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Dawn Explores Vesta: Current Status, Future Plans

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Dawn maps Vesta from three distinct orbits, a Survey orbit at 2735 km altitude, a high-altitude mapping orbit at 685 km, and a low-altitude mapping orbit at 210 km altitude. At the time of the EGU meeting, each of these orbital phases will be complete. However, the full surface will not yet have been illuminated as Dawn arrived at summer solstice in the southern hemisphere. The Sun does not cross the equator to shine on the north pole until August 20. Thus additional imaging is planned on the way out from Vesta. Dawn's observations reveal Vesta to be a tiny world with many of the characteristics of the terrestrial planets but with much greater relief than on other planetary bodies. The central peak of the Rheasilvia basin rivals the altitude of Olympus Mons on Mars. Great troughs circle the globe. Colorful terrains speak to geochemical diversity. Bright materials and very dark materials are scattered across the surface and an iron core shows that Vesta melted and differentiated. As soon as possible, Dawn must leave Vesta in order to reach Ceres in 2015 where it will perform similar orbital mapping to that used at Vesta. The HED meteorites have presaged many of the observations we have made at Vesta, but there is no meteorite population that informs us about Ceres. Thus much mystery surrounds what we will find there.