

## **Debate : Space and Our Near Future**

by Jeff Krukin

Were you to ask me, a Space enthusiast, I think teenagers like you should jump into a hot debate likely to rage the rest of your life, and long into that of your as yet unborn children. Here are just some of its major issues -

### **1) The Bush space plan will be enormously expensive, and dangerous, even though disguised as a noble effort to hunt for the "origins of life."\***

Rebuttal: Several words deserve particular attention and will be considered individually.

A) “Enormously expensive:” This must be considered within several contexts, beginning with the size of the Federal budget. President Bush’s FY2002 budget request for the United States Government was \$1,929.4 Trillion, including mandatory and discretionary outlays.<sup>(1)</sup> Of that amount, \$13.6 Billion<sup>(2)</sup> was requested for NASA, which is just .7% of the budget. Does this qualify as an enormous amount?

Another context is the planned increase for NASA’s budget. In his January 14, 2004 speech the President called for “Congress to increase NASA's budget by roughly a billion dollars, spread out over the next five years.”<sup>(3)</sup> Within the context of the Federal budget, is this an enormous amount?

Yes, after the next five years NASA’s budget will increase more, but it will always be a miniscule portion of the Federal budget. The expense context must also be seen within a historical context of how we’ve “done” space versus the future of how we must “do” space. If you only see future space activity through the lens of the past, then all you’ll see are massively expensive federal programs.

President Bush understands that the government cannot do this alone. The very last sentence of the White House document “Bush Space Initiative Vision to Reality” instructs NASA to “Pursue commercial opportunities for providing transportation and other services supporting the International Space Station and exploration missions beyond low Earth orbit.”<sup>(4)</sup> Involving the entire US economy, rather than just the same few aerospace companies working on large government contracts, is the only way to reduce the cost of Bush’s initiative.

B) “Dangerous:” Any space undertaking is dangerous... today. So were the first aircraft... yesterday; “By Oct. 14, 1911, the popularity of air meets, the barbaric demands of the crowds and the machismo of pilots worldwide had combined to bring the number of flying machine fatalities to an even 100.”<sup>(5)</sup> As technology progresses and we gain experience, transportation becomes less dangerous. Why shouldn’t this also happen in space in the same evolutionary manner? First, Earth-orbit travel improves, then Earth-moon, and eventually Earth-Mars.

I realize there are experts who say it can’t be done. No matter the issue, this is frequently the case. Still, “In the beginner’s mind there are many possibilities, but in the expert’s mind there are few.”<sup>(6)</sup> The Wright brothers were beginners, and look what they did.

C) “Disguised as...:” Where’s the disguise? The White House document “Bush Space Initiative Goals and Objectives” is crystal clear: “The fundamental goal of this vision is to advance U.S.

scientific, security, and economic interests through a robust space exploration program.”<sup>(7)</sup>

## **2) The Bush space plan will create unnecessary conflict as it expands nuclear power and weapons into space.**

Rebuttal: again, let’s consider specific words, as these words have great emotional weight.

A) “Create unnecessary conflict” and “Weapons into space:” How will conflict be created, and how is this conflict defined? Might the arms race extend into space? Yes. Is this the same as actual conflict? No. Does it guarantee conflict? No. In the 20<sup>th</sup> Century, the US-Soviet arms race prevented direct and massive war between the two nations. It was called MAD, “Mutually Assured Destruction,” and it worked because it created a balance of power where trust was lacking.

Do you believe that if the United States chooses not to place weapons in space that all our real and potential adversaries will automatically do the same? Isn’t it possible another nation may use this to their advantage, placing weapons in a place where we gave up our defensive capabilities? These are important questions and deserve thoughtful consideration.

Are treaties the answer? Only when everybody abides by the treaties. If a potential adversary doesn’t and has military capability in space before us, we have a tremendous disadvantage. We will have lost the high ground.

I would prefer that space be free of weapons, but I don’t see that happening as long as nations act primarily in their own interest. This is who we are at this point in our history. Wishing we didn’t have to prepare for future conflict doesn’t eliminate the possibility of conflict, not when some powerful nations aren’t ruled by the same values as democratic nations.

B) “Nuclear power into space:” What specifically is the argument against nuclear power in space? That it might be used as a weapon? If that’s it, should we also ban all future power and propulsion technologies?<sup>(8)</sup> They will likely be useful as weapons, too. This attitude can be taken to an extreme, such as banning all access to space because of its potential military use. No communication or weather satellites, no spacecraft, no exploration, no settlement.

If this attitude were successful in the past, think of all the dual-use (military and civilian) technology we might not have today. Ships, aircraft, and automobiles are all vital to our lives, and valuable military tools. What would our society be like without them?

Is this simply an emotional anti-nuke feeling? What is the alternative that can’t possibly be used in some destructive manner? If humanity is going to explore *and settle* the solar system, nuclear power is necessary for long journeys until we develop something even more powerful. All technology can be abused, but we are a technological species; there is no going back.

To eliminate a useful technology or endeavor because it has both military and peaceful uses is an easy choice, but is it a wise choice? Science, technology, and space are vital to our economy and way of life. What’s required is thoughtful and balanced consideration, rather than simple avoidance altogether.

**3) The Bush space plan is seeking to take advantage of our never having signed the 1979 Moon Treaty that was created at the United Nations to prevent a rush of land claims and military bases on the planetary body.**

Rebuttal: A) “Land claims:” Should the moon be completely untouched by human hands? As it’s quite large, isn’t it possible to use it in the same varied ways that humans use the Earth? A research station, mining facility, <sup>(9)</sup> college campus, shopping center, undeveloped park, ... in short, the same as here. Why should it be different?

I realize that some believe space must be protected from the ravages of humanity, because we’ll only exploit it. Many environmentalists want to protect space from being spoiled, just as they wish to keep Earth clean. This is commendable, but humans need resources to live. From where shall we get them? What would you rather keep unspoiled, Earth or small asteroids containing metal ores needed on Earth?

China and India are the two most populous nations in the world, with a combined total of 2.3 billion people. Their economies are growing into 21<sup>st</sup> Century powerhouses that will require vast resources. How will the governments of these nations provide for their citizens? Will Pearl Harbor be attacked again, only this time China destroys it with a nuclear strike before deploying its navy to seize the Spratley Islands<sup>(10)</sup> and other oil-rich parts of Southeast Asia? What will India do, situated between the oil wealth of the Middle East and Southeast Asia? Is conflict the only answer? Is conservation alone a realistic alternative? Must Earth be the sole source of energy and other resources?

B) “Military bases:” If all nations will adhere to a treaty banning military force on the moon, I’m all for it. A US decision to keep its military Earth-bound can’t be made in a vacuum, pardon the pun, without considering what other nations may do in space with their military. Space is the ultimate high ground, and many nations are developing their spaceflight capabilities.<sup>(11)</sup>

China is a potential adversary with ambitious plans for their spaceflight capability. Russia is a potential adversary when their economy gets stronger. Which government (not administration, this isn’t about Bush) and military do you believe is more likely to protect your way of life... American, Chinese, or Russian?

Many nations welcome the presence of US military forces. US military bases around the world have maintained peace in potentially volatile areas. Singapore welcomes US Navy ships patrolling nearby. Global commerce depends on the sea, and our navy keeps the sea lanes open. In a chaotic and competitive world, our military provides a needed deterrent. This may be necessary when Earth-orbit and Earth-moon commerce become a reality.

If a military base is the first base on the moon and leads to follow-on scientific, academic, and commercial bases, that’s fine with me. As long as it belongs to us, or a nation we can trust with our lives. If there’s a missile or laser platform in orbit, I’d rather it belong to us than to North Korea, Iran, Russia, or China.

#### 4) The money is better spent at this time addressing our many pressing social problems.

Rebuttal: On the face of it, this seems to make perfect sense. Just one question: when will there *never* be pressing social problems?

Do you know of any nation, any society, or any family that has solved all their problems? How do you define “social problems” in a way that you know when they are all solved, and who does the defining? We will always have problems to solve. Such is the nature of humanity, a dynamic and ever-shifting force always changing itself and its social and political institutions.

This attitude would have all six billion human beings still living in Mesopotamia, the cradle of civilization, because nobody would have explored and settled elsewhere. It would a very crowded and miserable place to live today.

Human beings explore in order to learn, to grow, to create a better life, to avoid stagnation. Do you stay home until you solve all your problems, or do you sometimes leave home because you must look elsewhere for solutions? Will you go to college, or will you solve your problems by staying home after graduating from high school?

NASA’s FY2002 budget was \$13.6 Billion. In the same year the Federal budget for education, training, employment, and social services was \$165.9 Billion.<sup>(12)</sup> The budget for health, Medicare, and veterans benefits and services was \$628.6 Billion.<sup>(13)</sup> How will taking NASA’s funding and spreading it across all our social problems magically solve them when the current expenditures haven’t? This nation has the wealth to invest in its future while also continuously addressing its immediate needs.

As our economy expands into orbit and then the moon, new businesses and jobs will be created. Rather than simply drawing from the US Treasury, these businesses will generate revenue going into the Treasury. Now you have more tax dollars to spend on social problems.

If we are to survive as a nation we must invest wisely to continuously expand economic well-being for all our citizens. When a society becomes less able to sustain itself, individual rights are inevitably trampled upon as the powerful use all means to provide for themselves. When a society fails to seek knowledge and grow, it withers and dies. Without vision, there is little motivation to grow.

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The author has an M.S. in Studies of the Future, and has been writing and speaking about the settlement and commercial development of space for over twenty years. Learn more about the human-space connection and contact the author at [www.jeffkrukin.com](http://www.jeffkrukin.com).

#### **\*Note**

A critical assessment of the Bush space initiative can be found at the web site (<http://www.space4peace.org>) of The Global Network Against Weapons and Nuclear Power in Space. Founded in 1992 to stop the nuclearization and weaponization of space, it has over 170 affiliate groups all over the world.

The four arguments against the Bush space initiative used in this come from a press release written by Bruce K. Gagnon, Coordinator of The Global Network, and Theoretical Physicist Dr. Michio Kaku, which I received via email. Having read this, I believe this organization's views are skewed by the belief that business profit is inherently bad. As I said earlier when speaking of technology, there is no room for balance in this view. Neither profit nor technology are inherently bad, it is how they are used that matters. Without the profit motive we wouldn't live in a comfortable and progressive society. Communism failed, and socialism does include various forms of profitable capitalism.

Here is the complete text of the press release:

Date: Sun, 18 Jan 2004 13:50:19 -0500 (EST)

From: xxxxx@aol.com

Subject: Bush Space Policy

### Bush Launches a Dangerous Space Policy

Contact: Bruce Gagnon (209) 729-0517 or (207) 319-2017 (cell)  
Dr. Michio Kaku (212) 650-8448

Two leading experts on the space program are warning that the expected space policy announcement by George W. Bush to establish permanent bases on the moon and an aggressive program to take humans to Mars will be an expensive and dangerous undertaking.

Dr. Michio Kaku (Professor of Theoretical Physics at the Graduate Center, CUNY) and Bruce Gagnon (Coordinator of the Global Network Against Weapons & Nuclear Power in Space) both have years of experience monitoring and writing about the space program and working to stop the use of nuclear power in space.

An integral part of the Bush announcement is expected to be the nuclear rocket - what is now known as "Project Prometheus," named after the God of Fire. The nuclear rocket would cut in half the amount of time it would take to get to Mars, and would have military applications as well. According to Dr. Kaku, "Perhaps one of the greatest risks facing this ambitious program is the use of dangerous, unproven technologies which could backfire, eroding public confidence in the space program. One such dangerous technology is the nuclear rocket, which is now seriously being reconsidered after being rightly rejected for the past several decades. The nuclear booster rocket has gone through many stages of development in the past, and all of them have been cancelled with good cause."

Said Bruce Gagnon, "There is legitimate reason to question the plan for the establishment of bases on the moon. The military has long eyed the moon as a potential base of operations as warfare is moved into the heavens. The moon is also the site of rare helium-3 which many view as the replacement for fossil fuels as supplies dwindle on Earth. Now is the time for a thoughtful and thorough debate about the expected Bush space proposals."

In a New York Times op-ed piece called "A New Pathway to the Stars", space writer Timothy Ferris wrote on December 21, 2003 that "Another possible energy source of the future - nuclear fusion reactors burning clean, safe helium 3 - has its own lunar connection. Helium 3, rare on

Earth, is abundant on the moon. When fusion reactors start coming on line, lunar entrepreneurs may stand to make the kind of money their predecessors raked in during the gold rush and the oil boom."

The U.S. never signed the 1979 Moon Treaty that was created at the United Nations to prevent a rush of land claims and military bases on the planetary body. In fact, in a 1959 U.S. Army study entitled *The Establishment of a Lunar Outpost*, the once secret plan stated that "The lunar outpost is required to develop and protect potential U.S. interests on the moon; to develop techniques in moon-based surveillance of the earth and space to serve as a base for exploration of the moon, for further exploration into space and for military operations on the moon if required."

The moon base theme reemerged in a 1989 study written for the U.S. Congress by John Collins. The study, published in book form, was called *Military Space Forces: The Next 50 Years* and the forward to the book was signed by political leaders at the time including Sen. John Glenn (D-OH) and Sen. Bill Nelson (D-FL).

Congressional staffer Collins reported that the U.S. would need to have military bases on the moon in order to control the pathway between the Earth and moon. Collins went on to conclude that with U.S. bases on the moon, "Armed forces might lie in wait at that location to hijack rival shipments on return." Obviously the author was envisioning the day when aerospace corporations would be hard at work "mining the sky" for profit.

Said Bruce Gagnon, "Just as the Spanish Armada? and British Navy were created to protect the "interests and investments" in the new world, space is viewed today as open territory to be seized for eventual corporate profit. The United Nations created the Moon Treaty and the Outer Space Treaty as ways to circumvent the warlike tendencies of humankind as we step out into the cosmos. These treaties hoped to ensure that conflict over 'national appropriation' of the planetary bodies could be avoided.

"The Bush administration appears to be heading in the opposite direction. The Bush space plan will be enormously expensive, dangerous, and will create unnecessary conflict as they expand nuclear power and weapons into space – all disguised as the noble effort to hunt for the "origins of life."

The Global Network, founded in 1992 to stop the nuclearization and weaponization of space, has over 170 affiliate groups all over the world. The website of the organization is <http://www.space4peace.org/>

### **Footnotes and Bibliography**

- (1) Office of Management and Budget. *FY2002 Budget of the United States Government*, (Washington, DC, 2001), p. 18.
- (2) Ibid, p. 30.
- (3) President Bush Announces New Vision for Space Exploration Program. <http://www.whitehouse.gov/news/releases/2004/01/20040114-3.html>
- (4) The White House. [http://www.whitehouse.gov/space/renewed\\_spirit.html](http://www.whitehouse.gov/space/renewed_spirit.html)
- (5) Kandebo, Stanley W. *Aviation Week & Space Technology*, "The Wright Brothers and the Birth of an Industry, (Dec. 30, 2002), p. 37.

- (6) Zen master Suzuki Roshi. I also like noted author and scientist Arthur C. Clarke's statement, "When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong."
- (7) The White House. [http://www.whitehouse.gov/space/renewed\\_spirit.html](http://www.whitehouse.gov/space/renewed_spirit.html)
- (8) NASA Glenn Research Center. <http://www.lerc.nasa.gov/WWW/PAO/warp.htm>
- (9) What has space got to do with your way of life? "Gerald Kulcinski of the Fusion Technology Institute at the University of Wisconsin at Madison estimated the moon's helium 3 would have a cash value of perhaps \$4 billion (2.23 billion pounds) a ton in terms of its energy equivalent in oil." Wolf, Jim. *U.S. eyes space as possible battleground*, (Jan. 18, 2004) <http://www.globalsecurity.org/org/news/2004/040118-space-battleground.htm>
- (10) "Rich fishing grounds and the potential for gas and oil deposits have caused this archipelago to be claimed in its entirety by China, Taiwan, and Vietnam, while portions are claimed by Malaysia and the Philippines. All five parties have occupied certain islands or reefs, and occasional clashes have occurred between Chinese and Vietnamese naval forces." [http://www.insidecountryinfo.com/html/spratley\\_islands.html](http://www.insidecountryinfo.com/html/spratley_islands.html)
- (11) Global Security.org's World Space Guide. <http://www.globalsecurity.org/space/world/index.html>
- (12) Office of Management and Budget. *FY2002 Budget of the United States Government*, (Washington, DC, 2001), p. 16.
- (13) Office of Management and Budget. *FY2002 Budget of the United States Government*, (Washington, DC, 2001), pp. 16-17.