

Solar Prominences in 1907, observed at the Kodaikámal Observatory.
By John Evershed.

The year has been one of considerable activity as regards prominences, notwithstanding a noticeable reduction in the mean profile area, which amounts to about 10 per cent. for all classes of prominences.

At the Kodaikámal Observatory 78 prominences of 100" or upwards have been recorded photographically and visually during 305 days of observation. The photographic records show also that large eruptive prominences have not been infrequent, seven of this class having been recorded; the greatest elevation measured was $6\frac{1}{2}$ minutes of arc in a transient eruption, photographed on March 14 in solar latitude $+52$. A remarkable eruption was also photographed by Fox at the Yerkes Observatory on May 21 in solar latitude -68 .

The general activity of the two hemispheres of the Sun compared with the previous year may be inferred from the following figures, deduced from the Kodaikámal results:—

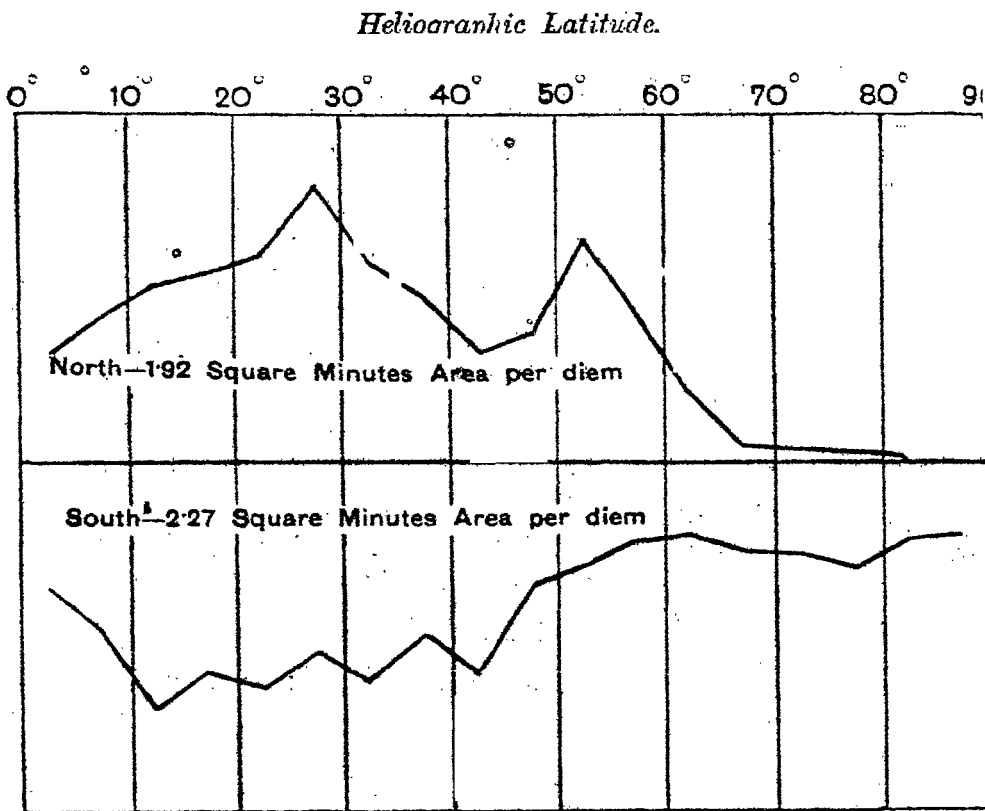
Mean Daily Profile Areas of Prominences.

	1906.	1907.
North	2.51 square minutes.	1.92 square minutes.
South	2.17 " "	2.27 " "
Total	4.68 " "	4.19 " "

It is seen from the above that the general reduction of activity in 1907 is confined to the northern hemisphere, the southern showing a slight increase. In the latitude distribution a remarkable difference is shown between the two hemispheres, which are usually more or less symmetrical as regards the latitudes of the zones of maxima and minima. From the beginning of the year the northern polar prominences, which were strongly represented during 1906, practically ceased to exist, whilst the south polar region still continued active, the whole region between -45° and the south pole producing a very considerable number of large prominences. The region from lat. -10° to -45° has been the most prolific, however, in this hemisphere; but no clearly marked zones of maxima are shown. In the north, on the other hand, two well-defined maxima occur in the zones $+25^\circ$ to 30° and $+50^\circ$ to 55° .

Metallic prominences were of frequent occurrence, 111 having been recorded. Of these, 54 were confined to the northern spot zone, and had a mean latitude of $+15.7^\circ$; 50 were confined to the southern spot zone, with a mean latitude of -15.6° ; the remaining 7 were distributed in longitude in a narrow zone entirely outside the spot regions, the mean latitude being -72° . The only metallic

elements observed in these high-latitude prominences were Na, Mg, and Fe, whilst some of the prominences in spot-latitudes gave in addition the lines of Ba and Ca, together with a considerable number of unidentified lines, probably including Ni, Mn, Cr, and Ti.



Distribution Curve of the Prominences for 1907.

The ordinates give the mean daily profile areas for each zone of 5°, obtained from observations on 296 days.