

Abstract Submitted  
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**The Nature and Source of Solar Magnetic Phenomena<sup>1</sup>** THOMAS JARBOE, University of Washington — The heliosphere appears to be powered by coaxial helicity injection from a negative helicity injector in the northern hemisphere and a positive one in the southern. The injector flux for both is the measured solar polar flux and the injector voltage is generated by a simple dynamo effect due to the differential rotation of the solar surface with the polar flux. The dynamo current is estimated from the solar motion that it causes. This current also appears to sustain a thin, shallow global magnetic structure over most of the solar surface that has the form of a 1D minimum energy state. The current channel appears to be destroyed and reformed every 11 years. The currents and magnetic fields reverse in this solar cycle. A brief discussion of surface phenomena observed during this cycle is given. Plasma self-organization is briefly discussed and used in this analysis of solar data. The magnetic phenomena discussed include torsional oscillations; the heat source for the chromosphere and the corona; filaments; meridional flow; the solar cycle; sunspots; CMEs; and flares.

<sup>1</sup>The Nature and Source of Solar Magnetic Phenomena

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