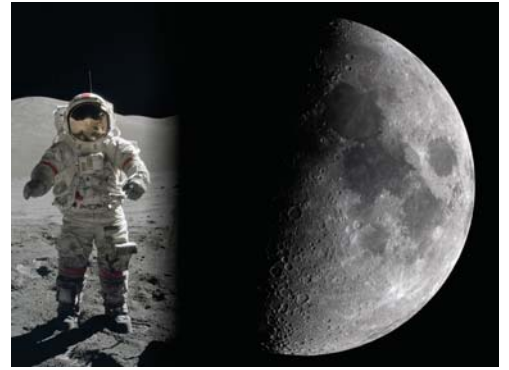


Out in Space — back in Time

Looking into space means looking back in time. The starlight we see has taken a long time to reach us through vast distances, which we measure in light-years, the distance light travels in a year.

Radio communications from astronauts on the **Moon** took about 1.3 seconds to reach Earth. Light from the Sun takes 9 minutes to reach us.



Images of **Saturn** are from light reflected from its surface an hour and 20 minutes ago.

Signals from Voyager 1, the spacecraft launched in 1977, and now outside the solar system, take 23 hours to get

to Earth. In late 2026, it will pass a distance from which signals take 24 hours to reach us. Voyager 1 will have taken almost 50 years to travel just one light-day.



One of the nearest stars, Sirius, is 8.6 light-years away; when the starlight we see today left Sirius, Brexit was still 3 years in the future!



The **Orion Nebula** is 1,344 light-years away. The light we see now set out in 681, when the first Bulgarian Empire was established following a defeat by Byzantine Emperor Constantine IV.

The **Crab Nebula** consists of debris from a supernova explosion seen from Earth by Chinese

astronomers in 1054. It was bright enough to be visible in daytime for nearly a month. It is 6,500 light years away, so the explosion happened about 4,475 BCE, long before the Romans, the Pyramids in Egypt and even Skara Brae in Orkney.



Outside the Milky Way, the nearest large galaxy is the **Andromeda galaxy**, some 2.5 million light years away. The light we see now from Andromeda left at a time when early ancestor species of humans were just beginning to use simple stone tools.

...and **these** can be seen from Marcham!