

# BROAD-BAND, HIGH-RESOLUTION PHOTOGRAPH OF THE SOLAR CORONA FEBRUARY 16, 1980

(Research Note)

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**Abstract.** Unsharp masking may be used for better reproduction of over-exposed solar corona photographs.

Figure 1 is a photograph of the solar corona taken on February 16, 1980 by K. K. Scaria *et al.* (1981) at Hosur, India (long.  $75^{\circ}09'18''$  E, lat.  $15^{\circ}00'12''$  N). This is one of the five photographs obtained during the eclipse with a  $f/48$  Grubb lens of 5.97 m focal length. An emulsion filter combination of IIIaF and Wratten 25 was used for this 10 s exposure. The plate, developed in fine grain developer, was of excellent quality and streamers could be traced to a distance of  $\approx 2.2R_{\odot}$ . Though the prominences and the

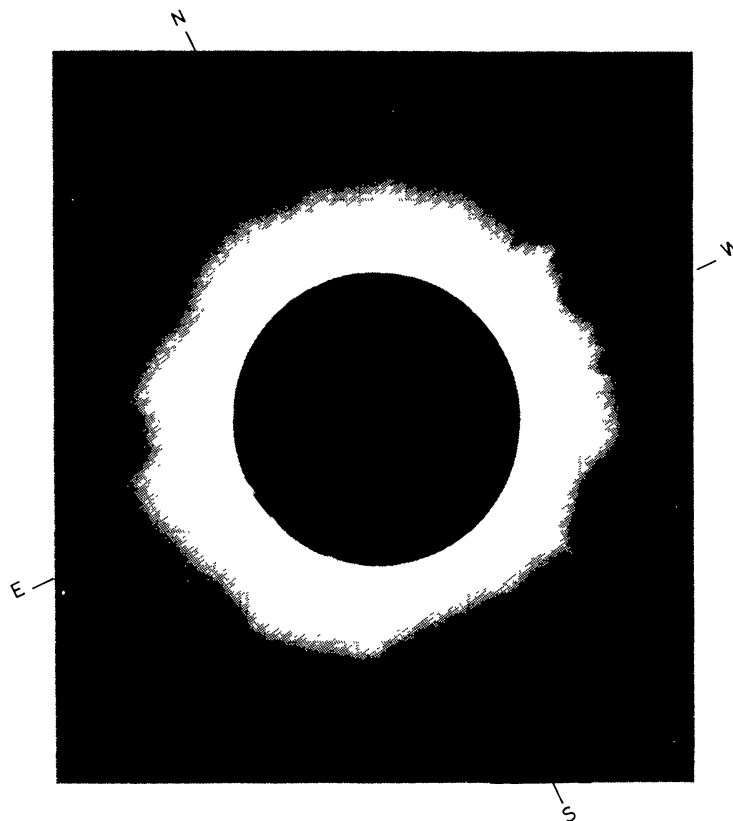


Fig. 1. A photograph of the solar corona without using the unsharp masking procedure.

arches around them are seen clearly in the photograph, their reproduction was not possible in Figure 1, because of the very bright diffuse background of the inner corona. By using an unsharp masking procedure (Malin, 1977), it was possible to reduce the effect of the diffuse background and enhance details of the arches, streamers and polar plumes as can be seen in Figure 2. By this method one can obtain good quality corona pictures, which otherwise is possible only by the use of radial density filters. A transient feature in the corona is seen in the SE quadrant.

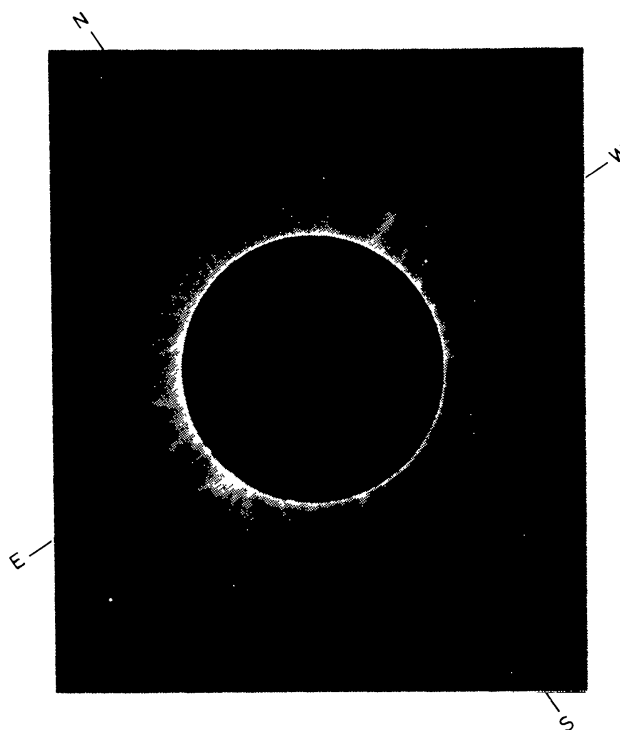


Fig. 2. A photograph of the solar corona using an unsharp masking procedure.

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### References

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