

# Tata Institute of Fundamental Research Public Lecture



## Prof. Joseph Silk FRS

Institut d'astrophysique de Paris  
Johns Hopkins University

28<sup>th</sup> April 2023, Friday, 5pm  
Homi Bhabha Auditorium

# Telescopes on the Moon The Next Decades

Just over half a century since Neil Armstrong first stepped foot on the lunar surface, a new space race to the Moon is well underway and rapidly gaining momentum. NASA aims to build a habitable orbiting space station to coordinate lunar development and exploration, while European and Chinese space agencies are planning lunar villages and the mining of precious resources that are dwindling here on Earth. Powerful international and commercial interests are driving the race to revisit the Moon, but lunar infrastructures could also open breathtaking vistas of the cosmos. Over the next 50 years, I argue that we should put scientific discovery at the forefront of lunar exploration. Colonization of the Moon could usher in a thrilling new age of scientific research. With lunar telescopes of unprecedented size situated in permanently dark polar craters and on the far side of the Moon, we could finally be poised to answer some of the most profound questions confronting humankind, including what were our cosmic origins and whether we are alone in the Universe.



Joseph Silk (Institut d'astrophysique de Paris and Johns Hopkins University) was the Savilian Chair of Astronomy at the University of Oxford, and Chair of Astronomy at Berkeley. Prof Silk did his Mathematical Tripos at the University of Cambridge and then his PhD from Harvard in 1968. Prof Silk has pioneered many areas in cosmology and astrophysics, especially on the physics of CMB, the formation of galaxies, the baryonic processes affecting structure formation, and dark matter from different perspectives. The fundamental process of 'Silk damping' in CMB anisotropies bears his name. He is a member of the American Physical Society, the American Academy of Arts and Sciences, the Royal Society, and the US National Academy of Sciences. His many awards and honors include the Gold Medal of the Royal Astronomical Society (2008), the Balzan Prize (2011), the Henry Norris Russel lectureship (2018), and the Gruber Prize in Cosmology (2019).

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