

Bush administration cancels maintenance of Hubble Space Telescope

Patrick Martin
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In what can only be described as an act of cultural vandalism, the Bush administration has decided to halt scheduled maintenance of the Hubble Space Telescope—perhaps the most important scientific instrument in the history of mankind—and allow it to shut down as early as 2006.

NASA Administrator Sean O’Keefe confirmed the decision in remarks to reporters at NASA headquarters March 11, after the release of a letter from Admiral Harold Gehman, chairman of the Columbia Accident Investigation Board, which took no clear position on whether the resumption of space shuttle flights next year would make it possible to service the orbiting telescope.

Gehman’s letter to Senator Barbara Mikulski (Democrat of Maryland), did not come down for or against a mission to Hubble, noting that the mission “increases the risk” to the shuttle, but suggesting that “only a deep and rich study of the entire gain/risk equation can answer the question of whether an extension of the life of the wonderful Hubble telescope is worth the risks involved, and that is beyond the scope of this letter.”

O’Keefe reiterated a decision originally announced January 16, two days after Bush’s speech proposing that the US space program refocus on manned missions to the Moon and Mars over the next several decades. A planned December 2003 maintenance visit to Hubble was canceled as a result of the destruction of the space shuttle Columbia disaster, but a new NASA schedule had reset the mission to Hubble for 2006, a year after the proposed resumption of shuttle flights.

While O’Keefe left open a little room to maneuver, in the face of mounting protests from the scientific community, he suggested that only “new ideas” such as the development of robotic spacecraft that could carry out the routine maintenance work now performed by astronauts would make it possible to save the Hubble. “Letting it go dark” is “the most unpopular decision I

could have made,” he admitted, but he added, “I don’t expect the facts to change.”

The Hubble, launched in 1990, has been the greatest achievement of the otherwise troubled NASA space shuttle program. The huge observatory was placed in orbit by a shuttle, and then successfully repaired in 1993 by shuttle astronauts who were able to correct flaws in its optical systems. Since then, Hubble has provided an unprecedented quality and quantity of data on astronomical objects ranging from comets to the furthest reaches of space.

The space telescope has a planned life of 20 years, after which it was to be replaced by a new and more powerful orbiting observatory, the James Webb Space Telescope, now set for launching in 2011—also via space shuttle. This planned lifespan, however, assumes that astronauts regularly service Hubble, replacing batteries and gyroscopes as they wear out. Without this maintenance, Hubble will likely cease operating in late 2007 or early 2008, according to officials at the Space Telescope Science Institute (STSI) in Baltimore, which operates the observatory under contract from NASA. There is a significant chance that shutdown could take place even earlier, some time in 2006, if one of the three gyroscopes stops functioning.

O’Keefe said that he canceled the mission purely out of concern for the safety of shuttle astronauts who would be performing the maintenance. He claimed that a visit to Hubble would violate the conditions for the planned resumption of space shuttle flights. All new launches are to place the shuttle in orbit to dock with the International Space Station, giving the astronauts a safe haven and access to another return vehicle if there is a recurrence of the damage to heat-shield tiles which is believed to be the cause of the Columbia disaster.

NASA’s announcement produced an uproar among scientists and space enthusiasts. Bruce Margon, associate

director for science at STSI, told the *Washington Post*: “The overwhelming amount of general public comment we’ve gotten is just sort of shock. ‘If it’s working,’ people ask, ‘how can you possibly shut it off?’ I have to say I don’t have an answer to that.”

Engineers at the Johnson Space Center criticized O’Keefe’s decision in reports that were subsequently leaked to the media and posted on the Internet. They argued that there was no difference, from the standpoint of safety, between a mission to the space station and a mission to Hubble. On March 3 they were joined by eight congressmen—six Democrats and two Republicans—who introduced a resolution urging NASA to refer the Hubble decision to an independent panel of experts.

Engineers, scientists and former astronauts have all expressed the concern that the cancellation of Hubble is based on financial concerns, because of budgetary constraints imposed on NASA by the Bush administration, not safety. NASA has been ordered to shift most of its budget to the preparation of future manned missions, while pulling the plug on many planned unmanned missions whose purpose is purely scientific.

The Hubble Space Telescope was the realization of a longstanding effort by astronomers to place a telescope in orbit, free of the distorting effects of the Earth’s atmosphere. Placed in a stable orbit more than 350 miles above the Earth, Hubble has carried out more detailed and comprehensive observation of the cosmos than all previous Earth-bound telescopes combined.

It is impossible to adequately summarize here the new knowledge obtained through Hubble over the past decade. But a few of its most notable accomplishments include:

- * dating the age of the Big Bang, the origin of the current stage of the universe, to 14 billion years ago;
- * observing quasars and confirming they are the nuclei of distant galaxies;
- * proving the existence of black holes billion times the mass of the sun;
- * confirming the existence of “dark matter” and “dark energy,” which are fundamental to current concepts in cosmology.

The latest Hubble triumph was announced March 9, as scientists at STSI and several universities said they used two Hubble instruments, the Advanced Camera for Surveys (ACS) and the Near Infrared Camera and Multi-object Spectrometer (NICMOS), to locate the oldest stars and galaxies ever observed, formed only 300 million years after the Big Bang.

The so-called Hubble Ultra Deep Field (HUDF) is an

image of area of the sky containing as many as 10,000 galaxies in the constellation Fornax, just below Orion, which required more than one million seconds of combined exposure on the two instruments. The light captured is extremely old, dating back to more than 13.7 billion years, 95 percent of the way back to the Big Bang. It is also extremely faint, representing only one photon a minute.

While budgetary constraints may have contributed to the perverse decision to allow Hubble to shut down, there are undoubtedly politico-religious issues involved as well. Pure scientific research, especially that which focuses on investigating the material origins of the universe, is not a high priority with the right-wing ideologues the Bush administration.

Bush’s social base includes a large number of Christian fundamentalists who, if not exactly flat-earthers, are certainly Biblical literalists who espouse the view that God created the universe in seven days, and who date this creation, using Genesis and other texts, to about 4,000 BC. For such people, scientific investigation into billions of years of cosmological development is as alien as Darwin’s theory of evolution, a constant target of the Christian right.

As for the alleged budgetary issues—this in an administration that dismisses a \$521 billion deficit as of no great moment!—it should be pointed out that on March 9, the White House released a report touting as a great achievement the awarding of \$1.1 billion in federal grants to religious organizations during fiscal 2003. Most of these grants were for social services provided by religious groups, which accounted for a staggering 24 percent of all grants provided by the Department of Housing and Urban Development.

Scrapping Bush’s “faith-based” initiative, a billion-dollar slush fund for the religious right, would pay for refurbishing the Hubble Space Telescope several times over.



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