

being done by Professors Byron P. Roe, Daniel Sinclair, and John Vander Velde.

MSU Cyclotron Facility

Construction of a building to house a 50-MeV variable-energy sector-focused cyclotron has begun on the campus of Michigan State University. The experimental area includes three separately shielded target rooms with walls and ceilings consisting of large, movable concrete blocks. The cost of the 34 500-square-foot building (\$960 054) is being borne by the University, and the structure is scheduled to be completed by the end of August. The National Science Foundation is supplying financial assistance toward the construction of the cyclotron.

Colorado Cyclotron Facility

Plans have been announced for the construction of an addition to the cyclotron building at the University of Colorado with the aid of a grant of \$123 300 from the National Science Foundation. The University will allocate funds to match the grant, which will be used to provide additional laboratory, shop, and office space. The four-year-old building houses the Nuclear Physics Laboratory and the only university cyclotron in the Rocky Mountain region, a 30-MeV cyclotron designed for nuclear-structure studies which produced its first beam in April of last year. The Nuclear Physics Laboratory is under the direction of David A. Lind and Jack J. Kraushaar and has a staff of five faculty members and about ten graduate students.

Chilean Observatory

An international optical observatory available for use by astronomers of both the United States and Chile is to be constructed in Chile with funds provided by the National Science Foundation under its program for the development of research centers. The installation will give US astronomers access to an observing site for study of portions of the southern sky that are invisible from North America.

The observatory will be operated for the NSF by the Association of Universities for Research in Astronomy, the organization that now operates the Kitt Peak National Observatory. To emphasize the international nature of the venture, Dr. Federico Rutlant, director of the National Observatory of Chile, has been named to the AURA board of directors.

Funds (\$750 000) for the major observing instrument, a 60-inch telescope, will be provided by the US Air Force. Various smaller instruments, including a 16-inch telescope that was used in the site-selection surveys, will also be made available. The Foundation has provided a total of \$1.05 million for preliminary engineering studies, site development, construction of buildings and purchase of equipment, and the first year of the observatory's operations.

Radio Telescope

The new 150-foot radio telescope of the Air Force Cambridge Research Laboratories Sagamore Hill Radio Astronomy Observatory at Hamilton, Mass., is reported in partial operation. The reflector, which was placed on its supporting towers last September, is capable of motion in the horizontal plane and is now being used to view radio sources as they rise and set. Equipment to control vertical motion and tracking of sources is being installed, and the instrument is expected to be in full operation by the end of the year. Two other radio telescopes of the same size have been placed in operation by Stanford University in Palo Alto, Calif., and by the Naval Research Laboratory at Chesapeake Beach in Maryland.

The Sagamore Hill dish has a reflecting surface of aluminum mesh with a focal length of 68 feet. Its support consists of two 85-foot towers which are joined at the top by a bridge and are mounted on wheels running on a circular track in the concrete base. Horizontal motion is accomplished by revolving the entire structure.

The research program, under the direction of Jules Aarons, chief of the AFCRL Radio Astronomy Branch, will place major emphasis on the study of the earth's ionosphere. When in full operation, the instrument will be used in observing radiations from planets, including blackbody, synchrotron, and burst, to help determine the characteristics of planetary atmospheres. Studies of Jupiter radiation, in particular, may provide information on the earth's atmosphere, the solar corpuscular stream, and solar storms. The new radio telescope will also be employed in studies of the aurora by radio-star scintillation and absorption, thus expanding a program which has been in progress for several years with Sagamore Hill's 84-foot dish, and when the two telescopes are used together, they will provide AFCRL with an extremely sensitive interferometer.



The AFCRL 150-foot radio telescope