

*Prominences.*—The year 1945 has witnessed a marked increase in all forms of solar activity.

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

	<i>Areas</i>			<i>Numbers</i>		
	North	South	Total	North	South	Total
January to June	1.36	1.25	2.61 sq. mins.	4.68	4.39	9.07
July to December	2.00	2.21	4.21 „	5.40	5.37	10.77

When compared with the figures of the previous year, there is a marked increase in both areas and numbers, the former being 58 per cent. and the latter 30 per cent. The areas showed a preponderance in the southern hemisphere as in the previous year, but the numbers show a southern defect.

The distribution of the areas in latitude shows maximum activity between  $45^{\circ}$ - $50^{\circ}$  both in the northern and southern hemispheres. The distribution in numbers shows a maximum activity between latitude zone  $46^{\circ}$ - $50^{\circ}$  in the northern hemisphere and between  $51^{\circ}$ - $55^{\circ}$  in the southern hemisphere.

Six metallic prominences were observed during the year. Of these, two were in the northern hemisphere and four in the southern hemisphere.

Ninety-one displacements of the hydrogen C line in the chromosphere and prominences were observed during the year with the spectroscope as against eighteen during the previous year. Of these, thirty-one showed displacement towards violet, forty-five towards red, and fifteen showed displacement both ways simultaneously. The largest displacement observed during the year was 4.5 A. both ways on September 6.

One hundred and forty-five displacements in prominences were observed with the spectrohelioscope as against twenty-five during the previous year. Of these, fifty-two were in the north and ninety-three were in the south, while eighty were in the east and sixty-five in the west. Seventy-seven showed displacement towards red, sixty-seven towards violet, and one showed displacement both ways simultaneously.

A long filament-type prominence of height 4' and base only  $1^{\circ}$  in the east limb of the Sun was photographed on February 13. A large prominence, base extending from  $+2^{\circ}$  to  $-54^{\circ}$  in the east limb, of height  $2\frac{1}{2}'$  and covering an area of 3 square minutes, was photographed on January 5. Another prominence, base extending from  $+42^{\circ}$  to  $-15^{\circ}$  in the east limb having an area of 4 square minutes, was photographed on April 19.

The mean daily areas of hydrogen absorption markings (without applying foreshortening correction) was 2123 millionths of the Sun's visible hemisphere, showing a marked increase of 105 per cent. over the previous year. This is mainly due to the appearance of large markings towards the end of the year. The distribution in areas shows an increased activity between the zones of latitude  $30^{\circ}$ - $35^{\circ}$  and  $50^{\circ}$ - $55^{\circ}$  in the northern hemisphere, while in the southern hemisphere the activity is mainly confined to the latitude  $35^{\circ}$ .

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