

## ASTRONOMY

**New Observations Made Of Fastest Solar Flares**

► NEW OPTICAL observations have been made of explosive solar flares, the fastest moving things on the sun.

Dr. Lewis Larmore, solar physicist of Lockheed Aircraft Corporation, Burbank, Calif., said he and his colleague Gail Moreton observed the flares and their resulting shock waves with a hydrogen alpha heliograph, an instrument that photographs in light emitted by hydrogen.

Dr. Larmore told a National Science Foundation colloquium in Washington, D. C., that they had observed that the shock waves disturbed the solar atmosphere over large areas. The shock waves also influence solar prominences. (Solar flares are intense flashes of light on the surface of the sun, lasting from one half hour to about three hours. Solar prominences are huge loops of solar gas shooting millions of miles into space from the sun.)

Dr. Larmore said the explosive flares rise more rapidly than other flares and have a considerable effect on the atmosphere of the sun. The explosive flares are also associated with the type-3 radio bursts from the sun, radio waves emitted from the sun.

Solar flares emit protons and ultraviolet rays that often interfere with radio communication on earth, Dr. Larmore said.

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## ASTRONAUTICS

**Space Cooperation Must Be Reciprocal, JFK Says**

► COOPERATION in space between the Soviet Union and the United States must be based on reciprocity, President John F. Kennedy said in Washington, D. C.

Despite continued attempts to reach such agreement, none yet has been achieved, he said.

The President emphasized that any such agreement must present no threat to national security and "contribute to some useful purpose."

Asked by SCIENCE SERVICE if there had been a definition of special areas for space exploration in which cooperation with the Soviet Union would not affect national security, the President said, "There are other proposals we have made for the long-range explorations of space, weather control, and so on; and we are going to continue to attempt to engage the Soviet Union in a common effort of that kind of activity."

President Kennedy called attention to the fact that the Soviet representative did not attend an international meeting in Washington recently. The absence of a Soviet meteorologist "was a source of regret," he said.

In past years, the USSR has cooperated with the United States and the World Meteorological Organization in weather studies. Russian cooperation in this area reached an all-time high during the Inter-

national Geophysical Year when there was an active exchange of meteorologists between the U. S. and the USSR in important Antarctic weather research.

Some observers have attributed the absence of a Soviet scientist to the WMO meeting in Washington to political propaganda considerations. The U. S., through its weather satellites, has a definite lead in meteorological research, and it may be that the Russians are reluctant to participate in a scientific exchange where they cannot be in the limelight.

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## PUBLIC HEALTH

**Detergents for Hair Not Advised by AMA**

► DETERGENTS are for heavy cleaning duty and not for the hair and scalp.

Dr. Joseph B. Jerome of the American Medical Association's committee on cosmetics states in the *Journal of the AMA*, 175:933, 1961, that possible damage to eyes as well as to the hair and scalp must be considered.

Replying to a question by a Connecticut physician, who asked about a specific detergent being used by mothers to wash their children's hair, Dr. Jerome said a large number of available shampoos are more bland and to be preferred on that account.

Commercial detergent products, he said, are "usually marketed in a number of formulations because adjustments in the basic formula may be necessary due to variations in the relative hardness of the water in the marketing area."

The AMA consultant added that a further complication arises from the fact that during a period of years, the product name remains the same because of the heavy advertising investment associated with it, but there may be changes in the nature of the active ingredient used.

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## ASTRONOMY

**Exploding Star Releases Tremendous Energies**

► A SUDDEN explosion of a star releases more energy than the total energy output of the sun in 100,000 years.

One such nova was observed by Russian scientists. The star flared up for a few weeks, releasing tremendous energies, and then became quiet again.

During the flare-up, the star's outer layers were hurled spaceward at speeds up to 1,100 miles per second. The brilliant light of the star's energy was recorded by Soviet instruments.

The new star, Nova Hercules, is at a distance 500 million times farther than the sun. The flare-up actually happened about 4,000 years ago, but light from the nova is just now reaching the earth.

The Russian studies were conducted at the Crimean Astrophysical Observatory by Dr. V. B. Nikonov and reported in translation by the U. S. Joint Publications Research Service in Washington, D. C.

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**IN SCIENCE**

## EDUCATION

**College Teaching Seen in New Light**

► MORE COLLEGE graduates are turning to college teaching as a "prestige" career despite opportunities to earn more money in other fields, Dr. Hans Rosenhaupt, national director of the Woodrow Wilson National Fellowship Foundation, Princeton, N. J., noted in a survey of this year's scholarship winners.

Dr. Rosenhaupt also said that more students of outstanding ability are being recruited from hundreds of colleges, indicating the high quality of education in many lesser known schools. Fellowship candidates this year are also choosing their graduate schools on the basis of their own needs rather than the prestige of the institution.

The Foundation has named 1,333 students from 381 colleges and universities throughout the United States and Canada as Woodrow Wilson Fellows for 1961-62, the largest number ever elected by the Foundation in its 15-year search for prospective college teachers.

The value of this year's awards is estimated at \$3,000,000.

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## SOCIOLOGY

**Victorian Sex Standards Prevail in Russia**

► RUSSIAN ATTITUDES toward sex and sexual problems are now almost Victorian in character. This is in sharp contrast to the Soviet sex standards of the 1920's.

No research on the psychology or sociology of sex is being done in Russia today. Soviet educators do not publicly discuss the question of whether young boys and girls should be prepared for puberty. Movies, pictures and books deal with sex in a reserved manner, David Burg reports in *The American Behavioral Scientist*.

These standards are not resisted by the average Soviet citizen. He does, however, resent their enforcement by the Government. But Soviet authorities say that the social responsibilities of lovers transcend all other obligations, and so infidelity may be regarded as analogous to treason against the State.

There are only two groups in the USSR that openly violate these sexual standards—the stilyagi, or juvenile delinquents, and members of the working class. With the workers the violations are often a result of the housing shortage, which encourages men and women to establish liaisons simply to get a room.

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# CE FIELDS

## MEDICINE

### Deaths From Abortion Remain High in Britain

► DEATHS FROM ABORTION still rank third highest on the list of deaths from maternal causes in England and Wales despite a striking reduction in recent years.

Blood transfusion service and antibiotics are credited with saving many lives, but dextran as a plasma substitute is being discarded because of its negative effect on blood coagulation, Dr. Wilfred S. E. Perera of Walton Hospital, Liverpool, England, reports after studying the treatment of 2,327 abortion cases over a period of two years. Only one died, and he said that it could have been prevented if plasma and not dextran had been used.

Death occurred from uncontrollable hemorrhage because of failure of coagulation, Dr. Perera said. He has now stopped using dextran altogether as a plasma substitute.

"Mortality figures for abortions in general leave no place for complacency," Dr. Perera states.

Because 15% to 20% of pregnancies are estimated to result in abortions, causing a problem in gynecological wards, Walton Hospital more than ten years ago made available a separate ward block with 40 beds as an abortion unit.

Dr. Perera recommended more hospital beds and the establishment of special centers for treatment of abortion to reduce further the general death rate.

His report appears in the *British Medical Journal*, March 11, 1961.

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## MEDICINE

### Gastrointestinal Allergy May Mimic Appendicitis

► A BABY'S COLIC or an adult's stomachache may be due to allergy.

Dr. Orval R. Withers, University of Kansas Medical Center, Kansas City, Mo., told the American College of Allergists' meeting in Dallas, Tex., that allergic patients may have gastrointestinal symptoms simulating gall bladder, ulcer, appendicitis or almost any organic disorder.

Inhalants and antibiotics as well as foods may be at fault, Dr. Withers said, but careful diagnosis is required.

"Gastrointestinal allergies are not common," Dr. Withers said, "but when I see patients who complain of other allergies, such as cause hay fever or asthma, I always investigate stomach and intestinal symptoms."

From the lips to the end of the alimentary canal, gastrointestinal allergies can show themselves, Dr. Withers said.

"A child eating an orange or a woman

wearing a certain type of lipstick may have a swelling of the lips, or angiodermatitis. When recurrent abdominal pain, nausea, diarrhea or heartburn cause distress it may be due to allergy."

What happens is that in stomach or intestinal allergy, the mucous membrane linings contract, the allergist explained. He examines such patients with X-ray or fluoroscope and also with an esophagoscope or gastroscope.

"By using such instruments you can look directly into the stomach and see what the trouble is," he said.

Shellfish, milk, pork and ripe bananas are among the food allergies Dr. Withers has found in his patients.

"A 36-year-old woman patient who really had gallstones was operated upon," he said, "and later when I was treating her for hay fever, we discovered that eating pork had caused recurrence of the pain in the region where the gallbladder had been removed."

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## PHYSICS

### Underground Nuclear Test Study Planned

► THE ATOMIC Energy Commission is considering a program of studies on the earth shock effects of possible underground nuclear detonations.

The studies would be particularly useful in determining the risks involved in the proposed Plowshare Program of atomic detonations for peaceful uses. No nuclear detonation yet has been approved for Plowshare, which has been highly publicized by AEC as a positive reason for continued nuclear testing, at least underground.

Apart from military implications, the AEC has pointed out that the ability to achieve controlled underground explosions could have valuable peaceful uses in the building of dams, canals and other similar major construction. However, the danger of radiation pollution of underground streams, and the very earth itself has kept the Plowshare program in the idea and thought stage only.

The proposed studies also would have an important bearing on the AEC's seismic improvement programs, aimed at increasing basic knowledge of seismology and developing instruments and techniques to improve monitoring of a control system for a nuclear test ban treaty.

To date only five underground nuclear detonations with an explosive yield of one kiloton or more have been fired outside of the Soviet Union, all at the Nevada Test Site. In the study program being considered, existing knowledge of earth shock phenomena associated with such events would be analyzed for use in considering the possible effects of detonations in other geographical regions.

The program also would aid in better predictions than now are possible on earth shock effects on existing structures within a few miles of a detonation.

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## MATHEMATICS

### Better College Math Training Urged

► COLLEGE MATHEMATICS training must be updated to keep abreast of the "explosion" of knowledge in engineering.

A rapid change in the mathematical world and its related fields has made this revision necessary, Dr. H. O. Pollak of Bell Telephone Laboratories stressed to a group of 50 leading mathematicians and engineers meeting in Washington, D. C.

New applications of mathematics in engineering are creating various trends already visible in the engineering world. More emphasis on basic science, installation of large complex engineering systems and wider duties of research engineers demand a stronger mathematics background, Dr. Pollak said.

Extensive changes must be made in the mathematics classrooms, Dr. Pollak said. More mathematics should be required and elementary courses made more "sophisticated" to meet the demand.

The expanding use of engineering mathematics is an "explosive," not a "revolutionary" change, the scientist stated. Already, the electronic computer is affecting every phase of science and technology, from basic research to the production line.

Dr. Pollak spoke to a Mathematical Association of America's committee that is seeking to wipe out the one- to four-century lag in some school and college math teaching.

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## METEOROLOGY

### Extensive Study of What Causes Tornadoes

► THE U. S. Weather Bureau will in the next few months undertake the largest research program ever attempted to study tornadoes and other severe local storms.

The program will be a cooperative effort of various scientific groups to gather more information about the atmosphere when devastating storms break loose.

Secretary of Commerce Luther H. Hodges personally inspected two of the Weather Bureau's "flying laboratories" at the National Airport, Washington, D. C. The two planes, which will be used extensively in the research project, are en route to Oklahoma City, the project's home base.

The planes will again this year be flown straight into the storm centers, collecting valuable information on the little known turbulent areas. Similar methods have been used to track and study hurricanes.

The 1961 research program began March 15 and will end June 1. This is the time of year when twisting tornadoes and slashing severe local storms are at a peak.

The U. S. Weather Bureau is in charge of the National Severe Storms Project. Cooperating agencies include the Federal Aviation Agency, the U. S. Navy and Air Force, and various universities.

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