

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.

David Dickson
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

Comite has important powers — such as over whether unsuccessful laboratories should be closed, or new ones opened — and the technicians' and administrators' union, affiliated to the communist-led CGT, has been campaigning ever since for its voice to be heard again in that forum.

Chevènement agrees, and hasty changes are being made in order to allow technicians and administrators to attend the autumn meeting of the Comité. Beyond that, there must be a reform of CNRS statutes, which will probably wait for the National Colloquium; but the reform will be thorough, and could even involve the abandonment of the present two-tier directorship of CNRS, which has a scientific president and an executive director with overlapping responsibilities.

In a further move, the Ministry of Research and Technology has begun to appoint its own staff. They will be organized in *missions d'orientation*, concerned with the various goals of Chevènement's policy. Directors have been named for four. "Renewable energy and conservation" will be headed by Philippe Chartier, an expert in biomass from the Institut National de la Recherche Agronomique; "biotechnology" by Pierre Douzou, an ex-professor at the Museum of Natural History; "electronics" by Abel Farnoux, a television-tube manufacturer; and "employment and the conditions of work" (a matter of great concern to Chevènement, and the government as a whole) by an ex-cabinet maker and present assistant lecturer on working conditions at the University of Paris IV, Albert Detraz.

Robert Walgate

British universities

Job losses inevitable

News is emerging from British universities on how they plan to contract along the lines indicated by the University Grants Committee early in August. Not surprisingly, those universities singled out for the largest cuts in their recurrent grants over the next three years are among the first to react. Some estimate that they need to lose between 50 and 150 academic posts and up to 450 non-academic posts. Although all concerned hope that posts can be lost through early retirement and voluntary redundancy, it seems that compulsory redundancies are inevitable.

The biggest problem for universities singled out for cuts in income of more than 20 per cent is that action needs to be taken quickly. The senate of Brunel University, for example, is this week considering a report from a working party which recommends losing 110 non-academic posts, preferably by the end of this year, and 50 academic posts by April 1982.

The University of Aston in Birmingham, which says that it must do away with 150 academic and 450 non-academic posts to comply with the grants committee's wishes, has a

London to respond with more committees

The University of London, which has been agonizing over its future organization for some time, has now set up four subject review committees to advise on the resource allocation most likely to maintain high academic standards. This move comes just a few weeks after the university court told the constituent colleges how much money they will have to spend in the current academic year and shortly before the Committee on Academic Organisation, under its chairman Sir Peter Swinnerton-Dyer, is due to issue its final report on how the university should be re-constructed.

The committees, which have been established too late to have much bearing on this year's allocations, have nevertheless been charged with the task of reporting quickly. The hope is that recommendations made early in 1982 can

be used in shaping the university to its reduced grant in future years.

The move may also provide alternatives to the recommendations made by the Swinnerton-Dyer committee in its interim report. Those included the unpopular suggestion that Chelsea College be closed and that some of the smaller colleges should merge.

Four independent chairmen have been appointed to the committees whose detailed membership will be announced later. The committees are on physical sciences, under the chairmanship of Sir Sam Edwards from the University of Cambridge; biological sciences, under Sir James Beament of the University of Cambridge; languages under Professor J. Cruickshank from the University of Sussex; and social studies under Sir Alec Cairncross of the University of Oxford.

Judy Redfearn

similar problem. Its decision last week to inform the Department of Employment that 95 staff will be redundant within a month aroused strong opposition from the Association of University Teachers, the academics' trade union, which threatened to take the university to court at the first hint of compulsory redundancy. The university administration claims that these redundancies are for non-academic staff who have already opted to take early



William Shelton, MP for Streatham in London, who has replaced Neil Macfarlane as Britain's Under-Secretary responsible for science in the Department of Education and Science

retirement or voluntary redundancy with compensation of up to nearly three times annual salary, but compulsory redundancies seem inevitable sooner or later.

Other universities, however, are taking it a bit more slowly. The University of Bradford plans to meet its 30 per cent drop in income by 1983-84 by losing between 150 and 180 academic staff over three years. Consultations between the senate and heads of departments should result in a strategy by December.

Universities with more modest cuts in income are also taking more time, some of

them hoping to get by without compulsory redundancy. The University of Cambridge plans to shed 100 academic posts by lowering the compulsory retirement age from 67 to 65 years and by filling only essential posts that fall vacant. It plans to make further savings by, amongst other things, abolishing a student travel fund, curtailing sabbatical leave and abolishing examiners' fees. And at the University of Bristol, where it has been suggested that academics take a cut in salary, no decision has yet been taken. Much still needs to be resolved, however, before the future shape of the British university system becomes clear. During the next few weeks, universities will be presenting the grants committee with detailed plans, some of which will go against the committee's original advice. The University of Bradford, for example, would prefer to cut its physics and chemistry departments rather than biology. And the University of Leeds plans to make cuts across the board before resorting to selective cuts between departments.

Some universities are clinging to one last hope: that Sir Keith Joseph, new Secretary of State for Education and his new Under-Secretaries, William Waldegrave for higher education and William Shelton for science, can be persuaded to give the universities more time. Judy Redfearn

Polish universities

Poised to strike

Solidarity members at Krakow's Jagiellonian University and the nearby Mining and Metallurgical Academy (AGH) have declared a state of "strike readiness" in protest against unilateral amendments by the Ministry of Science, Higher Education and Technology to the new draft law on higher education. Many