20. SPACE POLICY AND THE CONSTITUTION #3

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Former Senator Schmitt Details Concerns about the Administration's Proposed Space Policies

The President announced a "bold approach for space exploration and discovery," to quote the 2010 White House statement. In considering his FY2012 budget proposals for NASA, Congress rightly should ask just how "bold" is this approach versus what America requires in the intense geopolitical environment of space. In addition, Congress should ask for specifics as to why this approach would be better than the Constellation Program previously approved by a Congress controlled by the President's own Party, and whether it truly "advances America's commitment to human spaceflight and exploration of the solar system" to again quote the White House. Congress also should question if the proposals support the primary constitutional rationale for funding NASA, that is, as a contribution to "the common Defence."

The previous United States space policy, twice approved by the Congress in response to President George W. Bush's FY2005 and subsequent budget requests, called for focused technology development and mission formulations that would (1) enable a return to the Moon not later than 2020; (2) be consistent with future Mars exploration; (3) complete the construction of the International Space Station; and (4) replace the Space Shuttle with a new crewed vehicle not later than 2014. The Constellation Program's design could have achieved these goals subject to the projected run-out funding for NASA in that original FY2005 budget.

Unfortunately, the Bush White House submitted annual budgets for FY2006-10 that funded Constellation $11 billion less than originally deemed necessary to maintain the proposed schedule. This includes the effects of an Office of Management and Budget error of about $3.8 billion in 2004 budgeting for the run-out cost of the Space Shuttle. Congress exacerbated this continued under-funding for Constellation through inflation-related cuts of about $1.5 billion in its 2006 and 2008 Continuing Resolutions.

In spite of these budgetary complications amounting to under-funding of some $12.5 billion over six years, and contrary to the Augustine-Crawley Commission's allegations, Constellation remained "executable" in 2009-2010, albeit with some delay relative to the original schedule. The Augustine-Crawley Commission did not look at the reality of the existing Constellation Program and its previously approved funding, but constrained itself to the cumulative cuts of $28 billion for FY2010-20 submitted in the Obama budget for FY2010. Clearly, Constellation would not be "executable" with such drastic cuts to the original funding plan.

New funding of about $4 billion per year for the next five years could restore and maintain Constellation and possibly remove dependency on Russia in 2015 for Space Station access (NASA's FY2011 budget of $18.5 billion is less than 0.5 percent of total federal spending.). If this budgetary augmentation to current space policy were made, the United States could indefinitely maintain its dominant position as the world geopolitical and technical leader in space.

With the 2004-2010 period of intense design and development for Constellation already behind us, President Obama's budget proposals would substitute the following policy elements:

1. **A NASA budget increase of $6 billion over five years.** These new dollars would be used largely to increase expenditures for space, Earth, and climate science. (This same $6 billion increase, if dedicated to Constellation, would give the U.S. its own Orion spacecraft and Ares launch vehicle for access to Space Station.)

2. **A "commitment to decide in 2015" on a specific approach to a heavy-lift rocket.** Such a launch vehicle would be required if future policy added flights to "lunar orbit, Lagrange Points, Asteroids, moons of Mars, and Mars." (With no commitment to any specific objective for a new heavy-lift, this policy position is made to order to be abandoned. It contains the technically and philosophically ludicrous suggestions that Lagrange points could be fuel depots without getting fuel from the Moon, and that a one-shot mission to an asteroid has greater historical and scientific value than a base on the Moon.)

3. **Technology development and test to increase space capabilities and reduce costs.** The objective would be to "establish the technological foundation for future crewed spacecraft for missions beyond Earth-orbit." (As with heavy-lift, the policy gives no focus for these technology efforts as valuable as they could be, particularly with the development of a domestically produced, large hydrocarbon fueled rocket engine like we had for Apollo. Claims of providing "more jobs for the country" are disingenuous, however, as many more thousands of jobs disappear with the cancellation of Constellation and the retirement of the Space Shuttle).

4. **A "steady stream of precursor robotic exploration missions."** (A steady stream of such missions has been underway for two decades so this is nothing new.)

5. **Restructuring of Constellation with the Orion spacecraft downsized to an emergency escape vehicle for the Space Station.** (Orion development has progressed to the point that this proposal amounts to its termination and the start of a new spacecraft program that will cost more than completing Orion. Contrary to White House claims, this logically does nothing to reduce dependence on Russia to carry Americans to the Space Station. Major additional costs would be incurred to fly the new Orion uncrewed to the Station and replace it periodically.)

6. **An increase in "astronaut days in space by 3500 over 10 years."** (No obvious means of doing this exist based on available Russian Soyuz flights to the Space Station and current biomedical limits on crew exposure to the space environment.)

7. **A "jumpstart" to non-NASA, "commercial space launch" capabilities for human space flight.** (With no known business case that would justify referring to such a capability as a "commercial" venture that private investors would support, and no definition of the final level of requirements and specifications NASA ultimately would demand, this fully subsidized initiative amounts to another, probably underfunded program by government. It is not clear how much funding will be requested for this subsidy, but a total of about $4 billion of new money each year over ten years would have kept Constellation on track for a 2015 availability of Orion and a 2020 return to the Moon.)

8. **Placing the space program on a more ambitious trajectory.** (Clearly, the President's proposals are not as ambitious as the Constellation return to the Moon and Mars exploration program. Rather, the President takes American human space flight out of the calculations of other nations.)

Although many inherent logical, technical, and implementation flaws in the Obama policy are evident, it is important to examine the consequences for the United States if the President's promises could be kept in their entirety:

1. **The United States' human space flight capability will rapidly atrophy and then disappear by about 2020.** With this atrophy would come the rapid disappearance of the psychological geopolitical edge from which we have benefited immensely since World War II and particularly since Neil Armstrong stepped on the Moon.

2. **China will control lunar resources for terrestrial energy and space flight as well as dominate the Settlement of the Moon and eventually Mars.** China repeatedly expresses interest in harvesting helium-3 fusion fuel present in the Moon's surface materials. A lunar settlement, sustained by the by-products of helium-3 production, constitutes the most cost and politically effective means of gaining this critical future energy resource. If the Moon comes under China's control, long-term geopolitical reality would be changed in the same way that the Middle East's control of oil dominates our current national security vulnerabilities.

3. **Russia will control access to the International Space Station.** Prices per astronaut visit to the Station, including the astronauts of our non-Russian partners, will escalate from the $63 million today to whatever the traffic will bear. After the Space Station must be abandoned due to aging, probably no later than 2025, any future station will be left to China and/or Russia to build, crew, and use.

4. **Europe, Japan, and other nations with limited space capabilities will cut deals with China, India and Russia for space access.** A clear loss of international interest in space

and other partnerships with the United States will result.

5. **Without a clear set of space objectives, NASA will be reduced to a Space Science Agency.** Past strong technical and professional synergism with national security will disappear.

6. **Subsidized human space flight development for national space projects will see cost escalation and schedule slips.** If this nebulous alternative to traditional NASA contracting received adequate funding, including needed reserves, then this potential problem might disappear; but, since Apollo, that is too much to expect in modern federal budgeting. Inevitable cost and schedule problems will follow inadequate initial funding, unanticipated or unknown technical issues, requirement and specification creep, and progressive NASA intrusion into design and implementation. As taxpayer dollars will fund this effort, cost increases will be driven by the unfortunate and overly risk-adverse nature of mainstream media reporting, and political reactions by the Congress, White House, and NASA bureaucracy.

7. **Inevitable shrinkage and loss of innovation of the aerospace and defense industrial base will occur.** Combined with the Administration's and Congress' under-funding of advanced research, development, and test for national security systems, the lack of funding and focus on specific space objectives will worsen this progressive weakening of our essential development and manufacturing foundations. Congress clearly has the constitutional power to increase or decrease defense-related funding; however, it also has the constitutional obligation to provide for the "common Defence" relative to existing threats. Along with the President, Congress clearly is not addressing existing threats adequately.

8. **Engineering and science education and research will lose another major foundation.** The governmental and academic establishments continually underestimate the importance of national human space flight initiatives in stimulating academic education and research; but it is nonetheless still as real in the minds of young people today as it was after the launch of Sputnik in 1957.

In light of these obvious adverse consequences if all the President's promises are kept, and much worse if any are not, why would the President not just budget to properly restart, fund and manage Constellation? Compared to trillions of dollars of other spending he has asked for, this would have added a relative pittance. Would not President John Kennedy, or Presidents Jefferson, Polk, Lincoln, Eisenhower, Johnson, and Reagan, have moved forward in space rather than backward, given the global challenges we face?

The depth of the current Administration's antagonism toward the historical vision of America, as well as toward a preceding President, is unprecedented. The philosophical wedge driven between citizens and their government reaches deeper than any time since just before the Civil War. Our national future on Earth, as well as in the ocean of space, requires that this negative view of America, its people, and its future be overturned in upcoming elections.

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