HELCATS: WP3 TECHNICAL MANUAL

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TASK 3.1: GEOMETRICAL MODELLING OF STEREO/HI CMES

The WP3 catalogue[1] is generated by inspection and characterisation of the J-maps for the CMEs in the WP2 catalogue, by the following steps (on the **stereo-ops** machine at RAL Space):

1. The code list.pro is run to generate a list of all fair and good events, to remove the poor events for the tracking. This code is in directory
   /soft/ukssdc/share/Solar/HELCATS/codes/list.pro

2. From the list of fair and good events, a J-map for each event is called in the code
   /soft/ukssdc/share/Solar/HELCATS/codes/jmap_widget_pa_final.pro
   In IDL the code is compiled as .r jmap_widget_pa_final and then called as, e.g.,
   jmap_widget_pa, 'A', 2008, 02, 01, '01', /dofit, posa=80
   where the '01' entry corresponds to the first CME to be tracked on that day (so a small number of events are '02' if they are the second CME to be tracked on that day), the 'dofit' keyword performs the model fitting to the J-map clicked tracks, and the 'posa' is the position angle suggested as pa_mid in the WP2 observational catalogue.

3. In WP3 each CME track is characterised 5 times by a point-&-click along the bright front/ridge corresponding to the front of the CME (along the position angle chosen to generate the J-map). Two output files are produced for each track, e.g.:
   /soft/ukssdc/share/Solar/HELCATS/tracks/HCME_A__20080201_01_PA080.dat
   which contains the 5 point-&-clicks date-time, distance (in Helioprojective-radial coordinates), J-map position angle (PA), and spacecraft (A/B); and
   /soft/ukssdc/share/Solar/HELCATS/tracks/HCME_A__20080201_01_PA080.dat_fit
   which contains the 5 resulting fittings of each of the three methods: Fixed Phi, Self-Similar Expansion, and Harmonic Mean.

[1] http://www.helcats-fp7.eu/catalogues/wp3_cat.html