

Café Scientifique Headingley

Monday 13 December 2021
How to build a habitable world
by Catherine Walsh



This artist's impression shows planets forming from the gas and dust in a protoplanetary disk around a young star. The gas is composed of an array of different molecules, from simple carbon-bearing species to the more complex, the latter being the feedstock of pre-biotic molecules important for life, such as amino acids.

Credit: M.Weiss/Center for Astrophysics | Harvard & Smithsonian

Outline: So far, we know of only one planet in the universe that harbours life - planet Earth. Our picture of a habitable planet is shaped by what we know about life's limits on Earth, and these limits set the diagnostics to identify and characterise habitable environments outside of Earth, that may host extra-terrestrial life. Looking at the Earth's formation history, it is long proposed that Earth became a habitable planet because of the late delivery of water and organic material by impacts of bodies such as comets and asteroids: these are the leftovers of planet formation in our Solar System. In this talk I will describe current efforts to search for potentially habitable environments outside of the Earth, and I will describe current efforts to detect the organic reservoirs of material around newly born stars that may seed life in emerging planetary systems.

Catherine Walsh is a University Academic Fellow and UKRI Future Leader Fellow at the University of Leeds. She leads a research group in the School of Physics and Astronomy that studies the chemistry of star and (exo)planet formation using state-of-the-art observations with telescopes and computational models. Her and her group are particularly interested in how chemistry in space shapes potentially habitable environments. She is also interested in how we can use future observations with telescopes to detect signatures of life on other worlds.

Venue: The New Headingley Club, 56 St Michael's Rd., Leeds LS6 3BG

Time: Club opens at 7:00pm for drinks & the room at 7:30; talk begins promptly at 7:45pm

Entry: Donation please for room hire and expenses: **£3 at the door**



Café Scientifique Headingley is a programme run under the auspices of the Headingley Development Trust. More from our website:

<http://cafesci.hdtleeds.org.uk/>