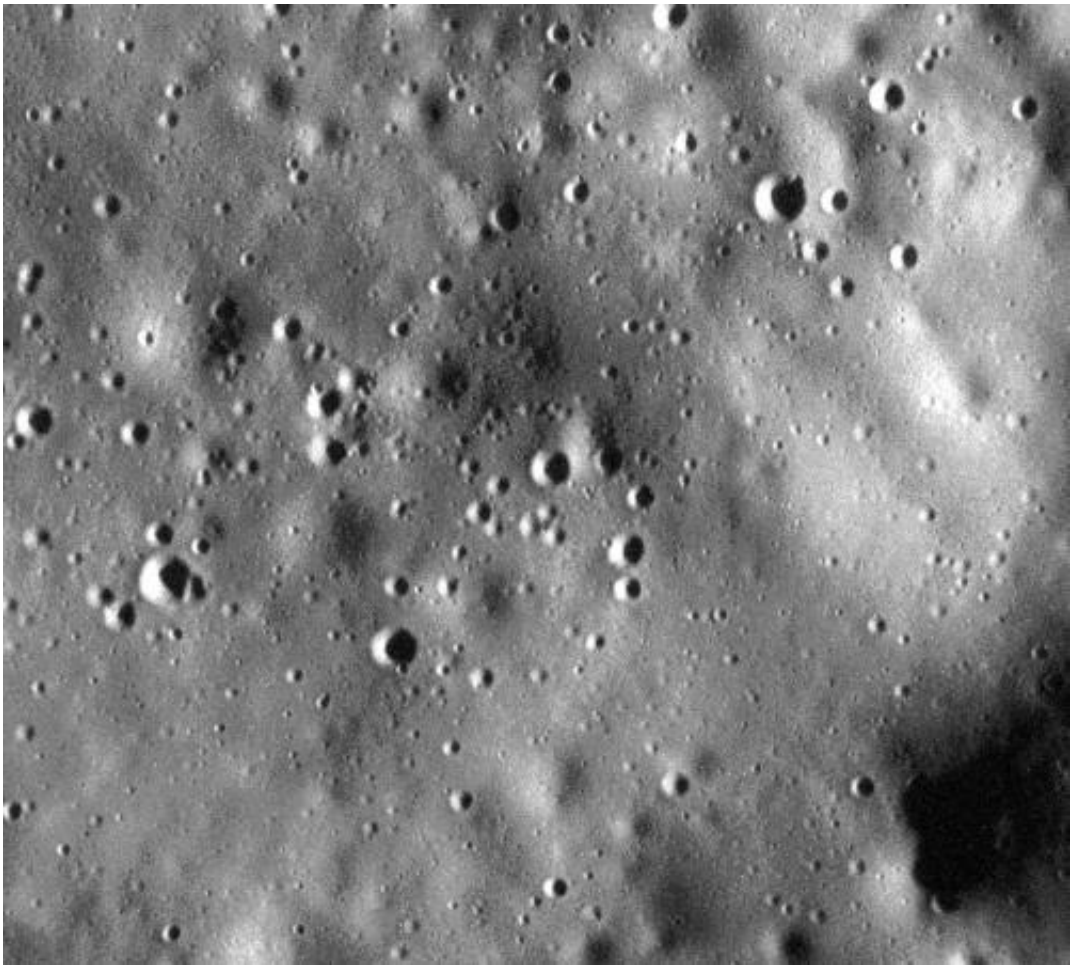
High-resolution image of Mercury acquired

May 16 2014, by Jason Major



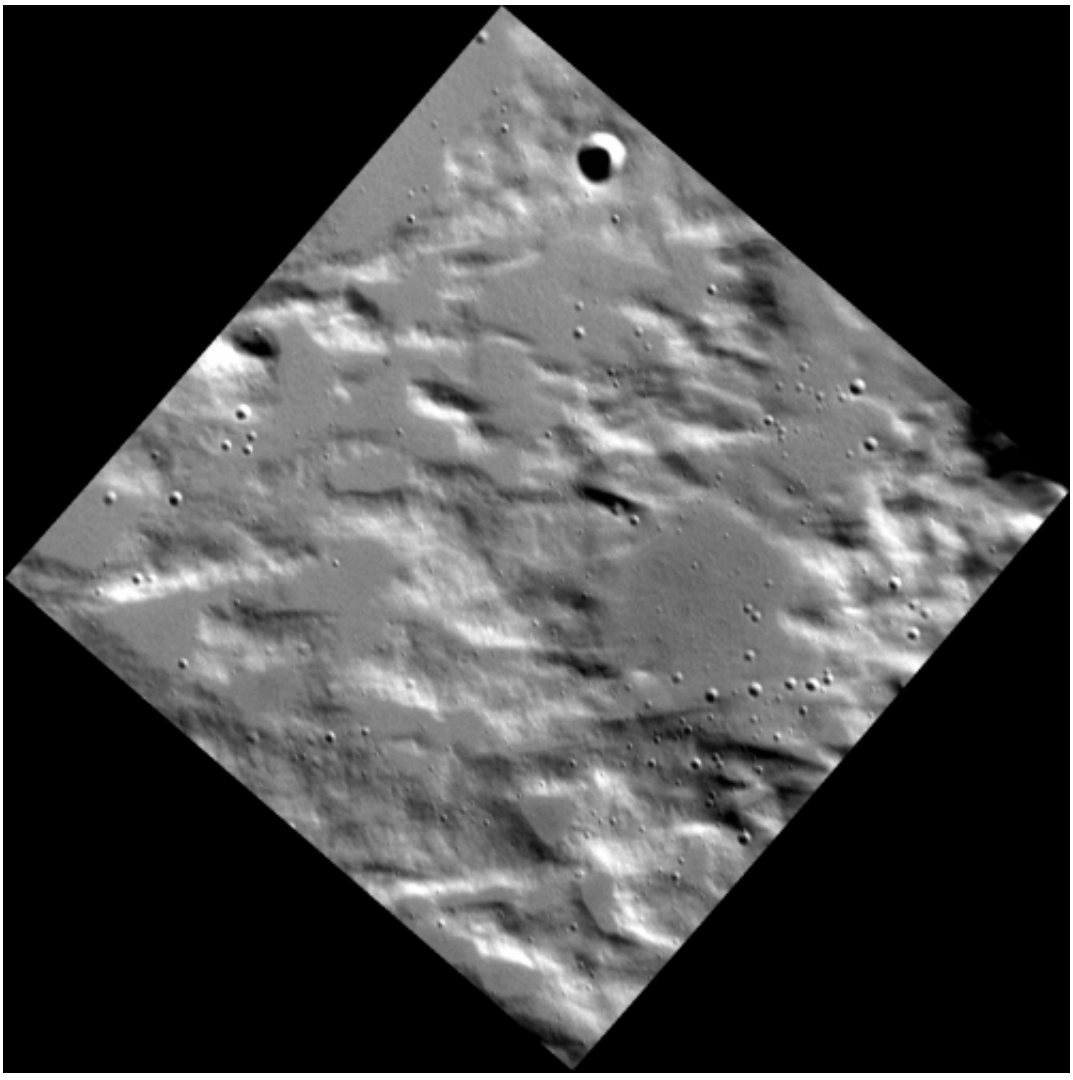
One of the highest-resolution images of Mercury's surface ever acquired.

Are you ready for a good close look at Mercury? At an incredible 5 meters per pixel, this is one of the highest-resolution images of Mercury's surface ever captured. It was acquired on March 15 with the

MESSENGER spacecraft's MDIS (Mercury Dual Imaging System) instrument and shows an 8.3-km (5.2-mile) -wide section of Mercury's north polar region, speckled with small craters and softly rolling hills.

Because MESSENGER was moving so quickly relative to the targeted area it was imaging, a short exposure time was necessary to avoid blurring. As a result the image appears a bit grainy. See the original map projection here.

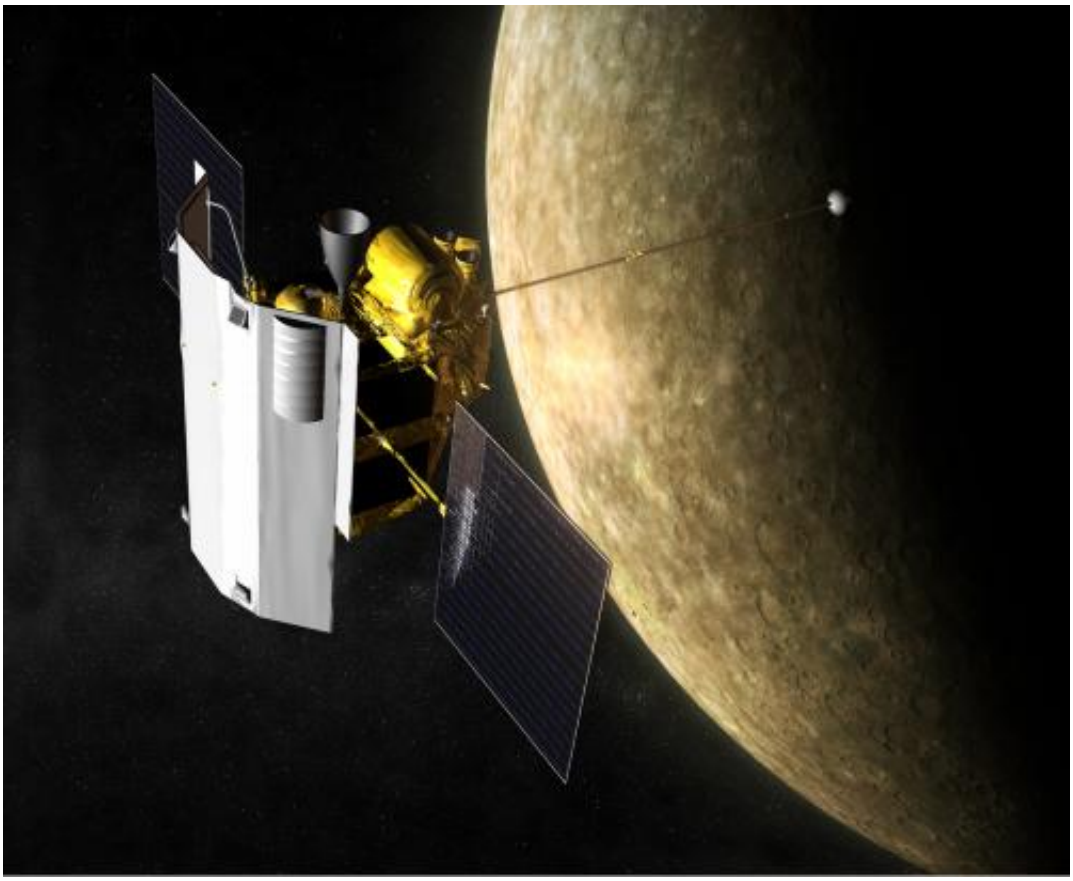
The previous record for most extreme close-up of Mercury was held by this image:



It was acquired as a targeted observation by MESSENGER's Narrow-Angle Camera on April 30, 2012, and has a resolution of 7 meters/pixel. It shows an impact melt-covered area about 11 km (7 miles) across near Gaugin crater.

(Although Mercury's surface may at first appear strikingly similar to the Moon's, it's been known since the Mariner 10 mission that the two worlds are very different at fundamental geologic and compositional levels. Read more on that here.)

Images like these are extremely special; during the first two years of MESSENGER's mission in orbit around Mercury, over 150,000 images were acquired but only five images had resolutions better than 10 meters per pixel.



Artist’s impression of MESSENGER orbiting Mercury

On April 20, 2014, MESSENGER completed its 3,000th orbit of Mercury (3,075 to date) and is steadily moving into an even lower-altitude orbit. MESSENGER now comes within less than 200 km (124 miles) of the planet's surface when it passes over its north pole every eight hours… that's less than half the altitude of the Space Station!

Orbiting at such a low altitude and so often will allow MESSENGER to examine Mercury's surface in unprecedented detail. Now that 100% of the planet has been successfully mapped by MESSENGER it can spend its second—and last—extended mission investigating specific scientific targets.

"The final year of MESSENGER's orbital operations will be an entirely new mission," said Sean Solomon, Principal Investigator for MESSENGER. "With each orbit, our images, our surface compositional measurements, and our observations of the planet's magnetic and gravity fields will be higher in resolution than ever before. We will be able to characterize Mercury's near-surface particle environment for the first time. Mercury has stubbornly held on to many of its secrets, but many will at last be revealed."

Source: Universe Today

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