

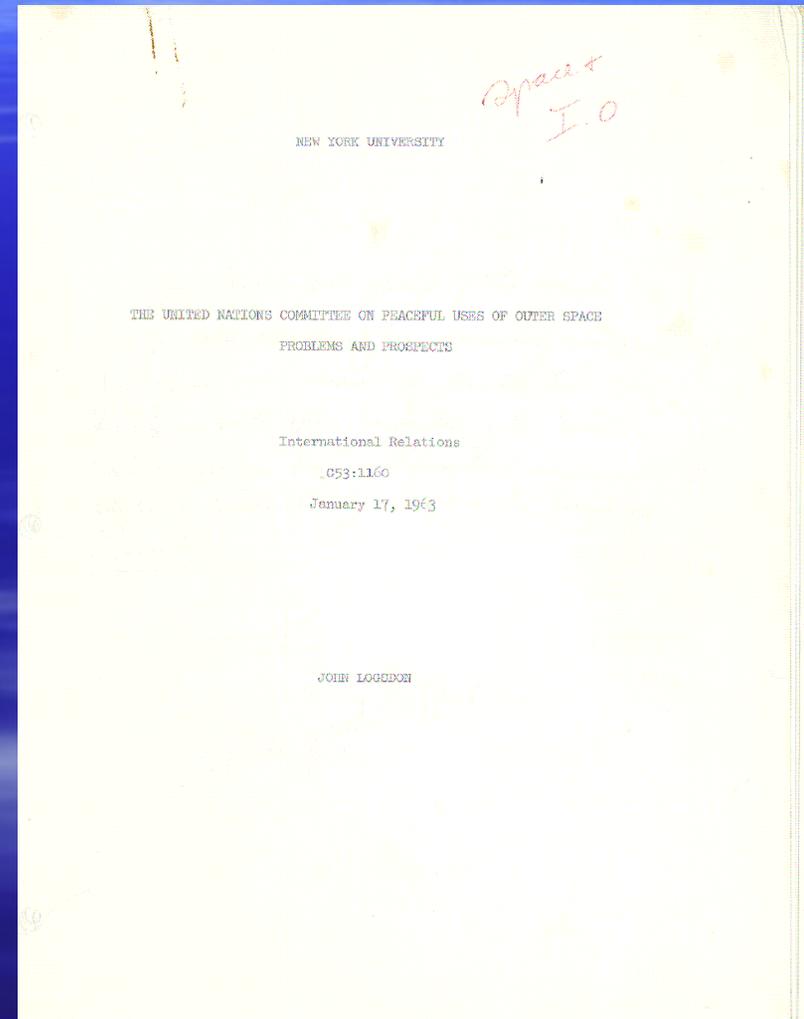
# **SPACE IN THE TWENTY-FIRST CENTURY**

## **A Challenge for International Governance**

**John M. Logsdon**  
**Director, Space Policy Institute**  
**Elliott School of International Affairs**  
**The George Washington University**  
**Washington, DC, USA**

# COPUOS THEN AND NOW

- When I first paid attention to COPUOS in late 1962, the Committee was just beginning its “golden decade” of crafting the basic international regime for space activities
- The space world 45 years later is very different than the one in which that regime was developed, and is likely to continue to change rapidly in the years to come
- These changes present a challenge to this Committee if it is to remain a central forum for developing an international regime for 21<sup>st</sup> century space



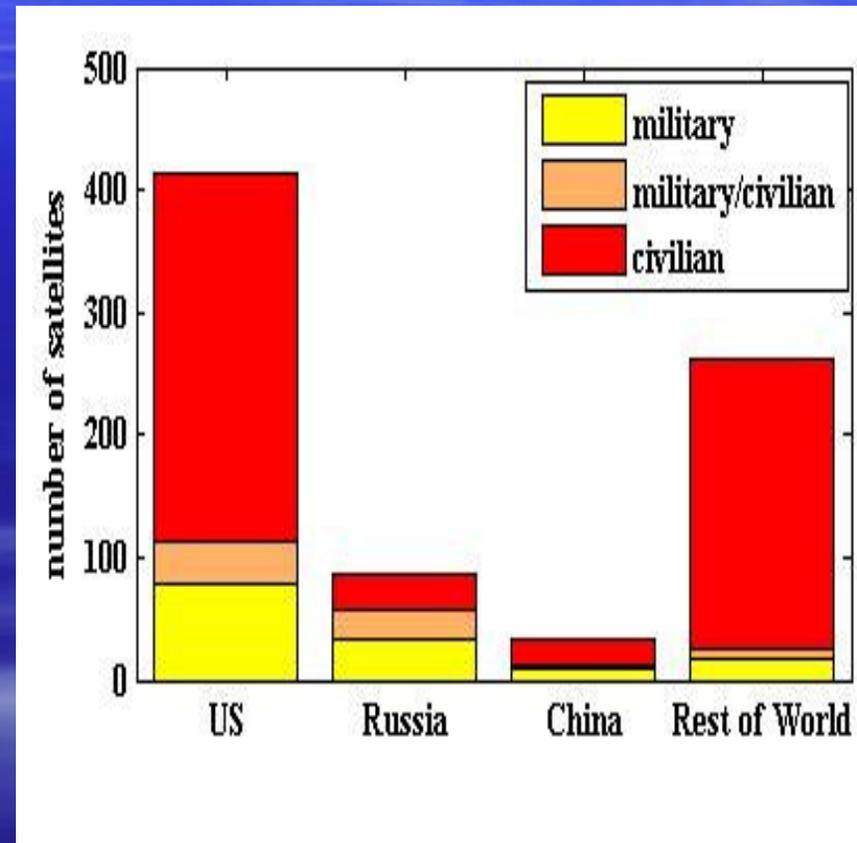
# The 21st Century: A Very Different World Than 50 Years Ago



- Many of the satellites in orbit today provide services that are integral to modern life. For much of the world, they are already “global utilities.”
- How will global developments influence what happens in space in the years to come?
- It is no longer possible to treat space as a “special” sector, developing independent of multiple global trends. How will this reality affect the work of COPUOS?

# SPACE IS A BUSY PLACE (AND WILL ONLY BECOME MORE BUSY)

- As of April 2007, the Union of Concerned Scientists listed 848 satellites in orbit around the Earth (plus a few spacecraft in other locations). Space Security Index says there are 620 operational satellites.
- The large majority of these satellites are civilian or dual-use in character
- Almost fifty countries own and operate satellites, in addition to various private sector operators



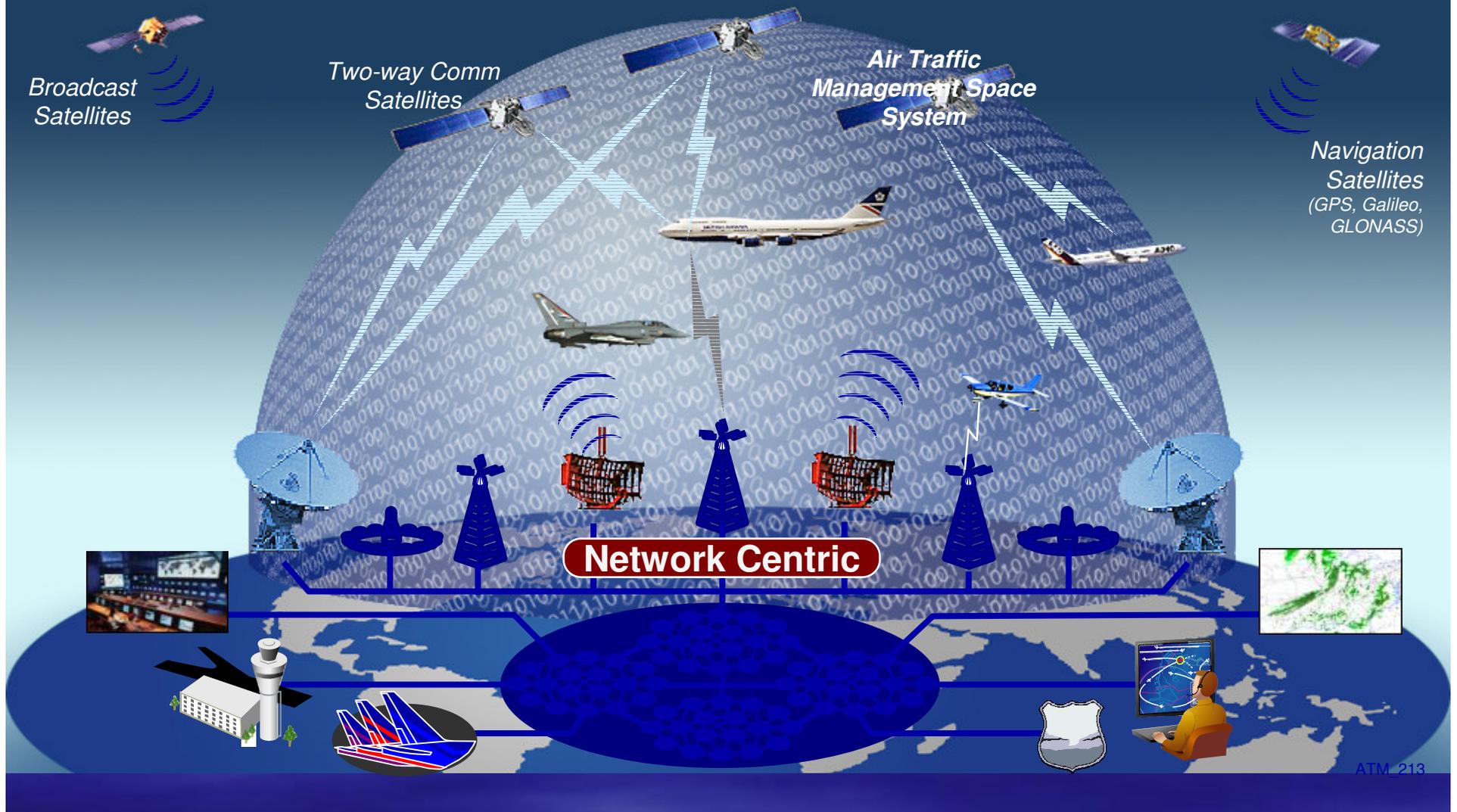
# SPACE IS ALREADY AN IMPORTANT ECONOMIC SECTOR, WITH POTENTIAL FOR FUTURE GROWTH



*Satellite Services Are Becoming Increasingly Important*

# SPACE WILL BECOME EVEN MORE INTEGRATED WITH DAILY LIFE

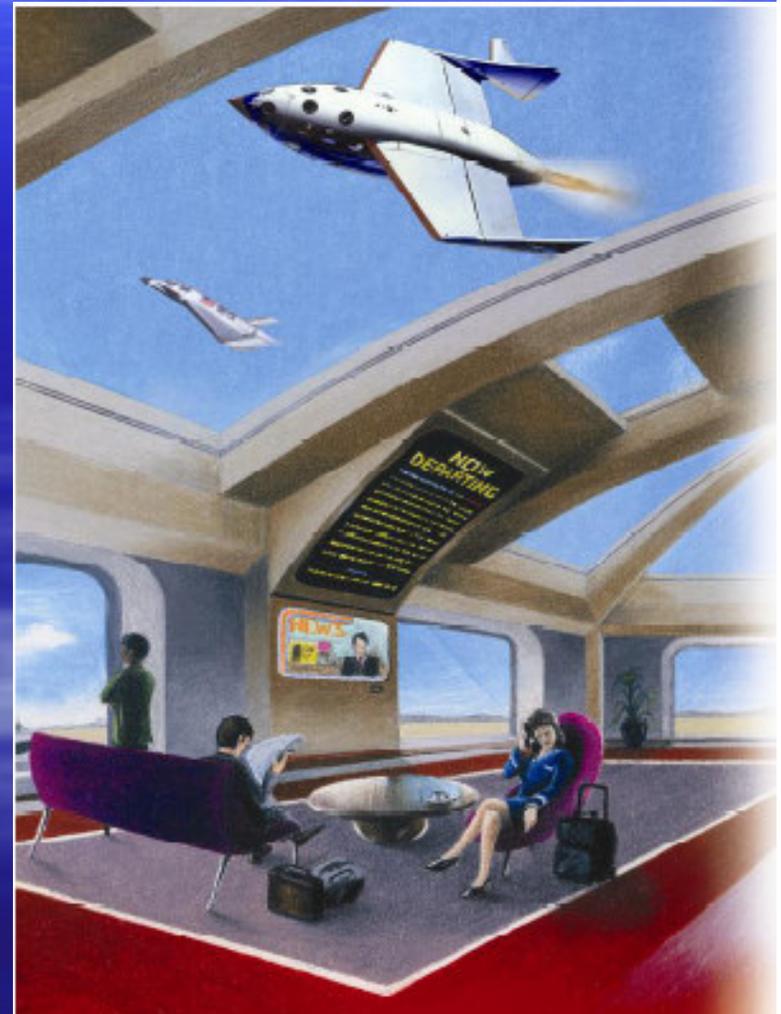
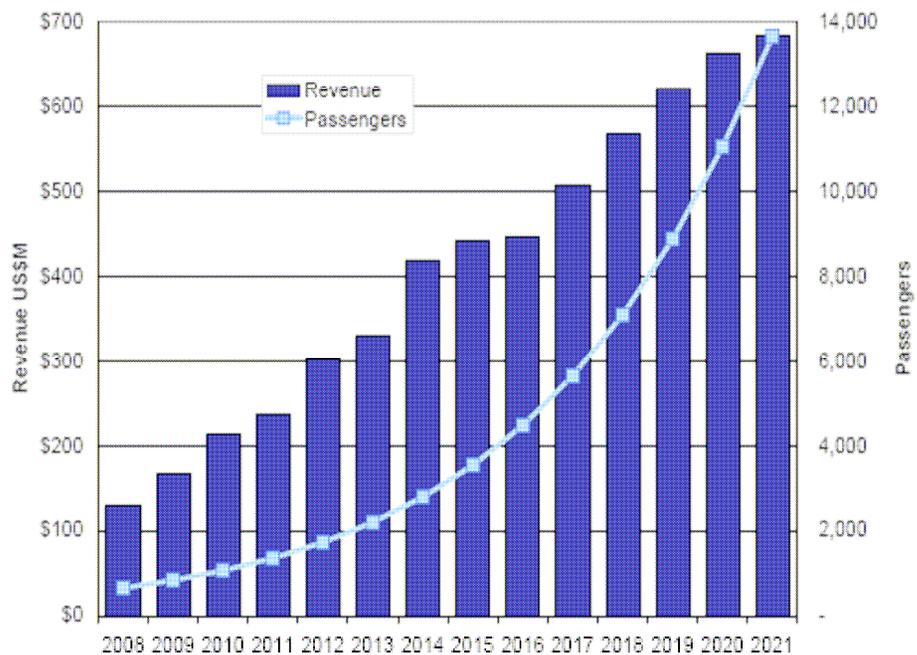
(EXAMPLE - NEXT GENERATION GLOBAL AIR TRAFFIC MANAGEMENT)

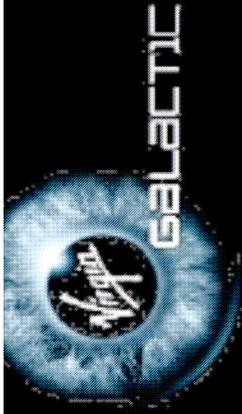


# WHAT FUTURE FOR PASSENGER SPACE TRANSPORT?



2006 Passenger and Revenue Forecast





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Book your space ticket now to become one of the world's first commercial astronauts. Virgin Galactic is planning to start propelling its first astronauts into space by 2009.

With a set payment of \$200,000, and a minimum refundable deposit of \$20,000 you can now make your reservations to experience the ultimate adventure.

This page is the means to make a firm booking. If you want to just register your interest in Virgin Galactic then please [click here](#).

During the course of 2007, Virgin Galactic will be appointing Accredited Space Agents around the world. These are registered travel agents who have been specially selected and fully trained on all aspects of the Virgin Galactic experience and will be happy to help you make your space flight reservation.

[Click here](#) to find your nearest Space Agent.

• **Email Address :**

• **Email Address confirmation :**

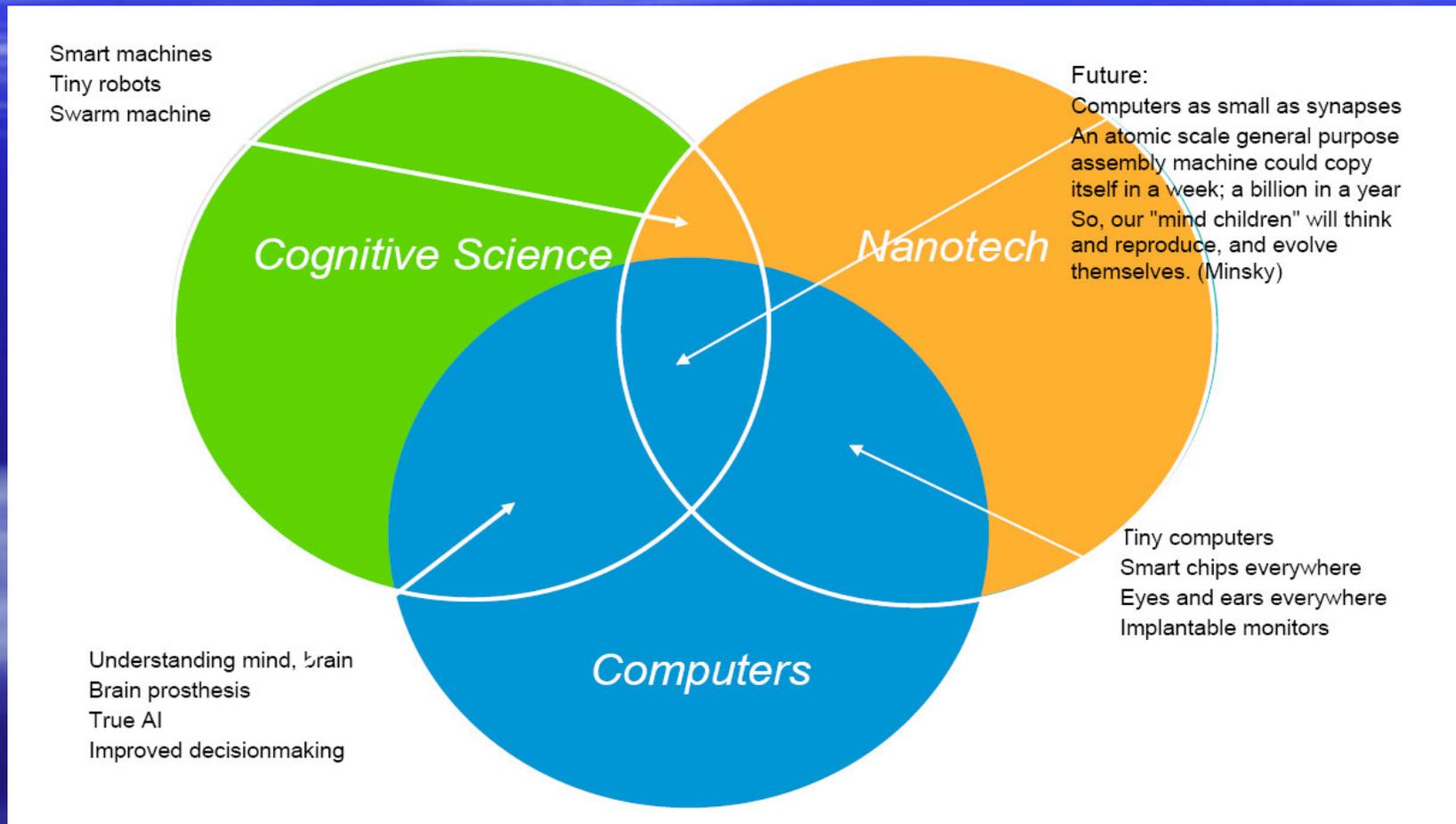
**Title :**

• **Forenames :**

• **Surname :**

We will be calling you as soon as possible. When we do, what do you want to concentrate on during your call?

# HOW WILL TRENDS IN TECHNOLOGY AFFECT FUTURE SPACE ACTIVITIES?

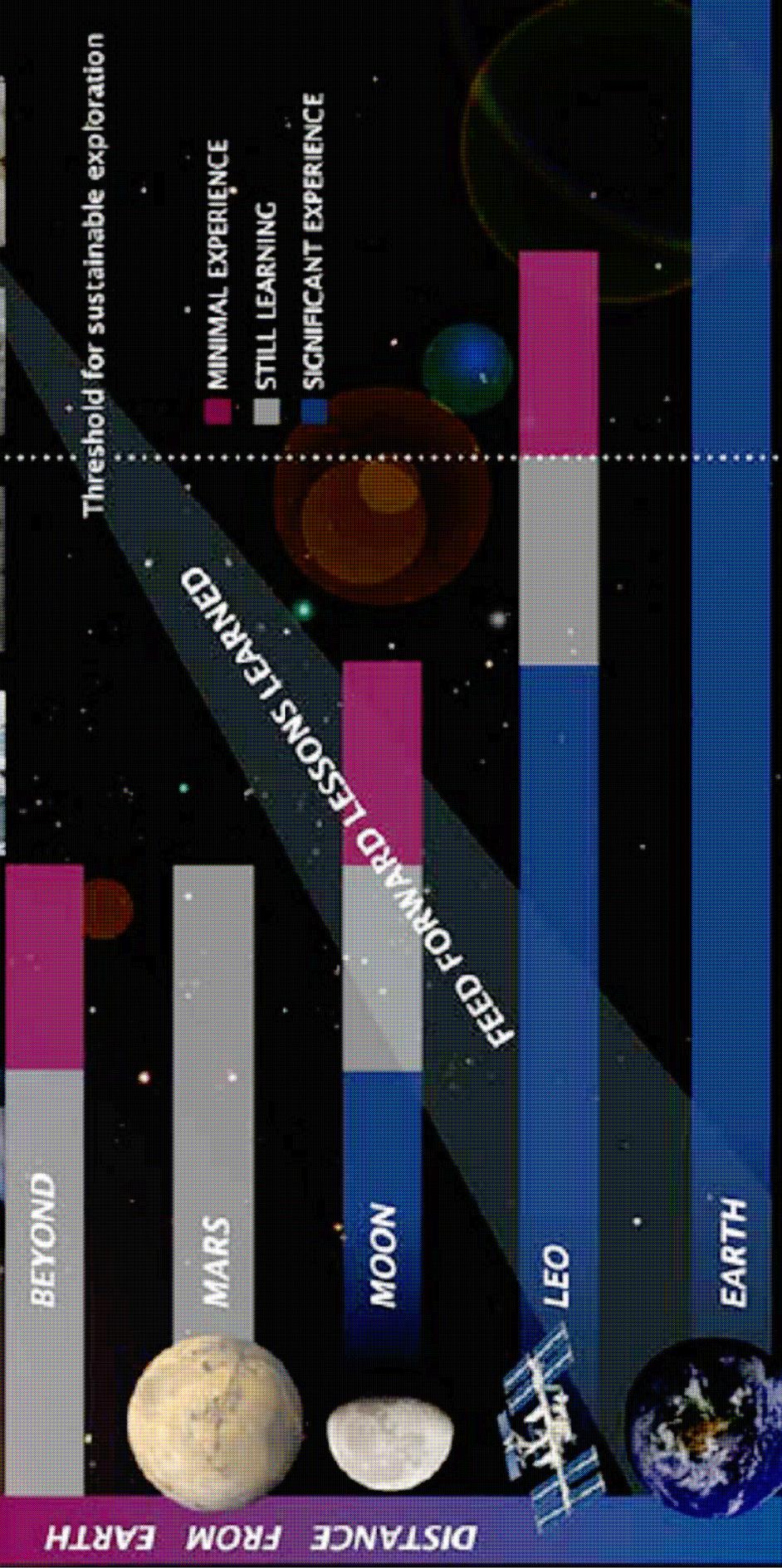
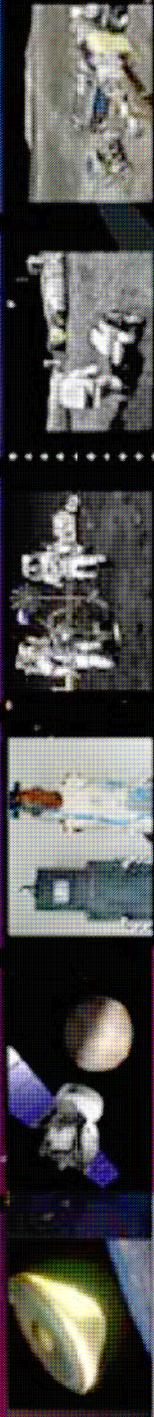


# ENSURING SPACE SECURITY

- With increasing dependence on space comes increasing vulnerability
- How best to ensure that peaceful space activities can proceed free from threats of disruption?
- There are many suggestions of how to answer this question
- Focused attention to evaluating these suggestions and then pursuing promising alternatives is critical to a productive future in space



> **Space Exploration: different destinations, the same steps >**



DISTANCE FROM EARTH

# GLOBAL EXPLORATION STRATEGY

- On May 31, 2007, 14 space agencies issued a “Global Exploration Strategy” that proclaimed that
  - This Global Exploration Strategy will bring significant social, intellectual and economic benefits to people on Earth. . . . By understanding how planets work, we learn more about our Earth. The technologies created will help build a more sustainable society.
  - Space exploration also offers significant entrepreneurial opportunities by creating a demand for new technologies and services. These advances will encourage economic expansion and the creation of new businesses.
  - Finally, this new era of space exploration will strengthen international partnerships through the sharing of challenging and peaceful goals. It will inspire people everywhere, particularly youth.
- How will all countries of the world become engaged in this grand effort?

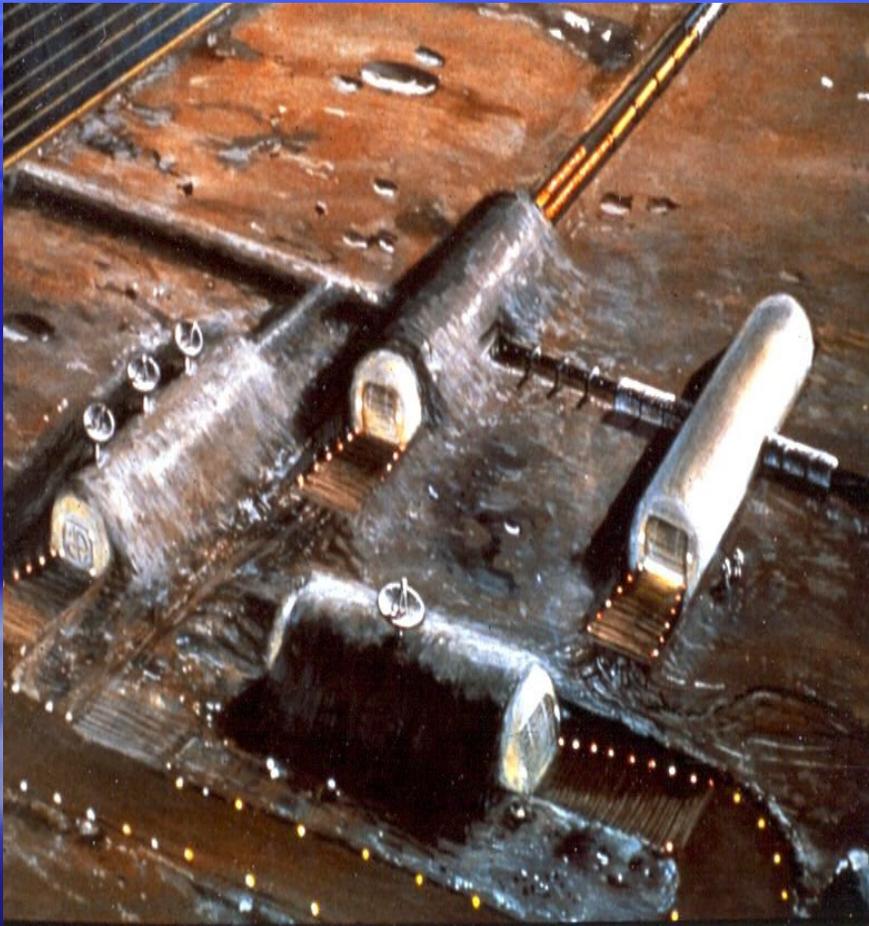


# GLOBAL EXPLORATION STRATEGY

*Space exploration is essential to humanity's future. It can help answer fundamental questions such as: 'Where did we come from?' 'What is our place in the universe?' and 'What is our destiny?' It can bring nations together in a common cause, reveal new knowledge, inspire young people and stimulate technical and commercial innovation on Earth. The Global Exploration Strategy is key to unlocking this door to the future.*

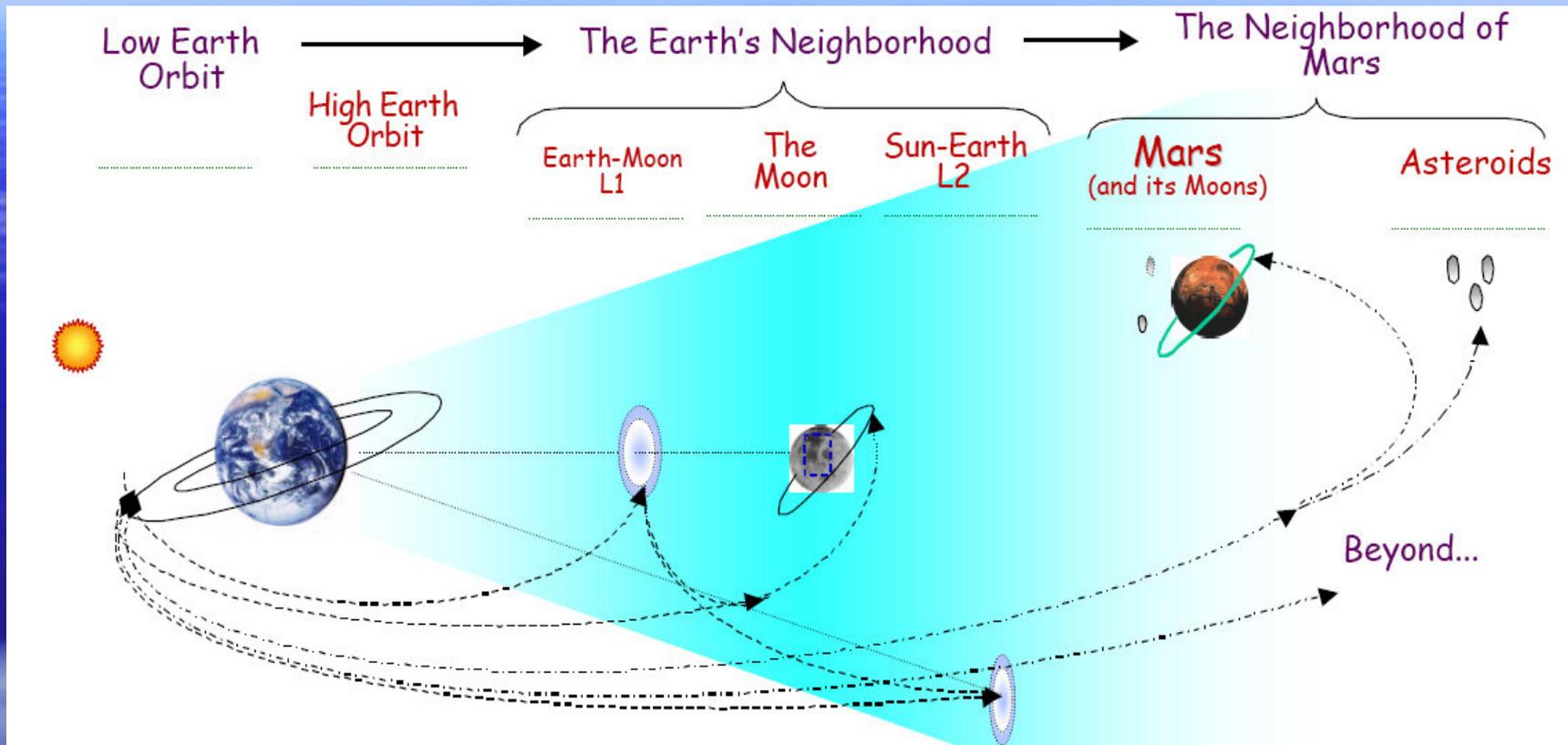
*The shared challenges of space exploration and the common motivation to answer fundamental scientific questions encourage nations of all sizes to work together in a spirit of friendship and cooperation.*

# SPACE AS A SOURCE OF WEALTH?



- “The greatest value of the Moon lies neither in science nor exploration, but in its material.”
- “We want to incorporate the Solar System into our economic sphere.”
  - John Marburger III, Science Adviser to the U.S. President, March 15, 2006

# Space and the (Trans)-Global Economy



## *Incorporating Space into Our Economic Sphere of Influence*

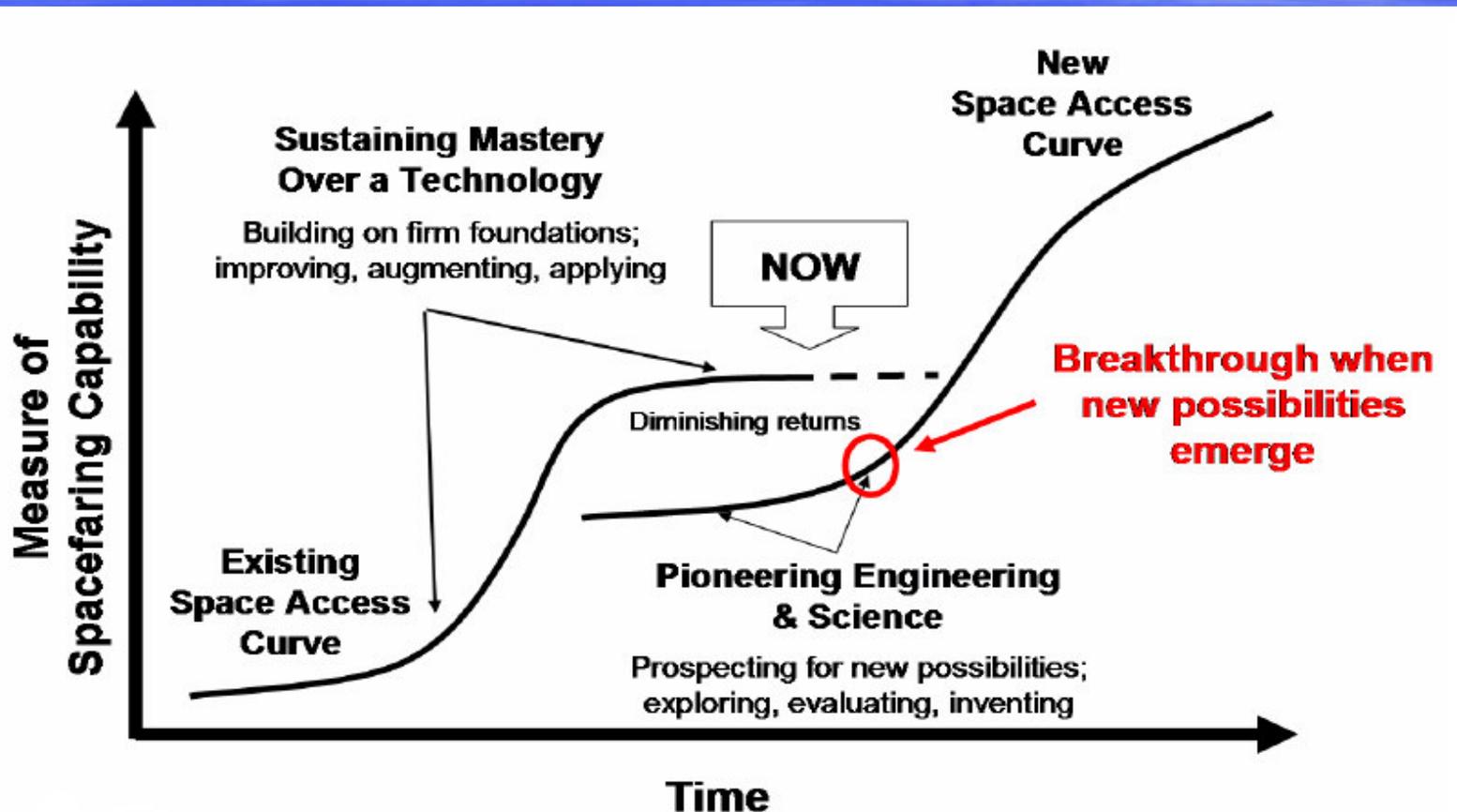
Michael D. Griffin

Administrator  
National Aeronautics and Space Administration

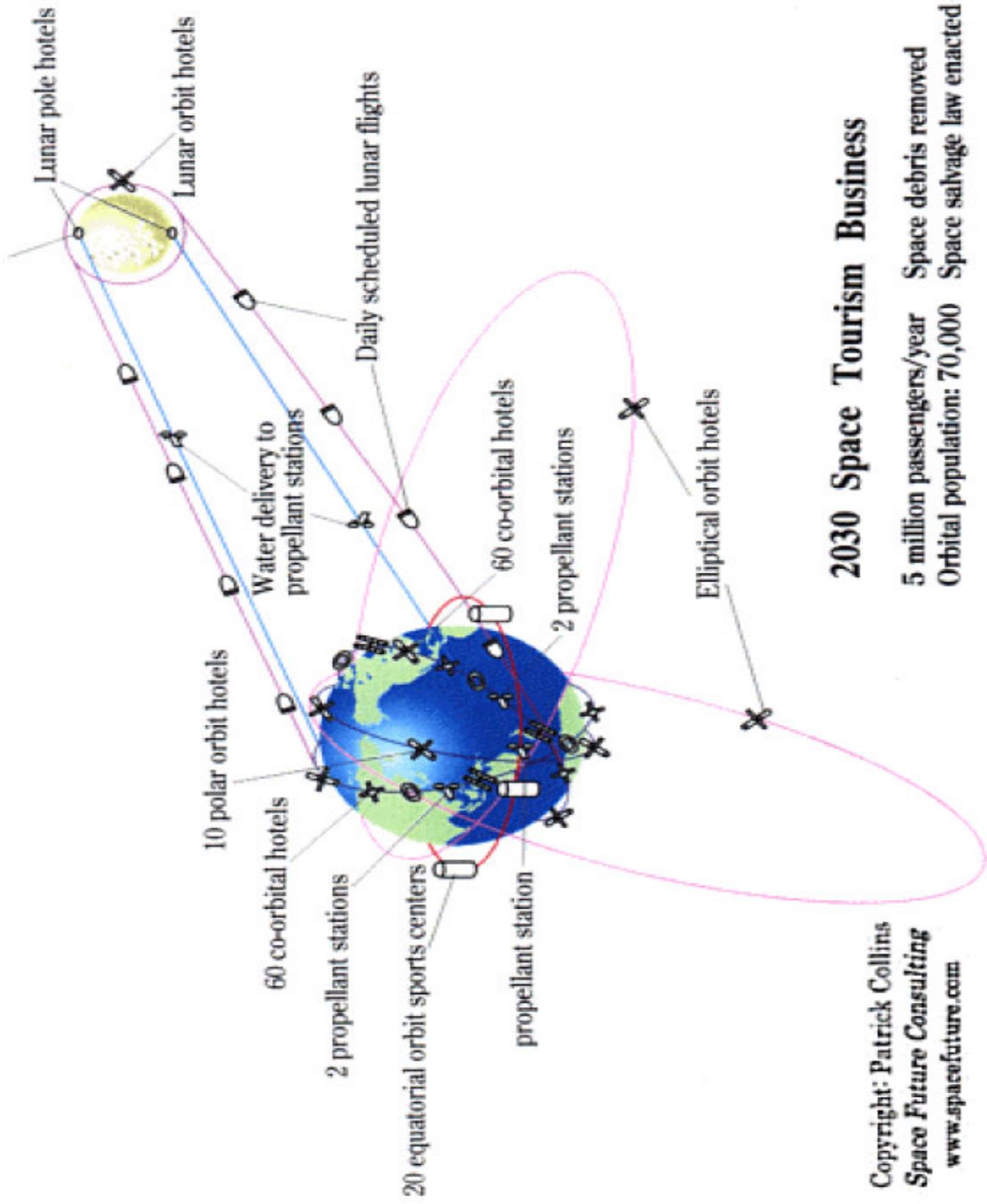
World Economic Forum  
26 January 2007

We have the technology and economic wherewithal to incorporate the benefits of space into our sphere of influence – to exploit the vantage point of space and the space environment, and the natural resources of the moon, Mars, and near-Earth asteroids. Space exploration is not simply this century's greatest adventure; it is an imperative that, if not pursued with some concerted effort, will have catastrophic consequences for our society.

# LOWERING THE COST OF ACCESS TO SPACE



Technology “S” curves depicting the needed transition from the current to a new space access paradigm.



## 2030 Space Tourism Business

5 million passengers/year    Space debris removed  
 Orbital population: 70,000    Space salvage law enacted

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