

# WG3 Research

All of these are posted on WHI site, with links in agenda

- Fuller-Rowell:
  - Analysis of planetary wave periodicities in dayside electrodynamics and ionosphere is enabled by new African magnetometer observations
  - Solar minimum opportunity to separate terrestrial weather input from solar-driven effects
- Lei:
  - Sees 9 day periodicities in neutral density (at 400 km), solar wind speed, Kp, coronal hole area
  - oscillations in neutral densities related to solar wind, not to irradiance or planetary waves at similar periods coming up from lower atmosphere
- Emery:
  - Periodicities also seen in auroral electron hemispheric power (Hpe)
  - Hpe sensitive to southward Bz and Vw
- Galvin:
  - Showed STEREO observations -- differences in high speed stream related to their source?
- Jackson:
  - IPS observations probe 3D time dependent structure in solar wind
- Webb:
  - EUVI Carrington maps -- show evolution of coronal holes over multiple rotations

# WG3 Plans

Side-by-side Carrington maps and time series (for WHI, for 3 rotations, for 1 year?)

- Sub-surface flows
- Open vs closed magnetic flux at sun as predicted by models (PFSS, MAS, ...) open field footpoints, with mapping to sub-Earth point, identification of wind properties there (V, Bx direction..)
- Coronal holes, polar and equatorial, from EUV, He, B, etc.
- HPS at various heights, from models, observations
- In situ solar wind properties, V, N, T, Bxyz, |B|, electron flow direction, composition, charge states
- IPS predicted density, velocity (Carrington map at sun, time series at 1 AU, movies of meridional/polar slices to compare to models)
- Geospace indices (AE, DST, KP, Hpe, neutral density and composition, radiation belt responses, NO)
- Information on whether Earth-intersecting wind is high-speed, low-speed, associated with transients