Satellites and Space Objects Abound

As the space age resurgence continues, humanity is launching an increasing number of objects toward the stars.

BY LOUISE POIRIER

It's been more than 70 years since the Sputnik I was first launched into space and in the decades since, the number of satellites and other objects in Earth's orbit has grown exponentially.

According to the European Space Agency (ESA), there have been about 6,500 rocket launches completed since the space age began in 1957, which has sent about 17,000 satellites into Earth's orbit. Although about 11,500 of these remain in space, the ESA states that only about 9,000 are still operational, as of December 2023. By comparison, the Union of Concerned Scientists pinned the number of operational satellites at about 7,560 as of May 2023.

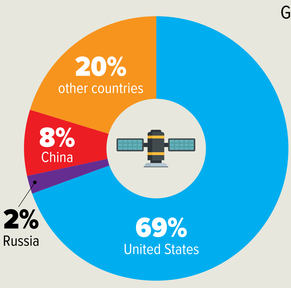
In total there are more than 11,500 tonnes of objects circling the planet, the ESA reported. That includes not only satellites, but debris of various kinds from the wide range of launches and their multiple purposes.

Earth's orbit is set to become even more crowded as the number of commercial launches continues to climb. Companies such as SpaceX are launching an increasing number of satellites—the firm alone completed 98 launches in 2023 and plans to make 144 in 2024.

WHO OWNS ALL THE SATELLITES?

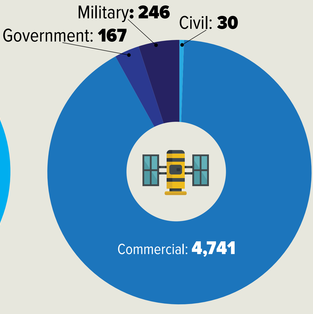
Operating Satellites by Country of Origin

Total number of operating satellites: 7,560



U.S. Satellites by Industry

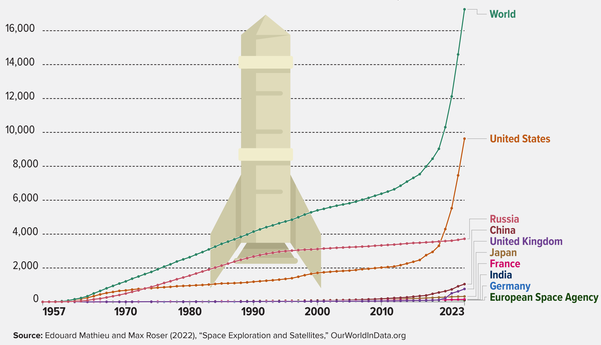
Total number of operating U.S. satellites: 5,184



Source: Union of Concerned Scientists, May 2023

CUMULATIVE NUMBER OF OBJECTS LAUNCHED INTO SPACE

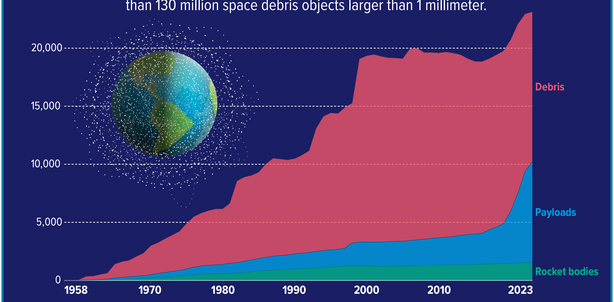
This includes satellites, probes, landers, crewed spacecrafts, and space station flight elements launched into Earth orbit or beyond.



Source: Edouard Mathieu and Max Roser (2022), "Space Exploration and Satellites," OurWorldInData.org

LOW EARTH ORBIT OBJECTS

Objects are subtracted from the time series after they have reentered the Earth's atmosphere. Not all objects are tracked: in 2021, the European Space Agency estimated there were more than 130 million space debris objects larger than 1 millimeter.



Source: Edouard Mathieu and Max Roser (2022), "Space Exploration and Satellites," OurWorldInData.org