



The new CORIMP CME catalog & 3D reconstructions

Jason Byrne (1), Huw Morgan (2), Peter Gallagher (3), Shadia Habbal (4), and Jackie Davies (1)

(1) RAL Space, STFC, Harwell Oxford, UK. (jason.byrne@STFC.AC.UK), (2) Aberystwyth University, Wales, UK. , (3) Trinity College Dublin, Ireland., (4) Institute for Astronomy, University of Hawaii, USA.

A new coronal mass ejection catalog has been built from a unique set of coronal image processing techniques, called CORIMP, that overcomes many of the limitations of current catalogs in operation. An online database has been produced for the SOHO/LASCO data and event detections therein; providing information on CME onset time, position angle, angular width, speed, acceleration, and mass, along with kinematic plots and observation movies. The high-fidelity and robustness of these methods and derived CME structure and kinematics will lead to an improved understanding of the dynamics of CMEs, and a realtime version of the algorithm has been implemented to provide CME detection alerts to the interested space weather community. Furthermore, STEREO data has been providing the ability to perform 3D reconstructions of CMEs that are observed in multipoint observations. This allows a determination of the 3D kinematics and morphologies of CMEs characterised in STEREO data via the 'elliptical tie-pointing' technique. The associated observations of SOHO, SDO and PROBA2 (and intended use of K-Cor) provide additional measurements and constraints on the CME analyses in order to improve their accuracy.