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*Davis: Can the boron 8 be wrong?*

radioactive argon 40). Dr. Davis thinks that nuclear explosions may have influenced one of the three experimental runs so far analyzed. It showed much more argon 37 than the other two, and the Americans, Russians and Chinese all exploded tests at the time. Dr. Davis wishes that the three governments would give him advance notice of tests, but he expresses little hope of ever getting the information.

When all the background is subtracted, argon 37 atoms attributable to solar neutrinos amount to about  $0.34 \pm 0.30$  atom per day. Thus they are detecting on the average only about one neutrino arrival every three days instead of the one every two days they expected. Though the statistics are still poor, Dr. Davis declares that there is a definite discrepancy between theory and experiment. No one knows why.

"Suppose there is something wrong with the boron 8," he suggests. According to theory, beta decay of boron 8 nuclei is supposed to be the main contributor of the solar neutrinos that the Brookhaven experiment is able to detect, and boron 8 is thus the main candidate for blame if something is wrong. But so far no one is willing to admit that it could be off.

People who make theoretical models of nuclear processes in the sun insist that their numbers and proportions are correct. Nuclear physicists, who have repeatedly measured the cross sections for the various interactions involved, insist that the numbers they supply to the theorists are accurate. Dr. Davis and his colleagues are sure that their experiment is virtually flawless. For the moment the discrepancy is a mystery to which no one can supply the key. □

september 25, 1971

## books OF THE WEEK

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**EDUCATORS GUIDE TO FREE SCIENCE MATERIALS**—Mary H. Saterstrom, Ed.; John W. Renner, Consult.—Educators Progress Service, 1971, 12th ed., 419 p., paper, \$9.25. Up-to-date, descriptive information on currently available free audiovisual media and other aids, arranged by subject.

**ELECTRONICS SELF-TAUGHT WITH EXPERIMENTS & PROJECTS**—Jim Ashe—TAB Bks., 1971, 288 p., illus., \$7.95; paper, \$4.95. Written for hobbyists, experimenters and students, book tells how to set up a home lab, shows why certain things are done, how devices and circuits work, and how to design your own circuits.

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**INJECTABLE SOLUTIONS AND ADDITIVES: Compatibilities, Incompatibilities, Routes of Administration**—Thomas J. Fowler—Springer Pub. Co., 1971, 32 p., paper, \$3.25; wall chart, paper, \$3. Brings together widely dispersed information and presents it in conveniently tabulated and chart form.

**THE MODERNIZED METRIC SYSTEM: The International System of Units (SI) and its Relationship to U.S. Customary Units**—National Bureau of Standards—GPO (NBS-SP 304), 1971, 29"x45" chart, paper, 50¢. Wall chart, depicts and defines the six base units of measuring length, time, mass, temperature, electric current and luminous intensity.

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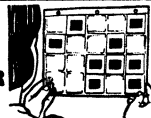
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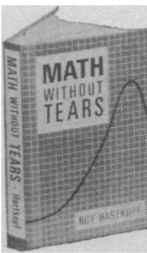
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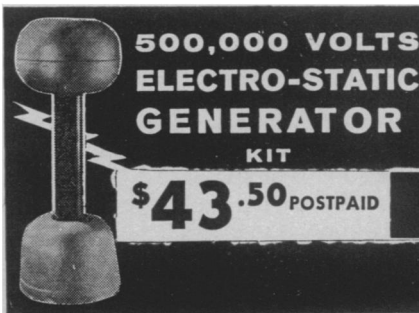


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