



Space Debris

Space Debris (also called space junk or orbital debris) refers to all man-made objects in space that are no longer useful but still orbit the Earth.

Main Sources

1. Defunct satellites - Old satellites that no longer work.
2. Rocket parts - Stages or fragments left behind after launches.
3. Collision fragments - Pieces created when satellites or rockets collide.
4. Mission-related objects - Bolts, metal pieces, or tools left during missions.

Dangers

- Damage to active satellites - Debris can crash into working satellites.
- Risk to astronauts - Even tiny fragments can harm the International Space Station (ISS).
- Kessler Syndrome - A chain reaction where collisions create more debris, making space too dangerous.

Solutions

- Graveyard orbit or re-entry - Moving old satellites into a safer orbit or burning them up in Earth's atmosphere.
- Active Debris Removal (ADR) - Using nets, robotic arms, or lasers to clear junk.
- New space rules - Agencies now design missions to reduce future debris.