Earth Satellites - Educator's Guide (Ages 16-18)

At the end of these Night Sky activities students will understand:

- How satellites appear in the night sky
- What are satellites used for
- How are satellites powered
- The potential problems of space junk

Astronomy background information

Satellites are visible as they move across dark night skies. We see them by the sunlight reflecting off them. The time taken by a satellite to go around the Earth is called its orbital period. Low orbit satellites take 90 minutes or more to circle the the Earth.

Most satellites are powered by large solar arrays. As they spend part of each orbital period in the Earth's shadow batteries are also installed to allow the satellites to continue functioning.

Almost 10,000 satellites are orbiting our planet. There is increasing concern about the large number of objects left in orbit. Collisions between satellites and space junk are becoming more common. Each impact generates thousands of smaller pieces of debris, increasing the chance of further collisions. Astronomers are alarmed by the growing number of satellites as they interfere with observations when they pass through a telescope's field of view.

Night Sky App Essential Settings

Go to Night Sky Settings and make sure the following Preferences are set.

Turn On these Effects:

Show Satellites
Real Sky Representation
Draw Trajectories and Orbits

Turn Off these Effects:

Show Rocket Bodies (at start of this activity)
Show Starlink Satellites (at start of this activity)
Environment Based Horizons
Show Ecliptic Line
Show Constellations Lines
Show Glass Mythology

Accessible Learning:

- Text size can be increased in the Preferences section
- Star numbers can be reduced by sliding two fingers down the screen