



High-Resolution Count Rates from SAMPEX/HILT

[Goto the data](#)

[SAMPEX Data Center Home](#)

[What's New?](#)

[Online Data](#)

[Documentation](#)

[People](#)

[Related Sites](#)

[Bibliography](#)

[Gallery](#)

This data set consists of energetic particle count rates from the HILT instrument. The energy ranges of these rates are provided in Table II of [the HILT instrument paper](#).

In launch configuration, the data were accumulated as counts per 100 milliseconds. However, the instrument configuration was changed several times over the life of the mission, so the data have been classified into four separate States, as described below.

Data are currently provided as daily ASCII text files. The data format is the same for each State: Second-of_Day followed by 6 count rates.

Notes and Caveats

Website Stats

- The PET and HILT hi-res rates were accumulated only if count rates were above a programmable threshold, and these thresholds were adjusted several times during the mission.
- The PET and HILT hi-res rates had separate memory quotas in the SAMPEX SEDS solid state recorder, and if the rates filled their respective quotas no additional hi-res data would be collected until after the solid state recorder memory had been cleared following a ground pass.
- Additional details on the threshold adjustments can be found in the HILT, PET, and DPU "Event tables" in the [MDF documentation](#) (Appendix "I").

Brief description of each data item. More details can be found in the [HILT instrument paper](#).

- SSD1,2,3,4: Each SSD row responds to protons above about 5 MeV and electrons above 1 MeV, with a geometric factor of around 15 cm² sr.
- Sum: The summed rate from the four SSD rows. Geometric factor ~60 cm² sr.
- PCRE: The PCRE responded to electrons >150 keV with a geometric factor of about 1 cm² sr at the start of the mission, declining with time as its sensitivity degraded and disappearing altogether when the isobutane ran out (November 15, 1995); PCRE also responded to protons of about 2.5-8 MeV with a much larger geometric factor.
- IK: Nominal response was to Z>=2, with an energy range of 3-9 MeV/nuc for He4. IK also responded to electrons, but the response was never very well defined.

Definition of each State.



[SAMPEX Data
Center Home](#)

[What's New?](#)

[Online Data](#)

[Documentation](#)

[People](#)

[Related Sites](#)

[Bibliography](#)

[Gallery](#)

[Website Stats](#)

- **State 1:** Launch configuration: 1992-187 thru 1994-069, plus 1996-044 thru 1996-220.
 - Rate1 : SSD1 from Time to Time + 100 msec
 - Rate2 : SSD2 from Time to Time + 100 msec
 - Rate3 : SSD3 from Time to Time + 100 msec
 - Rate4 : SSD4 from Time to Time + 100 msec
 - Rate5 : PCRE from Time to Time + 100 msec
 - Rate6 : IK from Time to Time + 100 msec

Units are counts per 100 msec.

- **State 2:** First 20-msec SSD configuration: 1994-137 thru 1994-237.
 - Rate1 : SSD1 from Time to Time + 20 msec
 - Rate2 : SSD1 from Time + 20 msec to Time + 40 msec
 - Rate3 : SSD1 from Time + 40 msec to Time + 60 msec
 - Rate4 : SSD4 from Time to Time + 100 msec
 - Rate5 : SSD1 from Time + 80 msec to Time + 100 msec
 - Rate6 : SSD1 from Time + 60 msec to Time + 80 msec

Units are counts per 20 msec, except for Rate 4 (SSD4), for which the units are counts per 100 msec.

- **State 3:** 30-msec SSD/PCRE configuration: 1994-237 thru 1995-322.
 - Rate1 : SSD1 from Time to Time + 30 msec
 - Rate2 : PCRE from Time to Time + 30 msec
 - Rate3 : SSD1 from Time + 30 msec to Time + 60 msec
 - Rate4 : PCRE from Time + 30 msec to Time + 60 msec
 - Rate5 : PCRE from Time + 60 msec to Time + 90 msec
 - Rate6 : SSD1 from Time + 60 msec to Time + 90 msec

Units are counts per 30 msec.

(data from Time + 90 msec to Time + 100 msec is discarded)

- **State 4:** Second 20-msec SSD configuration: 1996-220 thru 2004-182. (Sum is total of SSD1 through SSD4 rates).
 - Rate1 : Sum from Time to Time + 20 msec



**SAMPEX Data
Center Home**

What's New?

Online Data

Documentation

People

Related Sites

Bibliography

Gallery

- Rate2 : Sum from Time + 20 msec to Time + 40 msec
- Rate3 : Sum from Time + 40 msec to Time + 60 msec
- Rate4 : Sum from Time + 60 msec to Time + 80 msec
- Rate5 : SSD4 from Time to Time + 100 msec
- Rate6 : Sum from Time + 80 msec to Time + 100 msec

Units are counts per 20 msec, except for Rate 5 (SSD4), for which the units are counts per 100 msec.

[Andrew Davis, SAMPEX Data Center Technical Lead](#)

Website Stats
