

SPUDIS & ZUBRIN: NASA's mission to nowhere

Big, fat, pointless and expensive describes plan to twiddle our fingers

Paul D. Spudis and Robert Zubrin

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In a speech given at the Kennedy Space Center last month, President Obama reaffirmed his administration's decision to cancel Constellation, NASA's program to create new vehicles for human flights to the moon and Mars. If implemented, this decision will guarantee a decade of non-achievement by NASA's human spaceflight program, at a cost of more than \$100 billion.

Although we are known for holding different opinions on the order and importance of specific objectives in space, we are united in our concern over this move to turn away from the Vision for Space Exploration (hereafter referred to as Vision). Vision gave NASA's human spaceflight program a clear direction: to reach the moon and Mars. Congressional authorization bills in 2005 (under Republican leadership) and 2008 (under Democratic leadership) endorsed this goal.

The agency created the Constellation program to build the Ares 1 and Ares 5 launch vehicles, the Orion spacecraft and other hardware needed to go to the moon and Mars. A timeline was set, and objectives were articulated to achieve Vision's first major milestone - a sustainable return to the moon by the end of the present decade to gain knowledge, reacquire operational experience and use local resources to create capabilities for our reach to Mars and beyond.

Vision had its roots in the 2003 report of the Columbia Accident Investigation Board, which asserted that the goals associated with human spaceflight must be worthy of its costs and risks. In canceling Constellation and Vision, the administration is proposing to return NASA to its pre-Columbia template of operating on a "flexible path" involving no commitment to any specific timeline, achievement or objective. This new direction, coming just as the space-shuttle program is set to end, threatens America's human spaceflight effort not merely with stagnation but also with cancellation.

The new plan proposes to contract with private companies to design and develop vehicles for human flights to low Earth orbit (LEO) and the International Space Station. The agency will research advanced technologies in the coming five years before picking a heavy-lift rocket design. Human missions are next - to an asteroid in 15 years and to orbit Mars in 25 years. A human Mars landing supposedly will occur afterward - sometime.

The idea of contracting with the private sector for launch and transport to LEO is not new. This capability was encouraged and started under Vision. The difference under the new direction is the termination of any capability by the federal government of the United States to send people into space.

For 50 years, America has maintained this ability through an infrastructure of cutting-edge industrial hardware, specialized facilities and a skilled work force. By adopting the new program, we will lose - probably irretrievably - this space-faring infrastructure and, most certainly, our highly trained, motivated and experienced work force. It will be prohibitively expensive and

difficult to restart our manned program after five to 10 years of agency navel-gazing, effectively signaling the end of America's manned space program and our leadership in space.

NASA falters without specific direction or a stated destination. The history of the agency is replete with research projects disconnected from flight missions that produced no real hardware or technology. Taking five years (or even one year) to "study" the technologies of a heavy-lift rocket is not only pointless - it is destructive. We currently possess all the knowledge, technology and infrastructure necessary to build a heavy-lift launch vehicle.

In a logical and effective space program, a mission is chosen, a plan for accomplishing the mission is developed, the flight hardware needed to accomplish the plan is identified, and technology is developed as needed to enable the flight hardware. The administration claims it is setting daring goals - the asteroids and Mars - but has posited them so far in the future that no real, focused work needs to be done toward their achievement during this or the next presidential term.

Under Vision, we were working on the development of real capabilities, including launch systems, spacecraft and destinations with specific activities and capabilities at these places. If the new path is adopted, we will have exchanged a mission-driven program for a costly stagnation that will take us nowhere.

That is the choice before us.

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