

Colloquium at Carnegie Observatories:

Science with the James Webb Space Telescope
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The James Webb Space Telescope is the scientific successor to the Hubble and Spitzer Space Telescopes. It will be a large (6.6m) cold (50K) telescope launched into orbit around the second Earth-Sun Lagrange point. It is a partnership of NASA with the European and Canadian Space Agencies. The science goals for JWST include the formation of the first stars and galaxies in the early universe; the chemical, morphological and dynamical buildup of galaxies and the formation of stars and planetary systems. Recently, the goals have expanded to include studies of dark energy, dark matter, active galactic nuclei, exoplanets and Solar System objects. Webb will have four instruments: The Near-Infrared Camera, the Near-Infrared multi-object Spectrograph, and the Near-Infrared Imager and Slitless Spectrograph will cover the wavelength range 0.6 to 5 microns, while the Mid-Infrared Instrument will do both imaging and spectroscopy from 5 to 28.5 microns. The observatory is confirmed for launch in 2018; the design is complete and it is in its construction phase. Recent progress includes the completion of the mirrors, the delivery of the first flight instrument(s) and the start of the integration and test phase.