- PUBLIC LECTURE -

Spatially Resolved Spectroscopy with Extremely Large Telescopes

"Seeing our history from the Big Bang to Now: *New Tech for New Discoveries"*

with Dr John C Mather

Nobel Laureate in Physics (2006)

19:00 (BST)

Tuesday 21st September 2021

Register for free: tinyurl.com/OxfordAstro

The great golden James Webb Space Telescope is almost ready to pack and ship to the launch site in French Guiana, and it will open the treasure chest of infrared astronomy, looking out in space to look back in time towards the first objects that grew in the expanding universe, looking into glowing gas and dust clouds to see how stars are born, and looking at planets here and out there that could tell us about our own history. The JWST is a joint project of NASA, ESA, and the Canadian Space Agency, and is the most powerful space telescope ever built. I will show how it works and what we hope to see.

But this is only the beginning. More space telescopes are coming, and the Extremely Large Telescope is growing in Chile. Hybrid telescopes are possible, with an orbiting guide star to enable improved adaptive optics of giant ground-based telescopes, so the ELTs could have almost the sensitivity and image quality that they would have in space. An even more ambitious concept would fly a starshade in orbit, to cast a shadow of a star onto the ELT, so we could see little Earths orbiting around them, and get their spectra. Do those Earths have continents and oceans, chlorophyll, surface minerals, weather, and oxygen? Glorious discoveries await!