Tools Used to Study the Universe

BRAIN POP
Satellites & ISS

Probes
DEFINITION:
A probe is a spacecraft that travels through space to collect science information. Probes do not have astronauts. Probes send data back to Earth for scientists to study.
Examples:
- Voyager 1 & 2 (outer planets, Saturn's rings)
- Huygens (explore Saturn's moon Titan)
- Stardust (comet tail)
- Deep Impact (Comet)
- Dawn (asteroid belt)
- Mariner 10 (Mercury & Venus)

Satellites
DEFINITION:
*Any object that revolves around another object
* A moon, planet, or machine that orbits a planet or star
* GPS, Cell Phones, TV, Pictures: Weather
* Distant stars & galaxies
Examples:
- International Space Station: Large artificial satellite where people can live and work for long periods of time
- Some are geosynchronous: rotate once per day to stay directly over the same area of Earth

Telescopes
DEFINITION:
*A tool that captures and magnifies light that allows you to see far away things in detail (by the use of lenses or mirrors)
* Best locations = high up and away from city lights OR in space above the atmosphere
* Often have a tool called SPECTROGRAPH that breaks light into a spectrum
Examples:
- Hubble Space Telescope (mirrors - reflector)
- Optical (lenses & mirrors)
  - Keck Observatory Hawaii
  - NON - Optical
- Radio (radio waves - alone or together) Parkes Observatory Australia
- X-Rays, Gamma Rays, Infrared - FERMI in space

Space Shuttle
DEFINITION:
* As of 1981, what NASA used to deliver people and supplies to space
* Reusable (land like an airplane)
Examples:
* Challenger, Discovery, Atlantis, Endeavour, STS #

Landers / Rovers
DEFINITION:
-Natural = Earth & Moon
- Sputnik 1 was 1st
- Explorer (cosmic rays)
- TIROS (TV pic of Earth from space)
Examples:
- Small Robots that explore Mars (Spirit & Opportunity)