CHAPTER 10: SPACE EXPLORATION

DEVELOPMENT IN THE FIELD OF ASTRONOMY

ASTRONOMER	YEAR	CONTRIBUTION TO THE FIELD OF ASTRONOMY
Aristotle	384-322 BC	- suggest that the Earth was spherical and not flat.
Nicholas Copernicus	1473-1543	- The first astronomer to suggest that the Sun was the centre of the Solar System. - Stated that each planet had its own and that the orbits were circular.
Galileo Galilei	1564-1642	- inverted the first astronomical telescope and used it to observe a. the surface of the moon b. sunspots c. the planets Saturn and its rings d. the four moons that orbit Jupiter.
Johannes Kepler	1571-1630	- Stated that the Earth's orbits is elliptical.
Isaac Newton	1642-1727	- introduced that law of gravity. - introduced the idea that natural satellites and planets remaining in their respective orbits, are closely related to the pull of gravity. - inverted the first reflecting telescope.
Albert Einstein	1879-1955	- introduced the idea of time, space and energy being related.

DEVELOPMENT IN SPACE EXPLORATION

YEAR	DEVELOPMENTS
1957	
1961	salin dari buku teks page 196
1969	
1981	

The Application of the Technology Related to Astronomy and Space Exploration

1. The primary objective of space programmes are the search for scientific knowledge and exploration of the unknown.
2. Several modern technological devices have been invented to explore outer space. These include:
   a. telescope
      - three types of telescope for space exploration.
        i. Refracting - uses lenses to take or send photographs of outer space
        ii. Reflecting telescope - uses mirror to take or send photographs of outer space
        iii. radio telescope - used to receive electric signals and radiation from outer space

   b. spacecraft/spaceships
      - spacecraft are launched into space to obtain information.
      - spacecraft that transport astronaut are launched into space using rockects.
      - A probe is a spaceship that *does not carry humans*. Examples are Voyager 2, Viking 1, Pioneer 10 ad Mariner 10.
      - Space probes are launched to collect information by taking photographs of our solar system.

   c. space station
      - space stations provide a place in space for astronaut to carry out studies while in space.
      - Russia's space station-Salyut, America's – Skylab.
      - The International Space Station (ISS) is now being built in orbit through the cooperation of 16 countries.

   d. space shuttles
      - this type of spacecraft can be launched, *returned to the Earth* and *can be used several times*.
      - nowadays, the launching of a spacecraft with rockects has been replaced by space shuttles.
      - Space shuttles are used to ferry astronaut and research equipments as well as to launch space probes and satellites.

e. Satellites

1. A satellites is an object that orbits around another object.
2. Man-made satellites are launched into certain orbits for remote sensing purpose.
3.. Satellites that are launched are very beneficial, especially for the following fields :

a. Telecommunications
- Communications satellites are satellites that transmit signals for televisions, radios, telephones, telexes, the internet and another communication devices.

b. Meteorological and disaster monitoring
- Meteorological satellites help us to accurately predict the weather.

c. Navigation
- Navigational satellites help ships and the accurately aircrafts determine their locations, especially in bad weather.

d. Geology
- Satellites help geologists in the exploration of oil and minerals.

e. Agriculture
- Satellites are used to detect the location of soil that is suitable for specific crops.

f. Forestry
- Satellites provide information on how forests are destroyed by fires, pests or diseases.

g. National security
- Satellites can detect pollution, such as oil spills at sea.

Salin jadual 10.2 dari mukasurat 197 textbook