



# National Space Society



## 2005 Legislative Agenda



# The National Space Society - Who We Are

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- **Independent non-profit organization dedicated to promoting space exploration and development**
- **Founded in 1975 by Wernher von Braun**
- **~20,000 member-subscribers**
- **50+ chapters in the USA**



## The National Space Society – Our Vision for the Future

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***“People living and working in thriving communities beyond Earth.”***

- ***“People...”*** – not just robots
- ***“...living and working...”*** – not just visiting or exploring
- ***“...in thriving communities...”*** – creating a new sphere of economic activity and producing new economic wealth to benefit all mankind
- ***“...beyond Earth.”*** – expanding human civilization throughout the solar system, to guarantee the survival of the human race even in the event of a local catastrophe

***This future has moved from the realm of imagination  
to a future achievable within the next century.***



# America: A Nation Shaped by its Frontiers



Lewis' first view of the Rockies

- From the earliest days of the Jamestown colony, Americans pushed the physical boundaries of their new environment. In doing so, they developed industries and a social order that made America a world leader.
- This year is the bicentennial of the Lewis and Clark expedition. This three-year voyage of the Corps of Discovery (as they called themselves) was about the same duration as a voyage to Mars. Their journey was risky – before they made it home, they had been given up for lost. But they did make it home, and their exploration opened up a huge new area for settlement and economic development.
- Today's America has a new frontier – space

*“Those who came before us made certain that this country rode the first waves of the industrial revolutions, the first waves of modern invention, and the first wave of nuclear power, and this generation does not intend to founder in the backwash of the coming age of space. We mean to be a part of it - we mean to lead it.”*

*-- John F Kennedy, Speech at Rice University, September 12, 1962*



## The Space Frontier Will Continue To Transform The Global Economy In The 21st Century

*"In the 21st century for America to go forward and remain and for our culture and our values - and the values of western civilization – to go forward, it is necessary that America be the pre-eminent spacefaring nation. I don't know when it will happen, or exactly how it will happen, but I know it will happen, that one day there will be as many people living off the Earth as living on it."*

*-- NASA Administrator Michael Griffin*

Just as the benefits of our interaction with this new frontier were only dimly perceived at the beginning of the Space Age, we can't know all the transformative technologies that will be spurred by our continued activity in space. Some of the benefits we can predict now include:

- **New sources of power** – Helium-3 (fuel for fusion reactors) mined on the moon, and/or Solar Power Satellites (SPS) transmitting electrical power to wherever it's needed throughout the world
- **New sources of mineral wealth** – virtually limitless natural resources in the Near Earth Asteroids (NEAs) will free us from dependence on depleting Earth's limited resources to support our prosperity
- **Telemedicine** – will help doctors diagnose and treat patients in remote areas
- **Environmental science** – will advance as a result of developing life support systems for long-duration voyages of discovery

The nation that leads the way on this new frontier will dominate the global economy – just as the nations that led the way in exploring the New World dominated the global economy during the last Age of Exploration.



## The Space Frontier Will Inspire the Next Generation of Scientists, Engineers – and Entrepreneurs

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- The number of U.S. high school graduates who plan to study engineering has declined by one-third in the past ten years
- Europe graduates three times as many engineering students as the U.S., Asia five times as many
- Nearly half the degrees granted in China are engineering degrees. In the U.S., only one student in twenty graduates with an engineering degree
- The percentages of graduate degrees in the sciences are equally skewed against the U.S

*Our young people need the prospect of exciting adventure – putting footprints in places no footprints have ever been before – to spur them to do the hard academic work that will be required to prepare them for the challenges they will face as adults.*



## Our Space Assets are Critical to National Security

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### **Meteor Crater, Arizona**

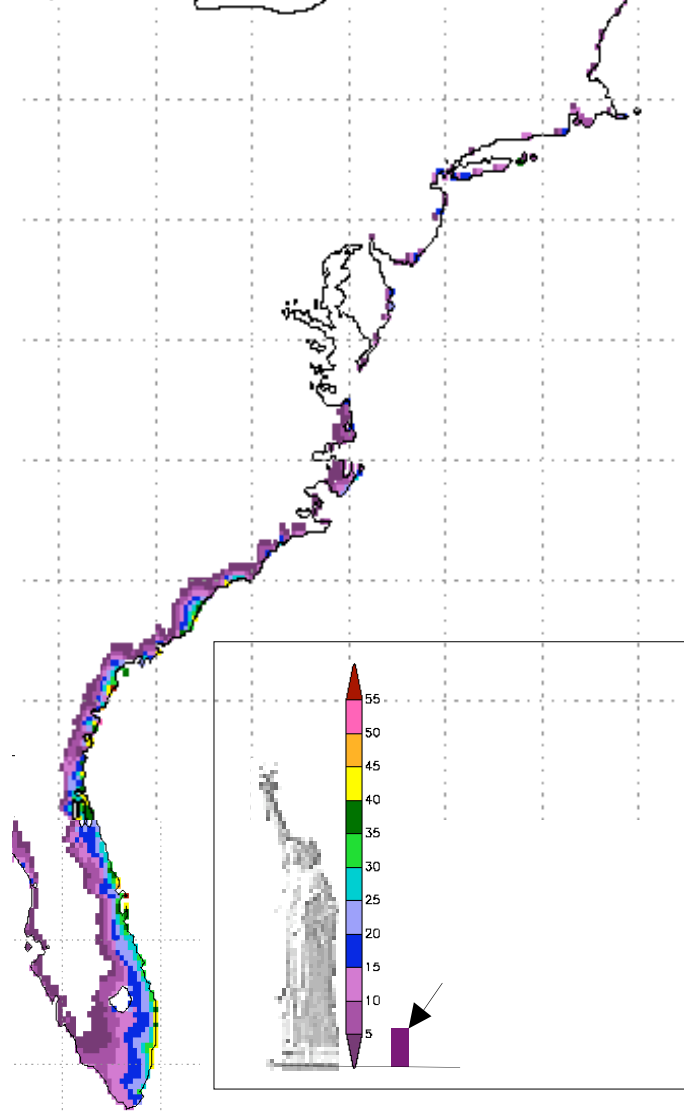
*2.5 megaton impact (more than 150 times more powerful than the Hiroshima bomb)  
...and this is a small impact!*

- **Space-based reconnaissance and communications assets contributed to maintaining peace during the Cold War. Today, systems like GPS are critical for military operations in Iraq and Afghanistan.**
- **In addition to threats from hostile nations and terrorist organizations, we face a natural threat for which we presently have no defense.**



# National Defense Must Include Planetary Defense

Height (in meters) of tsunami after asteroid impact in Atl:



(Courtesy of Space Studies Institute)

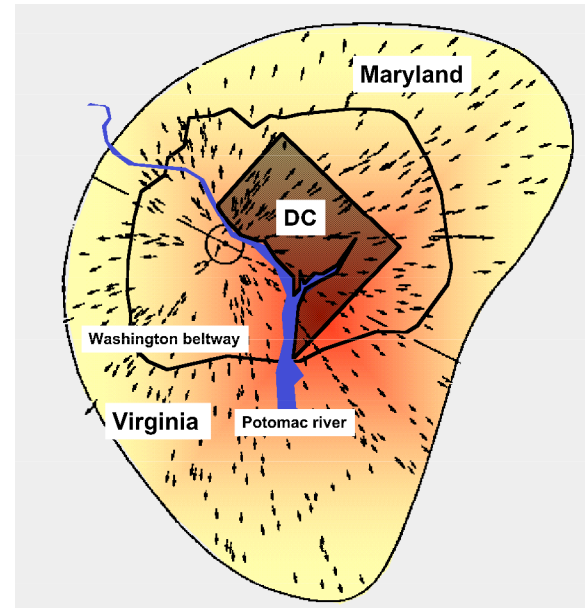


Image of 1908  
Tunguska  
Explosion  
superimposed over  
Washington  
(Courtesy of Space Studies  
Institute)

**If we discovered an asteroid on a collision course with Earth this minute, what could we do about it?**

**NOTHING – *today***

**But the technologies we develop in the exploration of the Moon and Mars can give us the ability to defend ourselves from this threat *tomorrow***





# The NSS Policy Agenda

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- ① Fully Support and Accelerate the Vision for Space Exploration**
- ② Reinstate the Shuttle Mission to Extend the Life of Hubble**
- ③ Ensure Government Policy Promotes the Emerging Private Sector Space Businesses**
  - Lower Barriers to Market Entry
  - Provide a Market



# Support the Vision

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- The Vision for Space Exploration is the right plan for future space exploration and development
  - Key to revitalizing NASA
  - Inspires the young minds of America
  - Strengthens US economic and security
- Keep NASA destination driven - not technology driven
- Fully fund the President's 2006 Budget Request for NASA
- Pass a NASA Authorization Bill that supports the Vision this year



# Accelerate the Vision

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*“When the United States developed its Gemini spacecraft, it did so from contract award to first flight in a period of something like 38 to 39 months, a little over three years. Even the Apollo spacecraft, a much more challenging development...was brought from contract award to fruition in no more than six years. It seems unacceptable to me that it should take from 2005 to 2014 to do the same thing when we already know how.”*

*NASA Administrator Michael Griffin, Senate Confirmation Hearing, April 12, 2005*

- Current schedule calls for a four-year gap between ending of Shuttle flights in 2010 and beginning of piloted flights with the Crew Exploration Vehicle (CEV) in 2014.
- During this period, the U.S. would have no access to space for human crews, and would be forced to rely on Russia for human space transport, as we have done these past few years while Shuttle is grounded.
- This is inexcusable: We must not cede space access to foreign countries.
- NASA should accelerate develop of the CEV to minimize or eliminate human spaceflight gap
  - However, it should keep open the consideration of new ideas
  - Long drawn-out development programs cost more and lose focus
  - Accelerated goals will inspire the American public and inspire America’s youth to follow high-value education and career choices



# Save Hubble

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- The Hubble Space Telescope is often referred to as the finest scientific instrument in the world. Scientists and the public alike marvel at its returns.
- Given that it is projected to cost \$300M to develop a tug to dock with and deorbit Hubble, it makes more sense to fly the upgrade instruments which have already been built to upgrade and extend the life of the telescope
- **Provide NASA the incremental funding to accomplish this mission**



## ***Promote the Emerging Private Space Sector***

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### **Support a robust space prize program by authorizing NASA to issue Centennial Challenge prizes of at least \$10 million.**

- For only \$10M, the Ansari X-Prize stimulated more than \$50M in private sector investment from multiple competitors
- The only three Americans who were launched into space from U.S. territory in 2004 flew in an X-Prize vehicle which cost about \$25M to develop – more than the prize money
- Larger prizes are appropriate and necessary to stimulate cheaper private sector solutions to bigger problems
- There is no risk to the government – if the private sector can't meet the prize criteria, no prize money is awarded.



## ***Promote the Emerging Private Space Sector***

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### **Fix ITAR**

- ITAR is broken, and must be fixed.
- It encourages the development of foreign competition.
- It is seriously hurting American industry and market share.
- Balance has been lost: ITAR contributes less to U.S. security than the damage it inflicts on American jobs and industry.
- These common sense principles should guide Congressional action:
  - Evaluate whether technology is widely available on the int'l market
  - Differentiate between friendly and unfriendly nations; consider a list of close allies
  - Re-designate Commerce Dept as the review agency for allies and common technology.



## ***Promote the Emerging Private Space Sector***

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### **Provide a Market**

- Until private markets become established, government should provide a market for goods and services to encourage the growth of this new sector of the economy
- **Provide \$1M/year per state for university science payloads** over and above current science education payload programs
  - Maintains vitality in the university/science communities
  - Emerging launch companies need the market
  - Provides every state with opportunities to participate in space science
- **Privatize cargo supply flights to the International Space Station**
  - Emerging launch companies should meet this service via competitive bid
  - Parallels government stimulation of the early airlines by hiring private companies for Air Mail delivery
  - Fully fund the \$160M request for ISS cargo services



## ***Promote the Emerging Private Space Sector***

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- **Support H.R. 1024 (Zero-G, Zero Tax Act)**
  - Declares a 50-year tax holiday for any product manufactured in space (excludes comsats)
  - Creates the equivalent of Enterprise Zones to stimulate economic activity in space
  - Doesn't lose any tax revenue because at present there is no industry to be taxed
  
- **Maintain NASA's world class wind tunnels, test stands, and laboratory facilities**
  - Currently count as overhead burden against centers that have them, hindering those centers' pursuit of new work
  - These national assets should be booked separately
  - Both small and large companies depend on these facilities





# Fortune Favors the Bold

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Now as in the past, a more prosperous future awaits America on its frontiers.

A vigorous national space policy, properly balanced between the civil and commercial sectors, will ensure this future.

Thank you for your attention.