Subject: Electron Density in the Solar Corona During the Eclipse of February 25, 1952.

I have looked at the curve computed by the N.R.L. group, giving the electron density at a distance from the center of the sun equal to 1.96 $R_\odot$.

1. The densities are different from those corresponding to the "model corona" of Van de Hulst, as appears in the following table:

<table>
<thead>
<tr>
<th>$N_e R_\odot$ 1952</th>
<th>&quot;Model Corona&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>equatorial regions</td>
<td>3 to $6 \times 10^6$ maximum of all regions $3 \times 10^6$</td>
</tr>
<tr>
<td>polar regions</td>
<td>$2.5 \times 10^6$ minimum of (equatorial regions $1.8 \times 10^6$ solar cycle)</td>
</tr>
<tr>
<td></td>
<td>(polar regions $2.2 \times 10^5$)</td>
</tr>
</tbody>
</table>

The N.R.L. densities in polar regions are especially high.

That may be explained in different ways:

a) The drop in density in polar regions is perhaps very steep during the last two years of the solar cycle.

b) As Van de Hulst points out, the values in the polar regions, for the "model corona" are very uncertain for $r > 1.5 R_\odot$.

2. The contrast between streamer and background is as expected ($\geq 50\%$).

3. The streamers are very broad:

- NW streamer $\sim 35^\circ$
- E streamer $\sim 40^\circ$

The small humps are also rather broad $\sim 10^\circ$.

Thus if we scan the K corona with an aperture corresponding to $5^\circ$ we will not lose details. If we are especially interested in the detection of the big streamers, we may even use a greater aperture without trouble: $7^\circ$ for instance (which will multiply by a factor 2 the amount of light).
ELECTRON DENSITY IN THE N.R.L.

\[ N_e \times 10^{-6} \]

36°
SOLAR CORONA AT $r = 1.96 \, R_e$

FEBRUARY 25, 1952