James Webb space telescope ISIM on 'spin cycle'

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In this photograph the ISIM structure is in the process of being loaded onto the centrifuge at NASA's Goddard Space Flight Center, Greenbelt, Md. Credit: NASA/Katie Lilly

Prior to taking a new telescope into space, engineers must put the spacecraft and its instruments through a "spin cycle" test for durability to ensure they'll still work after experiencing the forces of a rocket launch. Finding out they don't work once they're in orbit is too late. The

structure that houses the science instruments of the James Webb Space Telescope is undergoing that cycle of tests during the weeks of May 23 and 30 at NASA's Goddard Space Flight Center in Greenbelt, Md. This structure is called the Integrated Science Instrument Module, or ISIM.

The Webb telescope will experience significant shaking and gravitational forces when it is launched on the large Ariane V rocket. The ISIM structure will house the four main scientific instruments of the telescope.

During the testing process, as the ISIM structure is being spun and shaken, engineers take measurements to compare with their computer models. If there are discrepancies, the engineers hunt for the reasons so they can address them. The huge centrifuge will spin at speeds close to 11 rpm, exposing the ISIM structure to about 10 times the force of gravity.

The centrifuge in action, carrying the Webb telescope's ISIM structure. Credit: NASA/Maggie Masetti

Webb is the successor to the Hubble Space Telescope and will serve thousands of astronomers worldwide. Webb will study the history of our Universe, ranging from the first luminous glows after the Big Bang, to the formation of planetary systems capable of supporting life on planets like Earth, to the evolution of our own Solar System. The Webb telescope is a joint mission of NASA, the European Space Agency and Canadian Space Agency.

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