

started by the Fraunhofer Institut, of Freiburg-im-Breisgau, Germany, for the purpose of producing daily maps of the Sun showing photospheric and chromospheric details and coronal intensities for λ 5303.

Among the observatories contributing chromospheric data are those of Freiburg, Kodaikanal, Wendelstein, Tokyo and Sydney. The coronal data are provided from the observatories of Climax, Sacramento Peak, Pic du Midi, Kanzelhöhe and Wendelstein. Istanbul, Potsdam, Arcetri and the German and Swedish stations on Capri also contribute material. The reduction of data and production of the daily maps are carried out at Freiburg and the printing is by a half-tone process to a scale of 15 cm. of the solar diameter. Conventions are used to show the areas occupied by calcium *plages* of low, intermediate and high intensity, and the shapes of dark filaments and limb prominences are shown, all against a background of lines giving heliographic co-ordinates. Limb coronal intensities and the positions and Zurich types of the sunspot groups are shown schematically. The aim is to produce these maps at intervals of two weeks with a delay of two weeks from the date of the latest map. Only a small number of gaps are expected to occur throughout the year.

These maps will provide a series for reference which with regard to the chromosphere should be more valuable than all other similar information published elsewhere. It remains to be seen how well the standards of indicating the various phenomena fluctuate from day to day and deviate from the initial standards over long periods of time. The possibility of such variations must be kept in mind when investigating solar-terrestrial relations, and it would be interesting to know if any special safeguards have been adopted in the present instance, where quantitative assessment apparently takes no part in the stages prior to publication. It certainly seems possible to draw quantitative information from these maps in a satisfactory manner; but it is the responsibility of the person who uses the information to make sure that it is inherently suitable for his purpose. Only the considerable task of collecting the raw material and making it available has been taken for him.

P. A. WAYMAN

B.B.C. ENGINEERING MONOGRAPHS

THE *B.B.C. Quarterly*, which has been issued since April 1946, ceased publication in the autumn of 1954, and in order to provide a vehicle for the publication of technical papers of the type hitherto included in this journal, the British Broadcasting Corporation has recently issued the first four of a series of "B.B.C. Engineering Monographs", about six of which will be produced every year (annual subscription £1); each monograph will deal with a technical subject within the field of television and sound broadcasting and will describe work that has been done by the Engineering Division of the Corporation, including, where appropriate, a survey of earlier work on the same subject. The series will also contain, from time to time, selected reprints of articles by B.B.C. authors that have been published in technical journals.

The first monograph, "The Suppressed Frame System of Telerecording", by C. B. B. Wood, A. V.

Lord, E. R. Rout and R. F. Vigurs, summarizes the fundamental and practical aspects of a telerecording system using standard 35 mm. film. The recording cycle consists of exposure during one whole television frame while the film is stationary in the gate, followed by pulldown of the film during the next, or suppressed, television frame. Thus the picture photographed on the film corresponds to a $202\frac{1}{2}$ line structure; but with the use of spot-wobble to broaden the lines, the recording is found to give an acceptable picture when the film is re-scanned by the standard 405 lines in the teleciné machine. Three photographs accompany the description of the equipment; and the results of tests have shown that the construction of an apparatus of this type using standard film-transport mechanism has been fully justified.

No. 2 in the series is a paper on "Absolute Measurements in Magnetic Recording" by E. D. Daniel and P. E. Axon, and describes work carried out in the B.B.C. Research Department to establish methods of measuring the absolute sensitivity of the component parts of the recording-reproducing system. Another contribution from the Research Department is the third monograph, that on "The Visibility of Noise in Television", by R. D. A. Maurice, M. Gilbert, G. F. Newell and J. G. Spencer. This describes a comprehensive investigation of the effect of random noise on a television picture, its dependence on the non-linearity in the relevant portions of the transmission channels and the visibility of the noise as a function of frequency. The third part of this monograph comprises four photographs illustrating the effect of noise on a television picture for four values of the signal-to-noise ratio.

The fourth monograph is entitled "The Design of a Ribbon Type Pressure-Gradient Microphone for Broadcast Transmission", by D. E. L. Shorter and H. D. Harwood. This describes work leading to the development of an improved studio microphone for both sound and vision broadcasting, with a greatly reduced weight and volume and an extension in the range of uniform frequency-response.

Summaries of recent patent applications by the B.B.C. are also included in two of the monographs, each of which is issued in a distinctive two-tone blue cover. It is likely that the series will be of interest and value to engineers engaged in broadcasting and telecommunications generally both in Great Britain and overseas.

THE METEOROLOGICAL OFFICE ANNUAL REPORT FOR 1954-55

THE annual report for 1954-55 of the Director of the Meteorological Office* records another year of steady progress and of honest endeavour by the Office to meet the ever-increasing demands for its services. There appears to be little need for special comment regarding two of its main functions: the provision of meteorological services for civil and military aviation, for shipping, for the general public by television, radio, telephone and through the Press, for special customers such as the railways, electricity and gas undertakings, farmers, river and road

* Annual Report of the Director of the Meteorological Office, presented by the Meteorological Committee to the Secretary of State for Air, for the Year April 1, 1954, to March 31, 1955. (M.O. 594.) Pp. 68. (London: H.M.S.O., 1955.) 2s. 6d. net.