

## HAO/NCAR HMI Progress Report July/August 2005

Fabrication of the mounts for the Polarization Calibration Unit is nearly complete. (See attached picture). Assembly of the rotation and translation stages has started with completion projected for the week of 22 August. The polarization optics are scheduled to be completed by Meadowlark Optics on 9 Sept. Software to control the unit via the laptop control computer is currently under development.

Testing of the software will start the week of 15 August.

Software for the analysis of the calibration measurements to be taken with the PCU continues to be developed. The code now converges to the correct answers when run with artificial data. The software will be refined and the redundancy of the measurements will be investigated with the aim to take the minimal set of measurements to characterize the HMI polarization properties.

Work continues on the estimation of errors in the vector magnetic field measurements. In particular we have focused on simulating:

a) the effects that the solar p-modes will have on the spectropolarimetric data depending upon the modulation scheme used and the time cadence; and b) the number of filtergram positions along the line profile needed to maintain sufficient information content.

This study is approaching completion and a technical report describing the details of the study and the results is currently being prepared.

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