

# NASA wants permanent moon base

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**HOUSTON, Texas** (CNN) – NASA's plans for returning people to the moon – an objective called for by President Bush in 2004 – includes establishing a permanent outpost that would be used to prepare for a manned trip to Mars.

The moon base would be at either the north or south pole of the moon, NASA Deputy Administrator Shana Dale said during a news conference Monday at the Johnson Space Center in Houston.

Increased sunlight at the poles would allow better use of solar energy to power the outpost, she said.

NASA's lunar architecture team decided it would be better to establish a base than to conduct individual missions to the moon, as in the Apollo program of the 1960s and 1970s, she said.

Team scientists believe astronauts could use the moon's natural resources to maintain the outpost, and could use the base to prepare for the trip to Mars, an objective also set forth by Bush.

Sorties to other locations on the moon could also be carried out from the outpost, Dale said.

Deputy Associate Administrator Doug Cooke said one promising location is the Shackleton Crater at the south pole.

In addition to having an area that is almost permanently sunlit, it is adjacent to a permanently dark area that might yield water ice.

NASA Associate Administrator Scott Horowitz said the goal is to conduct the first manned missions to the moon by 2020, starting with short stays by four-person crews that would establish the outpost.

He estimated that perhaps by 2024 there might be a continual presence on the surface, with crews rotating in and out, as is done with the international space station. Before the manned missions, NASA plans a series of robotic missions. The first of these, using the lunar reconnaissance orbiter, is scheduled for 2008.

The orbiter is designed to create high-resolution maps, look for good landing sites and search for water ice and other resources.

NASA said an important component of the moon mission will be international participation.

The space agency will reach out to other nations to determine how they would like to take part.



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