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How safe is space? New study spotlights anti-satellite and space debris risks

Anti-satellite weapons and space debris are increasing threats to the security of outer space. This a key finding from the just released **Space Security 2008**, a study issued September 21 by Project Ploughshares, which coordinated and published the report.

While space debris caused by routine space operations is an issue, the fragments spewed out into space from China's January 2007 anti-satellite experiment has created a serious problem for routine and safe operations of all nations' spacecraft, the report points out. That action by China is gauged as the worst debris-creating event in the history of the space age. "Even a small piece of metal, traveling at 7.5 km/second, can destroy a spacecraft, putting critical systems and large projects such as the International Space Station at risk," explains Dr. William Marshall from the NASA Ames Research Center, who advised research for the report.

Weapons programs also threaten stability in outer space, demonstrated by the Chinese anti-satellite experiment on 11 January 2007 and the US intercept of a failed satellite using its missile defense system on 20 February 2008. "There is growing tension between the U.S. and China over the security of outer space, largely driven by mistrust and suspicions over weapons programs," says Dr. Ray Williamson, Executive Director of Secure World Foundation, a contributor to the report.

"Outer space is of strategic concern to a growing number of countries," explains Dr. M. Lucy Stojak, a faculty member at the International Space University. "It is in everyone's interest to safeguard the sustainable use of the space environment." But there is a widening impasse on how to do this.

"Efforts to restrict the use of conventional weapons in space have been stalled for decades," adds Ambassador Thomas Graham, Jr., a former US Ambassador for Nonproliferation.

Threats are heightened by a limited ability to monitor the space environment and space activities. "In an increasingly crowded environment, improving 'space situational awareness' – the ability to track space objects and understand the space environment – is critical to ensure space security. This will require both more investment by space-faring nations, as well as better cooperation and more formal processes for sharing space data," says Theresa Hitchens, director of the Center for Defense Information.

Jessica West is the Program Manager for the Space Security Index at Project Ploughshares, based in Waterloo, Ontario. "Space issues generate a lot of interest and information—but not always accurate information. We aim to make these issues clear and transparent for everyone, thus providing a common knowledge base for all policymakers with a stake in space." The project also seeks to determine how policies and actions affect space security, which, Ms. West notes, is becoming more complex. "*Space Security 2008* reflects the real-life challenges faced by policymakers in determining the manifold effects

Space Security 2008

www.spacesecurity.org

of their decisions. There is a delicate balance in outer space – if you mess up one thing, you risk messing up a lot of things.”

Space Security 2008 is the only comprehensive source of data and analysis on space activities and their cumulative impact on the security of outer space. It is the fifth annual report on trends and developments in space, covering the period January to December 2007. It is part of a wider Space Security Index project that facilitates dialog among space experts on space security challenges.

Project partners include Project Ploughshares, Secure World Foundation, the Institute of Air and Space Law at McGill University, the Simons Centre for Disarmament and Non-Proliferation Research at the University of British Columbia, the Cypress Fund for Peace and Security, and the Space Generation Foundation.

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Complete report and executive summary online: www.spacesecurity.org/publications.htm

“No one source is more valuable than the Space Security Index to learn about the present state of space activities. Space is critical to protect the Earth’s environment and to improve life for all of humanity. For the present and future generations, we must preserve outer space as the source of security and wealth. The first step is to read *Space Security 2008*.”

Dr. Setsuko AOKI
Professor, of International Law, Faculty of Policy Management, Keio University

“The Space Security Index is a unique and exceptional annual endeavor to provide the global community with significant information concerning security in outer space. By addressing all of the relevant sectors that influence space security, the Index is an invaluable reference document for all space professionals.”

Colonel Philip A. Meek
Judge Advocate, United States Air Force, (Ret.), and former Associate General Counsel
(International Affairs), Department of the Air Force

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