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# Living on the Moon

*By Lisa M. Guidone*

## NASA shoots for the moon, then Mars.

Only 12 people have set foot on the moon—so far [2007]. The last time was in late 1972, when two astronauts walked on its surface. Their final visit—the longest of any—lasted just three days. Now astronauts are preparing for another **mission**<sup>1</sup> to our space neighbor. This time, though, they plan to stay there.

- \_\_\_1. What do you think astronauts will have to do in order to live on the moon?
- depend on monthly deliveries of supplies.
  - bring all their supplies with them.
  - use the moon's natural resources for water and fuel.
  - make periodic trips to Earth to get supplies.

NASA recently announced plans to build a **permanent**<sup>2</sup> base on the moon. Astronauts could be living and working there by 2020, according to the U.S space agency. The goal is to prepare astronauts for a trip to Mars in the future.

Under the plan, four-person crews will begin with week-long missions to the moon. By 2024, when more equipment has been set up, astronauts will be able to **reside**, or live, on the moon for as long as six months. Astronauts will travel in roving vehicles to explore the area near the **lunar** (moon) base.

## Polar Plus

Unlike Earth, the moon has no air, wind, or weather. Its dusty **terrain**, or surface, is covered with deep craters. So how can humans survive on the moon?

<sup>1</sup> **mission**: a space trip with specific goals

<sup>2</sup> **permanent**: lasting for a very long time

NASA hopes to establish a lunar outpost near one of the moon's poles. "These locations experience sunlight for longer periods of time than other locations on the moon, which will make it possible to use solar power," NASA official Michael Braukus told *WR News*. Solar power is energy from the sun that can be used to generate electricity.

It is also likely that the polar regions are rich in natural resources, such as oxygen and hydrogen. While on the moon, astronauts plan to use natural resources for water and fuel.

### Stepping Up Space Travel

The moon is the only place beyond Earth that humans have visited. About 238,900 miles away, the moon is Earth's closest space neighbor.

On July 20, 1969, Americans Neil Armstrong and Edwin "Buzz" Aldrin became the first humans to walk on the moon. Those space pioneers traveled to the lunar surface on the *Apollo 11* mission.

NASA's new direction is to **surpass**, or greatly exceed, the Apollo missions of the 1960s and early 1970s. "This is not your father's Apollo," says space policy expert John Logsdon at George Washington University in Washington, D.C.

As part of its new phase of space exploration, NASA will **retire**, or stop using, its aging space shuttle fleet by 2010. For their trek to the moon, astronauts will travel aboard the new *Orion* crew exploration vehicle, which is being developed. The vehicle, a modernized version of the *Apollo* craft, will attach to a lunar lander.

### Next Stop: Mars

The moon mission is part of President George W. Bush's long-term space plan. The proposed base is the first step in the bold plan to prepare astronauts for their ultimate destination—Mars.

- \_\_\_ 2. What do you think will be needed for astronauts to live on Mars?
- The trip to Mars will have to be short.
  - Only a few astronauts will be able to visit at a time.
  - Natural resources will be needed on Mars for fuel and energy.

- d. Astronauts will have to leave the Earth in the summer.

Because Mars is so far from Earth, traveling there will require humans to stay for long periods of time. Astronauts will not be able to bring enough supplies for the entire mission. They will have to use the elements on Mars to survive.

"By demonstrating we can survive on another world for a long time, we build confidence that we can venture much farther from Earth and stay for longer periods of time," says Braukus of NASA.

### High-Priced Visit

While some supporters are jumping over the moon about launching a new era of space exploration, not everyone is pleased with the plan. Critics warn that it will be difficult to fund the moon program. So far, NASA has not put a price tag on the mission but welcomes participation by other countries to help carry out its plan.

### U.S. Space Travel

In October 1957, the Soviet Union launched *Sputnik 1*, the first artificial satellite in space. The U.S. space program was established as a response. The "space race" between the two countries had begun. In 1961, President John F. Kennedy challenged Americans to send a person to the moon by the end of the 1960s.

- \_\_\_ 3. Neil Armstrong and "Buzz" Aldrin went to the moon, because
- it was one of President Kennedy's goals.
  - Apollo 11* needed four astronauts.
  - they wanted to try to use the moon for electricity.
  - the Soviet Sputnik program on the moon needed help.
- \_\_\_ 4. In the sentence, "...some supporters are *jumping over the moon* about launching a new era of space exploration," *jumping over the moon* means:
- practicing a new jump rope game.
  - being enthusiastically pleased.
  - watching the moon through a telescope.
  - planning a new mission to the moon.

\_\_\_ 5. Do you think the United States will be willing to spend the money necessary to send people to live on a lunar base? Explain.

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