What does this warning mean?

```
# hrc_process_events (CIAO 3.4): The following error occurred 2482 times:
  dsHPEEVENTSEQERR -- 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).

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