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Acquisition and Processing Report For

Matanuska-Susitna Borough

350 East Dahlia Avenue

Palmer, Alaska 99645

Orthoimagery – Matanuska-Susitna Borough, Alaska

Prepared by

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Aerometric Project No. 6110401

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AeroMetric Project No. 6110401

1 INTRODUCTION

This report contains a summary of the Digital DMC data acquisition and Orthoimage processing in the vicinity of the Matanuska and Susitna River valleys in Alaska. Data collection includes the cities of Wasilla, Palmer, and Houston; plus the communities of Butte, Sutton, Chickaloon, Knik, Meadow Lakes, Big Lake, Willow, Talkeetna, and Trapper Creek.

1.1 Contact Info

Questions regarding the technical aspects of this report should be addressed to:

AeroMetric, Inc.
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Anchorage, AK 99501

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Telephone: 907-272-4495
Email: gbering@aerometric.com

1.2 Purpose

The Matanuska-Susitna (Mat-Su) Borough had a requirement for high resolution digital ortho-imagery needed for mapping of the borough with sufficient quality and horizontal accuracy to meet USGS, NDEP, and FEMA standards and in accordance with requirements specified to produce such a dataset as outlined for the project.

Aero-Metric, Inc. (AeroMetric) acquired digital imagery for an area that comprises approximately 3,720 square miles. This acquisition was carried out to satisfy the need for high resolution orthoimageary in the region. AeroMetric's Zeiss DMC camera systems were used in the collection of data for this project.

1.3 Project Locations

The project area extends from the mouth of the Susitna River, and follows the river north past Talkeetna, to the proposed Susitna Watana Dam site, then follows the river eastward to approximately 21 miles west-northwest of Tyrone Lake. From the mouth of the Susitna River the project extends northeast to Palmer, then follows the Knik River southeast until it terminates at the Knik Glacier, and follows the Matanuska River northeast, past the Matanuska Glacier to approximately 1.7 miles northeast of Trail Lake.

This area encompasses the cities of Wasilla, Palmer, and Houston; plus the communities of Butte, Sutton, Chickaloon, Knik, Meadow Lakes, Big Lake, Willow, Talkeetna, and Trapper Creek; the termini of the Matanuska and Knik glaciers; the Point MacKenzie/Port MacKenzie area; as well as the Hatcher Pass area.

The project area of interest was defined and supplied by the Matsu Borough in early 2011, and modified to include the dock at Point Mackenzie.

The figure below shows a graphic of the approximate area of acquisition.

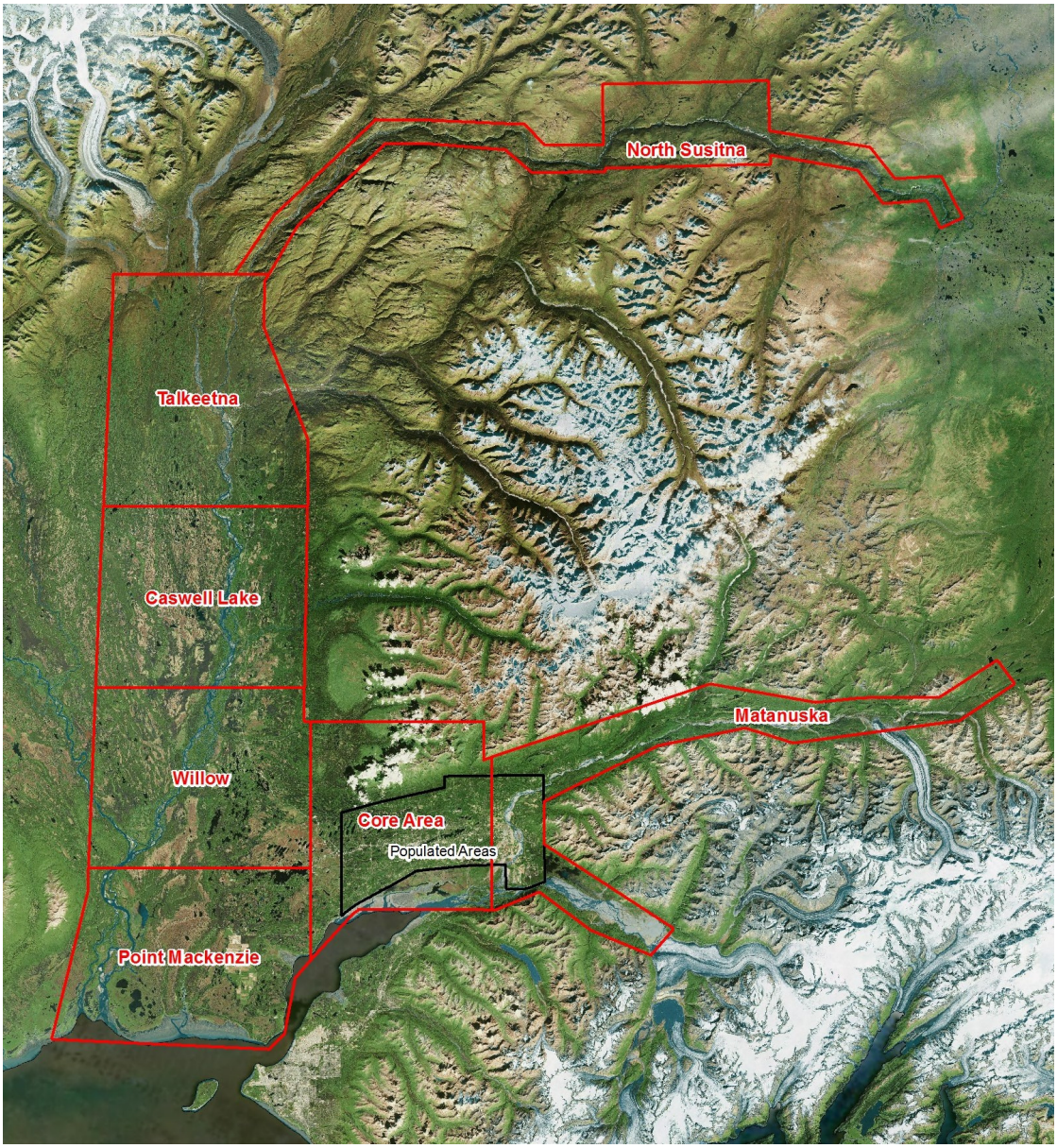


Figure 1.3 - Red boundary indicates the approximate acquisition area with the delivery block areas for the 1' pixel orthophoto. Black boundary shows the limits of the 0.5' pixel orthophoto. (Imagery Source: University of Alaska, Geographic Information Network of Alaska)

1.4 Time Period

Image acquisition project planning was carried out in early 2011 and concluded in September 2012.

DMC image acquisition was completed between May 11th, 2011 and September 10th, 2012. Data was acquired in 30 missions. Particular flight mission dates can be found in the individual flight logs in Section 11 and the QC Virtual Reports in Section 12.

Ground control check point surveys were completed between March 30th and August 18th, 2011 by Lounsbury and Associates, Inc. (Lounsbury) specifically for this project.

1.5 Project Scope

Data collection was accomplished with aircraft operated by AeroMetric utilizing a Zeiss Digital Mapping Camera (DMC) system. Flights were performed at a nominal altitude of 9400 feet above mean terrain (9400 to 13200 feet above mean sea level) to collect imagery suitable for production of orthophotos with a 1' pixel resolution over the entire project area. In addition, flights were performed at a nominal altitude of 4650 feet above mean terrain (4650 to 7450 feet above mean sea level) to collect imagery suitable for production of orthophotos with a 0.5' pixel resolution for the main populated areas.

The horizontal accuracy of the Orthoimagery was to be produced to meet 1 inch = 100 feet for the 1"=1000' imagery and 1 inch =200 feet for the 1 inch = 2000 feet imagery using the FGDC, Geospatial Positioning Accuracy Standards, Part 3: National Standards for Spatial Data Accuracy.

The accuracy as compiled, tested and published in this report has met horizontal accuracy requirements as specified by the client.

Appendix B at the end of this report contains portions of accuracy reports produced by our QC software called Accuracy Analyst.

The following table summarizes the specifications as requested in the RFP.

Data Acquisition	**Specification**
Project Area	See project area map in Figure 1.3
Collection Area	Defined project area buffered by 100 meters with at least the first two and last two exposures of each flight strip falling outside the project area boundaries.
Output Pixel Resolution	0.5-foot (anticipated) Low Altitude / 1.0-foot for High Altitude
Above Mean Terrain	Approx. 5,000 feet to meet a nominal scale of 1" = 1000' – Low Approx. 10,000 feet to meet a nominal scale of 1" = 2000' - High
Imagery Type	4-band (RGB and NIR)
End Overlap	60% (80% for canyons)
Side Overlap	30% (60% for canyons)
Collection Conditions	• 30-degree sun angle (high angle in urban canyons to min. shadows) • Cloud-free with minimal smoke, smog, haze, fog, and dust • Minimal flooding or excessive soil moisture • Leaf-off
GPS & Survey Control	Combination of AGPS, IMU, and supplemental ground control points
Vertical Datum	NAVD88 (North American Vertical Datum of 1988)
Horizontal Datum	NAD83
Projection	Alaska State Plane Zone 4
Horizontal & Vertical Units	U.S. Survey Foot and will be expressed to the nearest tenth (0.1)
Image Format	Uncompressed GeoTIFF format, version 1.8.2
Imagery Products	Seamless mosaic covering the project area and non-overlapping, edge-matched tiles based on a tile scheme provided by the Partners.
Radiometric Resolution	Minimum 8-bit in accordance with GeoTIFF specifications, revision 6

Table 1.5 - Specification summary

1.6 Project Spatial Reference System

The specific spatial reference system for this delivery is as follows:

Horizontal Datum:	North American Datum 1983 (CORS96 Epoch 2003.0)
Vertical Datum:	North American Vertical Datum 1988 (GEOID09)
Projection:	Alaska State Plane Zone 4
Measurement Units:	U.S. Survey Feet

2 GEODETIC CONTROL

QC surveys and ground control point readings were completed by Lounsbury and Associates, Inc between March 30 and August 18, 2011. Survey report, control summaries, and survey certification from Lounsbury are included in the first submittal under the Project_Survey_Control directory.

3 DIGITAL IMAGERY ACQUISITION AND PROCEDURES

3.1 Acquisition Time Period

Digital image acquisition and Airborne GPS control surveys were completed between May 11th, 2011 and September 10th, 2012. Thirty flight missions were required to cover the project area.

3.2 DMC Imagery Planning

The Images for this project were collected with three of AeroMetric's Zeiss DMC digital cameras. Flight planning and acquisition was completed using DeLorme's X-Map flight planning software.

Endlap specifications call for 60%, except in canyons where it will be 80% endlap. Sidelap specifications call for 30%, except in canyons where it will be 60% sidelap.

3.3 DMC Image Acquisition

A total of thirty flight missions were required to complete the project area. A total of 32 flight lines were planned for the 1"=1000' imagery and 128 planned flight lines for the 1"=2000' imagery. Figure 3.3 on the following page illustrates this.

Airborne GPS and IMU position and trajectory data of the DMC cameras were also acquired during the time of flight.

Missions were typically four to five hours long. Before take-off, the Airborne GPS and IMU system were initialized for a period of five minutes and in operation after landing for another five minutes. The missions acquired data according to the planned flight lines.

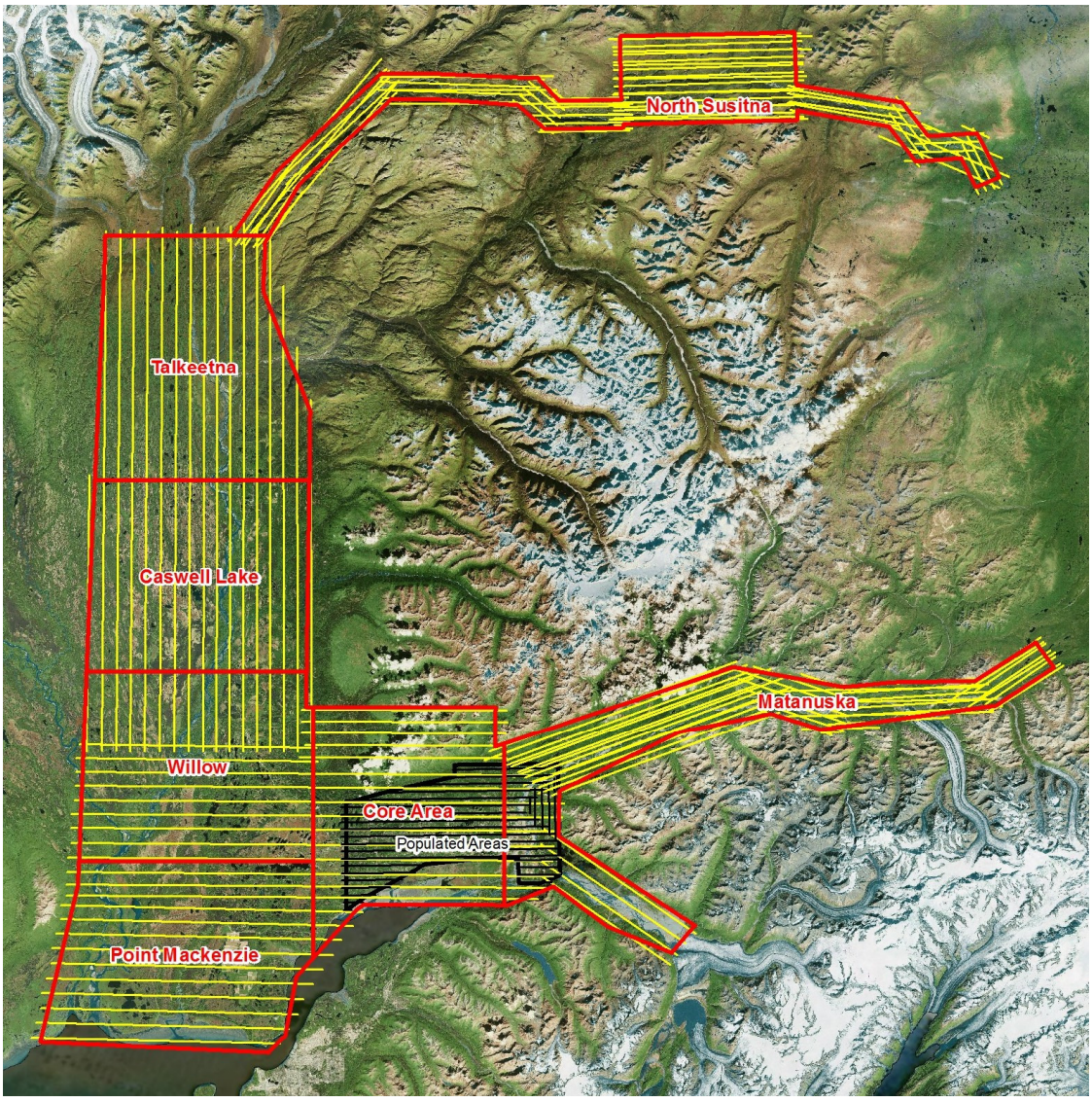
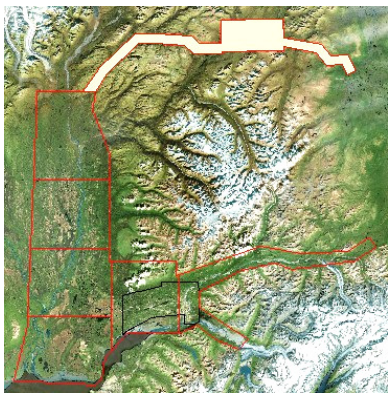


Figure 3.3 - Yellow and black lines indicate planned flight lines for digital imagery

3.4 Production Blocks

The following are pre-defined Production Blocks as defined by the client. Our Aerotriangulation (AT) was performed based on these blocks, as were our deliveries.

North Susitna Block

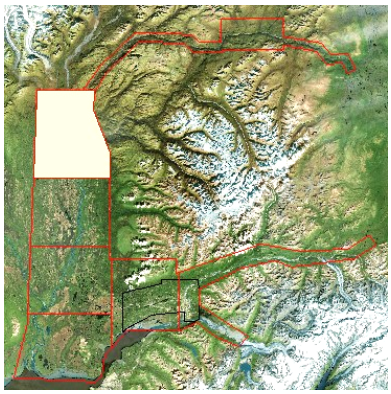


Dates of Acquisition: June 18, July 21, Aug. 12-16, Sept 9-27, Oct. 11-12, 2011

- Number of Planned Lines: 51

This area is located in the northern portion of the project. Flight lines were oriented parallel to the slope so that flight altitudes could be stair-stepped to minimize scale change as much as possible.

Talkeetna Block

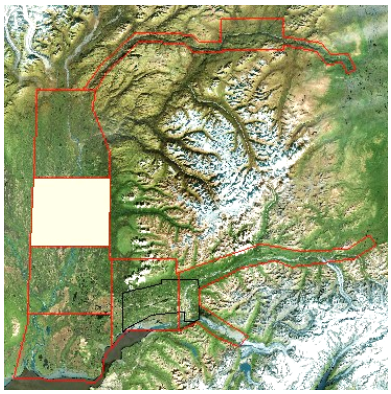


Dates of Acquisition: May 23-27, June 18, July 21, 2011

- Number of Planned Lines: 16

This area is located along the Susitna River and is the northern-most part of the wider and flatter portions of the project.
This area was combined with the Caswell Lakes block and the northern part of the Willow block for efficiency in flying north-south flight lines.

Caswell Lakes Block

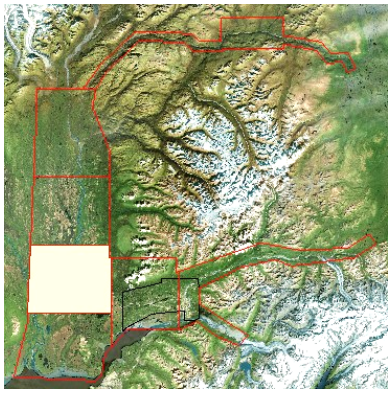


Dates of Acquisition: May 23-27, 2011

- Number of Planned Lines: 17

This area is located along the Susitna River and is immediately south of the Talkeetna block.
This area was combined with the Talkeetna block and the northern part of the Willow block for efficiency in flying north-south flight lines.

Willow Block

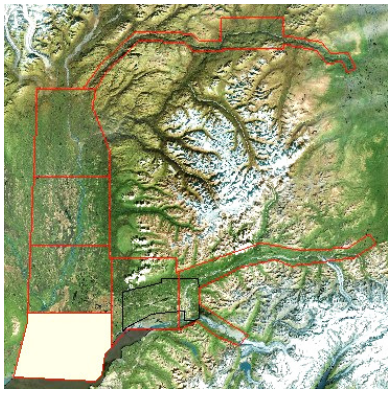


Dates of Acquisition: May 11-27, June 18, 2011

- Number of Planned Lines: 26

This area is located along the Susitna River and is immediately south of the Caswell Lakes block.
This area was combined with the Talkeetna block and the Caswell Lake block for efficiency in flying north-south flight lines.

Point Mackenzie Block

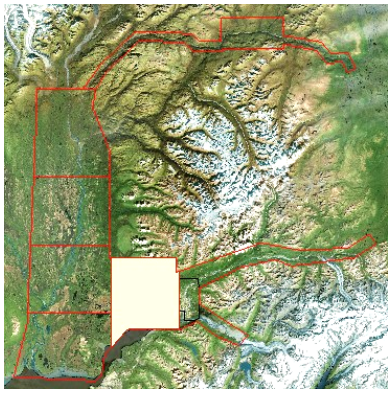


Dates of Acquisition: May 12-27, June 18, 2011

- Number of Planned Lines: 14

This area is located along the Susitna River and is immediately south of the Willow block. This is the southern-most block and extends south to Cook Inlet and Knik Arm.
This area was combined with the south half of the Willow block and the Core Area block for efficiency in flying east-west flight lines.

Core Area Block

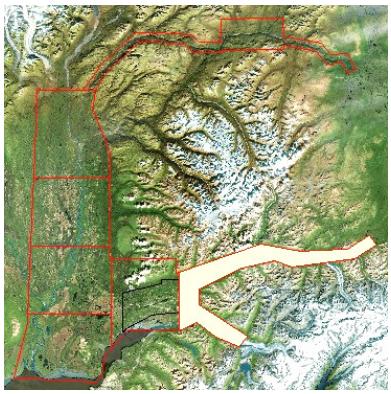


Dates of Acquisition: May 23-27, June 18, 2011 and September 10, 2012

- Number of Planned Lines: 19

This area is centrally located from Big Lake on the west to almost to Palmer on the east. This area includes Hatcher Pass. This area was combined with the south half of the Willow block and the Pt. Mackenzie block for efficiency in flying east-west flight lines.

Matanuska Block

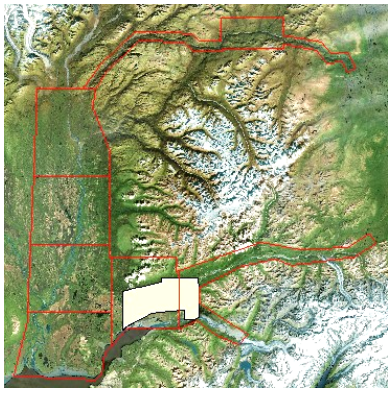


Date of Acquisition: May 24, 2011

- Number of Planned Lines: 44

This area is immediately east of the Core Area block and includes Palmer and then branches out to cover both the Matanuska River and the Knik River. The flat part of this block was combined with the Core Area for efficiency in flying east-west lines. The remaining areas were flown to be parallel with the slope much like the North Susitna Block.

Populated Areas Block



Dates of Acquisition: May 11-27, 2011 and Aug. 18, 2012

- Number of Planned Lines: 32

This area is the main core of the main population center of the borough and was collected at a higher resolution, in addition to the same resolution as the other blocks. Being mostly flat this area was flown with east-west flight lines. The exception to this is the extreme eastern portion of the block. This area experiences higher relief and was flown north-south to parallel the slopes.

3.5 Zeiss DMC Camera

Since the DMC contains 8 separate cameras, each acquiring only a specific portion of the information required to assemble a complete frame of imagery per exposure station, the data is then introduced into an image processing system running the Intergraph DMC Post Processing Suite (PPS) currently at version 06.03.01.01.The PPS software is designed to convert raw DMC image data into airborne images with high geometric precision and perfect radiometric quality. Radiometric and geometric calibration data are applied during the process to produce an image with perfect geometry and radiometry that now also allow for accurate pan sharpening of the individual spectral bands of data. The resulting output file is a 4-band (Red, Green, Blue, Infrared), 12-bits of radiometric resolution per band (4096 possible discreet values per band), TIFF 6.0, tiled image with overviews stored in a more standardized 16-bit (65536 possible discreet values per band) for the purpose of compatibility. Also contained within the TIFF header are the initial estimates for the geographic location and rotation of the exposure. The imagery is then reviewed

and cross-referenced against the flight logs and planning maps for location, resolution, overlap, coverage, clouds, shadows, and possible sensor or atmospheric anomalies that would affect the exposure's suitability for further use.

3.6 DMC Imagery GNSS Ground Control

During the 2011 DMC Imagery acquisition, twelve GNSS ground control stations were operated to provide position data during flights. These base stations were setup to collect L1 and L2 GPS frequencies at a rate of 2 Hz. The location of the stations allowed for 97% of the project area to have a base station within 30 km of the aircraft during acquisition. Ten (10) stations were road accessible. The station located in the Watana Dam area, as well as the station further northeast along the Susitna River were accessed via helicopter.

Lounsbury was responsible for establishing and operating these control stations. During data acquisition, AeroMetric's flight operations coordinated with Lounsbury's ground operations regarding base station activities mission timing.

The 2012 DMC Imagery acquisition consisted of 5 missions, 4 of which were processed using the Continuously Operating Reference Station (CORS) ZAN1, which is operated by the FAA and is located on Joint Base Elmendorf-Richardson (JBER) or CORS Station UAAG, which is operated by UOAA Department of Geomatics and is located on the University of Alaska, Anchorage campus.

During data processing, GNSS data from the ground stations may produce insufficient positional accuracy for some missions. This is determined through examination of solution separation plots, which provide a representation of a differential GNSS solution's consistency during data acquisition. Typically accepted solutions will have an overall separation that falls within the <10 cm threshold.

These low accuracy solutions may be the result of any number of variables, including but not limited to satellite constellation geometry, location of aircraft turns, and atmospheric anomalies caused by solar activity or otherwise. AeroMetric used TerraPos, a processing package by Frontier Geomatics, Inc. to provide a Precise Point Position (PPP) solution for these missions. TerraPos utilizes precise GNSS orbit data and other relevant ephemerides to compute positions without the use of base stations. Please see section 6.1 for further details of the TerraPos processing method.

One DMC Imagery mission was processed utilizing TerraPos. This was mission H072712A flown July 7, 2012.

AeroMetric has been utilizing TerraPos on LiDAR projects for the past 3 years and on Photo missions for 2 years as an alternative GPS solution tool. There have been numerous occasions where noisy or otherwise problematic GPS solutions were resolved to usable state via TerraPos processing. In some cases entire projects have been completed using TerraPos only, with very positive results.

In order to confirm that the TerraPos solutions used on this project had no adverse effects on the airborne GPS data, the results from the aerotriangulation were analyzed where the images from this mission overlap with images from other missions.

4 QUALITY CONTROL SURVEYS

Field surveys for this project were performed by Lounsbury between March 30th and August 18th, 2011. These control and check points were used to verify the horizontal and vertical accuracies in the aerotriangulation. Please see the Project_Survey_Control directory.

5 QUALITY ASSURANCE / QUALITY CONTROL REPORTING

The accuracy as compiled, tested and published in this report has met horizontal accuracy requirements as specified by the client. We used our QC software, Accuracy Analyst to test the accuracy of check points collected. Accuracy Analyst allows us to import a listing of check points with their X, Y coordinates. These are photo identifiable points that are then compared with the actual locations in the finished orthos. Upon completion of this comparative step, statistics are computed for inclusion in a report. Error Statistics include CE90 and/or CE95, RMSE, and NSSDA.

See Appendix B located at the end of this report for the statistics for each of the blocks produced and tested.

In addition to this horizontal accuracy assessment, we also check for the overall quality of the imagery including color balance, tonal quality, and image matching at cutlines and tile boundaries.

6 IMAGE PROCESSING

6.1 Airborne GPS (AGPS) and IMU Processing

Applanix – POSGPS

Utilizing carrier phase ambiguity resolution on the fly (i.e., without initialization), the solution to sub-decimeter kinematic positioning without the operational constraint of static initialization as used in semi-kinematic or stop-and-go positioning was utilized for the airborne GPS post-processing.

The processing technique used by Applanix, Inc. for achieving the desired accuracy is Kinematic Ambiguity Resolution (KAR). KAR searches for ambiguities and uses a special method to evaluate the relative quality of each intersection (RMS). The quality indicator is used to evaluate the accuracy of the solution for each processing computation. In addition to the quality indicator, the software will compute separation plots between any two solutions, which will ultimately determine the acceptance of the airborne GPS post processing.

TerraPos

TerraPos represents a state-of-the-art solution to Precise Point Positioning (PPP). TerraPos has been implemented to be fully compliant with data and products from leading international organizations, e.g. the International Earth Rotation and Reference Systems Service (IERS) and the International GNSS Service (IGS). TerraPos thus allows kinematic positioning with sub decimeter accuracy within the globally consistent and long-term stable reference frames maintained by the IERS.

In the PPP solution the carrier phase biases are estimated as real numbers (a so-called “float solution”). This confirms that the precision of the solution benefits from an increased data rate using an increased number of observations. However, this gain is ultimately limited by the time correlated errors in the observations that include but not limited to multipath and residual satellite clock errors. The data requires both dual-frequency code and carrier phase observations and uses respective ionosphere-free linear combinations. Doppler observations are also included in the computation for all kinematic profiles which assists the algorithm in the pre-processing to aid cycle slip detection and also helps to improve the position estimates.

Inertial Data

The post-processing of inertial and aiding sensor data (i.e. airborne GPS post processed data) is to compute an optimally blended navigation solution. The Kalman filter-based aided inertial navigation algorithm generates an accurate (in the sense of least-square error) navigation solution that will retain the best characteristics of the processed input data. An example of inertial/GPS sensor blending is the following: inertial data is smooth in the short term. However, a free- inertial navigation solution has errors that grow without bound with time. A GPS navigation solution exhibits short-term noise but has errors that are bounded. This optimally blended navigation solution will retain the best features of both, i.e. the blended navigation solution has errors that are smooth and bounded. The resultant processing generates the following data:

- Position: Latitude, Longitude, Altitude
- Velocity: North, East, and Down components
- Attitude: roll, pitch, true heading
- Acceleration: x, y, z components
- Angular rates: x, y, z components

The Applanix software, version 4.4, was used to determine both the ABGPS trajectory and the blending of inertial data. The airborne GPS and blending of inertial and GPS post-processing were completed in multiple steps.

1. The collected data was transferred from the field data collectors to the main computer. Data was saved under the project number and separated between LiDAR mission dates. Inside each mission date, a sub-directory was created with the aircraft's tail number and an A or B suffix was attached for the time of when the data was collected. Inside the tail number sub-directory, five sub-directories were also created EO, GPS, IMU, PROC, and RAW.

2. The aircraft raw data (IMU and GPS data combined) was run through a data extractor program. This separated the IMU and GPS data. In addition to the extracting of data, it provided the analyst the first statistics on the overall flight. The program was POSPac (POS post-processing PACkage).

3. Executing POSGPS program to derive accurate GPS positions for all flights: Applanix POSGPS

The software utilized for the data collected was PosGPS, a kinematic on- the-fly (OTF) processing software package. Post processing of the data is computed from each base station (Note: only base stations within the flying area were used) in both a forward and backward direction. This provides the analyst the ability to Quality Check (QC) the post processing, since different ambiguities are determined from different base stations and also with the same data from different directions.

The trajectory separation program is designed to display the time of week that the airborne or roving antenna traveled, and compute the differences found between processing runs. Processed data can be compared between a forward/reverse solution from one base station, a reverse solution from one base station and a forward solution from the second base station, etc. For the Applanix POSGPS processing, this is considered the final QC check for the given mission. If wrong ambiguities were found with one or both runs, the analyst would see disagreements from the trajectory plot, and re-processing would continue until an agreement was determined.

Once the analyst accepts a forward and reverse processing solution, the trajectory plot is analyzed and the combined solution is stored in a file format acceptable for the IMU post processor.

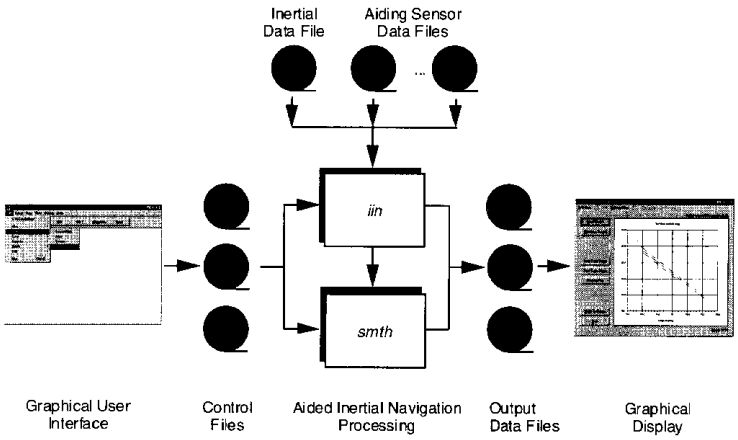
Please see Section 13 for the final accepted trajectory plots.

4. When the processed trajectory (either through POSGPS) data was accepted after quality control

analysis, the combined solution is stored in a file format acceptable for the IMU post processor (i.e. POSProc).

5. Execute POS Proc. POS Proc comprises a set of individual processing interface tools that execute and provide the following functions:

The diagram below shows the organization of these tools, and is a function of the POSProc processing components.



Integrated Inertial Navigation (iin) Module

The name *iin* is a contraction of Integrated Inertial Navigation. *iin* reads inertial data and aiding data from data files specified in a processing environment file and computes the aided inertial navigation solution. The inertial data comes from a strapdown IMU. *iin* outputs the navigation data between start and end times at a data rate as specified in the environment file. *iin* also outputs Kalman filter data for analysis of estimation error statistics and smoother data that the smoothing program *smth* uses to improve the navigation solution accuracy.

iin implements a full strapdown inertial navigator that solves Newton's equation of motion on the earth using inertial data from a strapdown IMU. The inertial navigator implements coning and sculling compensation to handle potential problems caused by vibration of the IMU.

Smoother Module (*smth*)

smth is a companion processing module to iin. smth is comprised of two individual functions that run in sequence. smth first runs the smoother function and then runs the navigation correction function.

The smth smoother function performs backwards-in-time processing of the forwards-in-time blended navigation solution and Kalman filter data generated by iin to compute smoothed error estimates. smth implements a modified Bryson-Frazier smoothing algorithm specifically designed for use with the iin Kalman filter. The resulting smoothed strapdown navigator error estimates at a given time point are the optimal estimates based on all input data before and after the given time point. In this sense, smth makes use of all available information in the input data. smth writes the smoothed error estimates and their RMS estimation errors to output data files.

The smth navigation correction function implements a feed forward error correction mechanism similar to that in the iin strapdown navigation solution using the smoothed strapdown navigation errors. smth reads in the smoothed error estimates and with these, corrects the strapdown

navigation data. The resulting navigation solution is called a Smoothed Best Estimate of Trajectory (SBET), and is the best obtainable estimate of vehicle trajectory with the available inertial and aiding sensor data.

The above mentioned modules provide the analyst the following statistics to ensure that the most optimal solution was achieved: a log of the iin processing, the Kalman filter Measurement Residuals, Smoothed RMS Estimation Errors, and Smoothed Sensor Errors and RMS.

6.2 Exporting Exterior Orientations

Position and Orientation System Exterior Orientation Module (POSEO)

POSEO uses the camera event times to extract the external orientations from the SBET in the selected mapping frame projection. The POSCal application within POSEO is used to determine the boresight angles of the camera system. The boresight angle compensates for the misalignment of the IMU unit with respect to the cameras rotational coordinate system.

6.3 Aerotriangulation

The aerotriangulation was performed using INPHO MATH-AT version 5.4 software. The aerotriangulation photogrammetrically ties the images together, refining the coordinate positions and the exterior orientations of each image.

Tie points were created using autocorrelation routines and manually measuring points. The Surveyed control points were manually measured. The final run is a simultaneous bundle solution for each AT block (project). Supplemental check points were measured to use as check points in the final orthophotography.

2011 Imagery

• The AT was performed with INPHO MATCH-AT, version 5.4.0

• The aerotriangulation (AT) of the 2011 imagery was split into four blocks.

• The 1000 scale images were AT'ed separately as project "Mat_Su_1000".

• The 2000 scale images were split into three blocks, projects "Mat_Su_2000_Core", Mat_Su_2000_North", and "Mat_Su_2000_Matanuska".

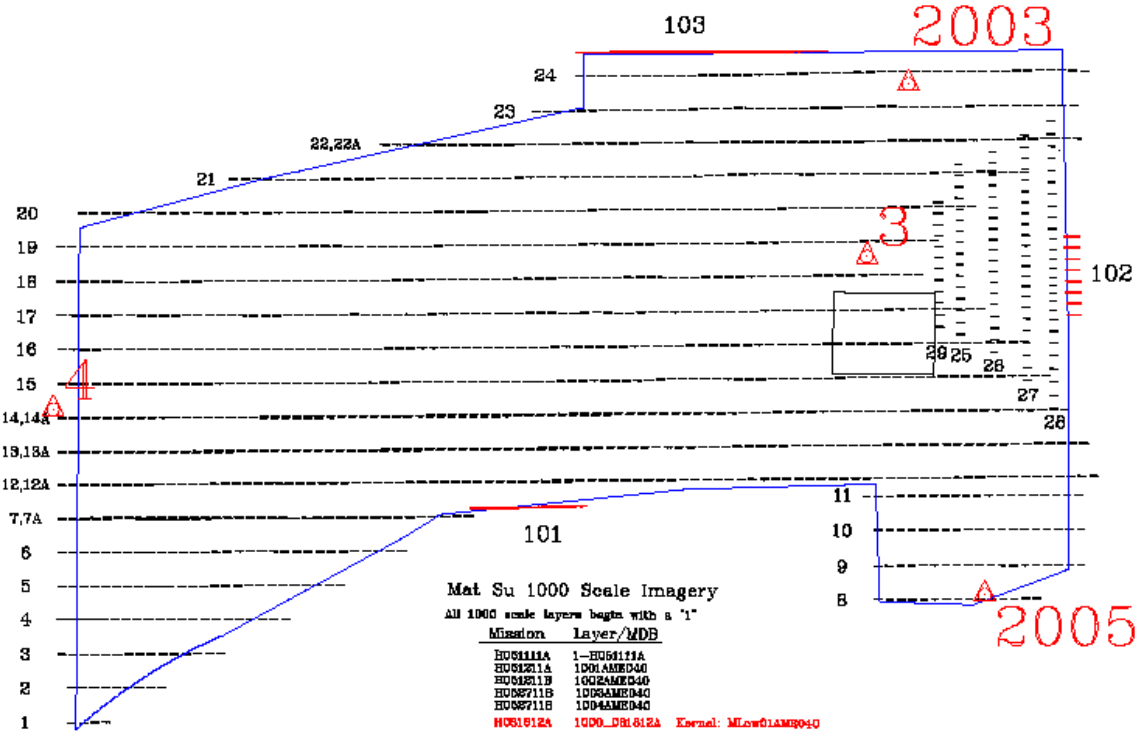
• The AT block "Mat_Su_2000_Core" includes the orthophoto delivery blocks; Core Area, Point Mackenzie, Willow, Caswell Lake, and Talkeetna.

2012 Imagery

• The AT was performed with INPHO MATCH-AT, version 5.4.2

• The 1000 scale images were added to the 2011 project "Mat_Su_1000" to create the new project "Mat_Su_1000_2012". All 1000 scale images were triangulated as a single block for the final run.

• The 2000 scale images acquired in 2012 were AT'ed as a single block in project "Mat_Su_2000_2012". These images are tied to the 2011 images via tie points and check points, but the 2011 images are not in this bundle solution.


2003
103
24
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21
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19
18
17
16
15
14,14A
13,13A
12,12A
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6
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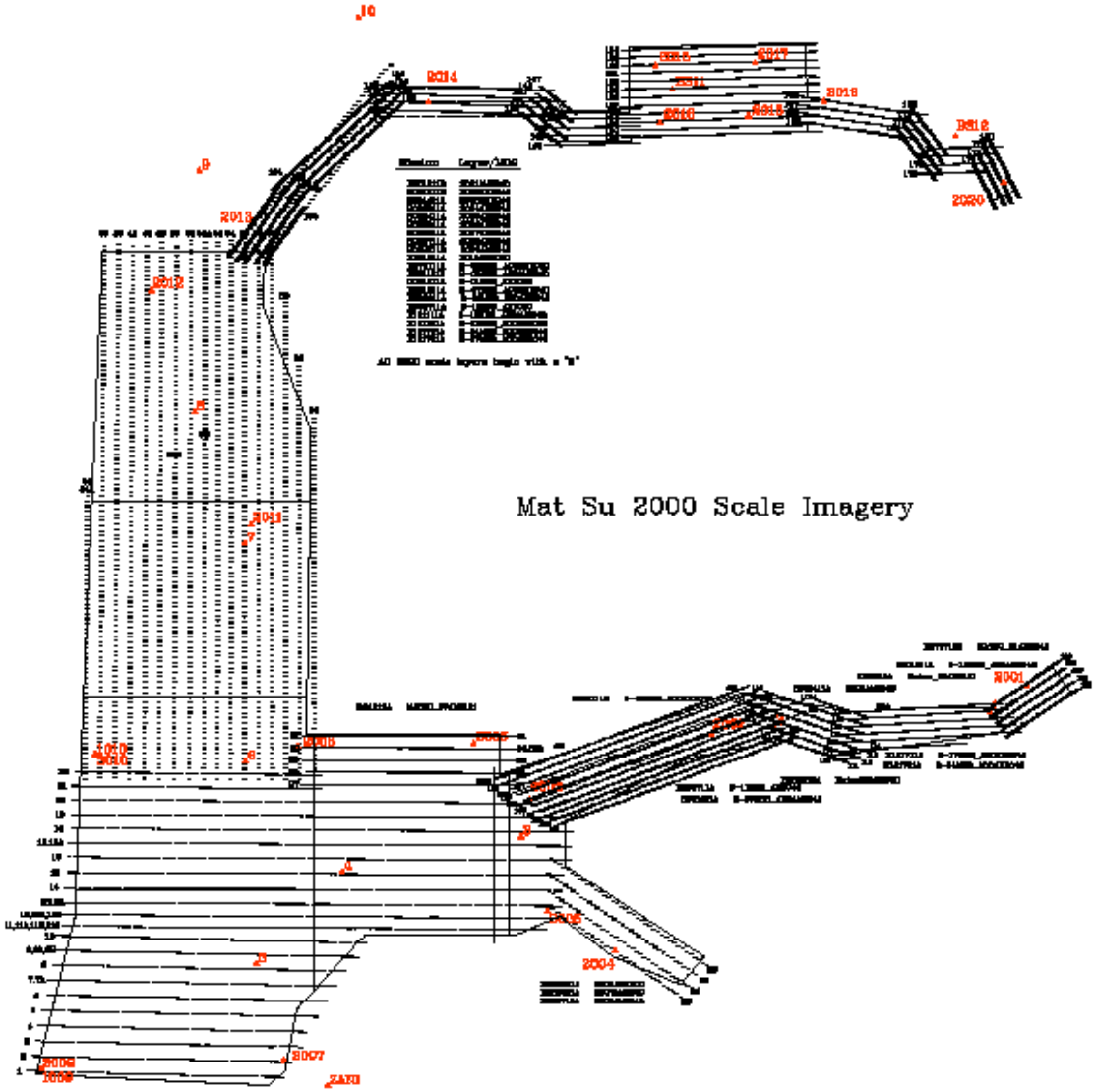
4
3
2
1
3
4
102
29
25
26
27
28
11
10
9
8
101
2005
Mat Su 1000 Scale Imagery
All 1000 scale layers begin with a "1"
Mission Layer/MDB
HU61111A 1-HU61111A
HU61211A 1DO1AMED40
HU61211B 1DO2AMED40
HU62711B 1DO3AMED40
HU62711B 1DO4AMED40
HU61612A 1DO0_DH1612A Kernel: MLowG1AMED40


Mat Su 2000 Scale Imagery

See Apendix A at the end of this report for the AEROTRIANGULATION SUMMARIES

7 ORTHOIMAGERY PROCESS

7.1 Rectification Process

The DMC imagery is loaded into Adobe Photoshop CS5 version 12.0.4, and the data is stretched in a linear fashion to better make use of the data value range afforded by the16-bit storage space. Histograms are then computed and analyzed in order to calculate proper curves adjustments to better utilize the expanded data range and correct for color and contrast variations due to effects such as lens vignetting, atmospheric conditions, sun angle, seasonality, and to some degree, general visual appeal. These initial calculation steps are carried out by flight line and tested at multiple exposures within the line due to the general similarity in ground cover and capture conditions present within a contiguous data acquisition strip.

The resulting initial color-corrected imagery is then used as the imagery input information for the Inpho Applications Master 5.4 project file created during the AT process to be utilized within the Ortho Master module for the creation of digital ortho corrected images. The bare earth LiDAR DEM data is also ingested at this point to provide the information required in order to correct the imagery for relief displacement and camera attitude. The output ortho boundaries are then calculated to reduce excess overlap within the project, eliminate a portion of the vignetting effect, as well as reduce the amount of possible visual lean in buildings, trees, and other objects that deviate from the bare earth surface. The software is also given an area of interest (AOI) with which to clip the output files. After loading this data and defining desired output pixel resolution, Ortho Master then proceeds to create output TIFF image files that have now been corrected for lens and terrain distortions as well as also containing georeferencing information.

The ortho-rectified TIFF files are then loaded into another Inpho software package called OrthoVista version 4.6. OrthoVista allows the user to load and view the newly rectified files in relationship with one another to compare the horizontal placement as well as the initial color corrections. The Radiometrix option will create statistics for the input imagery and allow the user to interactively adjust color and contrast parameters in order to provide a better match between exposures as well as give the software a desired target for the overall mosaic output. The user then calculates an output tile layout, defines how many iterations of internal adjustment should be run, and how seam lines should be calculated. The process is then run and the individual ortho files are mosaicked and color balanced into the user's new tile layout. These mosaicked TIFF files are then loaded back into Photoshop and panned through by a technician for inspection. The technician will look for and correct problems in color balance, contrast, seam line placement, and general aesthetics. If necessary, new orthos covering a larger area or even from different exposures covering problem locations will be created and patched in manually. Overall color will also be finalized at this point.

Finally, the mosaicked TIFF files are processed with GDAL 9.2 to create proper geotiff headers, define nodata values, and ensure proper TIFF formatting. These final tiles are then loaded into ArcCatalog 9.2 for the creation of FGDC compliant metadata. These tiles are also loaded into ArcCatalog 10.0 to provide a final check of tile layout and location as well as calculation of statistics and reduced resolution datasets.

7.2 Orthoimagery Quality Control

The accuracy as compiled, tested and published in this report has met horizontal accuracy

requirements as specified by the client. We used our QC software, Accuracy Analyst to test the accuracy of check points collected. Accuracy Analyst allows us to import a listing of check points with their X, Y coordinates. These are photo identifiable points that are then compared with the actual locations in the finished orthos. Upon completion of this comparative step, statistics are computed for inclusion in a report. Error Statistics include CE90 and/or CE95, RMSE, and NSSDA.

See section 10 of this report for the statistics for each of the blocks produced and tested.

In addition to this horizontal accuracy assessment, we also check for the overall quality of the imagery including color balance, tonal guality, and image matching at cutlines and tile boundaries.

8 CONCLUSION

The Orthoimagery products discussed in this report were processed and produced in accordance with provided guidelines and established practices. The accuracy criteria set forward by the Borough and other Government / Industry standards have been demonstrated to be met throughout this report and it's supporting documents. As such, the resultant data and derivative products satisfy the request and needs of the Mat-Su Borough, and may be considered useful and reliable to additional end users upon distribution.

9 CAMERA FLIGHT LOGS

High Resolution Area – 2011

DMC FLIGHT LOG

PILOT: Czechowicz	OPERATOR: Iverson				APC: 314	GPS: POS 766		DATE: 05.11.11		DI 1			
C.F.L. 120.00	AIRCRAFT: N6GR		DMC # 040		P.O.S. 766	SCSI: 7		TIME ZONE: GPS		H051111A			
PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN ~~AGL~~	TIME START	STOP	REMARKS	
6110401						1	Pan/IR	Multi	Scale	2003	2006	Static 1756.3 Hobbs	
MatSu Orthos										2019		Take OFF MRI	
H051111A	13E	1-91	91	0	91	92	14.7	14.3	[redacted]	2038	2046		
	12W	93-1	93	0	93	185			1000	2052	2100		
	14E	1-90	90	0	90	275				2106	2112	Bumpy Air	
	11W	20-1	20	0	20	295				2115	2117		
	10E	1-19	19	0	19	314				2121	2123	Glacier Dust in Air	
	9W	19-1	19	0	15	333				2126	2128		
	8W	1-15	15	0	15	348				2133	2134		
	25N	1-16	16	0	16	364				2137	2138		
	26S	19-1	19	0	19	383				2142	2144		
	27N	1-23	23	0	23	406				2149	2151		
	28S	27-1	27	0	27	433				2155	2157		
										2209		Land MRI 1758.2 Hobbs	
										2210	2213	Static	

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	
⊘ 6110401	433	1.9		○					WX: Higher Skattered CLDS, Shadows
○				○					NOTES: Bumpy Air
○				○					

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DMC FLIGHT LOG

PILOT: Wenger | OPERATOR: Iverson | APC: 314 | GPS: POS 766 | DATE: 05.12.11 | DI 1

C.F.L. 120.00 | AIRCRAFT: N6GR | DMC # 040 | P.O.S. 766 | SCSI: 7 | TIME ZONE: GPS | H051211A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN ~~AGL~~	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi	Scale	1827	1830	Static 1759.4 [redacted] Hobbs
Mat Su Orthos										1841		Take OFF MRI
1001 AME040	7 E	1-37	37	0	37	37	13.7	13.2	1000	1853	1857	bumpy Air, — Re Do on 1002 AME040
	6 W	31-1	31	0	31	68	14.2	13.7		1903	1905	
	5 E	1-26	26	0	26	94				1911	1914	bumpy Air
	4 W	21-1	21	0	21	115				1919	1921	
	3 E	1-15	15	0	15	130				1926	1927	
	2 W	9-1	9	0	9	139				1933	1933	
	1 E	1-4	4	0	4	143				1939	1939	
	15 E	1-89	89	0	89	232				1954	2002	bumpy Air
	~~16 W~~	~~78-1~~	~~78~~	~~0~~			14.6	14.1				
	18 W	78-1	78	0	78	310	14.6	14.1		2018	2025	bumpy
	16 E	1-86	86	0	86	396	14.4	13.9		2031	2039	
	19 W	78-1	78	0	78	474	14.6	14.1		2043	2051	
	17 E	1-83	83	0	83	557				2057	2104	
	22 W	62-1	62	3	59	616	14.7	14.2		2111	2115	— Redo on 1002 AME040
	20 E	1-80	80	0	80	696	14.5	14.0		2123	2130	
	23 W	49-1	49	0	49	745	14.7	14.2		2135	2138	
										2154		Land MRI 1762.6 Hobbs

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES
○ 6110401	745	3.2		○	
○				○	
○				○	

WX: CLR

NOTES: bumpy Air

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2156 | 2159 Static

DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 05.12.11	DI 2
C.F.L. 120.00	AIRCRAFT: N66R DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H051211B

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN ~~AGL~~	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi	scale	2300	2303	static 1762.6 Hobbs
MatSuOrthos										2308		Take OFF MRI
1002 AME040	21E	1-71	71	0	71	71	13.8	13.3	1000	2326	2333	
	24W	46-1	46	0	46	117	14.3	13.8		2336	2340	
	22E	1-62	62	0	62	179				2345	2351	
	7W	37-1	37	0	37	216				2359		00:02:35

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ 6110401	216	1		○					NOTES:
○				○					
○				○					

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DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-27-11 FRI	JS2
C.F.L. 120.00	AIRCRAFT: N73TM DMC #040.	P.O.S. 766	SCSI: AME03	TIME ZONE: GMT	140527118

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
~~6110401~~										22:25	22:51	FERRY: PAAQ → SITE .4
MATSU	7W	~~59-1~~	59	0	59	4/62			9448	22:51	23:01	
2009AME040	12E	1-4	4	0	4	66				~~23:05~~	23:06	PARTIAL COMPLETE
	9W	6-1	6	0	6	72				23:11	23:12	PARTIAL COMPLETE
	6E	1-57	57	0	~~57~~	129				~~23:16~~	23:26	
	29E	1-44	44	0	44	173				23:37	23:45	
	~~30W~~ 30W	44-25	44	24	20	193				23:48	23:52	
	~~30W~~	~~44-~~	24							23:53		FATAL ERROR - REBOOT
					(190)	197						CLOUDING OUT
1003AME040	~~14W~~	90-	90									RFT - NO GO
	12W	93-1	93	0	93	290			4724	00:15	00:24	RFT LINE COMPLETE
	14E	1-90	90	0	90	380				00:27	00:35	↓
	13E	1-91	91	0	91	471				00:47	00:56	↓
1004AME040	29	12-1	12	0	12	485			↓	01:08	01:09	
					(286)						01:29	FERRY: SITE → PAMR .4

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
⊘ 6110401 (DMC)	476	2.3	.8	○					NOTES:
○				○					
○			3.1	○					

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High Resolution Area – 2012

DMC FLIGHT LOG

PILOT: Hunter	OPERATOR: Iverson	APC: Inflight 108	GPS: POS	DATE: 8/18/12	DI
C.F.L. 120.00	AIRCRAFT: N898WW	DMC # 040	P.O.S. 3190	SCSI: 3065	TIME ZONE: GPS / AK	H081812A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6120804							Pan/IR	Multi		1000		TerraPOS-AK 2542.2 Hobbs
ERF01AME040										1834		static
										1842		Take OFF MRI
	1W	4-1	4	0	4	4	13.8	13.3	13300	1900	1901	High Over cast
	2E	1-5	5	0	5	9				1906	1906	scale 33,600
	3W	5-1	5	0	5	14				1911	1912	
	4E	1-6	6	0	6	20	14.0	13.5		1917	1918	
	5W	5-1	5	0	5	25	14.2	13.7	13200	1923	1924	
6110401												
MLOW01AME040												
	102N	1-8	8	0	8	33	13.5	13.1	7400	1935	1936	bumpy Air 12,000 scale
	103W	22-1	22	0	22	55			5600	1944	1946	
	101E	1-10	10	0	10	65			4800	1952	1953	
											2009	Land MRI 2543.7 Hobbs
											2015	static
											16:45	Terra POS-AK

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	WX: High Overcast
⊗ 6120804	25	.5	.25	○				NOTES:
⊘ 6110401	40	.5	.25	○				
○				○				

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1' Pixel Resolution (Lower Res) Areas – 2011

DMC FLIGHT LOG

PILOT: Czechowicz	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 05.11.11	DI 2
C.F.L. 120.00	AIRCRAFT: N66R DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H051111B

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN ~~AGL~~	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi	Scale	2238	2241	static 1758.2 H
Mat Su Orthos										2243		Take OFF MRI
2001AMEo40	44N	1-58	58	0	58	58	14.8	14.4	2000	2300	2309	snow.
	~~5yp~~	~~[illegible]~~	~~[illegible]~~									snow Abort Line
~~TCO1AMEo40~~	~~2[illegible]~~	~~1[illegible]~~							1000			Abort CLDs
										2353		Land MRI
										~~[illegible]~~	~~[illegible]~~	Static 1759.4 Hobbs
										2356	2359	Static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ 6110401	58	1.2		○					NOTES:
○				○					
○				○					

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DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 05.12.11	DI 3
C.F.L. 120.00	AIRCRAFT: N66R DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H051211B

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN ~~AGL~~	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi	Scale			
MatSu Ortho	[redacted]	[redacted]	[redacted]						2000			
2002 AMEO40	1 E	1-52	52	0	52	3521	14.3	13.8	2000	00:32	00:40	
	2 W	53-1	53	0	53	3574	14.5	14.0		00:45	00:53	
	3 E	1-54	54	0	54	3628	14.3	13.8		00:58	01:07	
	4 W	55-1	55	0	55	3683				01:13	01:22	
	5 E	1-56	56	0	56	3739				01:27	01:36	
										01:47		Land MRI 1765.2 Hobbs
										01:49	01:52	Static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	WX: CLR
○ 6110401	270	1.6		○				NOTES:
○				○				
○				○				

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DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-23-11	H052311A
C.F.L. 120.00	AIRCRAFT: N73TM	DMC # 040.	P.O.S. 7606	SCSI: AME03	TIME ZONE: GMT	JS1

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401										17:34	18:09	FERRY: PAMR → SITE .6
MATSU	9 E	01-61	61	Ø	61	61			9448	18:09	18:20	CUE EXPS 1-4, 56
2004AME040	10 W	63-01	63	Ø	63	124				18:20	18:33	
/	52 N	01-69	110	41	69	193				18:49	19:00	PARTIAL
	~~31~~ S	—	110	—	—	—	—	—	—	—	—	NO GO
	~~26~~ SE	39-	39									
	25 SE	37-01	37	Ø	37	235				19:35	19:42	
	~~24~~ NW	01-	35	—	—	—	—	—	—	—	—	SNOW IN AREA
/	35 NE	01-54	60	6	54	289				19:58	20:07	CUE IN 51-54 PARTIAL
											20:36	FERRY: SITE → PAMR .5

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX: CUEING UP AT SUN 4
⊘ 6110401	284	2.0	1.1	○					NOTES: SET GK
○			3.1	○					DRIVE W9KB
○				○					

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DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-24-11	JSI
C.F.L. 120.00	AIRCRAFT: N73TM DMC # 040.	P.O.S. 766	SCSI: AME03	TIME ZONE: GMT	H0524111A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401										17:30	17:52	FERRY: PAMR → SITE .4
MATSU	~~60~~ N	1-	72						9448			SNOW THIS LINE + SHADOWS FROM CIRRUS
2005AME040	44 N	1-58	58	Ø	58	58				18:03	18:12	
	45 S	109-1	109	Ø	109	167				18:24	18:43	SOME SNOW ON THE N. END OF THIS LINE
	46 N	1-109	109	Ø	109	276				18:46	19:02	
	47 S	109-1	109	Ø	109	385				19:06	19:24	CLOUD SHADOWS THROUGH OUT
/	11 E	1-73	98	25	73	458				19:33	19:47	CLOUDS 1-5 / CLOUDS 72-98 (PARTIAL)
/	12 W	55-1	101	46	55	514				19:58	20:06	PARTIAL / CLOUDS 1-2
—	13 E	1-29	101	ALL	29	543				20:10	20:20	SHADOW 15-20 (LINE NO GOOD)
											20:38	FERRY: SITE → PAMR
												TOO MANY CLOUDS/SHADOWS .3

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX: HI BKN CIRRUS VIS 7
⊘ 6110401 (DMC)	543	2.5	.7	○					NOTES: GREENING UP
○				○					
○				○					

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DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-25-11	JSI
C.F.L. 120.00	AIRCRAFT: N73TM	DMC # 040	P.O.S. 766	SCSI: AME 03	TIME ZONE: GMT	H0525IIA

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
0110401										17:48	18:13	FERRY: PAMR → SITE .4
MATSU	60 N	1-72	72	0	72	72			9448	18:13	18:24	
2006AME040	59 S	85-1	85	0	85	157				18:29	18:43	
	58 N	1-97	97	0	97	254				18:47	19:02	
	57 S	109-1	109	0	109	363				19:07	19:25	SOME SNOW IN 109-94
	56 N	1-110	110	0	110	473				19:28	19:45	" " 92-110
	55 S	110-1	110	0	110	583				19:49	20:07	PASS TRACES OF SNOW 110-95
	54 N	1-110	110	0	110	693				20:11	20:28	" " 95-110
	53 S	109-1	109	0	109	802				20:31	20:49	SNOW IN 109-105
	51 N	1-110	110	0	110	912				20:52	21:09	SNOW IN 107-110
	52 S	110-68	110/43	0	43	955				21:13	21:20	PARTIAL LINE COMP. TRACES OF SNOW 110-104
											21:39	FERRY: SITE → PATK .3
										22:27	23:30	FERRY: PATK → PAMR 1.0
												DRIVE 7HYR

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX: SKC VIS +10
⊘ 0110401 (DMC)	955	3.1	.7	○					NOTES: ABGPS STARTS ON FILE 17
○			3.8	○					LIGHT TURBULANCE
○			1.0 4.8	○					CUE FORMING AT 20:30

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DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-26-11 THUR	JSI
C.F.L. 120.00	AIRCRAFT: N73TM DMC # 040	P.O.S. 766	SCSI: GOOD	TIME ZONE: GMT	H0526111A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401										18:26	18:51	FERRY: PAAR → SITE .4
MATSU	9 W	61-54	61/14	6	8	8			9448	18:51	18:53	PARTIAL 1-6 REMAIN
2007AMED40	12 E	54-101	101/51	4	48	56				18:57	19:04	PARTIAL 1-4 REMAIN
	11 W	98-71	98/35	7	28	84				19:10	19:15	PARTIAL 1-7 REMAIN
	8 W	60-1	60	0	60	144				19:17	19:27	
	11 E	1-7	98/7	0	7	151				19:31	19:32	PARTIAL COMPLETE
	16 E	1-102	102	0	102	253				19:38	19:55	
	17 W	102-1	102	0	102	355				19:58	20:14	
	48 N	1-108	108	0	108	463				20:21	20:39	~~PASSES OF SNOW 100-108~~ / CLOUD SHADOW 106→
	49 S	109-1	109	0	109	572				20:42	20:59	CLOUD SHADOW 109-106
	26 SE	39-1	39	0	39	611				21:12	21:19	
	24 NW	1-35	35	0	35	646				21:23	21:28	
	23 SE	34-1	34	0	34	680				21:34	21:40	
											22:06	FERRY: SITE → PAAQ .4
										23:11	23:42	FERRY: PAAQ → PAMR .5

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	
⊘ 6110401	680	2.9	.8	○					WX: SKC VIS ± 8
○			.5	○					NOTES: HIGH CLOUDS TO THE NORTH
○			1.3	○					DRIVE BACK

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(4.2)

DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-27-11 FRI	JSI
C.F.L. 120.00	AIRCRAFT: N73TM DMC # 040	P.O.S. 7606	SCSI: GOOD	TIME ZONE: GMT	H0527IIA

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
C0110401										17:15	17:35	FERRY: PAMR → SITE .3
MATSU	150 N	1-?	109	?	?	65			9448	17:35	?	PROGRAM CRASHED - RELOADED - SHOWS NO EXPS TAKEN
2008AME040	50 S	109-0	109	0	109	70/179				17:57	18:15	
	31 E	1-44	44	0	44	223				18:26	18:34	SNOW THIS LINE
	28 W	43-1	43	0	43	266				18:37	18:44	SOME SNOW THROUGHOUT
	27 E	1-44	44	0	44	310				18:48	18:56	
	20 W	95-1	95	0	95	405				19:00	19:15	
	22 E	1-50	50	0	50	455				19:18	19:27	
	21 W	51-1	51	0	51	506				19:30	19:38	
	19 E	1-99	99	0	99	605				19:42	19:58	
	18 W	102-1	102	0	102	707				20:02	20:18	
	15 E	1-101	101	0	101	808				20:21	20:38	
	14 W	101-1	101	0	101	909				20:41	20:57	
	13 E	1-101	101	0	101	1010				21:01	21:18	
											21:38	FERRY: SITE → PAAQ .3

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY
C0110401 DMC 80%	940	3.7	.6
			4.3

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY

WX: HIGH THIN CIRRUS VIS 10-15

NOTES:

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DMC FLIGHT LOG

PILOT: JESSE	OPERATOR: JIM	APC: 314	GPS: 13919	DATE: 5-27-11 FRI	JS2
C.F.L. 120.00	AIRCRAFT: N73TM DMC #040.	P.O.S. 766	SCSI: AME03	TIME ZONE: GMT	1405271B

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401										22:25	22:51	FERRY: PAAQ → SITE .4
MATSU	7W	59-1	59	0	59	4/62			9448	22:51	23:01	
2009AME040	12E	1-4	4	0	4	66				23:05	23:06	PARTIAL COMPLETE
	9W	6-1	6	0	6	72				23:11	23:12	PARTIAL COMPLETE
	6E	1-57	57	0	57	129				23:16	23:26	
	29E	1-44	44	0	44	173				23:37	23:45	
	30W	44-25	44	24	20	193				23:48	23:52	
	~~30W~~	~~H-~~	24							23:53	—	FATAL ERROR - REBOOT
					(190)	197						CLOUDING OUT
~~1003AME040~~	~~14W~~	~~90-~~	~~90~~									~~RFT - NO GO~~
	12W	93-1	93	0	93	290			4724	00:15	00:24	RFT LINE COMPLETE
	14E	1-90	90	0	90	380				00:27	00:35	
	13E	1-91	91	0	91	471				00:47	00:56	
1004AME040	29	12-1	12	0	12	485				01:08	01:09	
					(252)						01:29	FERRY: SITE → PAMR .4

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
⊘ 6110401 (DMC)	476	2.3	.8	○					NOTES:
○				○					
○			3.1	○					

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DMC FLIGHT LOG

PILOT: JESSE | OPERATOR: Tom | APC: 314 | GPS: 13919 | DATE: 6/18/11 SAT | TP1

C.F.L. 120.00 | AIRCRAFT: N73TM | DMC # H 040 | P.O.S. 766 | SCSI: AME Ø3 | TIME ZONE: AK / GPS | H0618IIA

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	~~LVAL~~	~~ECOR~~	PLAN AGL	TIME START	TIME STOP	REMARKS
6110606	CLOUDS ON	BOTH	SECTIONS		2	PAN/IR	MULTI	8,550	9:12	10:00	FERRY: PAFA → SITE → SITE 1.8
6110401 ⊗	63SW	50→1	50	0	50	52	14.6	14.0		18:58	19:05	221°
2013AME040 ⊗	62NE	1→48	48	0	48	100	14.4	13.9		19:10	19:18	040
PARTIAL ⊘	64E	1→37	53	16	37	137				19:25	19:31	90 FLY 34→53 OCC TRACE SNOW S. SIDE OF IMAGES
⊗	65W	38→1	38	0	38	175				19:35	19:40	271 SM CLOUD 38, 37, 36
⊘	66E	1→26	37	11	26	201				19:44	19:48	90 FLY 24→37
⊗	61SW	46→1	46	0	46	247				19:55	20:01	221 OCC TRACE SNOW E. SIDE OF PICS
REFLT ⊗	30E	1→44	44	0	44	291	14.5	14.0		20:20	20:27	90 SNOWTRACES E END IN MNTS CIR JUST TO S.
REFLT ⊗	11W	75→60	98/16	0	16	307				20:39	20:41	271 HI-CIR OK
REFLT ⊗	7W	8→1	59/8	0	8	315				20:51	20:52	271 " "
REFLT	17E	1→17	102/17	0	17	332				21:00	21:03	90 " "
										1:06	1:30	FERRY: SITE → PATK 0.4
6110606	CLOUDS									2:00	3:18	FERRY: PATK → SITE → PAFA 1.3

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	WX:
⊘ 6110606	—	—	0.8	○				NOTES:
⊘ 6110401	330	2.1	2.7	○				
○				○				

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DMC FLIGHT LOG

02MSB- ADDAME040

PILOT: ZECHOWICZ		OPERATOR: PACE			APC:		GPS:			DATE: 7-21-11
C.F.L. 120.00	AIRCRAFT: 73TM			DMC # 040	P.O.S.		SCSI:			TIME ZONE: GPS
PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	IMAGES PLANNED	LEFT	IMAGES TAKEN	PLANNED AGL & FOL		TIME START	TIME STOP	EVENTS	REMARKS
6110401 MSBADD										DEPART FAI 3770.5
H072111A										LAND TKA 3771.5
02MSB_ADDAME040							2041	2044	1	DEPART TKA STATIC
	139 W	68	0	68	11200	14.0/13.5	2110	2114	69	SKC
	140 E	71	0	139	11000	14.0/13.5	2120	2125	140	
	141 W	75	0	214	11000	14.0/13.5	2129	2134	215	
	142 E	78	0	292	11500	14.0/13.5	2137	2142	293	
	138 S	74	0	366	10900	14.0/13.5	2150	2155	367	
	137 N	70	0	436	10500	14.0/13.5	2158	2203	437	
	136 S	69	0	505	10200	14.0/13.5	2206	2211	506	
	135 N	66	0	571	11200	14.0/13.5	2214	2219	572	
	134 S	44	0	615	11000	14.0/13.5	2226	2229	616	
	133 N	43	0	658	10200	14.0/13.5	2232	2235	659	.5
	132 S	42	0	700	10400	14.0/13.5	2238	2240	701	
	131 N	40	0	740	11200	14.0/13.5	2243	2246	741	
	130 S	33	0	773	11700	14.0/13.5	2248	2251	744	
							2251	2254		LAND MRI STATIC 3774.0
										MRI - FAI?

JOB #	IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ 6110401 MSBADD	773	2.5	1.0	○				NOTES:
○				○				
○				○				

DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 08/11/11	DI 1
C.F.L. 120.00	AIRCRAFT: 73TM DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H08111[redacted]B

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							PAN/IR	Multi		1800	1805	static 3792.3 Hobbs
MSB ADD										1812		Take OFF MRI
[redacted]											1830	Land MRI 3792.6 Hobbs
[redacted]										1839	1844	static
06 MSB_ADD										1849		Take OFF MRI
AMEC40	106 W	117-1	117	0	117	117	14.1	13.6	10600	1942	1949	
	107 E	1-120	120	0	120	237			10700	1955	2004	
	105 W	117-1	117	0	117	354			10400	2009	2017	
	104 E	1-116	116	0	116	470	14.3	13.8	10400	2023	2032	
	103 W	115-1	115	0	115	585			10900	2037	2044	around #87. 200 feet low
	102 E	1-115	115	0	115	700			11300	2050	2059	#60-#55 CLDs
02ANCAMEC40	27 E	11-1	11	0	11	711			11800	2125	2126	CLDs 3795.1 Hobbs
1100803										[redacted]		
											2141	Land MRI 3795.5 Hobbs
										2142	2145	static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX: Few CLDs
⊘ 6110401	700	2.8		○					NOTES:
⊘ 1100803	11	.4		○					
○				○					

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DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 08/16/11	DI1
C.F.L. 120.00	AIRCRAFT: 73TM DMC # 04C	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	HC0816 11A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							FAN/IR	Multi		1757	1800	Static 3795.5 Hobbs
MSB ADD										1803		Take OFF MRI
07 MSB_ADD	157E	1-89	89	0	89	89	13.9	13.4	11600	1844	1849	
~~ADD C4C~~	158W	88-1	88	0	88	177			11500	1854	1900	
AME C4C	159E	1-88	88	0	88	265			11500	1906	1911	CLDs @ 53+88 Possible PDOP Spike
	101E	1-113	113	0	113	378	14.4	13.9	12200	1946	1953	CLD @ 60+80 etc. 100
											2020	Land Talkeetna ~~3779 CLDs~~
										20:23	20:28	Static 3797.8 Hobbs
										3:08pm		Take OFF Talkeetna
											3:28pm	Land MRI 3798.2 Hobbs

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX: CLDs in Area
⊘ 6110401	378	2.3	.4	○					NOTES:
○				○					Lines 159,101 - CLDs
○				○					

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DMC FLIGHT LOG

PILOT: Vogt/Wenger | OPERATOR: Iverson | APC: 314 | GPS: POS 766 | DATE: 09/09/11 | DI 1

C.F.L. 120.00 | AIRCRAFT: 6GR | DMC # 040 | P.O.S. 766 | SCSI: 7 | TIME ZONE: GPS | HC090911A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							PAN/Tr	Multi		1813	1816	static 2040.2 Hobbs
Mat Su B										1821		Take OFF MRI
~~09 MSB~~	159 E	1-~~79~~	88	9	80	80	13.7	13.2	11500	1901	1906	Omega Angle out at start Fatal Error
~~ADD AME 040~~	159 W	~~88-79~~	9	0	9	89			11500	1918	1918	88-80
09 MSB	160 W	88-1	88	0	88	177			11700	1925	1932	Wobbly Flt AΩ! (CLDs last 8)
ADD AME 040	161 E	1-88	88	0	88	265			11900	1938	1944	(CLDs start - 88-70) Wobbly Flt AΩ!
	162 W	87-1	87	10	78	342			1200	1951	1957	AΩ! (CLDs 18-1) Abort CLDs
	163 E	1-88	88	0	88	430	13.8	13.3	12100	2004	2010	(CLDs 88-55) AΩ!
	168 E	58-1	58	0	58	488			12300	2024	2027	AΩ!
	167 W	1-55	55	0	55	543	14.1	13.6	11700	2033	2037	(CLD 7,3-1)
	166 E	54-1	54	0	54	597			11500	2040	2046	CLDs 54-47 AΩ!
	172 W	1-28	28	25	3	600	13.8	13.3	12800	2054	2054	Abort CLDs
											2134	Land 2043.5 Hobbs
										2135	2138	static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	WX: SKT CLDs
⊘ 6110401	600	3.3		○				NOTES:
○				○				AΩ!= Angle Omega out of Range
○				○				

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DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 9/27/11	DI 1
C.F.L. 120.00	AIRCRAFT: 73 TM DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H092711A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi		1849	1852	static
MSB_ADD										1855		Take OFF MRI 3822.5 Hobbs
	162 E	9-24	16	0	16	16	13.6	13.1	12,000	2012	2013	
11MSB_ADD	161 W	17-1	17	0	17	33			11,900	2018	2019	
AME 040	160 E	1-10	10	0	10	43			11,700	2025	2026	
	163 W	26-1	26	0	26	69			12,100	2032	2033	
	164 E	1-87	87	0	87	156			12,300	2039	2045	CLDs, Shadows
	101 E	1-113	113	0	113	269			12200	2117	2124	angle omega Ω out of Range slow shadows
	102 W	115-1	115	109	6	275			11300	2129	2129	Abort OFF Line
	102 W	109-1	109	0	109	384			11300	2136	2143	shadows
	103 E	1-115	115	0	115	499			10900	2147	2155	shadows
	104 W	116-1	116	0	116	615			10400	2200	2208	shadows
											2221	Land MRI 3825.9 Hobbs
										2222	2225	static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ 6110401	615	3.4		○					NOTES:
○				○					
○				○					

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DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson			APC: 314	GPS: POS 766		DATE: 10/11/11		DI1			
C.F.L. 120.00	AIRCRAFT: 73TM	DMC # 040		P.O.S. 766	SCSI: 7		TIME ZONE: GPS		H101111A			
PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	STOP	REMARKS 3837.9
6110401							Pan/IR	Multi		1950	1953	static [redacted] Hobbs
MSB_ADD										1956		Take OFF MRI
12 MSB_ADD	162W	10-1	10	0	10	10	13.3	12.9	12000	2044	2044	
AME 040	~~164E~~	34-47 71-87	31	0	31	41			12300	2049	2052	34-47 / 71-87 Ω(ALT) Re-Fly
	165E	1-51	51	0	51	92			12300	2102	2105	CLDs
	164W	87-71 47-34	31	0	31	123			12300	2114	2117	87-71, 47-34
										2206		Land MRI 3840.1 Hobbs
										2207	2210	static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ 6110401	123	2.2		○					NOTES:
○				○					(use 164W) (Delete 164E)
○				○					

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DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 10/12/11	DI 1
C.F.L. 120.00	AIRCRAFT: 73TM DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H101211A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi		2002	2005	Static 03840.6 Hobbs
MSB_ADD										2008		Take OFF MRI
13 MSB_ADD	165 E	51-01	51	0	51	51	13.5	13.1	12300	2051	2054	
AME 040	169 E	28-1	28	0	28	79			12400	2100	2102	
	170 W	1-27	27	0	27	106			11800	2107	2109	
	171 E	28-1	28	0	28	134			11900	2113	2114	
	172 W	1-28	28	0	28	162			12800	2119	2121	snow
	176 E	1-30	30	0	30	192			12500	2126	2128	
	175 W	30-1	30	0	30	222			12200	2133	2134	
	174 E	1-30	30	0	30	252			11600	2141	2142	
	173 W	31-1	31	0	31	283			12500	2147	2149	
	177 S	23-1	23	0	23	306			12100	2153	2155	
	178 N	1-25	25	0	25	331			11800	2203	2204	
	179 S	28-1	28	0	28	359			11900	2209	2111	
	180 N	1-30	30	0	30	389			12200	2217	2219	
	129 W	39-1	39	0	39	428			13200	2238	2240	snow
	128 E	1-40	40	0	40	468			12500	2246	2249	
											2324	Land MRI 3843.8 Hobbs
										2325	2328	Static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
⊘ 6110401	468	3.2		○					NOTES: GPS went out briefly
○				○					after Last Line + came back
○				○					on

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DMC FLIGHT LOG

PILOT: Wenger	OPERATOR: Iverson	APC: 314	GPS: POS 766	DATE: 10/17/2011	DI1
C.F.L. 120.00	AIRCRAFT: 73TM	DMC # 040	P.O.S. 766	SCSI: 7	TIME ZONE: GPS	H 101711 A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi		2103	2106	static 3843.9 Hobbs
MSB_ADD										2118		Take OFF MRI
14 MSB_ADD	111 W	1-35	35	0	35	35	13.9	13.4	12500	2151	2153	
AME 040	112E	45-1	45	0	45	80			11300	2159	2202	
	113W	1-49	490	49	42	122			11000	2208	2213	Ω 4312 Lost GPS ? Fatal ERROR
17 MSB_ADD	113W	1-49	49	0	49	4361			11000	2242	2245	17 MSB_ADD AME 040
AME 040	114E	54-1	54	0	54	4415			11400	2251	2254	CLDs Ω
											2322	Land MRI 3845.9 Hobbs
										2223	2226	Static

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX: Snow, Shadows, CLDs
⊘ 6110401	223	2		○					NOTES:
○				○					
○				○					

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 920-467-1220** E-Mail: amephoto@aerometric.com

1' Pixel Resolution Areas – 2012

DMC FLIGHT LOG

PILOT: CZECHOWICZ	OPERATOR: PACE				APC: Inflight 108		GPS: POS		DATE: 07-27-12		H072712A
C.F.L. 120.00	AIRCRAFT: N898WW		DMC # 040		P.O.S. 3190		SCSI: 3065		TIME ZONE: GPS / AK		SU_FLOW_02 AME040

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
G120706 SU							Pan/IR	Multi		AK	AK	Anx GPS @ 9:00 am
H072712A						1						DEPART FAI 2512.4 HOBBS
SU_FLOW_01AME						3						LOAD FAIL, RESTART
040	5 S	59	59	0	59	62	14.0	13.5	10,000	10:17	10:25	
	2 S	11	11	0	70	73	14.0	13.5	9600	10:27	10:30	
	6 N	89	89	0	159	162	14.0	13.5	9900	10:34	10:45	
	7 S	91	91	0	250	253	14.0	13.5	9800	10:50	11:03	2514.0 FINISH PROJ. SWITCH
					250	253						LOAD NEW PROJ 6110401
6110401 MAT SU	125 NE	40	40	0	40	293	14.5	14.0	12600	11:29	11:32	
H072712A	126 SW	40	40	0	80	333	14.0	13.5	12200	11:36	11:38	
MATSU_01AME	127 NE	40	40	0	120	373	14.0	13.5	12200	11:43	11:47	
040	128 SW	40	40	0	160	413	14.0	13.5	12500	11:50	11:54	OVER CRAB 1st 10 EXP. POSS RE-FLY
	129 NE	39	39	0	199	452	14.0	13.5	1320	11:58	12:01	2515.0
												LAND FAI 2515.8

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ G120706 SU_RIVER	250	1.6	.8	○					NOTES:
○ 6110401 MAT_SU	199	1.0		○					
○				○					

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

DMC FLIGHT LOG

PILOT: Hunter	OPERATOR: Iverson	APC: Inflight 108	GPS: POS	DATE: 8/22/12	DI1
C.F.L. 120.00	AIRCRAFT: N898WW DMC # 040	P.O.S. 3190	SCSI: 3065	TIME ZONE: GPS / AK	H082212A

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401							Pan/IR	Multi		915		Terra POS-AK 2543.7 Hobbs
MatSu02										1726		static
AME040	[redacted]	[redacted]	[redacted]							1800		Take OFF MRI
	108 E	1-120	120	0	120	127	13.6	13.1	11200	1814	1823	
	109 W	123-1	123	0	123	250			11500	1828	1837	
	110 E	1-124	124	0	124	374	13.8	13.3	12100	1842	1851	CLDs W end,
	117 W	25-1	25	0	25	399	14	13.5	13000	1856	1857	
	116 E	1-48	48	0	48	447			12000	1903	1906	
	115 W	58-1	58	0	58	505			11700	1912	1916	
	114 E	1-54	54	0	54	559			11400	1921	1925	
	113 W	49-1	49	0	49	608			11000	1928	1933	
	112 E	1-45	45	0	45	653			11300	1938	1941	
	111 W	35-1	35	0	35	688			12500	1945	1948	Ω
	118 W	11-1	11	0	11	699			13100	1953	1954	
	124 [redacted] E	1-71	71	0	71	770			12500	1957	2002	CLDs East end 124 E
	121 [redacted] W	77-1	77	0	77	847	14.2	13.7	11400	2007	2012	Ω 121 W
	120 E	1-80	80	0	80	927	14.2	13.7	11800	2016	2022	
	119 W	56-1	56	0	56	983	14.2	13.7	11600	2027	2031	
											2051	Land MRI 2546.5 Hobbs

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES		AIRCRAFT SITE	AIRCRAFT FERRY	WX:
○ [redacted]	[redacted]	[redacted]	[redacted]	○					NOTES: Static stop 20:56
⊘ 6110401	976	2.4	.4	○					Terra POS-AK stop 15:30
○				○					

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

DMC FLIGHT LOG

PILOT: CAROL | OPERATOR: PACE | APC: | GPS: | DATE: 09.10.12

C.F.L. 120.00 | AIRCRAFT: N66R | DMC # 151 | P.O.S. | SCSI: | TIME ZONE: AK

PROJECT NUMBER & MDB NAME	LINE NO. & DIR.	EXPOSURE STATIONS	IMAGES PLANNED	IMAGES LEFT	TOTAL	EVENTS	LVAL	ECOR	PLAN AGL	TIME START	TIME STOP	REMARKS
6110401 MSB												AUX GPS @ 10:35
I091012A												DEPART MRI 2440.6
MSB_05AME151	31 E	44	✓	✓	✓	4	13.5/13.0	✓	12300	1117	✓	DMC FATAL ERROR - RE-BOOT
						13				1156	✓	MSB_06AME151 FAILED, BOOT-UP
MSB_07AME151	31 E	44	44	0	44	57	13.5/13.0		12300	1156	1203	RE-FLIGHT
	30 W	44	44	0	88	101	14/13.5	✓	11800	1207	1215	SNOW ON MNT TOPS, HIGH EXP SETTINGS
	29 E	44	44	0	132	145			11800	1219	1225	
	28 W	43	43	0	175	188			12000	1229	1237	
	27 E	44	43	0	219	232			11500	1240	1248	
												LAND MRI 2442.8
6120706.01 SM						1						DEPART MRI 2442.8
I091012B	13 N	65	65	0	65	66	13.5/13.0		9900	1422	1433	
SM_RIV_01AME151	14 S	66	66	0	131	132			9900	1438	1449	
	15 N	67	67	0	198	199			9800	1455	1506	
	16 S	68	28	40	234	235			10000	1509	✓	PILOT OFF COURSE RE-FLY (1-40)
	16N	1-40	✓	✓	242	✓			10000	✓		IMU STATUS (WARNING) NO NAV
												NO AIRBORNE DATA, RETURN MRI
												LAND MRI 2444.7

JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY	JOB #	TOTAL IMAGES	AIRCRAFT SITE	AIRCRAFT FERRY
6110401 MSB2000		2.2					
6120706.01 SM_RIV		1.9					

WX: AUX GPS @ 16:05

NOTES:

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 920-467-1220 E-Mail:

10 QC VIRTUAL REPORTS

High Resolution Area - 2011

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CJC
Client:	Matanuska Susitna Borough						**Date:**	5/18/2011
Site:	Mat-Su			**MISSION NAME:**	H051111A		**Virtuals QC by:**	TJS
					DMC 040		**Date:**	5/19/2011
Aircraft:	N6GR			**Camera Focal Length:**	**120.000**		**Adjusted QC by:**	
Crew:	Czechowicz/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	5/11/2011			**Total Project Lines:**	**28 (1000 scale)**		**Date:**	
Flight Height:	4,724	**Ft**	***(AMT)***	**Current Accepted Lines:**				
Scale:	1000'/"						**Partial:**	X
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
13	E	91	91	011_rej-015_rej	**dark cloud shadows 011-015**	013 / 001-010, 016-091		
12	W	93	93	001_rej-013_rej	**cloud shadows 001-013, N edge 017&018**	012 / 093-014		
14	E	90	90	001_rej-004_rej, 074_rej-076_rej	**cloud shadows/tilt 001-004, haze/dust 074-076**	014 / 005-073, 077-090		
11	N	20	20		OK	011 / 020-001		
10	E	19	19		OK	010 / 001-019		
9	W	19	19		OK	009 / 019-001		
8	E	15	15		**OK - small snow patches in wooded areas**	008 / 001-015		
25	N	16	16		OK - scale 006 (1" = 976')	025 / 001-016		
26	S	19	19		**OK - small snow patches in wooded areas**	026 / 019-001		
27	N	23	23		**OK - small snow patches in wooded areas and higher elevations**	027 / 001-023		
28	S	27	27		**OK - small snow patches in wooded areas and higher elevations**	028 / 027-001		
			432					
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL
Client:	Matanuska Susitna Borough						**Date:**	5/20/2011
Site:	Mat-Su				**MISSION NAME:**	1001AME040	**Virtuals QC by:**	TS, CC (100%)
							Date:	5/24/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	5/12/2011				**Total Project Lines:**	**28 (1000 scale)**	**Date:**	
Flight Height:	4,724	**Ft** ***(AMT)***			**Current Accepted Lines:**	14		
Scale:	1000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Blurry Images	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
7	E	37	37	exp 017	Line NN ?, reflown 1002AME040.	007/ 001-037_nn		
6	W	31	31	017	OK	006/ 031-001		
5	E	26	26	020 - top	OK	005/ 001-026		
4	W	21	21	006	OK	004/ 021-001		
3	E	15	15		OK	003/ 001-015		
2	W	9	9		OK	002/ 009-001		
1	E	4	4		OK - slightly off line 001	001/ 001-004		
15	E	89	89	052, slight in corners	OK	015/ 001-089		
18	W	78	78	012, 033, 064	OK	018/ 078-001		
16	E	86	86	054	OK - Extreme tilt 053, +/-10°	016/ 001-086		
19	W	78	78		OK	079/ 078-001		
17	E	83	83	008, 025	OK - crab/tilt throughout	017/ 001-083		
22	W	60	59		Line NN - reflown 1002AME040, missed 059. Very small snow 026-016, 011-007, 005-003, 060, 040 tilt, 038 tilt +/- 4º	022/ 060, 058-001_nn		
20	E	80	80	021	OK - Very small snow 006-010, 017-018, 072-077. Tilt 009, 020, 074, 080	020/ 001-080		
23	W	49	49	032, 040	OK - crab/tilt 034-033, tilt 041 , Very small snow 049-037, 012-002 snow,	023/ 049-001		
			745					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CJC	
Client:	Matanuska Susitna Borough						**Date:**	5/20/2011	
Site:	Mat-Su				**MISSION NAME:**	1002AME040	**Virtuals QC by:**	CC	
							Date:	5/25/2011	
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**		
Crew:	Wenger/Iverson						**Date:**		
							Renamed by:		
Flight Date(s):	5/12/2011				**Total Project Lines:**	**28 (1000 scale)**	**Date:**		
Flight Height:	4,724	**Ft *(AMT)***			**Current Accepted Lines:**	4			
Scale:	1000'/"						**Partial:**	X	
							Complete:		
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc									
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***		

Line #	Flt Dir.	Total	Taken	Blurry Images	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
21	E	71	71	043, 046, 059, 063	OK	021 / 001-071		
24	W	46	46	005	OK	024 / 046-001		
22	E	62	62		OK - scale 030 (986'/")	022 / 001-062		
7	W	37	37		OK	007 / 037-001		
			216					
			snow patches in some wooded areas and along river banks lines 21, 22, and 24					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL	
Client:	Matanuska Susitna Borough						**Date:**	6/7/2011	
Site:	Mat-Su				**MISSION NAME:**	1003AME040	**Virtuals QC by:**	CL (100%)	
							Date:	6/7/2011	
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**		
Crew:	JJ/JS						**Date:**		
							Renamed by:		
Flight Date(s):	5/27/2011				**Total Project Lines:**	**28 (1000 scale)**	**Date:**		
Flight Height:	4,724	**Ft** ***(AMT)***			**Current Accepted Lines:**	3			
Scale:	1000'/"						**Partial:**	X	
							Complete:		
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc									
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***		
Line #	**Flt Dir.**	**Total**	**Taken**	**Rej. Exp. Range(s)**	**Remarks**	**Good Exp. Range(s)**	**Exp. for A.T.**	**Exp. for Ortho**	
12	W	93	93		OK - image 061, scrambled data lower right, reprocessed 6/9/11-fixed	012/ 093-001			
14	E	90	90		OK	014/ 001-090			
13	E	91	91		OK	013/ 001-091			
		274							
								PAGE: 1 of 1	

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	6/6/2011
Site:	Mat-Su				**MISSION NAME:**	1004AME040	**Virtuals QC by:**	JGH
							Date:	6/6/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JJ/JS						**Date:**	
							Renamed by:	JGH
Flight Date(s):	5/27/2011				**Total Project Lines:**	**28 (1000 scale)**	**Date:**	6/6/2011
Flight Height:	4,724	**Ft**	***(AMT)***		**Current Accepted Lines:**	1		
Scale:	1000'/"						**Partial:**	
							Complete:	X (1000 scale)

VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc

VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc

							PRODUCTION NOTES	
Line #	**Flt Dir.**	**Total**	**Taken**	**Rej. Exp. Range(s)**	**Remarks**	**Good Exp. Range(s)**	**Exp. for A.T.**	**Exp. for Ortho**
29	S	12	12		OK- line processed as "001" as noted on mdb. Renamed to "029"	029/ 012-001		

PAGE: 1 of 1

High Resolution Area - 2012

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	8/23/2012
Site:	Mat-Su				**MISSION NAME:**	MLow01AME040	**Virtuals QC by:**	JGH
							Date:	8/23/2012
Aircraft:	N898WW				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Hunter/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	8/18/2012				**Total Project Lines:**	**3 additional**	**Date:**	
Flight Height:	4,724	**Ft** ***(AMT)***			**Current Accepted Lines:**			
Scale:	1000'/"						**Partial:**	
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	
Line #	**Flt Dir.**	**Total**	**Taken**	**Rej. Exp. Range(s)**	**Remarks**	**Good Exp. Range(s)**	**Exp. for A.T.**	**Exp. for Ortho**
102	N	8	8		OK? - Very small gap in stereo cov. of peak exp 4-6	102/ 001-008		
103	W	22	22		OK	103/ 022-001		
101	E	10	10		OK? - Overcast/shadows	101/ 001-010 ?		
				Virtuals processed as lines 1-3, renamed to 101-103				
								PAGE: 1 of 1

1' Pixel Resolution (Lower Res) Areas - 2011

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CJC
Client:	Matanuska Susitna Borough						**Date:**	5/18/2011
Site:	Mat-Su				**MISSION NAME:**	2001AME040	**Virtuals QC by:**	TJS
							Date:	5/19/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Czechowictz/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	5/11/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft** ***(AMT)***			**Current Accepted Lines:**			
Scale:	2000'/"						**Partial:**	
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	
Line #	**Flt Dir.**	**Total**	**Taken**	**Rej. Exp. Range(s)**	**Remarks**	**Good Exp. Range(s)**	**Exp. for A.T.**	**Exp. for Ortho**
44	N	58	58		**snow patches in all images throughout line**	044 / 001-058		
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CJC	
Client:	Matanuska Susitna Borough						**Date:**	5/24/2011	
Site:	Mat-Su				**MISSION NAME:**	2002AME040	**Virtuals QC by:**	CJC	
							Date:	5/25/2011	
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**		
Crew:	Wenger/Iverson						**Date:**		
							Renamed by:		
Flight Date(s):	5/12/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**		
Flight Height:	9,449	**Ft** ***(AMT)***			**Current Accepted Lines:**	5			
Scale:	2000'/"						**Partial:**		
							Complete:		

VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc

VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	***PRODUCTION NOTES*** Exp. for A.T.	Exp. for Ortho
1	E	52	52		OK	001 / 001-052		
2	W	53	53		OK	002 / 053-001		
3	E	54	54		OK	003 / 001-054		
4	W	55	55		OK	004 / 055-001		
5	E	56	56		OK - scale 041 (1979'/")	005 / 001-056		
			270					
				Process issues - note different process dates				
					Lines 1-3 processed 5/19/11			
					Lines 4-5 even #s processed 5/21/11			
					Lines 4-5 odd #s processed 5/23/11			
					line 4 exp 052 & 054 processed 5/24/11			
					All virtuals are OK			

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	BG
Client:	Matanuska Susitna Borough						**Date:**	5/20/2011
Site:	Mat-Su				**MISSION NAME:**	2003AME040	**Virtuals QC by:**	CJC
							Date:	5/25/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	McSheehy/Pace						**Date:**	
							Renamed by:	
Flight Date(s):	5/14/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**			
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
32	E	53	53		**Very tight sidelap w/ line 33 at exp 032-036 , Gaps in Stereo coverage at higher elevations 010-053.** Snow at higher elevations and on N slopes	032 / 001-053		
33	W	60	60		**Very tight sidelap w/ line 32 at exp 034-037 , Gaps in Stereo coverage at higher elevations 042-033.** Snow at higher elevations and on N slopes	033 / 060-001		
34	E	62	62		OK, snow at higher elevations and on N slopes 050-062	034 / 001-062		
			175					
					Scale @ 033 / 006 = 1996'/"			
					All virtuals are OK			
							PAGE:	**1 of 1**

Project No.:	**6110401**			**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL	
Client:	Matanuska Susitna Borough					**Date:**	5/31/2011	
Site:	Mat-Su			**MISSION NAME:**	2004AME040	**Virtuals QC by:**	CL (10%)	
						Date:	5/31/2011	
Aircraft:	N6GR			**Camera Focal Length:**	**120.000**	**Adjusted QC by:**		
Crew:	JJ/JS					**Date:**		
						Renamed by:		
Flight Date(s):	5/23/2011			**Total Project Lines:**	**81 (2000 scale)**	**Date:**		
Flight Height:	9,449	**Ft**	***(AMT)***	**Current Accepted Lines:**	2			
Scale:	2000'/"					**Partial:**	X	
						Complete:		
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**						***PRODUCTION NOTES***		

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
9	E	61	61	009/ 001-005_rej, 054-055_rej	clouds 001-006 reflown 5/27/11, 054-055 reflown 5/26/11. Tilt 028	009/ 006-053, 056-061		
10	W	63	63		OK	010/ 063-001		
52	N	110	69		OK - partial line	052/ 001-069		
25	SE	37	37		OK	025/ 037-001		
35	NE	60	54	**035/ 050-054_rej**	clouds/shadows 050-054 (small cloud edge 014-ok) **tight stereo coverage: 023-029, 043-046, gap in stereo 031-034,** some snow 009-011, 021-026	035/ 001-049		
			284					
				Some snow at higher elevations and on frozen rivers				
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL
Client:	Matanuska Susitna Borough						**Date:**	5/31/2011
Site:	Mat-Su				**MISSION NAME:**	2005AME040	**Virtuals QC by:**	CL (10%)
							Date:	5/31/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JJ/JS						**Date:**	
							Renamed by:	
Flight Date(s):	5/24/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft** ***(AMT)***			**Current Accepted Lines:**	4		
Scale:	2000'/"						**Partial:**	X
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s	Exp. for A.T.	Exp. for Ortho
44	N	58	58		OK	044/ 001-058		
45	S	109	109		OK - **snow in woods 109-077**	045/ 109-001		
46	N	109	109		OK - **snow in woods 082-109**	046/ 001-109		
47	S	109	109		OK - **snow in woods 109-087**	047/ 109-001		
11	E	98	73	**011/ 066-073_rej**	**Large shadows 066-073** (1-7 reflown 5/26/2011-not needed)	011/ 001-065		
12	W	101	56		OK (001-004 reflown 5/27/2011 - not needed)	012/ 056-001		
13	E	101	29	013/ 014-029_rej	shadows of clouds 014-029, Not needed - entire line flown on 5/27/2011	013/ 001-013 (NN)		
					A little snow along river			
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL
Client:	Matanuska Susitna Borough						**Date:**	6/1/2011
Site:	Mat-Su				**MISSION NAME:**	2006AME040	**Virtuals QC by:**	CL (10%)
							Date:	6/1/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JJ/JS						**Date:**	
							Renamed by:	
Flight Date(s):	5/25/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	10		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
60	N	72	72		OK - some snow 060-072	060/ 001-072		
59	S	85	85		OK - some snow 084-080, 074-071,	059/ 085-001		
58	N	97	97		OK - some snow 080-085, 096-097	058/ 001-097		
57	S	109	109		OK - some snow 109-095, 081-079,	057/ 109-001		
56	N	110	110		OK - some snow 080-081, 099-110	056/ 001-110		
55	S	110	110		OK - some snow 110-107, 078-076	055/ 110-001		
54	N	110	110		OK - some snow 102-110, along river 013-081	054/ 001-110		
53	S	109	109		OK - some snow 109-105, along river 079-002	053/ 109-001		
51	N	110	110		OK - some snow along river 001-012, 080-096, 110	051/ 001-110		
52	S	110	43		OK - some snow 110-107, along river 092-076 (rest of line flown 5/23/11)	052/ 110-068		

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	6/7/2011
Site:	Mat-Su				**MISSION NAME:**	2007AME040	**Virtuals QC by:**	JGH
							Date:	6/7/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JJ/JS						**Date:**	
							Renamed by:	
Flight Date(s):	5/26/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	10		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
9	W	61	8		OK - reflight of 2004AME040	009/ 061-054		
12	E	101	48		OK- Stereo gaps South edge 097-101- outside project limits	012/ 054-101		
11	W	98	28		OK- Small stereo gaps South edge 089-094 - outside project limits	011/ 098-071		
8	W	60	60		**OK?** Very thin shadows 005-011, good detail and most cov by line 9 sidelap	008/ 060-001		
11	E	98	7		Reflight of 2005AME040 - not needed	(011/ 001-007_nn)		
16	E	102	102		OK	016/ 001-102		
17	W	102	102	017/ 001-014_rej	Thin cloud shadows 004-014, fairly good detail	017/ 015-102		
48	N	108	108		**OK?** A few small shadows 102-105, heavy shadows 106-108 - outside project limits	048/ 001-108		
49	S	109	109		**OK?** Very thin shadows 023-026. heavy shadows 108-109, outside project limits	049/ 109-001		
26	SE	39	39		OK- small gaps in stereo NE side 015-017, 027-029, 032-035 - outside project limits	026/ 039-001		
24	NW	35	35		OK	024/ 001-035		
23	SE	34	34		OK- small gaps in stereo SW side 001-003, 029-032 - outside project limits	023/ 034-001		
			680					
				Small amount of snow along rivers and in mountains				
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL
Client:	Matanuska Susitna Borough						**Date:**	6/6/2011
Site:	Mat-Su				**MISSION NAME:**	2008AME040	**Virtuals QC by:**	CL (100%)
							Date:	CL
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	6/7/2011
Crew:	JJ/JS						**Date:**	
							Renamed by:	
Flight Date(s):	5/27/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	12		
Scale:	2000'/"						**Partial:**	X
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
50	S	109	109		OK	050/ 109-001		
31	E	44	44		OK -009 scale 1" = +/-2300	031/ 001-044		
28	W	43	43		OK	028/ 043-001		
27	E	44	44		OK- 040 scale 1" = +/-2200	027/ 001-044		
20	W	95	95		OK	020/ 095-001		
22	E	50	50		OK	022/ 001-050		
21	W	51	51		OK - 034 scale 1'=+/-1878'	021/ 051-001		
19	E	99	99		OK	019/ 001-099		
18	W	102	102		OK	018/ 102-001		
15	E	101	101		OK	015/ 001-101		
14	W	101	101		OK - Hazier on North 026-001	014/ 101-001		
13	E	101	101		OK	013/ 001-101		
			940					
					(snow in mountains)			
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	CL
Client:	Matanuska Susitna Borough						**Date:**	6/7/2011
Site:	Mat-Su				**MISSION NAME:**	2009AME040	**Virtuals QC by:**	CL (100%)
							Date:	6/8/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JJ/JS						**Date:**	
							Renamed by:	
Flight Date(s):	5/27/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**			
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
7	W	59	59	**(007/ 005_rej ?)**	OK - **bad pan data, upper right 005, unable to fix with reprocess, could be mosaicked out**	007/ 059-001		
12	E	101	4		OK - Not needed OK- 2005AME040	012/ 001-004_nn		
9	W	61	6		OK	009/ 006-001		
6	E	57	57		OK - 044-047 reprocessed 6/9/11 to fix bad data SE corner - OK	006/ 057-001		
29	E	44	44		OK - 001 reprocessed 6/9/11 to fix bad data SE corner - OK	029/ 001-044		
30	W	44	19		OK- 044-026 processed, flight log said 044-025. Thin shadows S edge 027-026	030/ 044-026		
			189					
					(some snow in mountains)			
								PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	6/22/2011
Site:	Mat-Su				**MISSION NAME:**	2013AME040	**Virtuals QC by:**	JGH
							Date:	6/22/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JJ/TP						**Date:**	
							Renamed by:	
Flight Date(s):	6/18/2011				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	7		
Scale:	2000'/"						**Partial:**	X
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
63	SW	50	50		OK	063/ 050-001		
62	NE	48	48		OK	062/ 001-048		
64	E	53	37	064/ 035-037_rej	Partial line - clouds/shadows 035-037	063/ 001-034		
65	W	38	38	065/ 038-034_rej	Clouds/shadows 038-034	065/ 033-001		
66	E	37	26	066/ 024-026_rej	Partial line - clouds/shadows 024-026	066/ 001-023		
61	SW	46	46		OK	061/ 046-001		
30	E	44	44		OK	030/ 001-044		
11	W	98	16		OK- reflight of 2005AME040	011/ 075-060		
7	W	59	8		OK reflight of bad 005 from 2009AME040	007/ 008-001		
17	E	102	17		OK - Large glare line edge of SE pan 012, can be mosaicked out	017/ 001-017		
			330					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	8/8/2011
Site:	Mat-Su				**MISSION NAME:**	02MSBADDAME040	**Virtuals QC by:**	JGH
							Date:	8/8/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Czechowicz/Pace						**Date:**	
							Renamed by:	
Flight Date(s):	7/21/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	13		
Scale:	2000'/"						**Partial:**	X
							Complete:	

VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc

VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	***PRODUCTION NOTES*** Exp. for A.T.	Exp. for Ortho
139	W	68	68		Contrail shadow 012-016, ground detail ok, area also cov to limits by line 140. Reoccurring faint line not as visible	139/ 068-001		
140	E	71	71		OK	140/ 001-071		
141	W	75	75		OK	141/ 075-001		
142	E	78	78		OK	142/ 001-078		
138	S	74	74		OK	138/ 074-001		
137	N	70	70		OK	137/ 001-070		
136	S	69	69		OK	136/ 069-001		
135	N	66	66		OK- reoccurring faint line not as visible	135/ 001-066		
134	S	44	44		OK	134/ 044-001		
133	N	43	43		OK- +/- 5° crab first part	133/ 001-043		
132	S	42	42		OK	132/ 042-001		
131	N	40	40		OK	131/ 001-040		
130	S	33	33		OK	130/ 033-001		
			773					
				Replanned with +/- 55-70% Sidelap, 80% FOL				
		Data retrieved by Intergraph from bad FDS. Reoccurring light line across MOST images 1/4 from top						

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	8/18/2011
Site:	Mat-Su				**MISSION NAME:**	06MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	8/18/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	8/11/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	3		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
106	W	117	117		Bad File 037	106/ 117-001		
107	E	120	120		OK (005=2090'/")	107/ 001-120		
105	W	117	117		OK	105/ 117-001		
104	E	116	116	104/ 060-065_rej	Large shadow center 060-065	104/ 001-059, 066-116		
103	W	115	115	103/ 061-055_rej	Clouds/shadows 055-061	103/ 115-062, 054-001		
102	E	115	115	102/ 053-062_rej, 088-099_rej	Major clouds/shadows 053-062, 088-099	102/ 001-052, 063-087, 100-115		
			700					
		Band issue left side 102~069, 104/ 016, 051, 116, 106~037. Reprocessed 8/18/11 - OK						
					Slightly hazy uneven exposures			

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	8/25/2011
Site:	Mat-Su				**MISSION NAME:**	01MSB_AME006	**Virtuals QC by:**	JGH
							Date:	8/25/2011
Aircraft:	N57175				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	JB/CP						**Date:**	
							Renamed by:	
Flight Date(s):	8/12/2011				**Total Project Lines:**		**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	14		
Scale:	2000'/"						**Partial:**	X
							Complete:	

VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc

VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	PRODUCTION NOTES Exp. for A.T.	Exp. for Ortho
143	NW	25	25		OK	143/ 001-025		
144	SE	24	24		OK	144/ 024-001		
145	NW	23	23		OK	145/ 001-023		
146	SE	22	22		OK	146/ 022-001		
147	NW	21	21		OK	147/ 001-021		
148	E	43	43		OK	148/ 001-043		
(149)	W	41			Invalidated - overwritten by second pass			
149	E	41	41		OK	149/ 001-041		
150	W	40	40		OK	150/ 040-001		
151	E	38	38		OK	151/ 001-038		
(152)	W	36			Invalidated - overwritten by second pass			
152	E	36	36		OK	152/ 001-036		
153	E	90	90		OK- shadow E end, outside project area	153/ 001-090		
154	W	89	78		OK- Missing 011, wouldn't process	154/ 089-012		
154	E	89	10		OK- 60% FOL between passes w/o 011	154/ 001-010		
155	E	89	89		OK	155/ 001-089		
156	W	89	89		OK	156/ 089-001		
			669					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	8/19/2011
Site:	Mat-Su				**MISSION NAME:**	07MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	8/19/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	8/16/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**	3		
Scale:	2000'/"						**Partial:**	X
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
157	E	89	89		OK	157/ 001-089		
158	W	88	88		OK	158/ 088-001		
159	E	88	88		OK- clouds E end, outside limits	159/ 001-088		
101	E	113	113	101/ 073-113_rej	Shadows S side 027-071, all outside project limits. Clouds/shadows throughout 073-113, most outside limits and cov by line 102 sidelap	101/ 001-072		
			378					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	9/15/2011
Site:	Mat-Su				**MISSION NAME:**	09MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	9/16/2011
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Vogt, Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	9/9/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft *(AMT)***			**Current Accepted Lines:**	3 & 4 partial		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
159	E	88	77		Not Needed, flown & OK 8/16/11 mission 07MSB_ADDAME040. 078-079 wouldn't process	159/ 001_nn-077_nn		
159	W	88	9		Not Needed	159/ 080_nn-088_nn		
160	W	88	88	**160/ 008-001_rej**	Solid clouds W end. +/- 1000' off line at start, occ crab/tilt thru-out, heavy crab/tilt 088-079, cov ok because of 80% FOL & 65 % Side Lap. Thin shadow 070-075	160/ 088-009		
161	E	88	88	**161/ 001-015_rej**	Solid clouds W end. Small clds E end, out of limits. Some crab/tilt, heavy 069-070 cov ok	161/ 016-088		
162	W	87	77	**162/ 022-011_rej**	Solid clouds W end. Small clds E end, out of limits. Tilt 028-029, 057-058, cov ok	162/ 087-023		
163	E	88	88	**163/ 001-024_rej**	Solid clouds W end. Large shadow E end, out of limits. Smaller clds/shad 063-071, cov by SL	163/ 025-088		
168	E	58	58		OK - some clds/shad 015-020, shadows 045-058, all should be covered by SL or Lines 157-158	168/ 058-001		
167	W	55	55		OK - some clouds/shad thru-out esp at ends, should be cov by SL and overlapping lines	167/ 001-055		
166	E	54	54	???	OK? Shadows 001-005 cov by lines 170-171, Clouds 027-029 cov by SL, 050-054 cov by L 155-156, shadows 34-42 cov by SL	166/ 054-001		
172	W	28	3	172/ 001-003_rej	Line aborted due to clouds	none		
			597					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	10/4/2011
Site:	Mat-Su				**MISSION NAME:**	11MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	10/4/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	9/27/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft**	***(AMT)***		**Current Accepted Lines:**			
Scale:	2000'/"						**Partial:**	X
							Complete:	
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
162	E	87	16		Reflight of 9/9/11 rejected. **Exp 001-008 have not been flown for this line**	162/ 009-024	162/ 023-024	162/ 009-022
161	W	88	17		OK - Reflight of 9/9/11	161/ 017-001	161/ 017-016	161/ 015-001
160	E	88	10		OK - Reflight of 9/9/11	160/ 001-010	160/ 009-010	160/ 001-008
163	W	88	26		OK - Reflight of 9/9/11, a little crab E 1/2	163/ 026-001	163/ 026-025	163/ 024-001
164	E	87	87	**164/ 036-045, 073-087_rej**	Heavy clouds/shadows mid line & E end	164/ 001-035, 046-072		
101	E	113	113		001-070 Not needed, ok 8/16/11. A few very small clouds and large long shadows thru-out	101/ (001-070_nn) 071-113	101/ 071-072	101/ 073-113
102	W	115	6		001-109 ovrwritten by second pass 110-115 not needed, OK 8/11/11	(102/ 115-110_nn)		
102	W	115	109		001-050, 065-085, 102-109 not needed, ok 8/11/11 flight	102/ (109-102_nn) 101-086, (085-065_nn) 064-051(050-001_nn)	102/ 101-100, 087-086, 064-063, 053-051	102/ 099-088, 062-053
103	E	115	115		001-052, 064-115 not needed, ok 8/11/11 flight	103/ (001-052_nn) 053-063 (064-115_nn)	101/ 053-054, 062-063	101/ 055-061
104	W	116	116		116-068, 057-001 not needed, ok 8/11/11 flight. Long shadow 058-061 covered by sidelap	104/ (116-068_nn), 067-058 (057-001_nn)	104/ 067-068, 059-058	104/ 065-060
			615					
				A little snow in shadows at higher elevations. Extremely long shadows				

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	10/25/2011
Site:	Mat-Su				**MISSION NAME:**	12MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	10/25/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	10/11/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft** ***(AMT)***			**Current Accepted Lines:**	2		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
162	W	87	10		OK	162/ 010-001	162/ 010-001	162/ 008-001
164	E	87			(Overwritten by second pass)			
165	E	51	51	165/ 001-031_rej	Clouds first 1/2, not needed, reflown 10/12/11	165/ 032_nn-051_nn		
164	W	87	17		OK- reflight area from 11MSB_ADDAME040	164/ 087-071	164/ 087-071	164/ 087-073
164	W	87	14		OK- reflight area from 11MSB_ADDAME040	164/ 047-034	164/ 047-034	164/ 045-036
			92					

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	10/24/2011
Site:	Mat-Su				**MISSION NAME:**	13MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	10/24/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iversen						**Date:**	
							Renamed by:	
Flight Date(s):	10/12/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft** ***(AMT)***			**Current Accepted Lines:**	15		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
165	E	51	51		OK- small snow patches 009-015	165/ 051-001		
169	SE	28	28		OK- a little snow in higher elevations	169/ 028-001		
170	NW	27	27		OK	170/ 001-027		
171	SE	28	28		OK - snow 024-028	171/ 028-001		
172	NW	28	28		OK - snow 011-028	172/ 001-028		
176	E	30	30		OK	176/ 001-030		
175	W	30	30		OK	175/ 030-001		
174	E	30	30		OK	174/ 001-030		
173	W	31	31		OK- a little snow 002-018	173/ 031-001		
177	S	23	23		OK	177/ 023-001		
178	N	25	25		OK	178/ 001-025		
179	S	28	28		OK	179/ 028-001		
180	N	30	30		OK	180/ 001-030		
129	SW	39	39		OK, turning, tilt at start, coverage ok. Some snow	129/ 039-001		
128	NE	40	40		OK- a little snow at higher elevations	128/ 001-040		
			468					
					19.15-19.8° Sun angle throughout			
					Long shadows, some snow at higher elevations			

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	10/25/2011
Site:	Mat-Su				**MISSION NAME:**	14,17MSB_ADDAME040	**Virtuals QC by:**	JGH
							Date:	10/25/2011
Aircraft:	N73TM				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Wenger/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	10/17/2011				**Total Project Lines:**	**80 (replanned areas)**	**Date:**	
Flight Height:	9,449	**Ft *(AMT)***			**Current Accepted Lines:**	3		
Scale:	2000'/"						**Partial:**	X
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
14MSB_ADDAME040								
111	W	35	35		OK, Much snow S side- outside proj limits	111/ 001-035		
112	E	45	45		OK,snow S side- outside proj limits	112/ 045-001		
113	W	49	38		Missed exp 015-017, 019 line reflown	113/ 001-014_nn, 018_nn, 020-042_nn		
17MSB_ADDAME040								
113	W	49			OK - Some snow in shadows & at higher elev	113/ 001-049		
114	E	54		**114/ 038-029_rej**	Thin clouds, haze E end, cov by line 120. Clouds 029-038. some snow	114/ 054-039, 028-001		
				Very low sun angle, 18.8° start, 17.3° at end. Extremely long shadows				

PAGE: 1 of 1

1' Pixel Resolution Areas - 2012

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	sal
Client:	Matanuska Susitna Borough						**Date:**	8/9/2012
Site:	Mat-Su				**MISSION NAME:**	MATSU_01AME040	**Virtuals QC by:**	sal
							Date:	8/9/2012
Aircraft:	N898WW				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Czechowicz/Pace						**Date:**	
							Renamed by:	
Flight Date(s):	7/27/2012				**Total Project Lines:**	**81 (2000 scale)**	**Date:**	
Flight Height:	9,450	**Ft**	***(AMT)***		**Current Accepted Lines:**			
Scale:	2000'/"						**Partial:**	x
							Complete:	
VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc								
VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc							***PRODUCTION NOTES***	

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
125	N	40	40		OK? Thin cloud shadows w. edge exps. 6-18	125/001-040		
126	S	40	40		OK	126/040-001		
127	N	40	40		OK. Minor drift exps. 24-28, 36-38	127/001-040		
128	S	40	40		OK. Minor drfit thru line	128/040-001		
129	N	39	39		OK? Thin clouds and shadows w. edge exps. 12-19, 23-28	129/001-039		
			159					
					Some snow in mountain areas			

PAGE: 1 of 1

Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	8/27/2012
Site:	Mat-Su				**MISSION NAME:**	MATSU02AME040	**Virtuals QC by:**	JED
							Date:	8/27/2012
Aircraft:	N898WW				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Hunter/Iverson						**Date:**	
							Renamed by:	
Flight Date(s):	8/22/2012				**Total Project Lines:**		**Date:**	
Flight Height:	9,450	**Ft** ***(AMT)***			**Current Accepted Lines:**	13		
Scale:	2000'/"						**Partial:**	X
							Complete:	

VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc

VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	PRODUCTION NOTES Exp. for A.T.	Exp. for Ortho
108	E	120	120		OK	108/ 001-120		
109	W	123	123		OK	109/ 123-001		
110	E	124	124	**110/ 001-016_rej**	Clouds West end	110/ 017-124		
117	W	25	25		OK	117/ 025-001		
116	E	48	48		OK	116/ 001-048		
115	W	58	58		OK	115/ 058-001		
114	E	54	54		OK	114/ 001-054		
113	W	49	49		OK	113/ 049-001		
112	E	45	45		OK	112/ 001-045		
111	W	35	35		OK	111/ 035-001		
118	W	11	11		OK	118/ 011-001		
124	E	71	71	**124/ 042-071_rej**	Heavy clouds/shadows East 1/2	124/ 001-041		
121	W	77	77		OK	121/ 077-001		
120	E	80	80		OK	120/ 001-080		
119	W	56	56		OK	119/ 056-001		
			976					
					80% FOL +/- 60% Sidelap			

PAGE: 1 of 1

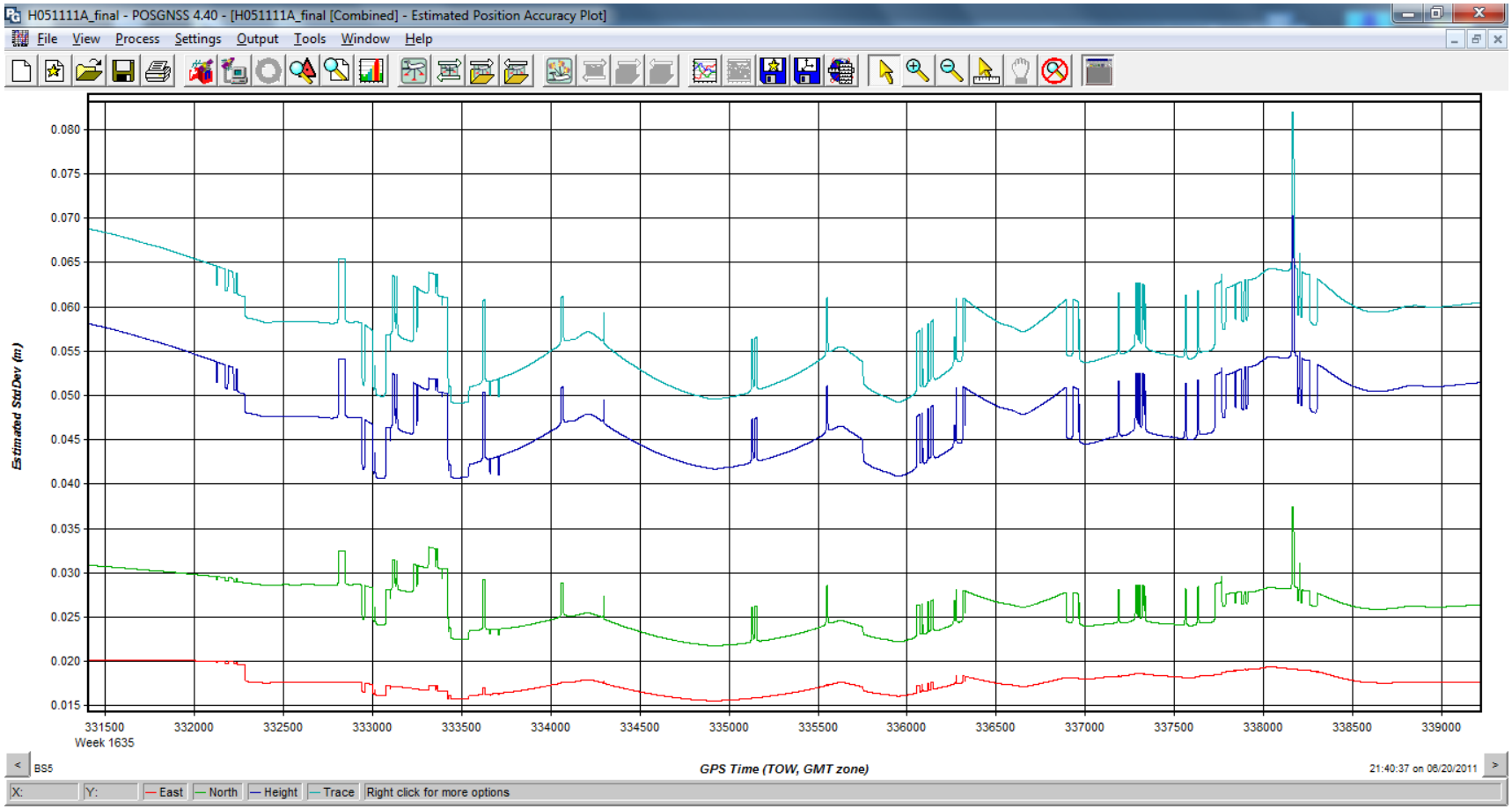
Project No.:	**6110401**				**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH
Client:	Matanuska Susitna Borough						**Date:**	9/5/2012
Site:	Mat-Su				**MISSION NAME:**	Matsu_03AME151	**Virtuals QC by:**	JGH
							Date:	9/5/2012
Aircraft:	N6GR				**Camera Focal Length:**	**120.000**	**Adjusted QC by:**	
Crew:	Sarber/Pace						**Date:**	
							Renamed by:	
Flight Date(s):	8/29/2012				**Total Project Lines:**		**Date:**	
Flight Height:	9,450	**Ft**	***(AMT)***		**Current Accepted Lines:**	5		
Scale:	2000'/"						**Partial:**	
							Complete:	X
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**							***PRODUCTION NOTES***	

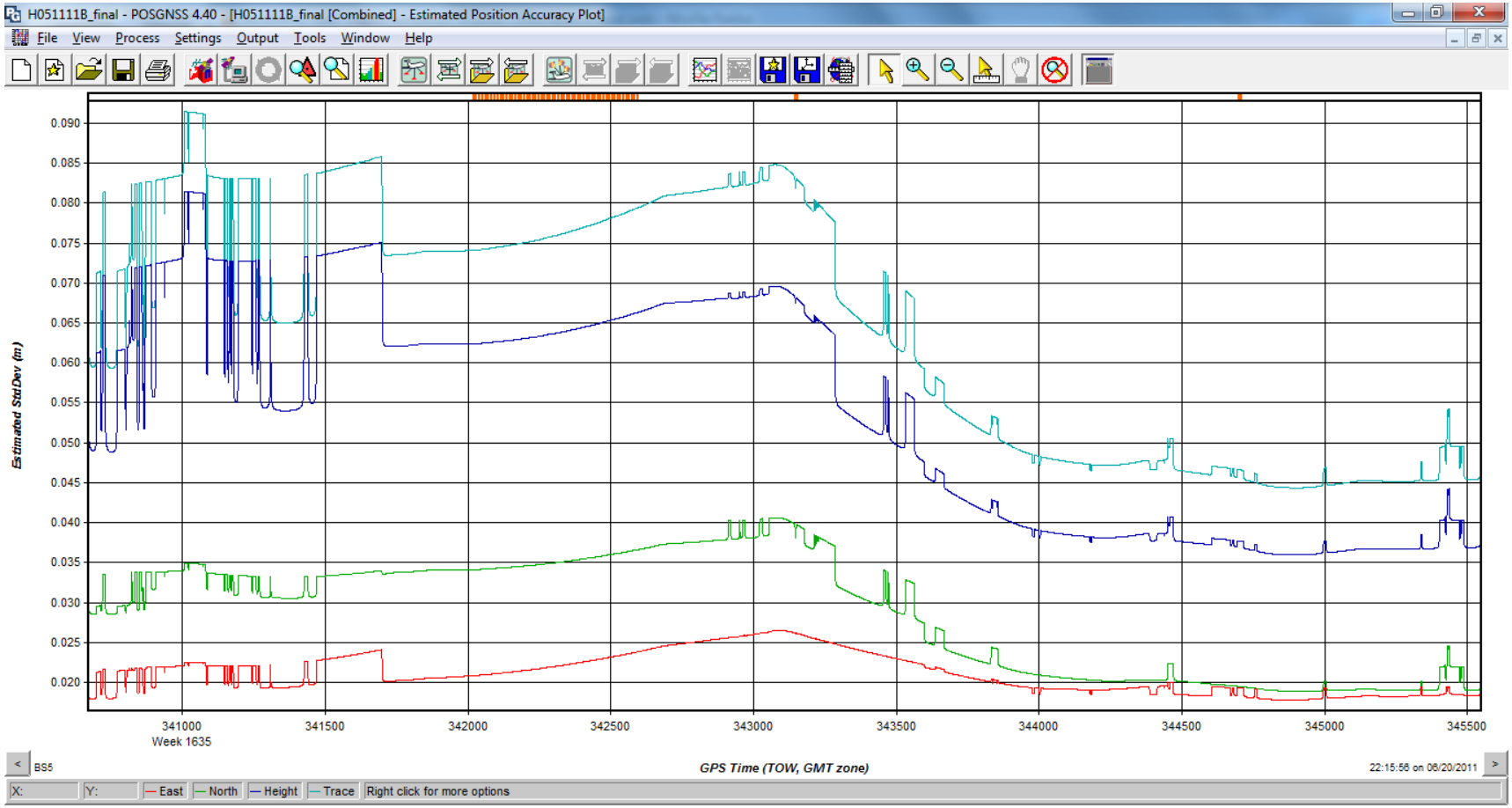
Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
123	E	72	72		OK	123/ 001-072		
122	W	75	75		OK - 026 = +/-2125'/"	122/ 075-001		
121	E	77	77		OK - also flown MATSU02AME040, 8/22/12	121/ 001-077		
124	W	71	71		OK - RF of MATSU02AME040	124/ 071-001		
110	W	124	20		OK - RF W end from MATSU02AME040	110/ 020-001		
			315					
					Wrong date on MDB file - "6/7/2012"			
					+/- 80% FOL, 70% Sidelap			
								PAGE: 1 of 1

Project No.:	**6110401**			**NOTE: View THUMBNAILS**		**Thumbs Check by:**	JGH	
Client:	Matanuska Susitna Borough					**Date:**	9/18/2012	
Site:	Mat-Su			**MISSION NAME:**	Matsu_07AME151	**Virtuals QC by:**	JGH	
						Date:	9/18/2012	
Aircraft:	N6GR			**Camera Focal Length:**	**120.000**	**Adjusted QC by:**		
Crew:	Sarber/Pace					**Date:**		
						Renamed by:		
Flight Date(s):	9/10/2012			**Total Project Lines:**		**Date:**		
Flight Height:	9,450	**Ft**	***(AMT)***	**Current Accepted Lines:**				
Scale:	2000'/"					**Partial:**	X	
						Complete:		
***VIEW THUMBNAILS for coverage, crab, tilt, clouds, shadows,smoke, snow, flooding, etc**								
***VIEW VIRTUALS for sharpness, band misregistration, tiling, color bleed, glare, etc**						***PRODUCTION NOTES***		

Line #	Flt Dir.	Total	Taken	Rej. Exp. Range(s)	Remarks	Good Exp. Range(s)	Exp. for A.T.	Exp. for Ortho
31	E	44	44		OK - Less snow than 5/27/11 mission 2008AME040	031/ 001-044		
30	W	44	44		OK - Cld shad E end. **Much more snow** than 6/18/11 mission 2013AME040	030/ 044-001		
29	E	44	44		OK - Less snow than 5/27/11 mission 2009AME040. **Sm shadow in proj limits E end**	029/ 001-044		
28	W	43	43	? 028/ 035-030, 022-020_rej	? Thin clouds 035-030, shad 022-020. Less snow than 5/27/11 mission 2008AME040	? 028/ 044-001		
27	E	44	44	027/ 025-033_rej	Clds/shads 025-033. Less snow than 5/27/11 mission 2008AME040	027/ 001-024, 034-044		
			219					
					Snow in higher elevations			
					Wrong date on MDB file - "6/7/2012"			
								PAGE: 1 of 1

11 PHOTO MISSION GPS PROCESSING RMSE PLOTS

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0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
341000
Week 1635
341500
342000
342500
343000
343500
344000
344500
345000
345500
BS5
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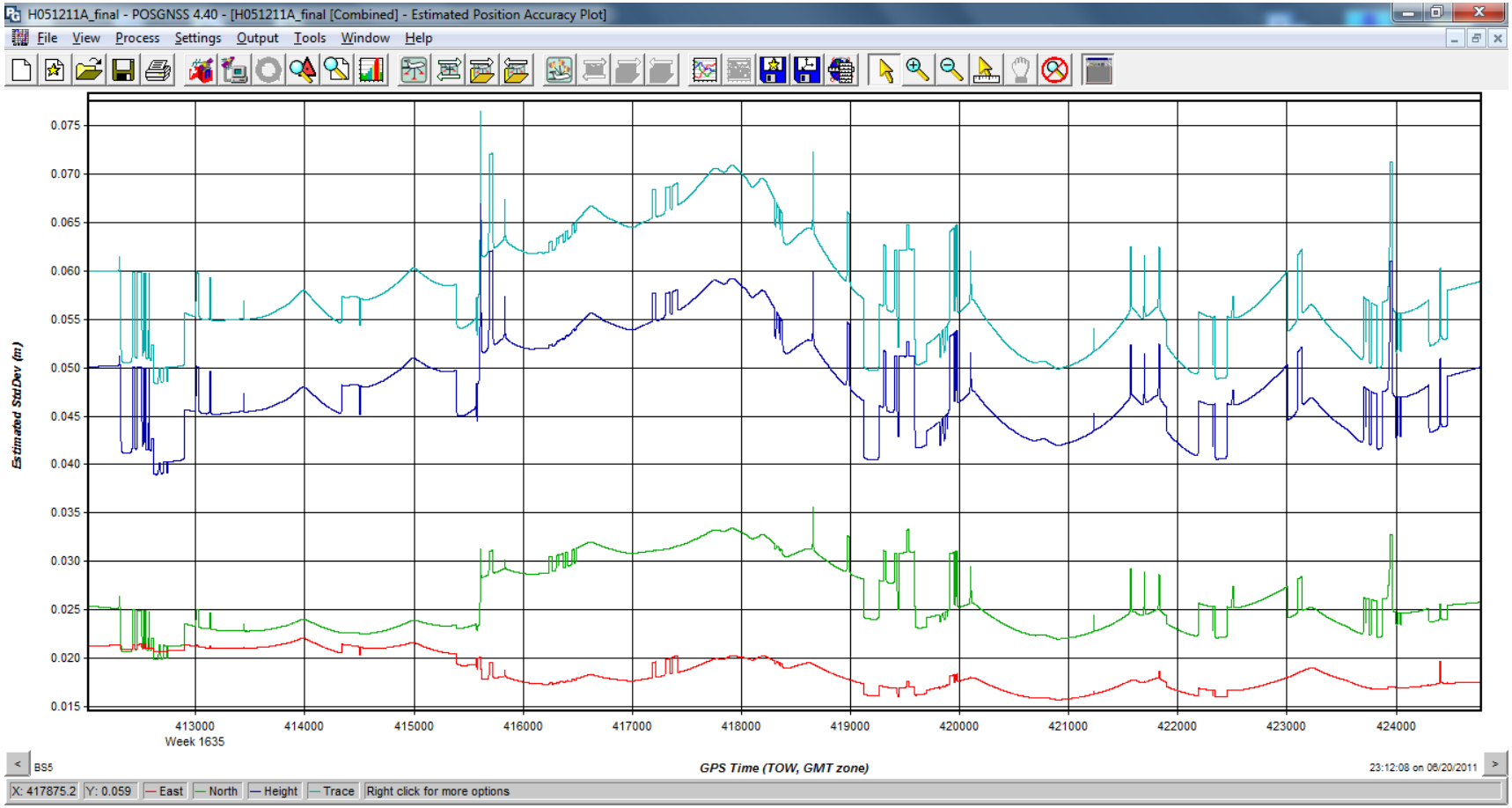
X:
Y:
East
North
Height
Trace
Right click for more options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0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
413000
Week 1635
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
BS5
GPS Time (TOW, GMT zone)
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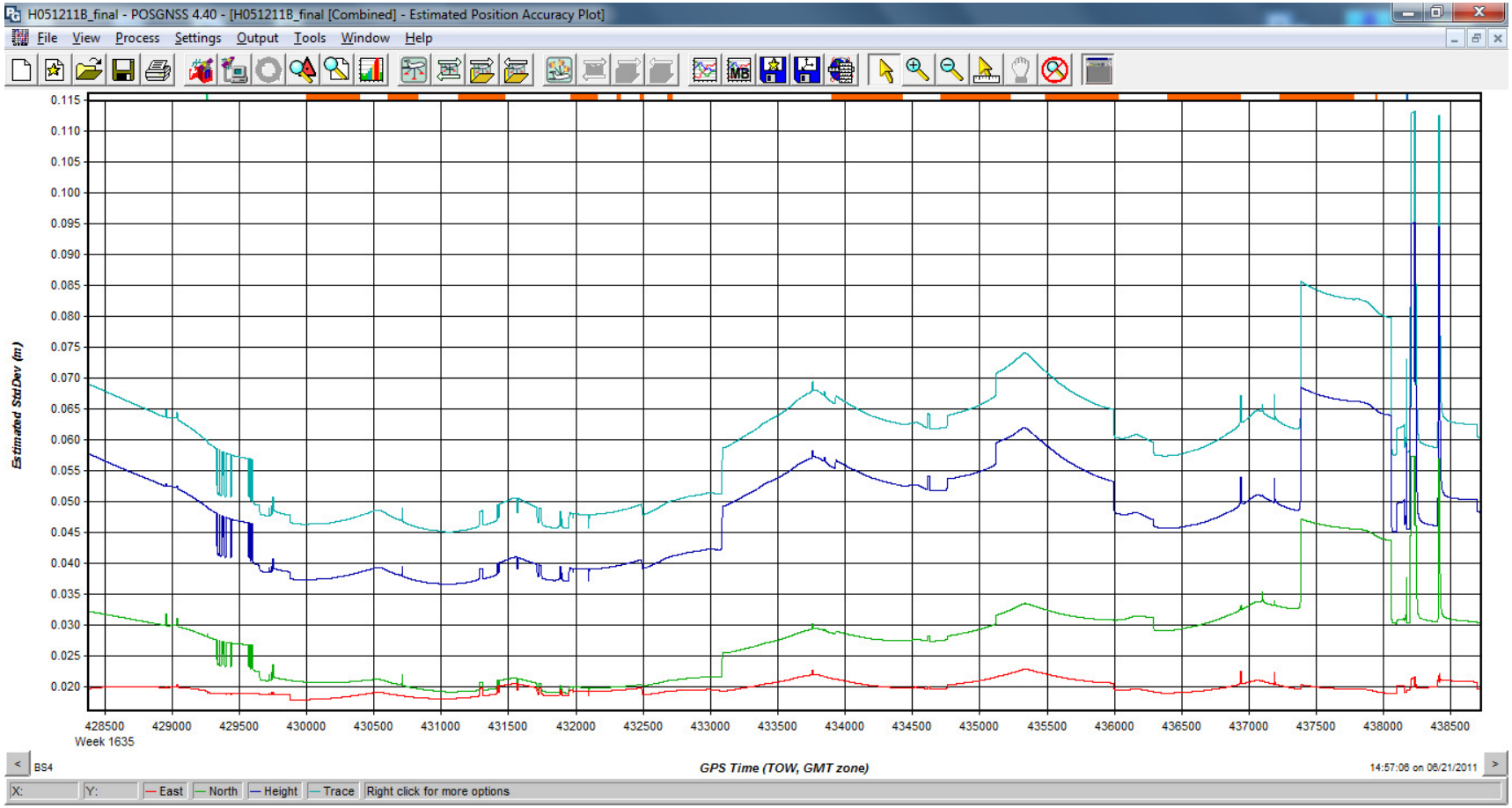
East
North
Height
Trace
Right click for more options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0.095
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0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
428500 429000 429500 430000 430500 431000 431500 432000 432500 433000 433500 434000 434500 435000 435500 436000 436500 437000 437500 438000 438500
Week 1635
BS4
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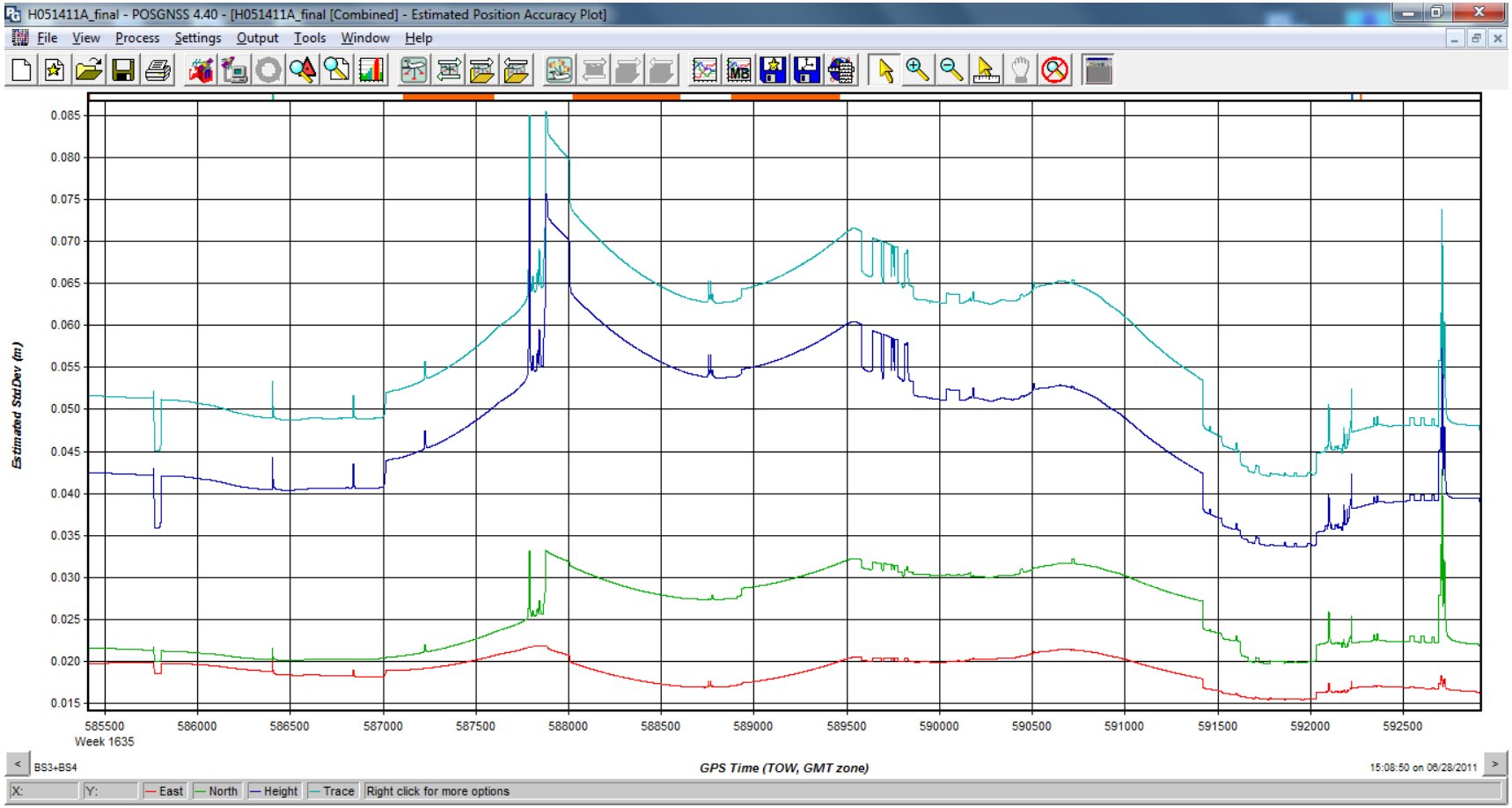
Y:
East
North
Height
Trace
Right click for more options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Estimated StdDev (m)
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0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
585500
Week 1635
586000
586500
587000
587500
588000
588500
589000
589500
590000
590500
591000
591500
592000
592500
BS3+BS4
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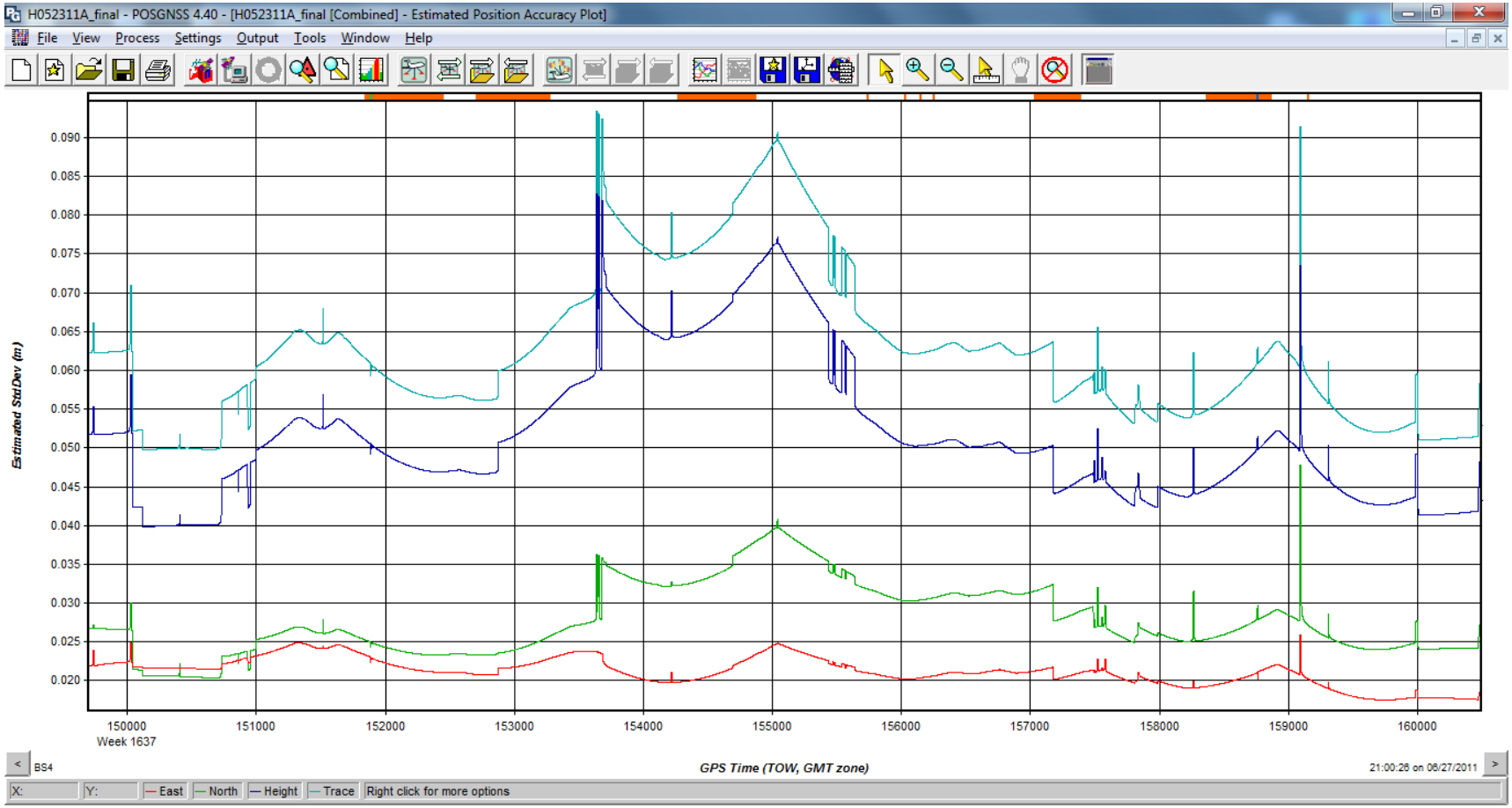
15:08:50 on 06/28/2011
X:
Y:
East
North
Height
Trace
Right click for more options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0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
150000
Week 1637
151000
152000
153000
154000
155000
156000
157000
158000
159000
160000
BS4
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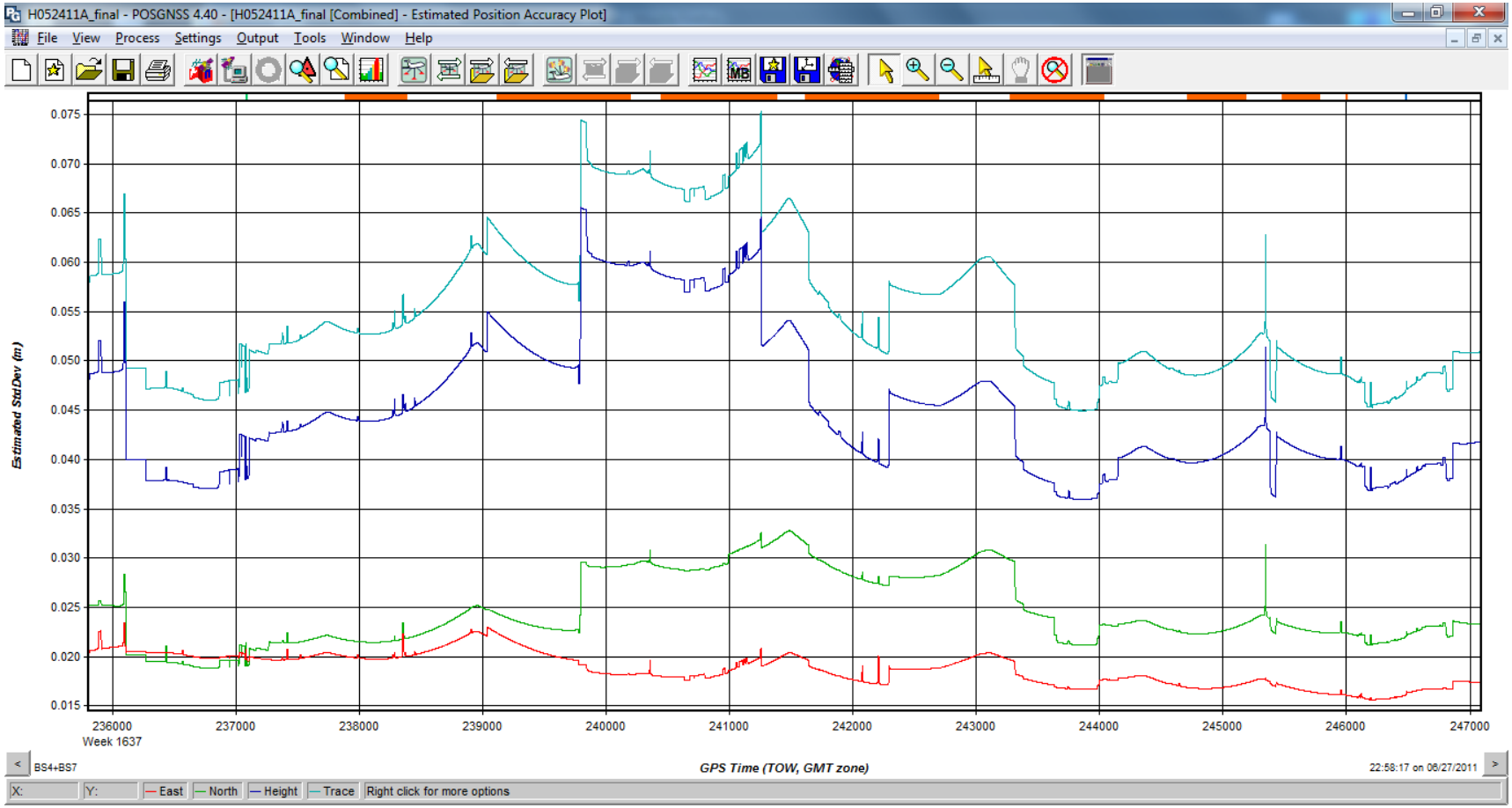
X:
Y:
East
North
Height
Trace
Right click for more options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File View Process Settings Output Tools Window Help
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0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
236000
Week 1637
237000
238000
239000
240000
241000
242000
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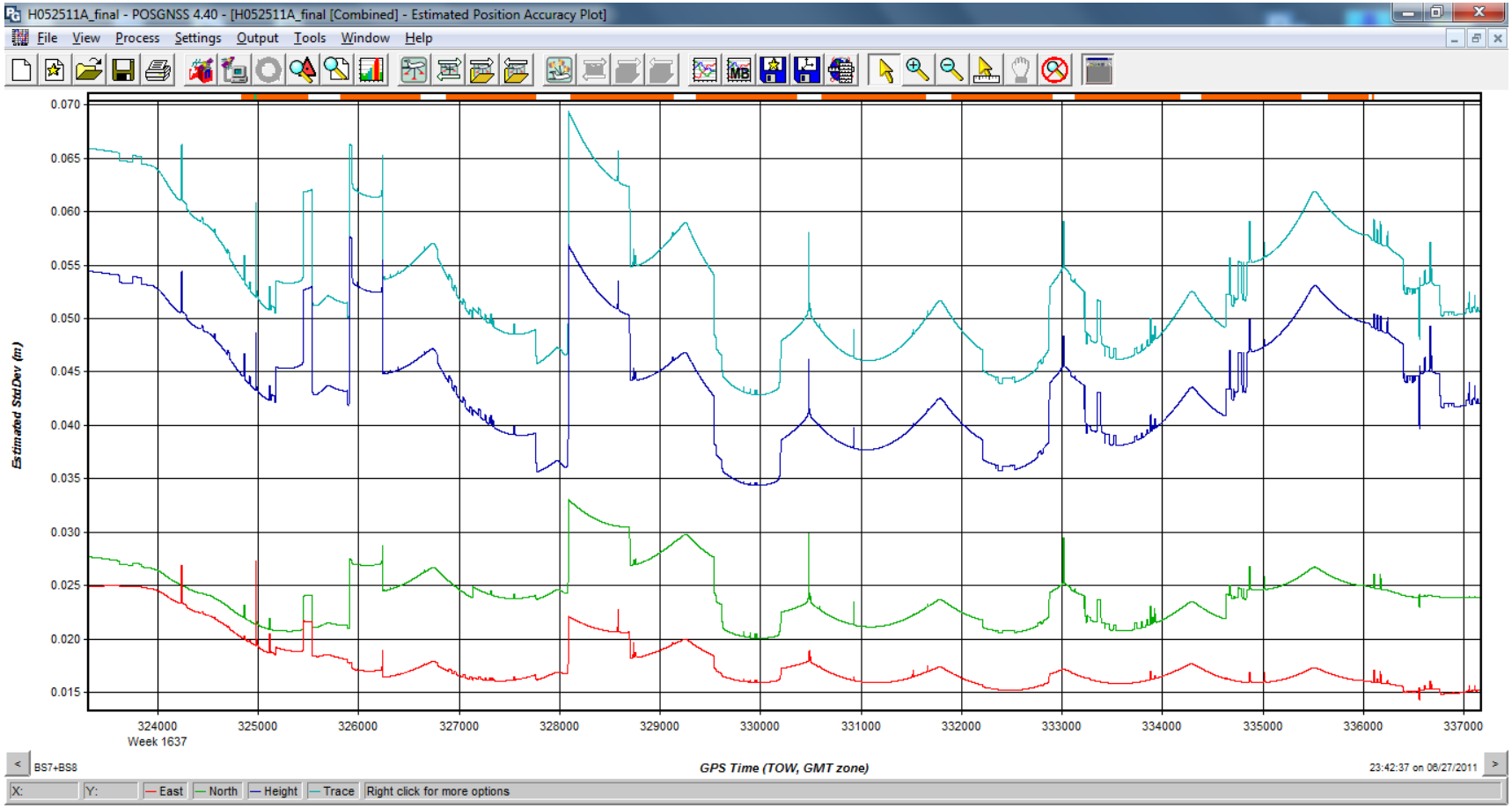
244000
245000
246000
247000
BS4+BS7
GPS Time (TOW, GMT zone)
22:58:17 on 06/27/2011
X:
Y:
East
North
Height
Trace
Right click for more options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File View Process Settings Output Tools Window Help
Estimated StdDev (m)
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0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
324000
Week 1637
325000
326000
327000
328000
329000
330000
331000
332000
333000
334000
335000
336000
337000
BS7+BS8
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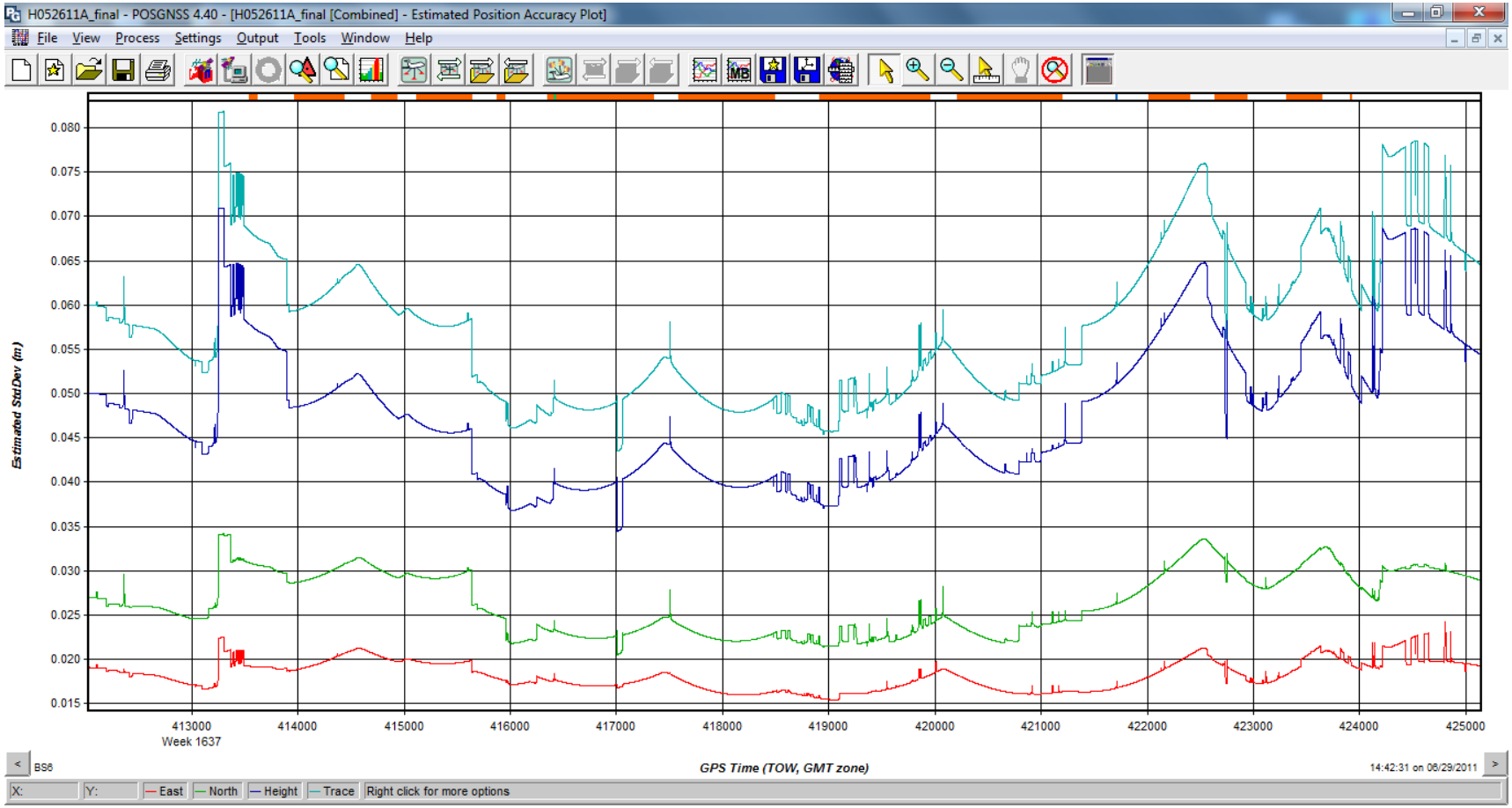
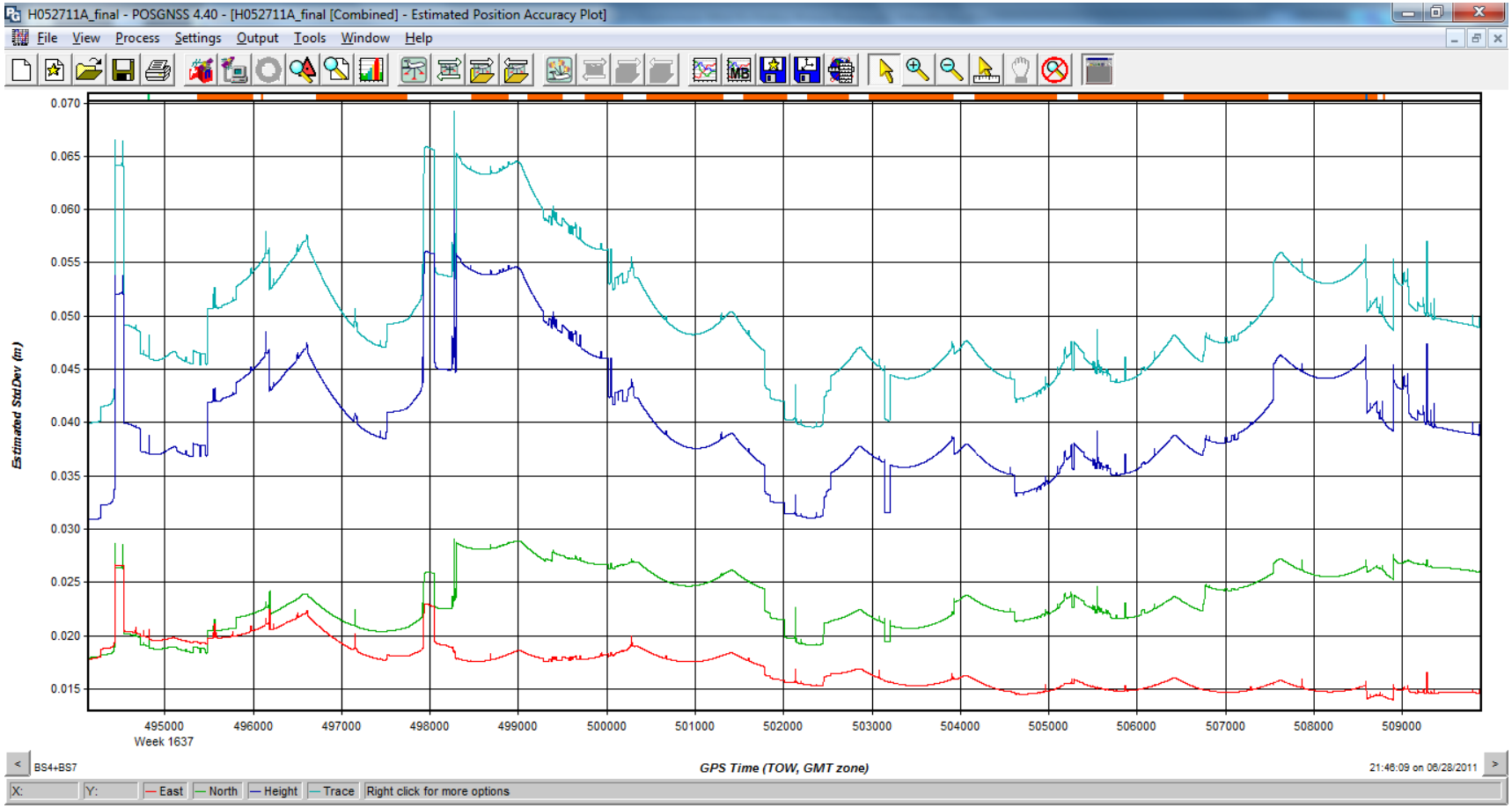
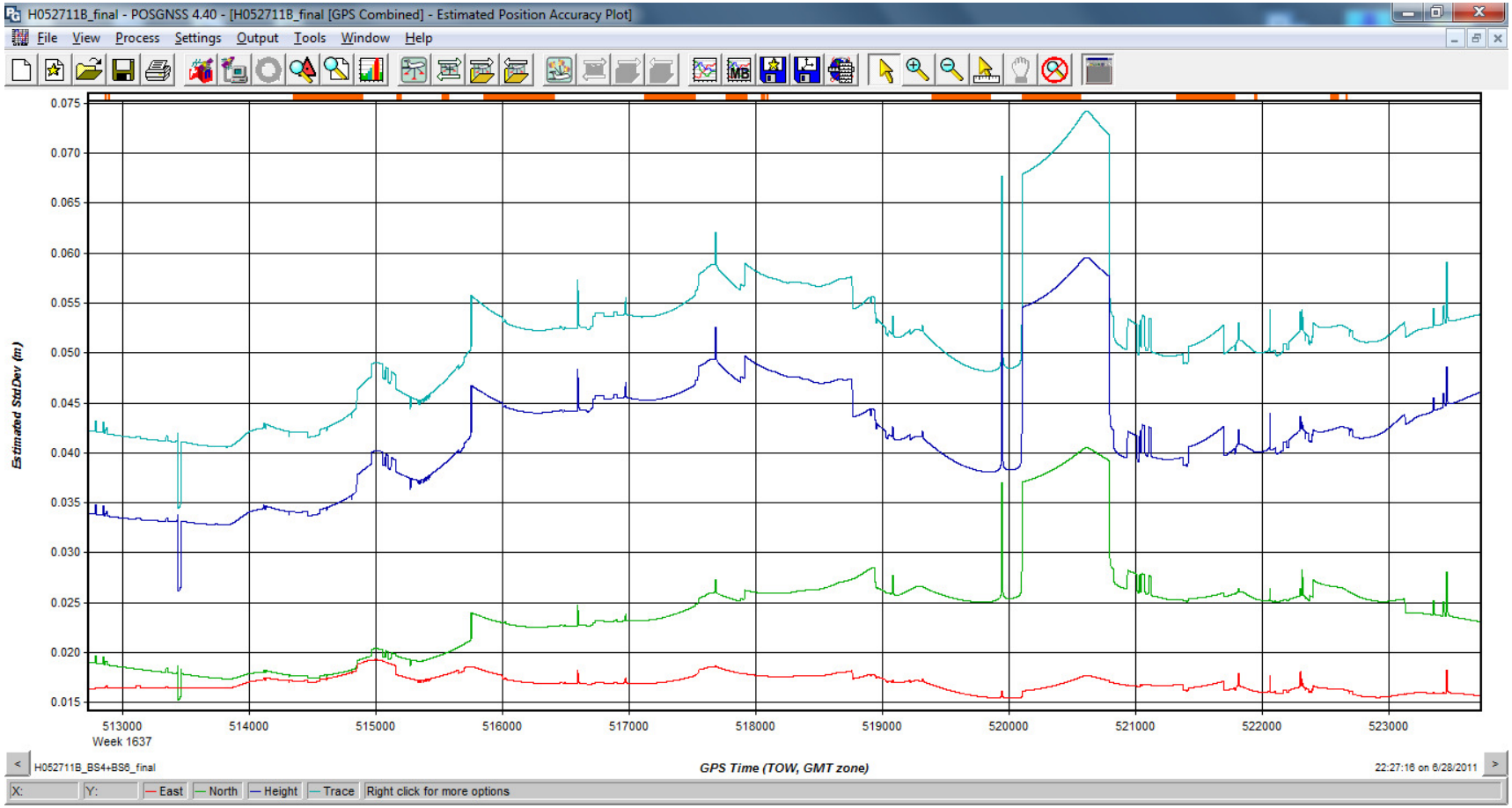
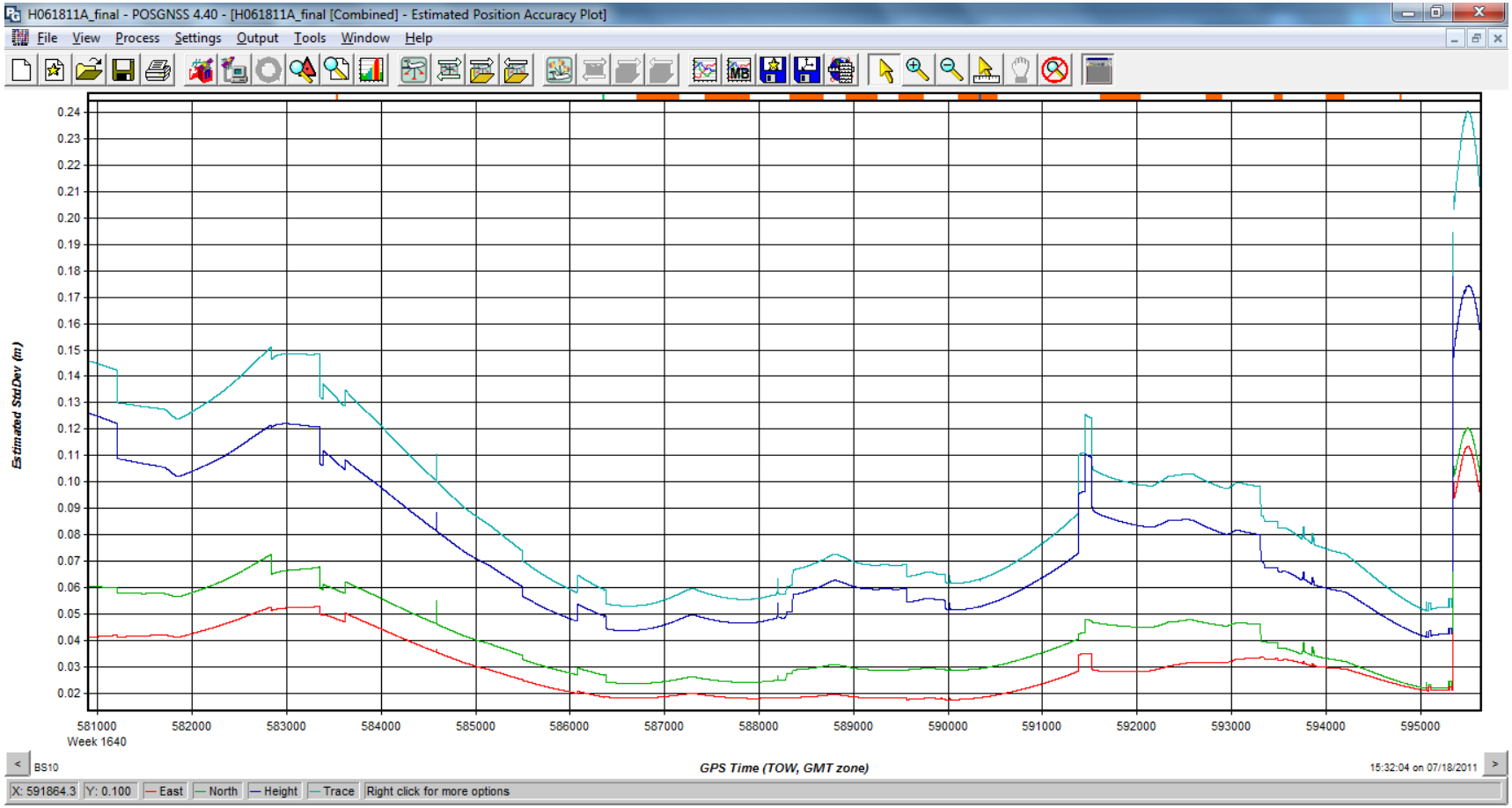
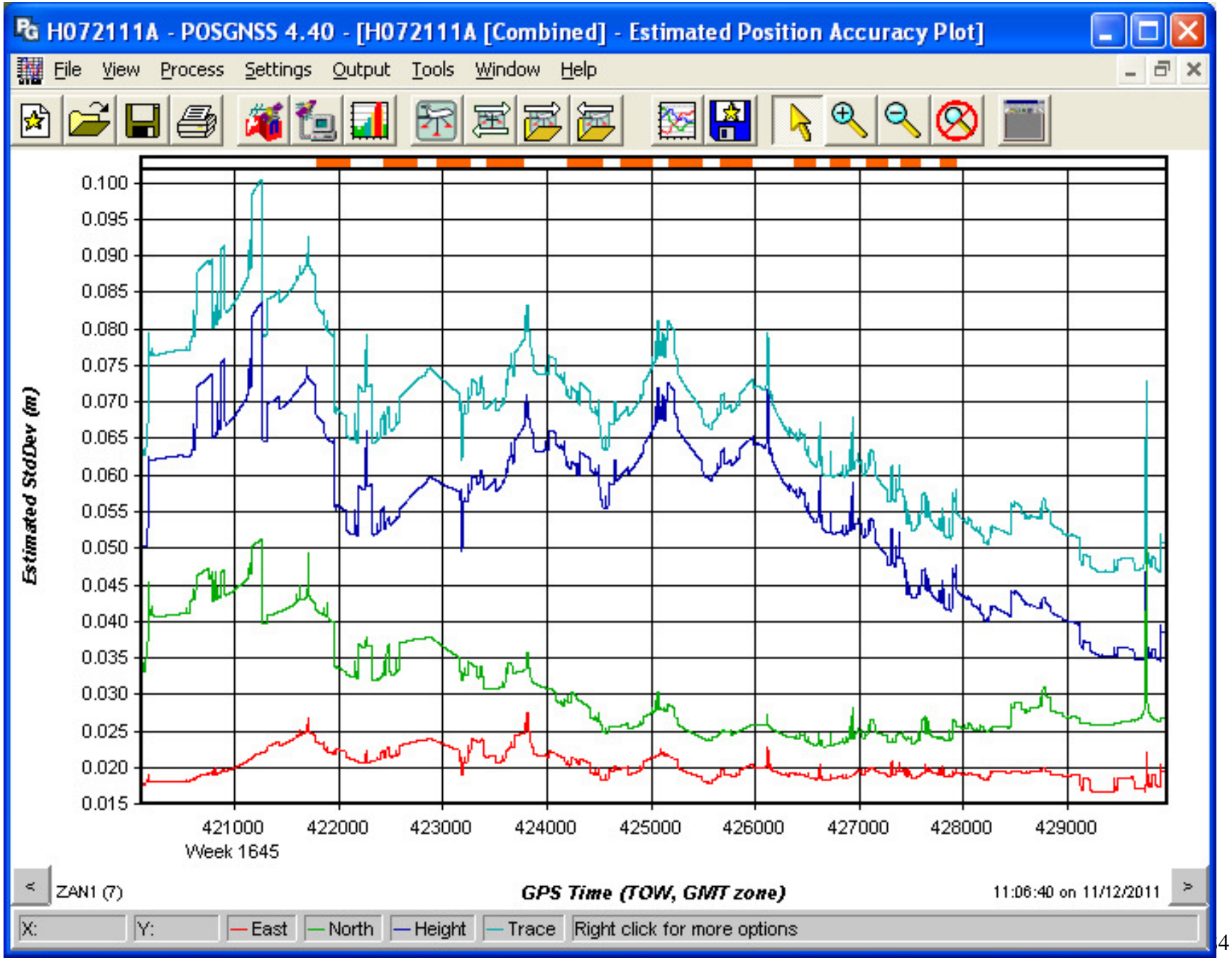
X:
Y:
East
North
Height
Trace
Right click for more options

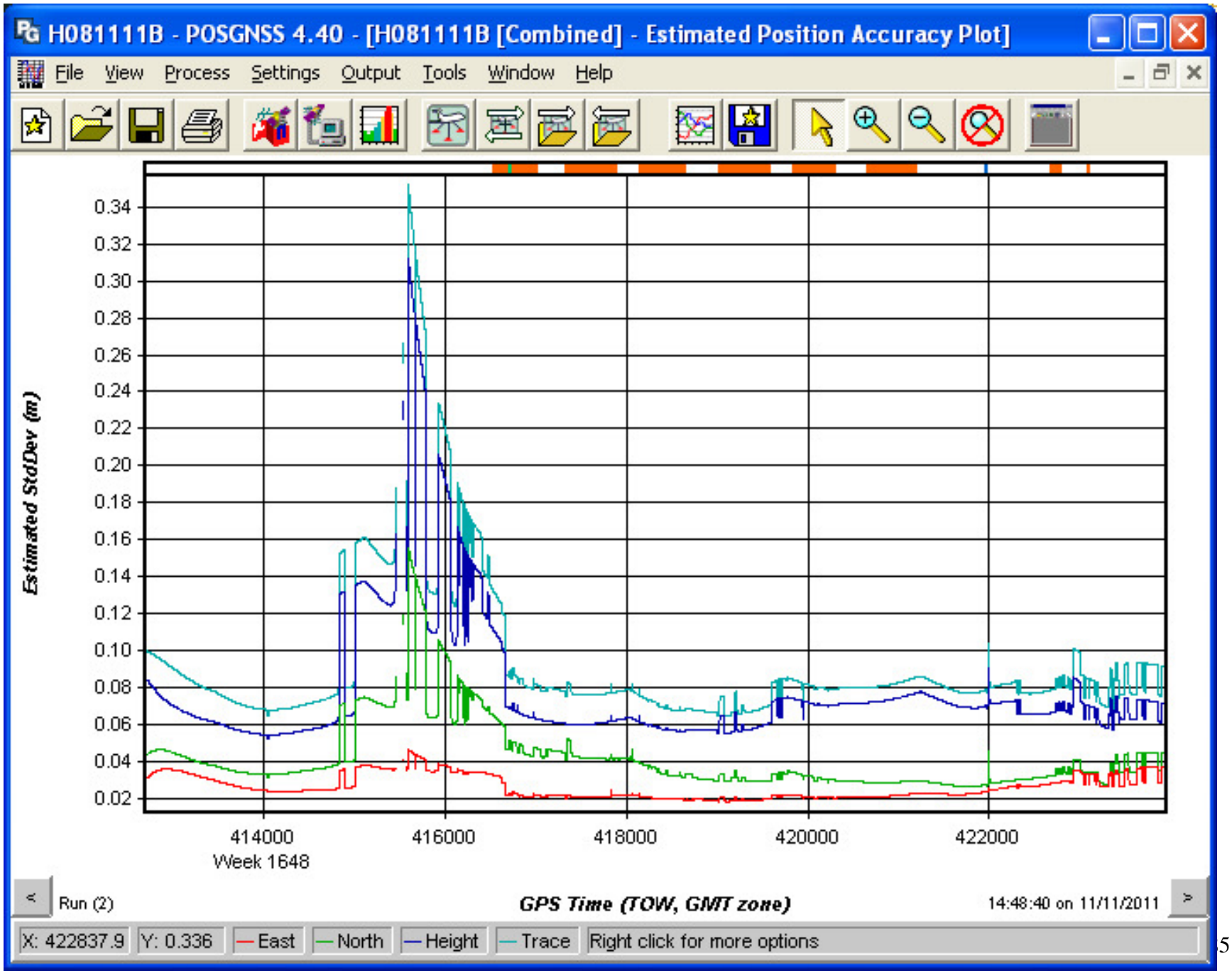

H052611A_final - POSGNSS 4.40 - [H052611A_final [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
413000
Week 1637
414000
415000
416000
417000
418000
419000
420000
421000
422000
423000
424000
425000
BS6
GPS Time (TOW, GMT zone)
14:42:31 on 06/29/2011
X:
Y:
East
North
Height
Trace
Right click for more options


H052711A_final - POSGNSS 4.40 - [H052711A_final [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (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
495000
Week 1637
496000
497000
498000
499000
500000
501000
502000
503000
504000
505000
506000
507000
508000
509000
BS4+BS7
GPS Time (TOW, GMT zone)
21:46:09 on 06/28/2011
X:
Y:
East
North
Height
Trace
Right click for more options

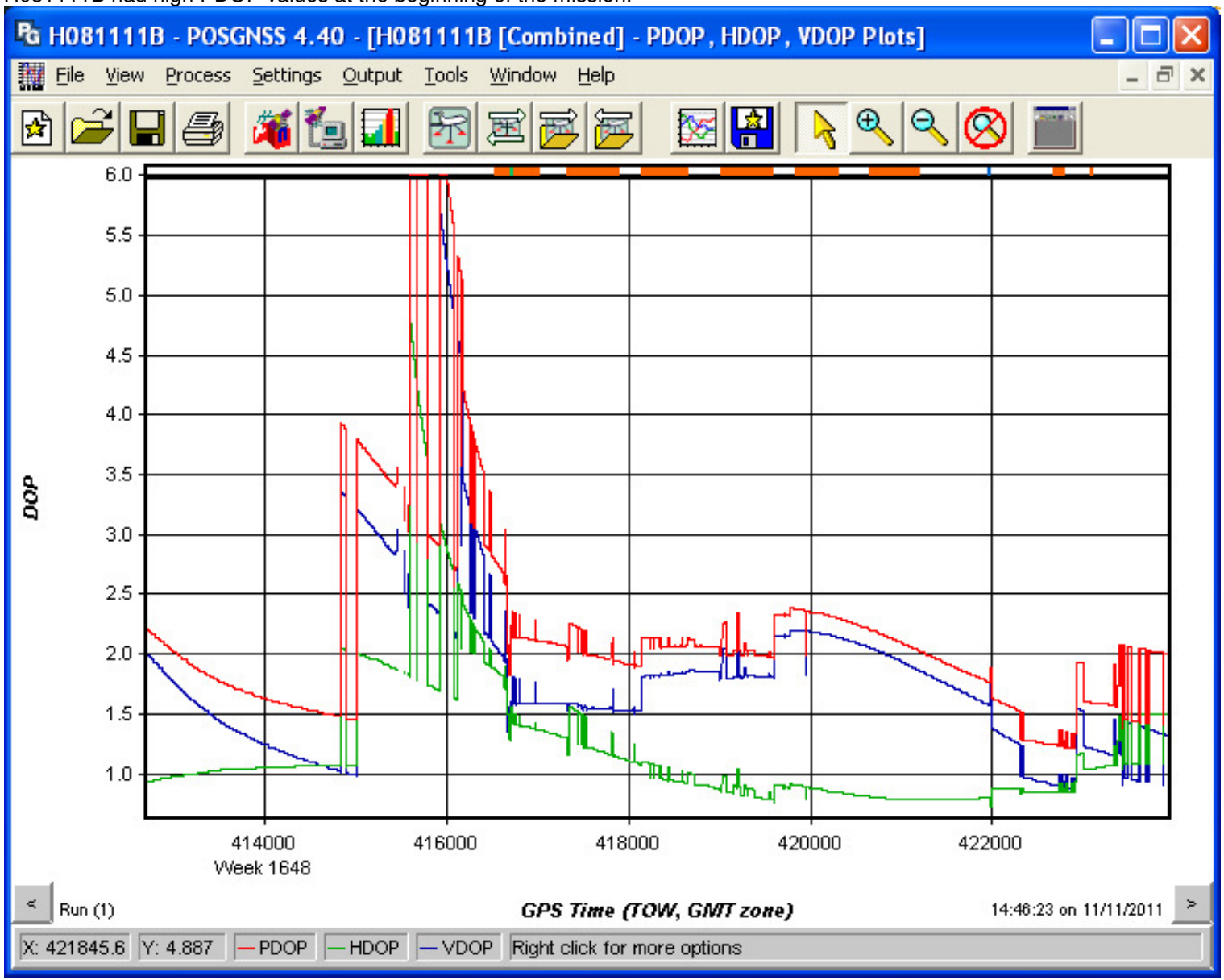

H052711B_final - POSGNSS 4.40 - [H052711B_final [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
513000
Week 1637
514000
515000
516000
517000
518000
519000
520000
521000
522000
523000
H052711B_BS4+BS6_final
GPS Time (TOW, GMT zone)
22:27:16 on 6/28/2011
X:
Y:
East
North
Height
Trace
Right click for more options

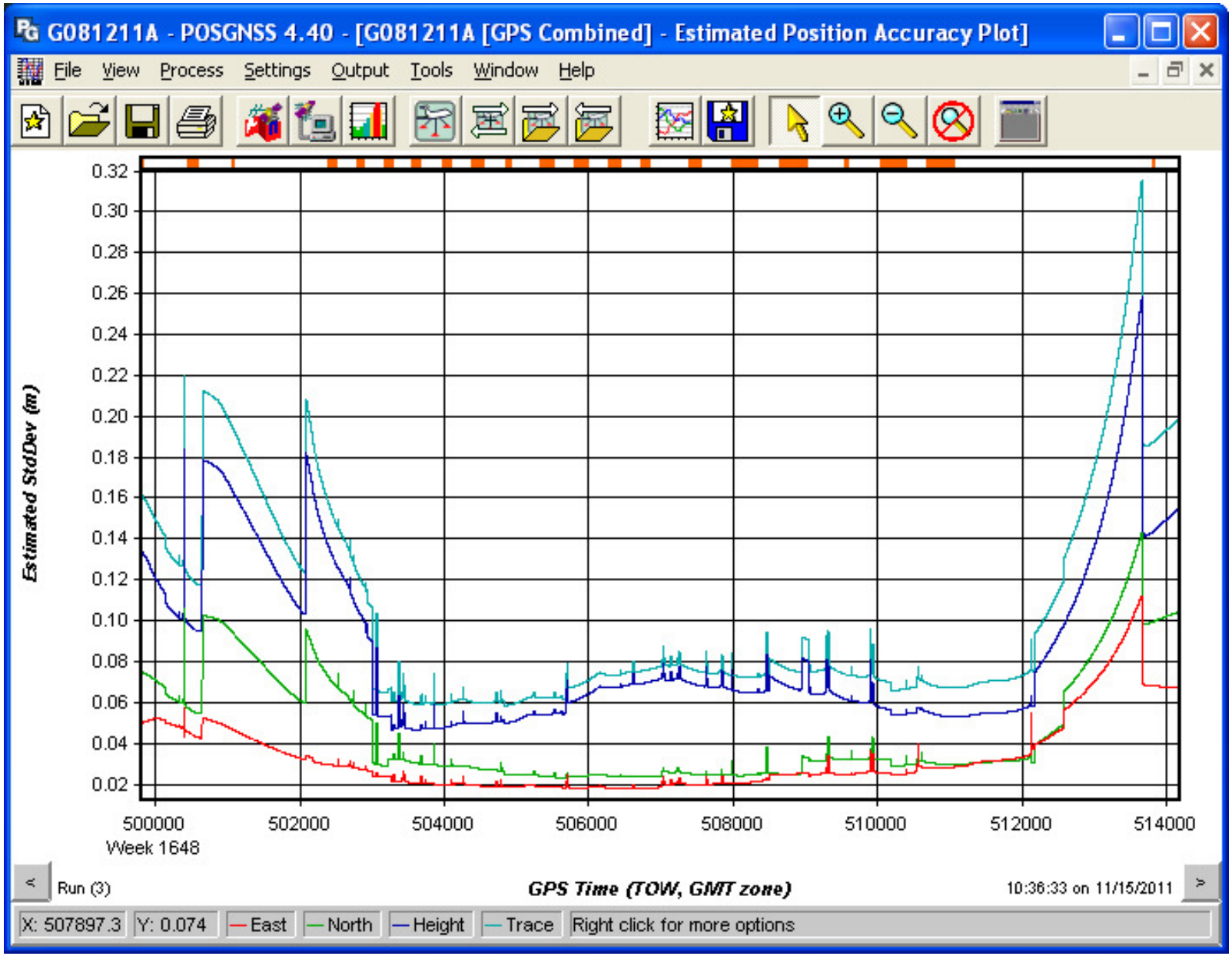

H061811A_final - POSGNSS 4.40 - [H061811A_final [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.24 0.23 0.22 0.21 0.20 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.10 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02
581000 582000 583000 584000 585000 586000 587000 588000 589000 590000 591000 592000 593000 594000 595000
Week 1640
BS10
GPS Time (TOW, GMT zone)
15:32:04 on 07/18/2011
X: 591864.3 Y: 0.100 East North Height Trace Right click for more options


H072111A - POSGNSS 4.40 - [H072111A [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.100
0.095
0.090
0.085
0.080
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
421000
422000
423000
424000
425000
426000
427000
428000
429000
Week 1645
ZAN1 (7)
GPS Time (TOW, GMT zone)
11:06:40 on 11/12/2011
X:
Y:
East
North
Height
Trace
Right click for more options

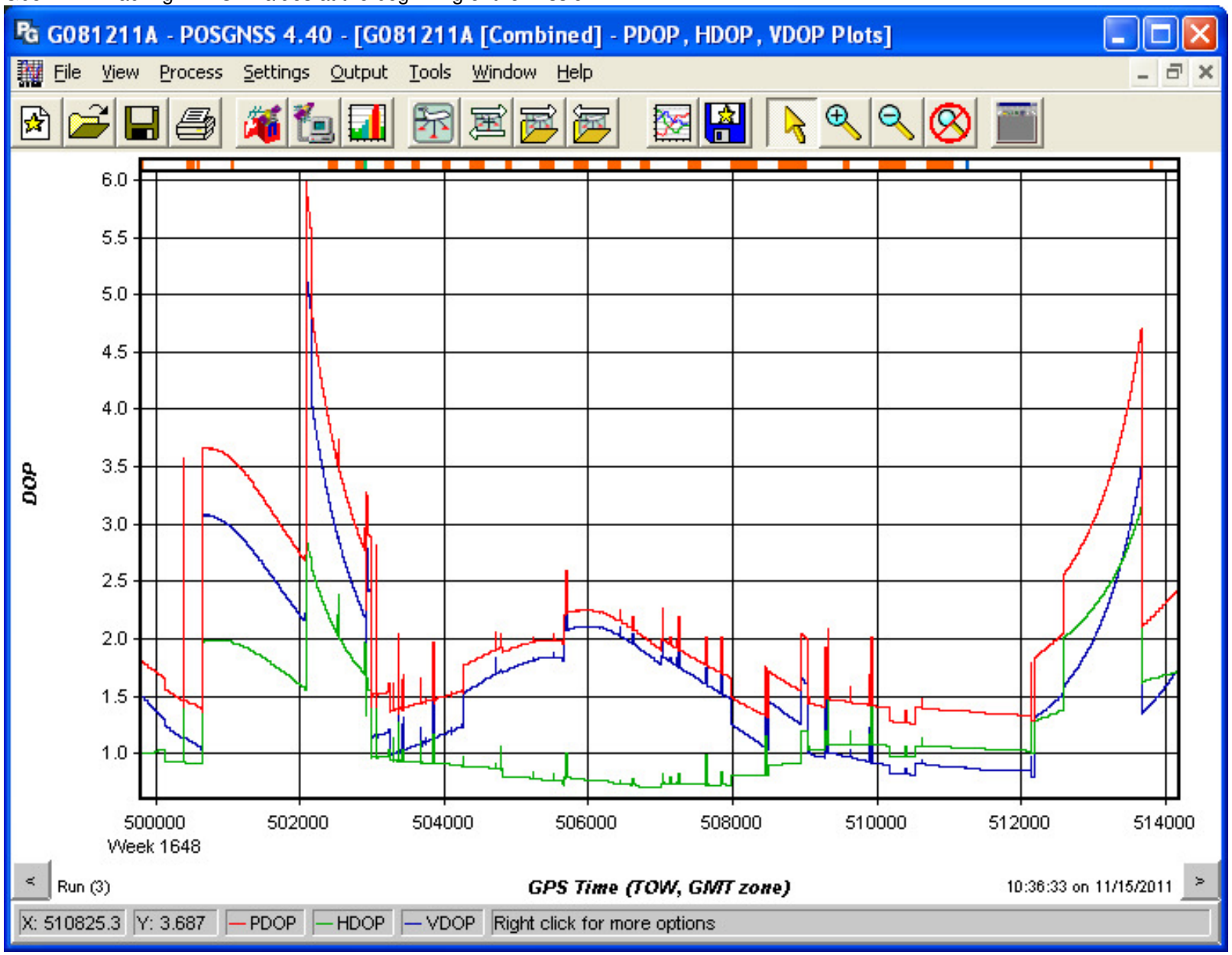

H081111B - POSGNSS 4.40 - [H081111B [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
414000
Week 1648
416000
418000
420000
422000
Run (2)
GPS Time (TOW, GMT zone)
14:48:40 on 11/11/2011
X: 422837.9
Y: 0.336
East
North
Height
Trace
Right click for more options

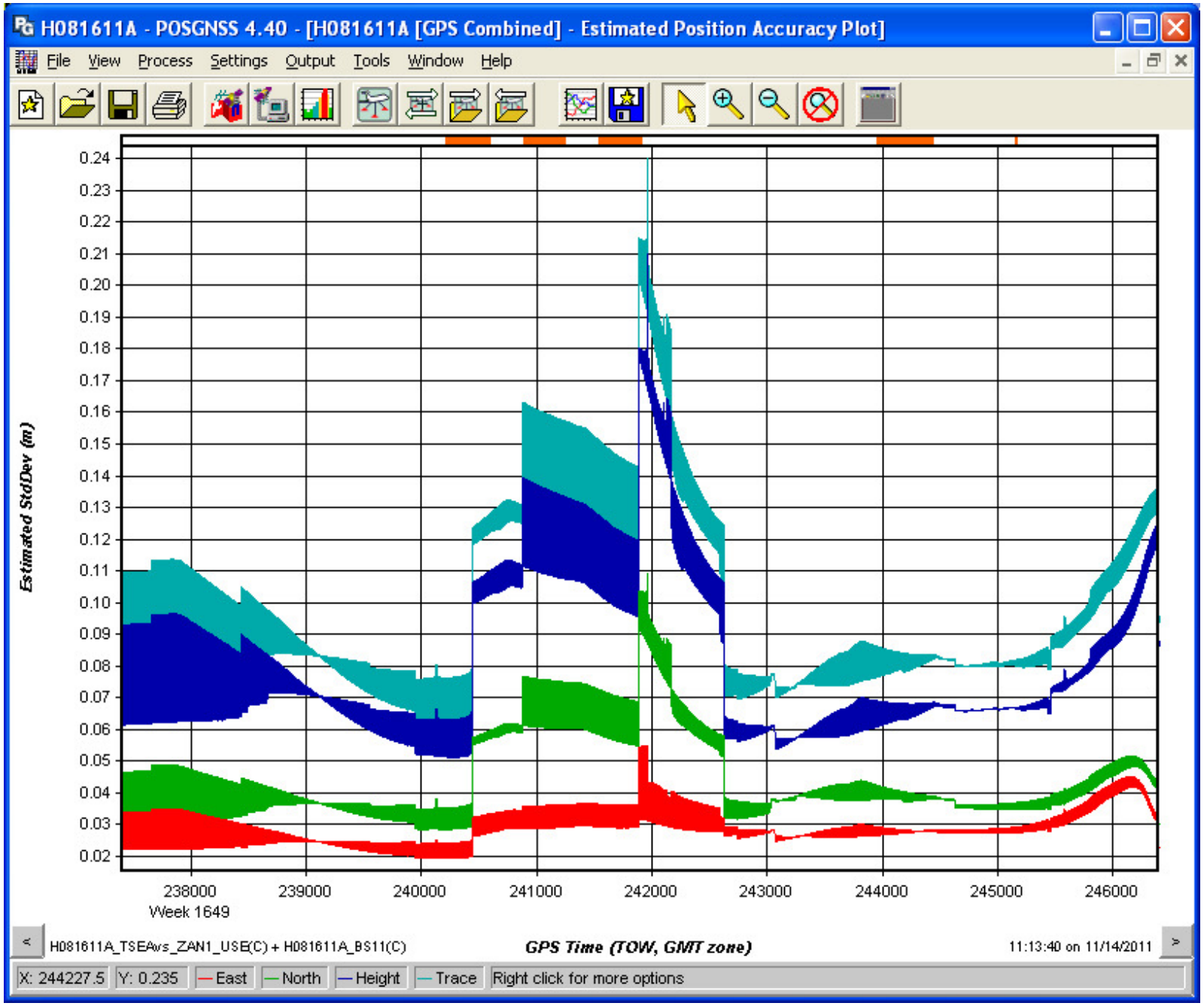
H081111B had high PDOP values at the beginning of the mission.



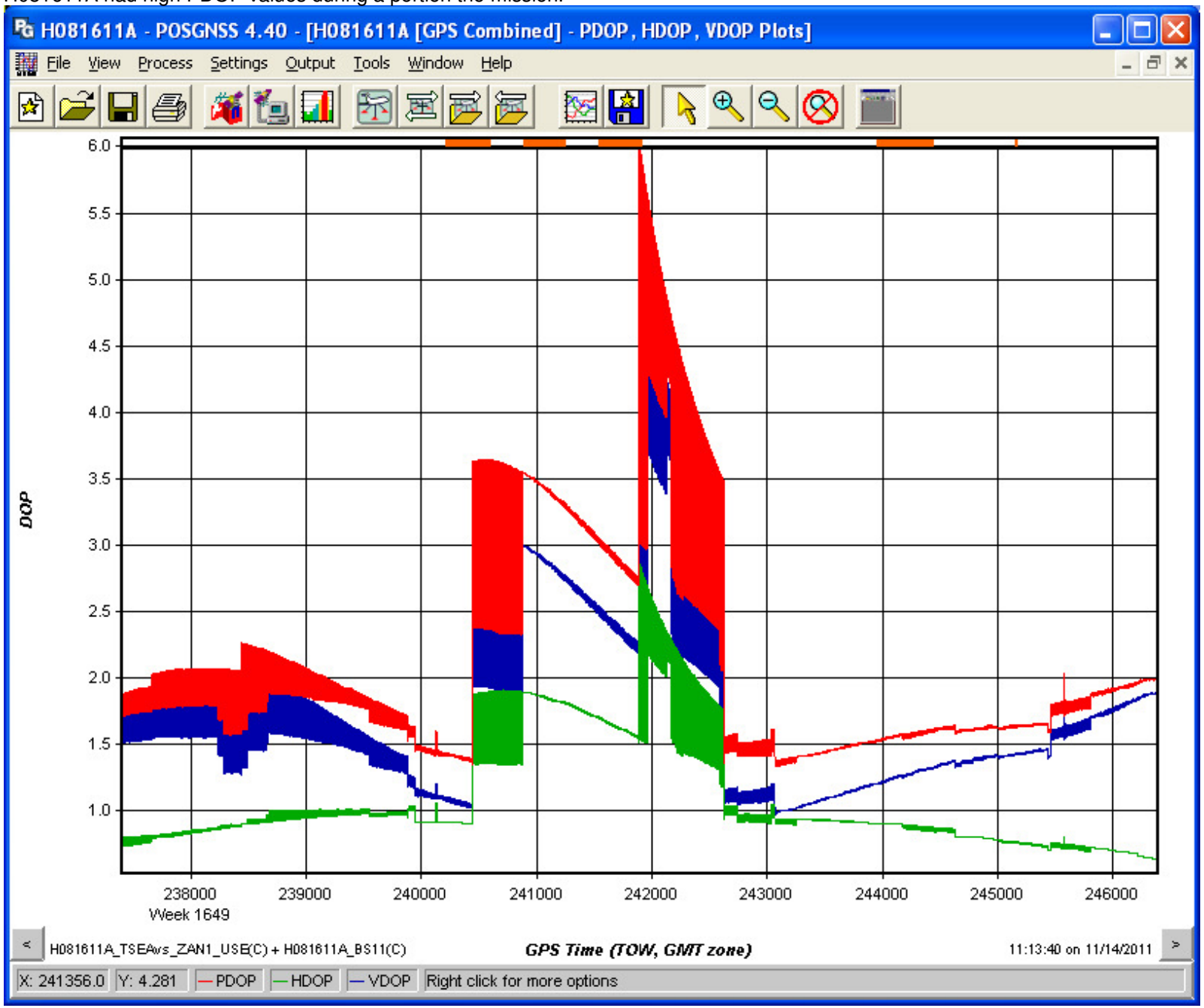

G081211A - POSGNSS 4.40 - [G081211A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
500000
Week 1648
502000
504000
506000
508000
510000
512000
514000
Run (3)
GPS Time (TOW, GMT zone)
10:36:33 on 11/15/2011
X: 507897.3
Y: 0.074
East
North
Height
Trace
Right click for more options

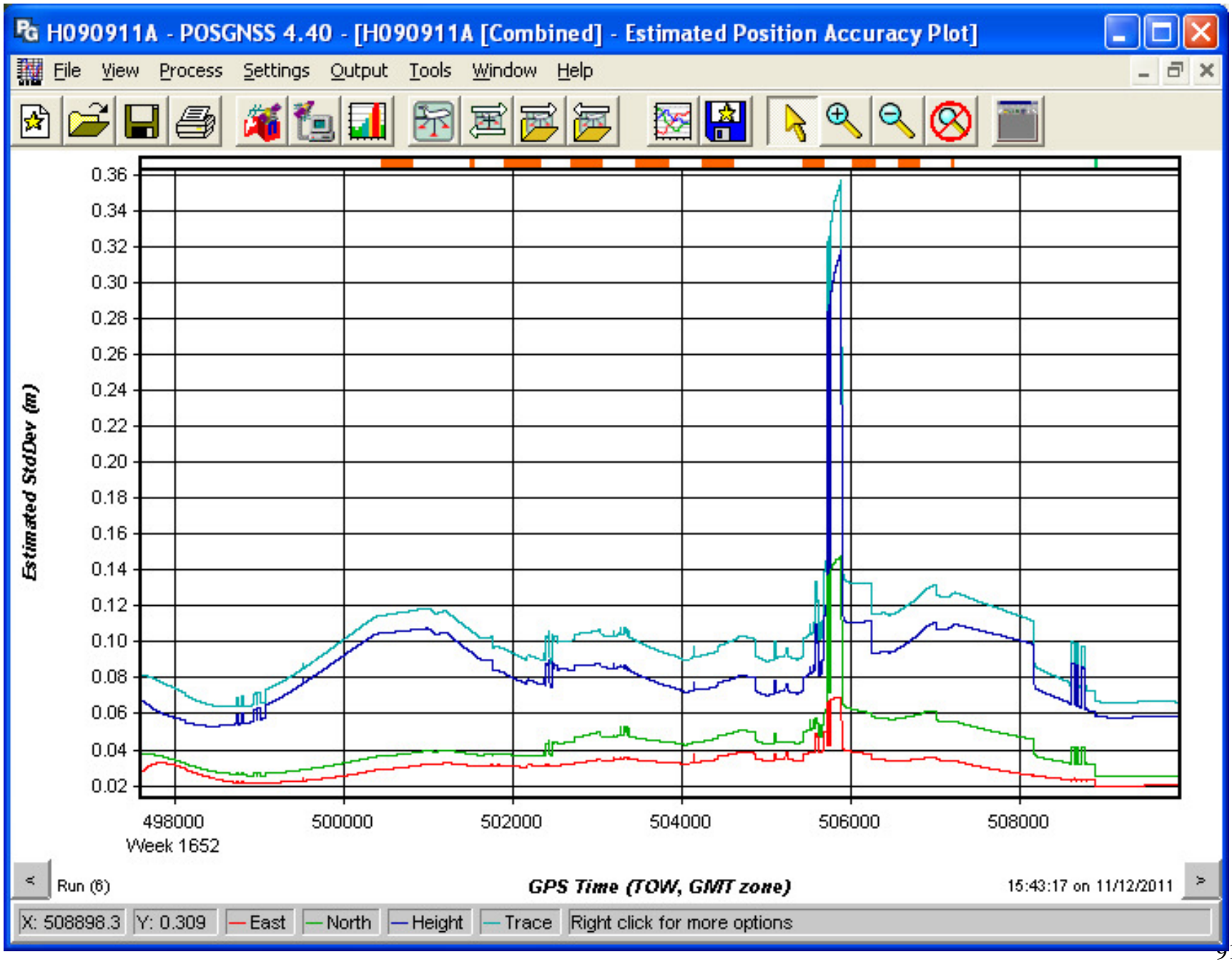
G081211A had high PDOP values at the beginning of the mission.



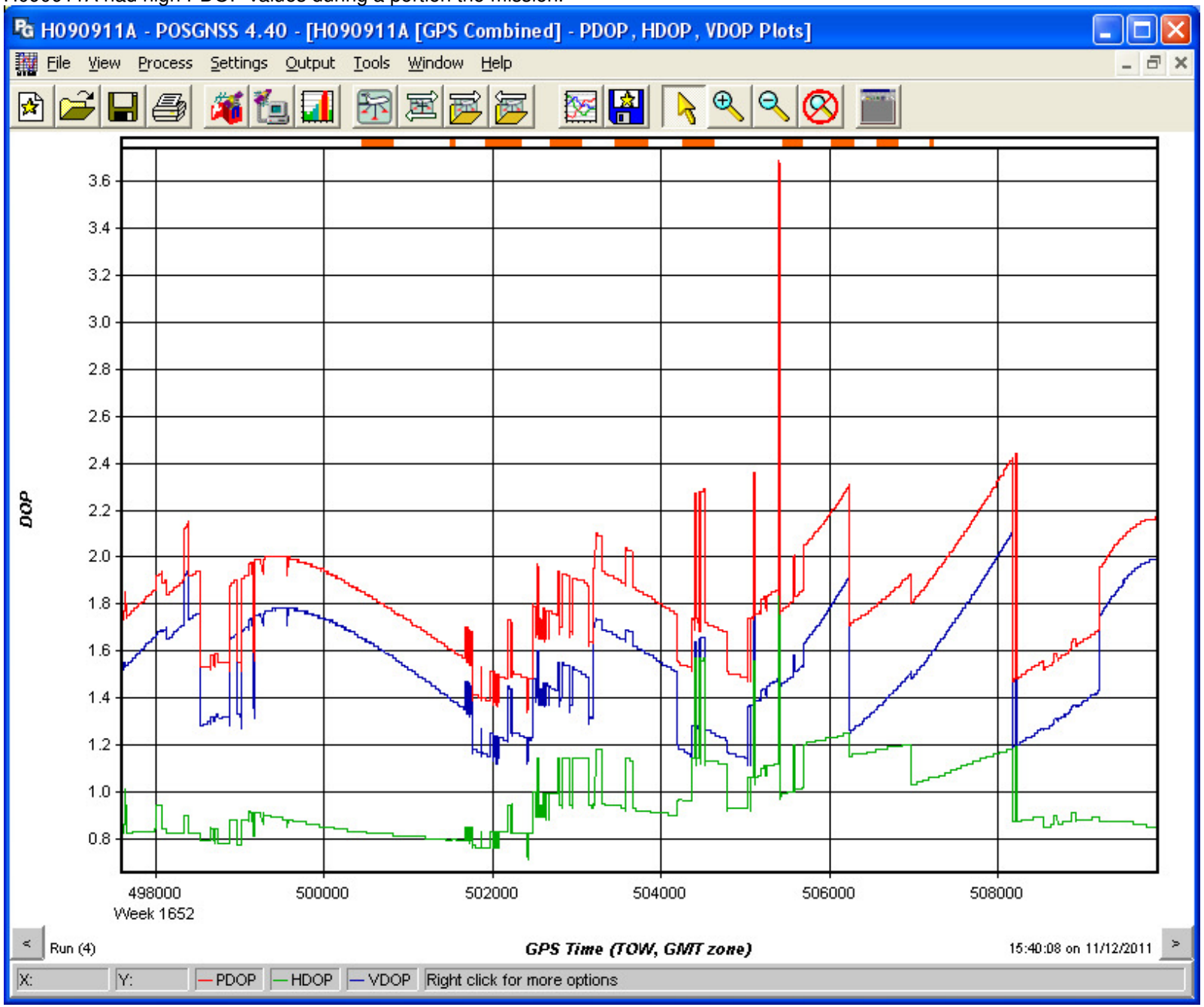

H081611A - POSGNSS 4.40 - [H081611A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.24
0.23
0.22
0.21
0.20
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
238000
Week 1649
239000
240000
241000
242000
243000
244000
245000
246000
H081611A_TSEAvs_ZAN1_USE(C) + H081611A_BS11(C)
GPS Time (TOW, GMT zone)
11:13:40 on 11/14/2011
X: 244227.5
Y: 0.235
East
North
Height
Trace
Right click for more options

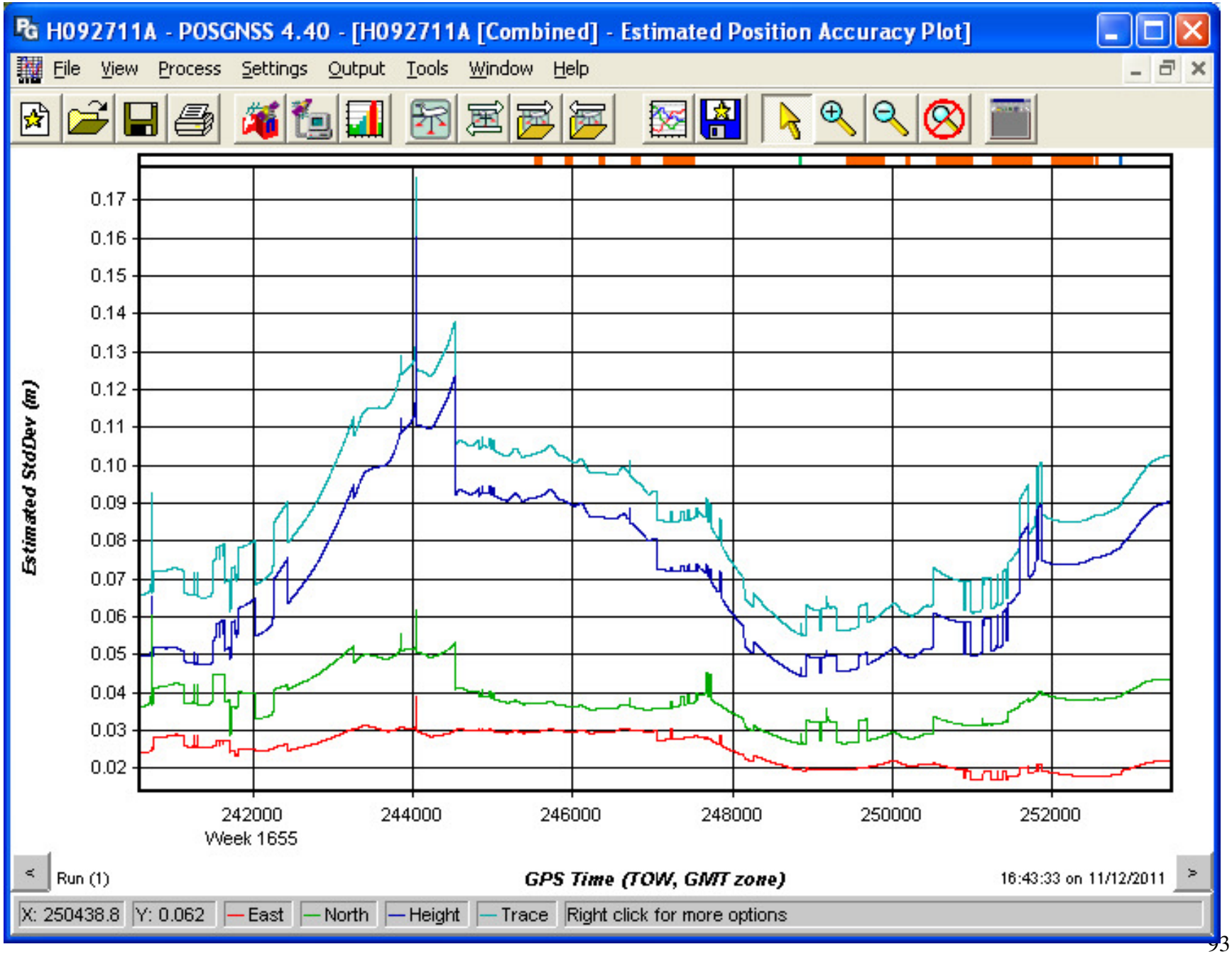
H081611A had high PDOP values during a portion the mission.

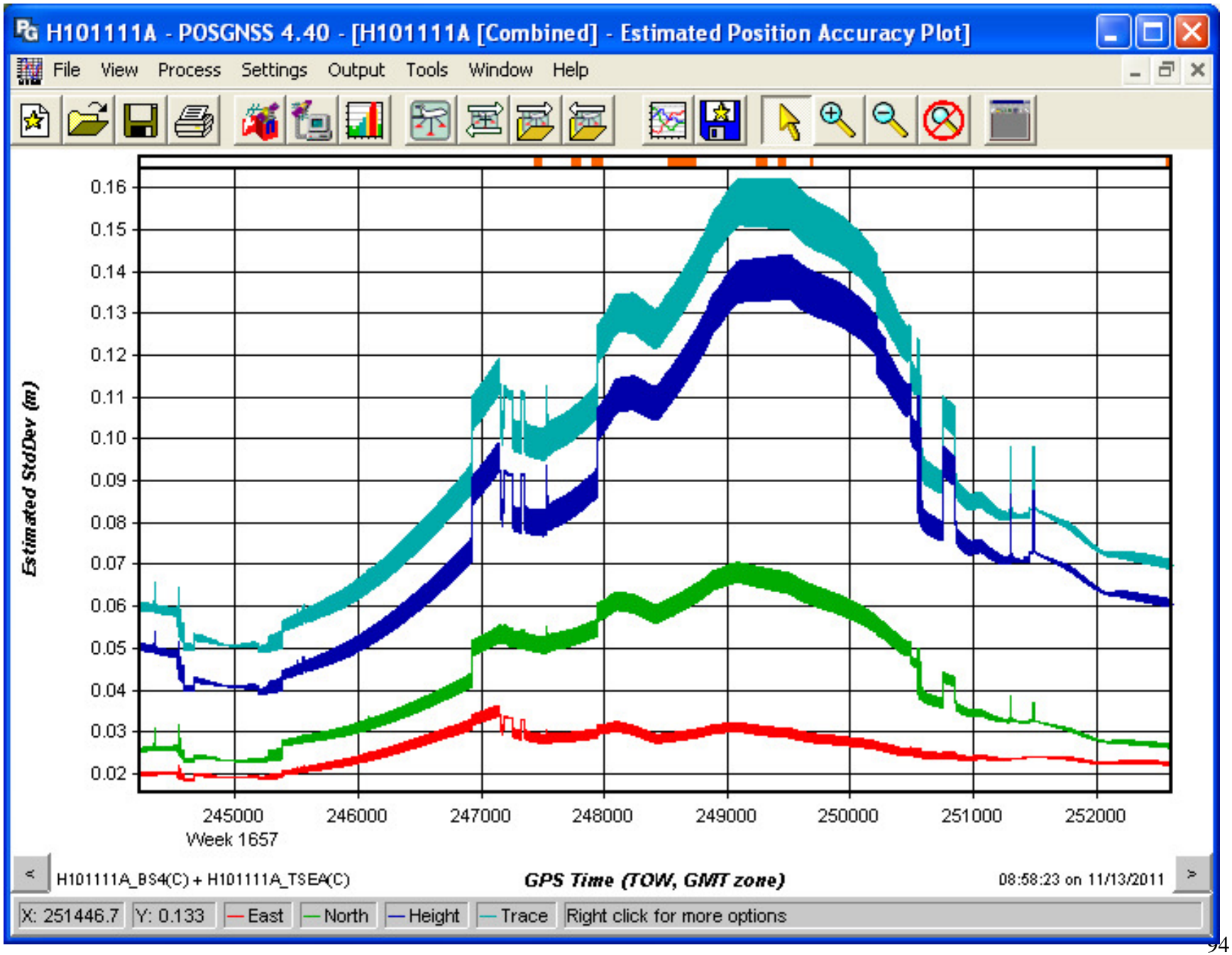


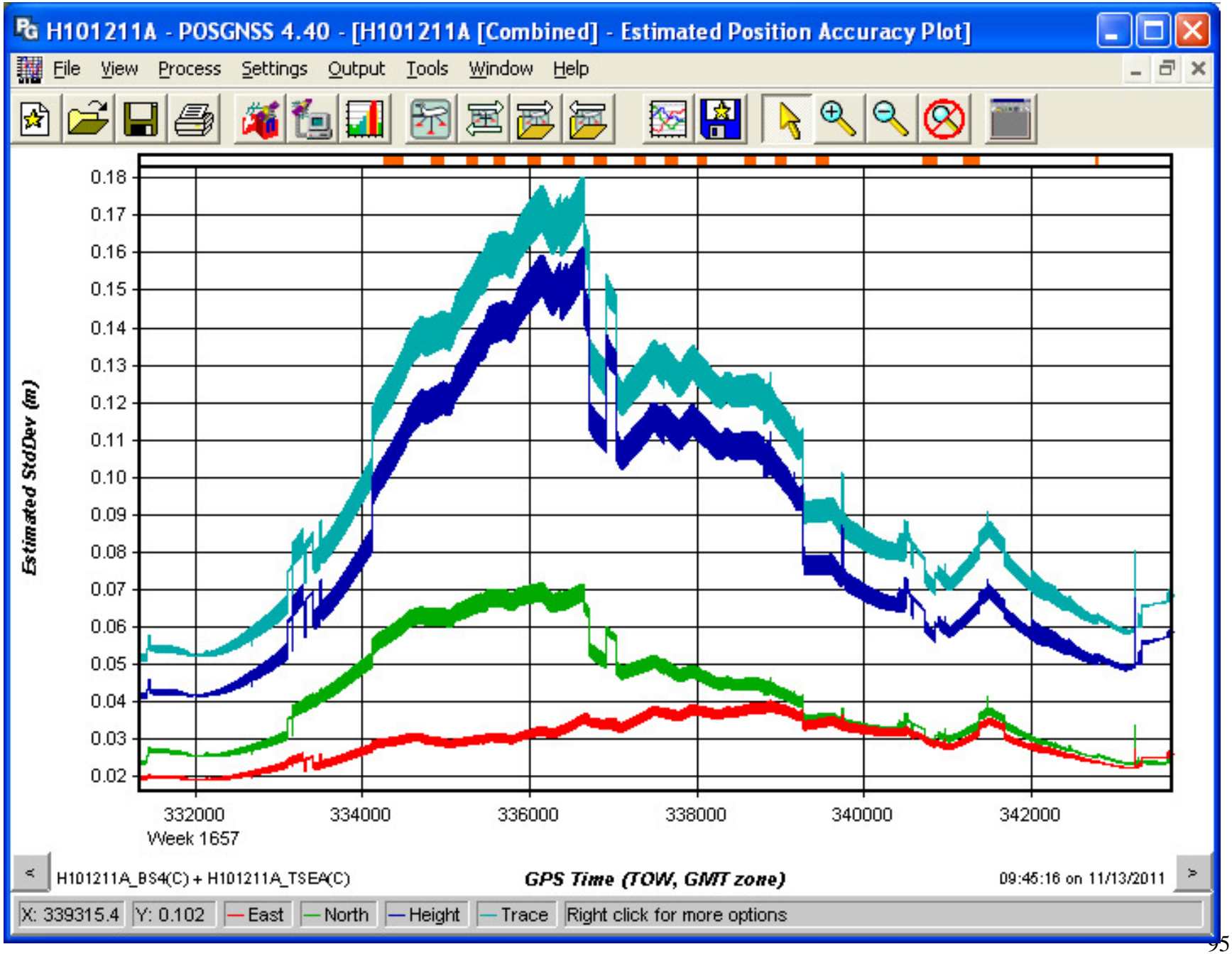

H090911A - POSGNSS 4.40 - [H090911A [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
498000
Week 1652
500000
502000
504000
506000
508000
Run (6)
GPS Time (TOW, GMT zone)
15:43:17 on 11/12/2011
X: 508898.3
Y: 0.309
East
North
Height
Trace
Right click for more options

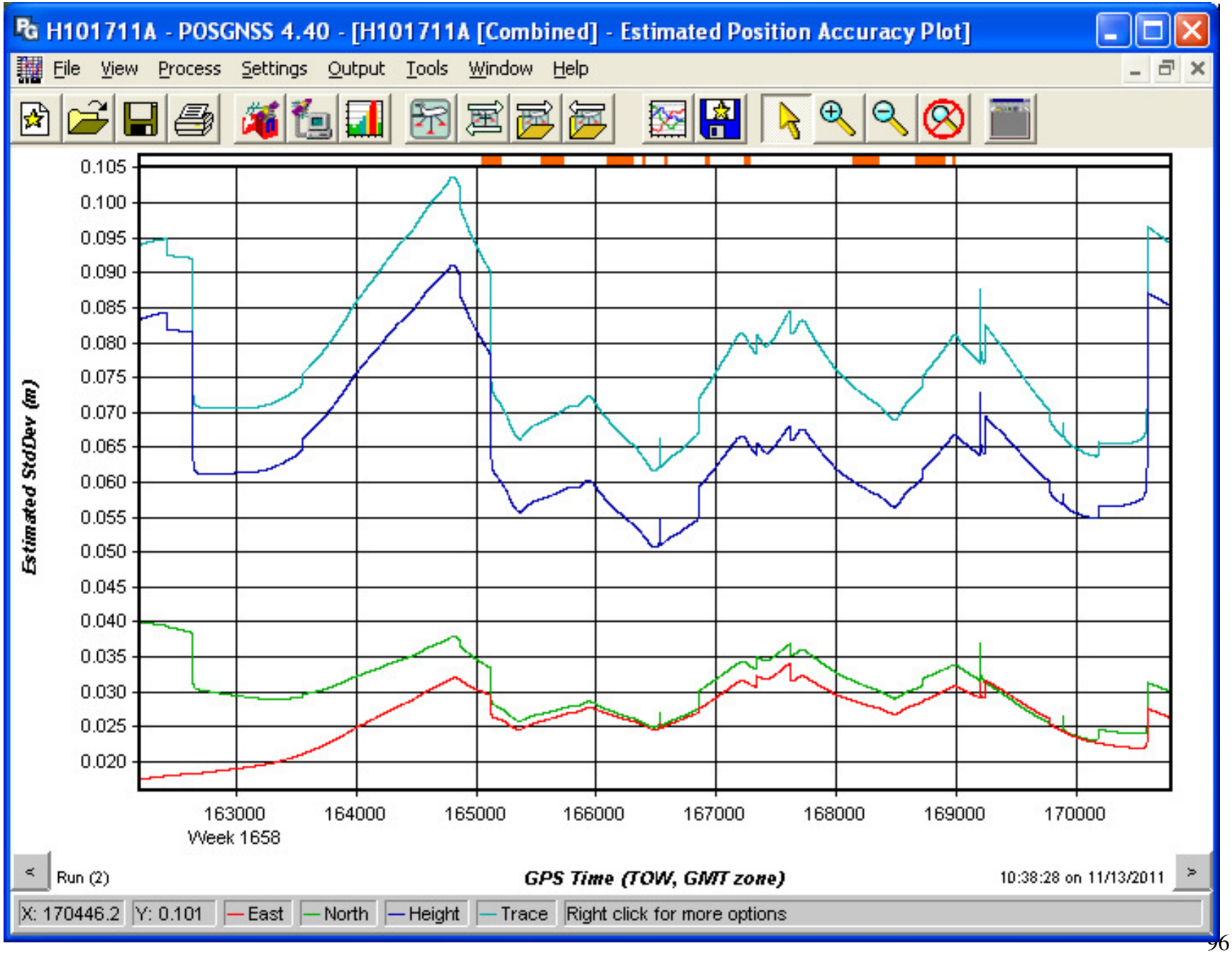
H090911A had high PDOP values during a portion the mission.

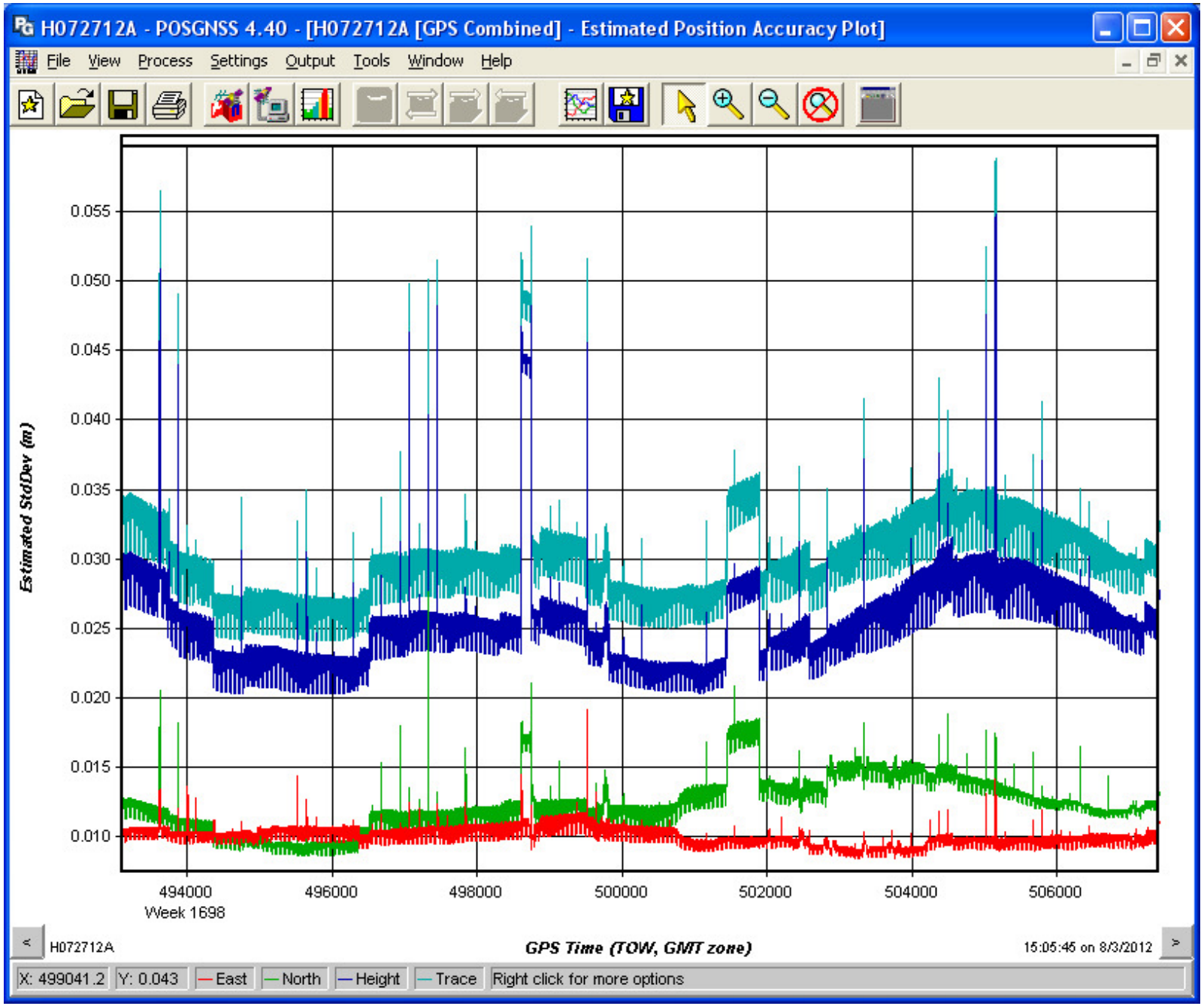


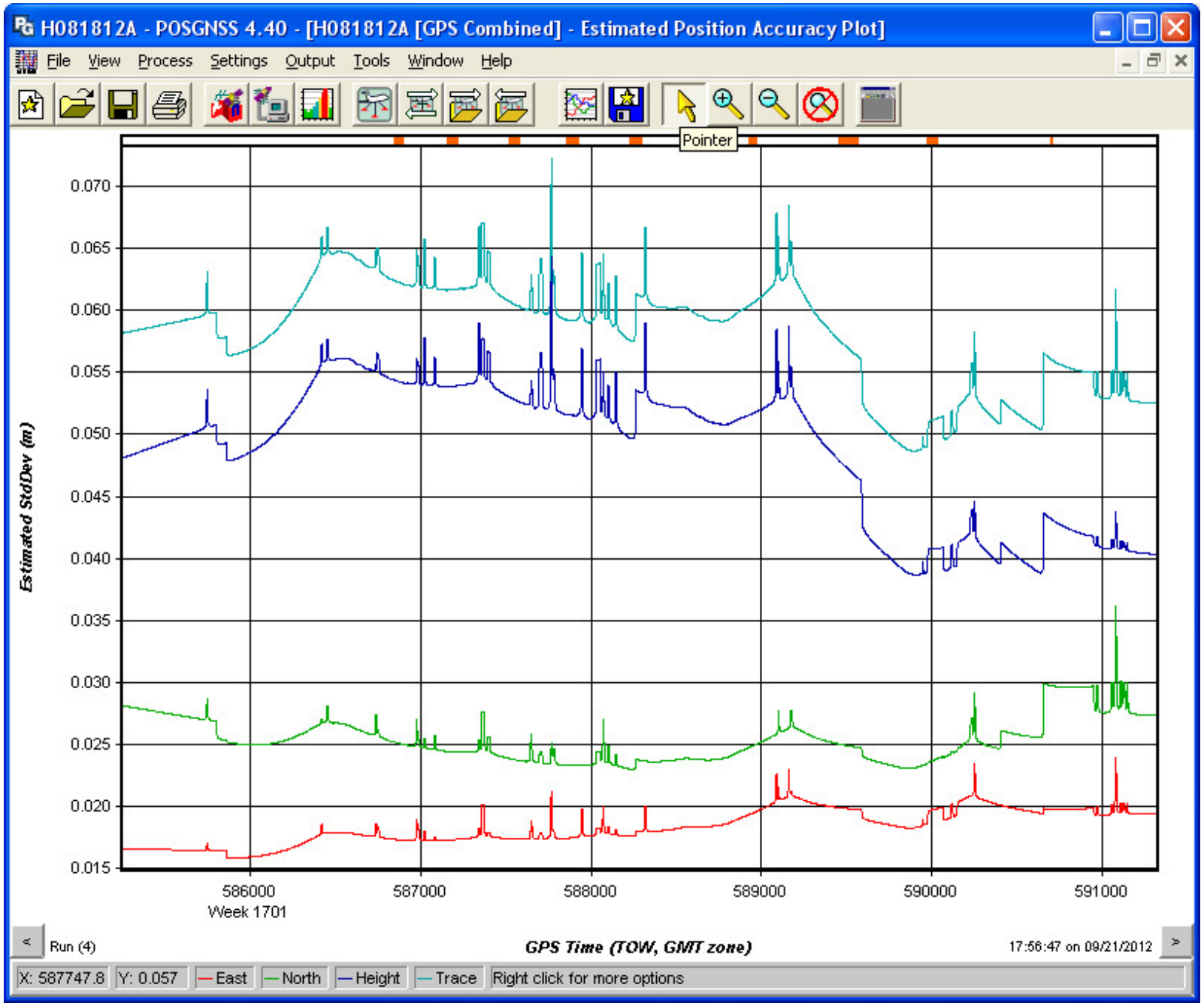

H092711A - POSGNSS 4.40 - [H092711A [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
242000
Week 1655
244000
246000
248000
250000
252000
Run (1)
GPS Time (TOW, GMT zone)
16:43:33 on 11/12/2011
X: 250438.8
Y: 0.062
East
North
Height
Trace
Right click for more options

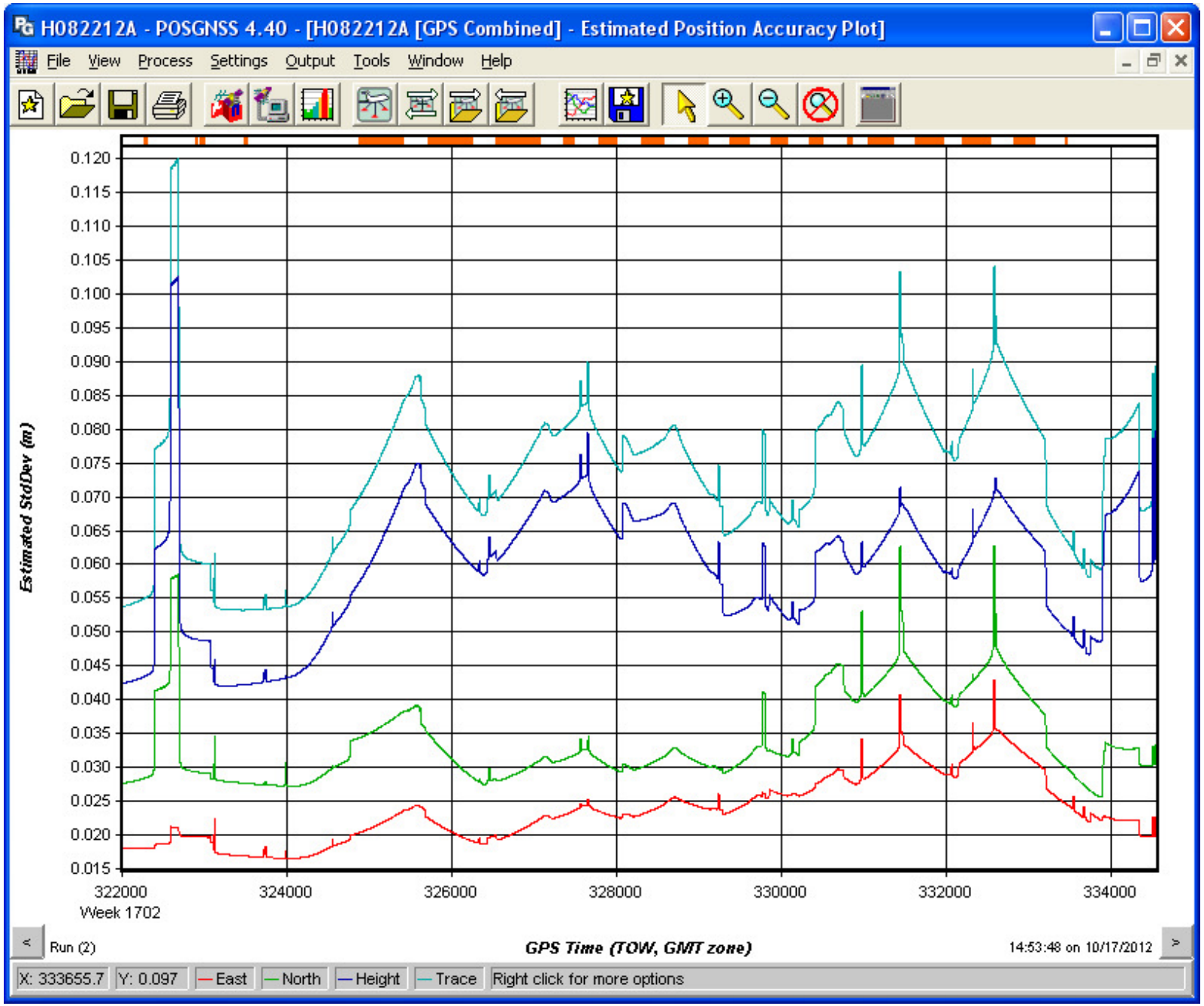

H101111A - POSGNSS 4.40 - [H101111A [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
245000
246000
247000
248000
249000
250000
251000
252000
Week 1657
H101111A_BS4(C) + H101111A_TSEA(C)
GPS Time (TOW, GMT zone)
08:58:23 on 11/13/2011
X: 251446.7
Y: 0.133
East
North
Height
Trace
Right click for more options

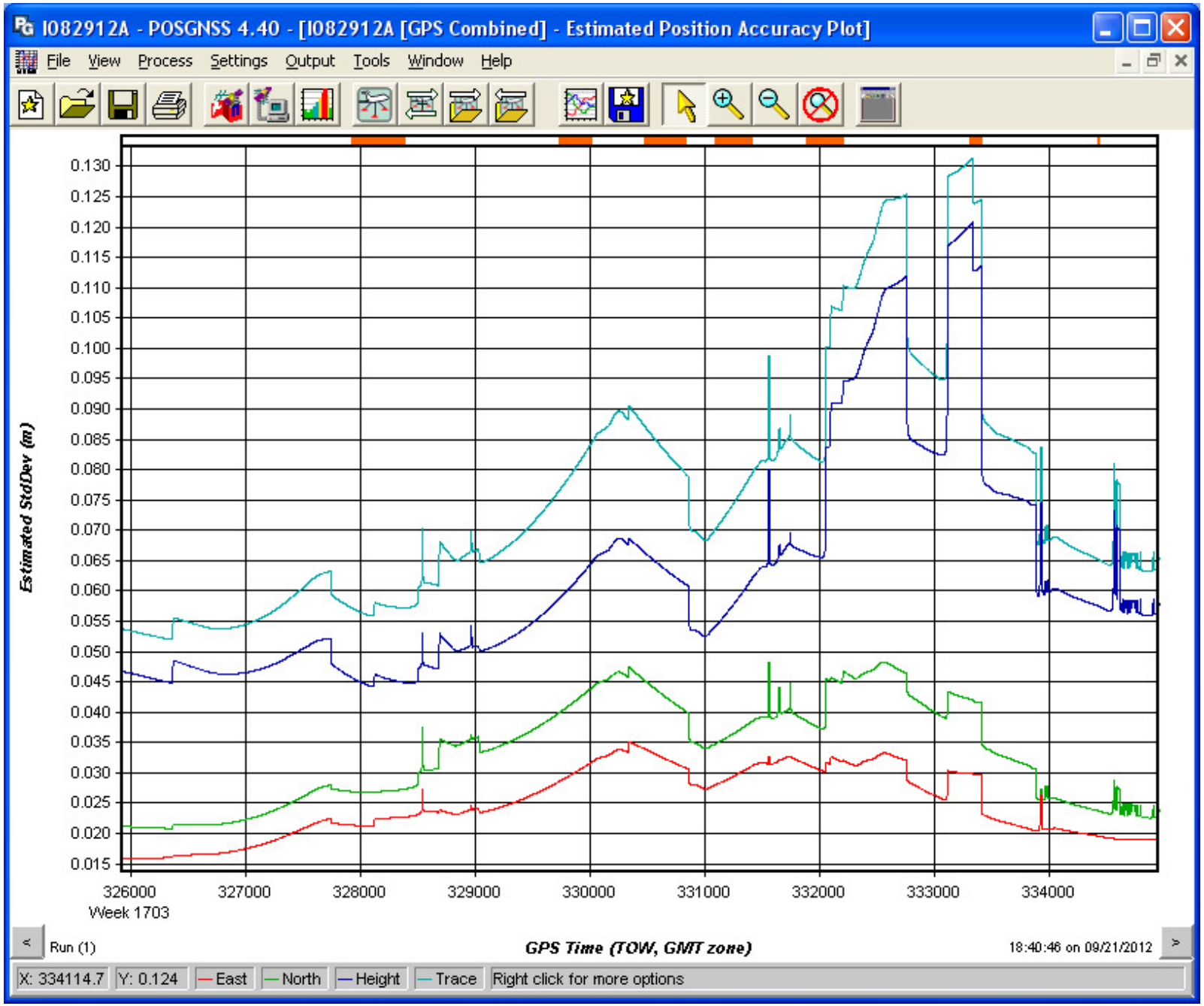

H101211A - POSGNSS 4.40 - [H101211A [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
332000
334000
336000
338000
340000
342000
Week 1657
H101211A_BS4(C) + H101211A_TSEA(C)
GPS Time (TOW, GMT zone)
09:45:16 on 11/13/2011
X: 339315.4
Y: 0.102
East
North
Height
Trace
Right click for more options

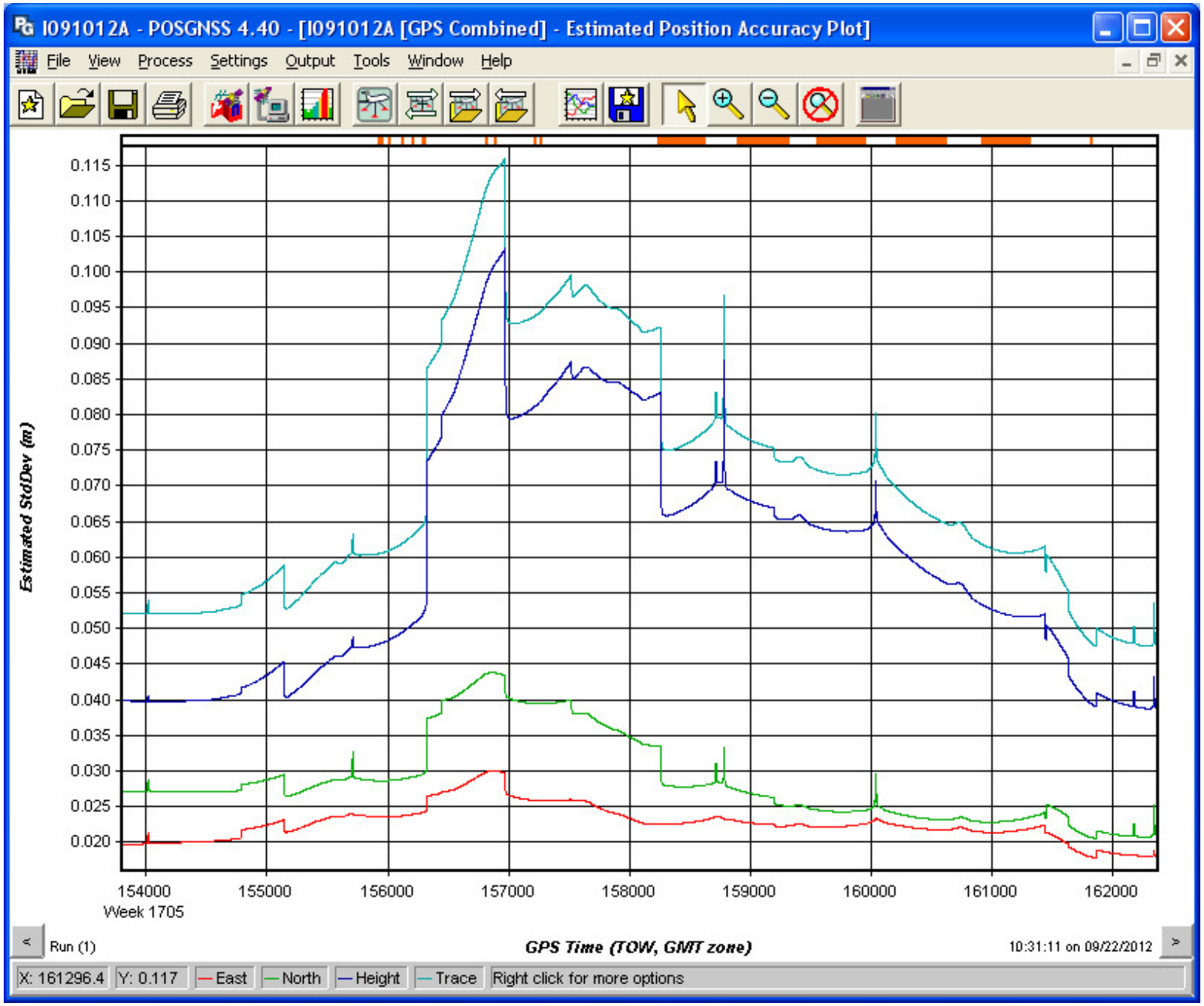

H101711A - POSGNSS 4.40 - [H101711A [Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.105
0.100
0.095
0.090
0.085
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
163000
Week 1658
164000
165000
166000
167000
168000
169000
170000
Run (2)
GPS Time (TOW, GMT zone)
10:38:28 on 11/13/2011
X: 170446.2
Y: 0.101
East
North
Height
Trace
Right click for more options


H072712A - POSGNSS 4.40 - [H072712A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
494000
Week 1698
496000
498000
500000
502000
504000
506000
H072712A
GPS Time (TOW, GMT zone)
15:05:45 on 8/3/2012
X: 499041.2
Y: 0.043
East
North
Height
Trace
Right click for more options


H081812A - POSGNSS 4.40 - [H081812A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Pointer
Estimated StdDev (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
586000
Week 1701
587000
588000
589000
590000
591000
Run (4)
GPS Time (TOW, GMT zone)
17:56:47 on 09/21/2012
X: 587747.8
Y: 0.057
East
North
Height
Trace
Right click for more options


H082212A - POSGNSS 4.40 - [H082212A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.120
0.115
0.110
0.105
0.100
0.095
0.090
0.085
0.080
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
322000
Week 1702
324000
326000
328000
330000
332000
334000
Run (2)
GPS Time (TOW, GMT zone)
14:53:48 on 10/17/2012
X: 333655.7
Y: 0.097
East
North
Height
Trace
Right click for more options


I082912A - POSGNSS 4.40 - [I082912A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.130
0.125
0.120
0.115
0.110
0.105
0.100
0.095
0.090
0.085
0.080
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
326000
327000
328000
329000
330000
331000
332000
333000
334000
Week 1703
Run (1)
GPS Time (TOW, GMT zone)
18:40:46 on 09/21/2012
X: 334114.7
Y: 0.124
East
North
Height
Trace
Right click for more options


I091012A - POSGNSS 4.40 - [I091012A [GPS Combined] - Estimated Position Accuracy Plot]
File View Process Settings Output Tools Window Help
Estimated StdDev (m)
0.115
0.110
0.105
0.100
0.095
0.090
0.085
0.080
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.040
0.035
0.030
0.025
0.020
154000
Week 1705
155000
156000
157000
158000
159000
160000
161000
162000
Run (1)
GPS Time (TOW, GMT zone)
10:31:11 on 09/22/2012
X: 161296.4
Y: 0.117
East
North
Height
Trace
Right click for more options

APPENDIX A – AEROTRIANGULATION SUMMARIES

Mat Su DMC Aerotriangulation Summary

Company: Aero-Metric, INC., 2014 Merrill Field Drive, Anchorage, AK 99501
Project Name: **6110401 Mat Su DMC**

Overview:

• Location: This project is located in south-central Alaska, centered approximately 61.7° North and 149.8° West

• Product: 4-band Orthophotography

• Control: · NAD83, Alaska State Plane Zone 4, U.S. Survey Feet, Geoid09 Orthometric Elevations
· Airborne GPS/IMU data collected using an Applanix System during photo acquisition.
· Ground Surveyed Control

• 2011 acquisition: 10,563 images including reflights
1:12000 (1"=1000'), 1679 images including reflights
1:24000 (1"=2000'), 8884 images including reflights

• Imagery: 4-band digital imagery
Images are named with a kernel, underscore, three digits for flightline, tilde, three digits for exposure.
Example: 1001AME040_001~001 is the 1:12000 scale imagery, flight 1, exposure 1.

· Nominal Scale: 1:12000 (1"=1000')

Date	Mission	Sensor	Image Name Kernel
2011-05-11	H051111A	DMC (lens #01000040)	H051111A
2011-05-12	H051211A	DMC (lens #01000040)	1001AME040
2011-05-12	H051211B	DMC (lens #01000040)	1002AME040
2011-05-27	H052711B	DMC (lens #01000040)	1003AME040
2011-05-27	H052711B	DMC (lens #01000040)	1004AME040

Nominal Scale: 1:24000 (1"=2000')

Date	Mission	Sensor	Image Name Kernel
2011-05-11	H051111B	DMC (lens #01000040)	2001AME040
2011-05-12	H051211B	DMC (lens #01000040)	2002AME040
2011-05-14	H051411A	DMC (lens #01000040)	2003AME040
2011-05-23	H052311A	DMC (lens #01000040)	2004AME040
2011-05-24	H052411A	DMC (lens #01000040)	2005AME040
2011-05-25	H052511A	DMC (lens #01000040)	2006AME040
2011-05-26	H052611A	DMC (lens #01000040)	2007AME040
2011-05-27	H052711A	DMC (lens #01000040)	2008AME040
2011-05-27	H052711B	DMC (lens #01000040)	2009AME040
2011-06-18	H061811A	DMC (lens #01000040)	2013AME040
2011-07-21	H072111A	DMC (lens #01000040)	02MSB_ADDAME040
2011-08-11	H081111B	DMC (lens #01000040)	06MSB_ADDAME040
2011-08-12	G081211A	DMC (lens #04000006)	01MSB_AME006
2011-08-16	H081611A	DMC (lens #01000040)	07MSB_ADDAME040
2011-09-09	H090911A	DMC (lens #01000040)	09MSB_ADDAME040
2011-09-27	H092711A	DMC (lens #01000040)	11MSB_ADD040
2011-10-11	H101111A	DMC (lens #01000040)	12MSB_ADDAME040
2011-10-12	H101211A	DMC (lens #01000040)	13MSB_ADDAME040
2011-10-17	H101711A	DMC (lens #01000040)	14MSB_ADDAME040
2011-10-17	H101711A	DMC (lens #01000040)	17MSB_ADDAME040

Procedure:

• The AT was performed with INPHO MATCH-AT, version 5.4.0
Tie points were created using autocorrelation routines and manually measuring points. Control points were manually measured. The final run is a simultaneous bundle solution for each AT block. Supplemental check points were measured to use as check points in the final orthophotography.

The aerotriangulation (AT) of the 2011 was split into four blocks.
The 1000 scale images were ATed separately as project "Mat_Su_1000".
The 2000 scale images were split into three blocks, projects "Mat_Su_2000_Core", Mat_Su_2000_North", and "Mat_Su_2000_Matanuska".

Residual Summary:

· **Mat_Su_1000**
1:12000 scale imagery, 1679 images including reflights
This block covers the more developed areas around Wasilla and Palmer. Existing surveyed ground control was added to the control surveyed for this project as supplemental control. Ground points that may have been from another datum were not constrained in the aerotriangulation and were included as check points only.

RMS control points with default standard deviation set (number: 36)
x 0.285 [feet]
y 0.250 [feet]

RMS control points with default standard deviation set (number: 33)
z 0.162 [feet]

RMS IMU observations (number: 1679)
omega 0.006 [deg]
phi 0.004 [deg]
kappa 0.008 [deg]

RMS GNSS observations (number: 1679)
x 0.245 [feet]
y 0.194 [feet]
z 0.192 [feet]

mean standard deviations of terrain points
x 0.039
y 0.051
z 0.131

Sigma naught : 1.6 [micron] = 0.1 [pixel in level 0]

· **Mat_Su_2000_Core**
1:24000 scale imagery, 3805 images including reflights.
Not to be confused with the LIDAR block area called "Core Area", the AT "Core" includes five of the LIDAR delivery blocks. They are: Core Area, Point Mackenzie, Willow, Caswell Lake, and Talkeetna. This block also includes the east end of flights that extend into the LIDAR block area "Matanuska". Those images are duplicated in AT bock "Mat_Su_2000_Matanuska". The supplemental check points measured in the 1:12000 imagery were included as check points in this block the ensure the two AT blocks fit together well. There are 15 images that are all water and not included in the block adjustment, those orientation parameters are unadjusted Applanix values in the final listing.

RMS control points with default standard deviation set (number: 31)
x 0.297 [feet]
y 0.163 [feet]

RMS control points with default standard deviation set (number: 31)
z 0.097 [feet]

RMS at check points

x	0.448 [feet] (number: 176)
y	0.362 [feet] (number: 176)
z	0.698 [feet] (number: 176)

RMS IMU observations (number: 3790)

omega	0.009 [deg]
phi	0.003 [deg]
kappa	0.009 [deg]

RMS GNSS observations (number: 3790)

x	0.284 [feet]
y	0.288 [feet]
z	0.256 [feet]

mean standard deviations of terrain points

x	0.086
y	0.087
z	0.254

Sigma naught : 1.6 [micron] = 0.1 [pixel in level 0]

· **Mat_Su_2000_North**

1:24000 scale imagery, 3156 images including reflights and overlap of 23 images with block "Mat_Su_2000_Core". Covers the LIDAR block "North Susitna" Five of the photo panels were destroyed or partially destroyed at the time of photo acquisition, so those control points were used as vertical only control.

RMS control points with default standard deviation set (number: 4)

x	0.264 [feet]
y	0.163 [feet]

RMS control points with default standard deviation set (number: 9)

z	0.782 [feet]

RMS IMU observations (number: 3156)

omega	0.010 [deg]
phi	0.004 [deg]
kappa	0.006 [deg]

RMS GNSS observations (number: 3156)

x	0.567 [feet]
y	0.468 [feet]
z	0.490 [feet]

mean standard deviations of terrain points

x	0.066
y	0.084
z	0.214

Sigma naught : 1.6 [micron] = 0.1 [pixel in level 0]

· **Mat_Su_2000_Matanuska**

1:24000 scale imagery, 2016 images in sub-block "MAIN", 79 images in sub-block "128-129".
The "MAIN" sub-block includes overlap of 149 images with the east portion of "Mat_Su_2000_Core".
This AT block covers the LIDAR block "Matanuska".
Image acquisition for this area has not been completed. Flights 128 and 129 were split into a separate sub-block because they are detached from the rest of the imagery acquired in 2011. The "MAIN" sub-blocks overlap with the core area also contains the supplemental check points measured in the 1:12000 scale imagery.

· sub-block **MAIN**

RMS control points with default standard deviation set (number: 4)

x	0.599 [feet]
y	0.262 [feet]

RMS control points with default standard deviation set (number: 6)

z	0.105 [feet]

RMS IMU observations (number: 2016)
omega 0.009 [deg]
phi 0.003 [deg]
kappa 0.007 [deg]

RMS at check points
x 0.497 [feet] (number: 62)
y 0.448 [feet] (number: 62)
z 0.806 [feet] (number: 62)

RMS GNSS observations (number: 2016)
x 0.405 [feet]
y 0.326 [feet]
z 0.264 [feet]

mean standard deviations of terrain points
x 0.089
y 0.116
z 0.283

Sigma naught : 2.0 [micron] = 0.2 [pixel in level 0]

· sub-block **128-129**

RMS control points with default standard deviation set (number: 1)
x 0.197 [feet]
y 0.348 [feet]

RMS control points with default standard deviation set (number: 2)
z 0.236 [feet]

RMS IMU observations (number: 79)
omega 0.007 [deg]
phi 0.005 [deg]
kappa 0.003 [deg]

RMS GNSS observations (number: 79)
x 0.319 [feet]
y 0.318 [feet]
z 0.313 [feet]

mean standard deviations of terrain points
x 0.081
y 0.096
z 0.205
Sigma naught : 1.4 [micron] = 0.1 [pixel in level 0]

All files listed below were previously submitted with this summary

• Included AT text files:

· Control point list in NAD83, ASP Zone 4, U.S. Survey Feet, Geoid09 Orthometric Elevations

Mat_Su_Control_NAD83_ASP4_G09.txt

· Adjusted exterior orientation parameter files for all exposure stations in each AT block

Mat_Su_1000_EO.xyz
Mat_Su_2000_Core_EO.xyz
Mat_Su_2000_North_EO.xyz
Mat_Su_2000_Matanuska_EO.xyz

· AT output with residuals and standard deviations for each exposure and control point in the AT adjustment

Mat_Su_1000_aat.log
Mat_Su_2000_Core_aat.log
Mat_Su_2000_North_aat.log
Mat_Su_2000_Matanuska_aat.log

· AT output files with statistics for all triangulated points and exposure stations in the AT adjustment

Mat_Su_1000_Statistics.txt
Mat_Su_2000_Core_Statistics.txt
Mat_Su_2000_North_Statistics.txt
Mat_Su_2000_Matanuska_Statistics_128-129.txt
Mat_Su_2000_Matanuska_Statistics_Main.txt

• other files

· PDF file with 1:12000 (1”=1000’) photo centers

Mat_Su_1000_Layout.pdf

· PDF file with 1:24000 (1”=2000’) photo centers

Mat_Su_2000_Layout.pdf

Mat Su DMC Aerotriangulation Summary
2012 Acquisition

Company: Aero-Metric, INC., 2014 Merrill Field Drive, Anchorage, AK 99501
Project Name: **6110401 Mat Su DMC**

Overview:

• Location: This project is located in south-central Alaska, centered approximately 61.7° North and 149.8° West

• Product: 4-band Orthophotography

• Control: · NAD83, Alaska State Plane Zone 4, U.S. Survey Feet, Geoid09 Orthometric Elevations
· Airborne GPS/IMU data collected using an Applanix System during photo acquisition.
· Ground Surveyed Control

• Imagery: 4-band digital imagery
Images are named with a kernel, underscore, three digits for flightline, tilde, three digits for exposure.
Example: 1001AME040_001~001 is the 1:12000 scale imagery, flight 1, exposure 1.

· Nominal Scale: 1:12000 (1"=1000')

Date	Mission	Sensor	Image Name Kernel
2012-08-18	H081812A	DMC (lens #01000040)	MLow01AME040 Flights 101, 102, 103
2011-05-11	H051111A	DMC (lens #01000040)	H051111A
2011-05-12	H051211A	DMC (lens #01000040)	1001AME040
2011-05-12	H051211B	DMC (lens #01000040)	1002AME040
2011-05-27	H052711B	DMC (lens #01000040)	1003AME040
2011-05-27	H052711B	DMC (lens #01000040)	1004AME040

· Nominal Scale: 1:24000 (1"=2000')

Date	Mission	Sensor	Image Name Kernel
2012-07-27	H072712A	DMC (lens #01000040)	MATSU_01AME040
2012-08-22	H082212A	DMC (lens #01000040)	MatSu02AME040
2012-08-29	I082912A	DMC (lens #151)	Matsu_03AME151
2012-09-10	I091012A	DMC (lens #151)	MATSU_07AME151

Procedure:

• The AT was performed with INPHO MATCH-AT, version 5.4.2
Tie points were created using autocorrelation routines and manually measuring points. Control points were manually measured. The final run is a simultaneous bundle solution for each AT block (project). Supplemental check points were measured to use as check points in the final orthophotography.

· The 1000 scale images were added to the 2011 project "Mat_Su_1000" to create the new project "Mat_Su_1000_2012". All 1000 scale images were triangulated as a single block for the final run.

· The 2000 scale images acquired in 2012 were ATed as a single block in project "Mat_Su_2000_2012". These images are tied to the 2011 images via tie points and check points, but the 2011 images are not in this bundle solution.

Residual Summary:

· Mat_Su_1000_2012

1:12000 scale imagery, 1719 images including reflights. (40 images from 2012, 1679 images from 2011)
This block covers the more developed areas around Wasilla and Palmer. Existing surveyed ground control was added to the control surveyed for this project as supplemental control. Ground points that may have been from another datum were not constrained in the aerotriangulation and were included as check points only.

RMS control points with default standard deviation set (number: 36)
- x 0.286 [feet]
- y 0.252 [feet]

RMS control points with default standard deviation set (number: 33)
- z 0.161 [feet]

RMS IMU observations (number: 1719)
- omega 0.006 [deg]
- phi 0.004 [deg]
- kappa 0.008 [deg]

RMS GNSS observations (number: 1719)
- x 0.253 [feet]
- y 0.203 [feet]
- z 0.207 [feet]

mean standard deviations of terrain points
- x 0.041
- y 0.055
- z 0.141

Sigma naught : 1.6 [micron] = 0.1 [pixel in level 0]

· Mat_Su_2000_2012

1:24000 scale imagery, 1709 images including reflights.

RMS control points with default standard deviation set (number: 3)
- x 0.212 [feet]
- y 0.353 [feet]

RMS control points with default standard deviation set (number: 3)
- z 0.187 [feet]

RMS at check points
- x 0.635 [feet] (number: 25)
- y 1.001 [feet] (number: 25)
- z 1.394 [feet] (number: 25)

RMS IMU observations (number: 1709)
- omega 0.012 [deg]
- phi 0.008 [deg]
- kappa 0.012 [deg]

RMS GNSS observations (number: 1709)
- x 0.535 [feet]
- y 0.763 [feet]
- z 0.529 [feet]

mean standard deviations of terrain points
- x 0.076
- y 0.110
- z 0.257

Sigma naught : 2.0 [micron] = 0.2 [pixel in level 0]

All files listed below were previously submitted with this summary

• Included AT text files:

· Control point list in NAD83, ASP Zone 4, U.S. Survey Feet, Geoid09 Orthometric Elevations

Mat_Su_Control_NAD83_ASP4_G09.txt

· Adjusted exterior orientation parameter files for all exposure stations in each AT block

Mat_Su_1000_2012_EO.xyz	1000 scale images from 2011 and 2012
Mat_Su_2000_2012_EO.xyz	2000 scale images from 2012
Mat_Su_2000_All_EOs.xyz	2000 scale images from 2011 and 2012

· AT output with residuals and standard deviations for each exposure and control point in the AT adjustment

Mat_Su_1000_2012_aat.log
Mat_Su_2000_2012_aat.log

· AT output files with statistics for all triangulated points and exposure stations in the AT adjustment

Mat_Su_1000_2012_Statistics.txt
Mat_Su_2000_2012_Statistics.txt

• other files

· PDF file with 1:12000 (1”=1000’) photo centers

Mat_Su_1000_2012_Layout.pdf	1000 scale images from 2011 and 2012

· PDF file with 1:24000 (1”=2000’) photo centers

Mat_Su_2000_2012_Layout.pdf	2000 scale images from 2012 only
Mat_Su_2000_All_Layout.pdf	2000 scale images from 2011 and 2012

• See the AT Summary directories for full summaries and associated files.

APPENDIX B – ACCURACY ANALYST QUALITY CONTROL REPORTS

Following are the results from a horizontal accuracy assessment done using Accuracy Analyst, a software program designed for this purpose.

This software compares the actual location of check points within the orthoimagery to the coordinate values collected during the aerotriangulation process.

See section 5 entitled QUALITY ASSURANCE / QUALITY CONTROL REPORTING on page 11 for more details on this procedure.

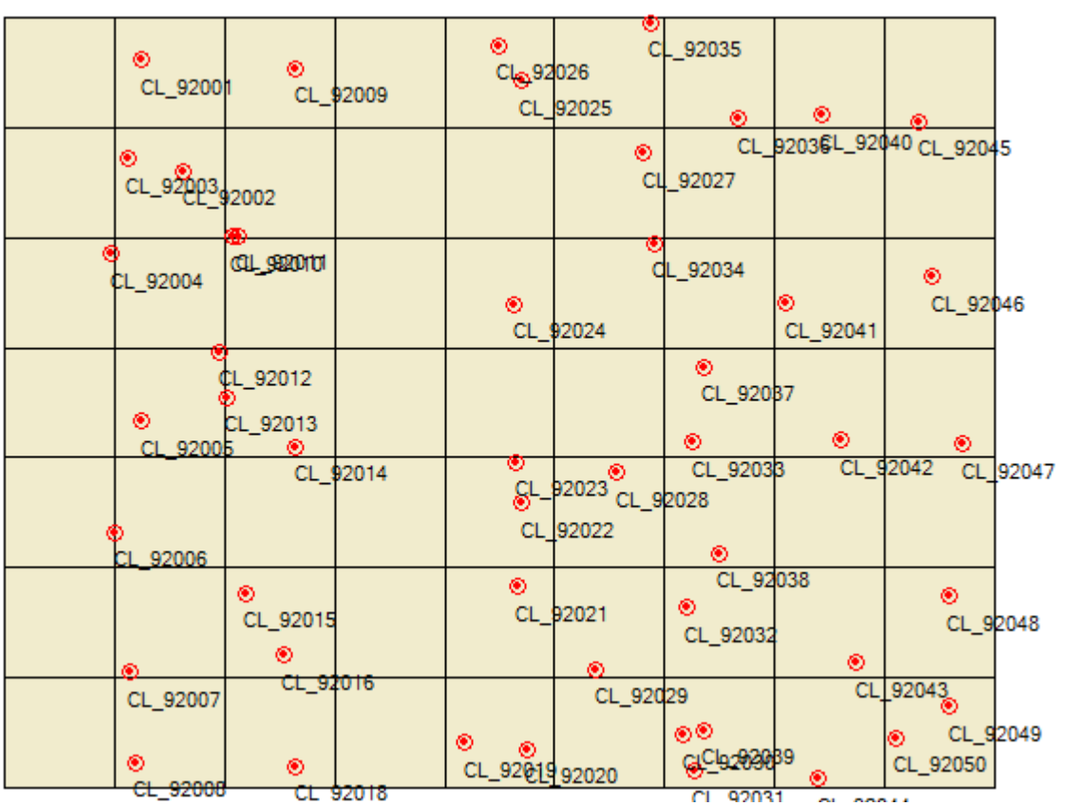
Project Information

Prepared By: Mark Syren
Project Name: MatSu Orthos - Caswell Lake
Sensor Info: Digital Mapping Camera
Sensor Resolution: 1
Vendor Name: Aero-Metric, Inc.
Date of Aquisition: Start: 5/23/2011 Finish: 5/27/2011

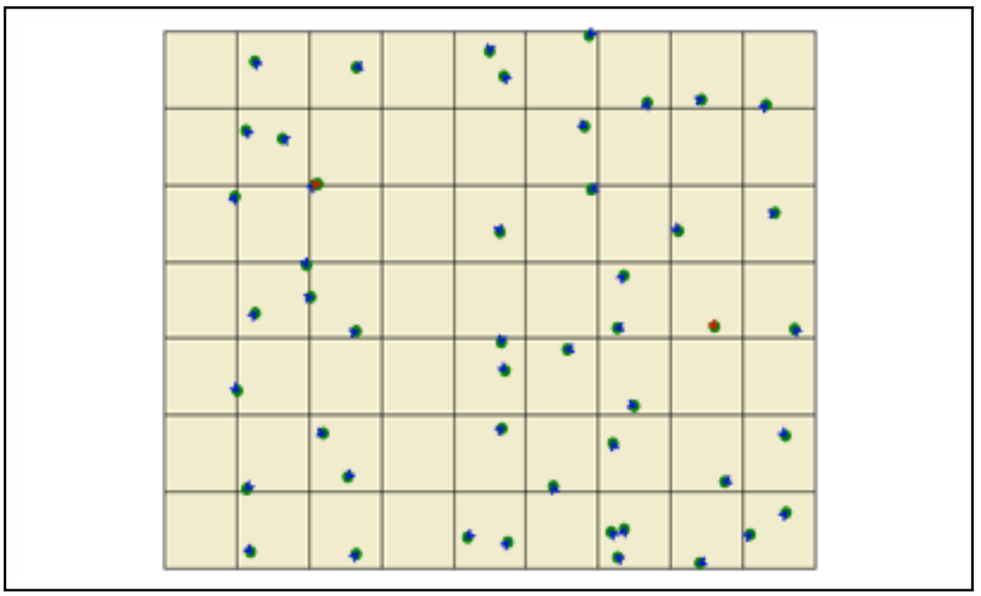
Metadata Information

Index File Name: CL_Layout.shp
# of Polygons: 63
# of Matching Images: 63
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.042
Scaling Used: 1:400

Tiled-Image Area

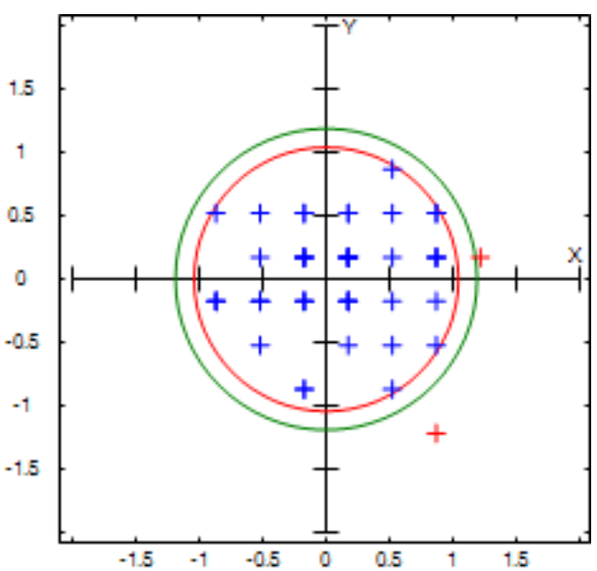


Vector Offset



Scaling Factor: 200

Circular Error



Error Statistics

Min ΔX:	-0.868	Min ΔY:	-1.215	SX:	0.54
Max ΔX:	1.215	Max ΔY:	0.868	SY:	0.432
Mean ΔX:	0.103	Mean ΔY:	-0.004	SH:	0.486
Skew ΔX:	0.008	Skew ΔY:	-0.619		
RmseX:	0.544	RmseY:	0.427	RmseH:	0.692
SRMSE H:	0.069				
CE 90:	1.042	CE 95:	1.189	CI:	0.136
No. Observations:		49			
Horiz. Bias:		0.103		NSSDA:	1.189

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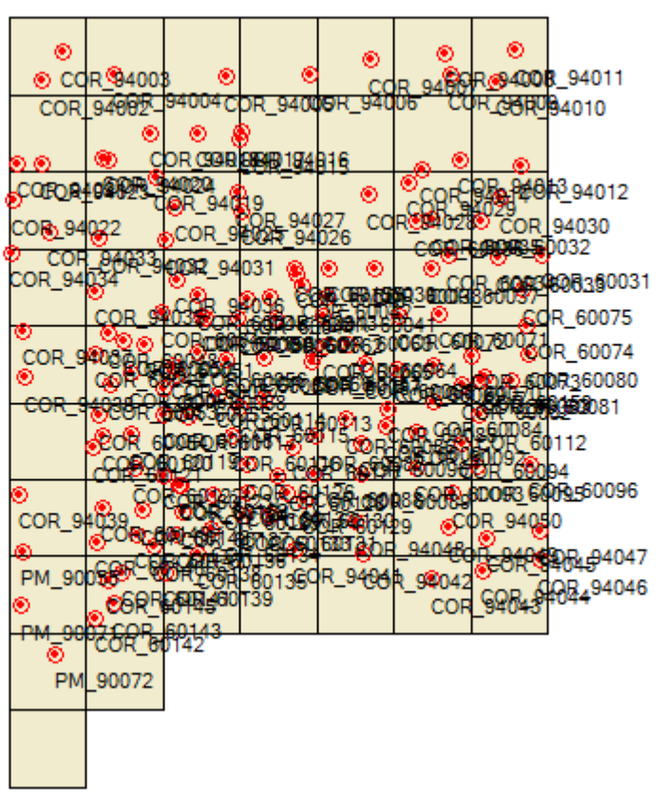
Project Information

Prepared By: Mark Syren
Project Name: MatSu Orthos - Core Area
Sensor Info: DMC
Sensor Resolution: 1
Vendor Name: Aero-Metric, Inc.
Date of Aquisition: Start: 5/23/2011 Finish: 9/10/2012

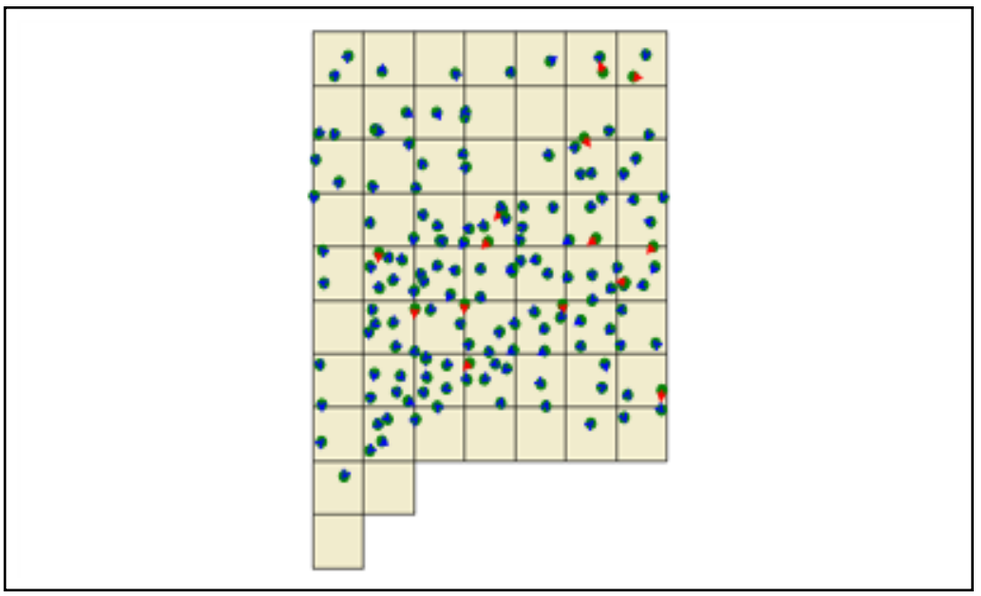
Metadata Information

Index File Name: CA_Layout.shp
# of Polygons: 59
# of Matching Images: 59
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.033
Scaling Used: 1:400

Tiled-Image Area

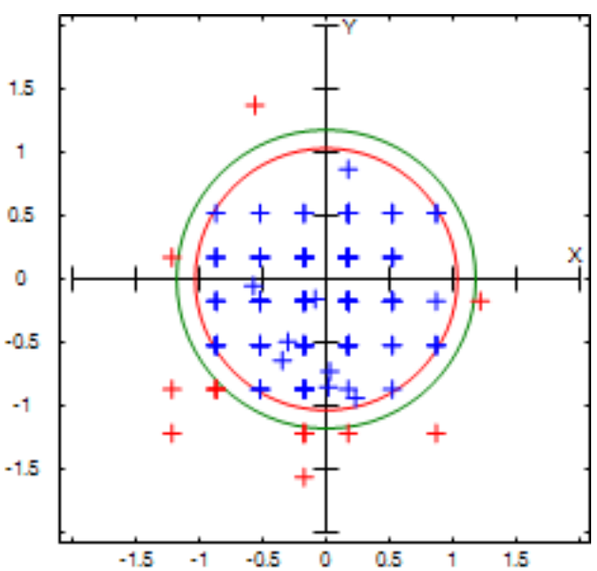


Vector Offset



Scaling Factor: 2000

Circular Error



Error Statistics

Min ΔX:	-1.215
Min ΔY:	-1.563
Max ΔX:	1.215
Max ΔY:	1.373
Mean ΔX:	-0.102
Mean ΔY:	-0.219
RmseX:	0.489
RmseY:	0.529
RmseH:	0.721
NSSDA:	1.247
No. Obs.:	153
CE 90:	1.033
CE 95:	1.179

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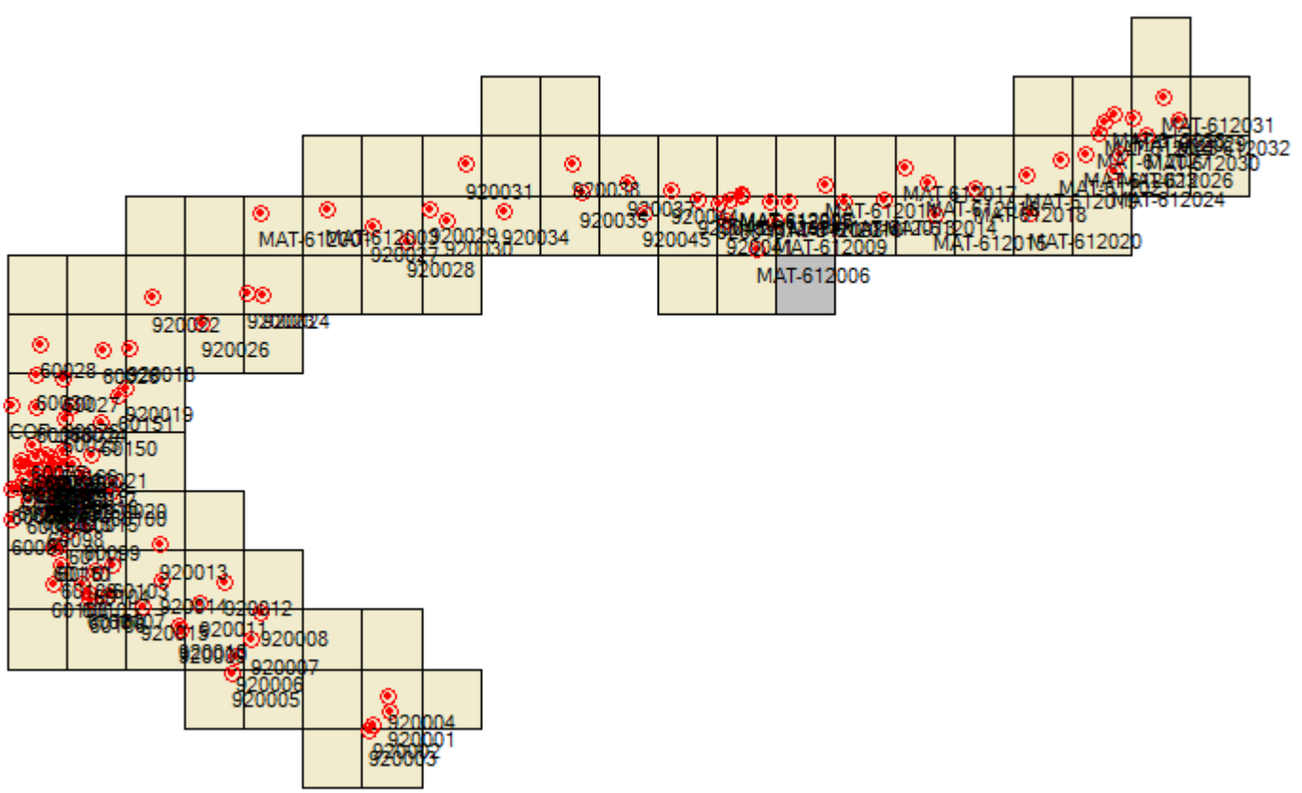
Project Information

Prepared By: Mark Syren
Project Name: MatSu Orthos - Matanuska
Sensor Info: DMC
Sensor Resolution: 1
Vendor Name: Aero-Metric, Inc.
Date of Aquisition: Start: 5/14/2011 Finish: 8/29/2012

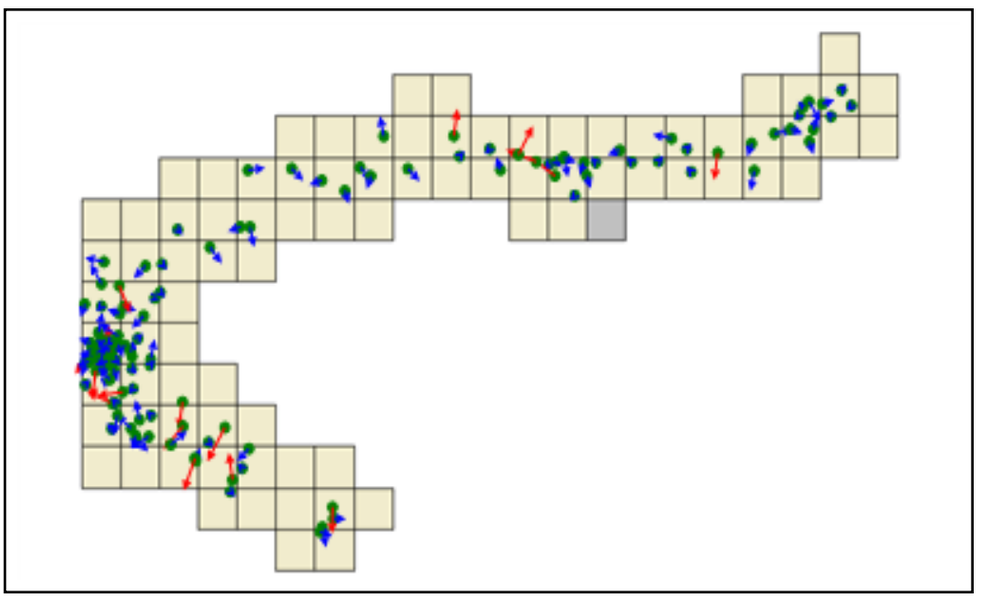
Metadata Information

Index File Name: Mat_Layout.shp
# of Polygons: 85
# of Matching Images: 84
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.119
Scaling Used: 1:400

Tiled-Image Area

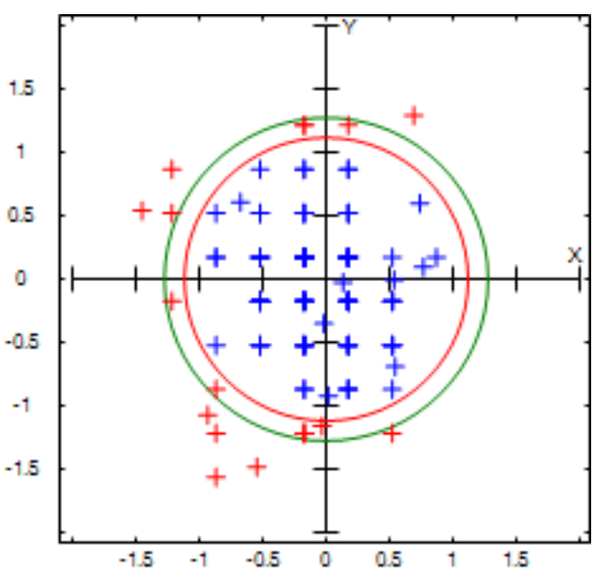


Vector Offset



Scaling Factor: 8000

Circular Error



Error Statistics

Min ΔX:	-1.452
Min ΔY:	-1.563
Max ΔX:	0.868
Max ΔY:	1.291
Mean ΔX:	-0.122
Mean ΔY:	-0.11
RmseX:	0.471
RmseY:	0.594
RmseH:	0.758
NSSDA:	1.312
No. Obs.:	121
CE 90:	1.119
CE 95:	1.276

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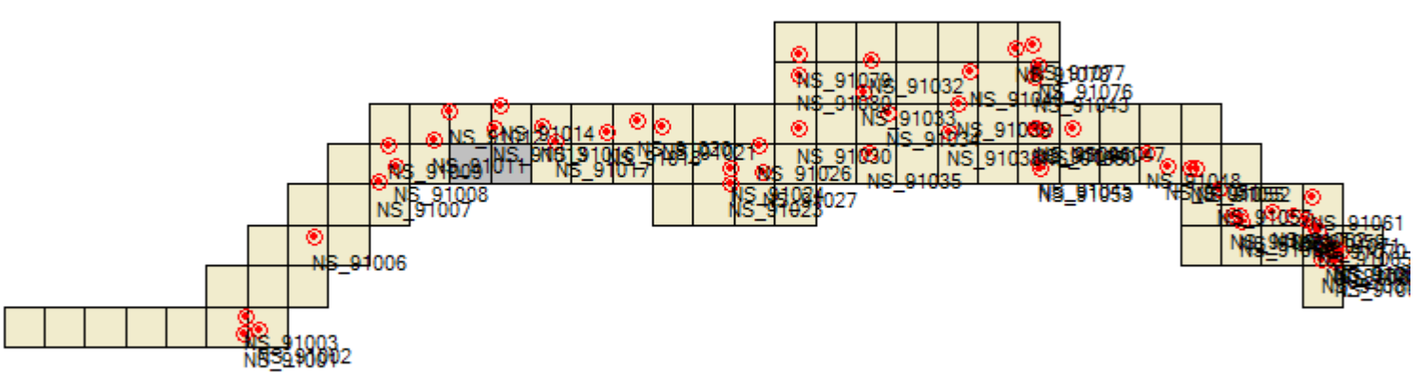
Project Information

Prepared By: Mark Syren
Project Name: MatSu Ortho - North Susitna
Sensor Info: Digital Mapping Camera
Sensor Resolution: 1
Vendor Name: Aero-Metric, Inc.
Date of Aquisition: Start: 6/18/2011 Finish: 10/12/2011

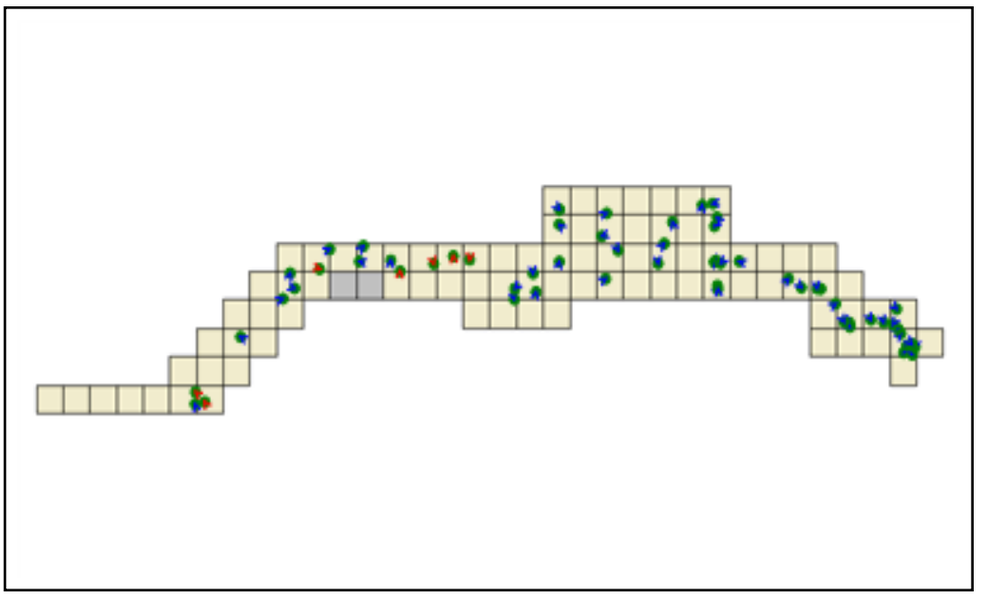
Metadata Information

Index File Name: NS_Layout.shp
# of Polygons: 88
# of Matching Images: 86
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.43
Scaling Used: 1:400

Tiled-Image Area

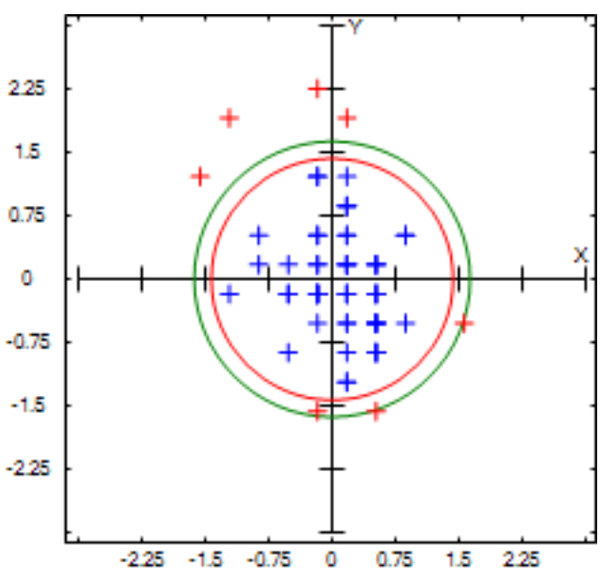


Vector Offset



Scaling Factor: 200

Circular Error



Error Statistics

Min ΔX:	-1.563	Min ΔY:	-1.563	SX:	0.539
Max ΔX:	1.563	Max ΔY:	2.257	SY:	0.794
Mean ΔX:	0.075	Mean ΔY:	0.035	SH:	0.666
Skew ΔX:	-0.604	Skew ΔY:	0.557		
RmseX:	0.54	RmseY:	0.788	RmseH:	0.955
SRMSE H:	0.086				
CE 90:	1.43	CE 95:	1.631	CI:	0.169
No. Observations:		60			
Horiz. Bias:		0.083		NSSDA:	1.625

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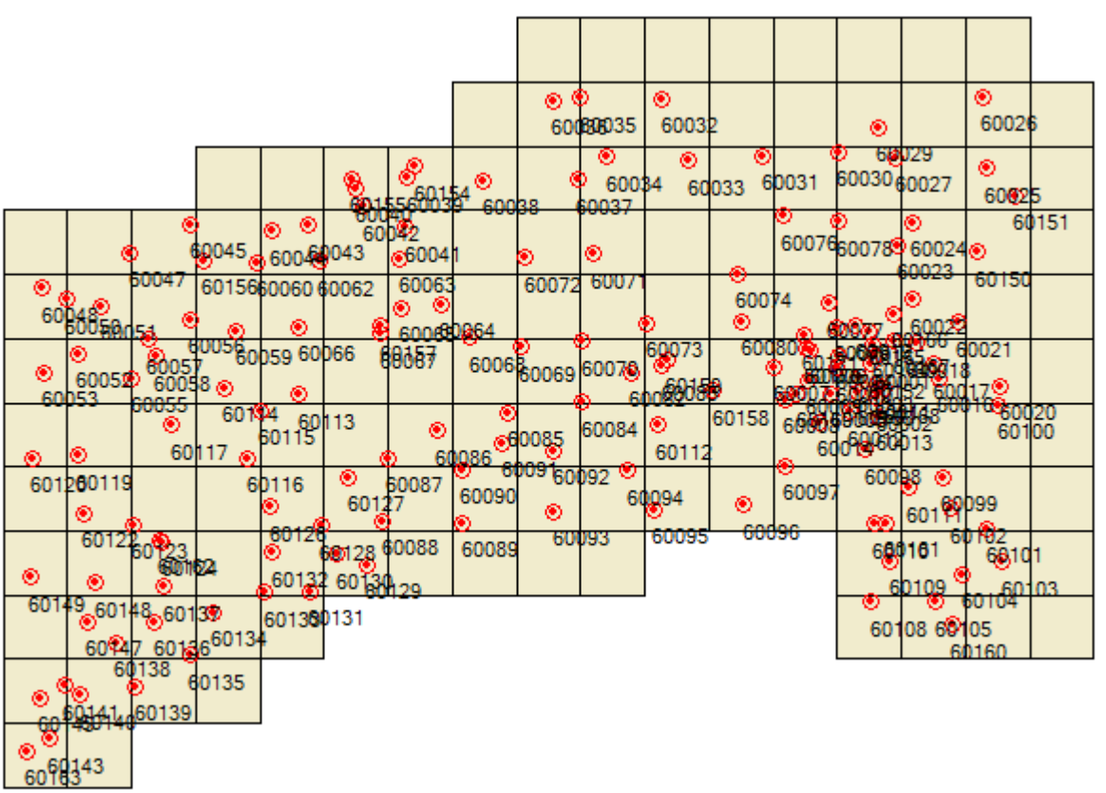
Project Information

Prepared By: Mark Syren
Project Name: MatSu Orthos - Populated Area
Sensor Info: Zeiss Digital Mapping Camera
Sensor Resolution: 1
Vendor Name: AerMetric, Inc.
Date of Aquisition: Start: 5/11/2011 Finish: 8/18/2012

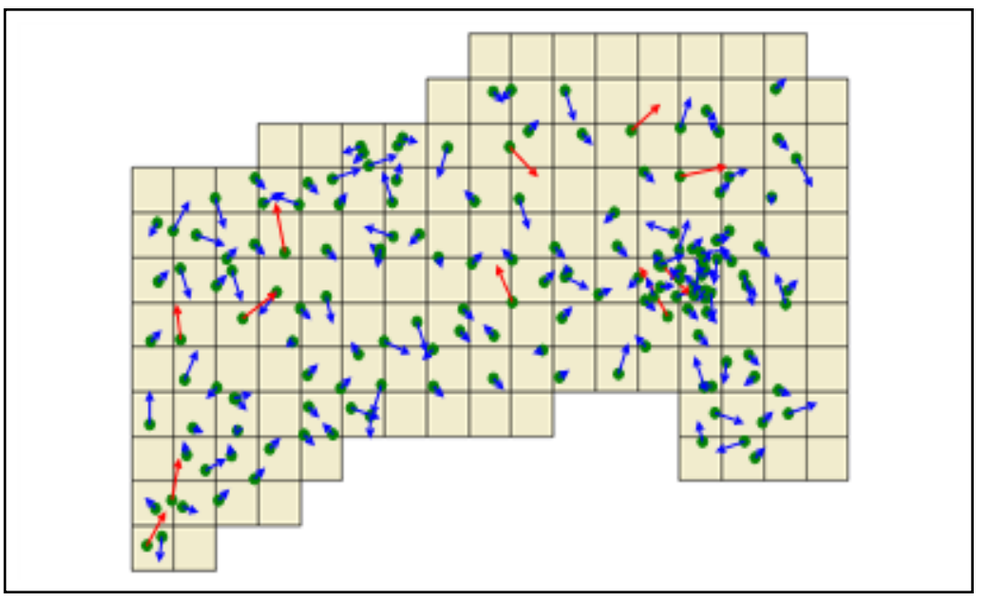
Metadata Information

Index File Name: MatSu_Tiles_1000scale.shp
# of Polygons: 146
# of Matching Images: 146
Polygon ID: Qtr_Tile
Units: Feet
Threshold: CE90: 0.59
Scaling Used: 1:400

Tiled-Image Area

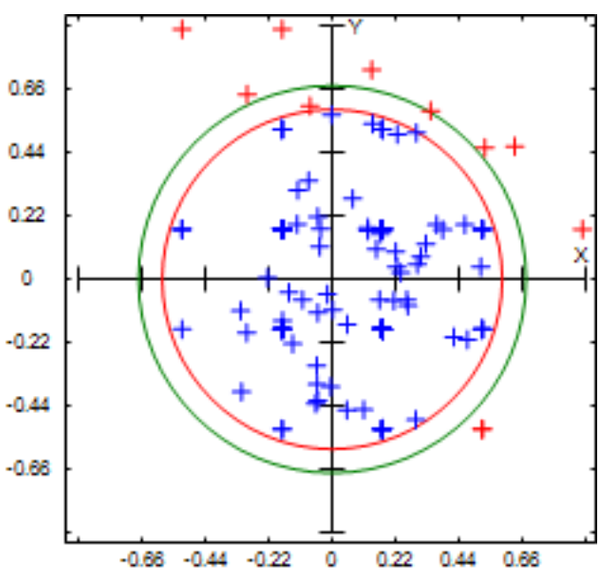


Vector Offset



Scaling Factor: 10000

Circular Error



Error Statistics

Min ΔX:	-0.521	Min ΔY:	-0.521	SX:	0.247
Max ΔX:	0.868	Max ΔY:	0.868	SY:	0.303
Mean ΔX:	0.089	Mean ΔY:	0.016	SH:	0.275
Skew ΔX:	-0.068	Skew ΔY:	0.292		
RmseX:	0.261	RmseY:	0.302	RmseH:	0.4
SRMSE H: 0.022					
CE 90:	0.59	CE 95:	0.673	CI:	0.043
No. Observations:		155			
Horiz. Bias:		0.09		NSSDA:	0.69

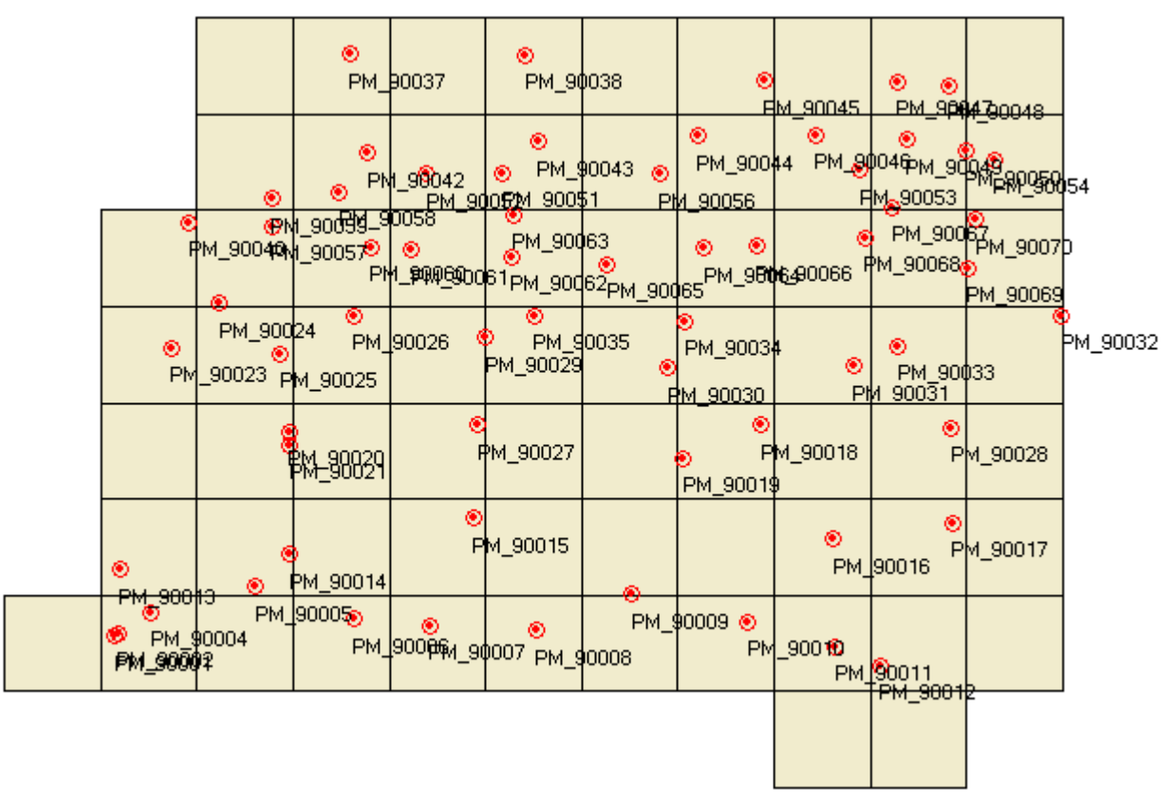
Project Information

Prepared By: Mark Syren
Project Name: MatSu Orthos - Point MacKenzie
Sensor Info: Digital Mapping Camera
Sensor Resolution: 1
Vendor Name: AeroMetric, Inc.
Date of Aquisition: Start: 5/12/2011 Finish: 6/18/2011

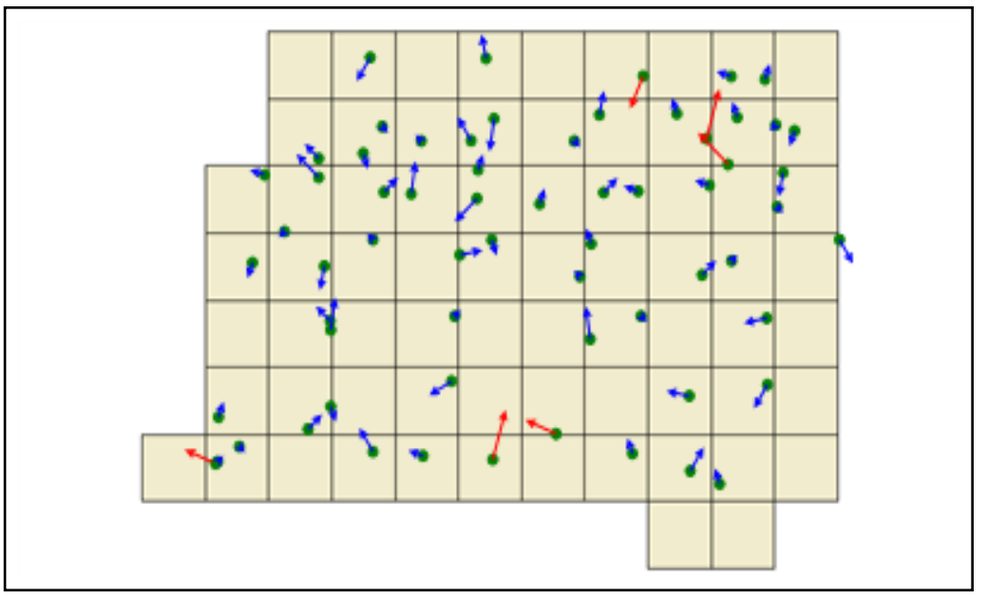
Metadata Information

Index File Name: PM_Layout.shp
# of Polygons: 71
# of Matching Images: 71
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.243
Scaling Used: 1:400

Tiled-Image Area

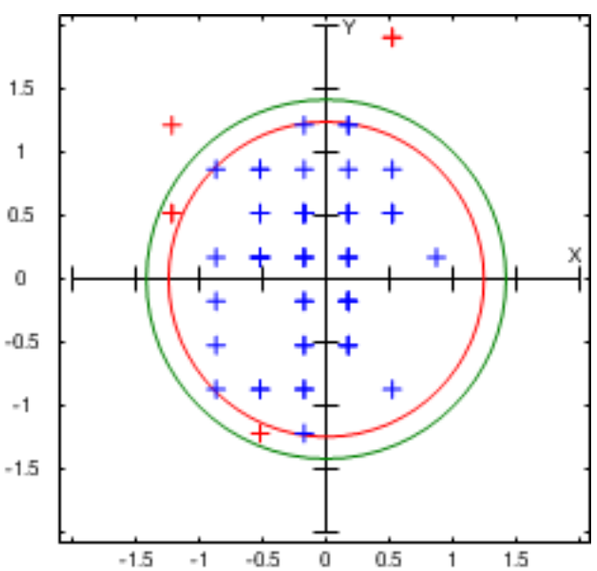


Vector Offset



Scaling Factor: 6000

Circular Error



Error Statistics

Min ΔX:	-1.215	Min ΔY:	-1.215	SX:	0.474
Max ΔX:	0.868	Max ΔY:	1.91	SY:	0.684
Mean ΔX:	-0.141	Mean ΔY:	0.201	SH:	0.579
Skew ΔX:	-0.367	Skew ΔY:	0.042		
RmseX:	0.491	RmseY:	0.708	RmseH:	0.862
SRMSE H:	0.072				
CE 90:	1.243	CE 95:	1.418	CI:	0.142
No. Observations:		64			
Horiz. Bias:		0.245		NSSDA:	1.467

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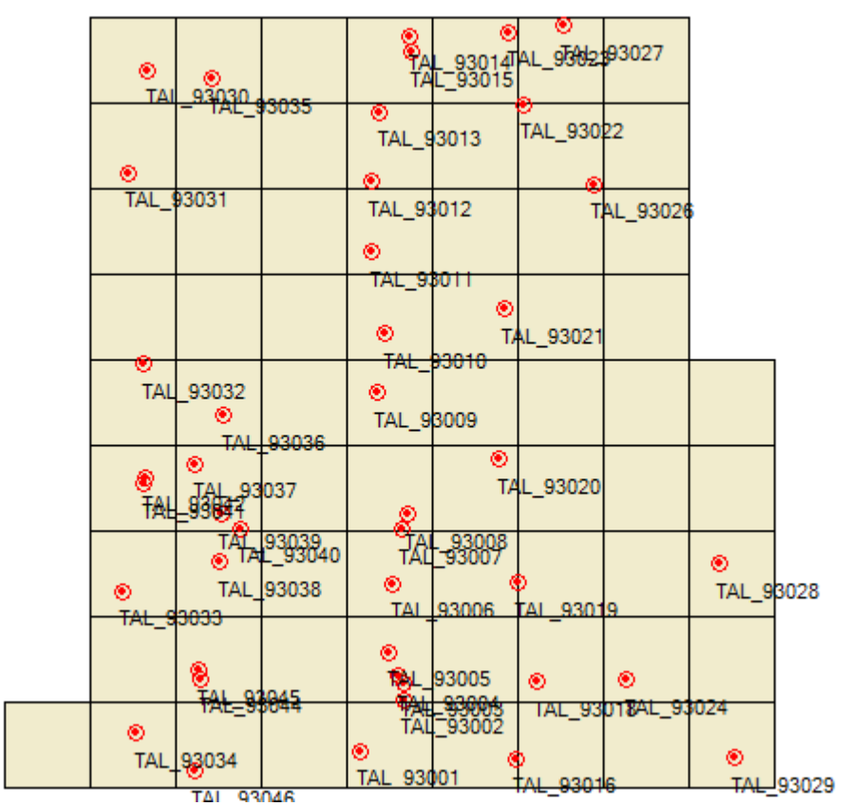
Project Information

Prepared By: Mark Syren
Project Name: MatSu Ortho - Talkeetna
Sensor Info: Digital Mapping Camera
Sensor Resolution: 1
Vendor Name: Aero-Metric, Inc.
Date of Aquisition: Start: 5/23/2011 Finish: 7/21/2011

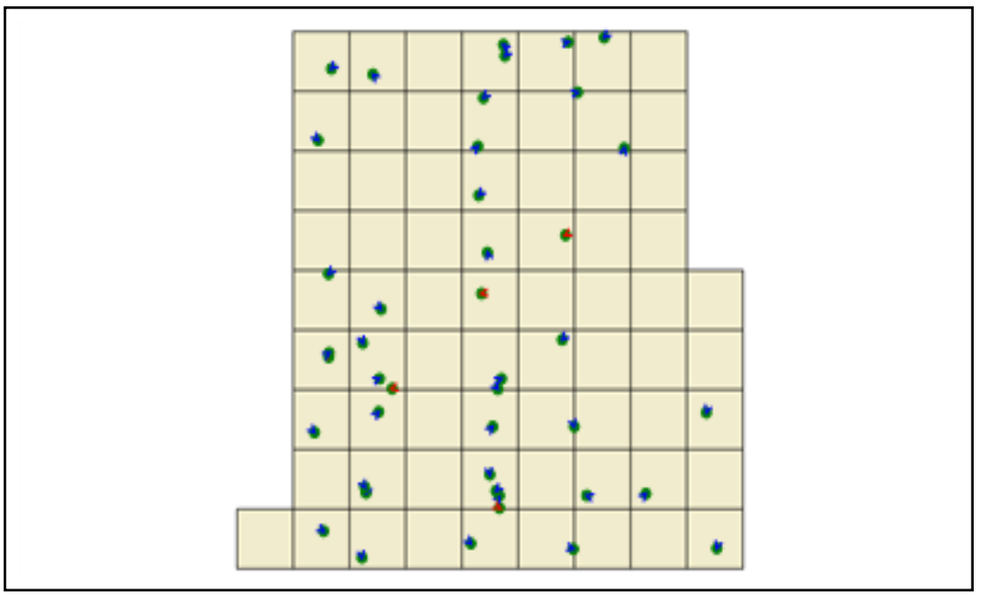
Metadata Information

Index File Name: TAL_Layout.shp
# of Polygons: 69
# of Matching Images: 69
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.223
Scaling Used: 1:400

Tiled-Image Area

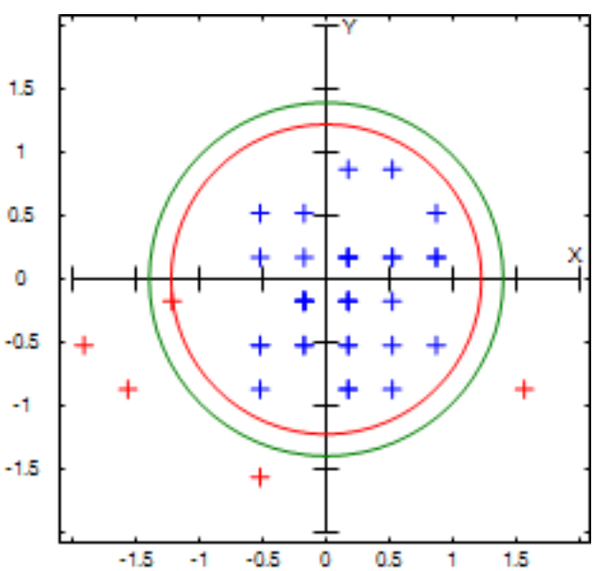


Vector Offset



Scaling Factor: 200

Circular Error



Error Statistics

Min ΔX:	-1.91	Min ΔY:	-1.563	SX:	0.635
Max ΔX:	1.563	Max ΔY:	0.868	SY:	0.505
Mean ΔX:	0.02	Mean ΔY:	-0.198	SH:	0.57
Skew ΔX:	-0.697	Skew ΔY:	-0.117		
RmseX:	0.628	RmseY:	0.537	RmseH:	0.826
SRMSE H:	0.087				
CE 90:	1.223	CE 95:	1.395	CI:	0.17
No. Observations:		43			
Horiz. Bias:		0.199		NSSDA:	1.426

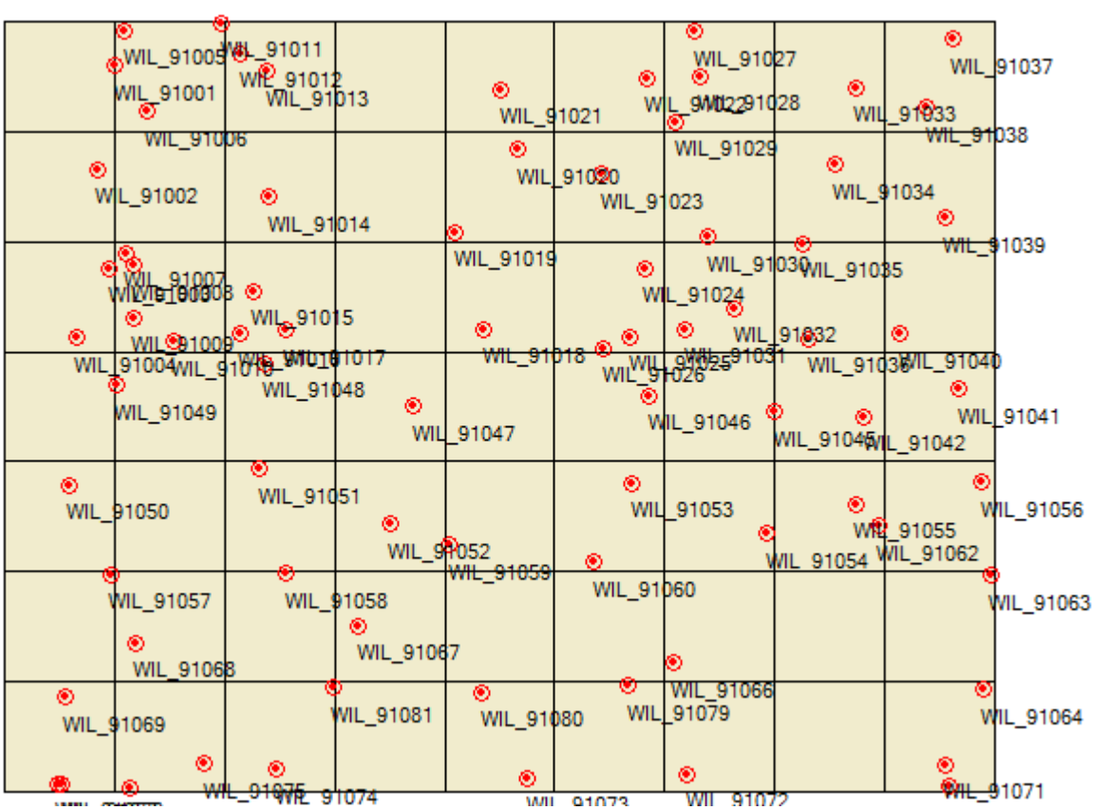
Project Information

Prepared By: Mark Syren
Project Name: MatSu Orthos - Willow
Sensor Info: Digital Mapping Camera
Sensor Resolution: 1
Vendor Name: Aero-Metric, Inc.
Date of Aquisition: Start: 5/11/2011 Finish: 6/18/2011

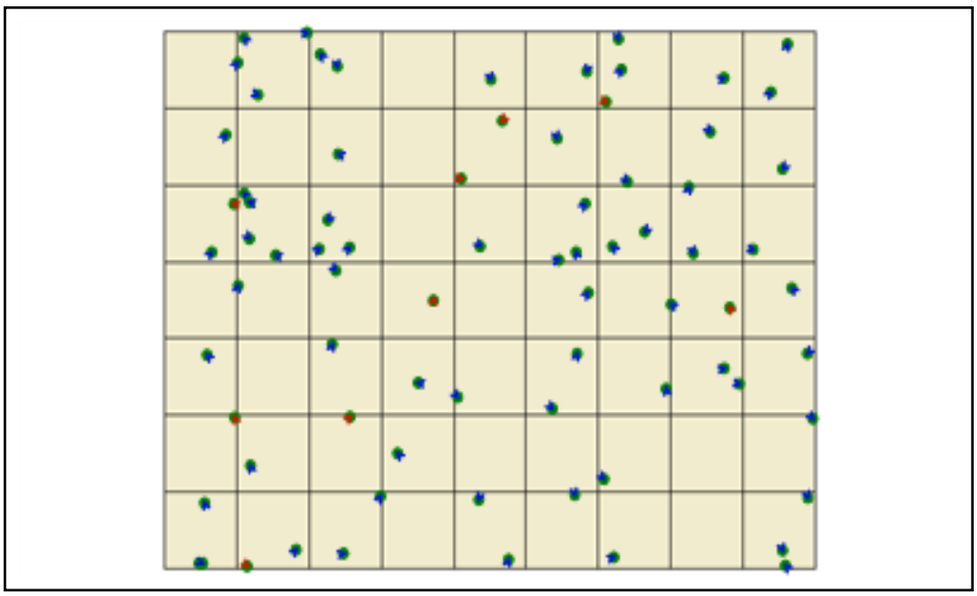
Metadata Information

Index File Name: Wil_Layout.shp
# of Polygons: 63
# of Matching Images: 63
Polygon ID: Tile_Name
Units: Feet
Threshold: CE90: 1.156
Scaling Used: 1:400

Tiled-Image Area

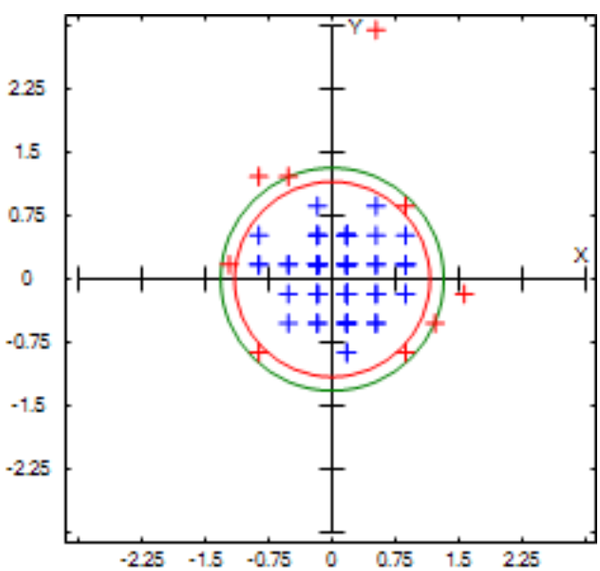


Vector Offset



Scaling Factor: 200

Circular Error



Error Statistics

Min ΔX:	-1.215	Min ΔY:	-0.868	SX:	0.513
Max ΔX:	1.563	Max ΔY:	2.951	SY:	0.564
Mean ΔX:	0.119	Mean ΔY:	0.083	SH:	0.539
Skew ΔX:	-0.025	Skew ΔY:	1.698		
RmseX:	0.524	RmseY:	0.567	RmseH:	0.772
SRMSE H:	0.061				
CE 90:	1.156	CE 95:	1.319	CI:	0.12
No. Observations:		77			
Horiz. Bias:		0.146		NSSDA:	1.335