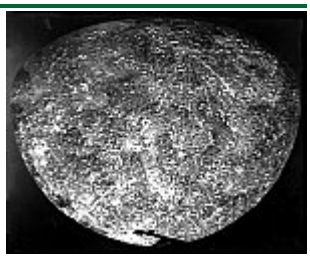
# Mercury

**By Sharon Fabian**



[1] Mercury is an extreme planet. It is the fastest of all the planets. It is one of the hottest planets, and it is also one of the coldest! It may be the site of the largest crash in the history of the solar system. Mercury may also have the strangest view of the sun in the whole universe!

[2] Mercury zooms around the sun at a speed of 48 kilometers per second, or half as fast as the Earth travels.

[3] At certain times and places, Mercury's surface temperature can rise to twice the temperature inside an oven when you are baking a cake. On the other hand, in the shadow of its North Pole craters, Mercury has ice like our North Pole does.

[4] Since Mercury is so close to the sun, we have never been able to see it in any detail. Even with the most powerful telescope, Mercury looks like a blurry white ball. It wasn't until 1974 that we really began to learn about Mercury. In 1974 and 1975, Mariner 10 flew by Mercury three times and sent back about 12,000 images.

[5] These pictures combined to give a map of about 45% of Mercury's surface, and what they show us is a planet covered with craters, much like our moon. Mercury's largest land feature is the Caloris Basin, a crater formed by a collision with a meteorite long ago. The size of the Caloris Basin, about 1350 kilometers in diameter, suggests that this may have been the largest impact ever. In fact, the impact was so intense, that scientists think it sent shock waves through the center of Mercury, causing strange landforms to appear on the opposite side of the planet. These landforms, nicknamed "weird terrain," look like nothing we have seen anywhere else except on the moon.

[6] Around some of Mercury's larger craters are secondary craters, formed when rocks from Mercury's surface were thrown up by the impact, and then fell back to Mercury, causing craters of their own.

[7] Mercury also has craters that appear to have shiny rays radiating out from their centers. These rays were probably formed from tiny specks of rock and dust thrown out by the impact. Since Mercury has almost no atmosphere, the specks fell straight back down and settled around their crater in a neat geometric pattern. The tiny specks of rock reflect Mercury's bright sunlight, and give the rays their bright shiny look.

[8] Here is the strangest thing of all about Mercury. If you could stand on the surface of Mercury, your view of the sun would be unbelievable! First the sun might start to rise; then it would speed up and begin to get larger. Then it would stop, reverse its direction, stop again, and then continue on its way! If you could take your eyes away from this sight for a minute, you would notice that the stars in the background were zipping along at three times the speed of the sun. An extreme view, for sure.

[9] Since Mercury is such an extreme little planet, what would we really learn from exploring it? Would it be worth the effort to spend the millions of dollars to send up another spacecraft to explore Mercury? NASA seems to think so, because even though Mercury is a planet of extremes, in some ways it is like Earth. Mercury may have gone through many of the same stages that Earth has gone through over the past few billion years. So, beginning in 2004, the Messenger spacecraft will begin its explorations of Mercury. Messenger will map the rest of the planet, and it will study what the planet is made of. It will take measurements of Mercury's magnetic fields and look for facts about the planet's interior. Why? If scientists can learn more about Mercury, maybe those facts will also help them draw conclusions about planet Earth. By studying Mercury, scientists hope to learn more about how the earth was formed and how it has changed over its lifetime. Maybe the extreme little planet called Mercury will teach us more about our home planet, Earth.

Name _____ Science Pd _____

# Mercury

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| 1. Mercury is the _____ planet.<br>(A) Hottest<br>(B) Fastest<br>(C) Largest<br>(D) None of the above | 2. Scientists used a powerful telescope to discover the Caloris Crater on Mercury.<br>(A) False<br>(B) True |
| 3. The landforms on Mercury called "weird terrain" are located _____.<br>(A) Around large craters<br>(B) On the side of the planet opposite a large crater<br>(C) At the North Pole<br>(D) In the Caloris Crater | 4. Messenger is the name of one of Mercury's moons.<br>(A) False<br>(B) True |
| 5. Mercury has an "extreme" view of _____.<br>(A) Earth<br>(B) The moon<br>(C) Pluto<br>(D) The sun | 6. Which happened last.<br>(A) Scientists tried to see Mercury through telescopes.<br>(B) The spacecraft Mariner 10 explored Mercury.<br>(C) The planet Mercury was formed.<br>(D) The spacecraft Messenger explored Mercury. |
| 7. This article is mainly about _____.<br>(A) An unusual planet and what we can learn from it<br>(B) A planet that is more like earth than any other planet<br>(C) The Messenger spacecraft<br>(D) Planets and stars | 8. The word collision in paragraph 5 means about the same thing as _____.<br>(A) Landing<br>(B) Crash<br>(C) Crater<br>(D) Planet |