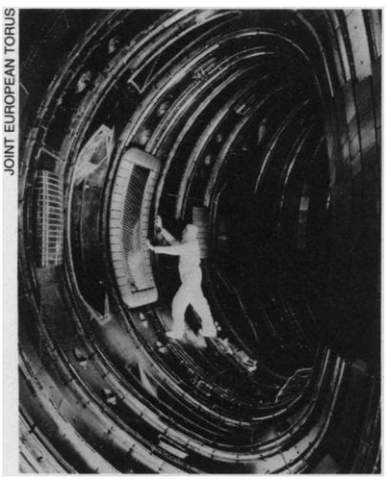
A Fusion First

■ The political prospects for fusion research in Europe appear much brighter in the aftermath of the successful deuterium-tritium "burn" last Saturday at the Joint European Torus (JET), the European fusion experiment located near Oxford in the United Kingdom (*Science*, 23 August, p. 841).

More than 200 scientists at the fusion facility erupted in joy as a blend of 14% tritium and 86% deuterium ignited to deliver almost 2 million watts of power. The 2-second burn brings sustainable fusion marginally closer, but it has also rendered JET's confinement chamber radioactive—one reason the experiment has been delayed for several years while other work was under way.

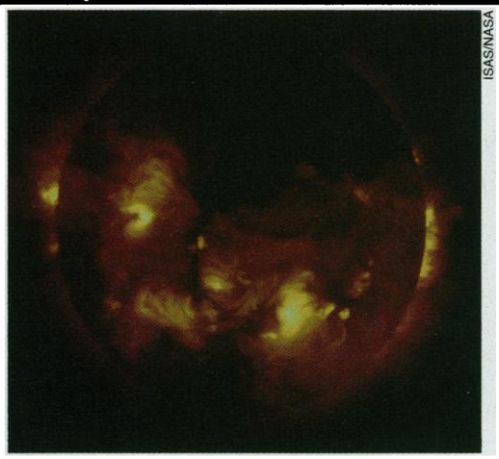
The timing of the experiment could prove as significant as its outcome. European research ministers, said to be lukewarm about a proposed JET budget increase, may well relent in the wake of the much-publicized experiment. JET officials also suggest privately that their recent success should put them in the running to host the International Thermonuclear Experimental Reactor, a joint U.S., European, Japanese, and Soviet program to build a working reactor that is now beginning a 6-year design phase.


JOINT EUROPEAN TORUS

An engineer makes an adjustment in JET's confinement chamber.

Solar Astronomers Ready Their Pitch for a New Terrestrial Facility

■ The Large Earth-based Solar Telescope (LEST), a proposed magnetic mapping instrument that could explore the solar atmosphere, as well as help to explain some earthly phenomena such as the northern lights and power outages that are linked to solar flares, will edge closer to production this fall if the National Science Foundation (NSF) approves funding for a design project on the telescope's adaptive optics.


ISAS/NASA

LEST could help reveal relationships between solar activity and terrestrial phenomena.

Despite LEST's scientific promise and its bargain price—$55.7 million, of which the U.S. would pay only $18.6 million—research agencies have given it a low priority. LEST has remained on the waiting list ever since an association of European solar physicists first proposed the telescope in 1969. But recent advances in adaptive optics have made LEST less of a pipe dream, says astrophysicist Jeffrey Linsky, chairman of LEST's U.S. scientific and technical working group. As a result, LEST supporters will appeal next week to NSF's astronomy advisory committee for $2.2 million in funding earmarked for telescope design studies and a 3-year adaptive optics project.

However, as Seth Tuttle, NSF's program manager of the National Optical Astronomy Observatory, puts it: "It's not unanimous among U.S. solar physicists that [LEST] is the way to go." One reason: Funding the telescope would siphon money from smaller projects. But some U.S. physicists are also reportedly uncomfortable with LEST's international flavor.

SSC's Sinking Feeling

■ For years, Department of Energy (DOE) officials have bragged about the near-perfect geology at Waxahachie, Texas, where the Superconducting Super Collider (SSC) is now under construction. But in what could be an embarrassing setback, a recent geological assessment has revealed that the proposed site for the collider's two large detectors is less stable than previously believed. As a result, the SSC laboratory is likely to relocate the interaction halls that will house the detectors to the east side of the accelerator ring—some 17 miles from the laboratory's main campus on the west side.

Sources familiar with the geological assessment say it found that shale in the rock underlying the western site lies unexpectedly close to the surface. Shale compresses more easily than the chalk that is said to predominate the geology of the eastern site, and engineers are anxious to avoid the risk of building the heavy detectors on an uncertain foundation.

While the lab won't make a final decision until it sends a formal recommendation to DOE next week, the detector collaborations have already been notified that a move is likely. "It'll be an inconvenience from a human standpoint," says Caltech physicist Barry Barish, a collaboration co-chairman. "They'll put the campus, the intellectual center, on one side and the experiments on the other." But an engineer who worked on Fermilab's proposal to host the SSC complains that the assessment just shows how political the original site selection was. "Why didn't they take a better sample to begin with?" the engineer asks. "This really pisses off us Fermilab people."

Budget Follies Push Antarctic Program to the Brink

■ U.S. scientists are planning an emergency evacuation of Antarctica—not to escape a natural disaster, but to play their part in an entirely artificial budget pantomime, the kind that has become commonplace in Washington in recent years. An attempt by Congress and the Administration to evade last year's budget agreement has backfired and will force the National Science Foundation (NSF) to withdraw all U.S. personnel from the Antarctic by 1 December if officials can't find a solution.

While NSF officials say that evacuation is unlikely, they have to prepare for the worst. In this case, that would mean doing without the $105 million NSF had requested to operate its Antarctic program in the current fiscal year. That money was supposed to come from the Navy's portion of the defense budget, which NSF's backers in Congress approved in an attempt to keep the funds from counting against the budget agreement's limit on domestic discretionary spending. President Bush has already signed NSF's 1992 appropriation into law, which truncates the agency's Antarctic budget, but he has not approved the transfer of $105 million from the Navy because the Pentagon's appropriation is still languishing in a House-Senate conference.

So far, NSF and the Navy have been able to keep the program running by shifting money between accounts. But NSF officials say they can't keep up the financial shell game forever, and unless the defense appropriation comes through soon, Antarctic scientists will be homeward bound.

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