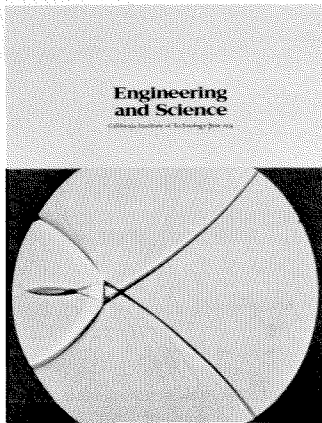


In This Issue



Grand Slam

On the cover—a portrait of a sonic boom. In this case a *focusing* sonic boom has been simulated in the 17-inch shock tube in Caltech's Graduate Aeronautical Laboratories. The shock wave has come in from the right, and has been reflected back from a curved wood surface. In this shadowgraph, the wave is 0.11 milliseconds old, and is shown coming out of the focus, leaving behind (at the left) a hot blob of gas that was heated at the focus. On page 14, more on this aeronautics research project in "Sonic Booms."

For further information about the articles and authors in this issue of *E&S*, please turn to the inside back cover.

TO OUR READERS

We are sorry to say that rising costs have forced us to change our publishing schedule, starting with the October 1974 issue. Instead of seven issues a year we will now publish quarterly—

October-November

December-January

February-March

April-May

Despite this schedule change, current subscriptions will continue through seven issues.

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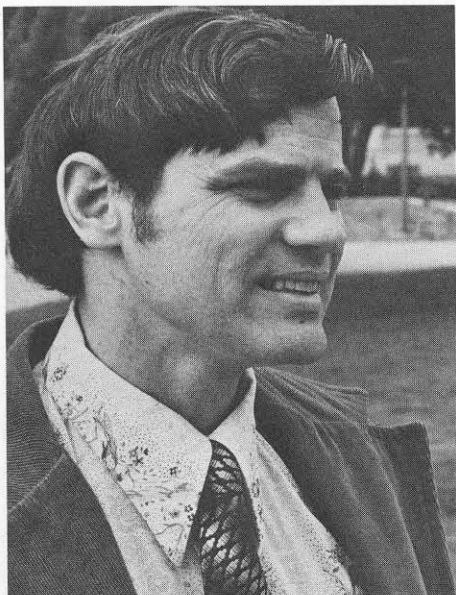
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In This Issue ...continued

Fiat Lux

Many scientists are concerned about keeping the public informed of scientific findings that affect it. One way in which that concern has been demonstrated at Caltech recently is with a series of open conferences on the ethical questions of science. These conferences have been jointly sponsored by the Caltech Y and the Institute. The first, "The Impact of Genetic Engineering on Society," was held in May 1972. A second was held a year later on "The Impact of Behavioral Engineering on Society."

With partial funding by the Norton Simon, Inc. Foundation for Education, the third of these conferences, "The Impact of Modern Biological Research on the Ethics of Society," was held on the campus on April 20. One of the principal speakers was Leroy Hood, MD, associate professor of biology, and Caltech alumnus (BS '60, PhD '68). "Medical Genetics and the Engineering of Man" (page 2), by Hood



Leroy Hood



Robert Mackin

and Robert J. Mackin Jr., is in part adapted from Hood's talk on that occasion and in part drawn from discussions held the following day to consider how these issues might be communicated to the general public. This workshop, also sponsored by the Simon Foundation, was attended by about a dozen scientists, physicians, ethicists, and representatives from the television industry.

Caltech alumnus Mackin (MS '51, PhD '53), who collaborated with Hood on this article, is also concerned about the public's need to know what scientists are doing. He is manager of Caltech-JPL Medical Sciences Laboratory Planning and of the JPL Space Sciences Division.

Food for Thought

Caltech's Linus Pauling, professor of chemistry emeritus, two-time Nobel Prize winner, and perennial generator and explorer of ideas—from the nature of the chemical bond, through outlawing war, to the value of vitamins, for example—came back to the campus recently as a guest of the Caltech Y's Leaders in America program. As always, he brought out standing-room-only crowds. One of the largest groups turned up at Ramo Auditorium on April 4 for his talk on nutrition. "Good Nutrition for the Good Life" (page 6) is adapted from that speech.

By Request

Richard P. Feynman, who is Richard Chace Tolman Professor of Theoretical Physics at Caltech, was Caltech's commencement speaker this year—by popular demand.

The faculty convocations committee, which arranges the Institute's commencement ceremony every year, had just about decided to do away with the custom of having a formal commencement speaker at Caltech's 80th Annual Commencement on June 14, when the graduating senior class not only begged them to change their minds, but presented them with a list of speakers the seniors would like them to invite. And Feynman's name led all the rest. (The rest, incidentally, included Elliot Richardson, Isaac Asimov, Eric Sevareid, and Woody Allen—a very catholic selection.)

As Feynman began to cast about for a subject for his talk, he decided that it would at least have something to do with his recent investigations into such *un*-scientific matters as ESP, Esalen, astrology, and expanded consciousness. It was at this point, of course, that he had to produce a title for the talk, because the commencement program was going to press. He settled on "Unscientific Evidence." Not until he began to put the actual talk together did he realize ("like the woman who expects to have a red-headed son and names him Rufus—then has a black-haired daughter") that his title no longer fit his talk.

So, on page 10, the transcript of Feynman's commencement speech, "Unscientific Evidence," appears with a new name—"Cargo Cult Science."