

## Mars MGS MOLA global geodetic control network

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The Mars Orbiter Laser Altimeter (MOLA) on the Mars Global Surveyor (MGS) mission will produce a precision global geodetic control network for Mars of 30,000 - 50,000 points which will be accurate to 500m (3 sigma) in planer coordinates and 100m (3 sigma) in radius. Precision orbits, produced from long arc spacecraft doppler tracking to improve the Mars gravity field, together with spacecraft attitude, MOLA alignment parameters and the MOLA ranging points are being combined with the existing Viking Mars Digital Image Maps (MDIMs - E. Eliason, USGS) to produce accurate 3 dimensional coordinates of surface features using the MOLA ranging observations to identify feature crossings and the MDIMs to translate the feature crossing to the center of the feature. A special MOLA / MDIM image product (mogal) is being produced which contains a small image strip surrounding the MOLA ground track and a plot of the MOLA-derived radii data to enable the correlation between altimetry and image. The mogal production process and the extraction process of geodetic control points will be described.