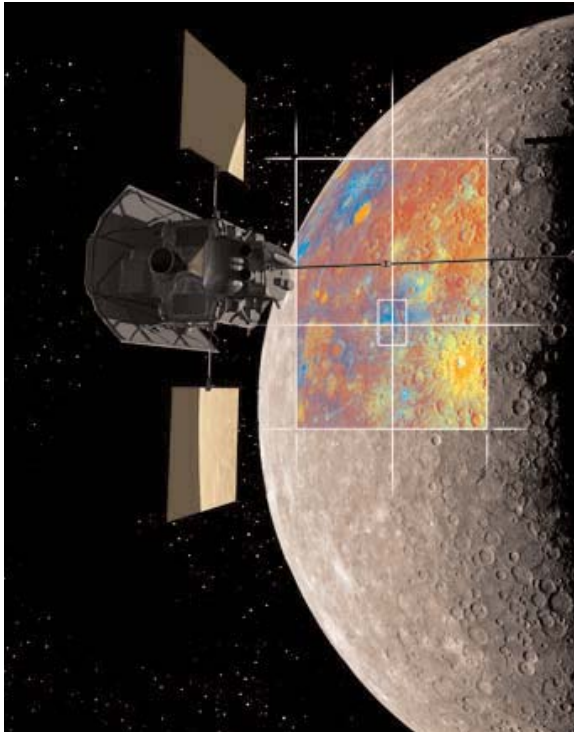


## MESSENGER INFORMATION SHEET



### *The MESSENGER Mission to Mercury*

MESSENGER is an unmanned U.S. spacecraft that will be launched in 2004 and will arrive at the planet Mercury in 2011, though it will not land. Instead, it will make its observations of the planet from orbit. MESSENGER will never return to Earth, but will stay in orbit around Mercury to gather data until sometime in 2012.

MESSENGER is an acronym that stands for "MErcury Surface Space ENvironment, GEochemistry and Ranging," but it is also a reference to the name of the ancient Roman messenger of the gods: Mercury, who, it was said, wore winged sandals and was somewhat of a trickster.

MESSENGER will be the second spacecraft ever to study Mercury: In 1974 and 1975 Mariner 10 flew by the planet three times and took pictures of about half the planet's surface. MESSENGER will stay in orbit around Mercury for about one Earth-year, during which time it will make close-up and long-term observations, allowing us to see the whole planet for the first time.

Because Mercury is so close to the Sun, one of the biggest problems the spacecraft will encounter is intense sunlight, which will be 11 times as strong as in space near Earth and 22 times as strong as on the surface of Earth. It is a big concern for the instruments used to observe Mercury, because they can get so much sunlight that they get blinded. Sunlight is also a concern for the solar cells that the spacecraft uses to generate electricity. The same kind of solar cells you may have seen on Earth would normally cover the whole area of the spacecraft's solar panels facing the Sun. But in the case of MESSENGER, the solar cells heat up faster than they can cool down (panels usually cool off by radiating away excess heat out the back and sides). So MESSENGER engineers had to come up with a solution for keeping the solar cells from heating up too much and for keeping the sensitive instruments from getting blinded. (Perhaps you will find the answer currently being used. If not, ask your teacher, or think of a better way!)

For more information about the MESSENGER mission to Mercury, visit: <http://messenger.jhuapl.edu/>

