

Mercury & Venus Section

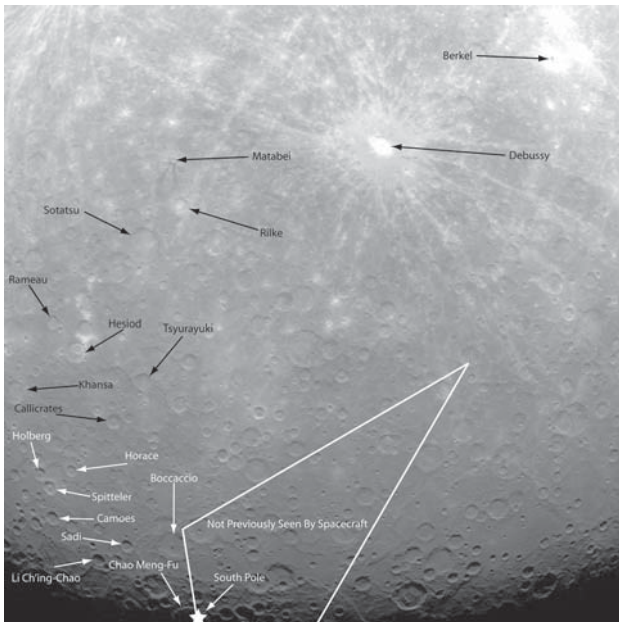


Figure 1. The first image *Messenger* acquired from orbit on 2011 March 29, which was obtained 37 years to the day after the first Mercury flyby by *Mariner 10*. Labels have been added to indicate several craters that were named from *Mariner* images, as well as *Debussy*, (diameter 80km), *Matabei*, and *Berkel*, which were named from *Messenger* flyby images. The surface contained in the white lines is terrain previously unseen by spacecraft, and the star indicates the location of the south pole. Figures 1, 2 & 3 courtesy NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington.

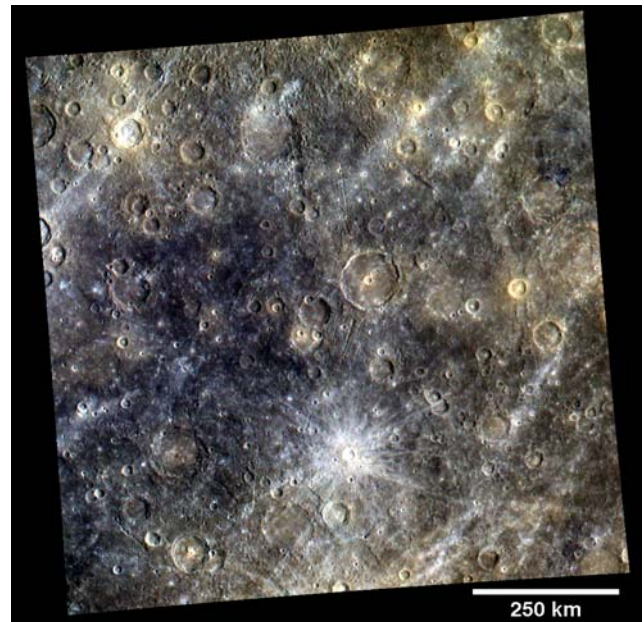


Figure 3. This image (a colour-exaggerated montage using three different narrowband filters with wavelengths of 430, 750 and 1000nm) was taken on 2011 April 15, and represents part of the objective to obtain a Mercury colour base map during the mission's first 176 days. The bright, rayed crater is *Snorri* (21km diameter).

Messenger at Mercury: orbital insertion

On 2011 March 18 NASA's *Messenger* spacecraft began to establish itself in its final, highly eccentric orbit around Mercury, in accordance with the mission plan. It was of course the first spacecraft ever to be placed

in orbit around the innermost planet. We have already reported upon the three successive pre-orbital encounters in these pages (*Journal*, **118**(2), 67–68 (2008), **119**(1), 4–5 (2009) and **120**(2), 67–68 (2010)).

All the *Messenger* images may be viewed online. Here in Figures 1–3 we present and describe a few of the more interesting ones. The *Messenger* website is at: <http://messenger.jhuapl.edu/index.php>

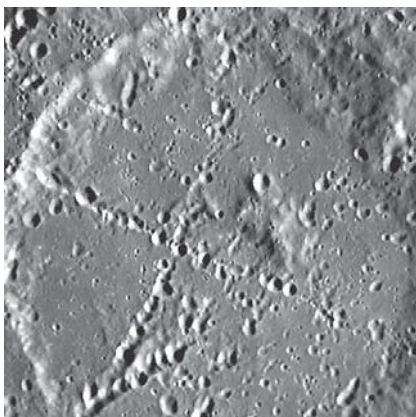


Figure 2. An unnamed crater imaged on 2011 April 29, image no. 171577, entitled 'X marks the spot' on the *Messenger* website, where it is noted that the 'perpendicular lines that traverse the crater are secondary crater chains caused by ejecta from two primary impacts outside of the field of view'. The image measures 116km across.

Mercury's spring evening elongation, 2011 March–April

Meanwhile ground-based observations of the favourable spring evening elongation were received from Gianluigi Adamoli (Verona, Italy), David Arditto (Edgware, UK) and Willem Kivits (Siebengewald, Netherlands). The bright ejecta patch around the large *Kuiper* crater was the most conspicuous feature. Adamoli (Mar 22–23) probably recorded it vaguely upon his webcam images

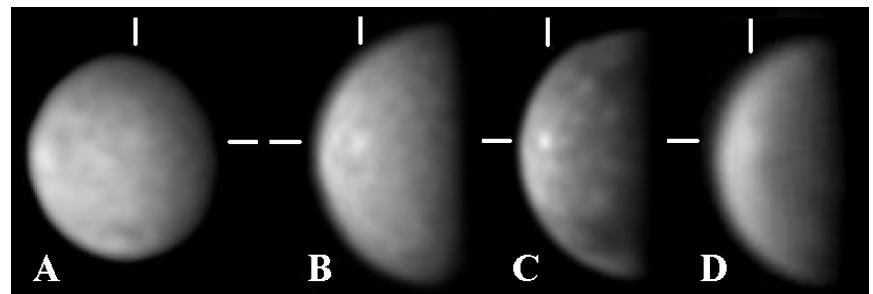


Figure 4. Images of Mercury (A, B, D) and *WinJUPOS* simulation for Mar 19 (C). The location of *Kuiper* crater is indicated. In Figures 4 & 5, south is uppermost.

A. 2011 Mar 7d 15h 45m, CML= 028°, 355mm SCT, DMK camera, 708nm filter, *Kivits*.

B. 2011 Mar 19d 16h 34m, CML= 081°, details as A, *Kivits*.

D. 2011 Mar 19d 16h 56m, CML= 081°, 355mm SCT, SkyNYX 2-0 camera, 742nm filter, *Arditti*.

as enhanced brightening at that latitude on the limb; Arditti (Mar 19) imaged the patch close to the limb and Kivits (Mar 7 and 19) imaged it progressively approaching the limb, his latter images closely similar to those by Sean Walker on 2008 May 5 at the same CML (*Journal*, **118**(5), 245 (2008)). Kivits recorded a number of other brighter patches which correlate very well with a *WinJUPOS* simulation. (Figure 4)

Adamoli reported the following visual phase estimates through his 235mm SCT, $\times 270$ and W25 red filter: Mar 20, 0.54; Mar 21, 0.50; Mar 22, 0.43; Mar 23, 0.39; Mar 24, 0.37; Mar 25, 0.33; Mar 26, 0.30; Mar 29, 0.21; Mar 30, 0.19. The cuspidal areas appeared darker, particularly the southern one. The central dark marking was seen with certainty. Drawings were made on four dates and are reproduced here (Figure 5).

We always welcome good drawings and images of Mercury. The innermost planet continues to provide a fine observational challenge!

Richard McKim, *Director*

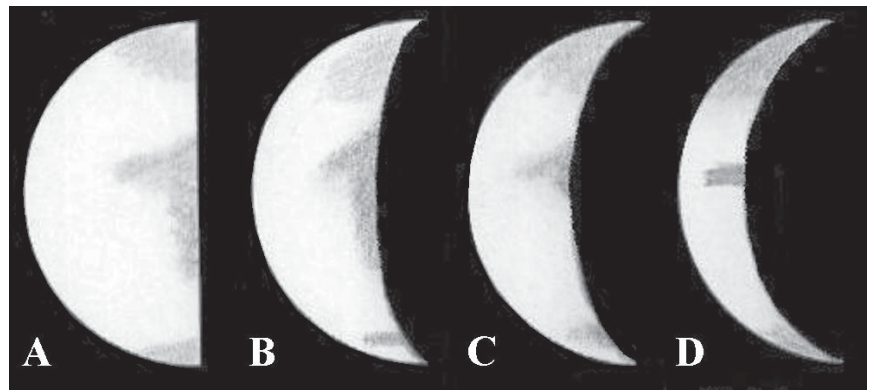


Figure 5. Sequence of drawings of Mercury by Gianluigi Adamoli with 235mm SCT, 270 and W25 red filter (A, C) or in white light (B, D).

A. 2011 Mar 21d 17h 40m, CML= 091°.

C. 2011 Mar 26d 17h 55m, CML= 118°.

B. 2011 Mar 24d 17h 20m, CML= 106°.

D. 2011 Mar 30d 17h 50m, CML= 140°.