groups—in the South Pacific. Among these were the Danger Islands in the Cook group.

American observing groups selected as their site Motu Koe, the southernmost of the three Danger Islands and the one closest to the center of the path of totality. Transportation and logistic support for the observers were supplied by the Department of Defense. The Navy furnished a vessel, the LSD *U.S.S. Thomaston,* both to transport scientists and equipment and to serve as a base of operations.

The Eclipse and The IGY

This unusually long eclipse was of particular importance because of its occurrence during the International Geophysical Year. The scheduling of the IGY from July 1957, to December 1958, was intended to coincide with a peak period in the cycle of sunspot activity. Solar eruptions during such periods are followed by many observable effects on the earth and its atmosphere, such as cosmic ray storms, auroral displays, disturbances in the ionosphere, magnetic fluctuations, and disrupted radio communications.

The eclipse also afforded the opportunity to coordinate observations of a variety of terrestrial conditions, by the many widely scattered IGY stations, with observations of solar features and terrestrial effects during an eclipse. For the first time, high-altitude research rockets were used to study the effects of an eclipse on the stratosphere and the ionosphere.

First Details of New Space Agency Organization

Appointments to the top management of the new National Aeronautics and Space Administration were announced 5 October by T. Keith Glennan, administrator of NASA. Initially, the organizational structure provides for three principal areas of activity—namely, space flight development, aeronautical and space research, and business administration.

Reporting to the office of the administrator are the directors of each of these areas: Abe Silverstein, John W. Crowley, Jr., and Albert F. Siepert.

Glennan described the NASA organization as follows:

"In the first category, NASA will be concerned with the entire spectrum of space flight operations including the design and procurement of vehicles and satellite payloads, the launching and monitoring of scientific satellites, the accumulation and reduction of data, and activities supporting the objective of launching man into space.

"In the second category, the long-established and highly regarded laboratories acquired from the NACA will continue their programs of basic and applied research in support of aeronautics and space science and technology. Additional effort in this area of activity will be supported in the laboratories of industry and educational and non-profit institutions.

"The third category, business administration, includes the business functions of any well-run organization, such as the development of fiscal and budgetary policies, of contracting policies and their implementation, of policies relating to personnel administration, plant operation and security, and the provision of administrative policy guidance for the decentralized operation of NASA's research centers and field stations."

Proposed Institute for Study of Man in Africa

When at the end of 1958 Raymond A. Dart retires from the chair of anatomy at the University of the Witwatersrand, which he has held since 1923, it is planned that his work be continued and extended by the establishment of an Institute for the Medical and Anthropological Study of Man in Africa.

A group of past and present students and colleagues of Dart have conceived the idea of the institute, the purpose of which would be to advance the study of the living peoples of Africa in health and disease and to serve as a museum, research, and teaching center. The objectives of the proposed institute are set forth by the organizing committee in its constitution as follows:

1) The institute shall advance the study of the peoples of Africa today in health and disease, their bodily structure, function and pathology, diet and nutrition, genetics and racial composition, disease patterns, climatic adaptations, demography, physical anthropology, psychological problems and cultures, including art, music, languages, social and tribal structure, and psycho-social attitudes.

2) In the second place, the institute shall advance the study of man's ancestors in Africa, their fossil remains, migrations, hybridizations, climatic background, associated flora and fauna, and cultures, including implements and other cultural objects, artistic creations and burial customs.

3) The institute shall foster and facilitate research in the laboratory and in the field; provide educational facilities, both intra-mural and extra-mural; set up a museum of Africana, which shall serve as a repository for collections within the University of the Witwatersrand bearing on the subject of man in Africa, past and present; build up a library and set up a centre for the collection, classification and dissemination of information on all relevant aspects of man in Africa.

Africa's need for workers in all of these fields is great, and it is expected that one great service which such an institute would fulfil, would be to draw young men and women into such work and to train competent personnel for field-work up and down the continent. Another important aim should be to provide adequate facilities for, and encouragement to, visiting scientists from overseas to spend periods working on African material.

Dart's record has included the deanship of the Medical Faculty in Johannesburg from 1925 to 1943, membership on the board of the South African Institute for Medical Research from 1934 to 1948 and on the Medical Advisory Committee of the Council for Scientific and Industrial Research from 1946 to 1948. He has served as president of the South African Association for the Advancement of Science and received the association's gold medal in 1939. Among his greatest achievements have been his contributions to all aspects of the study of man in Africa, not least of which has been his discovery and appraisal of the South African fossil ape-men, the Australopithecinae.

Seawolf

On 6 October the atomic submarine *Seawolf* surfaced off New London, Conn., after a record-breaking continuous submersion which lasted for 60 days. The previous record, set by the *Seawolf's* sister ship *Nautilus,* was 31 days and a few hours. The *Seawolf's* feat was held to have significance for a number of fields, chiefly naval warfare and space exploration. Admiral Hyman G. Rickover, commenting on the performance, said it was now possible to establish a hidden base beneath the sea. For the field of astronautics, with its problem of the extended isolation of space travelers, the experience of the crew of the *Seawolf* is expected to have considerable value.

New Atomic Reactor

A prototype of a nuclear reactor which is designed for space-vehicle propulsion will be tested soon at an Atomic Energy Commission facility near Mercury, Nevada. The basic design of the reactor calls for the injection of gases into a fission reaction, their sudden and extreme heating by it, and their expulsion through directing nozzles for propulsion.

So little is known about the actual performance of this radical design that elaborate safety precautions are being employed in the pretest preparations. A two-mile railroad track will carry the reactor from the engineering center to the instruments that will test its performance. It will then be returned to the engineering center for further examination.

As an additional safety precaution, the test center itself is laid out in the form of a triangle, with the test bunker, the engineering center, and the control center placed at the three angles. A distance of two miles separates each unit from the adjacent units.

Radioactivity Catalog

A world-wide search has been launched to locate at least 2000 persons who were exposed to radium poisoning during the period 1920–1930.

A program initiated by the Massachusetts Institute of Technology looks toward the establishment of a central catalog agency which would serve as a major source of information on the effects of radioelements in the body. The search is primarily directed toward locating persons who were exposed to radium either in connection with their work (for example, the painting of luminous watch dials) or as a part of medical treatment.

The central catalog, to be set up at the Radioactivity Center of the institute, will record information on persons who have carried radioactive material in their bodies for a generation or more. All physicians have been requested to aid in the search, which is being conducted with the cooperation of the division of biology and medicine of the Atomic Energy Commission.

Uranium Isotopic Standards

The National Bureau of Standards, in cooperation with the Atomic Energy Commission, has prepared the first of a series of uranium isotopic standards for use by educational and research institutions and industry in the United States and abroad. Ten standard uranium isotopic samples became available from the bureau on 1 October 1958. Five additional uranium standards are in preparation to complete a series of fifteen.

Standards for other atomic energy materials such as plutonium and thorium will be made available under a continuing program intended to provide materials of known certified composition which will be universally acceptable as analytical standards.

Order forms for domestic use (AEC contractors and licensees) may be obtained from the National Bureau of Standards, Washington 25, D.C. Orders from foreign sources should be submitted to the Division of International Affairs, U.S. Atomic Energy Commission, Washington 25, D.C.

New Detector for Infrared Radiation

Scientists at the Westinghouse Research Laboratories have developed a new infrared detector. The device, so sensitive that it can respond to less than 0.05×10^{-9} watt of infrared (heat) radiation, was developed by Max Garbuny, J. R. Hansen, and T. P. Vogl, in consultation with Henry Levinstein of Syracuse University.

Every object above the absolute zero temperature of outer space emits infrared radiation, which is generated inside the molecules of a material as a result of their own thermal motion. The higher the temperature, the faster the molecules move, and the more energetic and shorter in wavelength is the infrared radiation emitted by the body. The infrared wavelengths lie between the wavelengths of visible light and microwaves.

The function of an infrared detector is to convert infrared radiation into electrical signals that can be amplified and seen. It is the "heart," as well as the most critical component, of complete infrared systems, which are assuming ever-increasing importance in a variety of scientific and military tasks. These systems are used for guiding missiles to a target, for detecting missiles and fast-flying aircraft, for making "heat pictures" of the ground in the complete absence of light, for studying the radiation from stars and other celestial bodies, and for a variety of similar purposes. The detector is potentially very useful in medical research, astronomy, exact scientific experimentation and industrial control.

Since the sensitivity and frequency response of a photoconductive infrared detector are increased by operating it at low temperatures, the new detector is cooled to a temperature of $-320°F$ by surrounding it with liquid nitrogen in a special container.

Grants, Fellowships, and Awards

Mathematics. The School of Mathematics of the Institute for Advanced Study will allocate a small number of grants-in-aid to gifted young mathematicians and theoretical physicists to enable them to study and to do research work at Princeton during the academic year 1959–60. Candidates must have given evidence of ability in research comparable at least with that expected for the degree of doctor of philosophy. Blanks for application may be obtained from the School of Mathematics, Institute for Advanced Study, Princeton, N.J., and are returnable by *1 January 1959.*

Medicine and dentistry. The University of Rochester has established a program of postdoctoral fellowships to be awarded graduates of approved medical schools to enable them to pursue research in any of the departments of the School of Medicine and Dentistry. The Buswell fellowships are intended to assist well-qualified doctors of medicine to prepare adequately for academic careers. Junior fellowships will be awarded to medical graduates who have completed at least 1 year of internship or equivalent training. Research experience is not required but will be of advantage. Research interest and promise are essential. Stipends range from $4500 to $6000 per year. Senior fellowships will be awarded to medical graduates who have held a junior fellowship for 2 or 3 years or have had comparable experience in medical research and wish to continue in an academic career. Stipends range from $5500 to $8000 per year.

Applications for Buswell fellowships will be received at any time. Additional information and application forms may be obtained from Dr. L. E. Young, Chairman, Committee on Buswell Fellowships, University of Rochester Medical Center, 260 Crittenden Boulevard, Rochester 20, N.Y.

News Briefs

A major oceanographic research program for the Indian Ocean is being prepared by the Special Committee on Oceanographic Research of the International Council of Scientific Unions. The study, to take place during the period 1961–62, will be an international effort with scientists from the United States, the Soviet Union, the countries bordering the Indian Ocean, and others participating. Among the problems to be studied will be the mass mortality of fish, the ocean's floor, and the effect of monsoon winds on the currents and layers of the ocean. A fleet of at least 16 research ships is expected to be used in the program. A total cost of $4 million is the current estimate for the year-long program.

* * *

The more than 600 technical papers presented by American nuclear scientists at the second International United Nations Conference on Peaceful Uses of Atomic Energy held in Geneva 1–13 September have been published by the Atomic Energy Commission and are for sale by the Office of Technical Services.