

NBS Boulder Labs

Two new sections have been organized in recent months at the Central Radio Propagation Laboratory of the National Bureau of Standards in Boulder, Colo.

The first of these is the High-Latitude Ionospheric Physics Section, which will specialize in interpreting observations of geophysical phenomena gathered from field stations located at high latitudes in the northern and southern hemispheres—at opposite ends of lines of force of the earth's magnetic field. The Section, headed by Hugh J. A. Chivers, will observe the variations in the intensity of cosmic noise received at the stations and will carry out conventional radio soundings of the ionosphere, record radio waves at very low frequencies, and conduct photometric studies of the aurora. Results from a preliminary program using stations at conjugate sites in Canada and Antarctica have revealed marked similarities in minute-by-minute comparisons of events recorded at the two stations.

The newly established Frequency Utilization Section will be concerned with investigating and developing techniques in the application of ionospheric radio propagation to radio systems. The Section is headed by George W. Haydon, consultant to the chief of the Radio Systems Division, who has been with the Bureau's Boulder Laboratories since 1959. The group will be responsible for providing radio-path analysis services and performance predictions for ionospheric communication paths as well as consulting and advisory services in connection with other agency systems. It will also carry out research and development activities aimed at improving such predictions and services.

Go and Catch a Falling Star

The Smithsonian Astrophysical Observatory has undertaken a project to locate and recover fallen meteorites before they are contaminated by prolonged contact with the earth's surface. The project, under the direction of Richard McCrosky, will include a network of sixteen stations in seven midwestern states. Each station is equipped with four automatic cameras to scan the night sky for falling meteorites. Films from the stations will be collected periodically and examined for clues as to the location of possibly recoverable meteorites, and a search will be made if a fall is indicated.

New Look for MIT Cyclotron

The Massachusetts Institute of Technology's 22-year old cyclotron (which is capable of producing a 7.5 MeV proton beam) is undergoing a \$500 000 modernization program. The entire existing cyclotron building, except for the machine itself and the concrete vault that houses it, has been torn down and is being replaced by a larger two-story structure. Improvements will include an enlarged target area, up-to-date beam-focusing equipment, a modern radiochemistry laboratory, and expanded general research laboratories.

Celestial Mechanics

A research center for celestial mechanics was established at Yale University during the summer under the sponsorship of the Air Force Office of Scientific Research and the Office of Naval Research. Activities at the center will deal generally with problems in applied mathematics and astronomy involving the effects of gravitational forces on the motion of bodies in space. Special emphasis will be given to the further refinement of lunar theory and to the problems of predicting the paths of orbiting satellites and the trajectories of lunar and interplanetary probes and vehicles.

The center is under the leadership of Dirk Brouwer, director of the Yale Observatory, and is staffed initially with a small group of postdoctoral fellows and graduate students. Considerable work in celestial mechanics has been carried out at the Yale Observatory in recent years with the support of funds provided in part by the Air Force and the Navy. The program of the new center thus represents a continuation of that work on a larger scale, and a considerably expanded program is envisioned for the future.

New Air Academy Lab

A basic-research laboratory is to be established at the Air Force Academy near Colorado Springs in early autumn. The facility will be known as the Colorado Astronautical Research Laboratory (CARL), and will be operated under the supervision of the Office of Aerospace Research with an initial staff of 37 and an annual budget of \$850 000. Current plans call for a research program concentrating on the fields of chemistry and aerospace mechanics and including the areas of radiation chemistry, chemical physics, the physics of high polymers, numerical analysis, and solid mechanics.

Weather Bureau Grant for Maryland

The University of Maryland has received a \$150 000 grant from the US Weather Bureau to be used by the University's Department of Physics and Astronomy to strengthen its newly established Center of Atmospheric and Space Physics. The grant will provide new equipment and research facilities at the Center, and will support the addition of several new members to the research group. The Department expects the staff of the Center to include six or seven faculty members and at least ten graduate students this fall, and it is anticipated that that total will be approximately doubled within the next few years.

The Maryland Center was founded by the Department of Physics and Astronomy to serve as the focus of its research activities in atmospheric and space physics. It is currently engaged in the study of the upper atmosphere, cosmic rays, aurorae, radiation belts, and the effect of solar disturbances on the earth's magnetic field and the ionosphere.