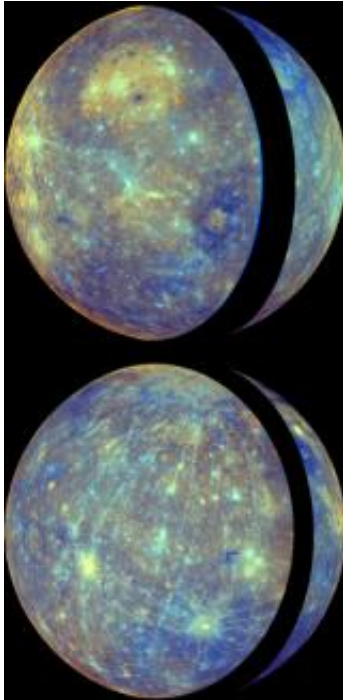


# Free online activity explains MESSENGER spacecraft's Mercury flyby on Sept. 29

21 September 2009



The spacecraft MESSENGER is on a journey to become the first spacecraft to orbit Mercury. While it won't orbit the planet until March 2011, it has already collected valuable data, such as these enhanced-color image mosaics shown in orthographic projection and created from wide-angle camera images. A free online simulator created by staff at MSU's Burns Technology Center helps explain how the spacecraft uses gravity to alter its path. Image courtesy: NASA/Johns Hopkins University Applied Physics Laboratory/Arizona State University/Carnegie Institution of Washington

(PhysOrg.com) -- NASA's MESSENGER spacecraft will fly past the planet Mercury on Sept. 29, and a free online simulator created by staff at Montana State University's Burns Technology Center helps explain how the spacecraft uses gravity to alter its path.

Designed for people of all ages and ability levels, it is available, along with other space science

resources for teachers and the public, at: [www.messenger-education.org/st...dents/animations.php](http://www.messenger-education.org/st...dents/animations.php)

MESSENGER, whose mission is to study Mercury, was launched atop a Delta II Rocket in 2004 and has since flown more than 3.5 billion miles. On Sept. 29, MESSENGER will fly past Mercury for the third and final time before being inserted into orbit about Mercury in 2011, where it will remain to collect data for one full Earth year.

MESSENGER stands for "MErcury Surface, Space ENvironment, GEochemistry, and Ranging."

The online simulator explores the "gravity-assist maneuver," in which a [spacecraft](#) nears a planet and uses that planet's [gravitational force](#) to alter the speed and [trajectory](#) of its flight path. MESSENGER will have used this maneuver six times during its mission--flying past Earth once, Venus twice and Mercury three times.

The [Gravity Assist Simulator](#) was developed by staff at MSU's Burns Technology Center as part of a NASA-funded outreach grant. For more information, go to: [www.messenger-education.org/st...dents/animations.php](http://www.messenger-education.org/st...dents/animations.php)

Provided by Montana State University ([news](#) : [web](#))

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