

COLLOQUIUM

Future science and brilliant engineering with the James Webb Space Telescope

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The James Webb Space Telescope, planned for launch in October 2018, will be the most powerful space telescope ever built. With the sensitivity to observe a bumblebee hovering at the distance of the Moon, in both reflected sunlight and re-radiated infrared, it will open new territories of astronomy. Scientists are planning observations to understand the history of the Earth by looking far away in space and far back in time. We will examine the first stars, galaxies, and black holes, the growth of galaxies, the formation of stars and planetary systems, the evolution of planetary systems, and seek to know what makes Earth special (if it is). I will highlight the extraordinary engineering challenges required to meet the scientific requirements.