about patent rights if other groups learned of the results and reproduced them.

On approximately 21 March, the University of Utah decided to announce the fusion results in a press conference 2 days later. The university administration "agonized" over the decision, Brophy said, but they could wait no longer. "We decided to stop at the point where they could demonstrate fusion without explaining it," Brophy said.

Jones was not informed of the decision, although he spoke with Pons over the telephone 2 days before the planned news conference. When Jones heard Pons say at the press conference that his team had already submitted a paper to a journal, he decided that Pons had broken their agreement, and he submitted his paper to *Nature*.

At the University of Utah, the fact that Jones contacted Pons after seeing his grant application has generated widespread rumors and innuendos that Jones was attempting to steal some of the credit for Pons and Fleischmann's work. In addition to the uneasy relationship between the two schools, some of those suspicions may have come from Pons himself, who has hinted, a couple of observers said, that Jones had stolen ideas from his grant application.

But nonpartisan observers who are familiar with the situation say Jones almost certainly came up with the ideas for his work independently of and prior to seeing the University of Utah grant proposal. For his own part, Jones said he can prove the work in his paper came completely out of his own lab. "Our log books prove we have been studying this since 1986." In fact, Jones said, he had a page from his notebook dated 7 April 1986 notarized. That notarized page contains an outline of experiments his team planned to run, including explicit reference to looking for cold fusion in palladium electrodes, he said. A drawing done in May 1986 of a fusion cell looks very similar to what Pons and Fleischmann eventually used, he said, although that is not too surprising because "there are only so many ways [to design it] once you get the idea of doing electrolysis." None of his team's work was done because he saw Pons and Fleischmann's grant application. "I've stuck to my reviewer's agreement," he said. "We had our program outline and we've followed it."

Meanwhile, Utah governor Norm Bangerter has announced he will call a special session of the state legislature to provide $5 million for a fusion center at the University of Utah, and former NASA head James Fletcher has accepted the position of director. If the discovery pans out, said Bockris of Texas A&M, "the University of Utah will be the richest university in the country in 5 years." ■ **ROBERT POOL**

Telescope Collapse Unraveled

The fracture of a single highly stressed steel plate has been identified as the most likely cause of the spectacular collapse of the 300-foot radio telescope at the National Radio Astronomy Observatory at Green Bank, West Virginia, last November. An independent panel appointed by the National Science Foundation, which funds the facility, and Associated Universities, Inc., which manages it, reached that conclusion after examining the suspect plate and performing a computerized stress analysis.

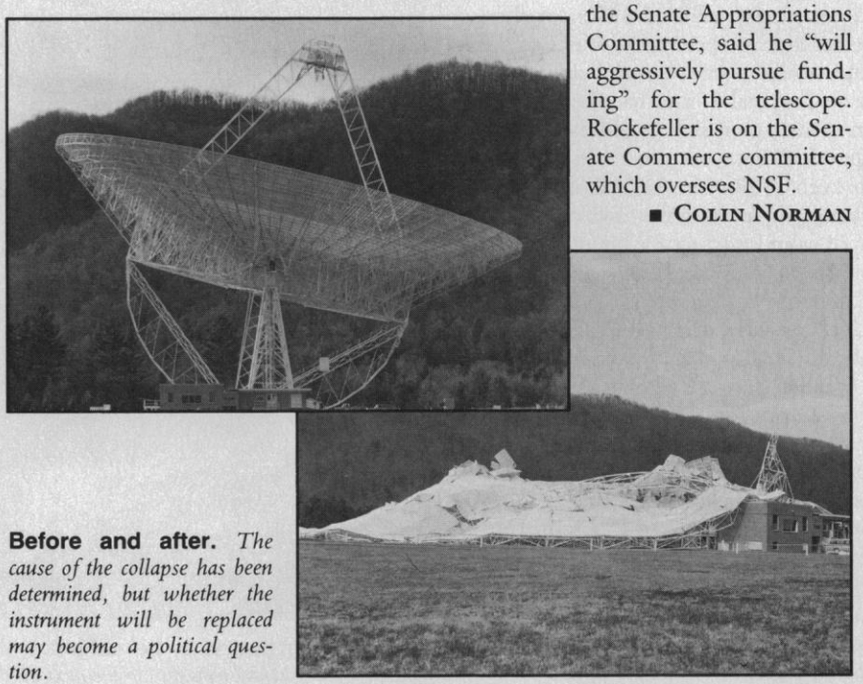
The panel found that parts of the telescope were under far higher stresses than would be permitted today, and that "from the beginning of its life, the structure was marginal with respect to structural failures of a minor or perhaps major nature." The plate that failed was a critical connection in the support structure of the instrument and it was subjected to high stresses when the telescope was moving. Half of the plate was recovered from the wreckage and a metallurgical analysis indicated that small cracks had been developing in it before it suddenly failed. The telescope was being swiveled when it collapsed around 10 p.m. on 15 November.

The panel absolves the managers of the facility from blame. It says there is no indication that the telescope was inadequately maintained—the plate itself was hidden from view and could not have been examined without disassembling the telescope—nor was it being operated inappropriately. The panel also notes that computerized stress analysis would identify potential failure points in telescopes built today, but these methods were not available when the instrument was built in 1962.

Now that the apparent cause of the collapse has been identified, attention is likely to focus on NSF's plans for replacing the instrument. In testimony before the House Appropriations Committee last month, NSF director Erich Bloch said that the foundation's top priority for its next major astronomy facility is an observatory to search for gravity waves. Known as the Laser Interferometer Gravity Wave Observatory, or LIGO, it would consist of a pair of facilities situated near the East and West coasts. LIGO has been in the planning and R&D stage for several years, and NSF was hoping to include funds in its 1991 budget to begin construction. The total cost would be about $100 million.

West Virginia Senators Robert Byrd (D) and Jay Rockefeller (D) have other ideas, however. In a statement released last month, they said that replacing the collapsed telescope with a modern instrument should have higher priority than LIGO. A replacement telescope, which would cost about $75 million, would be "the best promise for jobs, education, tourism, and scientific prestige," for their state, they said. Byrd, who is chairman of the Senate Appropriations Committee, said he "will aggressively pursue funding" for the telescope. Rockefeller is on the Senate Commerce committee, which oversees NSF.

■ **COLIN NORMAN**



Before and after. *The cause of the collapse has been determined, but whether the instrument will be replaced may become a political question.*