

**Quasi-Periodic Variations in Radiative Output Driven By Activity Band Interactions**

**Scott W. McIntosh** [mscott@ucar.edu], High Altitude Observatory / National Center for Atmospheric Research (HAO/NCAR), Boulder, CO, USA

Solar magnetism displays a host of variational timescales of which the enigmatic 11-year sunspot cycle is most prominent. Recent work has demonstrated that the sunspot cycle can be explained in terms of the intra- and extra-hemispheric interaction between the overlapping activity bands of the 22-year magnetic polarity cycle. Those activity bands appear to be driven by the rotation of the Sun's deep interior. Strong quasi-annual variability in the number of flares, coronal mass ejections, the radiative and particulate environment of the heliosphere is also observed. We infer that this secondary variability is driven by surges of magnetism from the activity bands. Understanding the formation, interaction and instability of these activity bands will considerably improve forecast capability in space weather and solar activity over a range of timescales.