

Space Junk (and what to do about it)

Curated and Presented by Bob Primak
for the Lexington Computers and Technology Group (LCTG)
Wed., May 14, 2025 -- 10:00 AM EDT (with delay for technical issues)

Videos Chosen for this Presentation:

Overview:

(01) Space debris: A problem that's only getting bigger
https://www.youtube.com/watch?v=eeQnv_IWttw
4:48

(skipped) (02) The Truth About Space Debris Real Engineering
<https://www.youtube.com/watch?v=itdYS9XF4a0>
16:22 (2019)

(03) Space Sustainability, Dr. Danielle Wood | Into the Void | MIT Challenges
<https://www.youtube.com/watch?v=Qpzg8snj0M4>
4:02 (2020)

Possible Solutions:

(04) 4 Ways To Capture Space Debris
<https://www.youtube.com/watch?v=VieRpePrWN8>
9:06

(05) What is RemoveDEBRIS mission and how does it operate?
<https://www.youtube.com/watch?v=d0S1rLque0s>
3:18

Space Claw concept:

(06) Remove Debris Mission Highlights
<https://www.youtube.com/watch?v=XLuHk5gWx3k>
5:39 (2019)

Astroscale, including magnetic capture:

(07) Astroscale demonstrates magnetic capture in space
<https://www.youtube.com/watch?v=dVOA18PfjuQ>
2:13 (2021)

(08) Astroscale spacecraft captures stunning time-lapses of space debris launched in 2009
<https://www.youtube.com/watch?v=0onLjDVQE7E>
1:53 (2024)

New concepts from Astroscale:

(09) Astroscale's ELSA-M Mission | A Space Sustainability Partnership
<https://www.youtube.com/watch?v=Yb7HQqIY8G4>
4:15

Lasers:

(10) How giant lasers could get rid of space trash
<https://www.youtube.com/watch?v=VQKpMmBDtZo>
9:30 (2024)

Notes about Videos:

Overview:

(01) Good general overview. However, as we all know, there is no sound in space, so all those explosion sounds are scientifically inaccurate. And as in all the animations, the sizes of the debris objects, as well as their density, are greatly exaggerated. Still, over 7300 objects larger than 10 cm across are in Low Earth Orbit (LEO).

(02) Alternative choice: <https://www.youtube.com/watch?v=itdYS9XF4a0>
The Truth About Space Debris Real Engineering 16:22 (2019)
A much better overview, with several possible solutions included. References listed on You Tube Site below the video, if anyone's interested in further information.

Note: Due to time constraints and technical difficulties, I didn't show Video Number 2 (above). This video shows a space debris incident created by India. Discussions during the meeting mentioned China, the USA and Russia, but never mentioned this incident from India. There are other good segments in this video.

(03) Good lead-in to further discussions.

Possible Solutions:

(04) Works just fine.

(05) More detailed view, not much narration.

Space Claw concept:

(06) Detailed view, not much narration.

Astroscale, including magnetic capture:

(07) Detailed View, not much narration.

(08) Detailed view, not much narration.

New concepts from Astroscale:

(09) Includes Magnetic Capture methods.

Lasers:

(10) Ground-based, due to concerns about military uses of space lasers, already demonstrated by USA, Russia and China.

Further Comments: I liked the discussions. We may be able to continue this discussion at a future potpourri, as well as using Video #02 as a refresher.

-- Bob Primak -- 5:52 PM EDT 5/14/2025 --