

Japan, Europe lobby US over space station

■ Possible cancellation causing alarm

■ Future collaborations could be affected

Tokyo, London & Munich

As the US House of Representatives was debating the fate of the planned US Space Station this week, scientists and government officials from Japan and Europe were doing their best to see that the ambitious programme stays on track.

Because Japan and Europe have already spent hundreds of millions of dollars developing their own contributions to the station, a cancellation at this point would be a stinging lesson that the United States cannot be trusted to keep its scientific commitments, said foreign officials from several countries. A decision to abandon the space station would almost certainly kill any hope there might be of Japanese contribution to the US Superconducting Super Collider (SSC), and certain European countries could reduce or halt their cooperation in collaborative space ventures with the United States.

On Monday this week, the future of the Space Station was still up in the air. On 15 May, a House subcommittee voted to discontinue funding the station, and a vote in the full House was expected to take place today (6 June). But even if the House votes to cancel the station, the Senate is likely to put funds for it back into the budget, and the matter would then go to a conference committee for resolution. A number of observers have said that the Space Station's fate probably rests with President Bush — it will be saved only if he pushes hard for it.

The Japanese have been the most vocal protesters, both because they have the most to lose and because they seem likely to have the most leverage on US science policy. Japan's Science and Technology Agency (STA) has already invested ¥40,000 million (about \$300 million) in developing the Japanese Experimental Module for the station — the module is expected to cost about \$2,000 million when complete — and the station's share of STA's space budget has been growing rapidly year by year. This year it will absorb ¥18,000 million, or 14 per cent of the science agency's ¥130,000 million budget. A cancellation of the space station would be disastrous for Japan's space programme.

Furthermore, Japan appears to be the only country that might make a major contribution to the SSC. US officials hope to persuade Japan to pick up \$1,000 million of the projected \$8,250 million cost of the project.

In the past two weeks, two senior Japanese officials have sent three strongly worded letters to their counterparts in the United States suggesting that abandonment of the space station would severely damage the credibility of the United States in future

international "big science" projects. The Japanese say they were encouraged to send the letters by US Administration officials, who are trying to push the station's budget through Congress.

Shigeo Iwatani, director of the division of scientific affairs at Japan's foreign ministry, says that soon after the subcommittee's vote to cancel funds for the space station, Japanese Embassy officials in Washington met representatives of National Aeronautic and Space Administration (NASA) and the State Department. "Both sides thought it better for Japan to express our concerns in writing" to help the US administration win back funding for the project, Iwatani says.

On 24 May, Taro Nakayama, head of Japan's Ministry of Foreign Affairs, wrote a letter to US Secretary of State James Baker. This was quickly followed three days later by two letters from Akiko Santo, head of Japan's Science and Technology Agency, to NASA administrator Richard Truly and to White House science adviser D. Allan Bromley. All the letters are unusually blunt by Japanese standards and similar in content.

Santo's letter makes three main points, according to Shinichiro Ogura, director of the science agency's office of space utilization. First, since accepting the US invitation in 1984 to join the project, Japan has been making "diligent efforts" to modify its national space policy and has invested "quite large resources" in preparing for the space station, but all of this will be nullified if the project is abandoned. Second, Japan and the other international partners have worked hard to restructure the space station project to meet new requirements imposed by Congress, and Japan finds it "very difficult to understand what is now taking place in Congress". Third, the space station is symbolic of US-Japan collaboration in science and if the project does not proceed smoothly, "doubt would inevitably grow about the credibility of the United States as a partner in international collaboration."

This doubt would inevitably make Japan harder to entice into other collaborative scientific projects. At this point, for instance, Japan's various science-related agencies and ministries have reached no agreement on how to deal with the SSC request. The required funds are far beyond the budgetary capabilities of any one ministry or agency. But the two most appropriate organizations to support the project, the STA and the Ministry of Education, Science and Culture, are constantly at loggerheads over how to divide up Japan's basic research budget.

The education ministry is trying to improve Japan's rundown universities and would prefer to spend the science funds on such domestic issues. A US decision to abandon the space station would almost certainly tip the scales against a Japanese contribution to the SSC.

The threatened cancellation of the space station is also causing alarm in Europe. The European Space Agency (ESA) has already spent nearly \$1,000 million — spread among several countries — on the Columbus programme, Europe's contribution to the space station. Columbus consists of a manned microgravity laboratory which will be bolted on to the station, a free-flying unmanned laboratory, and the polar platform, which is a large remote-sensing satellite. Cancellation of the space station would kill the manned laboratory, although the other two components could continue.

Franco Emiliani, manager of the Columbus programme, says the uncertainty is undermining the morale of project scientists. "It's a very annoying situation."

ESA itself, however, can exert little political pressure over the US decision. Because the space agency represents 13 separate member states, any effort to threaten the United States with reprisals would require an unprecedented degree of international cooperation.

Germany would wield the most influence of any European country. As the project leader on the Columbus, with a 38 per cent share of the costs, it has the most to lose from a cancellation of the space station. Between industry and government money, Germany has already invested about DM500 million (\$294 million) in Columbus.

If the United States cancels the space station, says Klaus Berge of the German government space agency DARA in Bonn, it would be seen as a breach of an international contract that would certainly have consequences for German-US cooperation. The first thing politicians in Germany would do, Berge says, would be to check all other cooperative programmes to see where they might retaliate. The first ones that come to mind, he says, are the ROSAT X-ray satellite, which is currently gathering data for a US project, and the CRAF mission to investigate a comet up close. But cooperation on the SSC — where Germany could help to build detectors for the collider — would also be endangered, Berge says.

But Germany would not be as free as Japan to retaliate against the United States, Berge says, because Germany has its own space project — the D2 spacelab mission scheduled to fly on the space shuttle in 1992 — which is dependent on US cooperation.

The House Committee on Science, Space and Technology, which supports the space station, was scheduled to hold hearings on the international consequences of cancellation on 4 June.

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