PDS ARCHIVE OF DAWN FRAMING CAMERA VESTA GLOBAL MOSAICS. Th. Roatsch[1], E. Kersten[1], K.-D. Matz[1], F. Preusker[1], F. Scholten[1], S. Elgner[1], S. E. Schroeder[1], R. Jaumann[1], C. A. Raymond[2], and C. T. Russell[3], [1]Institute of Planetary Research, German Aerospace Center (DLR), Berlin, Germany, Thomas.Roatsch@dlr.de, [2]JetPropulsion Laboratory, California Institute of Technology, Pasadena, CA, [3]Institute of Geophysics, UCLA, Los Angeles, CA.

Introduction: The Dawn mission mapped the surface of the asteroid 4 Vesta over a period of nearly ten months at altitudes below ~700 km [1]. Imaging data from the Dawn Framing Camera [2] were collected in three primary mapping phases: High Altitude Mapping Orbit One (HAMO-1, September 29 - October 31, 2011) and Two (HAMO-2, June 24 - July 24, 2012) near 700 km altitude and the Low Altitude Mapping Orbit (LAMO, December 15, 2011 - April 30, 2012) near 210 km altitude. During the two HAMO campaigns, the surface of Vesta was nearly completely mapped in the clear plus seven band-pass filters.

Data Archive: Global mosaics created from the HAMO images [3] in each of these filters have been generated and archived with NASA's Planetary Data System (PDS). Mosaics with 70m/pixel resolution are provided in both cylindrical and polar stereographic projections (Fig. 1) using VICAR (Video Image Communication and Retrieval) format and attached PDS3 labels.

In addition, a "Clementine" color ratio mosaic (Fig. 2) was produced using HAMO images from filter numbers three, four, and eight [5,6]. There was insufficient downlink bandwidth during the LAMO campaign to map Vesta using all color filters. Some images were acquired in filters two, three, and four but not enough were obtained to be able to generate global mosaics.

Clear filter coverage of more than 80% of the surface was achieved in LAMO and these images were used to produce global mosaics with 20m/pixel resolution [4]. These mosaics are also archived with the PDS.

Dawn is currently approaching 1 Ceres and will map that body using a strategy similar to the one used at Vesta. There will be global coverage in all eight filters in a single HAMO campaign (August - October, 2015) at about 1500 km altitude and clear imaging only in a LAMO at about 400 km altitude (December 2015 - ???). The LAMO mapping will end when the hydrazine used to orient the spacecraft is exhausted.

References: [1] Russell, C.T. and Raymond, C.A., Space Sci. Review, 163, 3-23; [2] Sierks, et al., 2011, Space Sci. Rev., 163, 263-327; [3] Roatsch et al. 2012, Planet. Space Sci.73, 283-286; [4] Roatsch et al. 2013, Planet. Space Sci.85, 293-29; [5] Schröder et al. 2013, Icarus 226, 1304-1317; [6] Schröder et al.2014, Icarus 234, 99-108.

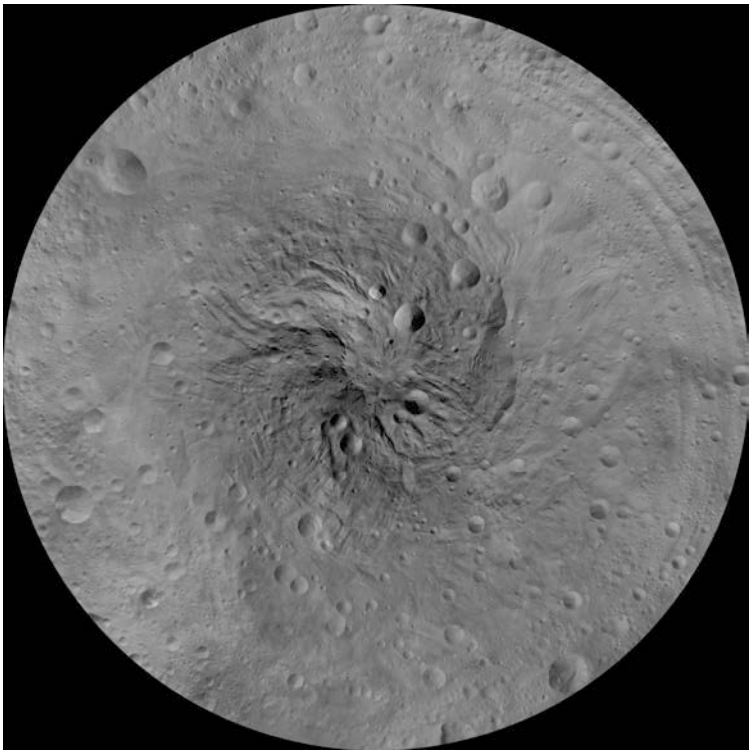

Fig. 1: Polar stereographic projection of Vesta's southern hemisphere from HAMO-1 images.

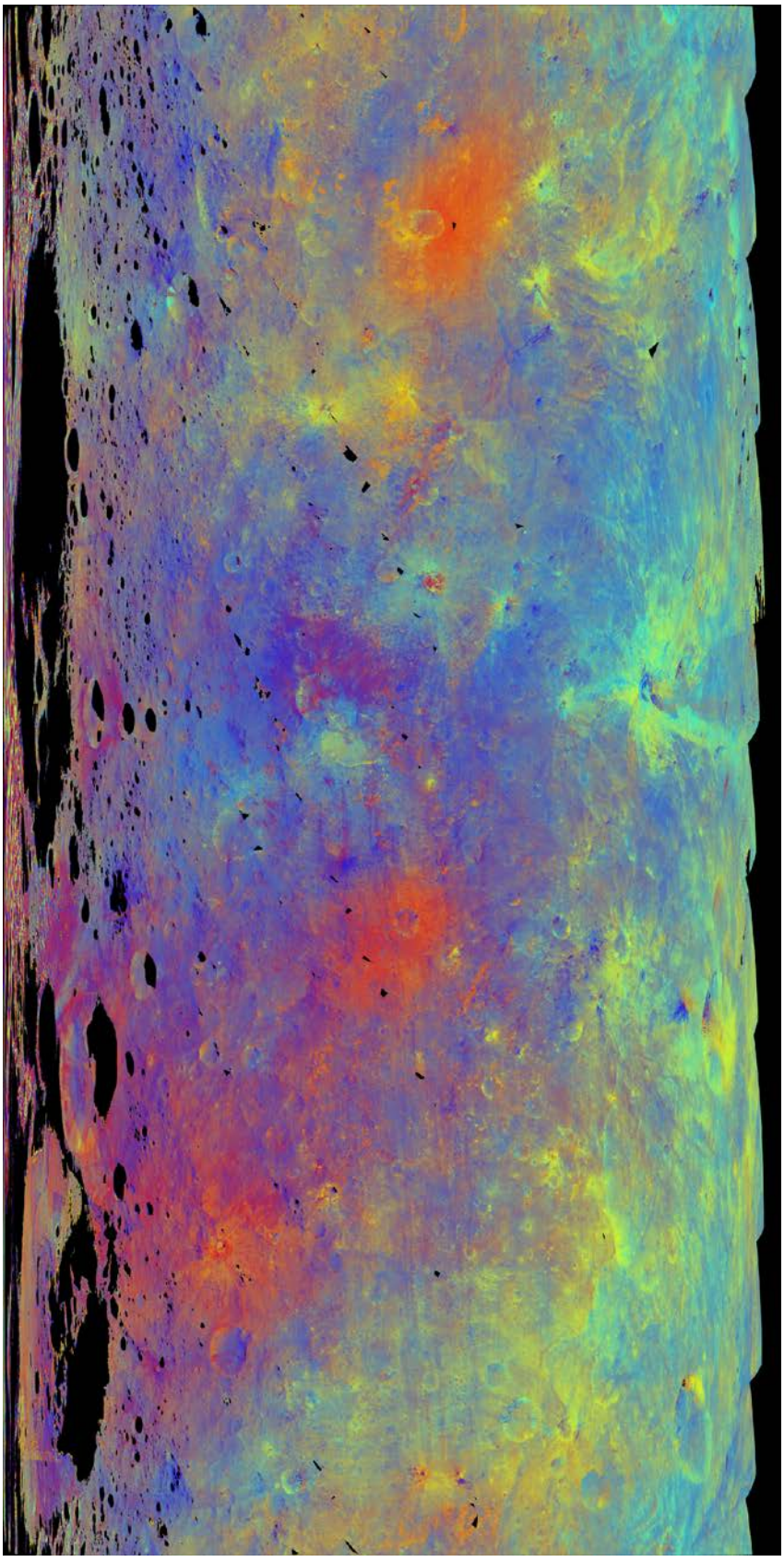

Fig. 2: Global “Clementine” color ratio of Vesta, red=750 nm/440 nm, green=750 nm/920 nm, blue=440 nm/750 nm.