

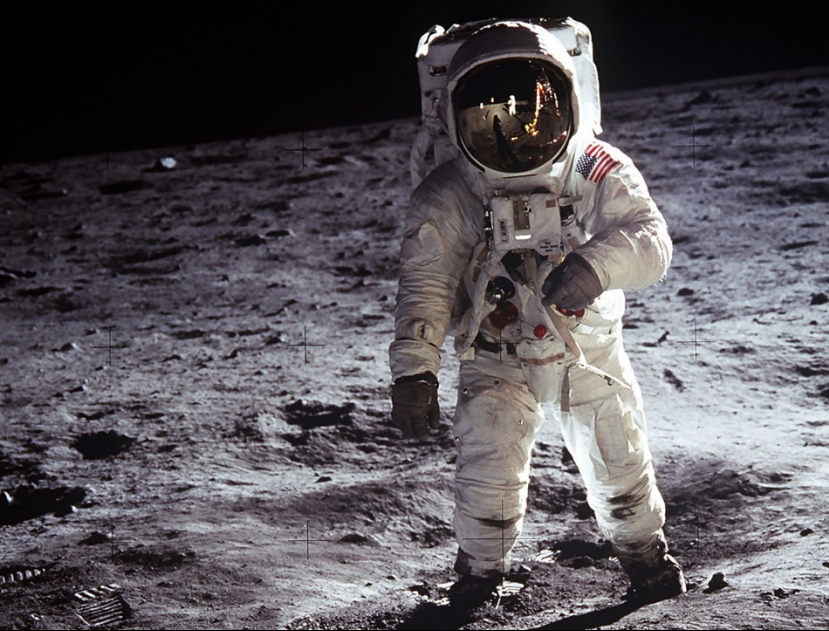
Presentation

“The Relationship between Space and Society”

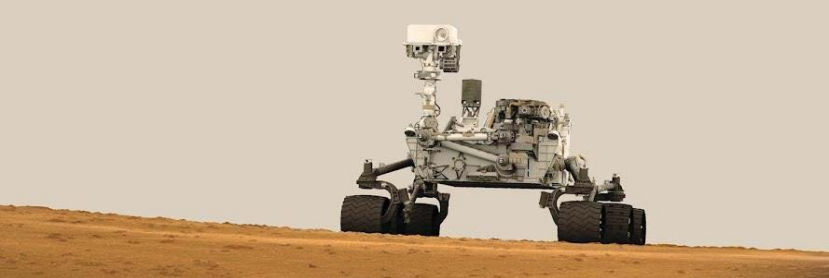
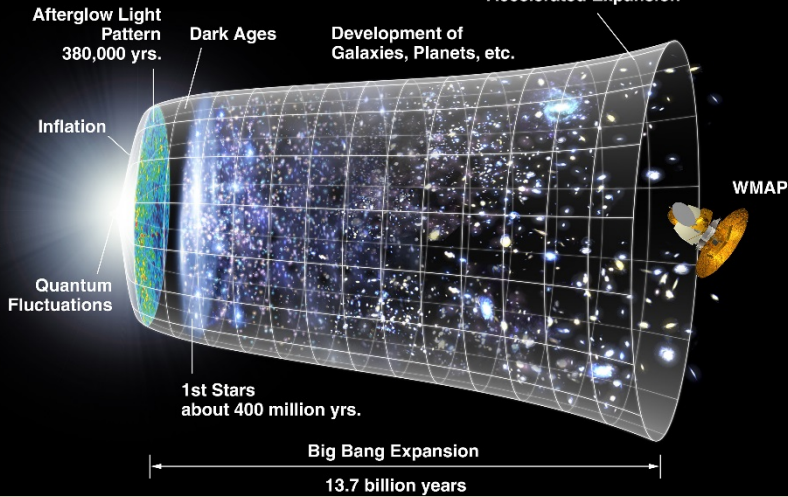
**Student Visit to ESPI
SIOI - ASI Master in Space Policy and Institutions**

15 June 2016, Vienna

Arne LAHCEN
Resident Fellow, ESPI



Dark Energy Accelerated Expansion



STAR WARS

A deep-field astronomical image showing a vast field of galaxies. The galaxies are scattered across the frame, appearing in various colors including yellow, orange, red, blue, and purple. Some galaxies are bright and clear, while others are faint and distant. The background is a deep black, punctuated by the light of the galaxies.

A Perspective on the Universe ...



... and to ourselves as a species

How Space Changes Society

Three Main Impacts:

1. Universal Understanding

- Who are we?
- Where are we?
- How does the universe and nature work?
- Discoveries have a strong impact on society!

2. Globalisation

- Space contributed significantly to the shape of the current world order.
- Global rapid exchange of information, goods, services, people and capital.

3. Environmentalism

- Leaving Earth made us realise how fragile, small and precious it is.
- Space technologies help us understand our planet better.

Most of Space Use is Down-To-Earth

Satellites in the Earth orbits:

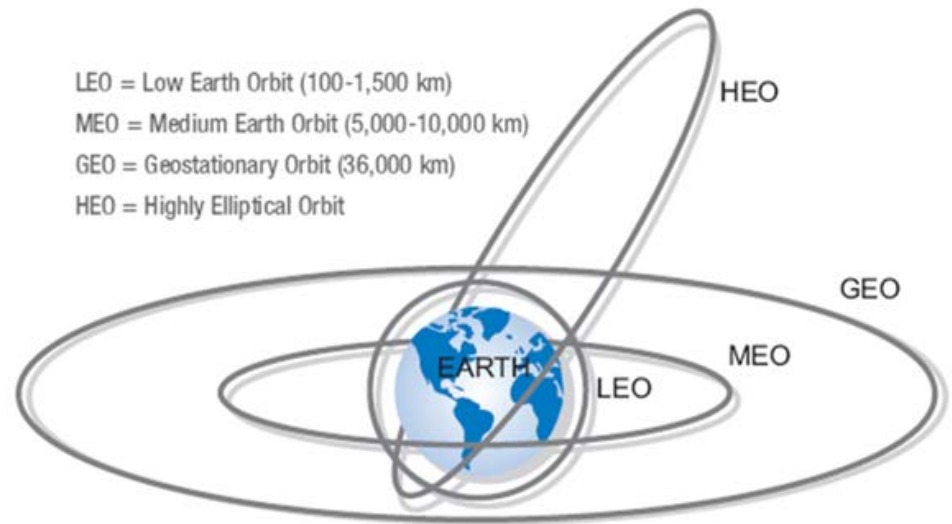
- Earth Observation
- Telecommunication
- Navigation
- Earth Science
- Space Science

Services create Added Value for:

- Individual People
- Governments
- Businesses
- Society at Large

Industry provides:

- Jobs, Economic Growth, Technological Progress and New Capabilities



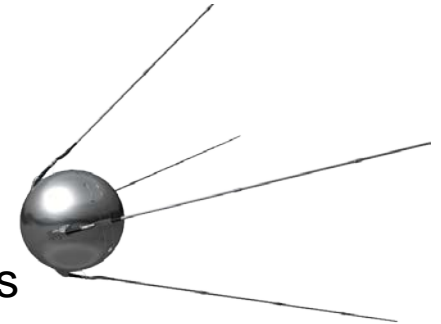
The Economic Playing Field of Space

		Rivalry	
		Rivalrous	Non-rivalrous
Access	Non-excludable	Common-Pool Goods Near-Earth space environment <i>(e.g. commonly used Earth orbits and orbital slots, frequency spectrum)</i>	Public Goods Space at largest scales <i>(e.g. for planetary and solar system exploration)</i>
	Excludable	Private Goods <ul style="list-style-type: none"> · Telecommunications · Launchers · Human Space Flight 	Club Goods <ul style="list-style-type: none"> · GNSS signals · Earth observation data · Space science

Space and Society: a Historic Perspective

Pioneering: The Early Cold War Era (1957 – 1960s)

- Sputnik in orbit by USSR
- Space became a major issue on the international agenda
- Emphasis on security and avoidance of conflict
- Establishment of global governance (UN) and legal regimes



Advancement: The Era of Achievement (1970s)

- Achievements are subject to political will (Kennedy: „We Choose to go to the Moon“ and the Apollo era)
- Space as a tool for prestige and advancement
- Space has reinforced the ecological movement



Space and Society: a Historic Perspective

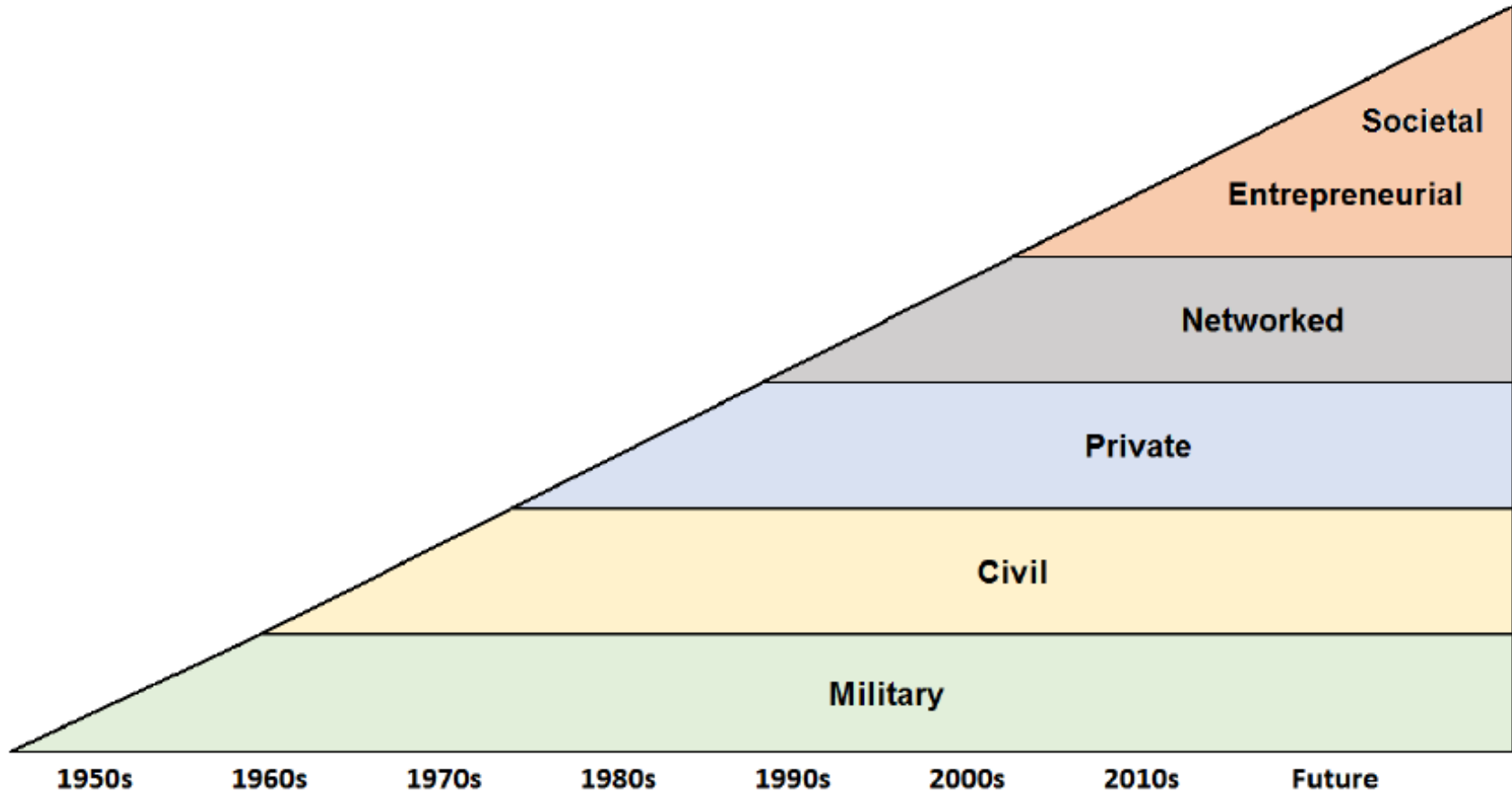
The Era of Consolidation (1975-1990)

- Realisation: Space is there to stay, but not only for prestige.
- Space becomes an environment for many global services.
- Many space agencies and institutions are established worldwide, in Europe the European Space Agency (1975).
- Space programmes are an element of national politics.

The Era of Globalisation (> 1990)

- The rise of privatisation and commercialisation of space activities.
- The number of space actors keeps on growing.
- The space club becomes more diverse.
- It remains a field to demonstrate strategic capabilities globally.

Societal Actors and Approaches in Space



Space for Society Today

Links to various Societal Needs and Values:

- **Protect and Strengthen Achievements**
 - Global Peace and Security
 - Space as a global common good makes us cooperate internationally.
- **Empowering Humankind:**
 - Knowledge helps governments to take better decisions, improving their policies.
 - Emancipation and Participation chances.
 - Global communication enables the people to speak and self-organise, regardless of national borders or physical barriers.
- **Opening up New Opportunities:**
 - To address existing challenges (development, environment, ...)
 - To develop new tools with unknown or untapped potential (AI, robotics, medicine, nano-technology, ...)
 - To push humanity forward into the future

What does this mean for Space Policy?

Space Policy Defined:

- *Space policy is one or more principles or protocols to guide decisions and achieve rational outcomes regarding space activities or supported services.*
- Typically formulated by the executive branch of government.
- Space policy exists on national, international and global level.

A lot is going on:

- Cooperations between Agencies, States and in Regions
- Technological Innovation Practices
- Autonomy in Space Capabilities
- Industrial Policy
- Geopolitical Tensions in Outer Space
- Economic Growth
- Social Well-Being
- Security Issues
- ...



Thank you for your attention!