Contribution ID: **55** Type: **not specified**

Transit time estimation of earthbound CMEs

Thursday 27 October 2022 14:55 (5 minutes)

We are working on predicting the time a CME directed towards earth will require to reach earth. We are using Solar and Heliospheric Observatory (SOHO) and Solar Terrestrial Relations Observatory (STEREO) twin spacecraft when they are in quadrature configuration. This allows us to observe the CMEs from two additional directions and get rid of the projection effect .
In our studies We are using the Maximum velocity of a CME in its trajectory (obtained from its velocity profile)as its initial velocity, This parameter is highly correlated to its final velocity .using this method and by performing manual observation of 51 halo and partial halo CMEs ejected between 2009-2013 we have already measured transit time of CMEs from sun to earth(TT) with accuracy same as it is present in literature but with a significant improvement in error of maximum transit time estimation. In literature it was 50 hours however using our method we drastically reduced it to 29 hours .
Now we are adding observation from one more instrument Coronograph1(Cor1) of STEREO(A or B) of the CMEs from 2009-2013 along with 2017-2021. As this instrument has a field of view closer to the sun(1.4-5 solar radii) the measurement of the maximum velocity of CME will be more accurate.

The novelty of our work is it can be used for quick estimation of transit time(TT) which is necessary for any space weather forecasting and the error of TT estimation is significantly lower. And we believe incorporating Cor1 observation and with a larger dataset using our method, we will get an even more accurate measurement.

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Session Classification: Solar physics and heliosphere