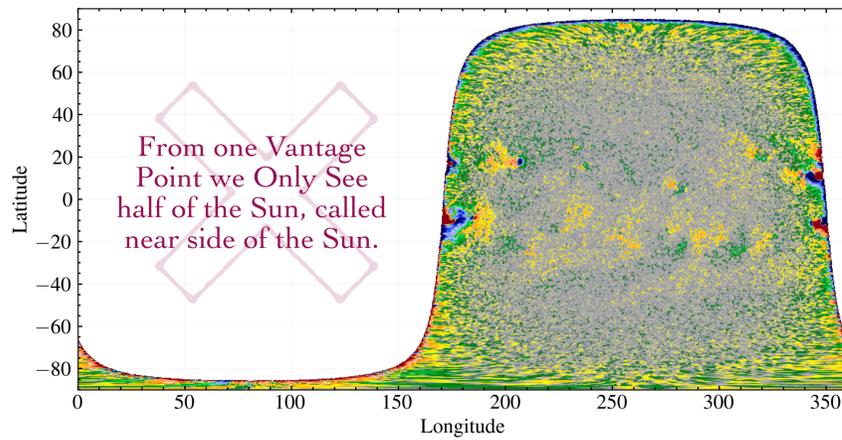# Providing Customized Magnetic Inner Boundary Condition
For Coronal And Solar Wind Models using AFT
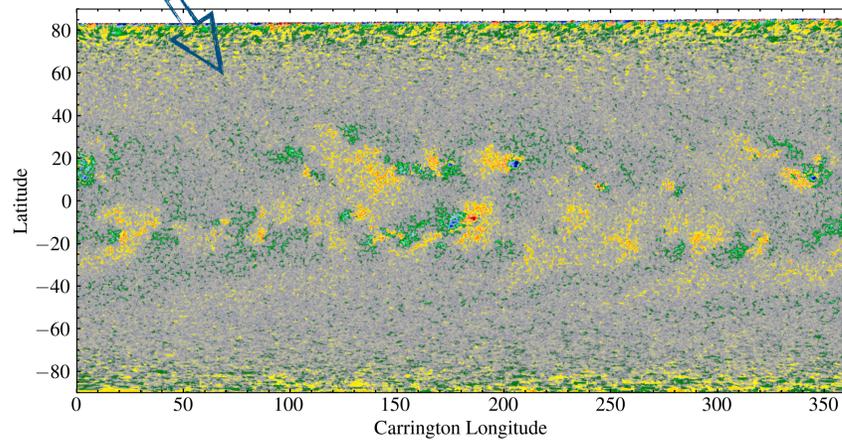
Bibhuti Kumar Jha[1], Lisa Upton[1] and Prateek Mayank[2]

[1]Southwest Research Institute, Boulder, CO; [2]University of Colorado, Boulder, CO
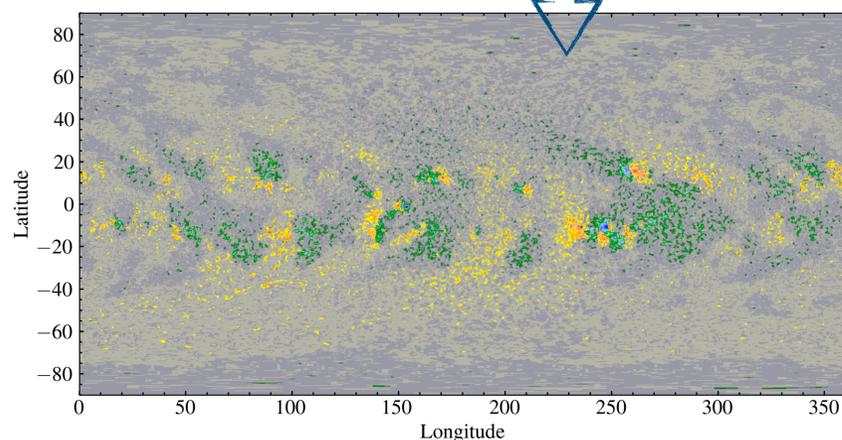
From one Vantage Point we Only See half of the Sun, called near side of the Sun.

We Need full Sun Photospheric Map Boundary condition for the Solar wind & Coronal Models.
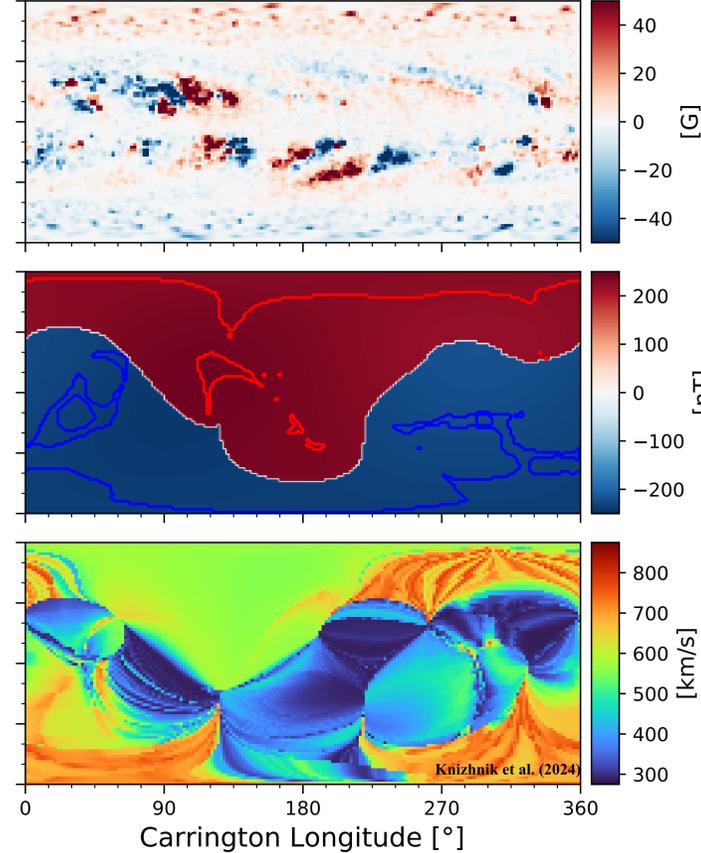
Synoptic Map Constructed Over One

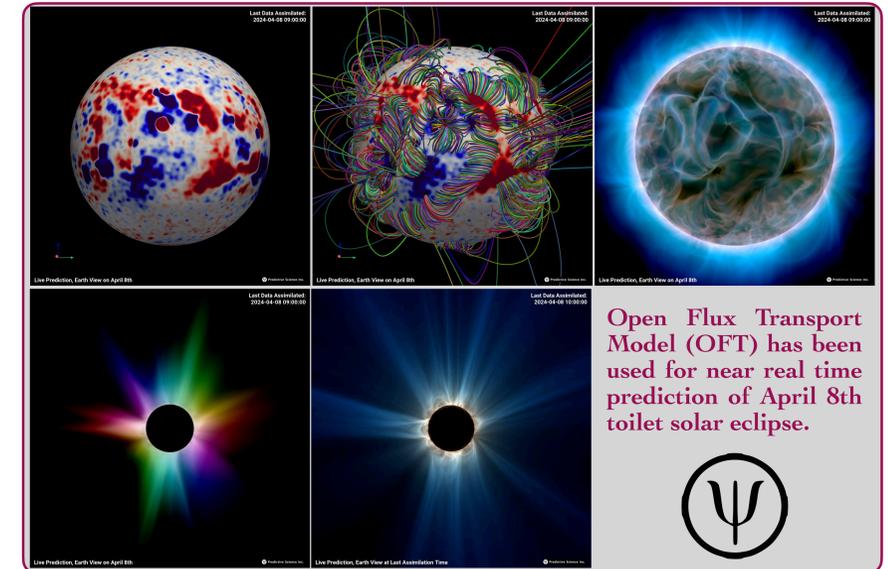☑ Use Surface Flux Transport Model like **Advective Flux Transport (AFT)** or **Open Flux Transport (OFT)** Model to simulate the photospheric magnetic map of the Sun.

Inner Boundary Condition for PFSS

B_r at 21.5 $R_\odot$ obtained by extrapolating PFSS followed by SCS

V_r at 21.5 $R_\odot$ obtained by extrapolating PFSS followed by SCS

CR 2258, Input Maps using AFT

Knizhnik et al. (2024)

Carrington Longitude [°]

Open Flux Transport Model (OFT) has been used for near real time prediction of April 8th toilet solar eclipse.

We can provide you with much-needed inner boundary conditions to modellers in exchange we love to have their feedback!

Synchronic or/and Synoptic Photospheric Map

Set of Photospoheric Map for ensemble modeling.

For a set of input parameters to match modelers requirements.

With Data Assimilation with HMI observation or synthetic data (SARG).

AFT

The AFT Baseline Map (SDO/HMI) Data is available in near real time and getting Updated Everyday.

As far-side Active Region is critical for Coronal Modeling, we will be providing AFT data with far-side very soon.

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