

## Two-Dipole Model of the Asymmetric Sun

The large-scale photospheric magnetic field is widely believed to be dipolar during solar activity minima with extended unipolar regions around the northern and southern poles. However, the spatial power spectrum of the photospheric magnetic field shows that in fact, it is the zonal octupole that dominates over the zonal dipole and the higher multipoles during solar minima. We fit two shifted axial dipoles to the observed photospheric magnetic field that successfully reproduce all the zonal spherical harmonics up to degree 8. The best-fitting two-dipole model suggests that the magnetic field originating from the southern dipole is significantly stronger than that originating from the northern dipole. This implies a north-south asymmetry in the operation of the solar dynamo. We also show that the hemispheric asymmetry in the photospheric magnetic field results in an asymmetric solar corona where the heliospheric current sheet is tilted by 4-5° to the south in agreement with observations.



**Thursday, September 17th**

4:00-5:00 p.m.

See website for Zoom information

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