NASA space science prospects still grim

ESA forced to go solo for the Sun

Washington

European space officials have failed to dissuade the United States from making a substantial withdrawal from the International Solar Polar Mission (ISPM) planned as a joint two-vehicle mission between the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA).

Faced with further severe cuts in space science programmes as part of the Reagan Administration's attempts to balance the federal budget, NASA has decided not to ask for any provision in the 1983 budget for the spacecraft which NASA was to contribute to the joint mission.

As a result of this decision, which ESA Director-General Erik Quistgaard was informed of by NASA administrator James M. Beggs two weeks ago, ESA has reluctantly accepted that it will have to fly its own space vehicle solo. Scientists will not now be able to obtain the hoped-for three-dimensional view of events on and around the Sun's surface. ESA's space advisory committee met in France last week to decide how it should proceed with a project on which over \$100 million of European research funds has already been spent.

Details of the budget for the 1983 financial year, beginning on 1 October 1982, have not yet been presented to Congress, but it is thought that the Office of Management and Budget has told the agency to plan for a total budget of about \$5,000 million, \$500 million less than the 1982 figure — and, allowing for inflation, a sum that would represent a 20 per cent decrease in funding for space research and development.

A political desire to protect the space shuttle from serious cuts would mean most cuts falling on the space science and space applications areas. With other programmes now under threat, including in particular the Galileo mission to send an orbiter and probe to Jupiter in 1985 as well as the whole of NASA's Solar System exploration division, the prospects of reviving a substantial US involvement in ISPM are now almost non-existent.

The Reagan Administration announced in March that, as part of the reduction in the 1982 budget, it proposed withdrawing the US spacecraft from the joint mission and reducing NASA's contribution to support for US scientific experiments on board the European craft. NASA will, however, be providing launch, tracking and data retrieval facilities as arranged.

The decision caused European space officials to protest that it was unilateral abrogation of the agreement between the two agencies which would not only reduce the scientific value of the mission, but also jeopardize the chances of future collaboration in space science projects.

In an attempt to salvage a dual-spacecraft mission, ESA had suggested that NASA could reduce its costs by ordering a duplicate version of the European spacecraft, to be built by the same Star consortium with the German company Dornier as prime contractor. The cost would have been \$40 million (with ESA underwriting any increase), rather than the expected \$100 million for the vehicle which NASA was to have had built by TRW Inc.

A mission with two identical vehicles, however, would have eliminated the coronagraph and the X-ray/X-ray-UV imaging which the NASA design would have provided. A report prepared for the Congressional Appropriations Committee by an *ad hoc* panel of the National Academy of Sciences concluded that this option was less attractive than flying the ESA craft and a cheaper NASA spacecraft without the despun platform or imaging instrumentation; and that even the increased scientific return of the latter option was "not commensurate" with the increase in cost over flying the European spacecraft on its own.

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Philip Campbell adds: Following a meeting last week, ESA's scientific advisory committee has requested the agency's

board of national delegates to endorse the continuation of the truncated International Solar Polar Mission. NASA's decision not to continue with the development of its spacecraft reduces only some of the uncertainty surrounding the project. ESA's spacecraft (which will carry nine experiments including six with principal investigators from the United States) depends on NASA's upgraded Centaur vehicle for its launch from the space shuttle. But the development of the Centaur launcher, also to be used in NASA's planned Galileo mission to Jupiter, is itself in doubt because the Galileo mission is under scrutiny as a result of budgetary pressures.

If the continuation of the European half of the solar polar mission is endorsed, ESA will continue to develop its spacecraft for a 1983 launch, despite the fact that NASA is working towards a launch in 1986. ESA's shorter timetable will minimize costs and, although the agency is prepared to put its vehicle into cold storage, it hopes to persuade NASA to bring forward the launch date, Centaur development permitting.

The two spacecraft were designed with only four experiments in common. ESA does not have the funds to rescue other experiments that were unique to the NASA vehicle. Although no specific "reprisals" have been announced, it is expected that NASA's decision not to continue with the solar polar mission will severely damage prospects for future collaboration in space between Europe and the United States. □

Racy reforms due for French research

The missionary zeal of the French government to reform the nation, preferably tomorrow, is not lost at the Ministry of Research and Technology. A few days ago the principal research agencies, such as the Centre National de la Recherche Scientifique (CNRS), were officially given three weeks (until 1 October) to make a claim for a place in a four-year programme of research, encompassing most of the billion-pound budget of the ministry.

At the same time, the minister announced that he was embarked on a "deep reform" of the CNRS, and won a 50 per cent increase in the budget of ANVAR, the Agence Nationale pour la Valorisation de la Recherche, which supports fledgling innovation in French industry. (ANVAR could do with more support it seems — recent figures showed new French patents last year amounting to only 1.7 per cent of the world total, compared with 4 per cent in 1975.)

Admittedly, the research agencies need only submit outline budgets, staff requirements and research programmes — but the timetable gives little room for manoeuvre. Then on 7 October the regional meetings of

a "National Colloquium" on science and technology will begin, with the position papers of the agencies in hand. The full colloquium is due in Paris in mid-January, and, according to the minister, Jean-Pierre Chevènement, that colloquium will finally decide the lines of the four-year *loi programme* which will define France's research commitments to 1985. (Previously the rigid form of a *loi programme* — which fixes budgets, staff and strategy by law for a long period — has been used only by the Ministry of Defence; Chevènement hopes to apply it to research.)

However, it is unlikely that such a broad forum will do other than given Chevènement plenty of room to define his own programme, taking account of the political factions which will emerge out of the scramble of the next few months.

Chevènement has already started to undo the reforms of CNRS instituted in 1979 by the minister of the universities of the previous government, Madame Saunier-Seïté. She saw fit to remove the right of technicians and administrators to be elected to the Comité National — a kind of scientists' "parliament" of CNRS, unique among Western research agencies. But the