

# NASA research satellite plunges into the sea

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This image provided by NASA shows the encapsulated Glory spacecraft sitting atop the Taurus XL rocket and awaiting launch on the pad at Vandenberg Air Force Base's Space Launch Complex in Calif., Feb. 22, 2011. Vandenberg Air Force Base officials say the Taurus XL rocket carrying NASA's Glory satellite lifted off about 2:10 a.m. PST Friday from the base. However the fairing surrounding the Glory spacecraft failed to separate properly preventing the spacecraft from reaching orbit. (AP Photo/NASA)

For the second time in two years, a rocket glitch sent a NASA global warming satellite to the bottom of the sea Friday, a \$424 million debacle that couldn't have come at a worse time for the space agency and its efforts to understand climate change.

Years of belt-tightening have left NASA's Earth-watching system in sorry shape, according to many scientists. And any money for new environmental satellites will have to survive budget-cutting, global warming politics and, now, doubts on Capitol Hill about the space agency's competence.

The Taurus XL rocket carrying NASA's Glory satellite lifted from Vandenberg Air Force Base in California and plummeted to the southern Pacific several minutes later. The same thing happened to another climate-monitoring probe in 2009 with the same type of rocket, and engineers thought they had fixed the problem.

"It's more than embarrassing," said Syracuse University public policy professor Henry Lambricht. "Something was missed in the first investigation and the work that went on afterward."

Lambricht warned that the back-to-back fiascos could have political repercussions, giving Republicans and [climate-change](#) skeptics more ammunition to question whether "this is a good way to spend taxpayers' money for rockets to fail and for a purpose they find suspect."

NASA's environmental division is getting used to failure, cuts and criticism. In 2007, a National Academies of Science panel said that research and purchasing for [NASA Earth sciences](#) had decreased 30 percent in six years and that the climate-monitoring system was at "risk of collapse." Then, last month, the Obama administration canceled two major satellite proposals to save money.

Also, the Republican-controlled House has sliced \$600 million from NASA in its continuing spending bill, and some GOP members do not believe the evidence of manmade global warming.

Thirteen NASA Earth-observing satellites remain up there, and nearly all

of them are in their sunset years.

"Many of the key observations for climate studies are simply not being made," Harvard Earth sciences professor James Anderson said. "This is the nadir of climate studies since I've been working in this area for 40 years."

Scientists are trying to move climate change forecasts from ones that are heavily based on computer models to those that rely on more detailed, real-time satellite-based observations like those that Glory was supposed to make. The satellite's failure makes that harder.

Ruth DeFries, the Columbia University professor who co-chaired the 2007 National Academies of Science panel, said in an e-mail that this matters for everyone on Earth.

"The nation's weakening Earth-observing system is dimming the headlights needed to guide society in managing our planet in light of climate change and other myriad ways that humans are affecting the land, atmosphere and oceans," DeFries wrote.

NASA Earth Sciences chief Michael Freilich said it is not that bad.

"We must not lose sight of the fact that we in NASA are flying 13 research missions right now, which are providing the fuel for advancing a lot of our Earth science," Freilich told The Associated Press. He said airplane missions, current satellites and future ones can pick up much of the slack for what Glory was going to do.

However, Freilich, at a budget briefing a year ago, described the Earth-watching satellites as "all old," adding that 12 of the 13 "are well beyond their design lifetimes."

"We're losing the ability to monitor really key aspects of the climate problem from space," said Jonathan Overpeck, a climate scientist at the University of Arizona. "Just about every climate scientist in the world has got to be sad right now."

Glory failed when the rocket's clamshell-shaped protective covering that was supposed to shield it during launch never opened to let the satellite fire into orbit. A similar fiasco happened in 2009 when the Orbiting Carbon Observatory fell back to Earth after the rocket nose cone also failed to separate.

A NASA investigation board and Taurus' builder, Orbital Sciences Corporation of Dulles, Va., will try to figure out what wrong. It was the third failure out of nine launches for that rocket. NASA paid Orbital \$54 million for launching Glory. The last failure was traced to the system that jettisons the covering, and Orbital changed its design.

"To make any connection between our investigation of the 2009 ... mishap and Friday's failure of the Glory launch at this time would be purely speculative and wholly inappropriate," said investigative panel chairman Rick Obenschain, deputy director of NASA's Goddard Space Flight Center.

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