Uncontrolled Mosaic of Ceres



Insitor

Scal	le 1:250	000		
0	5	10	15	20 km

GENERAL NOTES

Contour lines were derived from a digital terrain model (DTM) of Ceres. The lateral resolution of the DTM is 135 m/pxl. The heights are geometric heights and refer to This map sheet is the 36th of a 62-quadrangle series [1] covering the entire surface of Ceres at a nominal scale of 1:250 000. The source of map data was the Dawn an oblate ellipsoid with a semi-major axis of 482 km and a semi-minor axis of 446 imaging experiment [2]. The Dawn mission journeys to the center of the main asteroid belt to orbit and km. explore the two most massive main belt asteroids, Vesta and Ceres [3,4]; it entered Ceres's orbit in March 2015. The spacecraft was developed by Orbital Sciences Corporation under the management of the Jet Propulsion Laboratory (JPL). Contour equidistance 1,000 m Contour line values point to increasing heights. The Dawn framing camera has one clear filter and seven band-pass filters covering the wavelengths from the visible to the near-IR (0.4 to 1.05 microns). The camera has a focal length of 150 mm and a field of view of 5.5 degrees. At the heart of the camera is a charged coupled device (CCD) detector consisting of a 1024 square array of pixels, each 12 microns on a side. All images used in this atlas were taken during the LAMO (Low Altitude Mapping Orbit) phase at an altitude of about 370 By international age By international agreement, craters are named after gods and goddesses of

MAP SHEET DESIGNATION

Ac-L	Asteroid Cer
250K	Scale 1:250
-12.5/135	Center point
UMT	Uncontrolled
2017	Year of public

ORTHOIMAGE MOSAICKING

in the form of SPICE kernels. SPICE is a data system providing ancillary data such 2011, The Dawn Framing Camera, Space Science Review 163, 263-327. as spacecraft and target positions, target body size, shape, and orientation, spacecraft orientation, instrument pointing used for planning space science missions and [3] IAU, Minor Planet Names List: recovering the full value of science instrument data returned from missions http://www.minorplanetcenter.net/iau/lists/MPNames.html. (http://naif.jpl.nasa.gov/).

Space Science Review 163, 3-23. The Dawn mission was imaging Ceres in LAMO in ten cycles with a duration of about 20 days each. The spacecraft was nadir looking in the first four cycles and off-nadir looking in the other cycles and took about 31,000 clear filter images during these cycles. All images were ortho-rectified on the HAMO (High Altitude Mapping S.P., Polanskey, C.A., Raymond, C.A., and Russell, C.T., 2015, Shape model and S.P., Polanskey, C.A., Raymond, C.A., and Russell, C.T., 2015, Shape model and Orbit) DTM [5] using the reconstructed orbit and pointing kernels. We combined the rotational state of dwarf planet Ceres from Dawn FC stereo images, European images from the first four cycles to four mosaics and combined these four mosaics Planetary Science Congress 2015, Abstract ID: EPSC2015-186. to one global mosaic. Very minor remaining gaps were filled with images from cycle [6] Roatsch, Th., Kersten, E., Matz, K.-D., Preusker, F., Scholten, F., Jaumann, R., six and seven.

The crater Kait, measuring approximately 400 m in diameter, at 2.1°S and 0°E was Camera images, 2015, Planetary and Space Science 121, 115-120. chosen to define the Ceres longitude system [6].

MAP PROJECTION

Scale is true at 15.9°N and 15.9°S Adopted figure: sphere Mean radius: 470 km

Resolution: 35 m/pxl





eres - LAMO resolution 000

It in degrees consisting of latitude/east longitude d photomosaic with nomenclature and contour lines ication

Mercator projection with two standard parallels at 15.9°N and 15.9°S

Grid system: planetocentric latitude, east longitude

CONTOURS

agriculture and vegetation from world mythology, whereas other geological features are named after agricultural festivals of the world. All names are approved by the International Astronomical Union (IAU). For a detailed list of IAU-approved names on Ceres, see the Gazetteer of Planetary Nomenclature at http://planetarynames.wr.usgs.gov/Page/CERES/target.

REFERENCES

[1] Greeley, R. and Batson, G., 1990, Planetary Mapping, Cambridge University Press, Cambridge.

[2] Sierks, H., Keller, H.U., Jaumann, R., Michalik, H., Behnke, T., Bubenhagen, F., Büttner, I., Carsenty, U., Christensen, U., Enge, R., Fiethe, B., Gutiérrez Marqués, P., Hartwig, H., Krüger, H., Kühne, W., Maue, T., Mottola, S., Nathues, A., Reiche, For the Dawn mission, spacecraft position and camera pointing data are available K.-U., Richards, M.L., Roatsch, T., Schröder, S.E., Szemery, I., Tschentscher, M.,

[4] Russell, C.T. and Raymond, C.A., 2011, The Dawn Mission to Vesta and Ceres,

Raymond, C.A., and Russell, C.T., Ceres Survey Atlas derived from Dawn Framing

Image processing: Kersten, E., Matz, K.-D., Preusker, F., Roatsch, Th., Cartographic production and design: Kersten, E.

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