RESEARCH FACILITIES AND PROGRAMS

Michigan Space Research Lab

The University of Michigan has announced plans to build a $1.75-million Space Research Laboratory under a grant from the National Aeronautics and Space Administration. Construction of the laboratory, which will begin early next year, will enable the University to house most of its space-research activities in one multi-disciplinary research center.

The University's program of space-related research includes about $5.5 million in NASA-sponsored projects in the fields of propulsion, materials, neutral gas and plasma dynamics, astrophysics, cryogenics, nuclear engineering, aeronomy, meteorology, the ionosphere, radio astronomy, guidance and control, and communications.

The new laboratory will be a two-story, 56 000-square-foot building located on the University's North Campus in Ann Arbor near the Aeronautical Engineering and Fluids Engineering Laboratories, the Cyclotron Building, and the Phoenix Memorial Laboratory. It is expected to be ready for occupancy (by a staff of approximately 200) late next year.

Stanford Radar Astronomy Center

Stanford University and the Stanford Research Institute have established a new Center for Radar Astronomy, which will carry out a combined research program involving staff members of the two institutions and will also be intended for the training of graduate students. The center will employ various antennas and transmitters belonging to the University's "antenna farm", including Stanford's 150-ft parabolic reflector, which is one of three largest fully steerable paraboloids in the United States. The instrument was designed to serve both as a transmitting and a receiving antenna. Coupled to it is a transmitter capable of producing a 400 000-watt radar probe for the exploration of the solar system.

Emphasis in the experimental program will be given to work in "bistatic" radar astronomy. In contrast to ordinary or "monostatic" radar work in which both transmitter and receiver are in the same place, the bistatic procedure calls for a ground-based transmitter at Stanford and a receiver carried in a space probe. The receiver would record direct signals from earth as well as signals reflected from the planet that the probe was passing. Comparison of the two signals would yield information about the characteristics of the planet's surface and atmosphere. Such an experiment is being planned for the flight of Mariner C to Mars, scheduled late in 1964. Other experiments have been proposed for the 1964 Pioneer probe of interplanetary space and for the Surveyor craft which is intended to orbit the moon. The center will also do ground-based studies of the ionosphere, magnetosphere, moon, sun, planets, and meteor trails.

The work will be guided by a directorate consisting of Von R. Eshleman of the University's Radioscience Laboratory, Ray L. Leadabrand of SRI's Radio Physics Laboratory, and Allen M. Peterson of both laboratories. Other senior scientists include Rolf B. Dyce of SRI and Owen K. Garriott and Laurence A. Manning of Stanford. Senior engineers are H. Taylor Howard of Stanford and Lambert T. Dolphin, Ronald I. Presnell, and John C. Schlobohm of SRI. Financial support comes mainly from the Air Force Cambridge Research Laboratories and the National Aeronautics and Space Administration, with additional aid from the National Science Foundation and the Office of Naval Research.

The Boulder Geomagnetic Observatory

The US Department of Commerce has announced the forthcoming establishment in Colorado of a new geomagnetic observatory to be operated as a joint project of two of the Department's bureaus, the Coast and Geodetic Survey and the National Bureau of Standards. It will be located at the NBS Table Mesa field station, north of Boulder.

The Boulder Cooperative Magnetic Observatory will be the fourth such facility in the continental United States; the other three are at Fredericksburg, Va., Tucson, Ariz., and Dallas, Tex. The Coast and Geodetic Survey will have primary responsibility for establishing and operating the observatory, and the Bureau of Standards is in charge of its construction. Specialists in earth physics from the Coast and Geodetic Survey and members of the NBS staff working in atmospheric physics will participate in the scientific program. The new observatory is expected to be completed by October of this year, and the magnetic data it will provide will be made available to the scientific community. The station is expected to contribute to research projects carried out in connection with the International Year of the Quiet Sun, which begins on January 1, 1964. The IQSY is an international cooperative effort to extend the observations begun during the International Geophysical Year into the forthcoming period of minimum solar activity.

Millimeter-Wavelength Antenna

A new radio telescope, designed for operation at wavelengths previously inaccessible to radio-astronomical observations, was dedicated on June 14 at the University of Texas Electrical Engineering Research Labo-