

# FAR-SIDE IMAGING

## Summary

Two operating versions of FSI code

- MDI (since 2001)
- GONG (since 2005)
- Either should work on HMI in principle, but GONG version is more flexible.
- Computing resources needed (memory, storage,

Need for calibration work

- Active region identification
- What do the images mean in terms of familiar indices, e.g. magnetic fields?
- The near-side artifact
- Applications in irradiance forecasting

Calibration tasks

- Near-side magnetic field vs far-side signature (statistical)
- Near-side magnetic field vs near-side signatures (statistical)
- Spherical acoustic modeling.

# **FAR-SIDE IMAGING**

## **Present Pipeline**

- 1) Cleaning (glitch recognition and removal)
- 2) Projections/Tracking, Reduction
- 3) Temporal FT
- 4) Ingression, egression computations
  - $2 \times 2$ -skip (HH)
  - $1 \times 2$ -skip (HH)
  - $2 \times 3$ -skip (TD)
- 5) Phase-map computation
- 6) Cookie cutting
- 7) Normalization
- 8) Colorizing

## **BASIC TASKS**

In the initial working operating system we propose (items 2 and 3 below) HH and TD far-side images will be computed independently. Items 3 and 4 propose include major refinements to the initial working operating system.

1. Adapt DRMS data for front-end of existing pipeline.
2. Adapt output of existing pipeline for dispensation into the DRMS.
3. Adapt FastTrack to replace front-end (steps 1–3) of existing pipeline.
4. Merging of TD and Holographic FSI computations. (in “cookie cutting” phase of the pipeline).

## **Input Requirements**

Full disk Doppler observations at 1-min cadence.

## **Basic Output Data Products**

Full-Sphere Phase-Maps in terms of nominal square magnetic field at 0.5-dy cadence.

# Presentation

Colors

Perspective

Longitude-latitude

Polar

Spherical projections

Synoptic Maps?

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