

anniversary. Among the British men of science who are to deliver addresses are Sir Ernest Rutherford, Sir William Bragg, Prof. W. L. Bragg, Prof. E. G. Coker, Prof. F. G. Donnan, Sir Charles Parsons, and Prof. J. S. E. Townsend. Other distinguished men of science, exclusive of the large body of Americans, who will be present, include Prof. Charles Fabry, Prof. F. Haber, Prof. W. Lash Miller, and Prof. P. Zeeman.

THE southern slope of the Grasberg, in the valley of the Dürren Ager, parish of Oberaschau, Austria, has been in motion. Portions of the forest have migrated to the valley, and landowners can no longer identify their own areas. One man has a piece of forest tipped on him, but the timber is not his; another has lost the meadows he intended to mow; they have slidden away. The area of the landslide is about 100 acres and is a quarter mile broad. The depth of the mass moved is not more than 50 feet, but it is not limited to the weathered surface. The whole slope has been soaked. Coloured or black clays and shales, dark grey "ruschel"-shales, inter-

stratified between sandstones of the upper chalk, seem specially suitable for landslides. Two rows of stakes have been driven in so that measurements can be made to follow the movement.

WE learn that arrangements have been made by which Automatic and Electric Furnaces, Ltd., 17 Victoria Street, London, S.W.1, and Electric Furnace Company, Ltd., Elecfurn Works, 173-175 Farringdon Road, London, E.C.1, will jointly design Wild-Barfield internally heated electric furnaces having an input greater than 25 kw., which in future will be supplied by the latter firm. Automatic and Electric Furnaces, Ltd., will continue the manufacture and sale of the Wild-Barfield automatic hardening furnaces with magnetic detector, and internally heated type of furnaces up to 25 kw. Arrangements have also been made with George J. Hagan Co., of Pittsburg, U.S.A., who have constructed a large number of electric resistance furnaces up to 350 kw. capacity, for the use of their drawings and information, so that the best British and American practice will be incorporated in the designs.

Our Astronomical Column.

SOLAR SPECTROGRAPH FOR THE POULKOVO OBSERVATORY.—*Engineering* for July 18 contains a detailed description and several photographs of the 7-metre solar spectrograph by Grubb, which has just been erected at the Poulkovo Observatory. The instrument, in which a grating is employed, is of the Littrow type, and is modelled on the 30 ft. tower spectrograph at Mount Wilson. The sun's rays are received on a cœlost, for which a special erection is made at the top of the south wall of the Observatory, and are reflected into an object-glass, after passing through which they are reflected to the slit of the spectrograph on the ground floor, where they form an image of the sun about 10 cm. in diameter. The main object of the instrument is the study of the sun's rotation by means of the Doppler effect shown by light from the eastern and western limbs. By using a system of four prisms, light from the centre and limbs of the sun is made to fall simultaneously on different parts of the slit, and the spectra are obtained in juxtaposition on a plate 24 cm. long by 4 cm. wide. The spectrograph lens has an aperture of 10 cm. and a focal length of 706 cm. No description of the grating is given, but it is stated that the instrument will give from one spectrogram a velocity measurement of greater accuracy than 1/10th of a kilometre per second in the line of sight. Arrangements are provided for rotating the instrument, the solar image remaining fixed. The cœlost, which has an aperture of 25 cm., has been made adjustable for any latitude between 60° and 37°, in order that it may be used at the Simeis Observatory, in the Crimea, if desired.

THE LIVERPOOL ASTRONOMICAL SOCIETY, ANNUAL REPORT, 1923-24.—This body has undergone remarkable vicissitudes. It was founded in 1881 by Espin, Isaac Roberts, and R. C. Johnson, and proved so useful in helping beginners, and amateurs generally, that in a few years its membership rose to nearly 1000. Then a period of stagnation set in, and the publication of its journal became very irregular. It was the realisation of its earlier usefulness that led to the

formation of the British Astronomical Association in 1890. The competition thus afforded led to a distinct revival of the Liverpool body, though it has since been a local rather than a national body. War difficulties once more led to a suspension, but all will be glad to hear that meetings have now been resumed and that the outlook is hopeful. Papers were read during the session by the president (Dr. Whichello); by Mr. W. Porthouse on the moon; Mr. J. Rice on relativity; Rev. A. L. Cortie, S.J., on sun-spots and magnetism; and others.

While not at all endorsing the president's statement that the B.A.A. is too much under the influence of the professional astronomer to be of use to the ordinary amateur worker, we may freely admit that it is a great benefit to astronomers at a distance from London to have their own meetings both for discussion and observation; and doubtless all will join in wishing this society, the name of which recalls happy memories to many of us, a new lease of useful life.

ANNUAIRE DE L'OBSERVATOIRE ROYAL DE BELGIQUE, 1925.—This useful annual contains the usual almanac information about sun, moon, planets, stars, tides, etc. It gives very full information about wireless time-signals, and time determination. Incidentally it notes that while most of the national ephemerides adopt the new system of commencing the astronomical day at midnight at the beginning of 1925, the Berliner Jahrbuch adheres to the old system. It will therefore be necessary to state the system employed fully and clearly in all astronomical time determinations: it will be unwise to use the phrase Greenwich Mean Time for the new system without some distinguishing mark: Greenwich Civil Time is probably the best to use, but a warning is necessary that it does not mean Summer Time.

An error may be noted in the table of Periodic Comets on p. 168. The period given for Tuttle's Comet, 12·15 years, is far too short. The next return should be given as May 1926, not February 1937. Also the Comet Grigg-Skjellerup should be included as due to return in 1927.