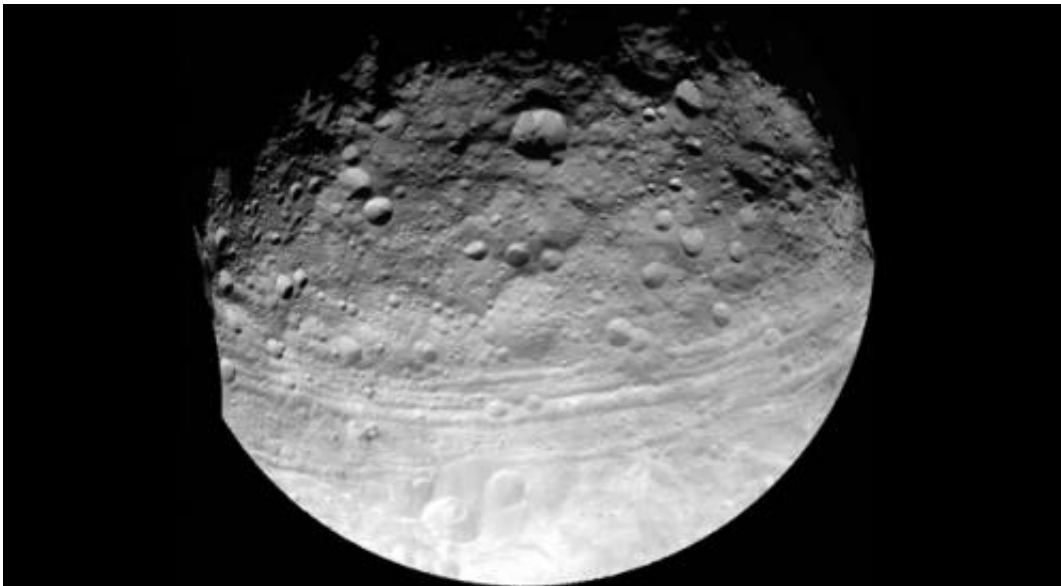


NASA's Dawn science team presents early science results

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This full view of the giant asteroid Vesta was taken by NASA's Dawn spacecraft, as part of a rotation characterization sequence on July 24, 2011, at a distance of 3,200 miles (5,200 kilometers). A rotation characterization sequence helps the scientists and engineers by giving an initial overview of the character of the surface as Vesta rotated underneath the spacecraft. Image credit: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA

(PhysOrg.com) -- Scientists with NASA's Dawn mission are sharing with other scientists and the public their early information about the southern hemisphere of the giant asteroid Vesta. The findings were presented today at the annual meeting of the Geological Society of America in

Minneapolis, Minn.

Dawn, which has been orbiting Vesta since mid-July, has found that the asteroid's southern hemisphere boasts one of the largest mountains in the solar system. Other findings show that Vesta's [surface](#), viewed by Dawn at different wavelengths, has striking diversity in its composition, particularly around craters. Science findings also include an in-depth analysis of a set of equatorial troughs on Vesta and a closer look at the object's intriguing craters. The surface appears to be much rougher than most asteroids in the [main asteroid belt](#). In addition, preliminary dates from a method that uses the number of craters indicate that areas in the southern hemisphere are as young as 1 billion to 2 billion years old, much younger than areas in the north.

Scientists do not yet understand how all the features on Vesta's surface formed, but they did announce today, after analysis of northern and southern troughs, that results are consistent with models of fracture formation due to giant impact.

Since July, the [Dawn spacecraft](#) has been spiraling closer and closer to Vesta, moving in to get better and better views of the surface. In early August, the spacecraft reached an orbital altitude of 1,700 miles (2,700 kilometers) and mapped most of the sunlit surface, during survey orbit, with its framing camera and visible and [infrared mapping spectrometer](#).

That phase was completed in late August, and the spacecraft began moving in to what is known as [High Altitude](#) Mapping Orbit at about 420 miles (680 kilometers) above Vesta, which it reached on Sept. 29.

An archive of the live news conference is available for viewing at: www.ustream.tv/nasajpl2 .

The Dawn scientists also shared their findings at the recent European

Planetary Science Congress and the Division of Planetary Sciences Joint Meeting 2011 in Nantes, France.

[Dawn](#) launched in September 2007 and arrived at Vesta on July 15, 2011. Following a year at Vesta, the spacecraft will depart in July 2012 for the dwarf planet Ceres, where it will arrive in 2015.

Provided by JPL/NASA

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