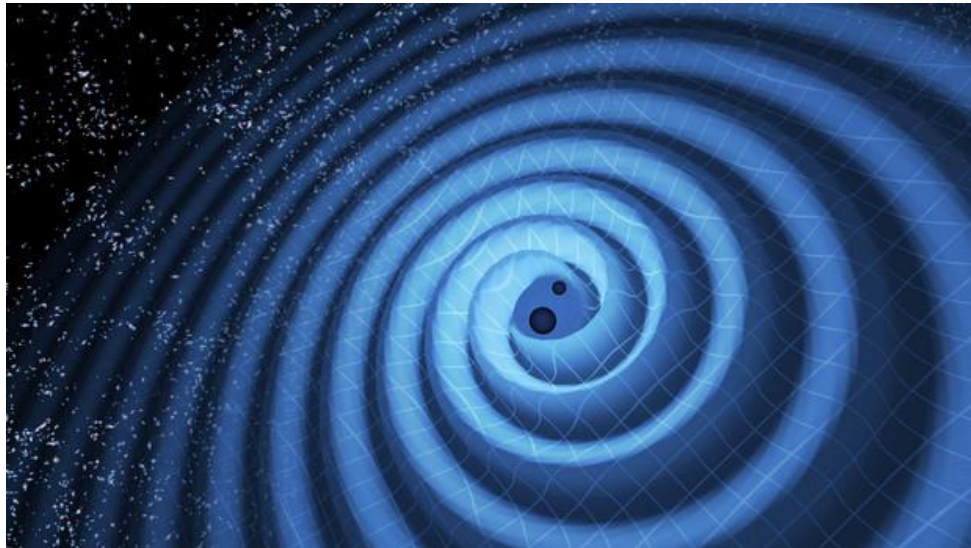


Café Scientifique Headingley

Monday 25 January 2021 at 7:30pm

The Promise of Gravitational Waves

by Sue Bowler



Outline: Gravitational waves are a new way of understanding the universe, completely distinct from light and other forms of electromagnetic radiation. They were a theoretical consequence of Albert Einstein's 1915 General Theory of Relativity, his revolutionary new conception of gravity, yet for most of the past century they were considered too infinitesimally small to measure - a theoretical curiosity. But in the 1970s, physicists worked out not only that they should be detectable but also a way to do it. It took four decades to build an observatory sensitive enough to detect them but in 2015 a worldwide collaboration of more than 1000 scientists and engineers did so. I'll cover what they found, why it was such a challenge and how they did it. I'll also discuss how this new field of astrophysics is already changing astronomical ideas.

Sue Bowler always wanted to be an astronaut. She watched the Apollo moon landings on tv and assumed that astronauts would soon walking on the other planets in our solar system. After a short stint working as an astronomer at the Royal Greenwich Observatory at Herstmonceux, Sue went to Cambridge University and discovered geosciences, including plate tectonics. She came to Leeds University to research the way that thrust faults make orogenic mountain belts, using field examples from Scotland and the Alps. Then ran away to join the circus, joining *New Scientist* magazine as Earth Sciences Editor, commissioning and editing articles on everything out to the heliopause. Sue has been editing science magazines ever since, notably the fellows' magazine of the Royal Astronomical Society, *Astronomy & Geophysics*. She also taught for 20 years in the Schools of Earth and Environment and Physics and Astronomy at the University of Leeds, where she is now a Visiting Research Fellow.

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 www.headingleydevelopmenttrust.org.uk