

LESSON 7 | What are satellites and space probes?

The moon is a satellite of the Earth. A **satellite** [SAT-uh-lite] is something that orbits another object in space.

On October 4, 1957, the Soviet Union launched Sputnik into orbit around the Earth. Sputnik became the Earth's first artificial satellite.

Since Sputnik, hundreds of satellites have been launched. Satellites perform all sorts of functions. There are four basic types of satellites.

EARTH SENSING SATELLITES These satellites have cameras and other kinds of sensors pointed down at the Earth. As the satellite flies over different places, the sensors on the satellite study these places. Satellites are very helpful in the study of isolated places that are hard for people to get to, such as the tops of mountains. Earth sensing satellites also are used by the military of some countries to study what is going on in other countries.

SPACE SENSING SATELLITES We need the Earth's atmosphere to survive, but the atmosphere often is in the way when we try to study things in space. Satellites are often put in orbit above the Earth's atmosphere. These satellites have a clear view of what scientists want to study in space.

COMMUNICATION SATELLITES Radio waves cannot travel through the ground, and the curvature of the Earth gets in the way of radio signals that are sent far across the planet. Instead, radio signals are sent to satellites in space. The satellites, in turn, send the signal to another place on the Earth. In fact, sometimes a satellite sends a message on to another satellite which then sends it to the ground. Messages can be sent all the way around the world this way.

NAVIGATION SATELLITES Ships, planes, and even cars can pinpoint their location on the Earth by "listening" to the signals sent by several navigation satellites.

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KINDS OF SATELLITES

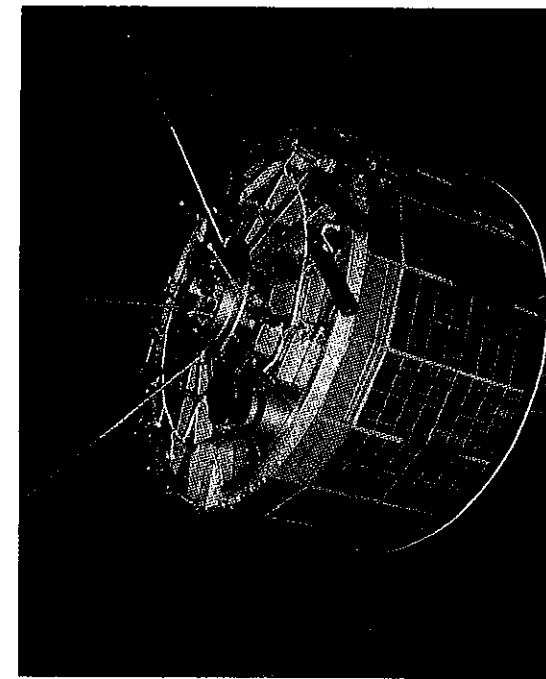


Figure A The TIROS weather satellite helps weathermen make their forecasts.

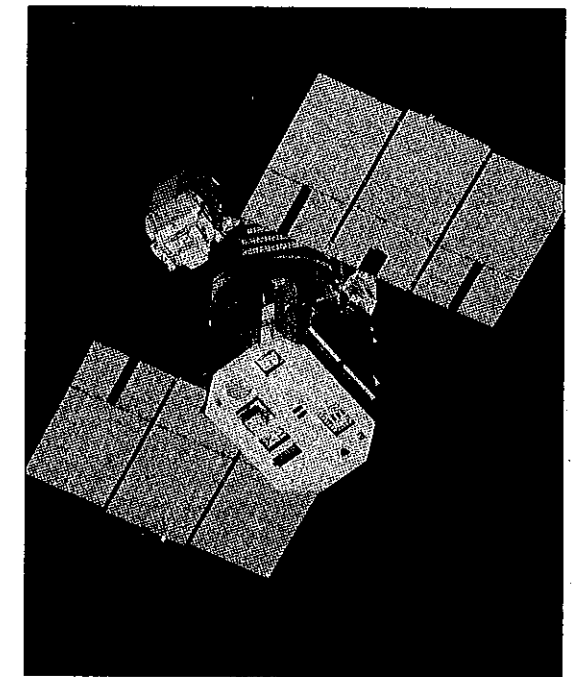


Figure B The Solar Maximum satellite studies the sun from space.

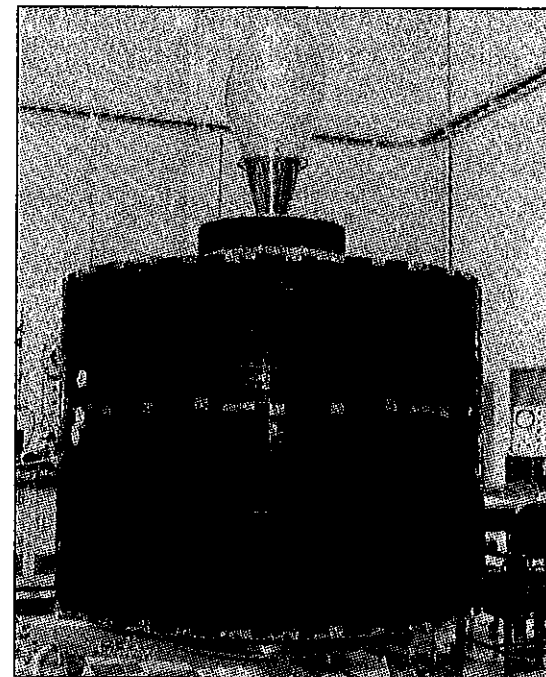


Figure C The Intelsat satellite relays telephone calls and television programs.

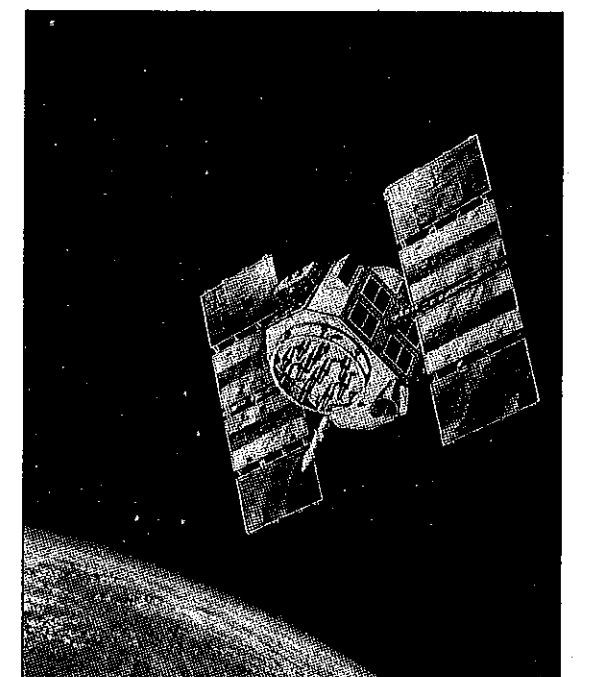


Figure D The Navstar satellite helps ships, aircraft and land vehicles navigate.

SPACE PROBES

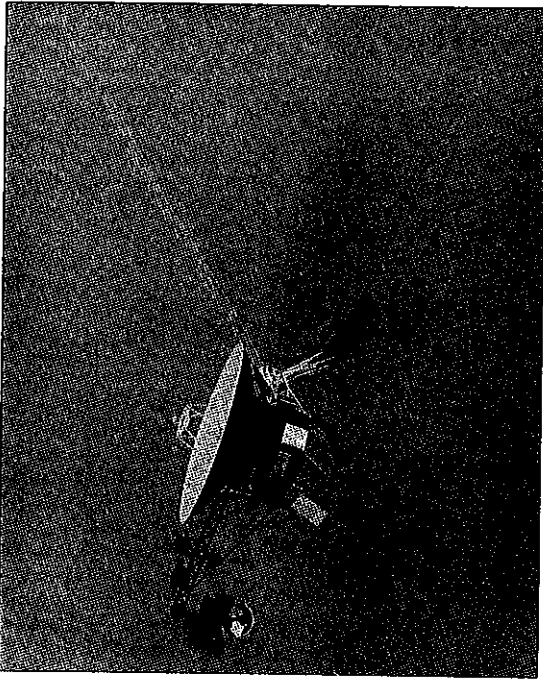


Figure E *Voyager*

In studying planets and other objects in the solar system, sometimes there is no substitute for "being there." However, it would be expensive and possibly dangerous to send people to other planets. For now, scientists send robots similar to satellites toward these objects. These robots are called space probes.

Space probes come in all shapes and sizes and can perform various functions. Most space probes have cameras of some type to take pictures of the objects they are studying. Because space probes are much closer to the objects they are studying, they can take much better pictures than we can from Earth. *Voyager 1* and *Voyager 2* are two space probes that flew by Jupiter, Saturn, Uranus, and Neptune.

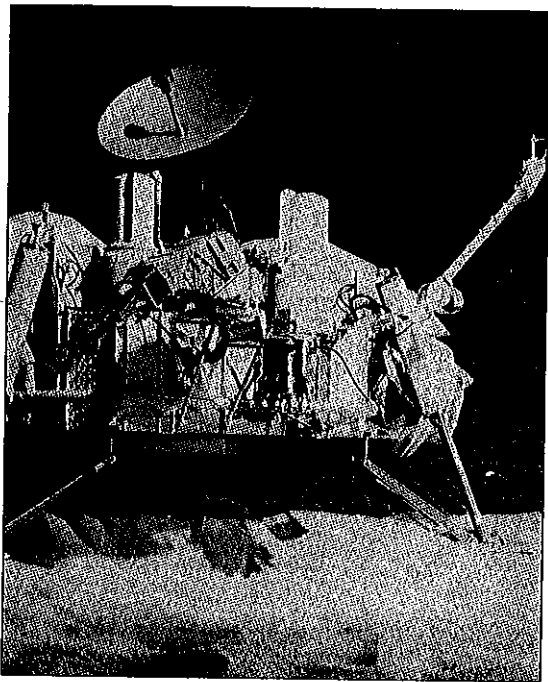


Figure F *Viking*

Some space probes are designed to land on other planets. These probes can then study the surface of the planet. *Viking 1* and *Viking 2* were two probes that landed on Mars in 1976.

SPACE PROBES

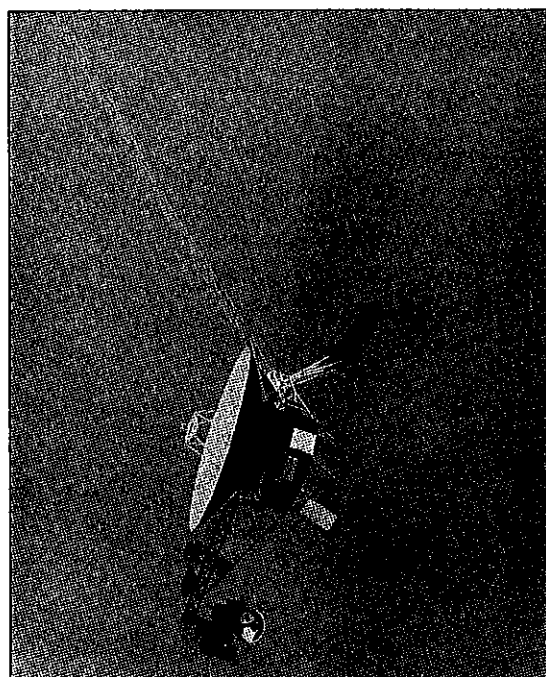


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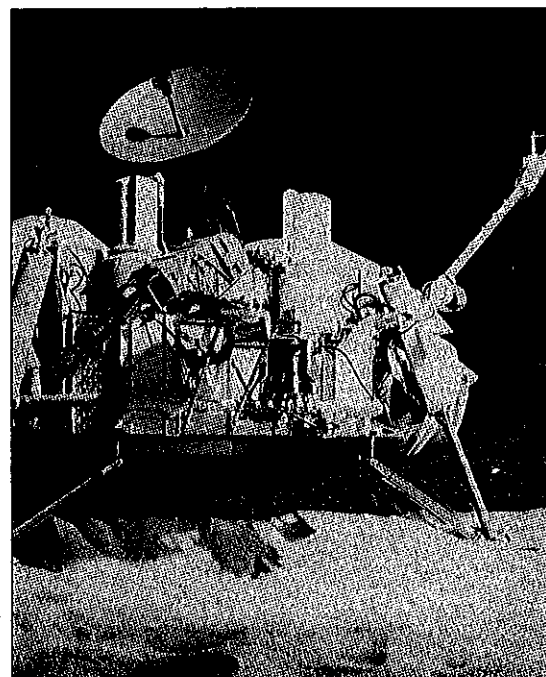


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TRUE OR FALSE

In the space provided, write "true" if the sentence is true. "Write "false" if the sentence is false.

- _____ 1. Sputnik was the Earth's first satellite.
- _____ 2. Sputnik was the Earth's first artificial satellite.
- _____ 3. The Earth has one natural satellite.
- _____ 4. The Earth has no natural satellites.
- _____ 5. Satellites can be used to study the Earth.
- _____ 6. Satellites can be used to study space.
- _____ 7. Space probes carry people to other planets.
- _____ 8. Space probes study objects in space.
- _____ 9. Space probes cannot land on planets.
- _____ 10. *Voyager 1* and *Voyager 2* studied Mars.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A	Column B
_____ 1. navigation satellites	a) used to study other objects in space from Earth orbit
_____ 2. Earth sensing satellites	b) weather satellites
_____ 3. space sensing satellites	c) <i>Voyager 1</i> and <i>Voyager 2</i>
_____ 4. communication satellites	d) relay telephone calls and television programs
_____ 5. space probes	e) help ships, planes, and cars find their way