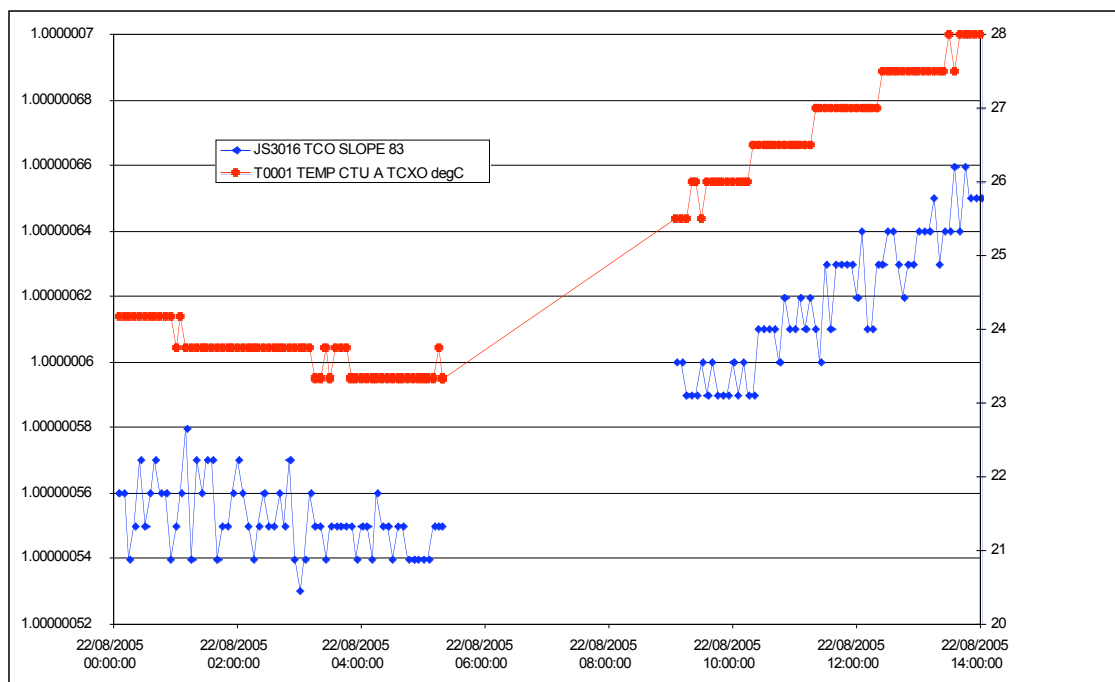


Expected errors during outage:

The TCO slope change across perigee can easily be 0.05 us/s over 4h this can lead to a correction of $0.05 * 3600 * 4 = 720\text{us}$ at perigee.

Such a change can be caused by a change in oscillator temperature following a large slew; large slews are often performed pre-perigee to move from the observing attitude to a safe perigee attitude.

The plot below shows a typical example of oscillator temperature change over perigee and corresponding change in TCO slope.



Taking this into account I will disregard errors of less than 200us/hour.

In the table below the part highlighted yellow below is the input from Jean-Pierre at the IOCG in ESOC 24/4/2008.

I have converted the times to more user-friendly format and checked all the problems, adding my comments to the table.

Where the problem is a station problem, the times come in pairs as there are normally 2 errors at start and end of the pass. Some of the station problems were already known about and were planned to be fixed during the TCO recalculation, however some new events were discovered which shows the value of such independent checks (thanks to Jean-Pierre). Once the entire TCO has been re-generated I would like Jean-Pierre to perform the same check again.

One series of smaller but constantly increasing errors is a nice illustration of the original TCO problem – explanation is in the table.