

*A Proposed Ban on the Testing and Use  
of Destructive Methods  
Against Man-made Space Objects*

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## *Supporting Elements*

- Pledges not to test or use destructive methods pending the conclusion of a treaty
- A code of conduct providing for consultative measures, SSA, space traffic management, and other debris mitigation measures

## *Why?*

- Without rules, there are no rule-breakers
- Some rules exist, but there are many loopholes
- Use of space expanding, potential for friction growing
- The continued testing and use of destructive ASAT weapons could seriously disrupt space operations

## *Why? (cont.)*

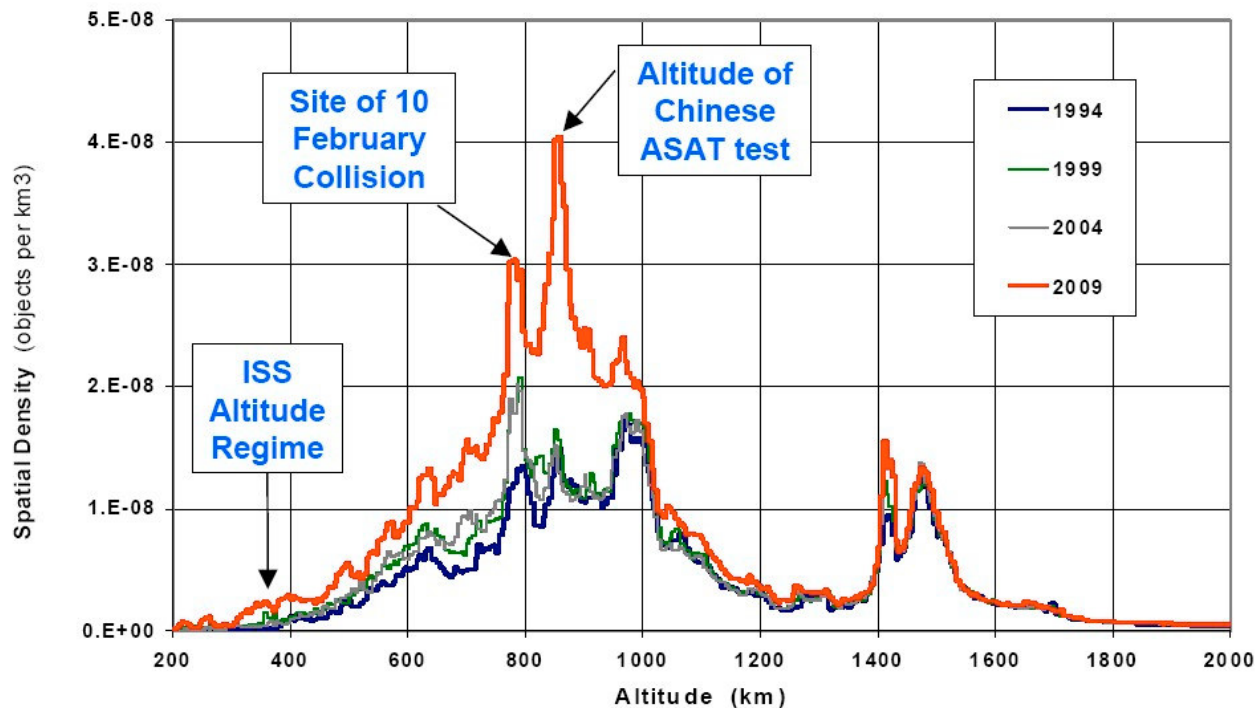
- More ASAT tests = More hedging
- More ASAT tests likely to have adverse impacts on strategic cooperation among major powers
- More ASAT tests likely to adversely affect planning assumptions for strategic offensive and defensive requirements

# *Previous Destructive ASAT Tests*

- 1985 – US ASAT test on Solwind satellite
  - ◆ Altitude: 600 km
  - ◆ Trackable debris: 285 pieces (but contemporary tracking was worse than today)
  - ◆ Near miss: 1 piece came within 1 mile of the ISS 14 years (!) later
  - ◆ Debris longevity: 19 years
- 2007 – Chinese ASAT test (“experiment”) on FY-1C
  - ◆ Altitude: 850 km
  - ◆ Trackable debris: 2378 (>5 cm)
  - ◆ Debris longevity: 98% still in orbit; much will remain in orbit for decades
- 2008 – US ASAT test (“safety risk mitigation”) on USA-193 spy satellite
  - ◆ Altitude: 240 km
  - ◆ Debris: 50% de-orbited after 2 revolutions, last categorized piece de-orbited on October 9, 2008 (6 months after test)

# Three Wake-up Calls

- China's Jan 11, 2007 ASAT test: 2000+ pieces of debris
- Feb 19, 2007 explosion of Russian Briz-M rocket booster: 1100+ pieces of debris
- Feb 10, 2009 Cosmos-Iridium collision: 900+ pieces of debris



# *The Threat From Debris*

- Debris concentrations are high and rising
- Collision predicted to occur once every 2-3 years over the next decade (twice as frequent as projected in early 2007, prior to the wake-up calls)

## *Merits of a Treaty*

- It would address a pressing threat to satellites in LEO
- Although deliberate, destructive ASAT tests are relatively rare, concern about debris has never been greater
- It is in the self-interest of all nations that derive value from satellites
- It is a legally-binding treaty, which is strongly preferred by many space-faring nations
- The narrow focus lends itself to verification by NTM

## *Limitations of a Treaty*

- Treaty addresses one narrow band of threats to satellites
- Possible to exploit gray areas – e.g. intentional near-misses
- Capabilities cannot be eliminated – but can serve as a deterrent
- Could lead to prolonged negotiations
- Difficulties of treaty ratification in USA

## *Given Latent Capabilities, Why Bother?*

- Capabilities will exist whether this treaty is negotiated or not
  - ◆ Would we prefer that they be tested or not?
  - ◆ Would we prefer that their tests create debris or not?
- Some tests have already occurred but may not provide sufficient operational confidence
  - ◆ Would we rather have more tests?
- Latent capabilities can serve as a deterrent against further testing and use of destructive ASATs

# *Verification*

- Like any test-ban treaty, will focus on evidence after the fact
- Relatively easy to tell when one satellite turns into a cloud of debris
  - ◆ Questions of causality can remain in limited cases
  - ◆ In such cases, attribution may be a difficult problem
- Ambiguous cases will require a consultative mechanism

# *Enforcement*

- Would rely on national determinations, with input from consultative process
- The US and other major powers have the means to punish wrong-doers

## *Possible Russian and Chinese Responses*

- Move to expand scope, recapture parts of ABM treaty
- Definition and verification issues related to space-based weapons
- This will present treaty ratification issues in the US

# *US Options*

- Continue negotiating a treaty
  - ◆ Try to arrive at a compromise which isn't dead upon arrival in Senate
- Seek an alternative approach that is more expansive than a code of conduct but not a treaty
  - ◆ Administration must be mindful of Senate prerogatives
- Focus on a code of conduct

# *Questions and Comments Welcome*

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