ties—which the MRC has recently been required to do. It has long been the tradition in Britain for the government to staff, equip, and maintain university laboratories and for funders to simply cover the cost of research. But in an effort to streamline its subsidy to the universities, the government is trying to shift to a system in which a portion for overhead is included in each grant. "We can't afford to just give [block grants] to all the universities," May says.

But Diana Garnham, general secretary of the Association of Medical Research Charities—which includes the British Heart Foundation and the Imperial Cancer Research Fund—says that its members have "a very strong position" against paying overhead costs. "What we spend is in addition to what the government spends," Garnham says, "not a substitution for it." Garnham adds that the charities "have been very generous on costs ... the average cost of a project grant has gone up by about 240% since 1987."

The charities have hardened their position since last November, when the government announced a 30% slash in capital and equipment funds for the universities. Ken Edwards, vice chancellor of the University of Leicester—which received $7.3 million in Wellcome Trust grants in 1995—says that "the universities have fallen into the crack in the middle" of this tussle between the government and the charities. With government grants shrinking, "it is extremely difficult for us to provide a sufficient level of [infrastructure] support without overhead," Edwards says, adding that "if we accept funds from the medical charities, we have to divert funds from other parts of our budget" to meet these costs.

Nevertheless, Edwards does not expect the charities to change their position. "Only government funding to support the national research base will solve this problem," he says, a position with which trust officials heartily agree. "It's crazy, this whole business of government pressure on everybody to get their money from somewhere else," says Ogilvie. "Why don't they fund things properly?"

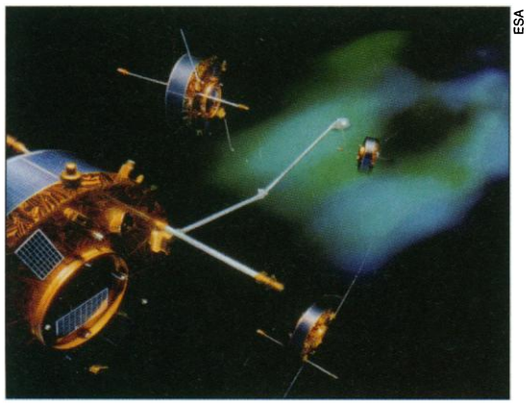
Few charitable bodies could take such a firm line against the government and be taken seriously. But for many who have benefited from the trust's generosity, the charity has taken on heroic proportions. "The Wellcome Trust has been the savior of British research," says Bryan Morgan, an immunologist at the University of Wales College of Medicine in Cardiff who has held a Wellcome senior fellowship for the past 9 years. But if the Wellcome Trust is out to save British science, it seems determined to take the British government kicking and screaming along with it.

–Michael Balter

SPACE SCIENCE

Cluster Mission to Rise From the Ashes

It is turning out to be a bad year for space science, with Russia's Mars '96 probe tumbling back into the atmosphere last weekend (see p. 1297) and Europe's Cluster mission blown up by a faulty launcher in June. But Cluster scientists, at least, have something to look forward to: Earlier this month, the European Space Agency's (ESA's) Space Science Advisory Committee recommended that the mission be reconstructed and reflown. Cluster scientists will be keeping the champagne on ice until ESA's Science Program Committee gives it the seal of approval at the end of the month, but the mission's principal investigators met in Paris last week to hammer out the details of what the reconfigured mission would look like. "ESA has come out with a very good, very firm proposal, and we the scientists are 100% behind it," says André Balogh of London's Imperial College.



ESA

Flight delays. Artist's vision of the original Cluster spacecraft sweeping through the magnetosphere.

Cluster consisted of four identical satellites designed to fly in formation around the Earth, studying its magnetosphere in unprecedented detail (*Science*, 24 May, p. 1095). All four spacecraft were destroyed on 4 June when the inaugural flight of Europe's Ariane 5 launcher veered off course (*Science*, 14 June, p. 1579), but a fifth spare spacecraft was in storage, and this, now dubbed Phoenix, will form the nucleus of the Cluster-2 mission.

The 11 research groups involved in Cluster will now refurbish spare instruments from the development phase of the mission, and these will be installed on Phoenix. ESA hopes to have Phoenix ready to fly by next year at a cost of $37.5 million, but it will then have to wait for the three new spacecraft, which will be completed at half-yearly intervals, starting in late 1998. ESA has stipulated that the total cost of the project, including launches but excluding the cost of instruments, must remain under $262 million.

The spacecraft will be launched in two pairs, or "in the worst case, individually," says Rudolf Schmidt, Cluster's project scientist at the European Space Research and Technology Centre (ESTEC) in Noordwijk, the Netherlands. ESA will negotiate with Arianespace for slots on launches, and Schmidt is hoping for two not too far apart, one late in 1999 and one early in 2000.

Even if the Science Program Committee approves the plan next week, as expected, it will not be the end of Cluster's travails, however. Instruments are paid for not by ESA but by the government of the research group that provides them; so each team will have to persuade its funding agency to cough up for instruments it has already paid for. Balogh, at least, is upbeat: Following last week's investigators' meeting, "there are very positive signs that all countries will be able to support the rebuilding of the instruments," he says. Schmidt says that meetings with NASA have also secured its commitment to fund the sole U.S.-built instrument, a radio interferometer from Donald Gurnett of the University of Iowa, for Phoenix, but funds for the three new spacecraft are still under discussion.

Although this is good news for Europe's space plasma physics community, other groups whose missions may have been delayed or cut back to pay for Cluster-2 are not so delighted. ESA plans to delay for 6 months the microwave mapping mission COBRAS-SAMBA and make cuts to others, such as reduction in mirror size from 8 to 3.5 meters in its Far Infrared Space Telescope. George Miley of Leiden University in the Netherlands says he does "not believe that the rest of the ESA science program should be penalized for something that was not at all the responsibility of the science program."

Miley fears that ESA's decision is based on "political choices," and he is also concerned that budget constraints may affect ESA's ability to take part in NASA's planned Next Generation Space Telescope, the successor to Hubble. "If Europe does not get involved with projects such as the Next Generation Space Telescope, we are relegating European astronomy to a second place in the world," he says. The Space Science Advisory Committee will meet in January to come to grips with these problems.

–Alexander Hellemans

Alexander Hellemans is a science writer in Paris.