

# SPACE PROFESSIONAL READING LIST

2024



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# NSSI

## SPACE PROFESSIONAL READING LIST

**The *NSSI's 2024 Space Professional Reading List* is recommended reading for U.S. Department of Defense and international-partner space professionals. The annual reading list is intended to spur intellectual growth, enhance professional development, promote lifelong learning, and foster traits highlighted in the USSF Guardian Ideal. These works provide a launching point for expanding existing knowledge, developing professional skills, and challenging conventional thinking about the profession. The recommended reading also introduces students and space professionals to the insights of NSSI educators and their recommendations for lifelong learning. These lists—complete with book and author descriptions—are not only distributed to students enrolled in NSSI courses but also disseminated to space and defense professionals worldwide.**

**POC**

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**DISCLAIMER:** The *National Security Space Institute's 2024* professional reading list contains six volumes intended to challenge conventional thinking and spur intellectual growth and development. The views and opinions expressed in each book are those of the author(s) and do not necessarily reflect the views or positions of the Department of Defense or its subordinate entities. A book's inclusion on this list does not constitute an official endorsement or validation of its contents.

# #1 WHEN THE HEAVENS WENT ON SALE: THE MISFITS AND GENIUSES RACING TO PUT SPACE WITHIN REACH

*When the Heavens Went on Sale* tells the remarkable, unfolding story of this frenzied intergalactic land grab. Through his trademark immersive reporting, Ashlee Vance follows four pioneering companies—Astra, Firefly, Planet Labs, and Rocket Lab—as they build new space systems and attempt to launch rockets and satellites into orbit by the thousands. While the public fixated on the space tourism being driven by the likes of Jeff Bezos and Richard Branson, these new companies arrived with a different set of goals: to make rocket and satellite launches fast and cheap, thereby opening Earth’s lower orbit for business—and setting it up as the next playing field for humankind’s technological evolution, where we can connect, analyze, and monitor everything on Earth.

Vance has had a front-row seat and singular access to this peculiar and unprecedented moment in history. *When the Heavens Went on Sale* travels through private company headquarters, labs, and top-secret launch locations

around the world, including California, Texas, Alaska, New Zealand, Ukraine, India, and French Guiana. He chronicles it all in full color: the private jets, communes, gun-toting bodyguards, drugs, espionage investigations, and multimillionaires guzzling booze to dull the pain as their fortunes disappear.

With the most detailed and intimate reporting of Vance’s career, *When the Heavens Went on Sale* reveals the spectacular chaos of the new business of space, and what happens when the idealistic, ambitious minds of Silicon Valley turn their unbridled vision toward the limitless expanse of the stars. This is the most pressing and controversial technology story of our time, a tale of fascinating characters chasing unimaginable stakes as they race to space.

-- Amazon



## SIGNIFICANCE TO THE SPACE PROFESSIONAL

Commercial space is driving a 2nd space age with tremendous innovation and private investment that will dramatically impact our mission, whether we

want it to or not, and could dramatically improve our capabilities if we can appropriately embrace and integrate these emerging commercial capabilities.

BY ASHLEE VANCE



## #2 WHITE SUN WAR: THE CAMPAIGN FOR TAIWAN

After decades of poising on the brink, the United States and China finally go to war when China invades the island of Taiwan. Deploying their most futuristic technologies in this grand strategic competition of the 21st century, the stakes could not be higher. Not only the future of the Taiwanese people but the fate of the world lies in the balance.

In an era when humans no longer just use machines, but partner with them in all aspects of military operations, this fictional account views this future war through the eyes of the American, Chinese, and Taiwanese caught up in the maelstrom, revealing the heartbreak, courage,

leadership, and despair of high-tech warfare played out on land, at sea, in space, and in cyberspace.

*White Sun War* asks readers to ponder anew an essential question for the future of security in western Pacific and the entire Indo-Pacific region: is a war for Taiwan winnable?

-- Amazon



### SIGNIFICANCE TO THE SPACE PROFESSIONAL

Space, Marines, autonomous weapons, AI, cyber and other elements of U.S. military operations are

brought to bear to engage PRC in the fight for Taiwan's freedom.

BY MICK RYAN

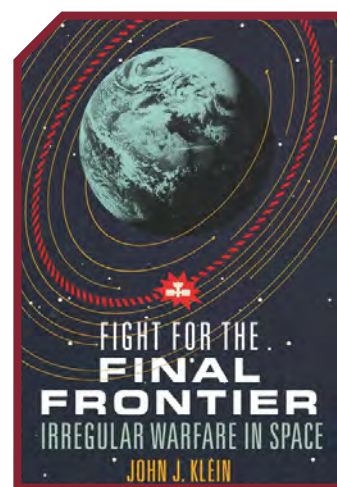


# #3 FIGHT FOR THE FINAL FRONTIER: IRREGULAR WARFARE IN SPACE

*Fight for the Final Frontier* uses the concepts associated with irregular warfare to offer new insights for understanding the nature of strategic competition in space. Today's most pressing security concerns are best considered using an irregular warfare lens because incidents and points of potential conflict fall outside the definition of armed conflict. While some universal rules of combat apply across all domains, conflict in space up-ends and flips those assumed standards of understanding.

John Klein provides a solution to reckoning with the many malicious, nefarious, and irresponsible behaviors in the space domain by using the irregular warfare framework. This offers a new paradigm through which one can view and study conflict, outside traditional combat, involving state and non-state actors. A "war" in space will be utterly unlike any that have hap-

pened on Earth, though scholars can provide lessons from past conflict to understand the flashpoints in the heavens.



Providing the needed foundational understanding, *Fight for the Final Frontier* makes the case that irregular warfare in the space domain is shaped by the fundamental nature of all warfare, along with universal principles of strategy and the essential unity of all strategic experience. Going one step further, John Klein outlines the new arenas for battle, new areas of conflict and competition, and the necessary concepts for operating in this bold new frontier.

-- Amazon

## SIGNIFICANCE TO THE SPACE PROFESSIONAL

John Klein compares traditional irregular warfare concepts to actual events occurring in space now. The themes conveyed in the book have relevance to integrated deterrence and coercion types, multi-domain operations, grey-zone activities, RPO,

lawfare, relevance to commercial activities, and historical analogs of privateering, piracy, and militias. Asymmetric advantages, innovation, and countering irregular space warfare are also included. This entire book has relevance to the modern space warfighter.

BY JOHN J. KLEIN



## #4 RANGE: WHY GENERALISTS TRIUMPH IN A SPECIALIZED WORLD

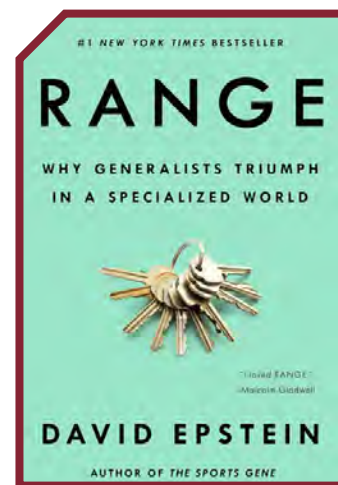
Plenty of experts argue that anyone who wants to develop a skill, play an instrument, or lead their field should start early, focus intensely, and rack up as many hours of deliberate practice as possible. If you dabble or delay, you'll never catch up to the people who got a head start. But a closer look at research on the world's top performers, from professional athletes to Nobel laureates, shows that early specialization is the exception, not the rule.

David Epstein examined the world's most successful athletes, artists, musicians, inventors, forecasters and scientists. He discovered that in most fields—especially those that are complex and unpredictable—generalists, not specialists, are primed to excel. Generalists often find their path late, and they juggle many interests rather than focusing on one. They're also more creative, more agile, and able to make connec-

tions their more specialized peers can't see.

Provocative, rigorous, and engrossing, *Range* makes a compelling case for actively cultivating inefficiency. Failing a test is the best way to learn. Frequent quitters end up with the most fulfilling careers. The most impactful inventors cross domains rather than deepening their knowledge in a single area. As experts silo themselves further while computers master more of the skills once reserved for highly focused humans, people who think broadly and embrace diverse experiences and perspectives will increasingly thrive.

-- Amazon



### SIGNIFICANCE TO THE SPACE PROFESSIONAL

Within the space professional enterprise, there are deliberate, institutional efforts to foster hyper-specialization. Currently, USSF officers are often self-described as PNT, Missile Warning, or Orbital Warfare specialists vice space officer professionals. As such, the USSF recruiting enterprise has been leaning toward considering only officer candidates with STEM degrees. According to Epstein, this can undermine

the success of an organization, as members will have difficulty seeing beyond their specialized stovepipe and not comprehending the strategic environment within broader contexts. This will lead to difficulty not only with DOD mission sets, but also integrating civil, commercial and foreign partners. The space enterprise, particularly the USSF, ignores Epstein's findings at its own peril.

BY DAVID EPSTEIN

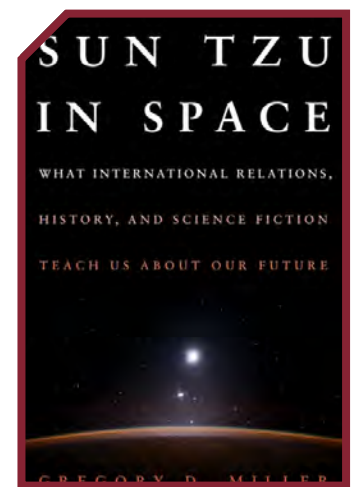


## #5 SUN TZU IN SPACE: WHAT INTERNATIONAL RELATIONS, HISTORY, AND SCIENCE FICTION TEACH US ABOUT OUR FUTURE

Sun Tzu in Space provides a novel way of thinking about the future, connecting international relations, history, and science fiction to better understand some of the various paths for future human activities in space. Simultaneously, it provides a way to use science fiction to help students and the public learn about international relations and the cyclical nature of history. Author Gregory D. Miller uses case studies, history, and foundational international relations concepts to draw big, or at least possible, conclusions about humanity's future in space.

By combining the lessons of science fiction, and the facts of the past, Miller presents possible outcomes with a goal of illuminating where things could go wrong, or wonderfully right, as humans venture forth into space in greater numbers in the decades to come.

-- Amazon



### SIGNIFICANCE TO THE SPACE PROFESSIONAL

A futuristic and essential analysis of international relations theory as America enters into the new space age. As humanity reaches for the stars and begins the process of colonizing the solar system, Miller speculates on how established world views will guide future politics, economics, and interactions once humans leave Earth. This project is an exceptional analysis of the future of politics and human (and machine) interaction as we reach for the

stars. Miller draws from both scholarly international relations theory as well as science fiction to discuss the future of humanity in a new era of exploration. As Dr. Lamont Colucci, an author from last year's SPRL said, Guardians need to stop looking at military space from an earth-centric, satellite-orbiting perspective and think beyond orbit. Dr. Miller's book challenges Guardians to do just that.

BY GREGORY D. MILLER



# #6 CHINESE AND RUSSIAN PERCEPTIONS OF AND RESPONSES TO U.S. MILITARY ACTIVITIES IN THE SPACE DOMAIN

U.S. military activities and policy with respect to the space domain have evolved significantly since the 1980s, and recent developments include the reestablishment of U.S. Space Command and the establishment of the U.S. Space Force in 2019. Yet, despite this activity and concerns regarding the increasingly congested and contested nature of space, there has been little open-source analysis of Chinese and Russian perceptions of these developments.

To fill this gap, RAND researchers systematically reviewed a variety of Chinese and Russian primary sources, such as government publications, military journals, academic reports, and domestic media, to gain insights into internal Chinese and Russian perceptions of developments in U.S. military activities related to space

and counterspace doctrine, exercises, and organization.

To focus their efforts, the researchers developed a representative sample of ten U.S. “events” in the space domain, such as the Strategic Defense Initiative (1983), the U.S. withdrawal from the Anti-Ballistic Missile (ABM) Treaty (2002), Operation Burnt Frost (2008), and the space policies of recent U.S. presidents. They searched each primary source for discussion of these events, which they used to assess how Chinese and Russian reactions to U.S. military activities related to space have evolved over time.

-- *Rand Corporation*



## SIGNIFICANCE TO THE SPACE PROFESSIONAL

Few nations, except China and Russia, have the capability and the will to challenge America in space. Yet, as America's two closest near peers, these two potential foes continue to flex their muscle in space. Understanding the Chinese and Russian psyche and how they perceive American military space operations is vital as the USSF operates in the contested and congested environment that is space, now and in

the future. Sun Tzu, the ancient Chinese warrior-philosopher said, “If you know the enemy and know yourself, you need not fear the result of a hundred battles.” Today's Guardians are well aware of America's space capabilities. However, this book will help them to know their most probable enemies and, for that reason, this should be mandatory reading.

BY ALEXIS A. BLANC, NATHAN BEAUCHAMP-MUSTAFAGA, KHRYSTYNA HOLYNSKA, M. SCOTT BOND, AND STEPHEN J. FLANAGAN





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