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Review - Space Policy in Developing Countries

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Space Policy in Developing Countries: The Search for Security and Development on the Final Frontier.
By Robert C. Harding
Routledge, 2012

National and commercial interests are increasingly tied to space in the political, economic, and military arenas. Space has become "the ultimate venue for the growth of national power and socioeconomic development among a number of the world's emergent states" (p.1). Long dominated by the United States and the Soviet Union, since the end of the Cold War more than 25 developing states and emerging markets now possess increasingly active space programs, including China, India, Brazil, South Korea, and even Iran and Indonesia. Aside from the socioeconomic benefits that such programs offer, geopolitical concerns and national prestige are catalyzing increasing spending with global outlays on national space programs reaching more than $70 billion in 2012, growing at five percent annually (p.5). It is this quest for both security and development that is pushing these space programs to new heights, a theme which Professor Robert Harding focuses on in *Space Policy in Developing Countries: The Search for Security and Development on the Final Frontier*.

The purpose of the book, as expressed by Professor Harding, is to "understand and to put in perspective the

political, economic, and cultural rationales used by developing countries that pursue space programs" (ix). The author sets out three questions: (1) "How do space programs fit into the traditional paradigms of international relations, and what are the policy priorities and decisions that have motivated developing states to divert relatively scarce resources toward space-orientated projects?; (2) How does the brief history of space policy in developing countries compare to the histories of more established and wealthier space powers; and (3) What role do the space programs of developing states play in their developmental and security schemata and how can these policy initiatives be understood comparatively and theoretically?" (p.13). Professor Harding uses case studies as diverse as Japan, South Africa, and Venezuela to compare and contrast the drivers of space policymaking and to explore alternative avenues that developing nations may take as their space policies evolve. To support his analysis, the author separates the space policies of emerging space powers into three tiers. The first tier includes those states with the most advanced technology such as indigenous launch capabilities and robust national space agencies, namely the United States and Russia (p.78). The second tier is composed of states, including China, India, and Brazil, that produce some domestic space technology, but out of necessity frequently collaborate with more advanced powers. Finally, the third tier is a catch-all category of nations with some space-related technology geared to accomplishing targeted goals (p.79).

In answer to the first research question, Professor Harding argues along realist lines that space programs primarily serve states' national interests, including security and socioeconomic development (p.173). At the outset, he notes that space policy has evolved not only as a laudable quest for scientific advancement, but for "the improvement of and even the survival of the state" (p.ix). Professor Harding is correct. As President Kennedy stated of the Apollo program, "This is important for political reasons; *international political reasons*… Whether we like it or not, this is an intensive race … we want to beat them, to demonstrate that, starting behind, by God we passed them."[1] As more nations seek out the rewards and resources made available by access to space, the author correctly argues that the final frontier is becoming increasingly crowded. The security and even environmental implications of this development will continue to shape space policymaking for decades to come.

As for the second and third research questions, Professor Harding argues that just as the first-tier powers viewed space as an arena for superpower competition vital to national security during the Cold War, security concerns continue to shape space policymaking in many developing nations today. There are exceptions to this realist critique, such as Canada, West Germany, and Japan's decision to put off pursuing independent offensive nuclear capabilities (p.194). But overall many states, including the major emerging markets of China, India, and Brazil as well as Israel, Iran, and Pakistan, have followed the so-called MNS (missile-nuclear-space) triad in which national security-oriented projects remain the paramount consideration and primary budget item in these space programs (pp.29-30). This explicit link between first tier nations and nuclear weapon development is well documented. Indeed, advances in rocketry and the threat of intercontinental ballistic missiles and nuclear weapons in space have influenced space policymaking since the dawn of the Space Age.

The security focus of emerging space powers has many important implications for international relations and space governance. One example of the former is the potential for an Asian space race between China, India, and Japan (p.107). As for the latter, Professor Harding covers the many bilateral and regional agreements that are being signed by and between emerging space powers. This represents a significant shift in space governance from when the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) was the locus of international space lawmaking from the 1960s through the 1980s. Attention is also paid to increasing South-South bilateral partnerships, such as between Brazil and Argentina (p.151). Readers will also enjoy insights into the Iranian space program as well as the treatment of early space policy in Chapter 2 that offers many interesting asides such as the X-20 space plane (p.53), even if portions of it may have been condensed somewhat in favour of greater analysis.

Despite the many strengths of *Space Policy in Developing Countries*, there are also at least three opportunities for improvement and further research. First, though it is accurate that more nations are entering the final frontier, this will not necessarily lead to a new space race or the end of NASA's leadership. The United States continues to enjoy massive superiority over China, for example, reportedly spending. For example, the United States spends more than ten times the amount on space operations annually than the PRC, though these estimates are contested. Although Russia would be another likely candidate, the country's space program has only recently begun to receive stable

funding and has been marred by setbacks. European Space Agency efforts have long been restricted by a lack of coordination among the Member States. Japan's program is plagued with delays. India has an aggressive agenda, but it too cannot yet match NASA's capabilities. Thus, while the U.S. government should increase NASA funding and seek out new strategic partnerships, calls for the demise of U.S. leadership in space seem premature. After all, NASA alone has negotiated approximately 4,000 agreements with more than 100 countries including both traditional U.S. allies and competitors.[2]

Second, while the author is correct in pointing to the multipolar state of international relations, more attention should have been paid to the consequences of the widening field of space powers and how different nations can work together to tackle collective action problems such as orbital debris and weaponization. Indeed, it is not entirely correct that "international cooperation has become much more common in this second era of space programs" (p.25) or that "space law has so far paralleled the space age" (p.27), at least in terms of growing good governance to protect the space commons. While it is true that more nations are entering into bilateral and regional partnerships, multilateral progress has been hobbled by the lack of consensus within COPUOS on issues ranging from sustainable development to weaponization as shown by the fact that no major treaties have been promulgated since the 1980s. Relatedly, it would also have been interesting to have a more in depth discussion of how increasing national activity in space is changing conceptions of sovereignty in the final frontier, including what role organizing principles such as the common heritage of mankind can play in this new era of space policymaking.

Third, it would have been interesting to have more treatment of the link between space policy and national prosperity. Though it is certainly discussed, such as on pp.2-3, going forward this link will likely become an increasingly important guiding factor for space policymakers. A U.K. Ministry of Defense think tank has predicted, "The economic prosperity of many states *will* depend on functioning globalized markets and access to the global commons…[and that] access to the 'global commons'… *will* be a priority for virtually all states."[3] While the author notes that the search for scarce resources is an important force shaping space policymaking, more attention should have been paid to the efforts already underway in nations such as China. As Fei Binjun, Vice Chancellor of the Beijing University of Aeronautics and Astronautics, has argued: "If China goes to the Moon because the U.S. and former Soviet Union have gone there, that would be wrong. The only real reason should be for resources."[4]

The many strengths of *Space Policy in Developing Countries* include the thoroughness of the research and the easy readability of Professor Harding's prose. Though the author is somewhat prone to run-on sentences (p.14), the book is overall both readable and enjoyable. Professor Harding navigates a complex and notoriously amorphous topic with ease and is able to substantively add to the evolving academic debate surrounding space policy. *Space Policy in Developing Countries* is an excellent and timely introduction to a fast changing field. How developing nations shape their space policies will impact not only rates of economic development, but also the shape of international relations in the twenty-first century and ultimately the manner in which humanity explores and eventually settles the final frontier.

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[1] Marc Selverstone, *JFK and the Space Race*, White House Tapes: Presidential Recordings Prog., http://whitehousetapes.net/exhibit/jfk-and-space-race (emphasis added).

[2] Exploring the Unknown: Selected Documents in the History of the U.S. Civilian Space Program, Volume II: External Relationships 12 (John M. Logsdon et al. eds., 1996)

[3] Dev. Concepts and Doctrine Ctr., U.K. Ministry of Defence, Strategic Trends Programme: Global Strategic Trends–Out to 2040, at 15, 46 (4th ed. 2010).

[4] Zhuhai, *China plans 3 Moon programs by 2020*, Japan Econ. Newswire, Nov. 1, 2004.

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