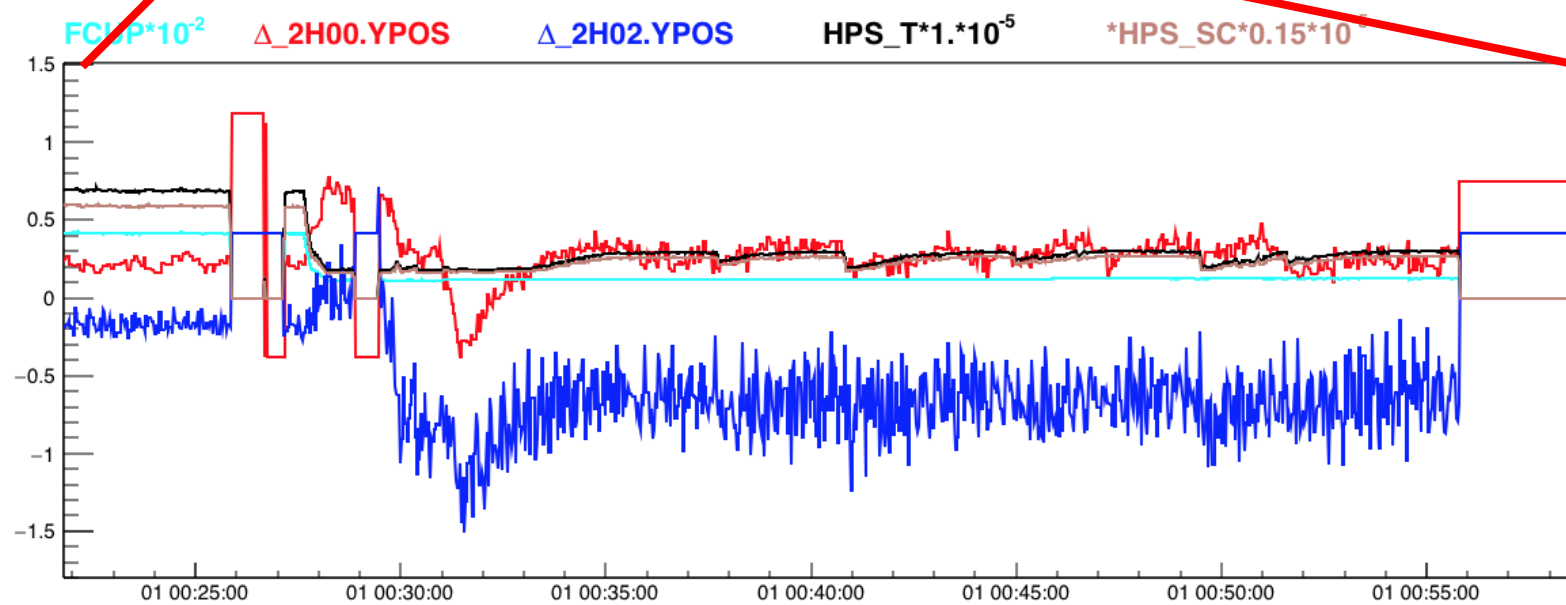
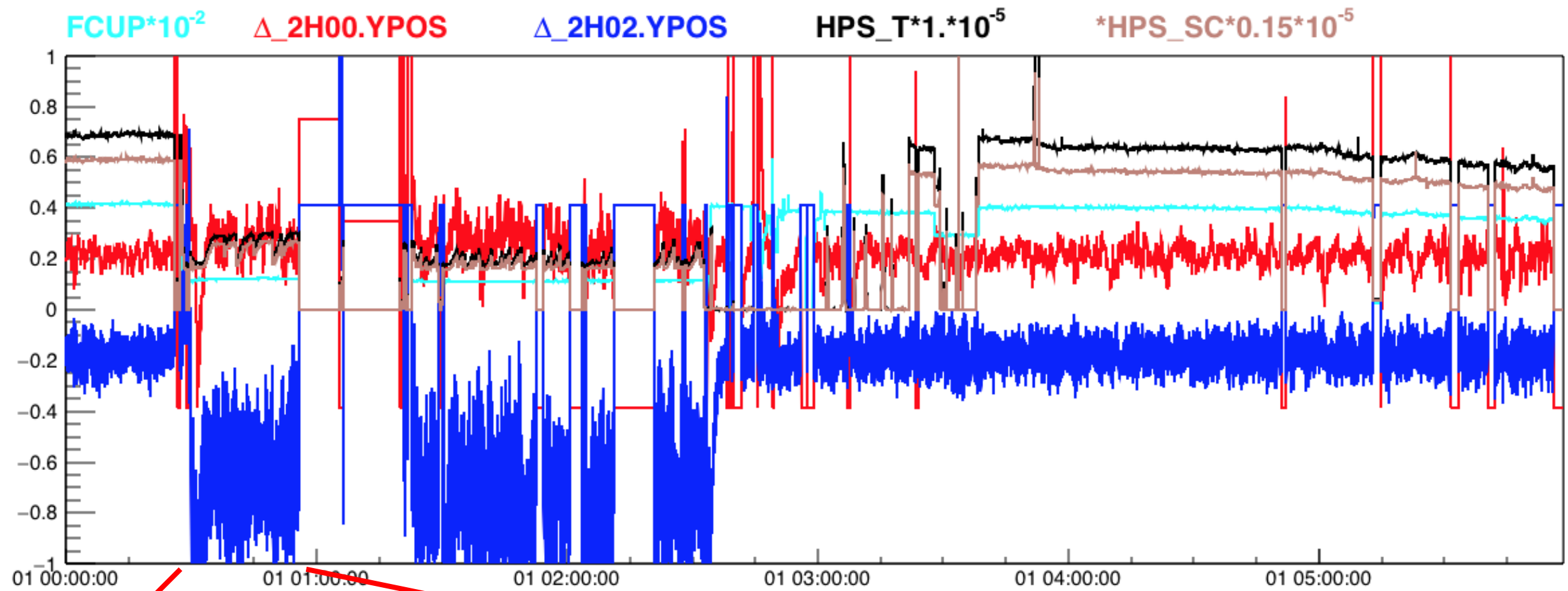


Beam motion study from the EPICS stored BPM Values.

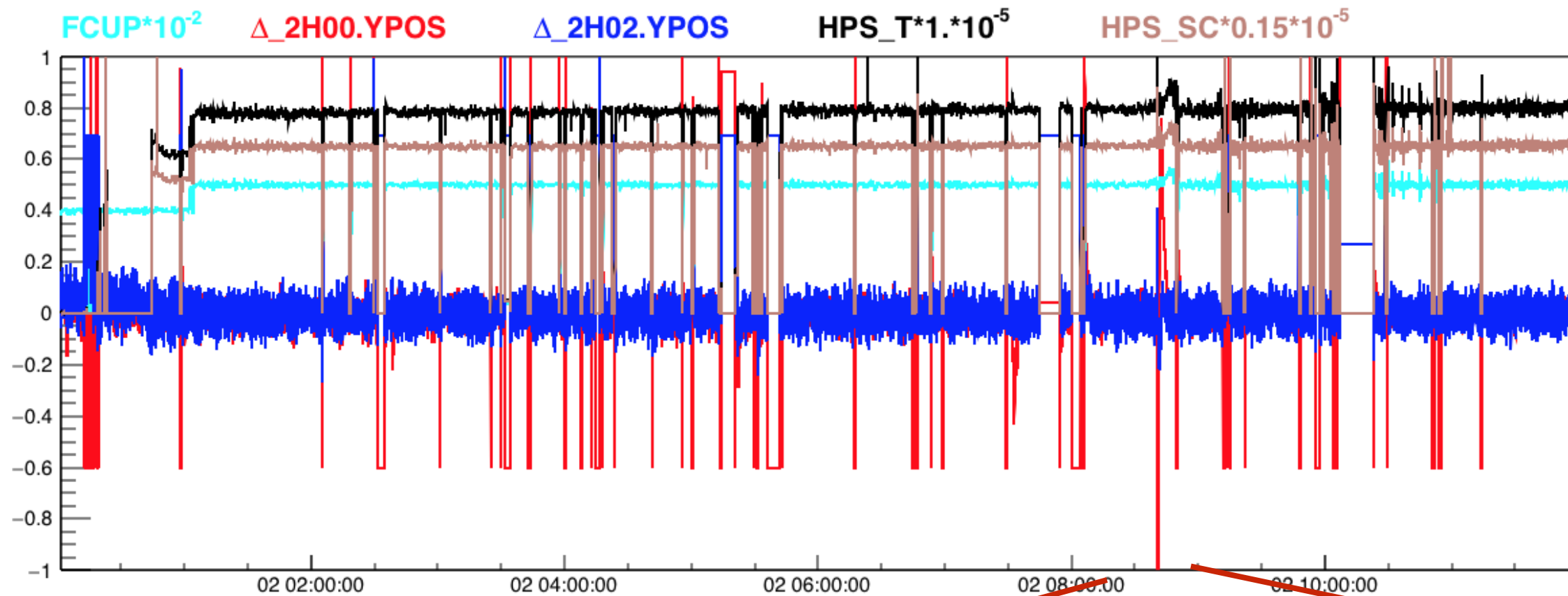
EC meeting May 8, 2015

May 1st

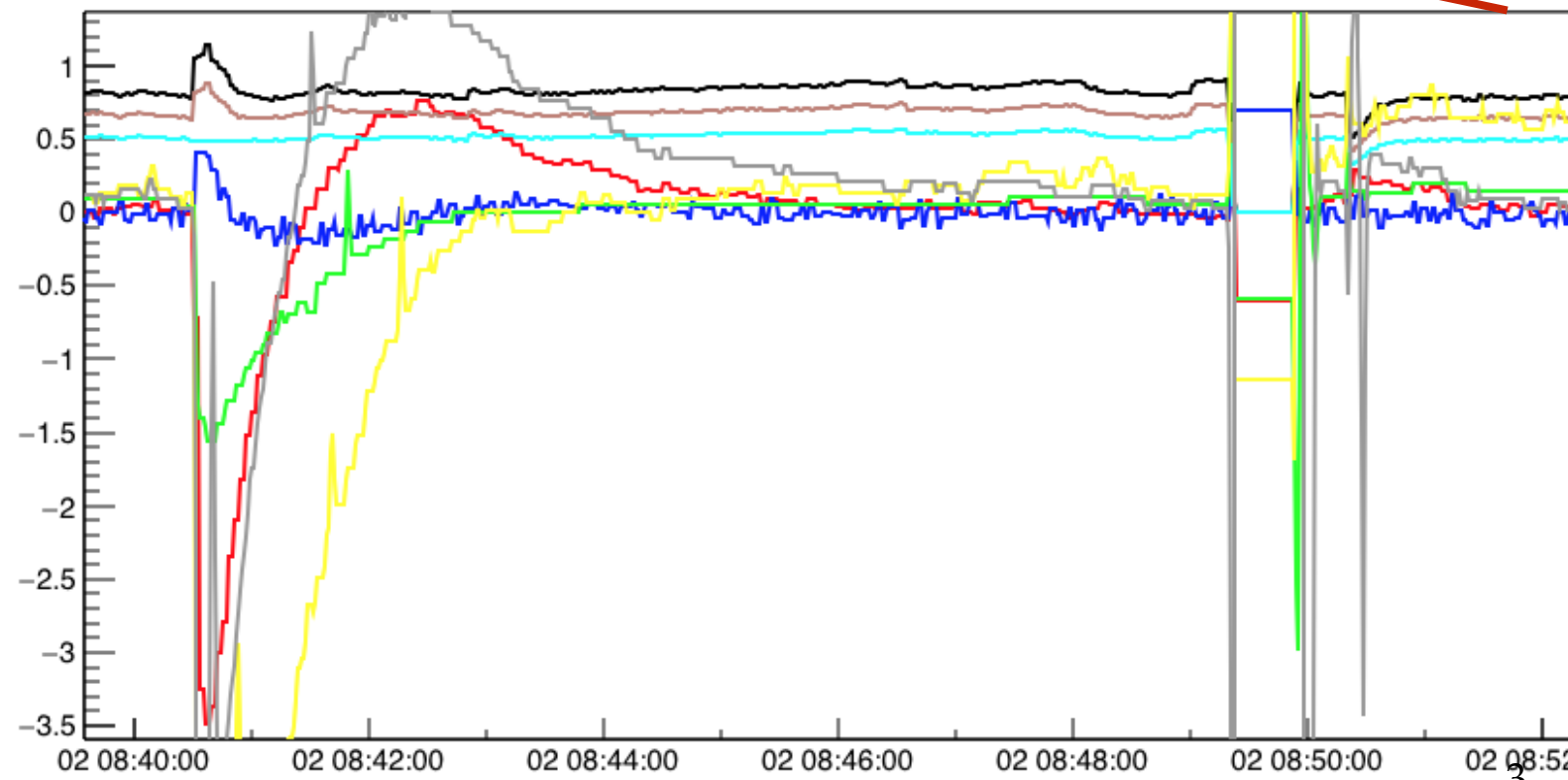


Low current beam $I < 10$ nA
Stripline BPM do not read
reliable position!

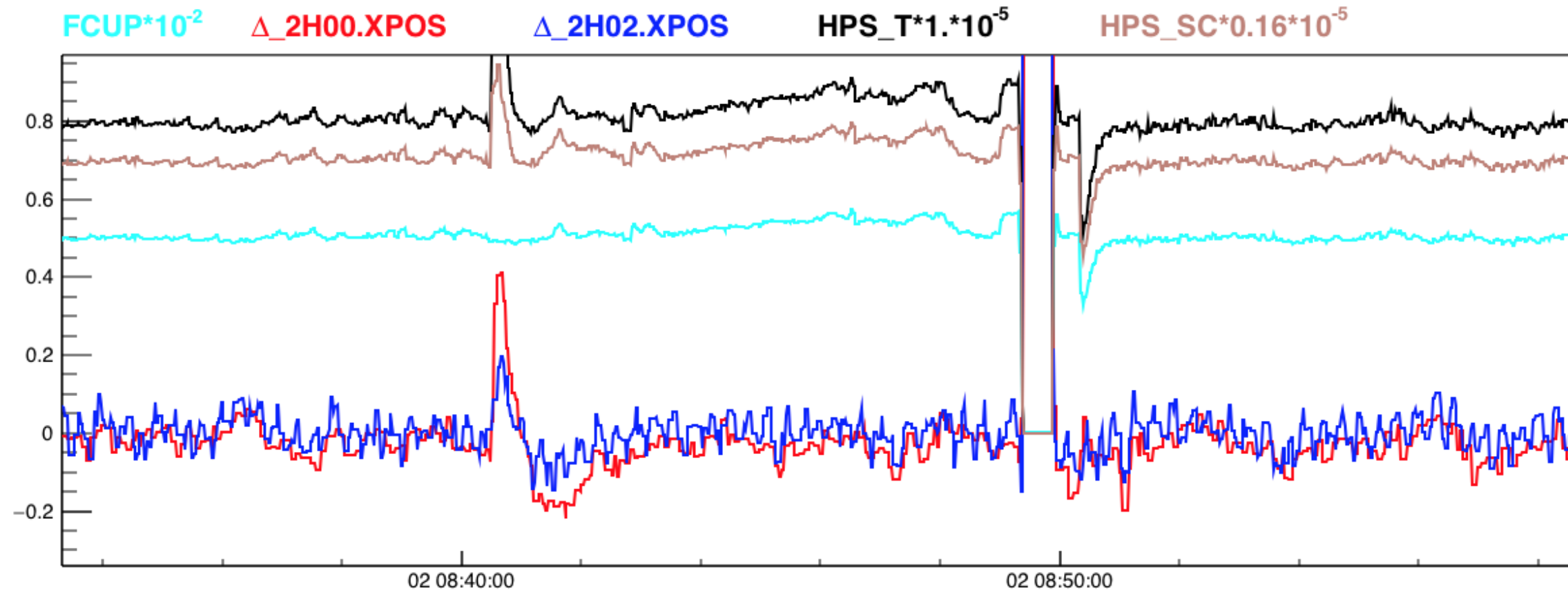
May 2nd



8:40 am - Significant movement in y of beam on 2H00 is also seen on 2C2I (green) and 2C24 (yellow) and 2H0I (grey) HPS_T and HPS_SC respond only a little.

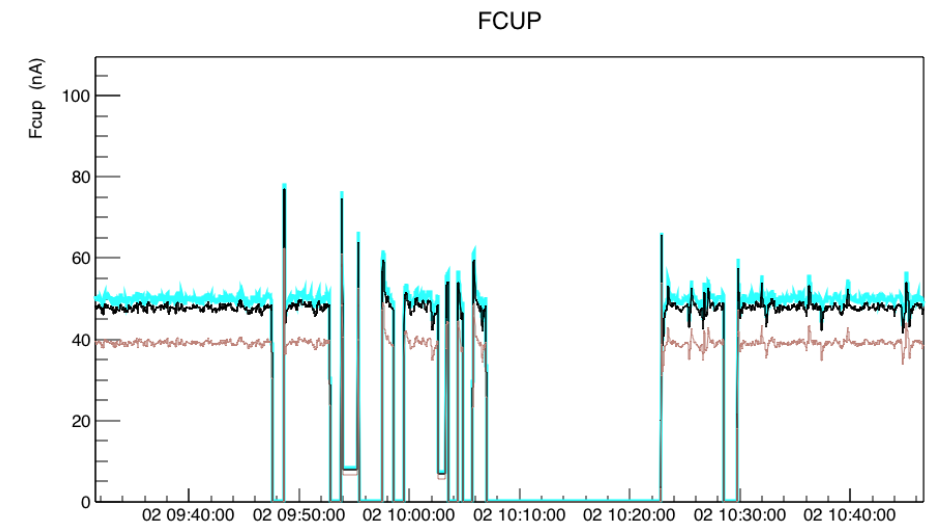
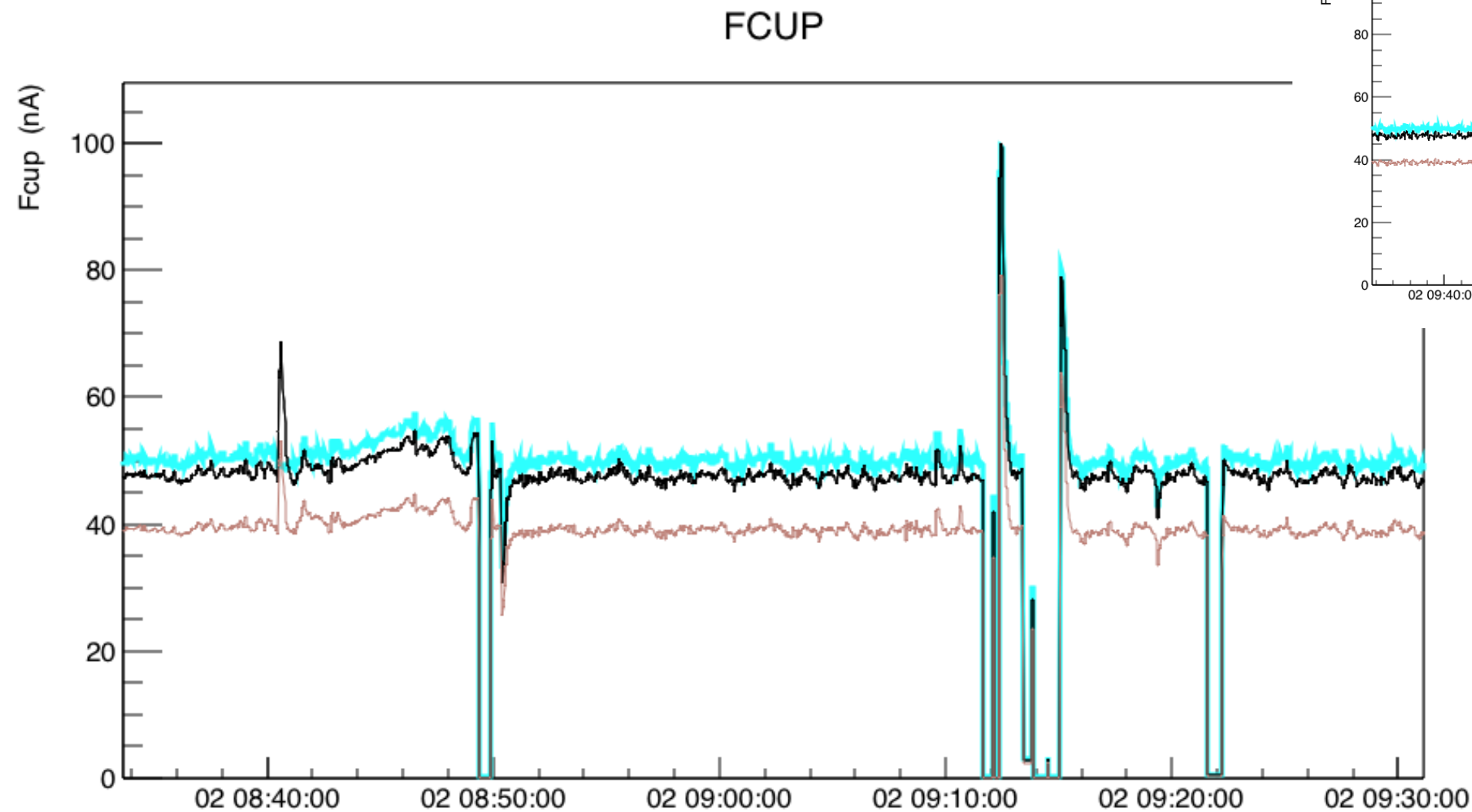


May 2nd



Not as much beam movement in X, but some.

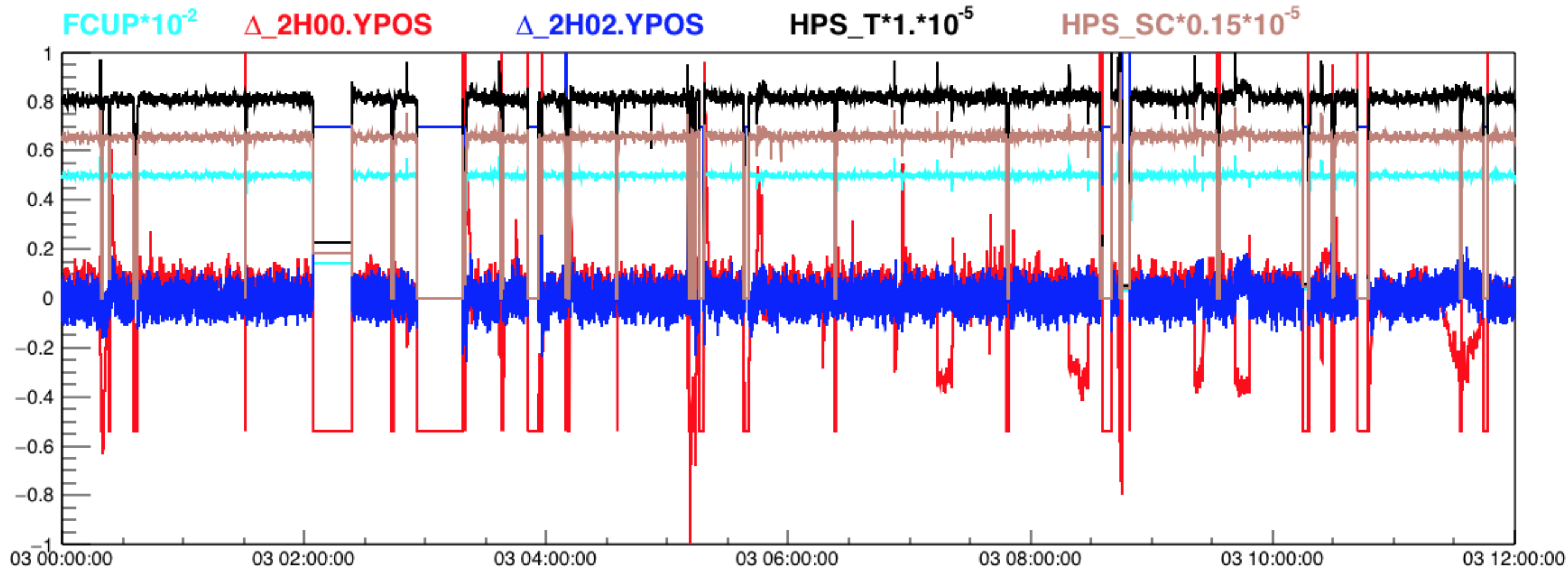
May 2nd



**Current spikes.
Logbook hints at
tuning beam to
Hall-D
Was that the earlier
issue as well?**

08:15 Run 5278 started, Event rate 10kHz, Trigger Rate Pair 1 12 kHz, Beam 50nA, 2H02 x,y are looking good, Livetime 74%
08:30 MCC called. They are seeing an alarm on the Tagger Magnet Power Supply. See no indication of this in counting house (still 0A and 0T). MCC will dig into this further
09:15 Run Ended with 30M events. Sergey called to inform us that the HPS data directory was almost full (~80Gb remaining). See separate entry.
09:35 Run 5279 started. Event rate 10kHz, Trigger Rate Pair 1 11.5kHz, Beam 50nA, positions good, Livetime 74%
10:00 Run 5280 started. Event rate 10kHz, Trigger Rate pair 1 11.5kHz, Beam 50nA, positions good, Livetime 75%
10:05 Run 5280 Ended due to beam trip with 1.3M events
10:10 Still waiting for beam
10:22 Called MCC for update on beam. They said a few minutes. Was down for invasive study of the Hall-D current set point
10:25 Run 5281 started. Event rate 9kHz, Trigger Rate Pair 1 11kHz, Beam 50nA, positions good, Livetime 76%
10:31 Run 5281 ended due to beam trip 2.7M events
10:33 Run 5282 started. Event rate 10kHz, Trigger Rate Pair 1 11.5kHz, Beam 50nA, positions good, Livetime 76%

May 3rd (Y)



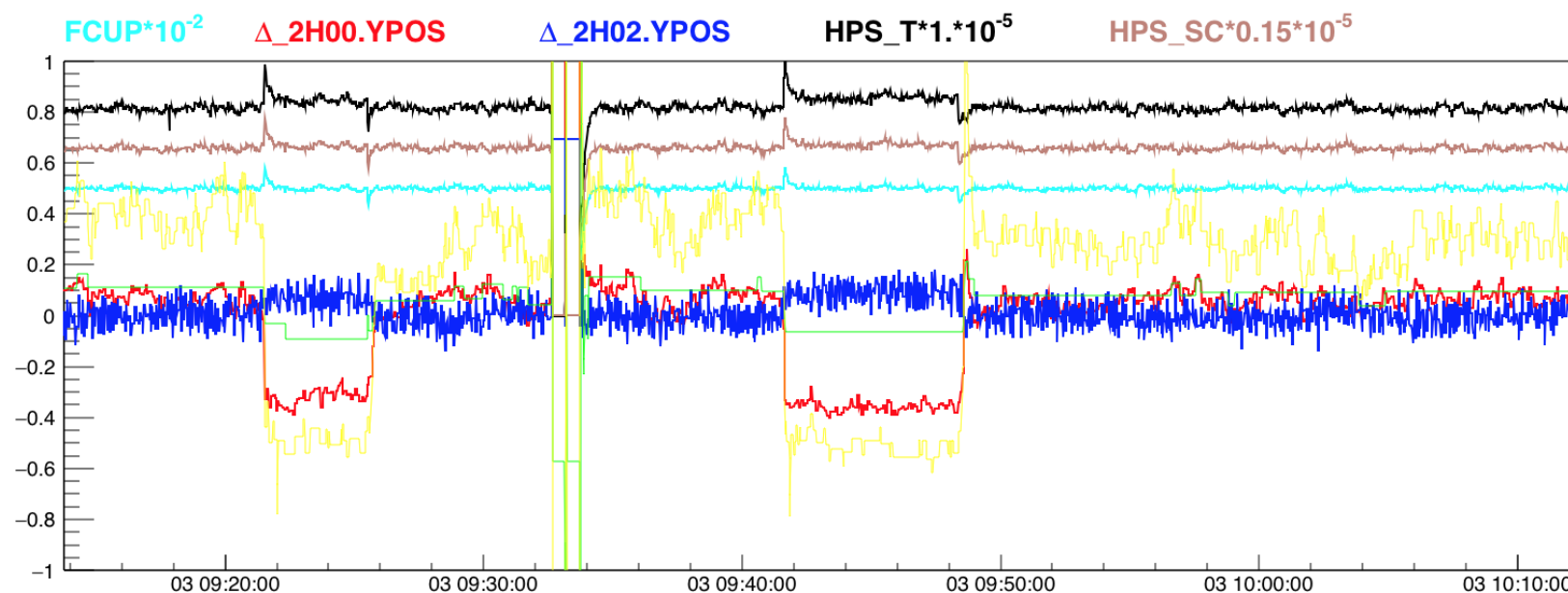
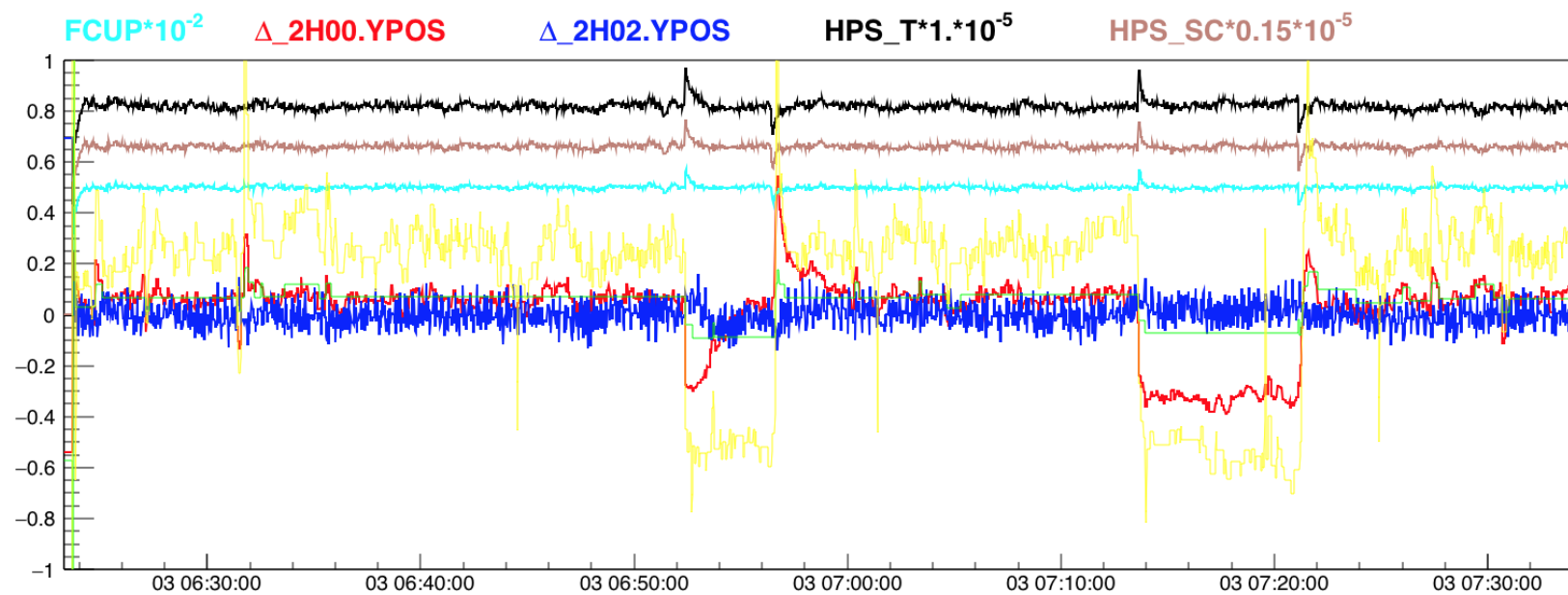
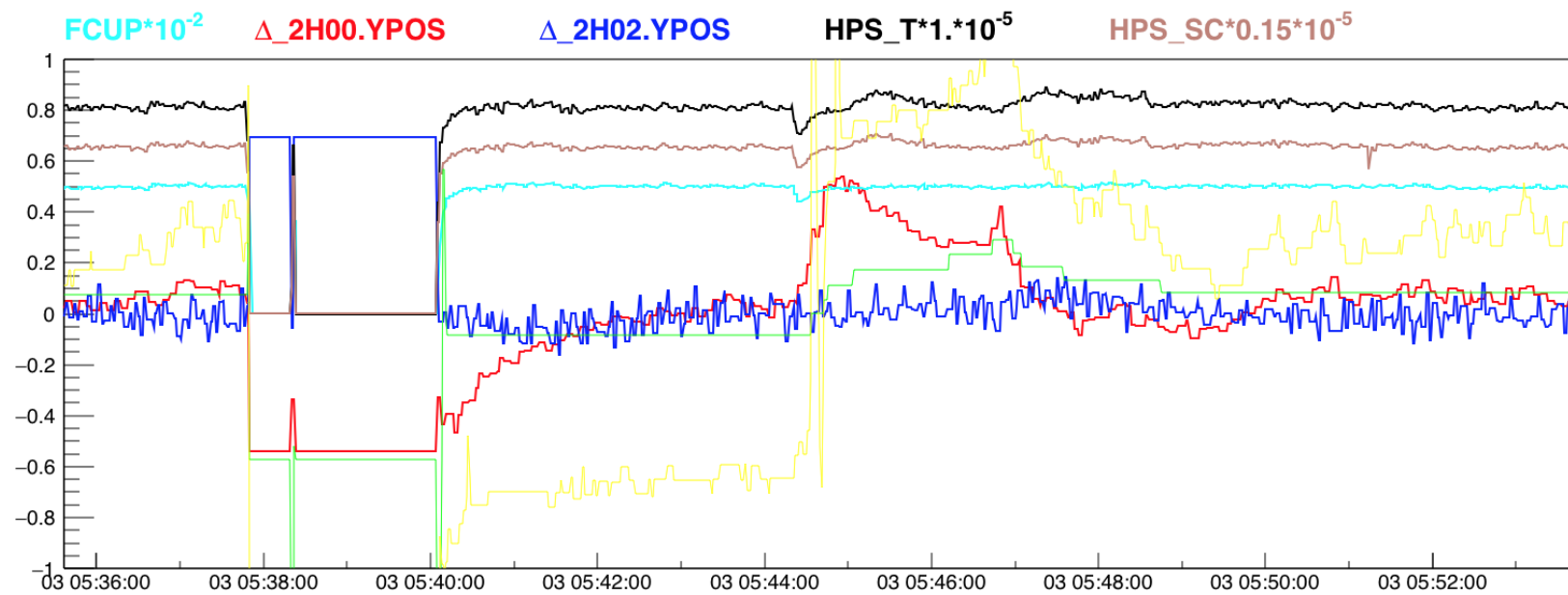
More beam instabilities?

Logbook mentions beam taken away for Hall-D access (2am), and bringing beam to Hall-D back.

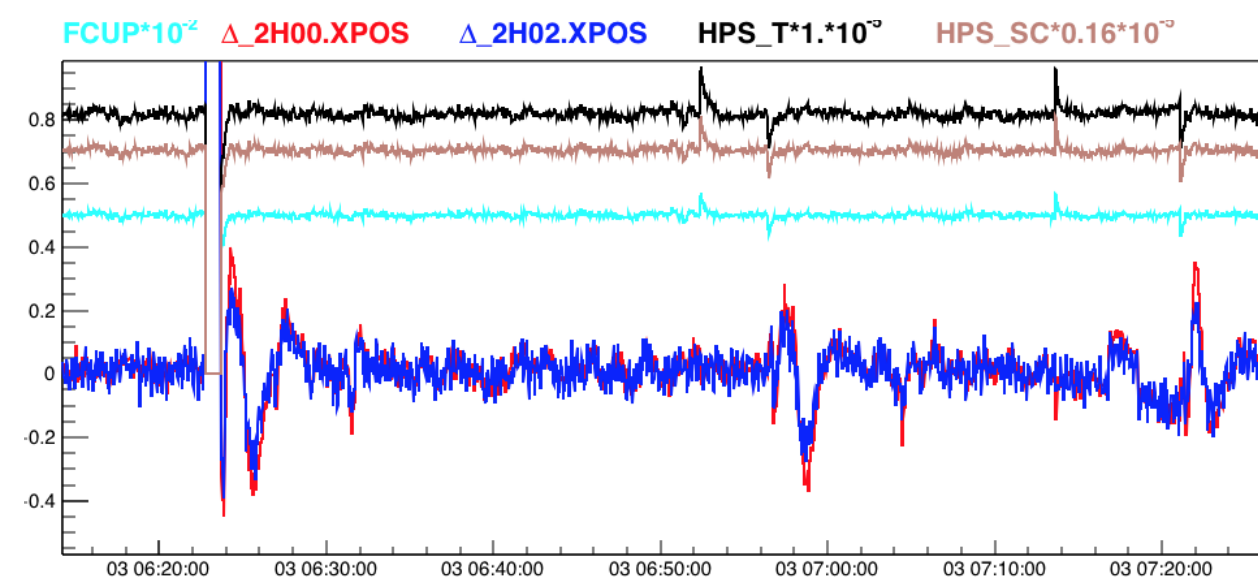
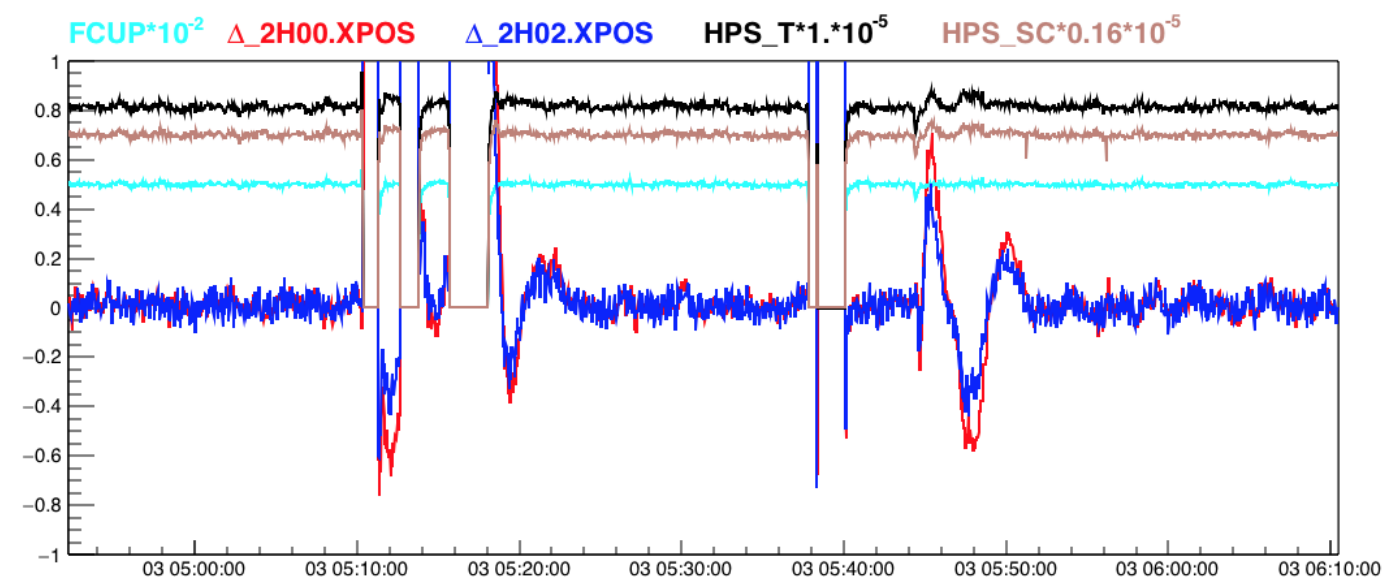
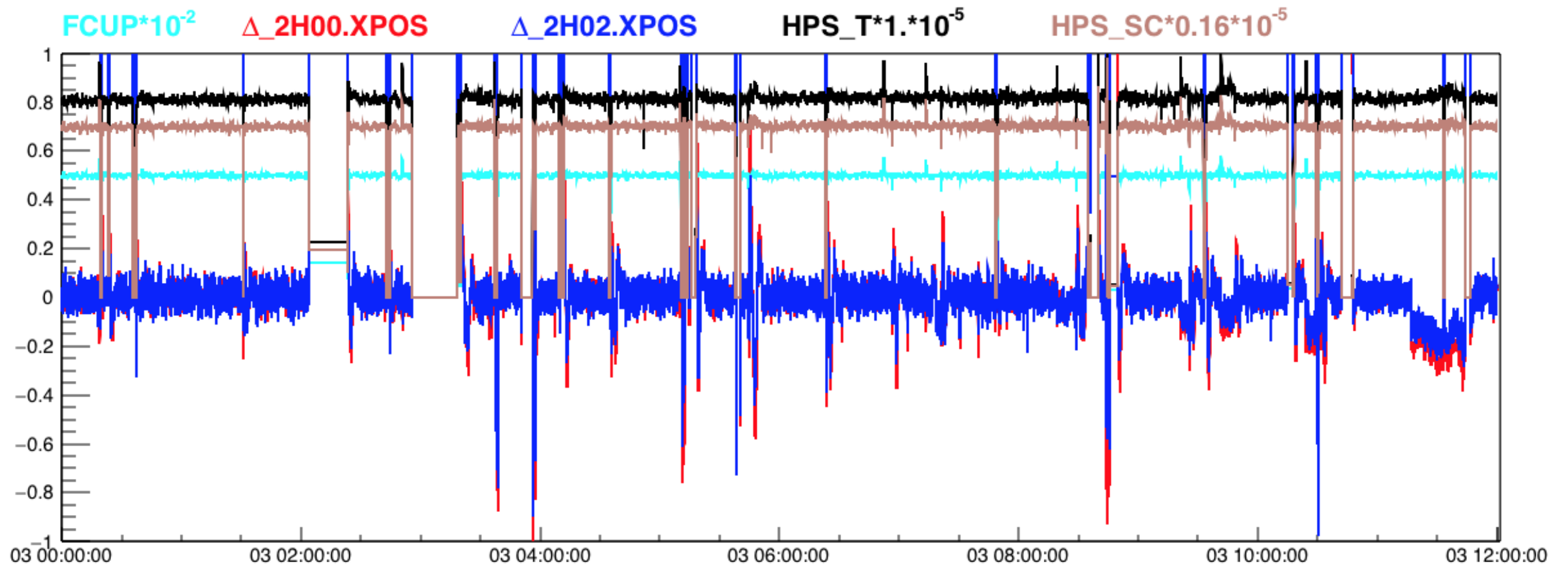
May 3rd (Y)

The 2C2I (green) and 2C24 (yellow) also track the movement.

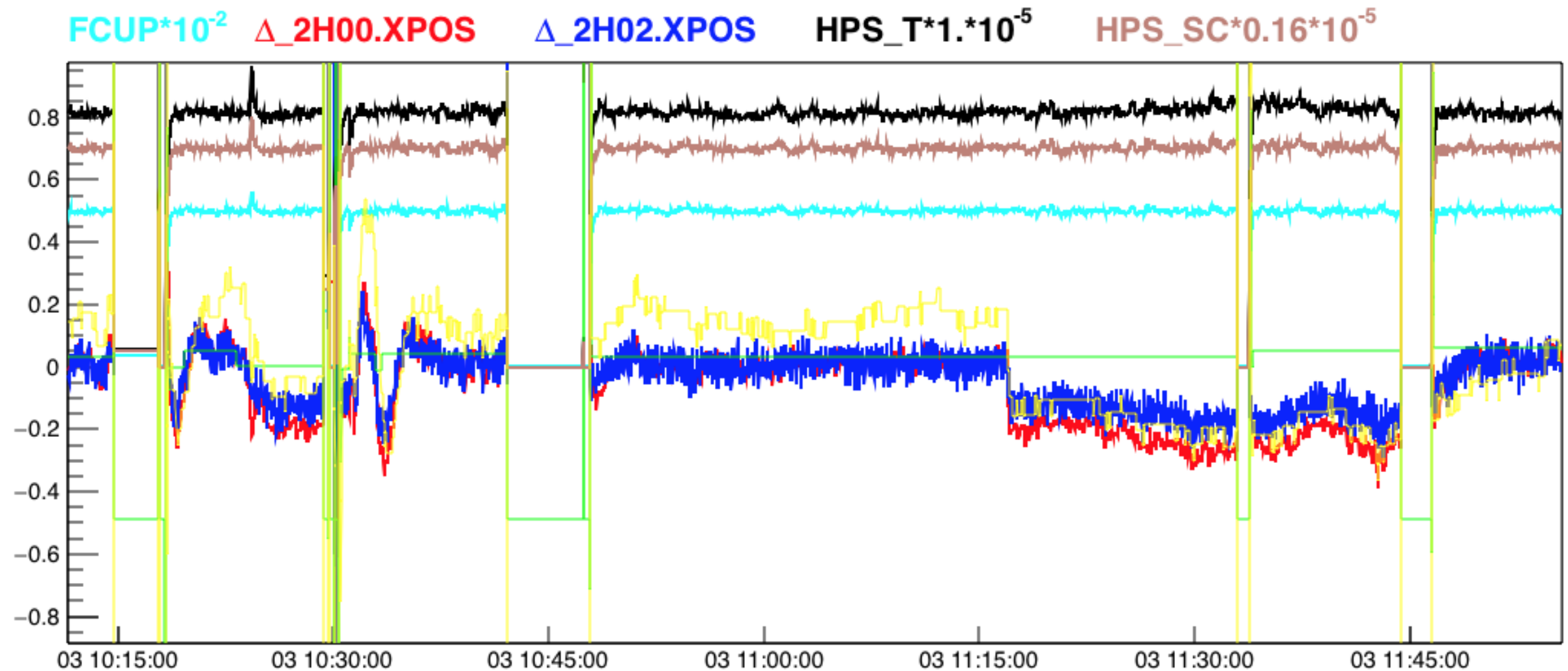
Is the orbit lock keeping 2H02 relatively constant?



May 3rd (X)

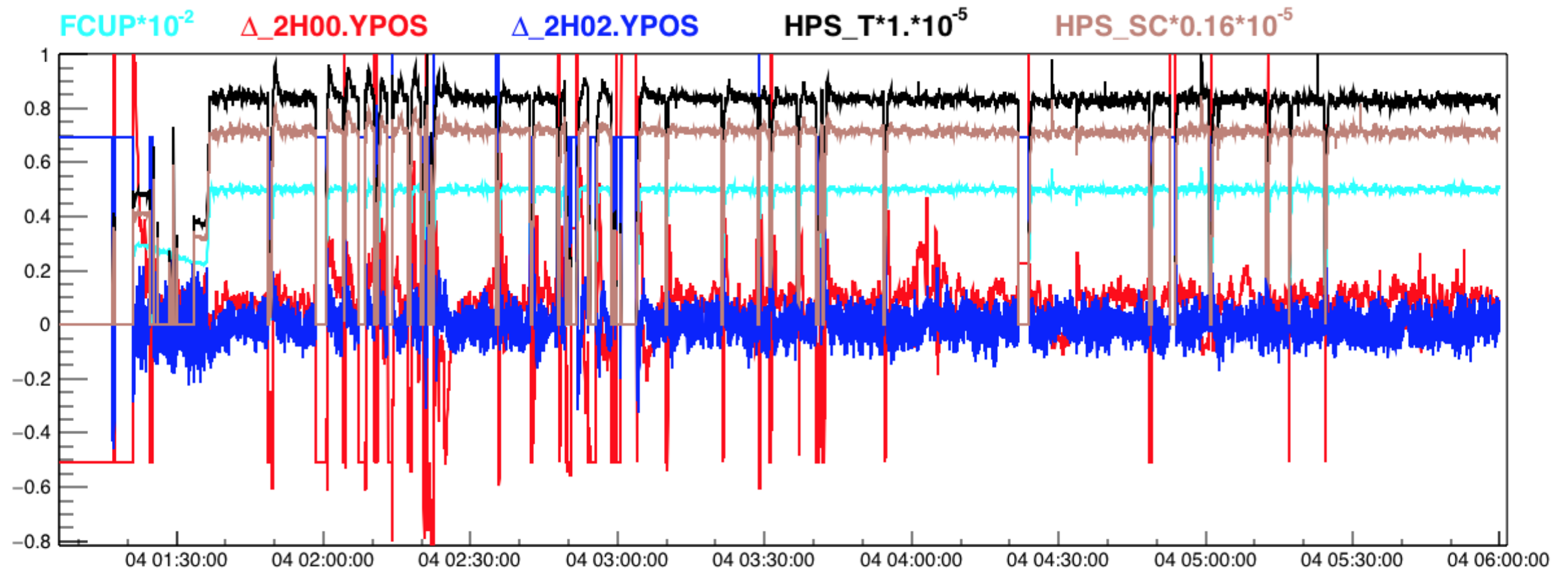


May 3rd (X)

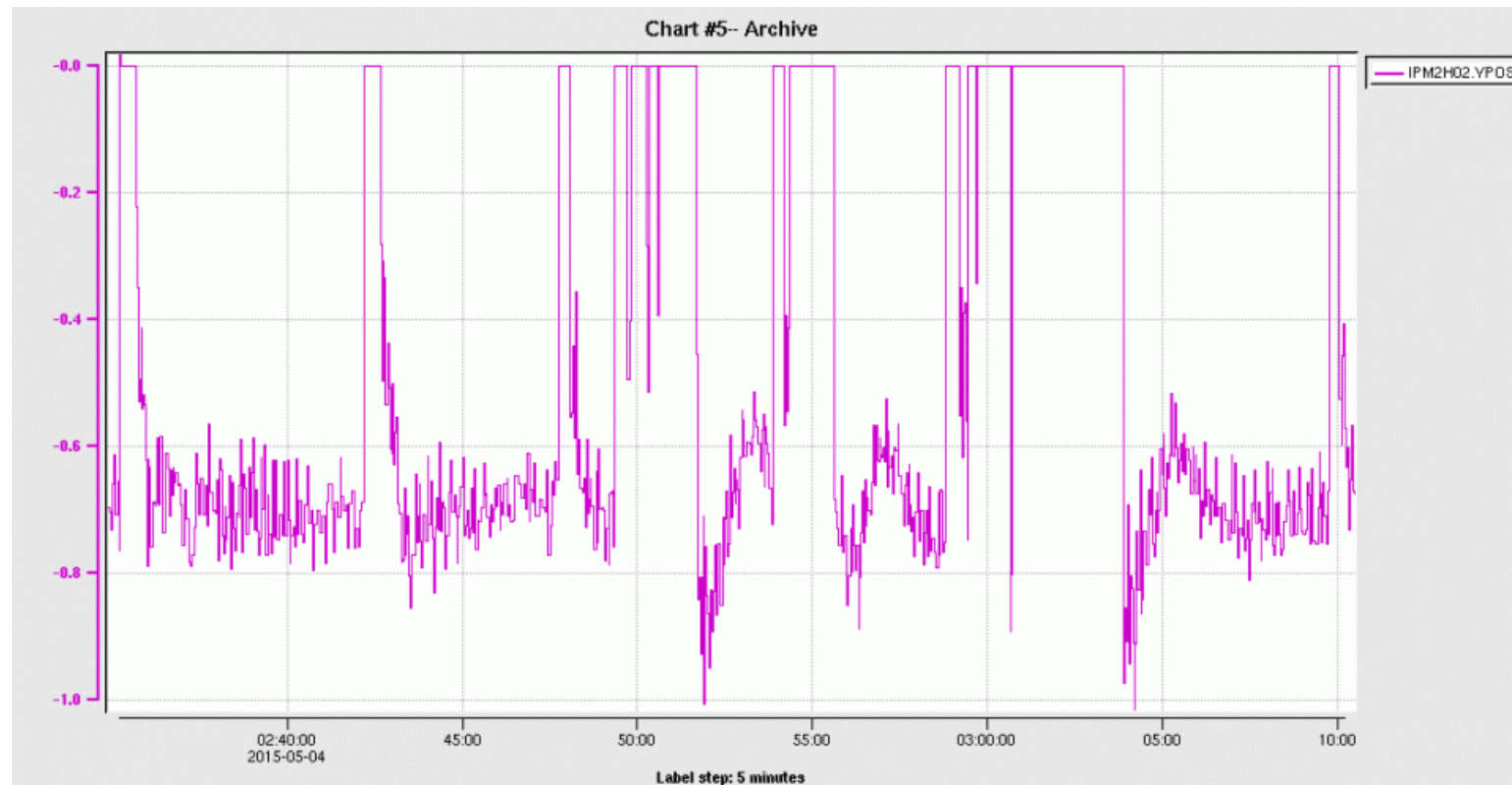


2C2I does not read well.
2C24 tracks the movements.

May 4th

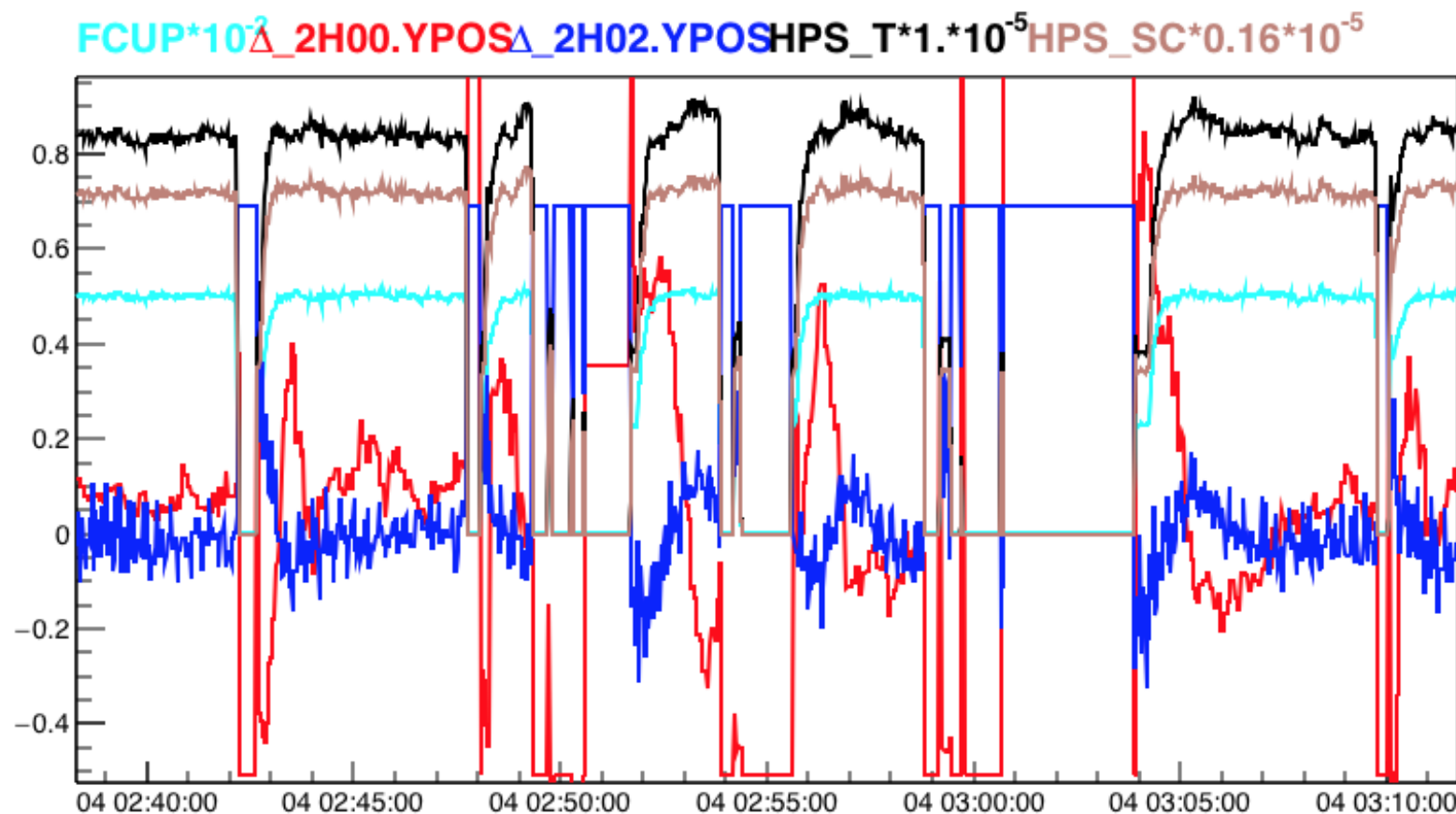


May 4th

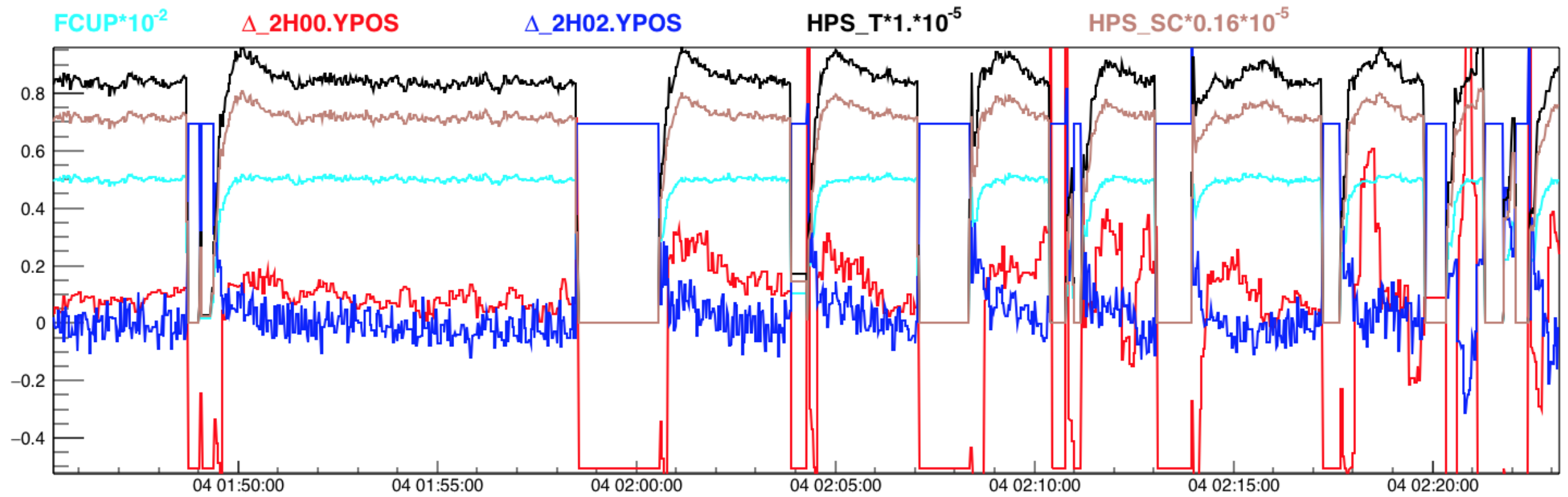


Very difficult to tell if this is actual beam motion, or the BPMs being inaccurate due to the trips.

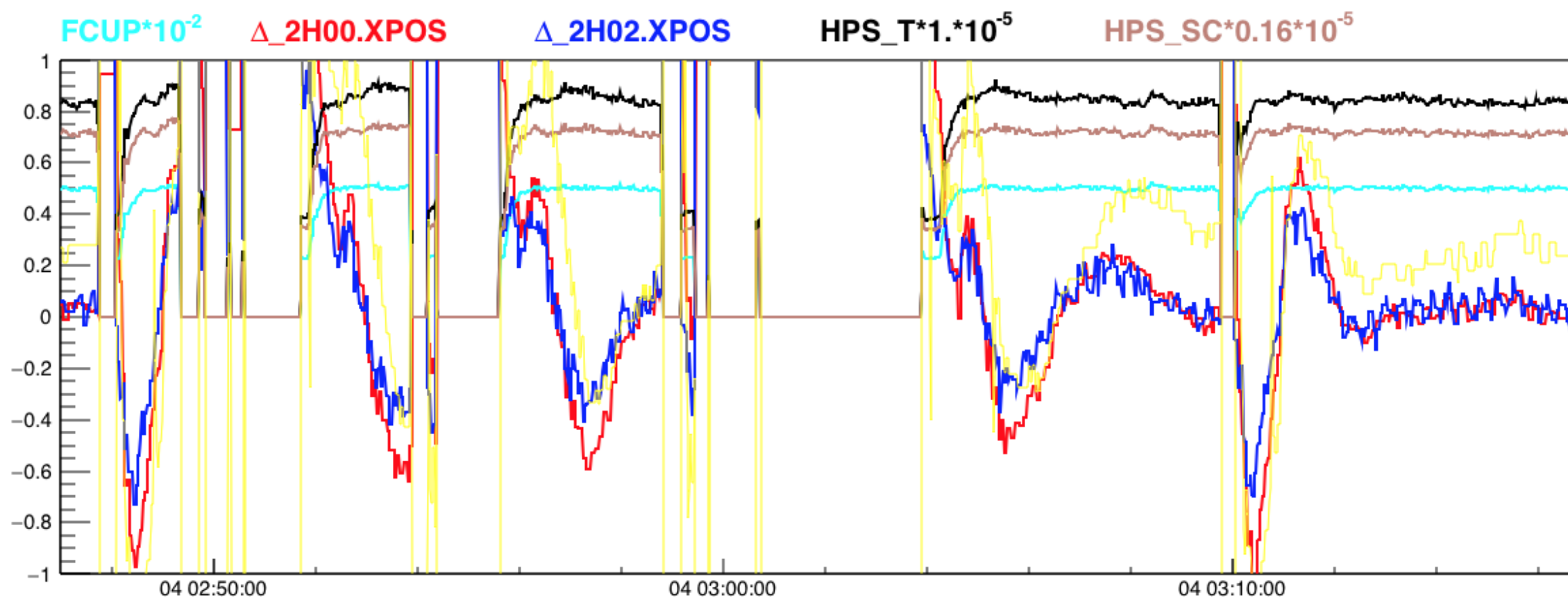
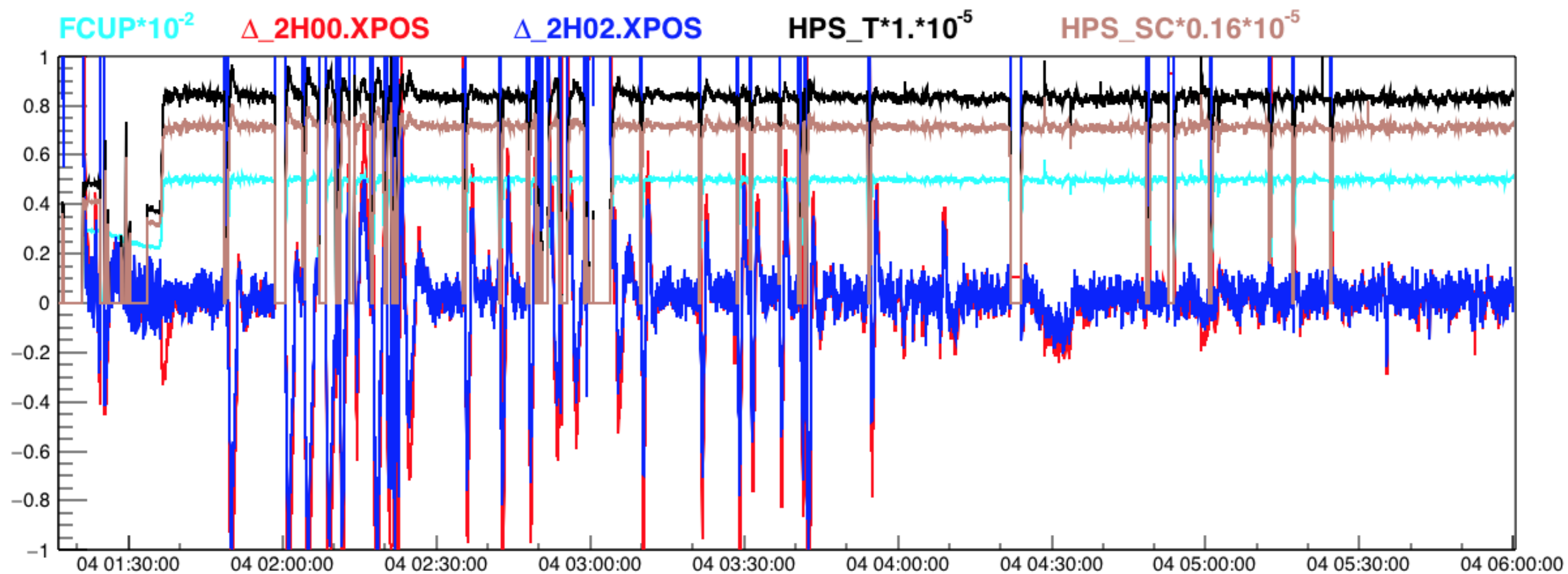
Note that the scalers do show increased counts, but similarly slight as seen previously.



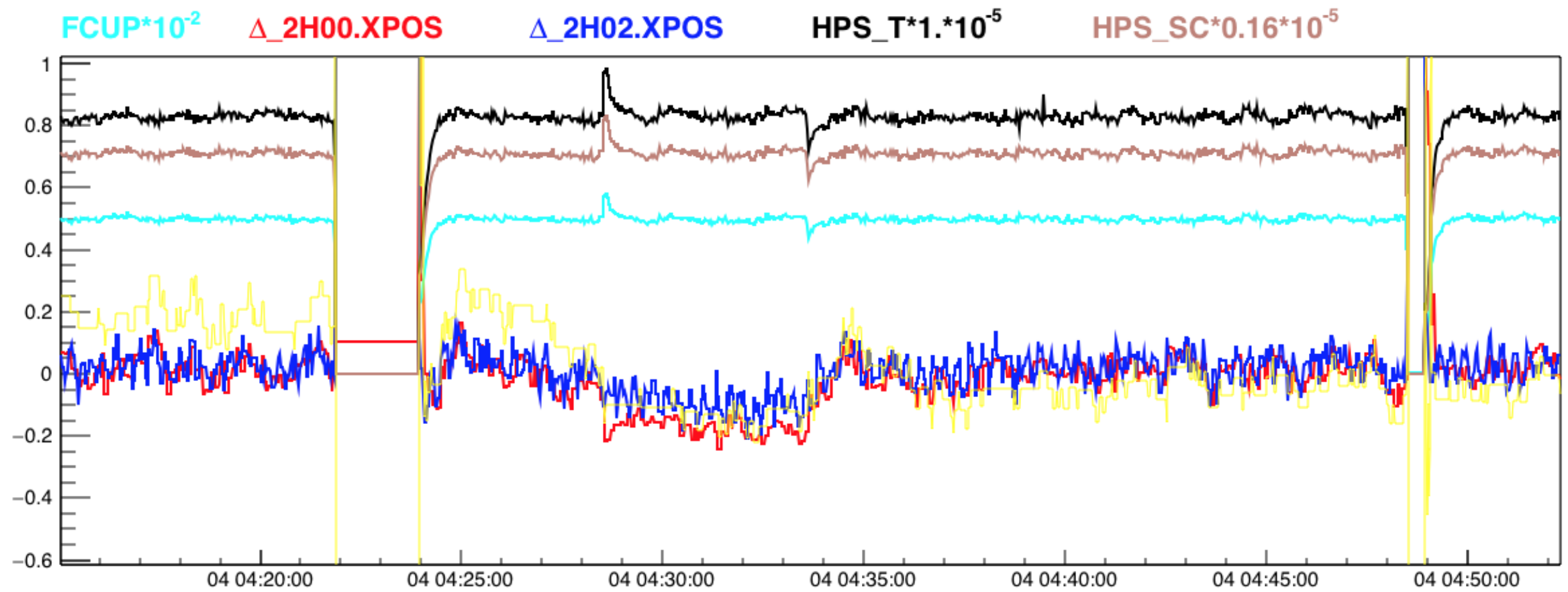
May 4th



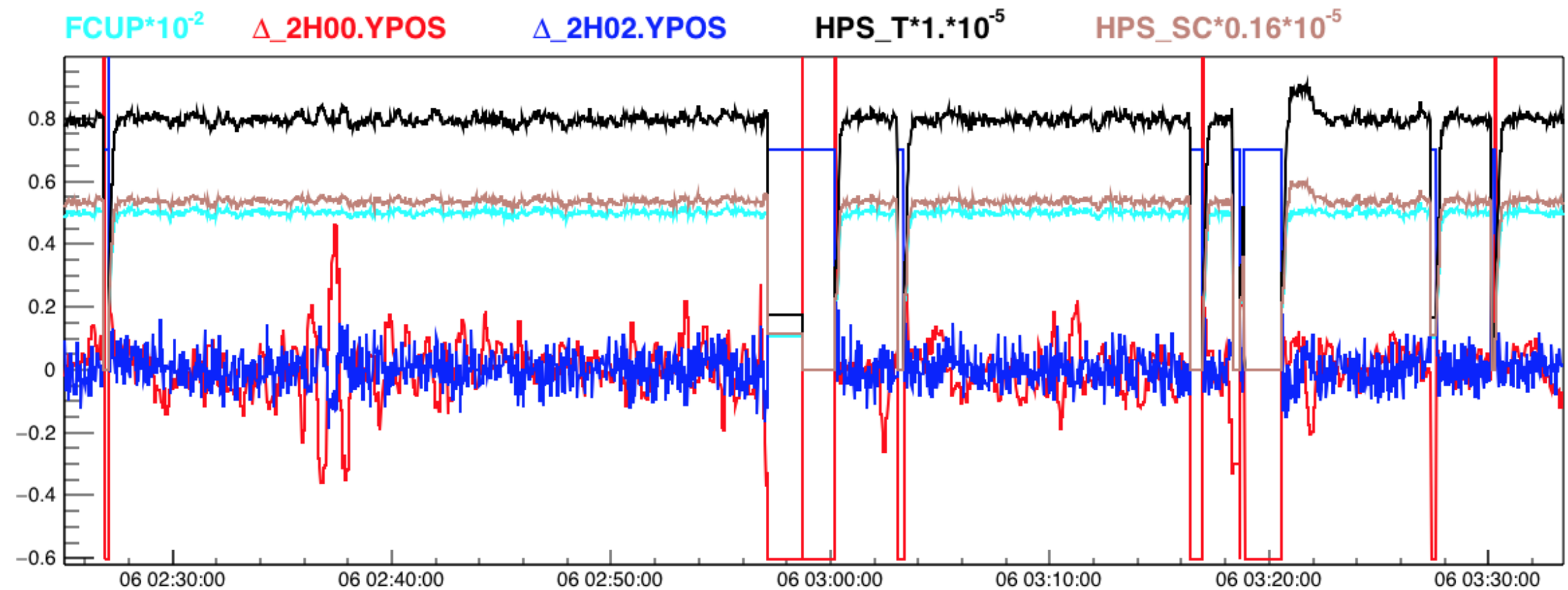
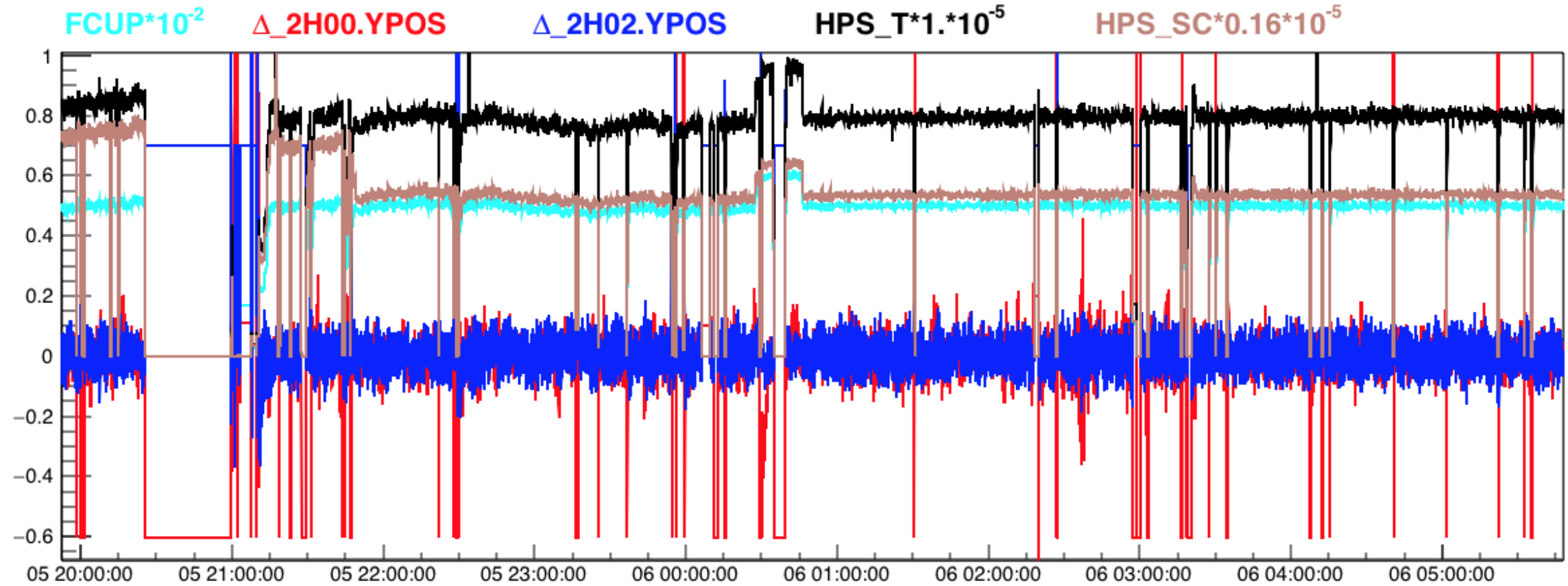
May 4th (X)



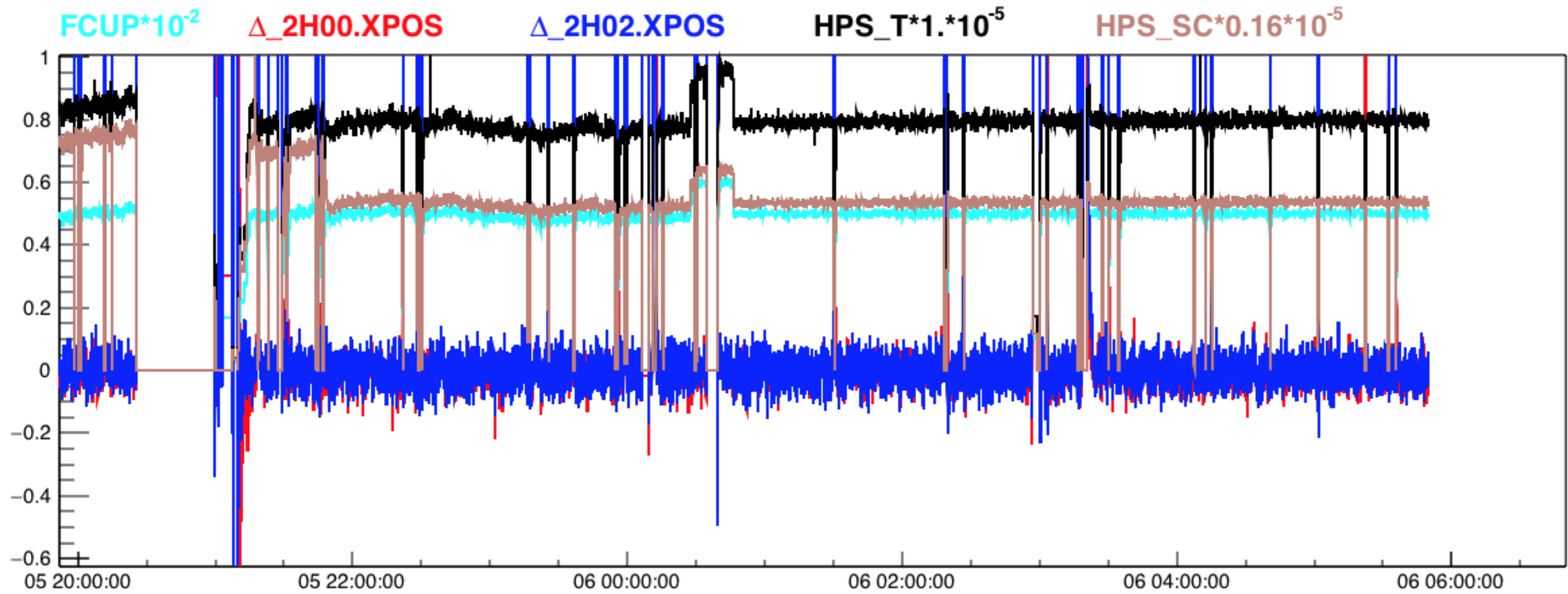
May 4th (X)



May 5th - beam is stable



May 5th (X)



Summary

It seems that there have definitely been times where the beam moved significantly.

The beam excursions at 2H02 are far less.

The HPS scalers show only small increases, probably because the beam isn't actually hitting anything.

Fast Shutdown is desirable.