WASTE IN SPACE

Currently, a thick band of levitating space junk—composed primarily of broken satellite pieces and discarded rocket boosters—skirts the Earth. Two or three times a day, a satellite circling our planet narrowly misses a torrent of the orbital debris. This phenomenon has jeopardized not only current space travelers, but future missions as well.

WHAT IS SPACE DEBRIS?

Nonfunctional, human-made materials in orbit caused by everything from spent booster stages to satellite collisions and explosions.

73%

of tracked debris reside in low-Earth orbit (LEO), 1,200 miles above our planet's surface.

HOW MUCH SPACE JUNK IS UP THERE?

The amount of space debris larger than four inches in diameter in Earth's orbit being tracked by the U.S. Space Surveillance Network:

More than **21,000** objects =

500,000 objects

Estimated amount larger than one centimeter in diameter–or the size of a marble.

There are another tens of millions of paint chip-like pieces that measure smaller than a centimeter.

WHY IT'S A SERIOUS PROBLEM

Traveling at such hyper velocities, any particle of space junk presents a considerable threat to spaceflight for any nation. And with more hardware flying around Earth's orbit, the potential of collisions between spacecraft and large orbital trash only continues to grow.

FASTER THAN THE SPEED OF SOUND

The speed of sound travels at approximately **768 mph** on a normal day.

In order to remain in orbit, the fragments in space have to move along at least **20 times that speed**, and can go up to almost

18,000 mph.

TOO CLOSE FOR COMFORT

About 1,000 times a day, satellites and debris pass less than 5 miles from each other. Considering how expansive space is, this distance is striking.

COLLISIONS & EXPLOSIONS INCREASE DEBRIS

CHINA'S ANTI-SATELLITE MISSION

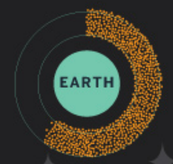
In 2007, China intentionally destroyed one of their weather satellites in space, and the event led to a

900-piece cloud of debris.

THE FIRST MAJOR IMPACT

February 10, 2009:
The 15,000 mph collision of the private Iridium 33 satellite and Cosmos 2251, a Russian military spacecraft, left a trail of approximately 2,000 pieces of low-Earth orbit debris.

Together, these two events combined increased the number of debris in low-Earth orbit by **more than 60%**



That's taking into account everything that has accumulated over the past 50 years.

A COLLABORATION BETWEEN GOOD AND COLUMN FIVE

SOURCES: NASA, WALL STREET JOURNAL, U.S. SPACE SURVEILLANCE NETWORK, SPACE.COM, UNIVERSETODAY.COM, NATIONAL GEOGRAPHIC, ESA DEBRIS OFFICE