structures of other steroid hormone receptors. They saw interplay of the two protein helices in activated forms of every member of the family, including the estrogen and glucocorticoid receptors, suggesting that this point of contact has broad functional significance. The researchers are now trying to block this interplay in each steroid receptor to see if that does indeed prevent the receptor from being activated. If so, the insight might help researchers design drugs to block aberrant effects of any or all of these hormones. In particular, the mineralocorticoid receptor is considered a hot target for novel congestive heart failure treatments as well as new blood pressure drugs.

And if the work helps pinpoint causes for common forms of high blood pressure, it might eventually lead to earlier identification of people at risk for the disorder, enabling preventive measures to be taken. Genetic insights might also help doctors make more informed choices when prescribing from the "Chinese menu" of blood pressure drugs, Lifton says: "In the long run, we'd like to tailor our medications to the specific underlying abnormality of each patient."

–INGRID WICKELGREN

SPACE SCIENCE

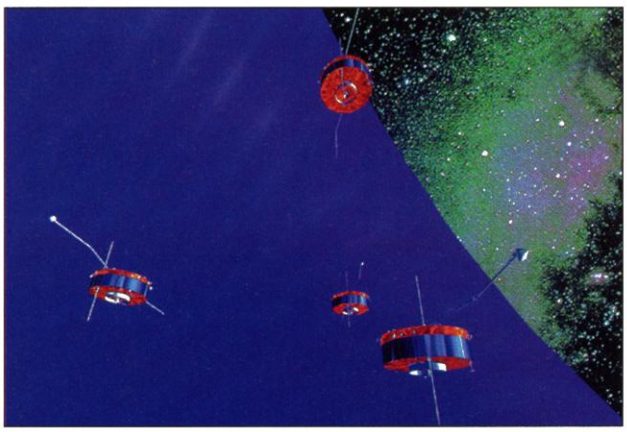
'Cluster' Prepares to Make a New Stand

Scientists who were at the Kourou space center on 4 June 1996 will never forget watching Cluster die. One moment, the mission—four identical satellites carrying 11 instruments designed to produce the first three-dimensional (3D) maps of the magnetic fields and plasmas surrounding Earth—was lofting skyward over French Guyana. Then the rocket carrying it exploded, turning one of the European Space Agency's (ESA's) most ambitious scientific projects into fireworks. "We were in shock," recalls principal investigator Nicole Cornilleau-Wehrlin of the Centre d'Étude des Environnements Terrestre et Planétaires in Vélizy, France (*Science*, 14 June 1996, p. 1579).

Dismayed scientists doubted whether ESA could muster the will, or the funds, to start over (*Science*, 28 June 1996, p. 1866). But Cluster is poised to fly again. If all goes well, four Cluster II spacecraft, built entirely from scratch, will reach orbit two at a time in mid-July and early August.

"I applaud ESA's determination to fly it again," says Cluster co-investigator Patricia Reiff of Rice University in Houston. "This is science that is not being done in any other mission before or in planning."

Credit for squeezing the Cluster II project into ESA's already tight science budget belongs to ESA's science director, Roger Bonnet, says principal investigator Donald Gurnett, a space scientist at the University of Iowa in Iowa City. "Bonnet really did a great job in convincing the European Community that they should be falling in," Gurnett says. John Ellwood, Cluster's project manager at the European Space Research and Technology Centre (ESTEC) in Noordwijk, the Netherlands, agrees. "We didn't have the money initially," he says. "It took us a year to get the mission going again."



Lofty pyramid. Cluster II satellites will orbit in tetrahedral formation to make 3D maps of Earth's magnetosphere.

To come up with 318 million euros needed for Cluster II, ESA siphoned some funds from the operations budget of the first mission, rescheduled other missions, and took advantage of improved technology. Higher capacity memory chips alone saved millions of euros, Ellwood says, by enabling the new satellites to download data to one ground station instead of two. To economize on launch costs, ESA teamed up with STARSEM, a joint venture between Arianespace and the Russian Space Agency, which will launch the quartet of Cluster II satellites on two Soyuz rockets from the Baikonur Space Center in Kazakhstan. Soyuz, the old workhorse of the Soviet Union, is considered the most reliable launcher available, with a success rate of over 98.5% in 1600 launches. At 30 million euros per launch, it is also a bargain. "Two Soyuz cost less than an Ariane 4," says Philippe Escoubet, Cluster's project scientist at ESTEC.

During their planned 2 years of operation, the satellites will fly in a tetrahedral formation—the optimal configuration for 3D imaging. Ground controllers will vary the distances among the satellites in order to observe different parts of the magnetosphere, such as the polar cusps and the magnetotail. "If we have a perfect injection into orbit by Soyuz, some fuel will be left over, and we will be able to extend the project for a third year," Escoubet says. One benefit of the delay is that the mission will be active when the sun reaches maximum activity later this year or next year.

Among scientists, expectations are high. Says principal investigator Hugo Alleyne of the University of Sheffield in the United Kingdom: "In terms of understanding the solar wind, magnetospheric boundaries, and interactions, it will be a quantum jump."

–ALEXANDER HELLEMANS

Alexander Hellemans writes from Naples, Italy.

PLANT SCIENCE

New European Group Lobbies for Support

COPENHAGEN—Reeling from budget cuts and public doubts about genetically modified foods, European plant scientists are mounting an ambitious effort to persuade European Union (E.U.) officials to plow more money into their field. But their blueprint for change, intended to prevent them from falling farther behind their global counterparts, has so far failed to win any promises from E.U. commissioner and science chief Phillippe Busquin.

The plan was drawn up by the fledgling European Plant Science Organization (EPSO), an independent body that represents 30 leading labs from 20 European countries. The group was set up in February, and last month it presented Busquin with the 10-year plan. "There is an acute need to organize the research effort and to increase funding for plant science if Europe wants to stay competitive in this field," says the group's chair, plant geneticist Marc Zabeau of the University of Ghent in Belgium.

EPSO's top priorities include boosting funding for basic plant science and co-

Speaking up. Belgium's Marc Zabeau says European plant science is imperiled by funding cuts.

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