

Varying Perspectives on NASA's James Webb Space Telescope

In the late 1990s, NASA began preparation of a plan to launch its largest and most powerful telescope into deep space: The James Webb Space Telescope (JWST). This advanced observatory was designed to discover what its predecessor, the Hubble Space Telescope, was not technologically advanced enough to image or observe. Twenty years and ten billion dollars later, the JWST was launched from the Guiana Space Center and has recently reached its final orbit location at the second Sun-Earth Lagrange Point (L2), nearly 1 million miles from Earth's far side from the Sun.

Since the early 1970s, public opinion about NASA's spending on research has swayed between approbation and rejection. Since the 1970s, Harris surveys have shown that 56% of Americans believed that the moon landing was not worth the money spent. This negative perspective about NASA's spending continues today following the costs of the JWST, as 76% of Americans believe that tax dollars spent on space research should instead go toward public education. However, positive perspectives have consistently challenged this disapproval of NASA's spending. Public opinion polls completed by the Pew Research Center in 2018 indicate that 72% of Americans, regardless of political party, believe that the United States should work to remain a world leader in space exploration.

Despite negative public opinion and a 2012 NASA budget cut of approximately 20%, the JWST moved forward with its mission to provide more insight into the origins and evolution of the universe. The observatory will use state-of-the-art scientific instruments capable of capturing the heat signature of a bumblebee (1cm²) at Earth-Moon distance to explore exoplanet terrains and the luminous glows originating from the Big Bang. At imaging and observational abilities 100x that of the Hubble Space Telescope, the JWST strives to understand where life on Earth originates from and to explore Earth's position among its surrounding galaxies. Unlocking realms of understanding in geology, astrobiology, physics, chemistry, and astronomy, the James Webb Space Telescope will provide us with some of the most advanced and detailed information about the universe that we have gathered to date, which many argue is worth the price tag.

By Natalia Fedorczak '24, Clarke Forum Student Project Manager

"Science Operations: Webb Launch," NASA (<https://webb.nasa.gov/content/webbLaunch/deploymentExplorer.html>); "NASA's James Webb Space Telescope: The ultimate guide," Space (<https://www.space.com/21925-james-webb-space-telescope-jwst.html>); "Where is Webb?," NASA (<https://webb.nasa.gov/content/webbLaunch/whereIsWebb.html>); "About: Frequently Asked Questions Lite," NASA (<https://webb.nasa.gov/content/about/faqs/faqLite.html#:~:text=How%20far%20back%20will%20Webb,and%20galaxies%20started%20to%20form>); "James Webb Space Telescope Science," NASA (https://www.nasa.gov/mission_pages/webb/science/index.html); "James Webb Telescope Overview," University of Arizona: Webb Space Telescope (<https://jwst.arizona.edu/mission>); "Senior Project Scientist John Mather Reflects on Journey to Webb's First Images," NASA: James Webb Space Telescope (<https://blogs.nasa.gov/webb/2022/07/15/senior-project-scientist-john-mather-reflects-on-journey-to-webbs-first-images/>); "How Americans see the future of space exploration, 50 years after the first moon landing" Pew Research Center (<https://www.pewresearch.org/fact-tank/2019/07/17/how-americans-see-the-future-of-space-exploration-50-years-after-the-first-moon-landing/>); "Americans keen on space exploration, less so on paying for it" Pew Research Center (<https://www.pewresearch.org/fact-tank/2014/04/23/americans-keen-on-space-exploration-less-so-on-paying-for-it/>)