

## **Space Exploration Initiative and the Moon**

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### **Abstract (Space Exploration Initiative, Human Missions to Moon)**

The Space Exploration Initiative, announced by the former President George Bush, was the consequence of a decade of studies by NASA. It was meant to vector the direction NASA would ultimately take in the human exploration of space. The Path that led to the announcement started with the Paine commission Report.

The Paine Commission concluded that the even without technology breakthroughs that the decision to pursue an aggressive human exploration program was political and not technical. Subsequently Sally Ride defined the near term implementation of elements of the Paine Commission. These eventually led to the initiation of the Office of Exploration at NASA Headquarters.

The initial tasks of this office were to scope out the challenges and see where initial investments by the agency should be made to allow the expansion of humans into space. This the office did by assuming four "case studies." These were developed to allow some context for technology discussions.

The moon played a role in most scenarios. Much time and effort were spent on looking at the challenges of permanent presence on the moon. In addition to the purpose of establishing a test bed on the moon, other scenarios allowed for international cooperation, a science component for the moon, and finally a commercial component that could evaluate the resources on the moon that could be utilized both for furthering human exploration and of benefit to the Earth.

The conclusions of the Office of Exploration still hold true today. The path to Mars is via the moon in any reasonable implementation of furthering the exploration of humans beyond Earth orbit. The risks associated with a Mars Direct and not testing integrated systems and the human response to extended stays in microgravity are too great. The scientific value of a return to the moon and the setting up of a permanent base are probably the next step after completion of the International Space Station.