

# Webb telescope's first full color, scientific images coming in July

May 9 2022

## James Webb telescope

The new space telescope\*, successor to Hubble, will detect primarily infrared light outside visible range to show otherwise hidden regions of space, from mid-2022 after arriving in position 1.5 million kms from Earth

**MISSION GOALS (10 YEARS)**

- Measure planetary systems and investigate for potential life
- Observe the formation of stars and evolution of galaxies
- Search for the first galaxies formed in the early universe

**LAUNCHED** on an Ariane 5 rocket on Dec 25, 2021  
Fully deployed its sunshield on Jan 4, 2022  
Reached destination Jan 24, 2022

**Instruments: cameras and spectrographs** must be kept very cold to detect extremely faint heat signals in the universe

**21 x 14 m**

**Primary mirror** diameter: 6.5 m  
18 segments

**Secondary mirror:** 0.74 m

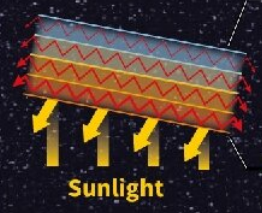
**Weight:** 6.2 tonnes

**SUNSHIELD**  
5 layers:  
0.05-0.025 mm thick

**Inner layer** temp -235 °C (-390°F)

**Outer layer:** 125 °C (260°F)

**Sunlight**



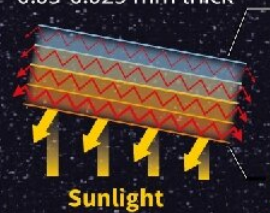
**ORBIT**

In position 1.5 million kms from Earth


Earth Moon Webb's orbit

Sun

Not to scale



Source: NASA \*Joint project by NASA, ESA and Canadian Space Agency

AFP 

Graphic of the James Webb space telescope, successor to Hubble.

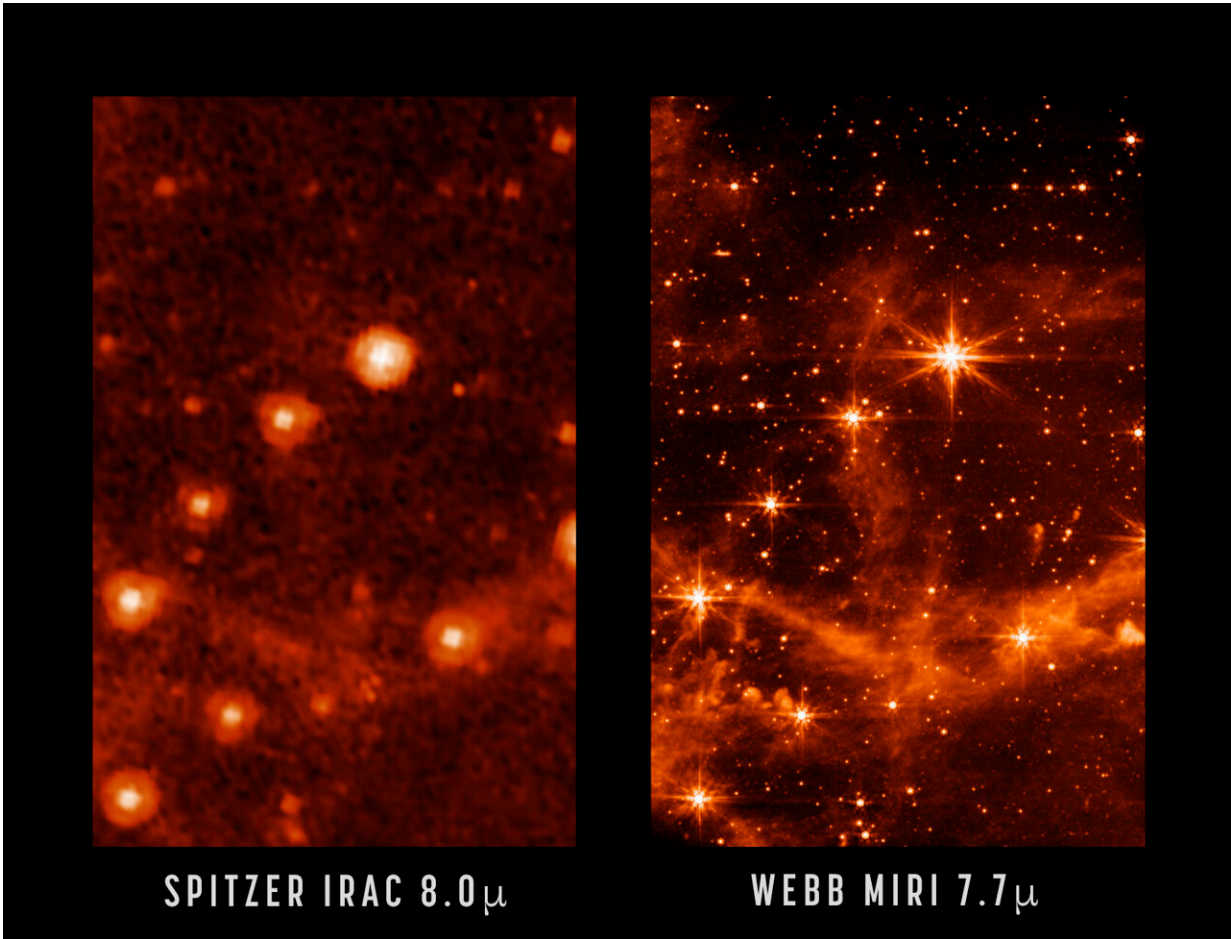
Get ready for a summer blockbuster.

The James Webb Space Telescope will produce "spectacular color images" of the cosmos in mid-July—its first observations dedicated to its mission of scientific discovery, an astronomer overseeing the project said Monday.

The successor to Hubble has spent the last five months aligning its instruments in preparation for the big reveal, with scientists deliberately remaining coy about where the cameras will be pointed.

"We'd really like it to be a surprise," Klaus Pontoppidan, a scientist at the Space Telescope Science Institute in Baltimore told reporters, adding that the secrecy was partly due to the first targets not yet being finalized.

NASA and its partners the European Space Agency (ESA) and Canadian Space Agency (CSA) formed a committee to create a ranked list of objects, which they now intend to work through.



This combination of images provided by NASA on Monday, May 9, 2022, shows part of the Large Magellanic Cloud, a small satellite galaxy of the Milky Way, seen by the retired Spitzer Space Telescope, left, and the new James Webb Space Telescope. The new telescope is in the home stretch of testing, with science observations expected to begin in July, astronomers said Monday. Credit: NASA/JPL-Caltech, NASA/ESA/CSA/STScI

Webb's team has already released a series of star field images taken for calibration purposes, but the new photographs will be of astrophysics targets, key to deepening humankind's understanding of the universe, said Pontoppidan.

These images will actually be shot in infrared, and then colorized for public consumption.

Visible and [ultraviolet light](#) emitted by the very first luminous objects has been stretched by the universe's expansion, and arrives today in the form of infrared, which Webb is equipped to detect with unprecedented clarity—giving it an unprecedented view of the first stars and galaxies that formed 13.5 billion years ago.

Webb, which is expected to cost NASA nearly \$10 billion, is among the most expensive scientific platforms ever built, comparable to the Large Hadron Collider at CERN, and its predecessor telescope, Hubble.

Its mission also includes the study of distant planets, known as exoplanets, to determine their origin, evolution and habitability.

**More information:** [blogs.nasa.gov/webb/2022/05/09 ... ilities-for-science/](https://blogs.nasa.gov/webb/2022/05/09/...ilities-for-science/)

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