



Written by [Brian Koenig](#) on June 11, 2012

NASA Terminates X-ray Telescope Project Amid Rising Costs

In terminating the Gravity and Extreme Magnetism Small Explorer (GEMS) project, an X-ray telescope mission that was launched to study black holes and various space-time theories, NASA has left taxpayers with a bill worth \$43.5 million. The program's overall price tag was initially marked at \$119 million (not including the rocket that was to be launched into orbit), but the space agency has already doled out tens of millions of dollars, and the project was 20 to 30 percent over budget, according to briefing charts received by SpaceNews.com.



GEMS had been blueprinted, but not yet constructed, and it would have designed X-ray telescopes that are sensitive to polarized light, intended to provide astronomers with a tool to examine magnetic fields surrounding neutron stars, black holes, and other high-energy objects.

According to SpaceNews.com, axing the X-ray telescope mission will also cost the agency millions of dollars in fees, inflating the total liability cost to as much as \$56 million. "The GEMS project was initiated under a very well designed cost cap ... it was clear they would not be able to be completed within their cost cap," NASA astrophysics director Paul Hertz [noted](#).

NASA made the decision to shutter the GEMS project last month after an independent cost estimate revealed that it would likely surpass a revised \$135-million cost cap that was instituted on spacecraft development early this year. Adding to the \$43.5 million that was spent by May, termination liability costs could total about \$13 million, with aerospace contractor Orbital Sciences Corporation owing nearly half of that amount.

GEMS was one of two Small Explorer-class astrophysics projects chosen in 2009 to launch between 2012 and 2015. The other Small Explorer mission, the Interface Region Spectrometer (IRIS), is scheduled to launch next year on a Pegasus XL rocket under a \$40 million contract NASA awarded two years ago. According to new budget documents, the space agency is slated to spend \$180 million on the IRIS mission by its 2015 wrap-up date. Those same budget documents showed GEMS costing somewhere between \$174 million and \$230 million, depending on the project's ultimate launch date.

Of course, the GEMS program is not alone among U.S. aerospace boondoggles, as other space projects have also wasted tens of millions of taxpayer dollars. Indeed, NASA's X-ray telescope program adds to a growing list of major U.S. science projects that have recently been terminated:



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- This week, the space program landed with a final thud as NASA donated the Space Shuttle Enterprise to a science museum in New York and ceded the space race to the private sector. President Obama killed the Constellation project, intended to create a successor to the shuttle, in early 2010.
- The Deep Underground Science and Engineering Laboratory (DUSEL) lost funding from the NSF in late 2010. The project — a “dark matter” detector — rebounded when the Department of Energy funded a new project, the Sanford Underground Research Facility (SURF).
- There’s a barren field at a science lab near Chicago. Just a few years ago, the Fermilab Tevatron particle accelerator was whisking atoms around a 3.9-mile oval and crashing them into one another, looking for signs of the early universe. Last September, that experiment — which cost about \$120 million to build in 1983, not including ongoing maintenance costs — was closed as well.

Further, one of the space agency’s flagship programs, the James Webb Space Telescope — the successor to the Hubble Space Telescope — has been confronted with severe delays and budget overruns, now estimated to cost nearly [\\$9 billion](#). In 2006, the Webb program was projected to cost \$2.4 billion. In 2008, the cost more than doubled, rising to \$5.1 billion. Last summer, NASA disclosed that it had already spent \$3.5 billion and needed an additional \$3.6 billion to fund the project, which has been delayed by four years.

“The increases have gotten larger, not smaller, which indicates they don’t really have their hands around the problem,” said Alan Stern, a former NASA administrator and critic of the Webb project, adding that he thinks Congress should terminate the mission. “I think it rewards bad management at a time when taxpayers are very concerned about government spending.”

Hertz affirmed that the technology needed to develop the GEMS instrument took far longer than expected, which boosted the project’s overall cost. And because it did not pass through the formulation phase, GEMS did not generate any flight hardware that could be recovered for other space missions. Hertz lamented, “We are in the process of formally notifying Congress of this decision.”



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