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The Solar Stormwatch CME catalogue.

Luke Barnard and the The Solar Stormwatch Project Team
University of Reading, Department of Meteorology, United Kingdom (l.a.barnard@reading.ac.uk)

Since the launch of the twin STEREO satellites in late 2006, the Heliospheric Imagers have been used, with good results, in tracking transients of solar origin, such as Coronal Mass Ejections (CMEs), out through the inner heliosphere. A frequently used approach is to build a "J-Map", in which multiple elongation profiles along a constant position angle are stacked in time, building an image in which radially propagating transients form curved tracks in the J-Map. From this the time-elongation profile of a solar transient can be manually identified. This is a time consuming and laborious process, and the results are subjective, depending on the skill and expertise of the investigator. With the Heliospheric Imager data it is possible to follow CMEs from the outer limits of the solar corona all the way to 1AU.

Solar Stormwatch is a citizen science project that employs the power of thousands of volunteers to both identify and track CMEs in the Heliospheric Imager data. The CMEs identified by Solar Stormwatch are tracked many times by multiple users and this allows the calculation of consensus time-elongation profiles for each event and also provides an estimate of the error in the consensus profile. Therefore this system does not suffer from the potential subjectivity of individual researchers identifying and tracking CMEs. In this sense, the Solar Stormwatch system can be thought of as providing a middle ground between manually identified CME catalogues, such as the CDAW list, and CME catalogues generated through fully automated algorithms, such as CACtus and ARTEMIS etc.

We provide a summary of the reduction of the Solar Stormwatch data into a catalogue of CMEs observed by STEREO-A and STEREO-B through the deep minimum of solar cycle 23 and review some key statistical properties of these CMEs. Through some case studies of the propagation of CMEs out into the inner heliosphere we argue that the Solar Stormwatch CME catalogue, which publishes the time-elongation profiles of CMEs observed at multiple position angles, is a new and valuable dataset for space weather community.