Global Solar Magnetic Maps: coronal & irradiance model drivers

- Global maps are utilized to drive coronal & solar wind models, plus the global maps are now used to drive irradiance predictions.
Global Solar Magnetic Maps: *types*

**Input Data**
- Magnetograms, and global maps, are typically aligned with solar rotational north at the top of the image, with “east limb” to the left.

**Diachronic Synoptic Map**
- solid body rotation
- central meridian biased
- space & time mixed

**Synchronic Synoptic Map**
- account for flux transport (e.g., differential rotation and meridional flow)

**Carrington Rotation Number**
- # of rotations since Nov 9, 1853, assuming rotational rate of 27.2753 days.
Global Solar Magnetic Maps: *issues*

**Remapping**
- maps are commonly created by remapping $B_r$ estimates from vector or LOS full-disk magnetograms into heliographic coordinates.
- maps are observationally “valid” for only $\sim 1/3$ of the total solar surface at any given time.

**Issues**
- How best to account for the “missing” $\sim 2/3$ of a map?
- How best to set the map mean to zero?
- How are coronal & solar wind models affected?