

## First Contact

Inspired by  
Sir Patrick Moore  
1923 – 2012

Best known as presenter of The Sky  
at Night from 1957 - 2012



Aliens will not inhabit a star; they need a planet. In our solar system the only planets that have the right conditions to support life are Earth, Venus and Mars.

Venus, however, has an atmosphere mainly composed of carbon dioxide with clouds of methane. This means that any life form would soon be poisoned on Venus.

Mars has polar regions, like Earth, which are covered by ice. We do not yet know if this ice covers water and if this water supports any, primitive, life forms. We say primitive because we would know of any intelligent life form on Mars by now.

Therefore in our search for *intelligent* alien life we must look to other solar systems. That is, other stars with planets orbiting them.

The nearest star to Earth, after the sun, is 4 light years away and according to Einstein's laws nothing can travel faster than the speed of light. This means that if we were to send out a signal that aliens could receive we would have to wait for 8 years at the very least until we could expect a response.

The best way to transmit communication over vast distances is via radio waves because they travel at the speed of light.

If we are to send them a message then we need to ensure that they can interpret it. We should not assume that aliens, although intelligent, speak English or indeed any other human language. Morse code is incredibly simple and is transmitted via radio waves. It is comprised of 'dots' and 'dashes'. In an astronomy lecture Sir Patrick Moore suggested that the following message, in Morse code, could be used to search for intelligent alien life.

Each 'o' represents a 'dot', or a short pulse, and each '-' represents a 'dash', or a long pulse.

Your task is to discover why Sir Patrick Moore recommends that we send this message in our search for intelligent alien life.

