

command, becomes an amplifier for the 150-watt transmitter. Both transmitters are connected to all instrumentation, but only one transmits at a time. The frequency is 378 megacycles per second.

The satellite is silent (to conserve power) until a transmitter is activated by one of three ground stations. The stations are located at South Point, Hawaii, at Goldstone Lake, Calif., and

at Jodrell Bank in England. The instruments function even when the transmitters are not operating; their findings are stored in electronic accumulators for later transmittal. Radio power is supplied by mercury batteries that are kept charged by solar cells in the four paddles.

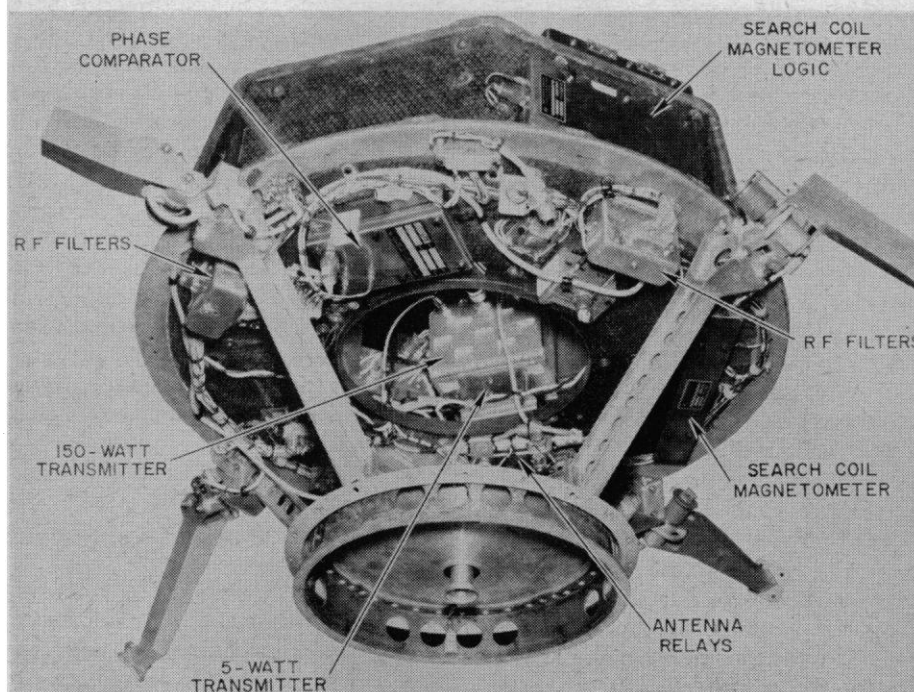
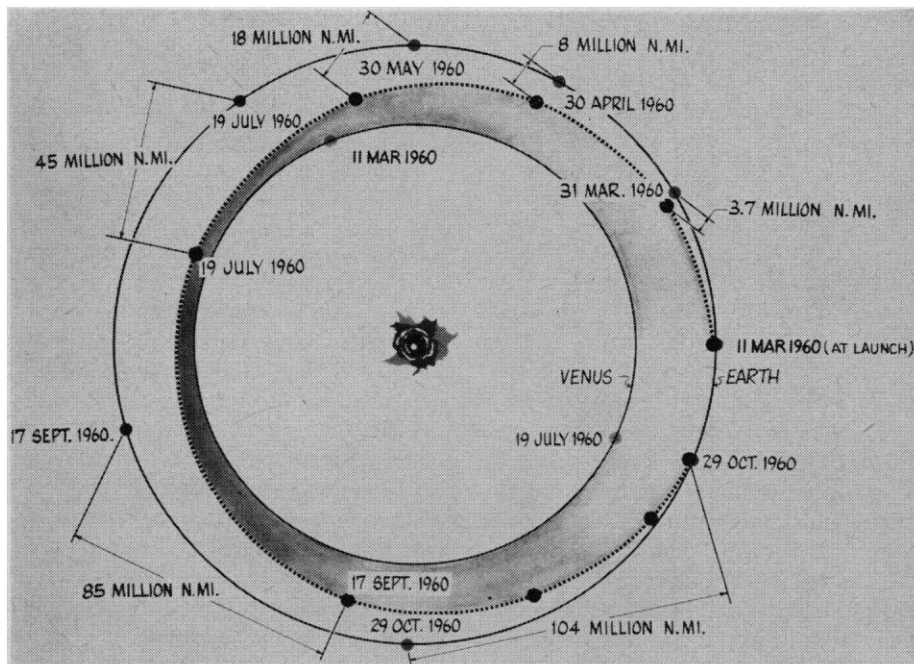
It is expected that periodic radio contact can be maintained with Pioneer V

for at least the next 5 months, until it goes out of range. If the vehicle's instruments hold up under the stresses of space environment, radio contact might be reestablished in 1963, when the satellite is expected to come within 50 million miles of the earth again.

Project Officials

Principal NASA officials involved in this program are Abe Silverstein, director of space flight development, and John Lindsay, head of the solar physics program of the space sciences division.

Key Air Force Ballistic Missile Division and Space Technology Laboratories personnel engaged in the program are Maj. Gen. O. J. Ritland, commander of AFBMD; Ruben F. Mettler, STL executive vice president and senior project advisor; Col. Richard D. Curtin, AFBMD deputy commander for Military Space Systems; George E. Mueller, STL vice president, associate director of the research and development division, and senior project advisor; Lt. Col. Donald R. Latham, AFBMD director of space probe projects; Adolph K. Thiel, STL director of advanced experimental space missions and project director; and Major John E. Richards, AFBMD chief of the astrovehicles division within the space probes directorate.



(Top) Plot of the projected path of Pioneer V in relation to the earth and Venus in the months ahead. (Bottom) View of the 94.8-pound probe payload without its aluminum shell. Near the earth, the 5-watt transmitter will be used for relaying experiment information. But when the probe is several million miles away from the earth, the 5-watt transmitter will become a booster-amplifier for the powerful 150-watt transmitter. [National Aeronautics and Space Administration]

Hearings on Atomic Energy Research Scheduled by Joint Committee

A series of public congressional hearings on "Frontiers in Atomic Energy Research" will be held in Washington 22-25 March, according to Representative Melvin Price, chairman of the Subcommittee on Research and Development of the Joint Committee on Atomic Energy. The hearings will begin with consideration of research in the use of nuclear explosives for peaceful purposes (known as the "Plowshare" project) and then proceed to the program for obtaining power by means of controlled thermonuclear reactions.

After this, the subcommittee will hear testimony on advanced developments in nuclear (fission) power-reactor concepts. Adaptation of nuclear power for outer space propulsion (particularly the "Rover" project) and auxiliary power systems for satellites and space ships (SNAP) will then be discussed. The final session will be devoted to a discussion of direct conversion of nuclear energy to electric power and of the role of solar energy.

Among the scientists who will be witnesses are the following: Henry D. Smyth, chairman of the University Research Board, Princeton University; Edward Teller, director of the Lawrence Radiation Laboratory, Livermore, Calif.; Kraft Ehrlicke, Convair, San Diego, Calif.; and W. H. Zinn, vice president, Nuclear Division, Combustion Engineering Company, Windsor, Conn. A complete list of witnesses will be issued when arrangements are completed.

Council for Advancement of Science Writing Established

The establishment of a Council for the Advancement of Science Writing was announced last month by the National Association of Science Writers. The purpose of the new organization is to raise the standards for science writing and stimulate an increase in the quantity of science news that is carried in all media of mass communications—newspapers, television, radio, magazines, and books for the general public. The council plans to foster research and training in science journalism and to sponsor discussions and seminars on science writing throughout the country. The aim is to heighten the public's understanding and appreciation of the scientific enterprise.

Earl Ubell, science editor of the *New York Herald Tribune* and vice president of the National Association of Science Writers, is president of the council; W. Bradford Wiley, president of John Wiley and Sons, is vice president; and Hillier Kriegbaum, chairman of the department of journalism at New York University, is secretary-treasurer.

The idea for an organization such as the Council for the Advancement of Science Writing grew out of a conference held by the National Association of Science Writers in New York several years ago. The NASW authorized its officers and executive committee to proceed with plans to set up the nonprofit corporation. Pending the opening of an office of its own, the CASW may be reached through Kriegbaum.

Leprosy Laboratory Established

In January the School of Hygiene at Johns Hopkins University celebrated the opening of a joint Johns Hopkins-Leonard Wood Memorial Leprosy Research Laboratory located in the depart-

ment of pathobiology. The laboratory succeeds one which has been maintained by the Wood Memorial for the past 13 years at the Harvard Medical School. Financial support of the laboratory will come from the Memorial, aided by a grant from the National Institute of Allergy and Infectious Diseases of the Public Health Service.

John H. Hanks, bacteriologist of the Memorial for the past 20 years, will be the director. New members of the staff are Claude V. Reich, associate bacteriologist, and Byron S. Tepper, associate biochemist, both of the University of Illinois, and Norman E. Morrison, associate biochemist, who is at present on the staff of the University of Otago, New Zealand. All staff members will have university positions and will teach in the School of Hygiene. The Leonard Wood Memorial, which has headquarters in New York, is devoted to research and education in leprosy.

Occupation Question in 1960 Census Should Be Answered with Care

The 1960 population census will begin on 1 April. In every fourth household each person 14 years of age or older will be asked what kind of work he is doing.

In order that the statistics on scientific and engineering manpower may be developed as accurately as possible, the U.S. Census Bureau has asked that scientists be reminded that the question on occupation should be answered completely and precisely. The entry should consist of at least two words in most cases. Some examples of acceptable entries follow: appraisal metallurgical engineer, design electrical engineer, director of chemical laboratory, process chemical engineer, research physicist.

Student Science Journal Launched

Particle, a quarterly by and for science students, is being published in Berkeley, Calif. Articles are accepted in the fields of chemistry, physics, mathematics, biology, and other natural sciences. The journal was established to enable student readers to discover what other students are doing and thinking in their chosen fields of science, and to afford student authors an opportunity to share the products of their original thinking or research.

The new publication, which is privately supported, has nearly 400 regular

subscribers. These include the libraries and science departments of more than 50 schools and colleges throughout the country, supporting subscribers, and a number of corporate subscribers. The editors are Joseph Weinstein, a student at the University of California, and Lloyd Prentice, a student at Castlemont High School, Oakland, Calif. Subscriptions are \$1.20 in the United States and \$1.60 abroad. For information, write to the editorial and publishing offices, 2531 Ridge Rd., Berkeley 9, Calif.

Oklahoma High-School Science Meeting Has Outstanding Speakers

Some 6000 high-school science students will gather in Oklahoma City, Okla., on 1 April to hear leading scientists trace the steps by which life began on earth. Joining seven biologists on the panel of speakers will be a well-known American author, Philip Wylie, who has a broad, layman's interest in biology.

The occasion will be the annual High-School Science Symposium of the Frontiers of Science Foundation of Oklahoma, a nonprofit organization supported by business and industry. The 1960 topic is "Origins of Life." The American Institute of Biological Sciences is cosponsor.

Participating scientists will be Alfred Mirsky of the Rockefeller Institute, Philip Abelson of the Carnegie Institution of Washington, Stanley Miller of Columbia University College of Physicians and Surgeons, Sidney Fox of Florida State University, Barry Commoner of Washington University, H. Bentley Glass of Johns Hopkins University, and Frank Fremont-Smith of the Josiah Macy, Jr. Foundation.

In addition to the day-long program for students, the symposium will include luncheon and banquet meetings for educators and for civic, industrial, and financial leaders of Oklahoma and surrounding states.

Grants, Fellowships, and Awards

High-school teaching. High-school teachers who need to learn more about the nature and methods of research will benefit from the National Science Foundation's second group of grants in the Research Participation for Teacher Training Program. These will provide for an additional 200 teacher-participants at 23 institutions. The first group