



## HAO Colloquium Series

(Refreshments served)

- Speaker:** Wageesh Mishra, Udaipur Solar Observatory
- Time:** 3:00–4:00 pm
- Date:** Thursday, July 11, 2013
- Location:** CG1-2126
- Title:** Estimating arrival time of Earth-directed CMEs at in-situ spacecraft using COR & HI observations from STEREO

### ***Abstract:***

The prediction of the arrival time and transit speed of CMEs near the Earth is one of the key problems in understanding the solar terrestrial relationship. Although, STEREO observations now provide a multiple view of CMEs in the heliosphere, the true speed derived from stereoscopic reconstruction of SECCHI coronagraph data are not quite sufficient in accurate forecasting of arrival time of a majority of CMEs at near Earth. In order to understand the propagation of CMEs, we have used the 3D triangulation method on SECCHI coronagraph (COR2) images, and geometric triangulation on the J-maps constructed from Heliospheric Imagers HI1 and HI2 images for eight Earth-directed CMEs observed during 2008-2010. Based on the reconstruction, and implementing the Drag Based Model for the distance where the CMEs could not be tracked unambiguously in the interplanetary medium, the arrival time of these CMEs have been estimated. These arrival times have also been compared with the actual arrival time as observed by in-situ instruments. The analysis reveals the importance of heliospheric imaging for improved forecasting of the arrival time and direction of propagation of CMEs in the interplanetary medium.