

# **Erik Seedhouse, *The New Space Race: China vs. the United States*, 2010, Chichester: Praxis Publishing Ltd.**

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In wake of the increasing attention received by China's space programme, it has been posited by some that a new space race, akin to the space race between the United States (US) and the Soviet Union during the Cold War, has already begun between China and the US. Erik Seedhouse in his book explores the various elements of the space programmes of both countries with a view to assess the possibility of a space race between them.

Divided into four sections, the book begins with a historical review of China's space programme. The ideological impetus behind China's investment in a space programme right from the time of Mao Zedong to the current leadership is examined and the important figures that shaped China's endeavours in space are identified. Seedhouse believes that despite the enormous financial costs and the dangers, by pursuing a manned spaceflight programme China hopes to "boost domestic pride, gain international prestige, increase economic development and reap all the benefits that the US acquired through the Apollo and Space Shuttle programmes" (p. 5). Nationalism and threat perceptions vis-à-vis the US are seen as having played an important role in the formulation of China's space programme. It is asserted that China's space programme has continued to be strongly military-oriented, right from the time of its inception (p. 13). Assessments of Chinese technological progress that has been instrumental in facilitating its space programme are made. The author documents the setbacks faced by China's commercial space programme with a series of failed launches and the subsequent investigations into these which included US satellite manufacturers, and ultimately enabled China's access to information with dual-use capabilities. An in-depth

analysis of the space policies of both, China and the US, is made in Chapter two. The US space policy document of 2006 is compared with that of 1996 and its emphasis on national security along with the de-emphasis of international cooperation and arms control is seen as indicative of American concerns of space security. China's Five-Year Plans and the White Paper on *China's Space Activities in 2006* are the sources utilised to glean information about China's space policy. Despite the rhetoric by

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China's officials on the peaceful exploration of space and China's participation in activities organised by the United Nations Committee on the Peaceful Uses of Outer Space, its ASAT test of 2007 and the control that the People's Liberation Army (PLA) exercises over the entire programme has strengthened the belief that China's space programme is essentially military in nature (p. 46).

Section two of the book reflects on the threats posed by China to US space superiority. The space capabilities and military assets of both countries are listed and assessed. China is believed to view space as any other battle field and considers superiority in space as essential for winning battles on land. China is expected to enhance its targeting capabilities and communications systems, China's pursuit of counter-space capabilities since the 1991 Gulf War is also emphasised (p. 86). The author contends that the US believes the deployment of space weapons works as a deterrent by reducing the confidence in the success of any attack (p. 104). In the near future the US is expected to continue deploying assets to improve real-time information on space assets and stealth capabilities. Advancement in interceptor technology could enable the US to overcome the use of high-altitude electromagnetic pulse (HEMP) by China to disrupt electronic systems. Although reduced interest in science and engineering among students in the US, along with increasing numbers of Chinese graduates in these fields, can be expected to impact the sustained superiority of the US in the realm of space technology, the author

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believes that the US' counter space capabilities are currently no match for China (p. 113). The most important consequence of a conflict between China and the US over superiority in space would be the death of any agreement banning the deployment of space weapons.

The third section of the book titled the "Second Space Race" examines the Vision for Space Exploration (VSE) launched by the Bush Administration in 2004. This identifies the long term tasks set by NASA, including manned missions to Mars, and the hardware necessary to achieve these goals. The drivers identified for a mission by NASA to return to the moon are science, technology, exploration

and exploitation (p. 139). These are drivers that can be common to many other missions planned by NASA. A review of China's manned space flight programme, from the completion of the Long March launch vehicle to the planned lunar base in 2020 is undertaken. Although China is developing the Long-March 5 launch vehicle (expected to be completed by 2014) and its Shenzhou-7 mission of 2008 showcased its Extravehicular Activity (EVA) capabilities, since China's Manned Lunar Programme and lunar base programme are not part of any existing state plan it is unclear how they will be realized (p. 146).

The final section of the book reasons why cooperation between the US and China in space exploration and exploitation is unlikely and why the space race between the two is all but inevitable. The moral differences between the US and China and the lack of transparency in the Chinese system are identified as the two main barriers to cooperation between the US and China (p 212-13). China is not part of the consortium of states participating in the International Space Station venture. This is not only because until recently China was not believed to have the monetary or technological wherewithal to contribute to the venture, but also because of China's questionable human rights record. China's ASAT test, the lack of political trust, the role of the PLA in China's space programme and also lack of avenues that necessitate collaboration, are all impediments to greater cooperation between the US and China. China's pursuit of soft power and the perception that manned spaceflight is an expression of leadership, pursuit of high-tech war capabilities and determinacy to acquire superiority in space in the face of US unwillingness to abrogate its leadership position, are all seen as reasons for the inevitability of a space race between the US and China.

This book is exceptional for bringing together a vast amount of information on the space programmes of both the US and China in a single volume. Although an exploration of domestic dynamics that shape decisions on space policy and investment in China as well as the US could have been more in-depth, the author does provide the basic rationale driving the space programmes of each country. The linkages between American space superiority and US economic and military pre-eminence are well explained. The book provides an exhaustive catalogue of the hardware and space assets of both countries along with documenting their space command and control facilities, enabling quicker assessment of comparative capabilities. The threat perception of each vis-à-vis the other outlined in the book help to contextualise the policy decisions made. For anyone interested in understanding the development of China's space technology, its probable aims and the future course of space exploration and exploitation, this book will indeed prove valuable.

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