

Fact Sheet

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JAMES WEBB SPACE TELESCOPE AT A GLANCE

Name of Mission

James Webb Space Telescope (JWST)

Science Goals

JWST will examine the luminous glows of the first stars that formed after the Big Bang, the formation of solar systems capable of supporting life on planets like Earth and to the evolution of our own solar system. JWST will be the premier space observatory for astronomers worldwide, extending the tantalizing discoveries of the Hubble Space Telescope, the Spitzer Space Telescope, and giant ground-based telescopes.

JWST Partners

NASA
European Space Agency
Canadian Space Agency
International science community

Observatory Provider

Northrop Grumman Space Technology

Optical Telescope Element Teammates

Ball Aerospace
ITT
Alliant Techsystems (ATK)

Science Operations

Space Telescope Science Institute (STScI)

Science Instruments & Providers

- Integrated Science Instrument Module (ISIM)
 NASA/Goddard Space Flight Center
- Near-Infrared Camera
 University of Arizona
- Near-Infrared Spectrograph
 European Space Agency
- Mid-Infrared Camera
 NASA/ESA
- Fine Guidance Sensor
 Canadian Space Agency

- more -

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Procuring Customer

NASA Goddard Space Flight Center

Launch date

2014

Orbit

L2 Lagrange point

Current Component Status

Ten new technologies developed for JWST were certified to have achieved Technology Readiness Level 6 (TRL 6) in April 2007. TRL 6 means prototypes of the technologies were successfully tested in a relevant environment simulating space and are mature enough to include on the telescope's upcoming mission. The actual hardware and software that will fly on the telescope now can be engineered from working prototypes.

The technologies include near- and mid-infrared detectors, sunshield materials, lightweight cryogenic mirrors, microshutter arrays, cryogenic detector readout application-specific integrated circuits, cryogenic heat switches, a large precision cryogenic structure, a cryocooler for the mid-infrared instrument, and wavefront sensing and control.

Launch Vehicle: An Ariane 5, supplied by the European Space Agency (ESA) as its major contribution to the JWST program, has been approved as the telescope's launch vehicle.

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