



## What does this warning mean?

```
# hrc_process_events (CIAO 3.4): The following error occurred 2482 times:
  dshPEVENTSEQERR -- WARNING: Out of sequence events discovered in hrc_evt1.fits.
```

There are occasional events that appear in the telemetry stream with time tags that make them seem to have occurred out-of-sequence. One special case where this occurs has been documented (see the [Out-of-sequence HRC Time Tags](#) memo); other occurrences are most likely to be caused by hiccups in the HRC or by double-bit errors in telemetry (single-bit errors are corrected).

This warning may be ignored in most cases, as long as the number of events flagged as out-of-sequence is a small fraction of the total number of events in the file. For example:

```
unix% dmlist hrc_evt1.fits blocks
-----
Dataset: hrc_evt1.fits blocks
-----
      Block Name                Type          Dimensions
-----
Block    1: PRIMARY              Null
Block    2: EVENTS               Table         20 cols x 798768 rows
Block    3: GTI                  Table          2 cols x 7 rows

(2482.0 / 798768.0) * 100 = 0.310729
```

Since there are 798768 events in the file, the 2482 that were flagged as out-of-sequence make up just 0.31% of the total events.

Note that all [standard data products](#) are supplied in the decommed order, so you *should not* run `dmsort` in an attempt to reorder them. These events are marked as bad by `hrc_process_events` and are removed by the standard level 2 status filter (see the [HRC-S Imaging Observations](#) section of the [Create a New Level=2 Event File](#) thread for an example).

## FAQ Entry – CIAO 3.4