

NOMINAL SITUATION (update)

MISR Level 1 products generated with the Camera Geometric Model (CGM) version 7 represent a significant improvement in terms of georectification and coregistration accuracy if compared with those generated with previous CGM versions 5 and 6. Previous CGM versions were based upon data from a few months or less. CGM version 7 was produced after extensive analysis of a comprehensive list of MISR image data acquired over an eighteen month time period. The improved coverage provided for more reliable removal of outlier data prior to full in-flight geometric calibration. The calibration was based on 120 Ground Control Points (GCP's) distributed around the globe. As a result, the D aft camera pointing deficiencies evident in previous CGMs were removed for the time period August 2000 - July 2001. For that time period, the expected mean geolocation error for all nine cameras is below 60 meters with the standard deviations ranging from 100 meters for the nadir view angle, up to 300 meters for the most oblique angles (i.e., the D cameras). Outside of that time period, the Da camera mean geolocation error may exhibit an occasional bias of up to 800m. The observed sizes of the remaining pointing deviations across all cameras are consistent with small dynamic errors expected in the reported spacecraft attitude data. However, the cause of the significant pointing variability in the Da camera when compared to the other eight cameras is not fully understood. Hence, there still exist potential accuracy issues with the data acquired by the Da camera in the future. We are in the process of verifying other ancillary datasets which are designed to complement the CGM and complete the in-flight geometric calibration effort. These datasets, named Projection Parameters and Reference Orbit Imagery, are specifically designed to reduce the effects of dynamic attitude errors. In addition, the use of these datasets should rectify any future changes in static pointing (e.g for Da camera) for the remainder of the mission. When these datasets are delivered and utilized (late 2002) a reliable geometric accuracy quality indicator will be added to MISR data products.

ANOMALIES

It should also be noted that occasional and temporary degradations in attitude accuracy have been observed. These attitude degradations ultimately impact product geolocation and registration. Nevertheless, we expect a very small percentage of data to be affected. There is a list of orbits suspected to suffer from poor attitude accuracy due to orbit maneuvers or orbit attitude data loss.

See also

- [Statement dated April 15, 2002](#) for the statement containing the initial quality evaluation of MISR Camera Geometric Model 7.
- [Statement dated February 5, 2002](#) for information concerning the previous version of the MISR Camera Geometric Model (6).