



Indian Institute of Astrophysics

भारतीय खगोलभौतिकी संस्थान

IIA COLLOQUIUM

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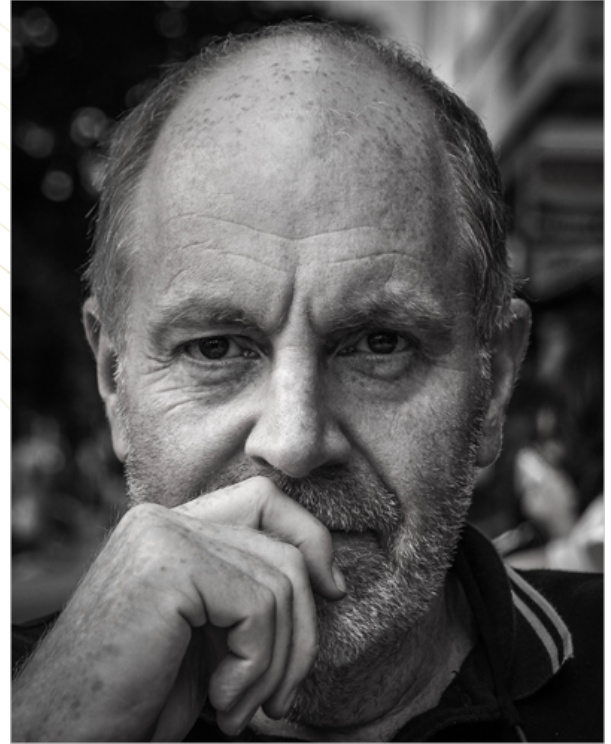
The James Webb Space Telescope: a revolution in astronomy

After more than three decades of development, construction, integration, and test, the NASA/ESA/CSA James Webb Space Telescope was launched from French Guiana on Christmas Day 2021. Following six months of complex deployment and commissioning in orbit around the Sun-Earth L2 point, the observatory has been in full scientific operation since July 2022. In this talk, I'll give an overview of the scientific and technical challenges that motivated the development of a 6.5m cryogenic infrared space telescope and some insights into key aspects of the novel architecture. I will then give an overview of some of the highlights of the first 2.5 years of scientific observations, spanning the formation of galaxies in the early universe to planets in our own solar system and around other stars. I'll also focus on results from my own scientific projects with JWST, studying young stars, circumstellar disks, jets, and proto-planets in the constellations of Orion and Perseus, including the surprising discovery of candidate single and binary Jupiter-mass free-floating planetary mass objects in the Orion Nebula.

3:30 p.m., Monday, January 13, 2025

Auditorium, Indian Institute of Astrophysics

High Tea 3:00 pm, First Floor Lounge, IIA



Mark McCaughrean is an adjunct scientist at the Max-Planck-Institute for Astronomy in Heidelberg and the former Senior Advisor for Science & Exploration at the European Space Agency. There, he was responsible for communicating results from ESA's astronomy, heliophysics, planetary, and exploration missions to the scientific community and the wider public. After studying at the University of Edinburgh, he worked in universities and research organizations in the US, Germany, and the UK before working for ESA from 2009 to 2024. His scientific research focuses on the formation of stars and their planetary systems, and he is an Interdisciplinary Scientist on the JWST Science Working Group. He is also the co-founder of Space Rocks, which celebrates space exploration and the art, music, and culture it inspires through public events and more.

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