

Session 2

Polarization of the Corona Observed During the 2017 and 2019 Total Solar Eclipses

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Polarization measurements of the white-light corona has been one of the principal topics in the solar polarimetry, because it gives the electron density distribution of the corona regardless of the temperature. Such measurements have been conducted in space and on the ground, but among various observations, solar eclipses are particularly good chances to perform precise polarimetry because of the low scattered light level down to the limb.

We carried out polarimetric observations of the white-light corona during the total solar eclipses on 2017 August 21 and 2019 July 2, and derived the brightness, polarization brightness, and degree of the polarization of the K+F corona from just above the limb to approximately 4 R_{sun}.

Comparison of our results with other observations exhibits that there is systematic discrepancy in some cases. The eclipse observations can provide a good calibration source of the brightness and polarization of the white-light corona, not only for existing space coronagraphs but also for future missions.