

NASA's decision to delay launch of the shuttle Discovery by two months may have given the Hubble Space Telescope a new lease on life - delighting the telescope's boosters.

Michael D. Griffin, the new NASA administrator, said yesterday that Discovery's May 22 launch date will be pushed back to at least July 13. He said engineers at Cape Canaveral, Fla., need the time to address lingering questions about the risk of damage from ice and insulation shed by the shuttle's external fuel tank.

At the same time, Griffin ordered engineers at the Goddard Space Flight Center in Greenbelt to get started with plans for a shuttle servicing flight that would keep Hubble functioning after 2007, when its systems are likely to begin failing.

That was good news for astronomers.

"It surely reveals that the administrator wants to see Hubble serviced if at all possible, in my view, and that's great," said Bruce Margon, associate director for science at the Space Telescope Science Institute in Baltimore, where Hubble's science operations are managed.

NASA halted work on that long-planned mission 15 months ago, after the Columbia disaster, when Griffin's predecessor ruled that flights to the space telescope were too risky.

But, under political and scientific pressure to keep the famous telescope alive, Griffin told Congress during his confirmation hearings that he would reconsider Hubble's future after Discovery returned safely to Earth.

With Discovery delayed by additional two months, Griffin said waiting until its return to make a decision could delay a subsequent Hubble flight until the instrument was beyond rescue. "If we delay much more, we ... put the capability of doing that servicing at some risk," Griffin said.

Goddard's effort will cost NASA money, and it could still come to nothing if Griffin ultimately

decides not to revive the Hubble mission, he acknowledged.

But it's worth the risk, he said. Turning to a gambling expression, he said, "We're going to 'bet on the come' a little bit, that we can do the servicing mission, and get folks at Goddard started on doing what they would have to do" if the mission were approved.

"Betting on the come" means betting on a weak hand that could become a strong one if the next cards fall your way.

To Hubble's advocates, Griffin appeared to be tipping his hand - hinting that he would support a shuttle mission to Hubble if Discovery's flight goes well.

"No one is foolish enough to view this as a decision, or a commitment, because everyone agrees that return to flight activities have to be successful," Margon said. "But it's just a wonderful, wonderful jump forward. ... It's very clear that the administrator thinks this is important, and he'd like to do it if he can."

Hubble has been serviced and upgraded by astronauts four times since its launch in April 1990, vastly increasing its power and extending its useful life well beyond original estimates. The fifth mission would have installed two new instruments and replaced failing gyroscopes and batteries, adding several more years to its lifetime.

But early last year, former NASA administrator Sean O'Keefe canceled the mission. He cited tightened safety guidelines set by the Columbia Accident Investigation Board and decreed that all 28 future shuttle flights - until the fleet's retirement in 2010 - would be dedicated to the completion of the International Space Station.

Yesterday, Griffin reaffirmed the administration's intent to retire the shuttle fleet in 2010, even if adding a Hubble mission would delay the final flights to the International Space Station beyond that date.

"If we cannot complete the requisite number of shuttle flights [to the station] by that time, we should be creative about other means that equipment [for the station] might be put in orbit," he said.

He also expressed confidence that Goddard personnel could move ahead with Hubble servicing preparations without jeopardizing their contributions to returning the shuttle fleet to flight.

"There's no reason why some of this work cannot be done in parallel," he said.

At Goddard yesterday, officials were as startled as Hubble astronomers were by Griffin's unexpected decision to restart preparations for a manned Hubble mission.

"We heard about this at pretty much the same time you did," said Goddard spokesman Ed Champion. He said it was too soon to detail what Hubble-related tasks would be addressed first at Goddard. "We're still waiting to get the details from the administrator."

The two new scientific instruments slated for installation have been built, at a cost of \$167 million. But NASA has not selected or trained a crew, a process that requires 12 to 18 months for a Hubble mission.

In the short term, Goddard can tap what remains of the \$290 million that Congress directed NASA to spend in fiscal 2005 to keep a Hubble repair mission viable. But unless Congress appropriates more, there is no Hubble mission money in the Bush administration's proposed budget for fiscal 2006.

Sen. Barbara A. Mikulski, a longtime Hubble advocate, said in a prepared statement yesterday that she would push for an additional \$250 million in 2006 to support planning for a Hubble mission. "Servicing Hubble one last time will enable another generation to see what we can only now imagine," the Baltimore Democrat said.

Rep. Steny H. Hoyer, a Southern Maryland Democrat, said he, too, welcomed Griffin's decision, which "recognizes the unique role Hubble plays in providing us with data of immeasurable scientific significance." He said he would urge Griffin to "remain committed to pursuing any and all options to preserve Hubble" and that "sending a servicing mission to Hubble remain one of NASA's highest priorities."

The decision to postpone Discovery's launch until sometime between July 13 and July 31 came Thursday night after engineers at Cape Canaveral concluded that they needed more time to install heaters on brackets that support liquid oxygen fuel lines, and to resolve a handful of other issues.

The heaters would reduce the risk that ice forming on the fuel lines could break off and damage the shuttle. "There has always been ice created there, but we didn't see any evidence that the ice could break loose and transport itself and damage the orbiter," said Bill Parsons, NASA's space shuttle program manager.

Subsequent tests, however, revealed that 5-inch chunks of ice could break off, and studies of past shuttle flights revealed that ice chunks had damaged the orbiters' thermal tiles.

"It became important to eliminate that," Parsons said. When efforts to reduce the ice formation proved inadequate, he said, engineers decided to install a heater. And that meant missing the May launch window.

Engineers are also studying whether insulation at the top of the external fuel tank could break away and damage the shuttle.

Meanwhile, fueling tests in recent days have raised new questions about the performance of fuel cutoff sensors and repressurization valves. "We have to figure this one out before we can go fly," Parsons said.

Some of the problems will be addressed on the launch pad. But Discovery will eventually be rolled back to the Vehicle Assembly Building for further troubleshooting.

Griffin stressed that meeting launch dates is not NASA's first priority these days. "We are recovering from a major accident here, a huge national tragedy," he said. "Putting people into space is still not so routine that we can do it blithely. Every mission where we decide to launch people into space with the level of technology we possess today is a big deal. We take it seriously."

Other considerations, such the sequence of dates for completing the space station, "have to come behind," he said.

NASA officials said the delay will not adversely affect the two-man crew now aboard the International Space Station. They have adequate oxygen, water and other supplies to carry them until the next Russian Progress supply ship arrives in June.

Sun staff writer Gwyneth K. Shaw contributed to this article.

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