

NASA's Space Launch System Progress Report

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Exploration beyond Earth orbit will be an enduring legacy for future generations, as it provides a platform for science and exploration that will define new knowledge and redefine known boundaries. NASA's Space Launch System (SLS) Program, managed at the Marshall Space Flight Center, is responsible for designing and developing the first exploration-class rocket since the Apollo Program's Saturn V that sent Americans to the Moon in the 1960s and 1970s. The SLS offers a flexible design that may be configured for the Orion Multi-Purpose Crew Vehicle with associated life-support equipment and provisions for long journeys or may be outfitted with a payload fairing that will accommodate flagship science instruments and a variety of high-priority experiments. Building on legacy systems, facilities, and expertise, the SLS will have an initial lift capability of 70 tonnes (t) in 2017 and will be evolvable to 130 t after 2021. While commercial launch vehicle providers service the International Space Station market, this capability will surpass all vehicles, past and present, providing the means to do entirely new missions, such as human exploration of Mars. Building on the foundation laid by over 50 years of human and scientific space flight—and on the lessons learned from the Apollo, Space Shuttle, and Constellation Programs—the SLS team is delivering both technical trade studies and business case analyses to ensure that the SLS architecture will be safe, affordable, reliable, and sustainable. This panel will address the planning and progress being made by NASA's SLS Program.