



## THE MARS SOCIETY

www.marssociety.org

### The Vision for Space Exploration

The Mars Society strongly supports the Vision for Space Exploration (VSE). Returning humanity to the Moon and going on to Mars will have a dramatic impact on our nation—stimulating science and technology, inspiring the next generation, and reaffirming our commitment to the American spirit. However, we hope that NASA will proceed as efficiently as possible in this endeavor, in order to save money and time. Some of the ways to achieve efficiency include:

- 1. Support Full NASA Funding:** In 2005, Congress overwhelmingly passed the NASA Authorization Act of 2005. With the passage of this act, Congress gave their approval for not only the goals of the Vision for Space Exploration, but a funding level adequate to achieve the goals of that plan. Since then, NASA budgets have not come close to the authorized funding levels. On the contrary, as a result of the failure of Congress to pass a budget last year, NASA's 2007 budget has been cut by over \$600 million from the original budgeted amount. At a minimum, these funds need to be returned to NASA so that they can move forward efficiently on this program. Failure to fund NASA appropriately will not only extend the "gap" in which the United States will have no capacity to send humans into space, but it will risk the success of the mission as a whole.
- 2. Integrated Moon-Mars Program:** If the Moon is to serve as a springboard to Mars, the program needs to be designed with that in mind from the beginning. By so doing, NASA will be able to accomplish both objectives with common hardware. This will cut overall program cost, risk, and schedule radically, since only one hardware set will need to be developed instead of two, and Lunar missions will validate Mars hardware directly. The design of the Ares 5 heavy lift vehicle, which will be able to launch hardware to the Moon and Mars, is a good start in this philosophy. Other program components, including the Crew Exploration Vehicle and Lunar surface systems, also need to be approached with Mars system requirements in mind. Otherwise, NASA will waste tens of billions of taxpayer dollars on a Moon program that does not prepare the way to Mars.
- 3. Accelerated Schedule:** Accelerating the schedule for NASA's plans will also go a long way to guaranteeing both the efficiency and the ultimate success of the mission. We believe that NASA should set a goal of landing on Mars by the year 2020—a goal that can be achieved if an integrated Moon/Mars approach is adopted. In aerospace, cost is people times schedule. The more time this project takes to achieve, the more expensive it will be.
- 4. Technologies That Use Indigenous Resources:** NASA should use resources that are indigenous to the Moon and Mars as often as possible in planning these missions. By so doing, NASA will be able to reduce the overall mission mass and will begin the process of making Moon and Mars bases partially self-sufficient. A key technology is liquid-oxygen/methane propulsion. With it, we will be able to use methane fuel manufactured "in situ" on the Martian surface for the return trip back to Earth. This technology has the potential to greatly reduce mission mass and costs. We hope that NASA and Congress continue to embrace and expand development in these technologies.

*Mars will not allow itself to be settled by people from a static society—those people won't have what it takes. We still do. Mars today waits for the children of the old frontier. But Mars will not wait forever.*

**Robert Zubrin, *The Case for Mars***