

## OBSERVATIONAL EVIDENCE FOR UBIQUITOUS OPEN MAGNETIC FIELD LINES IN THE INNER CORONA

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Knowing where open magnetic field lines prevail in the inner corona is fundamental for understanding how the solar wind directly probed by interplanetary spacecraft beyond 0.3 AU connects to the Sun. Determining this is difficult in light of the fact that even the general distribution of magnetic field lines is poorly understood on account of the lack of magnetic field measurements in the solar corona.

Open field lines at the Sun are widely believed to be restricted mainly to coronal holes. This conclusion is based on white-light and soft X-ray images of the corona, and the theoretical extrapolation of photospheric magnetic field measurements into the corona using calculations such as source surface models. The purpose of this paper is to review the observational evidence suggesting that, contrary to this picture, open field lines permeate the entire inner corona. Based on radio and white-light measurements of the corona as well as in situ measurements of the solar wind, these density measurements span large-scale and small-scale filamentary structures. They help explain the unexpected predominance of the radial component of magnetic field discovered in polarimetric measurements of the solar corona over three decades ago.