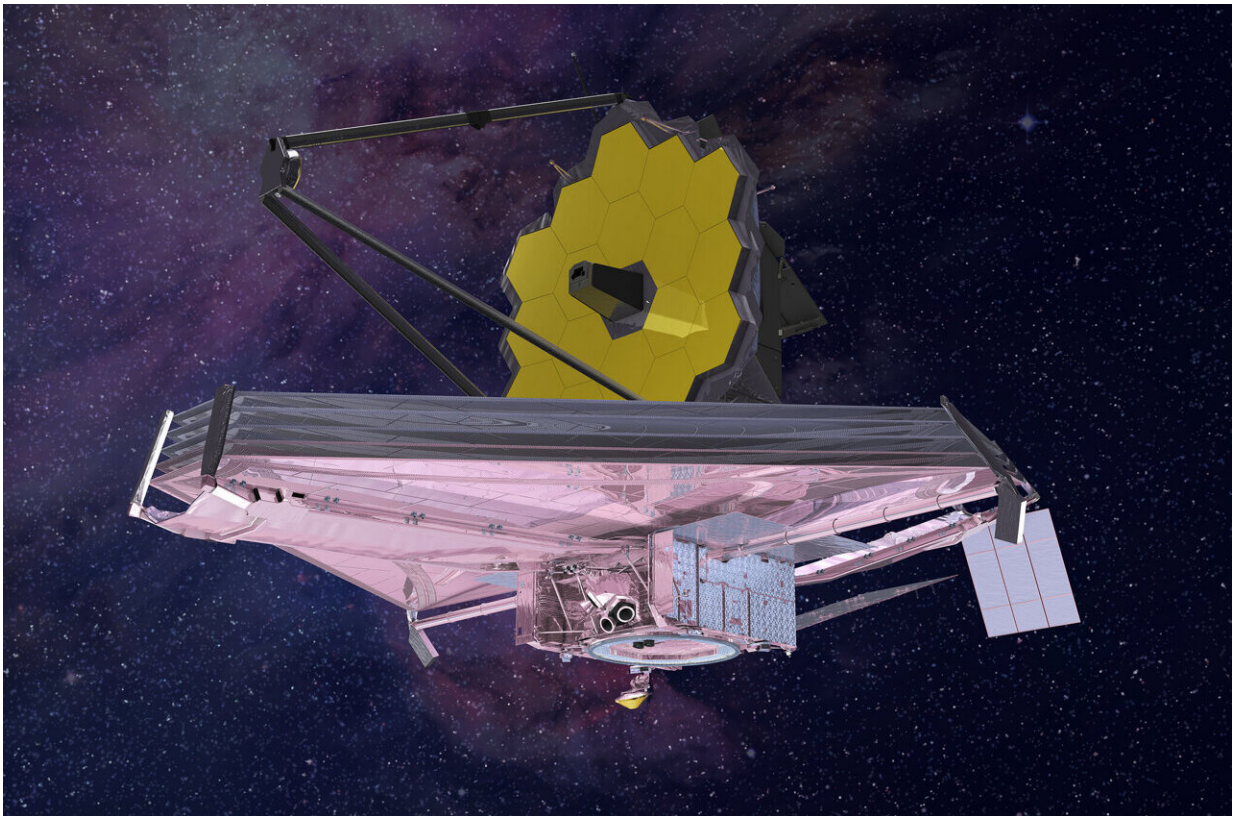


Another Webb telescope instrument gets the 'go for science'

June 30 2022, by Thaddeus Cesari



Artist's concept of NASA's James Webb Space Telescope. Credit: NASA

The second of NASA's James Webb Space Telescope's four primary scientific instruments, known as the Mid-Infrared instrument (MIRI), has concluded its postlaunch preparations and is now ready for science.

The last MIRI mode to be checked off was its coronagraphic imaging capability, which uses two different styles of masks to intentionally block [starlight](#) from hitting its sensors when attempting to make observations of the star's orbiting planets. These customized masks allow for scientists to directly detect [exoplanets](#) and study [dust disks](#) around their host stars in a way that's never been done before.

Along with Webb's three other instruments, MIRI initially cooled off in the shade of Webb's tennis-court-size sunshield to about 90 Kelvin (minus 298 degrees Fahrenheit, or minus 183 degrees Celsius). To perform its intended science meant dropping to less than 7 Kelvin—just a few degrees above the lowest temperature matter can reach—by using an electrically powered cryocooler. These extreme operating temperatures allow for MIRI to deliver mid-infrared images and spectra with an unprecedented combination of sharpness and sensitivity.

"We are thrilled that MIRI is now a functioning, state-of-the-art instrument with performances across all its capabilities better than expected. Our multinational commissioning team has done a fantastic job getting MIRI ready in the space of just a few weeks. Now we celebrate all the people, scientists, engineers, managers, national agencies, ESA, and NASA, who have made this instrument a reality as MIRI begins to explore the infrared universe in ways and to depths never achieved before," said Gillian Wright, MIRI European principal investigator at the UK Astronomy Technology Centre, and George Rieke, MIRI science lead at the University of Arizona. MIRI was developed as a partnership between NASA and ESA (European Space Agency), with NASA's Jet Propulsion Laboratory leading the U.S. efforts and a multi-national consortium of European astronomical institutes contributing for ESA.

With NIRISS and MIRI post-launch commissioning activities concluded, the Webb team will continue to focus on checking off the remaining two

modes on its other instruments. NASA's James Webb Space Telescope, a partnership with ESA (European Space Agency) and CSA, will release its first full-color images and spectroscopic data on July 12, 2022.

Provided by NASA

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