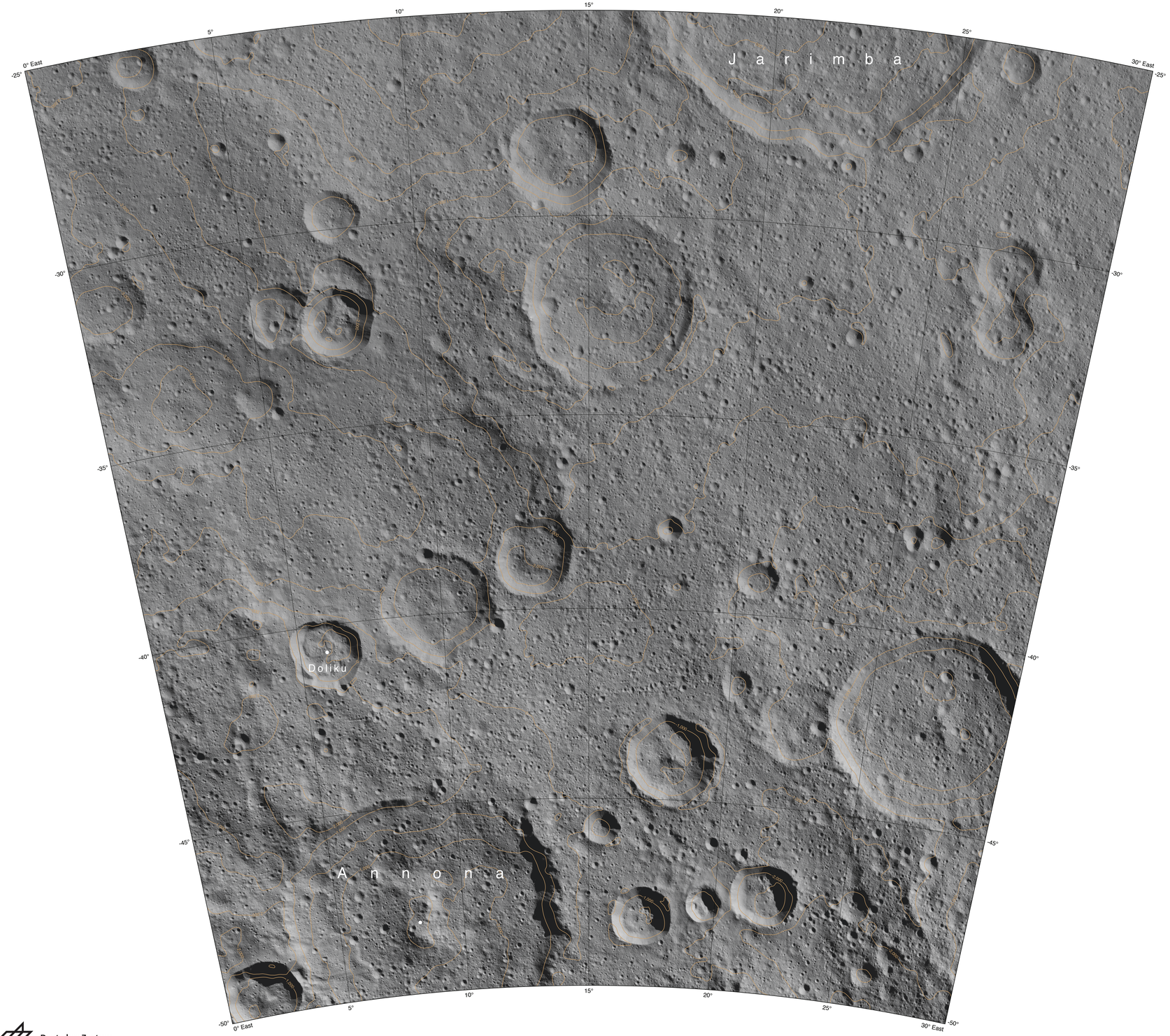


Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

Scale 1:250 000
0 5 10 15 20 km

GENERAL NOTES

This map sheet is the 44th 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 imaging experiment [2].
The Dawn mission journeys to the center of the main asteroid belt to orbit and 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).
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 km.

MAP SHEET DESIGNATION

Ac-L	Asteroid Ceres - LAMO resolution
250K	Scale 1:250 000
-37.5/15	Center point in degrees consisting of latitude/east longitude
UMT	Uncontrolled photomosaic with nomenclature and contour lines
2017	Year of publication

ORTHOIMAGE MOSAICKING

For the Dawn mission, spacecraft position and camera pointing data are available in the form of SPICE kernels. SPICE is a data system providing ancillary data such as spacecraft and target positions, target body size, shape, and orientation, spacecraft orientation, instrument pointing used for planning space science missions and recovering the full value of science instrument data returned from missions (http://naif.jpl.nasa.gov/).

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 Orbit) DTM [5] using the reconstructed orbit and pointing kernels. We combined the images from the first four cycles to four mosaics and combined these four mosaics to one global mosaic. Very minor remaining gaps were filled with images from cycle six and seven.

The crater Kait, measuring approximately 400 m in diameter, at 2.1°S and 0°E was chosen to define the Ceres longitude system [6].

MAP PROJECTION

Lambert Conic Conformal projection with two standard parallels at 73°S and 34°S
Scale is true at 73°S and 34°S
Adopted figure: sphere
Mean radius: 470 km

Grid system: planetocentric latitude, east longitude
Resolution: 35 m/pxl

CONTOURS

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 an oblate ellipsoid with a semi-major axis of 482 km and a semi-minor axis of 446 km.

Contour equidistance 1,000 m
Contour line values point to increasing heights.

NOMENCLATURE

By international agreement, craters are named after gods and goddesses of 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, K.-U., Richards, M.L., Roatsch, T., Schröder, S.E., Szemery, I., Tschentscher, M., 2011, The Dawn Framing Camera, Space Science Review 163, 263-327.

[3] IAU, Minor Planet Names List: http://www.minorplanetcenter.net/iau/lists/MPNames.html.

[4] Russell, C.T. and Raymond, C.A., 2011, The Dawn Mission to Vesta and Ceres, Space Science Review 163, 3-23.

[5] Preusker, F., Scholten, F., Matz, K.-D., Roatsch, T., Elgner, S., Jaumann, R., Joy, S.P., Polanskey, C.A., Raymond, C.A., and Russell, C.T., 2015, Shape model and rotational state of dwarf planet Ceres from Dawn FC stereo images, European Planetary Science Congress 2015, Abstract ID: EPSC2015-186.

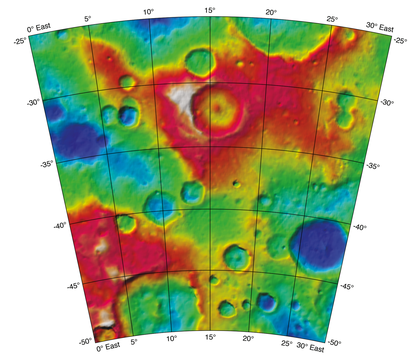
[6] Roatsch, Th., Kersten, E., Matz, K.-D., Preusker, F., Scholten, F., Jaumann, R., Raymond, C.A., and Russell, C.T., Ceres Survey Atlas derived from Dawn Framing Camera images, 2015, Planetary and Space Science 121, 115-120.

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

EDITOR

German Aerospace Center (DLR), Institute of Planetary Research, Roatsch, Th.
Please send comments, suggestions, and questions to Thomas.Roatsch@dlr.de.

Color-coded and shaded relief



Index map