Information for Contributors

The Editors of *Science*

Papers published in *Science* often receive far more attention than papers published in specialty journals. As a consequence, the rate of submission of papers is high—about 5000 manuscripts are submitted each year. The rejection rate of about 80 percent contrasts with that of most specialty journals, which is usually about 30 percent. Most of the material submitted to *Science* is of good quality and worthy of publication, and virtually all the scientific papers are eventually published somewhere. In selecting papers for *Science*, the editors must consider the needs of a broad audience. Insofar as the input of manuscript permits, preference is given to items that seem to be of general significance.

General Information

Four types of signed papers are considered: Articles, Reports, Letters, and Technical Comments. The author's membership in the AAAS is not a factor in selection. Papers are considered with the understanding that they have not been published and are not under consideration elsewhere. Authors will usually be notified of acceptance, rejection, or need for revision in 6 to 8 weeks (Reports) or 8 to 10 weeks (Articles).

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1) Articles: Up to 20 pages of text, including the references and notes, and one table or figure for approximately every three manuscript pages.

2) Reports: Up to seven pages of text, including references and notes, and two tables or figures that together will occupy no more than half a printed page.

3) Letters: Up to 250 words.

4) Technical Comments: Up to two pages of text, including references and notes.

Selection of Manuscripts

1) Articles: About half the Articles published in *Science* are solicited by the editor. Both solicited and unsolicited Articles undergo outside and in-house review. Articles are expected to (i) provide a review of new developments in one field that will be of interest to readers in other fields, (ii) describe a current research problem or a technique of interdisciplinary significance, or (iii) present a study of some aspect of the history, logic, philosophy, or administration of science or a discussion of science and public affairs. Readers should be able to learn from a technical Article what has been firmly established and what are significant unresolved questions; speculation should be kept to a minimum. Preference is given to Articles that are well written, well organized, and within the length limit. Balance of subject matter in *Science* is an important consideration when a choice is made between acceptable Articles.

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For a journal paper: H. Smith, *Am. J. Physiol.* **98**, 279 (1931).

For a book: F. Dachille and R. Roy, *Modern Very High Pressure Techniques* (Butterworth, London, 1961), pp. 163-180.

For a paper in a compilation: F. Dachille and R. Roy, in *Reactivity of Solids*, J. H. de Boer, Ed. (Elsevier, Amsterdam, 1960), p. 502.

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3) Letters: Letters should be short (up to 250 words) and to the point; they should be carefully phrased, free of technical jargon, and nonrepetitive. When a Letter refers to an Article published in *Science* the original author is usually given an opportunity to reply. Letters are frequently shortened and edited. Letters are acknowledged by postcard; authors are notified if their letters are accepted for publication. Letters must be typed with double spacing.

4) Technical Comments: Technical Comments on Reports or Articles are published at the end of the Reports section. When a Technical Comment is accepted for publication the authors of the original paper are usually given an opportunity to reply.

5) Book Reviews: Instructions accompany review copies when they are sent to reviewers.

Printing and Publication

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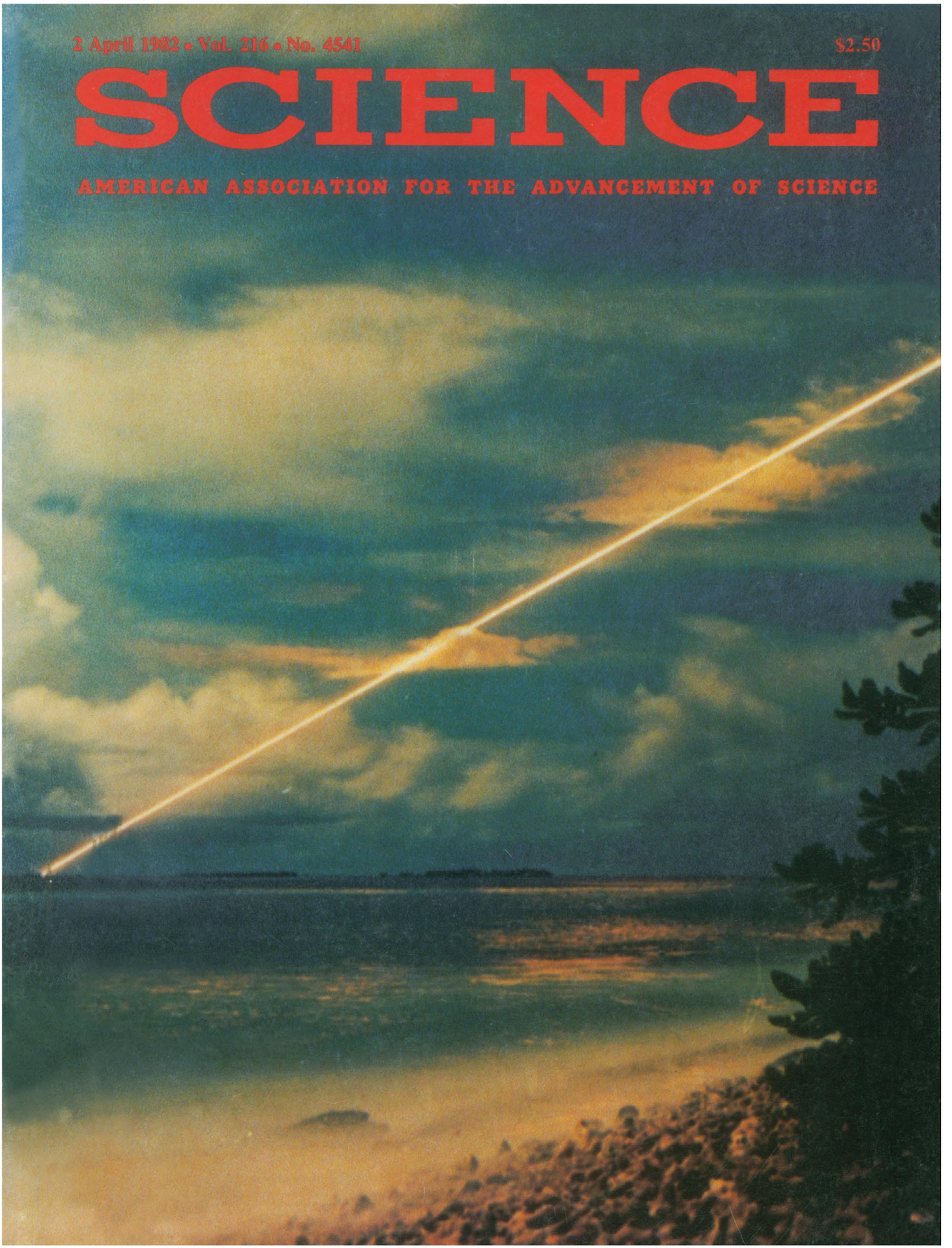

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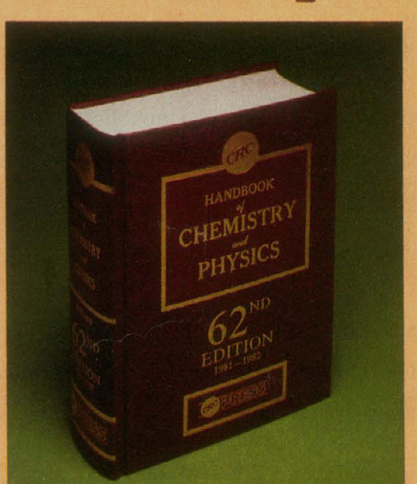

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COVER

An inert reentry vehicle from a U.S. Air Force Minuteman III launched from Vandenberg Air Force Base, California, streaks to an impact at Kwajalein missile range in September 1980. Similar tests in the Soviet Union led to a decision by the United States to build the controversial MX missile. See page 30. [U.S. Army]

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Outlay per $1,000	1.37	1.79	3.77	1.17	1.59	3.57

*Net outlay is annual premium less cash dividend payable at end of policy year, based on continuation of current scale; although dividend amounts cannot be guaranteed or estimated for the future, TIAA has paid dividends every year since 1918.

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SCIENCE/SCOPE

The oldest, continually-operating communications satellite celebrated its 15th year in orbit recently. Though designed to serve just three years when launched in December 1966, NASA's ATS-1 satellite continues to provide people of the Pacific Ocean region with a valued link for communications ranging from medical emergencies to classroom instruction. The cylindrical satellite with spiderlike whip antennas has logged more than 915 million miles through space. The Hughes-built ATS-1 is in orbit 22,300 miles above Christmas Island.

Though tantamount to being tied to a rifle bullet, an extremely pure steel wire carries guidance signals in flight to the U.S. Army and Marine Corps TOW (Tube-launched Optically tracked, Wire-guided) anti-tank missile. The wire is manufactured by U.S. Steel Corp. under exacting conditions to obtain the rare combination of high tensile strength and high ductility, or ability to bend. After the gunner fires the missile, two strands of wire peel off twin bobbins in the tail of the missile at velocities approaching the speed of sound. Guidance commands reach the missile automatically as the gunner keeps the target in his cross hairs. The wire enables the Hughes TOW to have one of the highest velocities and longest ranges (2.3 miles) of any wire-guided missile in the world.

A military laser device manufactured in areas as clean as a hospital operating room is designed for rugged use in swamps, desert, or snow. The U.S. Army's Laser Target Designator enables ground troops to pinpoint targets for aircraft and laser-homing weapons. Forward observers use the rifle-like device to fire an invisible beam of laser pulses at a target. These coded pulses reflect from the target like a beacon and are detected by laser sensors in aircraft or by laser-homing missiles, bombs, and projectiles. Hughes manufactured the devices with stringent cleaning measures because laser optics can be contaminated easily by microscopic chemical compounds. The designators are hermetically sealed and built to withstand the rough treatment they would receive in the field.

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2 April 1982, Volume 216, Number 4541 **SCIENCE**

Prospects for Support of R&D in Fiscal 1983

A Consortium of Presidents of AAAS Affiliated Societies met in Washington on the afternoon and evening of 15 March. Scientific and engineering societies having total memberships of more than 1 million were represented. The purpose of the meeting, which was organized by AAAS staff and presided over by Margaret Burbidge, president of AAAS, was to discuss the proposed fiscal 1983 federal budget for R&D and to obtain an estimate of the appropriations that will ultimately be made. Sources of information included Senator Pete Domenici (R–N.M.), Representatives Newt Gingrich (R–Ga.), Claudine Schneider (R–R.I.), and Doug Walgren (D–Pa.), and the President's science adviser, George Keyworth. Congressional staff members who participated were Fred Bernthal, administrative assistant to Senator Howard Baker (R–Tenn.); Hunter Spillan, House Appropriations Committee; and Michael Telson, House Budget Committee.

The picture that emerged was one of considerable uncertainty. At best, overall appropriations for support of academic research will rise slightly, though dropping somewhat in constant dollars. At worst, appropriations for research could drop substantially.

For the meeting and also for distribution on request, AAAS staff coordinated the preparation of a 145-page document that analyzes in detail President Reagan's proposed budget.* Sixteen organizations collaborated in the preparation of the publication.

The mood of the afternoon session was to a large degree gloomy. The pattern was set by the two Democratic staff members of the House. Telson said that in the interval 1980 to 1985 entitlement programs, including Social Security and Medicare, will increase from $291 billion to $410 billion. Defense expenditures will grow from $136 billion in 1980 to $292 billion in 1985. In contrast, discretionary programs, of which civilian research is a part, will drop from $117 billion in 1980 to $66 billion in 1985. In 1983, the discretionary portion of the budget is slated to drop to $84 billion. In these circumstances, research is being treated far more favorably than other items in the major category that includes it. In the intense political infighting that will occur this election year, science will be a target. Spillan emphasized that research is very easy to cut. Many individual congressmen prefer to obtain highly visible public works for their districts. Spillan also pointed out that if there is a budget compromise and some tax cuts are eliminated, the additional funds will not go to research. They will be used to diminish the budget deficit.

In spite of this threat to support of research, a question by Bernthal drew an unexpected answer. He asked, "What is the major concern of the audience?" The consensus reply was science education at all levels and especially support for graduate students. The afternoon's proceedings were summarized by Allan Bromley, past president of AAAS, who added his own views on the subject, emphasizing that we should not lose sight of the need for better science education in the secondary schools so that when science-based issues arise an informed public will deal with them.

The evening session was dominated by Republican lawmakers. They were optimistic about support of research. The luminary with by far the greatest weight is Senator Domenici. He is chairman of the Senate Budget Committee, and when a compromise on the budget is sought he will be a key factor in reaching it. Domenici asserted that he is a strong supporter of science and that there is a comparatively large number of Ph.D.'s in his state. However, he was blunt in saying that support for military preparedness must be increased, but changes in the total budget must be restrained.

Science adviser George Keyworth has emphasized that the Administration understands that basic research is a federal responsibility. But with discretionary expenditures under extreme pressure defenders of science in both parties need to be assured by their constituents that their efforts are recognized and appreciated.—PHILIP H. ABELSON

**Intersociety Preliminary Analysis of R & D in the FY 1983 Budget*, obtainable from the Office of Public Sector Programs, AAAS, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036.