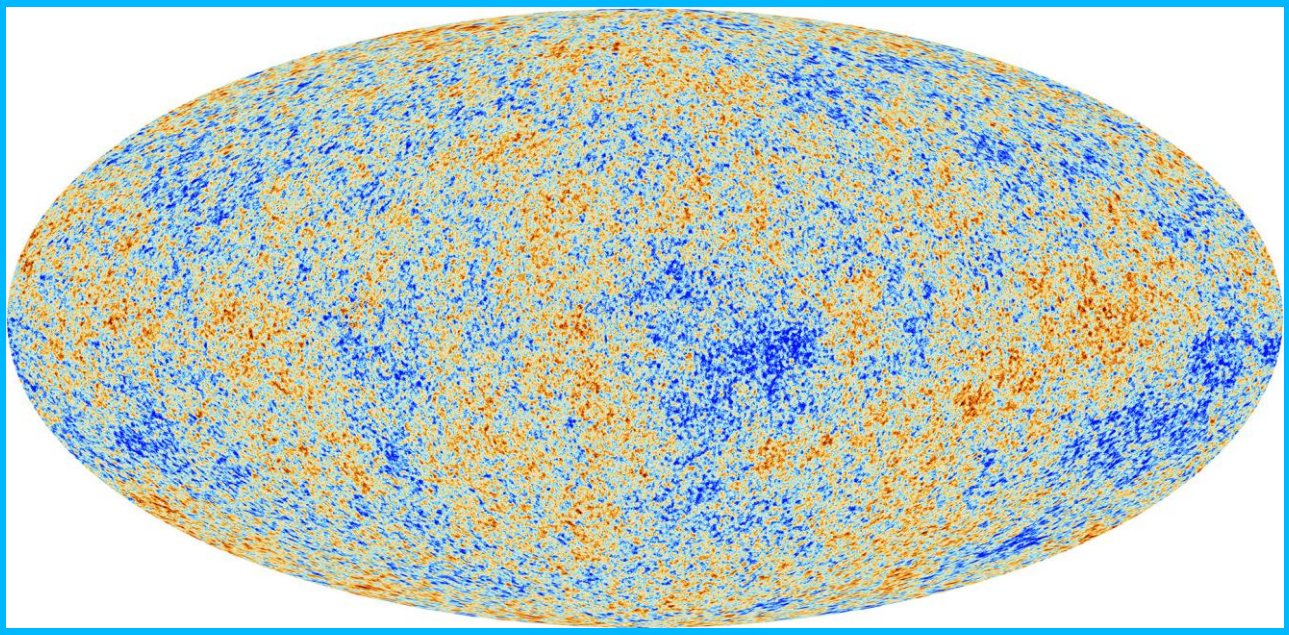
# Seeing the edge of the universe



Subir Sarkar

Humankind has always wondered how far the universe extends - whether it is finite or infinite? This remains a central question of modern cosmology but now we can try to answer it through observations rather than just philosophise about it. I will trace the evolution of our ideas about this issue through recorded history, dealing en route with the celebrated Olbers' "dark sky" paradox for an infinite universe (and its *correct* resolution), and ending with contemporary studies of the cosmic microwave background – the relic thermal radiation from the Big Bang – which marks the 'edge of the universe' we see today. This has enabled us to construct a standard `ΛCDM model' of cosmology but it leaves unanswered many fundamental questions. There is so much more to learn.

**Aristotle University, Thessaloniki; 8 pm, Sunday 4th September 2022**

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**Subir Sarkar** was born & educated in India, obtaining his PhD (1982) at the Tata Institute of Fundamental Research, Bombay, where he was also a staff member. Since 1990 he has been at the Rudolf Peierls Centre for Theoretical Physics at the University of Oxford, and held visiting positions at CERN, Geneva & the Niels Bohr Institute, Copenhagen, amongst others. His research interests are at the interface of fundamental physics and cosmology, and he is both a theorist and participates in various experiments like IceCube, the Cherenkov Telescope Array, and the Legacy Survey of Space & Time on the Vera Rubin Observatory. He was awarded the IUPAP-TIFR Homi Bhabha Medal & Prize (2017) for "distinguished contributions in the field of high energy cosmic ray physics and astro-particle physics".

He has a keen interest in the history and philosophy of science, and has taken time off from academia to work in school education & outreach with a NGO in India.