



Viewpoint

Space cooperation among order-building powers[☆]

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ABSTRACT

The global community is threatened by several kinds of disorder, including regional instabilities on land and the high seas (e.g., Ukraine, South China Sea). In addition, developing Russian and Chinese counterspace capabilities are creating new tensions in space. This article discusses similarities and differences between the maritime and space domains, governance, and how international cooperation in these domains could contribute to international stability. Current difficult questions related to the exercise of the right of self-defense in space are addressed with suggestions for future research. In light of the increasing importance and globalization of space activities, new norms of behavior in space need to be developed by like-minded national to create a more stable and secure international order.

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1. Introducing the Second Space Age

The first age of space development, characterized by the race to the Moon and the first explorations of the solar system, is over. Space is no longer a military sanctuary, either technically or politically. Space-based national security systems have emerged into more routine, if not open, usage from the cloak of their nuclear and intelligence origins. The main competitor to the United States in space is no longer the Soviet Union, but other market economies, rogue states such as Iran and North Korea, and increasingly capable Russian and Chinese military forces. The familiar Cold War fault lines have given way to the forces of economic globalization, disorder, and regional hegemony, leading to new risks from the proliferation of advanced technologies and space capabilities.

Civil space exploration and science are also having difficulties in ways that have harmed U.S. international relations. Traditional space partners in Europe and Japan, as well as potential emerging partners (e.g., India, South Korea) have been alienated by U.S. abandonment of the Moon as a focus for international human space exploration. This has been exacerbated by the failure to attract significant international interest in human missions to an asteroid or Mars. The United States abrogated launch commitments to its partners on the International Space Station (ISS) and is currently experiencing the longest gap in U.S. human spaceflight capability

since the Carter Administration in the late 1970s.

Recently, Japan has played an important and welcomed role in helping change the direction of international space cooperation with its decision to join the United States in extending the operation of the ISS through 2024. The significance of this step is not just that valuable scientific work will continue or that U.S. and Japanese astronauts will continue to work together. Rather, the renewal of Japan's support for the ISS represents an evolution in strategic, security, and economic relations between the two countries as leaders in the Asia-Pacific region. Japanese participation in the ISS allows for mutual growth in space activities, as the United States and Japan have done with ballistic missile defense, space situational awareness, and maritime domain awareness. It also lays the foundation for further development of Japan's space capabilities to conduct missions to the Moon and beyond. The US-Japan alliance is at a new frontier of growth that has implications beyond just space and the Asia-Pacific region.

Russian and Chinese counterspace capabilities, including ground-based anti-satellite (ASAT) weapons and in-space rendezvous and proximity demonstrations, seem to be part of broader national strategies to unilaterally advance regional hegemonic ambitions – contrary to international law and the wishes of their neighbors. Debates over dual-use capabilities such as launch vehicles, remote sensing, and satellite navigation, reflect challenges created by globalization and technical changes. These challenges are especially difficult for traditional government bureaucracies to keep up with, creating new economic and security risks. Modern military capabilities are increasingly reliant on having competitive

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and innovative commercial capabilities. Dual-use space capabilities are increasingly indistinguishable from many military space capabilities.

By their actions, spacefaring powers such as the United States, Japan, Europe, and others have great potential to shape the international environment for space commerce and therefore their military space capabilities. In order to do so, the national security and economic policy-makers need to see space as another, routine, aspect of national power. In turn, we need to look beyond national or even intergovernmental space agencies to take a “whole of government” approach to space issues. This means getting beyond just “interagency” and “intergovernmental” cooperation, but crafting and coordinating strategies with industry and non-governmental organizations. For governments, it means learning to work in unfamiliar institutions, with new partners, and becoming fluent in unfamiliar languages of business and market-driven technologies. It also means deciding what space capabilities and expertise can and should remain domestic and where alliances and cooperation with other foreign sources make sense.

2. Geopolitical challenges for the second space age

I have written in the past about policy conflicts over dual-use space technologies and in particular the differing cultures of “Merchants” and “Guardians.”¹ The Merchants represent the forces of technology and business innovation while the Guardians represent regulators and policy-makers concerns with security and stability. Many space policy debates over licensing, spectrum management, and export controls could be characterized by tensions between these two cultures as space commerce grew and spread.

The Merchants and Guardians dichotomy describes competing interests but does not specify a large objective toward which both cultures might strive. The early phase of the Second Space Age, starting roughly with the Space Shuttle program and ending after 9/11, was characterized by the growth of new commercial and international space actors in a strategically stable space environment. The current phase, starting roughly with the 2007 Chinese ASAT test and continuing today, sees continued growth in commercial and international space actors but in an increasingly volatile space environment. Interest in space governance to deal with space debris, space weapons, and even space property rights seems to coincide with the increasing perception that space is becoming less governable and stable than ever before. For some, this has spurred work on governance models to create greater clarity and certain for new actors and activities in space.

Developing countries, as well as small and medium space powers, recognize the importance of the space domain to their national interests. However, their ability to directly influence what happens in space is much less than those of three major space powers that are permanent UN Security Council members, the United States, Russia, and China. Unfortunately, the regional interests of Russia and China are at odds with those of their neighbors and established international norms (e.g., the Ukraine invasion and claims in the South China Sea). The unwillingness of the United States to embrace an unverifiable and flawed space arms control treaty proposed by Russia and China illustrates the gap between the

respective strategic interests of the major space powers.² On the other hand, Russia, virtually alone, is opposing consensus on UN guidelines for the long-term sustainability of space activities due to unrelated provisions in the draft international space code of conduct dealing with the removal of potentially harmful space objects.

Russia and China are the immediate causes of instability in the space domain, due to their development of counterspace capabilities that threaten U.S. and allied space systems, and their decades-long insistence on arms control proposals they know the United States and its allies cannot accept. However, the United States has contributed to weakening international space relations due to its own actions, notably in the civil space sector. At home, GPS, commercial remote sensing, and satellite communication companies have had to battle hostile and unresponsive regulators. The United States has failed to invest in crucial technologies, such as next generation liquid rocket propulsion engines and space nuclear power sources. The pipeline for new robotic science missions is increasingly thin and drying up, placing U.S. scientific leadership at risk.

Let me now “shift gears” and briefly discuss a different regime, the maritime regime, and then draw some analogies between security interests in space and on the high seas.

2.1. The maritime regime

The joint statement from the 2011 Japan-U.S. Security Consultative Committee (2 + 2) meeting mentioned the use of space capabilities for Maritime Domain Awareness (MDA) as well as cooperation in satellite navigation systems and space situational awareness (SSA). This statement was followed up by a proposal to conduct a tabletop exercise (TTX) focusing on the use of space for MDA, presented by the United States at the first U.S.-Japan Comprehensive Dialogue on Space in 2013. The proposal was well received and bilateral cooperation has grown each year since then. In the future, it is possible to imagine expanding cooperation to include countries such as Canada, Australia, and India.

A number of important issues need to be addressed as MDA cooperation grows. For example, the link between data derived from space systems and the allocation of budget resources is still vague, at present. Providers and users of MDA capabilities need to have a better understanding of the connections among data, analysis, and actionable information. What are the links among processes that characterize maritime activities (i.e., legal or illegal, threatening or benign), operational command decision-making (e.g., search for, interdict, pass to another component, etc.), and the expenditure of resources (e.g., fuel, manpower, ship time)?

2.2. Comparing space and ocean governance

Humanity's experience with the oceans goes back thousands of years while our experience with outer space is not yet a century old. Different maritime zones beyond national jurisdiction, such as the high seas and the deep seabed, are subject to entirely different legal regimes. Under the United Nations Convention on the Law of the Sea (UNCLOS), the high seas include a range of “freedoms” and are open to use by all, whereas the deep seabed is said to be the “common heritage of mankind,” which is subject to an international regulatory system for mineral exploitation. Such differentiation does not exist for outer space. Outer space is open for access to all states but it is not a “global commons” as there is no agreement or customary international law that recognizes it as one. Nonetheless, analogies exist among the issues faced by both domains. There can be tensions between the freedom of navigation and resource claims at sea; such conflicts contributed to the U.S.

¹ Pace, Scott. *Merchants and Guardians: Balancing U.S. Interests in Space Commerce*. Santa Monica, CA: [RAND,1999]. Accessed at: <http://www.rand.org/pubs/reprints/RP787.html>.

² Rose, Frank. “Using Diplomacy to Advance the Long-term Sustainability and Security of the Outer Space Environment,” U.S. Department of State remarks to the 31st Space Symposium, Colorado Springs, Colorado, April 16, 2015. Accessed at <http://translations.state.gov/st/english/texttrans/2015/04/20150417314715.html>.

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