

DATA & APPLICATIONS ONLINE

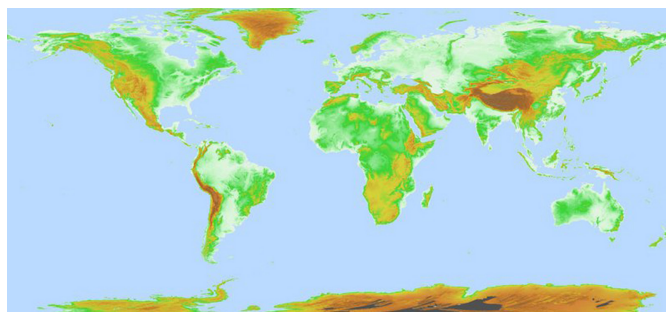
ASTER Global Digital Elevation Model (GDEM)

Overview

The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) is an imaging instrument aboard NASA's Terra satellite. The ASTER mission is a cooperative program between NASA, Japan's Ministry of Economy, Trade and Industry (METI), and Japan Space Systems. The ASTER GDEM was developed jointly by NASA and METI. The ASTER GDEM data are distributed by NASA's Land Processes Distributed Active Archive Center (LP DAAC) at no charge to users. The data are also available from Japan's Earth Remote Sensing Division (formerly, the Earth Remote Sensing Data Analysis Center (ERSDAC)).

The ASTER Global Digital Elevation Model (GDEM) was compiled from over 1.8 million ASTER scenes acquired between March 2000 and November 2013. GDEM is based on ASTER stereoscopic data (nadir and backward-looking near-infrared channels 3A and 3B at 15 meters spatial resolution). A cloud-mask is applied to remove cloudy pixels. All cloud-screened DEMs were stacked onto a global grid with a horizontal spatial resolution of 30 meters, and a statistical selection algorithm was used to remove abnormal values and outliers. Enhanced accuracy was achieved by using multiple scenes from the same area. Islands as well as continental areas were included, as long as at least one percent of an ASTER scene contained land.

An additional 30-meter global product, ASTER Water Bodies Database (ASTWBD), was included during the release of ASTER GDEM version 3. This raster product identifies all water bodies as either ocean, river, or lake. Each GDEM tile has a corresponding Water Body tile. This data product provides the only water mask covering nearly the entire surface of the Earth.



About the Data

Coverage: Land surfaces between 83° N and 83° S with 22,912 1° by 1° tiles, each an array of 3,601 by 3,601 elevations on a 1 arc-second (30 m) grid

Geographic projection: Latitude/Longitude

Accuracy information is available at: https://lpdaac.usgs.gov/documents/220/Summary_GDEM2_validation_report_final.pdf

Data Access

- ASTER GDEM and ASTWBD tiles may be downloaded from Japan Space Systems and from NASA's LP DAAC by visiting NASA's Earthdata Search (<https://search.earthdata.nasa.gov/>) or downloading directly from the LP DAAC's Data Pool (<https://lpdaac.usgs.gov/tools/data-pool/>).
- The data are available with transformation services via the Application for Extracting and Exploring Analysis Ready Samples (AppEEARS) (<https://lpdaacsvc.cr.usgs.gov/appears/>).
- ASTER Data Usage and Data Citation Policies: <https://lpdaac.usgs.gov/data/data-citation-and-policies/>

References

Sensing Our Planet, 2011, Waiting for Gojal, <https://earthdata.nasa.gov/featured-stories/featured-research/waiting-gojal>



Land Processes Distributed Active Archive Center (LP DAAC)

United States Geological Survey
Earth Resources Observation and Science
(EROS) Center
Sioux Falls, South Dakota

<https://lpdaac.usgs.gov>



EODIS DAACs

LP DAAC is one of the NASA Earth Observing System Data and Information System (EOSDIS) DAACs that manage, archive and distribute Earth science data as part of NASA's Earth Science Data Systems (ESDS) Program.

To learn more about EOSDIS data resources visit, <https://earthdata.nasa.gov>.