

Digital Elevation Models Created from Stereo Terra ASTER Data

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The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) on NASA's Terra platform acquires stereo images of the surface using nadir and backward looking telescopes. Data are obtained with a base-to-height ratio of 0.6 in the 0.76-0.86 micrometer wavelength region. Images cover about 60 by 60 km with a spatial resolution of 15 m. A digital stereo correlation approach is used to calculate the parallax differences and derive digital elevation models (DEMs) from ASTER stereo pairs. DEM accuracies are 15-30 m for relative DEMs made without ground control points (GCPs); with accurate GCPs, RMSE_{xyz} accuracies are 7-30 m. DEM's can be produced to-order through NASA's EOSDIS Data Gateway. In this presentation examples will be shown of derived DEMs with analyses of accuracies. Applications of DEMs for various applications will be presented.