look for artificial earth satellites in any given locality. *Simplified Satellite Prediction From Modified Orbital Elements* may be obtained for $1 from the Publications Office, National Academy of Sciences, Washington 25, D.C.

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An exhibit of paintings, drawings, and prints illustrating "Art in Science" is being displayed at the International Business Machines Gallery of Arts and Science in New York, 11–26 November. The exhibit, sponsored by the *Scientific American,* is composed of covers and illustrations drawn for the magazine. The American Federation of Arts assisted in the preparation of the exhibit.

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Apparatus has been developed at the National Bureau of Standards by F. E. Washer that makes possible the rapid, accurate visual testing of high-precision lenses, such as those used in airplane cameras and telescopes. Spherical and chromatic aberration are determined on an optical T-bench equipped with nodal slides and angle-measuring telescope. From the resulting data, corrections are easily made for out-of-focus effects.

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An explanation of what cosmic rays are and how they were discovered will be shown on television again when "The Strange Case of the Cosmic Rays" is repeated on the National Broadcasting Company at 6 P.M. on 23 November as a part of the Bell System Science Series.

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The National Science Foundation has issued a compilation of the Soviet scientific and technical journals available in English translation in the United States. There are now in print 53 English editions of Russian journals, four extensive series of translated Russian abstracts of scientific papers, and four series of partial translations of important Russian journals. The number of translations of complete journals supported by the National Science Foundation is 31.

Grants, Fellowships, and Awards

Atomic Energy. Graduate students who wish to major in subjects within the field of nuclear science and engineering are eligible to apply for special Atomic Energy Commission fellowships to support such studies. Up to 150 appointments will be made for fellowships which begin in the fall of 1959. More than 40 universities in the United States offering the required courses accept students under this program.

Basic stipend for first-year students is $1800 for 12 months. Intermediate-year fellows receive $2000, and terminal-year appointees, $2200. An additional allowance of $500 per year is made for a wife and a maximum of two dependent children, and tuition, fees, and travel allowances are provided.

The Oak Ridge Institute of Nuclear Studies, which administers these fellowships for the commission, has established an application deadline of *2 January 1959.* Brochures and application materials are available on request from the Nuclear Science and Engineering Fellowship Office, University Relations Division, Oak Ridge Institute of Nuclear Studies, Box 117, Oak Ridge, Tenn.

Biological Sciences. The Division of Biological and Medical Sciences of the National Science Foundation has announced that the next closing date for receipt of basic research proposals in the life sciences is *15 January 1959.* Proposals received prior to that date will be reviewed at the spring meetings of the foundation's advisory panels and disposition will be made approximately 4 months following the closing date. Inquiries should be addressed to the National Science Foundation, Washington 25, D.C.

Teacher training. Stanford University, with the financial support of the Shell Companies Foundation, is again making available to secondary-school chemistry, physics, and mathematics teachers in the United States and Canada 50 Merit Fellowships which provide an opportunity for advanced study. The Shell program makes it possible for a teacher to attend a Stanford University summer session with practically no cost to himself. The fellowships provide full tuition, board, and room; textbook and travel allowances; and a cash stipend of $500. The total value of a fellowship is approximately $1250 for the 8-week summer session. The application deadline is *1 January 1959.* For information, write to: Dr. Paul DeH. Hurd, Coordinator, Shell Merit Fellowship Program, School of Education, Stanford University, Stanford, Calif.

Travel grants. The National Science Foundation will award individual grants to defray partial travel expenses for a limited number of American scientists who wish to participate in the following international congresses: International Congress of the History of Science, Barcelona, August-September 1959; International Sociological Association Congress, Perugia, September 1959; International Union for the Scientific Study of Population, Vienna, August-September 1959; and the Pan–African Congress on Prehistory, Leopoldville, August 1959.

An attempt will be made to have the grants approximate round-trip air tourist fare between the scientist's home institution and the location of the meeting. Application blanks may be obtained from the National Science Foundation, Washington 25, D.C. Completed application forms must be submitted by *1 February 1959.*

Scientists in the News

EUGENE P. WIGNER, Thomas D. Jones professor of mathematical physics at Princeton University, is to receive the Atomic Energy Commission's Enrico Fermi Award. The $50,000 award will be presented to Wigner on 2 December for "contributions to nuclear and theoretical physics, to nuclear reactor development, and to practical applications of atomic energy."

The presentation ceremony is being held on the anniversary of the day when the late Enrico Fermi and his associates, among them Wigner, proved that nuclear fission could be self-sustained and controlled. This year's ceremony marks the 16th anniversary of the start-up, in 1942, of the first nuclear reactor under the stands of Stagg Field at the University of Chicago.

The award was recommended by the AEC's General Advisory Committee and approved by President Eisenhower. The Advisory Committee's recommendation was contained in a letter, dated 7 August, from the committee's chairman, Warren C. Johnson, to AEC chairman John A. McCone. After reporting that it was the unanimous recommendation of the committee that the award be made to Wigner, the letter reads:

". . . Dr. Wigner is one of the most renowned authorities in theoretical physics. His contributions have been both numerous and outstanding in the field of nuclear physics but have not been limited to this field; on the contrary, they have embraced many areas of theoretical physics.

"Dr. Wigner was the first to calculate, and with unusual accuracy, the correct lattice proportions of uranium and graphite in the design of the Hanford production piles. He also predicted the dislocation effect caused by fast neutrons in graphite, and designed experiments to verify his prediction. As a consequence, we were forewarned at an early date of a very serious problem in the operation of graphite piles. Also it was largely due to Dr. Wigner's insistence that the water-cooled design for the Hanford piles was adopted instead of other concepts. This decision was of the greatest importance in insuring the necessary production of plutonium during the war and the years to follow.

"During the past decade or so, Dr. Wigner has made numerous contributions to the development of nuclear reactors, both for military and civilian purposes. Also, he has been responsible for the

training of many scientists and engineers in the field. There is no one in the country today who is better informed about the reactor development program and has made more contributions to its progress than has Dr. Wigner.

"Dr. Wigner's contributions to the theory of nuclear reactions in the energy range of interest for reactors, as well as for nuclear reactions in general, lie at the foundation of what has now come to be called classical nuclear physics.

"Furthermore, it is especially appropriate to emphasize that although Dr. Wigner is rightfully regarded as a theoretical physicist, his contributions have been outstanding in the practical developments of nuclear energy. In this respect his dual role in the atomic energy field is quite unique."

Wigner is the third recipient of the Enrico Fermi Award. The late John von Neumann, noted mathematician and member of the Atomic Energy Commission, became the first recipient when the award was presented to him in April 1956. The late E. O. Lawrence, inventor of the cyclotron, was the second.

Fermi himself was the first to receive an award conferred under authority of the Atomic Energy Act of 1954. He was honored, on recommendation of the General Advisory Committee, in November 1954. When von Neumann was chosen to receive the award in 1956, it was decided that the award henceforth should bear Fermi's name.

The Gairdner Foundation, Toronto, Canada, has announced its first International Awards in Arthritis and Heart Disease, totalling $40,000. Medical scientists from England, the United States, and Canada are included among the seven recipients.

The $25,000 Gairdner Foundation Award of Merit has been awarded to ALFRED BLALOCK, professor of surgery at Johns Hopkins University, and HELEN B. TAUSSIG, associate professor of medicine at Johns Hopkins University, for their initial development of what is known to the public as the "blue-baby operation."

Three Gairdner Foundation Annual Awards of $5000 each have been awarded to the following:

HARRY M. ROSE, professor of medical and surgical research at Columbia University, and CHARLES RAGAN, professor of clinical medicine at Columbia University, for their discovery of the first practical laboratory test for the diagnosis of rheumatoid arthritis.

W. D. M. PATON, professor of pharmacology at the Royal College of Surgeons, London, and ELEANOR ZAIMIS, professor of pharmacology at the Royal Free Hospital School of Medicine, London, for their discovery of the first drugs to be proved practical and effective in treatment of high blood pressure.

W. G. BIGELOW, associate professor of surgery at the University of Toronto, Toronto, Canada, for his development of the technique of hypothermia for heart surgery.

The Gairdner Foundation was incorporated in December 1957. Its funds derive from personal gifts of J. A. Gairdner, a Canadian industrialist and financier, and members of his family. Gairdner was president of the Canadian Arthritis and Rheumatism Society from 1949 to 1952 and chairman of its National Board of Directors from 1952 to 1958.

The awards are prizes for achievements and not grants for support of future research. They are intended to encourage and reward individuals who have made major contributions to the conquest of disease and human suffering, to help focus attention on the problems of arthritis and heart disease, and to facilitate communication of ideas among scientific workers in these fields.

The $25,000 Award of Merit is to be presented periodically to the individual or group who, in the opinion of the foundation, has made outstanding discoveries or contributions in the same fields.

ROGER ADAMS, research professor of chemistry at the University of Illinois, has won the American Chemical Society's Charles Lathrop Parsons Award for outstanding public service. Adams is widely known for his services to the government, his research on medicinals, and his achievements in science teaching. He is a former president of the AAAS and of the American Chemical Society.

The Parsons Award, which cannot be given more frequently than once every 3 years, consists of a scroll and the privilege of choosing the recipient of a $2000 scholarship for graduate study in chemistry, chemical engineering, or some related field. The award will be presented to Adams at a dinner in conjunction with the quarterly meeting of the ACS Board of Directors on 6 December in Washington, D.C.

DELL LEBO, associate professor of psychology at Richmond Professional Institute of the College of William and Mary, has accepted an appointment to the staff of the Child Guidance and Speech Correction Clinic of Jacksonville, Fla. He will also serve as lecturer in psychology at Jacksonville University.

A. BAIRD HASTINGS, chairman of the department of biological chemistry at Harvard Medical School, will retire on 31 December after 23 years of teaching at Harvard. He becomes Hamilton Kuhn professor of biological chemistry, emeritus. On 1 January 1959, Hastings will join the Scripps Clinic and Research Foundation at La Jolla, Calif., as a member of the resident research staff. He plans to continue his current interests in intermediary metabolism and in the application of biochemistry to the study of disease.

Hastings early recognized the value of radioactive isotopes in medical research and took an active role in the establishment of the first laboratory to use these nuclear tools at the Harvard Medical School. This laboratory in 1946 became the Biophysical Laboratory in the Medical School.

Hastings' early work was with Donald D. Van Slyke, one of the founders of biochemistry, at the Rockefeller Institute for Medical Research. There, from 1921 to 1926, he carried on research on the extracellular fluids of the body, especially on electrolytes of the blood. In 1925 he was an assistant to the German biochemist Otto Warburg while the latter was at the Rockefeller Institute. Later, he spent several months with Warburg at the Kaiser Wilhelm Institute for Biology at Dahlem, Germany.

Hastings was appointed professor of physiological chemistry at the University of Chicago in 1926, and in 1928 became professor of biochemistry in the department of medicine and director of the Lasker Foundation for Medical Research there. At Chicago he taught both graduate and medical students while carrying on research on edema and adrenal disorders. His work there in defining the principles which determine water and electrolyte exchange between blood and tissues has found widespread application in clinical medicine. He joined the faculty of medicine at Harvard in 1935 as Hamilton Kuhn professor of biological chemistry and head of the department.

The research carried out at Harvard in collaboration with his students and colleagues has included biochemical changes in aging, the metabolism of carbohydrates, the role of hormones in metabolism, and factors affecting bone formation.

In his academic career, Hastings also has served as lecturer at the University of Southern California (1929); as visiting professor of biochemistry at the Peiping Union Medical College (1930–31); as visiting scientist at the Carlsberg Laboratory, Copenhagen (1950); as Fulbright lecturer at Oxford University (1952); and as visiting professor at the John Curtin School for Medical Research, Australian National University, Canberra (1957).

Hastings received the B.S. degree from the University of Michigan in 1917 and

the Ph.D. degree from Columbia University in 1921. He holds the honorary doctorate of science from Michigan (1941), Harvard (1945), Oxford (1952), and Boston (1956). In 1957 he was named honorary professor at the University of San Marcos, Lima, Peru.

Upon recommendation of the School Science Committee, the American Academy of Arts and Sciences at its meeting of 12 November presented the following nine teachers with Elizabeth Thompson Awards for outstanding science teaching in the secondary schools of New England: FREDERICK AVIS, head of the science department, St. Mark's School, Southborough, Mass.; ROGER BARTON, teacher of science, Orleans High School, Orleans, Vt.; FLORENCE HANCOCK, teacher of mathematics, Peterborough Consolidated School, Peterborough, N.H.; DOROTHY HARLOW, teacher of biology, Rockville High School, Rockville, Conn.; SANTO MARINO, teacher of science, Lexington Junior High School, Lexington, Mass.; ELIZABETH A. QUINN, teacher of science and assistant principal, Saxe Junior High School, New Canaan, Conn.; MARY C. ROGERS, science teacher, Thompson Junior High School, Newport, R.I.; LOUISE SWENSON, teacher of biology and chemistry, Lynn English High School, Lynn, Mass.; FRED L. TURNER, submaster and head of the science department, Cony High School, Augusta, Me.

Three pioneers of glass research were honored recently at a dinner at the Corning Glass Center, Corning, N.Y. EUGENE C. SULLIVAN, the late WILLIAM C. TAYLOR (see "Recent Deaths," this issue), and JESSE T. LITTLETON received the tribute of 85 fellow research scientists and engineers during an informal program commemorating the 50th anniversary of Corning's research laboratories.

Sullivan, dean of glass scientists, founded the Corning laboratory in 1908. The staff conducted the first organized glass research program in the United States and was one of the first industrial laboratories in the country.

Taylor joined the staff later in 1908 as a chemist. Together with Sullivan, he conducted research that led to the perfection of heat- and corrosion-resistant borosilicate glasses.

Littleton joined the laboratory in 1913 as the first physicist on the staff. He was responsible for developing glass cooking ware that was marketed under the Pyrex brand name.

The U.S. Navy's highest civilian honor has been awarded to EDGAR H. DIX, JR., retired assistant director of research, Aluminum Company of America. In ceremonies held at the Pentagon in Washington, D.C., Garrison Norton, Assistant Secretary of the Navy (Air), presented Dix with the Distinguished Public Service Award. The citation states, in part:

"As assistant director of research of the Alcoa Research Laboratories of Aluminum Company of America, Dix was the guiding intellect in the development of high strength, corrosion resistant aluminum alloys which constitute the basic construction material in modern, high performance naval aircraft. Dix has devoted a lifetime to aviation in general; and naval aviation, in particular, has benefited greatly from his achievements. His vision, technical competence and efficient leadership have resulted in outstanding contributions to the nation's defense capability."

Recognized internationally as the dean of aluminum metallurgy, Dix retired from Alcoa on 1 September, following 40 years of service with the firm. He has been directly or indirectly responsible for the development of the majority of the aluminum alloys in use today.

A portrait of FRANCES R. HOUSTON was presented to the University of Pennsylvania on 6 November in recognition of her 40 years of service to medical students, faculty, and alumni as librarian of the university's School of Medicine. The 1958 medical class started the movement to obtain funds for the portrait. With the enthusiastic help of faculty and alumni, the necessary amount was quickly subscribed, and artist Pietro Pezzati, of Boston, was commissioned. The portrait has been hung in the Medical Library among those of many distinguished university medical educators of the past.

JOSEPH V. CHARYK has been appointed chief scientist of the United States Air Force. Charyk, general manager of the Space Technology Division of Aeronutronics Systems, Inc., a subsidiary of Ford Motor Company in Glendale and Newport Beach, Calif., succeeds G. E. VALLEY. Valley has accepted a position with Melpar, Inc., a subsidiary of Westinghouse Air Brake Co., Falls Church, Va.

FRANK K. PITTMAN has been appointed director of the Atomic Energy Commission's Division of Reactor Development, which now has responsibility for the functions previously assigned to the Office of Industrial Development, except for those having to do with isotope development. Pittman has been director of the Office of Industrial Development since it was established in December 1957.

In addition, ALLEN J. VANDER WEYDEN, former deputy director of the Division of International Affairs, has been named deputy director of the Division of Reactor Development.

The functions of isotope development have been placed in an Office of Isotope and Radiation Development, which is headed by Paul C. Aebersold.

Recent Deaths

DONALD GUTHRIE, Sayre, Pa.; 78; founder of the Guthrie Clinic and chief surgeon of Robert Packer Hospital; retired professor of surgery at the University of Pennsylvania School of Medicine; chief surgeon of the Lehigh Valley Railroad for 30 years; helped to organize the American Board of Surgery; 31 Oct.

PAUL U. KELLOGG, New Paltz, N.Y.; 79; for 40 years editor of *The Survey,* a sociological journal that was discontinued in 1952; led an investigation, 1907–09, of the Pittsburgh steel industry, the first such social survey, and revealed facts which contributed to the abolition of the 7-day week and the introduction of the 8-hour day in industry; 1 Nov.

JACKSON O. KLEBER, Whitestone, Queens; 58; director of research of the National Industries for the Blind and former chief engineer of the Talking Book studios of the American Foundation for the Blind; inventor of a number of devices to aid the blind, including a device with which the deaf-blind can communicate; 30 Oct.

LOUIS LAHN, Norwich, Conn.; 63; clinical professor of obstetrics and gynecology at New York Polyclinic Medical School and Hospital; associate professor of obstetrics and gynecology at the New York Medical College; associate gynecologist at the Hospital for Joint Diseases; 31 Oct.

ROBERT T. MOORE, Los Angeles, Calif.; 76; ornithologist and retired research associate professor in vertebrate zoology, California Institute of Technology and Occidental College; director of the Moore Zoological Laboratory at Occidental; led several ornithological expeditions to Ecuador and Mexico; 30 Oct.

JOHN F. STIMSON, Papeete, Tahiti; 75; noted Polynesian ethnologist; editor for Polynesia of *Webster's Dictionary;* author of the Tahitian-English and Tuomatuan dictionary; 19 Oct.

WILLIAM C. TAYLOR, Corning, N.Y.; 72; honorary vice president and general adviser of the Corning Glass Works, with which he had been associated for 50 years; coinventor of Pyrex, heat-resistant glass; holder of 32 patents; 2 Nov.