SPECTROGRAPHIC OBSERVATIONS.

BY EDWIN B. FROST.

Results were given from the measurement of three spectrograms of the Algol variable \textit{RX Herculis} (magnitude 7.1 to 7.7), showing that the lines of both components are visible in the spectrum. The range in velocity is large, the extreme positive value being + 84 km, the negative −130 km.

The star \textit{50 Draconis}, which is of type A, magnitude 5.4, was offered for adoption for further study by some observatory specializing in spectroscopic binaries. Lines of both components are visible, the doubling occuring on alternate nights. The period is close to 4.1 days. The widest separation measured on the ten plates thus far obtained corresponded to a relative velocity of 175 km: −113 and + 62 km.

Reference was made to the determination, in collaboration with Miss Frances Lowater, of the wave-lengths in the star \textit{10 Lacertae} of certain lines useful in radial velocity work, e.g., silicon \(\lambda 4089.12\), the \(N\) line at \(\lambda 4097.55\), the line at \(\lambda 4116.33\), and the lines attributed to hydrogen at \(\lambda 4200.3\), 4541.9, and 4685.90.

THE POLARITY OF SUNSPOTS.

BY GEORGE E. HALE AND FERDINAND ELLERMAN.

The use of a quarter-wave plate, either single or compound, and a Nicol prism before the slit of the 75-foot spectrograph of the 150-foot tower telescope affords a convenient and reliable test of the polarity of sunspots.

Cases of opposite polarity in the two hemispheres have already been reported; but similar differences also occur in the same hemisphere.

To unify these results and exhibit the law governing the distribution of polarities, it is necessary to note that spots frequently occur in pairs in which the preceding spot usually appears first. Further, many single spots are followed by trains of calcium or hydrogen flocculi. The recognition of these as the principal members of imperfectly developed binary groups is essential. It is also necessary to discuss separately the results for the old cycle and for that now beginning.

The following can then be stated:

(1) The two principal spots of binary spot-groups are opposite in polarity.

(2) Preceding (or following) spots in northern and southern hemispheres are opposite in polarity.