

GAO Highlights

Highlights of [GAO-18-277T](#), a testimony before the Subcommittee on Space, Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

Acquisition management has been a long-standing challenge at NASA, although GAO has reported on improvements the agency has made in recent years. Three space telescope projects are the key enablers for NASA to achieve its astrophysics' science goals, which include seeking to understand the universe. In its fiscal year 2018 budget request, NASA asked for about \$697 million for these three projects, which represents over 50 percent of NASA's budget for its astrophysics' major projects. In total, these projects represent an expected investment of at least \$12.4 billion.

This statement reflects preliminary observations on (1) the current status and cost of NASA's major telescope projects and (2) lessons learned that can be applied to NASA's management of its telescope projects. This statement is based on ongoing work on JWST and ongoing work on the status of NASA's major projects. Both reports are planned to be published in Spring 2018. This statement is also based on past GAO reports on JWST and NASA's acquisitions of major projects, and NASA input.

What GAO Recommends

GAO is not making any recommendations in this statement, but has made recommendations in prior reports to strengthen NASA's acquisition management of its major projects. NASA has generally agreed with GAO's recommendations and taken steps to implement them.

View [GAO-18-277T](#). For more information, contact Cristina T. Chaplain at (202) 512-4841 or chaplainc@gao.gov.

December 6, 2017

NASA

Preliminary Observations on the Management of Space Telescopes

What GAO Found

The National Aeronautics and Space Administration's (NASA) current portfolio of major space telescopes includes three projects that vary in cost, complexity, and phase of the acquisition life cycle.

Table: Current Phase, Cost, and Schedule Status of National Aeronautics and Space Administration's (NASA) Major Space Telescope Projects

Project	Phase	Preliminary Cost Estimate		Preliminary Schedule	
		(dollars in millions)			
Wide-Field Infrared Survey Telescope	Formulation	3,200-3,800		2024-2026	
	(early phase)				
		Current Cost Estimate (dollars in millions)	Change from Baseline (dollars in millions)	Target launch date	Change from baseline (months)
Transiting Exoplanet Survey Satellite	Implementation (building, launching, and operating)	336.7	-41.7 ^a	March 2018	-3
James Webb Space Telescope	Implementation (building, launching, and operating)	8,825.4	3,861.8	March-June 2019	57-60

Source: GAO analysis of National Aeronautics and Space Administration data. | [GAO-18-277T](#)

^aThe dollar change reflects a decrease of \$26.7 million after launch vehicle selection in 2014 due to the reduction in planned costs and a decision by NASA in August 2017 to reallocate \$15 million of the project's headquarters-held reserves to the Wide-Field Infrared Survey Telescope project.

GAO's ongoing work indicates that these projects are each making progress in line with their phase of the acquisition cycle but also face some challenges. For example, the current launch date for the James Webb Space Telescope (JWST) project reflects a 57-60-month delay from the project's original schedule. GAO's preliminary observations indicate this project still has significant integration and testing to complete, with very little schedule reserve remaining to account for delays. Therefore, additional delays beyond the delay of up to 8 months recently announced are likely, and funding available under the \$8 billion Congressional cost cap for formulation and development may be inadequate.

There are a number of lessons learned from its acquisitions that NASA could consider to increase the likelihood of successful outcomes for its telescope projects, as well as for its larger portfolio of projects, such as its human spaceflight projects. For example, twice in the history of the JWST program, independent reviews found that the program was not holding adequate cost and schedule reserves. GAO has found that NASA has not applied this lesson learned to all of its large projects, and similar outcomes to JWST have started to emerge. For example, NASA did not incorporate this lesson with its human spaceflight programs. In July 2016 and April 2017, GAO found that these programs were holding inadequate levels of cost and schedule reserves to cover unexpected cost increases or delays. In April 2017, GAO recommended that NASA reassess the date of the programs' first test flight. NASA concurred and, in November 2017, announced a launch delay of up to 19 months.