Louisiana Bayou Nezpique Topographic Lidar Project

Project Report

October 16, 2019

Prepared for:

United States Geological Survey,
National Geospatial Technical Operations Center

Prepared by:

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CONTRACT: G17PC00007

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Contents

Contents

Introduction

Precision Aerial Reconnaissance was tasked by the United States Geological Survey to acquire and process QL1 topographic LiDAR data for 3,772 square miles in Louisiana, including the parishes of Acadia, Jefferson Davis, Allen, Evangeline, and portions of St. Landry, Lafayette, Vermillion, Rapides, and Calcasieu. These LiDAR data will be used to produce a high-resolution bare earth Digital Elevation Model of the entire project area. This report describes the data acquisition, ground survey, data processing, quality control, and data validation activities related to producing the final deliverables for this project.

The LiDAR data were processed in accordance with this task order's Statement of Work, as well as the USGS' NGP Lidar Base Specification version 1.2 (November 2014).

This contract has been novated from PAR to Optimal GEO, Inc. Under this task order, Optimal GEO assumed the responsibilities of correcting the final deliverables.

Project Team

Precision Aerial Reconnaissance, LLC (PAR), served as the prime contractor of this task order, was responsible for managing all project related activities. PAR was directly responsible for topographic lidar acquisition and calibration, manual editing of the lidar data and breakline generation and performing QA/QC on all final deliverables. All ground survey activities required to collect ground control and accuracy checkpoints were performed by Flora Bama Geospatial Solutions, LLC.

Coordinate Reference System

The lidar data and derived products were delivered in the following reference system.

Horizontal Datum: North American Datum 1983, 2011 adjustment (NAD83 (2011))
Vertical Datum: North American Vertical Datum of 1988, (NAVD88)
Coordinate System: Universal Transverse Mercator (UTM) Zone 15 North
Units: Horizontal units are in meters to 2 decimal places; Vertical units are in meters to 2 decimal places.
Geoid Model: Geoid12B (used to convert ellipsoid heights to orthometric heights)

Lidar Vertical Accuracy

The tested RMSEz of the classified lidar data for checkpoints in non-vegetated terrain is 6.8 cm, compared to the 10 cm specification. The NVA of the classified lidar data computed using RMSEz x 1.96 is 13.4 cm, compared to the 19.6 cm specification.

The tested VVA of the classified lidar data computed using the 95th percentile is equal to 22.6 cm, compared to the 29.4 cm specification.

Project Deliverables

The deliverable for the project are as follows:

1. Classified Point Cloud Data (Tiled)
2. Bare Earth Surface (Raster DEM – GeoTIFF, 32-bit floating-point format)
3. Intensity Images (8-bit gray scale, tiled, GeoTIFF format)
4. Breakline Data (ESRI ArcShape and Feature Class Format)
5. Independent Survey Checkpoint Data (Report, Photos, & Points)
6. Calibration Points
7. Metadata
10. Project Report (Acquisition, Processing, QC)
11. Project Extents

Lidar Acquisition

PAR planned 342 passes for the Bayou Nezpique project area and a parallel flight line for the purposes of quality control. To reduce any margin for error in the flight plan, PAR followed FEMA's Appendix A "guidelines" for flight planning and, at a minimum, includes the following criteria:

- A digital flight line layout using LEICA MISSION PRO flight design software for direct integration into the aircraft flight navigation system.
- Planned flight lines; flight line numbers; and coverage area.
- Lidar coverage extended by a predetermined margin (100m) beyond all project borders to ensure necessary over-edge coverage appropriate for specific task order deliverables.
- Local restrictions related to air space and any controlled areas have been investigated so that required permissions can be obtained in a timely manner with respect to schedule. Additionally, PAR filed our flight plans as required by local Air Traffic Control (ATC) prior to each mission.

PAR monitored weather and atmospheric conditions and conducted lidar missions only when no conditions exist below the sensor that will affect the collection of data. These conditions include leaf-off for hardwoods, no snow, rain, fog, smoke, mist and low clouds. lidar systems are active sensors, not requiring light, thus missions may be conducted during night hours when weather restrictions do not prevent collection. PAR accesses reliable weather sites and indicators (webcams) to establish the highest probability for successful collection to position our sensor to maximize successful data acquisition.

Within 72-hours prior to the planned day(s) of acquisition, PAR closely monitored the weather, checking all sources for forecasts at least twice daily. As soon as weather conditions were conducive to acquisition, our aircraft mobilized to the project site to begin data collection. Once on site, the acquisition team took responsibility for weather analysis.

PAR's lidar sensors are calibrated at a designated site located at the Shreveport downtown Airport in Shreveport LA and are periodically checked and adjusted to minimize corrections at project sites.

The lidar survey was conducted between April 5, 2018 and June 8, 2018.

Lidar System Parameters

PAR operated a Cessna 206G (Tail # N799AC) and a Cessna 206 (Tail#6461Z) each outfitted with a LEICA ALS70cm LiDAR system during the collection of the study area.

Table 1 lists PAR's system parameters for lidar acquisition on this project.

Item	Parameter
System	Leica ALS-70 HP
Altitude (AGL meters)	1125
Approx. Flight Speed (knots)	120
Scanner Pulse Rate (kHz)	487.0
Scan Frequency	53.4
Pulse Duration of the Scanner (nanoseconds)	10
Pulse Width of the Scanner (m)	3
Swath width (m)	809.47
Central Wavelength of the Sensor Laser (nanometers)	1064
Did the Sensor Operate with Multiple Pulses in The Air? (yes/no)	Yes
Beam Divergence (milliradians)	0.22
Nominal Swath Width on the Ground (m)	809.47
Swath Overlap (%)	30
Total Sensor Scan Angle (degree)	40
Computed Down Track spacing (m) per beam	1.16
Computed Cross Track Spacing (m) per beam	0.43
Nominal Pulse Spacing (single swath), (m)	0.32
Nominal Pulse Density (single swath) (ppsm), (m)	9.75
Aggregate NPS (m) (if ANPS was designed to be met through single coverage, ANPS and NPS will be equal)	0.32
Aggregate NPD (m) (if ANPD was designed to be met through single coverage, ANPD and NPD will be equal)	9.75
Maximum Number of Returns per Pulse	7

Table 1. Precision Aerial Reconnaissance's lidar system parameters.

Acquisition Status Report and Flight Lines

Upon notification to proceed, the flight crew loaded the flight plans and validated the flight parameters. The Acquisition Manager contacted air traffic control and coordinated flight pattern requirements. Lidar acquisition began immediately upon notification that control base stations were in place. During flight operations, the flight crew monitored weather and atmospheric conditions. Lidar missions were flown only when no condition existed below the sensor that would affect the collection of data. The pilot constantly monitored the aircraft course, position, pitch, roll, and yaw of the aircraft. The sensor operator monitored the sensor, the status of PDOPs, and performed the first Q/C review during acquisition. The flight crew constantly reviewed weather and cloud locations. Any flight lines (Figure 1) impacted by unfavorable conditions were marked as invalid and re-flown immediately or at an optimal time.

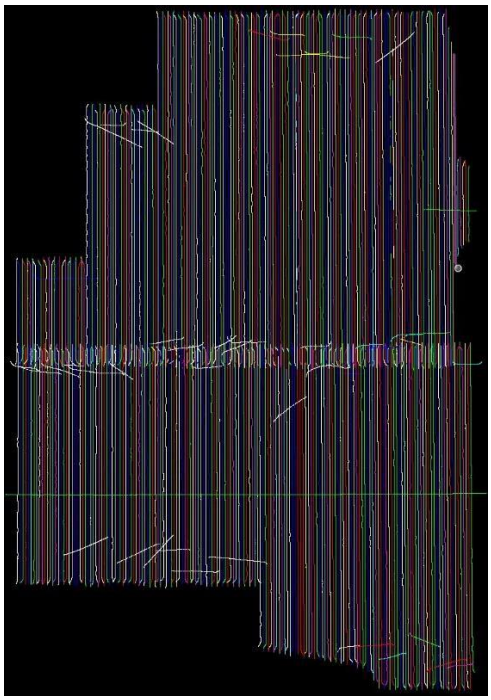


Figure 1. Trajectories as flown by PAR.

Lidar Ground Control

Two LiDAR acquisition base stations (Table 2) were used to control the lidar acquisition for the Bayou Nezpique project area. The Trimble R10 GNSS receiver and a CHC X900s-OPUS receiver, both logging at 2 Hertz affixed to a 2-meter range, pole served as base stations during acquisition. The coordinates of all used base station positions are provided in Table 2.

Name	NAD83 (2011) UTM 15		Ellipsoidal Ht (m)	Orthometric Ht (NAVD88 Geoid12B, m)
	Easting X (m)	Northing Y (m)		
Nail Allen Parish	529739.803	3402036.246	3.877	31.016
BK2430	531914.873	3345720.614	-21.163	6.065

Table 2. Listing of NGS monuments used for ground control of the lidar data.

Airborne GPS Kinematic

GPS and IMU processing reports are included in the Acquisition report: Appendix A.

Generation and Calibration of Laser Points

The initial step of calibration is to verify availability and status of all needed GPS and Laser data against field notes and compile any data if not complete.

Subsequently the mission points are output using Leica's Cloud Pro, initially with default values from Leica or the last mission calibrated for the system. Bayes StripAlign software (version 2.04B) was utilized for LiDAR calibration, assessment of calibration validity, and assessment of point cloud alignment to control. Additional quality checks are performed using MicroStation/TerraScan. If a calibration error greater than specification is observed within the mission, the roll, pitch and scanner scale corrections that need to be applied are calculated. The missions with the new calibration values are regenerated and validated internally once again to ensure quality.

Data collected by the lidar unit is reviewed for completeness as illustrated in Figure 2, acceptable density and to make sure all data is captured without errors or corrupted values. In addition, all GPS, aircraft trajectory, mission information, and ground control files are reviewed and logged into a database.

On a project level, a supplementary coverage check is carried out to ensure no data voids unreported by Field Operations are present.

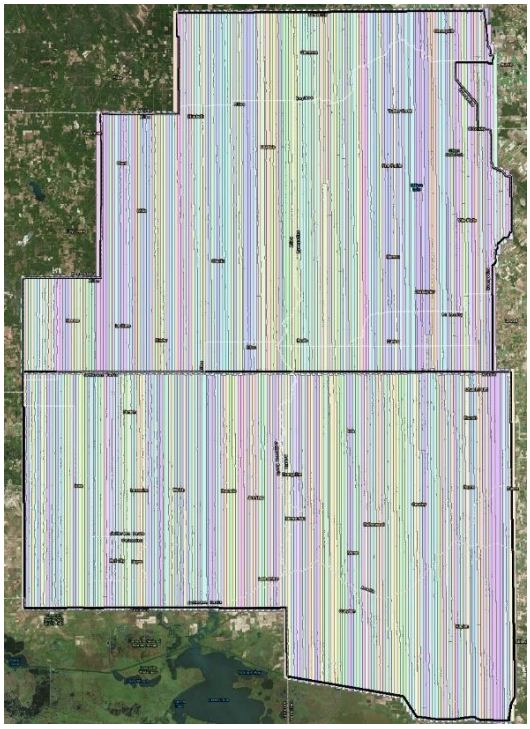


Figure 2. Lidar Swath output showing complete coverage.

Boresight and Relative Accuracy

The initial points for each mission calibration are inspected for flight line errors, flight line overlap, slivers or gaps in the data, point data minimums, or issues with the lidar unit or GPS. Roll, pitch and scanner scale are optimized during the calibration process until the relative accuracy is met.

Relative accuracy and internal quality are checked using at least 3 regularly spaced QC blocks in which points from all lines are loaded and inspected. Vertical differences between ground surfaces of each line are displayed. Color scale is adjusted so that errors greater than the specifications are flagged. Cross sections are visually inspected across each block to validate point to point, flight line to flight line and mission to mission agreement. An example of this review is illustrated in Figure 3.

For this project the specifications used are as follows:
Relative accuracy ≤ 8 cm maximum differences within individual swaths and ≤16 cm RMSDz between adjacent and overlapping swaths.

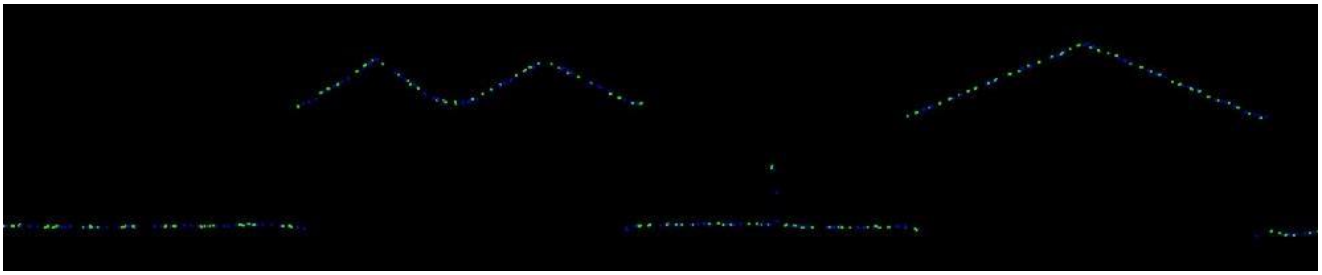


Figure 3. Profile views showing correct roll and pitch adjustments.

Lidar Processing & Quantitative Assessment

Initial Processing

PAR performed several validations on the dataset prior to starting full-scale production on the project. These validations include vertical accuracy of the swath data, inter-swath (between swath) relative accuracy validation, intra-swath (within a single swath) relative accuracy validation, verification of horizontal alignment between swaths, and confirmation of point density and spatial distribution. This initial assessment allows PAR to determine if the data are suitable for full-scale production. Addressing issues at this stage allows the data to be corrected while imposing the least disruption possible on the overall production workflow and overall schedule.

Final Swath Vertical Accuracy Assessment

PAR tested the vertical accuracy of the non-vegetated terrain swath data prior to additional processing. Vertical accuracy of the swath data was tested using one hundred and two (102) non-vegetated (open terrain and urban) independent survey check points. The vertical accuracy is tested by comparing survey checkpoints in non-vegetated terrain to a triangulated irregular network (TIN) that is created from the raw swath points. Only checkpoints in non-vegetated terrain can be tested against raw swath data because the data has not undergone classification techniques to remove vegetation, buildings, and other artifacts from the ground surface. Checkpoints are always compared to interpolated surfaces from the lidar point cloud because it is unlikely that a survey checkpoint will be located at the location of a discrete lidar point. PAR utilized MicroStation/TerraScan software to test the classified lidar vertical accuracy, and ESRI's ArcMap to test the DEM vertical accuracy so that two different software programs are used to validate the vertical accuracy for each project. Project specifications require a NVA of 19.6 cm based on the $RMSE_z$ (10 cm) x 1.96.

The dataset forth Bayou Nezpique Lidar QL1 Project satisfies these criteria. This raw lidar swath data set was tested to meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (2014) for a 10 cm $RMSE_z$ Vertical Accuracy Class. Actual NVA accuracy tested to be $RMSE_z$ = 6.8 cm, equating to ± 13.4 cm at 95% confidence level. Table 3 shows all calculated statistics for the raw swath data.

Table 3: NVA at 95% Confidence Level Raw Calibrated Data.

# of Points	RMSE	RMSEz @ 95% CI	Mean (m)	Median (m)	Skew (m)	Std Dev (m)	Min (m)	Max (m)
102	**0.068**	**0.134**	**0.007**	**0.004**	**0.204**	**0.068**	**-0.208**	**0.216**

Inter-Swath Relative Accuracy

PAR verified inter-swath or between swath relative accuracy of the dataset by creating Delta-Z (DZ) orthomosaics. According to the SOW, USGS Lidar Base Specifications v1.2, and ASPRS Positional Accuracy Standards for Digital Geospatial Data, 10 cm Vertical Accuracy Class or QL1 data must meet inter-swath relative accuracy of 8 cm RMSDz or less with maximum differences less than 16 cm. These measurements are to be taken in non-vegetated and flat open terrain using single or only returns from all classes.

Measurements are calculated in the DZ orthos on 1-meter pixels or cell sizes. Areas in the dataset where overlapping flight lines are within 8 cm of each other within each pixel are colored green, areas in the dataset where overlapping flight lines have elevation differences in each pixel between 8 cm to 16 cm are colored orange, and areas in the dataset where overlapping flight lines have elevation differences in each pixel greater than 16 cm are colored red. Pixels that do not contain points from overlapping flight lines are colored according to their intensity values. Areas of vegetation and steep slopes (slopes with 16 cm or more of valid elevation change across 1 linear meter) are expected to appear yellow or red in the DZ orthos. If the project area is heavily vegetated, PAR may also create DZ Orthos from the initial ground classification only, while keeping all other parameters consistent. This allows PAR to review the ground classification relative accuracy beneath vegetation and to ensure flight line ridges or other issues do not exist in the final classified data.

Flat, open areas are expected to be green in the DZ orthos. Large or continuous sections of yellow or red pixels can indicate the data was not calibrated correctly or that there were issues during acquisition that could affect the utility of the data, especially when these yellow/red sections follow the flight lines and not the terrain or areas of vegetation. The DZ orthos for the Bayou Nezpique QL1 Lidar Project are shown in Figure 4; this project meets inter-swath relative accuracy specifications.

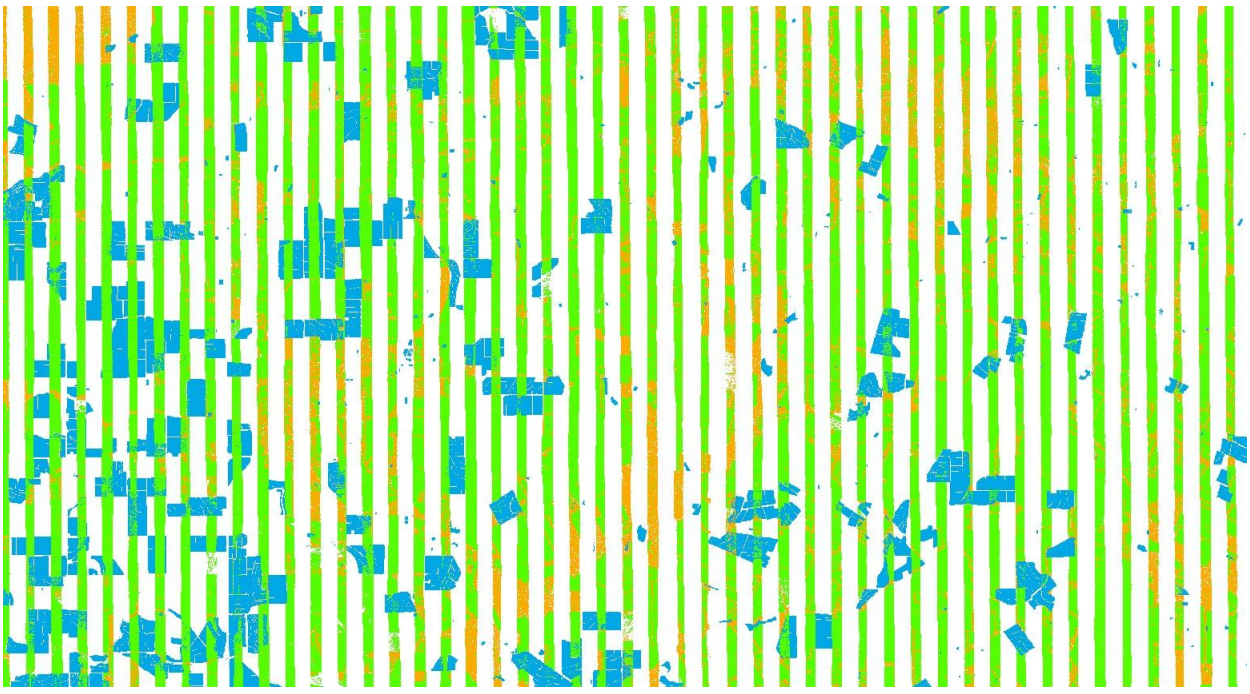


Figure 4. Delta-Z orthoimage raster generated to test inter-swath relative accuracy. Areas in the dataset where overlapping flight lines are within 8 cm of each other within each pixel are colored green, areas in the dataset where overlapping flight lines have elevation differences in each pixel between 8 cm to 16 cm are colored orange, and areas in the dataset where overlapping flight lines have elevation differences in each pixel greater than 16 cm are colored red. The orange areas in this image are attributed to vegetation. The blue polygons show areas of water.

Intra-Swath Relative Accuracy

PAR verifies the intra-swath or within swath relative accuracy by LAStools scripting and visual reviews. QTM scripting is used to calculate the maximum difference of all points within each 1-meter pixel/cell size of each swath. PAR analysts then identify planar surfaces acceptable for repeatability testing and analysts review the results in those areas. According to the SOW, USGS Lidar Base Specifications v1.2, and ASPRS Positional Accuracy Standards for Digital Geospatial Data, 10 cm Vertical Accuracy Class or QL1 data must meet intra-swath relative accuracy of 6 cm maximum difference or less. Figure 5 shows examples of the intra-swath relative accuracy of the Bayou Nezpique QL1 lidar data; this project meets intra-swath relative accuracy specifications.

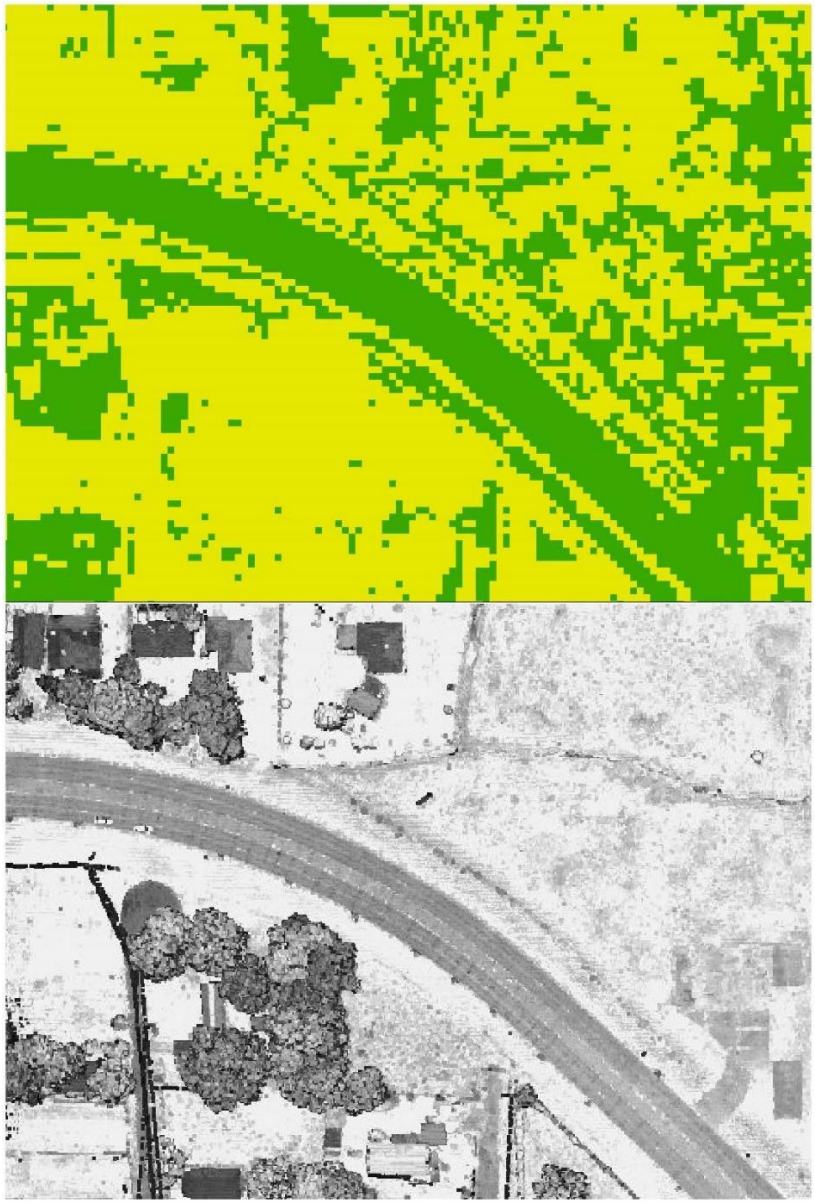


Figure 5. Intra-swath relative accuracy. The top image shows a close up of the project area; flat, open areas are colored green as they are within 6 cm whereas sloped terrain is colored yellow because it exceeds 6 cm maximum difference, as expected, due to actual slope/terrain change. The bottom image is a close-up of a flat area. Except for vegetated areas (shown as yellow speckling/mottling as the elevation/height difference in vegetated areas will exceed 6 cm), this open flat area is acceptable for repeatability testing. Intra-swath relative accuracy passes specifications.

Horizontal Alignment

To ensure horizontal alignment between adjacent or overlapping flight lines, PAR uses LAStools scripting and visual reviews. LAStools scripting is used to create files similar to DZ orthos for each swath but this process highlights planar surfaces, such as roof tops. Horizontal shifts or misalignments between swaths on roof tops and other elevated planar surfaces are highlighted. Visual reviews of these features, including additional profile verifications, are used to confirm the results of this process. Figure 6 shows an example of the horizontal alignment between swaths for the Bayou Nezpique lidar data.

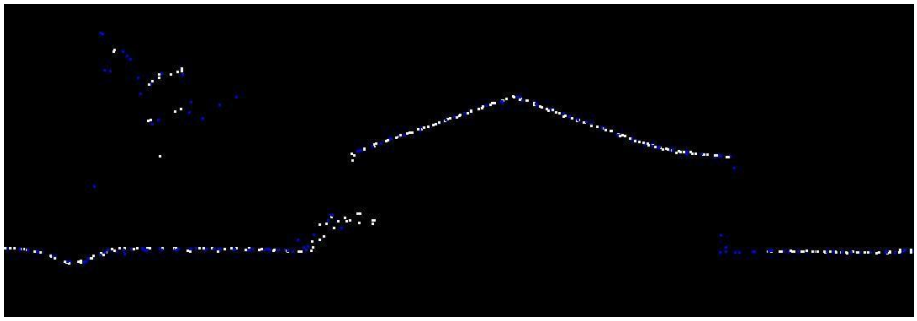


Figure 6. Profile of a lidar point cloud cross section of a buildings. Points are colorized by flight line number.

Point Density and Spatial Distribution

The required Aggregate Nominal Point Spacing (ANPS) for this project is no greater than 0.35 meters, which equates to an Aggregate Nominal Point Density (ANPD) of 8 points per square meter or greater. Density calculations were performed using first return data only located in the geometrically usable center portion (typically ~90%) of each swath. By utilizing statistics, the project area was determined to have an ANPS less than 0.35 meters or an ANPD greater than 8 points per square meter which satisfies the project requirements. Figure 7 below illustrates point density.

The spatial distribution of points must be uniform and free of clustering. This specification is tested by creating a grid with cell sizes equal to the design NPS*2. LAStools scripting is then used to calculate the number of first return points of each swath within each grid cell. At least 90% of the cells must contain 1 lidar point, excluding acceptable void areas such as water or low NIR reflectivity features, i.e. some asphalt and roof composition materials.

To perform this test, PAR generated a Spatial Distribution raster grid from first-return lidar points. This grid was generated for all tiles that intersect the project area. Tiles populated with lidar data but are outside of the project area were omitted from this test. PAR did not identify any tiles where less than 90% of the cells did not contain at least one lidar point excluding acceptable void areas.

PAR did not identify any voids in the lidar data that were larger than USGS' tolerance for acceptable data voids as defined in the task order. According to the USGS Lidar Base Specification, data voids are gaps in point cloud coverage greater or equal to $(4*ANPS)^2$ measured using only first returns within a single swath.

Figure 7. Density raster generated from first-return lidar pulses to ANPD of the lidar data. Green pixels are areas with 8 ppsm or greater. Red pixels contain less than 8 ppsm. The red areas are attributed to the abundance of aquaculture ponds in the center of the project area.

Data Classification and Editing

Once the calibration, absolute swath vertical accuracy, and relative accuracy of the data was confirmed, PAR utilized a variety of software suites for data processing. The data was processed using TerraScan software. The initial step is the setup of the TerraScan project, which is done by importing a project defined tile boundary index encompassing the entire project area. The acquired 3D laser point clouds, in LAS binary format, were imported into the TerraScan project and tiled according to the project tile grid. Once tiled, the laser points were classified using a proprietary routine in TerraScan. This routine classifies any obvious low outliers in the dataset to class 7 and high outliers in the dataset to class 18. Points along flight line edges that are geometrically unusable are identified as withheld and classified to a separate class so that they will not be used in the initial ground algorithm. After points that could negatively affect the ground are removed from class 1, the ground layer is extracted from this remaining point cloud. The ground extraction process encompassed in this routine takes place by building an iterative surface model.

This surface model is generated using three main parameters: building size, iteration angle and iteration distance. The initial model is based on low points being selected by a "roaming window" with the assumption that these are the ground points. The size of this roaming window is determined by the building size parameter. The low points are triangulated and the remaining points are evaluated and subsequently added to the model if they meet the iteration angle and distance constraints. This process is repeated until no additional points are added within iterations. A second critical parameter is the maximum terrain angle constraint, which determines the maximum terrain angle allowed within the classification model.

Each tile was then imported into TerraScan and a surface model was created to examine the ground classification. PAR analysts visually reviewed the ground surface model and corrected errors in the ground classification such as vegetation, buildings, and bridges that were present. PAR analysts employ 3D visualization techniques to view the point cloud at multiple angles and in profile to ensure that non-ground points are removed from the ground classification. After the ground classification corrections were completed, the dataset was processed through a water classification routine that utilizes breaklines compiled to automatically classify hydro features. The water classification routine selects ground points within the breakline polygons and automatically classifies them as class 9, water. During this water classification routine, points that are within 1x NPS or less of the hydrographic features are moved to class 10, an ignored ground due to breakline proximity. Overage points are then identified and used in TerraScan to set the overlap bit for the overage points and the withheld bit is set on the withheld points previously identified before the ground classification routine was performed.

The lidar tiles were classified to the following classification schema:

- Class 1 = Unclassified, used for all other features that do not fit into the Classes 2, 7, 9, 10, 17, or 18, including vegetation, buildings, etc.
- Class 2 = Bare-Earth Ground
- Class 7 = Low Noise
- Class 9 = Water, points located within collected breaklines
- Class 10 = Ignored Ground due to breakline proximity
- Class 17 = Bridge Decks
- Class 18 = High Noise

After manual classification, the LAS tiles were peer reviewed and then underwent a final QA/QC. After the final QA/QC and corrections, all headers, appropriate point data records, and variable length records, including spatial reference information, are updated in TerraScan software and then verified using proprietary PAR tools.

Lidar Qualitative Assessment

PAR's qualitative assessment utilizes a combination of statistical analysis and interpretative methodology or visualization to assess the quality of the data for a bare-earth digital terrain model (DTM). This includes creating pseudo image products such as lidar orthos produced from the intensity returns, Triangular Irregular Network (TIN)'s, Digital Elevation Models (DEM) and 3-dimensional models as well as reviewing the actual point cloud data. This process looks for anomalies in the data, areas where man-made structures or vegetation points may not have been classified properly to produce a bare-earth model, and other classification errors. This report will present representative examples where the lidar and post processing had issues as well as examples of where the lidar performed well.

Formatting

After the final QA/QC is performed and all corrections have been applied to the dataset, all lidar files are updated to the final format requirements and the final formatting, header information, point data records, and variable length records are verified using PAR' proprietary tools. Table 4 lists some of the main lidar header fields that are updated and verified.

Classified Lidar Formatting		
Parameter	**Requirement**	**Pass/Fail**
LAS Version	1.4	Pass
Point Data Format	Format 6	Pass
Coordinate Reference System	NAD83 (2011) Universal Transverse Mercator (UTM) Zone 15 North, meters and NAVD88 (Geoid 12B), meters in WKT Format	Pass
Global Encoder Bit	Should be set to 17 for Adjusted GPS Time	Pass
Time Stamp	Adjusted GPS Time (unique timestamps)	Pass
System ID	Should be set to the processing system/software and is set to NIIRS10	Pass
Multiple Returns	The sensor shall be able to collect multiple returns per pulse and the return numbers are recorded	Pass
Intensity	16-bit intensity values are recorded for each pulse	Pass
Classification	Required Classes include: Class 1: Unclassified Class 2: Ground Class 7: Low Noise Class 9: Water Class 10: Ignored Ground Class 17: Bridge Decks Class 18: High Noise	Pass
Overlap and Withheld Points	Overlap (Overage) and Withheld points are set to the Overlap and Withheld bits	Pass
Scan Angle	Recorded for each pulse	Pass
XYZ Coordinates	Unique Easting, Northing, and Elevation coordinates are recorded for each pulse	Pass

Table 4. Classified Lidar Formatting.

Lidar Positional Accuracy

Background

PAR quantitatively tested the dataset by testing the vertical accuracy of the lidar. The vertical accuracy is tested by comparing the discreet measurement of the survey checkpoints to that of the interpolated value within the three closest lidar points that constitute the vertices of a three-dimensional triangular face of the TIN. Therefore, the end result is that only a small sample of the lidar data is actually tested. However, there is an increased level of confidence with lidar data due to the relative accuracy. This relative accuracy in turn is based on how well one lidar point "fits" in comparison to the next contiguous lidar measurement and is verified as part of the initial processing. If the relative accuracy of a dataset is within specifications and the dataset passes vertical accuracy requirements at the location of survey checkpoints, the vertical accuracy results can be applied to the whole dataset with high confidence due to the passing relative accuracy. Typically, ESRI ArcMap is used to test the swath lidar vertical accuracy, TerraScan software to test the classified lidar vertical accuracy, and ESRI ArcMap to test the DEM vertical accuracy so that two different software programs are used to validate the vertical accuracy for each project.

Survey Vertical Accuracy Checkpoints

For the final vertical accuracy assessment, one hundred eighty-six (186) check points were surveyed for the project and are located within bare earth/open terrain, grass/weeds/crops, and forested/fully grown land cover categories. Please see the included survey report found in the survey folder of the deliverables structure which details and validates how the survey was completed for this project.

Checkpoints were evenly distributed throughout the project area to cover as many flight lines as possible using the “dispersed method” of placement.

Table 5 lists the location of the QA/QC checkpoints used to test the positional accuracy of the dataset.

Table 5. Ground Surveyed Vertical Accuracy Check Points.

Point ID	NAD83(2011), UTM Zone 15N		Elevation (m; NAVD88 Geoid 12B)
	Easting X (m)	Northing Y (m)	
101	574160.582	3429097.434	20.780
102	567384.745	3431178.361	19.095
103	544769.975	3434766.921	53.546
1001	556808.432	3309099.431	1.245
1002	562721.897	3306803.398	1.834
1003	574470.421	3305131.653	2.168
1004	543229.796	3316395.277	1.098
1005	553509.561	3315081.380	1.419
1006	562914.045	3317222.459	2.496
1007	574757.761	3316659.588	3.524
1008A	492259.320	3326546.258	2.425
1008B	492243.706	3327174.129	2.393
1009	500359.852	3324286.157	0.757
1010	512544.359	3327413.800	0.671
1011	523331.941	3327144.204	2.237
1012	533353.801	3326423.549	2.197
1013	543502.668	3326755.786	1.957
1014	554171.229	3327061.228	2.206
1015	563201.441	3326936.498	3.722
1016	574069.270	3326140.202	5.939
1017	492300.115	3337079.875	5.580
1018	501969.457	3337403.291	3.147
1020	522169.597	3337054.295	3.034
1021	533192.356	3336895.108	6.999
1022	542956.859	3336124.645	3.513
1023	553251.324	3337115.405	4.378
1024	563555.381	3336819.265	5.533
1025	574134.502	3337002.653	6.653
1026	492190.250	3347547.520	5.868
1027	502482.718	3348060.216	8.797
1028	511736.441	3346363.994	6.932
1029	523329.229	3347815.468	7.447
1030	533210.981	3347347.462	7.483
1031	544899.047	3347132.804	4.444
1032	553126.567	3347724.780	5.141
1033	563354.964	3347462.723	7.385
1034	573512.428	3347489.863	9.323
1035	492102.717	3357561.161	4.228
1036	501854.346	3355992.576	7.868
1037	513456.302	3357646.871	10.556
1038	523006.360	3357588.436	11.013
1039	533272.836	3357413.230	9.586
1040	543119.020	3357480.869	9.191
1041	553074.188	3357574.813	10.588
1043	573750.976	3357862.694	12.705
1044	492346.606	3368083.661	9.673

Table 5 (Cont.). Ground Surveyed Vertical Accuracy Check Points.

Point ID	NAD83(2011), UTM Zone 15N		Elevation (m; NAVD88 Geoid 12B)
	Easting X (m)	Northing Y (m)	
1045	502743.160	3367311.039	9.789
1046	512863.384	3367294.649	12.847
1047	522894.564	3368524.044	13.433
1048	532788.817	3367396.644	11.814
1049	542682.134	3367679.611	10.791
1050	552950.787	3368490.149	10.768
1051	564259.763	3367323.485	14.774
1052	573760.467	3367434.740	15.905
1053	491958.467	3377666.659	20.888
1054	503213.479	3377543.224	14.707
1055	512734.402	3377532.203	14.275
1056	521743.698	3378096.403	17.080
1057	531507.565	3377619.555	17.437
1058	543747.864	3378205.241	14.756
1059	555236.996	3378325.345	14.677
1060	563440.476	3377885.898	16.420
1061	573936.621	3378108.350	19.228
1062	502438.979	3389548.890	19.005
1063	512969.797	3387846.548	19.806
1064	522924.216	3387905.382	20.781
1065	533460.897	3389879.060	22.672
1066	542502.178	3388660.301	14.109
1067	553602.597	3388334.881	17.475
1068	563531.550	3389510.714	18.028
1069	574152.124	3388163.522	18.889
1070	502842.641	3398072.535	37.845
1071	512802.905	3397928.611	30.162
1072	523017.587	3398287.345	27.250
1073	531731.413	3398235.310	27.766
1074	543731.689	3397798.165	27.853
1075	553128.392	3398040.342	16.940
1076	562464.868	3398211.518	21.366
1077	573832.054	3398238.344	19.658
1078	504083.530	3407275.743	40.182
1079	512798.776	3408580.983	37.831
1080	523000.522	3408291.462	34.558
1081	532994.439	3408403.480	34.318
1082	544084.536	3408672.588	29.002
1083	552644.446	3408409.299	28.757
1084	563223.080	3408372.328	31.831
1085	574806.280	3408900.586	11.303
1086	522842.722	3418419.741	47.856
1087	533363.038	3417339.215	38.700
1088	540914.520	3418132.880	33.847
1089	552968.487	3418962.961	34.550
1090	565587.821	3418616.563	14.929

Table 5 (Cont.). Ground Surveyed Vertical Accuracy Check Points.

Point ID	NAD83(2011), UTM Zone 15N		Elevation (m; NAVD88 Geoid 12B)
	Easting X (m)	Northing Y (m)	
1092	522796.905	3428449.184	49.430
1093	533052.829	3429089.403	42.364
1094	543896.948	3428209.057	34.251
1095	557673.463	3428178.053	28.471
1096	563961.108	3429371.160	19.143
1097	574150.973	3429069.894	19.946
1098	548270.113	3321728.304	1.537
1099	517353.910	3402947.551	30.305
1100	507386.051	3331158.493	1.542
1101	507412.775	3331149.109	1.801

Vertical Accuracy Test Procedures

Non-vegetated Vertical Accuracy

NVA (Non-vegetated Vertical Accuracy) is determined with check points located only in non-vegetated terrain, including open terrain (grass, dirt, sand, and/or rocks) and urban areas, where there is a very high probability that the lidar sensor will have detected the bare-earth ground surface and where random errors are expected to follow a normal error distribution. The NVA determines how well the calibrated lidar sensor performed. With a normal error distribution, the vertical accuracy at the 95% confidence level is computed as the vertical root mean square error (RMSEz) of the checkpoints x 1.9600. For the Bayou Nezpique Lidar Project, vertical accuracy must be 19.6 cm or less based on an RMSEz of 10 cm x 1.9600.

Vegetated Vertical Accuracy

VVA (Vegetated Vertical Accuracy) is determined with all checkpoints in vegetated land cover categories, including tall grass, weeds, crops, brush and low trees, and fully forested areas, where there is a possibility that the lidar sensor and post-processing may yield elevation errors that do not follow a normal error distribution. VVA at the 95% confidence level equals the 95th percentile error for all checkpoints in all vegetated land cover categories combined. Nezpique's QL1 lidar project VVA standard is 29.4 cm based on the 95th percentile. Here, Accuracy$_z$ differs from VVA because Accuracy$_z$ assumes elevation errors follow a normal error distribution where RMSE procedures are valid, whereas VVA assumes lidar errors may not follow a normal error distribution in vegetated categories, making the RMSE process invalid. The relevant testing criteria are summarized in Table 6.

Quantitative Criteria	Measure of Acceptability
Non-Vegetated Vertical Accuracy (NVA) in open terrain and urban land cover categories using RMSE$_z$ *1.9600	19.6 cm (based on RMSE$_z$ (10 cm) * 1.9600)
Vegetated Vertical Accuracy (VVA) in all vegetated land cover categories combined at the 95% confidence level	29.4 cm (based on 95th percentile)

Table 6. Acceptance Criteria

The primary QA/QC vertical accuracy testing steps used by PAR are summarized as follows:

1. The ground team surveyed QA/QC vertical checkpoints in accordance with the project's specifications.
2. Next, PAR interpolated the bare-earth lidar DTM to provide the z-value for everycheckpoint.
3. PAR then computed the associated z-value differences between the interpolated z-value from the lidar data and the ground truth survey checkpoints and computed NVA, VVA, and other statistics.
4. The data were analyzed by PAR to assess the accuracy of the data. The review process examined the various accuracy parameters as defined by the scope of work. The overall descriptive statistics of each dataset were computed to assess any trends or anomalies. This report provides tables, graphs and figures to summarize and illustrate data quality.

Vertical Accuracy Results

Table 7 summarizes the tested vertical accuracy resulting from a comparison of the surveyed checkpoints to the elevation values present within the fully classified lidar LAS files.

Land Cover Category	# of Points	NVA — Non-vegetated Vertical Accuracy ($RMSE_z$ x 1.9600) Spec=19.6 cm	VVA — Vegetated Vertical Accuracy (95th Percentile) Spec=29.4 cm NVA
NVA	102	13.4 cm	
VVA	84		20.6

Table 7. Tested NVA and VVA

This lidar dataset was tested to meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (2014) for a 10 cm RMSEz Vertical Accuracy Class. Actual NVA accuracy was found to be $RMSE_z$ =6.8cm, equating to ± 13.4 cm at 95% confidence level. Class. Actual VVA accuracy was found to be ± 20.6 cm at the 95th Percentile.

Table 8 provides overall descriptive statistics.

100 % of Totals	# of Points	RMSEz (m) @95% CL	Mean (m)	Median (m)	Skew	Std Dev (m)	Min (m)	Max (m)
NVA	102	0.134	-0.007	0.004	0.204	0.068	-0.208	0.216
VVA	84	N/A	0.058	0.057	1.021	0.100	-0.193	0.499

Table 8. Overall Descriptive Statistics

Based on the vertical accuracy testing conducted by PAR, the lidar dataset for the Nezpique QL1 Lidar Project satisfies the project's pre-defined vertical accuracy criteria.

Breakline Production & Qualitative Assessment Report

Breakline Production Methodology

PAR compiled the project's hydrographic breaklines stereographically from lidar intensity imagery. This technique, known as lidargrammetry, enables PAR to produce accurate 3D hydrographic breaklines for features that are consistent with the lidar data at the time of airborne survey. All drainage breaklines are monotonically enforced to show downhill flow. Water bodies are at a constant elevation where the water body has been captured at the lowest elevation. Bridge deck breaklines are compiled directly from the project's DEMs. Bridge Breaklines are used where necessary to enforce the terrain beneath bridge decks and to prevent bridge saddles in the bare earth DEMs. All features were compiled in accordance with the project's Data Dictionary.

Breakline Qualitative Assessment

Completeness and horizontal placement are verified through visual reviews against lidar intensity imagery. Automated checks are applied on all breakline features to validate topology, including the 3D connectivity of features, enforced monotonicity on linear hydrographic breaklines, and flatness on water bodies. After all corrections and edits to the breakline features, the breaklines are imported into the final GDB and verified for correct formatting.

Breakline Data Dictionary

The following data dictionary was used for this project.

Horizontal and Vertical Datum

The horizontal datum shall be North American Datum of 1983, 2011 adjustment (NAD83 2011), Units in Meters. The vertical datum shall be referenced to the North American Vertical Datum of 1988, Units in Meters. Geoid12B shall be used to convert ellipsoidal heights to orthometric heights.

Coordinate System and Projection

All data shall be projected to Universal Transverse Mercator (UTM) Zone 15 North, Horizontal Units in Meters and Vertical Units in Meters.

Inland Streams and Rivers

Feature Class: BREAKLINES
Feature Type: Polygon
Contains Z Values: Yes
XY Resolution: Accept Default Setting
XY Tolerance: 0.003

Contains M Values: No
Annotation Subclass: None
Z Resolution: Accept Default Setting
Z Tolerance: 0.001

Description

This polygon feature class will depict linear hydrographic features with a width greater than 100 feet.

Table Definition

Field Name	Data Type	Allow Null Values	Default Value	Domain	Precision	Scale	Length	Responsibility
OBJECTID	Object ID							Assigned by Software
SHAPE	Geometry							Assigned by Software
SHAPE_LENGTH	Double	Yes			0	0		Calculated by Software
SHAPE_AREA	Double	Yes			0	0		Calculated by Software

Feature Definition

Description	Definition	Capture Rules
Streams and Rivers	Linear hydrographic features such as streams, rivers, canals, etc. with an average width greater than 100 feet. In the case of embankments, if the feature forms a natural dual line channel, then capture it consistent with the capture rules. Other natural or manmade embankments will not qualify for this project.	Capture features showing dual line (one on each side of the feature). Average width shall be greater than 100 feet to show as a double line. Each vertex placed should maintain vertical integrity. Generally, both banks shall be collected to show consistent downhill flow. There are exceptions to this rule where a small branch or offshoot of the stream or river is present. The banks of the stream must be captured at the same elevation to ensure flatness of the water feature. If the elevation of the banks appears to be different see the task manager or PM for further guidance. Breaklines must be captured at or just below the elevations of the immediately surrounding terrain. Under no circumstances should a feature be elevated above the surrounding lidar points. Acceptable variance in the negative direction will be defined for each project individually. These instructions are only for docks or piers that follow the coastline or water's edge, not for docks or piers that extend perpendicular from the land into the water. If it can be reasonably determined where the edge of water most probably falls, beneath the dock or pier, then the edge of water will be collected at the elevation of the water where it can be directly measured. If there is a clearly-indicated headwall or bulkhead adjacent to the dock or pier and it is evident that the waterline is most probably adjacent to the headwall or bulkhead, then the water line will follow the headwall or bulkhead at the elevation of the water where it can be directly measured. If there is no clear indication of the location of the water's edge beneath the dock or pier, then the edge of water will follow the outer edge of the dock or pier as it is adjacent to the water, at the measured elevation of the water. Every effort should be made to avoid breaking a stream or river into segments. Dual line features shall break at road crossings (culverts). In areas where a bridge is present the dual line feature shall continue through the bridge. Islands: The double line stream shall be captured around an island if the island is greater than 1 acre. In this case a segmented polygon shall be used around the island in order to allow for the island feature to remain as a "hole" in the feature.

Inland Ponds and Lakes

Feature Class: BREAKLINES
Feature Type: Polygon
Contains Z Values: Yes
XY Resolution: Accept Default Setting
XY Tolerance: 0.003
Contains M Values: No
Annotation Subclass: None
Z Resolution: Accept Default Setting
Z Tolerance: 0.001

Description

This polygon feature class will depict closed water body features that are at a constant elevation.

Table Definition

Field Name	Data Type	Allow Null Values	Default Value	Domain	Precision	Scale	Length	Responsibility
OBJECTID	Object ID							Assigned by Software
SHAPE	Geometry							Assigned by Software
SHAPE_LENGTH	Double	Yes			0	0		Calculated by Software
SHAPE_AREA	Double	Yes			0	0		Calculated by Software

Feature Definition

Description	Definition	Capture Rules
Ponds and Lakes	Land/Water boundaries of constant elevation water bodies such as lakes, reservoirs, ponds, etc. Features shall be defined as closed polygons and contain an elevation value that reflects the best estimate of the water elevation at the time of data capture. Water body features will be captured for features 2 acres in size or greater. "Donuts" will exist where there are islands within a closed water body feature.	Water bodies shall be captured as closed polygons with the water feature to the right. The compiler shall take care to ensure that the z-value remains consistent for all vertices placed on the water body. Breaklines must be captured at or just below the elevations of the immediately surrounding terrain. Under no circumstances should a feature be elevated above the surrounding lidar points. Acceptable variance in the negative direction will be defined for each project individually. An Island within a Closed Water Body Feature that is 1 acre in size or greater will also have a "donut polygon" compiled. These instructions are only for docks or piers that follow the coastline or water's edge, not for docks or piers that extend perpendicular from the land into the water. If it can be reasonably determined where the edge of water most probably falls, beneath the dock or pier, then the edge of water will be collected at the elevation of the water where it can be directly measured. If there is a clearly-indicated headwall or bulkhead adjacent to the dock or pier and it is evident that the waterline is most probably adjacent to the headwall or bulkhead, then the water line will follow the headwall or bulkhead at the elevation of the water where it can be directly measured. If there is no clear indication of the location of the water's edge beneath the dock or pier, then the edge of water will follow the outer edge of the dock or pier as it is adjacent to the water, at the measured elevation of the water.

DEM Production & Qualitative Assessment

DEM Production Methodology

PAR generates a project wide DEM using ESRI ArcGIS software. Once the DEM is created, it is reviewed in ArcGIS for any issues requiring corrections, including remaining lidar mis-classifications, erroneous breakline elevations, poor hydro-flattening or hydro-enforcement, and processing artifacts. After corrections are applied, the DEM is then split into individual tiles in accordance with the project tiling scheme. The tiles are verified for final formatting and then loaded into Global Mapper to ensure no missing or corrupt tiles and to ensure seamlessness across tile boundaries.

DEM Qualitative Assessment

PAR performed a comprehensive qualitative assessment of the bare earth DEM deliverables to ensure that all tiled DEM products were delivered with the proper extents, were free of processing artifacts, and contained the proper referencing information. This process was performed in ArcGIS software with the use of a tool set PAR has developed to verify that the raster extents match those of the tile grid and contain the correct projection information. The DEM data was reviewed at a scale of 1:5000 to review for artifacts caused by the DEM generation process and to review the hydro-flattened features. To perform this review PAR creates hillshade models and overlays a partially transparent colorized elevation model to review for these issues. All corrections are completed using PAR's proprietary correction workflow. Upon

completion of the corrections, the DEM data is loaded into Global Mapper for its second review and to verify corrections. Once the DEMs are tiled out, the final tiles are again loaded into Global Mapper to ensure coverage, extents, and that the final tiles are seamless.

DEM Vertical Accuracy Results

One hundred eighty-five (185) checkpoints that were used to test the vertical accuracy of the lidar were used to validate the vertical accuracy of the final DEM products. One point was removed because it fell outside of the boundary to which the DEMs were clipped. Accuracy results may vary between the source lidar and final DEM deliverable. DEMs are created by averaging several lidar points within each pixel which may result in slightly different elevation values at each survey checkpoint when compared to the source LAS, which does not average several lidar points together but may interpolate

(linearly) between two or three points to derive an elevation value. The vertical accuracy of the DEM is tested by extracting the elevation of the pixel that contains the x/y coordinates of the checkpoint and comparing these DEM elevations to the surveyed elevations. PAR typically uses TerraScan software to test the swath lidar vertical accuracy, to test the classified lidar vertical accuracy, and ESRI ArcMap to test the DEM vertical accuracy so that two different software programs are used to validate the vertical accuracy for each project.

Table 10 summarizes the tested vertical accuracy results from a comparison of the surveyed checkpoints to the elevation values present within the final DEM dataset.

Land Cover Category	# of Points	NVA — Non-vegetated Vertical Accuracy ($RMSE_z$ x 1.9600) Spec=19.6 cm	VVA — Vegetated Vertical Accuracy (95th Percentile) Spec=29.4 cm
NVA	102	13.3 cm	
VVA	84		22.2 cm

Table 10. DEM tested NVA and VVA

This DEM dataset was tested to meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (2014) for a 10 cm RMSEz Vertical Accuracy Class. Actual NVA accuracy was found to be $RMSE_z$ =13.3 cm, equating to +/- 10 cm at 95% confidence level. Actual VVA accuracy was found to be +/- 22.2 cm at the 95th percentile. Table 11 lists the 5% outliers that are larger than the VVA 95th percentile.

Table 11 provides overall descriptive statistics.

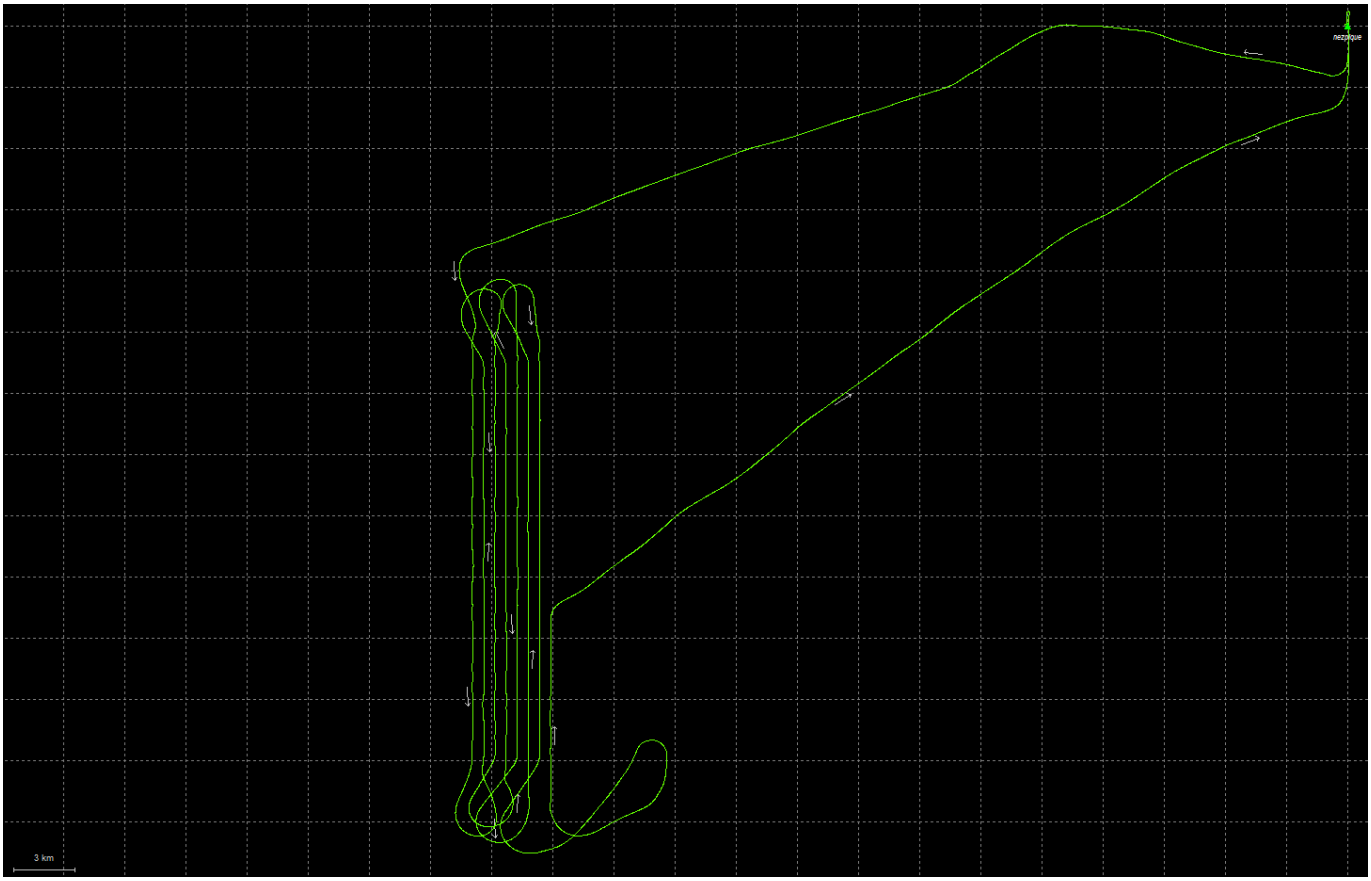
100 % of Totals	# of Points	RMSEz (m) @95% CL	Mean (m)	Median (m)	Skew	Std Dev (m)	Min (m)	Max (m)
NVA	102	13.3	0.0	0.005	-0.181	0.068	-0.186	0.208
VVA	84	N/A	-0.061	-0.051	-0.386	0.091	-0.379	0.155

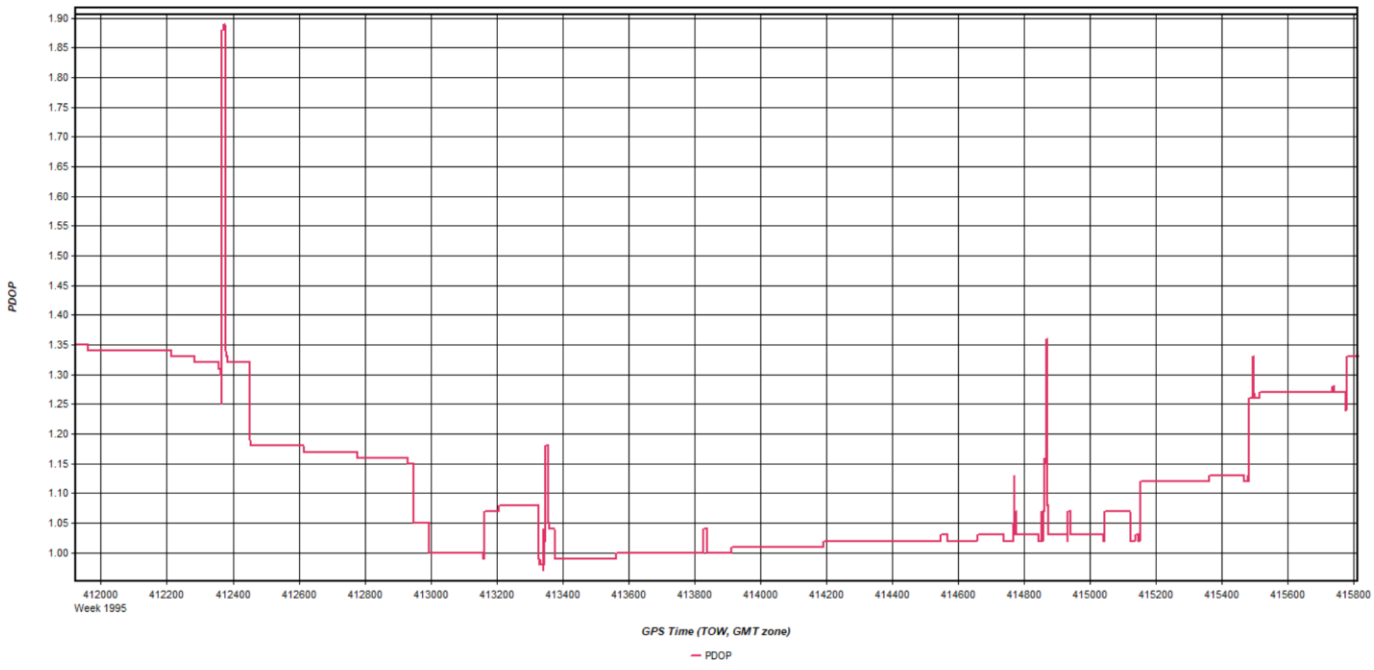
Table 11. Overall Descriptive Statistics

Based on the vertical accuracy testing conducted by PAR, the DEM dataset for the Nezpique QL1 Lidar Project satisfies the project's pre-defined vertical accuracy criteria.

Appendix A: IMU and GPS Processing Reports

Mission 1



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Week 1995
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
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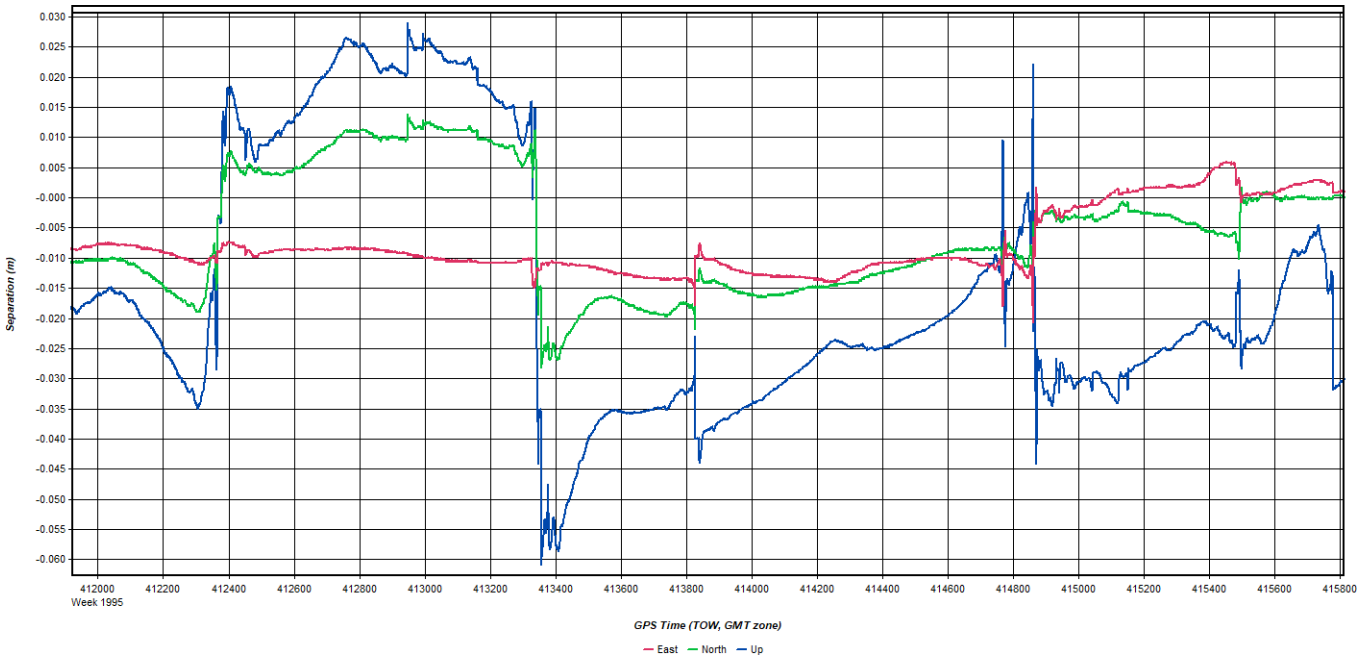
412000 412200 412400 412600 412800 413000 413200 413400 413600 413800 414000 414200 414400 414600 414800 415000 415200 415400 415600 415800
Week 1995
GPS Time (TOW, GMT zone)
East
North
Up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-0.025
-0.030
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412000
Week 1995
412200
412400
412600
412800
413000
413200
413400
413600
413800
414000
414200
414400
414600
414800
415000
415200
415400
415600
415800
GPS Time (TOW, GMT zone)
East
North
Up

Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type: Combined

Number of Epochs:
- Total in GPB file: 12098
- No processed position: 1
- Missing Fwd or Rev: 3
- With bad C/A code: 0
- With bad L1 Phase: 0

Measurement RMS Values:
- L1 Phase: 0.0212 (m)
- C/A Code: 1.10 (m)
- L1 Doppler: 0.030 (m/s)

Fwd/Rev Separation RMS Values:
- East: 0.009 (m)
- North: 0.010 (m)
- Height: 0.023 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (12094 occurances):
- East: 0.009 (m)
- North: 0.010 (m)
- Height: 0.023 (m)

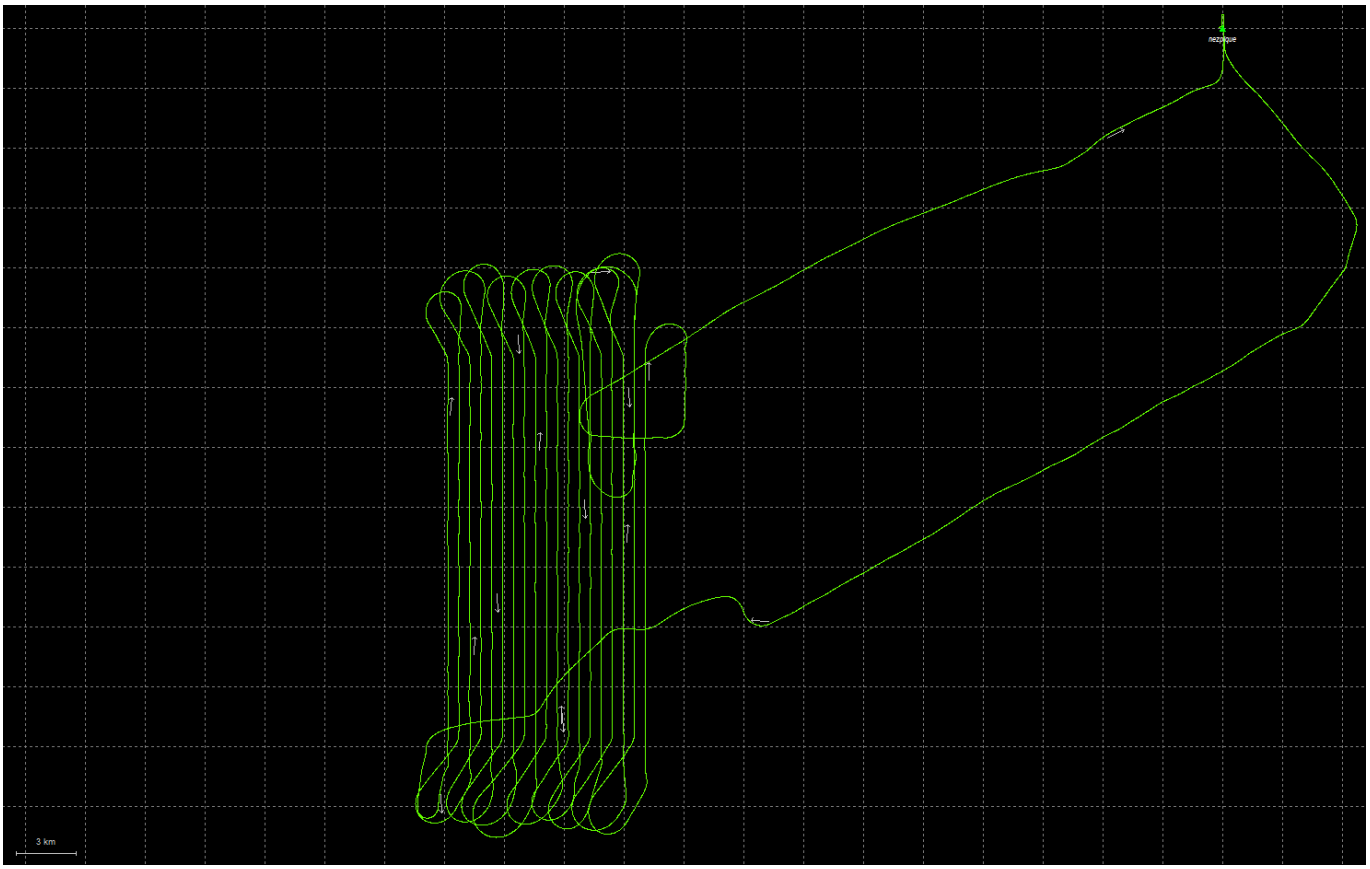
Quality Number Percentages:
- Q 1: 99.9 %
- Q 2: 0.1 %
- Q 3: 0.0 %
- Q 4: 0.0 %
- Q 5: 0.0 %
- Q 6: 0.0 %

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: 58.011 (km)
- Minimum: 0.075 (km)
- Average: 38.421 (km)
- First Epoch: 0.125 (km)
- Last Epoch: 0.106 (km)

Mission 2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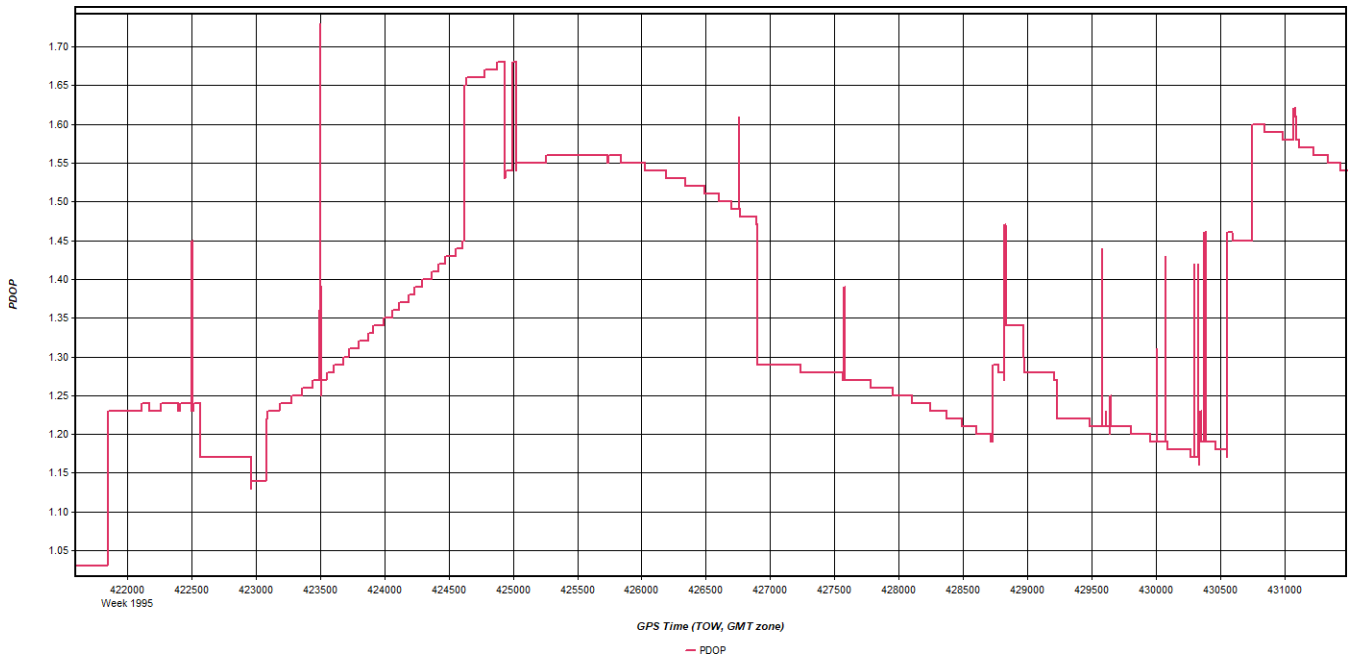
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1.10
1.05
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Week 1995
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423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
430500
431000
GPS Time (TOW, GMT zone)
PDOP


Num Sats
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2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
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422000
Week 1995
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423000
423500
424000
424500
425000
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
430500
431000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
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0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
422000
Week 1995
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425500
426000
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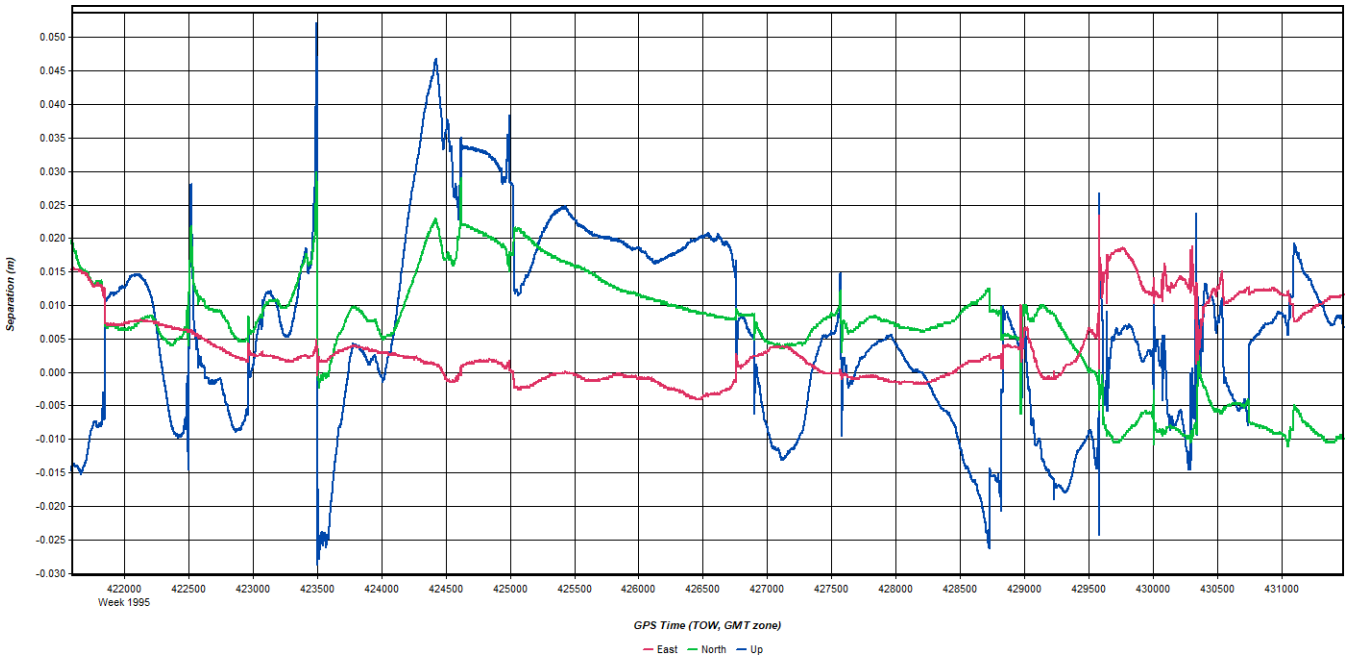
430500
431000
GPS Time (TOW, GMT zone)
East
North
Up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-0.010
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Week 1995
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424500
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430500
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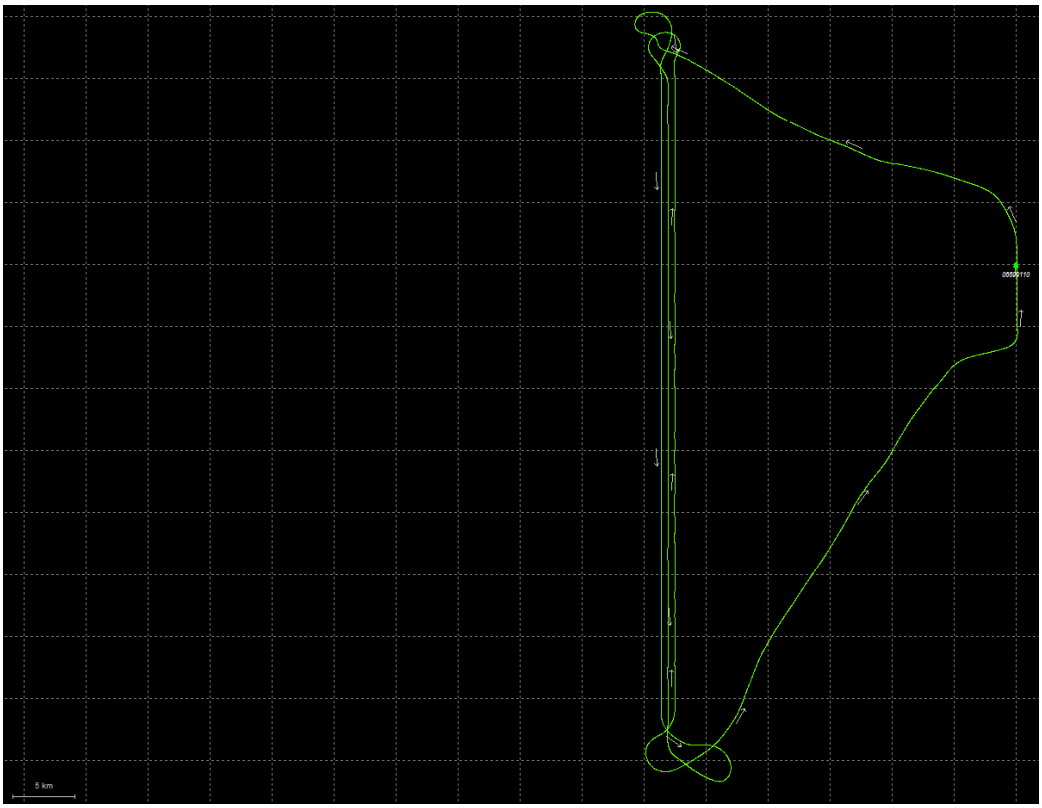
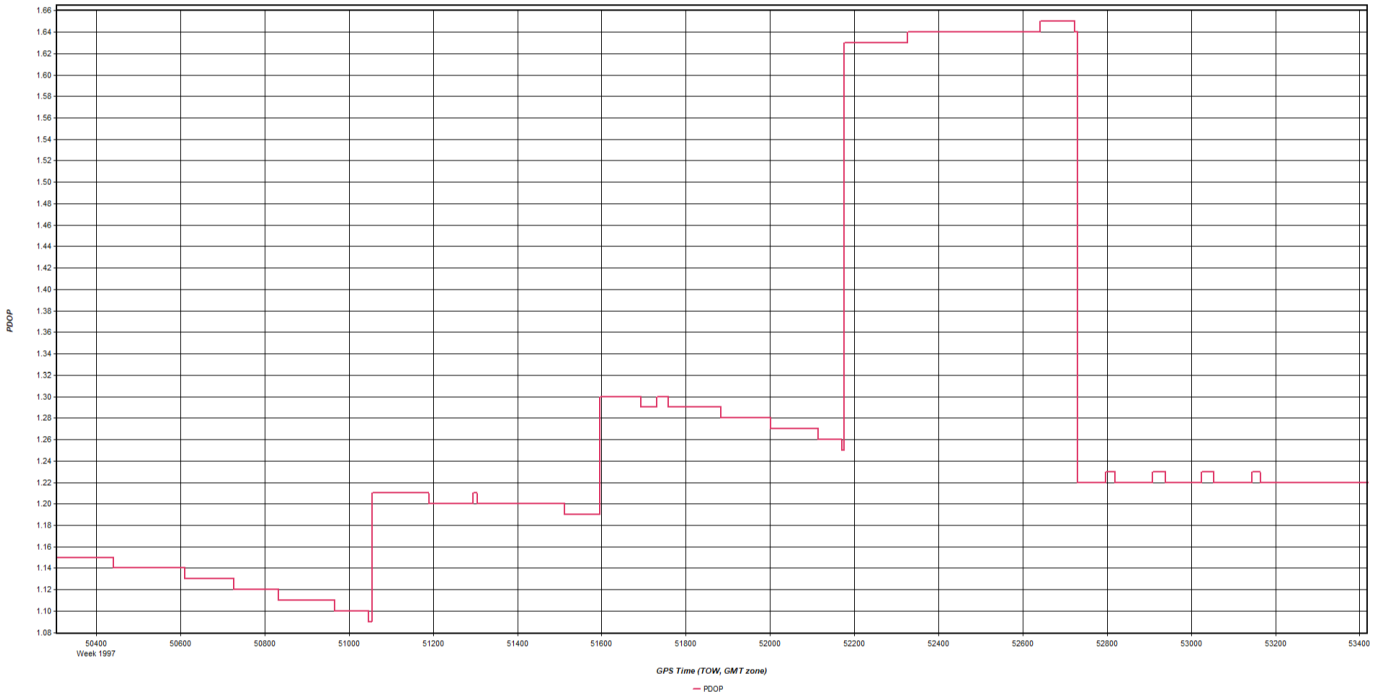
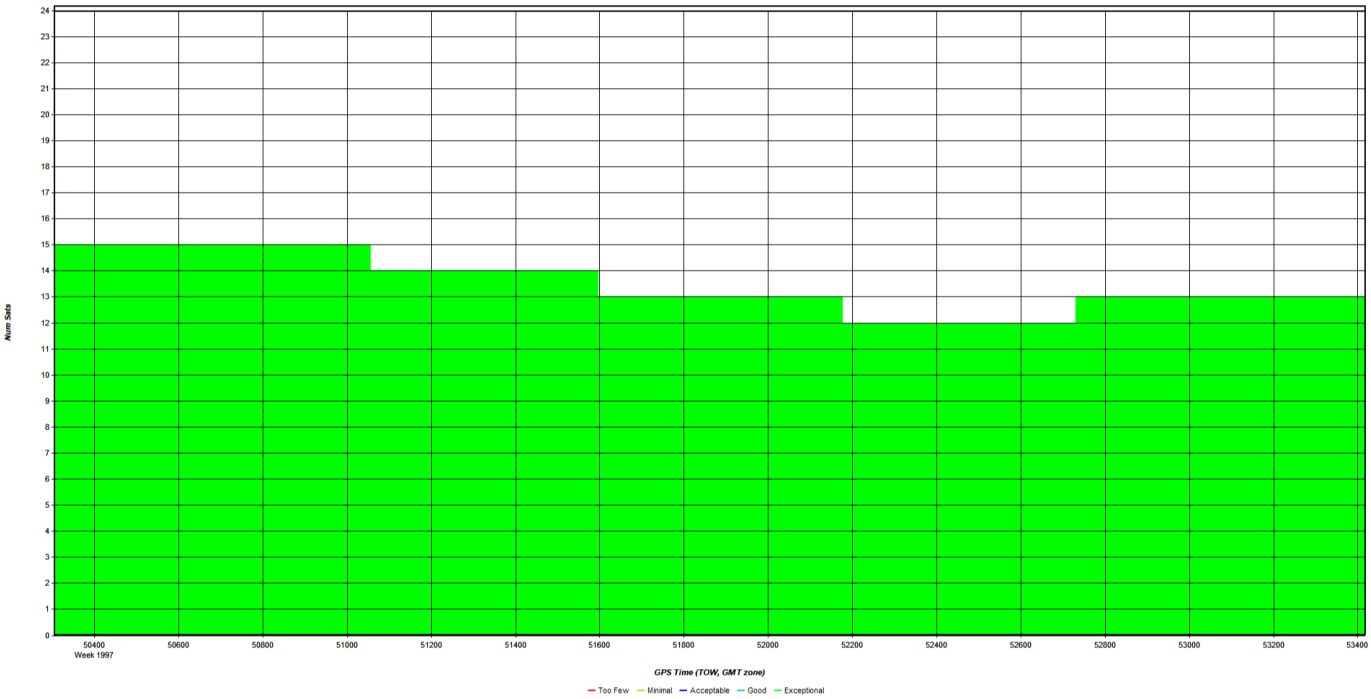
GPS Time (TOW, GMT zone)
East
North
Up

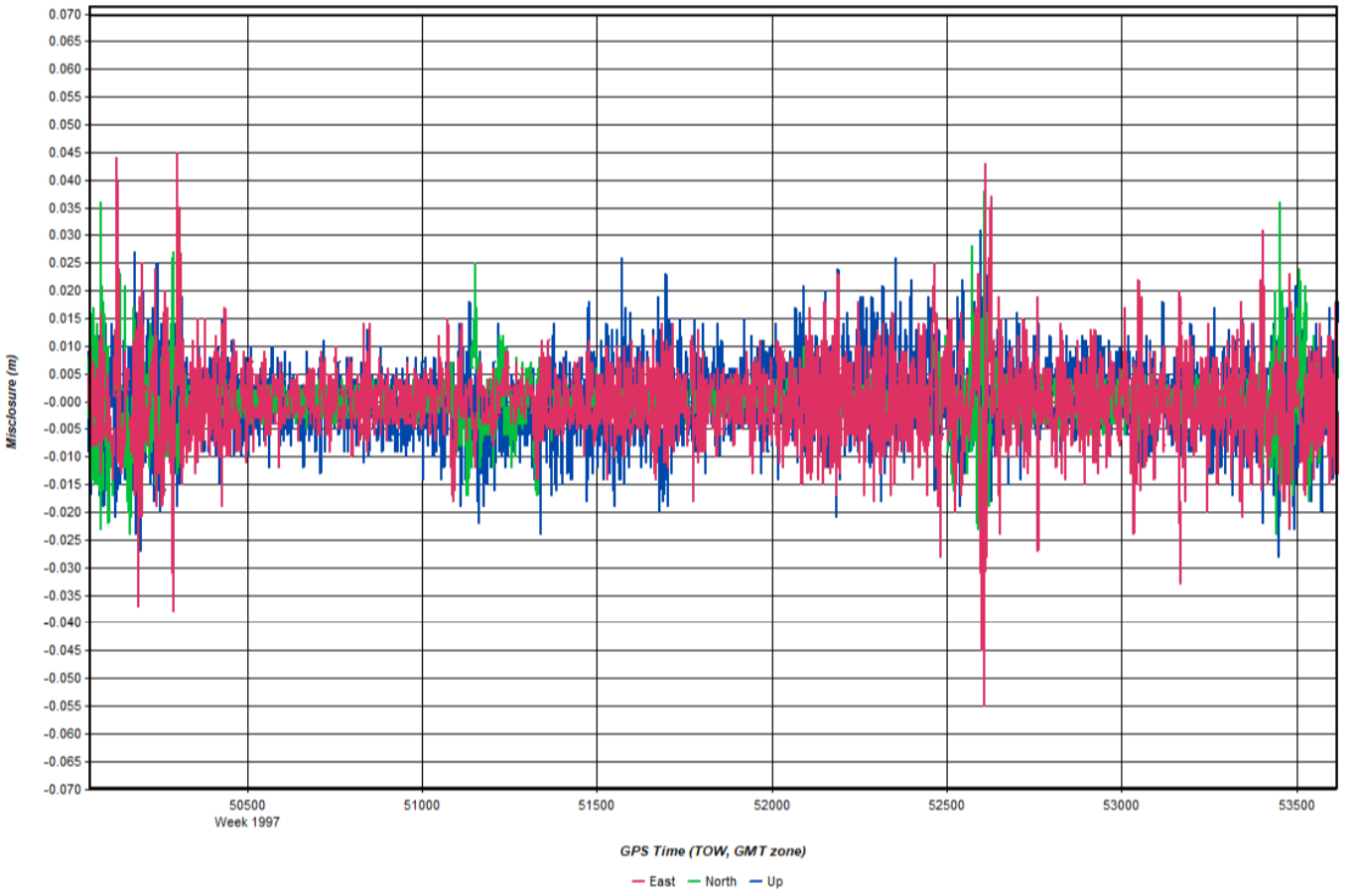
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      25410
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0210 (m)
        C/A Code:       0.91 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.007 (m)
        North:  0.011 (m)
        Height: 0.017 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (25406 occurances):
        East:   0.007 (m)
        North:  0.011 (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 %

Baseline Distances:
        Maximum:        56.148 (km)
        Minimum:        0.075 (km)
        Average:        38.412 (km)
        First Epoch:    0.142 (km)
        Last Epoch:     0.151 (km)
```

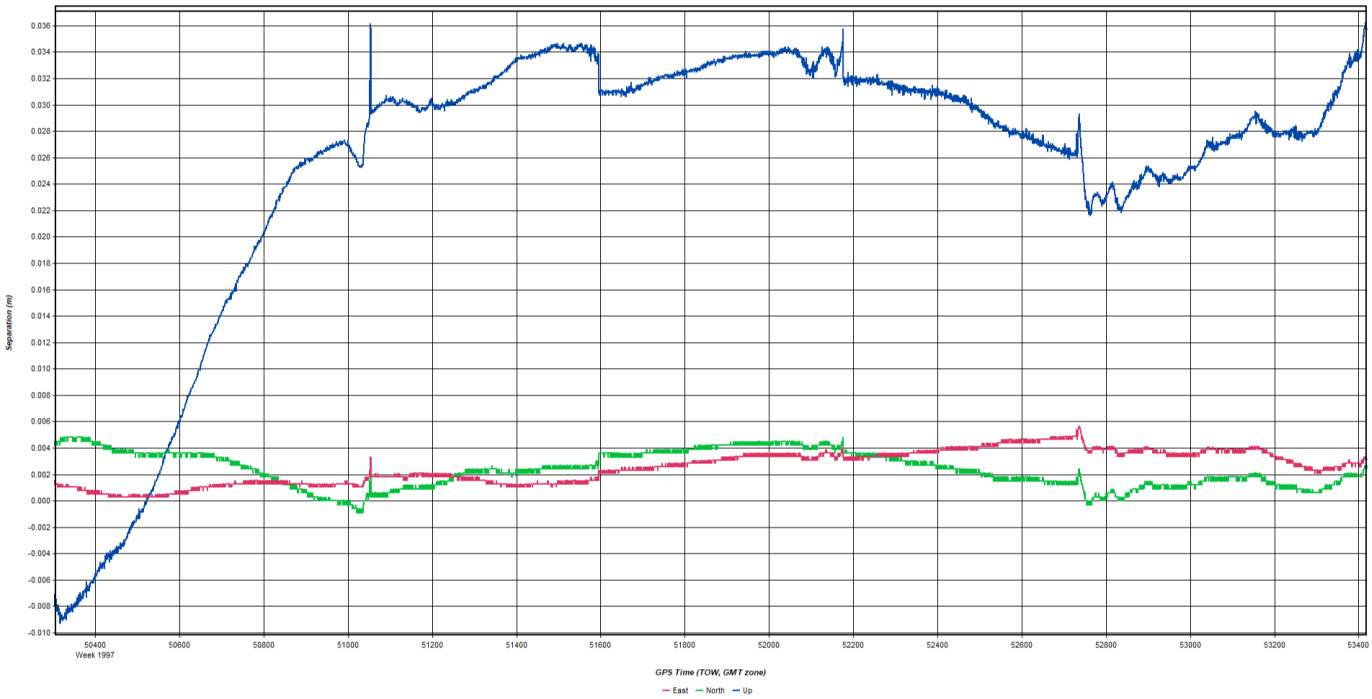
Mission 4


5 km


PDOP
1.66
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
50400
Week 1997
50600
50800
51000
51200
51400
51600
51800
52000
52200
52400
52600
52800
53000
53200
53400
GPS Time (TOW, GMT zone)
PDOP

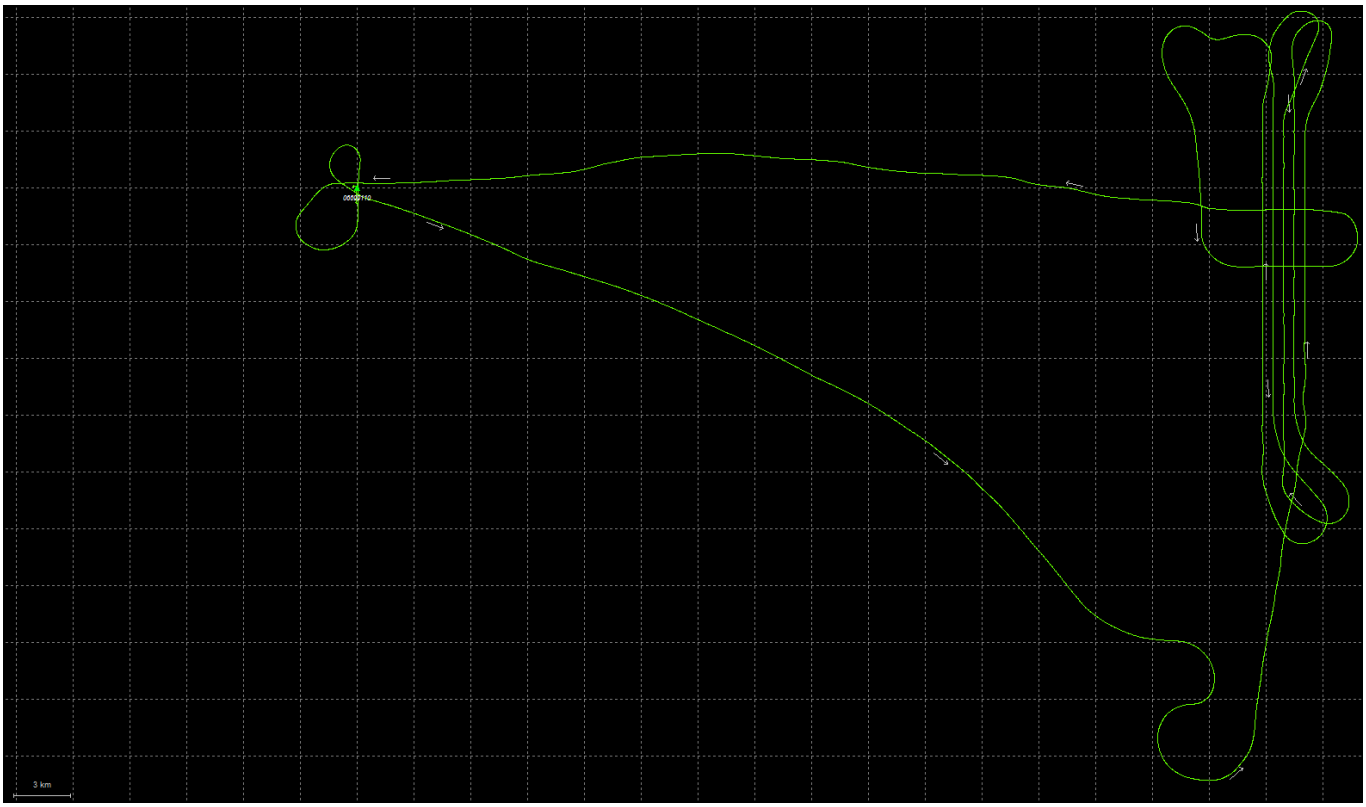

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
50400
Week 1997
50600
50800
51000
51200
51400
51600
51800
52000
52200
52400
52600
52800
53000
53200
53400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

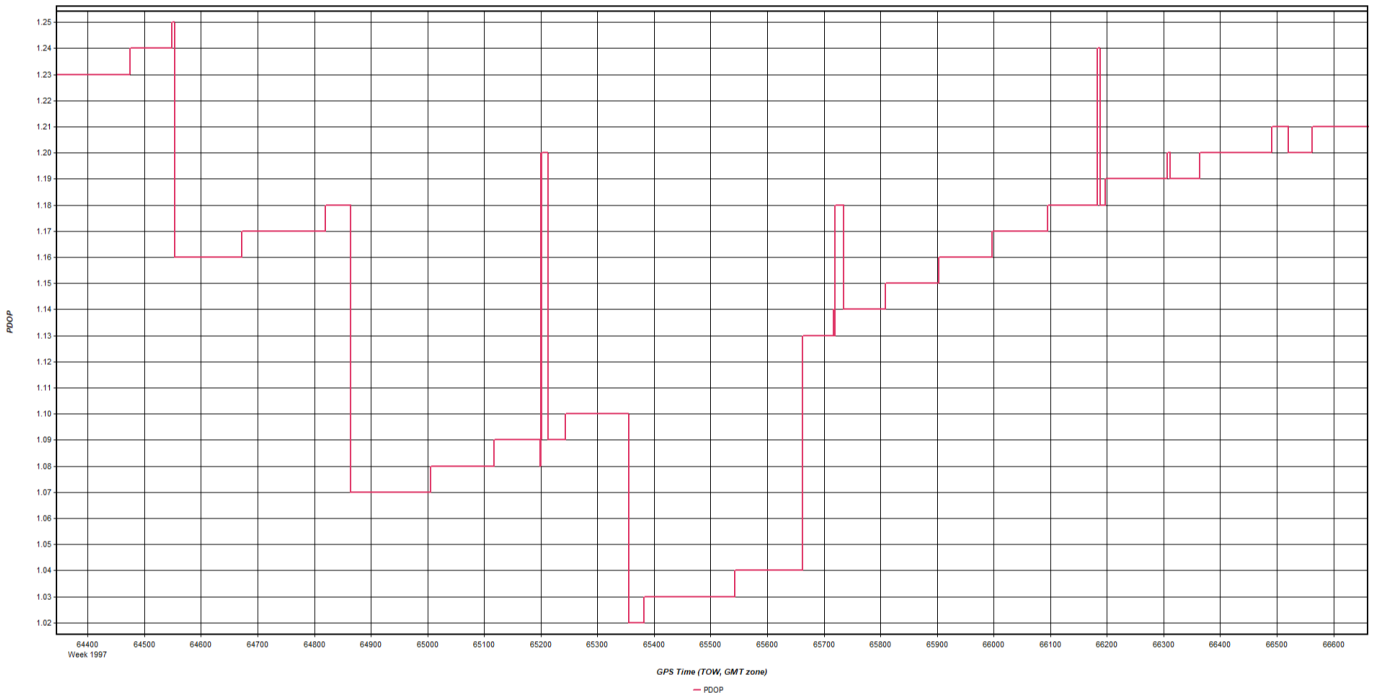

Misclosure (m)
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
50500
Week 1997
51000
51500
52000
52500
53000
53500
GPS Time (TOW, GMT zone)
East
North
Up

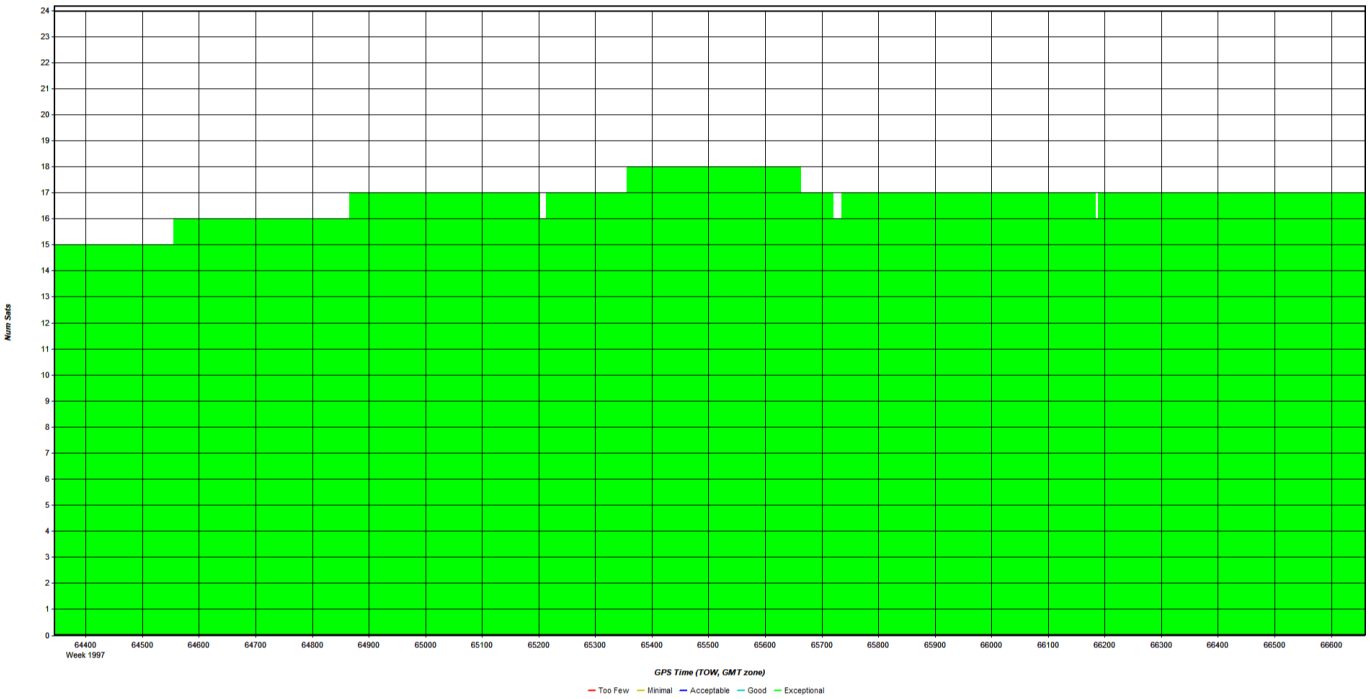

Separation (m)
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
50400
Week 1997
50600
50800
51000
51200
51400
51600
51800
52000
52200
52400
52600
52800
53000
53200
53400
GPS Time (TOW, GMT zone)
East
North
Up

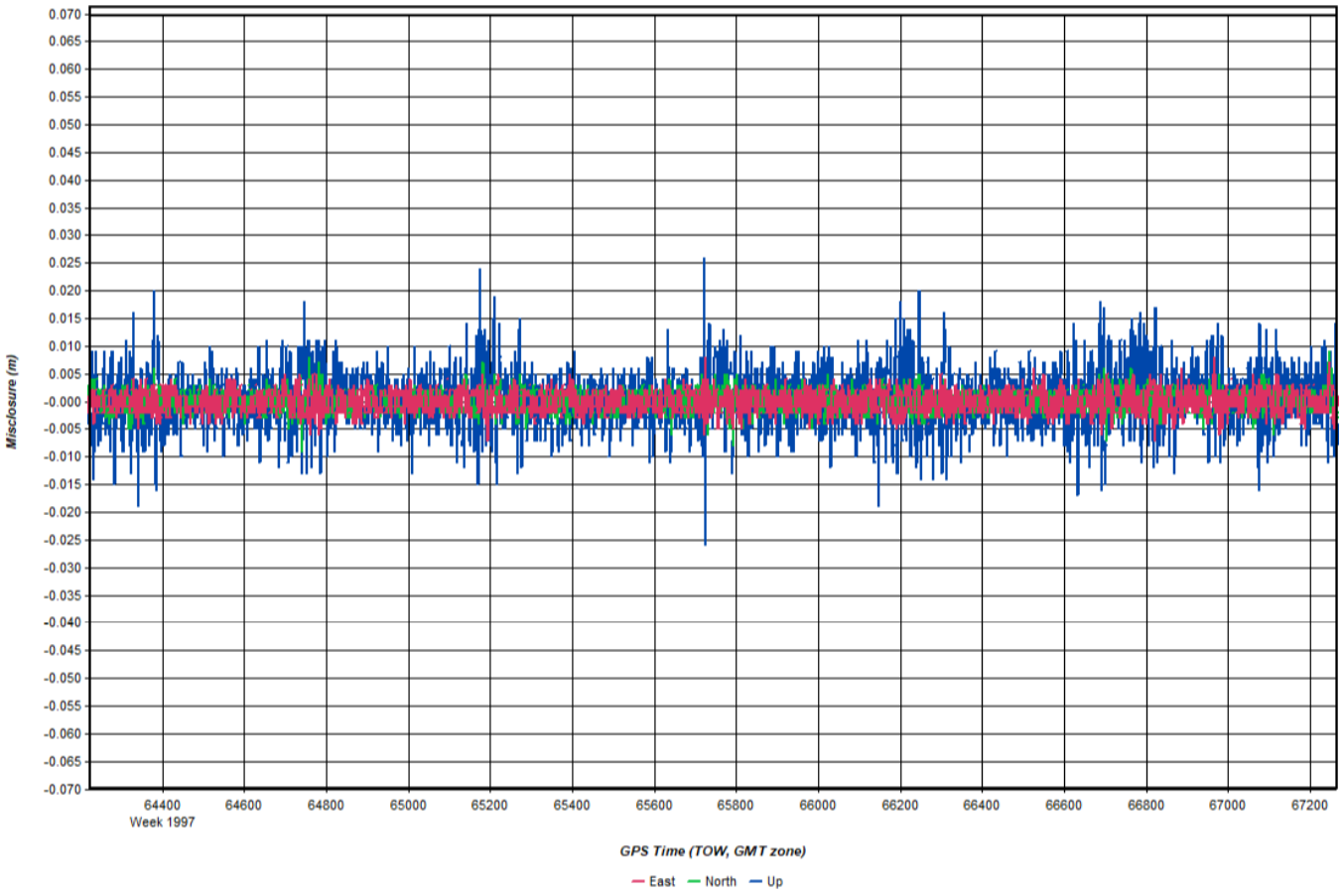
```
    Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      10962
        No processed position:  11
        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:       0.35 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.003 (m)
        North:  0.004 (m)
        Height: 0.025 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (10947 occurances):
        East:   0.003 (m)
        North:  0.004 (m)
        Height: 0.025 (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:        49.305 (km)
        Minimum:        0.046 (km)
        Average:        27.543 (km)
        First Epoch:    0.150 (km)
        Last Epoch:     0.104 (km)
```

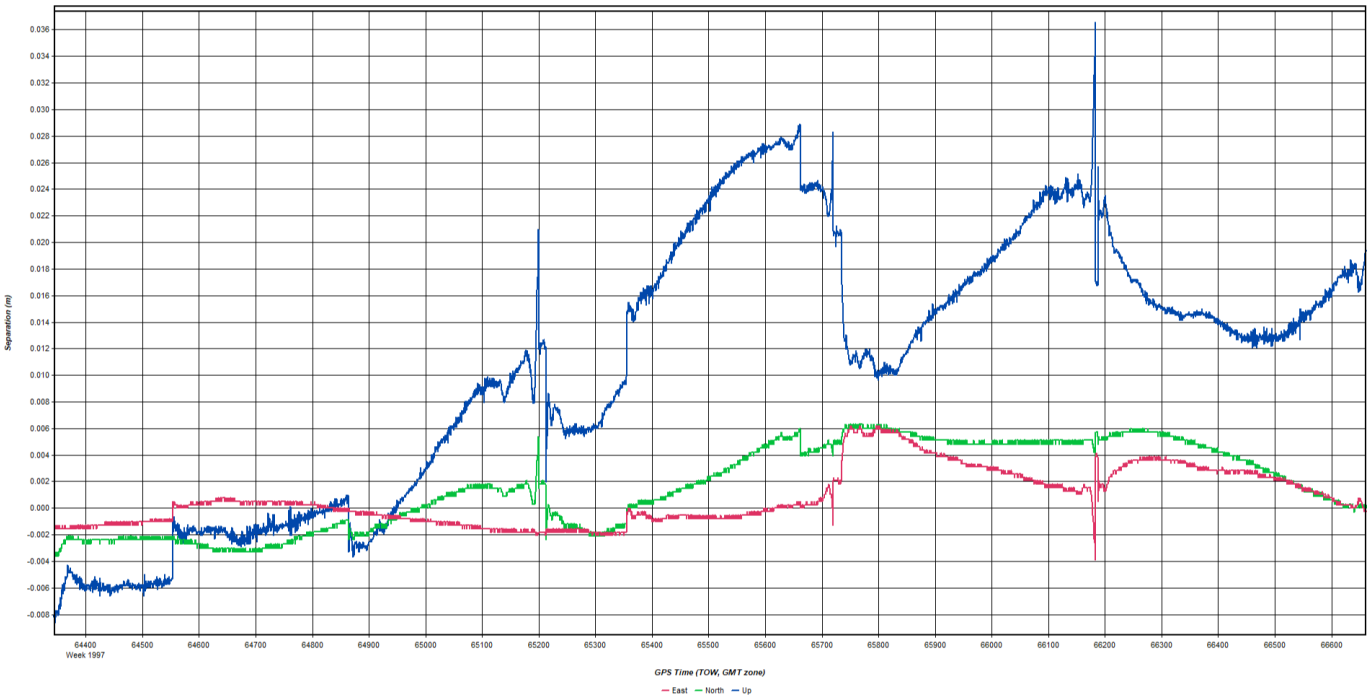
Mission 5


3 km


PDOP
1.25
1.24
1.23
1.22
1.21
1.20
1.19
1.18
1.17
1.16
1.15
1.14
1.13
1.12
1.11
1.10
1.09
1.08
1.07
1.06
1.05
1.04
1.03
1.02
64400
Week 1997
64500
64600
64700
64800
64900
65000
65100
65200
65300
65400
65500
65600
65700
65800
65900
66000
66100
66200
66300
66400
66500
66600
GPS Time (TOW, GMT zone)
PDOP

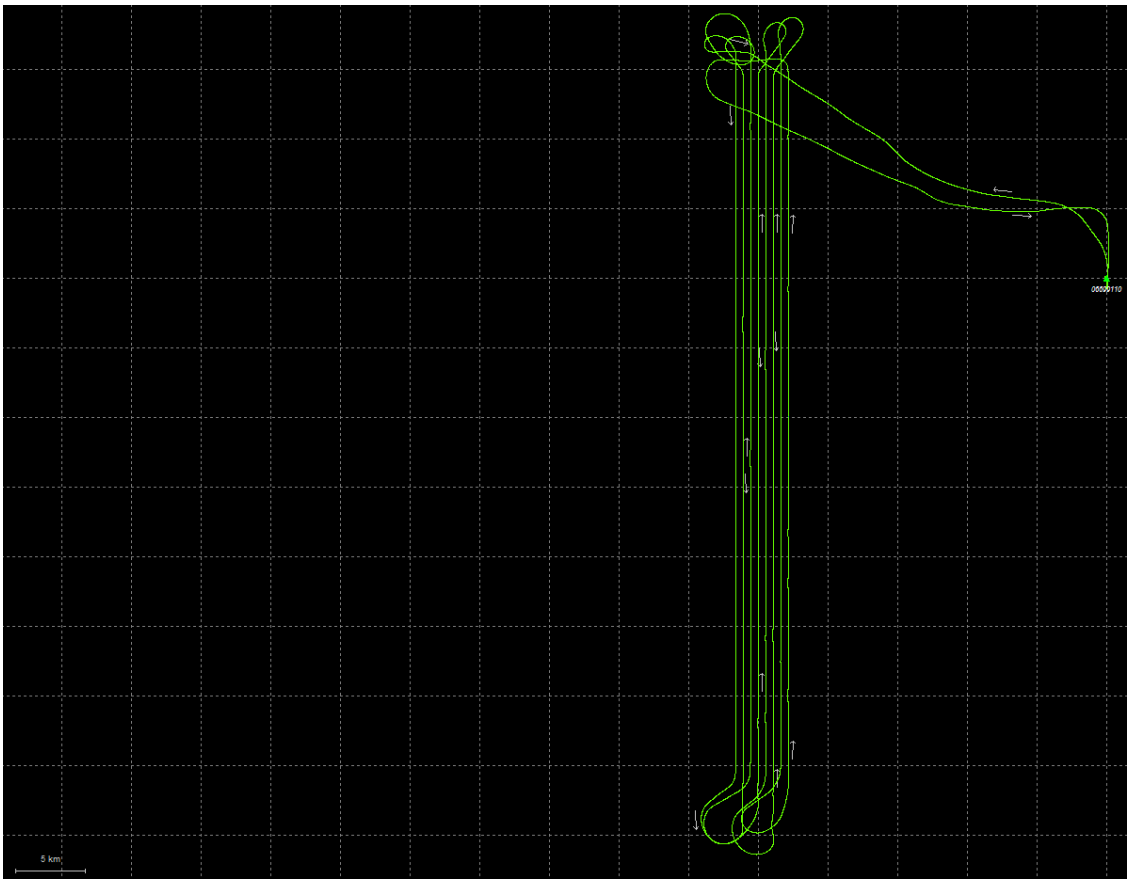

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
64400
Week 1997
64500
64600
64700
64800
64900
65000
65100
65200
65300
65400
65500
65600
65700
65800
65900
66000
66100
66200
66300
66400
66500
66600
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

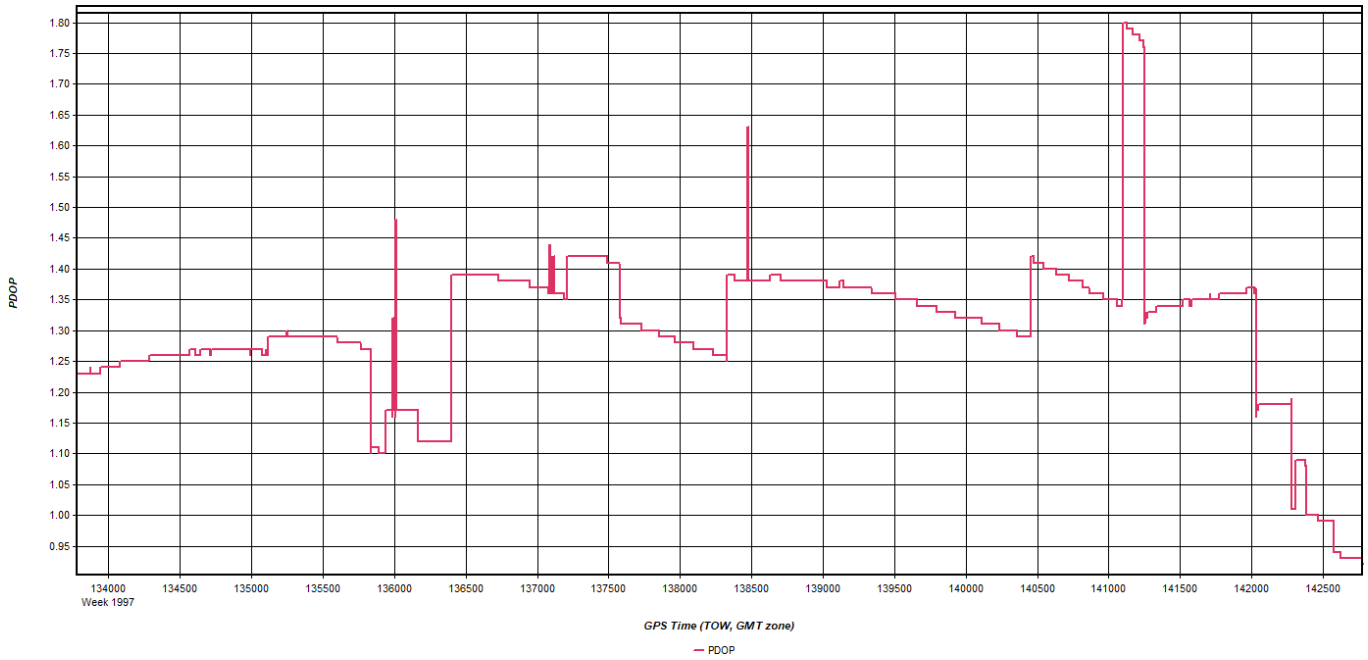

Misclosure (m)
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
64400
Week 1997
64600
64800
65000
65200
65400
65600
65800
66000
66200
66400
66600
66800
67000
67200
GPS Time (TOW, GMT zone)
East
North
Up

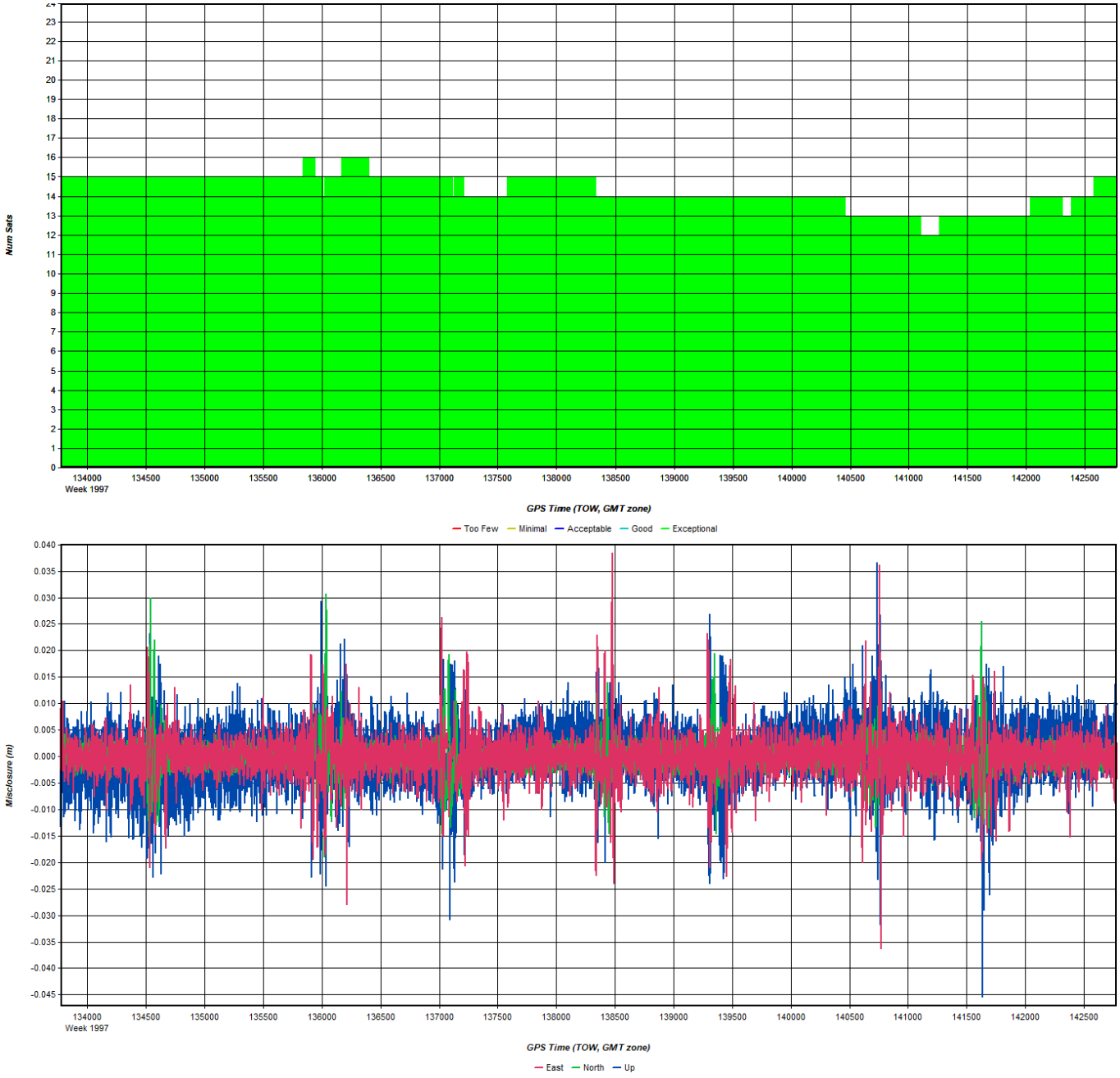

Separation (m)
0.036
0.034
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
64400
Week 1997
64500
64600
64700
64800
64900
65000
65100
65200
65300
65400
65500
65600
65700
65800
65900
66000
66100
66200
66300
66400
66500
66600
GPS Time (TOW, GMT zone)
East
North
Up

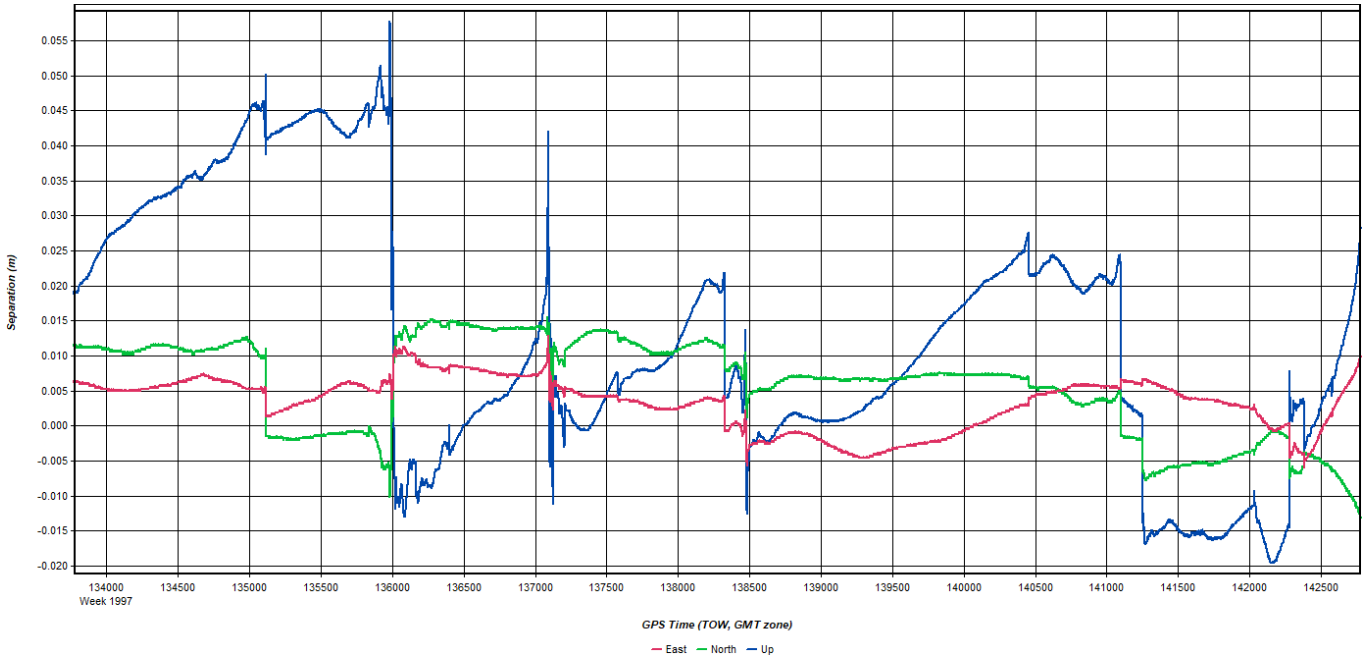
```
    Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      13213
        No processed position:  1
        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:       0.32 (m)
        L1 Doppler:     0.033 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.005 (m)
        Height: 0.011 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (13209 occurances):
        East:   0.005 (m)
        North:  0.005 (m)
        Height: 0.011 (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:        55.084 (km)
        Minimum:        0.045 (km)
        Average:        30.981 (km)
        First Epoch:    0.205 (km)
        Last Epoch:     0.192 (km)
```

Mission 6


5 km

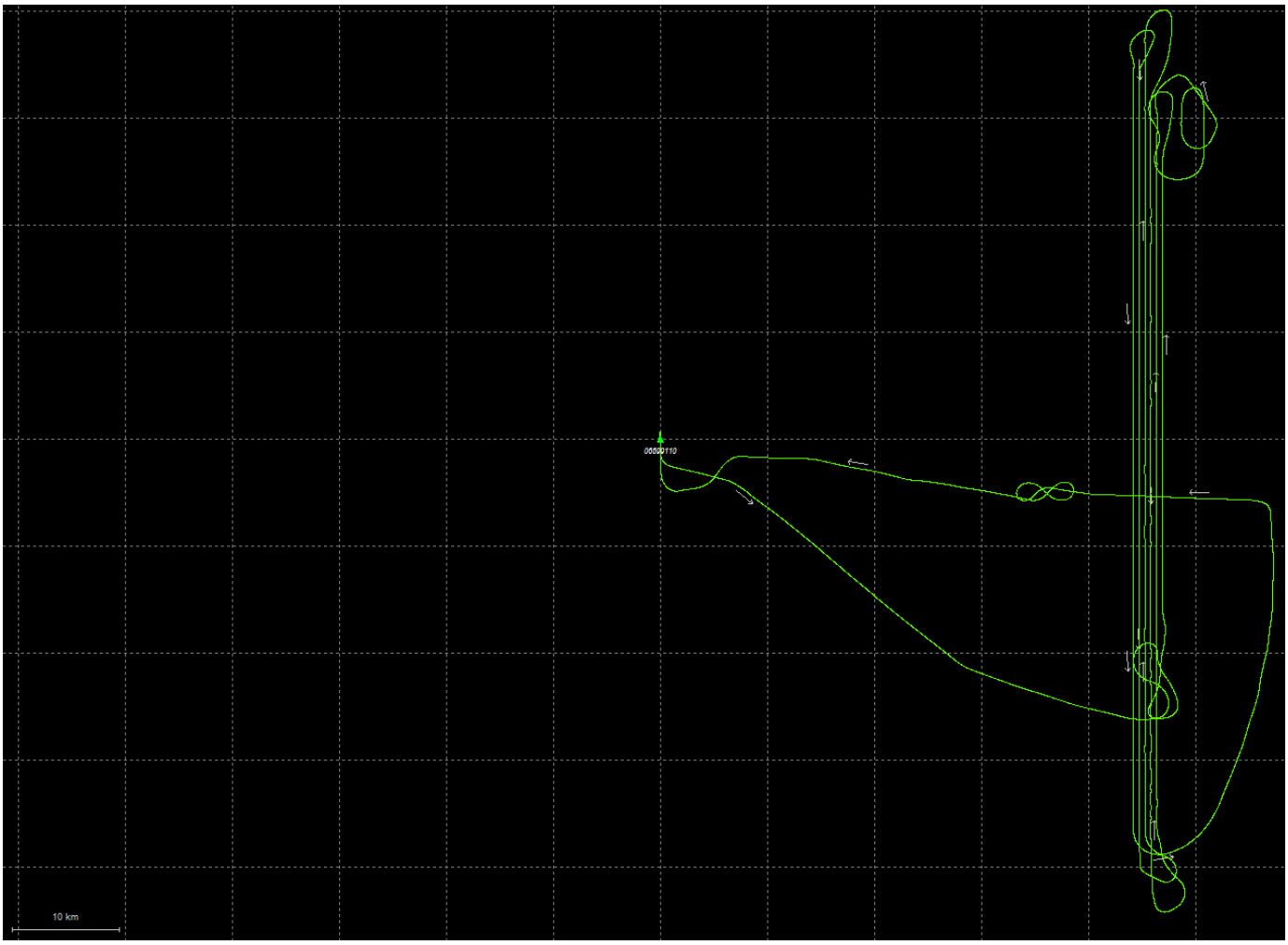

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
134000
Week 1997
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
PDOP

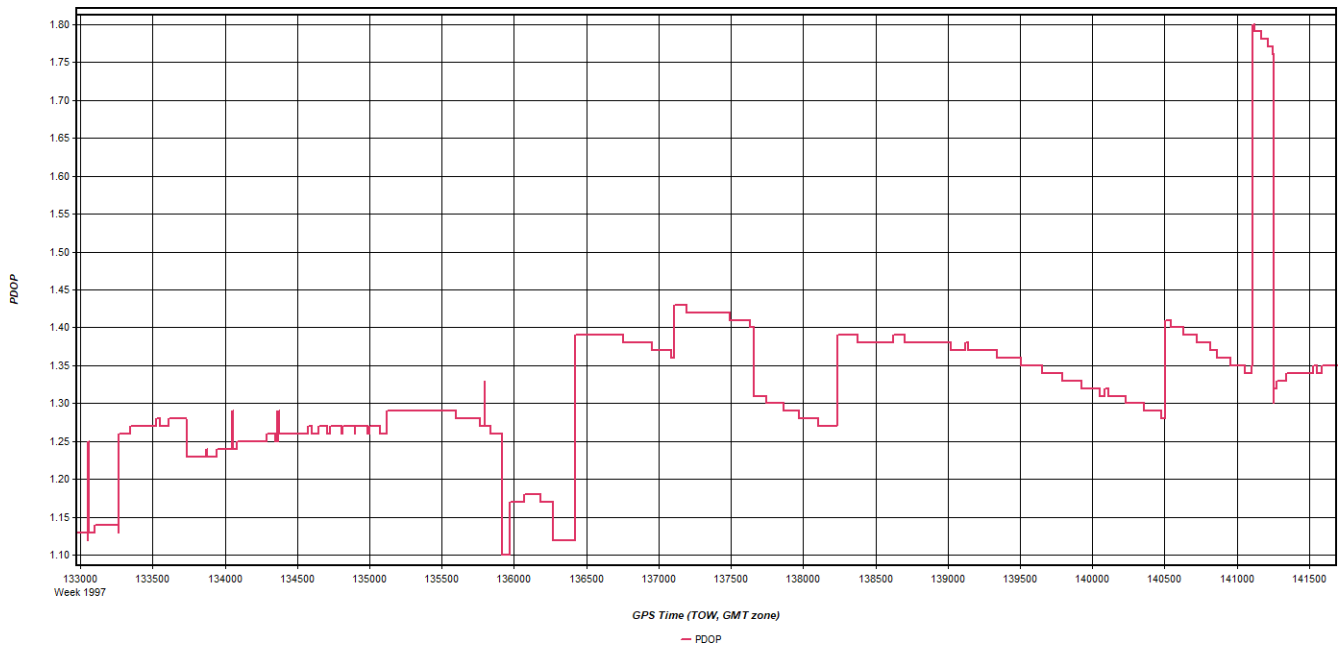

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
134000
Week 1997
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
134000
Week 1997
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
East
North
Up

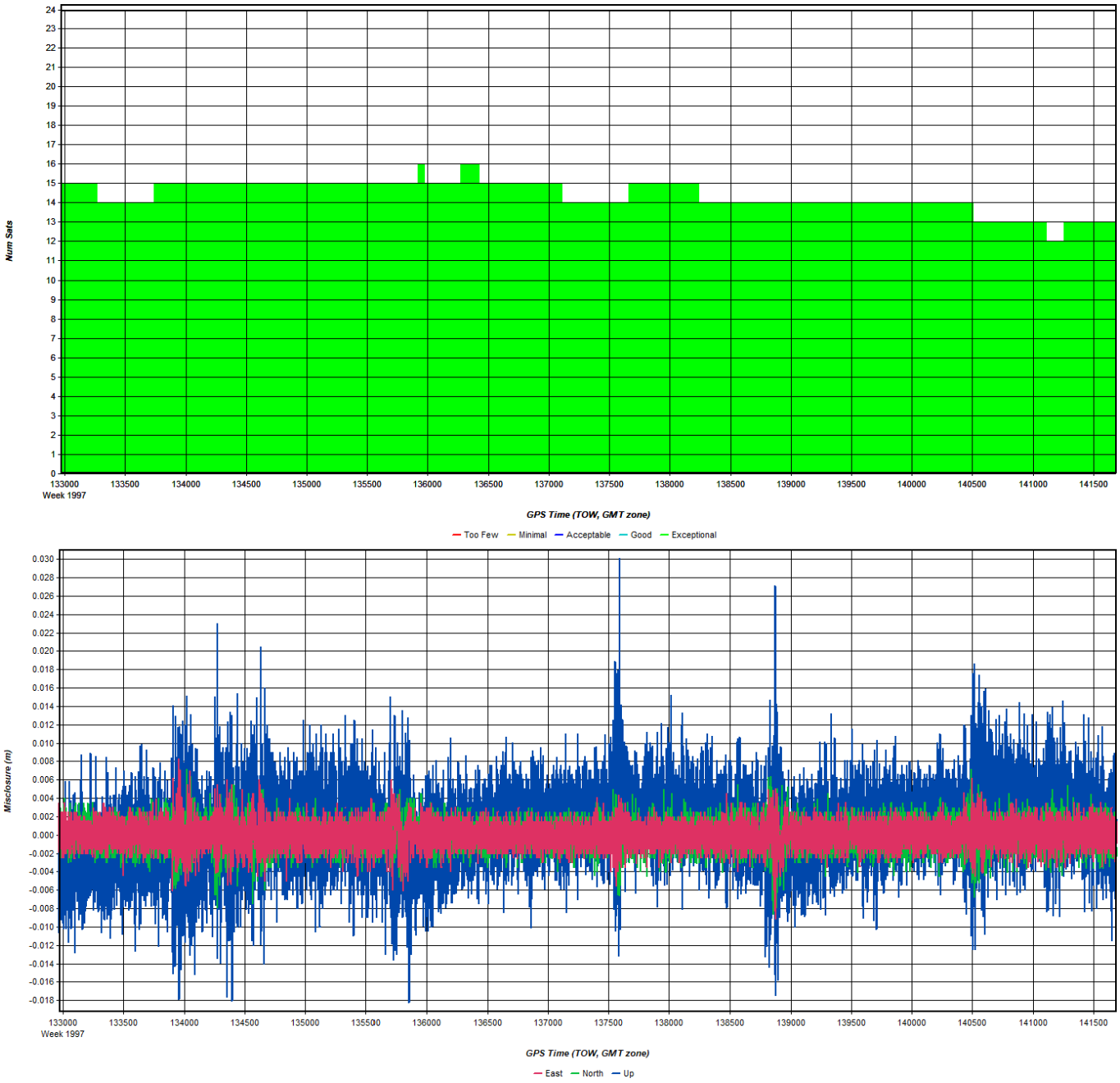

Separation (m)
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
134000
Week 1997
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
GPS Time (TOW, GMT zone)
East
North
Up

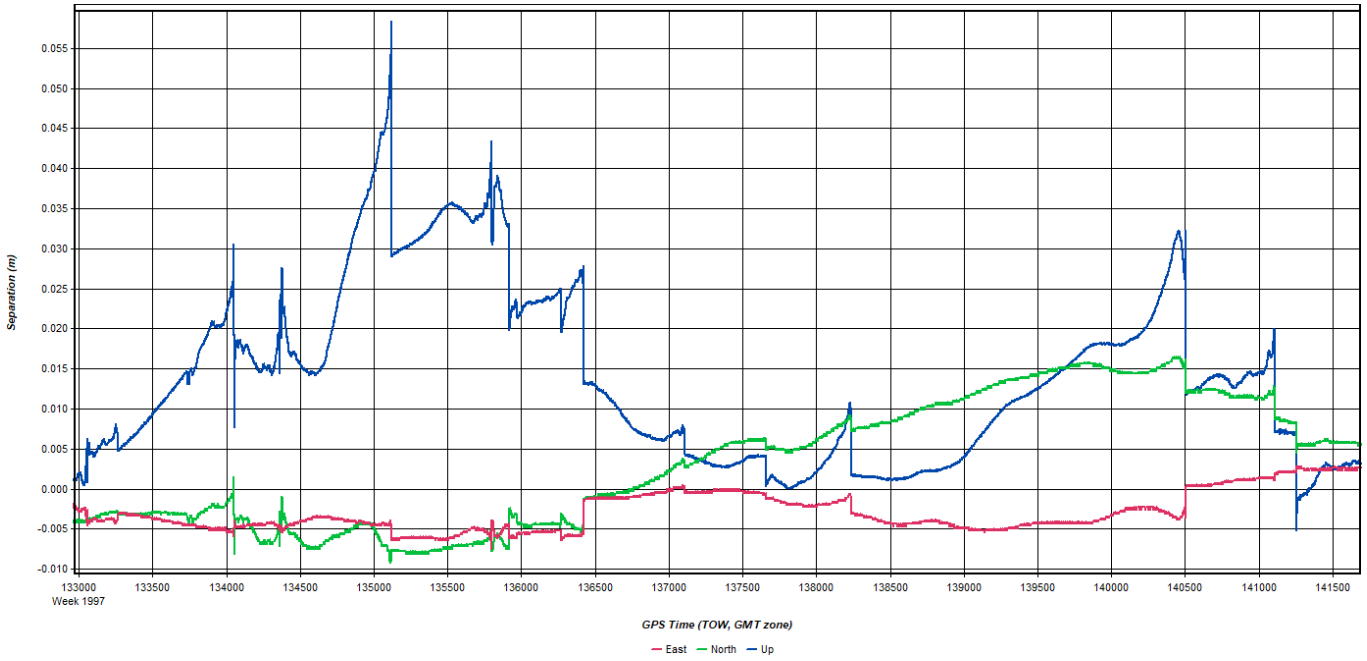
```
     Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      22486
        No processed position:  2
        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:       0.45 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.010 (m)
        Height: 0.020 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (22481 occurances):
        East:   0.005 (m)
        North:  0.010 (m)
        Height: 0.020 (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 %

Baseline Distances:
        Maximum:        49.260 (km)
        Minimum:        0.046 (km)
        Average:        27.934 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.148 (km)
```

Mission 7


10 km

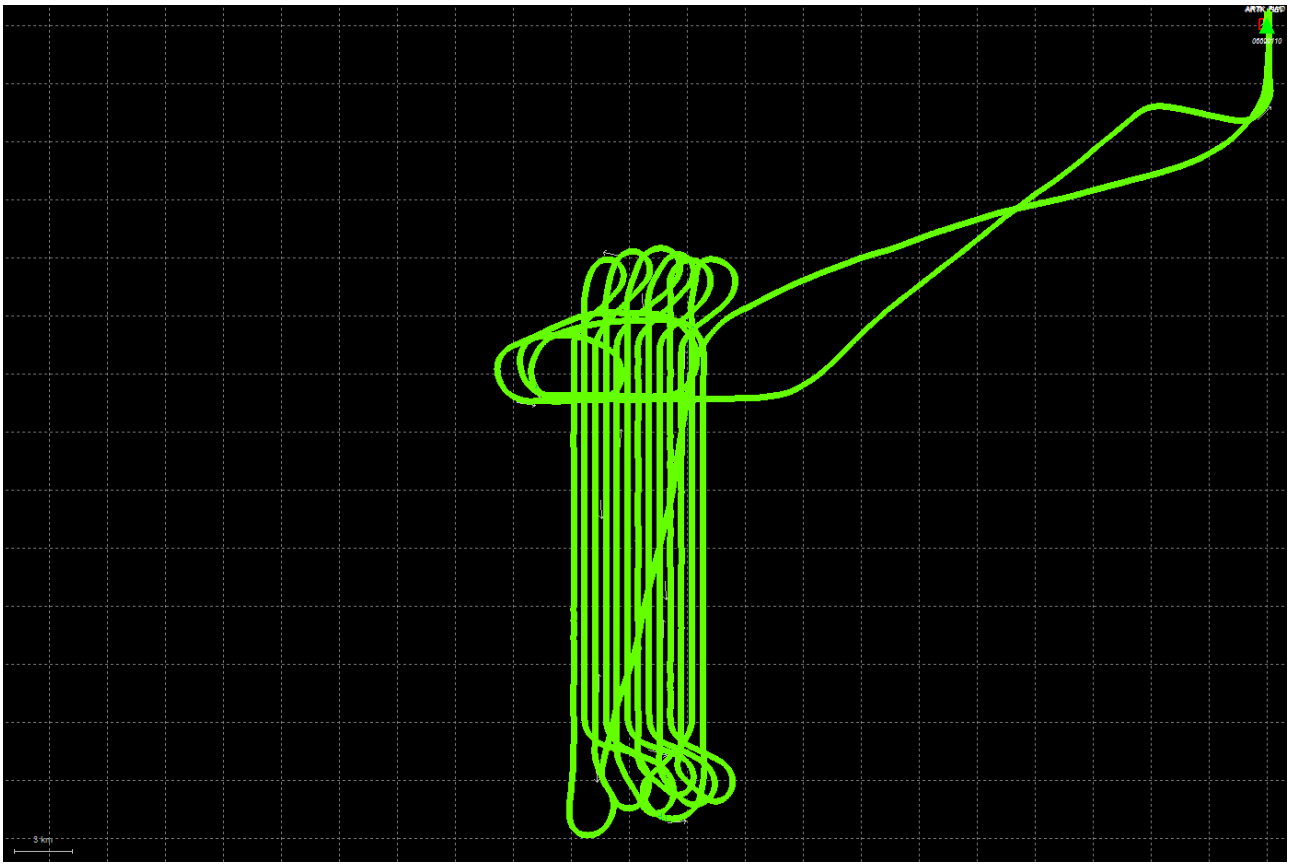

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
133000
Week 1997
133500
134000
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
GPS Time (TOW, GMT zone)
PDOP

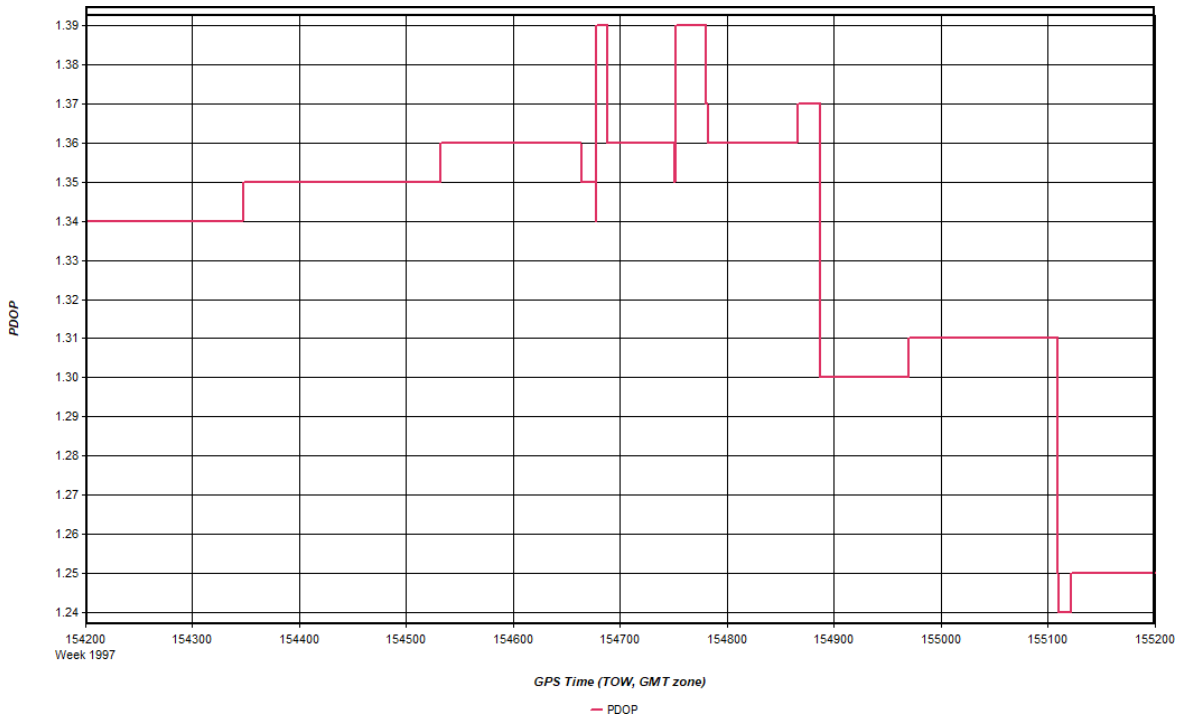

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
133000
Week 1997
133500
134000
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
133000
Week 1997
133500
134000
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
GPS Time (TOW, GMT zone)
East
North
Up

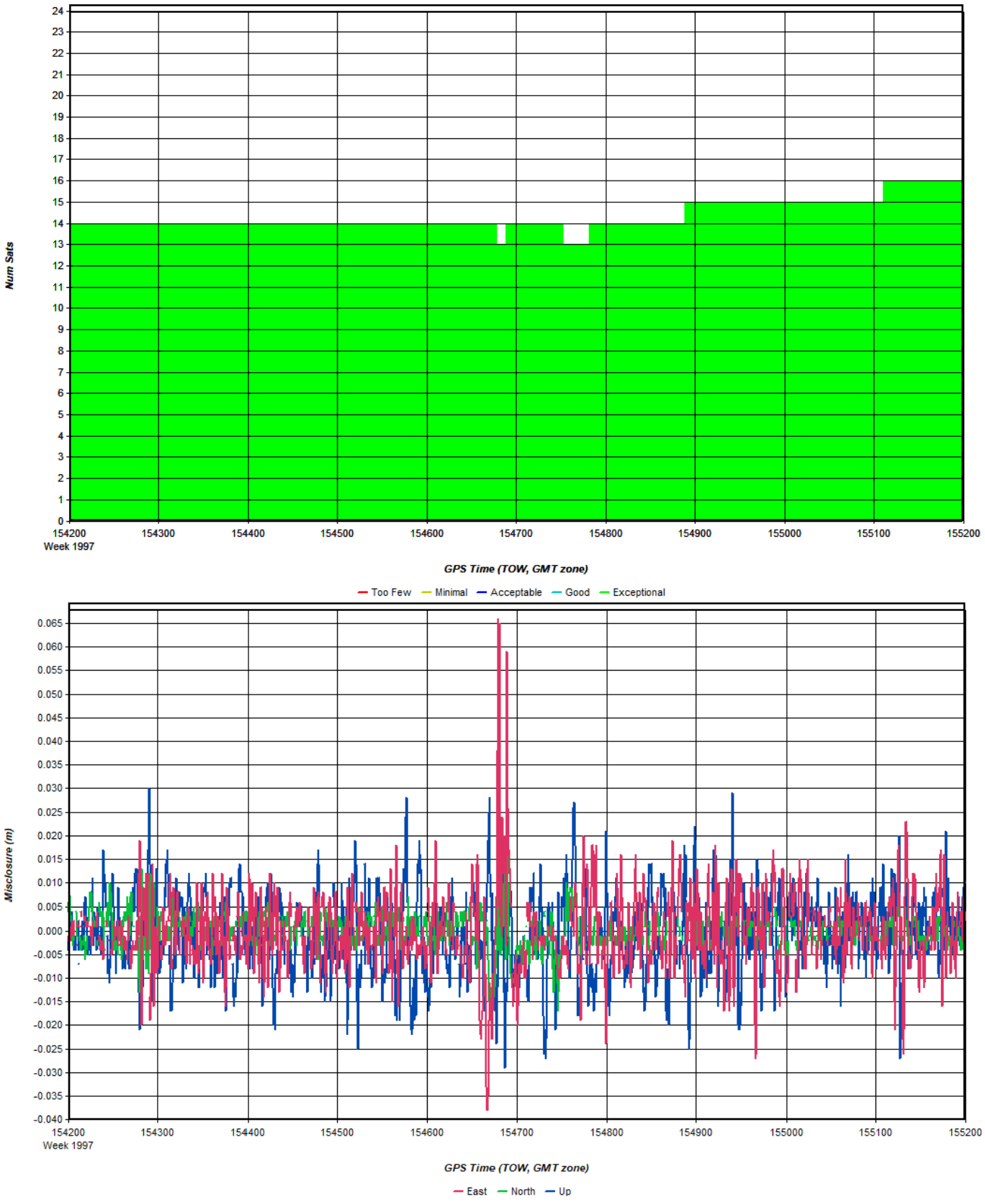

Separation (m)
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
133000
Week 1997
133500
134000
134500
135000
135500
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
GPS Time (TOW, GMT zone)
East
North
Up

```
 Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      25902
        No processed position:  2
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0137 (m)
        C/A Code:       0.39 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.007 (m)
        Height: 0.017 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (25897 occurances):
        East:   0.005 (m)
        North:  0.007 (m)
        Height: 0.017 (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 %

Baseline Distances:
        Maximum:        64.791 (km)
        Minimum:        0.076 (km)
        Average:        44.685 (km)
        First Epoch:    0.199 (km)
        Last Epoch:     0.110 (km)
```

Mission 8



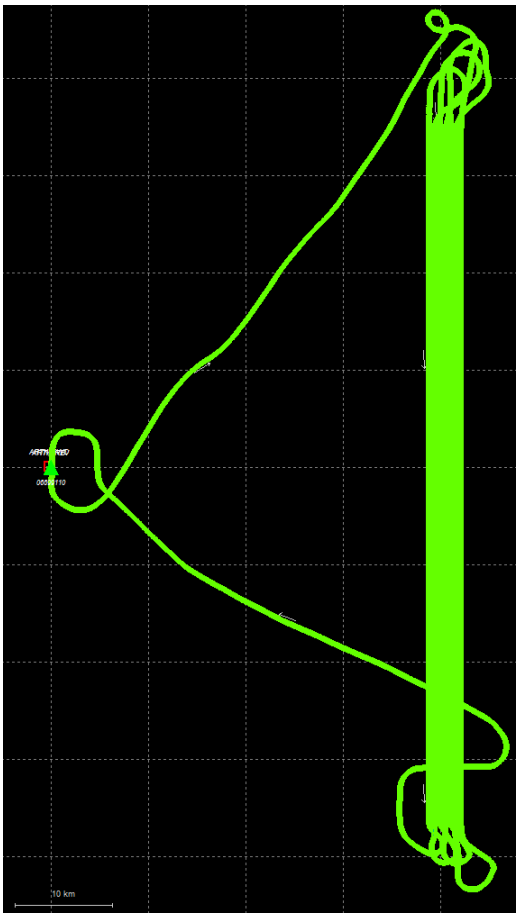

PDOP
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1.25
1.24
154200
Week 1997
154300
154400
154500
154600
154700
154800
154900
155000
155100
155200
GPS Time (TOW, GMT zone)
PDOP

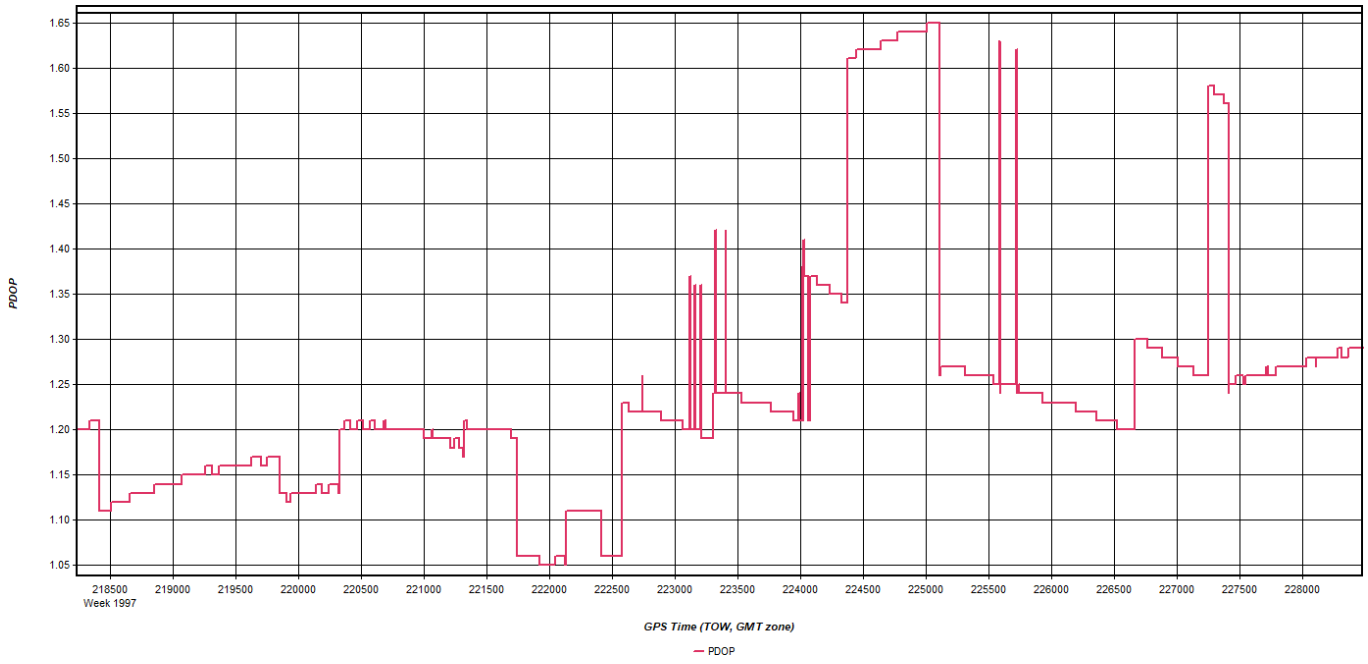

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
154200
Week 1997
154300
154400
154500
154600
154700
154800
154900
155000
155100
155200
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
154200
Week 1997
154300
154400
154500
154600
154700
154800
154900
155000
155100
155200
GPS Time (TOW, GMT zone)
East
North
Up

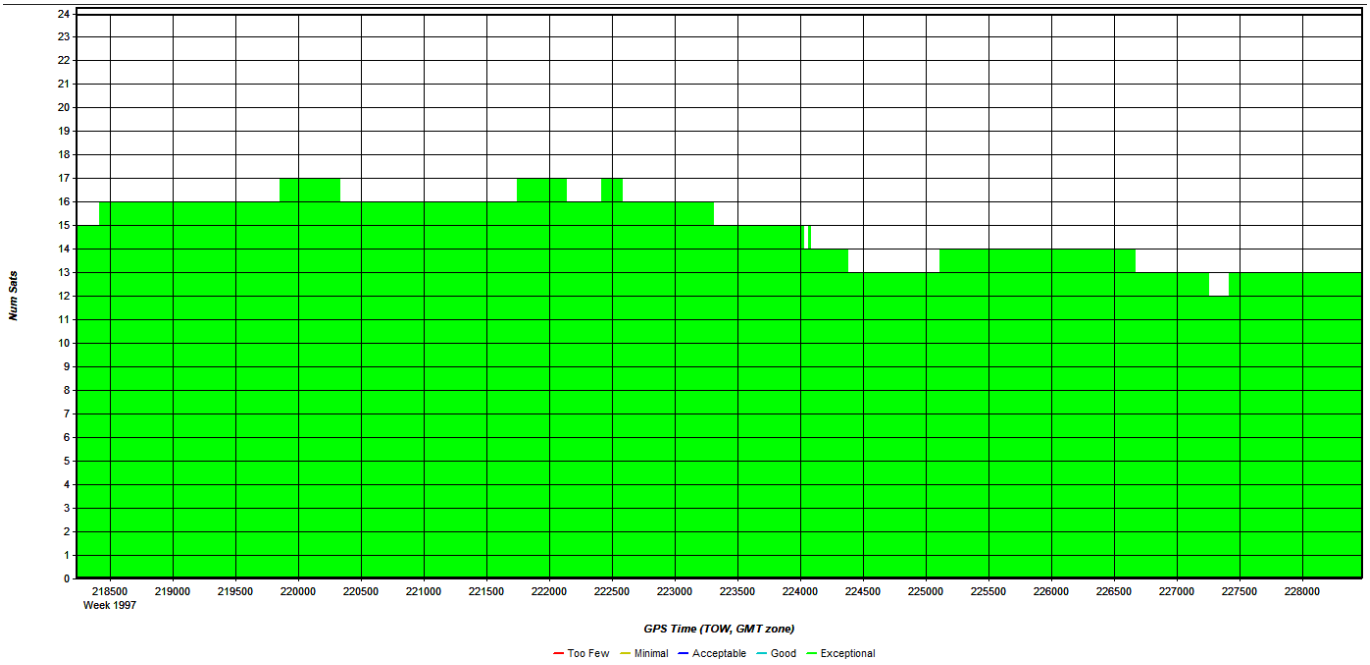

0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
-0.028
-0.030
-0.032
-0.034
-0.036
Separation (m)
154200
Week 1997
154300
154400
154500
154600
154700
154800
154900
155000
155100
155200
GPS Time (TOW, GMT zone)
East
North
Up

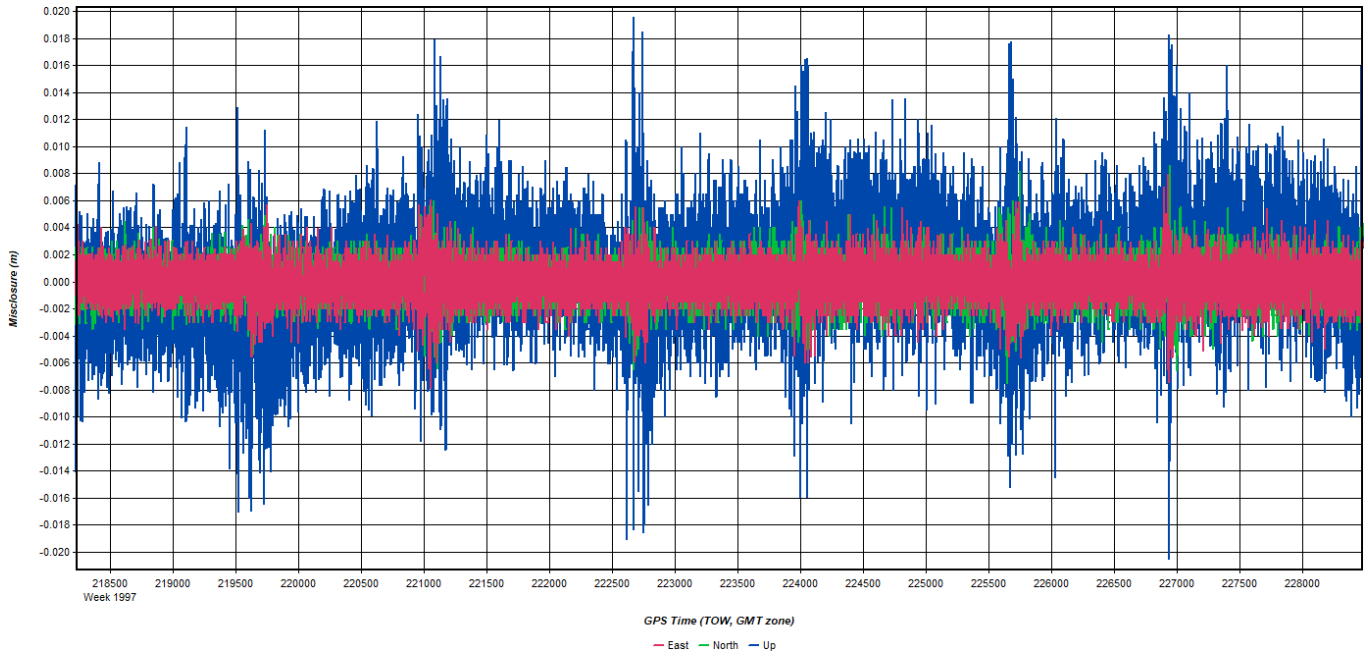
```
 Processing Summary Information

Program: Inertial Explorer
Version: 8.70.4517
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      20782
        No processed position:  2
        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:       0.41 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.005 (m)
        Height: 0.015 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (20777 occurances):
        East:   0.006 (m)
        North:  0.005 (m)
        Height: 0.015 (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 %

Baseline Distances:
        Maximum:        54.102 (km)
        Minimum:        0.077 (km)
        Average:        35.327 (km)
        First Epoch:    0.127 (km)
        Last Epoch:     0.147 (km)
```

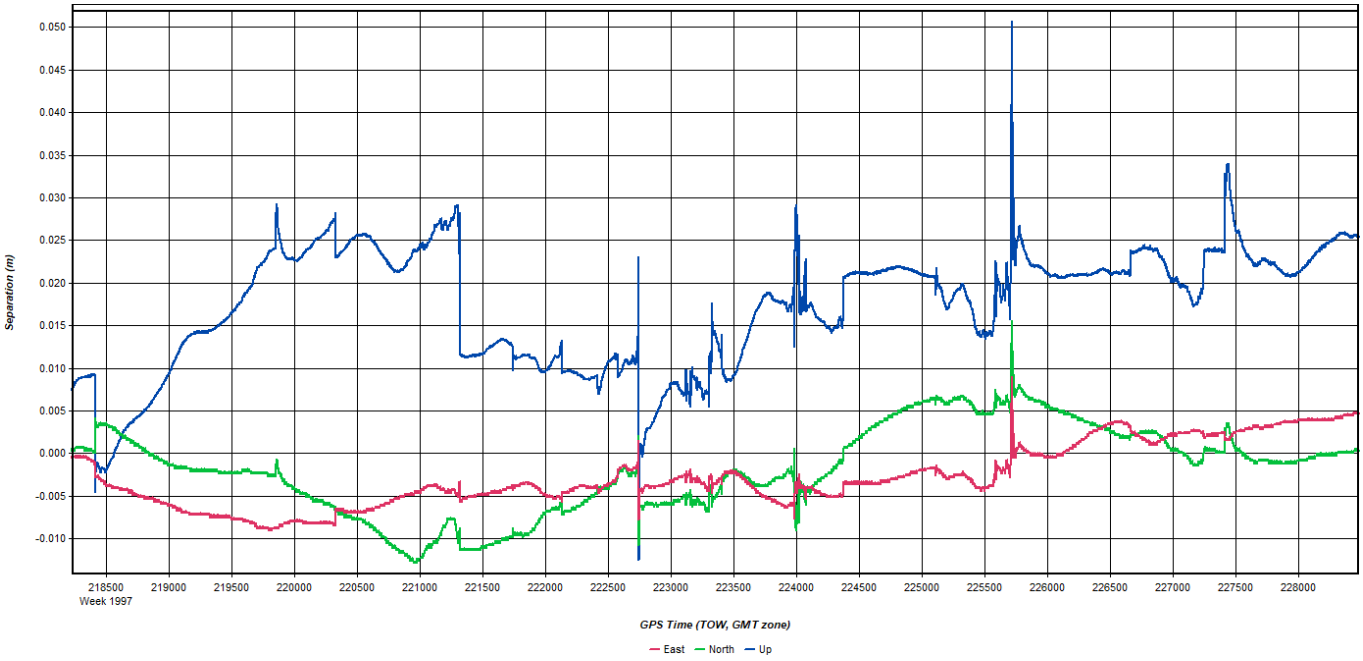
Mission 10


10 km


PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
218500
Week 1997
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
GPS Time (TOW, GMT zone)
PDOP

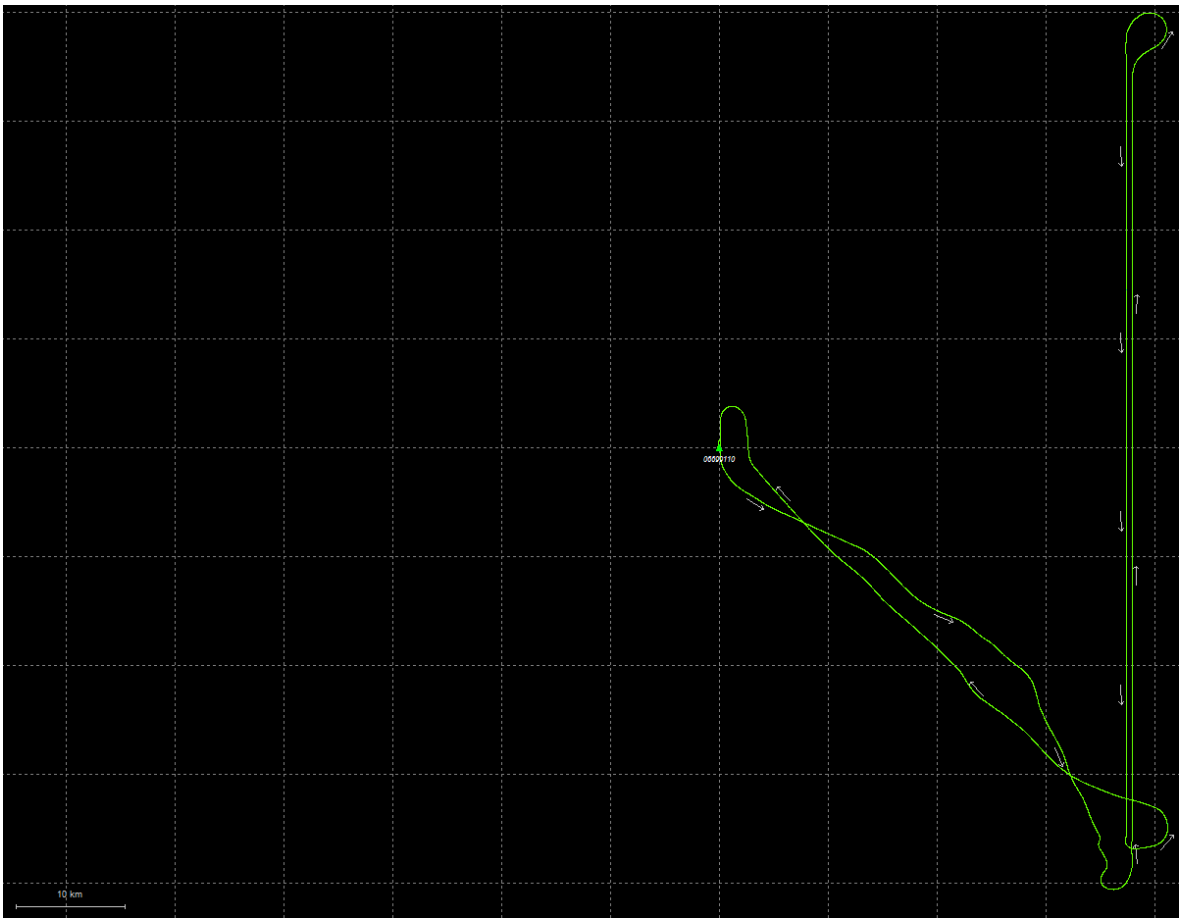

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
218500
Week 1997
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

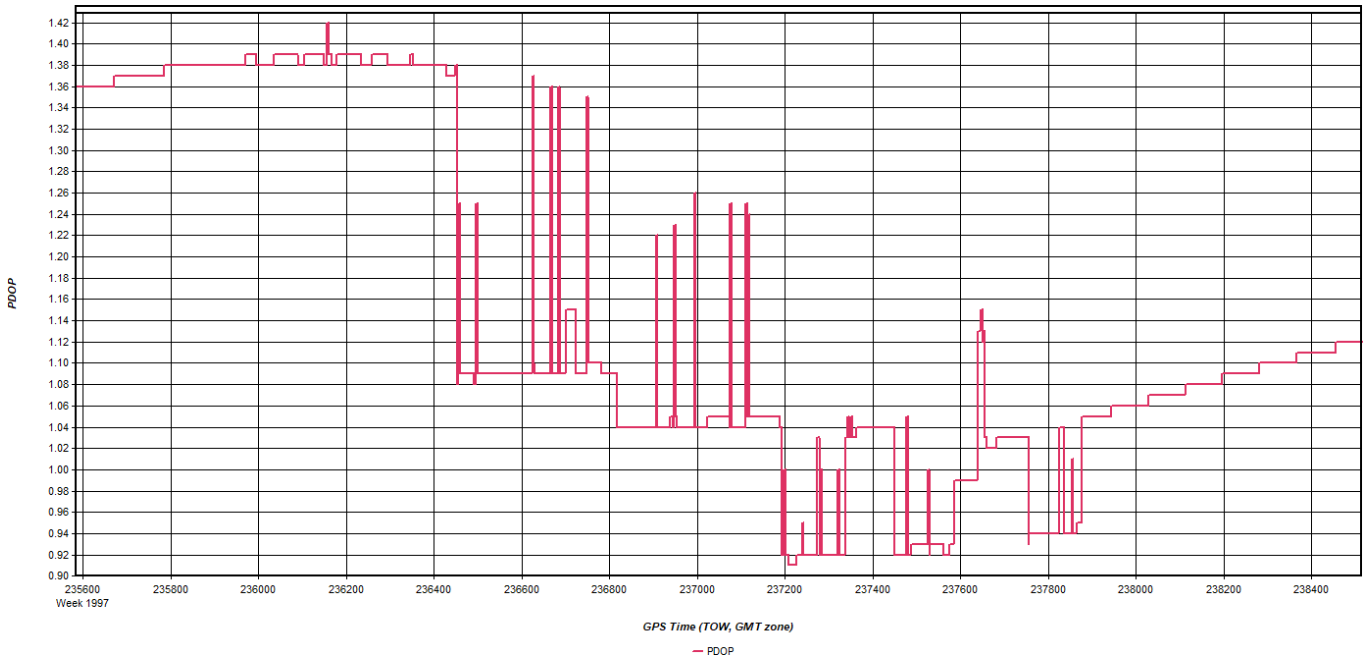

Misclosure (m)
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
218500
Week 1997
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
218500
Week 1997
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
GPS Time (TOW, GMT zone)
East
North
Up

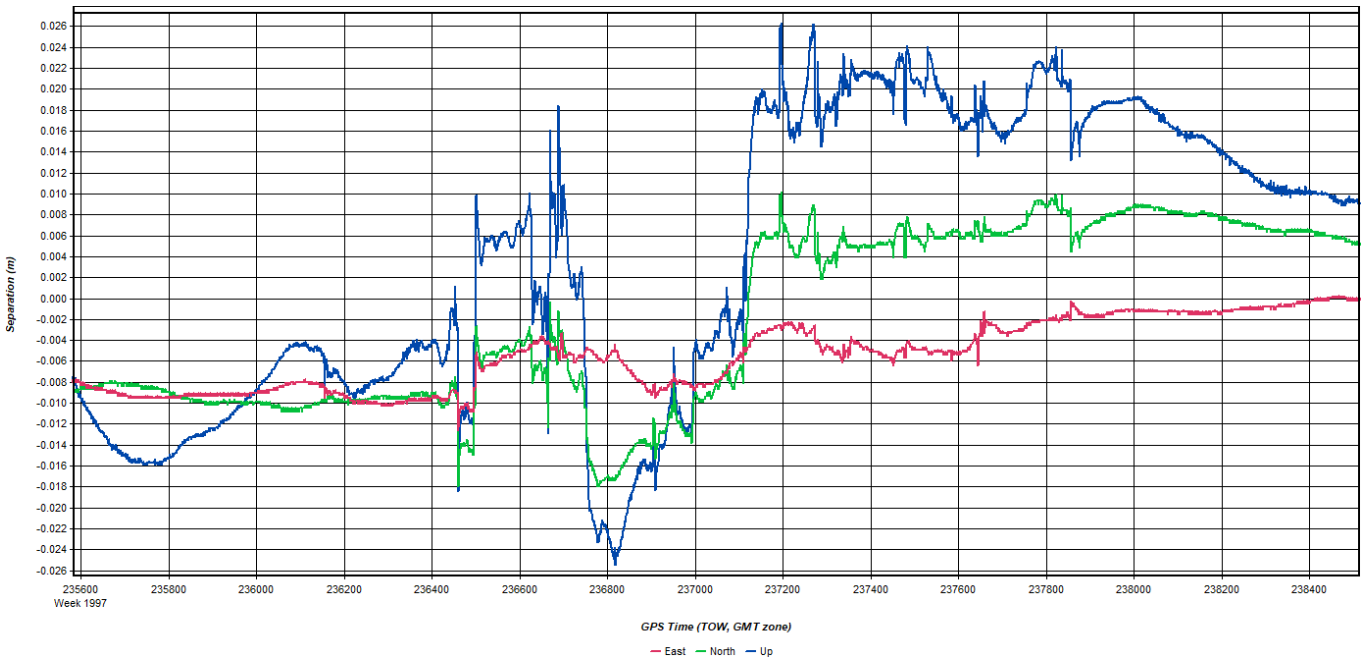
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      26755
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0132 (m)
        C/A Code:       0.35 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.005 (m)
        Height: 0.020 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (26751 occurances):
        East:   0.005 (m)
        North:  0.005 (m)
        Height: 0.020 (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 %

Baseline Distances:
        Maximum:        61.443 (km)
        Minimum:        0.083 (km)
        Average:        42.238 (km)
        First Epoch:    0.205 (km)
        Last Epoch:     0.113 (km)
```

Mission 12


10 km

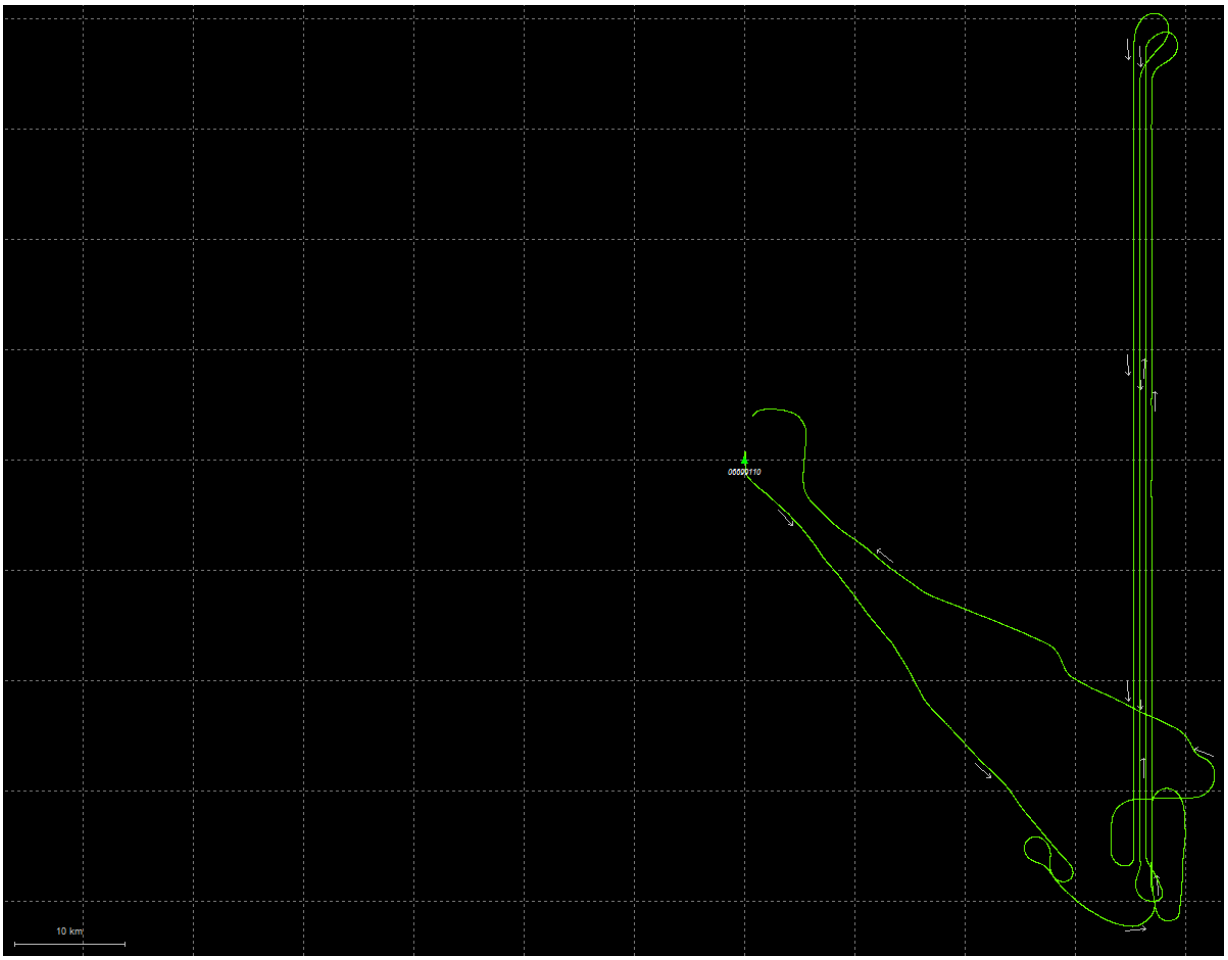

PDOP
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
235600
Week 1997
235800
236000
236200
236400
236600
236800
237000
237200
237400
237600
237800
238000
238200
238400
GPS Time (TOW, GMT zone)
PDOP

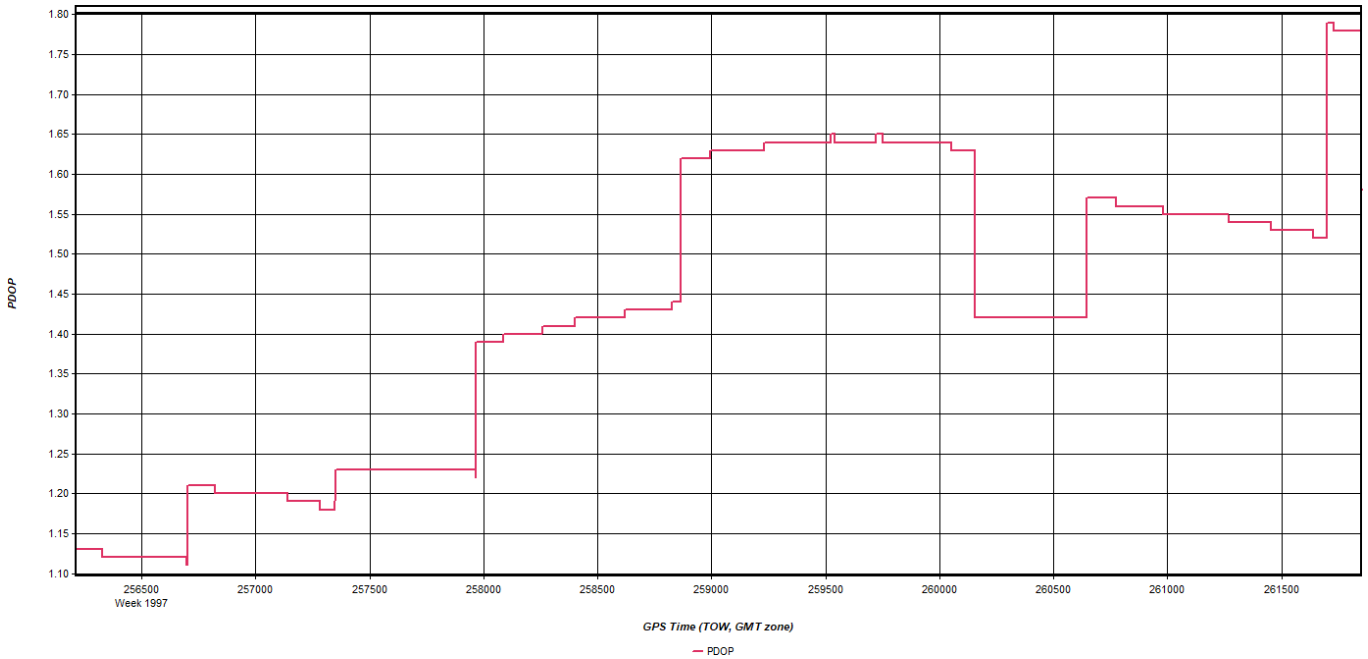

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
235600
Week 1997
235800
236000
236200
236400
236600
236800
237000
237200
237400
237600
237800
238000
238200
238400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
235600
Week 1997
235800
236000
236200
236400
236600
236800
237000
237200
237400
237600
237800
238000
238200
238400
GPS Time (TOW, GMT zone)
East
North
Up

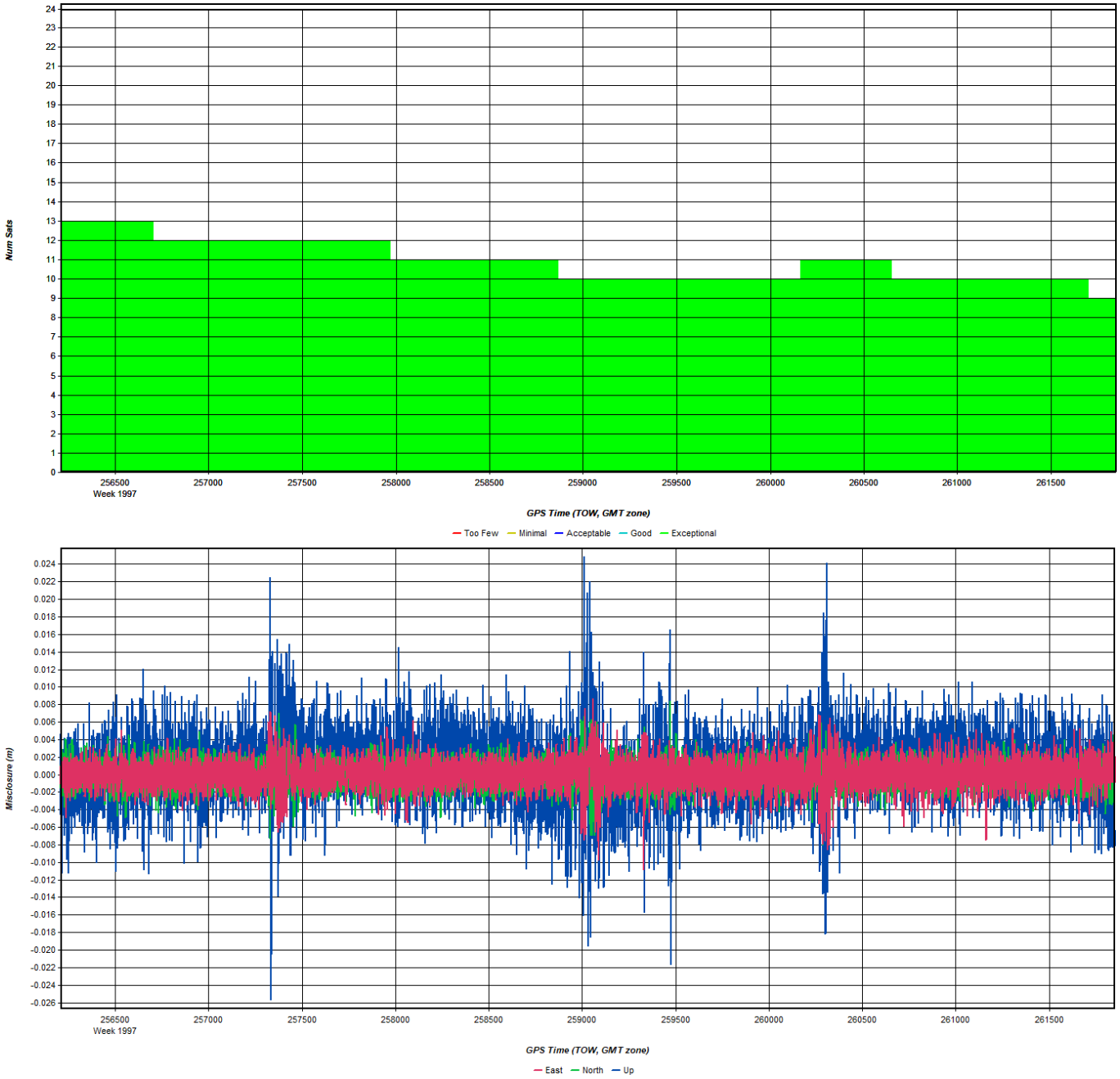

Separation (m)
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
235600
Week 1997
235800
236000
236200
236400
236600
236800
237000
237200
237400
237600
237800
238000
238200
238400
GPS Time (TOW, GMT zone)
East
North
Up

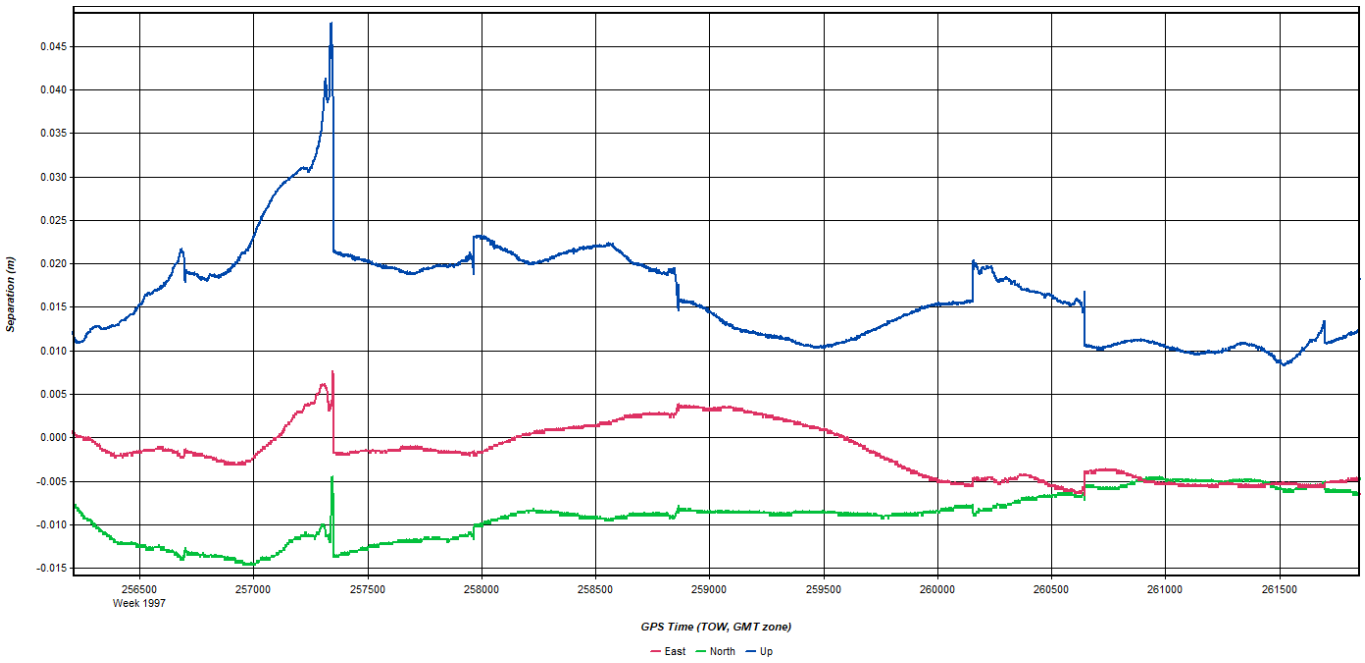
```
   Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717

Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      12085
        No processed position:  2
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0148 (m)
        C/A Code:       0.31 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.008 (m)
        Height: 0.015 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (12080 occurances):
        East:   0.006 (m)
        North:  0.008 (m)
        Height: 0.015 (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 %

Baseline Distances:
        Maximum:        56.594 (km)
        Minimum:        0.077 (km)
        Average:        32.495 (km)
        First Epoch:    0.205 (km)
        Last Epoch:     0.153 (km)
```

Mission 13


00000110
10 km

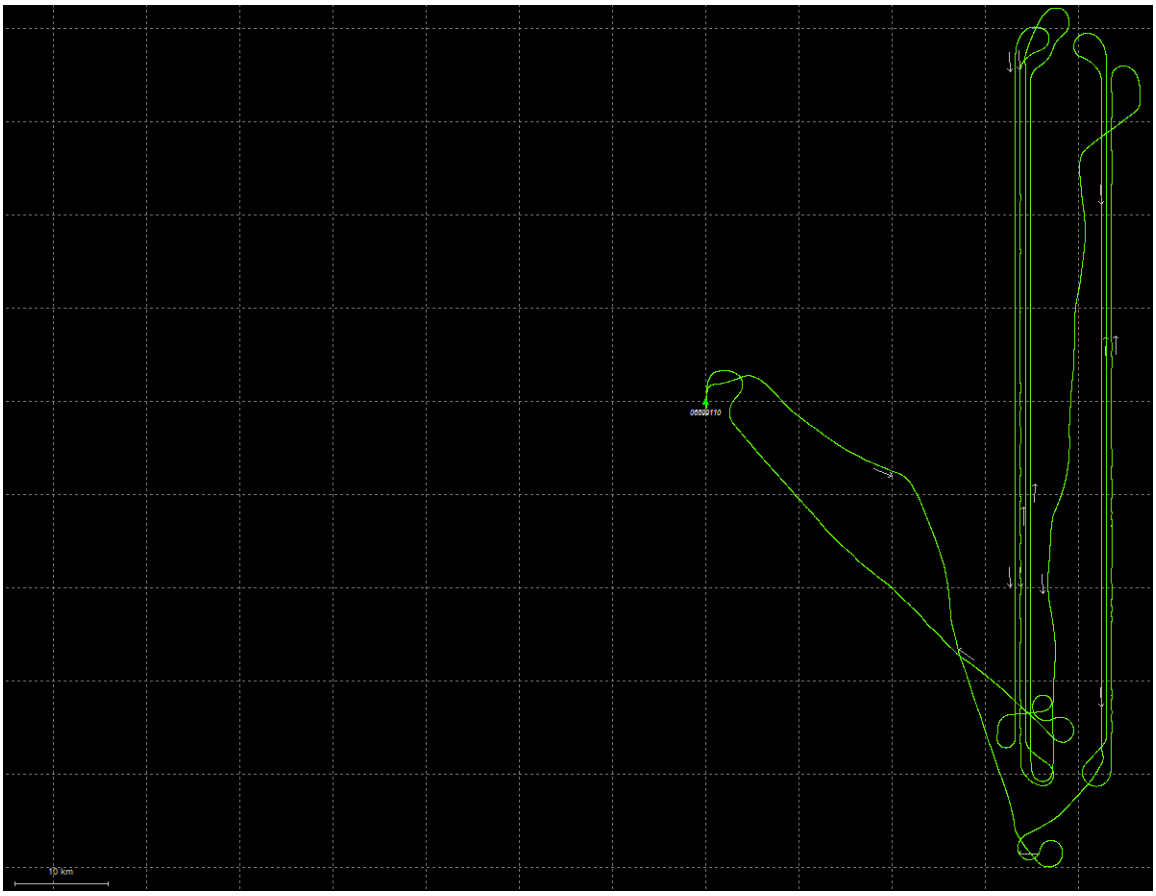

PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
256500
Week 1997
257000
257500
258000
258500
259000
259500
260000
260500
261000
261500
GPS Time (TOW, GMT zone)
PDOP

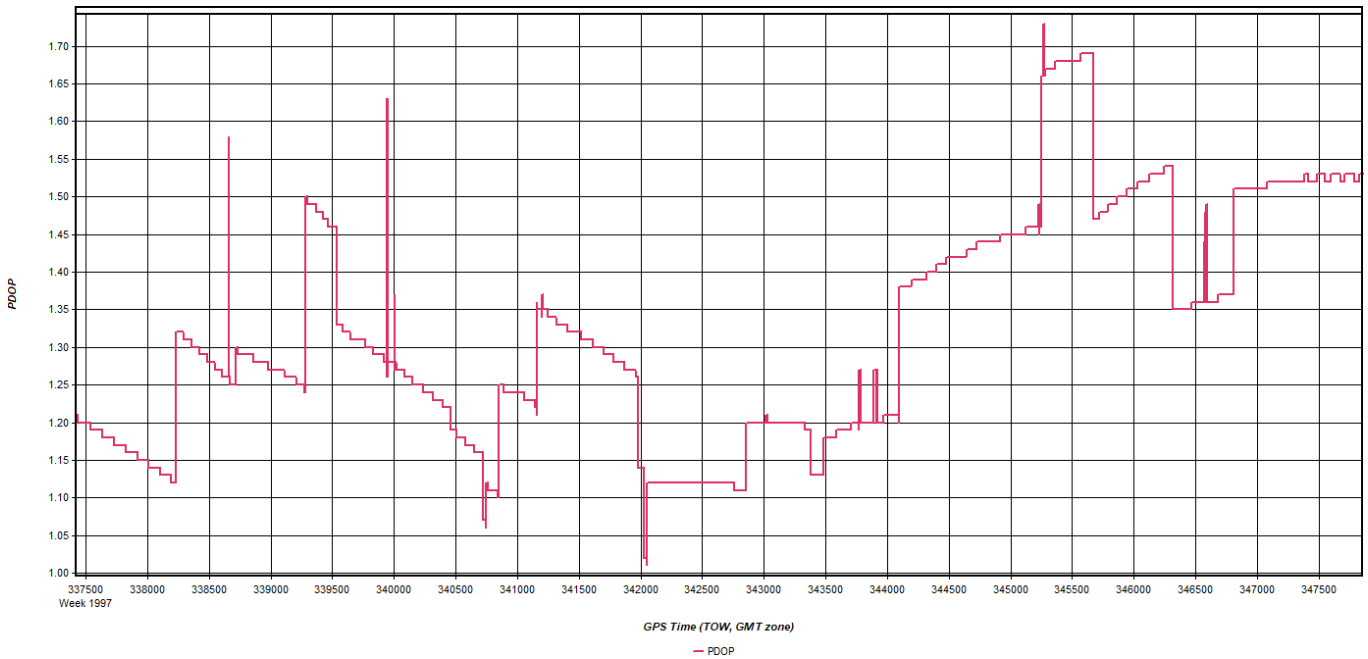

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
256500
Week 1997
257000
257500
258000
258500
259000
259500
260000
260500
261000
261500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
256500
Week 1997
257000
257500
258000
258500
259000
259500
260000
260500
261000
261500
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
256500
Week 1997
257000
257500
258000
258500
259000
259500
260000
260500
261000
261500
GPS Time (TOW, GMT zone)
East
North
Up

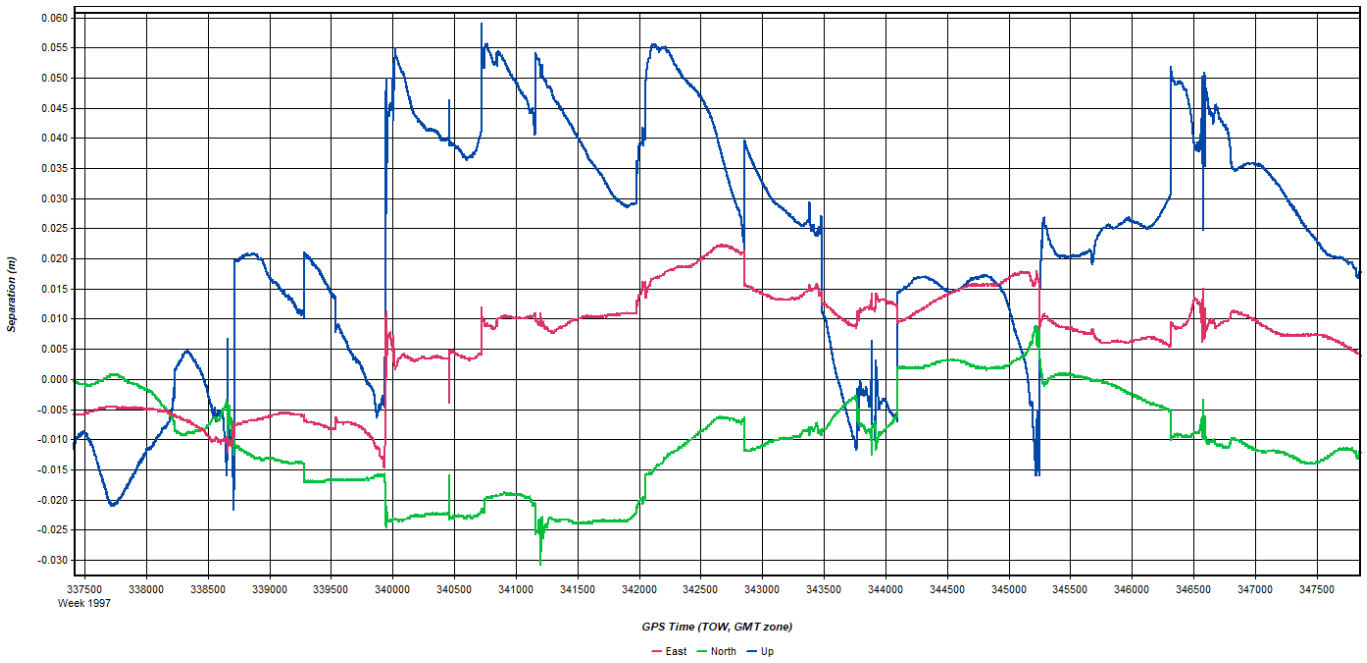
```
     Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      18342
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0142 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.011 (m)
        Height: 0.020 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (18337 occurances):
        East:   0.006 (m)
        North:  0.011 (m)
        Height: 0.020 (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 %

Baseline Distances:
        Maximum:        57.032 (km)
        Minimum:        0.077 (km)
        Average:        37.610 (km)
        First Epoch:    0.121 (km)
        Last Epoch:     4.027 (km)
```

Mission 14


10 km

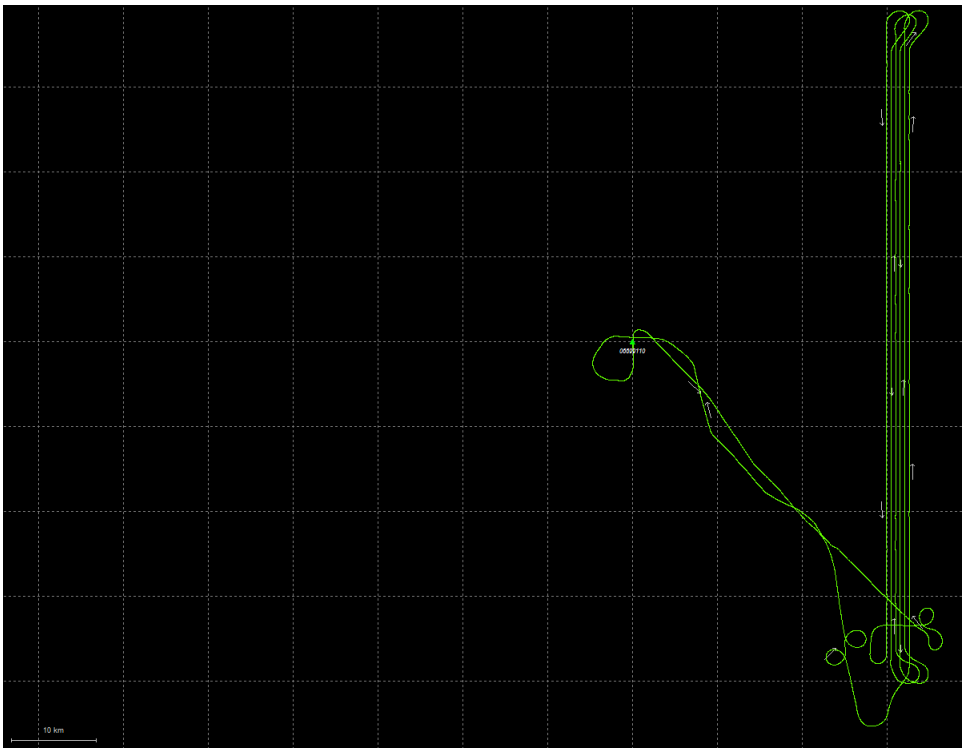

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
337500
Week 1997
338000
338500
339000
339500
340000
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
GPS Time (TOW, GMT zone)
PDOP

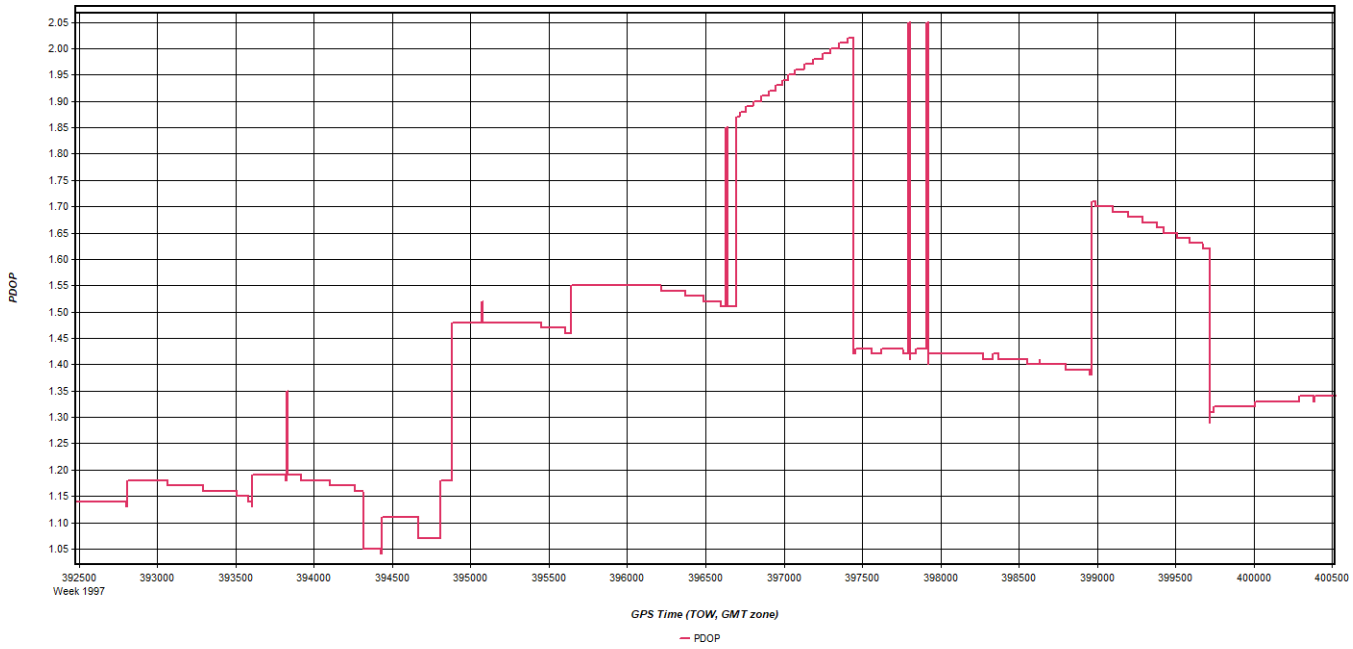

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
337500
Week 1997
338000
338500
339000
339500
340000
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
337500
Week 1997
338000
338500
339000
339500
340000
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
GPS Time (TOW, GMT zone)
East
North
Up

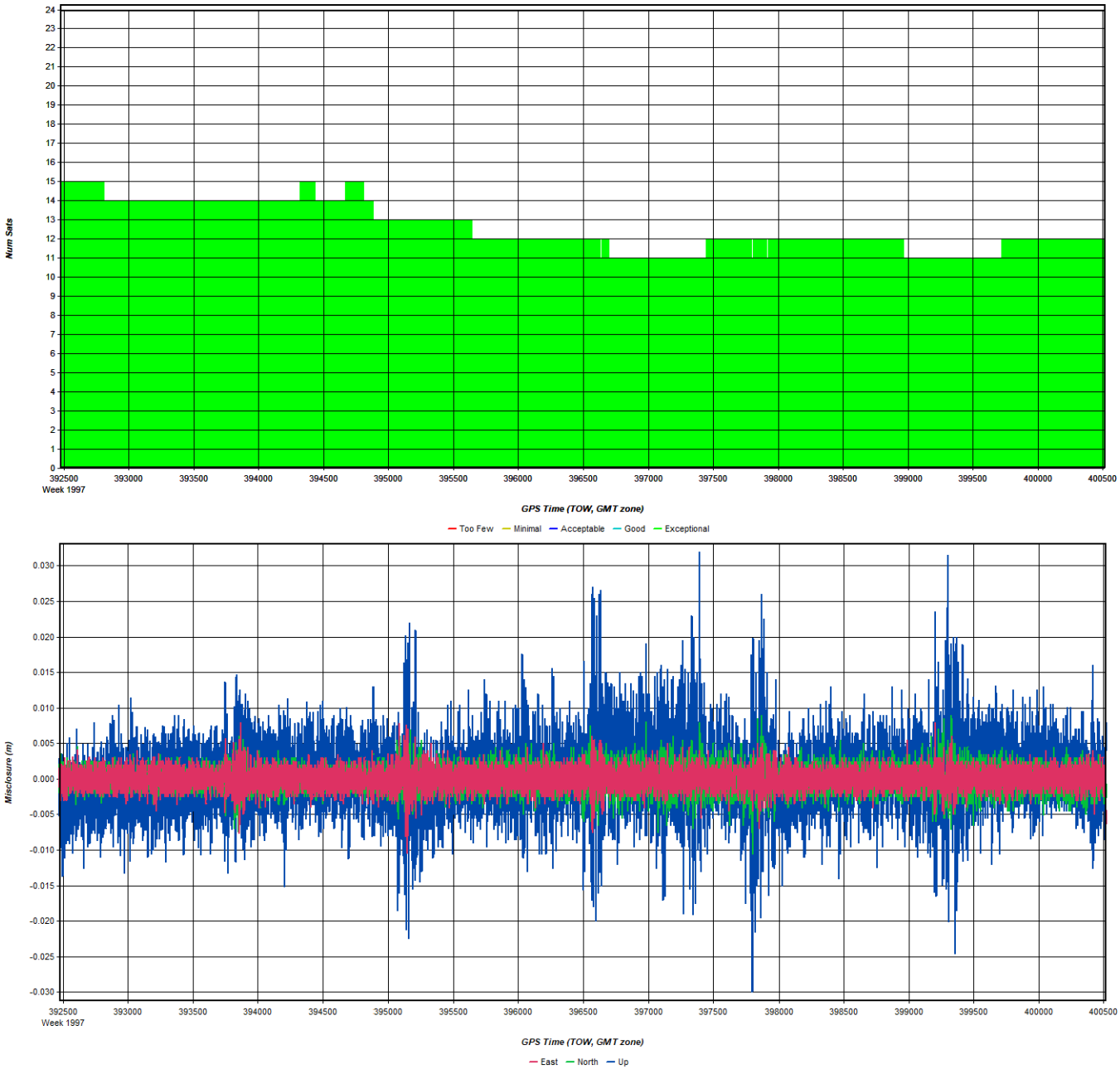

Separation (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
337500
Week 1997
338000
338500
339000
339500
340000
340500
341000
341500
342000
342500
343000
343500
344000
344500
345000
345500
346000
346500
347000
347500
GPS Time (TOW, GMT zone)
East
North
Up

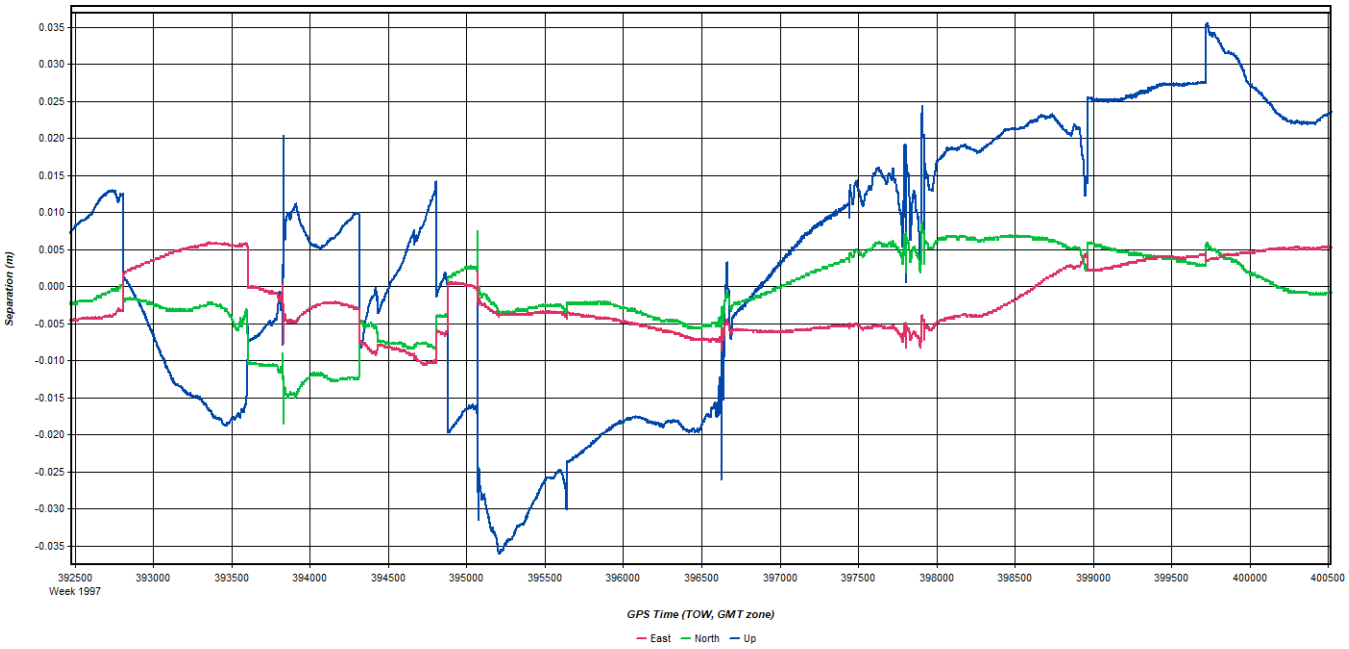
```
  Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      27575
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0170 (m)
        C/A Code:       0.32 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.010 (m)
        North:  0.012 (m)
        Height: 0.029 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (27571 occurances):
        East:   0.010 (m)
        North:  0.012 (m)
        Height: 0.029 (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 %

Baseline Distances:
        Maximum:        62.120 (km)
        Minimum:        0.045 (km)
        Average:        40.789 (km)
        First Epoch:    0.205 (km)
        Last Epoch:     1.126 (km)
```

Mission 15


10 km

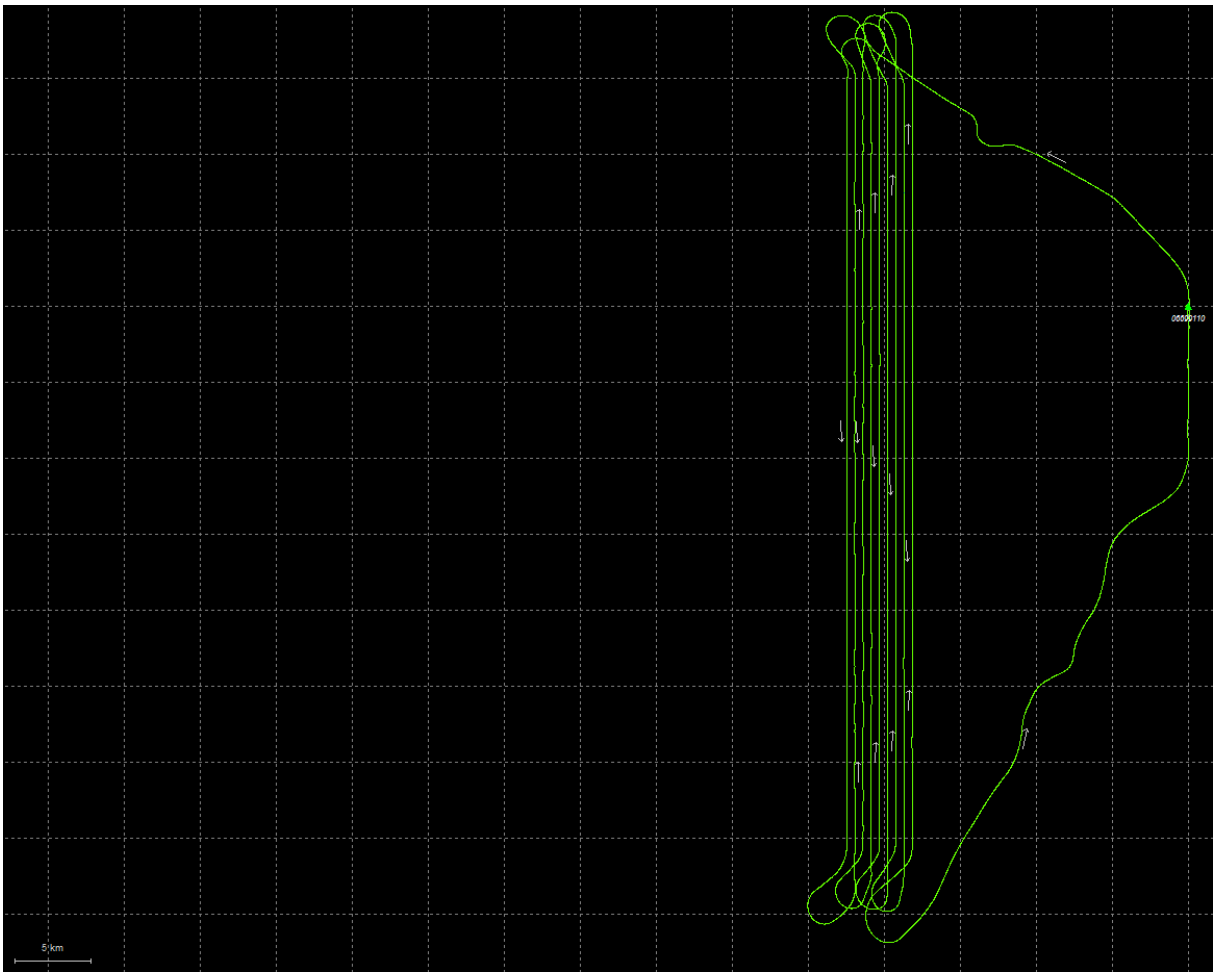

PDOP
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
392500
Week 1997
393000
393500
394000
394500
395000
395500
396000
396500
397000
397500
398000
398500
399000
399500
400000
400500
GPS Time (TOW, GMT zone)
PDOP

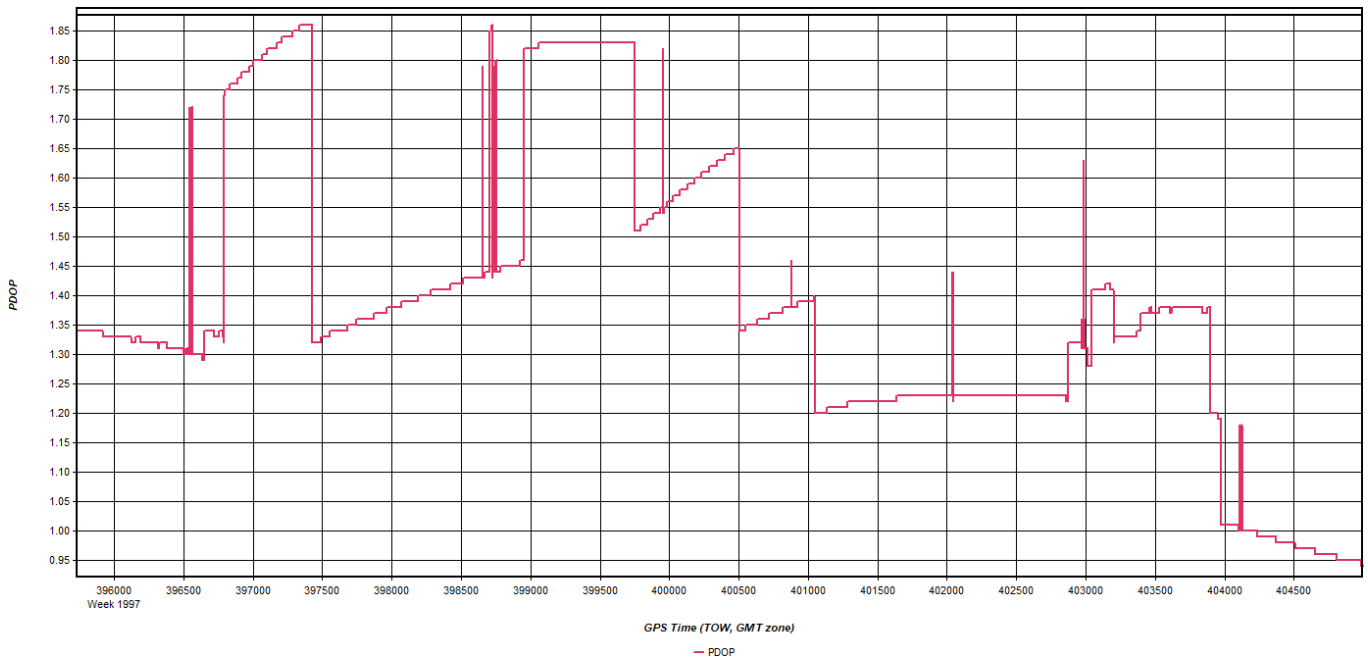

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
392500
Week 1997
393000
393500
394000
394500
395000
395500
396000
396500
397000
397500
398000
398500
399000
399500
400000
400500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
392500
Week 1997
393000
393500
394000
394500
395000
395500
396000
396500
397000
397500
398000
398500
399000
399500
400000
400500
GPS Time (TOW, GMT zone)
East
North
Up

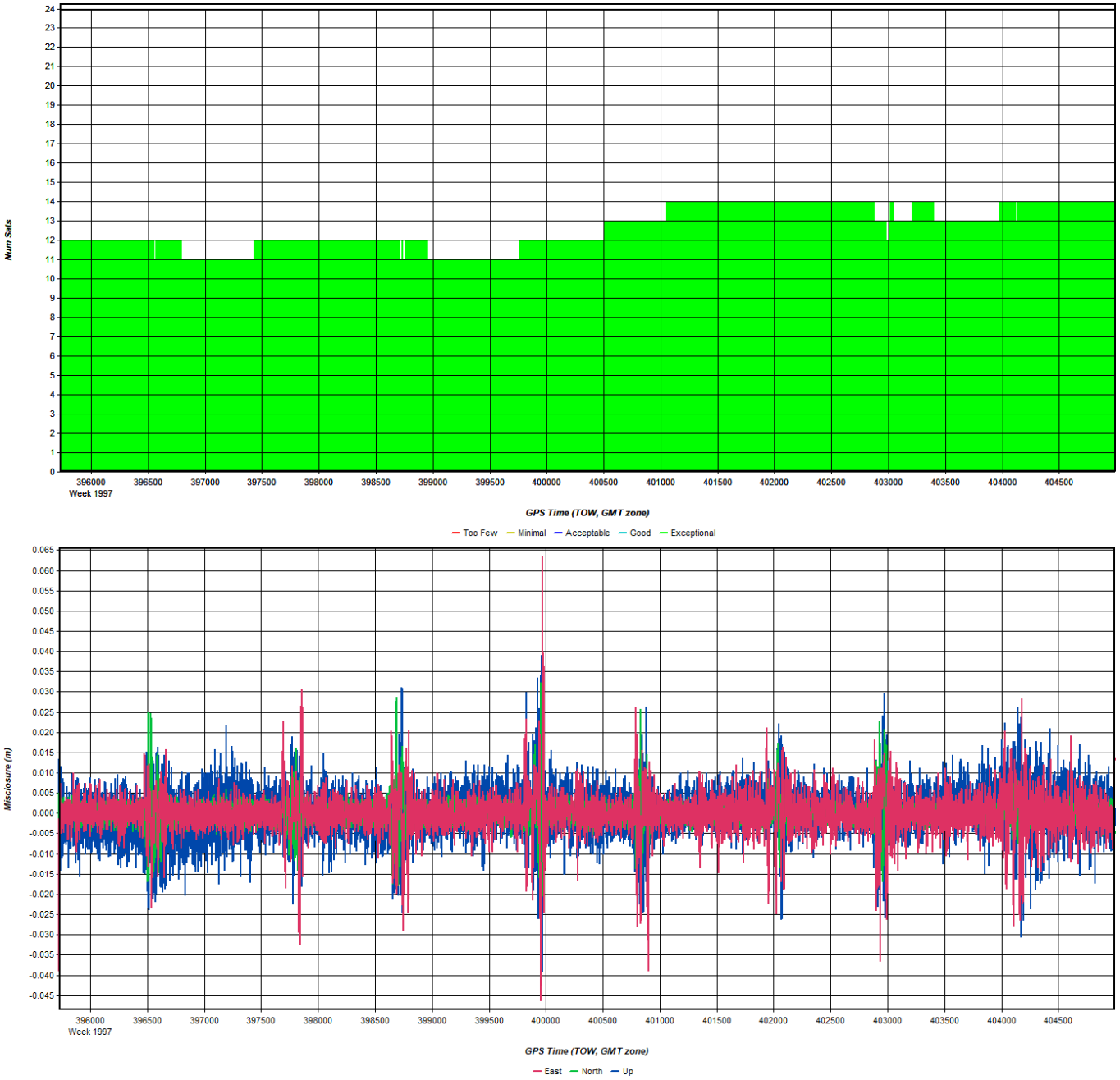

Separation (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
392500
Week 1997
393000
393500
394000
394500
395000
395500
396000
396500
397000
397500
398000
398500
399000
399500
400000
400500
GPS Time (TOW, GMT zone)
East
North
Up

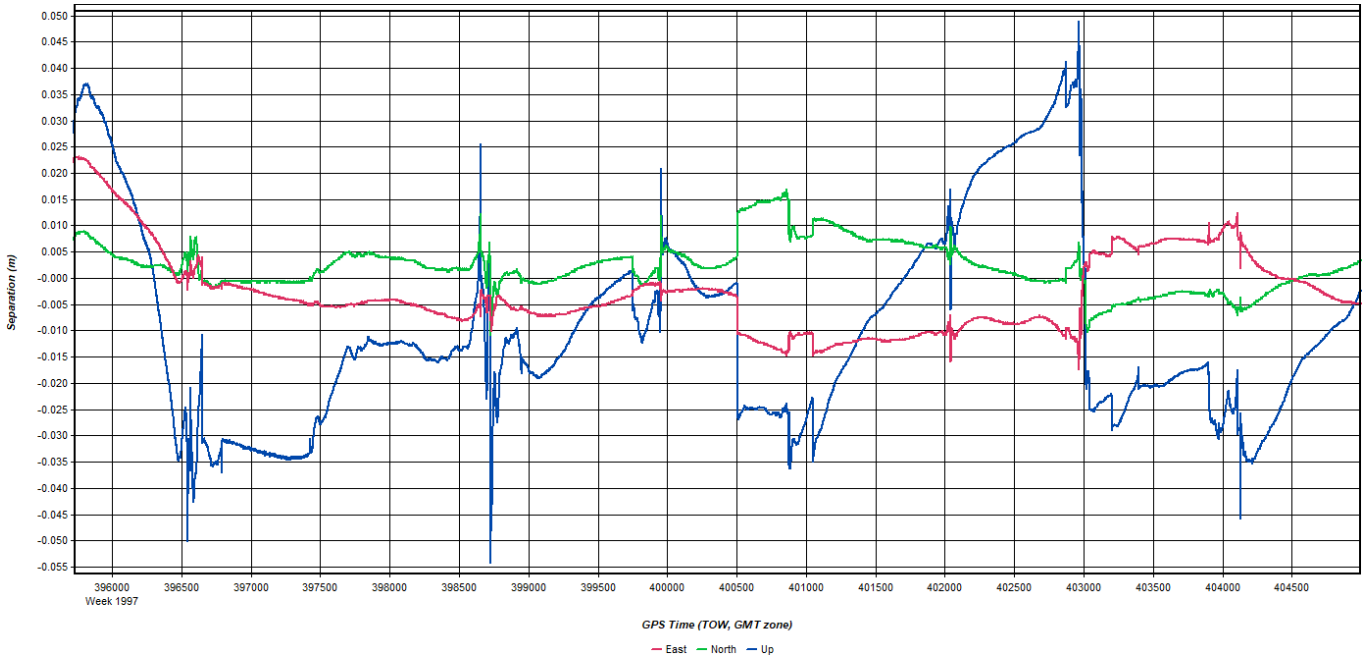
```
   Processing Summary Information
Program: Inertial Explorer
Version: 8.70.4517
Solution Type:  Combined
Number of Epochs:
        Total in GPB file:      23494
        No processed position:  2
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0152 (m)
        C/A Code:       0.39 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.006 (m)
        Height: 0.019 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (23489 occurances):
        East:   0.005 (m)
        North:  0.006 (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 %

Baseline Distances:
        Maximum:        53.535 (km)
        Minimum:        0.045 (km)
        Average:        33.799 (km)
        First Epoch:    0.114 (km)
        Last Epoch:     0.110 (km)
```

Mission 16


5 km

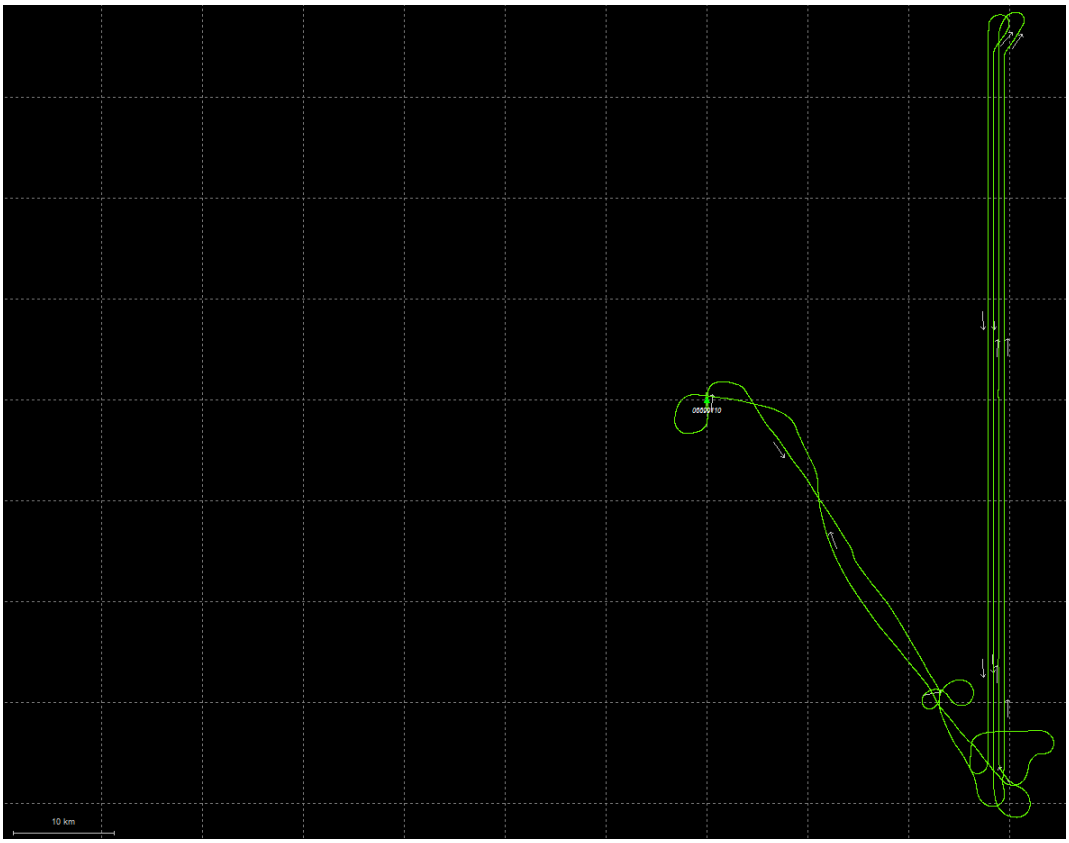

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
396000
Week 1997
396500
397000
397500
398000
398500
399000
399500
400000
400500
401000
401500
402000
402500
403000
403500
404000
404500
GPS Time (TOW, GMT zone)
PDOP

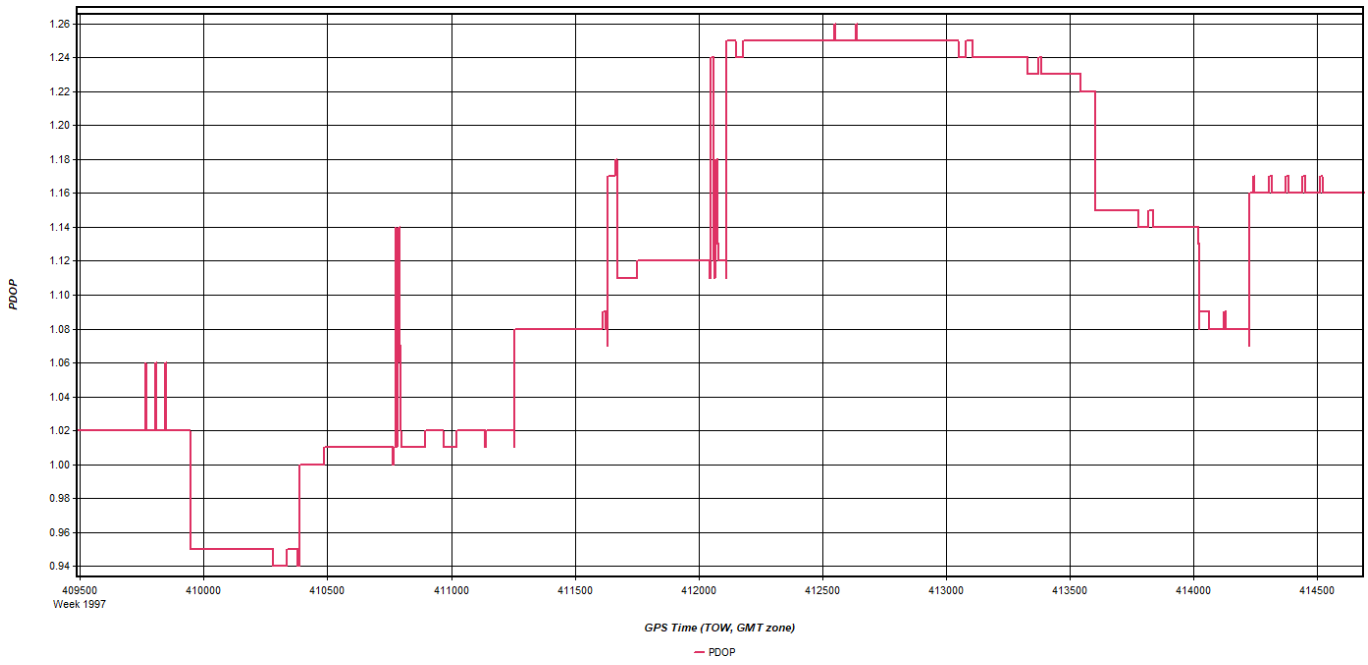

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
396000
Week 1997
396500
397000
397500
398000
398500
399000
399500
400000
400500
401000
401500
402000
402500
403000
403500
404000
404500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
396000
Week 1997
396500
397000
397500
398000
398500
399000
399500
400000
400500
401000
401500
402000
402500
403000
403500
404000
404500
GPS Time (TOW, GMT zone)
East
North
Up

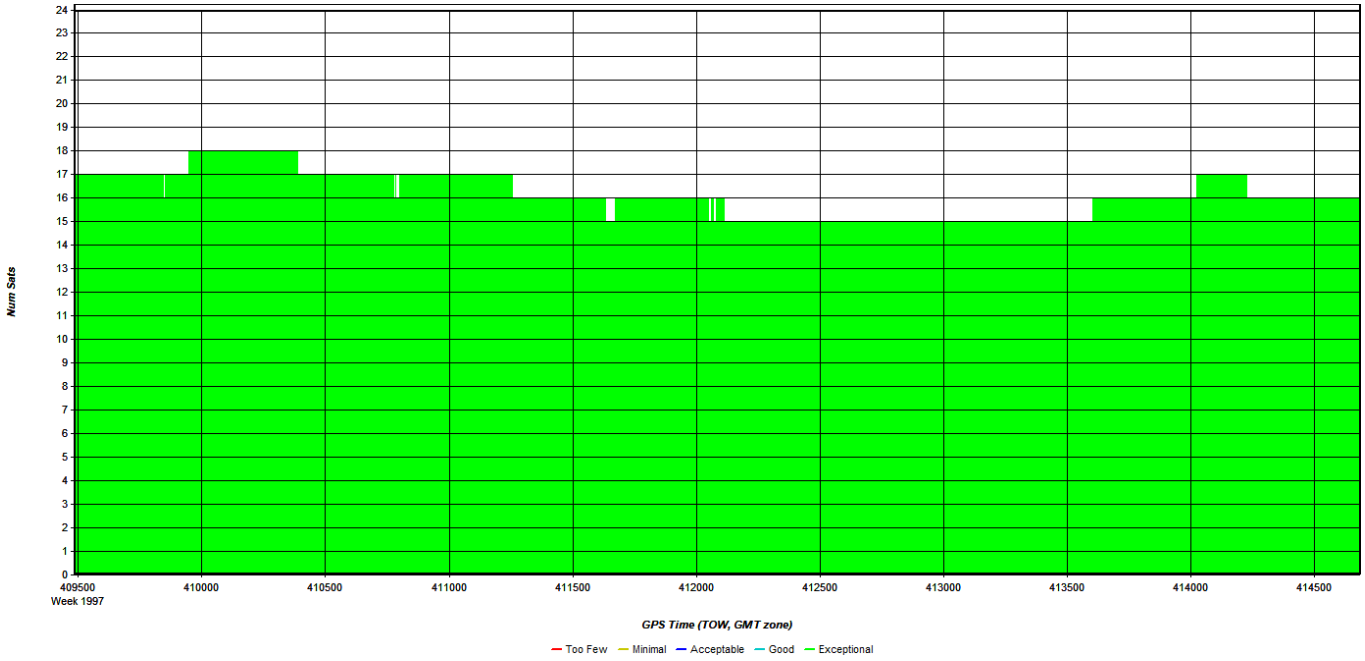

Separation (m)
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
396000
Week 1997
396500
397000
397500
398000
398500
399000
399500
400000
400500
401000
401500
402000
402500
403000
403500
404000
404500
GPS Time (TOW, GMT zone)
East
North
Up

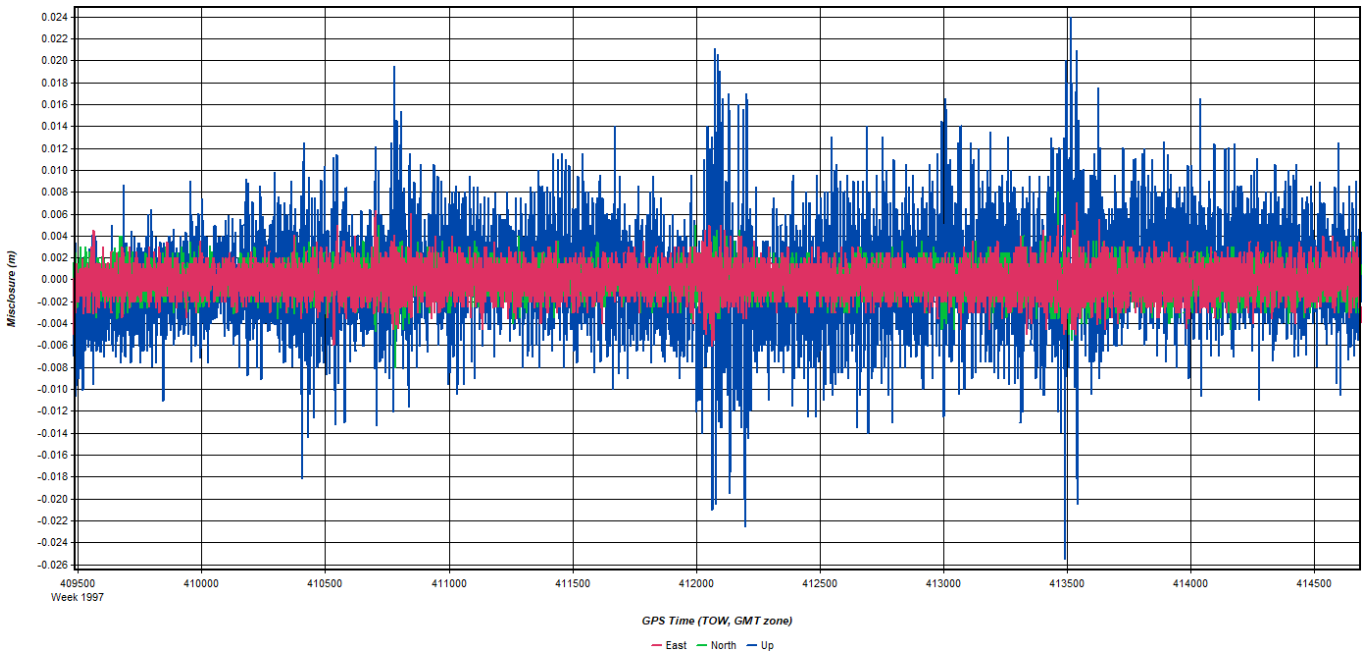
```
 Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      22967
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0184 (m)
        C/A Code:       0.52 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.009 (m)
        North:  0.005 (m)
        Height: 0.021 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (22963 occurances):
        East:   0.009 (m)
        North:  0.005 (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 %

Baseline Distances:
        Maximum:        46.966 (km)
        Minimum:        0.045 (km)
        Average:        25.378 (km)
        First Epoch:    0.127 (km)
        Last Epoch:     0.147 (km)
```

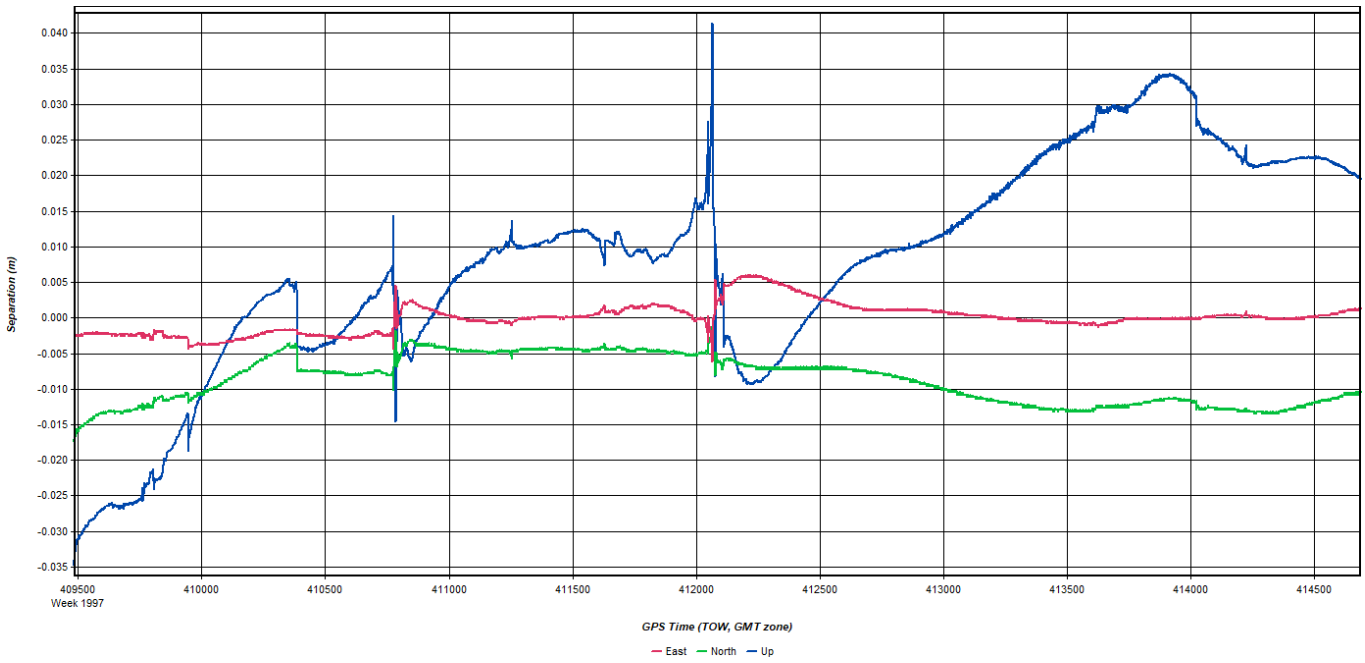
Mission 17


10 km


PDOP
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
409500
Week 1997
410000
410500
411000
411500
412000
412500
413000
413500
414000
414500
GPS Time (TOW, GMT zone)
PDOP

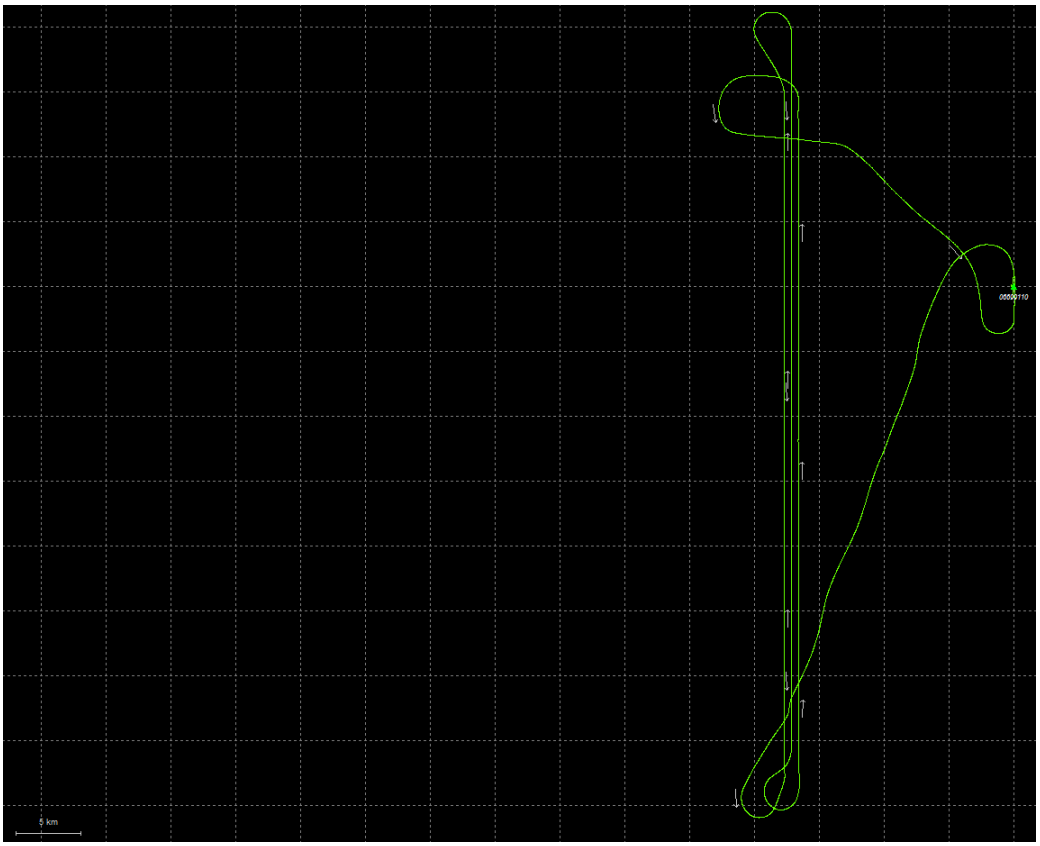

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
409500
Week 1997
410000
410500
411000
411500
412000
412500
413000
413500
414000
414500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

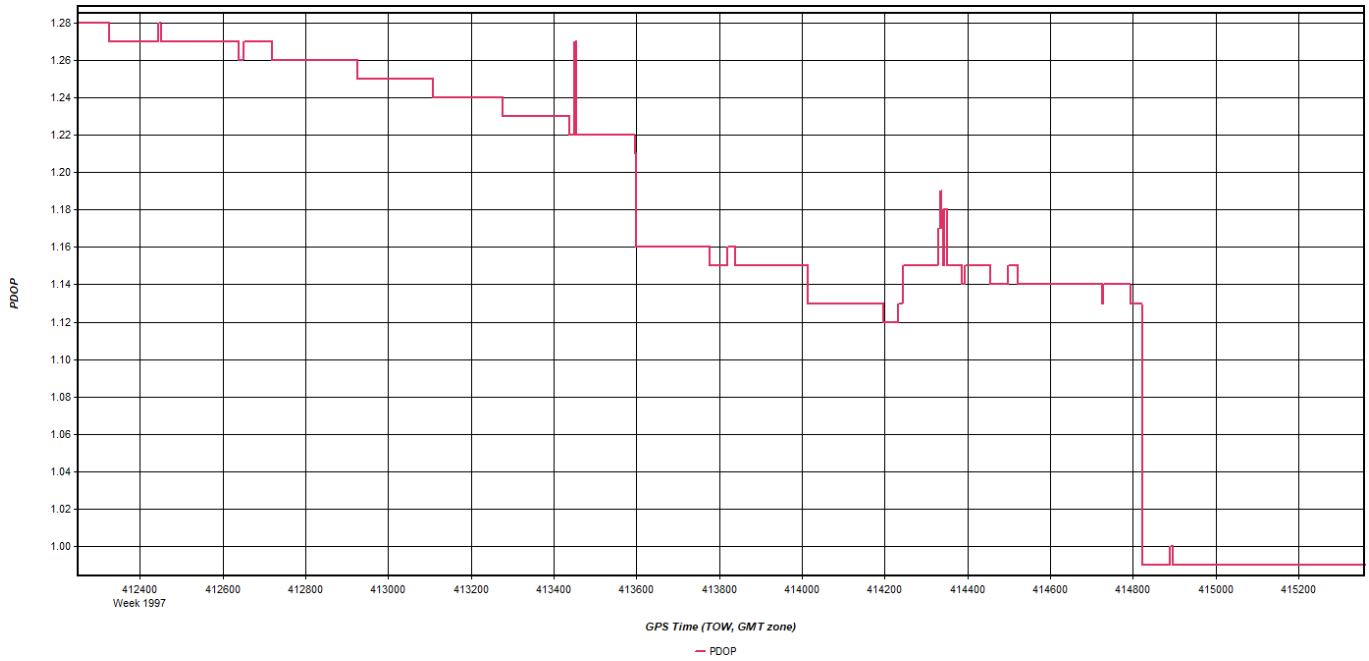

Misclosure (m)
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
409500
Week 1997
410000
410500
411000
411500
412000
412500
413000
413500
414000
414500
GPS Time (TOW, GMT zone)
East
North
Up

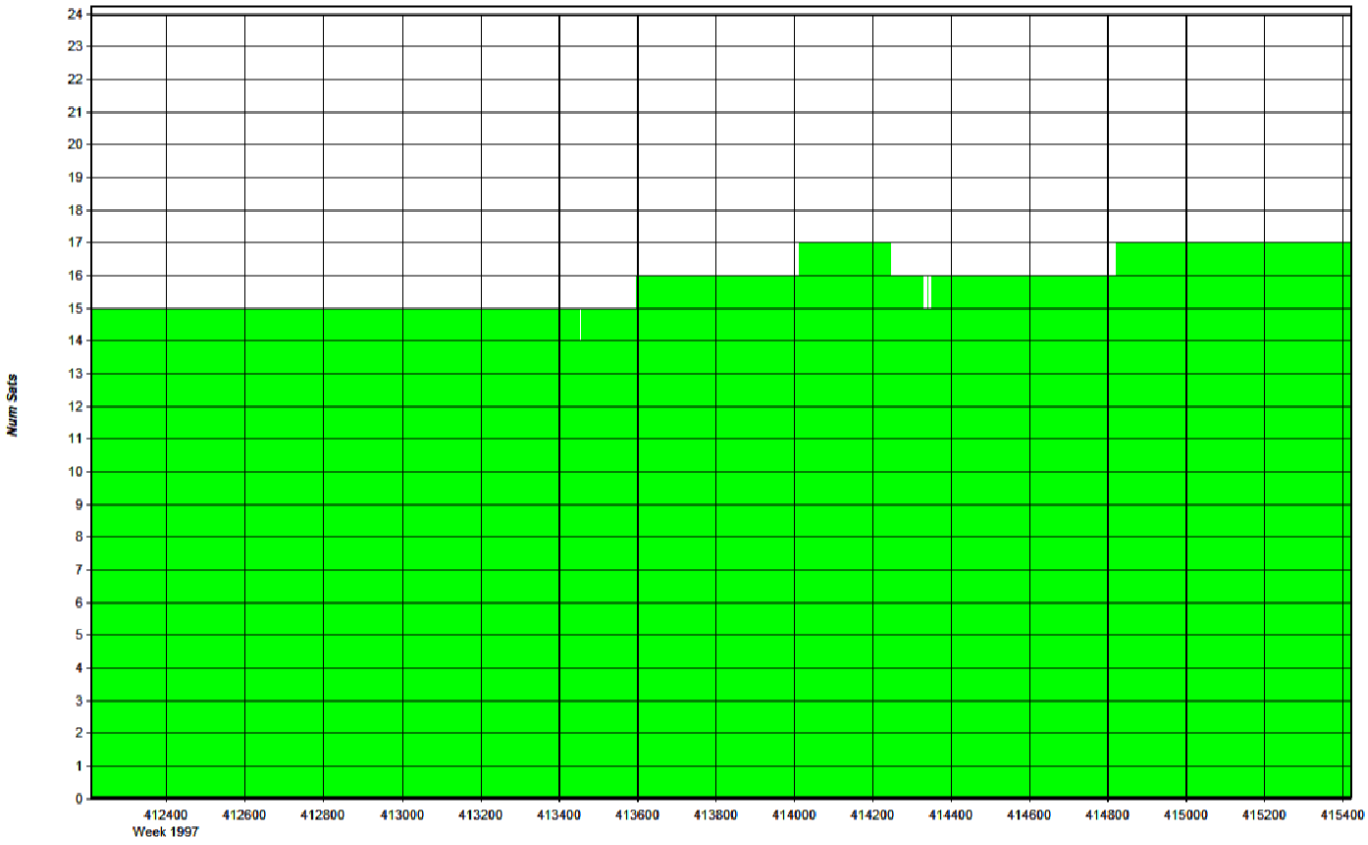

Separation (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
409500
Week 1997
410000
410500
411000
411500
412000
412500
413000
413500
414000
414500
GPS Time (TOW, GMT zone)
East
North
Up

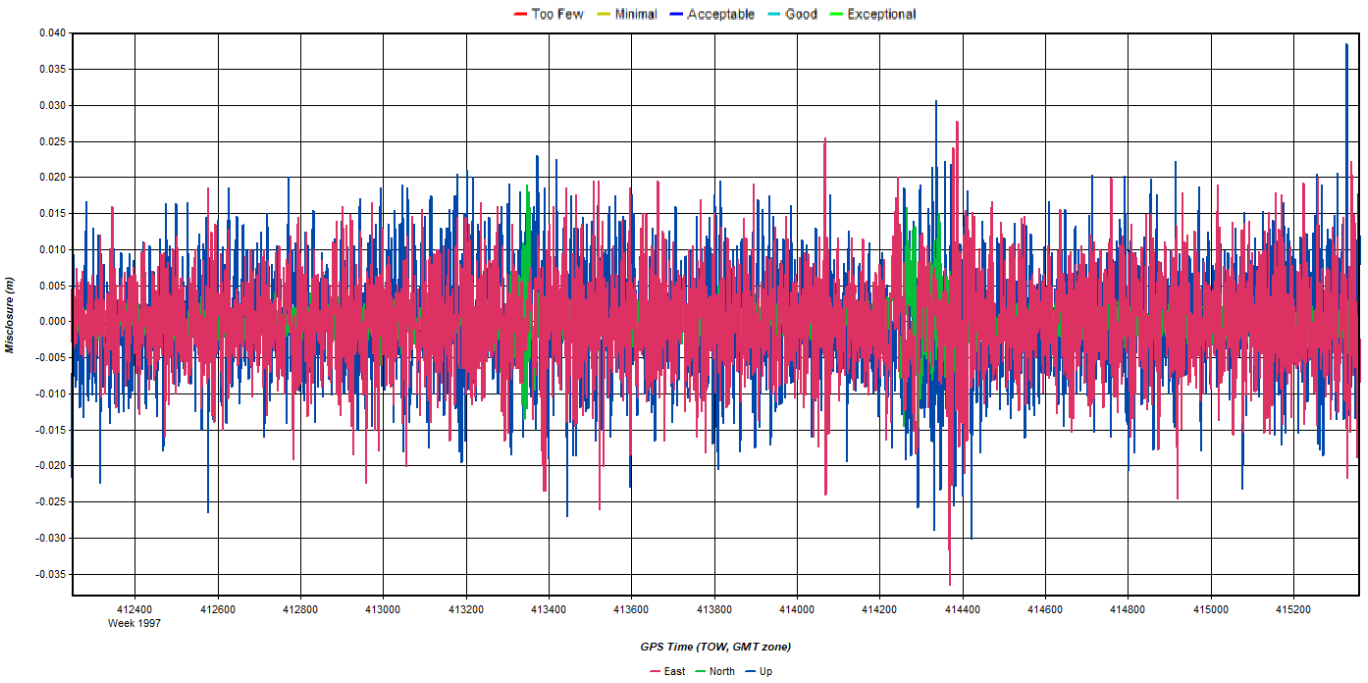
```
       Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      17046
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0134 (m)
        C/A Code:       0.32 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.003 (m)
        North:  0.009 (m)
        Height: 0.018 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (17041 occurances):
        East:   0.003 (m)
        North:  0.009 (m)
        Height: 0.017 (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 %

Baseline Distances:
        Maximum:        51.563 (km)
        Minimum:        0.045 (km)
        Average:        30.420 (km)
        First Epoch:    0.205 (km)
        Last Epoch:     0.114 (km)
```

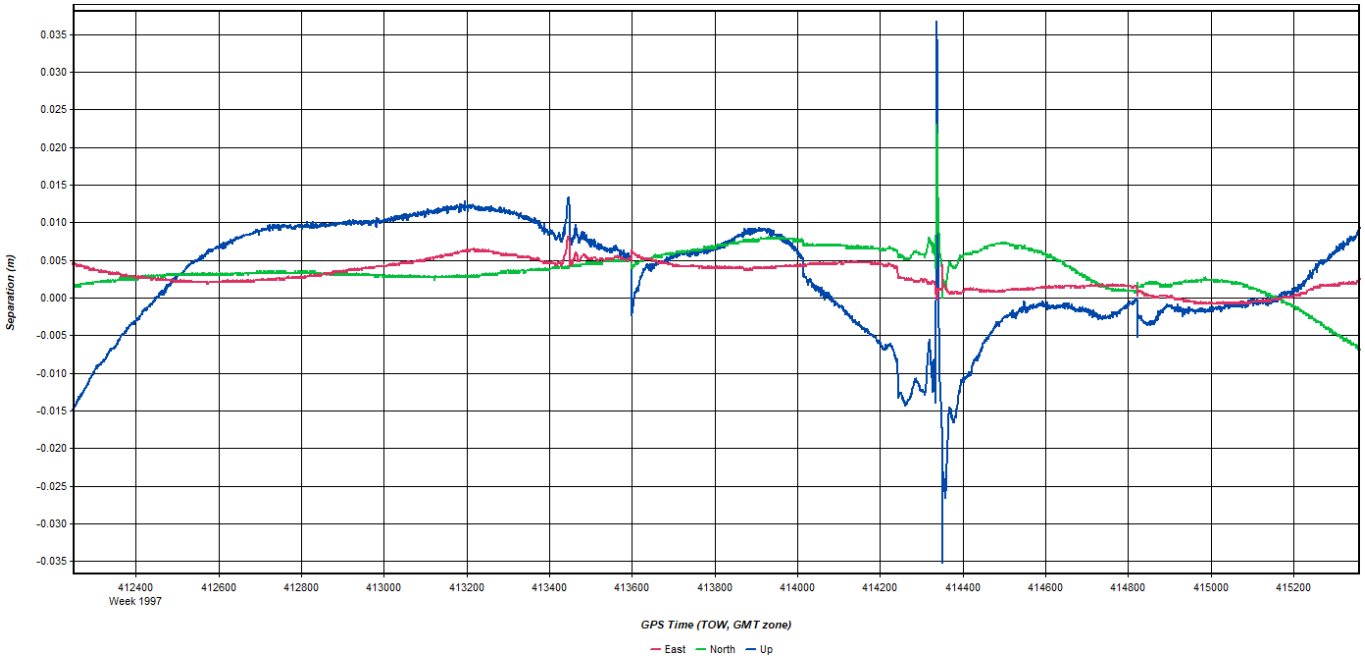
Mission 18


5 km


PDOP
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
412400
Week 1997
412600
412800
413000
413200
413400
413600
413800
414000
414200
414400
414600
414800
415000
415200
GPS Time (TOW, GMT zone)
PDOP

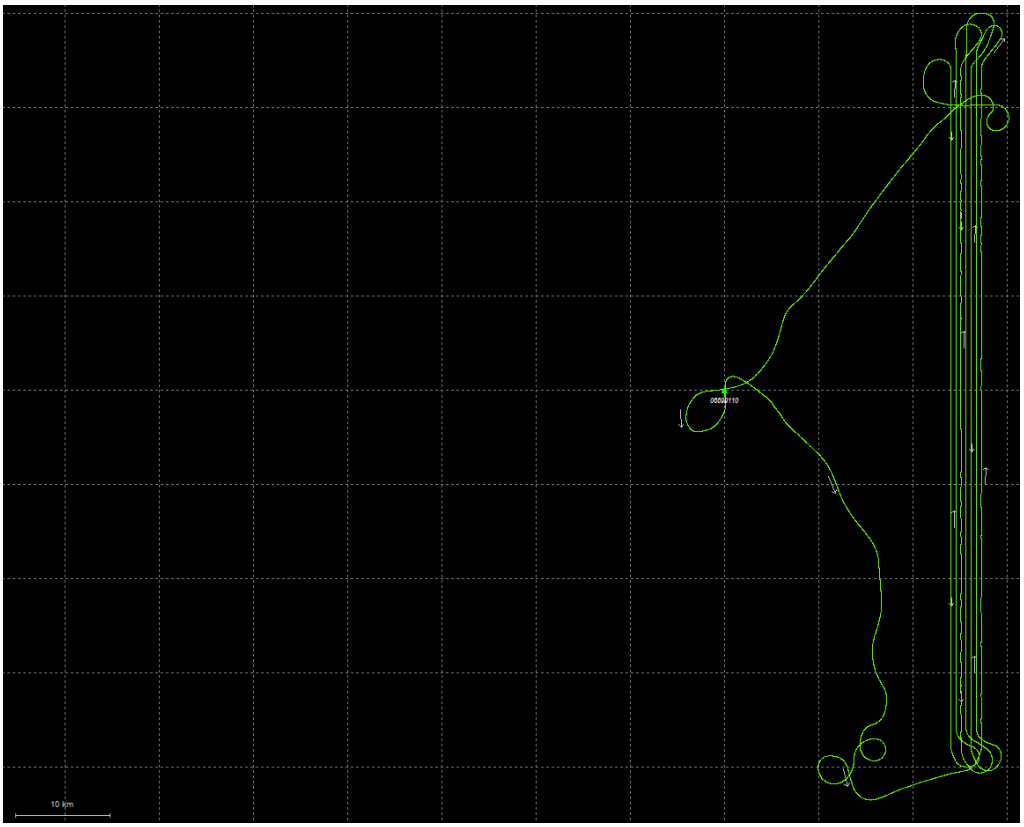

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
412400
Week 1997
412600
412800
413000
413200
413400
413600
413800
414000
414200
414400
414600
414800
415000
415200
415400
GPS Time (TOW, GMT zone)

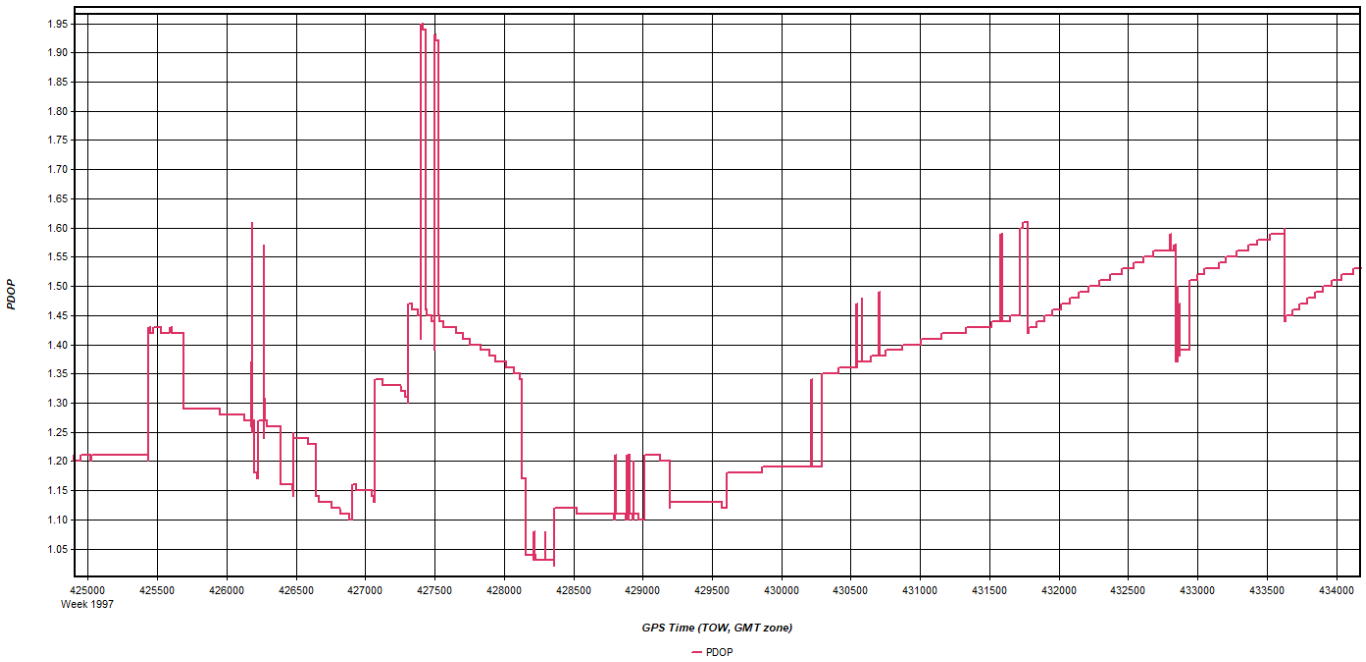

Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
412400
Week 1997
412600
412800
413000
413200
413400
413600
413800
414000
414200
414400
414600
414800
415000
415200
GPS Time (TOW, GMT zone)
East
North
Up

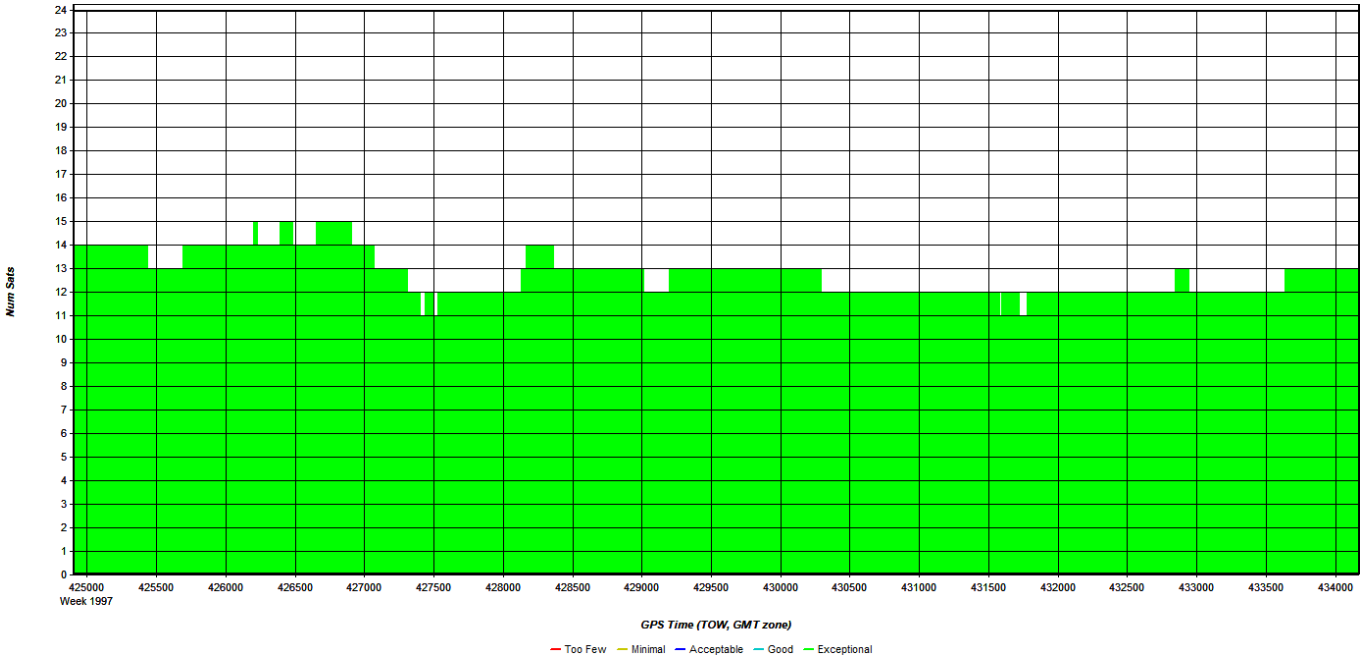

0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
Separation (m)
412400
Week 1997
412600
412800
413000
413200
413400
413600
413800
414000
414200
414400
414600
414800
415000
415200
GPS Time (TOW, GMT zone)
East
North
Up

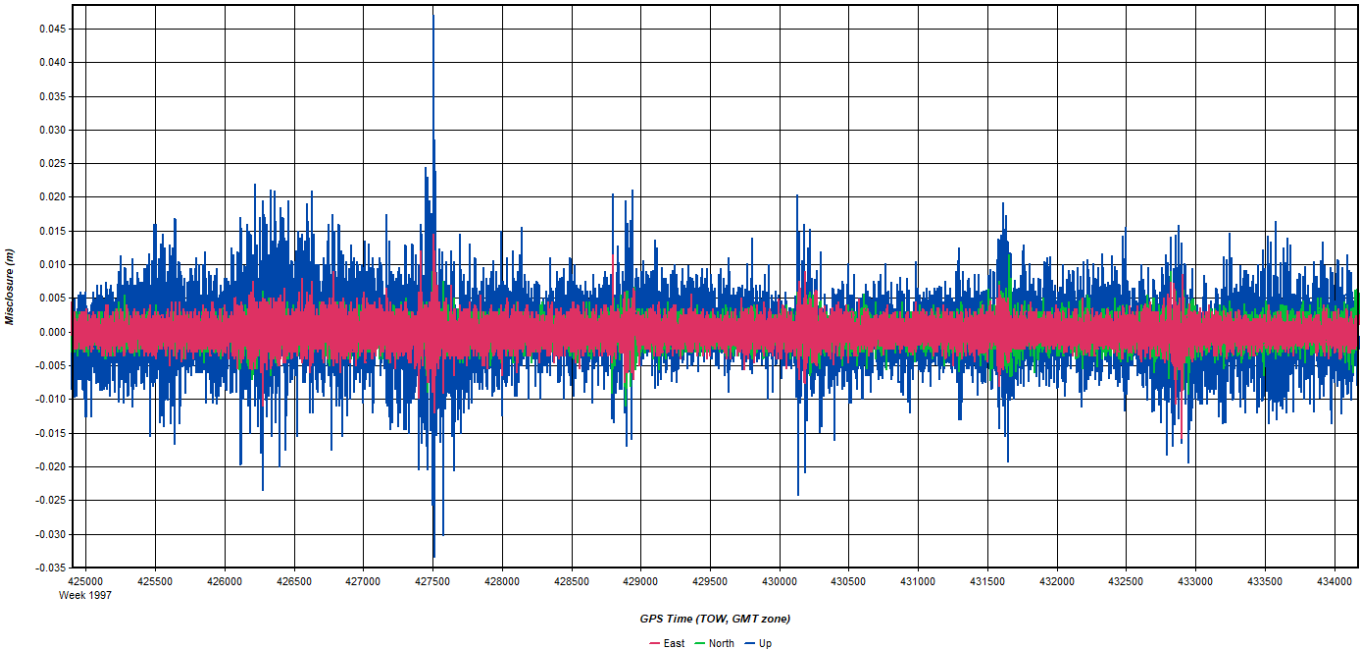
```
 Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      10834
        No processed position:  1
        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:       0.31 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.004 (m)
        North:  0.004 (m)
        Height: 0.008 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (10830 occurances):
        East:   0.004 (m)
        North:  0.004 (m)
        Height: 0.008 (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:        44.953 (km)
        Minimum:        0.045 (km)
        Average:        20.387 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.147 (km)
```

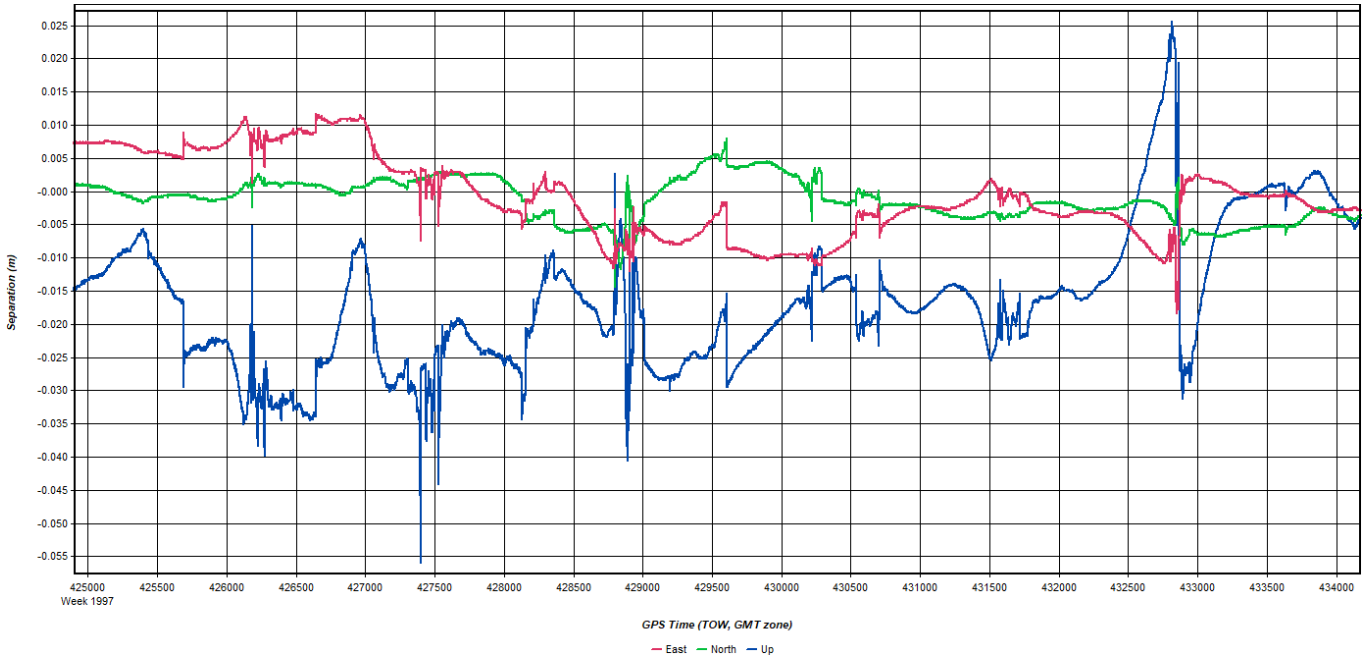
Mission 19


10 km


PDOP
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
425000
Week 1997
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
GPS Time (TOW, GMT zone)
PDOP

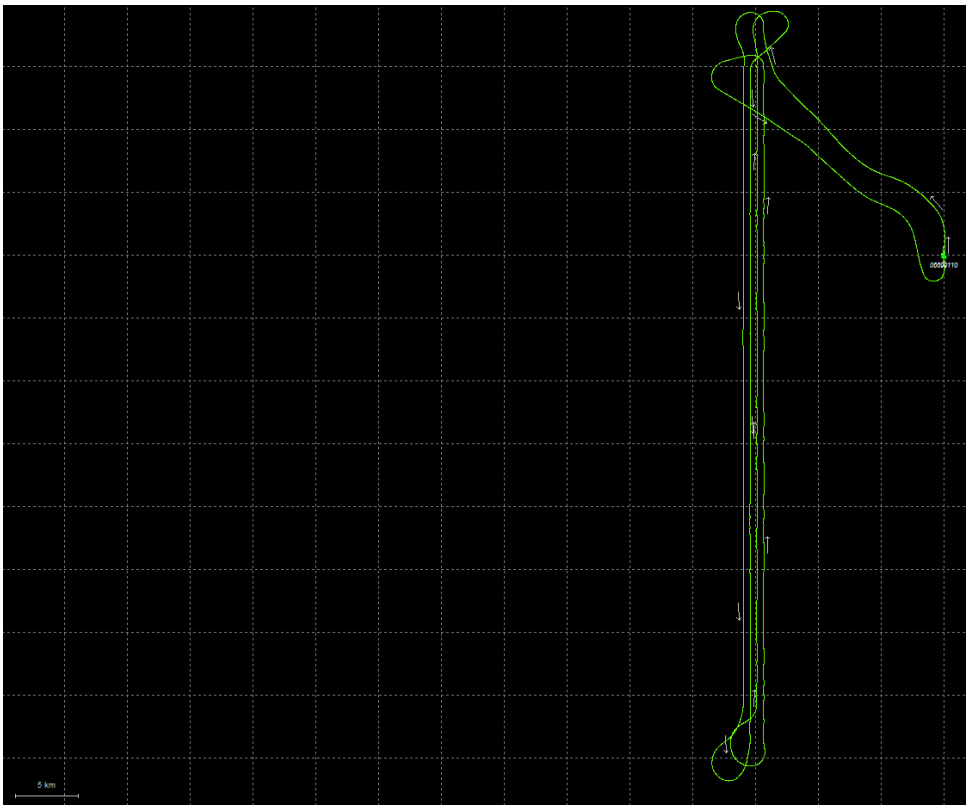

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
425000
Week 1997
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

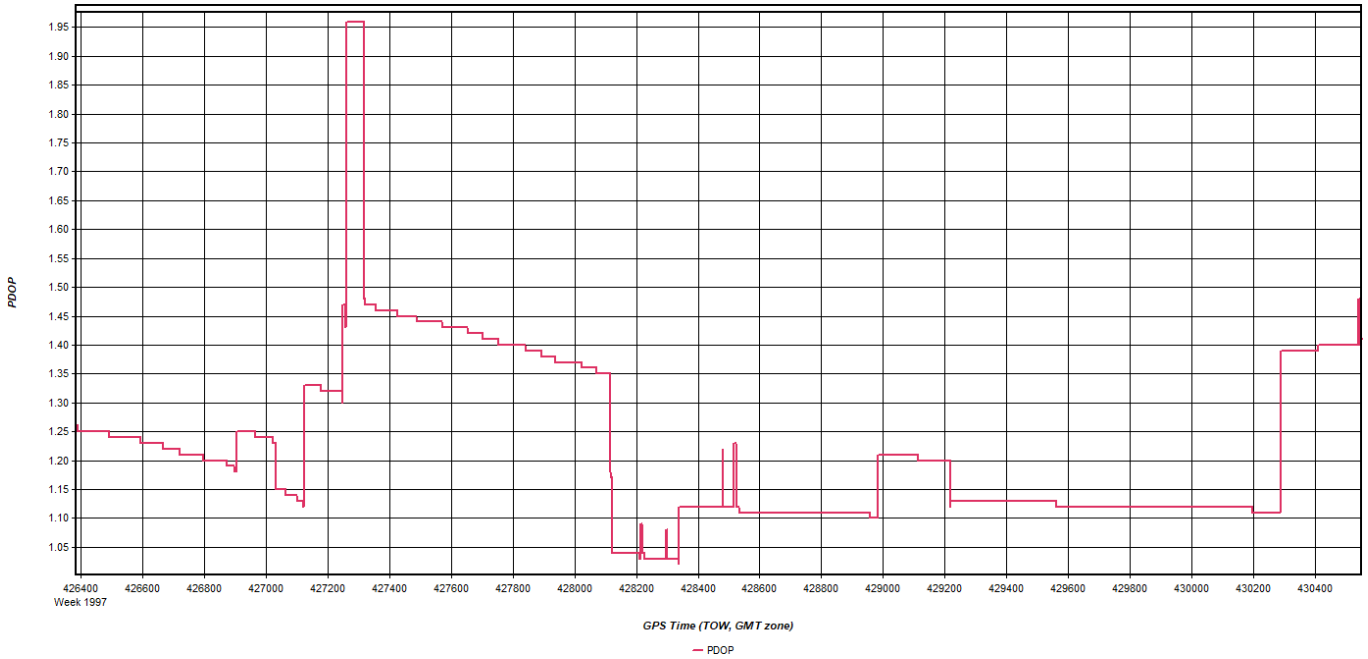

Misclosure (m)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
425000
Week 1997
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
GPS Time (TOW, GMT zone)
East
North
Up

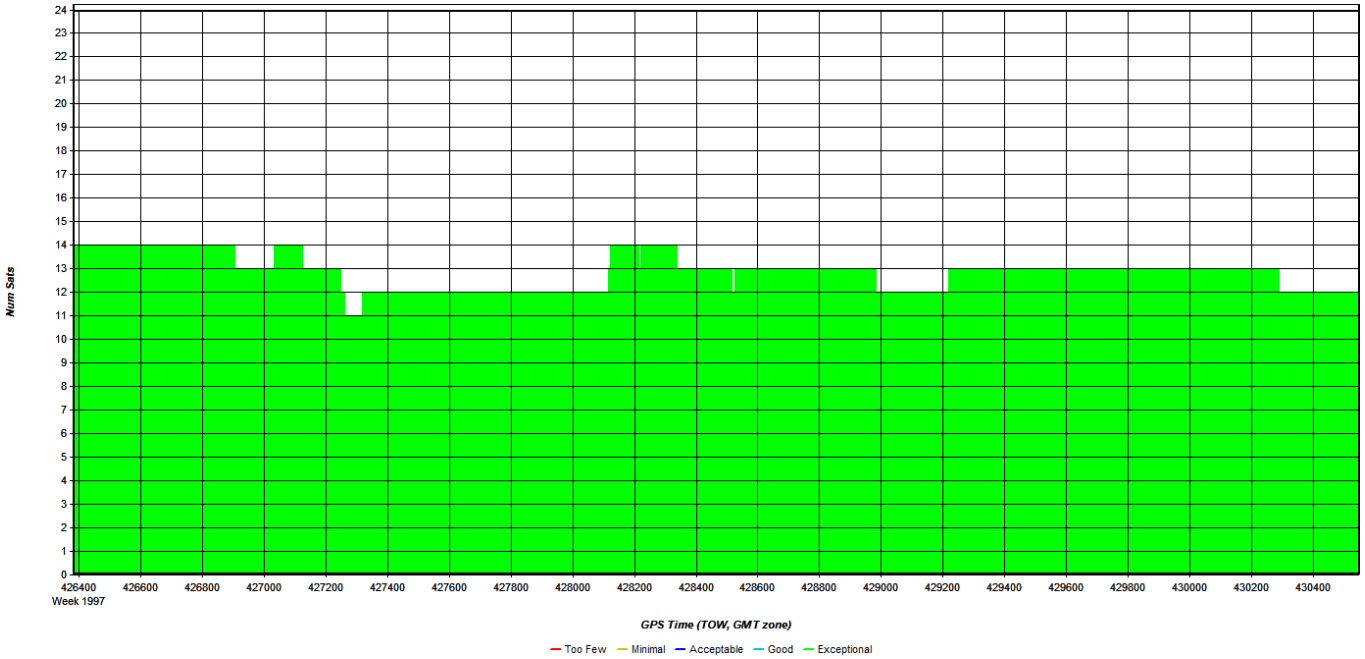

0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
Separation (m)
425000
Week 1997
425500
426000
426500
427000
427500
428000
428500
429000
429500
430000
430500
431000
431500
432000
432500
433000
433500
434000
GPS Time (TOW, GMT zone)
East
North
Up

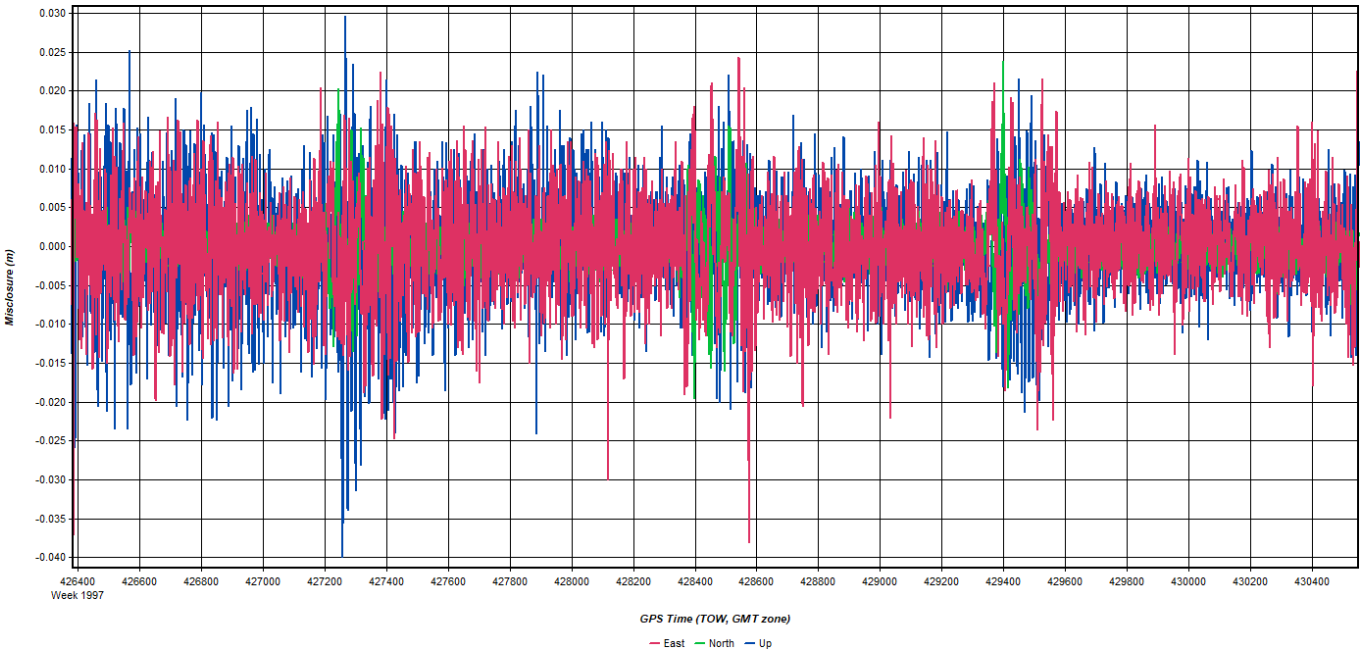
```
   Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      24949
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0147 (m)
        C/A Code:       0.31 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.007 (m)
        North:  0.004 (m)
        Height: 0.017 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (24945 occurances):
        East:   0.007 (m)
        North:  0.004 (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 %

Baseline Distances:
        Maximum:        49.275 (km)
        Minimum:        0.045 (km)
        Average:        31.025 (km)
        First Epoch:    0.118 (km)
        Last Epoch:     0.121 (km)
```

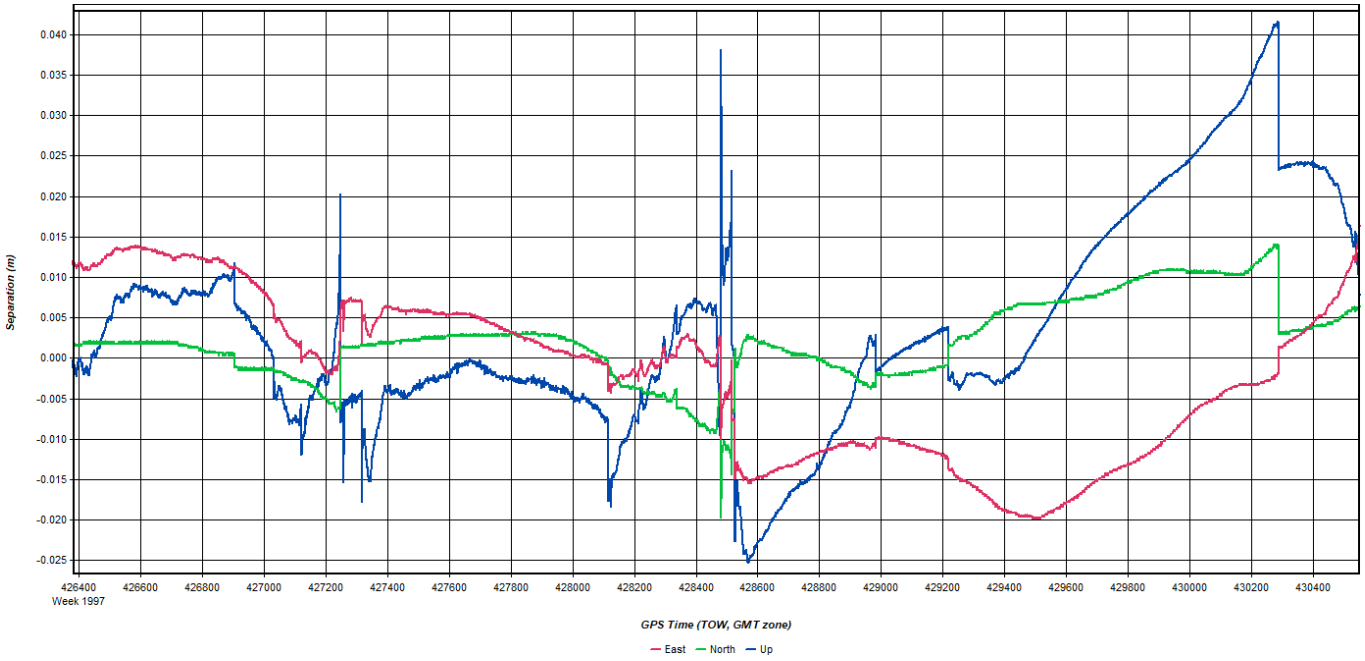
Mission 20


5 km


PDOP
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
426400
Week 1997
426600
426800
427000
427200
427400
427600
427800
428000
428200
428400
428600
428800
429000
429200
429400
429600
429800
430000
430200
430400
GPS Time (TOW, GMT zone)
PDOP

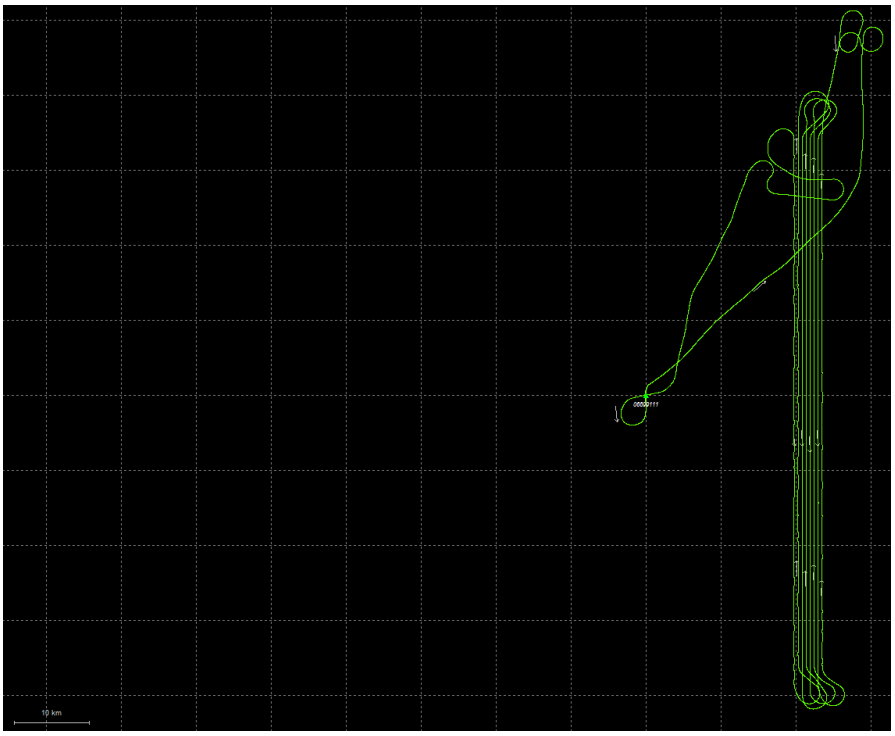

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
426400
Week 1997
426600
426800
427000
427200
427400
427600
427800
428000
428200
428400
428600
428800
429000
429200
429400
429600
429800
430000
430200
430400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

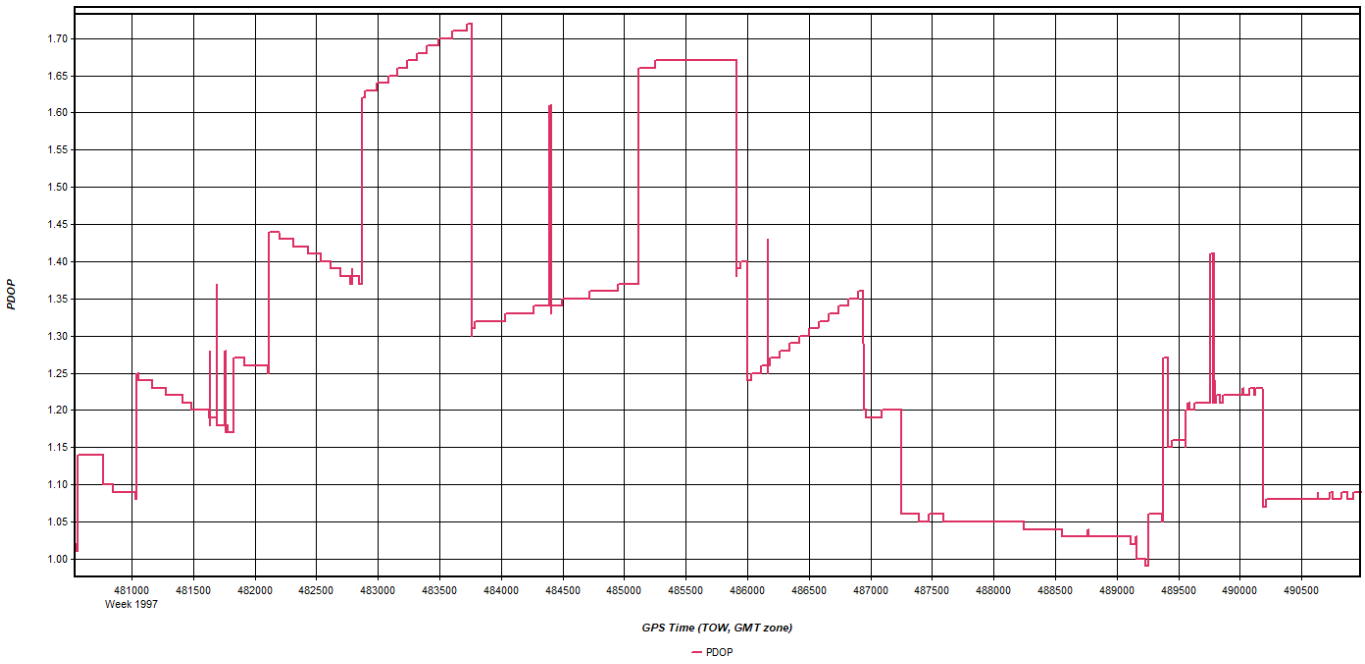

Misclosure (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
426400
Week 1997
426600
426800
427000
427200
427400
427600
427800
428000
428200
428400
428600
428800
429000
429200
429400
429600
429800
430000
430200
430400
GPS Time (TOW, GMT zone)
East
North
Up

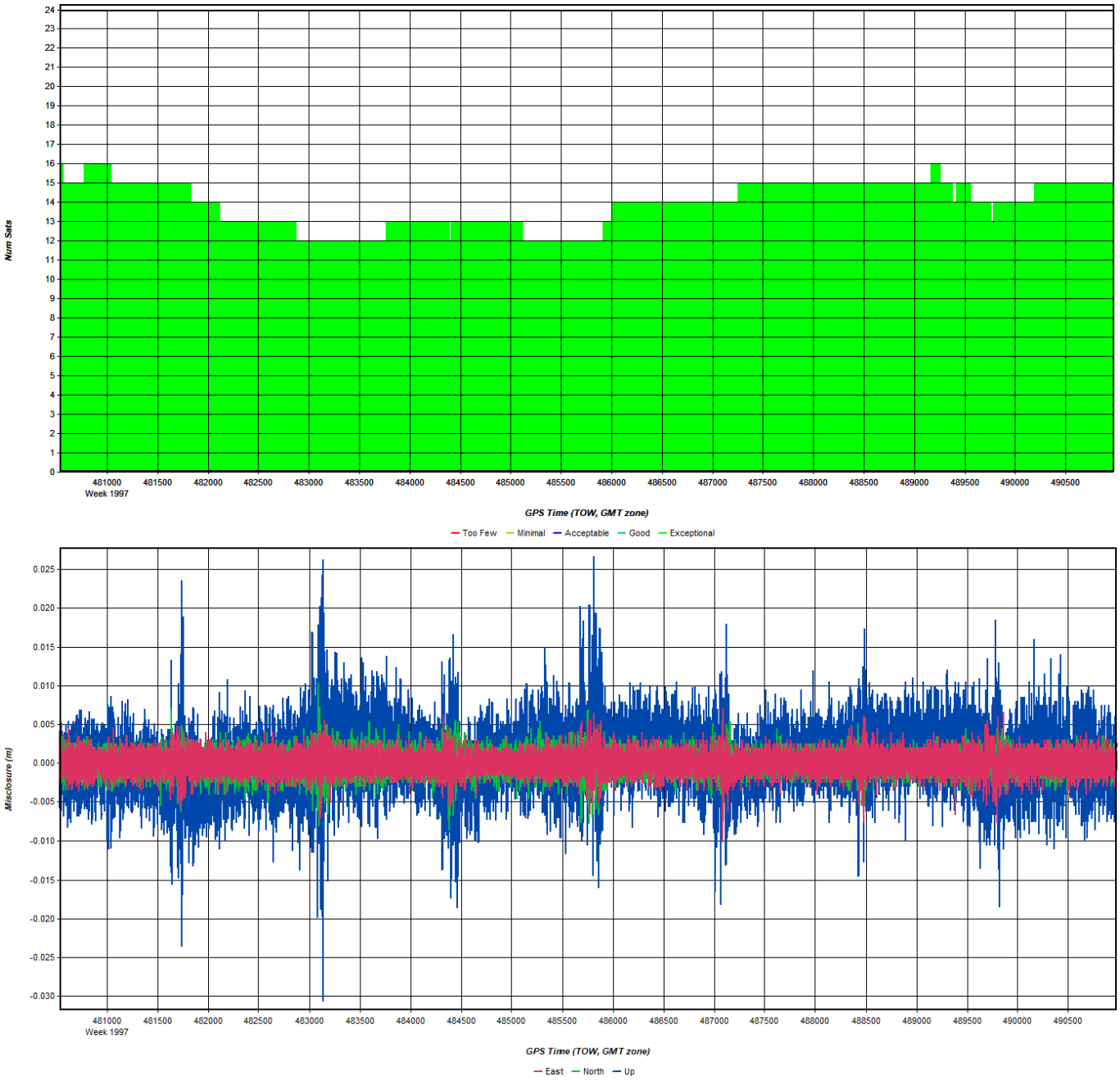

Separation (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
426400
Week 1997
426600
426800
427000
427200
427400
427600
427800
428000
428200
428400
428600
428800
429000
429200
429400
429600
429800
430000
430200
430400
GPS Time (TOW, GMT zone)
East
North
Up

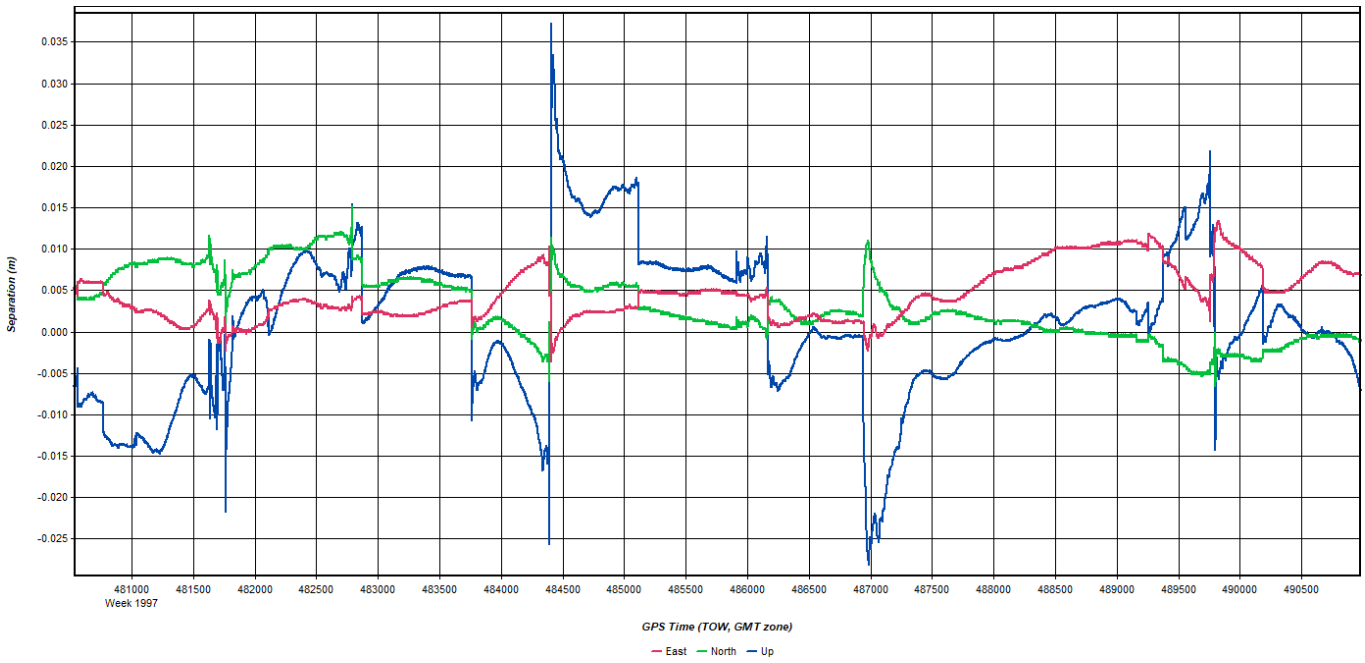
```
   Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      12429
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0168 (m)
        C/A Code:       0.37 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.011 (m)
        North:  0.005 (m)
        Height: 0.015 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (12424 occurances):
        East:   0.011 (m)
        North:  0.005 (m)
        Height: 0.014 (m)

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

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

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

Baseline Distances:
        Maximum:        44.909 (km)
        Minimum:        0.044 (km)
        Average:        18.916 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.180 (km)
```

Mission 21


10 km

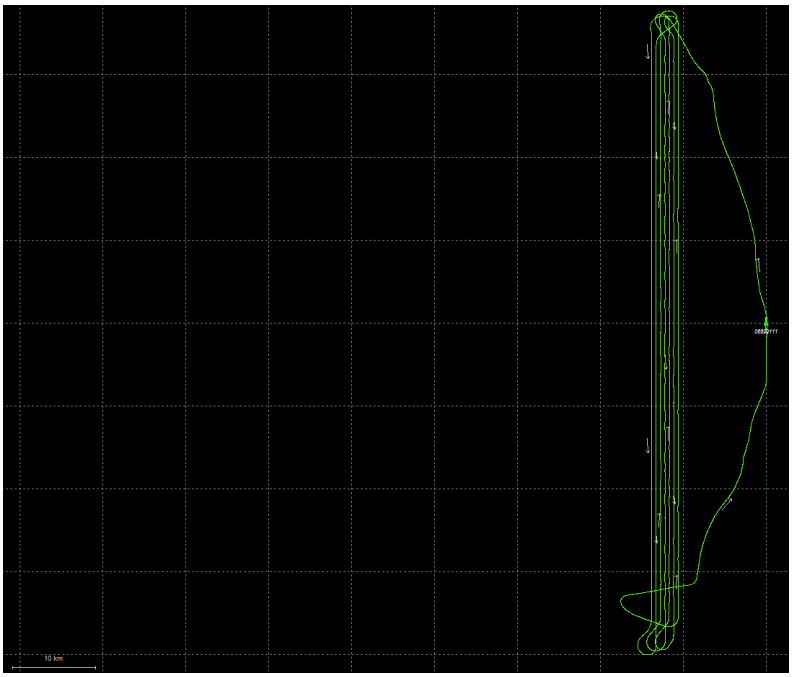

PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
481000
Week 1997
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
490500
GPS Time (TOW, GMT zone)
PDOP

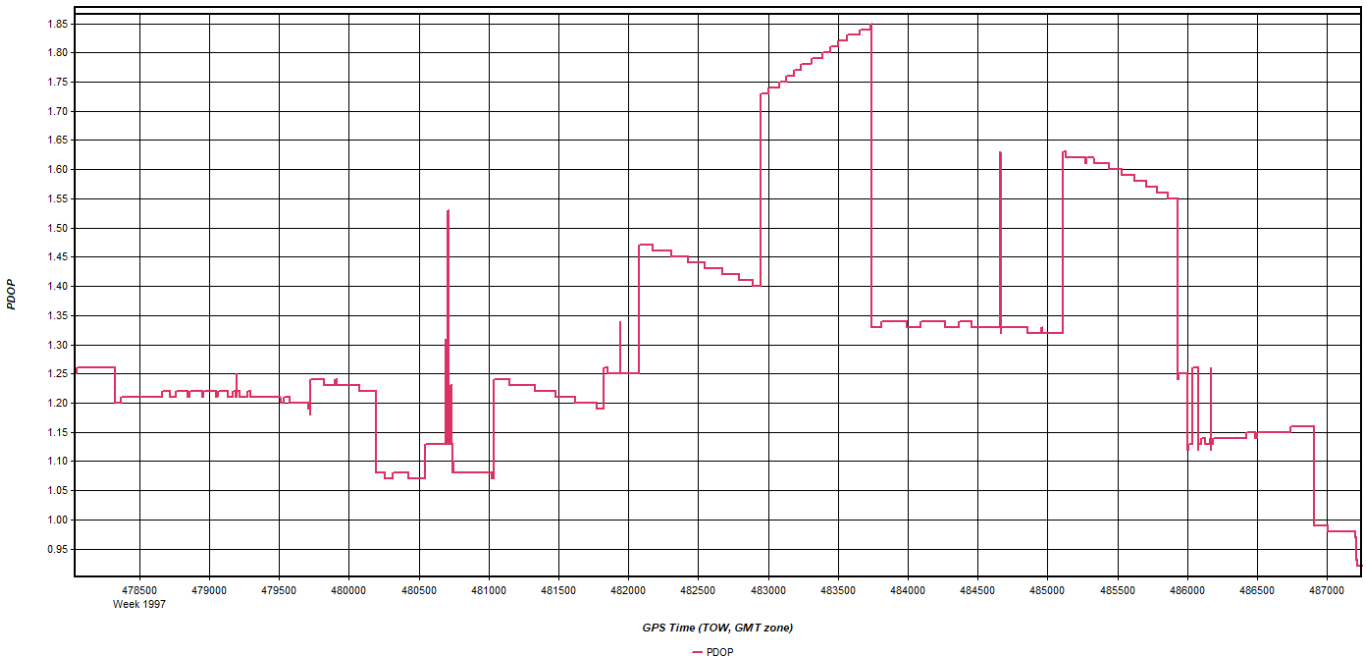

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
481000
Week 1997
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
490500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
481000
Week 1997
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
490500
GPS Time (TOW, GMT zone)
East
North
Up

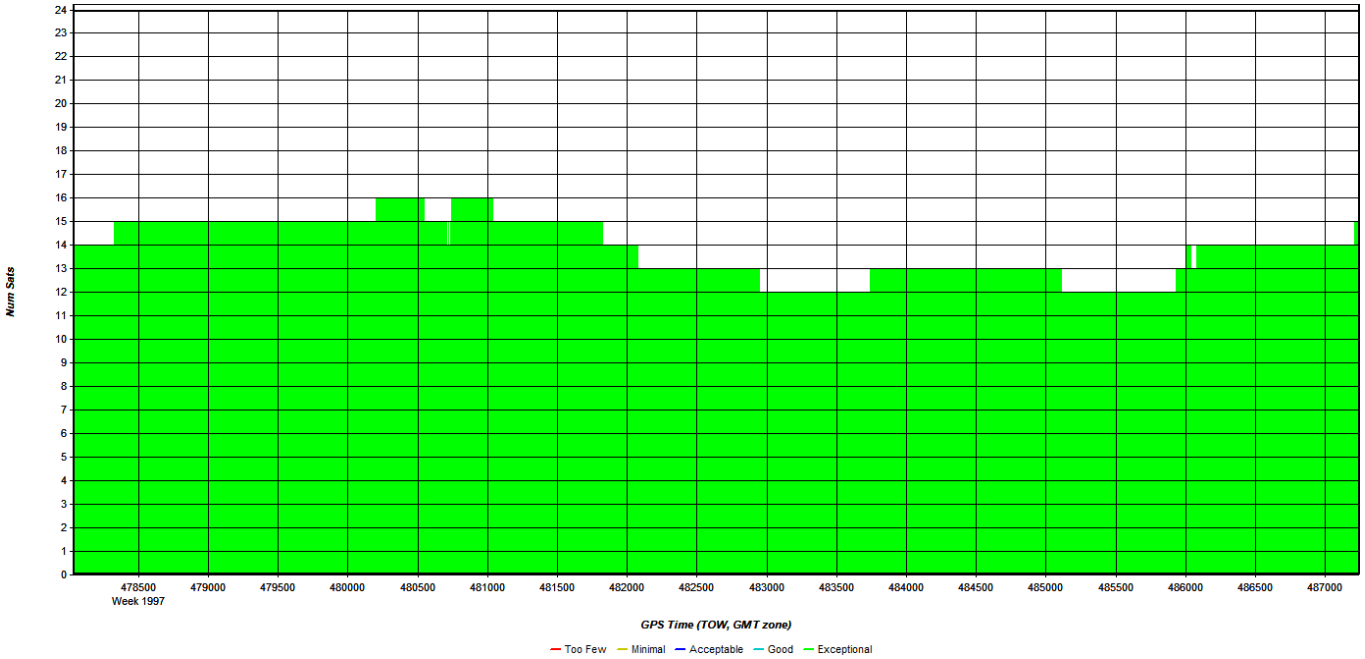

Separation (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
481000
Week 1997
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
487500
488000
488500
489000
489500
490000
490500
GPS Time (TOW, GMT zone)
East
North
Up

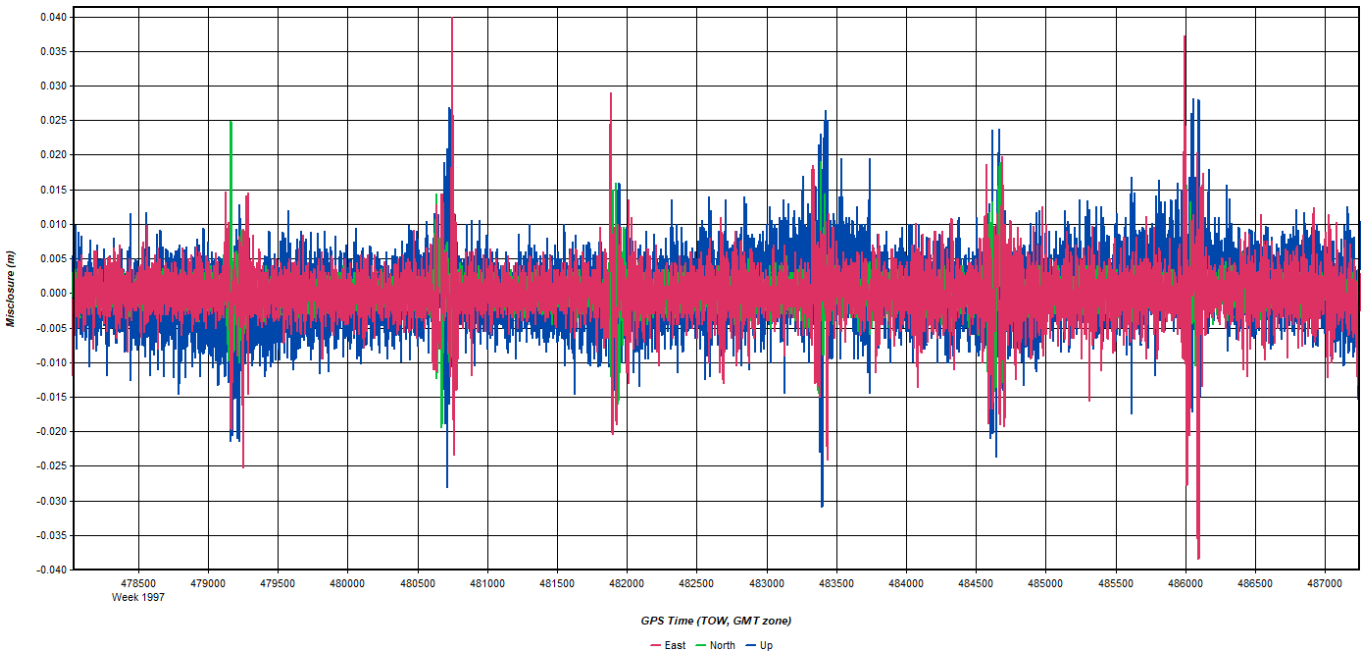
```
  Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      28262
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0134 (m)
        C/A Code:       0.31 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.004 (m)
        Height: 0.008 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (28258 occurances):
        East:   0.006 (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 %

Baseline Distances:
        Maximum:        58.123 (km)
        Minimum:        0.045 (km)
        Average:        29.728 (km)
        First Epoch:    0.193 (km)
        Last Epoch:     0.119 (km)
```

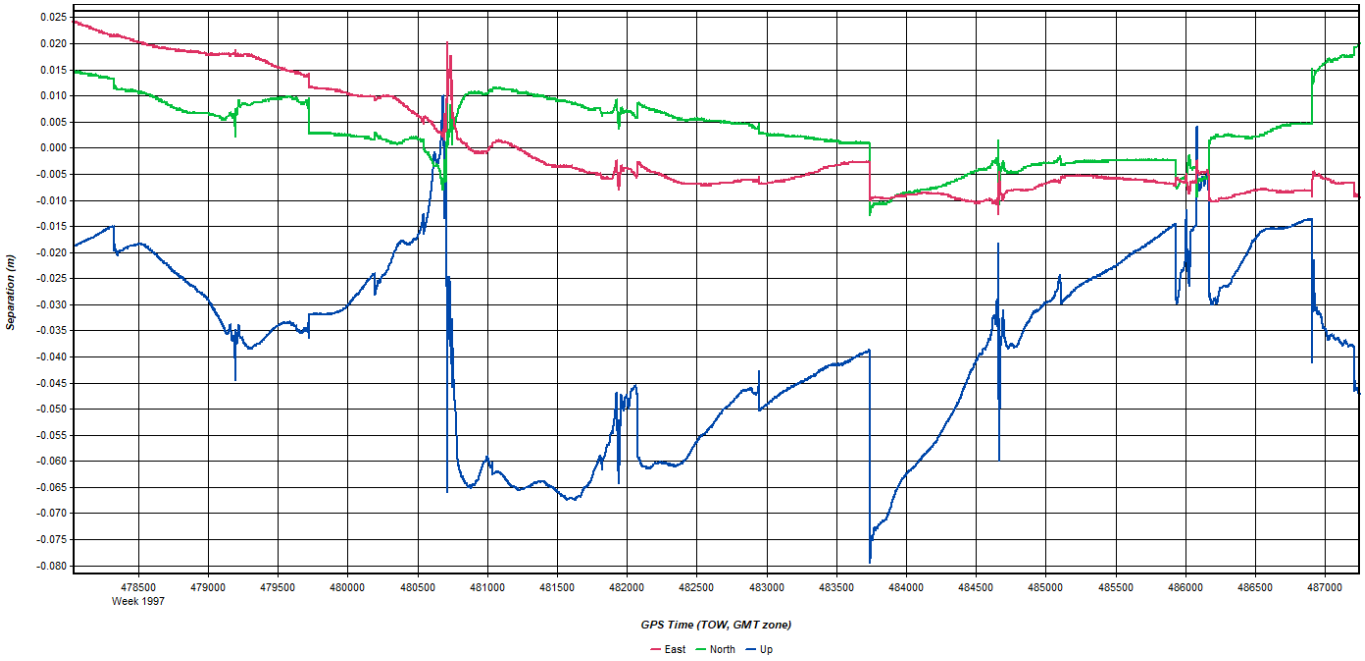
Mission 22


10 km


PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
478500
Week 1997
479000
479500
480000
480500
481000
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
GPS Time (TOW, GMT zone)
PDOP

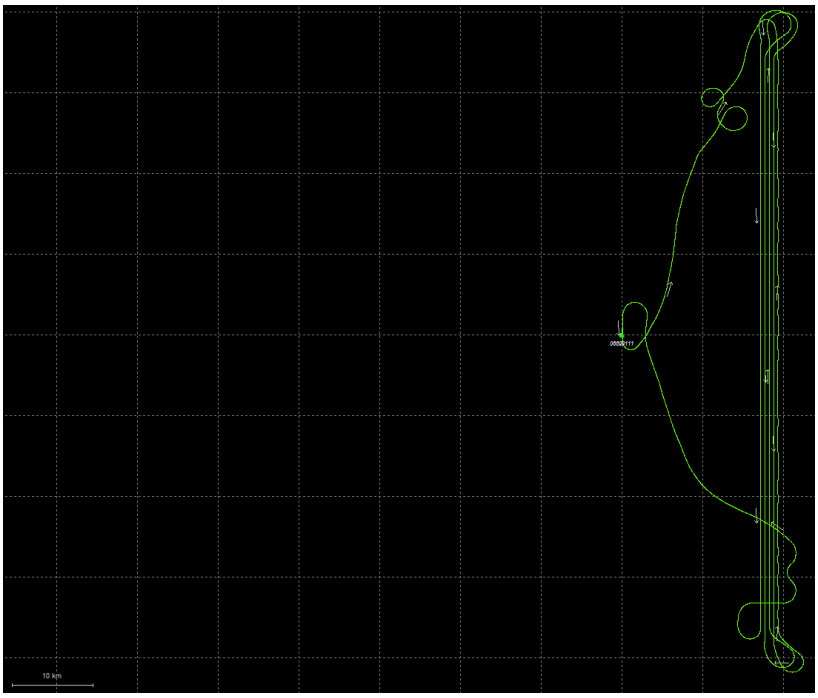

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
478500
Week 1997
479000
479500
480000
480500
481000
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

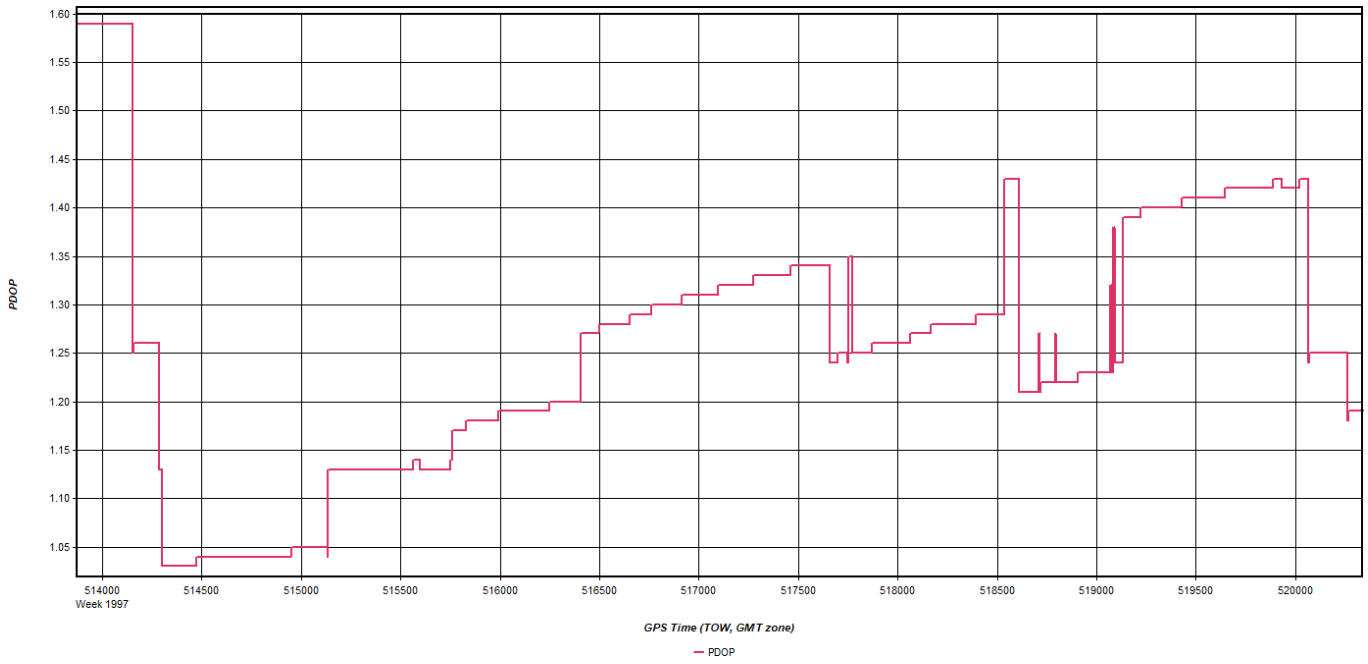

Misclosure (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
478500
Week 1997
479000
479500
480000
480500
481000
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
-0.075
-0.080
478500
Week 1997
479000
479500
480000
480500
481000
481500
482000
482500
483000
483500
484000
484500
485000
485500
486000
486500
487000
GPS Time (TOW, GMT zone)
East
North
Up

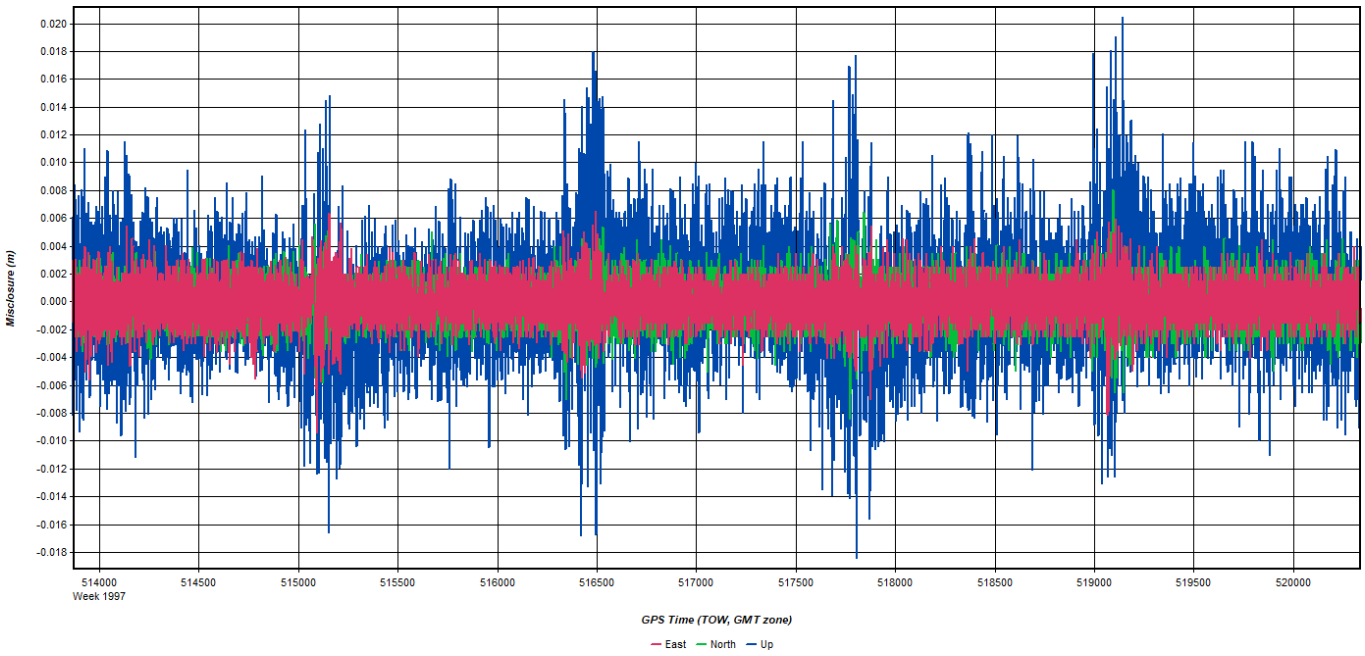
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      23343
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0157 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.013 (m)
        North:  0.009 (m)
        Height: 0.037 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (23339 occurances):
        East:   0.013 (m)
        North:  0.009 (m)
        Height: 0.037 (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:        42.234 (km)
        Minimum:        0.046 (km)
        Average:        22.056 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.139 (km)
```

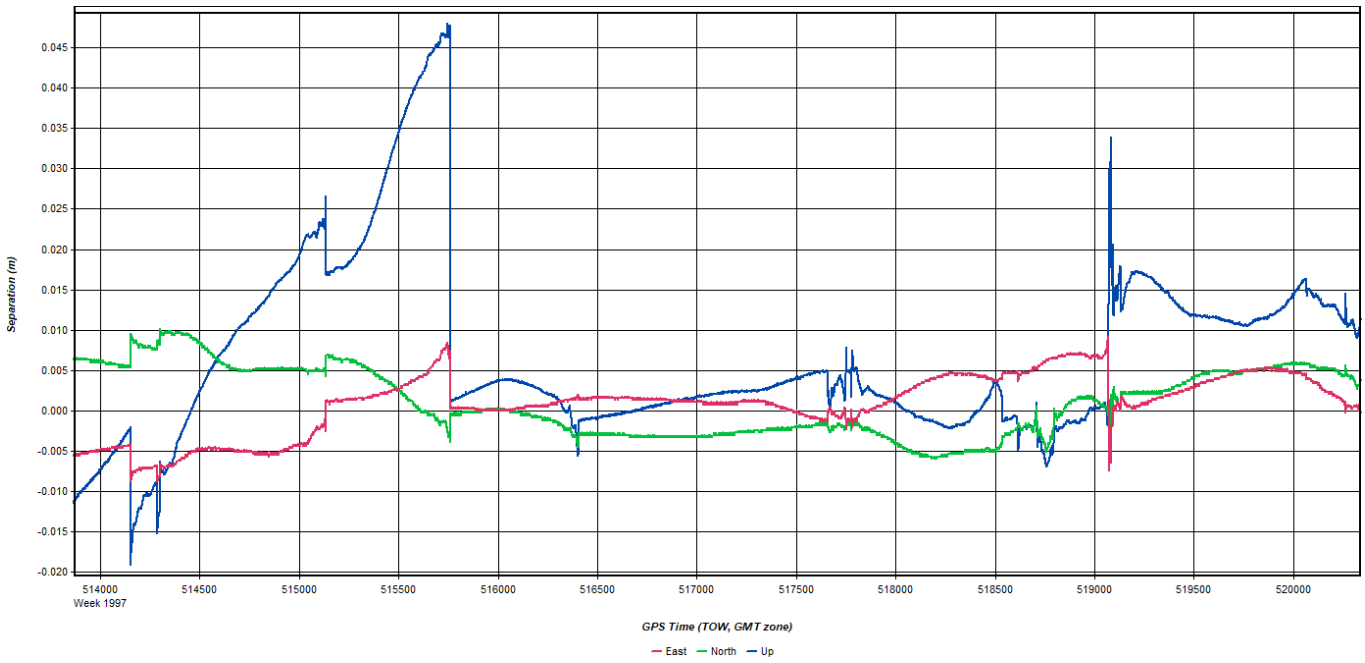
Mission 23


10 km


PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
514000
Week 1997
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
GPS Time (TOW, GMT zone)
PDOP

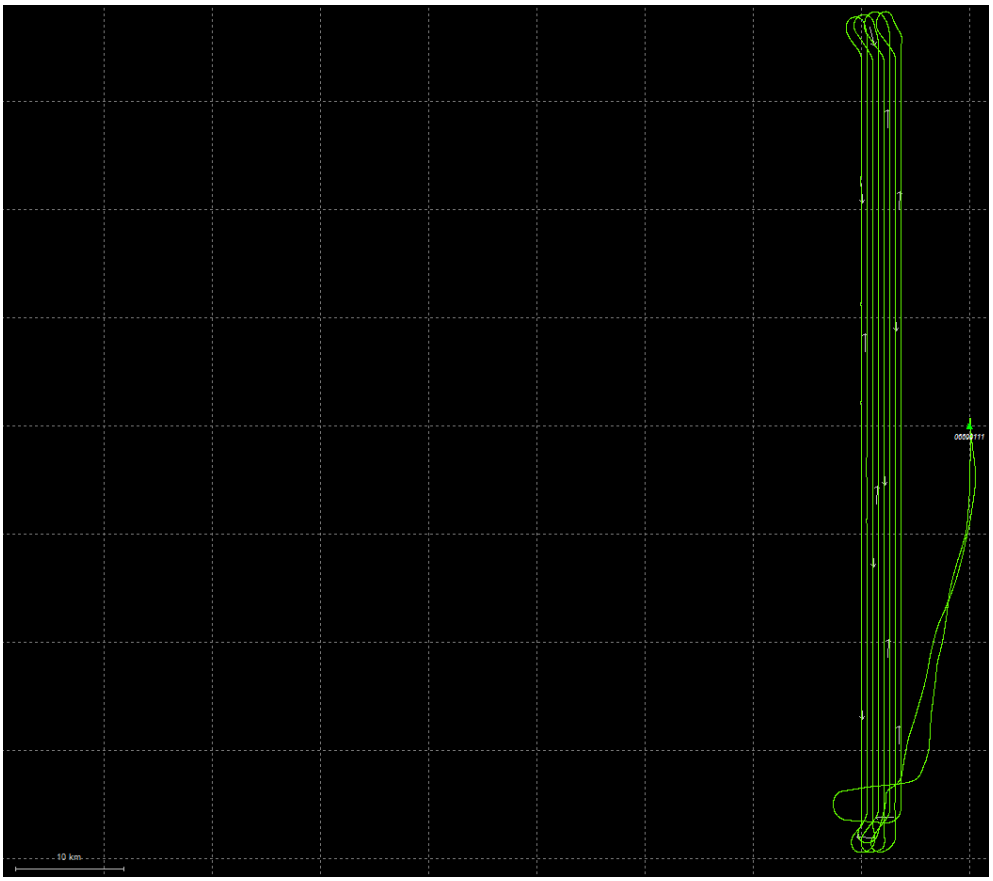

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
514000
Week 1997
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

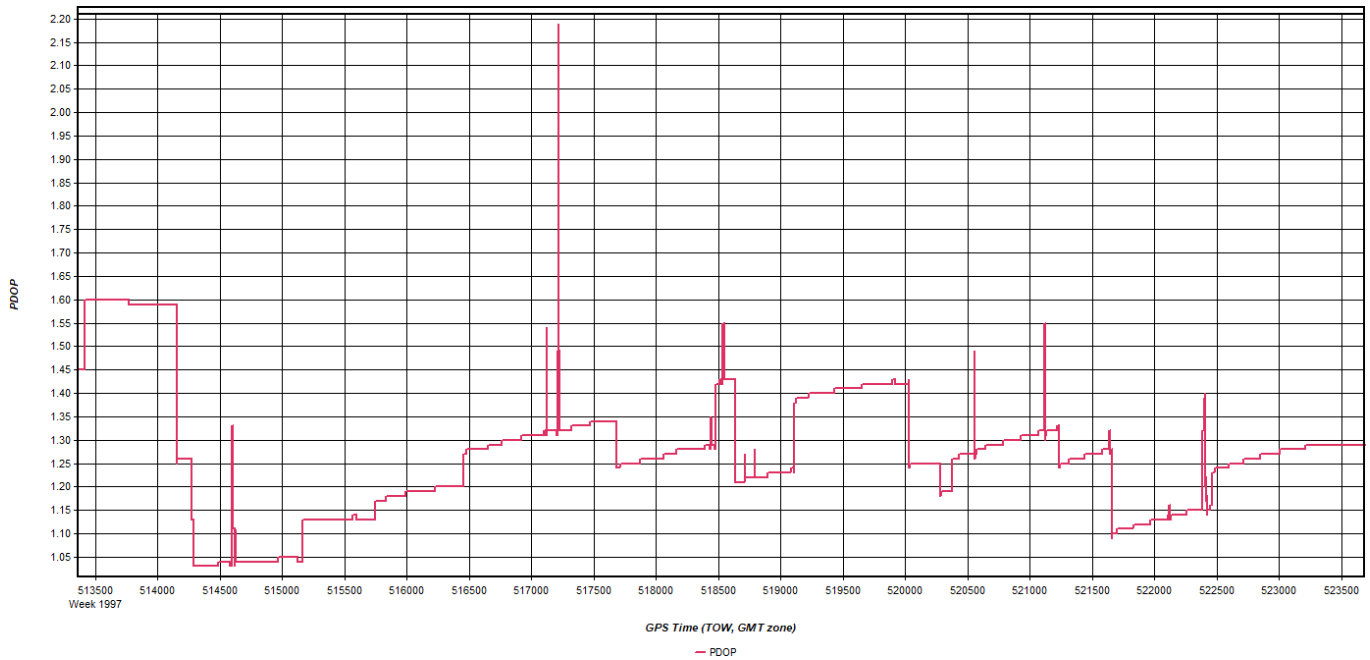

Misclosure (m)
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
514000
Week 1997
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
514000
Week 1997
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
GPS Time (TOW, GMT zone)
East
North
Up

```
       Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      18510
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0136 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.004 (m)
        North:  0.005 (m)
        Height: 0.013 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (18506 occurances):
        East:   0.004 (m)
        North:  0.005 (m)
        Height: 0.013 (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:        46.639 (km)
        Minimum:        0.073 (km)
        Average:        25.417 (km)
        First Epoch:    0.195 (km)
        Last Epoch:     0.205 (km)
```

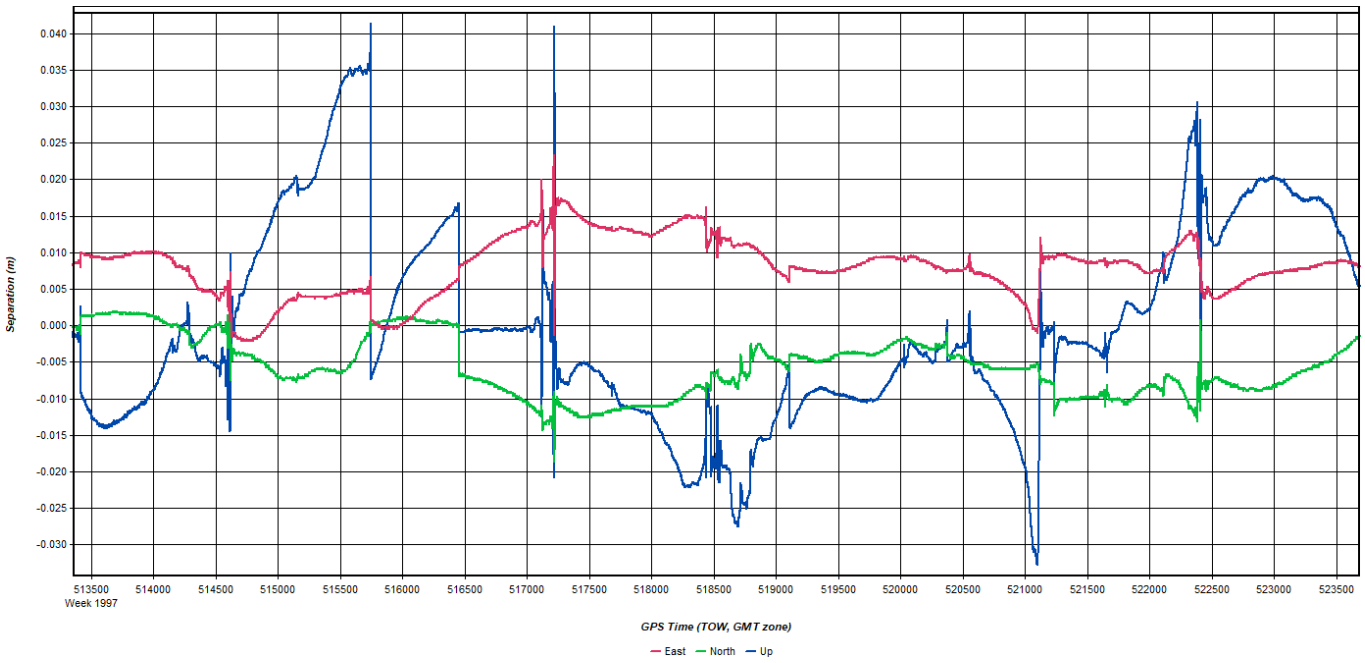
Mission 24


10 km


PDOP
2.20
2.15
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
513500
Week 1997
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
520500
521000
521500
522000
522500
523000
523500
GPS Time (TOW, GMT zone)
PDOP


Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
513500
Week 1997
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
520500
521000
521500
522000
522500
523000
523500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

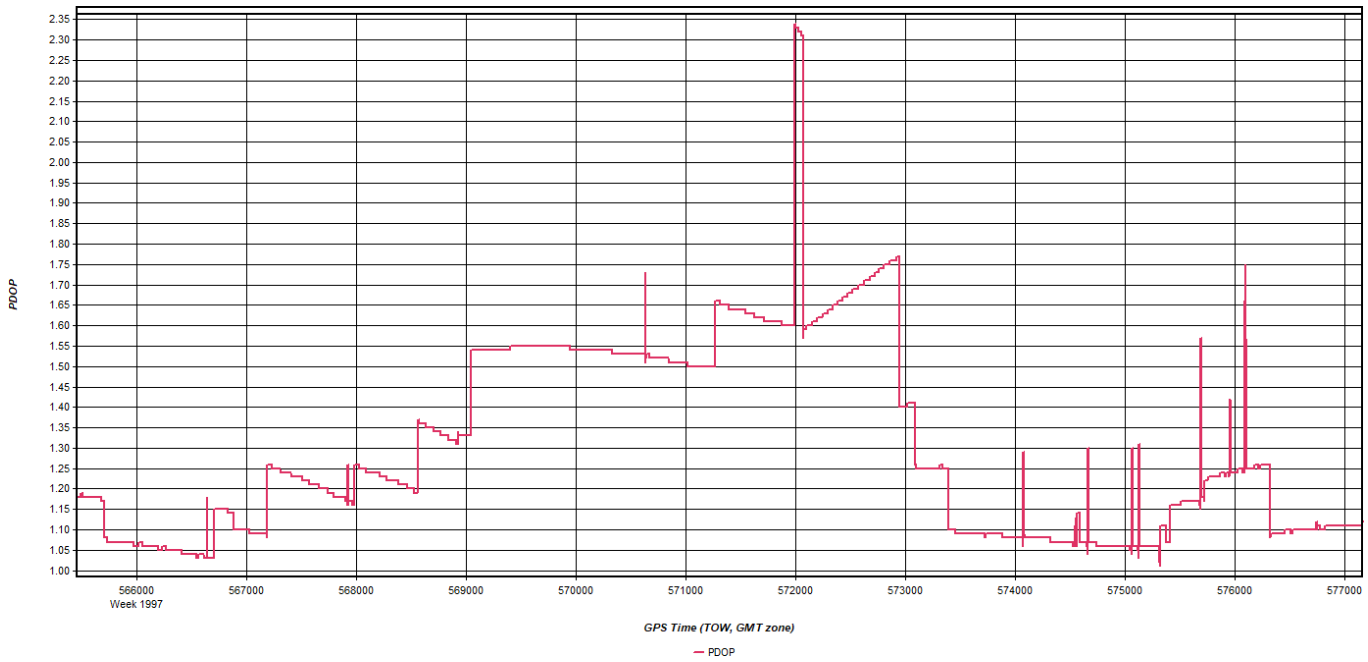

Misclosure (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
513500
Week 1997
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
520500
521000
521500
522000
522500
523000
523500
GPS Time (TOW, GMT zone)
East
North
Up

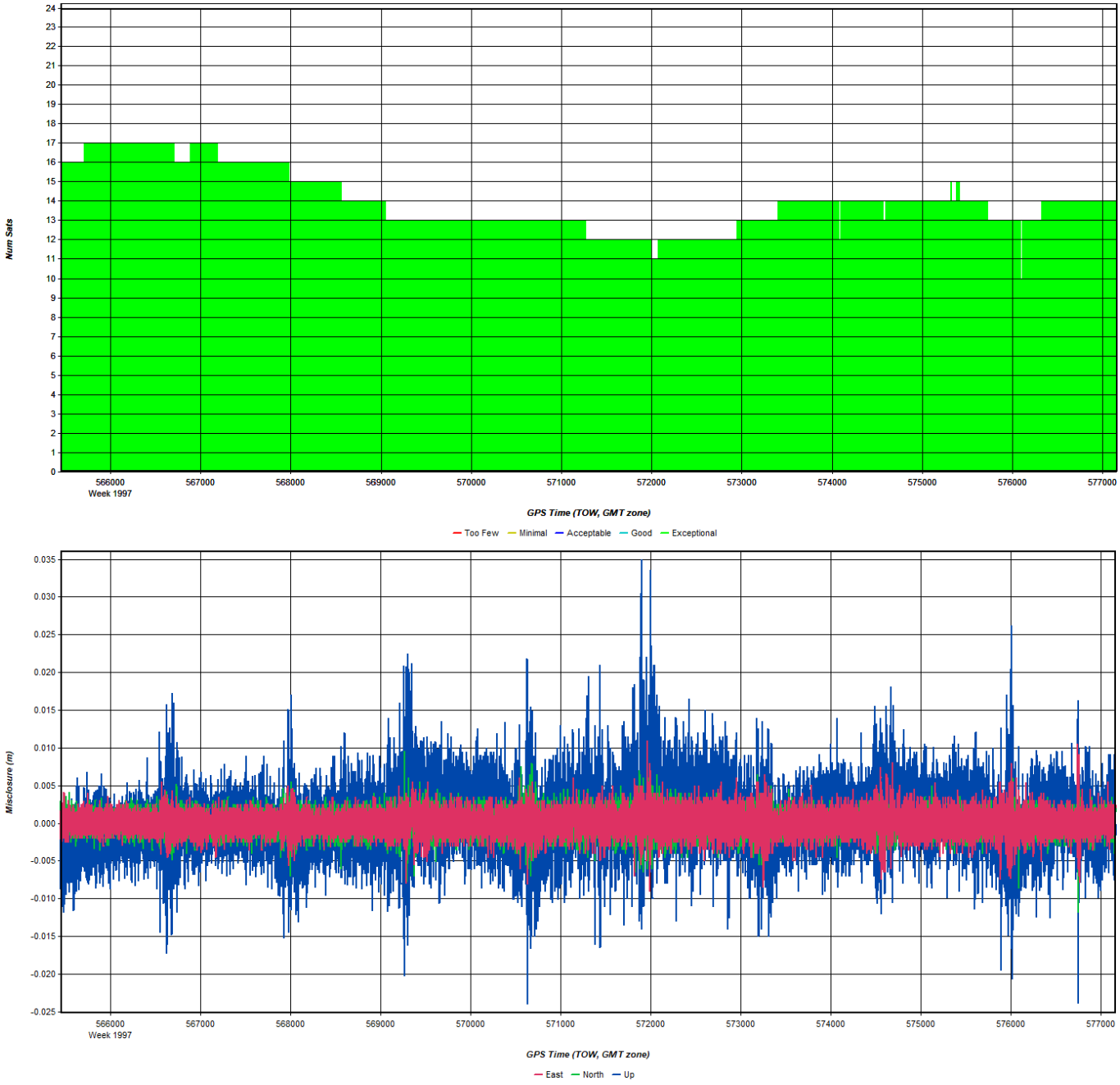

Separation (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
513500
Week 1997
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
520500
521000
521500
522000
522500
523000
523500
GPS Time (TOW, GMT zone)
East
North
Up

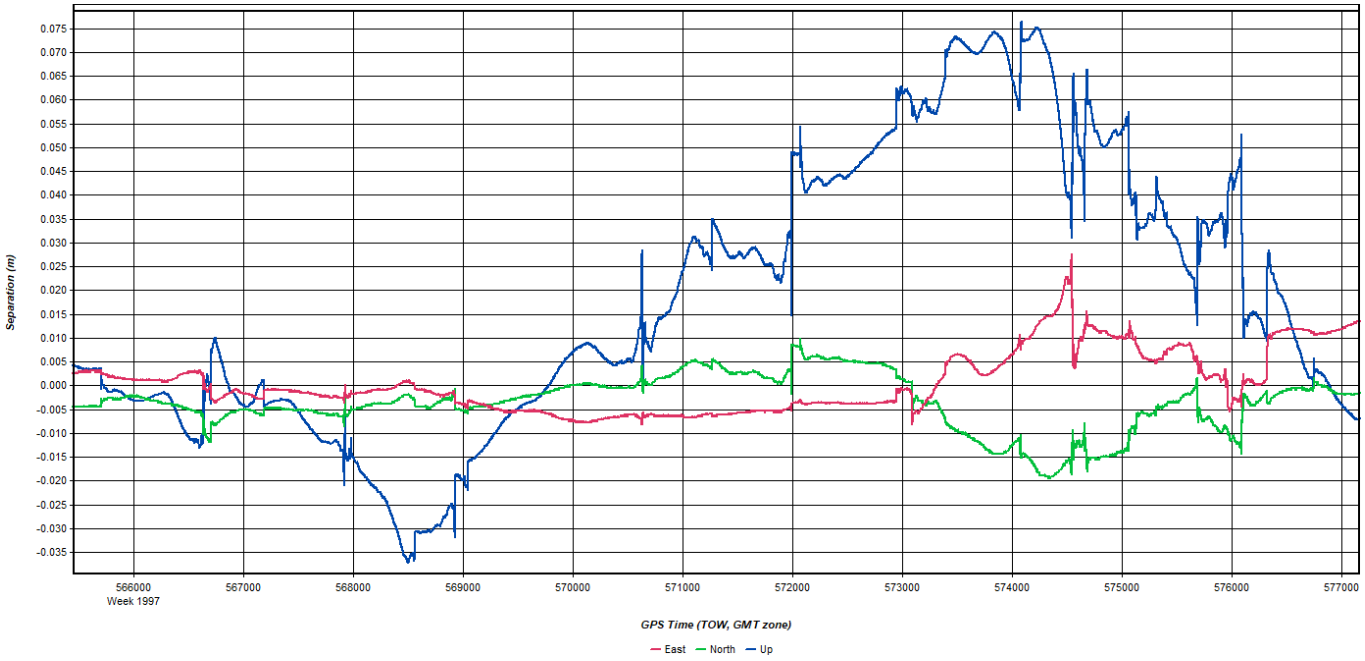
```
  Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      25140
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0147 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.009 (m)
        North:  0.007 (m)
        Height: 0.013 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (25136 occurances):
        East:   0.009 (m)
        North:  0.007 (m)
        Height: 0.013 (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 %

Baseline Distances:
        Maximum:        40.537 (km)
        Minimum:        0.076 (km)
        Average:        20.746 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.141 (km)
```

Mission 25


10 km

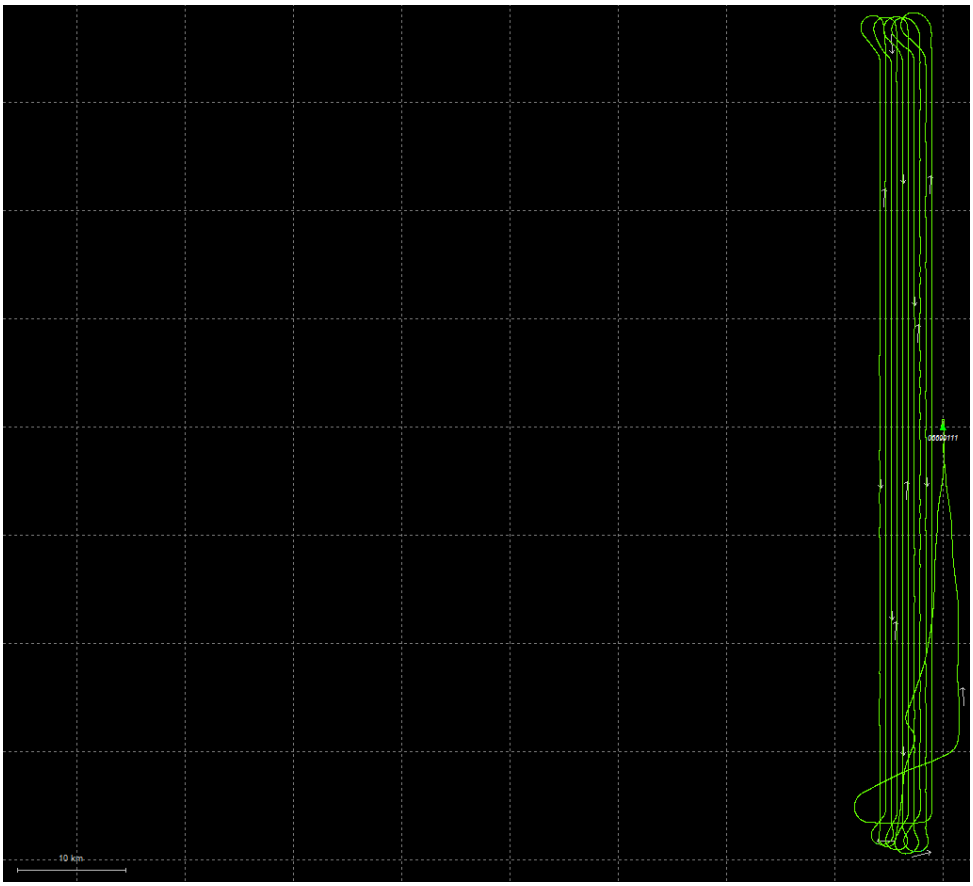

PDOP
2.35
2.30
2.25
2.20
2.15
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
GPS Time (TOW, GMT zone)
PDOP

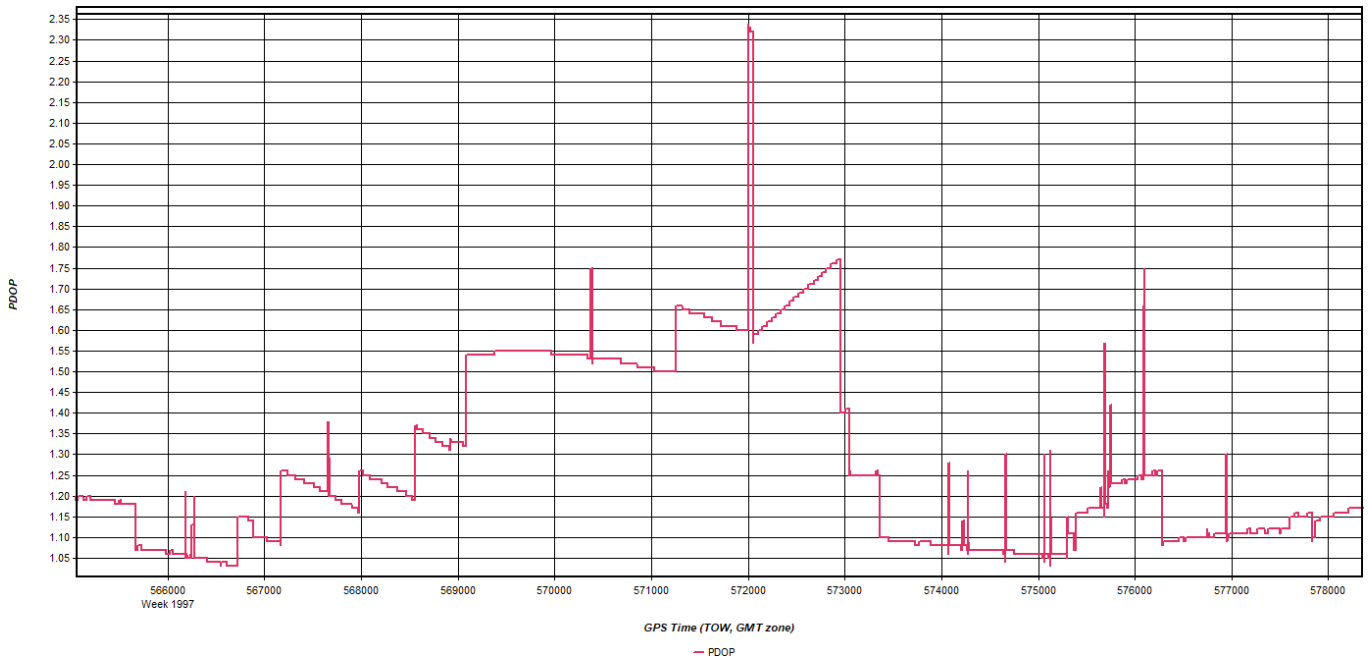

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
GPS Time (TOW, GMT zone)
East
North
Up

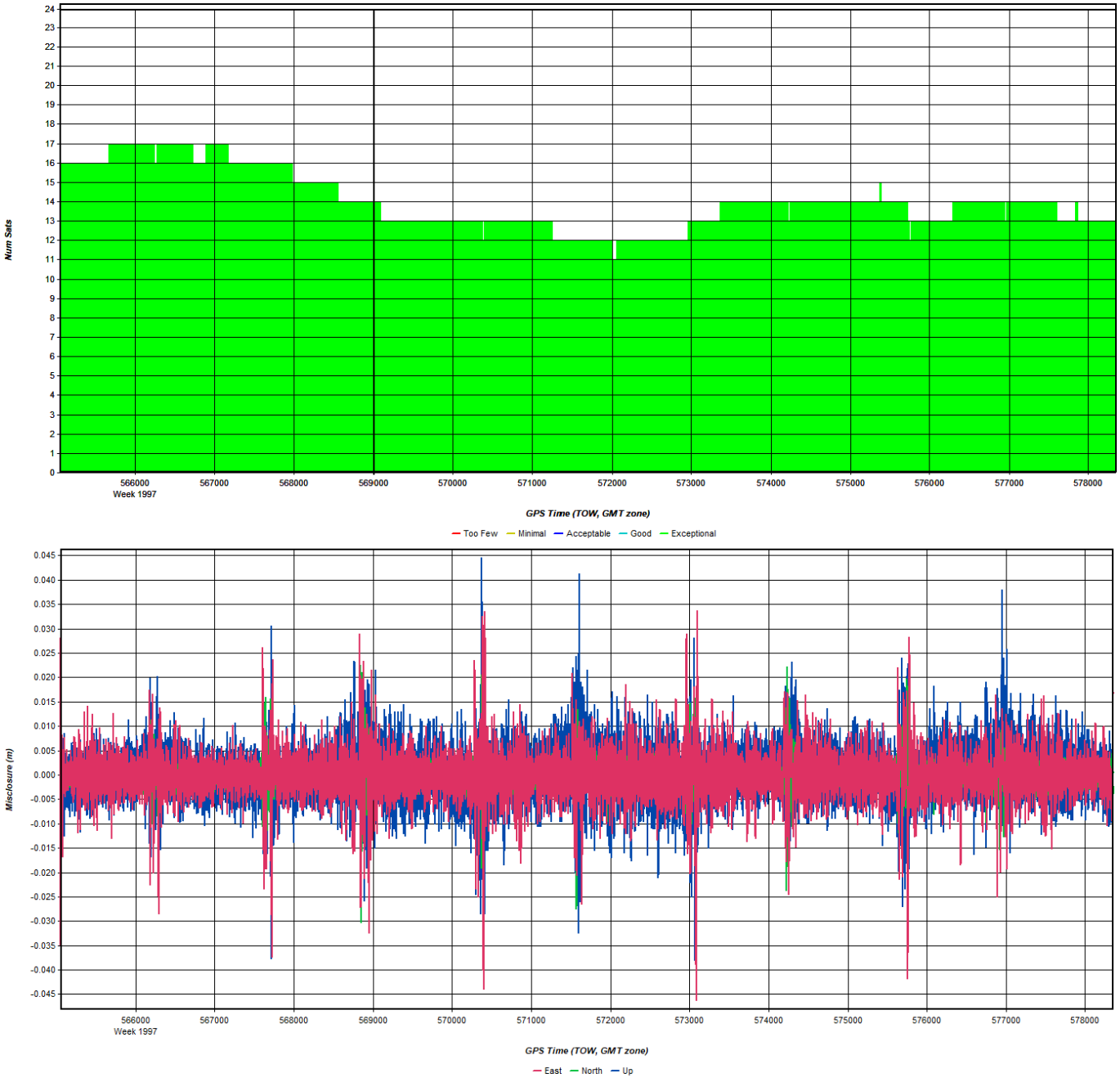

Separation (m)
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
GPS Time (TOW, GMT zone)
East
North
Up

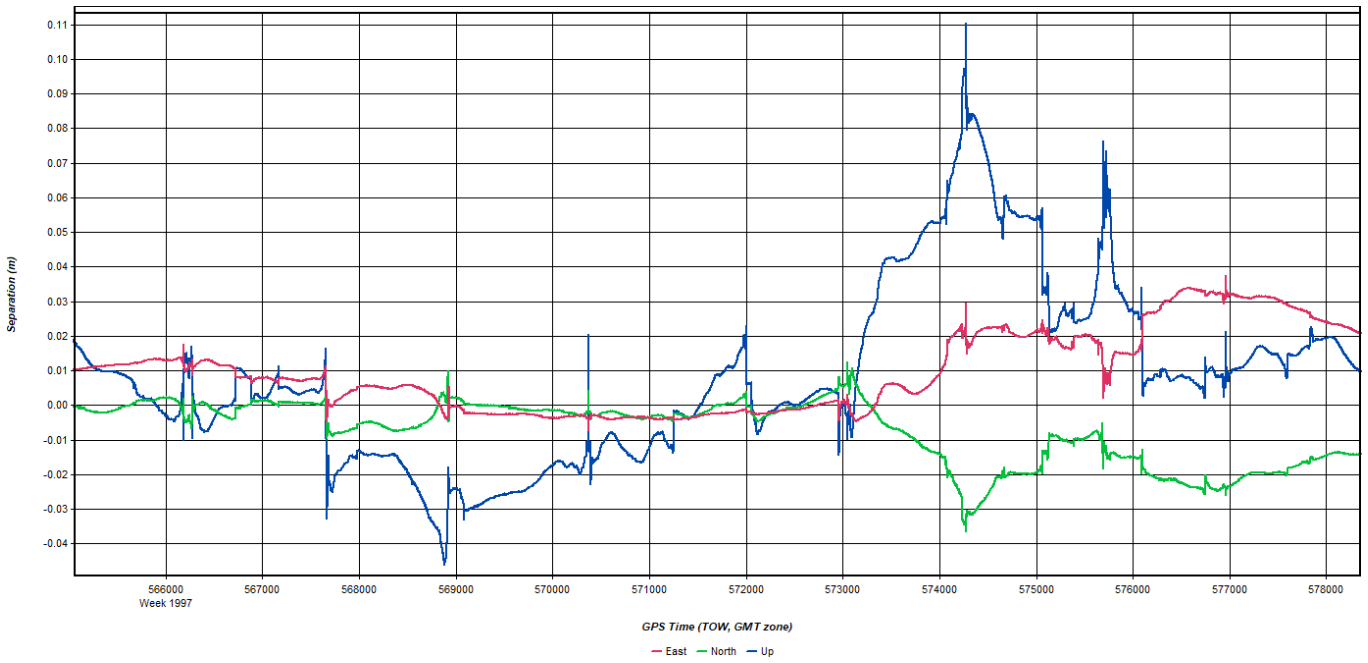
```
 Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      29893
        No processed position:  1
        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:       0.32 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.007 (m)
        North:  0.006 (m)
        Height: 0.031 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (29889 occurances):
        East:   0.007 (m)
        North:  0.006 (m)
        Height: 0.031 (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:        44.382 (km)
        Minimum:        0.046 (km)
        Average:        24.915 (km)
        First Epoch:    0.125 (km)
        Last Epoch:     0.145 (km)
```

Mission 26


10 km

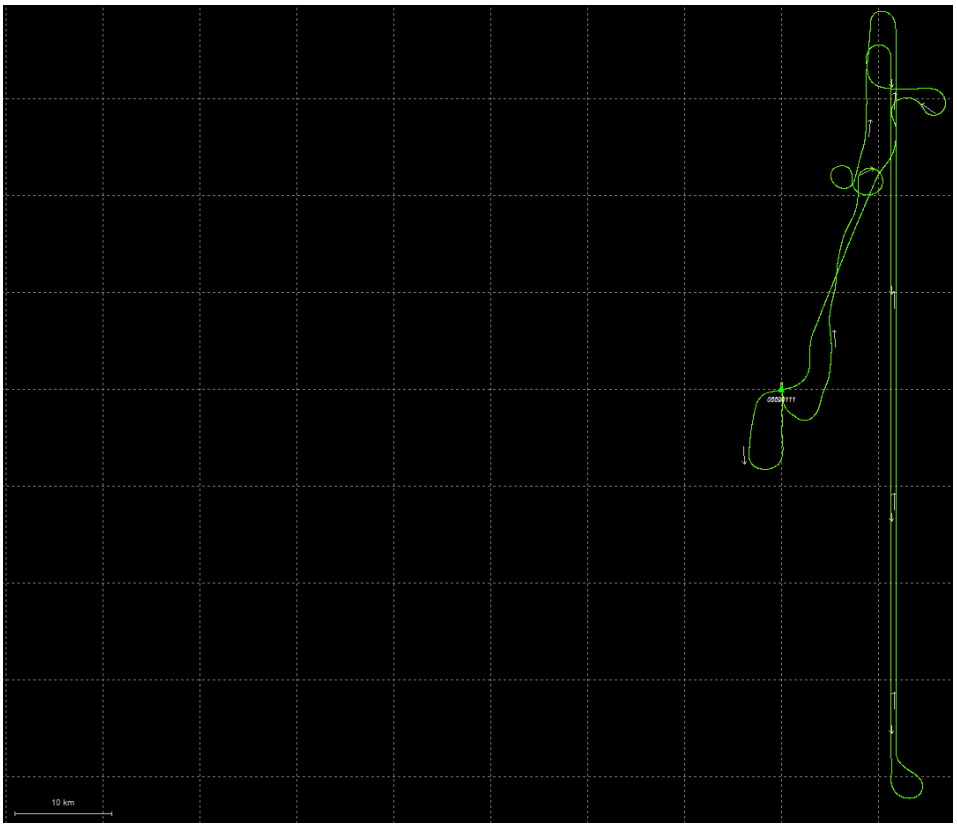

PDOP
2.35
2.30
2.25
2.20
2.15
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
GPS Time (TOW, GMT zone)
PDOP

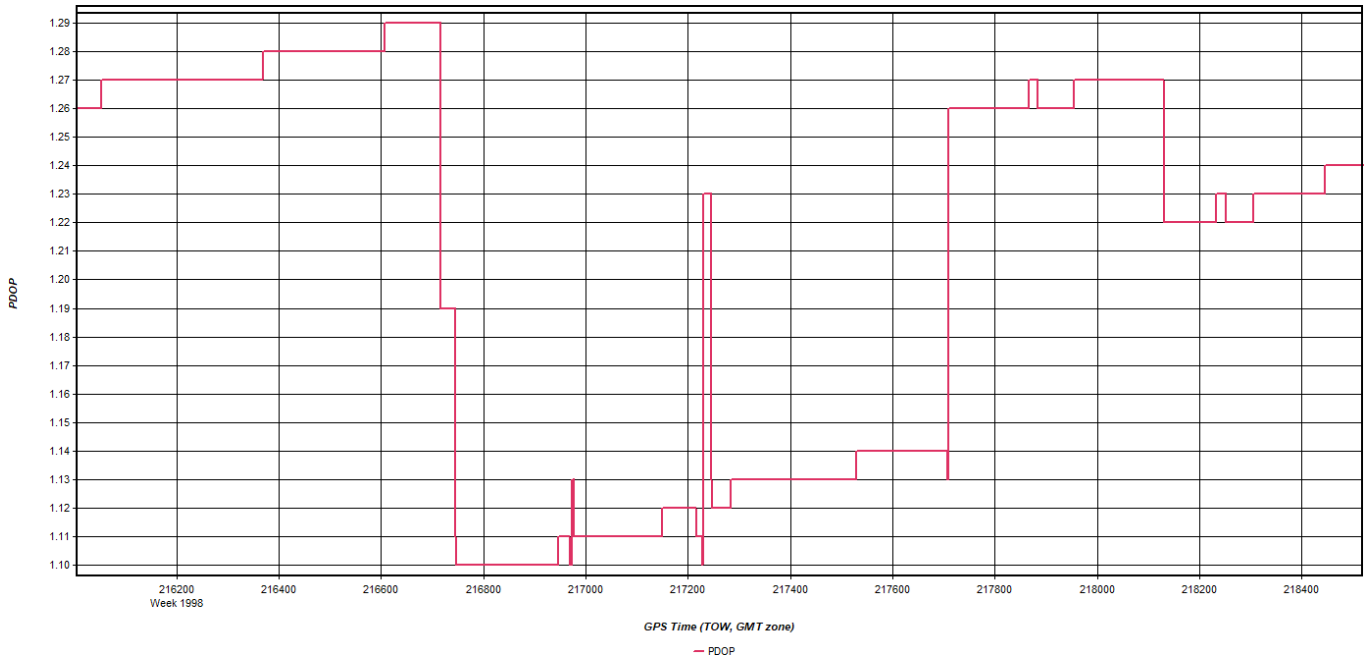

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
GPS Time (TOW, GMT zone)
East
North
Up

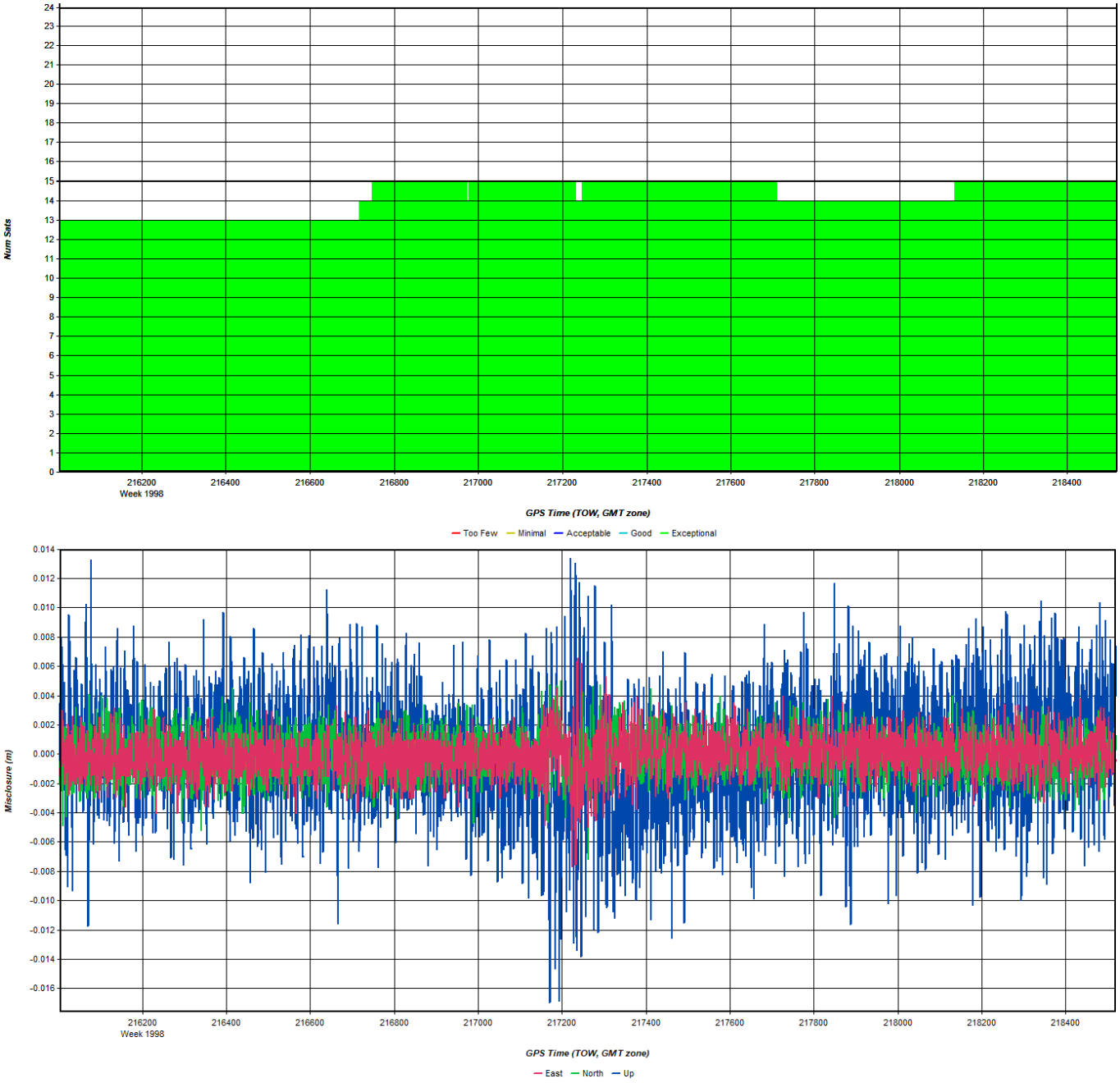

Separation (m)
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
566000
Week 1997
567000
568000
569000
570000
571000
572000
573000
574000
575000
576000
577000
578000
GPS Time (TOW, GMT zone)
East
North
Up

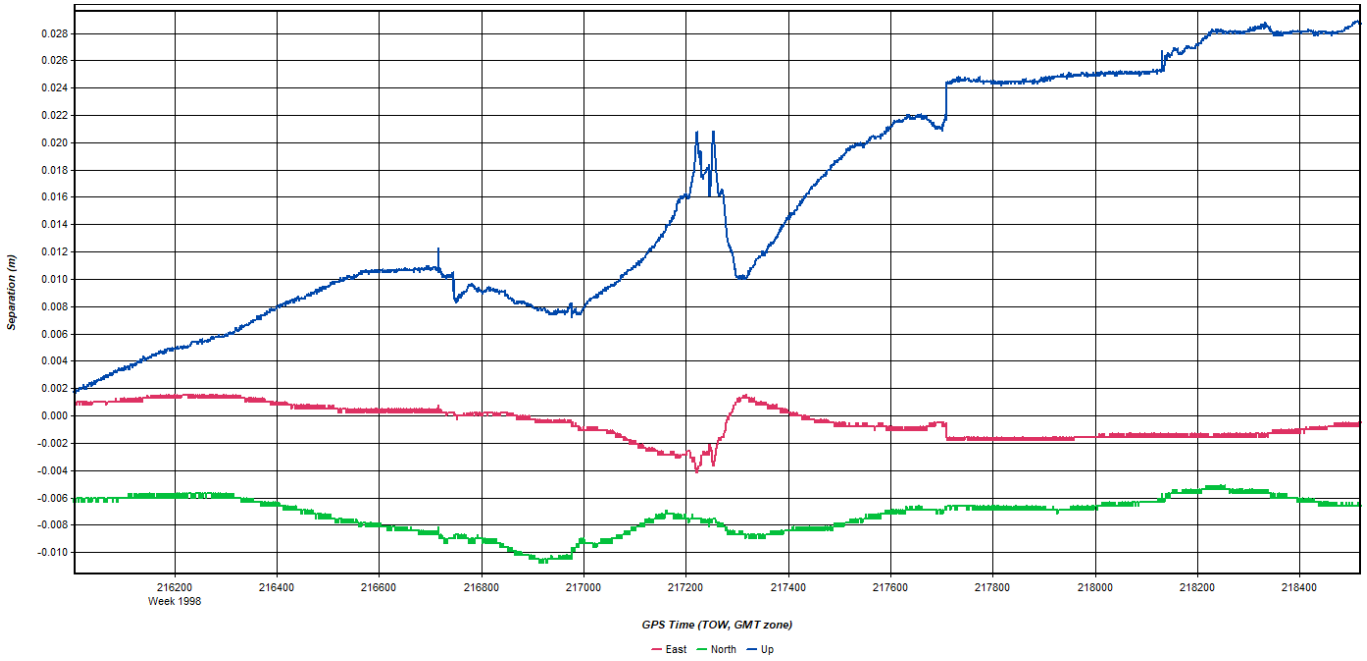
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      30781
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0159 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.015 (m)
        North:  0.011 (m)
        Height: 0.025 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (30777 occurances):
        East:   0.015 (m)
        North:  0.011 (m)
        Height: 0.025 (m)

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

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

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

Baseline Distances:
        Maximum:        39.417 (km)
        Minimum:        0.074 (km)
        Average:        19.574 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.130 (km)
```

Mission 27


10 km

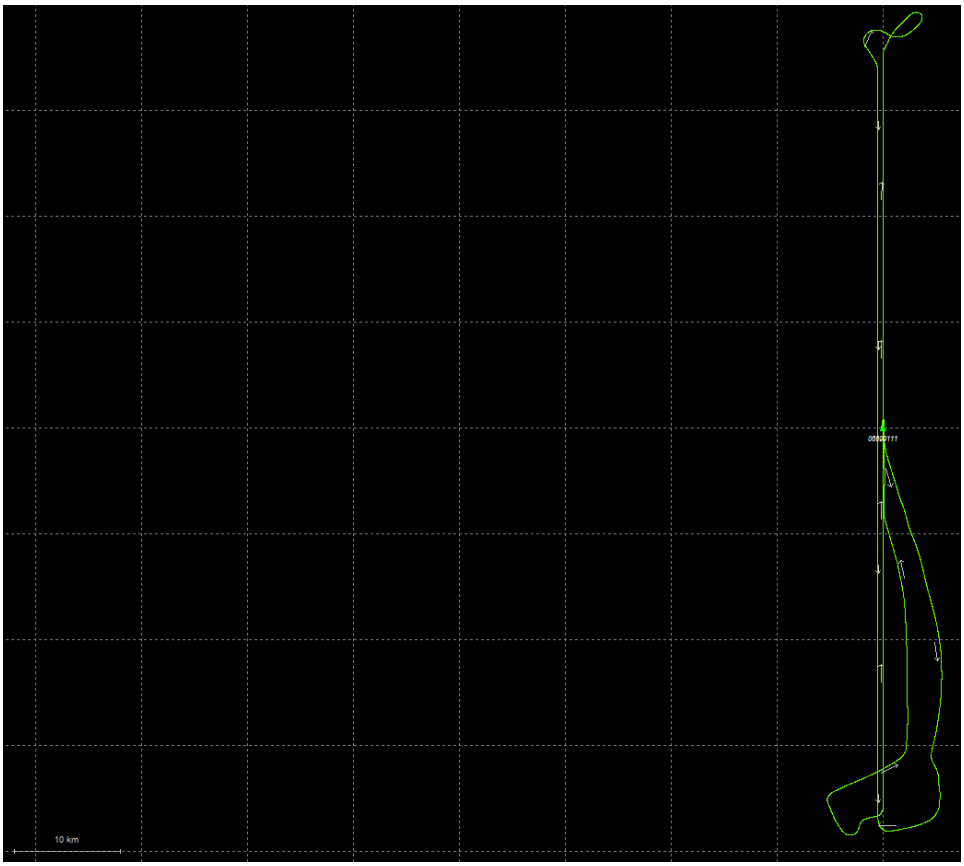

PDOP
1.29
1.28
1.27
1.26
1.25
1.24
1.23
1.22
1.21
1.20
1.19
1.18
1.17
1.16
1.15
1.14
1.13
1.12
1.11
1.10
216200
Week 1998
216400
216600
216800
217000
217200
217400
217600
217800
218000
218200
218400
GPS Time (TOW, GMT zone)
PDOP

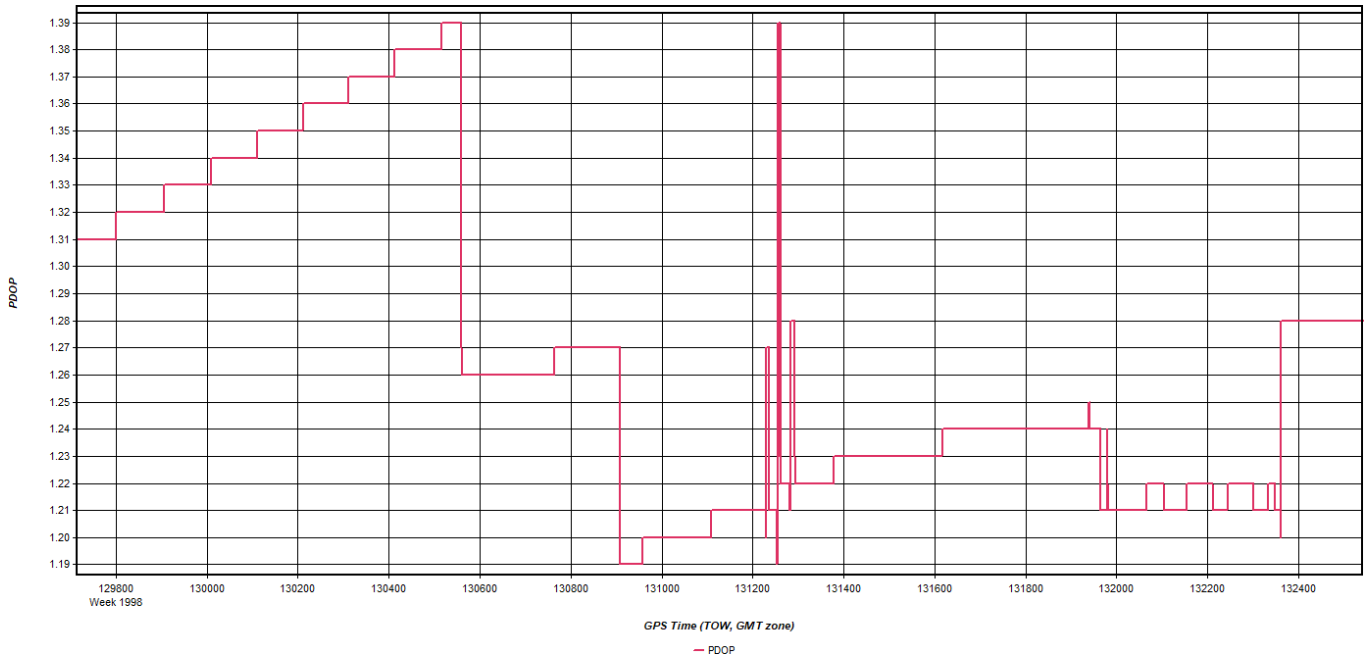

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
216200
Week 1998
216400
216600
216800
217000
217200
217400
217600
217800
218000
218200
218400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
216200
Week 1998
216400
216600
216800
217000
217200
217400
217600
217800
218000
218200
218400
GPS Time (TOW, GMT zone)
East
North
Up

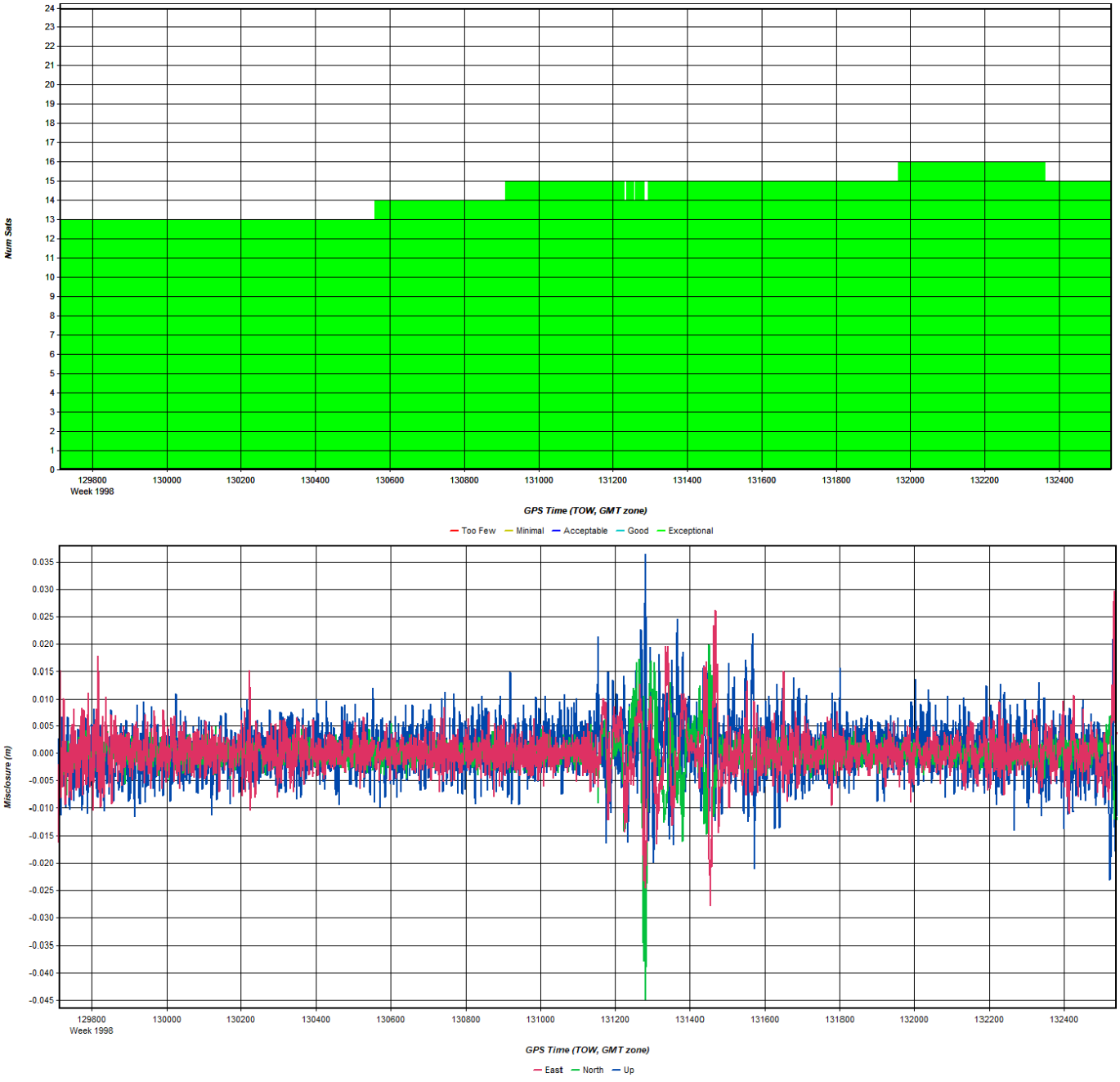

Separation (m)
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
216200
Week 1998
216400
216600
216800
217000
217200
217400
217600
217800
218000
218200
218400
GPS Time (TOW, GMT zone)
East
North
Up

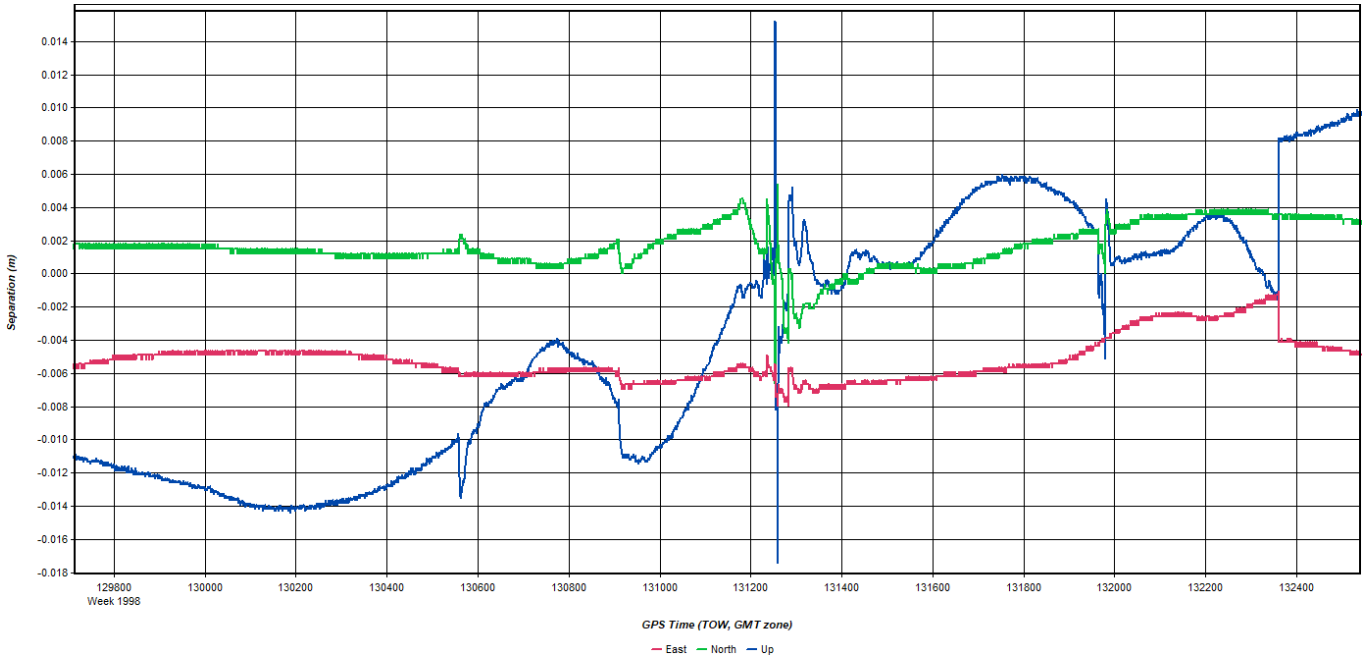
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      10689
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0125 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.002 (m)
        North:  0.007 (m)
        Height: 0.017 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (10685 occurances):
        East:   0.002 (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:  100.0 %
        0.10 - 0.30 m:   0.0 %
        0.30 - 1.00 m:   0.0 %
        1.00 - 5.00 m:   0.0 %
        5.00 m + over:   0.0 %

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

Baseline Distances:
        Maximum:        43.853 (km)
        Minimum:        0.047 (km)
        Average:        19.490 (km)
        First Epoch:    0.205 (km)
        Last Epoch:     0.086 (km)
```

Mission 28


10 km

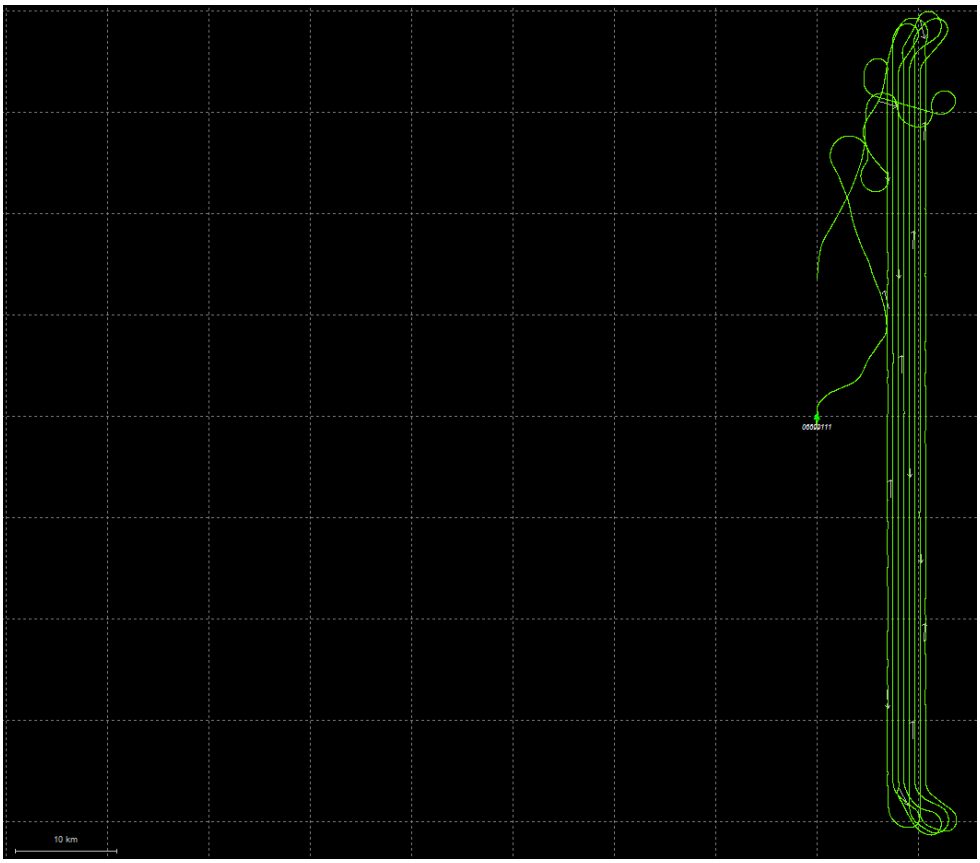

PDOP
1.39
1.38
1.37
1.36
1.35
1.34
1.33
1.32
1.31
1.30
1.29
1.28
1.27
1.26
1.25
1.24
1.23
1.22
1.21
1.20
1.19
129800
Week 1998
130000
130200
130400
130600
130800
131000
131200
131400
131600
131800
132000
132200
132400
GPS Time (TOW, GMT zone)
PDOP

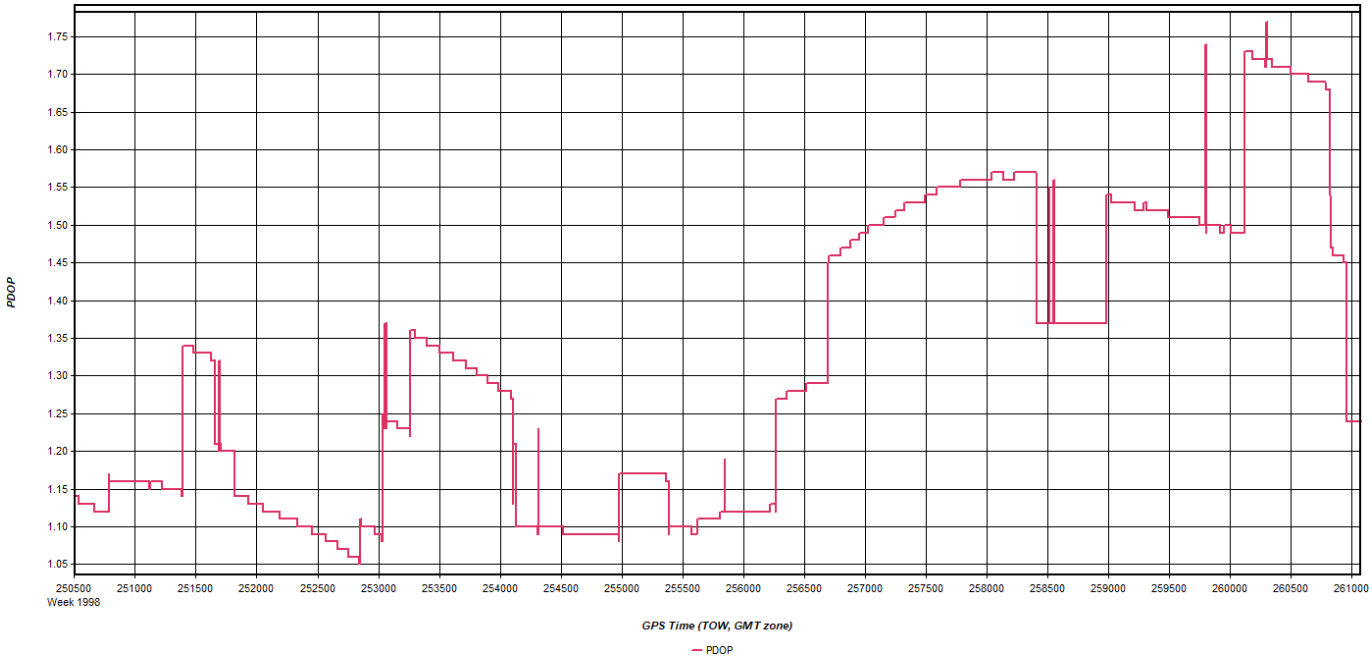

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
129800
Week 1998
130000
130200
130400
130600
130800
131000
131200
131400
131600
131800
132000
132200
132400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
129800
Week 1998
130000
130200
130400
130600
130800
131000
131200
131400
131600
131800
132000
132200
132400
GPS Time (TOW, GMT zone)
East
North
Up

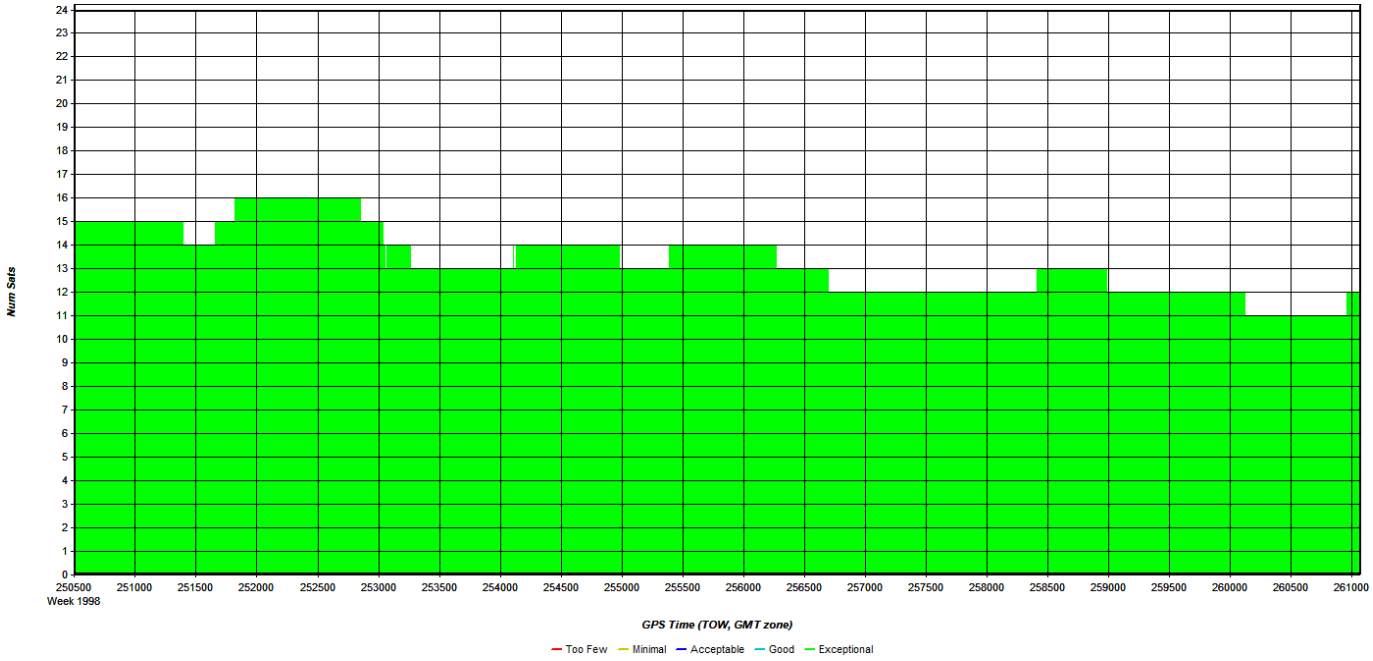

Separation (m)
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
129800
Week 1998
130000
130200
130400
130600
130800
131000
131200
131400
131600
131800
132000
132200
132400
GPS Time (TOW, GMT zone)
East
North
Up

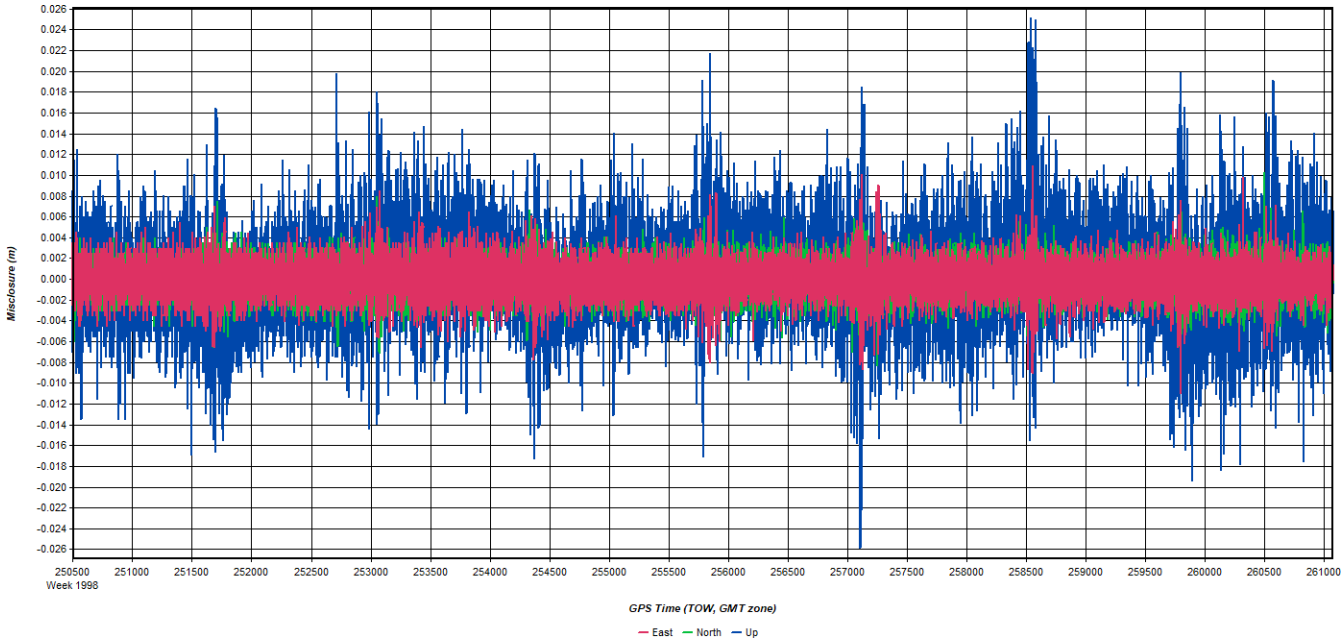
```
    Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      10018
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0174 (m)
        C/A Code:       0.35 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.003 (m)
        Height: 0.013 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (10014 occurances):
        East:   0.005 (m)
        North:  0.003 (m)
        Height: 0.013 (m)

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

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

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

Baseline Distances:
        Maximum:        39.153 (km)
        Minimum:        0.027 (km)
        Average:        18.404 (km)
        First Epoch:    0.213 (km)
        Last Epoch:     0.152 (km)
```

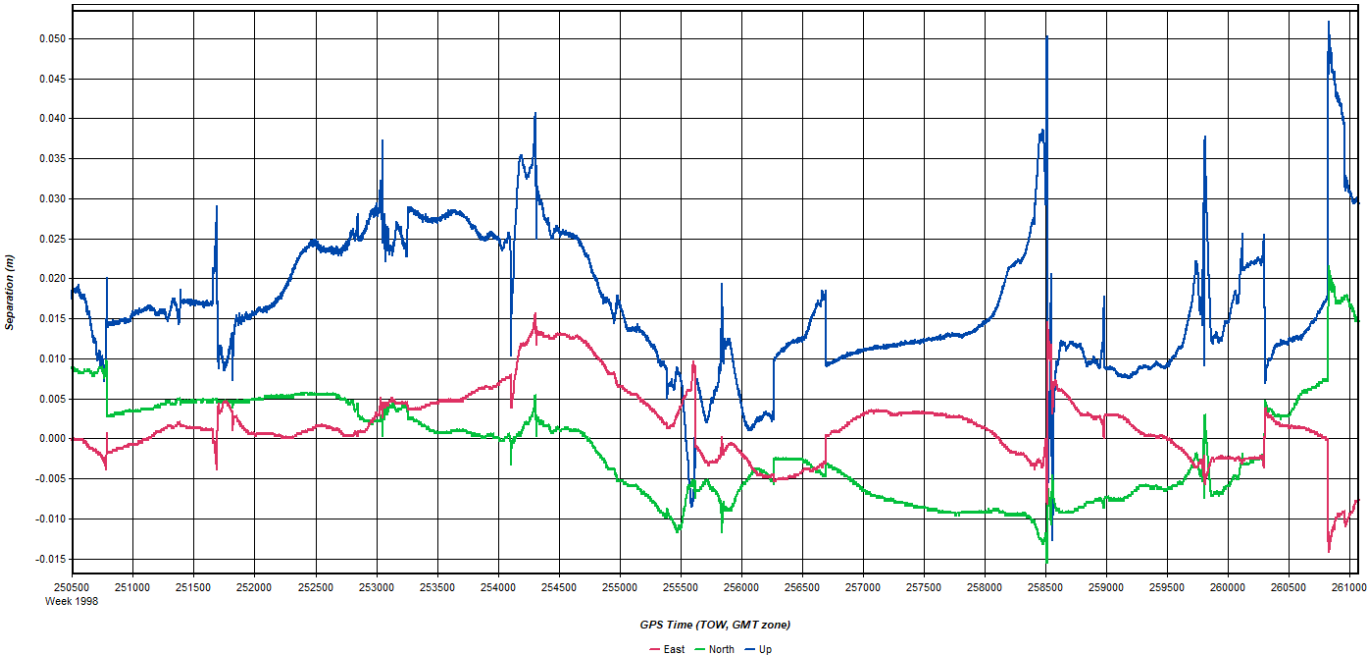
Mission 29


10 km


PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
250500
Week 1998
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
256500
257000
257500
258000
258500
259000
259500
260000
260500
261000
GPS Time (TOW, GMT zone)
PDOP

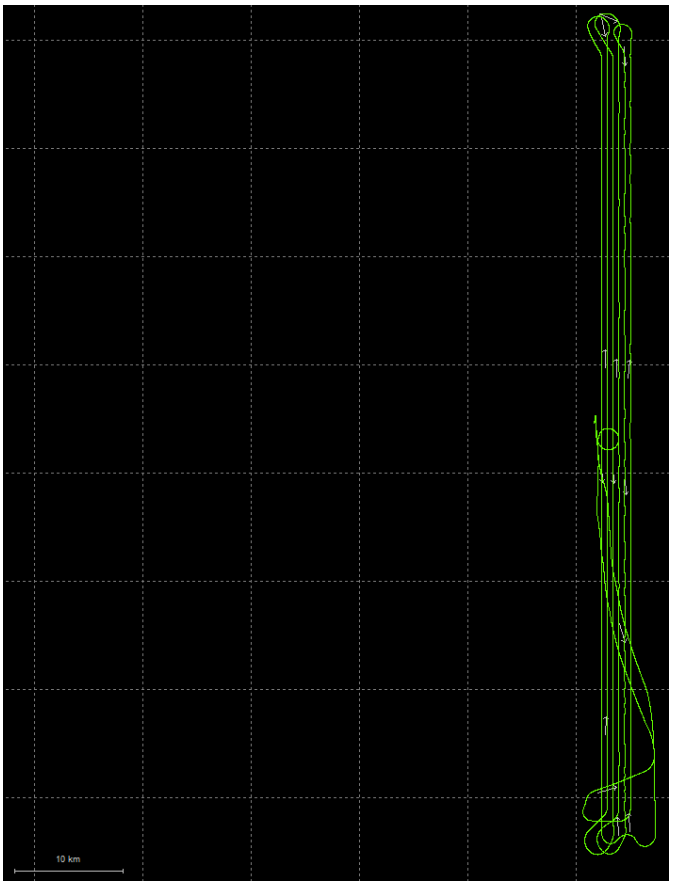

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
250500
Week 1998
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
256500
257000
257500
258000
258500
259000
259500
260000
260500
261000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

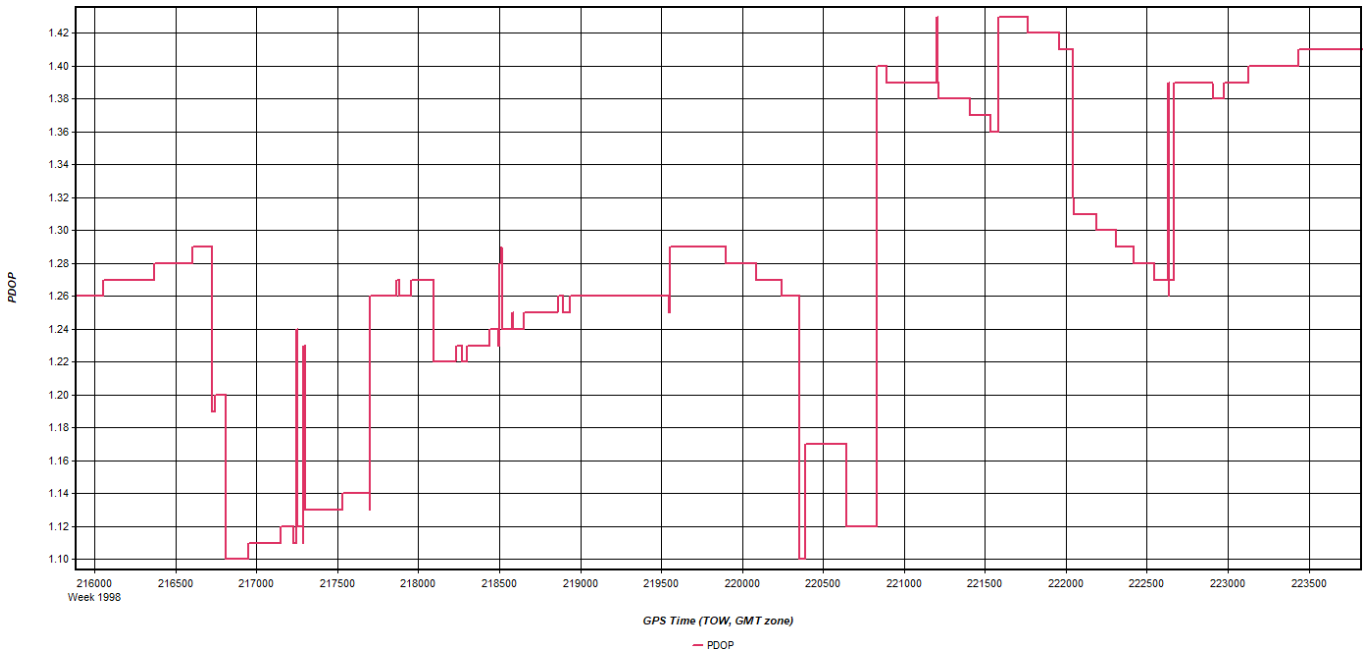

Misclosure (m)
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
250500
Week 1998
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
256500
257000
257500
258000
258500
259000
259500
260000
260500
261000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
250500
Week 1998
251000
251500
252000
252500
253000
253500
254000
254500
255000
255500
256000
256500
257000
257500
258000
258500
259000
259500
260000
260500
261000
GPS Time (TOW, GMT zone)
East
North
Up

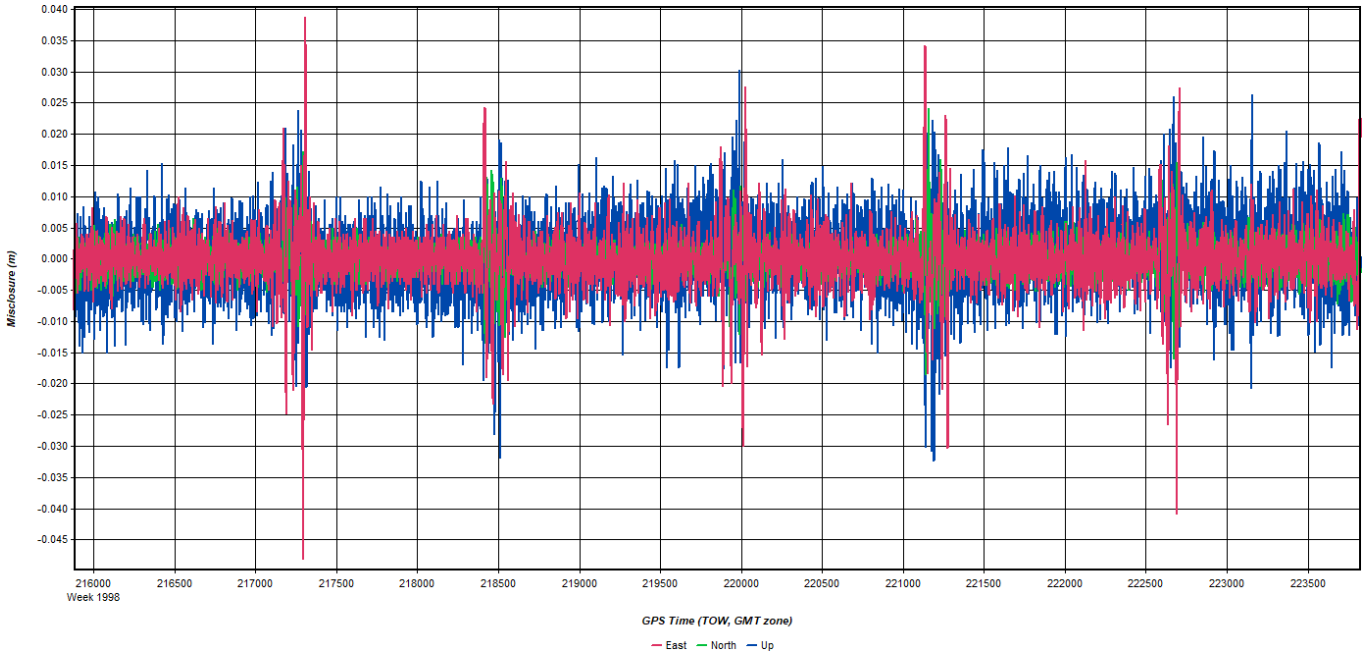
```
       Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      25883
        No processed position:  2
        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:       0.37 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.007 (m)
        Height: 0.019 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (25878 occurances):
        East:   0.005 (m)
        North:  0.007 (m)
        Height: 0.019 (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:        42.590 (km)
        Minimum:        0.045 (km)
        Average:        22.292 (km)
        First Epoch:    0.181 (km)
        Last Epoch:     13.551 (km)
```

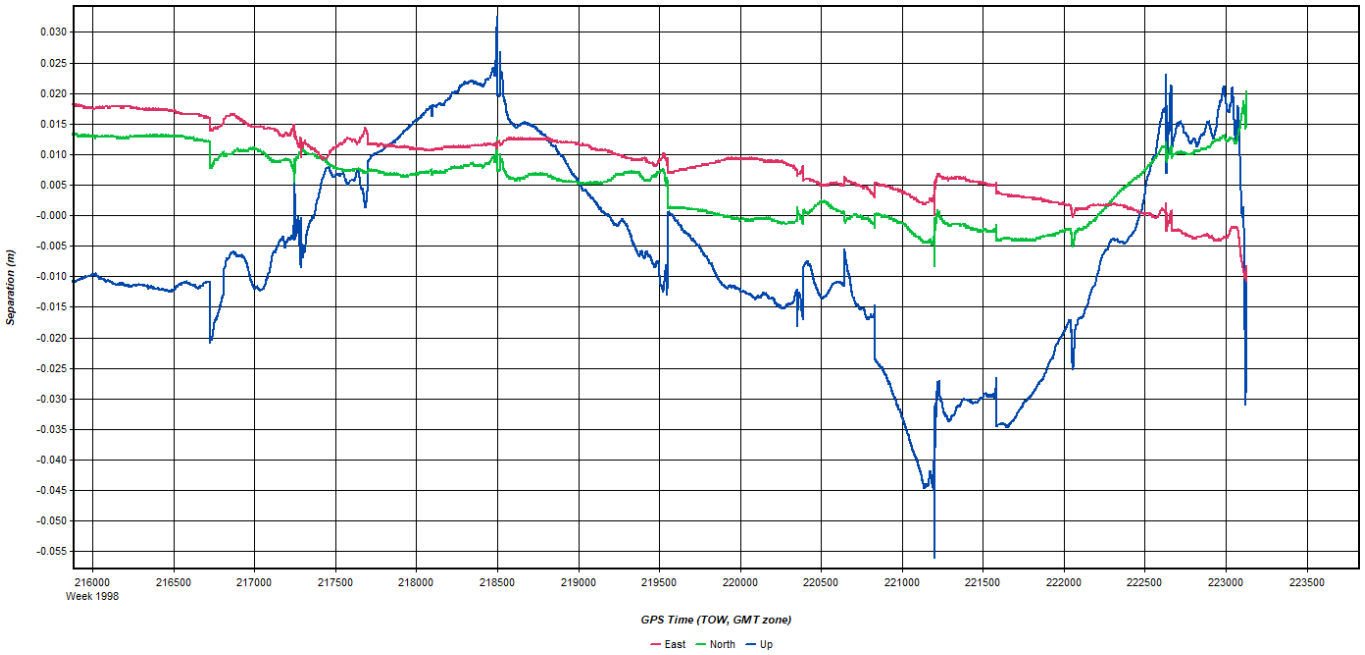
Mission 30


10 km


PDOP
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
216000
Week 1998
216500
217000
217500
218000
218500
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
PDOP

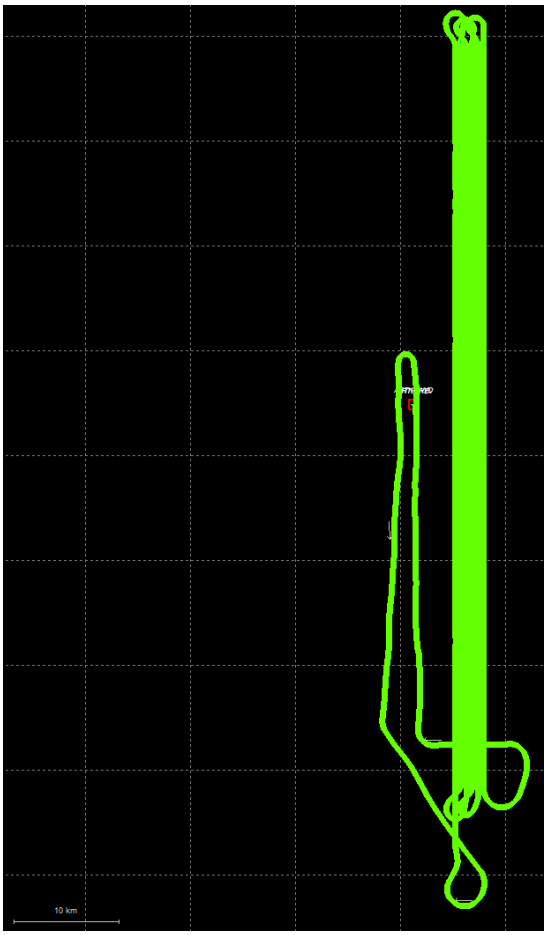

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
216000
Week 1998
216500
217000
217500
218000
218500
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

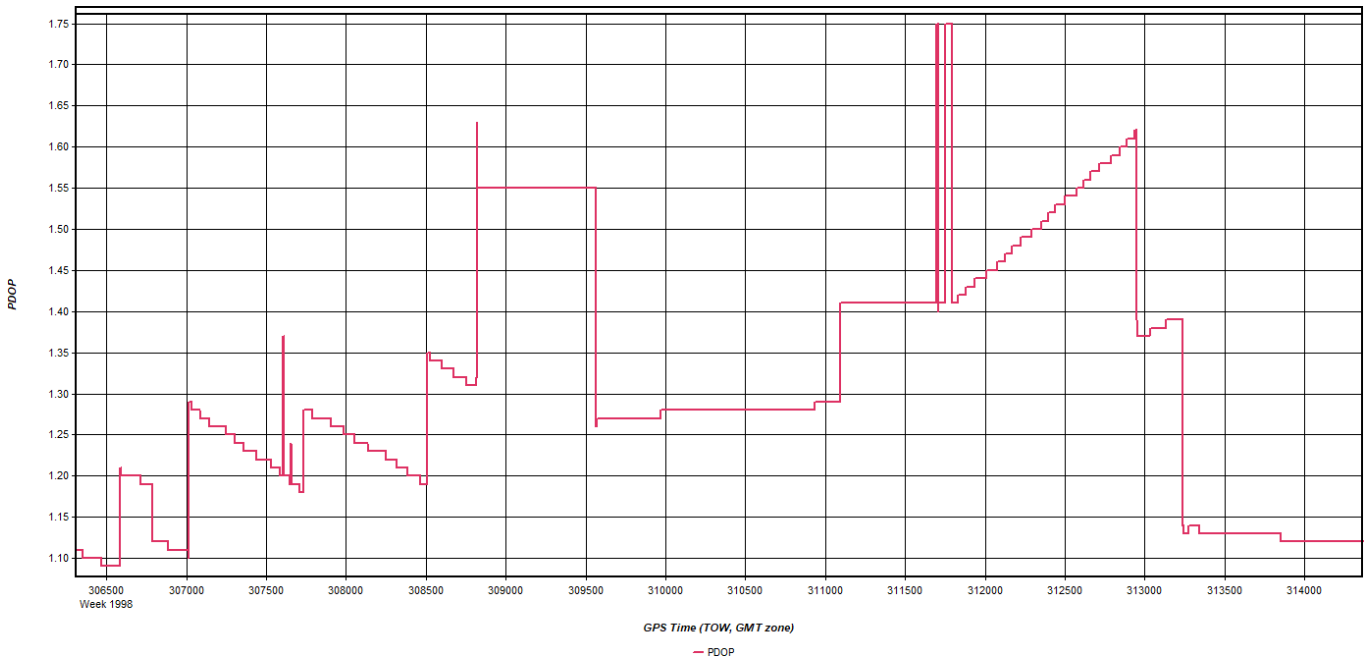

Misclosure (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
216000
Week 1998
216500
217000
217500
218000
218500
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
East
North
Up

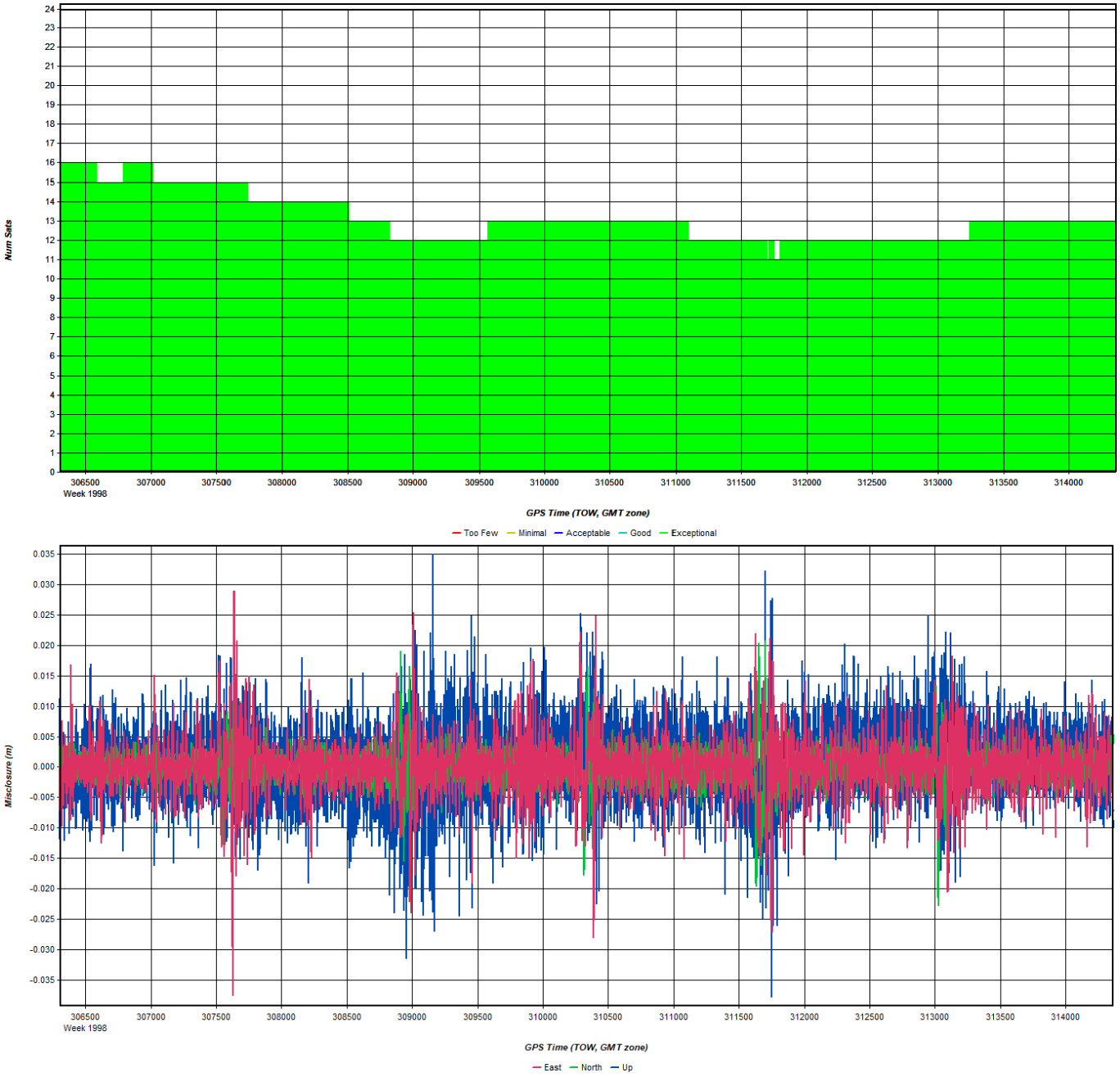

Separation (m)
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
216000
Week 1998
216500
217000
217500
218000
218500
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
East
North
Up

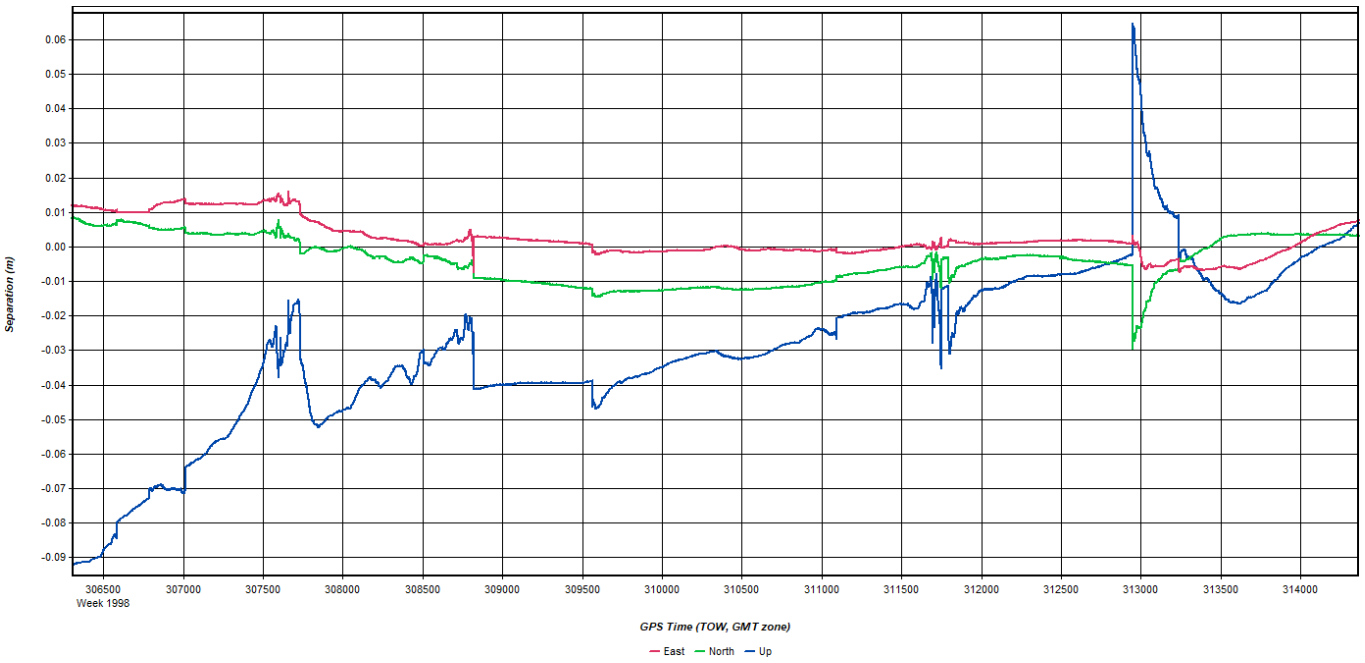
```
  Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      20221
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0190 (m)
        C/A Code:       0.76 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.131 (m)
        North:  0.039 (m)
        Height: 0.165 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (16743 occurances):
        East:   0.012 (m)
        North:  0.009 (m)
        Height: 0.016 (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 %

Baseline Distances:
        Maximum:        85.195 (km)
        Minimum:        53.236 (km)
        Average:        63.502 (km)
        First Epoch:    63.511 (km)
        Last Epoch:     63.448 (km)
```

Mission 31


10 km

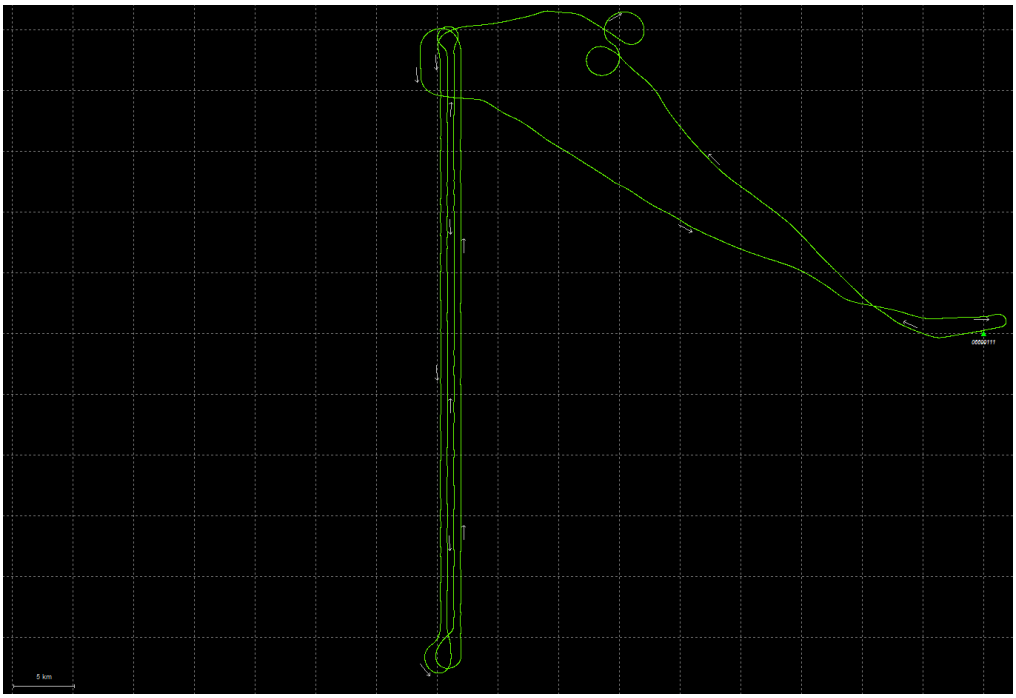

PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
306500
Week 1998
307000
307500
308000
308500
309000
309500
310000
310500
311000
311500
312000
312500
313000
313500
314000
GPS Time (TOW, GMT zone)
PDOP

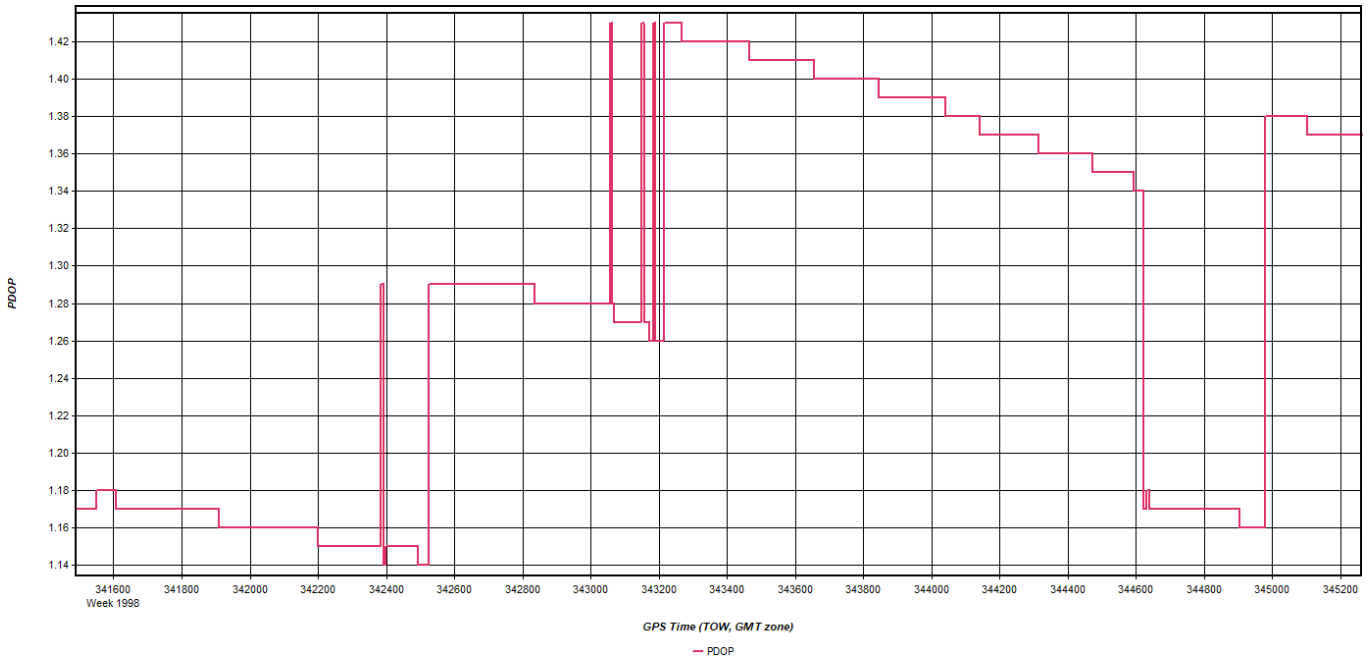

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
306500
Week 1998
307000
307500
308000
308500
309000
309500
310000
310500
311000
311500
312000
312500
313000
313500
314000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
306500
Week 1998
307000
307500
308000
308500
309000
309500
310000
310500
311000
311500
312000
312500
313000
313500
314000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
306500
Week 1998
307000
307500
308000
308500
309000
309500
310000
310500
311000
311500
312000
312500
313000
313500
314000
GPS Time (TOW, GMT zone)
East
North
Up

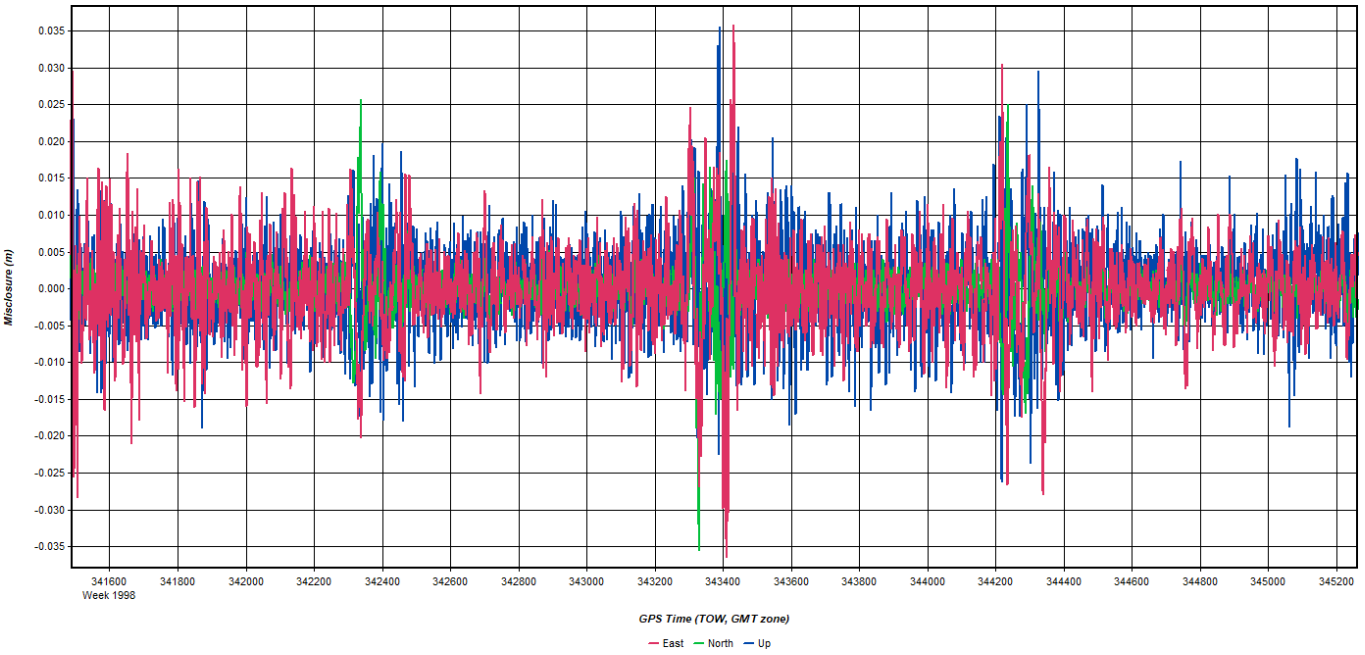
```
  Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      22327
        No processed position:  1
        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:       0.82 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.009 (m)
        North:  0.009 (m)
        Height: 0.044 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (22321 occurances):
        East:   0.008 (m)
        North:  0.008 (m)
        Height: 0.043 (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 %

Baseline Distances:
        Maximum:        82.554 (km)
        Minimum:        48.745 (km)
        Average:        61.474 (km)
        First Epoch:    63.511 (km)
        Last Epoch:     63.455 (km)
```

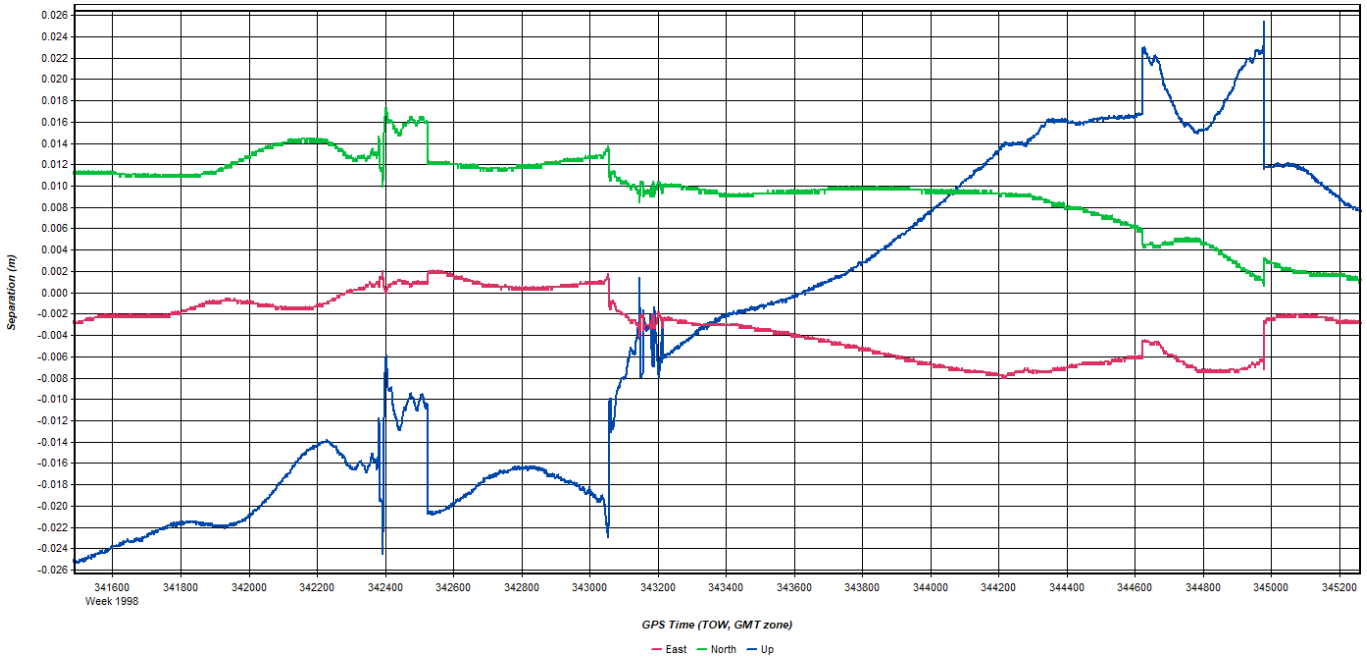
Mission 32




PDOP
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
341600
Week 1998
341800
342000
342200
342400
342600
342800
343000
343200
343400
343600
343800
344000
344200
344400
344600
344800
345000
345200
GPS Time (TOW, GMT zone)
PDOP

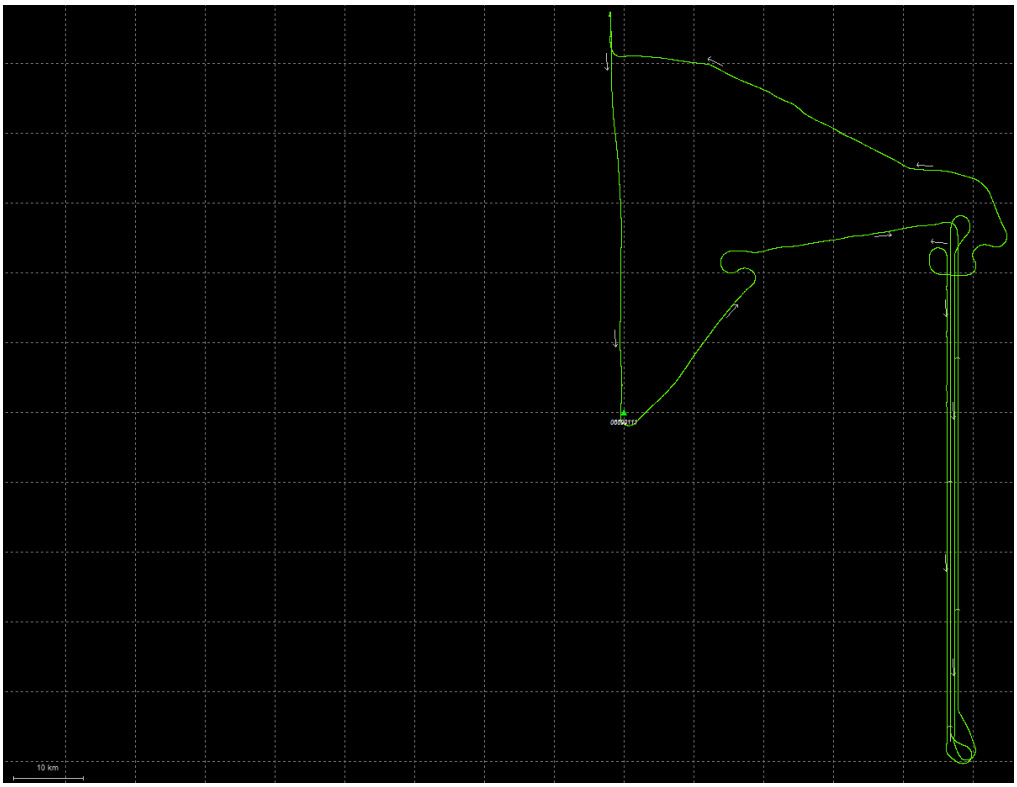

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
341600
Week 1998
341800
342000
342200
342400
342600
342800
343000
343200
343400
343600
343800
344000
344200
344400
344600
344800
345000
345200
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

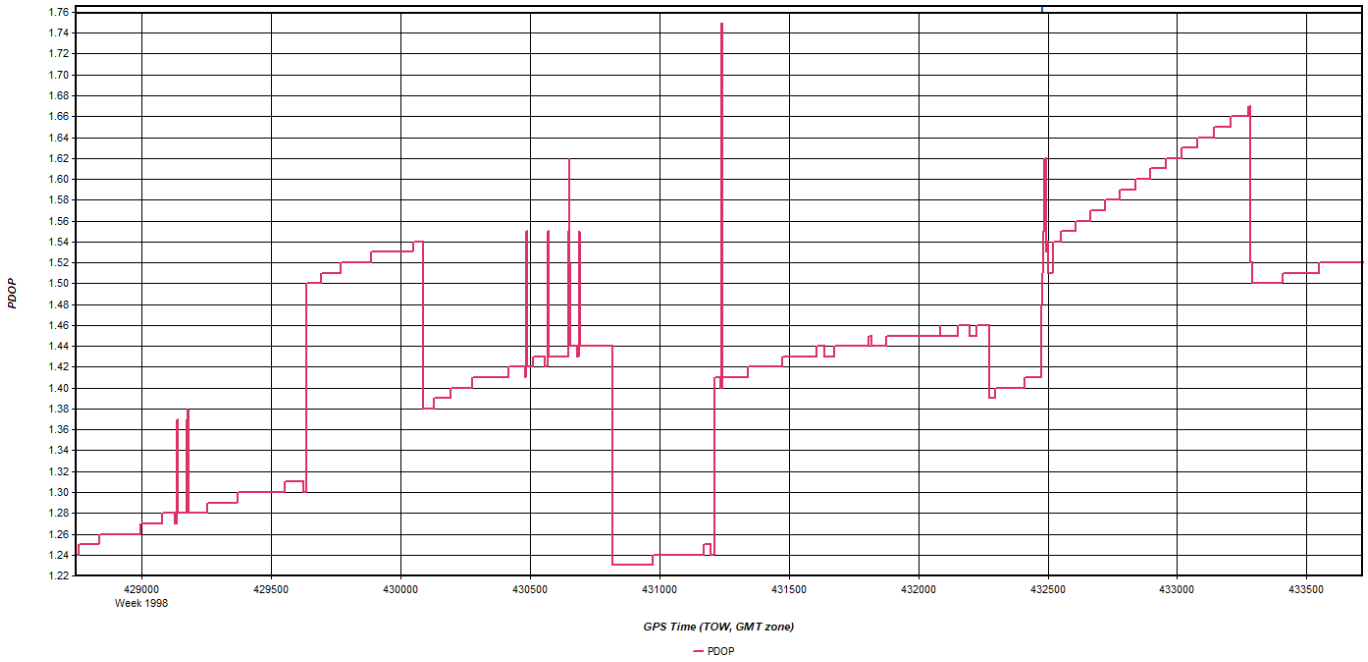

Misclosure (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
341600
Week 1998
341800
342000
342200
342400
342600
342800
343000
343200
343400
343600
343800
344000
344200
344400
344600
344800
345000
345200
GPS Time (TOW, GMT zone)
East
North
Up

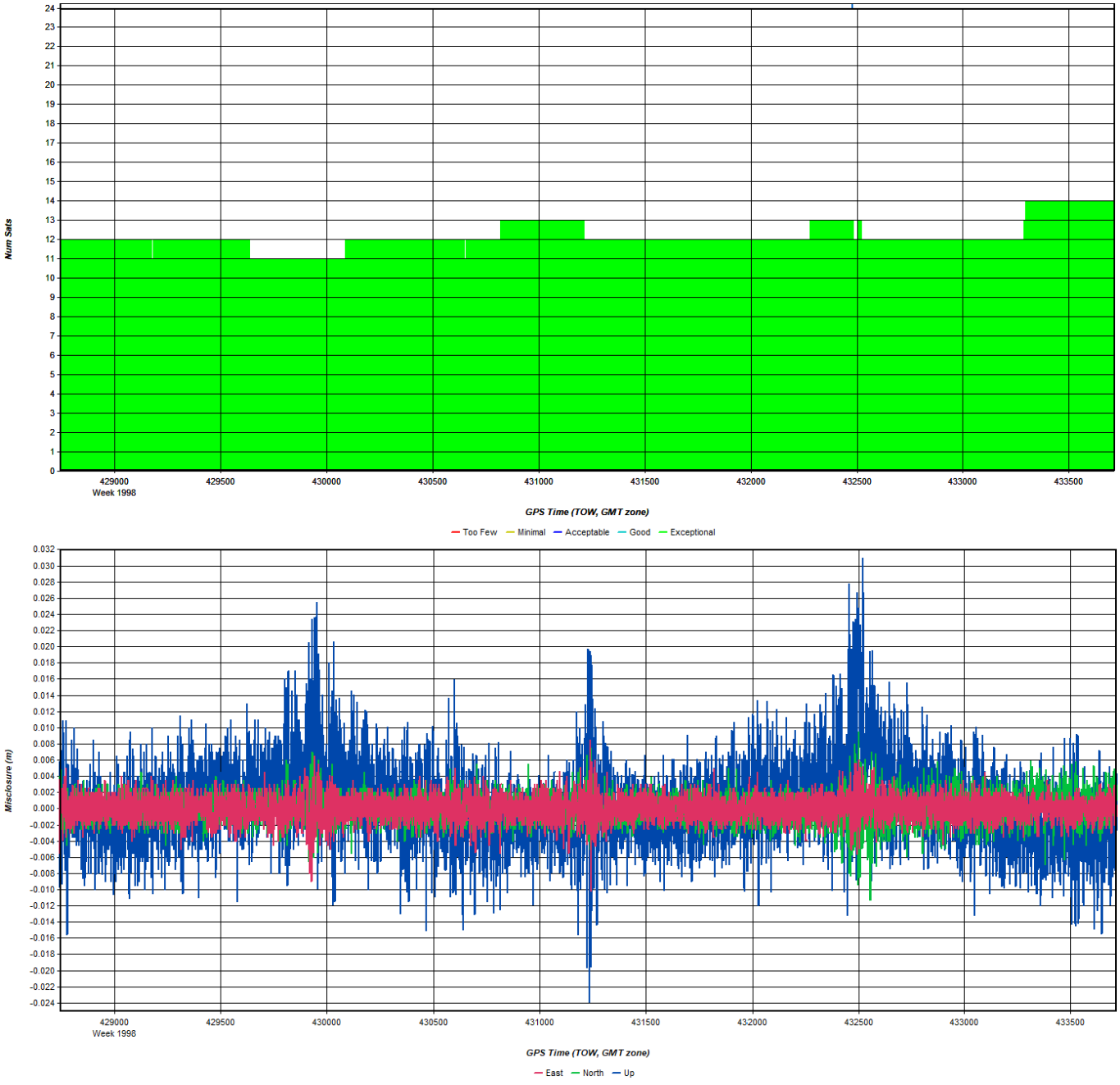

Separation (m)
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
-0.026
341600
Week 1998
341800
342000
342200
342400
342600
342800
343000
343200
343400
343600
343800
344000
344200
344400
344600
344800
345000
345200
GPS Time (TOW, GMT zone)
East
North
Up

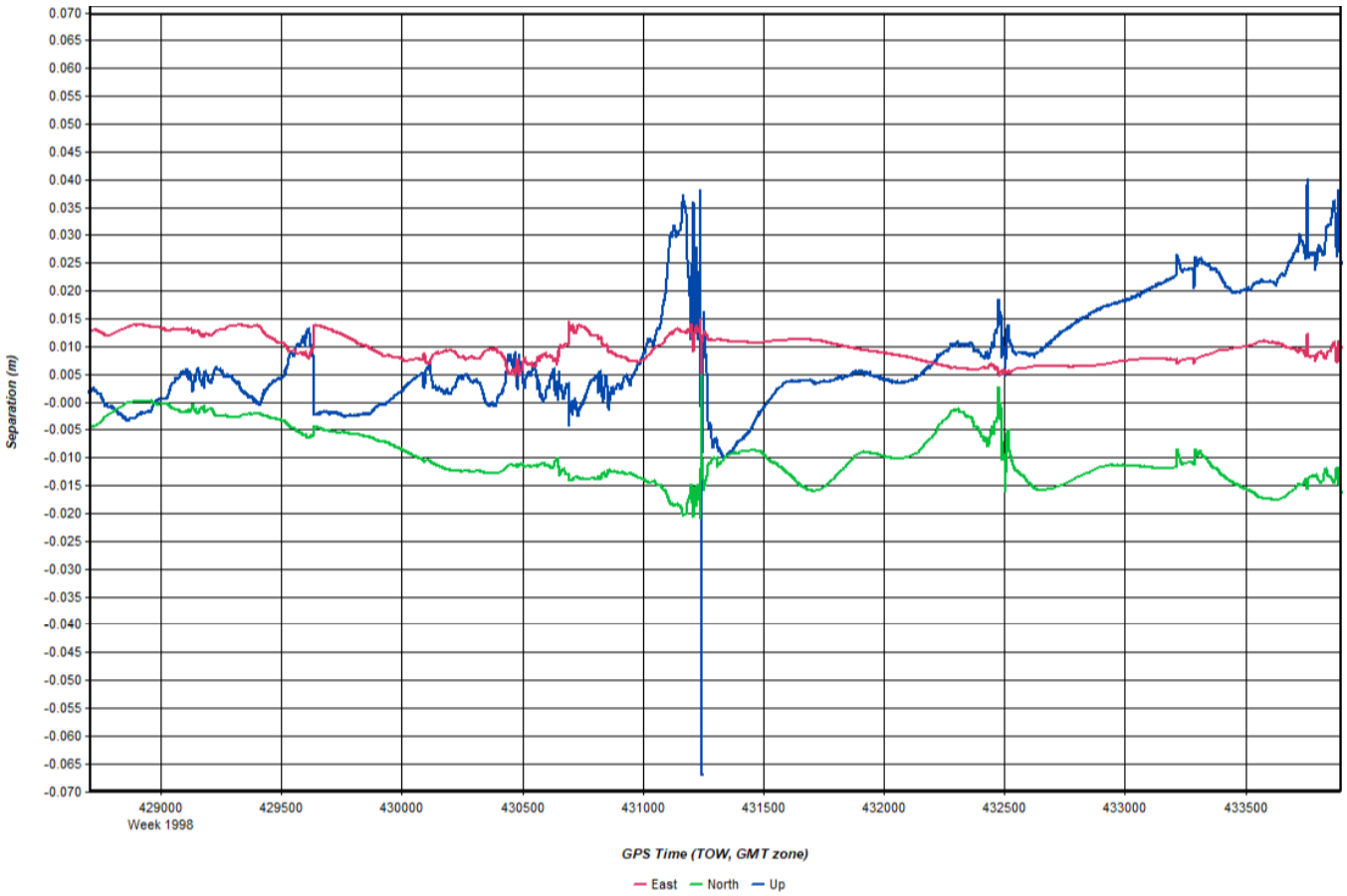
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      13814
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0173 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.011 (m)
        Height: 0.025 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (13808 occurances):
        East:   0.005 (m)
        North:  0.011 (m)
        Height: 0.025 (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:        53.101 (km)
        Minimum:        0.234 (km)
        Average:        35.529 (km)
        First Epoch:    0.234 (km)
        Last Epoch:     0.679 (km)
```

Mission 33


10 km

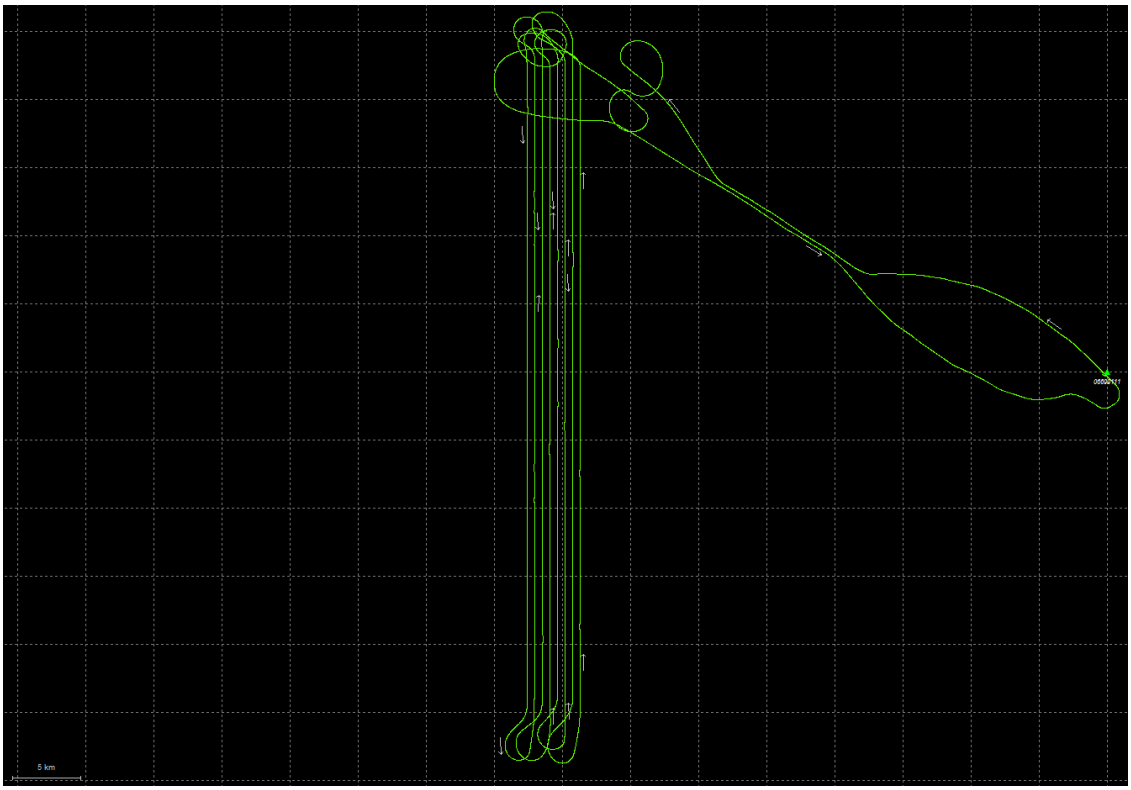

PDOP
1.76
1.74
1.72
1.70
1.68
1.66
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
429000
Week 1998
429500
430000
430500
431000
431500
432000
432500
433000
433500
GPS Time (TOW, GMT zone)
PDOP

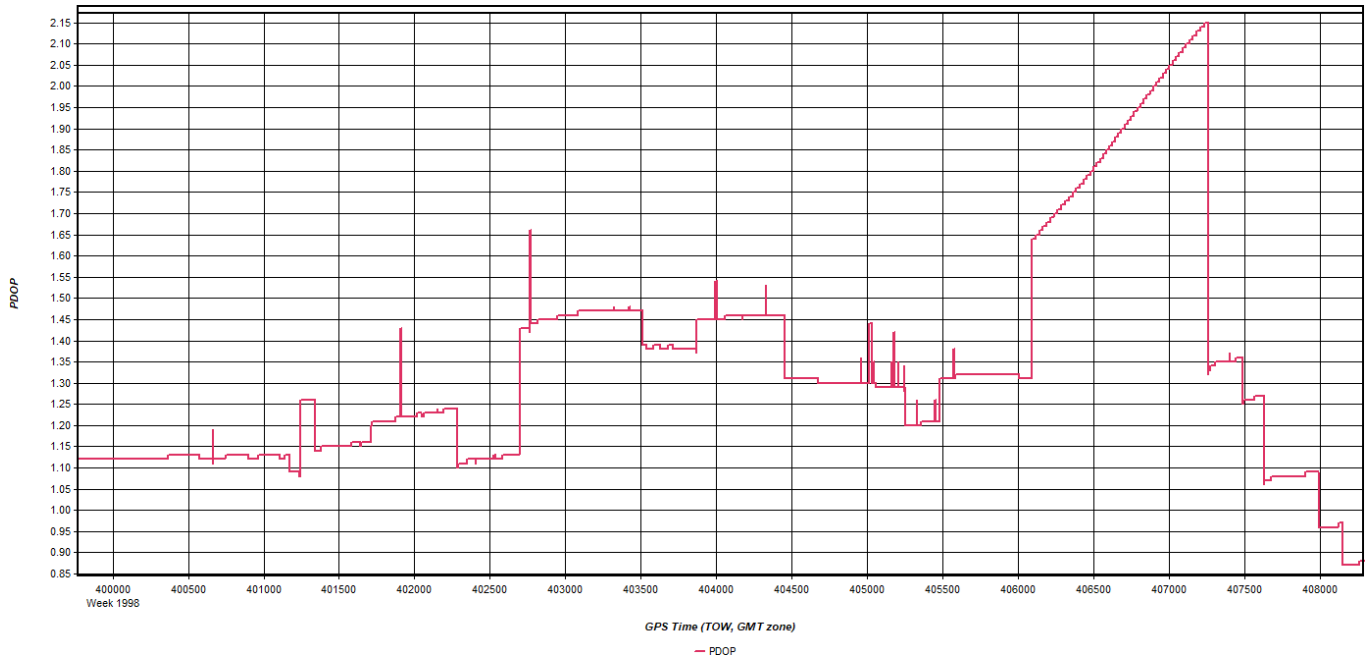

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
429000
Week 1998
429500
430000
430500
431000
431500
432000
432500
433000
433500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.032
0.030
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
429000
Week 1998
429500
430000
430500
431000
431500
432000
432500
433000
433500
GPS Time (TOW, GMT zone)
East
North
Up


0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
Separation (m)
429000
Week 1998
429500
430000
430500
431000
431500
432000
432500
433000
433500
GPS Time (TOW, GMT zone)
East
North
Up

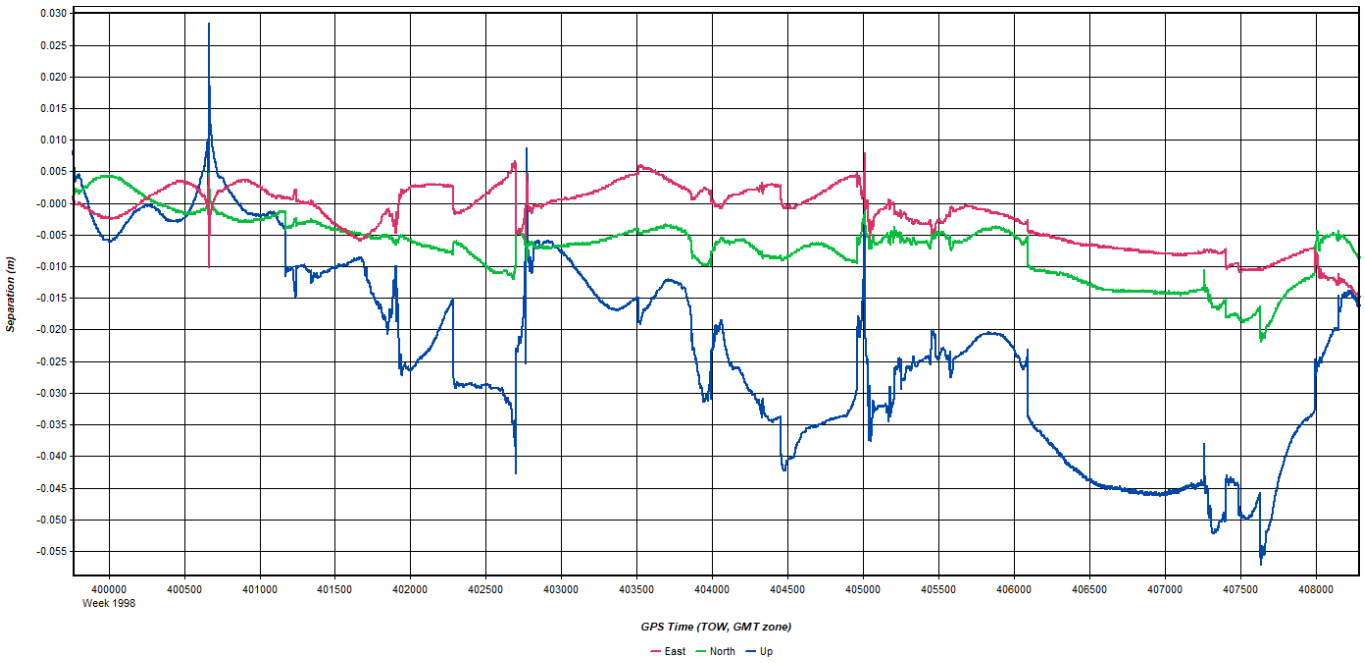
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      18372
        No processed position:  2
        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:       0.29 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.040 (m)
        North:  0.025 (m)
        Height: 0.066 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (11295 occurances):
        East:   0.003 (m)
        North:  0.003 (m)
        Height: 0.011 (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:        70.193 (km)
        Minimum:        0.507 (km)
        Average:        47.751 (km)
        First Epoch:    56.507 (km)
        Last Epoch:     56.417 (km)
```

Mission 34


5 km

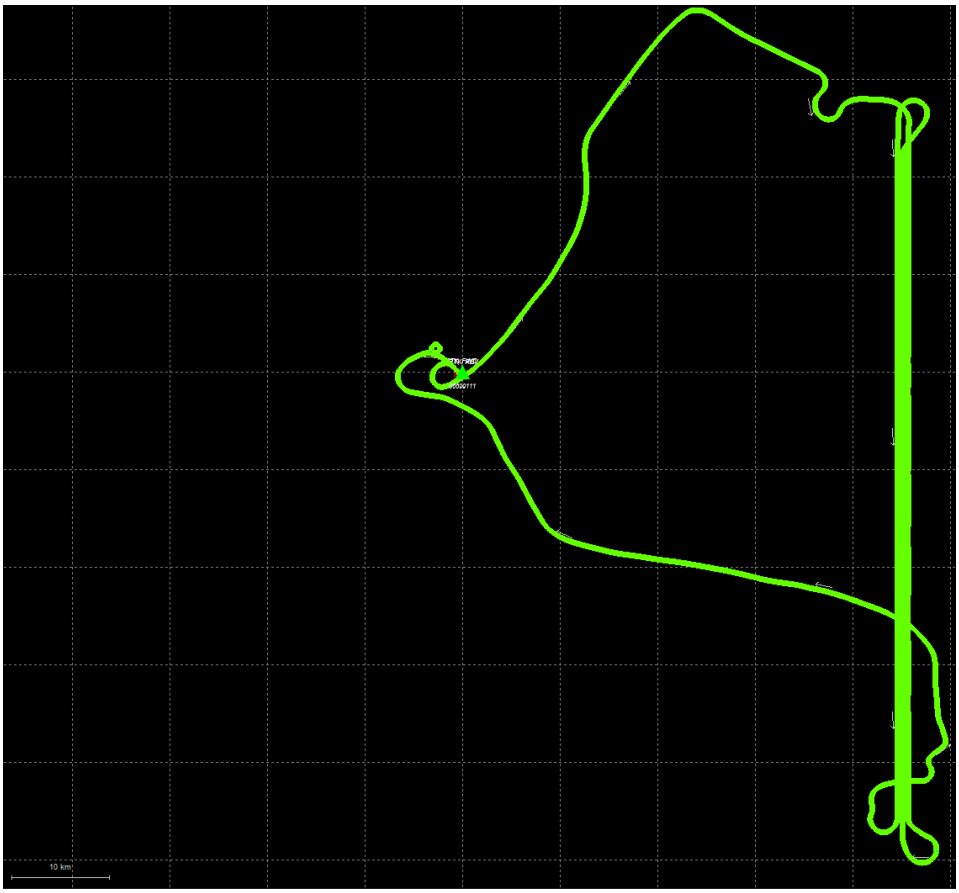

PDOP
2.15
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
400000
Week 1998
400500
401000
401500
402000
402500
403000
403500
404000
404500
405000
405500
406000
406500
407000
407500
408000
GPS Time (TOW, GMT zone)
PDOP

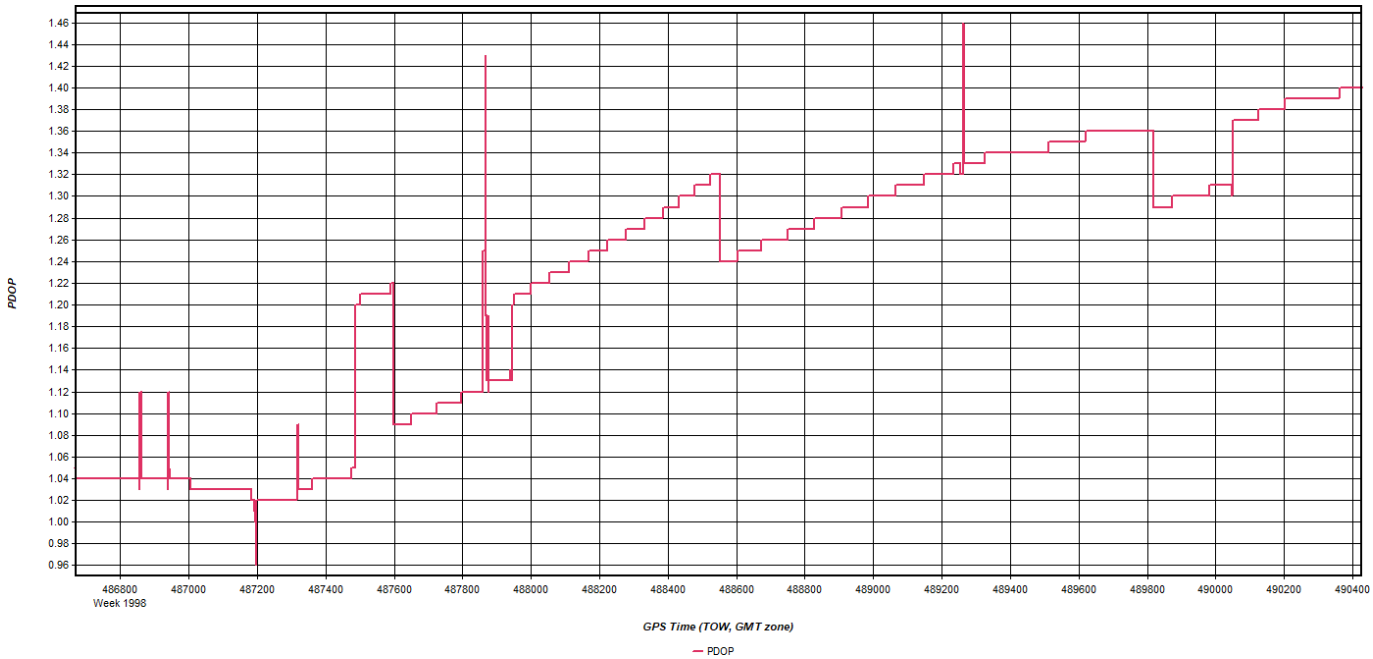

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
400000
Week 1998
400500
401000
401500
402000
402500
403000
403500
404000
404500
405000
405500
406000
406500
407000
407500
408000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
400000
Week 1998
400500
401000
401500
402000
402500
403000
403500
404000
404500
405000
405500
406000
406500
407000
407500
408000
GPS Time (TOW, GMT zone)
East
North
Up

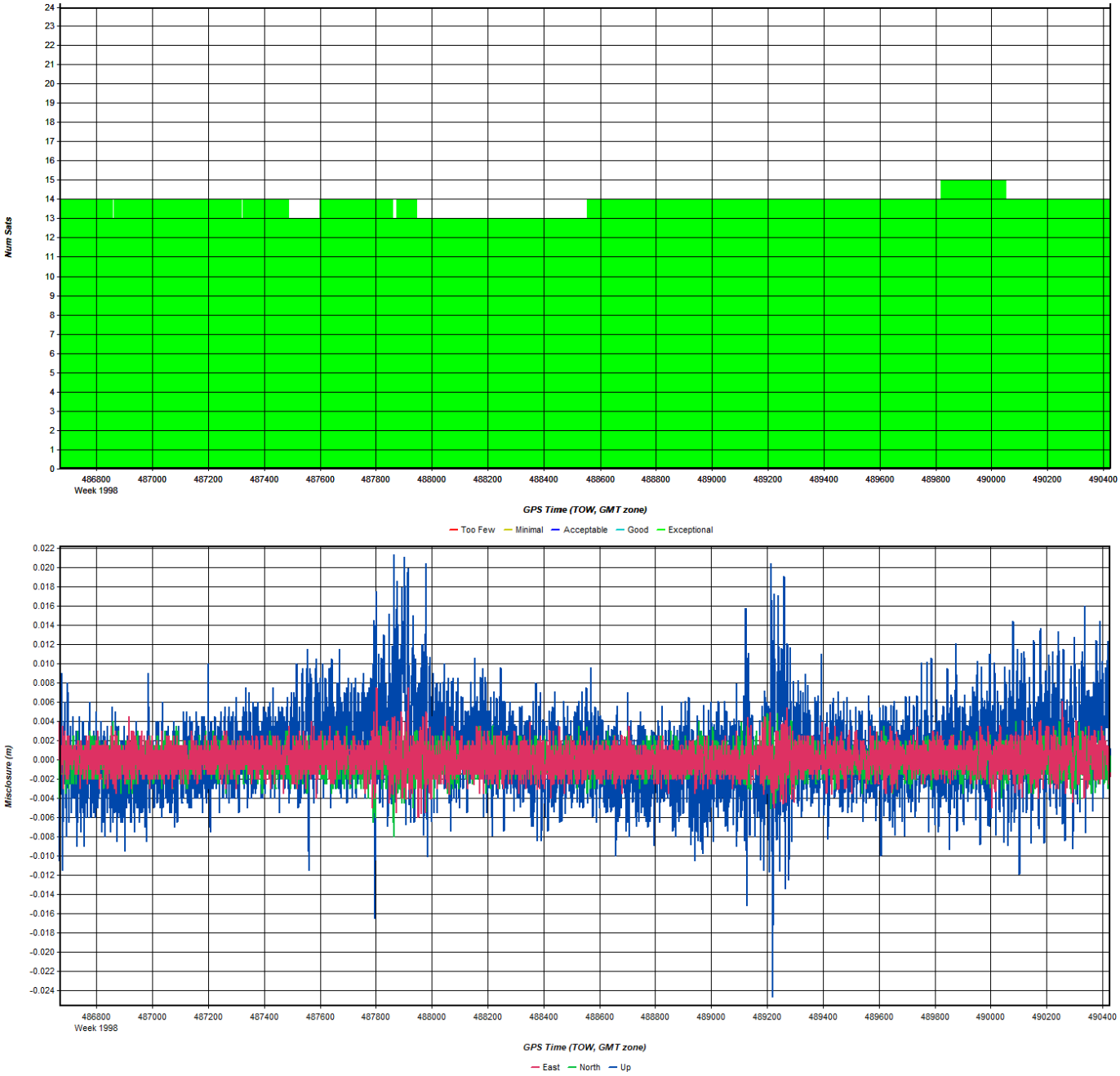

Separation (m)
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
400000
Week 1998
400500
401000
401500
402000
402500
403000
403500
404000
404500
405000
405500
406000
406500
407000
407500
408000
GPS Time (TOW, GMT zone)
East
North
Up

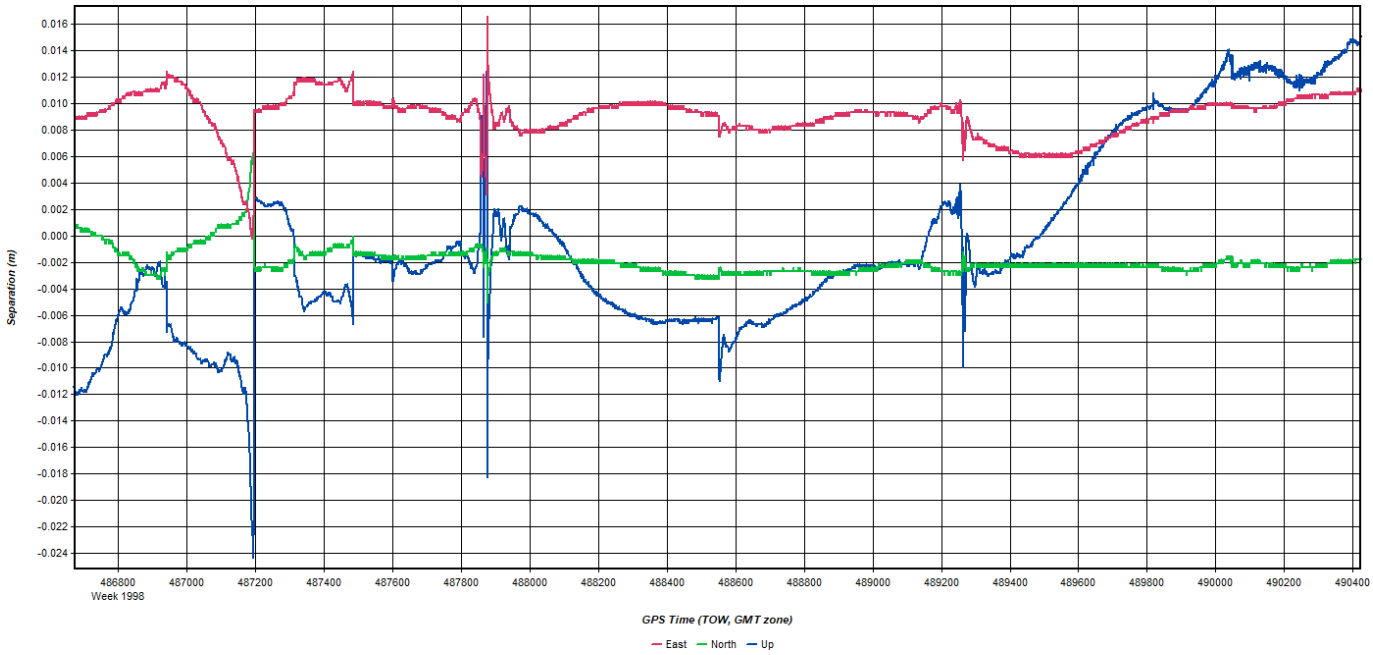
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      23843
        No processed position:  1
        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:       0.32 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.008 (m)
        Height: 0.026 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (23838 occurances):
        East:   0.005 (m)
        North:  0.008 (m)
        Height: 0.025 (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 %

Baseline Distances:
        Maximum:        51.839 (km)
        Minimum:        0.248 (km)
        Average:        37.083 (km)
        First Epoch:    0.418 (km)
        Last Epoch:     0.407 (km)
```

Mission 35


10 km

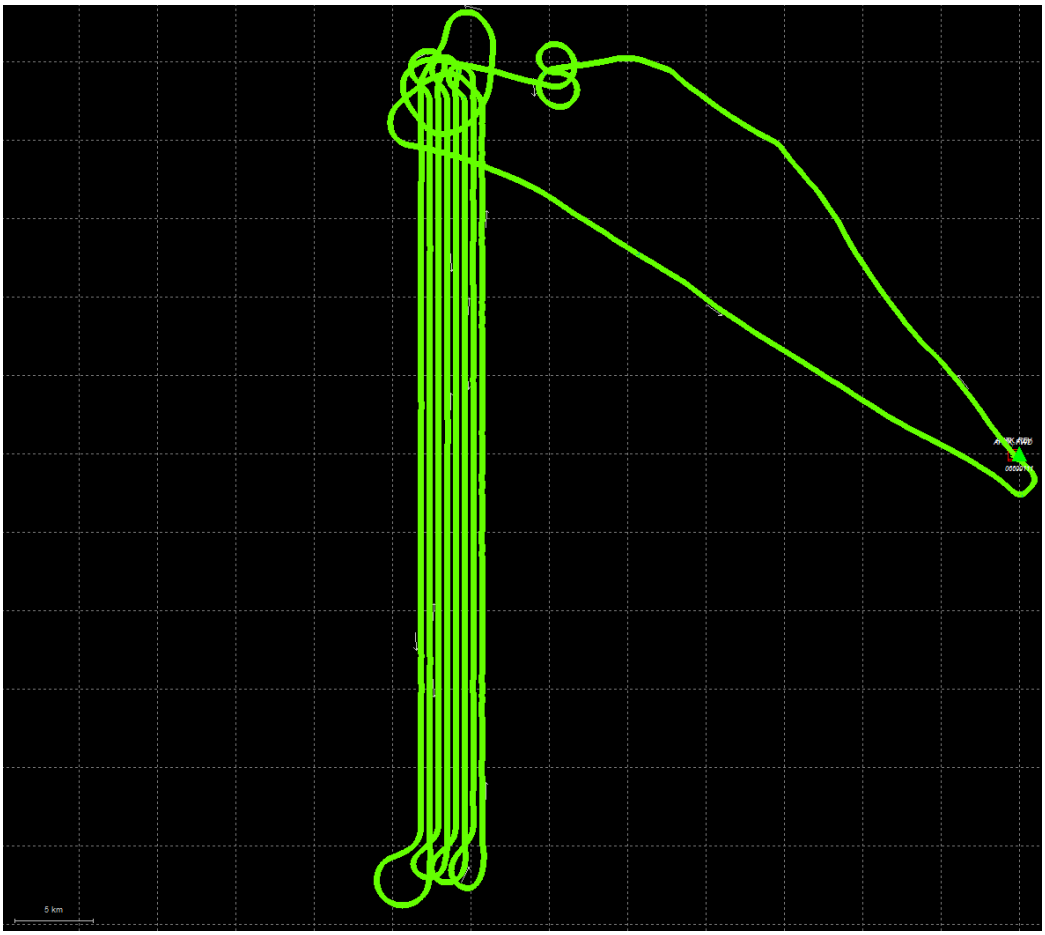

PDOP
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
486800
Week 1998
487000
487200
487400
487600
487800
488000
488200
488400
488600
488800
489000
489200
489400
489600
489800
490000
490200
490400
GPS Time (TOW, GMT zone)
PDOP

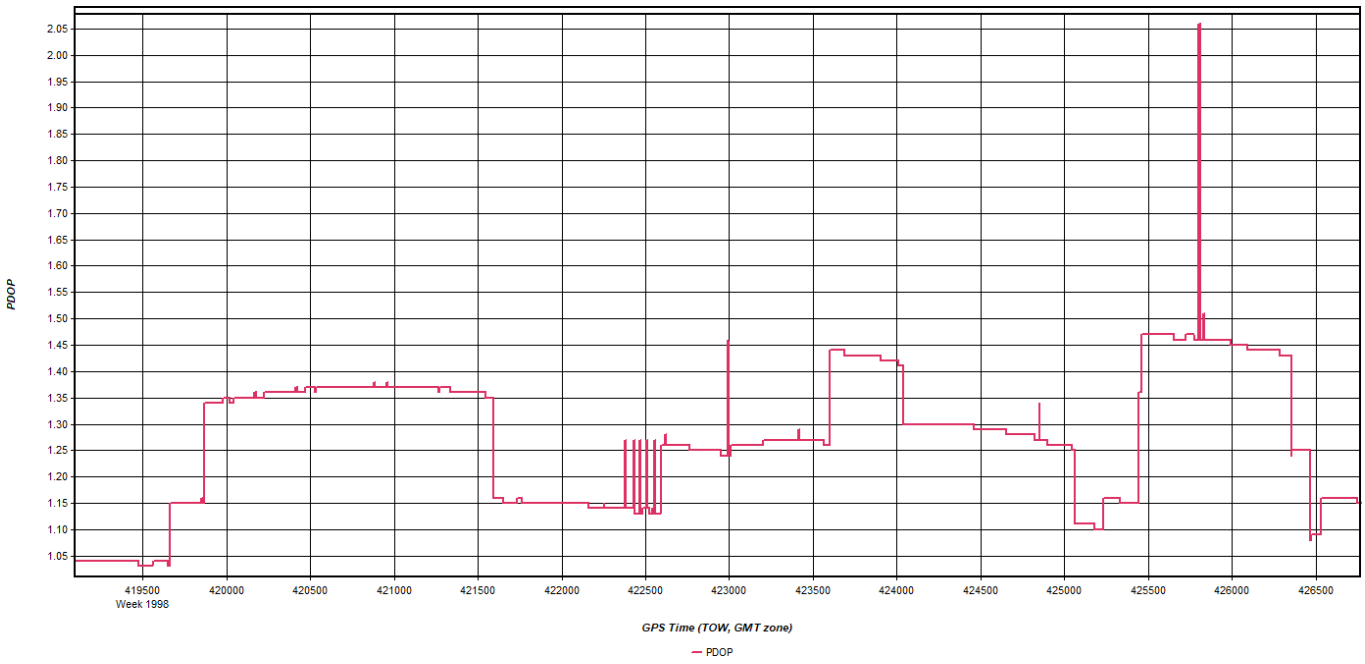

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
486800
Week 1998
487000
487200
487400
487600
487800
488000
488200
488400
488600
488800
489000
489200
489400
489600
489800
490000
490200
490400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
486800
Week 1998
487000
487200
487400
487600
487800
488000
488200
488400
488600
488800
489000
489200
489400
489600
489800
490000
490200
490400
GPS Time (TOW, GMT zone)
East
North
Up

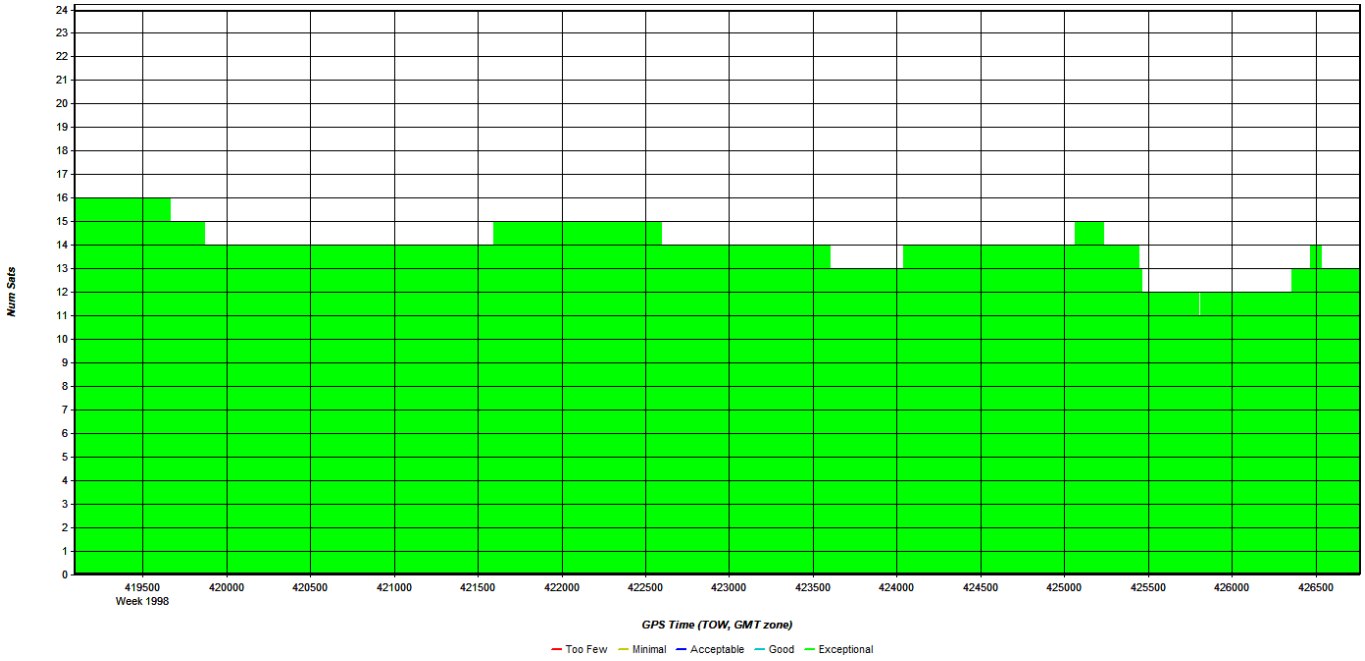

Separation (m)
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
486800
Week 1998
487000
487200
487400
487600
487800
488000
488200
488400
488600
488800
489000
489200
489400
489600
489800
490000
490200
490400
GPS Time (TOW, GMT zone)
East
North
Up

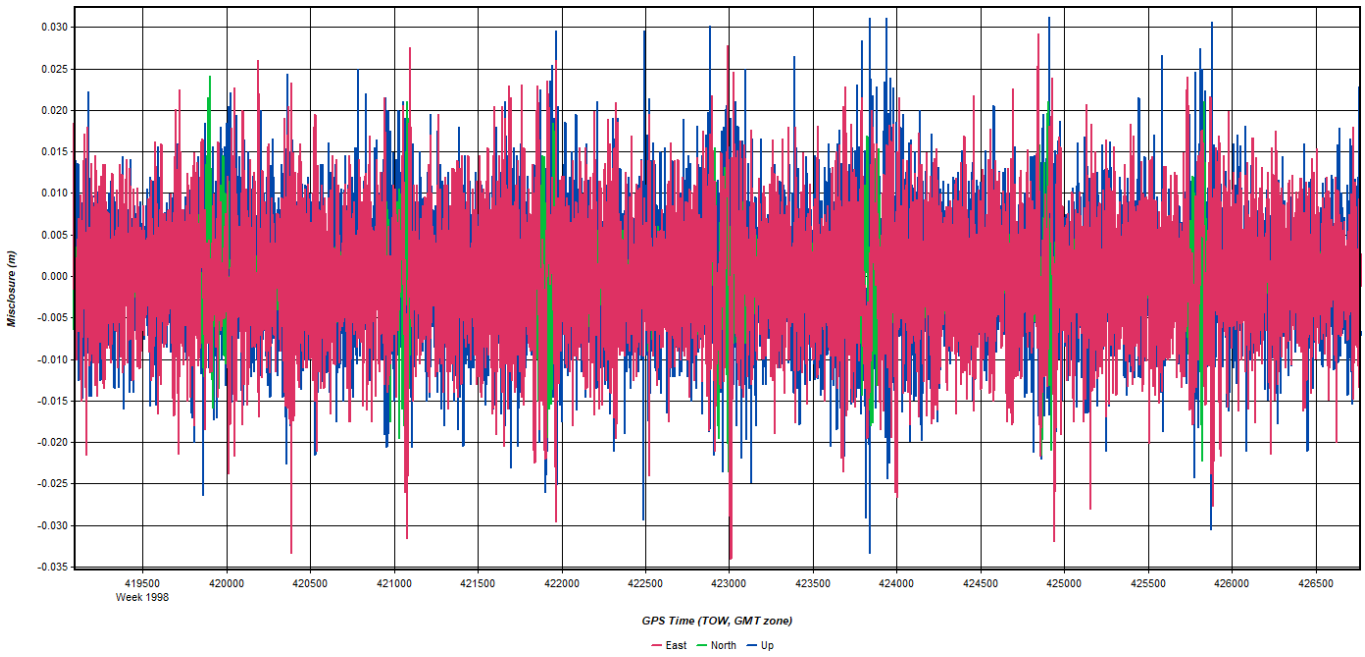
```
         Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      14944
        No processed position:  2
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0138 (m)
        C/A Code:       0.32 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.009 (m)
        North:  0.003 (m)
        Height: 0.015 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (14938 occurances):
        East:   0.009 (m)
        North:  0.003 (m)
        Height: 0.014 (m)

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

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

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

Baseline Distances:
        Maximum:        69.231 (km)
        Minimum:        0.248 (km)
        Average:        39.735 (km)
        First Epoch:    0.411 (km)
        Last Epoch:     0.334 (km)
```

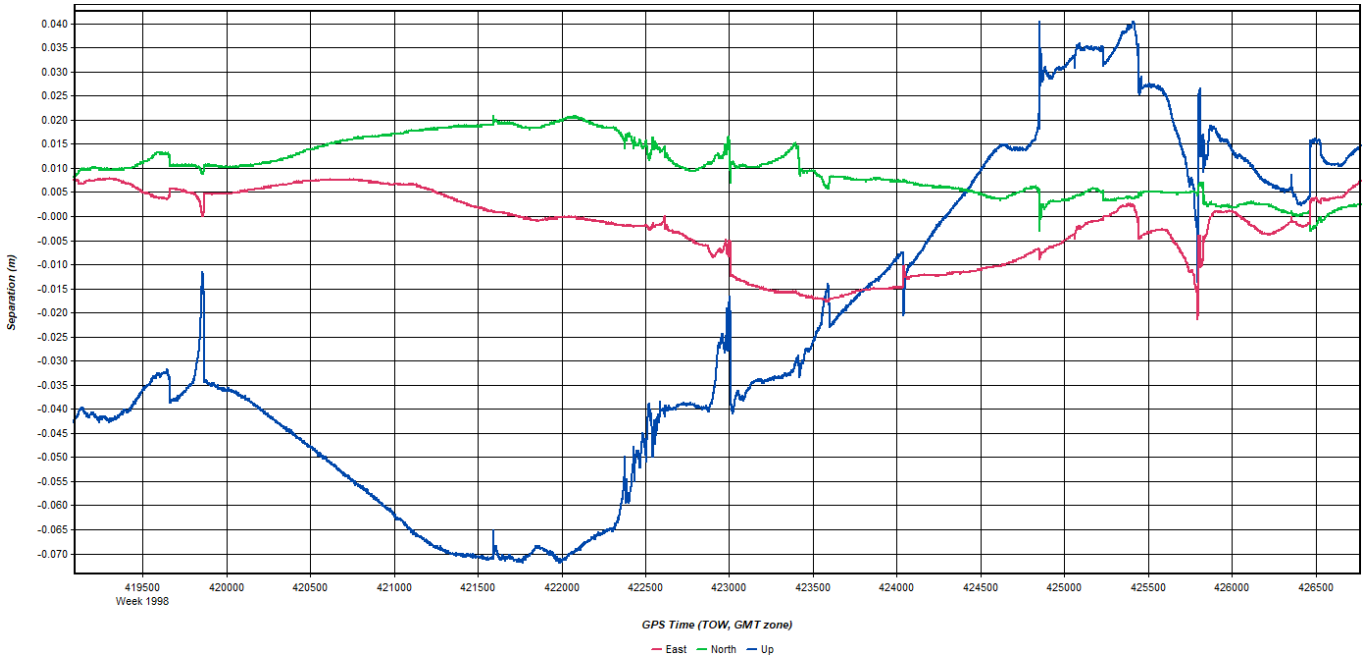
Mission 36


5 km


PDOP
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
419500
Week 1998
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
GPS Time (TOW, GMT zone)
PDOP

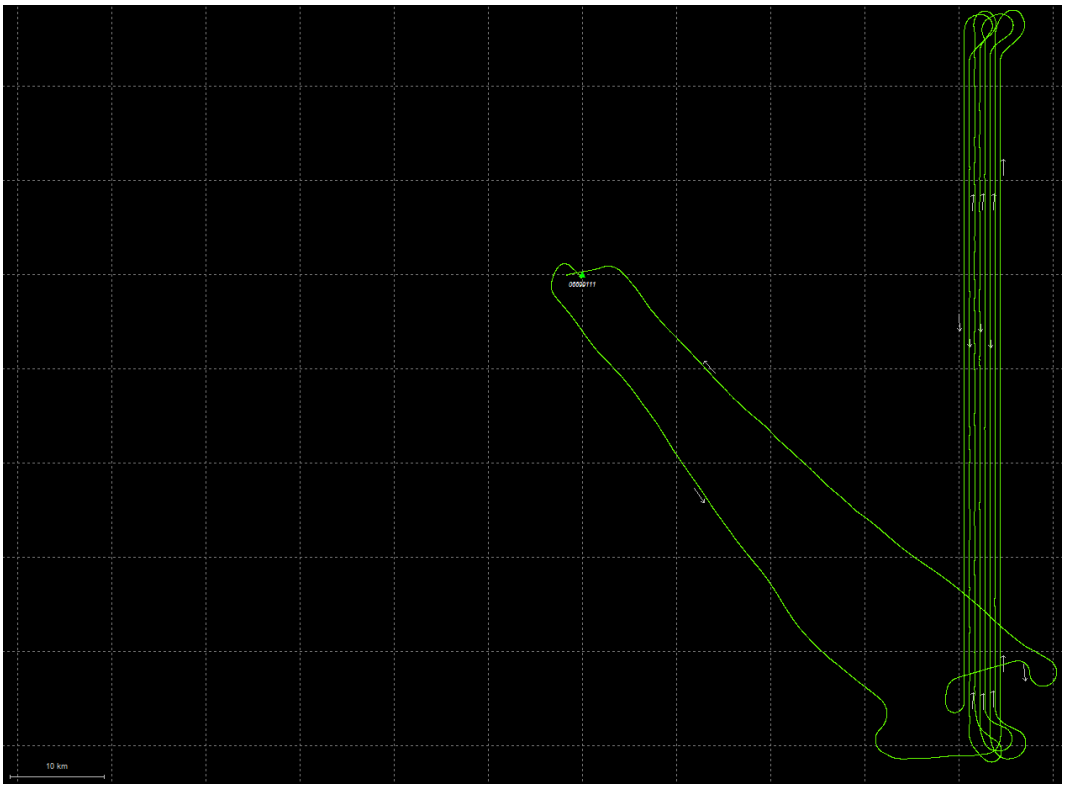

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
419500
Week 1998
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

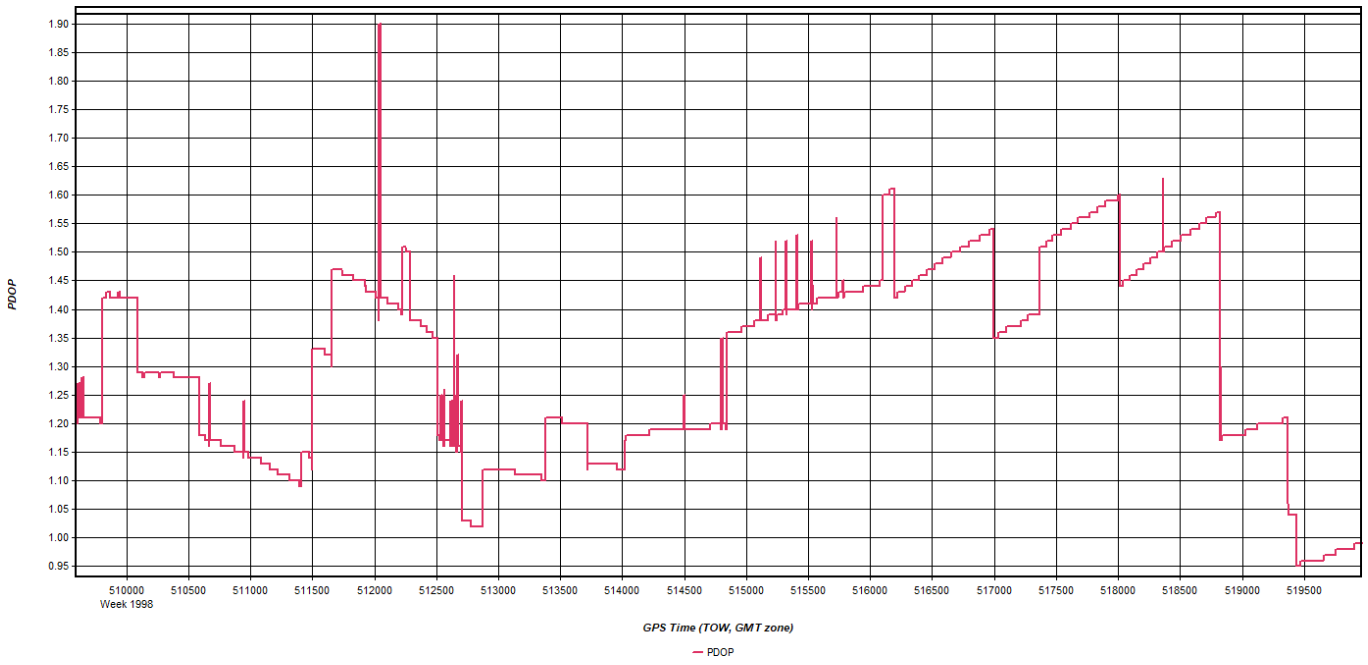

Misclosure (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
419500
Week 1998
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
GPS Time (TOW, GMT zone)
East
North
Up

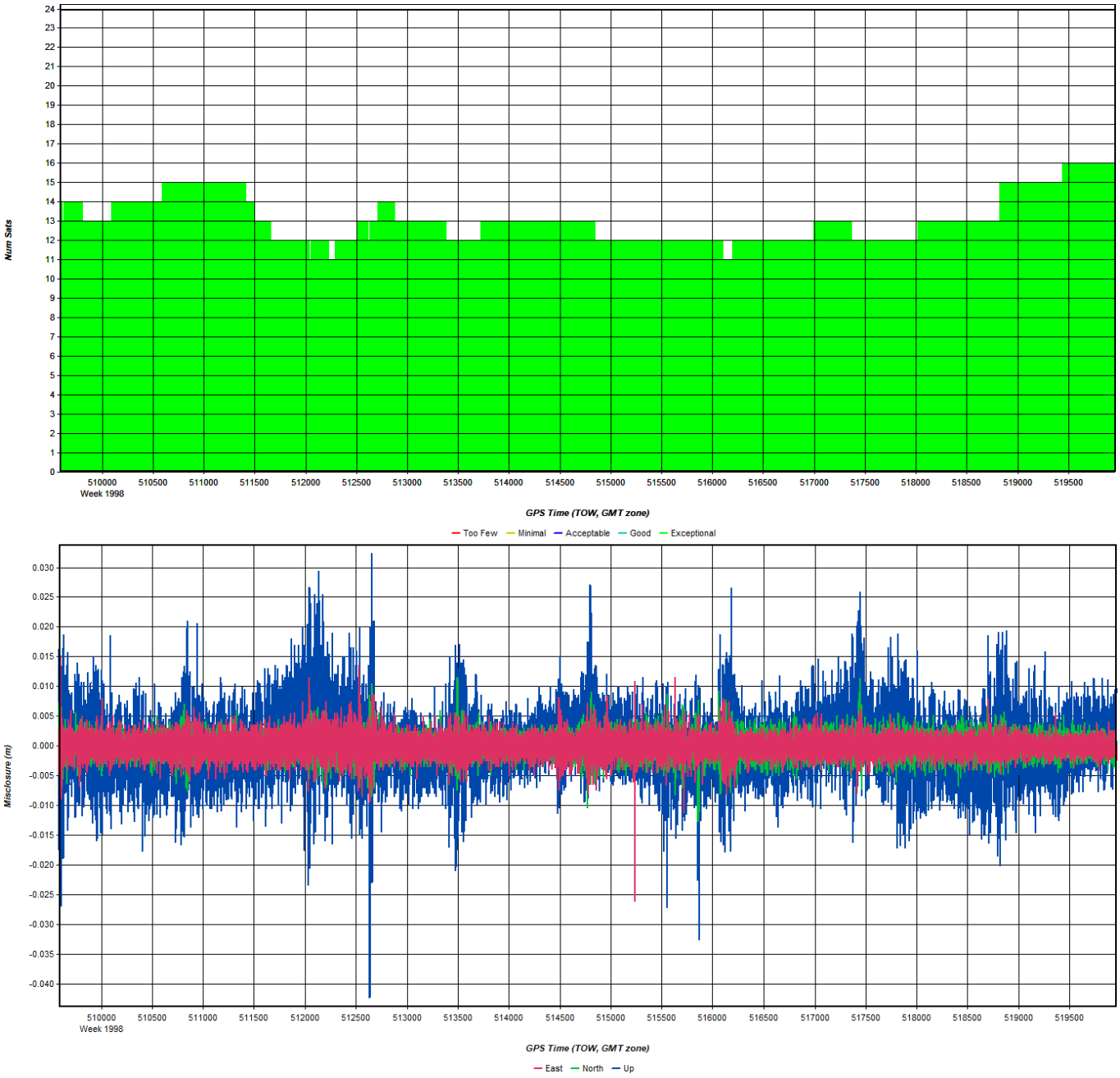

Separation (m)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
419500
Week 1998
420000
420500
421000
421500
422000
422500
423000
423500
424000
424500
425000
425500
426000
426500
GPS Time (TOW, GMT zone)
East
North
Up

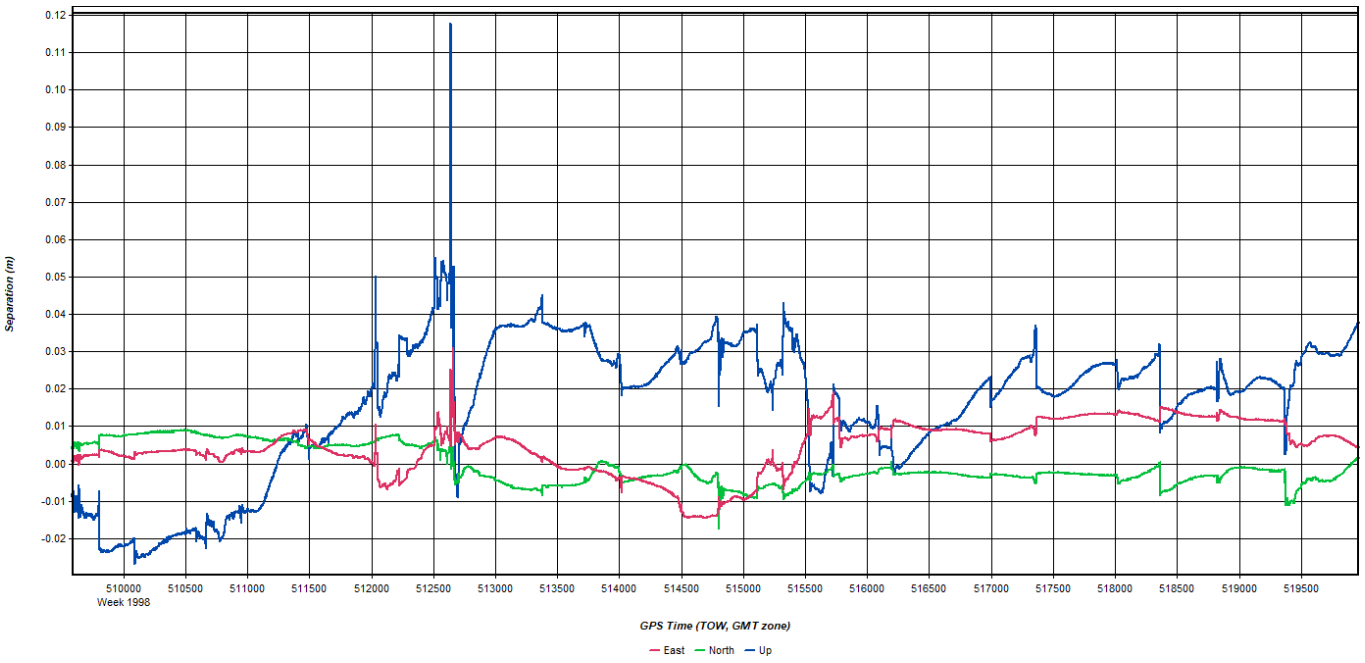
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      21911
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0181 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.008 (m)
        North:  0.010 (m)
        Height: 0.041 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (21907 occurances):
        East:   0.008 (m)
        North:  0.010 (m)
        Height: 0.041 (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 %

Baseline Distances:
        Maximum:        49.099 (km)
        Minimum:        0.248 (km)
        Average:        34.265 (km)
        First Epoch:    0.418 (km)
        Last Epoch:     0.355 (km)
```

Mission 37


10 km

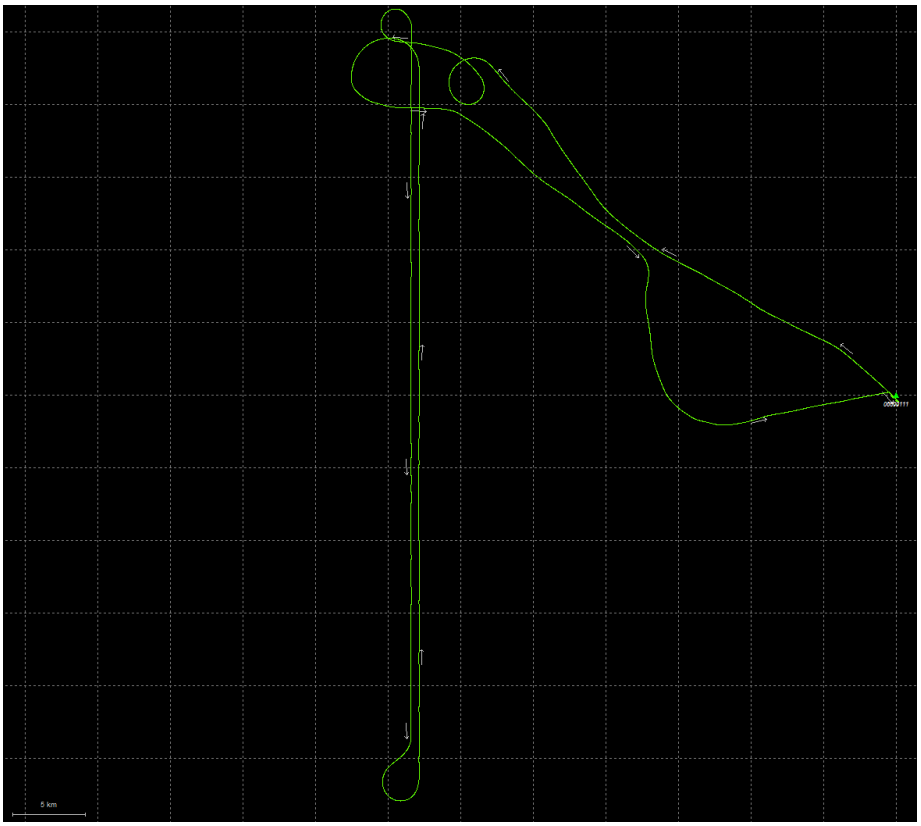

PDOP
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
510000
Week 1998
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
GPS Time (TOW, GMT zone)
PDOP

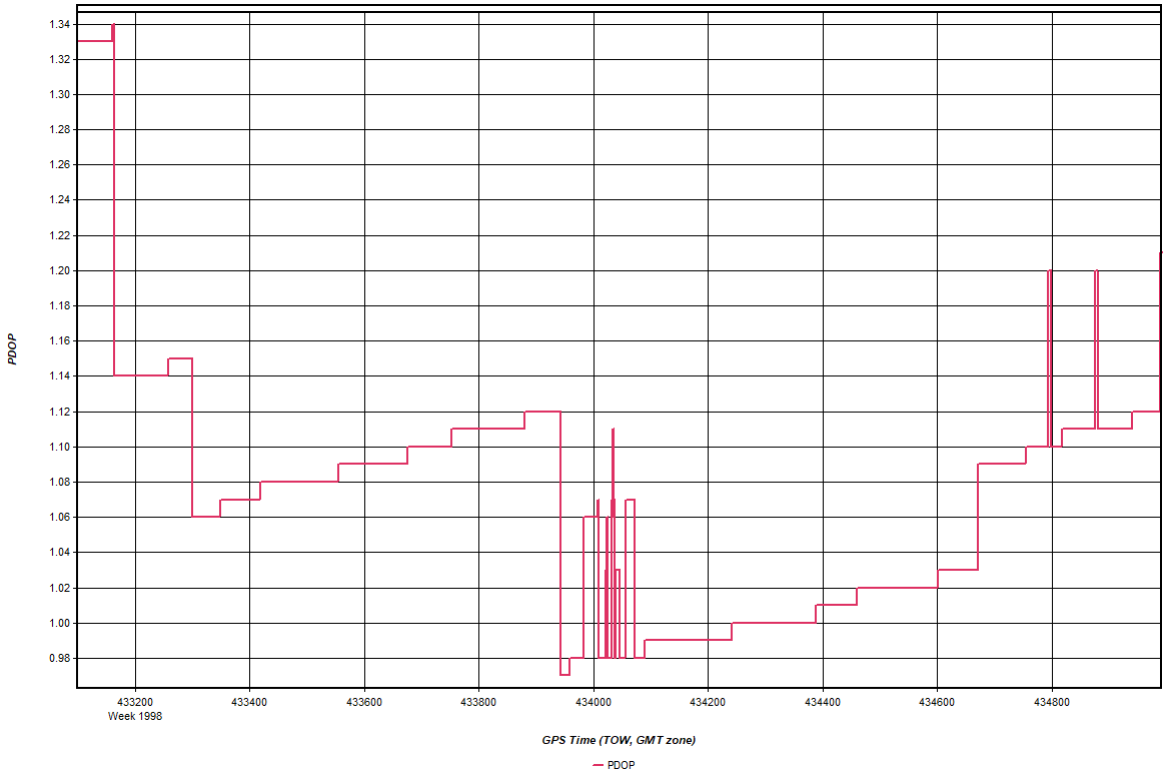

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
510000
Week 1998
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
510000
Week 1998
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
510000
Week 1998
510500
511000
511500
512000
512500
513000
513500
514000
514500
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
GPS Time (TOW, GMT zone)
East
North
Up

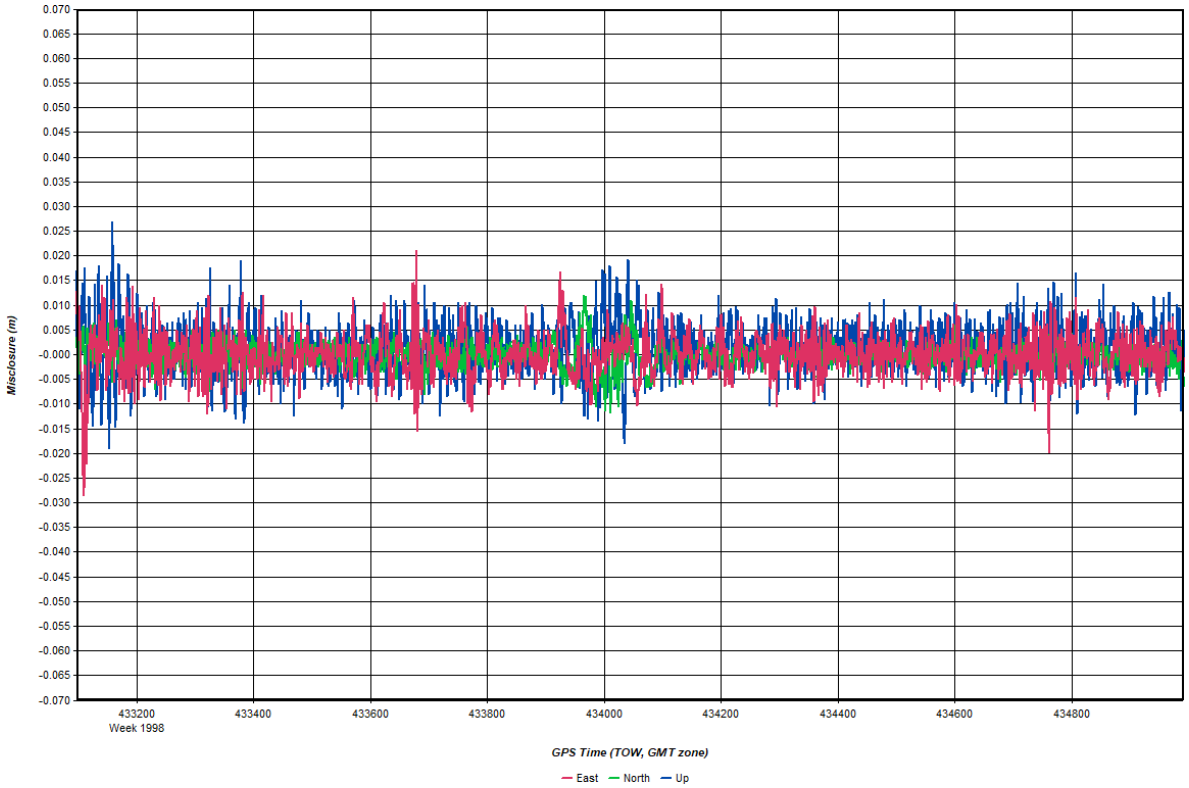
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      27818
        No processed position:  616
        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:       0.33 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.008 (m)
        North:  0.006 (m)
        Height: 0.024 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (27198 occurances):
        East:   0.008 (m)
        North:  0.006 (m)
        Height: 0.024 (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 %

Baseline Distances:
        Maximum:        68.415 (km)
        Minimum:        0.248 (km)
        Average:        44.736 (km)
        First Epoch:    0.375 (km)
        Last Epoch:     1.564 (km)
```

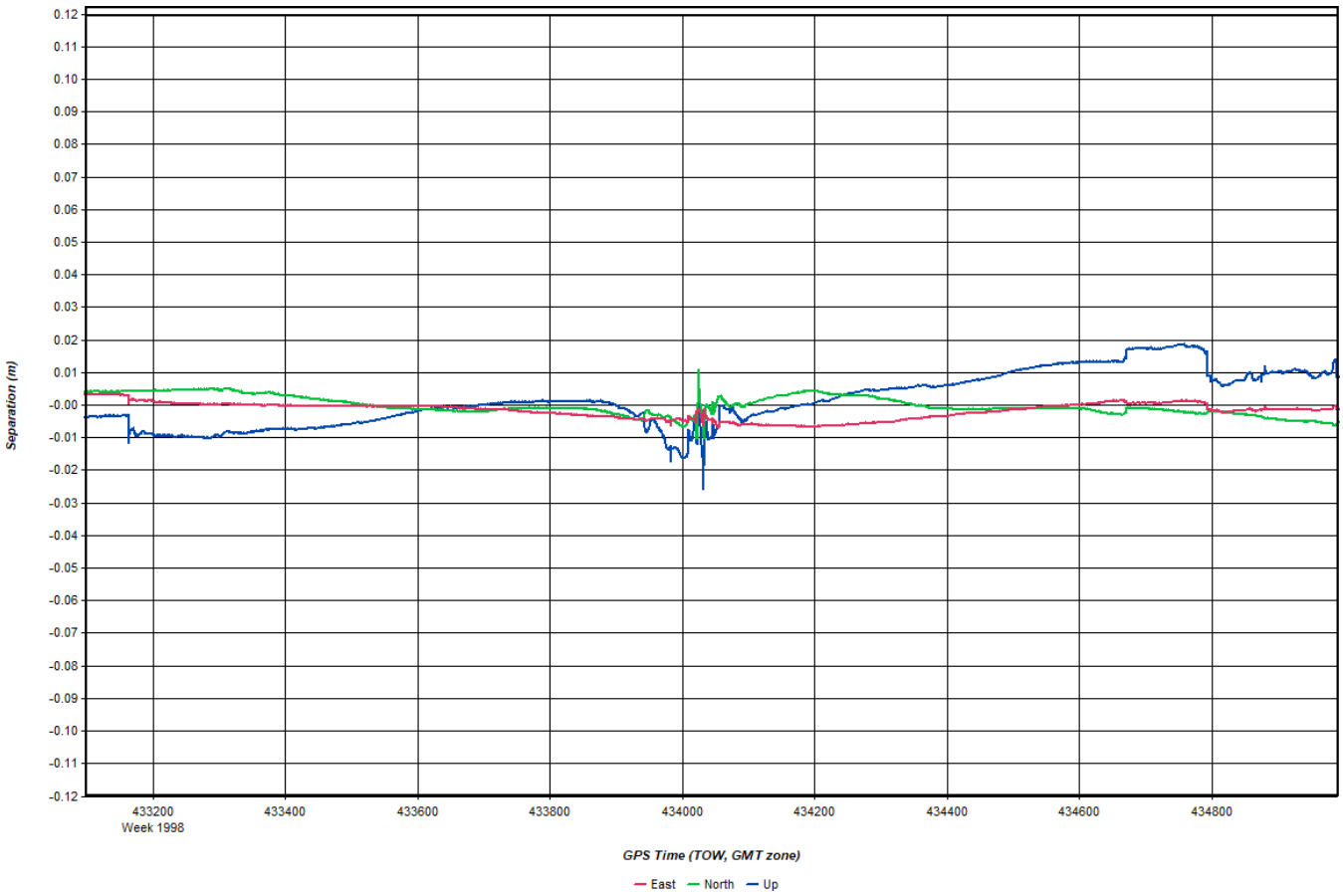
Mission 38


5 km


PDOP
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
433200
Week 1998
433400
433600
433800
434000
434200
434400
434600
434800
GPS Time (TOW, GMT zone)
PDOP

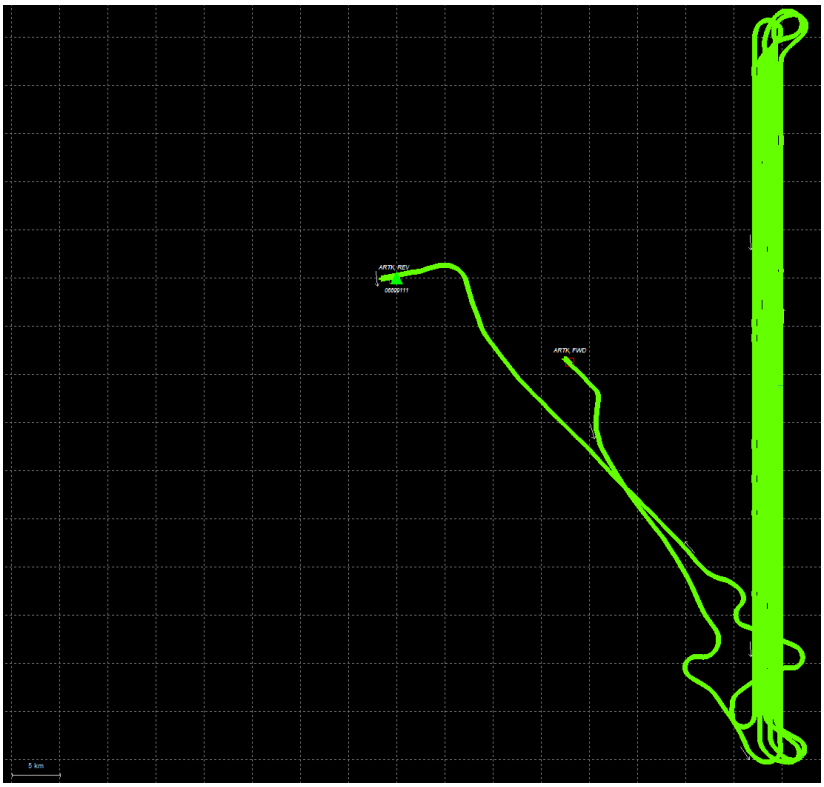

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
433200
Week 1998
433400
433600
433800
434000
434200
434400
434600
434800
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

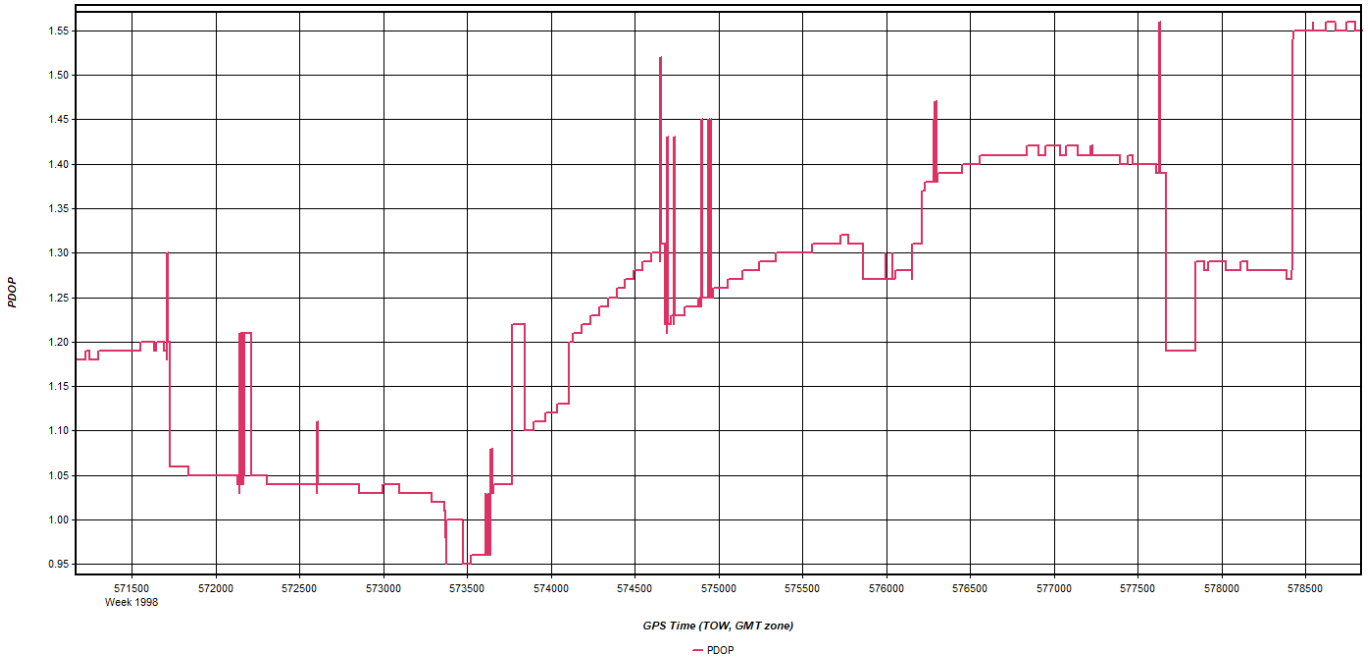

Misclosure (m)
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
433200
Week 1998
433400
433600
433800
434000
434200
434400
434600
434800
GPS Time (TOW, GMT zone)
East
North
Up

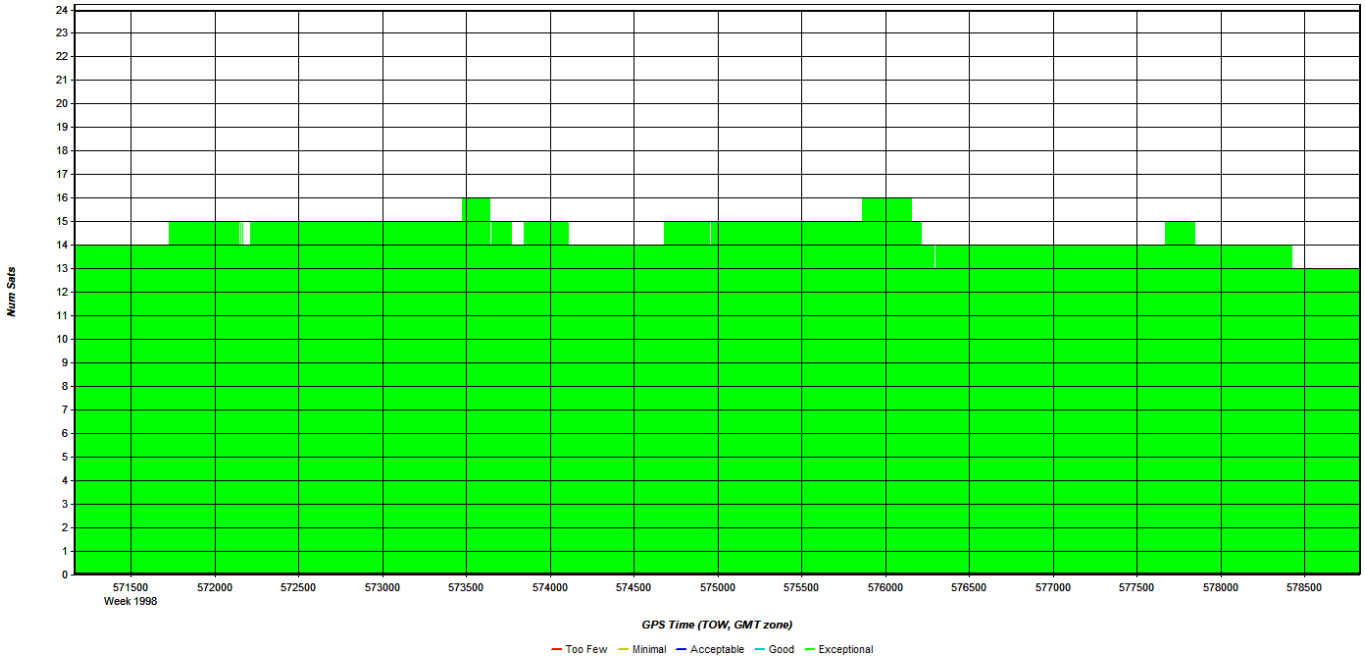

0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
-0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
-0.10
-0.11
-0.12
Separation (m)
433200
Week 1998
433400
433600
433800
434000
434200
434400
434600
434800
GPS Time (TOW, GMT zone)
East
North
Up

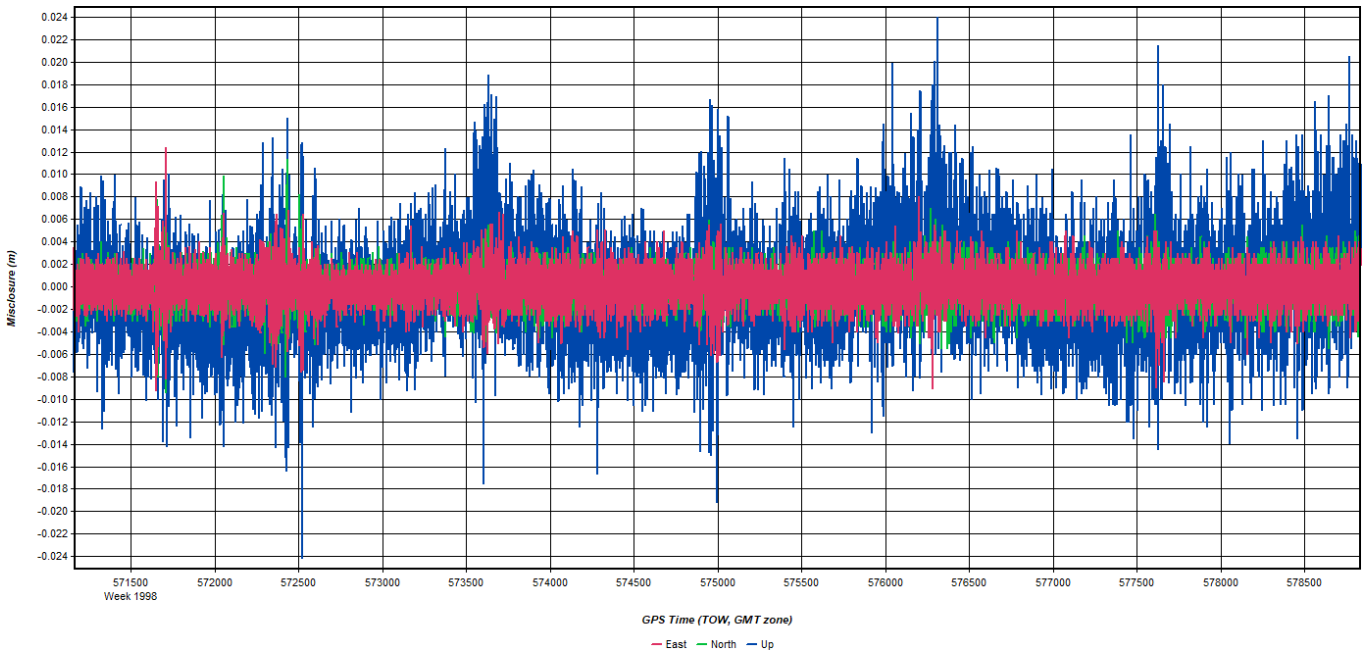
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      9701
        No processed position:  2
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0159 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.004 (m)
        North:  0.006 (m)
        Height: 0.012 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (9694 occurances):
        East:   0.003 (m)
        North:  0.005 (m)
        Height: 0.010 (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 %

Baseline Distances:
        Maximum:        44.596 (km)
        Minimum:        0.249 (km)
        Average:        24.931 (km)
        First Epoch:    0.395 (km)
        Last Epoch:     0.318 (km)
```

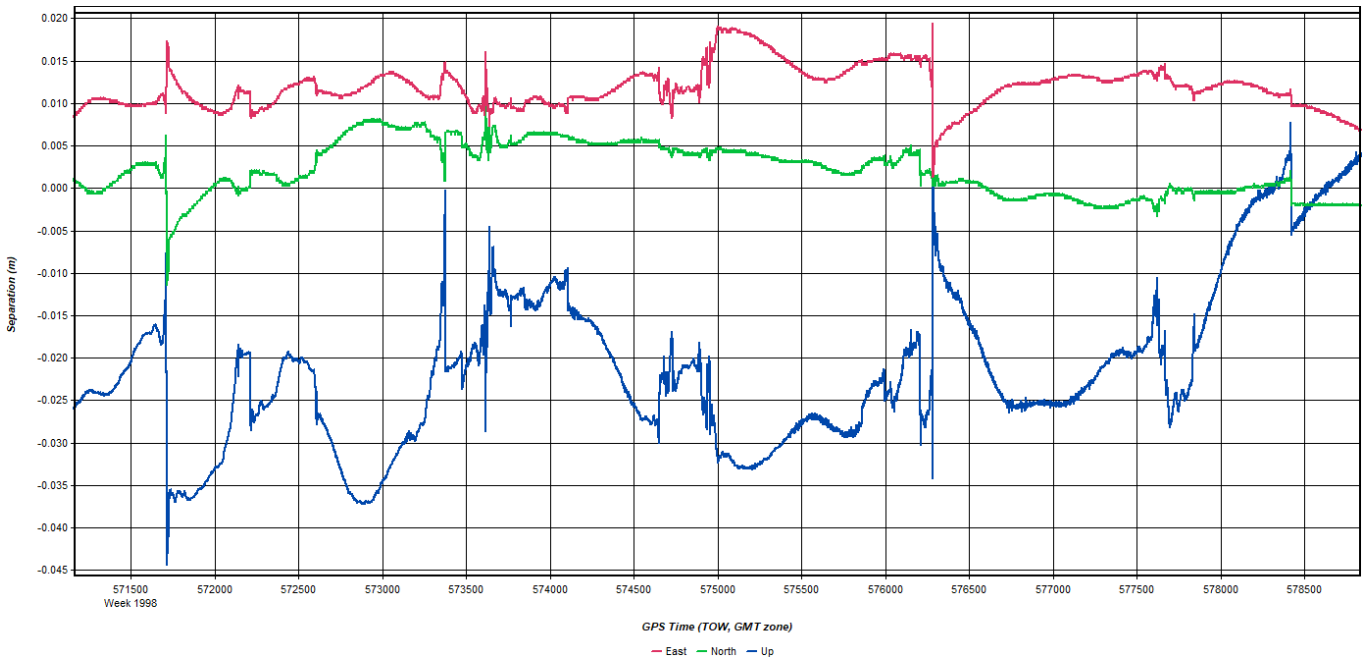
Mission 39


ARTK REV
ARTK FWD
5 km


PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
571500
Week 1998
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
GPS Time (TOW, GMT zone)
PDOP

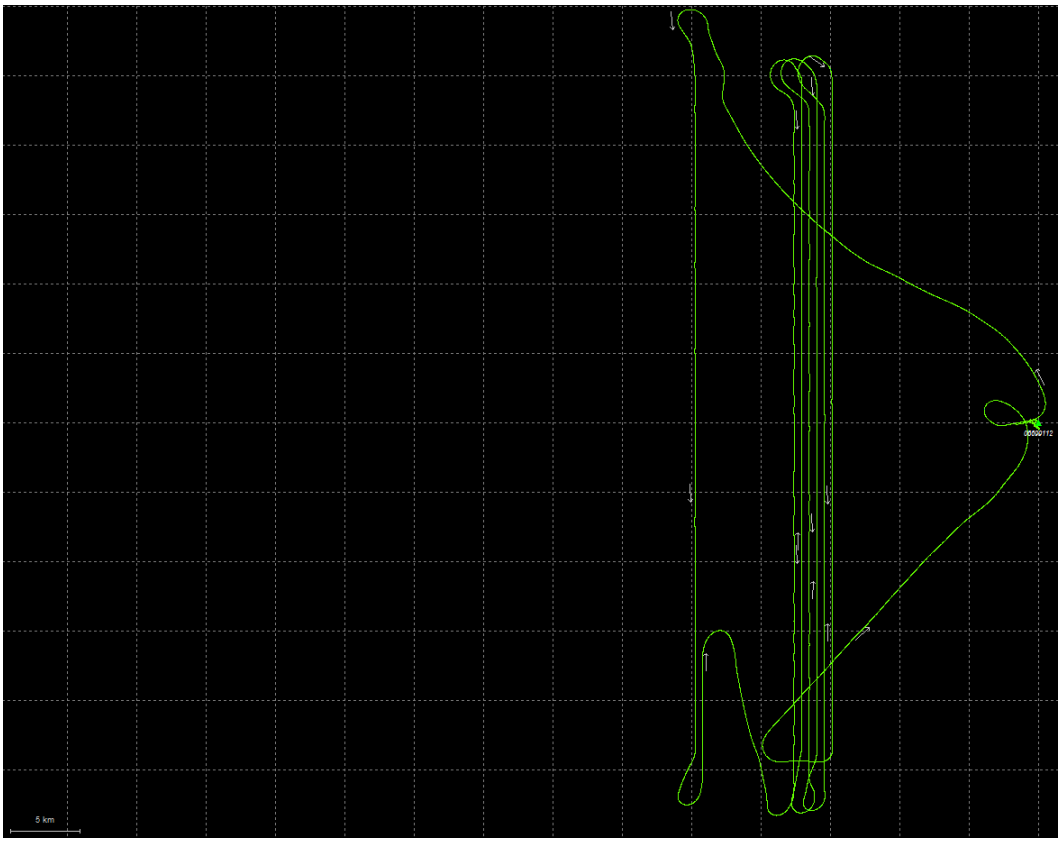

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
571500
Week 1998
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

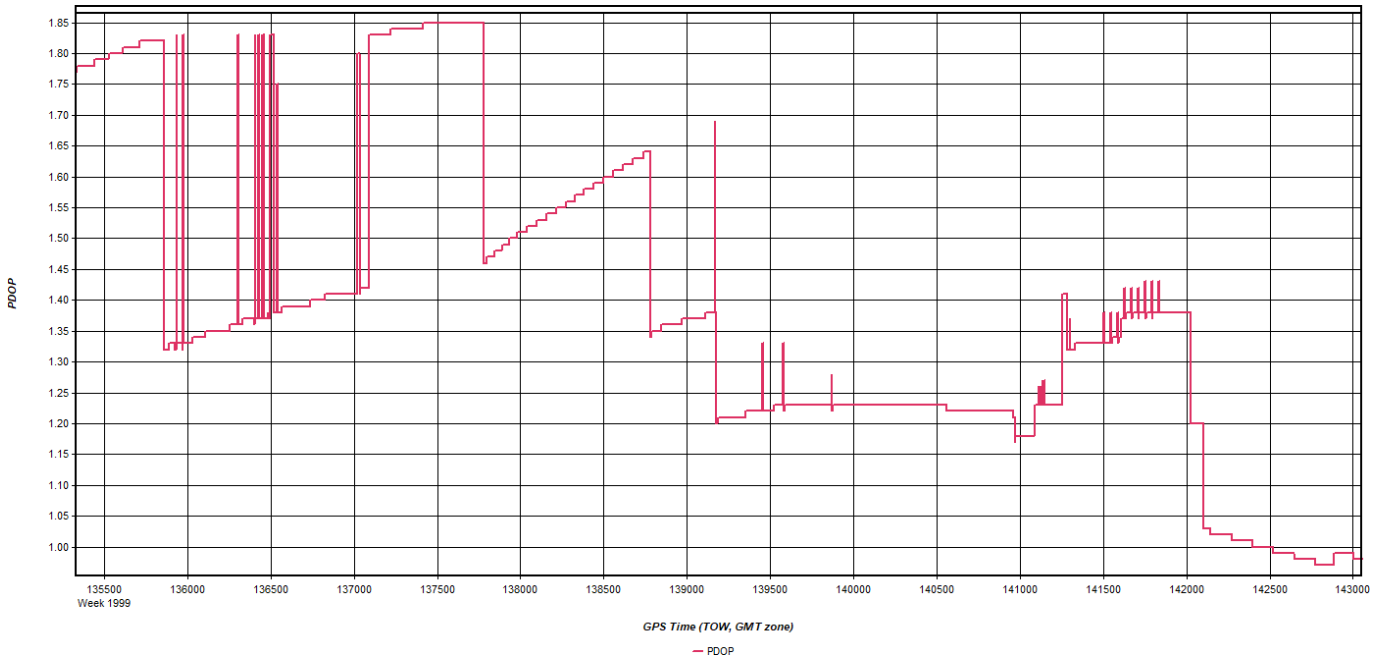

Misclosure (m)
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
571500
Week 1998
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
GPS Time (TOW, GMT zone)
East
North
Up


0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
Separation (m)
571500
Week 1998
572000
572500
573000
573500
574000
574500
575000
575500
576000
576500
577000
577500
578000
578500
GPS Time (TOW, GMT zone)
East
North
Up

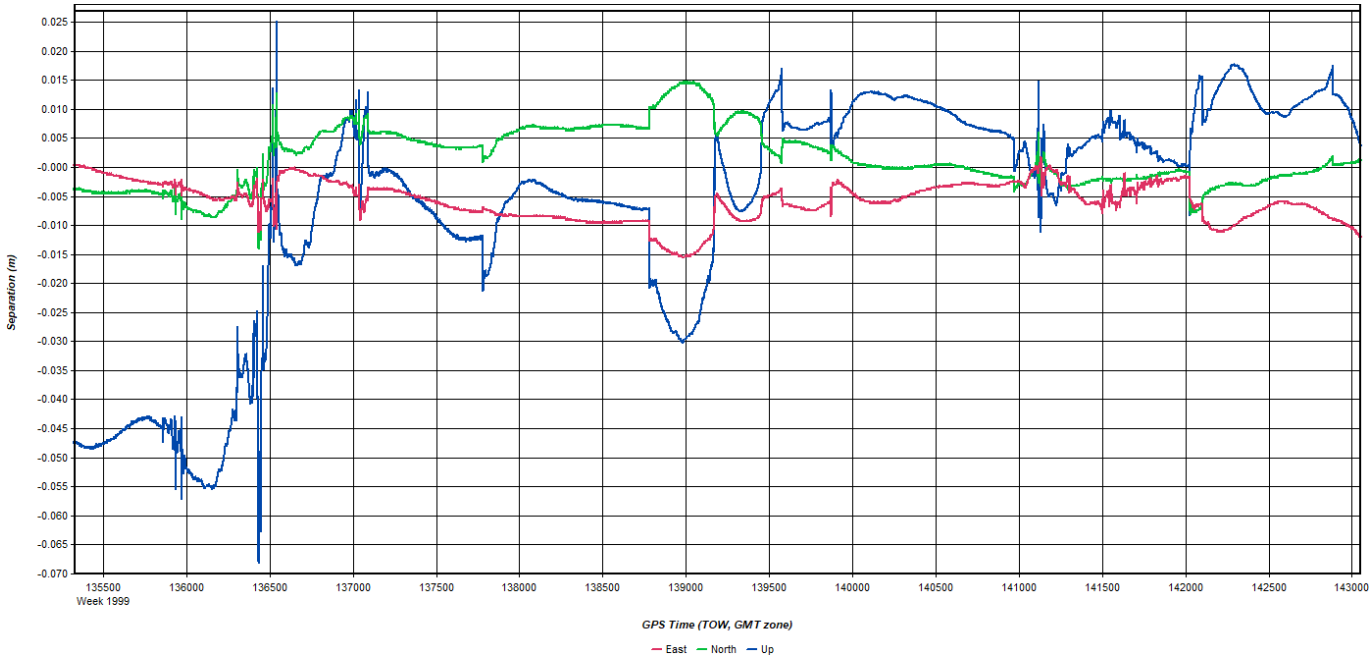
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      22014
        No processed position:  2
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0146 (m)
        C/A Code:       0.31 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.011 (m)
        North:  0.004 (m)
        Height: 0.024 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (22008 occurances):
        East:   0.011 (m)
        North:  0.004 (m)
        Height: 0.024 (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 %

Baseline Distances:
        Maximum:        64.795 (km)
        Minimum:        0.277 (km)
        Average:        40.384 (km)
        First Epoch:    19.916 (km)
        Last Epoch:     0.375 (km)
```

Mission 42


5 km

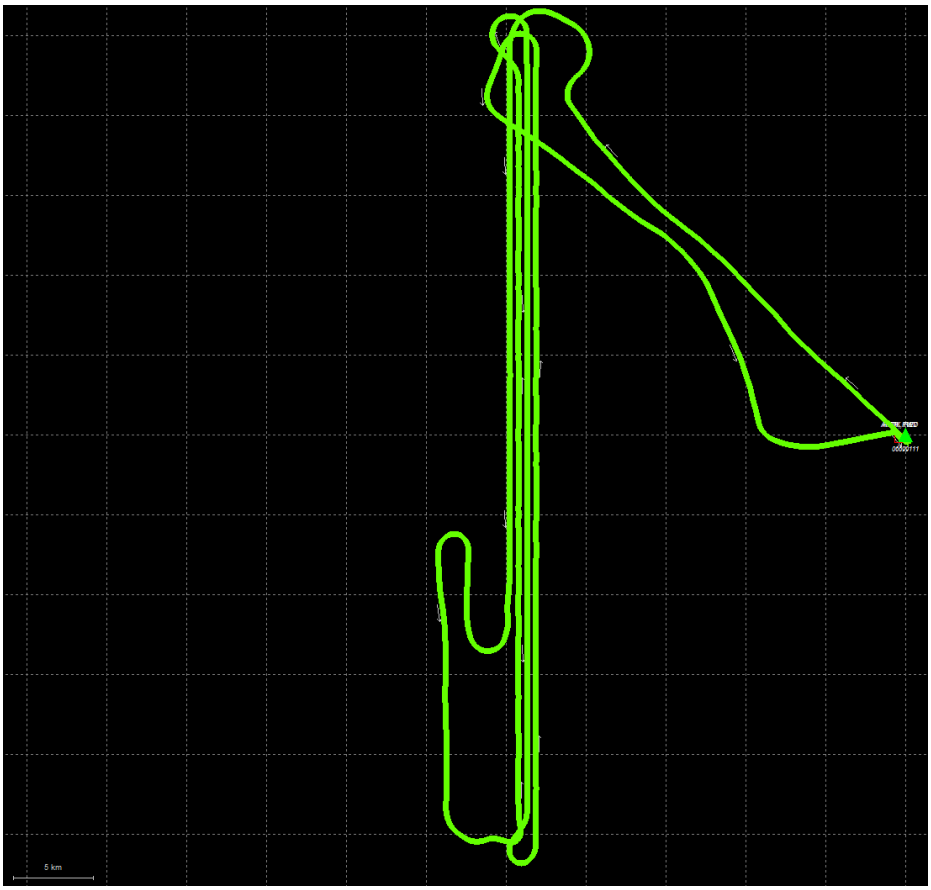

PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
135500
Week 1999
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
143000
GPS Time (TOW, GMT zone)
PDOP

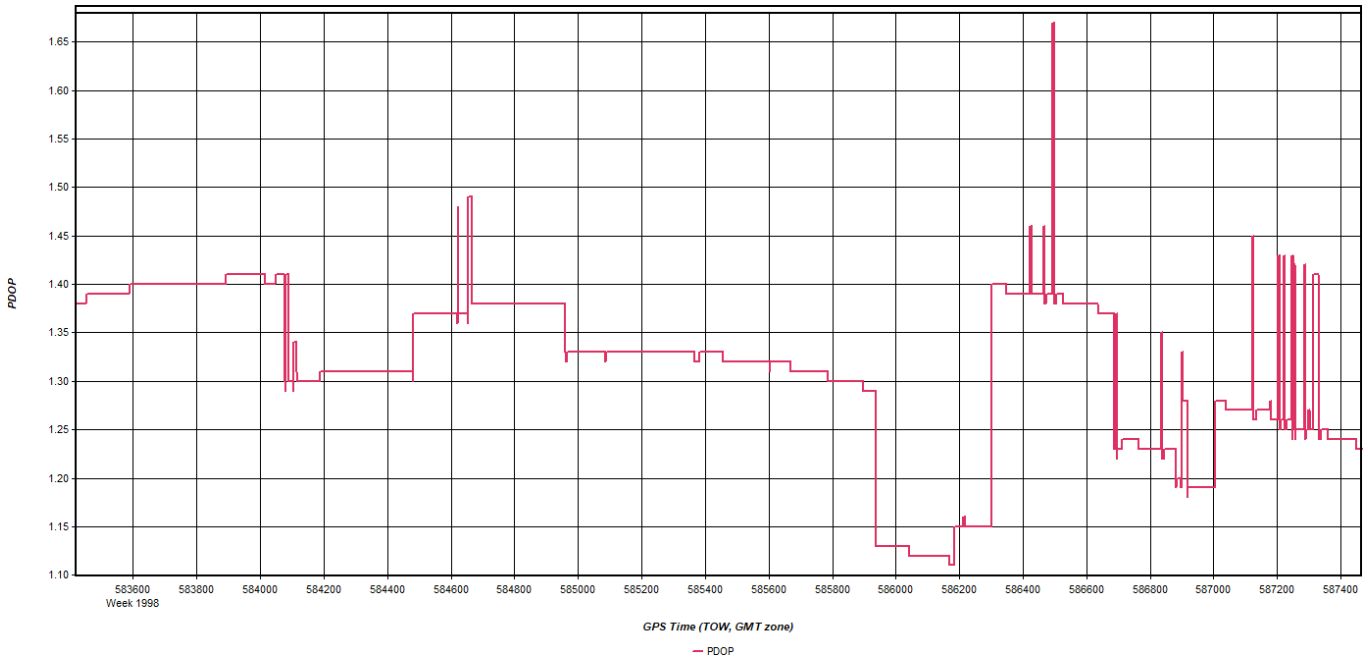

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
135500
Week 1999
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
143000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
135500
Week 1999
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
143000
GPS Time (TOW, GMT zone)
East
North
Up

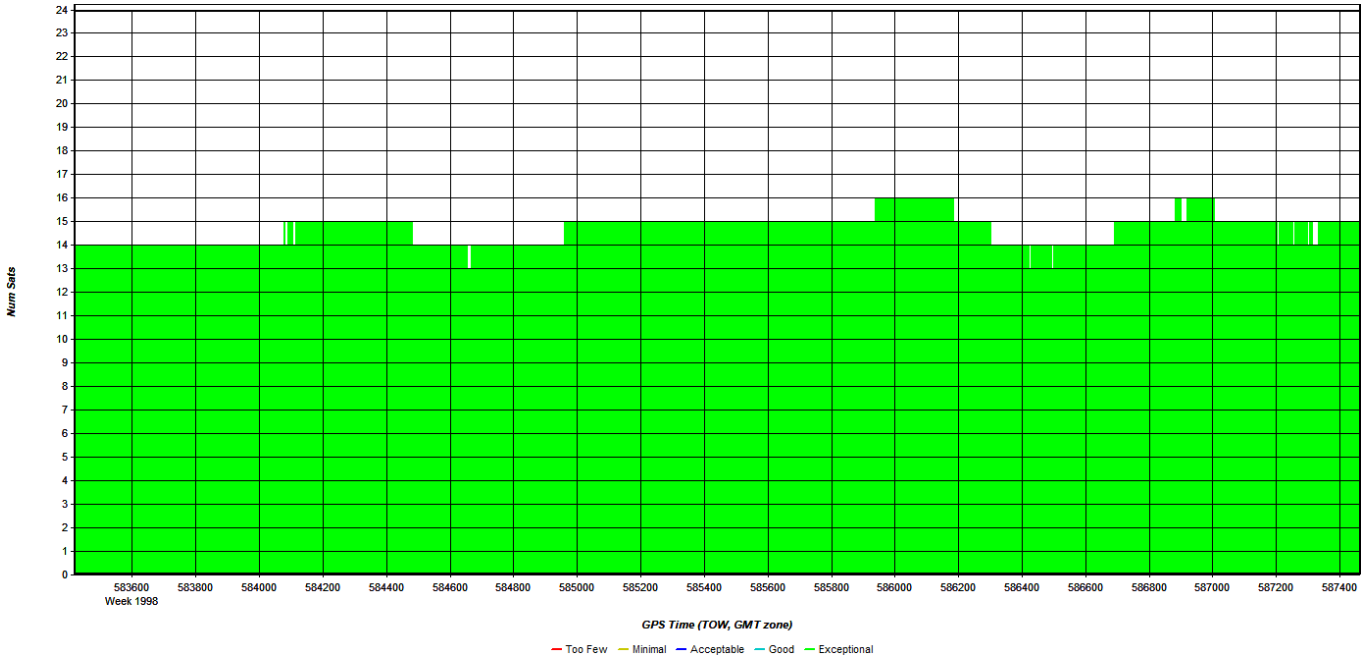

Separation (m)
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
135500
Week 1999
136000
136500
137000
137500
138000
138500
139000
139500
140000
140500
141000
141500
142000
142500
143000
GPS Time (TOW, GMT zone)
East
North
Up

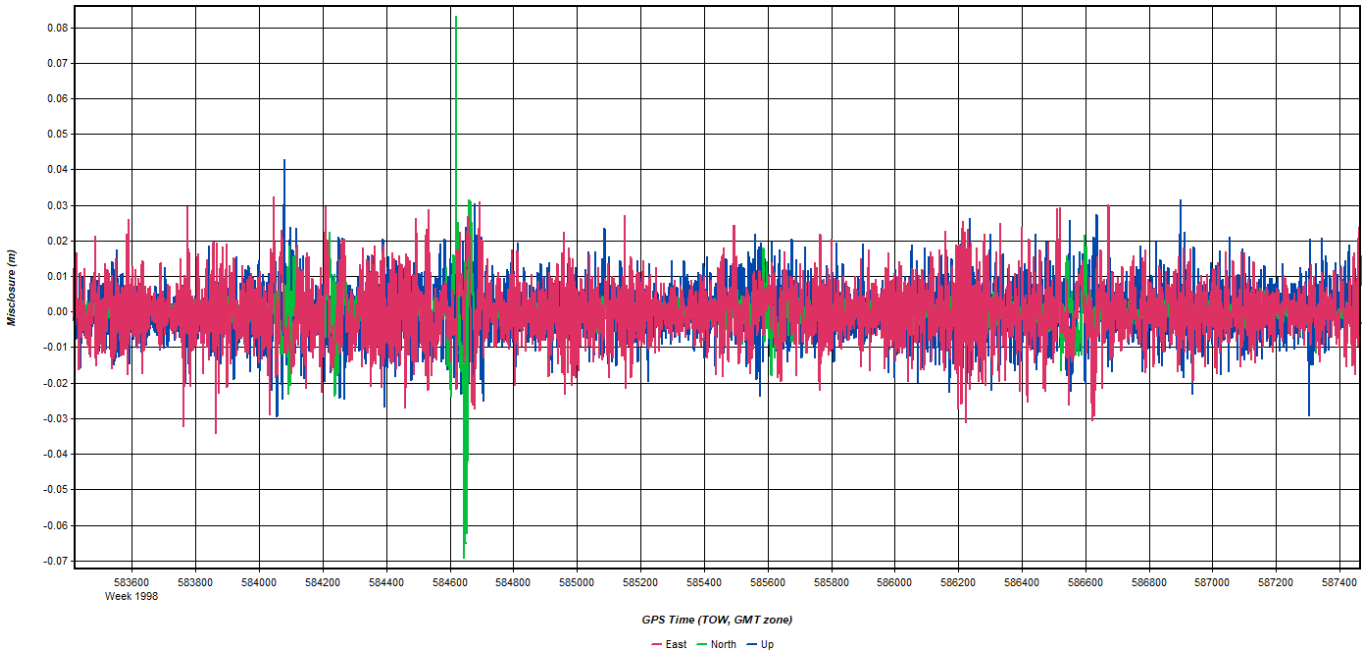
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      21253
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0168 (m)
        C/A Code:       0.35 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.005 (m)
        Height: 0.025 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (21249 occurances):
        East:   0.006 (m)
        North:  0.005 (m)
        Height: 0.025 (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:        38.976 (km)
        Minimum:        0.228 (km)
        Average:        19.955 (km)
        First Epoch:    0.493 (km)
        Last Epoch:     0.414 (km)
```

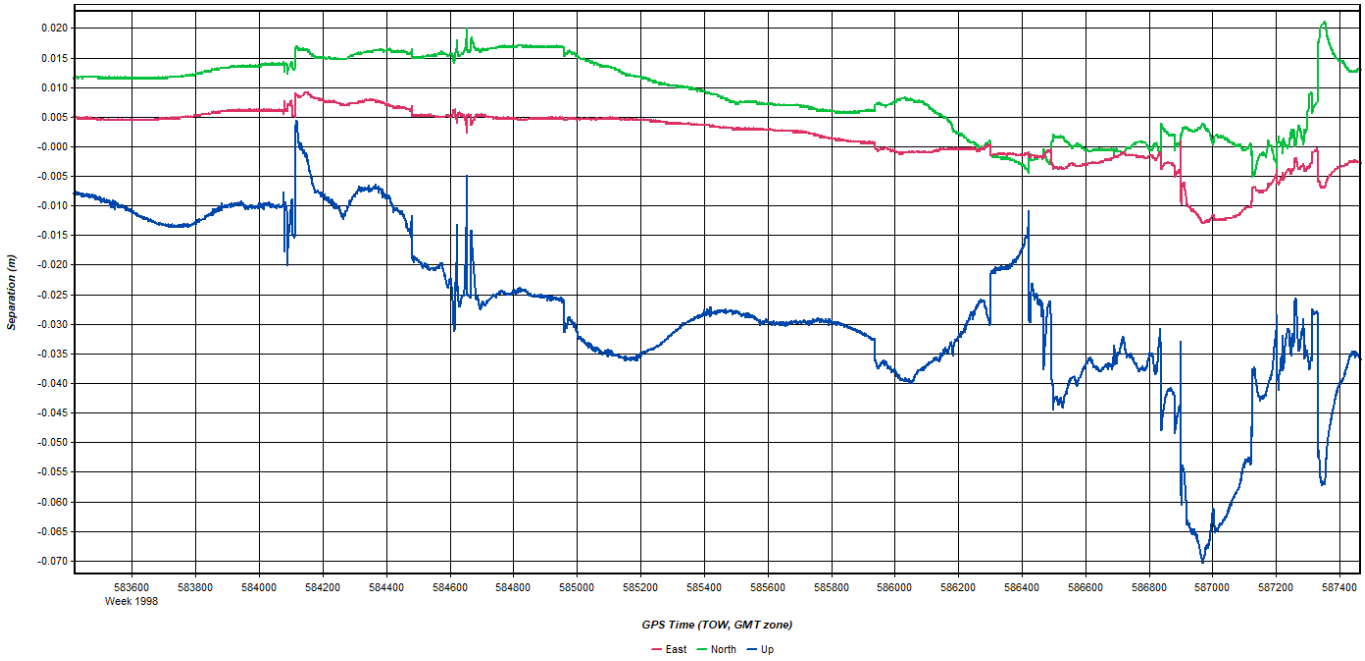
Mission 43


5 km


PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
583600
Week 1998
583800
584000
584200
584400
584600
584800
585000
585200
585400
585600
585800
586000
586200
586400
586600
586800
587000
587200
587400
GPS Time (TOW, GMT zone)
PDOP

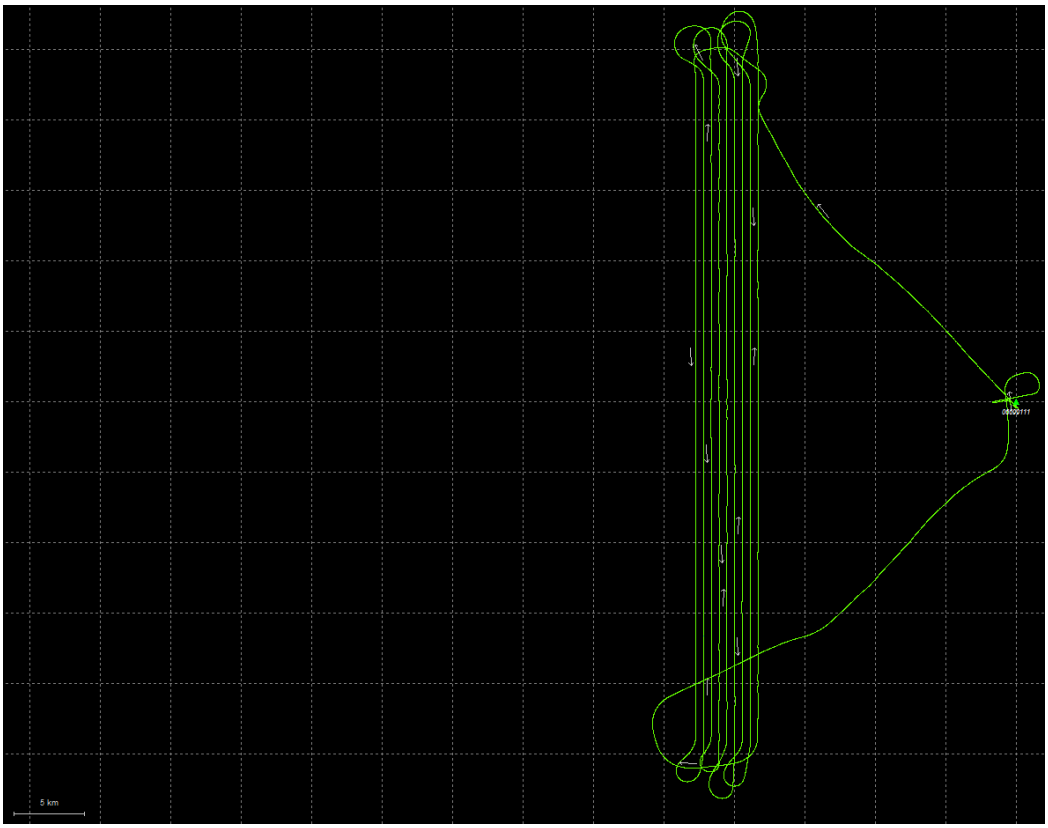

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
583600
Week 1998
583800
584000
584200
584400
584600
584800
585000
585200
585400
585600
585800
586000
586200
586400
586600
586800
587000
587200
587400
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

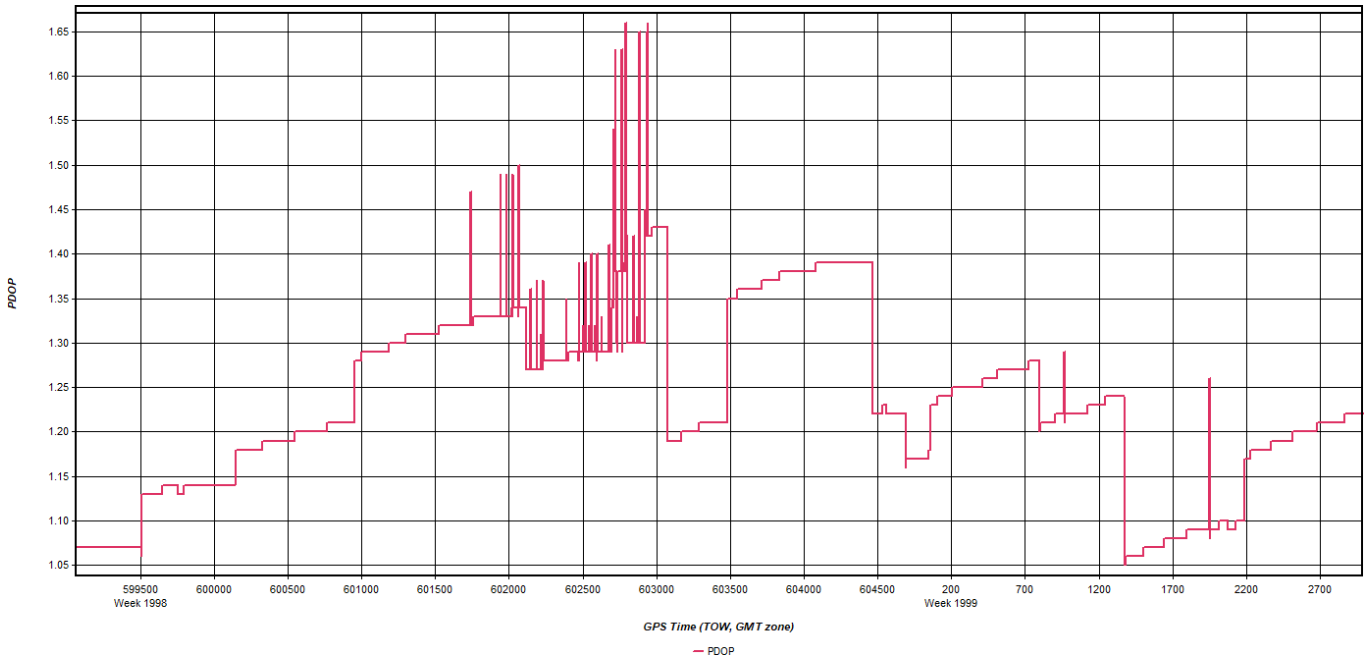

Misclosure (m)
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
583600
Week 1998
583800
584000
584200
584400
584600
584800
585000
585200
585400
585600
585800
586000
586200
586400
586600
586800
587000
587200
587400
GPS Time (TOW, GMT zone)
East
North
Up

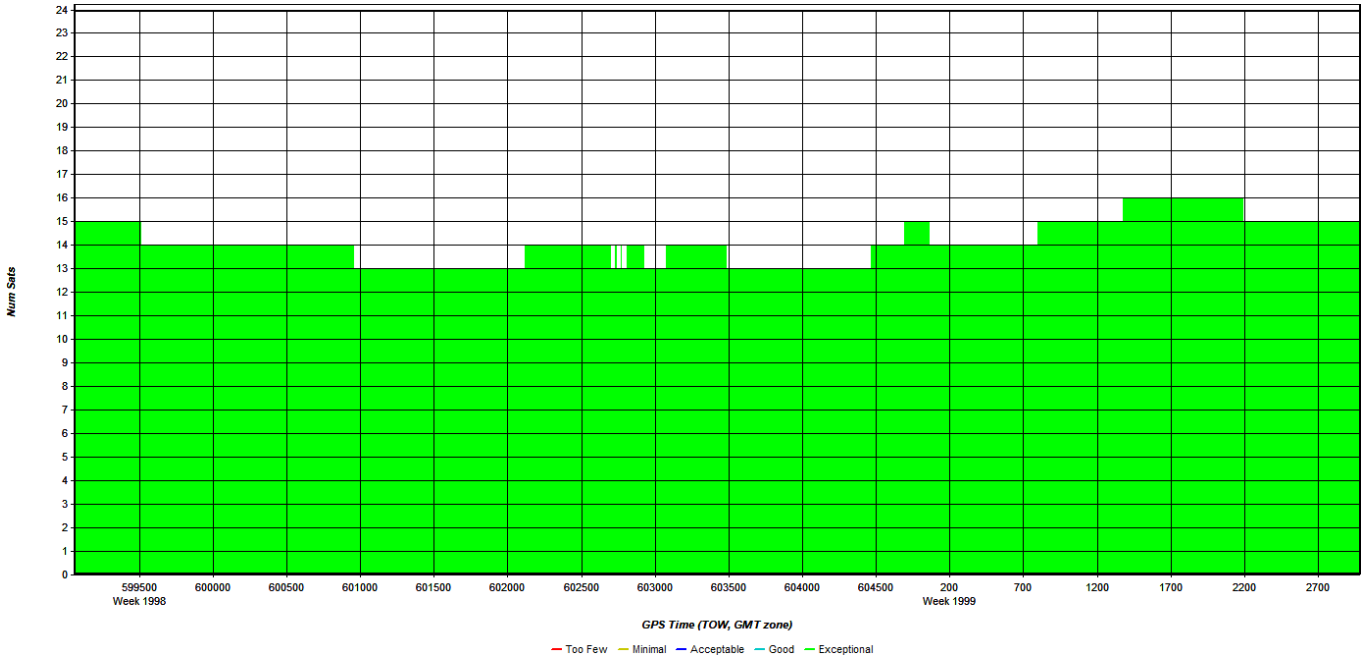

Separation (m)
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
583600
Week 1998
583800
584000
584200
584400
584600
584800
585000
585200
585400
585600
585800
586000
586200
586400
586600
586800
587000
587200
587400
GPS Time (TOW, GMT zone)
East
North
Up

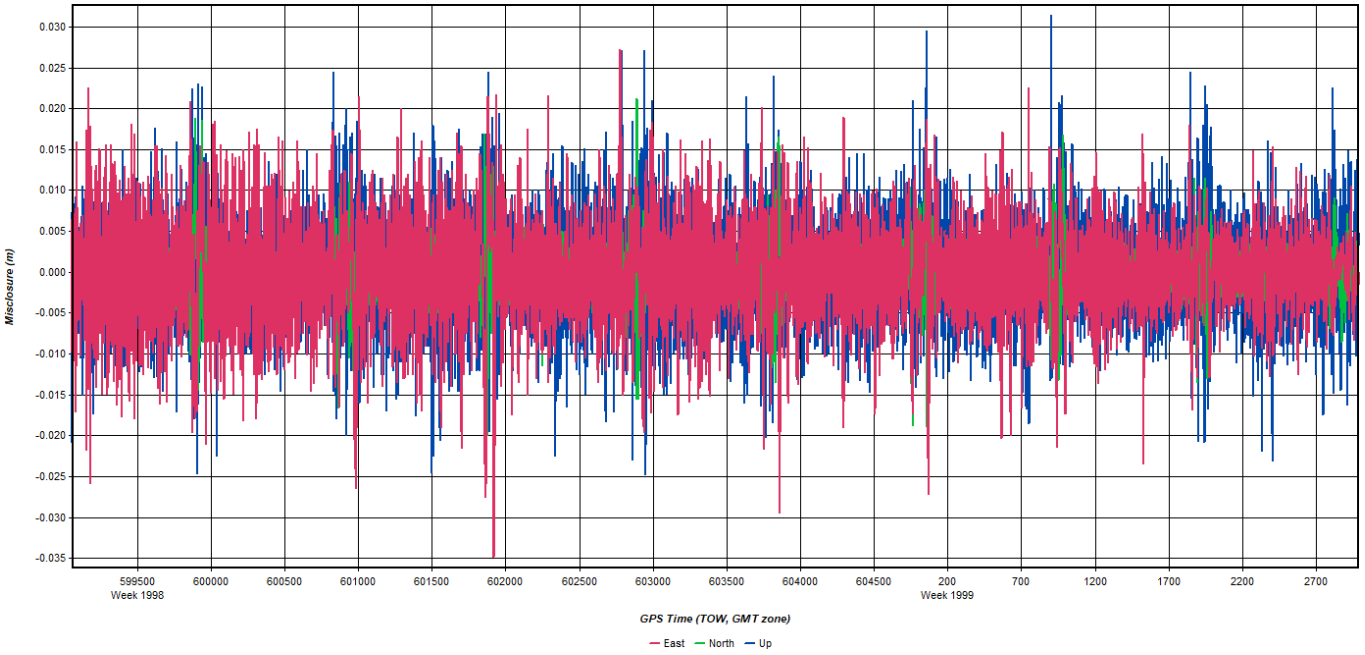
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      12505
        No processed position:  1
        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:       0.33 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.010 (m)
        Height: 0.026 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (12501 occurances):
        East:   0.005 (m)
        North:  0.010 (m)
        Height: 0.026 (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 %

Baseline Distances:
        Maximum:        37.394 (km)
        Minimum:        0.247 (km)
        Average:        23.117 (km)
        First Epoch:    0.418 (km)
        Last Epoch:     0.415 (km)
```

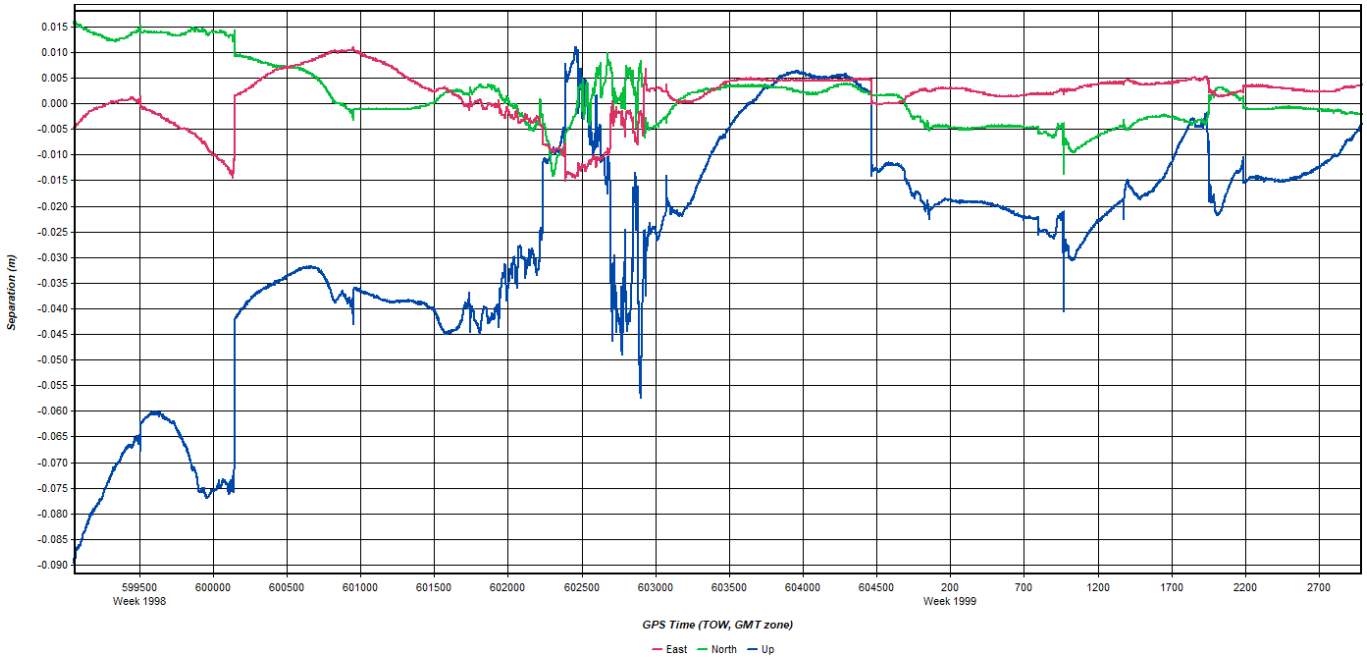
Mission 44


5 km


PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
599500
Week 1998
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
2700
GPS Time (TOW, GMT zone)
PDOP

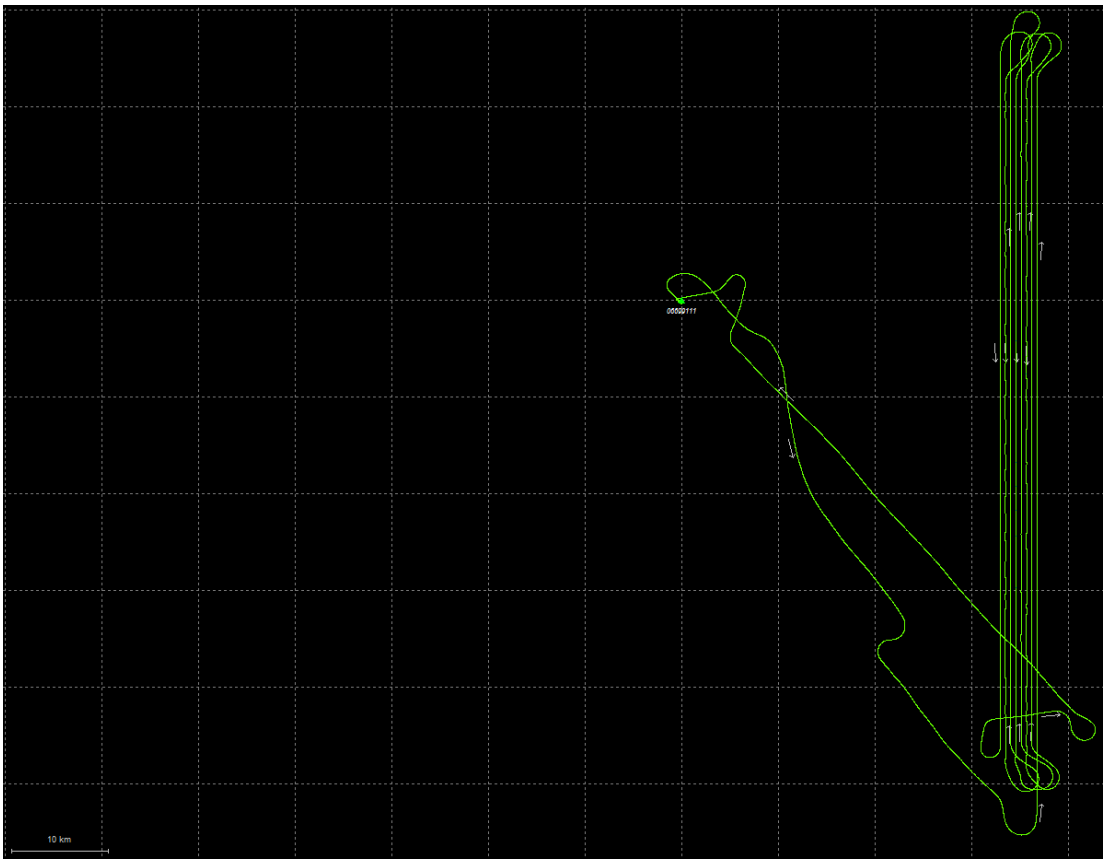

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
599500
Week 1998
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
2700
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

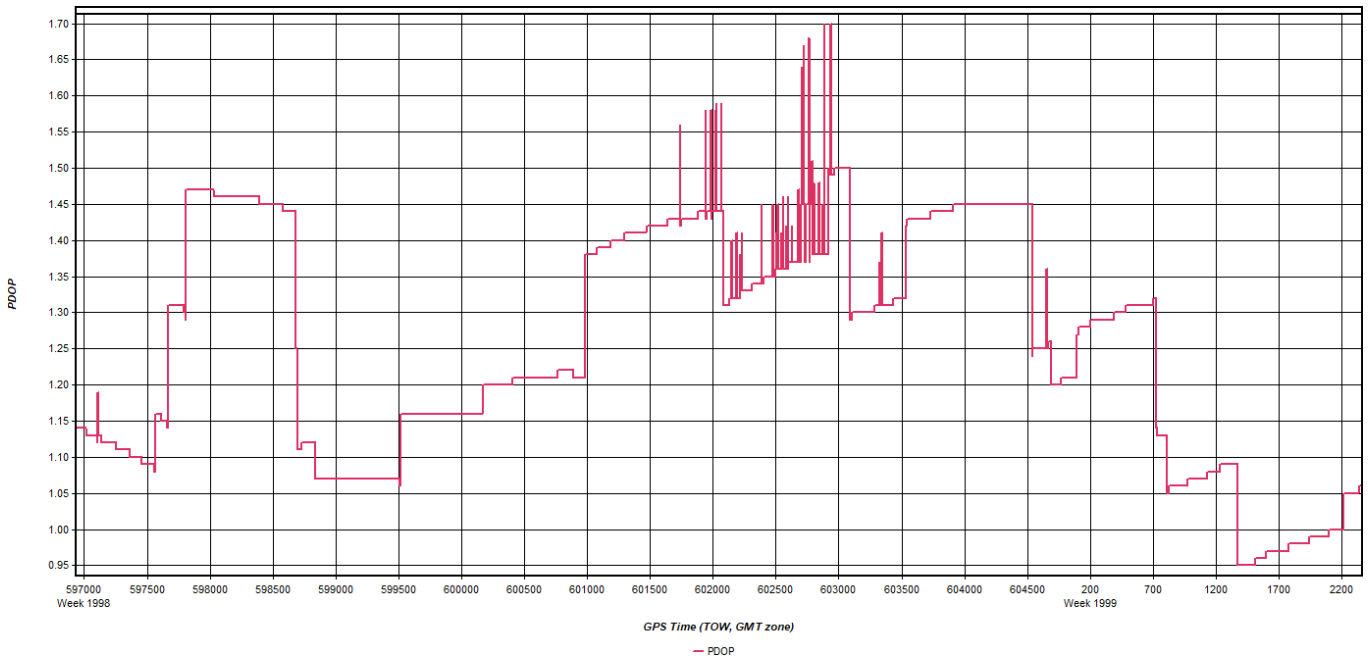

Misclosure (m)
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
599500
Week 1998
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
2700
GPS Time (TOW, GMT zone)
East
North
Up

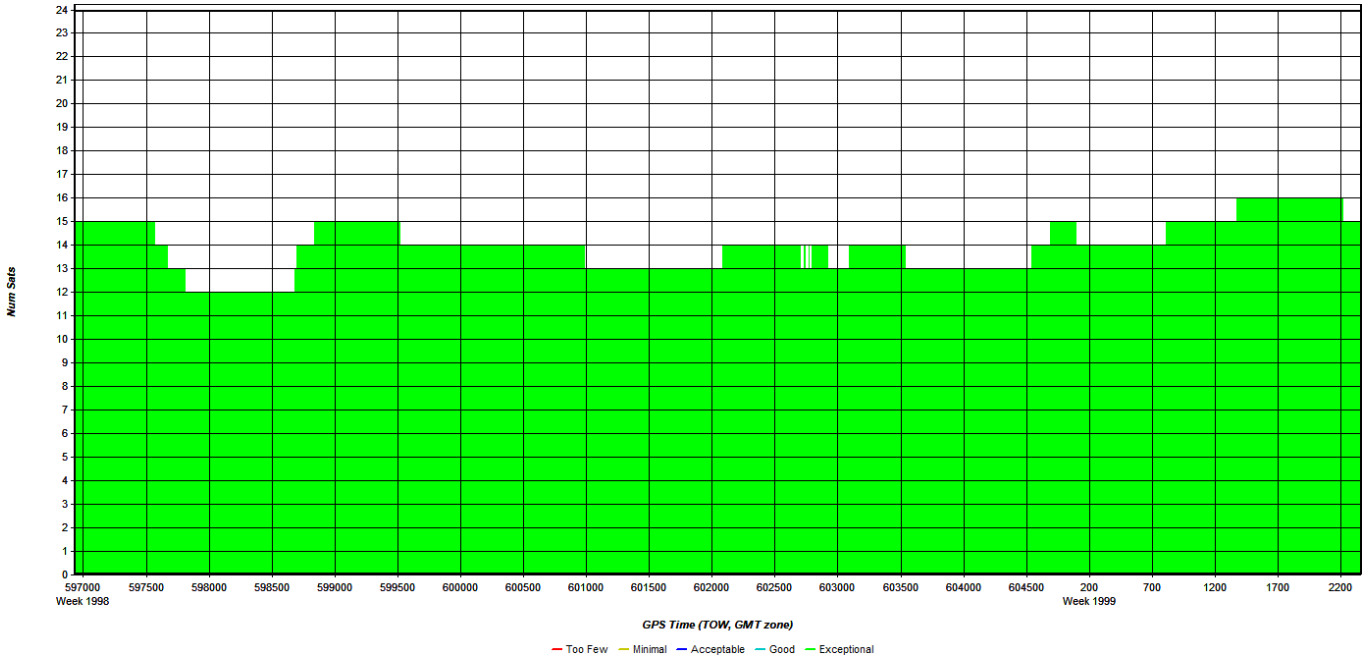

Separation (m)
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
-0.065
-0.070
-0.075
-0.080
-0.085
-0.090
599500
Week 1998
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
2700
GPS Time (TOW, GMT zone)
East
North
Up

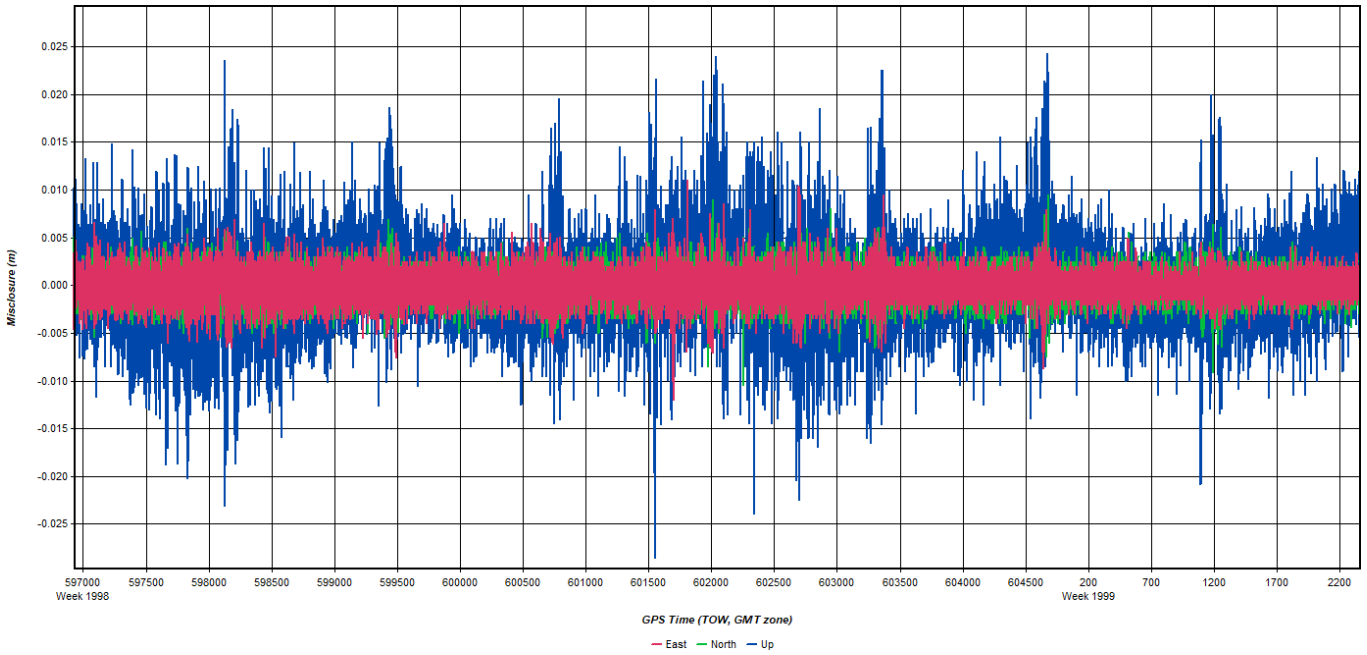
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      21616
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0163 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.007 (m)
        North:  0.009 (m)
        Height: 0.039 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (21610 occurances):
        East:   0.006 (m)
        North:  0.008 (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:  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:        35.473 (km)
        Minimum:        0.247 (km)
        Average:        22.932 (km)
        First Epoch:    0.329 (km)
        Last Epoch:     0.413 (km)
```

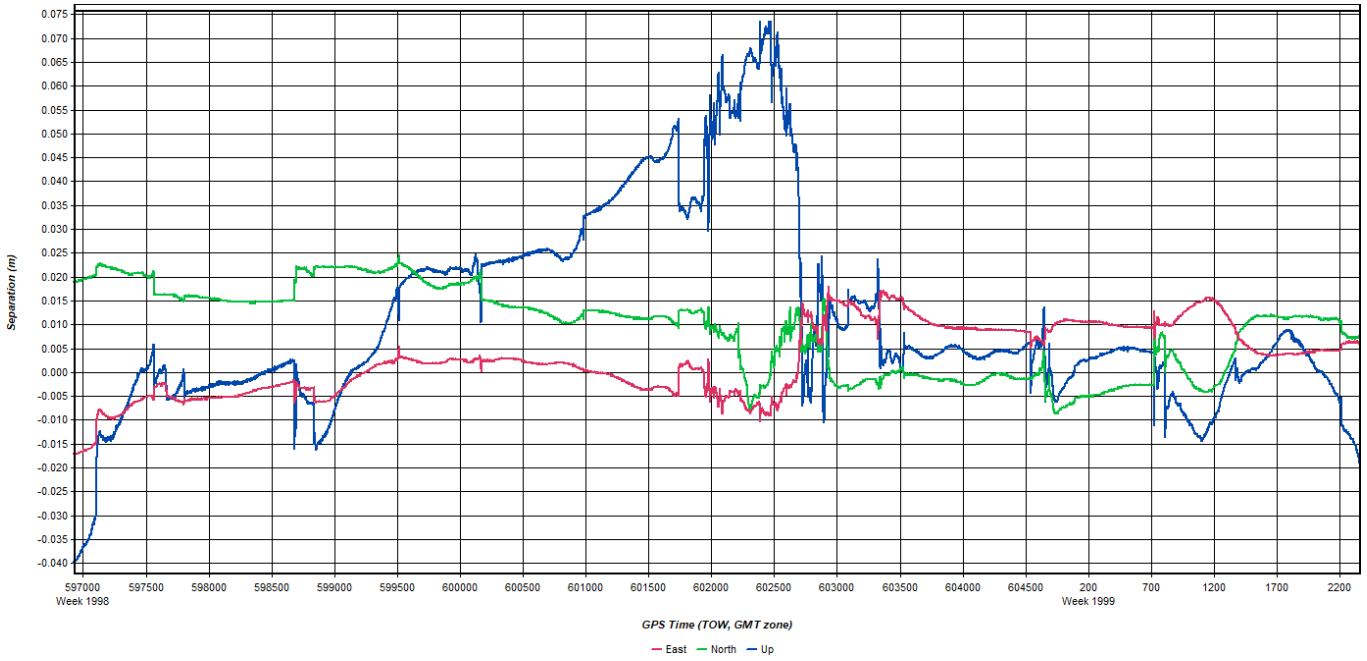
Mission 45


10 km


PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
597000
Week 1998
597500
598000
598500
599000
599500
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
GPS Time (TOW, GMT zone)
PDOP

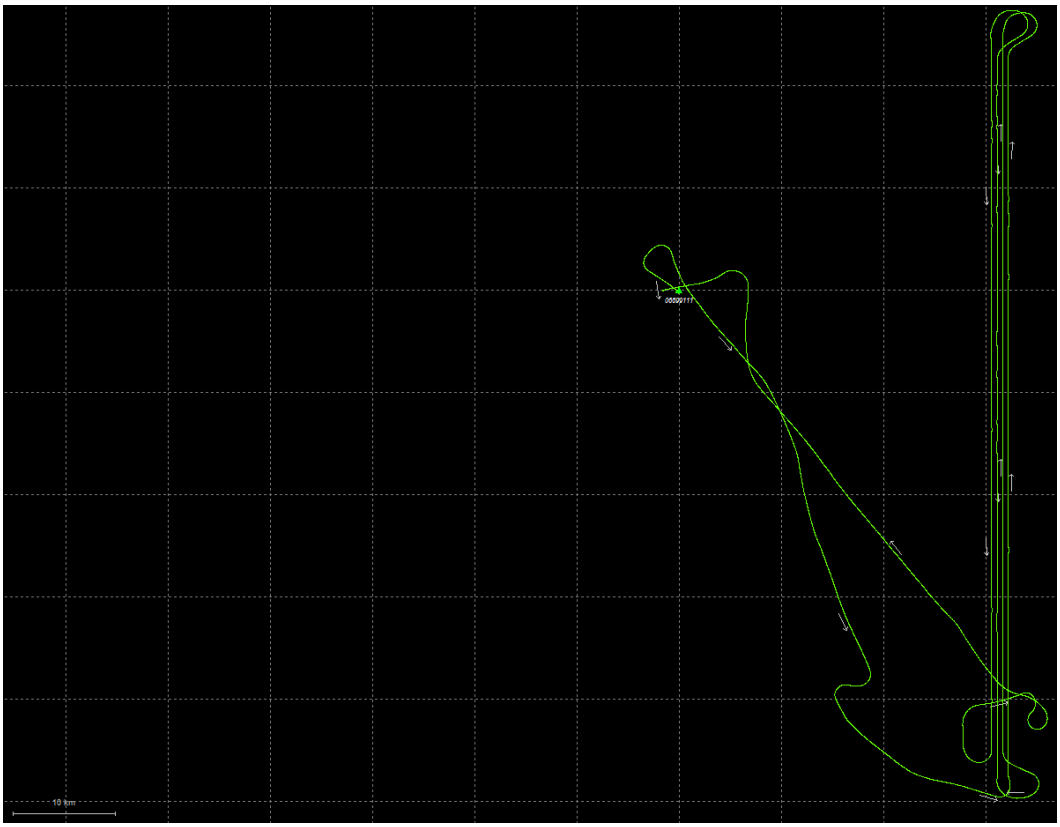

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
597000
Week 1998
597500
598000
598500
599000
599500
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

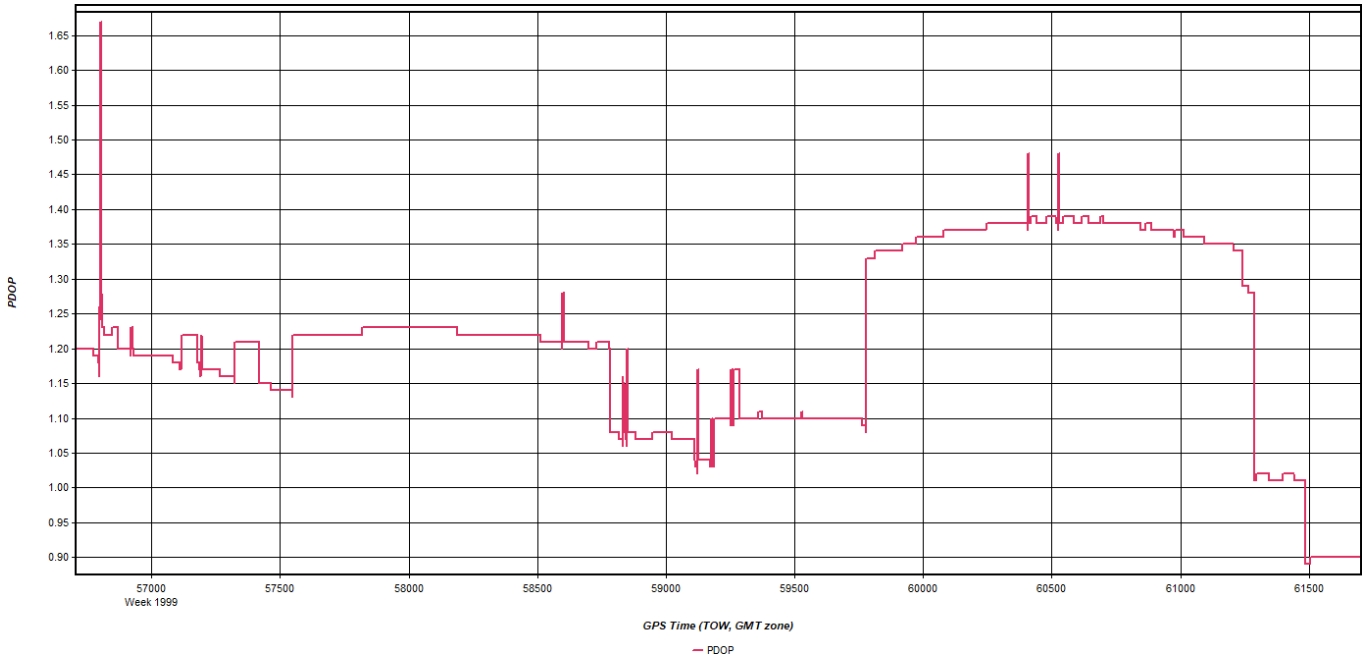

Misclosure (m)
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
597000
Week 1998
597500
598000
598500
599000
599500
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
GPS Time (TOW, GMT zone)
East
North
Up

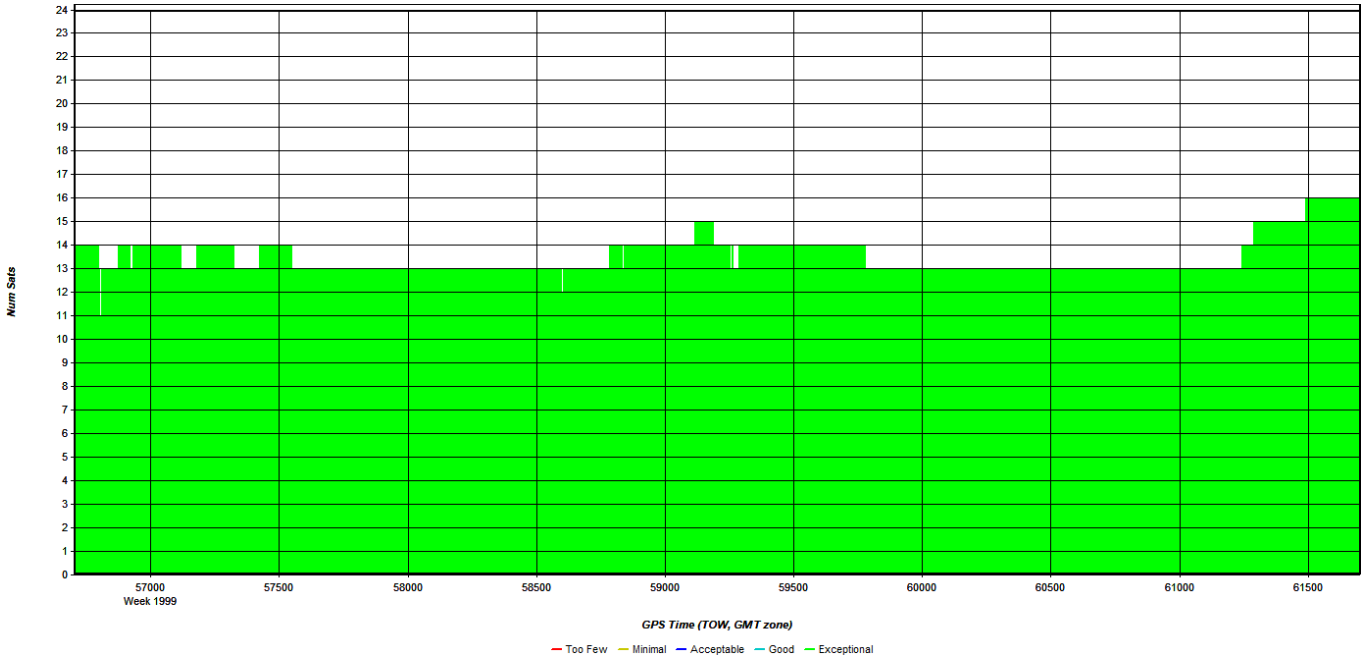

Separation (m)
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
597000
Week 1998
597500
598000
598500
599000
599500
600000
600500
601000
601500
602000
602500
603000
603500
604000
604500
200
Week 1999
700
1200
1700
2200
GPS Time (TOW, GMT zone)
East
North
Up

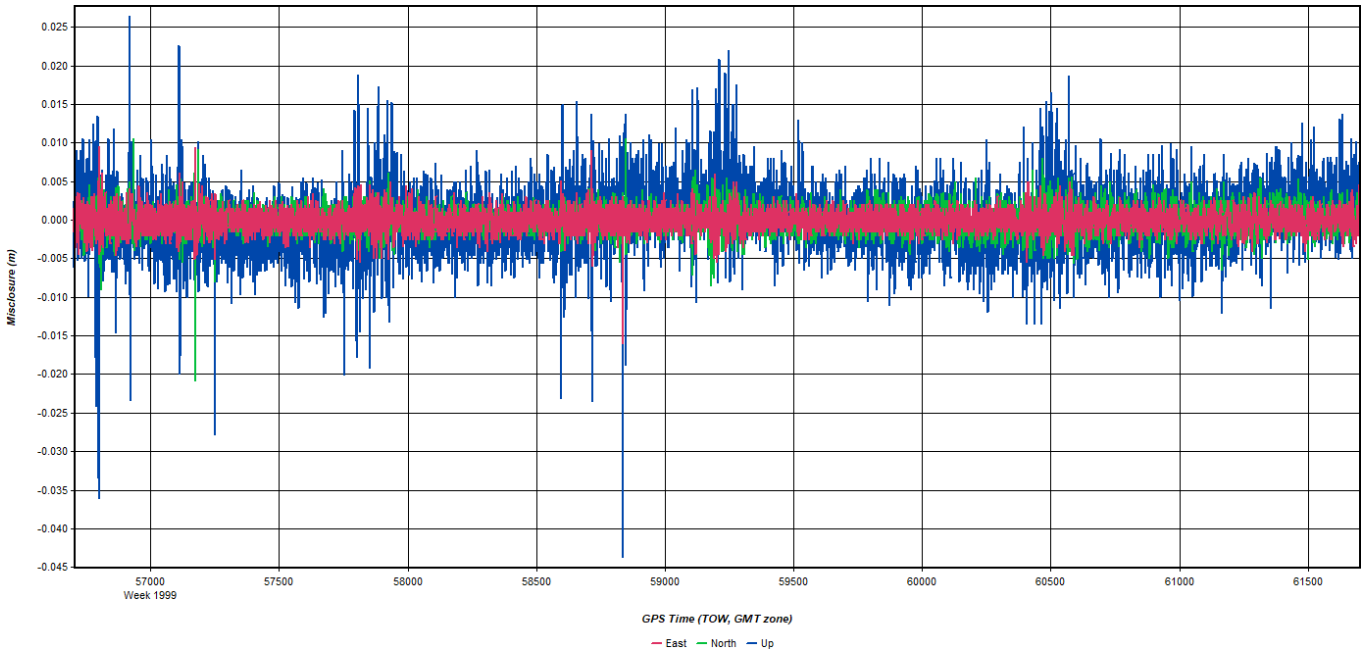
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      27254
        No processed position:  1
        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:       0.31 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.008 (m)
        North:  0.013 (m)
        Height: 0.024 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (27249 occurances):
        East:   0.008 (m)
        North:  0.013 (m)
        Height: 0.024 (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:        65.145 (km)
        Minimum:        0.249 (km)
        Average:        38.763 (km)
        First Epoch:    0.375 (km)
        Last Epoch:     0.411 (km)
```

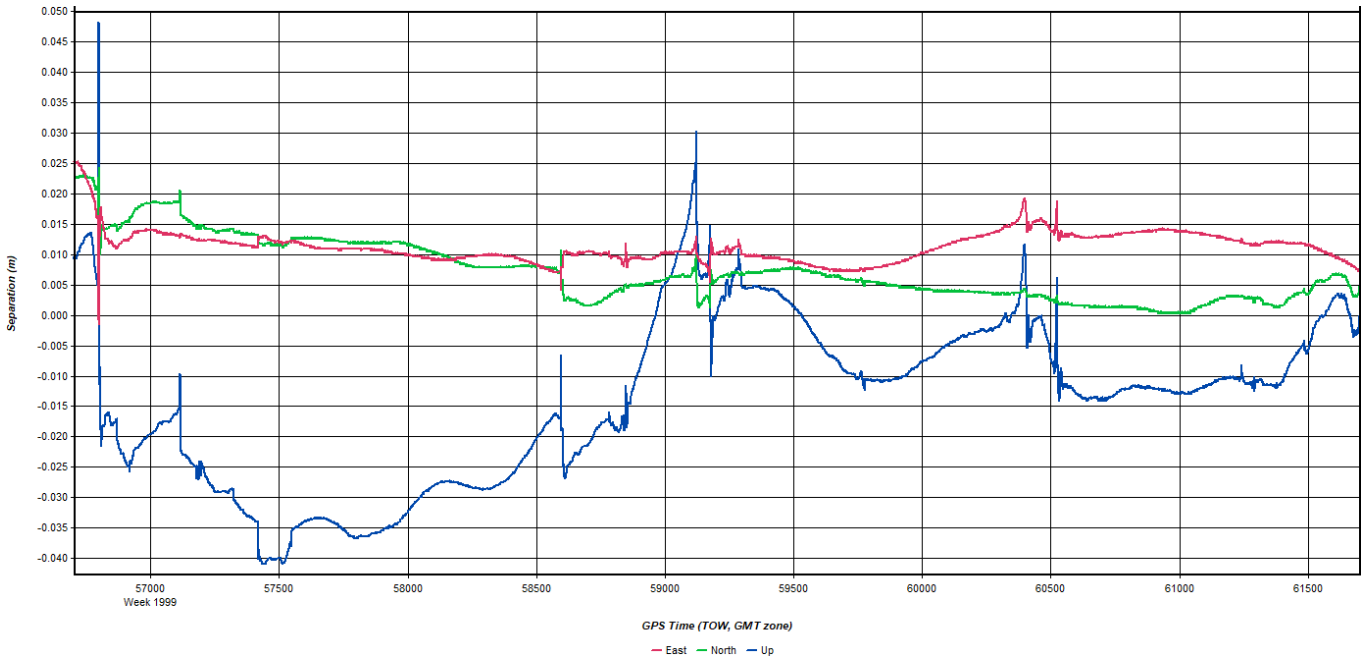
Mission 46




PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
57000
Week 1999
57500
58000
58500
59000
59500
60000
60500
61000
61500
GPS Time (TOW, GMT zone)
PDOP

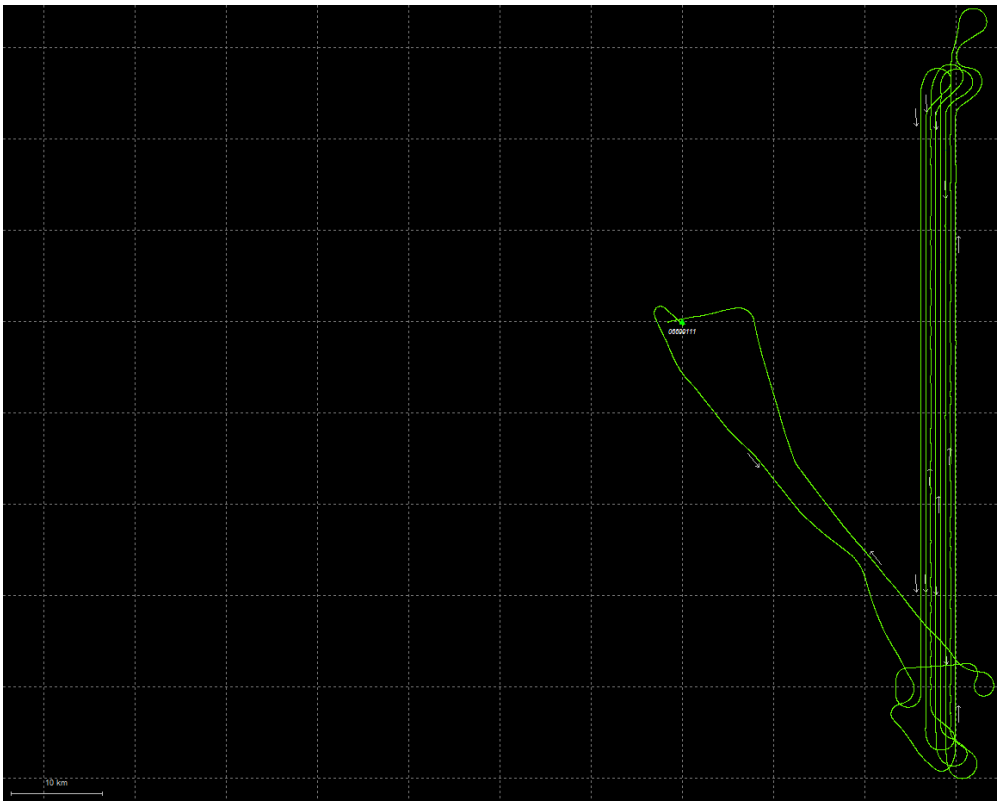

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
57000
Week 1999
57500
58000
58500
59000
59500
60000
60500
61000
61500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional


Misclosure (m)
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
57000
Week 1999
57500
58000
58500
59000
59500
60000
60500
61000
61500
GPS Time (TOW, GMT zone)
East
North
Up

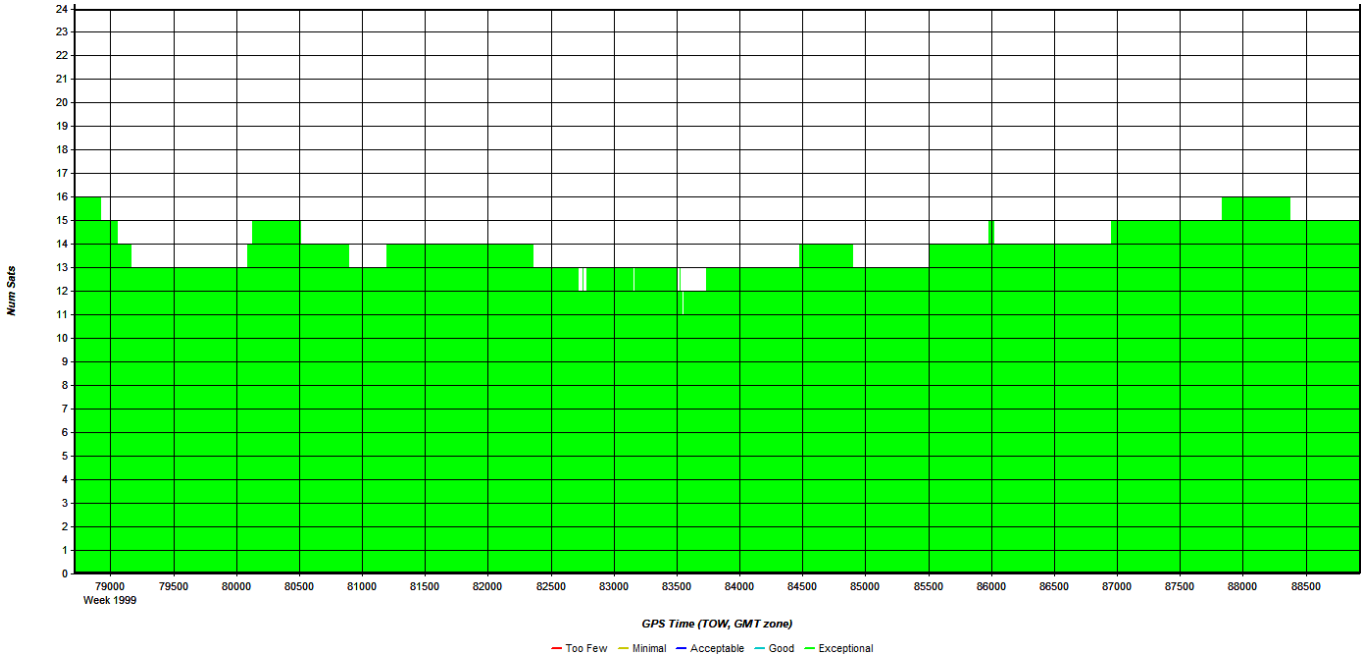

0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
Separation (m)
57000
Week 1999
57500
58000
58500
59000
59500
60000
60500
61000
61500
GPS Time (TOW, GMT zone)
East
North
Up

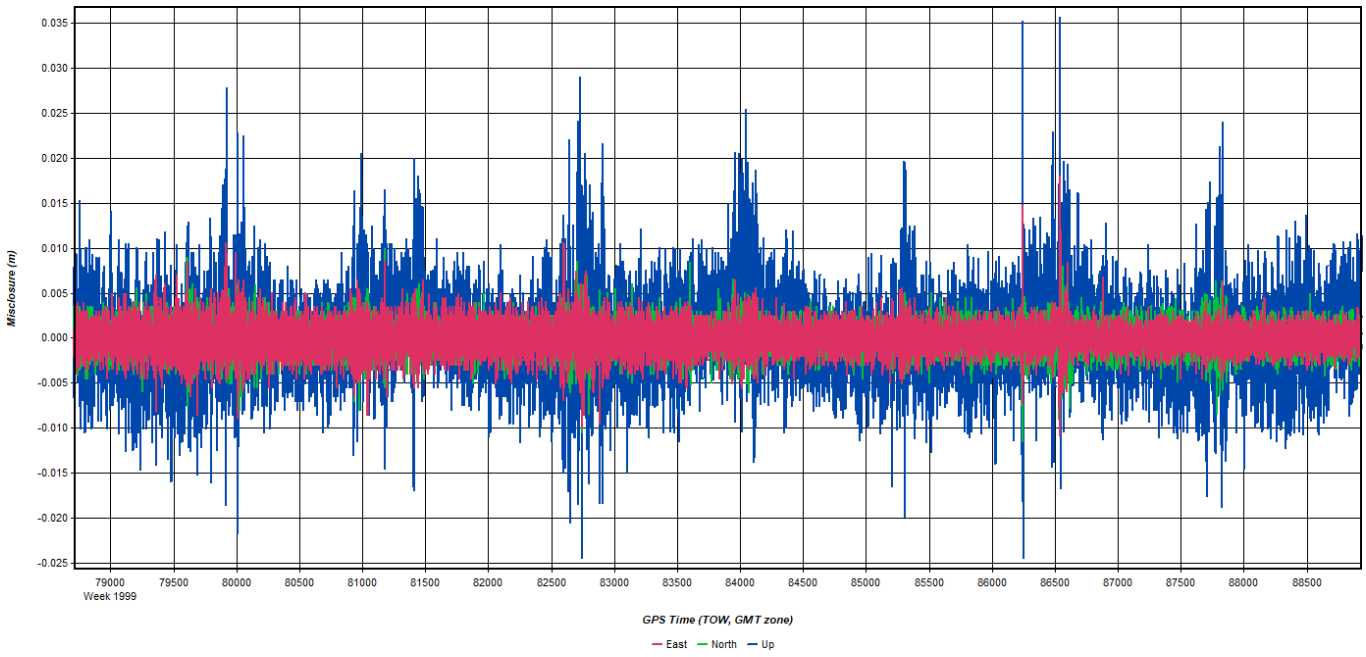
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      16706
        No processed position:  3
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0163 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.015 (m)
        North:  0.010 (m)
        Height: 0.024 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (16700 occurances):
        East:   0.015 (m)
        North:  0.010 (m)
        Height: 0.024 (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:        60.042 (km)
        Minimum:        0.248 (km)
        Average:        33.696 (km)
        First Epoch:    0.419 (km)
        Last Epoch:     1.584 (km)
```

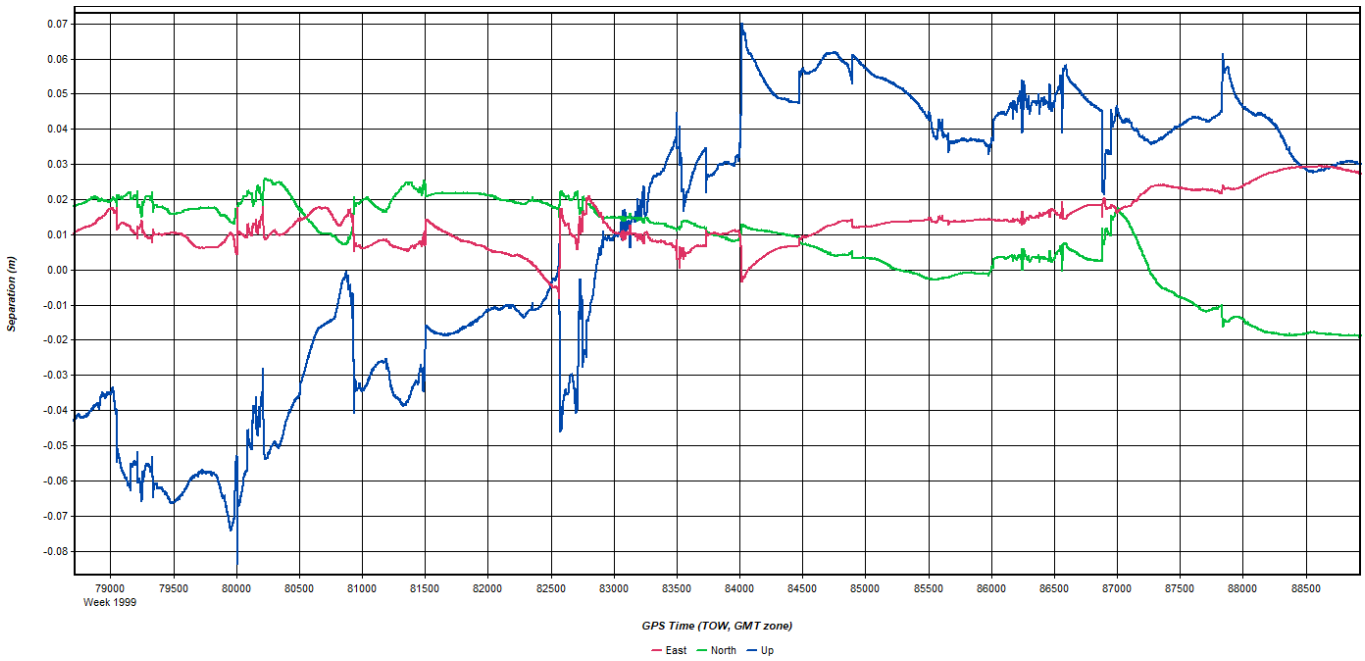
Mission 47


10 km


PDOP
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
79000
Week 1999
79500
80000
80500
81000
81500
82000
82500
83000
83500
84000
84500
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
PDOP

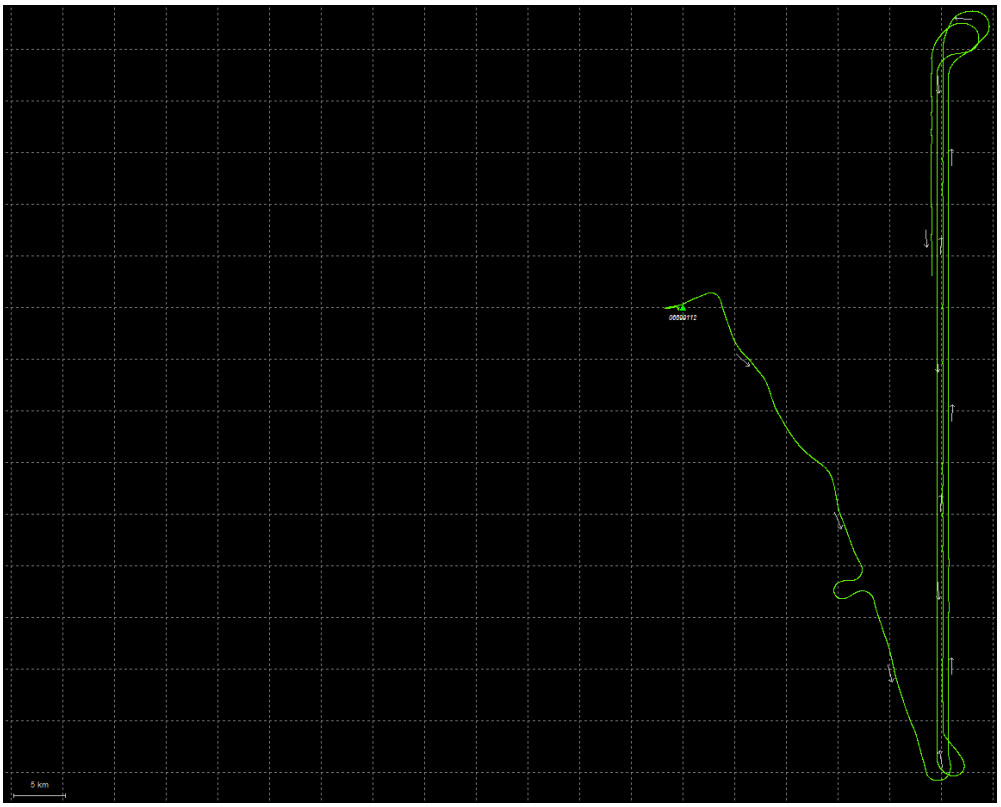

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
79000
Week 1999
79500
80000
80500
81000
81500
82000
82500
83000
83500
84000
84500
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

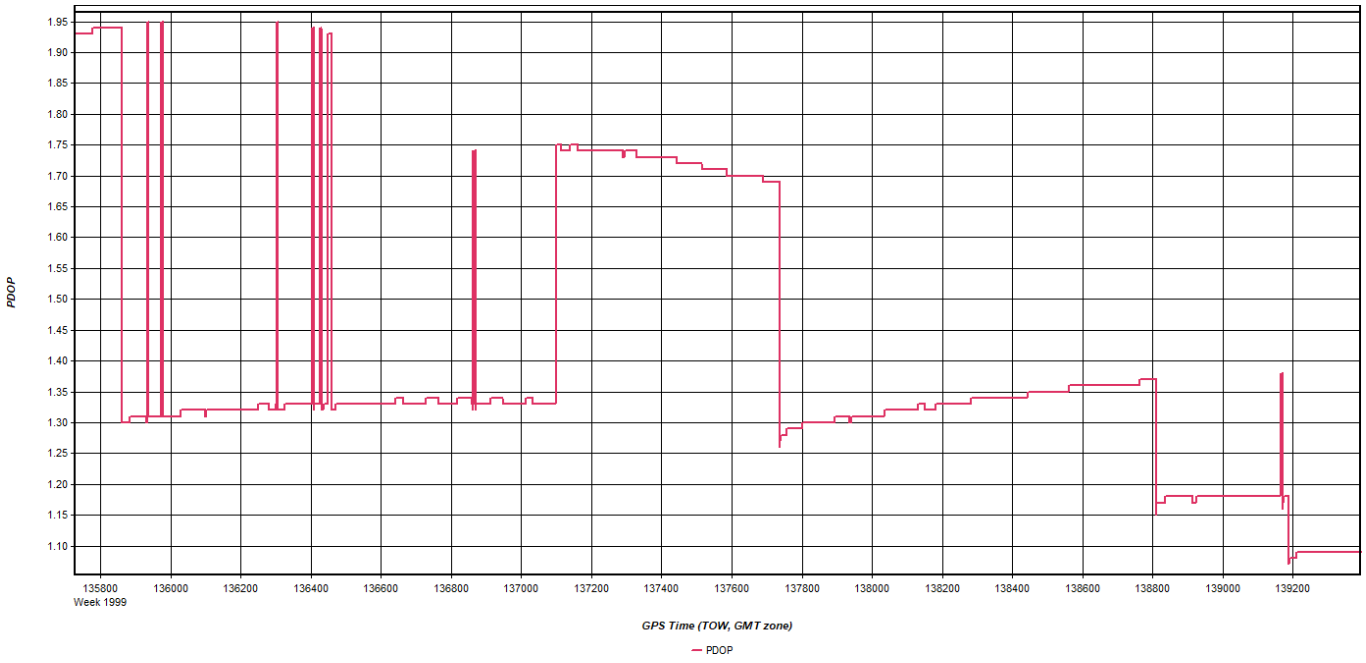

Misclosure (m)
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
79000
Week 1999
79500
80000
80500
81000
81500
82000
82500
83000
83500
84000
84500
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
East
North
Up

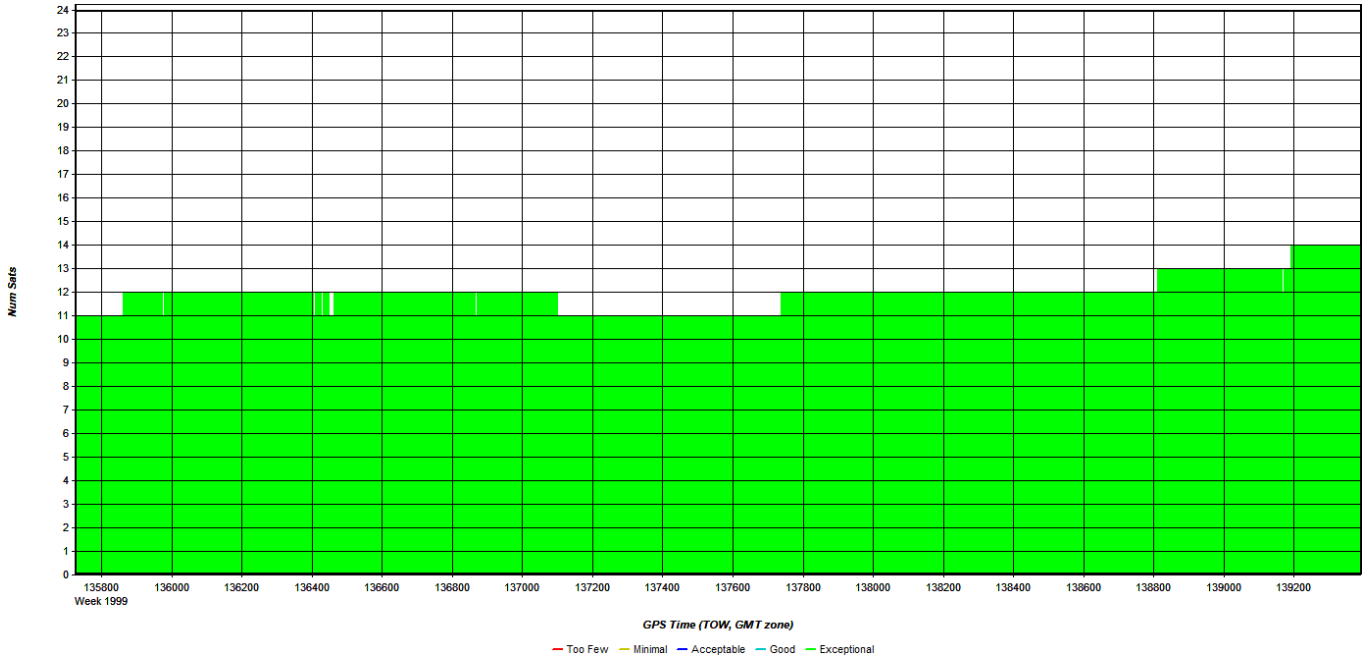

Separation (m)
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
79000
Week 1999
79500
80000
80500
81000
81500
82000
82500
83000
83500
84000
84500
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
East
North
Up

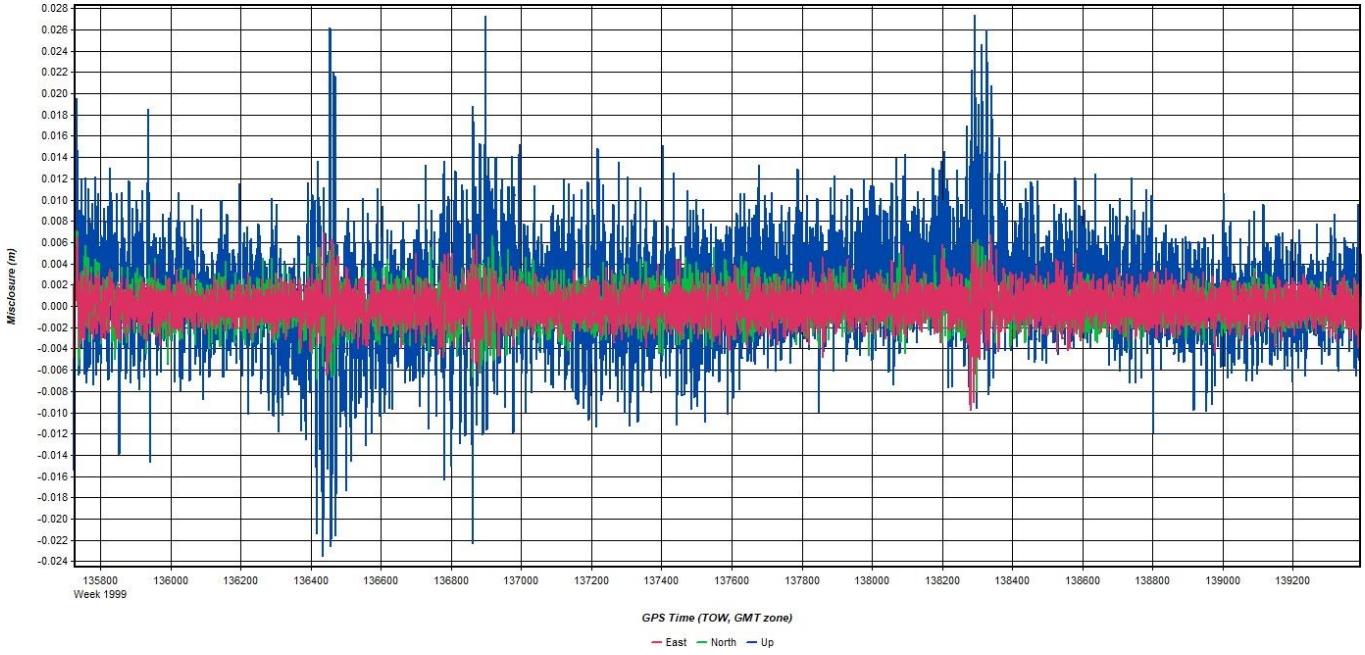
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      26476
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0181 (m)
        C/A Code:       0.32 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.016 (m)
        North:  0.015 (m)
        Height: 0.044 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (26472 occurances):
        East:   0.016 (m)
        North:  0.015 (m)
        Height: 0.044 (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:        58.808 (km)
        Minimum:        0.247 (km)
        Average:        33.838 (km)
        First Epoch:    0.414 (km)
        Last Epoch:     1.502 (km)
```

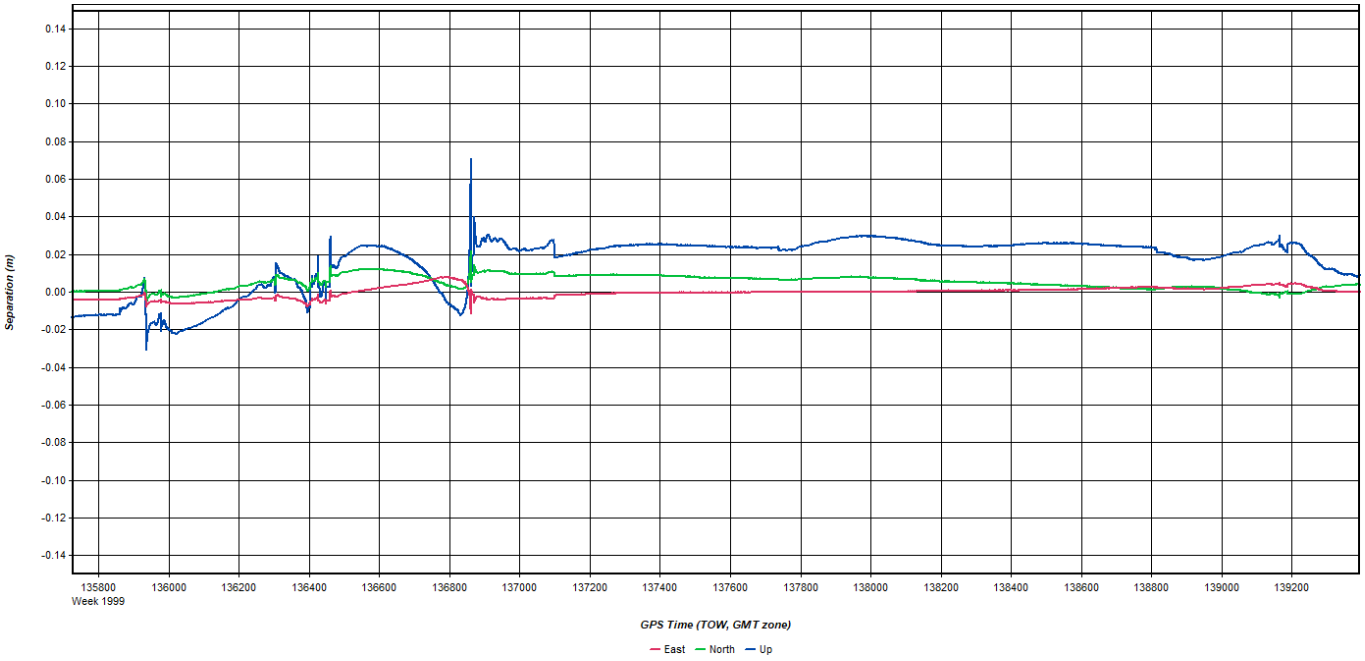
Mission 48


5 km


PDOP
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
135800
Week 1999
136000
136200
136400
136600
136800
137000
137200
137400
137600
137800
138000
138200
138400
138600
138800
139000
139200
GPS Time (TOW, GMT zone)
PDOP

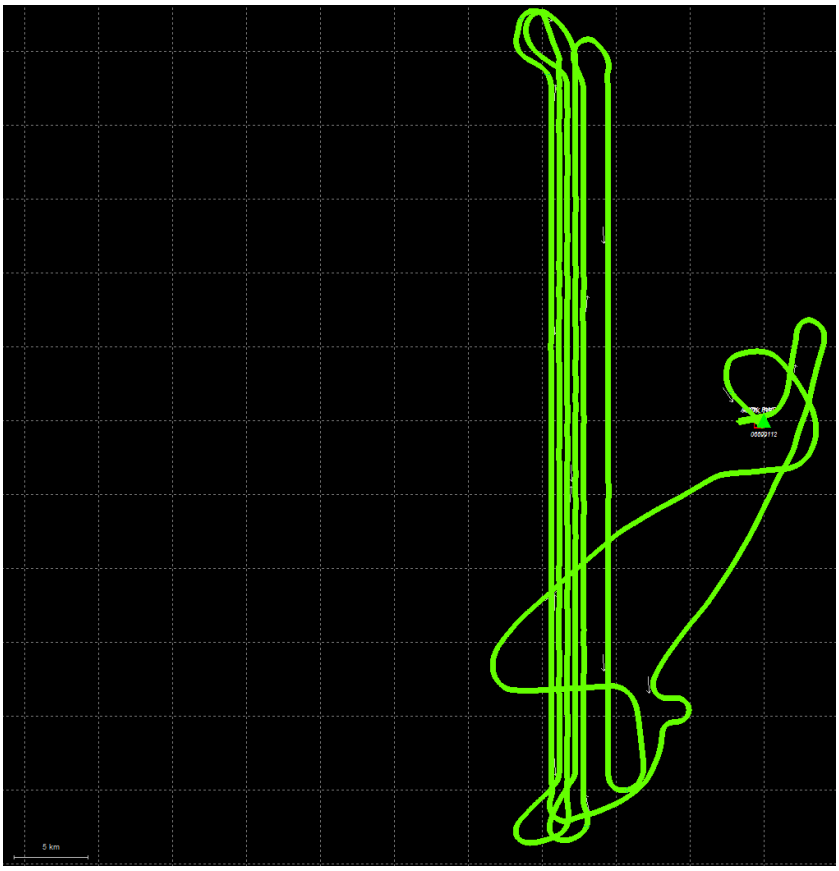

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
135800
Week 1999
136000
136200
136400
136600
136800
137000
137200
137400
137600
137800
138000
138200
138400
138600
138800
139000
139200
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

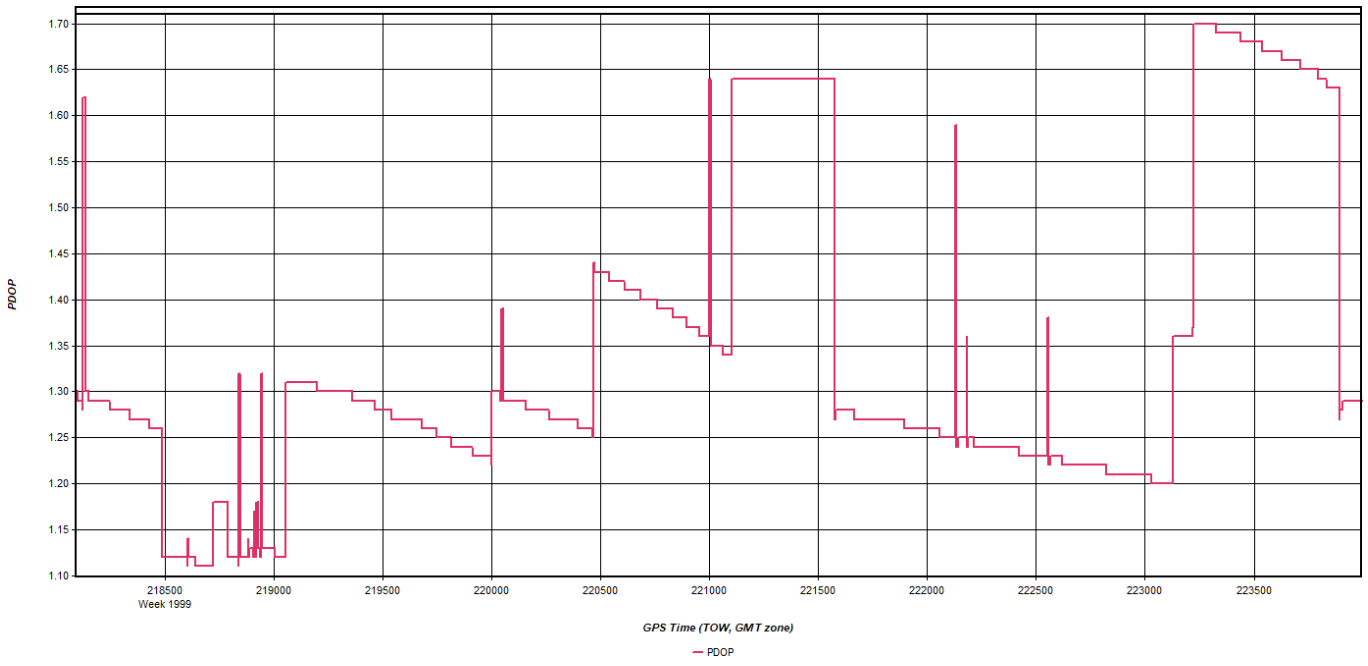

Misclosure (m)
0.028
0.026
0.024
0.022
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.010
-0.012
-0.014
-0.016
-0.018
-0.020
-0.022
-0.024
135800
Week 1999
136000
136200
136400
136600
136800
137000
137200
137400
137600
137800
138000
138200
138400
138600
138800
139000
139200
GPS Time (TOW, GMT zone)
East
North
Up

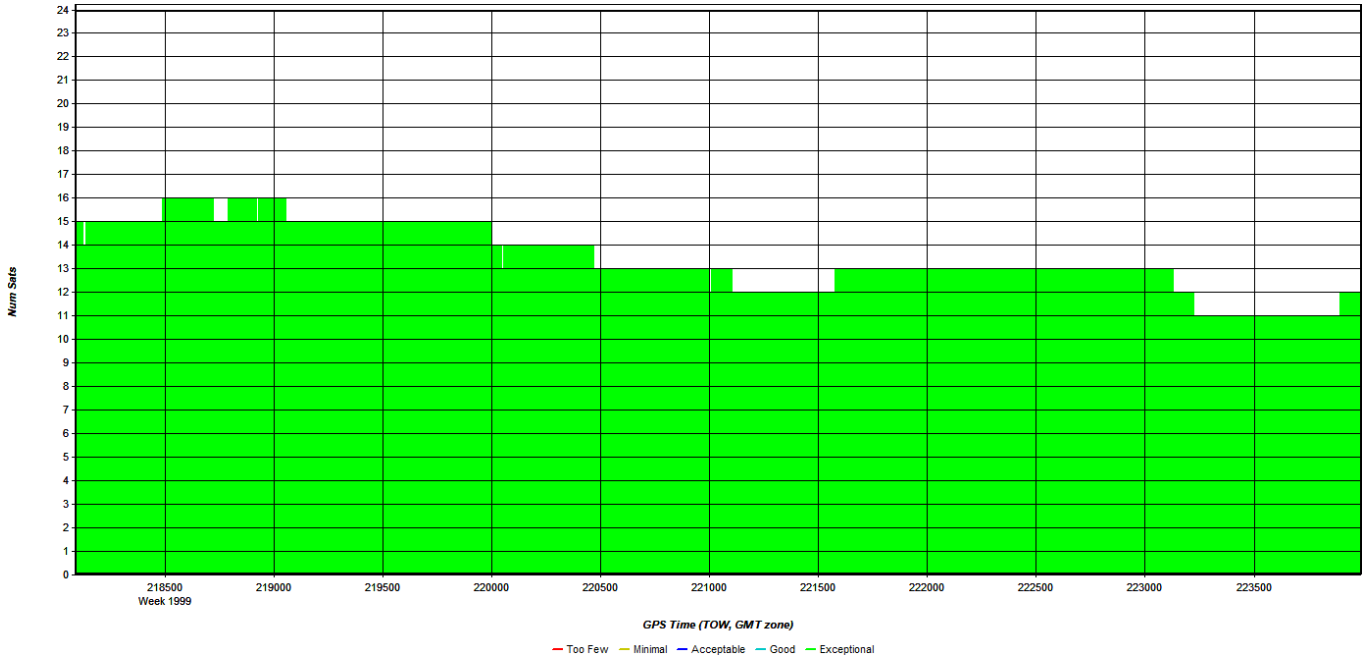

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
135800
Week 1999
136000
136200
136400
136600
136800
137000
137200
137400
137600
137800
138000
138200
138400
138600
138800
139000
139200
GPS Time (TOW, GMT zone)
East
North
Up

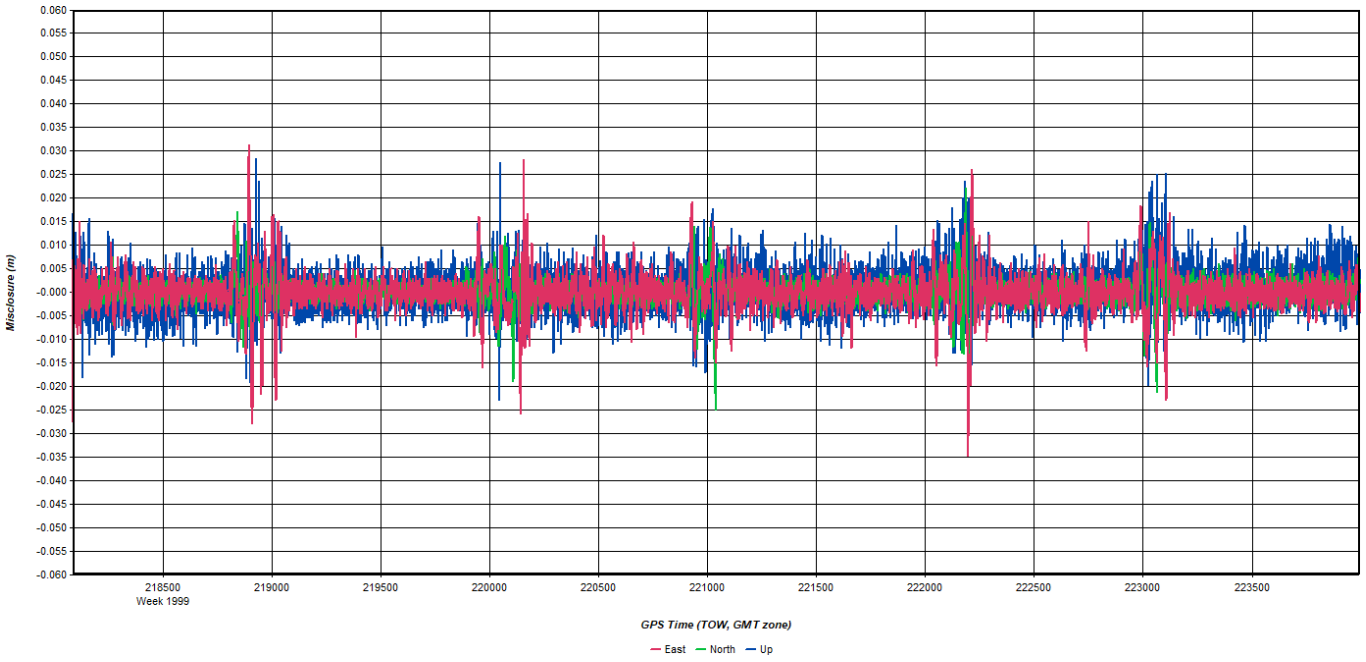
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      12537
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0127 (m)
        C/A Code:       0.29 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.003 (m)
        North:  0.005 (m)
        Height: 0.022 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (12532 occurances):
        East:   0.003 (m)
        North:  0.005 (m)
        Height: 0.022 (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 %

Baseline Distances:
        Maximum:        52.110 (km)
        Minimum:        0.312 (km)
        Average:        27.597 (km)
        First Epoch:    0.415 (km)
        Last Epoch:     24.159 (km)
```

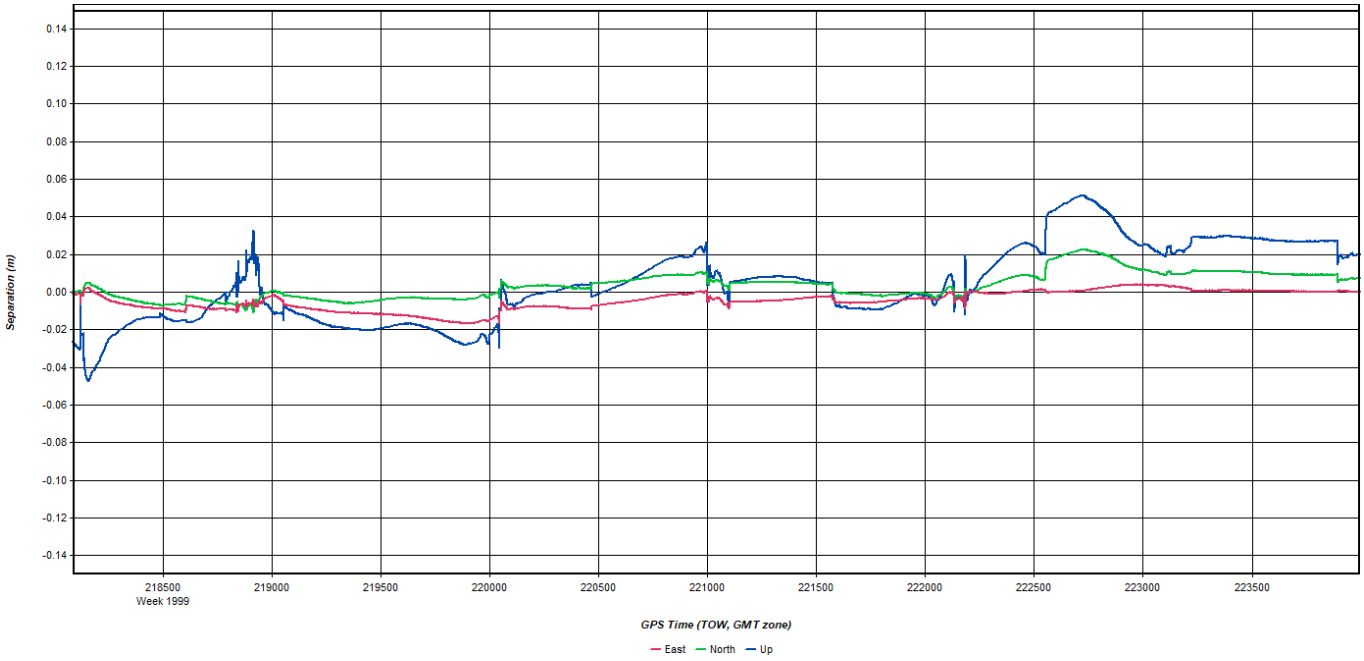
Mission 49


5 km


PDOP
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
218500
Week 1999
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
PDOP

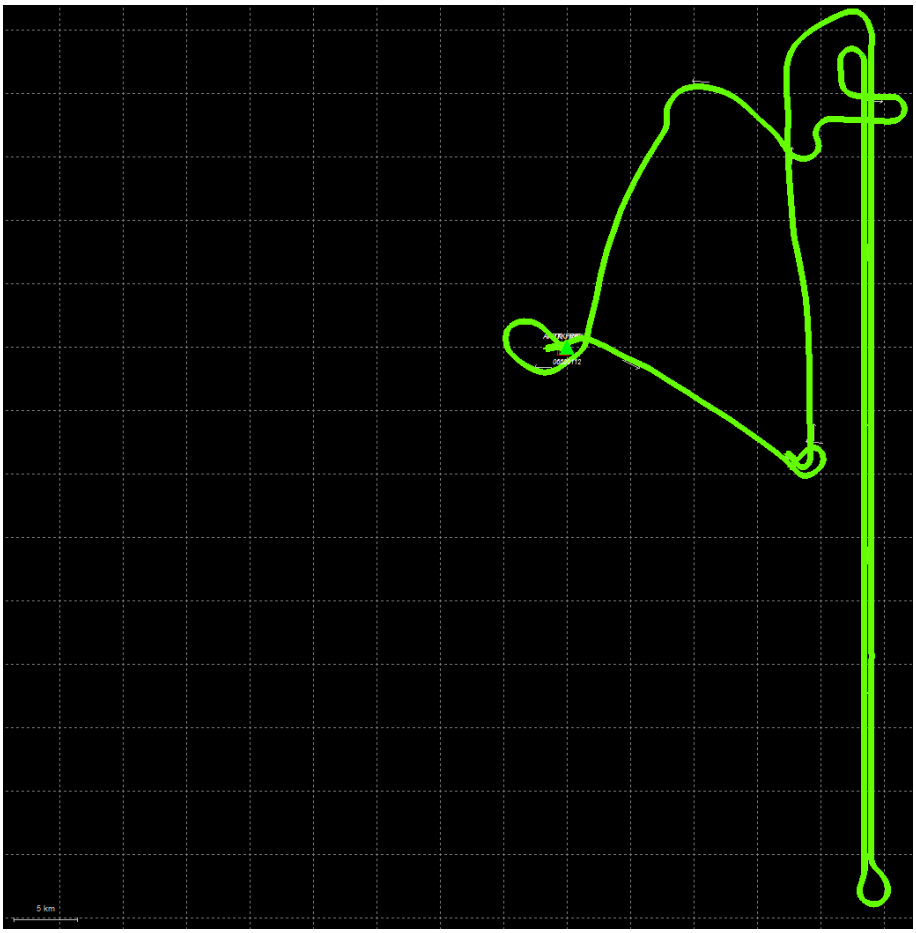

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
218500
Week 1999
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

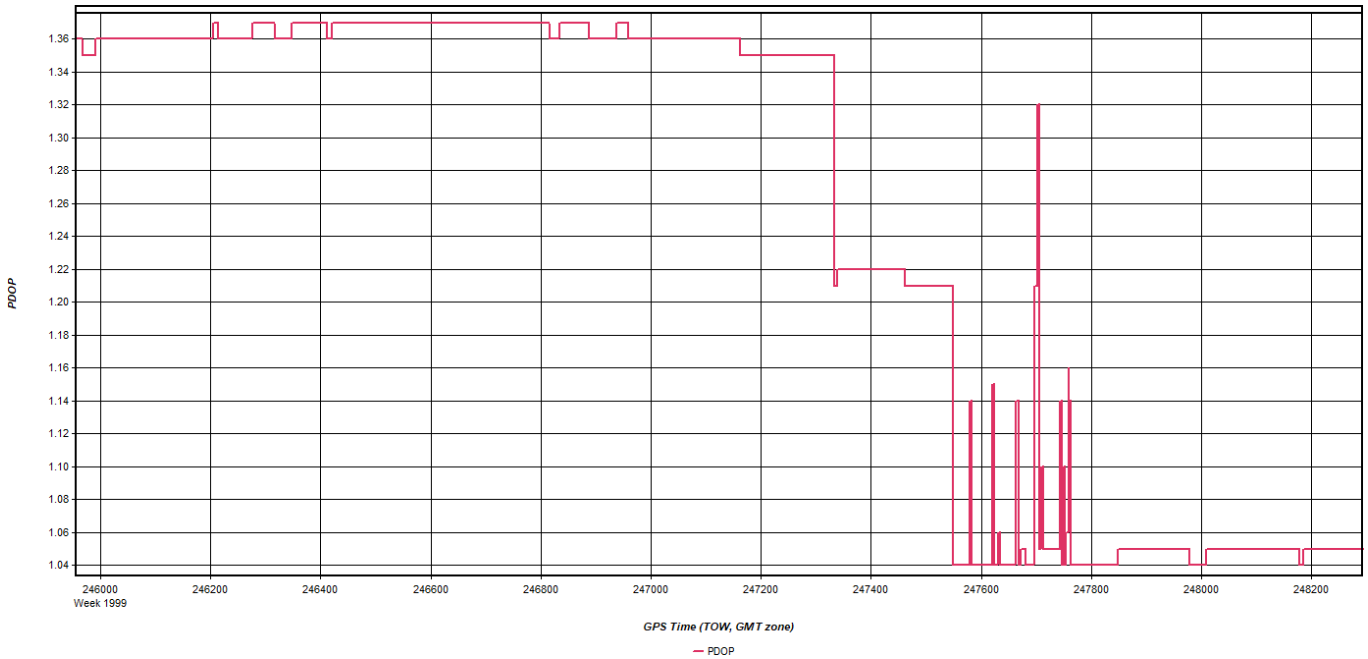

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
218500
Week 1999
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
East
North
Up


0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
Separation (m)
218500
Week 1999
219000
219500
220000
220500
221000
221500
222000
222500
223000
223500
GPS Time (TOW, GMT zone)
East
North
Up

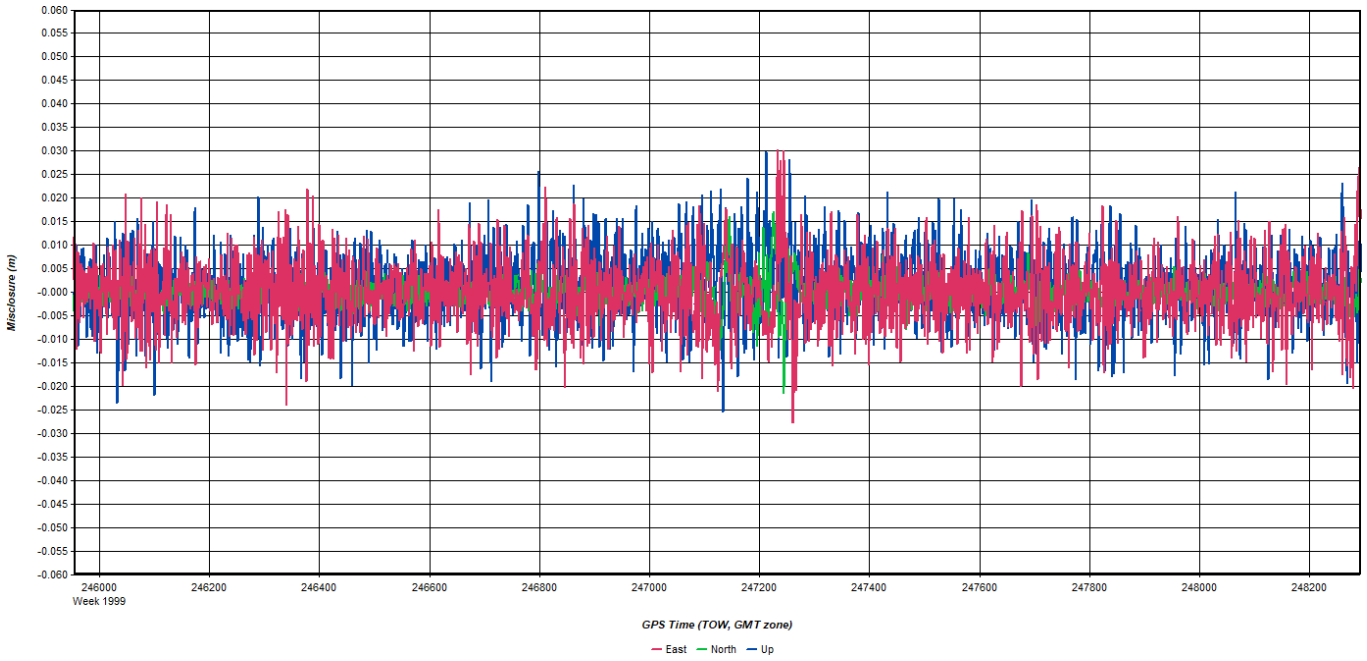
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      17537
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0176 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.006 (m)
        North:  0.007 (m)
        Height: 0.029 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (17533 occurances):
        East:   0.006 (m)
        North:  0.007 (m)
        Height: 0.029 (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:        32.581 (km)
        Minimum:        0.247 (km)
        Average:        16.604 (km)
        First Epoch:    0.375 (km)
        Last Epoch:     0.411 (km)
```

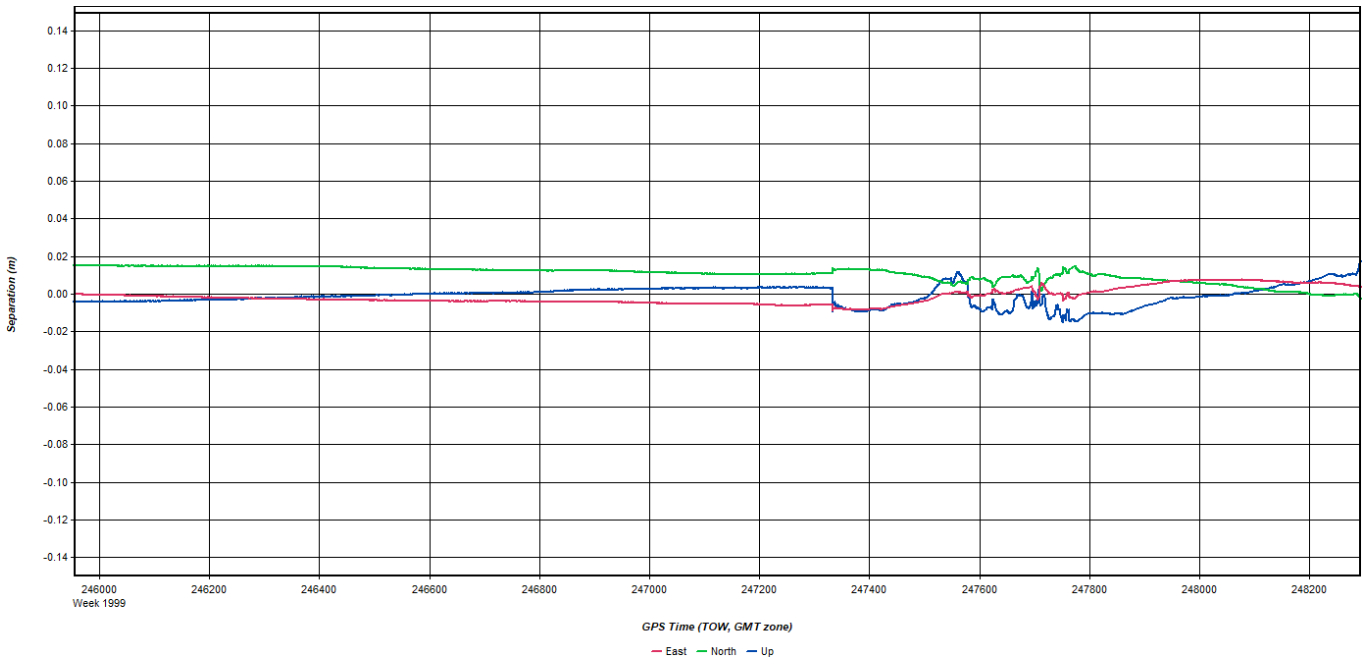
Mission 50


5 km


PDOP
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
246000
Week 1999
246200
246400
246600
246800
247000
247200
247400
247600
247800
248000
248200
GPS Time (TOW, GMT zone)
PDOP

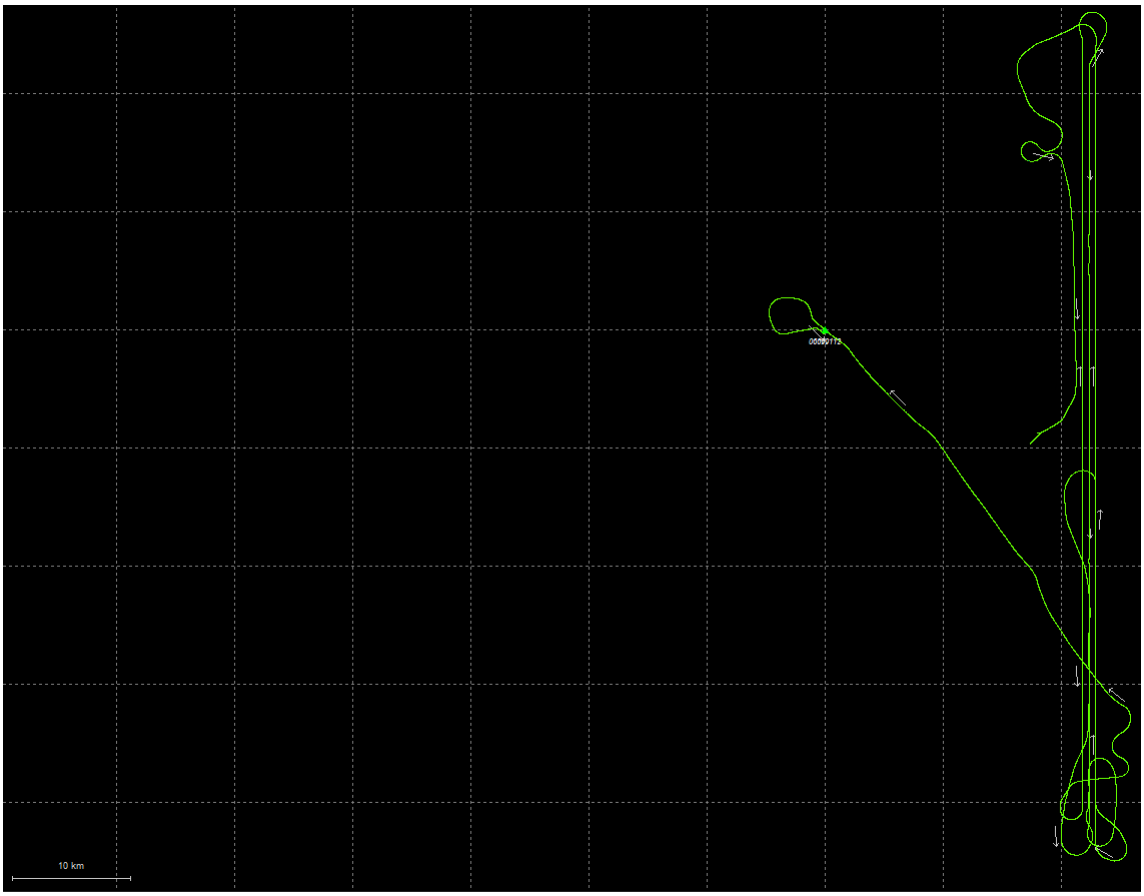

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
246000
Week 1999
246200
246400
246600
246800
247000
247200
247400
247600
247800
248000
248200
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

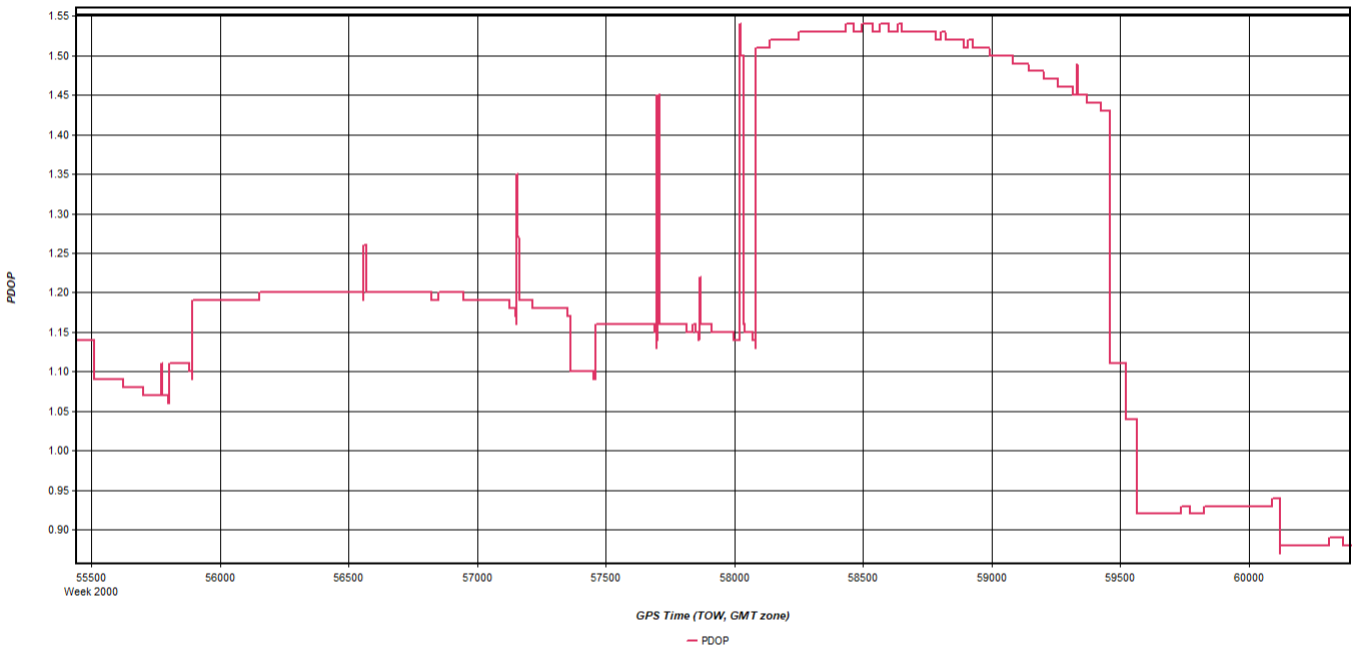

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
246000
Week 1999
246200
246400
246600
246800
247000
247200
247400
247600
247800
248000
248200
GPS Time (TOW, GMT zone)
East
North
Up

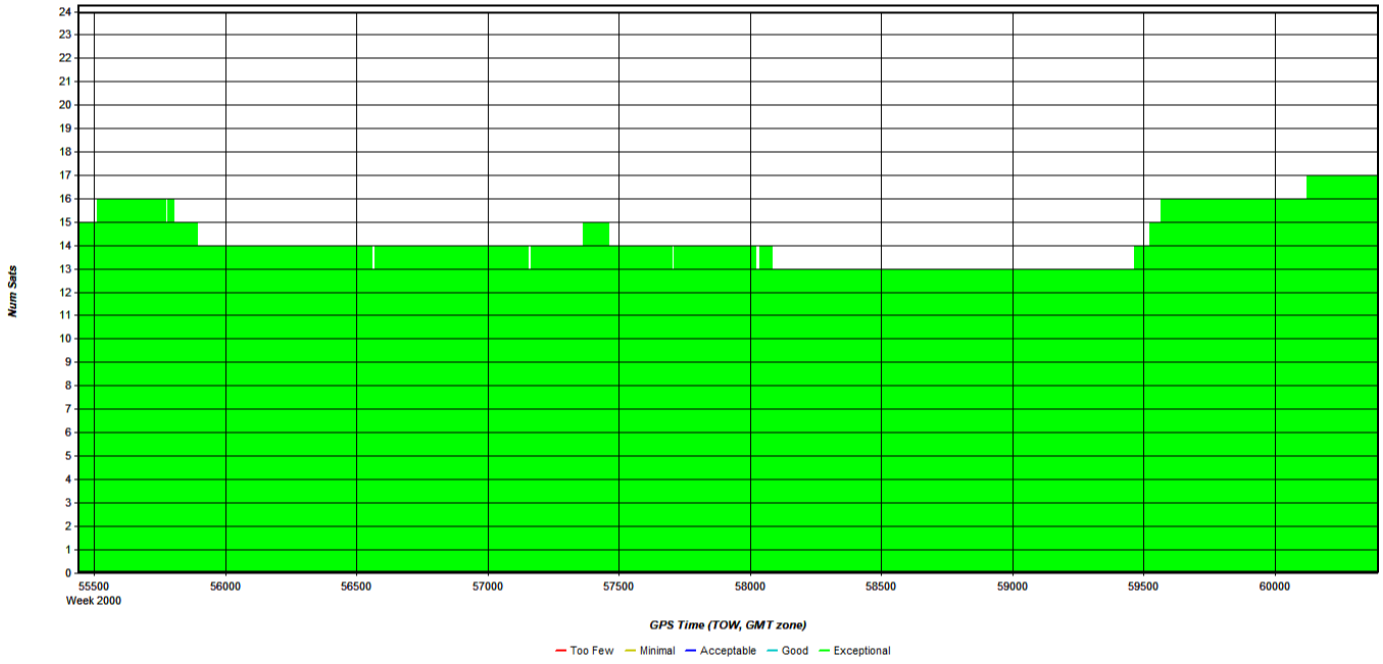

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
246000
Week 1999
246200
246400
246600
246800
247000
247200
247400
247600
247800
248000
248200
GPS Time (TOW, GMT zone)
East
North
Up

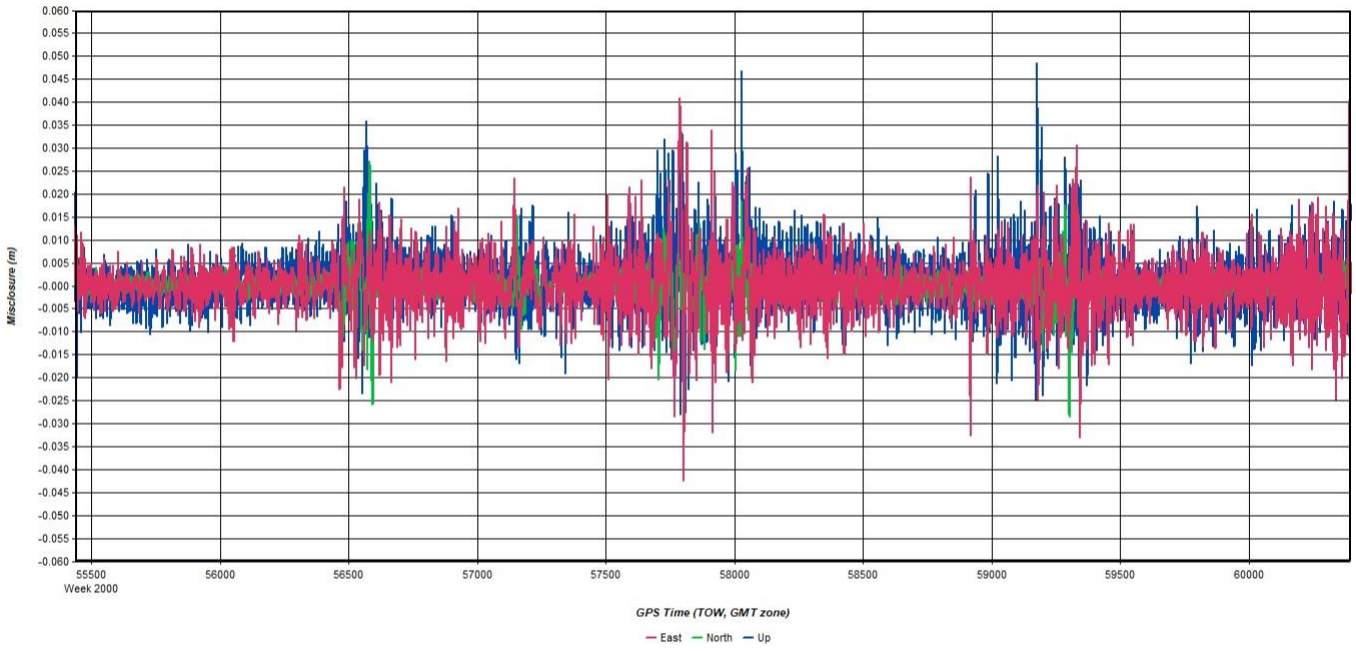
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      12377
        No processed position:  1
        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:       0.31 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.004 (m)
        North:  0.011 (m)
        Height: 0.021 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (12373 occurances):
        East:   0.004 (m)
        North:  0.011 (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 %

Baseline Distances:
        Maximum:        50.083 (km)
        Minimum:        0.247 (km)
        Average:        21.792 (km)
        First Epoch:    0.411 (km)
        Last Epoch:     0.323 (km)
```

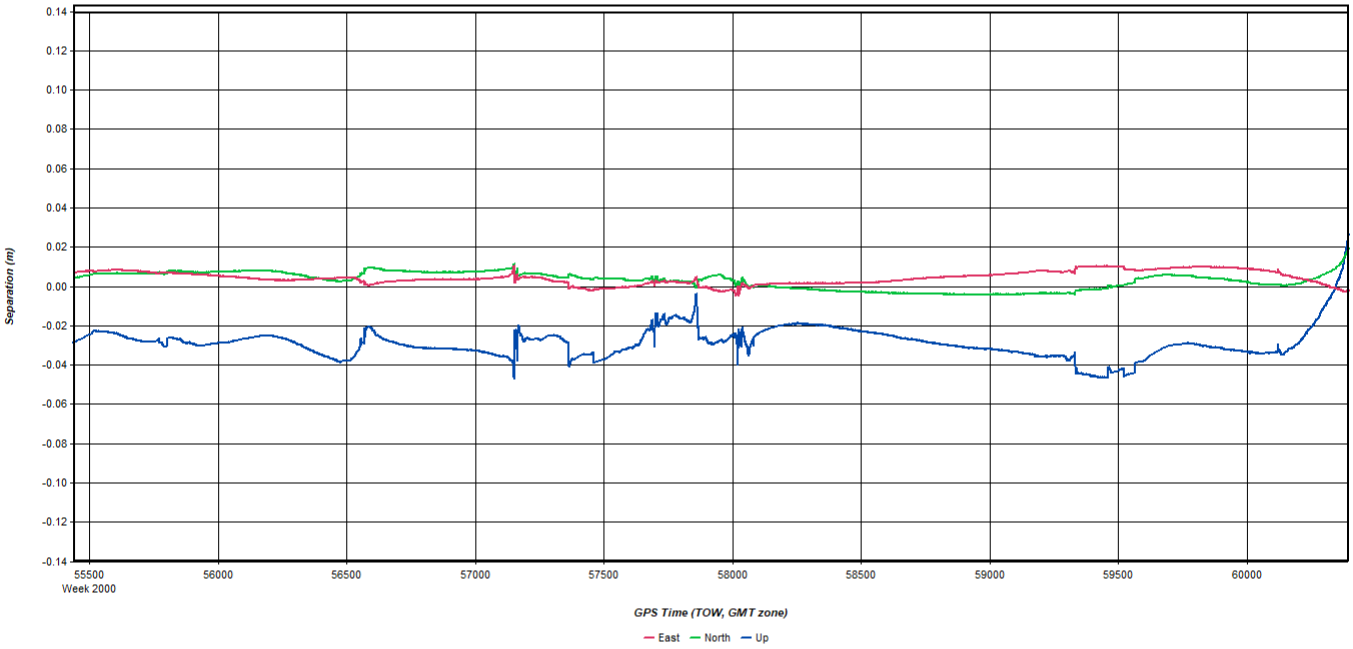
Mission 51


10 km


PDOP
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
55500
Week 2000
56000
56500
57000
57500
58000
58500
59000
59500
60000
GPS Time (TOW, GMT zone)
PDOP

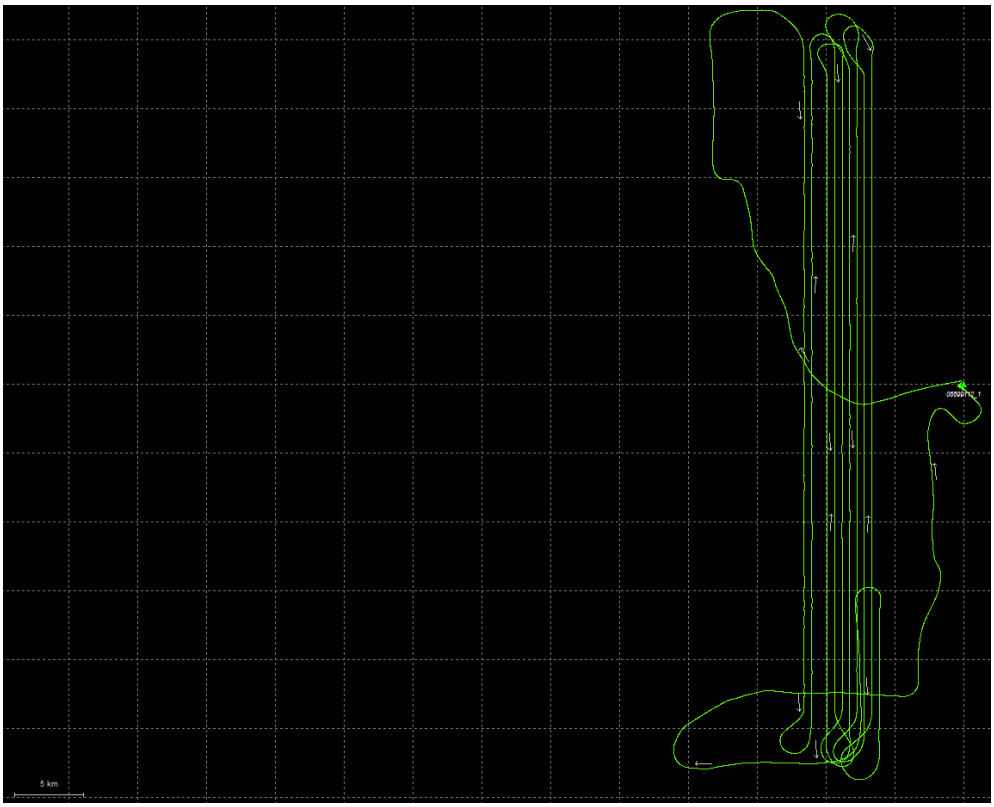

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
55500
Week 2000
56000
56500
57000
57500
58000
58500
59000
59500
60000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

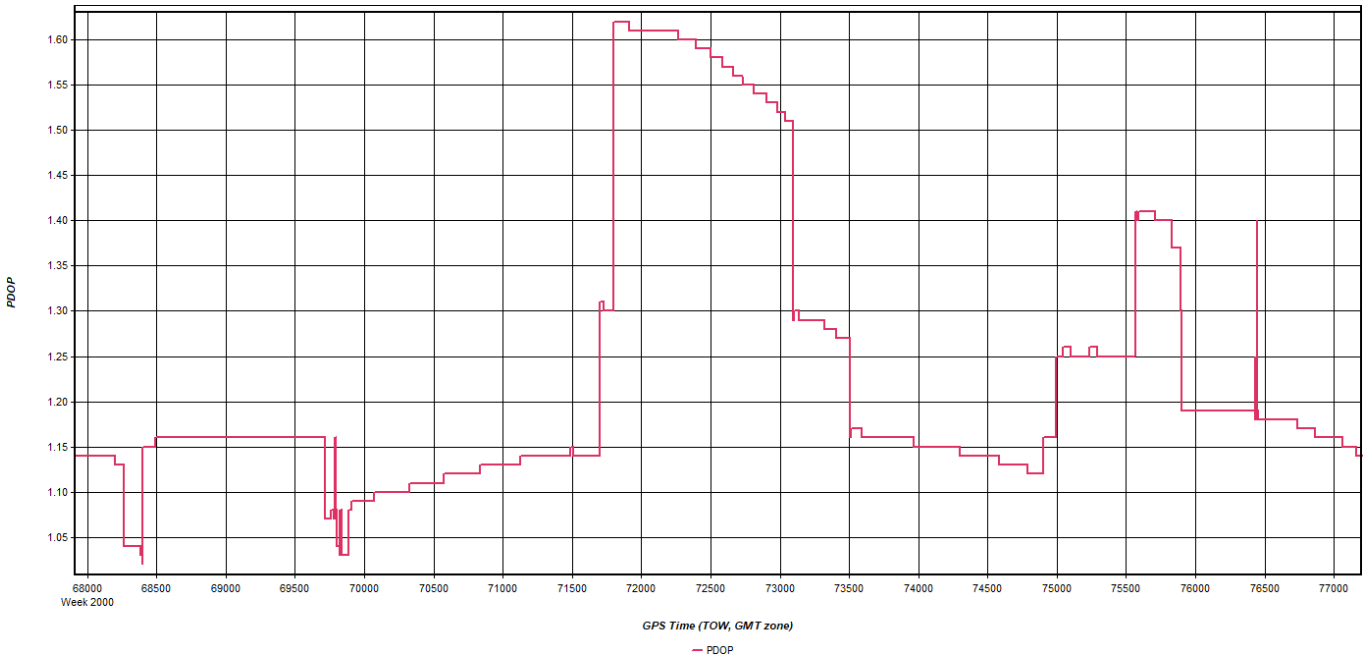

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
55500
Week 2000
56000
56500
57000
57500
58000
58500
59000
59500
60000
GPS Time (TOW, GMT zone)
East
North
Up

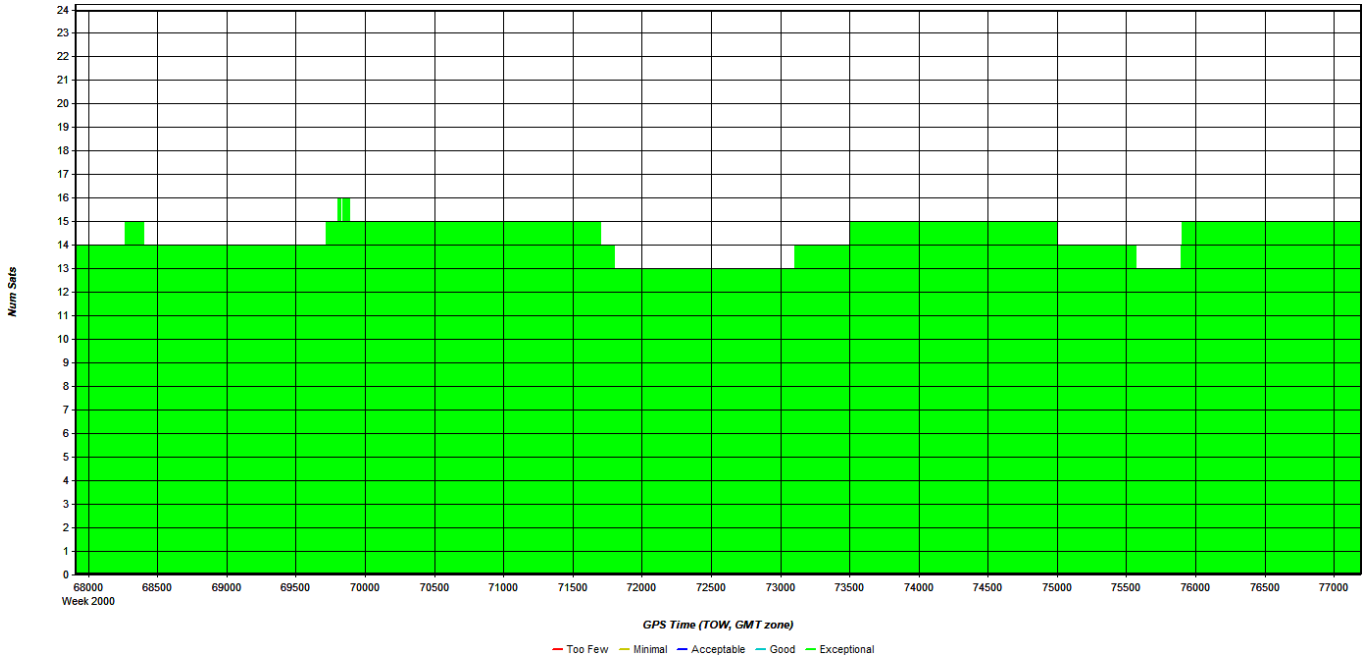

0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
Separation (m)
55500
Week 2000
56000
56500
57000
57500
58000
58500
59000
59500
60000
GPS Time (TOW, GMT zone)
East
North
Up

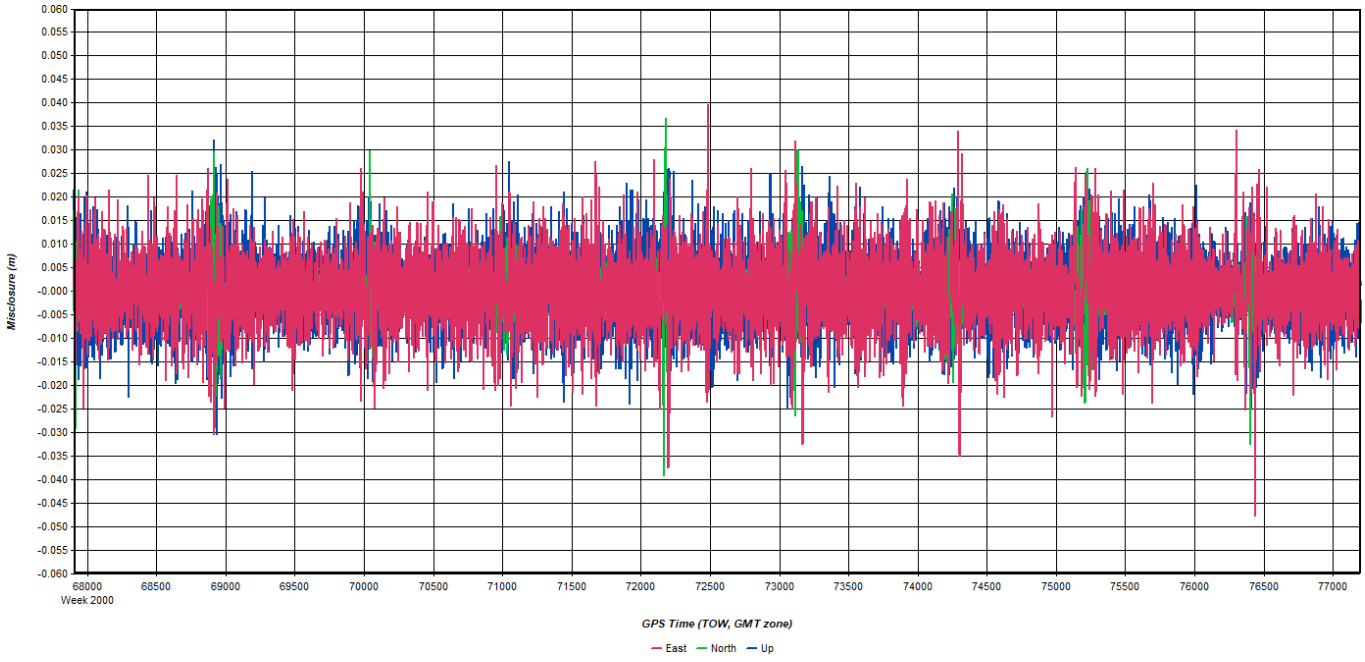
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      15885
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0178 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.006 (m)
        Height: 0.028 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (15881 occurances):
        East:   0.005 (m)
        North:  0.006 (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 %

Baseline Distances:
        Maximum:        51.107 (km)
        Minimum:        0.008 (km)
        Average:        28.500 (km)
        First Epoch:    19.901 (km)
        Last Epoch:     0.407 (km)
```

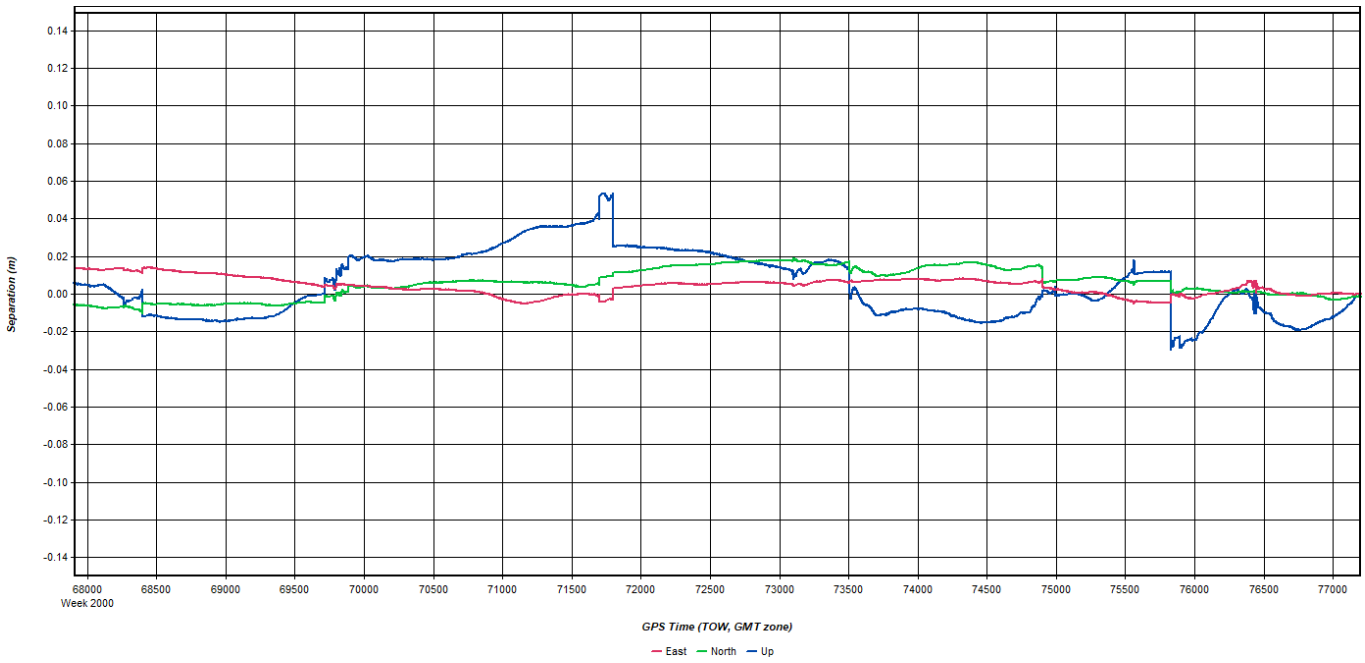
Mission 52


5 km


PDOP
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
68000
Week 2000
68500
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
GPS Time (TOW, GMT zone)
PDOP

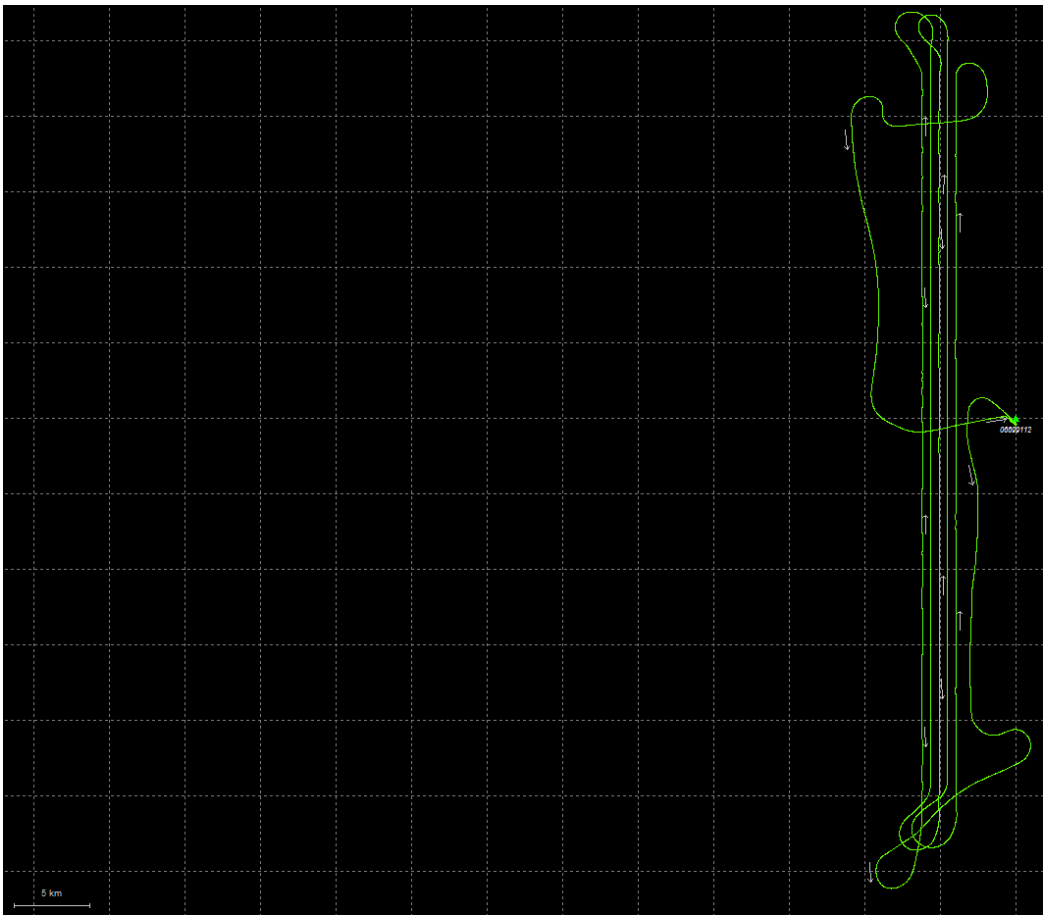

Num Sats
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
68000 68500 69000 69500 70000 70500 71000 71500 72000 72500 73000 73500 74000 74500 75000 75500 76000 76500 77000
Week 2000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

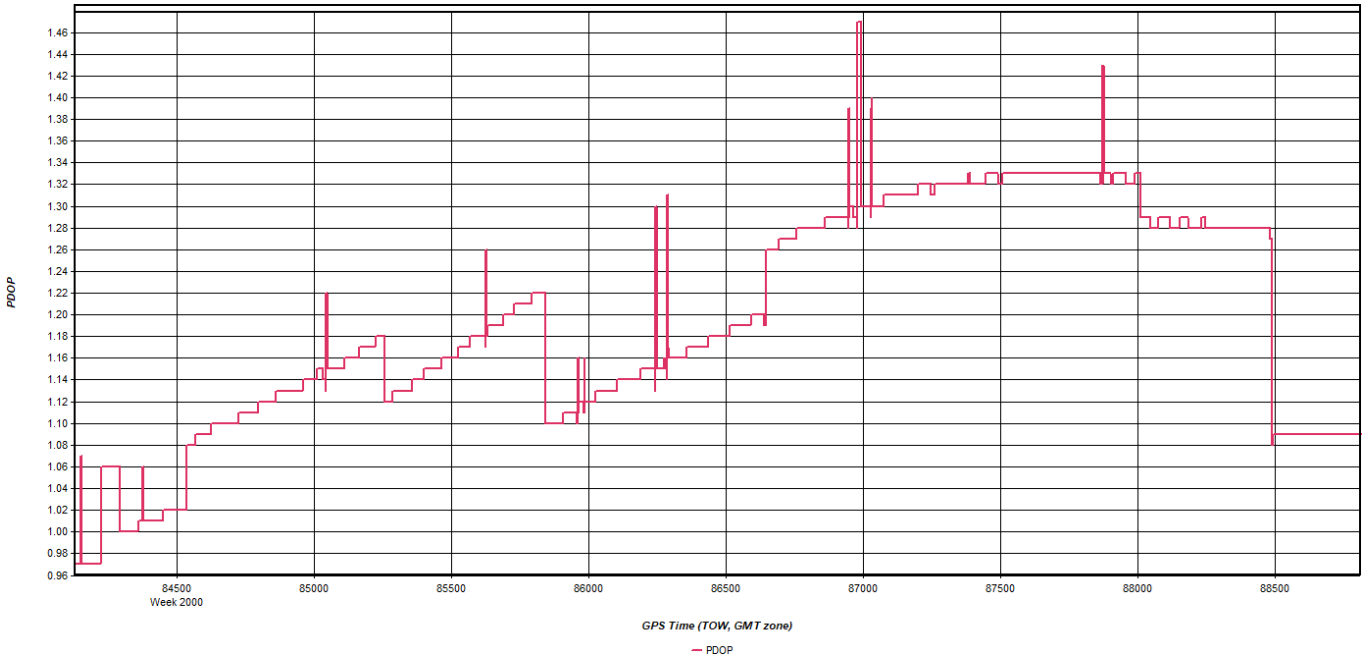

Misclosure (m)
0.060 0.055 0.050 0.045 0.040 0.035 0.030 0.025 0.020 0.015 0.010 0.005 -0.000 -0.005 -0.010 -0.015 -0.020 -0.025 -0.030 -0.035 -0.040 -0.045 -0.050 -0.055 -0.060
68000 68500 69000 69500 70000 70500 71000 71500 72000 72500 73000 73500 74000 74500 75000 75500 76000 76500 77000
Week 2000
GPS Time (TOW, GMT zone)
East
North
Up

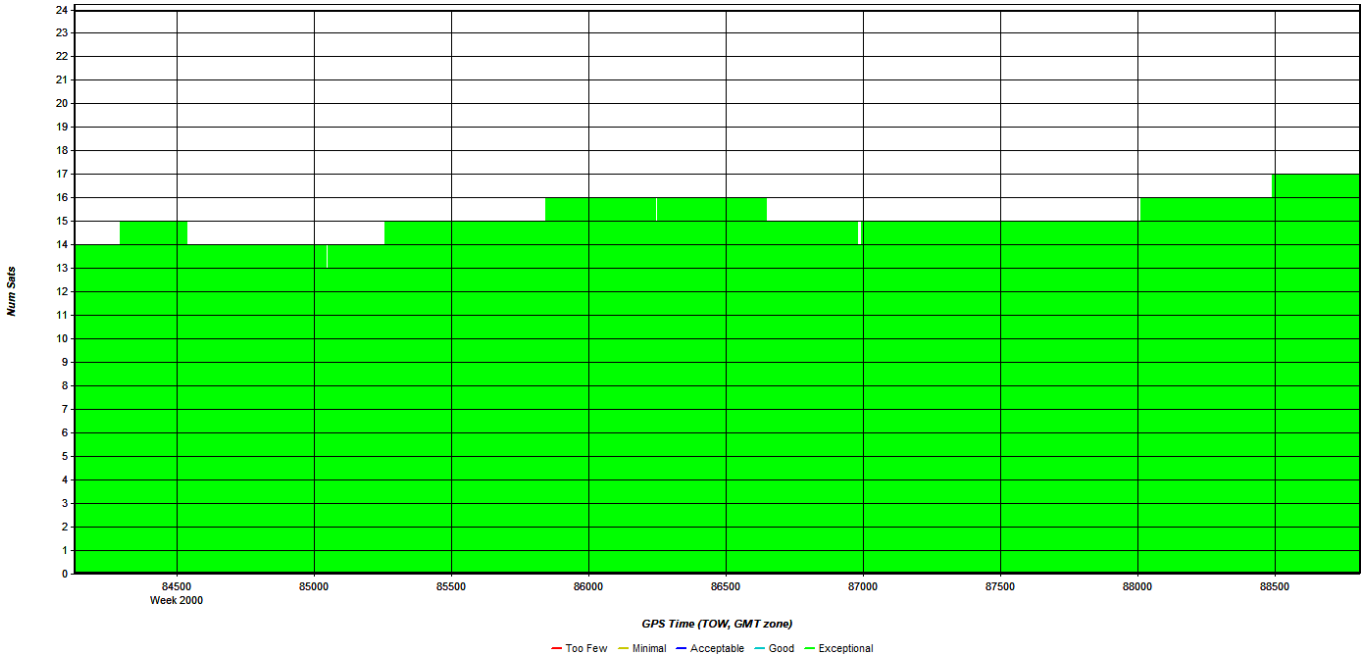

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
68000
Week 2000
68500
69000
69500
70000
70500
71000
71500
72000
72500
73000
73500
74000
74500
75000
75500
76000
76500
77000
GPS Time (TOW, GMT zone)
East
North
Up

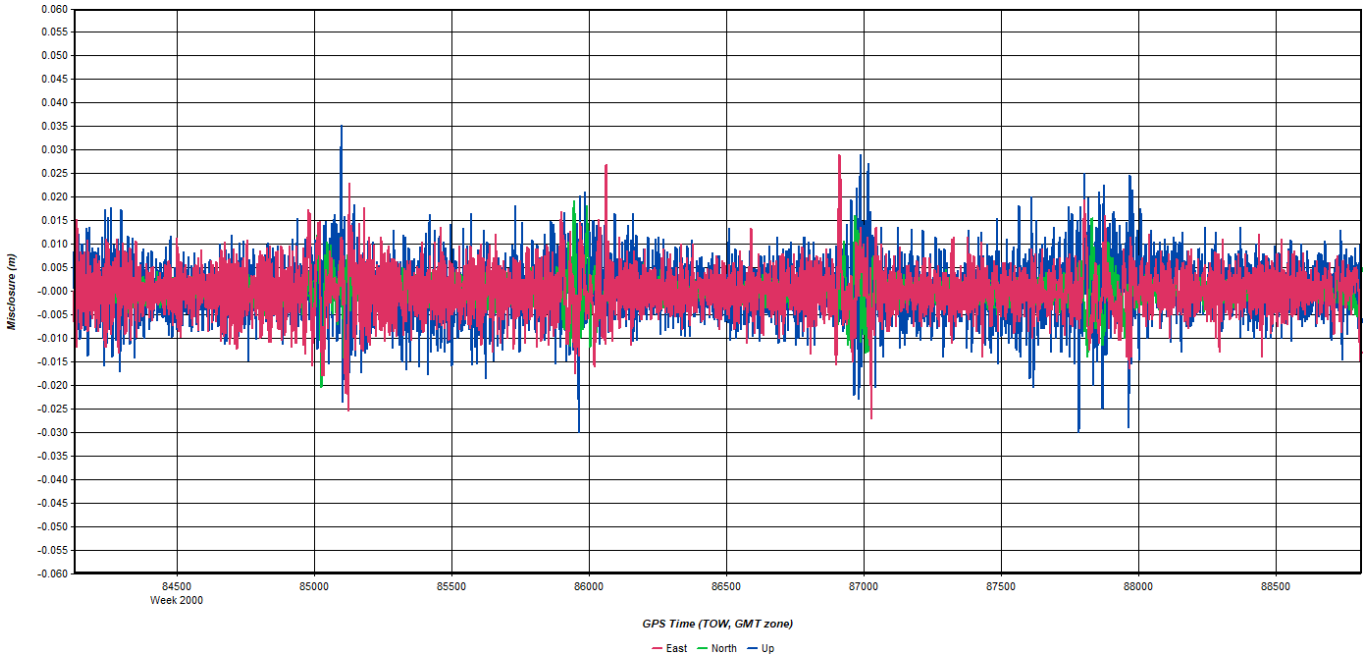
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      25957
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0202 (m)
        C/A Code:       0.32 (m)
        L1 Doppler:     0.035 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.007 (m)
        North:  0.009 (m)
        Height: 0.016 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (25953 occurances):
        East:   0.007 (m)
        North:  0.009 (m)
        Height: 0.016 (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 %

Baseline Distances:
        Maximum:        34.305 (km)
        Minimum:        0.226 (km)
        Average:        16.649 (km)
        First Epoch:    0.412 (km)
        Last Epoch:     0.417 (km)
```

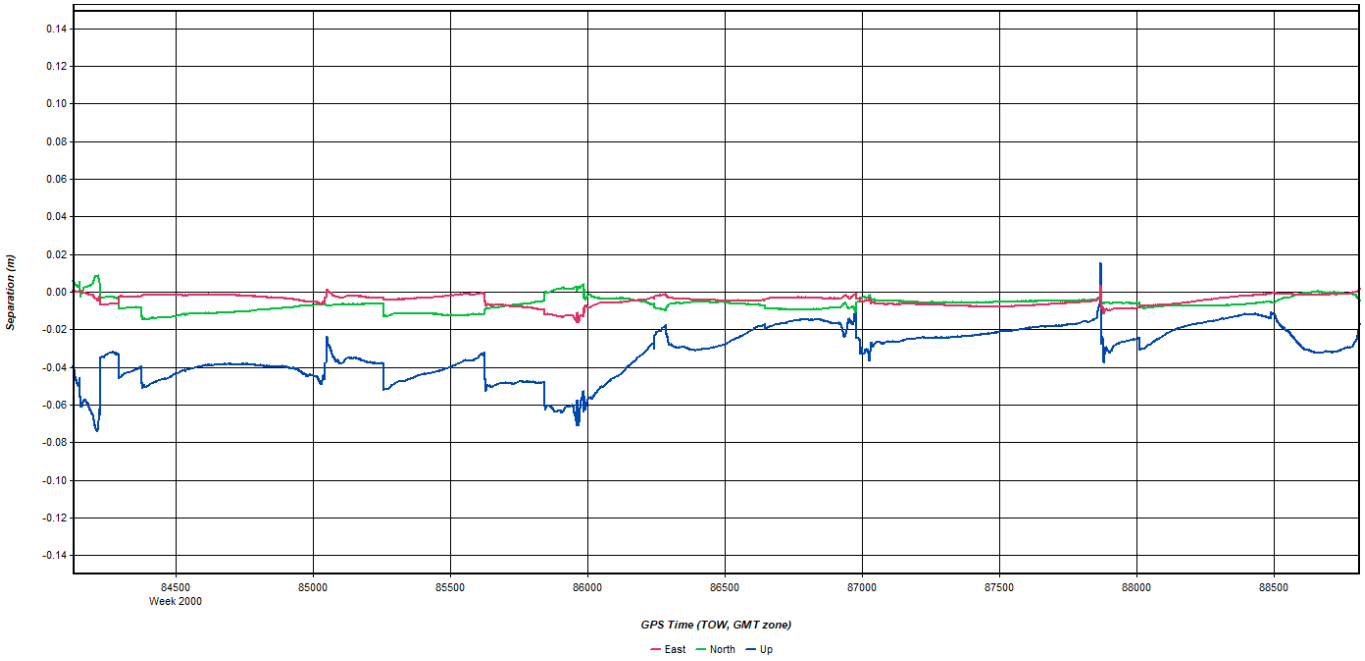
Mission 53


5 km


PDOP
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
84500
Week 2000
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
PDOP

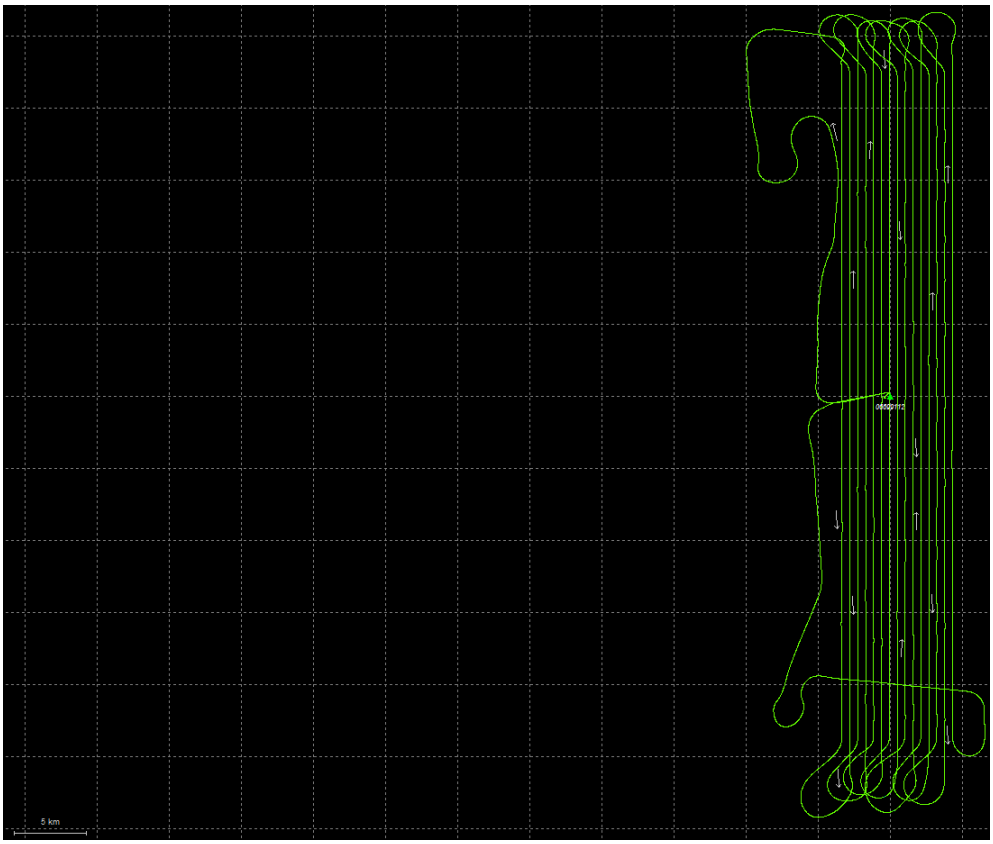

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
84500
Week 2000
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

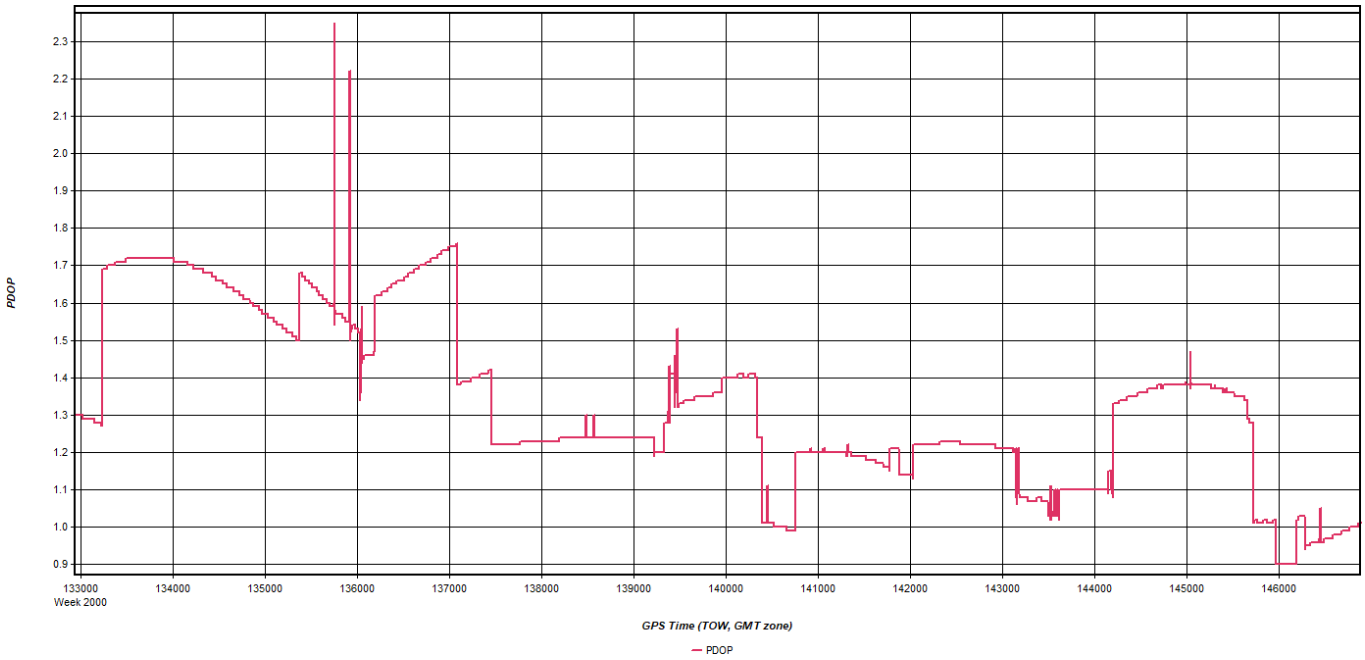

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
84500
Week 2000
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
East
North
Up

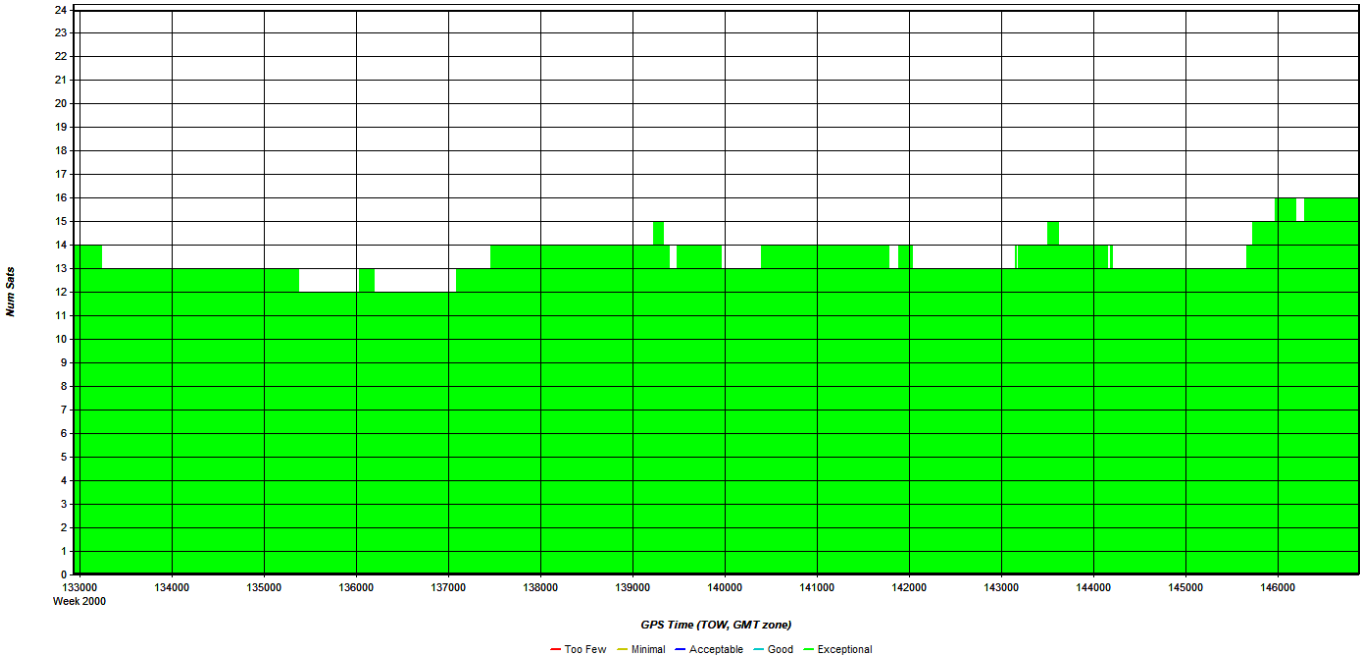

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
84500
Week 2000
85000
85500
86000
86500
87000
87500
88000
88500
GPS Time (TOW, GMT zone)
East
North
Up

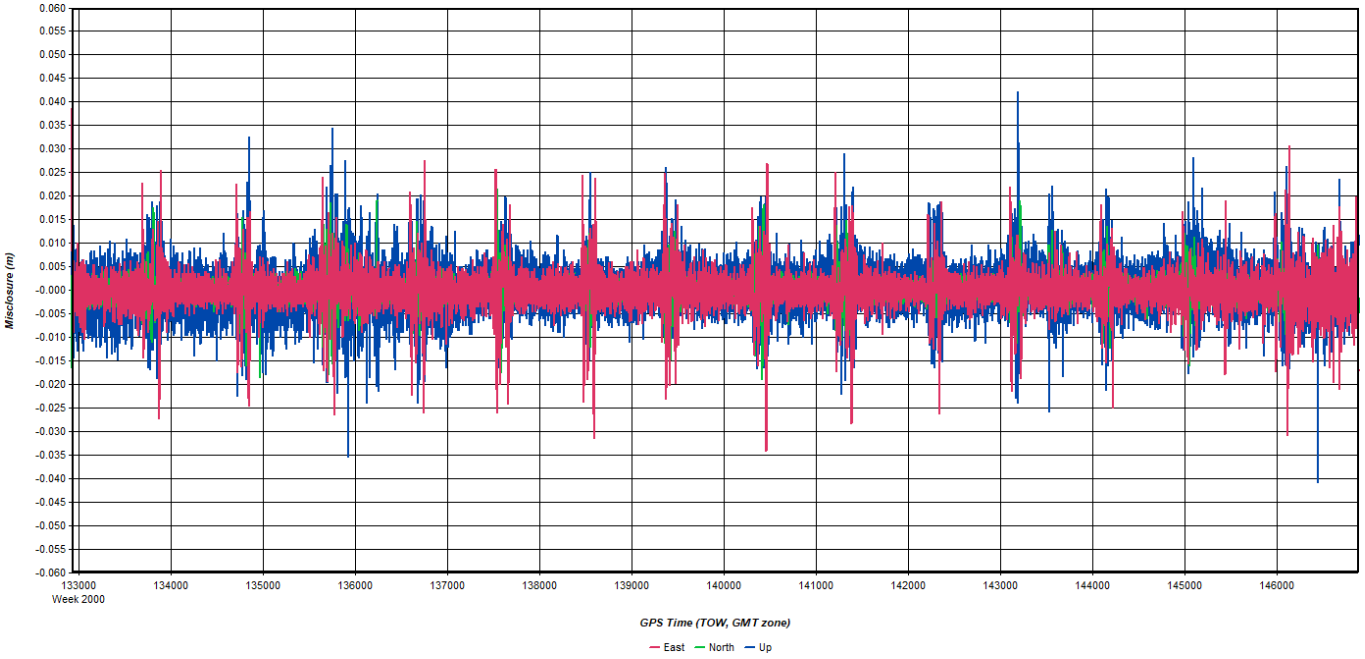
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      14804
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0165 (m)
        C/A Code:       0.31 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.005 (m)
        North:  0.007 (m)
        Height: 0.037 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (14798 occurances):
        East:   0.004 (m)
        North:  0.007 (m)
        Height: 0.037 (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:        31.744 (km)
        Minimum:        0.248 (km)
        Average:        13.205 (km)
        First Epoch:    0.369 (km)
        Last Epoch:     0.381 (km)
```

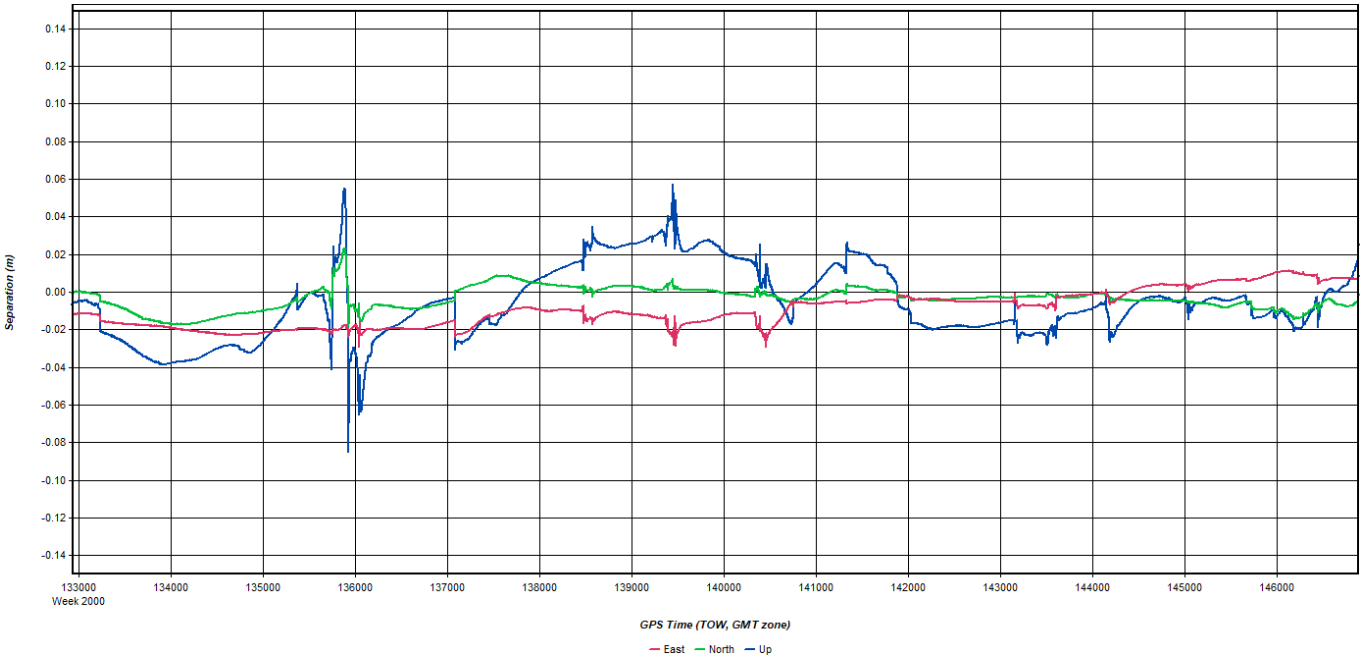
Mission 54


5 km


PDOP
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
133000
Week 2000
134000
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
GPS Time (TOW, GMT zone)
PDOP

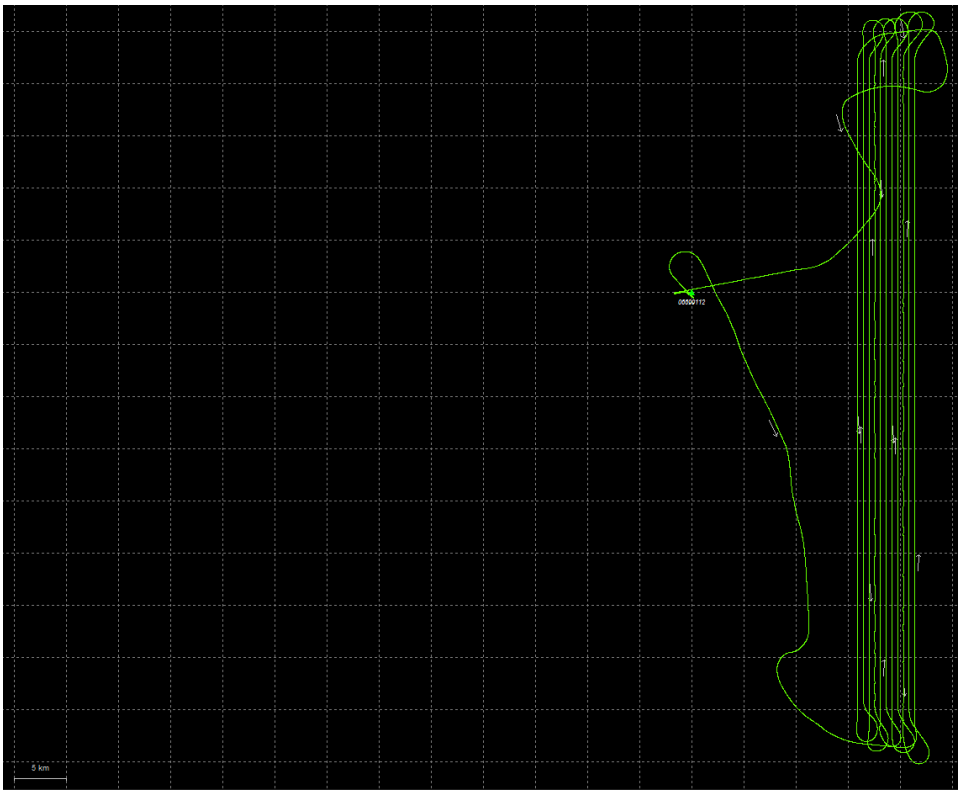

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
133000
Week 2000
134000
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

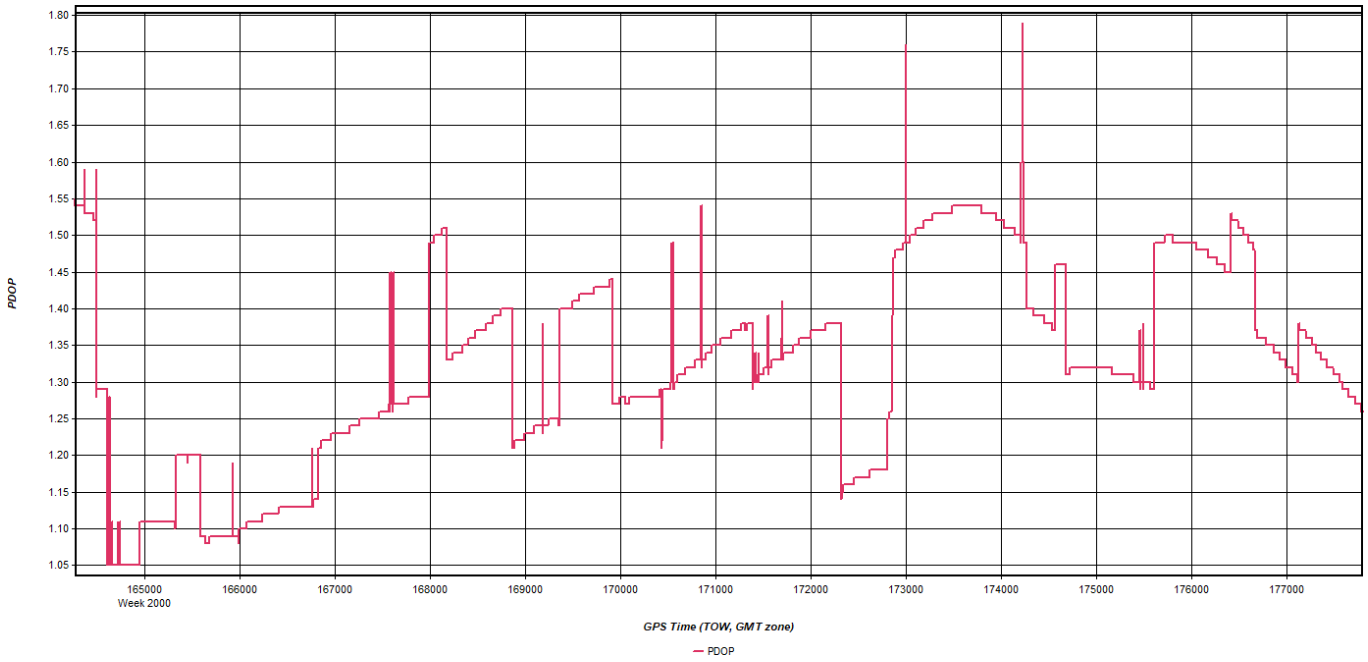

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
133000
Week 2000
134000
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
GPS Time (TOW, GMT zone)
East
North
Up

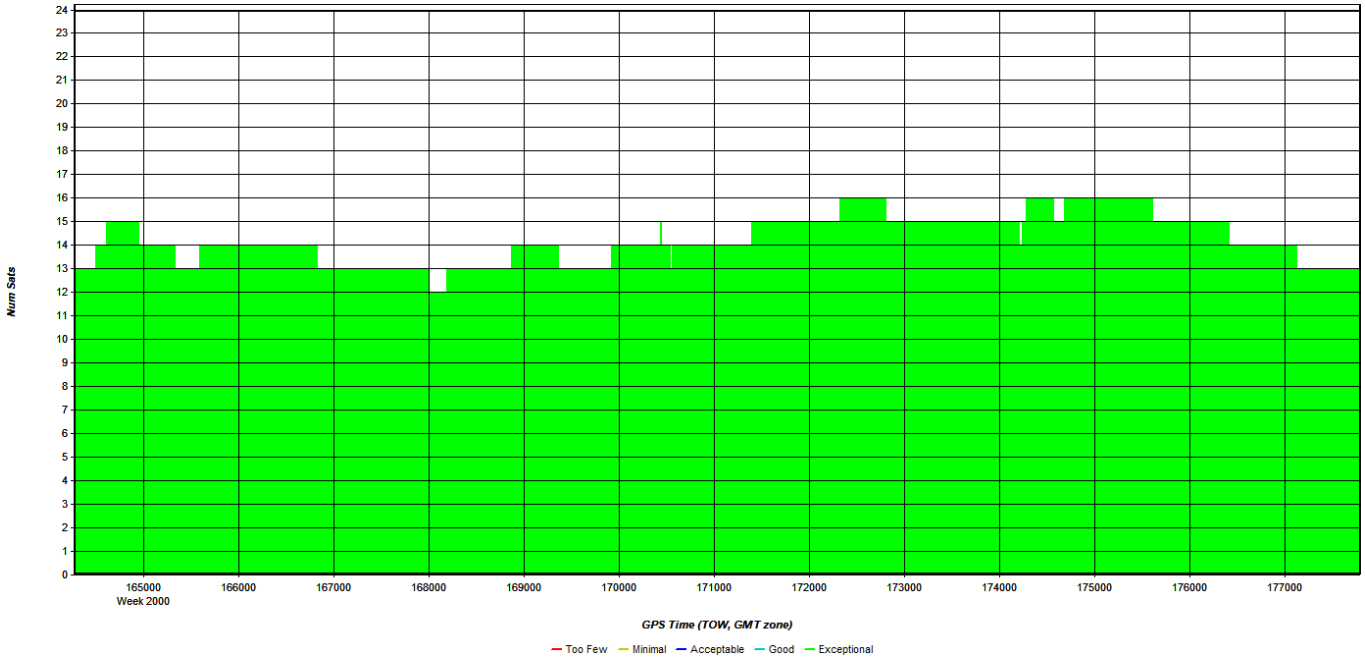

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
133000
Week 2000
134000
135000
136000
137000
138000
139000
140000
141000
142000
143000
144000
145000
146000
GPS Time (TOW, GMT zone)
East
North
Up

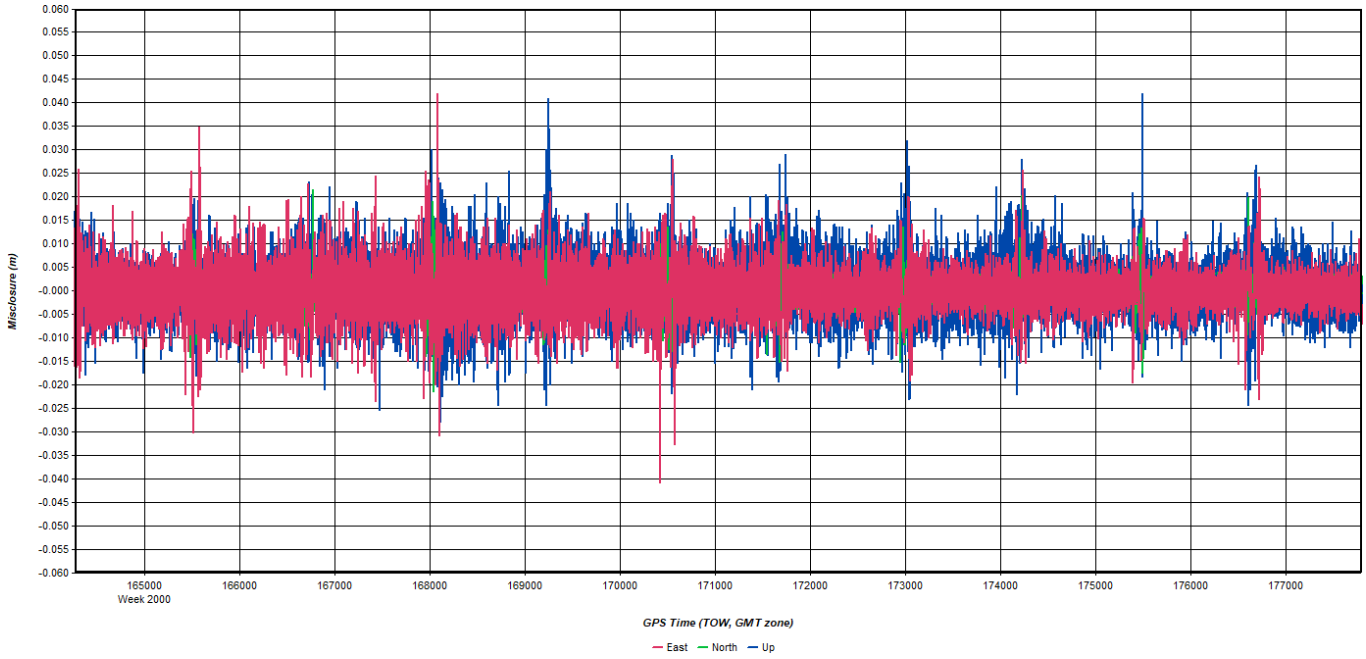
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      32724
        No processed position:  1
        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:       0.36 (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 dual FWD/REV fixes (32720 occurances):
        East:   0.013 (m)
        North:  0.007 (m)
        Height: 0.019 (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:        29.600 (km)
        Minimum:        0.093 (km)
        Average:        14.053 (km)
        First Epoch:    0.381 (km)
        Last Epoch:     0.675 (km)
```

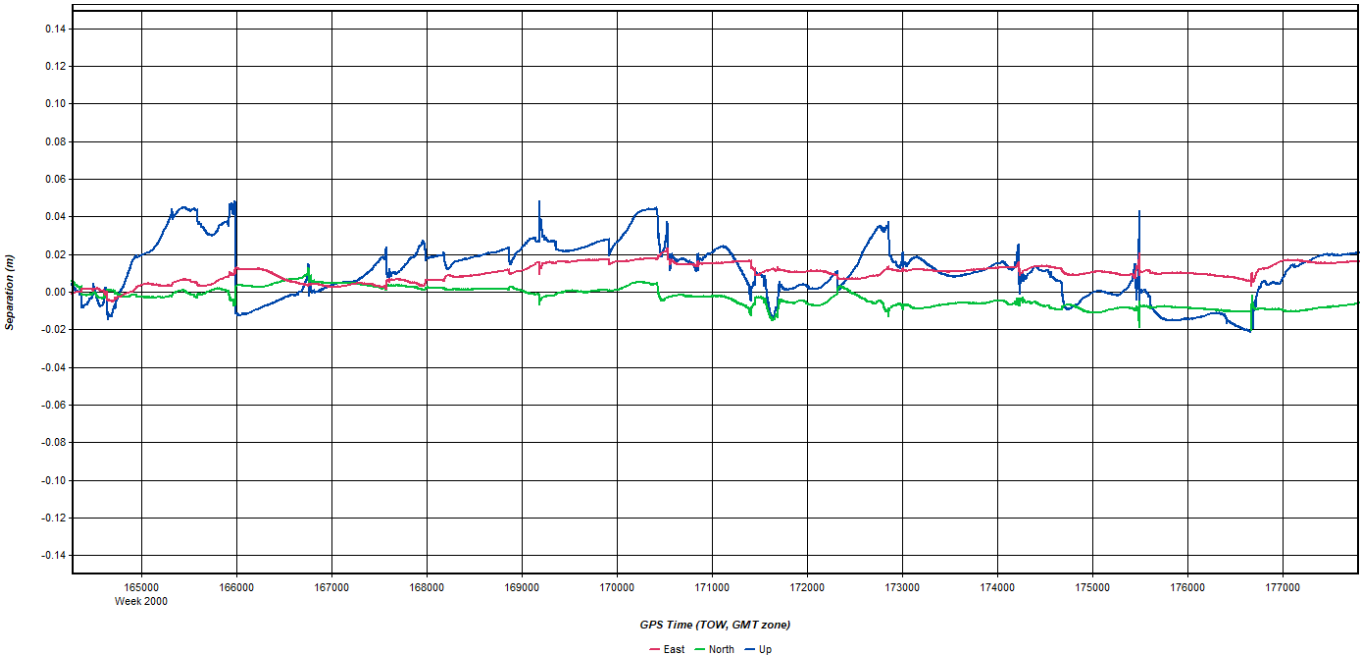
Mission 55


5 km


PDOP
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
165000
Week 2000
166000
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
GPS Time (TOW, GMT zone)
PDOP

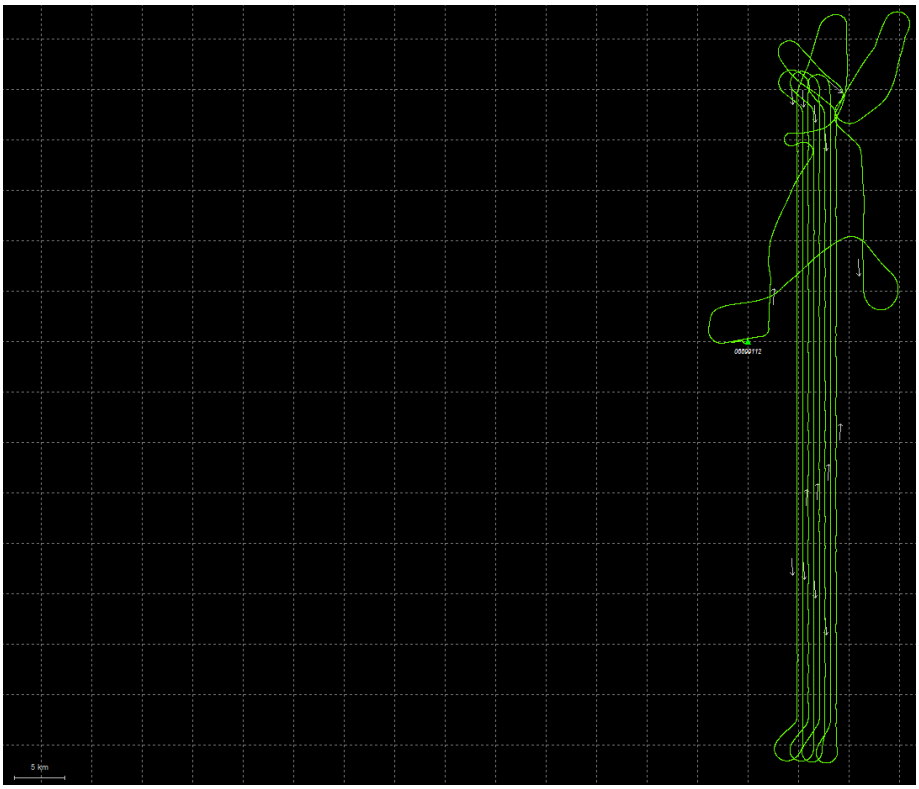

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
165000
Week 2000
166000
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

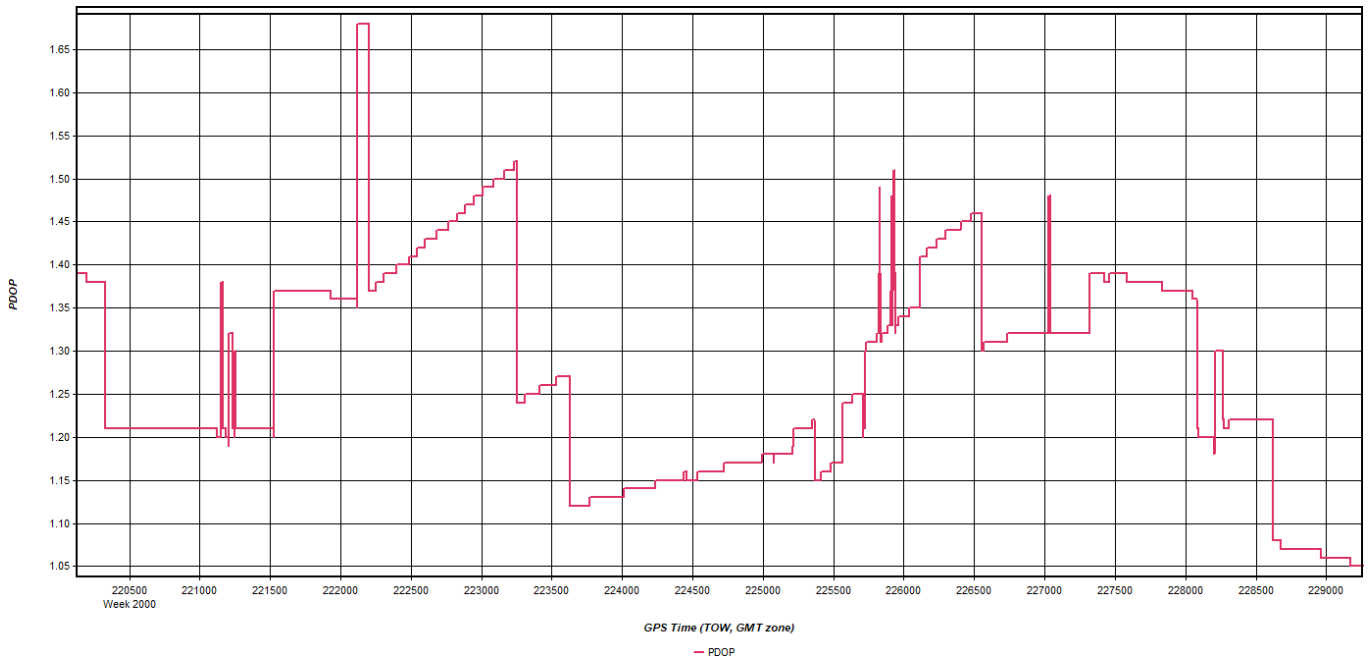

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
165000
Week 2000
166000
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
GPS Time (TOW, GMT zone)
East
North
Up

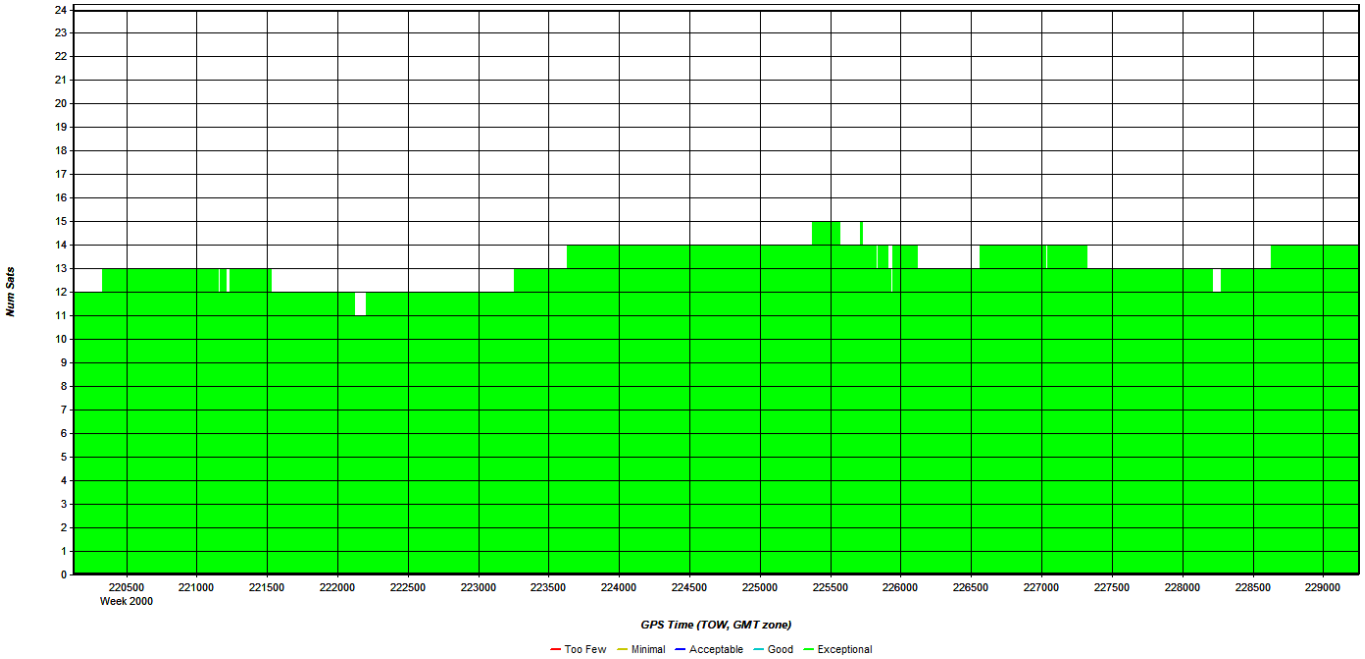

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
165000
Week 2000
166000
167000
168000
169000
170000
171000
172000
173000
174000
175000
176000
177000
GPS Time (TOW, GMT zone)
East
North
Up

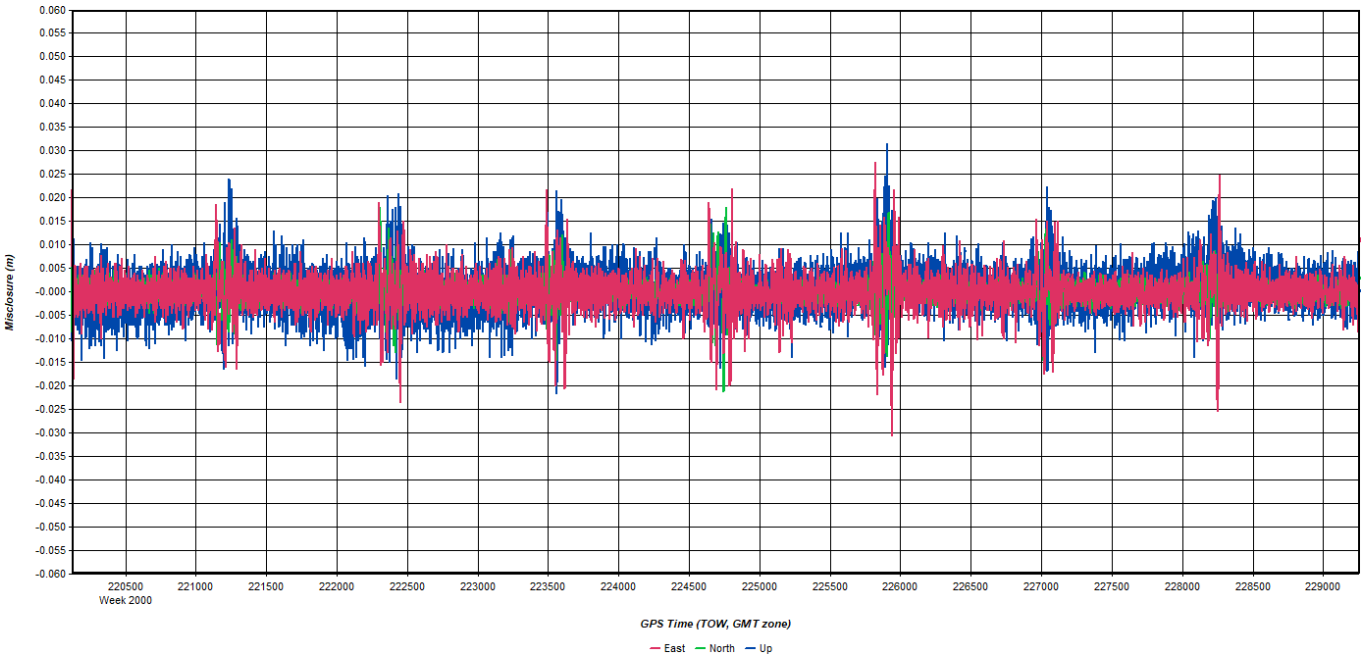
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      33420
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0163 (m)
        C/A Code:       0.35 (m)
        L1 Doppler:     0.030 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.011 (m)
        North:  0.007 (m)
        Height: 0.021 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (33415 occurances):
        East:   0.011 (m)
        North:  0.007 (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 %

Baseline Distances:
        Maximum:        49.732 (km)
        Minimum:        0.249 (km)
        Average:        25.408 (km)
        First Epoch:    0.370 (km)
        Last Epoch:     0.370 (km)
```

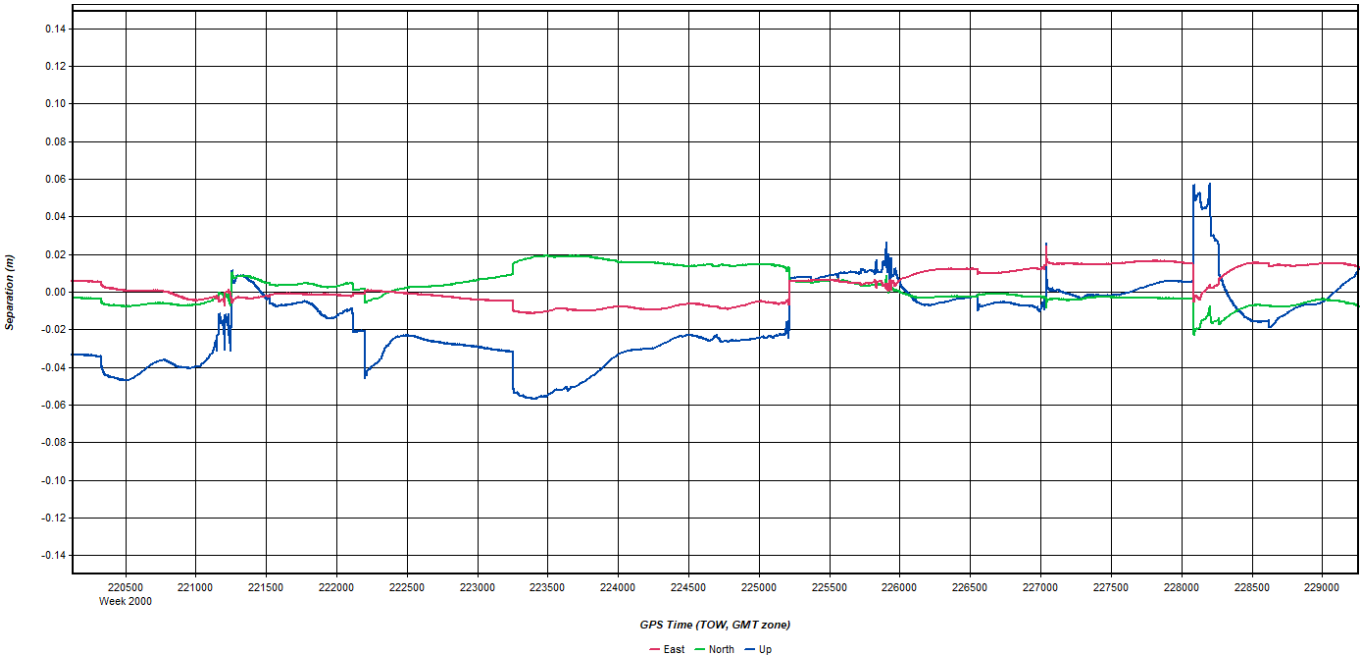
Mission 56


5 km


PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
220500
Week 2000
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
228500
229000
GPS Time (TOW, GMT zone)
PDOP

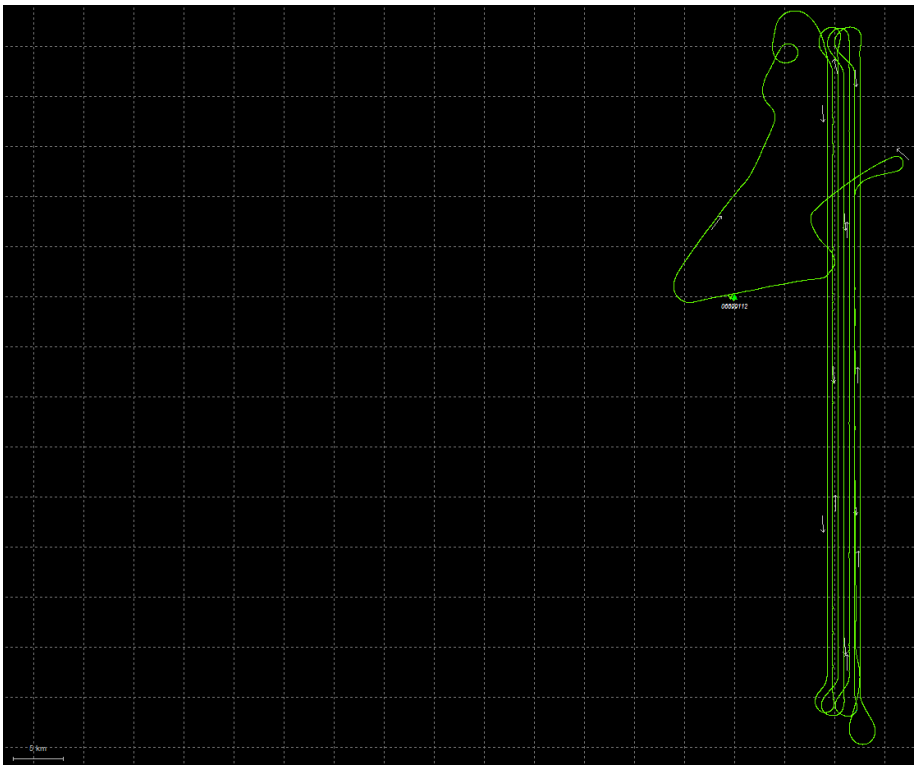

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
220500
Week 2000
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
228500
229000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

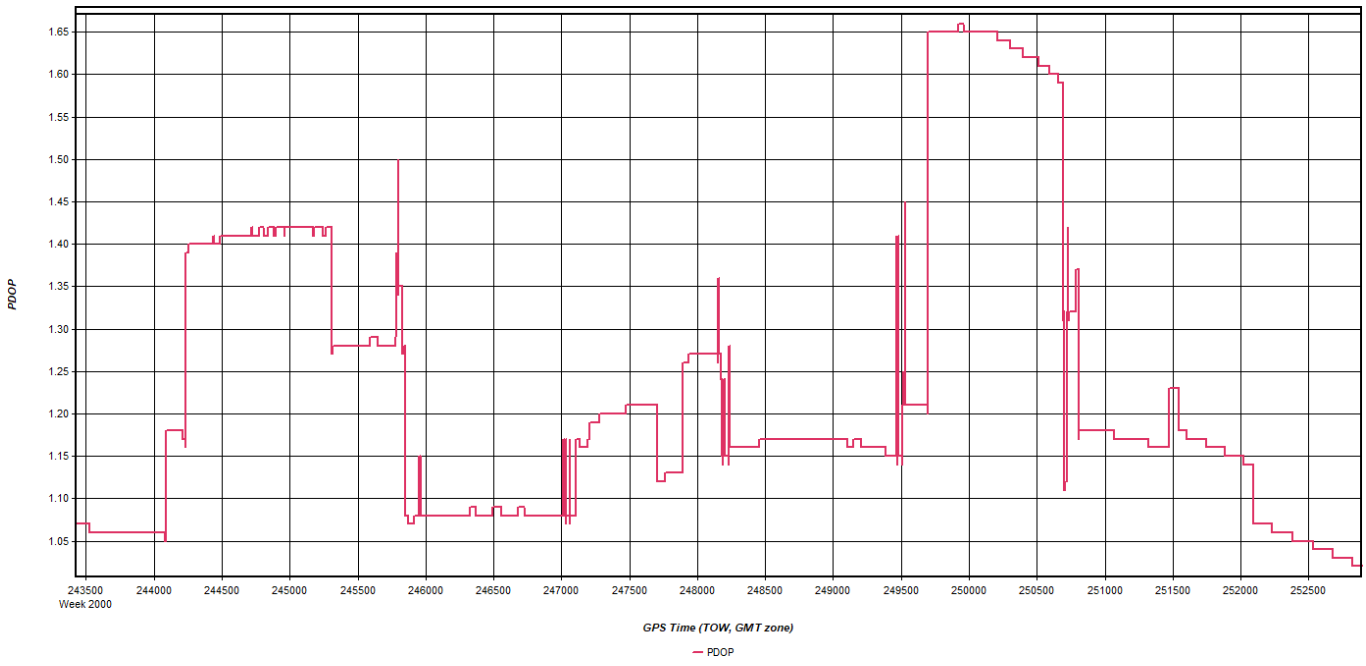

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
220500
Week 2000
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
228500
229000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
220500
Week 2000
221000
221500
222000
222500
223000
223500
224000
224500
225000
225500
226000
226500
227000
227500
228000
228500
229000
GPS Time (TOW, GMT zone)
East
North
Up

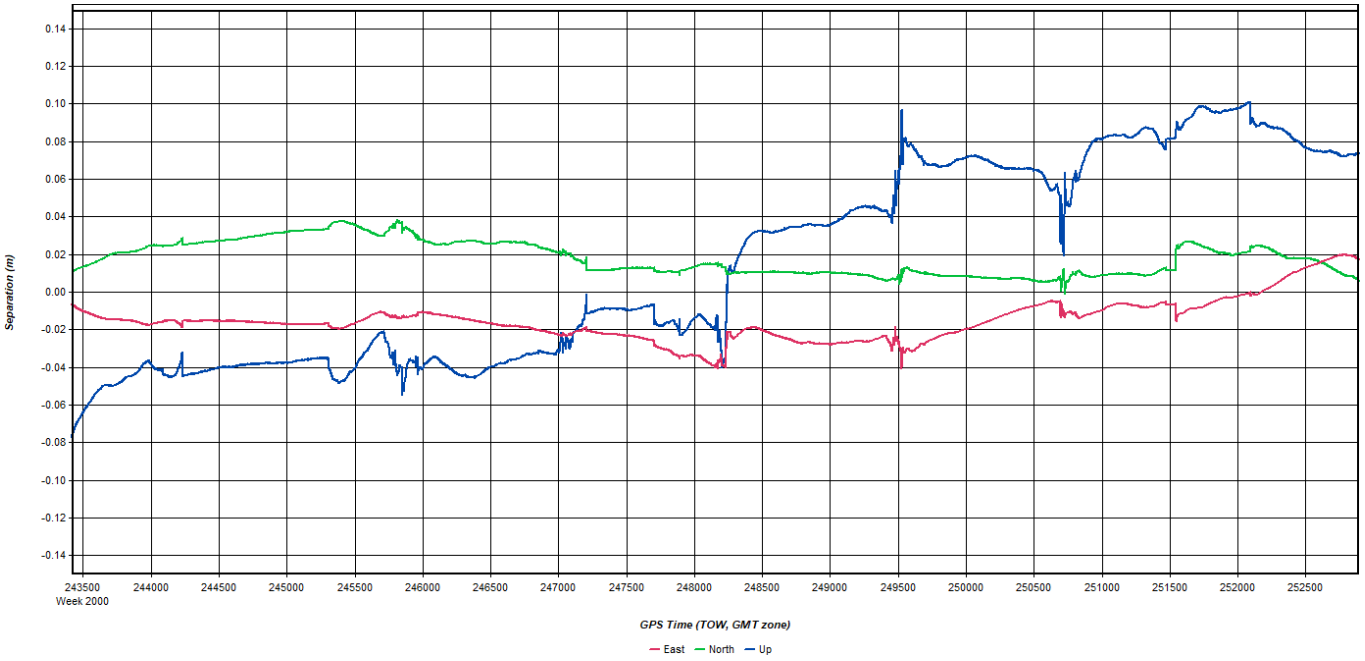
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      25087
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0162 (m)
        C/A Code:       0.35 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.009 (m)
        North:  0.008 (m)
        Height: 0.026 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (25082 occurances):
        East:   0.009 (m)
        North:  0.008 (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:        42.060 (km)
        Minimum:        0.280 (km)
        Average:        18.671 (km)
        First Epoch:    0.370 (km)
        Last Epoch:     0.458 (km)
```

Mission 57



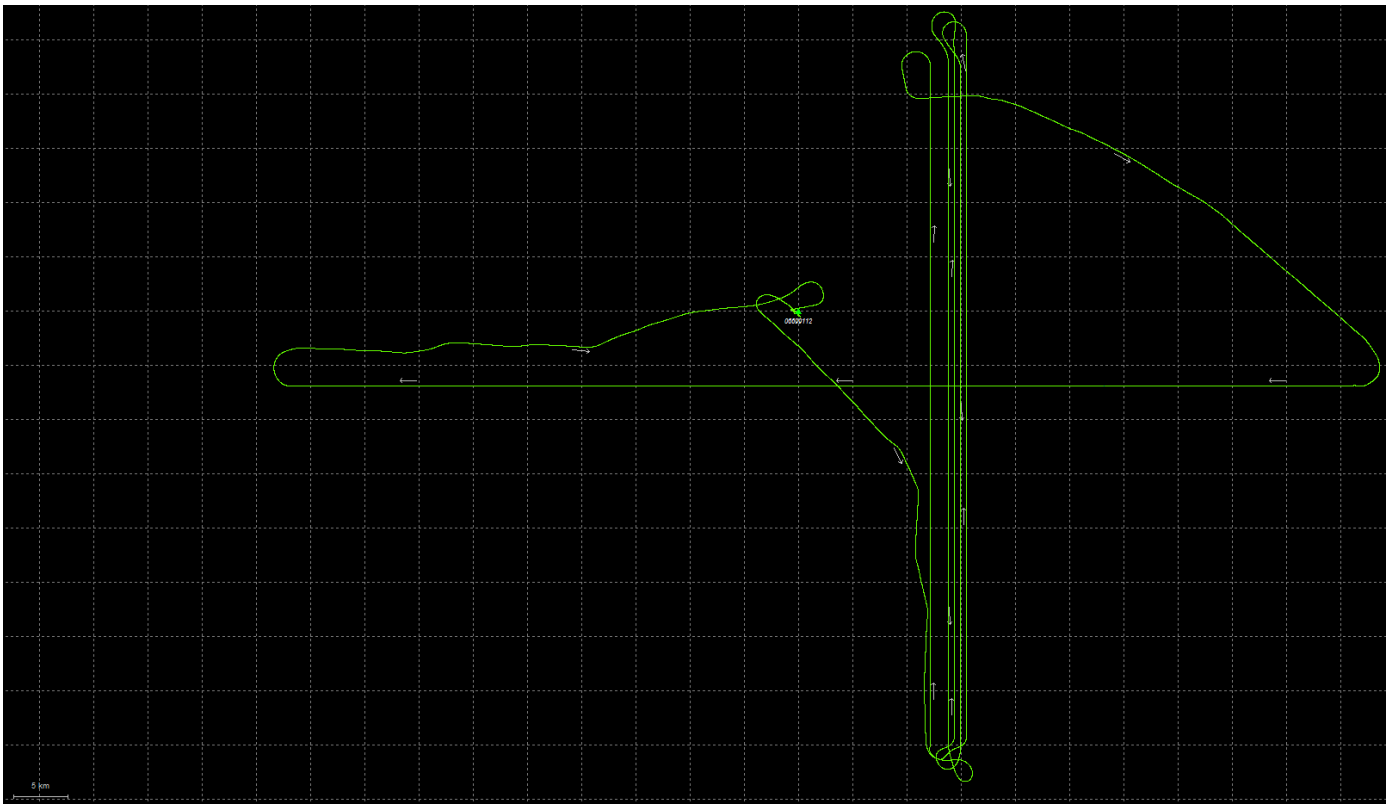

PDOP
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
243500
Week 2000
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
GPS Time (TOW, GMT zone)
PDOP

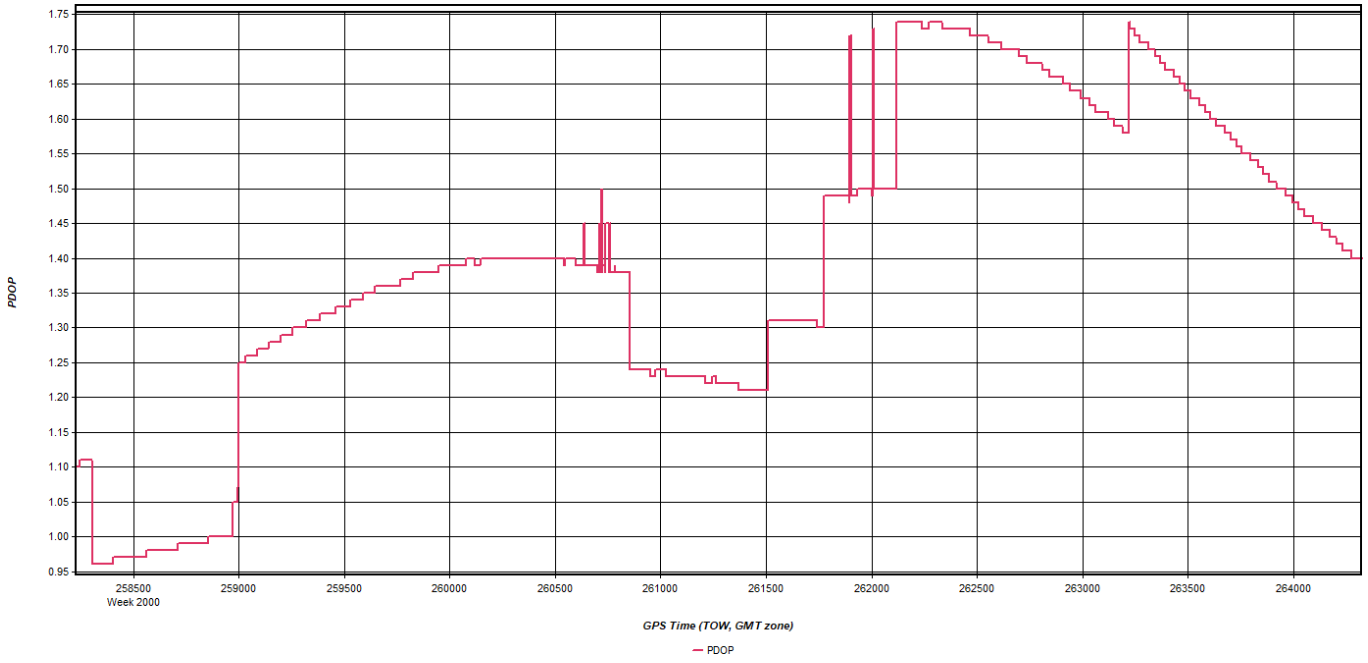

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
243500
Week 2000
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional
Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
243500
Week 2000
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
GPS Time (TOW, GMT zone)
East
North
Up

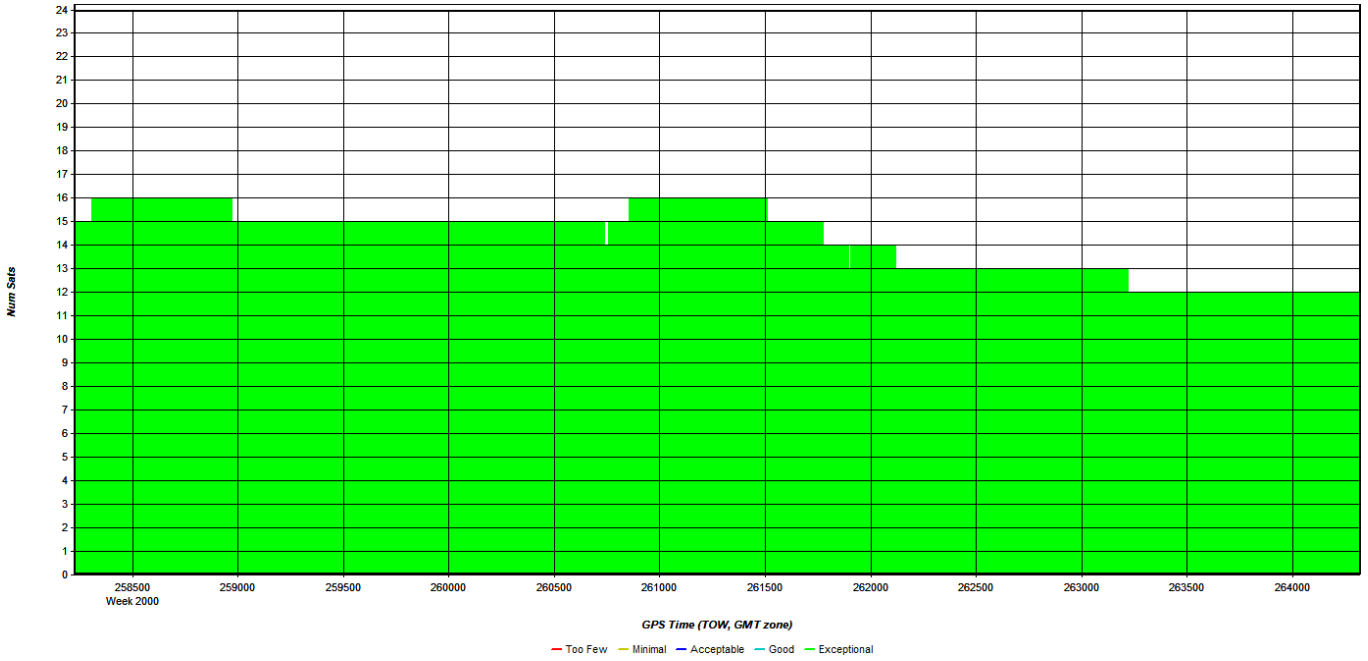

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
243500
Week 2000
244000
244500
245000
245500
246000
246500
247000
247500
248000
248500
249000
249500
250000
250500
251000
251500
252000
252500
GPS Time (TOW, GMT zone)
East
North
Up

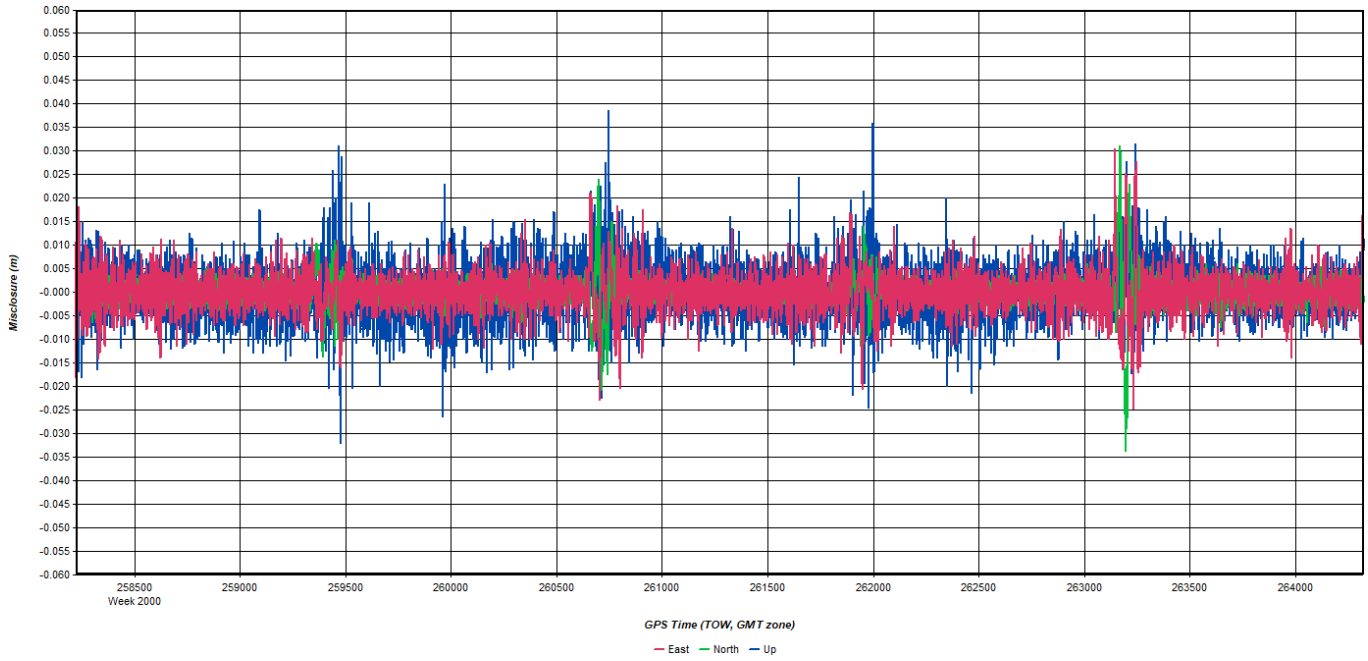
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      23366
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0216 (m)
        C/A Code:       0.33 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.019 (m)
        North:  0.019 (m)
        Height: 0.056 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (23361 occurances):
        East:   0.019 (m)
        North:  0.019 (m)
        Height: 0.056 (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:        46.157 (km)
        Minimum:        0.228 (km)
        Average:        20.150 (km)
        First Epoch:    0.414 (km)
        Last Epoch:     0.401 (km)
```

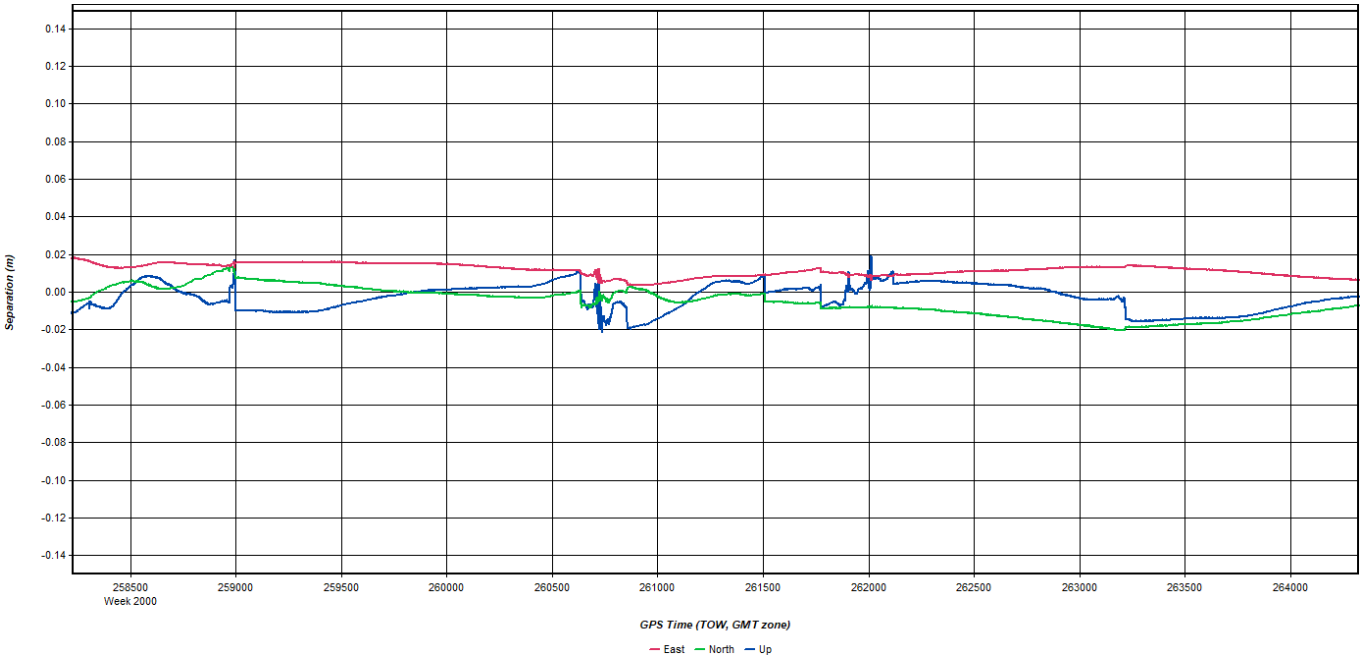
Mission 58


5 km


PDOP
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
258500
Week 2000
259000
259500
260000
260500
261000
261500
262000
262500
263000
263500
264000
GPS Time (TOW, GMT zone)
PDOP

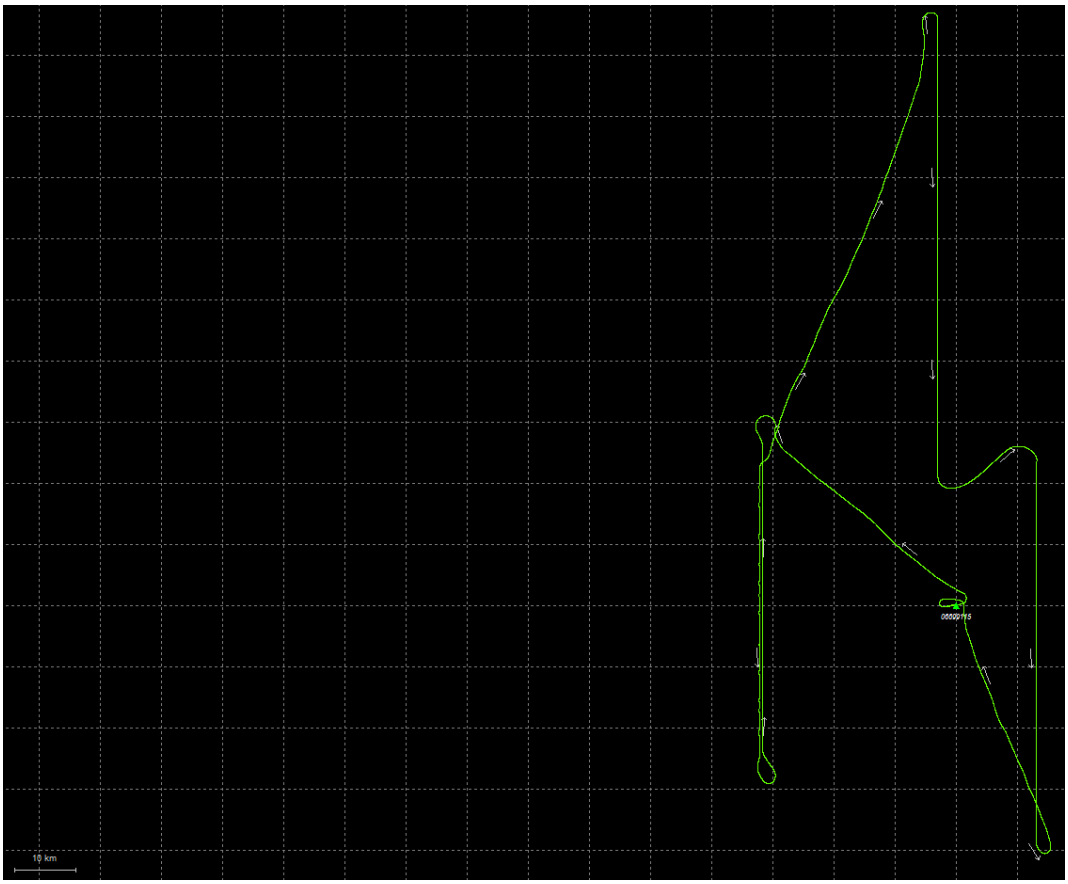

Num Sats
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
258500
Week 2000
259000
259500
260000
260500
261000
261500
262000
262500
263000
263500
264000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

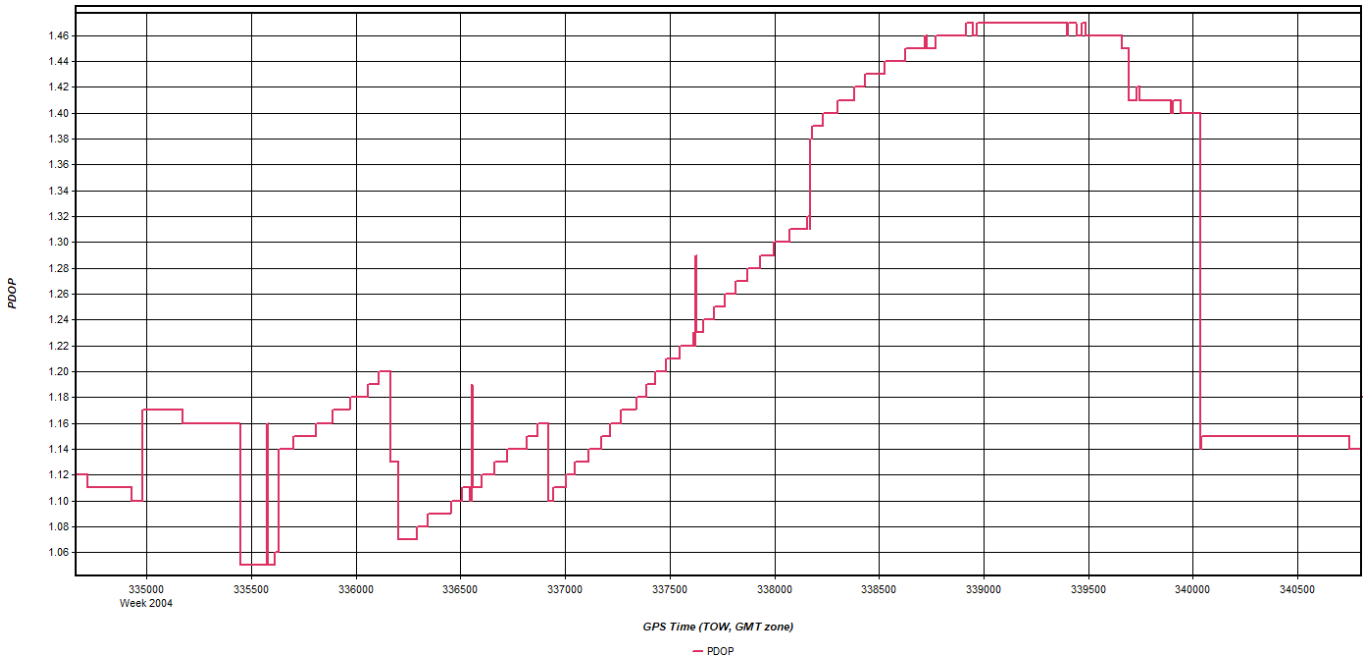

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
258500
Week 2000
259000
259500
260000
260500
261000
261500
262000
262500
263000
263500
264000
GPS Time (TOW, GMT zone)
East
North
Up

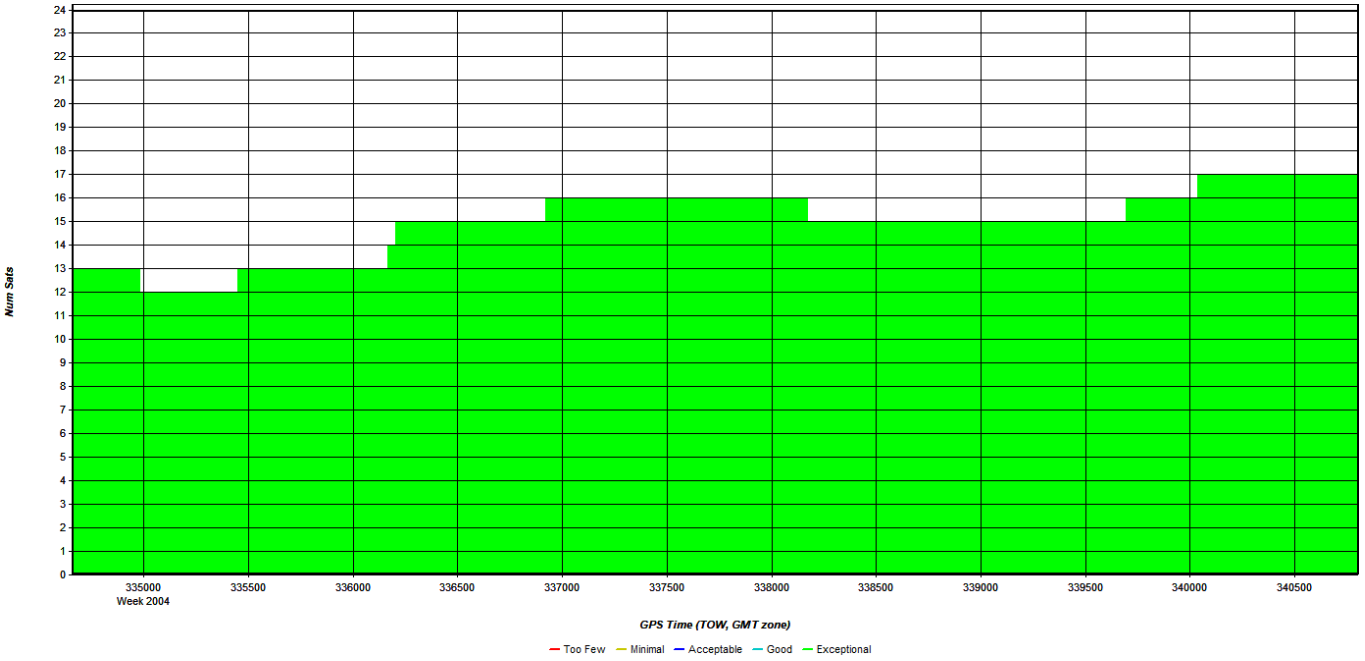

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
258500
Week 2000
259000
259500
260000
260500
261000
261500
262000
262500
263000
263500
264000
GPS Time (TOW, GMT zone)
East
North
Up

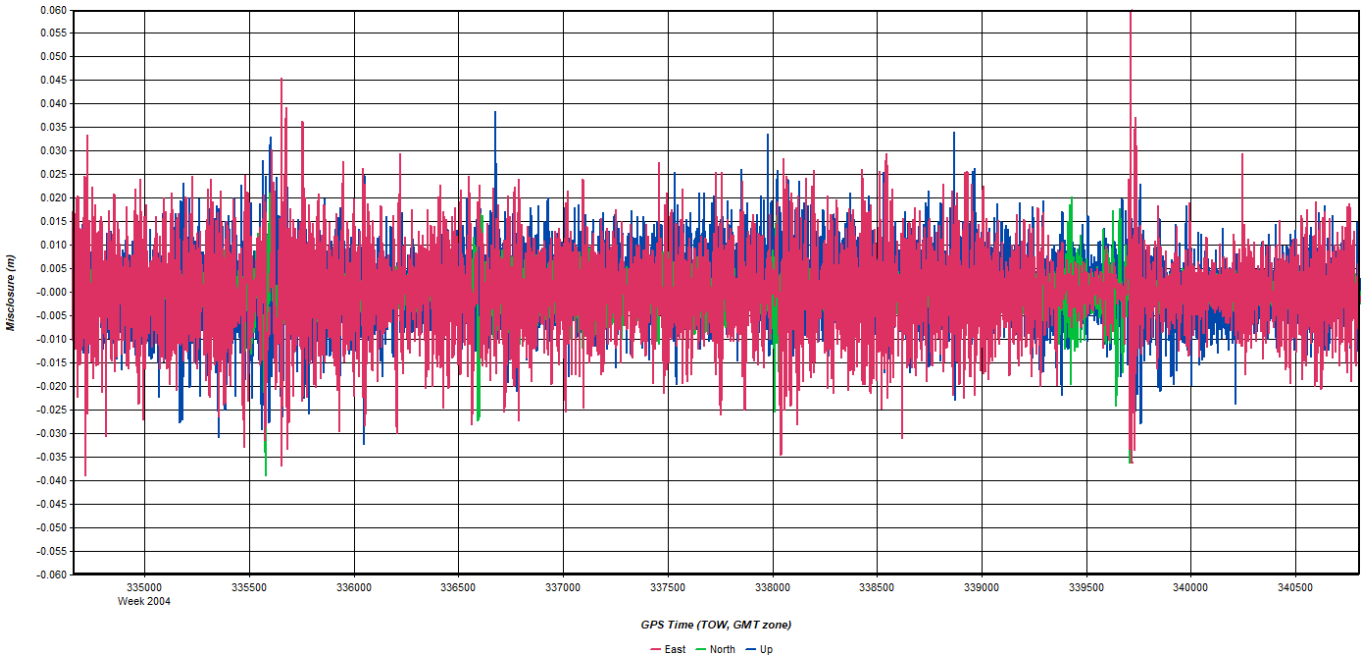
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      23003
        No processed position:  1
        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:       0.37 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.012 (m)
        North:  0.008 (m)
        Height: 0.009 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (22997 occurances):
        East:   0.011 (m)
        North:  0.008 (m)
        Height: 0.009 (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 %

Baseline Distances:
        Maximum:        53.054 (km)
        Minimum:        0.246 (km)
        Average:        24.056 (km)
        First Epoch:    0.413 (km)
        Last Epoch:     0.414 (km)
```

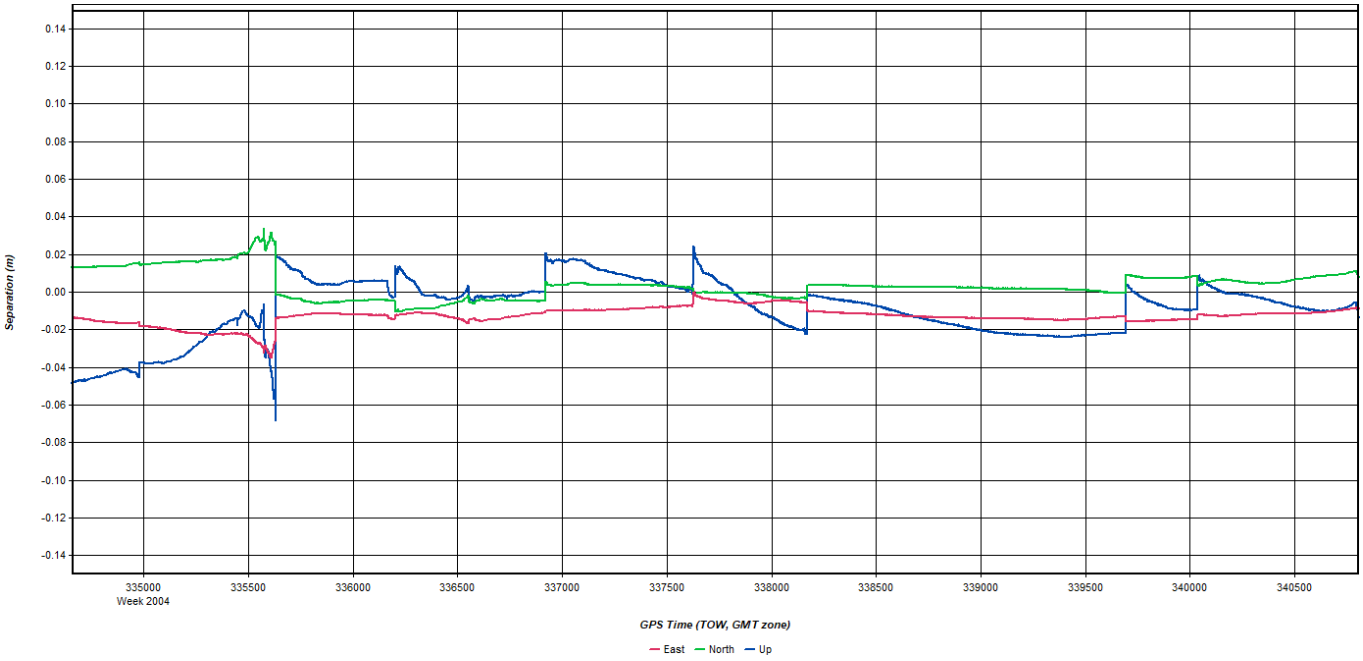
Mission 60


10 km


PDOP
1.46
1.44
1.42
1.40
1.38
1.36
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
335000
Week 2004
335500
336000
336500
337000
337500
338000
338500
339000
339500
340000
340500
GPS Time (TOW, GMT zone)
PDOP

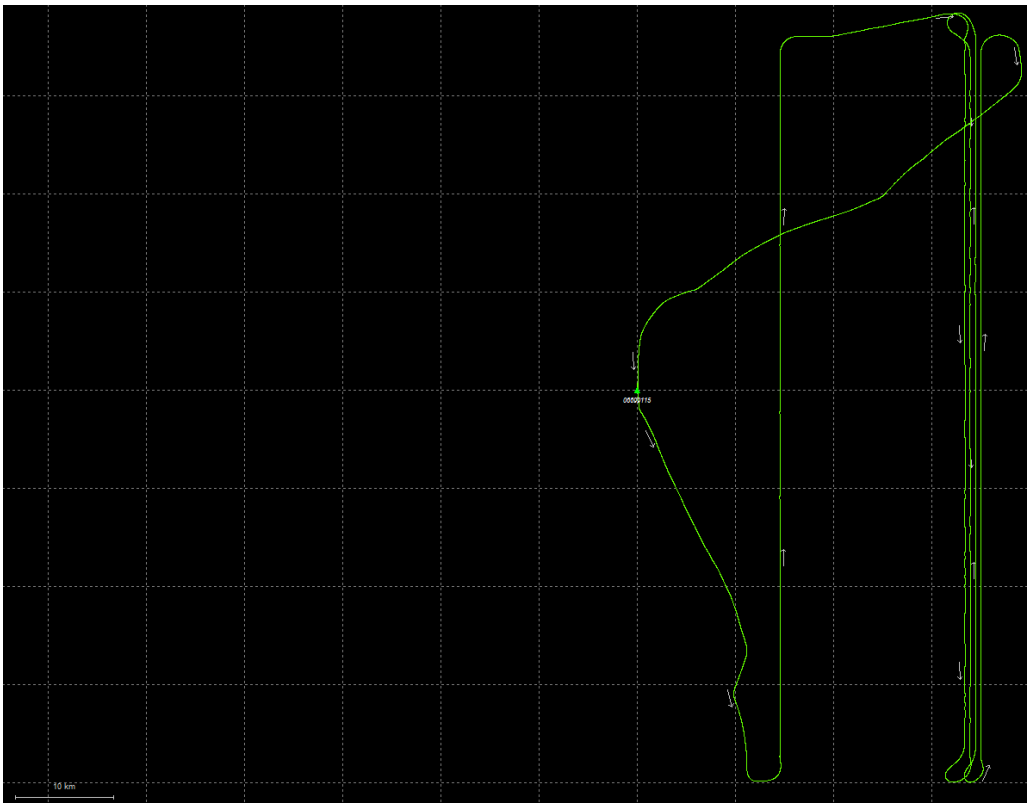

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
335000
Week 2004
335500
336000
336500
337000
337500
338000
338500
339000
339500
340000
340500
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

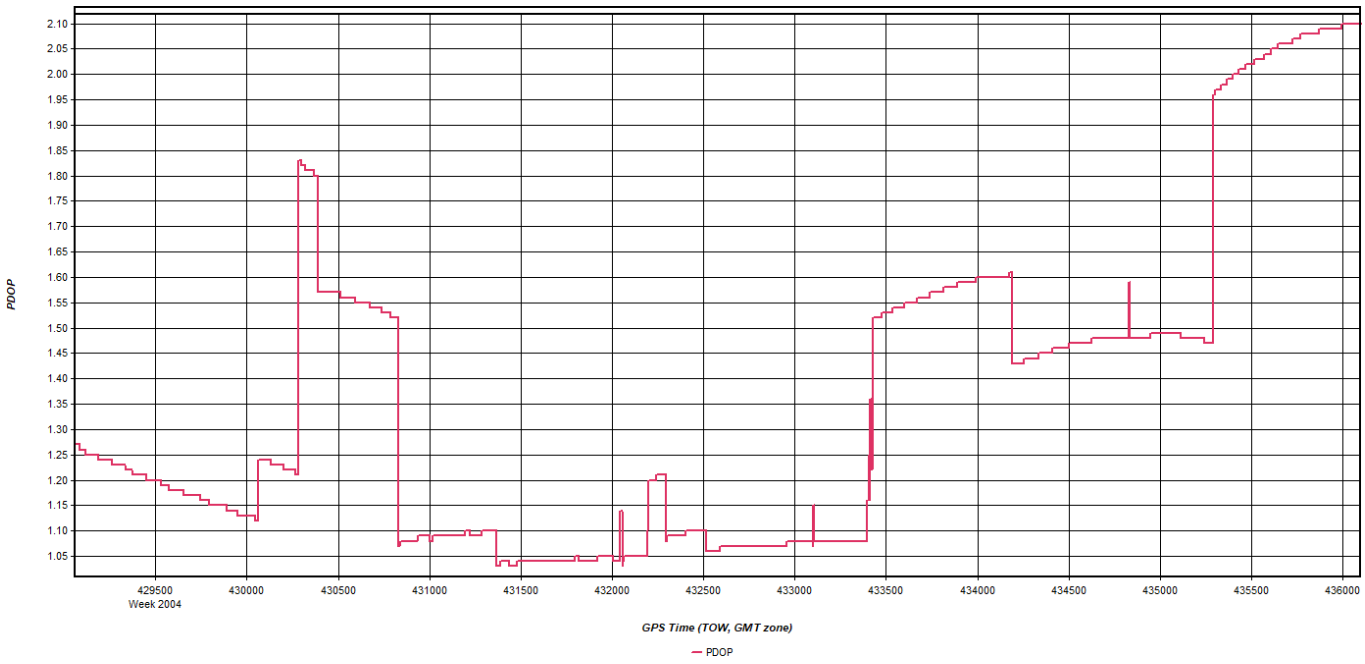

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
335000
Week 2004
335500
336000
336500
337000
337500
338000
338500
339000
339500
340000
340500
GPS Time (TOW, GMT zone)
East
North
Up

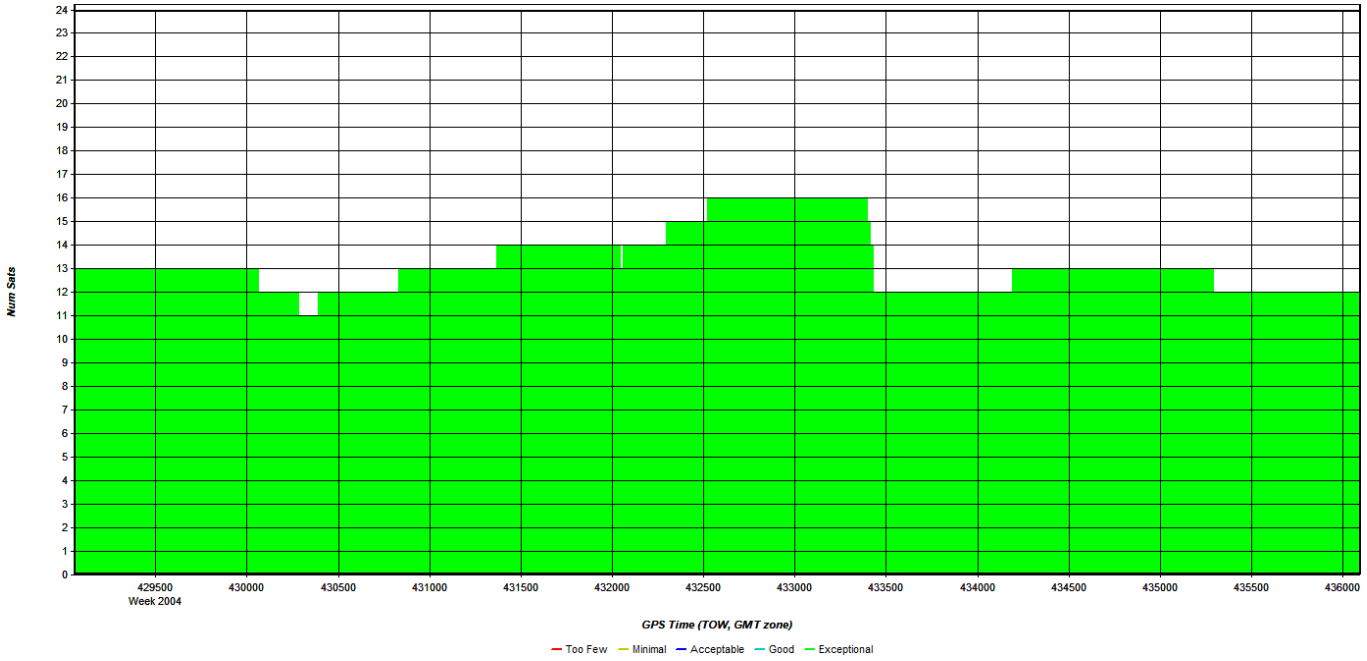

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
335000
Week 2004
335500
336000
336500
337000
337500
338000
338500
339000
339500
340000
340500
GPS Time (TOW, GMT zone)
East
North
Up

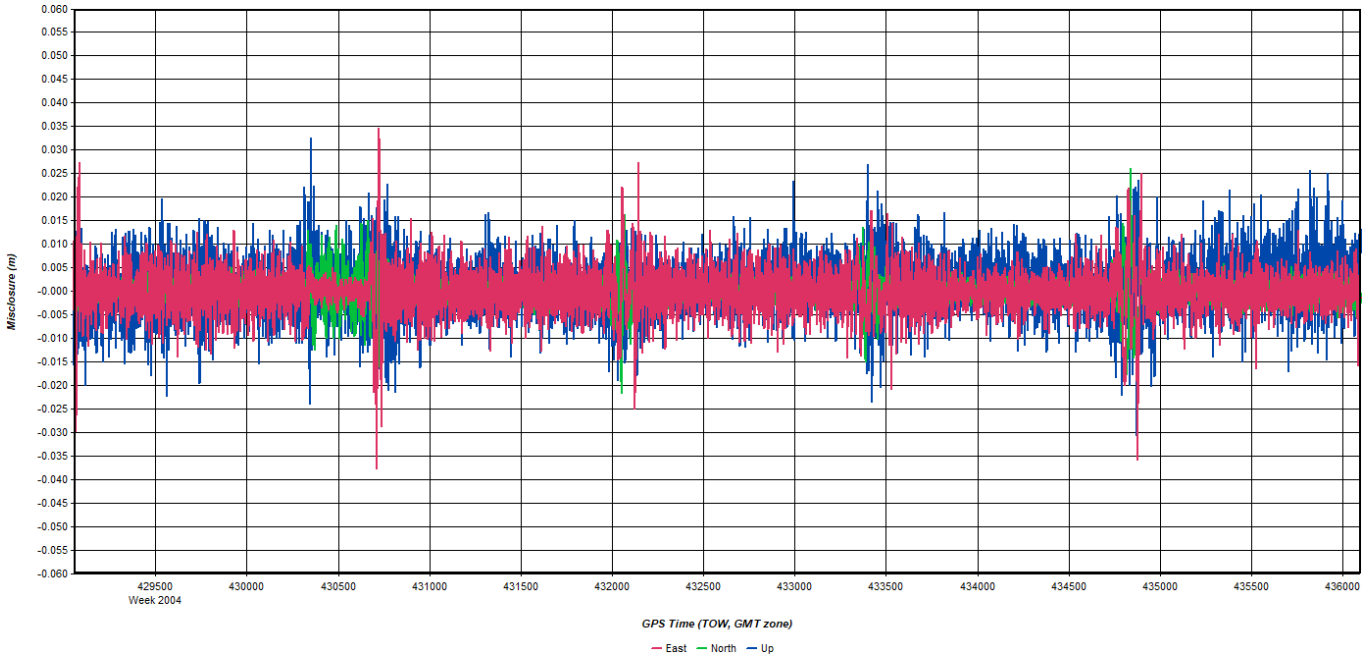
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      17469
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0192 (m)
        C/A Code:       0.34 (m)
        L1 Doppler:     0.032 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.013 (m)
        North:  0.008 (m)
        Height: 0.024 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (17463 occurances):
        East:   0.013 (m)
        North:  0.008 (m)
        Height: 0.024 (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 %

Baseline Distances:
        Maximum:        96.755 (km)
        Minimum:        0.247 (km)
        Average:        35.979 (km)
        First Epoch:    0.708 (km)
        Last Epoch:     0.535 (km)
```

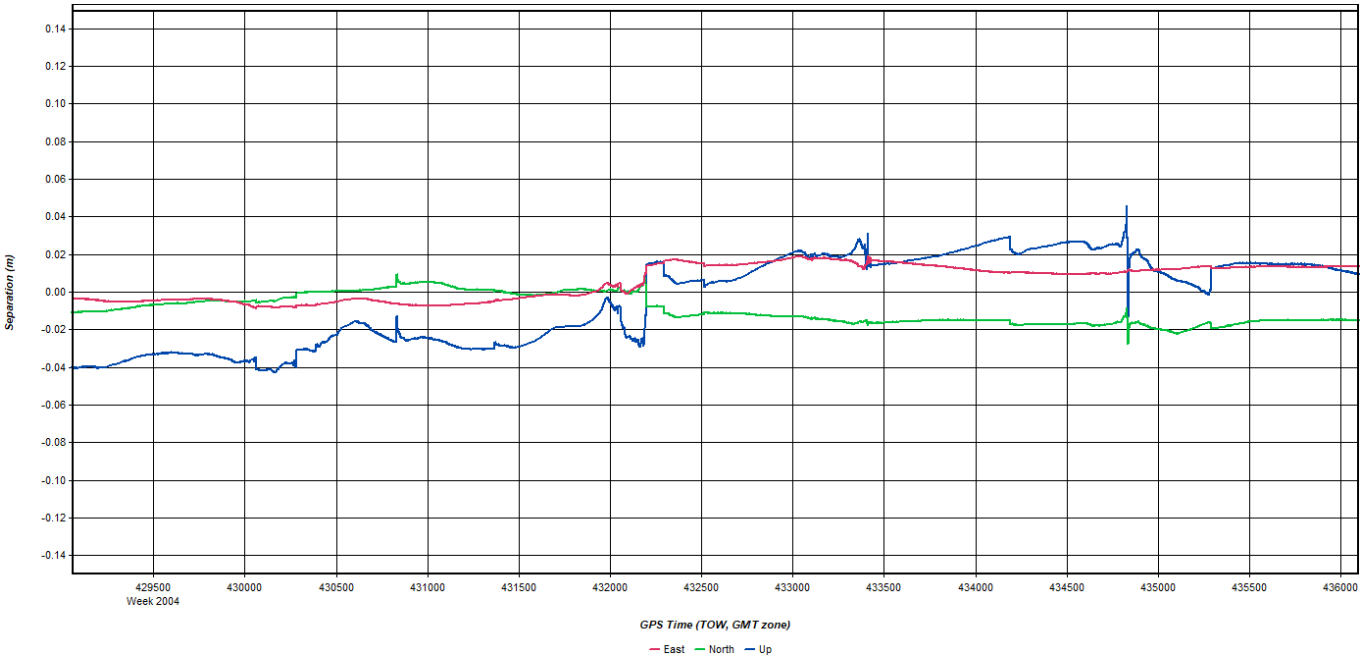
Mission 61


10 km


PDOP
2.10
2.05
2.00
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
429500
Week 2004
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
435000
435500
436000
GPS Time (TOW, GMT zone)
PDOP

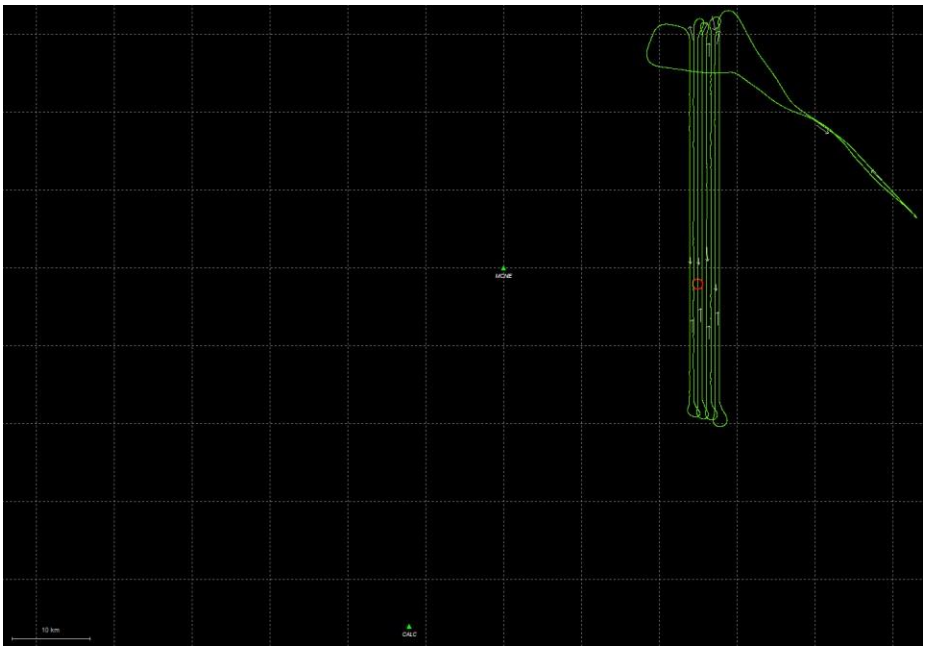

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
429500
Week 2004
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
435000
435500
436000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

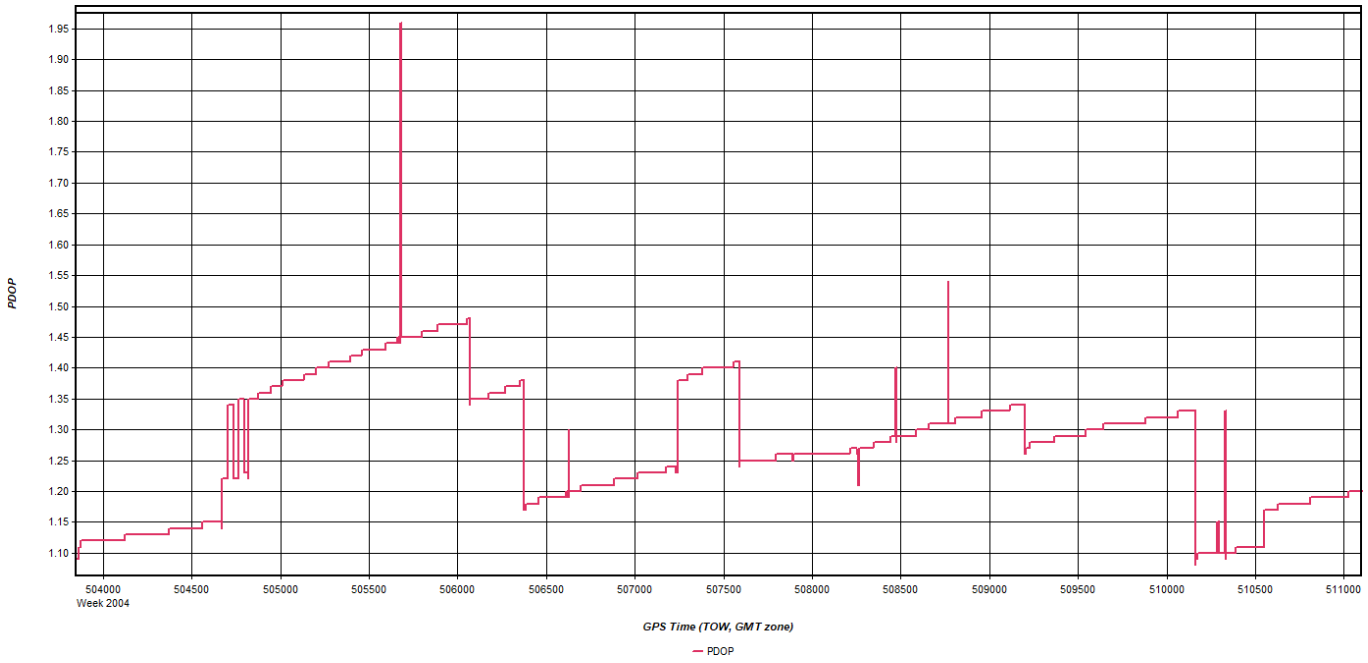

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
429500
Week 2004
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
435000
435500
436000
GPS Time (TOW, GMT zone)
East
North
Up

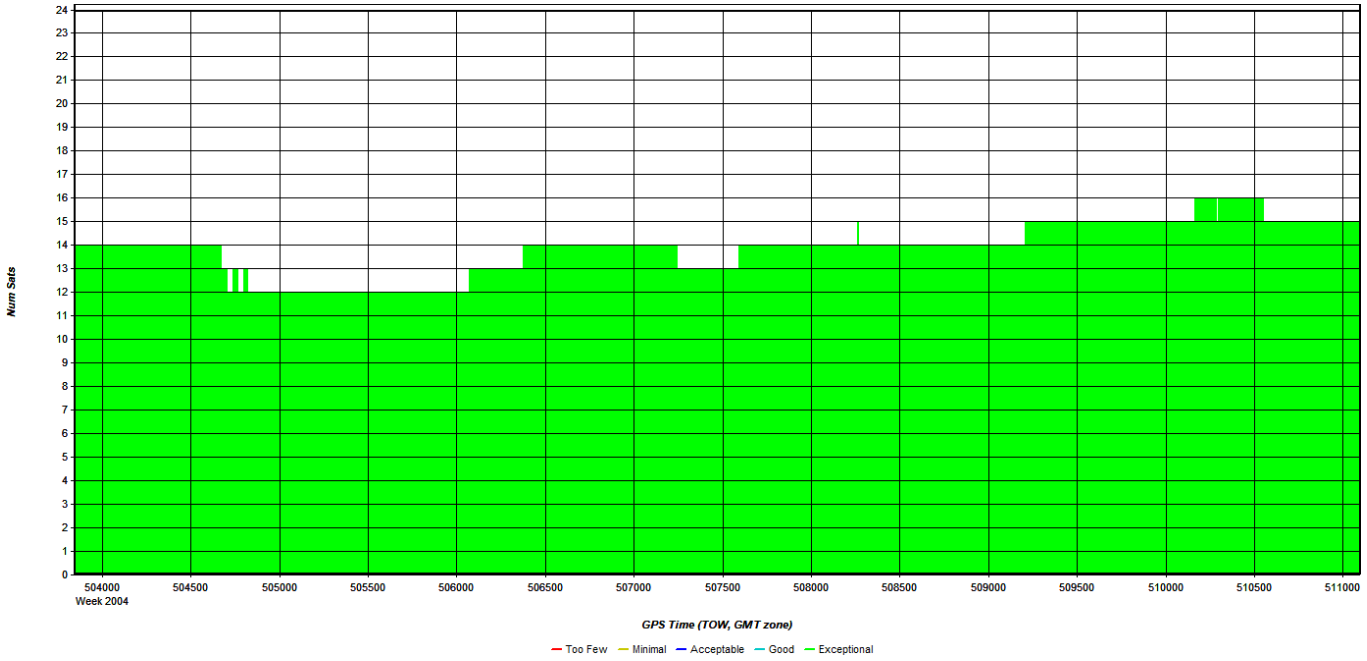

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
429500
Week 2004
430000
430500
431000
431500
432000
432500
433000
433500
434000
434500
435000
435500
436000
GPS Time (TOW, GMT zone)
East
North
Up

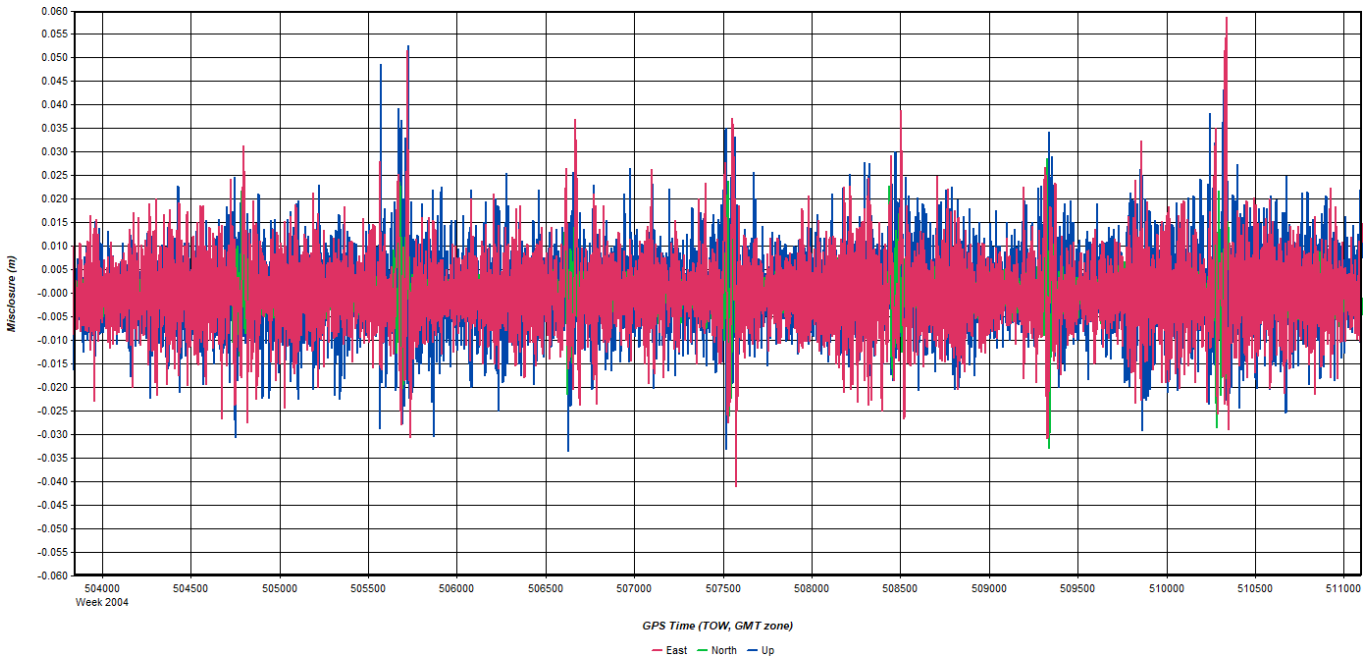
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      19309
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0174 (m)
        C/A Code:       0.35 (m)
        L1 Doppler:     0.028 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.010 (m)
        North:  0.011 (m)
        Height: 0.028 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (19304 occurances):
        East:   0.010 (m)
        North:  0.011 (m)
        Height: 0.025 (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 %

Baseline Distances:
        Maximum:        52.166 (km)
        Minimum:        0.078 (km)
        Average:        32.596 (km)
        First Epoch:    0.152 (km)
        Last Epoch:     0.792 (km)
```

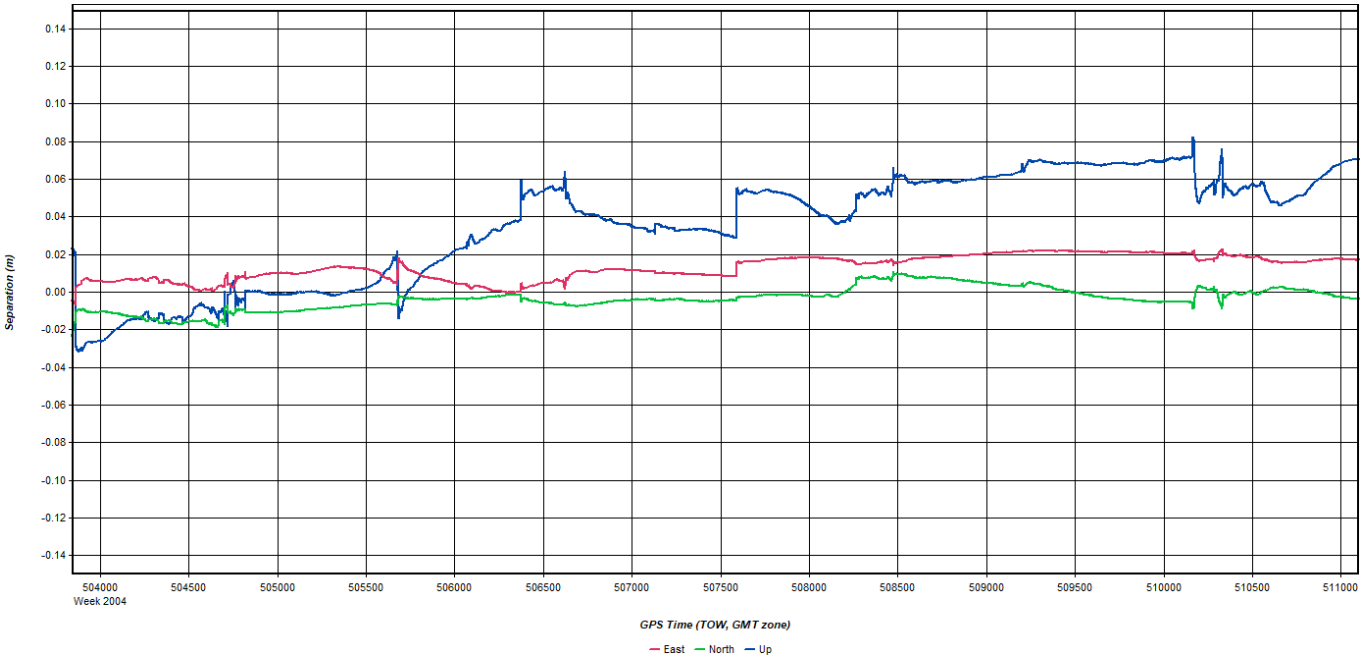
Mission 62




PDOP
1.95
1.90
1.85
1.80
1.75
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
504000
Week 2004
504500
505000
505500
506000
506500
507000
507500
508000
508500
509000
509500
510000
510500
511000
GPS Time (TOW, GMT zone)
PDOP

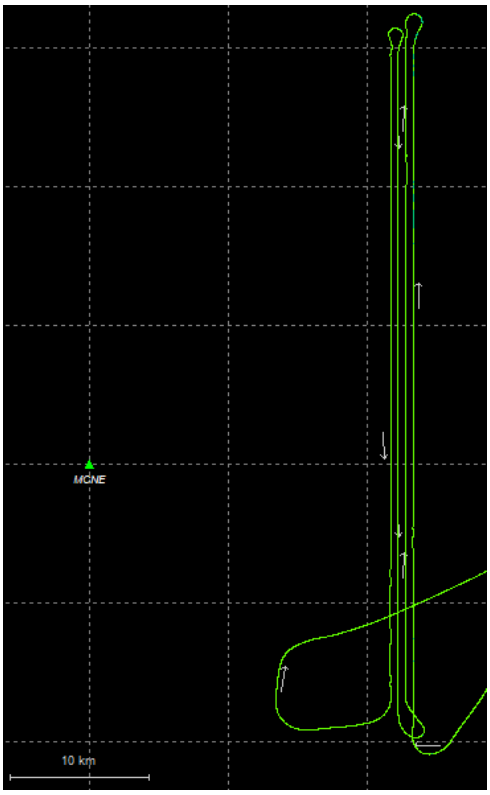

Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
504000
Week 2004
504500
505000
505500
506000
506500
507000
507500
508000
508500
509000
509500
510000
510500
511000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional

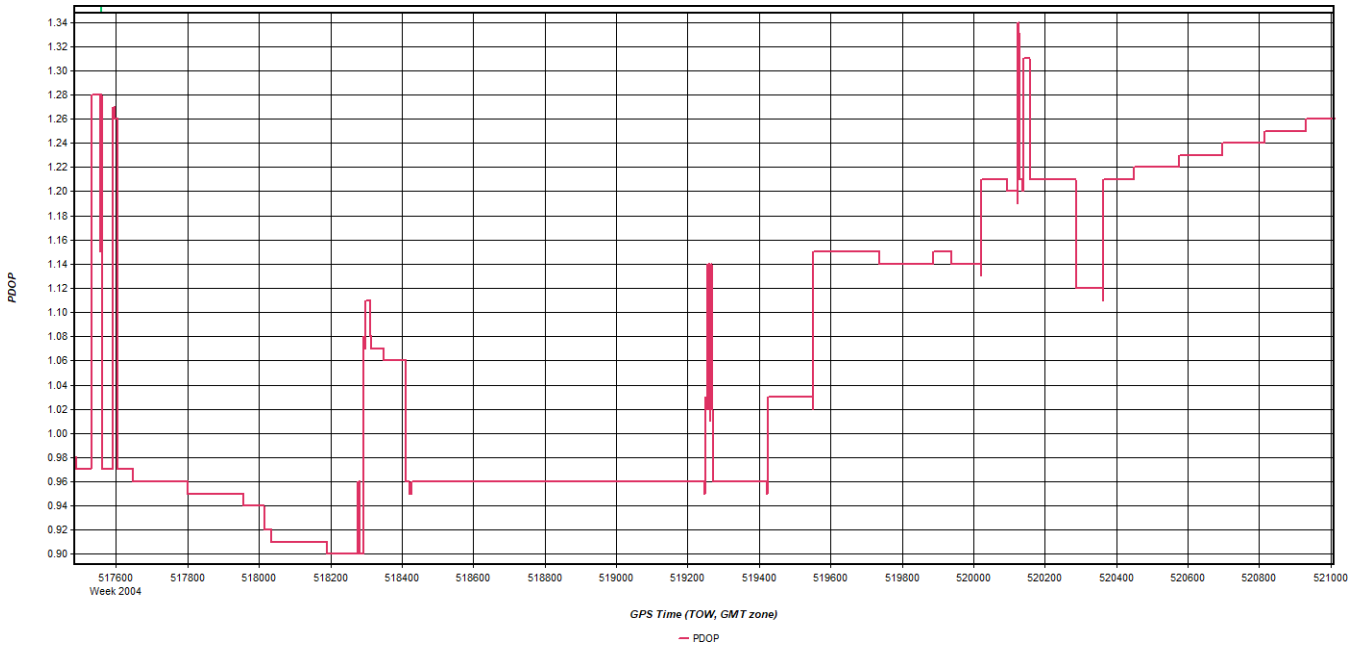

Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
-0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
504000
Week 2004
504500
505000
505500
506000
506500
507000
507500
508000
508500
509000
509500
510000
510500
511000
GPS Time (TOW, GMT zone)
East
North
Up

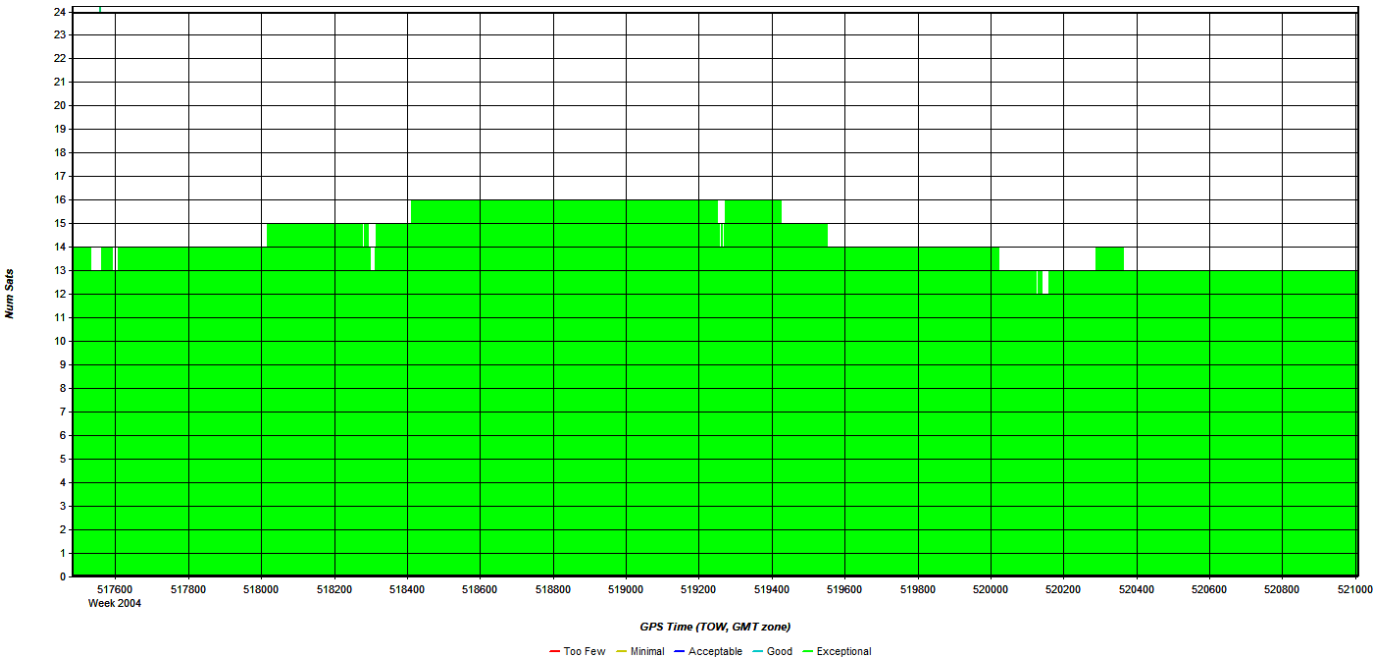

Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
504000
Week 2004
504500
505000
505500
506000
506500
507000
507500
508000
508500
509000
509500
510000
510500
511000
GPS Time (TOW, GMT zone)
East
North
Up

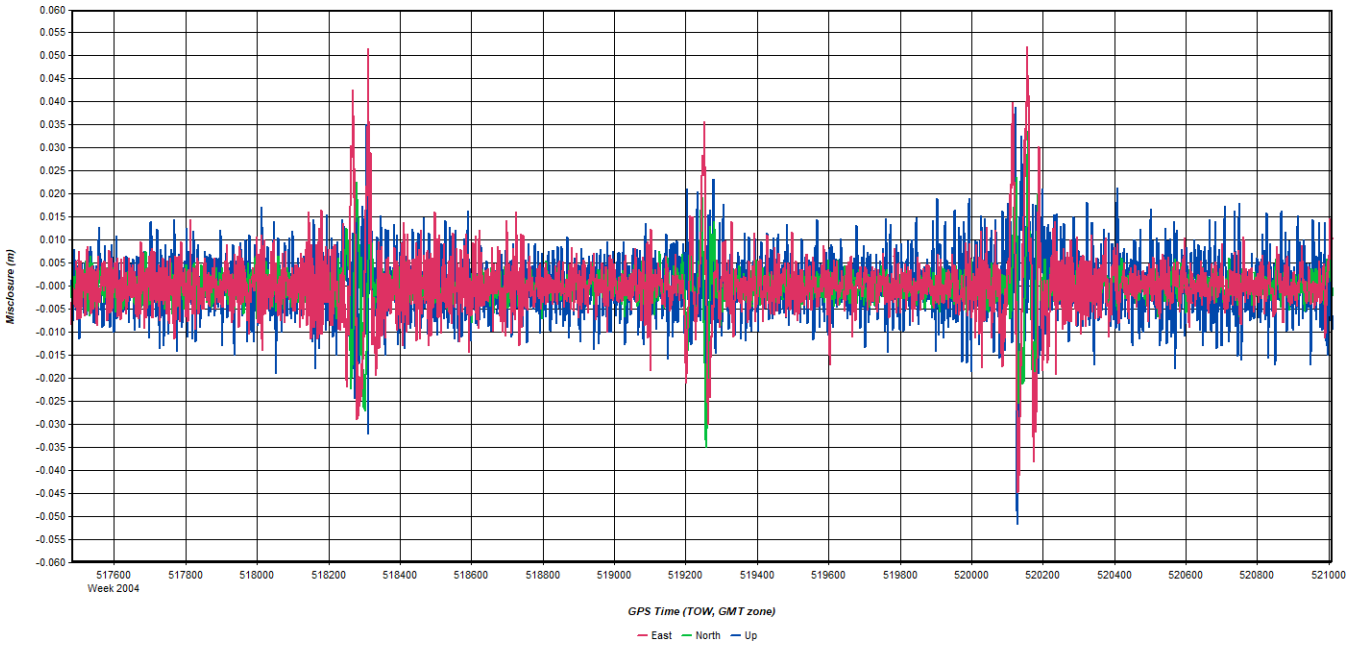
```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      19328
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0274 (m)
        C/A Code:       0.88 (m)
        L1 Doppler:     0.029 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.042 (m)
        North:  0.088 (m)
        Height: 0.108 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (18715 occurances):
        East:   0.014 (m)
        North:  0.008 (m)
        Height: 0.049 (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:        53.342 (km)
        Minimum:        23.826 (km)
        Average:        34.174 (km)
        First Epoch:    52.975 (km)
        Last Epoch:     53.247 (km)
```

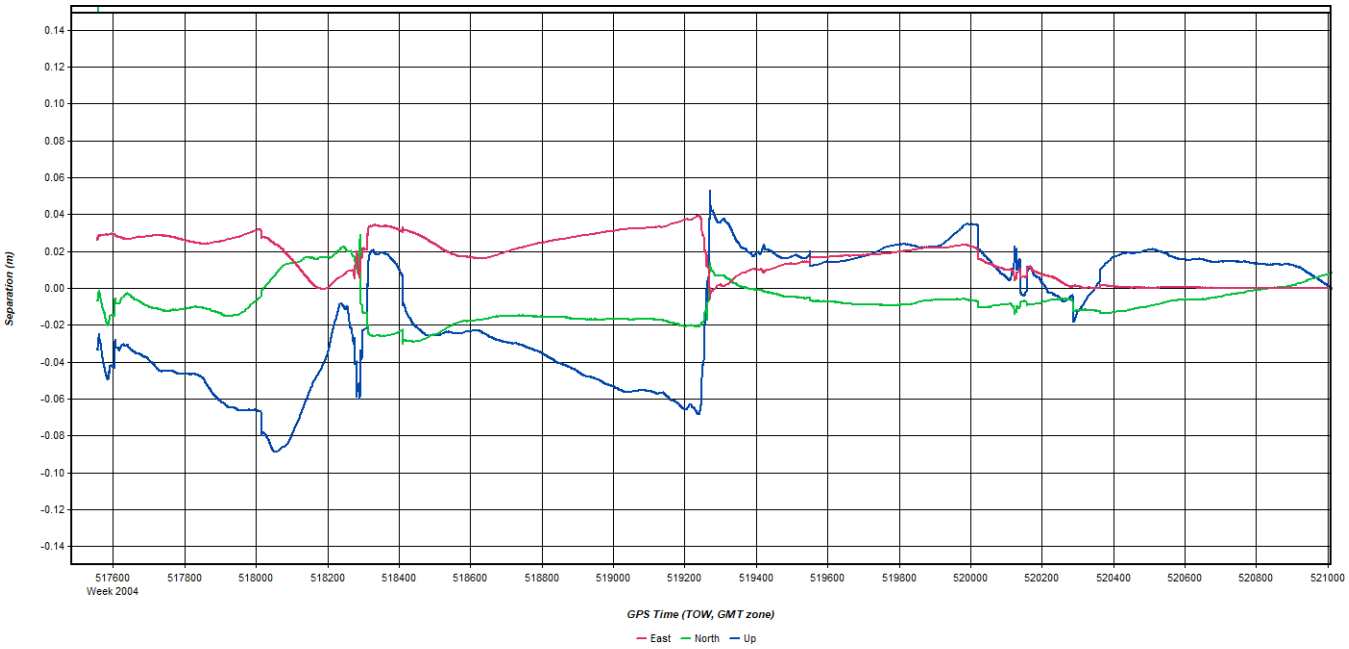
Mission 63


MGNE
10 km


PDOP
1.34
1.32
1.30
1.28
1.26
1.24
1.22
1.20
1.18
1.16
1.14
1.12
1.10
1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
0.92
0.90
517600
Week 2004
517800
518000
518200
518400
518600
518800
519000
519200
519400
519600
519800
520000
520200
520400
520600
520800
521000
GPS Time (TOW, GMT zone)
PDOP


Num Sats
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
517600
Week 2004
517800
518000
518200
518400
518600
518800
519000
519200
519400
519600
519800
520000
520200
520400
520600
520800
521000
GPS Time (TOW, GMT zone)
Too Few
Minimal
Acceptable
Good
Exceptional


Misclosure (m)
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.015
-0.020
-0.025
-0.030
-0.035
-0.040
-0.045
-0.050
-0.055
-0.060
517600
Week 2004
517800
518000
518200
518400
518600
518800
519000
519200
519400
519600
519800
520000
520200
520400
520600
520800
521000
GPS Time (TOW, GMT zone)
East
North
Up


Separation (m)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
-0.06
-0.08
-0.10
-0.12
-0.14
517600
Week 2004
517800
518000
518200
518400
518600
518800
519000
519200
519400
519600
519800
520000
520200
520400
520600
520800
521000
GPS Time (TOW, GMT zone)
East
North
Up

```
Processing Summary Information

Program: Inertial Explorer
Version: 8.60.6717
Solution Type:  Combined

Number of Epochs:
        Total in GPB file:      16462
        No processed position:  1
        Missing Fwd or Rev:     3
        With bad C/A code:      0
        With bad L1 Phase:      0

Measurement RMS Values:
        L1 Phase:       0.0265 (m)
        C/A Code:       0.87 (m)
        L1 Doppler:     0.031 (m/s)

Fwd/Rev Separation RMS Values:
        East:   0.081 (m)
        North:  0.052 (m)
        Height: 0.358 (m)

Fwd/Rev Sep. RMS for dual FWD/REV fixes (8563 occurances):
        East:   0.018 (m)
        North:  0.013 (m)
        Height: 0.033 (m)

Quality Number Percentages:
        Q 1:    98.8 %
        Q 2:     1.2 %
        Q 3:     0.0 %
        Q 4:     0.0 %
        Q 5:     0.0 %
        Q 6:     0.0 %

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

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

Baseline Distances:
        Maximum:        178.545 (km)
        Minimum:        19.515 (km)
        Average:        56.595 (km)
        First Epoch:    52.975 (km)
        Last Epoch:     177.103 (km)
```