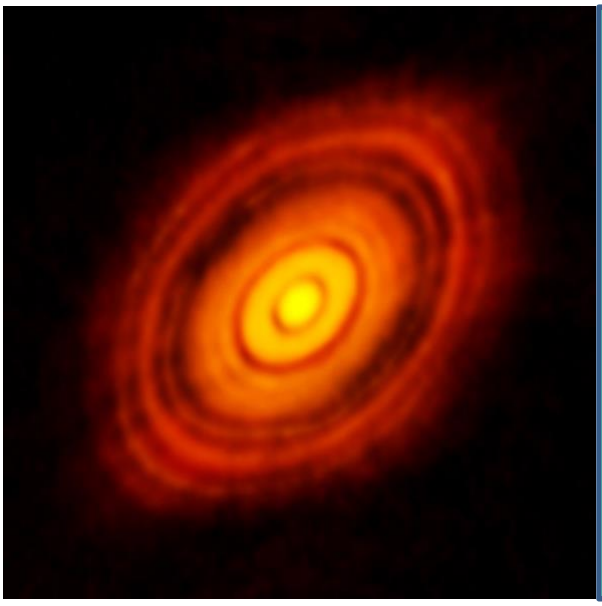
Microwaves and ALMA

High up in the mountains of Chile, a state-of-the-art telescope called the Atacama Large Millimeter Array (ALMA) has been built to study light from some of the coldest objects in the Universe.

ALMA comprises 66 antennae (dishes), spread out over distances of up to 16 KM. This is the largest ground-based telescope currently in existence.

ALMA uses light wavelengths from the far infra-red, through microwaves to radio waves to observe the cool Universe – molecular gas and dust. ALMA studies the building blocks of stars, planetary systems, galaxies and life itself!



This image was taken by ALMA in November 2014 and shows a protoplanetary disc in the HL Tauri star system, about 450 light years from Earth.

The rings that you can see in the image are caused by planets forming out of the protoplanetary debris surrounding this star. Studying this will likely give insight into how our own solar system formed and evolved.

Questions to ponder

- How old is the Universe and how do we know?
- Where did life come from?
- How does the temperature of dust and gas affect what planets can form?

Find out more about ALMA!

Visit the RAL Space page on ALMA here:
https://www.ralspace.stfc.ac.uk/Pages/ALMA.aspx