Hubble huggers fight for mission
NASA scrapped shuttle trip to service telescope;
Scientists, citizens clamor to save space observatory

By Gwyneth K. Shaw

WASHINGTON — In the two months since NASA decided to cancel a planned space-shuttle mission to service the Hubble Space Telescope, the outcry over the choice has grown only louder as politicians, scientists and regular citizens continue to press for a reprieve.

Agency chief Sean O’Keefe says he has been flooded with e-mails since the Jan. 16 announcement, imploring him to reconsider his stance that a mission to keep the Hubble working is not worth risking the lives of astronauts.

One Web site, savethehubble.org, claims to have gathered 29,000 signatures for its electronic petition.

O’Keefe recently agreed to have the National Academy of Sciences review his decision and examine ways to extend the life of the telescope without a shuttle mission.

But he was emphatic that he does not expect to change his mind because of the potential danger of such a trip.

“The bottom line is, there’s only one person who’s going to make a judgment about this and that’s whoever’s sitting here, doing this job,” he said.

The New York Times editorial board, which has called the decision “wrong-headed,” went so far as to question whether John Grunsfeld, NASA’s chief scientist, was speaking from the heart or “is simply a good soldier” after he sent a letter defending the decision.

So why has the Hubble — arguably the most famous and important astronomical instrument since Galileo first turned a telescope toward the heavens — provoked such passion?

John Logsdon, director of the Space Policy Institute at George Washington University, says the orbiting observatory has become part of the national fabric.

“I think there are two reasons for Hubble’s popularity: One is that there is a community of astronomers that have built a lot of their lives for the past 15 years around the use of the telescope and have a natural desire to continue it.

“But the other, and I think more fundamental, reason is the people who manage the Hubble telescope … have done a wonderful job of almost branding, of identifying Hubble with frontiers of knowledge and discovery in a way that has been very effective, and so it’s become an icon.”

Jeremy Mould, director of the National Optical Astronomy Observatory in Tucson, Ariz., believes the Hubble, during its tenure, has appealed to a broad range of people, moving astronomy from the realm of the science community into the general population.

“It’s easy for managers, I suppose, who treat one spacecraft just like another to think that there isn’t anything special about the Hubble,” Mould says. “But you only have to get an idea from the feedback from your readers, for example, or strike up a conversation in a public place, and people who would never have talked to you about science are concerned about the Hubble.

“My next-door neighbor, for example, knew about it the very day it was announced.”

Since 1990, the school-bus-sized Hubble has floated more than 600 kilometers above the Earth, probing the cosmos.
After getting off to a famously shaky start — the original mirror on the telescope had a tiny but debilitating flaw — spacewalking astronauts repaired it in 1993, and the orbiting observatory has beamed back a steady stream of breathtaking images ever since.

By any estimate, the Hubble has far exceeded expectations, which were high to begin with. It has helped astronomers better understand the birth and death of stars and answered questions about how the universe evolved.

This month, scientists at the Space Telescope Science Institute, which operates the Hubble for the National Aeronautics and Space Administration, unveiled an “ultra-deep field image” that astronomers think shows the universe as it looked 13 billion years ago, just after the “big bang” that began the expansion of the universe.

The release of the image started the gun on the rush for astronomers to look for galaxies that formed between 400 million and 800 million years after the big bang, as the universe was beginning to warm up and form stars.

Richard Berendzen, a professor of physics and astronomy at American University, calls the image “the best thing Hubble has ever done.”

The telescope, especially after its infamous beginning, has become the astronomical equivalent of Seabiscuit, the famously underrated racehorse, he says.

“To not allow it to continue is really sad.” The legions of “Hubble huggers” who are working to save the telescope couldn’t agree more.

Although O’Keefe’s decision doesn’t immediately doom the Hubble, without a servicing mission around 2006, the telescope’s batteries and the gyroscopes used to steady it will eventually stop working, probably in 2007 or 2008.

Although scientists at NASA and the institute are examining ways to squeeze the most life out of the Hubble, without maintenance it will undoubtedly die before its target retirement date of 2010.

Astronomers say an early death for the Hubble will deprive scientists of the data needed to keep pushing their knowledge of how the universe evolved.

NASA’s other observatories, including the Chandra X-Ray Observatory and the Spitzer Space Telescope, are also producing informational treasures, and the James Webb Space Telescope, scheduled to launch in 2011, will undoubtedly provide breakthroughs of its own.

But those telescopes don’t have the combination of a visual camera and an infrared spectrometer that Hubble does.

“I think there’s a lot of discoveries that are in the pipeline with Hubble that we won’t see, really, until we can put together an instrument with the equivalent pair,” Mould says. “I think that a lot of things that we would hope to discover if the servicing mission extends the life of the Hubble are really exciting, and it’ll just be pieces of the overall jigsaw of our picture of the universe that are missing for a long time to come.”

While critics have intimated that the cancellation was as much about money — a shuttle mission costs several hundred million dollars — as safety, O’Keefe has repeatedly said he is mainly concerned with the risks associated with a servicing mission.

The board that investigated the February, 2003, loss of the shuttle Columbia mandated that NASA be able to inspect its remaining three orbiters for possible damage during a flight. On missions to the international space station, such an inspection is easier, and astronauts also would be able to take shelter on the station in the event of a catastrophic problem.

Ironically, in the wake of the accident, O’Keefe used the case of Grunsfeld — who, as an astronaut in 2002, was the last person to touch the Hubble — as a reason a human presence in space is needed.

In a meeting with reporters, O’Keefe explained at length that, although the board did recommend NASA eventually be able to inspect the shuttle on non-station missions or flights where a problem prevents the orbiter from reaching the station, he does not expect that capability to be a sure thing. In the meantime, he is unwilling to take the chance. “It’s the most unpopular decision I could have made,” he said.

“But there’s nothing here that says you do this job for popularity.”