

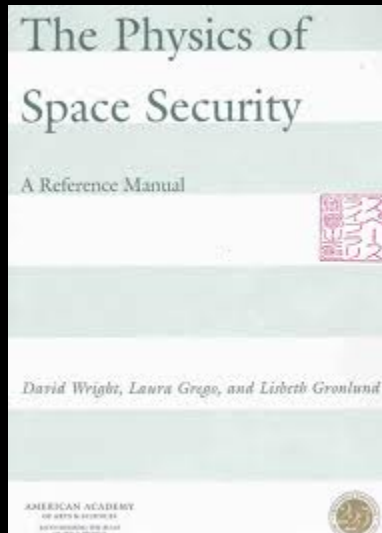
Space Security Road Ahead for the United States: Next Steps and Roadblocks



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UCS Space Security Resources

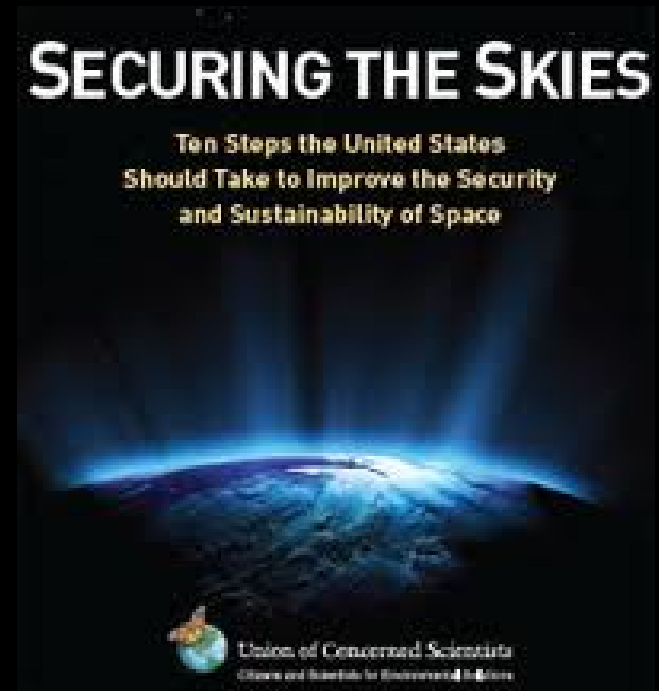
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← Available in Mandarin

UCS Satellite Database

Satellite Quick Facts			
Total number of operating satellites: 994			
LEO: 471	MEO: 69	Elliptical: 35	GEO: 419
United States: 441	Russia: 101	China: 83	
Total number of U.S. Satellites: 441			
Civil: 8	Commercial: 194	Government: 117	Military: 122
<i>includes launches through 12-31-11</i>			



Next Steps from Securing the Skies

- Space policy that emphasizes cooperation, norms, rule of law
- Modify export control law to facilitate cooperation
- Pursue strategy to make satellites less attractive targets: redundancy, backups etc.
- Begin discussions with int'l community to identify best forum for discussions

Next Steps from Securing the Skies

- Assemble a negotiating team and begin building diplomatic, technical, legal expertise and encourage other countries to do so.
- Declare US will not damage or destroy any satellite operating in accordance with OST.
- Declare US will not be the first to deploy weapons in space.
- Declare US will not develop space-based MD or use ground-based MD against satellites.

Roadblocks

U.S. Congress extremely contentious, perhaps worst ever.

- Resistance to ideas resembling arms control or that will restrict “freedom of action”
- Concern US will abide by rules but others won’t
- Hostility to cooperation with China
- Entrenched support for missile defense among both usual suspects and those who see Aegis MD as “working”

Roadblocks

- Missile defense in particular, PAA

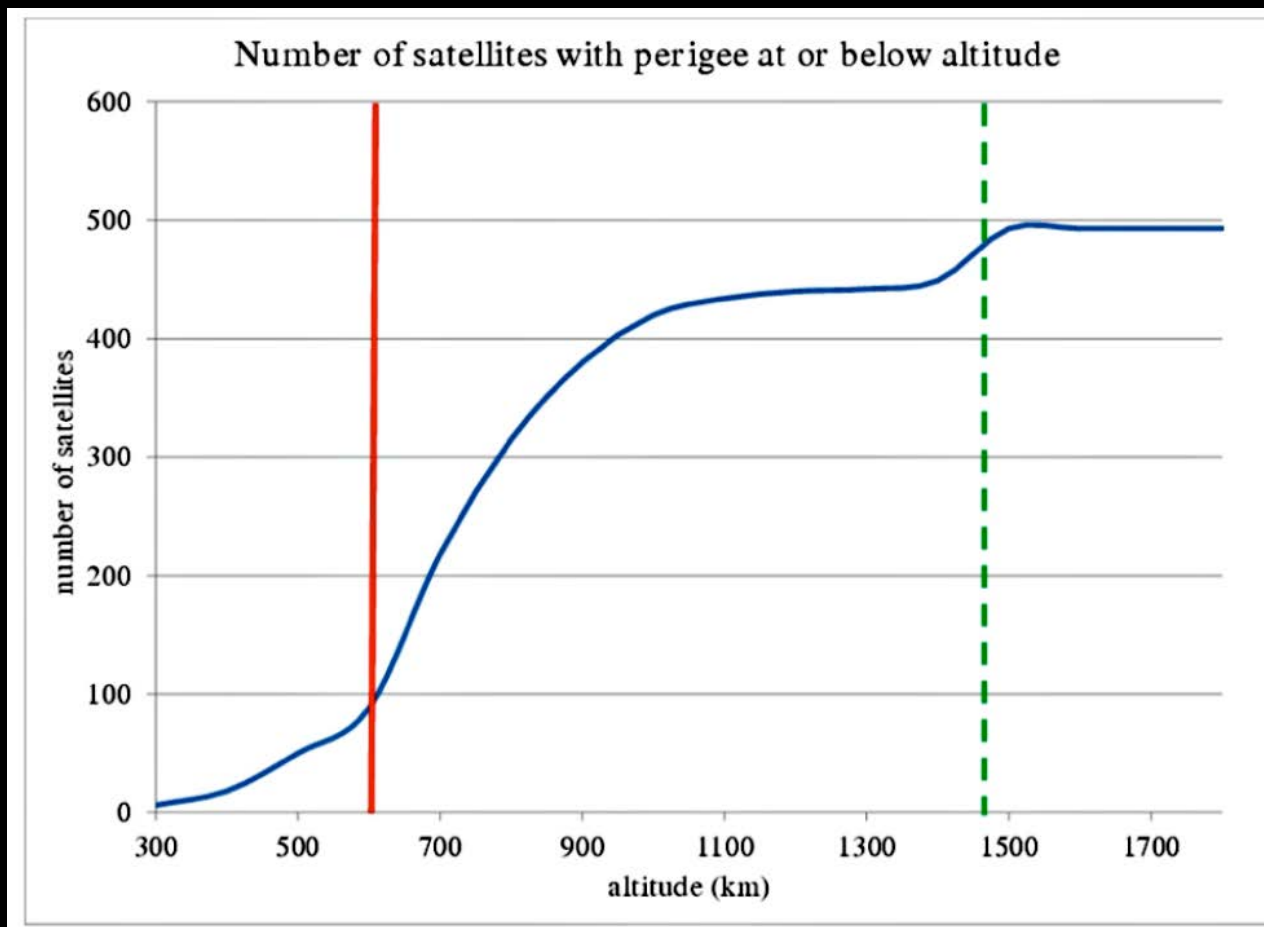


Roadblocks: Missile Defense plan *Phased Adaptive Approach*

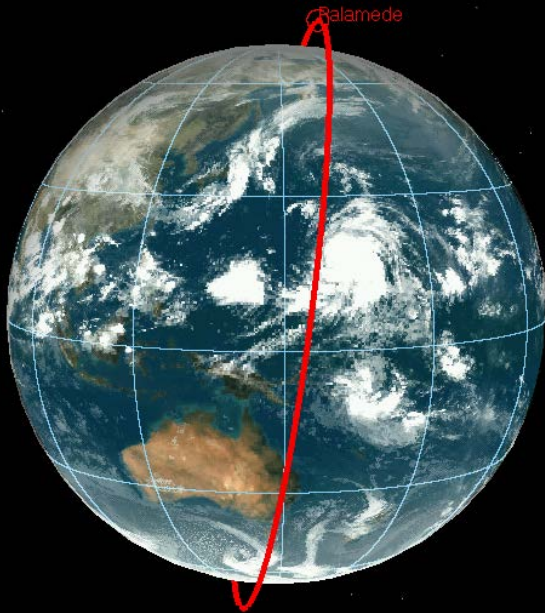
Phase/year	Number of SM-3 variant	Burnout velocity	Platforms
1/2011	107 Block 1A 4 Block 1B	3 km/s	23 Aegis ships
2/2015	113 Block 1A 150 Block 1B	3 km/s	38 Aegis ships 1 site in Romania
3/2018	486 Block 1 14 Block 2A	3 km/s 4.5 km/s	43 Aegis ships 1 site in Romania 1 site in Poland
4/2020	486 Block 1 29 Block 2A ?? Block 2B	3 km/s 4.5 km/s 5.5-6 km/s	43 Aegis ships 1 site in Romania 1 site in Poland

Table 2. Maximum altitude reachable by SM-3 variants.

SM-3 variant	Burnout velocity (km/s)	Maximum reachable altitude (km)
Block IA	3.0	600
Block IIA (lower range)	4.5	1450
Block IIA (upper range)	5.5	2350



PAA Missile Defense as ASAT



a polar orbiting satellite will eventually be overhead of any location.

even if SM-3 missiles are on land, they will be useful ASAT weapons.

Table 3. Number of actively operating satellites in low-earth orbits, categorized by primary users.

Country	Civil	Government	Commercial	Military	Total
China	5	36	--	8	49
Russia	2	2	9	30	43

Ideas for GGE

- Unilateral declarations not to be first to put weapons in space, not to damage or destroy satellites.
- Altitude limit on ballistic missile tests.
- Pledge to abide by Hague CoC on Ballistic Missiles.
- Set up standing committee to work on TCBMs.
- Set limits on low-speed close approaches to another satellite. “keep out zone”