Room for notes

ASTRONOMY 1

Astronomy is about studying space, the universe, stars and the planets in our **solar system**. Astronomers are **scientists** who try to find answers to questions **relating to** our universe. They **observe** planets, faraway stars and **galaxies**, as well as **certain** events that **occur** in space. They **examine** the structure of the universe and try to find out how it all began.

Ancient Astronomy

Astronomy has been around for thousands of years. In **ancient** times, people observed the sun and the stars **on a daily basis**. They planted **crops** and held certain events related to the **movement** of objects in the sky.

Ancient civilizations, like the Greeks and Romans, **however**, did not have the instruments that **later** generations had. They had to observe the skies and stars with their **naked eyes**. It helped them **navigate** the seas and guide them to other places. They saw that stars were **arranged** in **patterns** that looked like humans or animals.

In ancient times, people thought that the Earth was the centre of the universe and that everything **revolved** around it. Towards the end of the Middle Ages some astronomers were not quite **convinced** about this theory. In the early 16th **century** Nicolaus Copernicus, a Polish astronomer, was the first to show that, **in fact** , the sun was the centre of the solar system and planets **revolved** around it.

Isaac Newton's second telescope

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Almost a **century** later Italian astronomer Galileo used the first telescope to observe space. His studies **supported** Copernicus' theories. German mathematician Johannes Kepler **proved** that planets travel around the sun in **elliptical paths**. Isaac Newton used Kepler's findings to **explain** how **gravity** worked.

Modern Astronomy

The **discovery** of the telescope changed the way **scientists** could **observe** space. While **ancient** people only were able to see objects near Earth, **telescopes** were able to find Uranus, Neptune and Pluto, the **distant** planets of our solar system. Astronomers also found that an **asteroid belt** moves around the sun between Mars and Jupiter. With the help of powerful telescopes, they were able to **map** the **surface** of the moon and other planets **in great detail**.

Modern astronomy uses powerful telescopes on Earth to see objects far away from our solar system. It also **relies** on **images** sent to Earth from **orbiting** telescopes, like the Hubble Space Telescope, which has been **in operation** since 1990.

Unmanned spacecraft that land on the moon and other planets give astronomers large amounts of **data** and images that they can use for their work. Astronomers also study **samples** of rocks that spacecraft have brought back to Earth.

Today, astronomers use computers to **simulate** movements and events that may happen in space. For example, they can **predict** how close an **asteroid** can come to Earth or when certain **comets** appear.

Astronomers **measure** distances in light years – how far light can travel in one year, which is about 6 **trillion** miles (9.4 trillion km). They have found out that our **galaxy**, the Milky Way, has a **diameter** of 100,000 light years. The nearest star is Proxima Centauri, about four light years away from Earth.

Radio telescope in the Atacama Desert
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Hubble Space Telescope
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