



Canadian Space
Agency

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James Webb

SPACE TELESCOPE

Successor to Hubble

Slated for launch in 2014, the James Webb Space Telescope (JWST), will probe even further into the Universe than the Hubble Space Telescope. Designed to detect the first stars and quasars of the early universe, JWST will allow scientists to study the formation and evolution of stars, galaxies and planetary systems with unprecedented accuracy.

Positioned 1,5 million km from Earth in the cold darkness of space, JWST will be able to discover and study objects thousands of times fainter than those seen by current telescopes. Weighing 6800 kg, this enormous space observatory will have a sunshield the size of a tennis court and a 6.5-metre primary mirror, which is composed of 18 hexagonal panels and will be cooled to an impressive -240 degrees Celsius. The entire telescope will be deployed automatically in space.

Canada is contributing two instruments to JWST, the Fine Guidance Sensor (FGS) and the tunable filter camera (TFI), built by COM DEV for the Canadian Space Agency (CSA). The FGS cameras will measure the position of guide stars with great accuracy, pinpointing stars to one millionth of a degree. The TFI, adjoining the FGS, will have unique capabilities for detecting the first stars and will search for planets around stars outside our solar system. Canada is also providing functional support of the science operations for JWST.

JWST is an international collaboration between NASA, the European Space Agency, and the CSA. Over 1000 people in more than 17 countries are working on the development of JWST. In Canada, the CSA is responsible for overseeing Canada's full partnership and contribution, the National Research Council's Herzberg Institute of Astrophysics is providing scientific oversight for the FGS, and the Université de Montréal is ensuring direction for the TFI. In exchange for its contribution, Canada is guaranteed telescope time for scientific research.



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