reen Myers of NIH's AIDS Program. "And nobody seemed to know."

Producing an answer has not been easy. Until very recently, there has been no good assay to detect dextran sulfate in blood. Yet this is a critical piece of information, because some researchers suspect that the large size of the dextran sulfate molecule means that the drug is not absorbed from the stomach, making oral doses of dextran sulfate about as efficacious against AIDS as drinking a glass of water.

In December and again in March, various AIDS committees at NIH kept pressing Ueno and Abrams about the assay. Where were the data? Abrams told NIH he was drawing blood and sending it to Japan. On questions about the assay, Abrams deferred to Ueno, who replied that he was developing a more sensitive way to analyze the drug in the blood, and that as soon as he had the data, he would submit them.

Unfortunately, Abrams was required to heat-treat the blood specimens before shipping them to Japan, because Japanese lab workers refuse to handle the live AIDS virus, says Armond Welch, the U.S. representative for Ueno Fine Chemicals. In turn, this made developing an assay in Japan even more difficult, since during heat treatment, dextran sulfate has a nasty tendency to precipitate.

Ueno now says that he finally has an assay that will settle once and for all the question of whether or not dextran sulfate is absorbed—even in blood that has been heat-treated. He is busy analyzing samples now and expects results in the coming weeks. Frustrated with the lack of data on bioavailability, the FDA recently developed another assay that will be used to confirm Ueno's data.

If dextran sulfate is indeed absorbed, there is still the question of whether or not the drug works. Of the 29 people in Abrams' clinical trial who took dextran sulfate for 8 weeks, Abrams observed no statistically significant changes in T cell counts or other markers of disease progression, such as the production of p24 antigen, a sign that the virus is active. "I saw no demonstrable effect for this agent," says Abrams.

Still, Abrams has agreed to pursue the investigation of dextran sulfate in a larger, federally sponsored Phase 2 clinical trial that is just now getting under way. With more patients, Abrams and his colleagues hope to get a clearer answer about any efficacy dextran sulfate may have for people with HIV infections and AIDS.

But whatever effect dextran sulfate turns out to have in the human body, it has certainly had a profound effect on the body politic. ■ **WILLIAM BOOTH**

NASA Delays Space Telescope

Faced with delay after delay in its first post-Challenger space shuttle launch, and concerned about overcrowding in the subsequent flight schedule, the National Aeronautics and Space Administration (NASA) has decided to relieve the pressure by postponing the launch of the Hubble Space Telescope by some 7 months: from 1 June 1989 to February or March 1990.

From all reports it was a classic case of choosing the least unpleasant alternative. "Everybody was number one in line," says NASA spokesman Charles Redmond, "but somebody had to go first." Indeed, the constraints on the launch schedule seem to have left NASA with very little room to choose otherwise. In particular:

■ Although the shuttle Discovery was rolled out to the launch pad months ago, a long string of glitches has pushed back the lift-off from August until late September at the earliest. Taken together with the post-Challenger requirements for exhaustive inspection and refurbishment of the orbiters in between flights, these delays have made it impossible for NASA to maintain even a semblance of its previous schedule. The sequence of launch dates was beginning to topple like a line of dominoes, says Jerry J. Fitts, director of NASA's transportation services office. "If it hadn't been for the delays, we wouldn't have had a problem."

■ The 1989 launch schedule contains two points that cannot be moved. The Magellan radar mapping mission has to begin its journey to Venus sometime within a 3-week period beginning on 28 April 1989; otherwise it will have to wait another 19 months before the planets are again in the correct alignment. The Galileo orbiter/probe mission to Jupiter is likewise constrained to a launch window starting 12 October 1989. Space Telescope, by contrast, does *not* have any critical time for launch.

■ Of the seven flights scheduled for 1989 in the new manifest, three will carry classified payloads that the Defense Department has claimed as top priority. (Among them there is said to be one of the Pentagon's flagship intelligence-gathering satellites, the KH-12.) The Defense Department has always had the right to preempt other missions on national security grounds, although it seldom if ever had to exercise that right in the pre-Challenger days. In this case, Lennard Fiske, head of NASA's Office of Space Science and Applications, argued long and hard to get one of those three slots for Space Telescope. So did Riccardo Giacconi, director of the Space Telescope Science Institute. They lost.

■ Even though NASA technically has a three-orbiter fleet, most of the work will actually be done by two orbiters: Atlantis and Discovery. The third, Columbia, is both older than the other two, and heavier by 4 tons. It thus lacks the edge of performance needed for Space Telescope, the planetary missions, and most of the classified missions. Indeed, Space Telescope will stretch even the lighter orbiters to the limit: because of concern over atmospheric drag during the upcoming maximum of the solar cycle, mission planners want to get the telescope into as high an orbit as possible. Current plans call for an altitude of about 600 kilometers. In any case, the fact that NASA will effectively have to operate with a 2½-shuttle fleet means that the constraints on between-flight refurbishing and preparation are even more severe than they might have seemed.

The upshot was that something had to give, and the something was Space Telescope. Reaction at the Space Telescope Science Institute was predictably downbeat. "Psychologically, just falling into the next decade really hurts," says institute spokesman Ray Villard. Many of the staff scientists have been waiting for the launch since the institute was founded in 1983. "No matter how hard you work," says one, "you can't control your own destiny."

Of course, optimists can point to a few silver linings, such as they are. For example, NASA will now be able to conduct one more full-scale test of the telescope and its control systems, similar to a very successful test held this past June. Also, the delay gives NASA time to outfit an Air Force C5A transport aircraft to fly the telescope directly from its current storage place—a clean room at the Lockheed Corporation's research facility in Sunnyvale, California—to the launch site at Cape Canaveral. The previous plan had been to take the telescope by barge through the Panama Canal, something no one was very comfortable with; even leaving aside the prospect of storms at sea, it was all too easy to imagine terrorists attacking the telescope and/or holding it hostage.

One possibility now being seriously considered is to fly Space Telescope out to the Cape this coming spring, so that it will be available to take the place of one of the other missions if any of them is unable to make it. This is what NASA's Redmond calls "the vulture-on-the-fence mode."

■ **M. MITCHELL WALDROP**