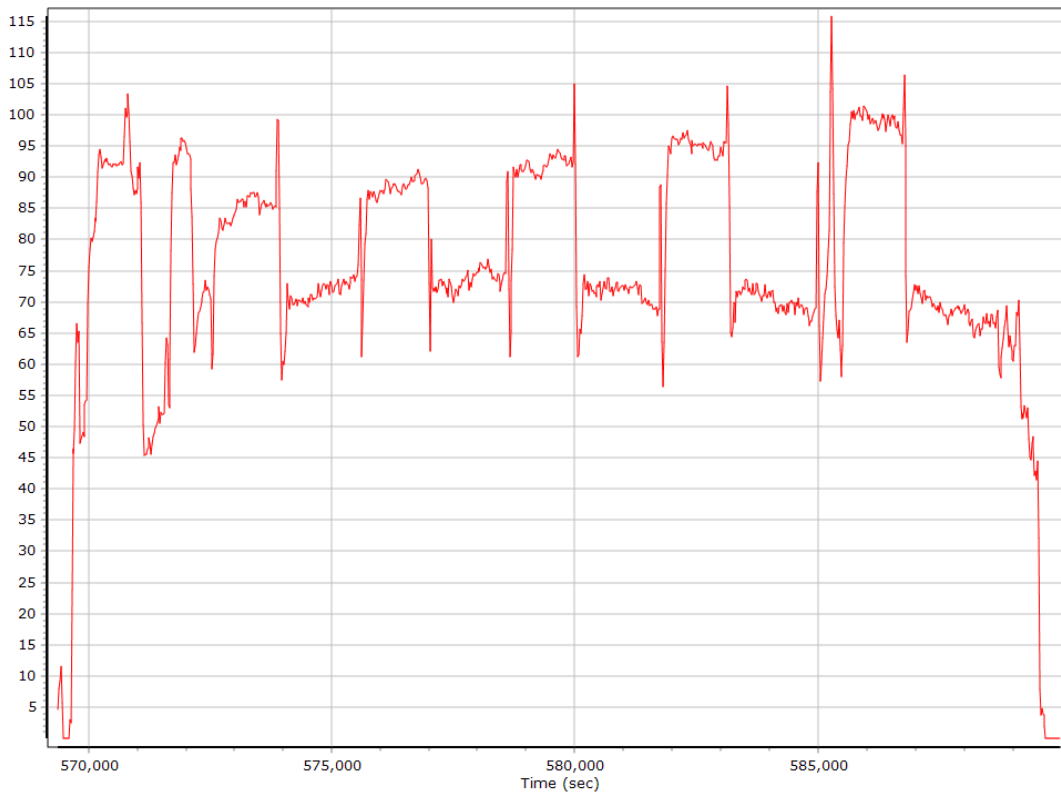
## North/East Velocity



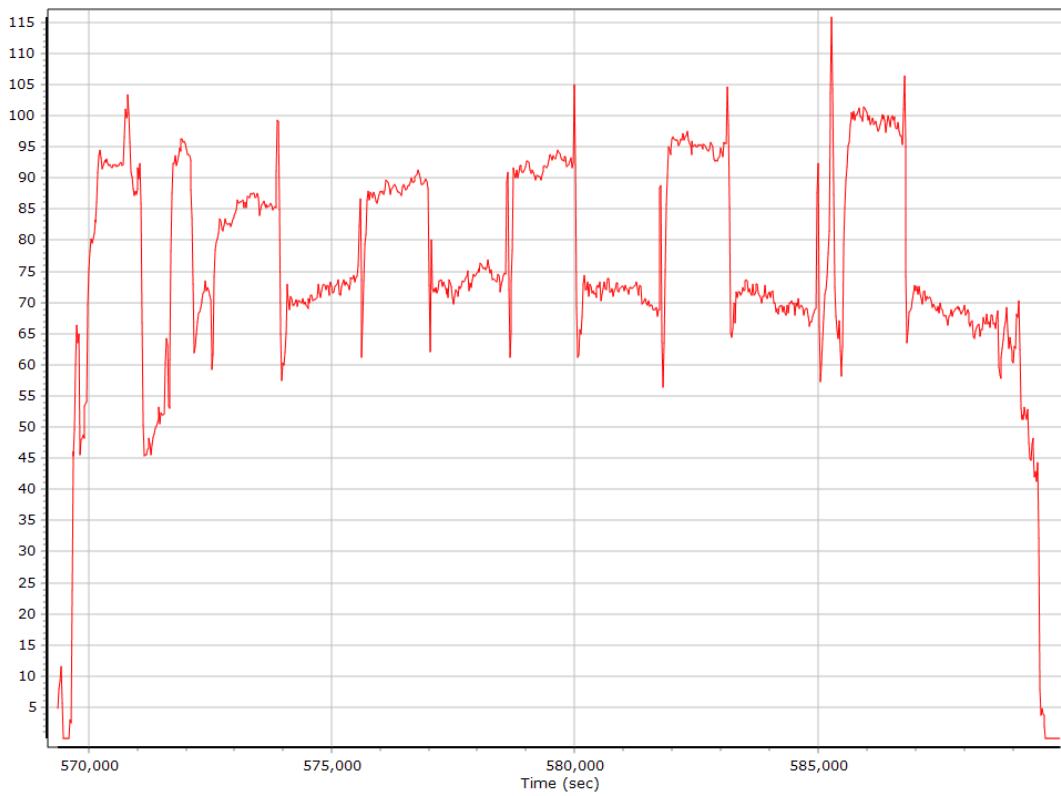
## Down Velocity



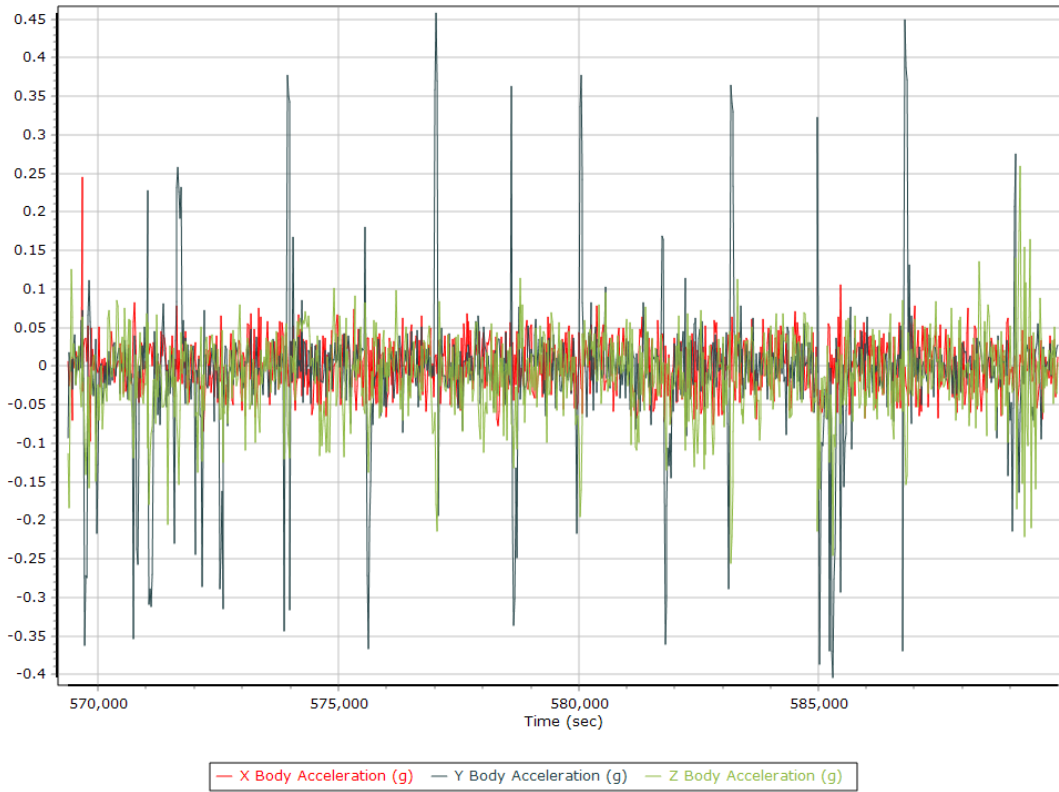
## Total Speed



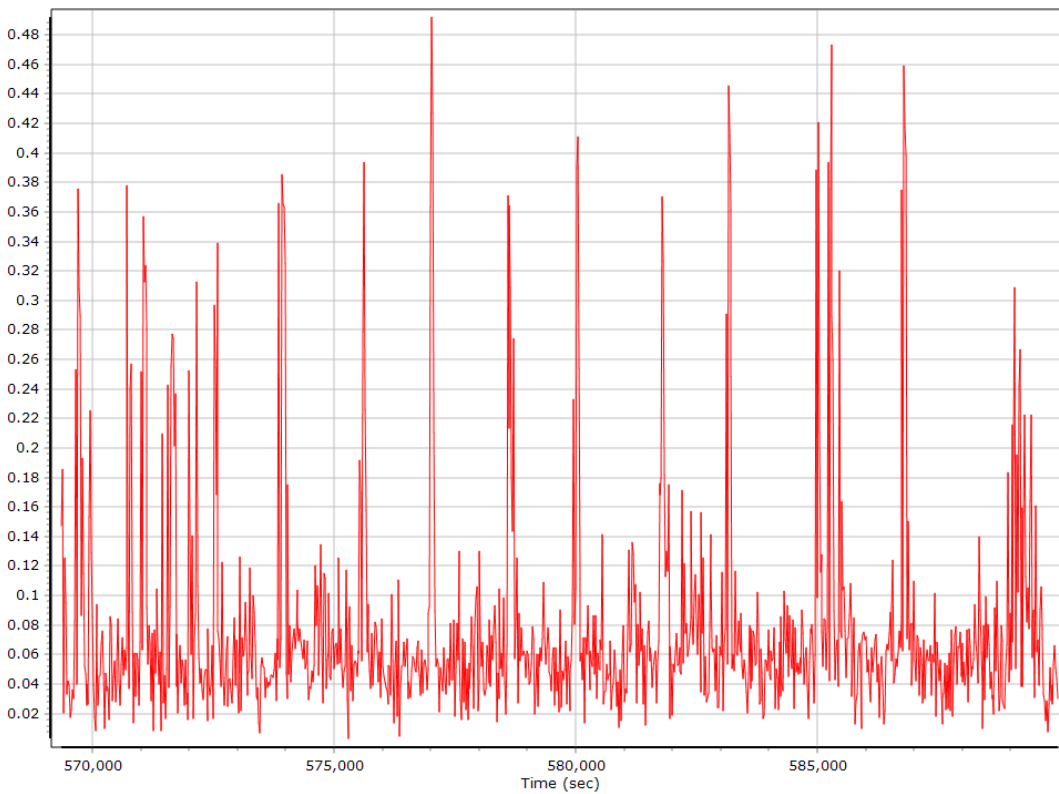
## Ground Speed



## Body Acceleration



## Total Body Acceleration



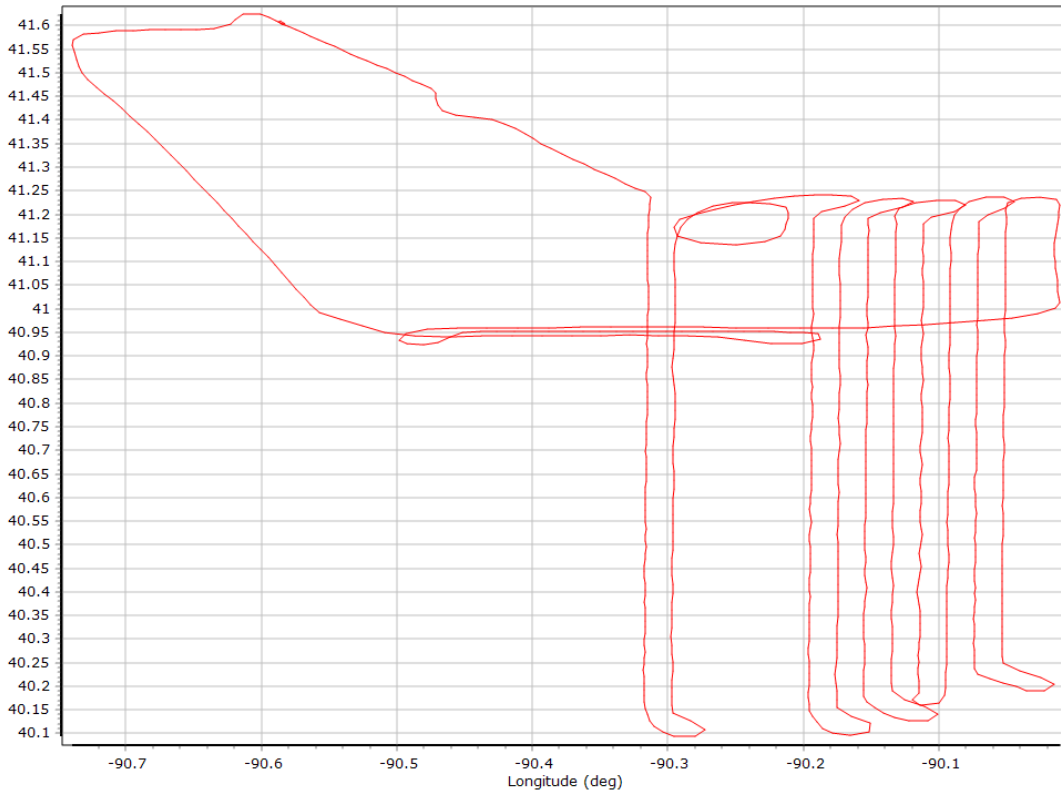
## Body Angular Rate



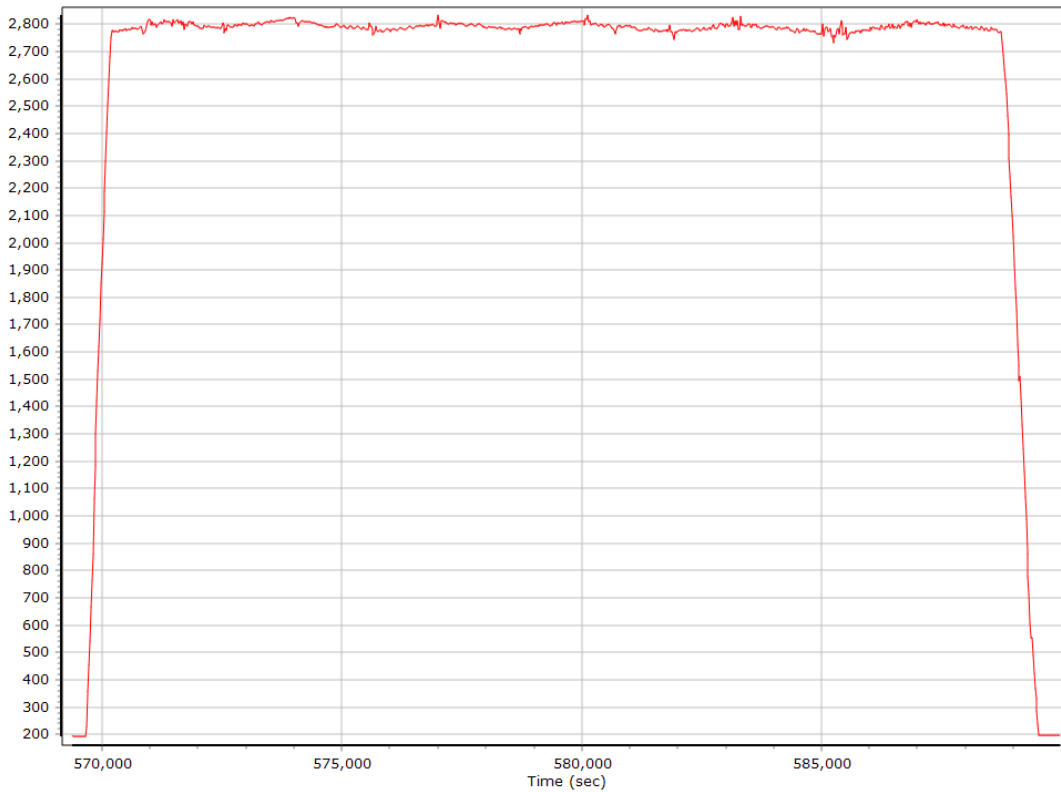


## Forward Processed Trajectory Information

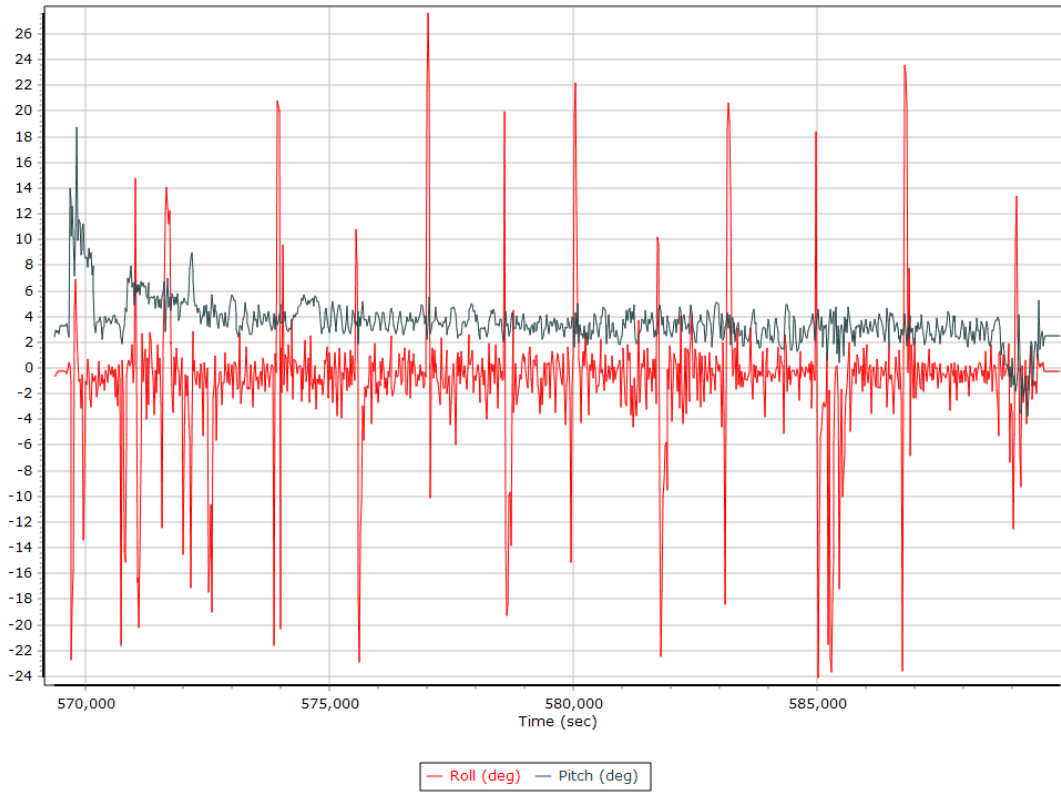
### Top View



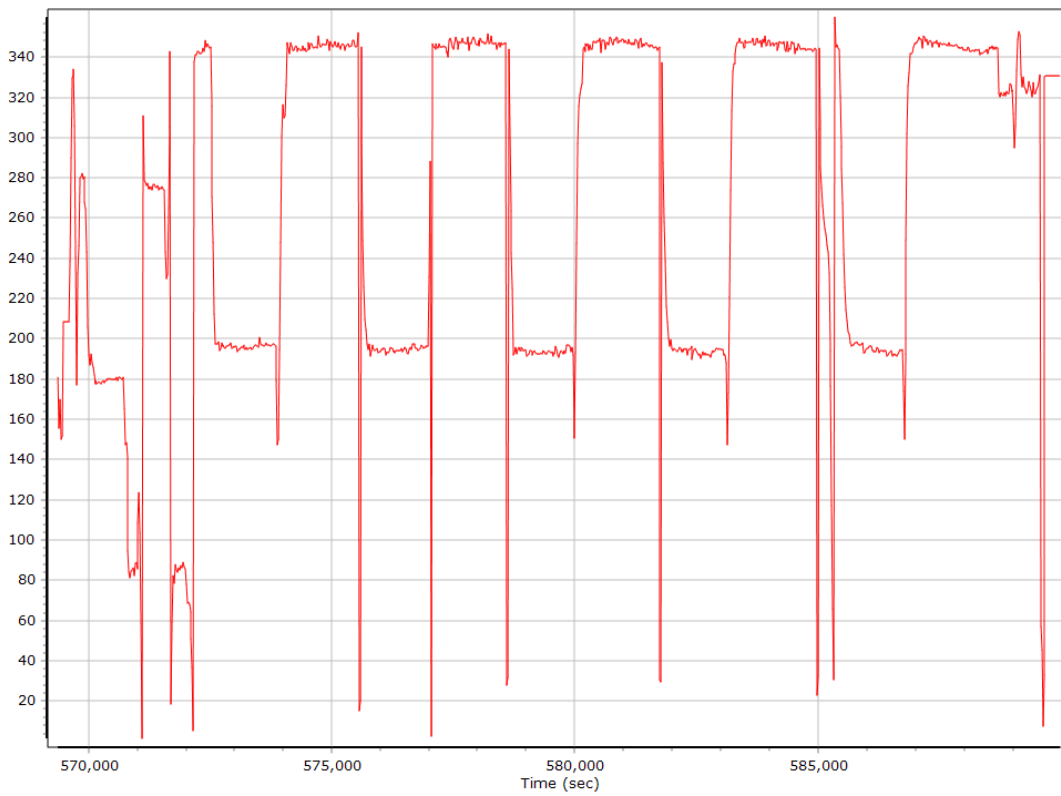
### Altitude



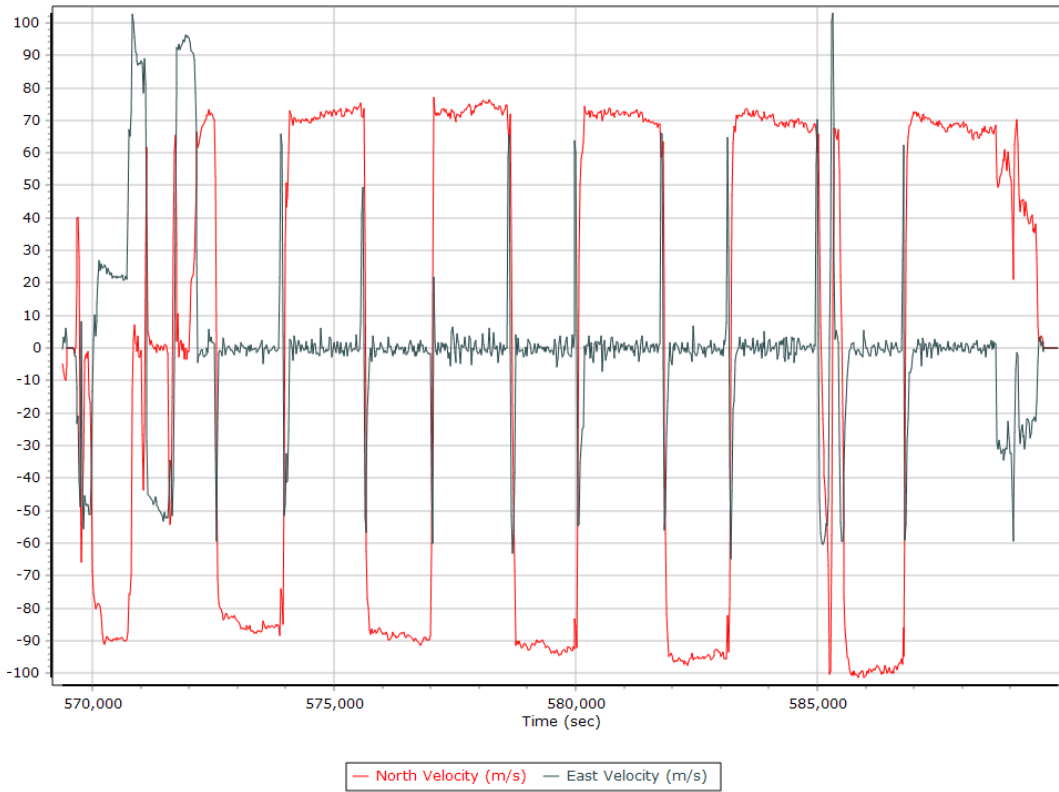
## Roll/Pitch



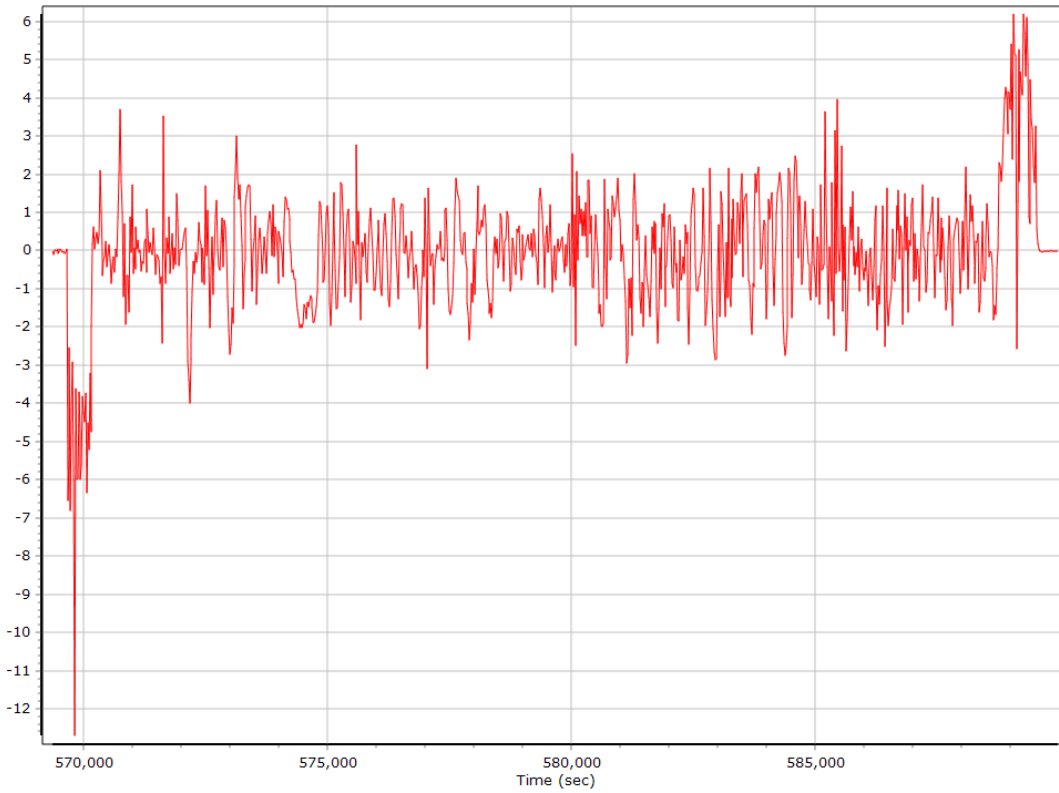
## Heading



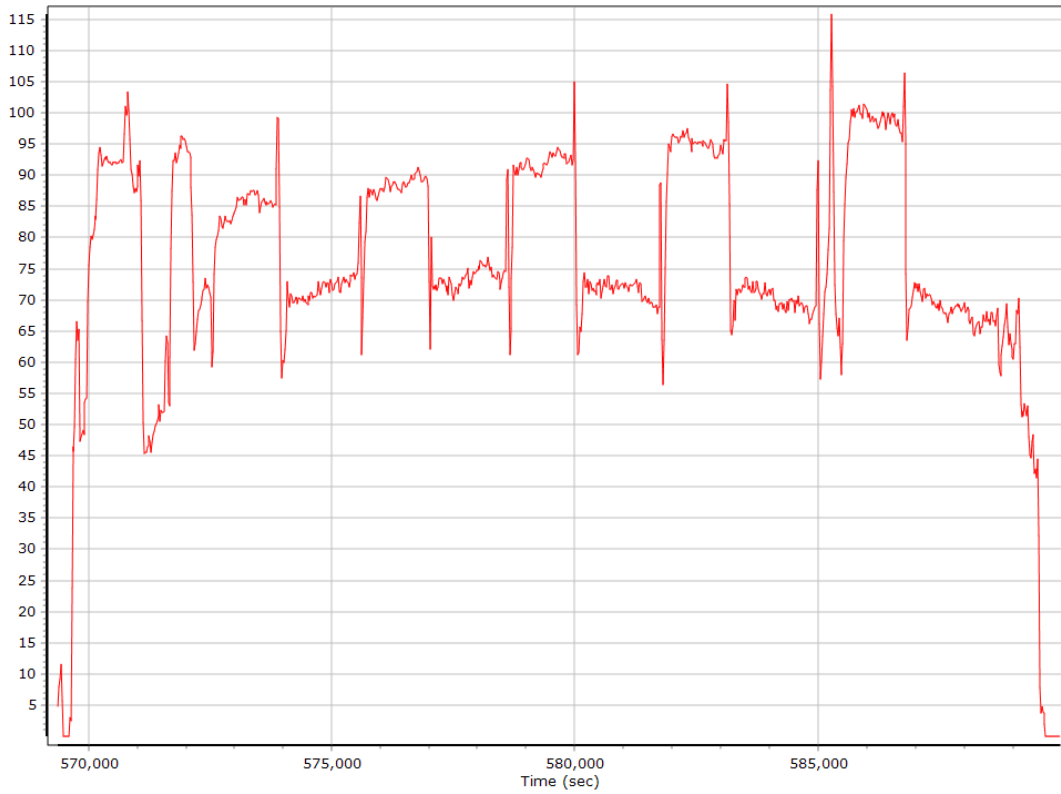
## North/East Velocity



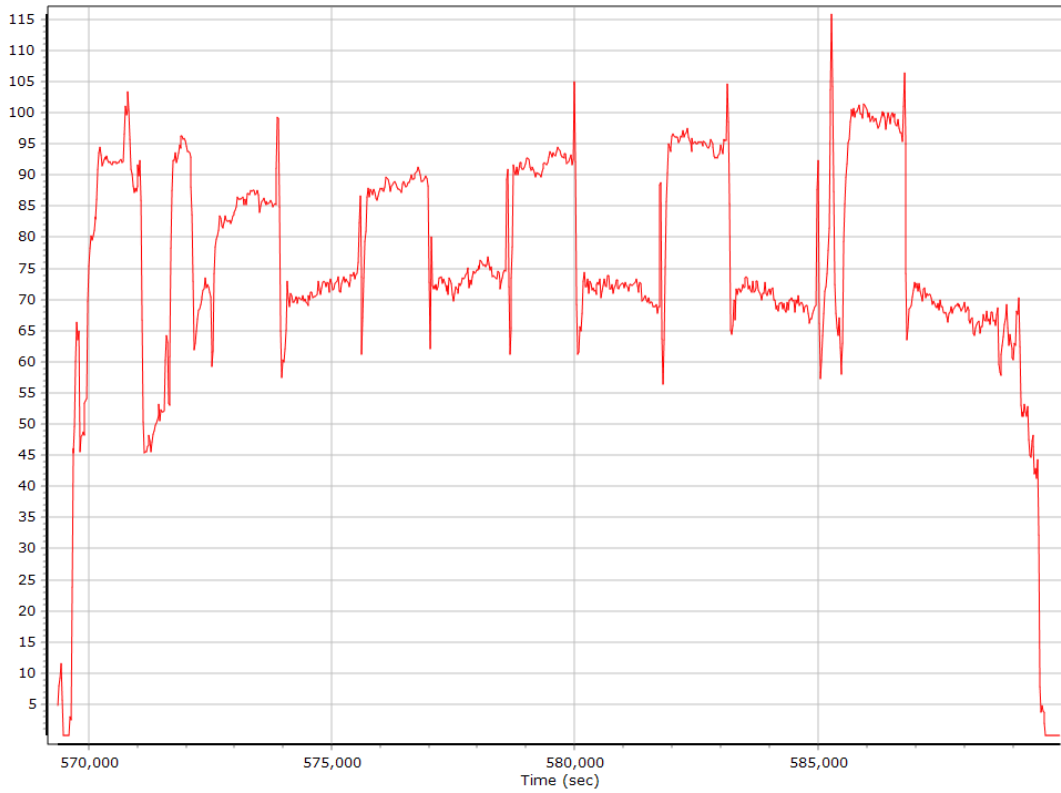
## Down Velocity



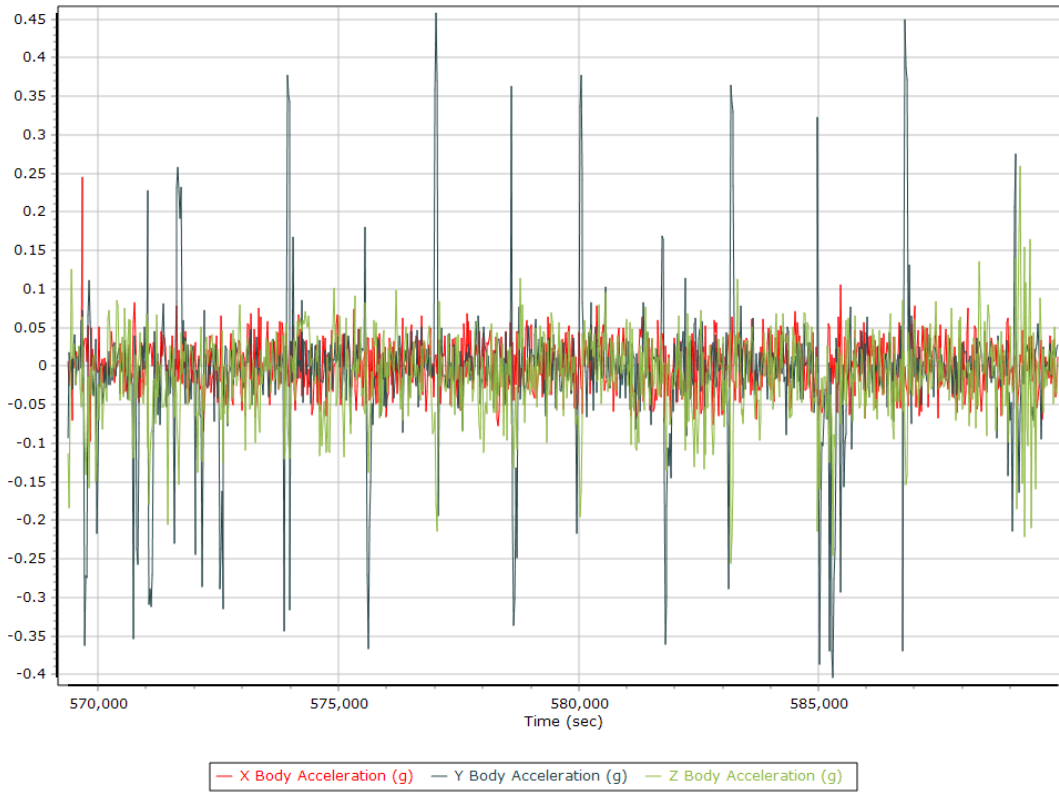
## Total Speed



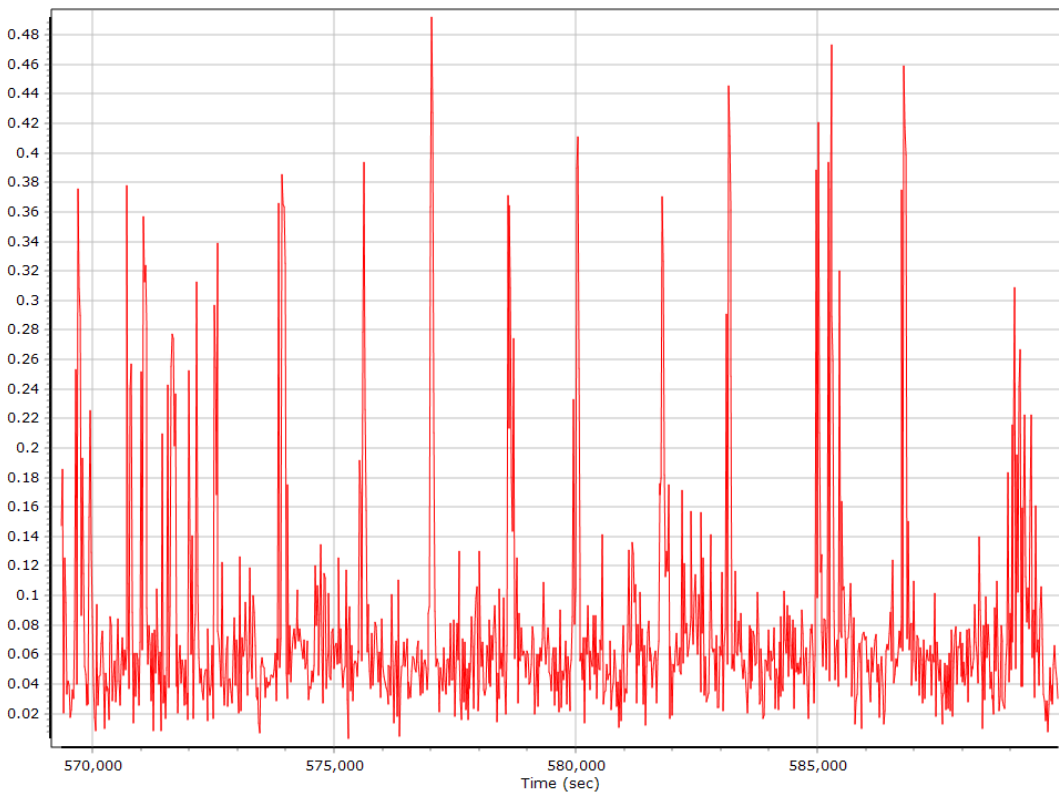
## Ground Speed



## Body Acceleration



## Total Body Acceleration



## Body Angular Rate

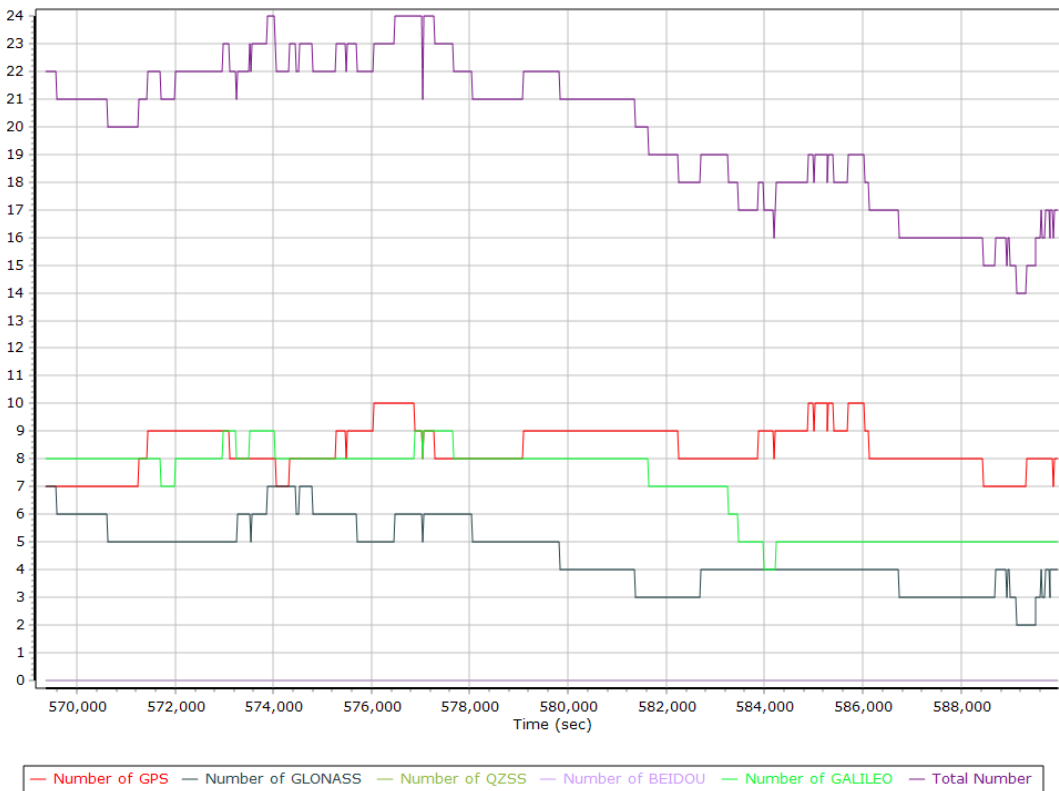


# GNSS QC

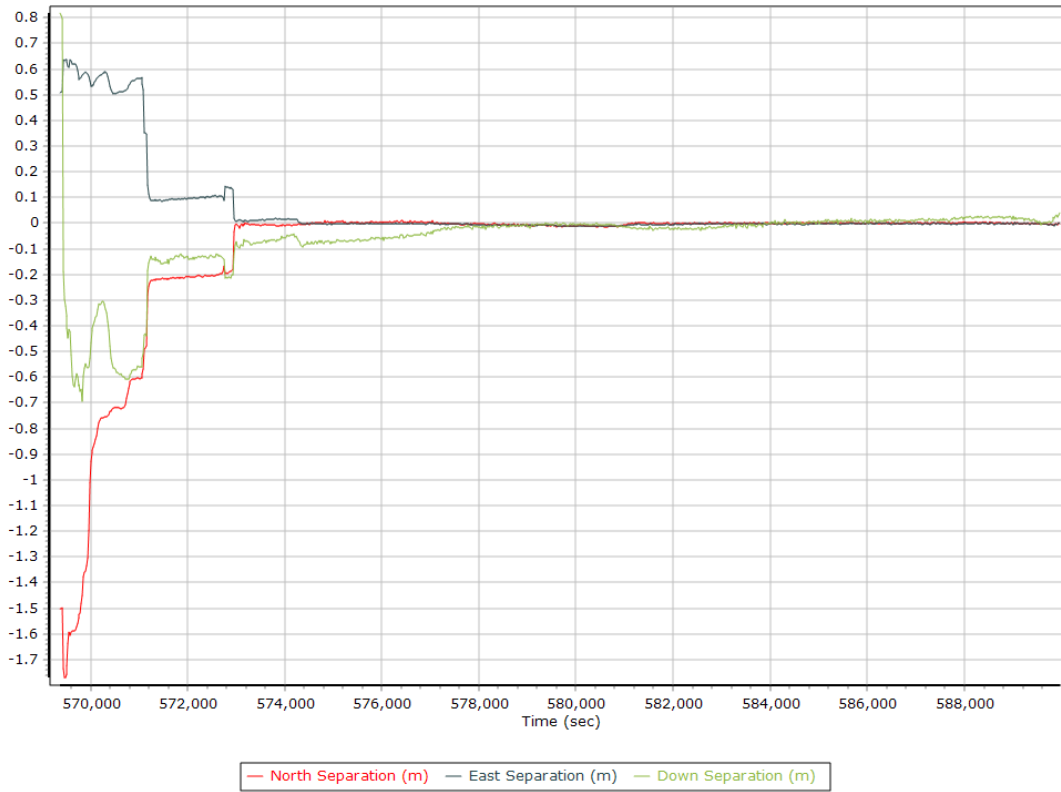
## GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	2	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	9	7
Total number of SV	14	24	20
PDOP	1.03	1.69	1.21
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	21499.00	0.00	0.00
Percentage	100.00	0.00	0.00

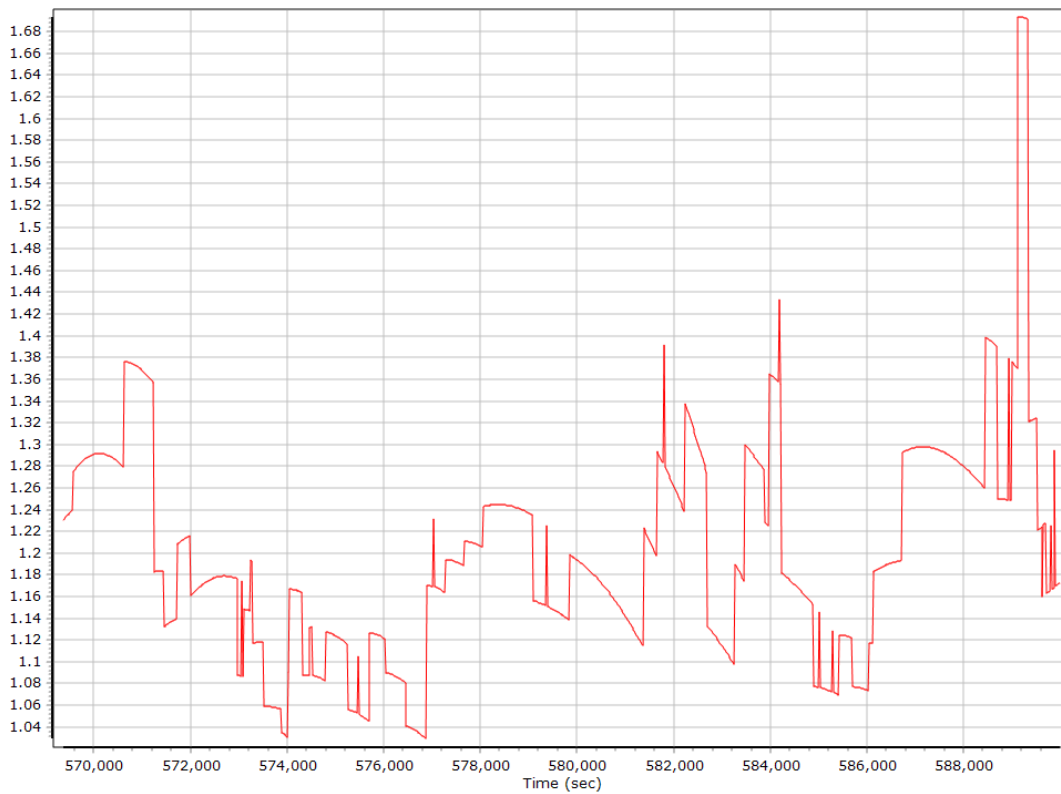
## Num SVs in solution



## Forward/Reverse Separation

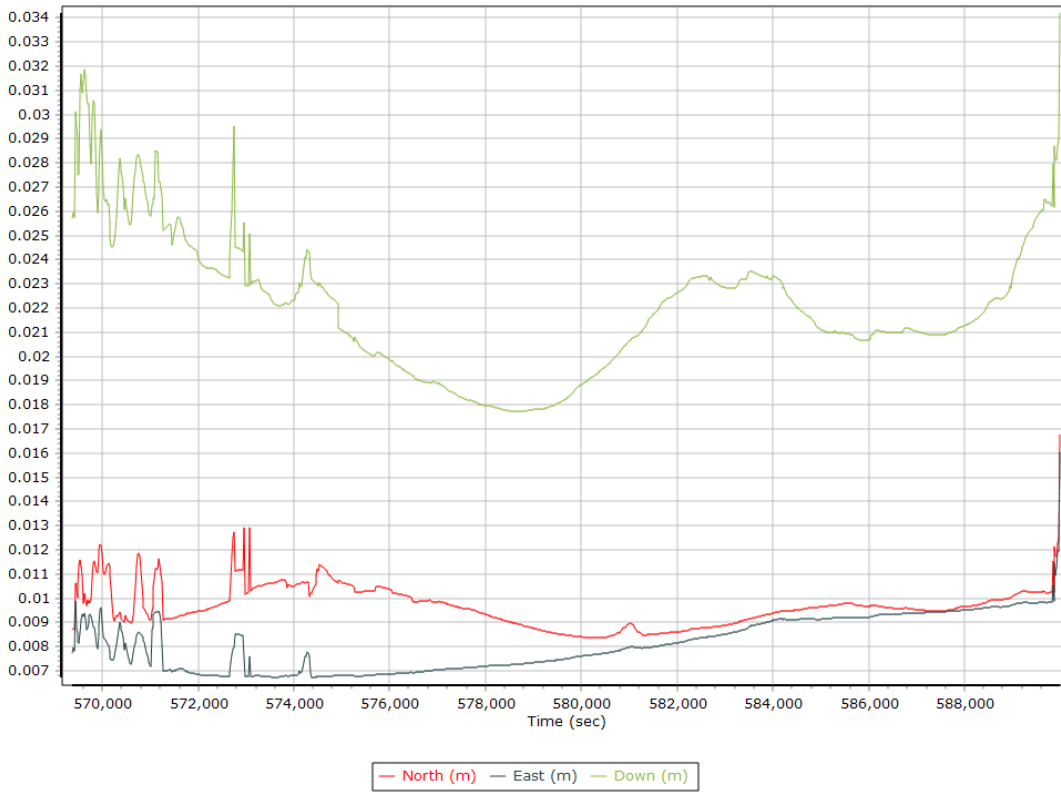


## PDOP

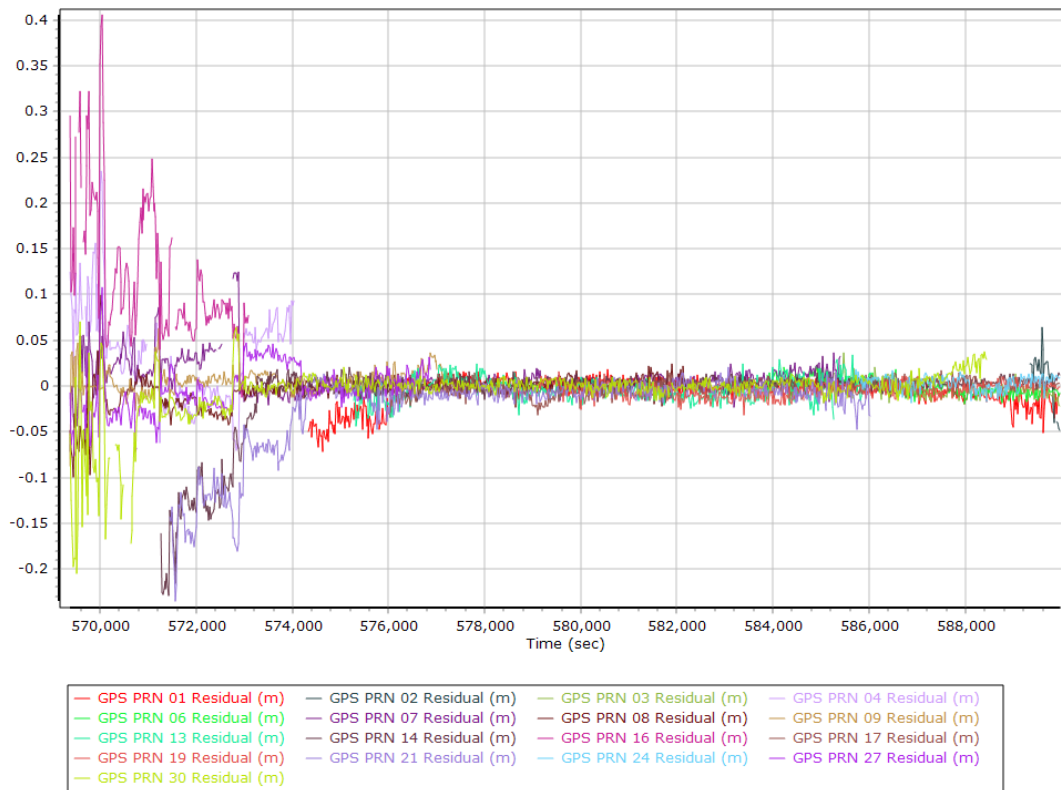




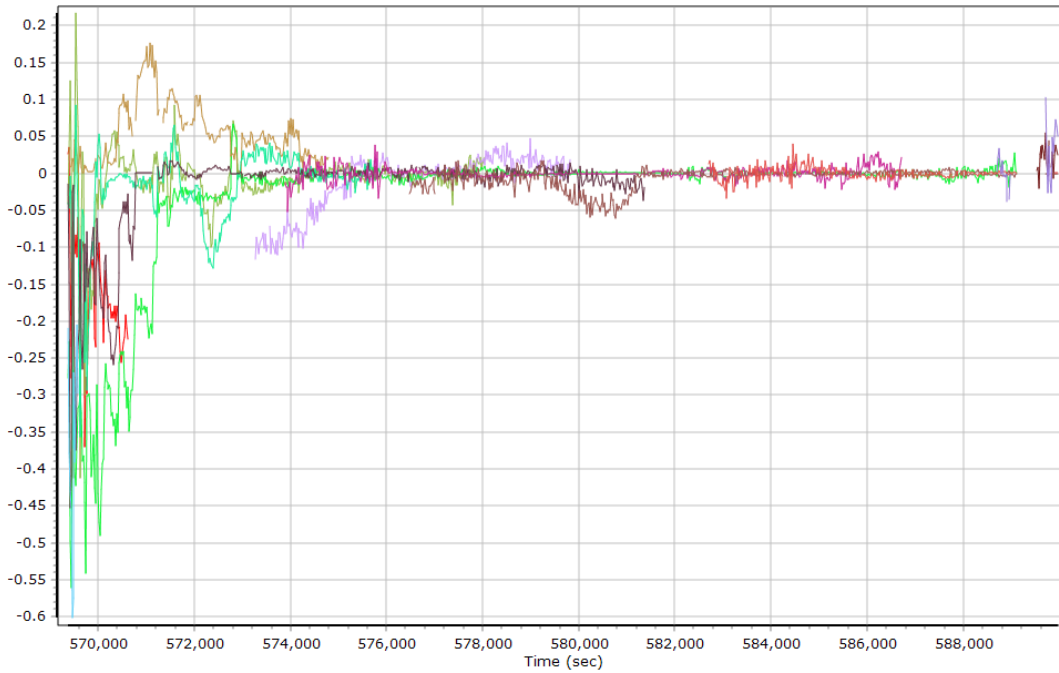
## Estimated Position Accuracy



## GPS Residuals

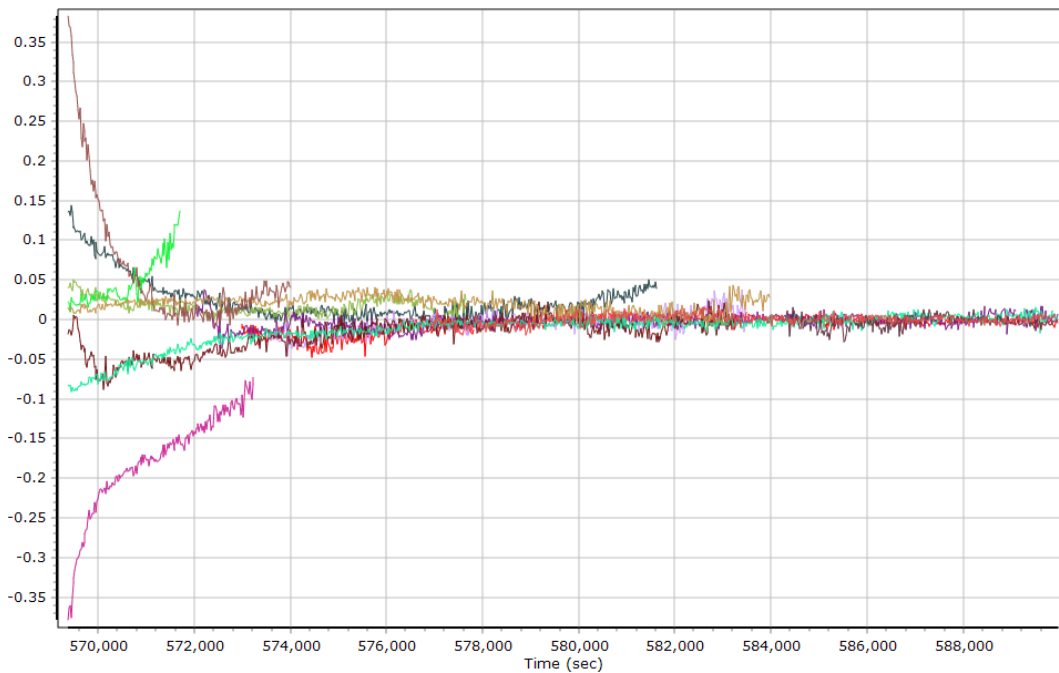


## GLONASS Residuals



- |                         |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|
| GLONASS 05 Residual (m) | GLONASS 06 Residual (m) | GLONASS 07 Residual (m) | GLONASS 08 Residual (m) |
| GLONASS 09 Residual (m) | GLONASS 10 Residual (m) | GLONASS 12 Residual (m) | GLONASS 15 Residual (m) |
| GLONASS 17 Residual (m) | GLONASS 18 Residual (m) | GLONASS 19 Residual (m) | GLONASS 20 Residual (m) |
| GLONASS 21 Residual (m) | GLONASS 22 Residual (m) | GLONASS 24 Residual (m) |                         |

## GALILEO Residuals



- |                         |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|
| GALILEO 02 Residual (m) | GALILEO 03 Residual (m) | GALILEO 05 Residual (m) | GALILEO 08 Residual (m) |
| GALILEO 09 Residual (m) | GALILEO 11 Residual (m) | GALILEO 12 Residual (m) | GALILEO 24 Residual (m) |
| GALILEO 25 Residual (m) | GALILEO 30 Residual (m) | GALILEO 31 Residual (m) | GALILEO 33 Residual (m) |
| GALILEO 36 Residual (m) |                         |                         |                         |

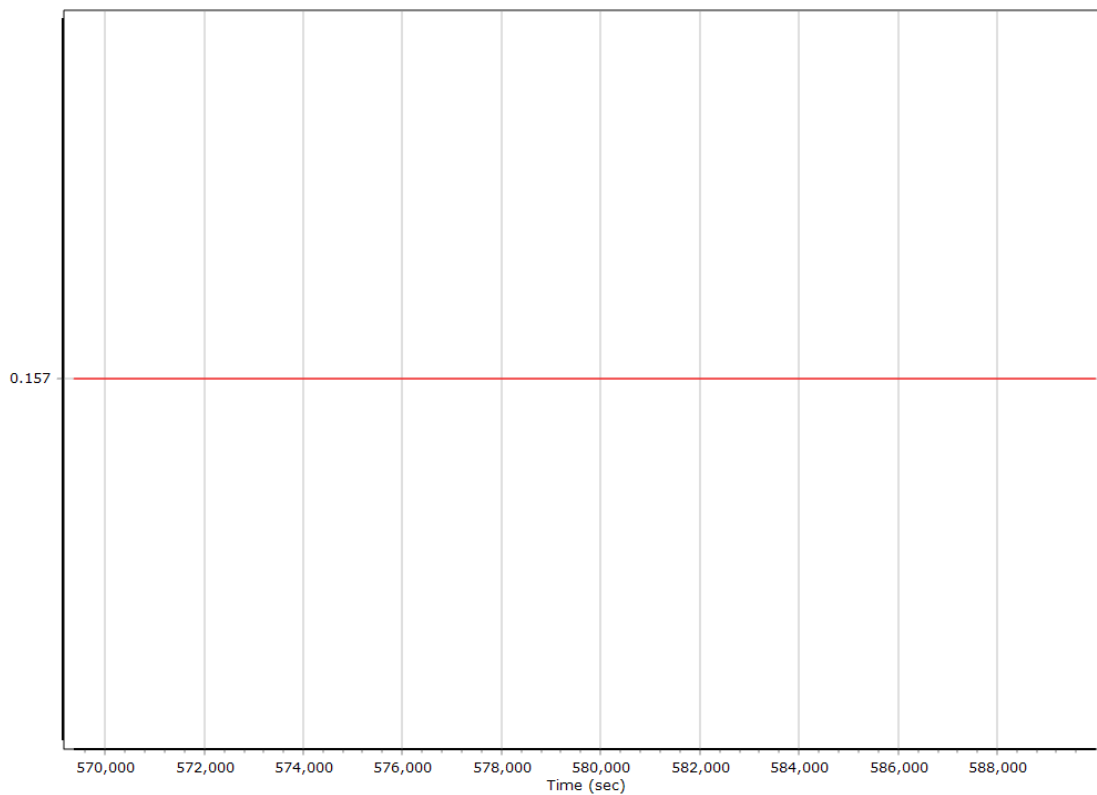
## GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	568478.000 (04/16/2022 13:54:38)		
Processing end time	589995.000 (04/16/2022 19:53:15)		
Initial attitude source	Real-Time VNAV/RNAV Attitude		
IMU Sensor Context	Processing with Onboard IMU		
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.157	-0.150	-1.090
Reference to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

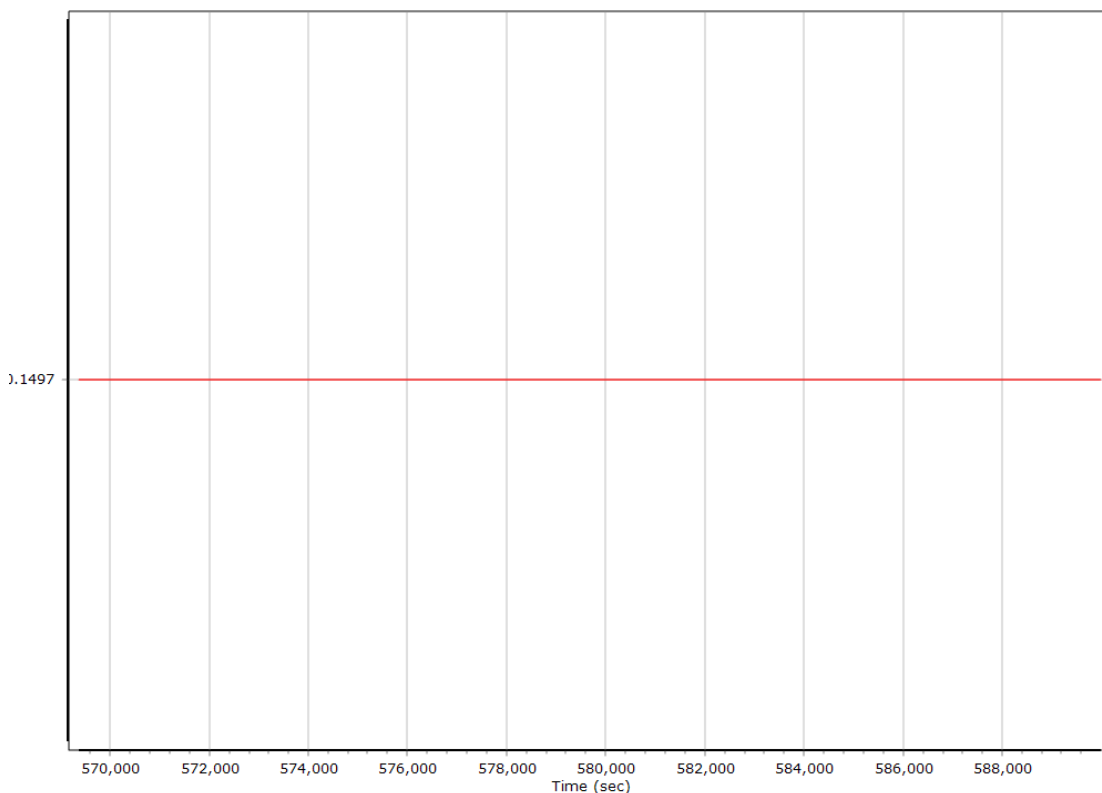
## Calibrated Installation Parameters

### Reference-Primary GNSS Lever Arm (m)

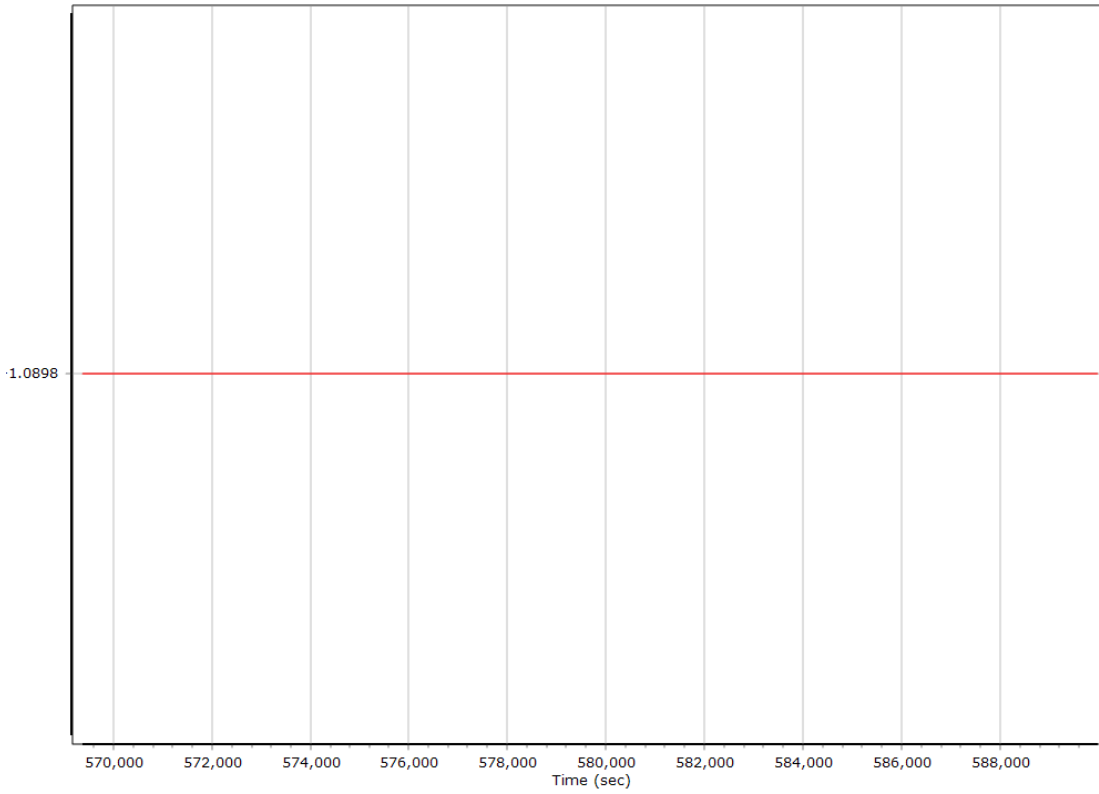
#### X Reference-Primary GNSS Lever Arm (m)



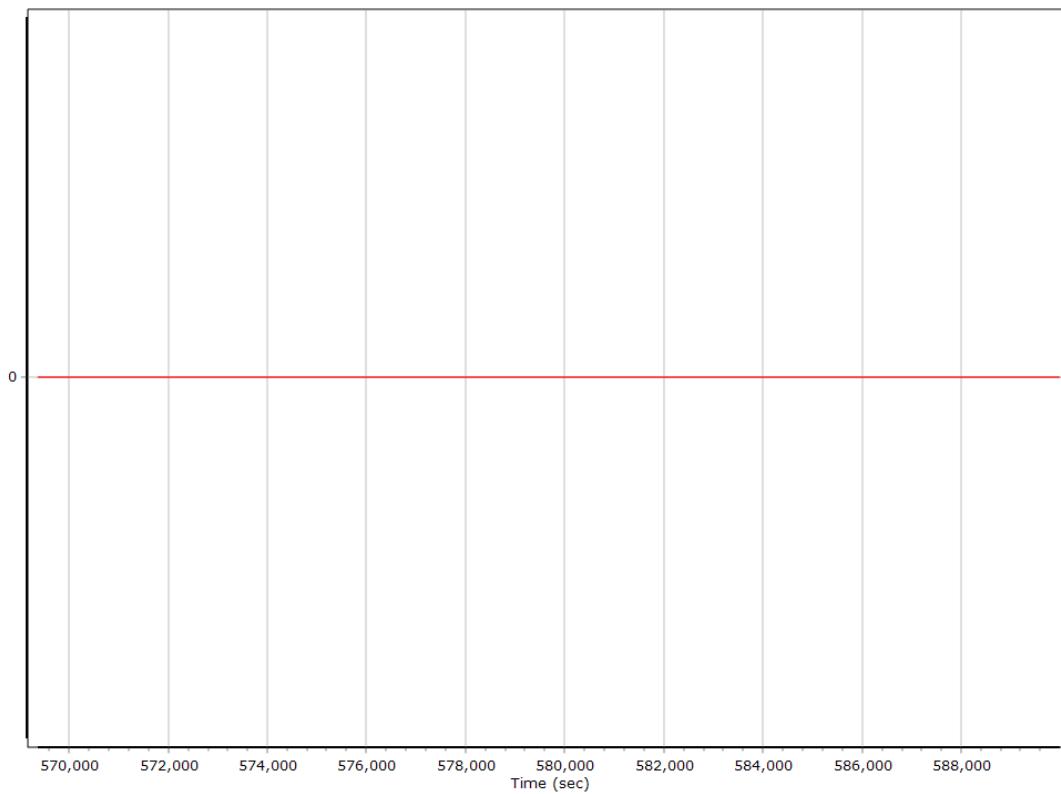
#### Y Reference-Primary GNSS Lever Arm (m)



### Z Reference-Primary GNSS Lever Arm (m)



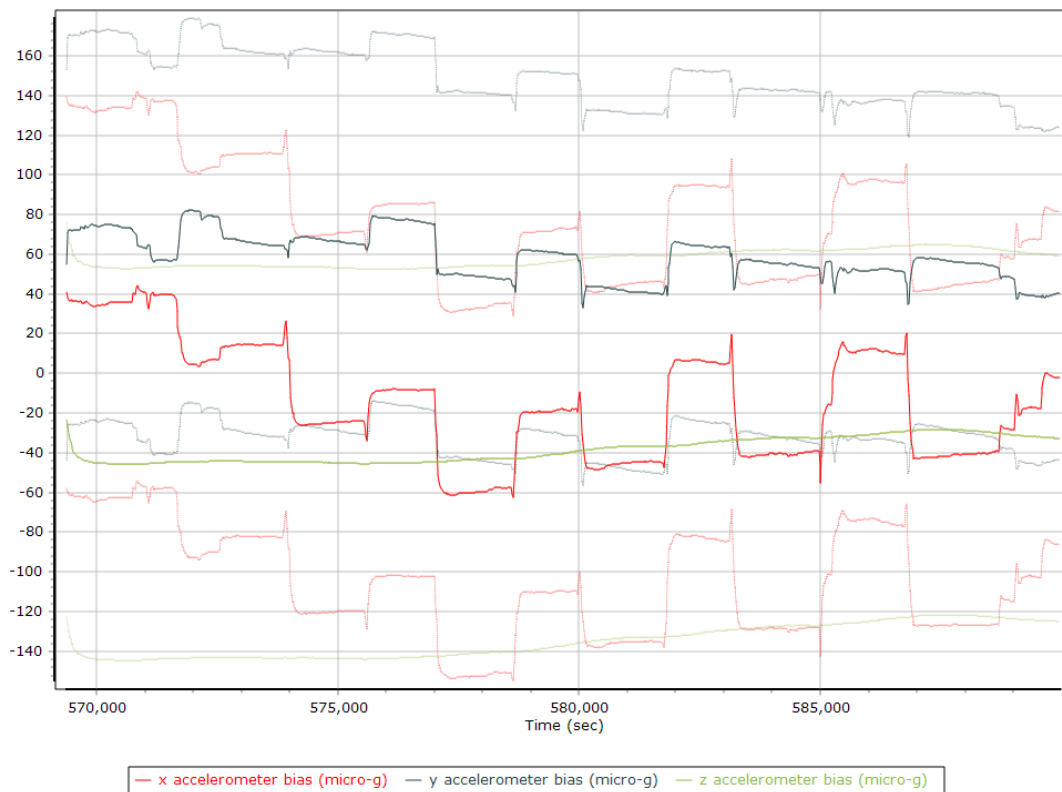
### Reference-Primary GNSS Lever Arm Figure of Merit



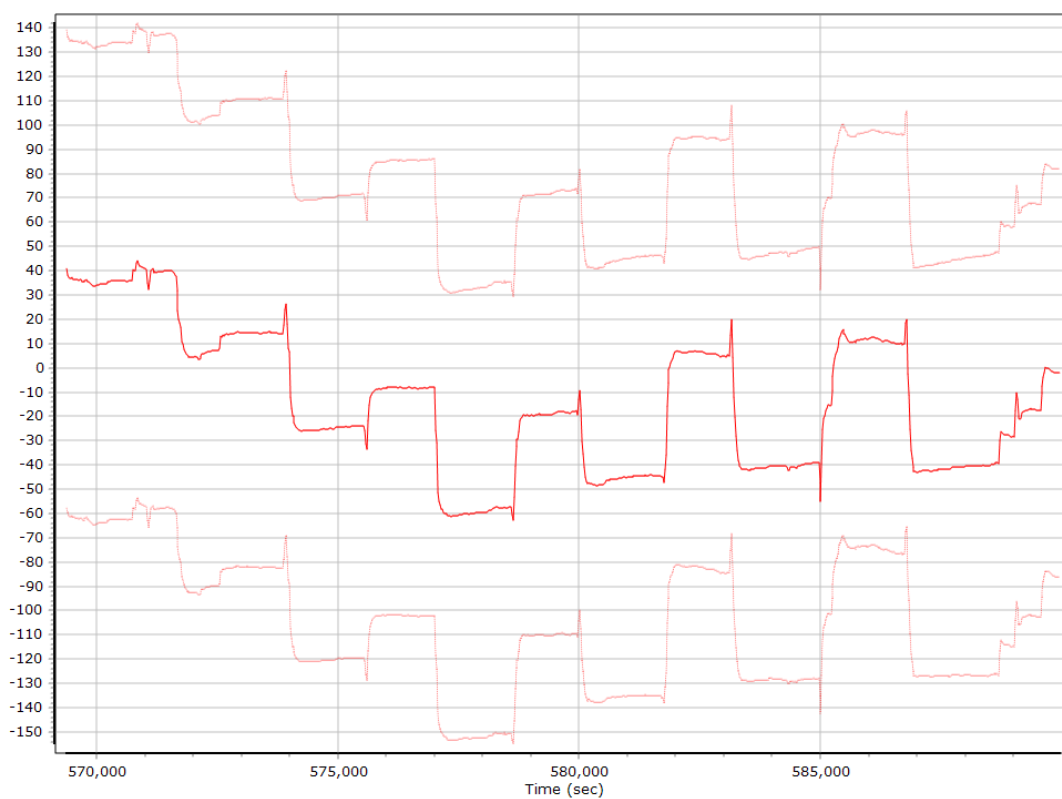
## IN-Fusion QC

### Forward Processed Estimated Errors, Reference Frame

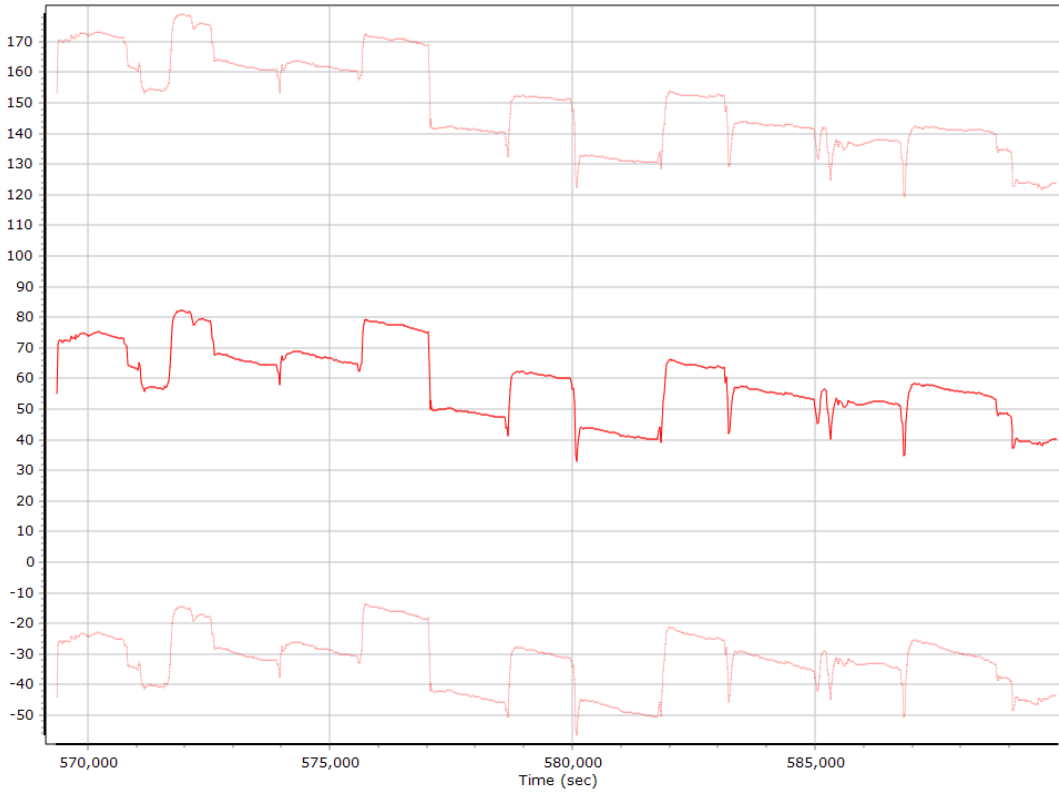
#### Accelerometer Bias (micro-g)



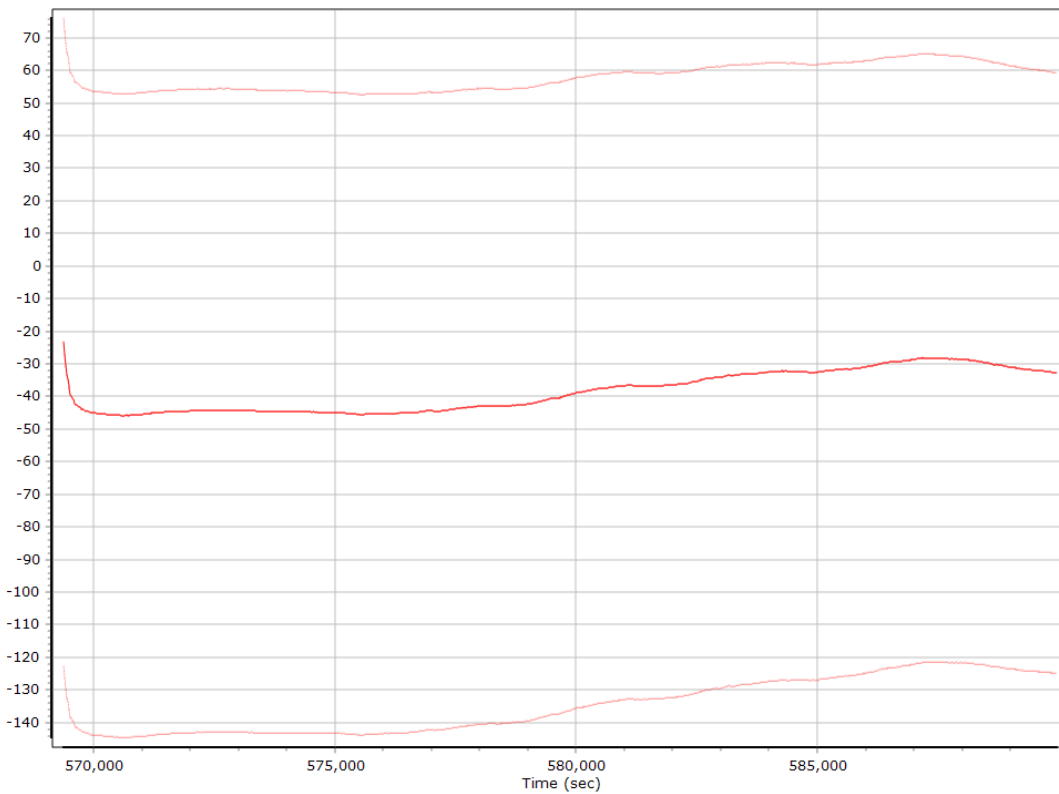
#### X Accelerometer Bias (micro-g)



### Y Accelerometer Bias (micro-g)



### Z Accelerometer Bias (micro-g)



### Accelerometer Scale Error (ppm)

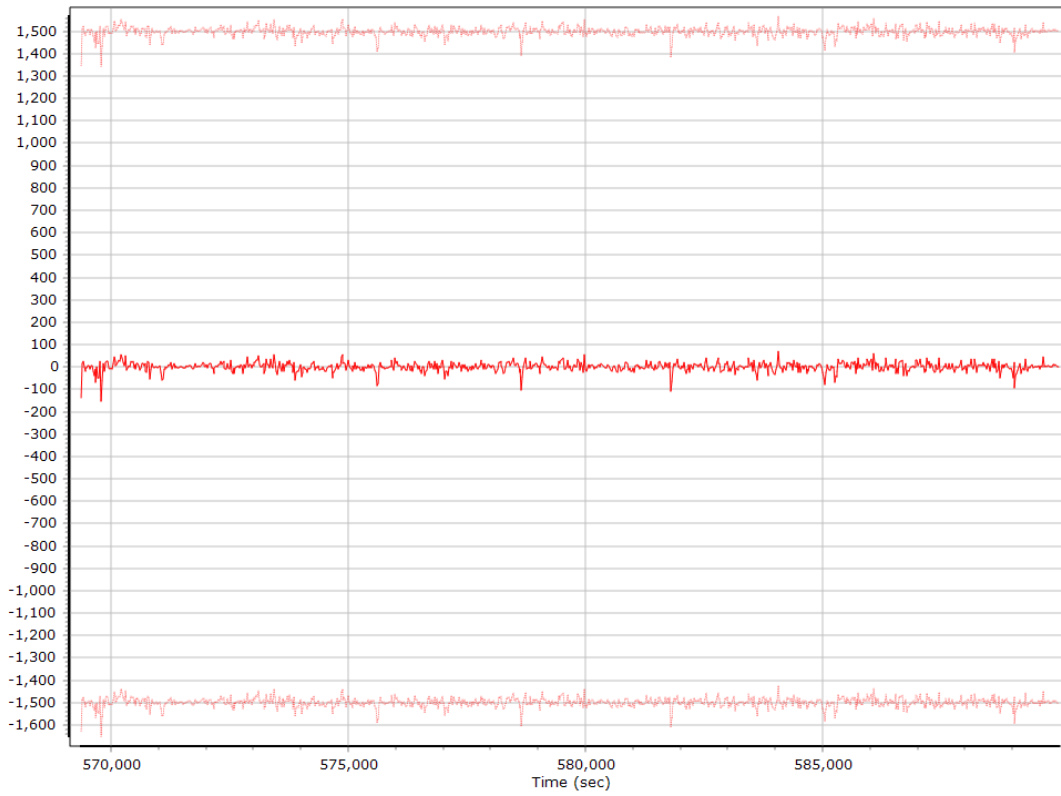


### X Accelerometer Scale Error (ppm)





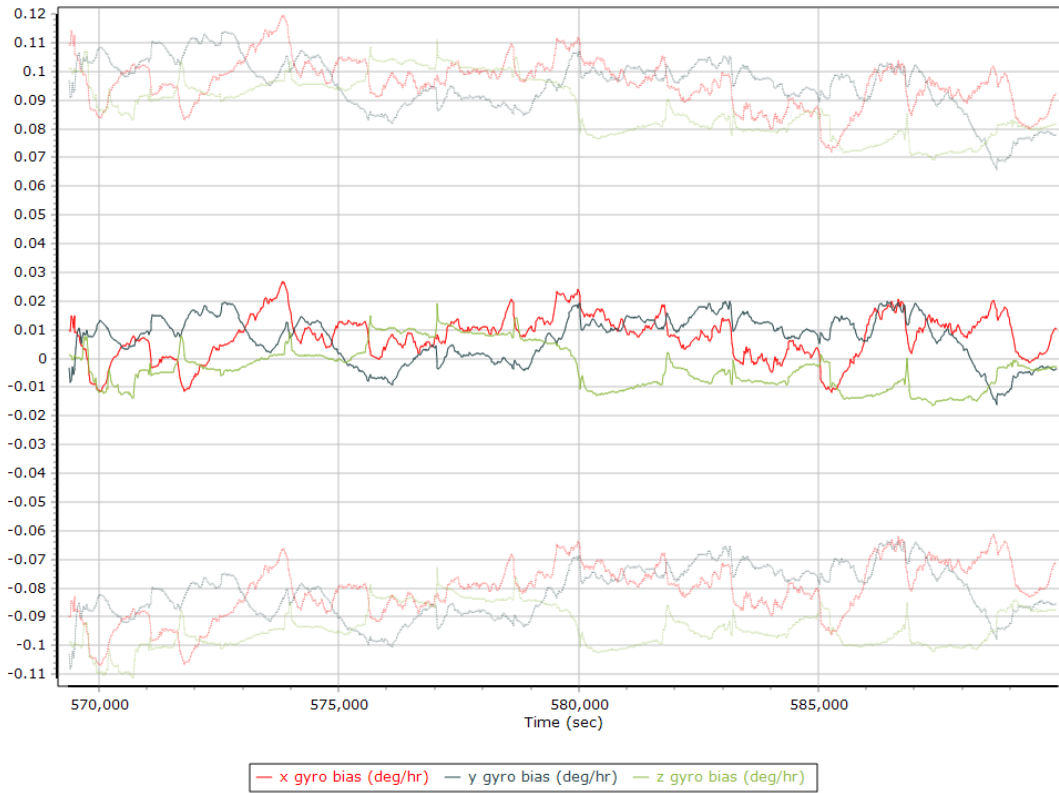
### Y Accelerometer Scale Error (ppm)



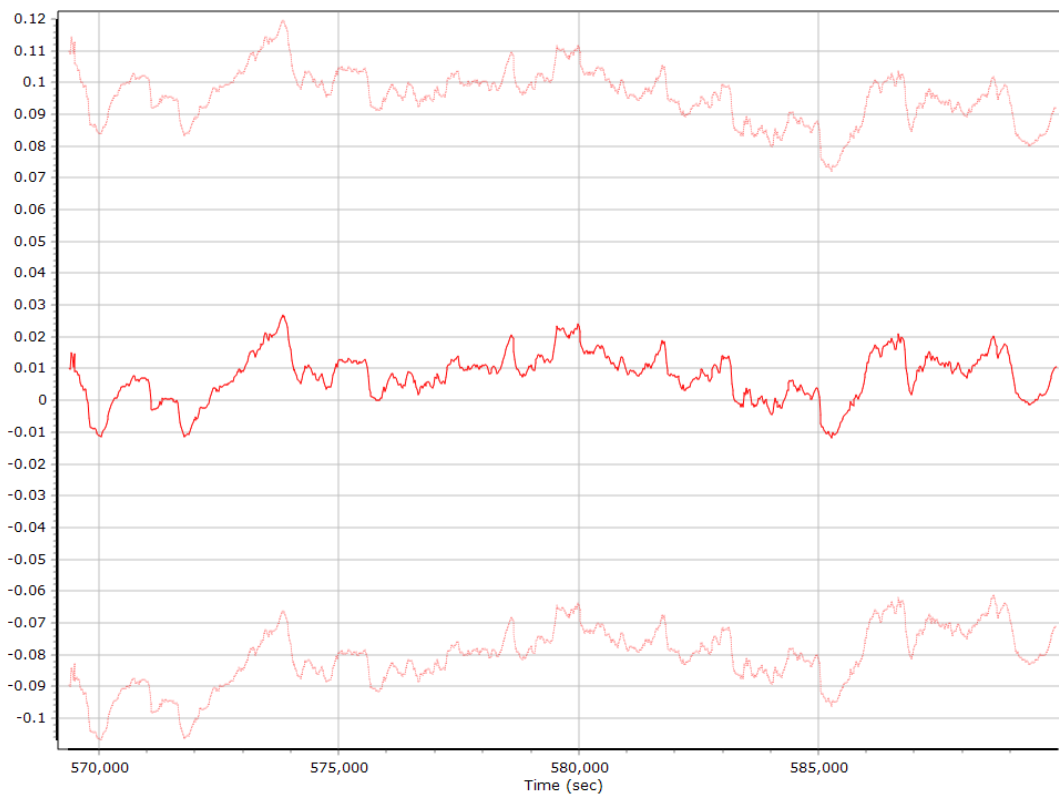
### Z Accelerometer Scale Error (ppm)



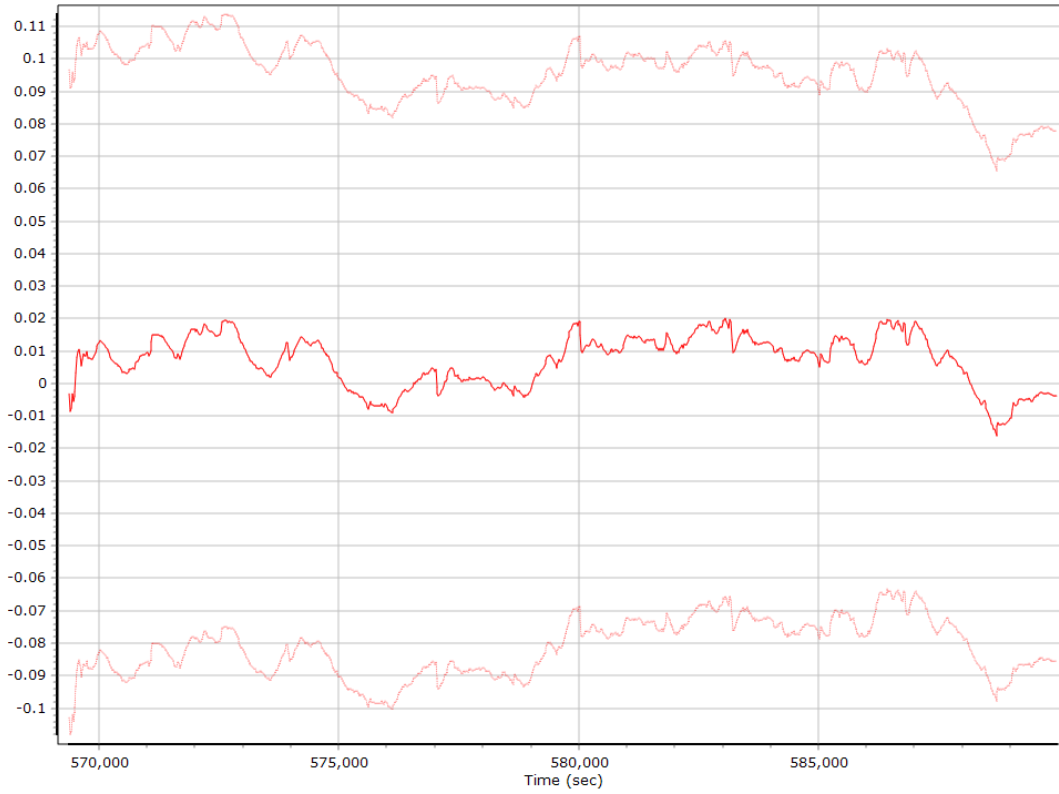
### Gyro Bias (deg/h)



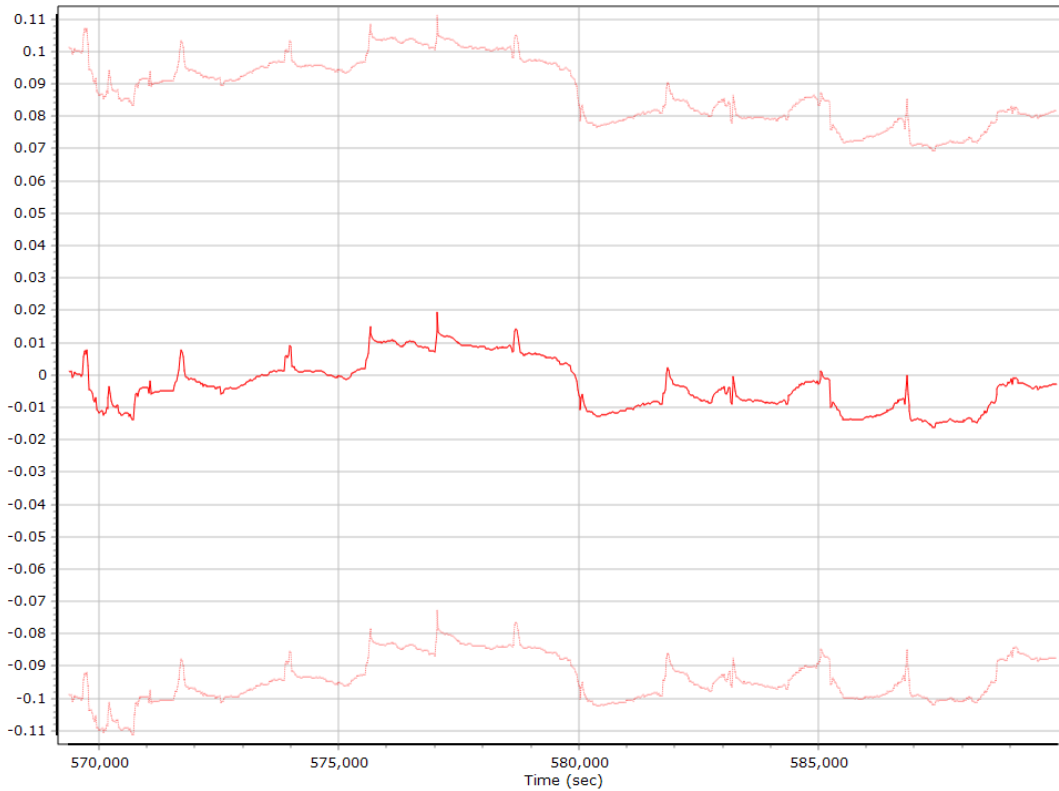
### X Gyro Bias (deg/h)



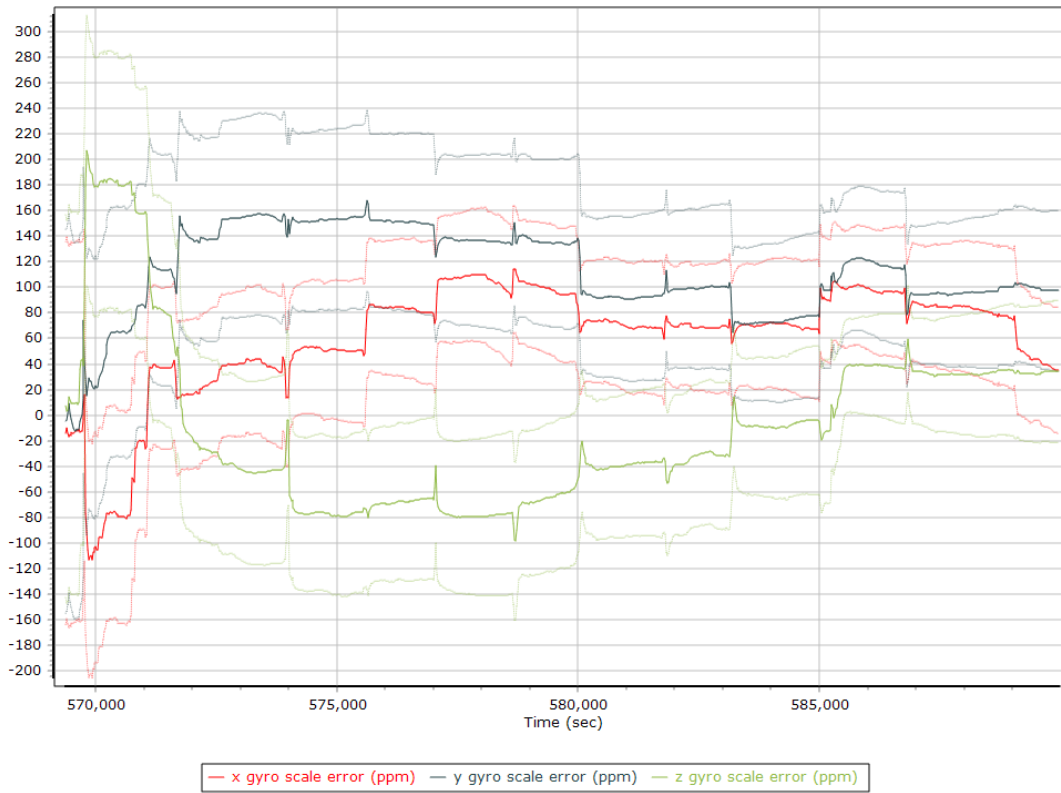
### Y Gyro Bias (deg/h)



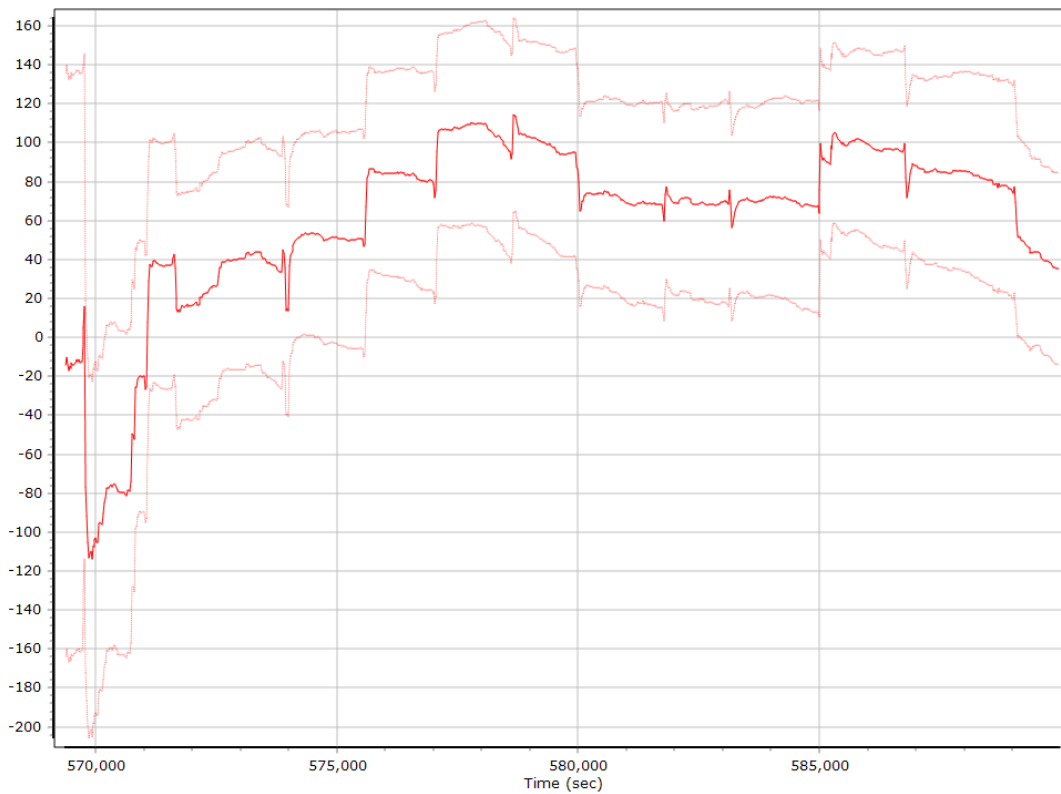
### Z Gyro Bias (deg/h)



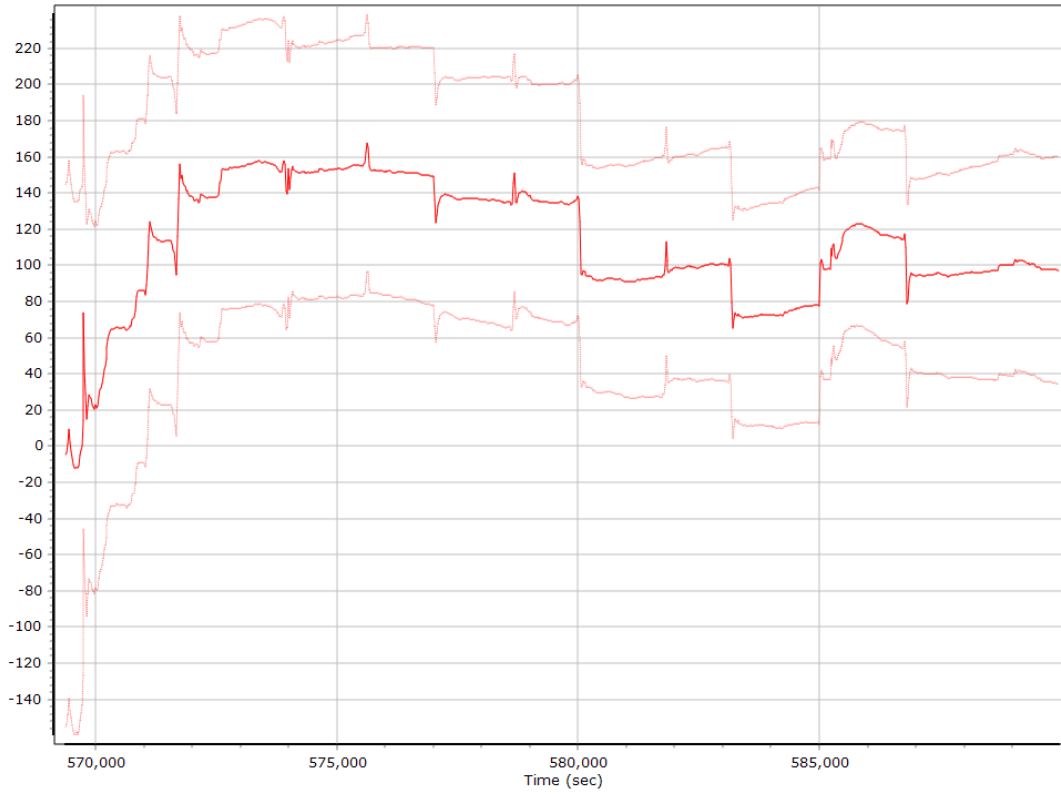
### Gyro Scale Error (ppm)



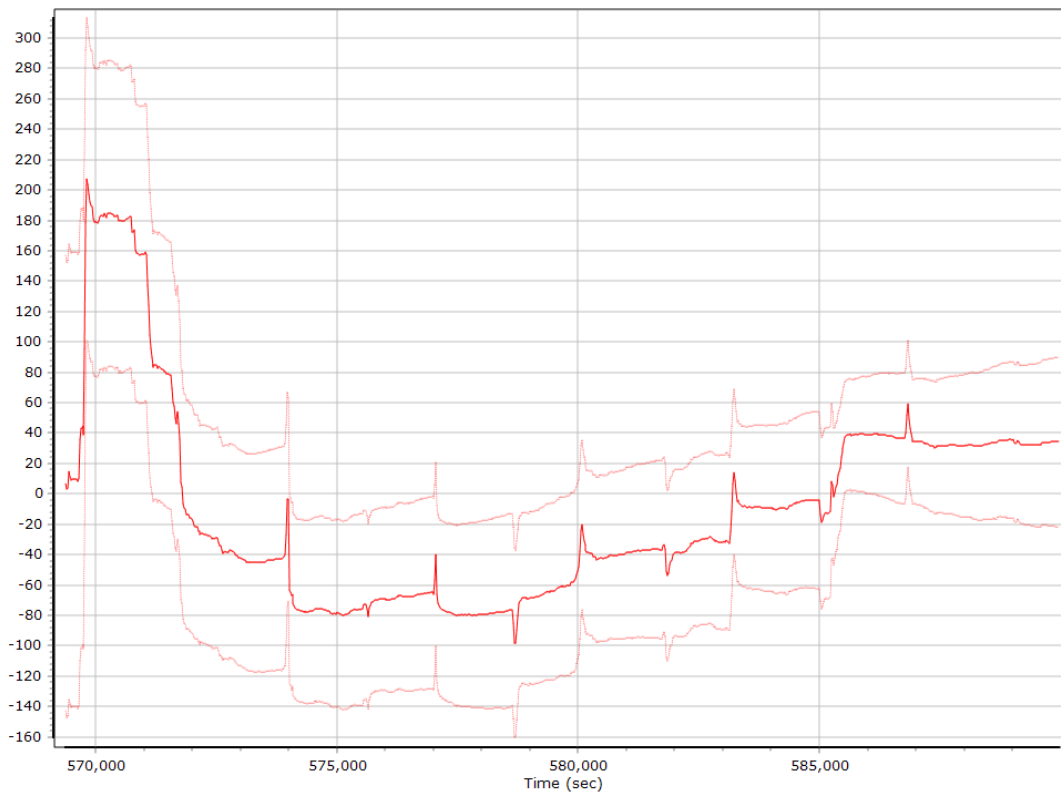
### X Gyro Scale Error (ppm)



### Y Gyro Scale Error (ppm)

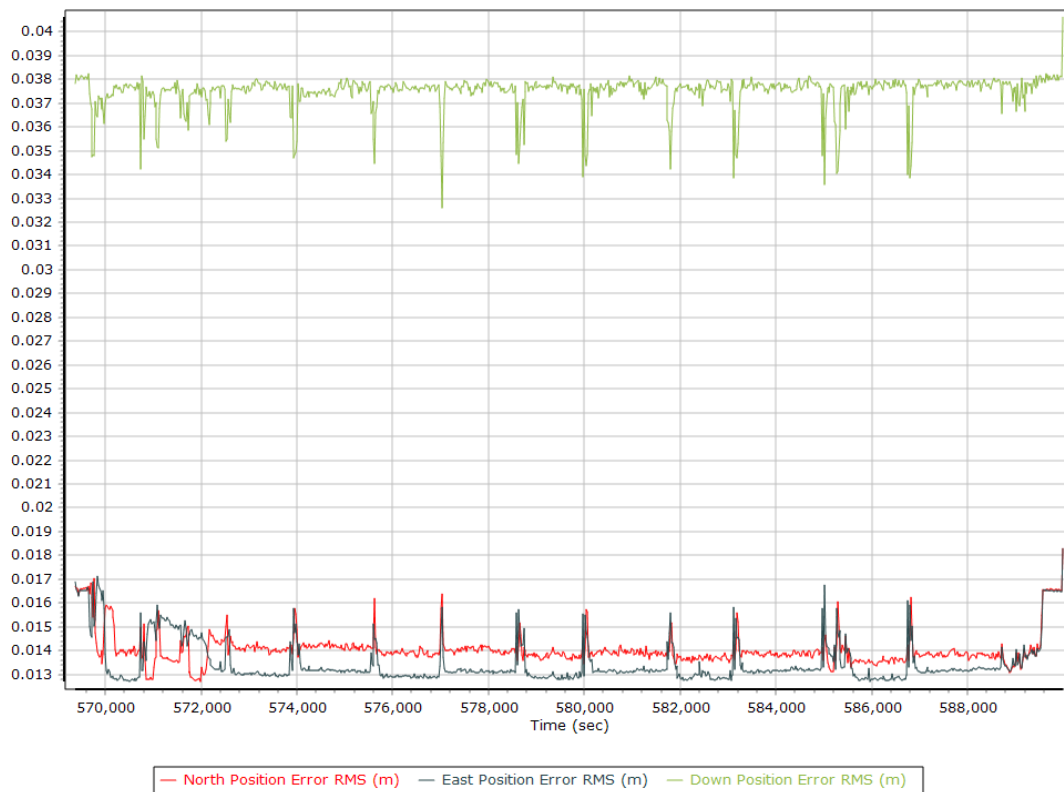


### Z Gyro Scale Error (ppm)

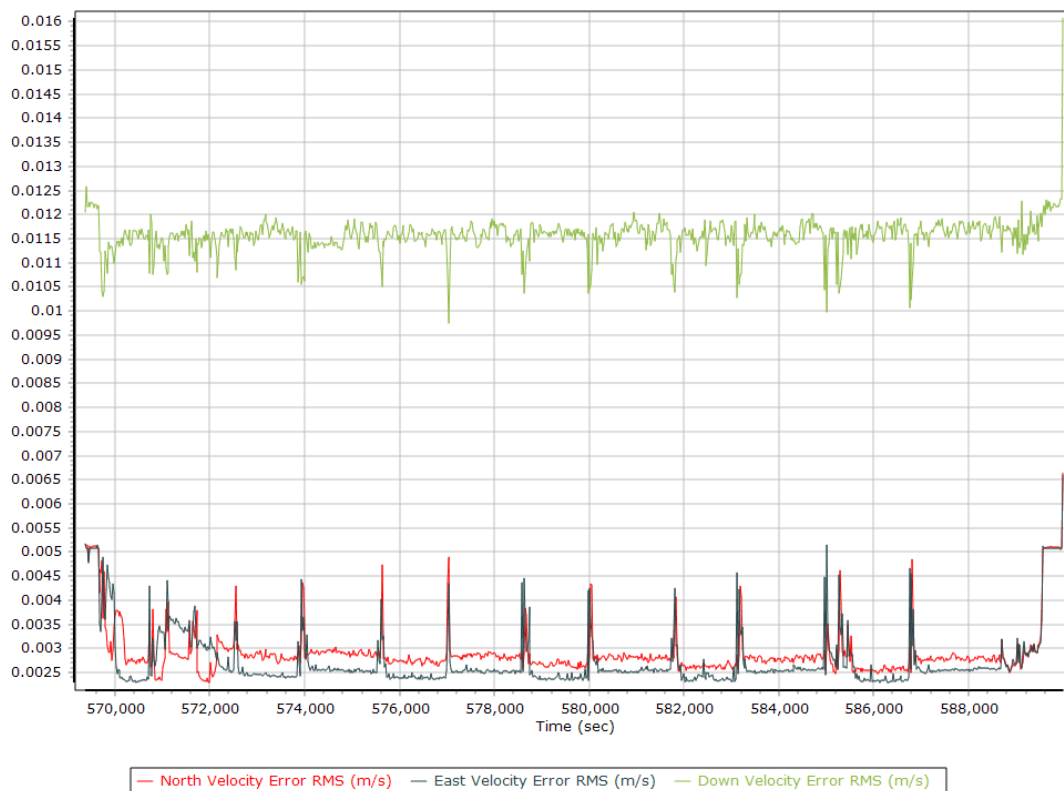


## Smoothed Performance Metrics

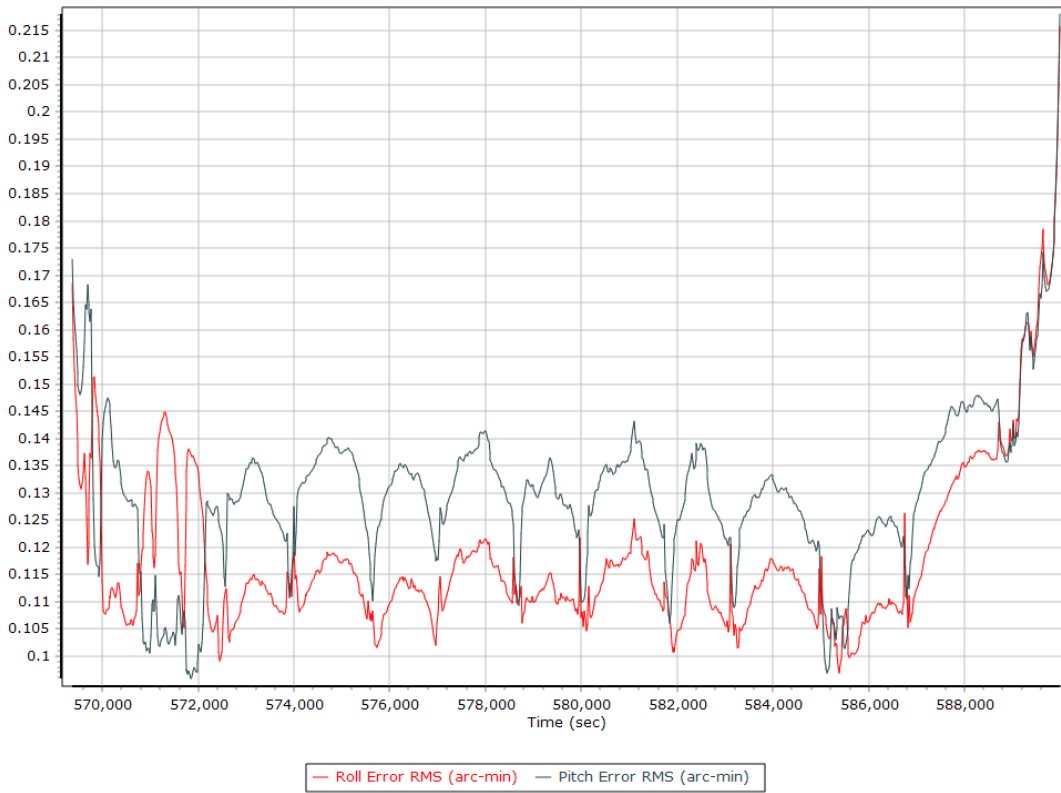
### Position Error RMS (m)



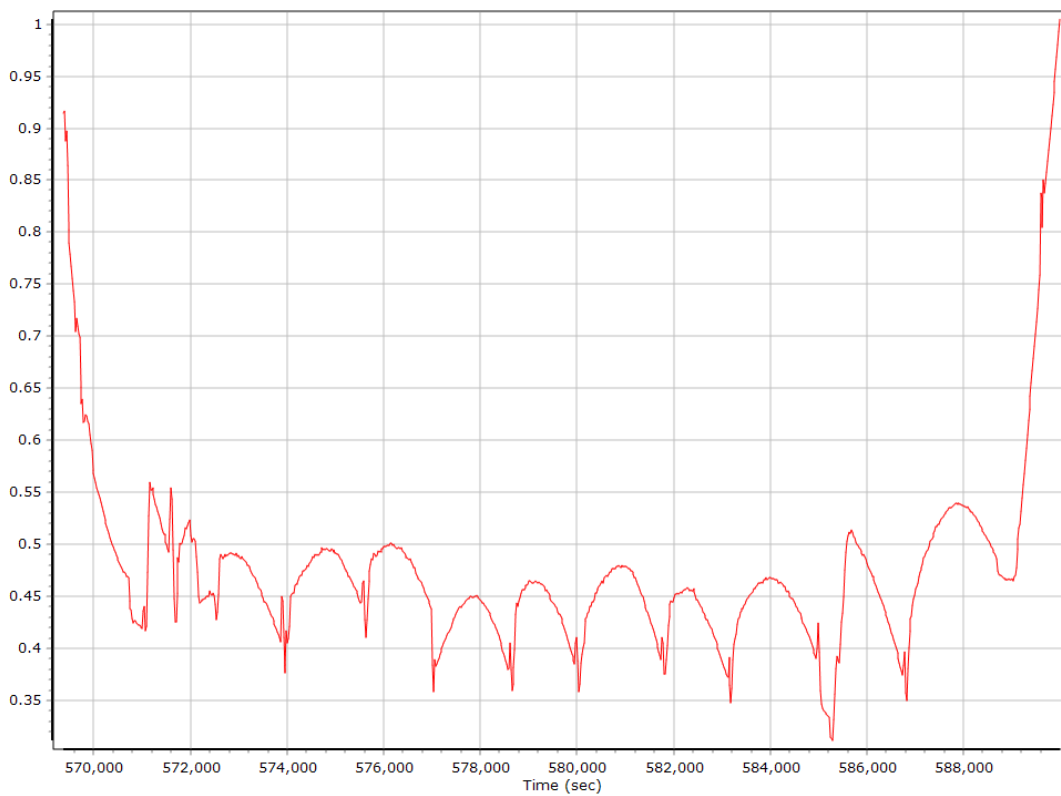
### Velocity Error RMS (m/s)



### Roll/Pitch Error RMS (arc-min)

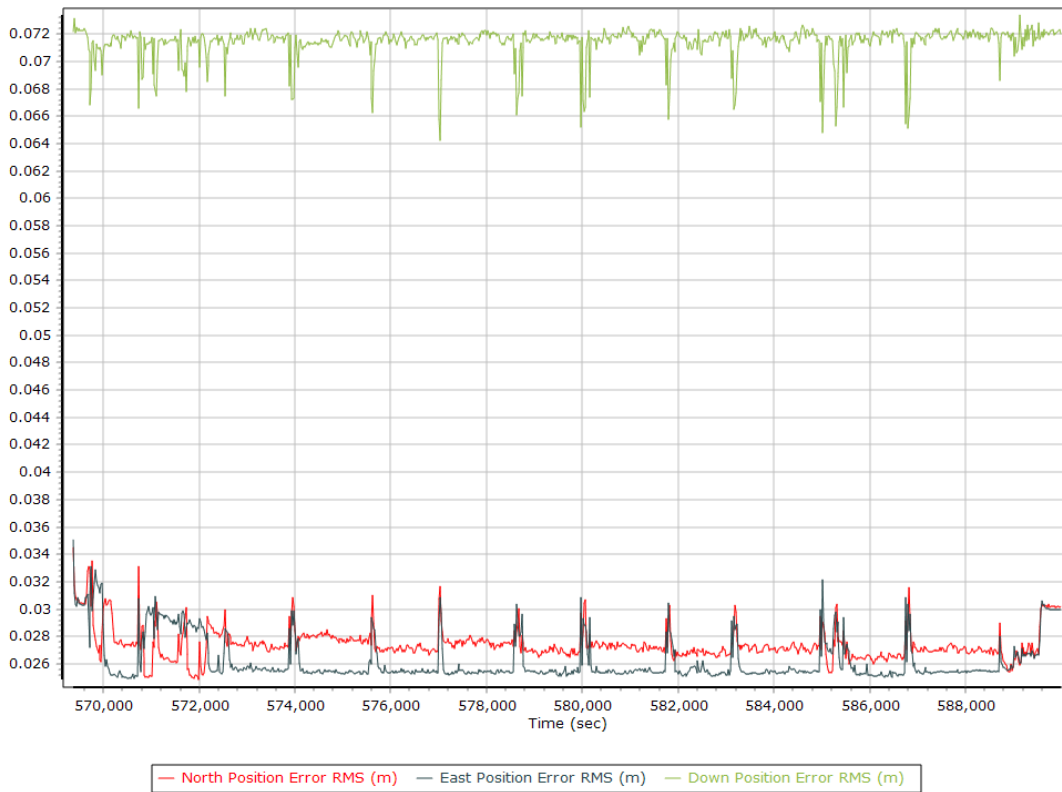


### Heading Error RMS (arc-min)

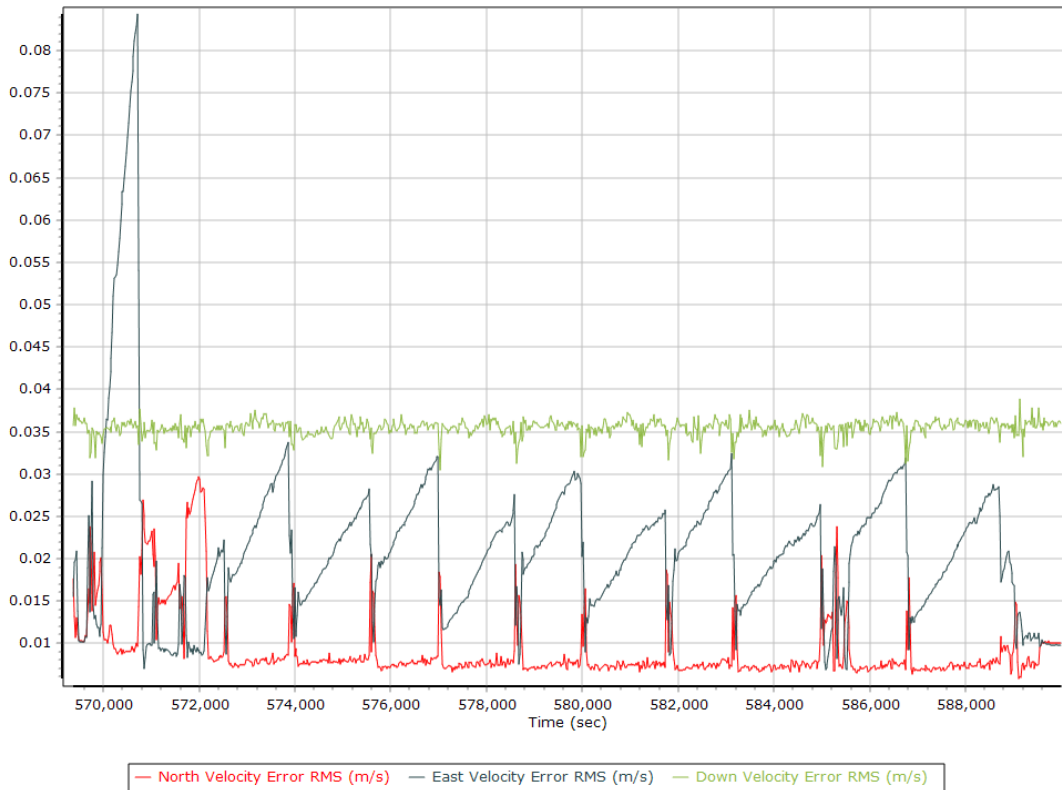


## Forward Processed Performance Metrics

### Position Error RMS (m)

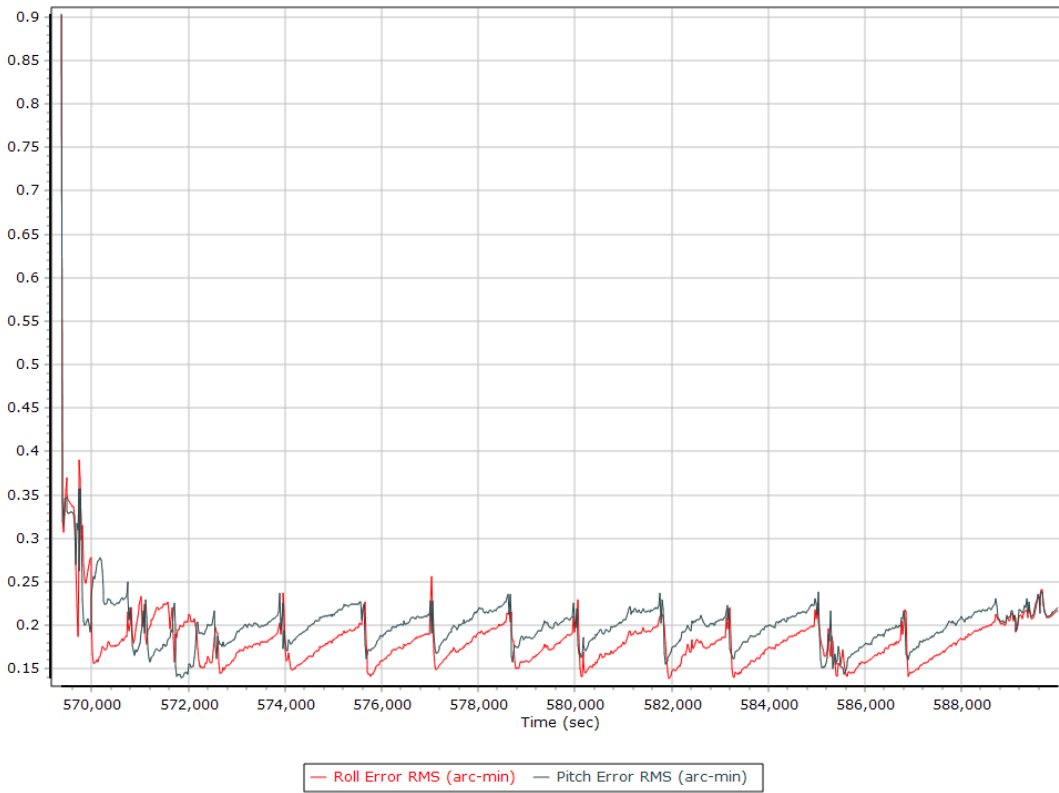


### Velocity Error RMS (m/s)

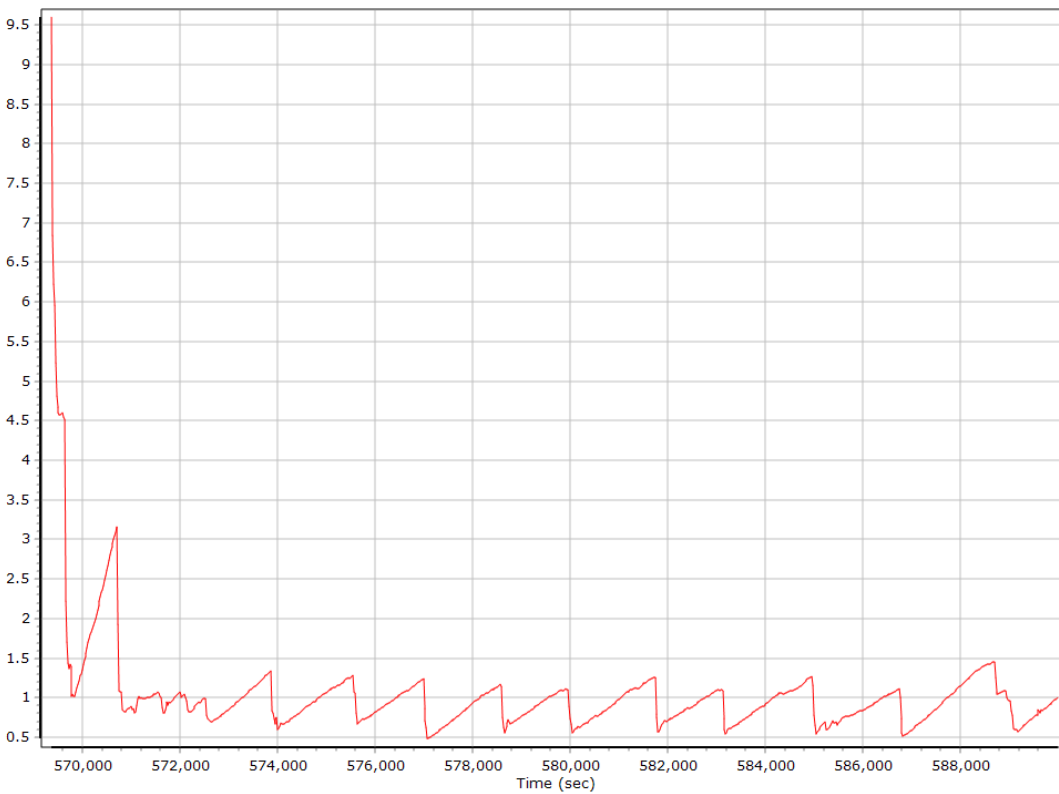




### Roll/Pitch Error RMS (arc-min)

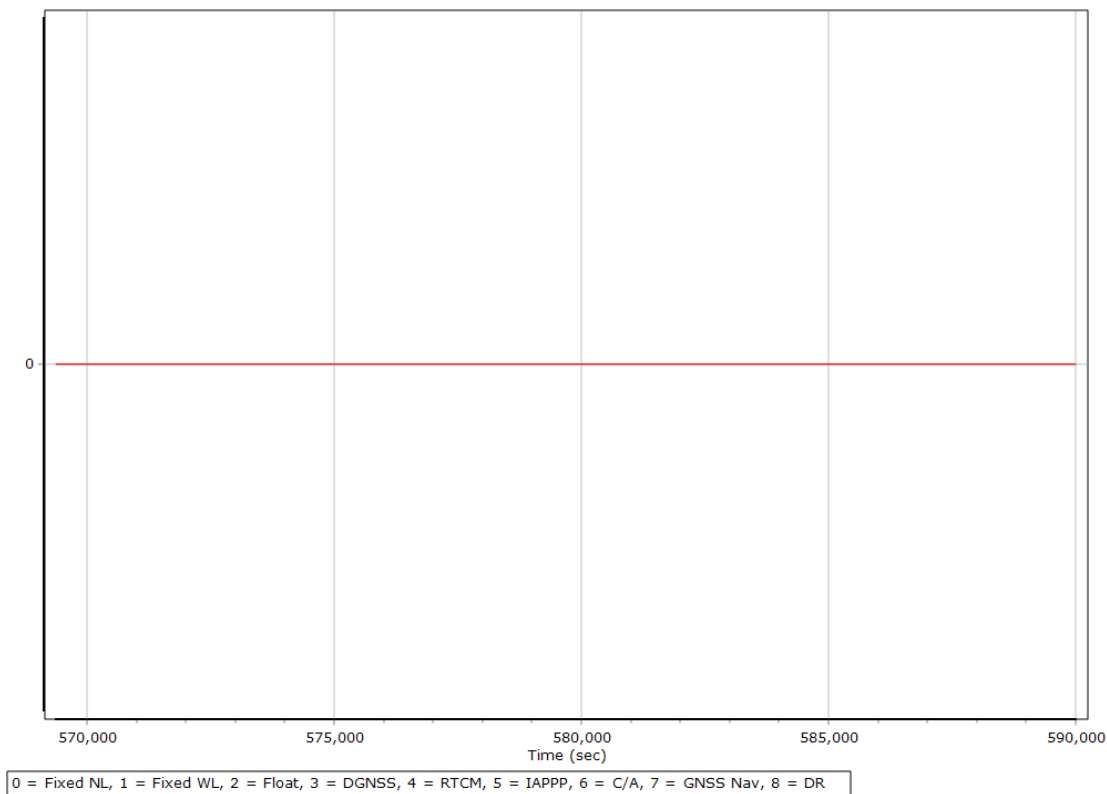


### Heading Error RMS (arc-min)

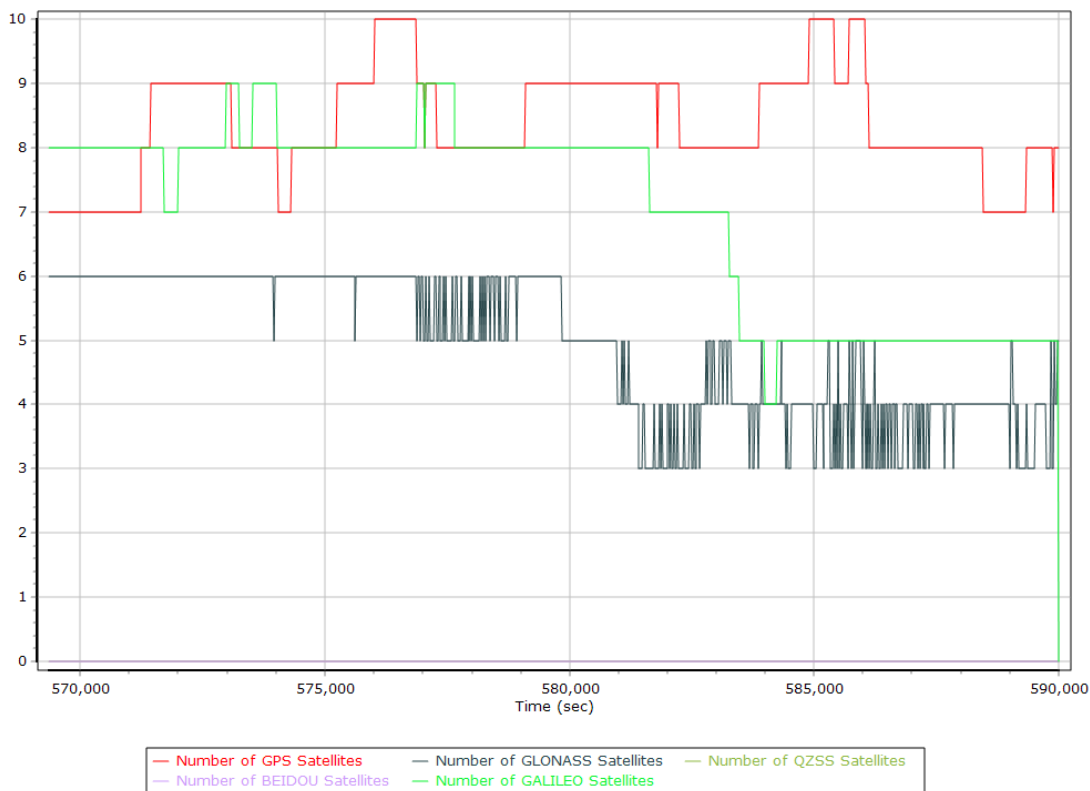


## Forward Processed Solution Status

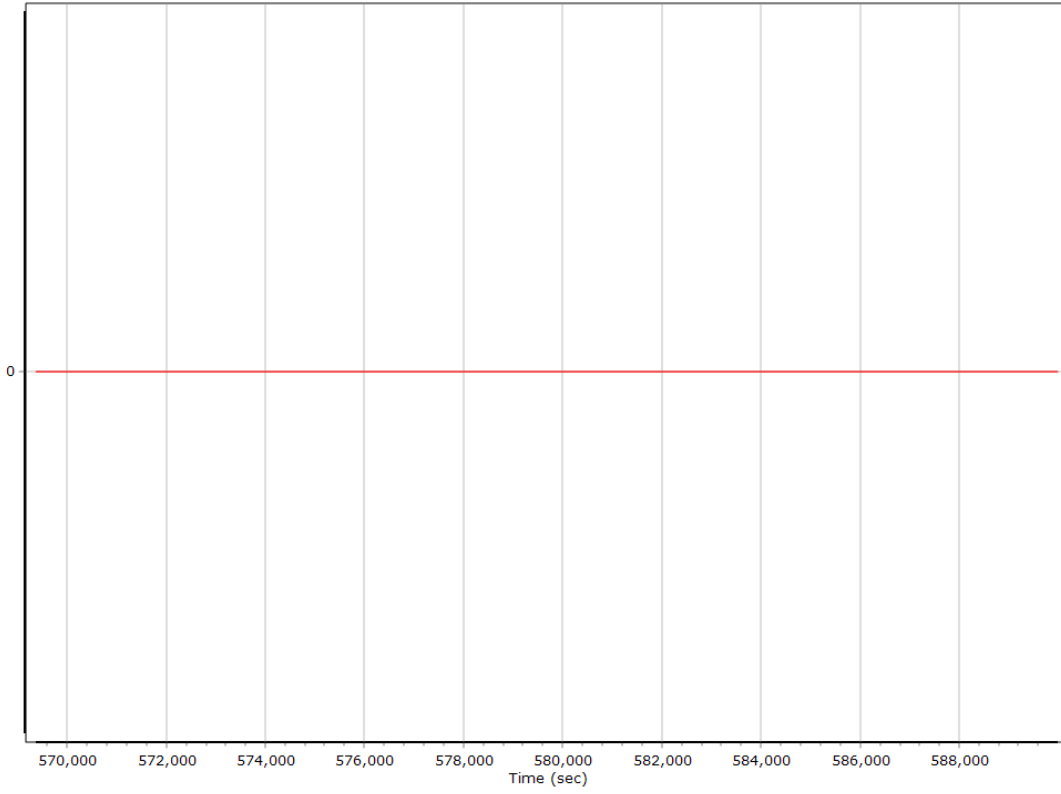
### Processing Mode



### Number of Satellites



### Baseline Length



## Export Summary

Export file	sbet_13866_NAD83(2011).out		
Export format	Custom Smoothed BET		
Solution in use	Post-processed		
Output rate	All Records		
Reference to Output lever arm (m)	0.000	0.000	0.000
Reference mounting angles (deg)	0.000	0.000	0.000
Output units (Coordinate / Lat & Lon)	Meter	Deg Decimal	
Export start time	569311.002 (04/16/2022 14:08:31)		
Export end time	589995.002 (04/16/2022 19:53:15)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid	Universal Transverse Mercator		
Zone	UTM North 15 (96W to 90W)		
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation	NONE		
Target Epoch	2010		

## EO Summary

EO file	eo_13866.txt		
EO format	ZI Imaging		
Lever arm (m)	0.000	0.000	0.000
Boresight angles (arcmin)	0.0000	0.0000	0.0000
Output rate	All Records		
Rotation sequence	x omega	y phi	z kappa
Local shift (m)	0.000	0.000	0.000
Output units (coordinate / angle / lat & lon)	Meter	Degree	Deg Decimal
Height option	Ellipsoid Height		
WGS84 height flag	False		
Scale height option	False		
Kappa cardinal rotation (deg)	0		
Solution in use	Post-processed		
EO start time	569311.002 (04/16/2022 14:08:31)		
EO end time	589995.002 (04/16/2022 19:53:15)		
Grid	Universal Transverse Mercator		
Zone	UTM North 15 (96W to 90W)		
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation	NONE		
Target Epoch	2010		