written as that in the present number, they should prove of considerable value to those who need an introduction to the subject.

FROM the reports of the behaviour of the recording instruments at a number of magnetic observatories in different parts of the world during the solar eclipse of August 21, 1914, Dr. Bauer and Mr. Fisk, of the Department of Terrestrial Magnetism, Washington, have drawn some preliminary conclusions as to the effects of eclipses on solar terrestrial magnetism, which will be found in the June number of *Terrestrial Magnetism and Atmospheric Electricity*. At stations from which the eclipse was visible it appears to have changed slightly the daily march of the declination needle. At four British and Danish stations for which curves of the daily change of declination are given the normal motion of the needle to the west was arrested, and in some cases reversed, a short time before totality of the eclipse. Outside the region of visibility of the eclipse no magnetic effects were observed. These results appear to justify more extensive preparations for observing the effects of the solar eclipse due June 8, 1918.

MESSRS. KODAK, LIMITED, have issued a new and much improved edition of their "Wratten Light Filters" (1s.), in which they describe some ninety colour screens. Of those previously catalogued eleven are omitted and twenty-nine new filters are introduced, the latter including a series of nine made to equalise the tints of various artificial lights for facilitating photometric work. The transmissions of nearly all the filters are given in very clearly expressed curves, a vast improvement on the reproductions of spectrographs taken with a graduating wedge in front of the slit, as given in the previous editions. For those who need more exact data the actual readings obtained by the use of the spectrophotometer are given in copious tables, and will prove of great value. "The Photography of Coloured Objects," another of Messrs. Kodak's publications, has been revised, and now includes "Orthochromatic Filters," which was until now published separately. For the benefit of any who do not know this volume, we may say that it gives a clear and accurate account of the principles involved, and points out objects of many kinds that are really "coloured," though they do not appear to be.

OUR ASTRONOMICAL COLUMN.

ENCKE'S COMET.—Prof. Strömgren reports that Encke's comet was observed by Dr. Max Wolf on September 22. At 9h. 41·5m., Königstuhl mean time, its position was R.A. 22h. 28m. 39s., declination 7° 8′ 5″ S. The magnitude of the comet was 16·5.

THE NEBULA H II. 78 LEONIS.—It is interesting to note that Mrs. Isaac Roberts is continuing her detailed studies of nebulæ photographed at Crowborough by the late Dr. Isaac Roberts. The subject of a recent paper (Monthly Notices R.A.S., vol. lxxvi., p. 647) is the nebula H II. 78 Leonis (N.G.C. 3367), photographed in 1902. The nebula extends for about 2′ from north to south, and 2·5′ in the direction at right angles, and is described as a left-hand spiral with a bright stellar nucleus. The nucleus is encircled twice by the spiral arm, which shows numerous condensations. With the aid of the Roberts "pantograver," measures were made of many of the bright nebulous knots, and of nineteen stars which appear in the neighbourhood of the nebula. All the measured objects are clearly indicated in a key chart, and the tabulated data will doubtless be of considerable value in subsequent investigations of relative motions within the nebula.

PHOTOGRAPHS OF MARS.—In the September number of the *Observatory* an account of a minute examination of photographs of Mars taken at Flagstaff by Dr. Lowell and his co-workers is given by G. H. Hamilton. The photographs were studied without reference to maps of the planet, and details common to three or more of the images, of which there were sometimes as many as four dozen on a single plate, were inserted in sketches. Subsequent comparisons in all cases showed a very close agreement with the accepted maps in the observatory. One of the sketches, from photographs taken on March 15 of the present year, is reproduced, and shows an abundance of detail, including numerous canals. Mr. Hamilton is of opinion that the linear character of the canals, as represented by Dr. Lowell, is completely confirmed by the photographs. By the use of a finely divided transparent scale, it was found possible to obtain satisfactory measurements of the positions of the principal markings, due allowance being made for halation.

SPECTRUM OF THE NEBULA H IV. 39 ARGÛS.—An account of the spectrum of H IV. 39 Argûs (N.G.C. 2438) has been given by Dr. Max Wolf (*Sitz. Heidelberg Akad. d. Wiss.*, March, 1916). The spectrum was photographed at the Königstuhl Observatory, Heidelberg, on February 20, with an exposure of five hours. The nebula is very faint, and direct photographs show it to be of annular form with an eccentrically situated stellar nucleus; the eastern side of the ring is the brighter, and the nucleus lies nearer the western edge. The spectrum is almost identical with that of the ring nebula in Lyra, but much fainter. In order of brightness the lines are λ 373, 387, 434 (Hγ), 469, 501, and 397; there is possibly also a faint line at 352. As in the Lyra nebula, a distribution of the different gases in layers is indicated by the varying distances to which the lines extend. The line 373 reaches furthest outwards, but has a marked minimum in the interior of the ring. The lines 387 and 434 reach further towards the centre; and, in striking contrast with the other lines, 469 (*i.e.* 4686, of "proto-helium") is brightest within the ring, and extends only a small distance from the nucleus.

THE UNITED STATES NATIONAL RESEARCH COUNCIL.

AN account of the inauguration and organisation of the National Research Council of the United States was published in our issue of August 3 last (vol. xcvii., p. 465), and the article pointed out that from the cordial interest shown by all who had learnt of the work in its early stages, it was evident that so soon as a widespread request for co-operation could be extended it would meet with general acceptance. A preliminary report of the Organising Committee to the president of the U.S. National Academy of Sciences, published in the August issue of its Proceedings, shows that this expectation has been justified, and some of the first instances of co-operation are given. Prof. G. E. Hale, chairman of the committee, has also sent to the *New York Times* an account of what is being done in the United States to mobilise science for industrial progress and military efficiency, and we reprint his letter below. It will be seen that the president of the Throop College of Technology in Pasadena, California, an institution which gives special attention to research, hearing of the plans of the Research Council, offered the assistance and co-operation of the recently endowed research laboratory of chemistry, and secured at once an additional endowment of 20,000*l.* for scientific research. In somewhat similar circumstances a gift of 100,000*l.*

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