

# International Perspectives on Space

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SECURE  
WORLD  
FOUNDATION



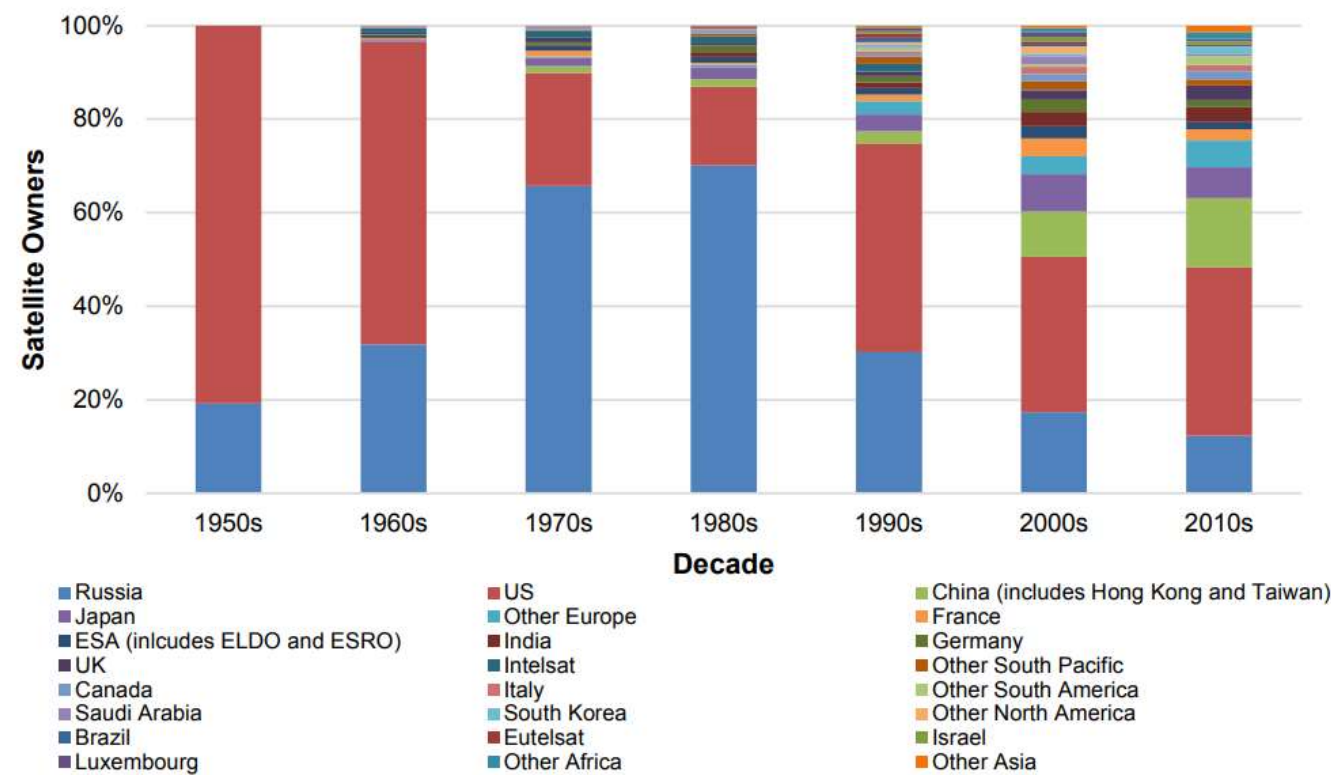
# Who we are

- **Secure World Foundation (SWF)** is a *private operating foundation* that promotes cooperative solutions for space sustainability
- **Our vision:** The secure, sustainable, and peaceful uses of outer space that contribute to global stability on Earth
- **Our mission:** Secure World Foundation works with governments, industry, international organizations, and civil society to develop and promote ideas and actions to achieve the secure, sustainable, and peaceful uses of outer space benefiting Earth and all its peoples

<https://swfound/.org>



# Growing number of countries are involved in space



<https://www.ida.org/-/media/feature/publications/g/gi/global-trends-in-space-volume-1-background-and-overall-findings/p5242v1.pdf>



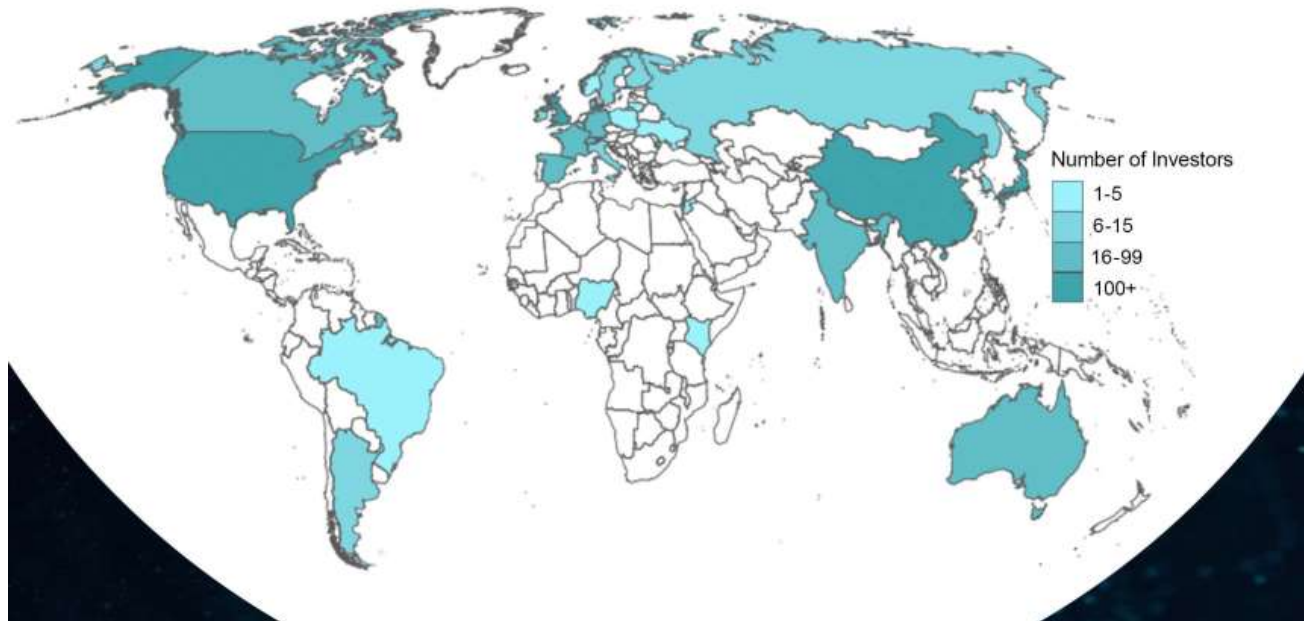
# ...but not always for the same reasons

- **Socioeconomic benefits**
  - PNT, remote sensing, satellite communications
- **Economic growth and development**
  - Jobs, innovation, STEM education
- **International prestige**
  - Human spaceflight, space science, Moon/Mars
- **National security**
  - Enhancing terrestrial military/intelligence capabilities



# Surging global investment in commercial space

Figure 8: California, China, Japan, and the UK account for 49% of investors since 2000

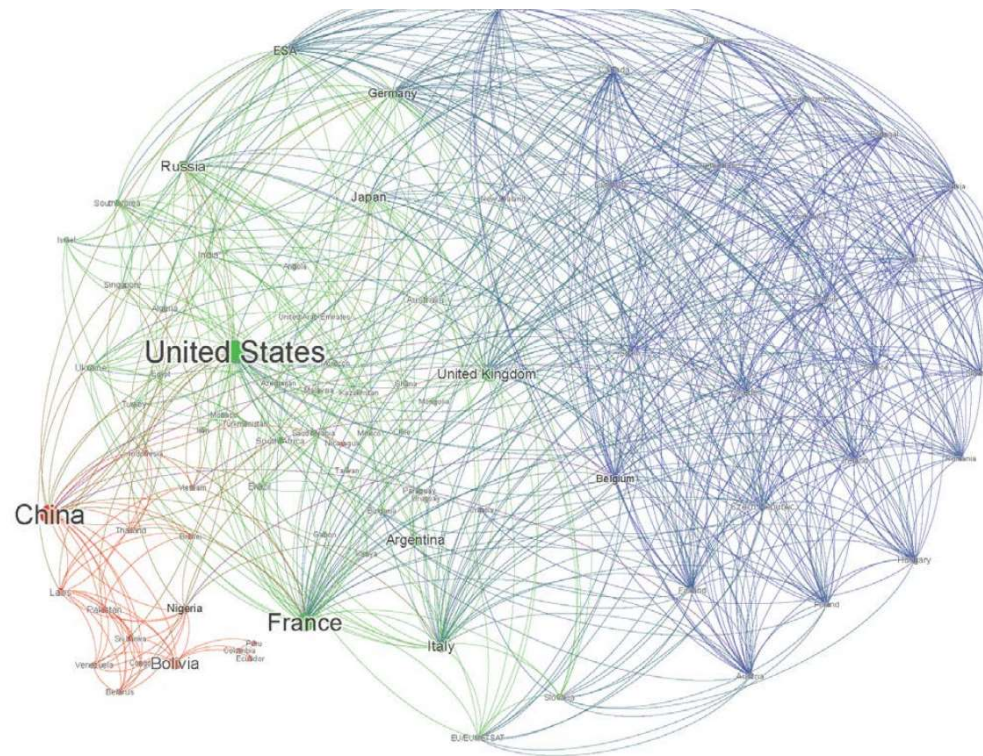


[https://brycotech.com/reports/report-documents/Bryce\\_Start\\_Up\\_Space\\_2022.pdf](https://brycotech.com/reports/report-documents/Bryce_Start_Up_Space_2022.pdf)





# Who's working with whom?



Note: Red denotes collaborations with China; blue, with EU countries; and green, with the United States.

<https://www.ida.org/-/media/feature/publications/g/gl/global-trends-in-space-volume-1-background-and-overall-findings/p5242v1.pdf>



# Major issues

- **Deployment of large constellations & increased congestion, interference, and light pollution**
- **Proliferation of counterspace capabilities and resurgence in anti-satellite (ASAT) testing**
- **Improving space situational awareness (SSA) and developing a global space traffic management (STM) regime**
- **Assured access to space & future space capabilities/resources**
- **Using space for sustainable development on Earth**

*Common thread: how do we “modernize” space governance?*



# Global counterspace capabilities

	U.S.	Russia	China	India	Aus.	France	Iran	Japan	North Korea	South Korea	U.K.
LEO Co-Orbital	■	▲	■	●	●	●	●	●	●	●	●
MEO/GEO Co-Orbital	■	▲	■	●	●	●	●	●	●	●	●
LEO Direct Ascent	■	▲	▲	■	●	●	●	●	●	●	●
MEO/GEO Direct Ascent	■	▲	■	●	●	●	●	●	●	●	●
Directed Energy	■	▲	■	●	●	■	●	●	●	●	●
Electronic Warfare	▲	▲	▲	■	●	■	■	●	■	●	●
Space Situational Awareness	▲	▲	▲	■	■	■	■	■	●	■	■

Legend: none ● some ■ significant ▲

<https://swfound.org/counterspace/>





# Artemis Program and Accords

- Artemis is the U.S.-led program to return to the Moon, along with international and commercial partners
- Program is complemented by the [Artemis Accords](#), a set of principles outlining how countries pledge to conduct activities on the Moon (including resource utilization)
- Current signatories:
  - Australia, Bahrain, Brazil, Canada, Columbia, Israel, Italy, Japan, the Republic of Korea, Luxembourg, Mexico, New Zealand, Poland, Romania, Singapore, Ukraine, the United Arab Emirates, the United Kingdom, and the United States



# Combined Space Operations

- Originally exercised as part of 2010 Schriever wargame (concept was having U.S., allies, and commercial partners all part of the same ops center)
- First Combined Space Operations (CSpO) concept established in 2014 among Five Eyes
  - Framework for linking multiple national ops centers
- Recently added France and Germany, released [CSpO Vision 2031](#)



# Space and the Quad?

Today, we begin new cooperation in cyber space and pledge to work together to combat cyber threats, promote resilience, and secure our critical infrastructure. In space we will identify new collaboration opportunities and share satellite data for peaceful purposes such as monitoring climate change, disaster response and preparedness, sustainable uses of oceans and marine resources, and on responding to challenges in shared domains. We will also consult on rules, norms, guidelines and principles for ensuring the sustainable use of outer space.

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/24/joint-statement-from-quad-leaders/>



# United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS)

- Main international body on space, source of the core international space treaties
- 100 State members, plus 40+ observers (including SWF)
- Current issues
  - Orbital Debris
  - Long-term sustainability of space activities
  - “Dark and Quiet Skies” (light pollution from large constellations)
  - Space Traffic Management
  - Use of space for sustainable development on Earth





# Conference on Disarmament (CD)

- Created in 1978 as the main multilateral disarmament negotiating forum
- Established the Non-Proliferation Treaty, Biological Weapons Convention, Chemical Weapons Convention, and the Comprehensive Nuclear Test Ban Treaty
- Currently focuses on nuclear disarmament, fissile material control, negative security guarantees, and prevention of an arms race in outer space
- Largely deadlocked since the 1980s

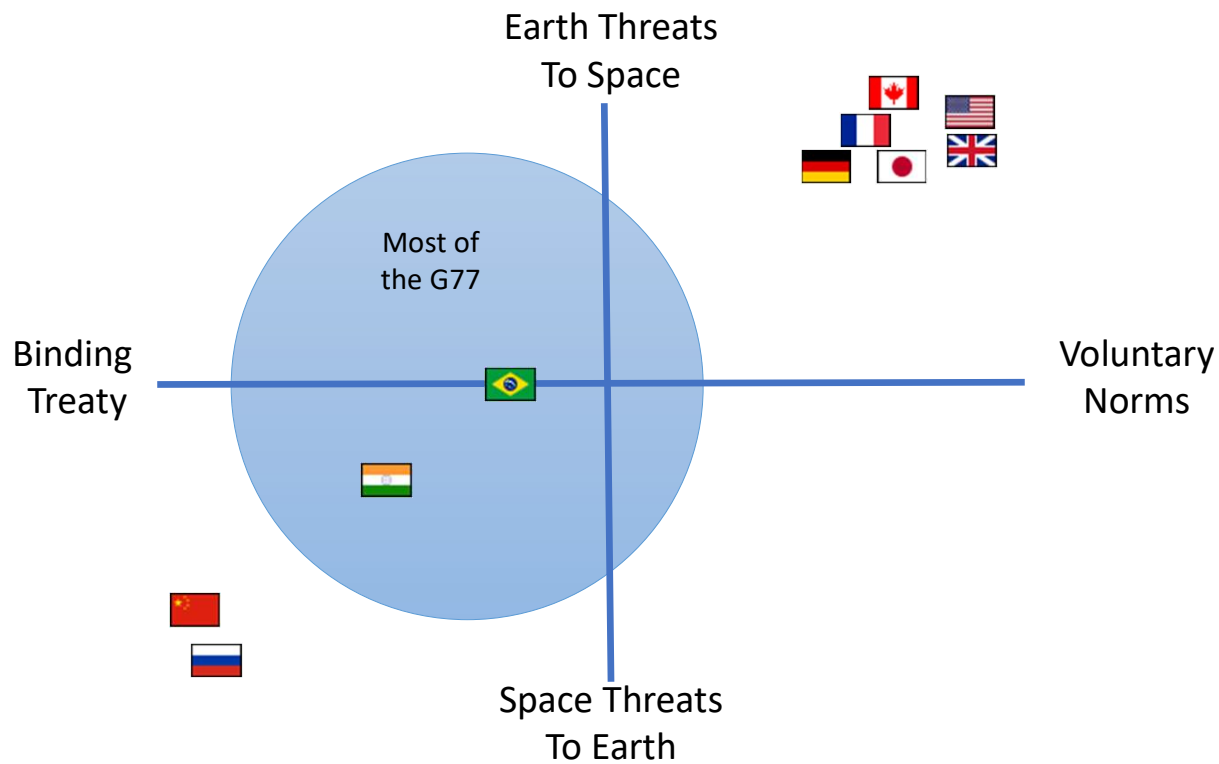


# UN Open Ended Working Group on Space Threats

- Established in Dec 2021 via UNGA resolution proposed by the UK
- Meet four times across 2022 and 2023
- “Develop recommendations on possible norms, rules, and principles of responsible behaviors relating to threats by States to space systems”
- Held first meeting in May 2022
  - Largely an exchange of views between countries but not as bad as most had feared



# Debate over space threats





# Commercial role in future conflicts?

## Satellite companies join the hunt for Russian war crimes

The firms that helped document the Russian invasion of Ukraine are now finding imagery of atrocities.

## What Does Starlink's Participation in Ukrainian Defense Reveal About U.S. Space Policy?

## Commercial satellites test the rules of war in Russia-Ukraine conflict

Companies are releasing images that once were seen only by intelligence agencies





# Summary

- Lots more countries are getting involved in space, but not always for exactly the same reasons
- Diversity of incentives, motivation, and approaches
- Big questions about how to “modernize” current space governance regime to deal with emerging challenges
- Commercial space seen as key source of innovation/economic growth, but also bringing a lot of new challenges
- Lots of opportunities for U.S. engagement/leadership/partnerships; the key questions are *on what and with whom*
- Which US policies/laws make it easier to collaborate and which create barriers?

