

Collision between Space Junk and monitoring of Junk

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In news

Two large pieces of space junk nearly collided in high 'risk situation'

A brief note on the issue

- Pieces of space junk, each about the weight of a compact car, had a close encounter some 620 miles above Earth.
- As per experts, if they had collided the smashup would have created a cloud of debris that would jeopardize other satellites and spacecraft for decades.
- The two objects are a defunct Russian navigation satellite launched in 1989 and a spent Chinese rocket part from a 2009 launch.

What is space debris?

Space debris/ Space junk is a term for defunct human-made objects in space—principally in Earth orbit—which no longer serve a useful function.

Examples of space junk include derelict spacecraft—nonfunctional spacecraft and abandoned launch vehicle stages—mission-related debris, and particularly numerous in Earth orbit, fragmentation debris from the breakup of derelict rocket bodies and spacecraft.

In addition to derelict human-built objects left in orbit, other examples of space debris include fragments from their disintegration, erosion and collisions, or even paint flecks, solidified liquids expelled from spacecraft, and unburned particles from solid rocket motors

Tracking and Monitoring of space junk

- Radar and optical detectors such as lidar are the main tools for tracking space debris. Although objects under 10 cm (4 in) have reduced orbital stability, debris as small as 1 cm can be tracked, however, determining orbits to allow re-acquisition is difficult.
- For example, the NASA Orbital Debris Observatory tracked space debris with a 3 m (10 ft) liquid mirror transit telescope
- **There are no international space laws to clean up debris in our Lower Earth Orbit.**
- LEO is now viewed as the World's largest garbage dump, and it's expensive to remove space debris from LEO because the problem of space junk is huge

Note: LiDAR, and LADAR) is a method for measuring distances (ranging) by illuminating the target with laser light and measuring the reflection with a sensor.