

21-12
ABS. ONLY

98789

IP

Meterwave Observations of a Coronal Hole

Z. Wang, E.J. Schmahl, and M.R. Kundu
Astronomy Program
University of Maryland
College Park, MD 20742

MI 915 766

are presented

~~We present~~ meterwave maps showing a coronal hole at 30.9, 50.0 and 73.8 MHz using the Clark Lake Radioheliograph in October 1984. The coronal hole seen against the disk at all three frequencies shows interesting similarities to, and significant differences from its optical signatures in HeI $\lambda 10830$ spectroheliograms.

← The 73.8 MHz coronal hole, when seen near disk center, appears to coincide with the HeI "footprint" of the hole. At the lower frequencies (30.9 and 50 MHz) the emission comes from higher levels of the corona, and the hole appears to be displaced, probably due to the non-radial structure of the coronal hole.

← The contrast of the hole relative to the quiet Sun is much greater than reported previously for a coronal hole observed at 80 MHz (~~Dulk et al., Solar Phys. 52, 349, 1977~~). The higher contrast is certainly real, due to the superior dynamic range, sensitivity and calibration of the Clark Lake instrument. *is derived*

← Using ~~the~~ model of coronal holes given by Dulk et al, ~~we derive~~ the electron density from the radio observations of the brightness temperature. ~~We find~~ A very large discrepancy between the derived density and that determined from Skylab EUV observations of coronal holes. This discrepancy suggests that much of the physics of coronal holes has ~~not~~ yet been elucidated. *is found*

to be