

for Union College and Rensselaer are being accepted from Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and the District of Columbia. The Union summer program also includes teachers from North Carolina.

NBS Boulder Laboratory

For Radio Wave Propagation Research

Construction has begun on a major laboratory of the National Bureau of Standards at Boulder, Colorado. The new building will house the Bureau's Central Radio Propagation Laboratory on a 210-acre site directly south of the city, near the campus of the University of Colorado. Complete and modern facilities are to be provided for research on the propagation of radio waves and on the expanded utilization of the radio spectrum now being used for FM, television, facsimile, and radar.

The NBS Central Radio Propagation Laboratory is engaged in a broad program of basic and applied research in radio physics and associated geophysical phenomena of the upper atmosphere and the troposphere. The program has four aspects: ionospheric research, systems research, measurement standards, and regular propagation services. Investigations are under way dealing with the properties of matter at radio and microwave frequencies and with the development of techniques for the precise measurement of electrical quantities in these regions. One aspect of the basic standards and measurement program is concerned with obtaining atomic standards of time and frequency. NBS also participates in an advisory capacity on radio subjects for other agencies of the Government such as the Defense and State Departments and the Federal Communications Commission.

More than fifty members of the NBS tropospheric research group are now housed in temporary quarters at Boulder pending completion of the new building. Another group of twenty, engaged in studies of long-range propagation techniques, is located in Colorado Springs. By mid-1954, a staff of about five hundred—including scientific and clerical personnel—will be employed at the new Boulder Laboratory.

Miscellany

The Copley Medal of the British Royal Society for the Advancement of Science has been awarded to P. A. M. Dirac, Lucasian professor of mathematics at Cambridge University, for his contributions to the present understanding of quantum theory, elementary particles, and electromagnetic fields. Included among the other awards presented during the Royal Society's 290th anniversary meeting last month were the Hughes Medal, which was given to Philip I. Dee of Glasgow University for his work leading to the wartime development of microwave radar, the Sylvester Medal, which went to Cambridge mathematician Abram S. Besicovitch, and the Rumford Medal, which was won this year by Fritz

Zernike of Holland, professor of theoretical physics at the University of Groningen and the discoverer of the principle of phase contrast, for his development of a new and valuable technique in microscopy.

An exact replica of Sir Isaac Newton's original reflecting telescope, the ten-inch high first ancestor of the 200-inch Hale telescope on Palomar Mountain, has been presented to the Mount Wilson and Palomar Observatories by the Royal Greenwich Observatory. Newton built his first telescope when he was twenty-six years old, replacing the lenses used in previous refracting telescopes with a two-inch concave mirror to eliminate the chromatic aberration caused by lens systems. The original telescope was presented by Newton to the Royal Society in London in 1672. Sir Harold Spencer Jones, British Astronomer Royal, arranged for presentation of the replica to the observatories in California after a visit last summer. It will eventually be exhibited in the museum of Palomar Observatory.

The University of Buffalo has recently received support from the Office of Naval Research for the continuation and expansion of the research program on the physics of carbons and graphite, which has been under way for some time in the department of physics. The project is under the direction of S. Mrozowski, professor of physics; John G. Castle, Jr., is in charge of the low-temperature phase of the project.

The University of Tennessee physics department will carry on a two-year project, directed by R. R. Newton, associate professor of physics, to investigate the causes of inaccuracy in fin-stabilized rockets. The program will be conducted under a contract with the Redstone Arsenal, Huntsville, Alabama.

A nomogram relating the mean life for gamma-ray transitions to the energy and spin change has been constructed from the formula of V. F. Weisskopf (*Phys. Rev.* 83: 1073; 1951). Prepared by R. Montalbetti of the University of Saskatchewan physics department, the nomogram appears in the November 1952 issue of the *Canadian Journal of Physics* (30: 660), published by the National Research Council, Ottawa.

Education

The University of Illinois College of Engineering has announced that its departments of electrical engineering and physics, in cooperation with several leading companies in the electronics industry, will conduct a Summer School on Semiconductors and Transistor Electronics at Urbana, Illinois, from June 22 through July 17, 1953. Courses will be offered in three areas: a general survey of semiconductors, physics of transistors, and transistor circuits. Lecturers will include outstanding scientists from industrial laboratories as well as regular University of Illinois staff members. The school will be part of the Summer Session of the University, so that graduate-level academic credit can be given if desired. Inquiries should be addressed to the Department of Electrical Engineering, University of Illinois, Urbana, Illinois.