



## **A global 3-D anaglyphic view of Mars derived from Mars Laser Altimeter Data**

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We show synthetic 3-D anaglyphic views of the planet Mars useful for science and education. We derived the images using height information from the Mars Orbiter Laser Altimeter (MOLA) instrument [1]. A global anaglyphic image of the entire Mars is presented in Simple Cylindrical projection. In addition, both poles are shown in Stereographic projection. For the global image we first formed a global Digital Terrain Model (DTM) by merging the four tiles (<http://pds-geosciences.wustl.edu/missions/mgs/megdr.html>) of the gridded MEGDR products (64 pxl/deg). Then, a shaded relief image of this model with a simulated light source from the upper left was created. Now, two artificial oblique views ( $\pm 25^\circ$ ) of the surface model, textured with the shaded relief, were calculated. Height information has been exaggerated by a factor of 5 in order to accentuate the 3-D effect. These perspective views were finally composed to a stereoscopic anaglyph. The global anaglyphic image in Simple Cylindrical has a resolution of 11,164 by 20,230, i.e. approx. 1 km/pxl. The images of the polar regions have resolutions of 8311 by 8311, i.e. approx. 0.3km/pxl. Because of the special MOLA point distribution, we started the creation of anaglyphic images of the poles from the original MOLA (PEDR) profiles (<http://pds-geosciences.wustl.edu/missions/mgs/pedr.html>). PEDR topography data were interpolated to form the initial DTM from  $\pm 70^\circ$  to  $\pm 90^\circ$  for the polar regions. Using special data analysis, more than 20 erroneous outlier profiles were eliminated from the interpolation. Shaded reliefs and oblique views were derived as before. The images will be made available electronically.

**References:**[1] Smith et al. (2001) JGR, 106, E10, 2001.