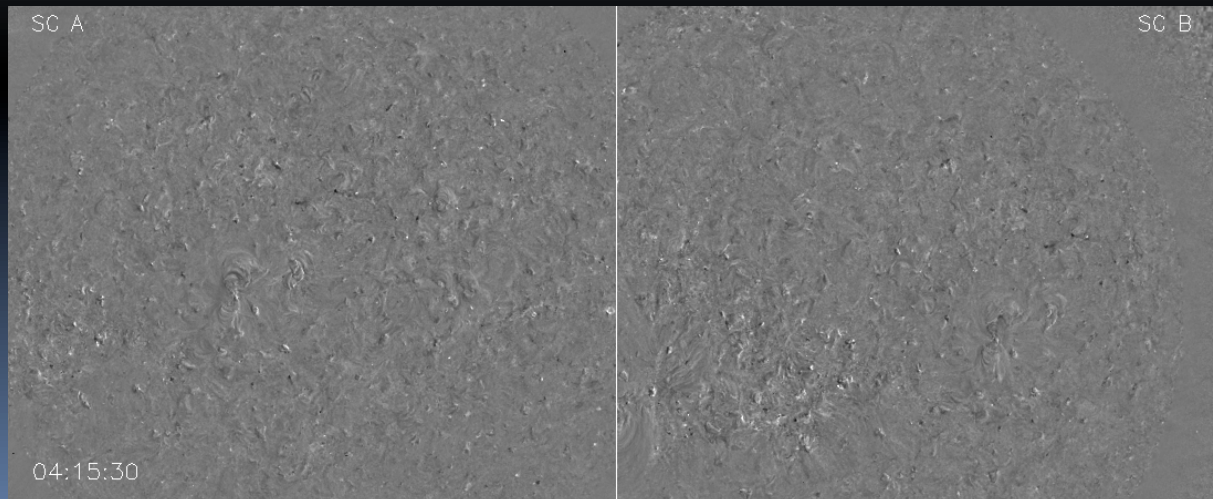
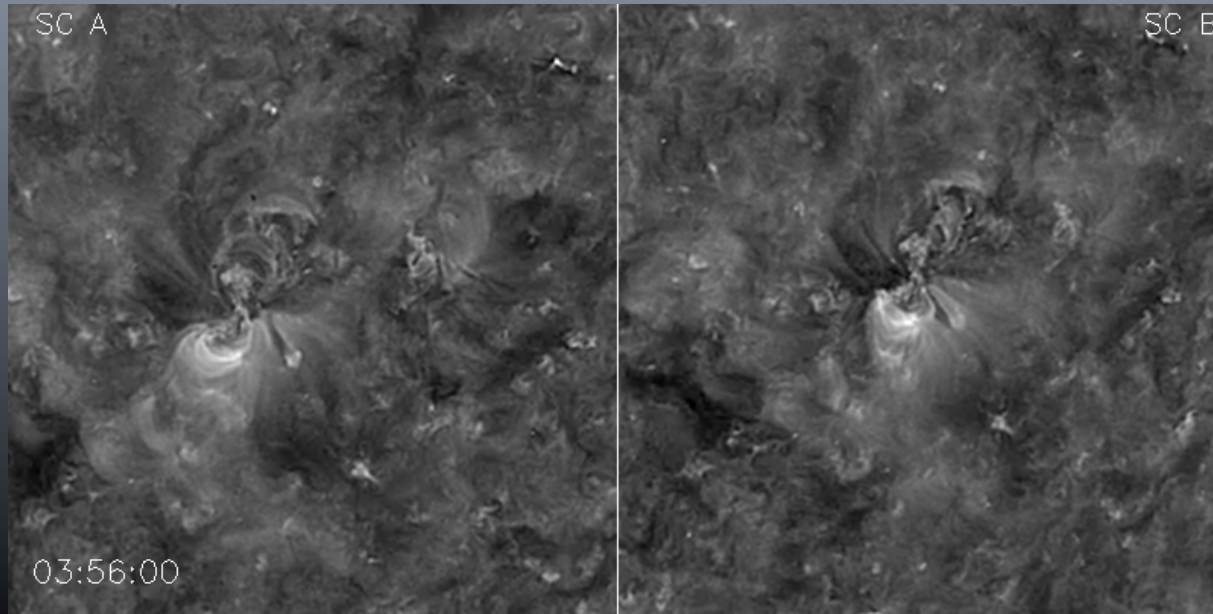
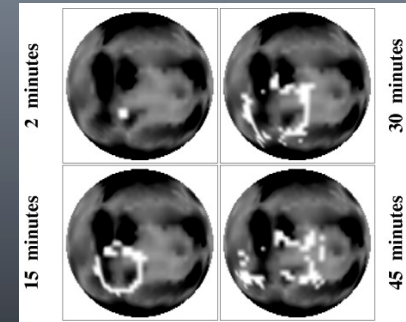


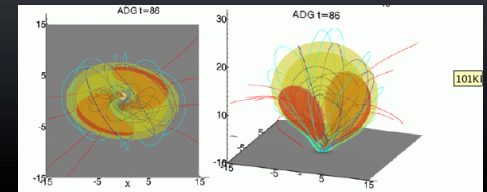
Rapidly expanding loops and EUV waves – 195 Å; $\Delta\phi=40^\circ$; December 07, 2007



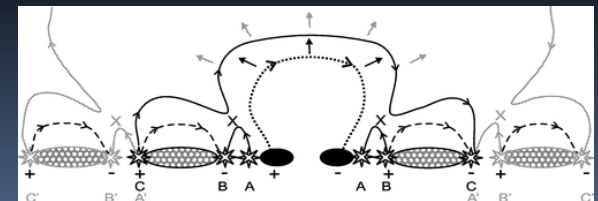
Fast mode wave: e.g., Wang 2000



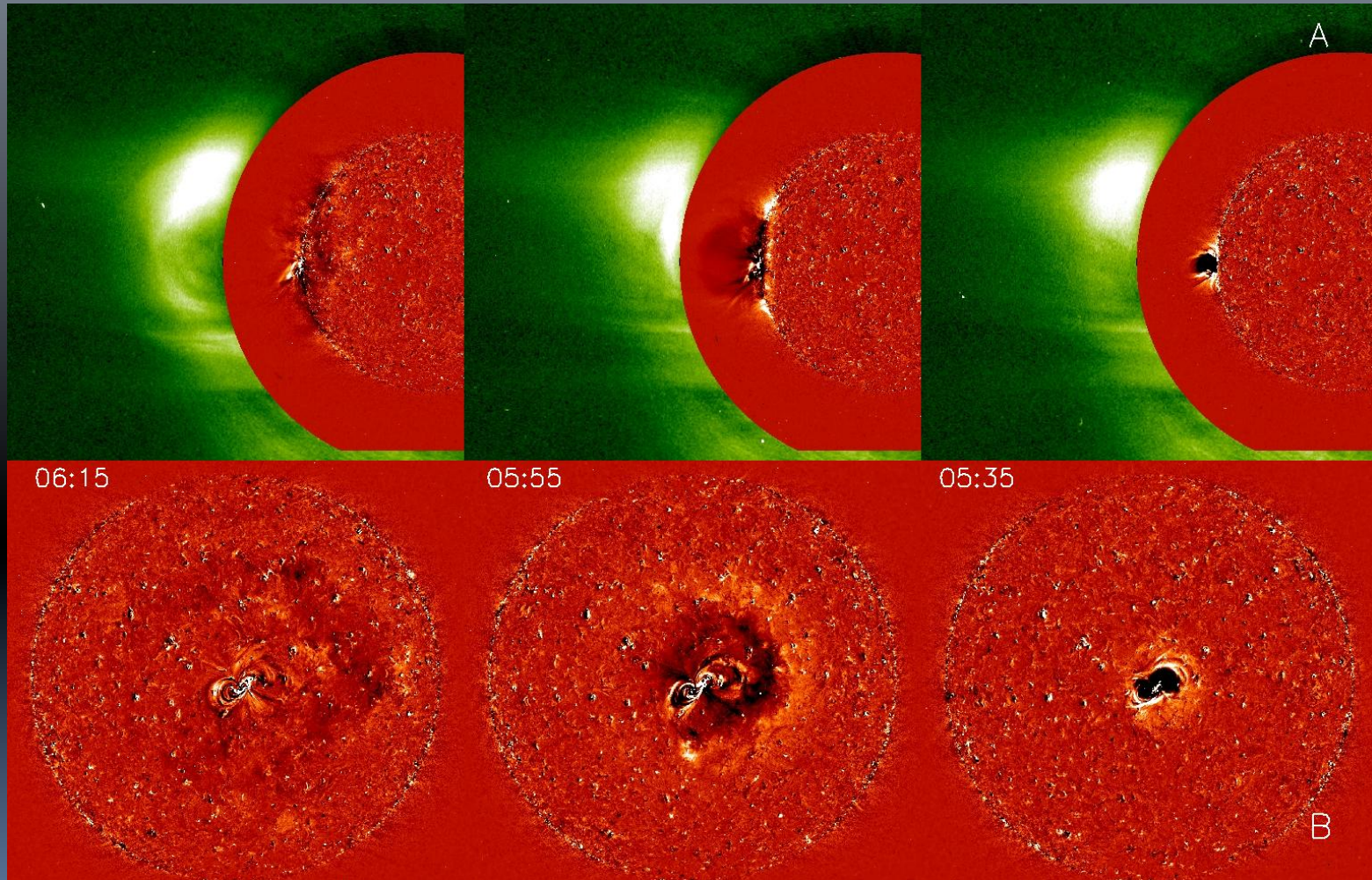
Expanding flux rope: e.g., Delannée et al. 2008



Reconnection fronts: e.g., Attrill et al. 2007



Evolution of CME and EUV-wave (adapted from Patsourakos and Vourlidas, ApJ, 2009)



CAT CME parametrization



J. Hesemann¹, G. Millward^{2,3}, V. Bothmer¹, E. Bosman¹

¹ Institute for Astrophysics, University of Göttingen, Germany

² Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, Boulder, Colorado, USA

³ National Oceanic and Atmospheric Administration (NOAA), Space Weather Prediction Center (SWPC), Boulder, Colorado, USA

phone: +49 551 39 5062

jheseman@astro.physik.uni-goettingen.de



CAT CME parametrization

- The bigger frame: Why geometrical modelling?
- What data to do it?
- CAT preparation tool
- CAT demonstration
- From CAT to L1

Why geometrical modelling?



STEREO satellites provide 3D-view

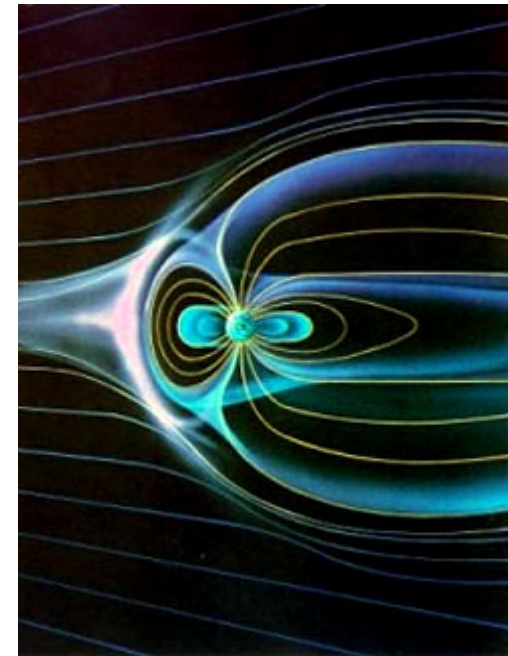


ACE gives 15-30 mins premonition time

Which direction does the CME go?
Will it miss?

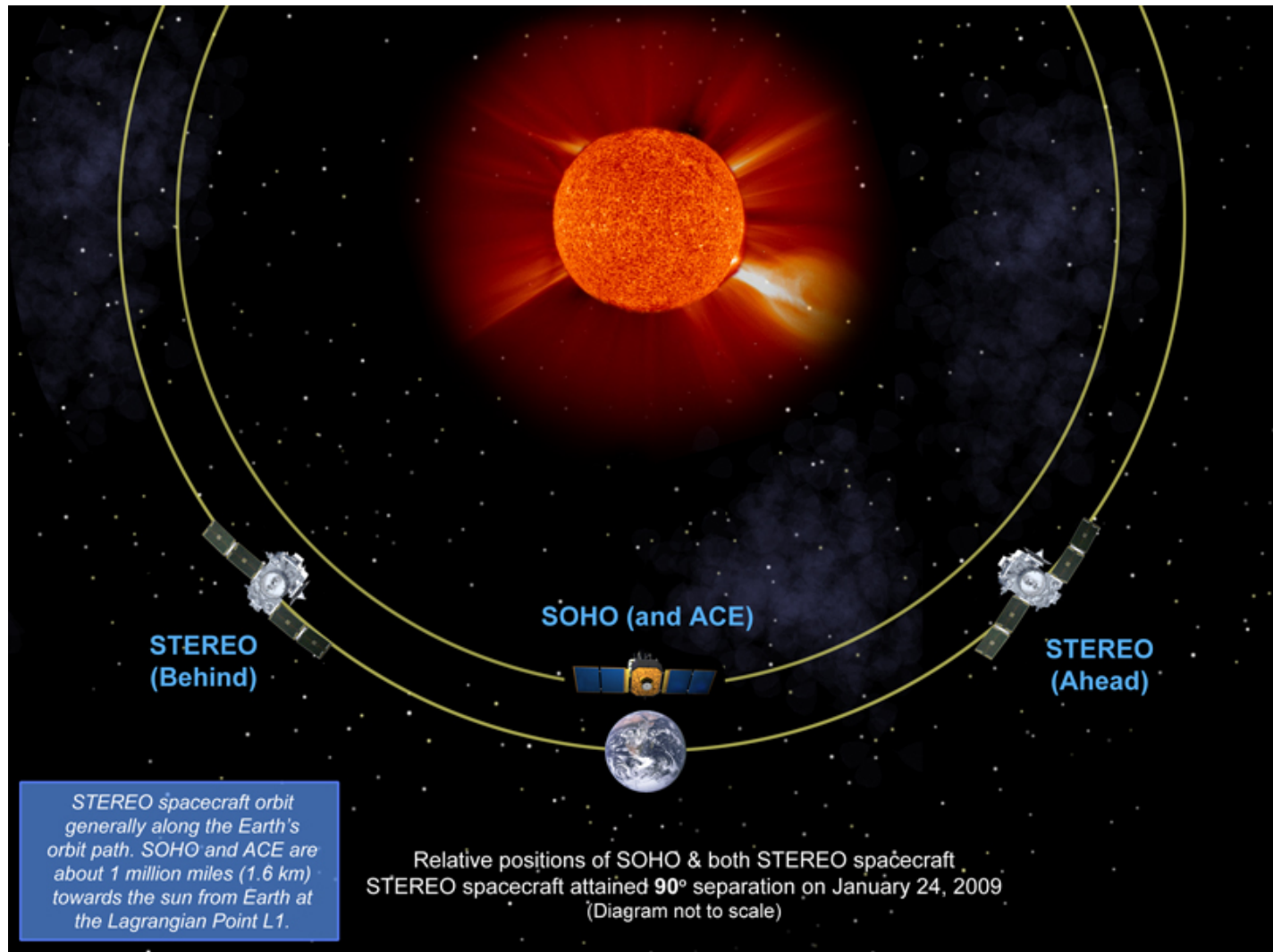


How fast is the CME?
When will it arrive at
Earth and with which
 $-B_z$? ($\underline{E} = -\underline{v} \times \underline{B}$)

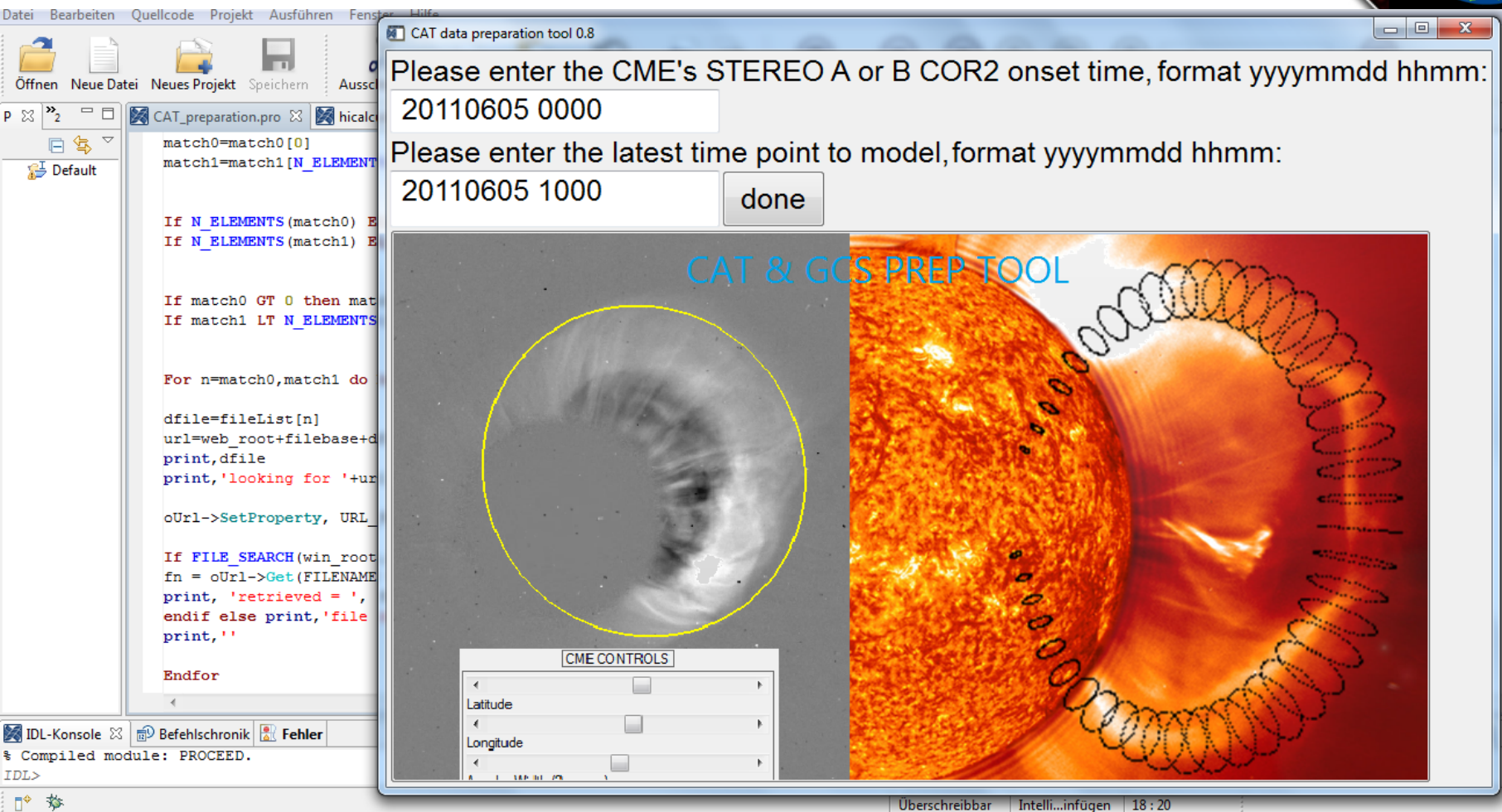


Images: NASA

Active Involvement in Multipoint Space and Ground Observations

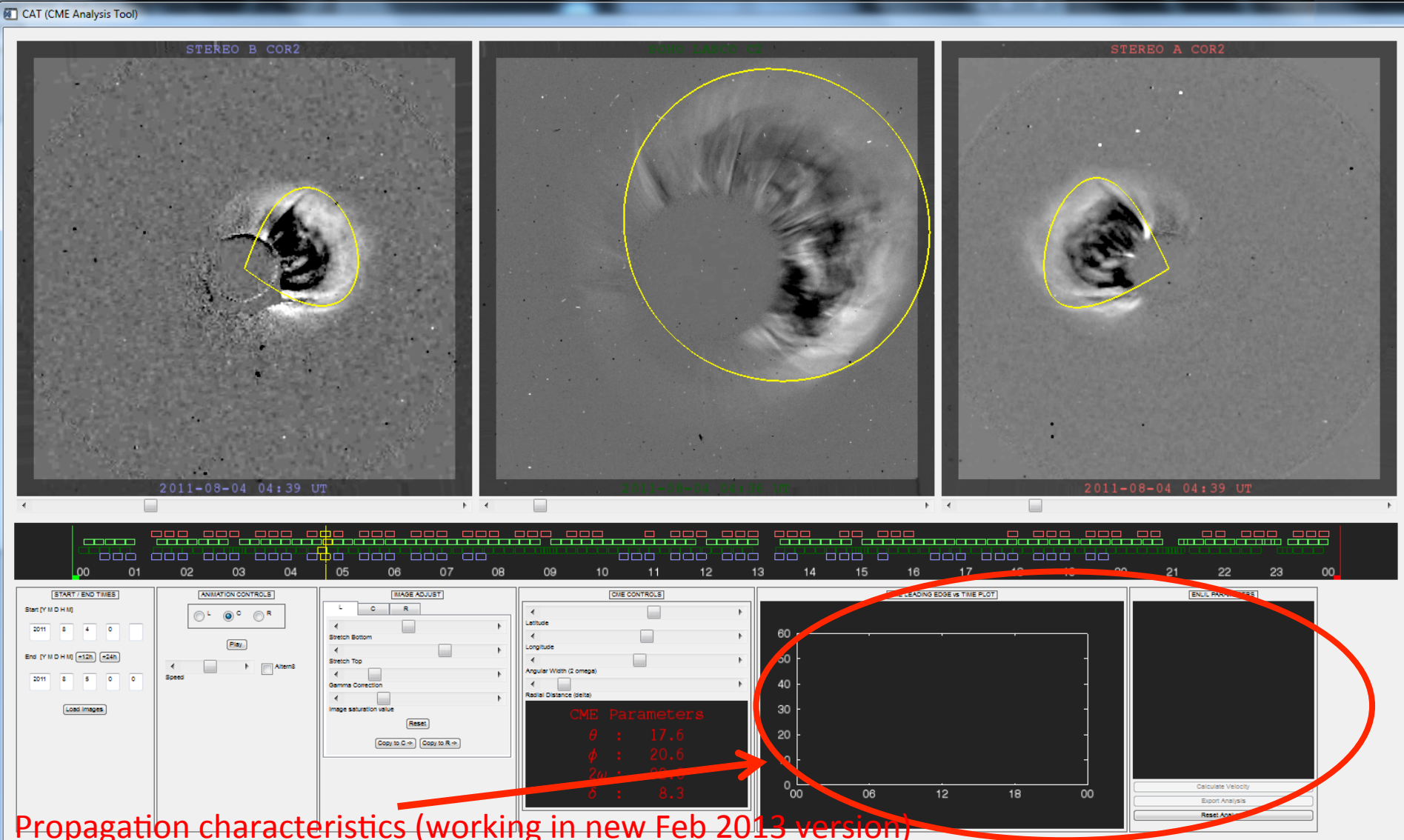


CAT – preparation



- Checks whether beacon images are stored
- Downloads from NASA ftp servers into needed folder structure

CAT tool structure



CAT – GCS comparisons



leading edge altitude vs time, CAT

