

a period of increasing sunspot number and indicate a negative correlation of midnight atmospheric noise with sunspot number.

During the period May 1945 through March 1948, the detailed variations of the 40° intercepts of Thomas equipment measurements at 5000 kc mentioned above were followed closely by the averages of 4272 kc and 5755 kc values obtained from WWI recordings.

Midnight values of atmospheric noise obtained from WWI recordings show a greater seasonal variation than the values given by the atmospheric noise charts of NBS Circular 462, "Ionospheric Radio Propagation."

#### 14.1/8. Disturbance Forecast and Warning Service

Disturbance forecasting and warning services, which again became the direct responsibility of Section 1 during the quarter, now comprise (1) the forecast of periods of radio propagation disturbances for the ensuing month, the forecasts being renewed each Friday for publication in the CRPL-J series, and each Tuesday for a few special agencies, (2) the disturbance notices for transmissions over North Atlantic paths, broadcast twice each hour by WWV, for which radio propagation conditions are evaluated at least twice each day, and (3) special forecasts of magnetic, ionospheric or radio propagation conditions as are from time to time requested of the laboratory. In addition, the warning service group computes regularly the Radio Propagation Quality Figures (Q-figures), the American Relative Sunspot Number ( $R_A$ ) and various other indices of solar and geomagnetic activity published in CRPL-F reports. Some of the work of the group is done in cooperation with Sections 3 and 7. The warning service is supervised by Miss Lincoln, Miss Youngdahl, and Mr. Davis, in weekly rotation; the disturbance forecasts are prepared jointly. The group is experimenting with new methods of forecasting and evaluating disturbances, and has revised the text of the published forecasts, beginning March 25, 1949 (Report J-301).

#### 14.1/9. Cosmic Noise Directivity

A California ranch-style building is nearly completed for housing the electronic equipment of the 32-foot mirror. Temporary electric lines have been installed.

A paper entitled "Galactic radio waves", by Grote Reber, was published in the April issue of Sky and Telescope. This paper gave a compilation of galactic radio intensity data and drew a variety of conclusions as to meaning of the measurements.

#### 14.1/10. Rehabilitation of Wurzburg Equipment

The heavy mechanical parts for a third solar radiometer were assembled and painted. It is expected to operate this machine near 53 megacycles. A start has been made on the electronic equipment.

#### 14.1/11. UHF Radiometer for Solar Noise

Data have continued to be taken with the first radiometer at 480 Mc. A large assortment of enhancement, bursts and other anomalies have been recorded. These will be reported upon in the future.

The electronic equipment for the second radiometer has been completed at a frequency of 160 Mc and will be mounted upon the machine in the near future.

Construction work at the solar noise site is nearly complete and the grounds will be cleaned up and put in order shortly.

#### Miscellaneous Activities

T. N. Gautier was appointed advisor to the U.S. Delegation to the Joint ITU Region 2 - Fourth Inter-American Radio Conference which convened in Washington on March 15, 1949.

A. H. Shapley attended the Second National Conference on UNESCO at Cleveland, Ohio, to discuss and demonstrate the activities of the National Bureau of Standards in radio propagation research.

Five lectures on Graphical Methods of Computation were given as part of the NBS Junior Professional Training Program by Mrs. Phillips. The lecture series covered in detail the construction of elementary scales and diagrams, and alignment charts for solution of six canonical forms of equation, and included discussion of various convenient devices of projective transformation, graphical methods of integration and differentiation, and other miscellaneous types of computation.