



Promoting Cooperative Solutions for Space Sustainability

China's Counterspace Capabilities

Brian Weeden, Ph.D.
Director of Program Planning
Secure World Foundation

ACC Space Threat Briefing
August 11, 2021

swfound.org
@SWFoundation



Promoting Cooperative Solutions for Space Sustainability

Counterspace Capabilities

- **Direct Ascent:** weapons that use ground, air-, or sea-launched missiles with interceptors that are used to kinetically destroy satellites through force of impact, but are not placed into orbit themselves;
- **Co-orbital:** weapons that are placed into orbit and then maneuver to approach the target to attack it by various means, including destructive and non-destructive;
- **Directed Energy:** weapons that use focused energy, such as laser, particle, or microwave beams to interfere or destroy space systems;
- **Electronic Warfare:** weapons that use radiofrequency energy to interfere with or jam the communications to or from satellites;
- **Cyber:** weapons that use software and network techniques to compromise, control, interfere, or destroy computer systems.
- **Space Situational Awareness:** knowledge about the space environment and human space activities that enables both offensive and defense counterspace operations

Overall Assessment for 2021

	R&D	Testing	Operational	Use in Conflict
LEO Direct Ascent	G	G	G	R
MEO/GEO Direct Ascent	Y	Y	-	R
LEO Co-Orbital	Y	?	-	R
MEO/GEO Co-Orbital	Y	-	-	R
Directed Energy	G	Y	-	R
Electronic Warfare	G	G	G	?
Space Situational Awareness	G	G	G	?

Legend: none **R** some **Y** significant **G** uncertain "?" no data "-"

Commercial imagery



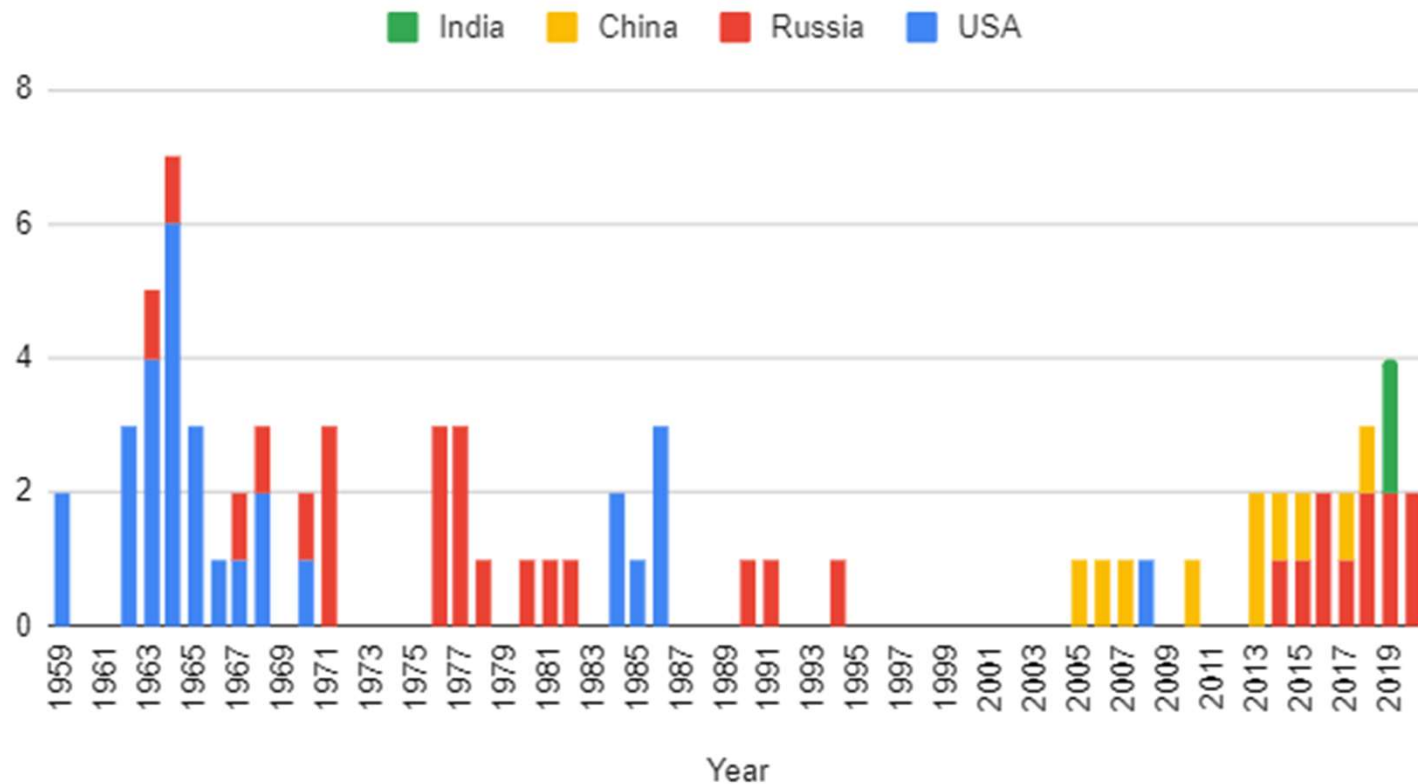
TEL on southeast launch pad at Xichang, April 3, 2013 (Image courtesy of Digital Globe)



Potential directed energy site near Bohu, Xinjiang, Nov. 15, 2013 (Image courtesy of Maxar Technologies)

History of ASAT Tests in Space

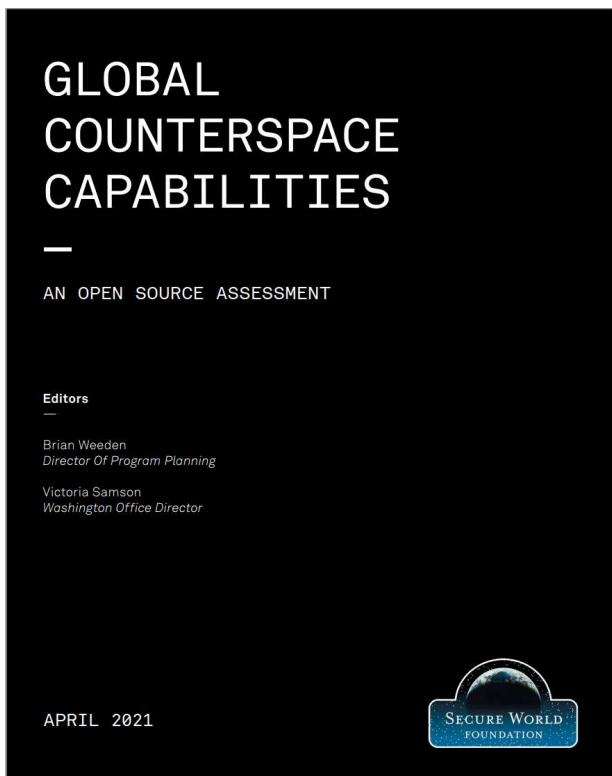
ASAT Tests By Country and Year





Promoting Cooperative Solutions for Space Sustainability

To learn more



[Secure World Foundation \(2021\)](#)



[Center for Strategic and International Studies \(2021\)](#)