

Prominences, 1938.—During 1938 there has been a slight decrease in almost all forms of prominence activity except the areas which show an increase over the previous year.

The mean daily areas and numbers of calcium prominences as derived from Kodaikanal photographs are as follows :—

		<i>Areas</i>		
		North	South	Total
1938 January to June	4.91	2.93	7.84 sq. mins.
July to December	4.21	4.33	8.54 „

		<i>Numbers</i>		
		North	South	Total
1938 January to June	8.35	6.65	15.00
July to December	7.61	7.00	14.61

Prominence areas show an increase of 12 per cent., whereas the numbers show a decrease of 6 per cent. when compared with the previous year. The northern hemisphere shows a slight preponderance of activity over the southern. The distribution of areas and numbers in latitude showed a tendency to increase in low latitudes up to 40° and to decrease in zones of higher latitudes. During the second half of the year the high latitude peak became unimportant, so that the activity was confined mainly to within 60° of the equator in both the hemispheres.

Forty-eight metallic prominences were observed during 1938 as against 60 in the previous year. Of these 20 were observed in the northern hemisphere and 28 in the southern hemisphere, and all these were between latitudes 4° and 36° . Displacements of the hydrogen line in the chromosphere and prominences observed during the year with the spectroscope numbered 323 as against 369 in 1937. Of these 176 were towards the red, 124 towards the violet and 23 both ways simultaneously. The largest displacements noticed were 6 A to red and 8 A to violet.

Bright reversals of the *H α* line over the Sun's disc observed with the spectroscope in the neighbourhood of sunspots numbered 872 as against 891 in the previous year. The displacements observed in the neighbourhood of sunspots numbered 65 as against 73 in the previous year. Of these

43 were towards the red, 8 towards the violet and 14 both ways simultaneously. D_3 was observed as a dark line on 789 occasions as against 826 in 1937.

The displacements observed in prominences with the spectrohelioscope numbered 187 as against 259 in the previous year. Of these 97 were in the northern hemisphere and 90 in the southern, and 100 were on the east limb and 87 on the west limb. Displacements to the red numbered 99 and those to the violet numbered 88. The largest displacement in prominences observed in 1938 was 4.0 A to violet.

Eruptive prominences on the limb were photographed on January 25, April 6, May 6, December 24 and December 30. The greatest height recorded was 13' on May 6 S.E. limb. The prominence of December 24 rose in latitude N. 20° on the west limb and poured into a centre of attraction in latitude S. 64° . There was no sunspot area in the neighbourhood. A striking feature of the prominence was the spiralling of the entire mass.

The mean daily areas of prominences projected on the disc as hydrogen absorption markings amounted to 10161 millionths of the Sun's visible hemisphere as against 9490 millionths in the previous year, showing an increase of 7 per cent. Their distribution in latitude is similar to that of calcium prominences, except that the activity in the zones 20° to 25° in the northern hemisphere and 15° to 20° in the southern hemisphere is more pronounced in the case of $H\alpha$ absorption markings.

A. L. NARAYAN.