



SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY

Press Release

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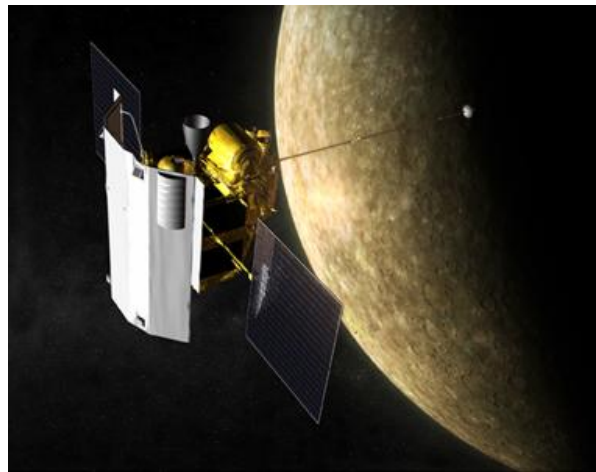
UH Researcher will be watching closely as MESSENGER Spacecraft makes close flyby of Mercury

Honolulu, HI – Dr. Jeffrey Gillis-Davis, an assistant researcher in the Hawaii Institute of Geophysics and Planetology (HIGP) at the University of Hawaii at Manoa, is a team member on the MESSENGER space mission, a spacecraft which will make a close flyby of the planet Mercury on Monday, January 14th. MESSENGER is an acronym that stands for MERcury Surface, Space ENvironment, GEOchemistry, and RANging, it will be the first spacecraft to visit Mercury in thirty-three years. The pictures and data acquired this Monday will mostly cover an area of Mercury that has never been photographed before.

“I’m excited to be a participating scientist on the MESSENGER mission because it’s going to reveal a whole new face of Mercury and, as a result, produce many discoveries about the Solar System’s inner most planet,” says Gillis-Davis. Mariner 10 is the only other spacecraft that has visited Mercury back in 1974, but it was only able to image one hemisphere of the planet. MESSENGER’s first flyby of Mercury will acquire data of this hemisphere not imaged by Mariner 10.

Gillis-Davis suspects that the unobserved hemisphere of Mercury is likely to have some big surprises in store for us. “If Mercury were a puzzle, we would only have half the pieces, which makes it difficult to put geologic processes into a global perspective. MESSENGER will fill-in a lot of those missing puzzle pieces this month,” explains Gillis-Davis. “So it’s wonderful opportunity to be among a handful of scientists who will get to study the whole of Mercury and have an opportunity to solve many of its unanswered questions.”

Peter Mougini-Mark, Interim Director of HIGP, sees Gillis-Davis’ participation as central to HIGP’s increasing involvement in NASA missions as they build towards their own capabilities to launch satellites. “We need to know how to conduct missions, as well as stay current with the latest instrumentation. The MESSENGER mission to Mercury is a particularly challenging mission because of the planet’s proximity to the Sun and will collect some exciting new data about a planet that is very similar to our Moon, but with a higher gravity,” says Mougini-Mark. “HIGP is striving to build its research base in both lunar and comparative planetology studies, and so Jeff’s participation will ensure that other UH faculty and students will have detailed knowledge of the experiments.”



Artists' impression of the MESSENGER space craft as it nears Mercury.

Image credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington



Gillis-Davis will be working with image and spectral data as well as compositional data from X-ray and gamma-ray spectrometers. He will use these data sets to study the origin and geologic evolution of Mercury's smooth plains and intercrater plains. "Evidence to prove that these plains units were formed by volcanism or cratering is lacking, I hope to bring closer to the question" explains Gillis-Davis. "Studying these two geologic units is essential to determining Mercury's thermal evolution and understanding how it compares to the other terrestrial planets with regards to volcanic resurfacing of the planet."

MESSENGER will have 3-flybys in total in January and October of this year and in September of 2009 before finally going into orbit in March of 2011.

For more about the mission, including images and videos please see <http://messenger.jhuapl.edu/>

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