

Status of the James Webb Space Telescope

The James Webb Space Telescope (JWST) is a large aperture (6.5 meter), cryogenic space telescope with a suite of near and mid-infrared instruments covering the wavelength range of 0.6 μm to 28 μm . JWST's primary science goal is to detect and characterize the first galaxies. It will also study the assembly of galaxies, star formation, and the formation and evolution of planetary systems. JWST is a segmented mirror telescope operating at $\sim 40\text{K}$, a temperature achieved by passive cooling of the observatory, via a large, 5-layer membrane-based sunshield. We present an overview of the observatory design, the mission science objectives, the integration and test program and review the concept for science operations of JWST. With construction of the observatory progressing rapidly across all elements of the observatory, we will report on recent highlights such as the completion of the first JWST primary mirror segment. We will also review the predicted performance of the JWST observatory, based on initial measurements of the telescope optics and instrumentation.