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Cover illustration

The inferred structure of a quasar lying at the core of an active galaxy (based on a figure by T. Couvoisier). Quasars, being among the brightest objects in the Universe, are also the most distant that can be observed. Unified models of active galactic nuclei are based on a central black hole, surrounded by an accretion disc and line-emitting clouds, with opposed central jets. See R. Walter, page 193.

Driving the Debate

Making lobbying electronic will not *per se* revolutionise the ancient art of "... influencing members of government". But 3000 young scientists with their Young Scientists Network* set up in 1990 that swaps information via electronic bulletin boards did not go unnoticed by the US Congress in the lead-up to its 282 to 143 vote to return the 2200 M\$US water and energy bill to a House-Senate conference committee, with instructions to delete funds for the 20% complete, 11 000 M\$US Superconducting Super Collider, thus killing the project. Some 640 M\$US, the amount originally proposed by the committee for fiscal 1994, is set aside for the closure, but the final cost is estimated at 1000 M\$US.

The electronic lobbyists got a taste of what could be done when they responded *en masse* to the shutdown on 25 September of the Los Alamos National Laboratory's extremely popular email preprint server system. Users were asked to "... contact (government) program officers to find a way to support it adequately", reawakening the question of the future of such systems for journal articles once what publishers call the "true cost" is identified. Such thinking has not however stopped two publishers from launching an electronic alerting service in condensed matter (see page 206). Meanwhile, Gordon and Breach has announced that its journals will soon be available electronically via servers sited in Europe, the USA and the Far East (to reduce access costs).

The SSC is not the first Department of Energy physics project to be terminated, and it was followed two weeks later by the first post-"cold war" decision to end a large defense project (a 13200 M\$US early-warning satellite system). The Director of Femilab has become the new SSC Director, physicists

and engineers are looking for jobs, and suppliers — some of whom such as institutes in Russia counted heavily on SSC contracts — will face additional difficulties. The final nature of the SSC lab will determine if it remains a motor behind the development of workstation farms as complements to supercomputers, the first extensive suite (called EPICS) of inter-laboratory software tools for control-system software, detector technology, and suchlike.

Much ink — electronic and otherwise — will be spilled in analyzing what went wrong and what should now be done to explore the high-energy frontier. Things could swing either way so many hesitate to take a firm stand before further reflection. Lobbies will emerge, with some hoping that eminent scientists will speak up (maybe citing the failure of the US's Nobel Laureates to do so as being one reason the SSC was killed).

Solutions will be strongly international and here science has an enormous array of mechanisms for preparing, reviewing and disseminating its messages. But they are only effective if the local climate is receptive. Hence the importance of the *European Week for Science Culture* in December, and the German Physical Society's discussion meeting with the media at the end of November on achieving a balanced response to the widespread belief that the physical sciences can do little to help solve today's problems.

One disturbing element is the continuing weak institutional support for international bodies such as UNESCO that promote international science (UNESCO's purchasing power will remain flat from 1986 to 1994 and changes to the Academy structures in east and central Europe do not help). Meanwhile, politico-economic structures such as the

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European Community are inflexible and overwhelmed in seeking to be fair (the EC association set up in July to promote basic science in the FSU has received 5000 applications — 1400 in physics — for the 20 MECU available in 1994). More flexible, privately sponsored bodies such as the International Science Foundation have taken up the challenge, but presumably only in the short-term, of stimulating international collaboration (the ISF is to spend 100 M\$US in 1993/4, the last deadline being 1 February 1994). Other bodies have fortunately expanded their review activities. For example, the OECD which published its latest country-by-country review — of Russia — in September now has a Megascience Forum, and EUPRO representing EC funding organizations in physics will be considering Europe's needs in various fields.

Special meetings also add to the debate on the rôle of science: they include an EPS study conference planned for December 1994 on ways to enhance university-industry collaboration, and the *EPS Large Facilities in Physics Conference* (Lausanne, 12-14 September 1994) that highlights user needs and the growing demand for communities without a facilities tradition to access large apparatuses (the contribution by P.H. Mokler on page 204 illustrates the reasons).

The broad base of well-informed scientists will in the end drive the debate. Information flow is essential, and this is one motive for the endorsement in September of the Society's proposals to open up the Divisions to national society member, and to ensure that members in countries with major national bulletins who will not receive *Europhysics News* will be kept informed via a special section.

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* Contact: ysn-adm@zoyd.ee.washington.edu. Post-doc International based in France runs a similar service (see page 206; contact: vallet@amoco.saclay.cea.fr).