

ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

98 274 OCT 1 00:00:00.000 - 98 290 OCT 17 00:00:00.000

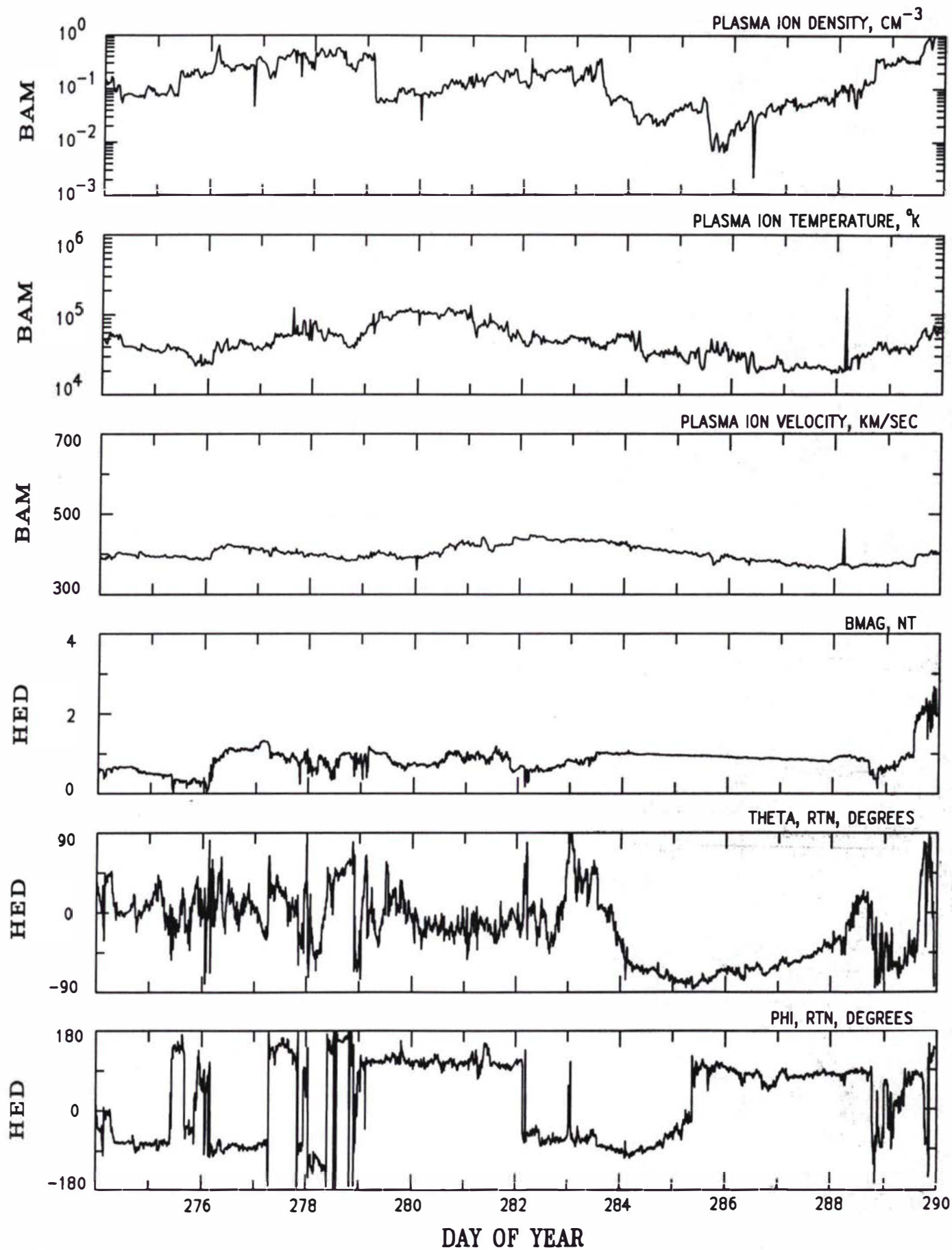


CHART 1000

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1000 0.0

1000 0.0

1000 0.0

1000 0.0

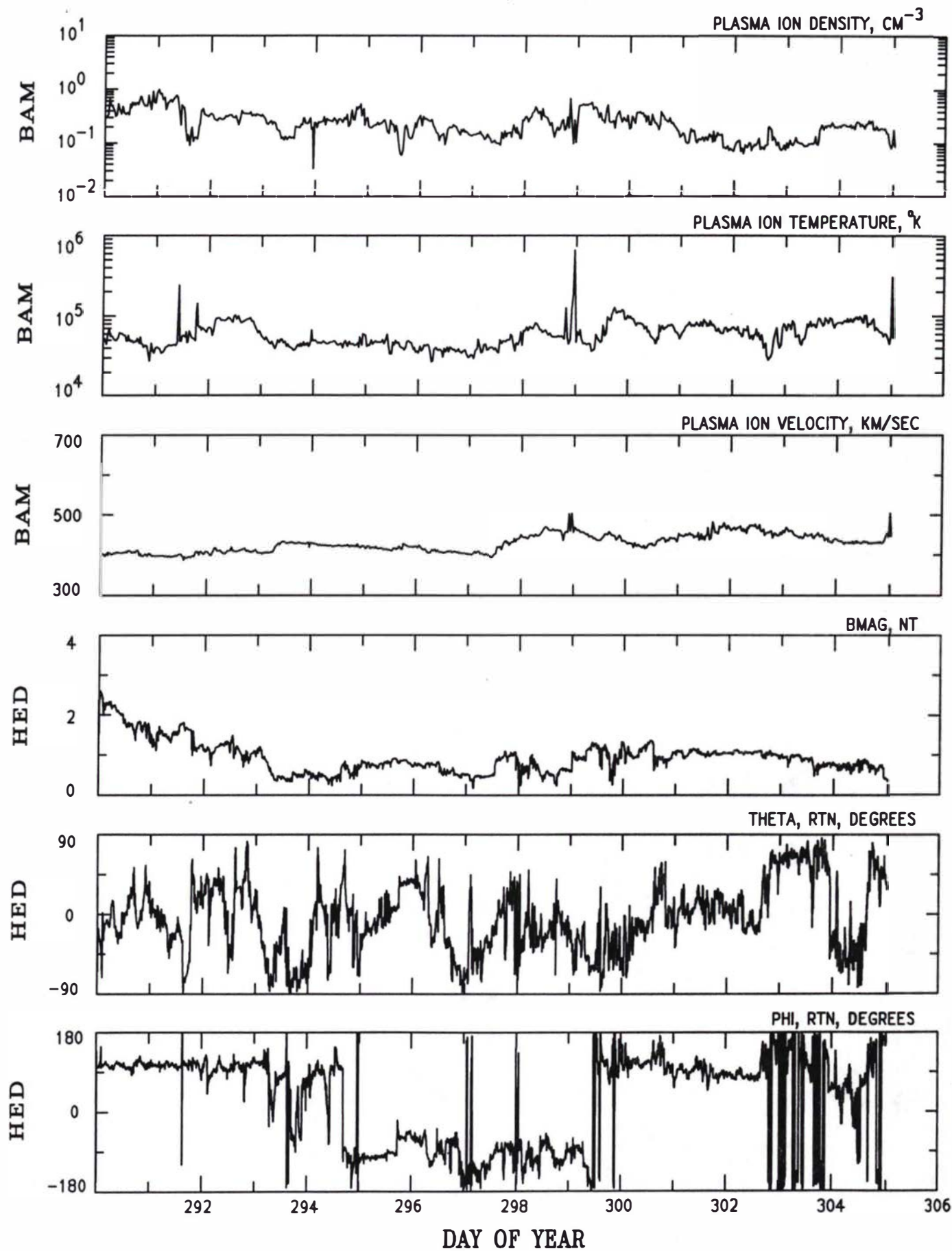
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ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

98 290 OCT 17 00:00:00.000 - 98 306 NOV 2 00:00:00.000



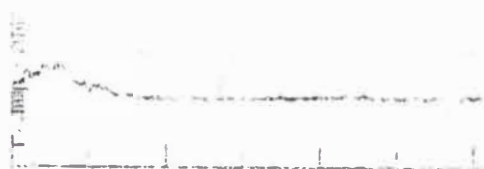
IONOSPHERIC RECORD

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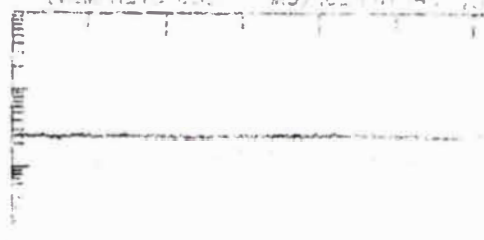
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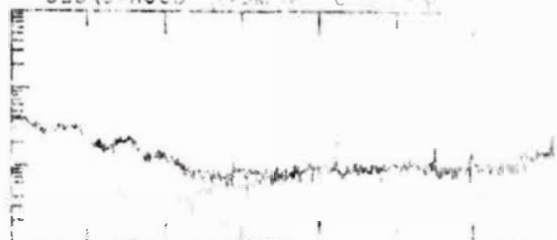
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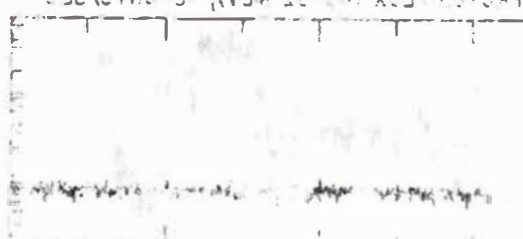
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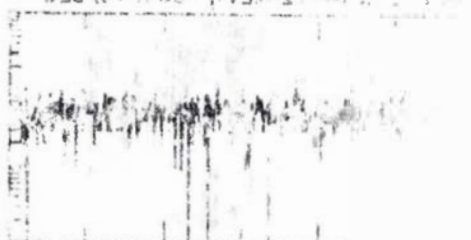
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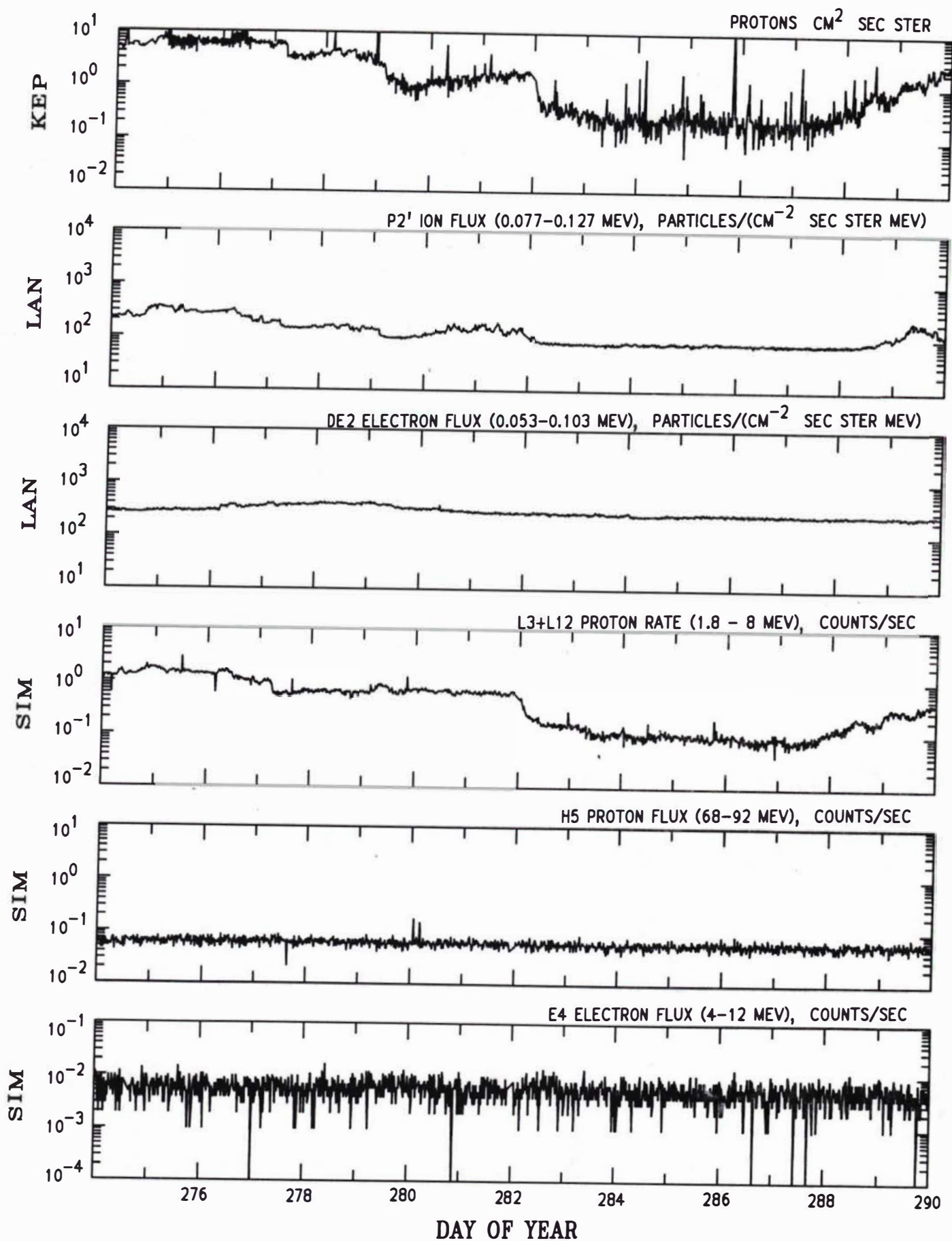
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ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

98 274 OCT 1 00:00:00.000 - 98 290 OCT 17 00:00:00.000



1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2



U. S. PATENT OFFICE



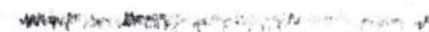
5/16/1972 (CONT'D) -2- SEC 276 (REV)



COUNTSHEET



032427KJ00 (V34 04-04) 0017 07.04



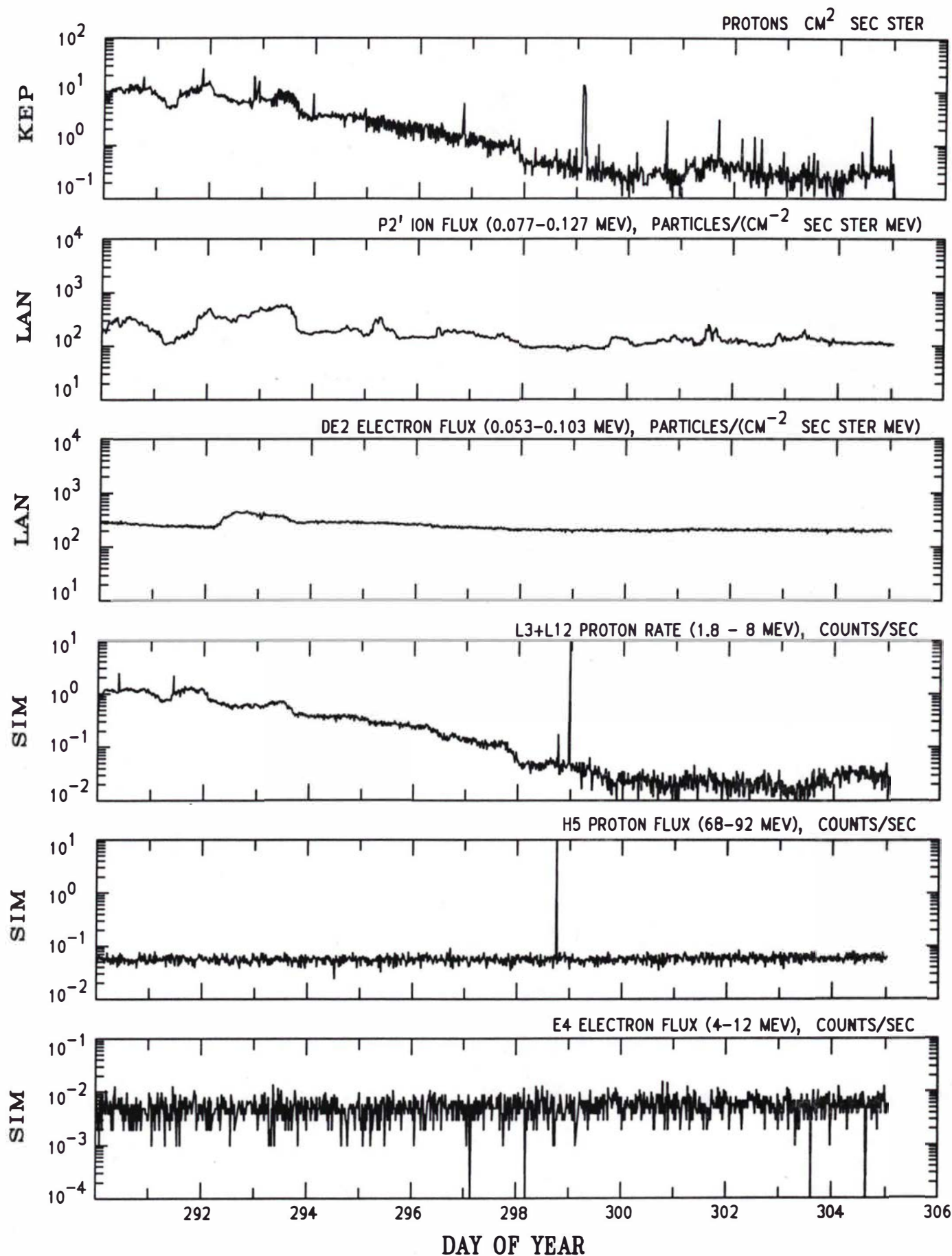
CONFIDENTIAL



300 100 500

ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

98 290 OCT 17 00:00:00.000 - 98 306 NOV 2 00:00:00.000

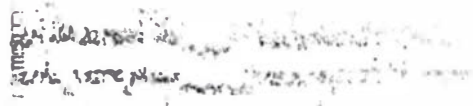


1000000

1000000



1000000



1000000

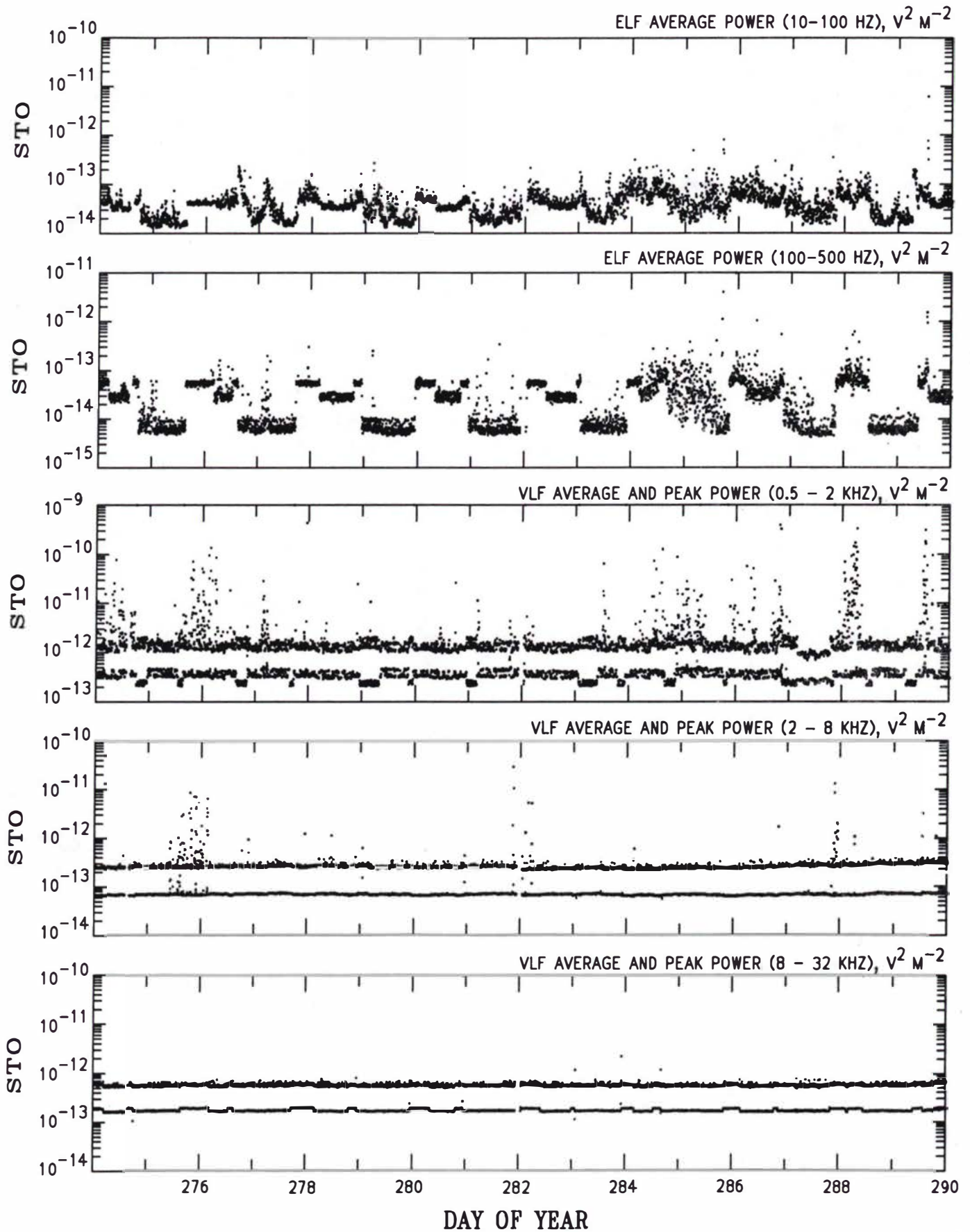


1000000



ULYSSES CDR - PLASMA WAVE

98 274 OCT 1 00:00:00.000 - 98 290 OCT 17 00:00:00.000



1. 1000 1000 1000

2. 1000 1000 1000

3. 1000 1000 1000

4. 1000 1000 1000

5. 1000 1000 1000

6. 1000 1000 1000

7. 1000 1000 1000

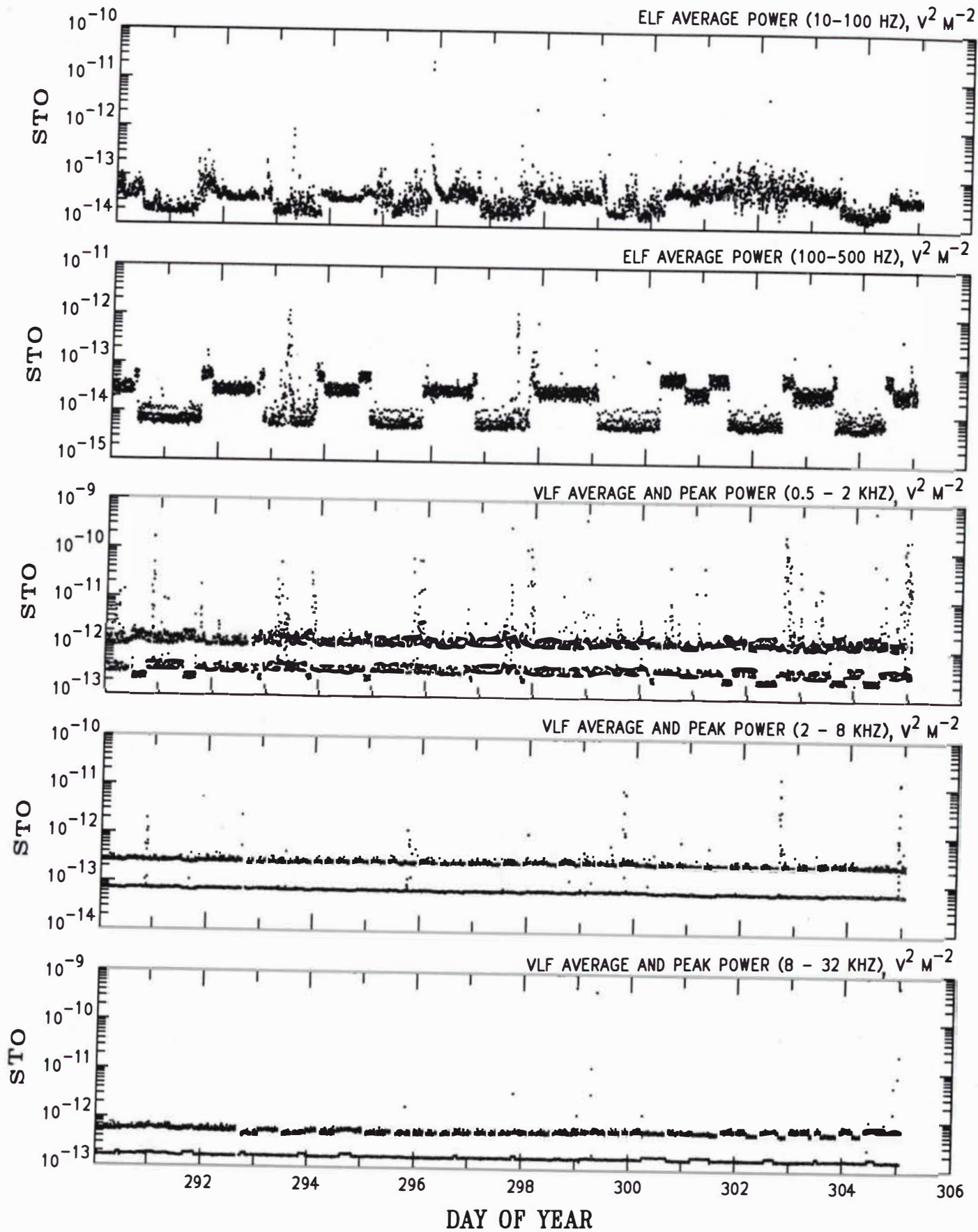
8. 1000 1000 1000

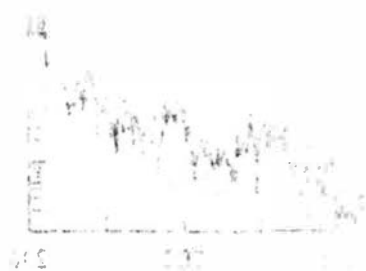
9. 1000 1000 1000

10. 1000 1000 1000

ULYSSES CDR - PLASMA WAVE

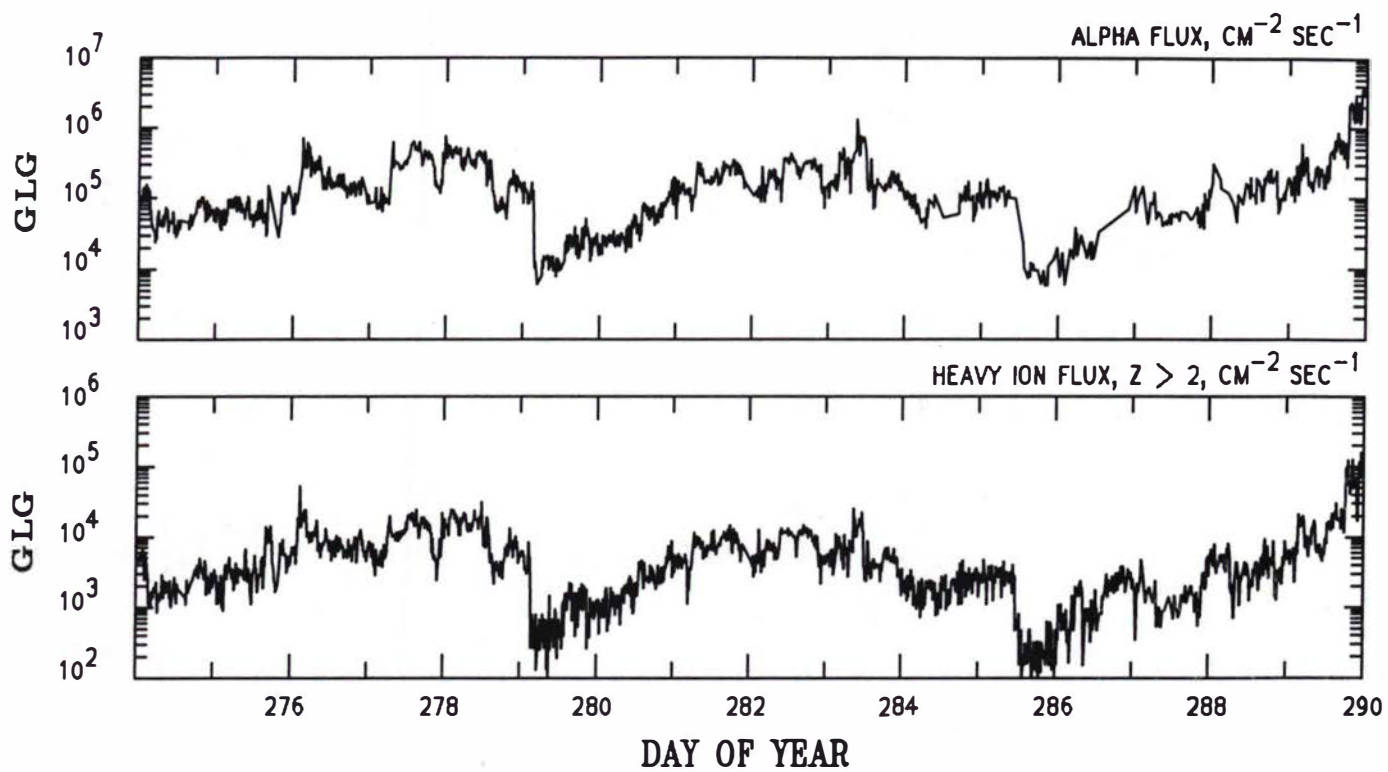
98 290 OCT 17 00:00:00.000 - 98 306 NOV 2 00:00:00.000





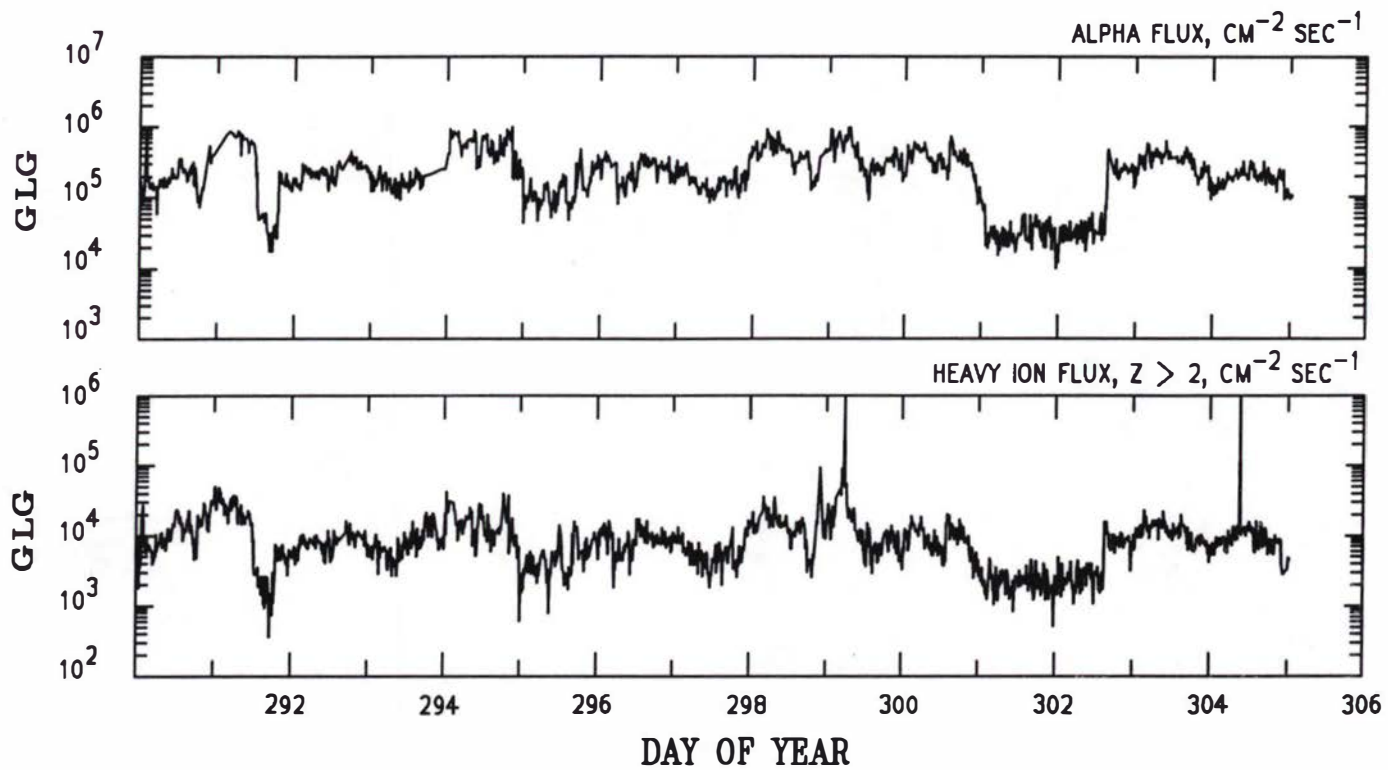
ULYSSES CDR - SOLAR WIND ION COMPOSITION

98 274 OCT 1 00:00:00.000 - 98 290 OCT 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

98 290 OCT 17 00:00:00.000 - 98 306 NOV 2 00:00:00.000



From khurley@sunspot Tue Oct 6 08:50 PDT 1998

Date: Tue, 6 Oct 1998 08:53:39 -0700

From: khurley@sunspot (Kevin Hurley)

To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov

Subject: GRB980930, 981001

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1800 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
SEP 30 1998 00:30	moderate, 32 ms long	3300
SEP 30 1998 11:01	weak, 32 ms long	3300
SEP 30 1998 20:22	weak, 32 ms long	3300
OCT 01 1998 10:366	weak, 32 ms long	3300

Were these events detected by anyone else?

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, frontera, kouveliotou, kurczyski, marar, tee

From HENZE@fender.msfc.nasa.gov Fri Oct 2 15:55:18 1998
Date: Fri, 2 Oct 1998 17:49:01 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7135

TIME: TJD=1087 SECONDS=22188

TYPE: PARTICL

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From HENZE@fender.msfc.nasa.gov Fri Oct 2 16:01:33 1998
Date: Fri, 2 Oct 1998 17:50:52 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7136

TIME: TJD=1087 SECONDS=63927

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

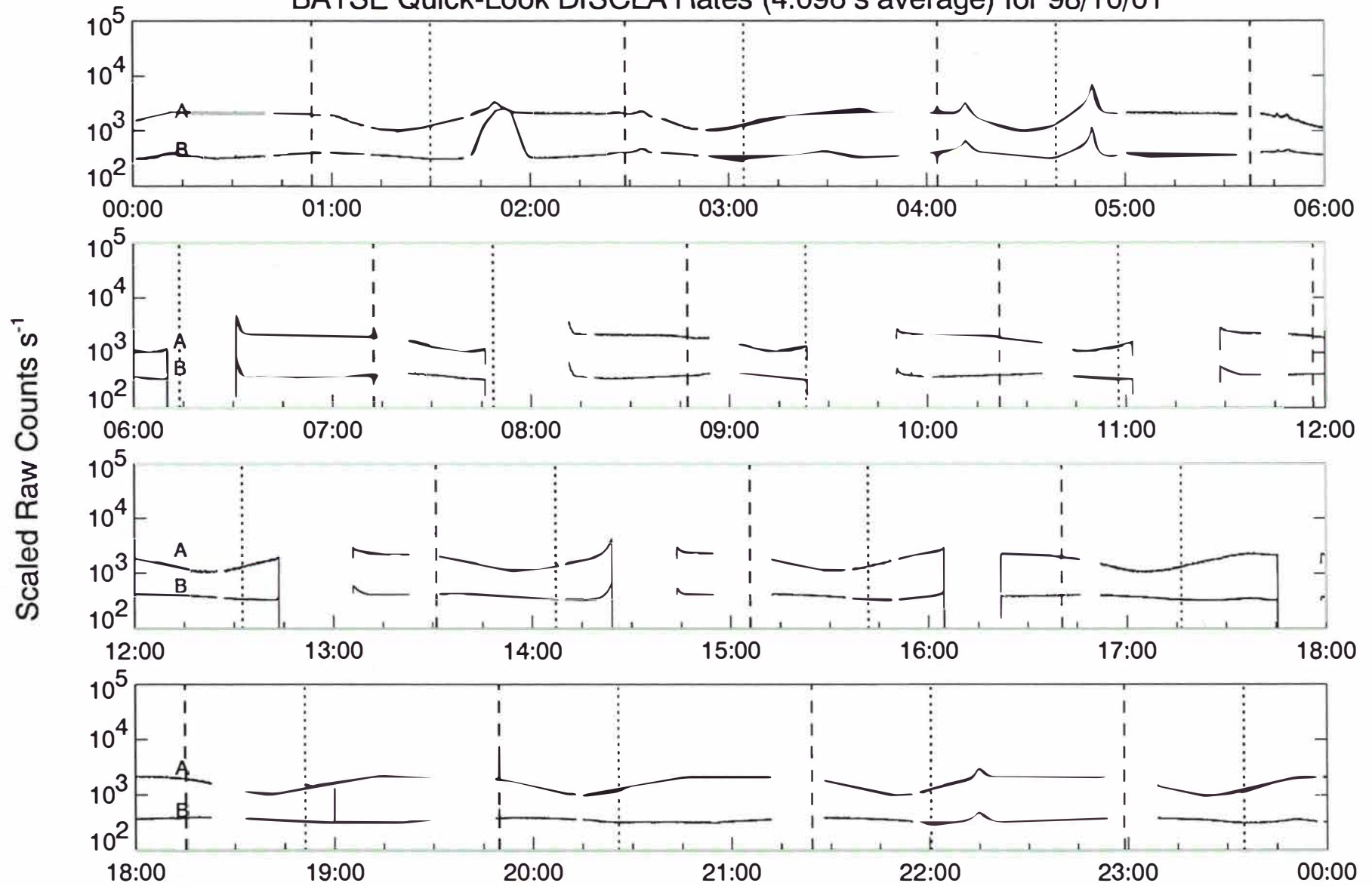
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/01

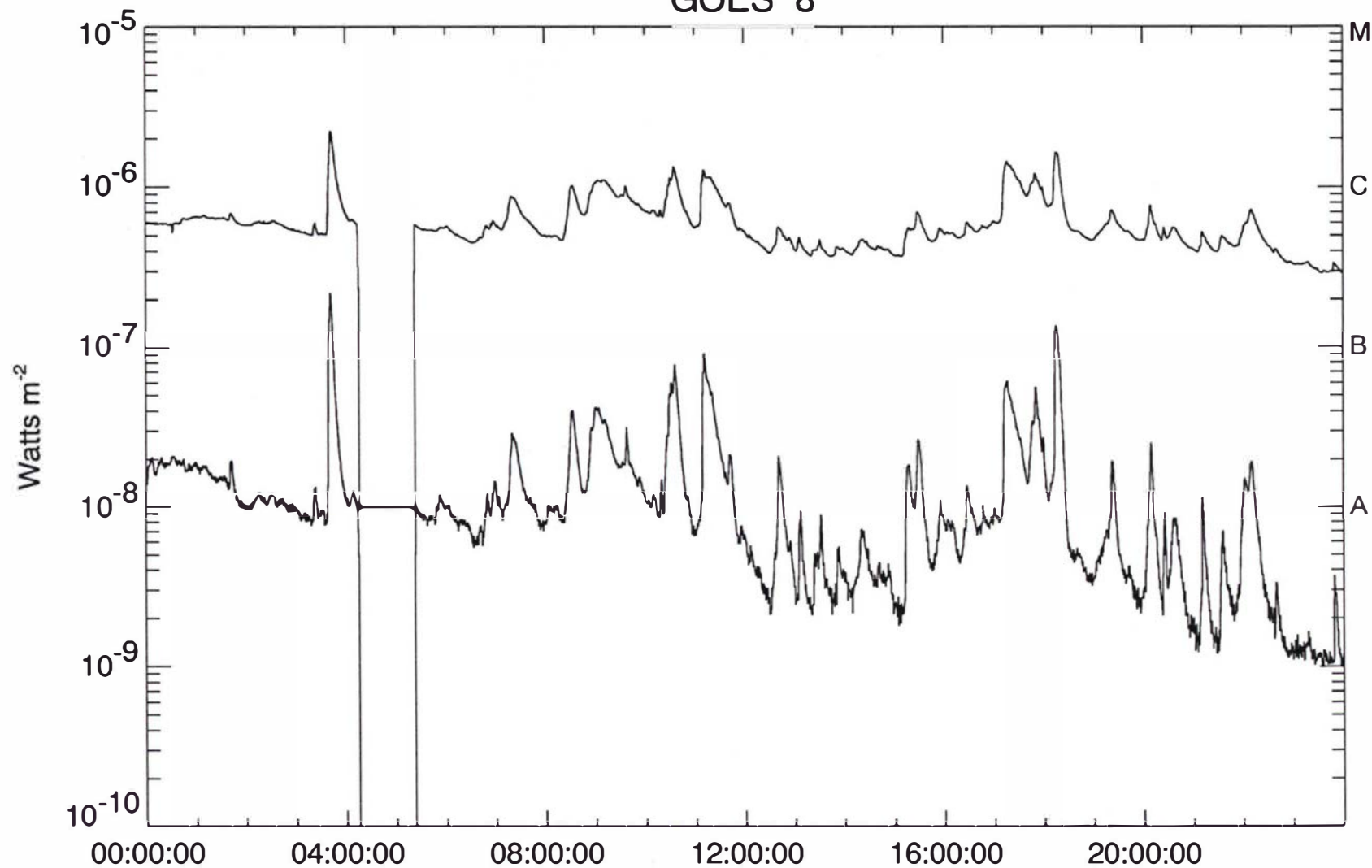


Current Time: 98/10/05, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/01, 0000:00

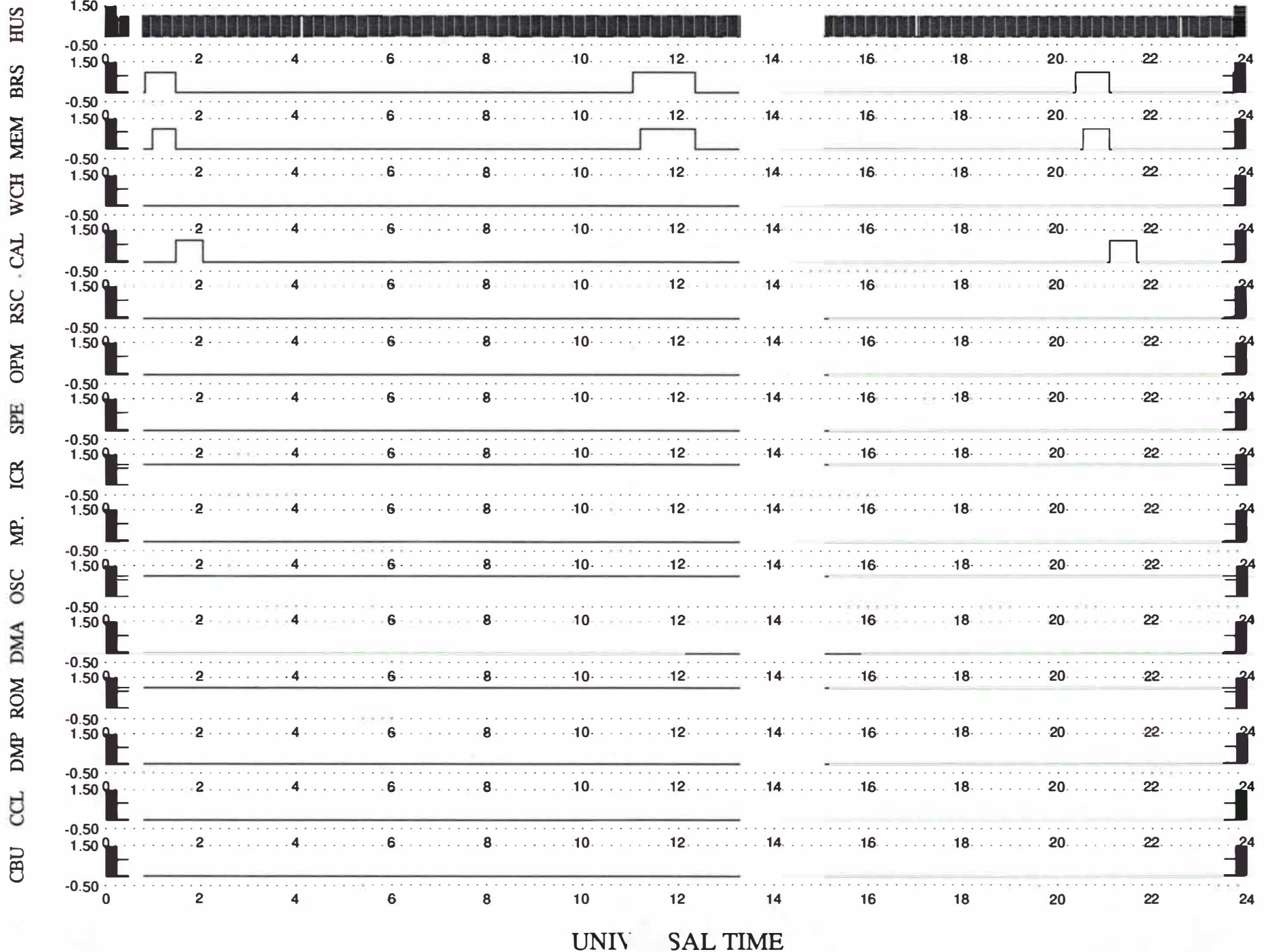
Plot created: 98/10/05, 1007

Channel

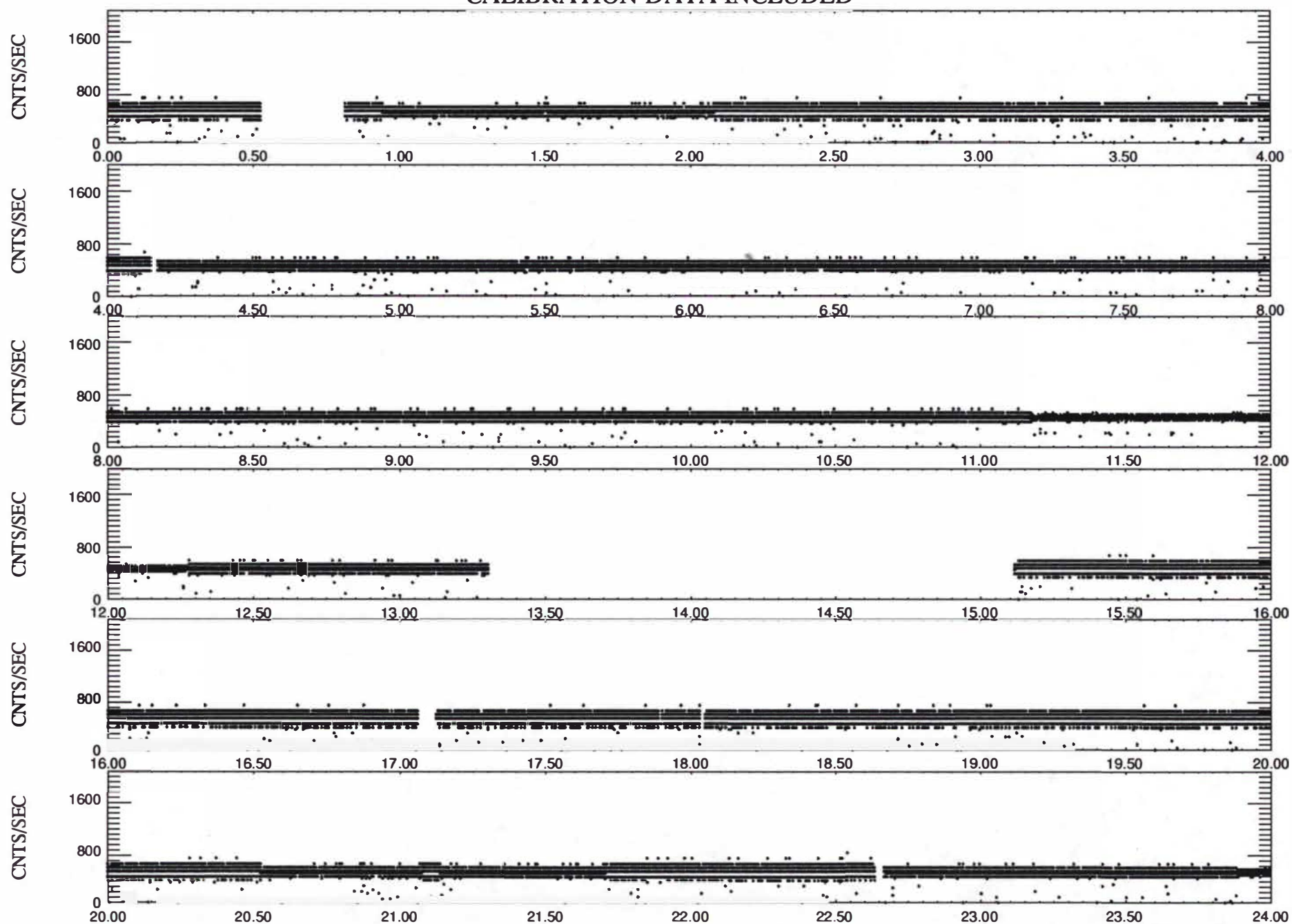
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 0 - 3

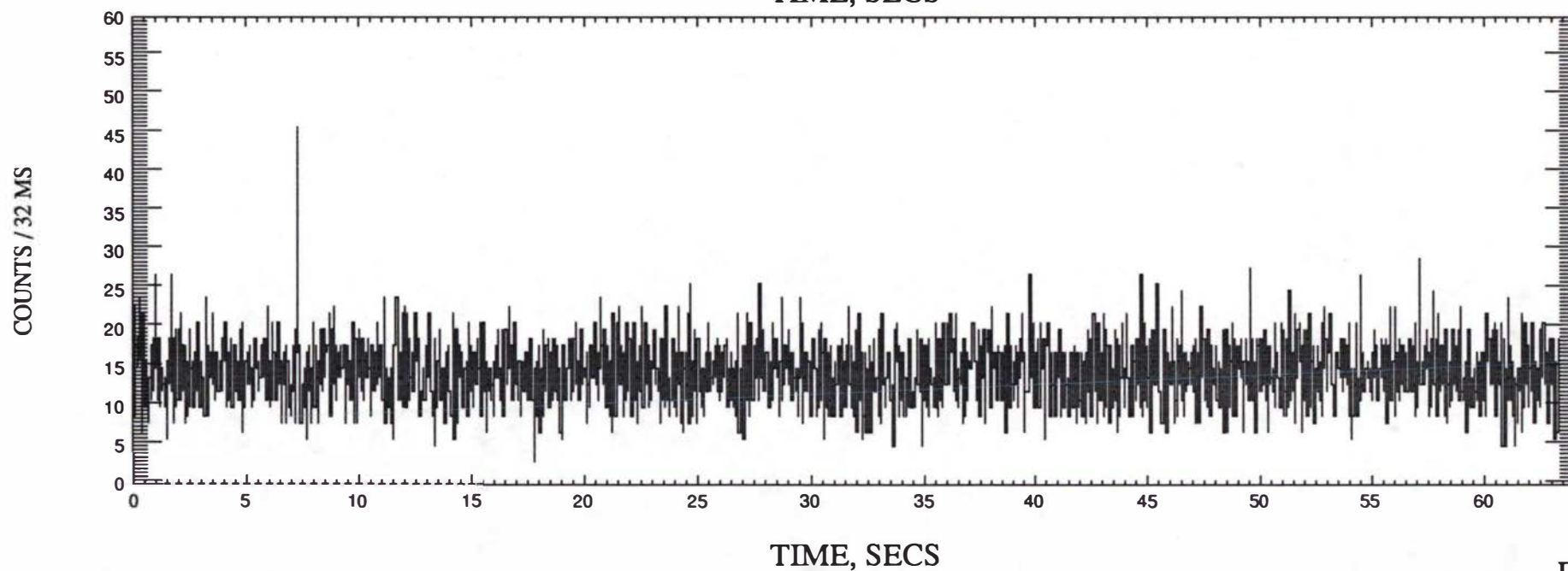
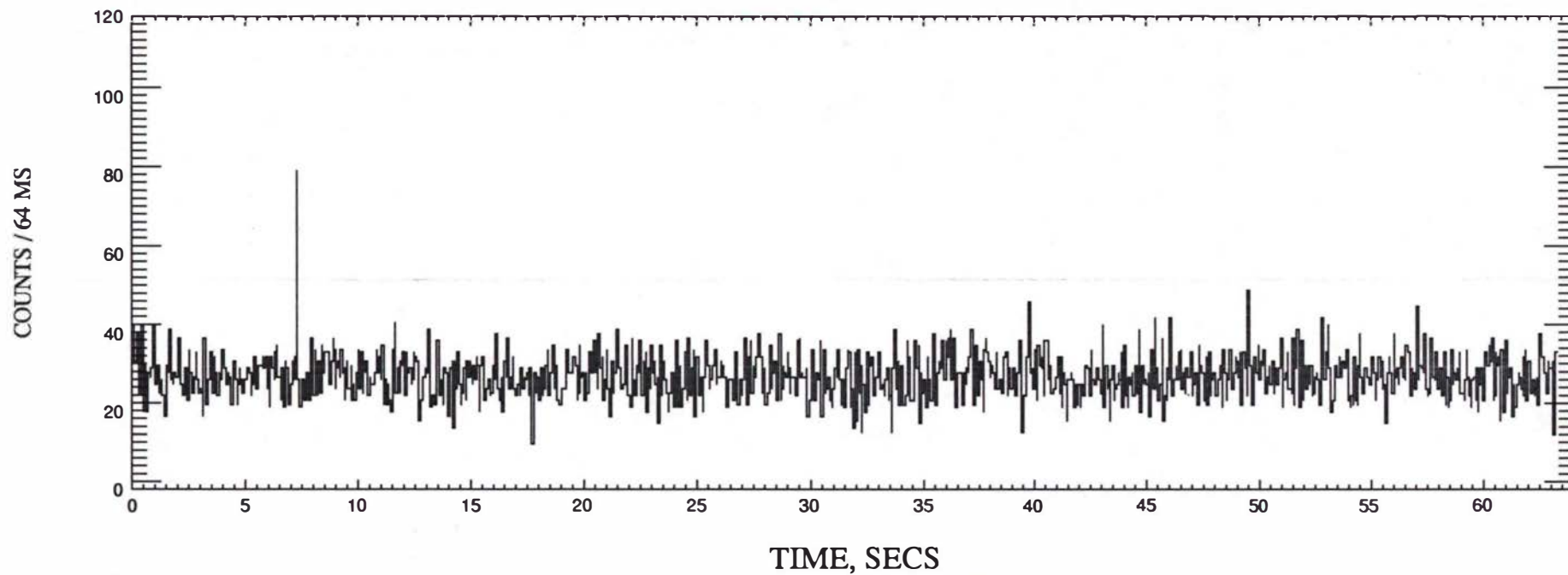


CALIBRATION DATA INCLUDED

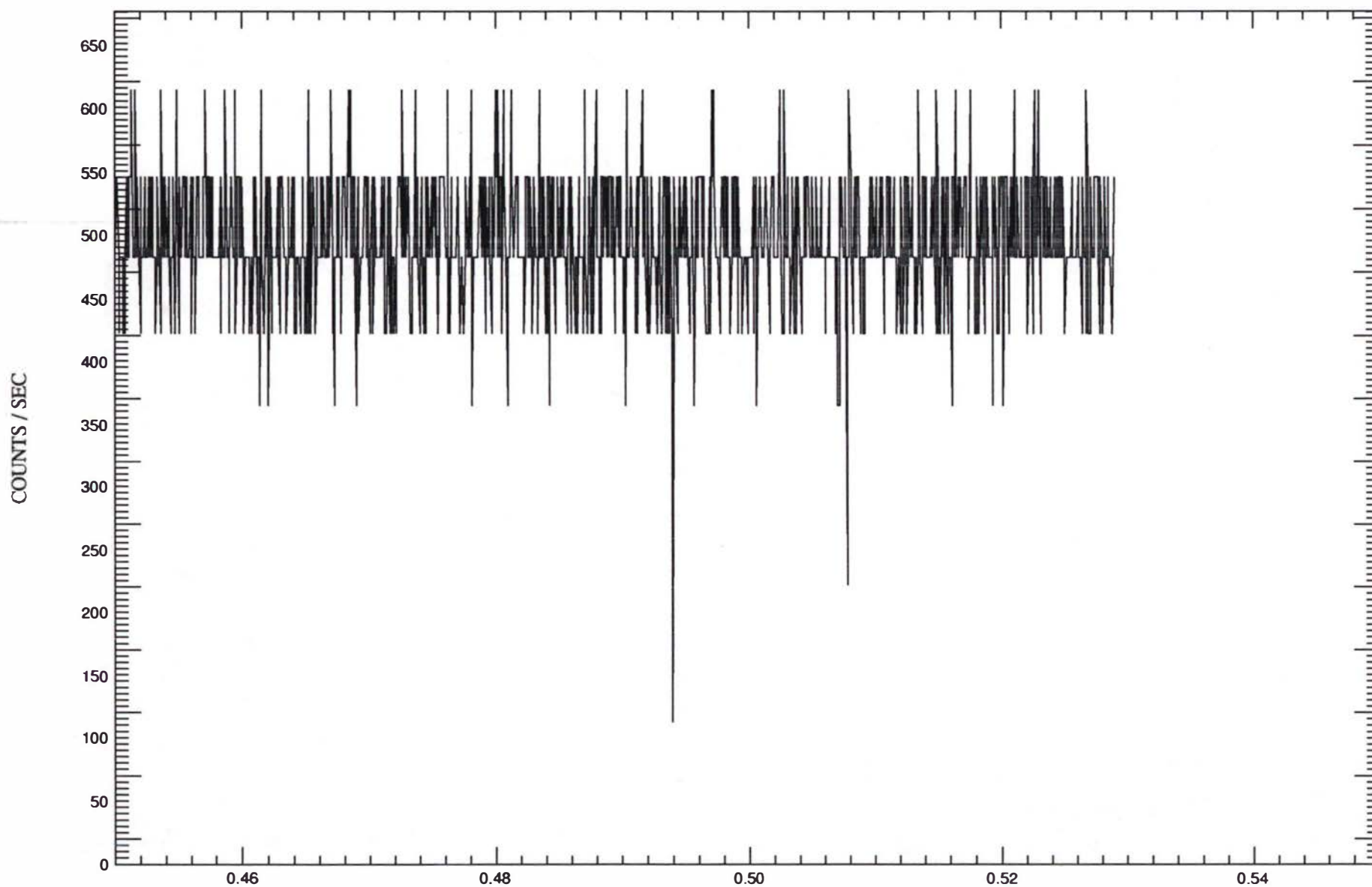


UNIV SAL TIME

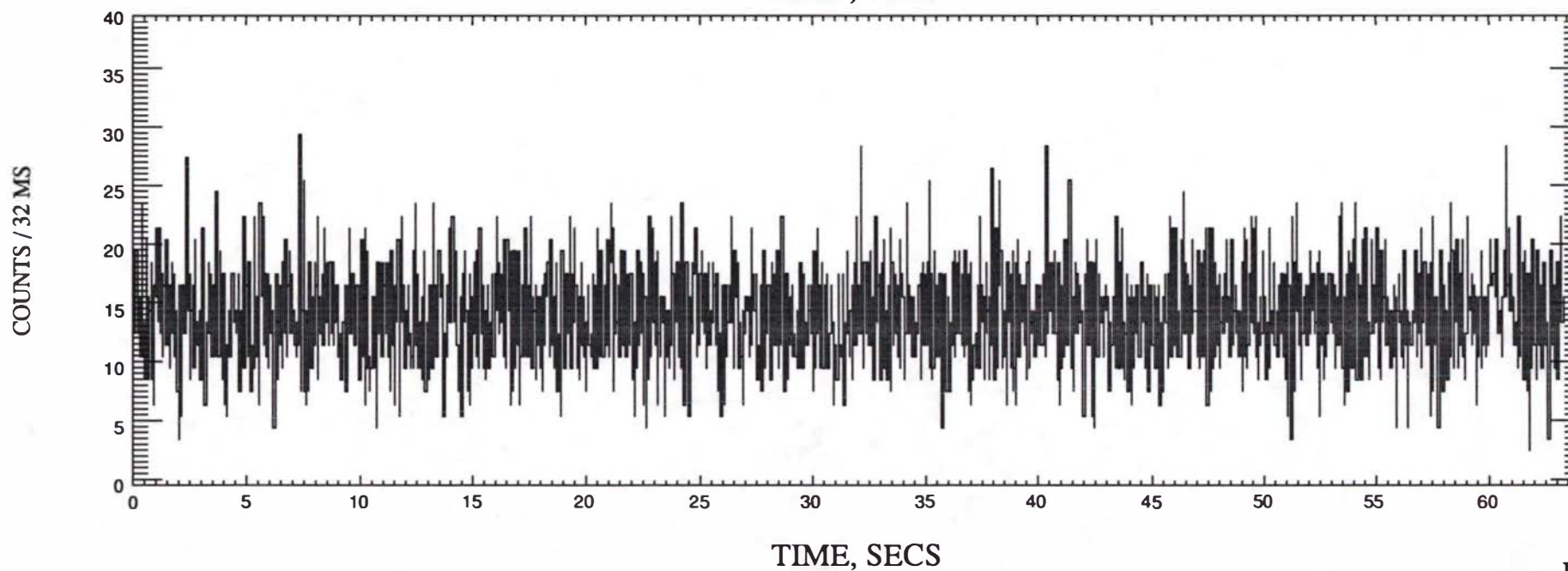
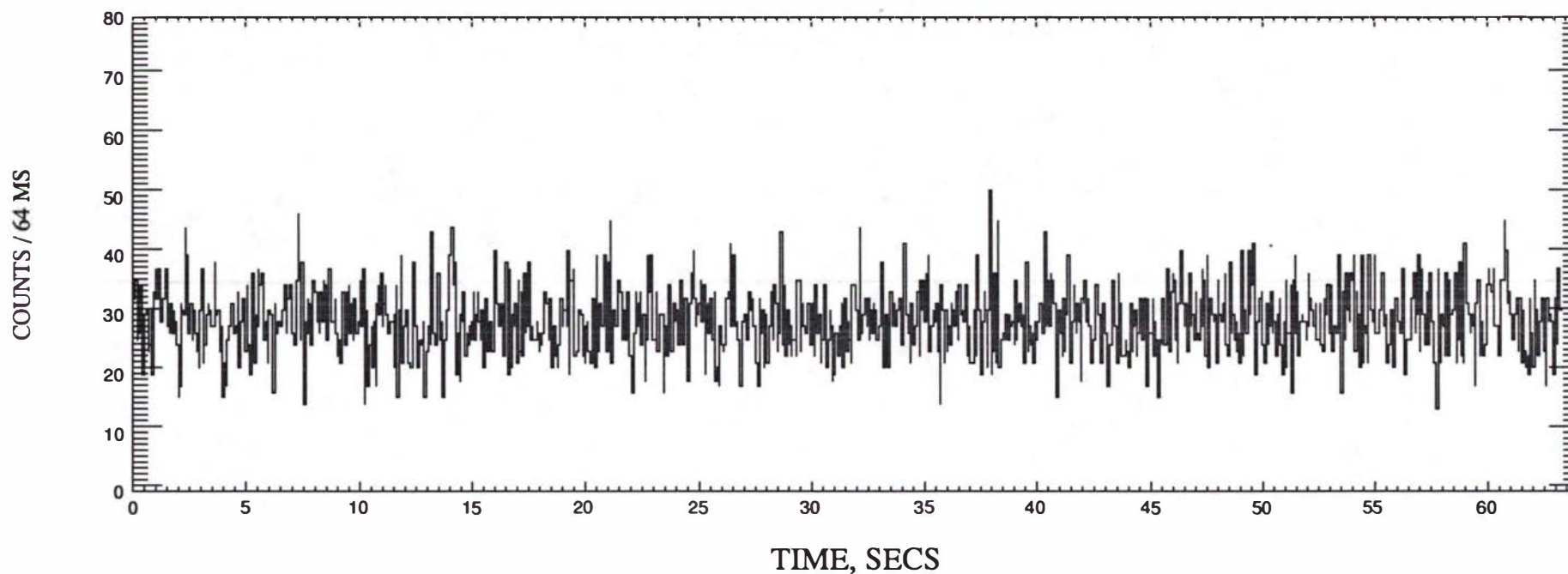
Burst Counter 0 at UT= 0.503825081719 h= 1813.770 s 00:30:13.770



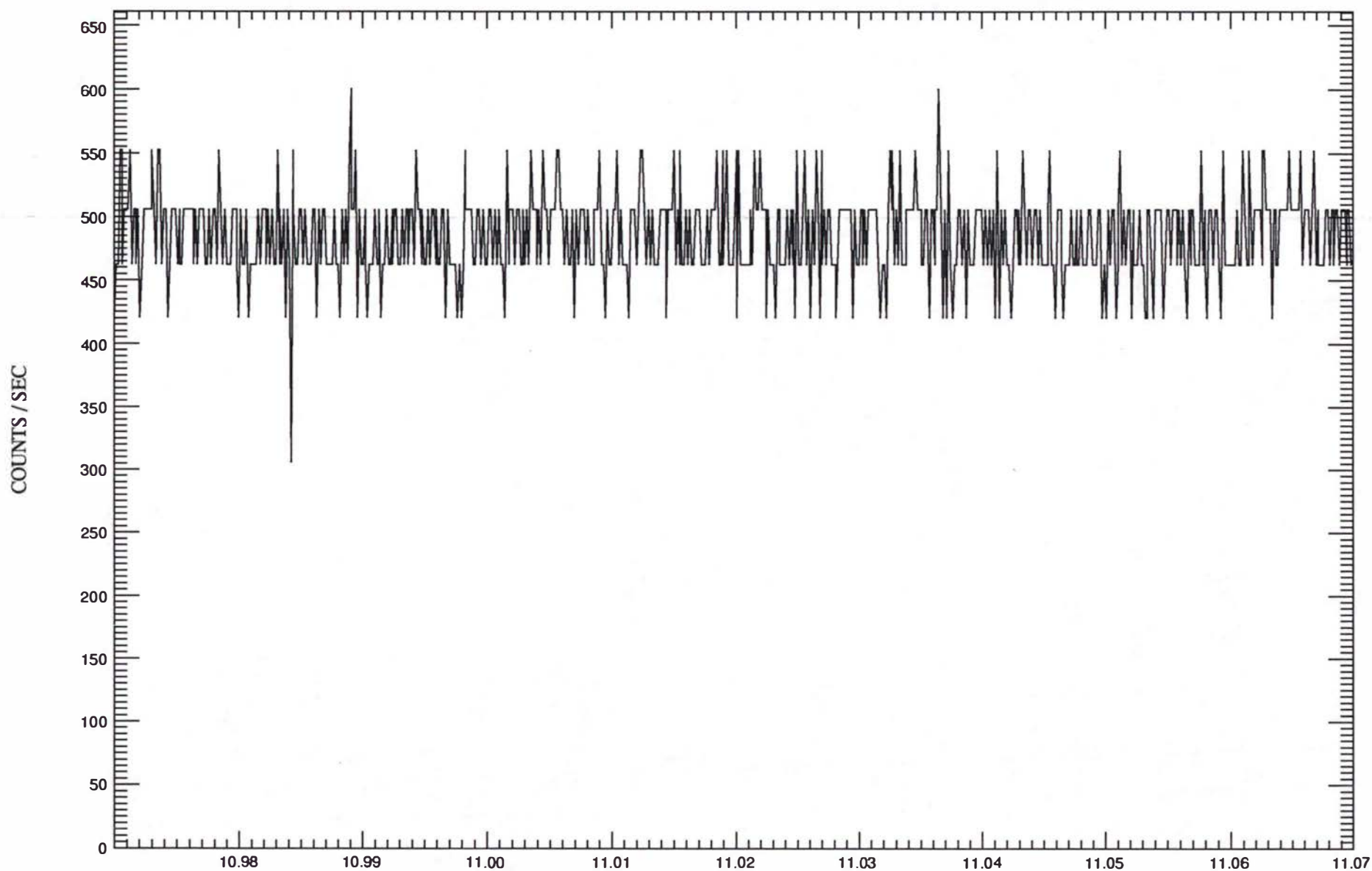
CALIBRATION DATA INCLUDED



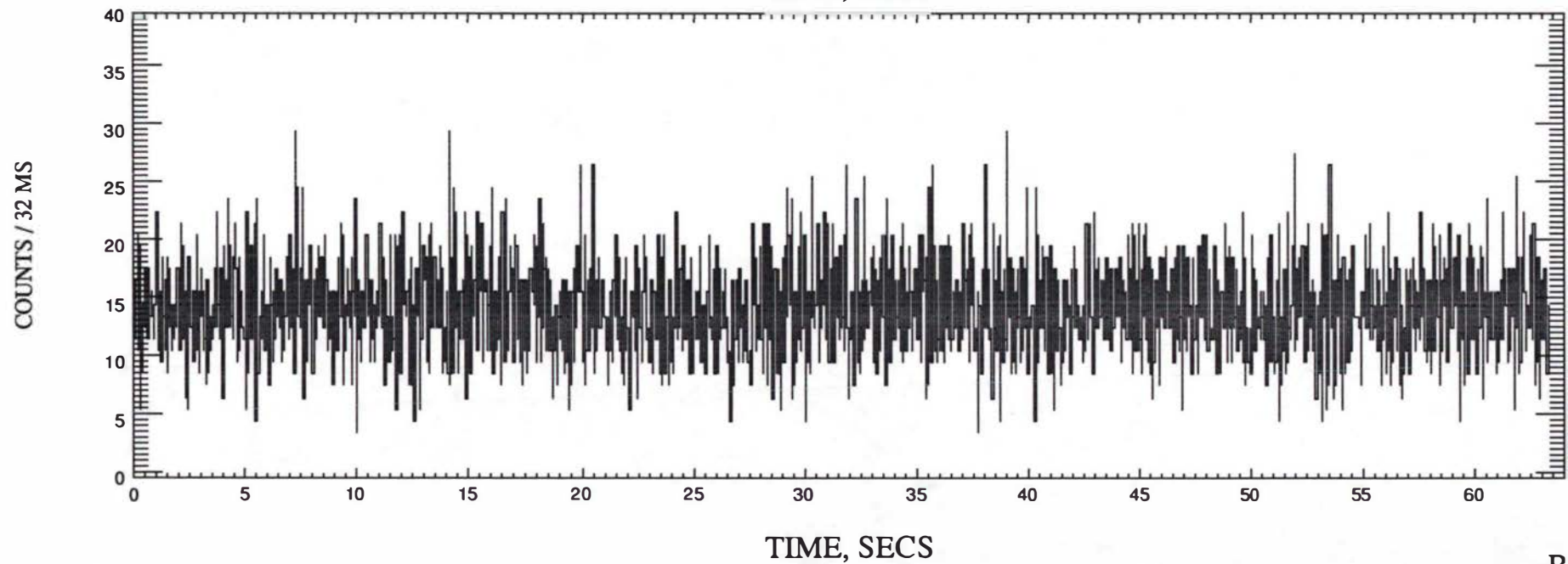
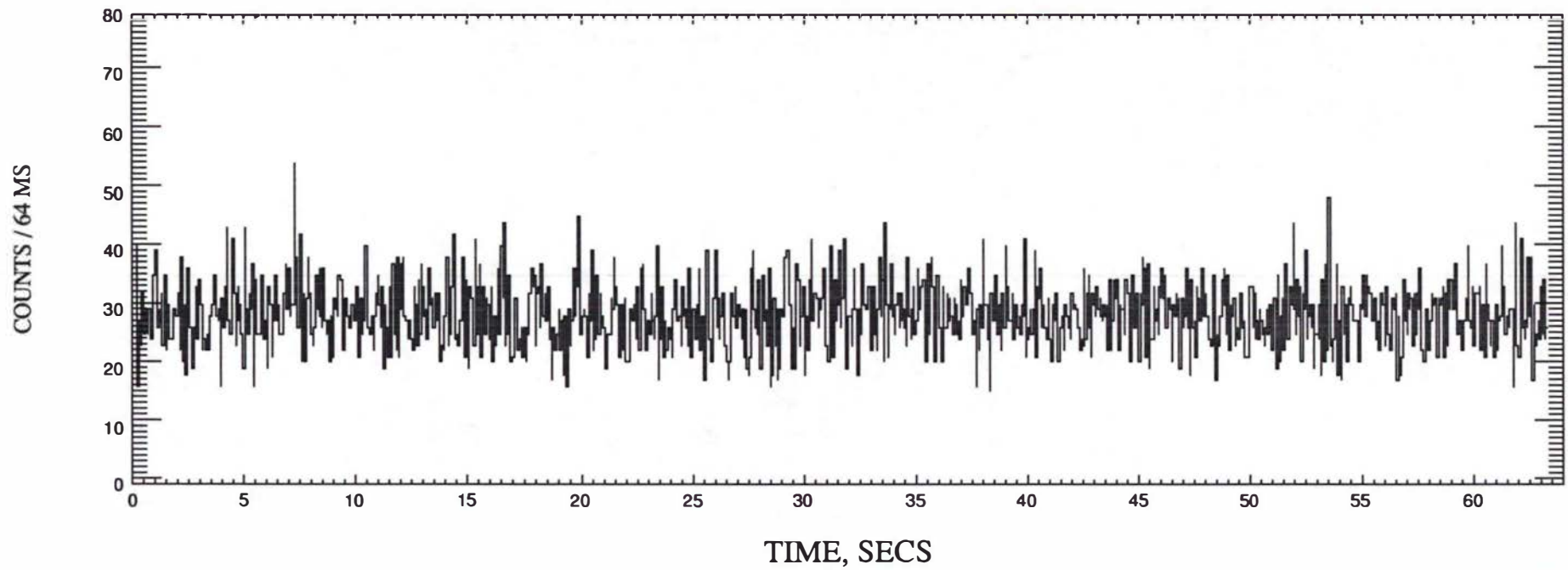
Burst Counter 1 at UT=11.021820271810 h=39678.553 s 11:01:18.553



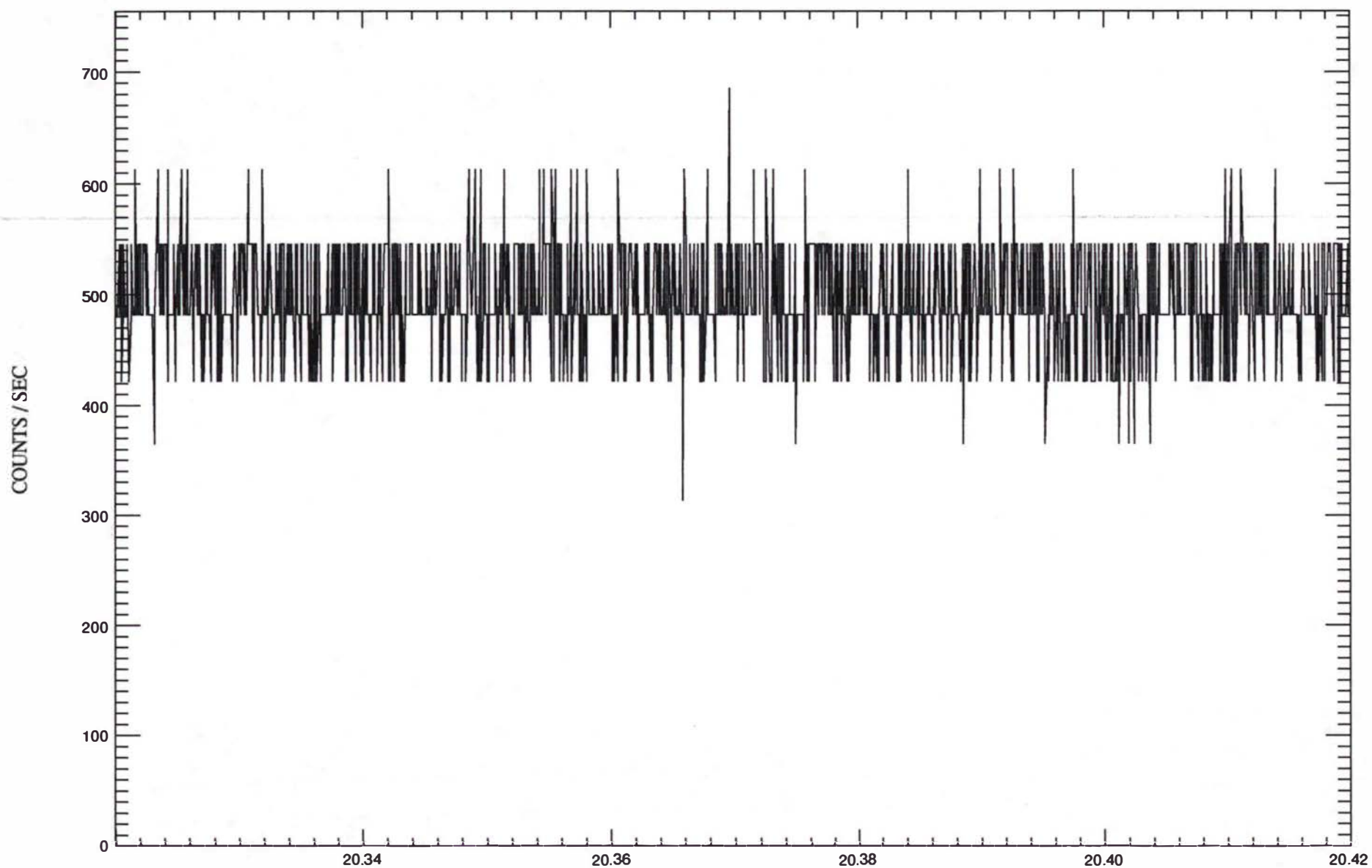
CALIBRATION DATA INCLUDED



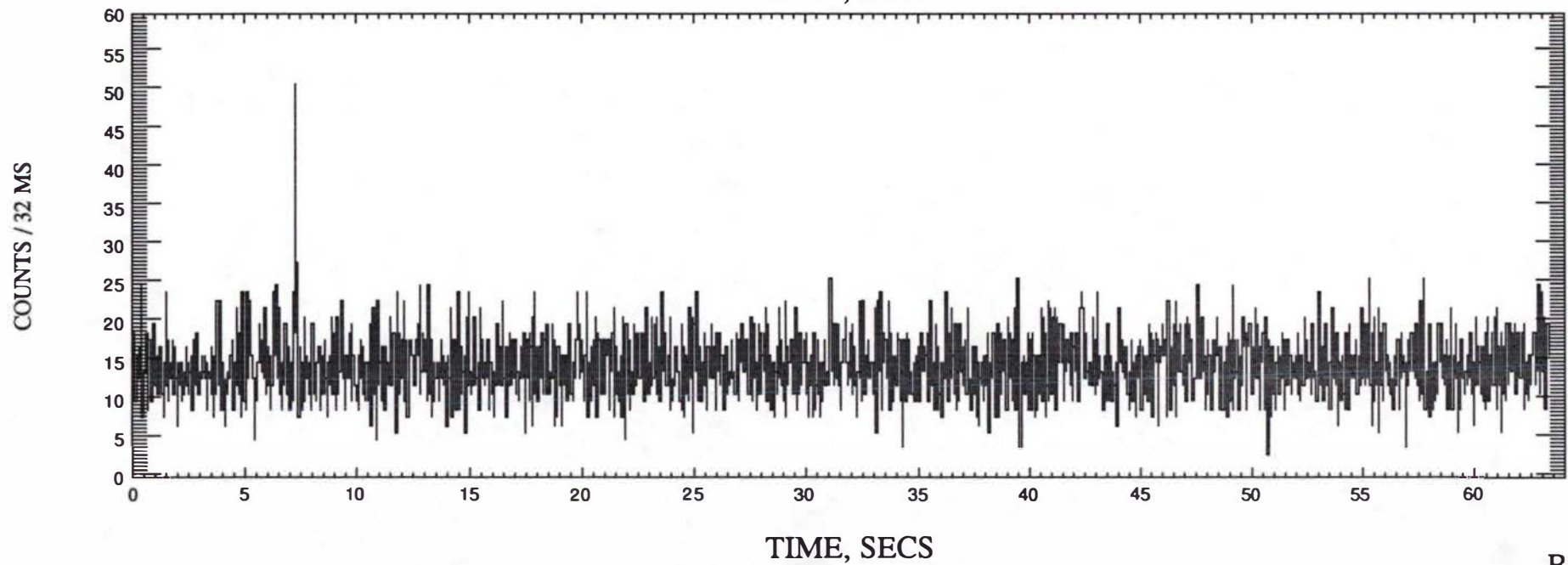
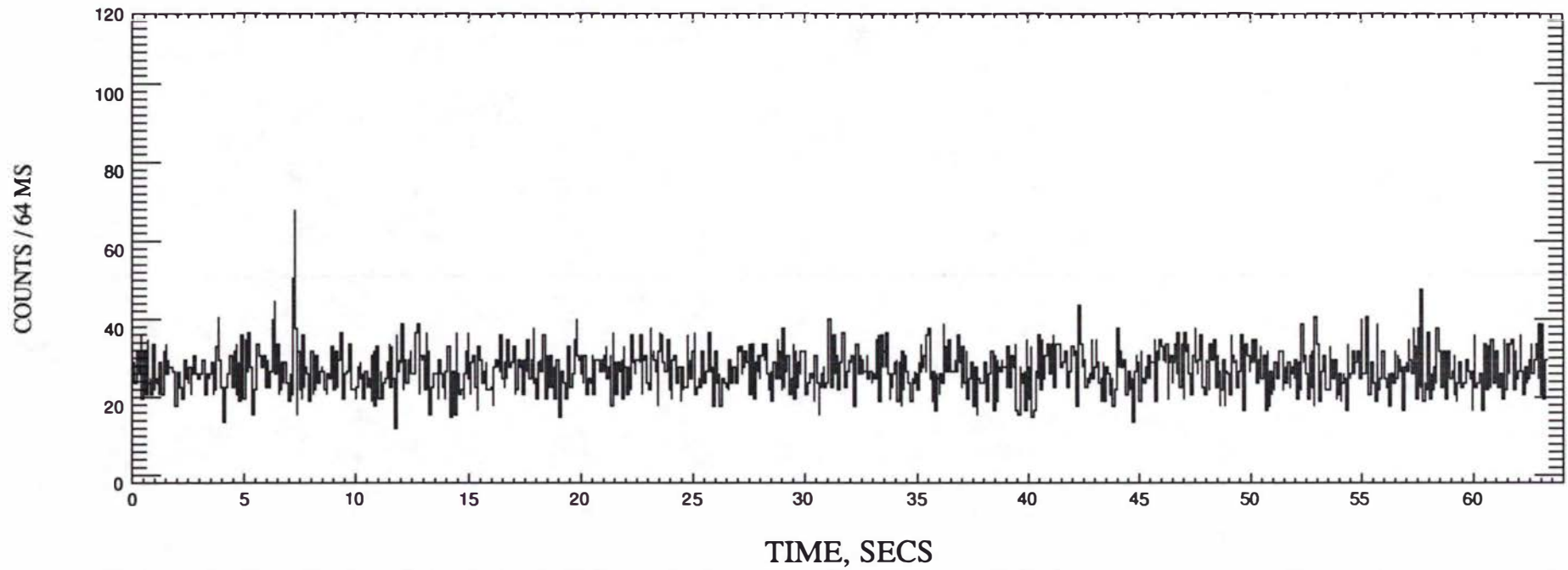
Burst Counter 2 at UT=20.369661428663 h=73330.781 s 20:22:10.781



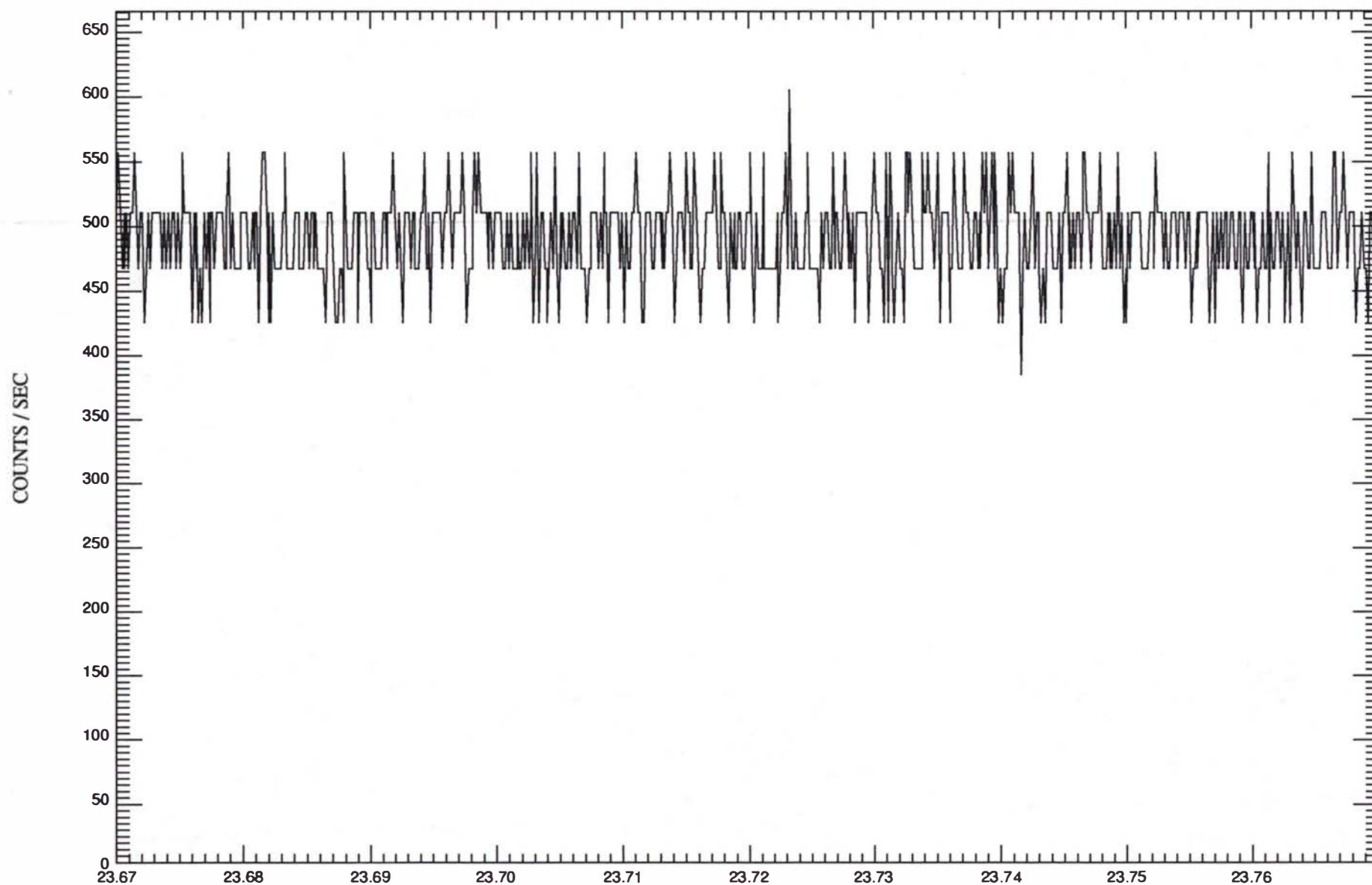
CALIBRATION DATA INCLUDED

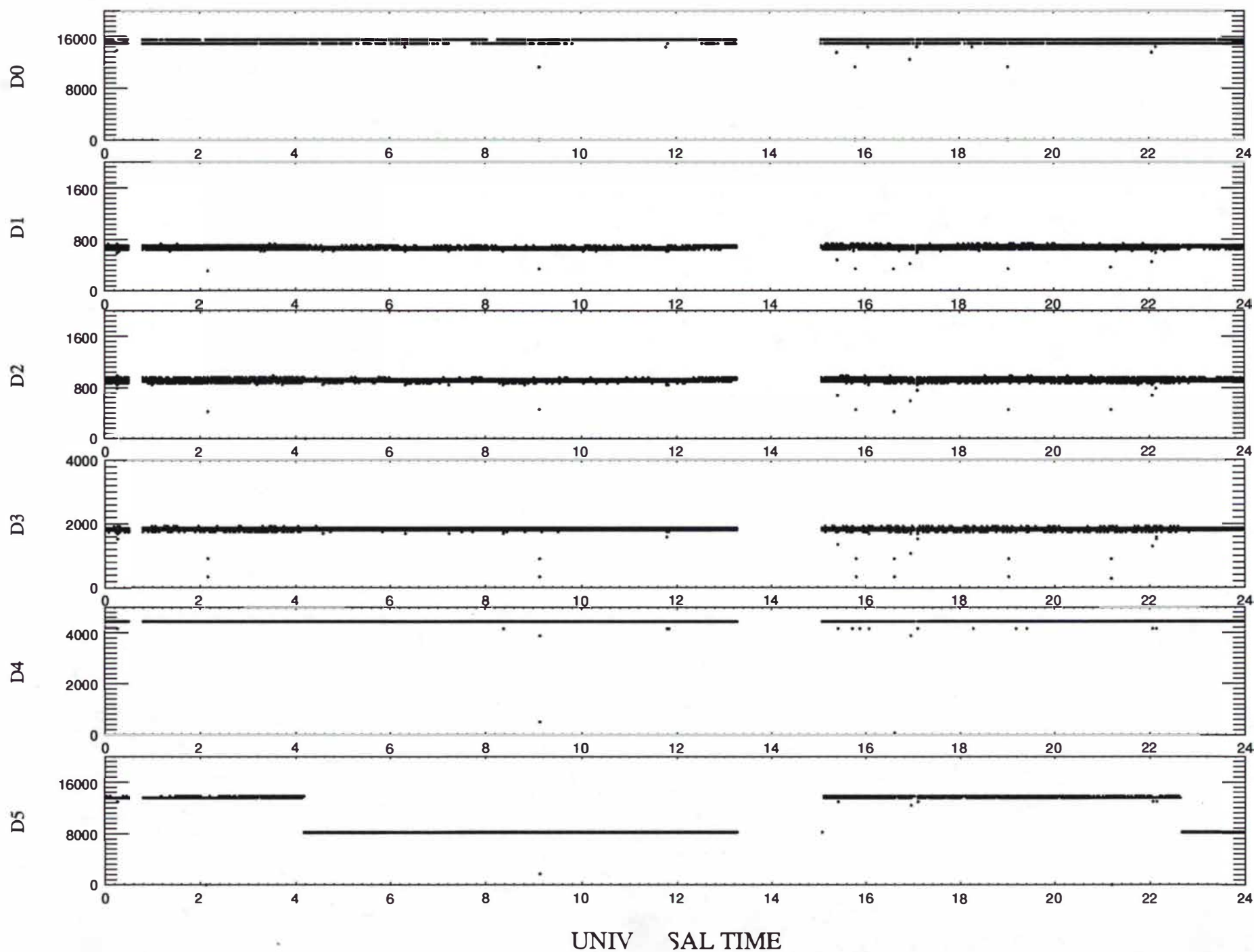


Burst Counter 3 at UT=23.723333447774 h=85404.000 s 23:43:24.000



CALIBRATION DATA INCLUDED





From SURASAK@fender.msfc.nasa.gov Mon Oct 5 14:06:04 1998

From: SURASAK@fender.msfc.nasa.gov

Date: Mon, 5 Oct 1998 16:05:19 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7137

TIME: TJD=1088 SECONDS=15992

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT.

From SURASAK@fender.msfc.nasa.gov Mon Oct 5 14:07:08 1998

From: SURASAK@fender.msfc.nasa.gov

Date: Mon, 5 Oct 1998 16:06:27 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7138

TIME: TJD=1088 SECONDS=20862

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

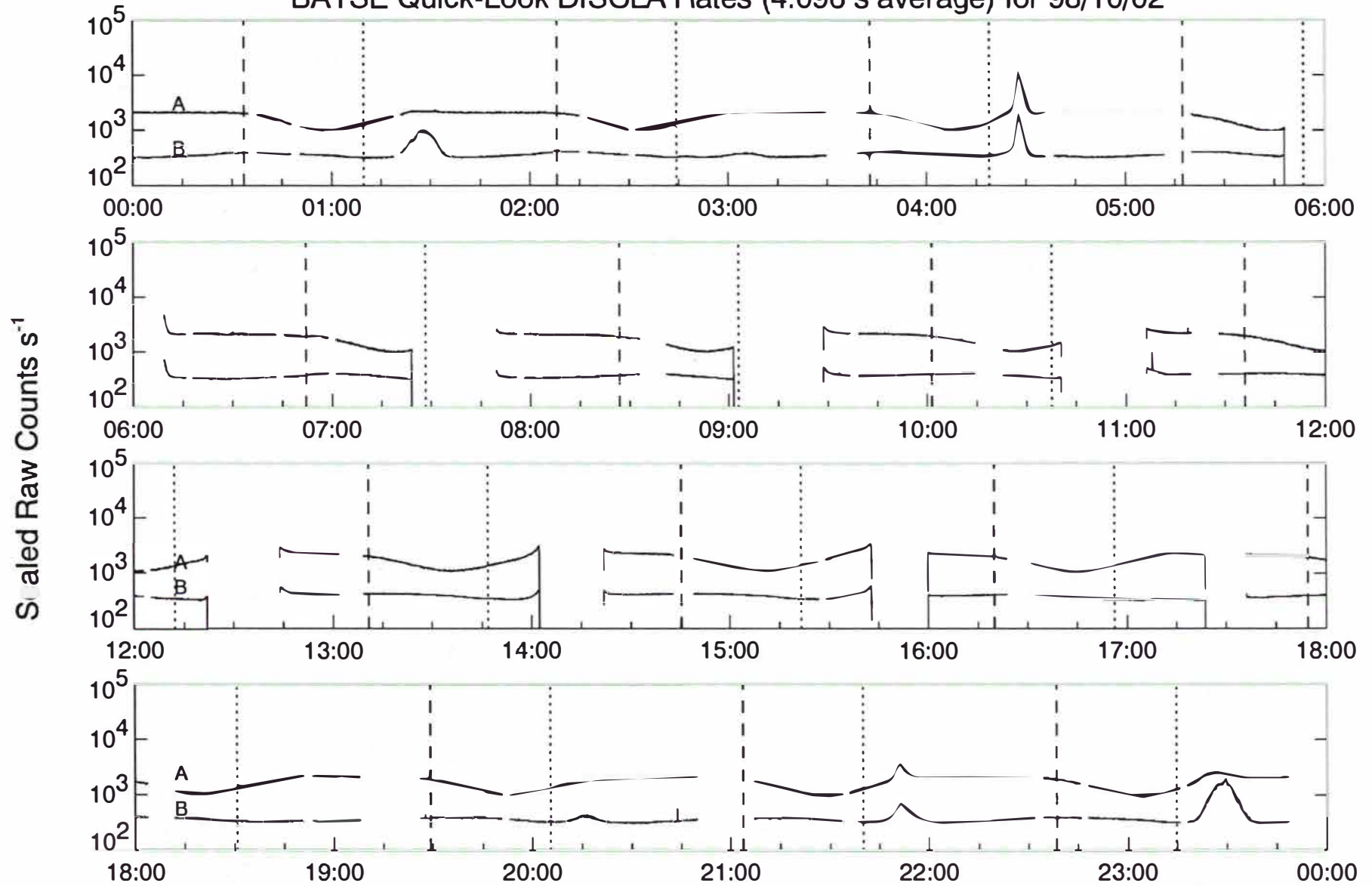
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY.

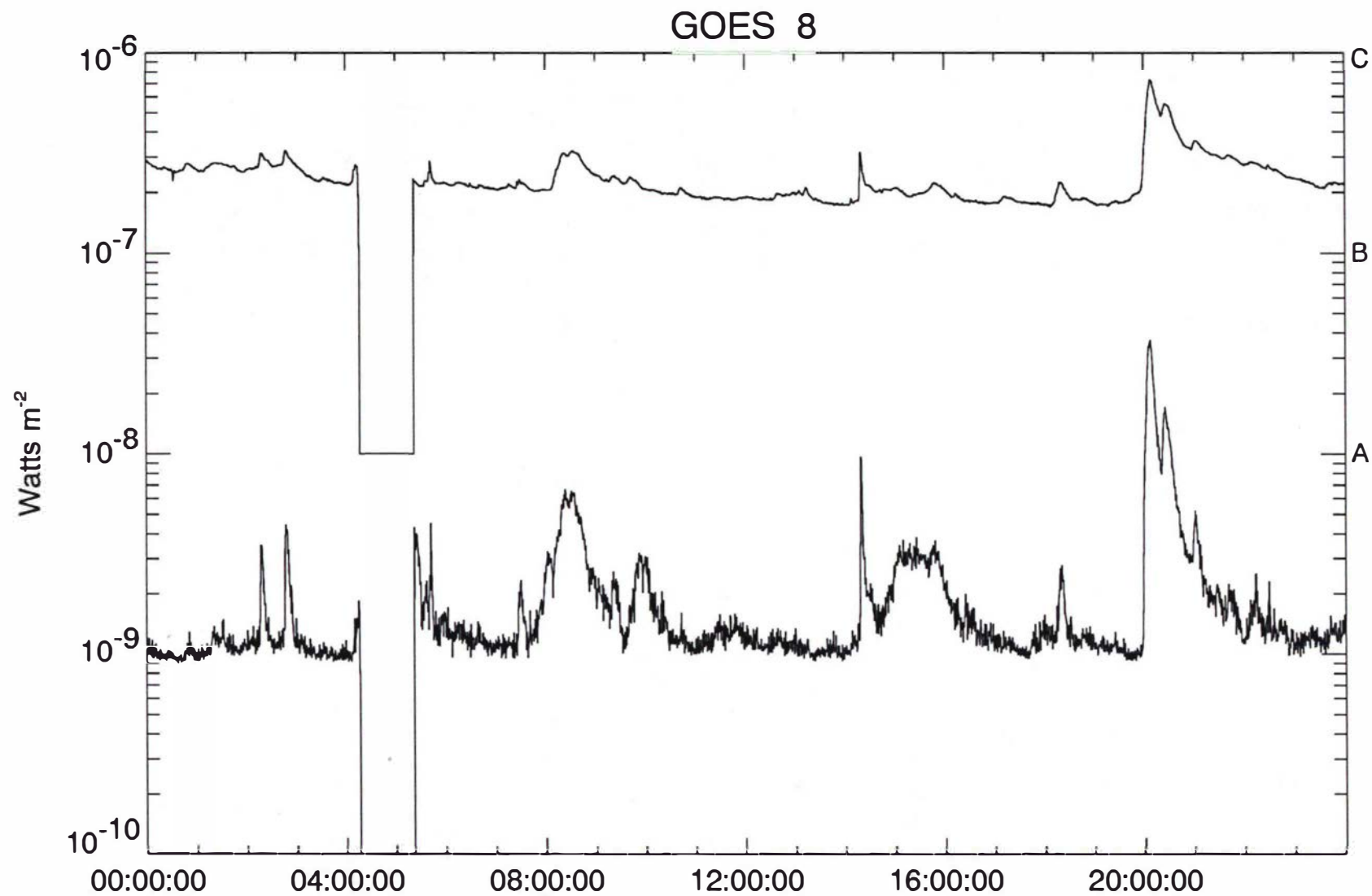
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/02



Current Time: 98/10/06, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/10/02, 0000:00

Plot created: 98/10/06, 1007

Channel

1 (1.0 - 8.0 Angstroms)

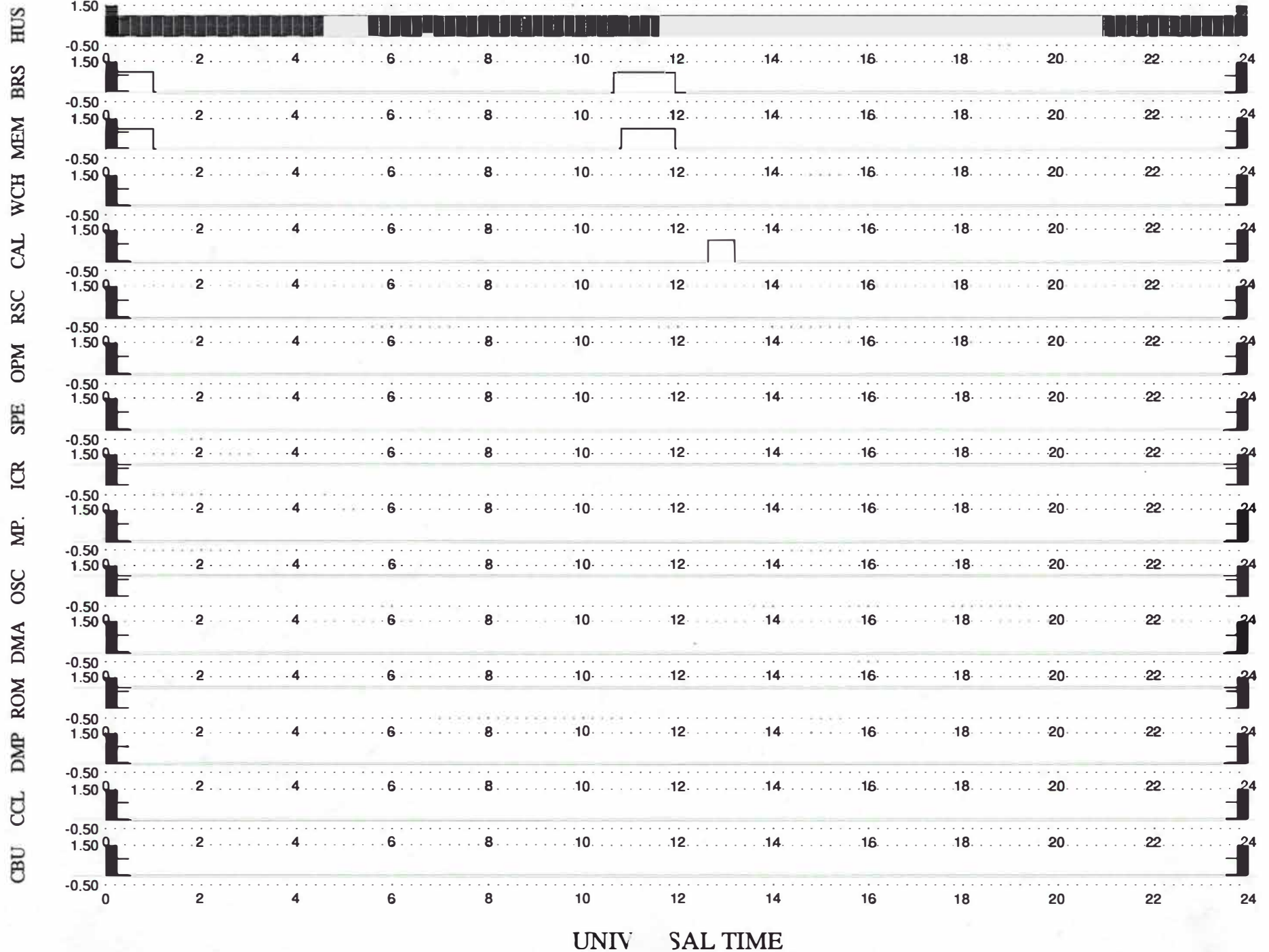
Background not subtracted

2 (0.5 - 4.0 Angstroms)

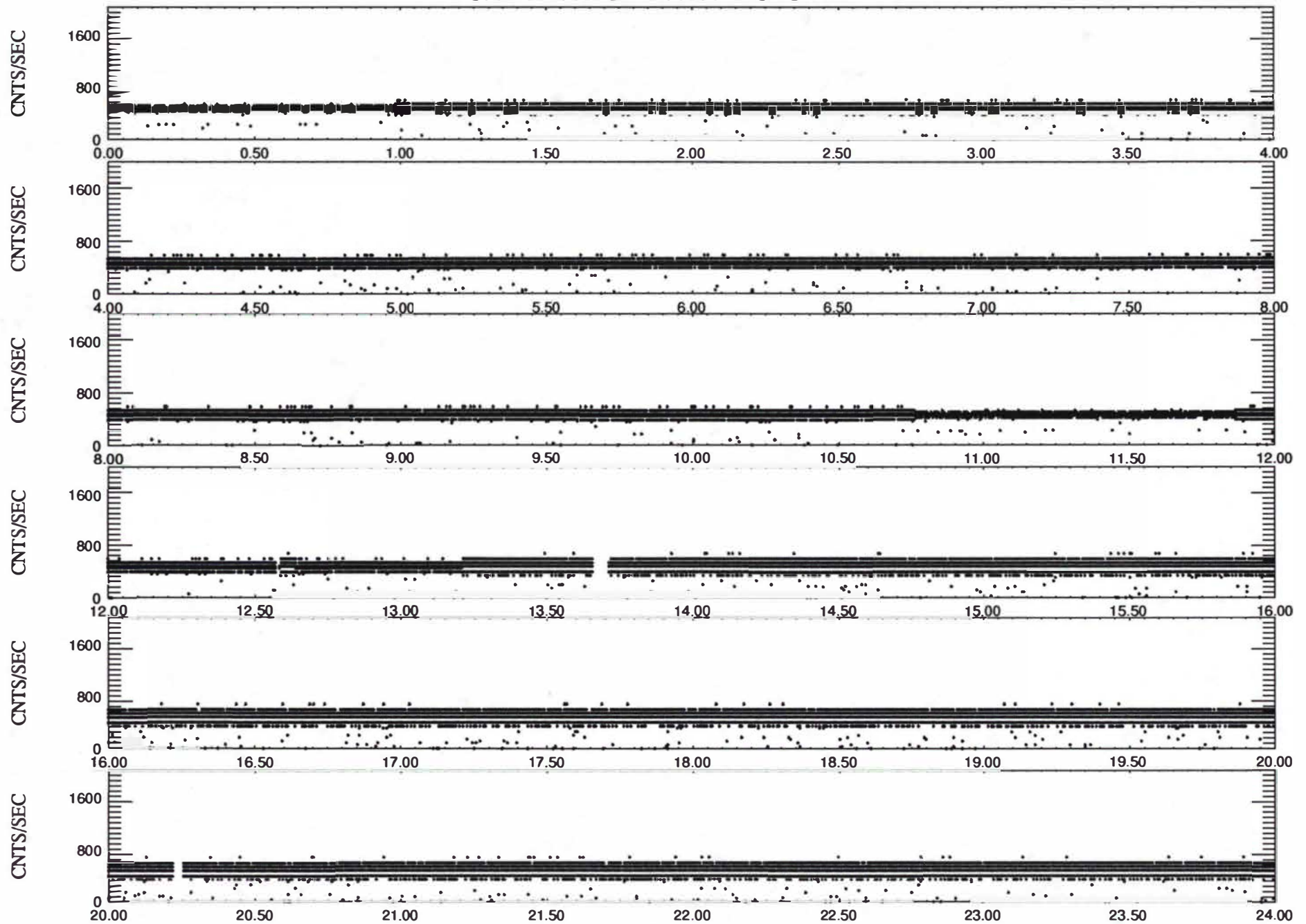
Background not subtracted

Sample average = 10

BURST NUMBER 4

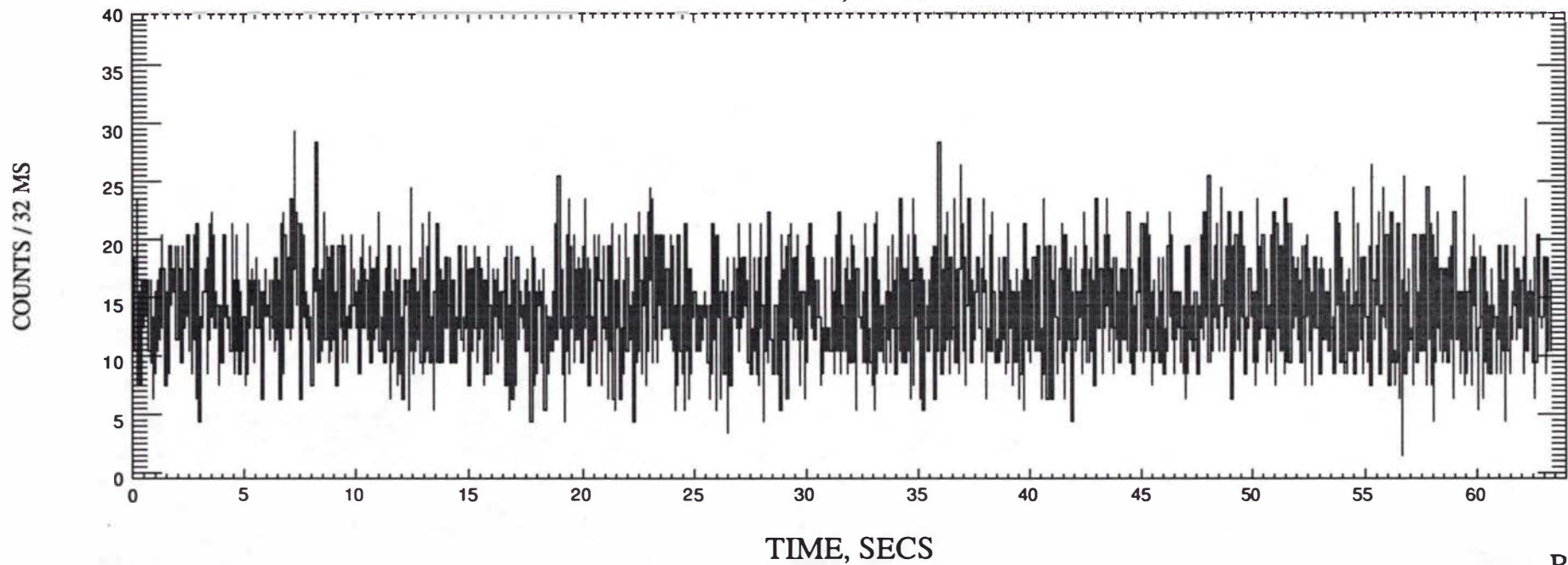
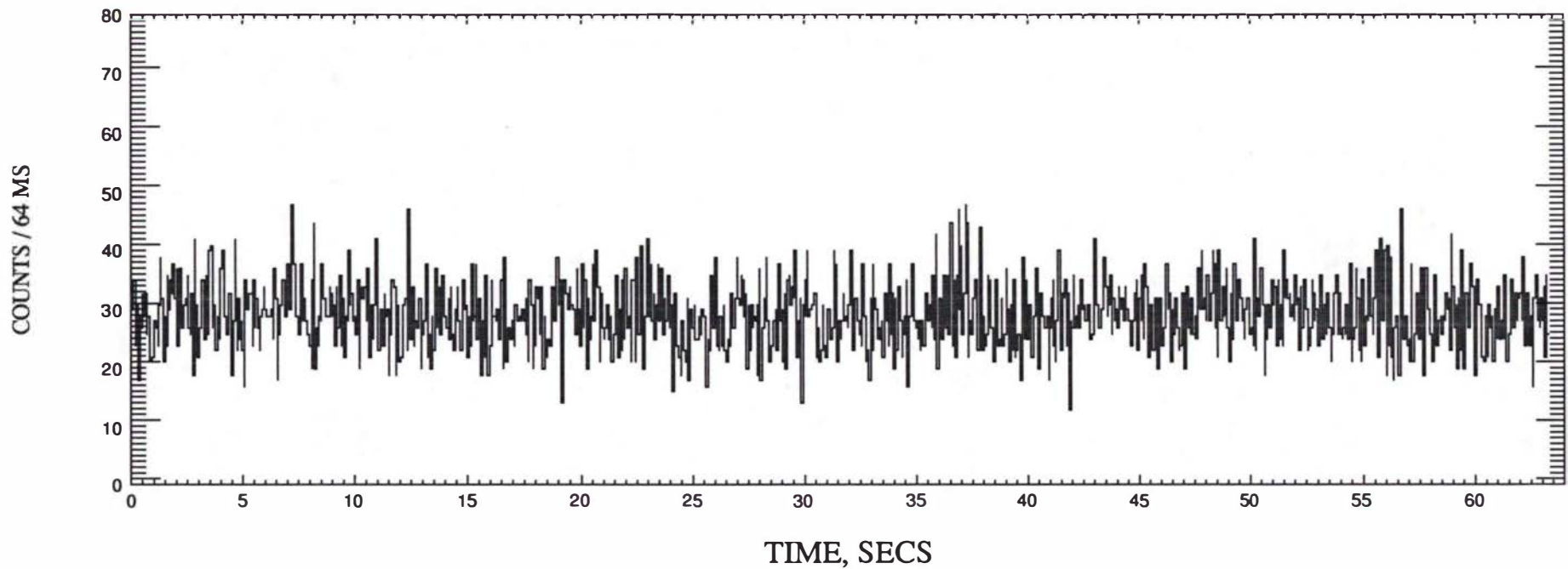


CALIBRATION DATA INCLUDED

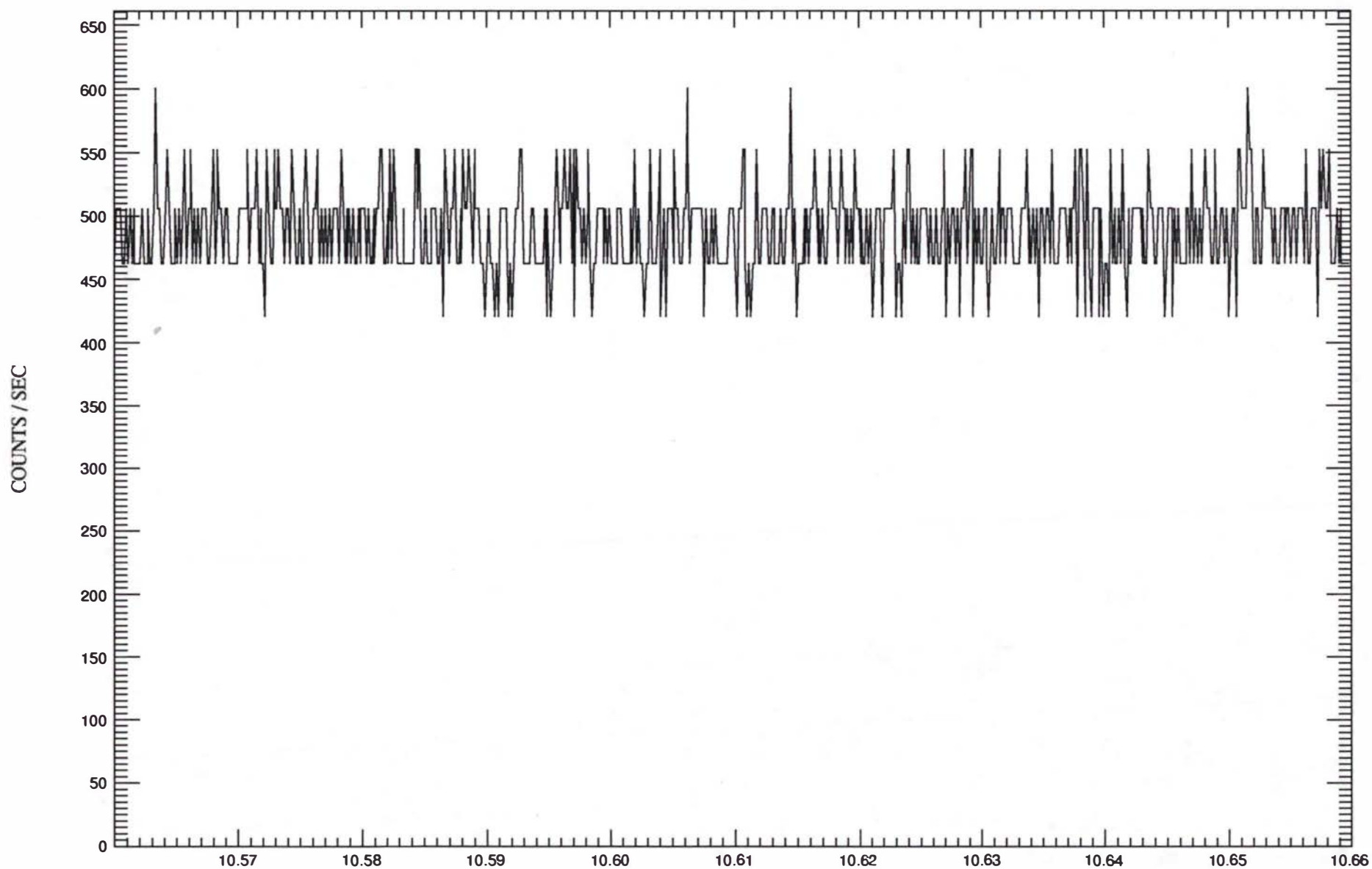


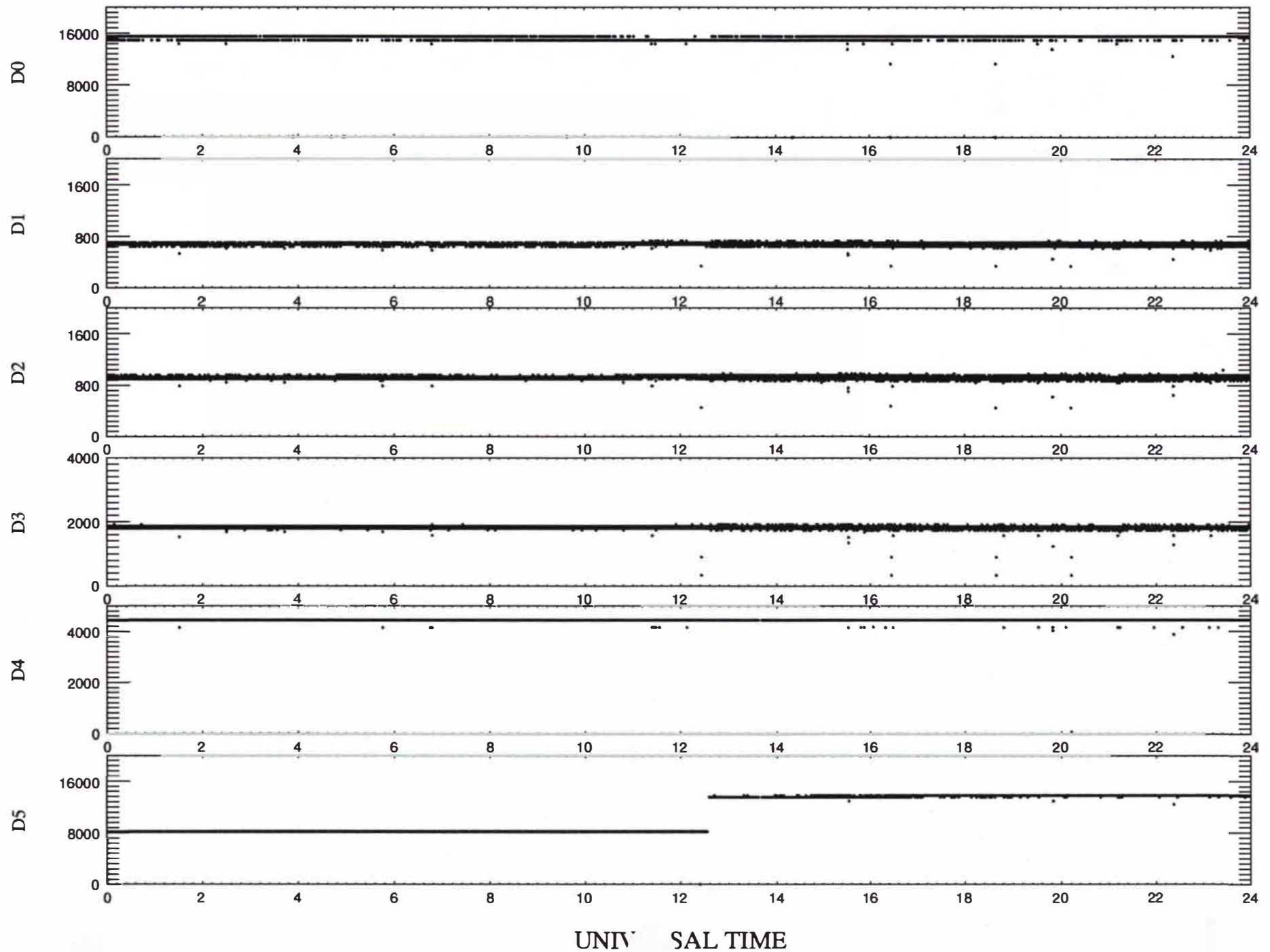
UNIV SAL TIME

Burst Counter 4 at UT=10.606439234416 h=38183.181 s 10:36:23.181



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Mon Oct 5 07:27:47 1998
Date: Mon, 5 Oct 1998 9:27:21 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7139

TIME: TJD=1089 SECONDS=19529

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

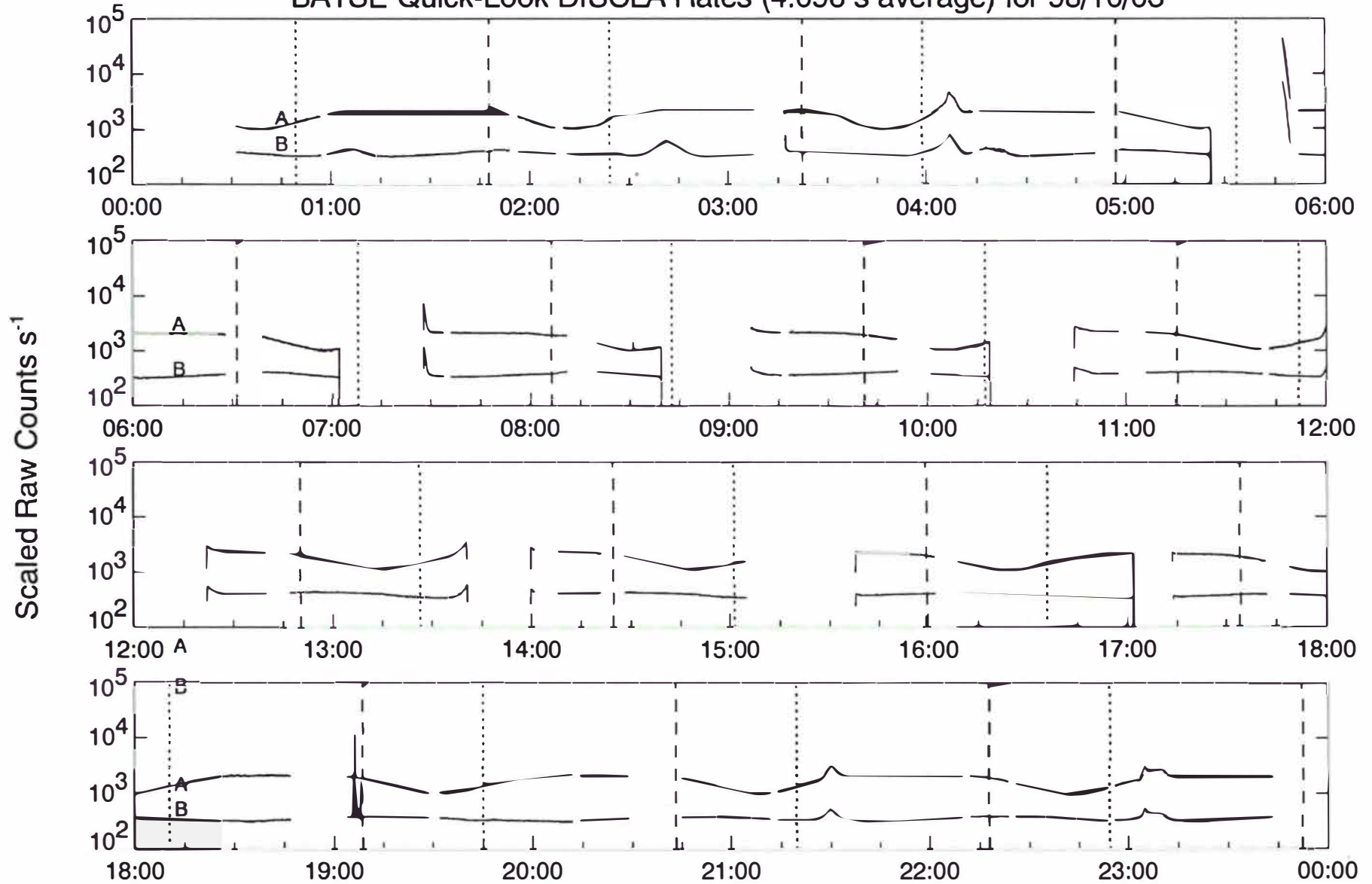
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/03

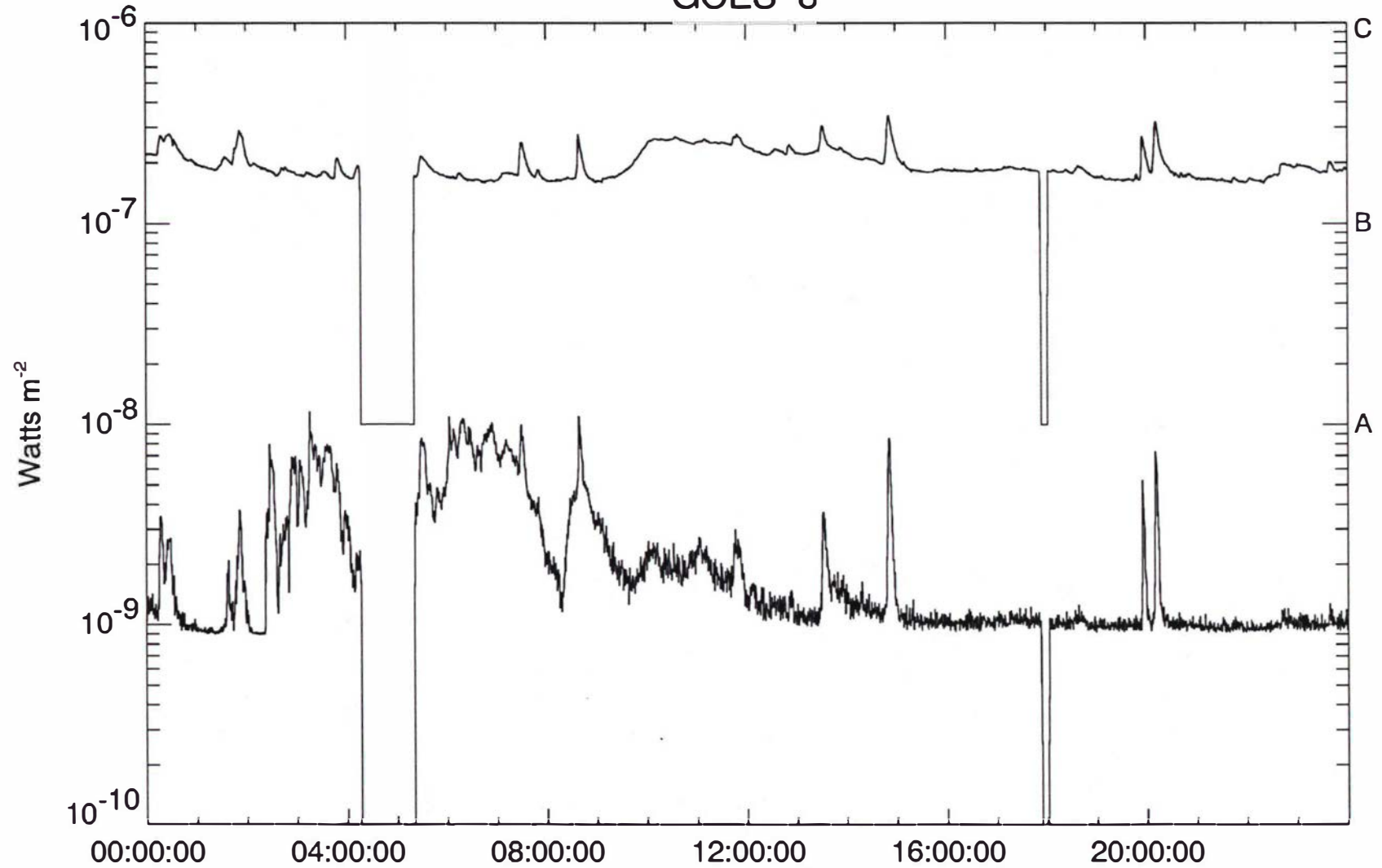


Current Time: 98/10/07, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/03, 0000:00

Plot created: 98/10/07, 1007

Channel

1 (1.0 - 8.0 Angstroms)

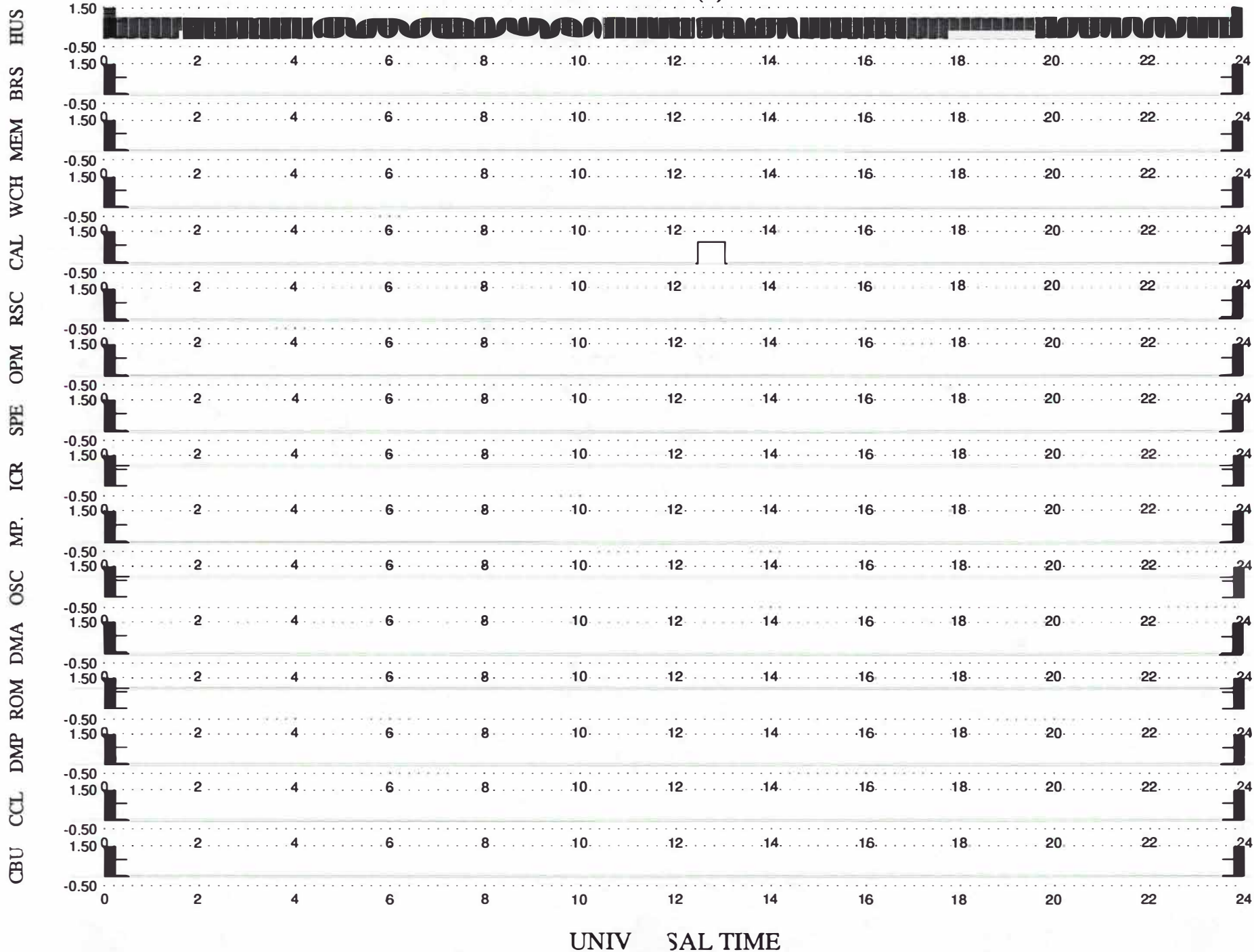
Background not subtracted

2 (0.5 - 4.0 Angstroms)

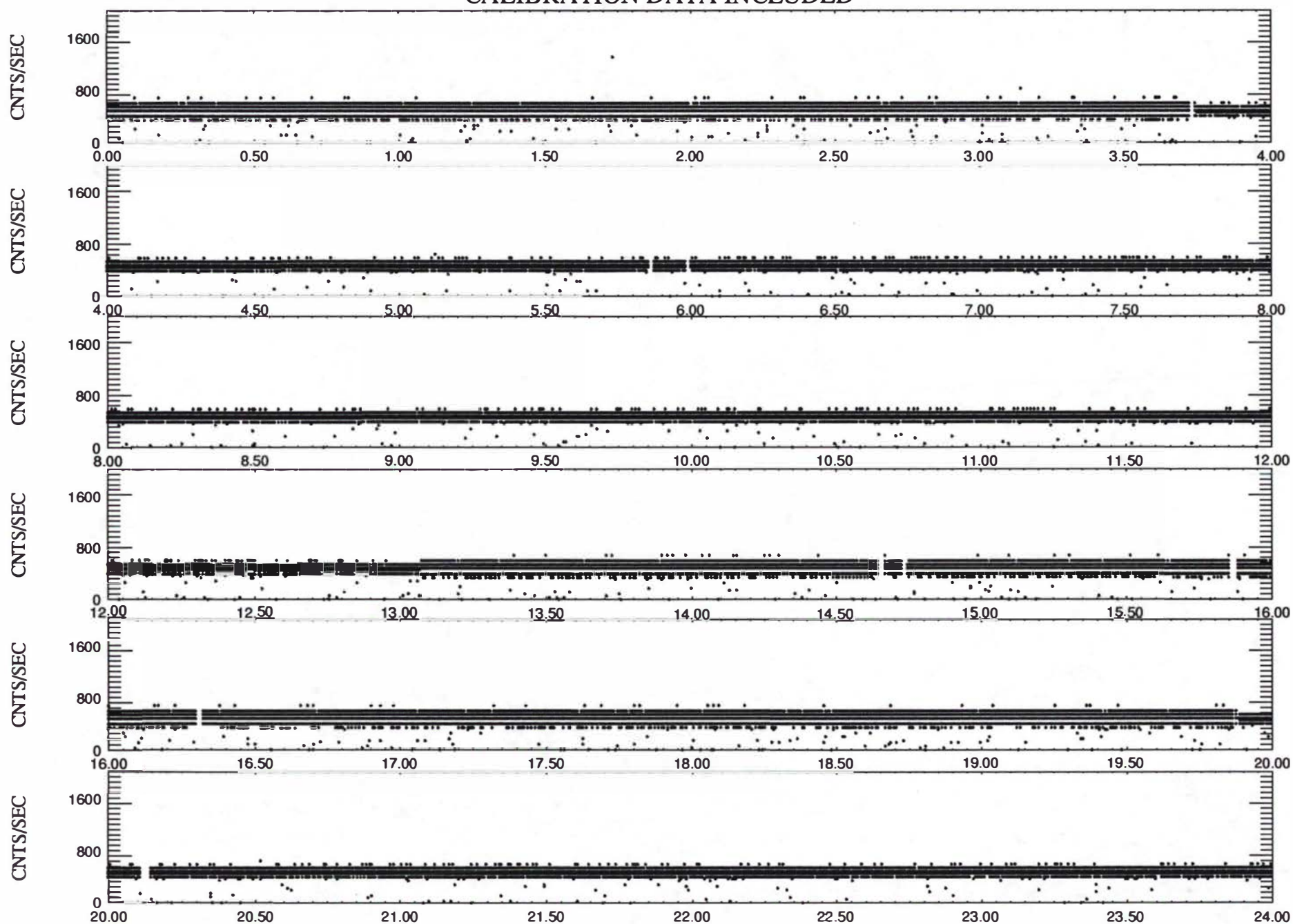
Background not subtracted

Sample average = 10

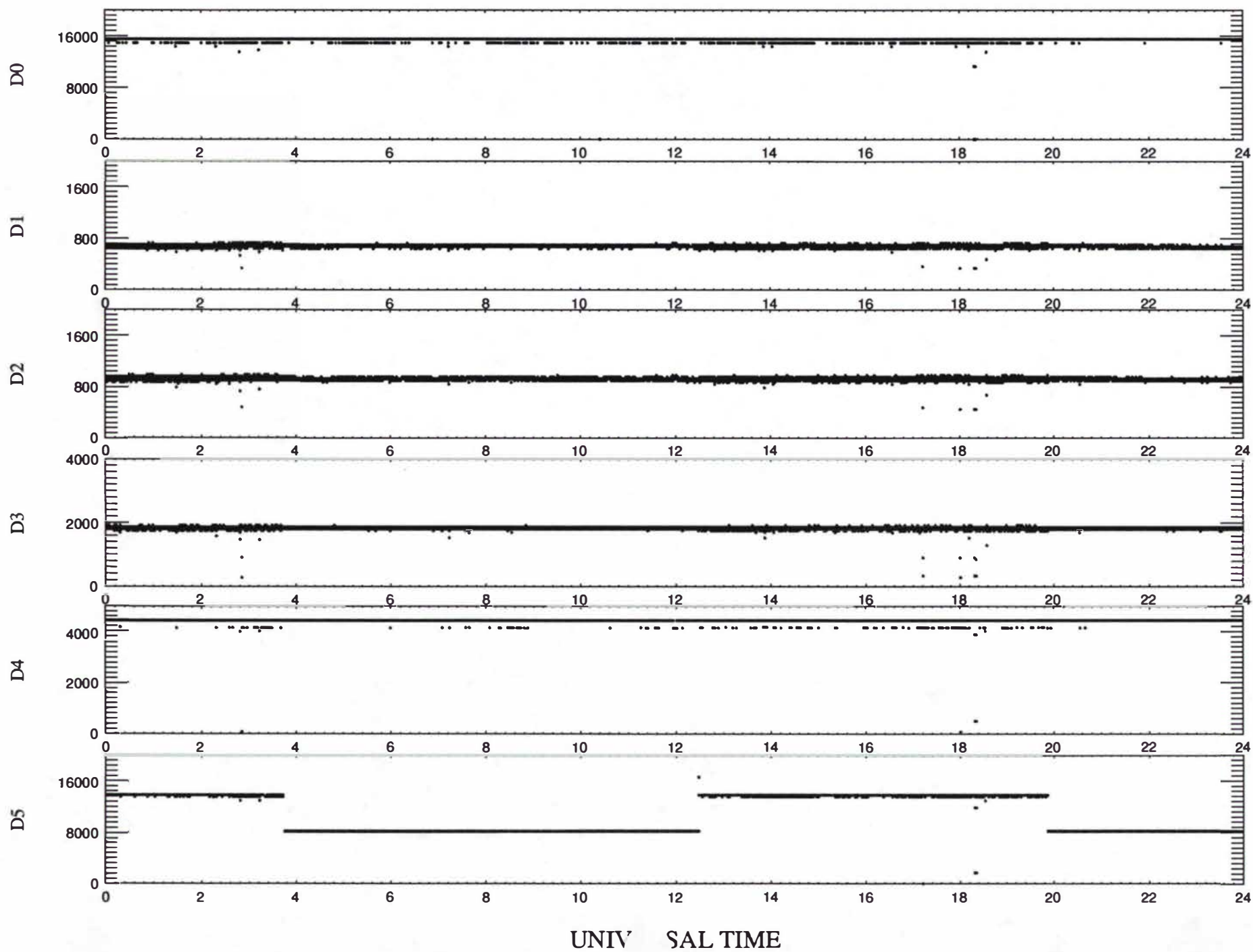
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From PETERSON@fender.msfc.nasa.gov Mon Oct 5 11:19:01 1998

From: PETERSON@fender.msfc.nasa.gov

Date: Mon, 5 Oct 1998 13:18:22 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7140

TIME: TJD=1090 SECONDS=18201

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

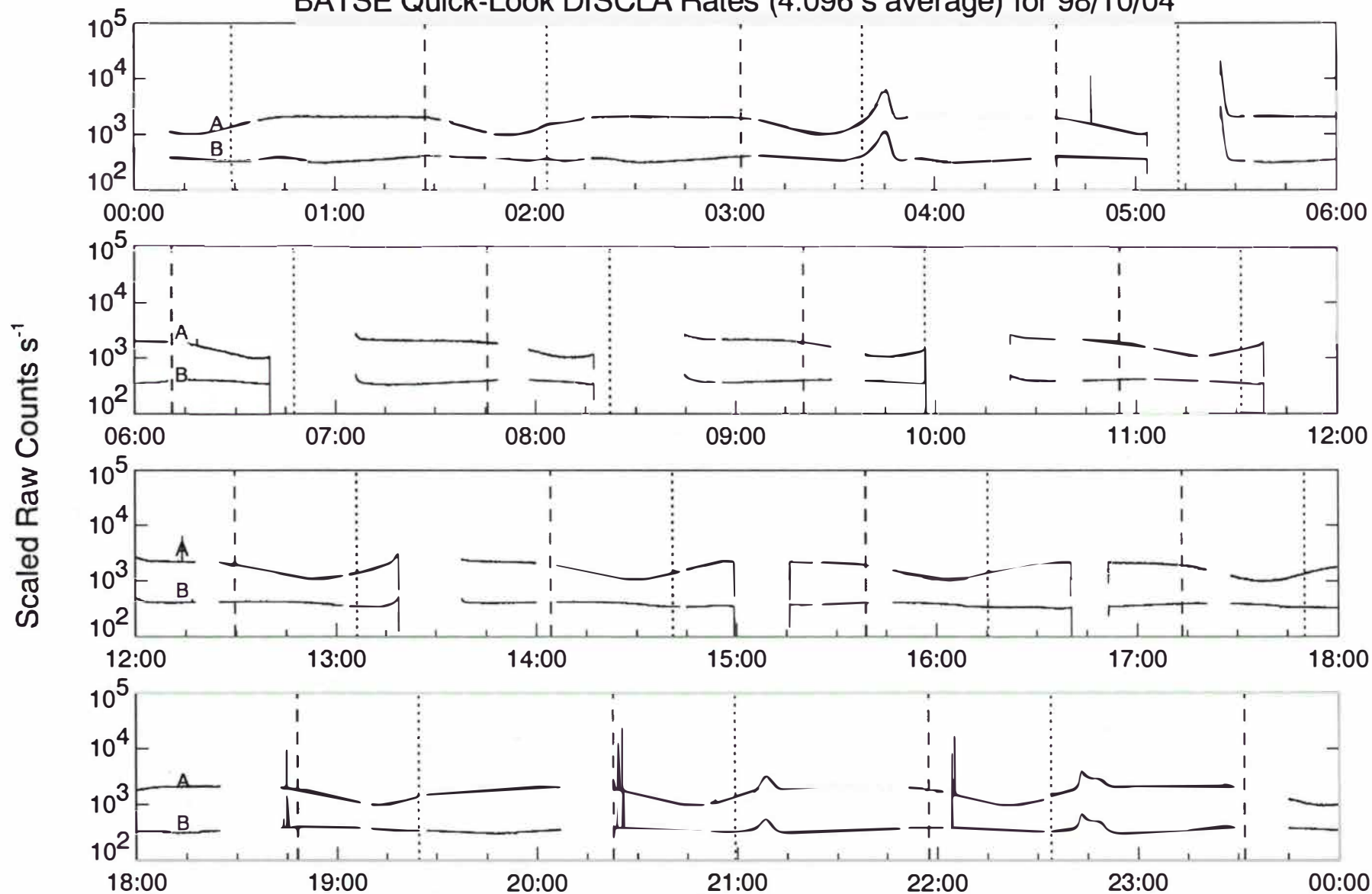
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY. HV OFF AT APPROX. T+12 S.

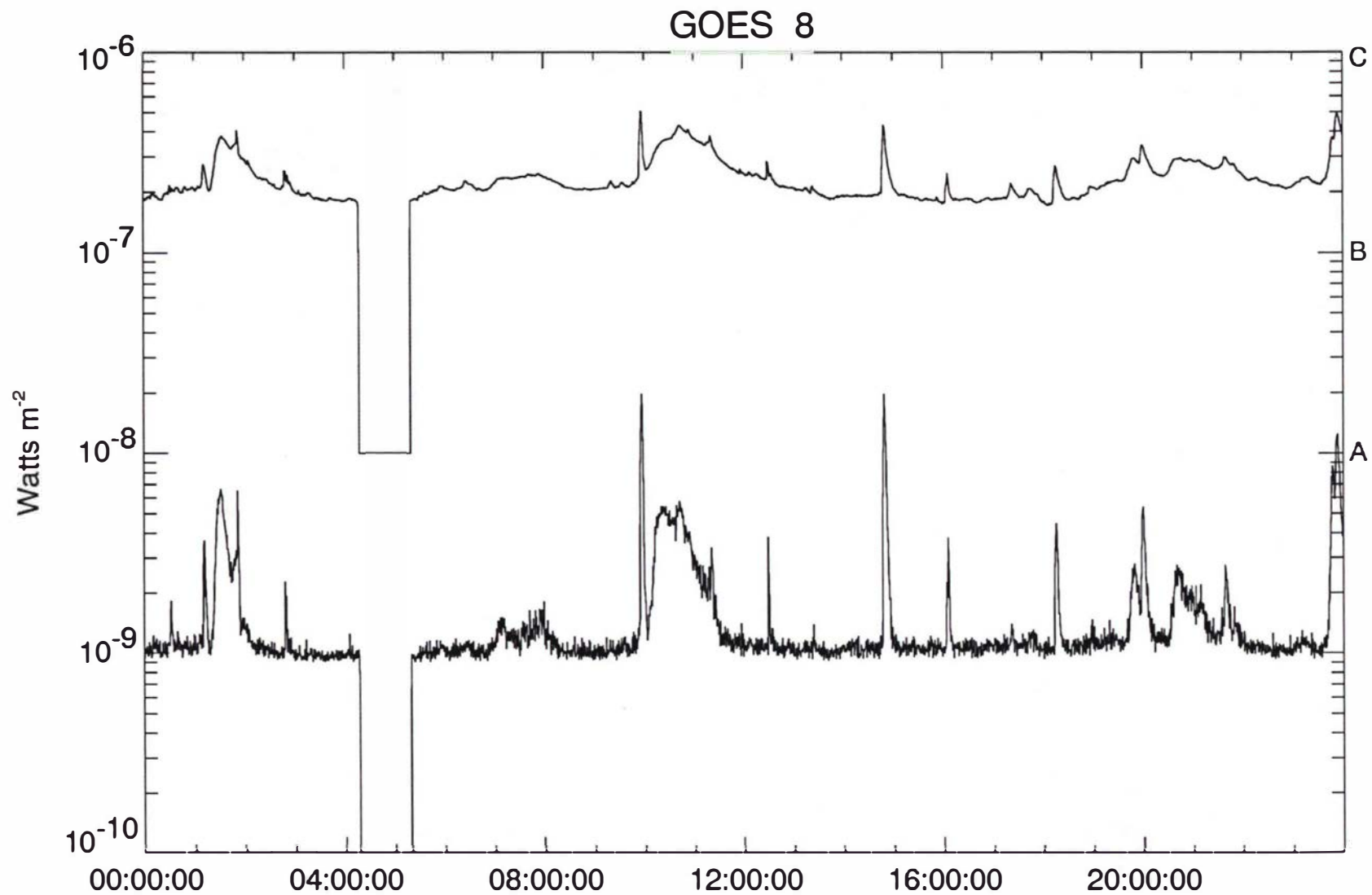
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/04



Current Time: 98/10/08, 1009 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/10/04, 0000:00

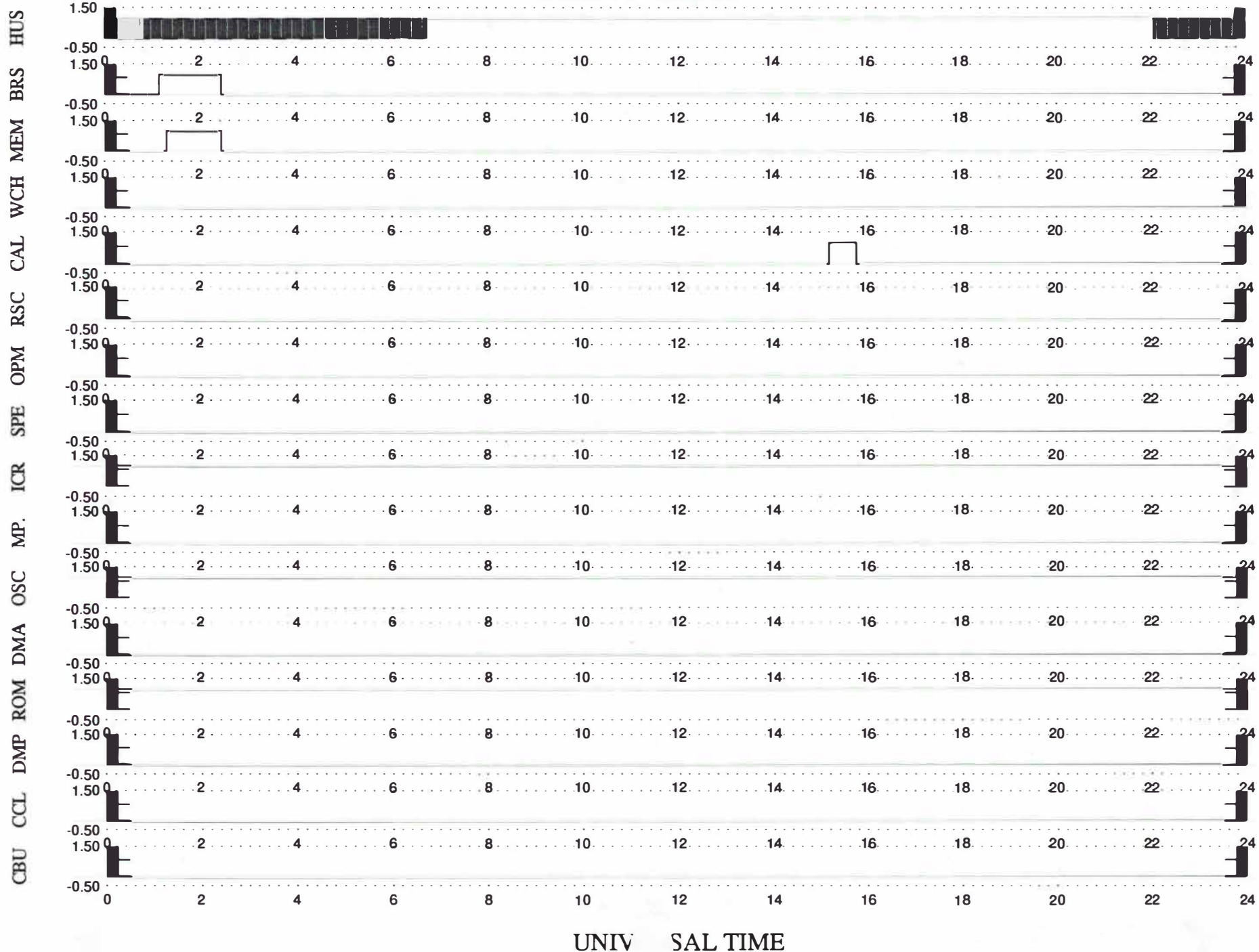
Plot created: 98/10/08, 1008

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

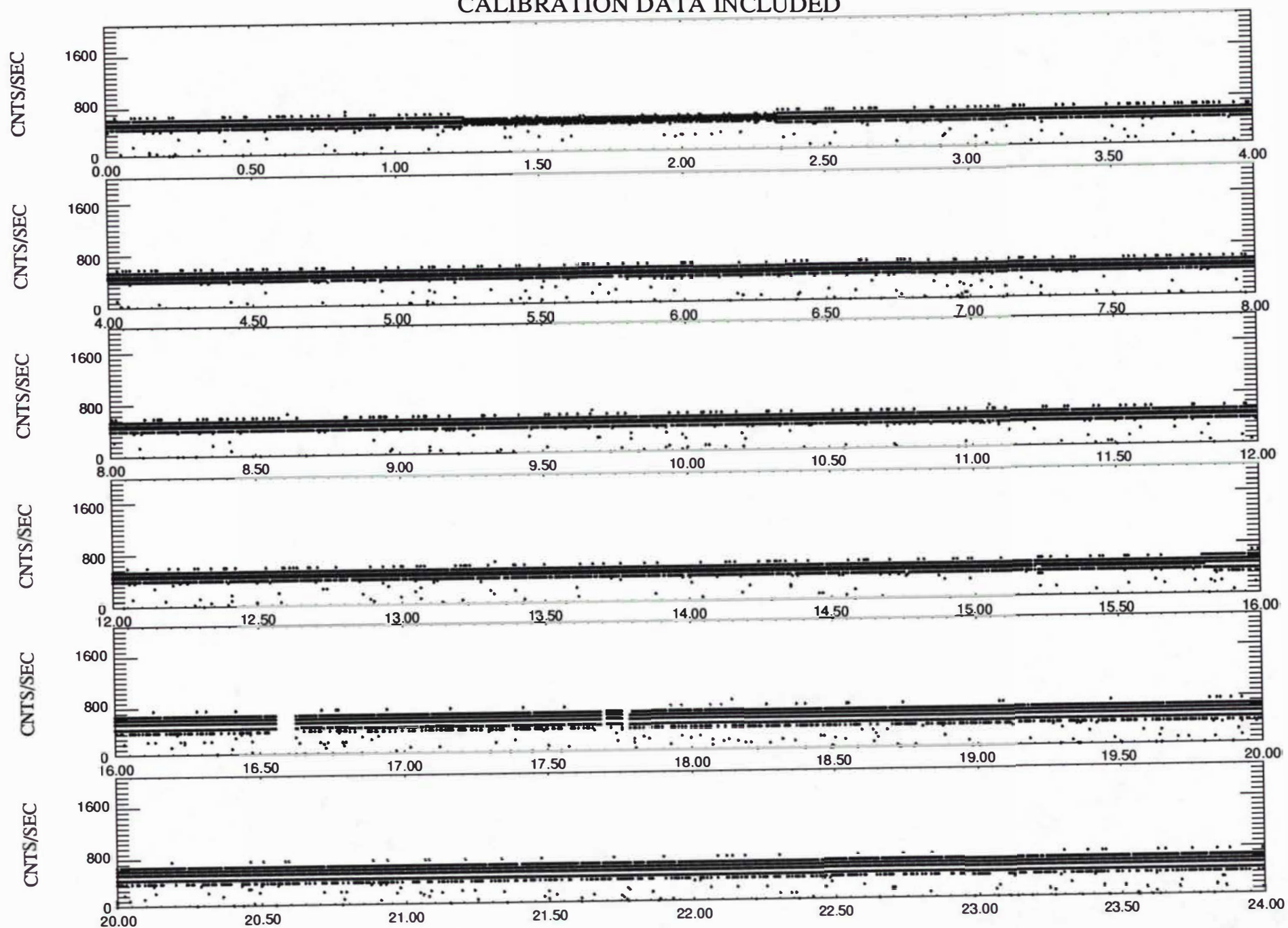
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 5

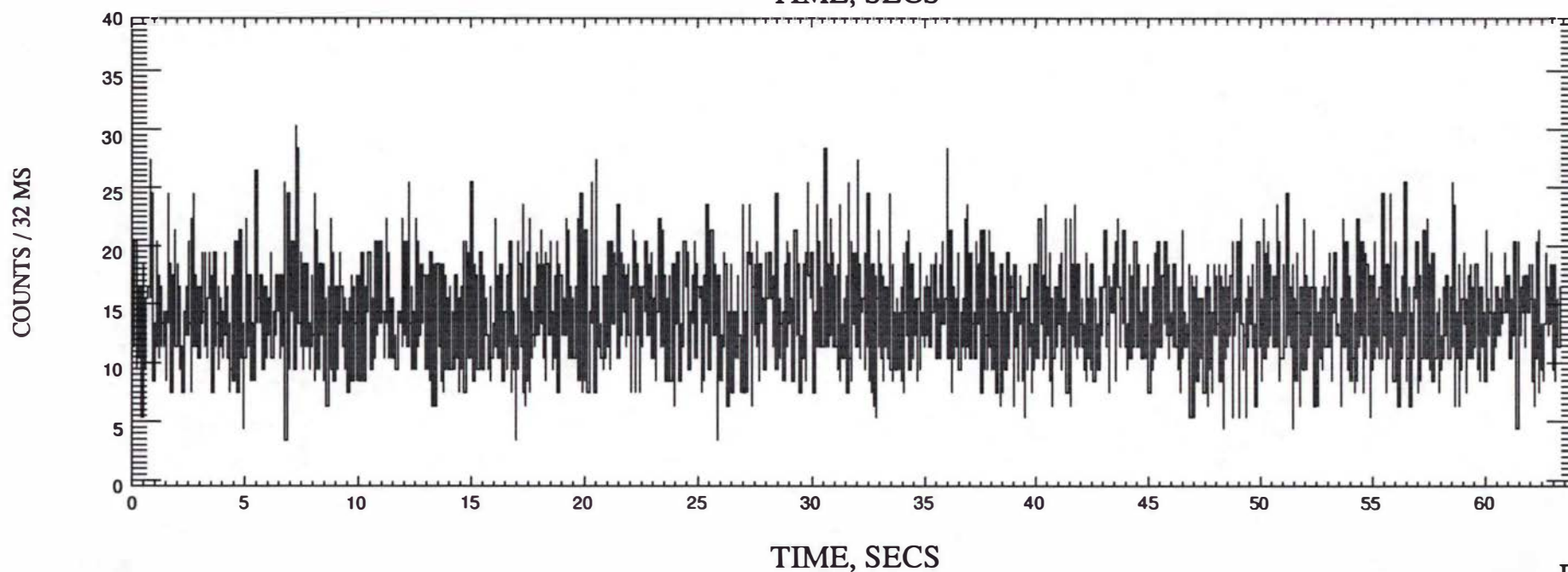
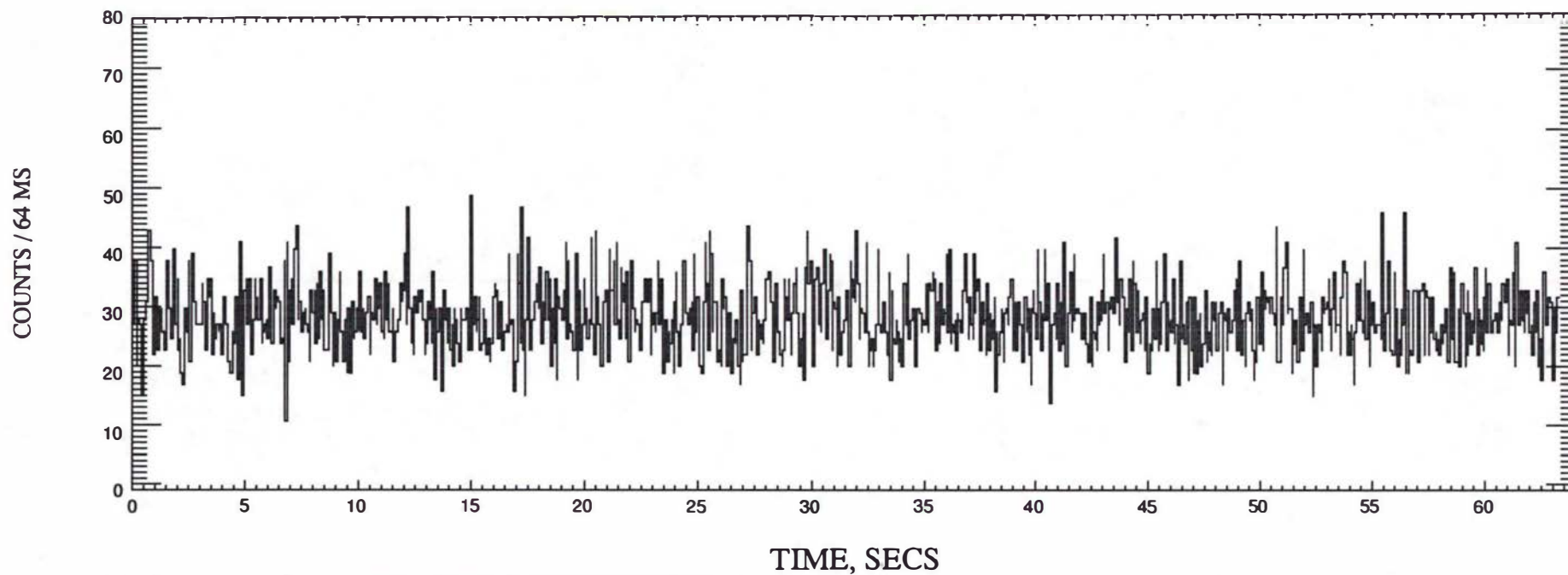


CALIBRATION DATA INCLUDED

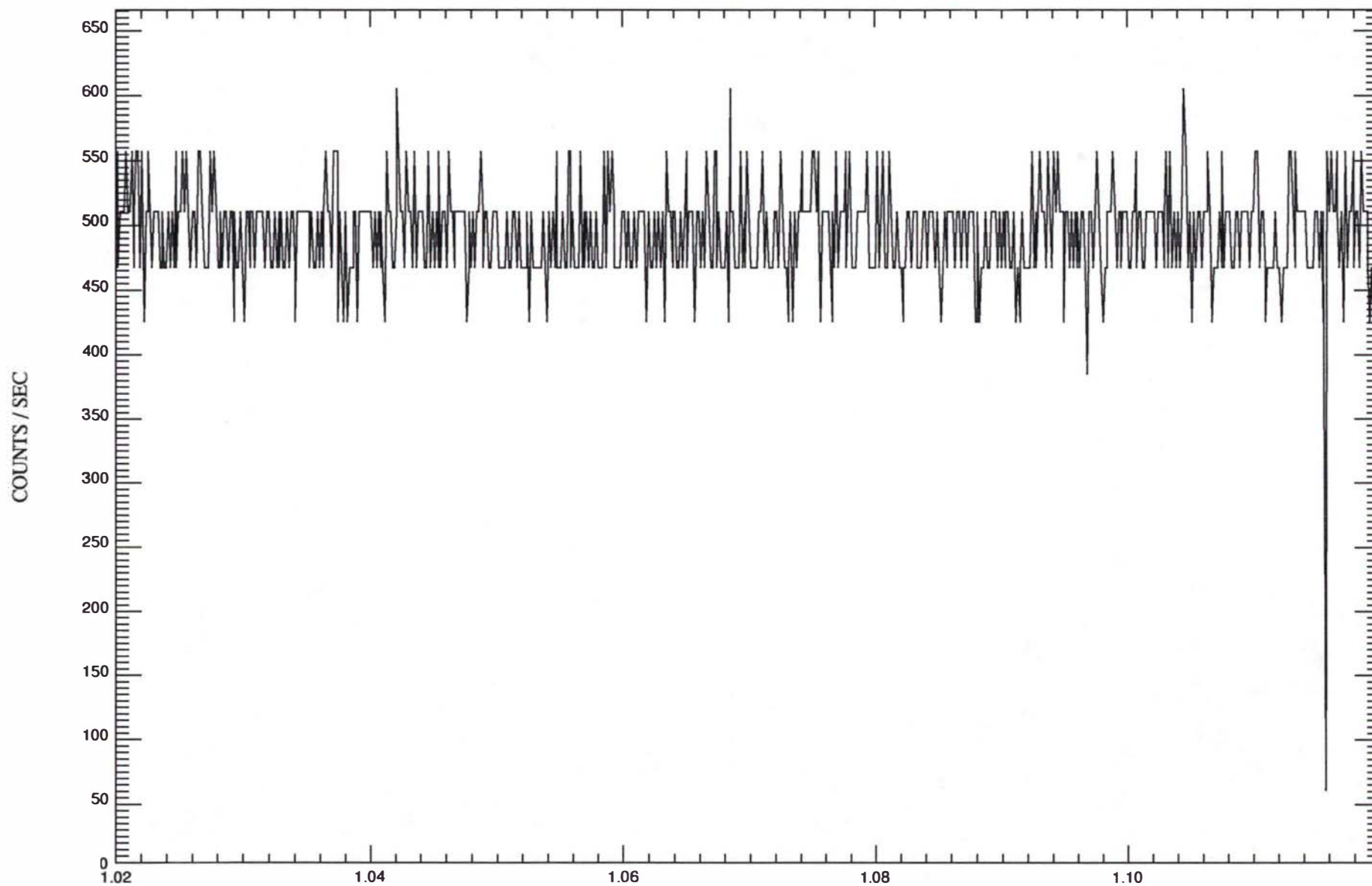


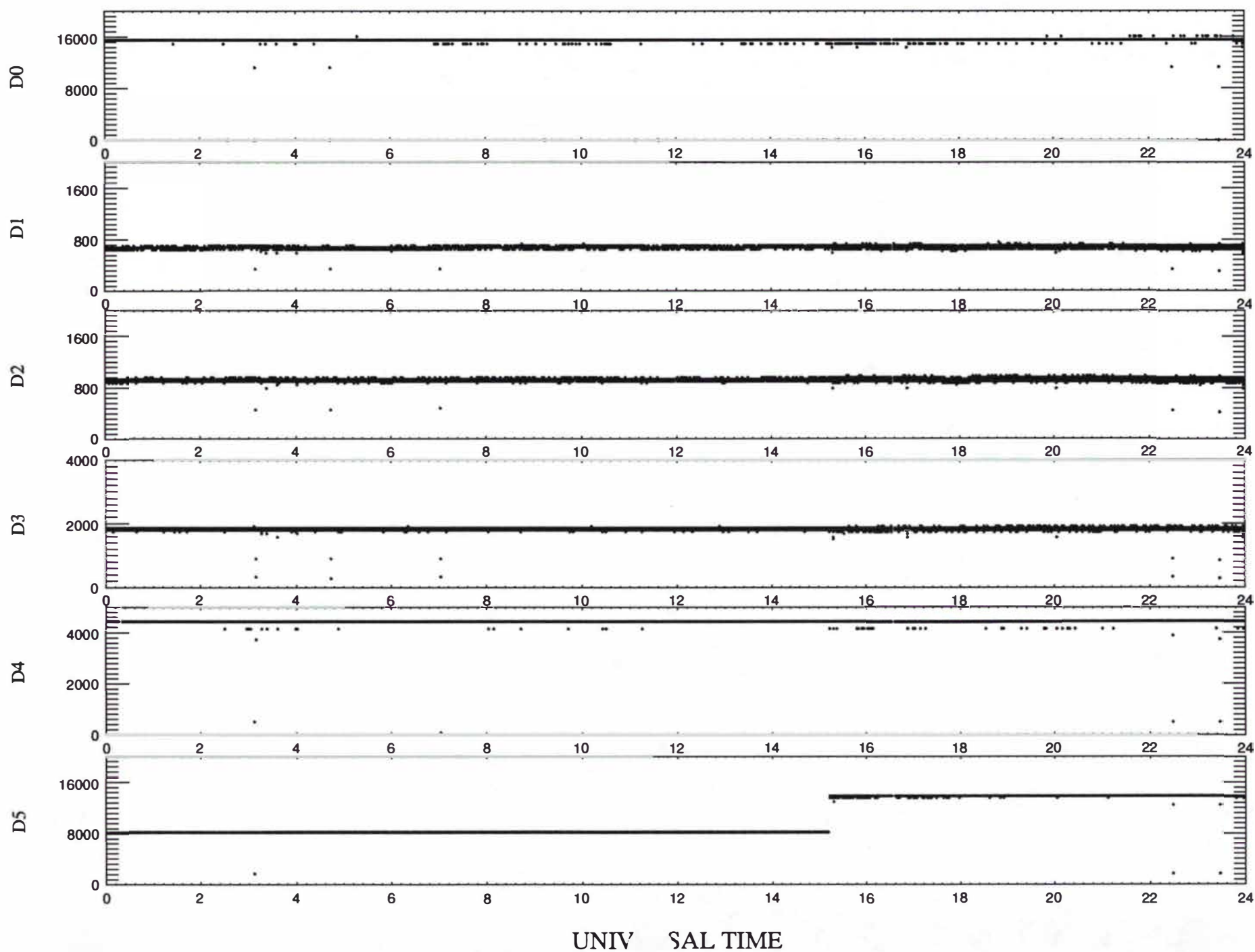
UNIV SAL TIME

Burst Counter 5 at UT= 1.071247232225 h= 3856.490 s 01:04:16.490



CALIBRATION DATA INCLUDED





From RICHARDSON@fender.msfc.nasa.gov Tue Oct 6 08:49:53 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Tue, 6 Oct 1998 10:47:24 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7141

TIME: TJD=1091 SECONDS=11985

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT ASSOCIATED WITH THE SAA.

From RICHARDSON@fender.msfc.nasa.gov Tue Oct 6 09:26:55 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA09267; Tue, 6 Oct 1998 09:26:45 -0700
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA09183; Tue, 6 Oct 1998 09:26:43 -0700
Date: Tue, 6 Oct 1998 11:21:55 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981006112155.20204519@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7142
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7142
EVENT OF 1998 OCT 5 DAY OF YEAR=278
EVENT CROSSING TIME AT BATSE : 64826. S. OR 18:00:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 275.000 44.000
BATSE PEAK COUNTING RATE: 25000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/10/ 98 IS:
RA= 162.888 DEC= 0.378 DIST= 6.168 AU
BATSE-ULYSSES DISTANCE = 922689818. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 819.26 SECS.
CROSSING TIME AT ULYSSES IS 65645. S. OR 18:14:05 +/- 577.51 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/10/ 98 IS:
RA= 151.085 DEC= 13.242 DIST= 2.221 AU
MARS-BATSE DISTANCE = 332246592. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 256.64 SECS.
CROSSING TIME AT MARS IS 65083. S. OR 18:04:42 +/- 191.08 SECONDS

BATSE BURST TRIGGER

NO.: 7142

TIME: TJD=1091 SECONDS=64826

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.7 AZIMUTH=261.7 ERROR=1.2 DEGREES

COMMENTS:

GRB. STRONG SPIKE WITH LOTS OF STRUCTURE. DURATION APPROX. = 1.1 SEC.
VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7142	981005	11091	64826	25000	275	+44	1.1

Date: Feb 15 '00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

N/A

- ☐ Jim Schmidling's stat file correction applied?
- ☐ Final ephemeris used?
- ☐ Final, CDROM data used?
- ☐ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vwx@boccl, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

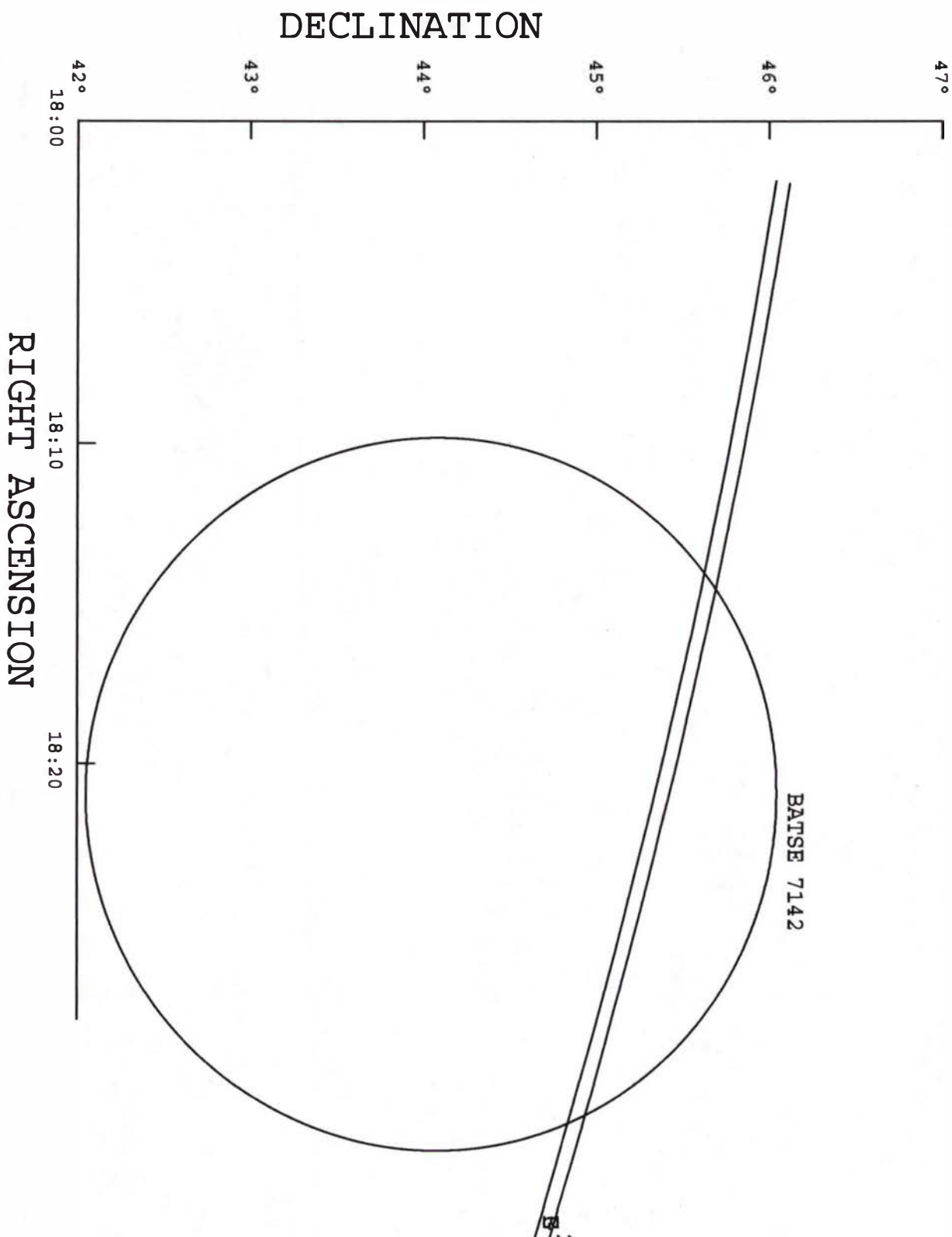
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF OCT 5, 1998 18:00

15 / 2 / 0



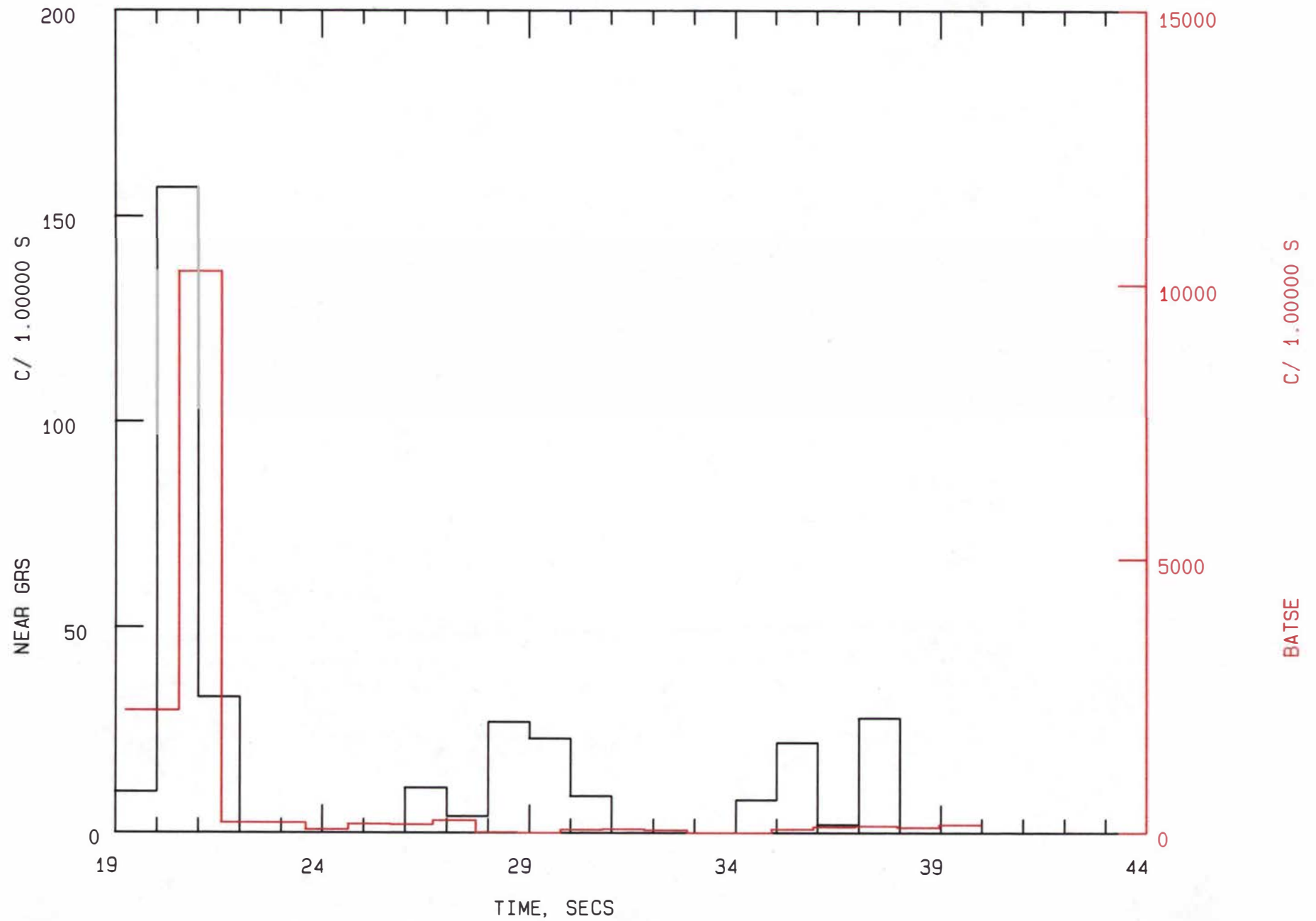
NEAR GRS -BATSE

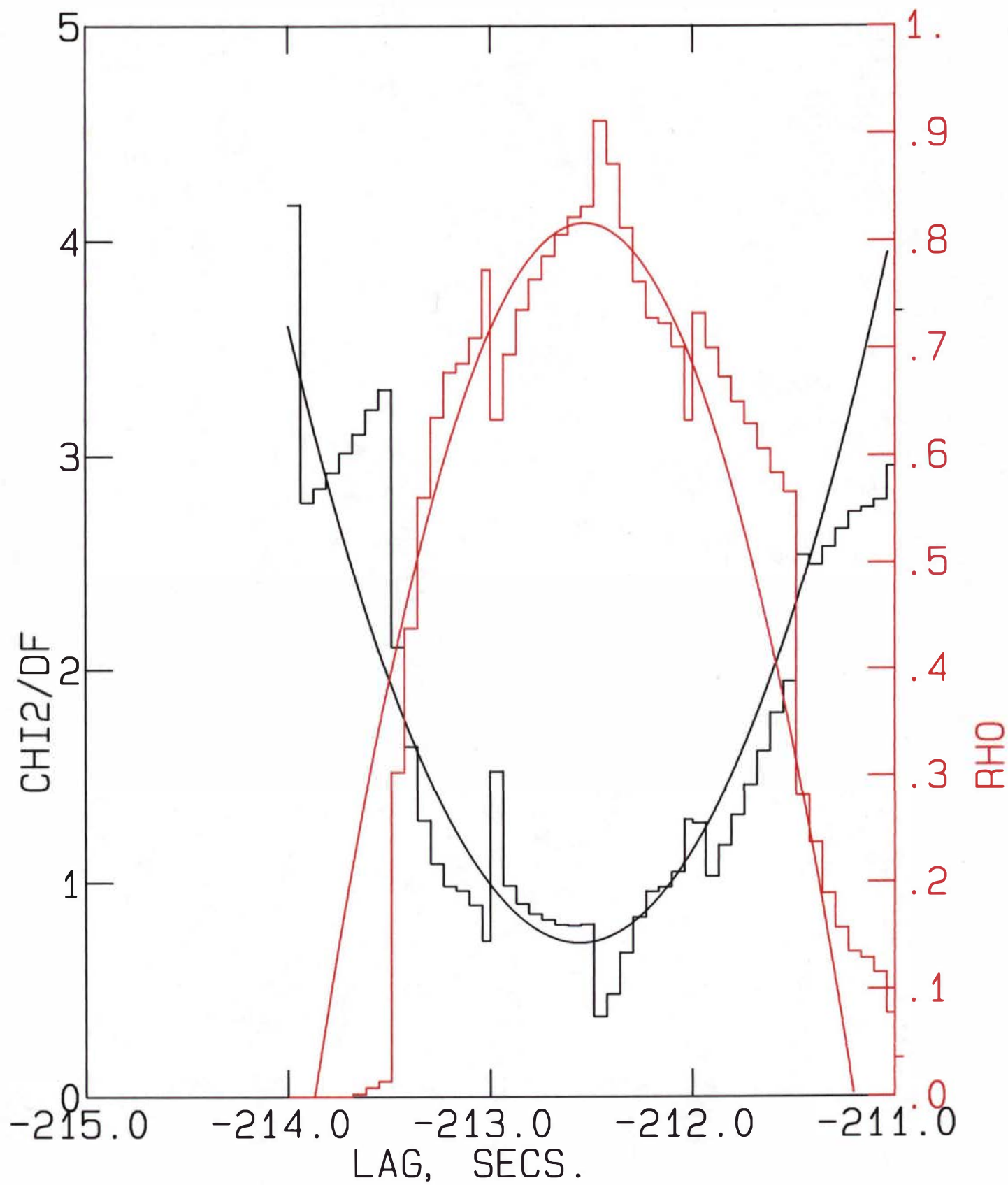
CORRELATION

05/10/98

64514.262

15/ 2/ 0





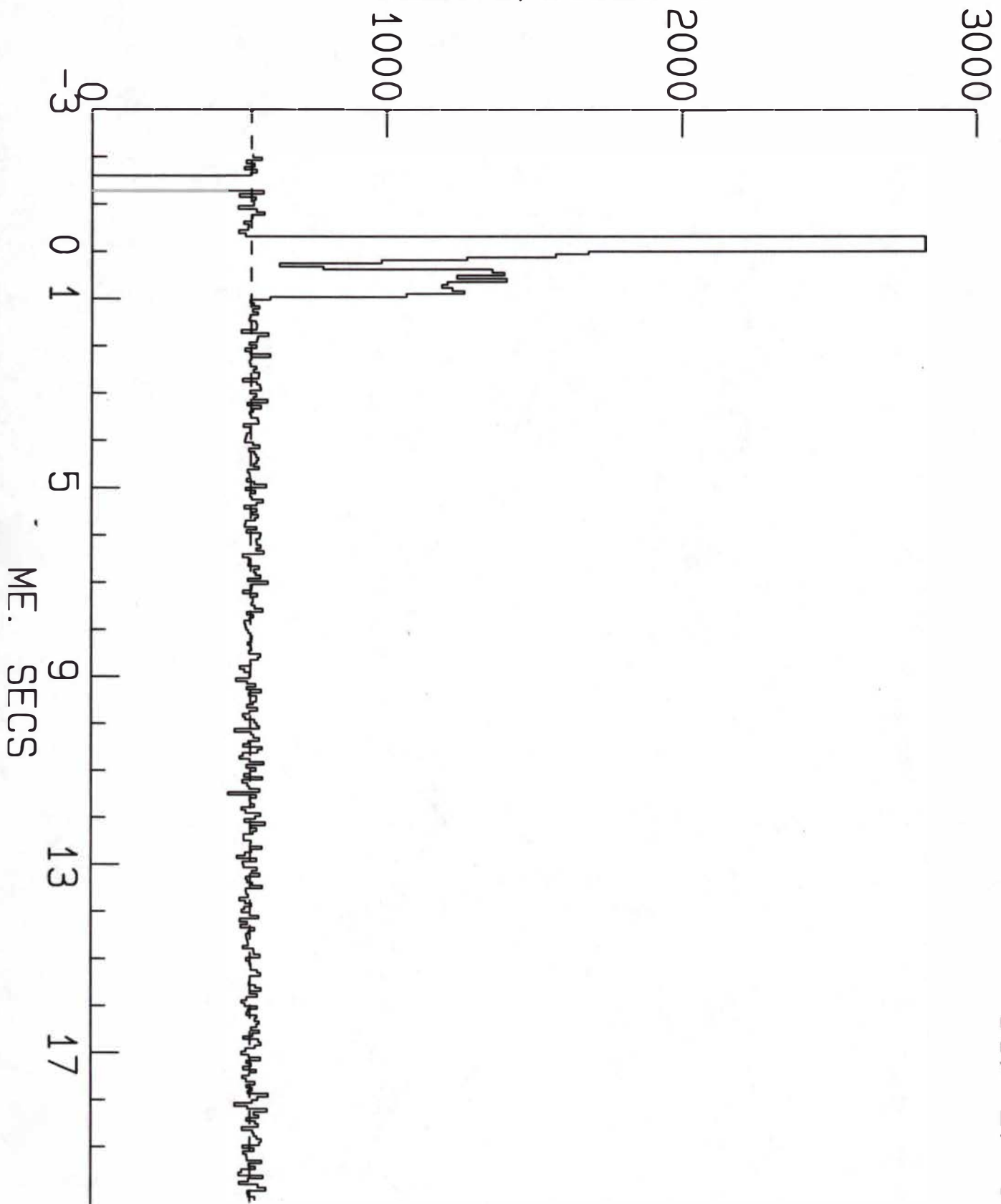
BATSE

05/10/98

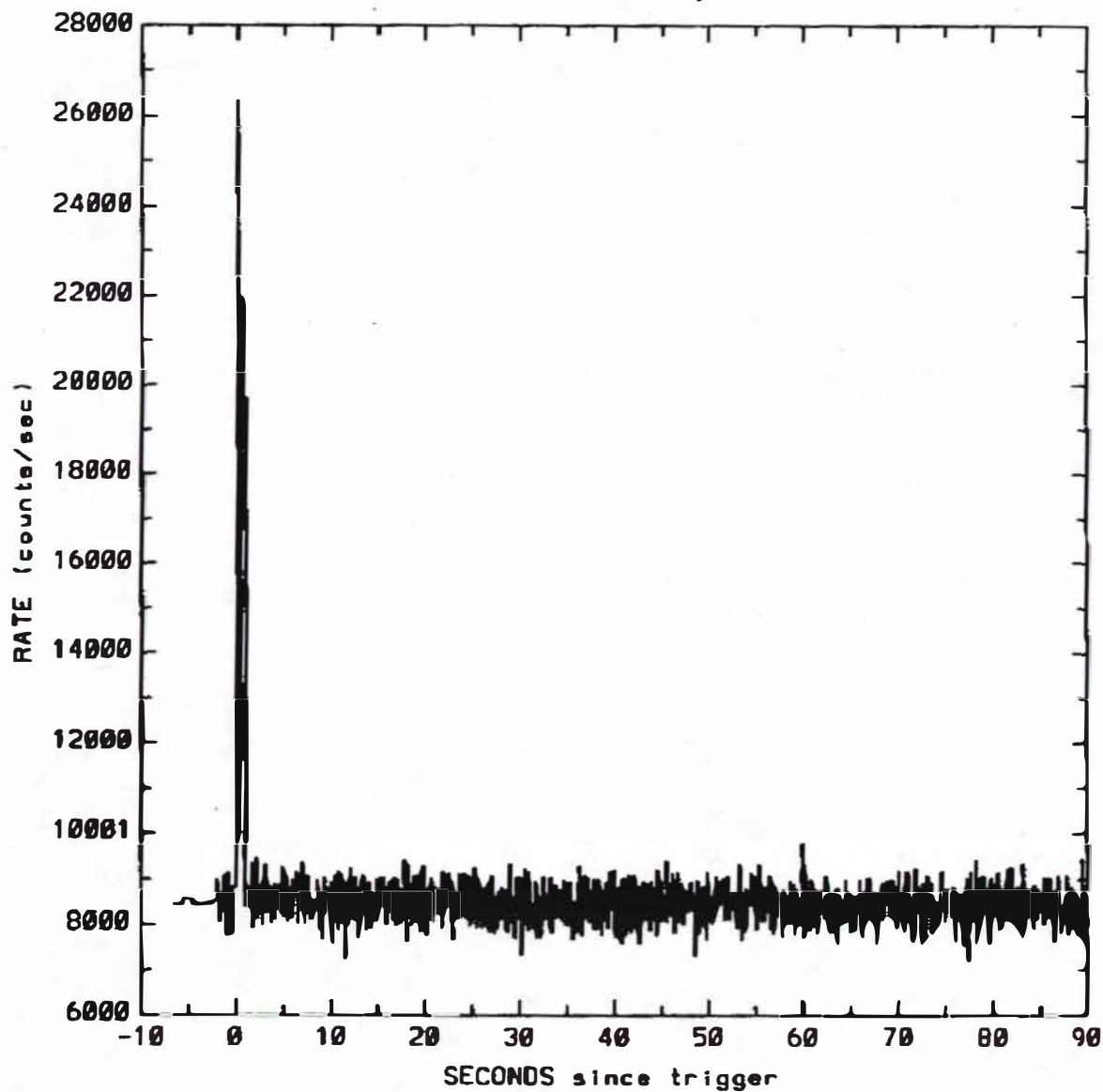
64826.529

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7142



9-FEB-2000 09:08.45

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7142

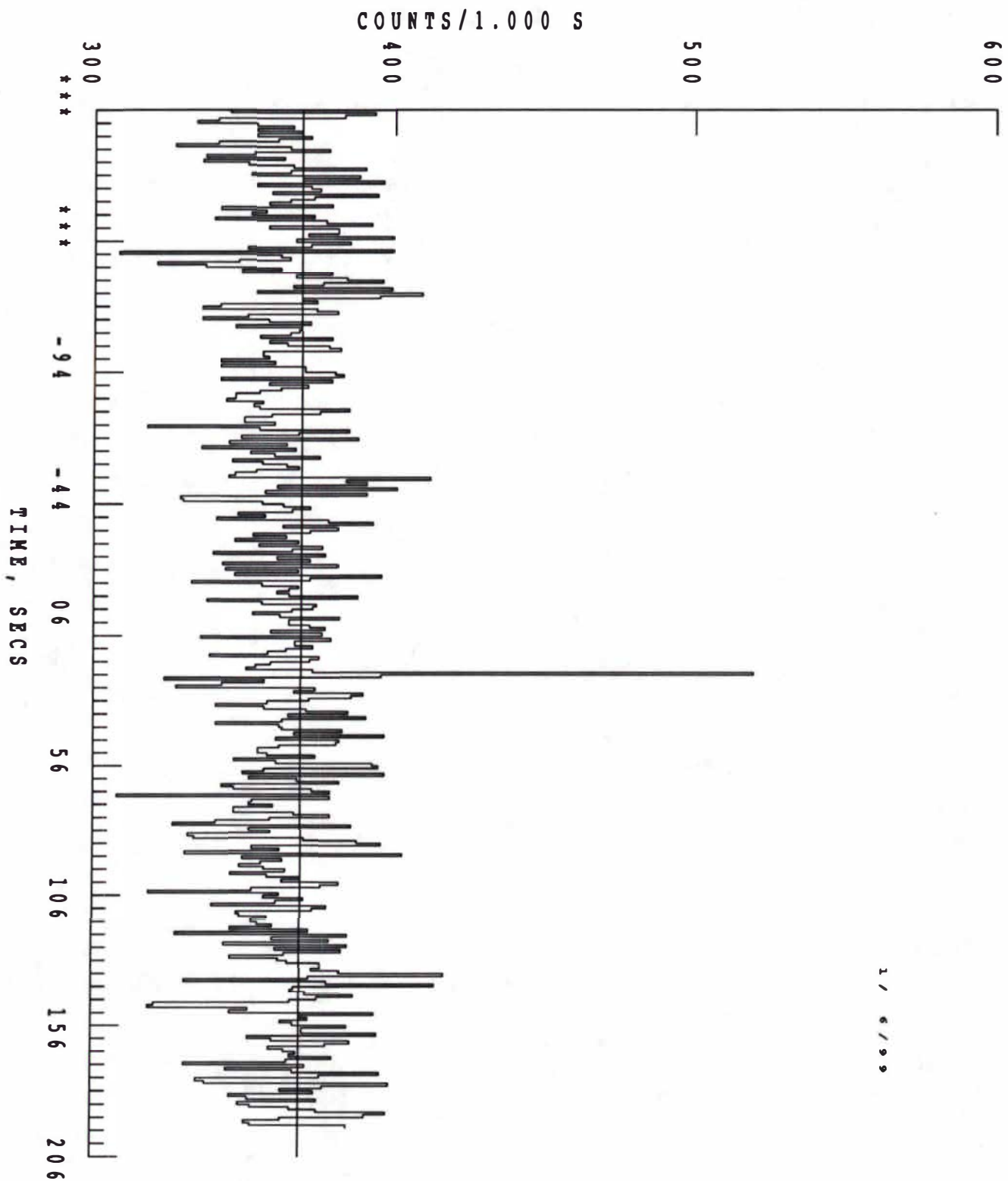
Trigger Time:
11091 / 64826.529Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
(0.064 seconds)Detectors [7..8],
76--32--Discriminators:
[3 . 4]Quality Mask:
B0ISP1

NEAR

05/10/98

64514.262

100-1000 keV



BATSE BURST# 7142

ULYSSES RT

6 / 10 / 98

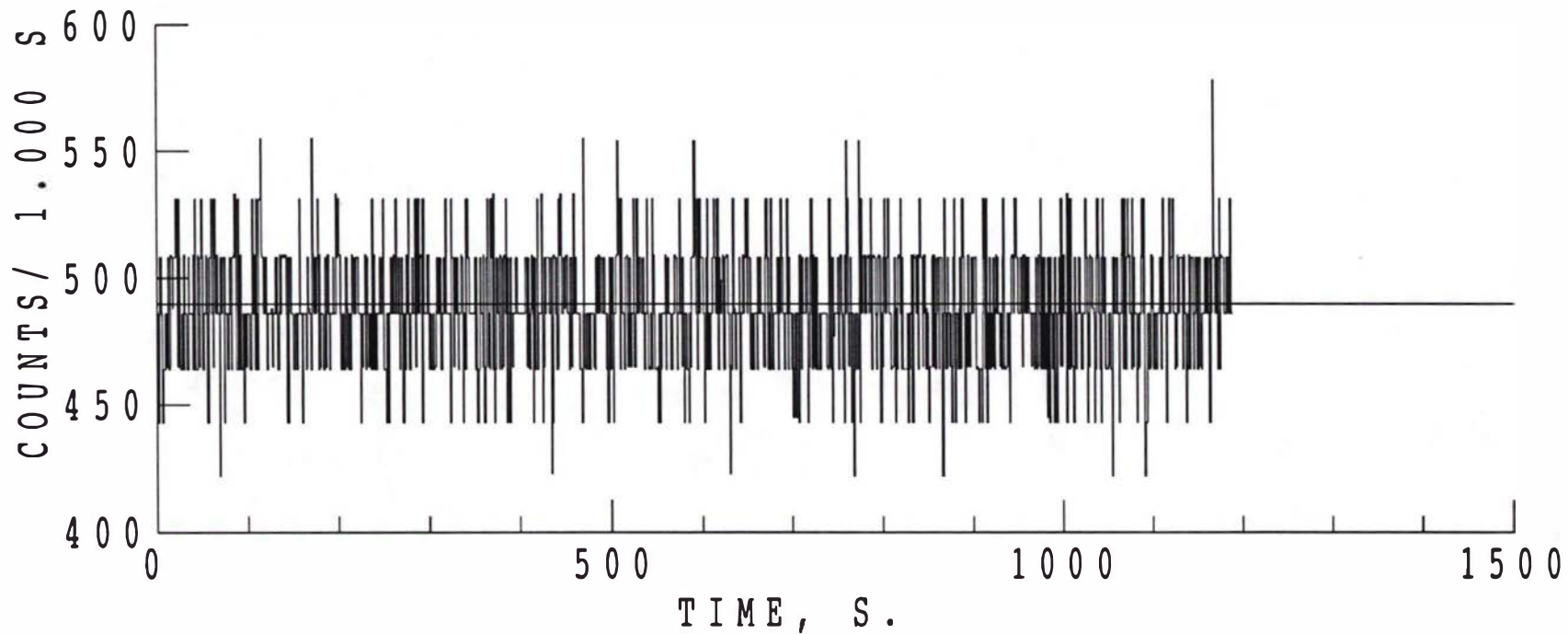
5 / 10 / 98 65052.145 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

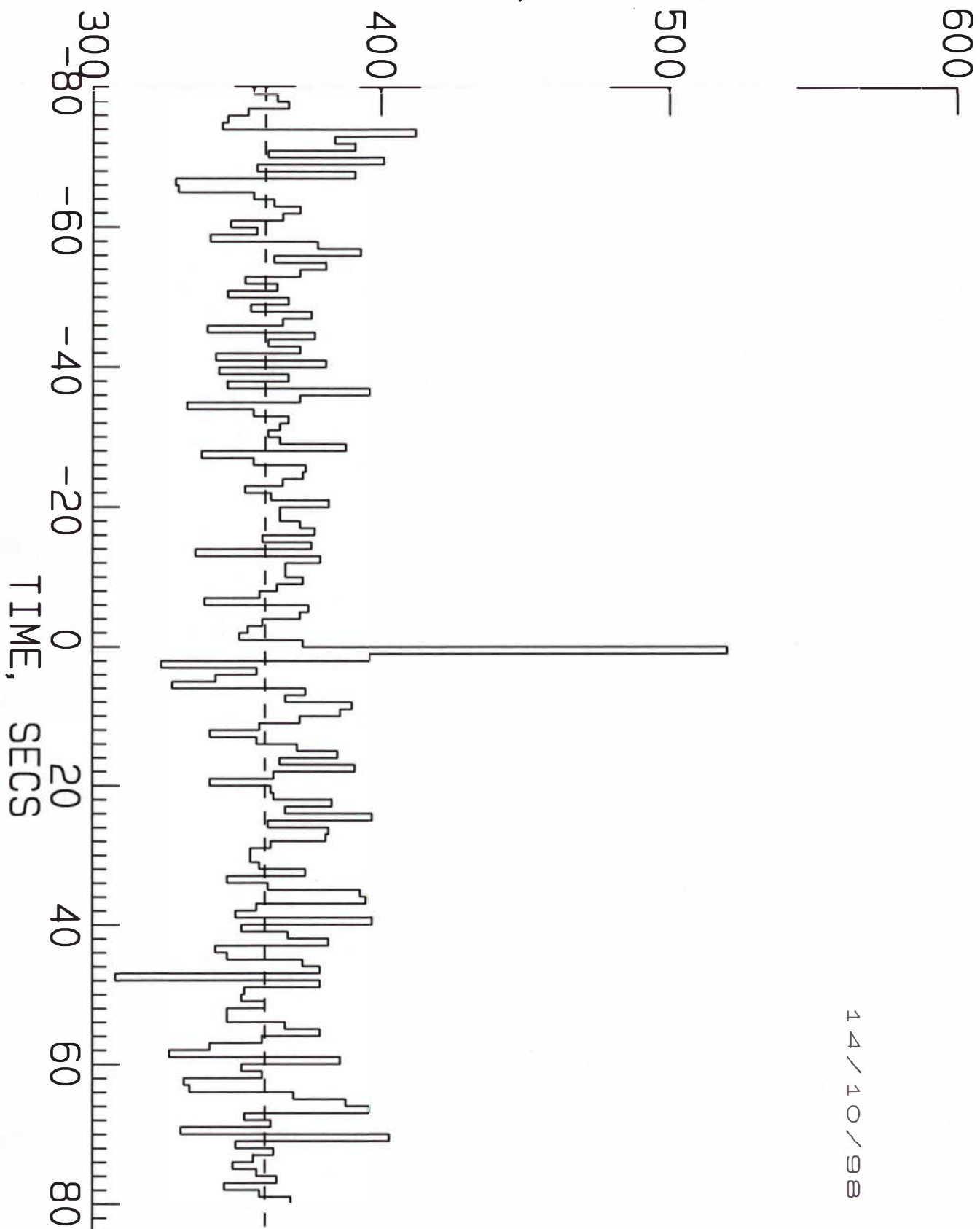


NEAR

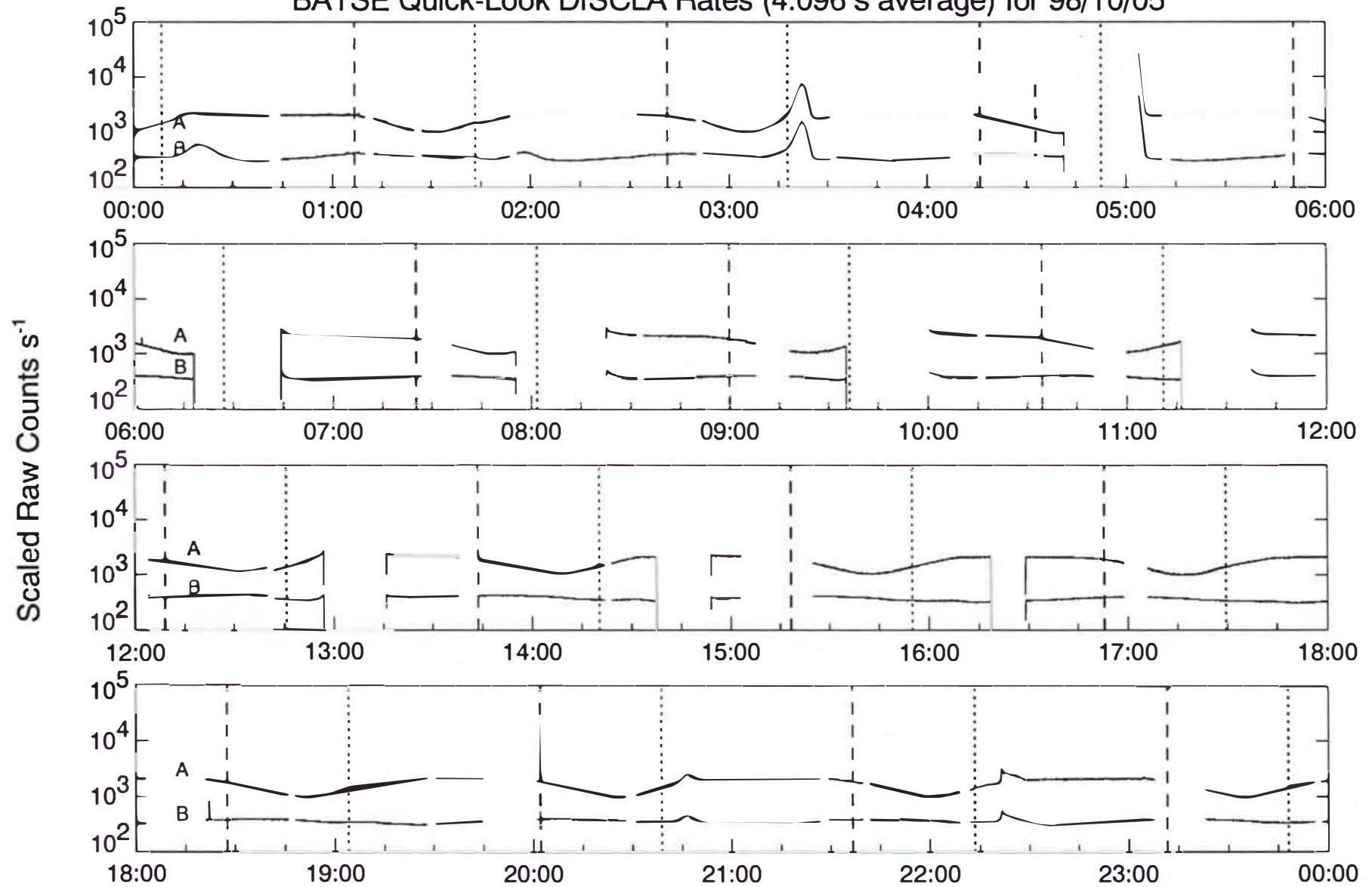
05/10/98 64536.818

100-1000 keV

COUNTS/1.000 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/05

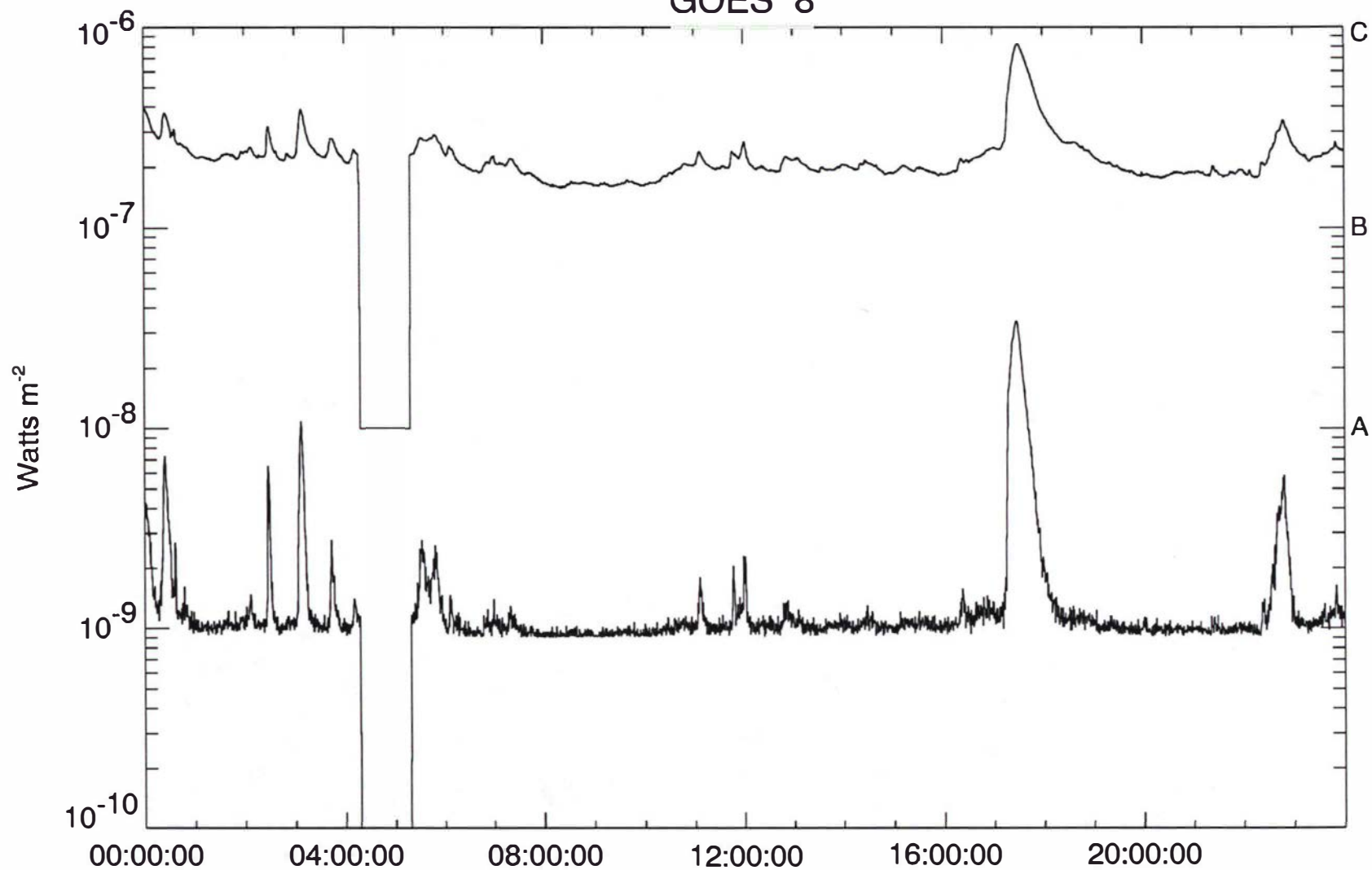


Current Time: 98/10/09, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/05, 0000:00

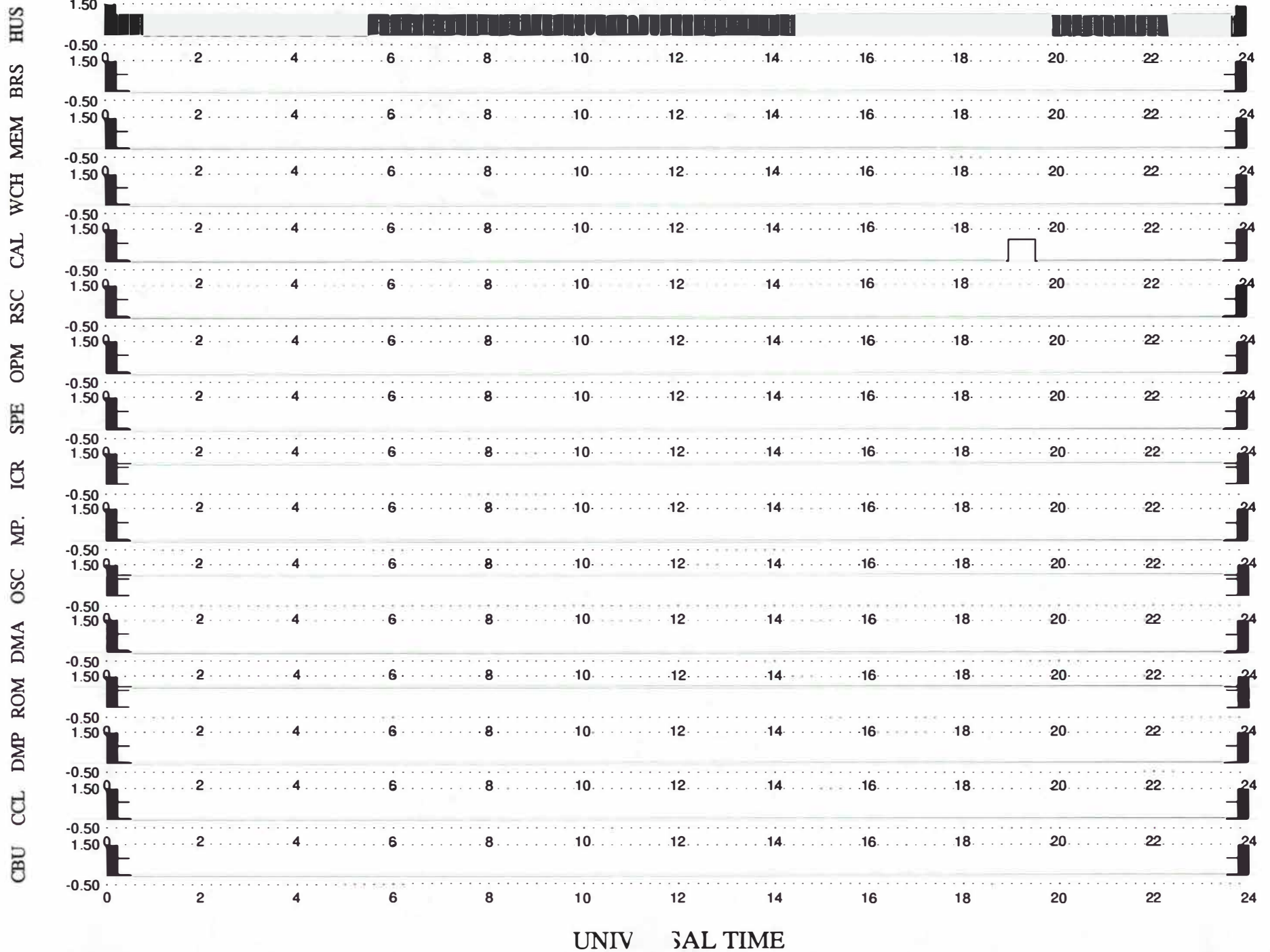
Plot created: 98/10/09, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

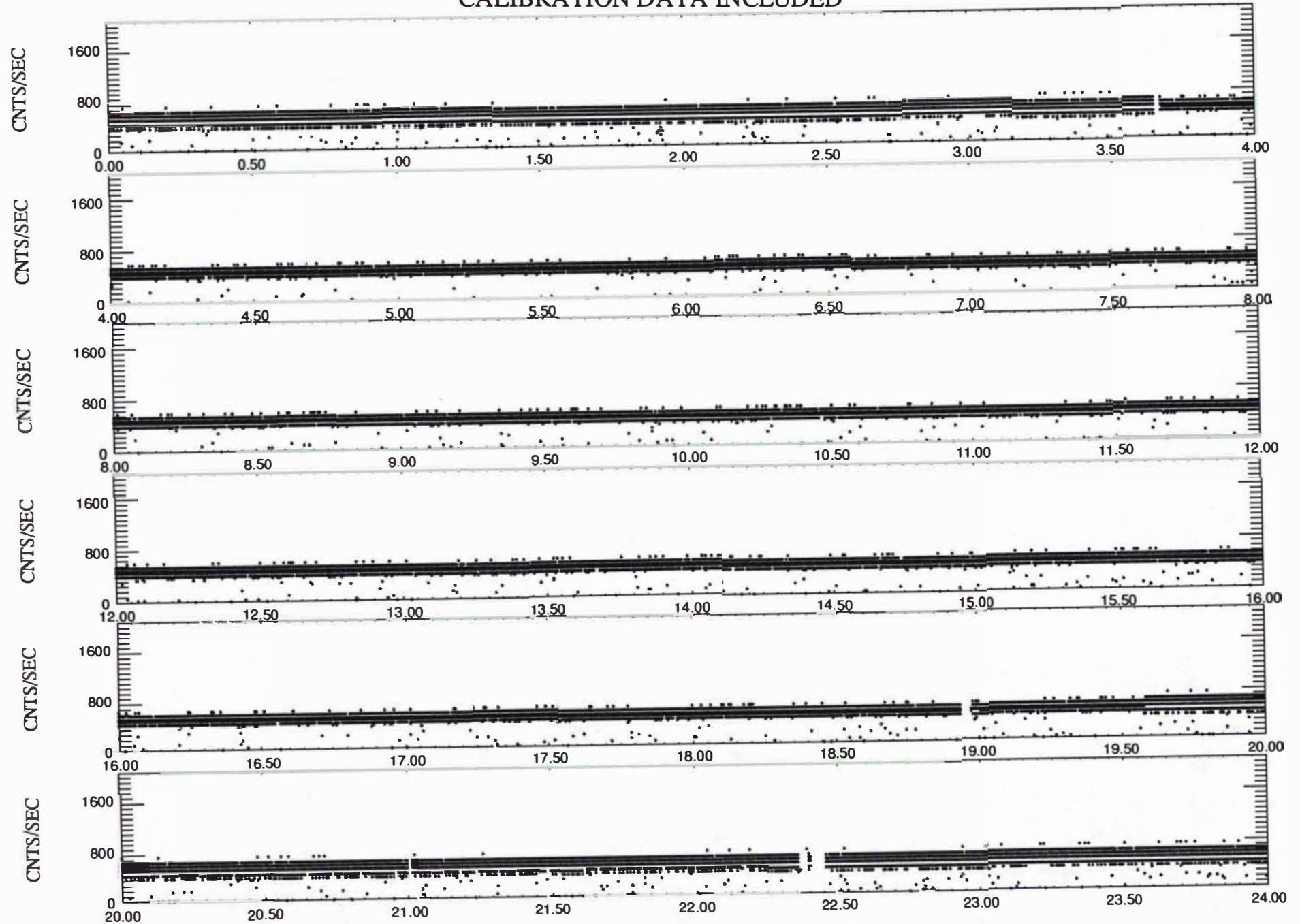
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

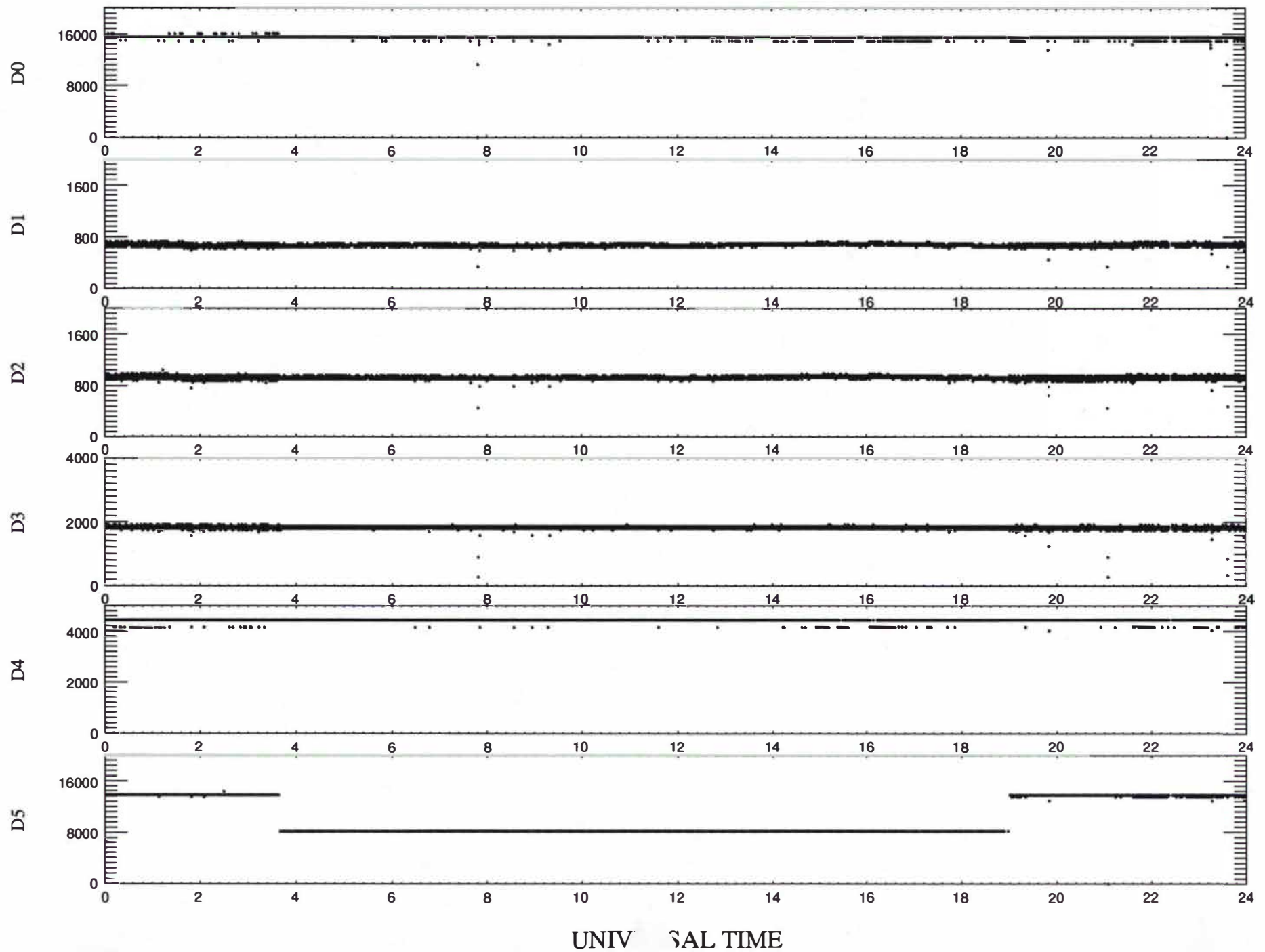
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From HENZE@fender.msfc.nasa.gov Wed Oct 7 14:46:01 1998
Date: Wed, 7 Oct 1998 16:41:47 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@lhev.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7143

Oct 6

TIME: TJD=1092 SECONDS=57401

TYPE: PARTICL

SOLAR FLARE TRIGGER SIGNAL:N

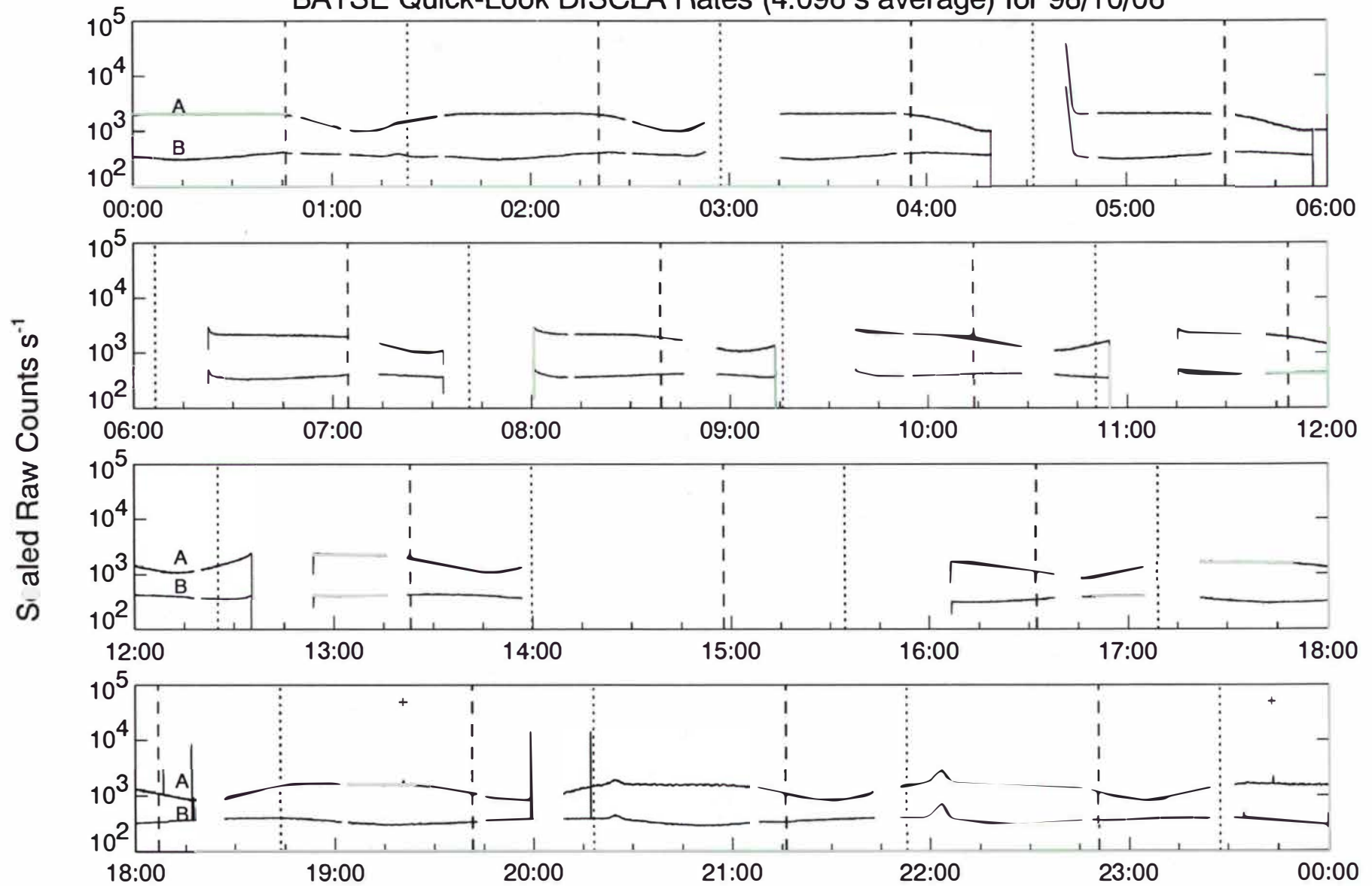
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/06

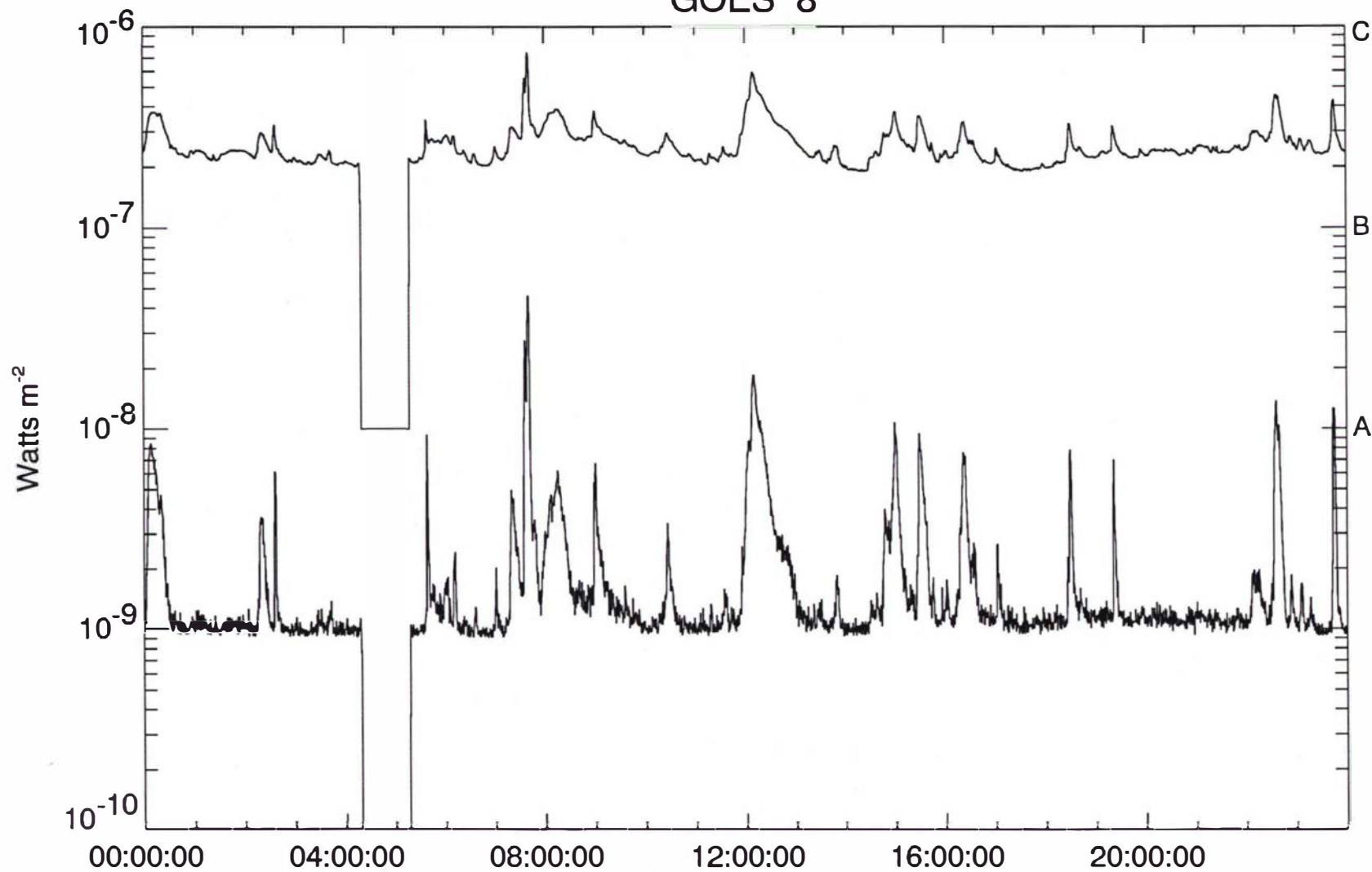


Current Time: 98/10/10, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/06, 0000:00

Plot created: 98/10/10, 1007

Channel

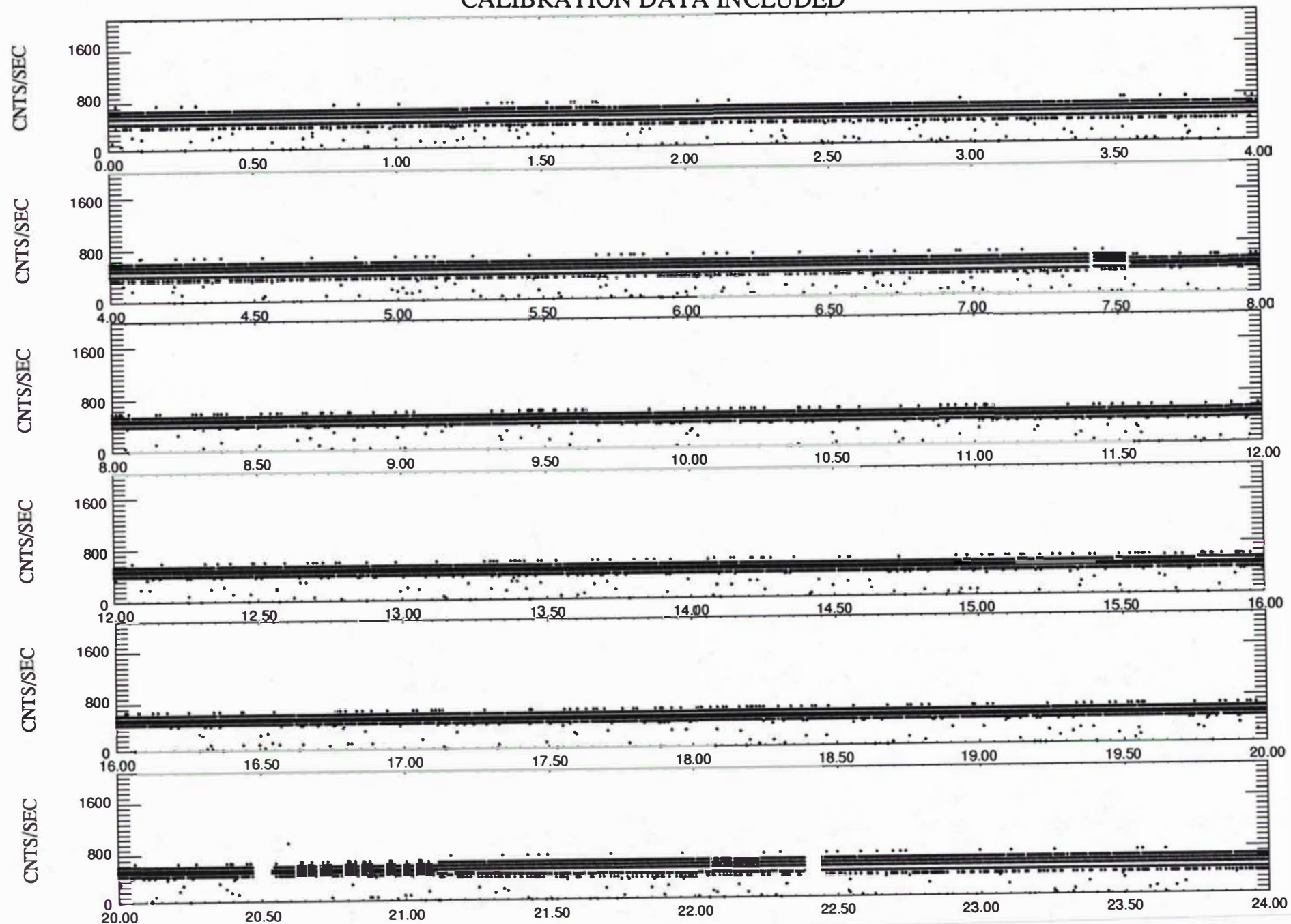
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

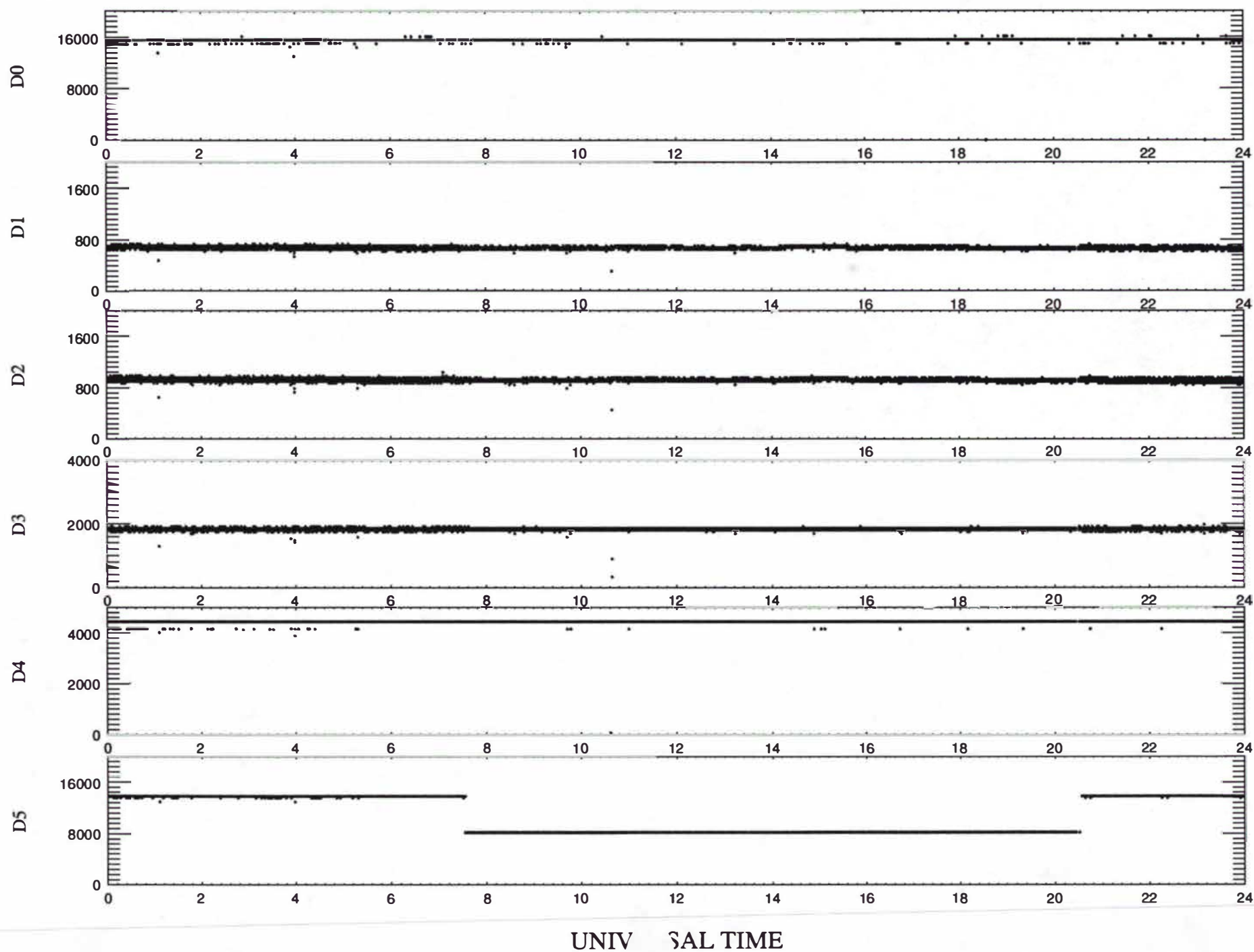
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From WOODSP@fender.msfc.nasa.gov Fri Oct 9 13:00:25 1998

From: WOODSP@fender.msfc.nasa.gov

Date: Fri, 9 Oct 1998 14:55:38 -0500 (CDT)

To: burst@compel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@lhev.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7144

TIME: TJD=1093 SECONDS=14211

TYPE: SAA

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From WOODSP@fender.msfc.nasa.gov Fri Oct 9 13:00:46 1998

From: WOODSP@fender.msfc.nasa.gov

Date: Fri, 9 Oct 1998 14:57:52 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7145

TIME: TJD=1093 SECONDS=45963

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142.5 AZIMUTH=39.5 ERROR=0.5 DEGREES

COMMENTS:

SOLAR FLARE LASTING ABOUT 330 SEC. GOES M1.6 FLARE. OPTICAL 1N.
ERUPTIVE PROMINENCE.

From WOODSP@fender.msfc.nasa.gov Fri Oct 9 13:01:19 1998

From: WOODSP@fender.msfc.nasa.gov

Date: Fri, 9 Oct 1998 14:59:32 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7146

TIME: TJD=1093 SECONDS=56103

TYPE: SAA

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

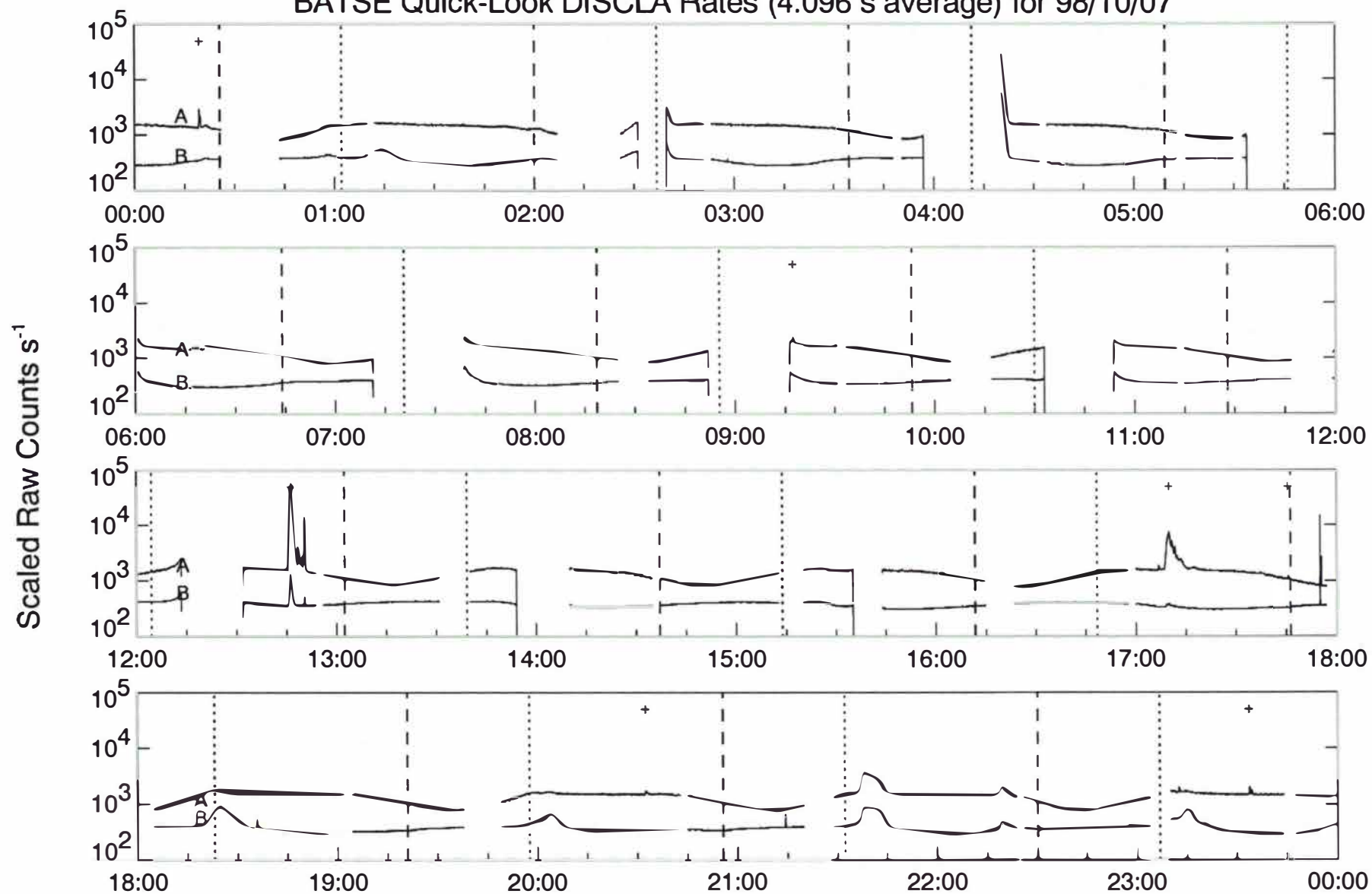
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/07

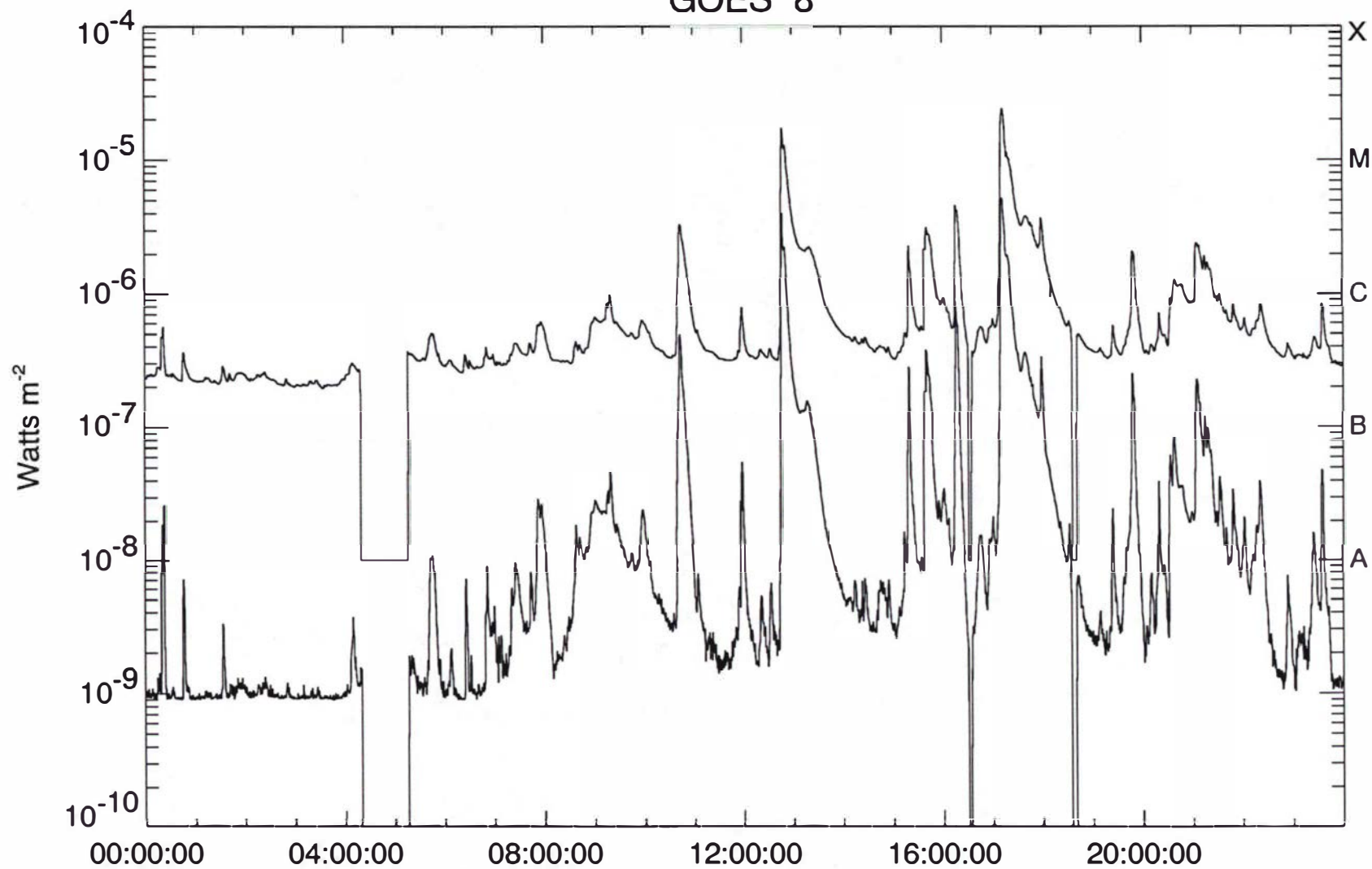


Current Time: 98/10/11, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/07, 0000:00

Plot created: 98/10/11, 1007

Channel

1 (1.0 - 8.0 Angstroms)

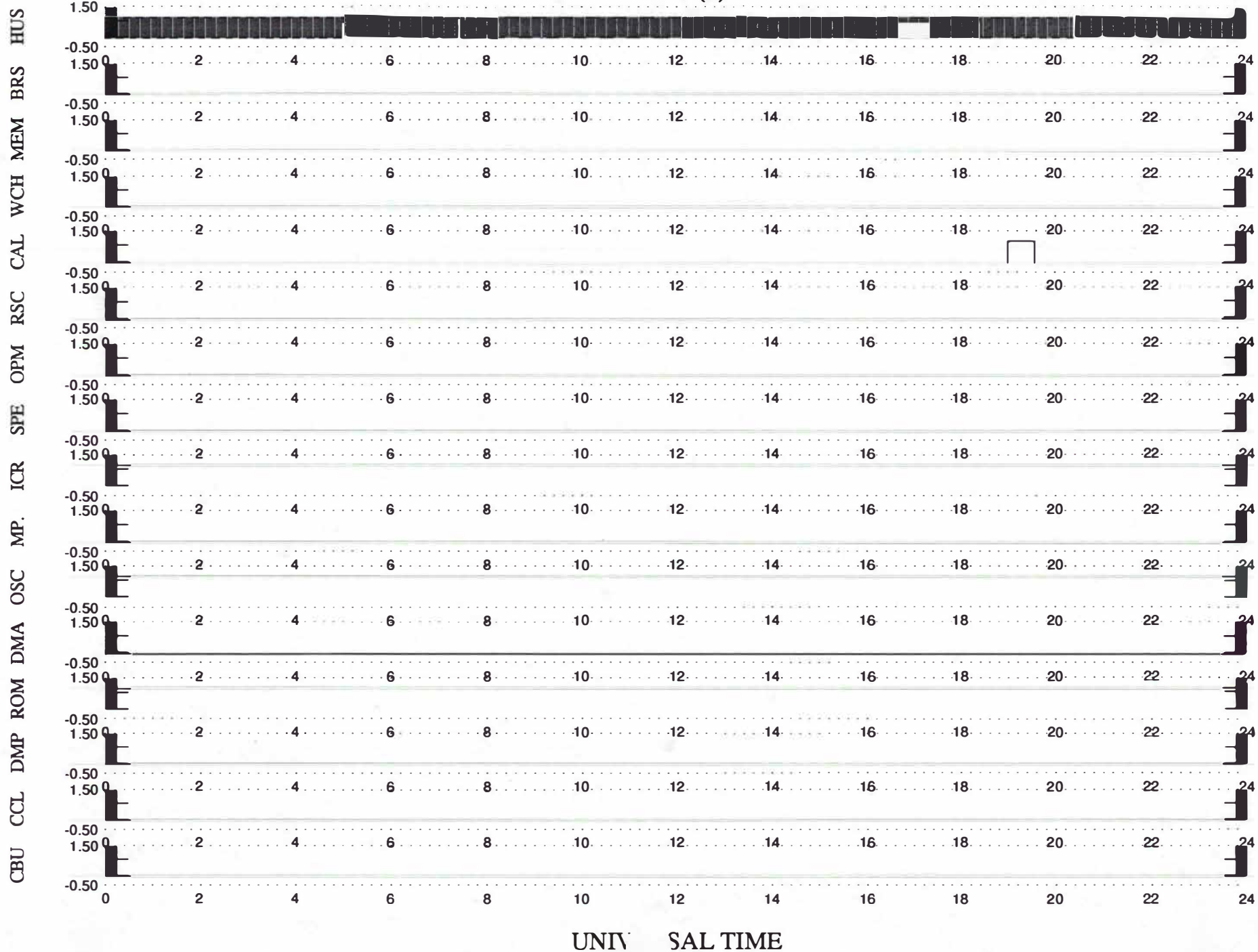
Background not subtracted

2 (0.5 - 4.0 Angstroms)

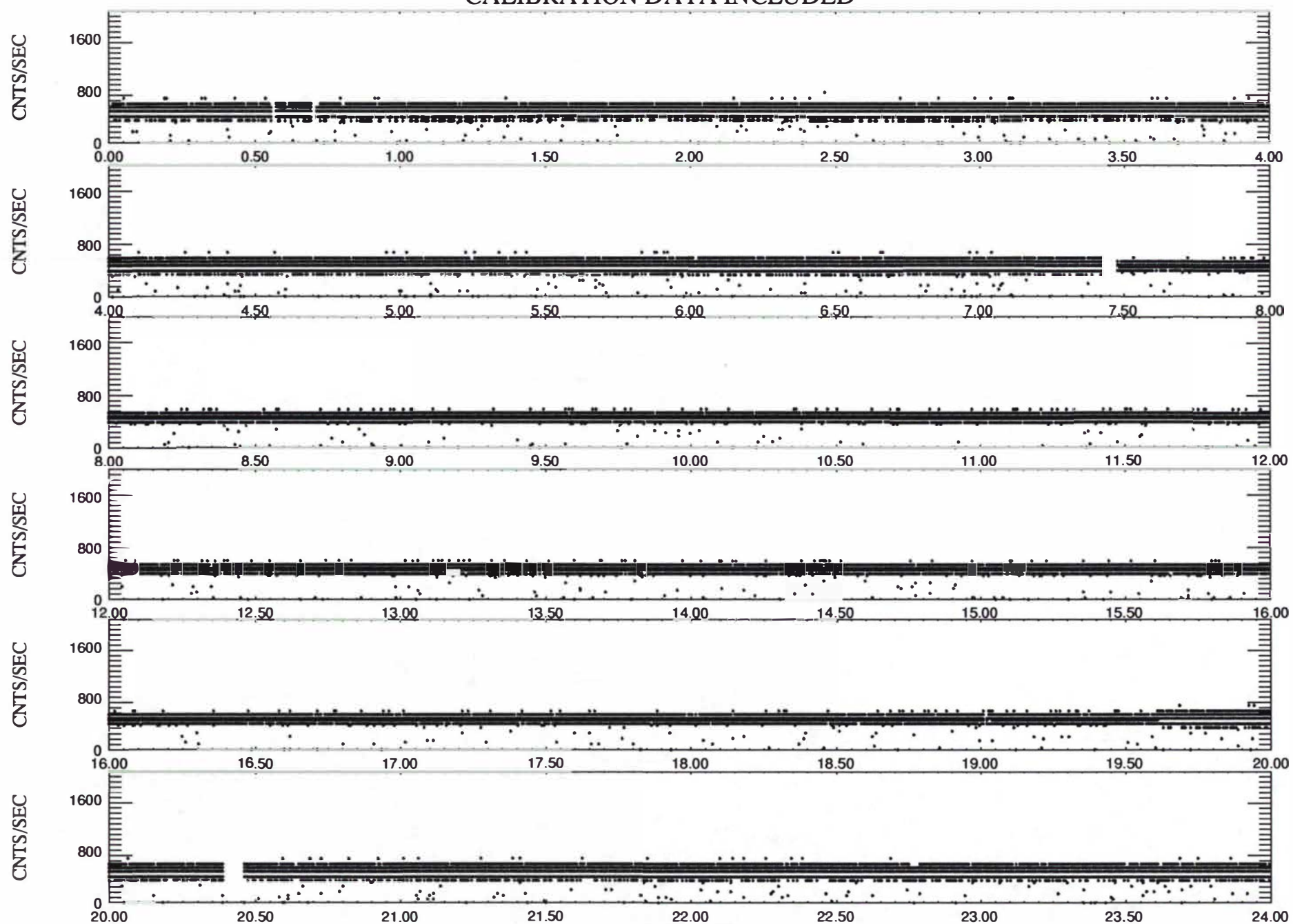
Background not subtracted

Sample average = 10

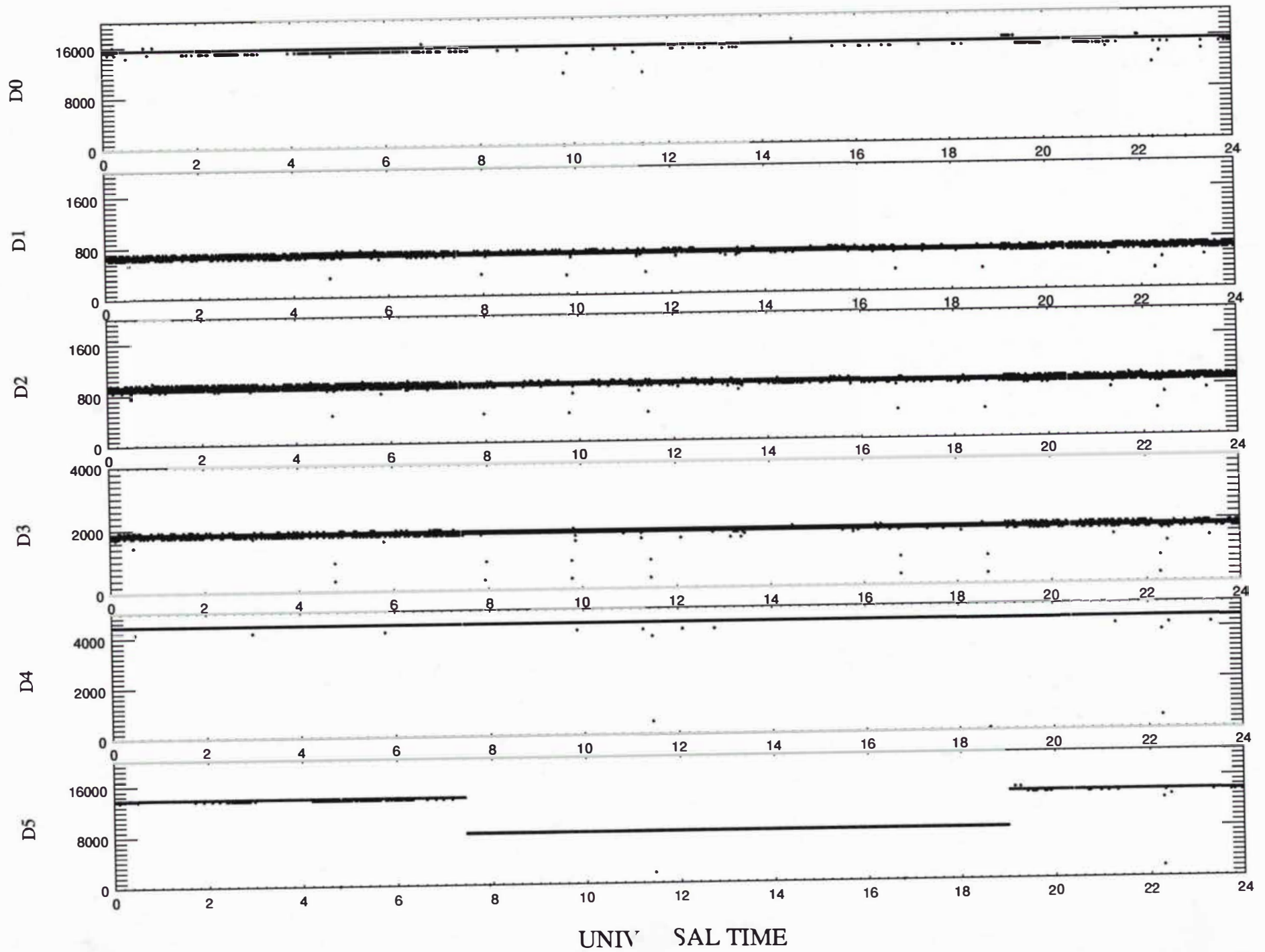
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From cline@apache.gsfc.nasa.gov Tue Oct 13 06:46 PDT 1998
Mime-Version: 1.0
Date: Tue, 13 Oct 1998 09:51:54 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: events in early October
Cc: palmer@lheamail.gsfc.nasa.gov, Butterworth@lheavx.gsfc.nasa.gov,
scott@rosserv.gsfc.nasa.gov

Dear Kevin

The auto-Konus events, since the last time I reported, are an obvious GRB on Oct. 8 at 30767.822 UT, a complex but narrow GRB/SGR candidate on Oct. 9 at 20735.781 UT, and a clear SGR on Oct 13 at 01910.530 UT.

I haven't seen anything from NEAR in some time, but I hear it is turned ON.

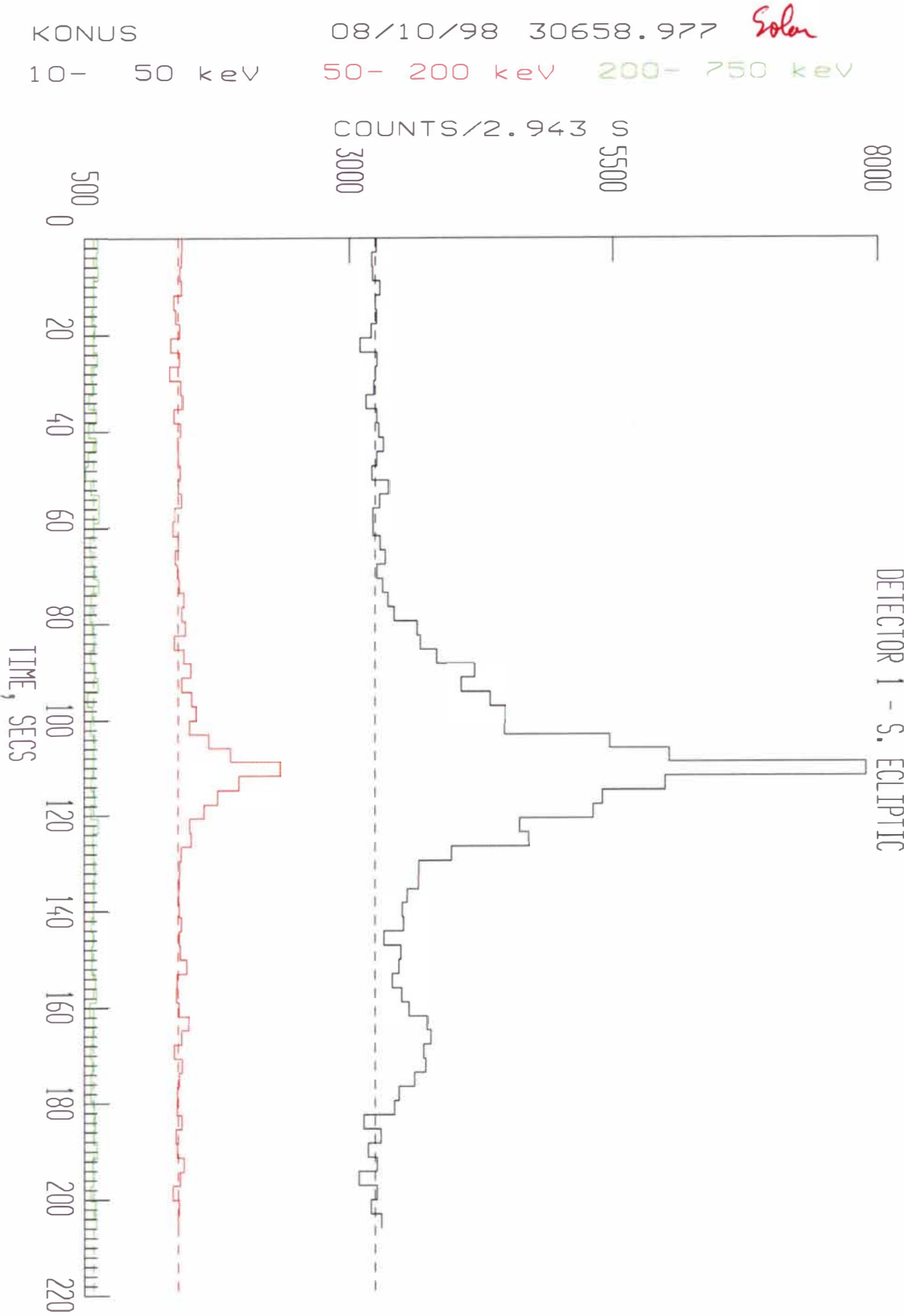
TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

08:32:47

13/12/2012

DETECTOR 1 - S. ECLIPIC



KONUS

08/10/98

30658.977

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.943 S

10400

7900

5400

2900

400

0

20

40

60

80

100

120

140

160

180

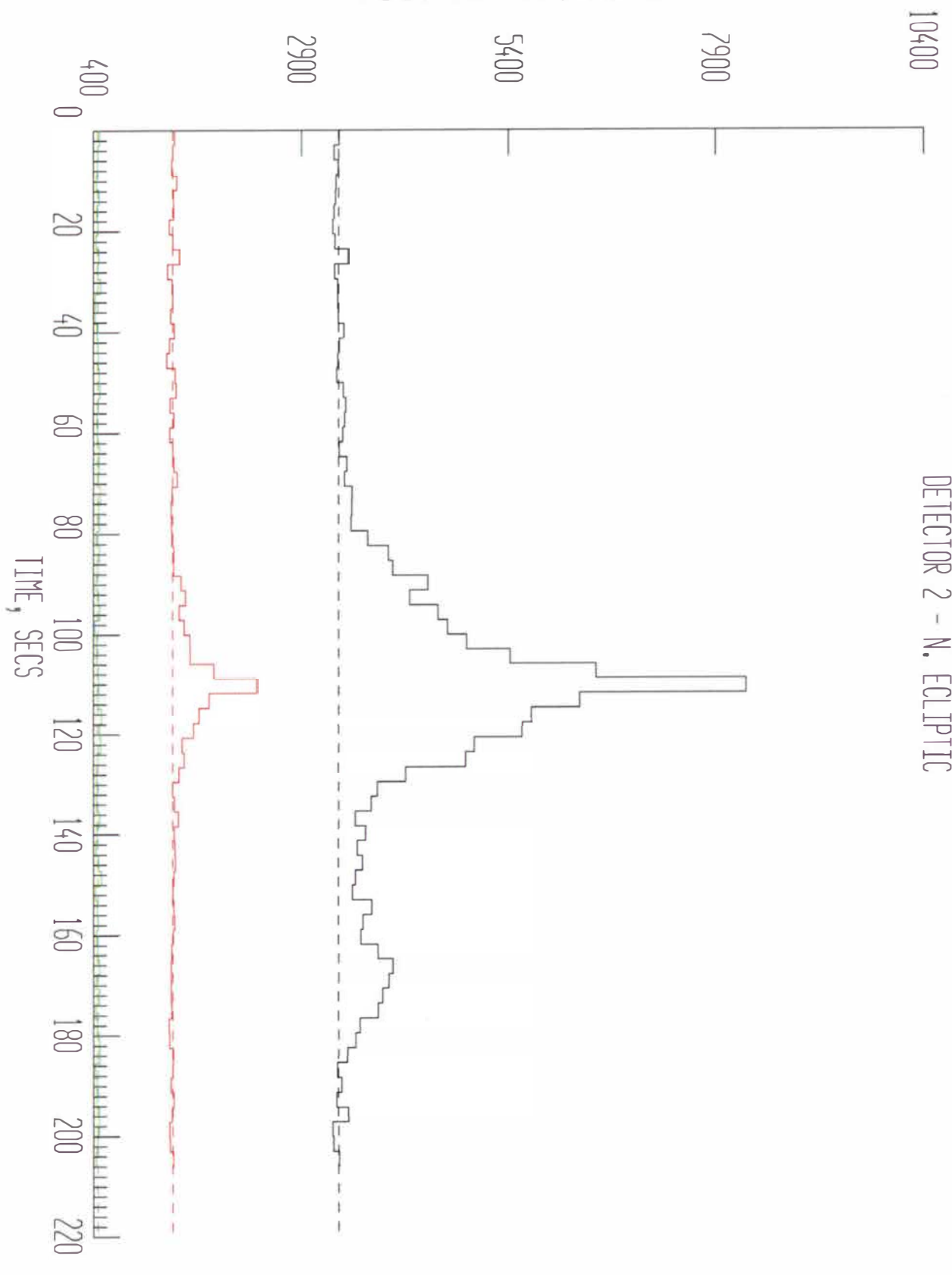
200

220

TIME, SECS

DETECTOR 2 - N. ECLIPIC

13/12/2012



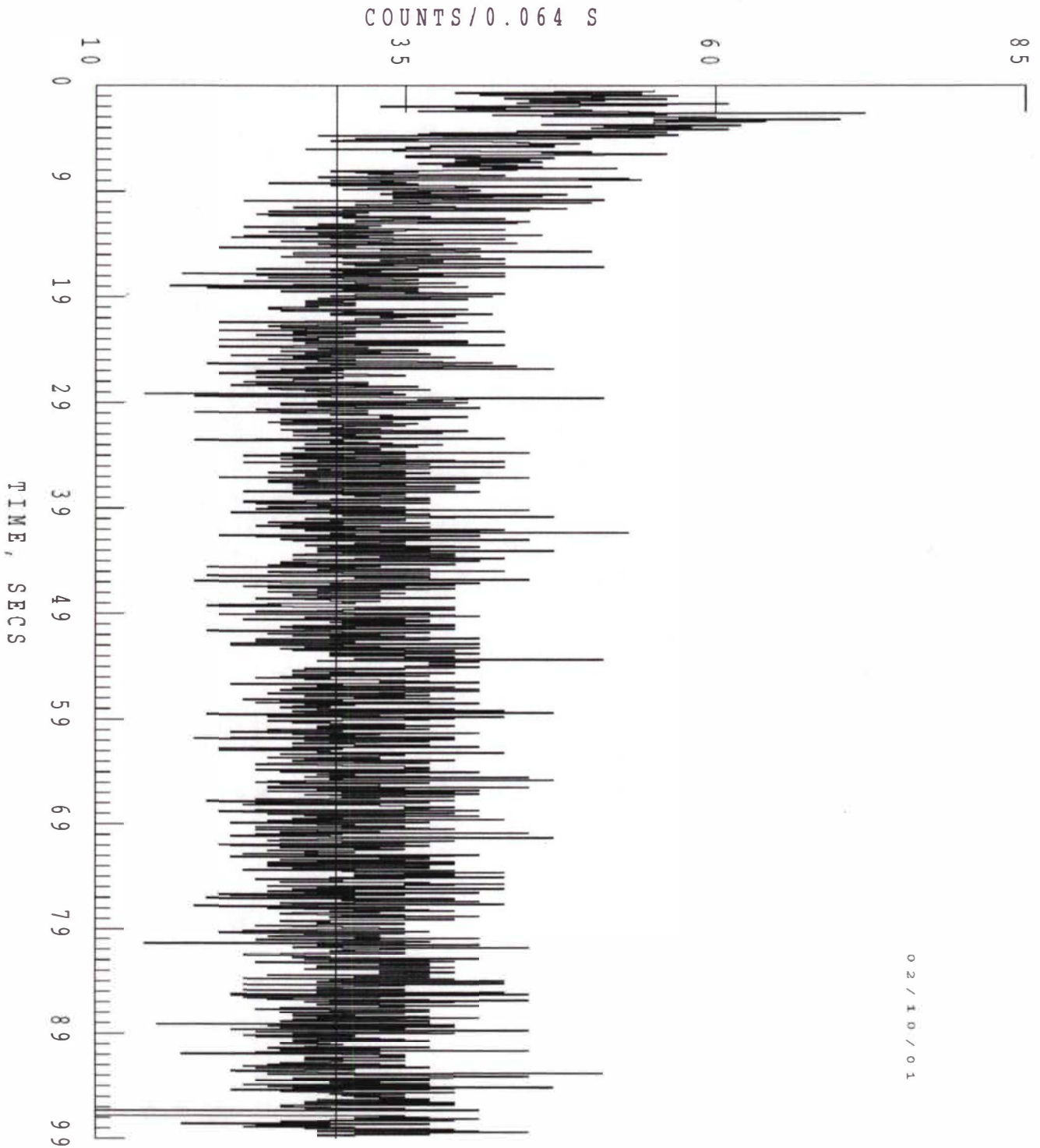
KONUS1

08/10/98

30767.822

50 - 200 keV

Solar



KONUS1 19981008 30767

ULYSSES RT

02/10/01

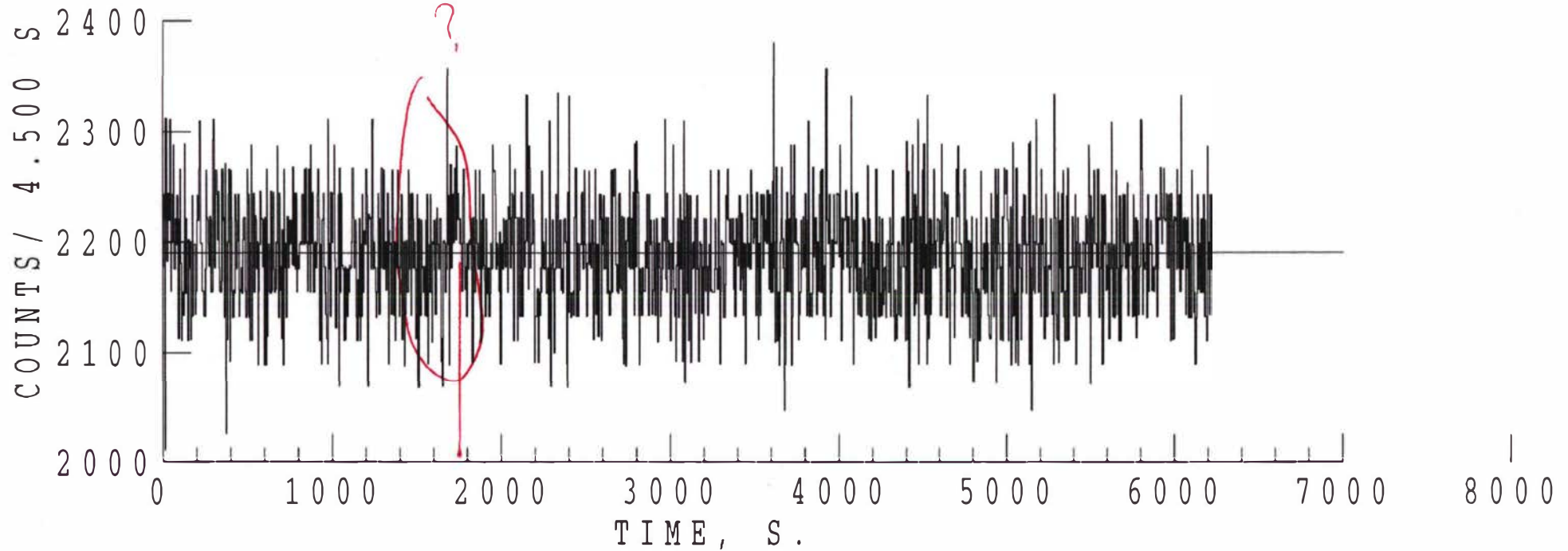
08/10/98 27648.441 s

0.500 S INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From khurley@sunspot Tue Oct 13 09:08 PDT 1998
Date: Tue, 13 Oct 1998 09:11:55 -0700
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981008

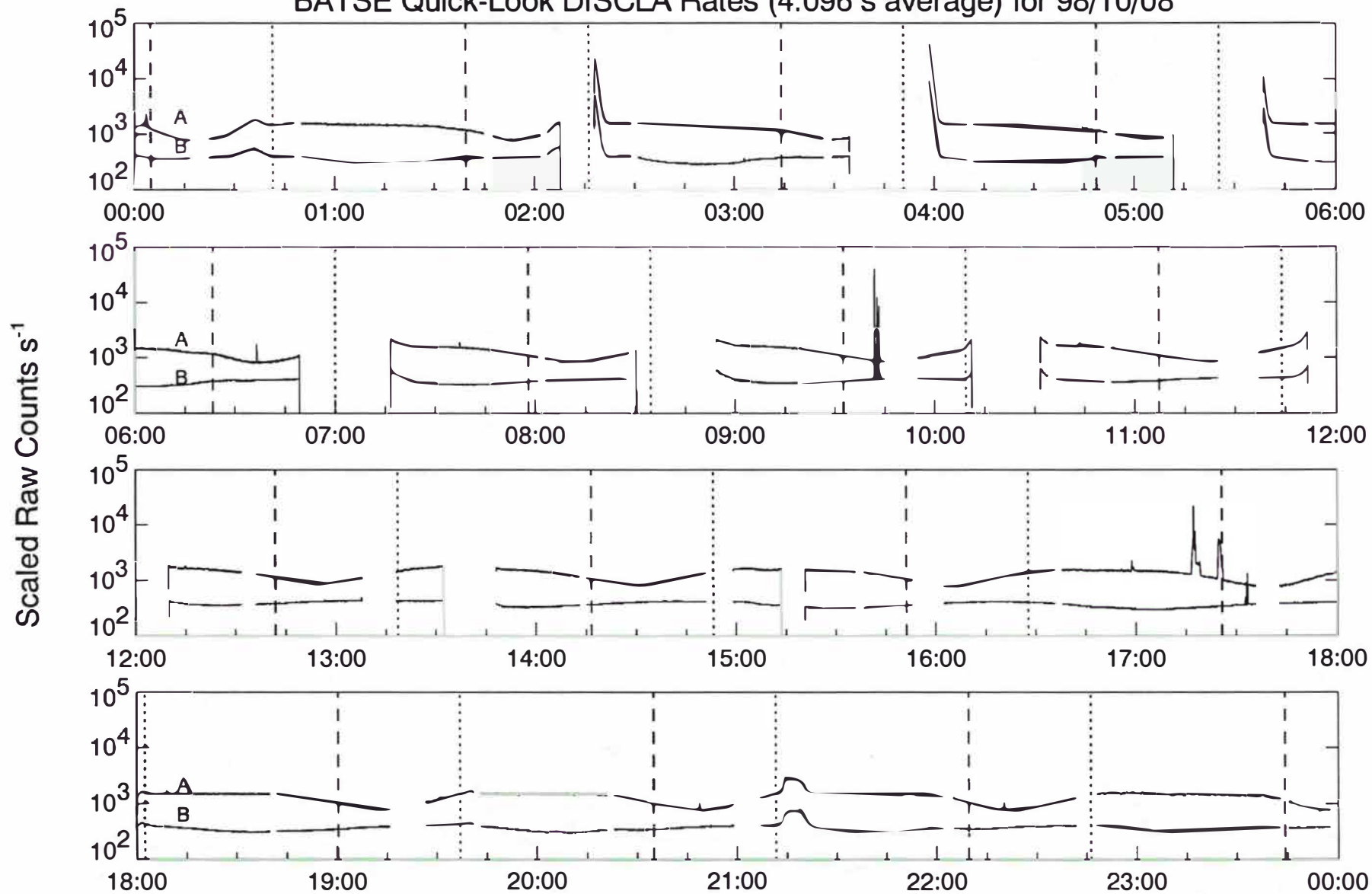
ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

October 8 1998 06:06 Ulysses time; weak, 3 s long

The spacecraft was about 3100 light-seconds from Earth.
Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczyski, mar

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/08

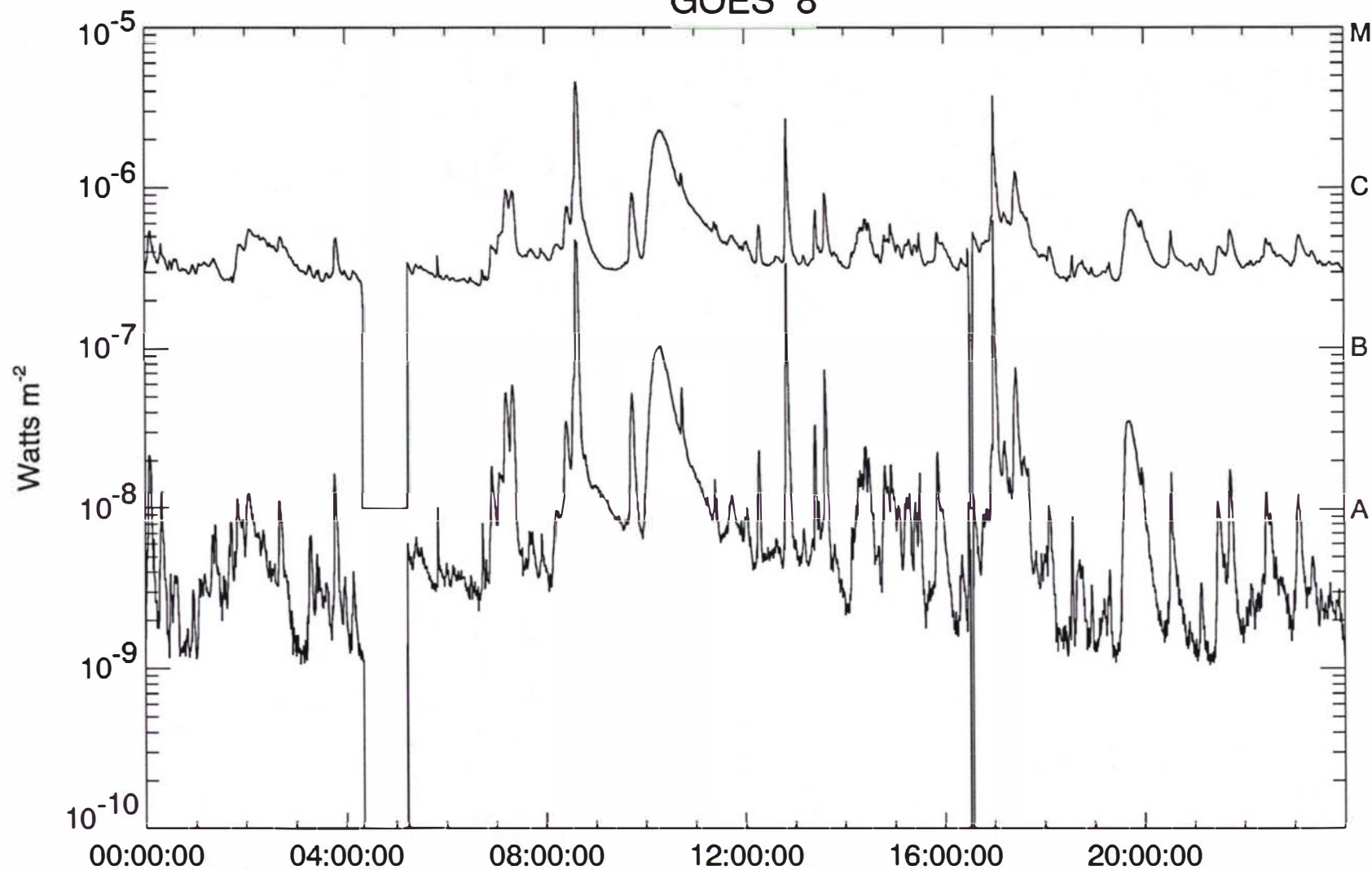


Current Time: 98/10/12, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/08, 0000:00

Plot created: 98/10/12, 1007

Channel 1 (1.0 - 8.0 Angstroms)

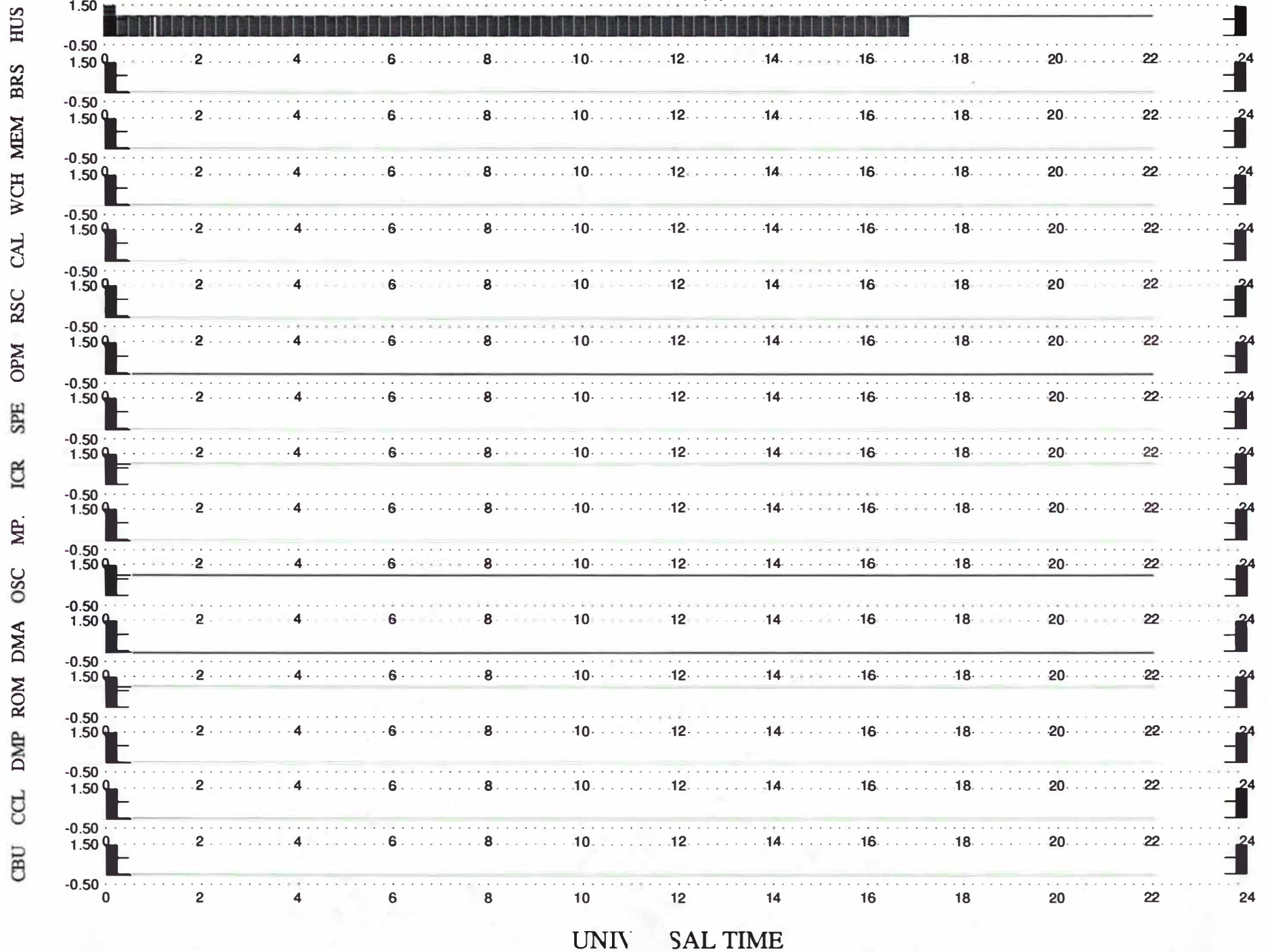
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

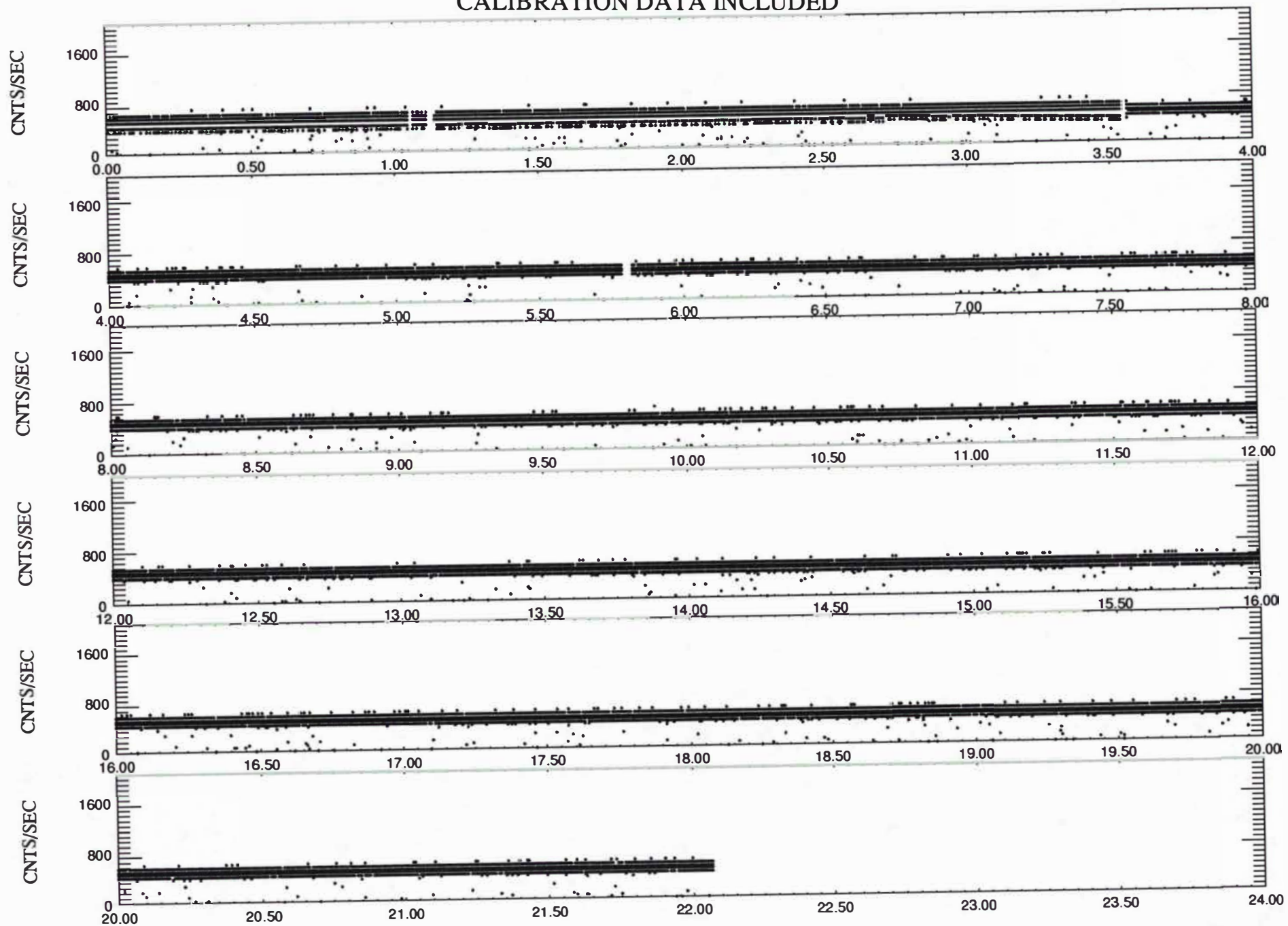
Background not subtracted

Sample average = 10

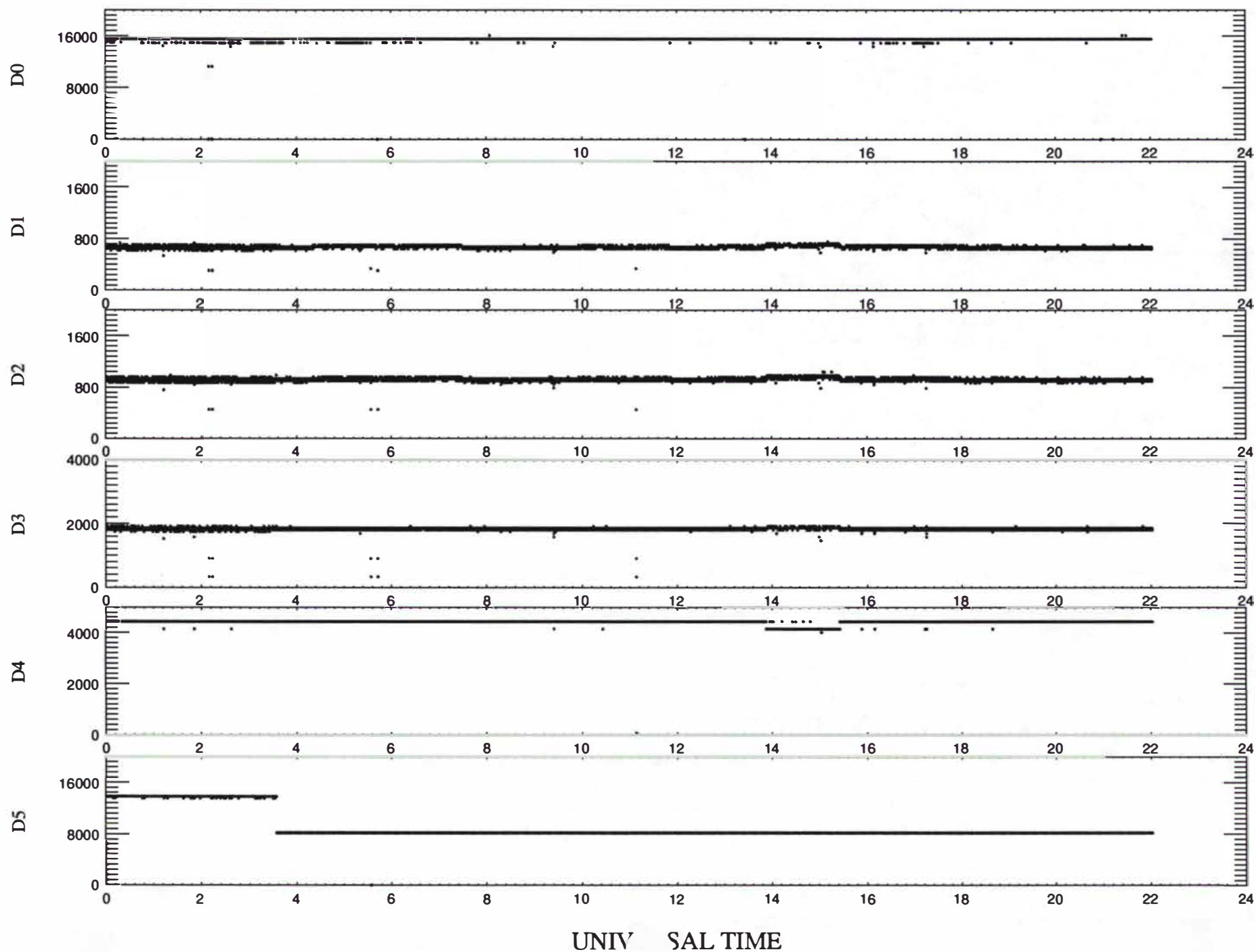
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From RICHARDSON@fender.msfc.nasa.gov Tue Oct 13 12:45:15 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA08335; Tue, 13 Oct 1998 12:45:14 -0700
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA23503; Tue, 13 Oct 1998 12:45:12 -0700
Date: Tue, 13 Oct 1998 14:37:23 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981013143723.20208d50@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7147
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7147
EVENT OF 1998 OCT 9 DAY OF YEAR=282
EVENT CROSSING TIME AT BATSE : 4110. S. OR 01:08:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 188.000 37.000
BATSE PEAK COUNTING RATE: 3750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/10/ 98 IS:
RA= 163.270 DEC= 0.033 DIST= 6.135 AU
BATSE-ULYSSES DISTANCE = 917847324. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=136.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2221.93 SECS.
CROSSING TIME AT ULYSSES IS 1888. S. OR 00:31:28 +/- 381.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/10/ 98 IS:
RA= 153.445 DEC= 12.406 DIST= 2.197 AU
MARS-BATSE DISTANCE = 328615488. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.50 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -845.87 SECS.
CROSSING TIME AT MARS IS 3264. S. OR 00:54:24 +/- 108.19 SECONDS

BATSE BURST TRIGGER

NO.: 7147

TIME: TJD=1095 SECONDS=4110

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=155.4 AZIMUTH=128.3 ERROR=1.6 DEGREES

COMMENTS:

GRB. MULTI-PULSED WITH STRUCTURE. DURATION APPROX. = 40 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7147	981009	11095	04110	3750	188	+37	40

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

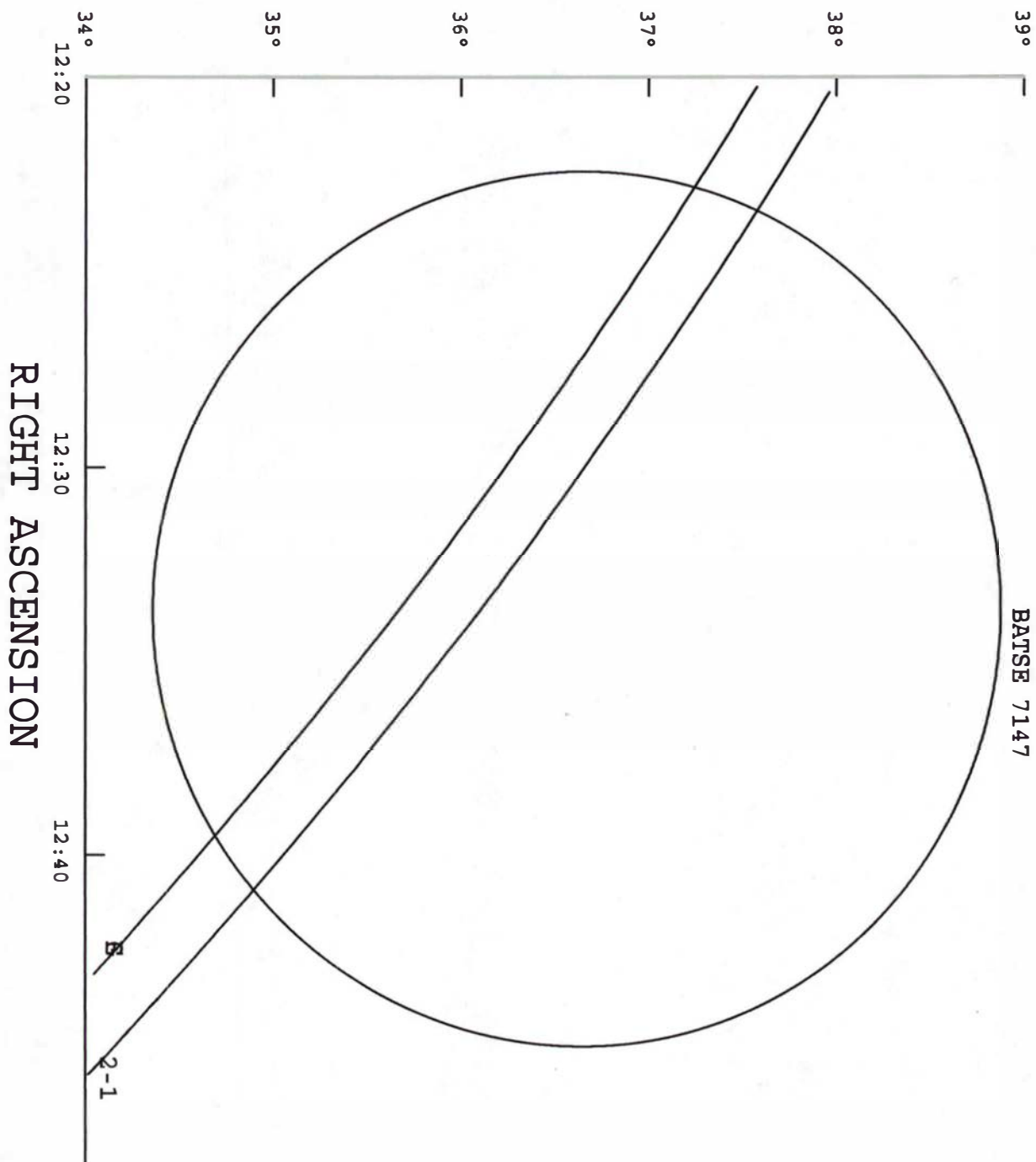
1 BATSE

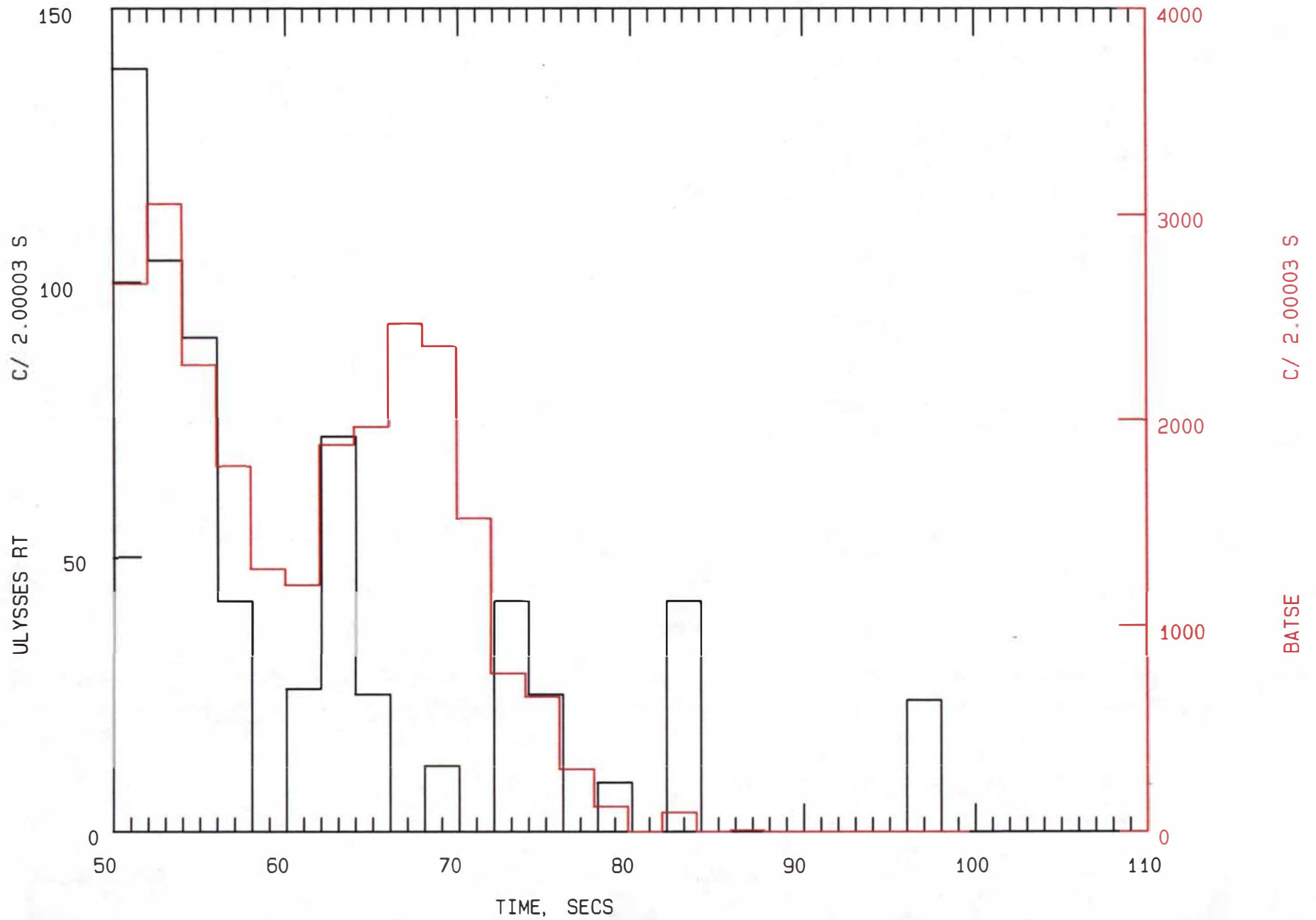
2 ULYSSES

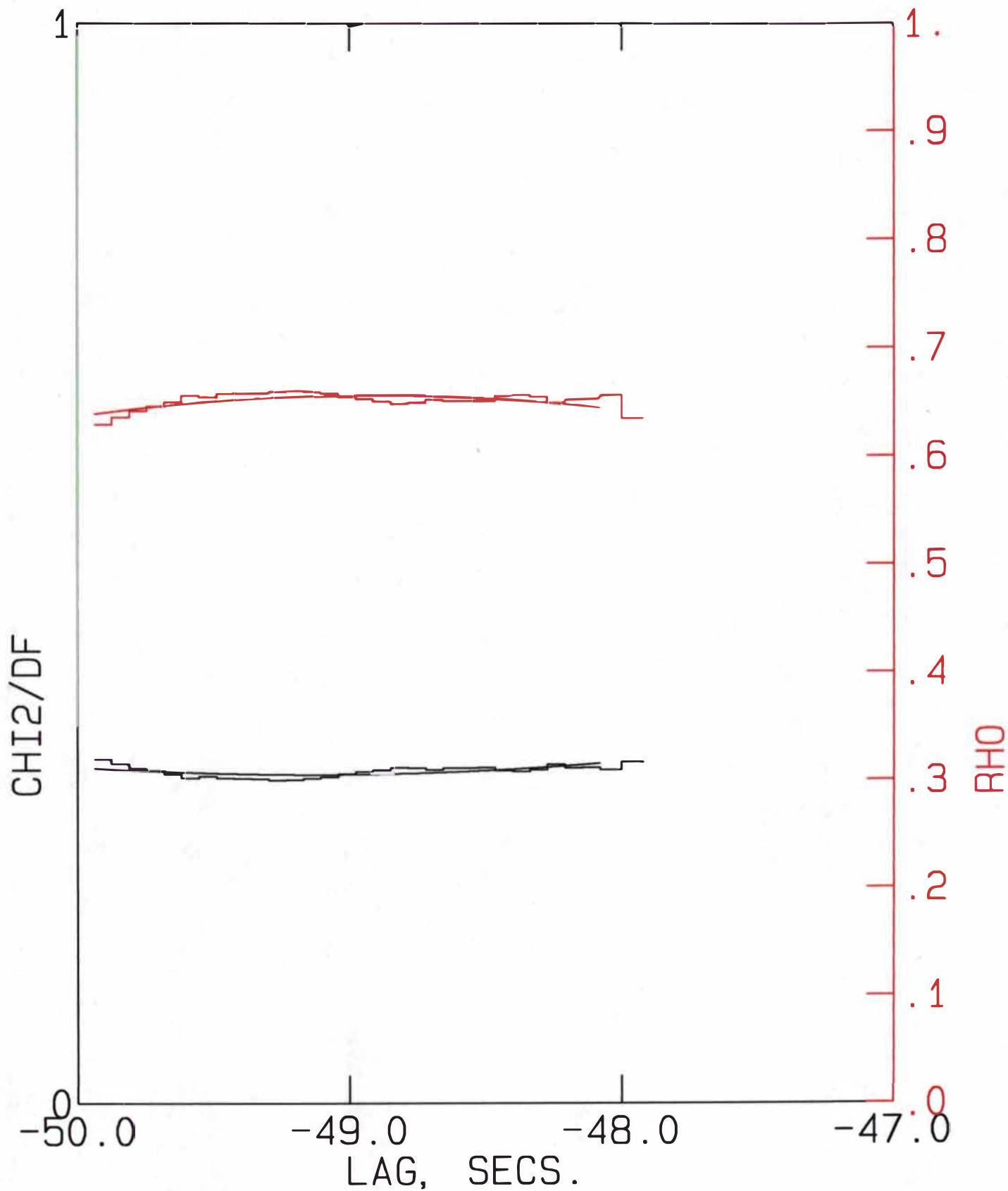
DECLINATION

EVENT OF OCT 9, 1998 1:08

15/ 2/ 0

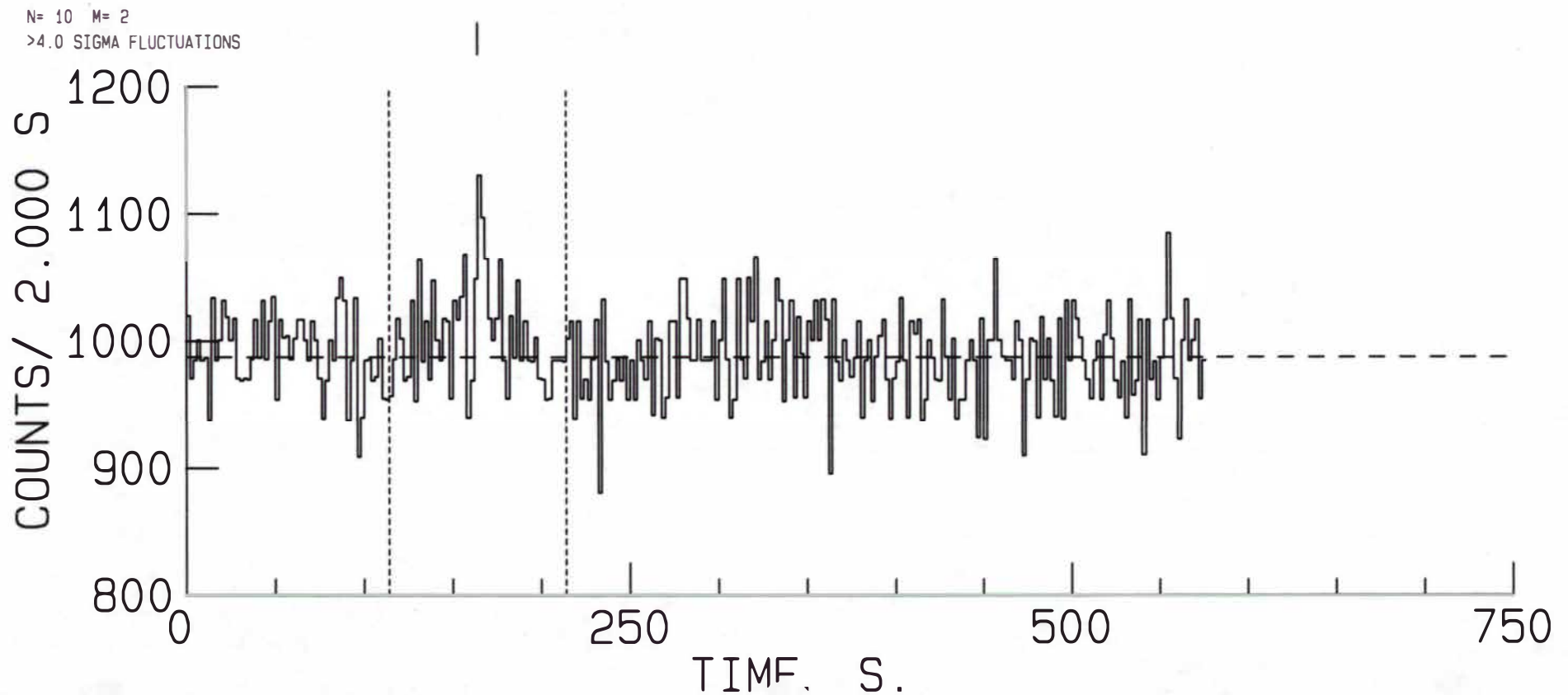






ULYSSES RT
9/10/98 1690.816 s
0.250 S INTERVALS REGROUPED BY 8
22- 149 keV

15 / 2 / 0



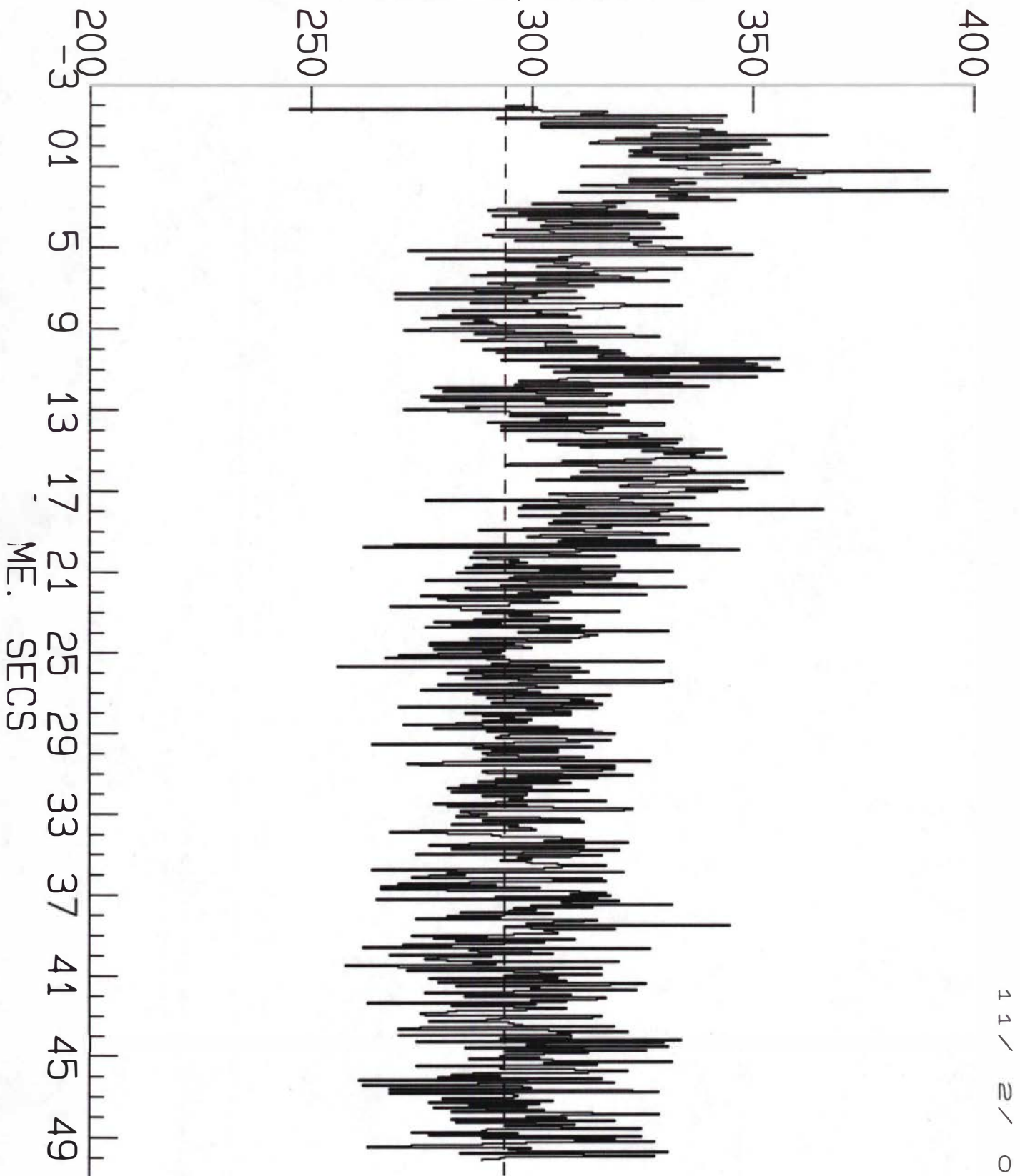
BATSE

09/10/98

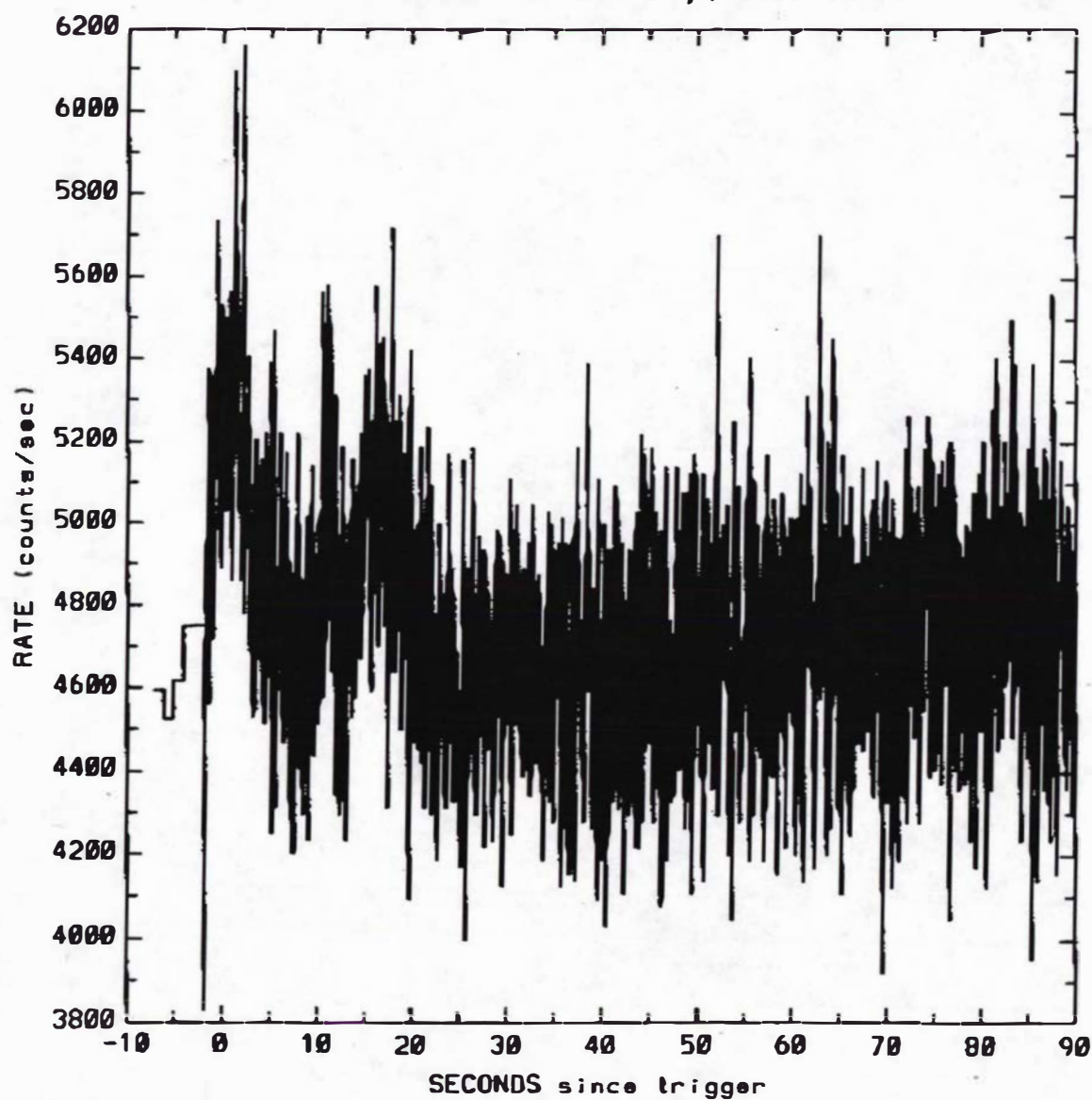
4110.049

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7147



9-FEB-2000 09:11:13

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # : 7147

Trigger Time:
11095 / 4110.049Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors (7..0).
--5---1-Discriminators:
(3 . 4)Quality Mask:
BD[SP1]

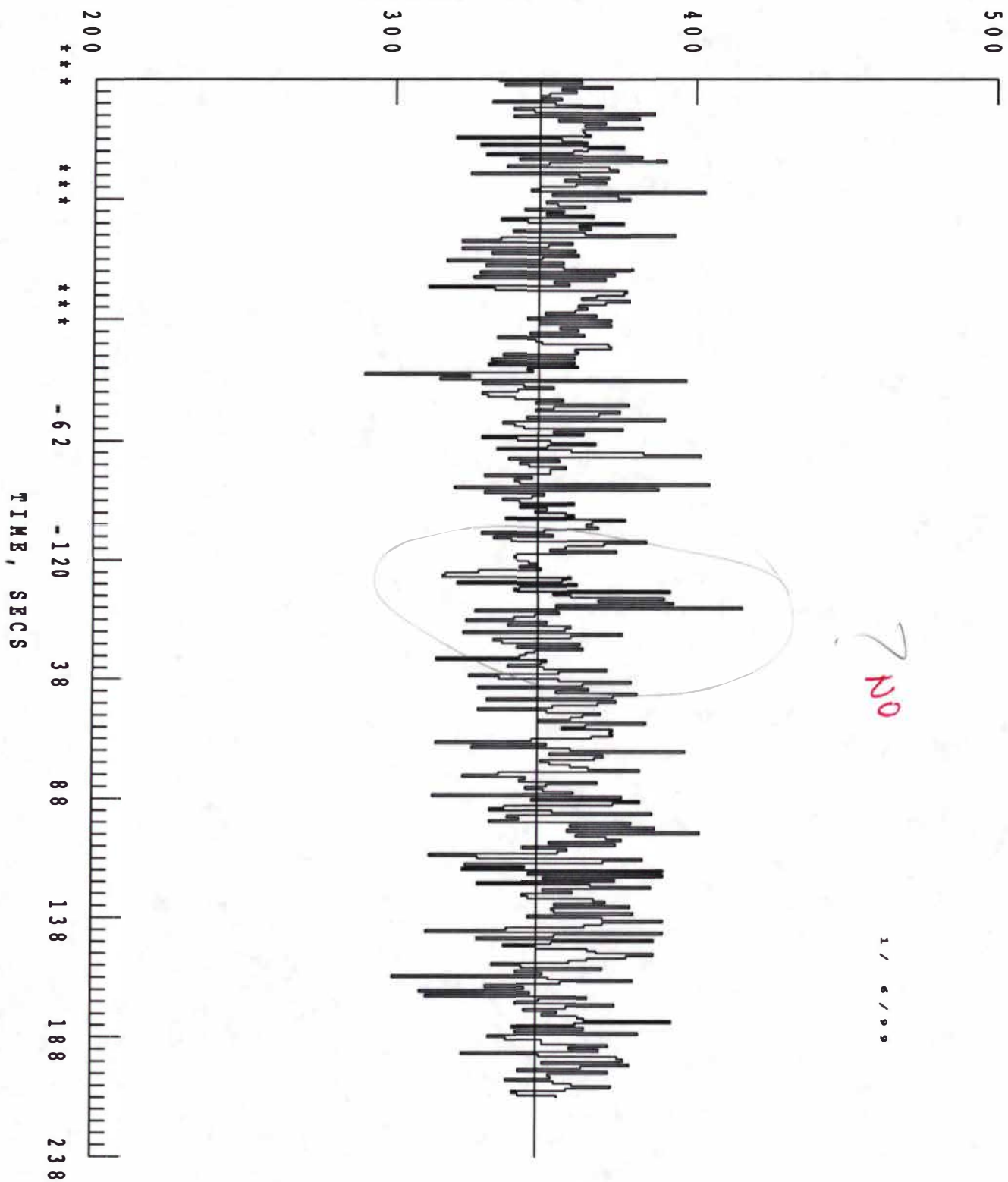
NEAR

09/10/98

4152.182

100-1000 keV

COUNTS/1.000 S



BATSE

09/10/98

4110.049

25- 100 keV

COUNTS/0.064 S

600

500

400

300

-3 0

13

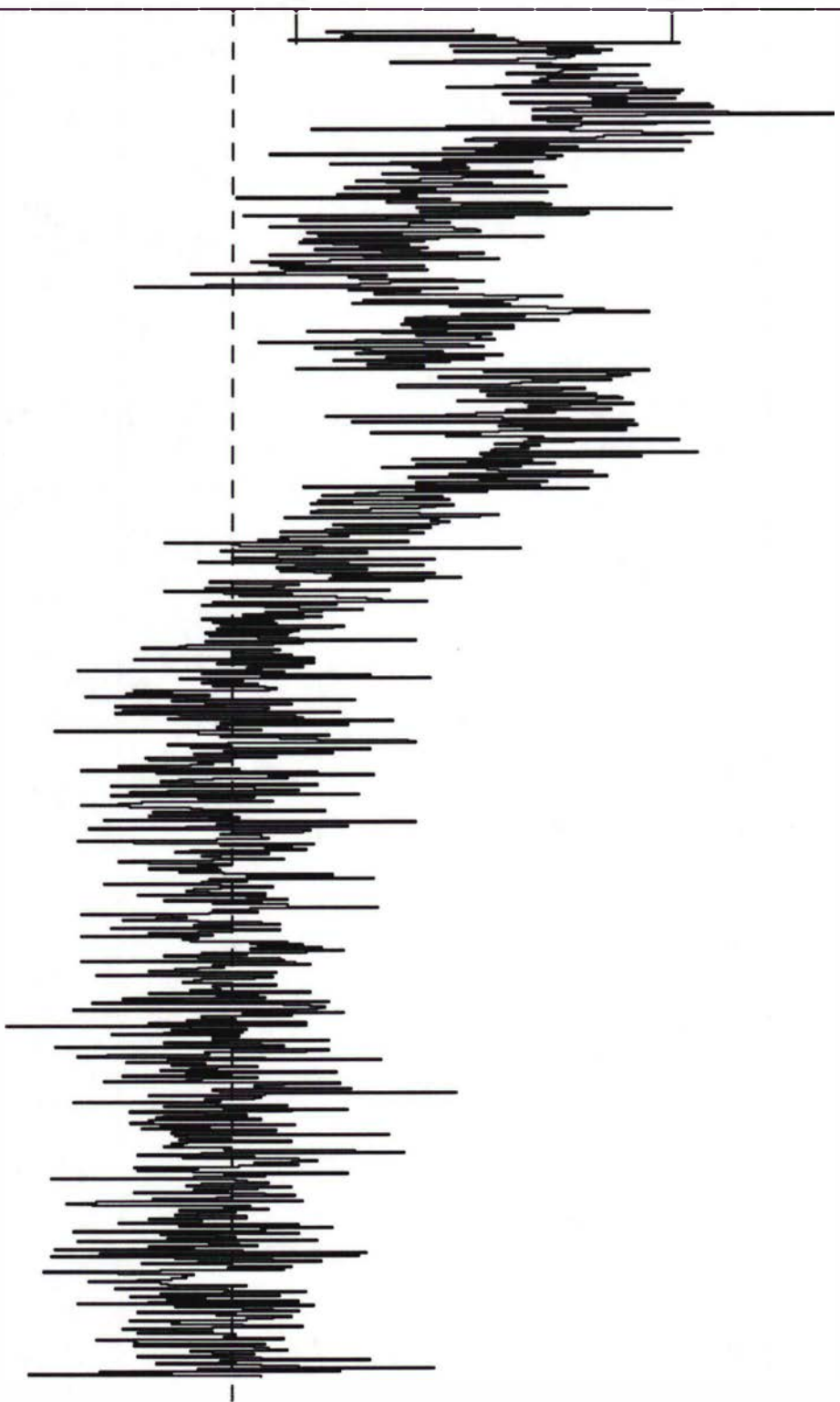
T
ME. SECS

29

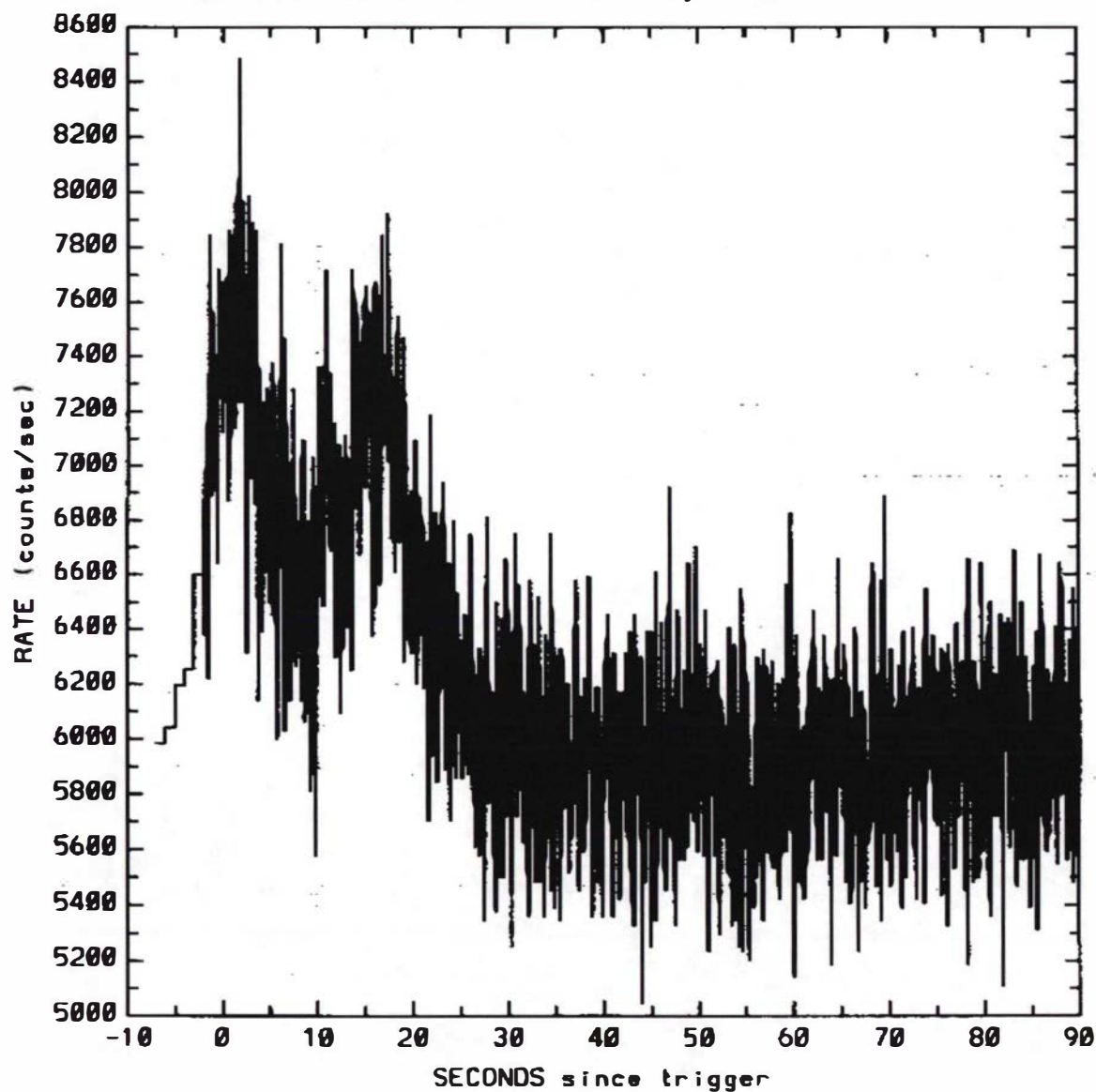
45

61

10/12/98



DISCSC Data for K. Hurley, No. 7147



From cline@apache.gsfc.nasa.gov Tue Oct 13 06:46 PDT 1998
Mime-Version: 1.0
Date: Tue, 13 Oct 1998 09:51:54 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
om: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: events in early October
Cc: palmer@lheamail.gsfc.nasa.gov, Butterworth@lhevax.gsfc.nasa.gov,
scott@rosserv.gsfc.nasa.gov

Dear Kevin

The auto-Konus events, since the last time I reported, are an obvious GRB
on Oct. 8 at 30767.822 UT, a complex but narrow GRB/SGR candidate on
Oct. 9 at 20735.781 UT, and a clear SGR on Oct 13 at 01910.530 UT.

~~NEAR~~ 05:46:36

I haven't seen anything from NEAR in some time, but I hear it is turned ON.

TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

Date: Nov 10 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

- ☐ Was CHECKMO run to eliminate data gaps?
- ☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data...")
- ☐ Was Mars-blocking used?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)
- ☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).
- ☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'s calculated, and/or BMAPSUM executed?

3. For INTEGRAL events

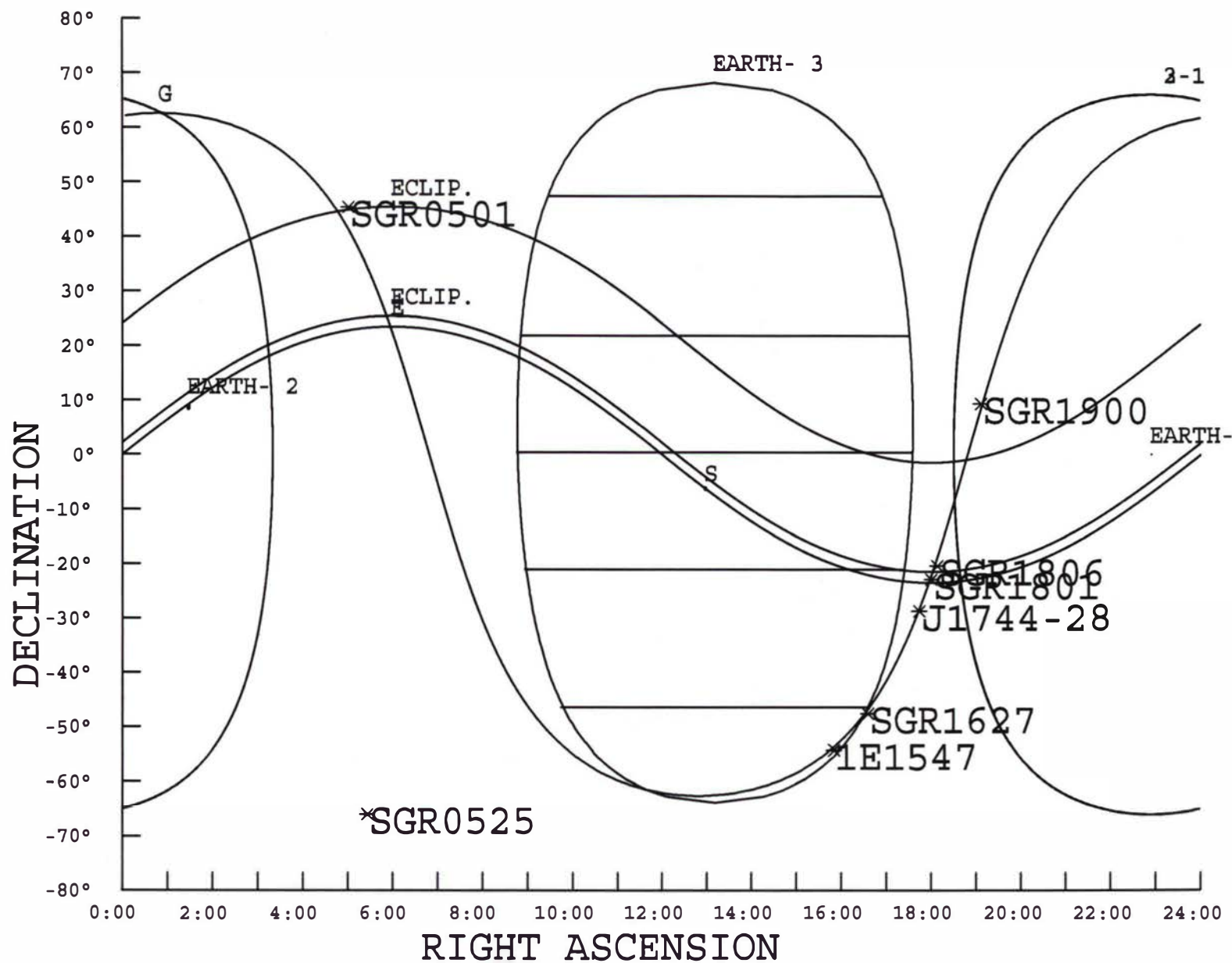
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

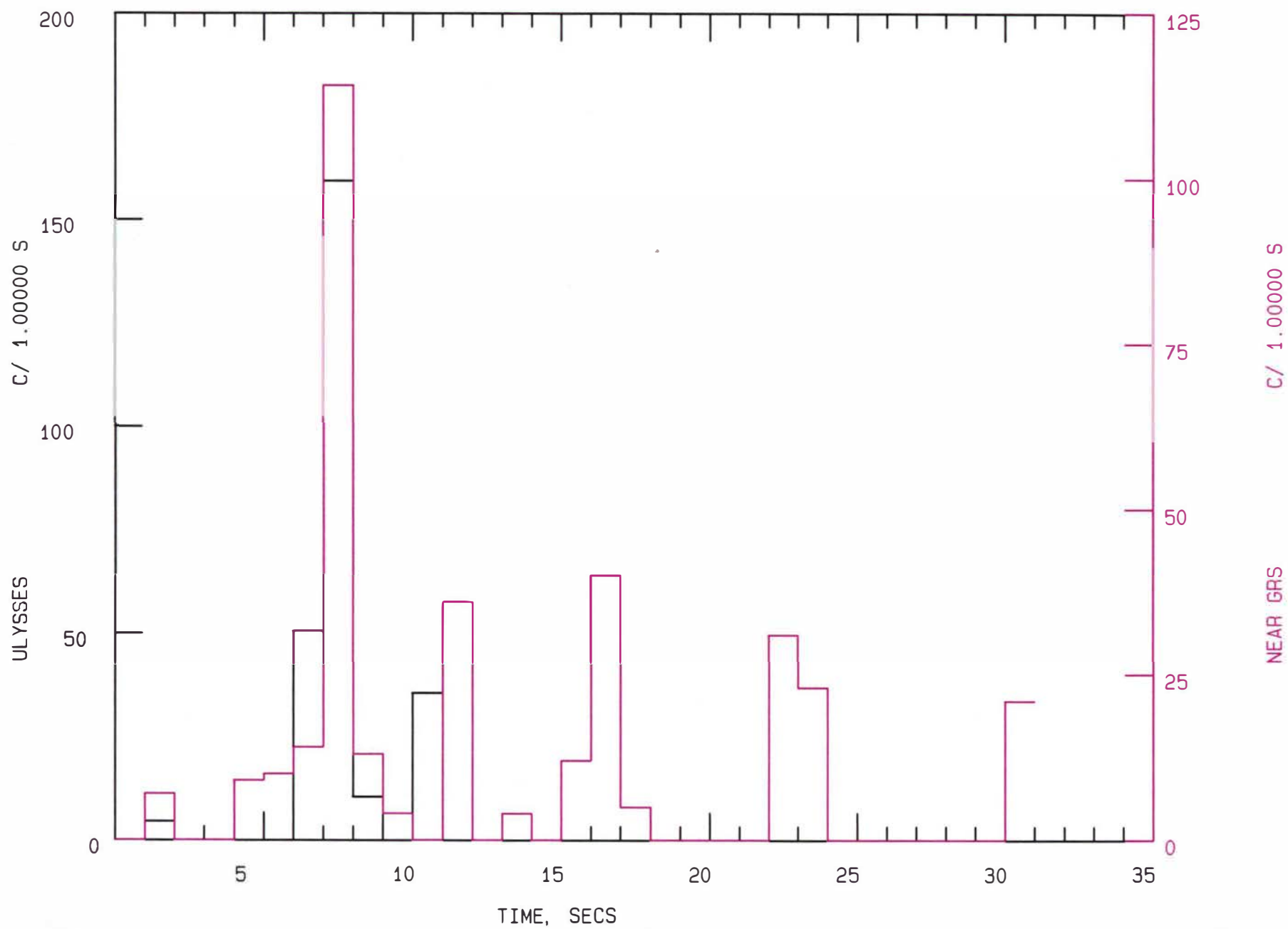
-
- ☒ ACCESS and MBL4 databases updated?

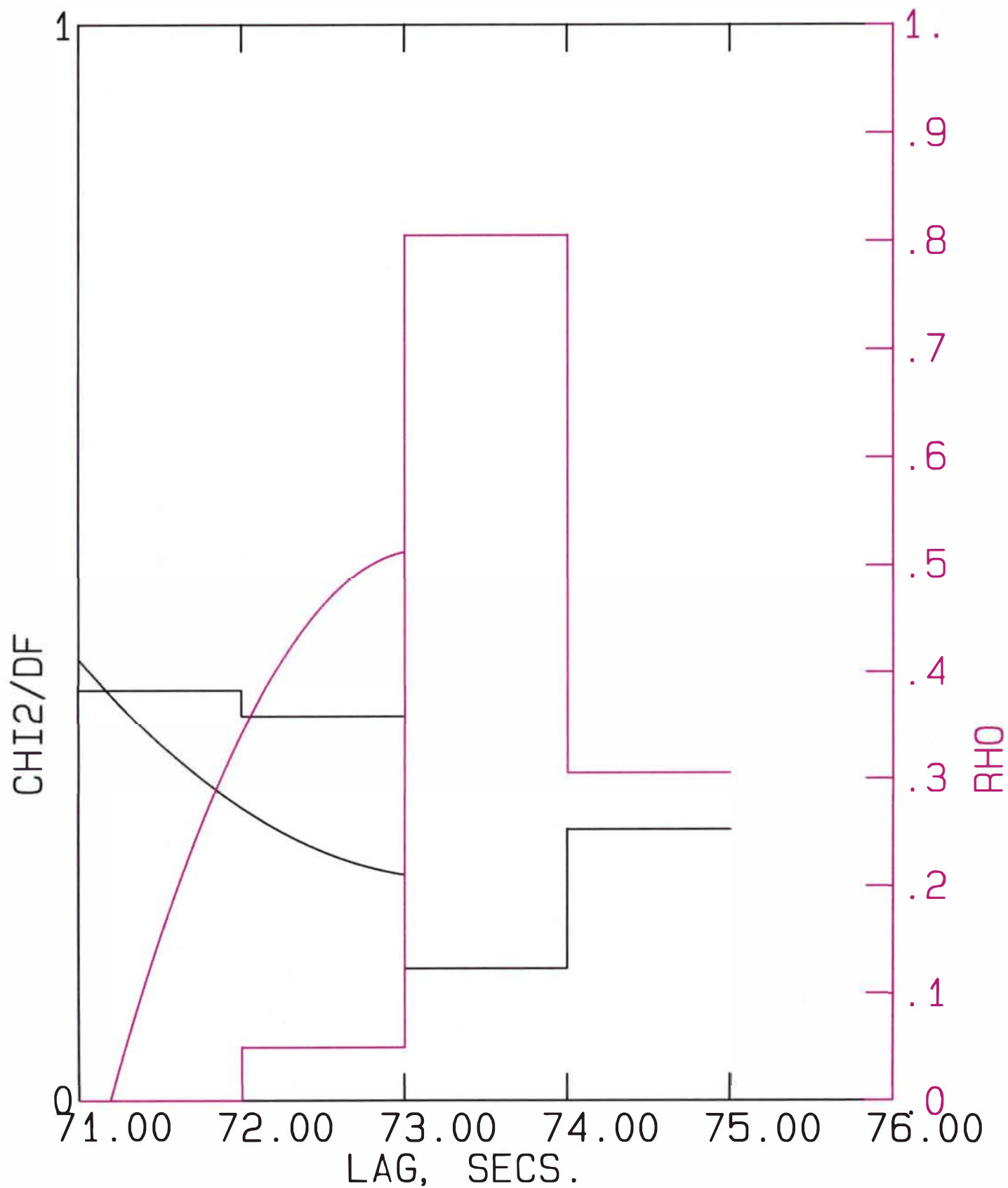
EVENT OF OCT 9, 1998 6:06

10/11/ 9

N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 KONUS2 3 SAX







KONUS2

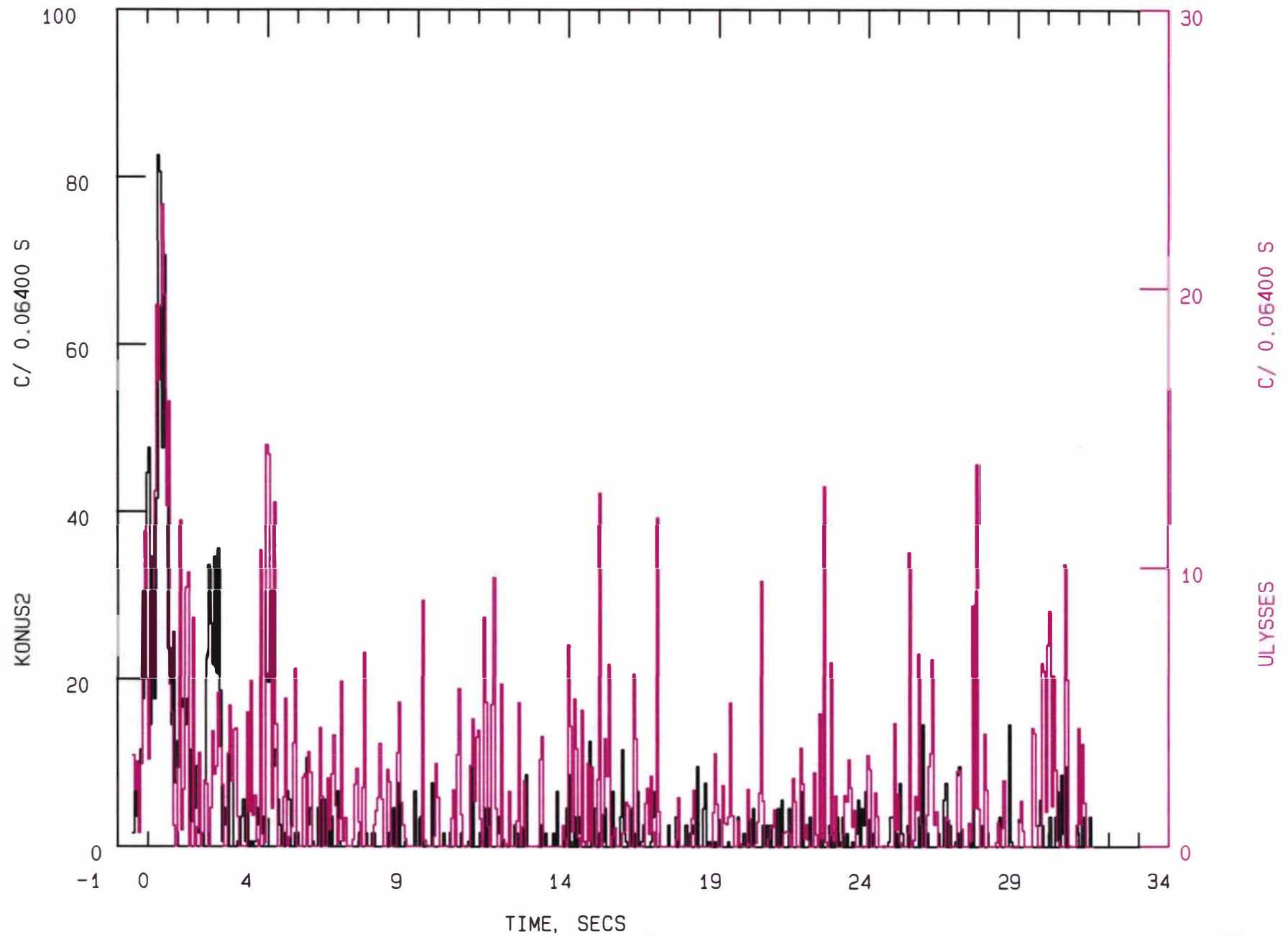
-ULYSSES

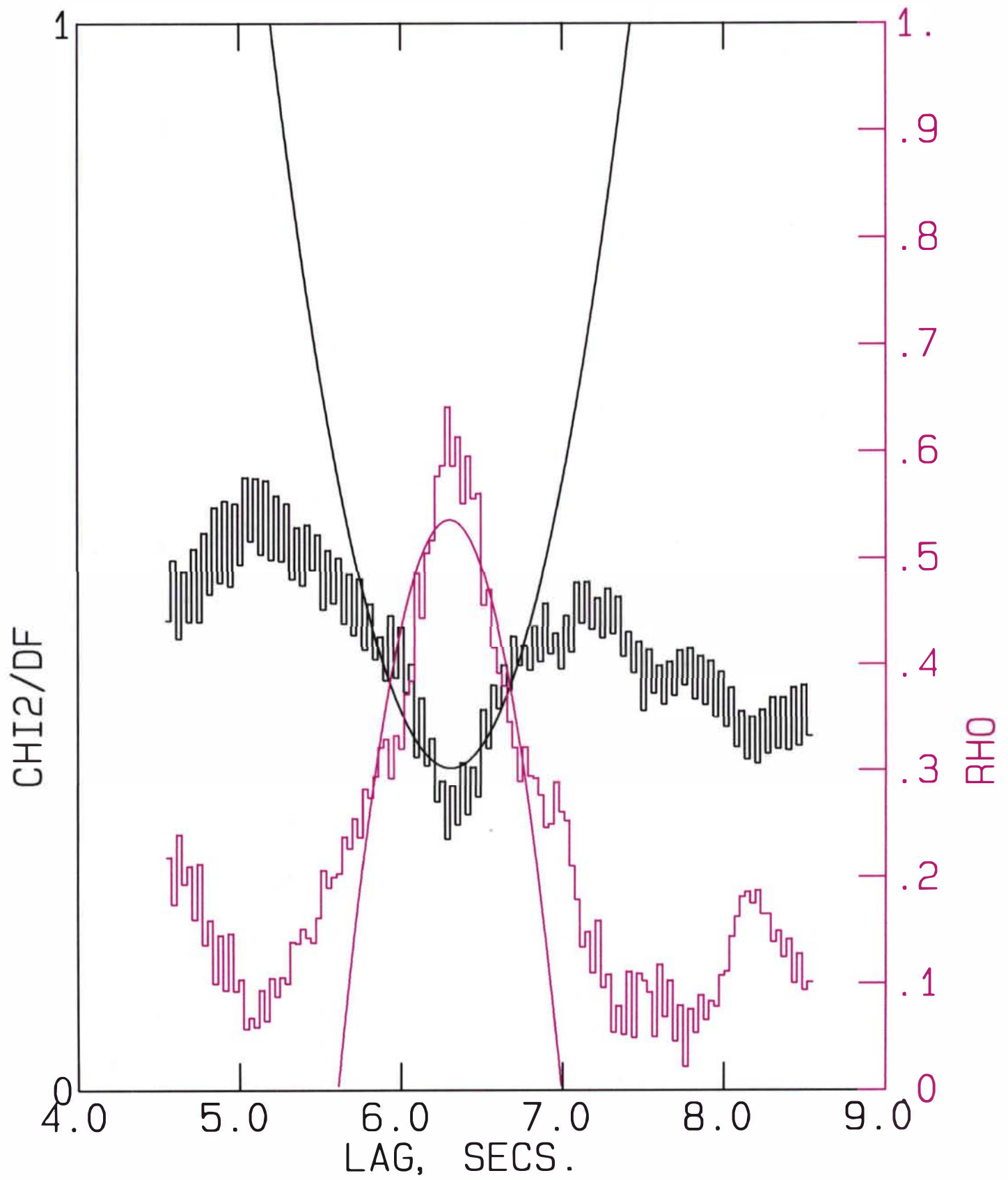
CORRELATION

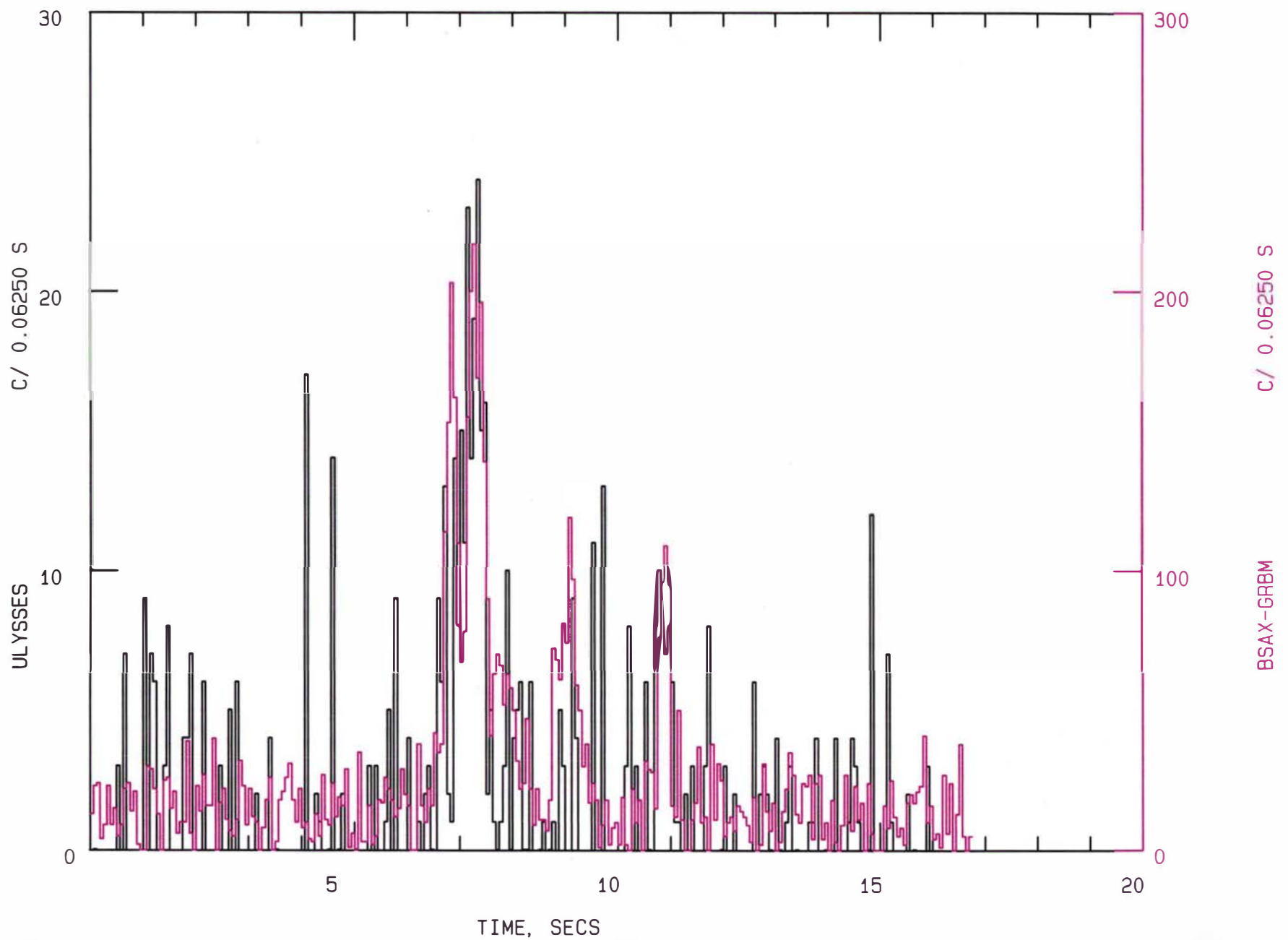
09/10/98

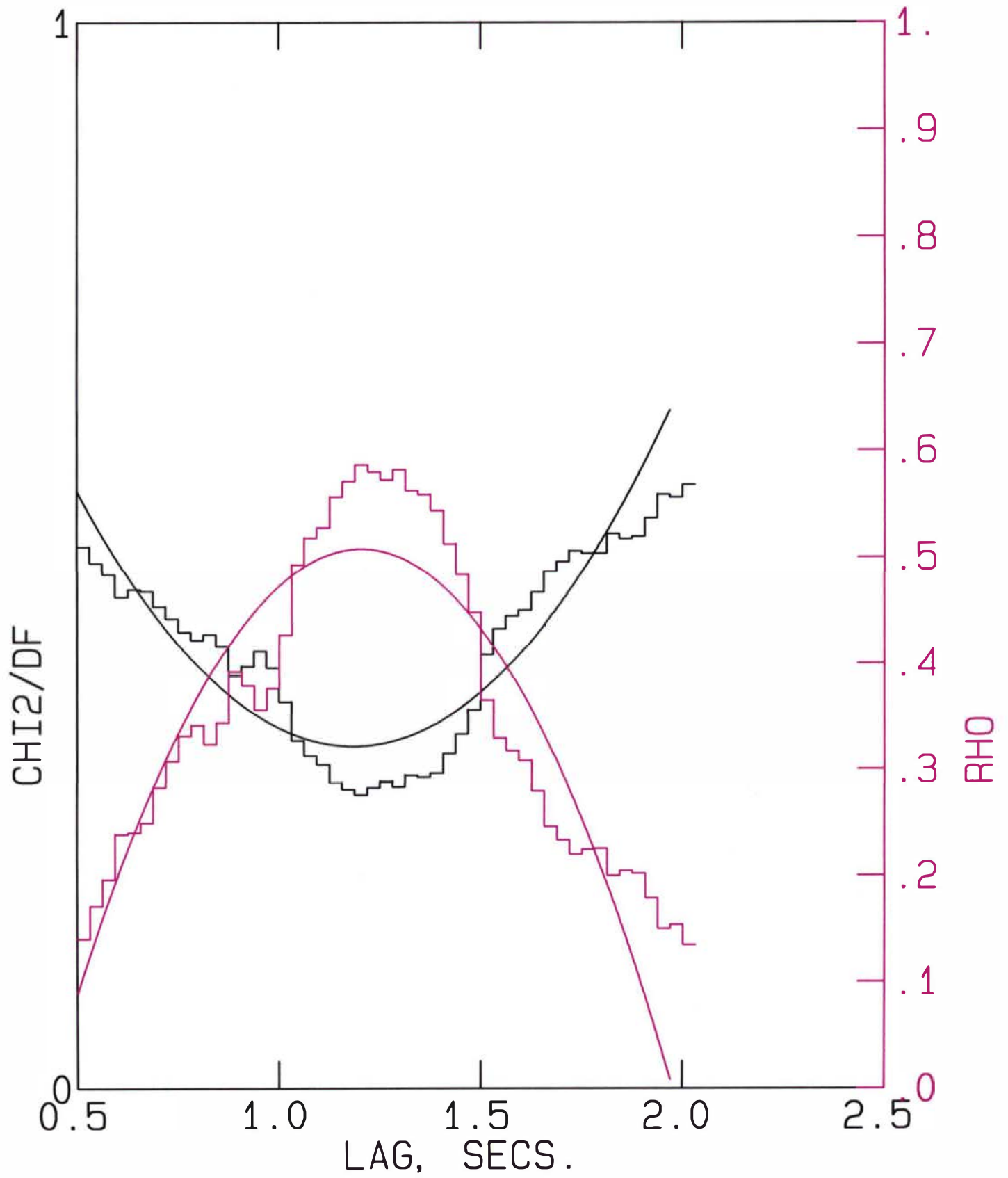
20735.781

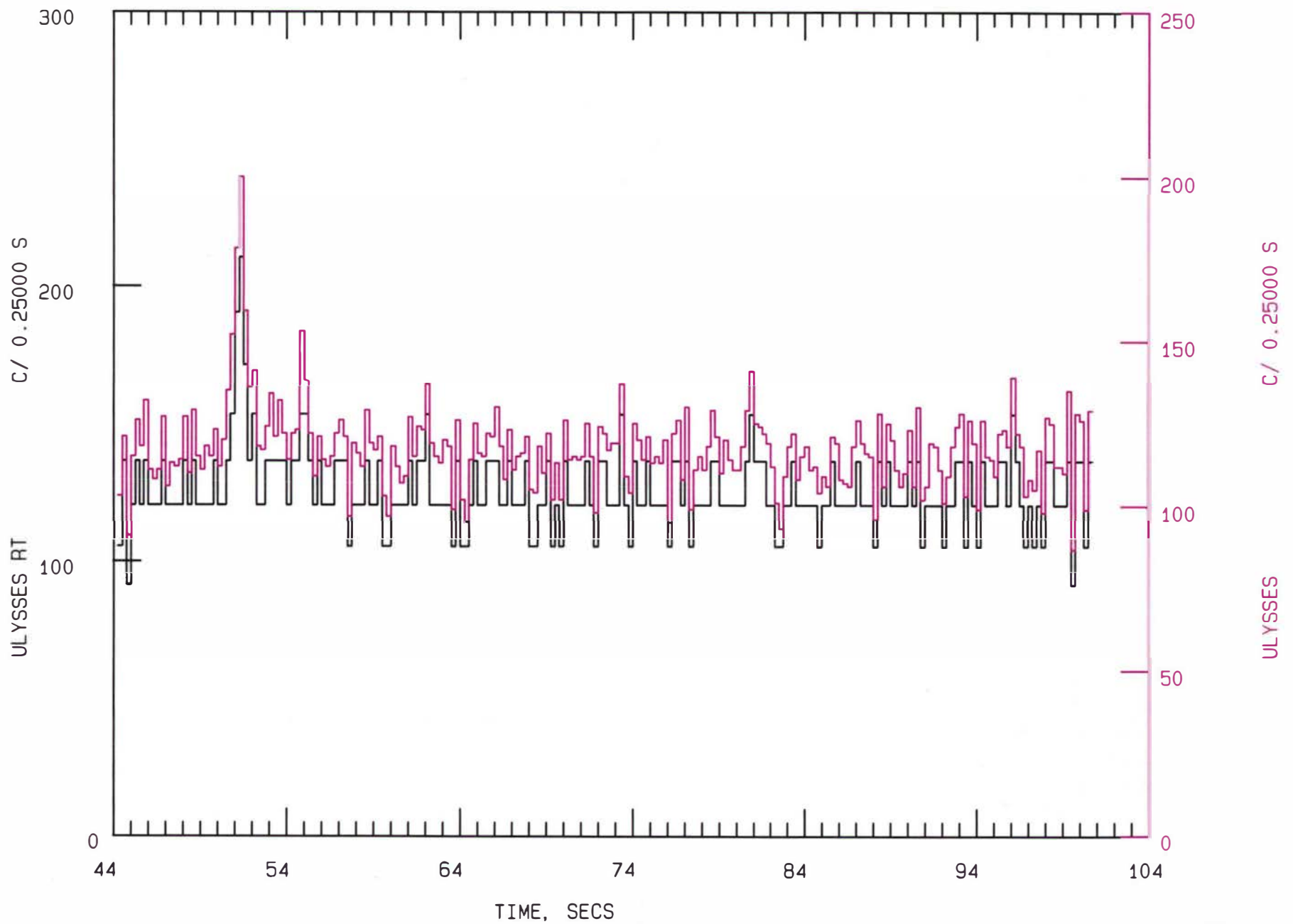
10/11/ 9

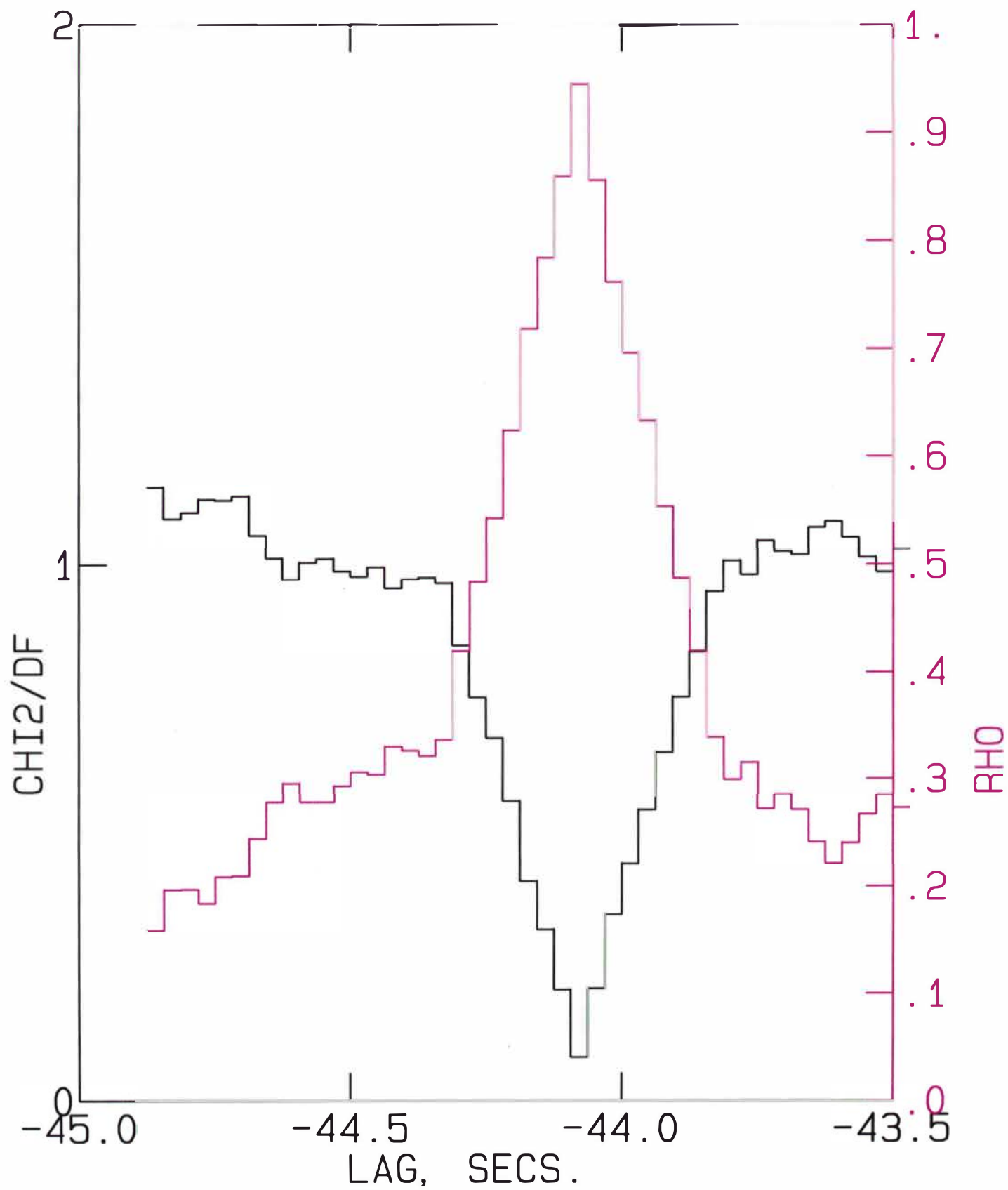










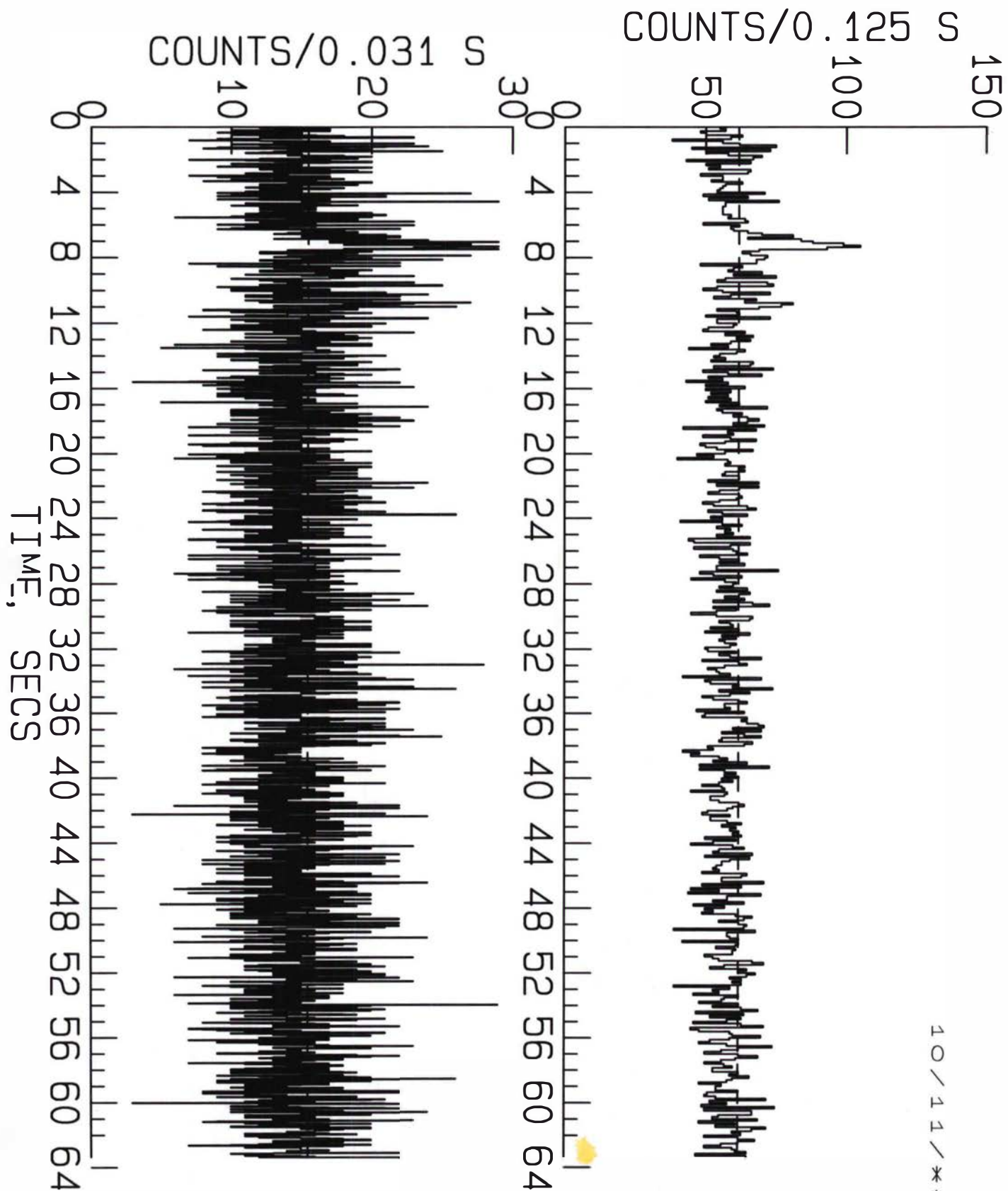


ULYSSES

09/10/98

Ttrig=21972.493

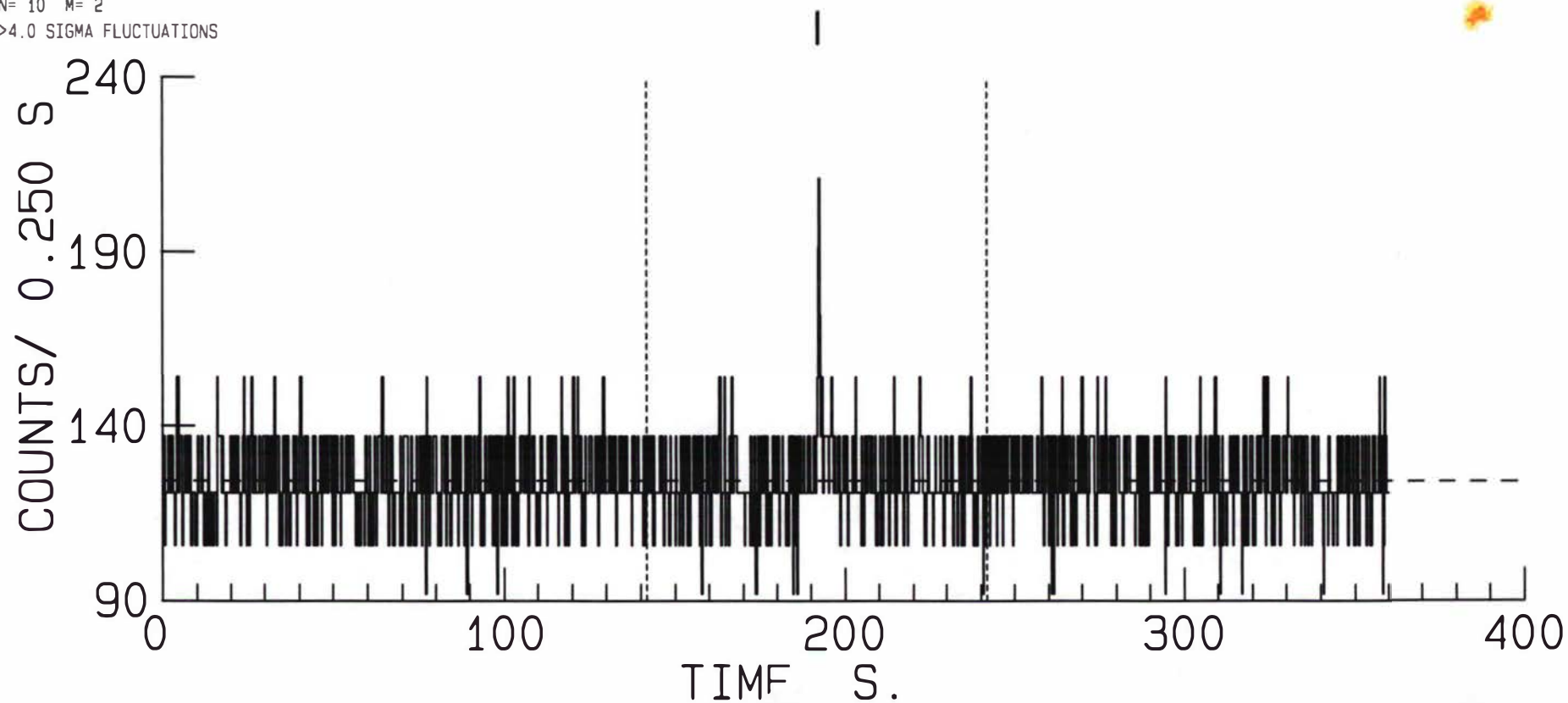
22- 149 keV



ULYSSES RT
9/10/98 21780.021 s
22- 149 keV

10/11/9

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

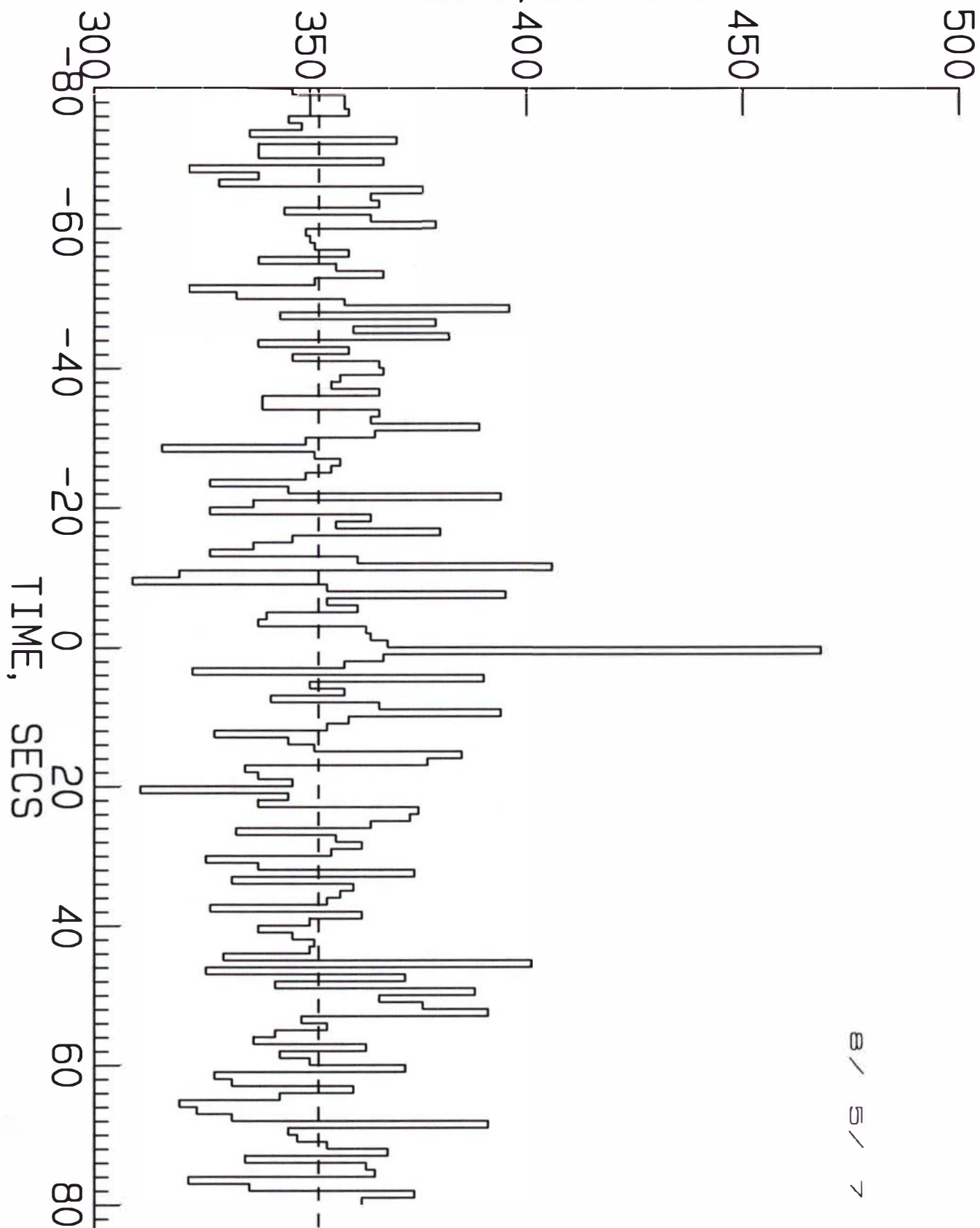


NEAR

09/10/98 21485.818 *Wrong*

100-1000 keV

COUNTS/1.000 S

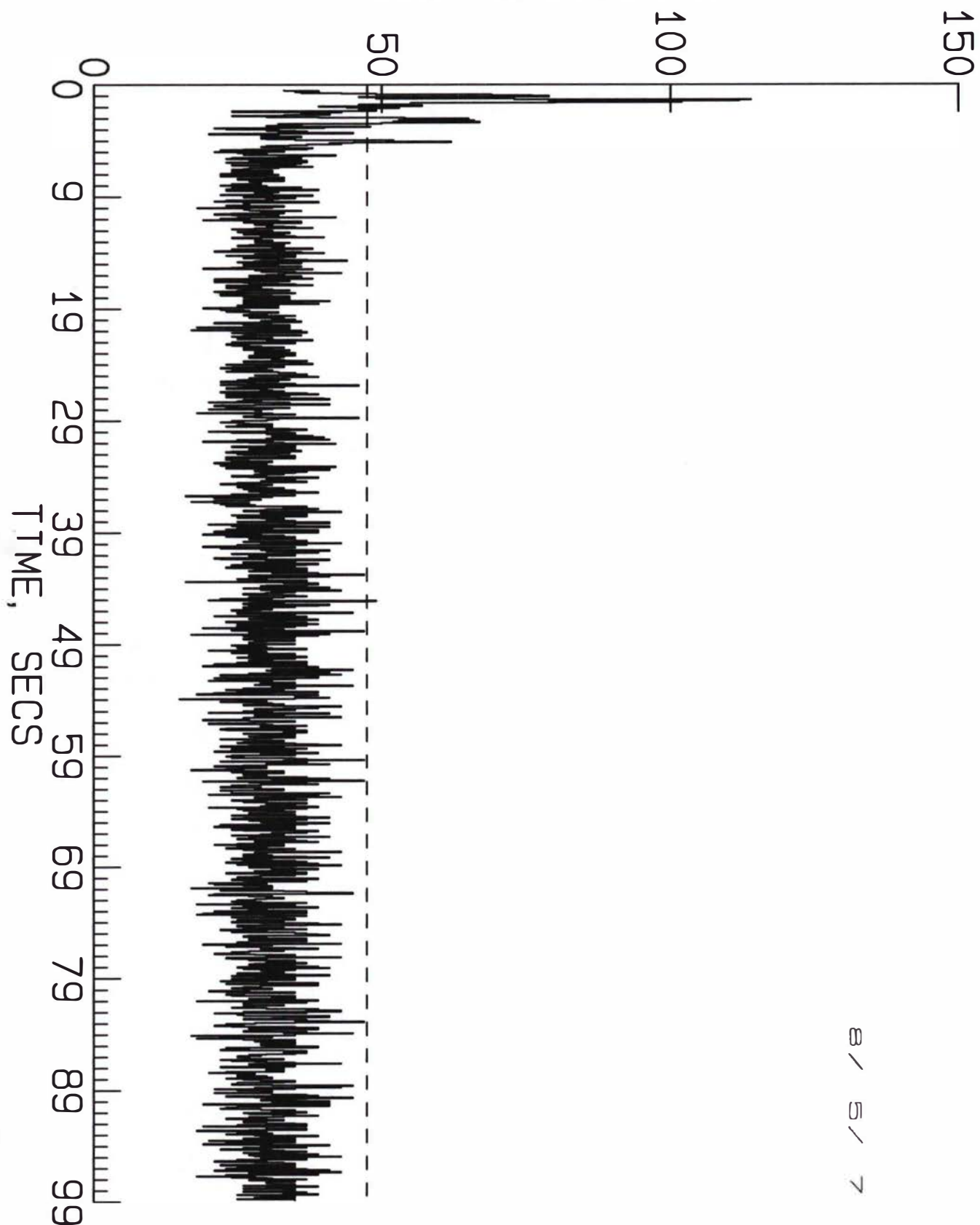


KONUS

09/10/98 20735.780

50- 200 keV

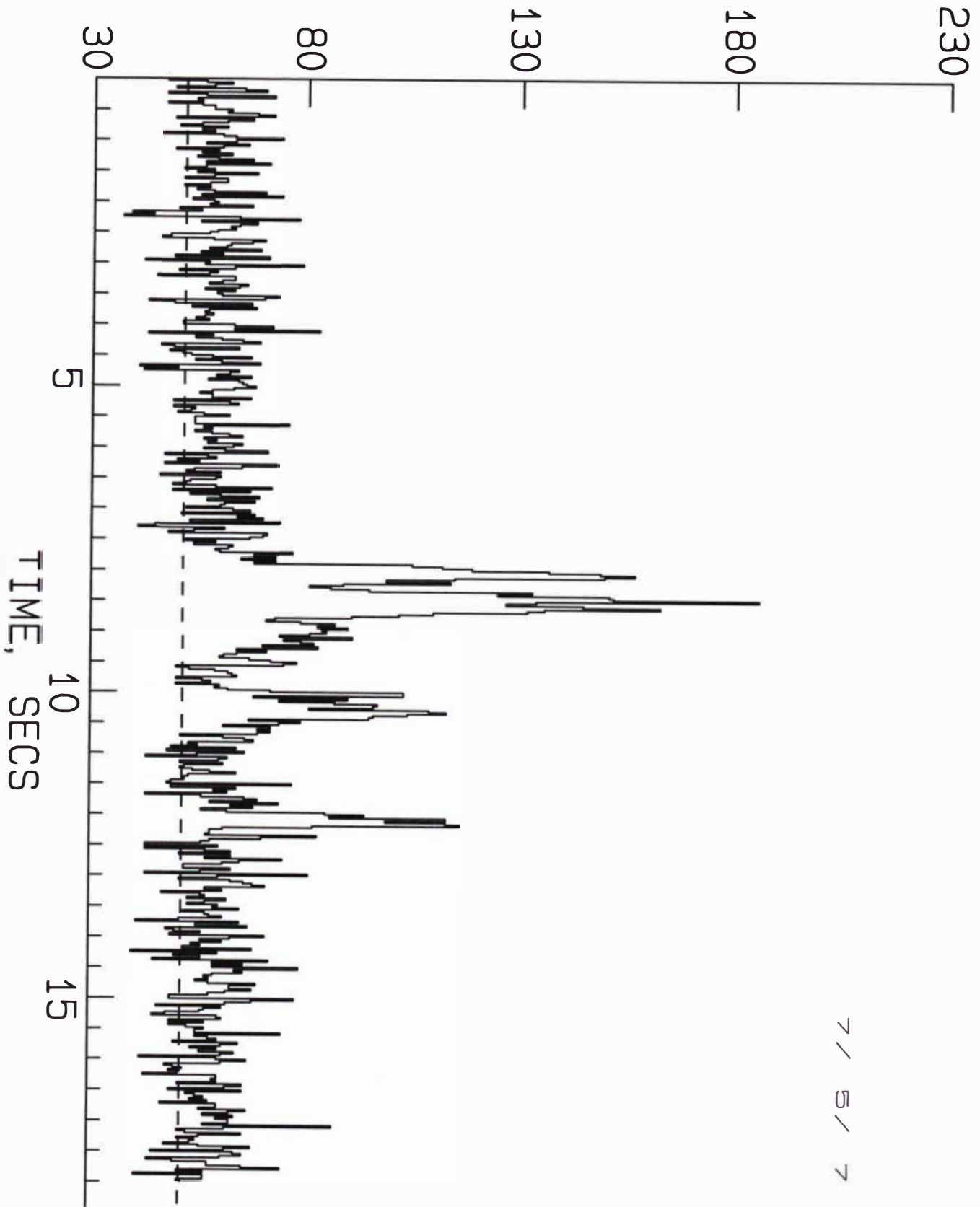
COUNTS/0.064 S



GRBM 09/10/98 20532

40- 700 keV

COUNTS/0.031 S

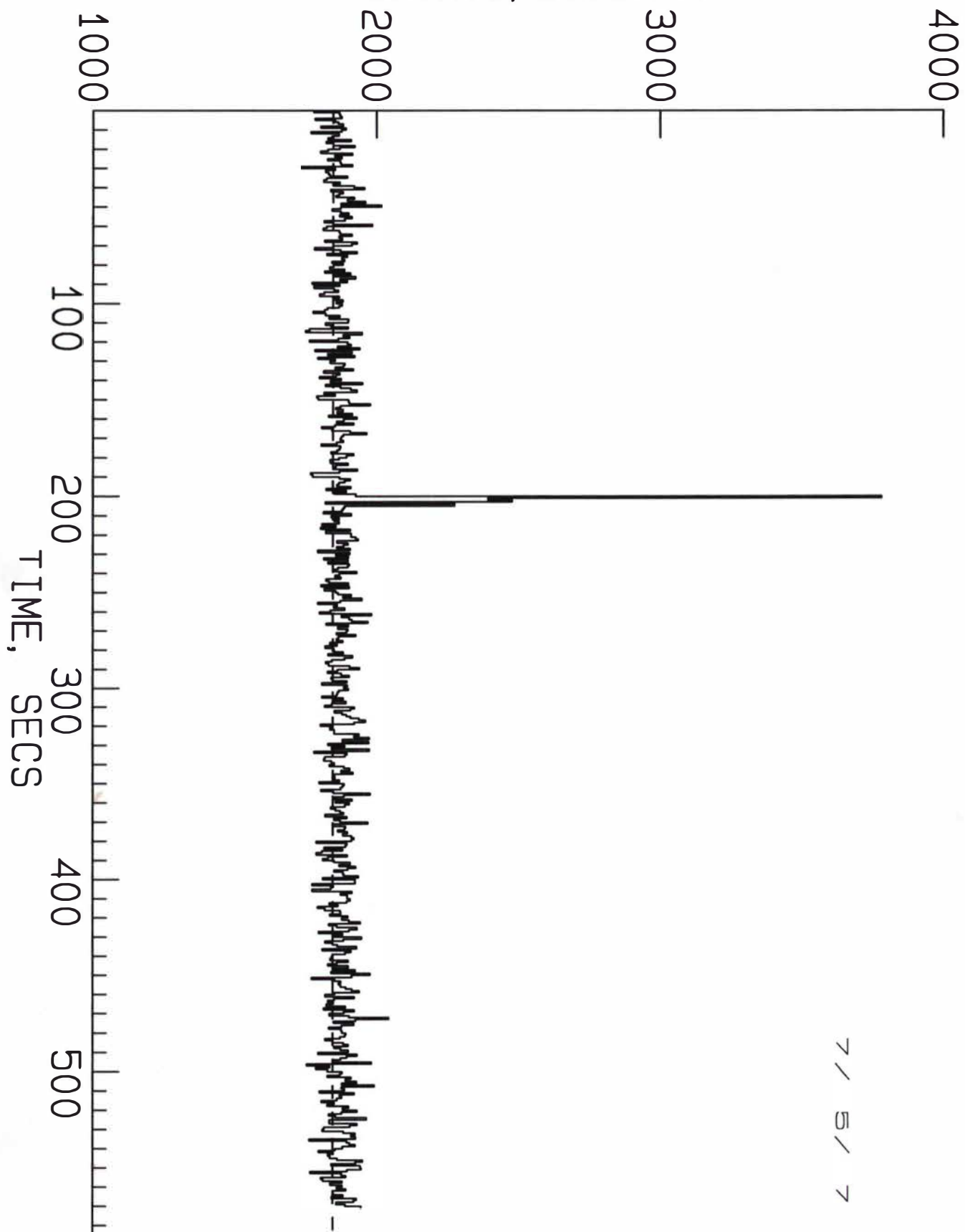


SAX GRBM

09/10/98 20532.846

40- 700 keV

COUNTS/1.000 S

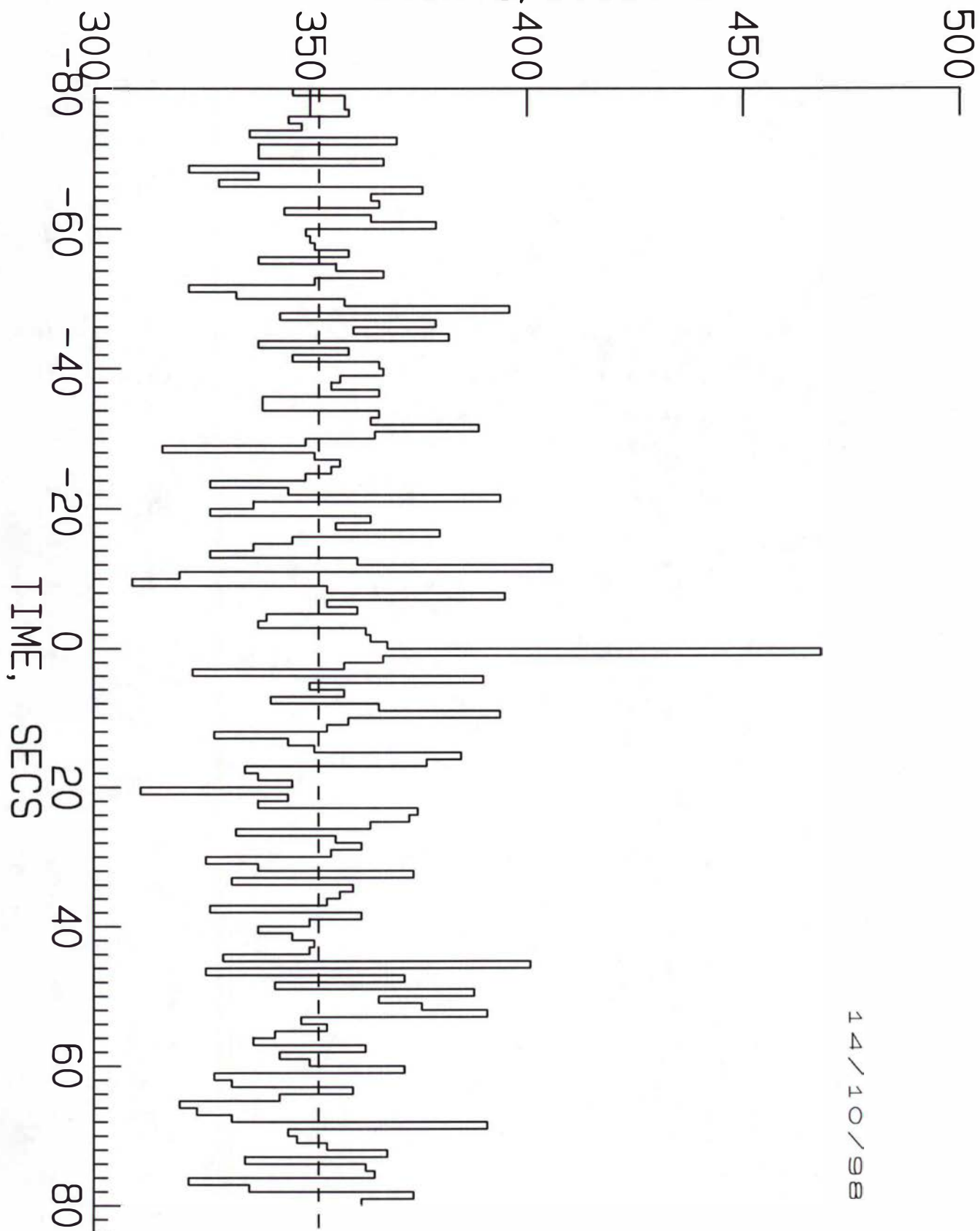


NEAR

09/10/98 21485.818

100-1000 keV

COUNTS/1.000 S



14/10/98

From RICHARDSON@fender.msfc.nasa.gov Tue Oct 13 12:45:39 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA08346; Tue, 13 Oct 1998 12:45:38 -0700
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA23517; Tue, 13 Oct 1998 12:45:36 -0700
Date: Tue, 13 Oct 1998 14:38:33 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981013143833.20208d50@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7148
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7148
EVENT OF 1998 OCT 9 DAY OF YEAR=282
EVENT CROSSING TIME AT BATSE : 77361. S. OR 21:29:21.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 264.000 -16.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/10/ 98 IS:
RA= 163.367 DEC= -0.056 DIST= 6.127 AU
BATSE-ULYSSES DISTANCE = 916545035. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 541.45 SECS.
CROSSING TIME AT ULYSSES IS 77902. S. OR 21:38:22 +/- 580.62 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/10/ 98 IS:
RA= 153.445 DEC= 12.406 DIST= 2.197 AU
MARS-BATSE DISTANCE = 328615488. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 426.22 SECS.
CROSSING TIME AT MARS IS 77787. S. OR 21:36:27 +/- 181.80 SECONDS

BATSE BURST TRIGGER

NO.: 7148

TIME: TJD=1095 SECONDS=77361

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=115.9 AZIMUTH=302.5 ERROR=8.6 DEGREES

COMMENTS:

GRB. SINGLE WEAK SPIKE. DURATION APPROX. = 1 SEC. VISIBLE ABOVE 300KEV.

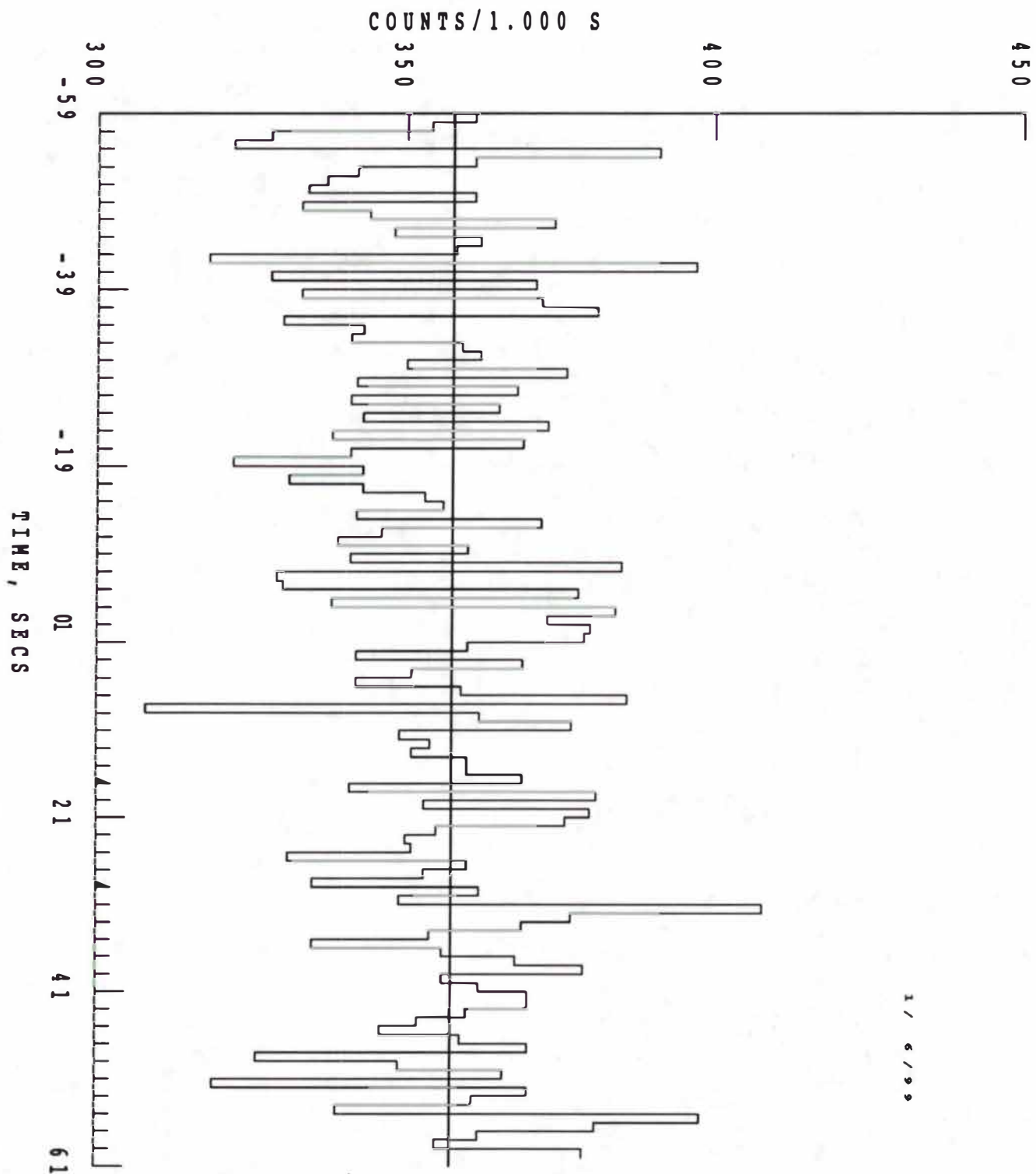
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7148	981009	11095	77361	3500	264	-16	1

NEAR

09/10/98

76434.162

100-1000 keV



BATSE BURST# 7148

ULYSSES RT

13 / 10 / 98

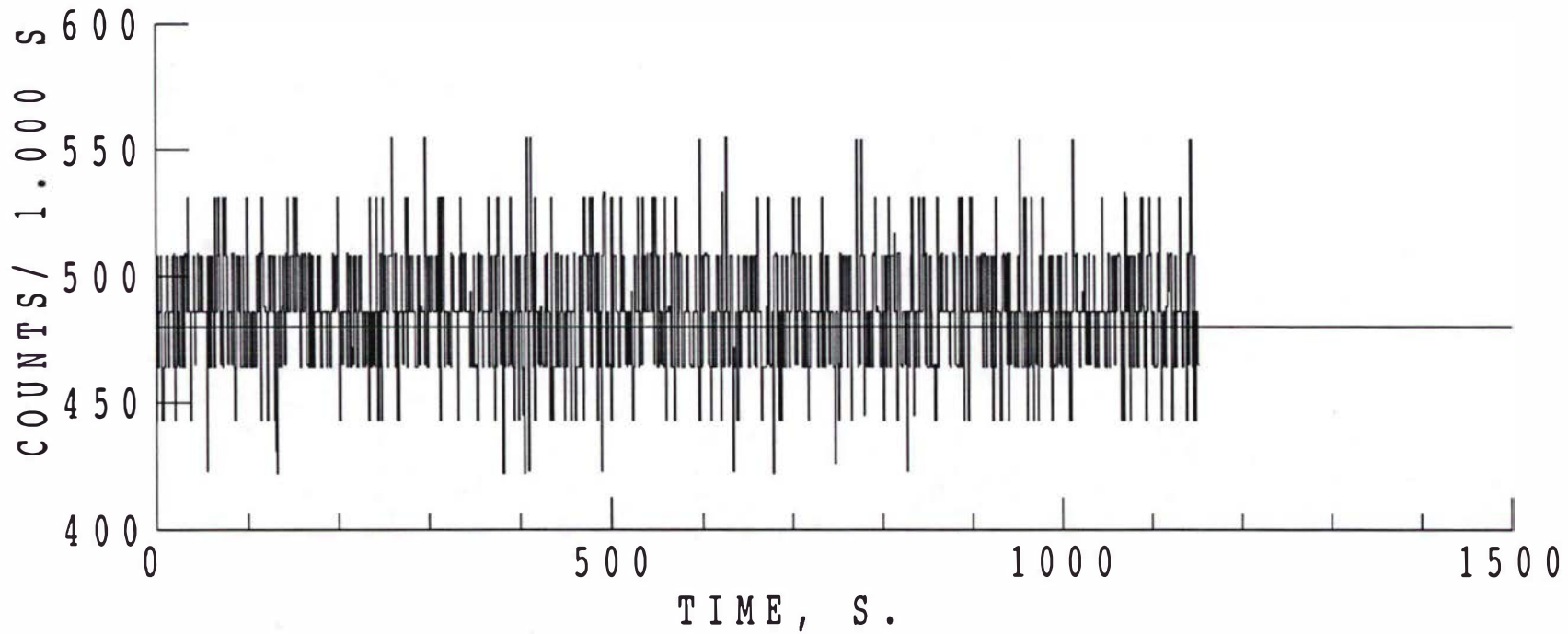
9 / 10 / 98 77328.344 s

0.500 S INTERVALS REGROUPED BY 2

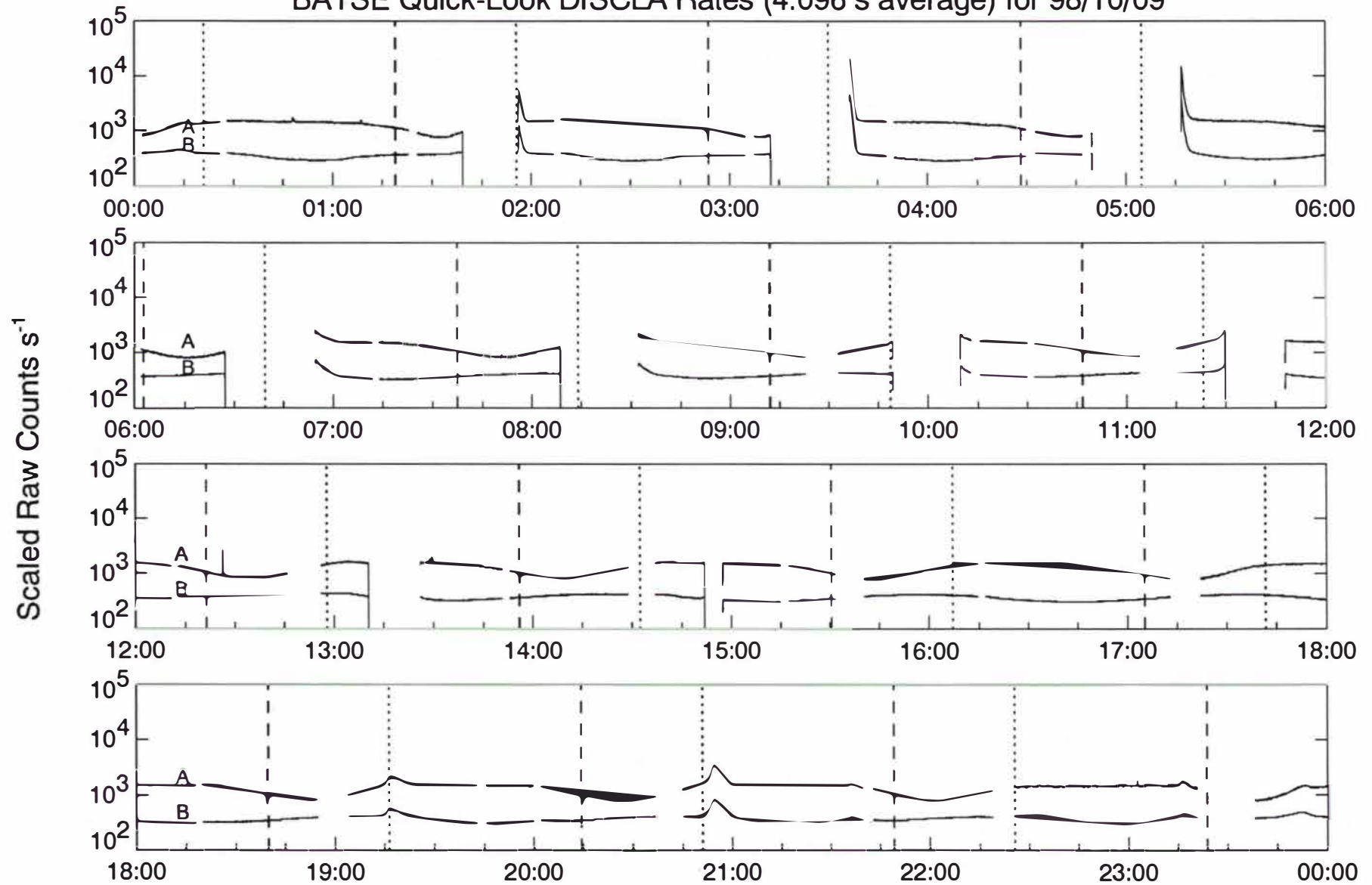
0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/09

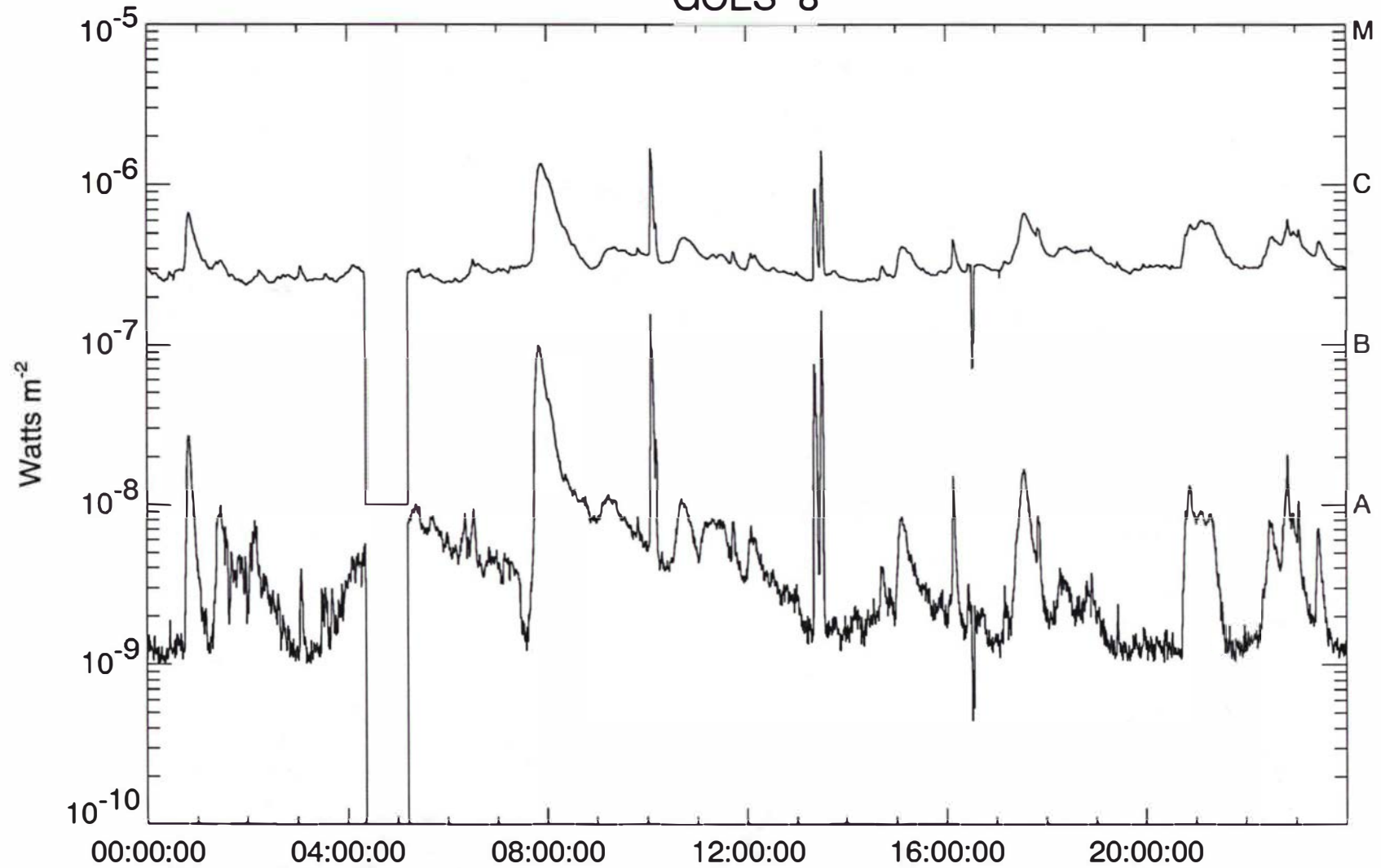


Current Time: 98/10/13, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/09, 0000:00

Plot created: 98/10/13, 1007

Channel 1 (1.0 - 8.0 Angstroms)

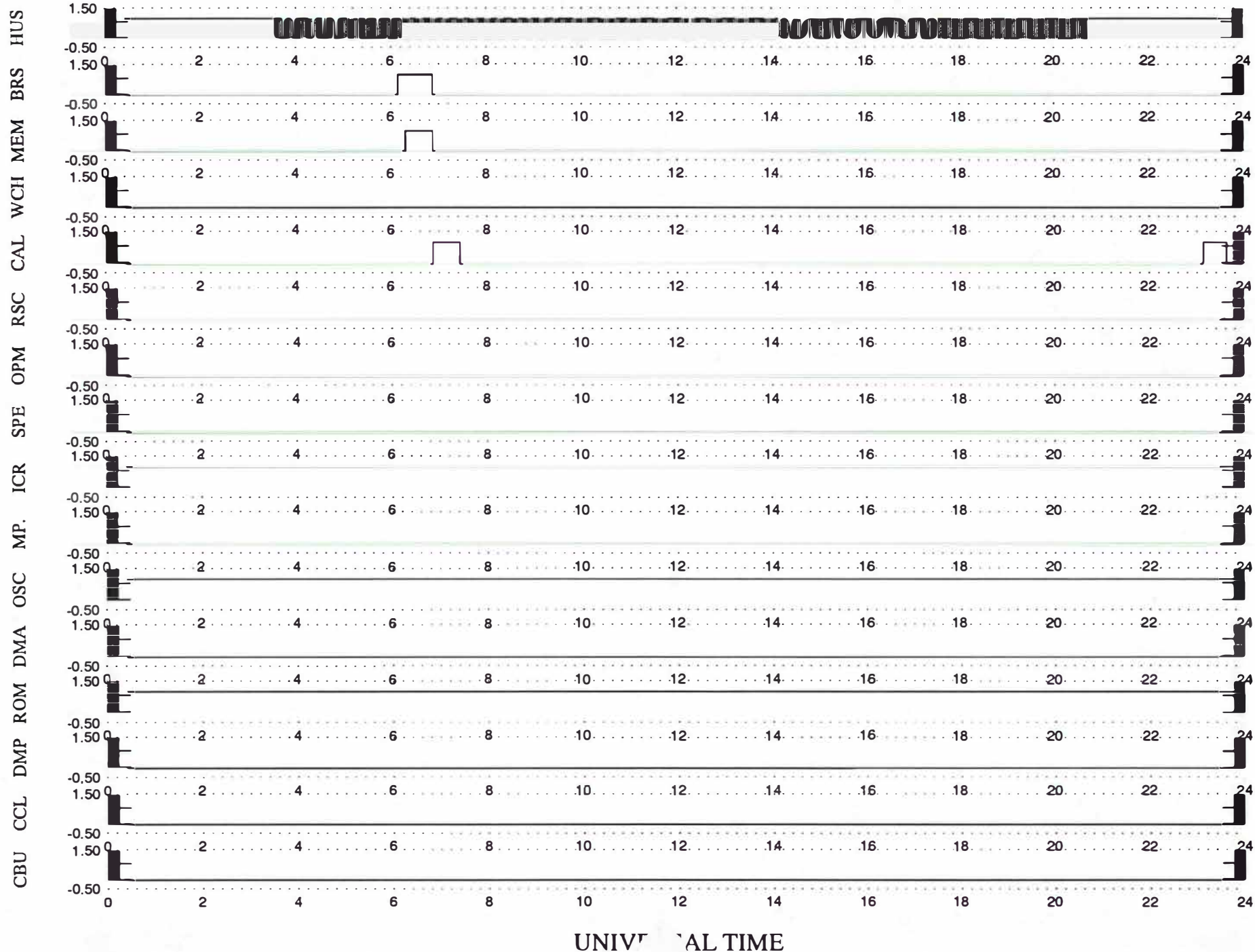
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

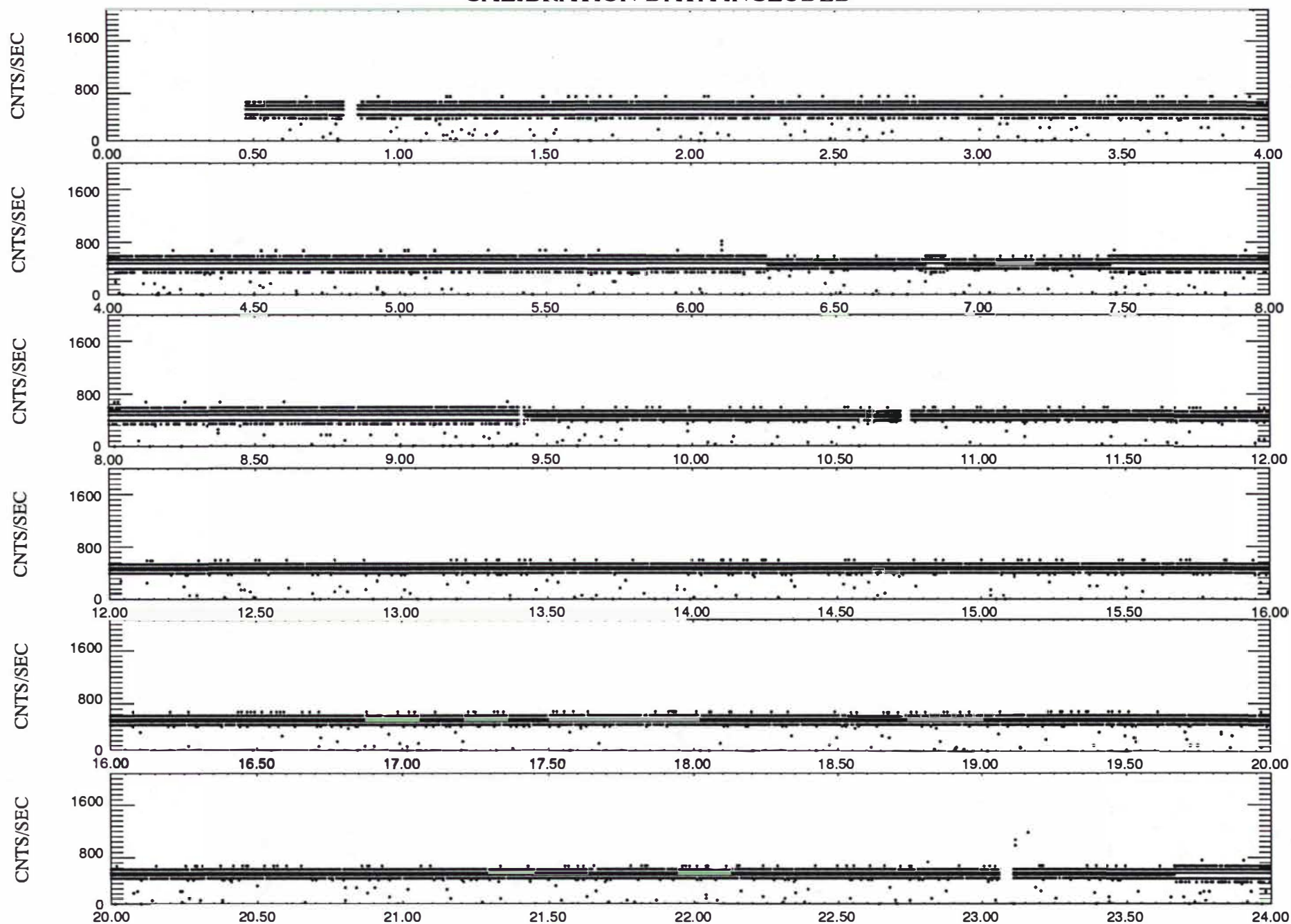
Background not subtracted

Sample average = 10

BURST NUMBER 6

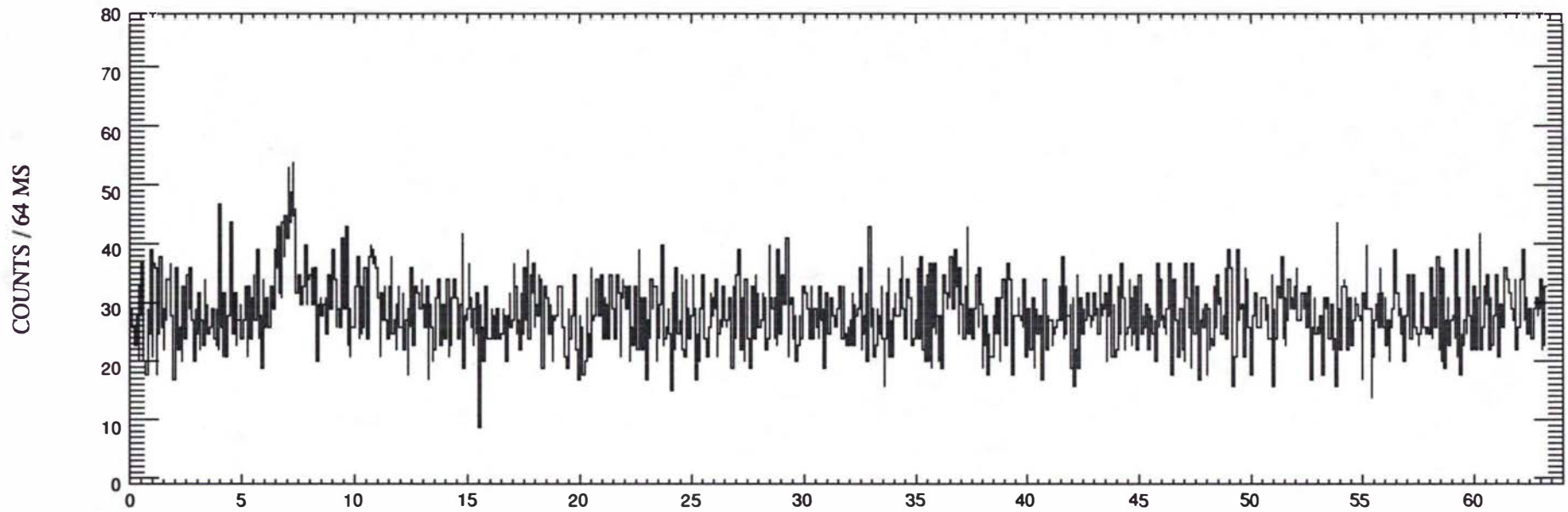


CALIBRATION DATA INCLUDED

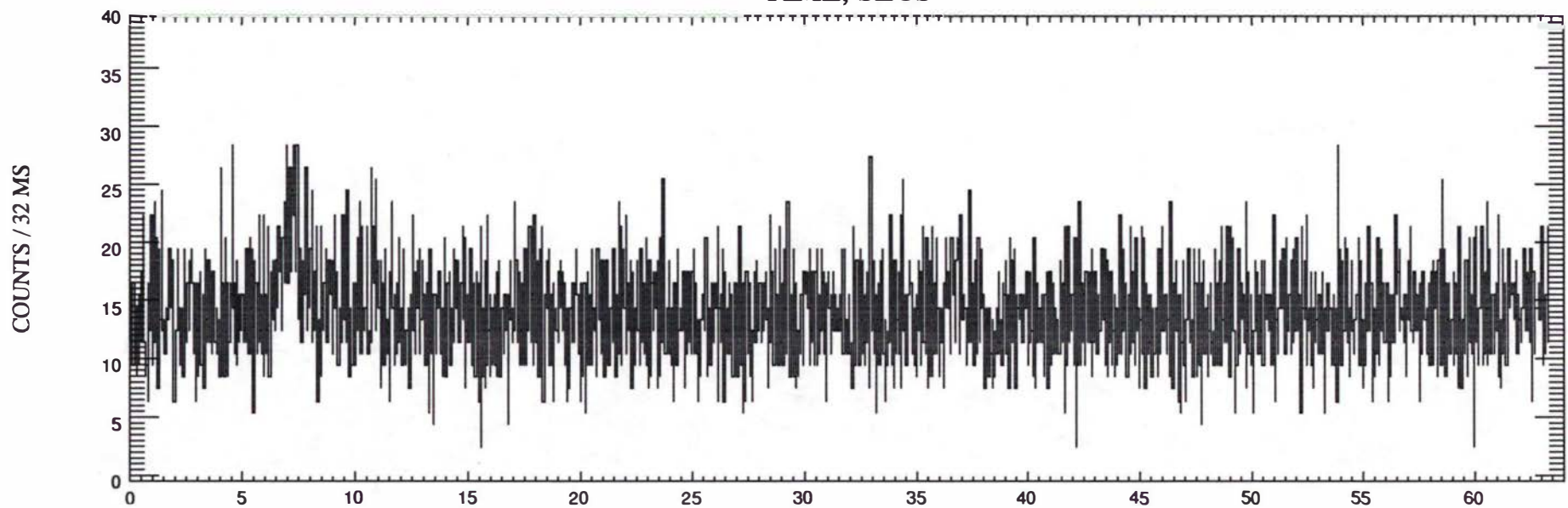


UNIFORM TIME

Burst Counter 6 at UT= 6.103477109273 h=21972.518 s 06:06:12.518

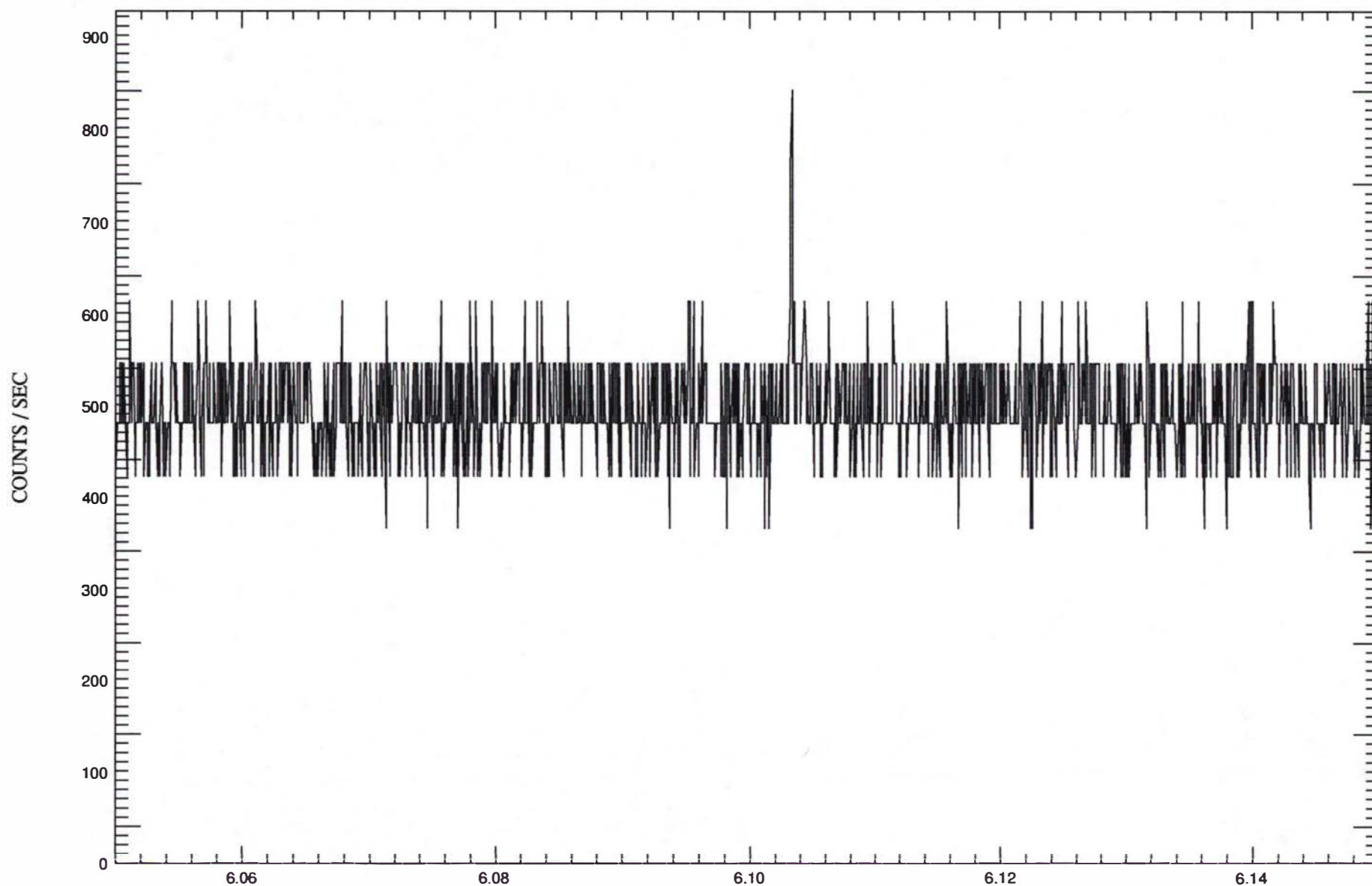


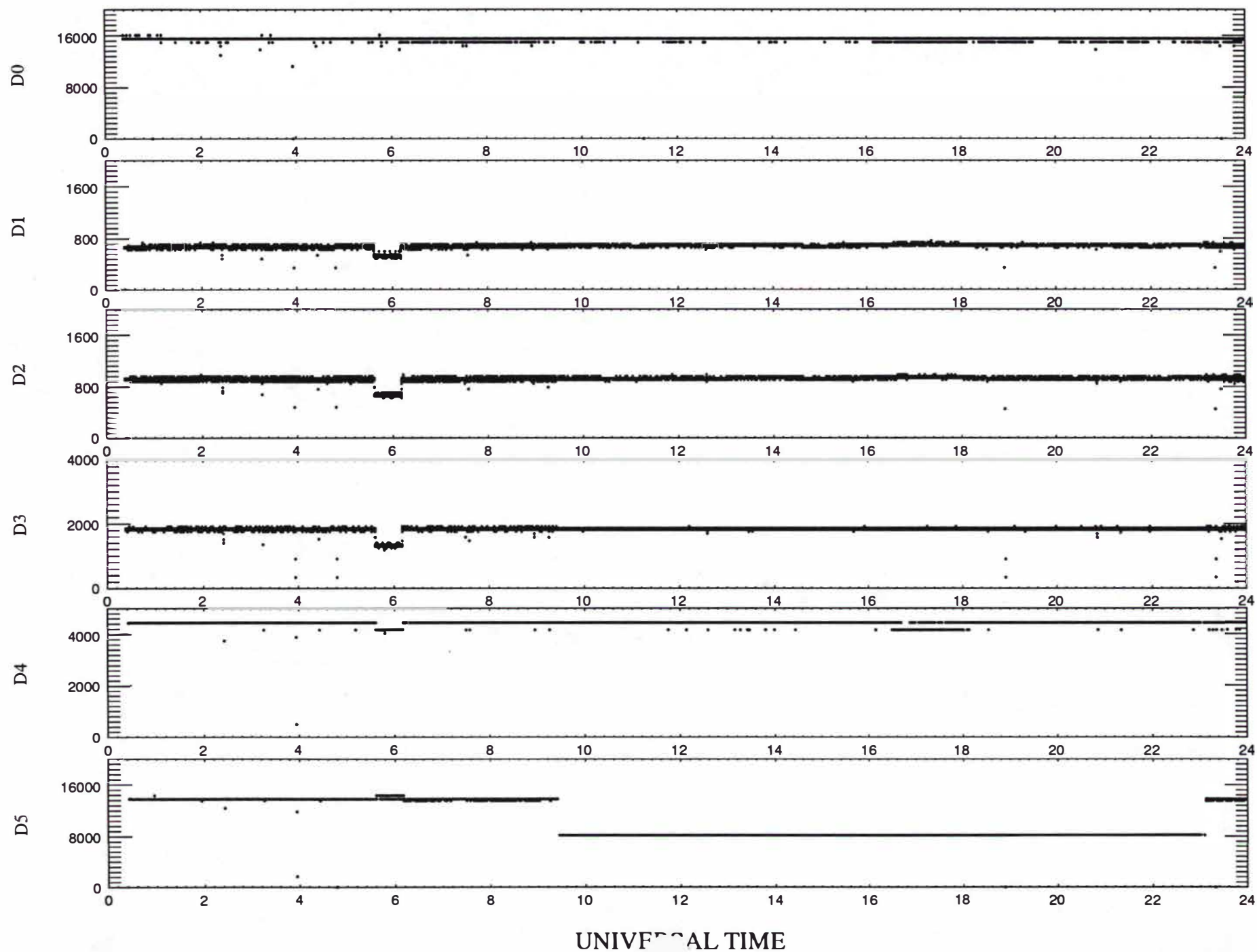
TIME, SECS



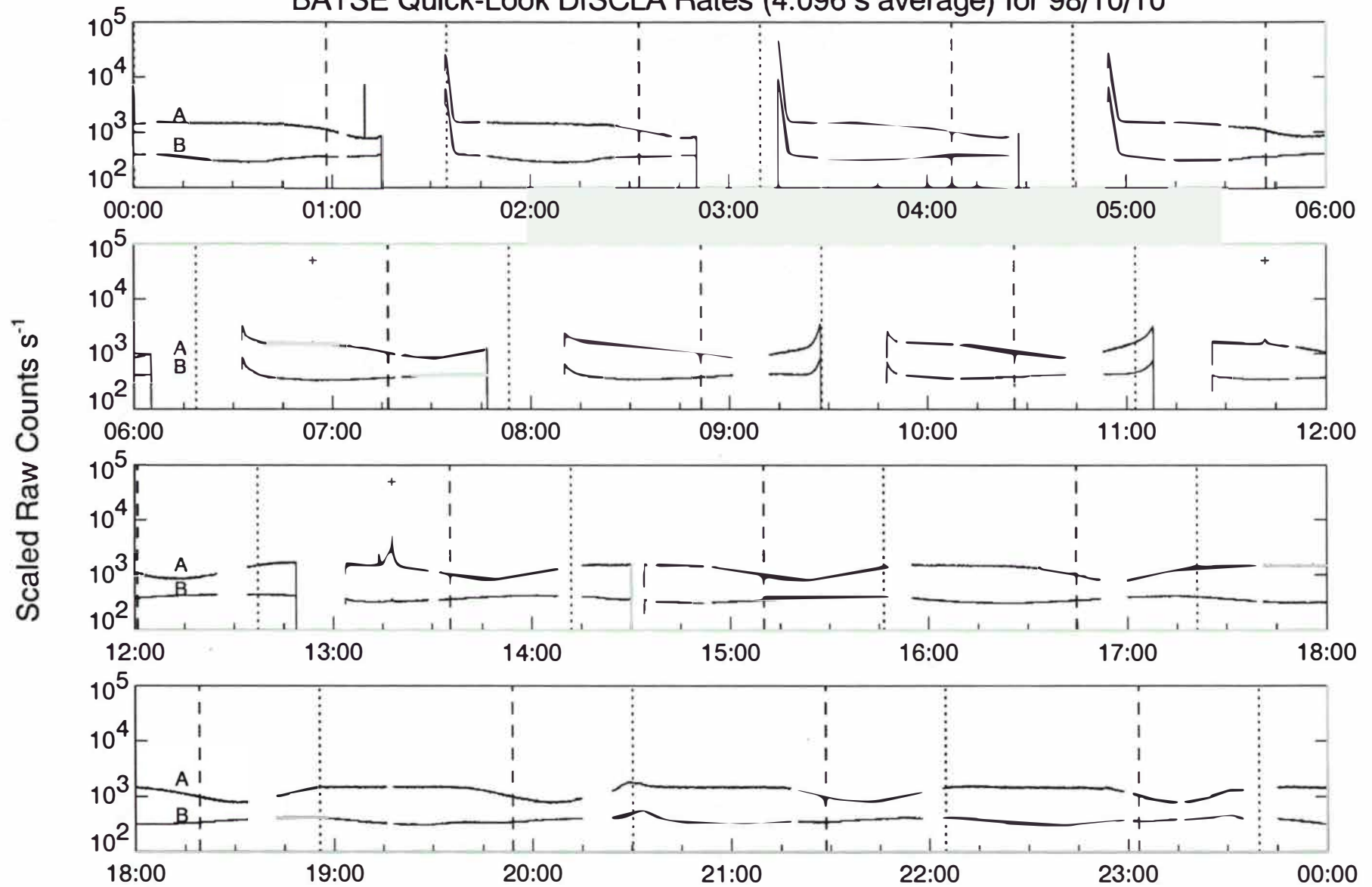
TIME, SECS

CALIBRATION DATA INCLUDED





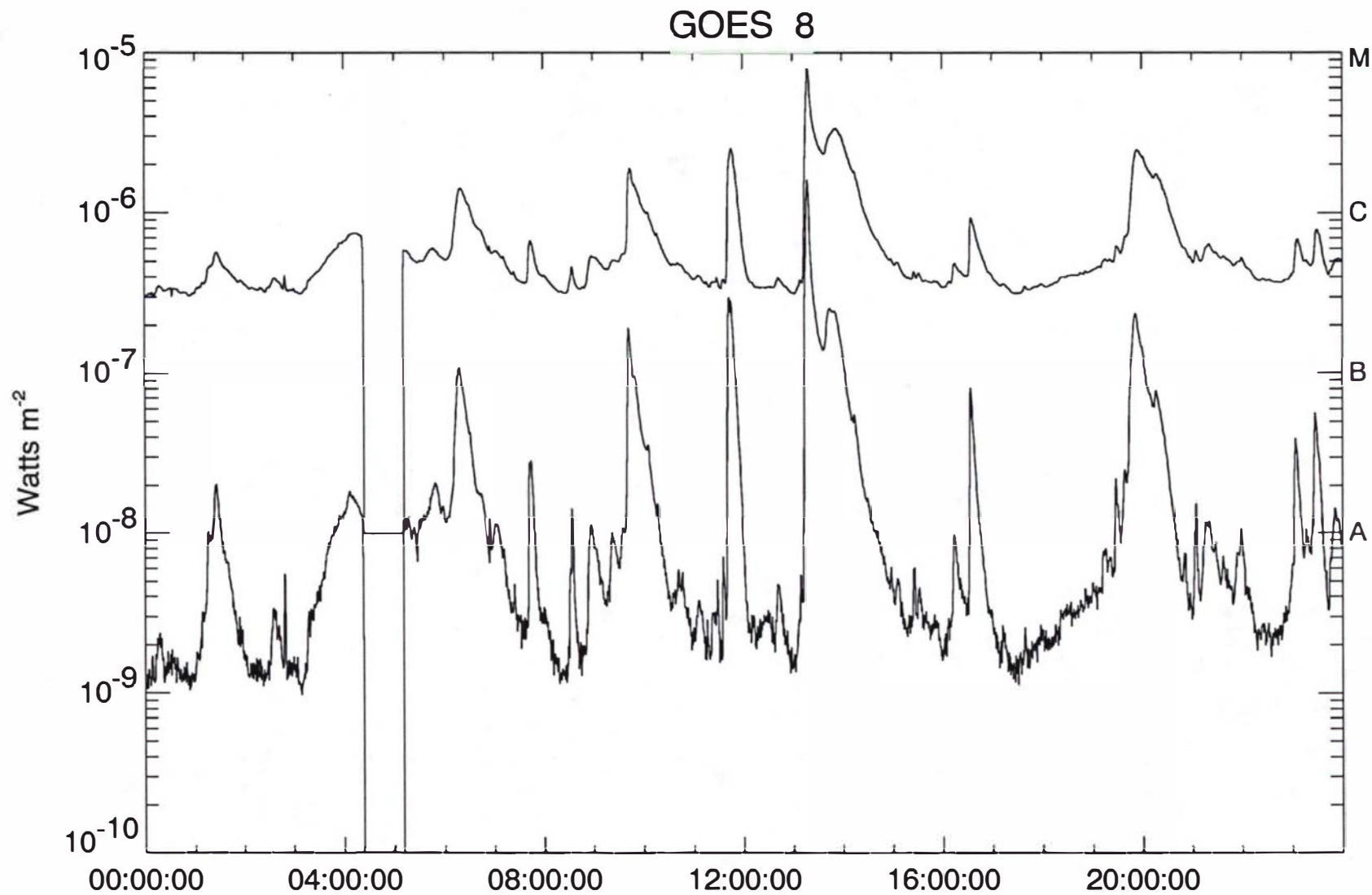
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/10



Current Time: 98/10/14, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/10/10, 0000:00

Plot created: 98/10/14, 1007

Channel 1 (1.0 - 8.0 Angstroms)

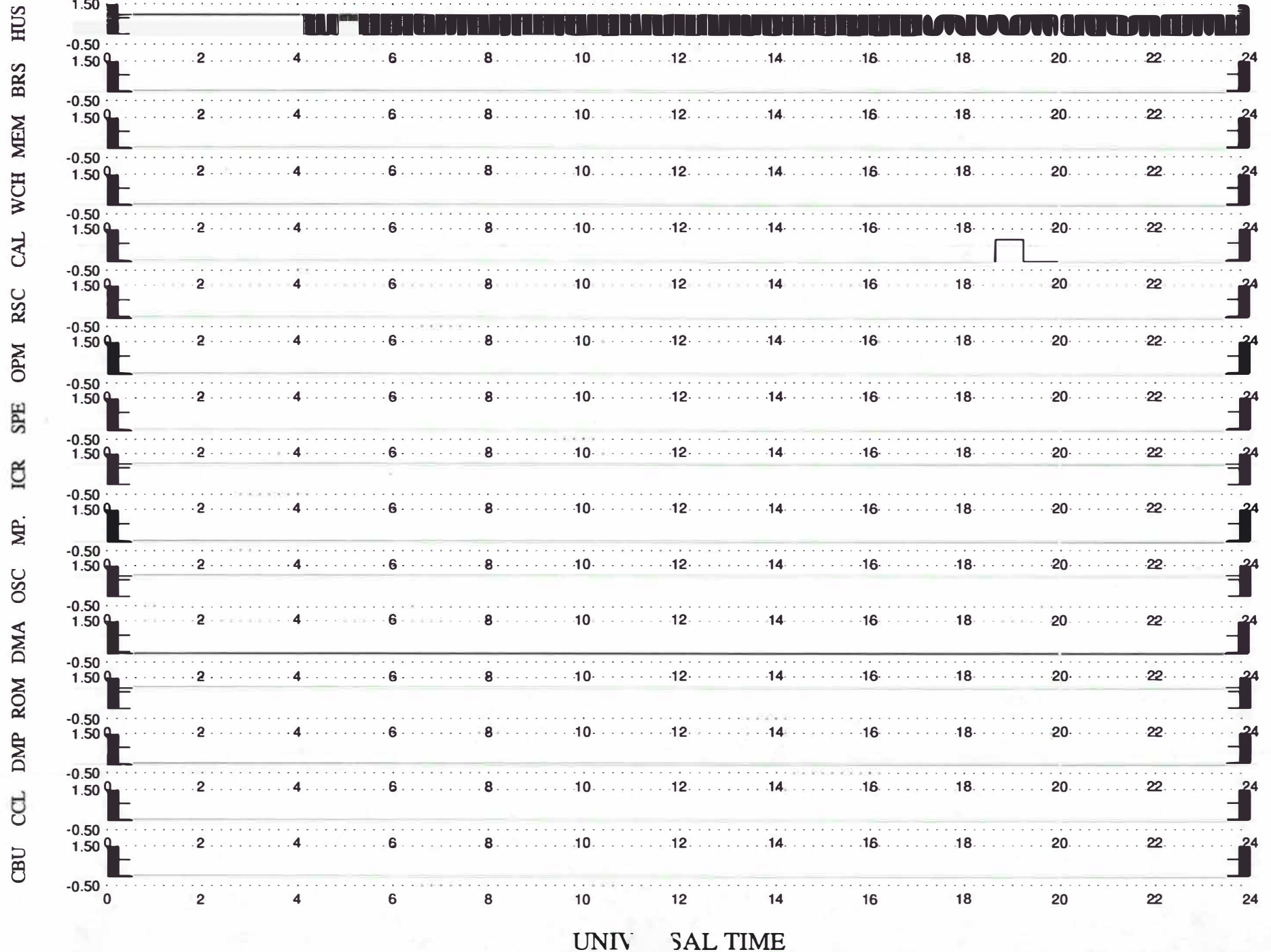
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

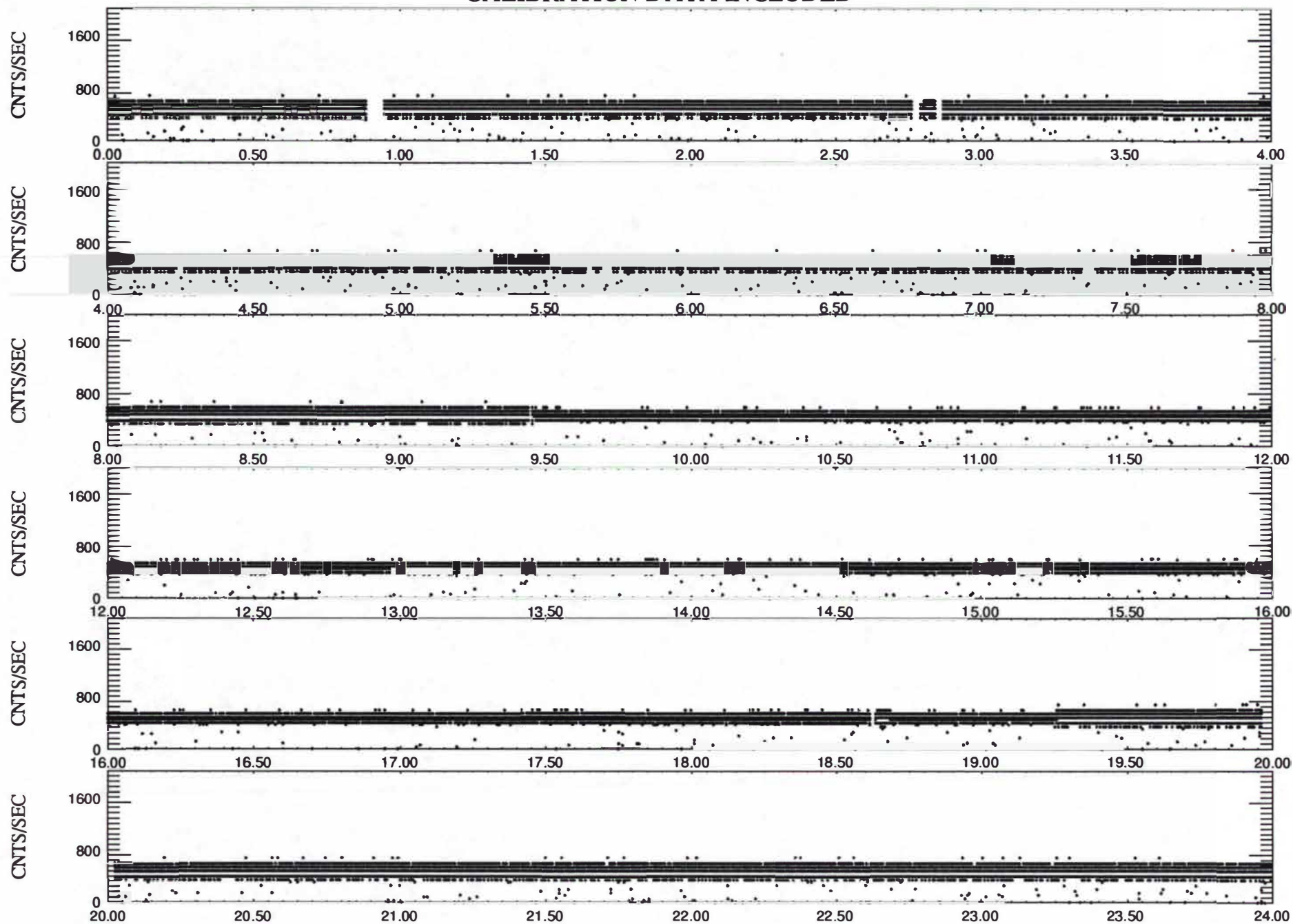
Background not subtracted

Sample average = 10

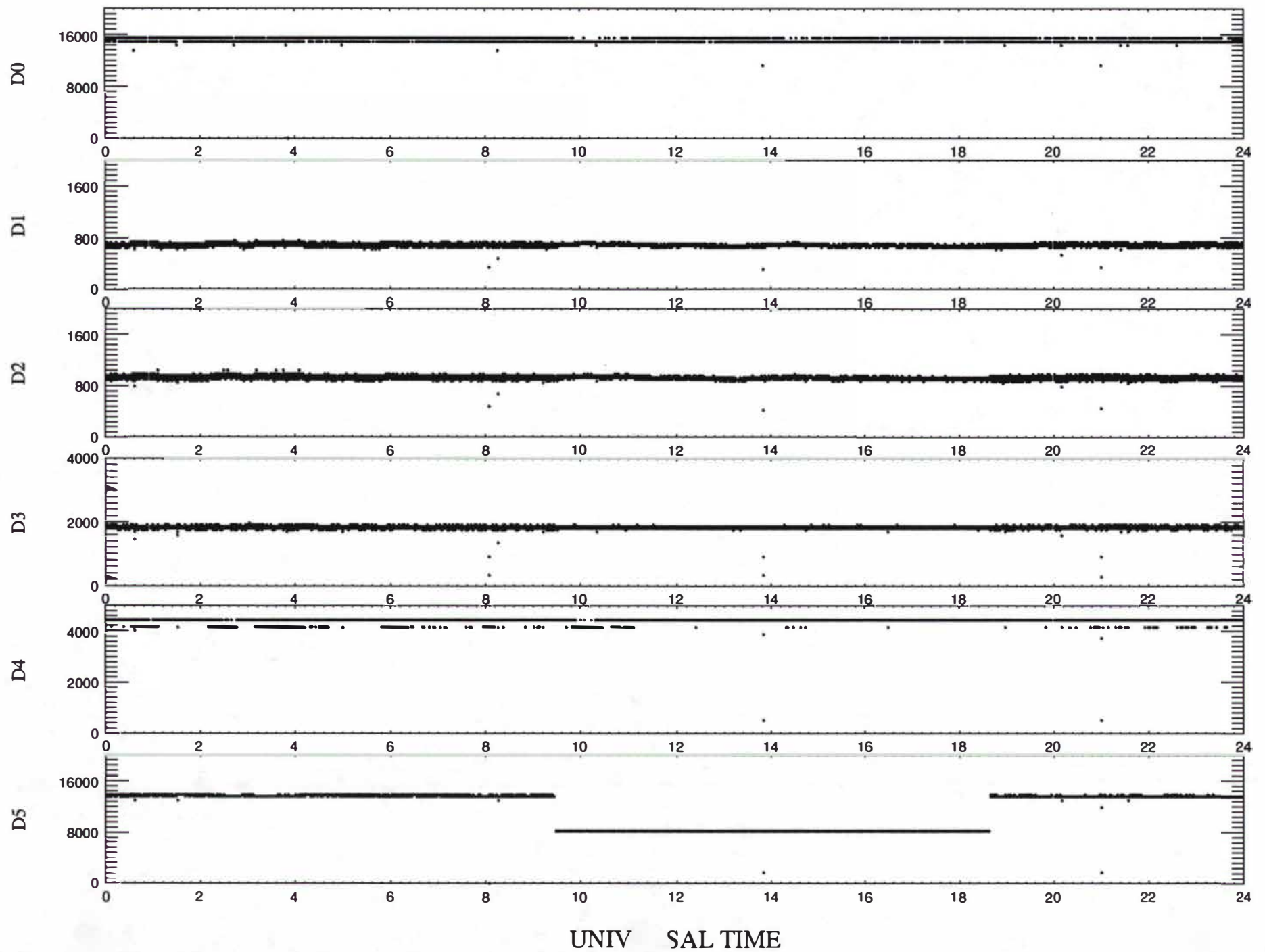
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From SURASAK@fender.msfc.nasa.gov Tue Oct 13 14:32:38 1998
Return-Path: <SURASAK@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA10002; Tue, 13 Oct 1998 14:32:35 -0700
From: SURASAK@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA25491; Tue, 13 Oct 1998 14:32:33 -0700
Date: Tue, 13 Oct 1998 16:31:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981013163135.2020c260@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7150
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7150
EVENT OF 1998 OCT 11 DAY OF YEAR=284
EVENT CROSSING TIME AT BATSE : 70556. S. OR 19:35:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 38.000 -60.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/10/ 98 IS:
RA= 163.583 DEC= -0.258 DIST= 6.106 AU
BATSE-ULYSSES DISTANCE = 913502604. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 874.67 SECS.
CROSSING TIME AT ULYSSES IS 71431. S. OR 19:50:30 +/- 570.05 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/10/ 98 IS:
RA= 154.616 DEC= 11.982 DIST= 2.184 AU
MARS-BATSE DISTANCE = 326745824. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.49 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 434.79 SECS.
CROSSING TIME AT MARS IS 70991. S. OR 19:43:10 +/- 180.12 SECONDS

BATSE BURST TRIGGER

NO.: 7150

TIME: TJD=1097 SECONDS=70556

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.2 AZIMUTH=4.1 ERROR=1.699 DEGREES

COMMENTS:

GRB. SINGLE PULSE. START AT ABOUT -10 S. DURATION ABOUT 38 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7150	981011	11097	70556	6000	038	-60	38

Date: Feb 15 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

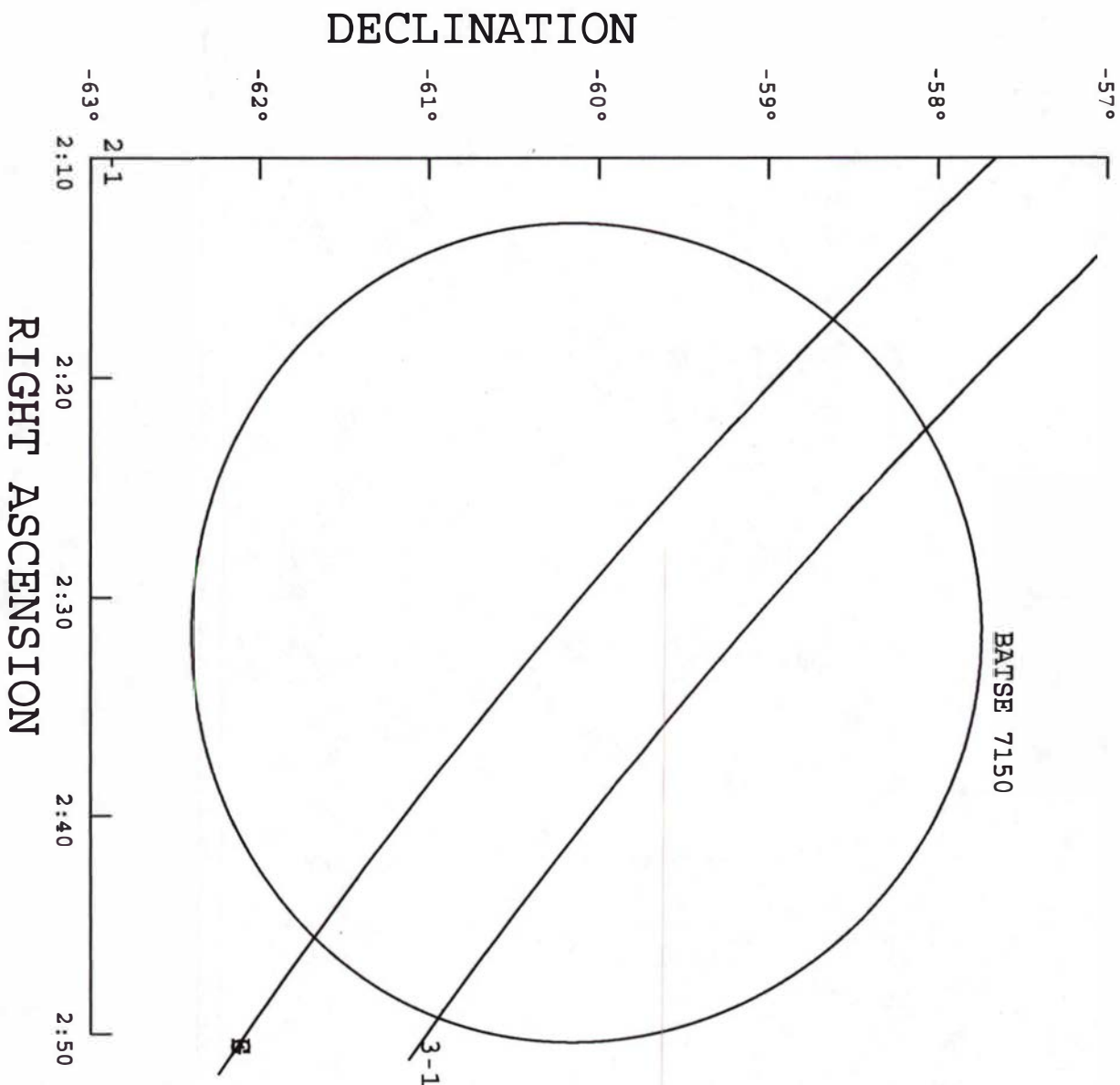
3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vwx@boccl, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation? *No - bad data*
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 BATSE 2 ULYSSES 3 NEAR

EVENT OF OCT 11, 1998 19:35

15 / 2 / 0



BATSE

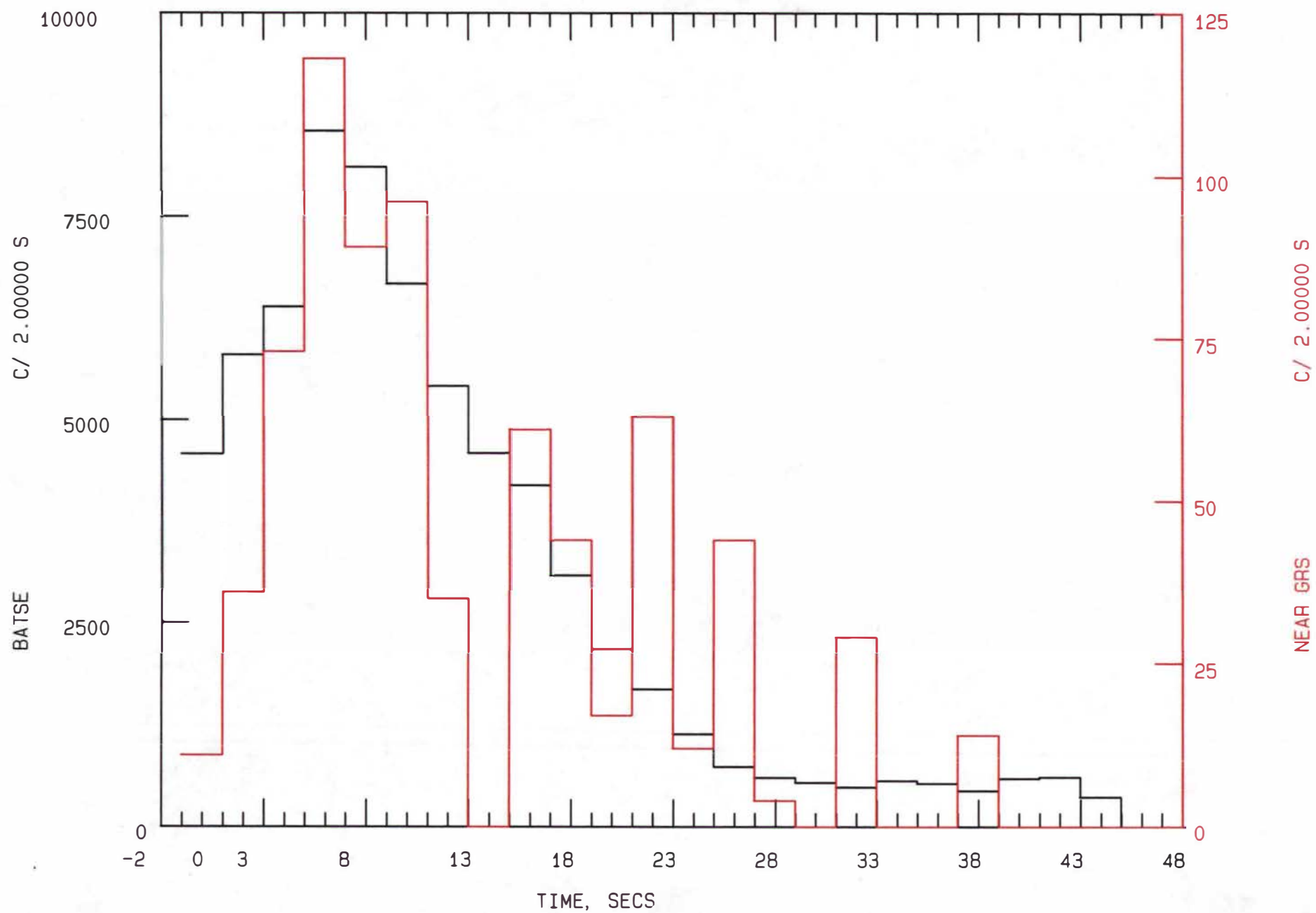
-NEAR GRS

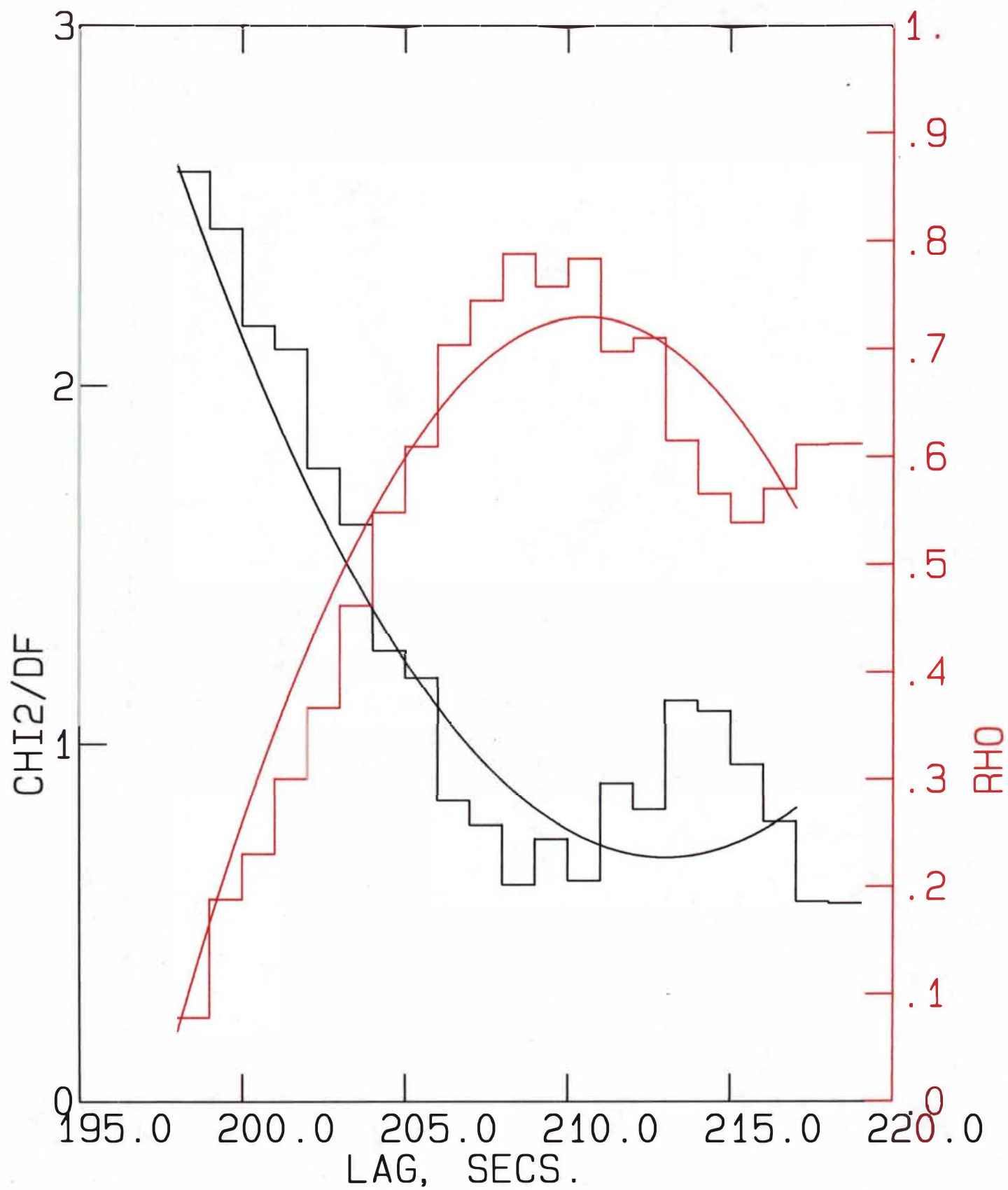
CORRELATION

11/10/98

70556.385

15/ 2/ 0





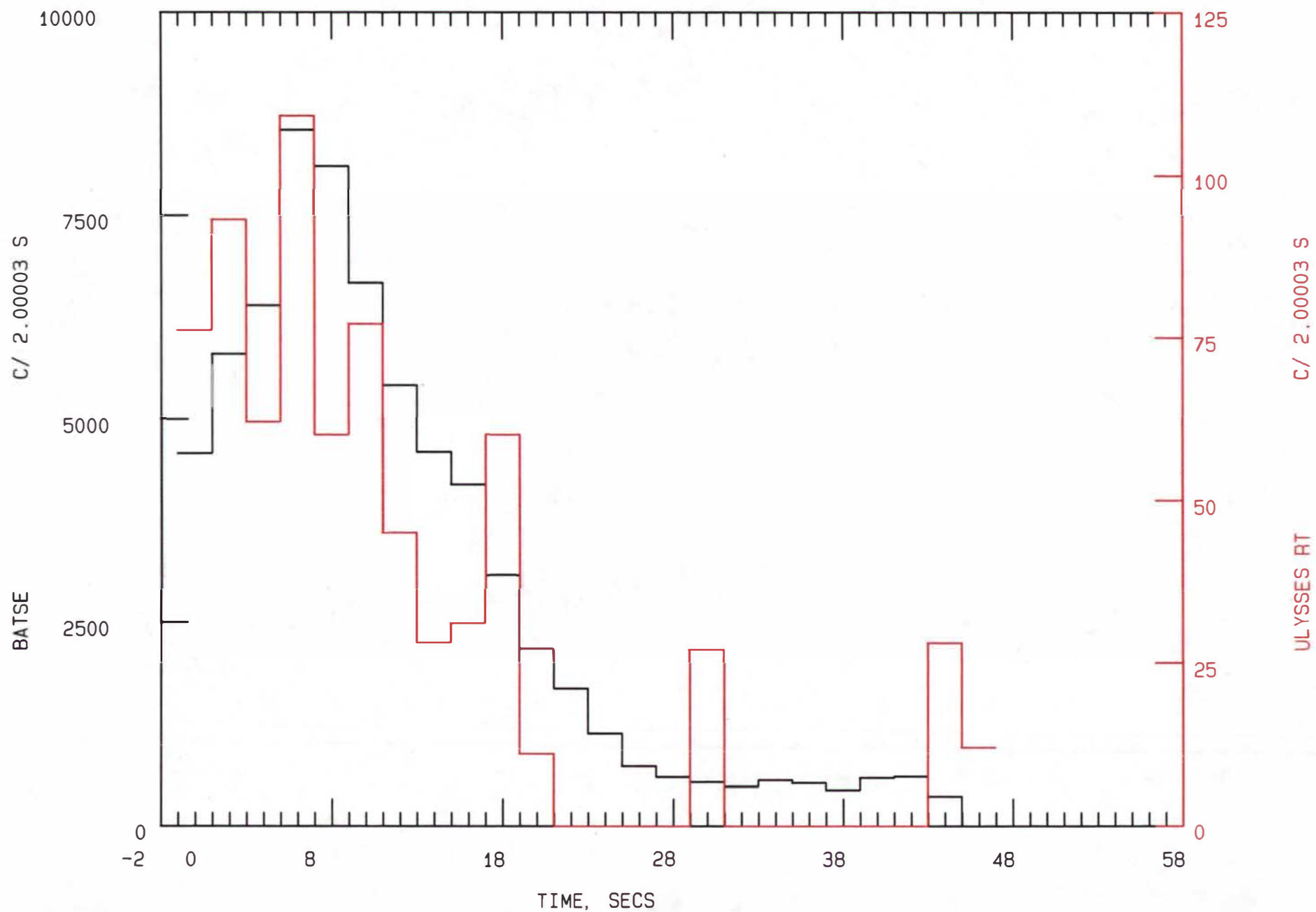
BATSE

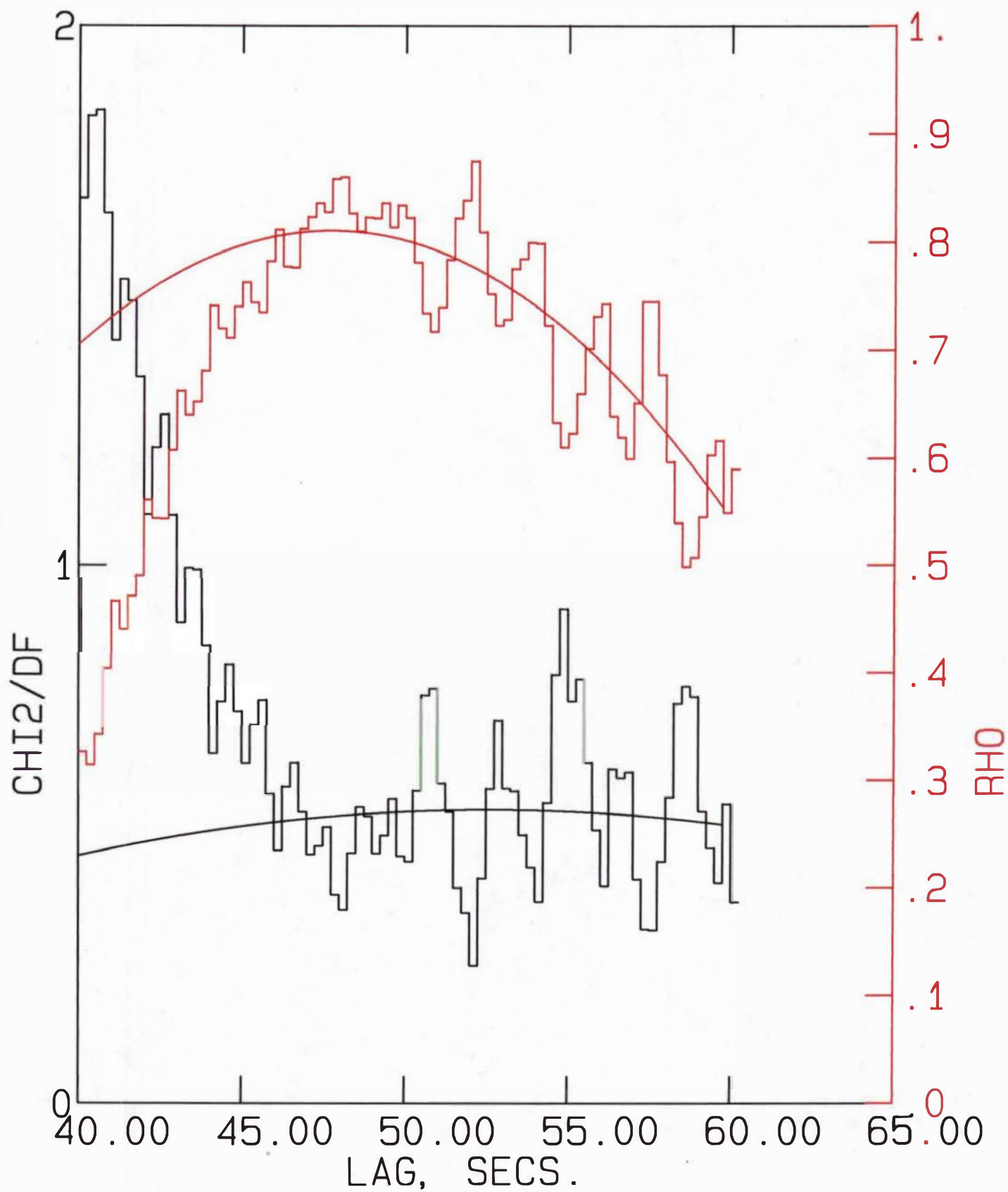
-ULYSSES RT CORRELATION

11/10/98

70556.385

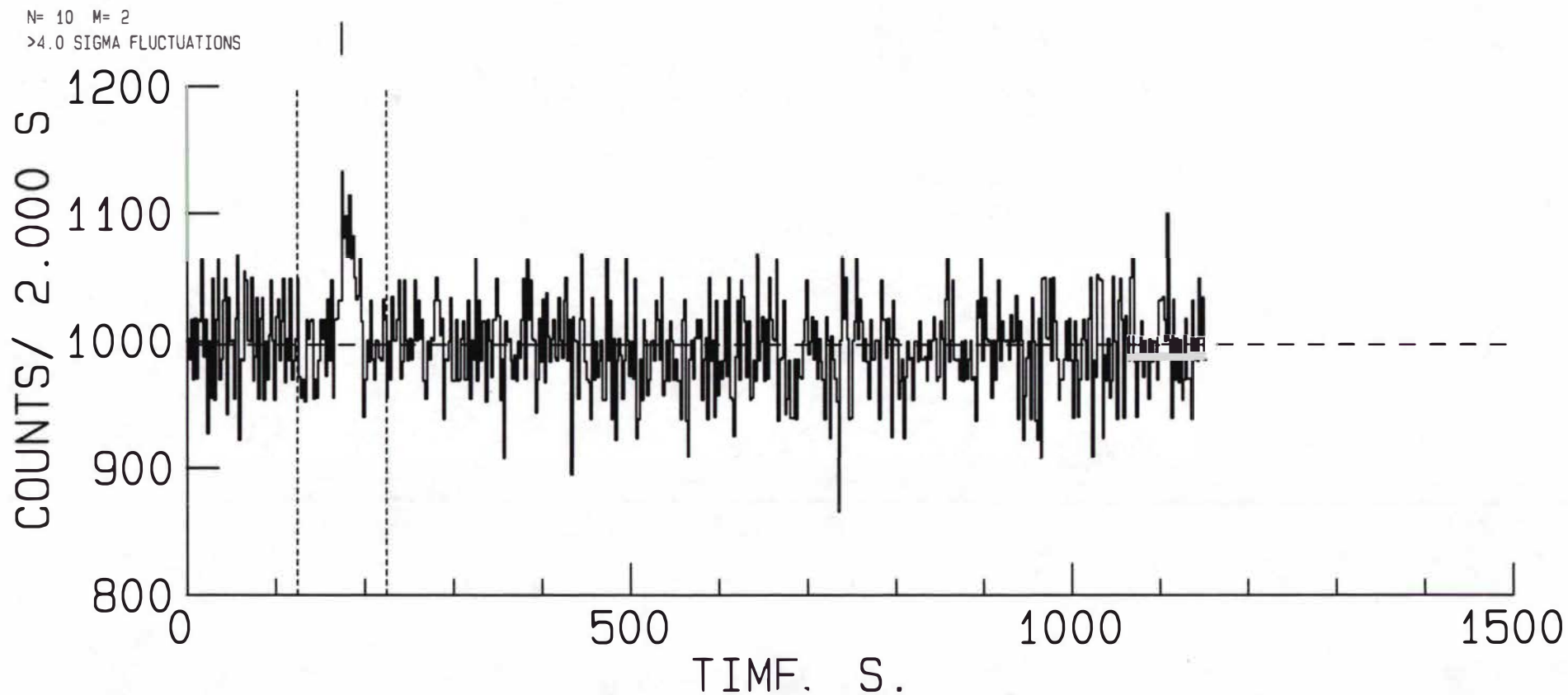
15/ 2/ 0



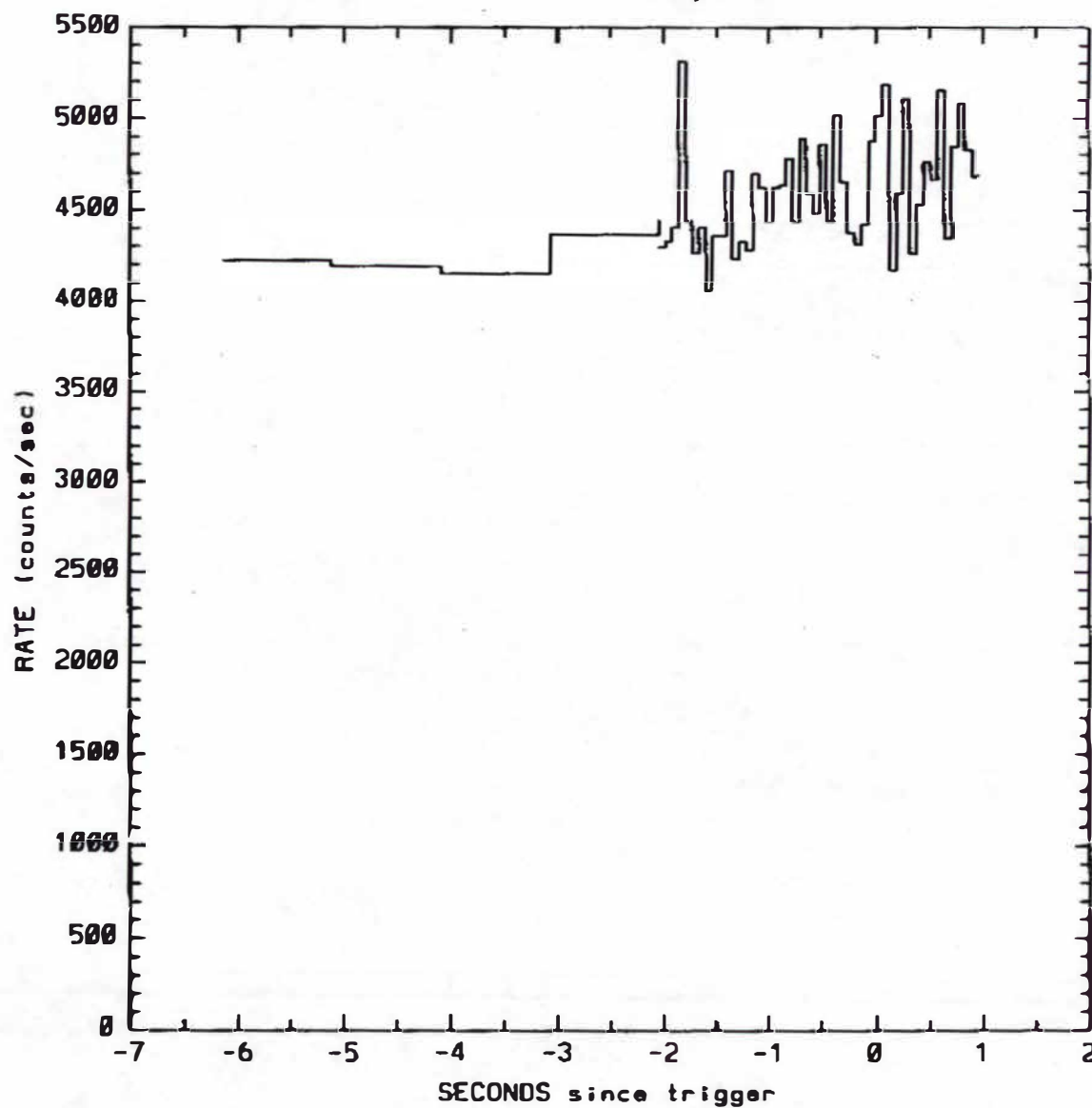


ULYSSES RT
11/10/98 70848.067 s
0.250 S INTERVALS REGROUPED BY 8
22- 150 keV

15 / 2 / 0



DISCSC Data for K. Hurley. No. 7150



9-FEB-2000 09:12:49

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger = . 7150

Trigger Time:
11097 / 70556.385Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 secondsDetectors [7..0].
-----2-0Discriminators:
[3 . 4]Quality Mask:
BDISP1

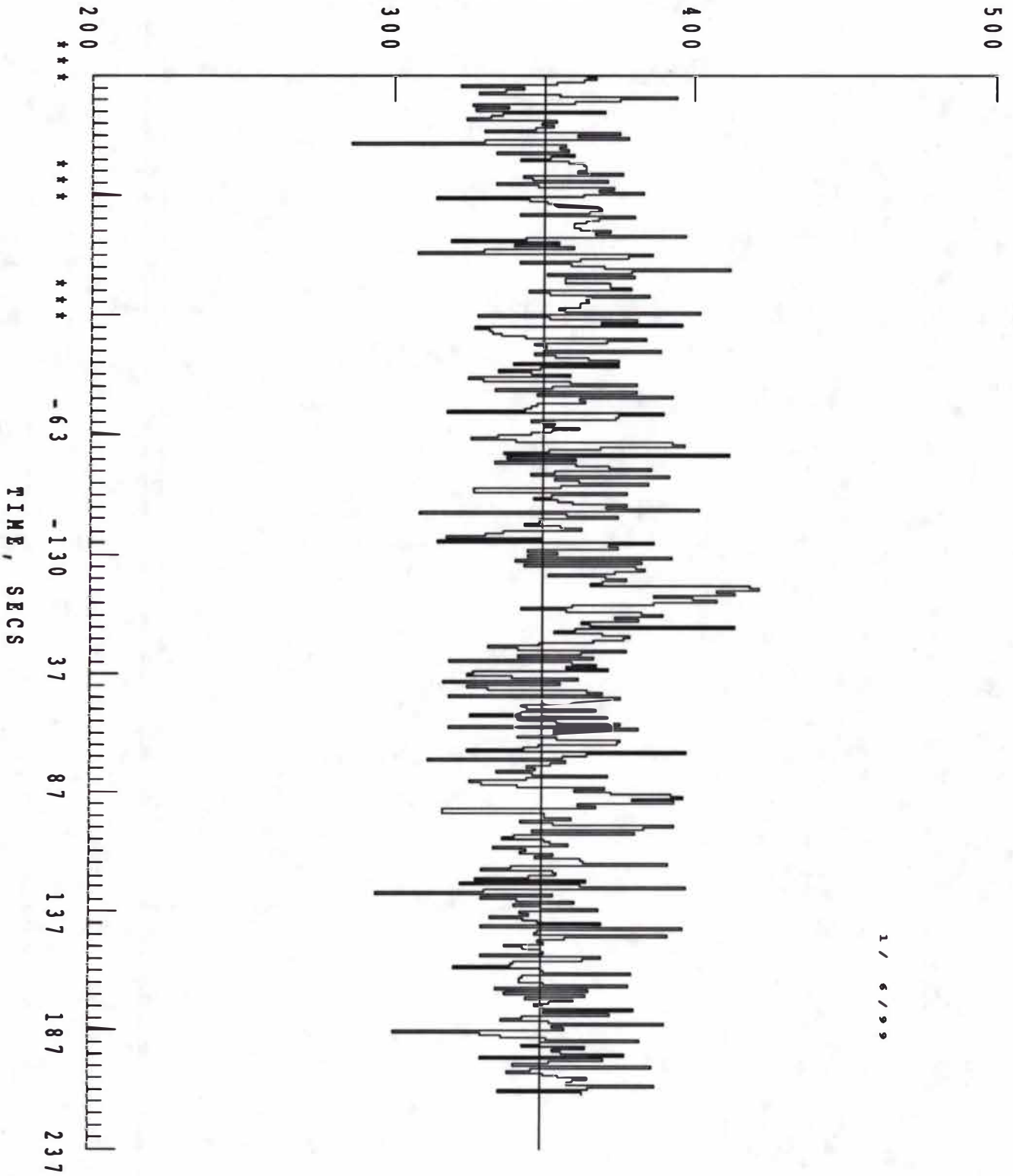
NEAR

11/10/98

70513.116

100-1000 keV

COUNTS/1.000 S

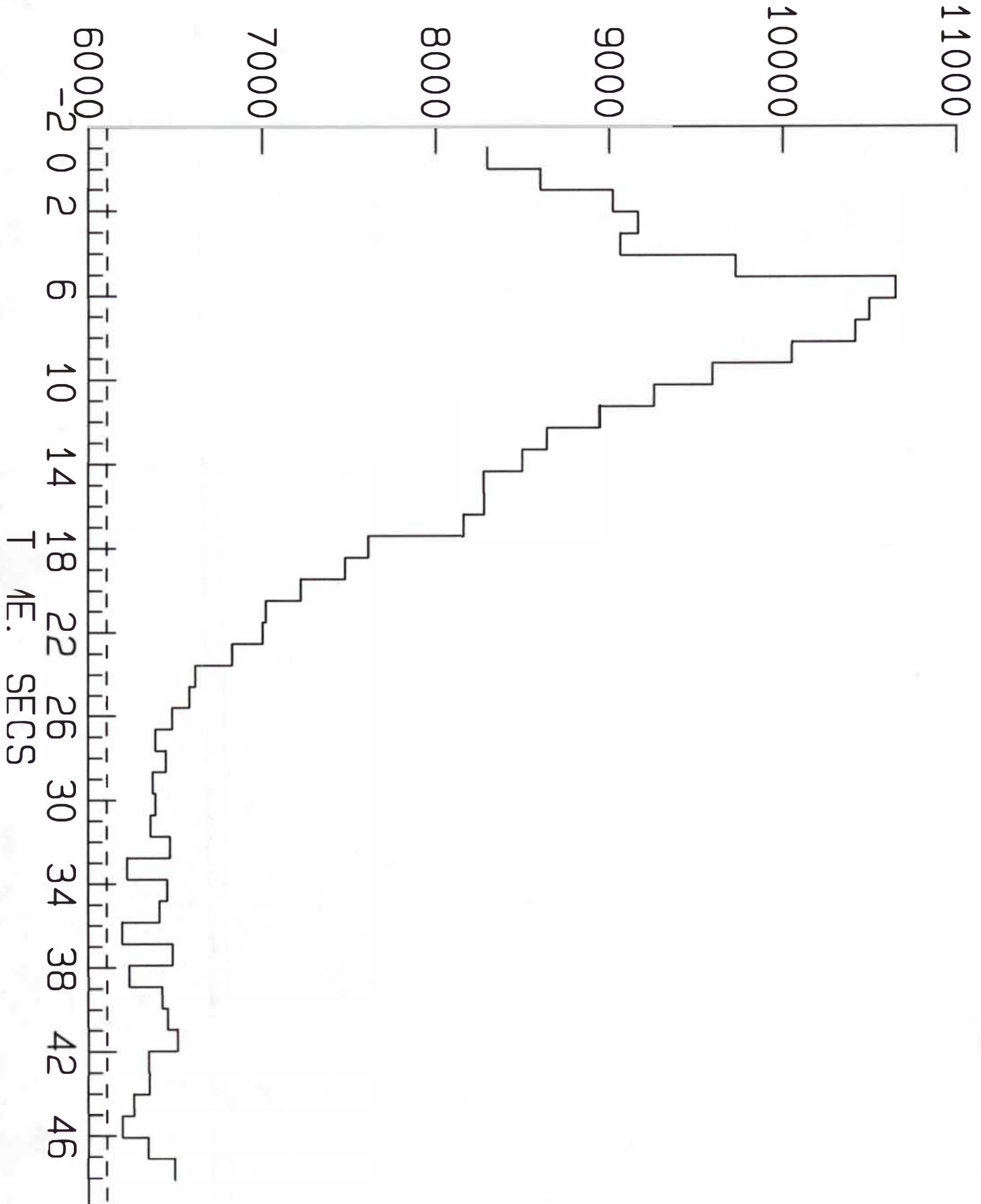


BATSE

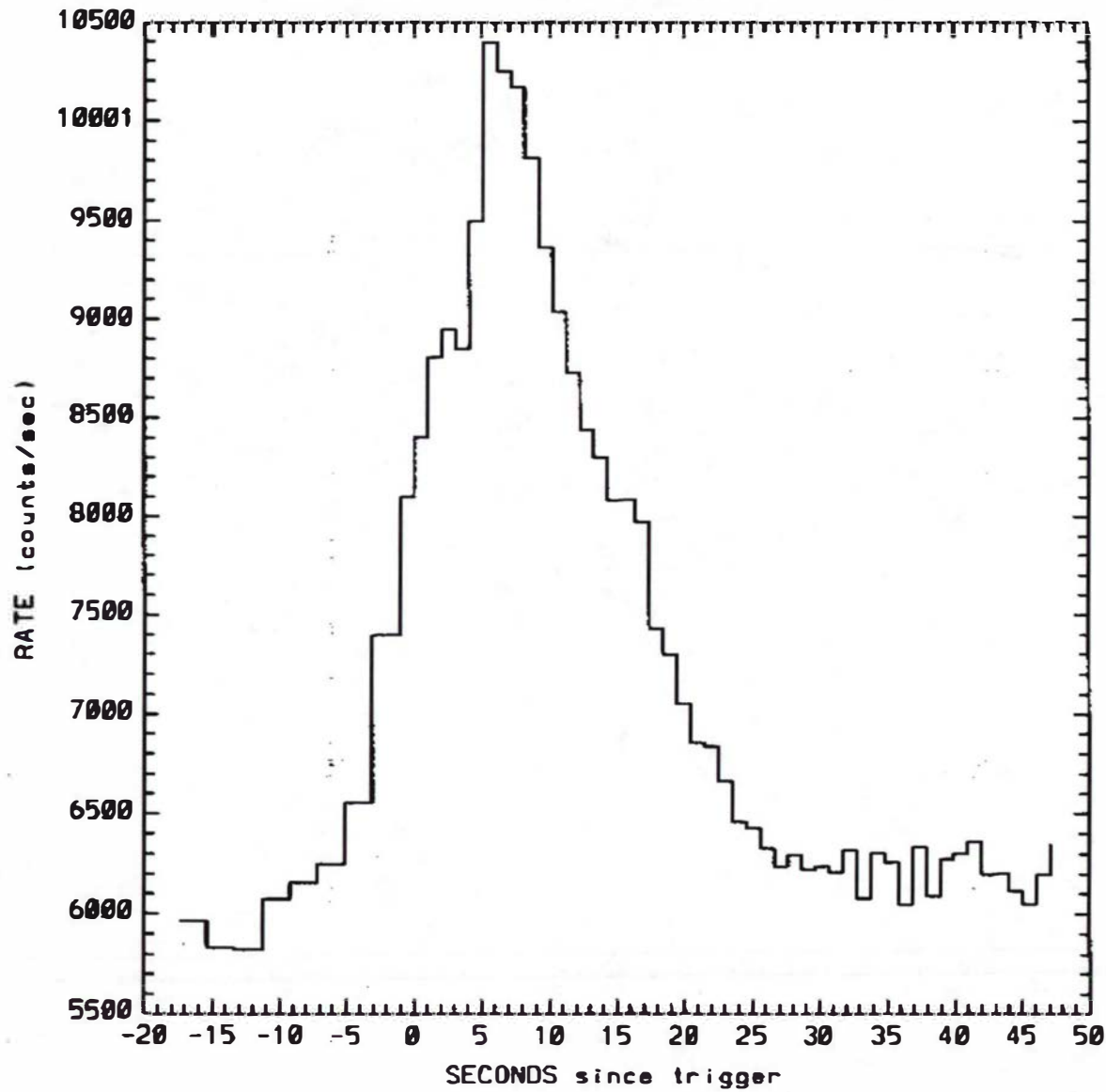
11/10/98

70556.385

25- 100 keV
COUNTS/1.024 S



DISCLB Data for K. Hurley, No. 7150



22-OCT-1998 15:04.44

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7150

Trigger Time:
11097 / 70556.385Burst Data Type:
DISCLBDeadtime
Corrected: NBackground Data
Type: NoneMinimum Integ. Time:
1.024 second(s)Detectors [7..8],
-----2-8Discriminators:
(1 , 2)Quality Mask:
BOTSP1

From khurley@sunspot Thu Oct 15 08:15 PDT 1998
Date: Thu, 15 Oct 1998 08:14:18 -0700
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981011a,b

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1800 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 11 1998 20:41	moderate, 64 ms long	3100
OCT 11 1998 22:35	moderate, 32 ms long	3100

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczyski, marar, tee

From WOODS@bowie.msfc.nasa.gov Thu Oct 15 09:01 PDT 1998
From: WOODS@bowie.msfc.nasa.gov
Date: Thu, 15 Oct 1998 11:01:34 -0500
To: khurley@sunspot.ssl.berkeley.edu
Subject: RE: GRB981011a,b

Kevin,

I can't see these events in the BATSE data, but there are a number of strong untriggered events starting ~24 hours later lasting for through the first half of the next day. All of these are consistent with coming from 1900+14. I doubt we will be changing the trigger criteria any time soon though.

Pete

From SURASAK@fender.msfc.nasa.gov Tue Oct 13 14:28:01 1998

From: SURASAK@fender.msfc.nasa.gov

Date: Tue, 13 Oct 1998 16:27:21 -0500 (CDT)

To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7149

TIME: TJD=1097 SECONDS=3119

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

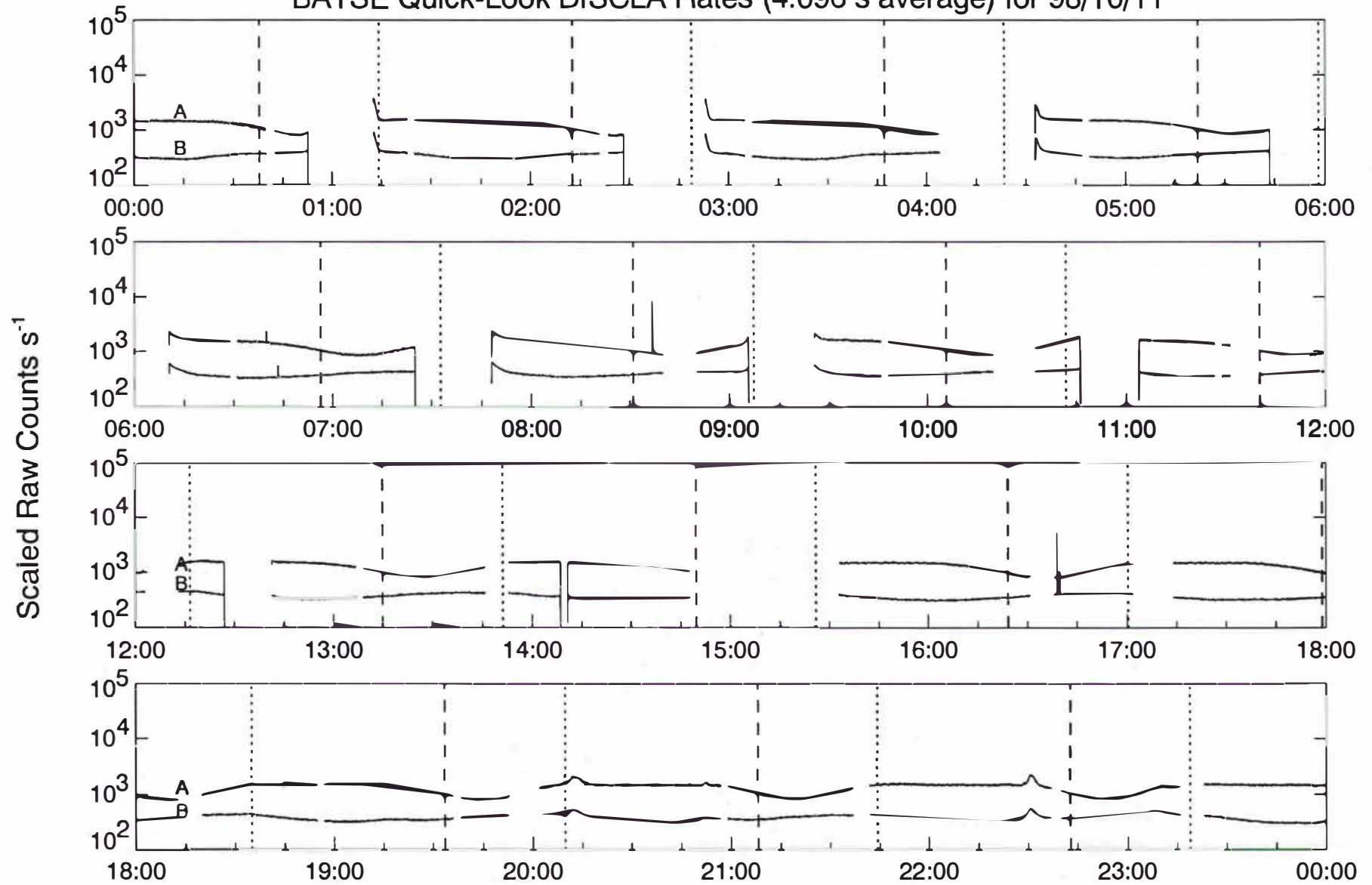
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/11

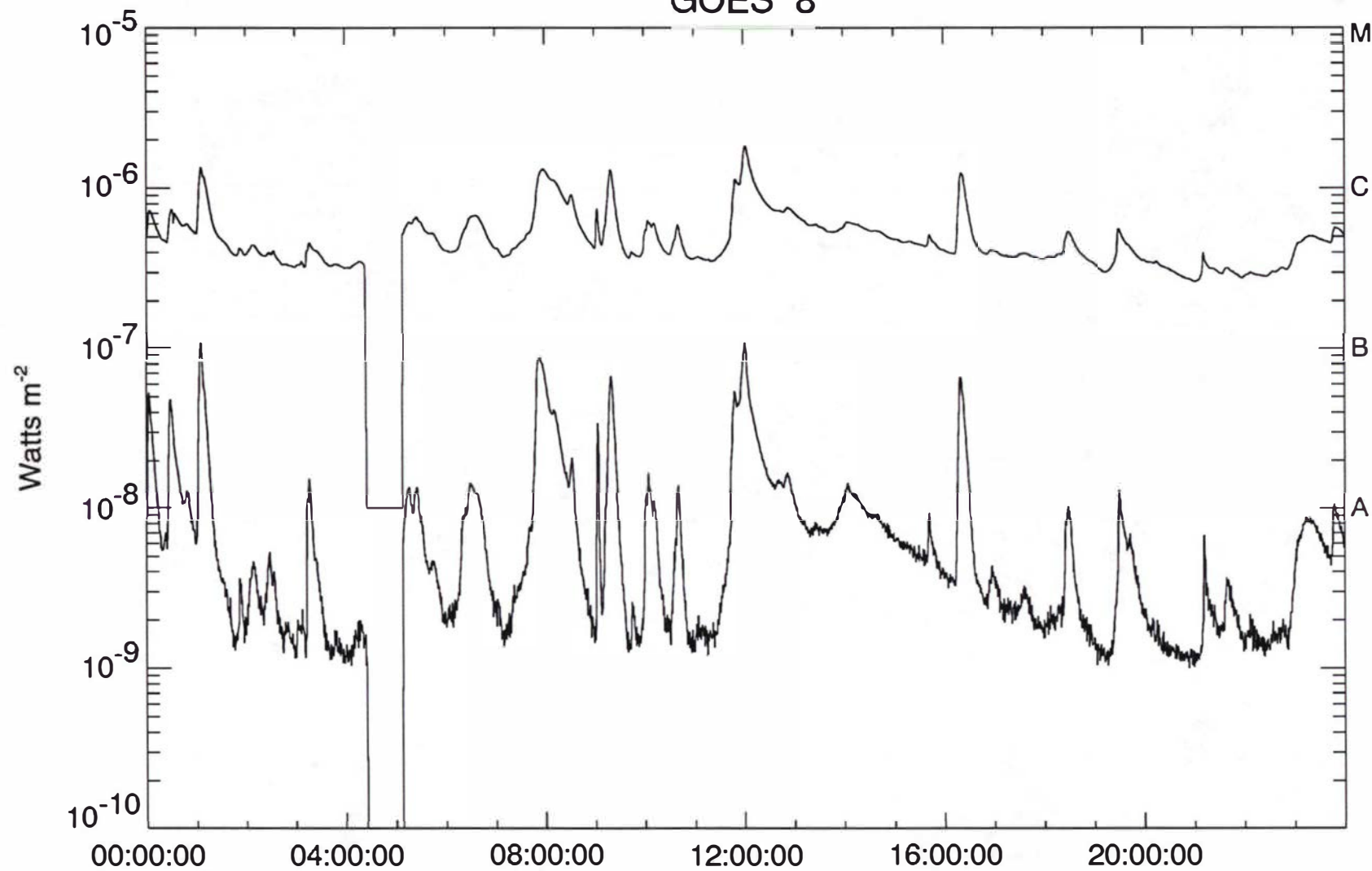


Current Time: 98/10/15, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/11, 0000:00

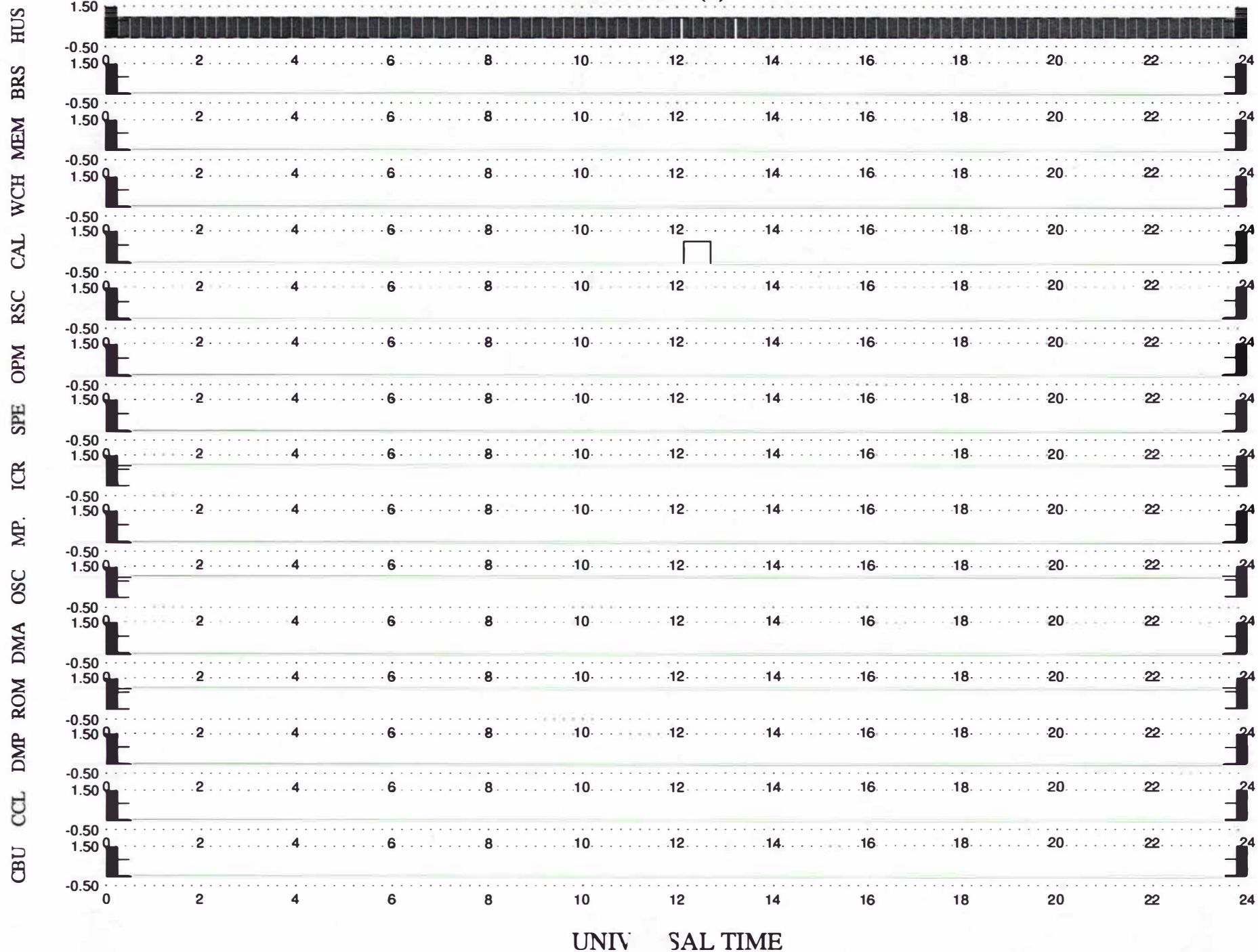
Plot created: 98/10/15, 1007

Channel

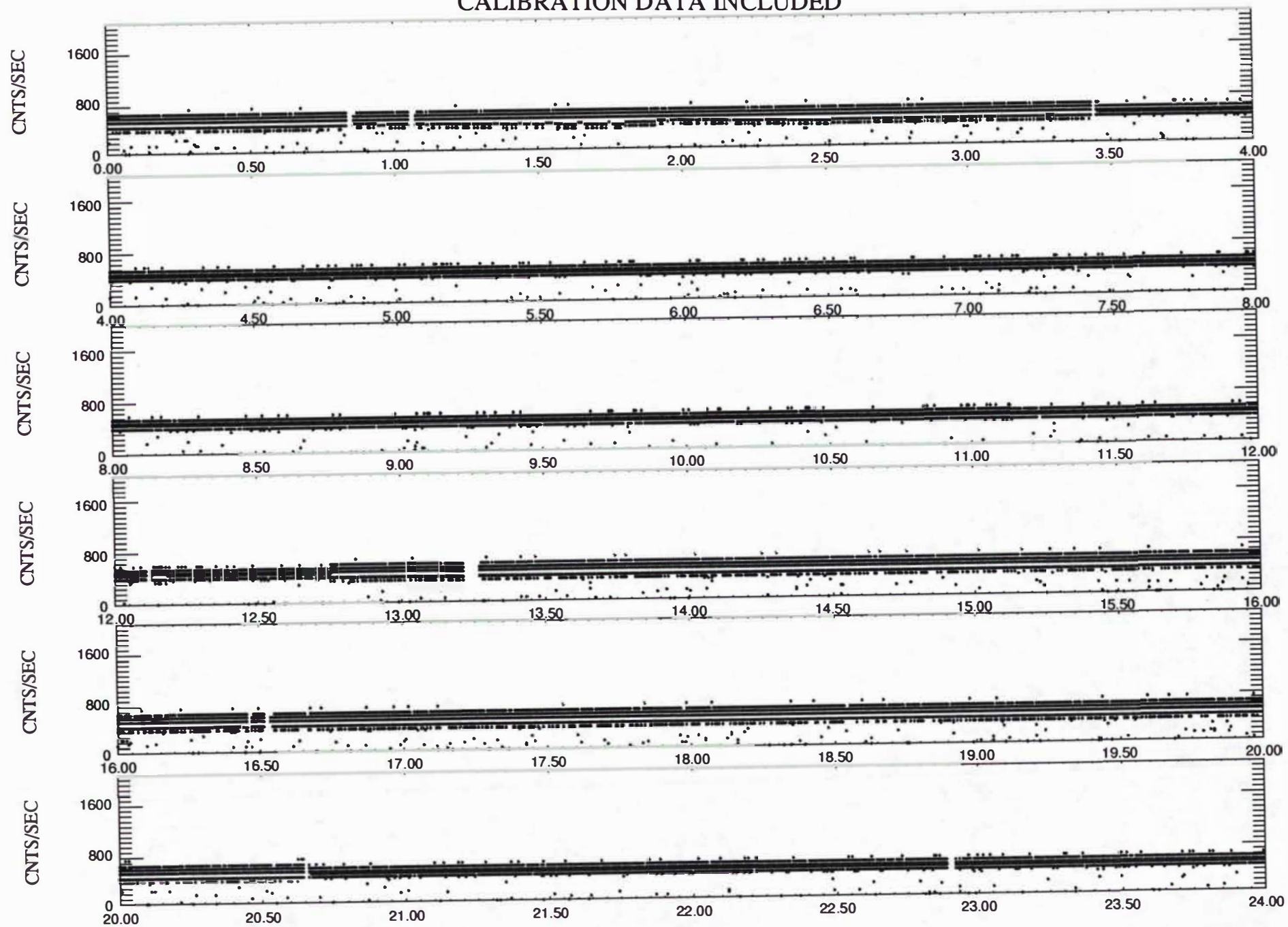
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

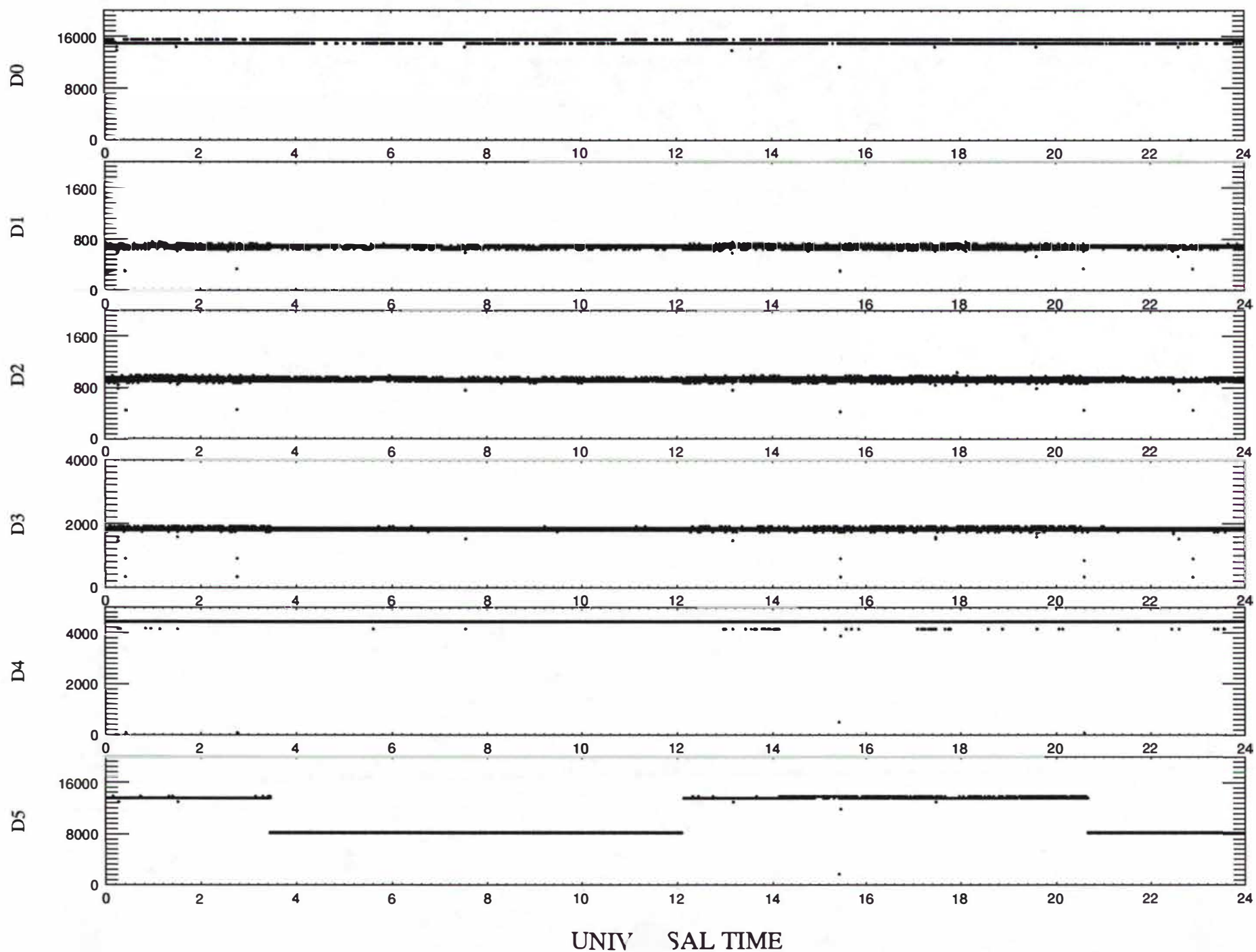
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From khurley@sunspot Fri Oct 16 08:26 PDT 1998

Date: Fri, 16 Oct 1998 08:29:33 -0700

From: khurley@sunspot (Kevin Hurley)

To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lhevax.gsfc.nasa.gov, cline@lhevax.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov

Subject: GRB981012A,B

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1655 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 12 1998 00:52	moderate, 128 ms long	3100
OCT 12 1998 01:36	strong, 128 ms long	3100

Were these events detected by anyone else?

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, frontera, kouveliotou, kurczynski, marar, tee

From WOODSP@fender.msfc.nasa.gov Thu Oct 15 07:05:57 1998

From: WOODSP@fender.msfc.nasa.gov

Date: Thu, 15 Oct 1998 9:05:41 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7151

TIME: TJD=1098 SECONDS=1805

TYPE: PARTICL

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

JANA TAB1 19981012 22009

ULYSSES RT

05/08/05

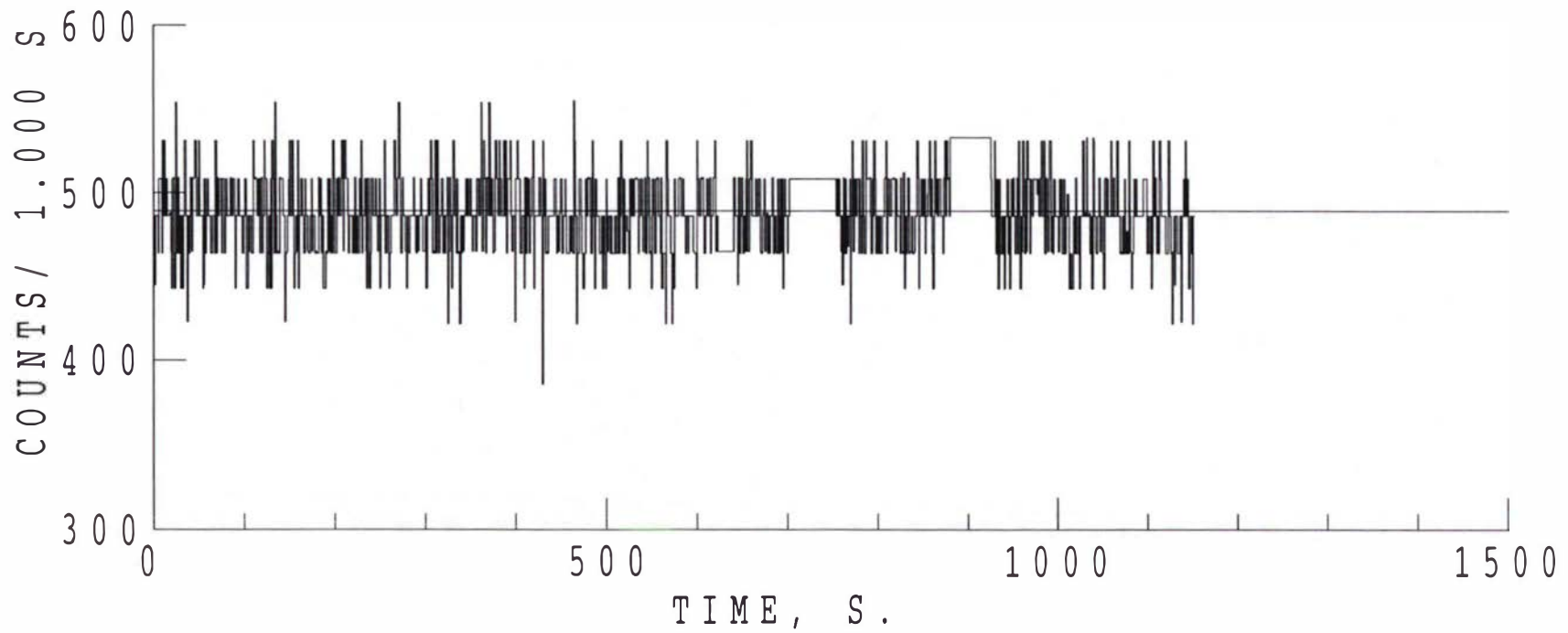
12/10/98 21420.447 s

0.500 S INTERVALS REGROUPED BY 2

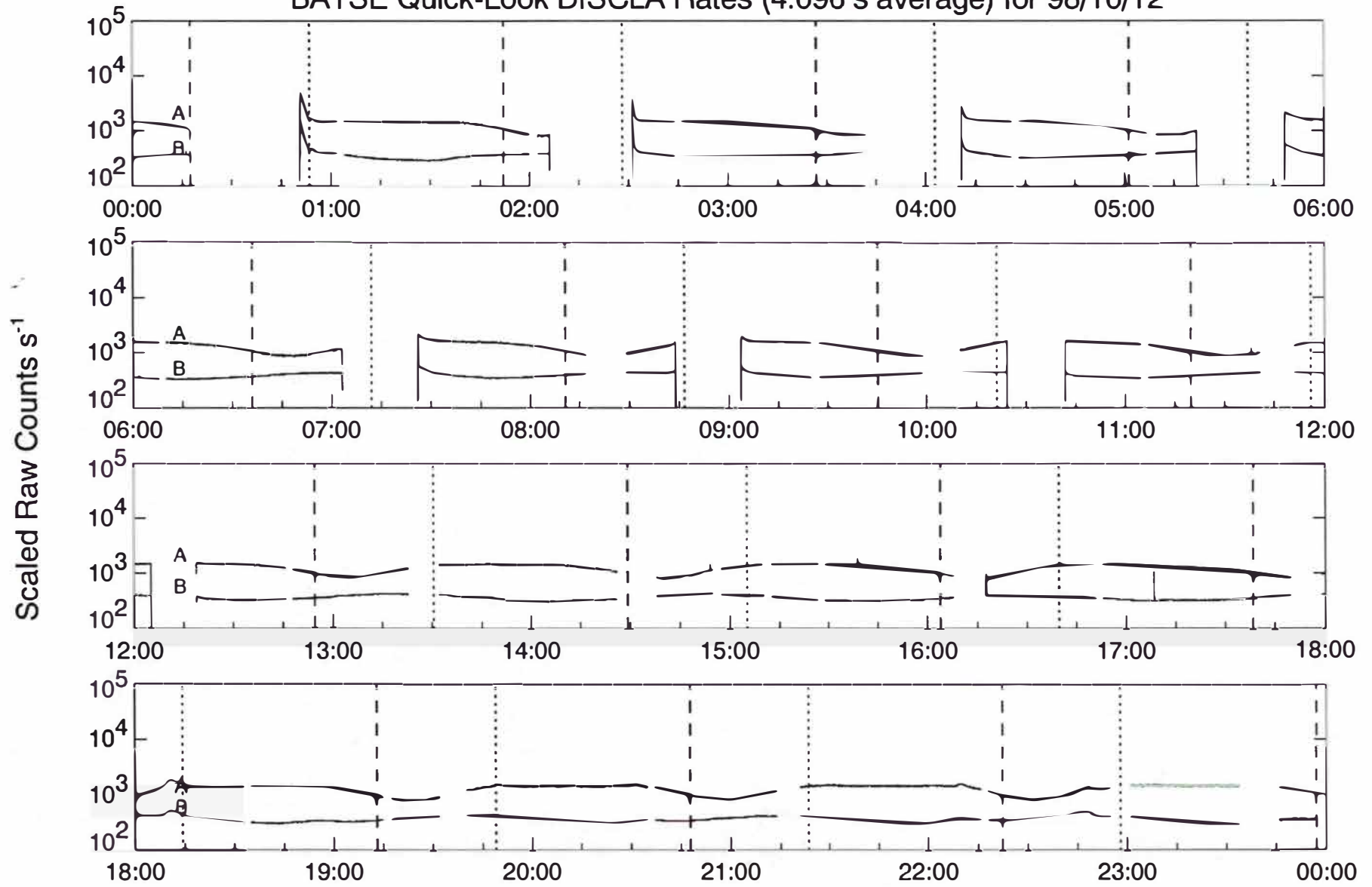
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/12

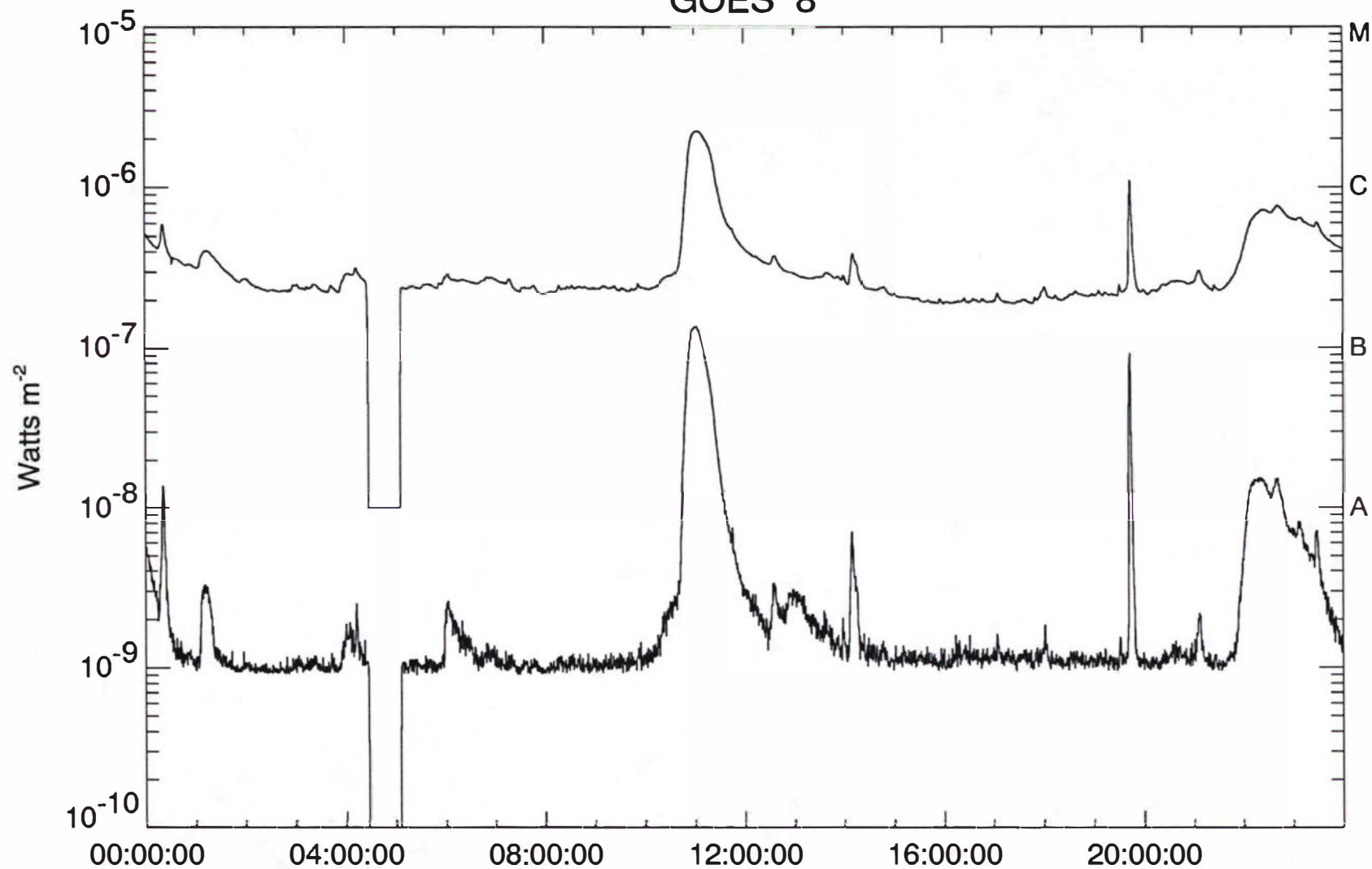


Current Time: 98/10/16, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/12, 0000:00

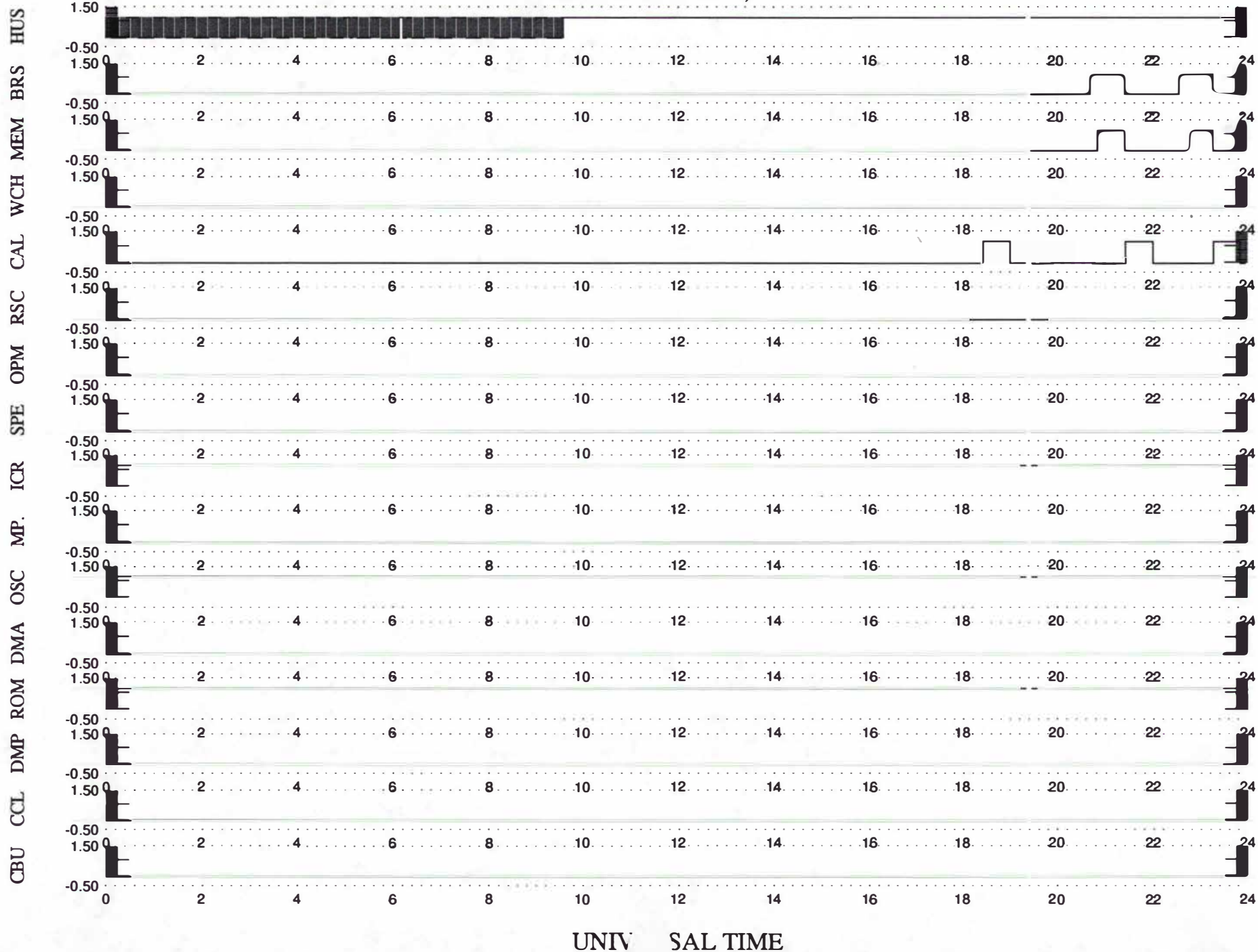
Plot created: 98/10/16, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

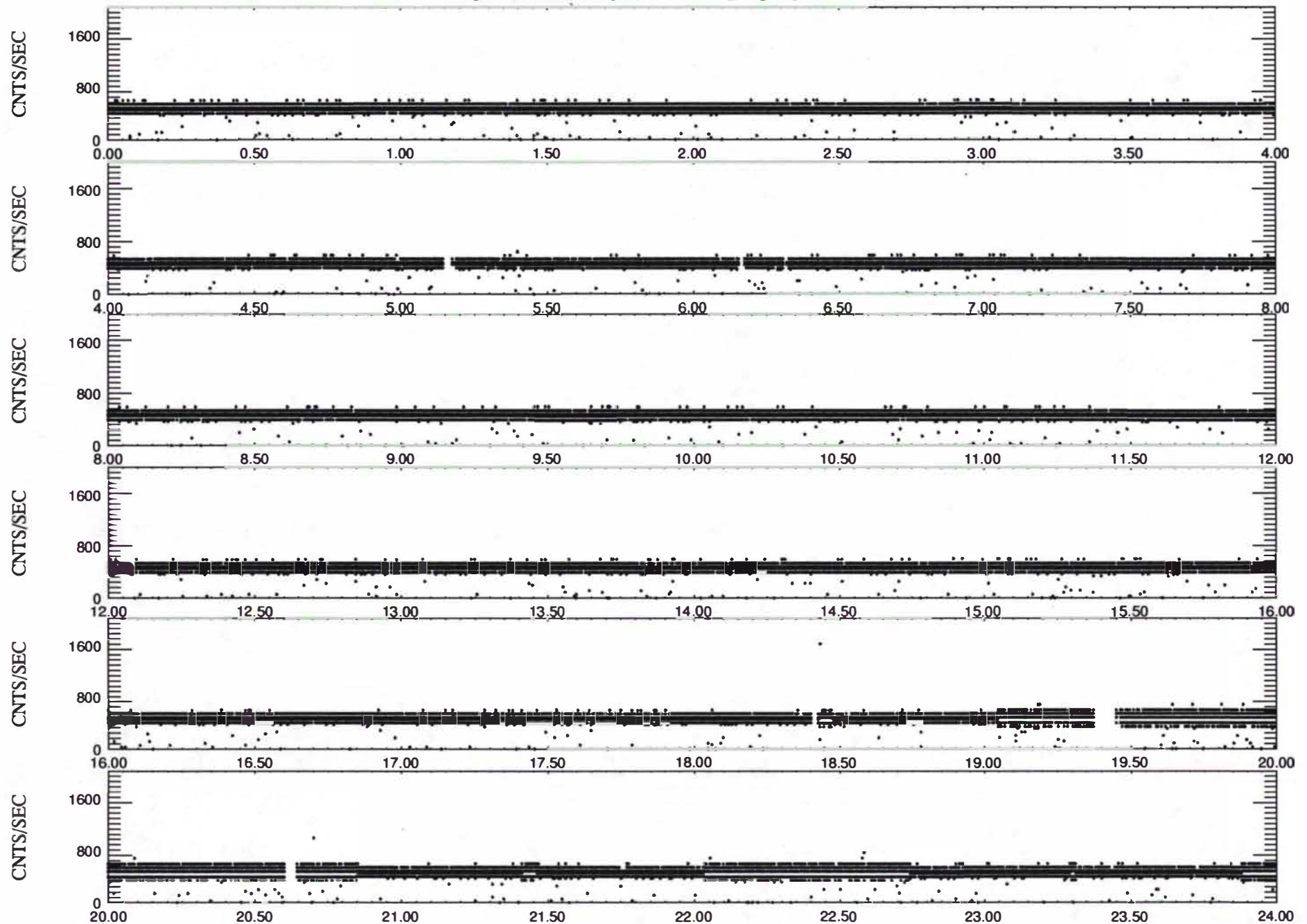
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 7, 8

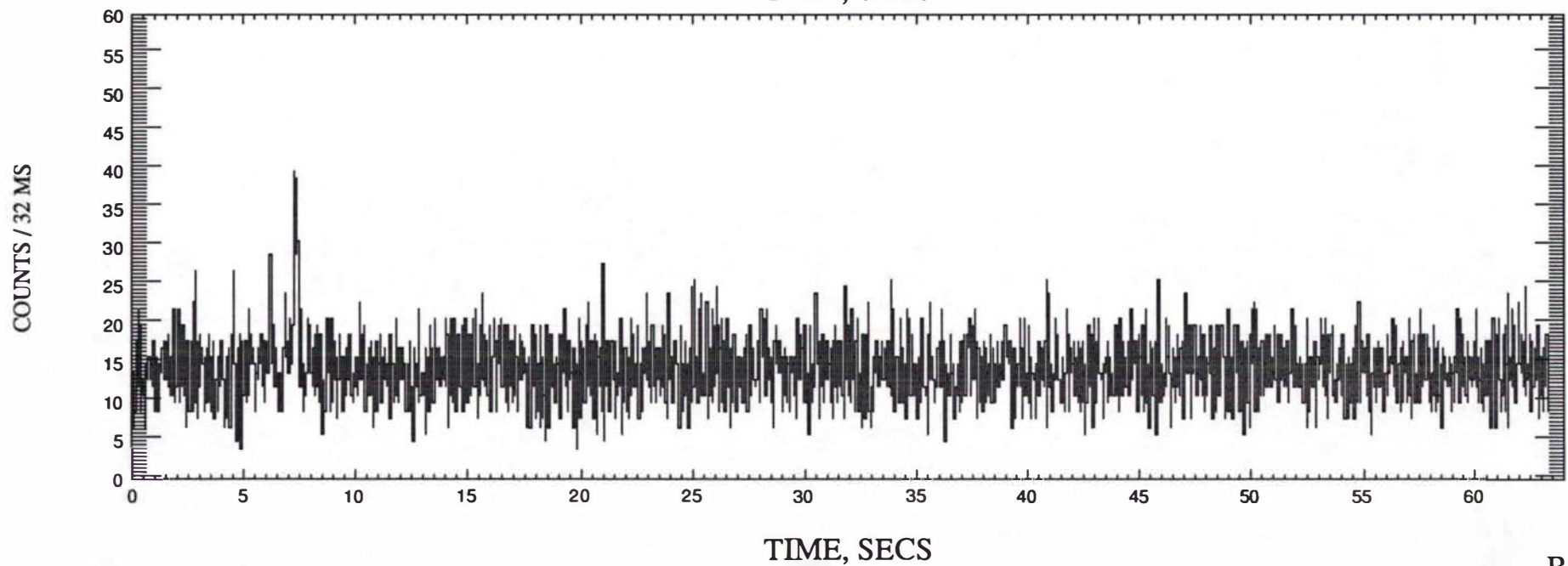
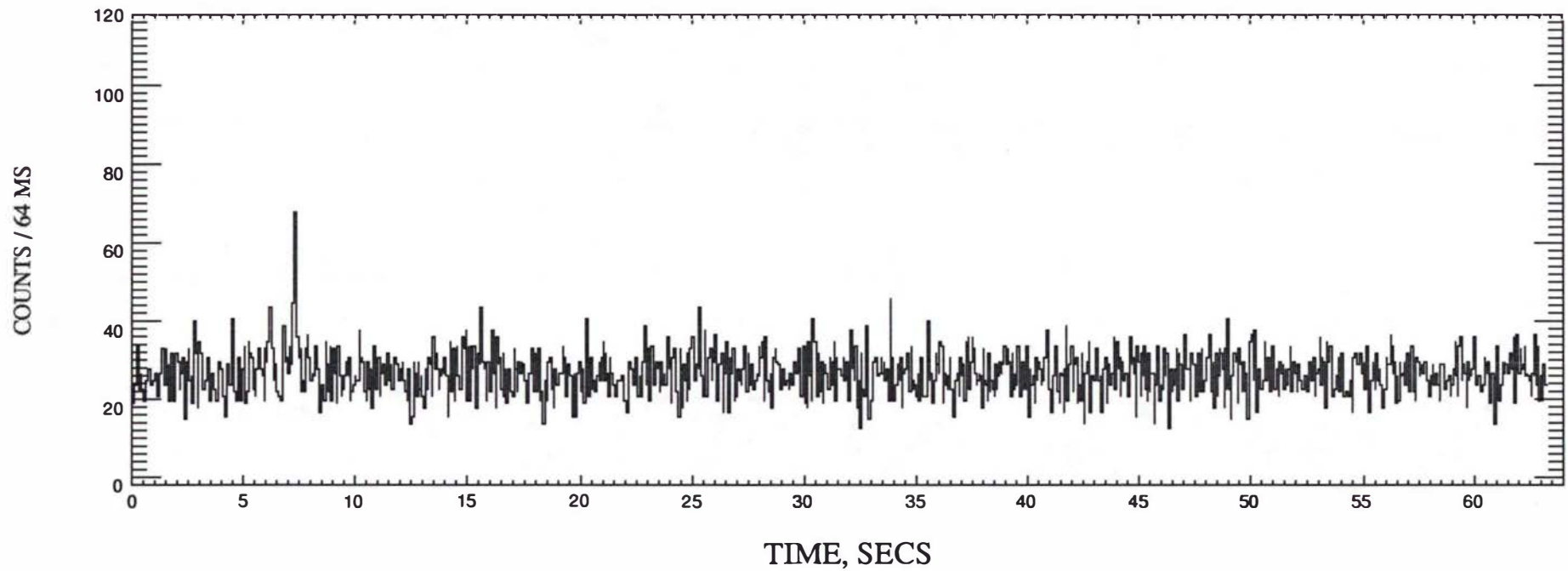


CALIBRATION DATA INCLUDED

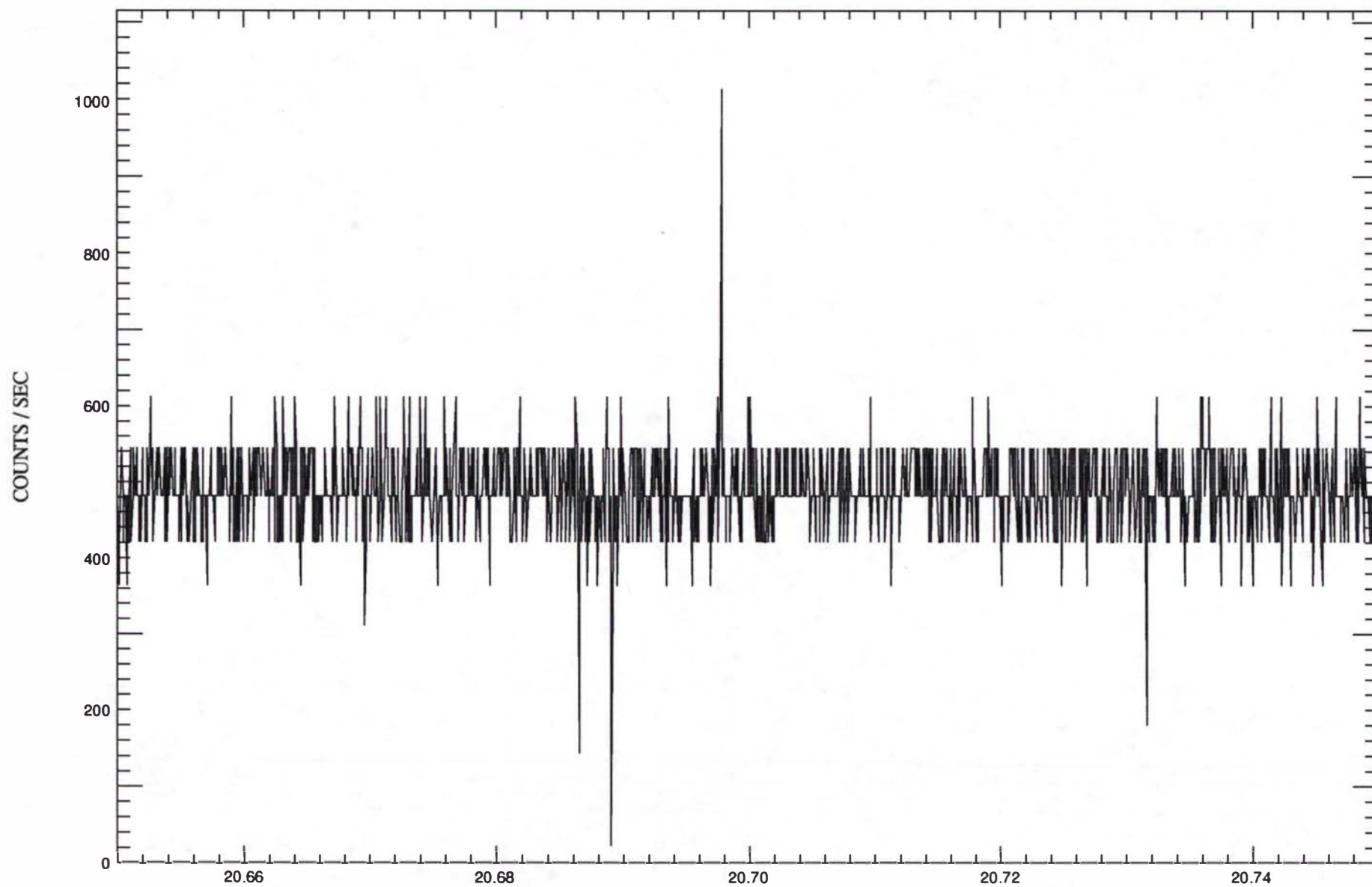


UNIV SAL TIME

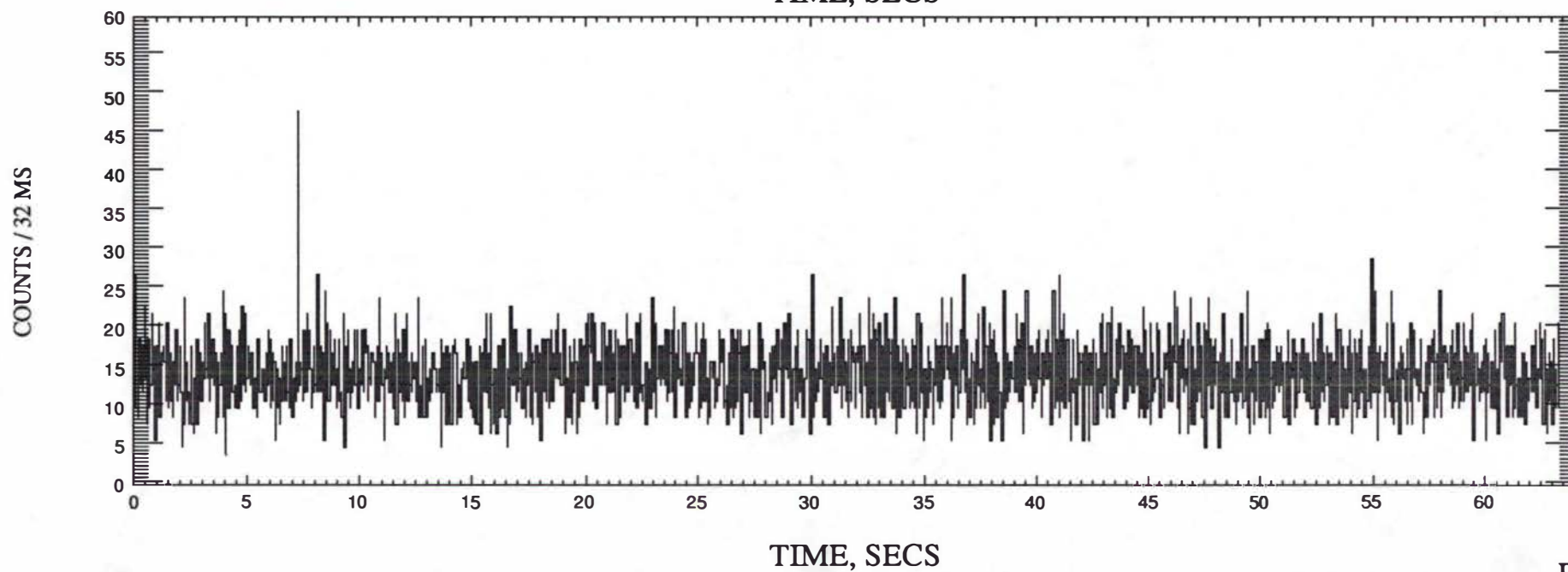
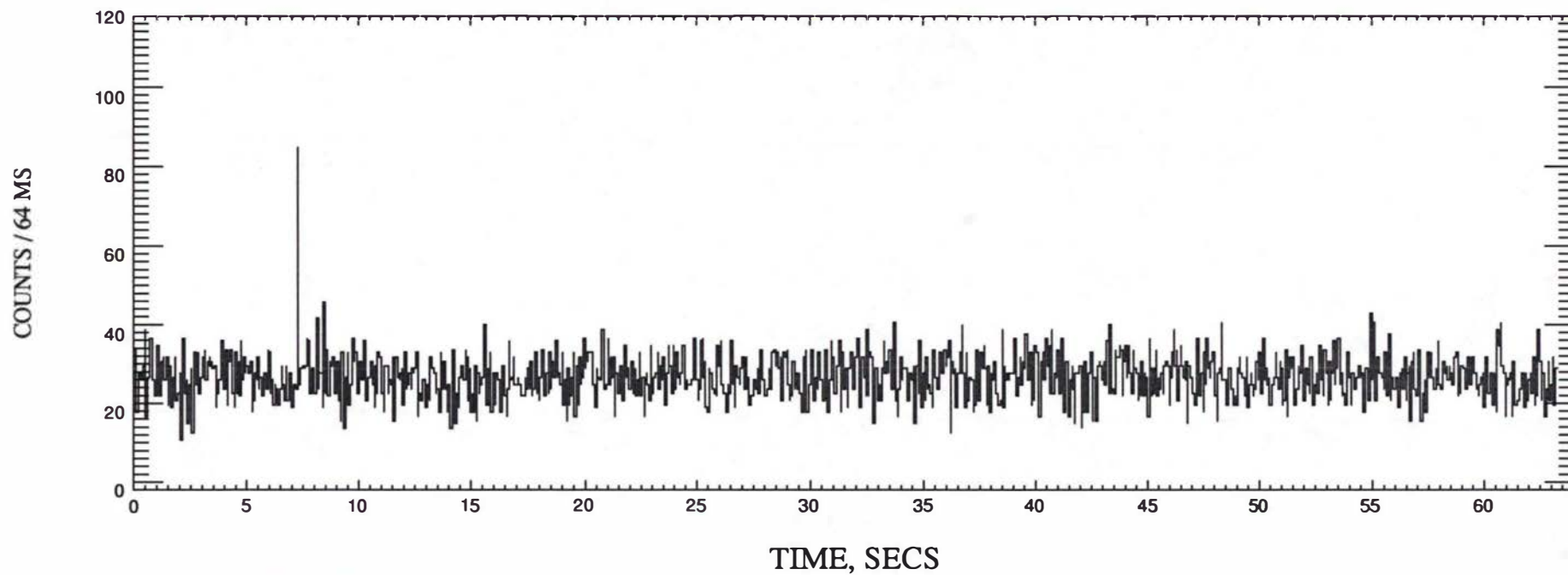
Burst Counter 7 at UT=20.697939652337 h=74512.583 s 20:41:52.583



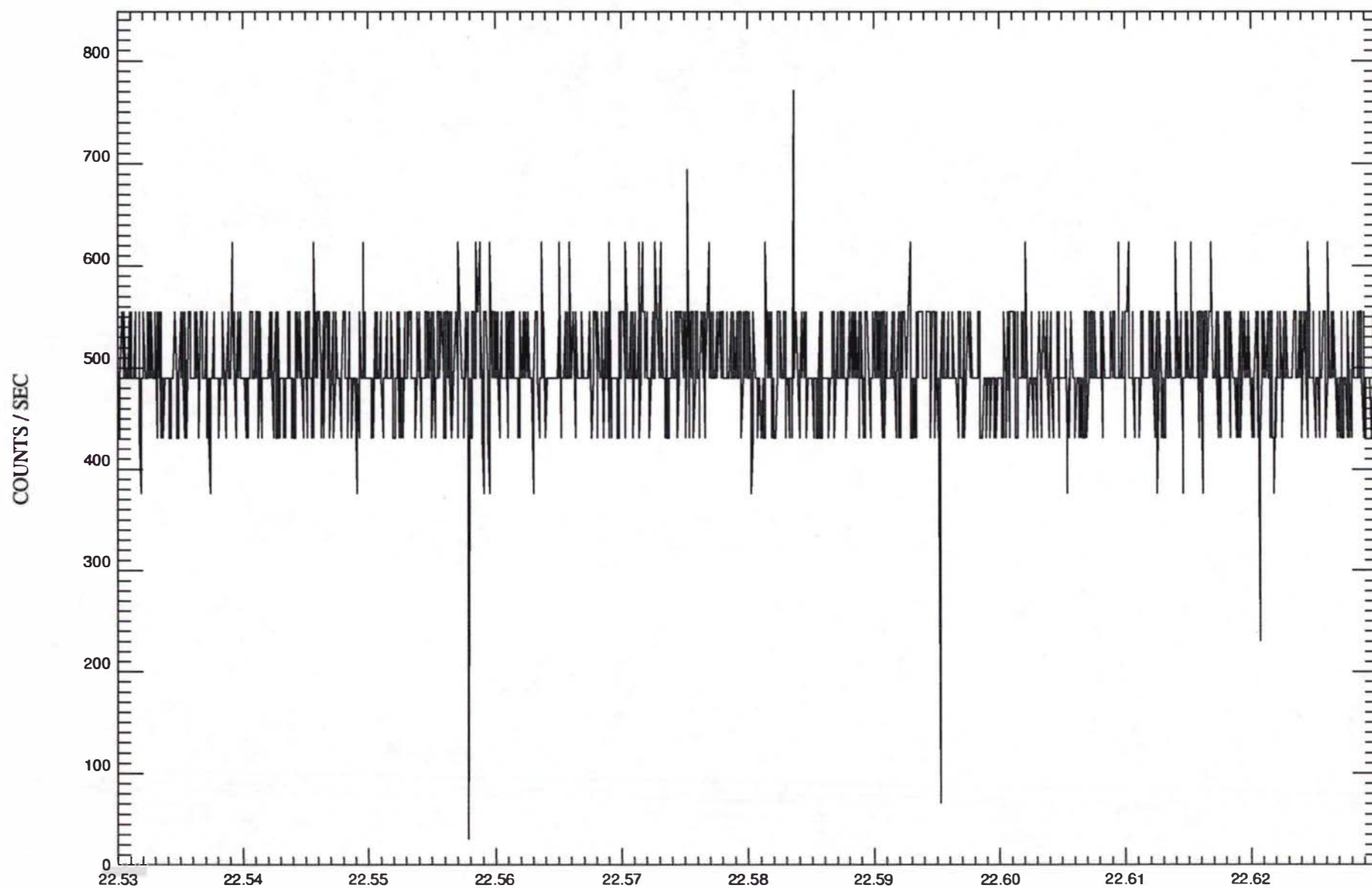
CALIBRATION DATA INCLUDED

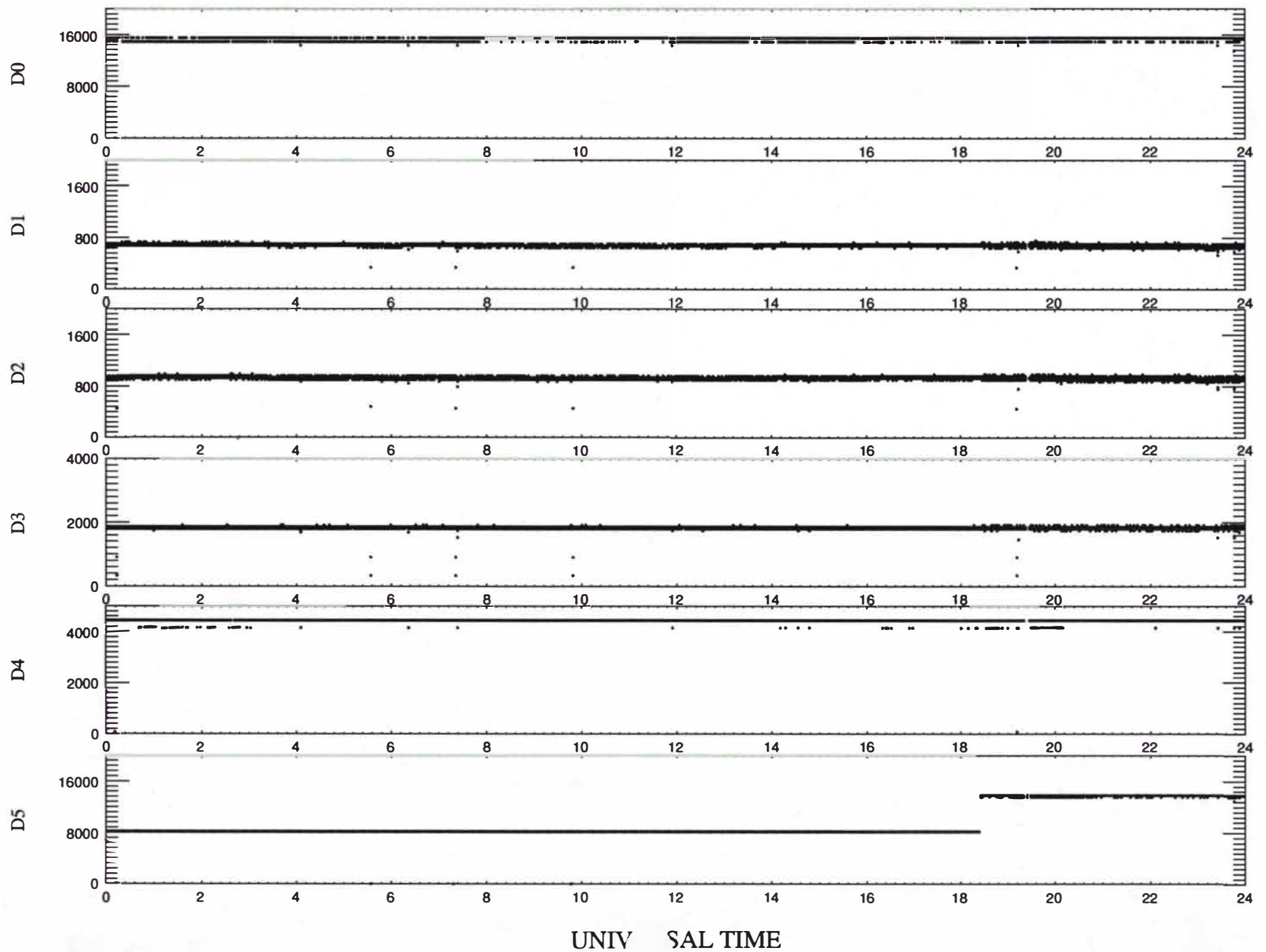


Burst Counter 8 at UT=22.583583759732 h=81300.902 s 22:35:00.902



CALIBRATION DATA INCLUDED





From cline@apache.gsfc.nasa.gov Tue Oct 13 06:46 PDT 1998
Mime-Version: 1.0
Date: Tue, 13 Oct 1998 09:51:54 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
 om: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: events in early October
Cc: palmer@lheamail.gsfc.nasa.gov, Butterworth@lheavx.gsfc.nasa.gov,
 scott@rosserv.gsfc.nasa.gov

Dear Kevin

The auto-Konus events, since the last time I reported, are an obvious GRB on Oct. 8 at 30767.822 UT, a complex but narrow GRB/SGR candidate on Oct. 9 at 20735.781 UT, and a clear SGR on Oct 13 at 01910.530 UT. *Tigger - SGR 1900*

I haven't seen anything from NEAR in some time, but I hear it is turned ON.

TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

KONUS

13 / 10 / 98

ULYSSES RT

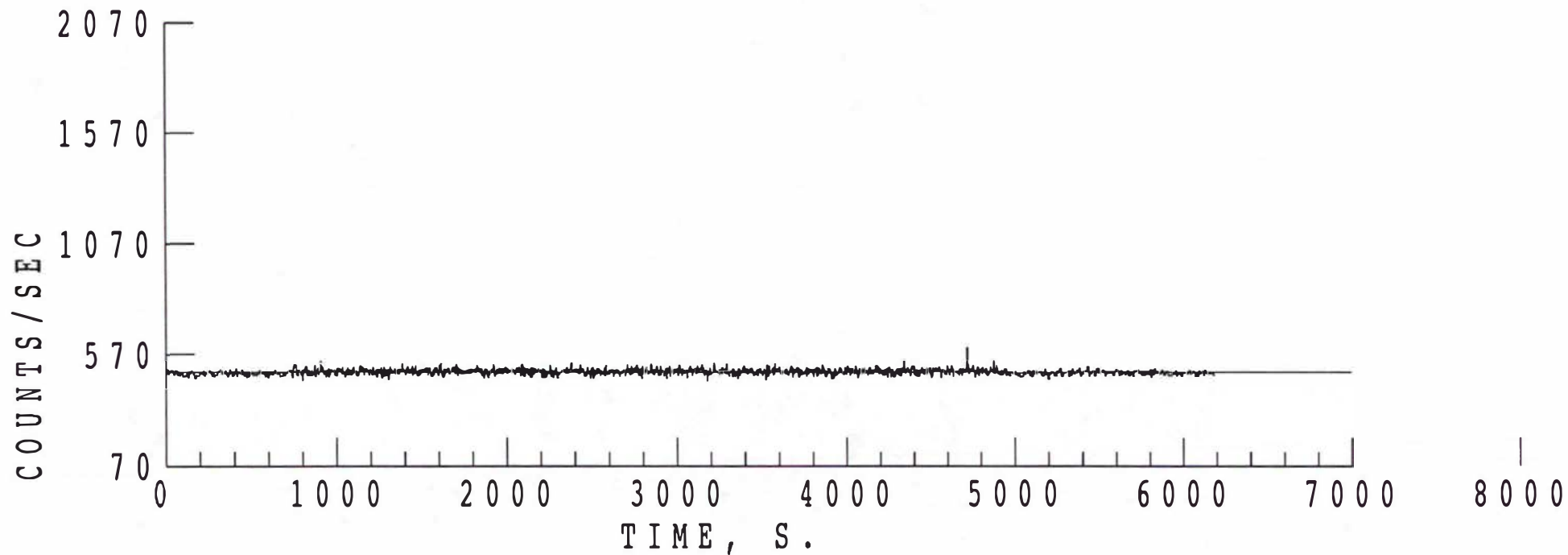
12/10/98 85212.102 s

INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From cline@apache.gsfc.nasa.gov Mon Oct 19 12:41 PDT 1998
Mime-Version: 1.0
Date: Mon, 19 Oct 1998 15:47:05 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Still the ugly anticorrelation

Dear Kevin

The latest NEAR event I received - moments ago, is on Oct. 15, 4 days ago.

The problem is that it is at 17027.8 sec UT whereas the only auto-Konus event on that day, Oct. 15, is at 83731.6 sec UT.

There were auto-Konus SGRs (?) on Oct. 13 at 01910.5 and at 50267.7 sec UT.

There is an auto-Konus on Oct. 14 at 12234.7 sec UT,
and an obvious SGR on Oct. 17 at 54823.3 sec UT,
and an apparent GRB on Oct 17, again, at 73933.5 sec UT.

Those are all I have seen since October 9th.

TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

KONUS

19 / 10 / 98

ULYSSES RT

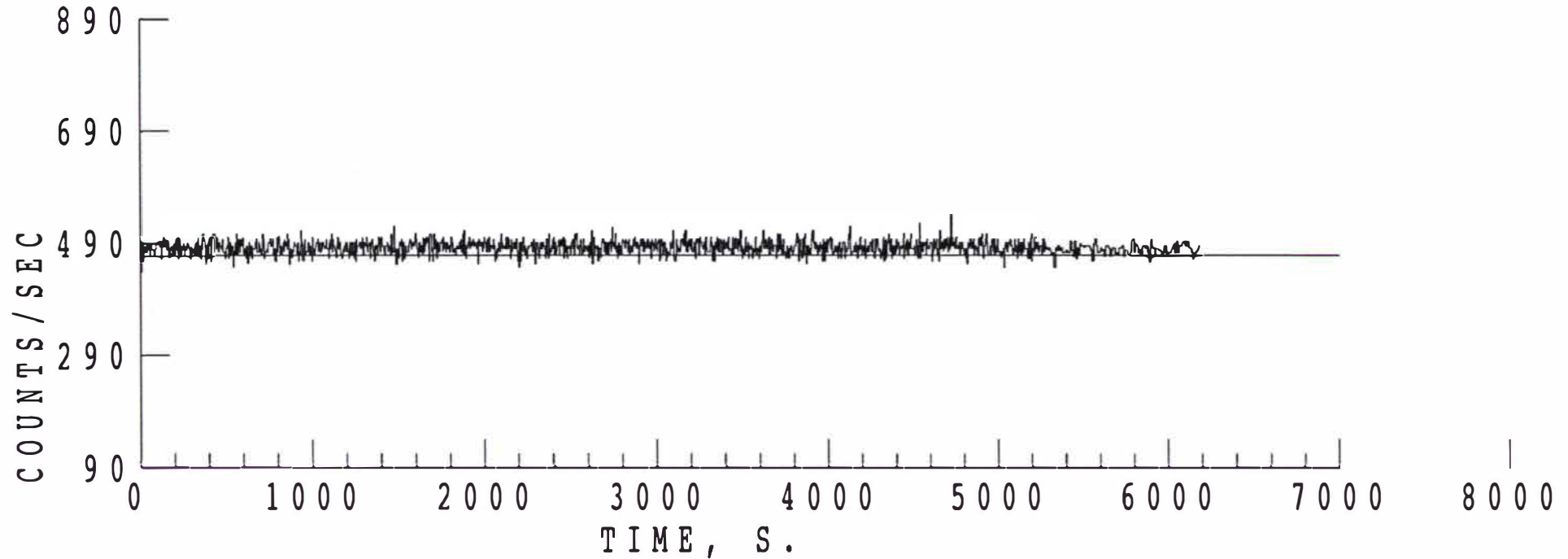
13 / 10 / 98 47160.055 s

INTERVALS REGROUPED BY 8

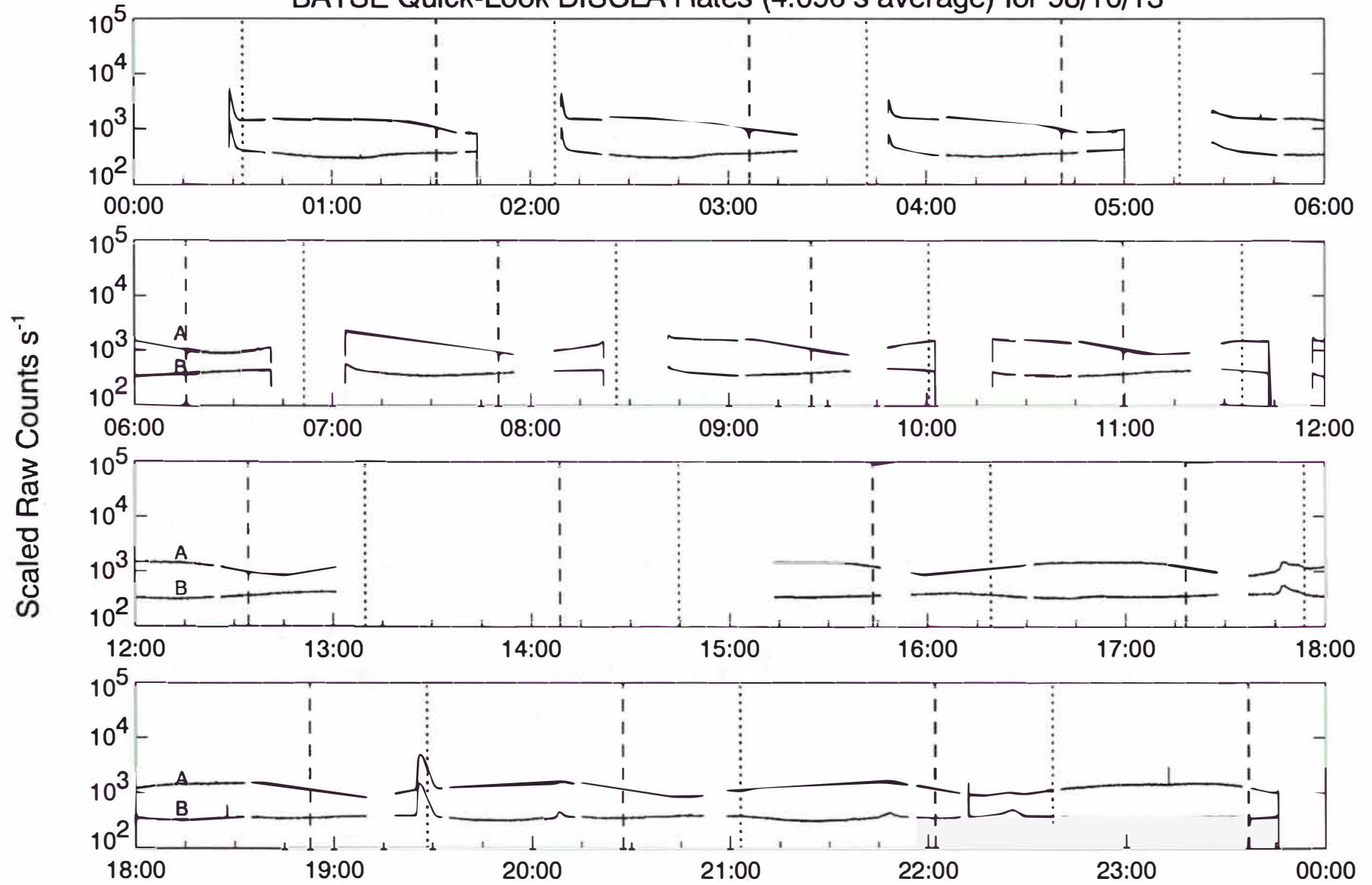
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/13

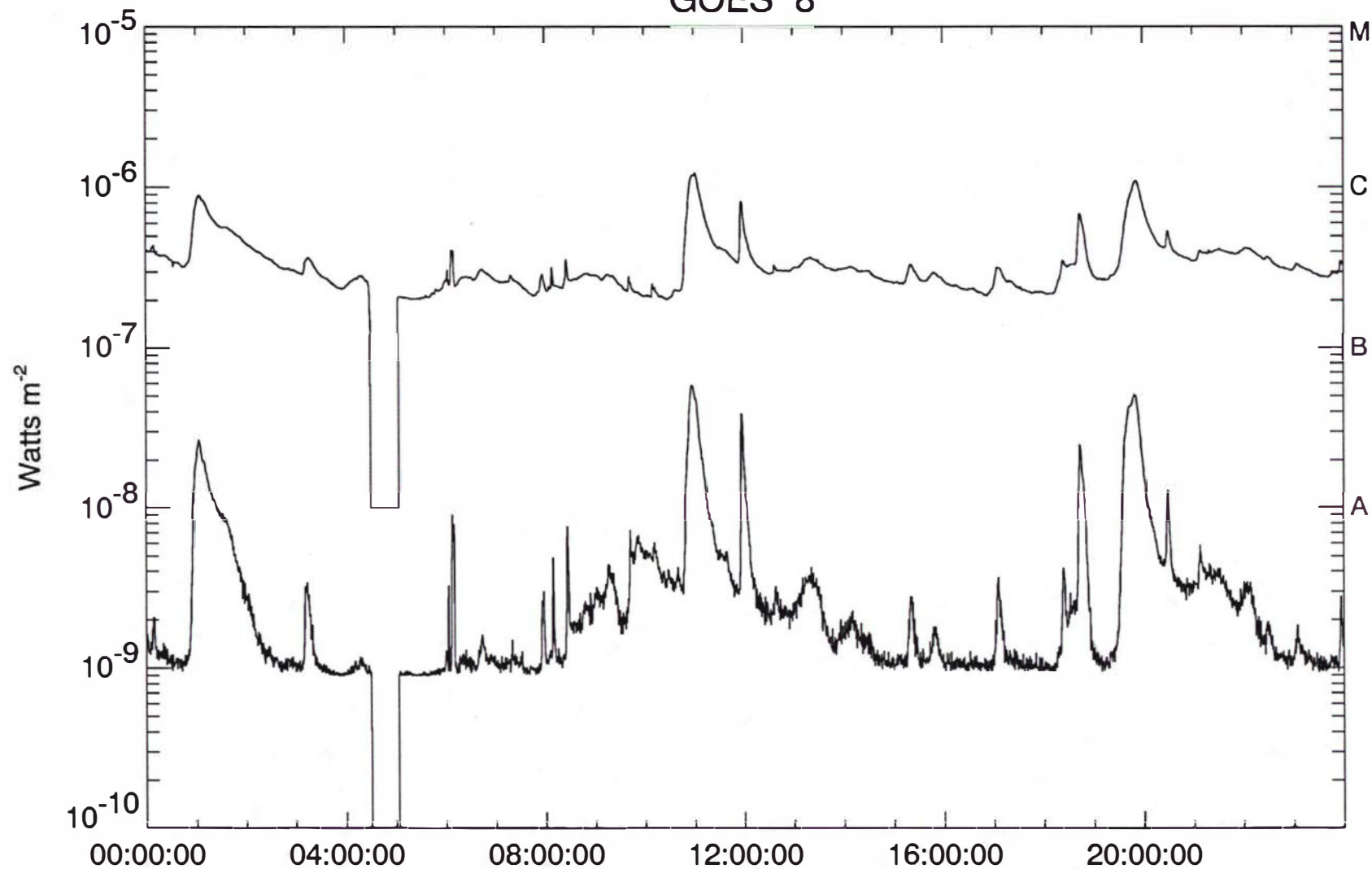


Current Time: 98/10/17, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/13, 0000:00

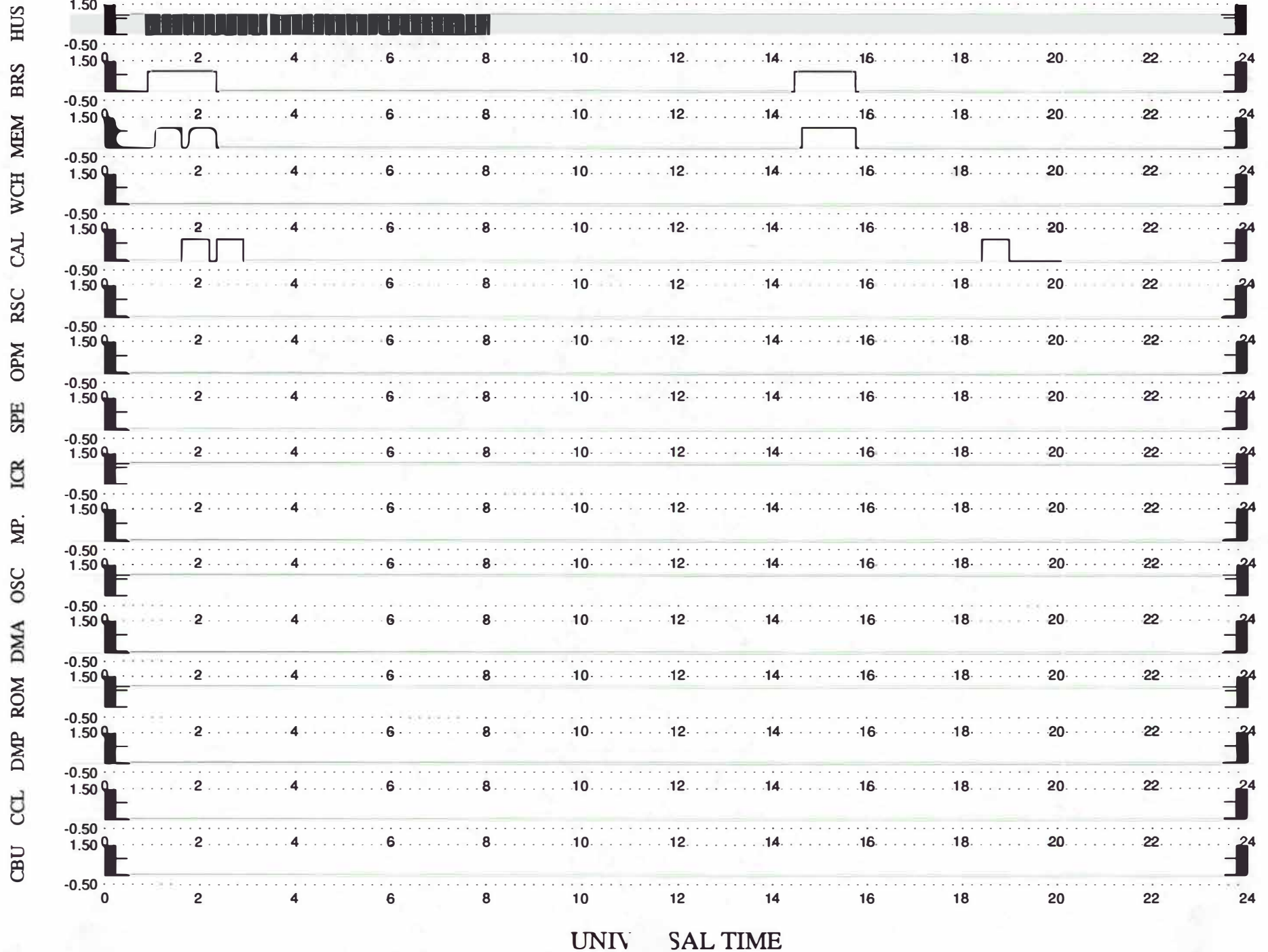
Plot created: 98/10/17, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

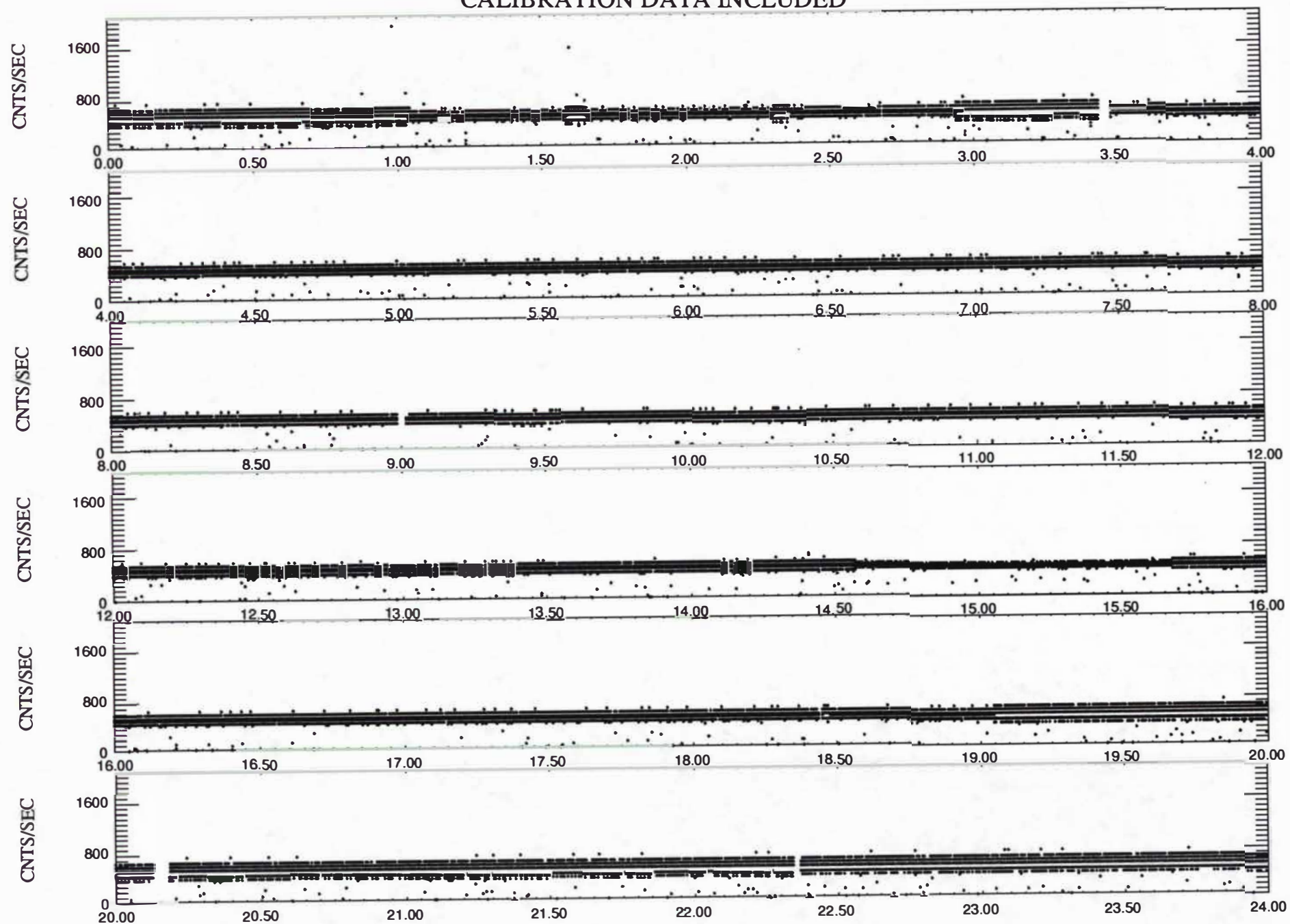
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 9 - 11

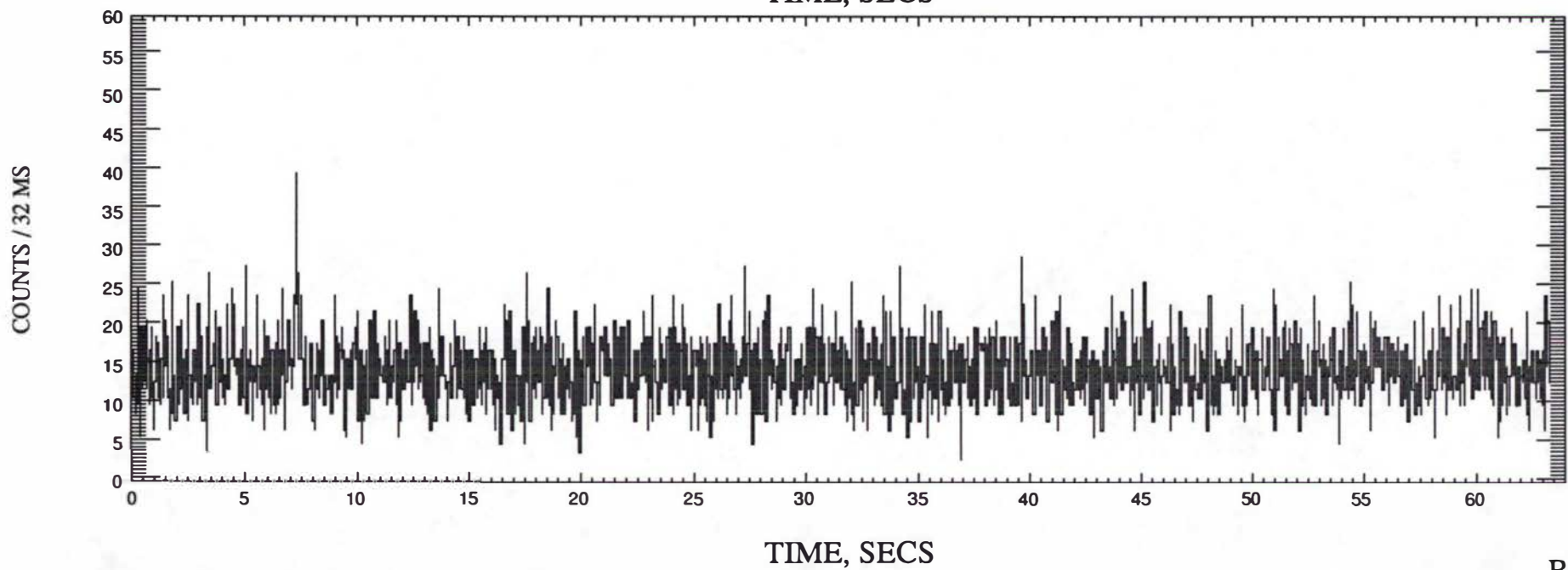
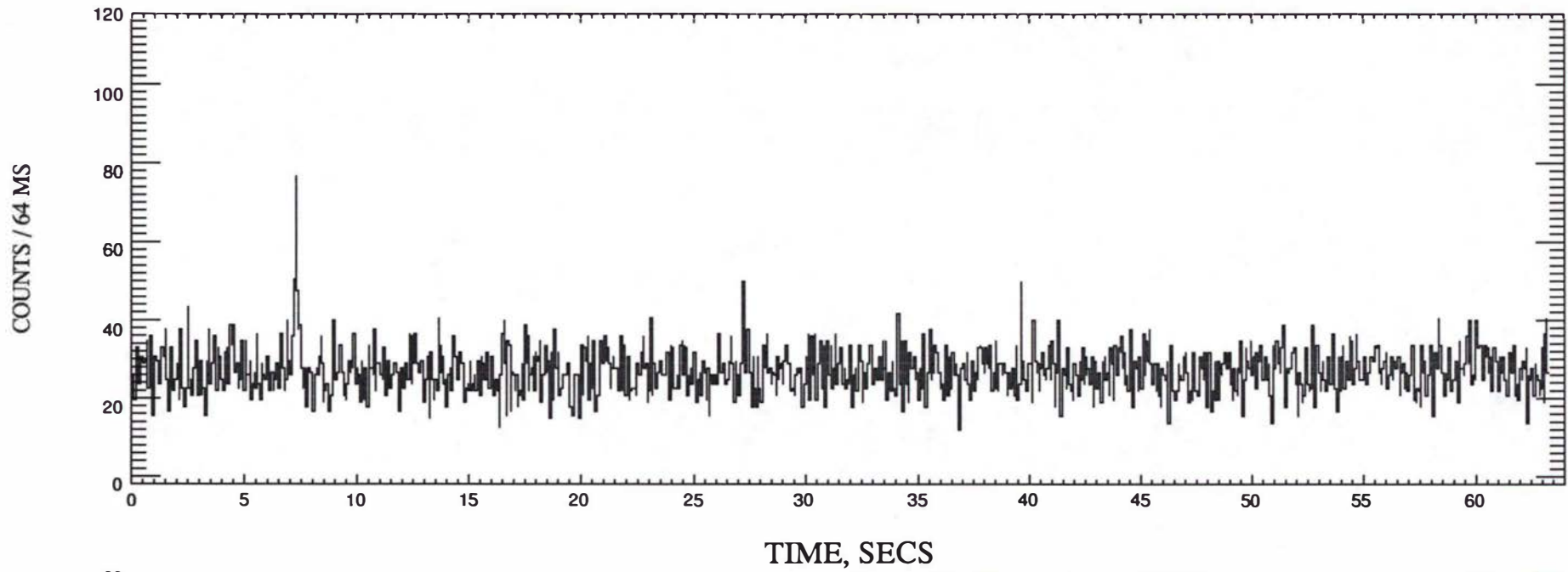


CALIBRATION DATA INCLUDED

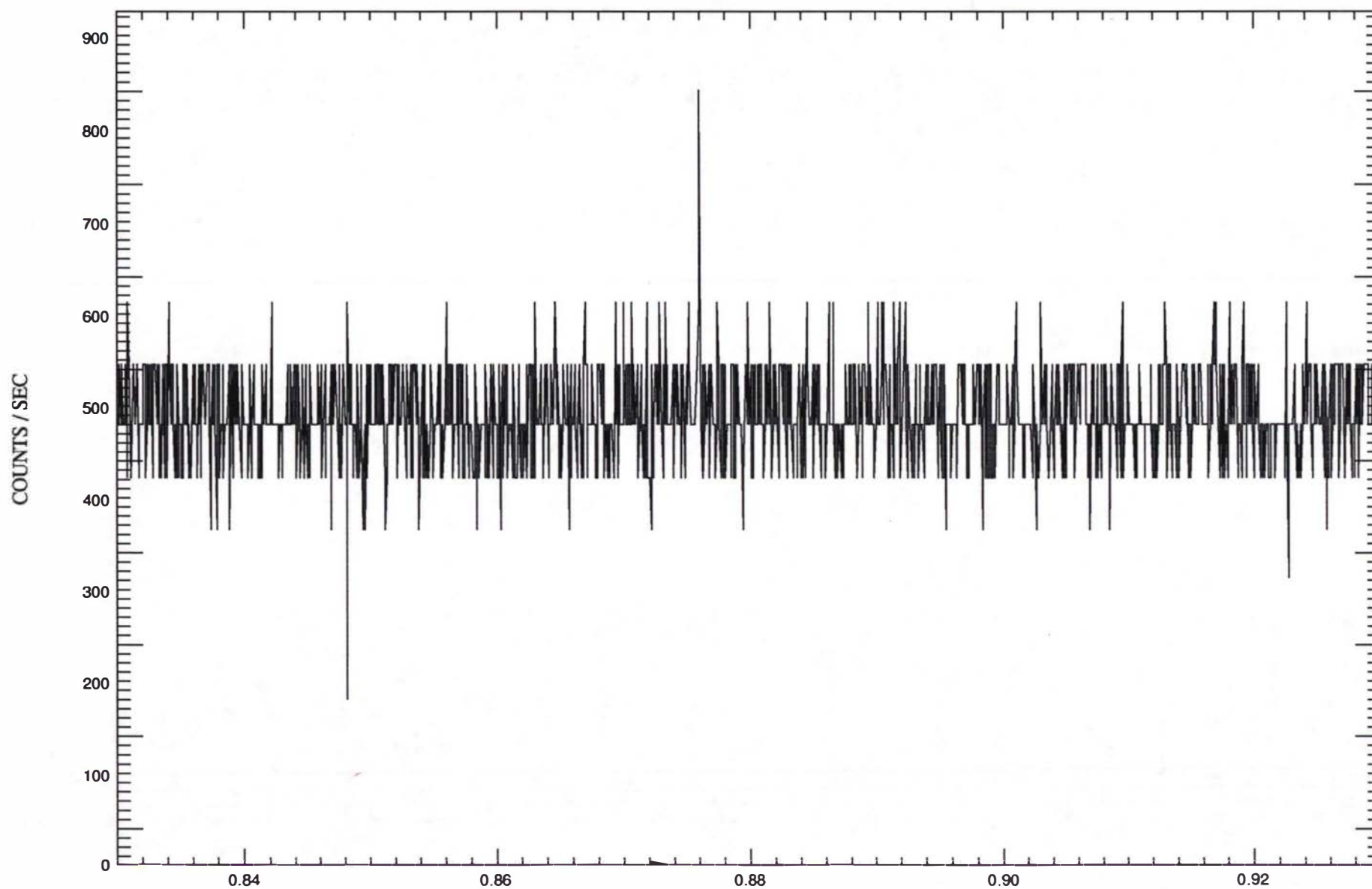


UNIV SAL TIME

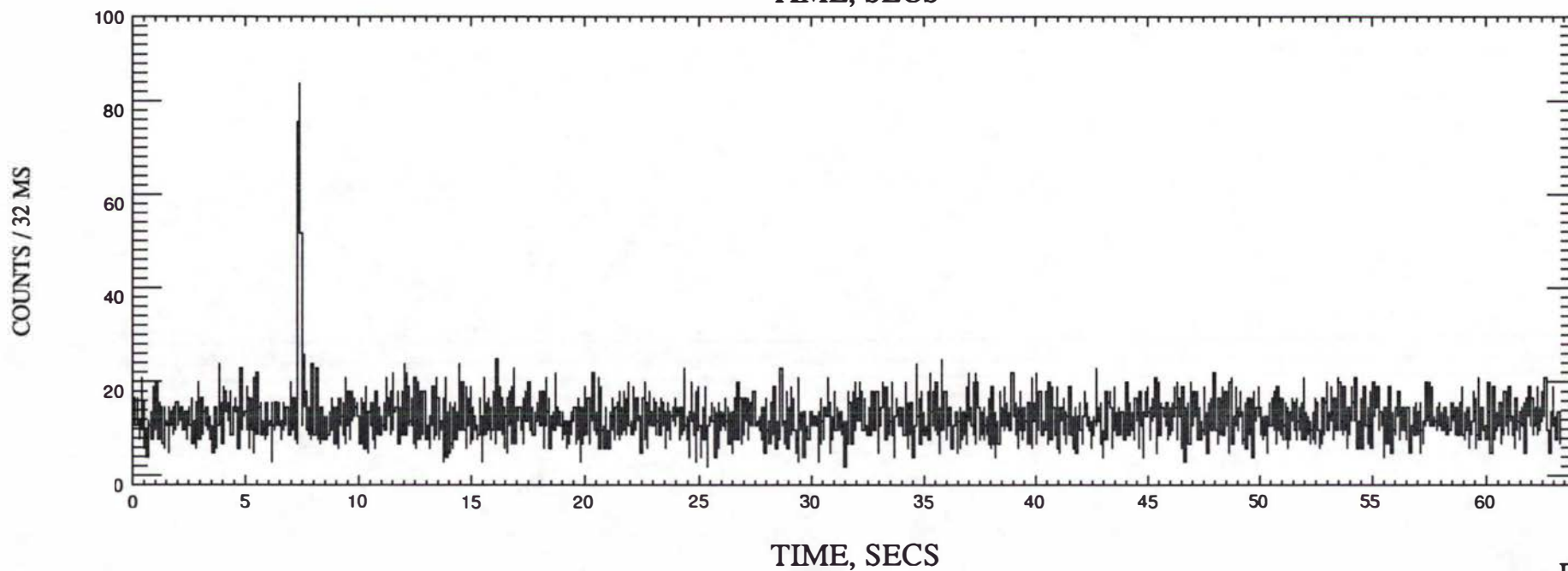
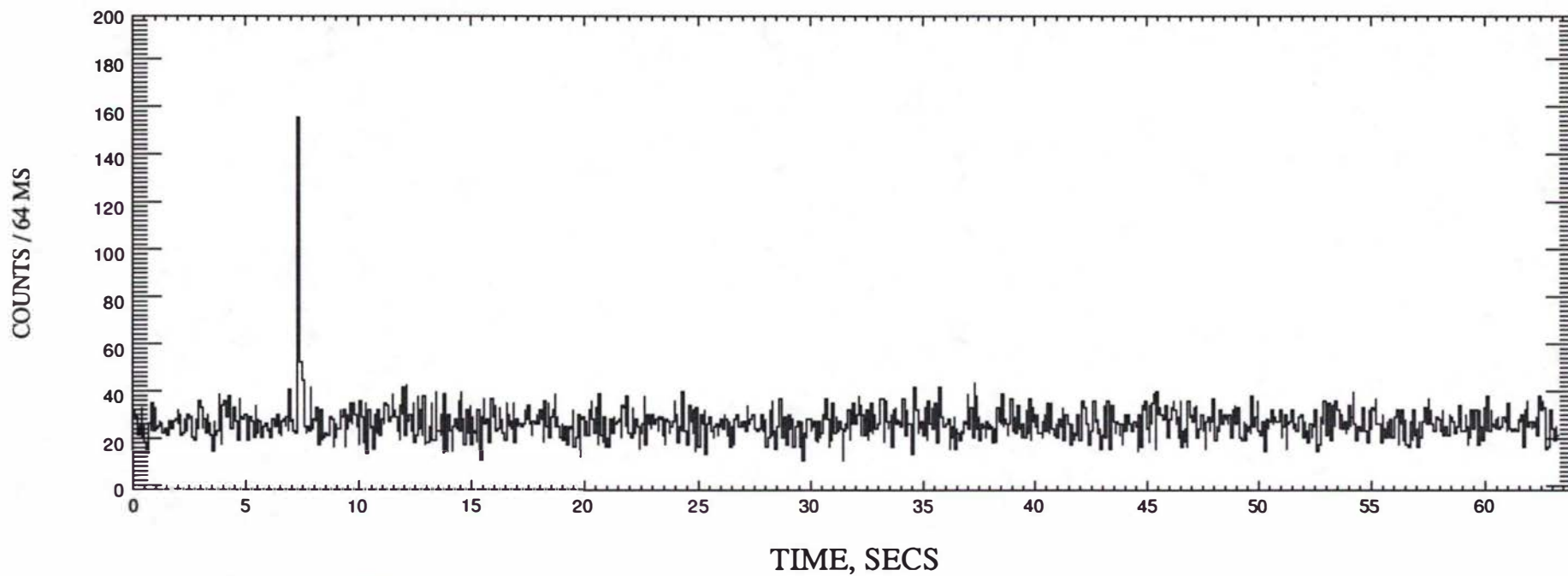
Burst Counter 9 at UT= 0.876108008491 h= 3153.989 s 00:52:33.989



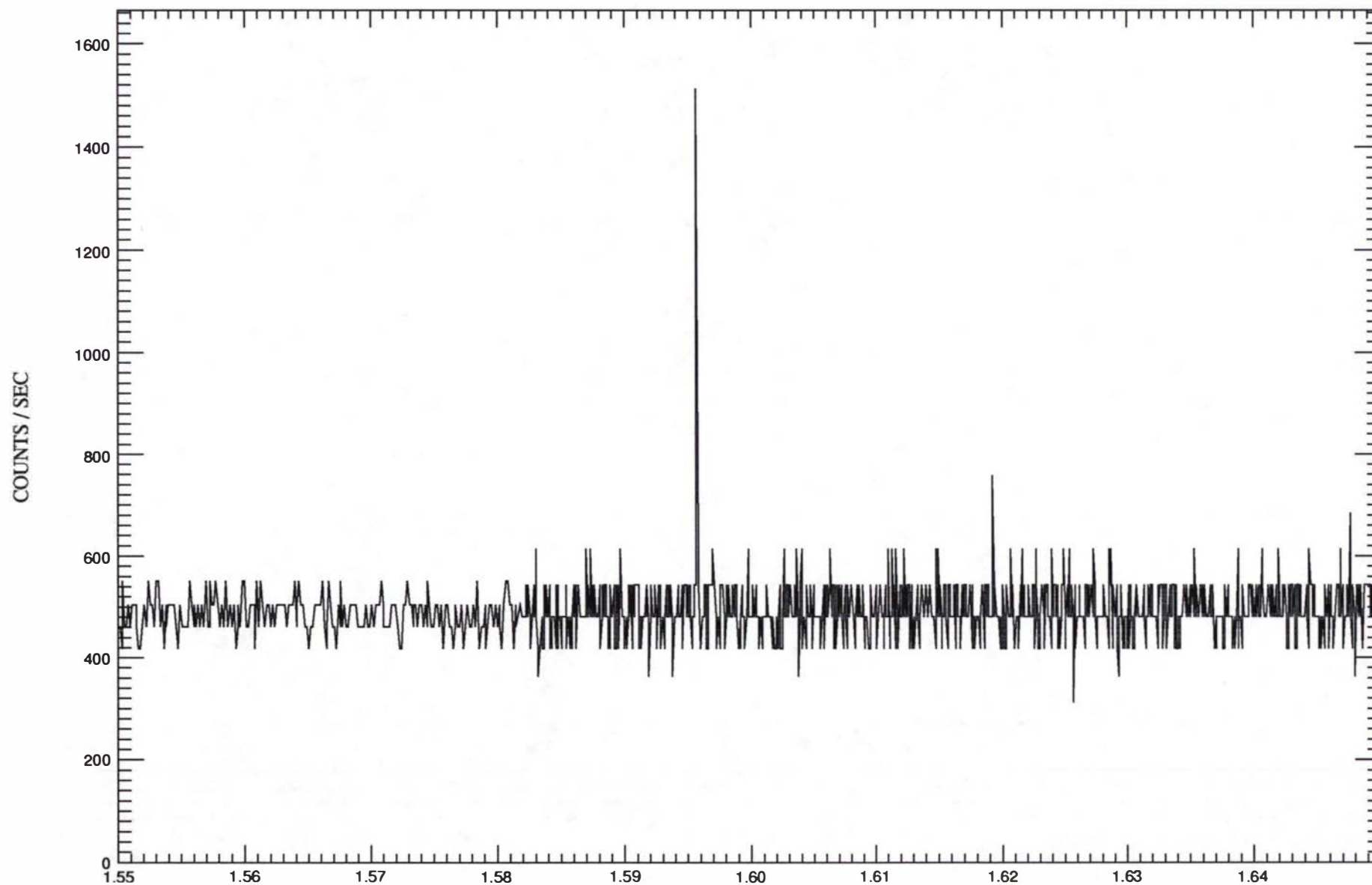
CALIBRATION DATA INCLUDED



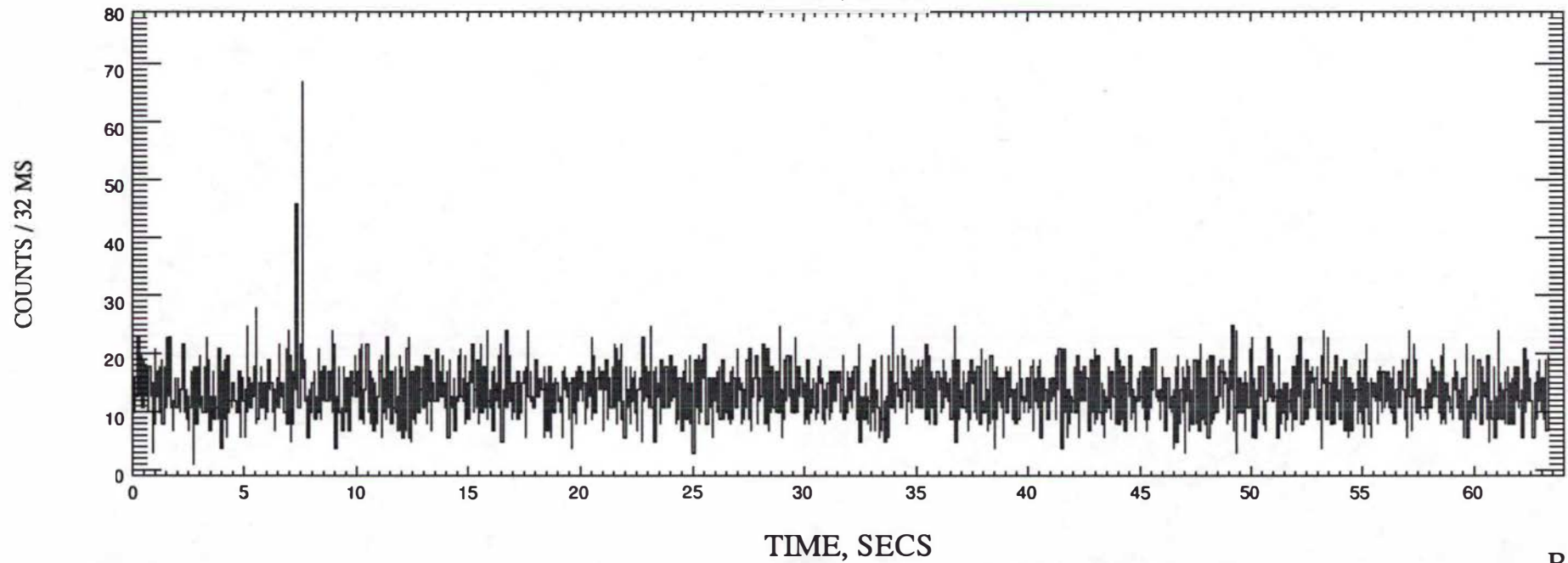
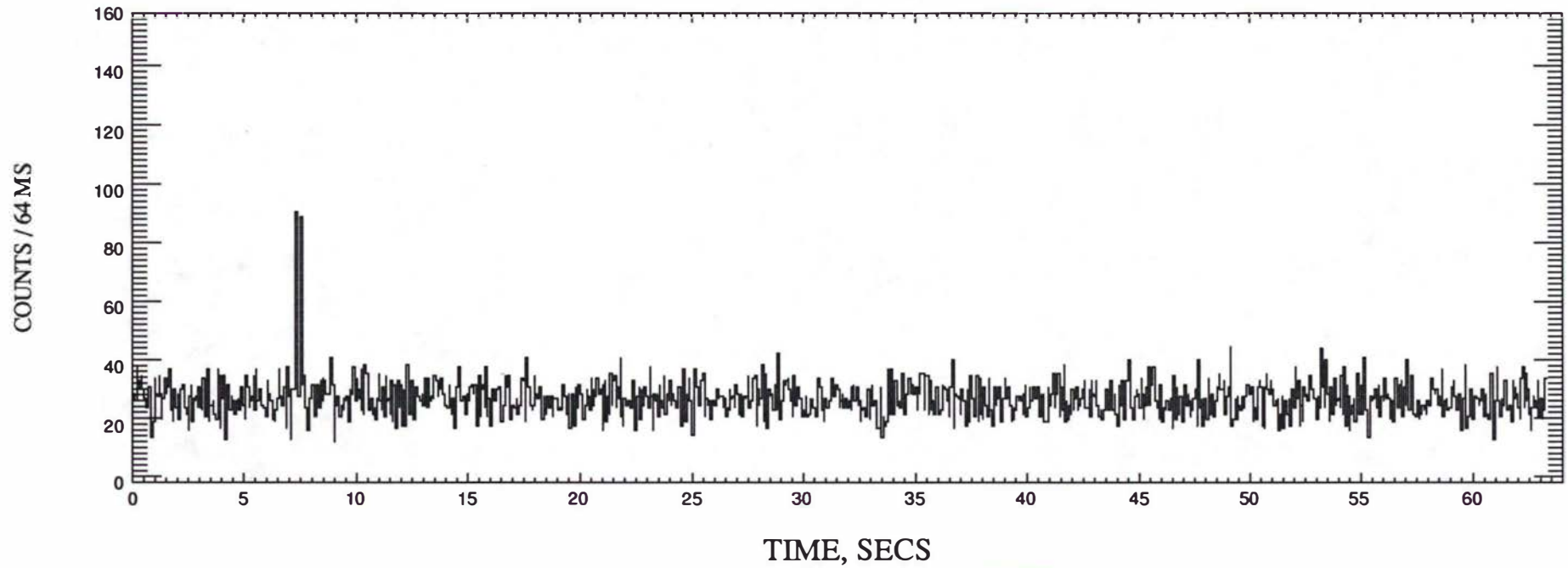
Burst Counter 10 at UT= 1.595776812236 h= 5744.797 s 01:35:44.797



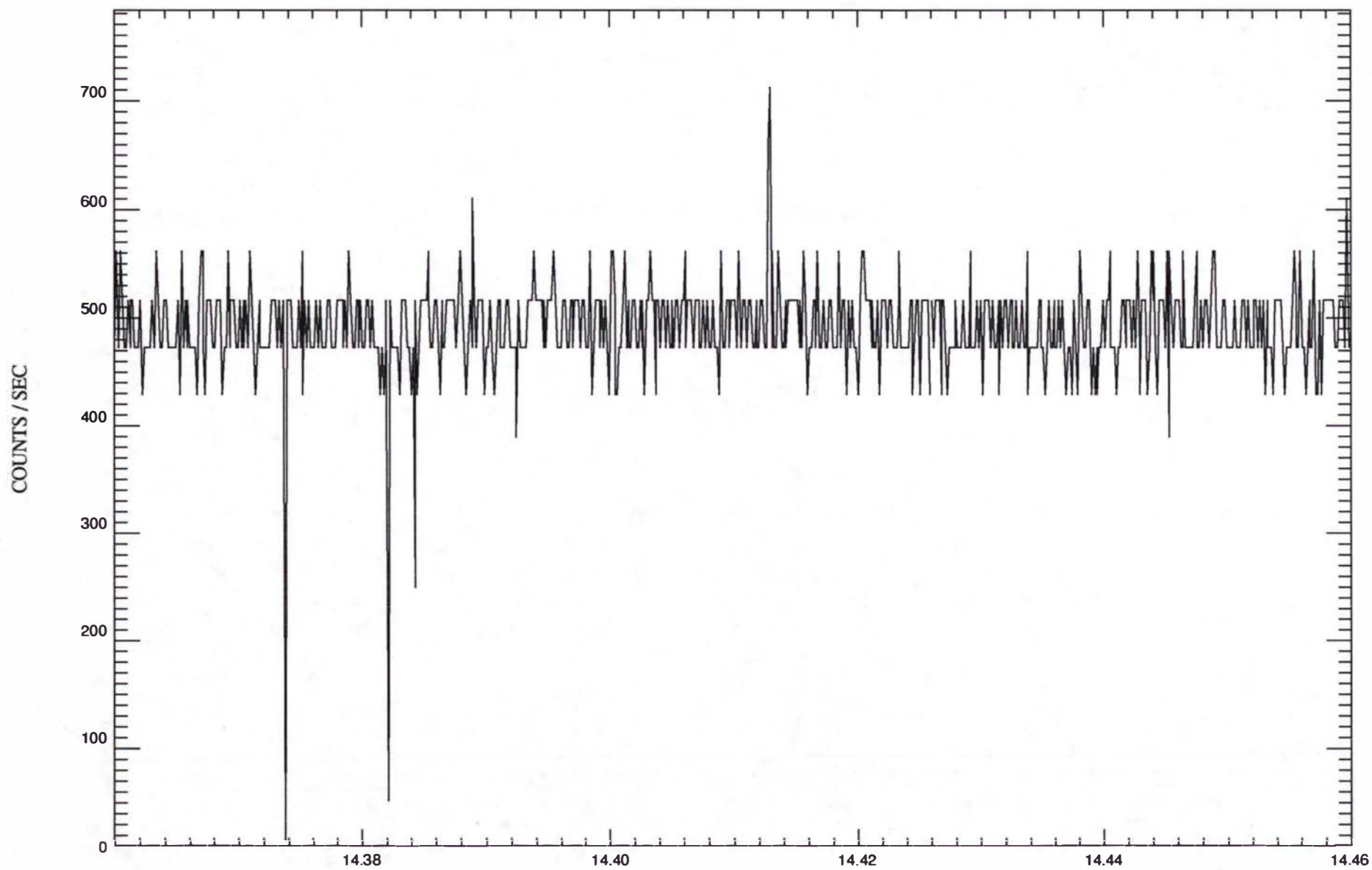
CALIBRATION DATA INCLUDED

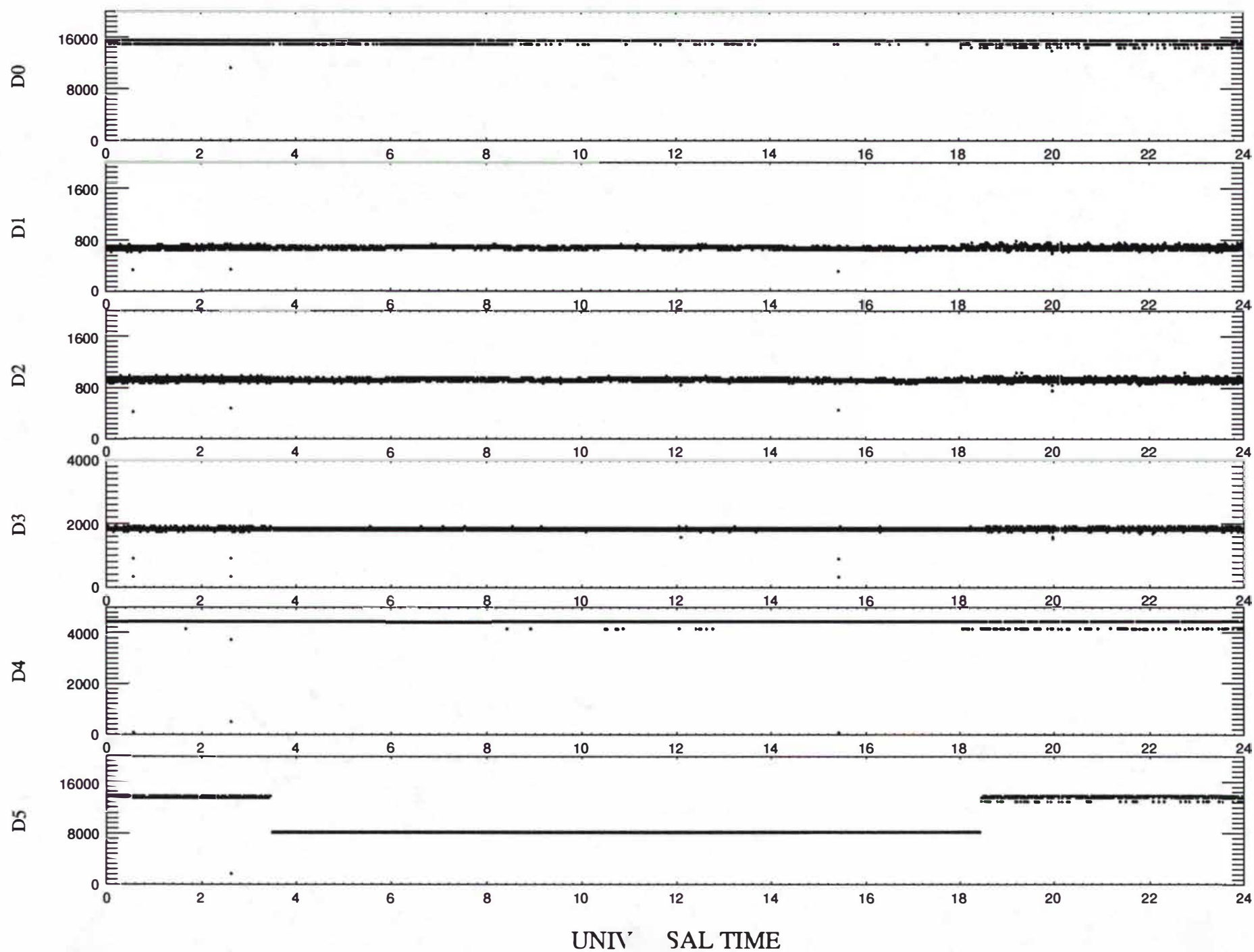


Burst Counter 11 at UT=14.412936905755 h=51886.573 s 14:24:46.573



CALIBRATION DATA INCLUDED





From cline@apache.gsfc.nasa.gov Mon Oct 19 12:41 PDT 1998
Mime-Version: 1.0
Date: Mon, 19 Oct 1998 15:47:05 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Still the ugly anticorrelation

Dear Kevin

The latest NEAR event I received - moments ago, is on Oct. 15, 4 days ago.

The problem is that it is at 17027.8 sec UT whereas the only auto-Konus event on that day, Oct. 15, is at 83731.6 sec UT.

There were auto-Konus SGRs (?) on Oct. 13 at 01910.5 and at 50267.7 sec UT.

There is an auto-Konus on Oct. 14 at 12234.7 sec UT, = 03:23:55
and an obvious SGR on Oct. 17 at 54823.3 sec UT,
and an apparent GRB on Oct 17, again, at 73933.5 sec UT.

Those are all I have seen since October 9th.

TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

KONUS

19 / 10 / 98

ULYSSES RT

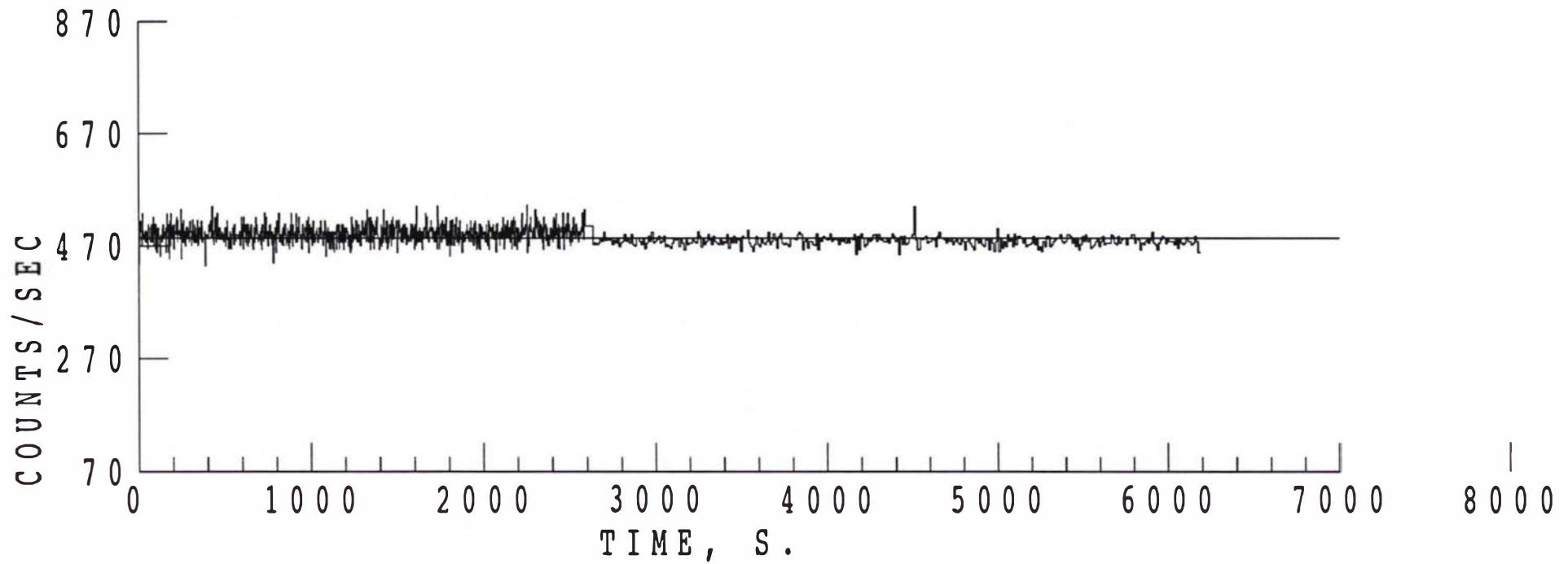
14 / 10 / 98 9144.056 s

INTERVALS REGROUPED BY 10

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Thu Oct 15 09:11:10 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Thu, 15 Oct 1998 11:10:39 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7154

TIME: TJD=1100 SECONDS=40895

TYPE: PARTICL

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From RICHARDSON@fender.msfc.nasa.gov Thu Oct 15 09:12:11 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Thu, 15 Oct 1998 11:11:51 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7155

TIME: TJD=1100 SECONDS=84198

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

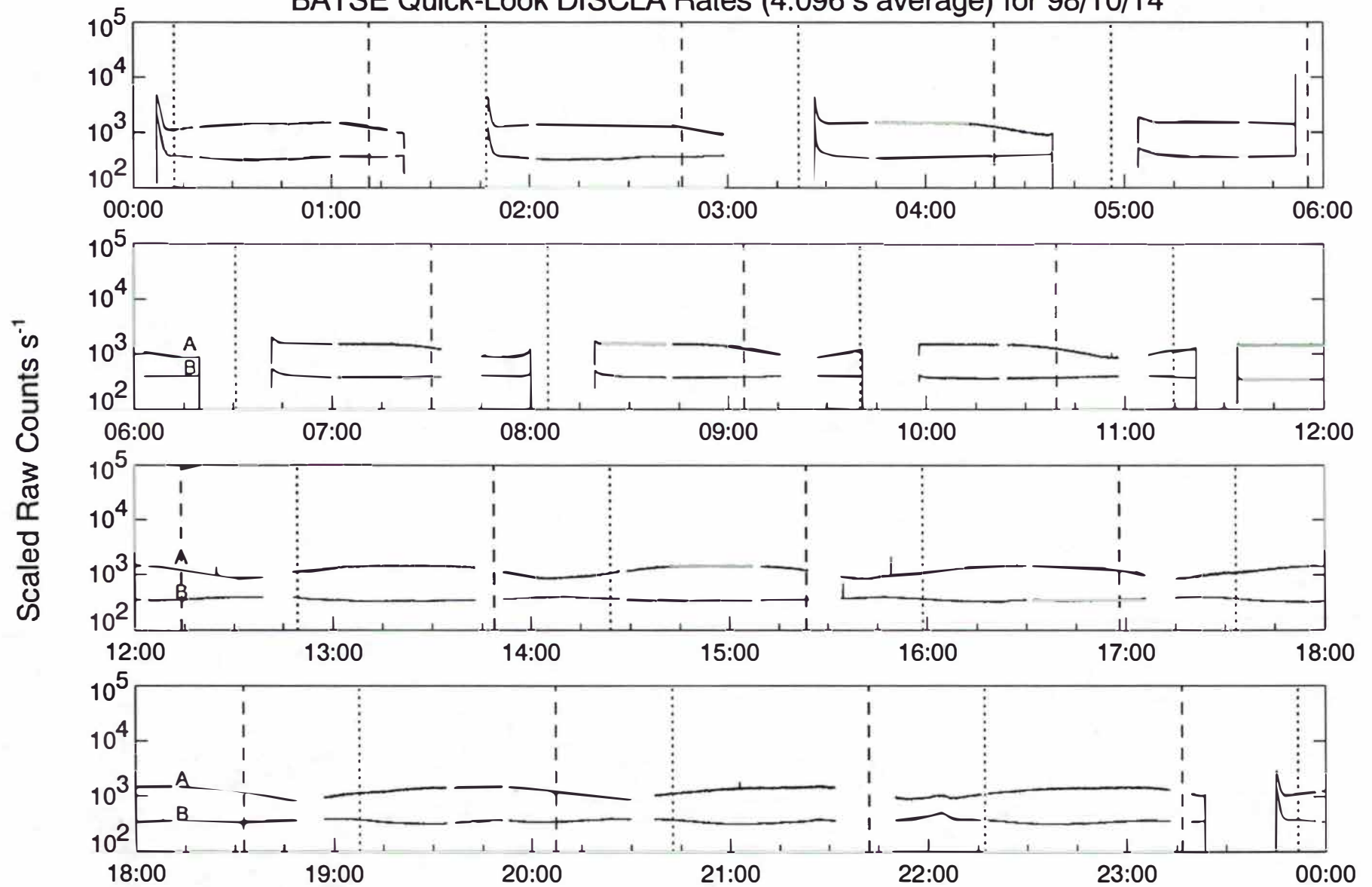
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/14

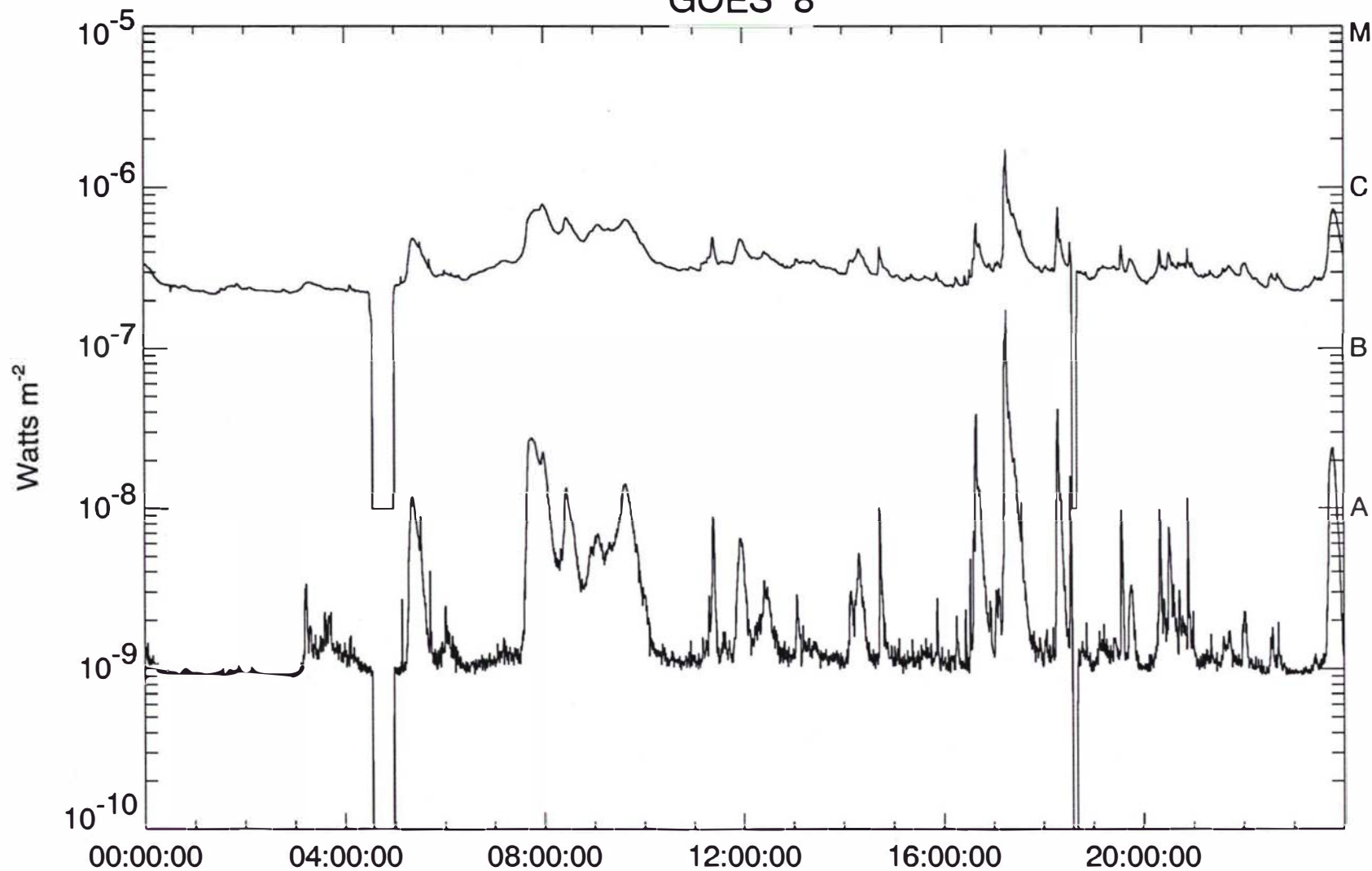


Current Time: 98/10/18, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/14, 0000:00

Plot created: 98/10/18, 1007

Channel 1 (1.0 - 8.0 Angstroms)

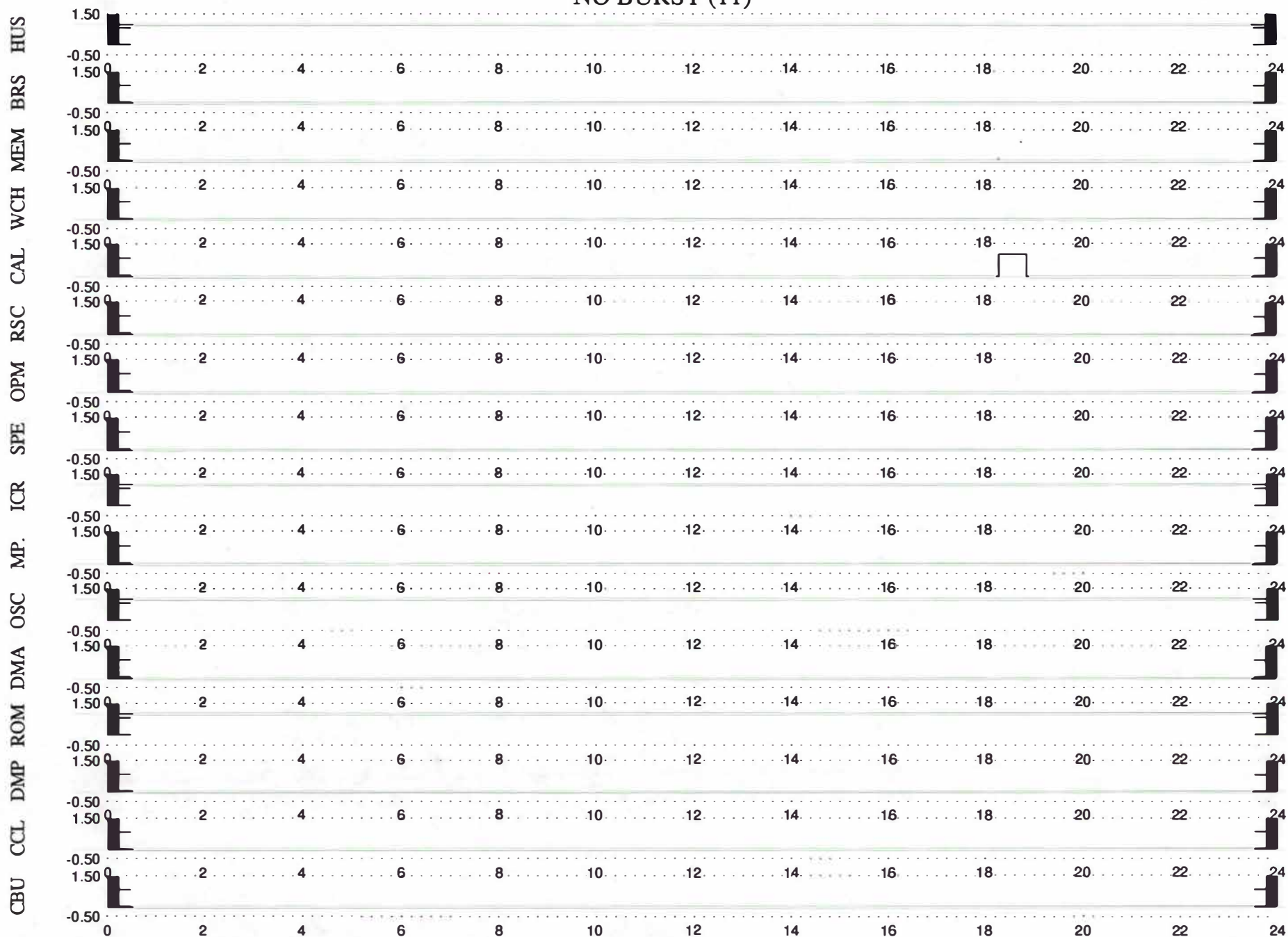
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

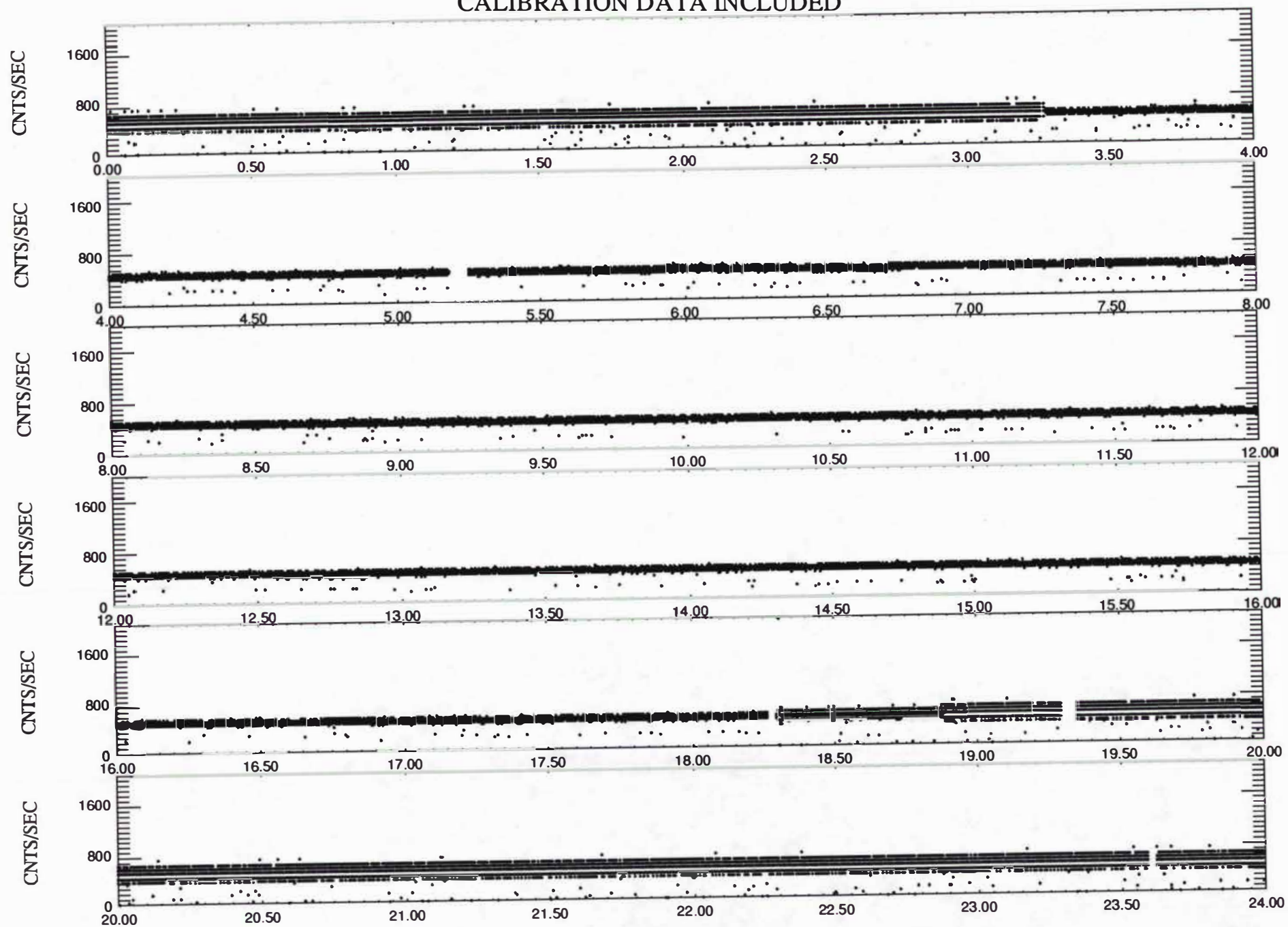
Background not subtracted

Sample average = 10

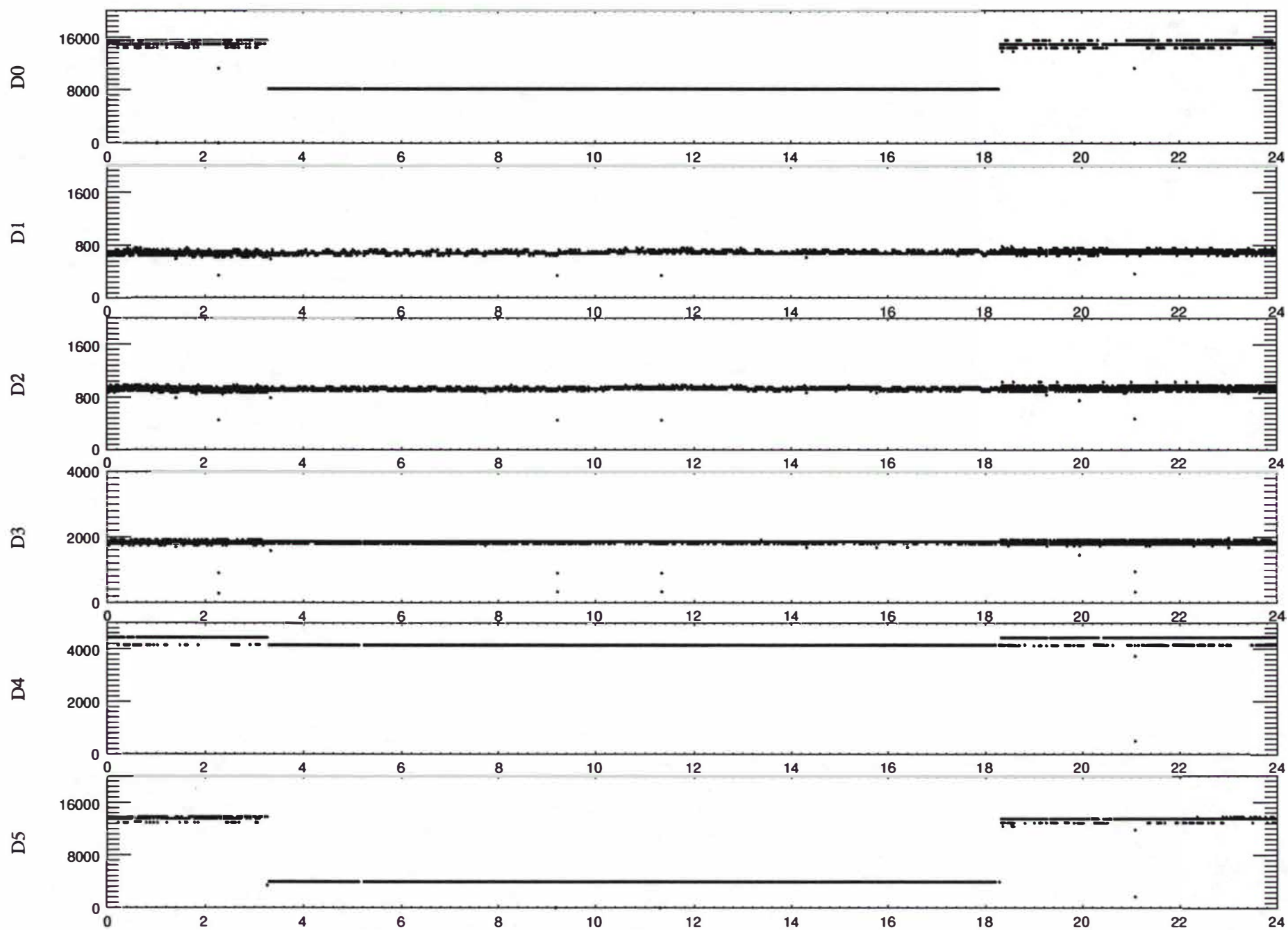
UNIV SAL TIME



CALIBRATION DATA INCLUDED



UNIV SAL TIME



UNIV SAL TIME

From khurley@sunspot Tue Oct 20 10:23 PDT 1998

Date: Tue, 20 Oct 1998 10:23:08 -0700

From: khurley@sunspot (Kevin Hurley)

To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov

Subject: GRB981015

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

October 15 1998 09:54 Ulysses time; moderate, 100 ms long

The spacecraft was about 3100 light-seconds from Earth. However, this burst looks like it could be from SGR1900+14, in which case the Earth-crossing time would have been ~1655 s earlier.

Was this event detected by anyone else?

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczyski, mar

From HENZE@fender.msfc.nasa.gov Mon Oct 19 12:55:35 1998
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA05946; Mon, 19 Oct 1998 12:55:35 -0700
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA15719; Mon, 19 Oct 1998 12:55:32 -0700
Date: Mon, 19 Oct 1998 14:55:04 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981019145504.2021265f@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7156
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7156
EVENT OF 1998 OCT 15 DAY OF YEAR=288
EVENT CROSSING TIME AT BATSE : 17541. S. OR 04:52:21.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 288.000 -80.000
BATSE PEAK COUNTING RATE: 6800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/10/ 98 IS:
RA= 163.955 DEC= -0.614 DIST= 6.069 AU
BATSE-ULYSSES DISTANCE = 907857950. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 262.41 SECS.
CROSSING TIME AT ULYSSES IS 17803. S. OR 04:56:43 +/- 577.77 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/10/ 98 IS:
RA= 156.939 DEC= 11.126 DIST= 2.158 AU
MARS-BATSE DISTANCE = 322897152. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 325.23 SECS.
CROSSING TIME AT MARS IS 17866. S. OR 04:57:46 +/- 183.21 SECONDS

BATSE BURST TRIGGER

NO.: 7156

TIME: TJD=1101 SECONDS=17541

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=133.4 AZIMUTH=221.6 ERROR= 1.0 DEGREES

COMMENTS:

SINGLE PULSE, DUR. APPROX. 30 S. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7156	981015	11101	17541	6800	288	-80	30

Date: Feb 15 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No - bad stats*

2. BATSE Data

- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vwx@boccl, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

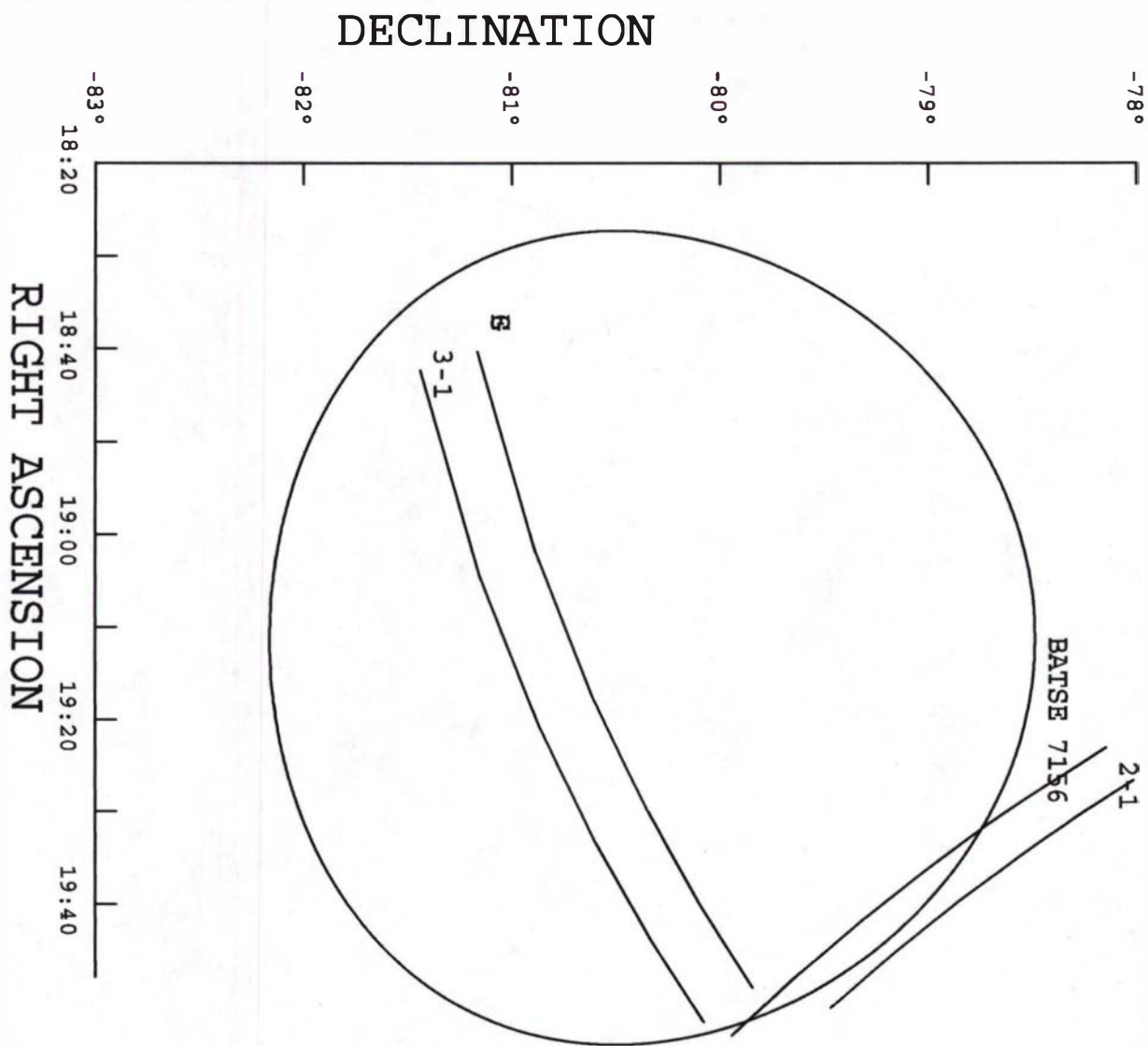
1 BATSE

2 ULYSSES

3 NEAR

EVENT OF OCT 15, 1998 4:52

15/ 2/ 0



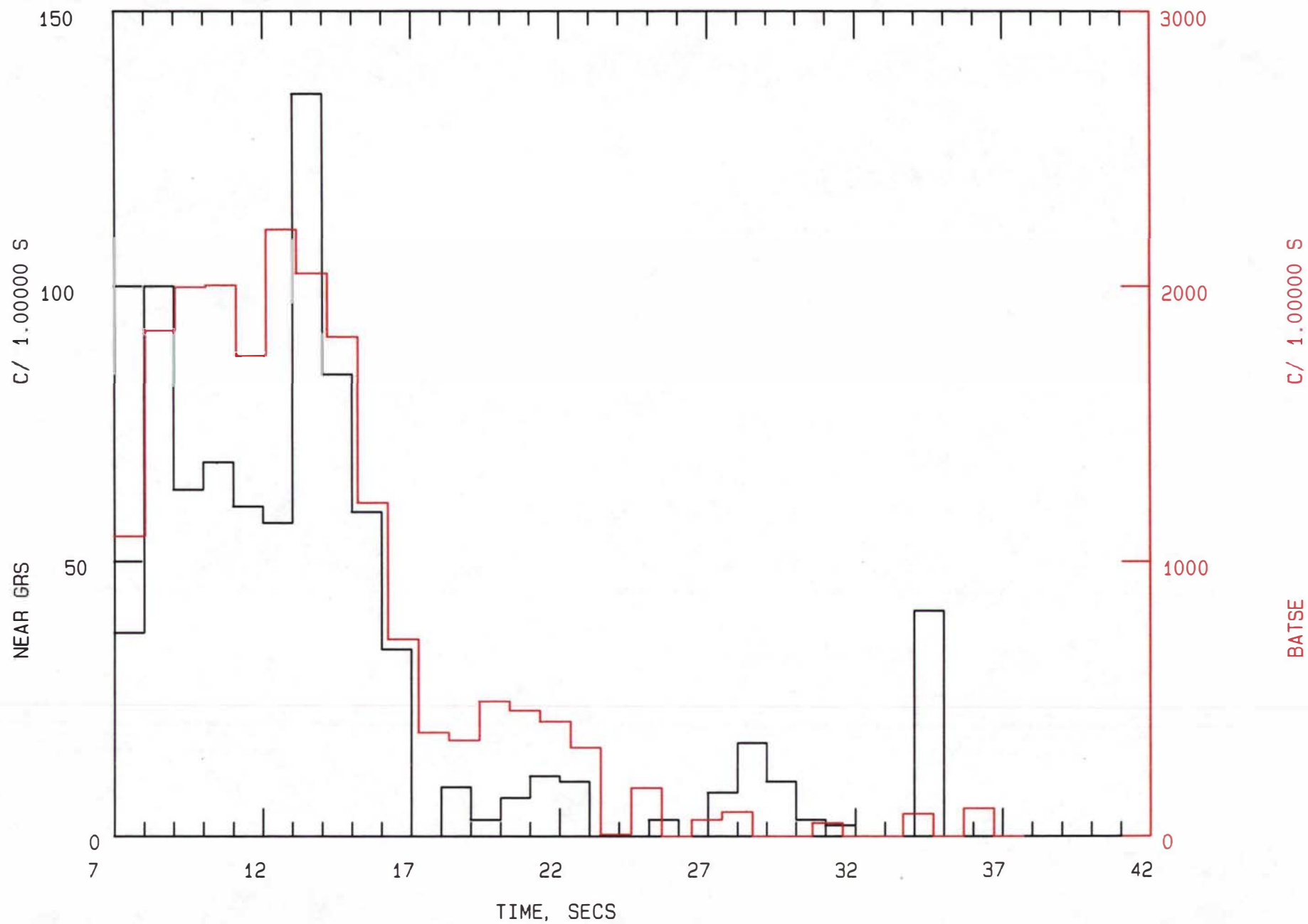
NEAR GRS -BATSE

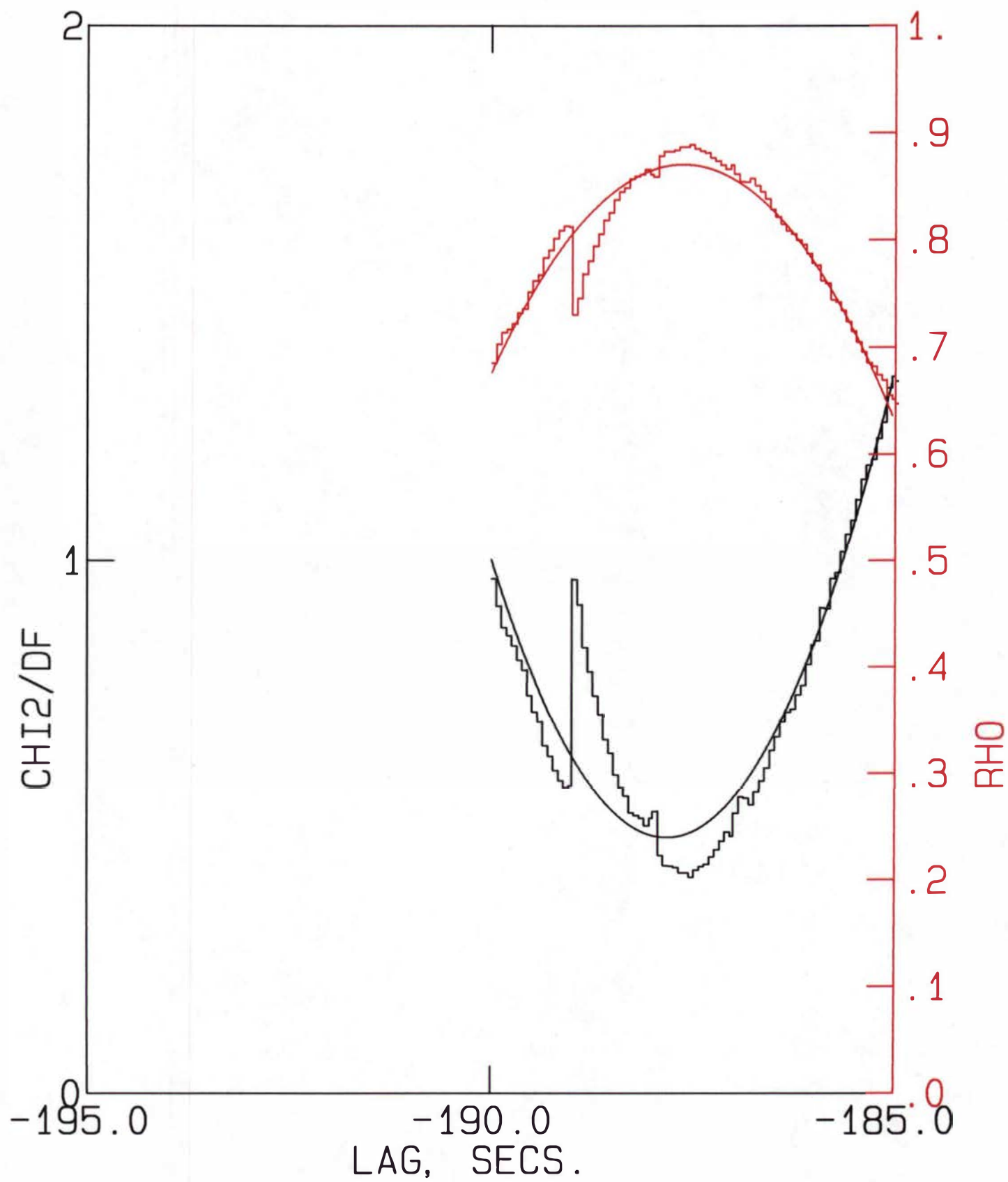
CORRELATION

15/10/98

17012.041

15/ 2/ 0





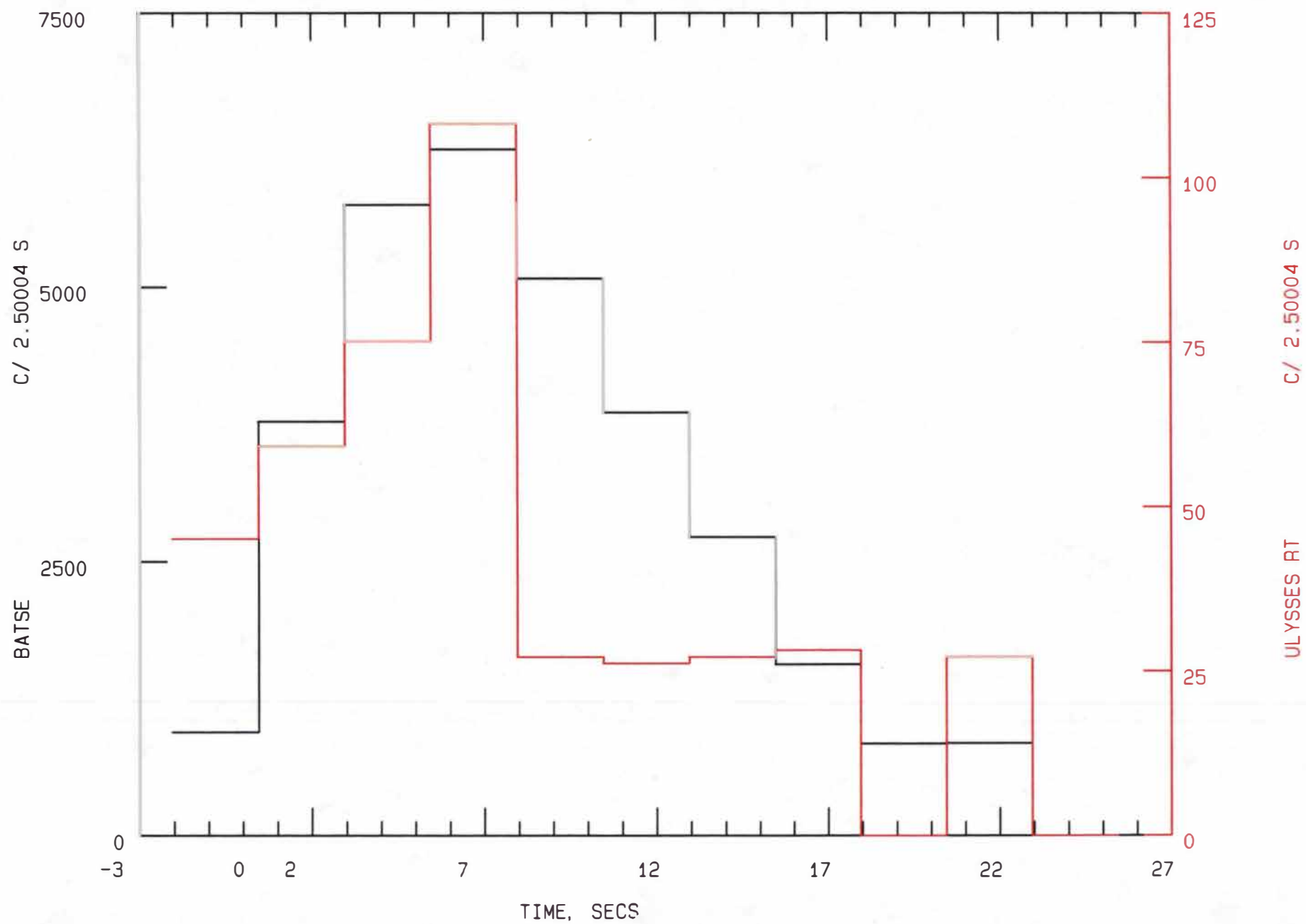
BATSE

-ULYSSES RT CORRELATION

15/10/98

17541.857

15/ 2/ 0



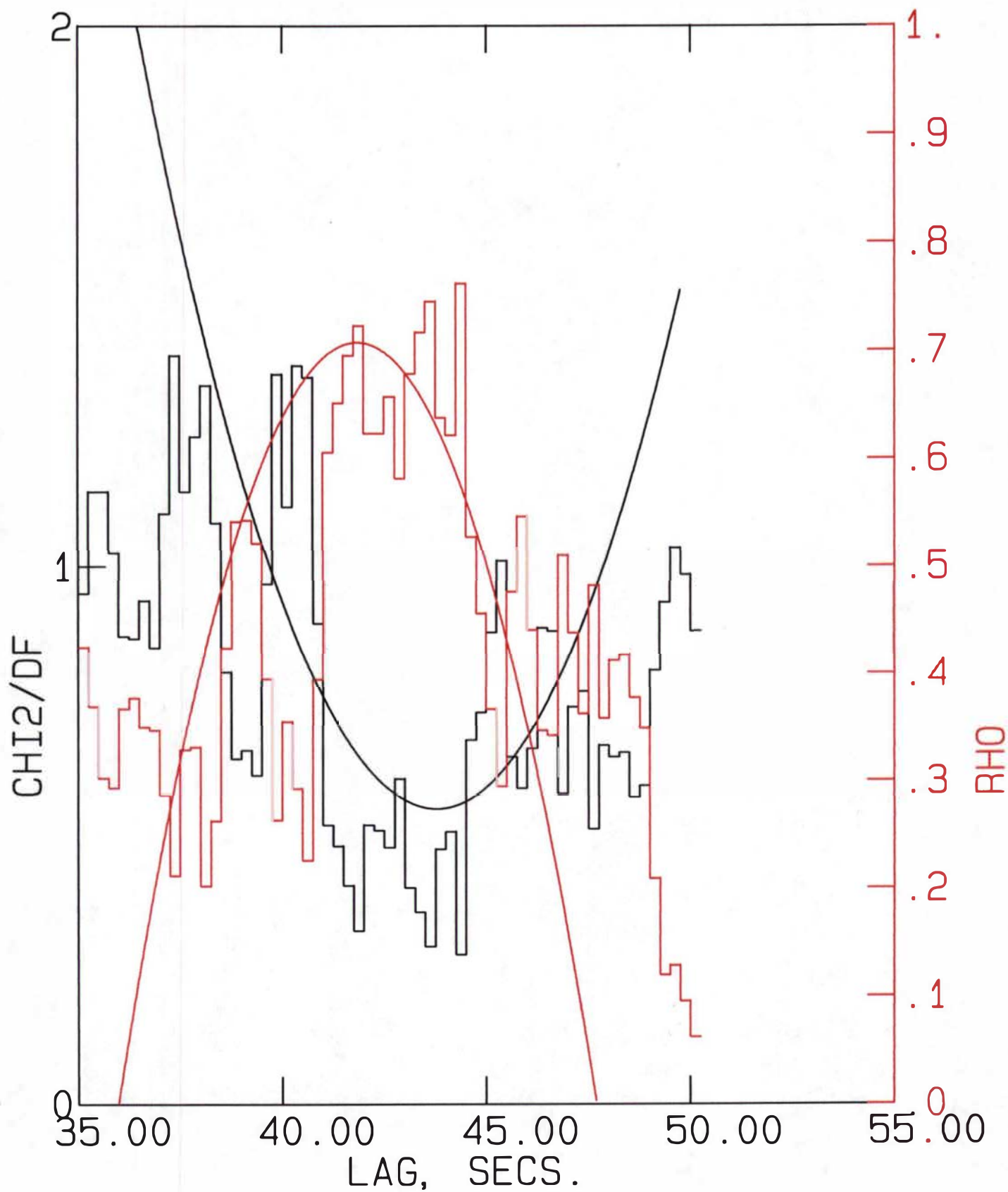
BATSE

-ULYSSES RT CORRELATION

15/10/98

17541.857

15/ 2/ 0



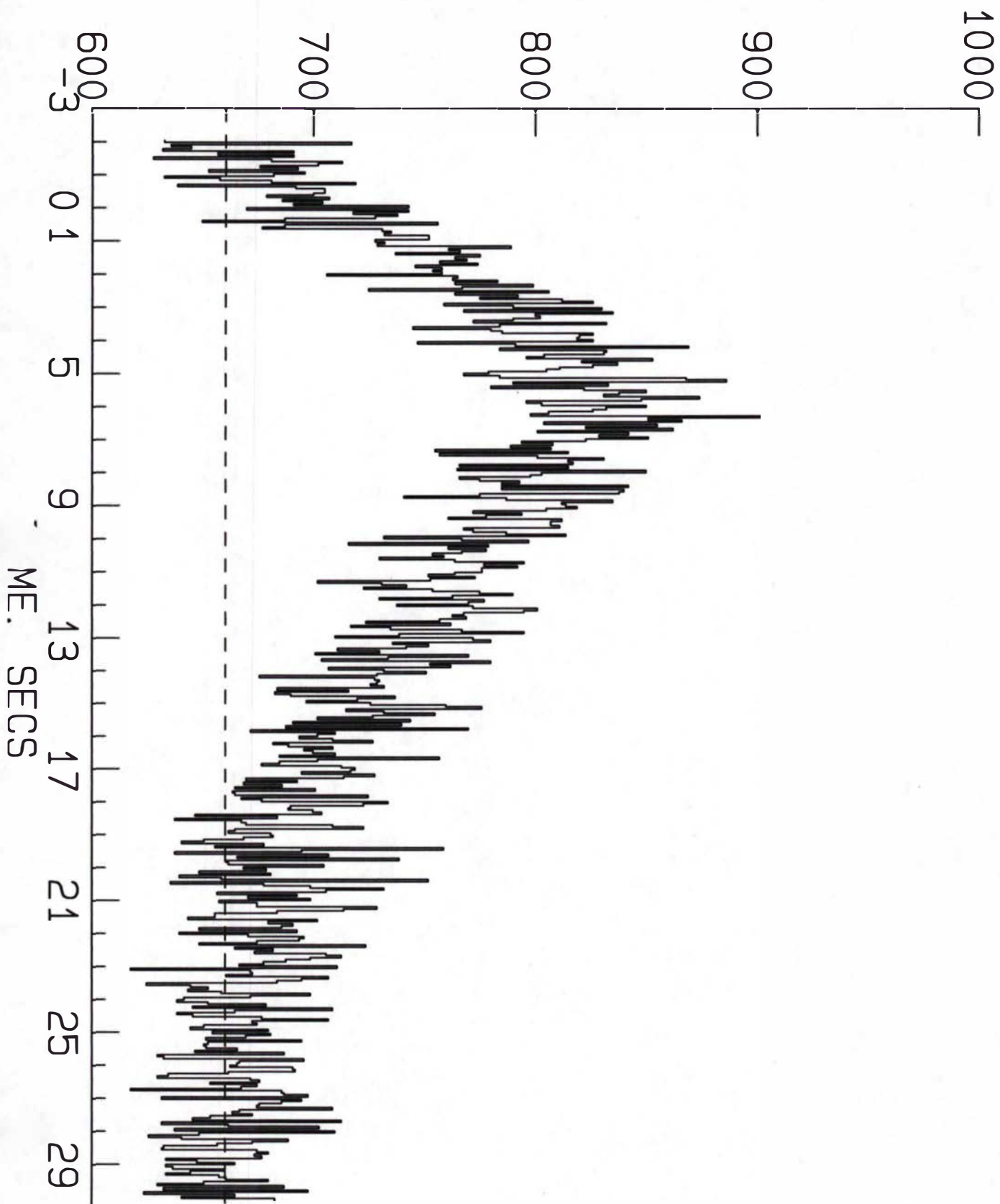
BATSE

15/10/98

17541.857

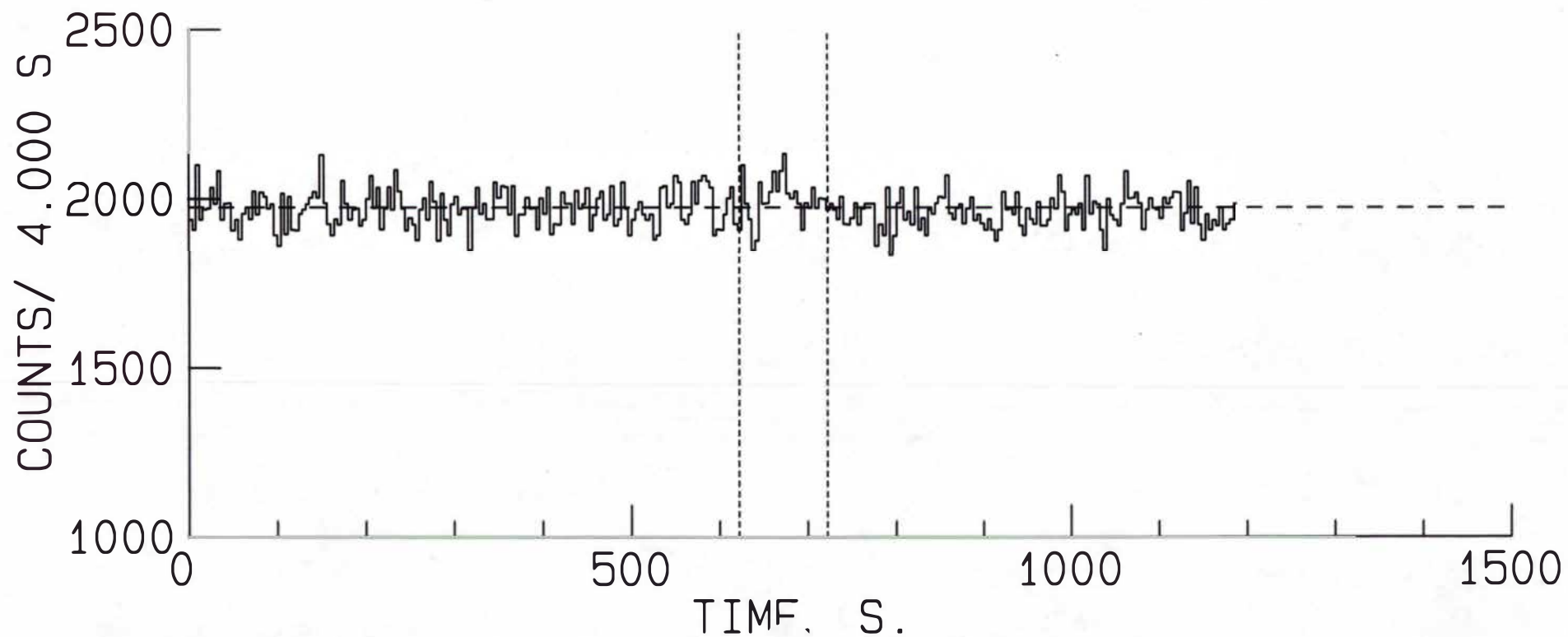
25- 100 keV

COUNTS/0.064 S



ULYSSES RT
15/10/98 17208.026 s
0.250 S INTERVALS REGROUPED BY 16
22- 151 keV

15 / 2 / 0



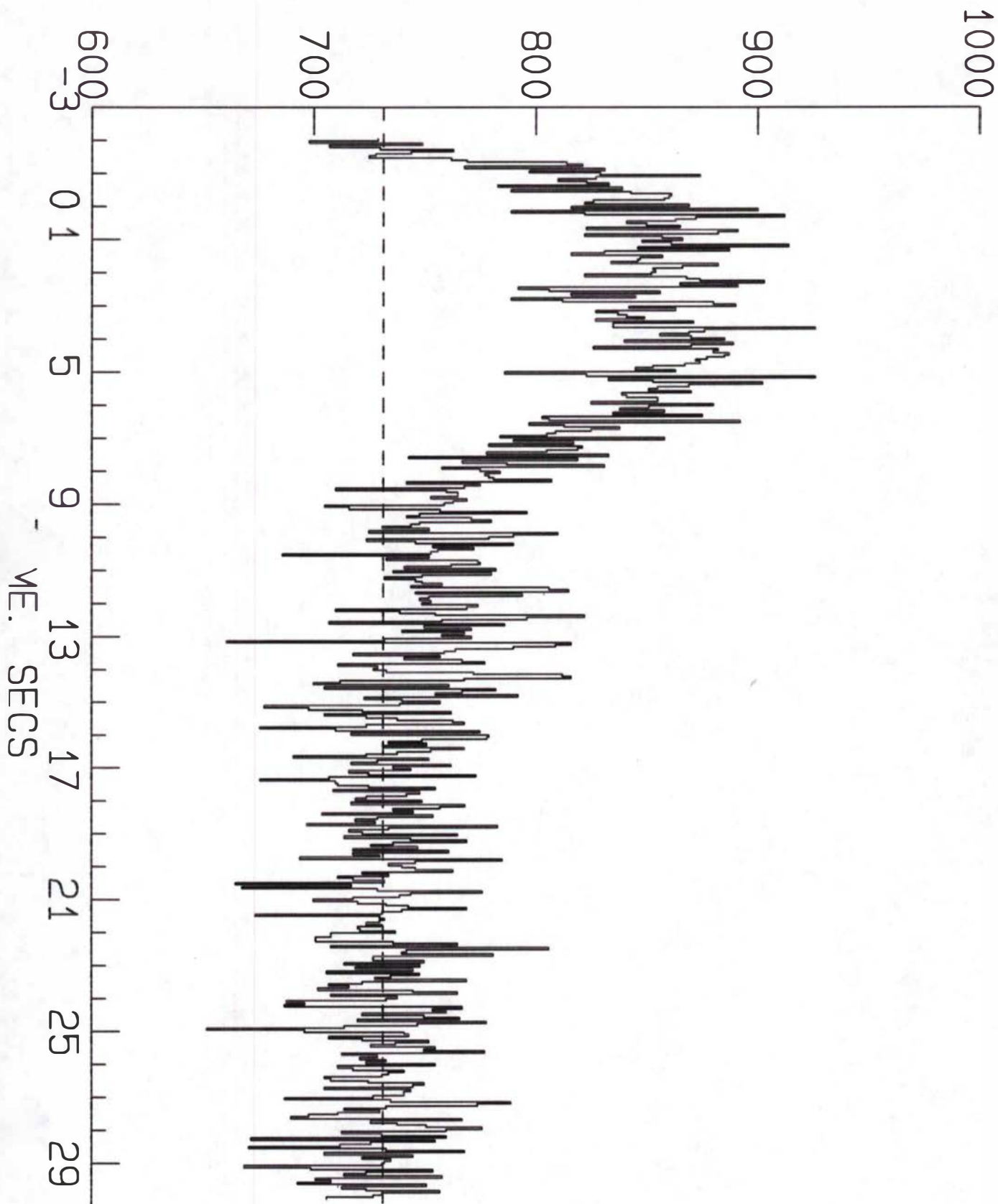
BATSE

15/10/98

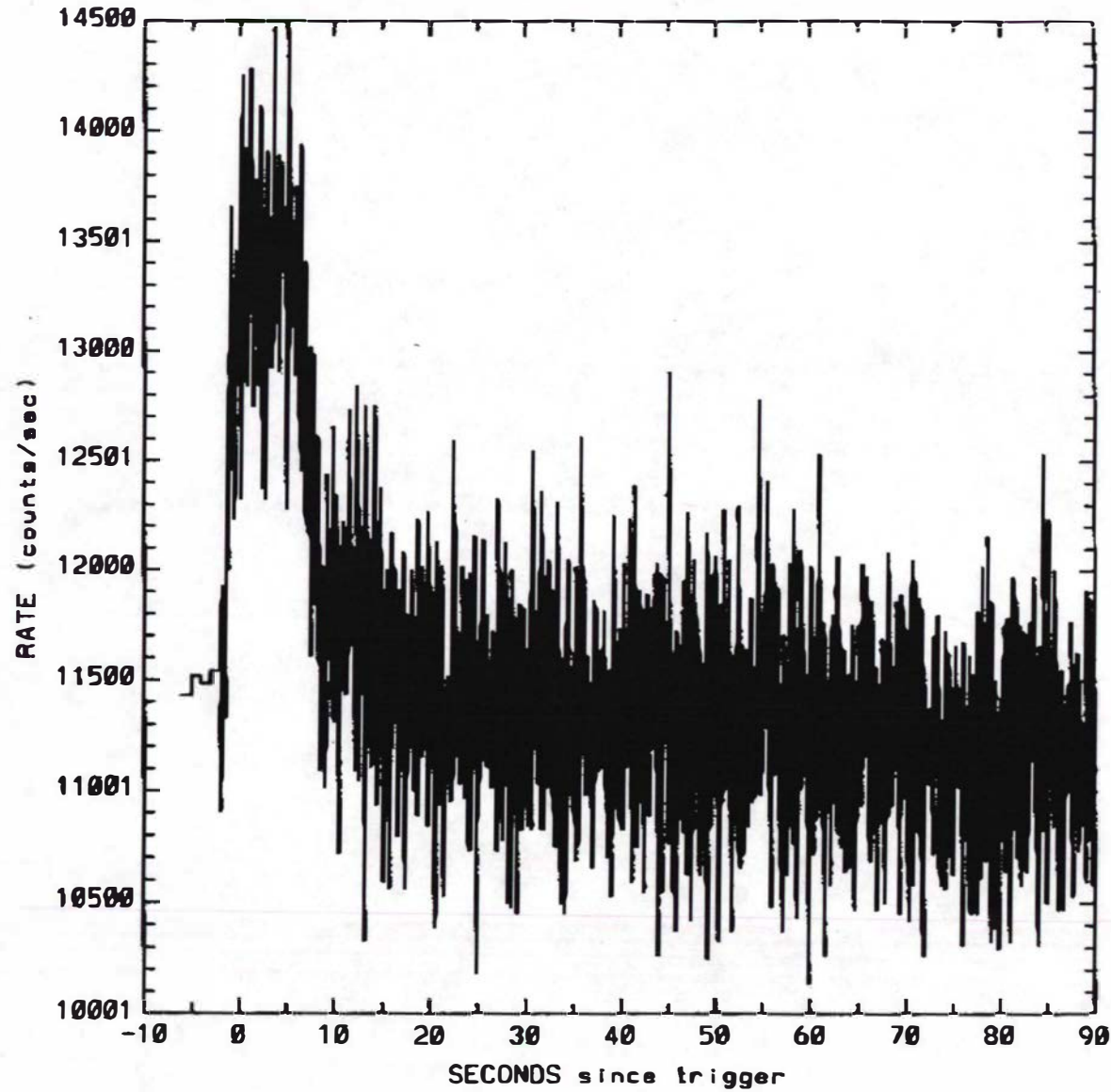
17541.857

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 7156



9-FEB-2000 09:28.47

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7156

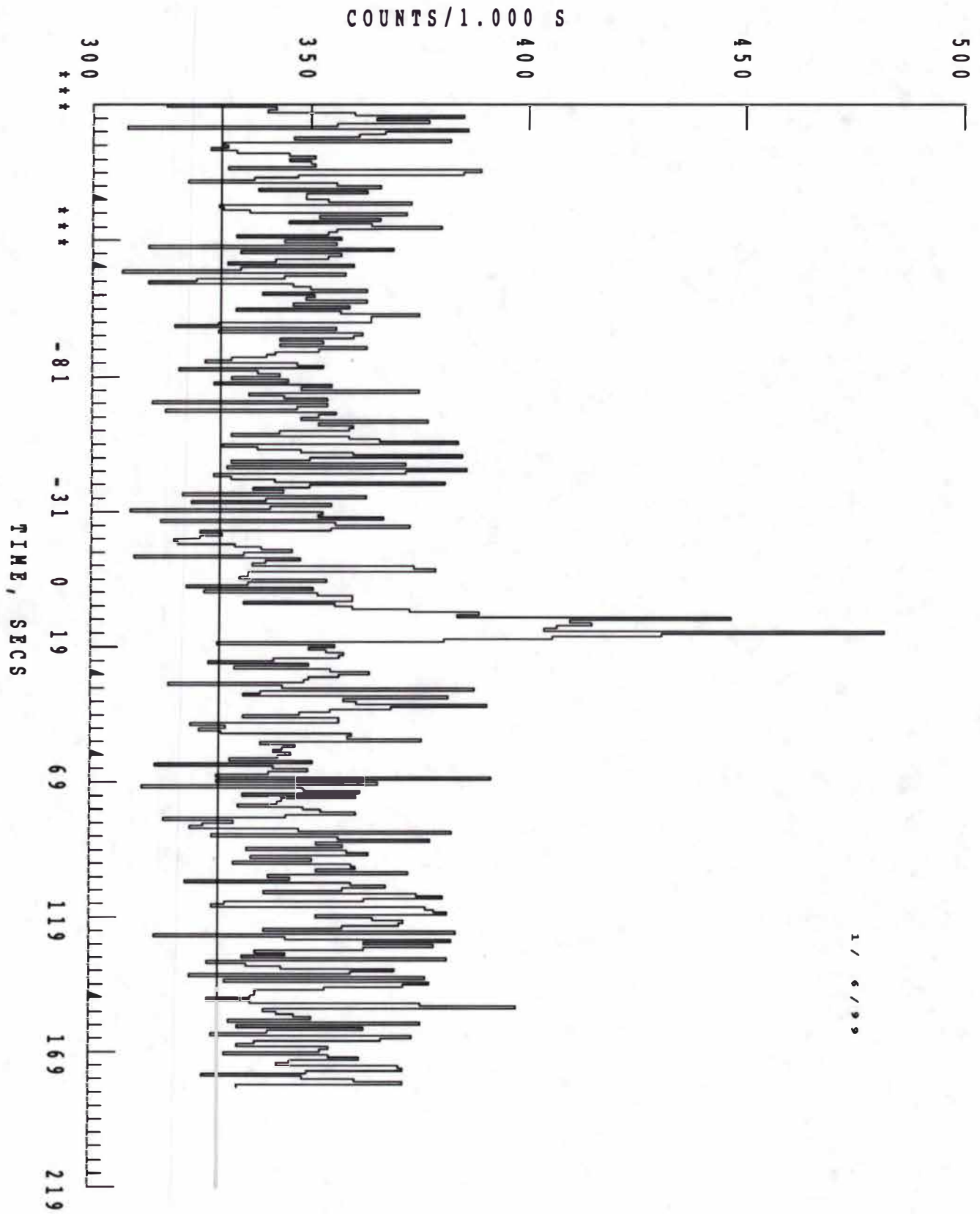
Trigger Time:
11101 / 17541.857Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)Detectors (7..0):
7-5-3---Discriminators:
(3 . 4)Quality Mask:
80ISP1

NEAR

15/10/98

17012.041

100-1000 keV



BATSE

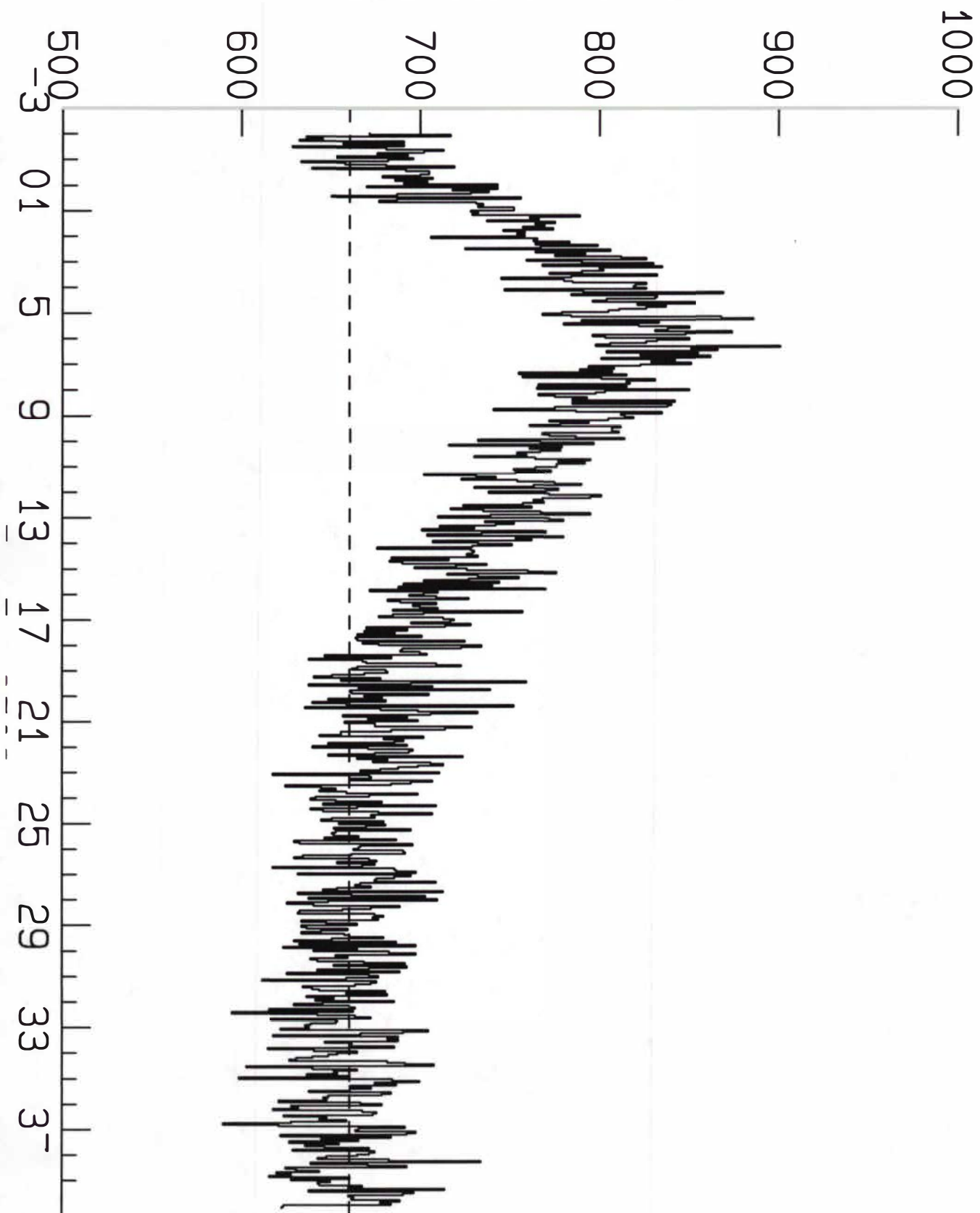
15/10/98

17541.857

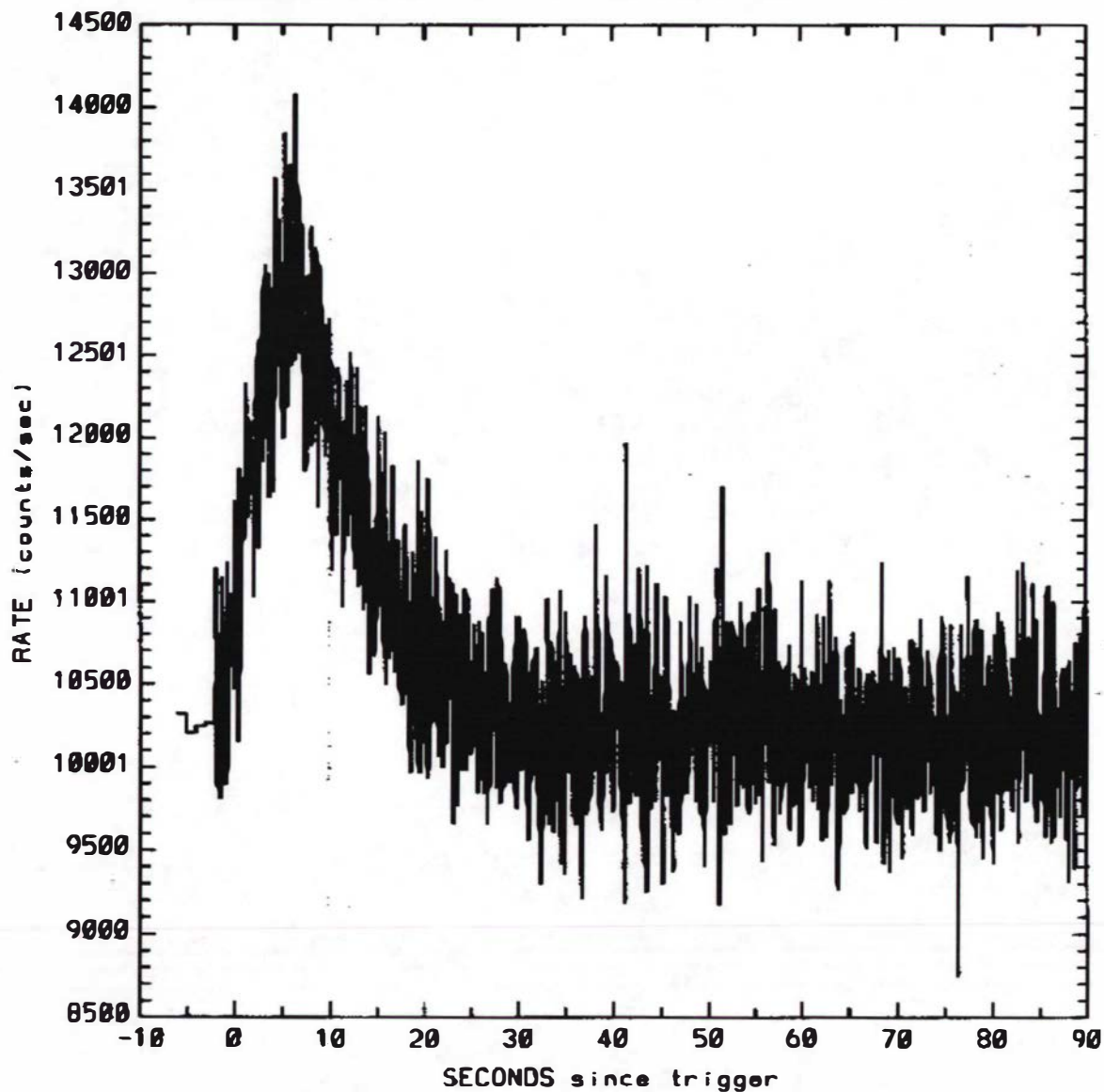
25- 100 keV

COUNTS/0.064 S

27 / 11 / 98



DISCSC Data for K. Hurley, No. 7156



22-OCT-1998 15:06:29

Created by MOPS BD
(Burst Display)
Version t2.26

Trigger # . 7156

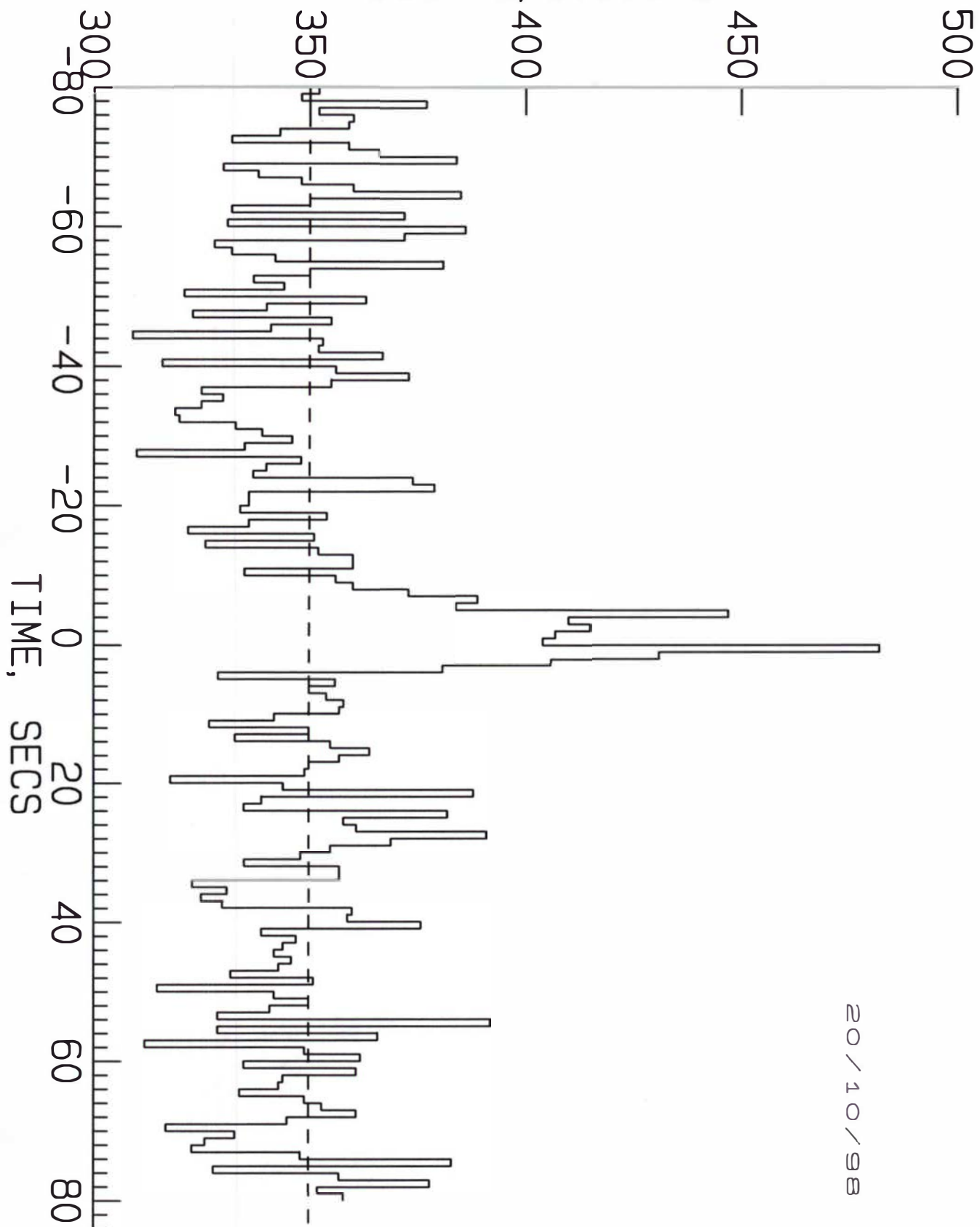
Trigger Time:
11101 / 17541.857Burst Data Type:
DISCSCDeadtime
Corrected. NBackground Data:
Type. PREB + DISCLAMinimum Integ. Time.
0.064 secondsDetectors [7..0].
7-5-3---Discriminators.
(1 . 2)Quality Mask.
BDISP1

NEAR

15/10/98 17027.818

100-1000 keV

COUNTS/1.000 S



20/10/98

From HENZE@fender.msfc.nasa.gov Mon Oct 19 12:57:22 1998
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA05989; Mon, 19 Oct 1998 12:57:22 -0700
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA15772; Mon, 19 Oct 1998 12:57:18 -0700
Date: Mon, 19 Oct 1998 14:57:20 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981019145720.2021265f@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7157
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7157
EVENT OF 1998 OCT 15 DAY OF YEAR=288
EVENT CROSSING TIME AT BATSE : 46766. S. OR 12:59:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 122.000 20.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/10/ 98 IS:
RA= 163.991 DEC= -0.650 DIST= 6.065 AU
BATSE-ULYSSES DISTANCE = 907270293. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2101.78 SECS.
CROSSING TIME AT ULYSSES IS 44664. S. OR 12:24:24 +/- 396.12 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/10/ 98 IS:
RA= 156.939 DEC= 11.126 DIST= 2.158 AU
MARS-BATSE DISTANCE = 322897152. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=145.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -885.19 SECS.
CROSSING TIME AT MARS IS 45881. S. OR 12:44:40 +/- 93.09 SECONDS

BATSE BURST TRIGGER

NO.: 7157

TIME: TJD=1101 SECONDS=46766

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 75.2 AZIMUTH=338.5 ERROR= 2.3 DEGREES

COMMENTS:

TWO PULSES, TOTAL DUR. APPROX. 46 S. SECOND PULSE IS STRONGER, SOFTER, HAS
MAX AT APPROX. T+25 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7157	981015	11101	46766	5000	122	+20	46

Date: 20/1/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Were data checked by Joe Springer for 0.5 s errors? N/A
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☒ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)?
- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☐ Final, correct time used? (Files on website have the correct time)
- ☐ BATSE >100 keV data used for NEAR correlation?

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

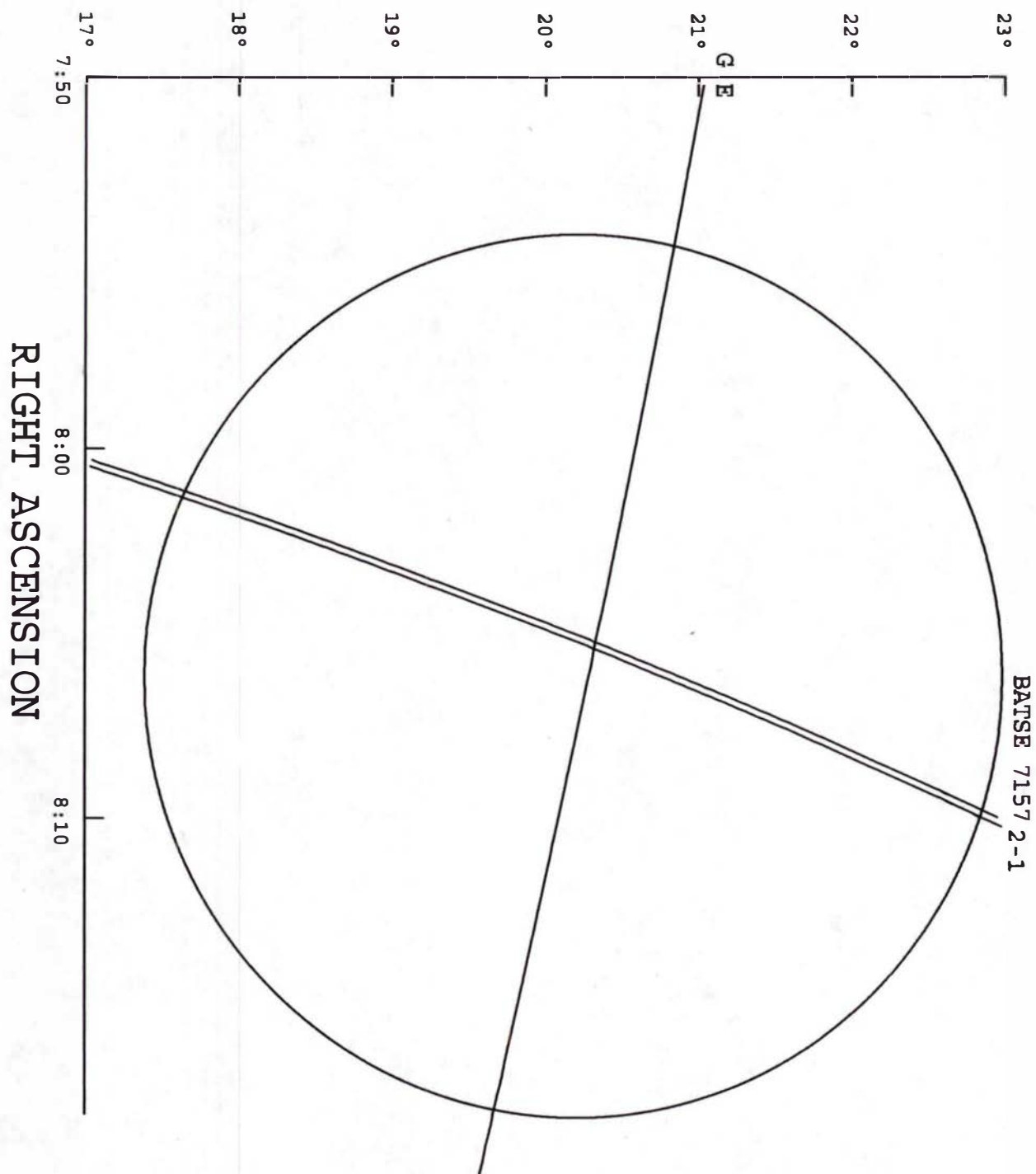
E=ECLIPTIC

G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

DECLINATION



EVENT OF OCT 15, 1998 12:59

20 / 1 / 0

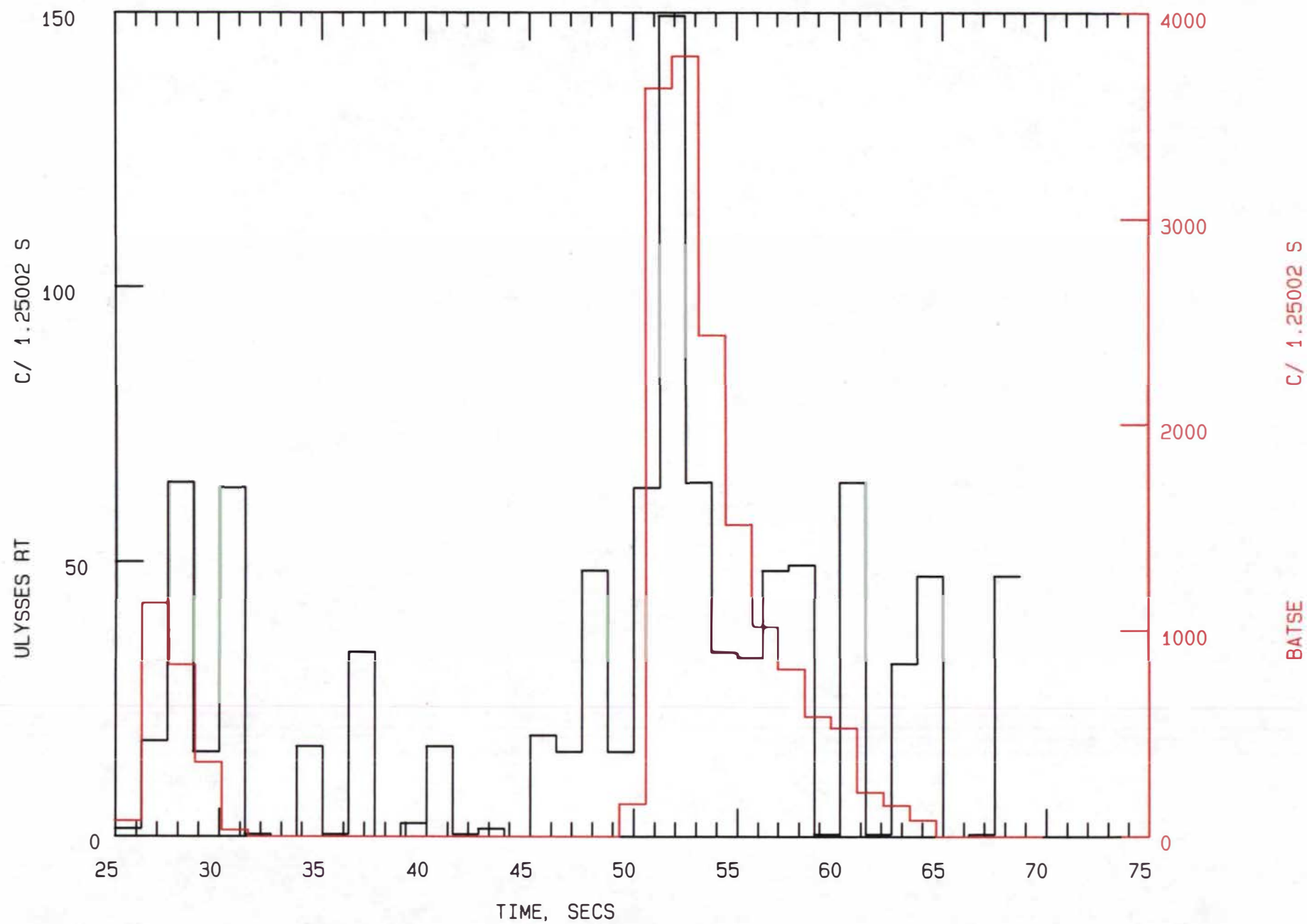
ULYSSES RT-BATSE

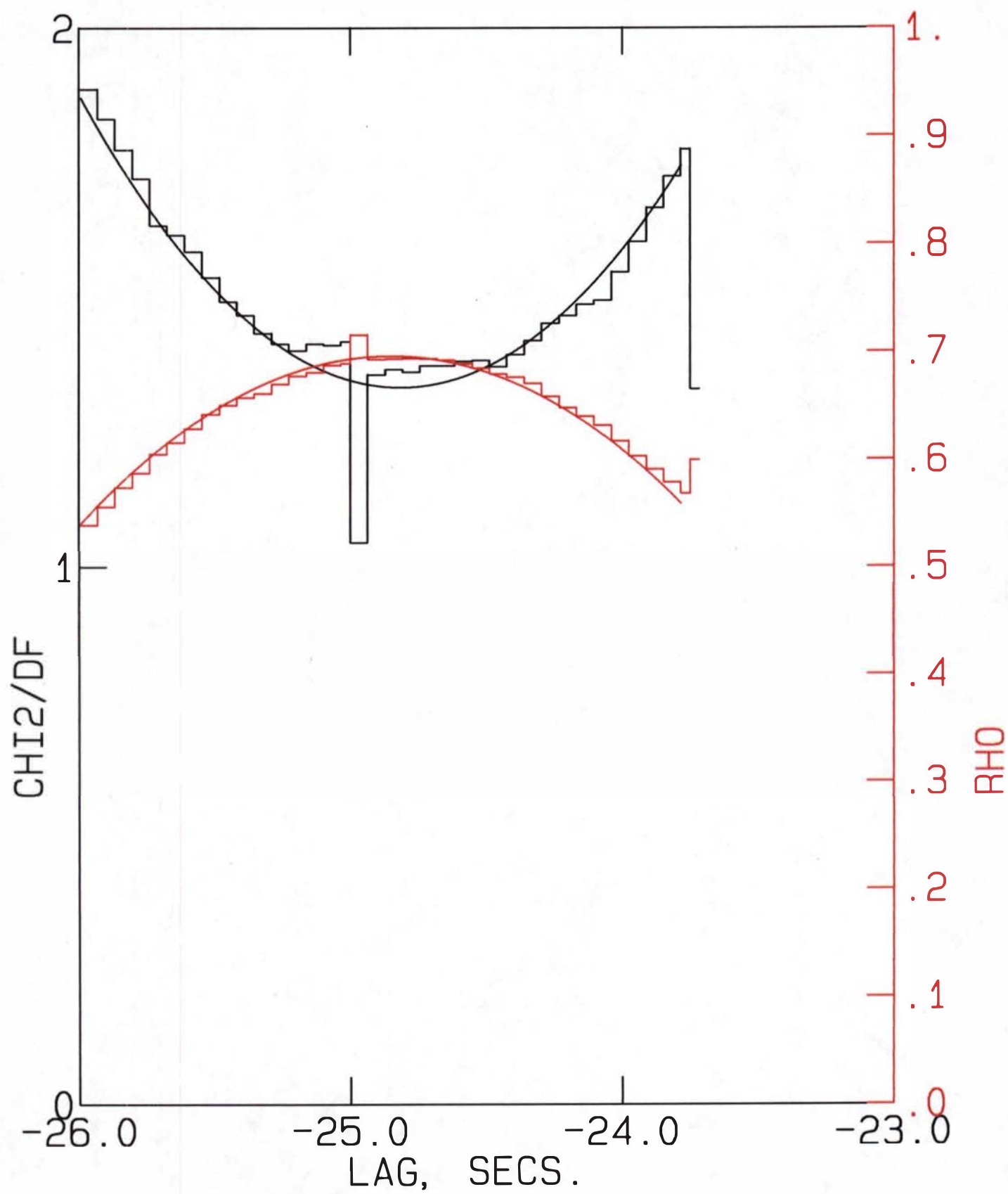
CORRELATION

15/10/98

44682.056

20/ 1/ 0

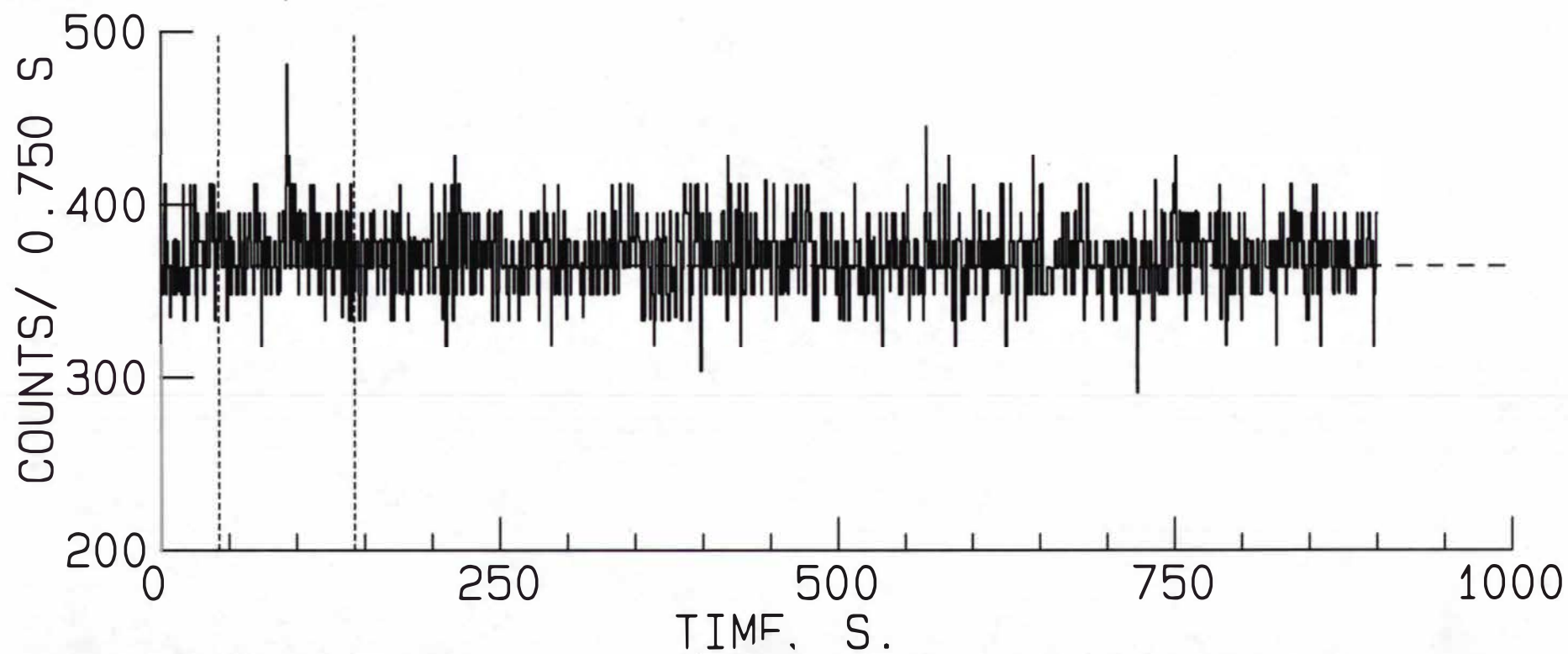




ULYSSES RT
15/10/98 44640.059 s
0.250 S INTERVALS REGROUPED BY 3
22- 151 keV

20 / 1 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

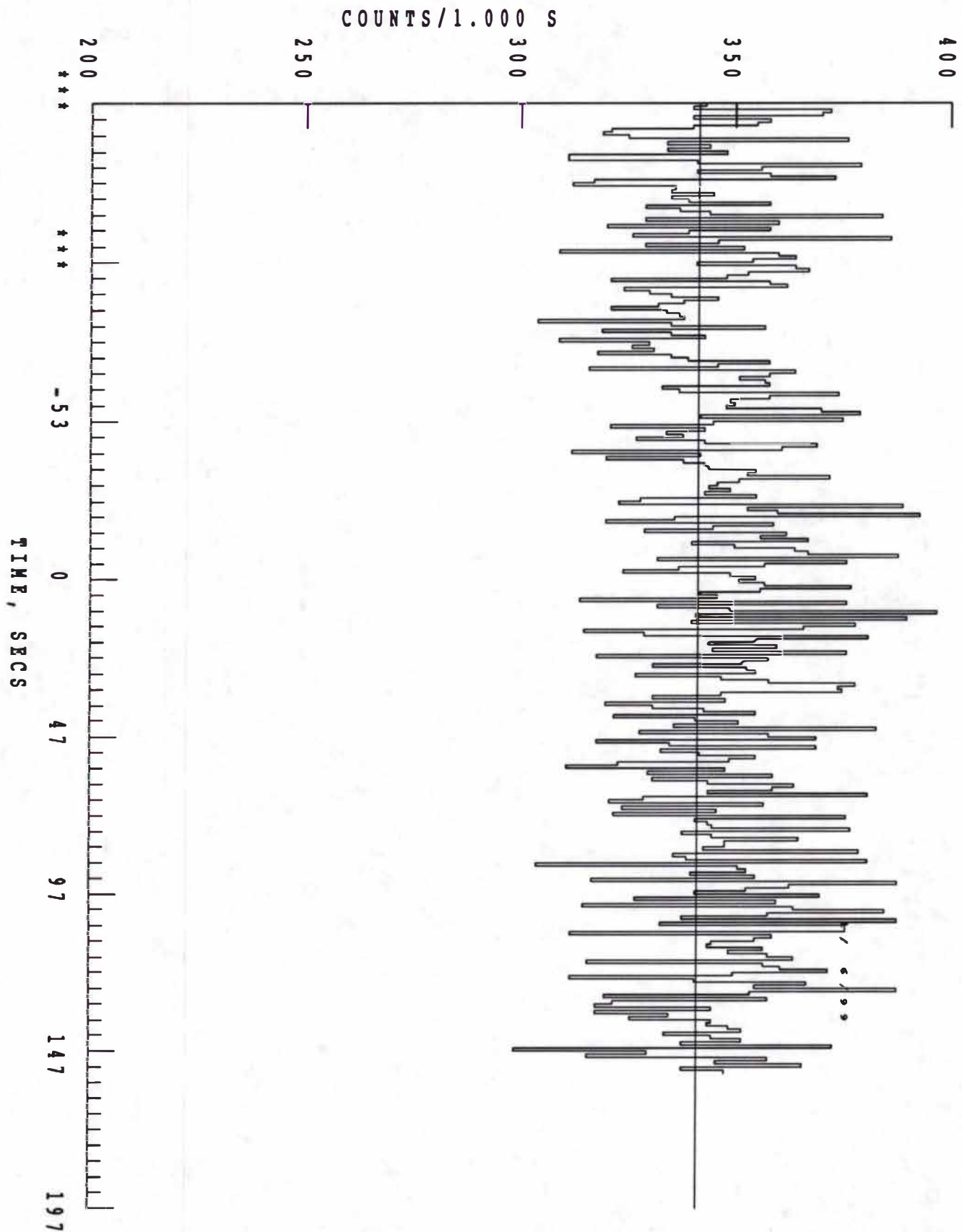


NEAR

15/10/98

47576.033

100-1000 keV



JANA TAB2 19981015 44656

ULYSSES RT

05/08/05

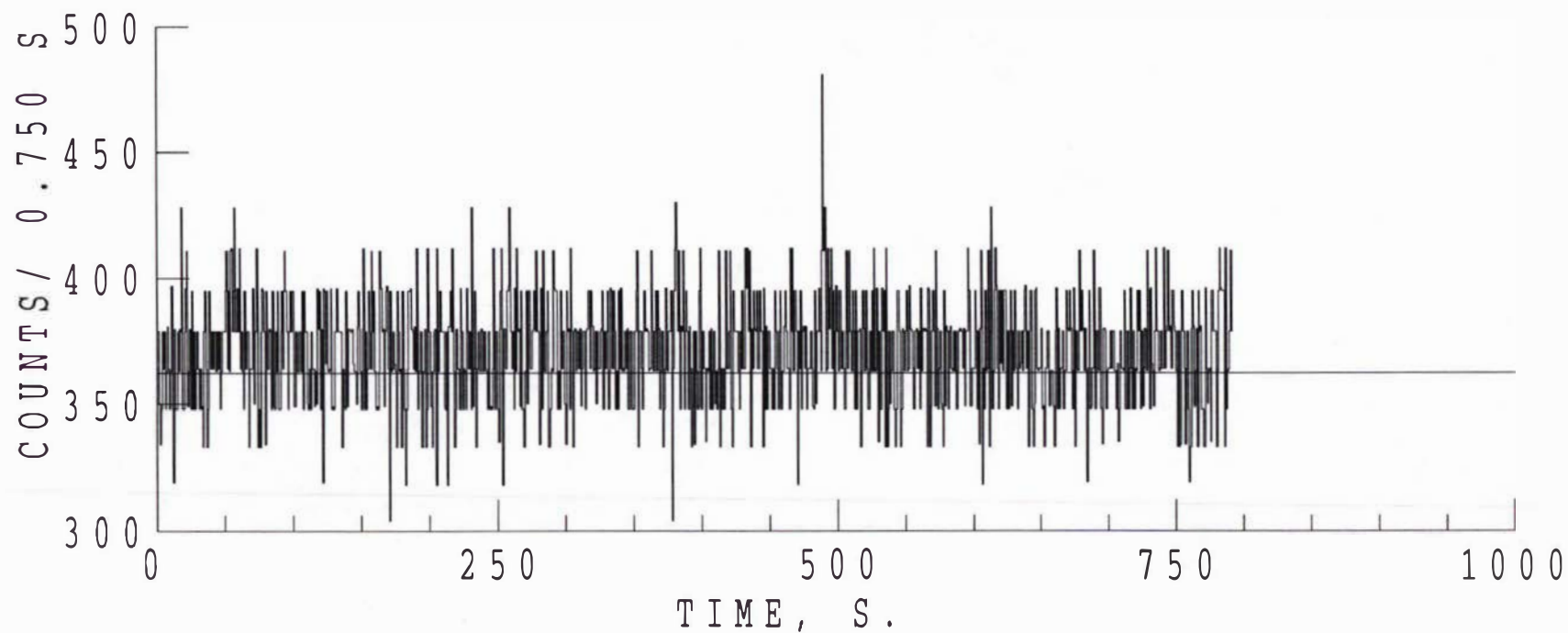
15/10/98 44244.055 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLOCTUATIONS



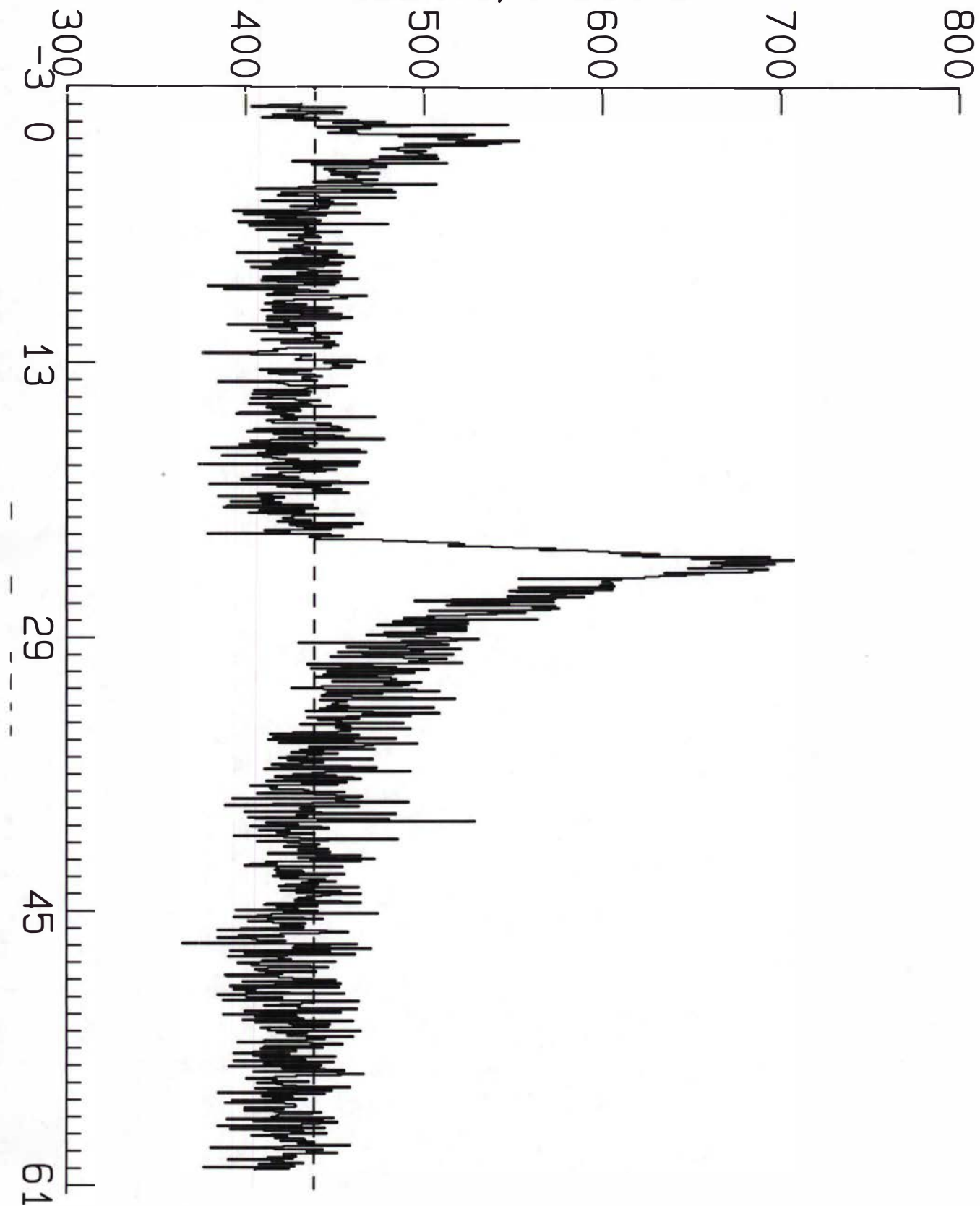
BATSE

15/10/98

46766.817

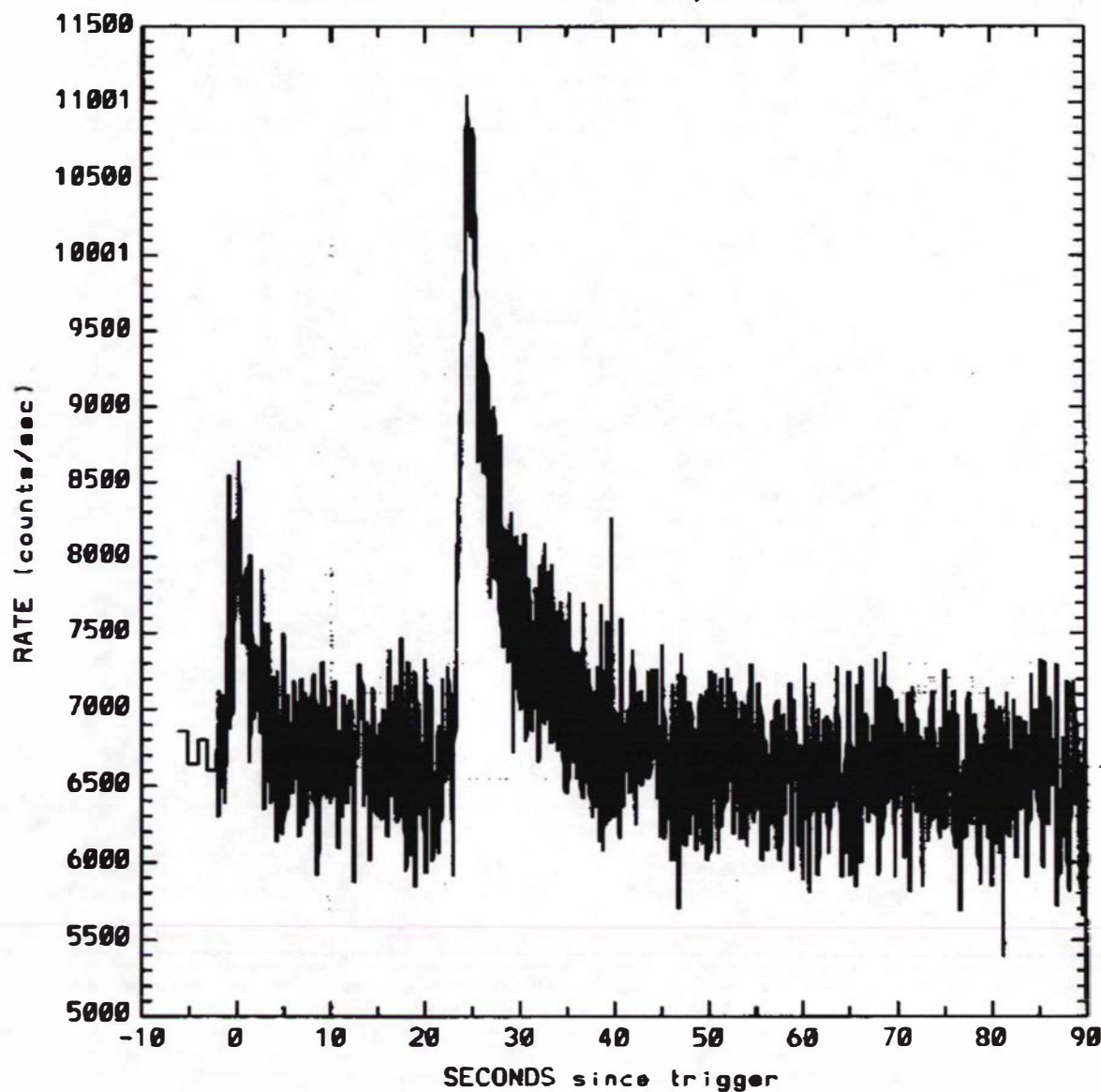
25- 100 keV

COUNTS/0.064 S



27 / 11 / 98

DISCSC Data for K. Hurley. No. 7157



22-OCT-1998 15:08:11

Created by MOPS BD
(Burst Display)
Version t2.26

Trigger # : 7157

Trigger Time:
11181 / 46766.817Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum (Integ. Time:
0.064 seconds)Detectors [7..0]:
----32--Discriminators:
(1 . 2)Quality Mask:
BDISP1

From cline@apache.gsfc.nasa.gov Mon Oct 19 12:41 PDT 1998
Mime-Version: 1.0
Date: Mon, 19 Oct 1998 15:47:05 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Still the ugly anticorrelation

Dear Kevin

The latest NEAR event I received - moments ago, is on Oct. 15, 4 days ago.

The problem is that it is at 17027.8 sec UT whereas the only
auto-Konus event on that day, Oct. 15, is at 83731.6 sec UT. = 23:15:32

There were auto-Konus SGRs (?) on Oct. 13 at 01910.5 and at 50267.7 sec UT.

There is an auto-Konus on Oct. 14 at 12234.7 sec UT,
and an obvious SGR on Oct. 17 at 54823.3 sec UT,
and an apparent GRB on Oct 17, again, at 73933.5 sec UT.

Those are all I have seen since October 9th.

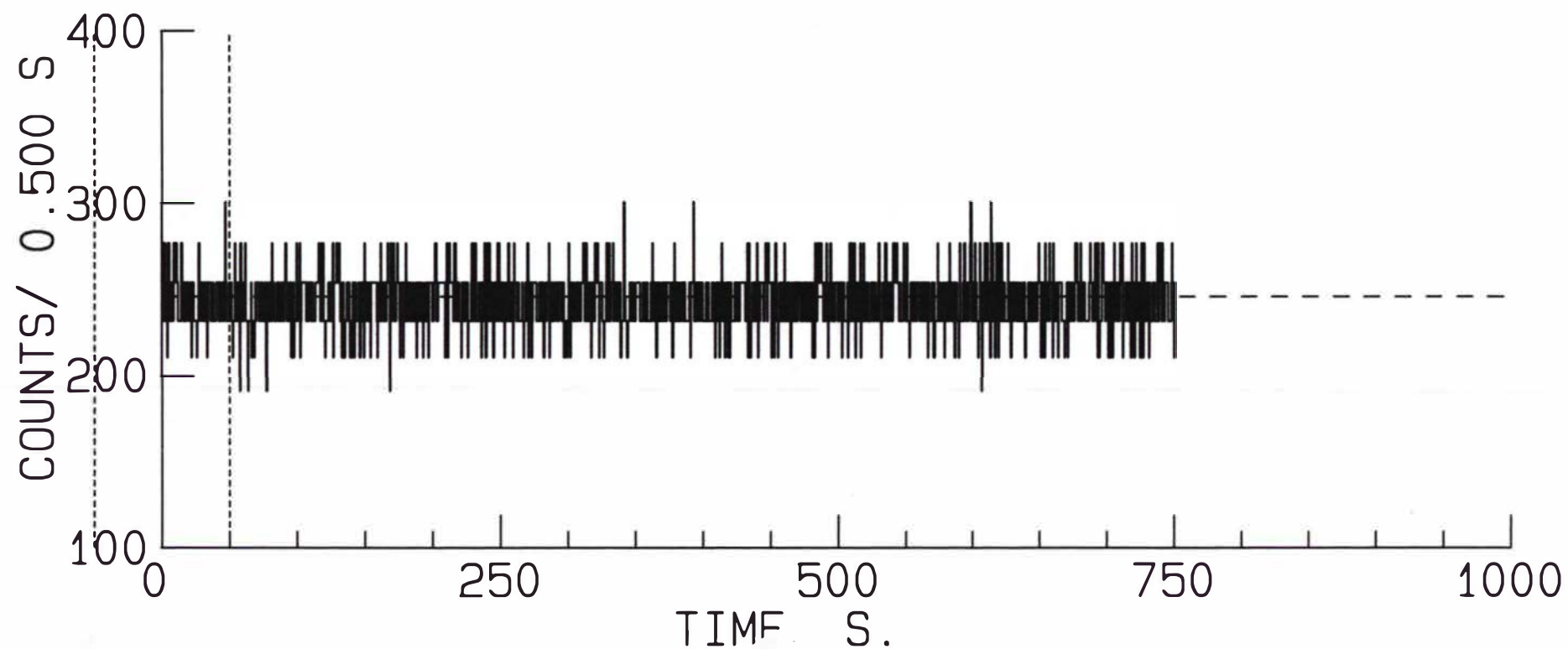
TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

Konus .48 s

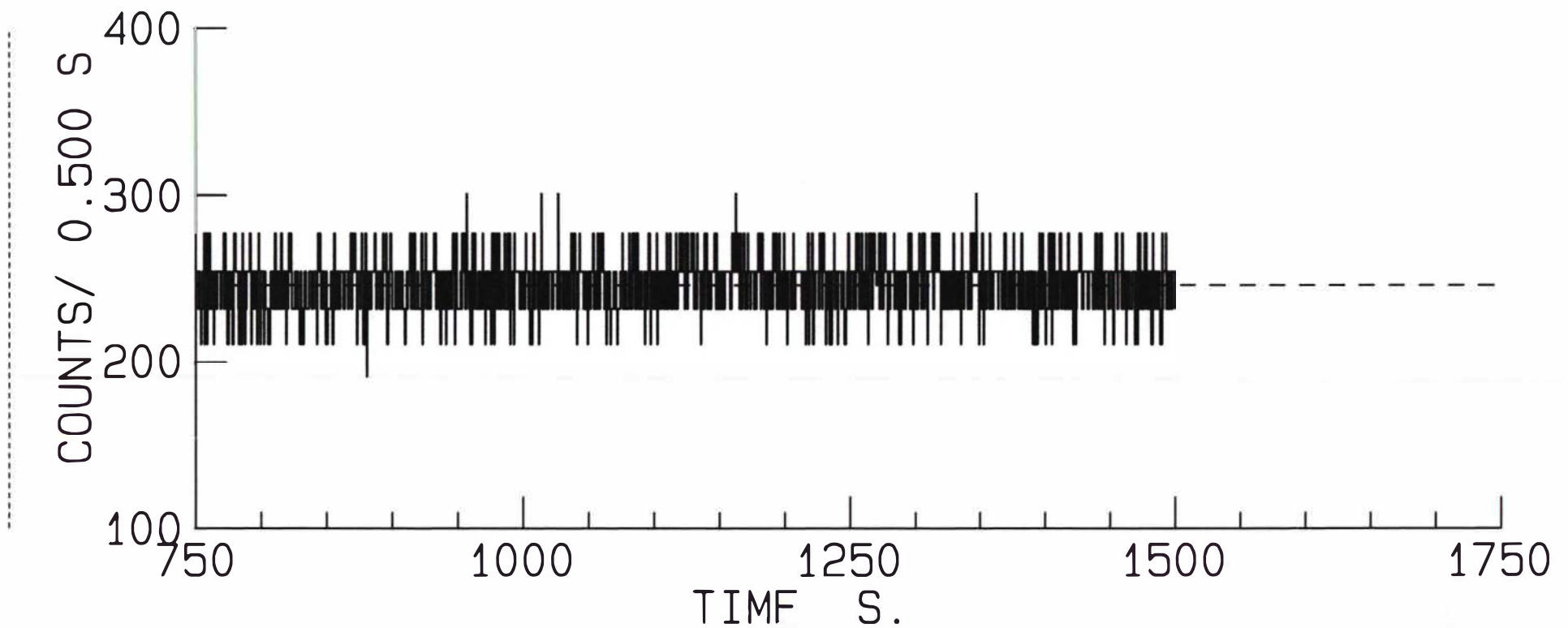
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



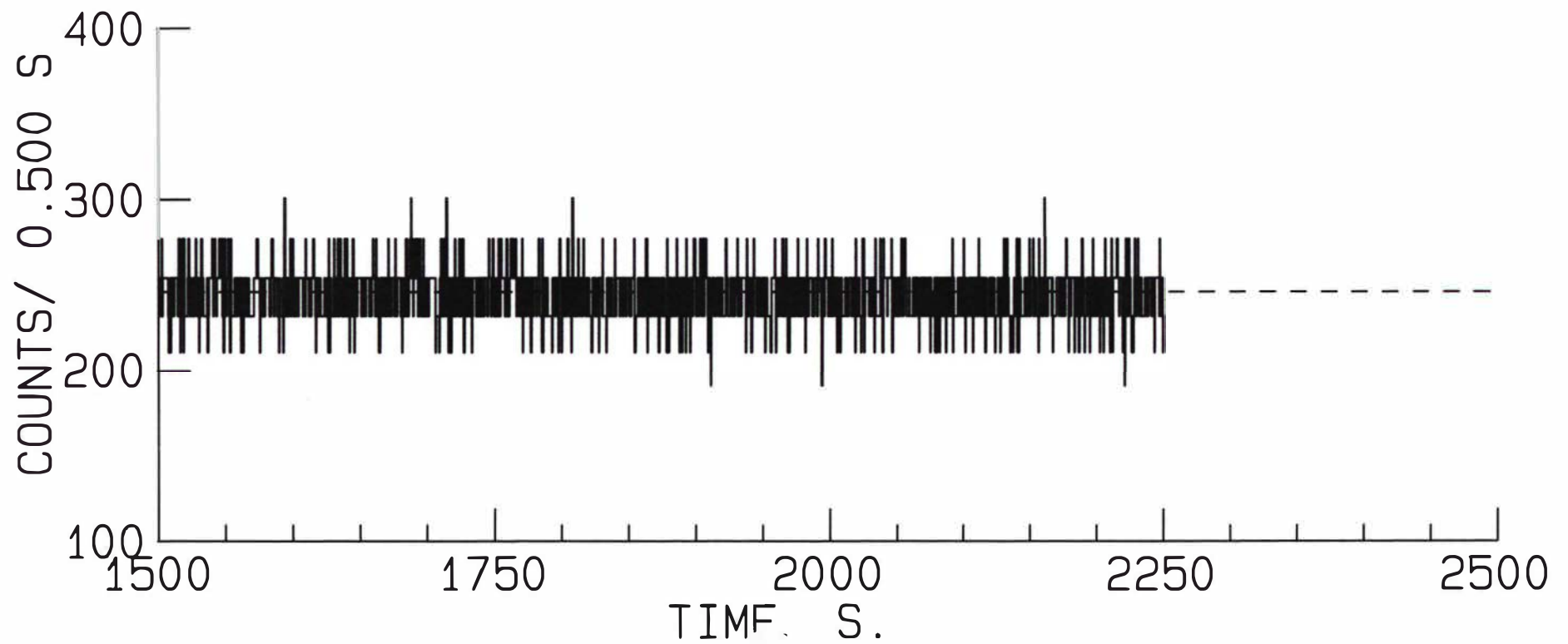
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



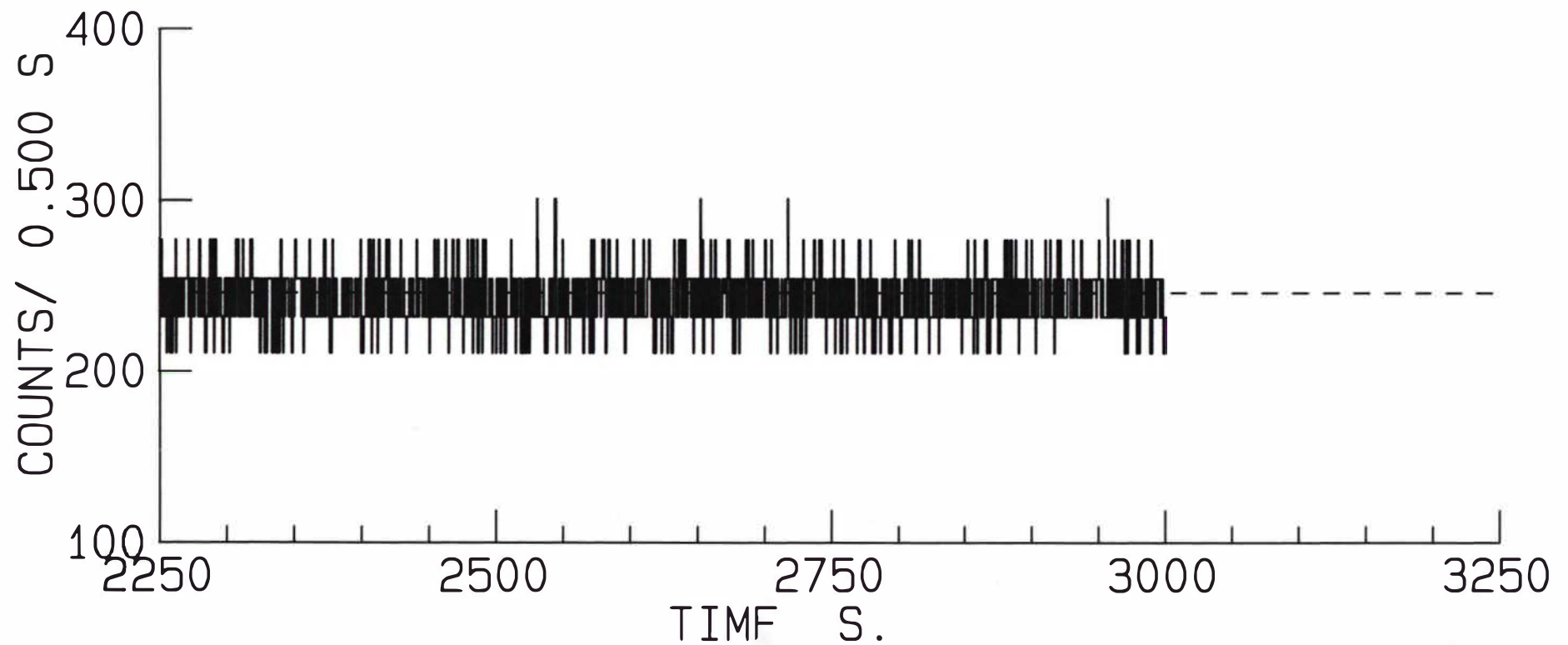
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



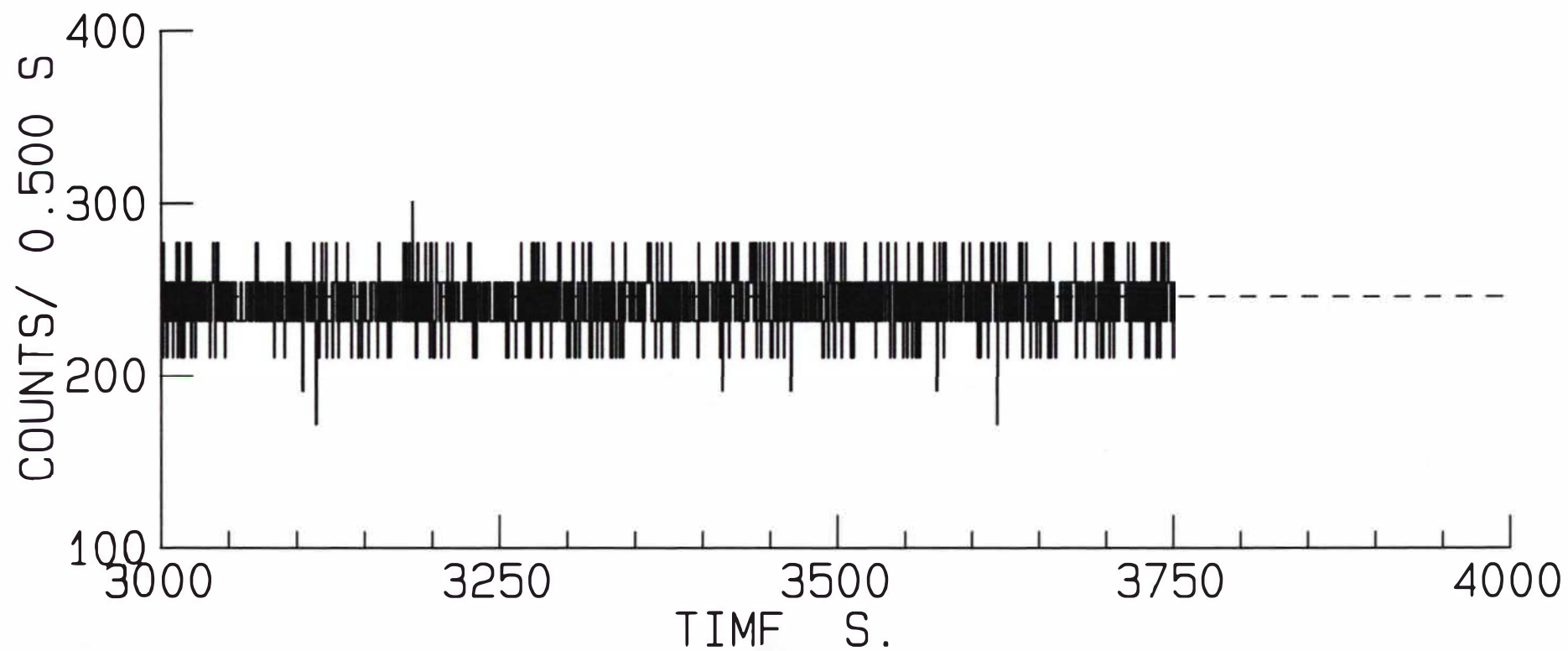
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



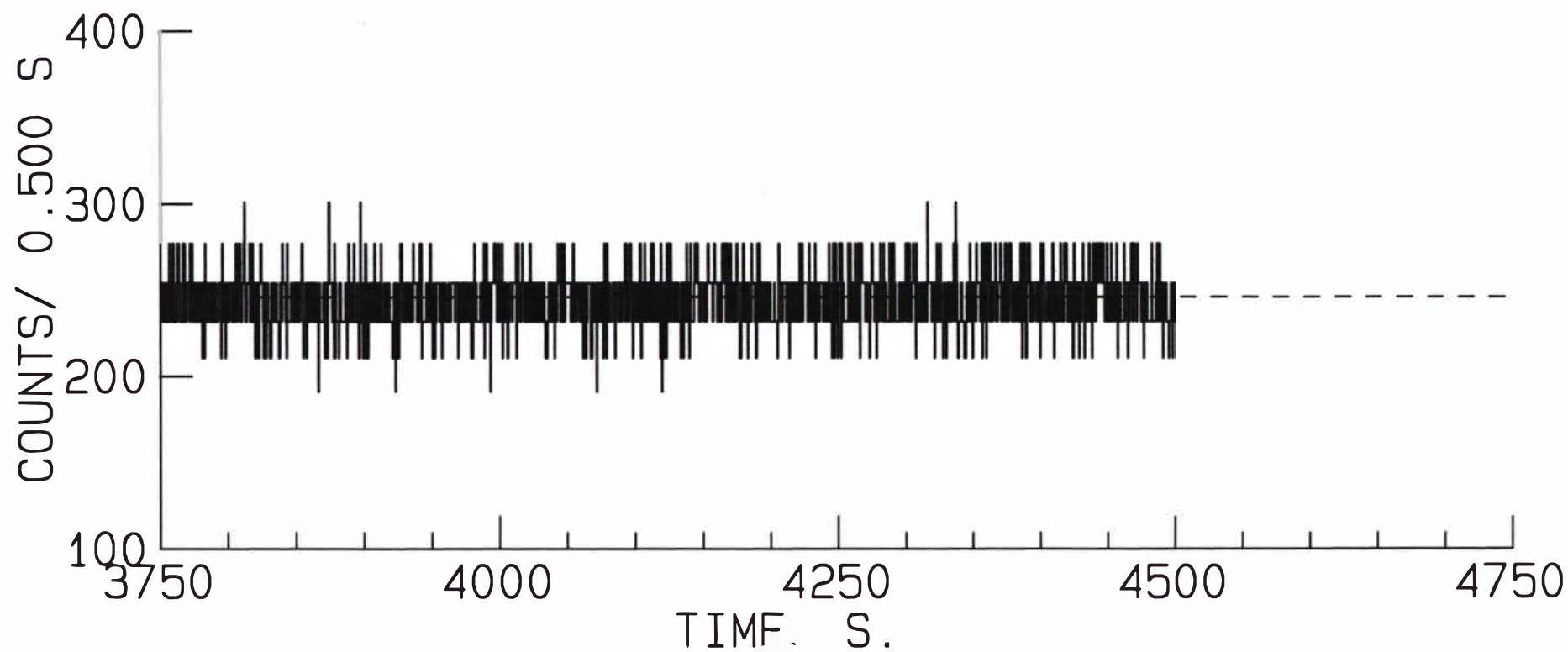
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



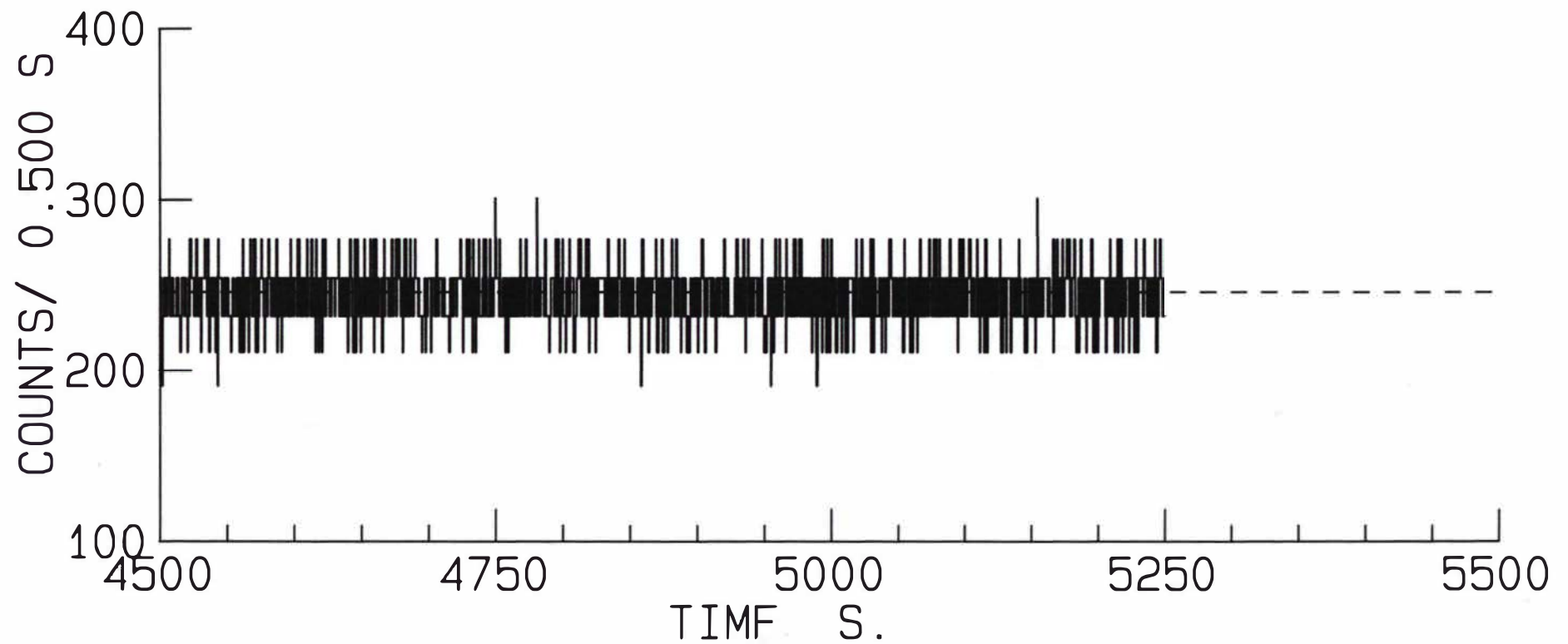
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



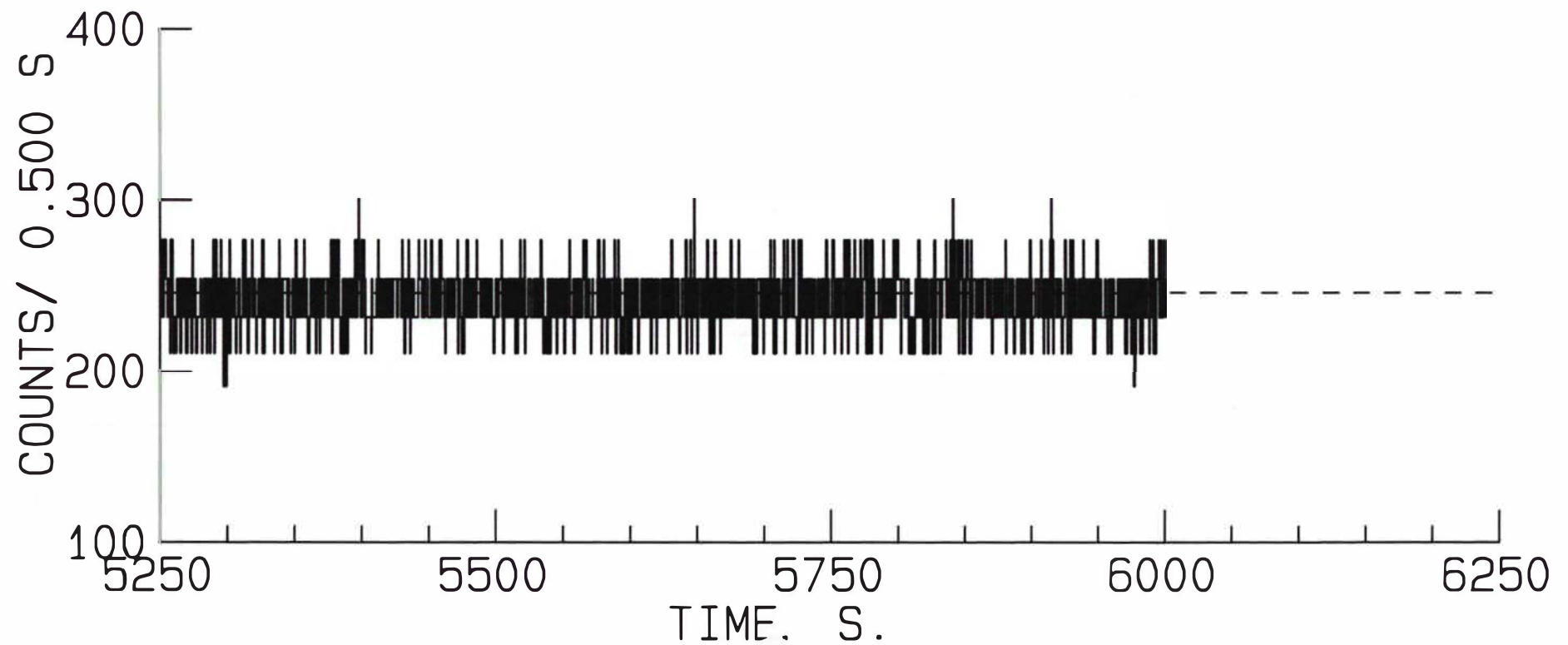
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



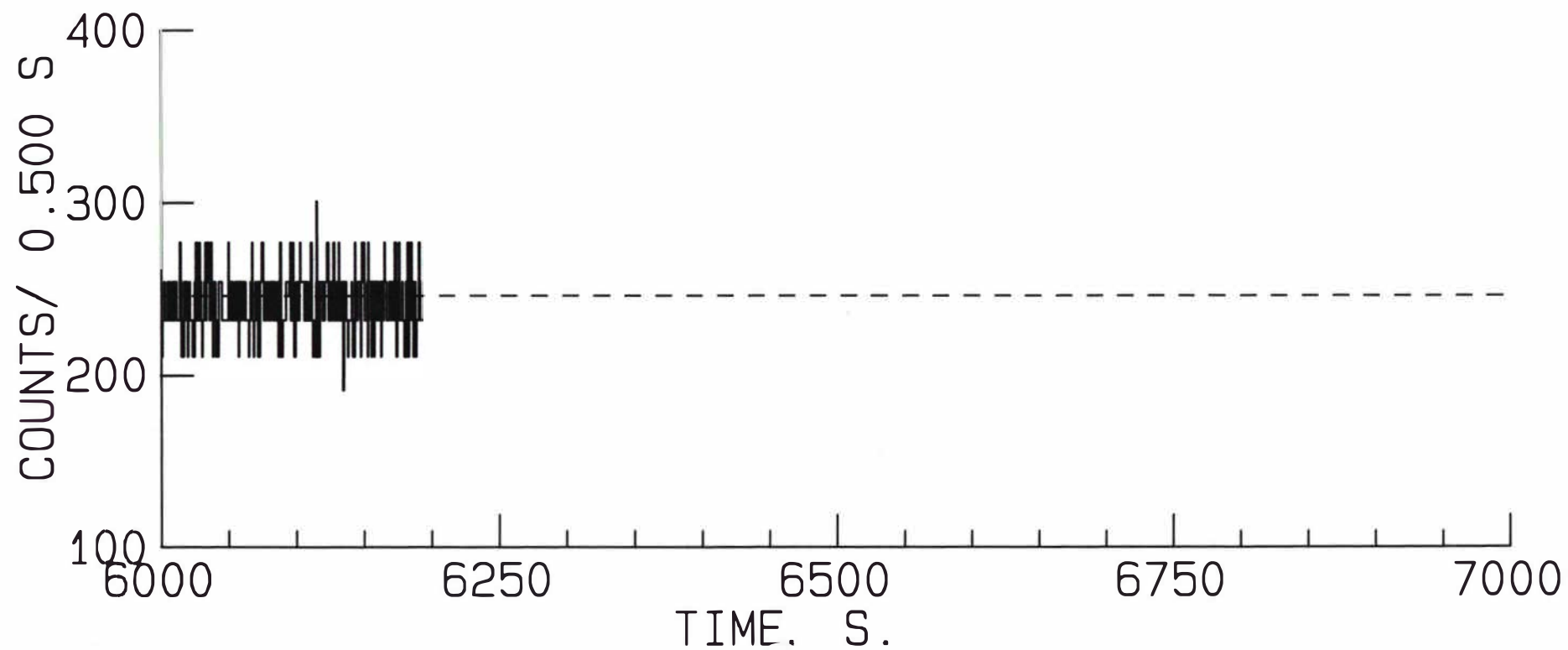
ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



ULYSSES RT
15/10/98 80640.180 s
22- 151 keV

19/11/8



KONUS

ULYSSES RT

20 / 10 / 98

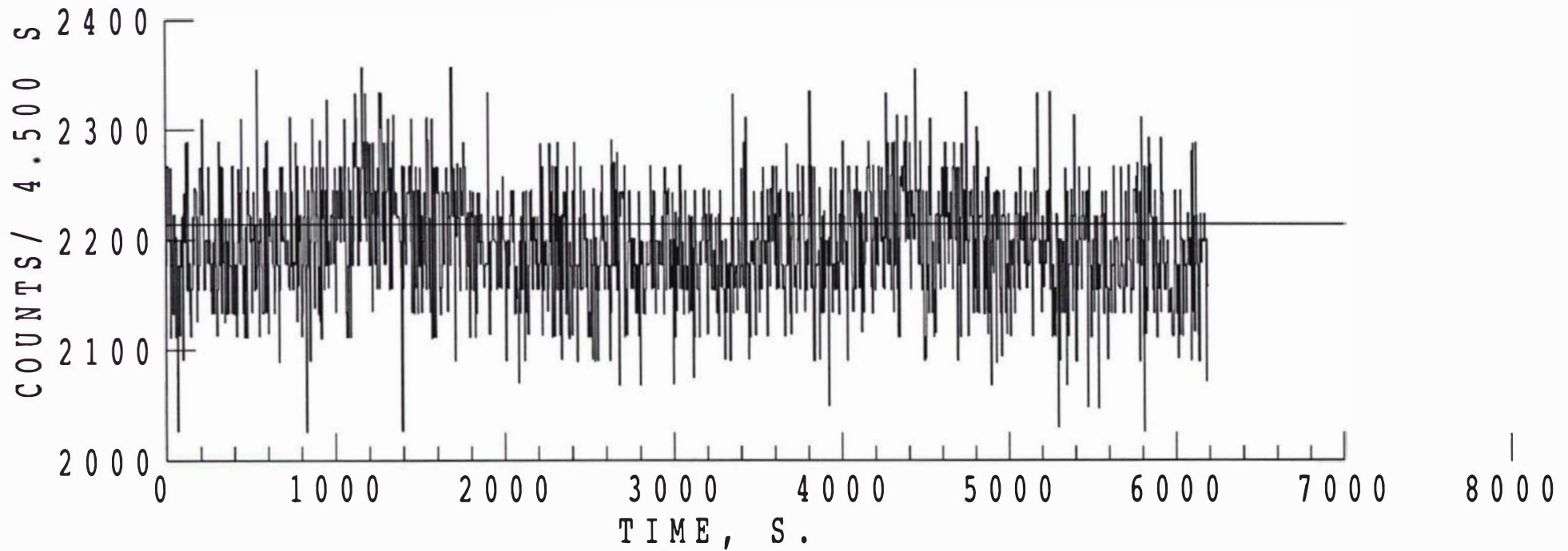
15 / 10 / 98 80640.180 s

0.500 S INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Fri Oct 16 11:25:40 1998

Date: Fri, 16 Oct 1998 13:25:14 -0500 (CDT)

From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevax.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevax.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7158

TIME: TJD=1101 SECONDS=82866

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

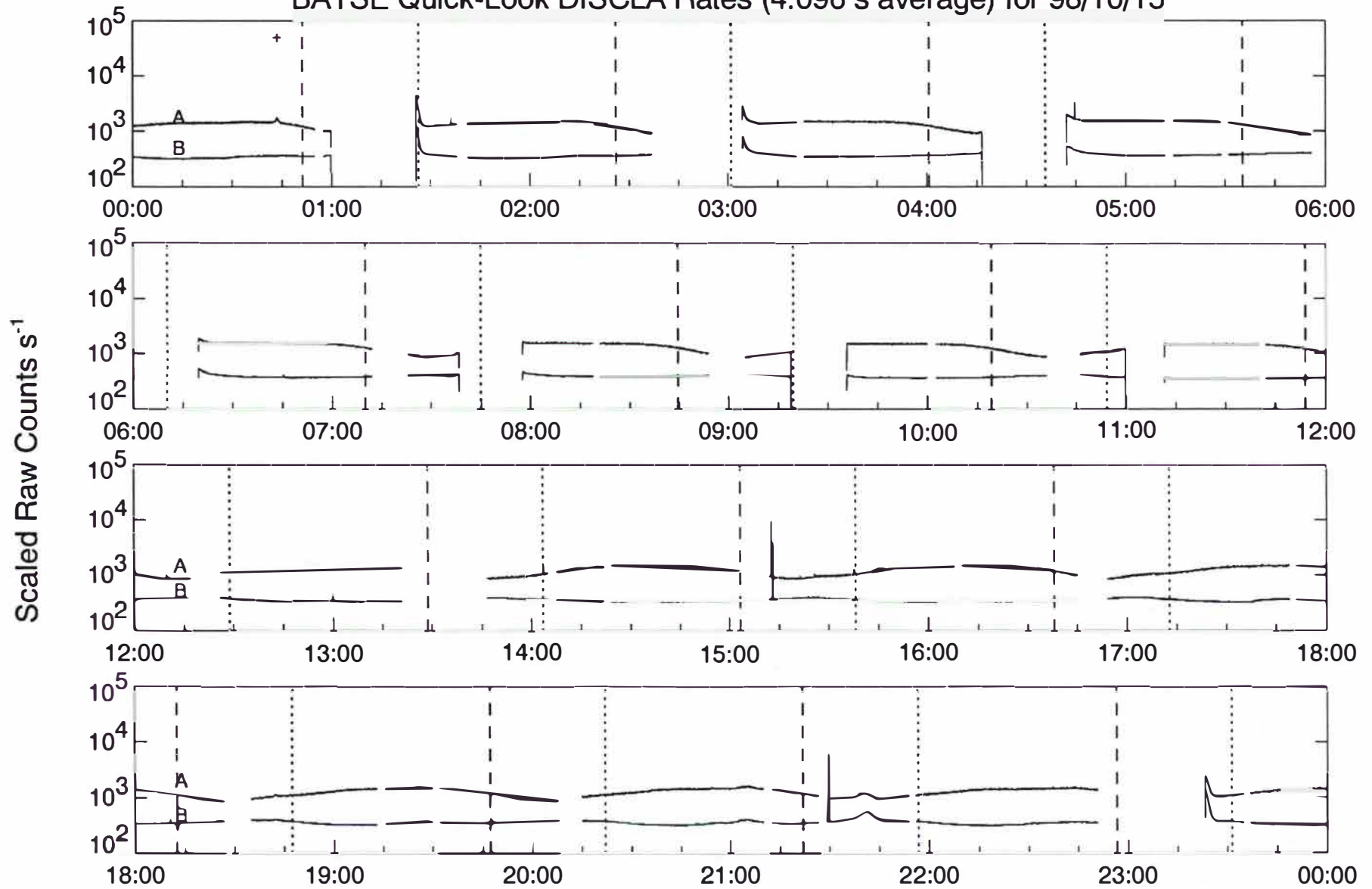
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/15

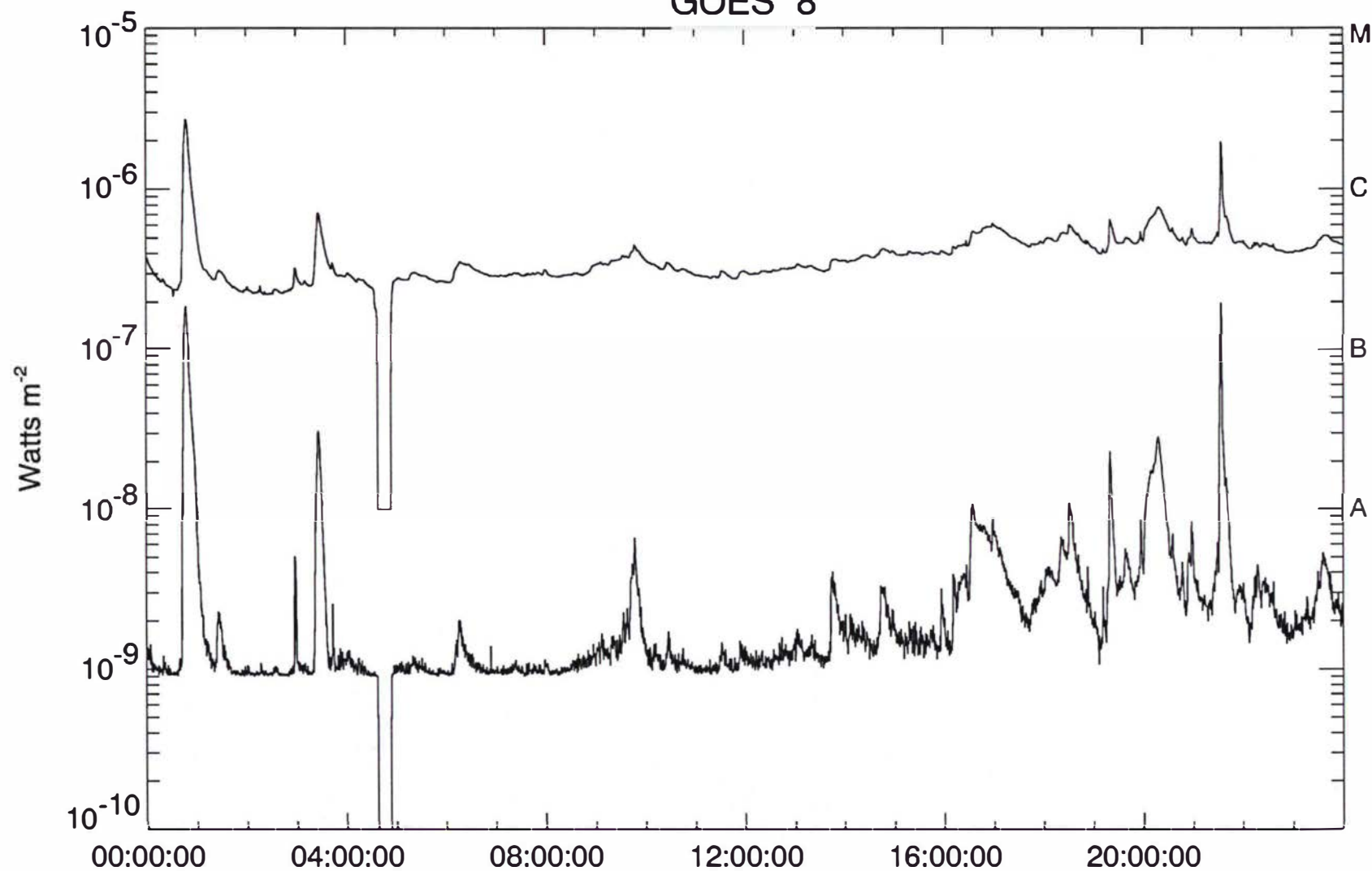


Current Time: 98/10/19, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/15, 0000:00

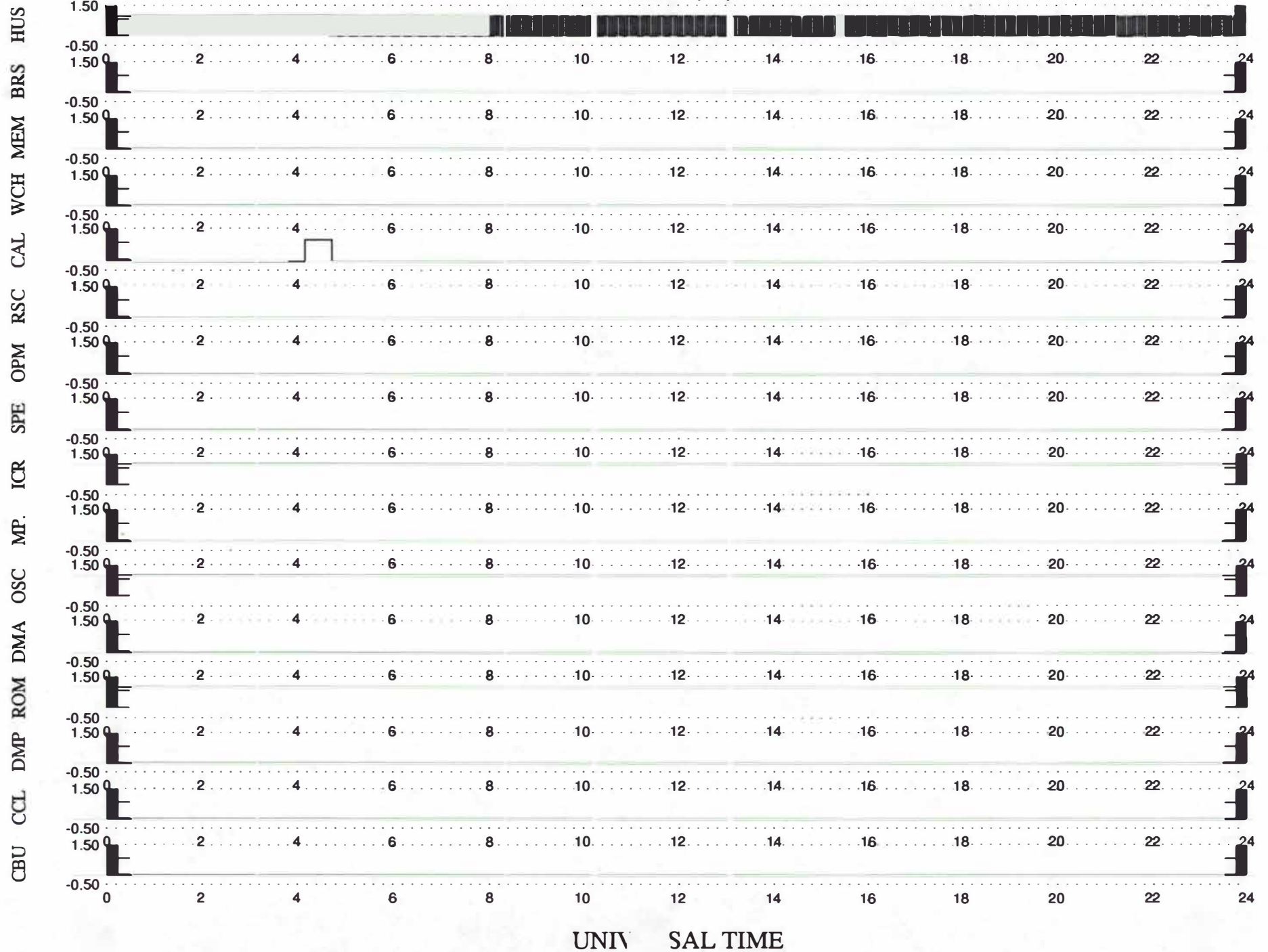
Plot created: 98/10/19, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

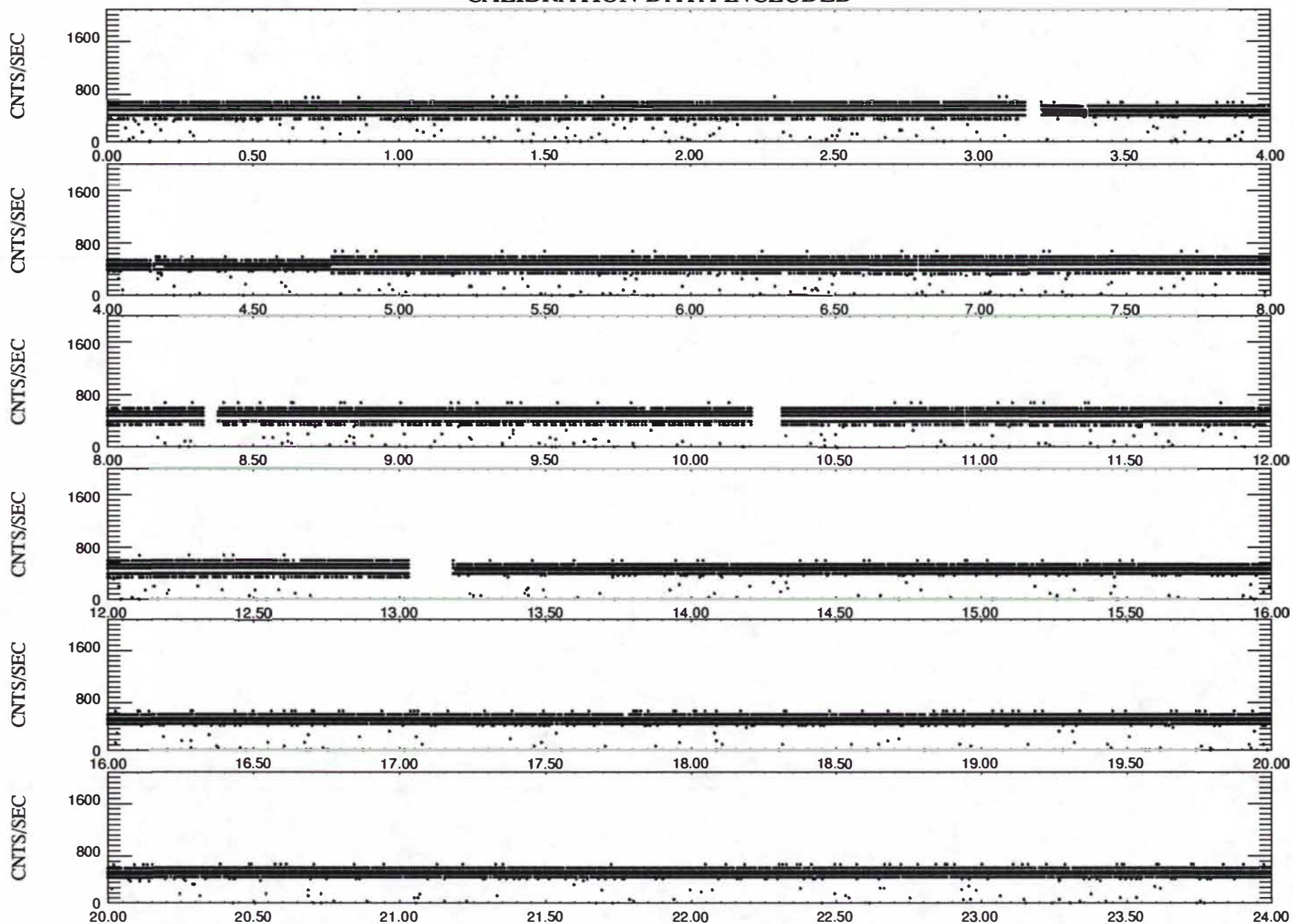
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

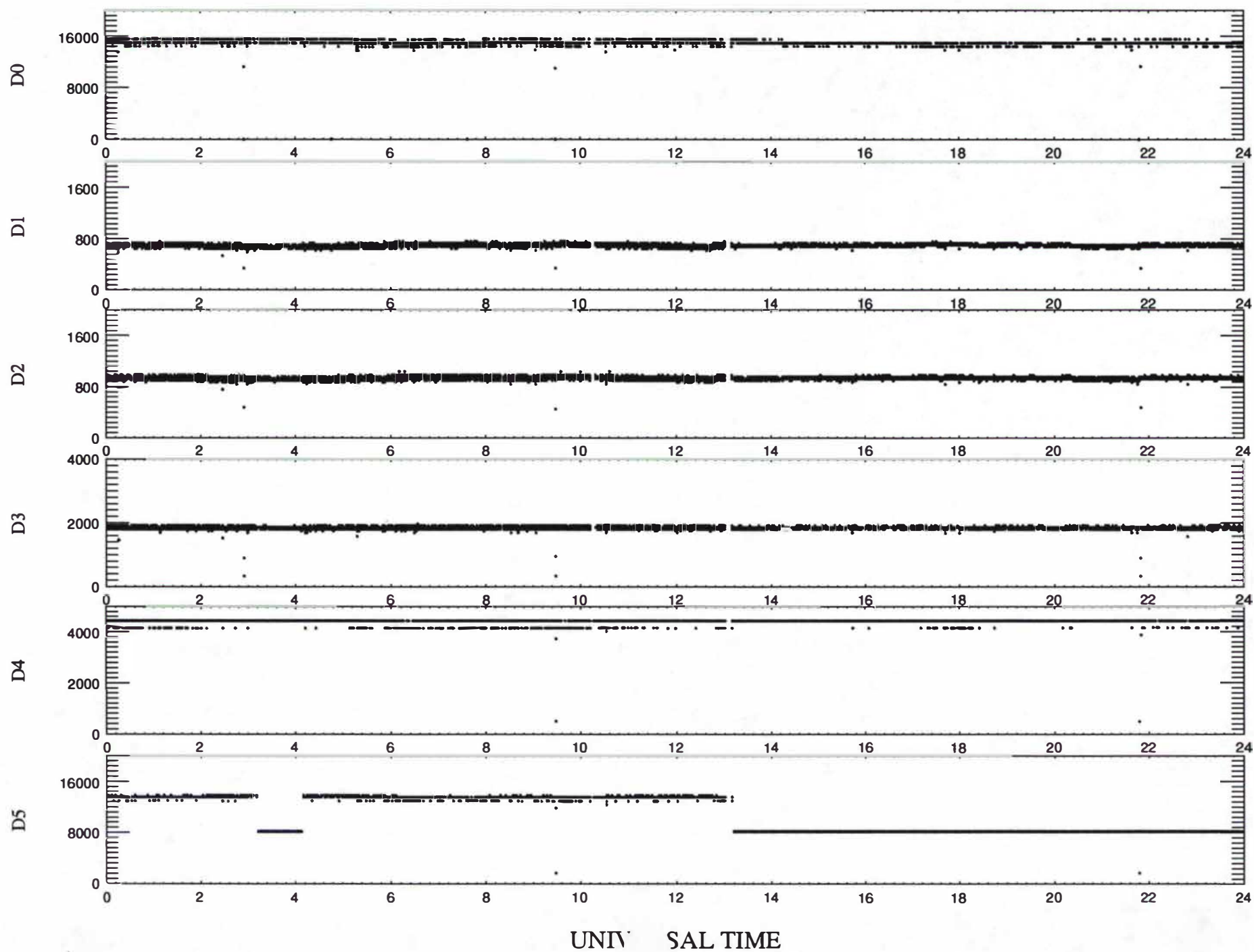
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From khurley@sunspot Wed Oct 21 08:07 PDT 1998
Date: Wed, 21 Oct 1998 08:09:13 -0700
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981016

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

October 16 1998 15:27 Ulysses time; intense, 600 ms long

The spacecraft was about 3100 light-seconds from Earth. However, this burst looks like it could be from SGR1900+14, in which case the Earth-crossing time would have been ~1655 s earlier.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczynski, mar

From RICHARDSON@fender.msfc.nasa.gov Mon Oct 19 14:00:21 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA07505; Mon, 19 Oct 1998 14:00:21 -0700
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA17049; Mon, 19 Oct 1998 14:00:18 -0700
Date: Mon, 19 Oct 1998 16:00:16 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981019160016.2020d275@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7159
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7159
EVENT OF 1998 OCT 16 DAY OF YEAR=289
EVENT CROSSING TIME AT BATSE : 60656. S. OR 16:50:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 42.000 50.000
BATSE PEAK COUNTING RATE: 3300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/10/ 98 IS:
RA= 164.114 DEC= -0.772 DIST= 6.051 AU
BATSE-ULYSSES DISTANCE = 905244241. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.39 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1062.89 SECS.
CROSSING TIME AT ULYSSES IS 61719. S. OR 17:08:38 +/- 556.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/10/ 98 IS:
RA= 157.515 DEC= 10.910 DIST= 2.152 AU
MARS-BATSE DISTANCE = 321912160. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 136.26 SECS.
CROSSING TIME AT MARS IS 60792. S. OR 16:53:12 +/- 186.99 SECONDS

BATSE BURST TRIGGER

NO.: 7159

TIME: TJD=1102 SECONDS=60656

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=10.5 AZIMUTH=24.2 ERROR=14.2 DEGREES

COMMENTS:

GRB. HARD WEAK SINGLE SPIKE. DURATION APPROX. = 0.5 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7159	981016	11102	60656	3300	042	+50	.5

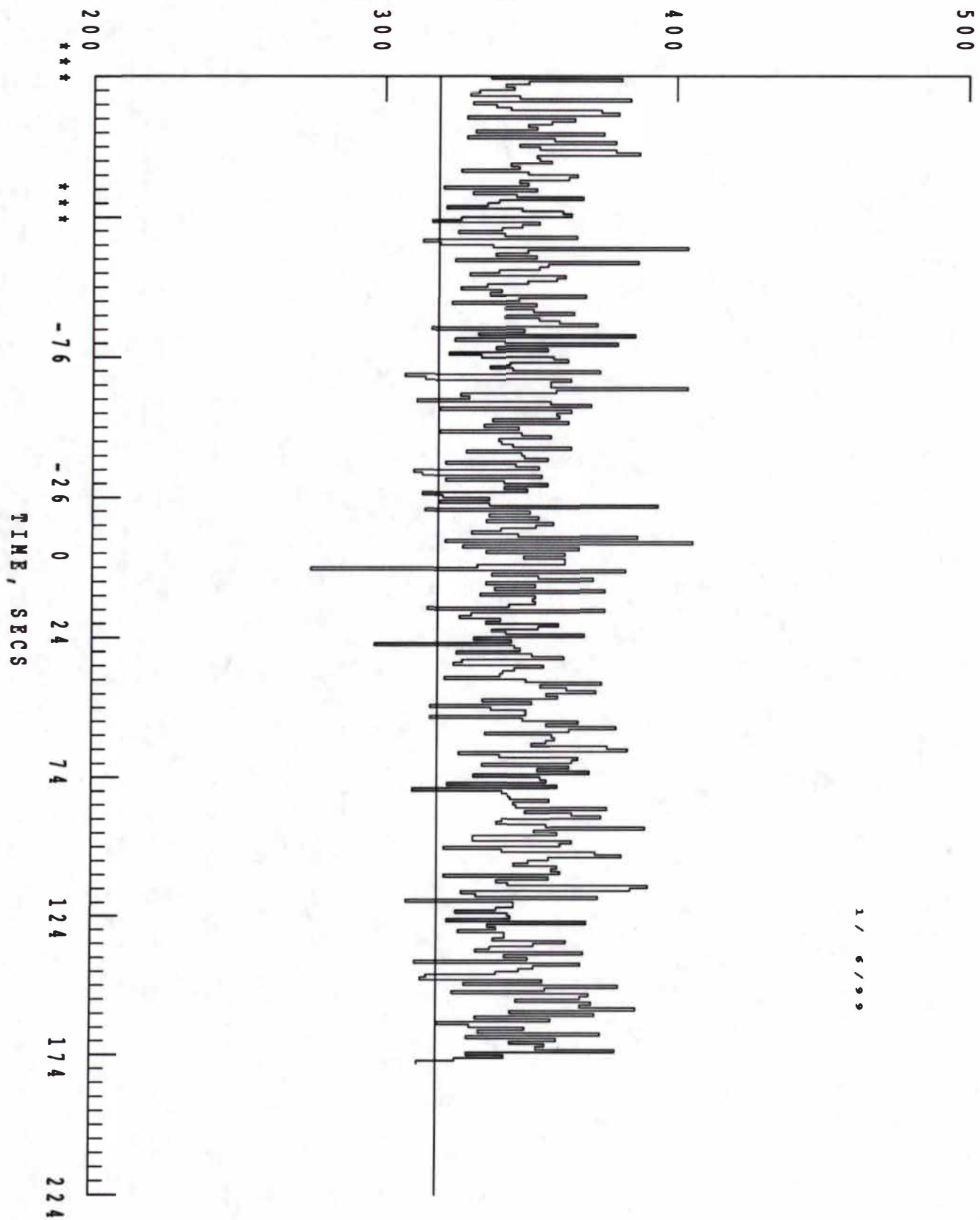
NEAR

16/10/98

61365.006

100-1000 keV

COUNTS/1.000 S



1 / 6 / 9 9

BATSE BURST# 7159

ULYSSES RT

19 / 10 / 98

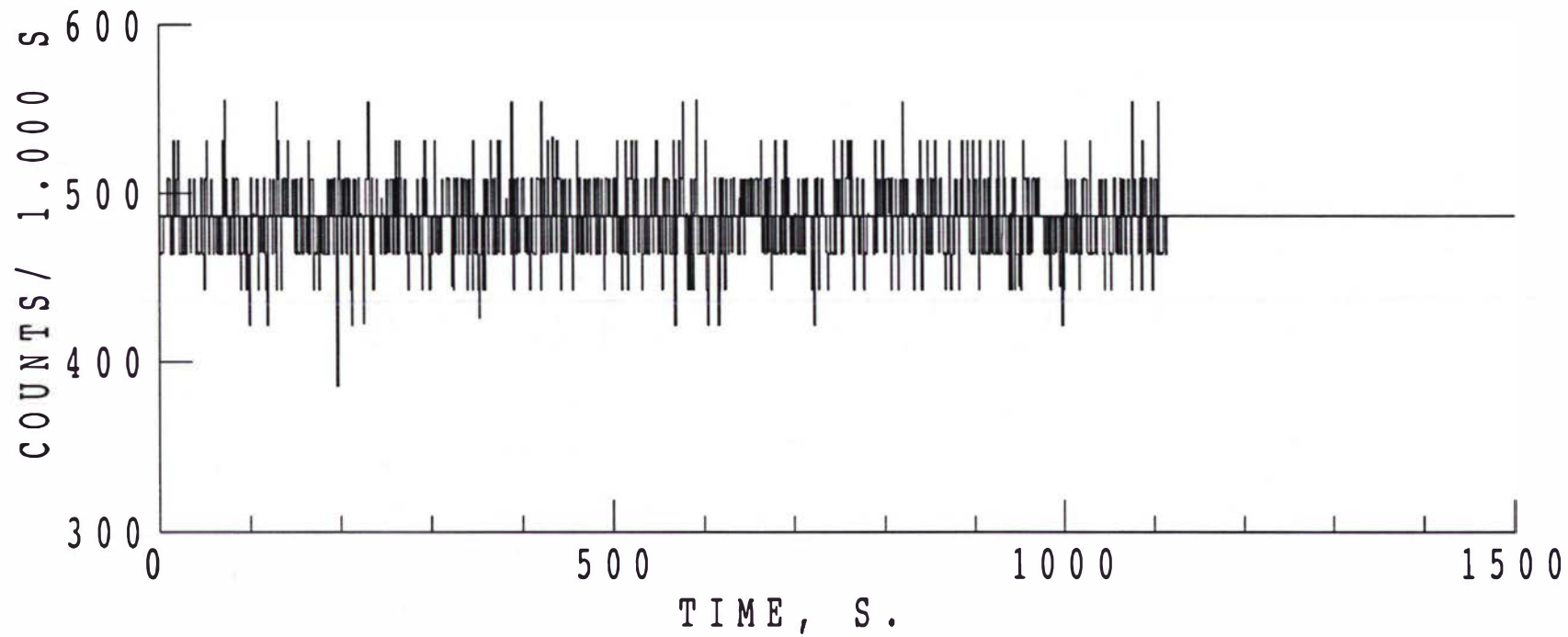
16 / 10 / 98 61164.367 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Mon Oct 19 13:52:59 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 19 Oct 1998 15:52:40 -0500 (CDT)

To: burst@compTEL.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmattes@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7160

TIME: TJD=1102 SECONDS=81527

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

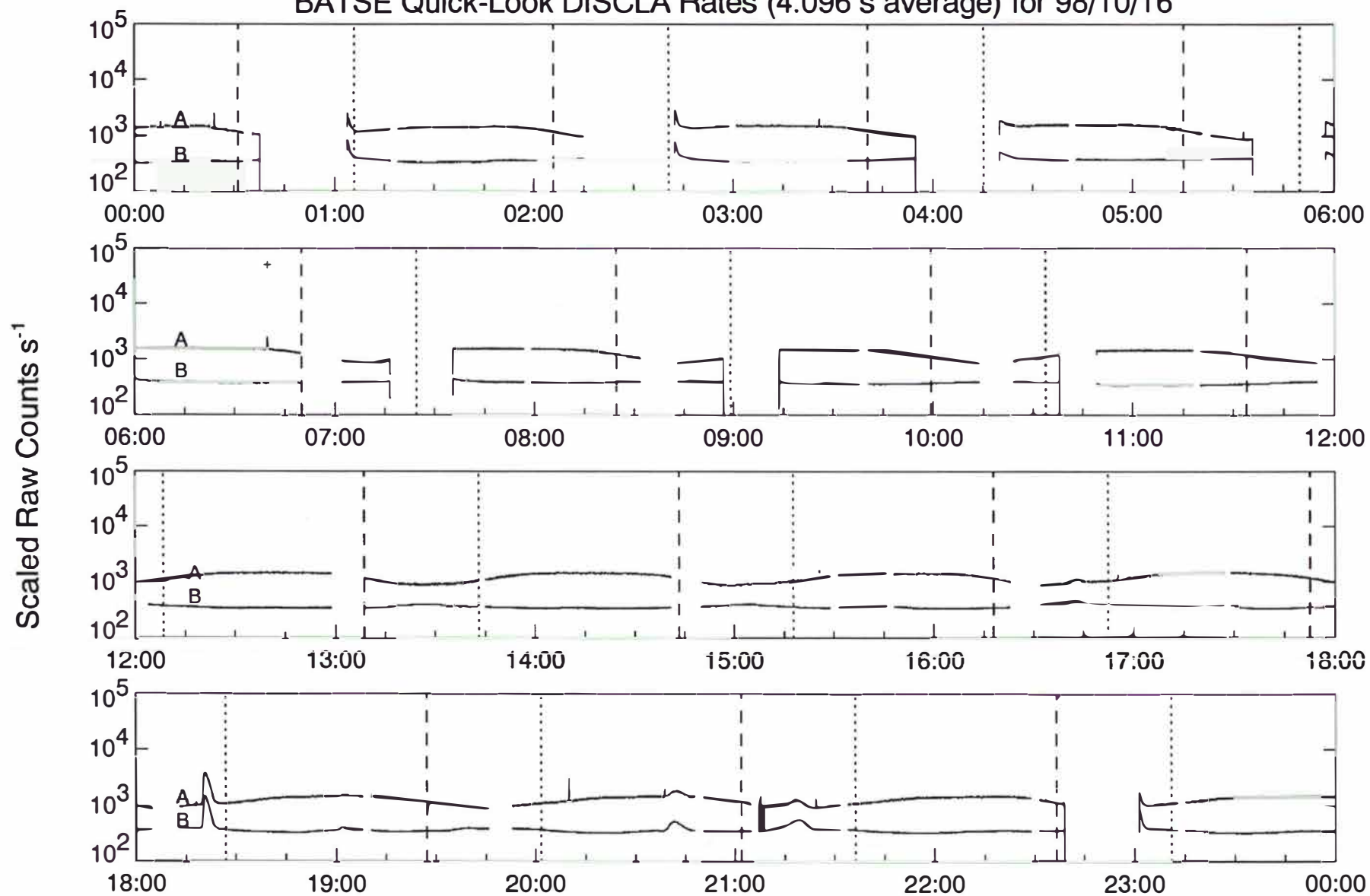
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/16

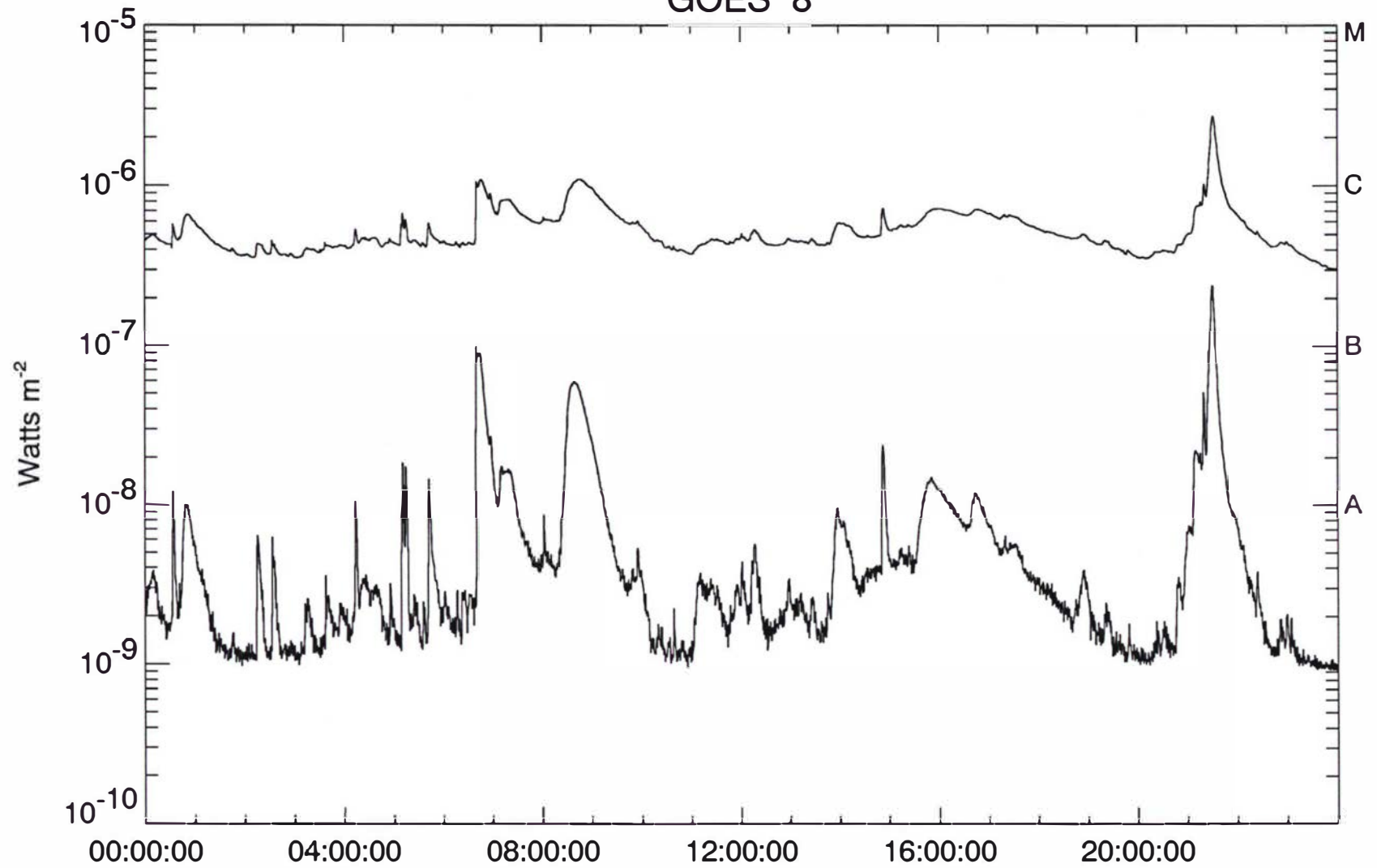


Current Time: 98/10/20, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/16, 0000:00

Plot created: 98/10/20, 1007

Channel 1 (1.0 - 8.0 Angstroms)

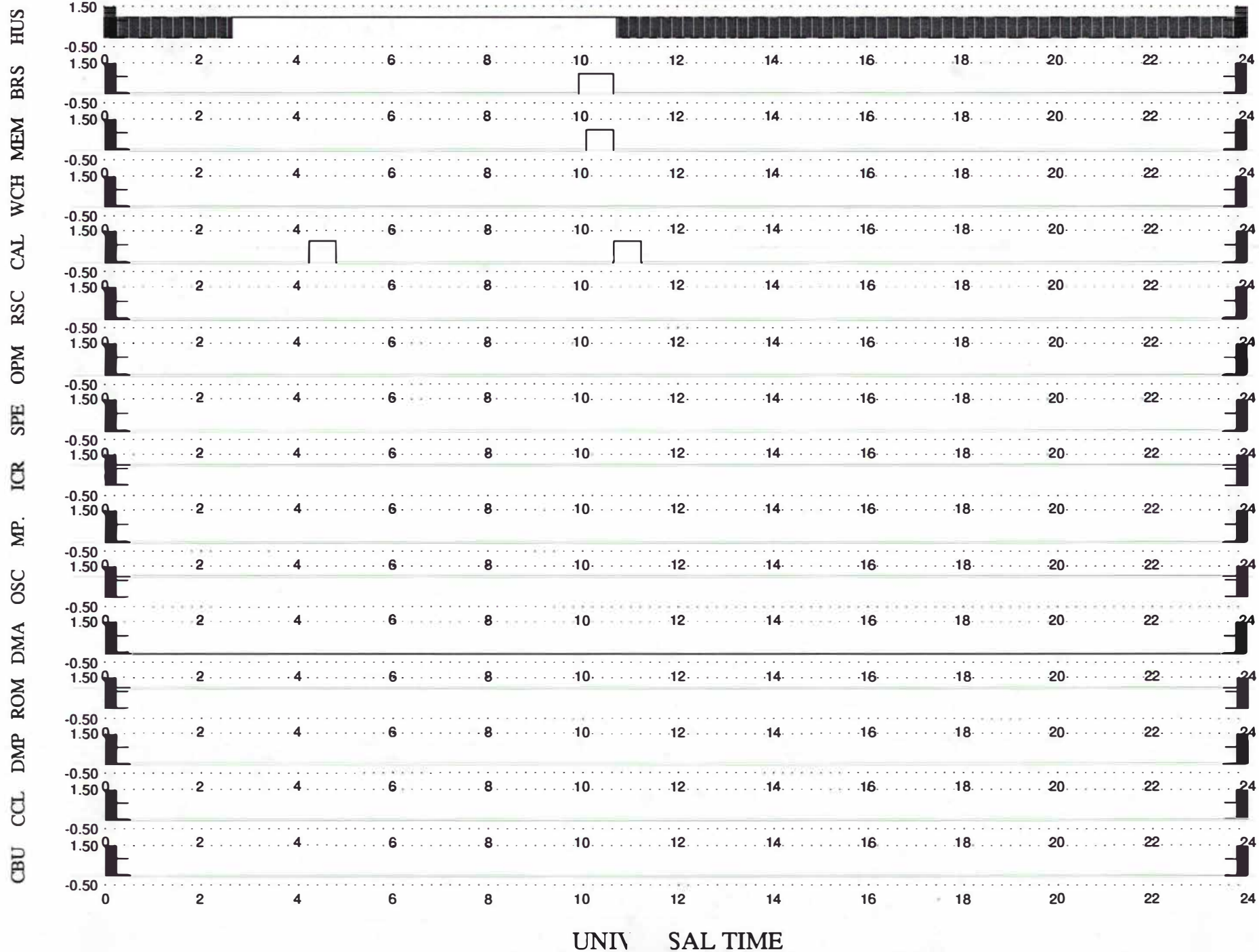
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

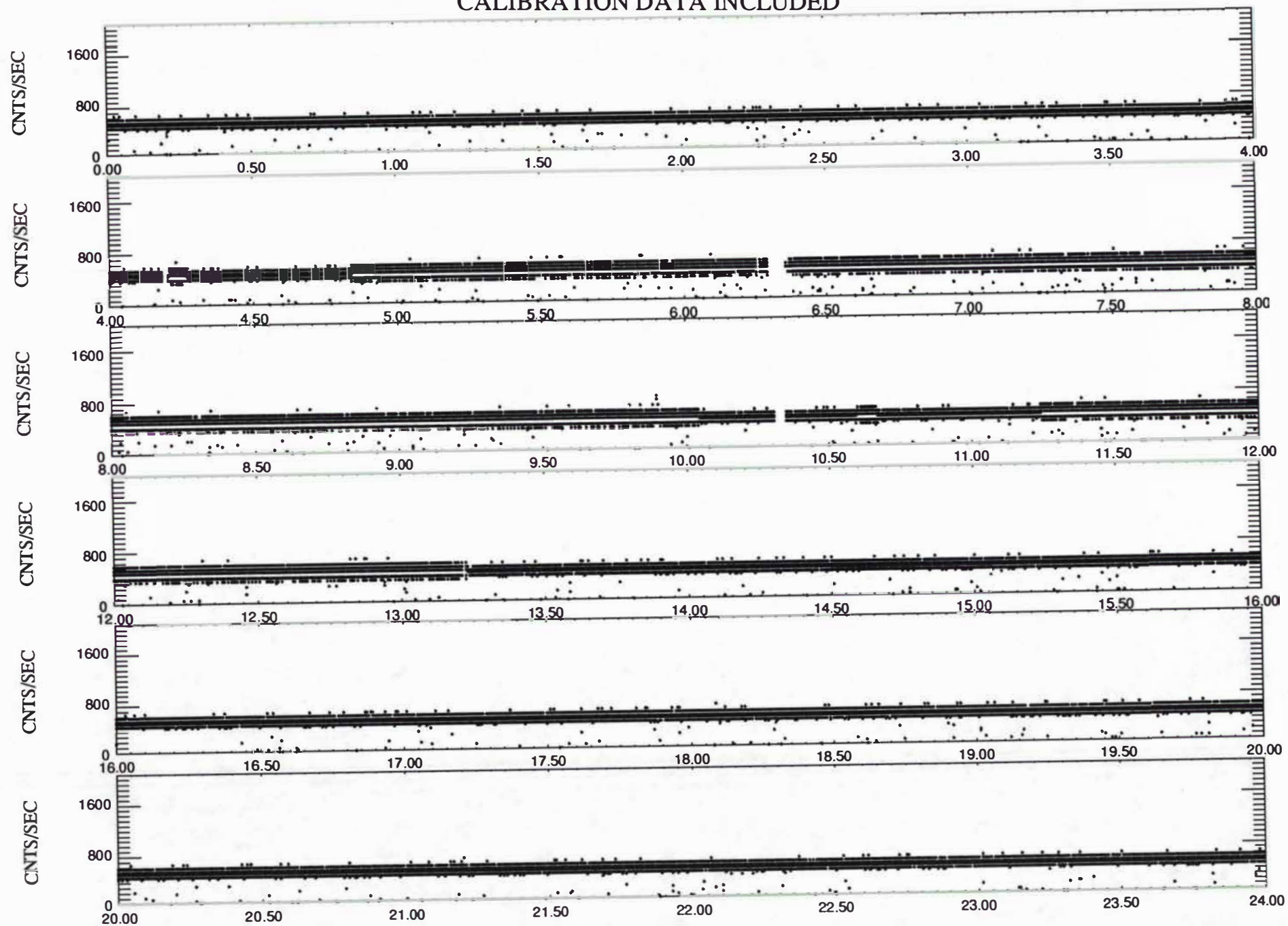
Background not subtracted

Sample average = 10

BURST NUMBER 12

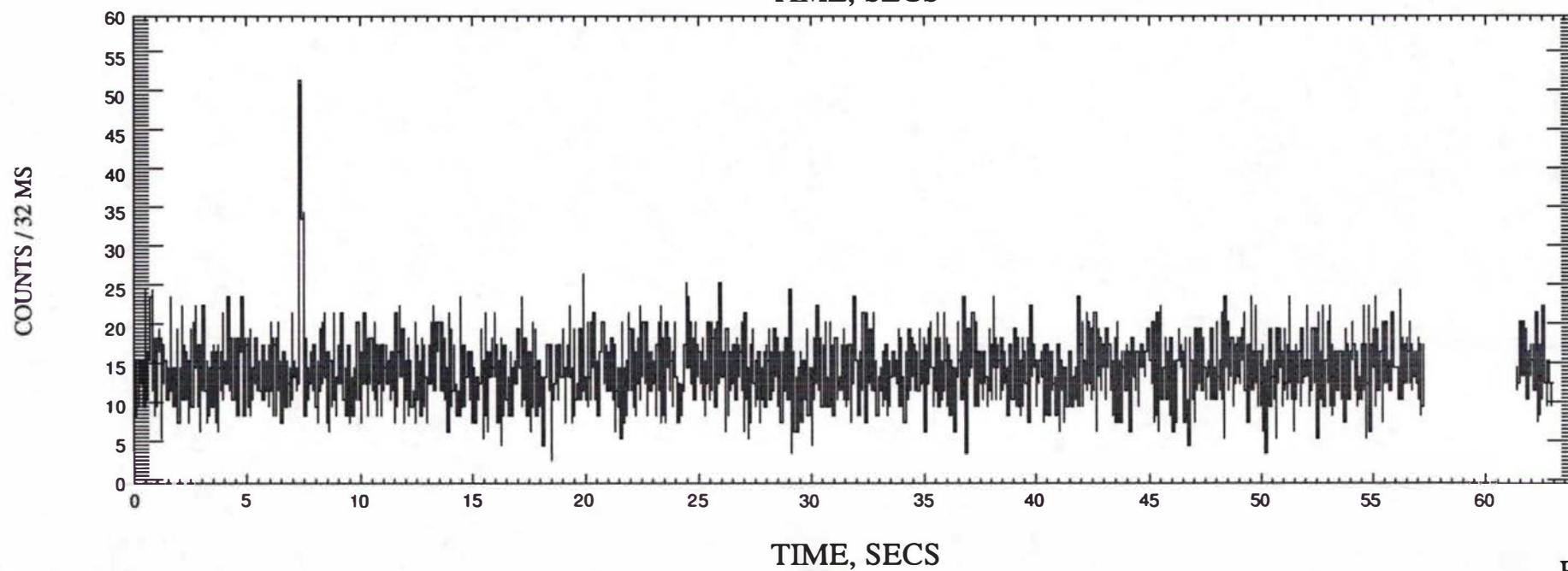
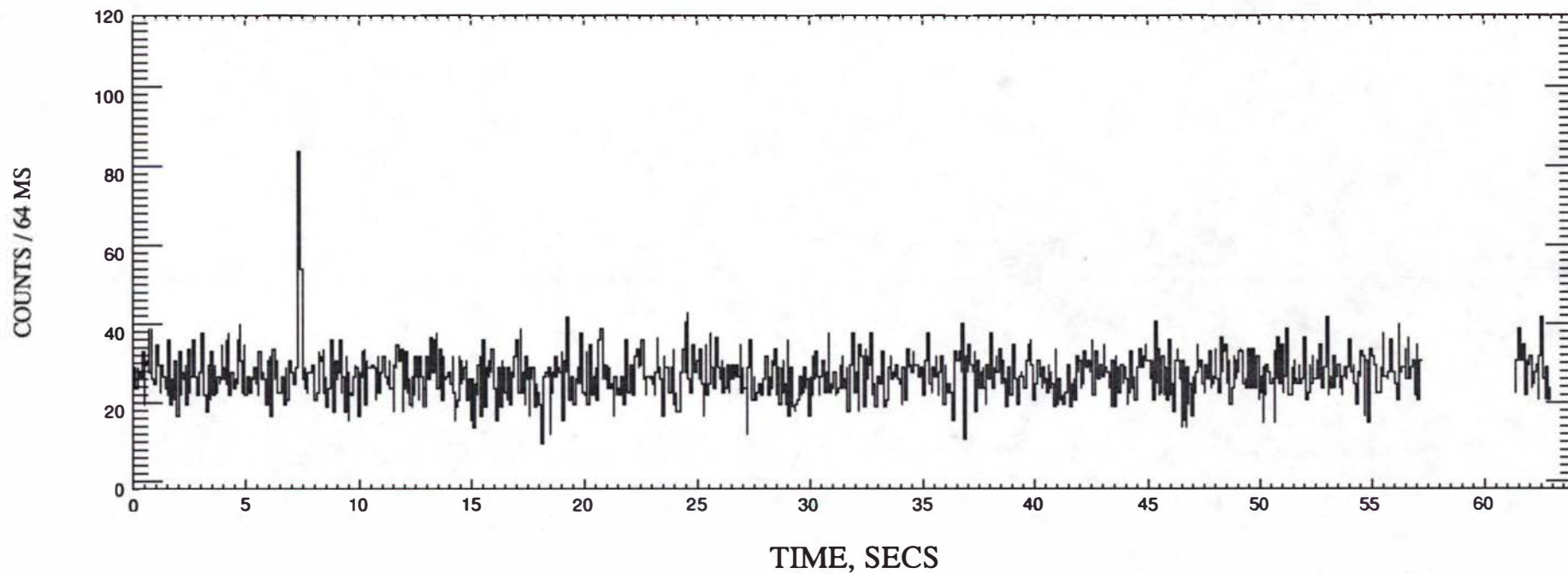


CALIBRATION DATA INCLUDED

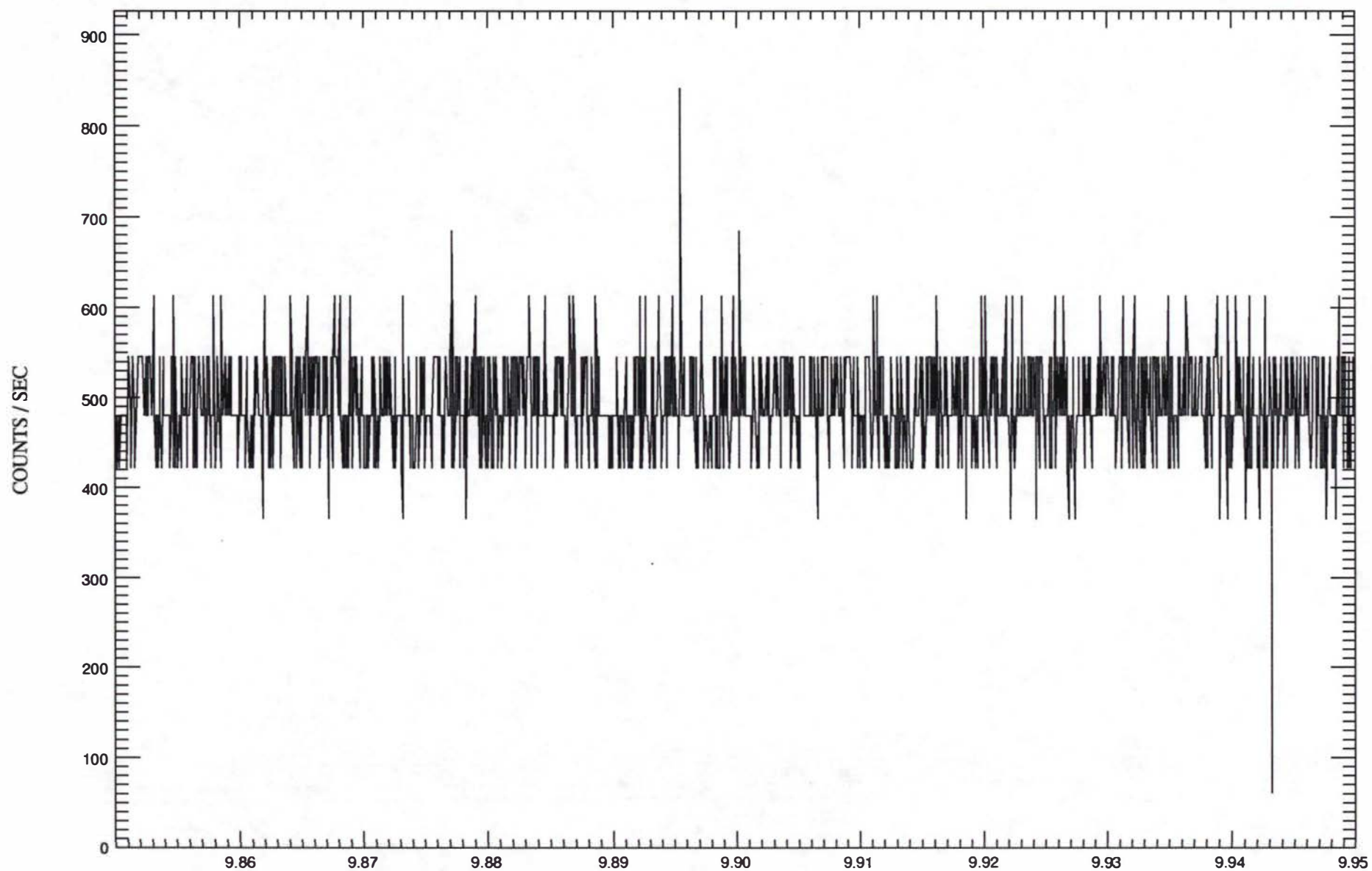


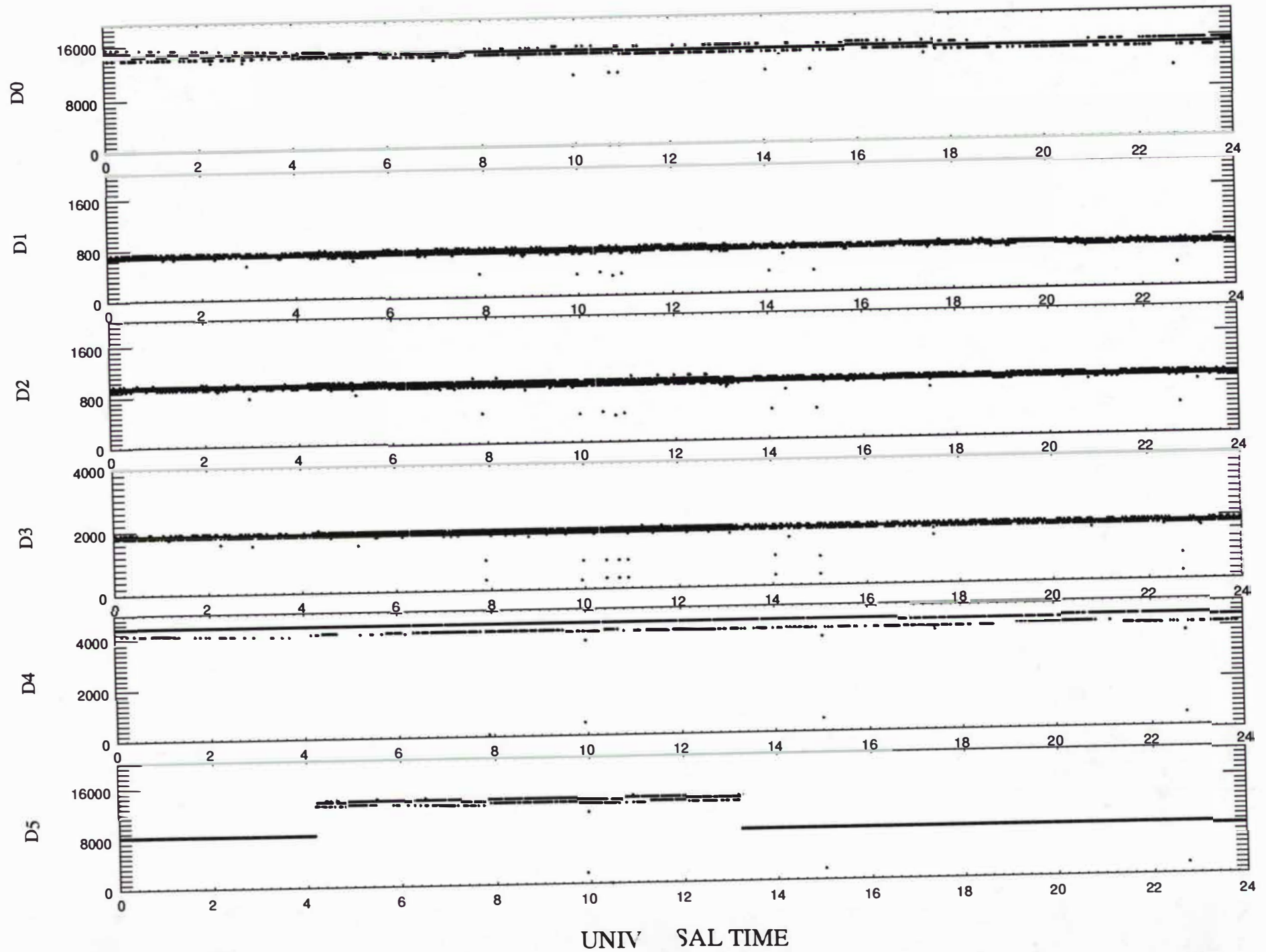
UNIV SAL TIME

Burst Counter 12 at UT= 9.895640992059 h=35624.308 s 09:53:44.308



CALIBRATION DATA INCLUDED





GRBM 19981016 86170

ULYSSES RT

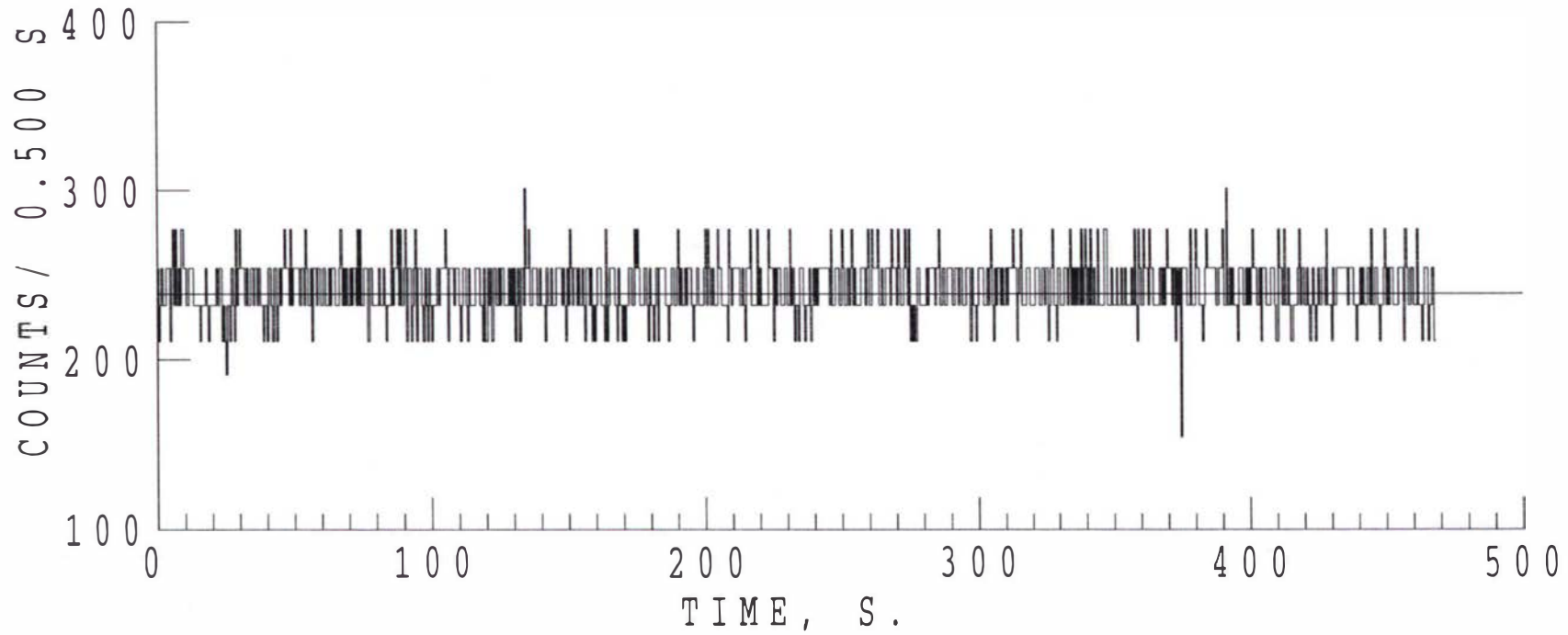
09/05/07

16/10/98 85932.117 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GRBM 19981017 01578

ULYSSES RT

14 / 05 / 07

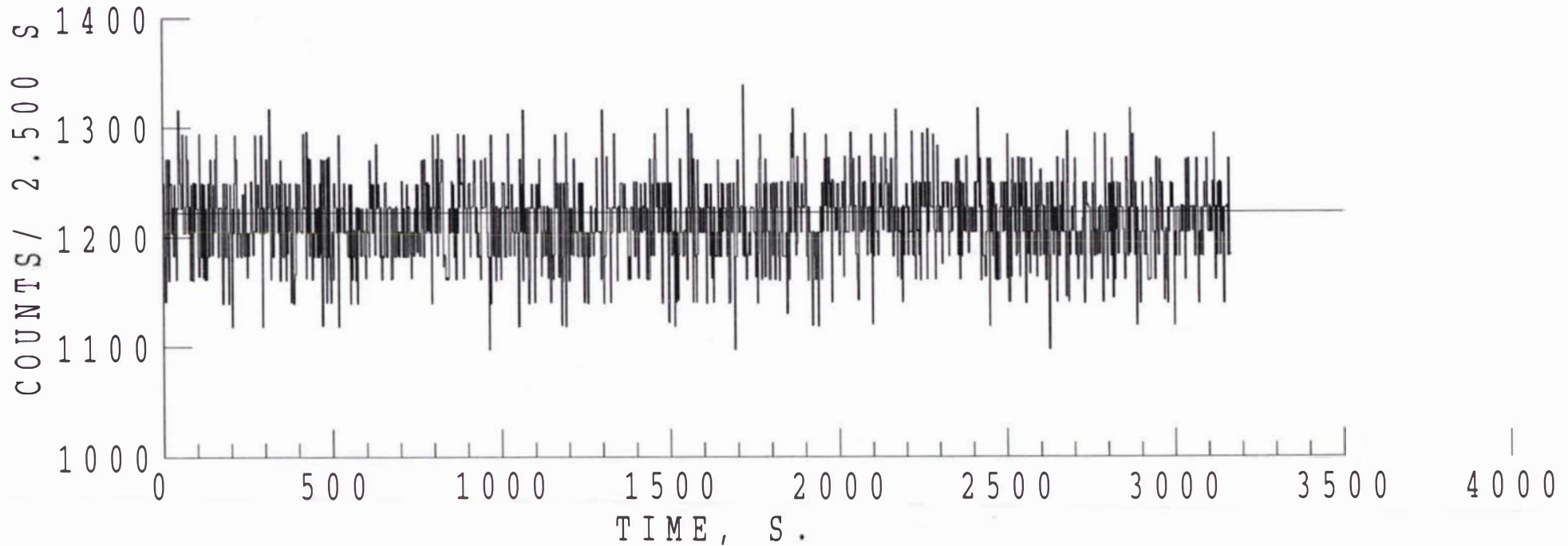
17/10/98 0.124 s

0.500 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From cline@apache.gsfc.nasa.gov Mon Oct 19 12:41 PDT 1998
Mime-Version: 1.0
Date: Mon, 19 Oct 1998 15:47:05 -0400
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Still the ugly anticorrelation

Dear Kevin

The latest NEAR event I received - moments ago, is on Oct. 15, 4 days ago.

The problem is that it is at 17027.8 sec UT whereas the only auto-Konus event on that day, Oct. 15, is at 83731.6 sec UT.

There were auto-Konus SGRs (?) on Oct. 13 at 01910.5 and at 50267.7 sec UT.

There is an auto-Konus on Oct. 14 at 12234.7 sec UT,
and an obvious SGR on Oct. 17 at 54823.3 sec UT, *Ulysses RFI Trigger SGR 1806*
and an apparent GRB on Oct 17, again, at 73933.5 sec UT. *No - wrong time*

Those are all I have seen since October 9th.

TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

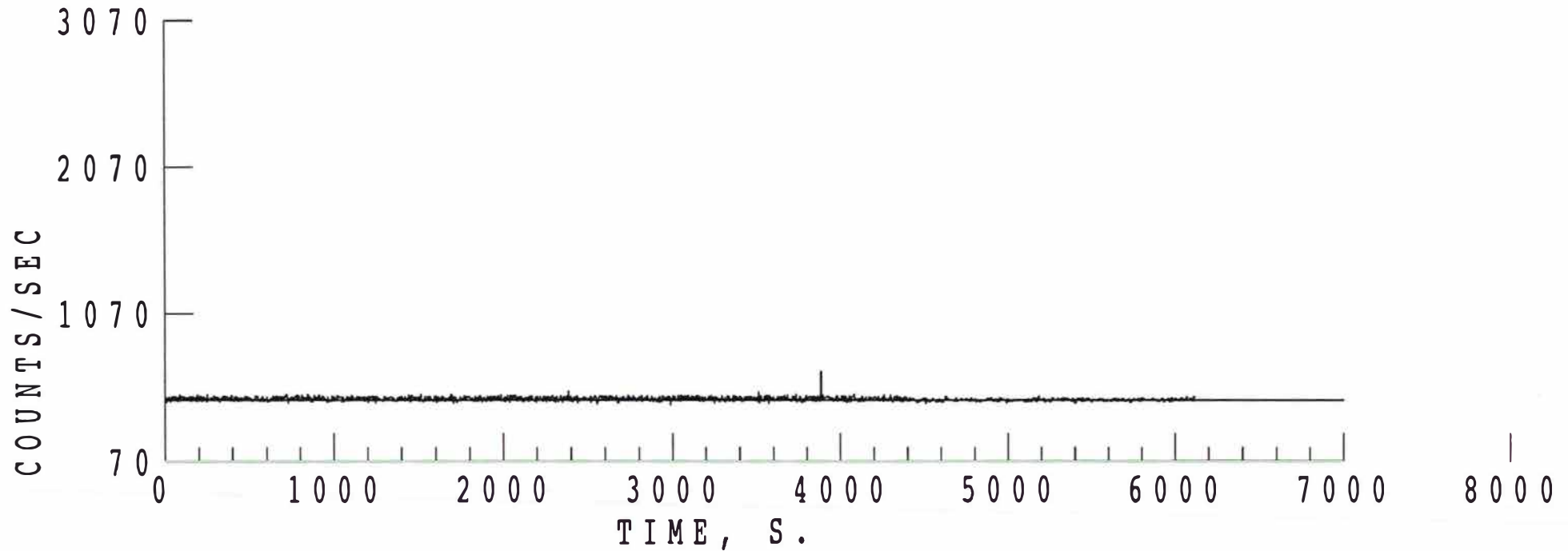
KONUS

19 / 10 / 98

ULYSSES RT
17/10/98 51768.160 s
INTERVALS REGROUPED BY 15
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From cline@apache.gsfc.nasa.gov Mon Oct 19 12:41 PDT 1998
Mime-Version: 1.0
Date: Mon, 19 Oct 1998 15:47:05 -0400
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There is an auto-Konus on Oct. 14 at 12234.7 sec UT,
and an obvious SGR on Oct. 17 at 54823.3 sec UT,
and an apparent GRB on Oct 17, again, at 73933.5 sec UT. *Ulysses RI*

Those are all I have seen since October 9th.

TLC

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

Date: Dec 14 2012

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☐ Final, CDROM data used?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☐ BATSE ephemeris for T_0 ?
- ☐ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

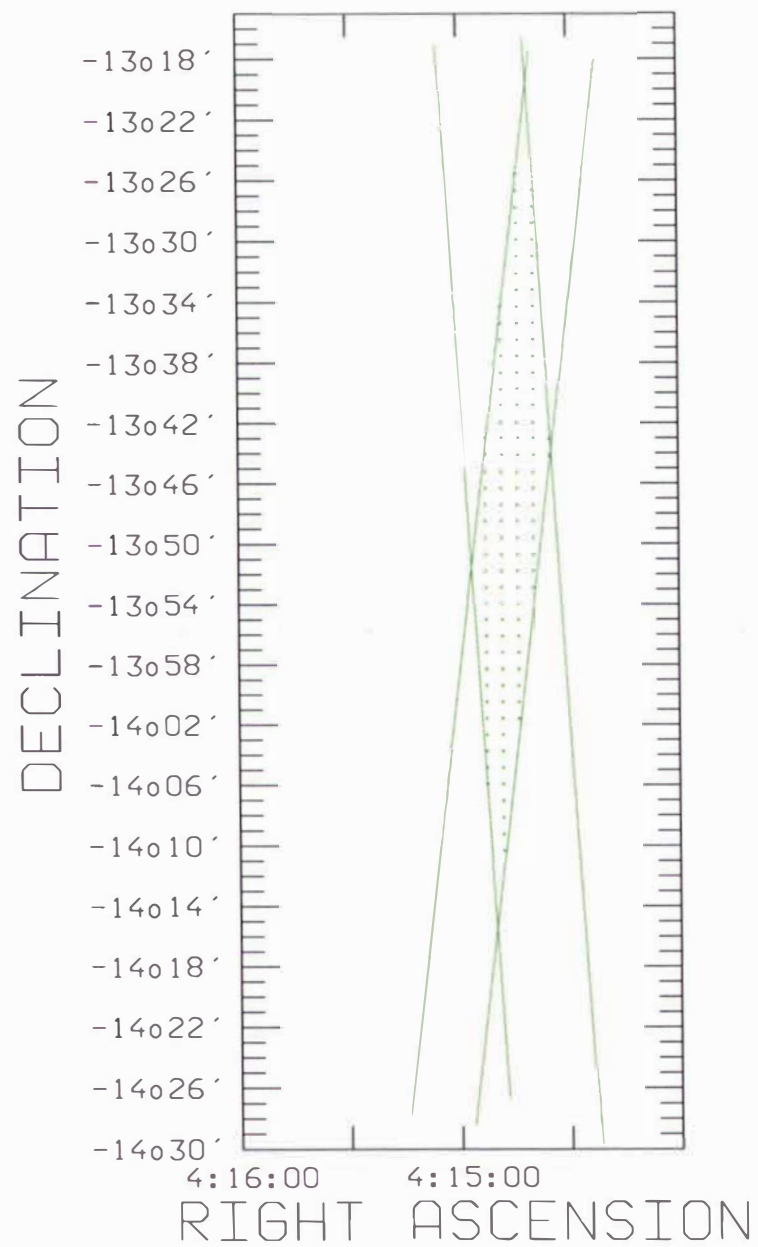
- ☒ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

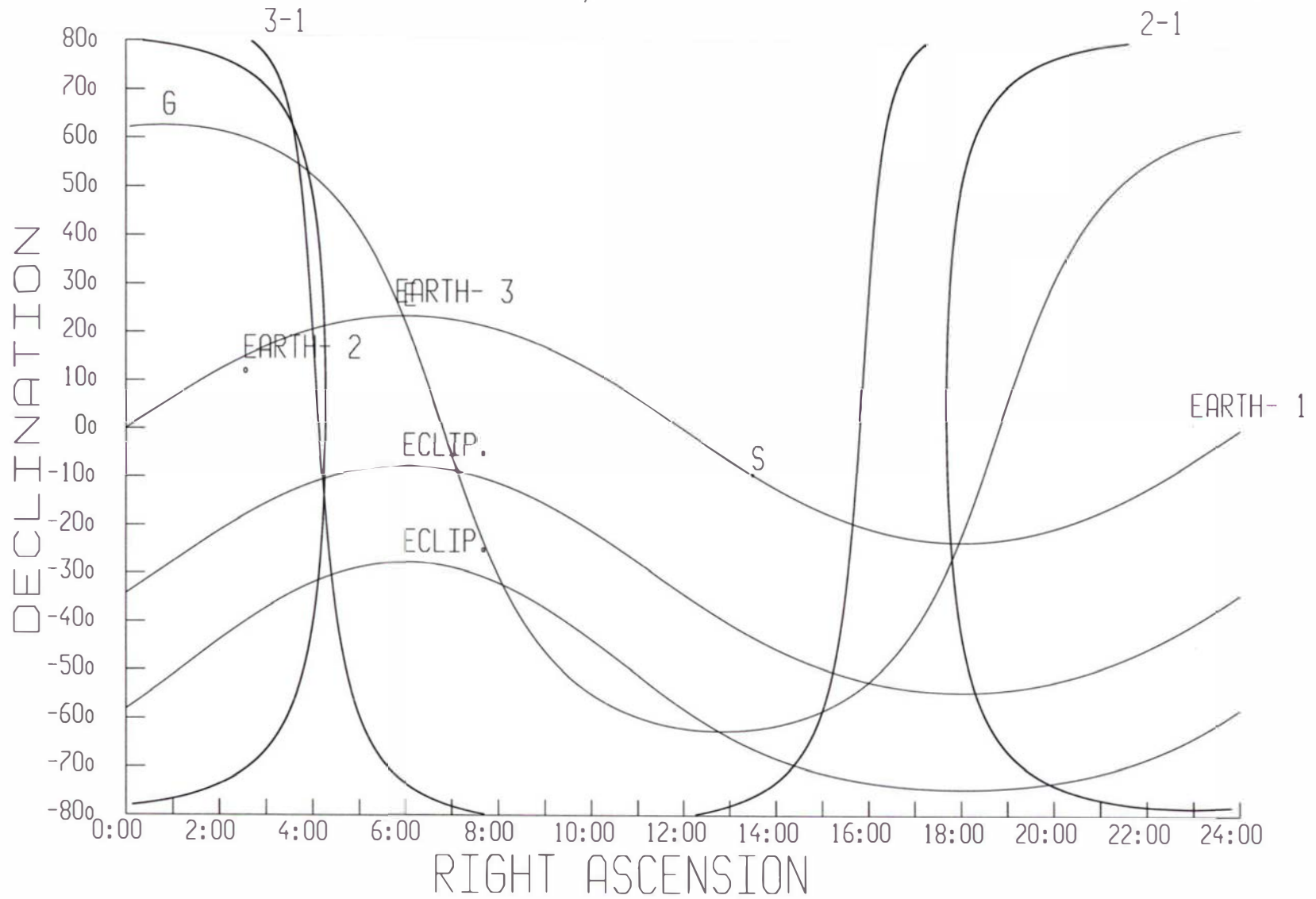
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

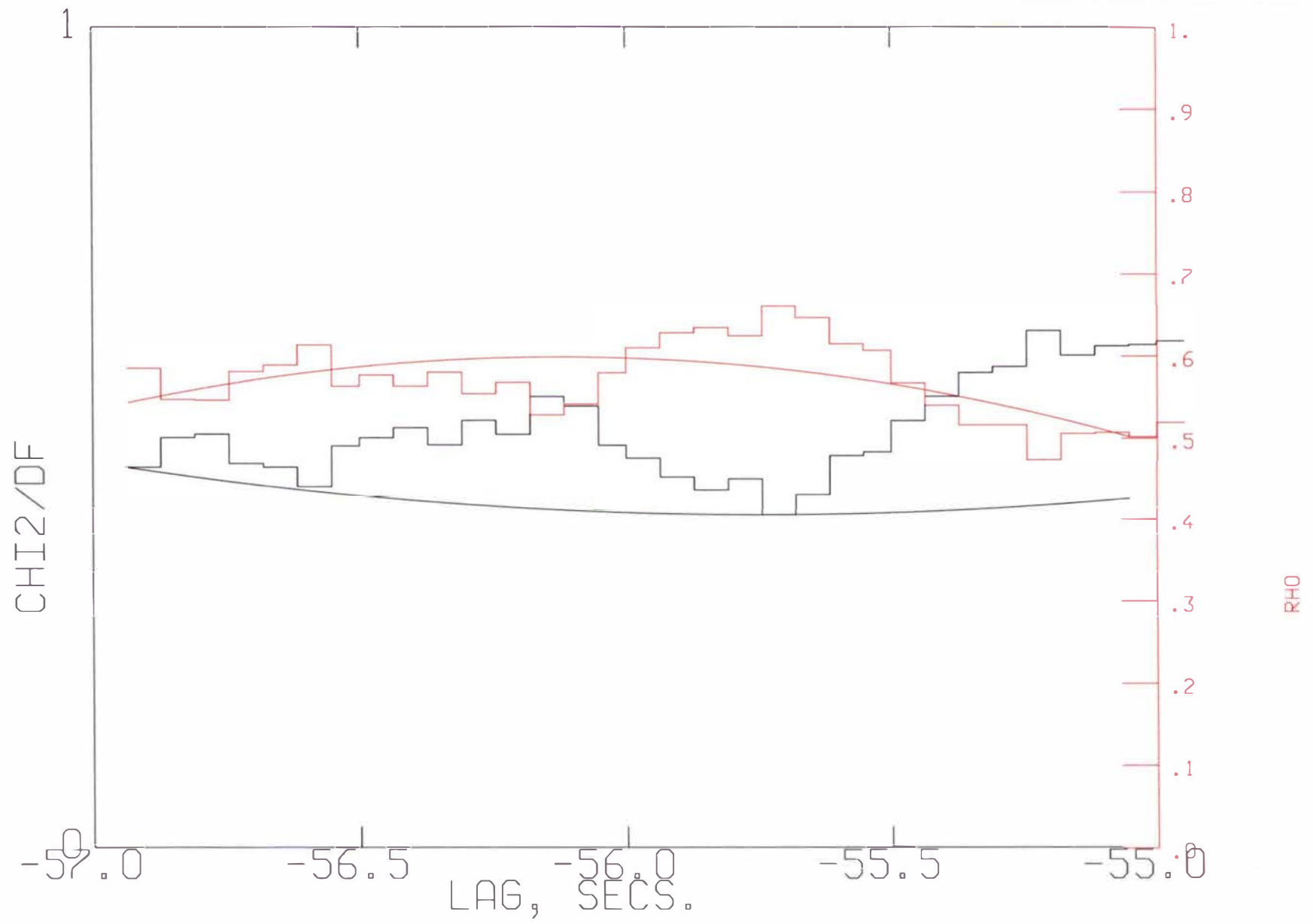


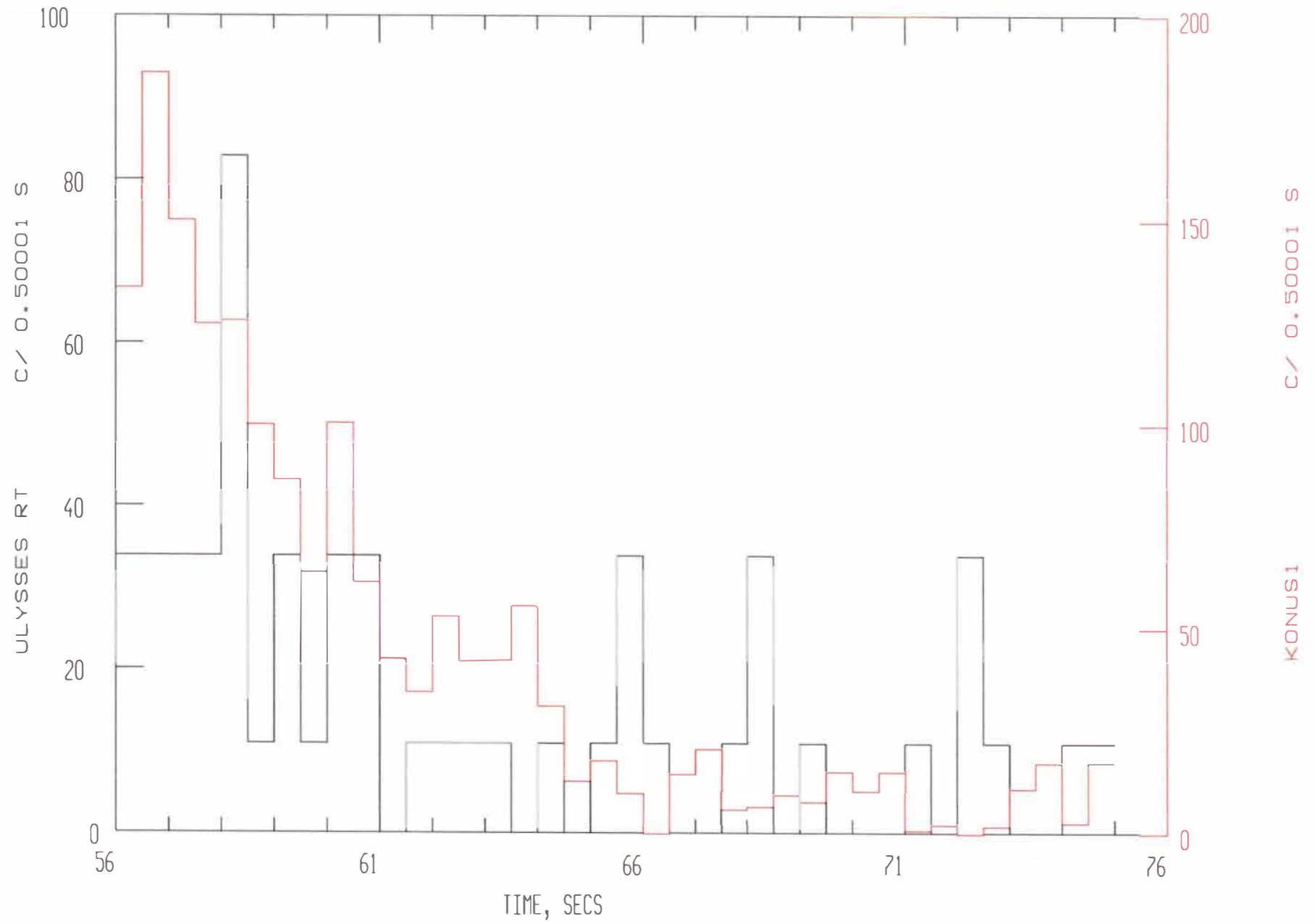
EVENT OF OCT 17, 1998 20:40

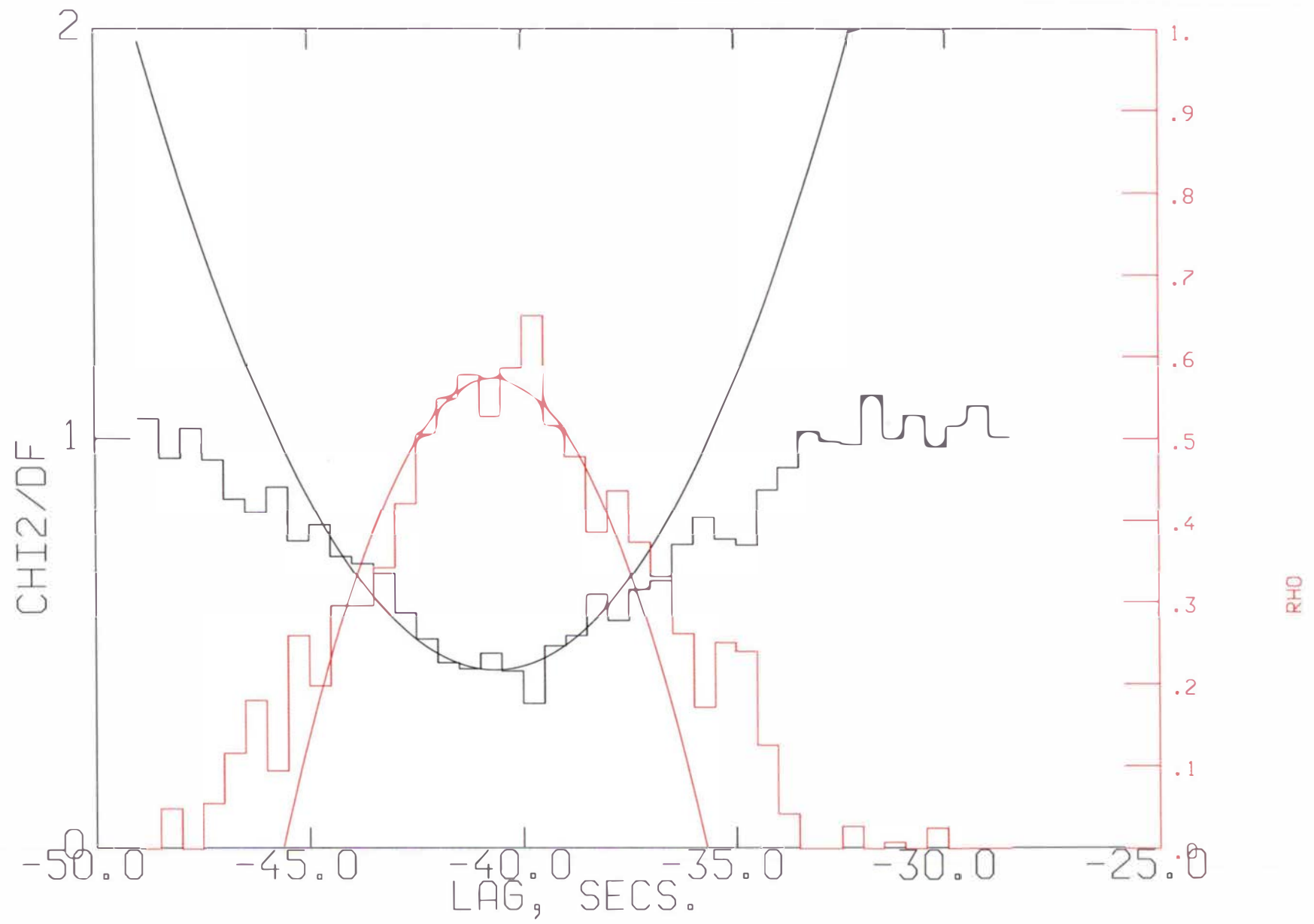
14/12/2012

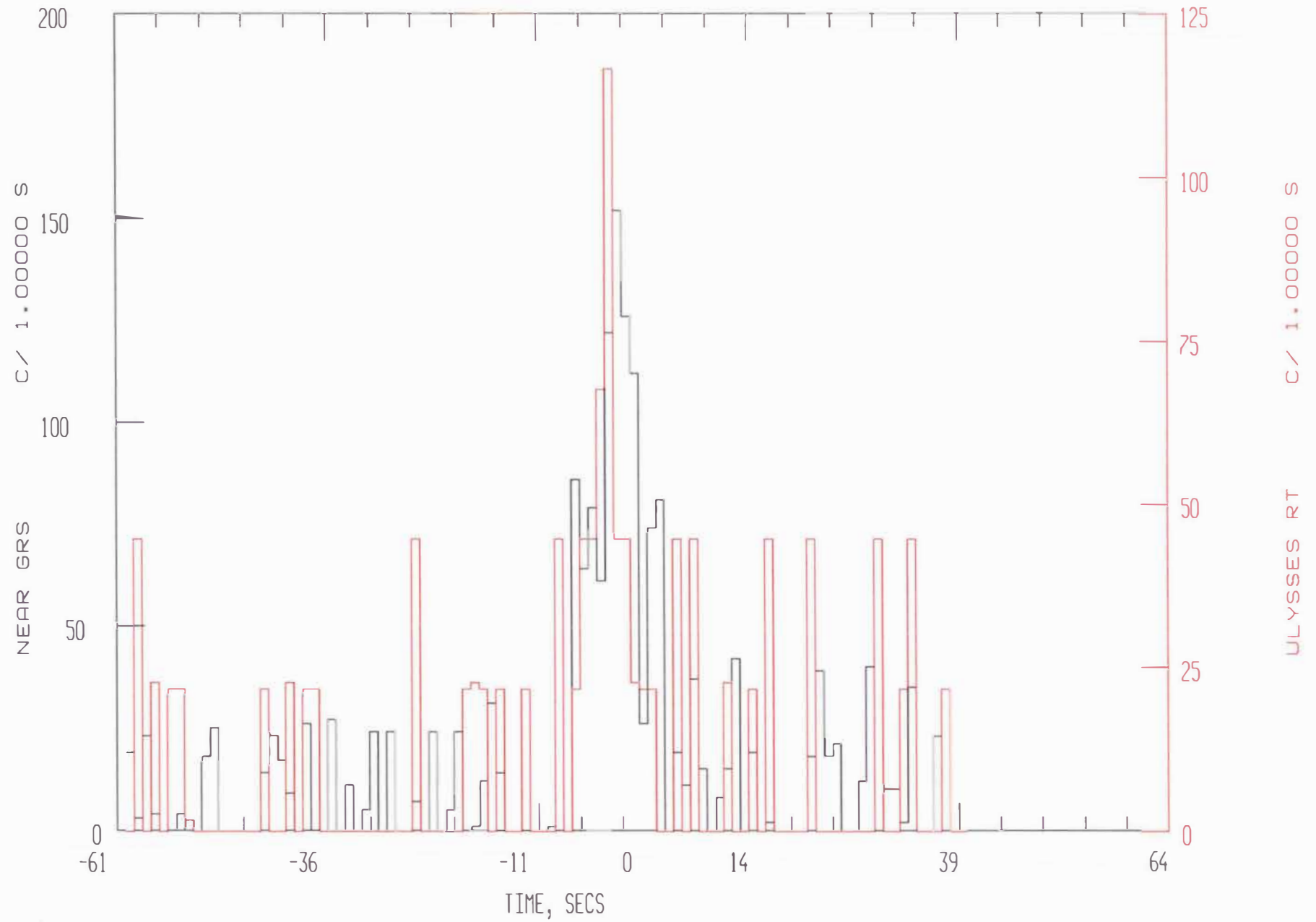
Z-M = CORRELATION BETWEEN SATELLITES Z AND M
EARTH-Z = EARTH AS SEEN FROM SATELLITE Z
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1 3 NEAR









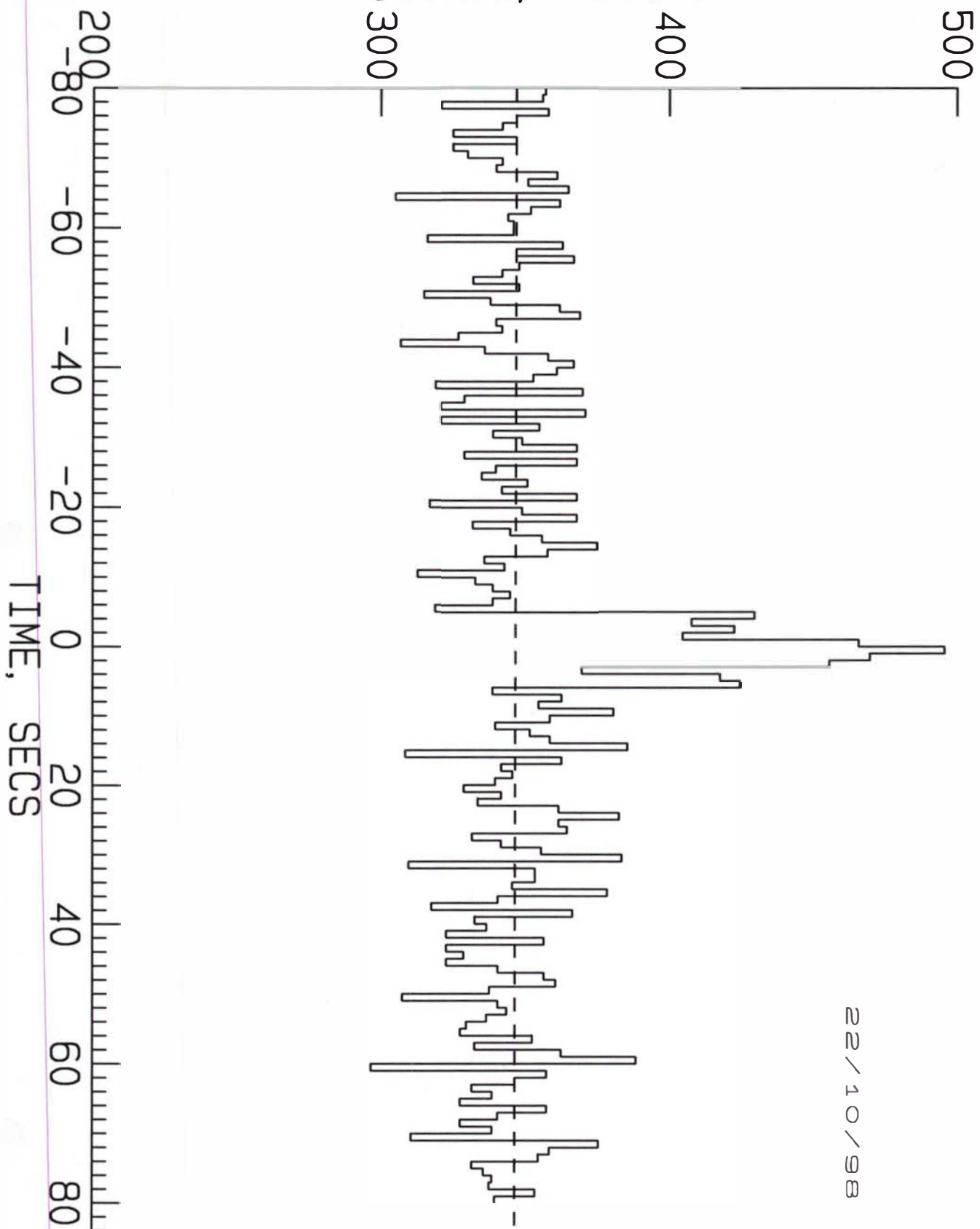


NEAR

17/10/98 74633.818

100-1000 keV

COUNTS/1.000 S



22/10/98

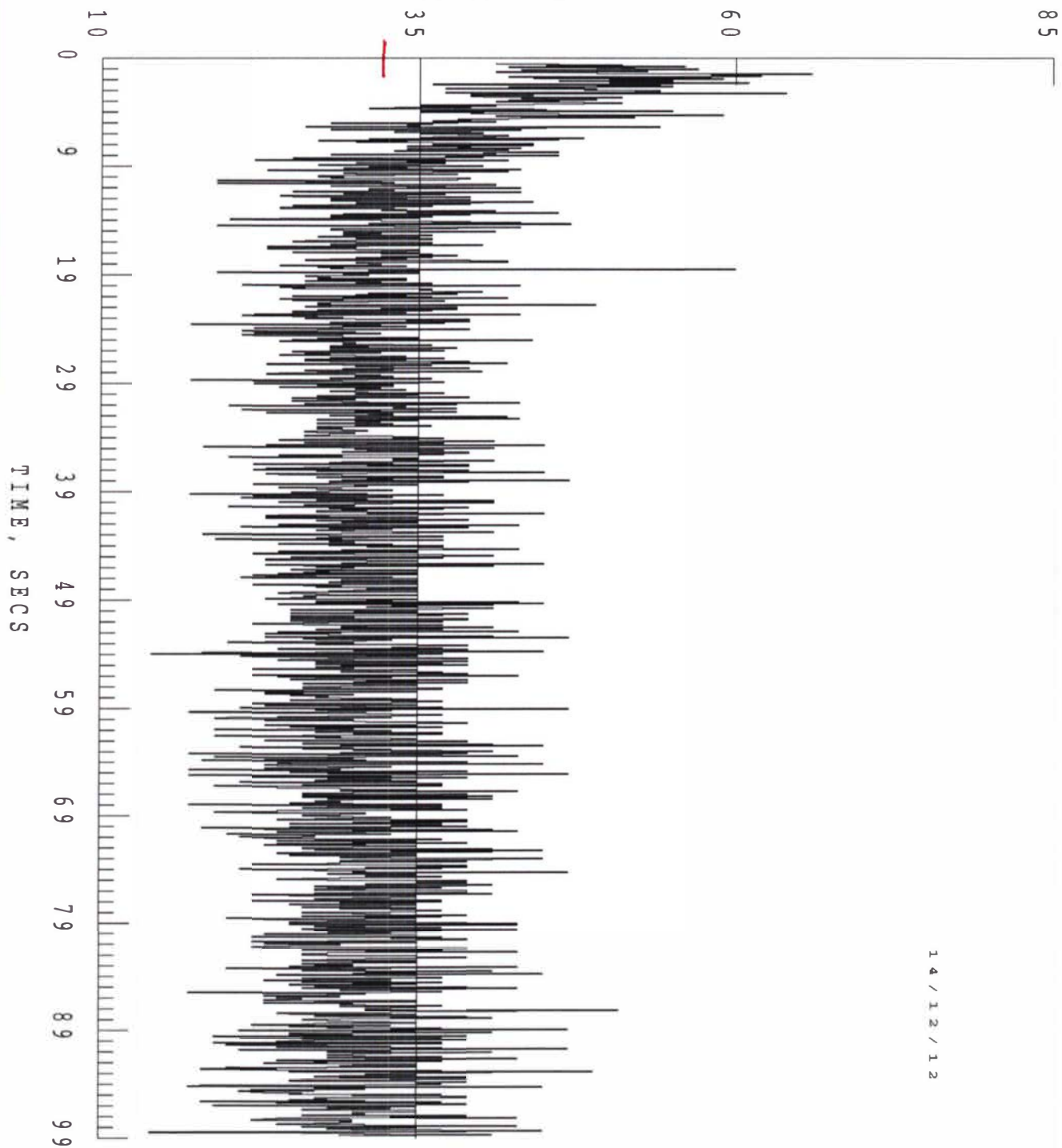
KONUS1

17/10/98

73933.534

50 - 200 keV

COUNTS/0.064 S



KONUS

ULYSSES RT

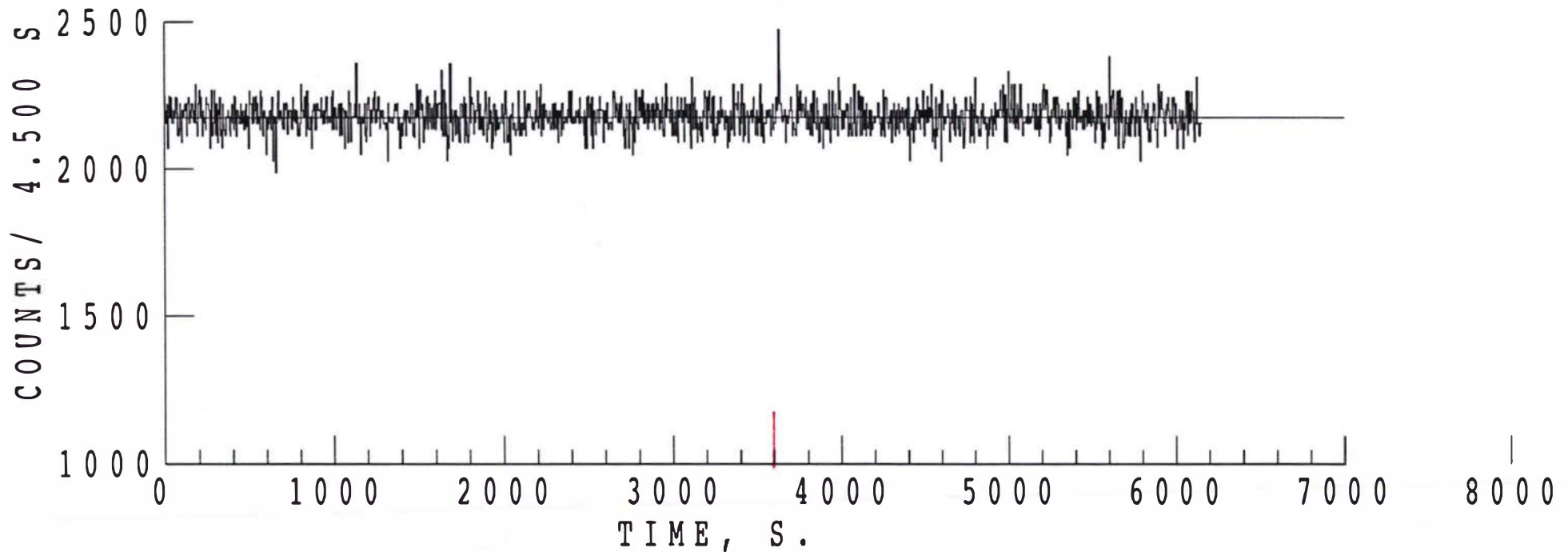
19 / 10 / 98

17 / 10 / 98 70848.352 s

0.500 S INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



C

From RICHARDSON@fender.msfc.nasa.gov Mon Oct 19 13:53:54 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 19 Oct 1998 15:53:37 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7161

TIME: TJD=1103 SECONDS=36962

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

From RICHARDSON@fender.msfc.nasa.gov Mon Oct 19 13:55:01 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 19 Oct 1998 15:54:28 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7162

TIME: TJD=1103 SECONDS=80201

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

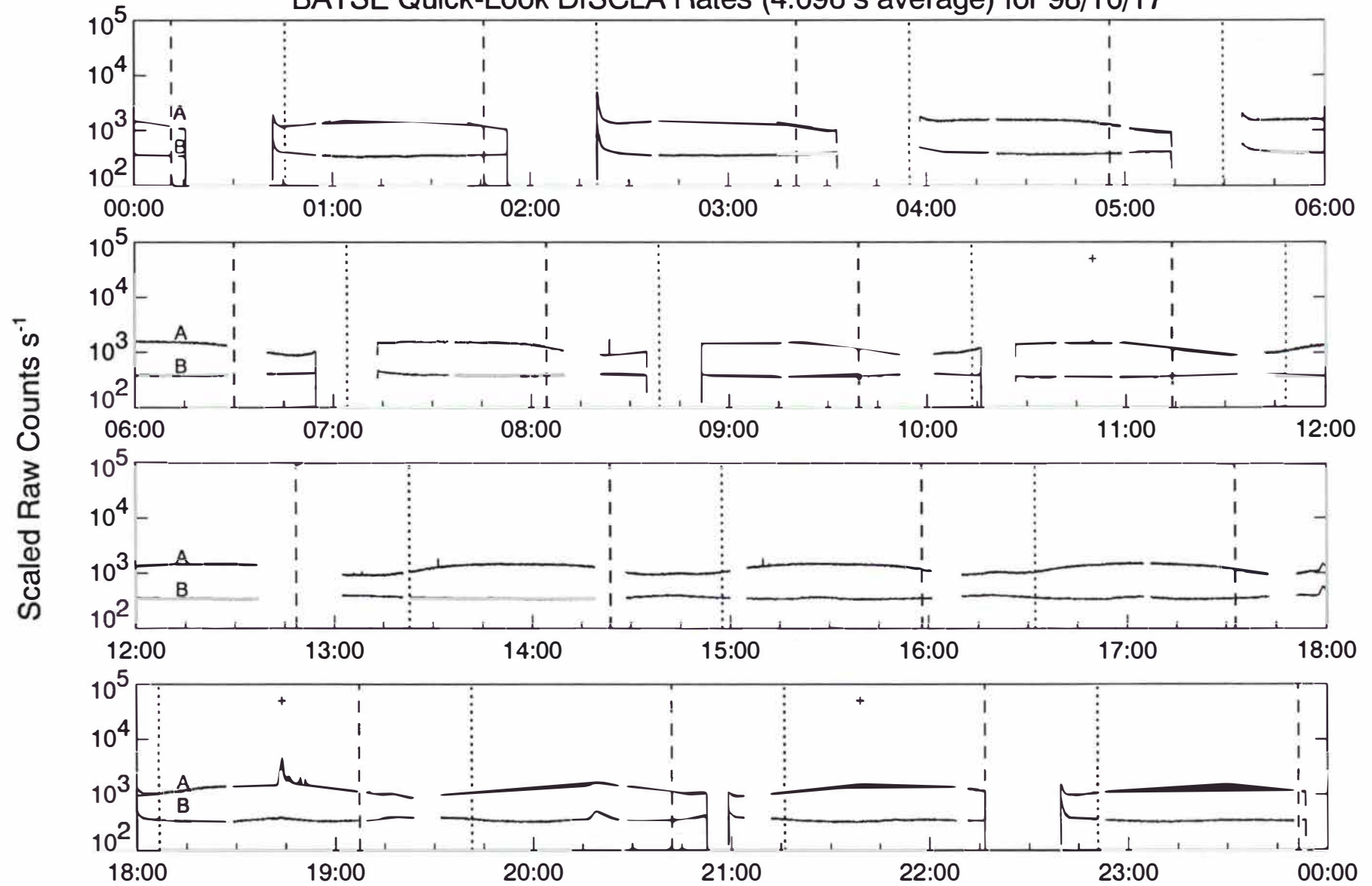
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/17

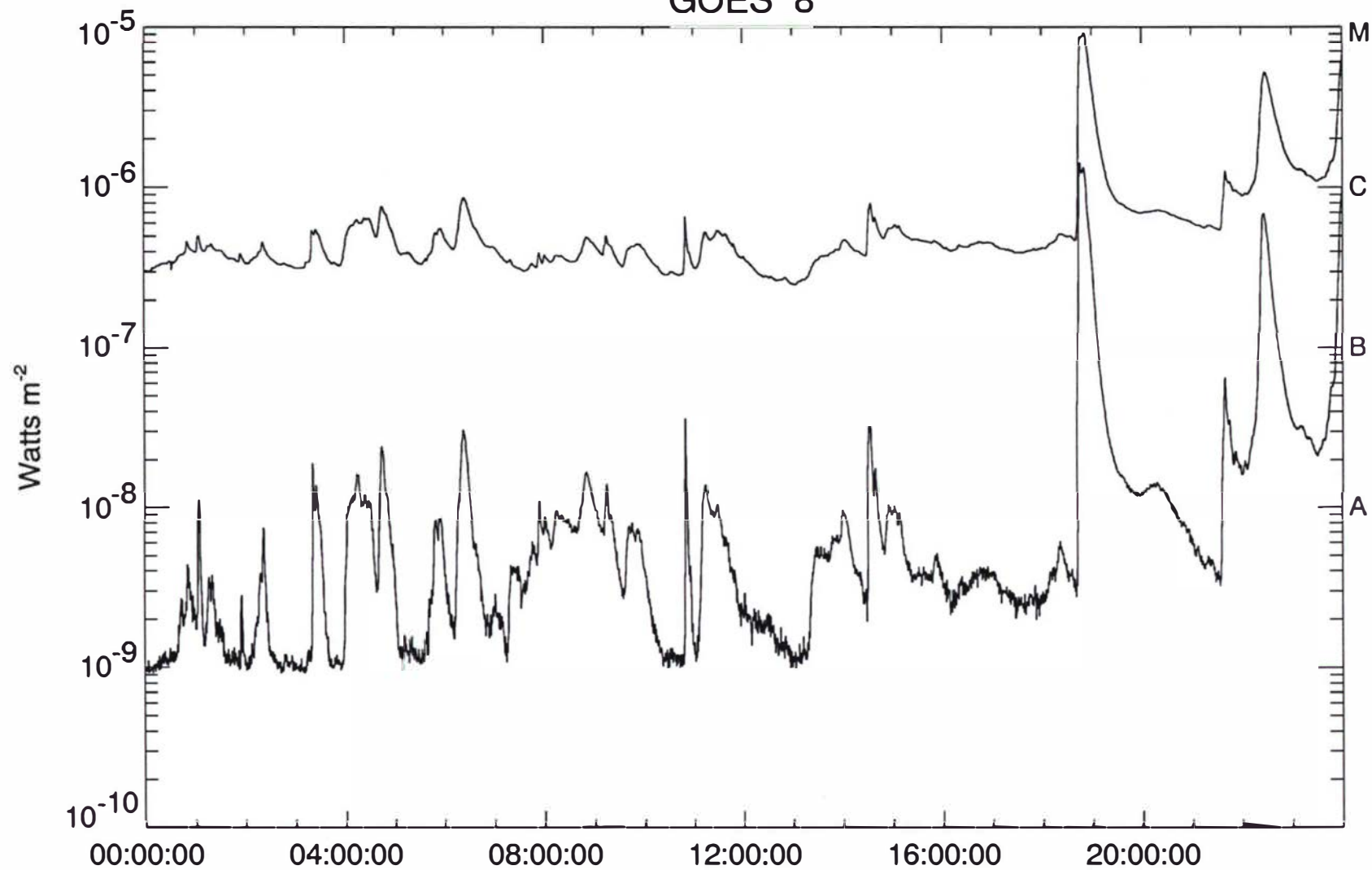


Current Time: 98/10/21, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 98/10/17, 0000:00

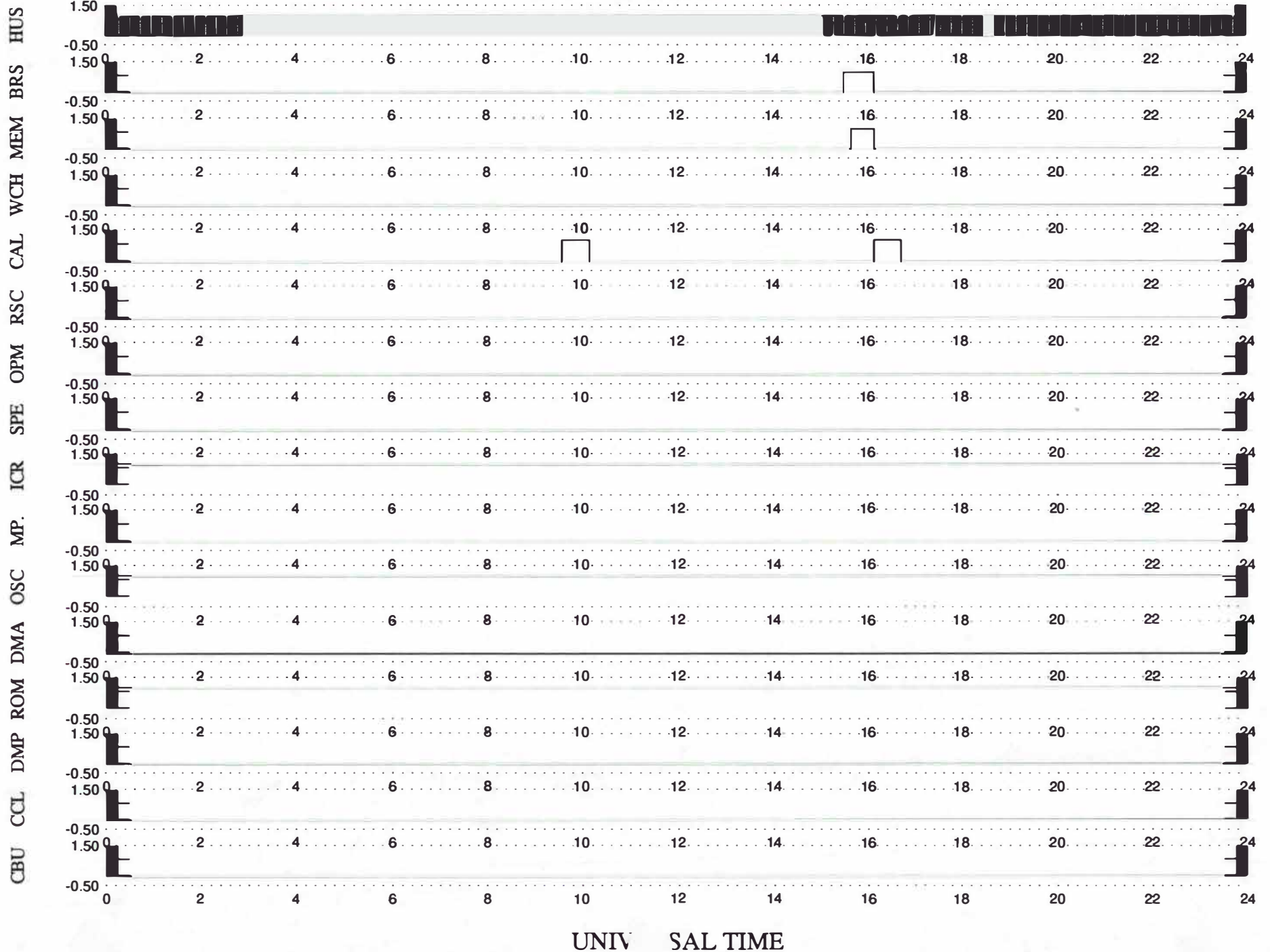
Plot created: 98/10/21, 1007

Channel

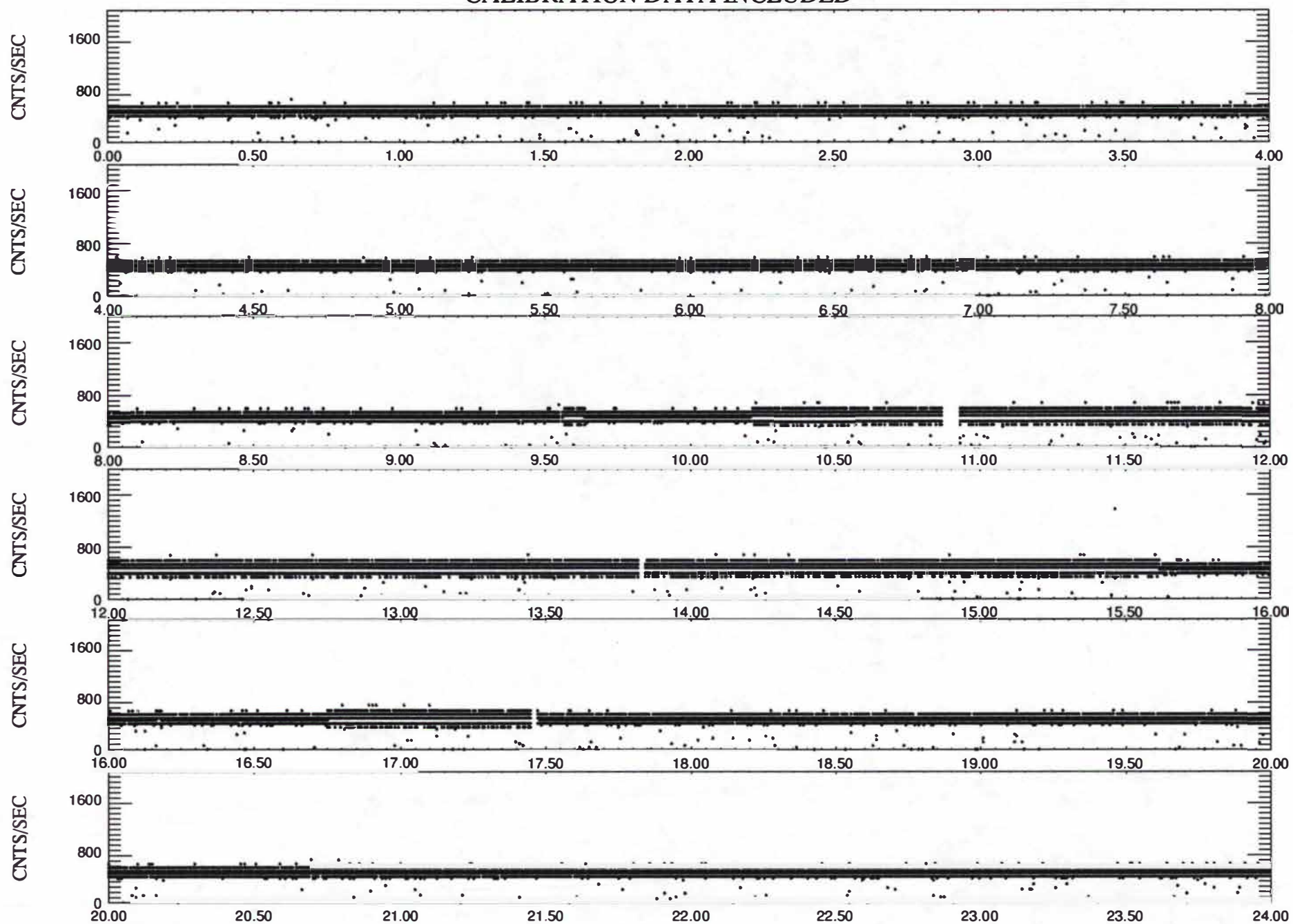
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 13

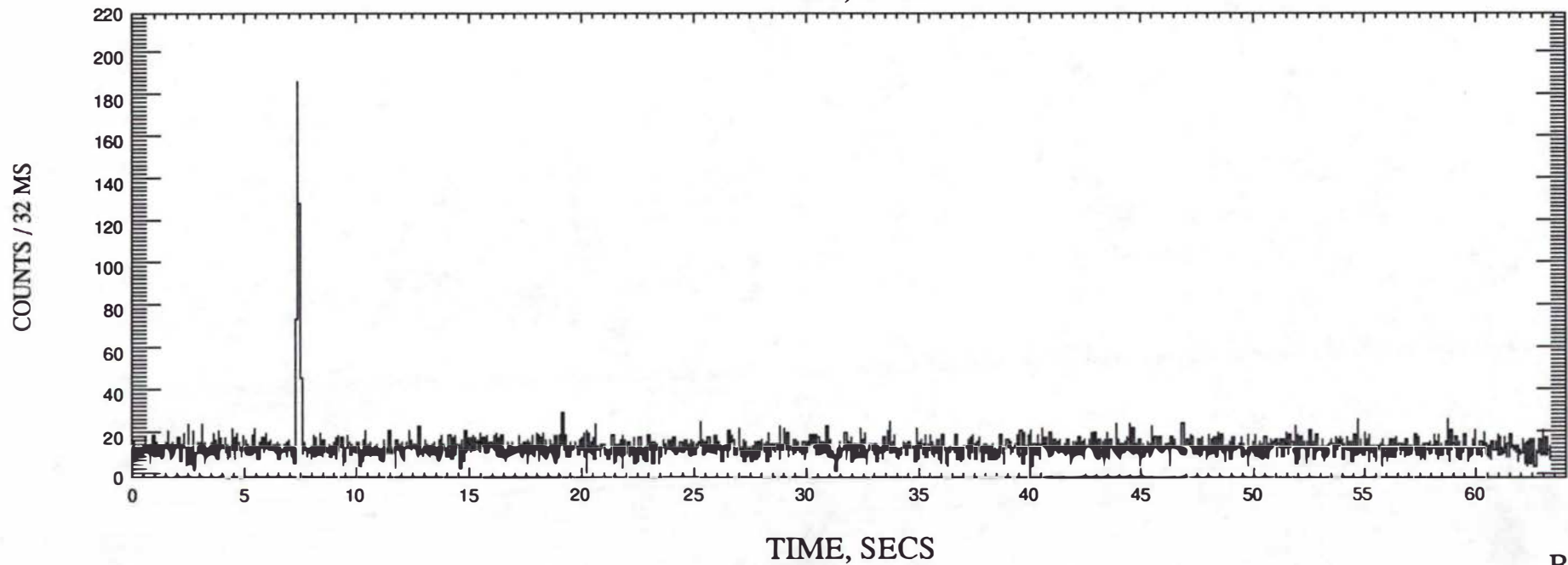
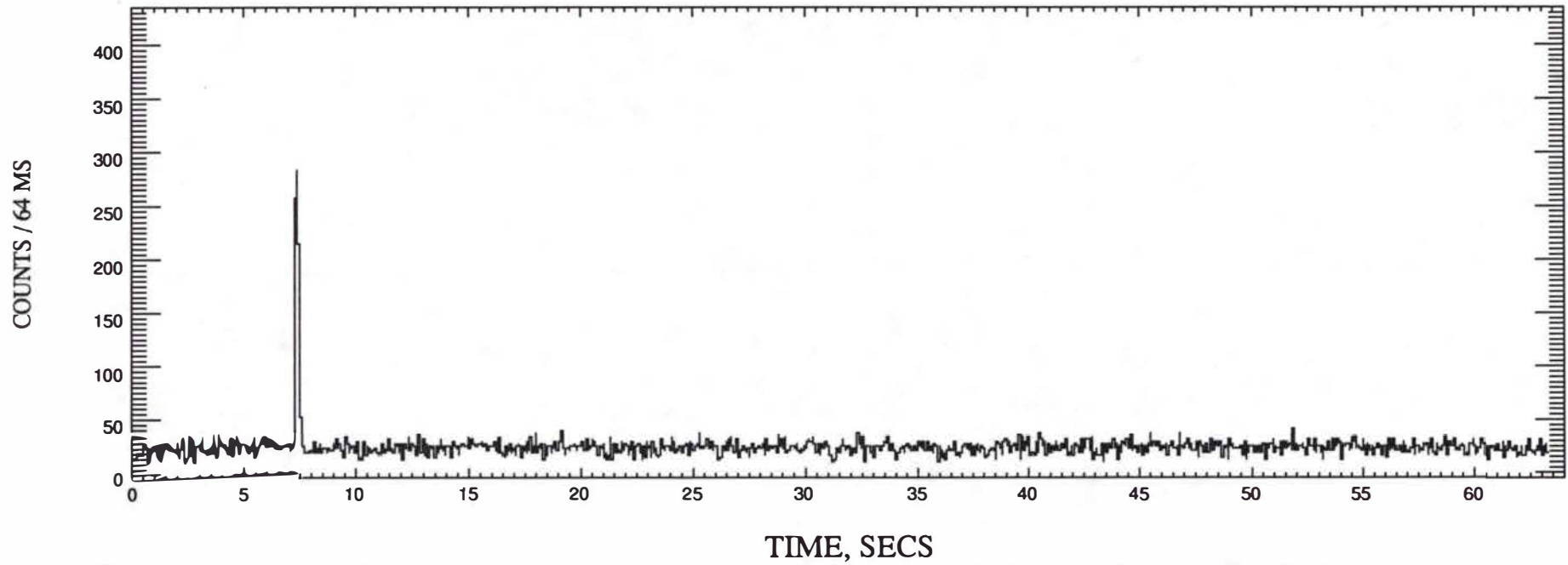


CALIBRATION DATA INCLUDED

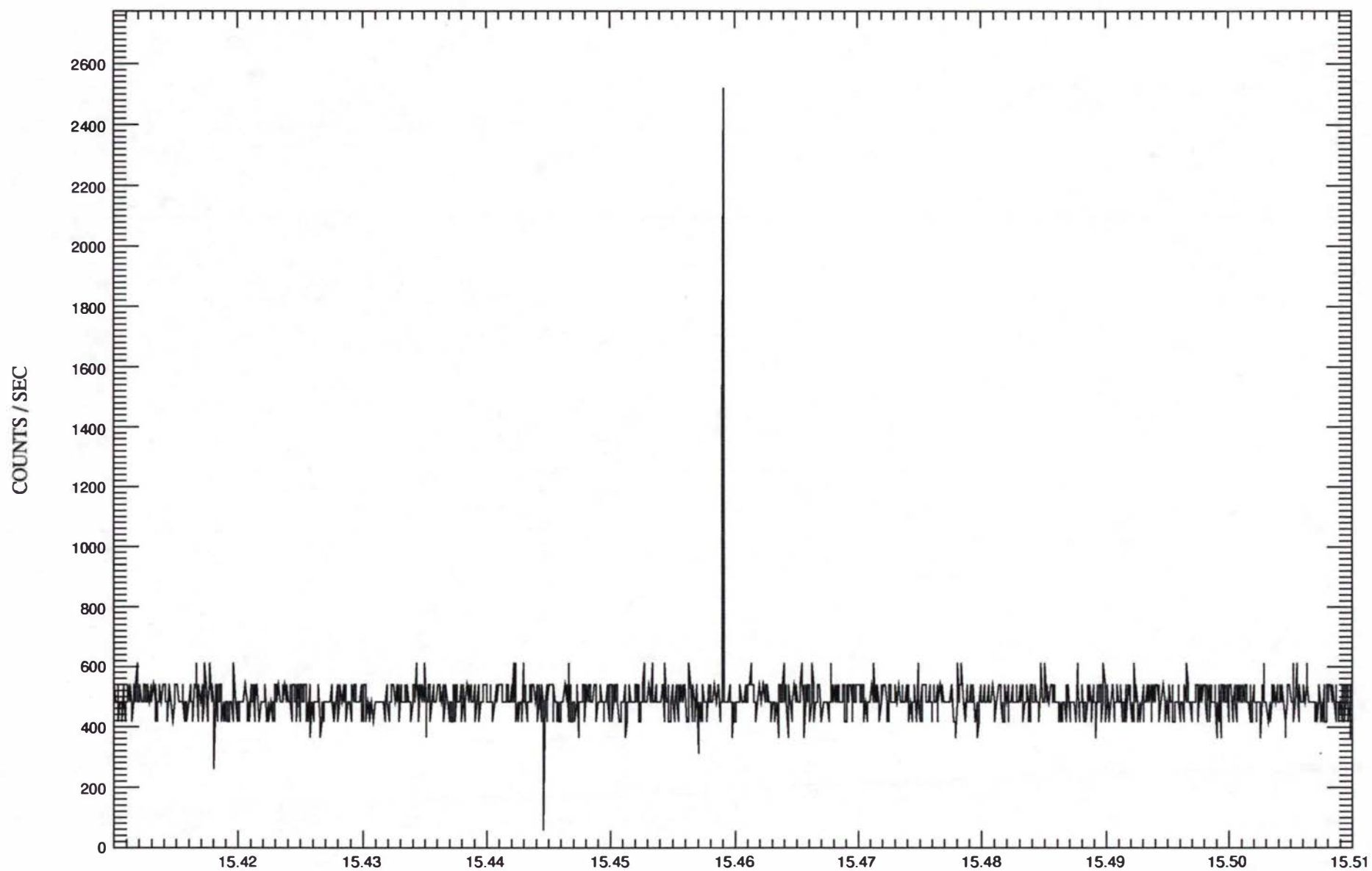


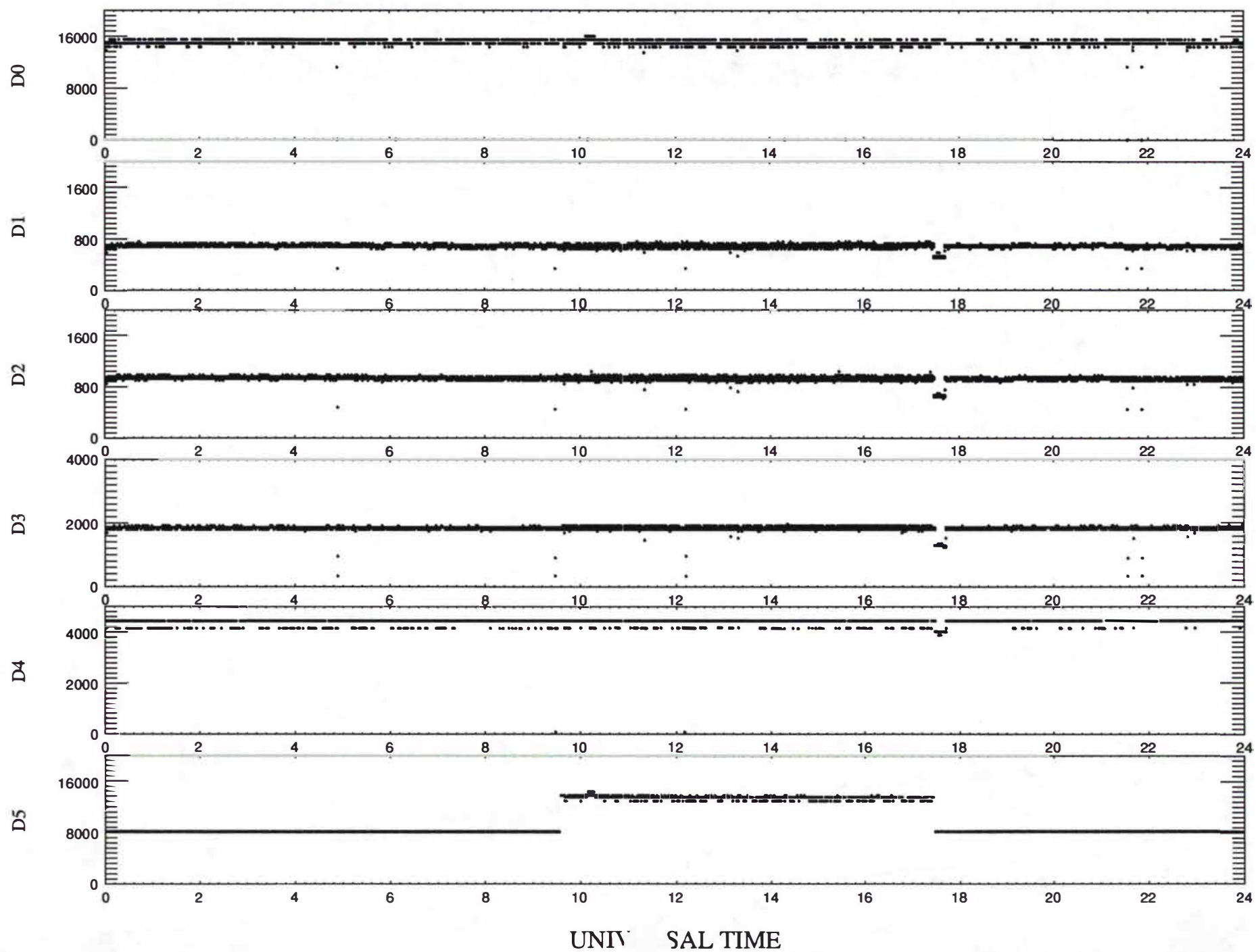
UNIV SAL TIME

Burst Counter 13 at UT=15.459141557482 h=55652.910 s 15:27:32.910

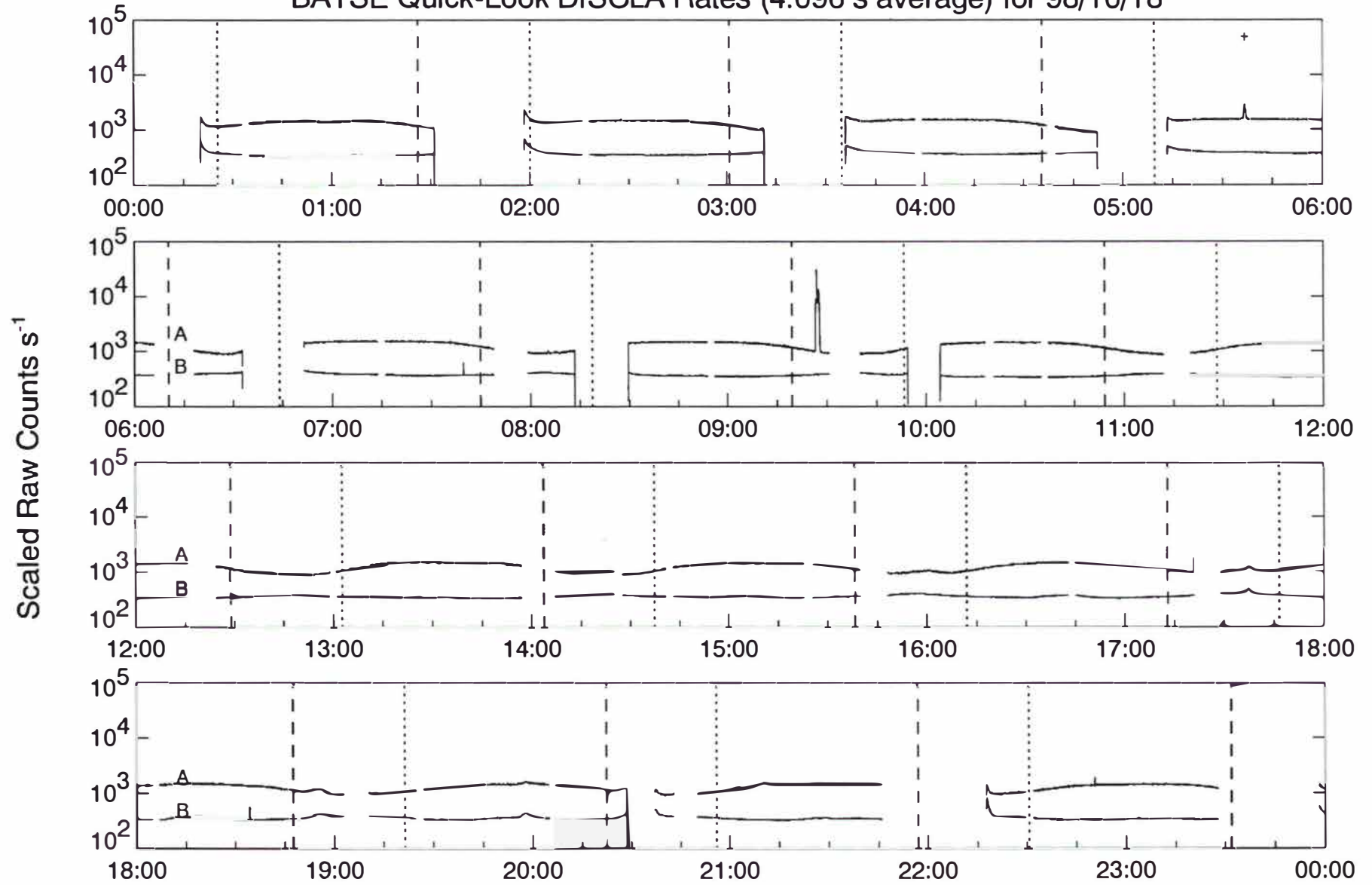


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/18

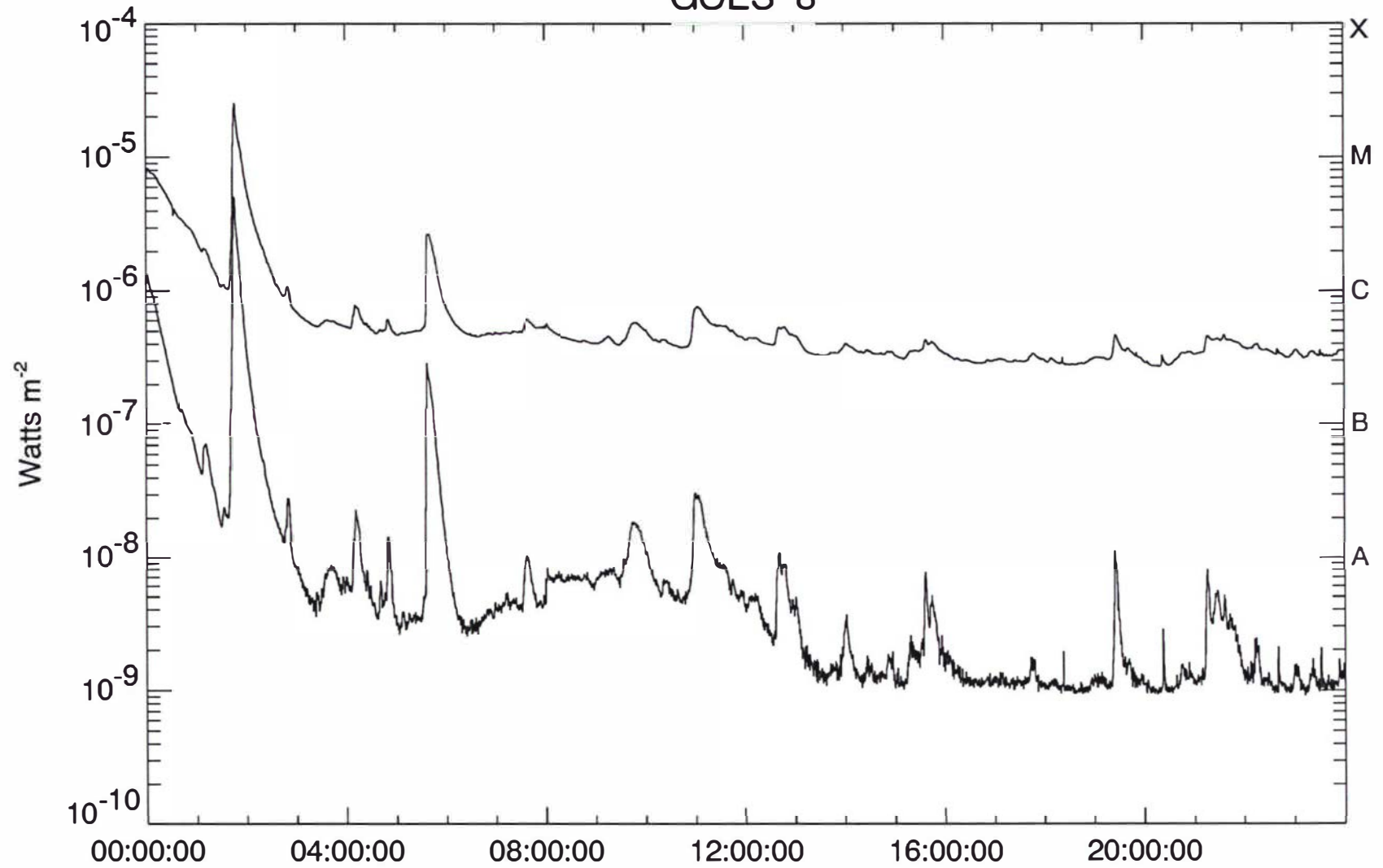


Current Time: 98/10/22, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

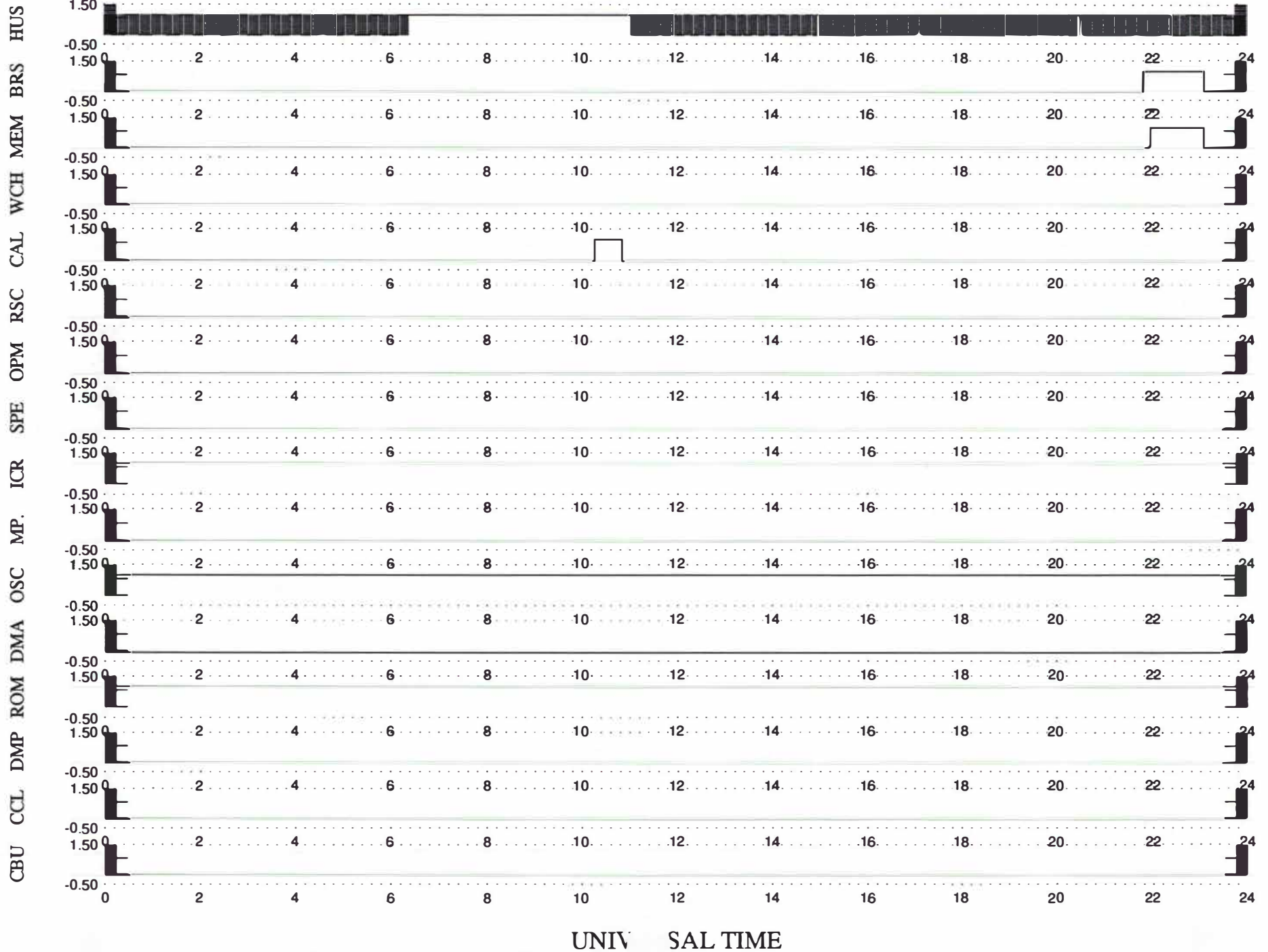


Data Start: 98/10/18, 0000:00

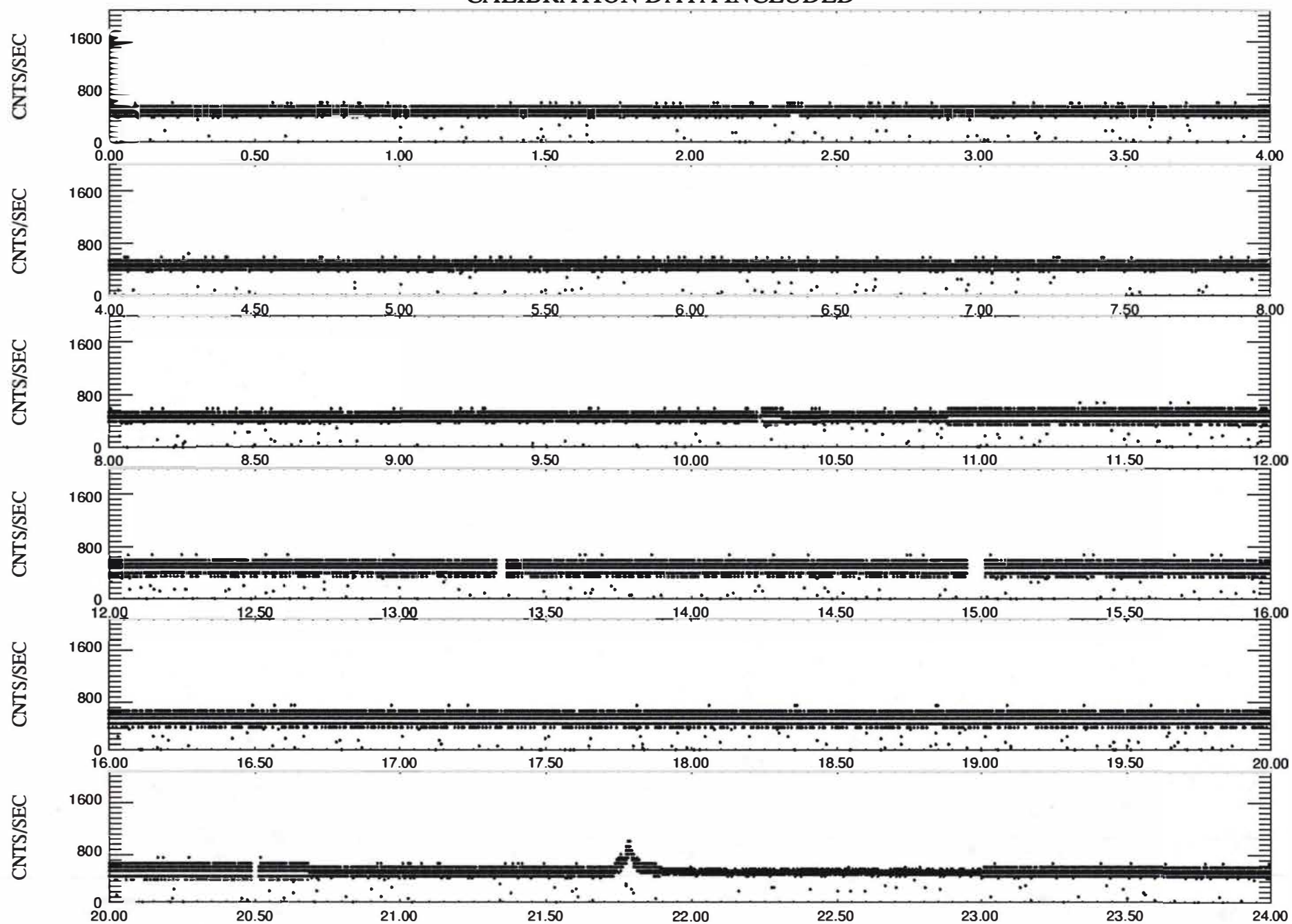
Plot created: 98/10/22, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

BURST NUMBER 14

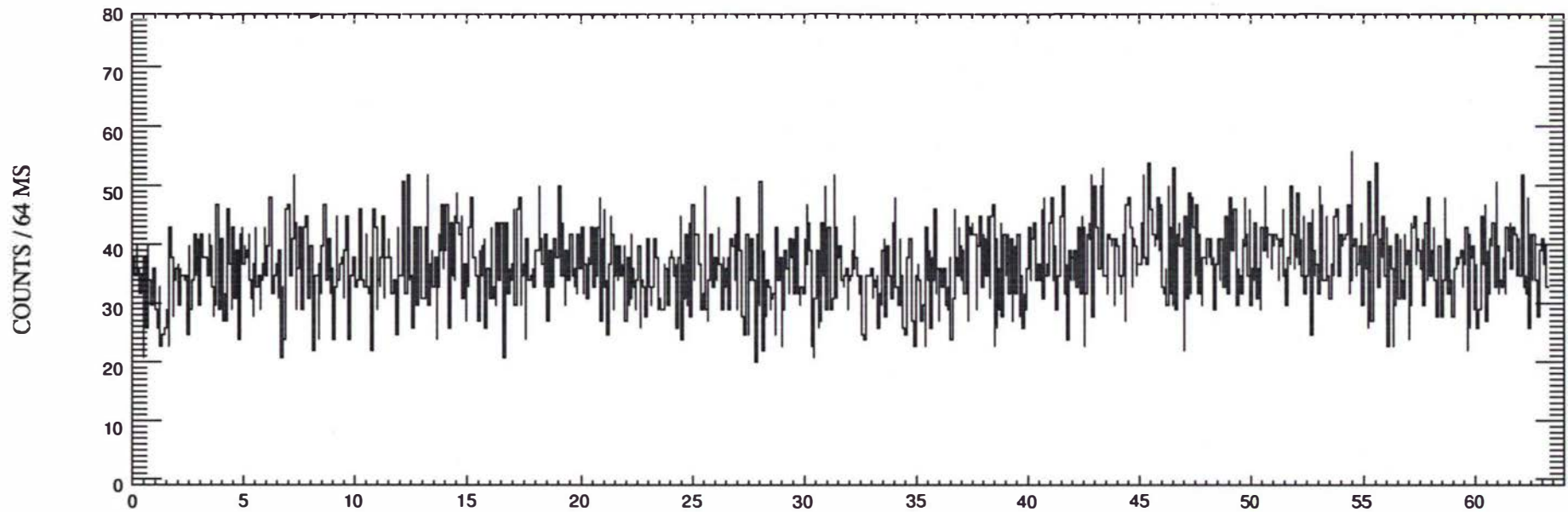


CALIBRATION DATA INCLUDED

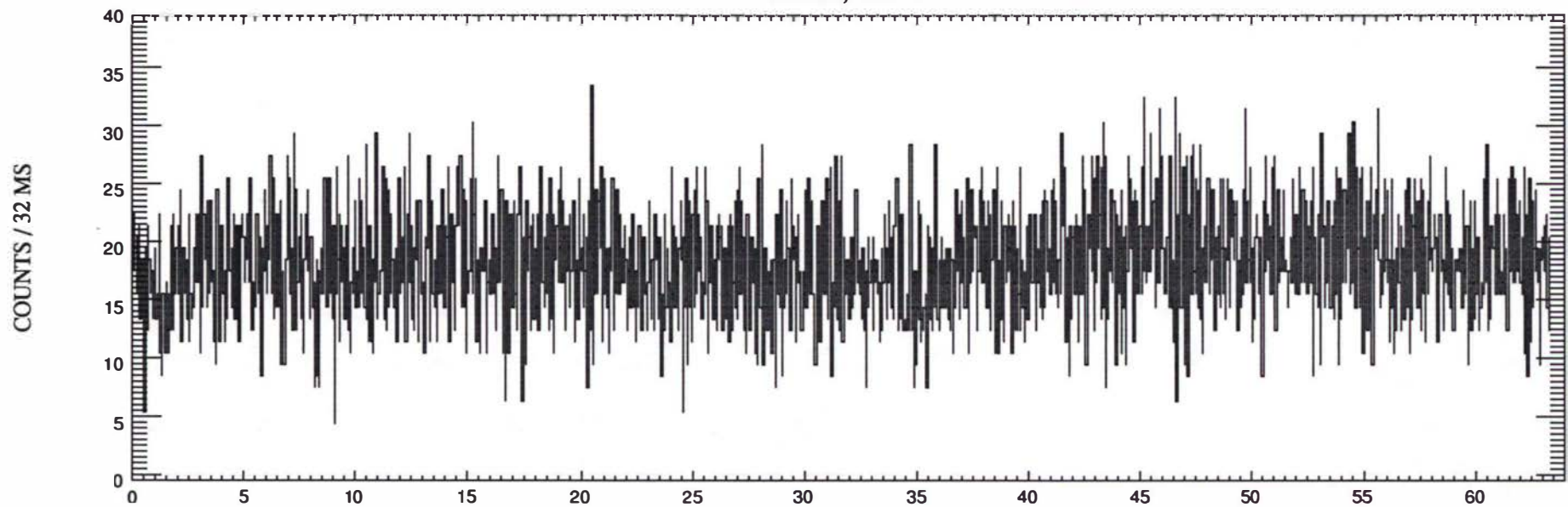


UNIV SAL TIME

Burst Counter 14 at UT=21.745952385796 h=78285.429 s 21:44:45.429

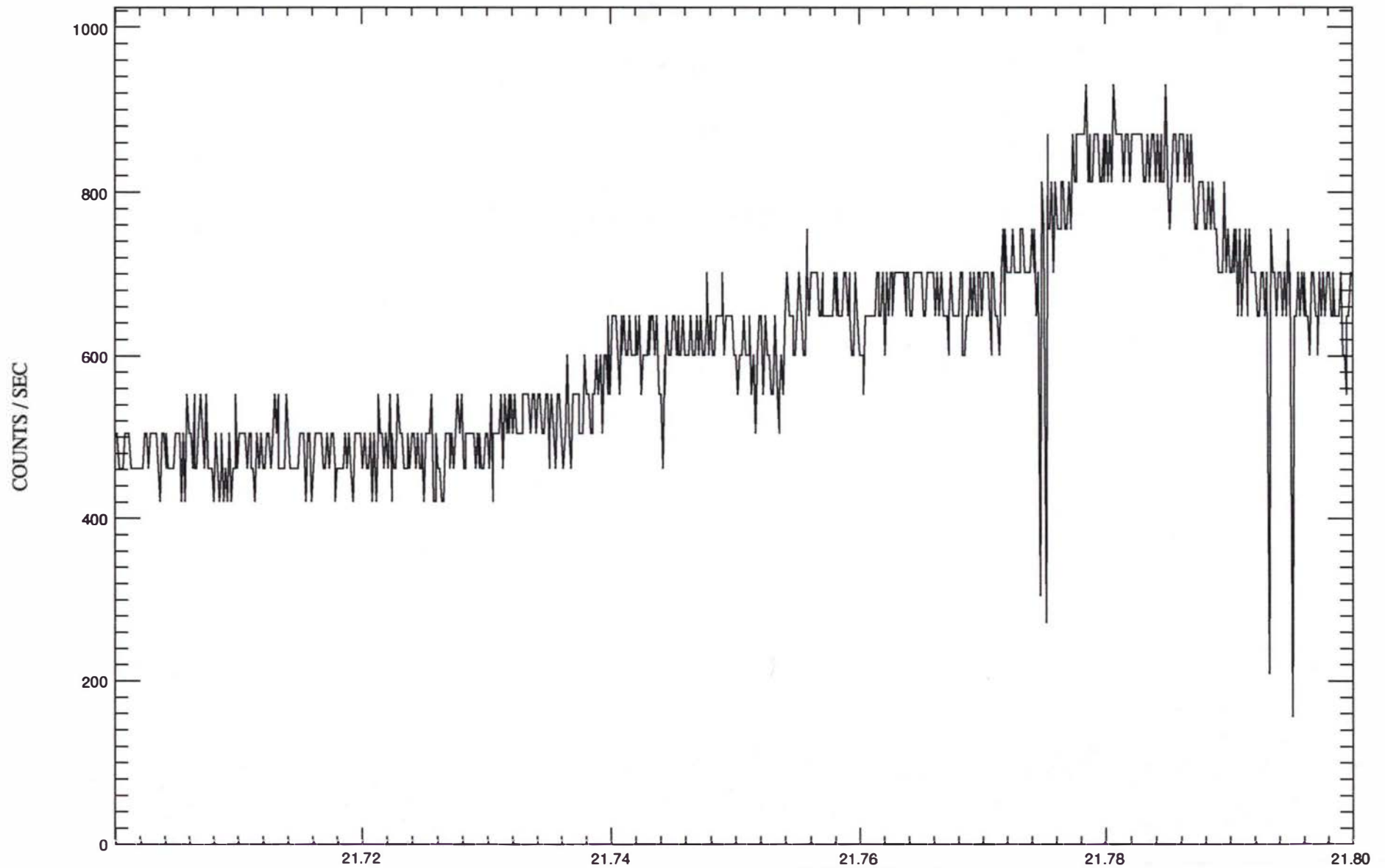


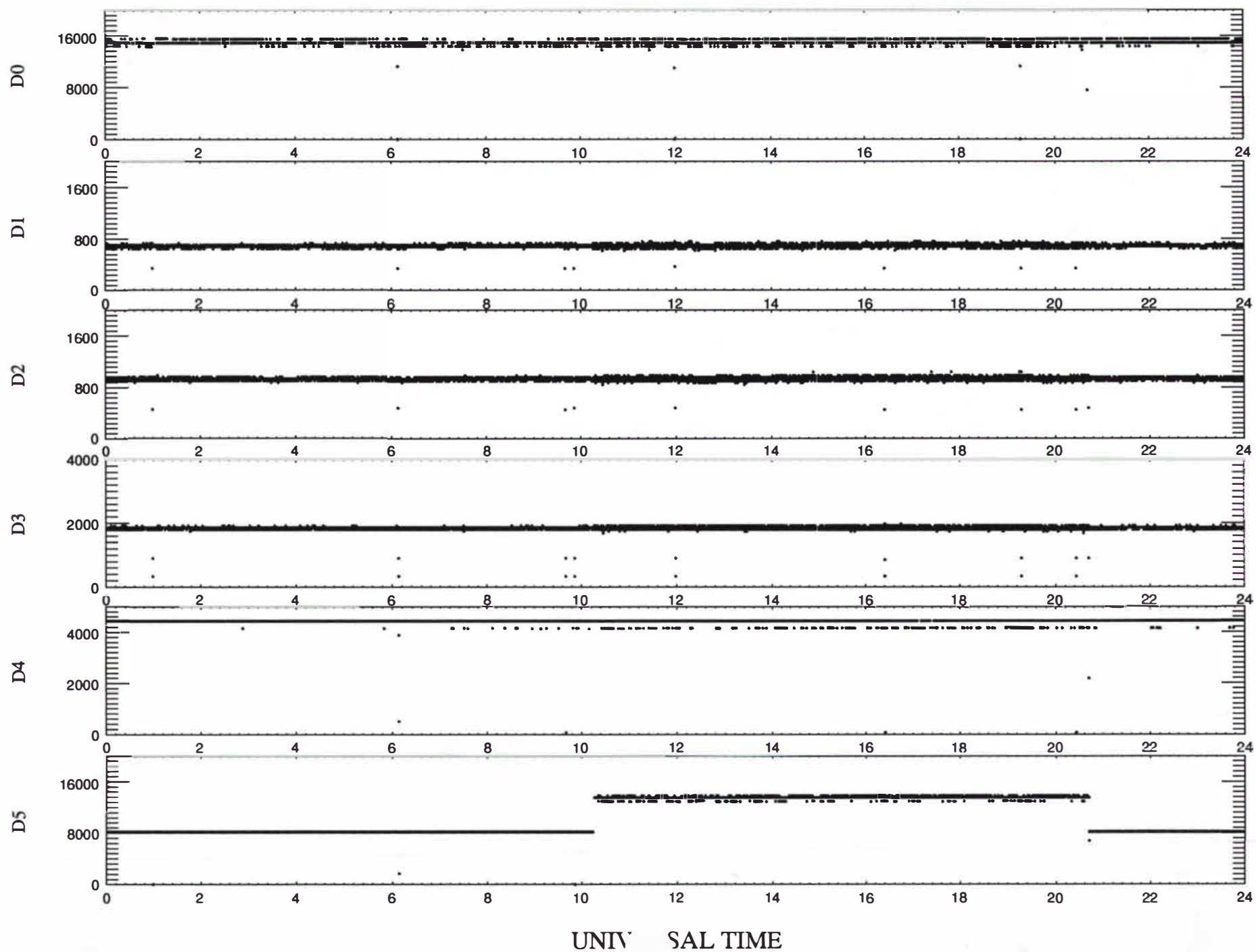
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





JANA TAB1 19981019 67962

ULYSSES RT

05/08/05

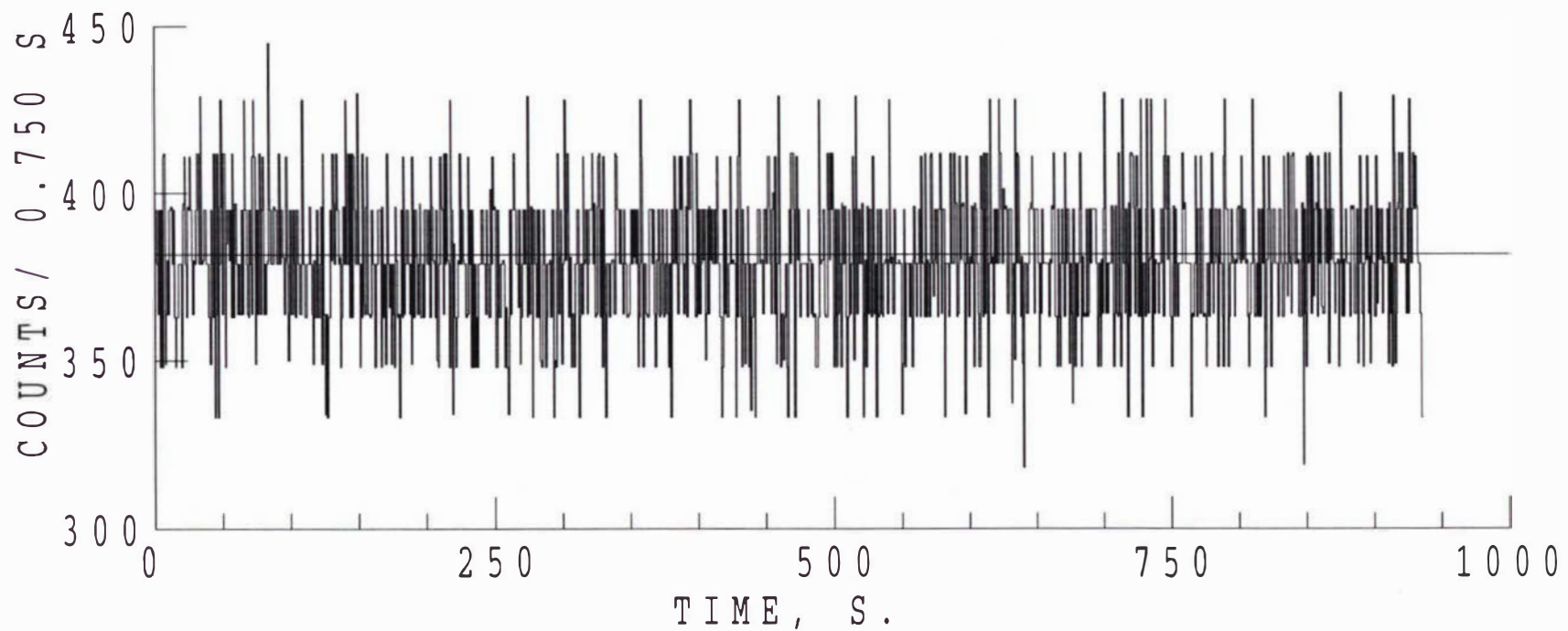
19/10/98 67500.094 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Tue Oct 20 09:36:43 1998
Date: Tue, 20 Oct 1998 11:32:21 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@ests2.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmattes@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7163

TIME: TJD=1105 SECONDS=79038

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT AFTER SAA EXIT.

BATSE time corrected 9/30

Date: July 01 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? **No**

2. For 3 Spacecraft events

- ☐ Konus N/S anisotropy used to distinguish between positions?
- ☐ SAX anisotropy used to distinguish between positions?
- ☐ SAX Earth-blocking used to distinguish between positions?
- ☐ $\Sigma 3\Delta t$'s calculated?

3. For 4 Spacecraft Events

- ☐ BMAPSUM executed to get chisquare for alternate positions?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

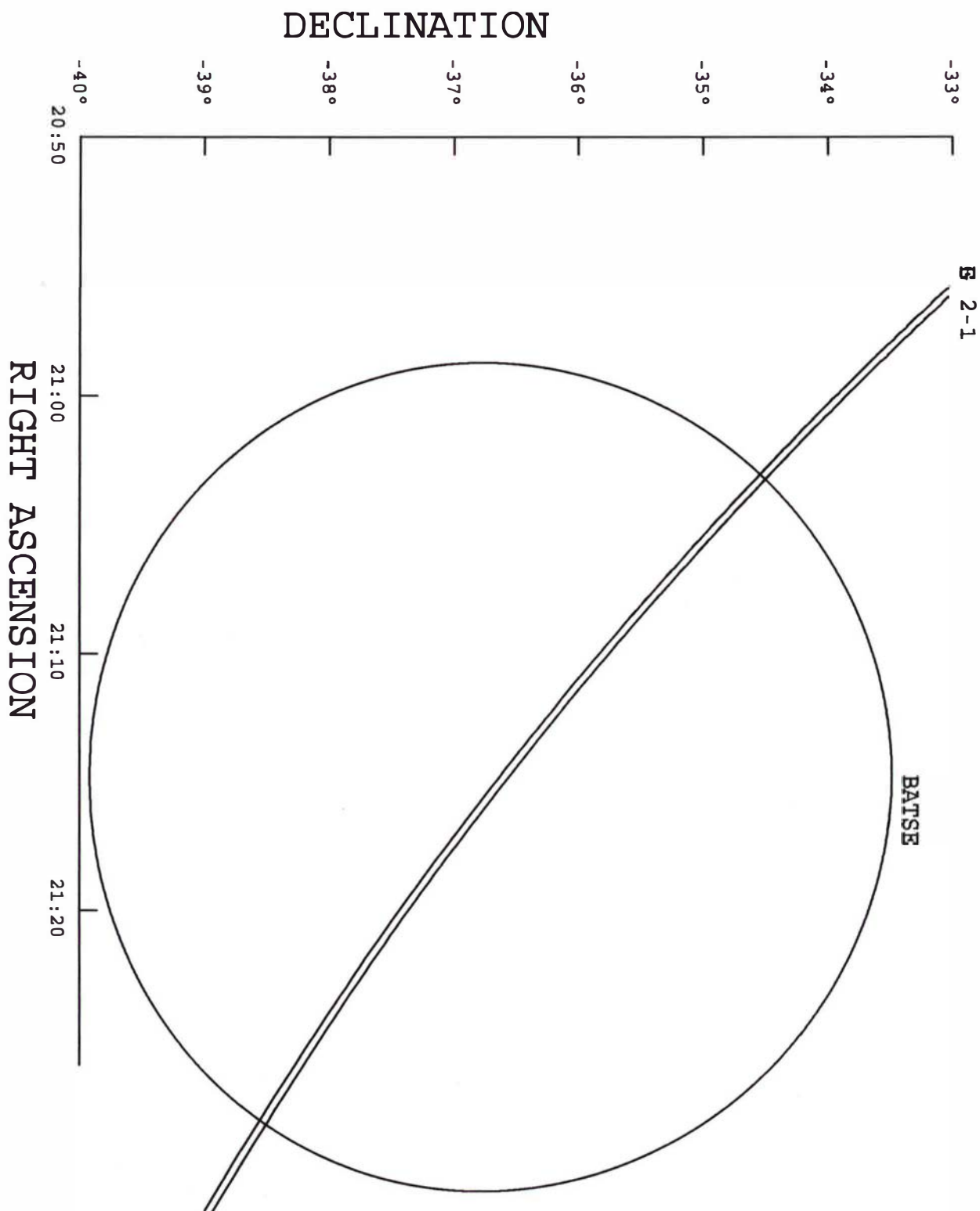
1 BATSE

2 ULYSSES

3 KONUS

EVENT OF OCT 19, 1998 22:06

1/ 7/ 2



KONUS1

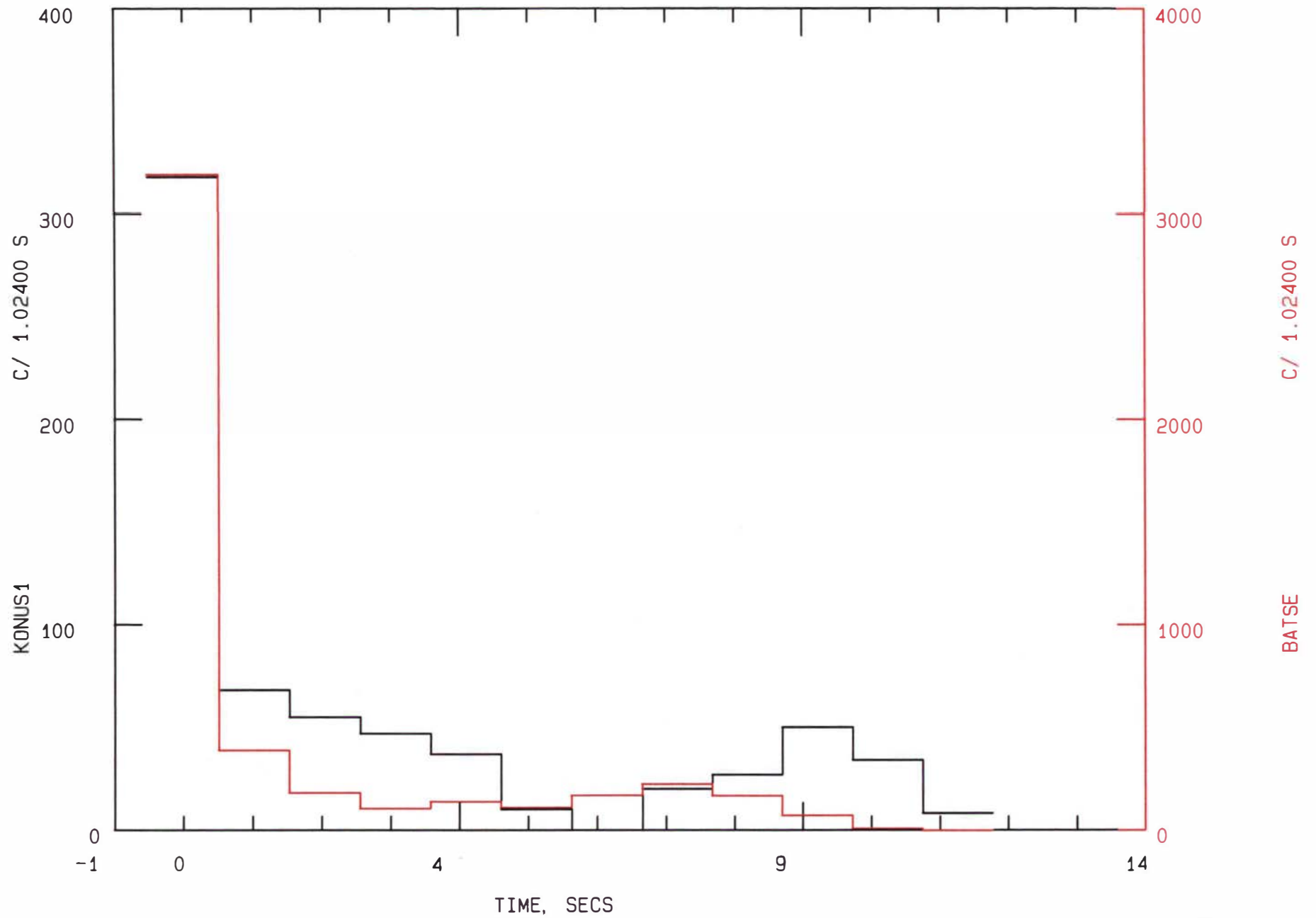
-BATSE

CORRELATION

19/10/98

79605.114

1/ 7/ 2



KONUS1

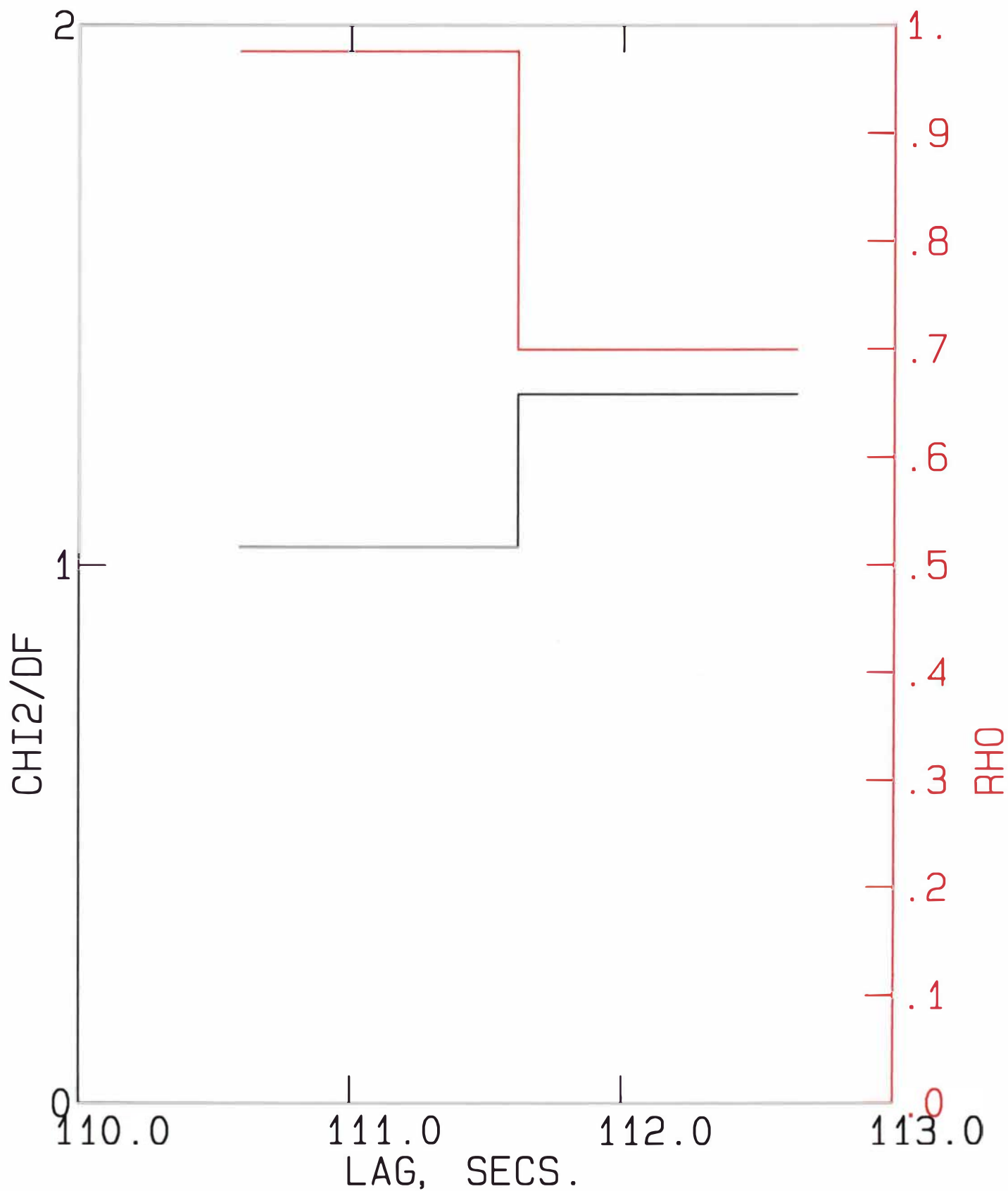
-BATSE

CORRELATION

19/10/98

79605.114

1/ 7/ 2



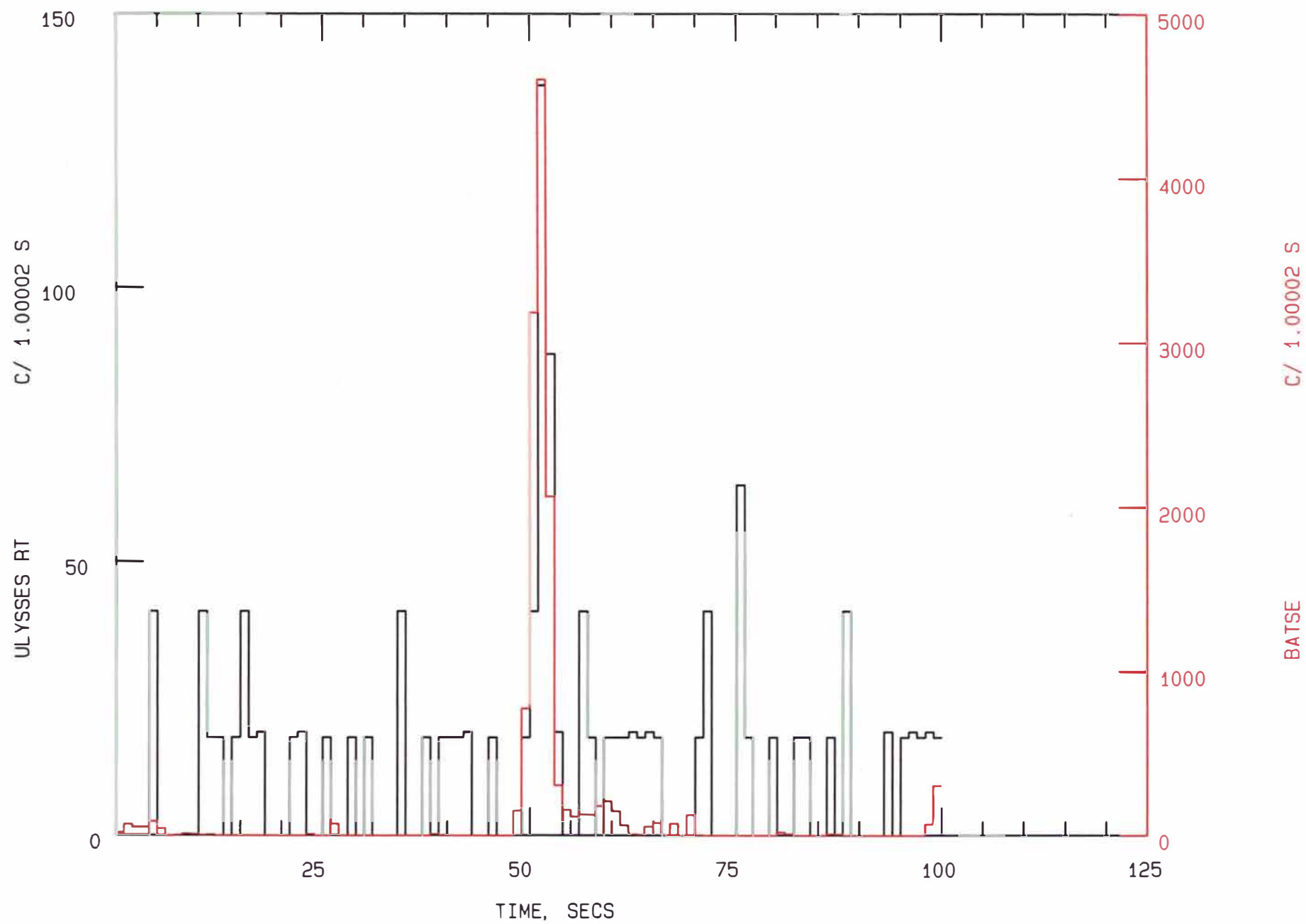
ULYSSES RT-BATSE

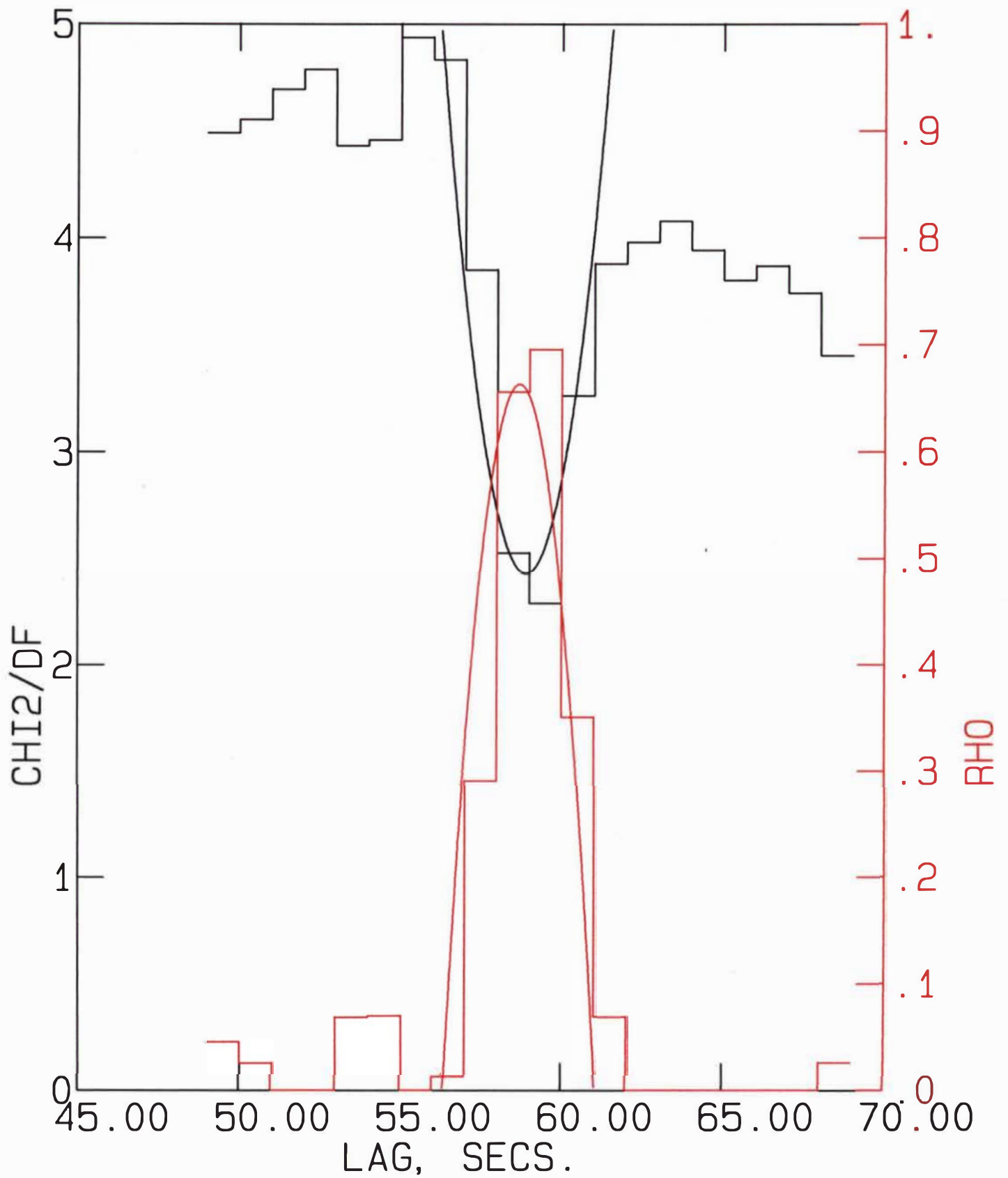
CORRELATION

19/10/98

81678.237

1/ 7/ 2





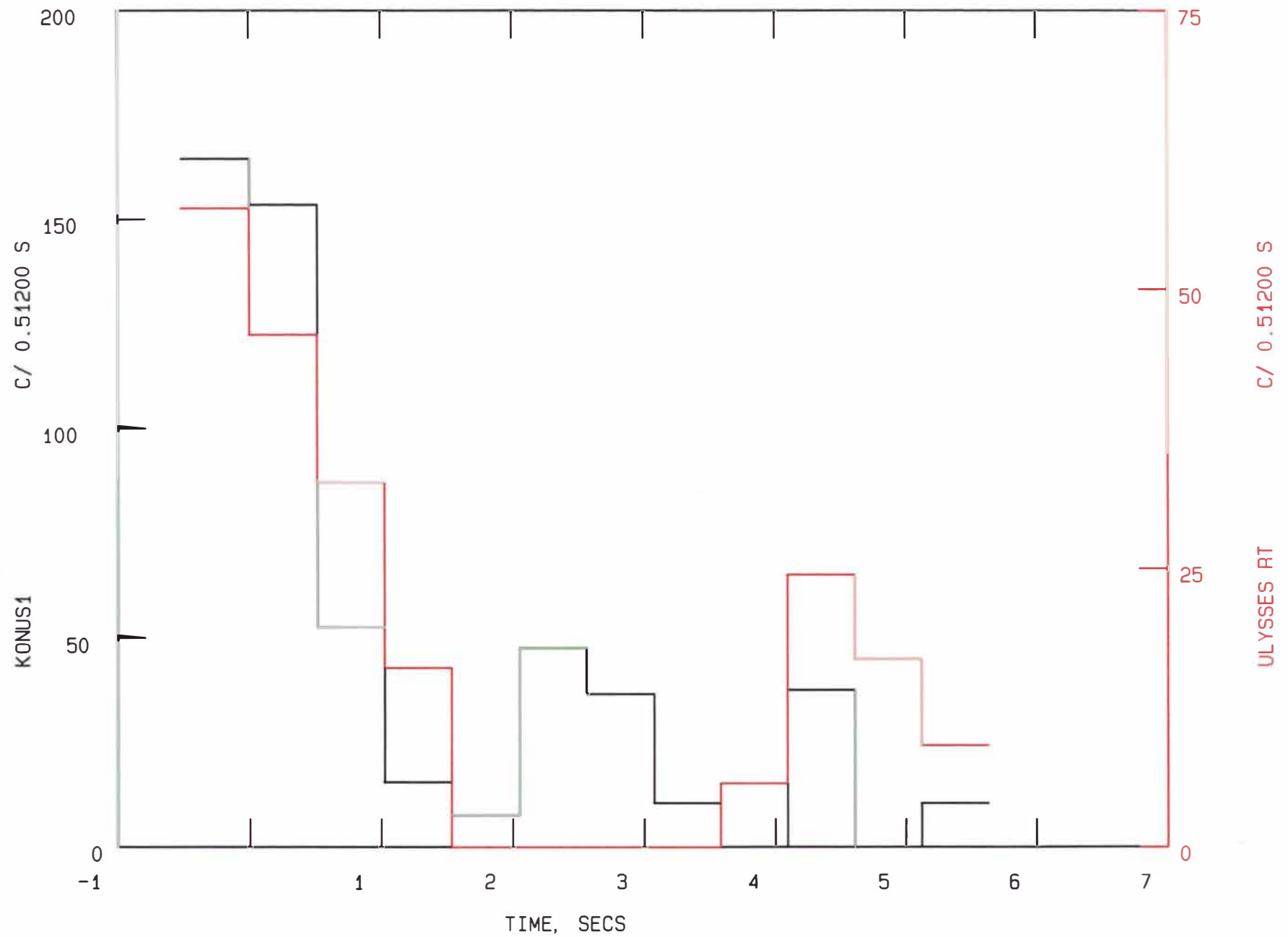
KONUS1

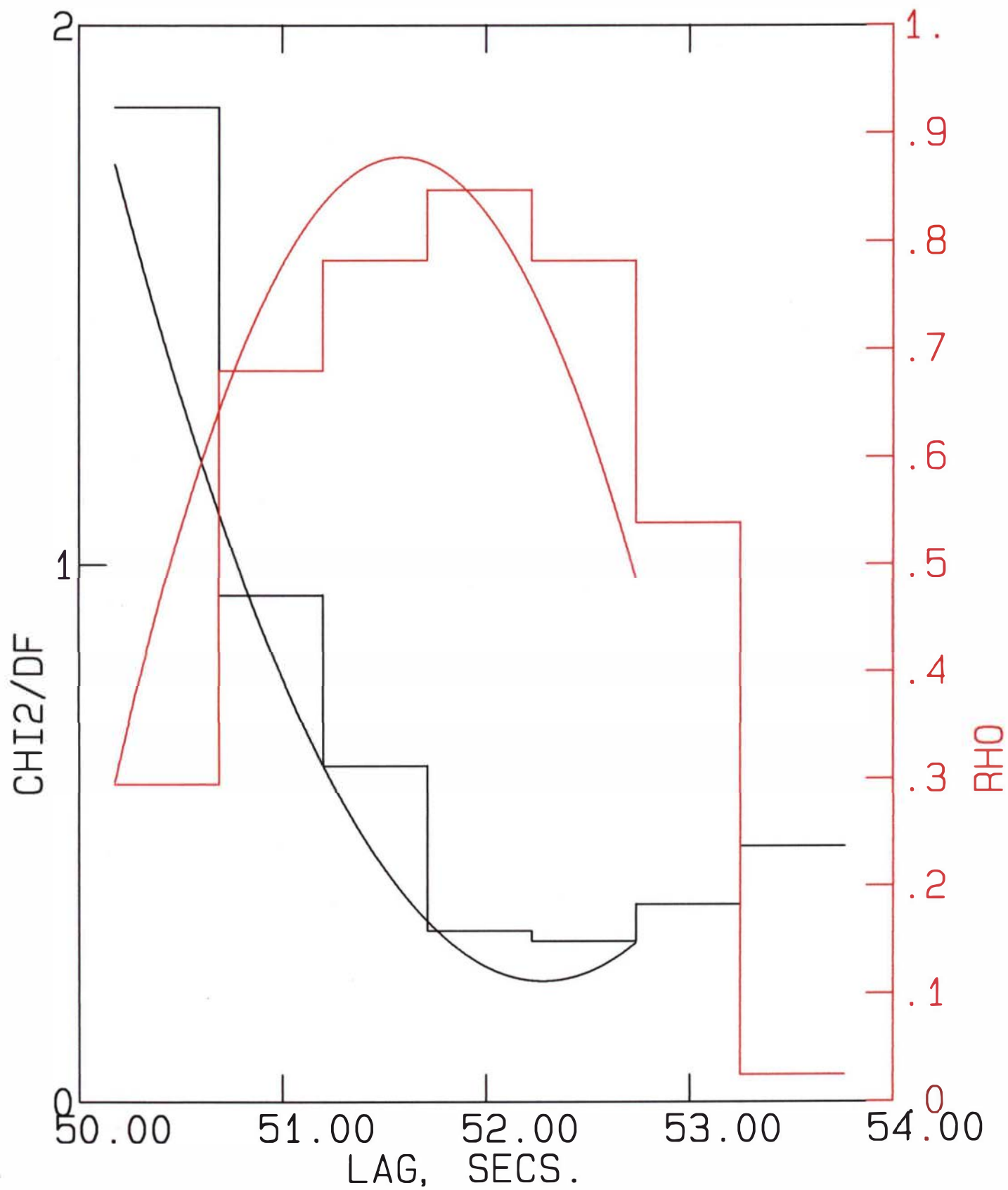
-ULYSSES RT CORRELATION

19/10/98

79605.114

1/ 7/ 2

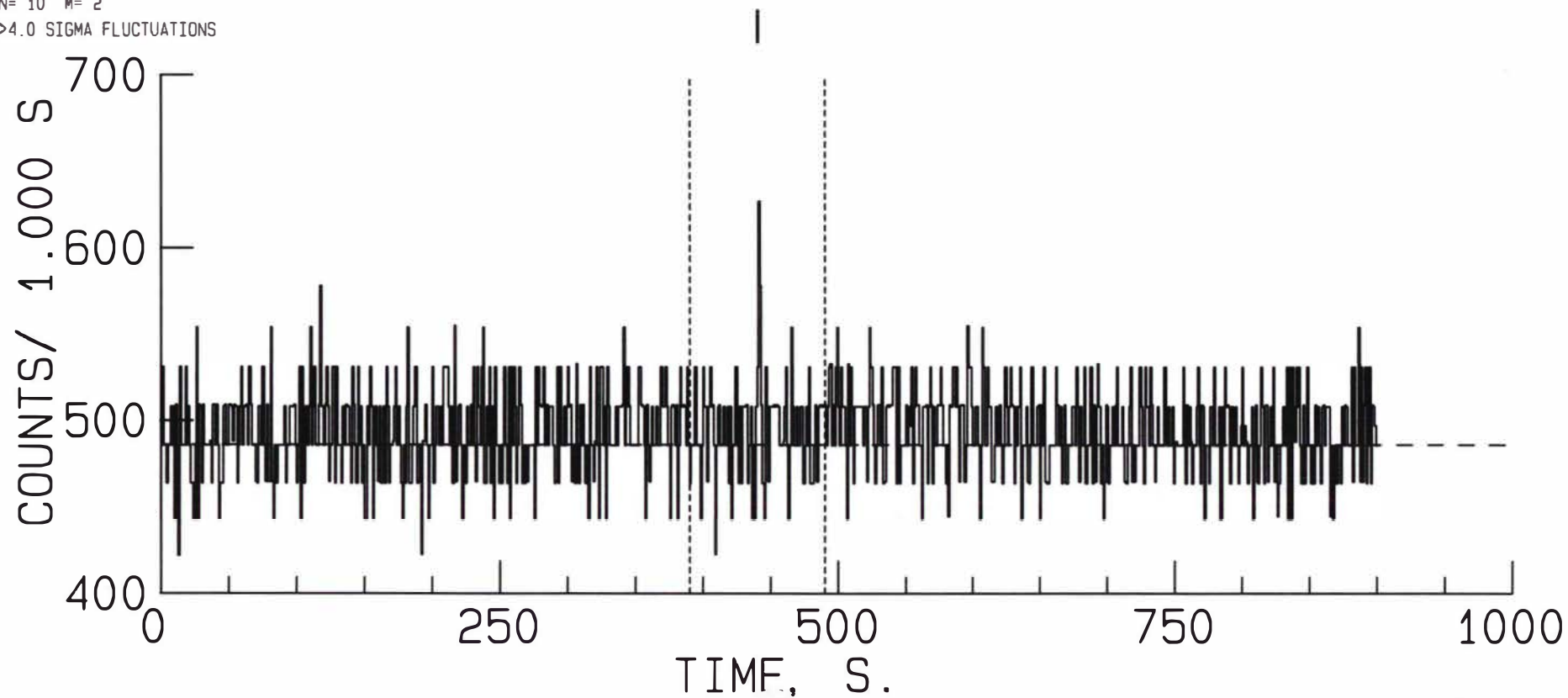




ULYSSES RT
19/10/98 81288.242 s
0.500 S INTERVALS REGROUPED BY 2
22- 150 keV

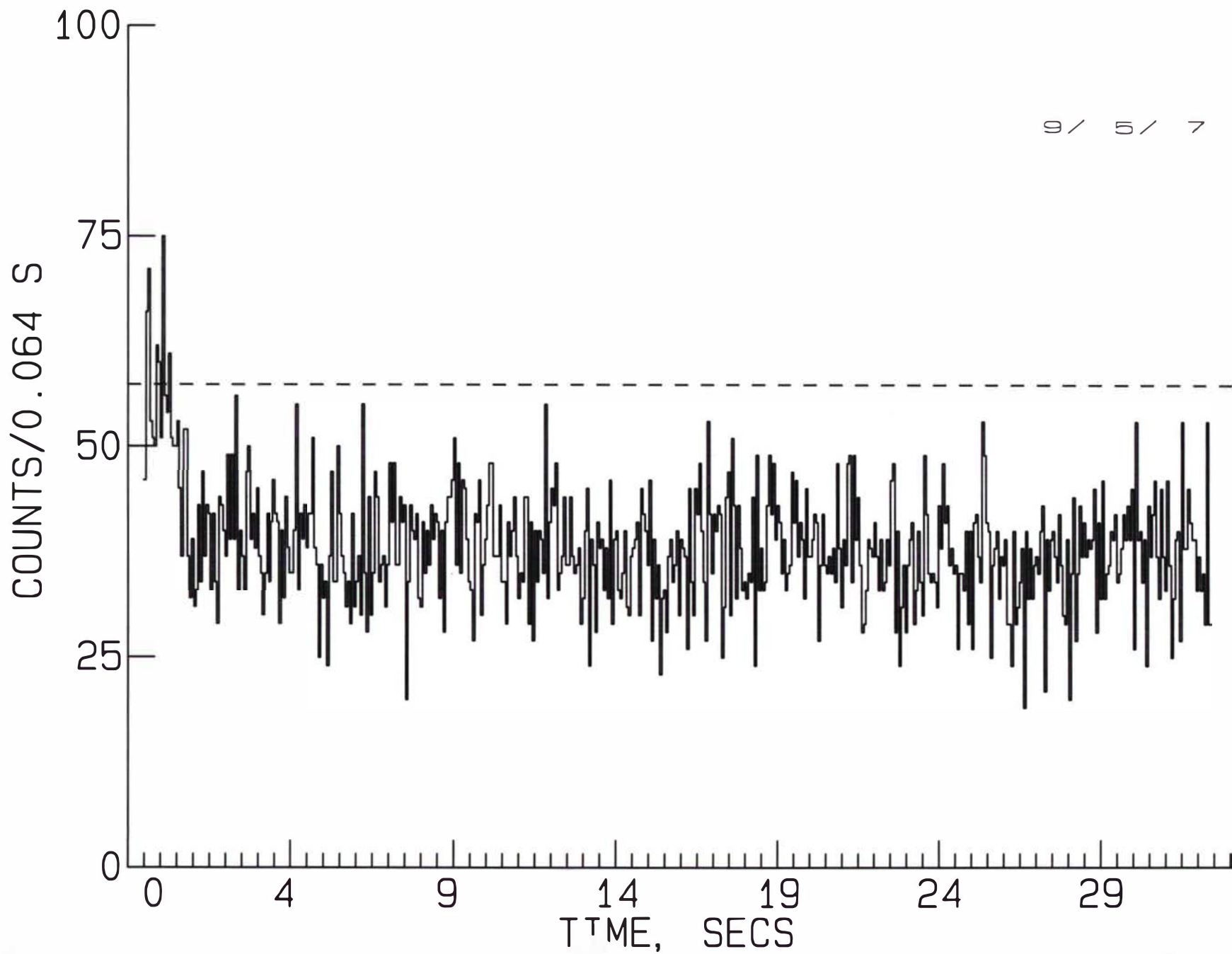
1 / 7 / 2

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

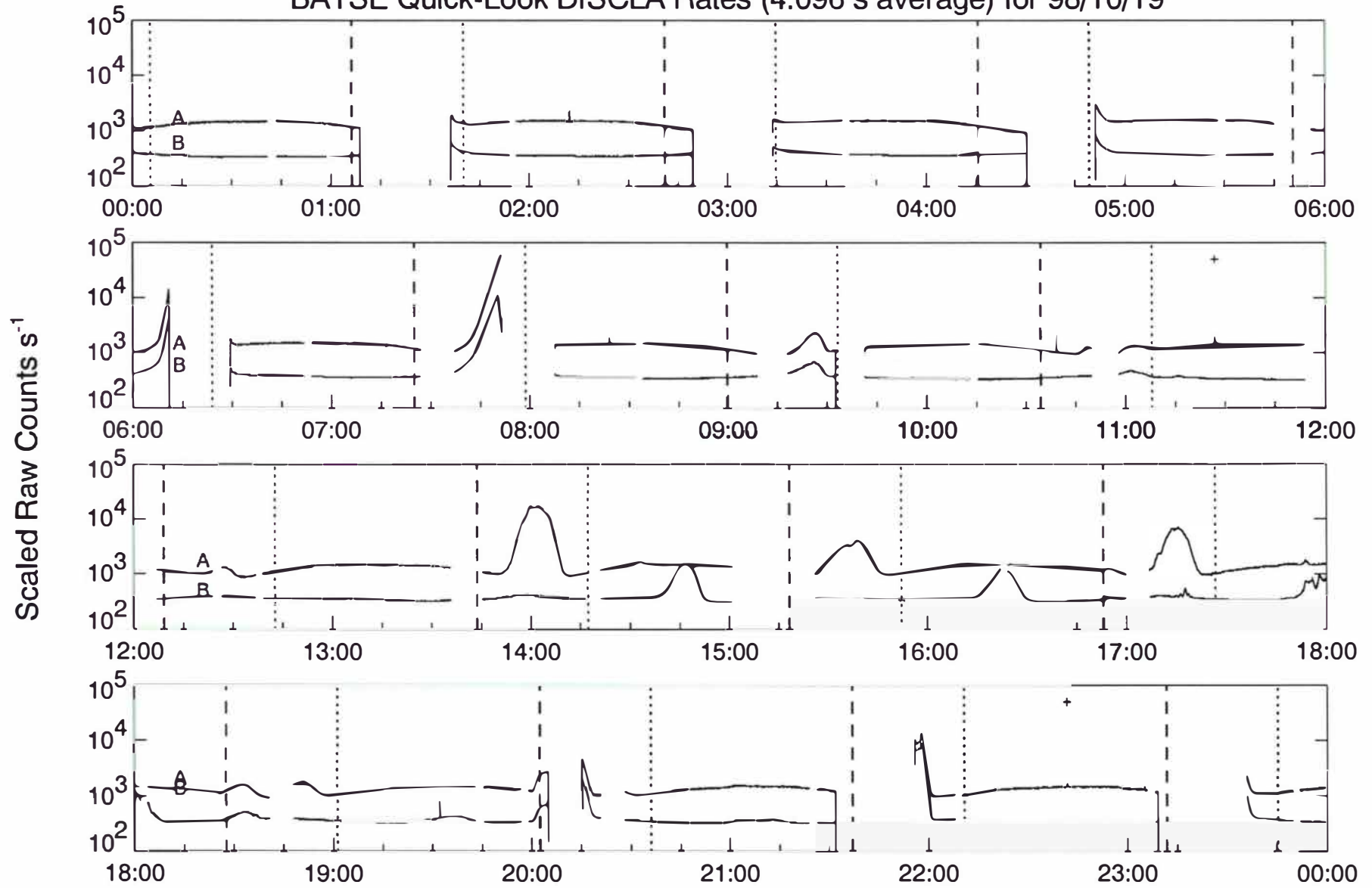


KOVUS

50- 200 keV



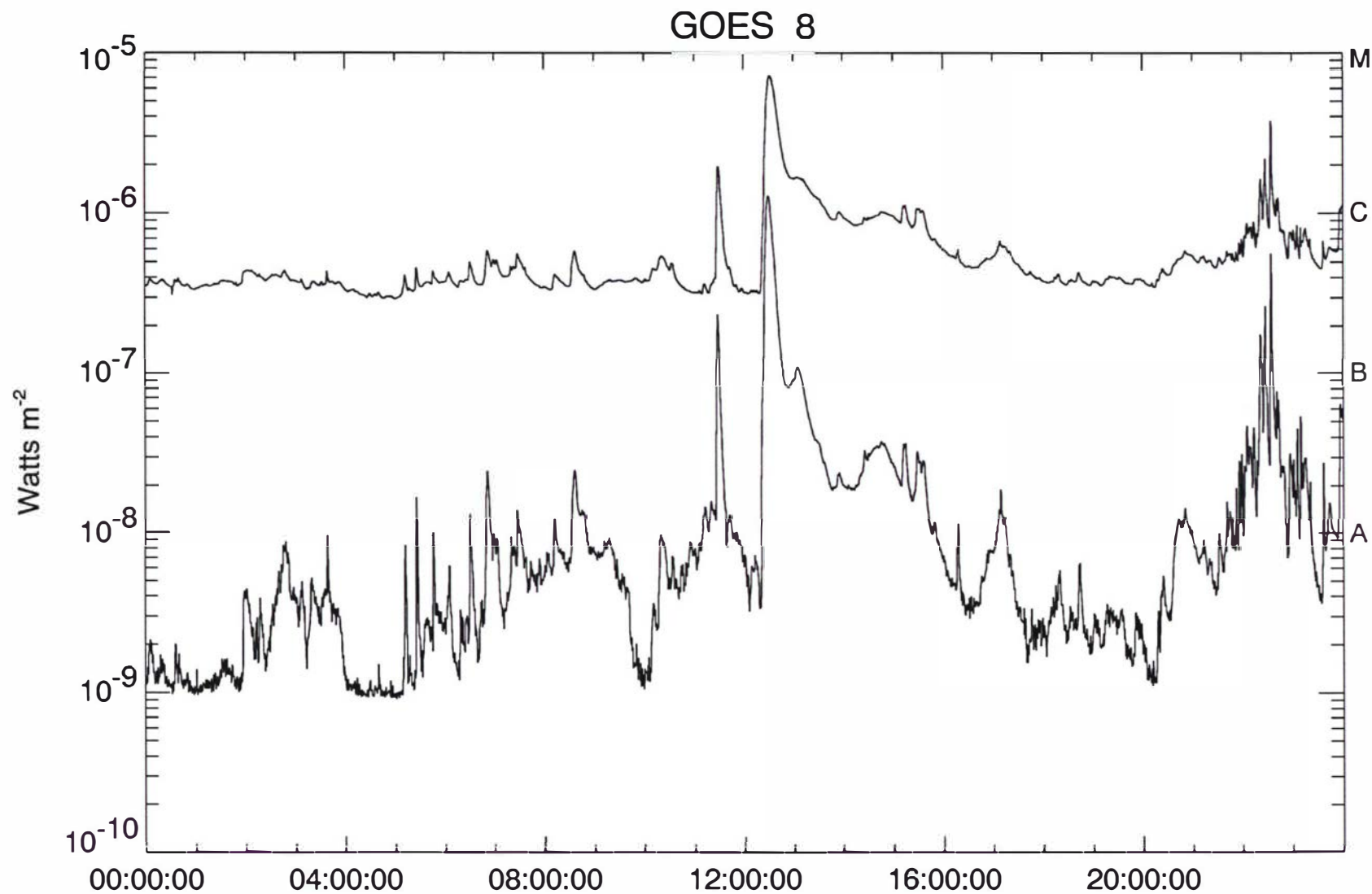
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/19



Current Time: 98/10/23, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/10/19, 0000:00

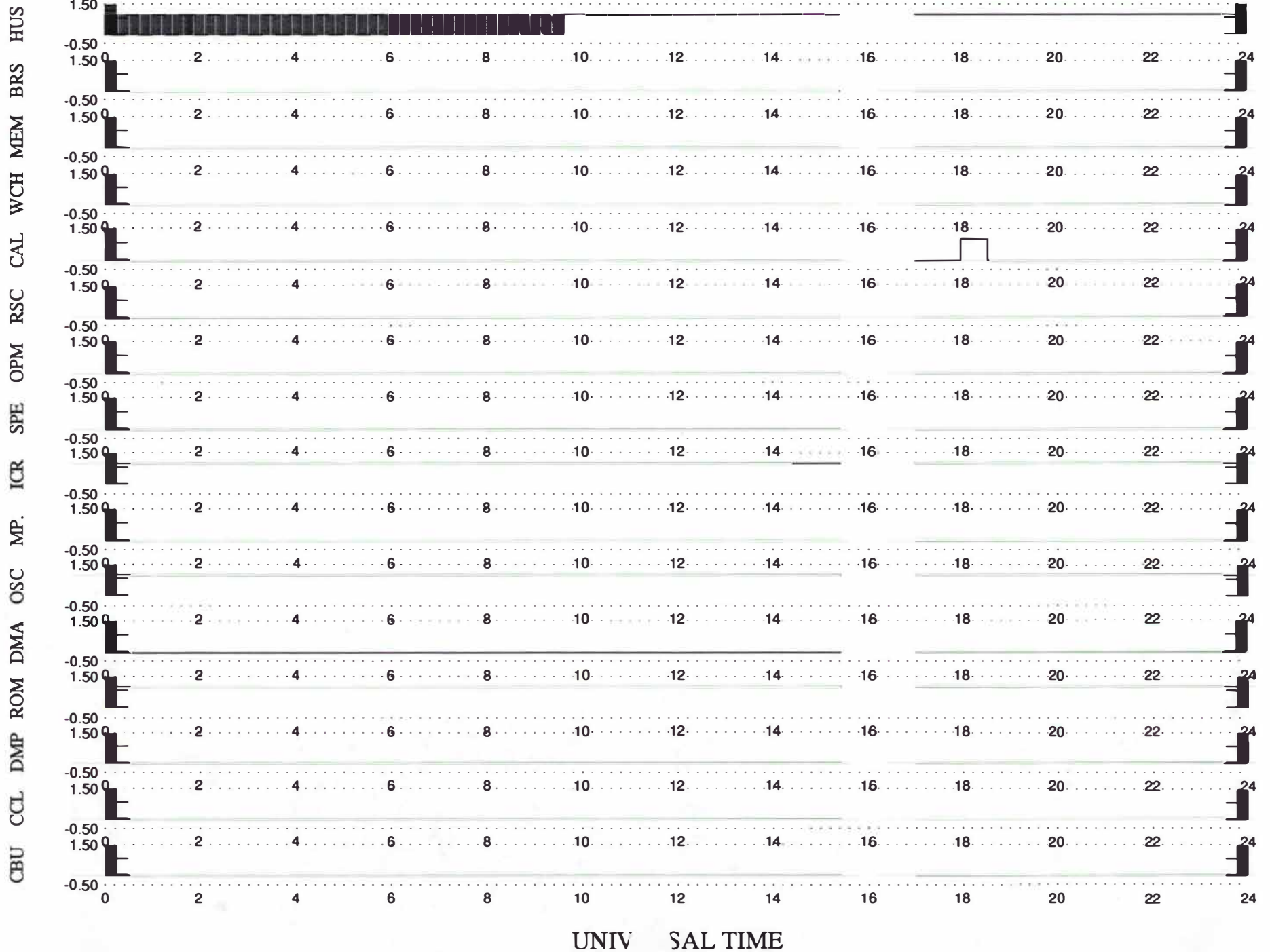
Plot created: 98/10/23, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

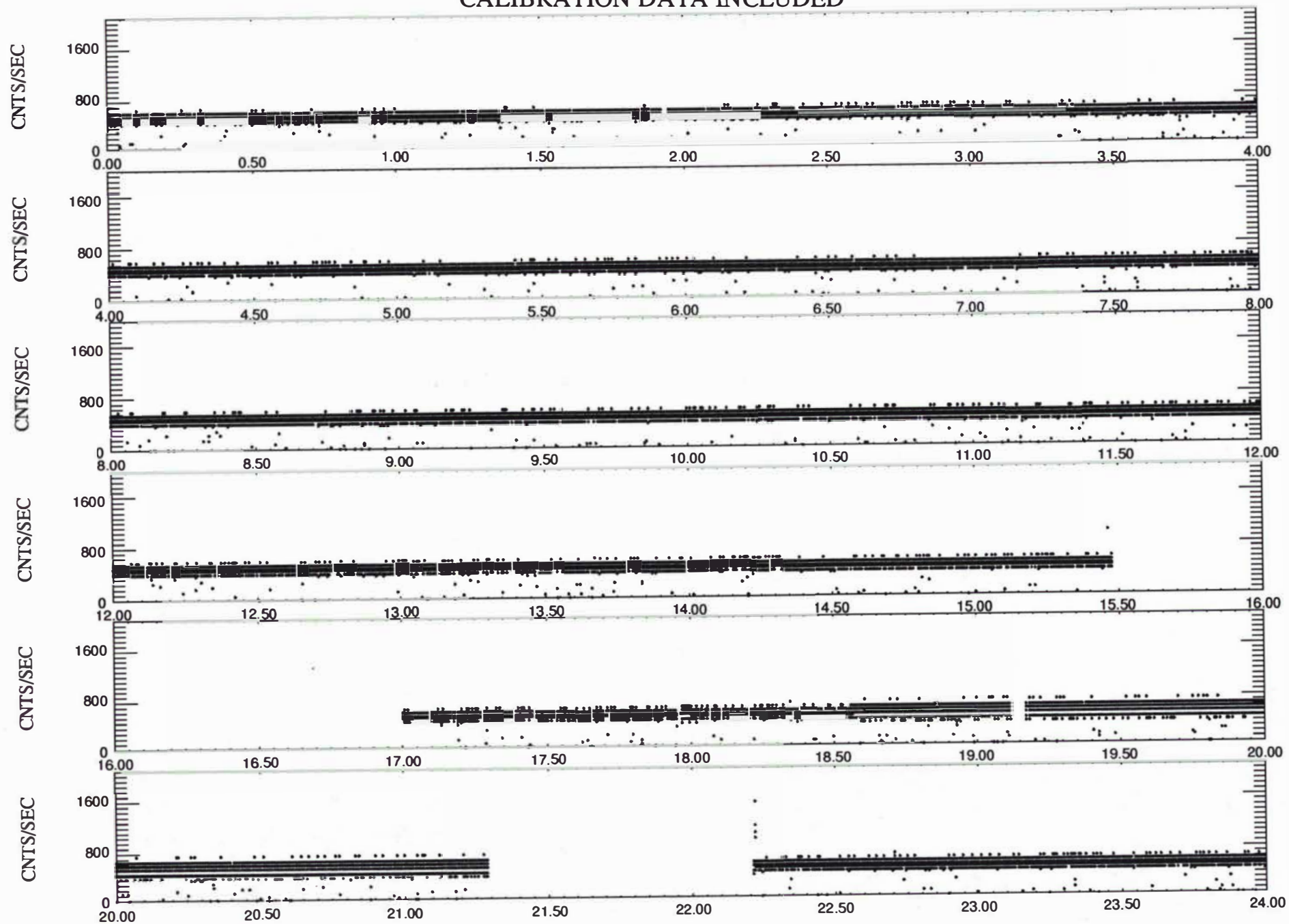
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

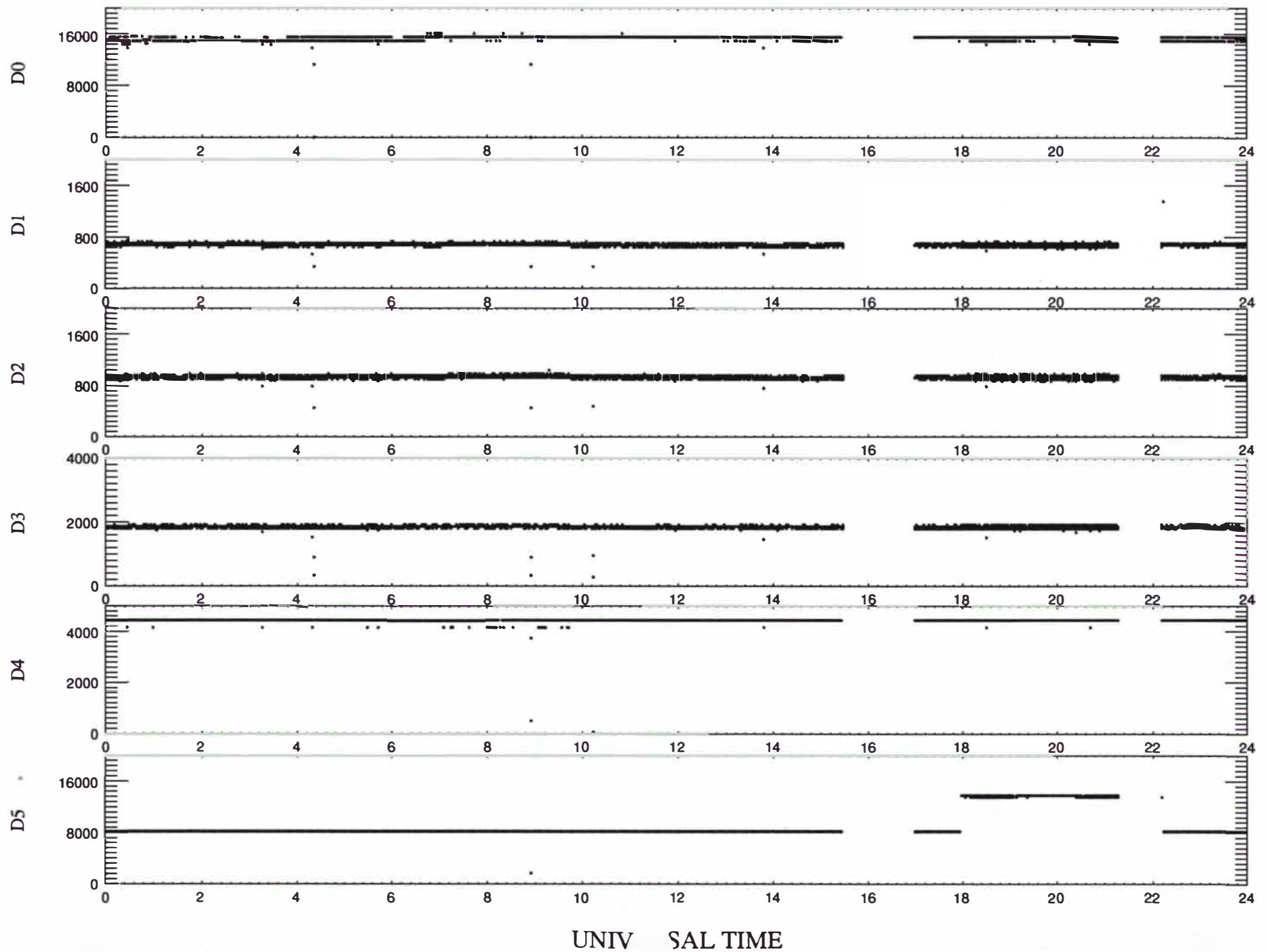
NO BURST (14)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From WOODSP@fender.msfc.nasa.gov Sat Oct 24 09:11:46 1998
Return-Path: <WOODSP@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA28990; Sat, 24 Oct 1998 09:11:46 -0700
From: WOODSP@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA25281; Sat, 24 Oct 1998 09:11:41 -0700
Date: Sat, 24 Oct 1998 10:58:50 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981024105850.20217b77@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7164
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7164
EVENT OF 1998 OCT 20 DAY OF YEAR=293
EVENT CROSSING TIME AT BATSE : 53192. S. OR 14:46:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 244.000 -5.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/10/ 98 IS:
RA= 164.518 DEC= -1.183 DIST= 6.003 AU
BATSE-ULYSSES DISTANCE = 898100842. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -550.05 SECS.
CROSSING TIME AT ULYSSES IS 52642. S. OR 14:37:21 +/- 552.91 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/10/ 98 IS:
RA= 159.807 DEC= 10.040 DIST= 2.125 AU
MARS-BATSE DISTANCE = 317881248. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 94.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -89.13 SECS.
CROSSING TIME AT MARS IS 53103. S. OR 14:45:02 +/- 182.09 SECONDS

BATSE BURST TRIGGER

NO.: 7164

TIME: TJD=1106 SECONDS=53192

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=135.0 AZIMUTH=99.5 ERROR=10 DEGREES

COMMENTS:

GRB LASTING ABOUT 10 SEC. MULTIPLE PEAKS. NOT VISIBLE ABOVE
300 KEV.

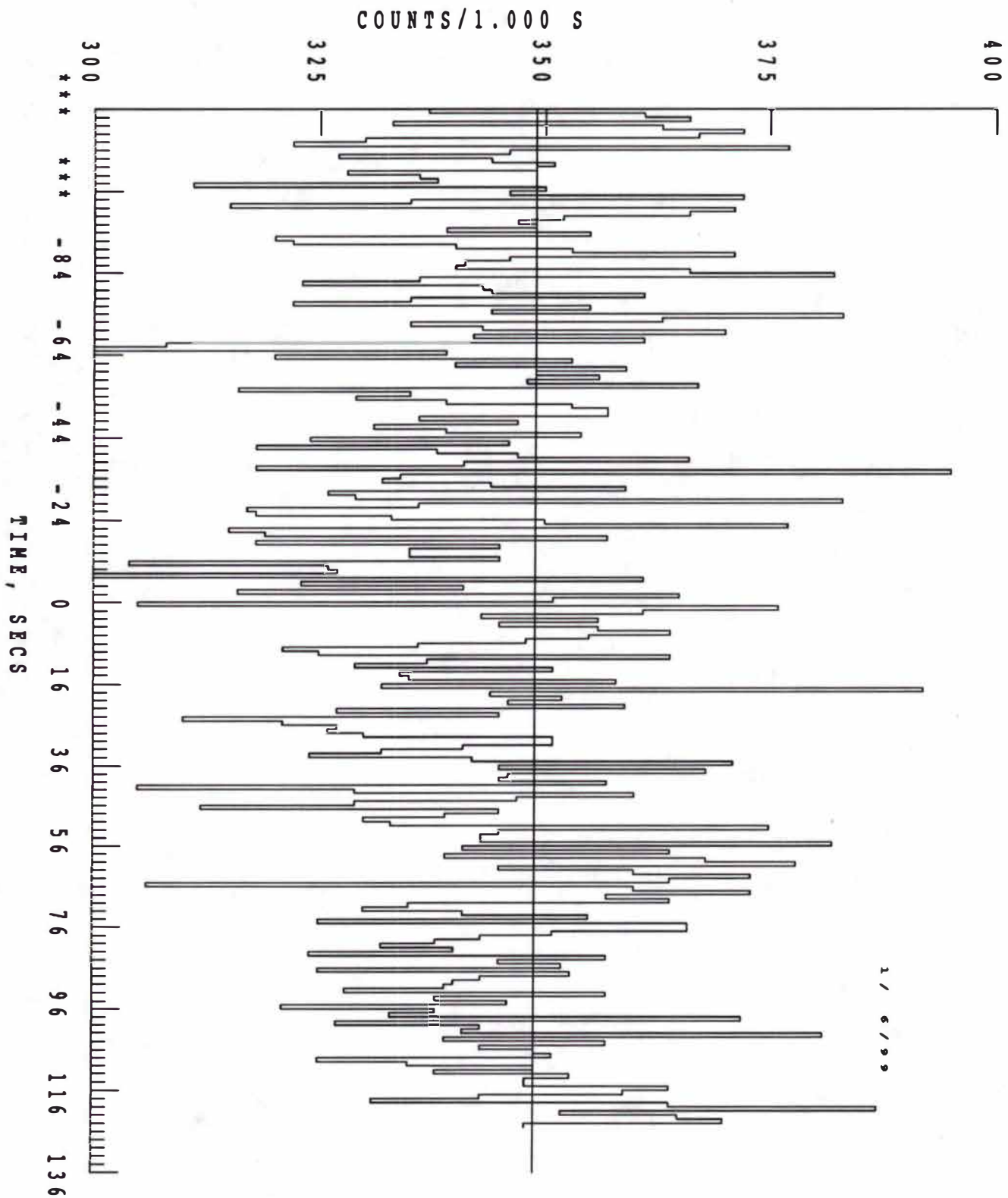
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7164	981020	11106	53192	4500	244	-05	10

NEAR

20/10/98

52335.915

100-1000 keV



BATSE BURST# 7164

ULYSSES RT

24 / 10 / 98

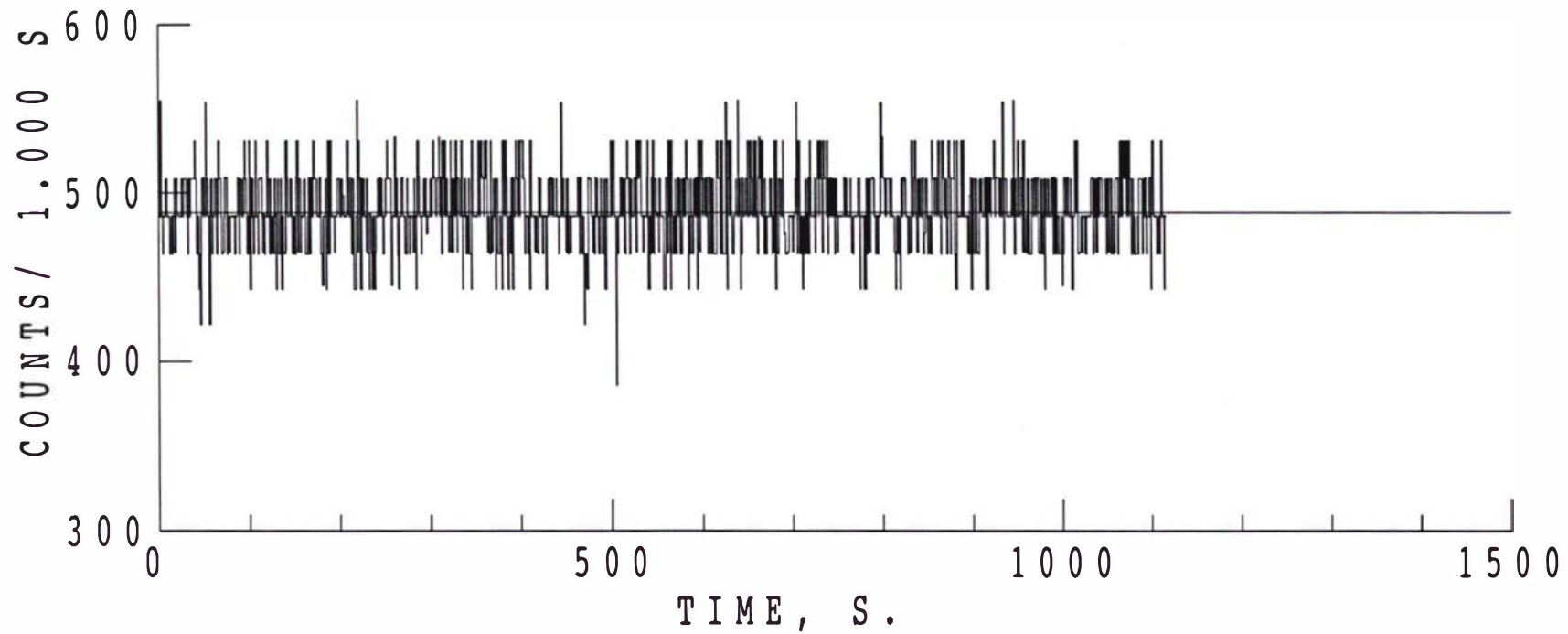
20 / 10 / 98 52092.324 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@fender.msfc.nasa.gov Sat Oct 24 09:12:24 1998
From: WOODSP@fender.msfc.nasa.gov
Date: Sat, 24 Oct 1998 10:57:02 -0500 (CDT)
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7165

TIME: TJD=1106 SECONDS=68927

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES AT A DISTANCE.

NEAR

ULYSSES RT

22 / 10 / 98

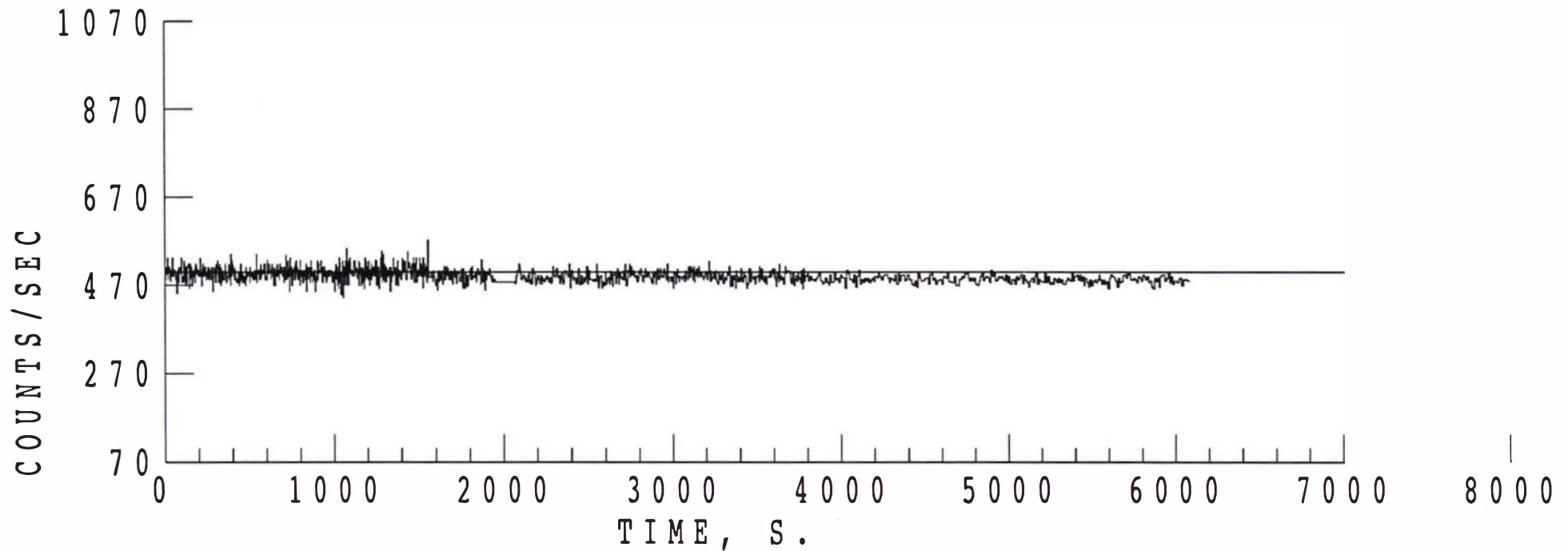
20 / 10 / 98 81108.125 s

INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

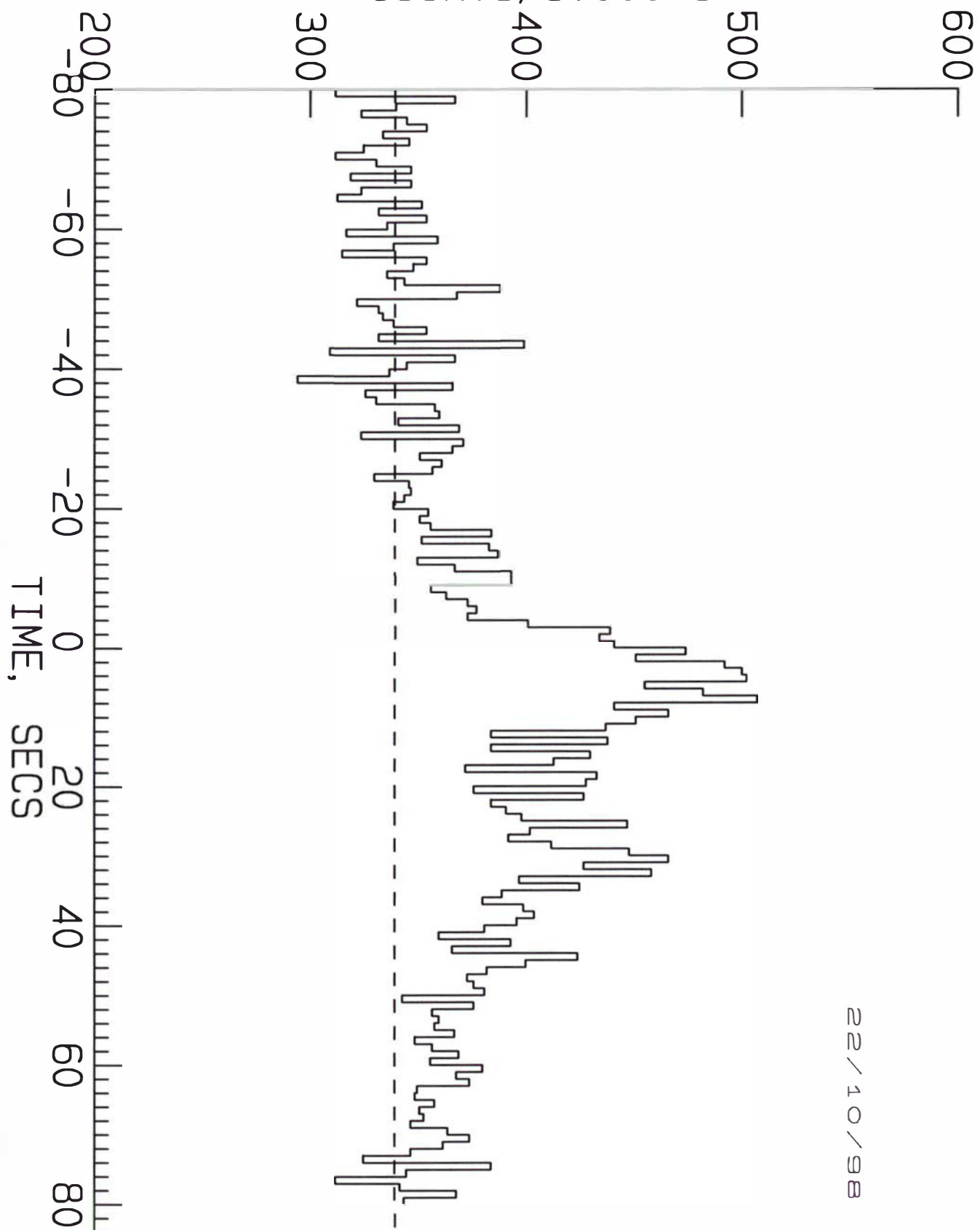


NEAR

20/10/98 84153.818

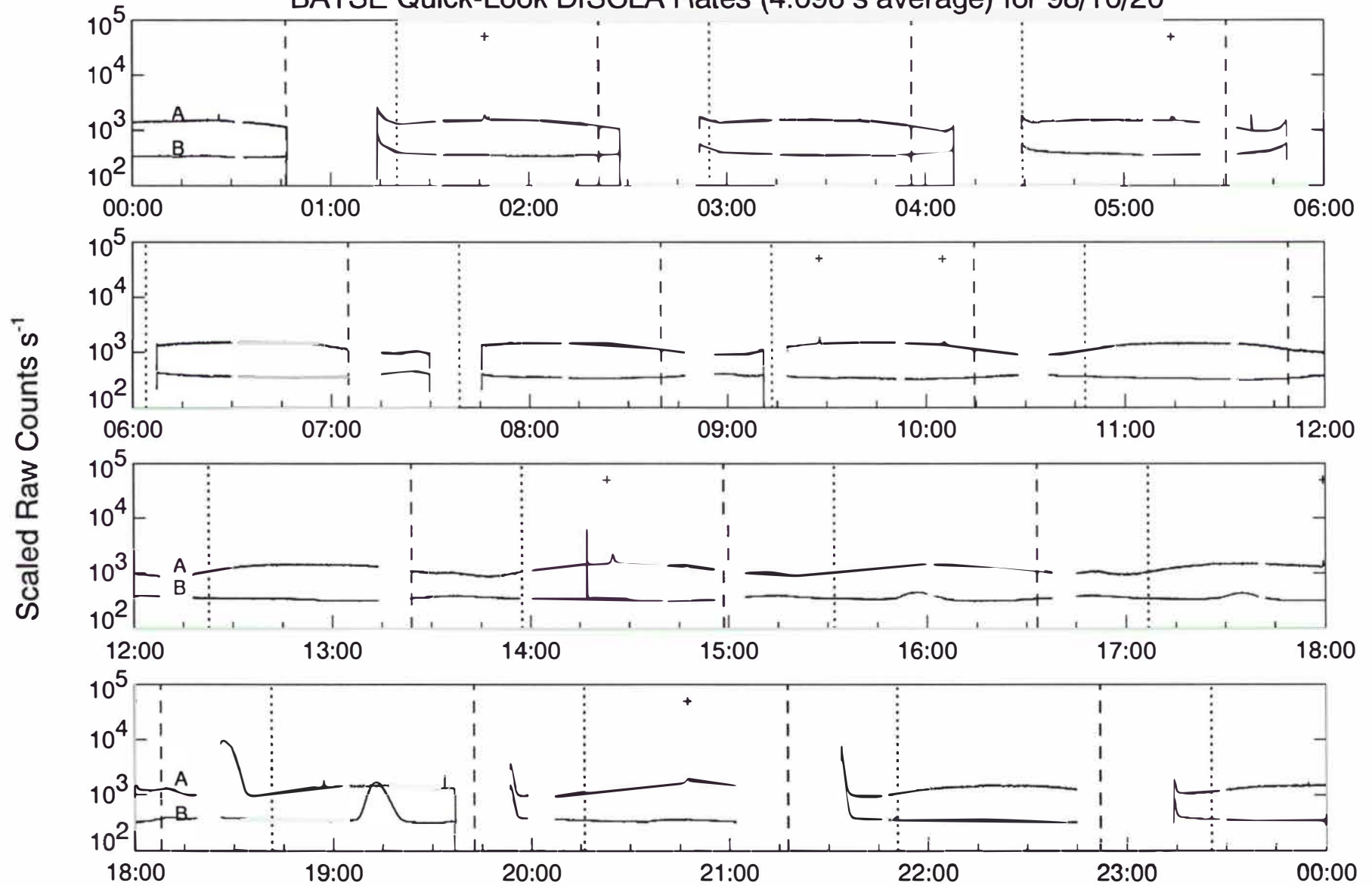
100-1000 keV

COUNTS/1.000 S



22/10/98

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/20

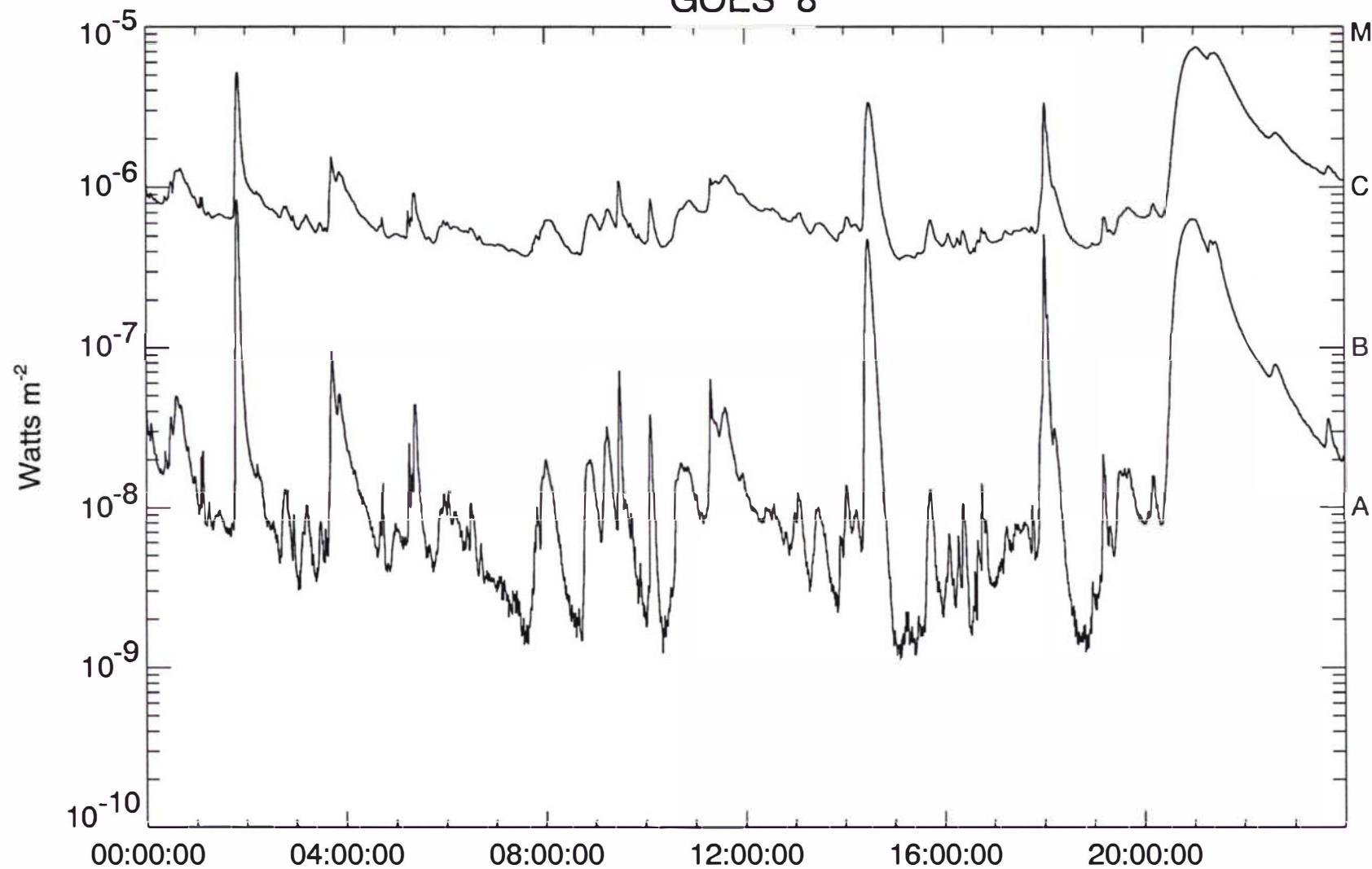


Current Time: 98/10/24, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/20, 0000:00

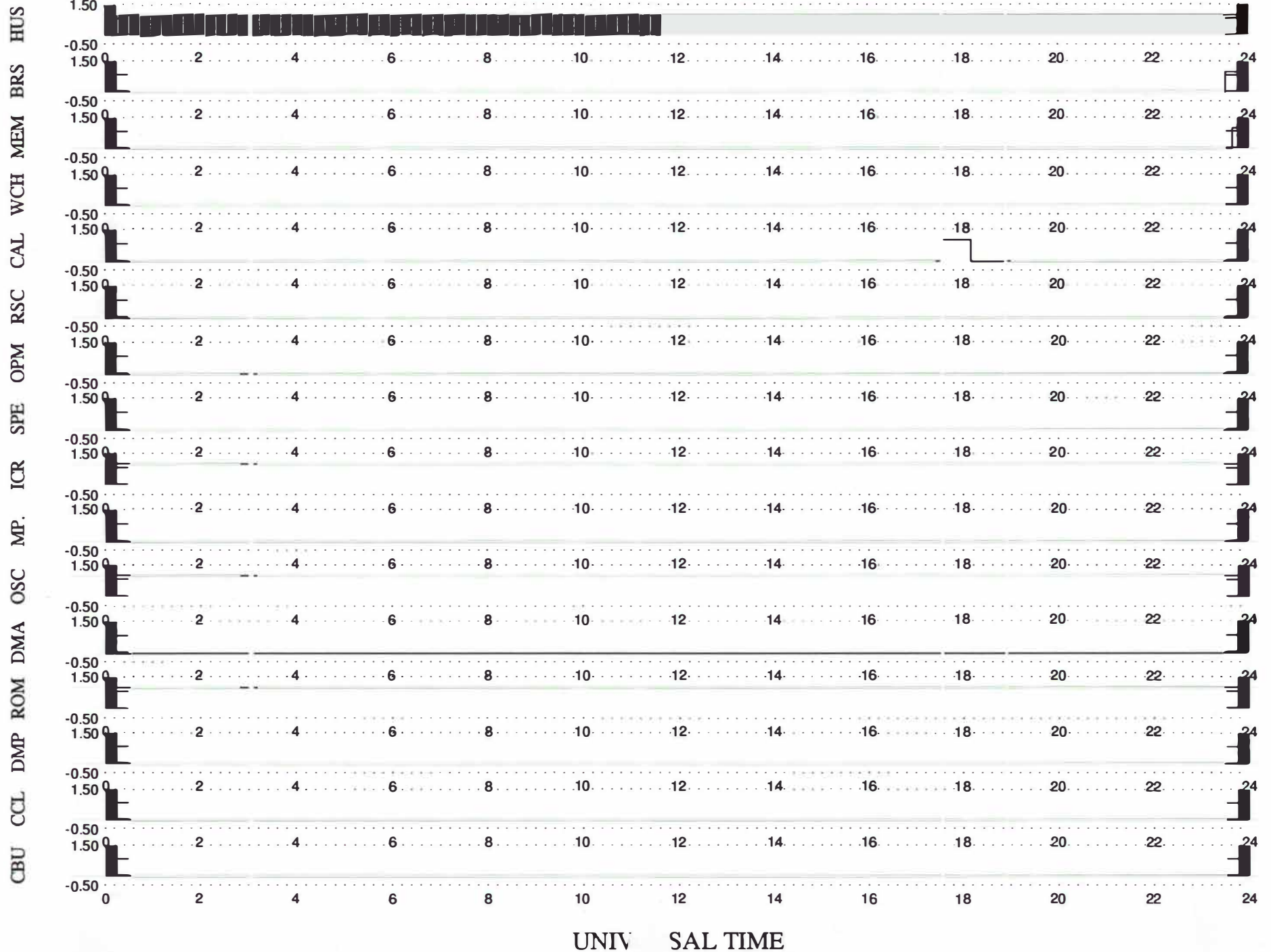
Plot created: 98/10/24, 1007

Channel

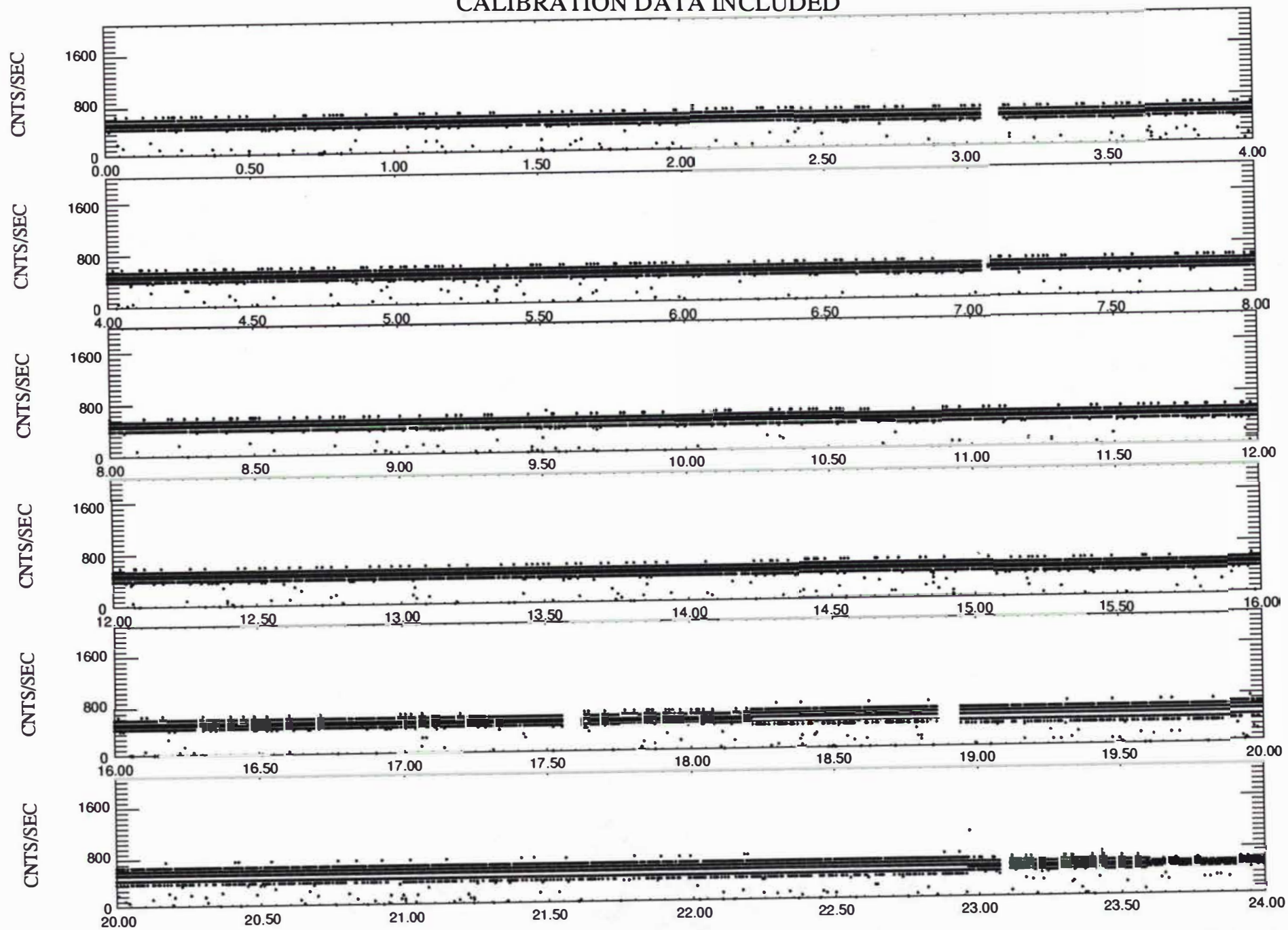
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 15

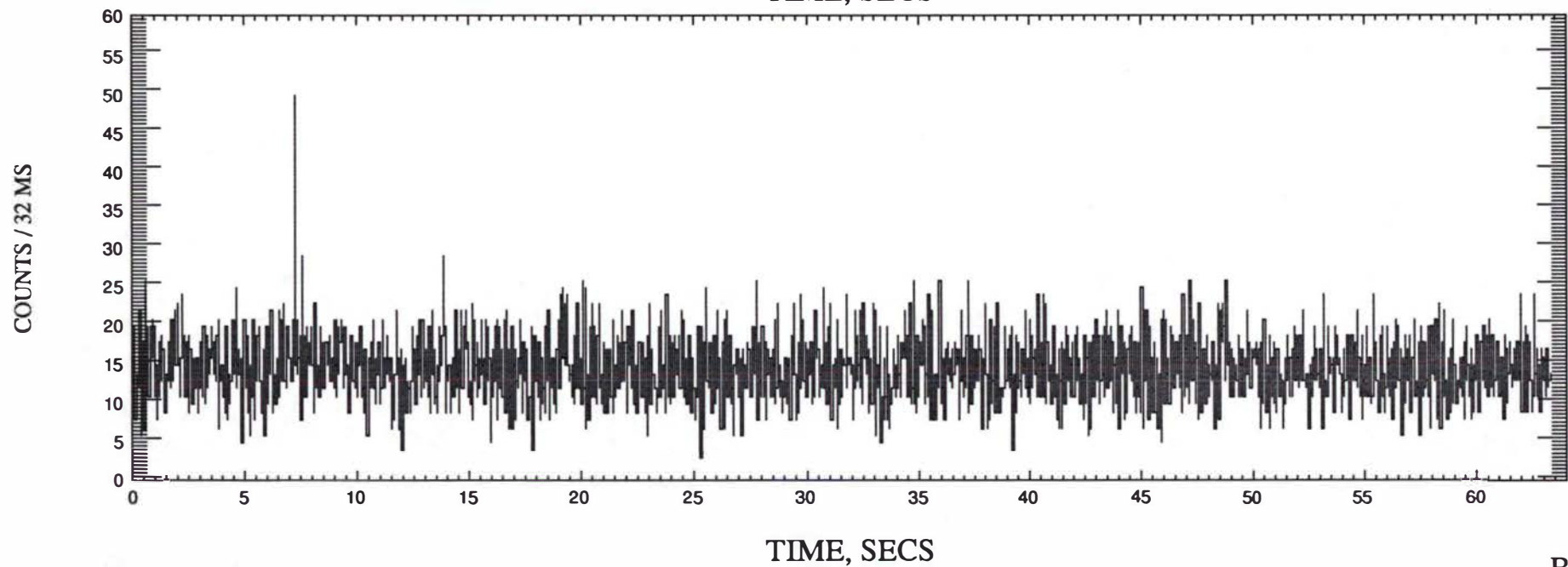
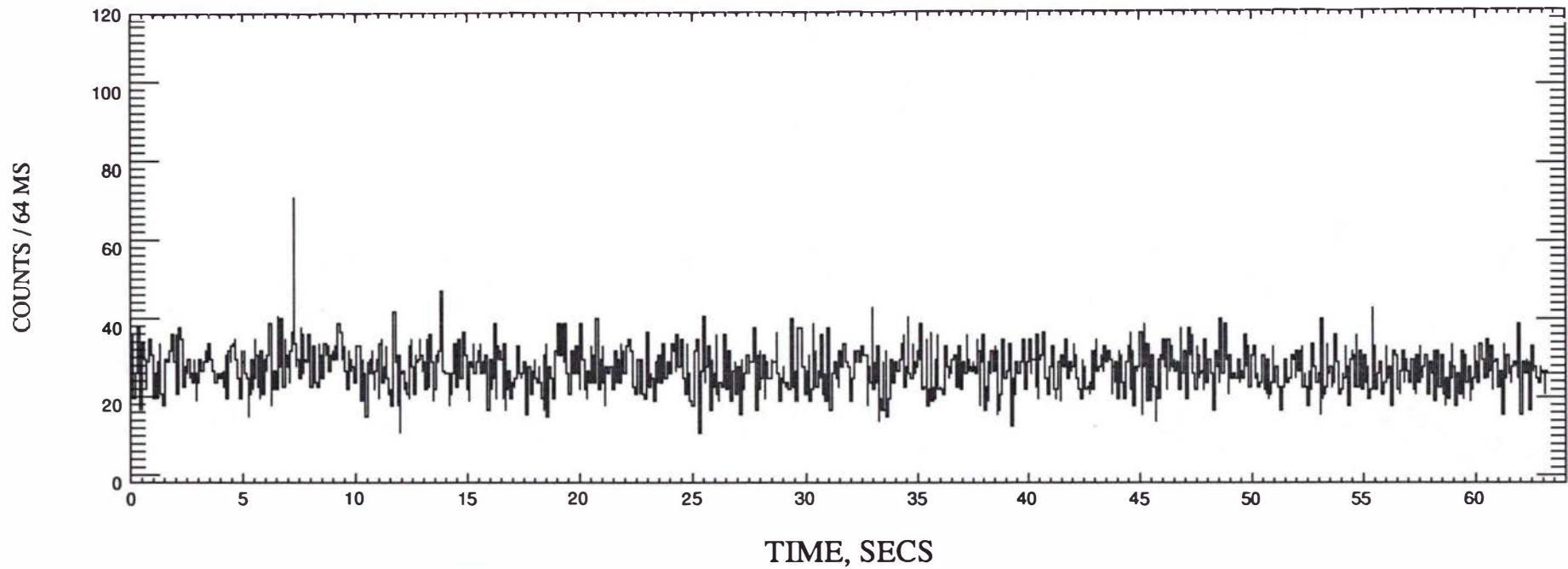


CALIBRATION DATA INCLUDED

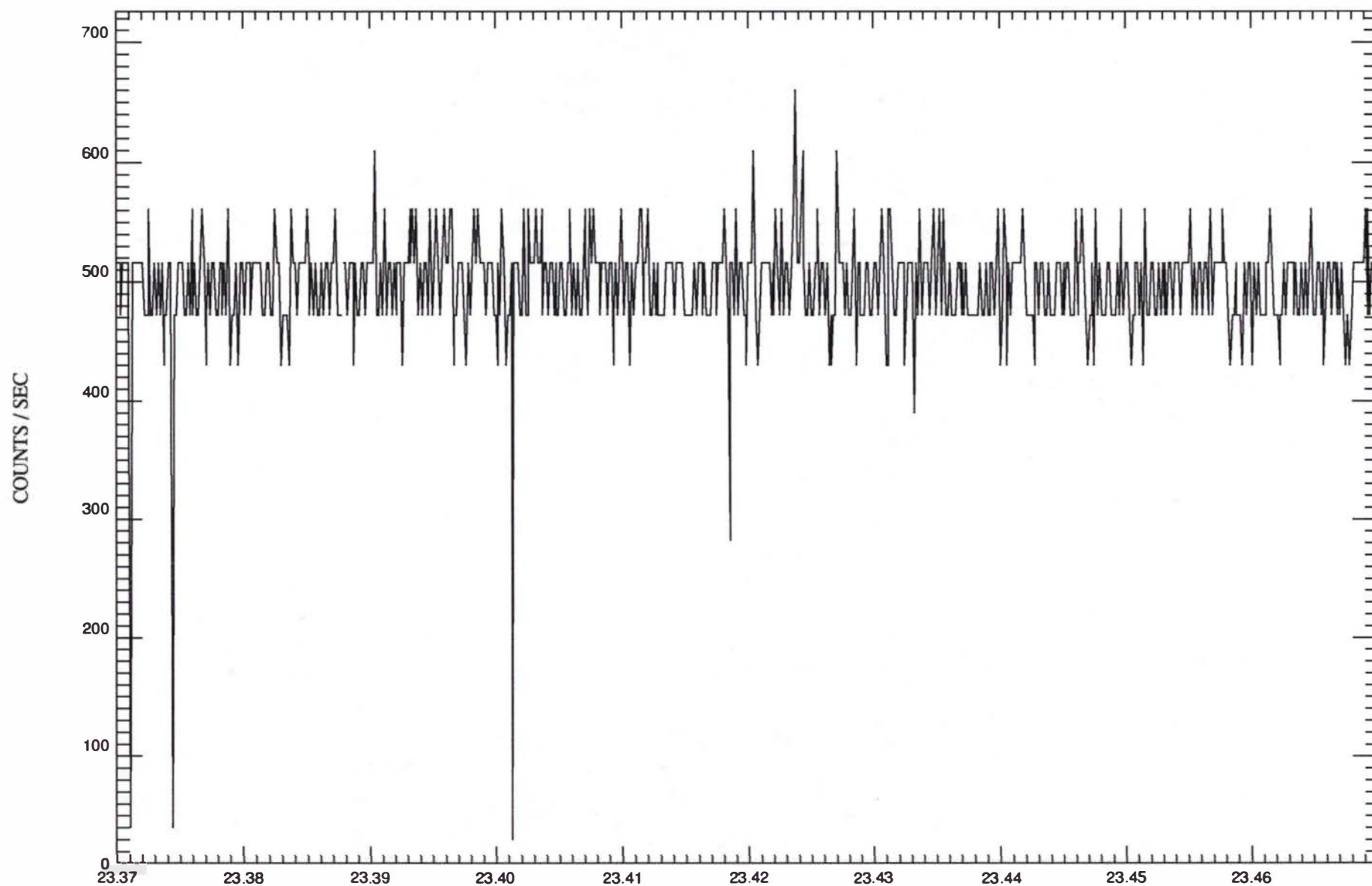


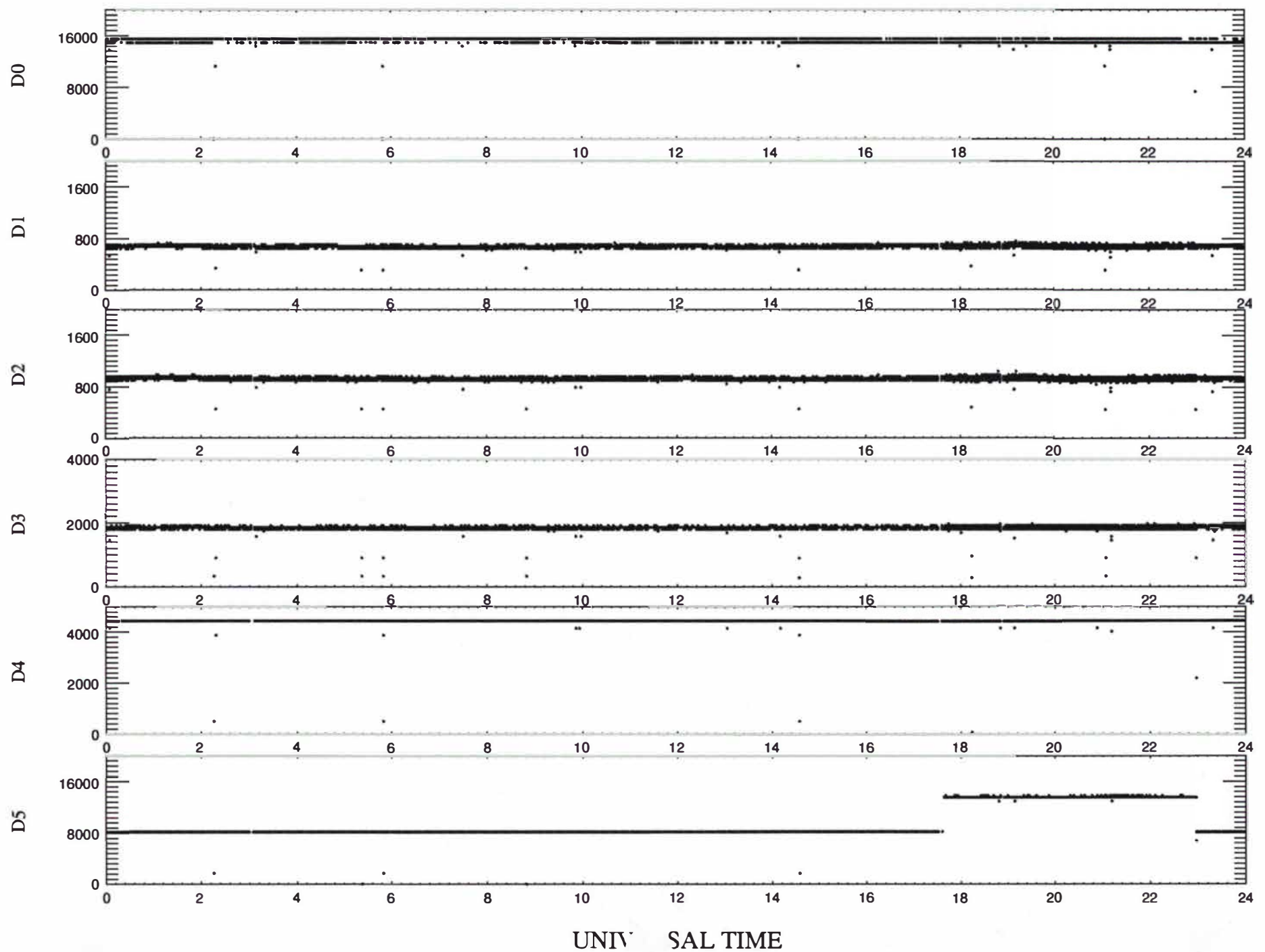
UNIV SAL TIME

Burst Counter 15 at UT=23.423857082791 h=84325.885 s 23:25:25.885



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Fri Oct 23 16:34:15 1998
Date: Fri, 23 Oct 1998 18:32:04 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7166

TIME: TJD=1107 SECONDS= 7507

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From HENZE@fender.msfc.nasa.gov Fri Oct 23 16:33:48 1998
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA23928; Fri, 23 Oct 1998 16:33:47 -0700
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA13360; Fri, 23 Oct 1998 16:33:45 -0700
Date: Fri, 23 Oct 1998 18:28:28 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981023182828.20217872@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7167
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7167
EVENT OF 1998 OCT 21 DAY OF YEAR=294
EVENT CROSSING TIME AT BATSE : 34588. S. OR 09:36:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 134.000 58.000
BATSE PEAK COUNTING RATE: 3800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/10/ 98 IS:
RA= 164.597 DEC= -1.265 DIST= 5.993 AU
BATSE-ULYSSES DISTANCE = 896612298. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1307.87 SECS.
CROSSING TIME AT ULYSSES IS 33280. S. OR 09:14:40 +/- 497.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/10/ 98 IS:
RA= 160.376 DEC= 9.821 DIST= 2.118 AU
MARS-BATSE DISTANCE = 316851040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=127.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -647.30 SECS.
CROSSING TIME AT MARS IS 33941. S. OR 09:25:40 +/- 135.22 SECONDS

BATSE BURST TRIGGER

NO.: 7167

TIME: TJD=1107 SECONDS=34588

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 60.6 AZIMUTH= 17.4 ERROR= 4.7 DEGREES

COMMENTS:

MULTIPLE PULSES, DUR. APPROX. 50 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7167	981021	11107	34588	3800	134	+58	50

Date: 20/1/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Were data checked by Joe Springer for 0.5 s errors? *N/A*
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No - bad stats*

2. BATSE Data

- ☒ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)?
- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data *N/A*

- ☐ Final, correct time used? (Files on website have the correct time)
- ☐ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

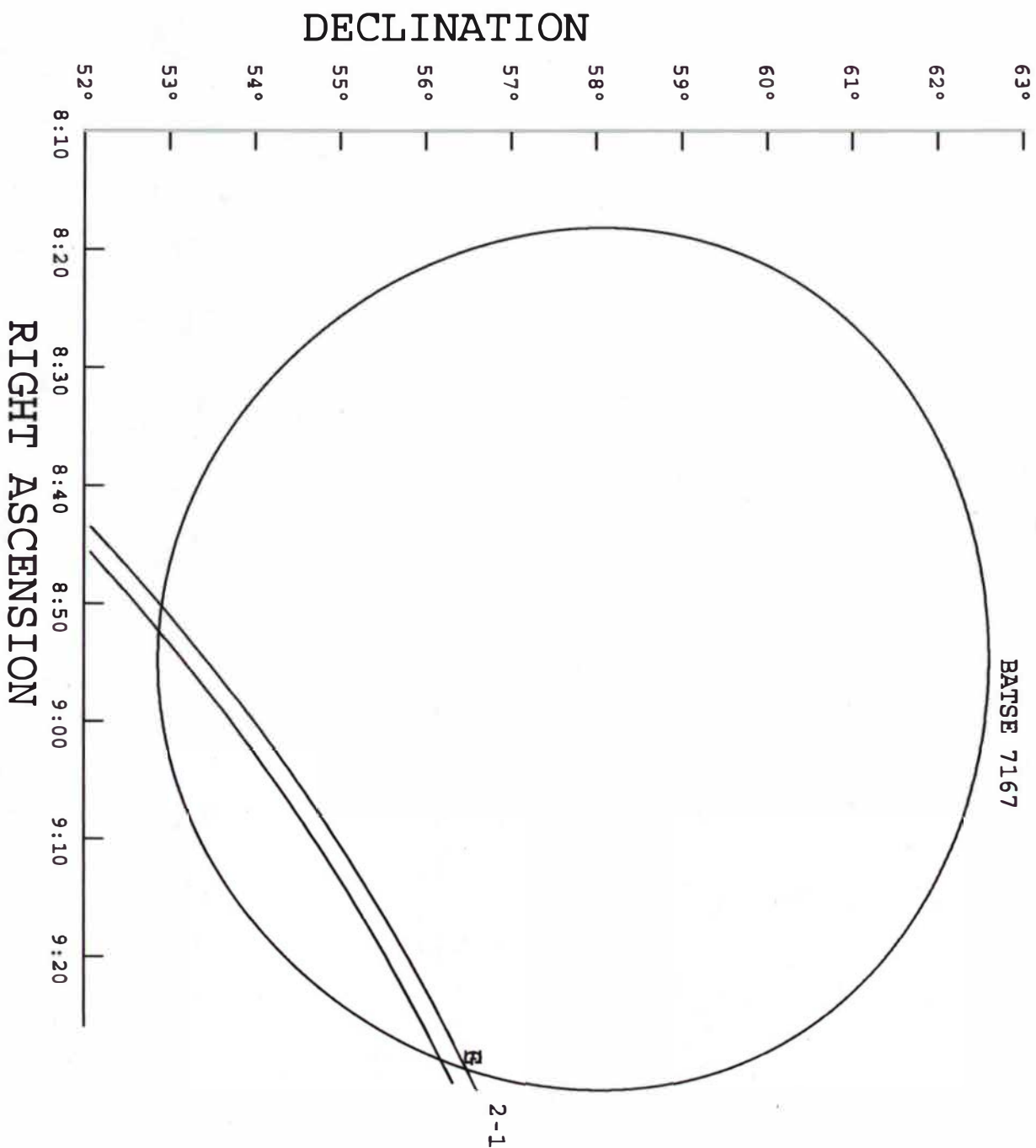
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF OCT 21, 1998 9:36

20 / 1 / 0



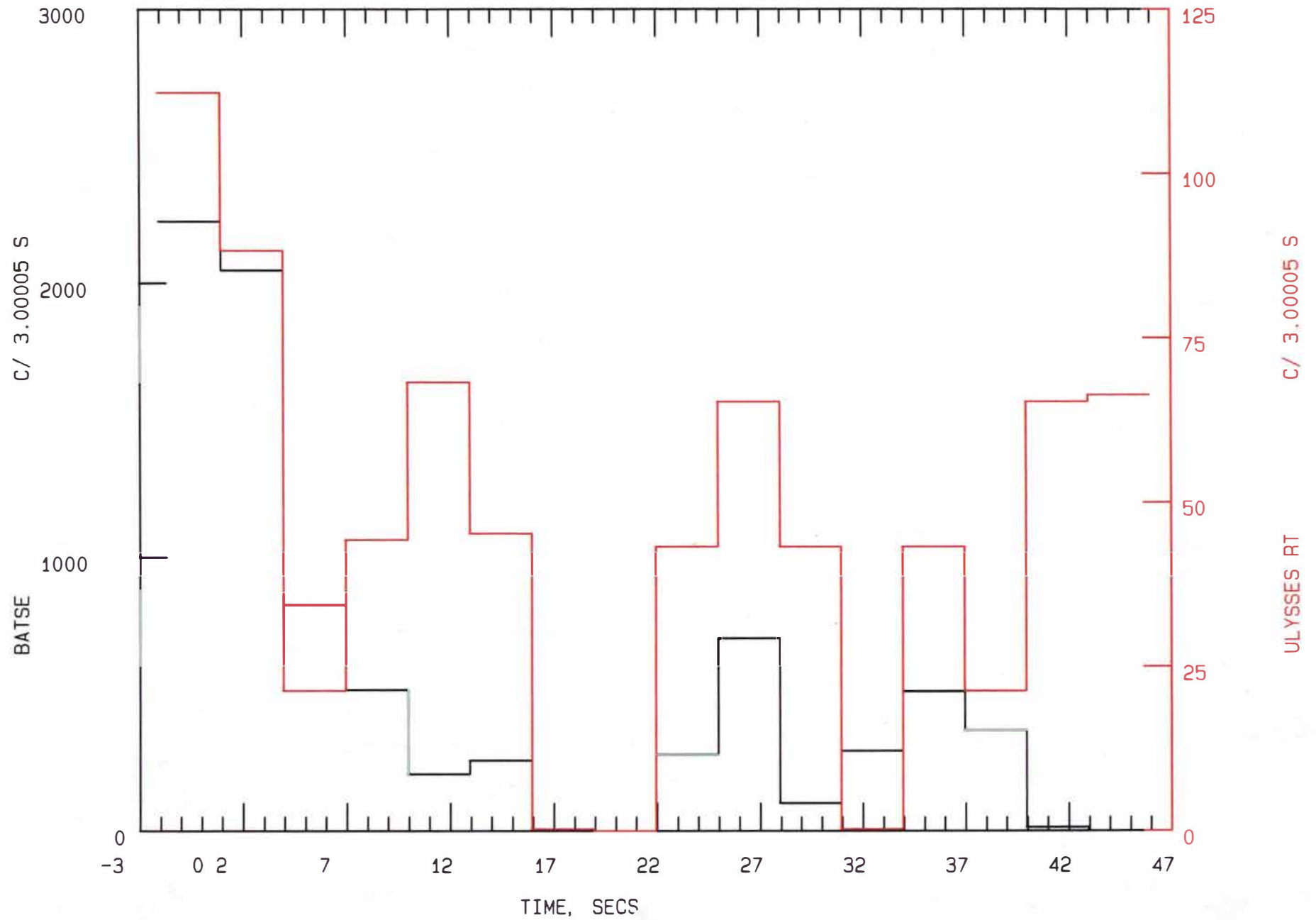
BATSE

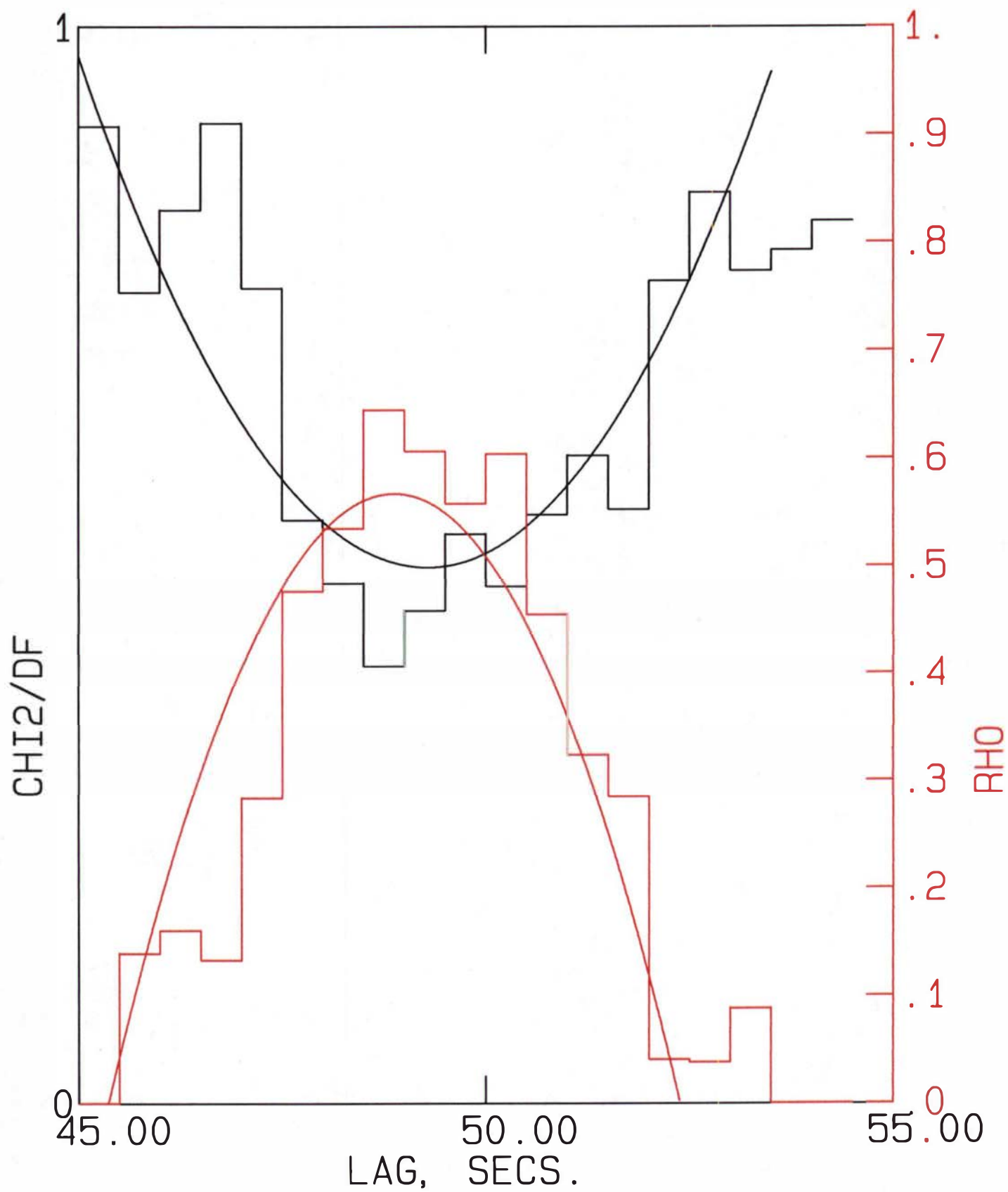
-ULYSSES RT CORRELATION

21/10/98

34588.641

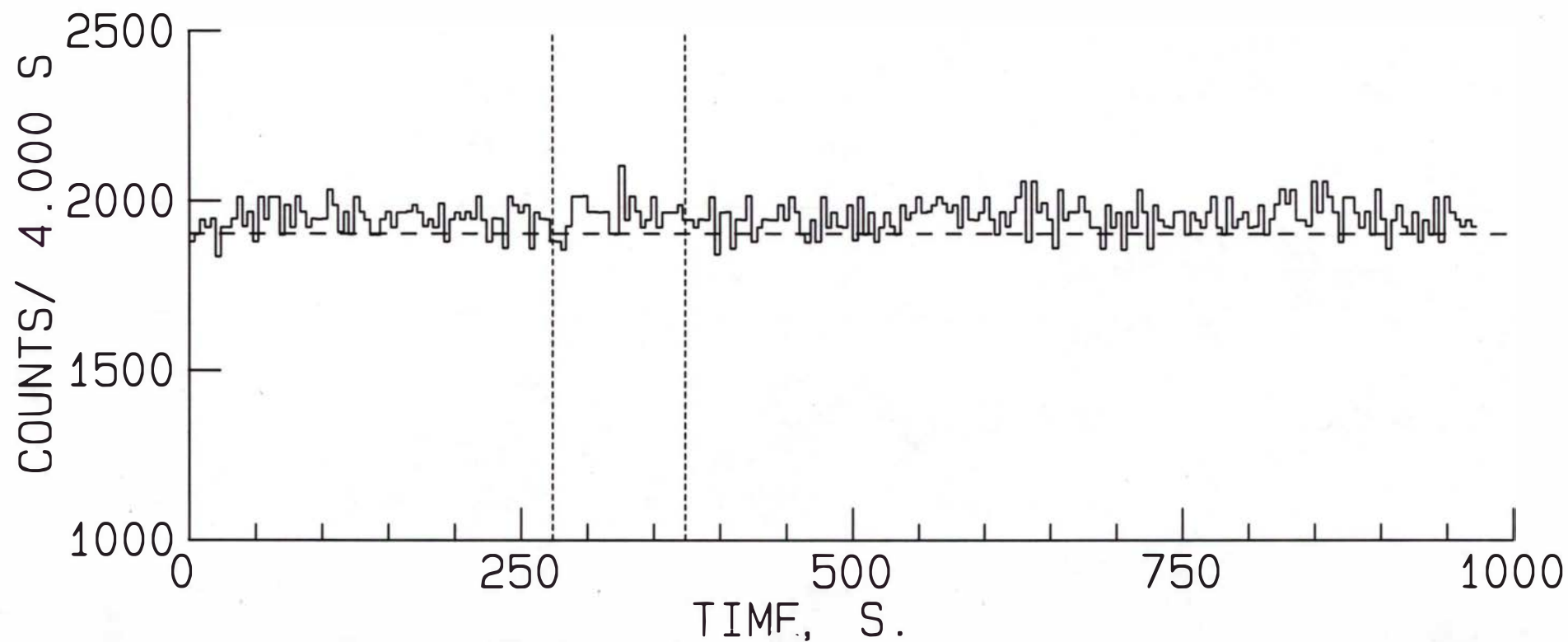
20/ 1/ 0





ULYSSES RT
21/10/98 32796.016 s
0.500 S INTERVALS REGROUPED BY 8
22- 149 keV

20 / 1 / 0

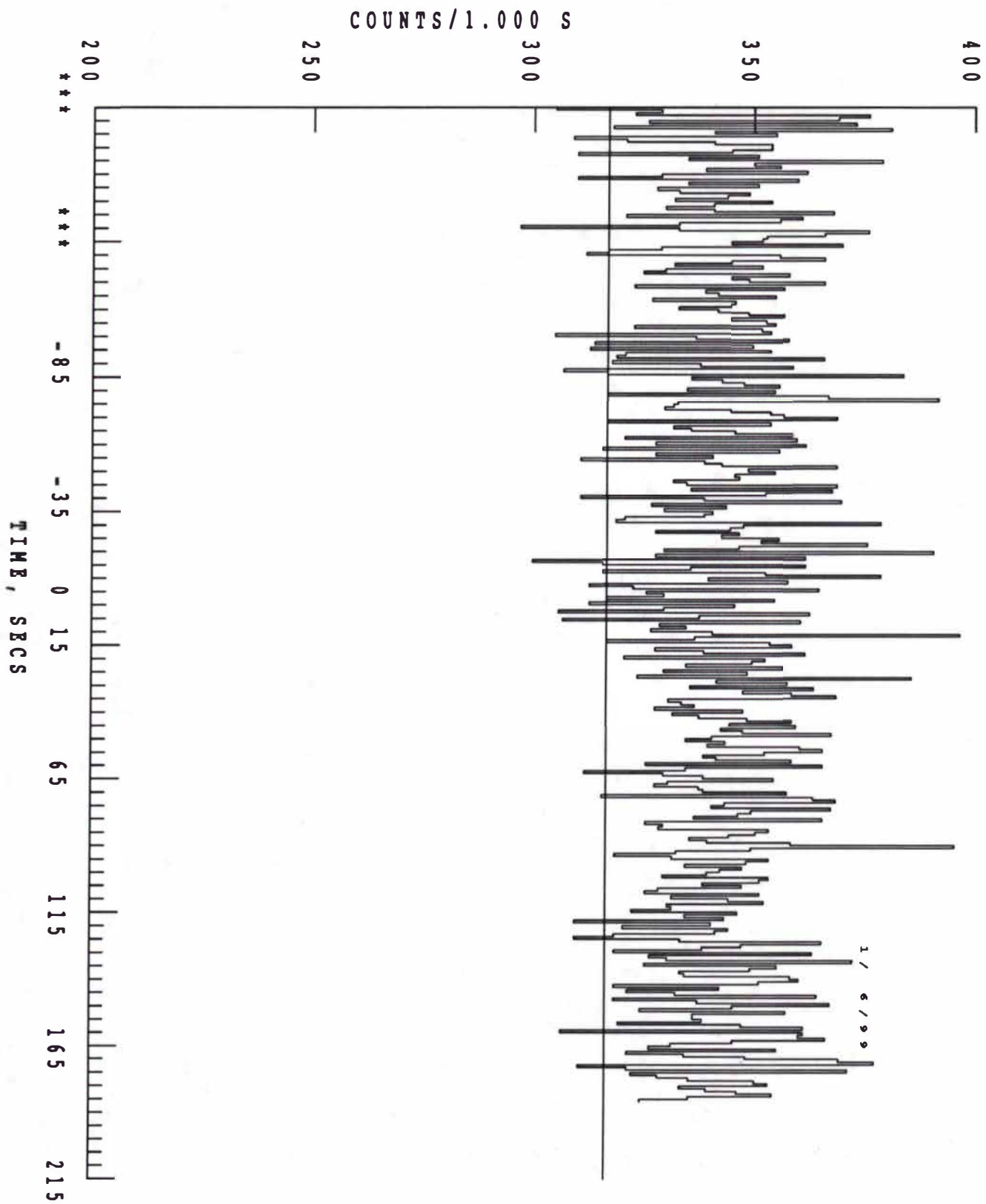


NEAR

21/10/98

35278.896

100-1000 keV



BATSE

21/10/98

34588.641

25- 100 keV

COUNTS/0.064 S

500

400

300

200

-3

01

5

9

13

17

21

25

29

33

37

41

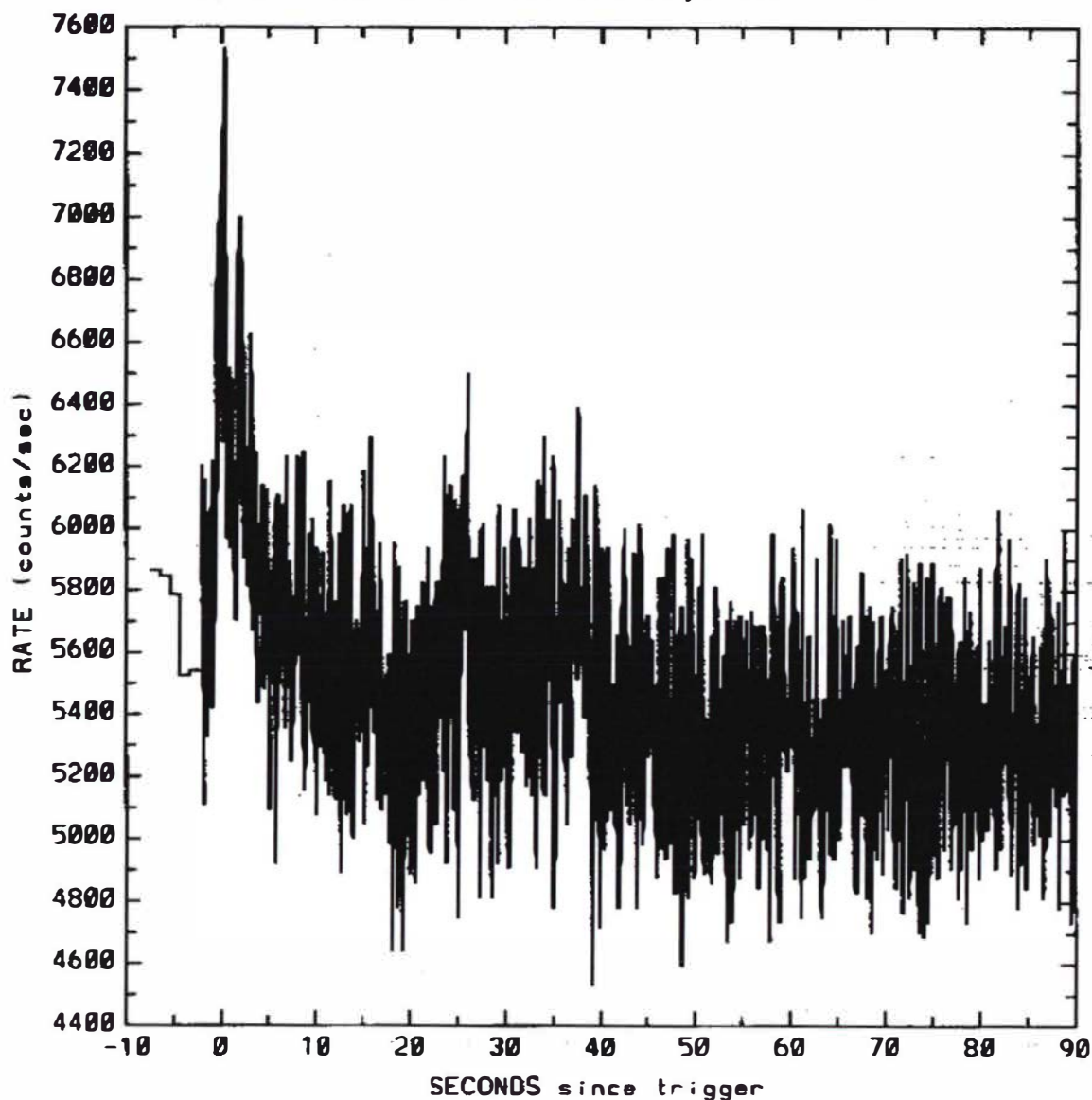
45

49

T
IE. SECS

10/12/98

DISCSC Data for K. Hurley. No. 7167



28-OCT-1998 11:38:50

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 7167

Trigger Time:
11107 / 34588.641Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8].
-----2-8Discriminators:
[1 . 2]Quality Mask:
BDISP1

From HENZE@fender.msfc.nasa.gov Sat Oct 24 09:12:54 1998
Date: Sat, 24 Oct 1998 11:11:59 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7168

TIME: TJD=1107 SECONDS=57752

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=127.7 AZIMUTH=308.6 ERROR= 12.7 DEGREES

COMMENTS:

TERRESTRIAL GAMMA-RAY FLASH. MULTIPLE SPIKES, TOTAL DUR. APPROX. 0.011 S.
NOT VISIBLE BELOW 100 KEV.

From HENZE@fender.msfc.nasa.gov Fri Oct 23 16:34:29 1998
Date: Fri, 23 Oct 1998 18:34:17 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7169

TIME: TJD=1107 SECONDS=67534

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From HENZE@fender.msfc.nasa.gov Fri Oct 23 16:33:57 1998
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA23932; Fri, 23 Oct 1998 16:33:56 -0700
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA13372; Fri, 23 Oct 1998 16:33:53 -0700
Date: Fri, 23 Oct 1998 18:30:27 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981023183027.20217872@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7170
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7170
EVENT OF 1998 OCT 21 DAY OF YEAR=294
EVENT CROSSING TIME AT BATSE : 83292. S. OR 23:08:12.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 357.000 2.000
BATSE PEAK COUNTING RATE: 55000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/10/ 98 IS:
RA= 164.652 DEC= -1.324 DIST= 5.986 AU
BATSE-ULYSSES DISTANCE = 895537424. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 12.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2917.95 SECS.
CROSSING TIME AT ULYSSES IS 86210. S. OR 23:56:49 +/- 205.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/10/ 98 IS:
RA= 160.376 DEC= 9.821 DIST= 2.118 AU
MARS-BATSE DISTANCE = 316851040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 20.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 990.99 SECS.
CROSSING TIME AT MARS IS 84283. S. OR 23:24:42 +/- 78.84 SECONDS

BATSE BURST TRIGGER

NO.: 7170

TIME: TJD=1107 SECONDS=83292

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 51.7 AZIMUTH=184.9 ERROR=1.7 DEGREES

COMMENTS:

TWO PULSES, TOTAL DUR. APPROX. 105 S. FIRST PULSE HAS STRUCTURE, DUR. APPROX.
30 S. SECOND PULSE STARTS AT APPROX. T+85 S, DUR. APPROX. 30 S.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7170	981021	11107	83292	55000	357	+02	105

Date: Feb 15 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No - bad stats*

2. BATSE Data

- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vwx@boccl, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

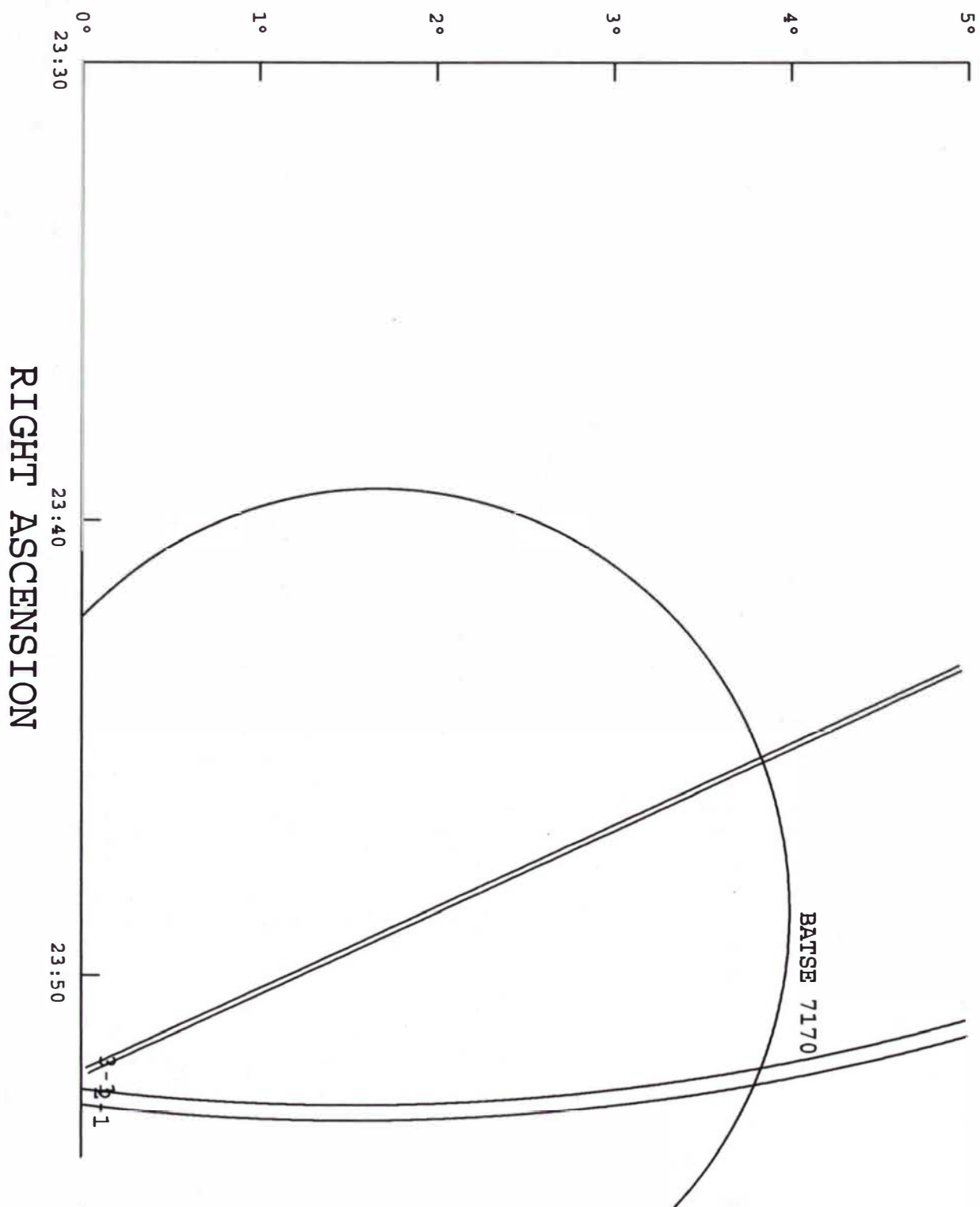
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

3 NEAR

DECLINATION



EVENT OF OCT 21, 1998 23:08

15 / 2 / 0

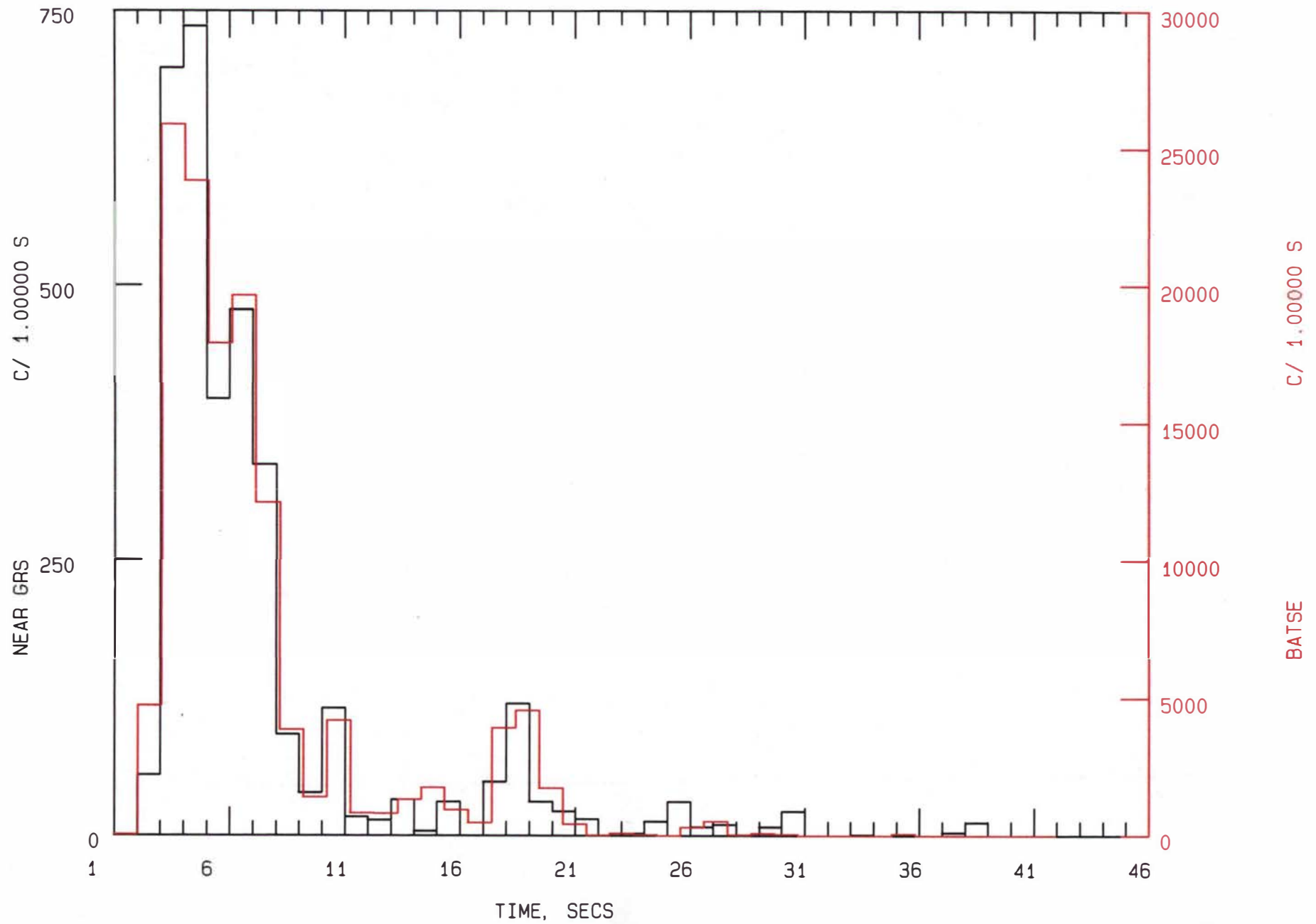
NEAR GRS -BATSE

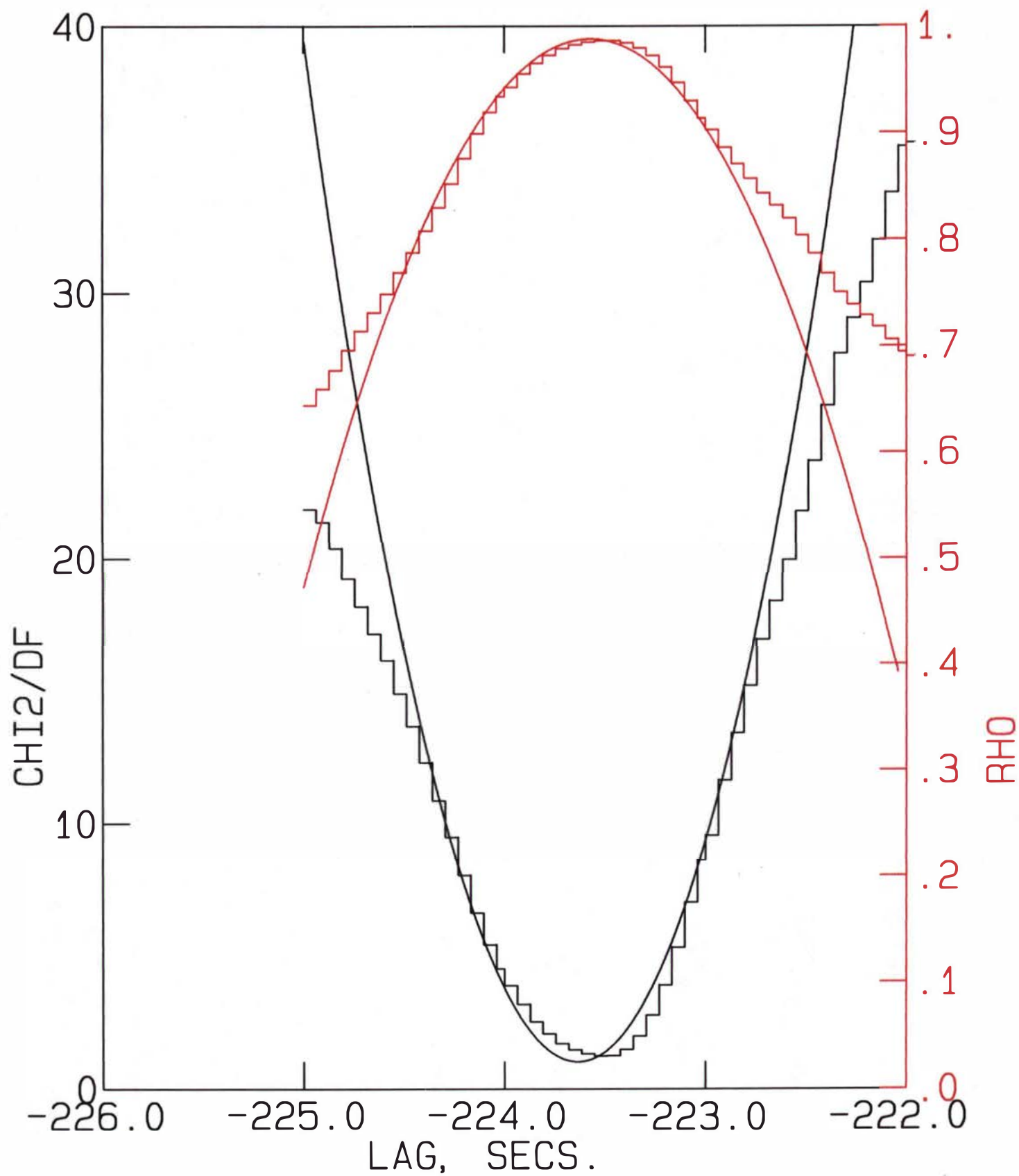
CORRELATION

21/10/98

83261.883

15/ 2/ 0





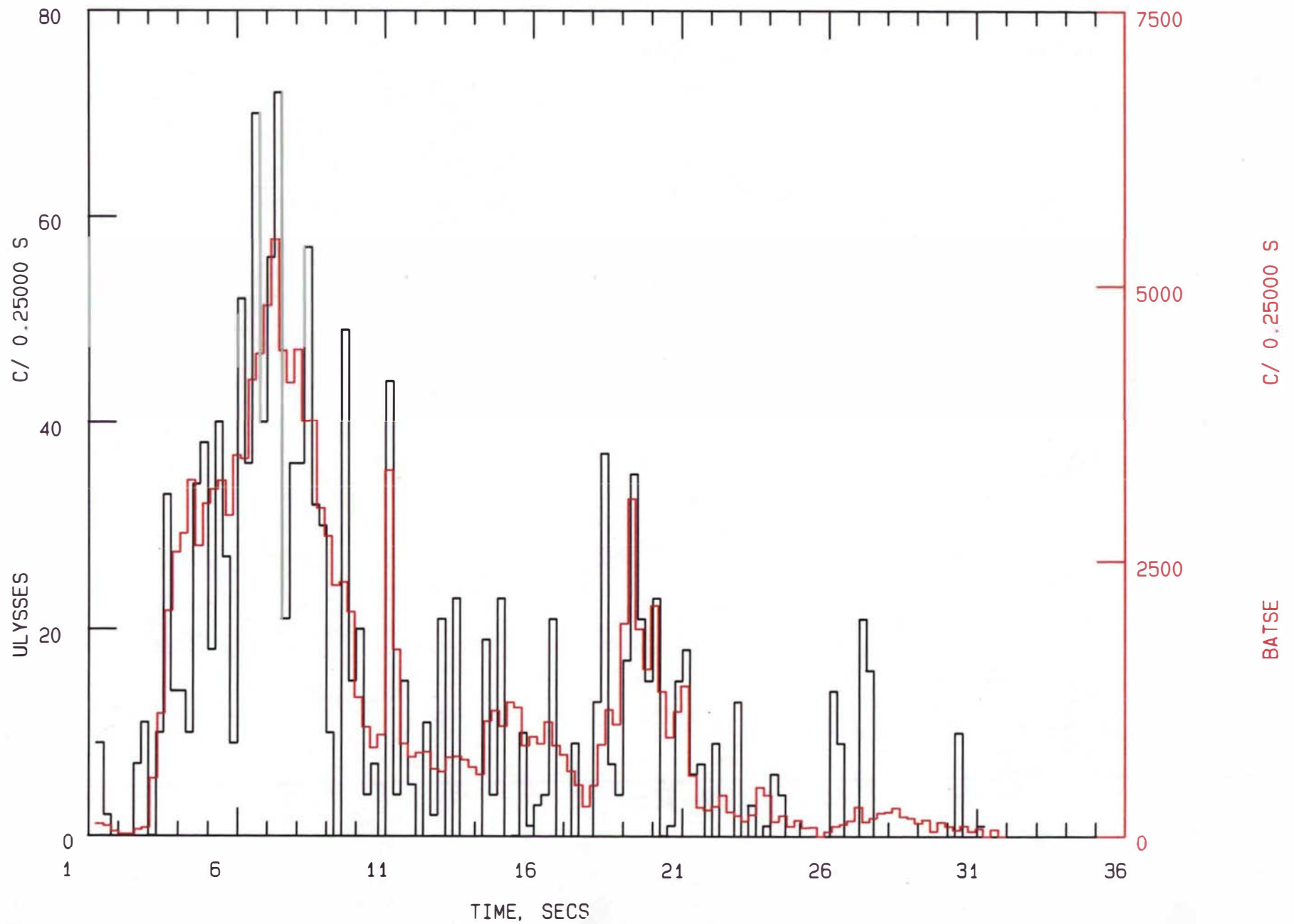
ULYSSES -BATSE

CORRELATION

21/10/98

86212.557

15/ 2/ 0



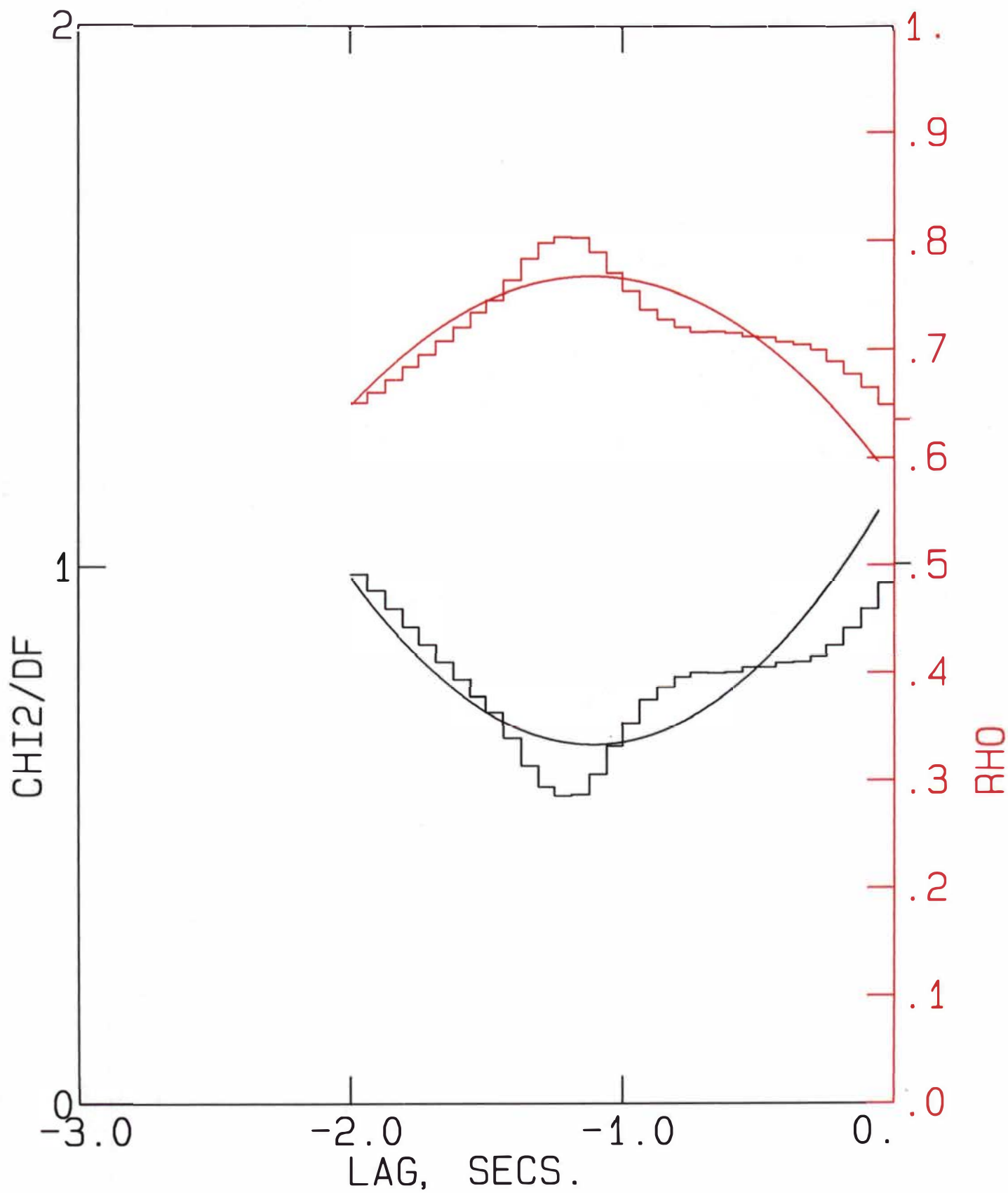
ULYSSES

-BATSE

CORRELATION

21/10/98

86212.557



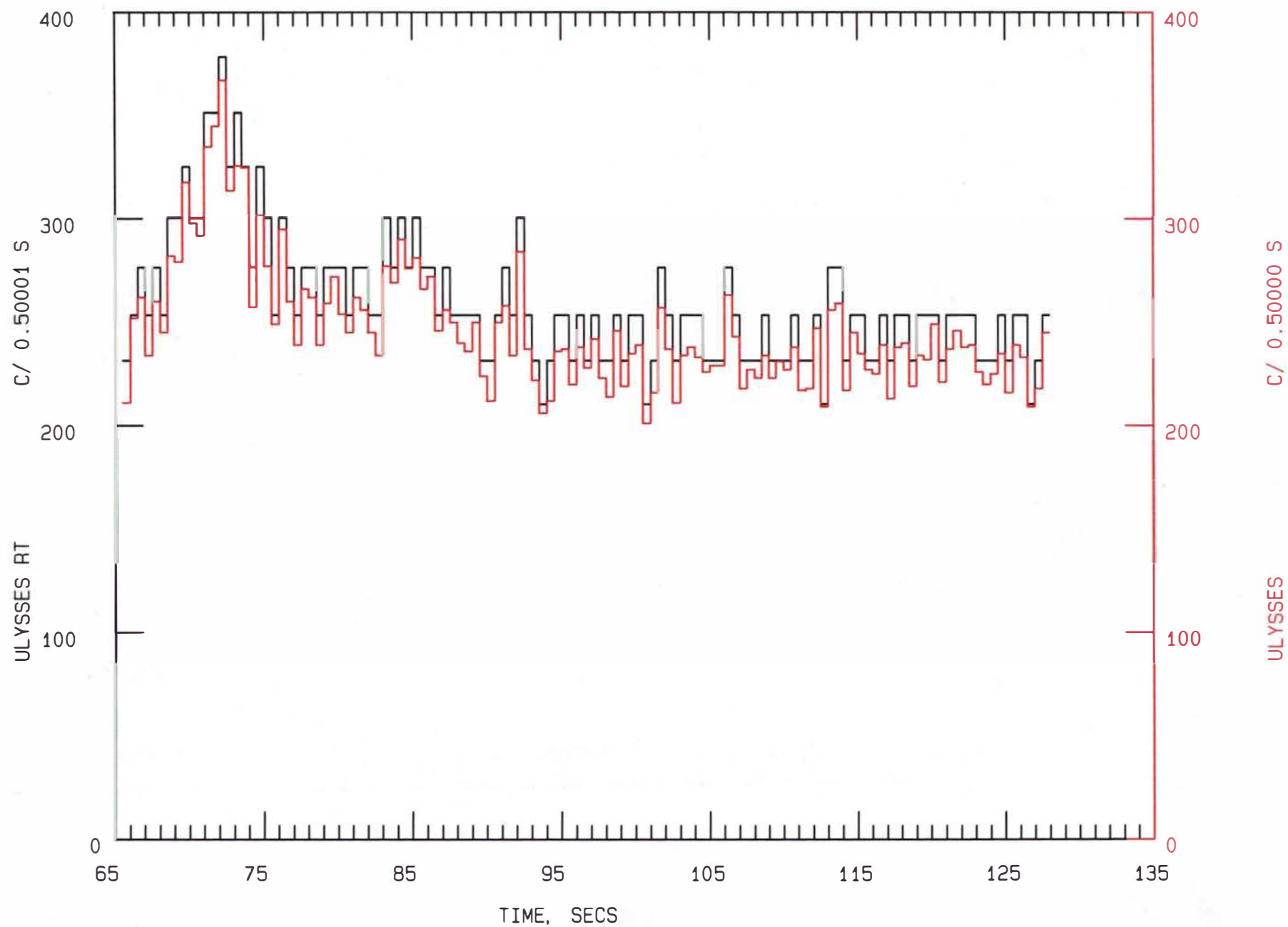
ULYSSES RT-ULYSSES

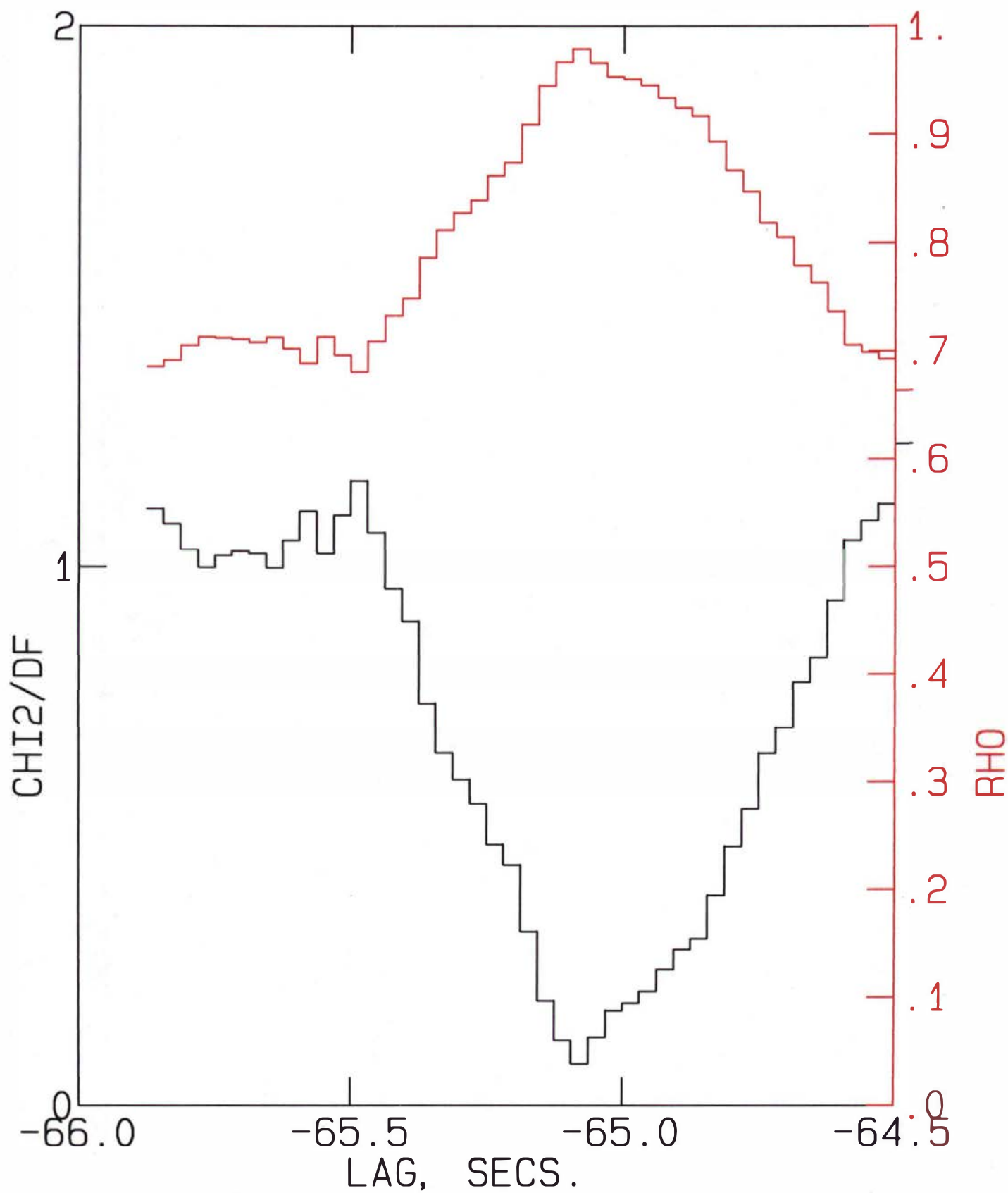
CORRELATION

21/10/98

86140.059

15/ 2/ 0



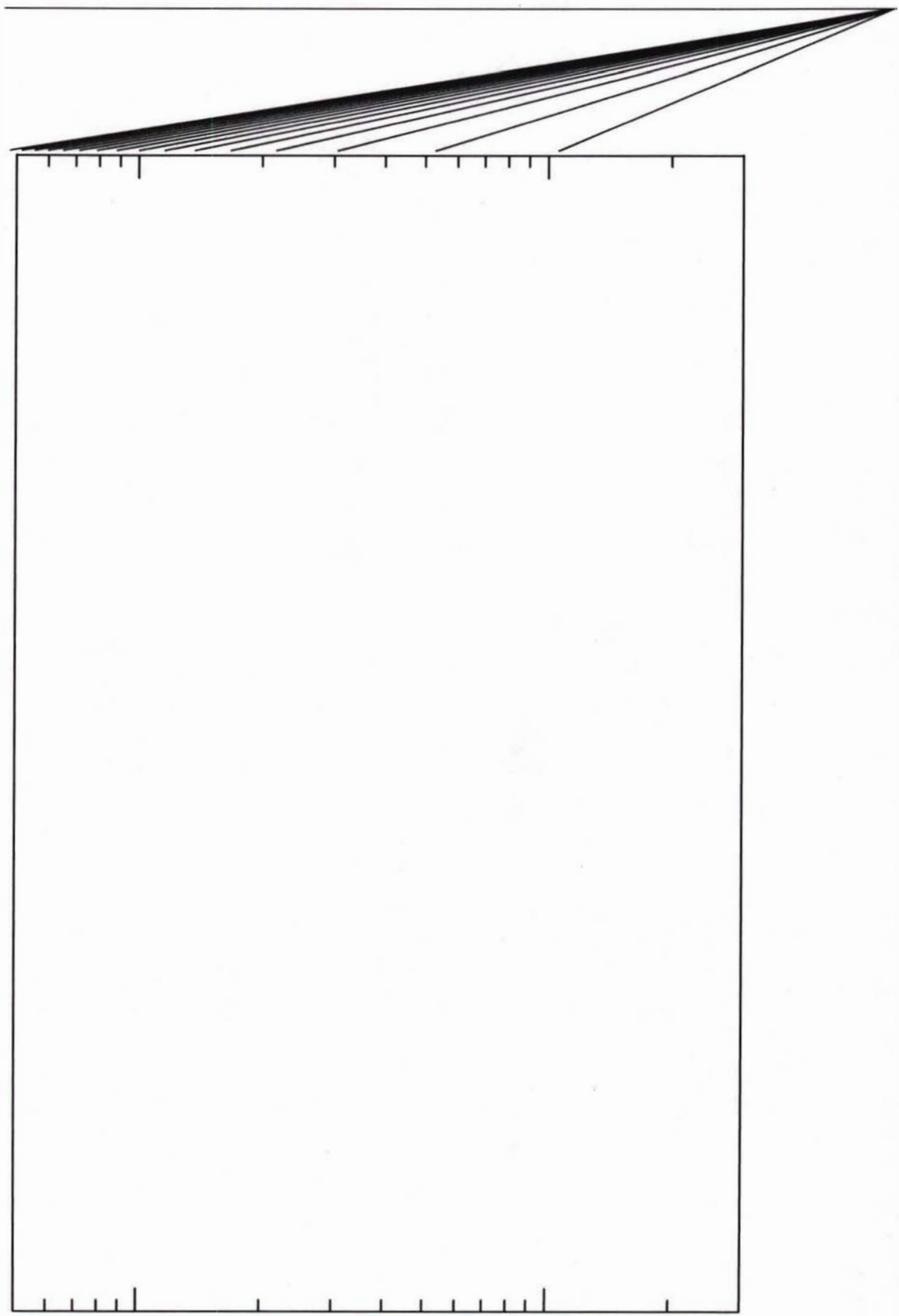


FLUX, counts/cm² s keV

SPECTRUM INTEGRATED OVER 0.0 SECONDS 10 50
10² 10¹ 10⁶

ENERGY, keV

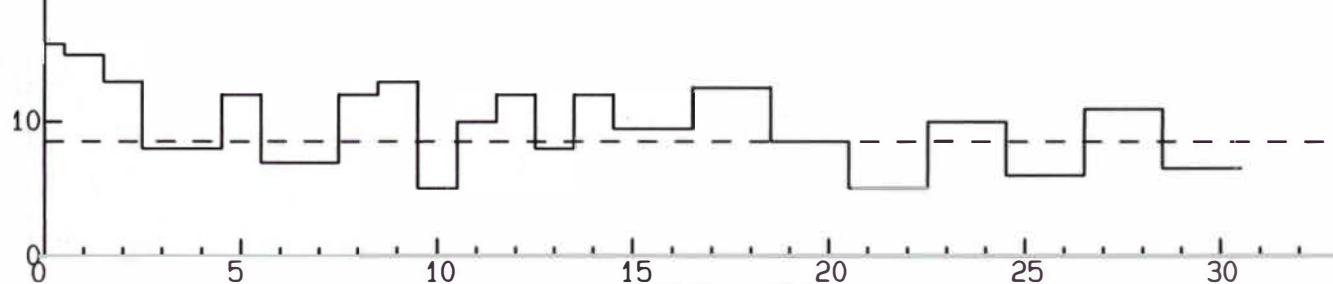
ULYSSES 21/10/98 86212.553



ULYSSES 21/10/98 86212.553 BURST SPECTRAL COUNT RATES

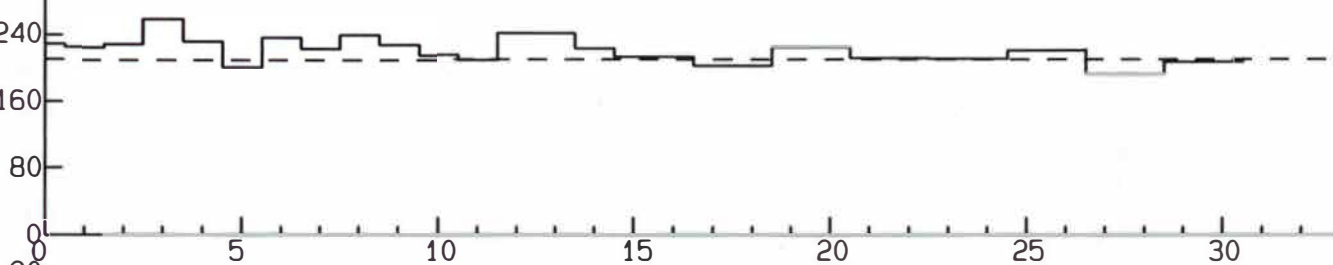
4- 18 keV

COUNTS/S



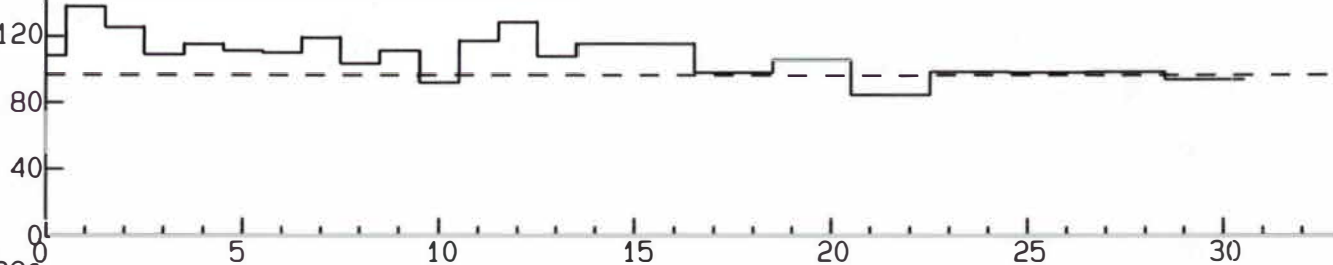
18- 46 keV

COUNTS/S



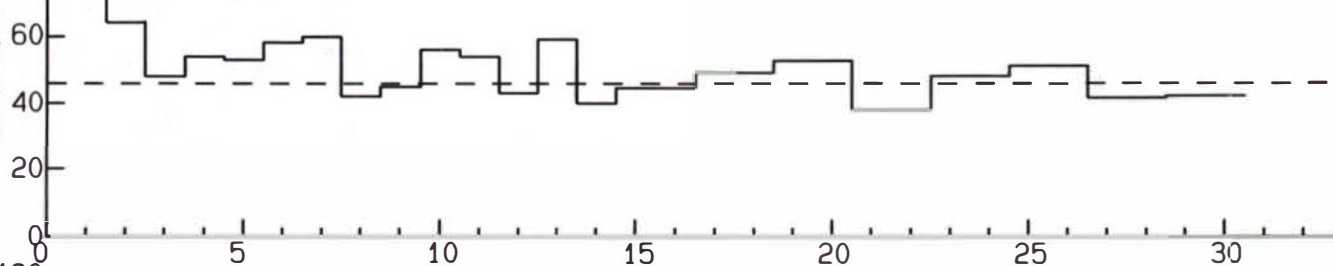
46- 74 keV

COUNTS/S



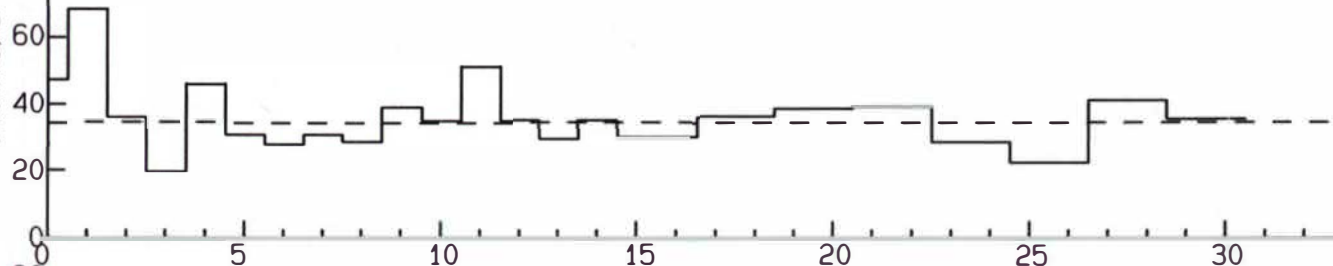
74-102 keV

COUNTS/S



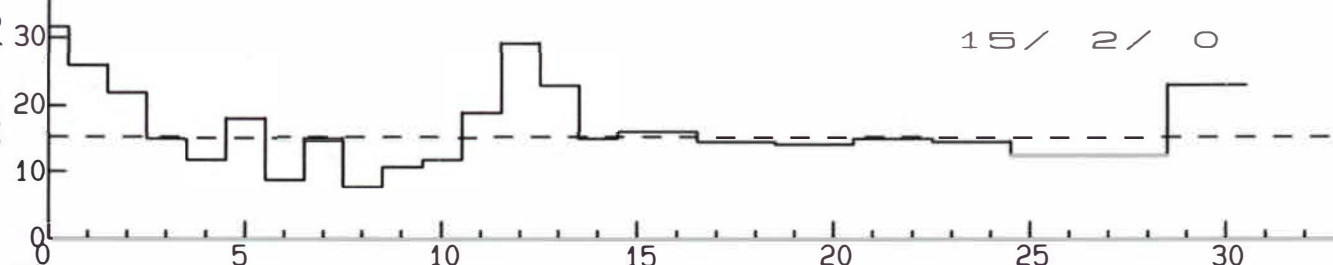
102-130 keV

COUNTS/S



130-149 keV

COUNTS/S

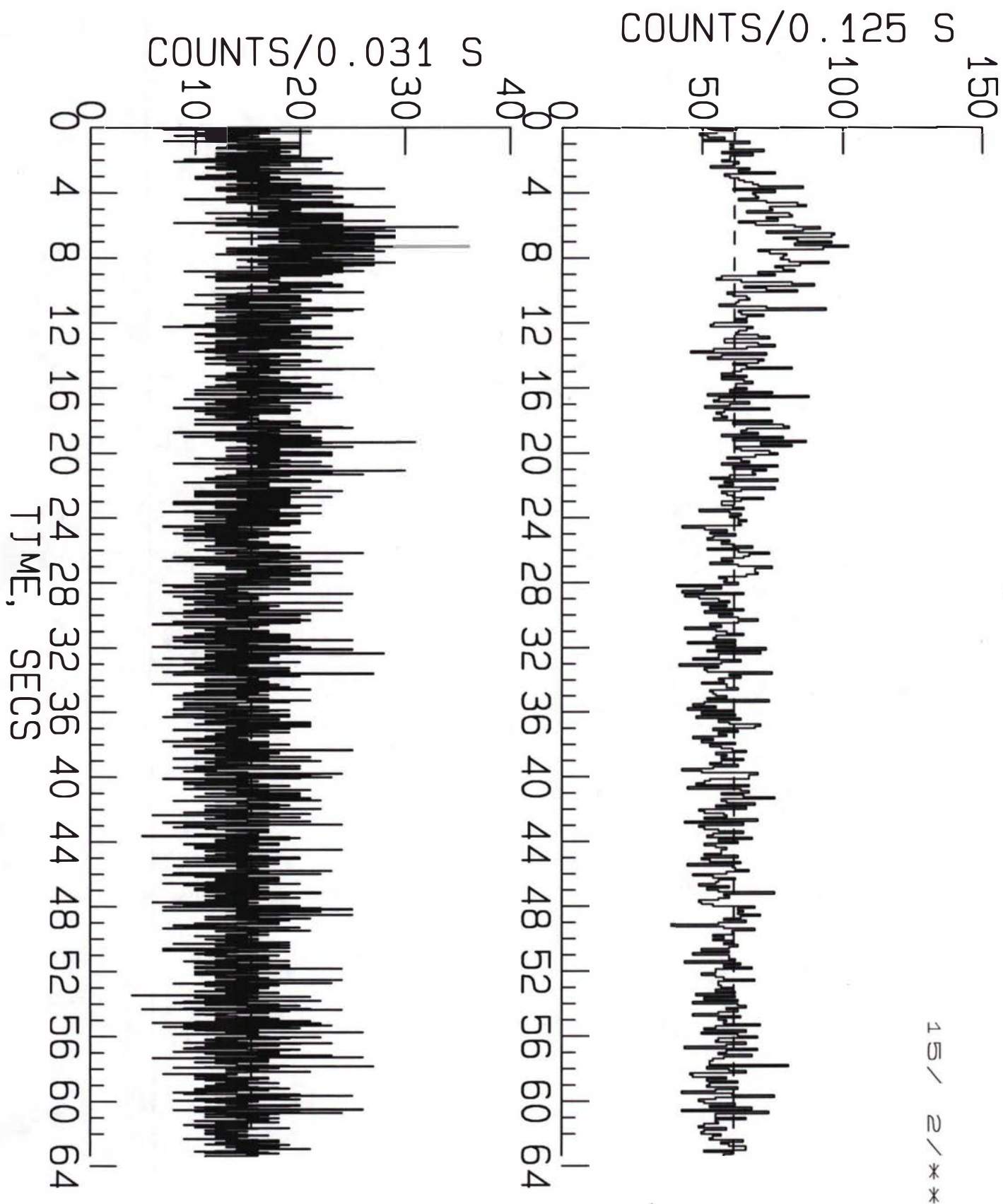


ULYSSES

21/10/98

Ttrig=86212.557

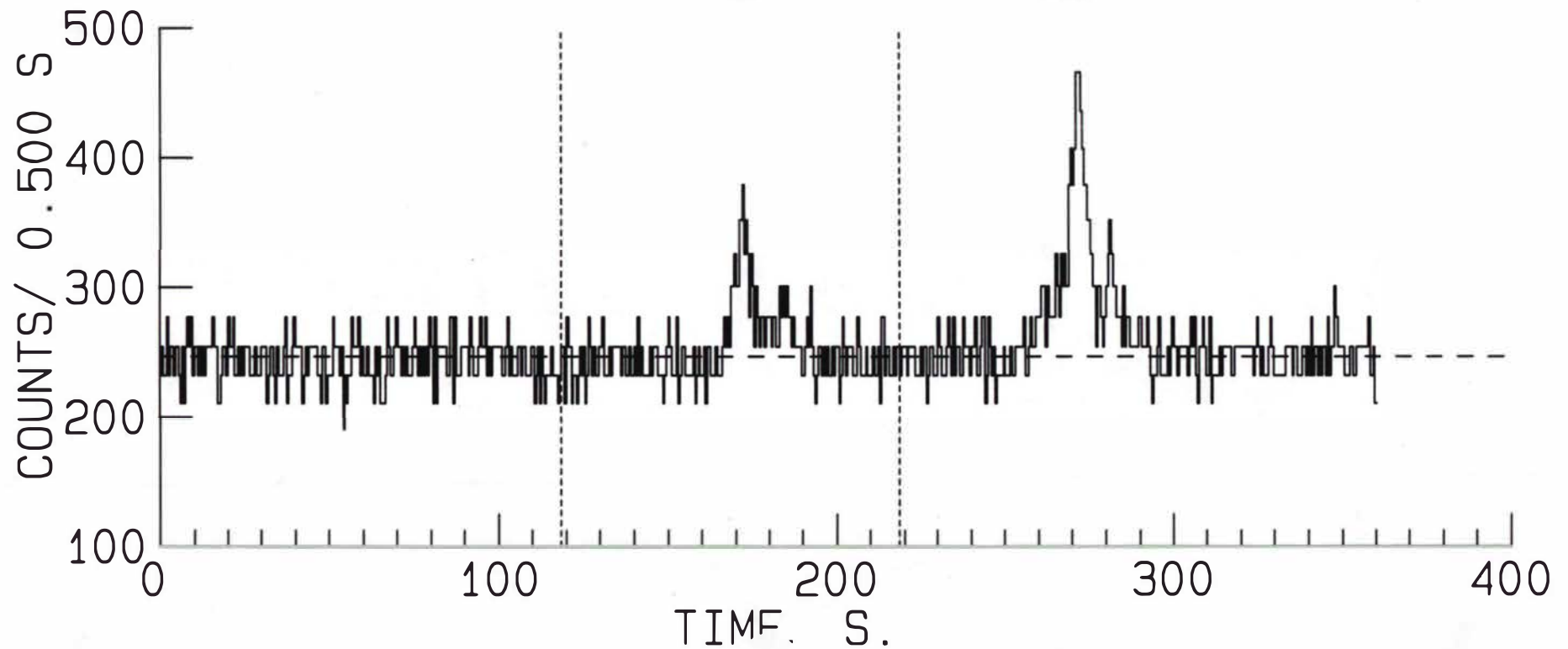
22- 149 keV



ULYSSES RT
21/10/98 86040.065 s
22- 149 keV

15 / 2 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



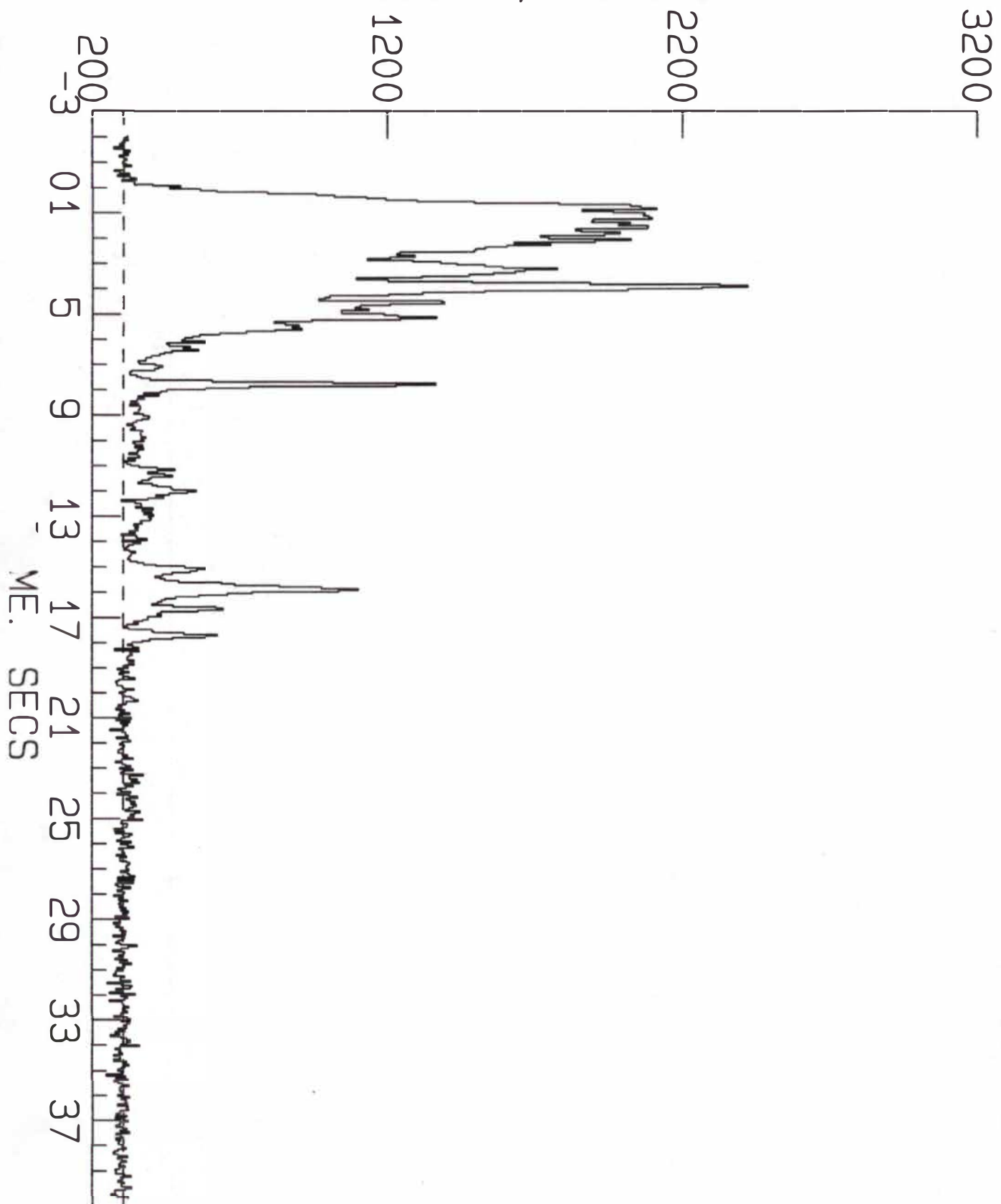
BATSE

21/10/98

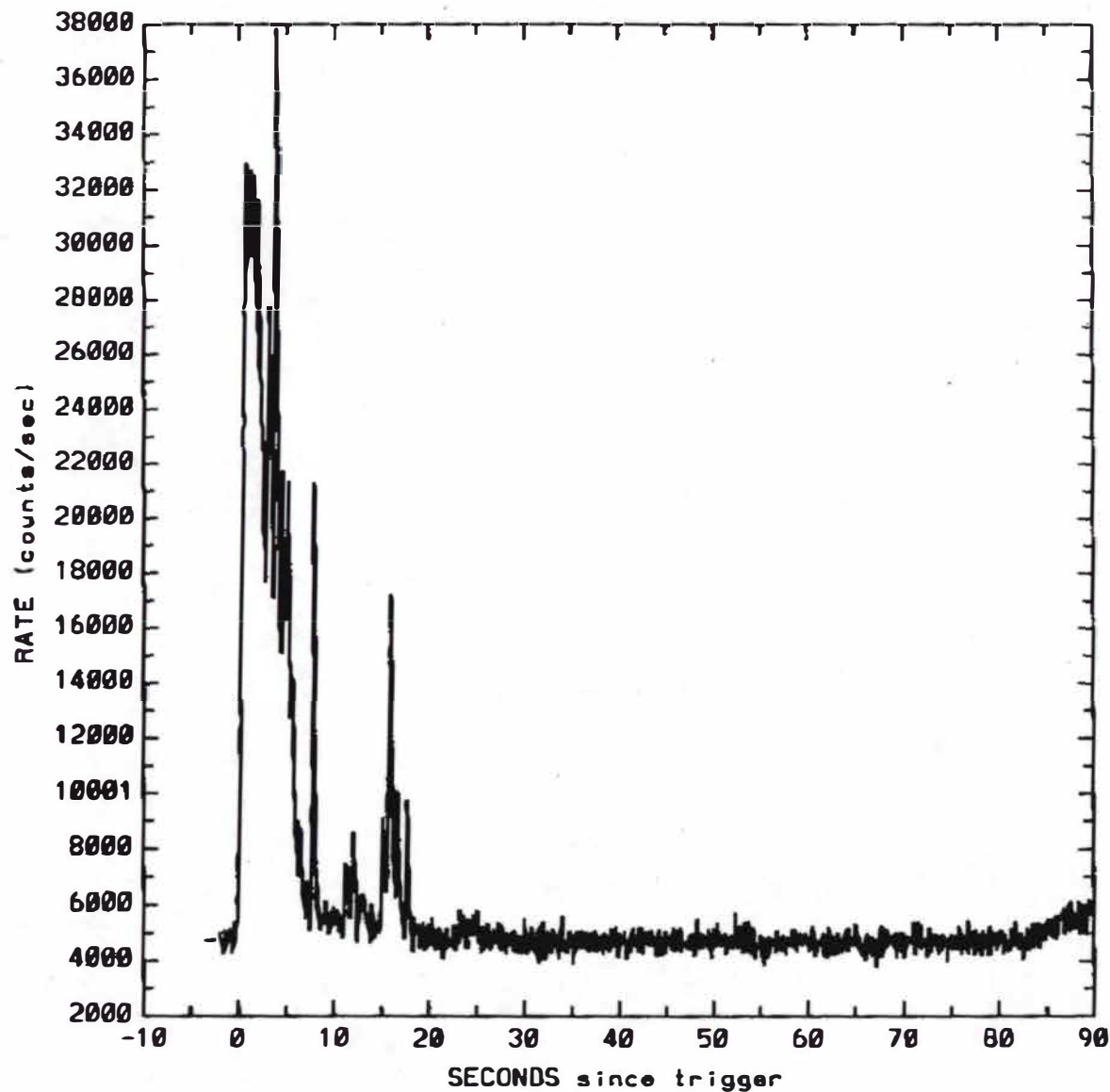
83292.321

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7170



9-FEB-2000 09:25:44

Created by MOPS 80
(Burst Display)
Version t2.26

Trigger # : 7170

Trigger Time:
11107 / 83292.321Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum (Integ. Time:
0.064 seconds)Detectors (7..0):
-6-4----Discriminators:
1 3 . 4 1Quality Mask:
B0ISP1

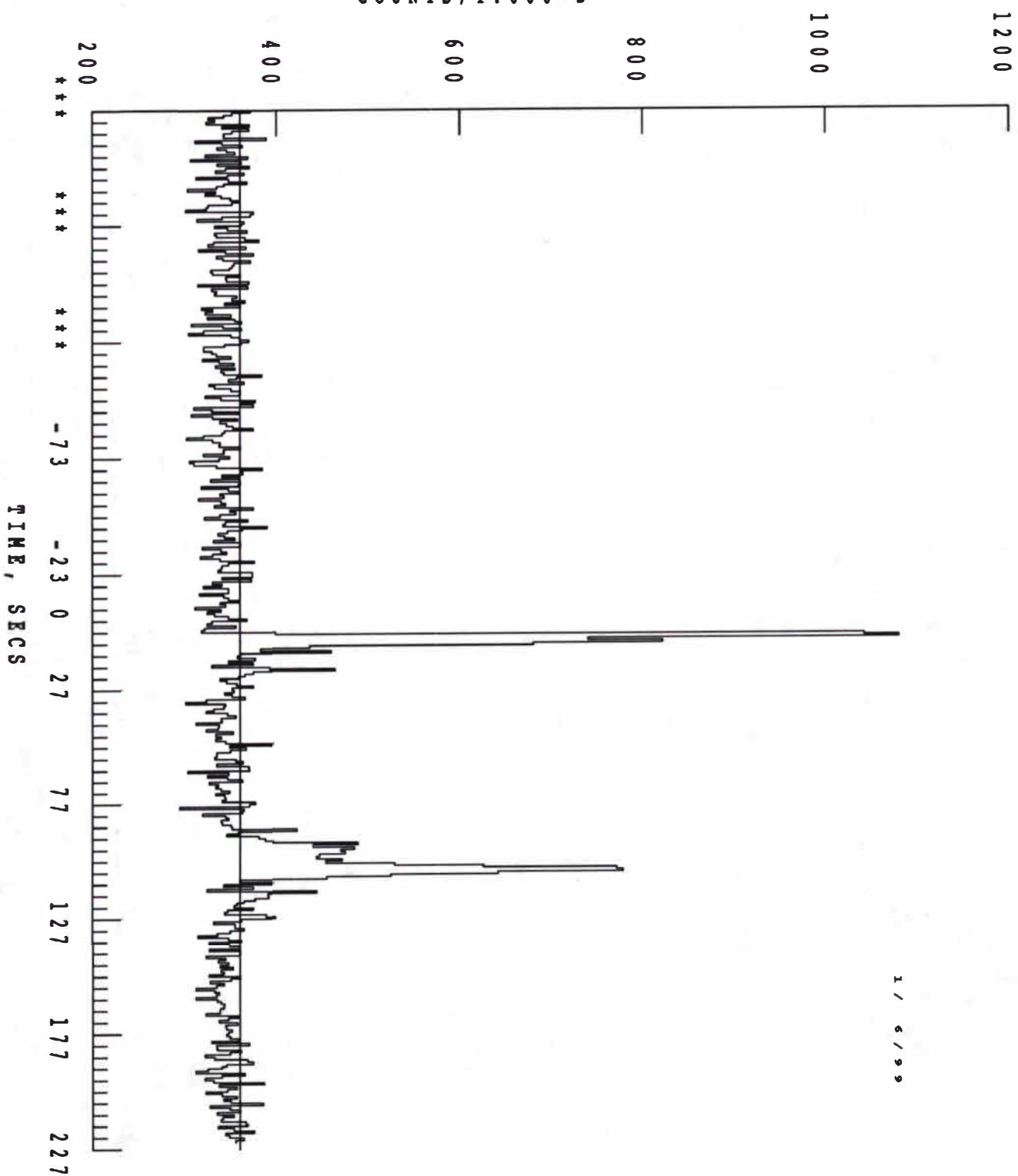
NEAR

21/10/98

83261.883

100-1000 keV

COUNTS/1.000 S



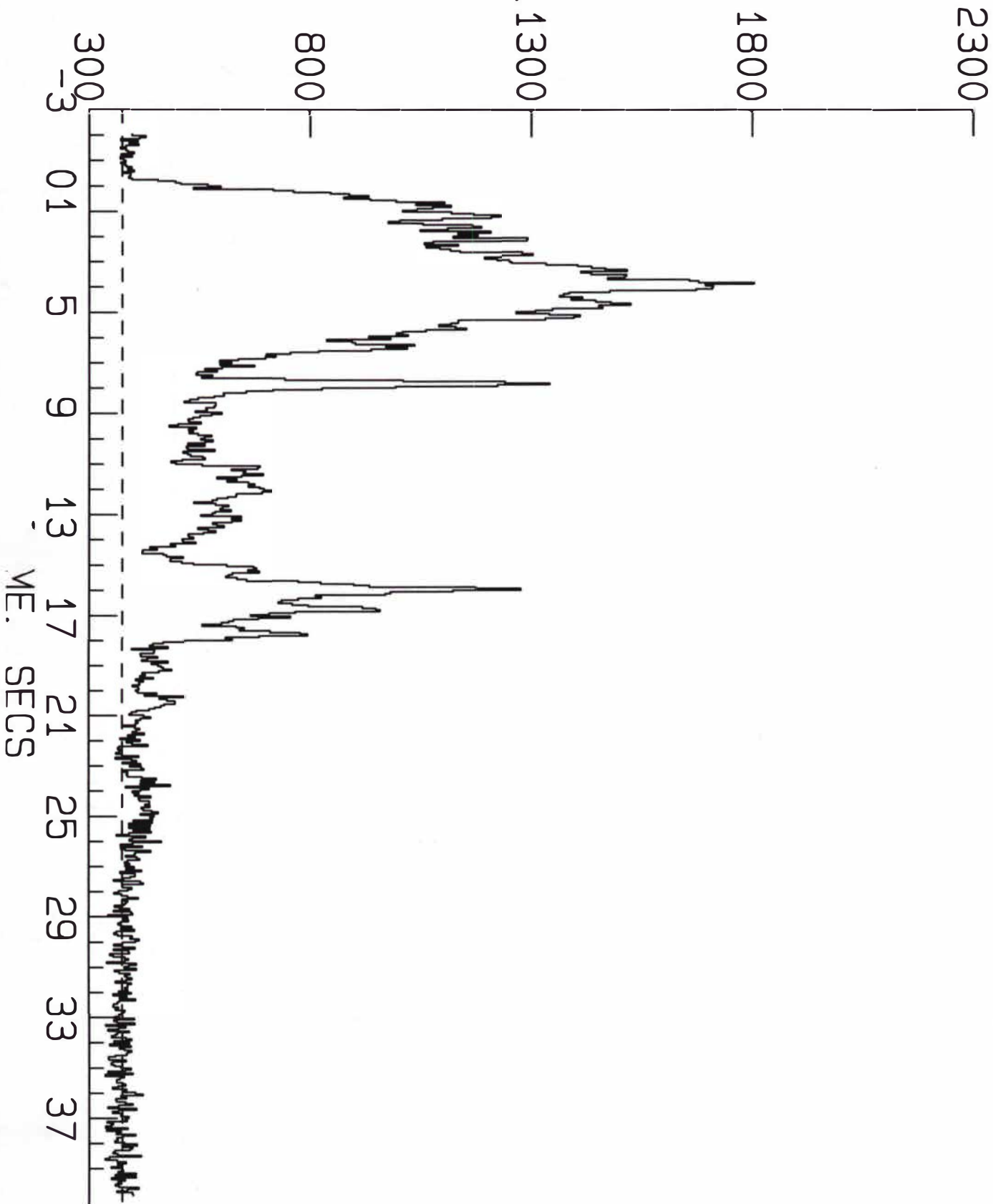
BATSE

21/10/98

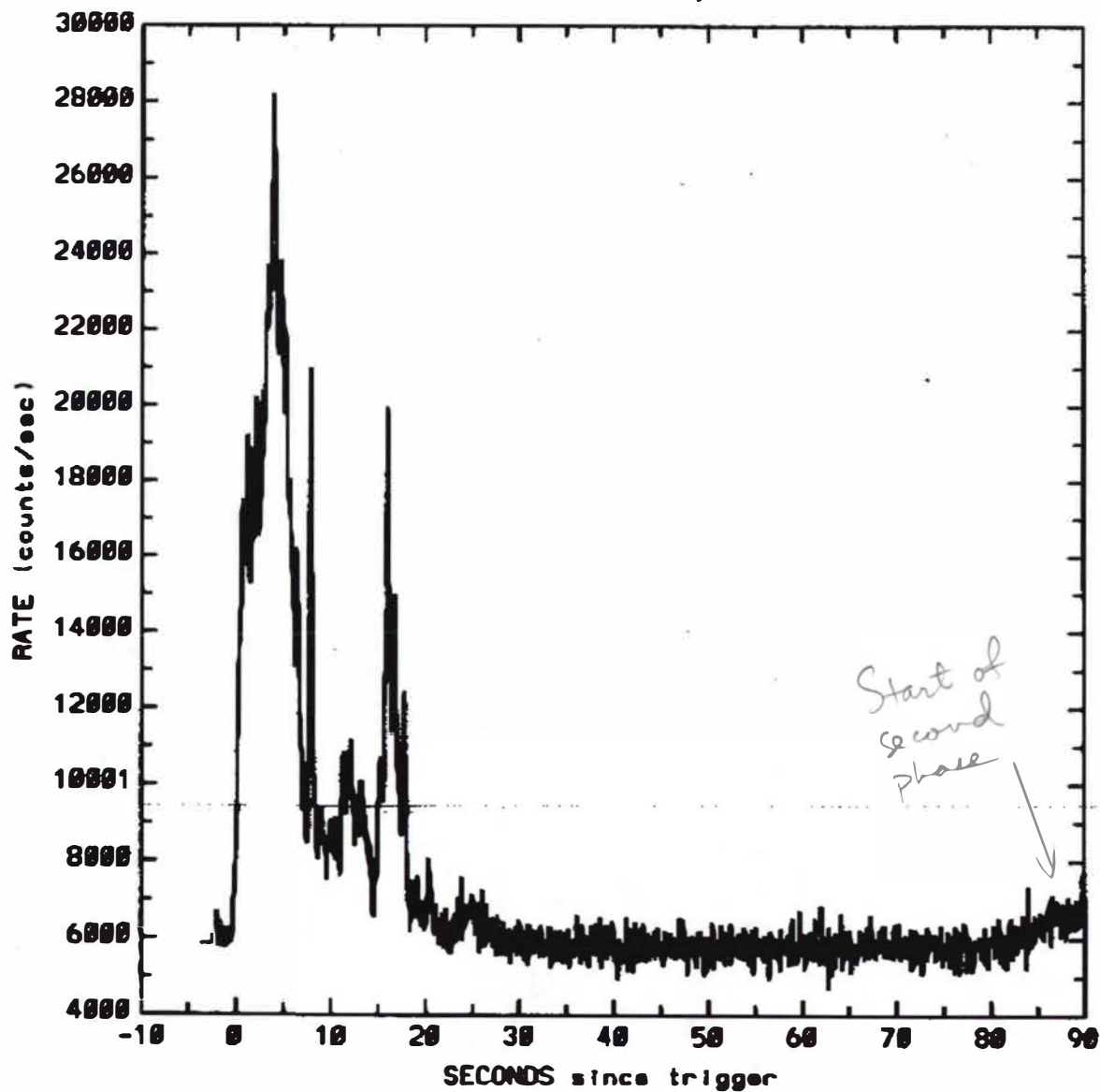
83292.321

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7170



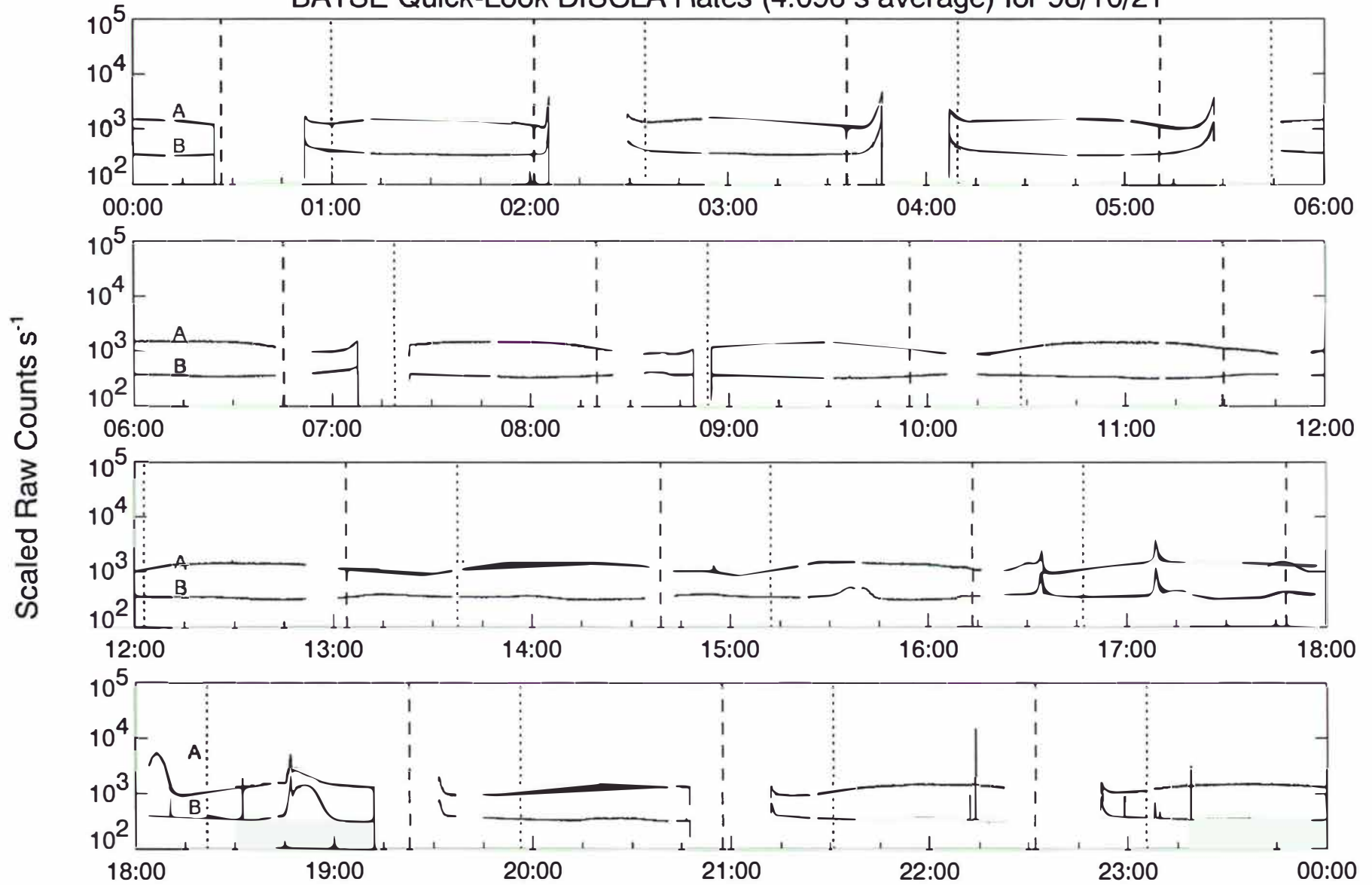
6-APR-1999 09:22:18

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger = 7170

Trigger Time:
11107 / 83232.321Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PRED + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
-6-4----Discriminators:
1 1 . 2 1Quality Mask:
BDISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/21

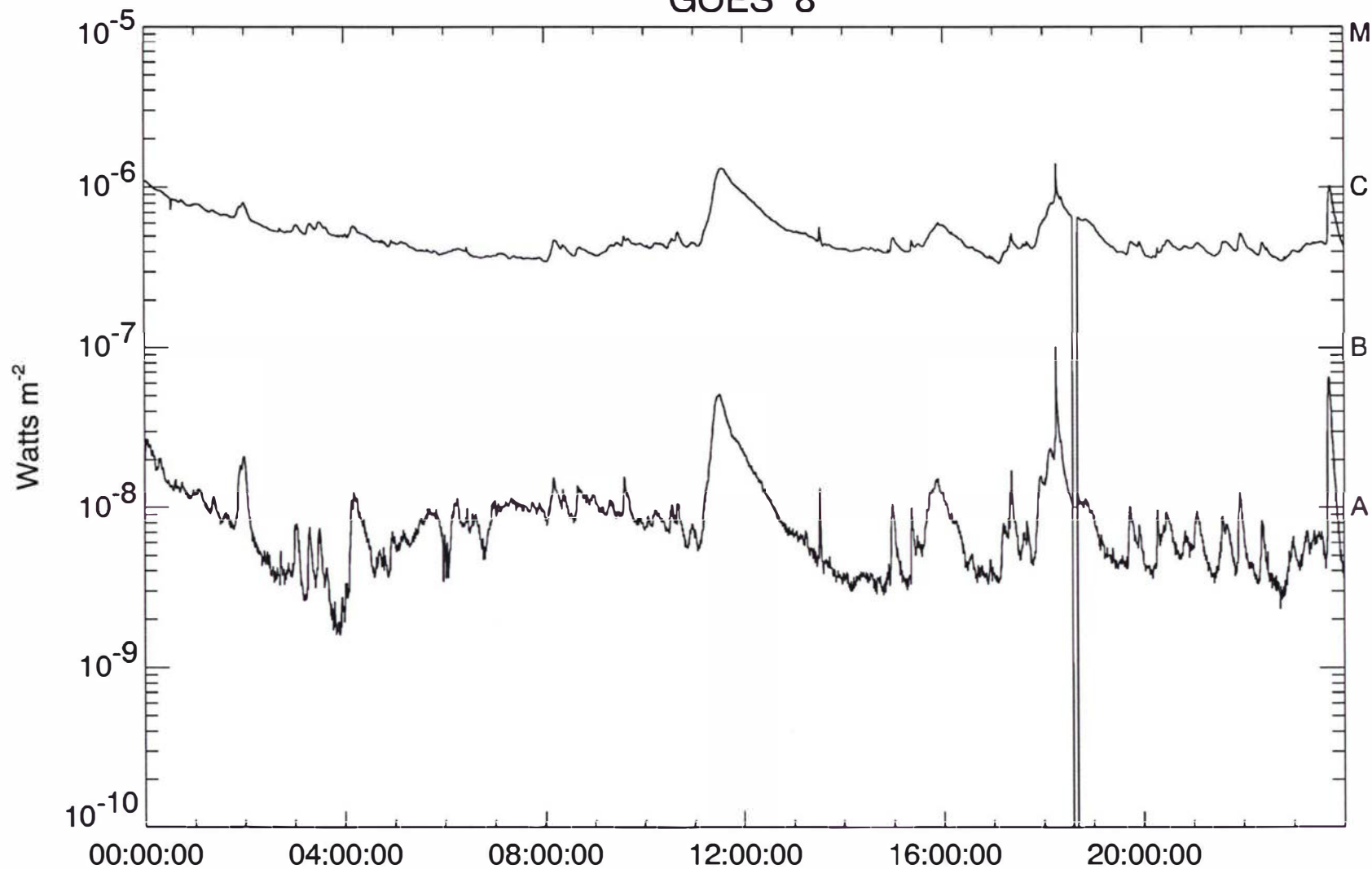


Current Time: 98/10/25, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/21, 0000:00

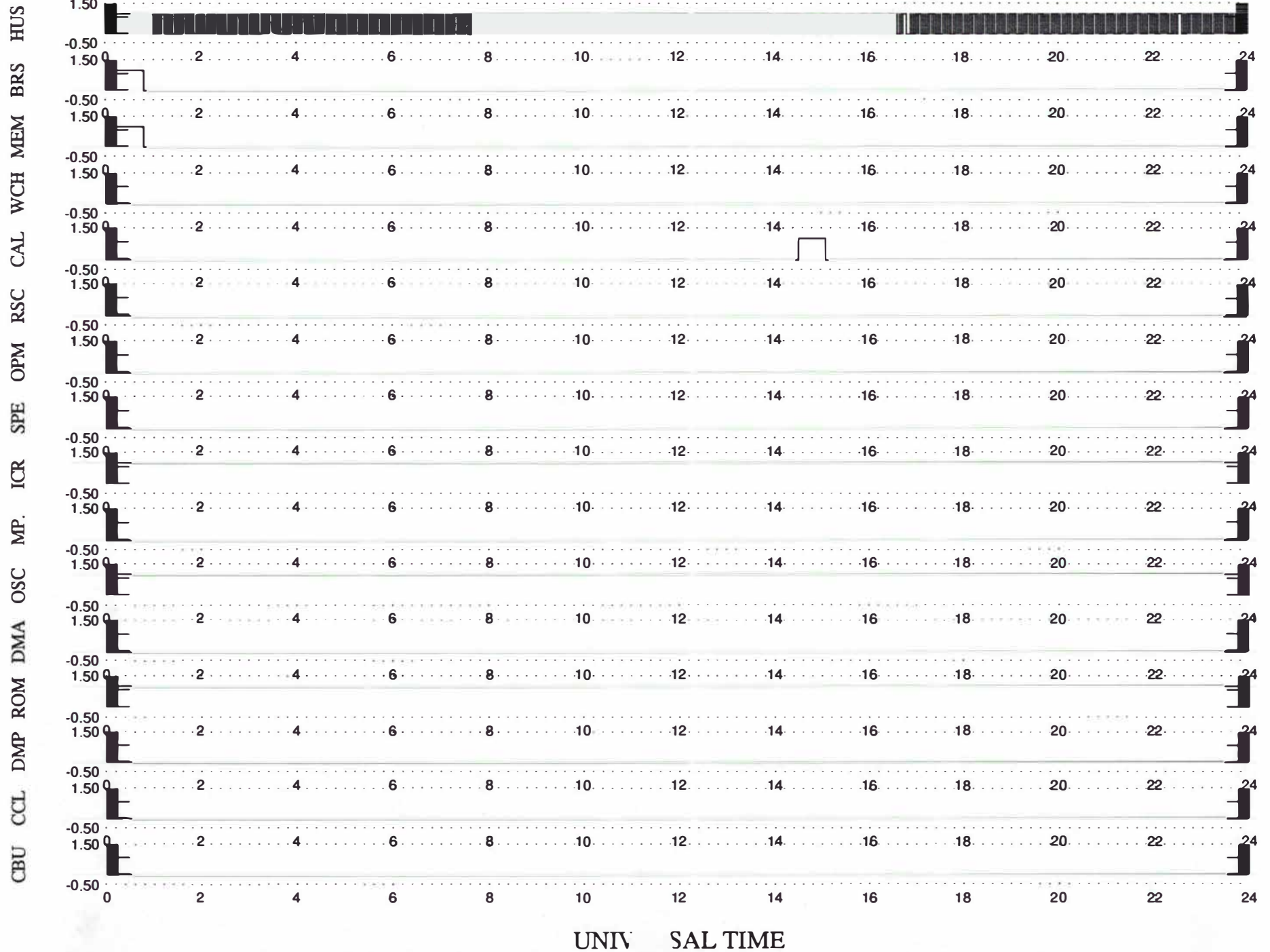
Plot created: 98/10/25, 1007

Channel

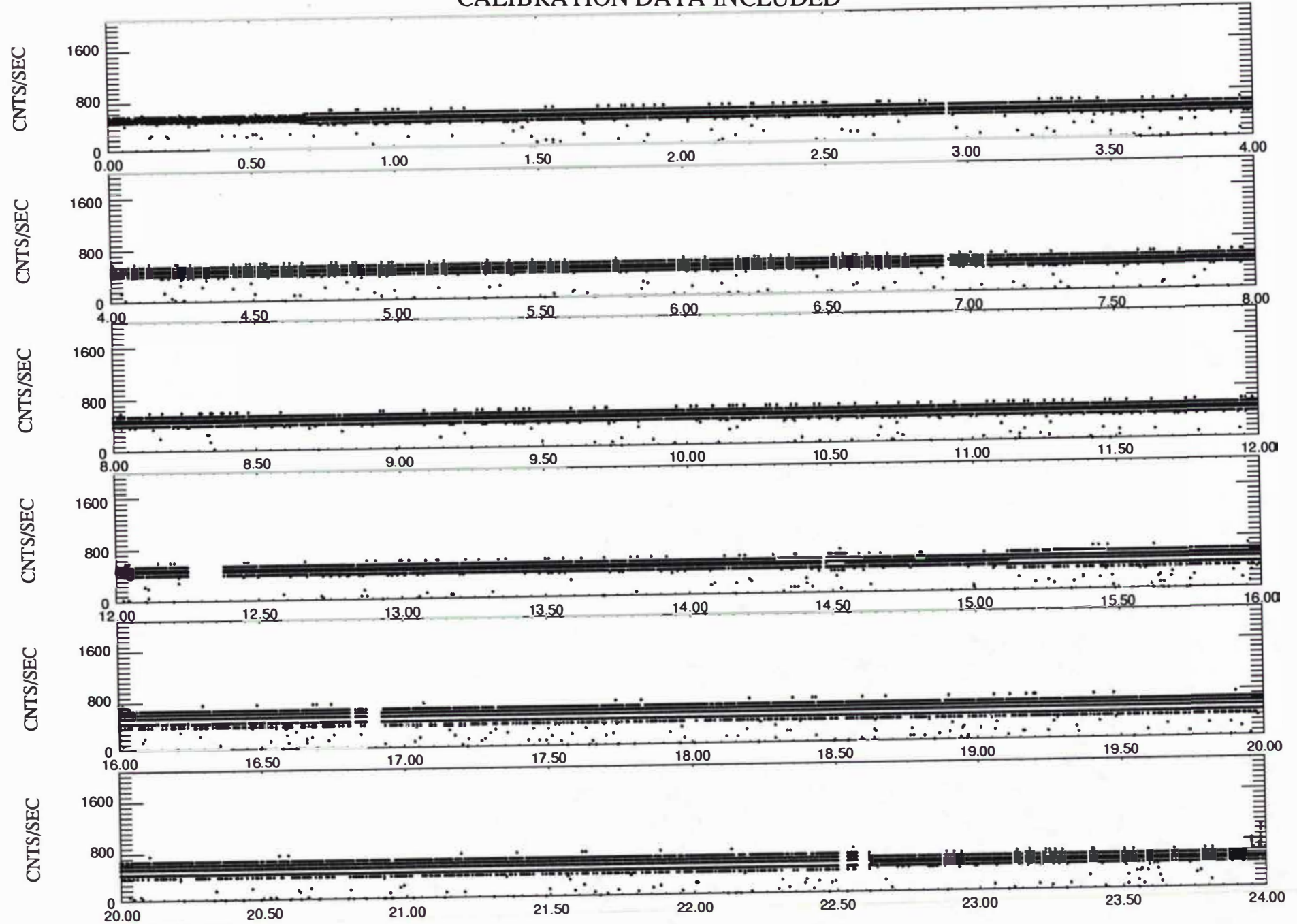
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

NO BURST (15)

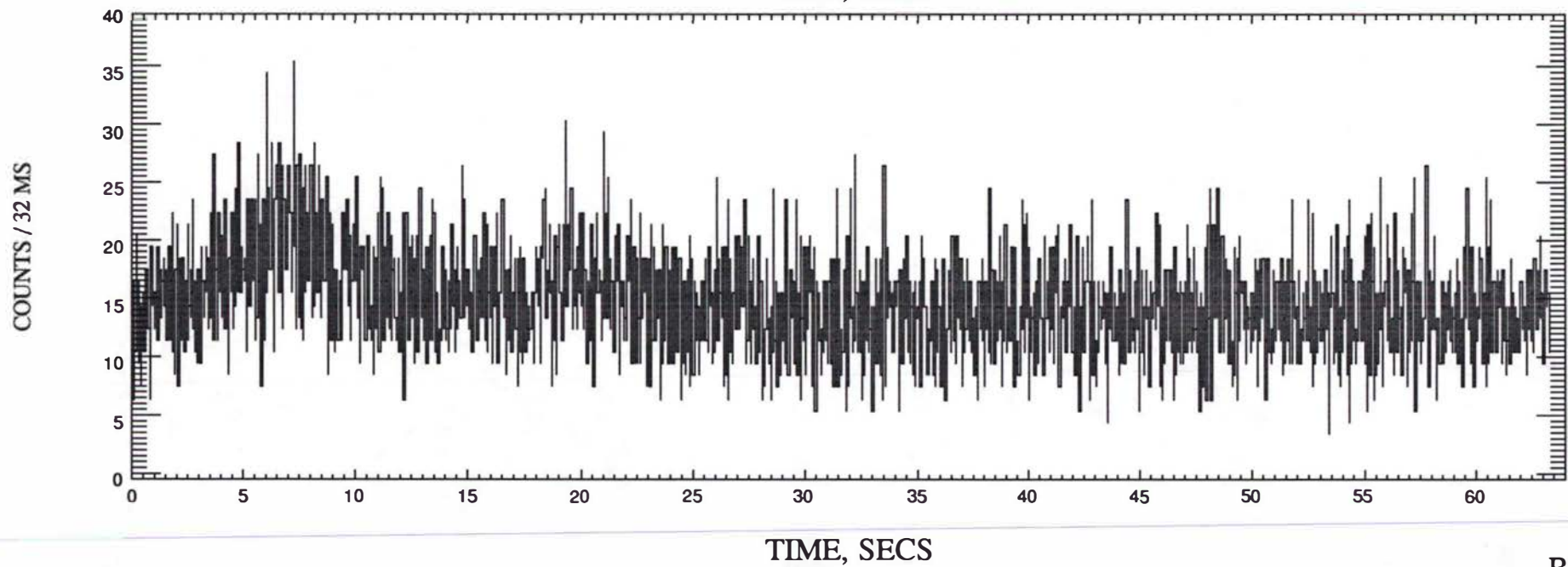
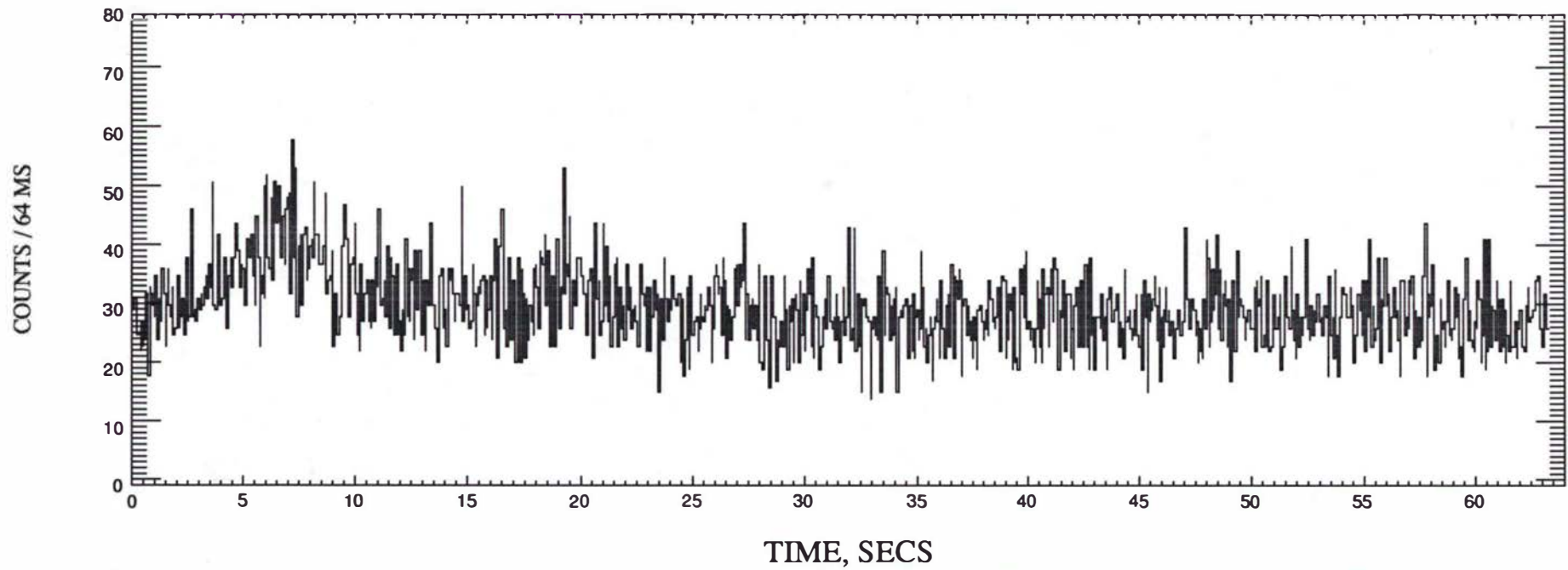


CALIBRATION DATA INCLUDED

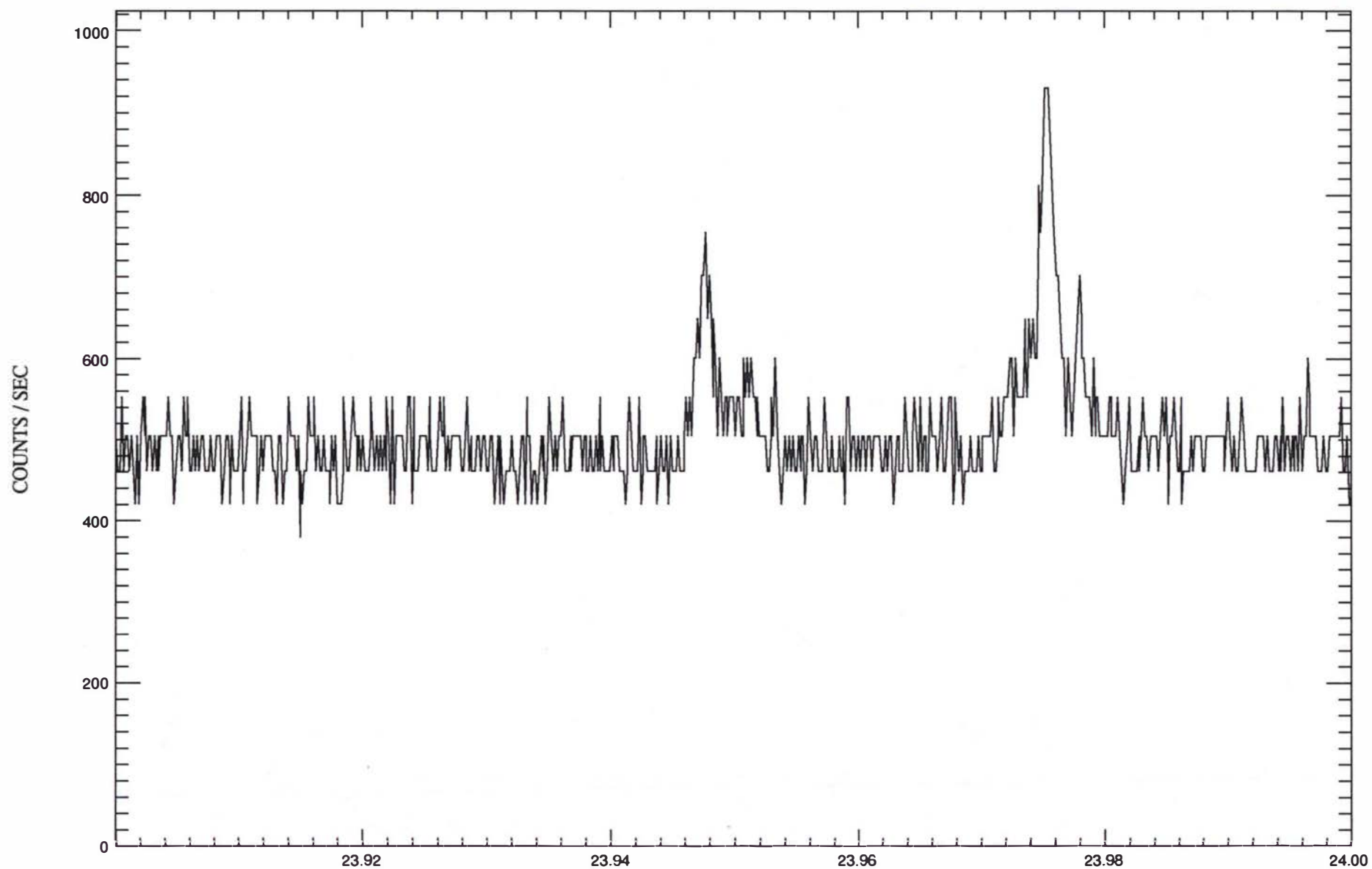


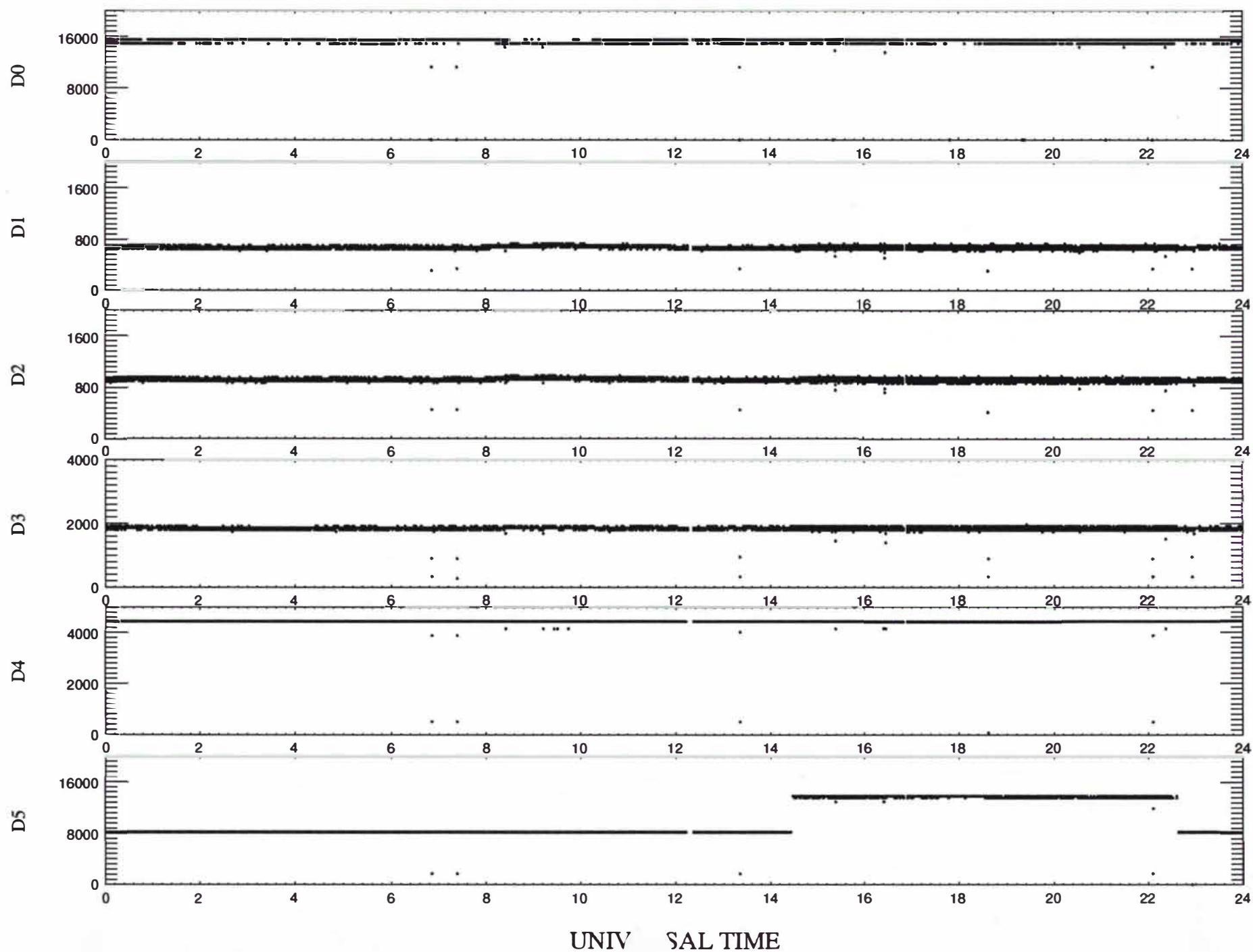
UNIV SAL TIME

Burst Counter 0 at UT=23.947931268480 h=86212.553 s 23:56:52.553



CALIBRATION DATA INCLUDED





Date: Jul 10 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? No

2. BATSE Data

- ☐ BATSE ephemeris for T_0 ?
- ☐ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

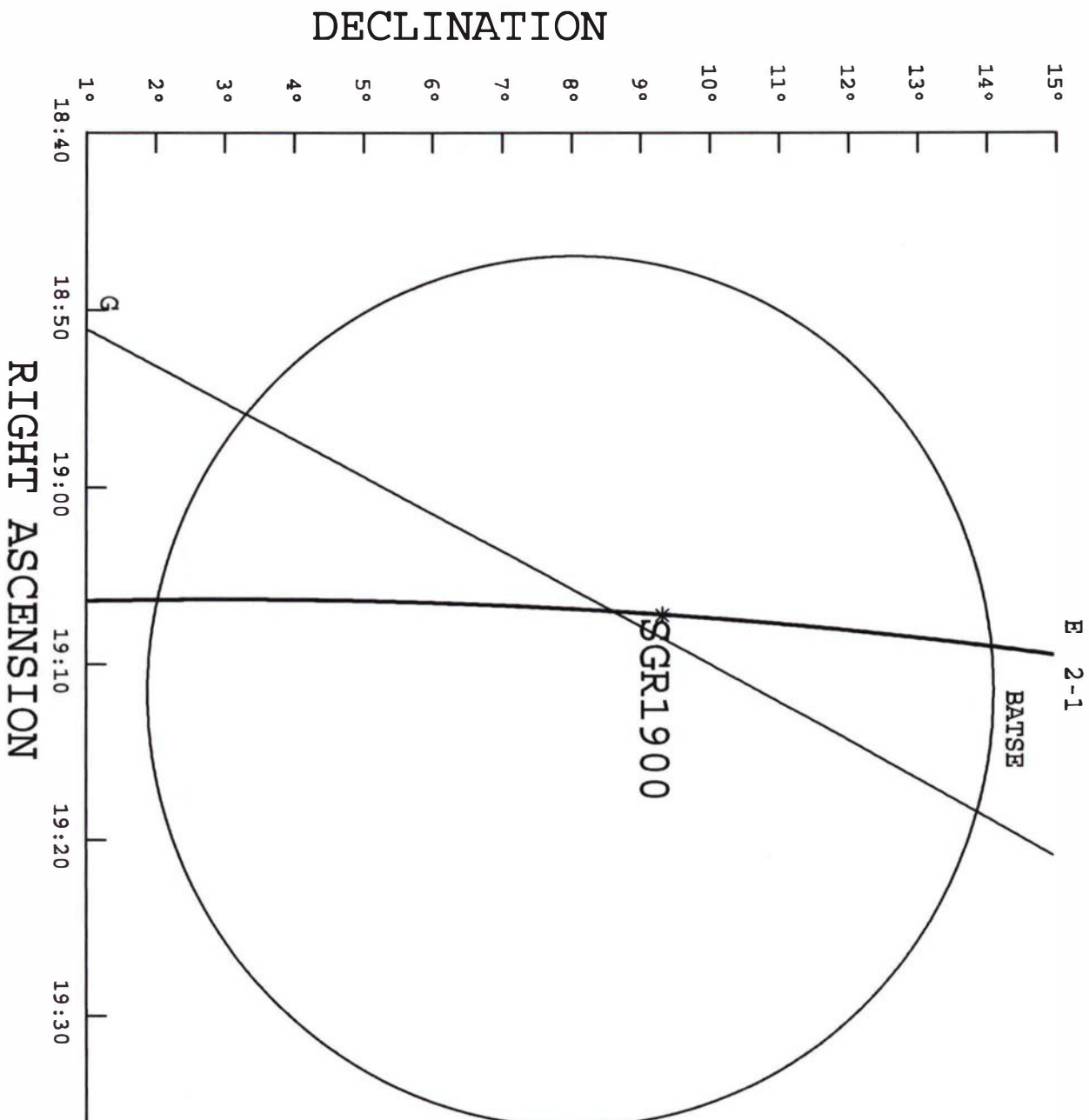
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF OCT 22, 1998 15:40

10/ 7/ 2



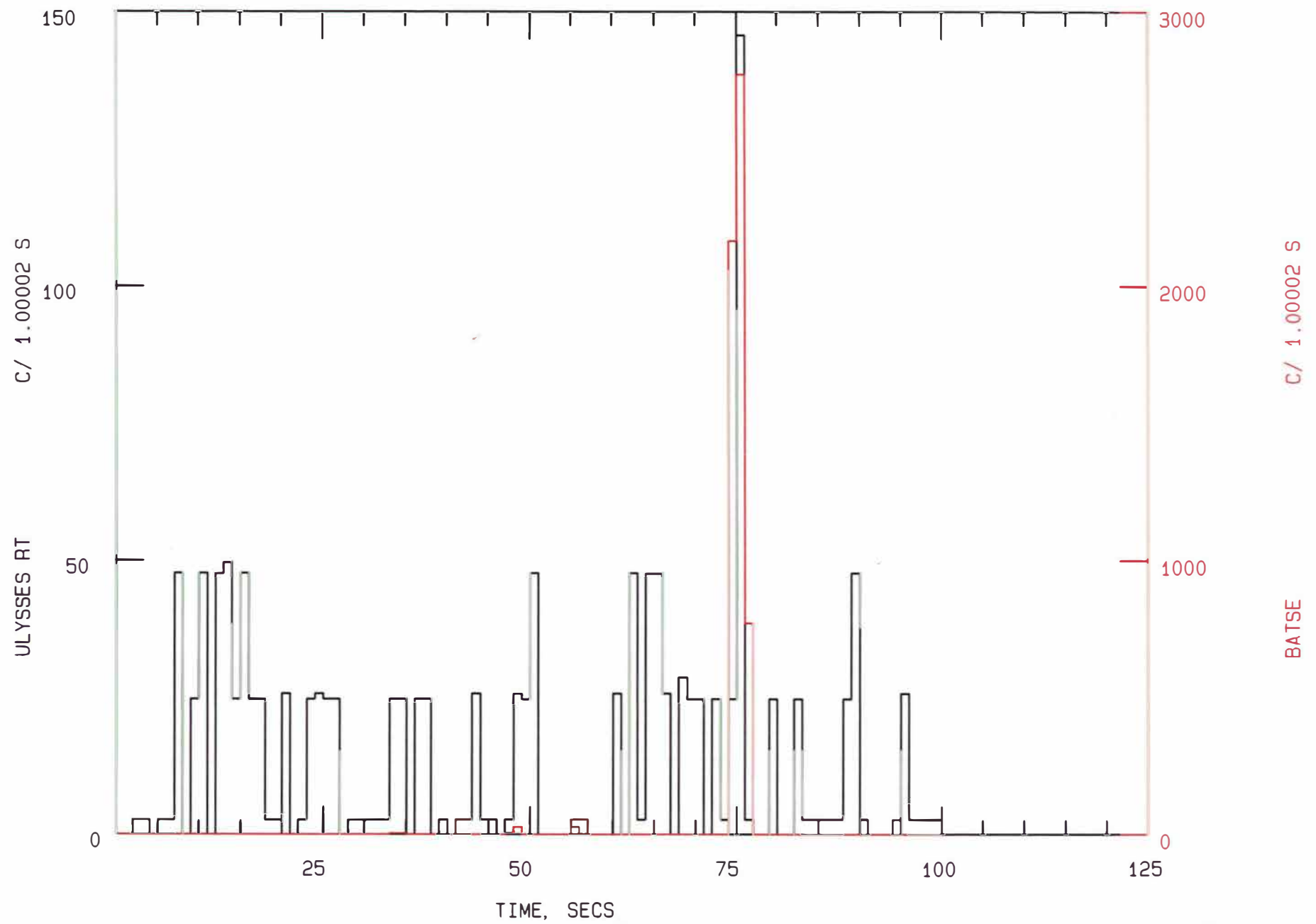
ULYSSES RT-BATSE

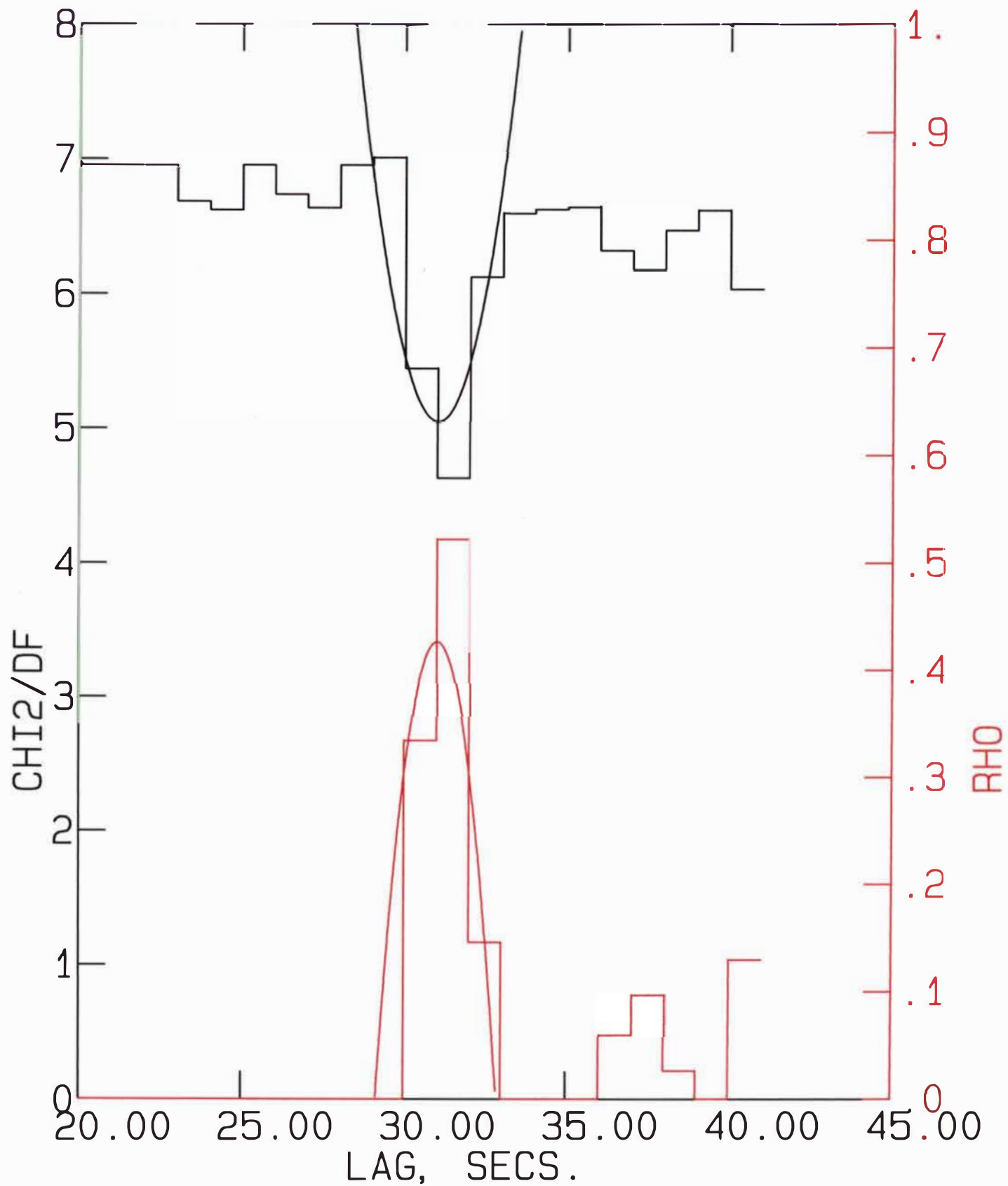
CORRELATION

22/10/98

57928.155

10/ 7/ 2

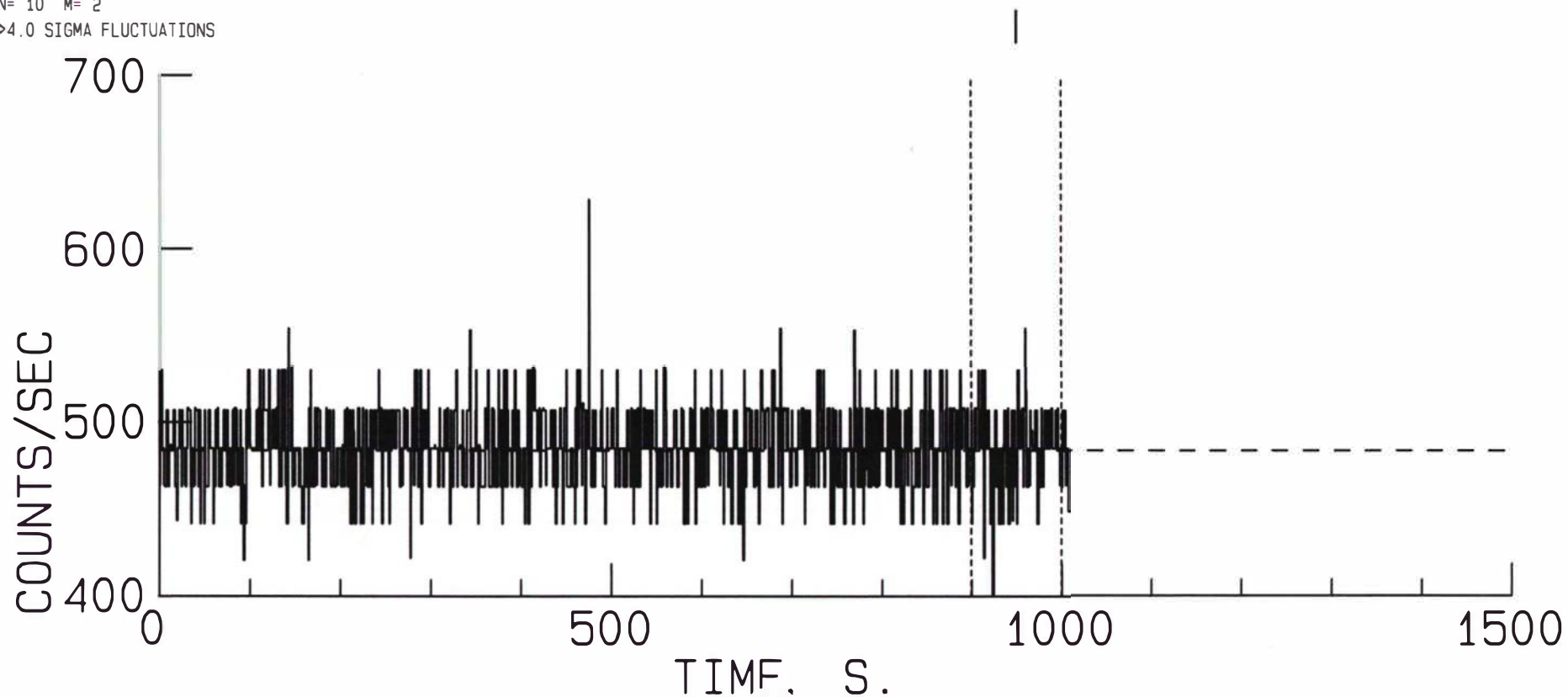




ULYSSES RT
22/10/98 57528.160 s
INTERVALS REGROUPED BY 2
22- 149 keV

10 / 7 / 2

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From kraken@milkyway.gsfc.nasa.gov Tue Nov 3 06:49 PST 1998
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 3 Nov 1998 09:49:47 -0500
 : khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@milkyway.gsfc.nasa.gov>
Subject: Re: GRB981022, 981024A,B,C

Hi Kevin,

TGRS did not trigger on the bursts you've mentioned in September and October. This may be because the detector is on the wrong side of the spacecraft to see the SGR.

I'll let you know if TGRS has any coincident (to within the light travel time), noteworthy events...

Pete

From khurley@sunspot Tue Oct 27 08:58 PST 1998
Date: Tue, 27 Oct 1998 08:59:32 -0800
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981022, 981024A,B,C

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1585 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 22 1998 05:34	moderate, 32 ms long	3000
OCT 24 1998 01:44	moderate, 64 ms long	3000
OCT 24 1998 12:36	moderate, 128 ms long	3000
OCT 24 1998 16:16	moderate, 64 ms long	3000

SGR 1806 - Konus

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczynski, marar, tee

From SURASAK@fender.msfc.nasa.gov Mon Oct 26 11:59:27 1998
Return-Path: <SURASAK@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA17075; Mon, 26 Oct 1998 11:59:26 -0800
From: SURASAK@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA01836; Mon, 26 Oct 1998 11:59:24 -0800
Date: Mon, 26 Oct 1998 13:59:21 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981026135921.20214d79@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7172
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7172
EVENT OF 1998 OCT 22 DAY OF YEAR=295
EVENT CROSSING TIME AT BATSE : 64922. S. OR 18:02:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 15.000 49.000
BATSE PEAK COUNTING RATE: 22300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/10/ 98 IS:
RA= 164.729 DEC= -1.407 DIST= 5.976 AU
BATSE-ULYSSES DISTANCE = 894011144. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 54.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1744.43 SECS.
CROSSING TIME AT ULYSSES IS 66666. S. OR 18:31:06 +/- 496.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/10/ 98 IS:
RA= 160.944 DEC= 9.602 DIST= 2.111 AU
MARS-BATSE DISTANCE = 315811904. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 431.95 SECS.
CROSSING TIME AT MARS IS 65354. S. OR 18:09:13 +/- 173.37 SECONDS

BATSE BURST TRIGGER

NO.: 7172

TIME: TJD=1108 SECONDS=64922

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=15.1 AZIMUTH=108.8 ERROR=1.01 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SOME TAIL. DURATION OF THE MAIN PULSE ABOUT 9 S.
TOTAL DURATION ABOUT 42 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7172	981022	11108	64922	22300	015	+49	42

Date: Feb 15 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ ~~Jim~~ Schmidling's stat file correction applied?
- ☒ ~~Final~~ ephemeris used?
- ☒ ~~Final~~, CDROM data used?
- ☒ ~~If~~ a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ ~~Is~~ the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☒ ~~BATSE~~ ephemeris for T_0 ?
- ☒ ~~Error~~ circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☒ ~~Final~~, correct time used? (Files postmarked vw@boccl, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ ~~BATSE~~ >100 keV data used for NEAR correlation?
- ☒ ~~ACCESS~~ database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

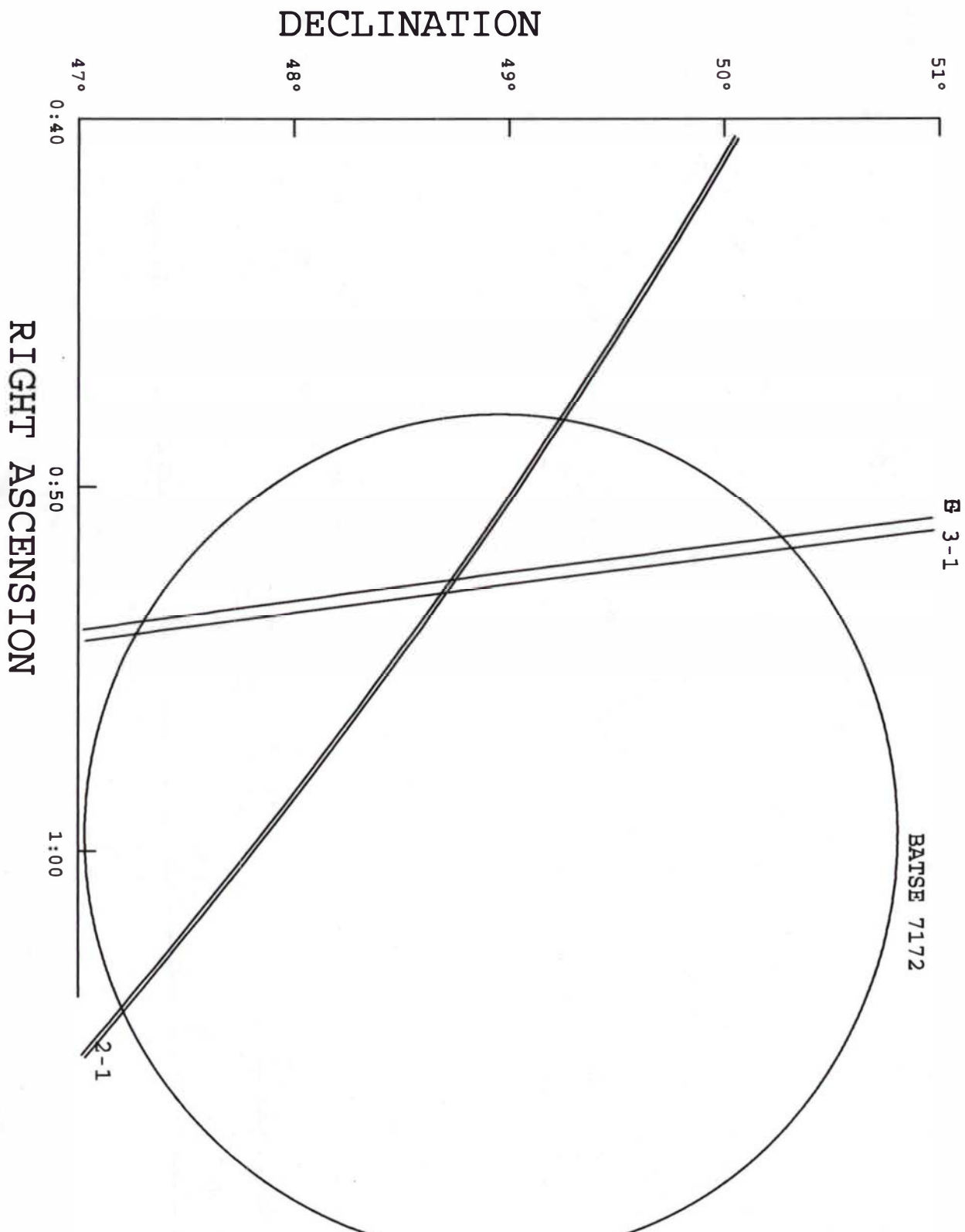
1 BATSE

2 ULYSSES

3 NEAR

EVENT OF OCT 22, 1998 18:02

15/ 2/ 0



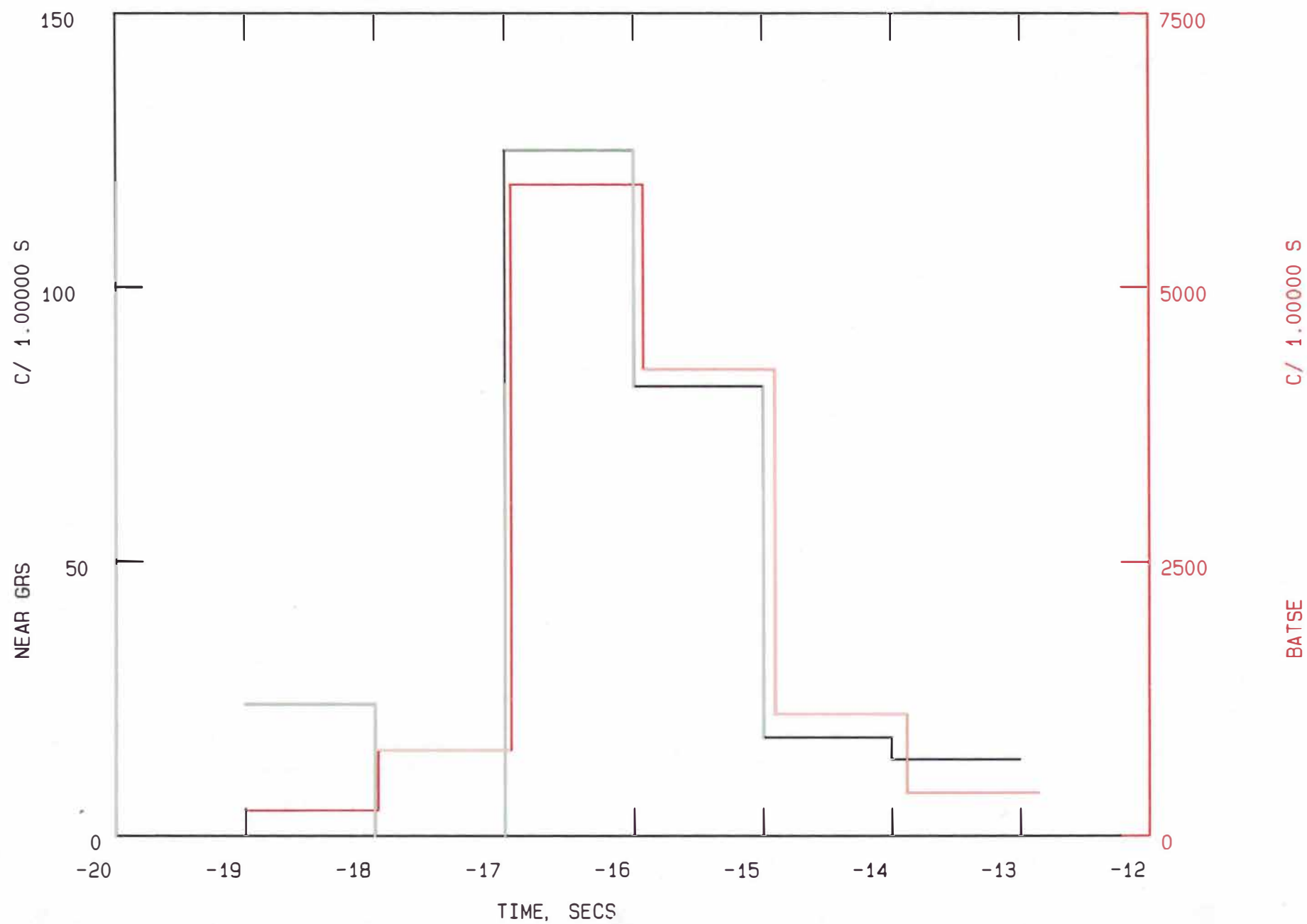
NEAR GRS -BATSE

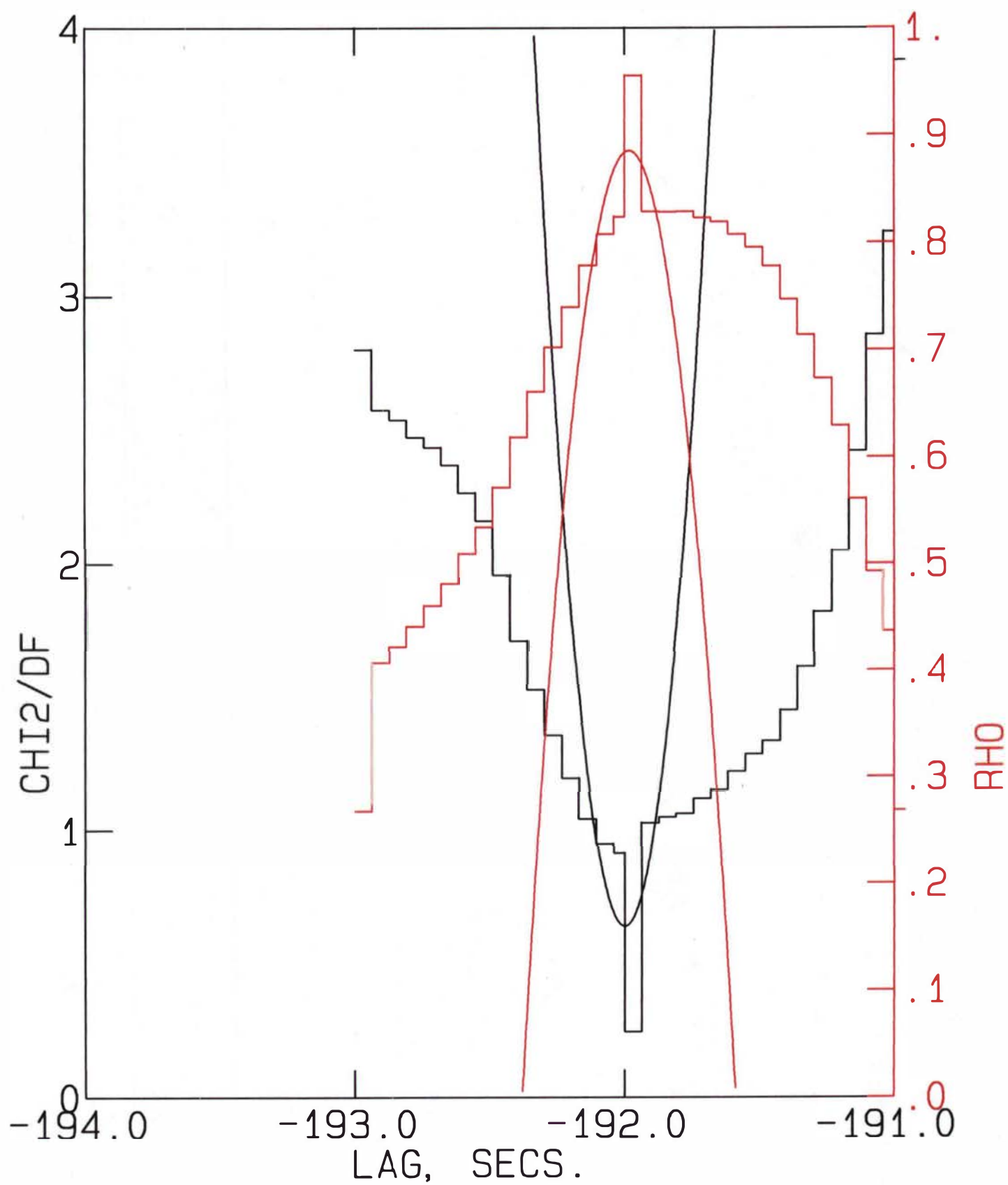
CORRELATION

22/10/98

65380.865

15/ 2/ 0





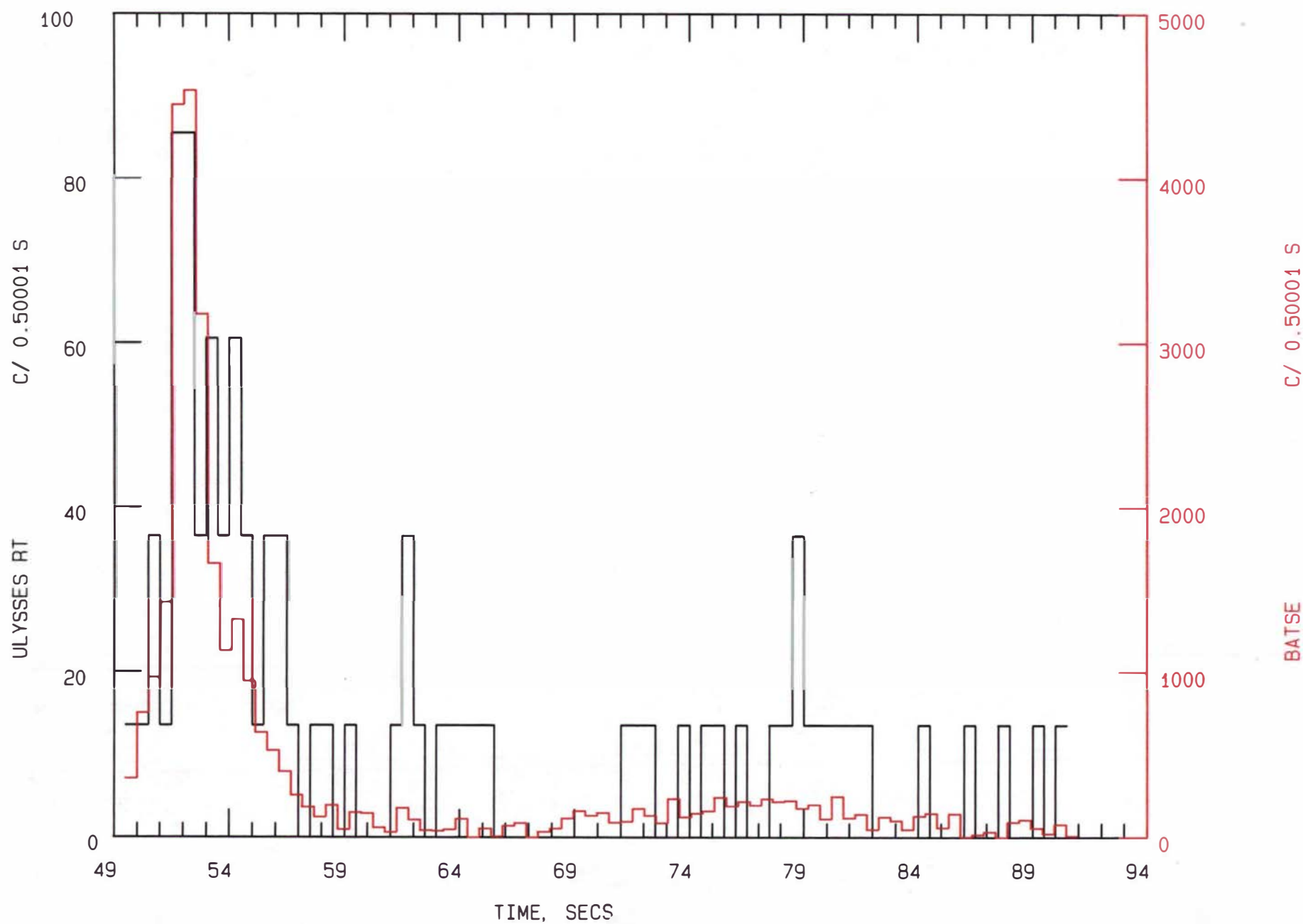
ULYSSES RT-BATSE

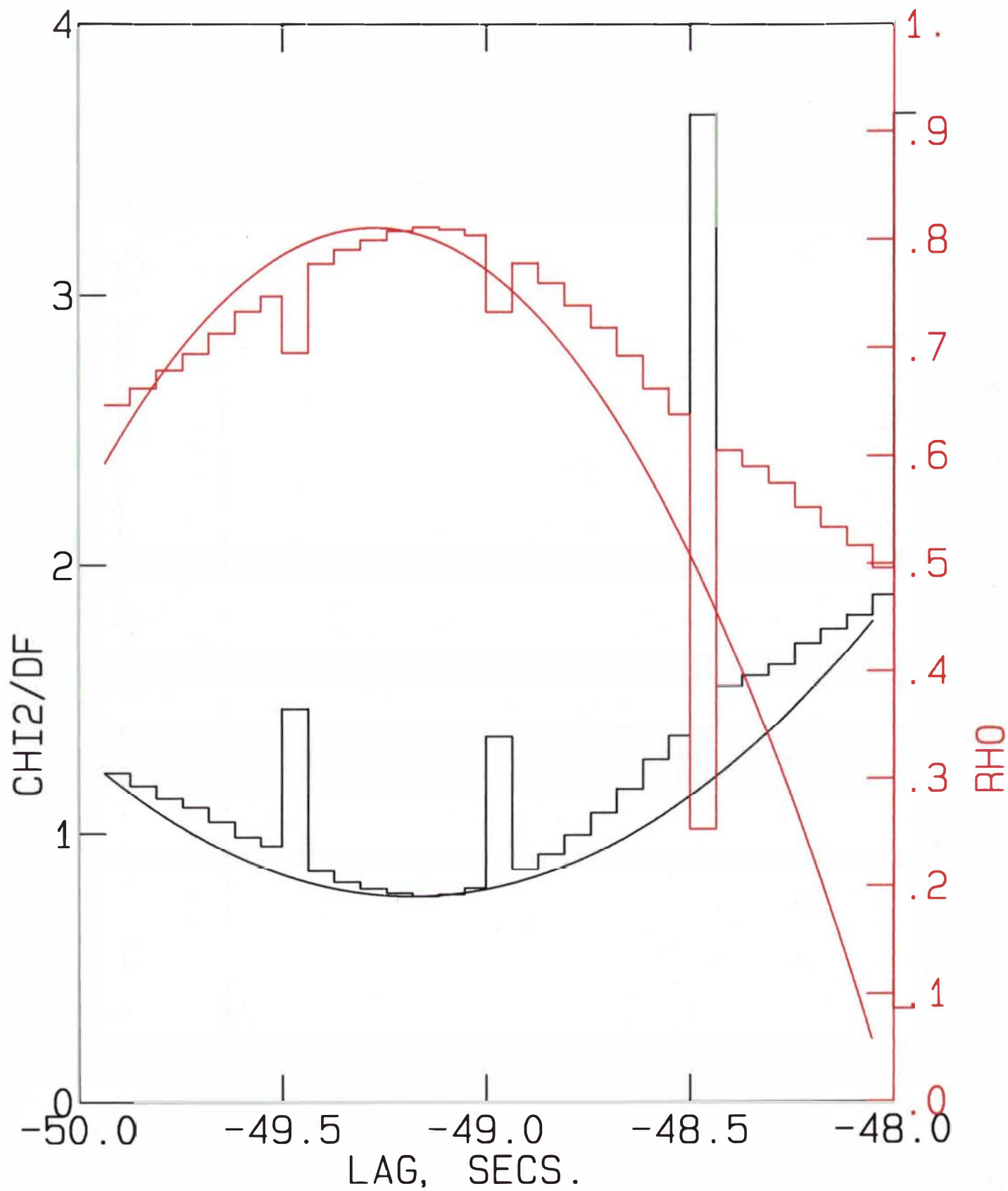
CORRELATION

22/10/98

66674.250

15/ 2/ 0

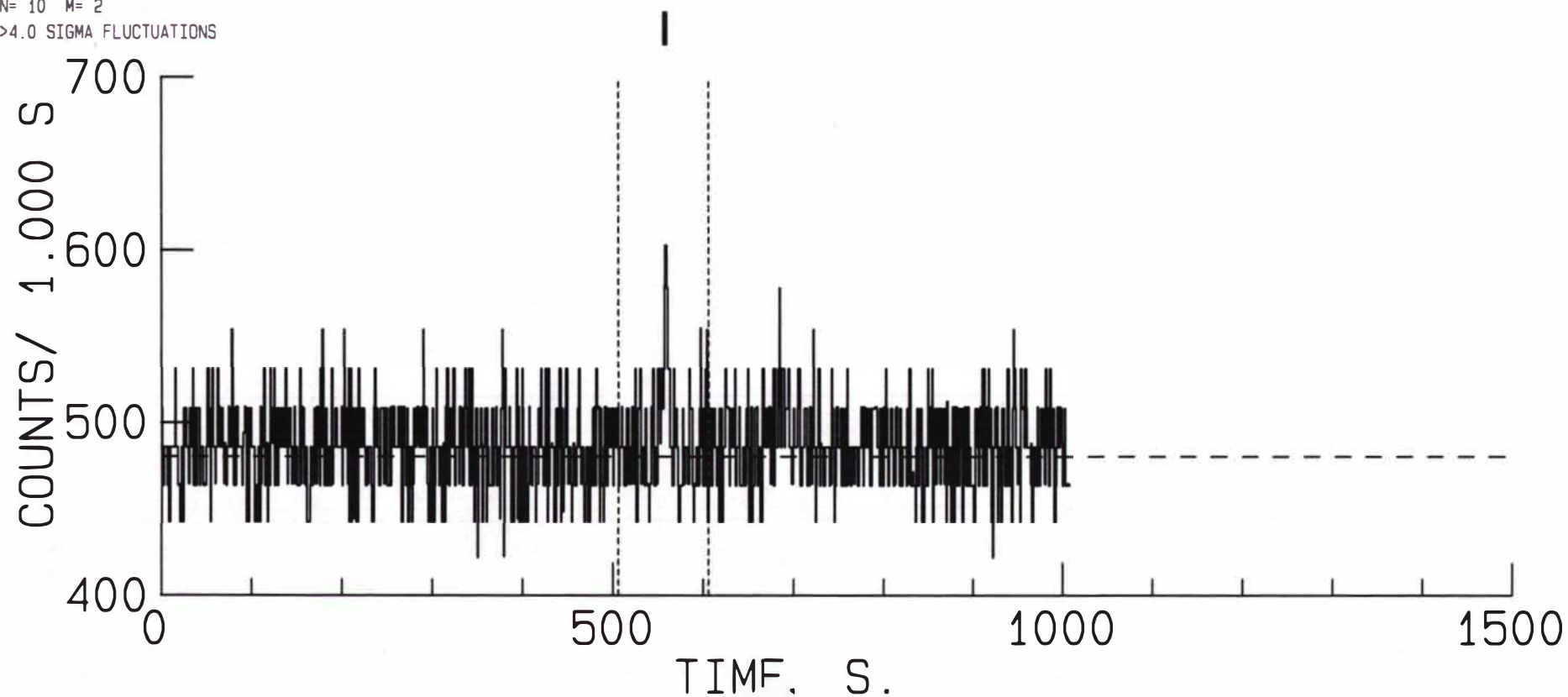




ULYSSES RT
22/10/98 66168.249 s
0.500 S INTERVALS REGROUPED BY 2
22- 149 keV

15 / 2 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



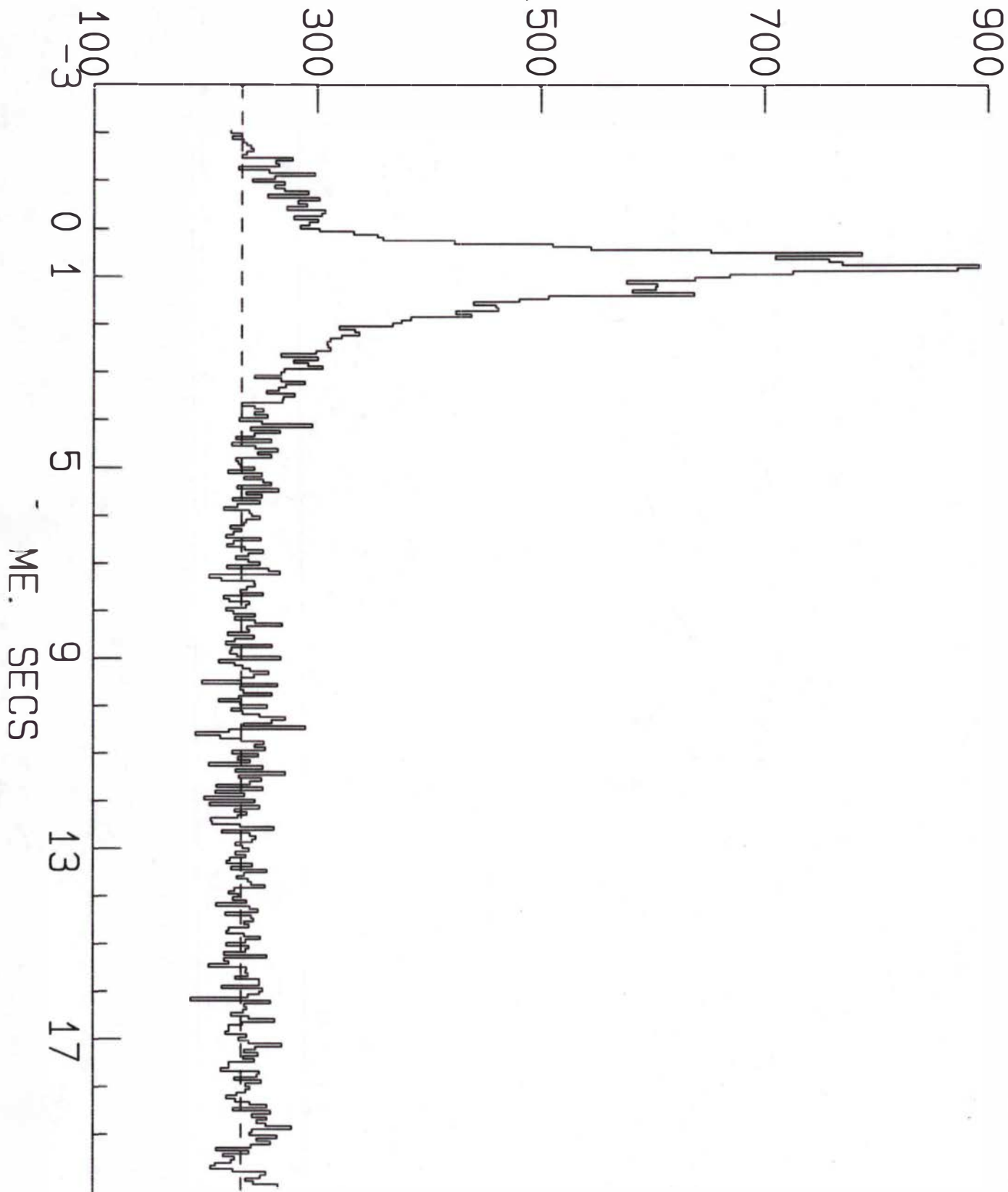
BATSE

22/10/98

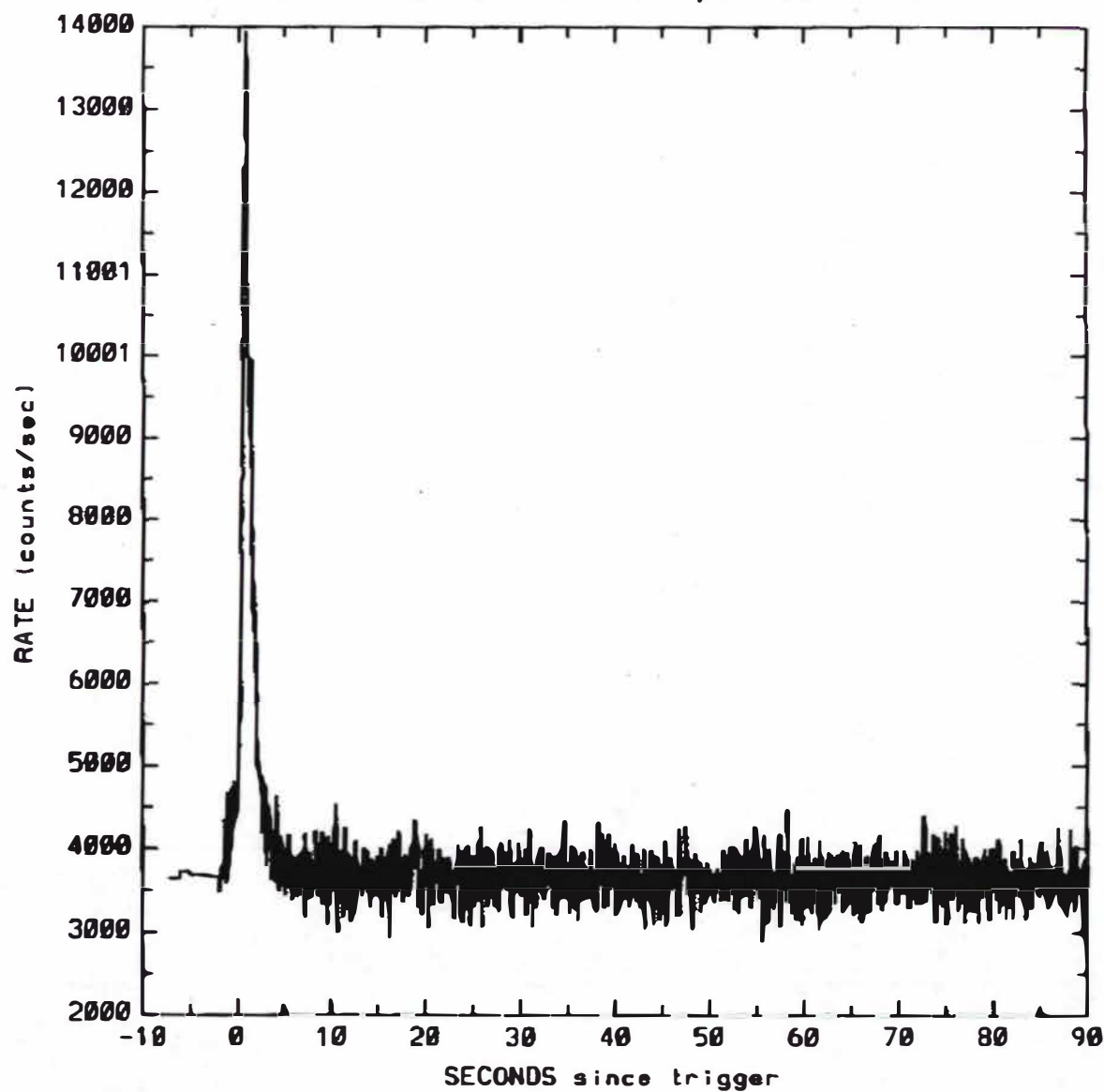
64922.337

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 7172



9-FEB-2000 09:38.11

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # : 7172

Trigger Time:
11100 / 64922.337Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors (7..0).
---4---0Discriminators:
(3 , 4)Quality Mask:
BDISP1

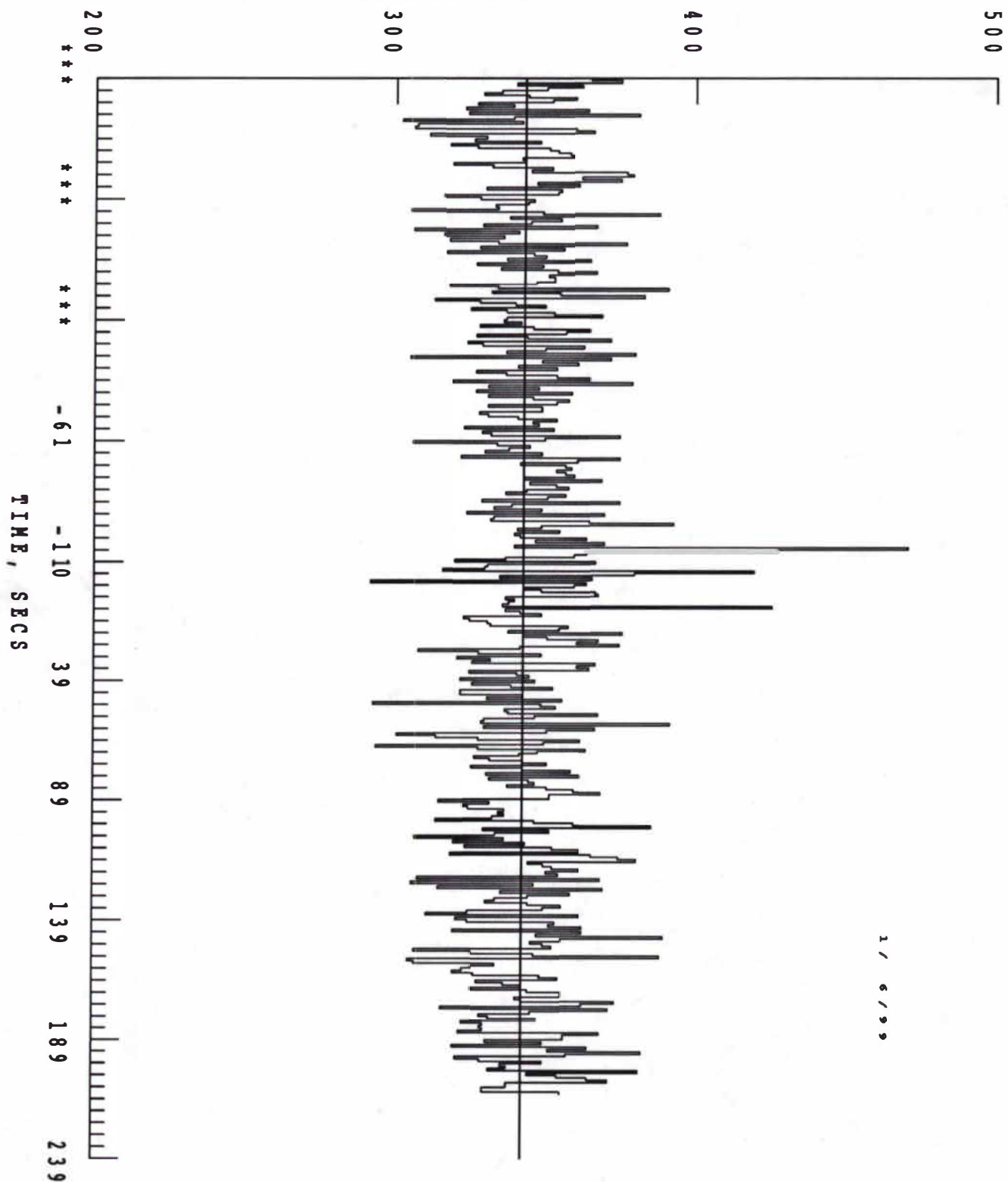
NEAR

22/10/98

65380.865

100-1000 keV

COUNTS/1.000 S



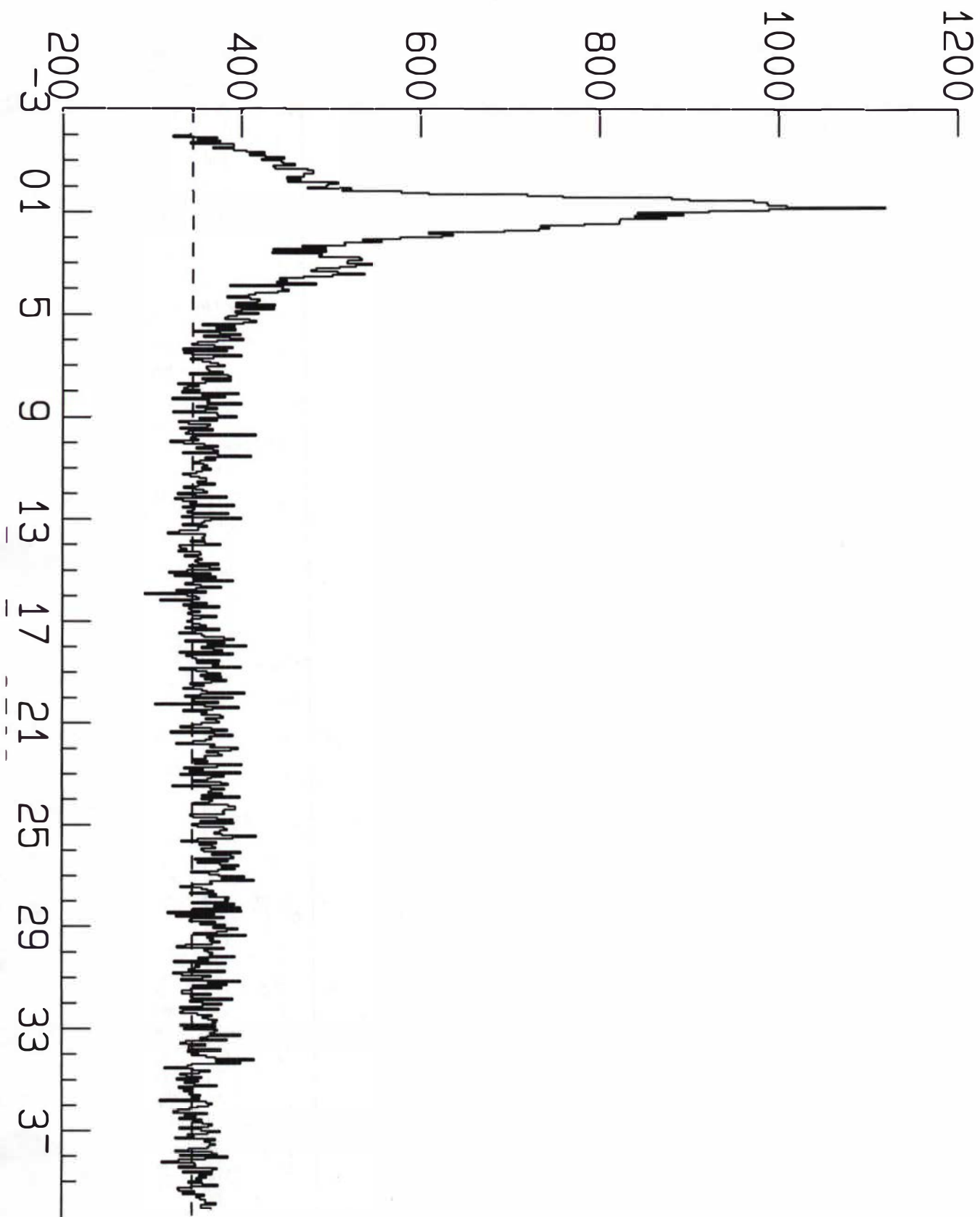
BATSE

22/10/98

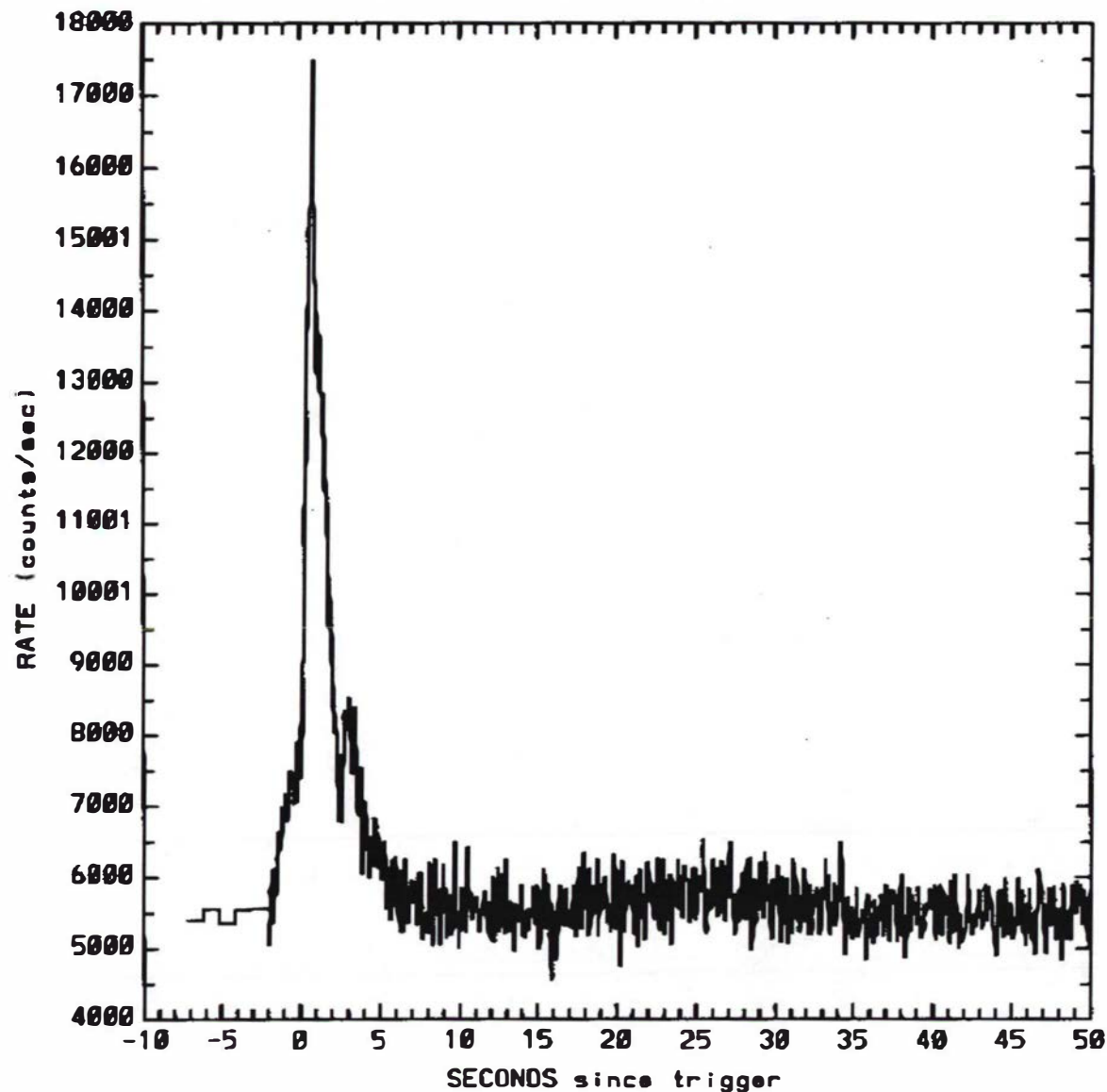
64922.337

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7172



10-NOV-1998 09:55:00

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7172

Trigger Time:
11100 / 64922.337

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..0]:
---4---0

Discriminators:
(1 , 2)

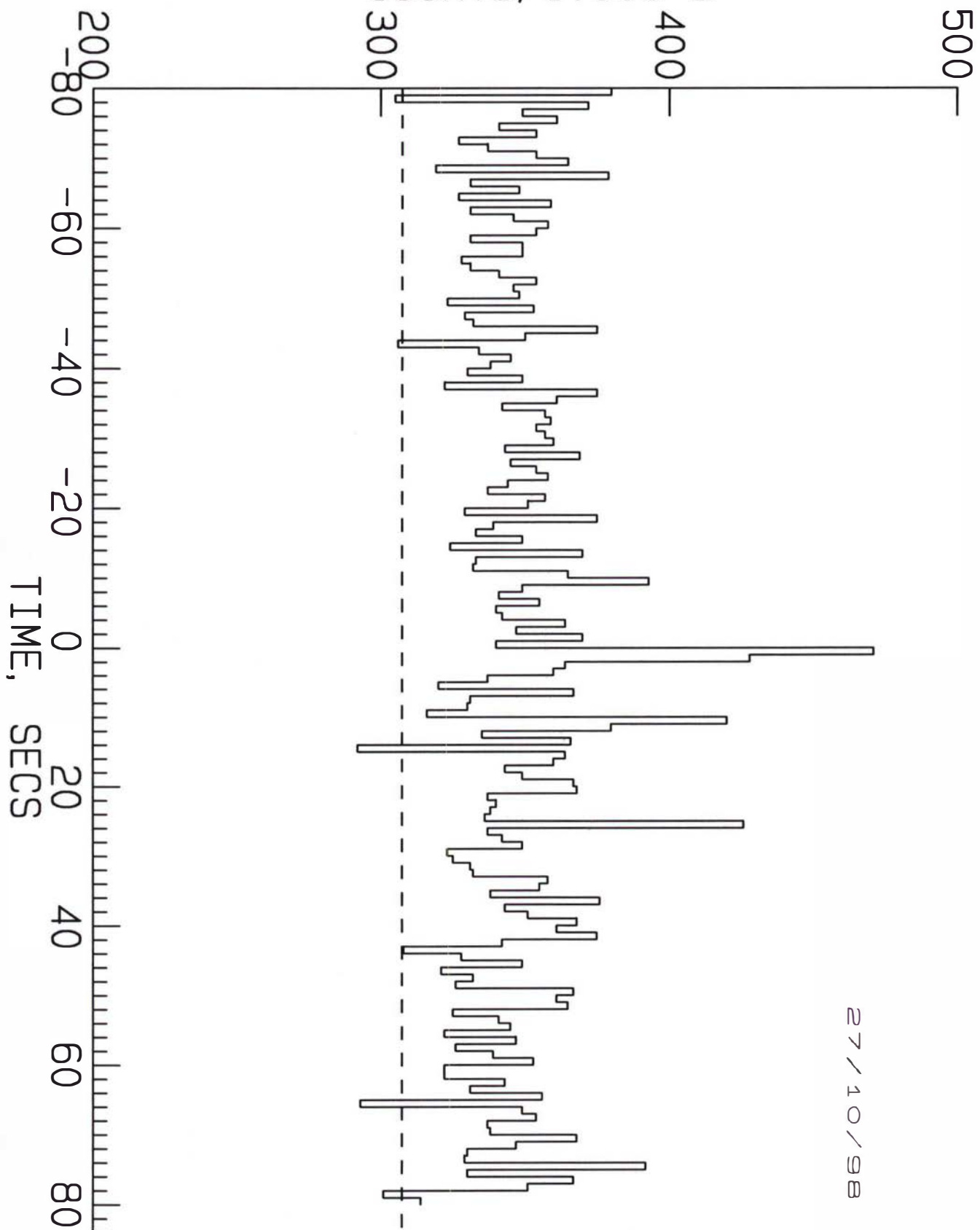
Quality Mask:
001SP1

NEAR

22/10/98 65366.818

100-1000 keV

COUNTS/1.000 S



27/10/98

From SURASAK@fender.msfc.nasa.gov Mon Oct 26 12:00:37 1998
Return-Path: <SURASAK@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA17173; Mon, 26 Oct 1998 12:00:37 -0800
From: SURASAK@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA01895; Mon, 26 Oct 1998 12:00:34 -0800
Date: Mon, 26 Oct 1998 14:00:36 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981026140036.20214d79@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7173
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7173
EVENT OF 1998 OCT 22 DAY OF YEAR=295
EVENT CROSSING TIME AT BATSE : 83308. S. OR 23:08:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 112.000 -5.000
BATSE PEAK COUNTING RATE: 9800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/10/ 98 IS:
RA= 164.749 DEC= -1.429 DIST= 5.973 AU
BATSE-ULYSSES DISTANCE = 893600969. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=127.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1803.29 SECS.
CROSSING TIME AT ULYSSES IS 81505. S. OR 22:38:24 +/- 434.67 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/10/ 98 IS:
RA= 160.944 DEC= 9.602 DIST= 2.111 AU
MARS-BATSE DISTANCE = 315811904. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -664.29 SECS.
CROSSING TIME AT MARS IS 82644. S. OR 22:57:23 +/- 131.86 SECONDS

BATSE BURST TRIGGER

NO.: 7173

TIME: TJD=1108 SECONDS=83308

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=84.5 AZIMUTH=312.8 ERROR=5.03 DEGREES

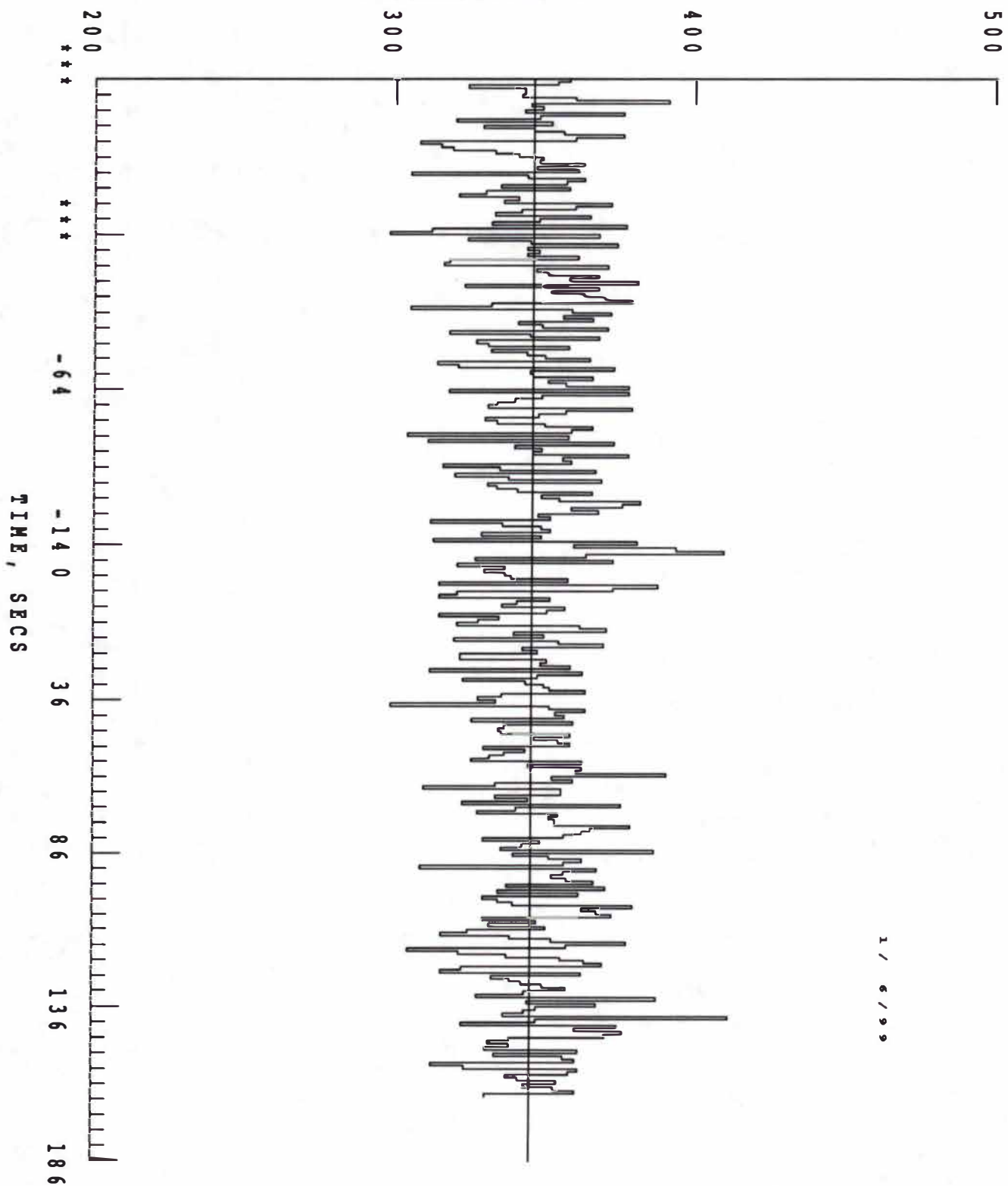
COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DURATION ABOUT 0.6 S. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7173	981022	11108	83308	9800	112	-05	.6

8 4 1 2 3 . 8 6 0

COUNTS / 1.000 S

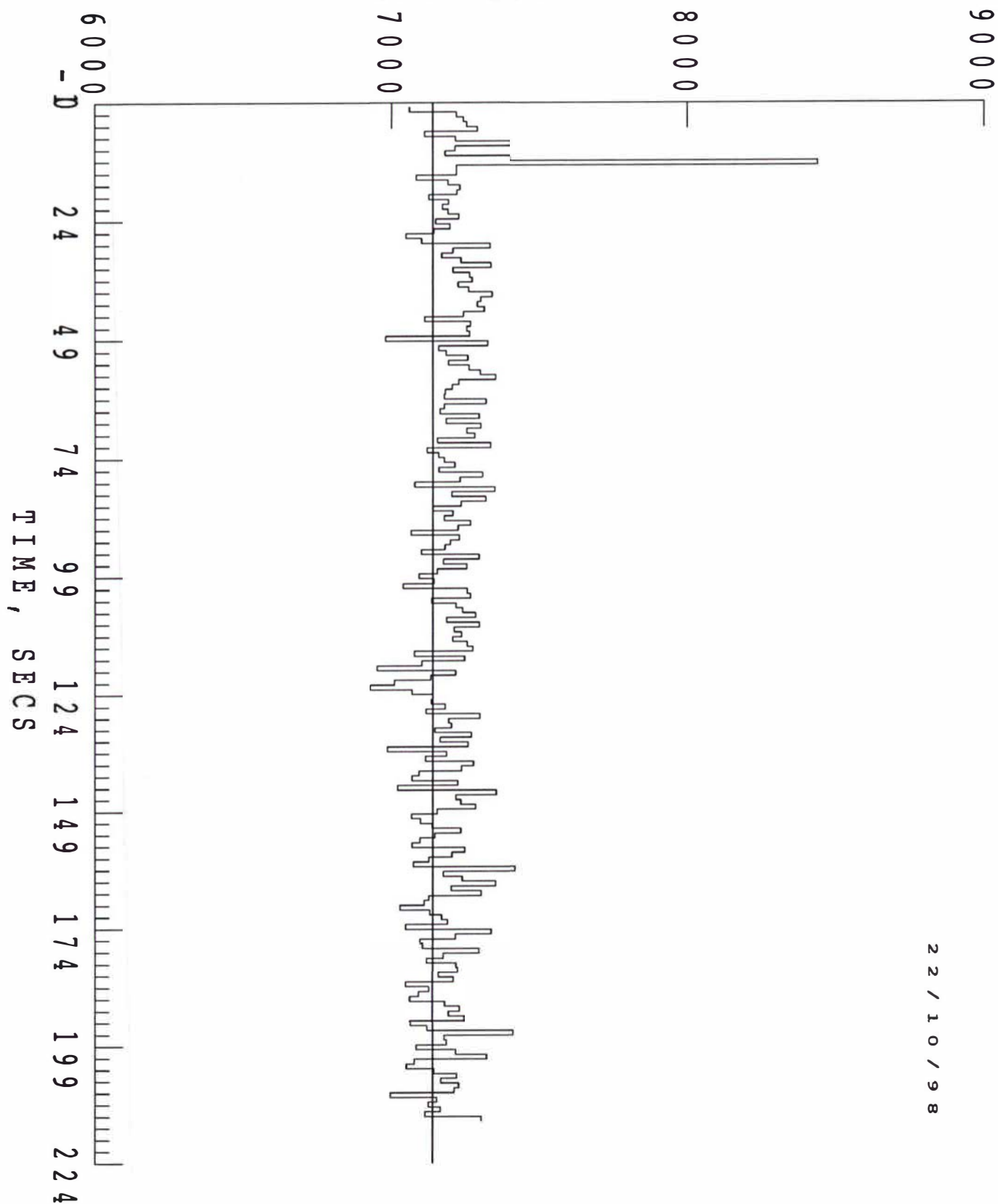


66 / 9 / 1

BACODINE 7173 22/10/98 83296.993

25 - 100 keV

COUNTS/1.024 S



BATSE BURST# 7173

ULYSSES RT

26 / 10 / 98

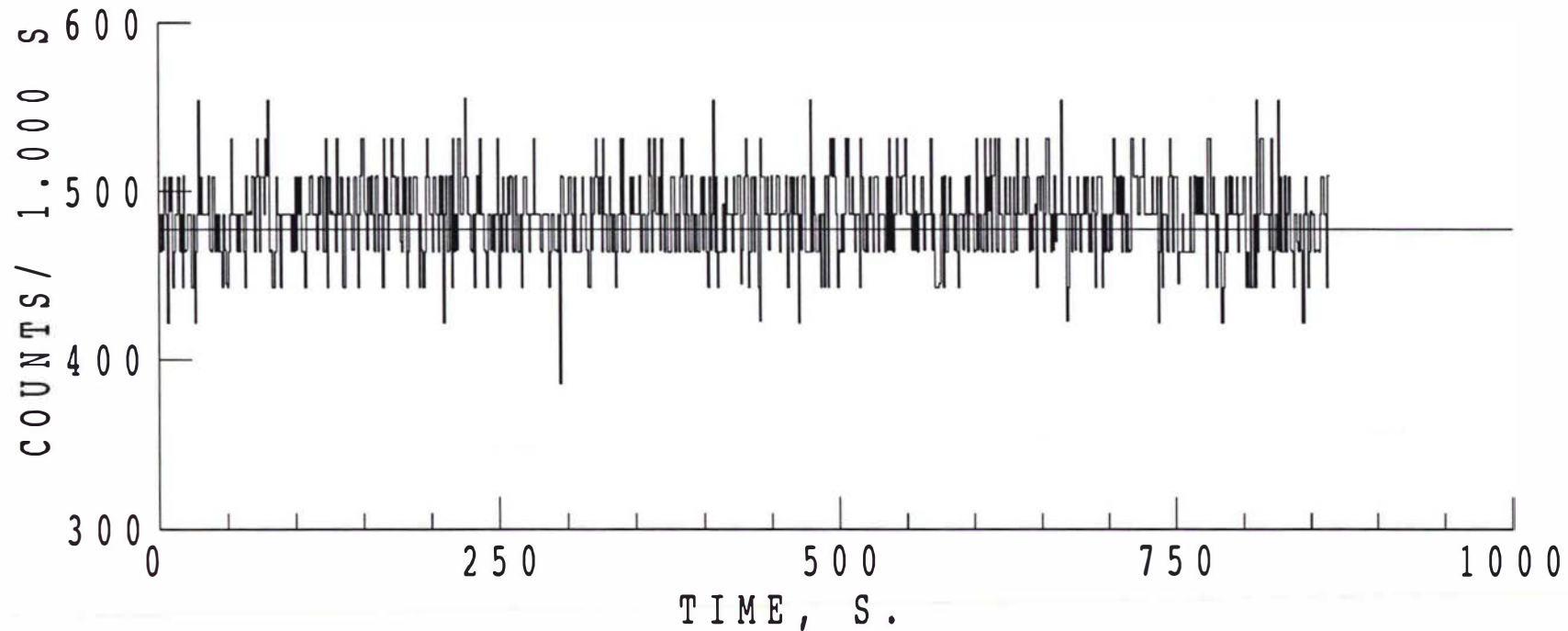
22 / 10 / 98 81072.398 s

0.500 S INTERVALS REGROUPED BY 2

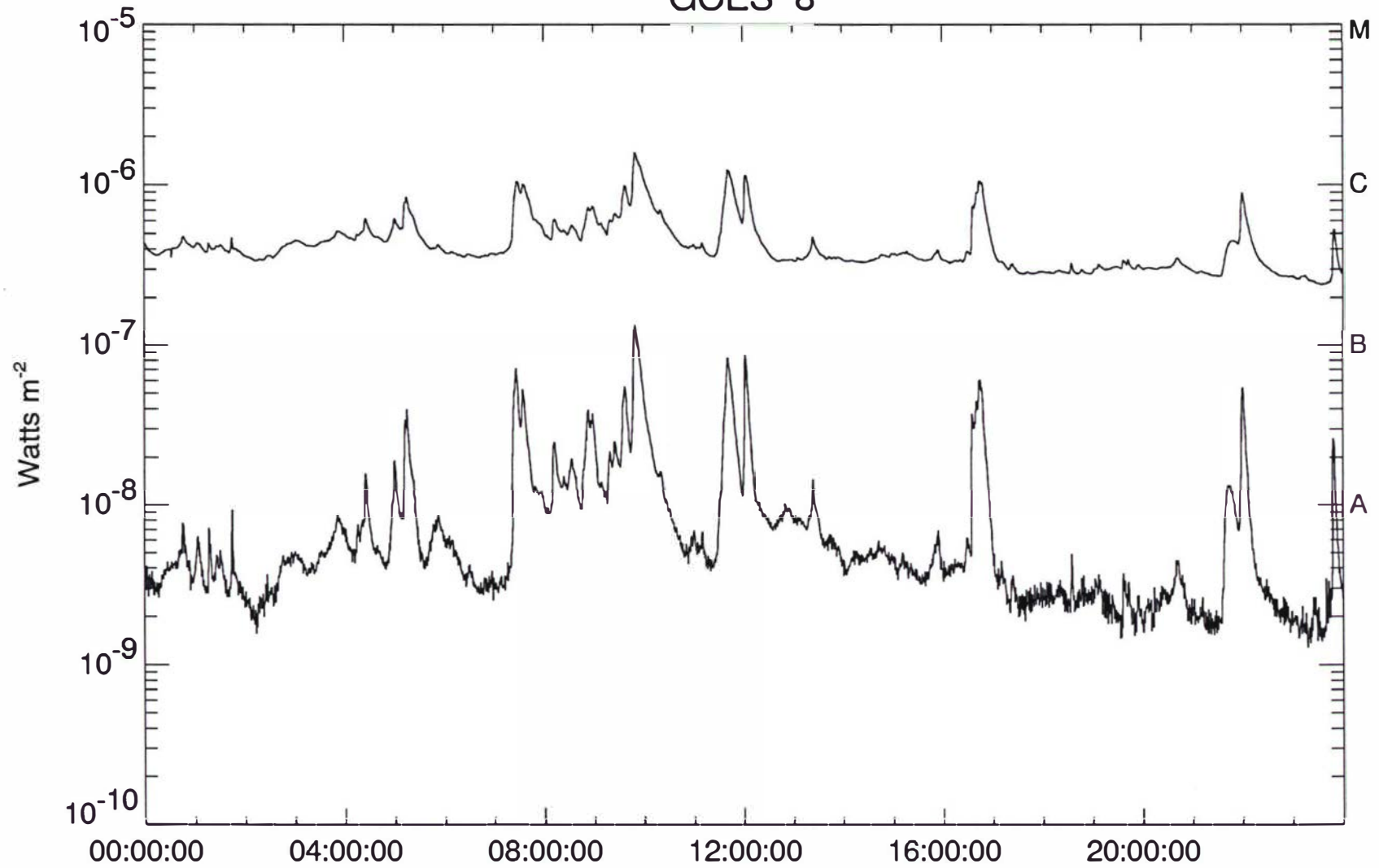
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GOES 8



Data Start: 98/10/22, 0000:00

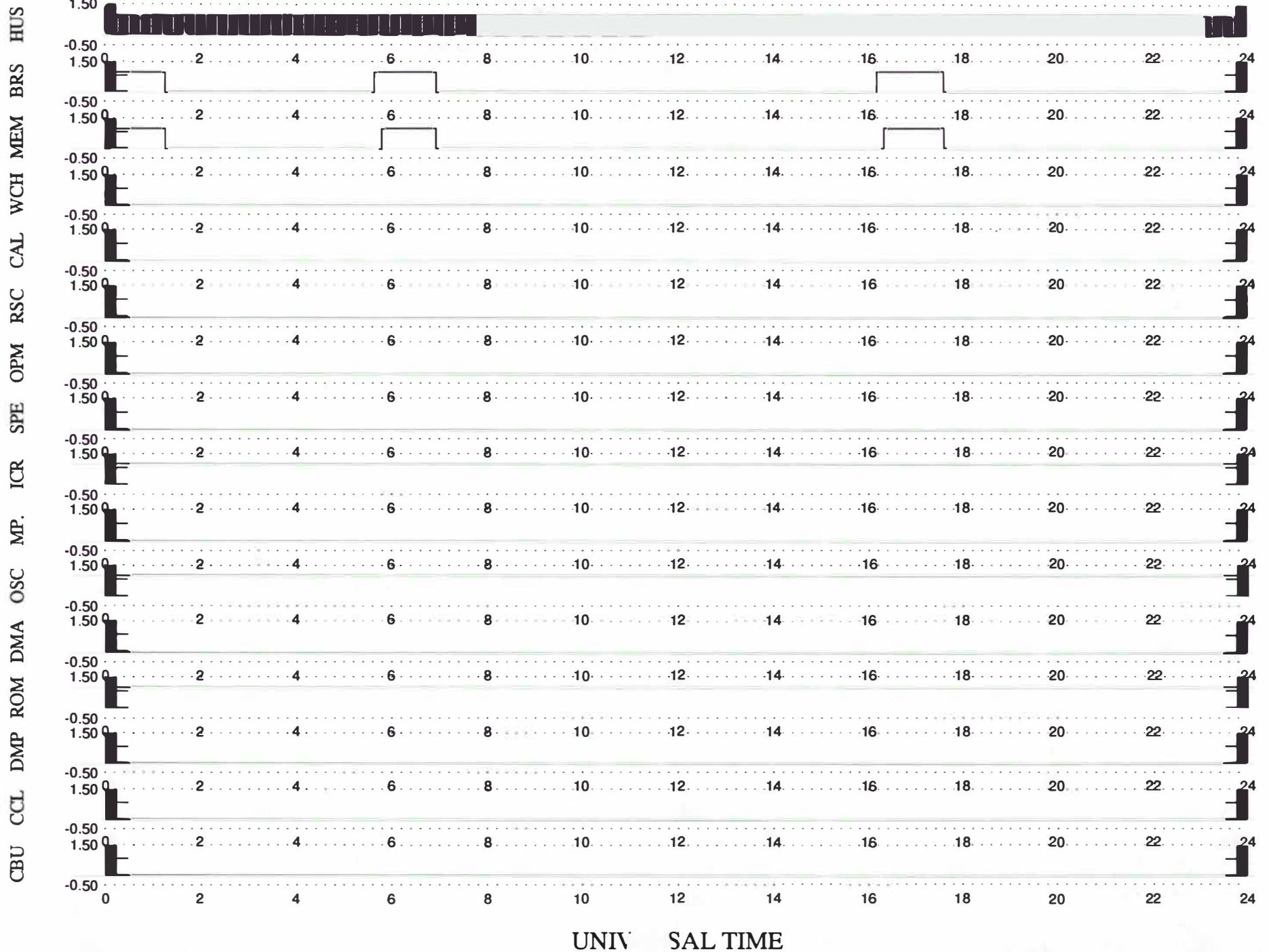
Plot created: 98/10/26, 1007

Channel

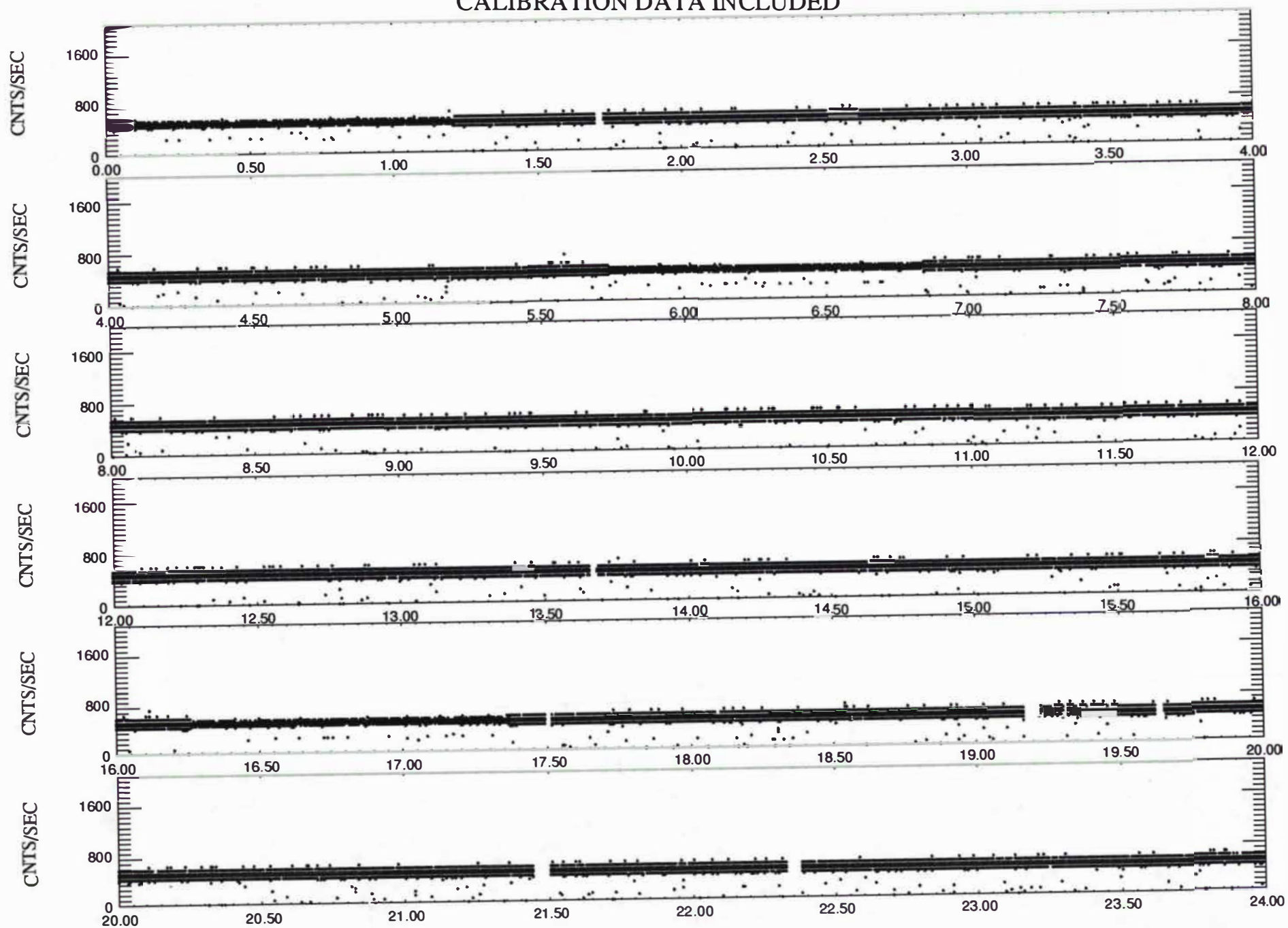
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 0 - 2

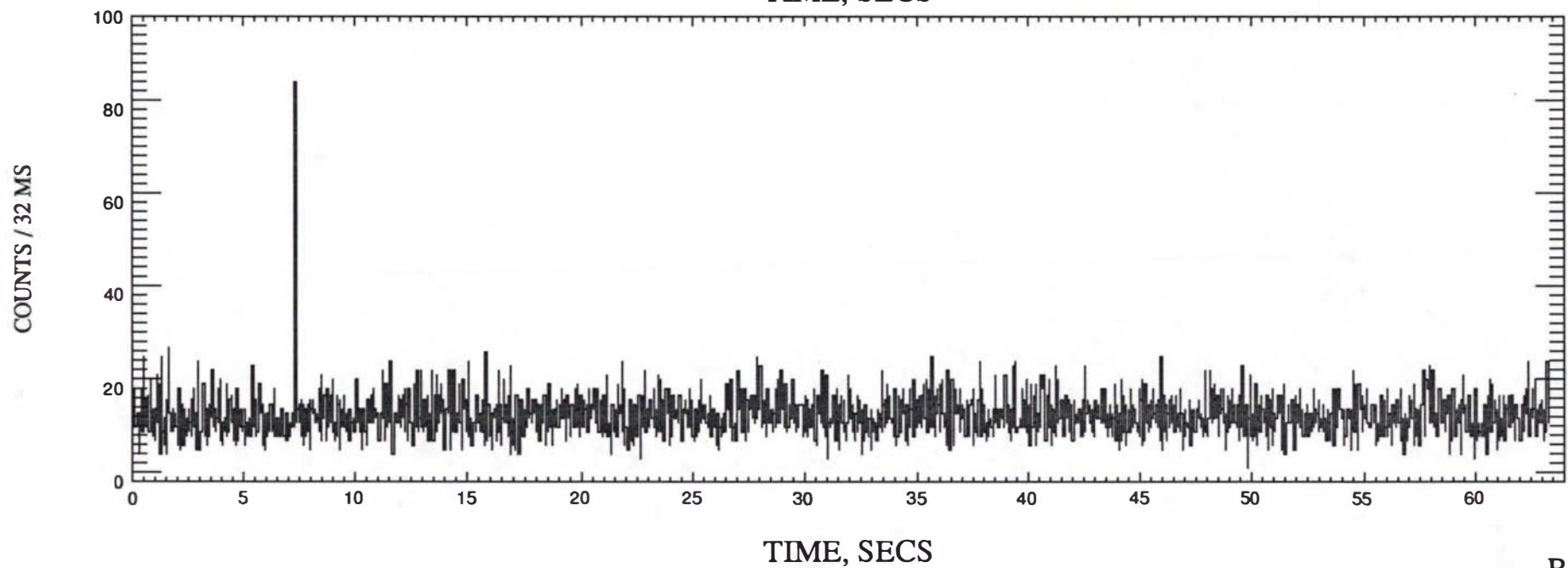
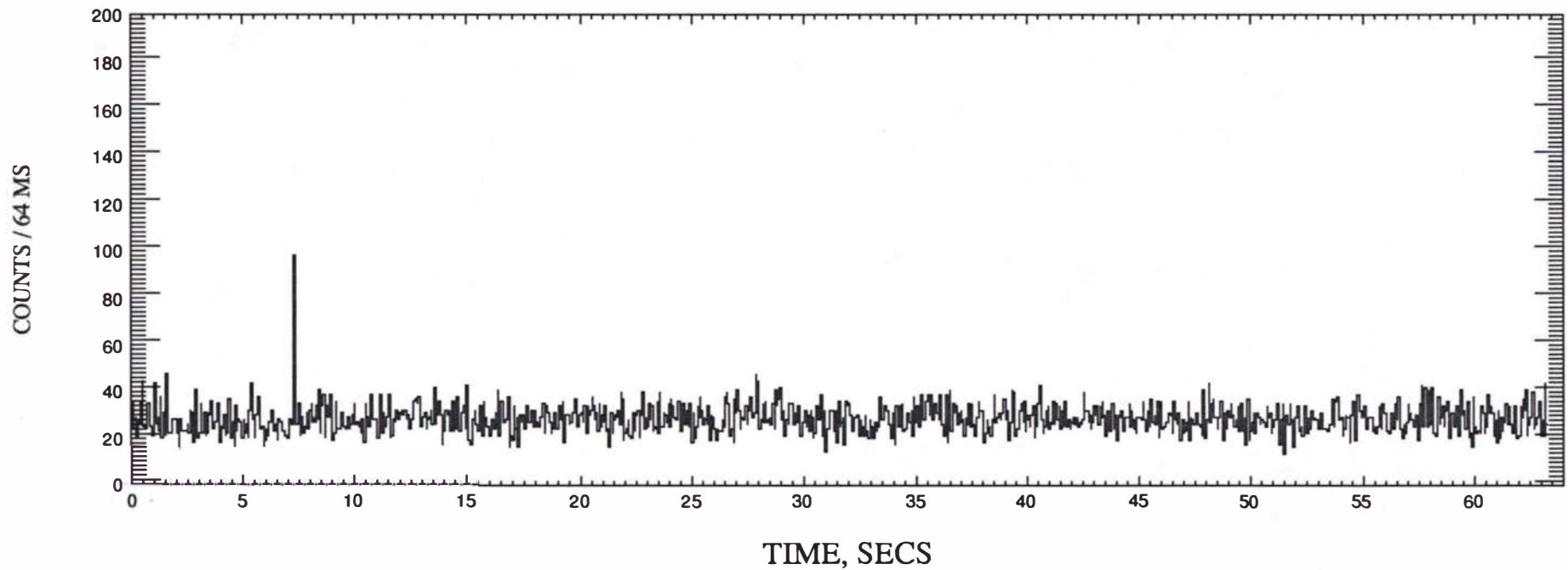


CALIBRATION DATA INCLUDED

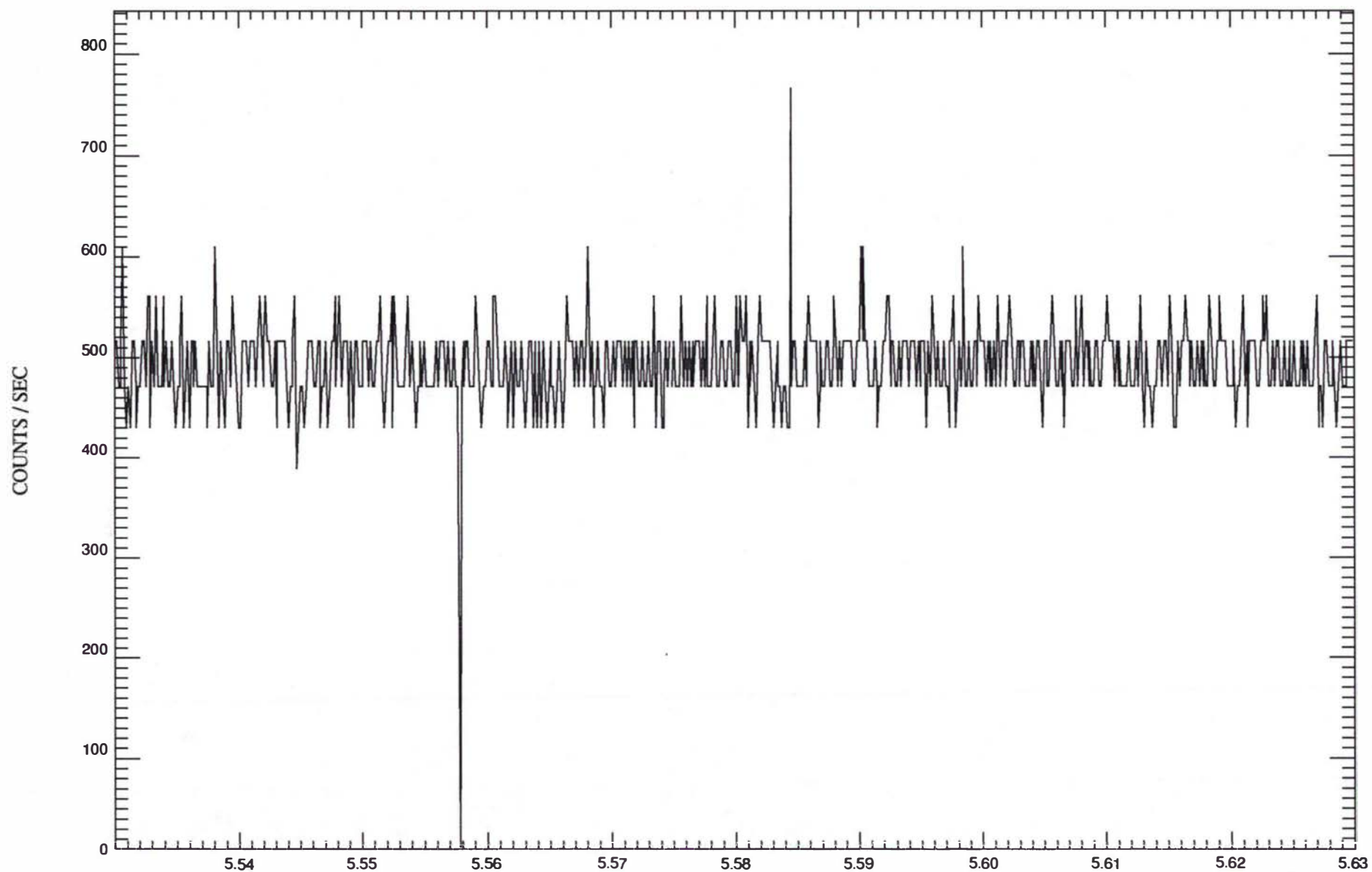


UNIV SAL TIME

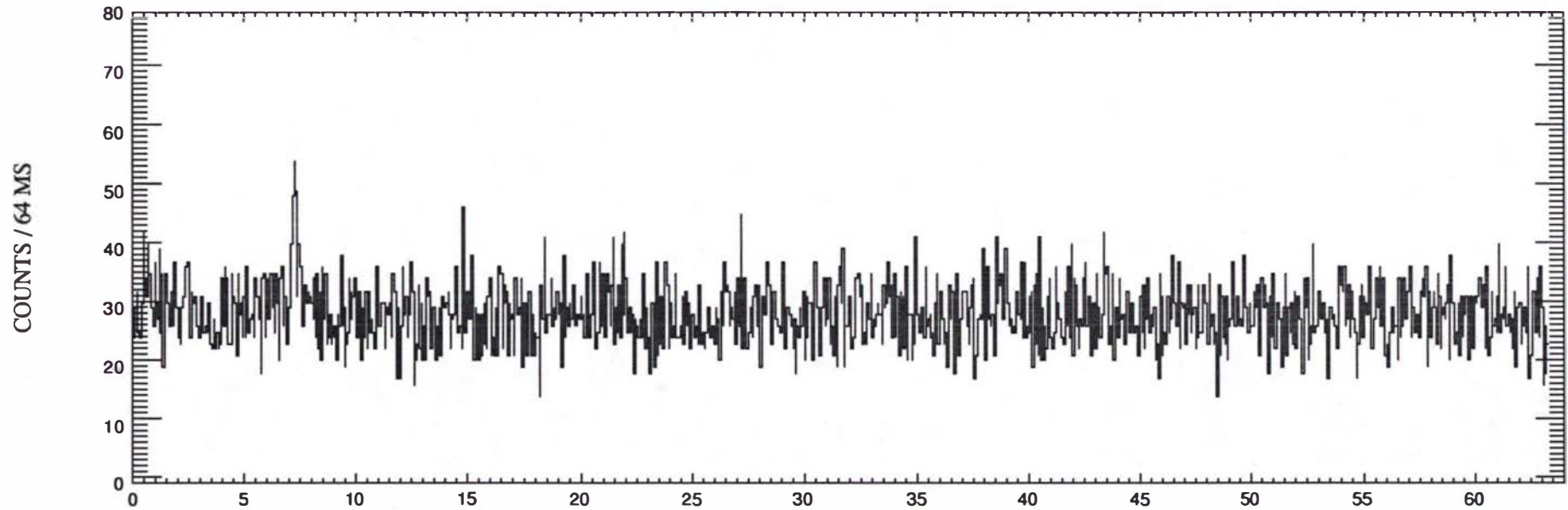
Burst Counter 1 at UT= 5.584571787516 h=20104.458 s 05:35:04.458



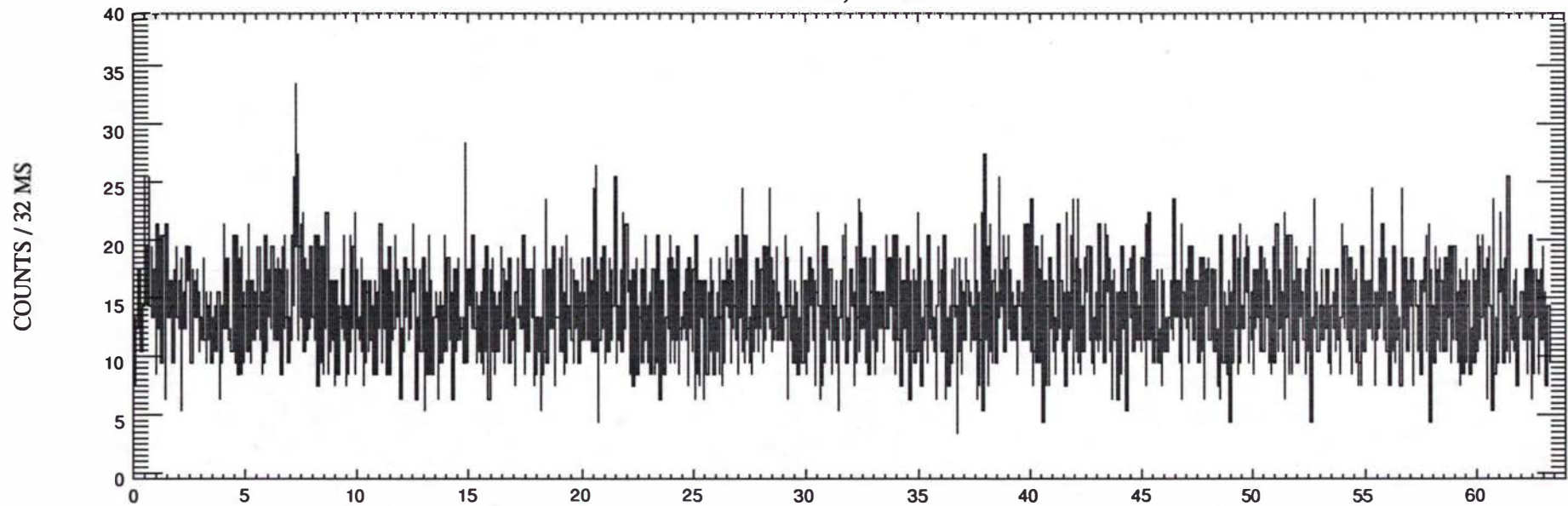
CALIBRATION DATA INCLUDED



Burst Counter 2 at UT=16.112088843452 h=58003.520 s 16:06:43.520

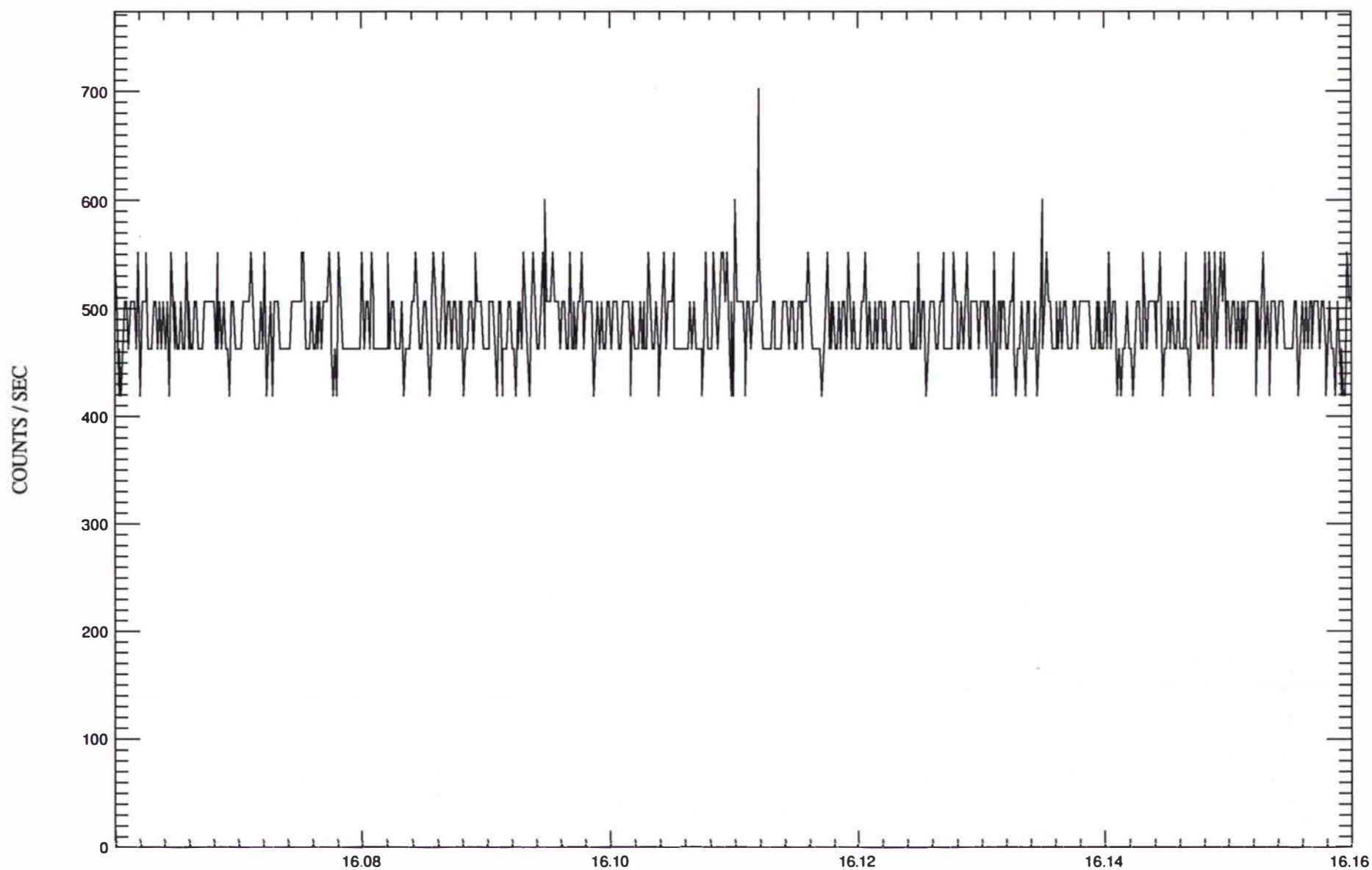


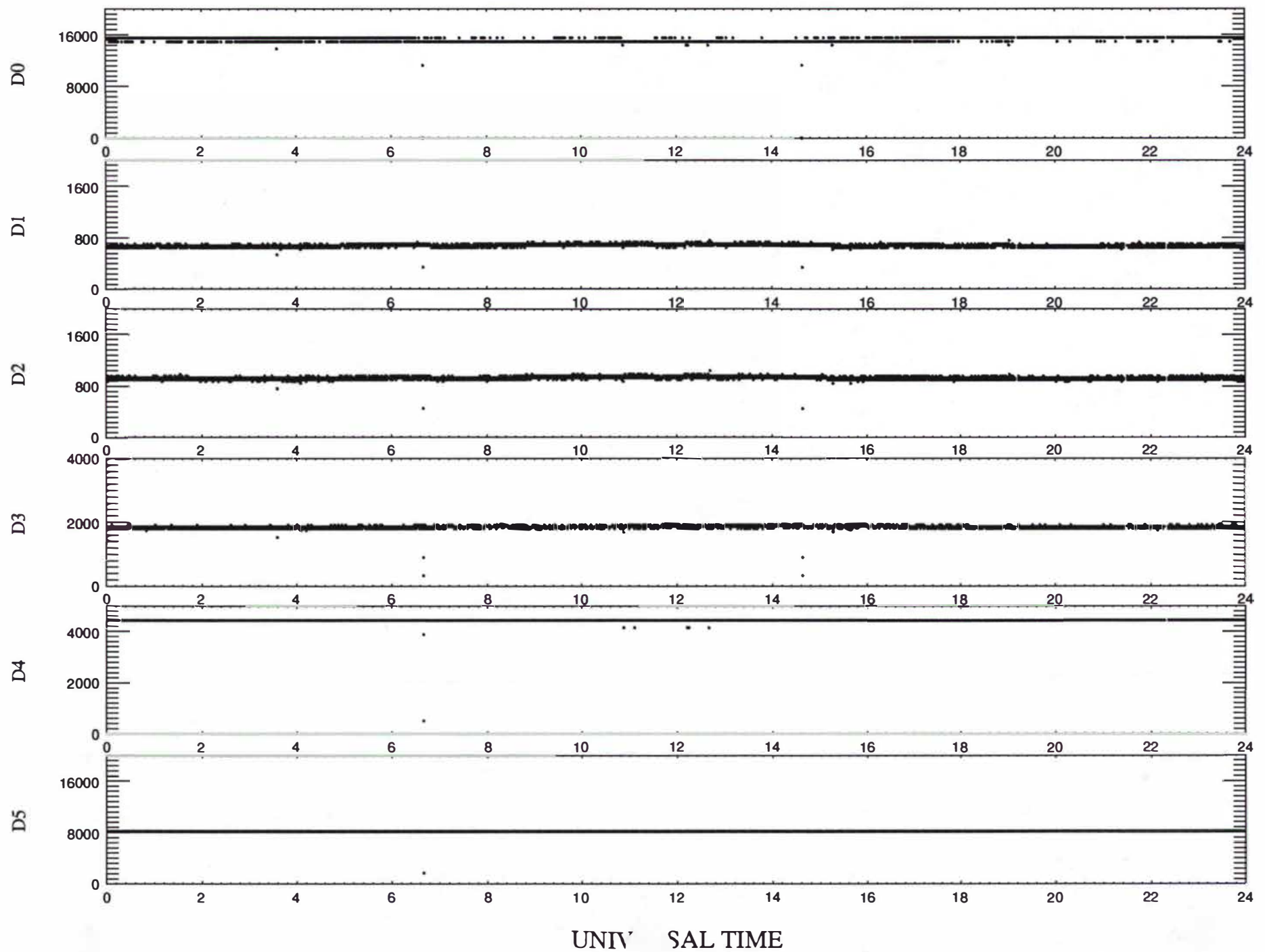
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





KONUS

ULYSSES RT

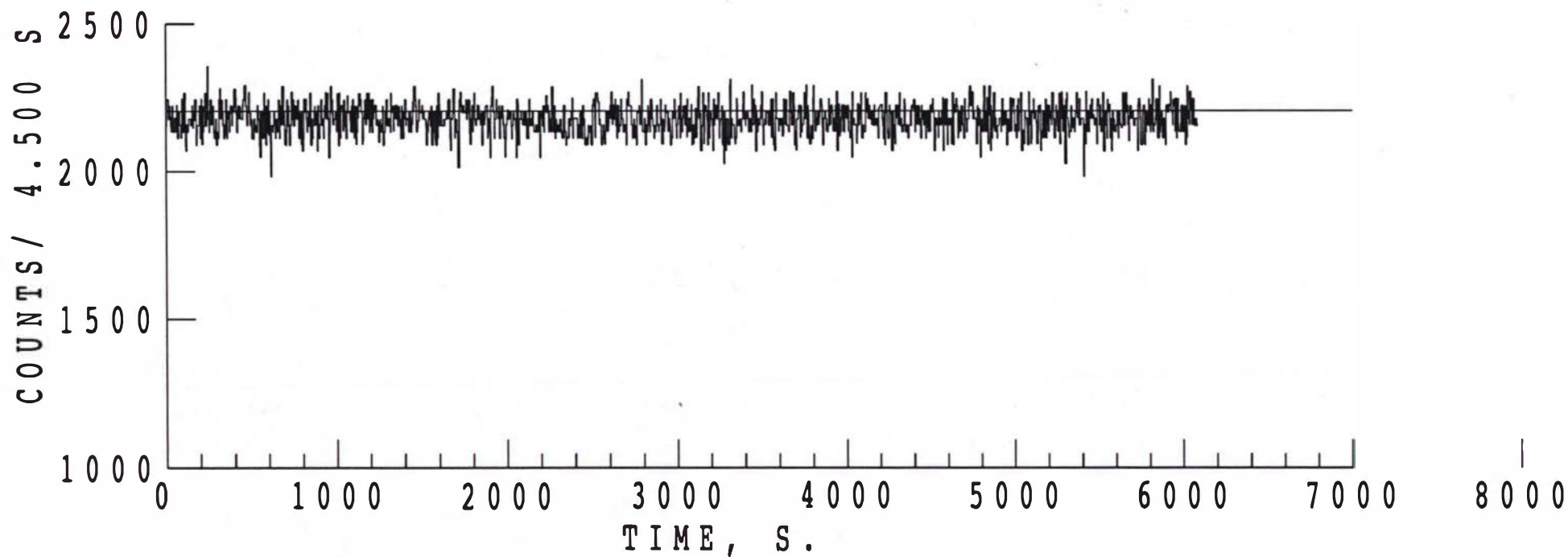
10/02/00

23/10/98 43992.406 s

0.500 S INTERVALS REGROUPED BY 9

0 - 0 keV

N=10 M=2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Mon Oct 26 08:31:41 1998
Date: Mon, 26 Oct 1998 10:31:01 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7174

TIME: TJD=1109 SECONDS=66414

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

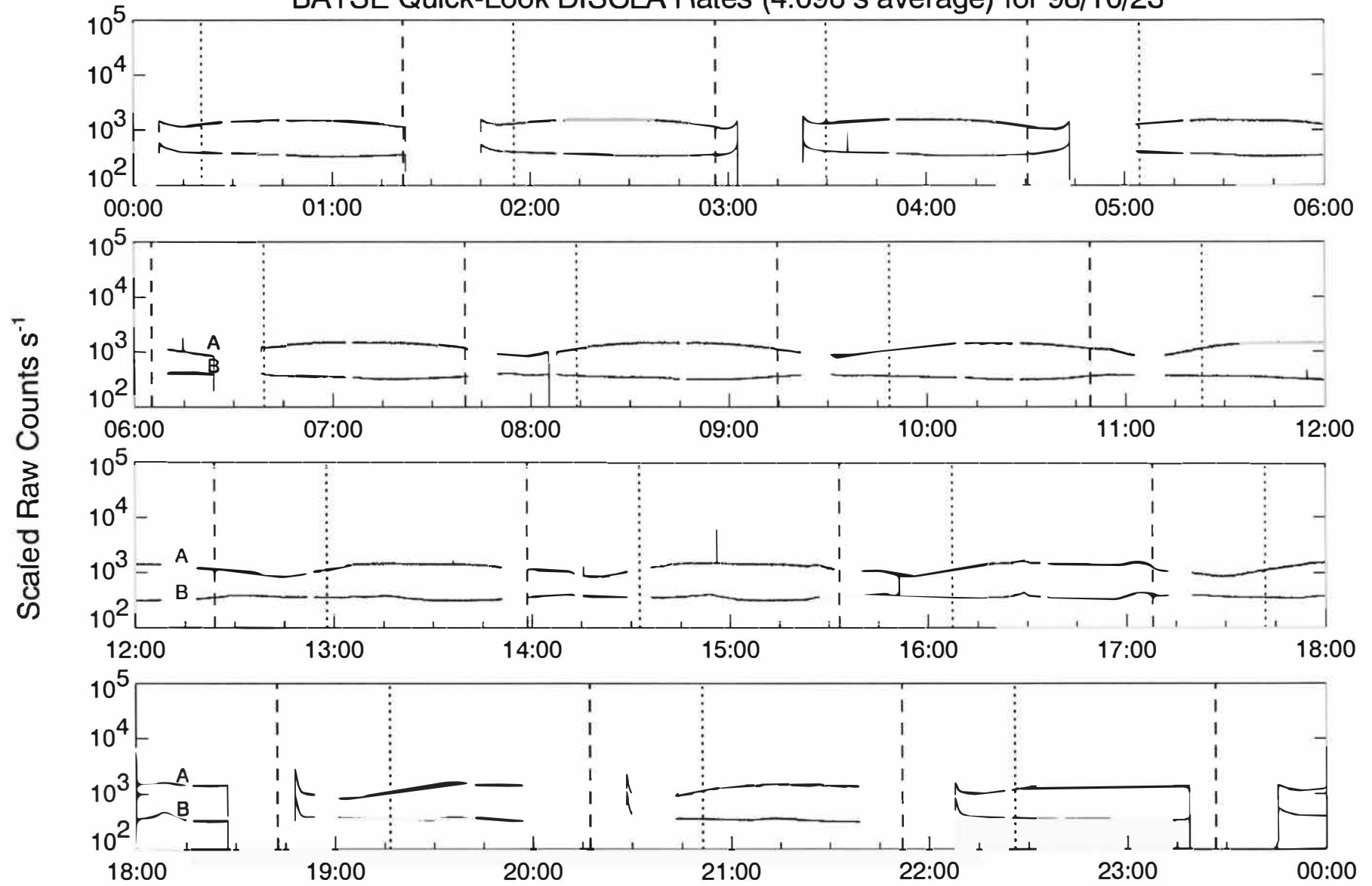
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

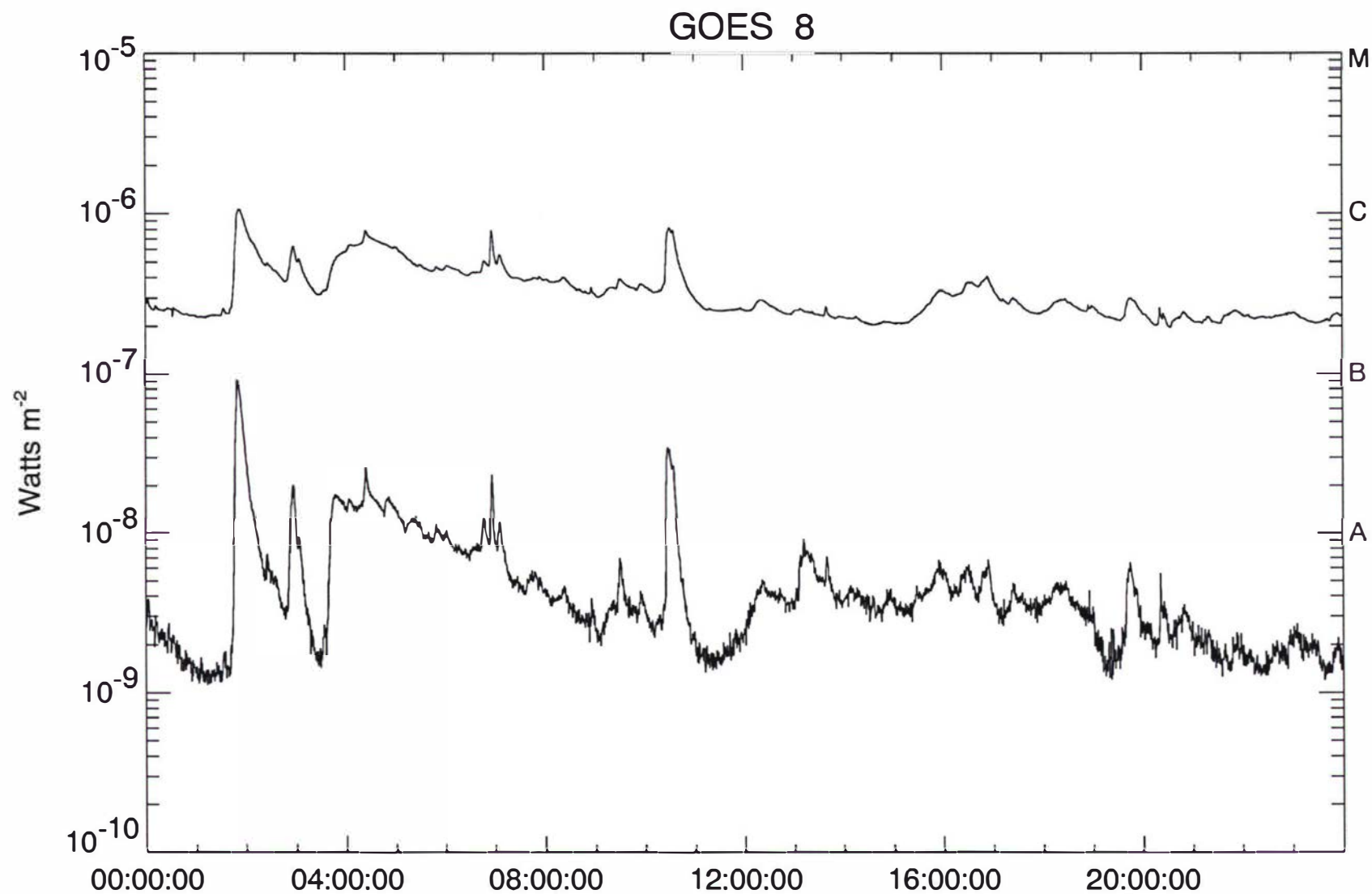
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/23



Current Time: 98/10/27, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/10/23, 0000:00

Plot created: 98/10/27, 1007

Channel

1 (1.0 - 8.0 Angstroms)

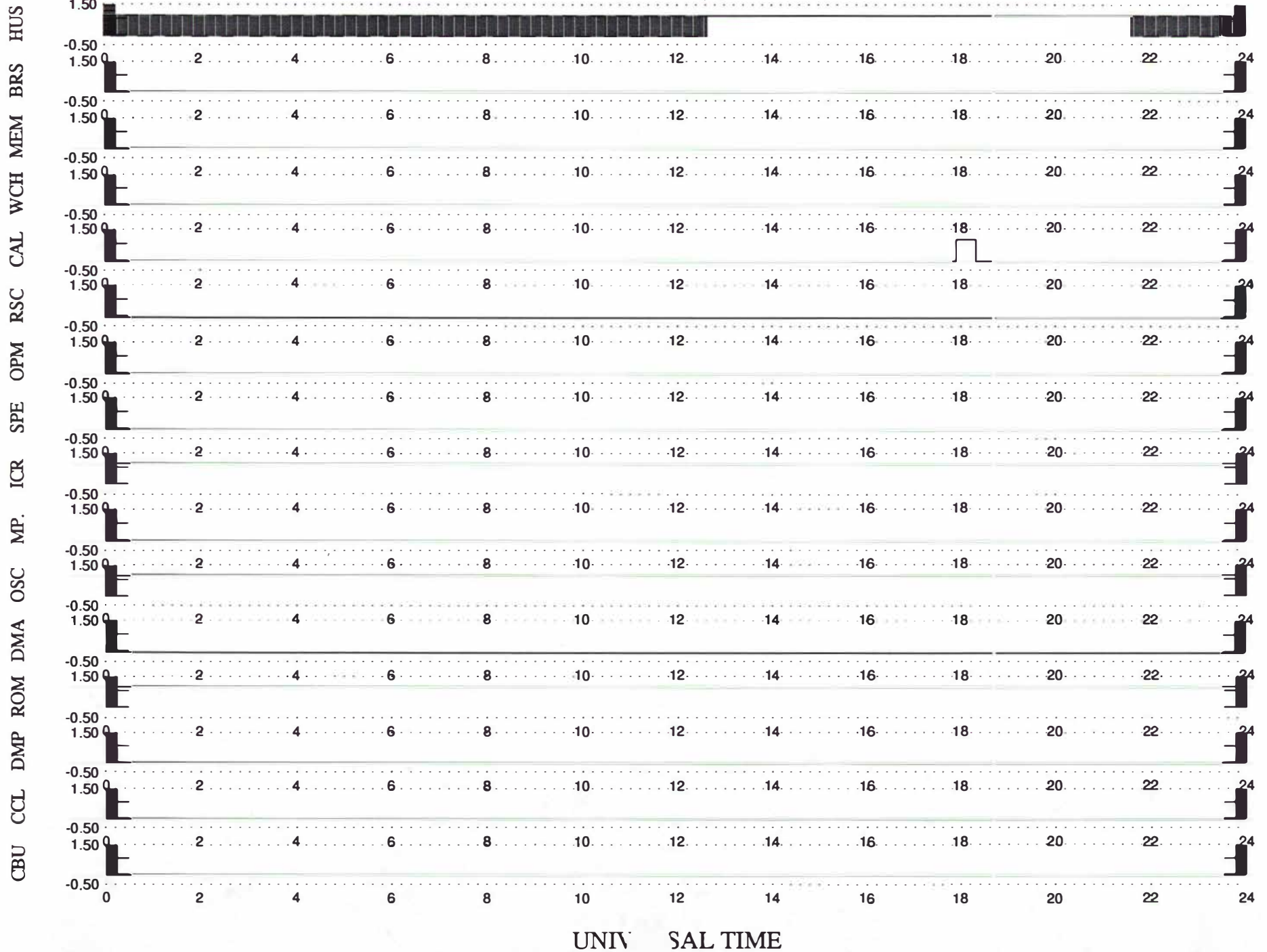
Background not subtracted

2 (0.5 - 4.0 Angstroms)

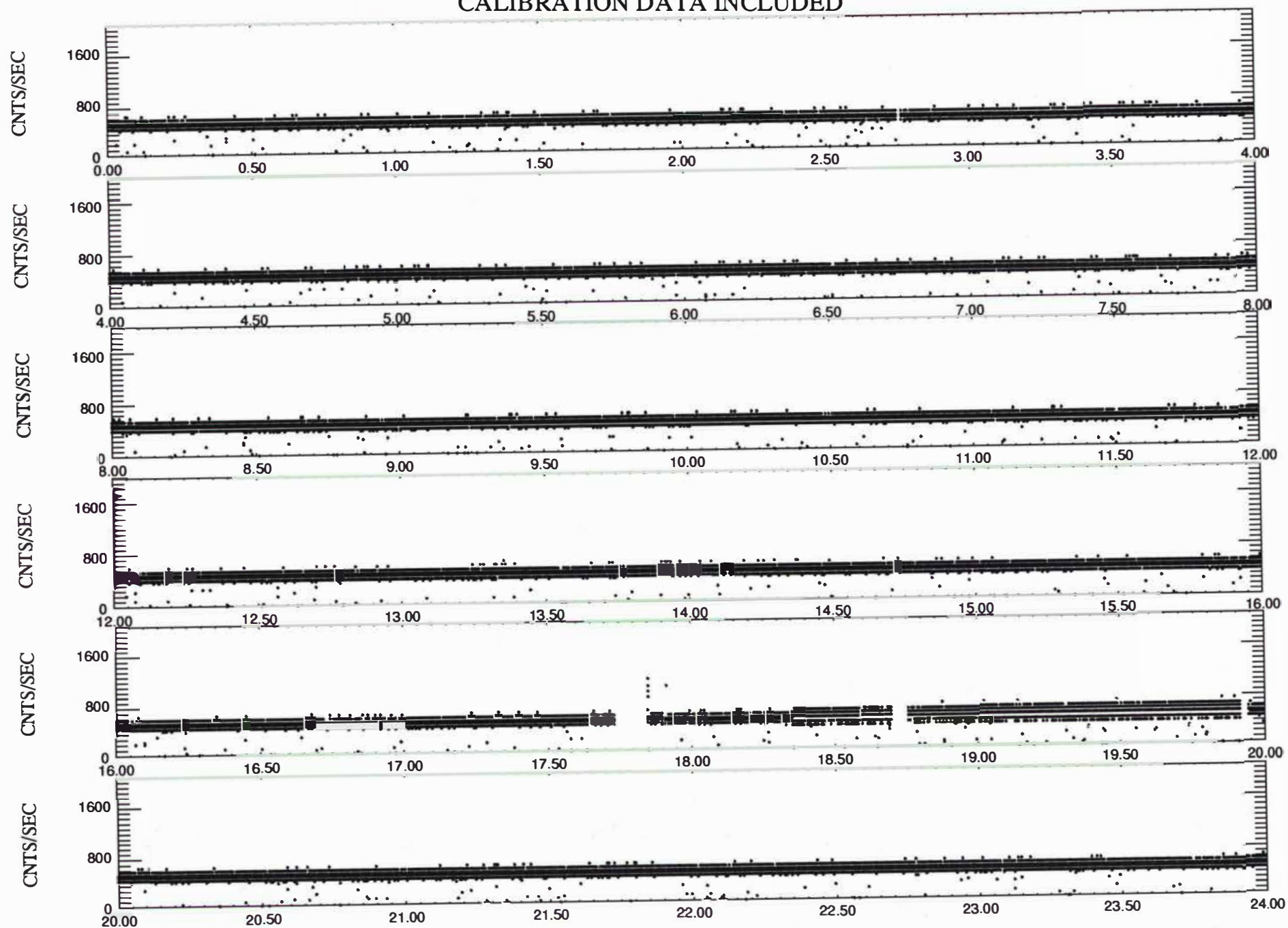
Background not subtracted

Sample average = 10

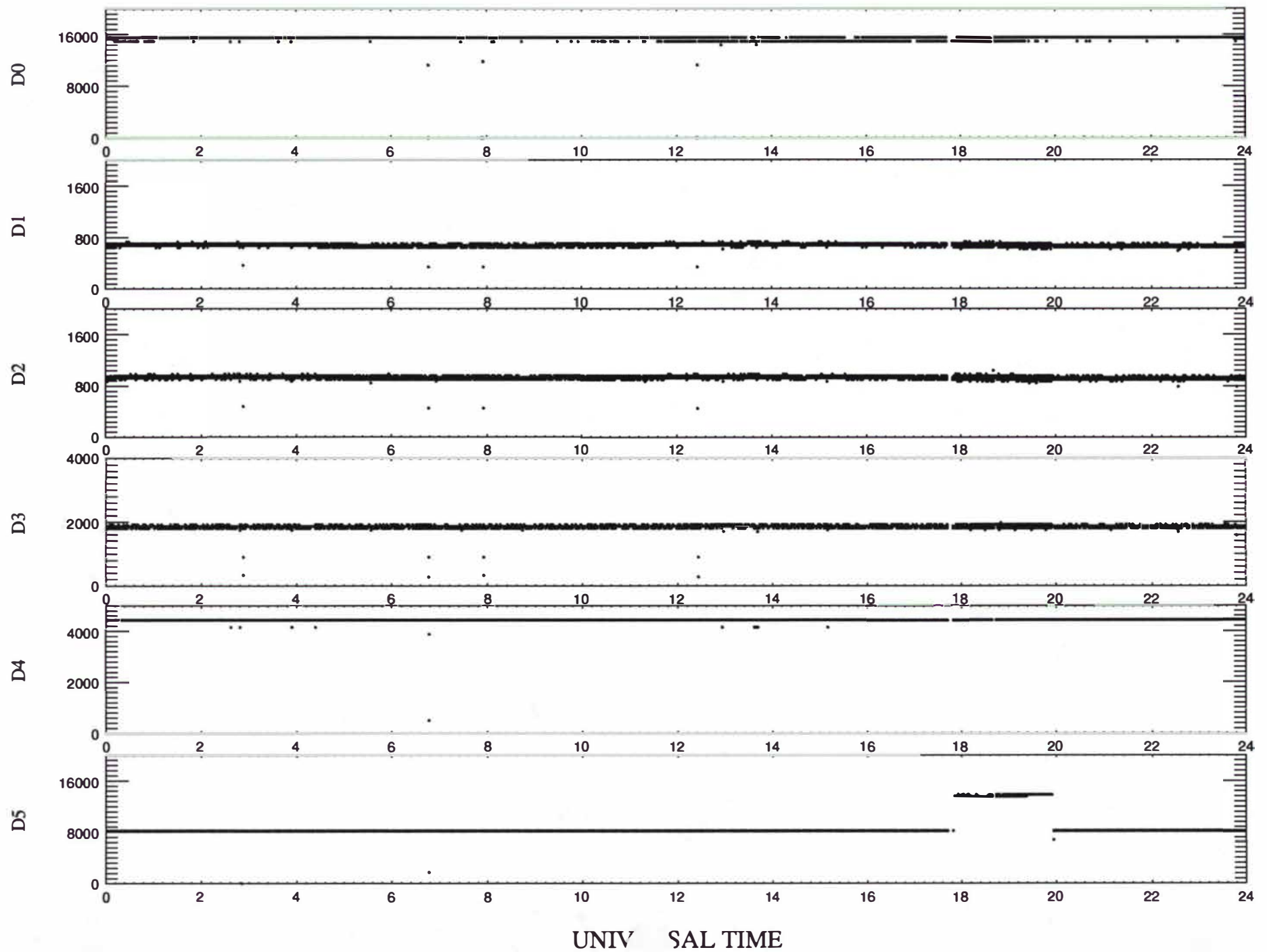
NO BURST (2)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



K 1900?

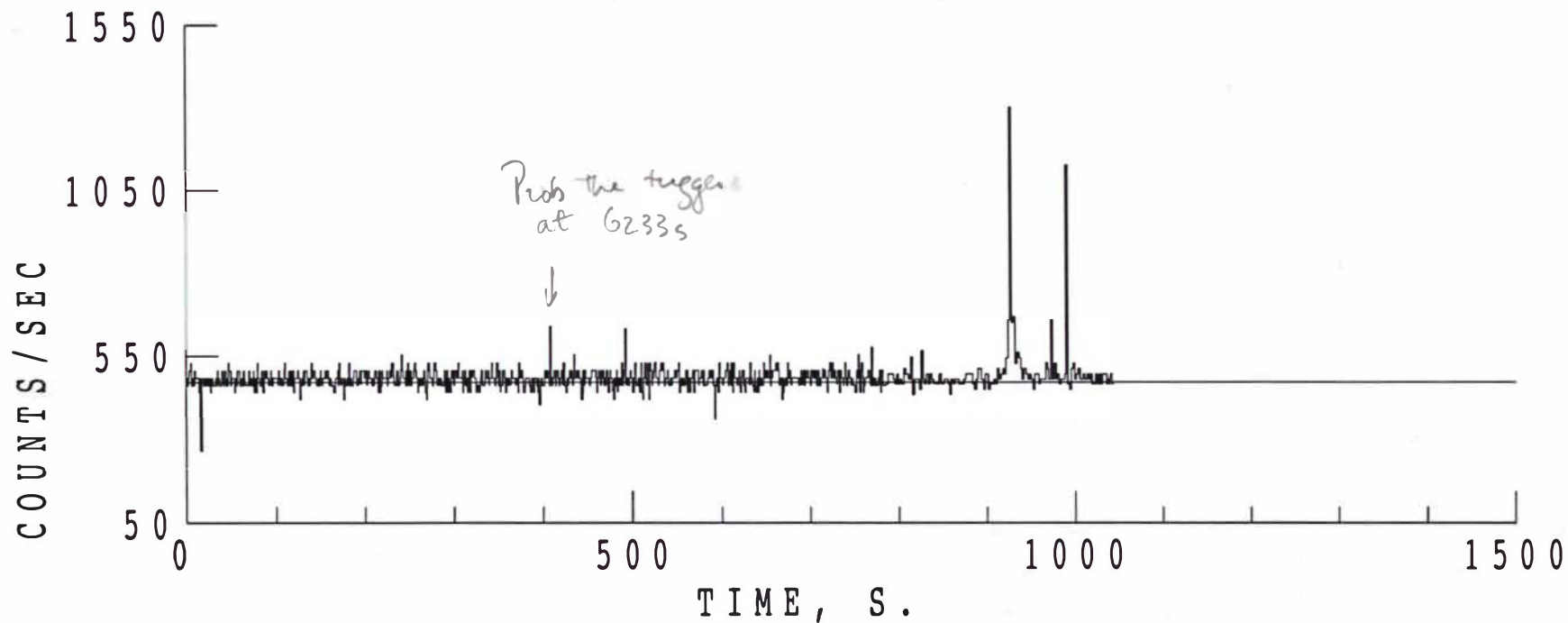
22 / 12 / 98

ULYSSES RT
24 / 10 / 98 5976.406 s
INTERVALS REGROUPED BY 2
0 - 0 keV

1500

Konus

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From kraken@milkyway.gsfc.nasa.gov Tue Nov 3 06:49 PST 1998
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 3 Nov 1998 09:49:47 -0500
 : khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@milkyway.gsfc.nasa.gov>
Subject: Re: GRB981022, 981024A,B,C

Hi Kevin,

TGRS did not trigger on the bursts you've mentioned in September and October. This may be because the detector is on the wrong side of the spacecraft to see the SGR.

I'll let you know if TGRS has any coincident (to within the light travel time), noteworthy events...

Pete

From khurley@sunspot Tue Oct 27 08:58 PST 1998
Date: Tue, 27 Oct 1998 08:59:32 -0800
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981022, 981024A,B,C

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1585 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 22 1998 05:34	moderate, 32 ms long	3000
OCT 24 1998 01:44	moderate, 64 ms long	3000
OCT 24 1998 12:36	moderate, 128 ms long	3000
OCT 24 1998 16:16	moderate, 64 ms long	3000

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczyski, marar, tee

From HENZE@fender.msfc.nasa.gov Mon Oct 26 08:32:48 1998
Date: Mon, 26 Oct 1998 10:32:30 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7175

TIME: TJD=1110 SECONDS=65104

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

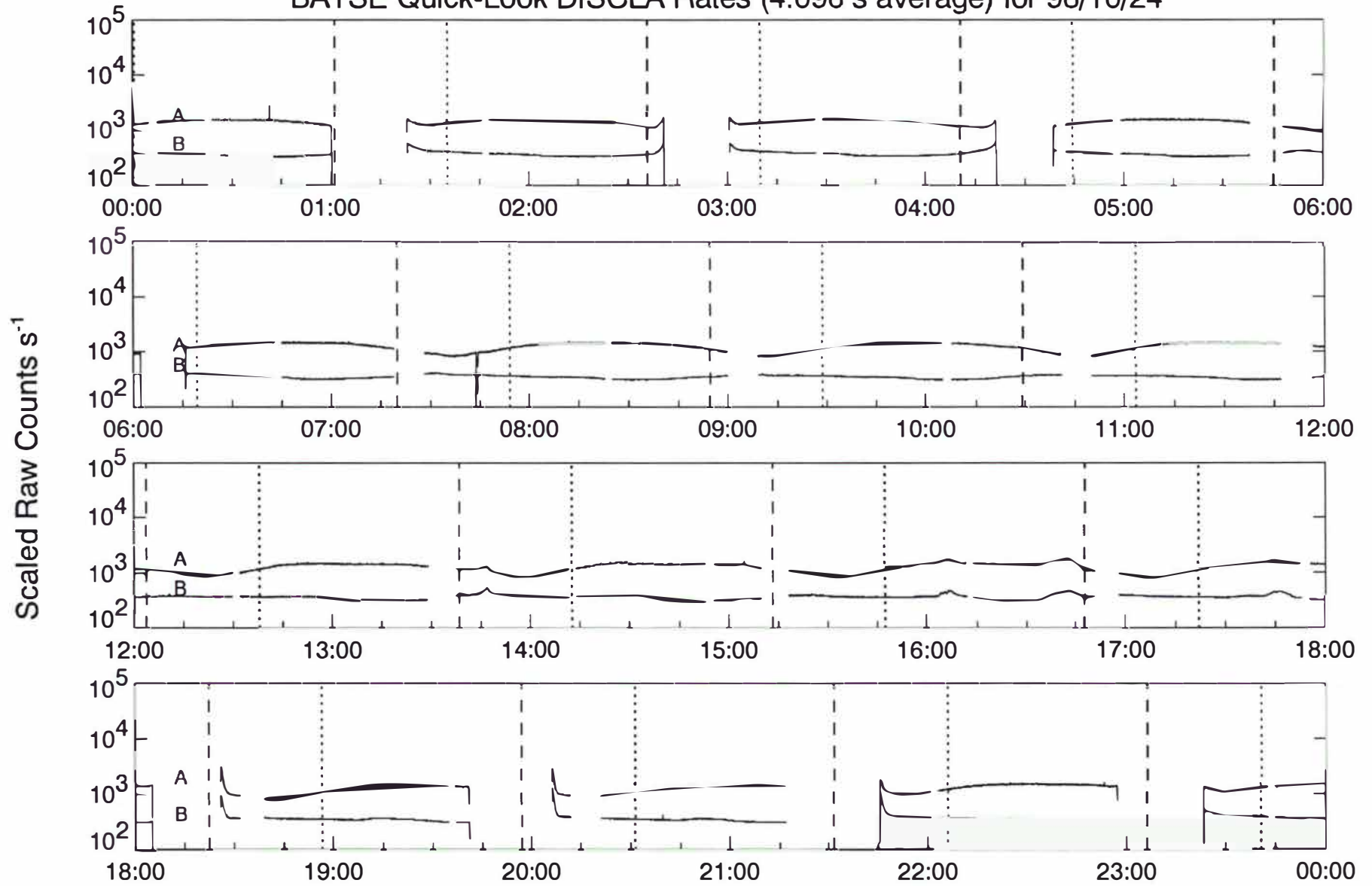
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

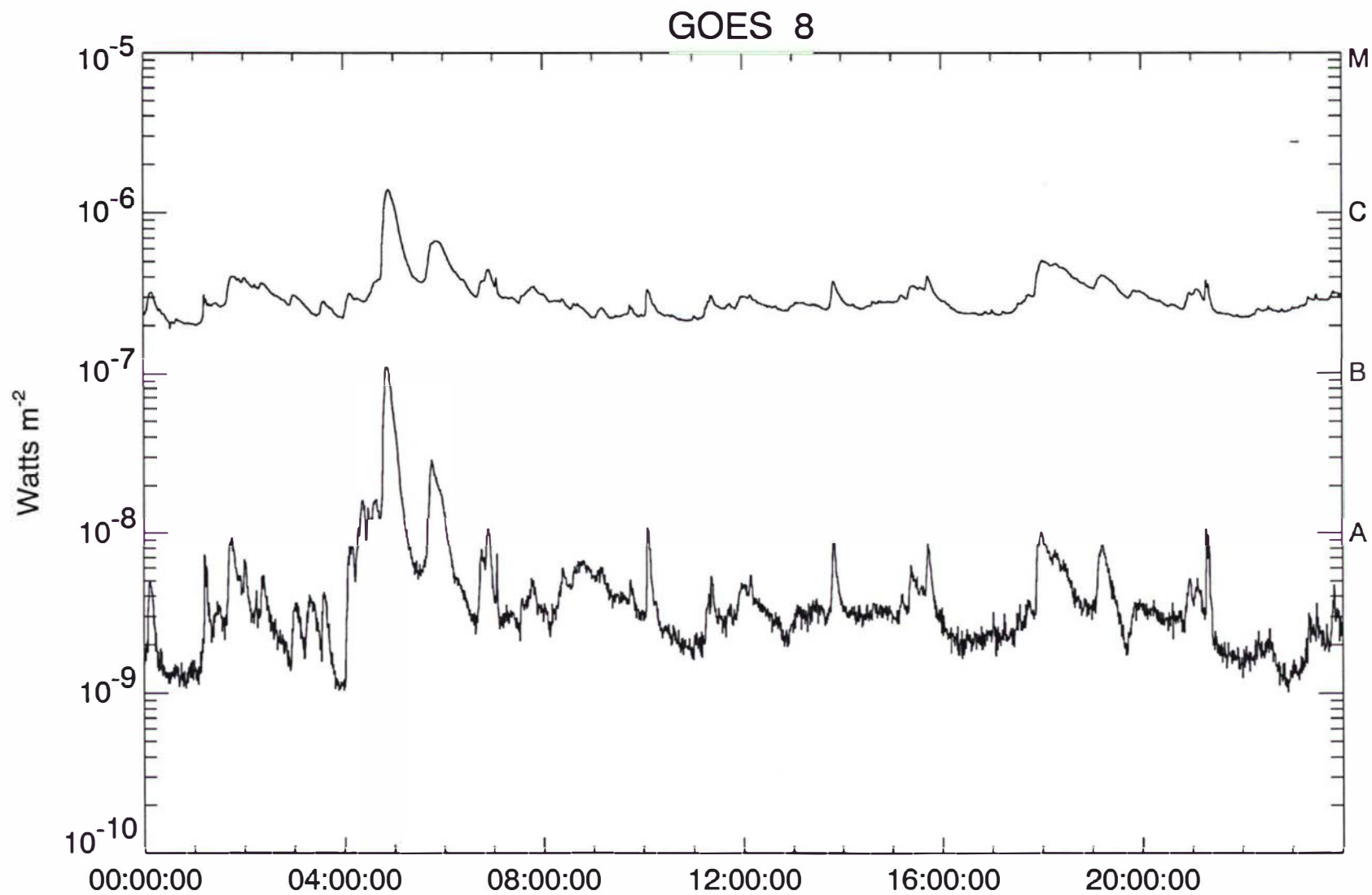
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/24



Current Time: 98/10/28, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/10/24, 0000:00

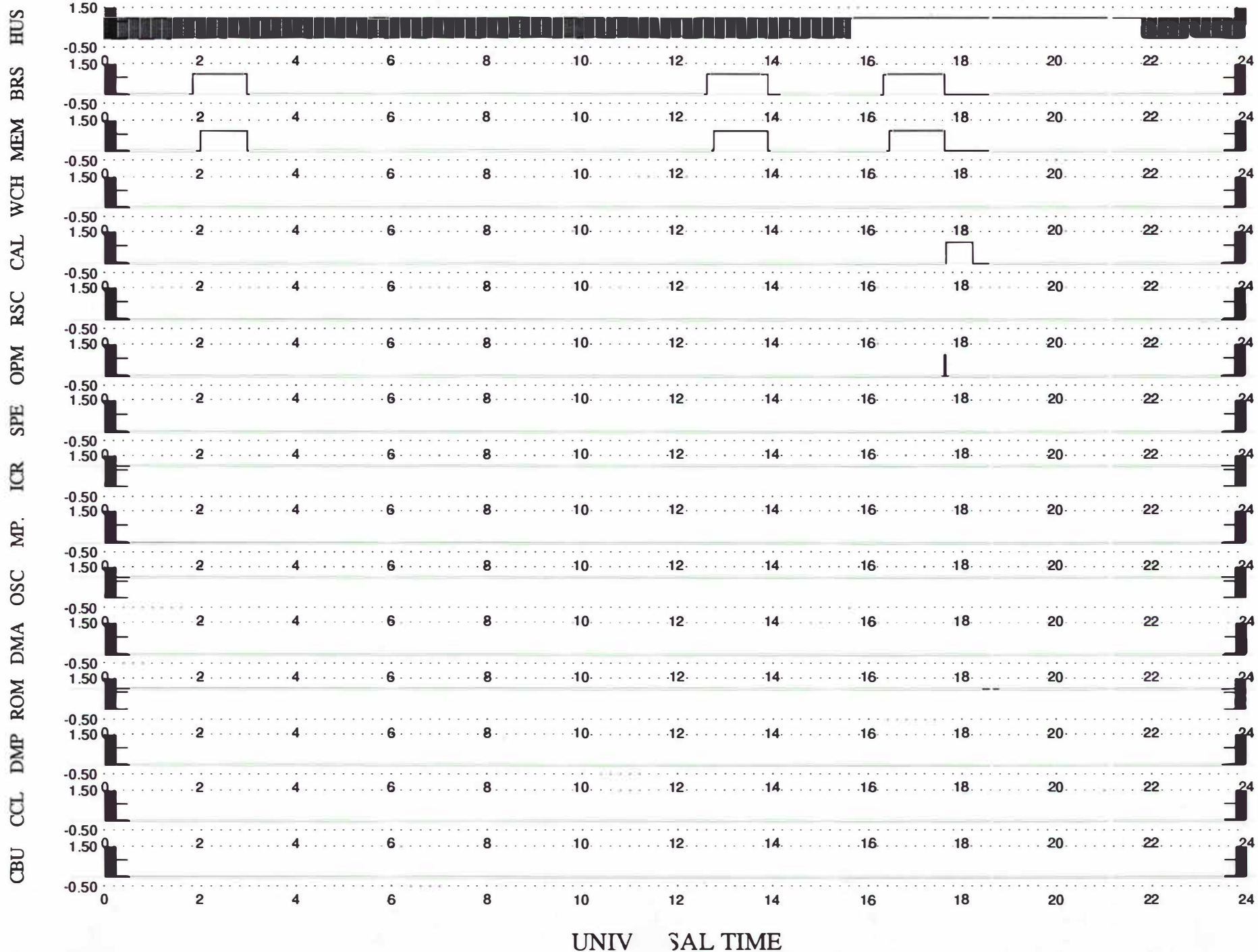
Plot created: 98/10/28, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

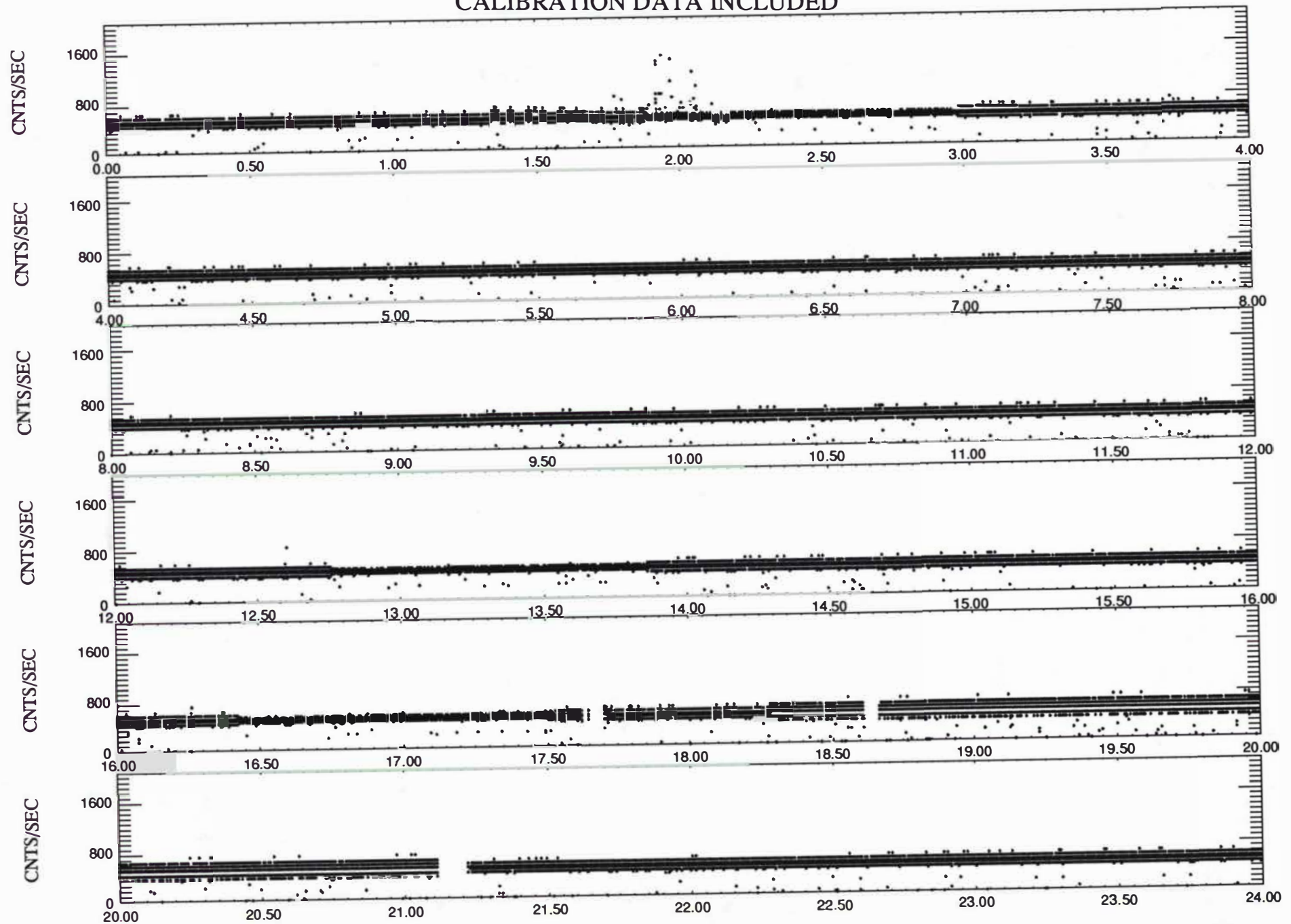
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 3 - 5

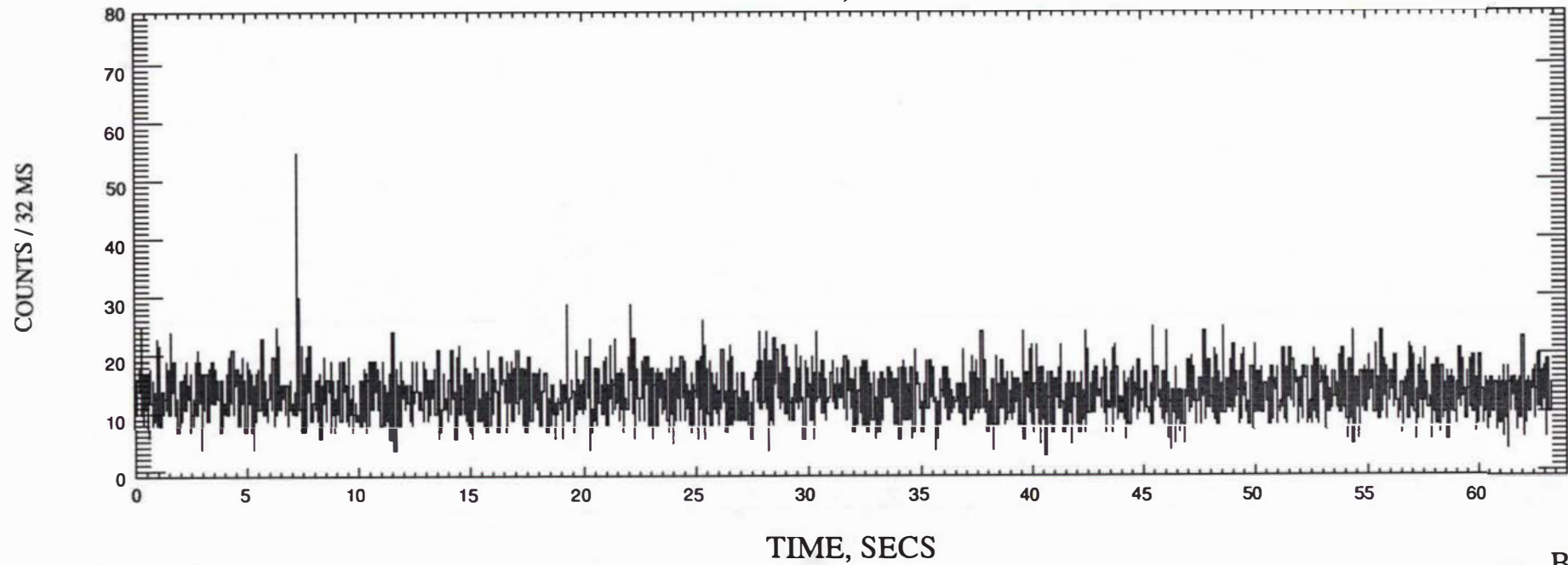
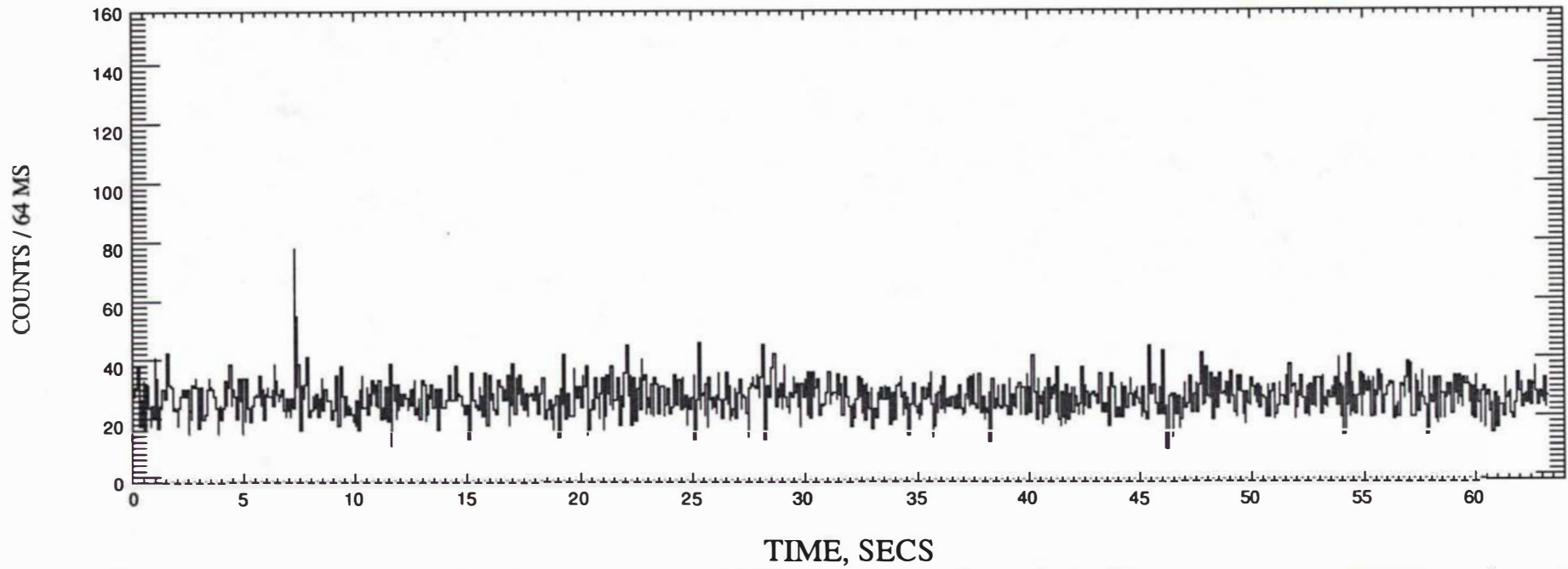


CALIBRATION DATA INCLUDED

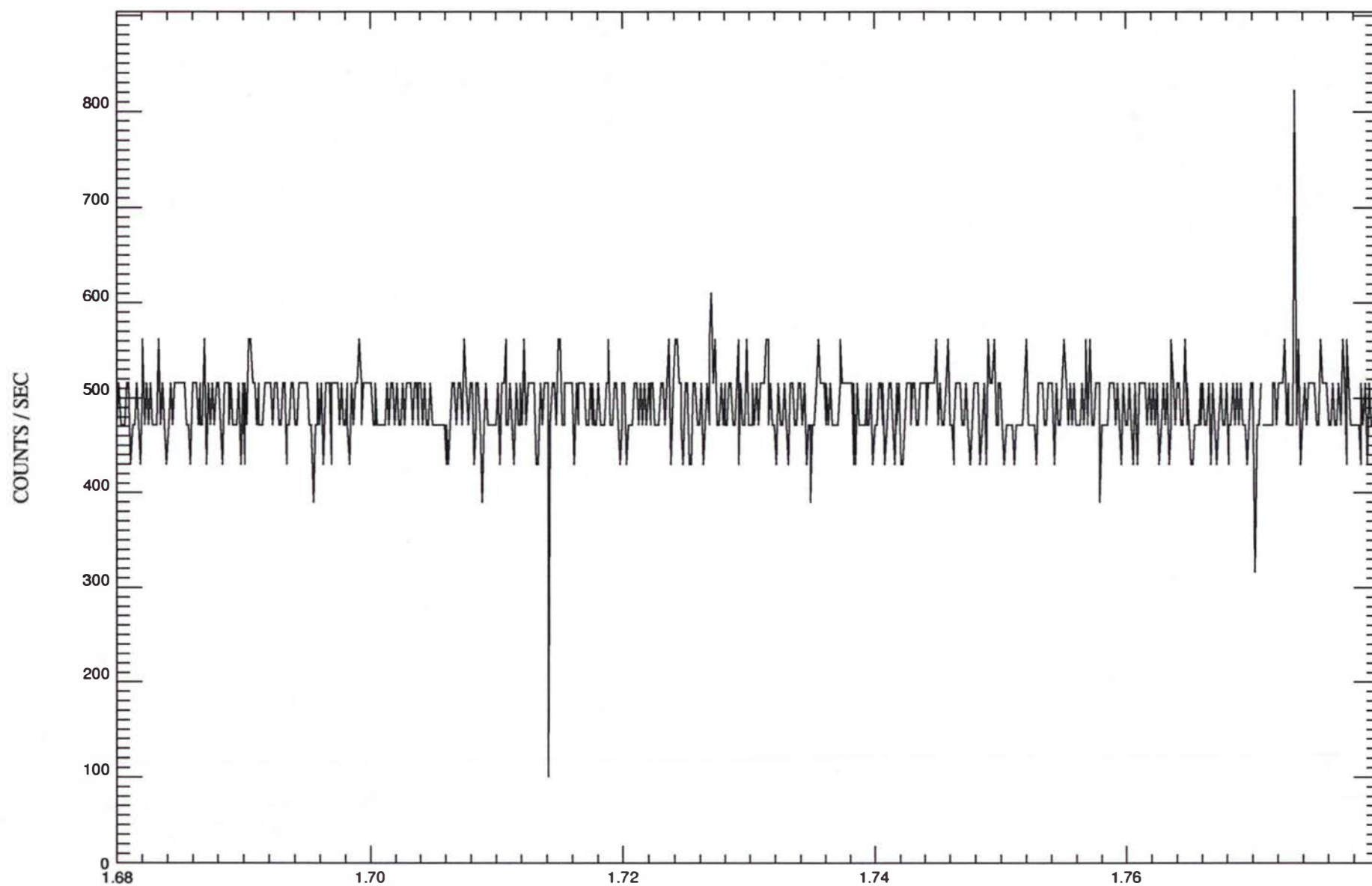


UNIV SAL TIME

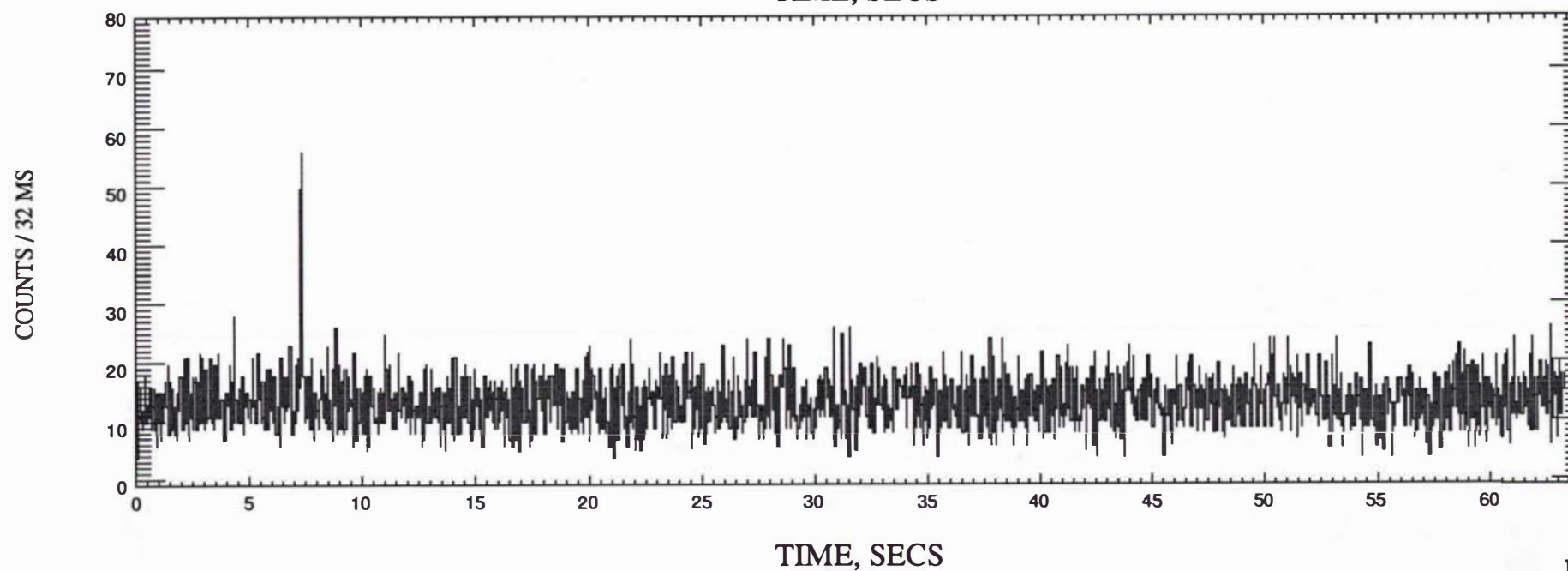
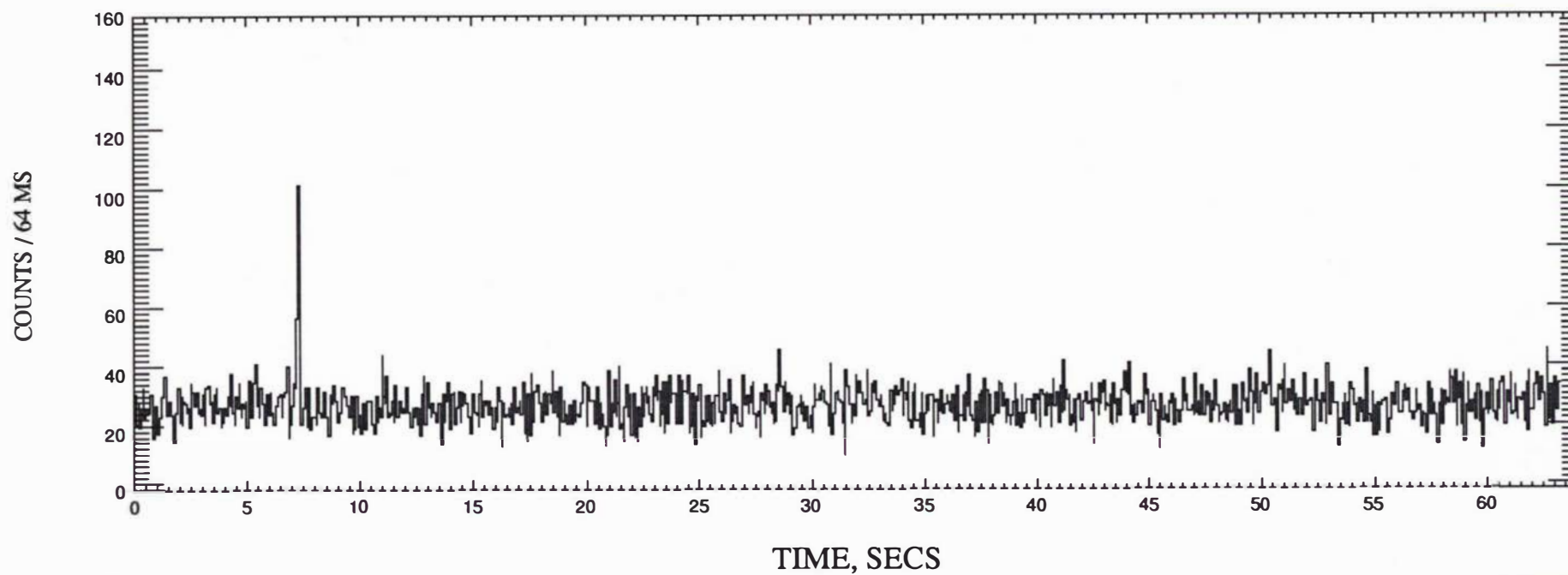
Burst Counter 3 at UT= 1.731493174235 h= 6233.375 s 01:43:53.375



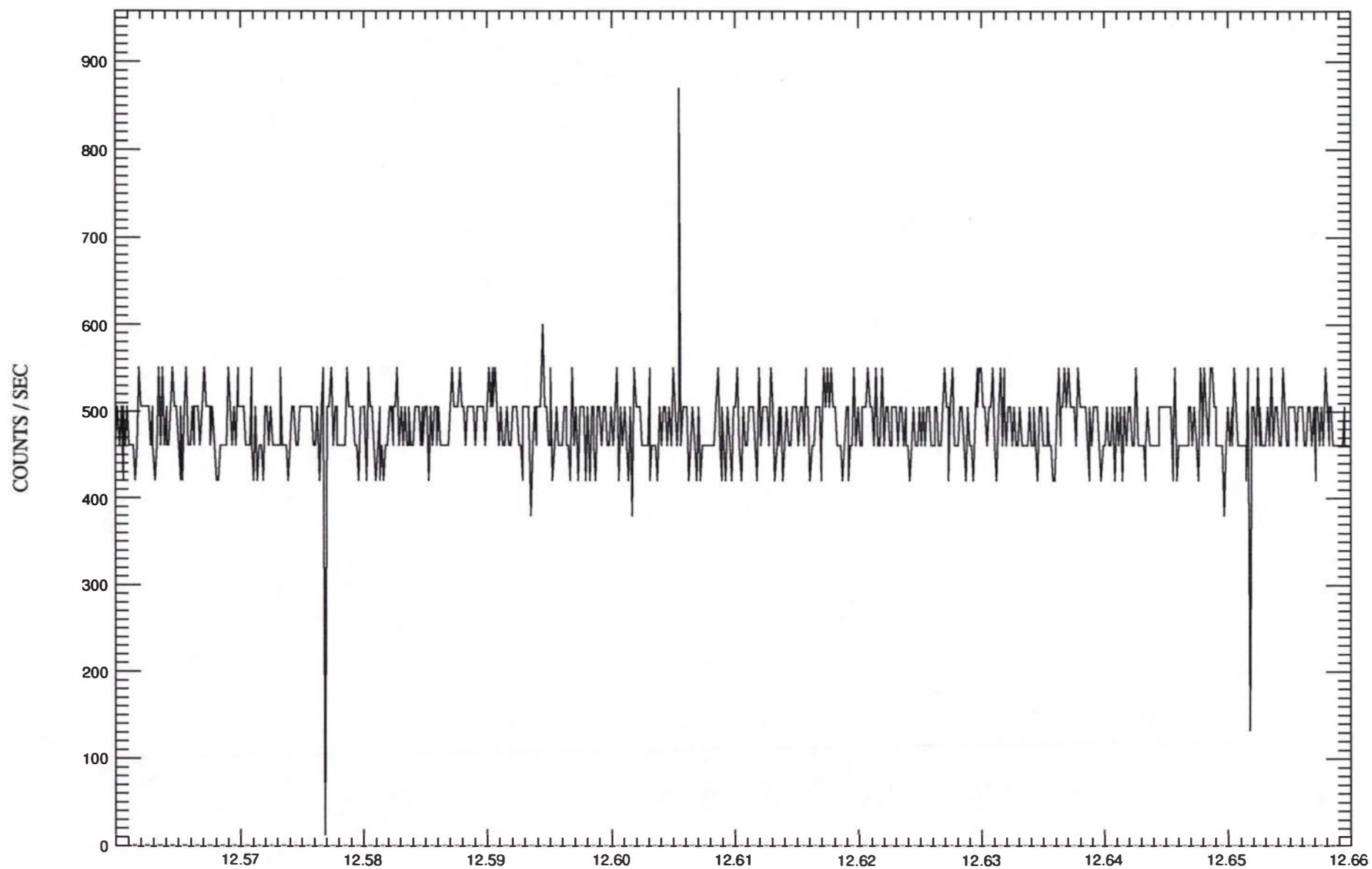
CALIBRATION DATA INCLUDED



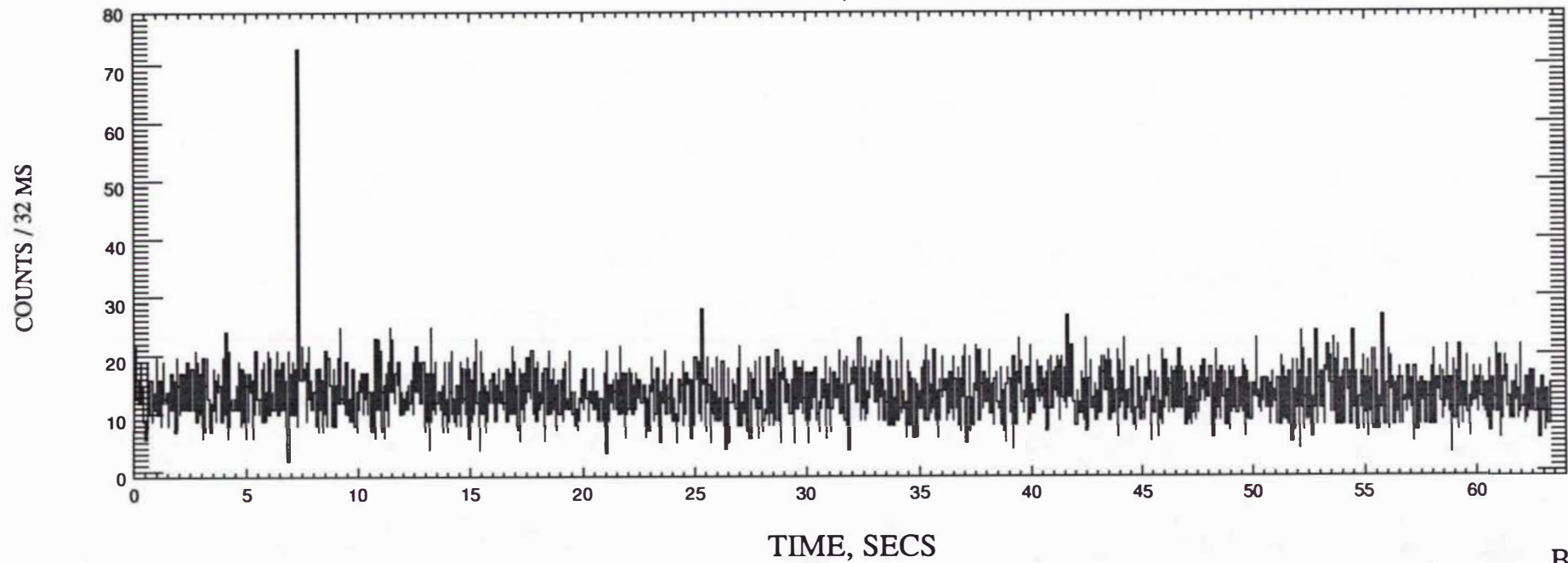
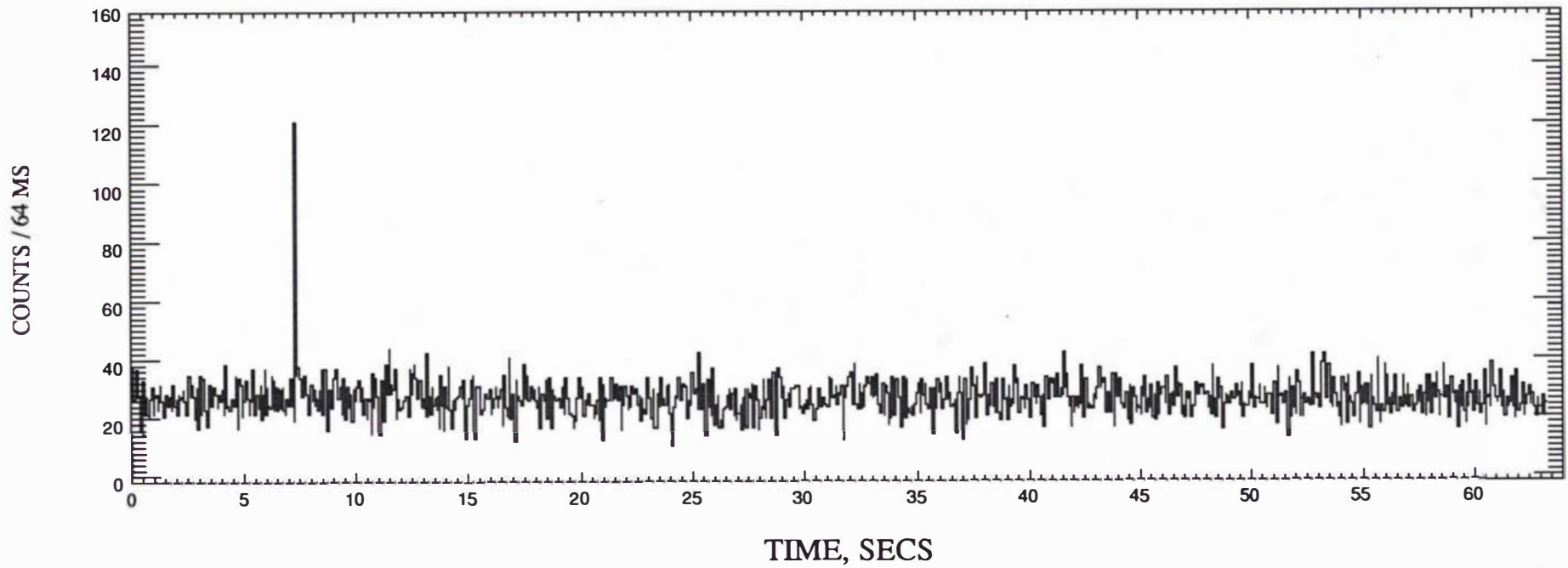
Burst Counter 4 at UT=12.605692842272 h=45380.494 s 12:36:20.494



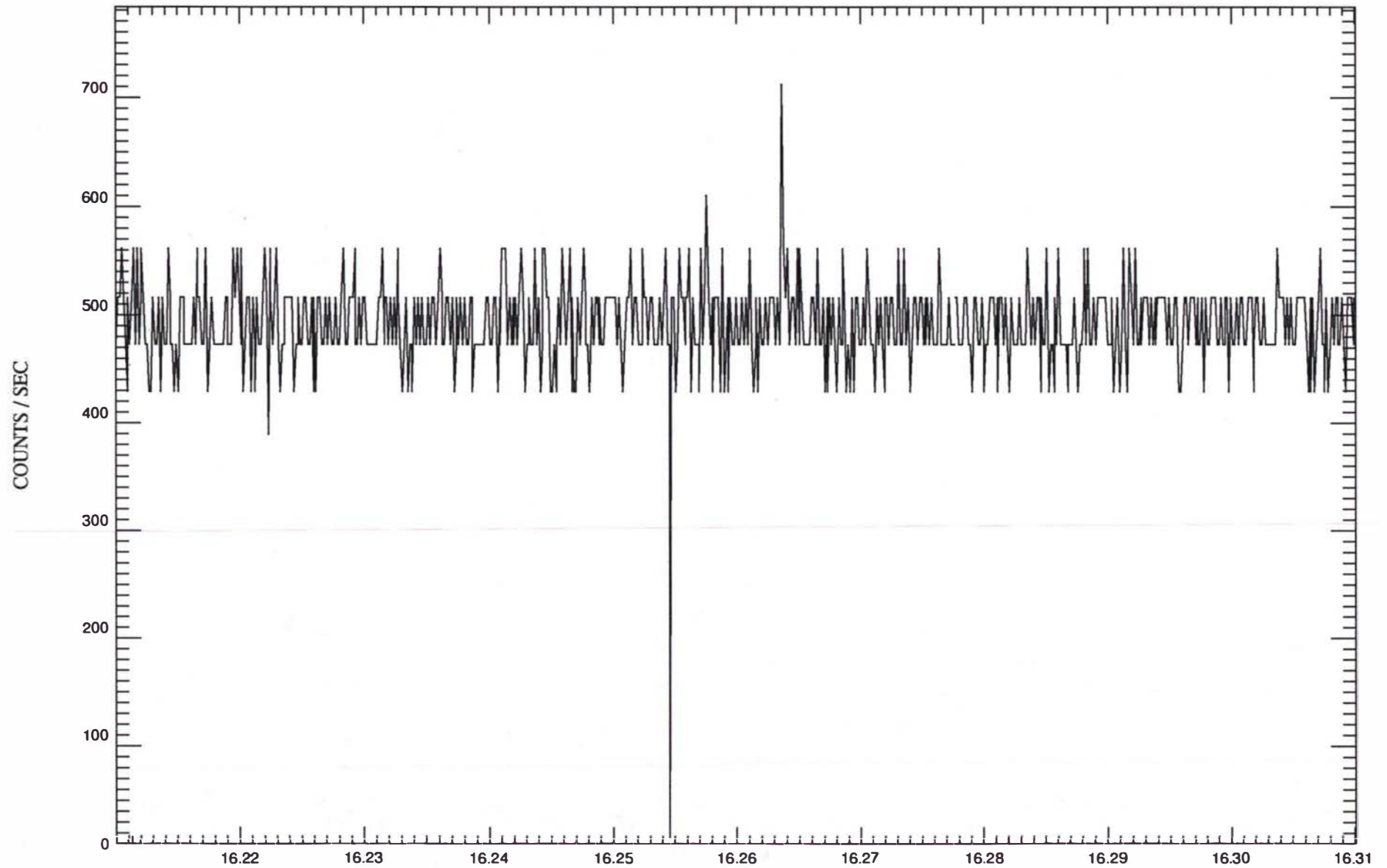
CALIBRATION DATA INCLUDED

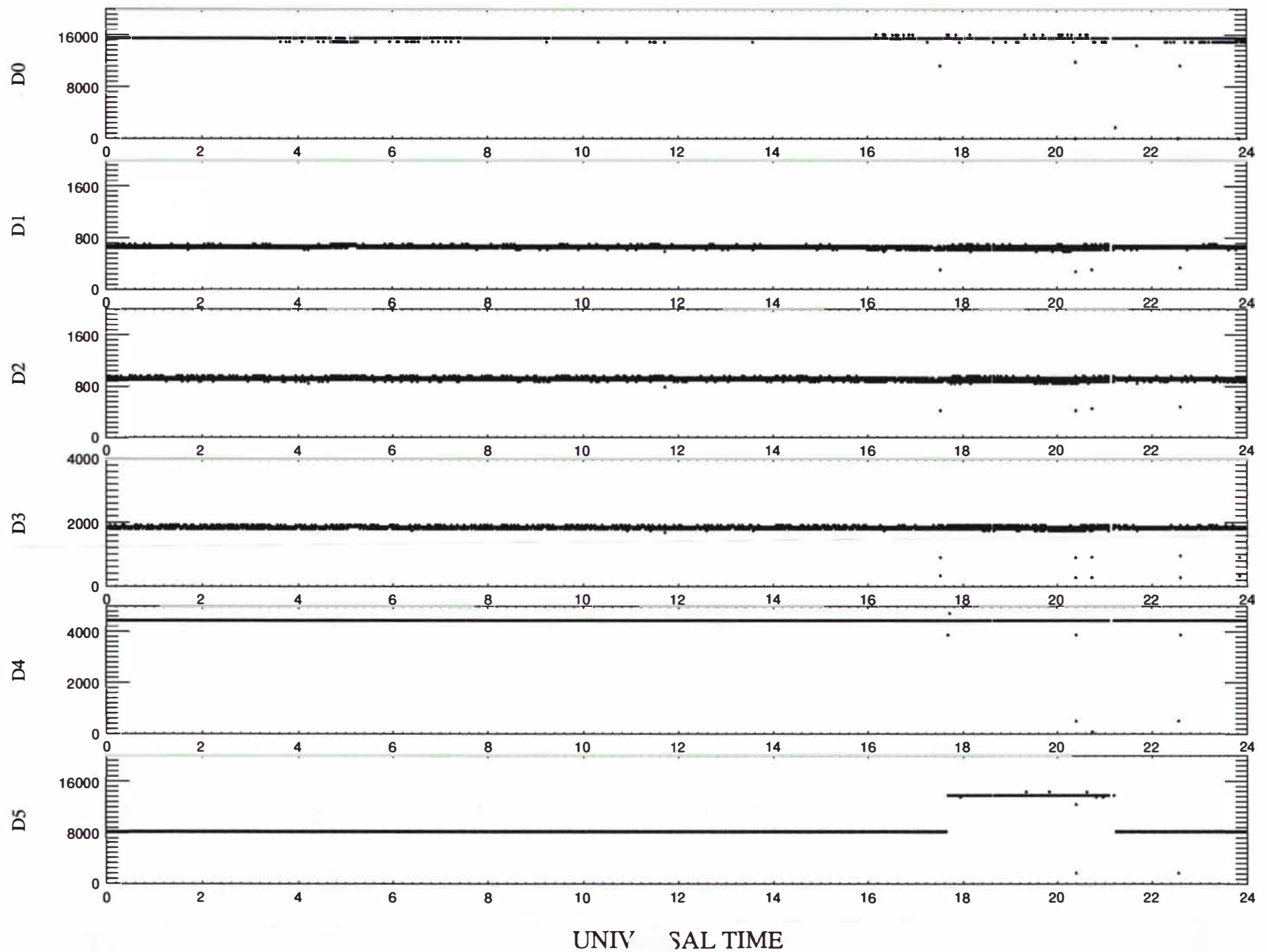


Burst Counter 5 at UT=16.263697437710 h=58549.311 s 16:15:49.311



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Mon Oct 26 08:34:38 1998
Date: Mon, 26 Oct 1998 10:34:19 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7176

TIME: TJD=1111 SECONDS=63746

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

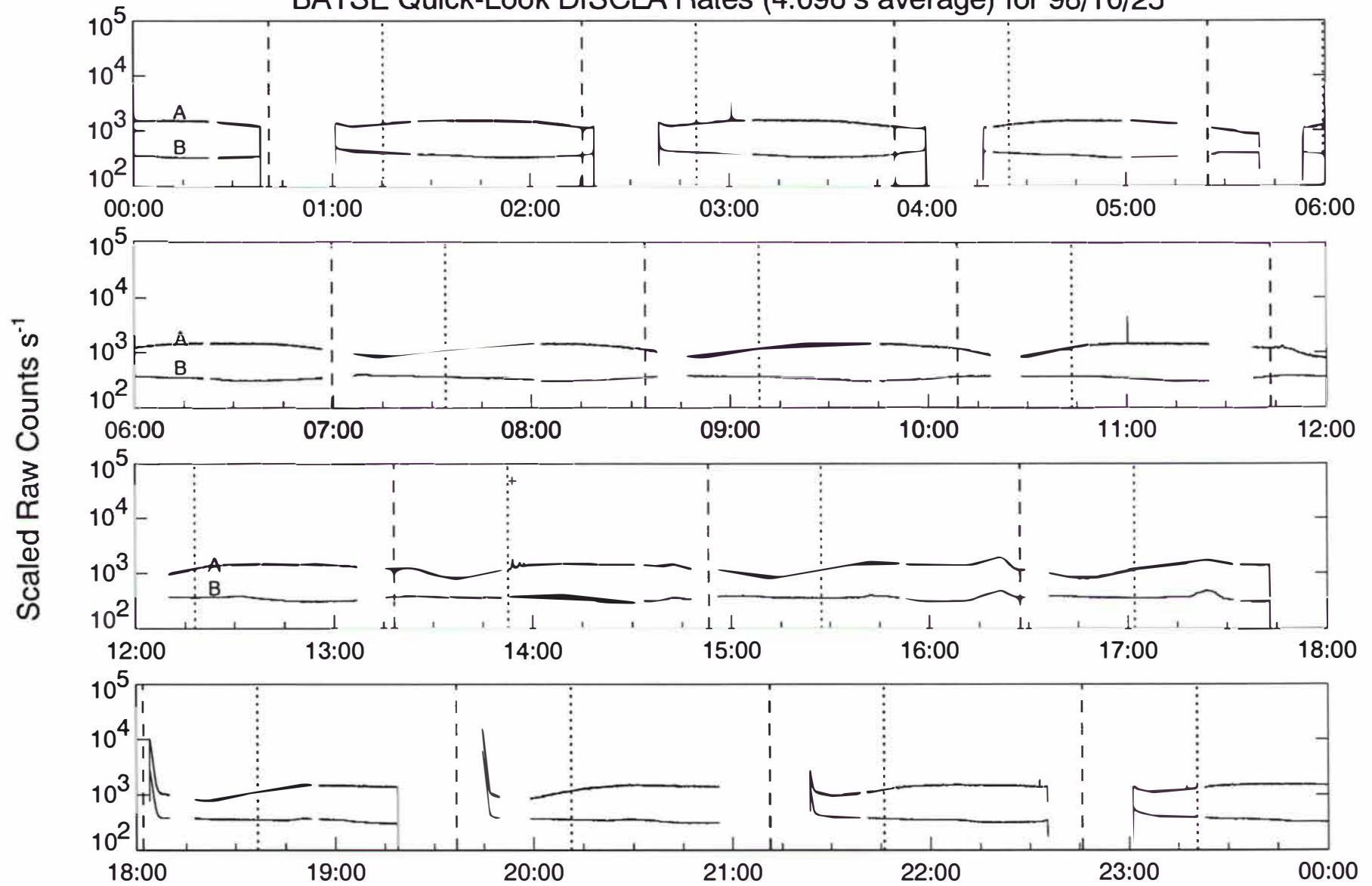
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/25

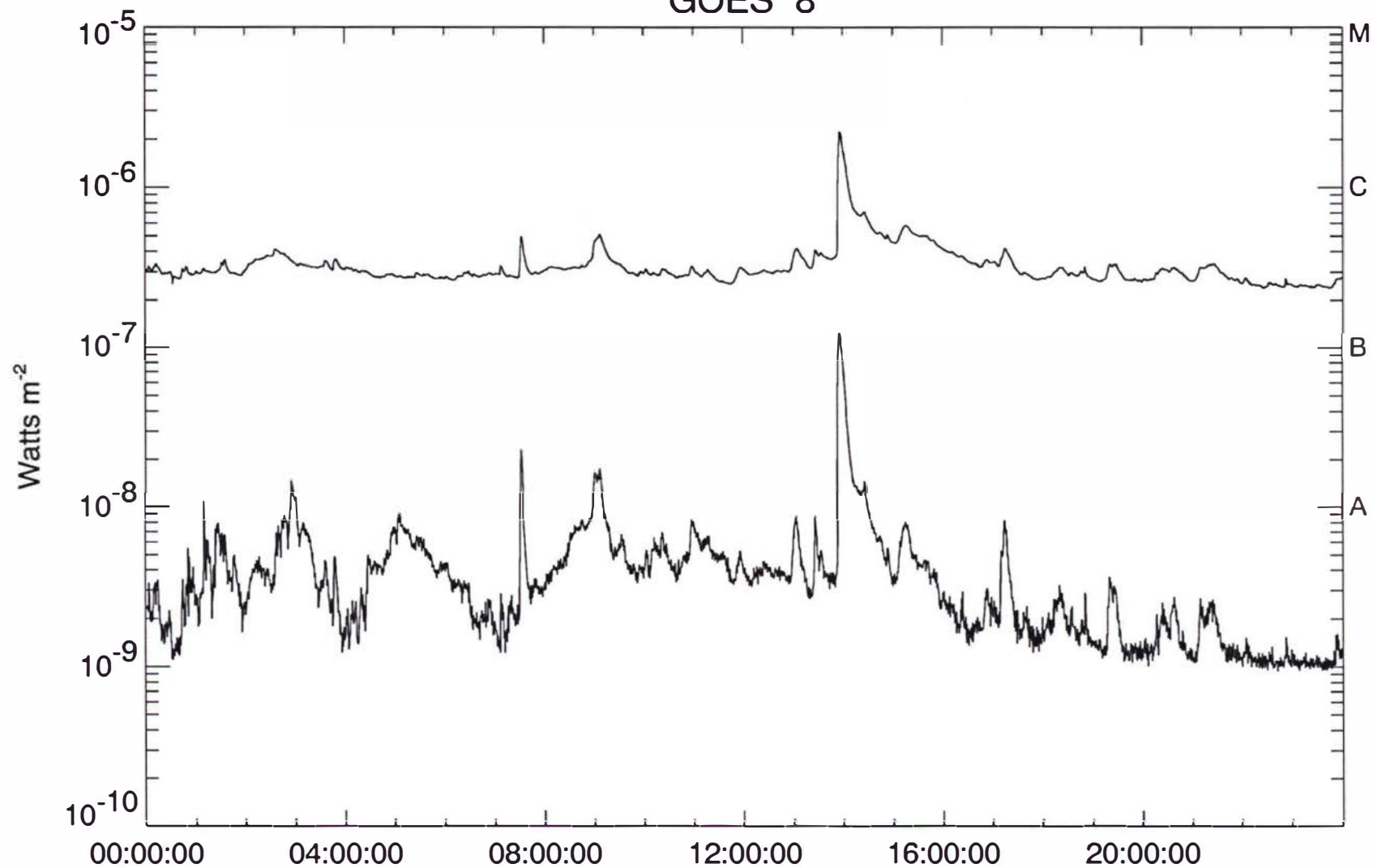


Current Time: 98/10/29, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/25, 0000:00

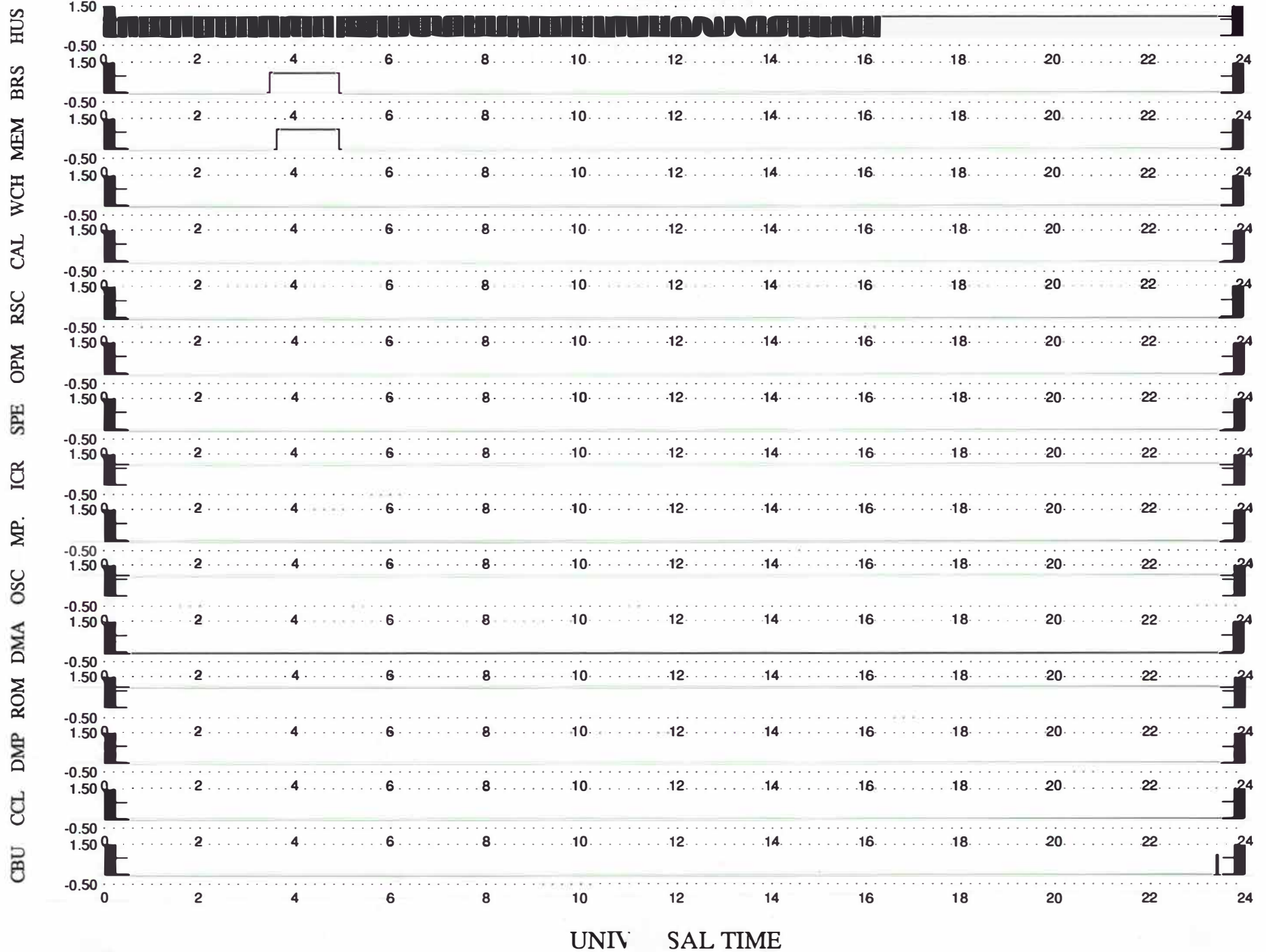
Plot created: 98/10/29, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

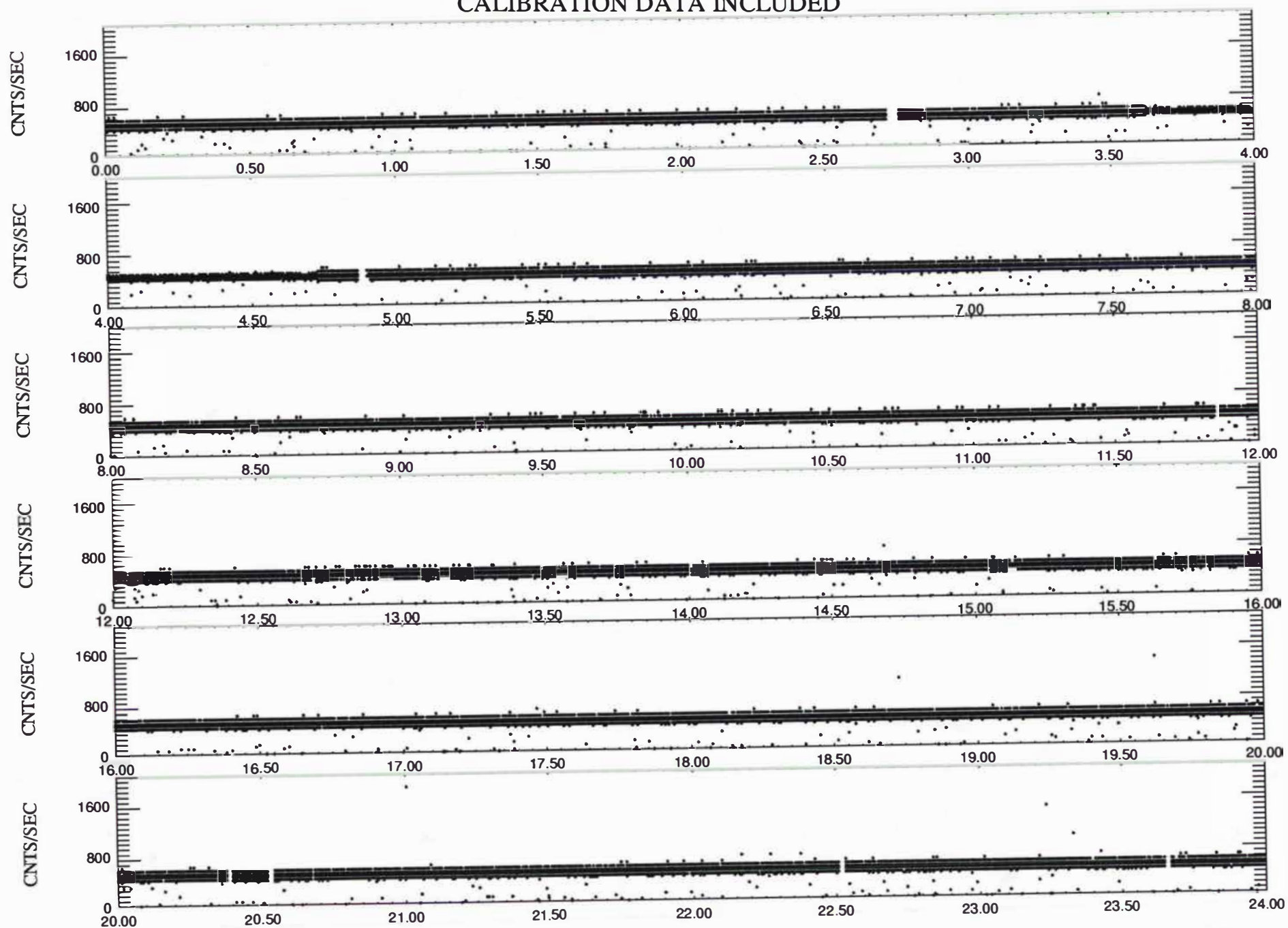
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 6

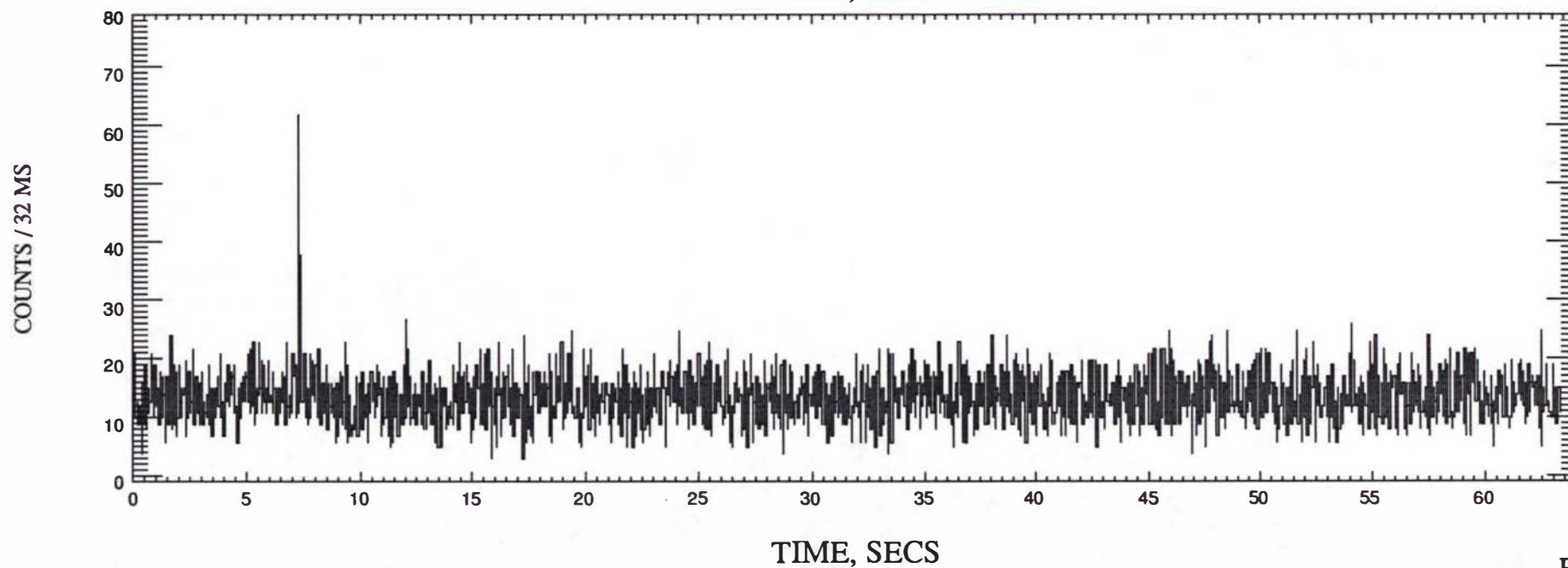
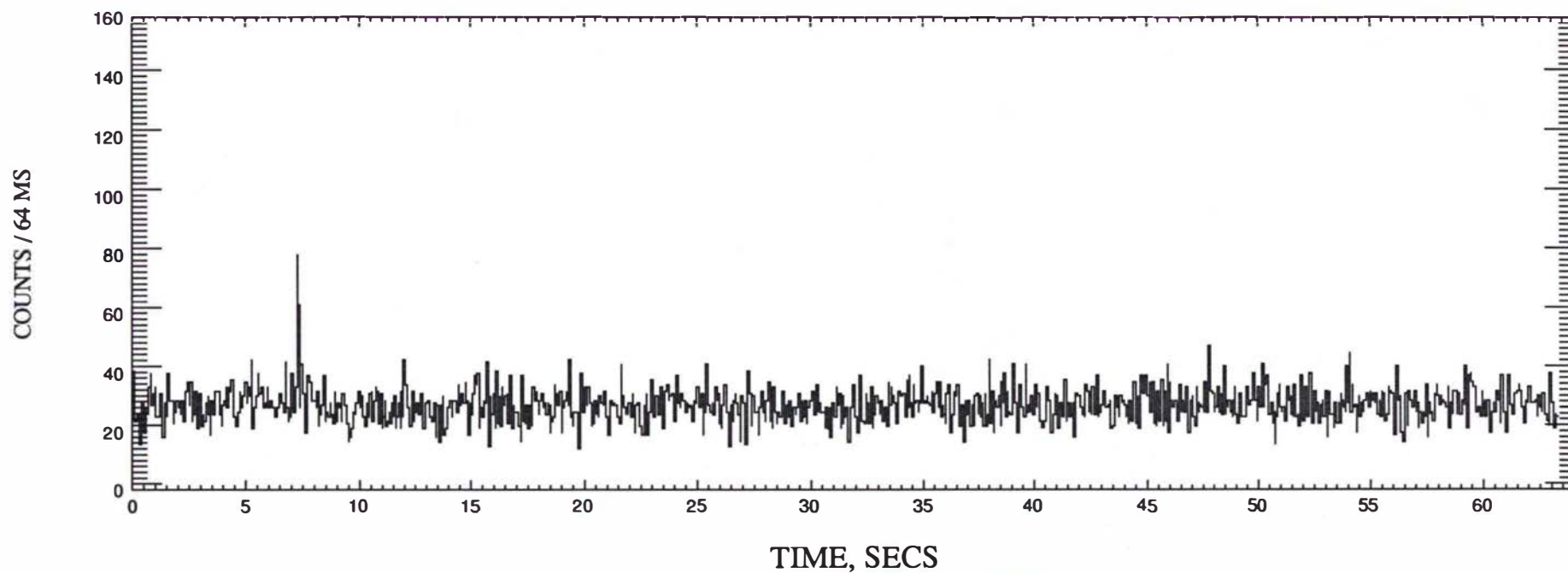


CALIBRATION DATA INCLUDED

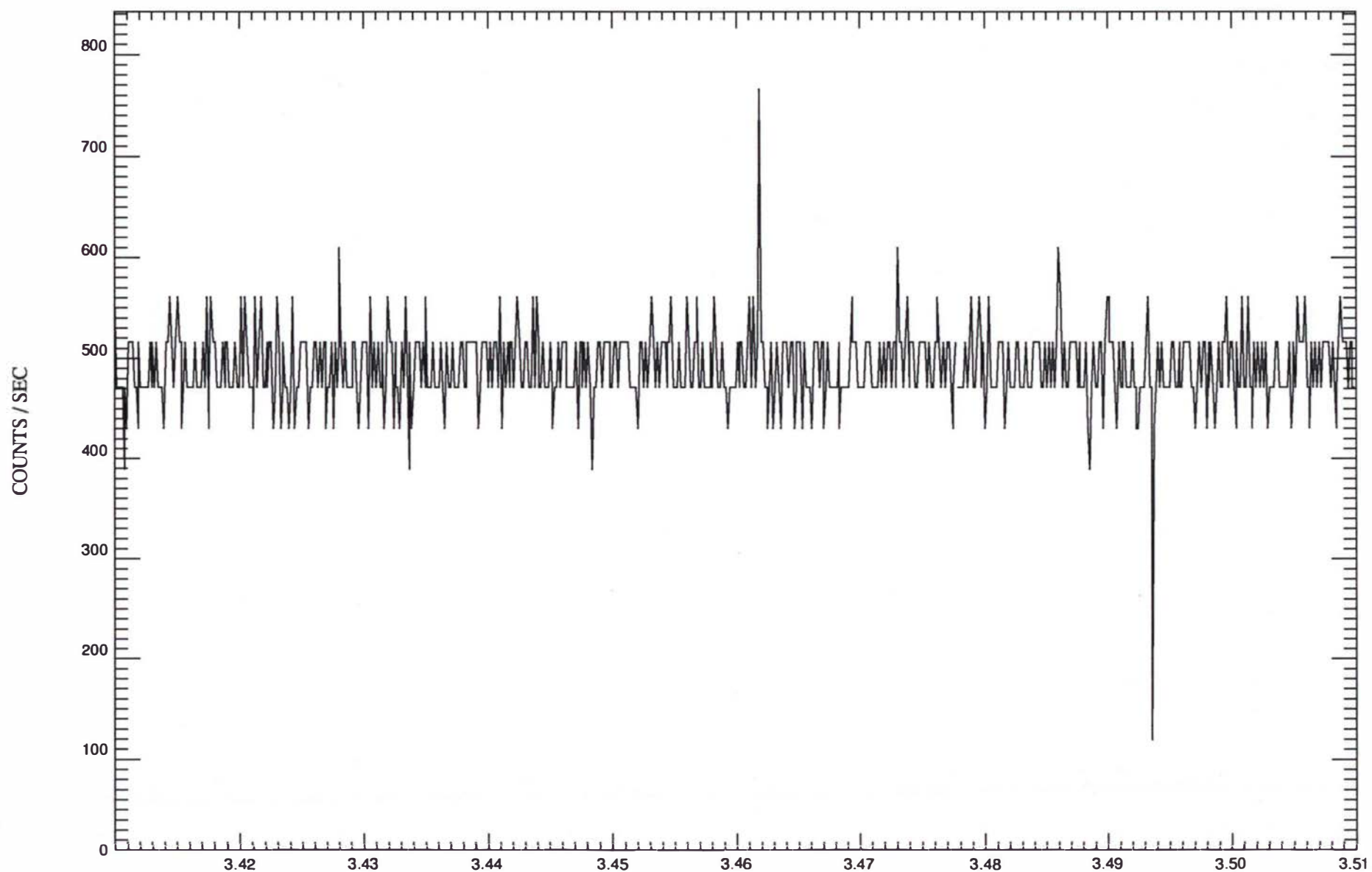


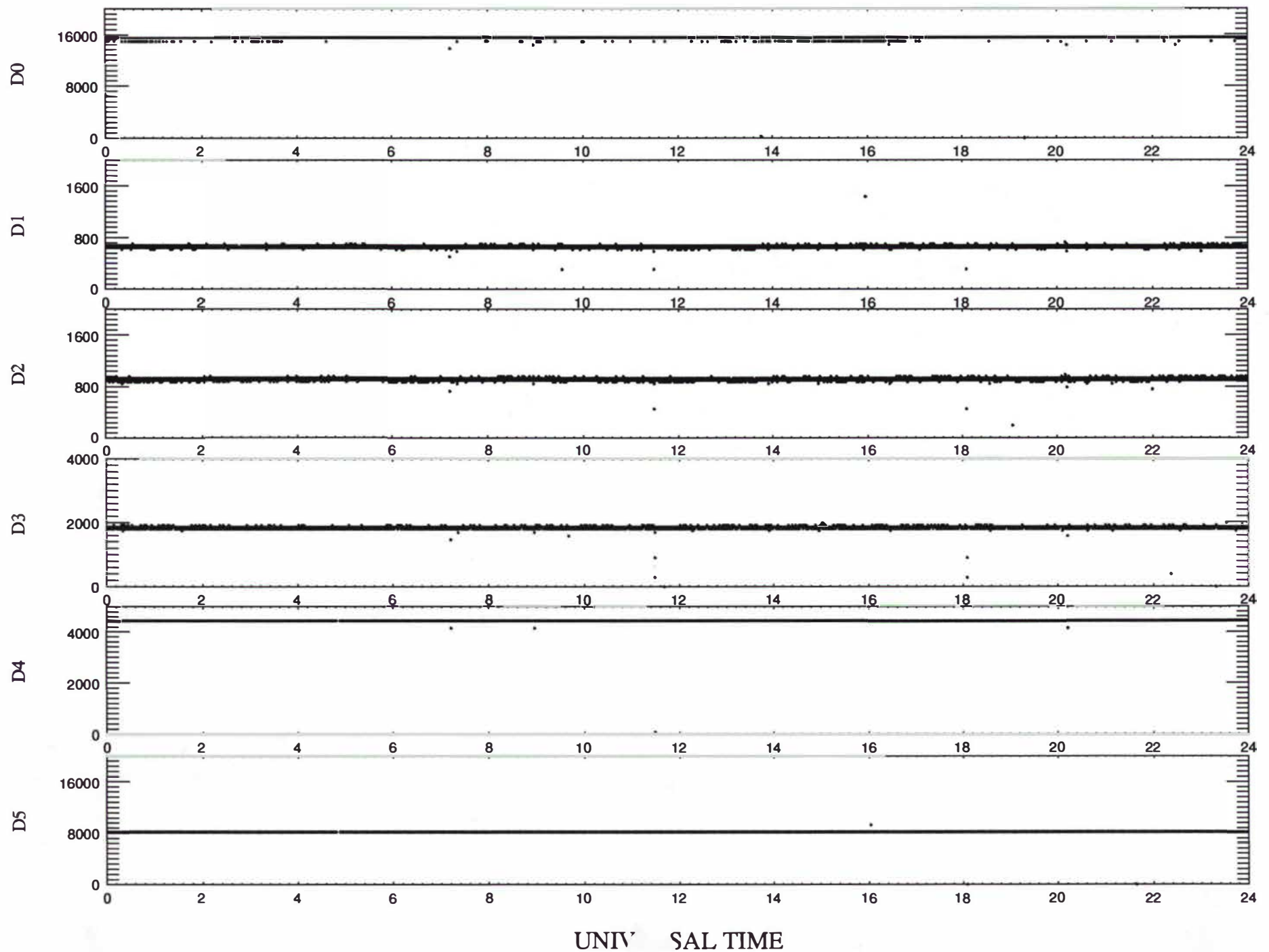
UNIV SAL TIME

Burst Counter 6 at UT= 3.461996180216 h=12463.186 s 03:27:43.186



CALIBRATION DATA INCLUDED





KONUS GRB19981026

ULYSSES RT

23 / 11 / 98

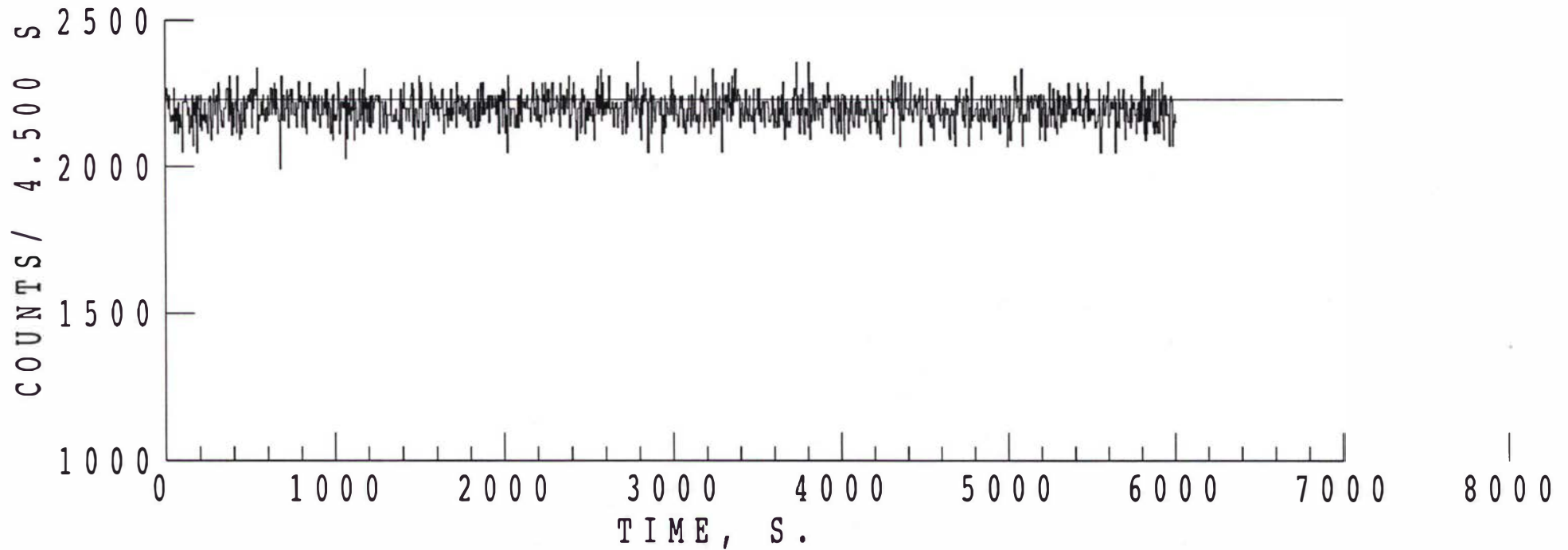
26 / 10 / 98 55260.184 s

0.500 S INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Tue Oct 27 08:17:08 1998
Date: Tue, 27 Oct 1998 10:16:42 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7177

TIME: TJD=1112 SECONDS=62410

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

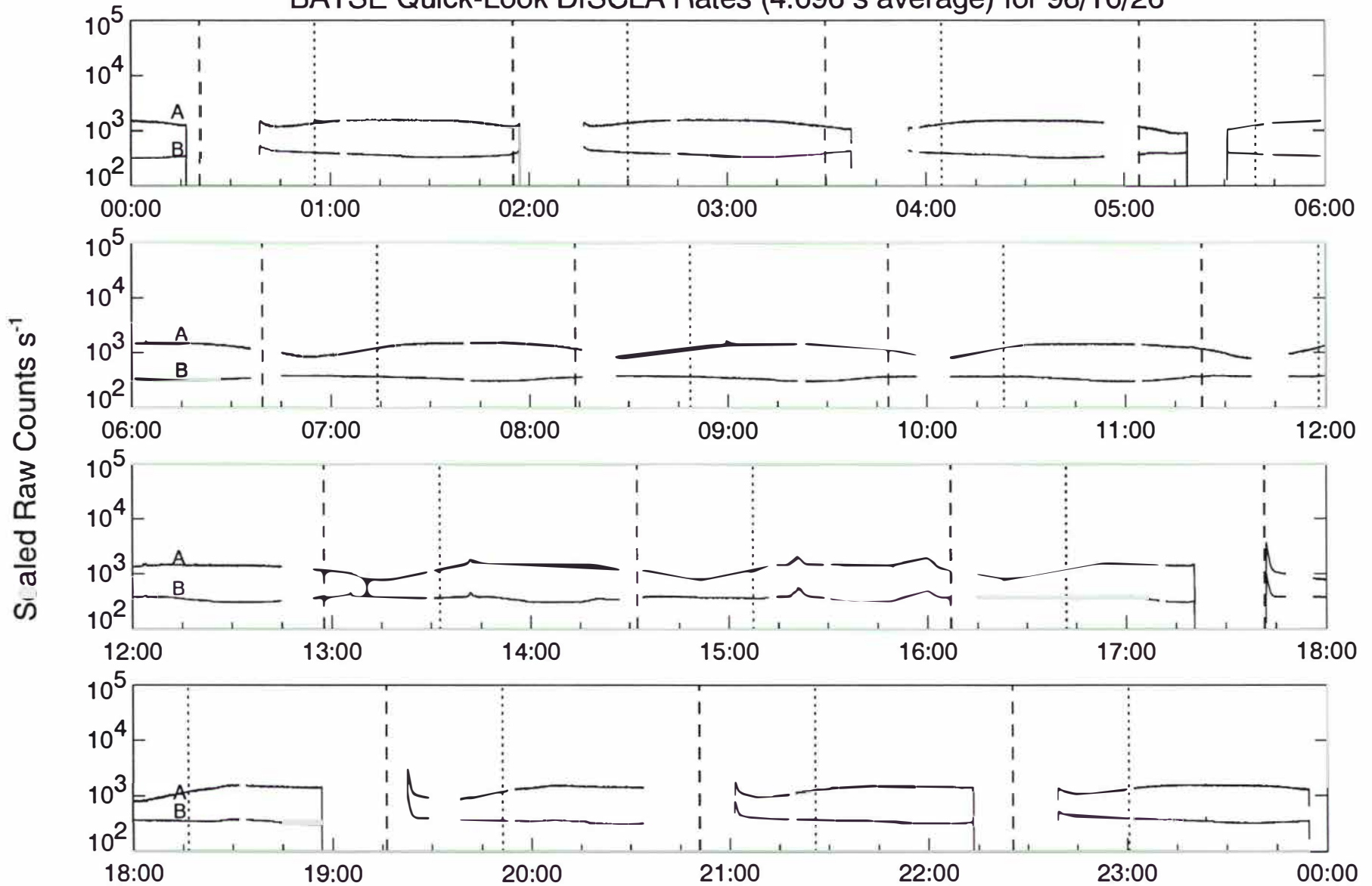
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/26

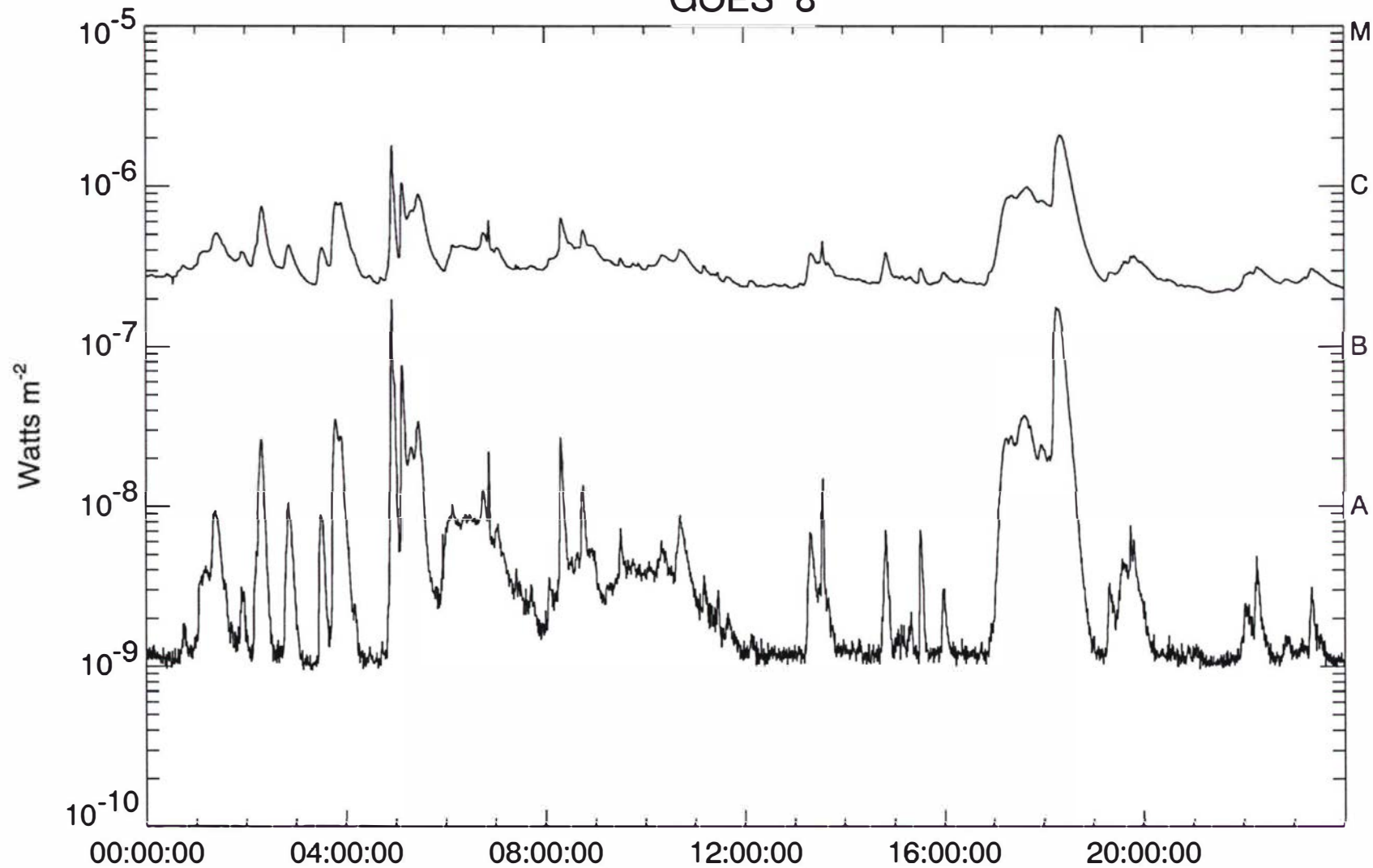


Current Time: 98/10/30, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



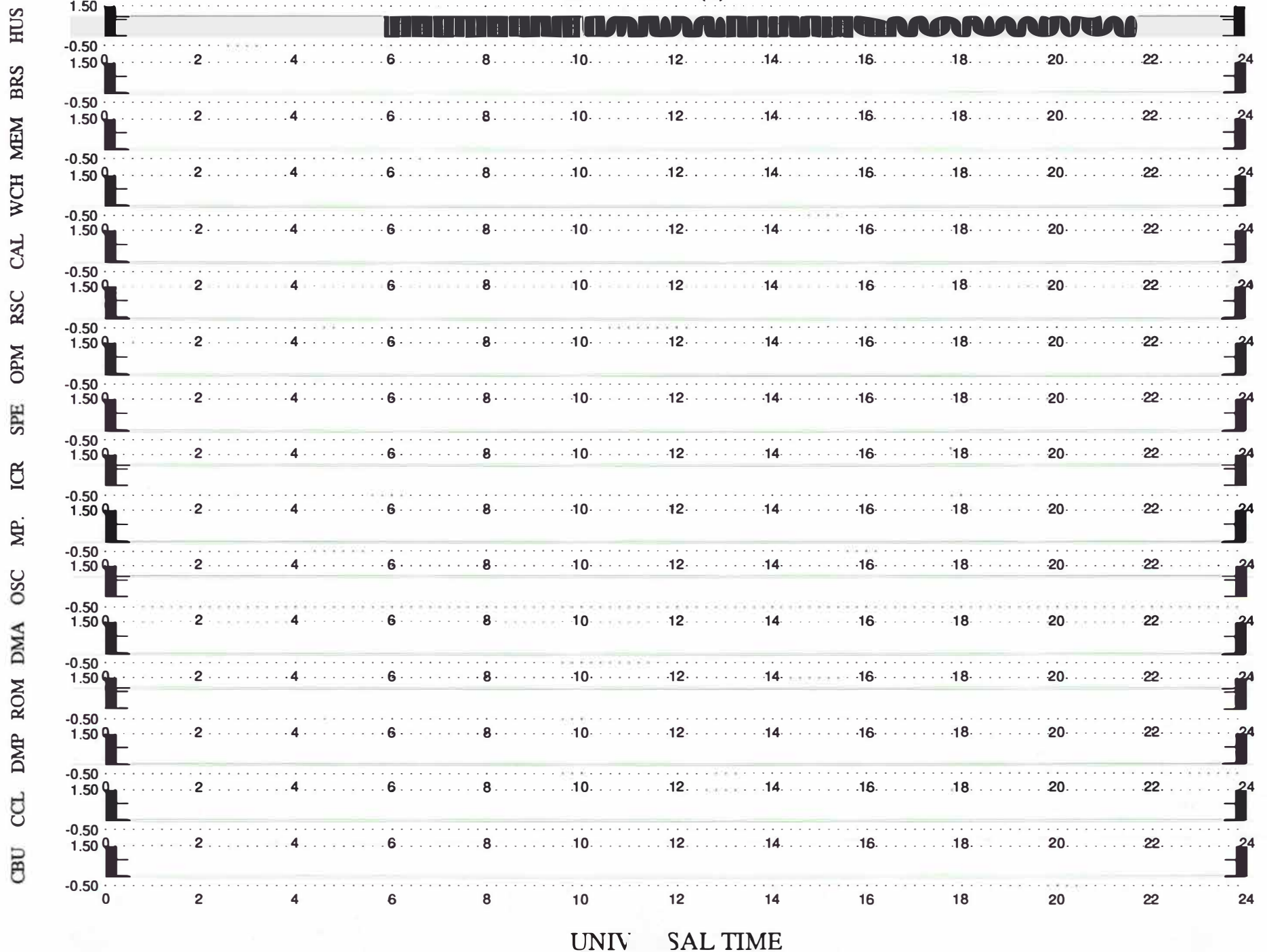
Data Start: 98/10/26, 0000:00

Plot created: 98/10/30, 1007

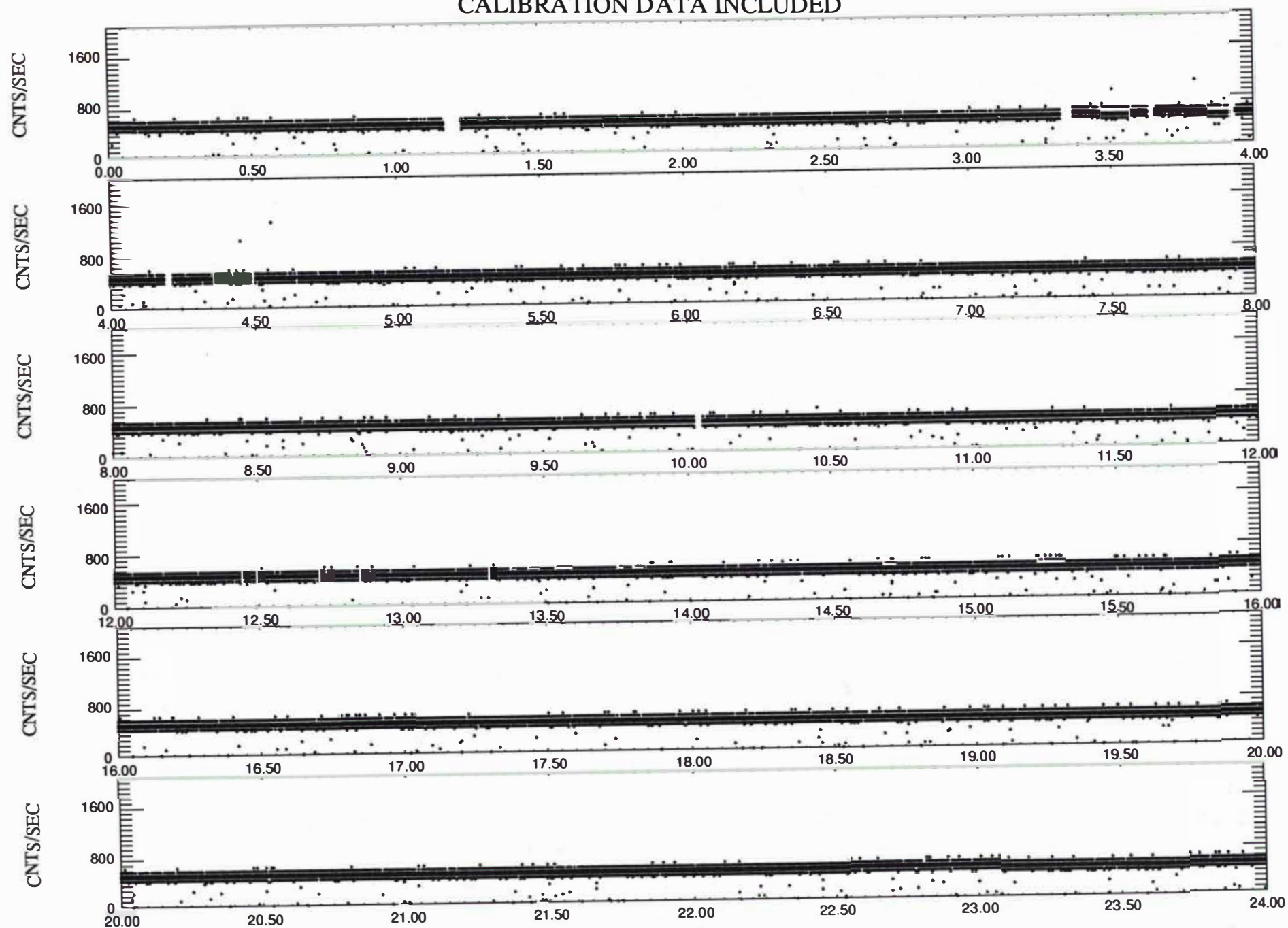
Channel 1 (1.0 - 8.0 Angstroms)
Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

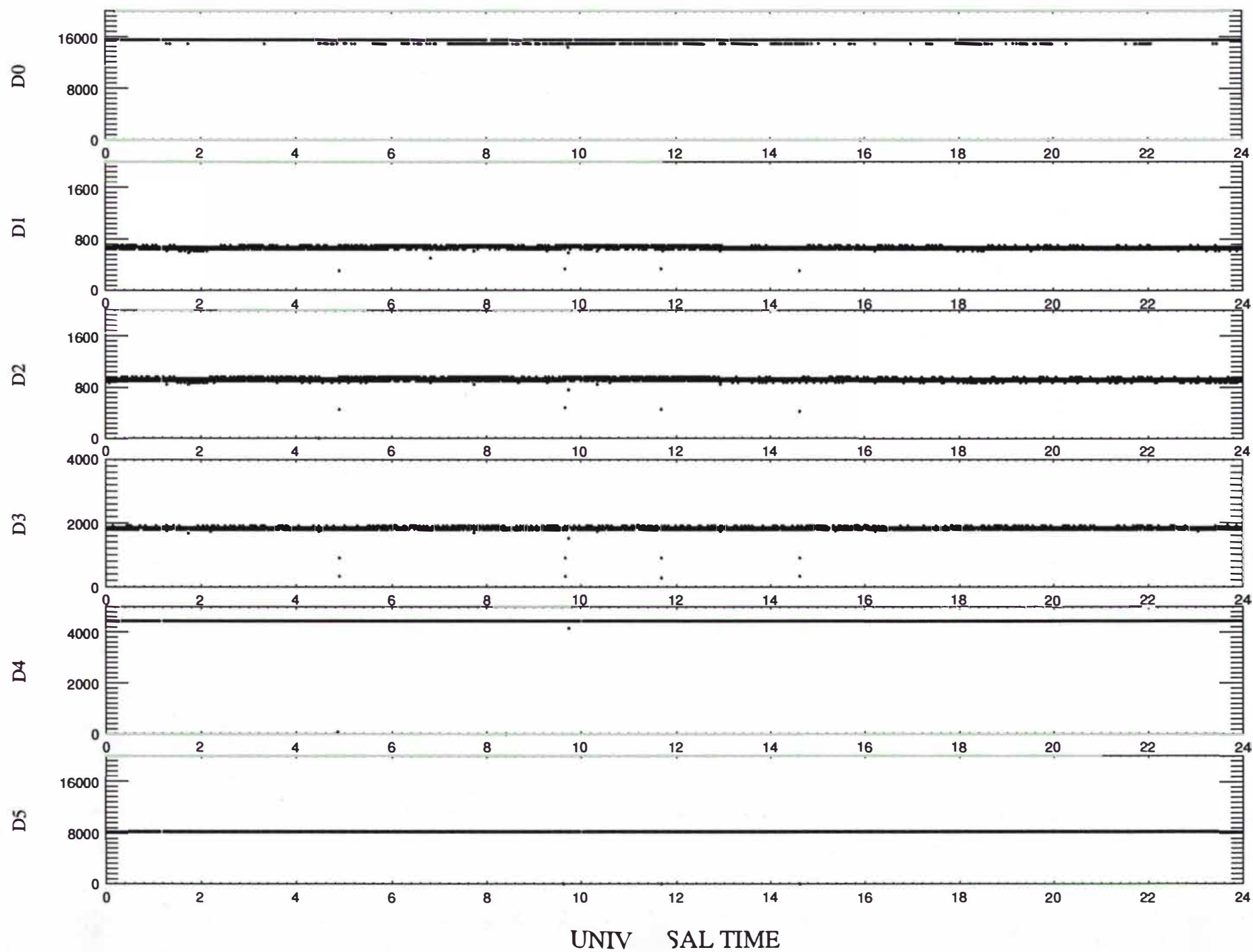
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From PACIESAS@fender.msfc.nasa.gov Sun Nov 1 11:45:09 1998
Return-Path: <PACIESAS@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA07404; Sun, 1 Nov 1998 11:45:09 -0800
From: PACIESAS@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA29785; Sun, 1 Nov 1998 11:45:06 -0800
Date: Sun, 1 Nov 1998 13:44:47 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981101134447.2021ec42@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7178
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7178
EVENT OF 1998 OCT 27 DAY OF YEAR=300
EVENT CROSSING TIME AT BATSE : 84267. S. OR 23:24:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 340.000 -64.000
BATSE PEAK COUNTING RATE: 4700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/10/ 98 IS:
RA= 165.217 DEC= -1.953 DIST= 5.906 AU
BATSE-ULYSSES DISTANCE = 883474347. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1195.48 SECS.
CROSSING TIME AT ULYSSES IS 85462. S. OR 23:44:22 +/- 535.80 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/10/ 98 IS:
RA= 163.759 DEC= 8.499 DIST= 2.075 AU
MARS-BATSE DISTANCE = 310485920. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 55.57 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 585.64 SECS.
CROSSING TIME AT MARS IS 84853. S. OR 23:34:12 +/- 157.19 SECONDS

BATSE BURST TRIGGER

NO.: 7178

TIME: TJD=1113 SECONDS=84267

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.3 AZIMUTH=211.4 ERROR= 3.3 DEGREES

COMMENTS:

DOUBLE-PULSE, TOTAL DURATION ~55 S. STARTS AT ~T-45 S. NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7178	981027	11113	84267	4700	340	-64	55

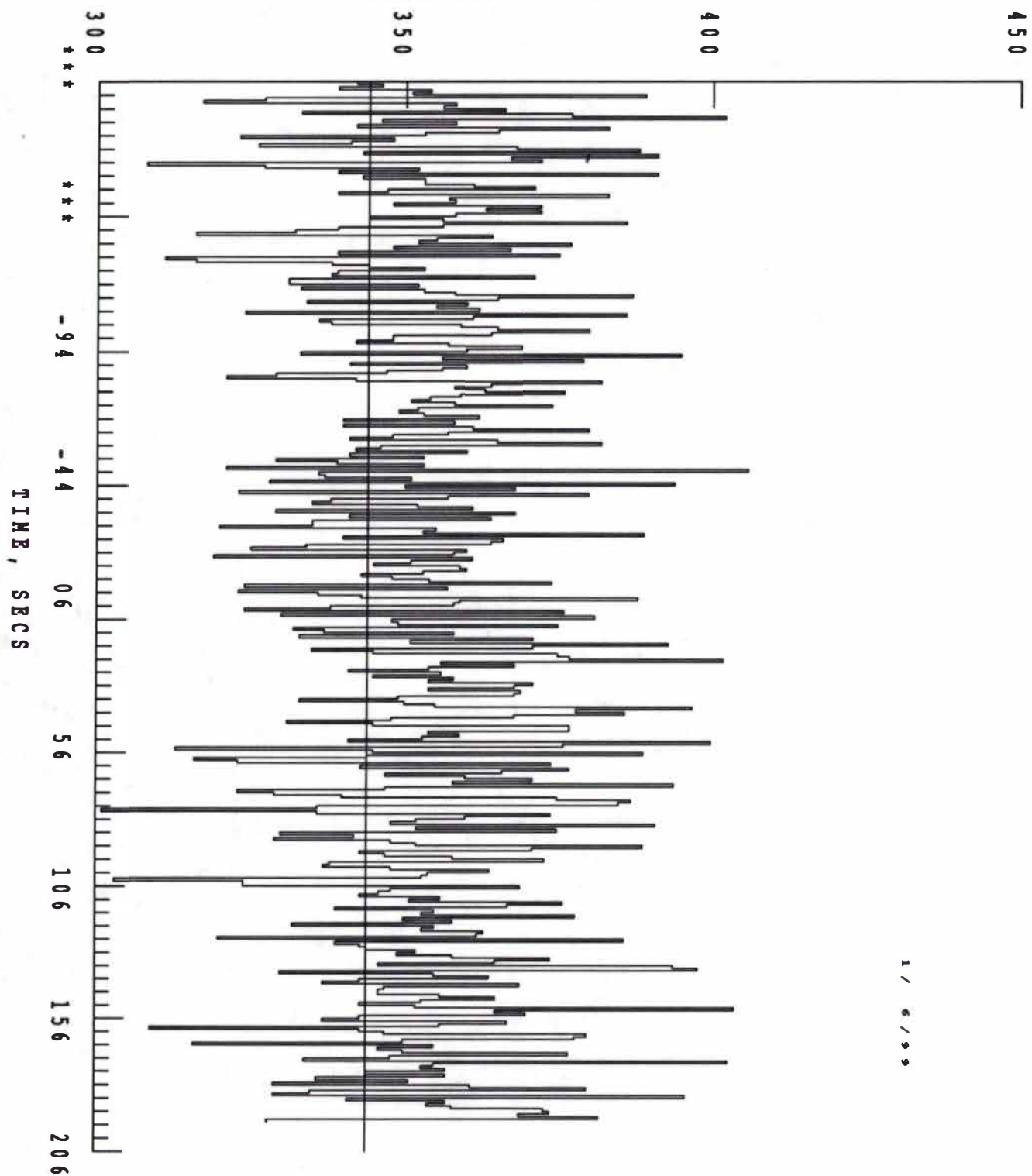
NEAR

27/10/98

83731.735

100-1000 keV

COUNTS/1.000 S



BATSE BURST# 7178

ULYSSES RT

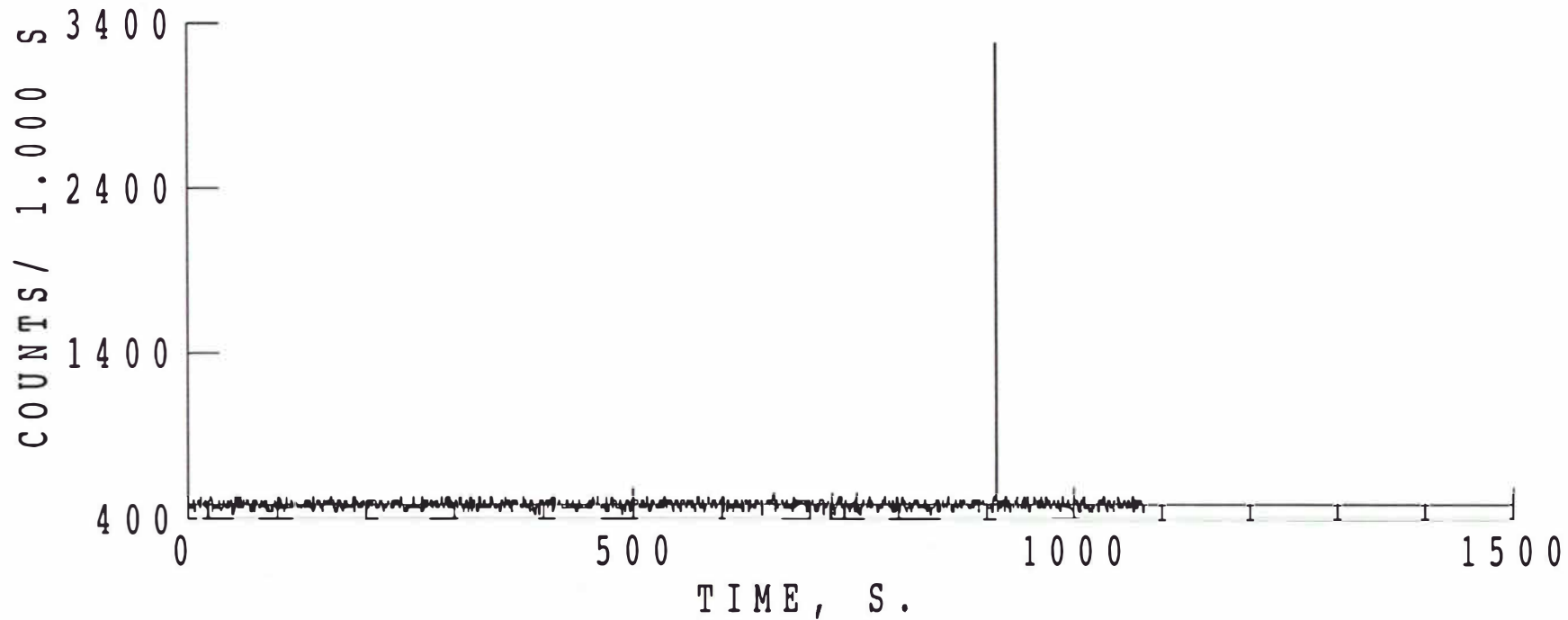
1 / 11 / 98

27 / 10 / 98 84924.383 s

0.500 S INTERVALS REGROUPED BY 2

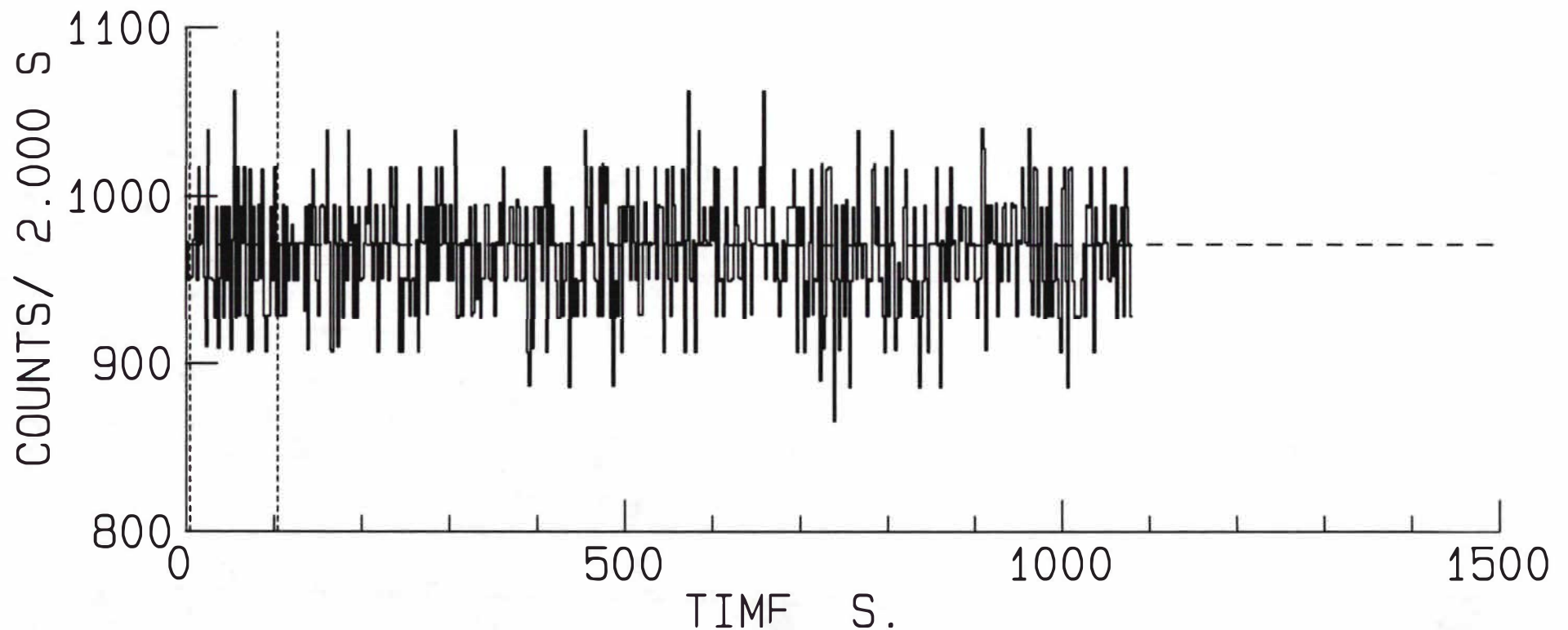
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
27/10/98 84924.383 s
0.500 S INTERVALS REGROUPED BY 4
22- 151 keV

10/12/98



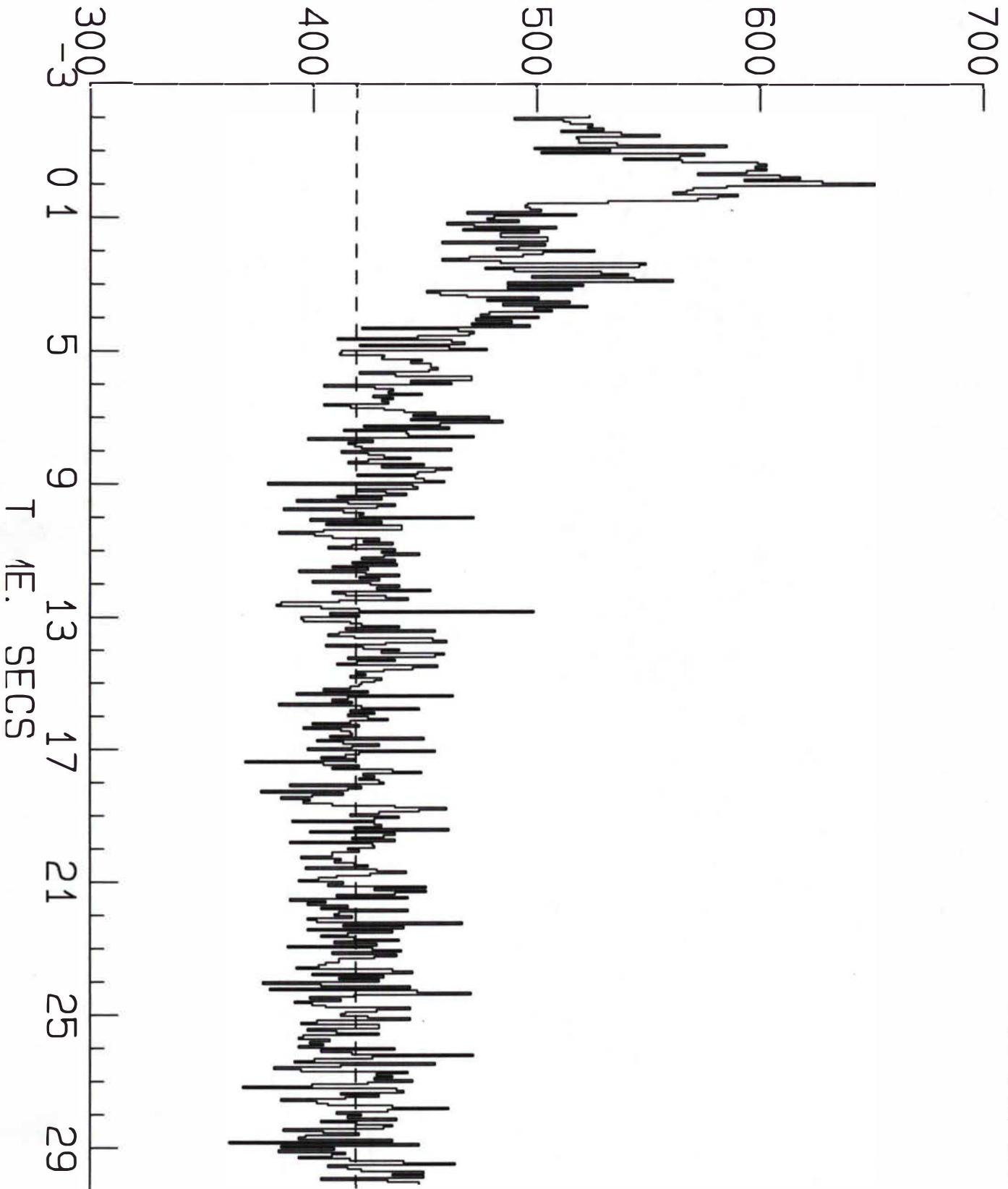
BATSE

27/10/98

84267.745

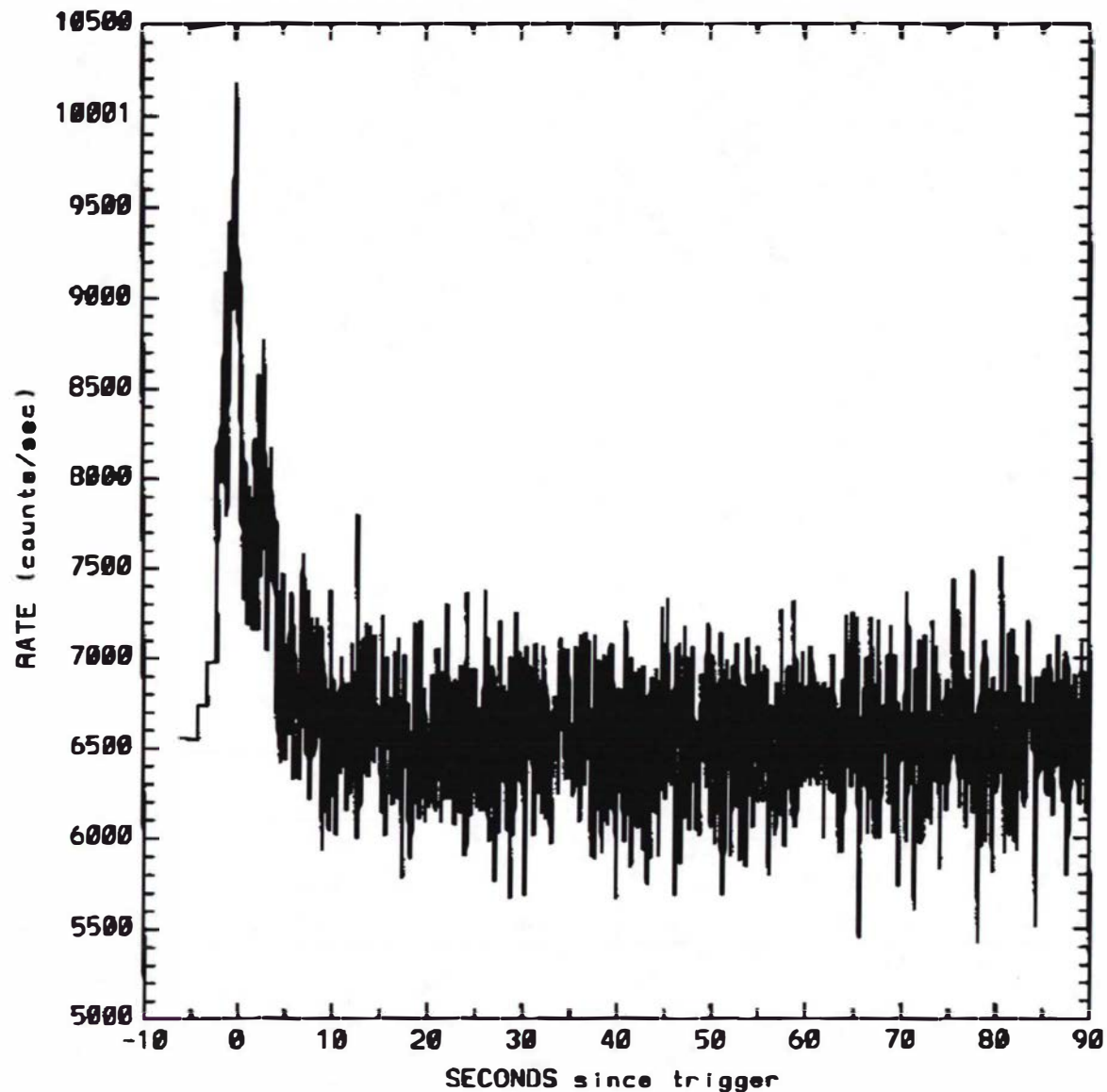
25- 100 keV

COUNTS/0.064 S



10/12/98

DISCSC Data for K. Hurley, No. 7178



18-NOV-1998 09:57:24

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7178

Trigger Time:
11113 / 84267.745

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors [7..8]:
76-----

Discriminators:
(1, 2)

Quality Mask:
80(SP1

From cline@apache.gsfc.nasa.gov Fri Oct 30 08:48 PST 1998
Mime-Version: 1.0
Date: Fri, 30 Oct 1998 11:49:04 -0500
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Re: GRB981027A,B,C

DEAR KEVIN

Auto-Konus was turned off just recently for GGS-Wind people to make some change or improvement or something, and is promised to be back on soon.

NEAR is yet many days behind per event, and we are hoping to get it automated soon, as you know, BUT HAVEN'T YET.

Thua, I have no data on any of these now.

TLC

> ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

>

> ULYSSES DATE & TIME COMMENTS ULYSSES DISTANCE FROM EARTH, LIGHT-S

>

> OCT 27 1998 06:28 weak, 32 ms long 2990

> OCT 27 1998 13:15 moderate, 64 ms long 2990

> OCT 27 1998 14:43 weak, 32 ms long 2990

>

-- Thomas L. Cline ----- cline@apache.gsfc.nasa.gov

From khurley@sunspot Fri Oct 30 08:03 PST 1998
Date: Fri, 30 Oct 1998 08:05:10 -0800
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981027A,B,C

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

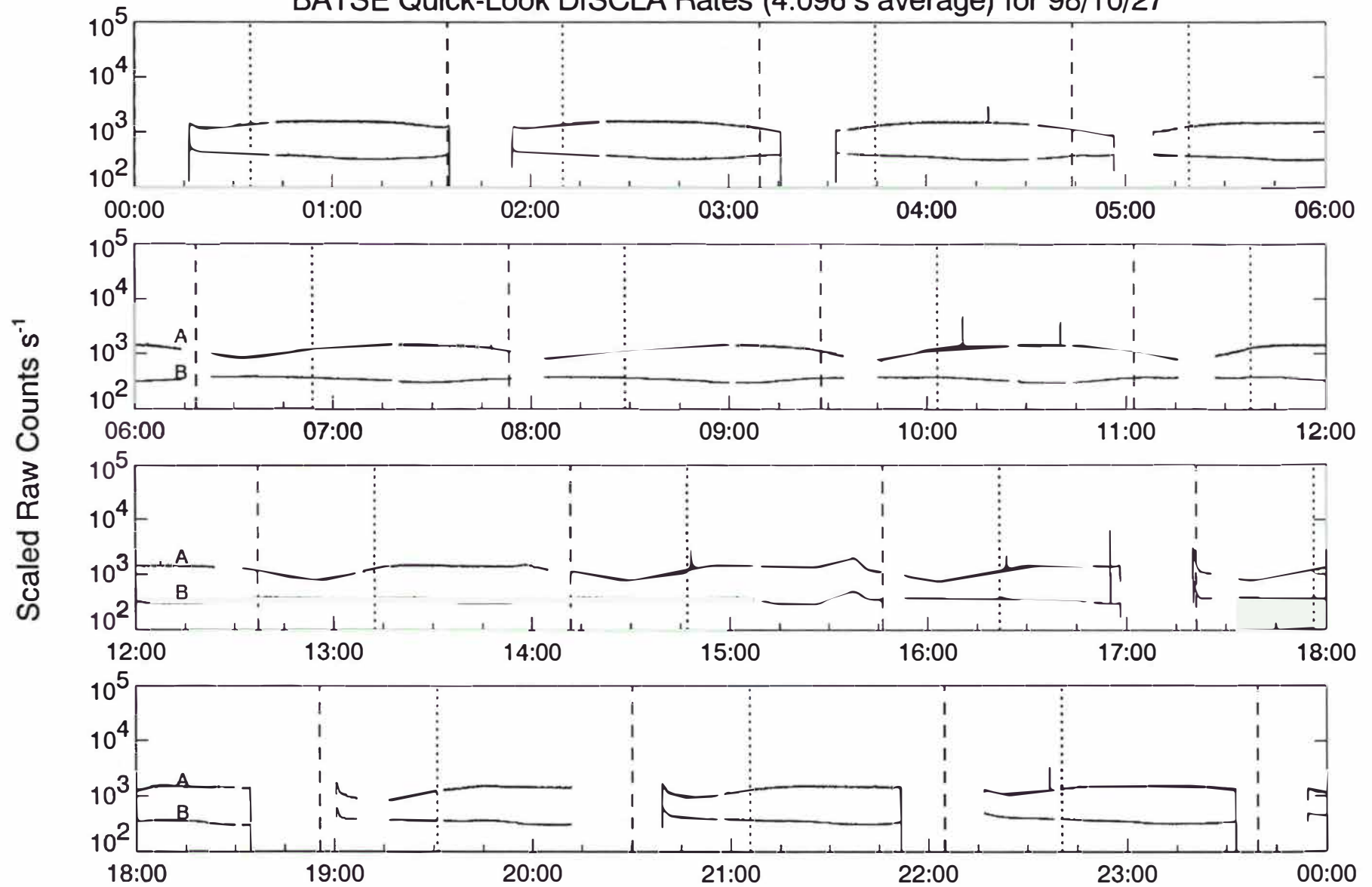
Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1556 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 27 1998 06:28	weak, 32 ms long	2990
OCT 27 1998 13:15	moderate, 64 ms long	2990
OCT 27 1998 14:43	weak, 32 ms long	2990

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczyski, marar, tee

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/27

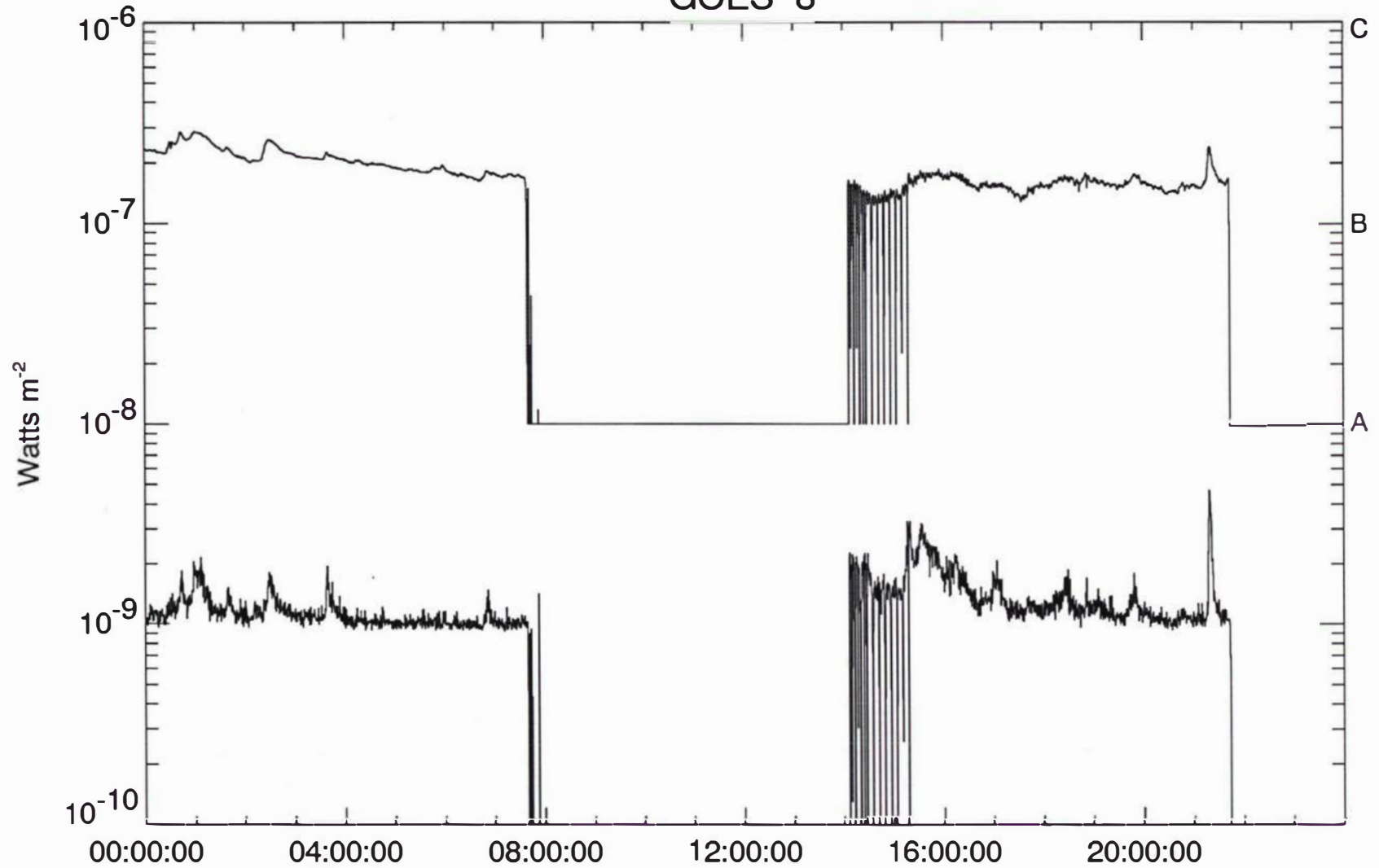


Current Time: 98/10/31, 1009 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/27, 0000:00

Channel 1 (1.0 - 8.0 Angstroms)

Channel 2 (0.5 - 4.0 Angstroms)

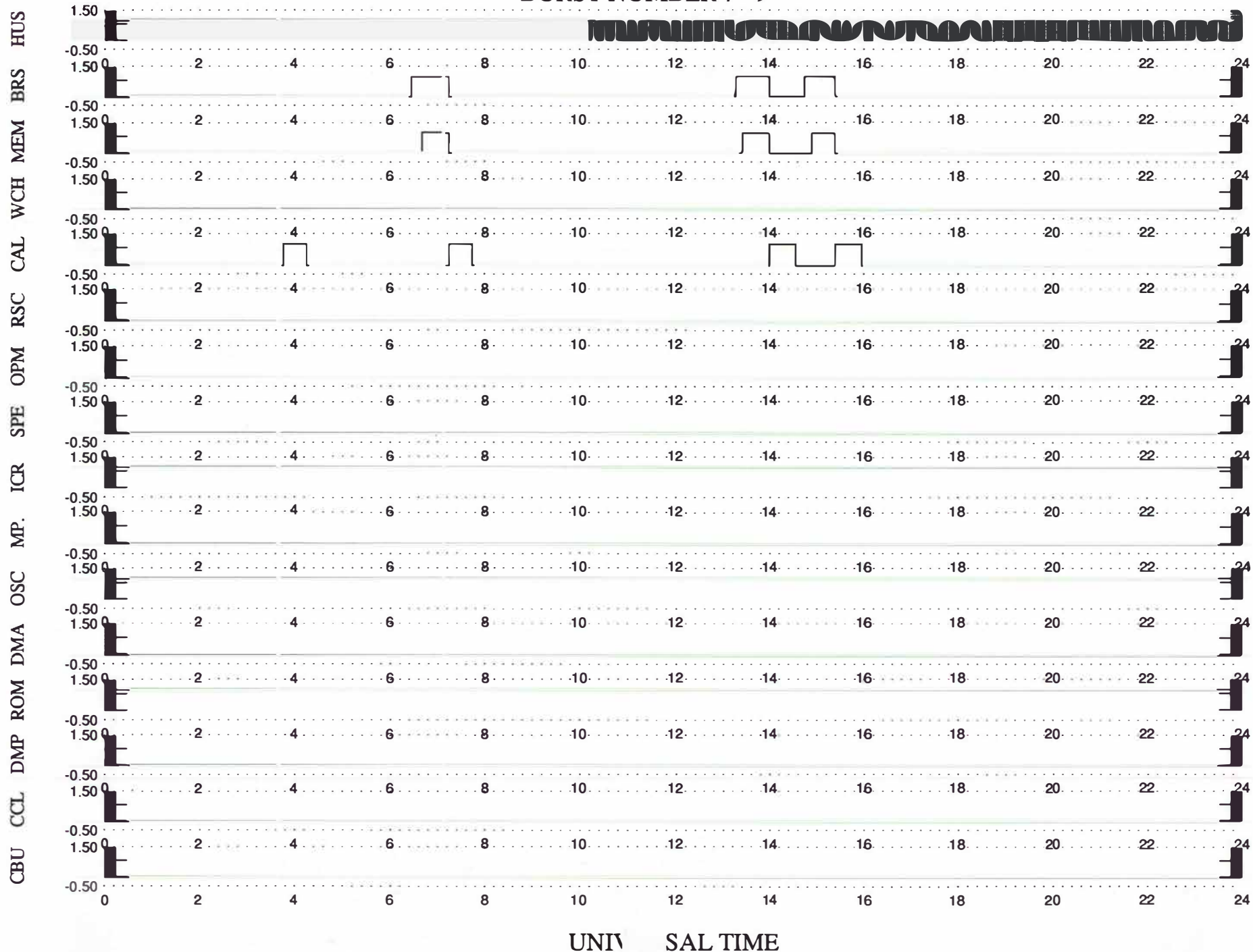
Plot created: 98/10/31, 1008

Background not subtracted

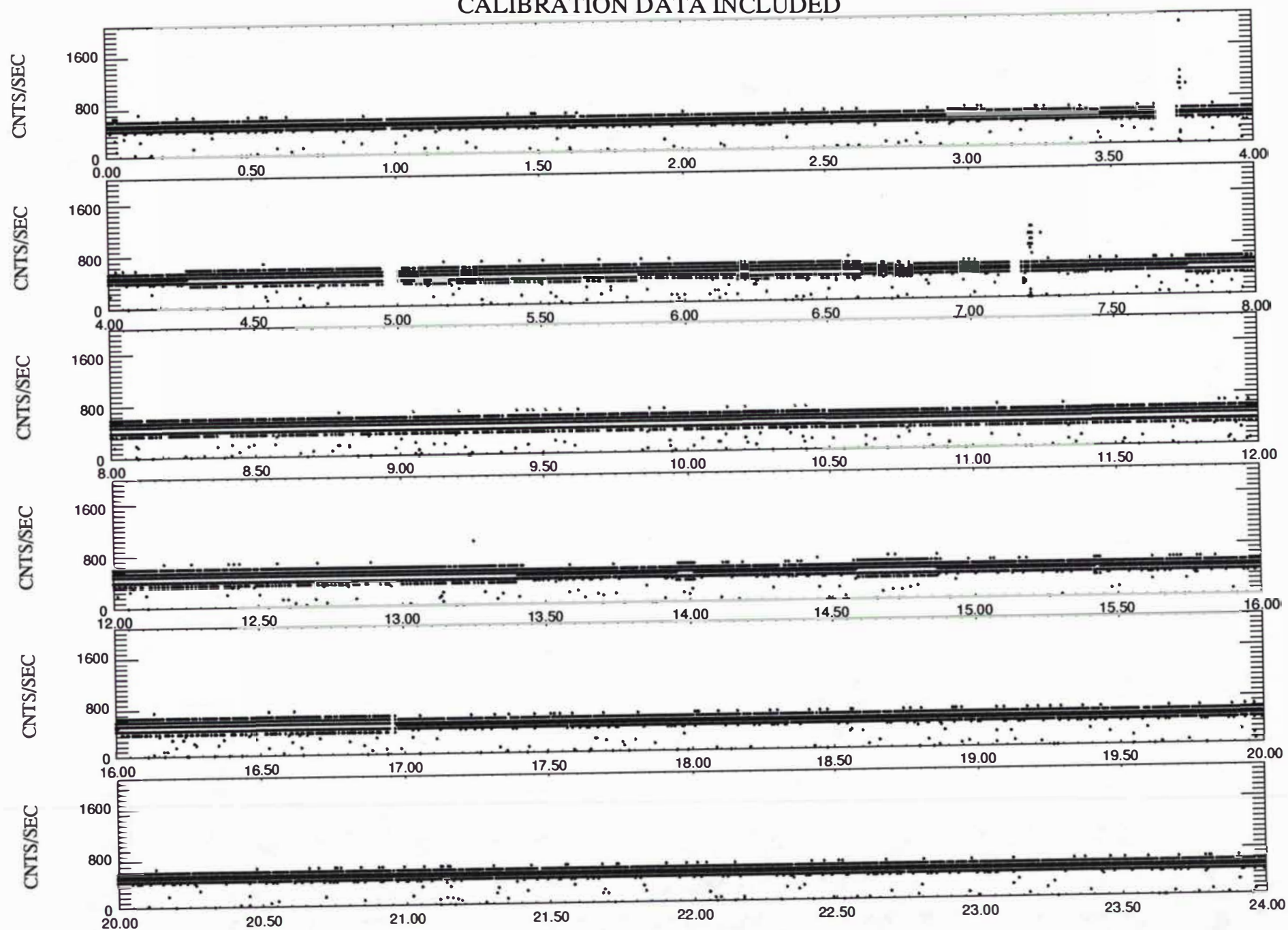
Background not subtracted

Sample average = 10

BURST NUMBER 7 - 9

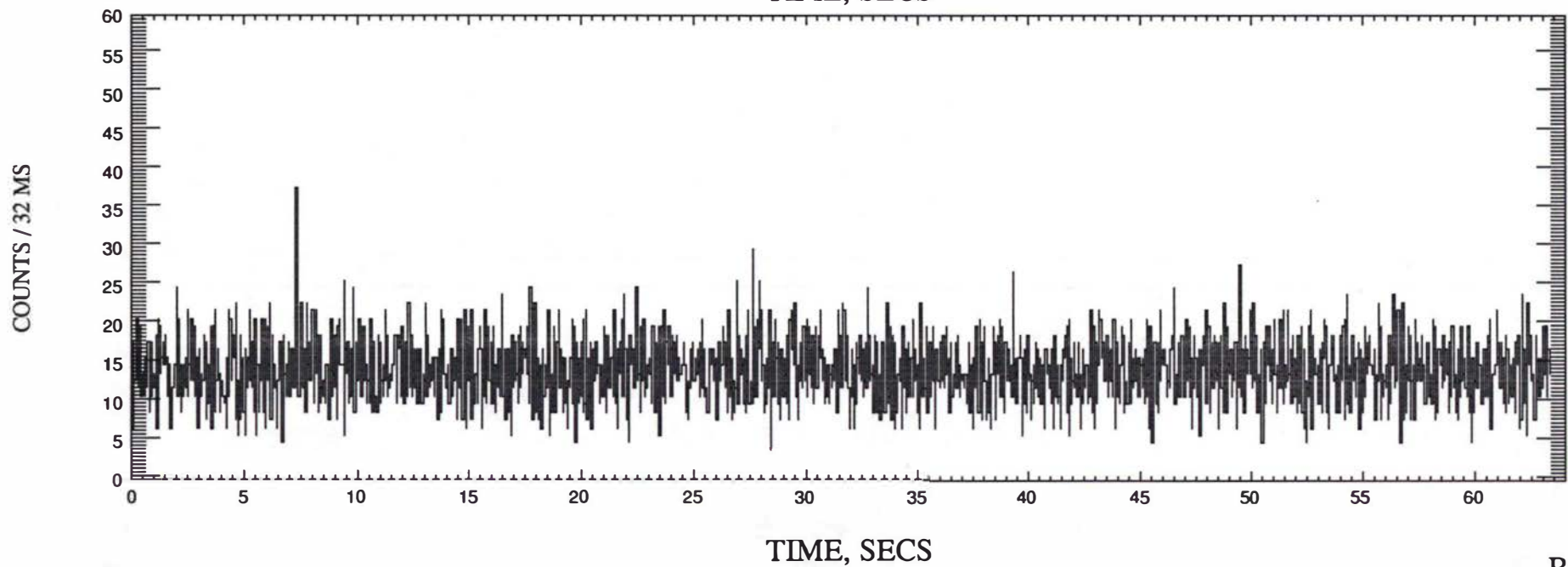
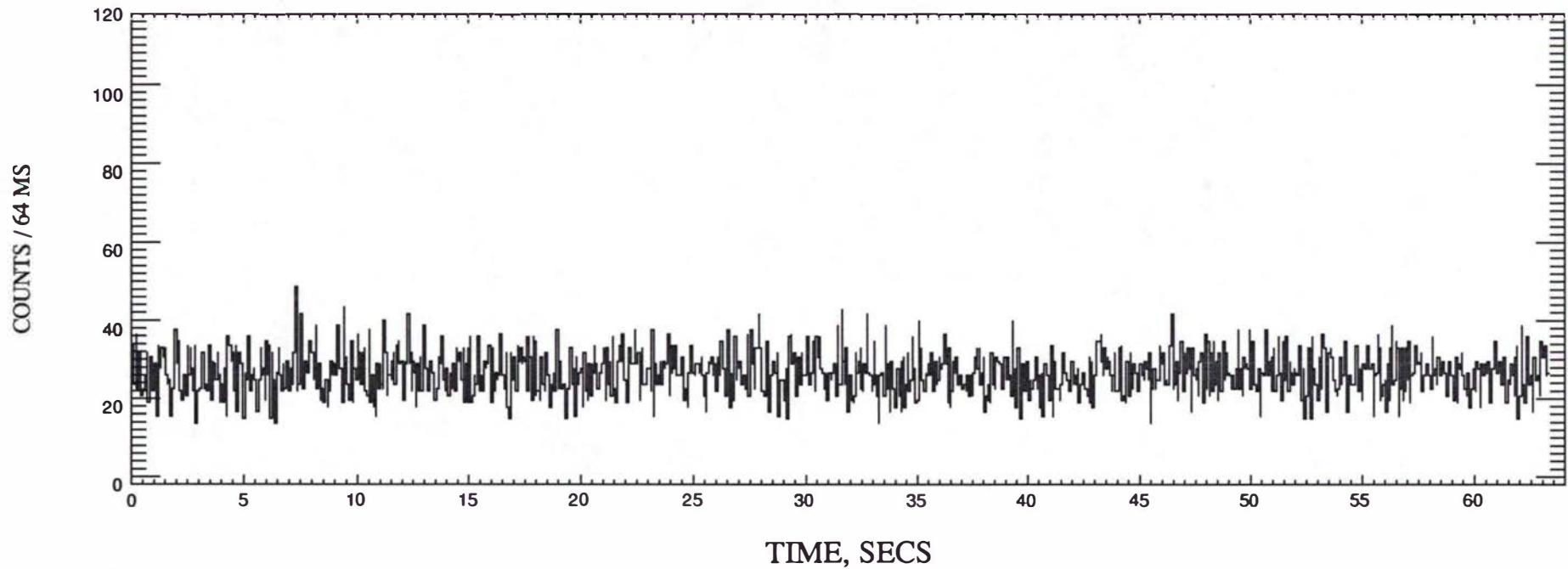


CALIBRATION DATA INCLUDED

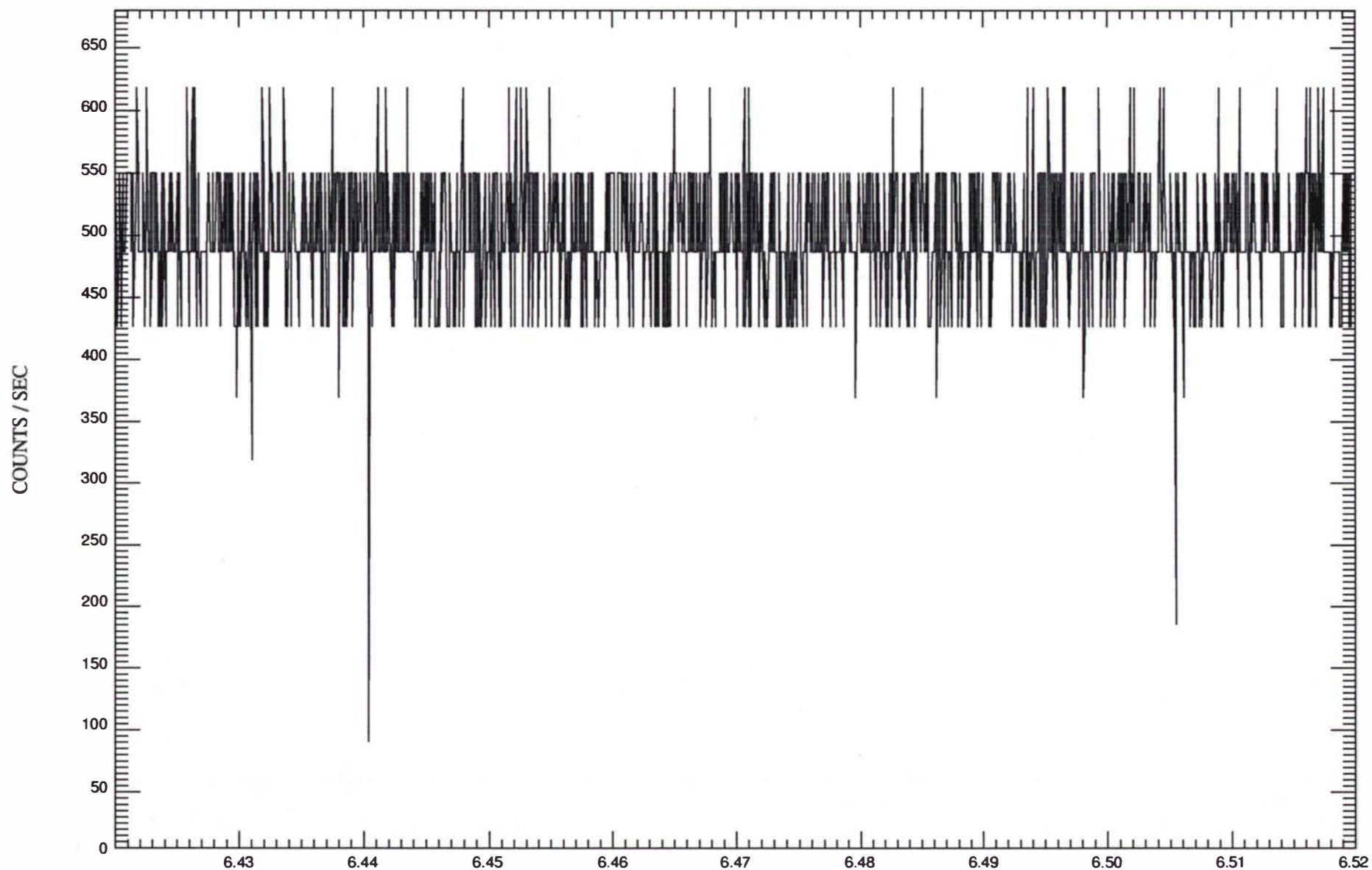


UNIV SAL TIME

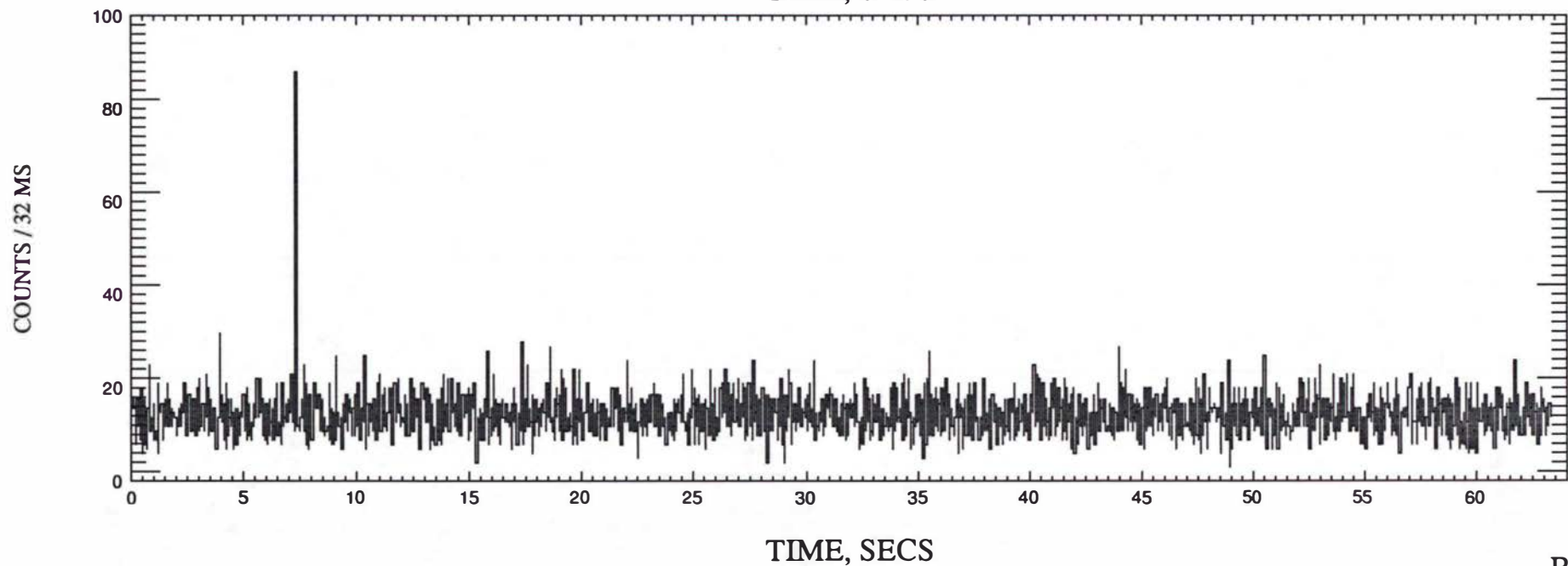
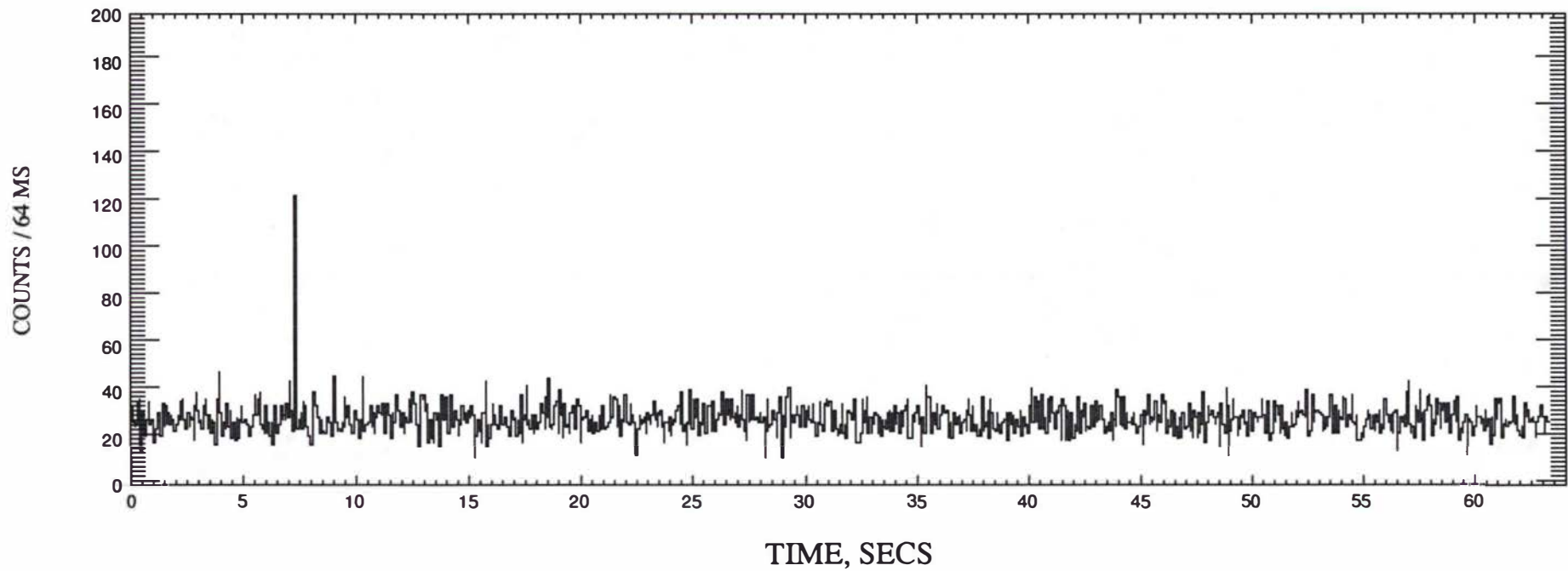
Burst Counter 7 at UT= 6.465103204515 h=23274.372 s 06:27:54.372



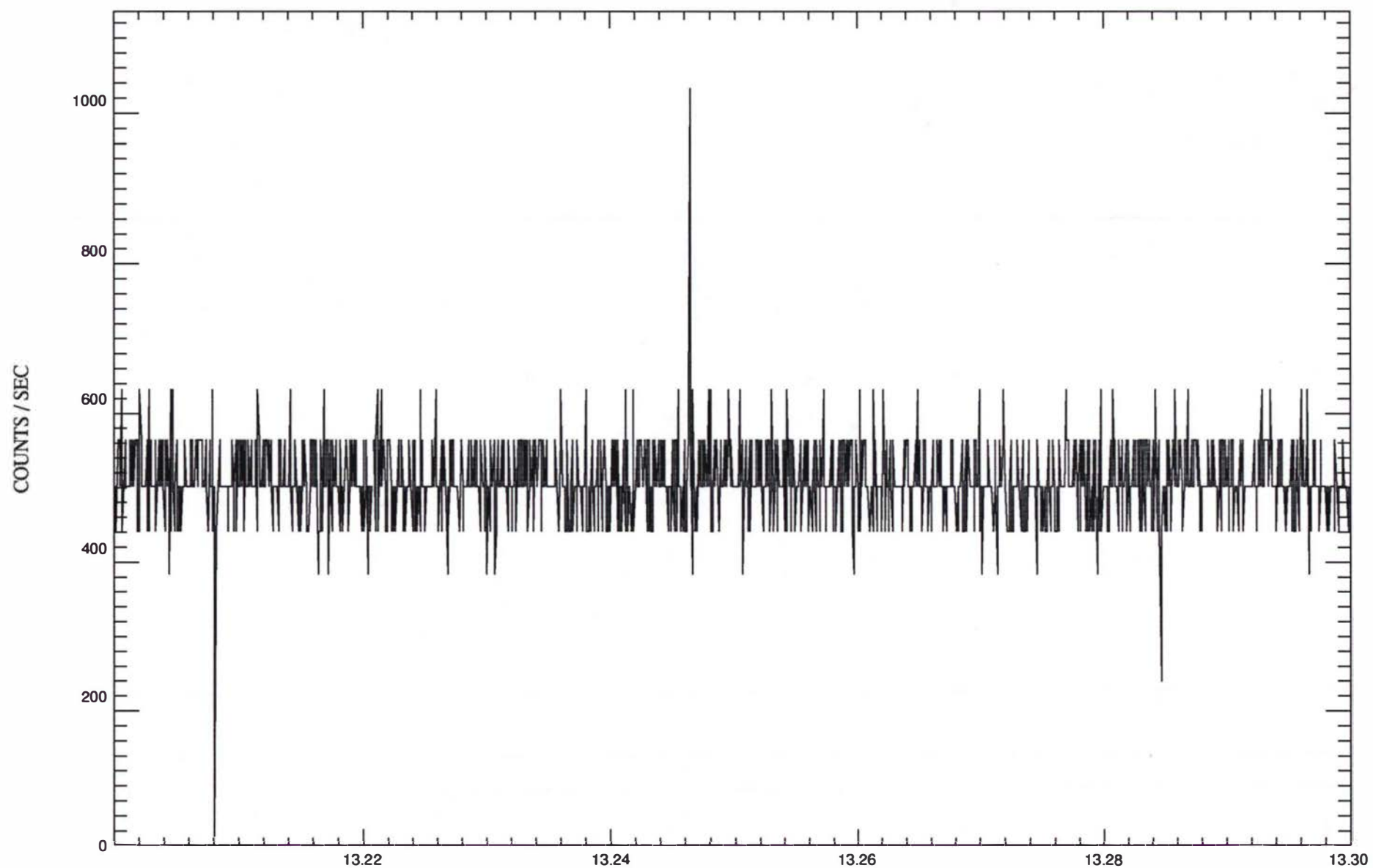
CALIBRATION DATA INCLUDED



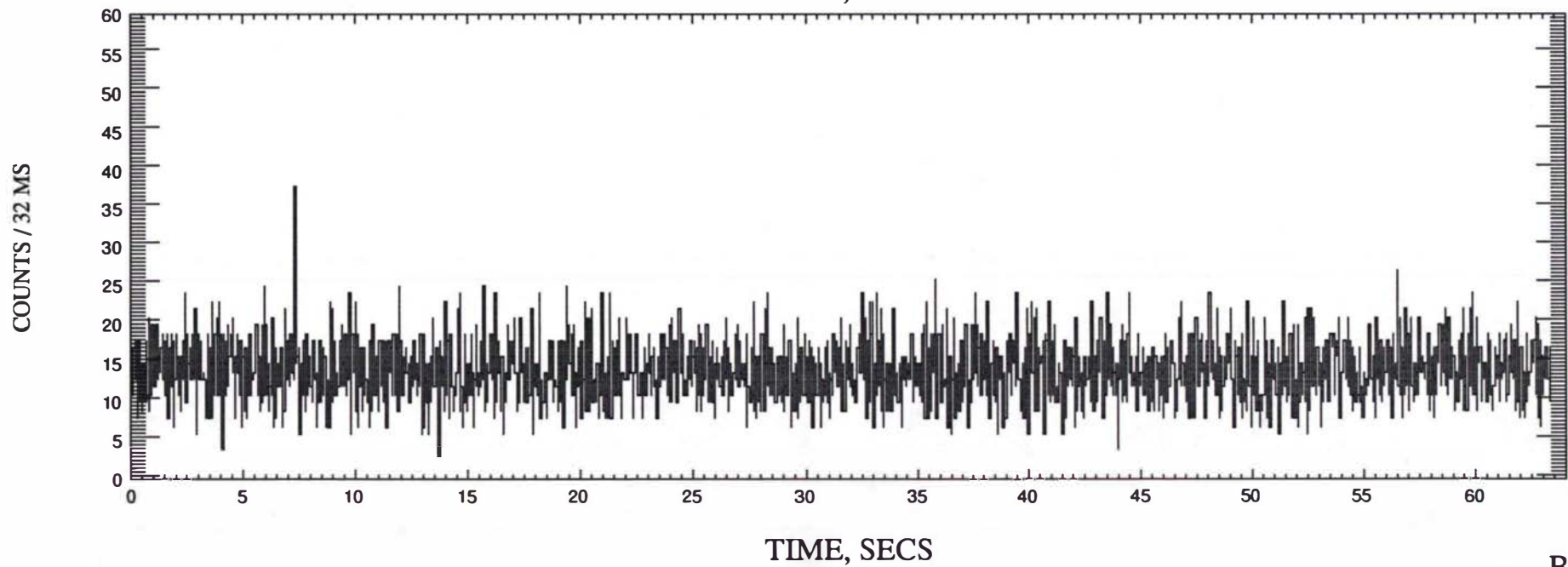
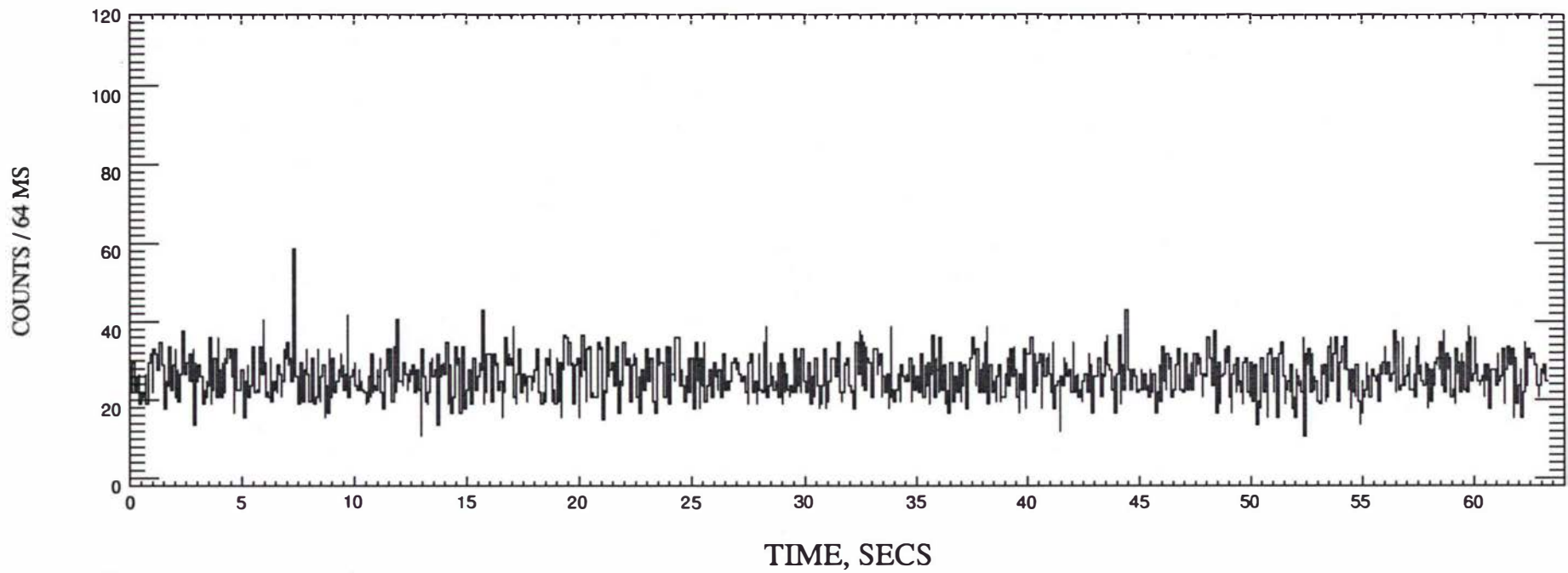
Burst Counter 8 at UT=13.246512730916 h=47687.446 s 13:14:47.446



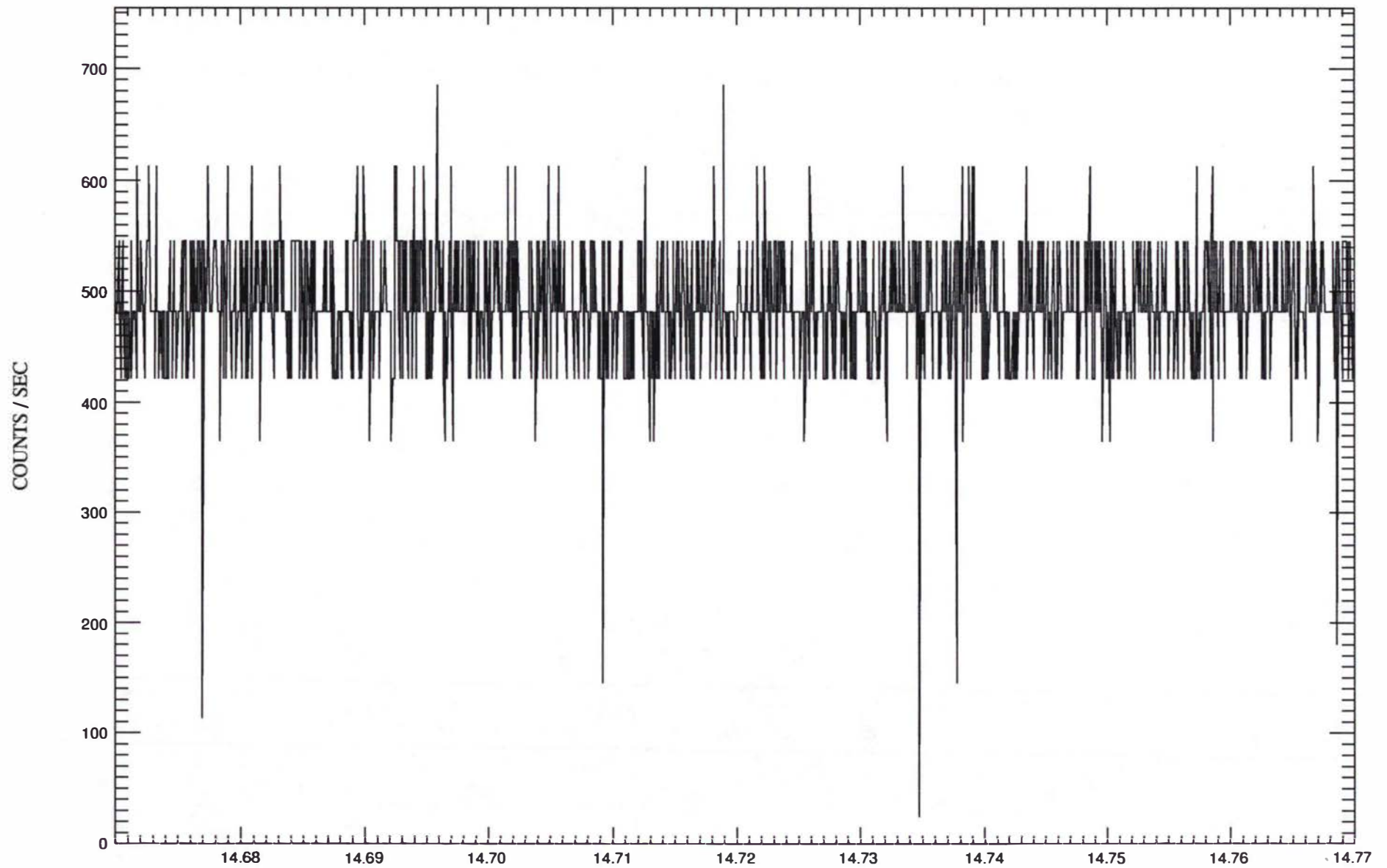
CALIBRATION DATA INCLUDED

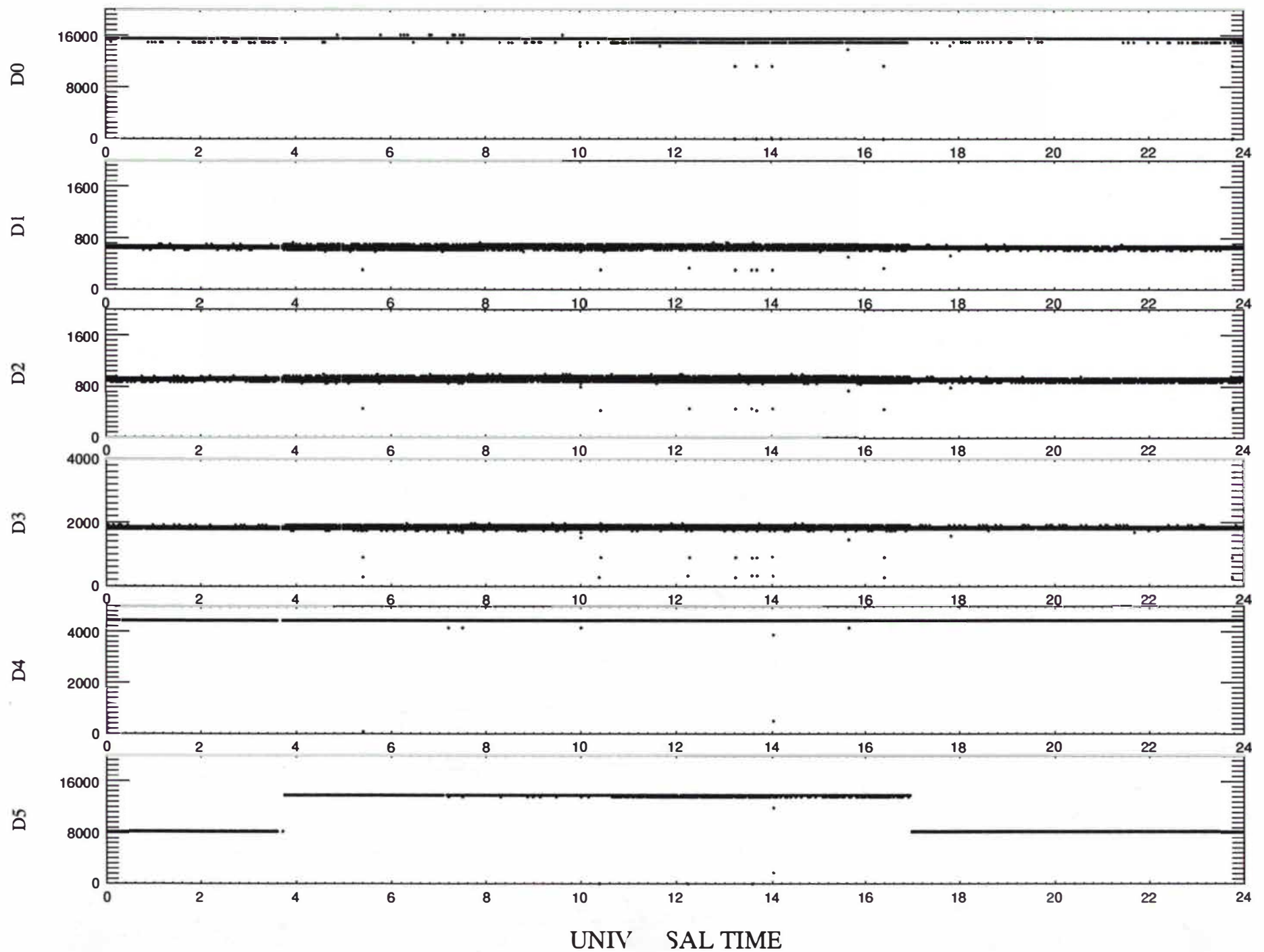


Burst Counter 9 at UT=14.719110548231 h=52988.798 s 14:43:08.798



CALIBRATION DATA INCLUDED





From khurley@sunspot Mon Nov 9 09:34 PST 1998
Date: Mon, 9 Nov 1998 09:30:51 -0800
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981028, 981031A,B,C,D, 981101

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1556 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 28 1998 20:46	moderate, 32 ms long	2990
OCT 31 1998 03:09	moderate, 128 ms long	2990
OCT 31 1998 18:57	intense, 1 s long	2990
OCT 31 1998 20:14	moderate, 128 ms long	2990
OCT 31 1998 23:55	intense, 128 ms long	2990
NOV 01 1998 01:15	intense, 64 ms long	2990

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczynski, marar, tee

From RICHARDSON@fender.msfc.nasa.gov Thu Oct 29 11:46:03 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Thu, 29 Oct 1998 13:44:32 -0600 (CST)

To: burst@compel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7179

TIME: TJD=1114 SECONDS=47734

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=139.9 AZIMUTH=62.7 ERROR=0.8 DEGREES

COMMENTS:

SOLAR FLARE, GOES C2.3 NO OPTICAL

SINGLE PULSE, DURATION APPROX. = 60 SEC. NOT VISIBLE ABOVE 300KEV.

From RICHARDSON@fender.msfc.nasa.gov Thu Oct 29 12:05:28 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Thu, 29 Oct 1998 14:05:02 -0600 (CST)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7180

TIME: TJD=1114 SECONDS=59741

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

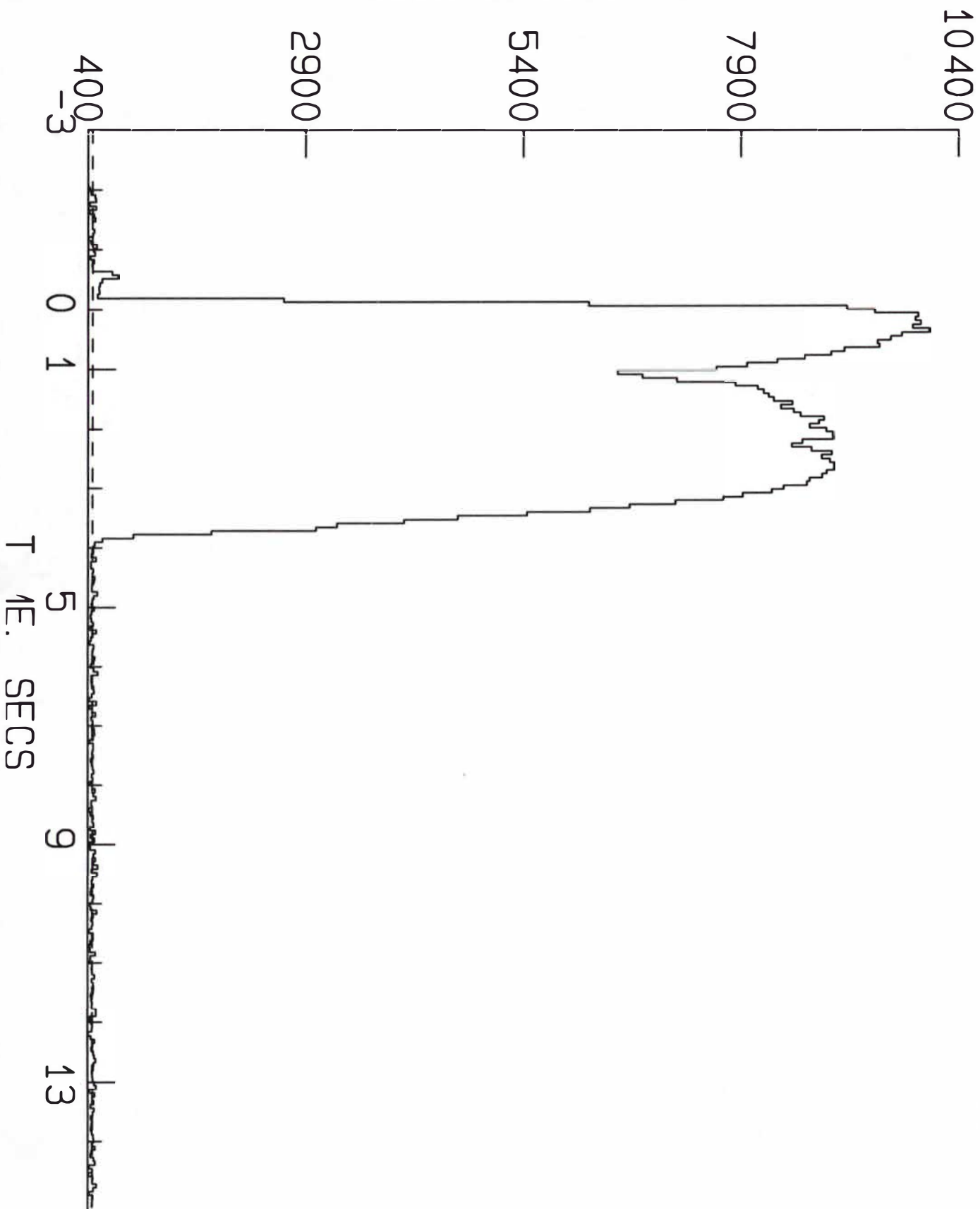
BATSE

28/10/98

83020.257

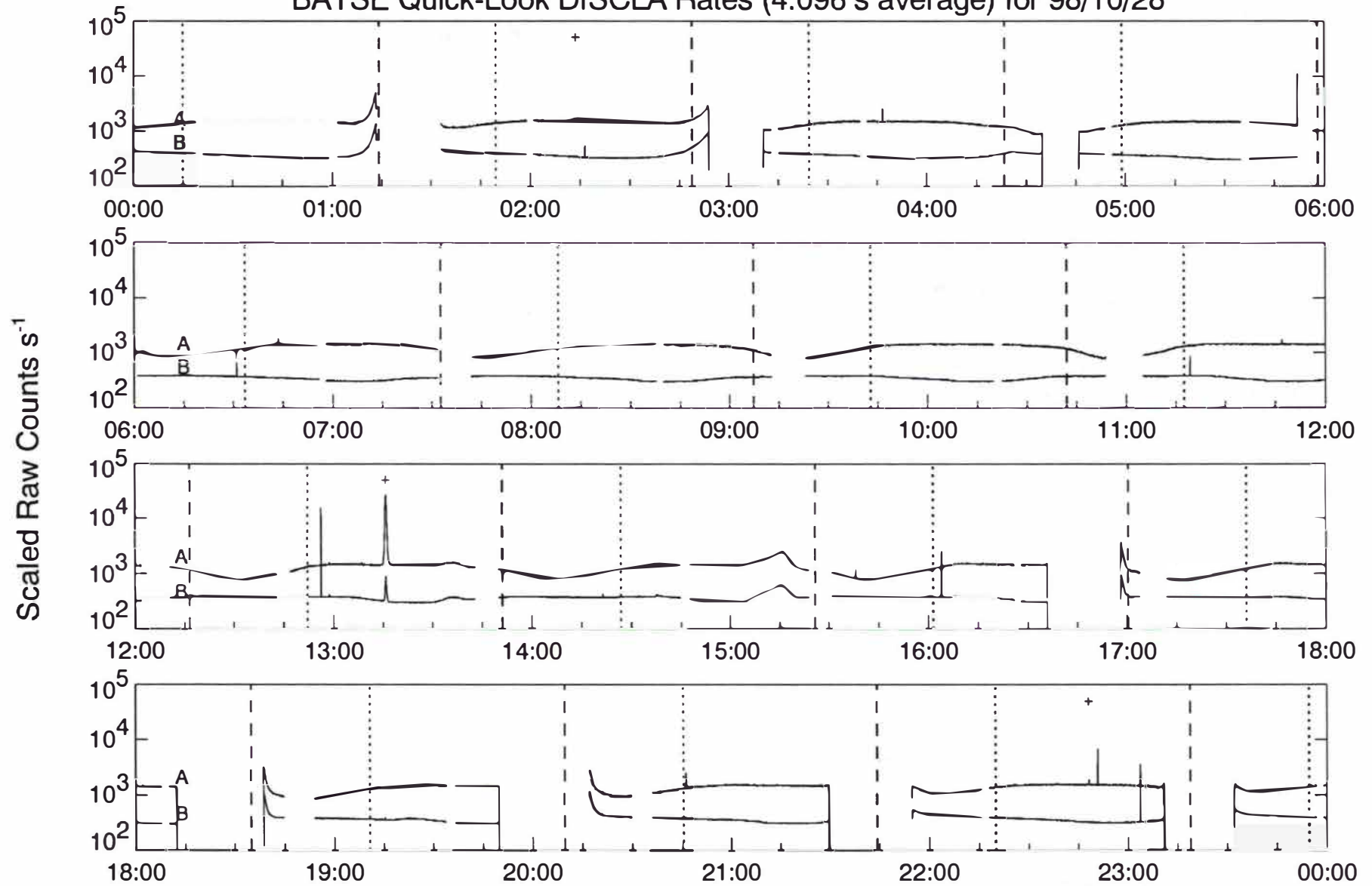
25- 100 keV

COUNTS/0.064 S



10/12/98

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/28

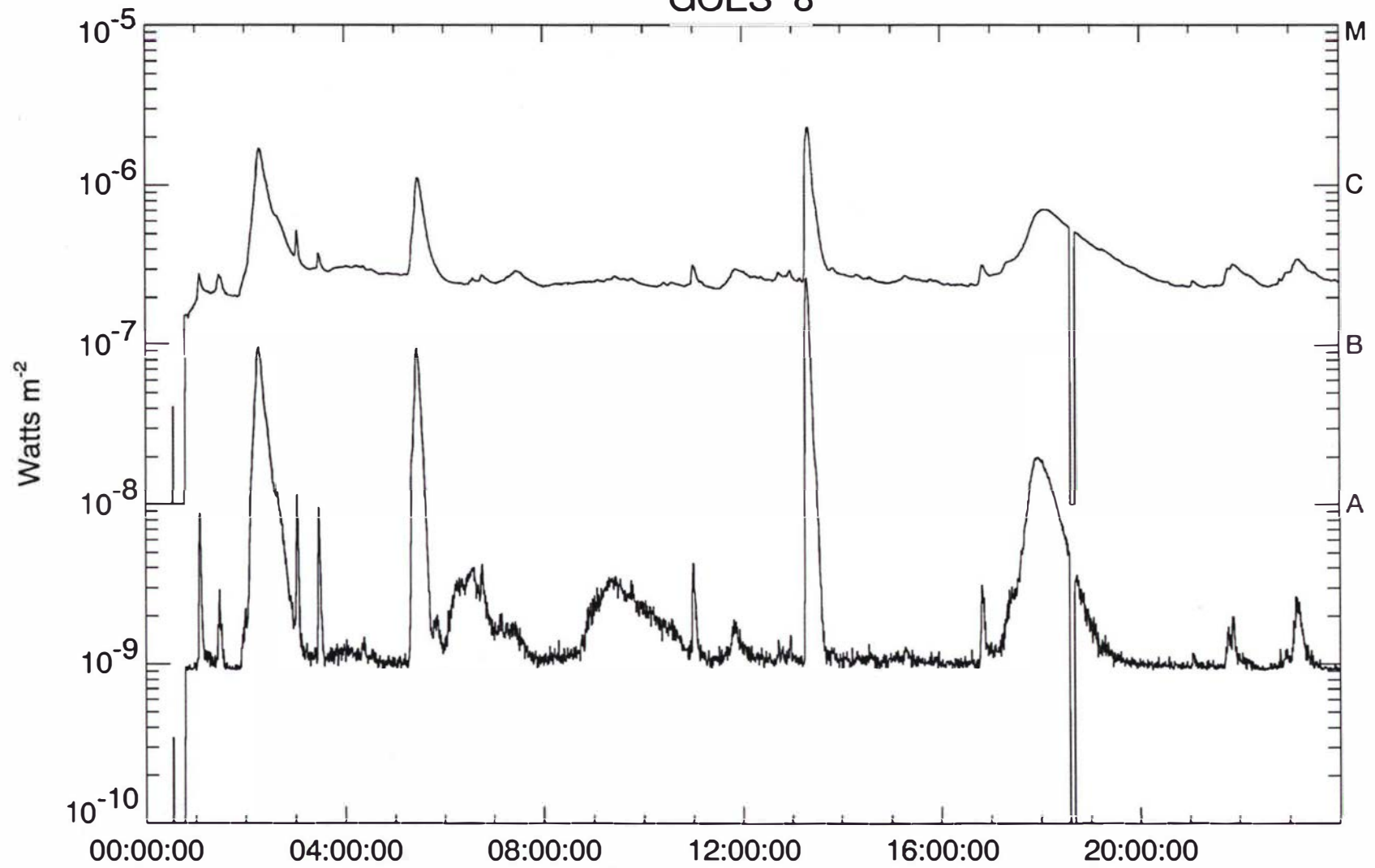


Current Time: 98/11/01, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/28, 0000:00

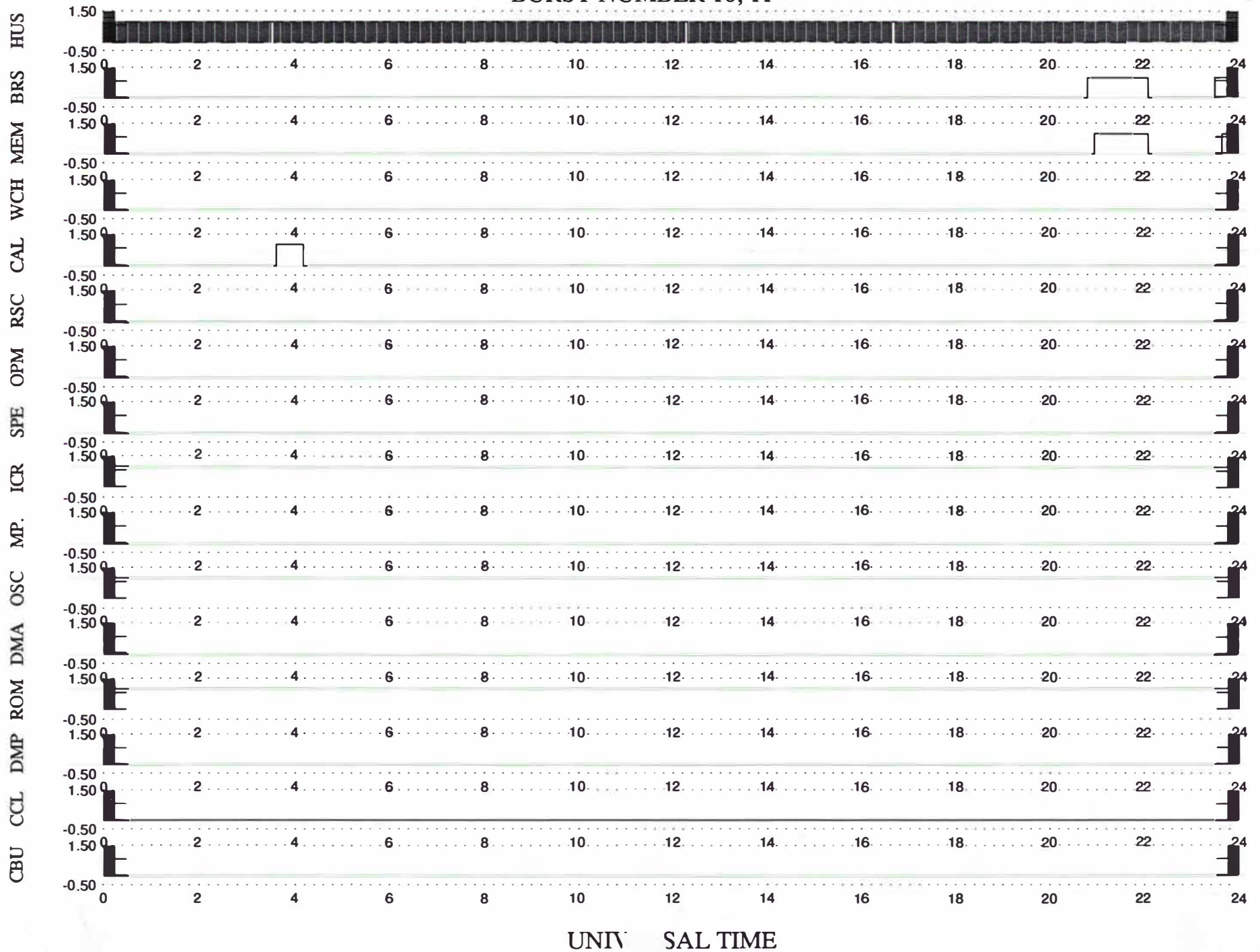
Plot created: 98/11/01, 1007

Channel

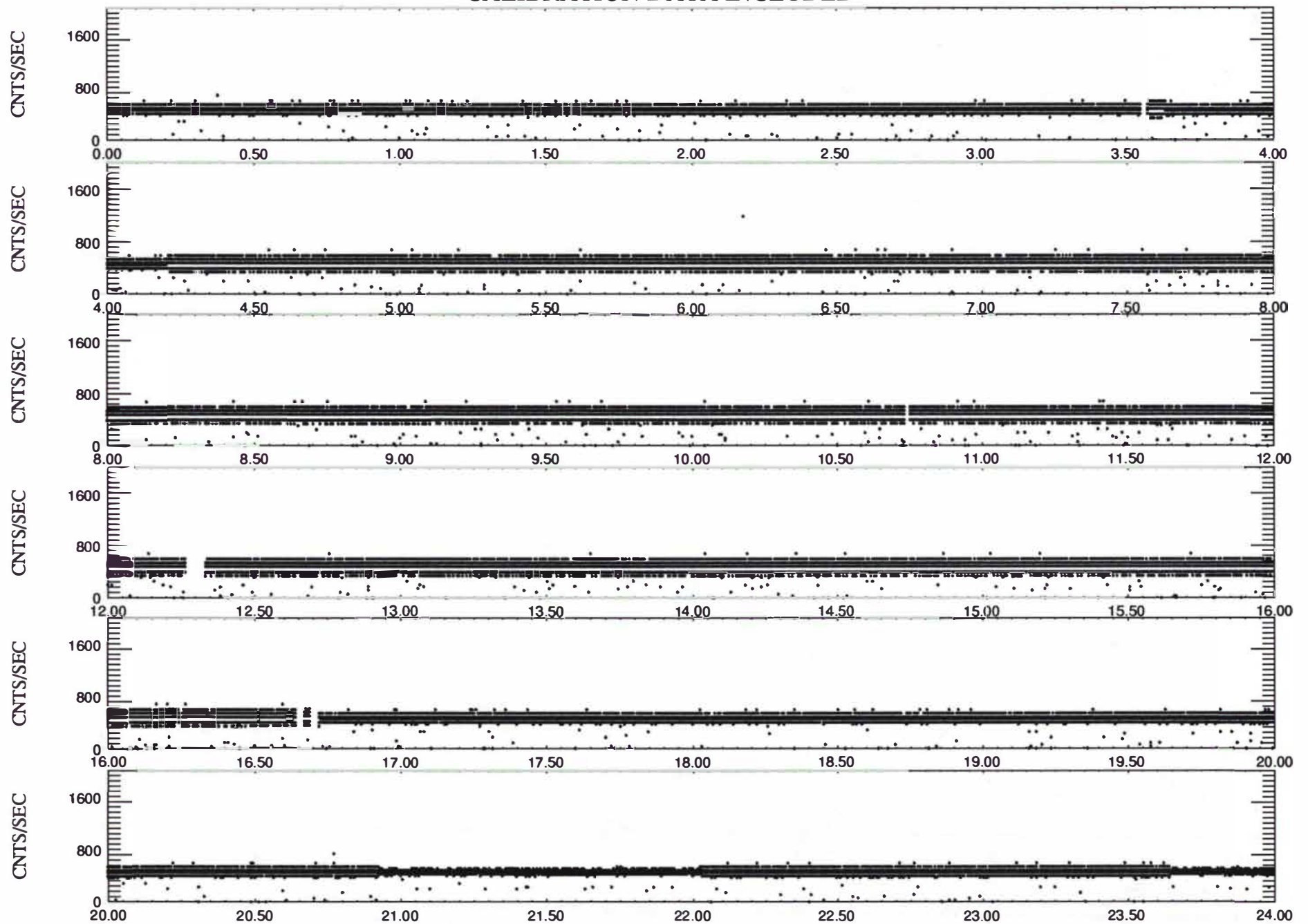
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 10, 11

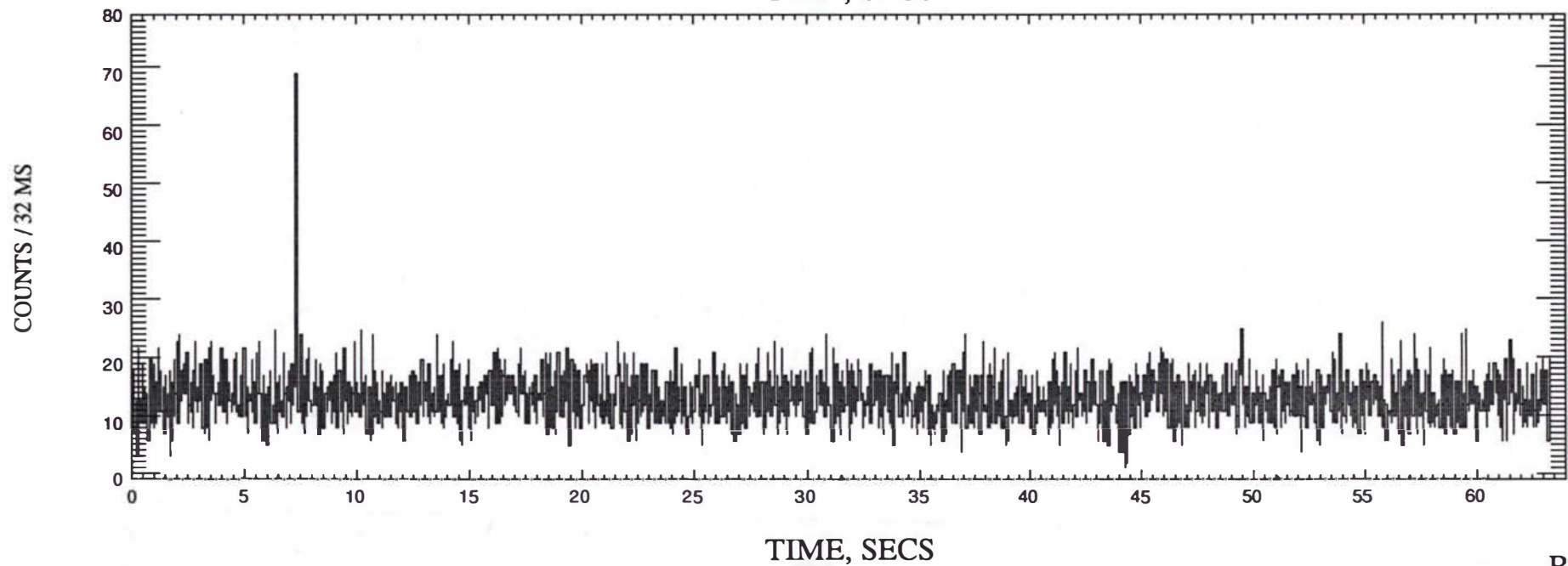
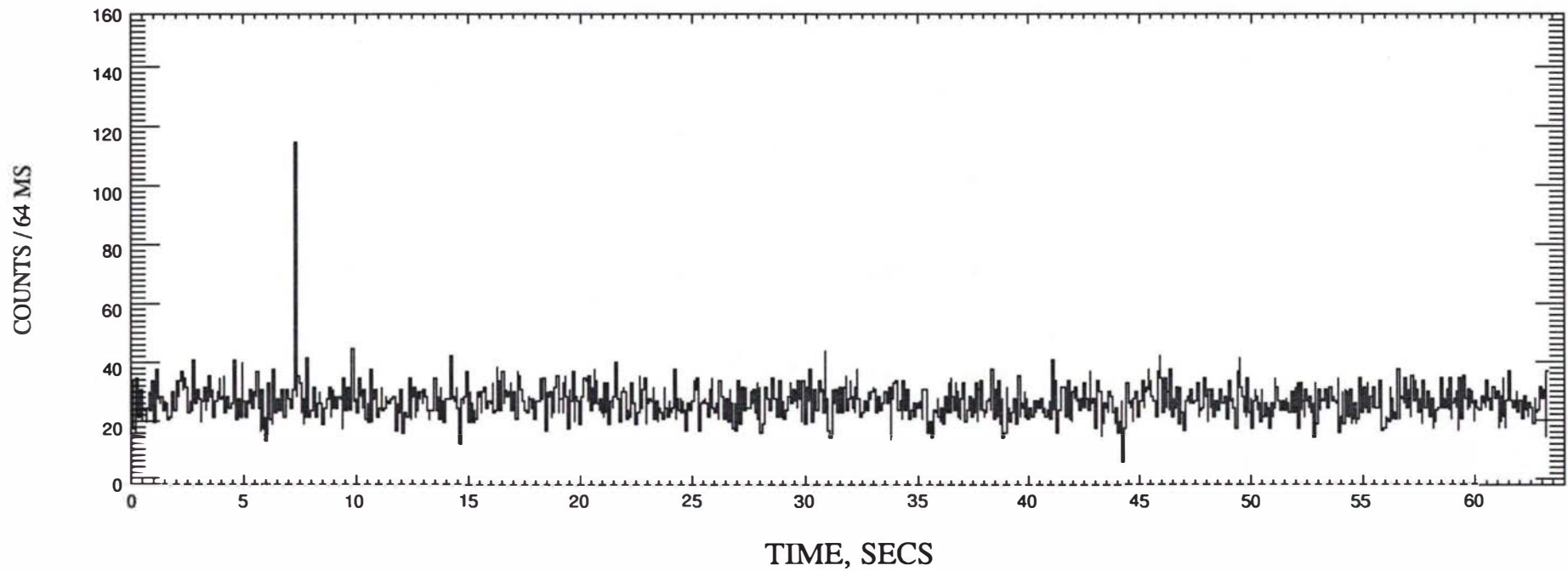


CALIBRATION DATA INCLUDED

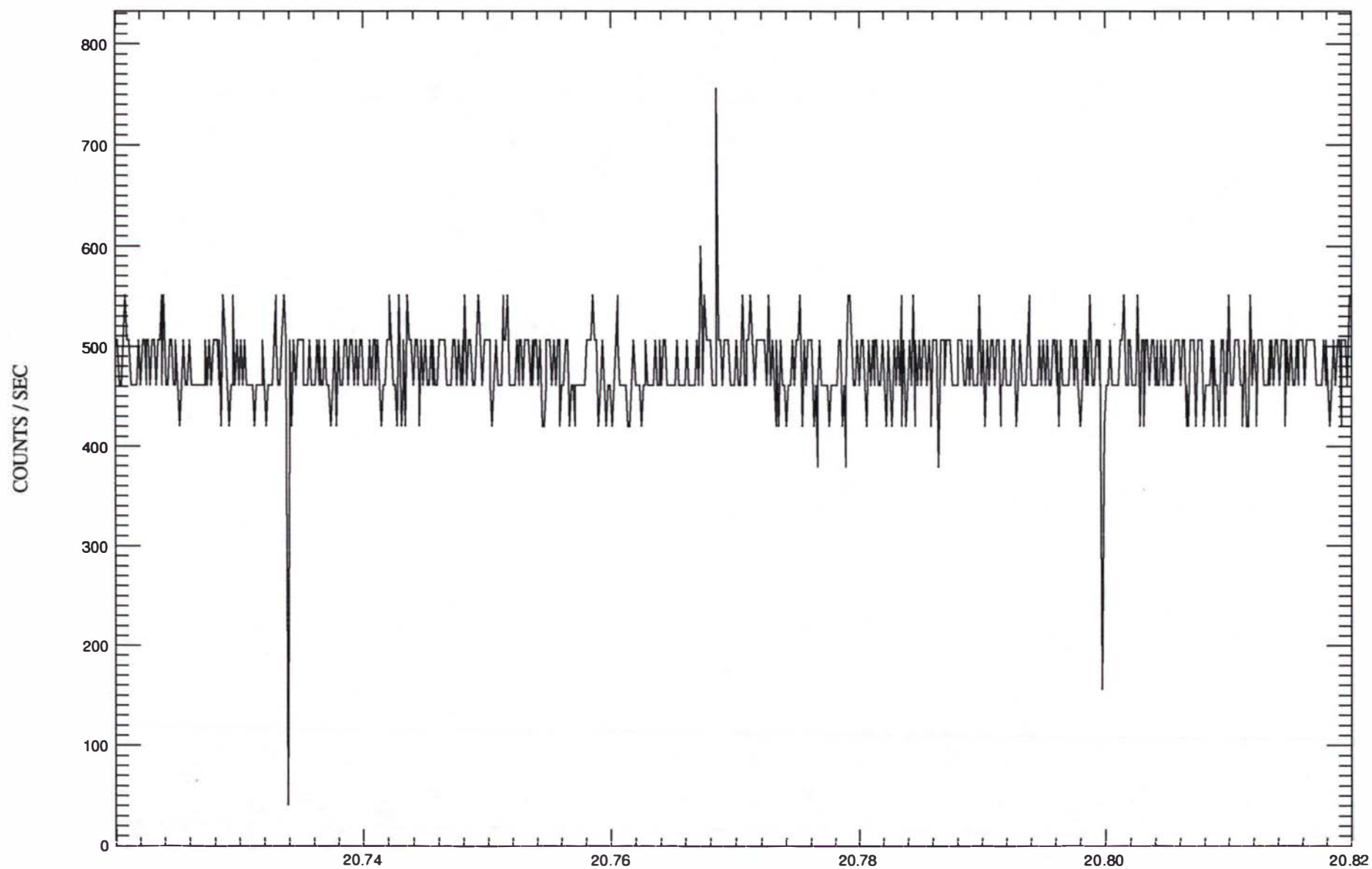


UNIV SAL TIME

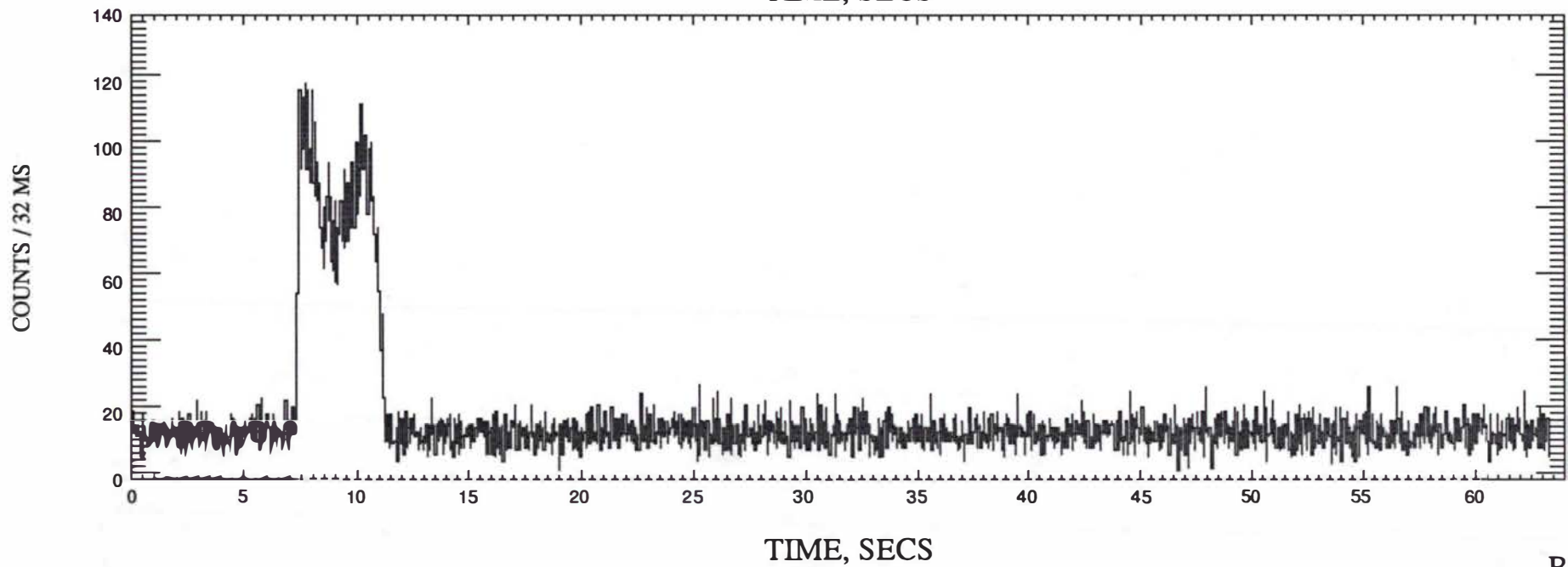
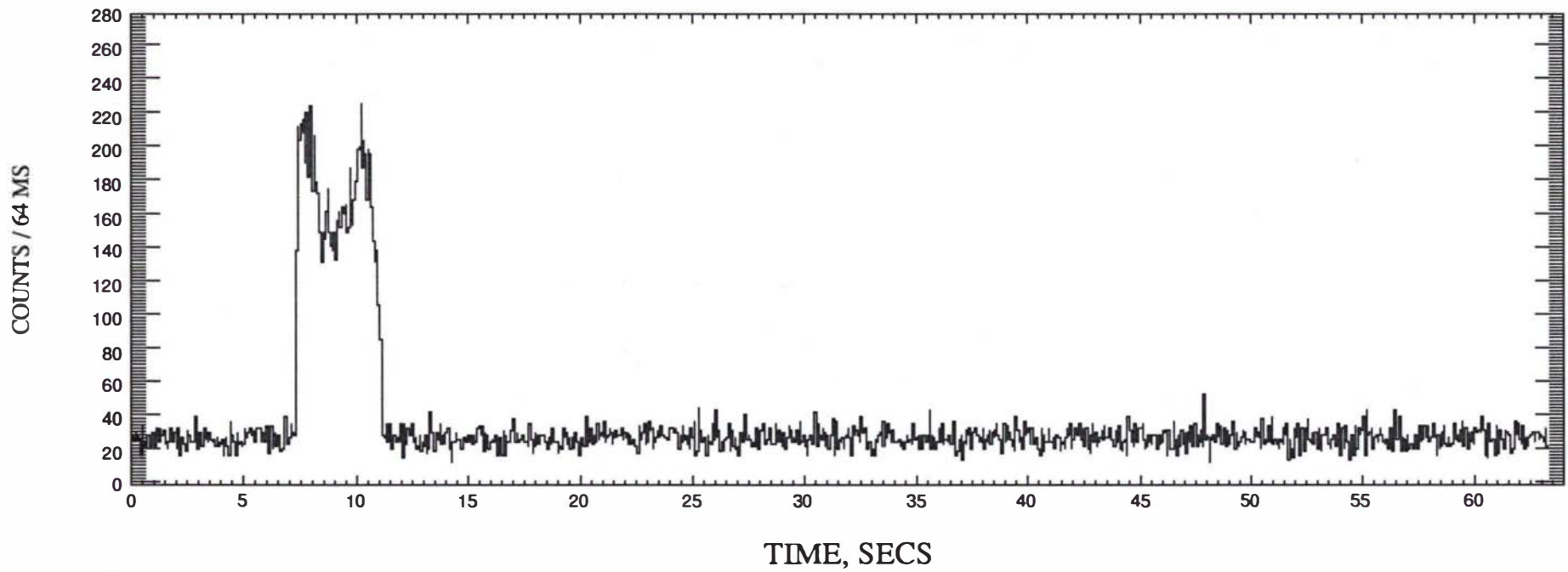
Burst Counter 10 at UT=20.768756811354 h=74767.525 s 20:46:07.525



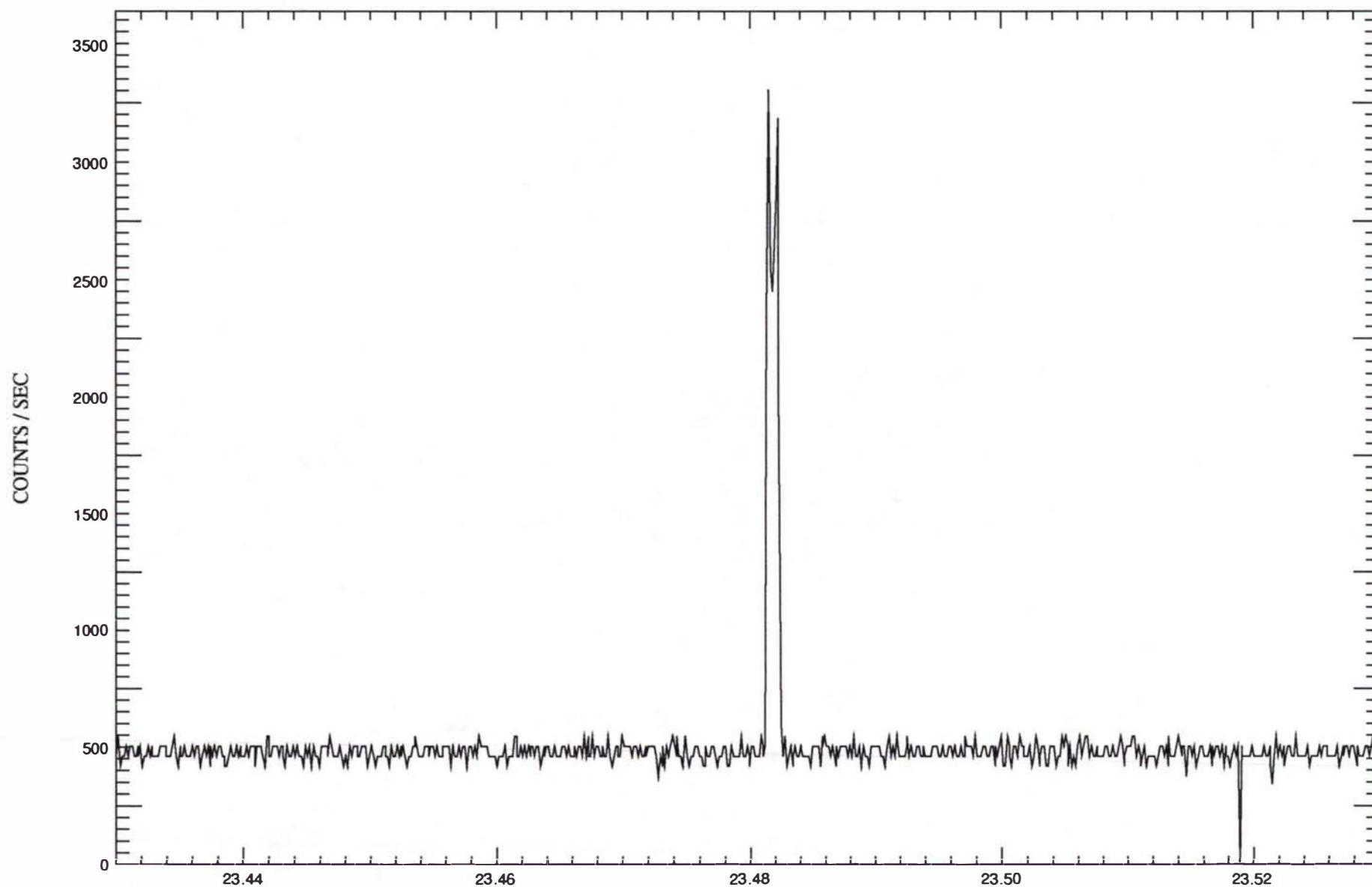
CALIBRATION DATA INCLUDED

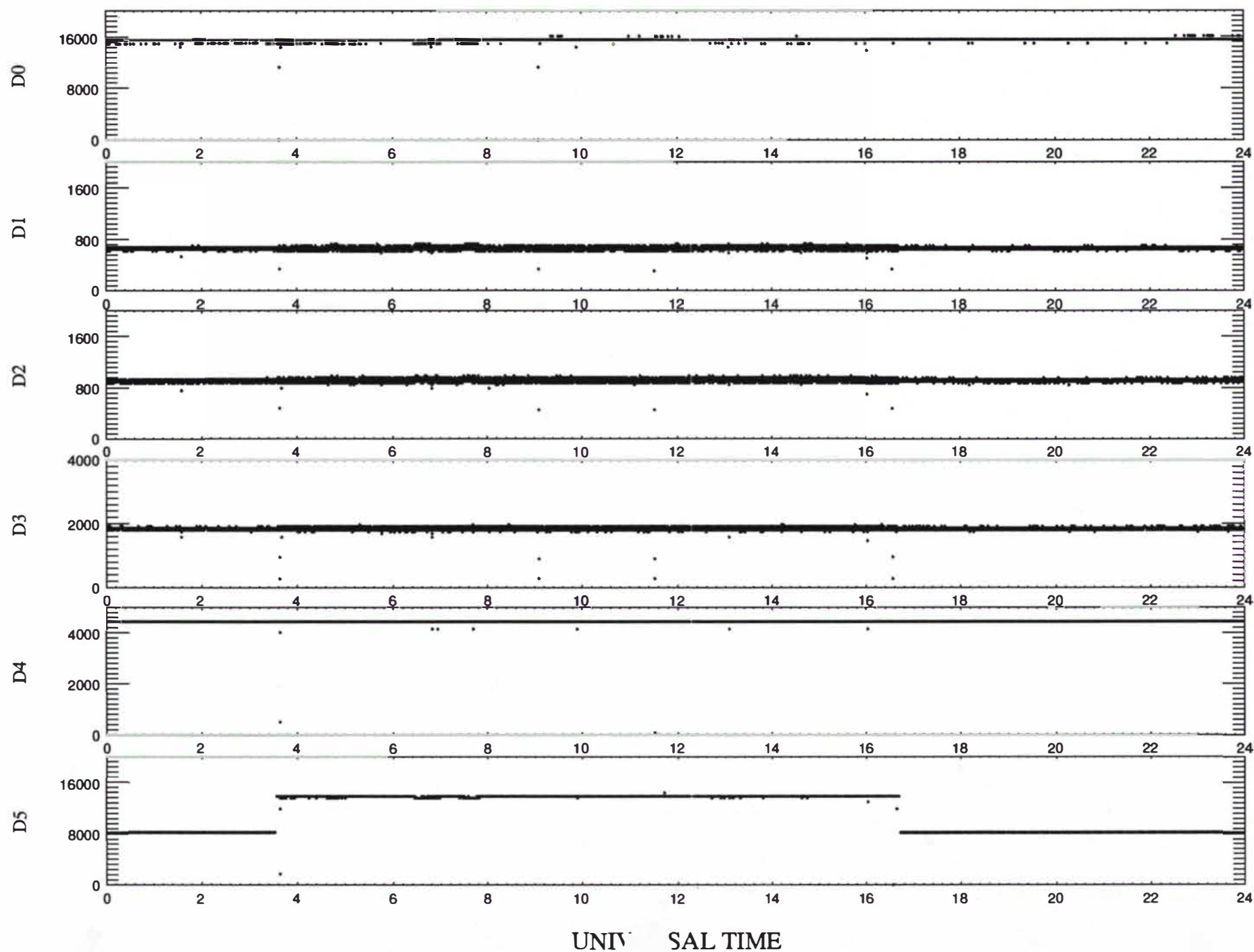


Burst Counter 11 at UT=23.481516799927 h=84533.460 s 23:28:53.460



CALIBRATION DATA INCLUDED





From JONESSD@fender.msfc.nasa.gov Fri Oct 30 11:59:36 1998

From: JONESSD@fender.msfc.nasa.gov

Date: Fri, 30 Oct 1998 13:59:00 -0600 (CST)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7182

TIME: TJD=1115 SECONDS=58404

TYPE:PARTICLES SOLAR FLARE TRIGGER SIGNAL:N

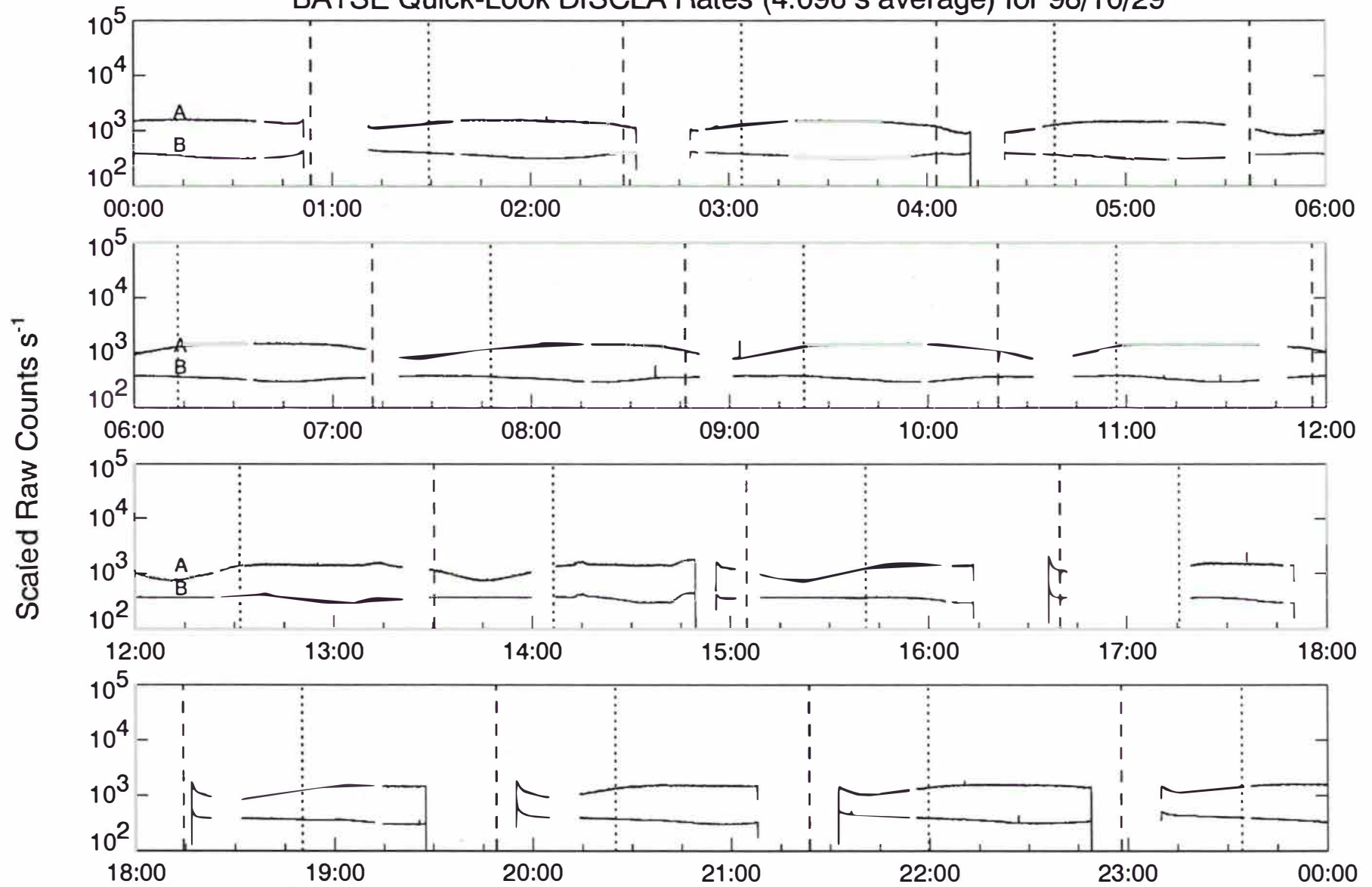
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/29

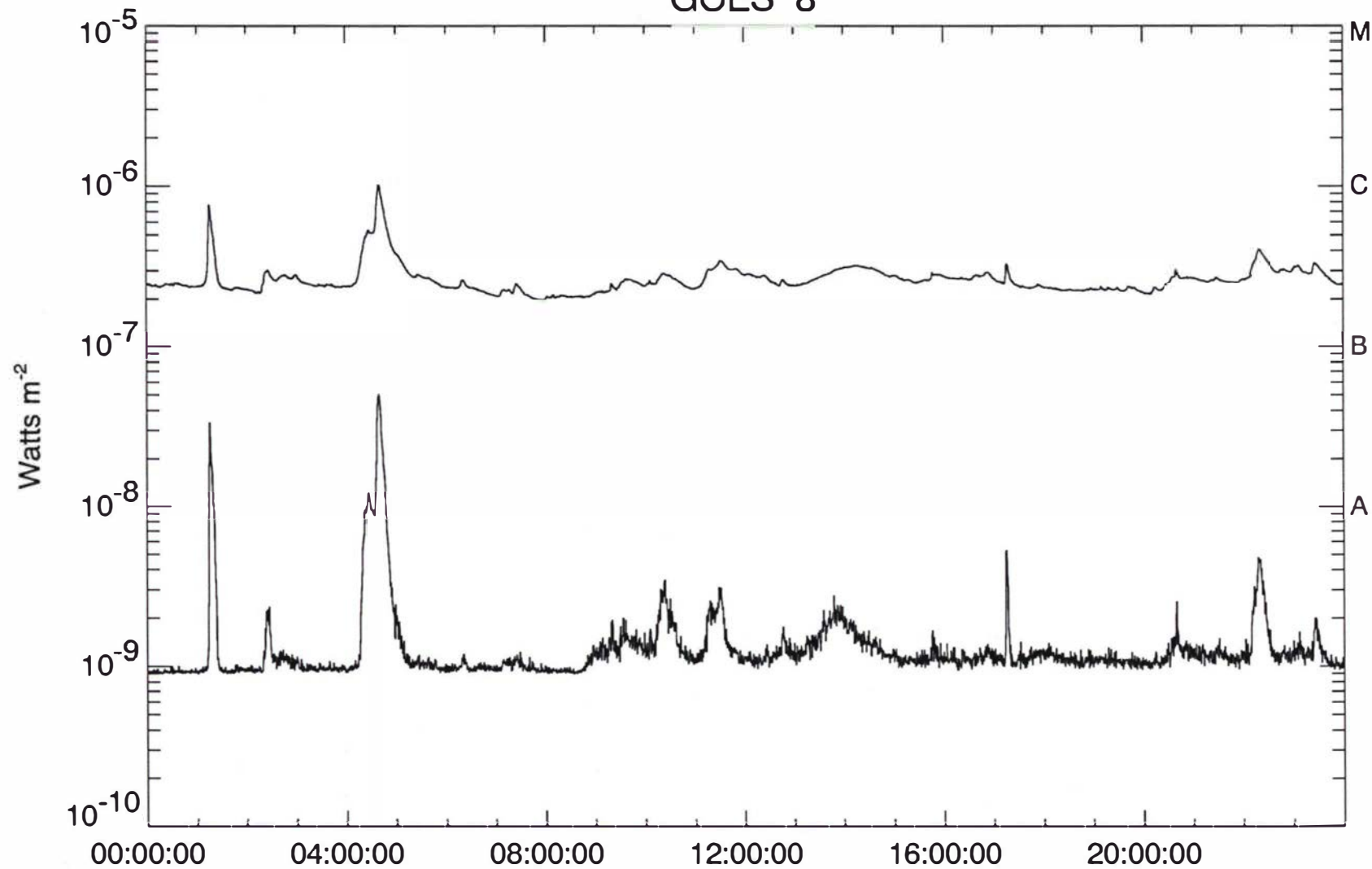


Current Time: 98/11/02, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 98/10/29, 0000:00

Plot created: 98/11/02, 1007

Channel

1 (1.0 - 8.0 Angstroms)

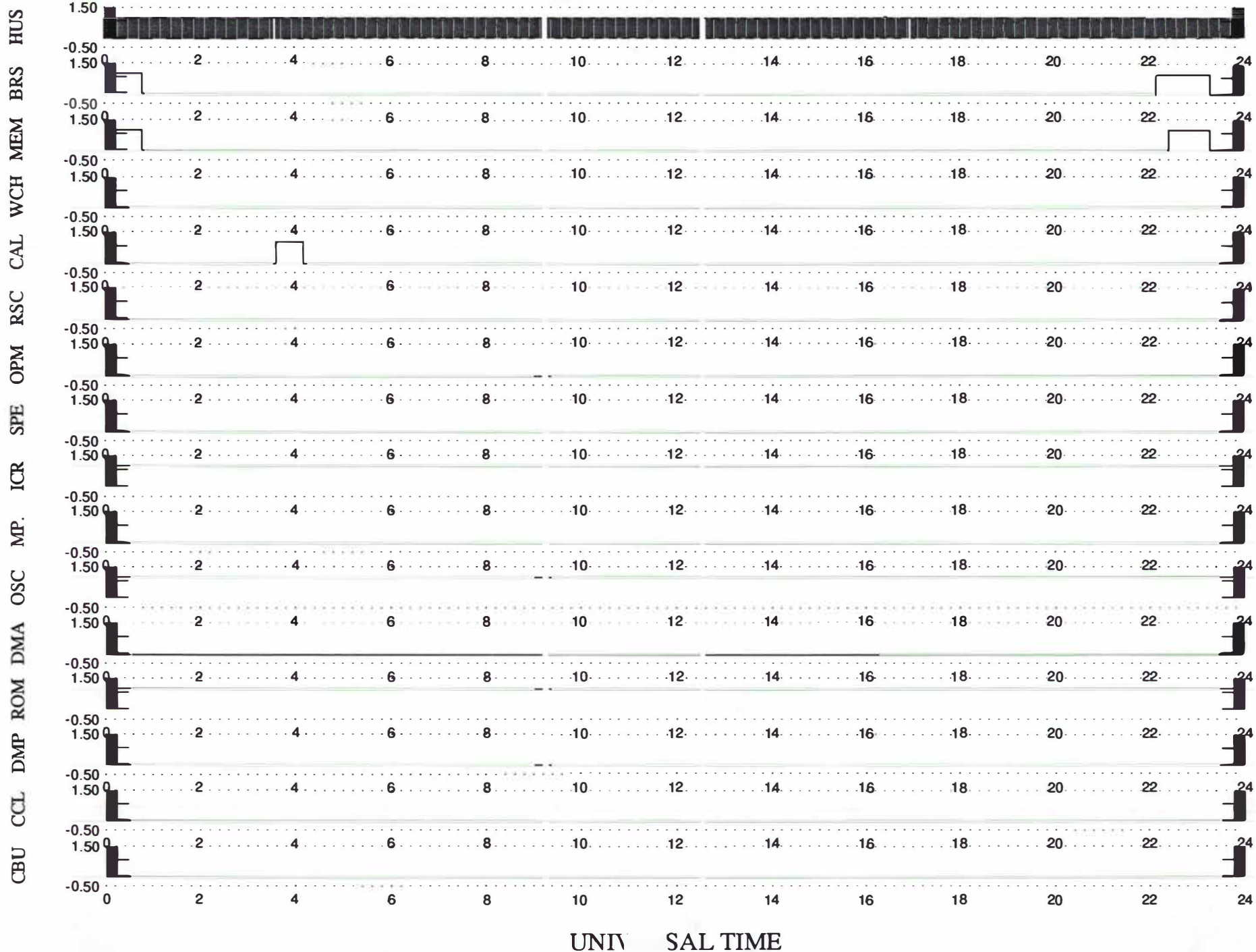
Background not subtracted

2 (0.5 - 4.0 Angstroms)

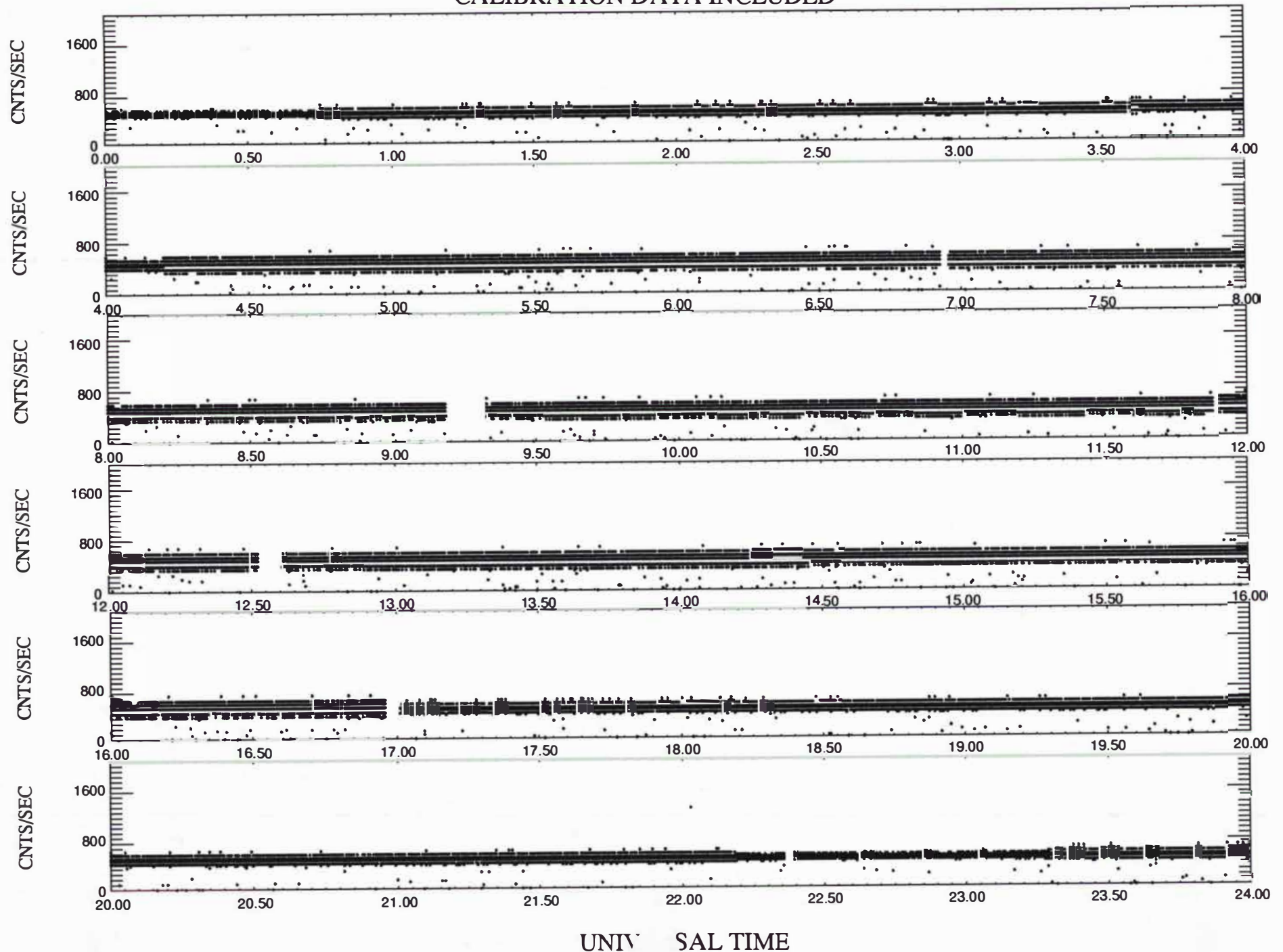
Background not subtracted

Sample average = 10

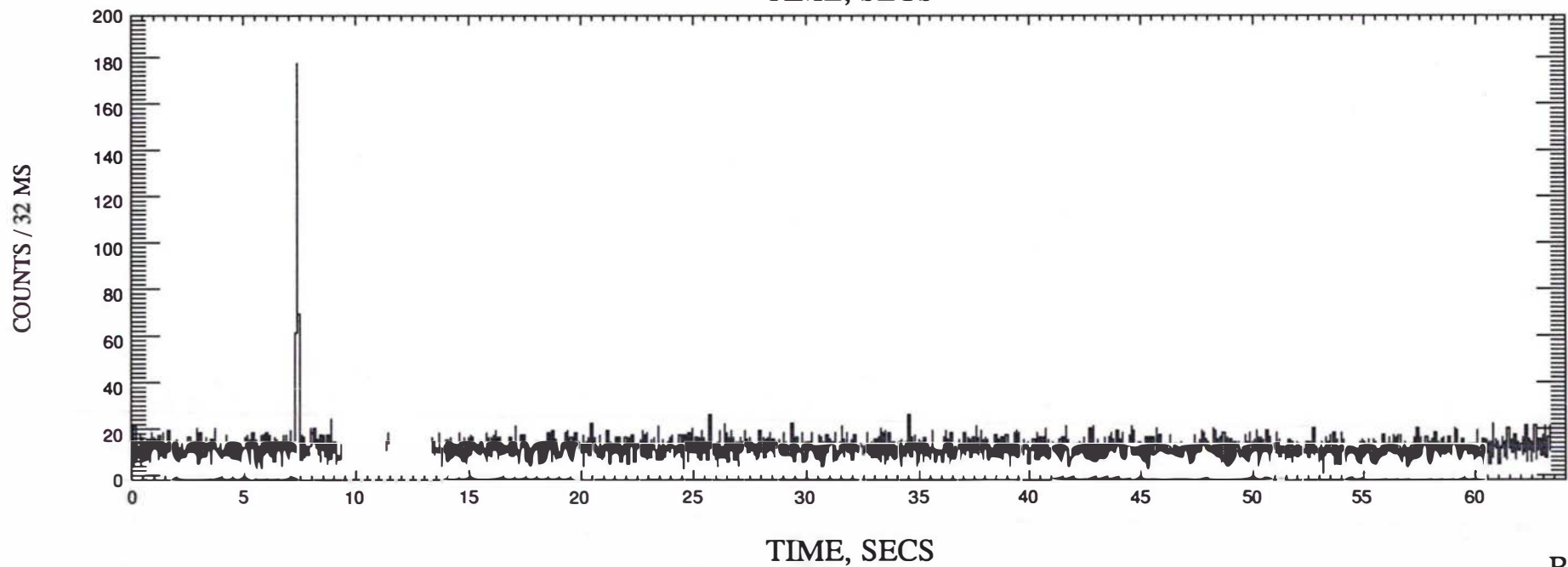
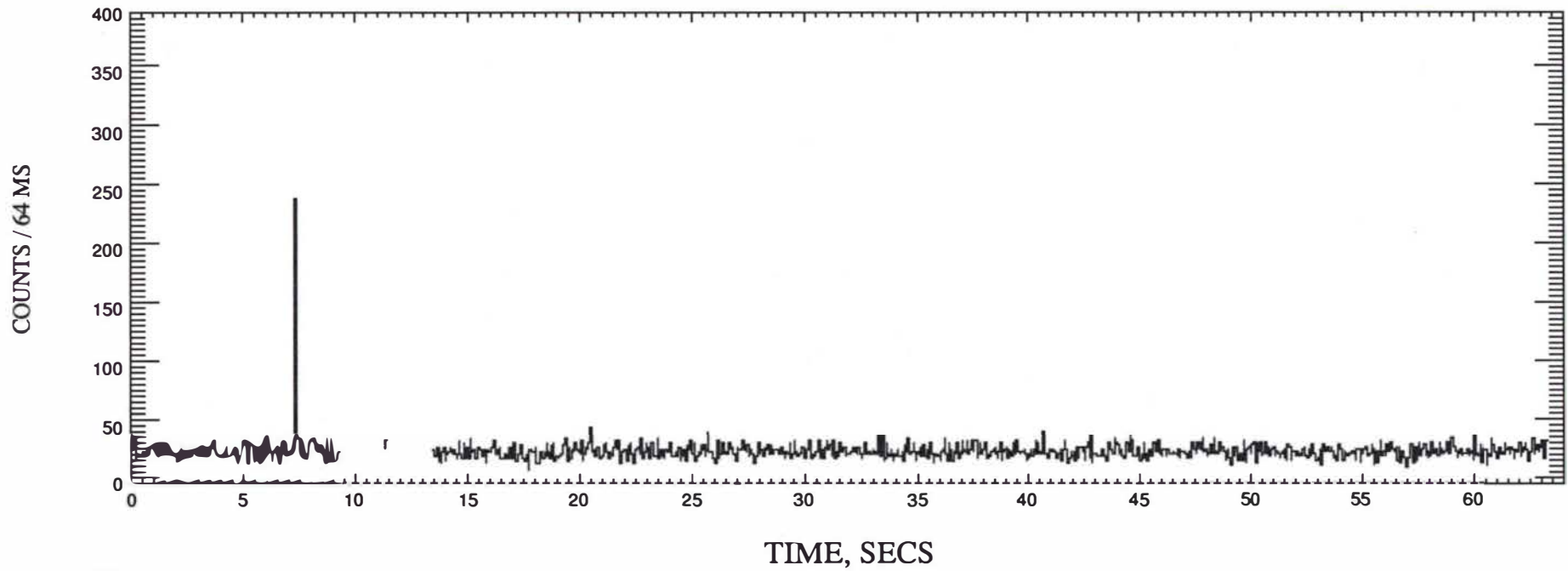
BURST NUMBER 12



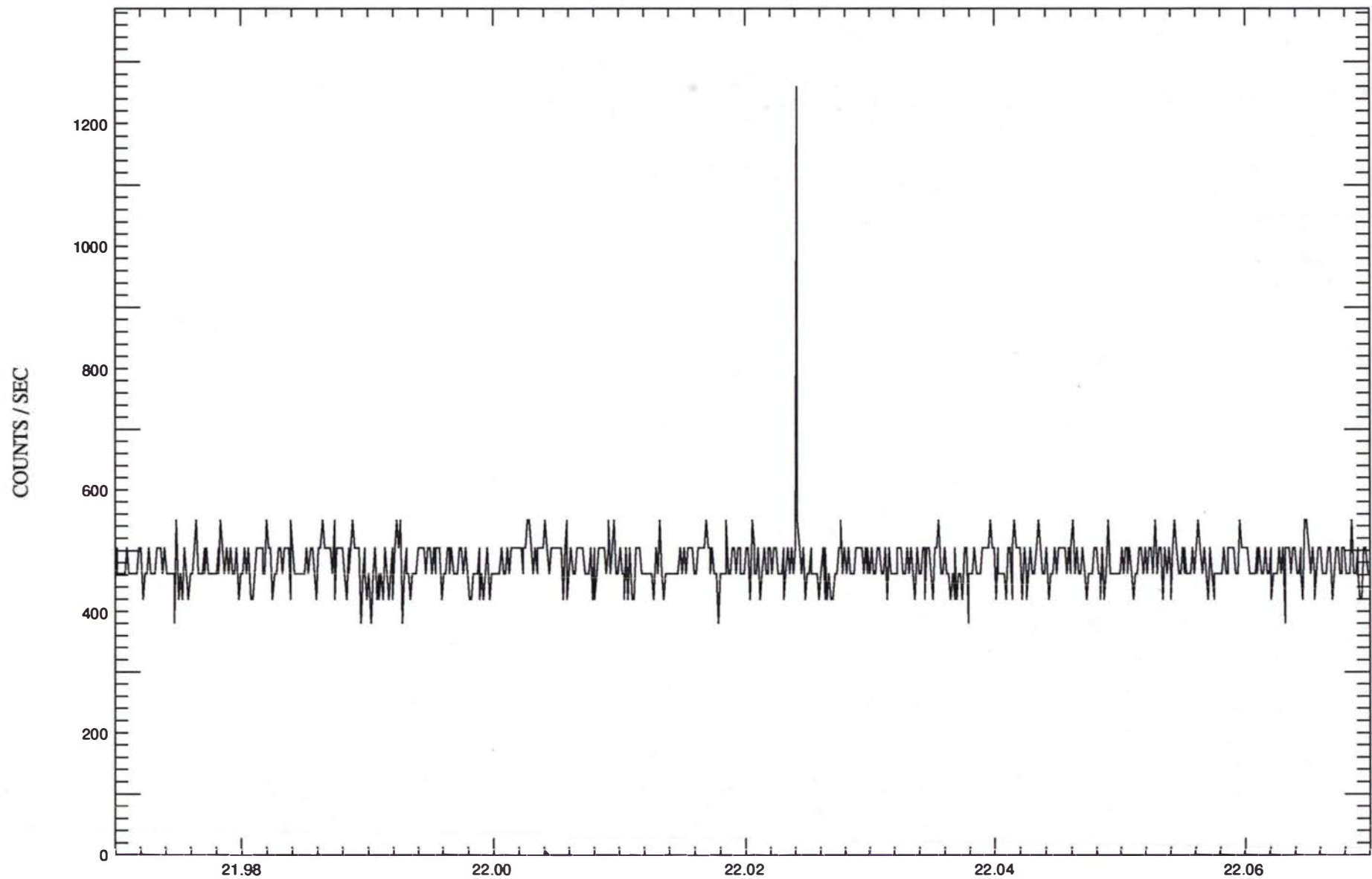
CALIBRATION DATA INCLUDED

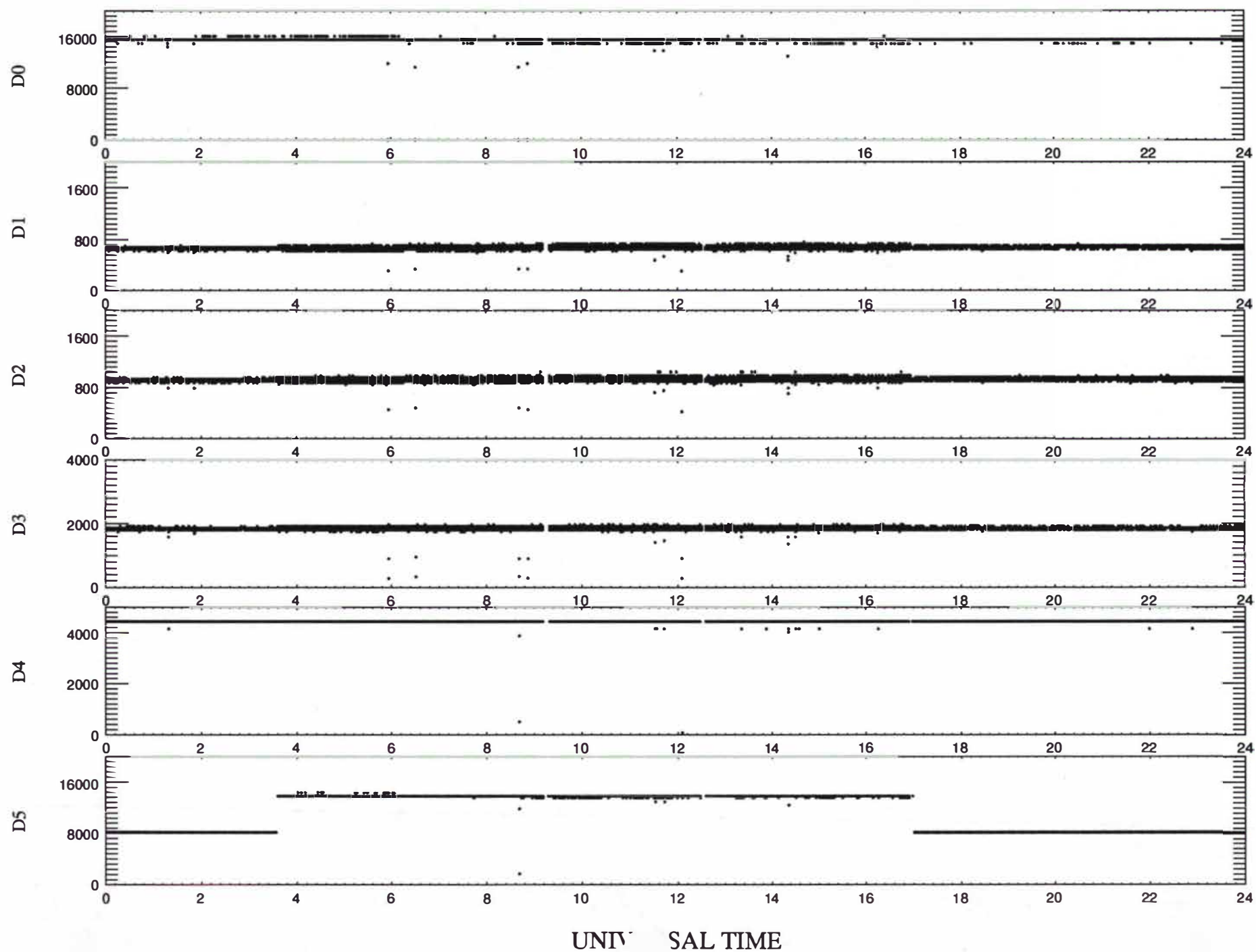


Burst Counter 12 at UT=22.024227218628 h=79287.218 s 22:01:27.218



CALIBRATION DATA INCLUDED





KONUS

ULYSSES RT

10/02/00

30/10/98 1800.190 s

0.500 S INTERVALS REGROUPED BY 9

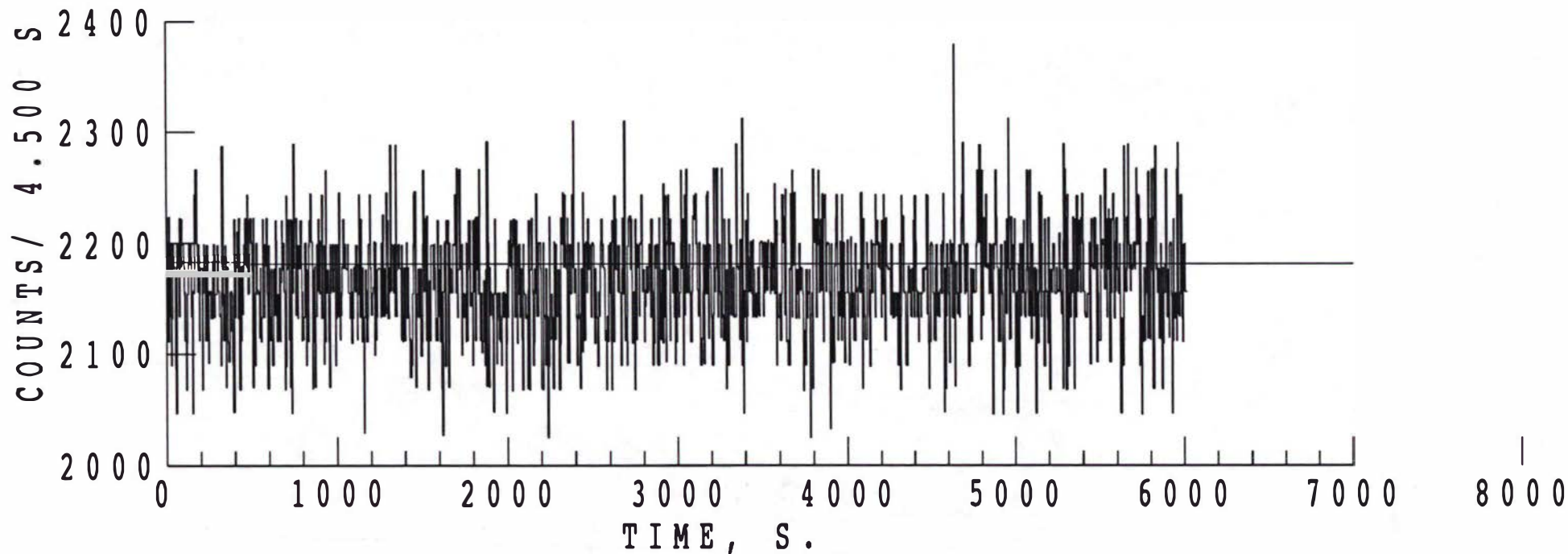
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

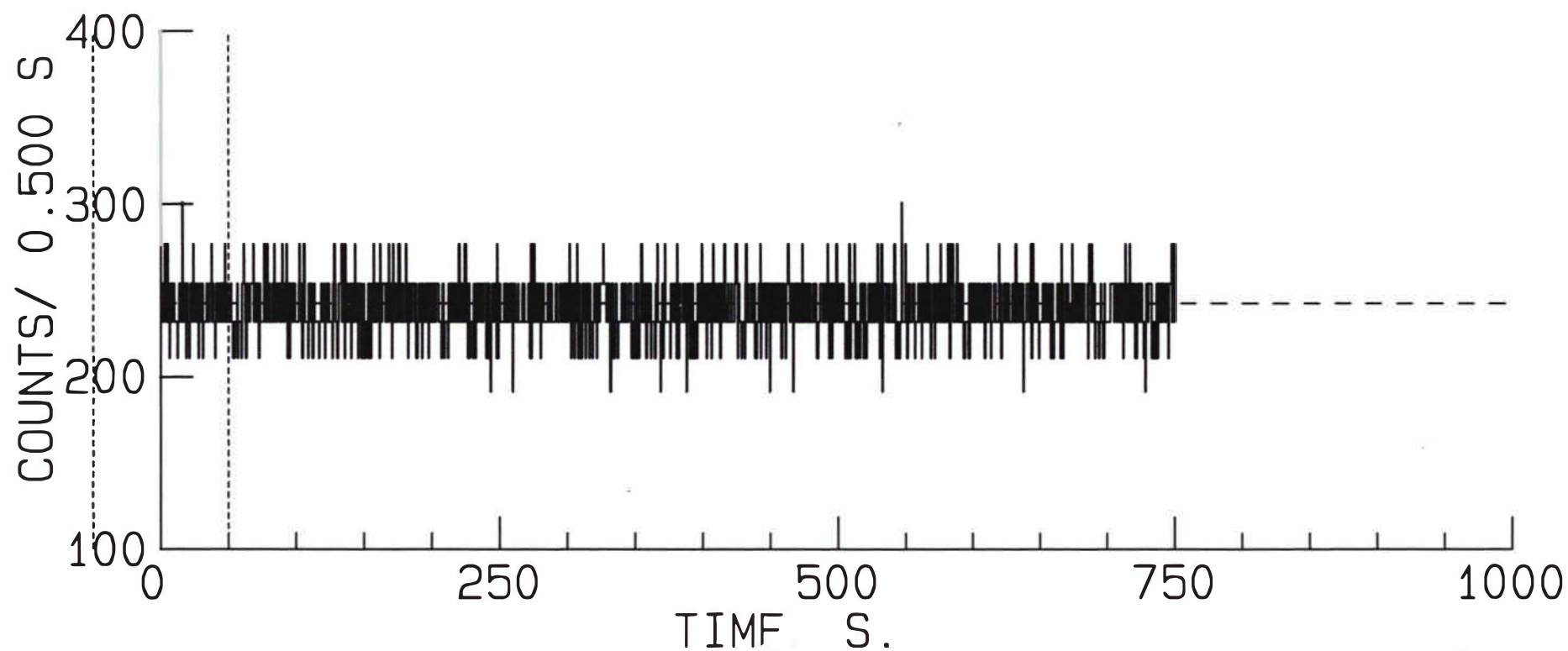
>4.0 SIGMA FLUCTUATIONS



Konus .6 s

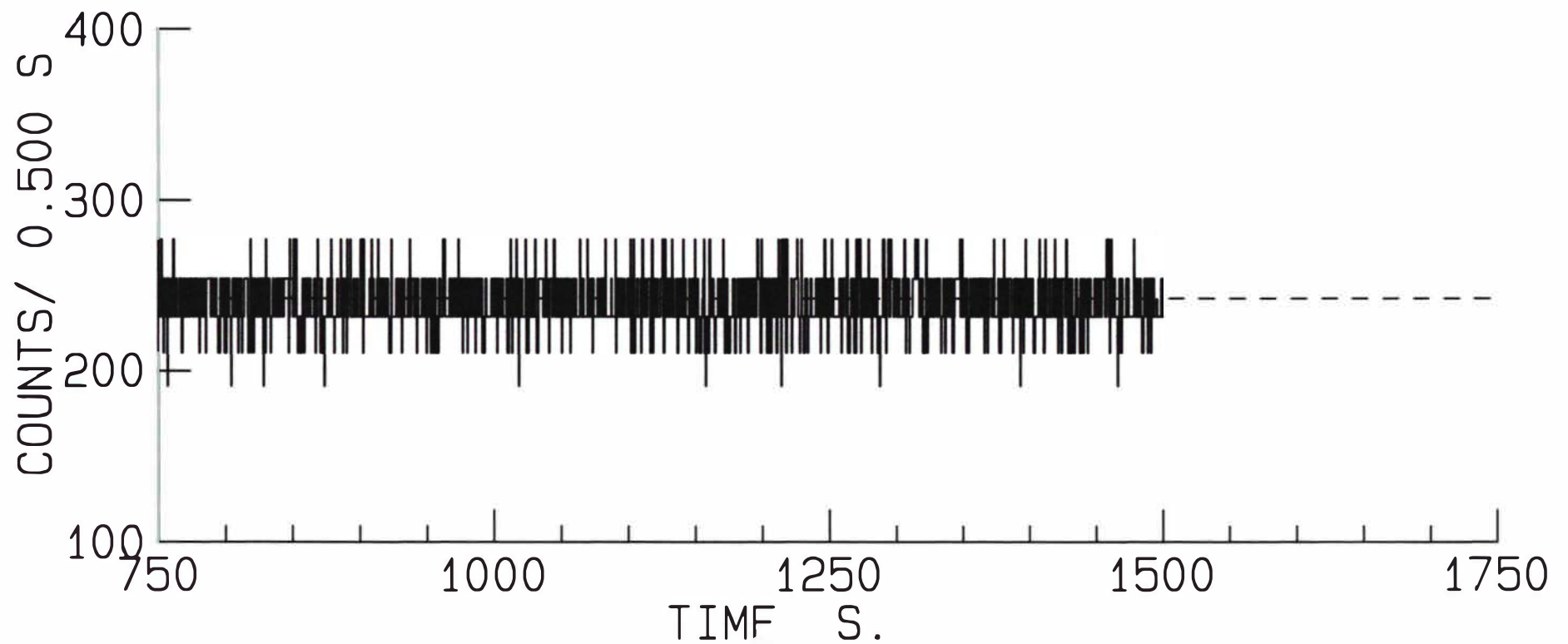
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



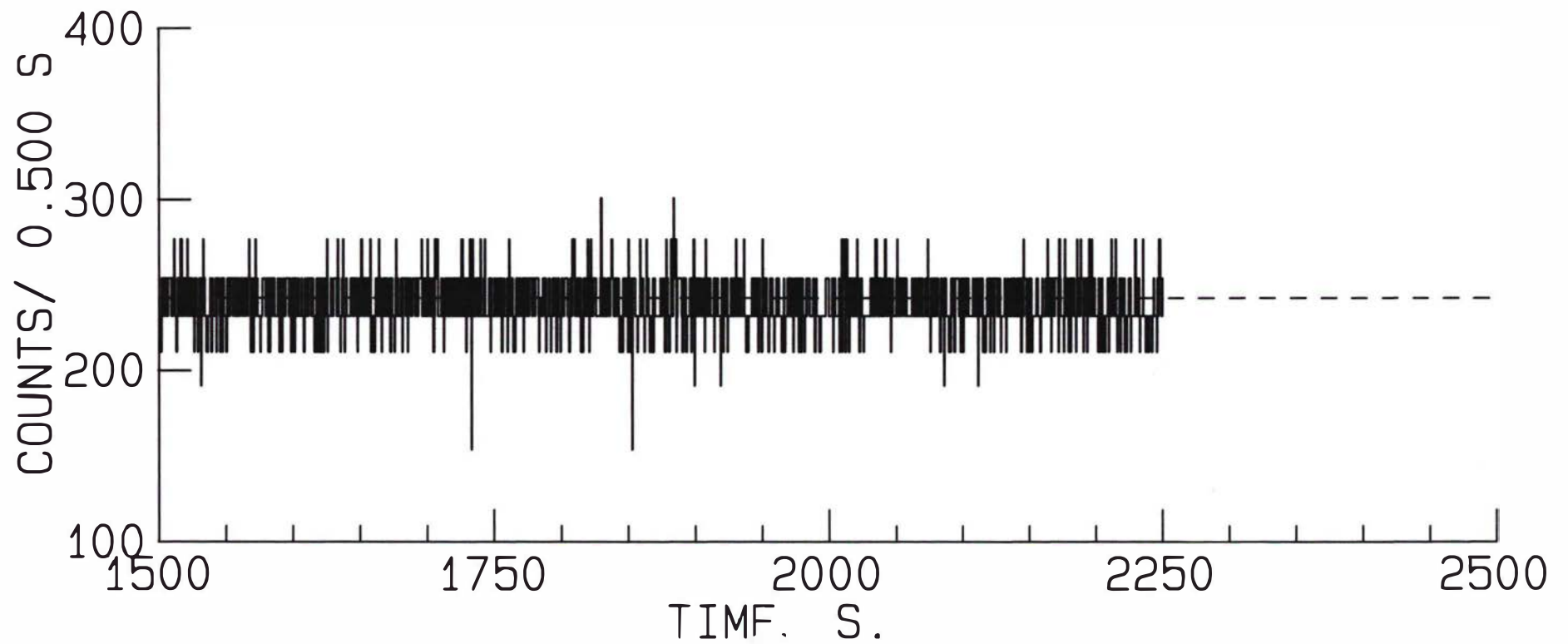
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



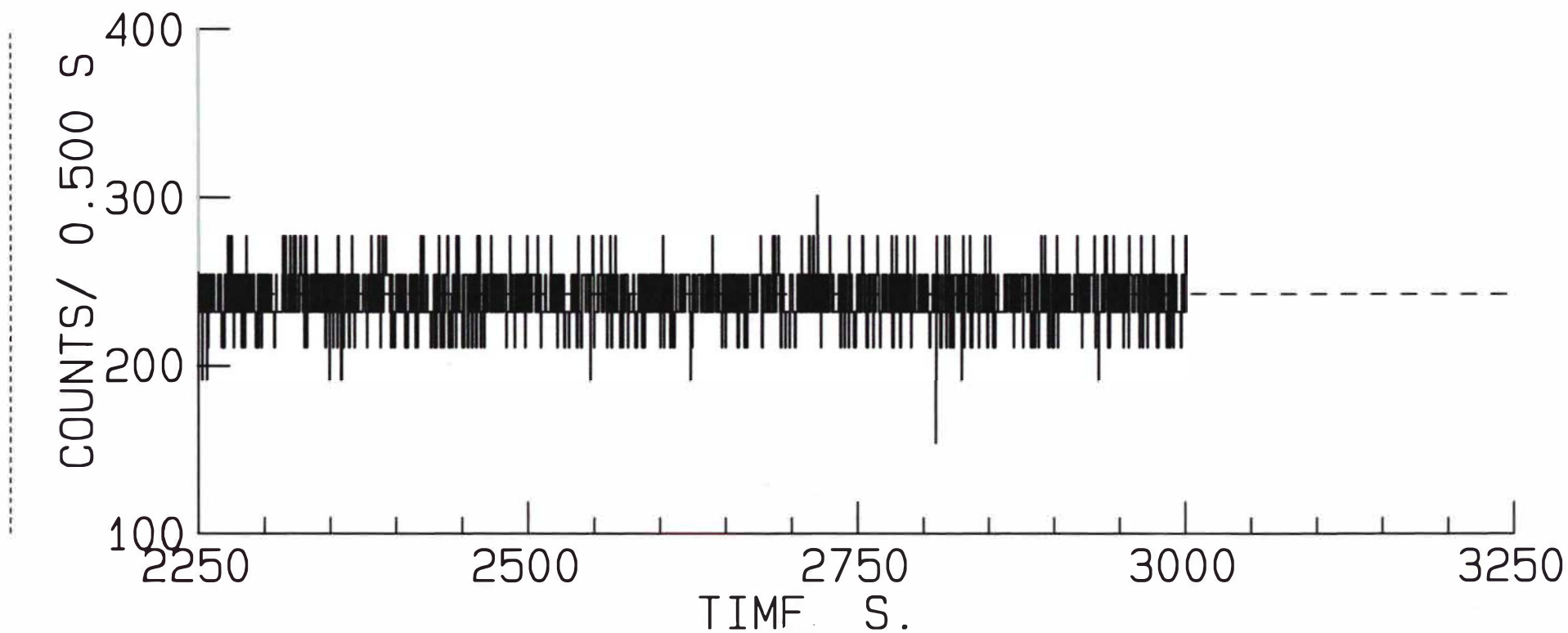
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



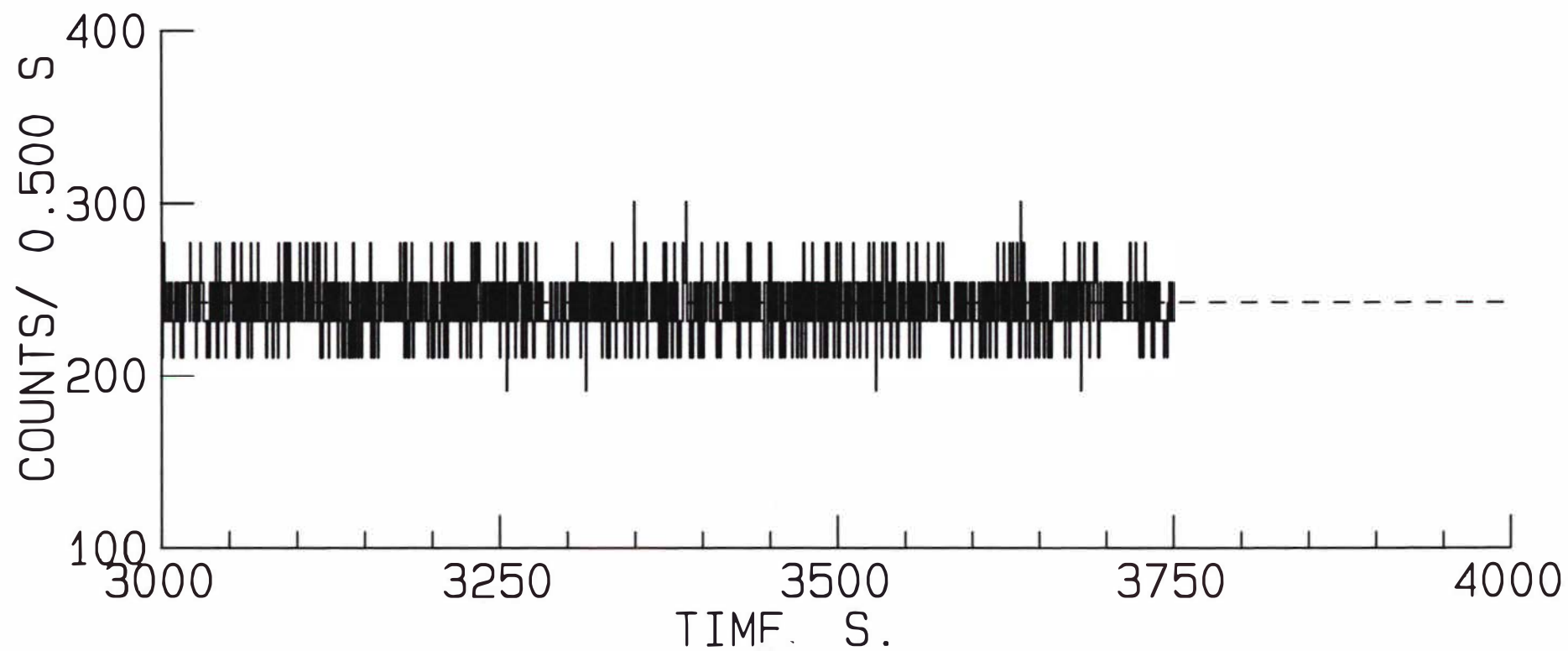
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



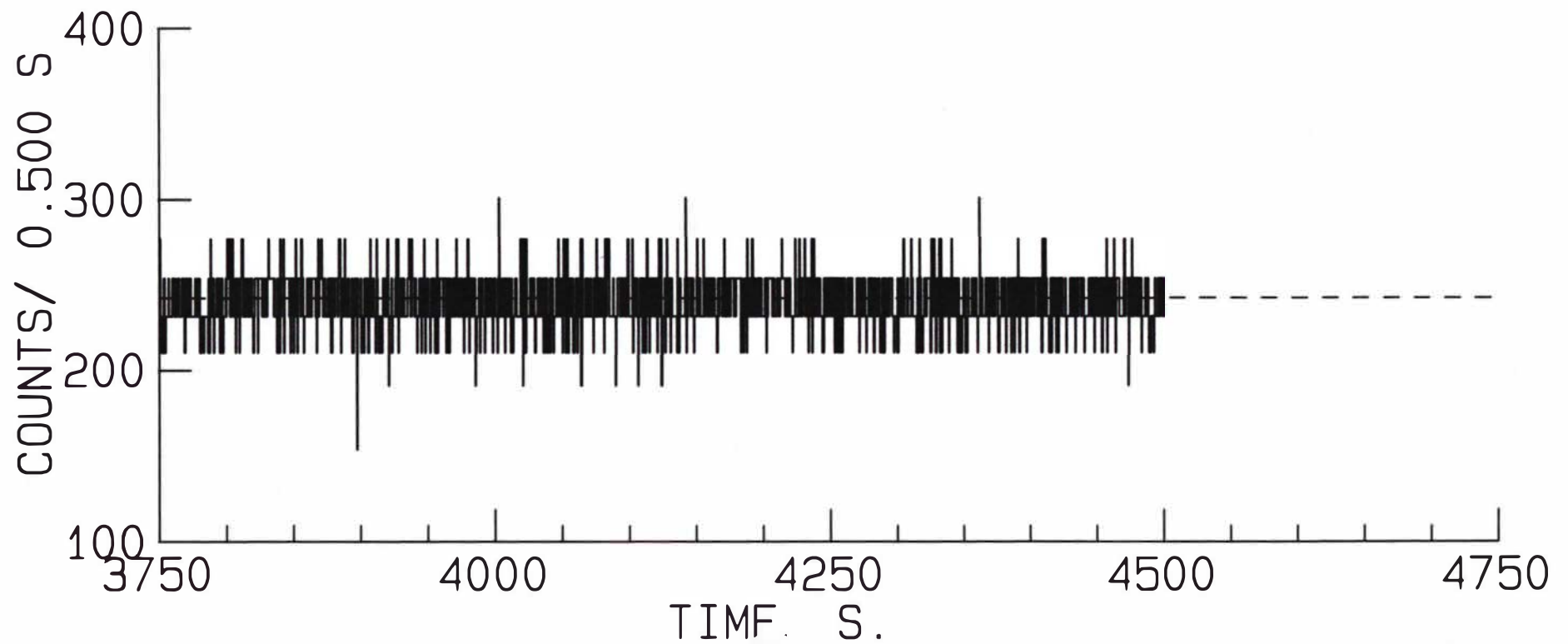
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



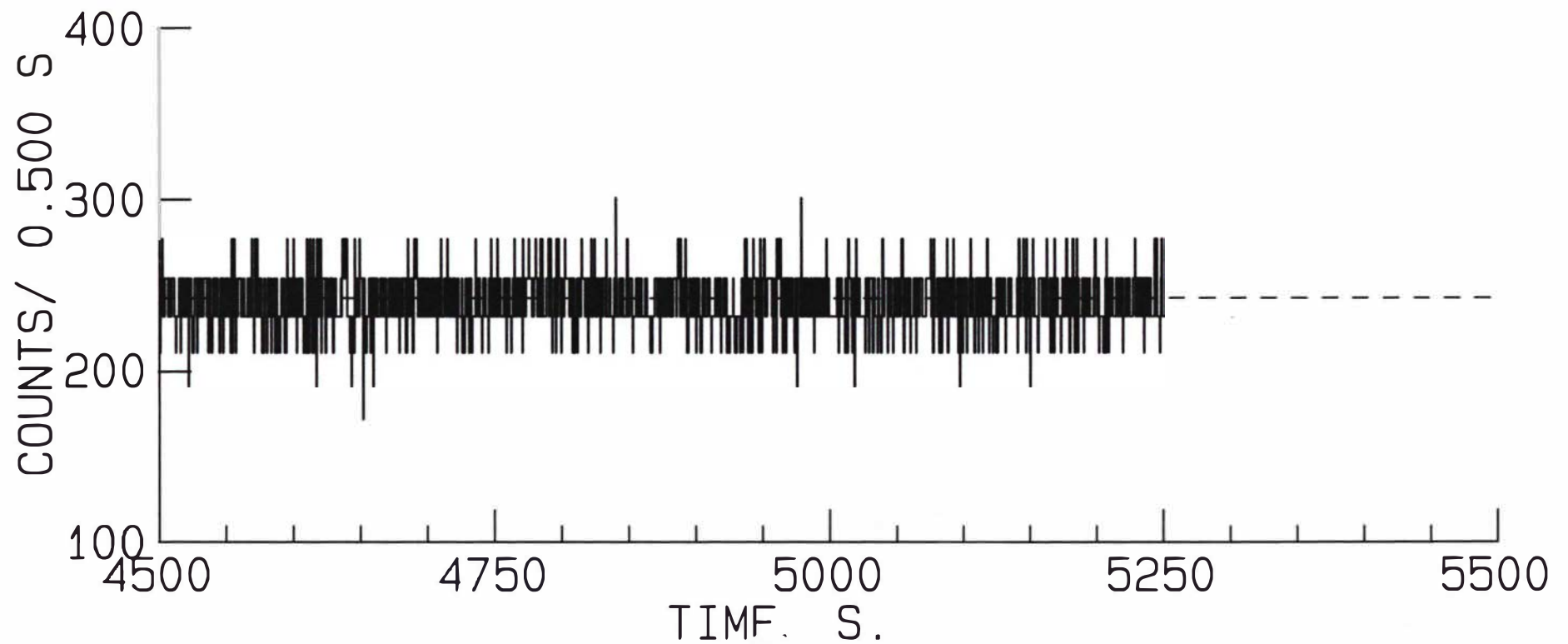
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



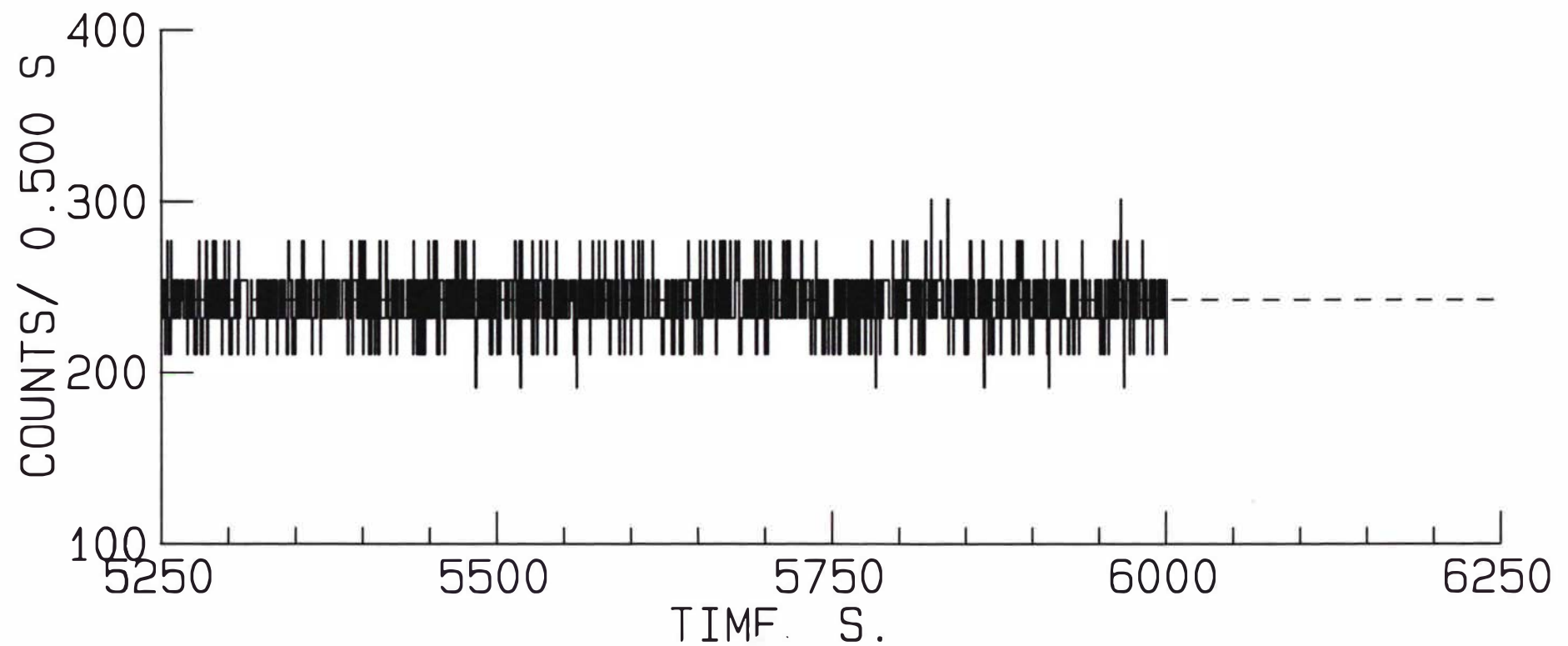
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



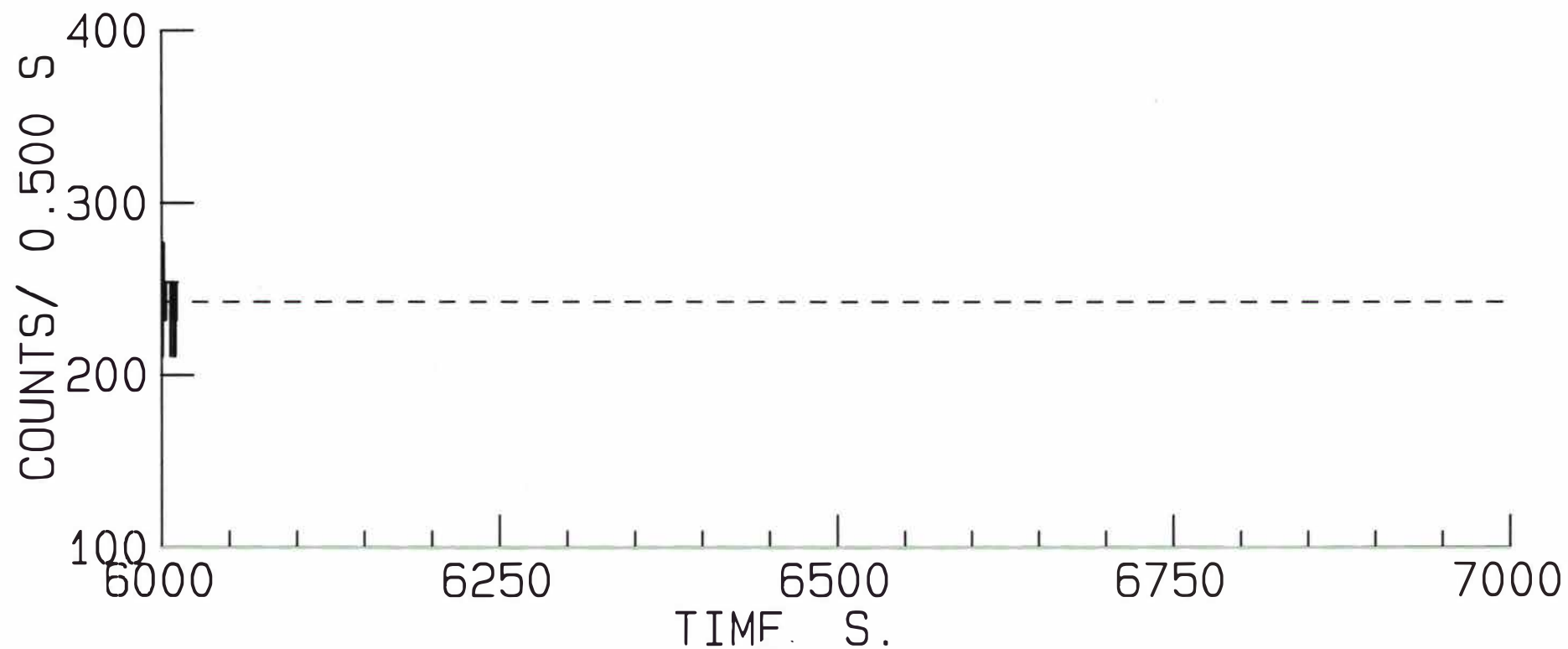
ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



ULYSSES RT
30/10/98 1800.190 s
22- 150 keV

19/11/8



From SURASAK@fender.msfc.nasa.gov Tue Nov 3 13:41:20 1998
Return-Path: <SURASAK@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA08971; Tue, 3 Nov 1998 13:41:15 -0800
From: SURASAK@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA14480; Tue, 3 Nov 1998 13:41:12 -0800
Date: Tue, 3 Nov 1998 15:41:13 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981103154113.20222446@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7183
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7183
EVENT OF 1998 OCT 30 DAY OF YEAR=303
EVENT CROSSING TIME AT BATSE : 11252. S. OR 03:07:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 200.000 49.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/10/ 98 IS:
RA= 165.406 DEC= -2.178 DIST= 5.875 AU
BATSE-ULYSSES DISTANCE = 878917120. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1498.08 SECS.
CROSSING TIME AT ULYSSES IS 9754. S. OR 02:42:33 +/- 464.78 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/10/ 98 IS:
RA= 165.431 DEC= 7.834 DIST= 2.053 AU
MARS-BATSE DISTANCE = 307188992. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -653.79 SECS.
CROSSING TIME AT MARS IS 10598. S. OR 02:56:38 +/- 127.05 SECONDS

BATSE BURST TRIGGER

NO.: 7183

TIME: TJD=1116 SECONDS=11252

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=89.1 AZIMUTH=45.5 ERROR=6.1 DEGREES

COMMENTS:

GRB. DOUBLE PULSE. DURATION ABOUT 9 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7183	981030	11116	11252	4000	200	+49	9

Date: 21/1/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Were data checked by Joe Springer for 0.5 s errors? N/A
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☒ 0.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)?
- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☐ Final, correct time used? (Files on website have the correct time)
- ☐ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

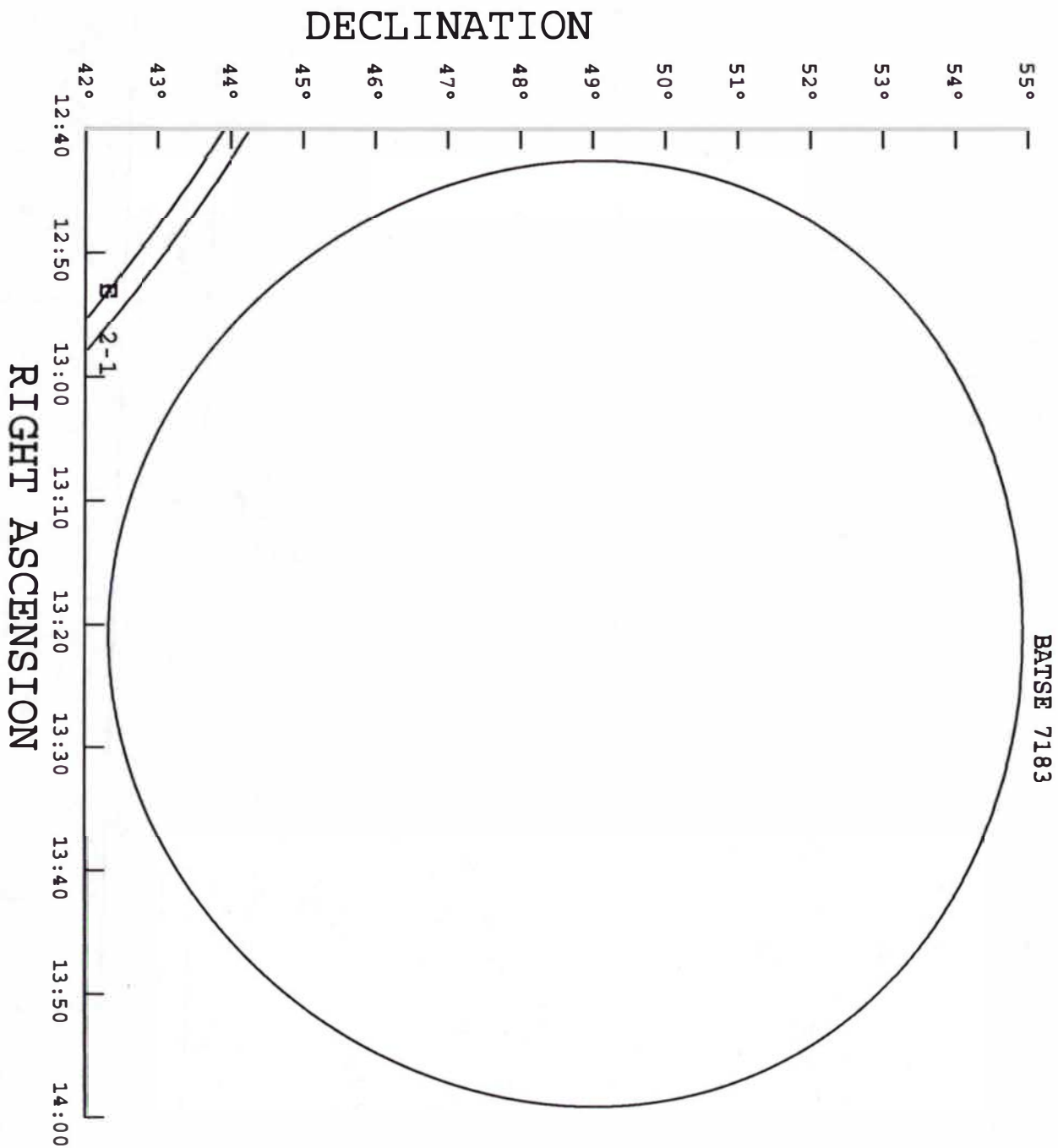
G=GALACTIC EQUATOR

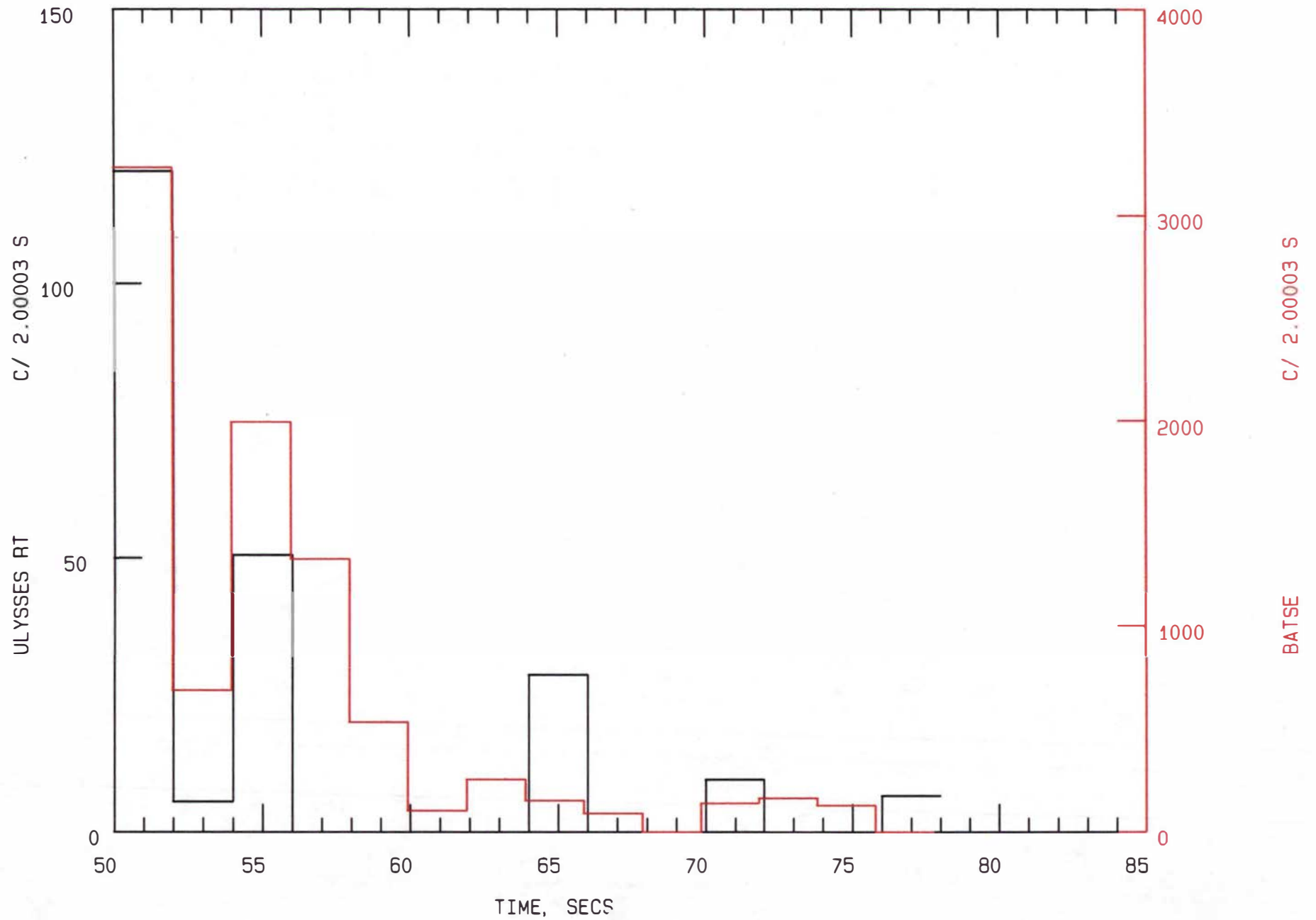
1 BATSE

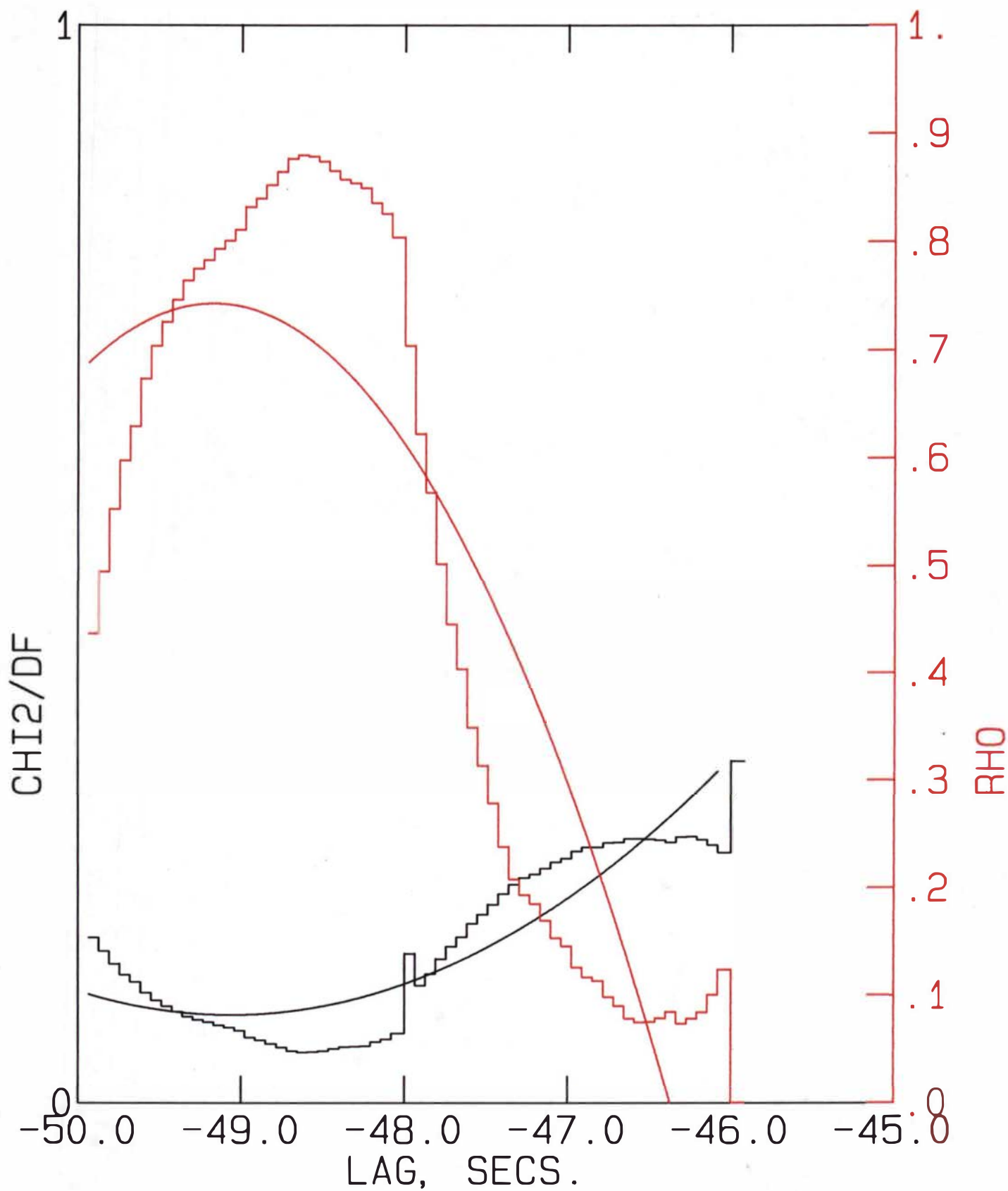
2 ULYSSES

EVENT OF OCT 30, 1998 3:07

21 / 1 / 0

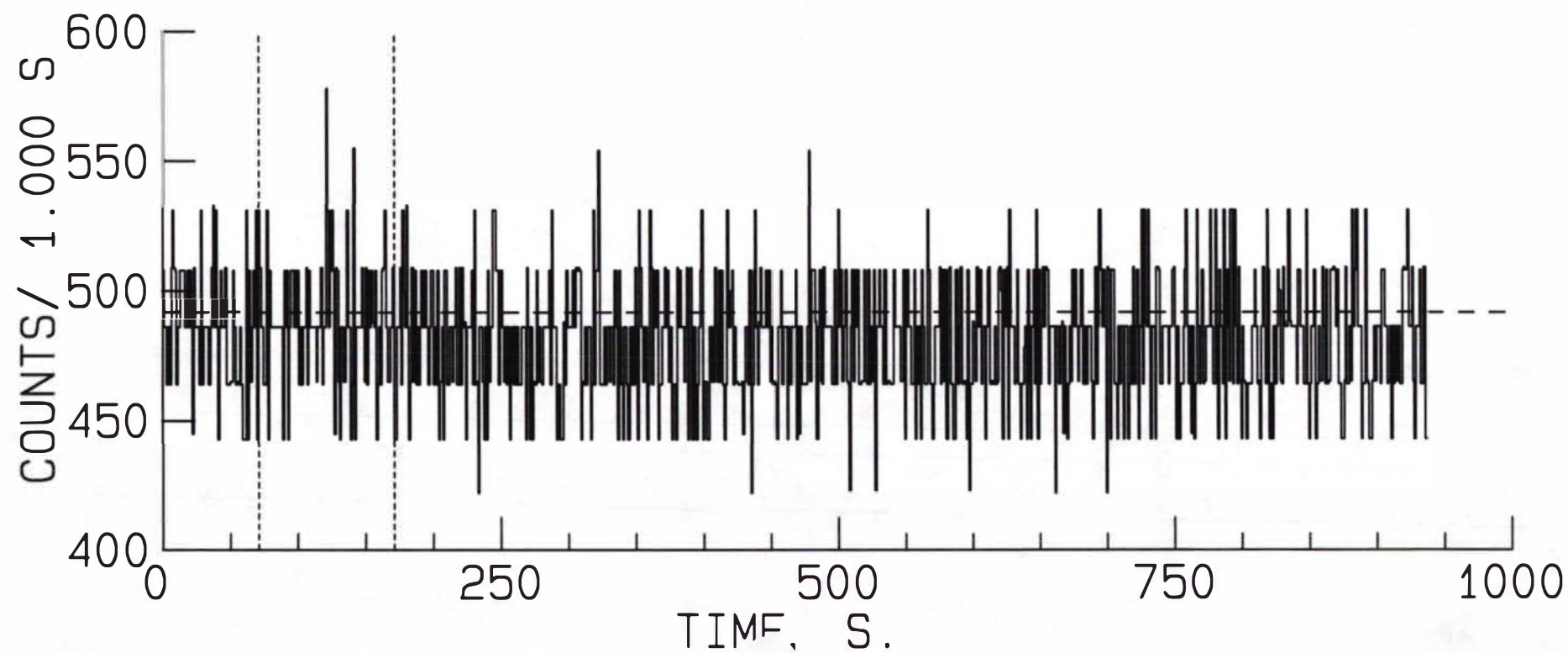






ULYSSES RT
30/10/98 9288.269 s
0.500 S INTERVALS REGROUPED BY 2
22- 150 keV

21 / 1 / 0



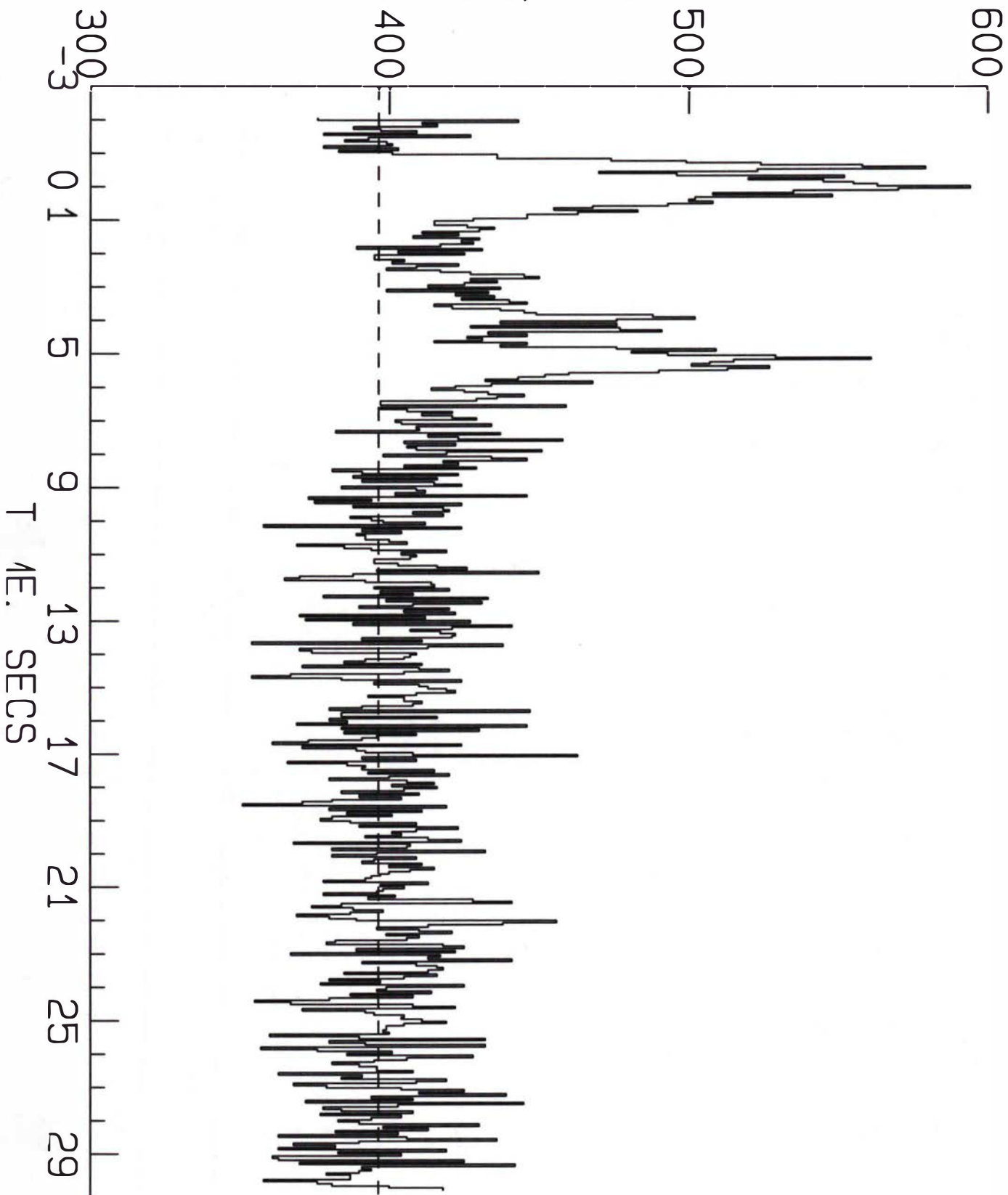
BATSE

30/10/98

11252.449

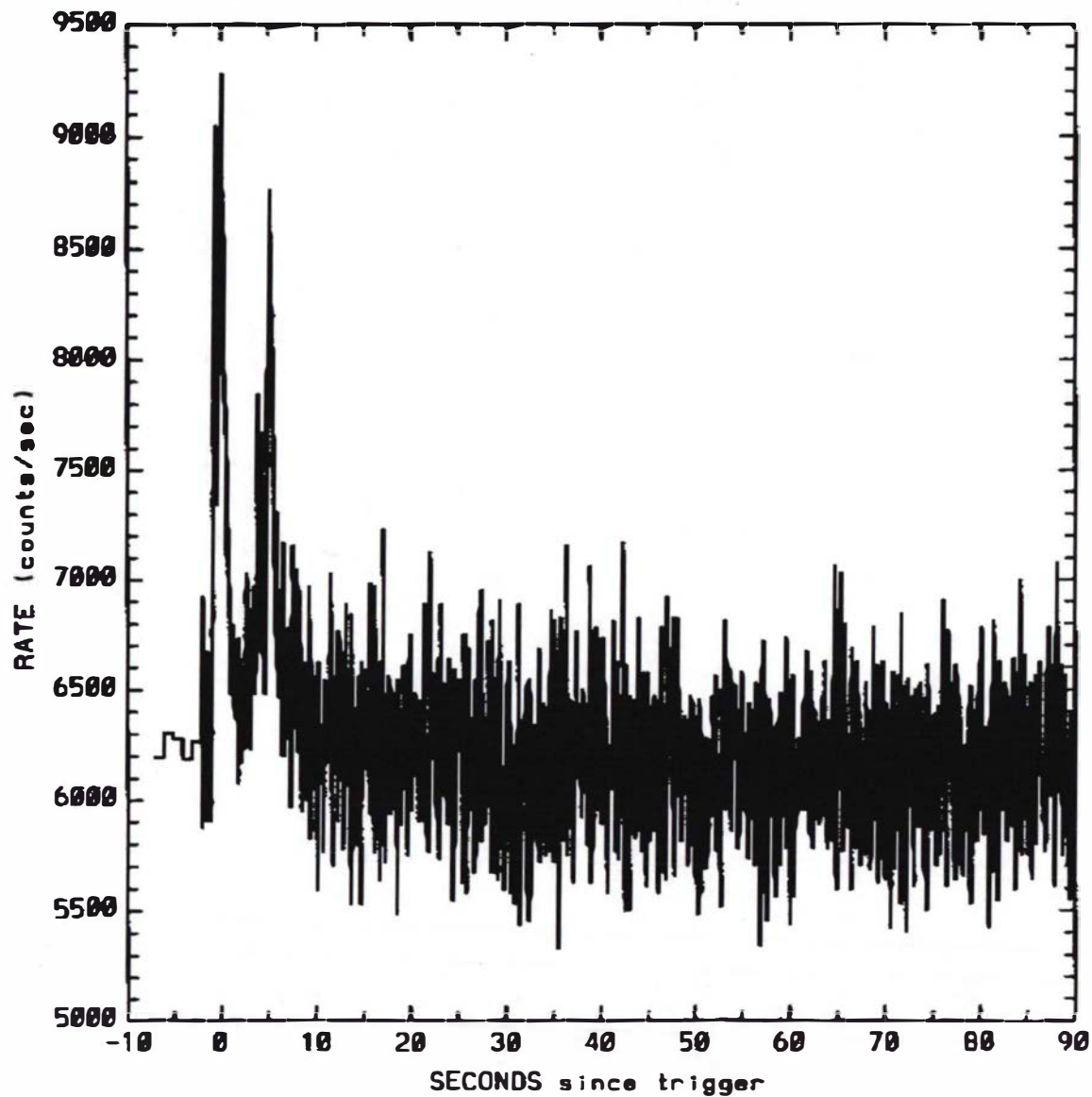
25- 100 keV

COUNTS/0.064 S



10/12/98

DISCSC Data for K. Hurley, No. 7183



10-NOV-1998 18.03.54

Created by MOPS 80
(Burst Display)
Version t2.26

Trigger # . 7183

Trigger Time:
11116 / 11252.449

Burst Data Type.
DISCSC

Deadtime
Corrected. N

Background Data
Type. PREB + DISCLA

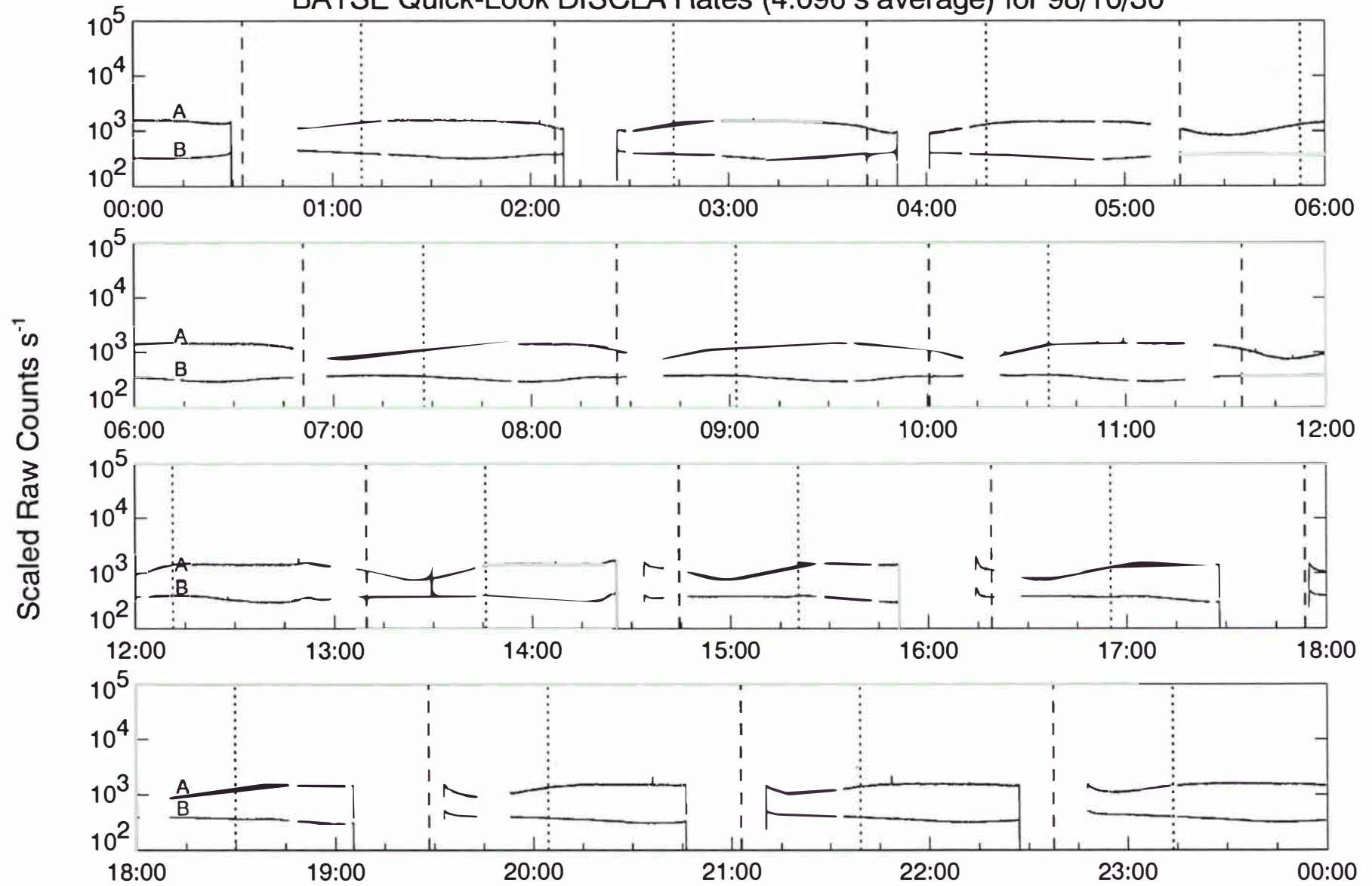
Minimum Integ. Time.
0.064 second(s)

Detectors [7..0]:
-----10

Discriminators.
(1 . 2)

Quality Mask.
BDISP1

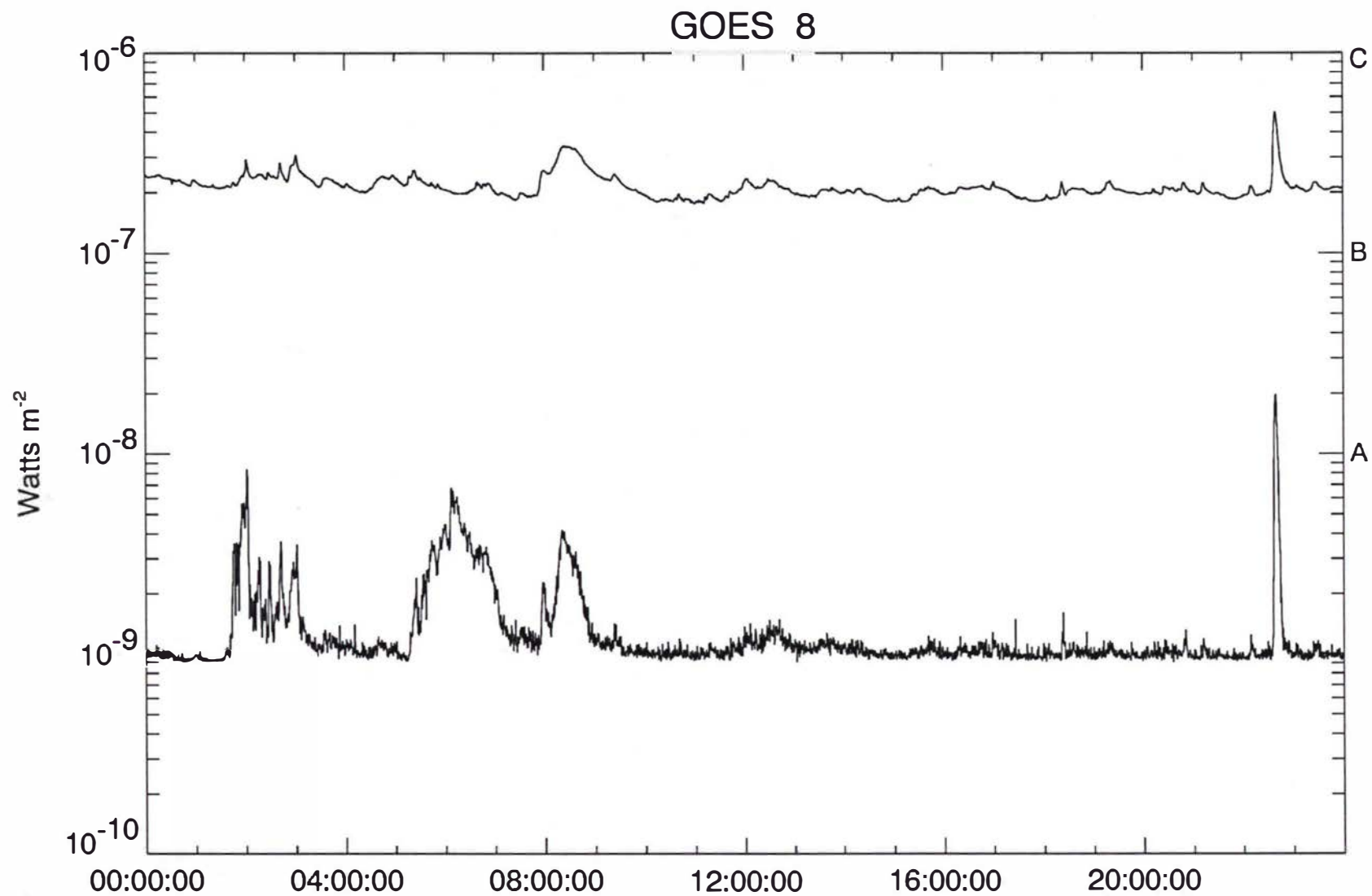
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/30



Current Time: 98/11/03, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/10/30, 0000:00

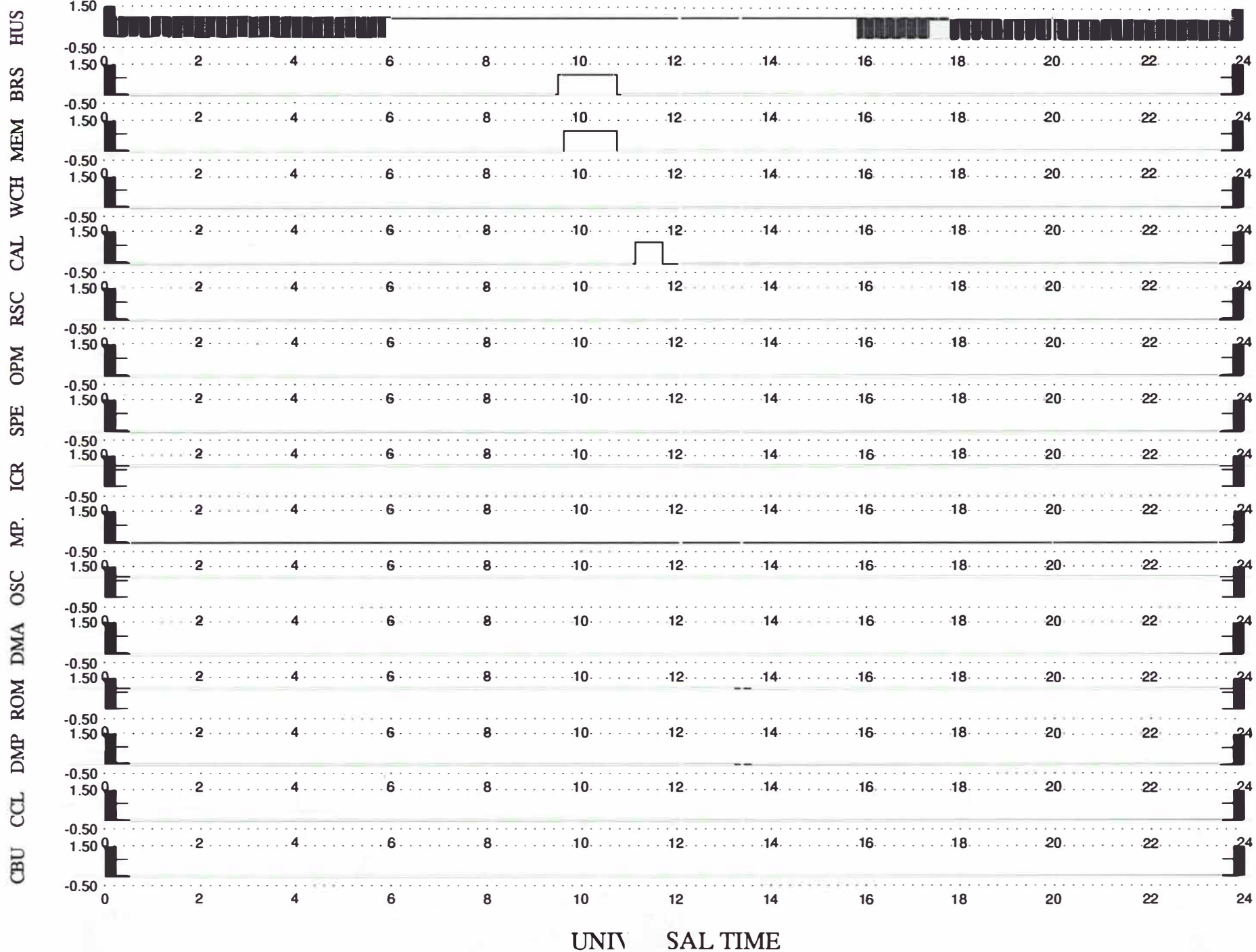
Plot created: 98/11/03, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

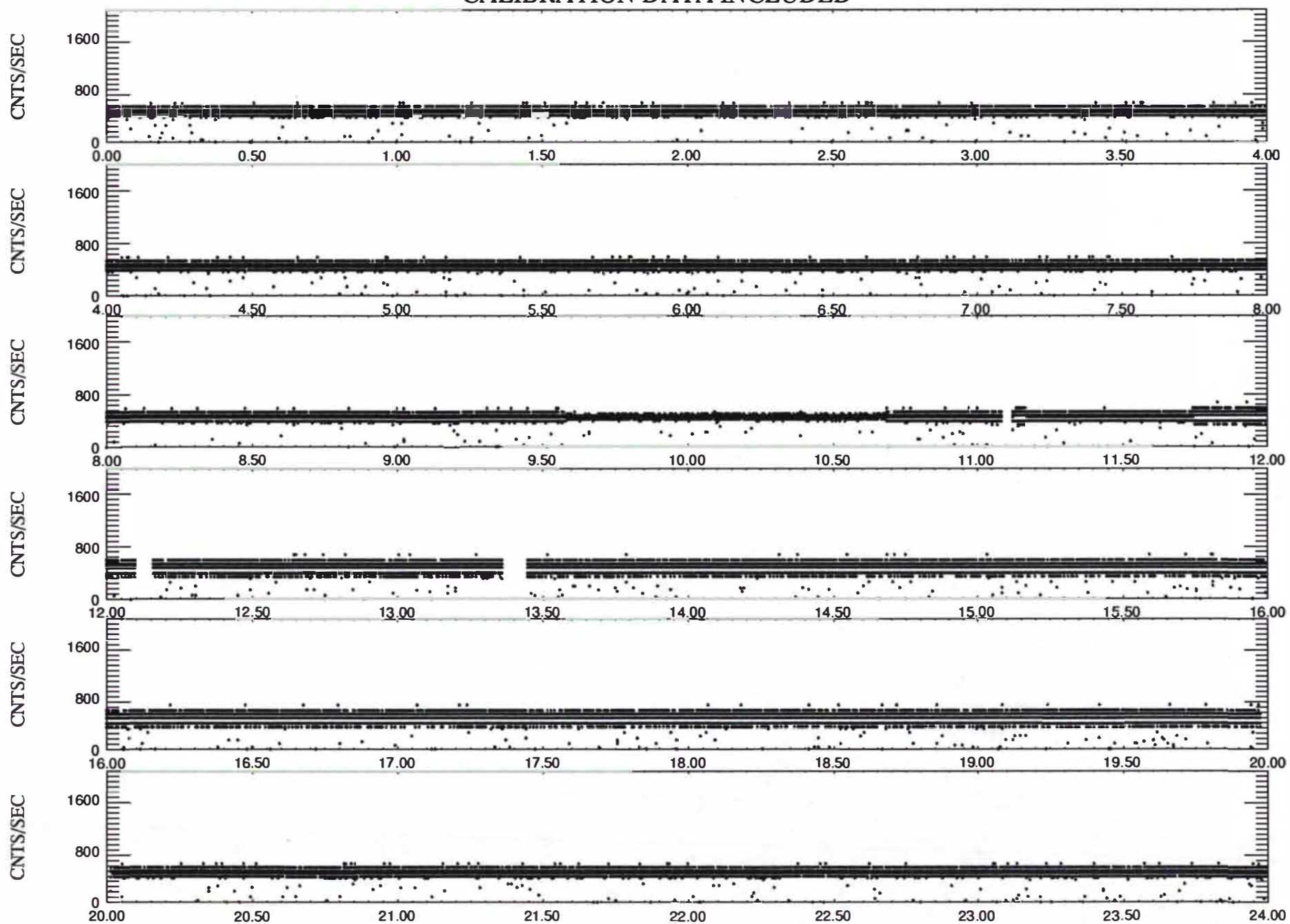
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 13

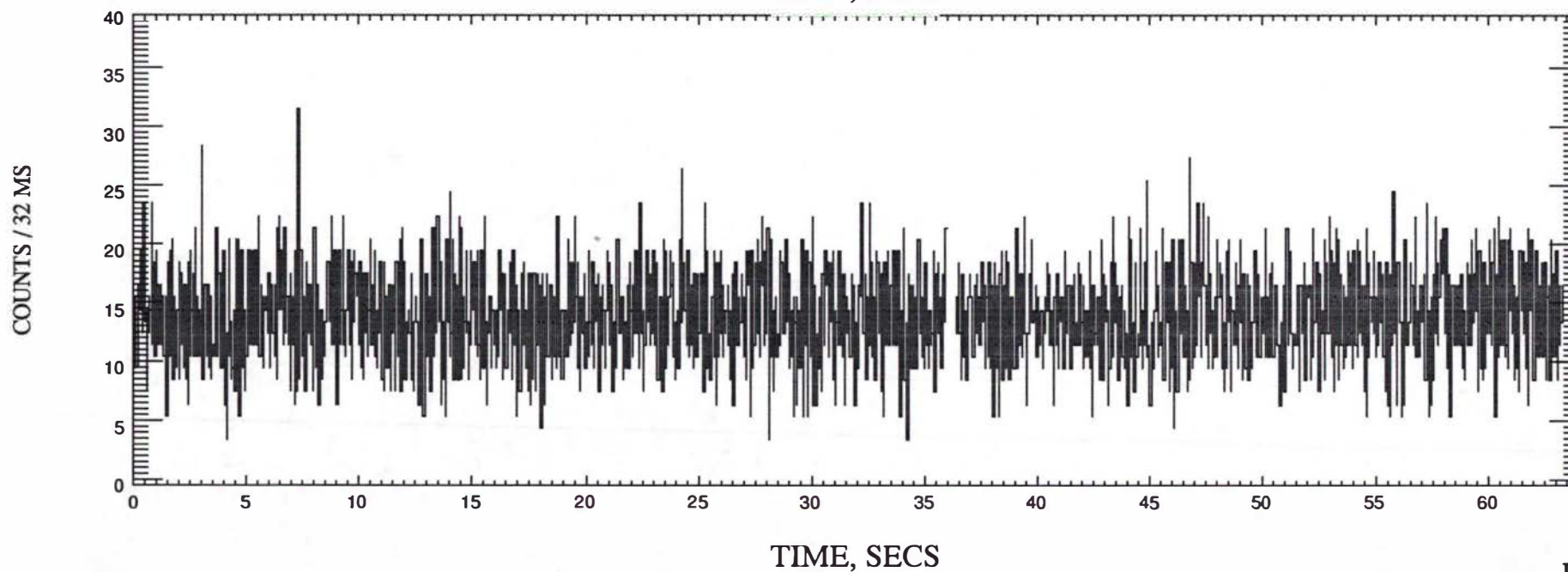
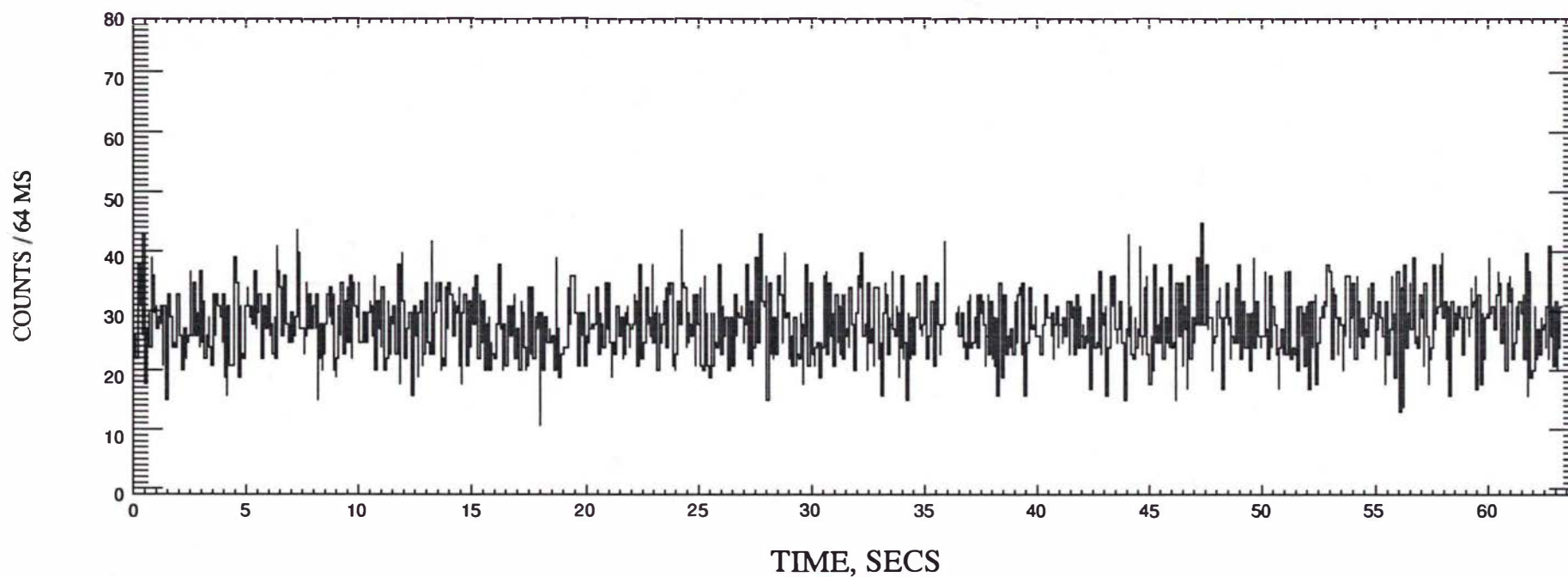


CALIBRATION DATA INCLUDED

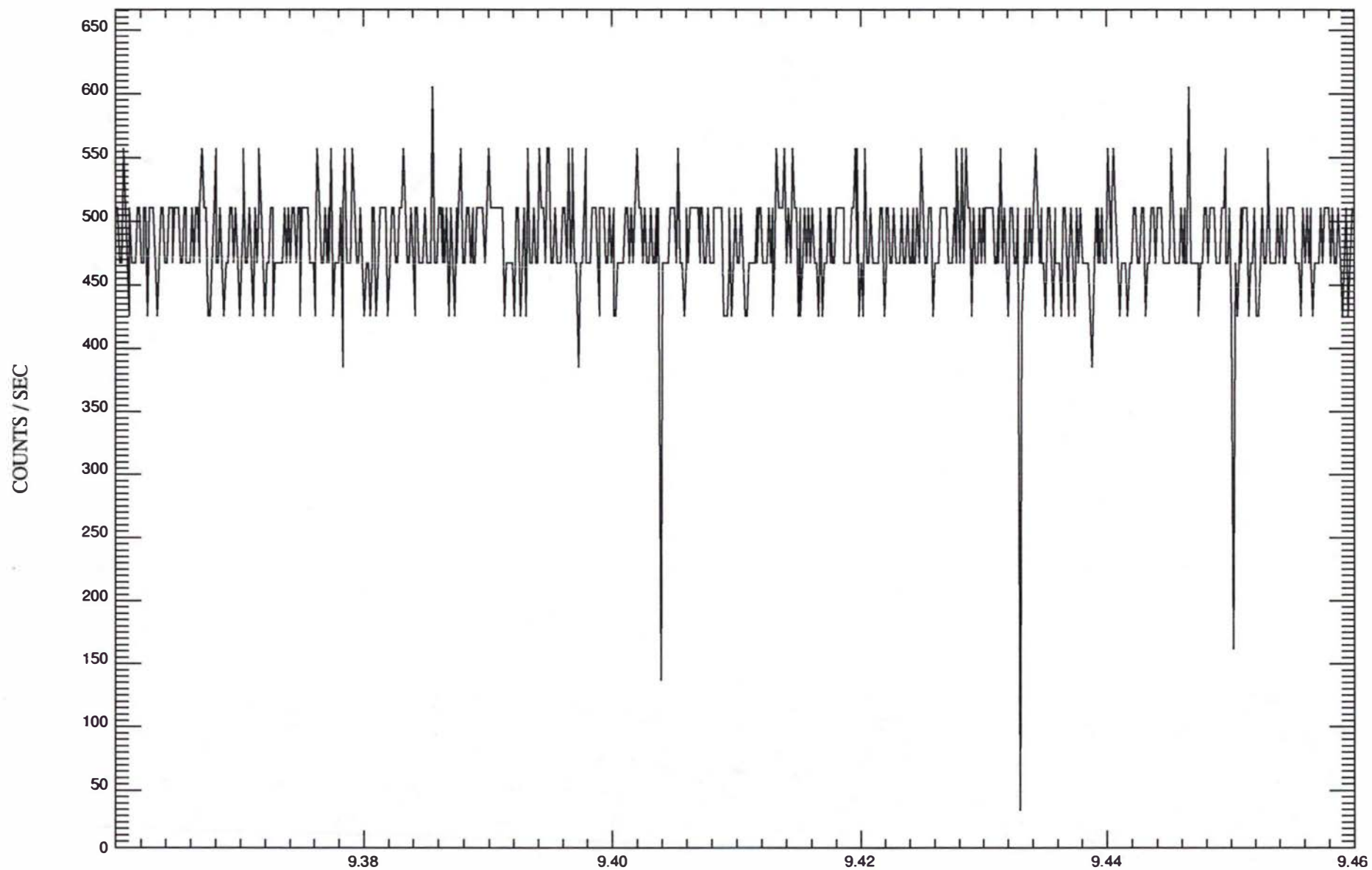


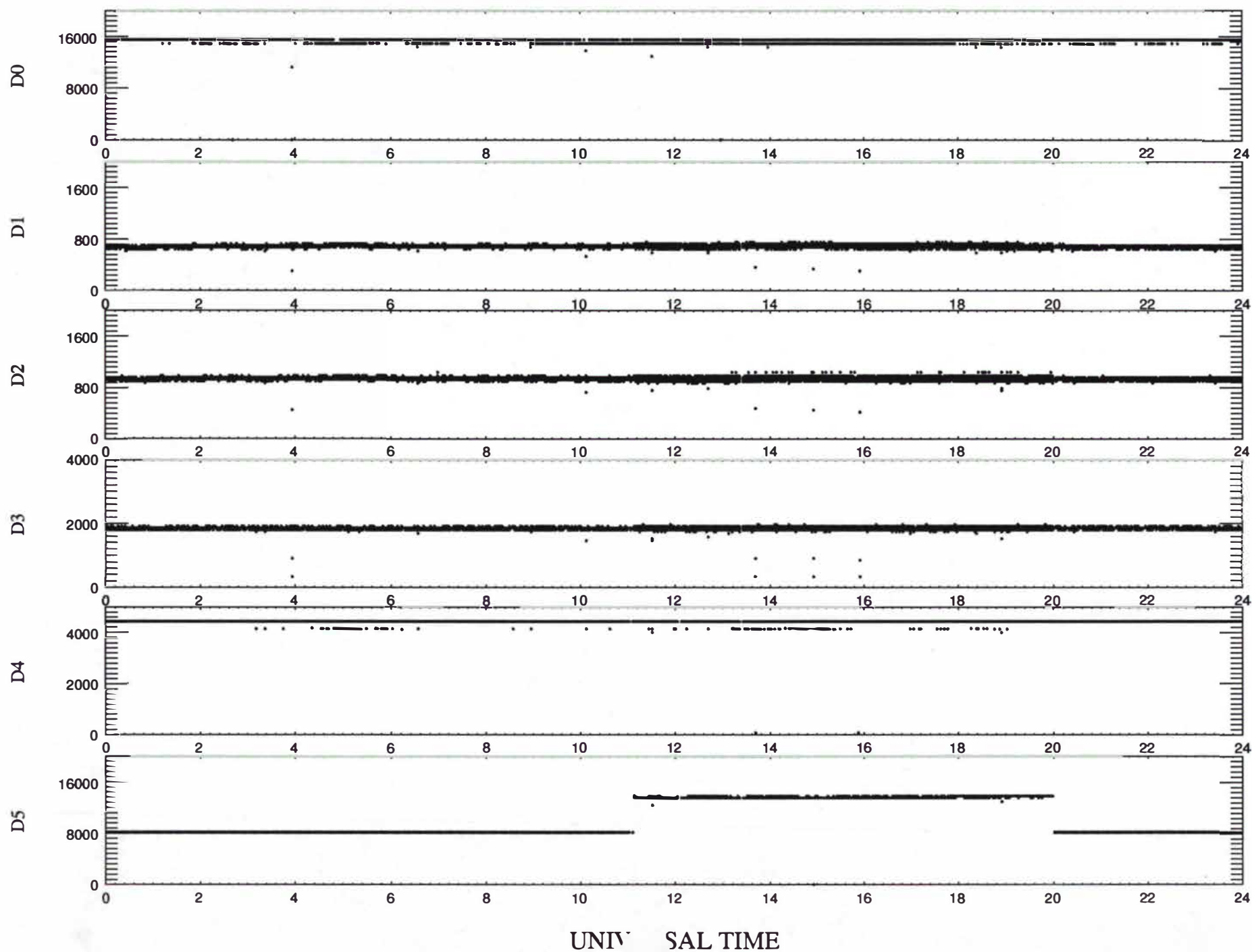
UNIV SAL TIME

Burst Counter 13 at UT= 9.413996971978 h=33890.389 s 09:24:50.389



CALIBRATION DATA INCLUDED





From khurley@sunspot Mon Nov 9 09:34 PST 1998
Date: Mon, 9 Nov 1998 09:30:51 -0800
From: khurley@sunspot (Kevin Hurley)
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, woods@eagles.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
Subject: GRB981028, 981031A,B,C,D, 981101

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts, all suspected to come from SGR1900+14. If so, the Earth-crossing time would have been ~1556 s earlier.

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
OCT 28 1998 20:46	moderate, 32 ms long	2990
OCT 31 1998 03:09	moderate, 128 ms long	2990
OCT 31 1998 18:57	intense, 1 s long	2990
OCT 31 1998 20:14	moderate, 128 ms long	2990
OCT 31 1998 23:55	intense, 128 ms long	2990
NOV 01 1998 01:15	intense, 64 ms long	2990

Konus SGR 1900

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczynski, marar, tee

From RICHARDSON@fender.msfc.nasa.gov Mon Nov 2 09:27:24 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 2 Nov 1998 11:19:50 -0600 (CST)

To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7184

TIME: TJD=1117 SECONDS=12544

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

From RICHARDSON@fender.msfc.nasa.gov Mon Nov 2 09:39:16 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA28712; Mon, 2 Nov 1998 09:39:15 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA15758; Mon, 2 Nov 1998 09:39:14 -0800
Date: Mon, 2 Nov 1998 11:38:13 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <981102113813.20216375@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7185
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7185
EVENT OF 1998 OCT 31 DAY OF YEAR=304
EVENT CROSSING TIME AT BATSE : 34904. S. OR 09:41:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 278.000 -25.000
BATSE PEAK COUNTING RATE: 19000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/10/ 98 IS:
RA= 165.561 DEC= -2.370 DIST= 5.848 AU
BATSE-ULYSSES DISTANCE = 874919302. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 70.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 957.73 SECS.
CROSSING TIME AT ULYSSES IS 35862. S. OR 09:57:41 +/- 543.17 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/10/ 98 IS:
RA= 165.985 DEC= 7.612 DIST= 2.046 AU
MARS-BATSE DISTANCE = 306073568. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 400.94 SECS.
CROSSING TIME AT MARS IS 35305. S. OR 09:48:24 +/- 169.10 SECONDS

BATSE BURST TRIGGER

NO.: 7185

TIME: TJD=1117 SECONDS=34904

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.7 AZIMUTH=148.0 ERROR=1.1 DEGREES

COMMENTS:

GRB. VERY SPIKEY, DURATION APPROX. = 165 SEC.
SLIGHTLY VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7185	981031	11117	34904	19000	278	-25	165

Date:

Feb 15'00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. BATSE Data

- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vwx@bocc1, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 BATSE

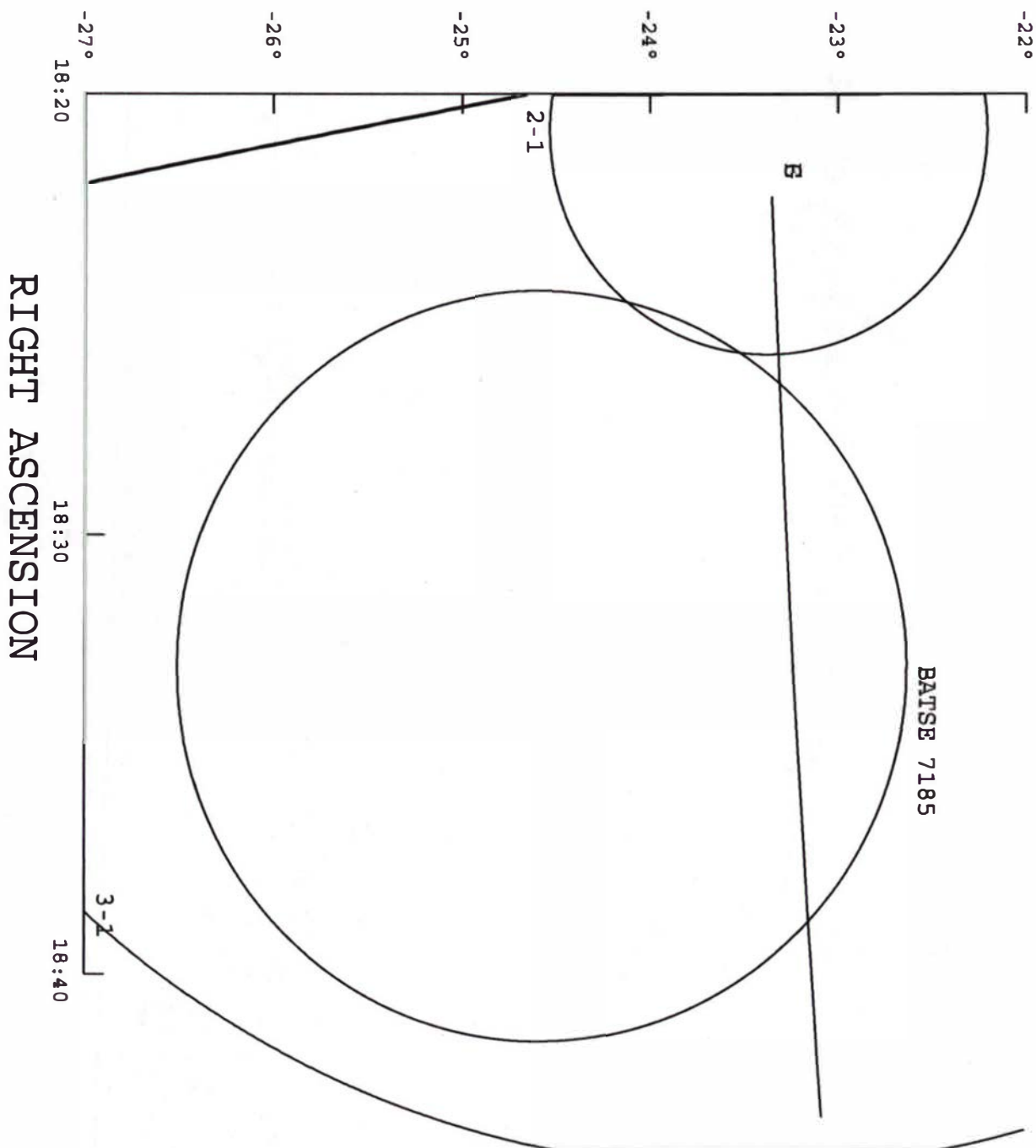
2 ULYSSES

3 NEAR

EVENT OF OCT 31, 1998 9:41

15 / 2 / 0

DECLINATION



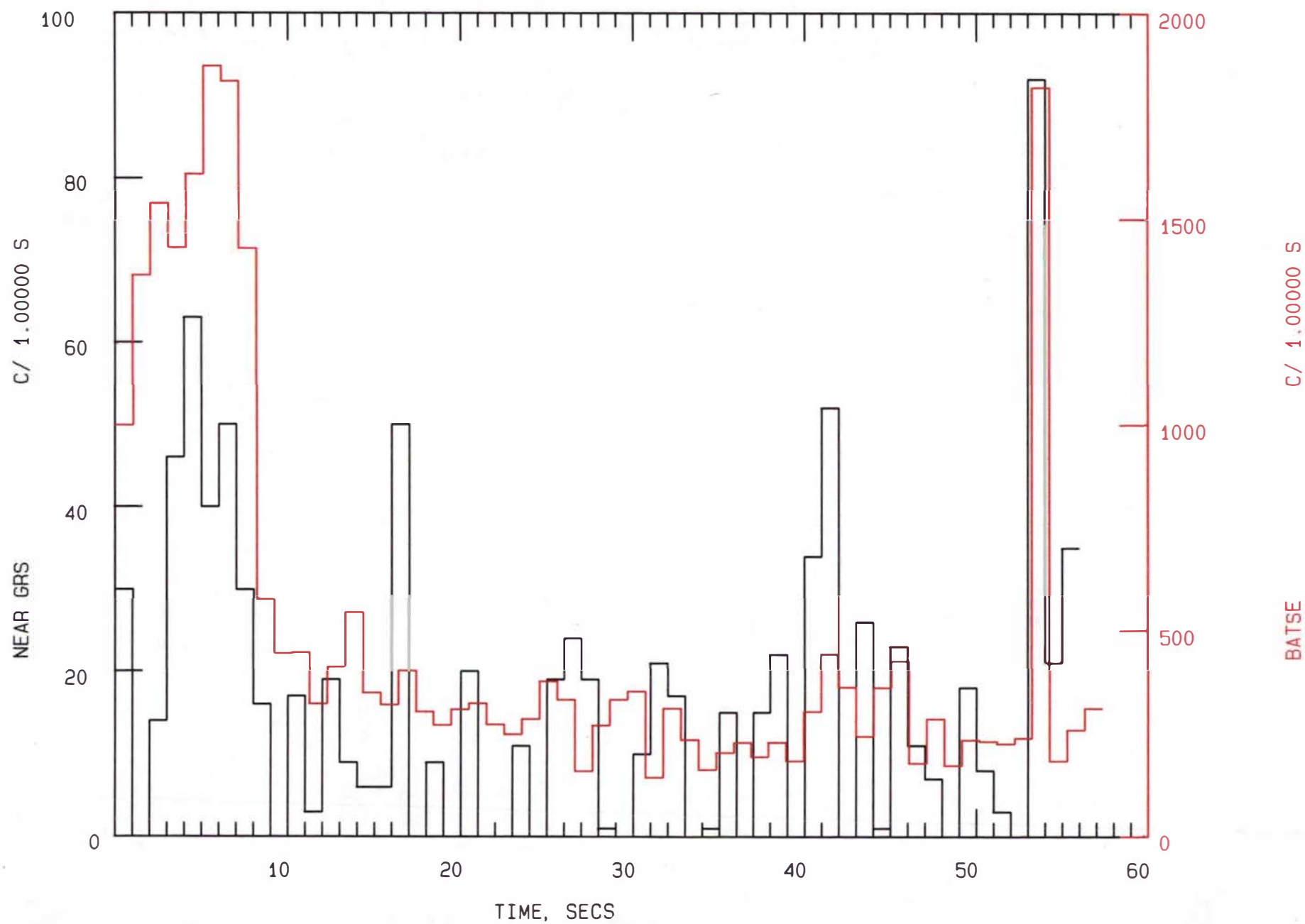
NEAR GRS -BATSE

CORRELATION

31/10/98

33857.654

15/ 2/ 0

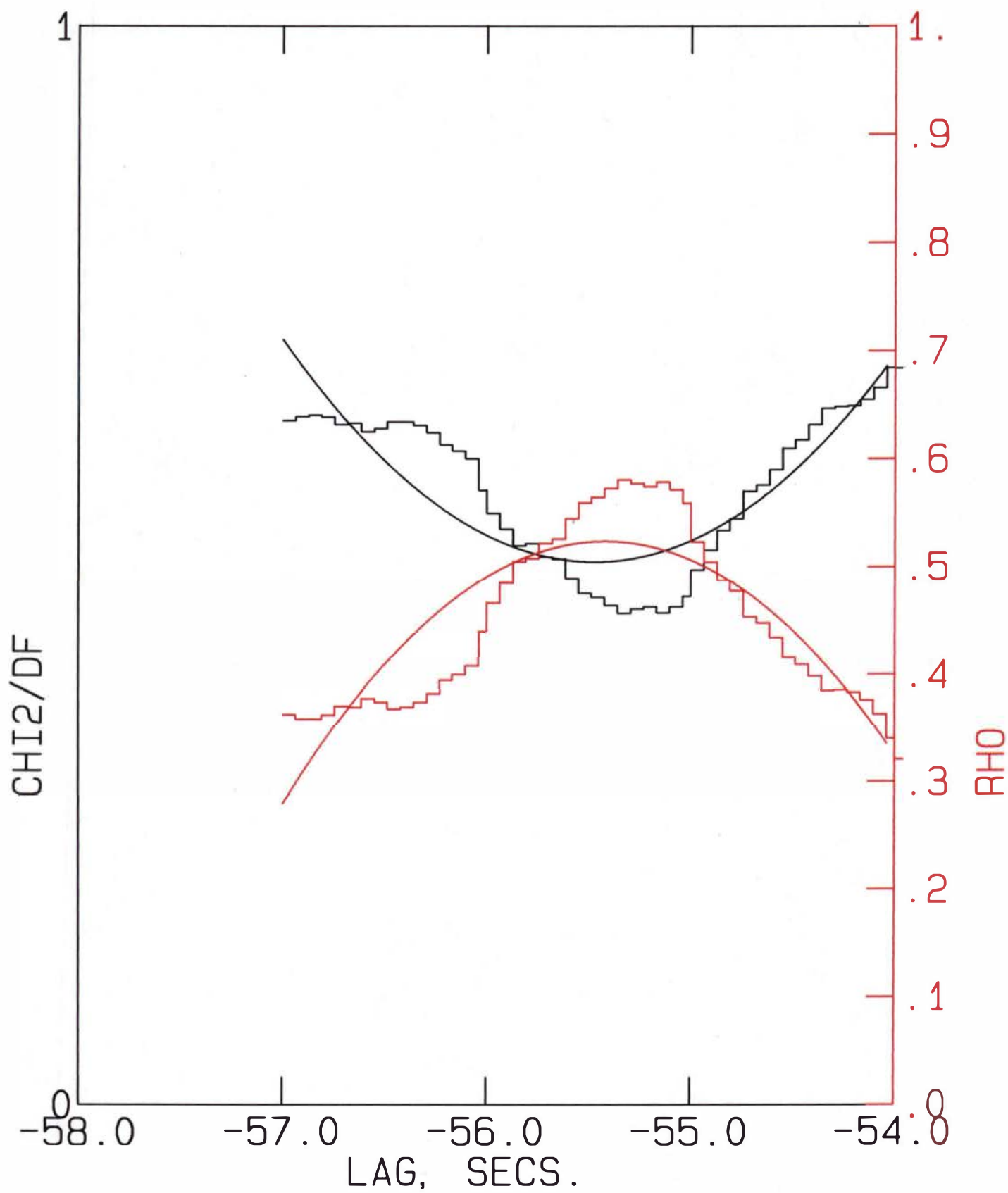


NEAR GRS -BATSE

CORRELATION

31/10/98

33857.654



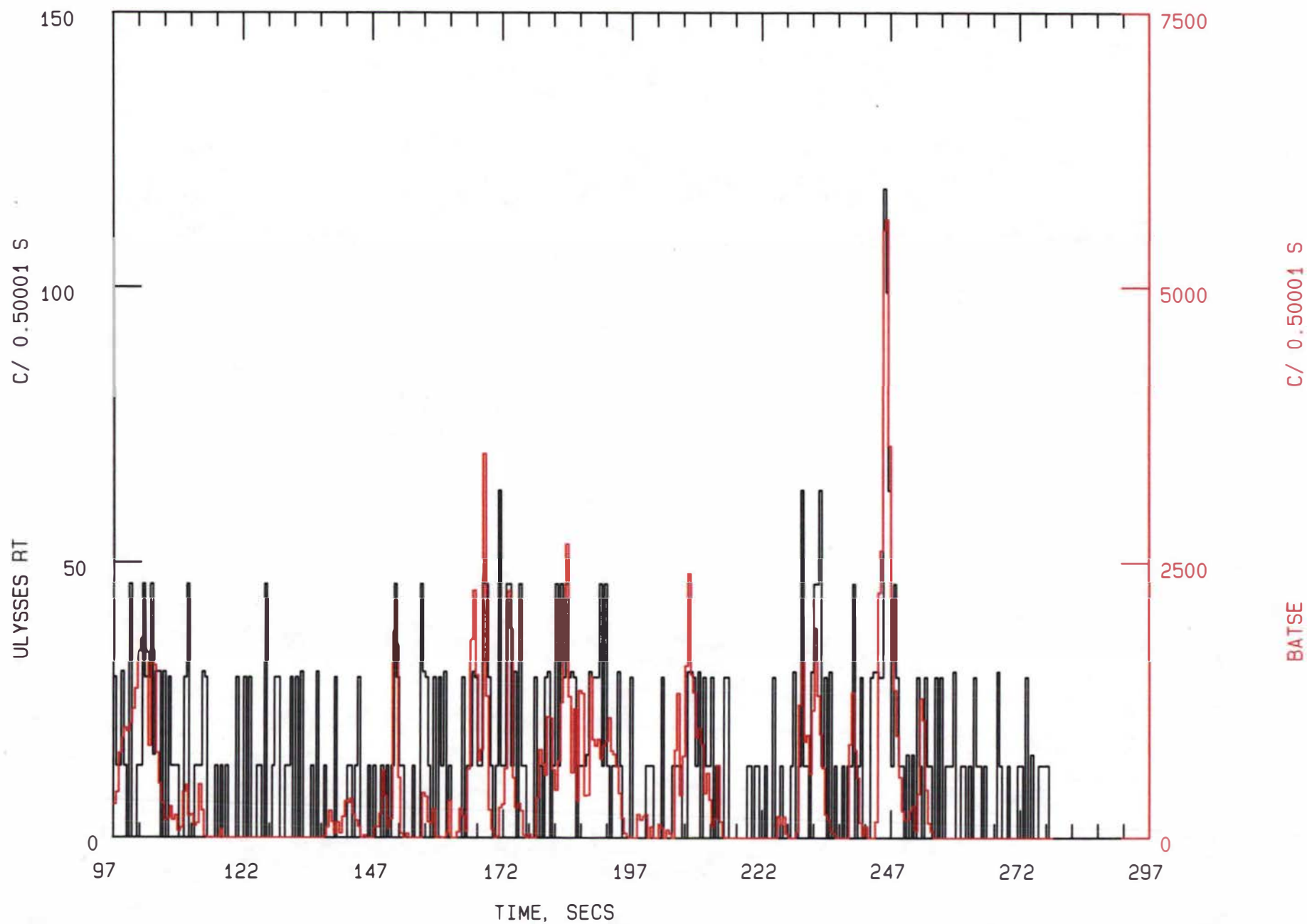
ULYSSES RT-BATSE

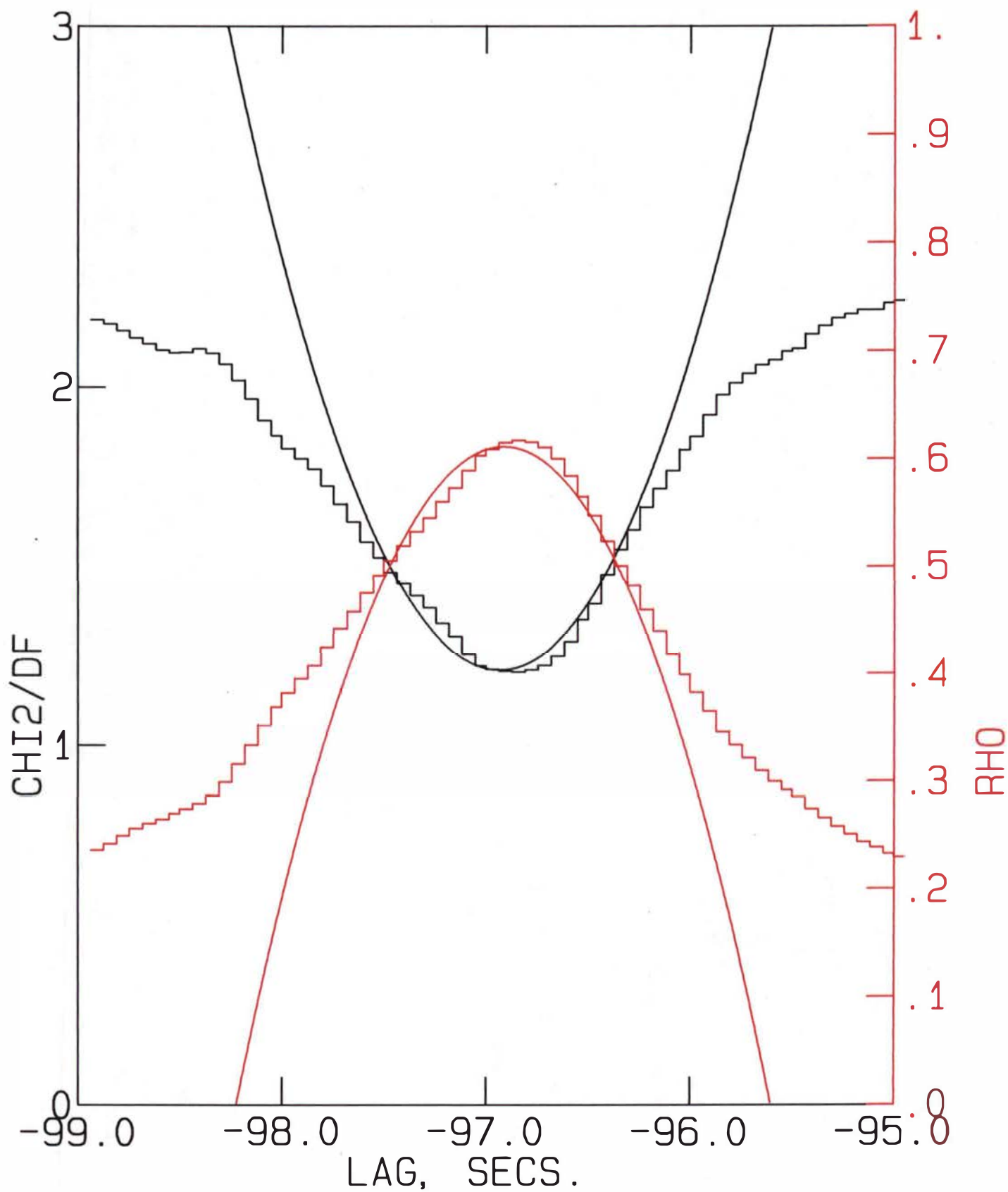
CORRELATION

31/10/98

35616.154

15/ 2/ 0

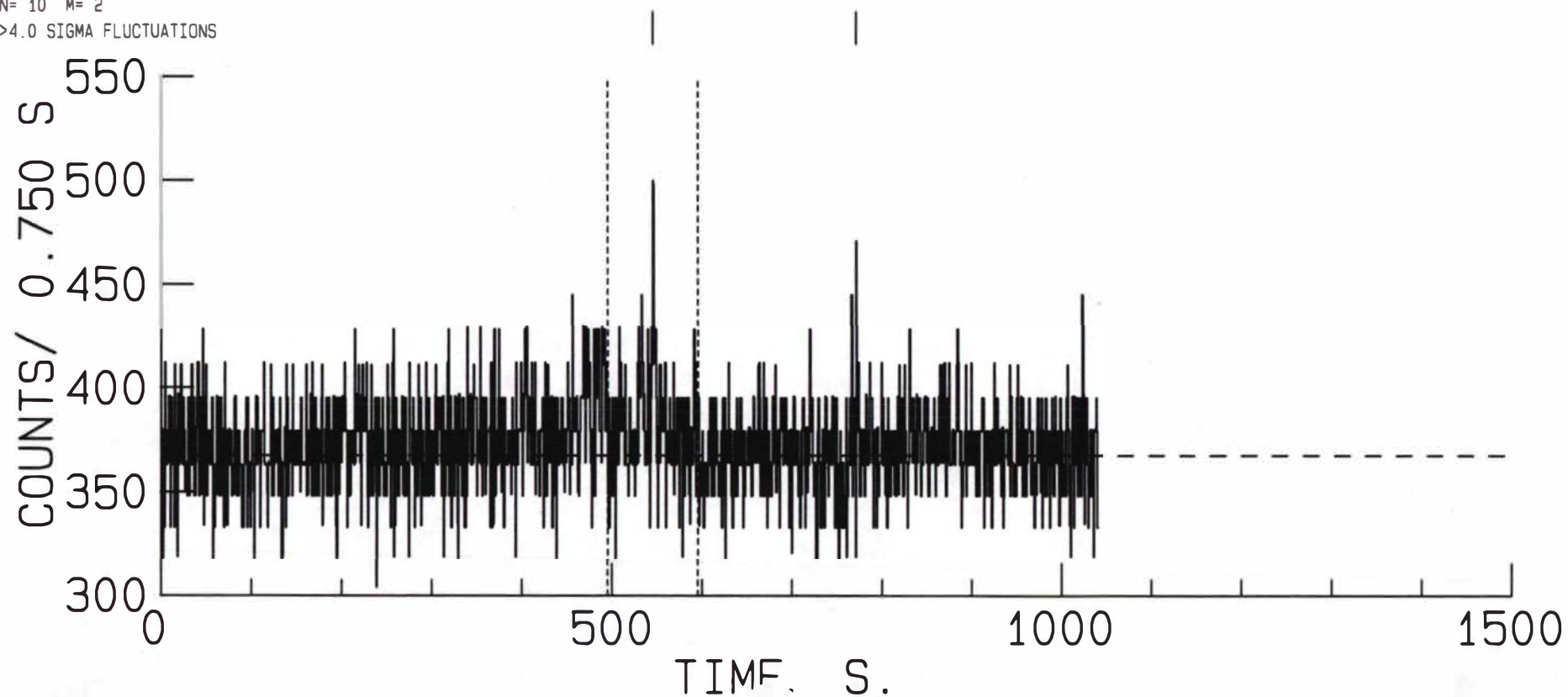




ULYSSES RT
31/10/98 35316.175 s
0.250 S INTERVALS REGROUPED BY 3
22- 149 keV

15 / 2 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



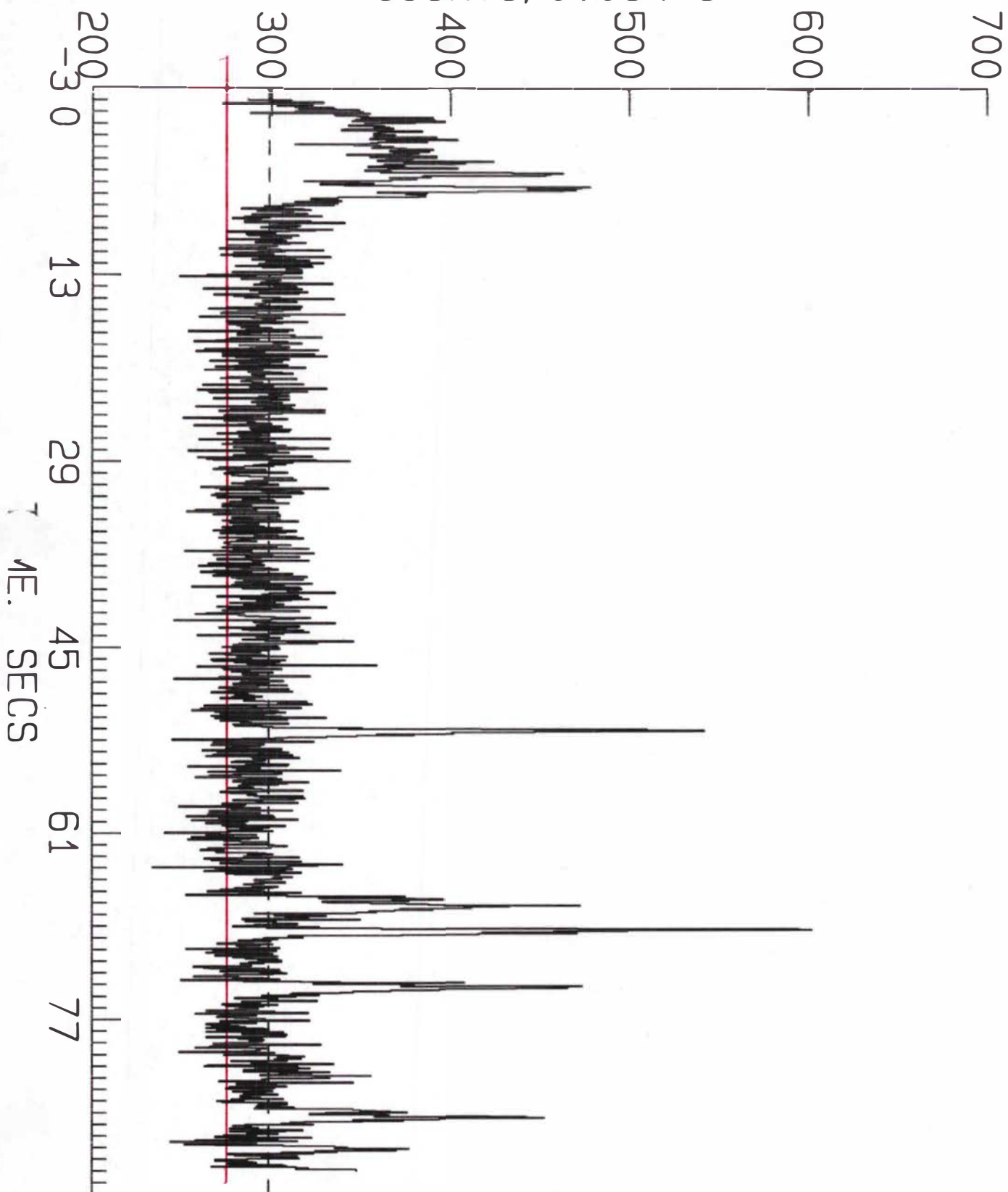
BATSE

31/10/98

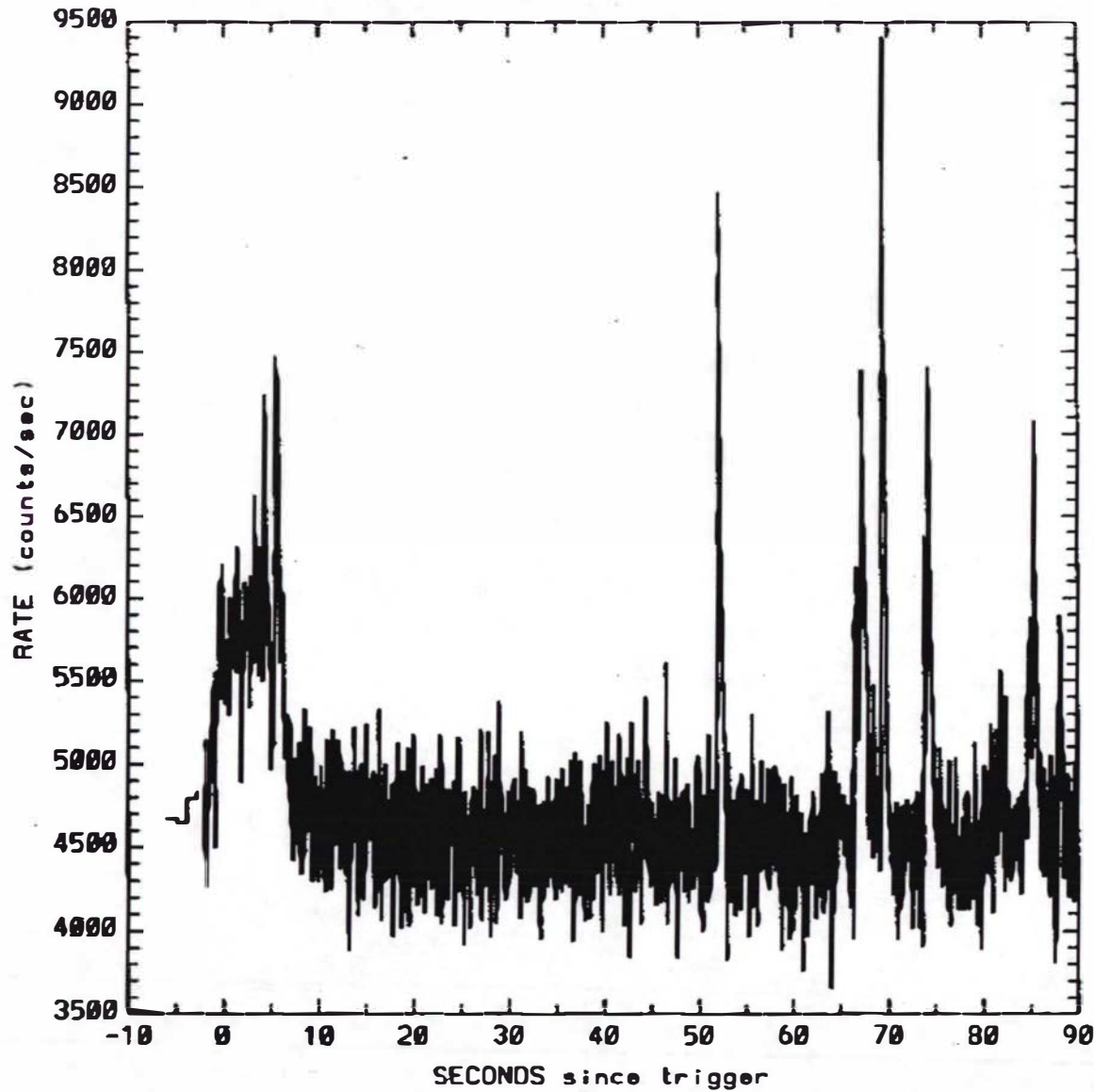
34904.545

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7185



9-FEB-2000 09:35:25

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7185

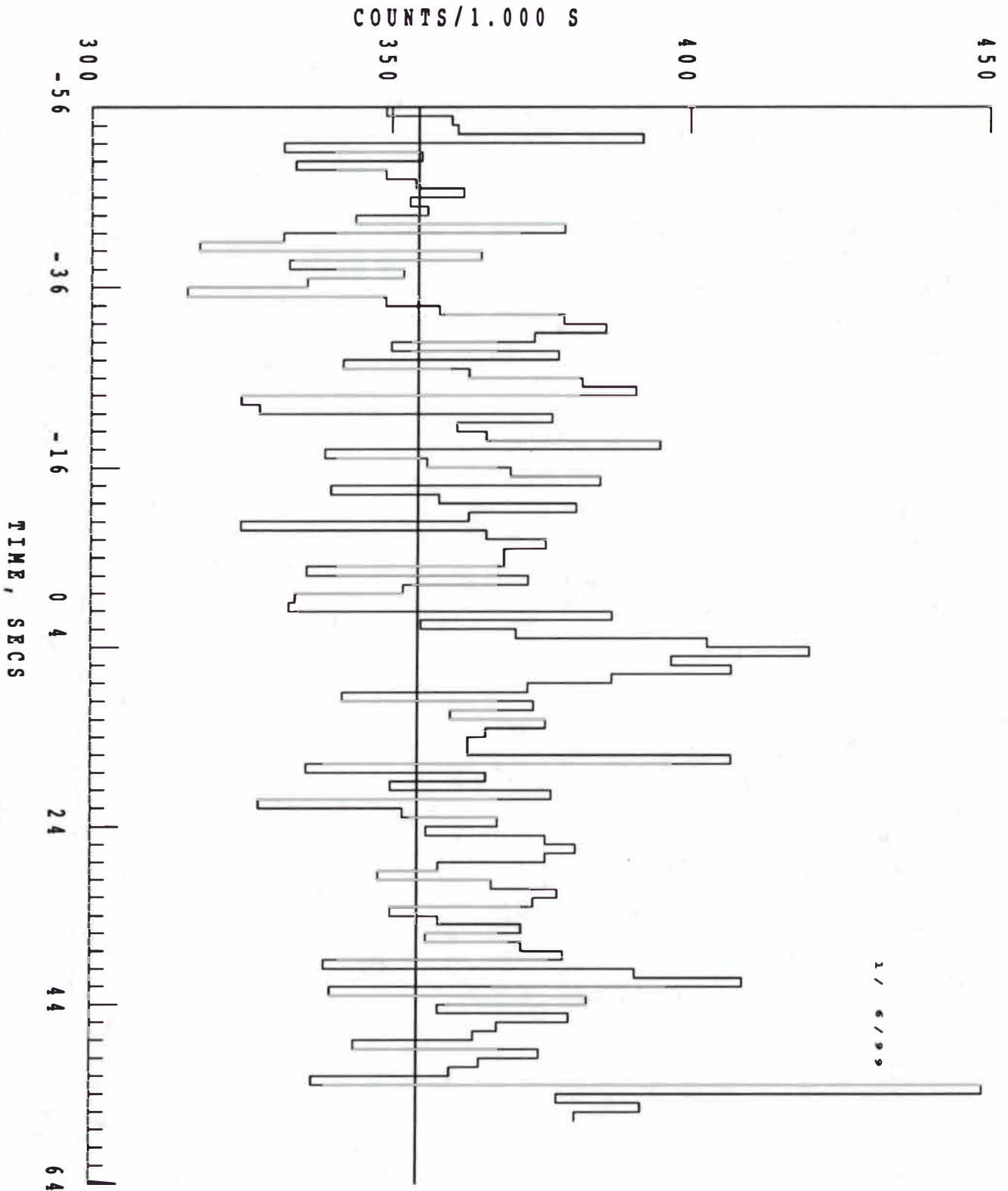
Trigger Time:
11117 / 34984.545Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors [7..8].
7-5-----Discriminators:
1 3 . 4 1Quality Mask:
80ISP1

NEAR

31/10/98

33857.654

100-1000 keV



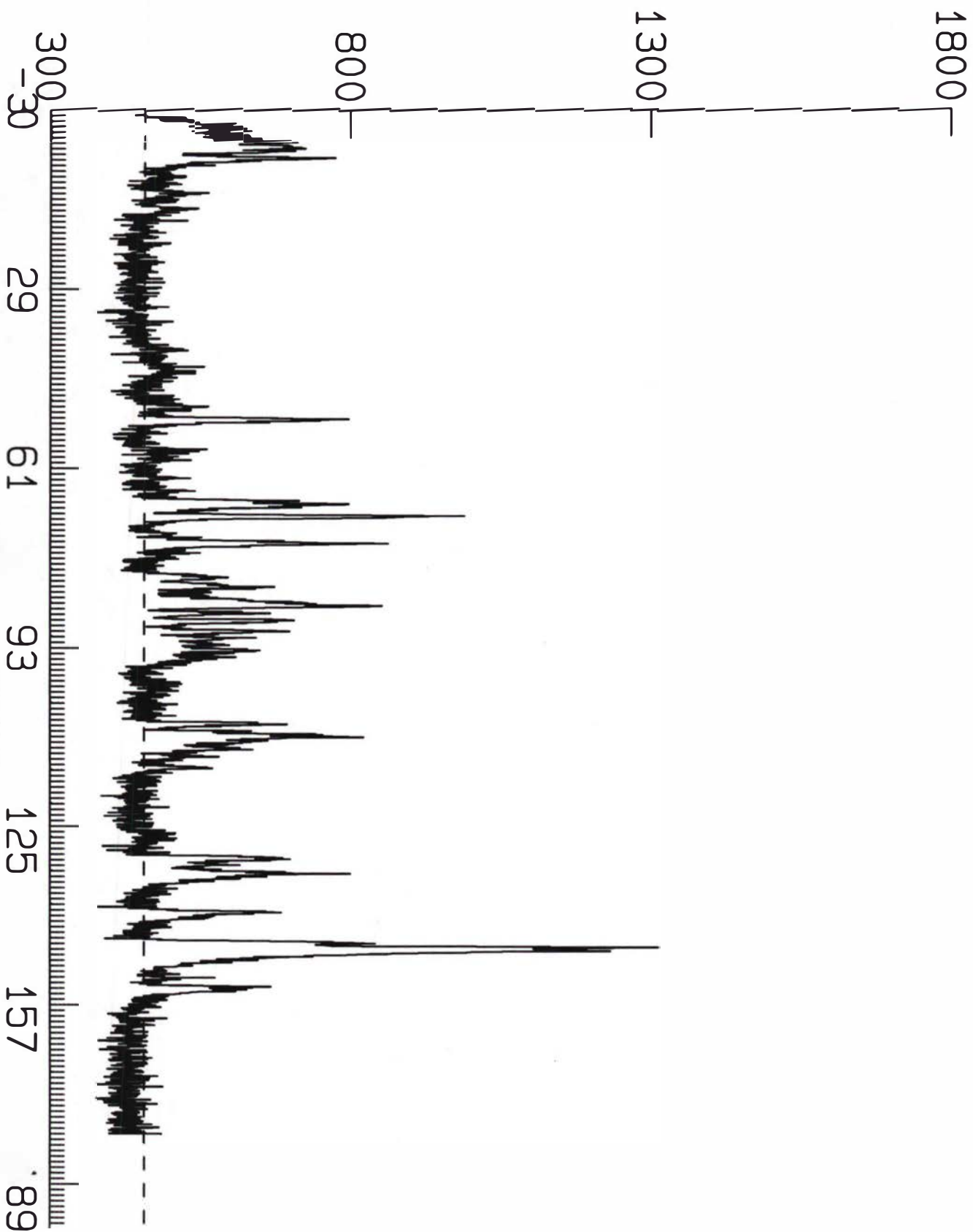
BATSE

31/10/98

34904.545

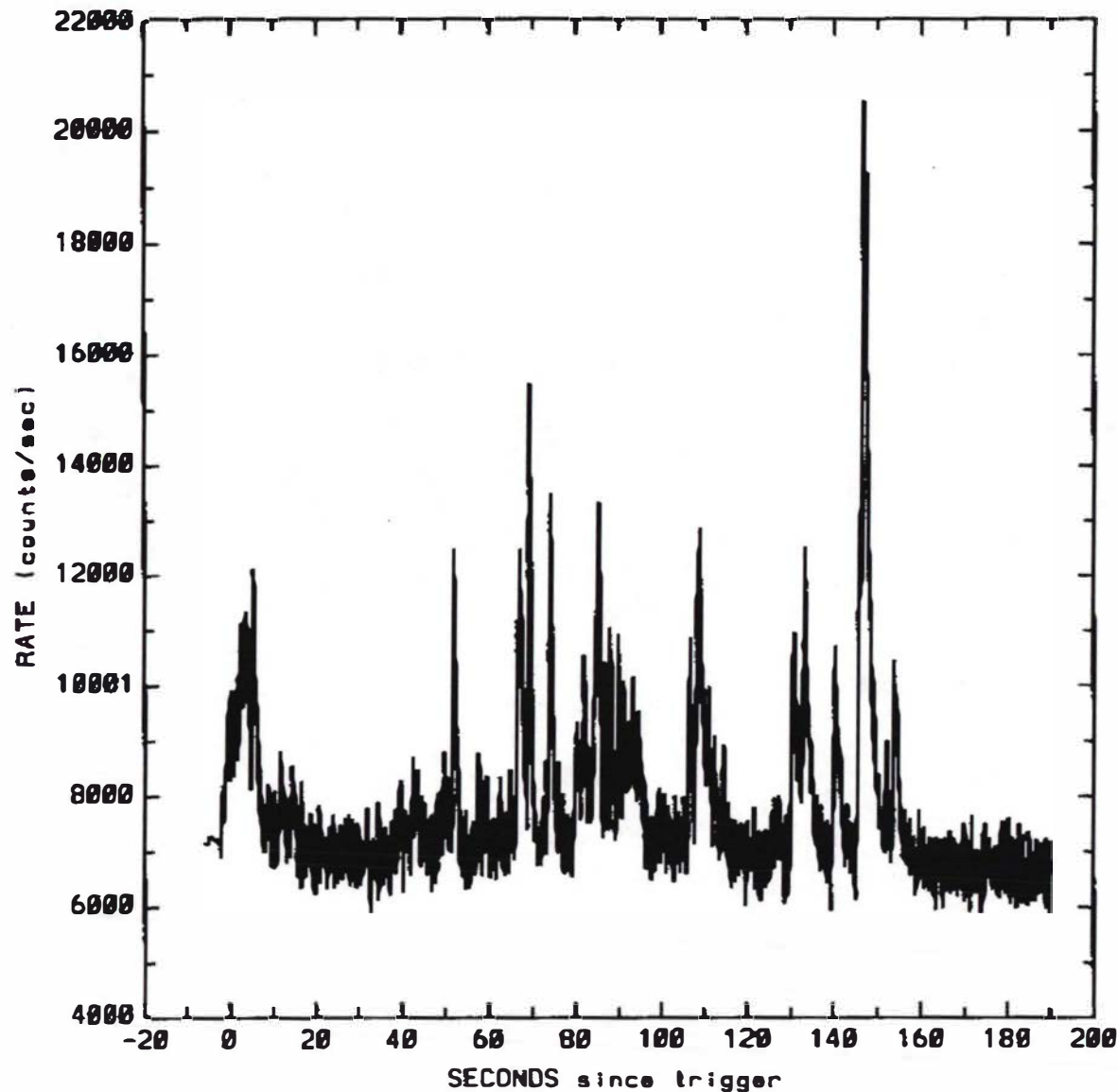
25- 100 keV

COUNTS/0.064 S



27 / 11 / 98

DISCSC Data for K. Hurley, No. 7185



18-NOV-1998 18:06:25

Created by NOPS 80
(Burst Display)
Version t2.26

Trigger # : 7185

Trigger Time:
11117 / 34984.545

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..8]:
7-5----

Discriminators:
(1..2)

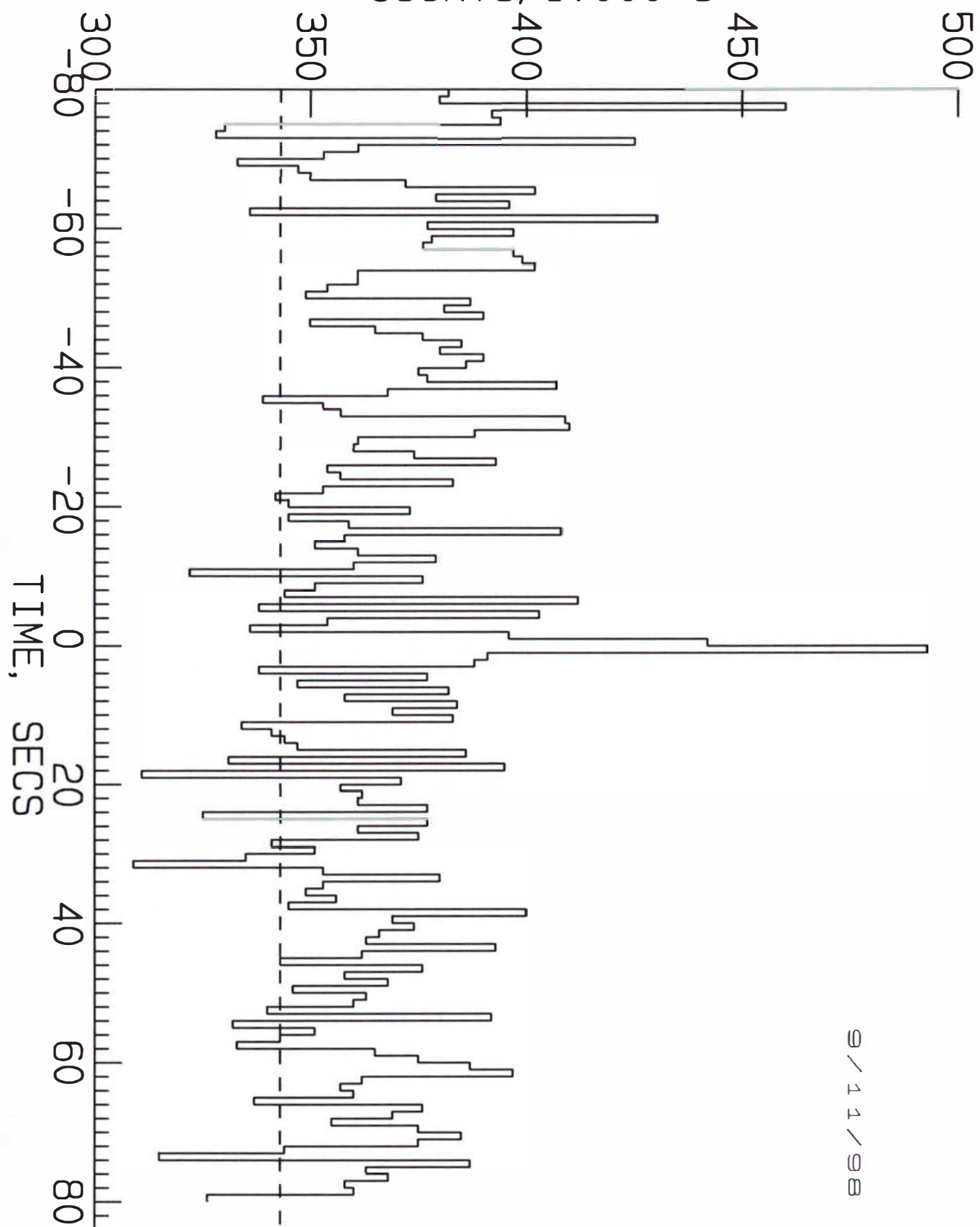
Quality Mask:
80(SP)

NEAR

31/10/98 34008.817

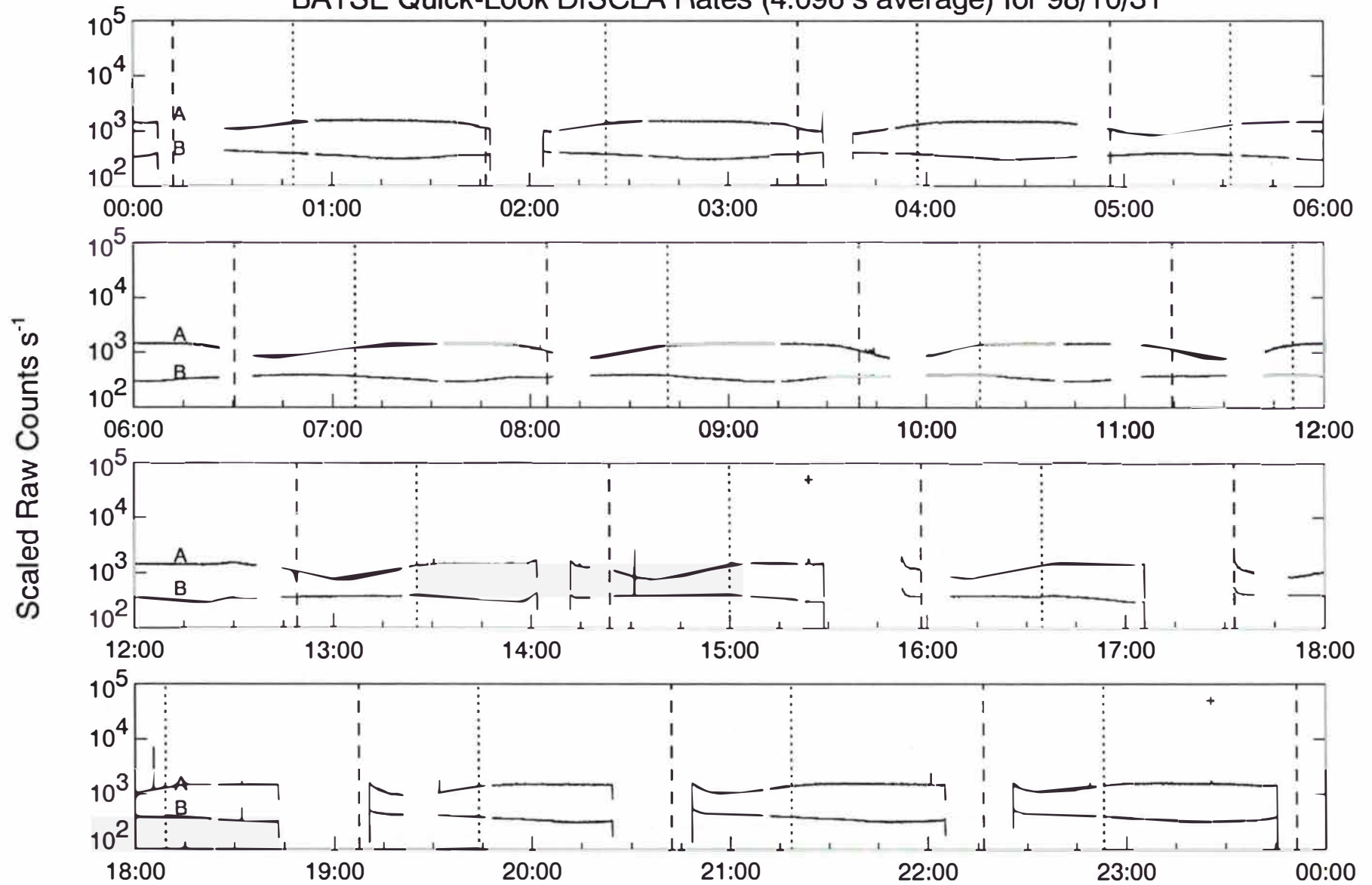
100-1000 keV

COUNTS/1.000 S



9 / 11 / 98

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/10/31

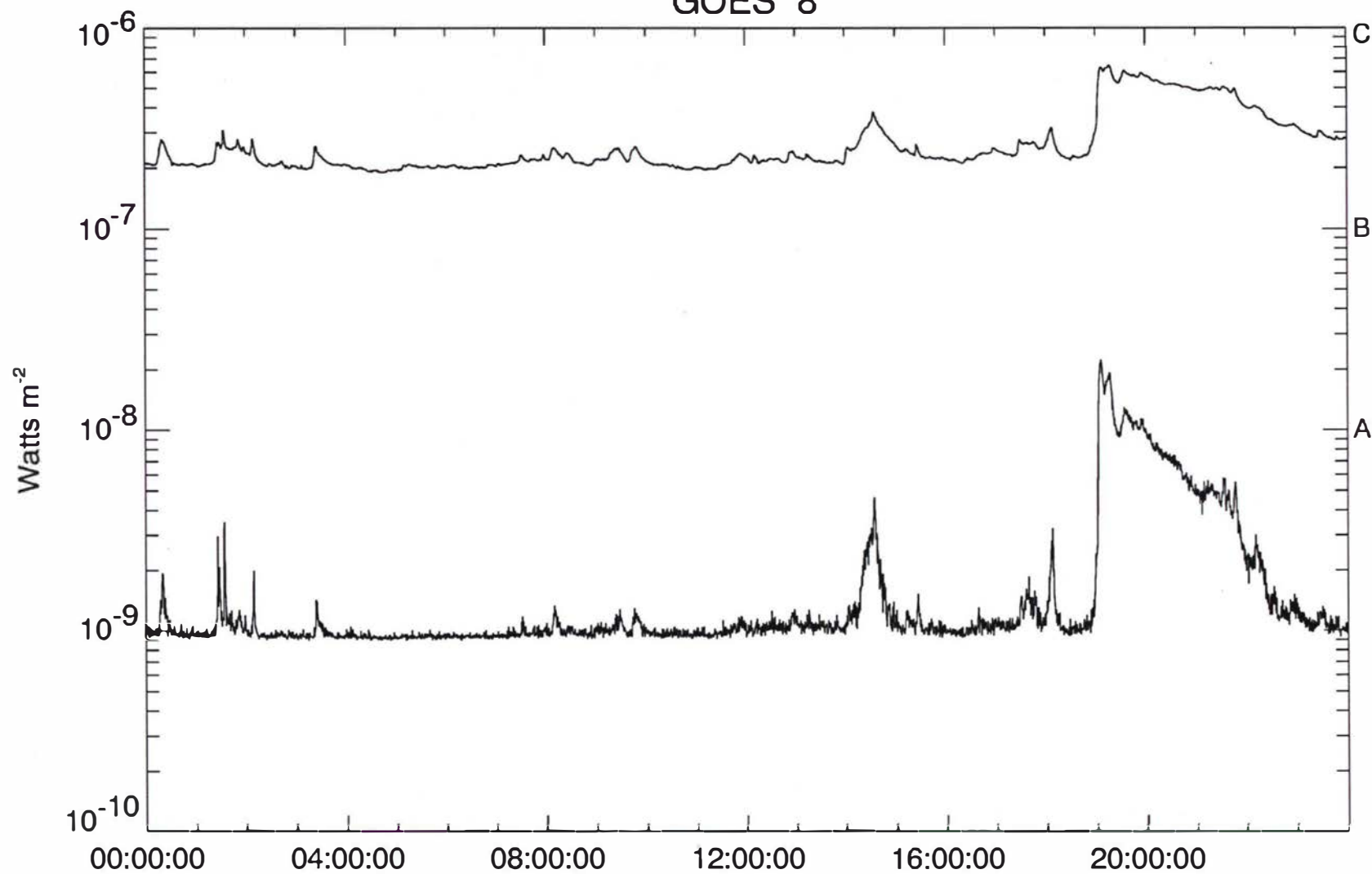


Current Time: 98/11/04, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/10/31, 0000:00

Plot created: 98/11/04, 1007

Channel

1 (1.0 - 8.0 Angstroms)

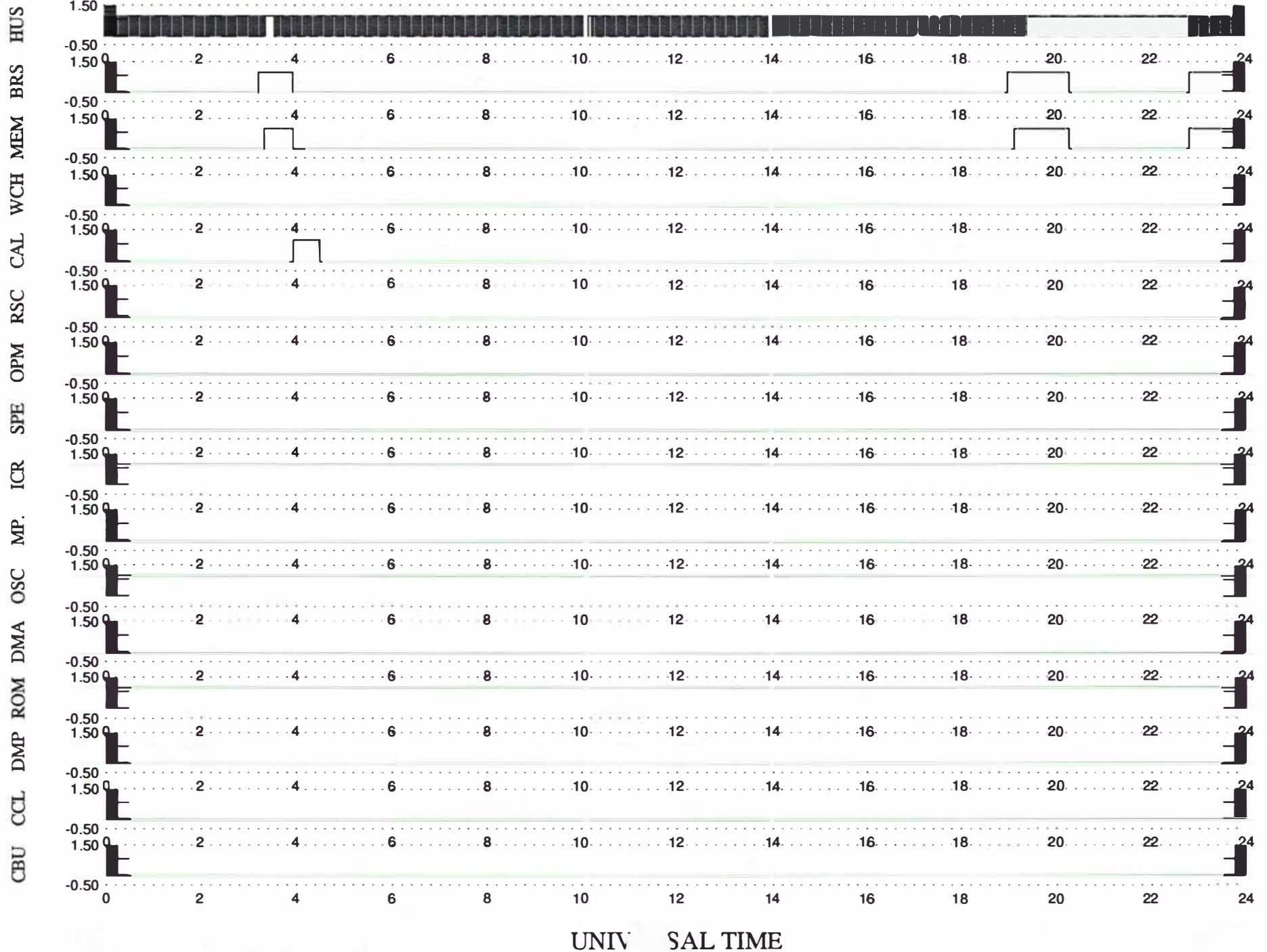
Background not subtracted

2 (0.5 - 4.0 Angstroms)

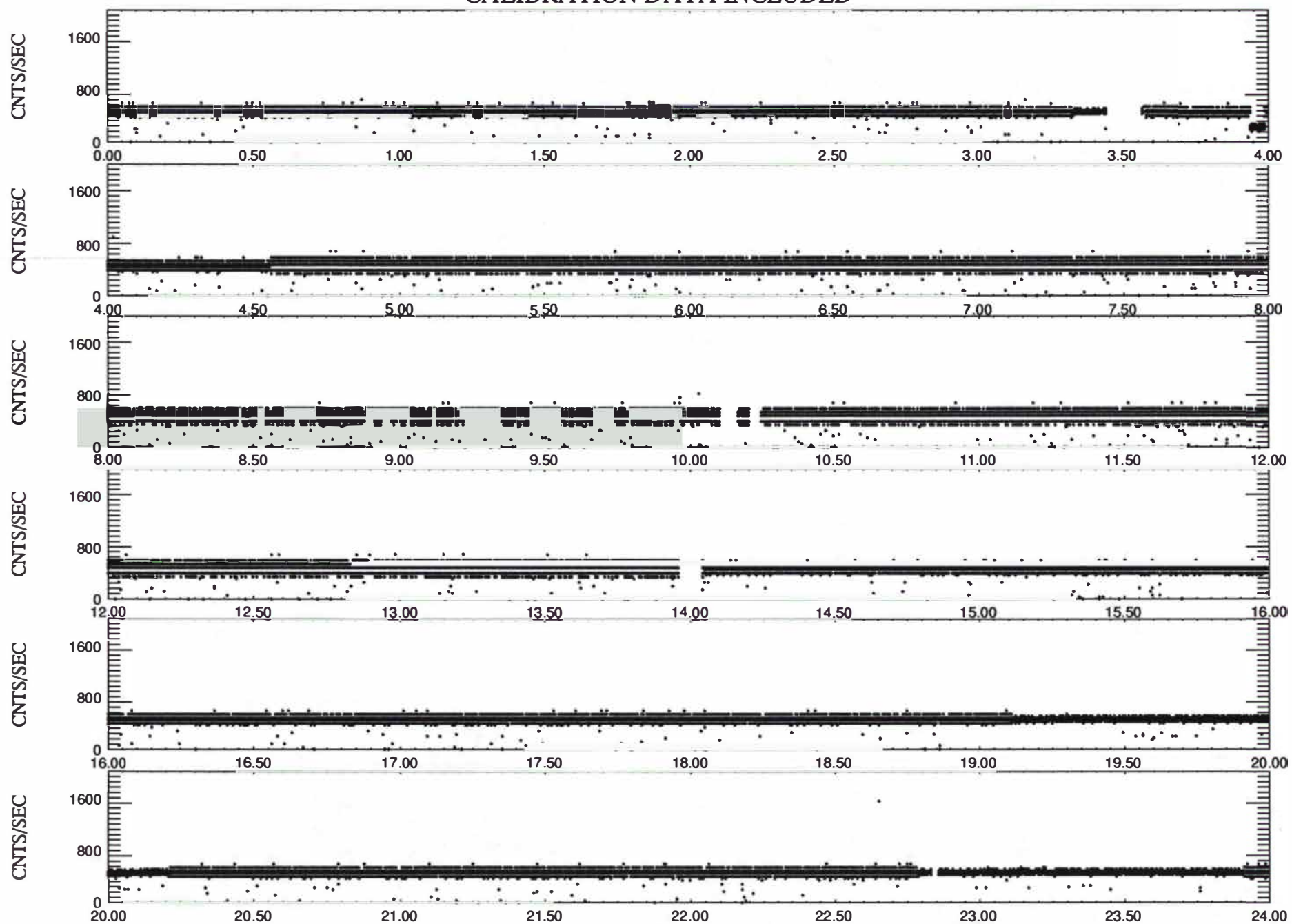
Background not subtracted

Sample average = 10

BURST NUMBER 14 - 15, 0

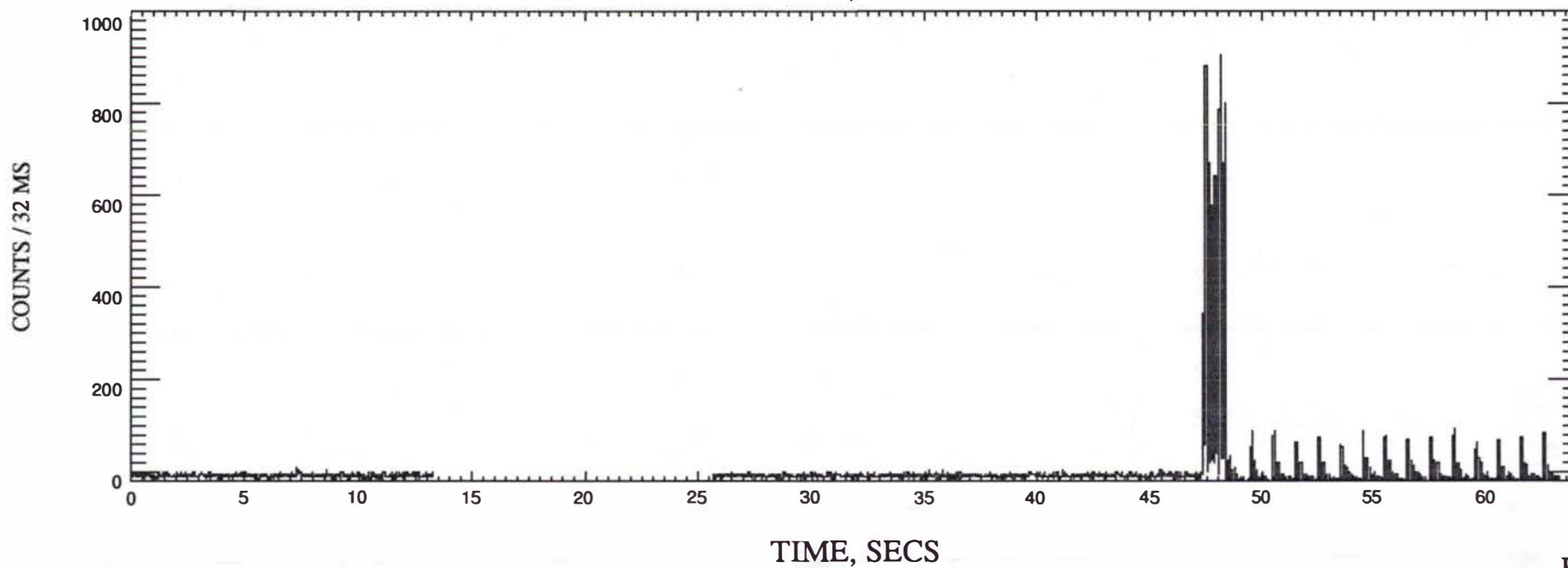
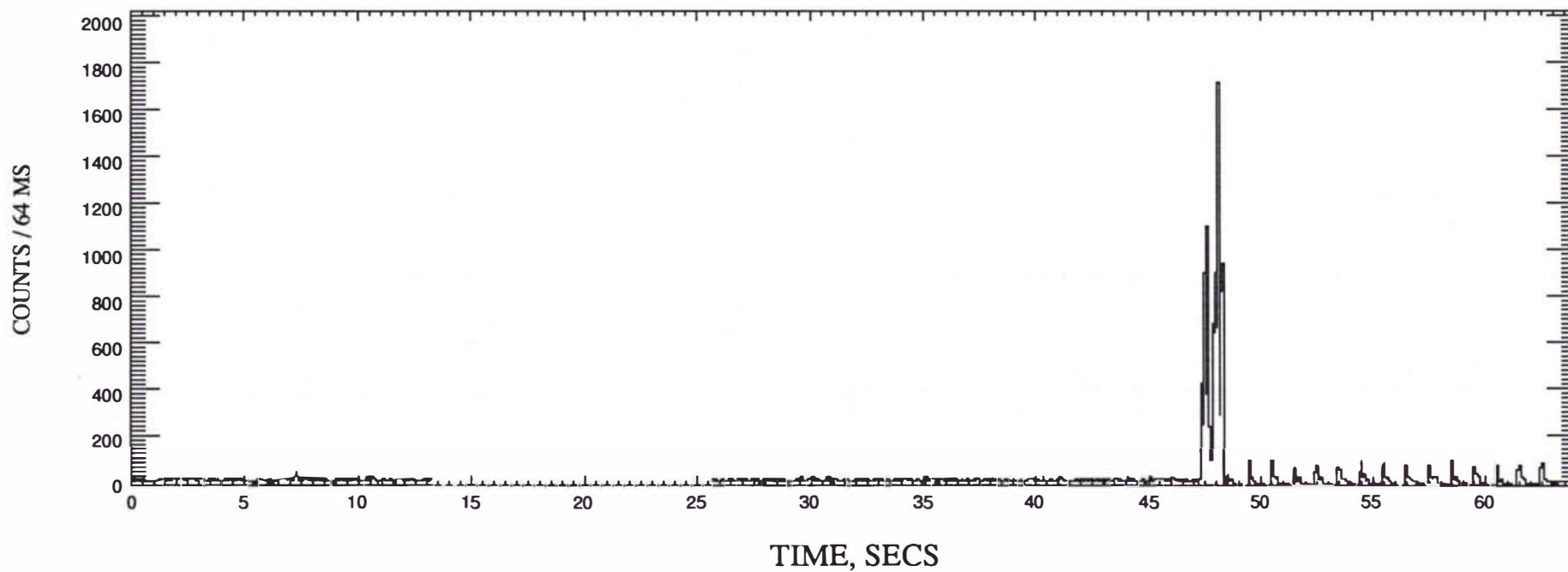


CALIBRATION DATA INCLUDED

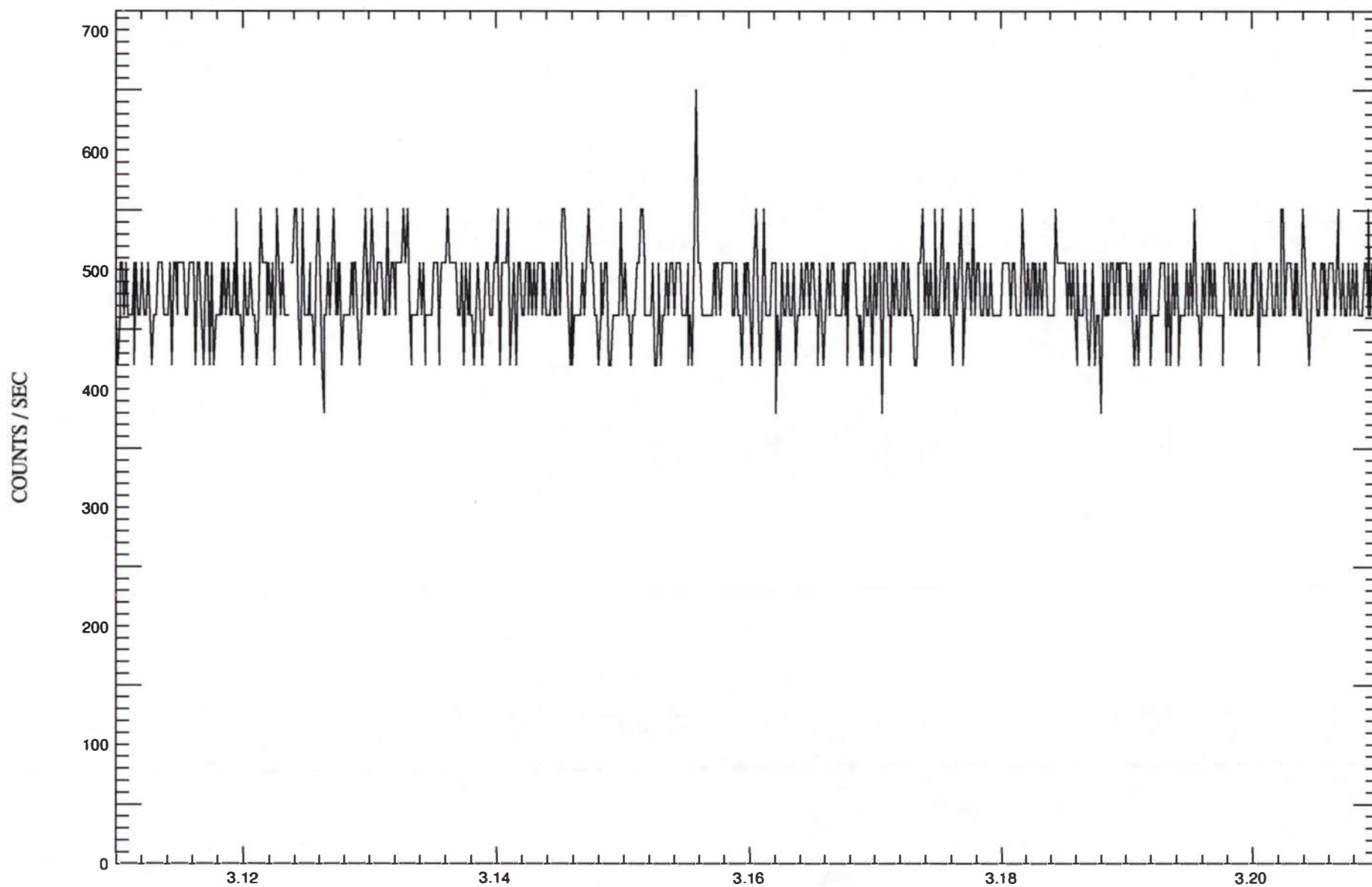


UNIV SAL TIME

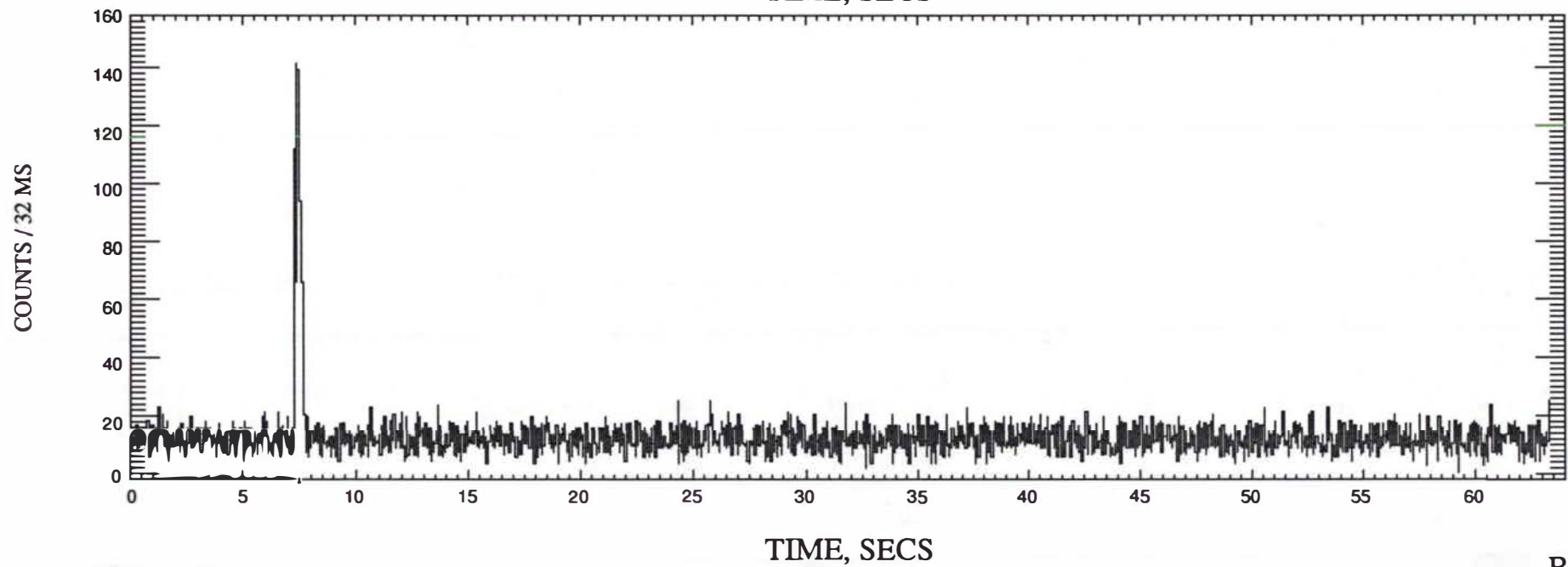
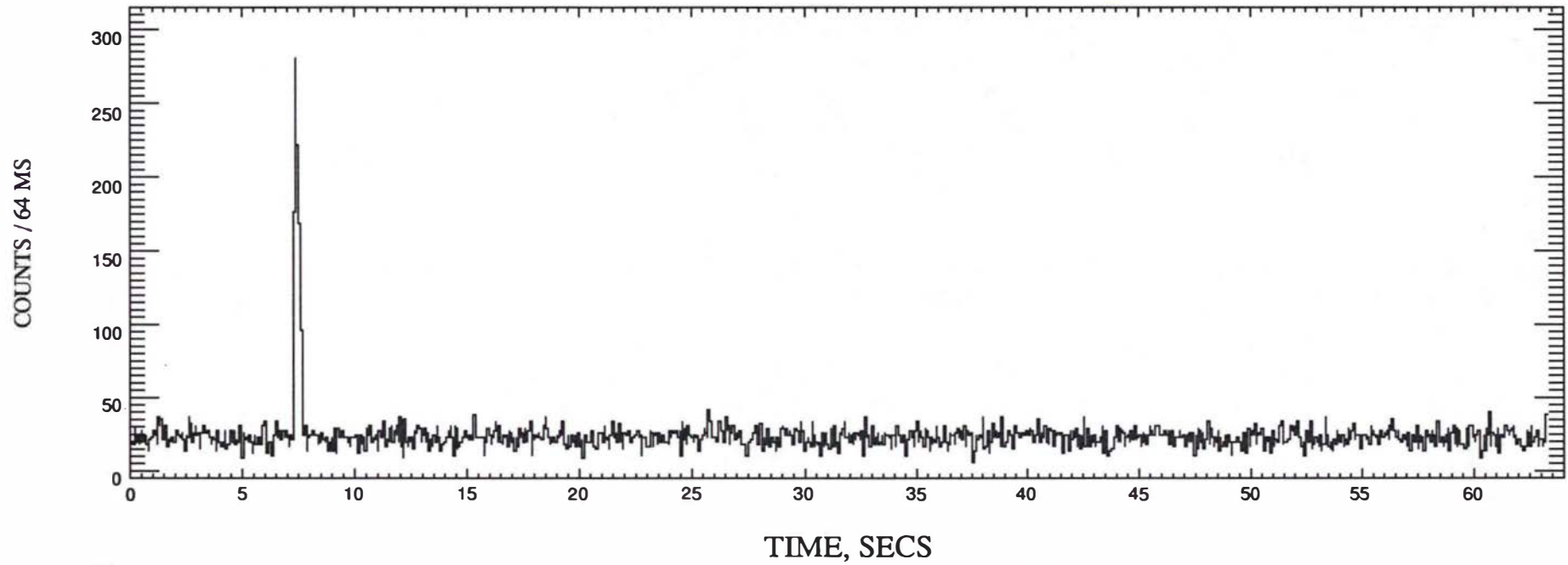
Burst Counter 14 at UT= 3.155979499817 h=11361.526 s 03:09:21.526



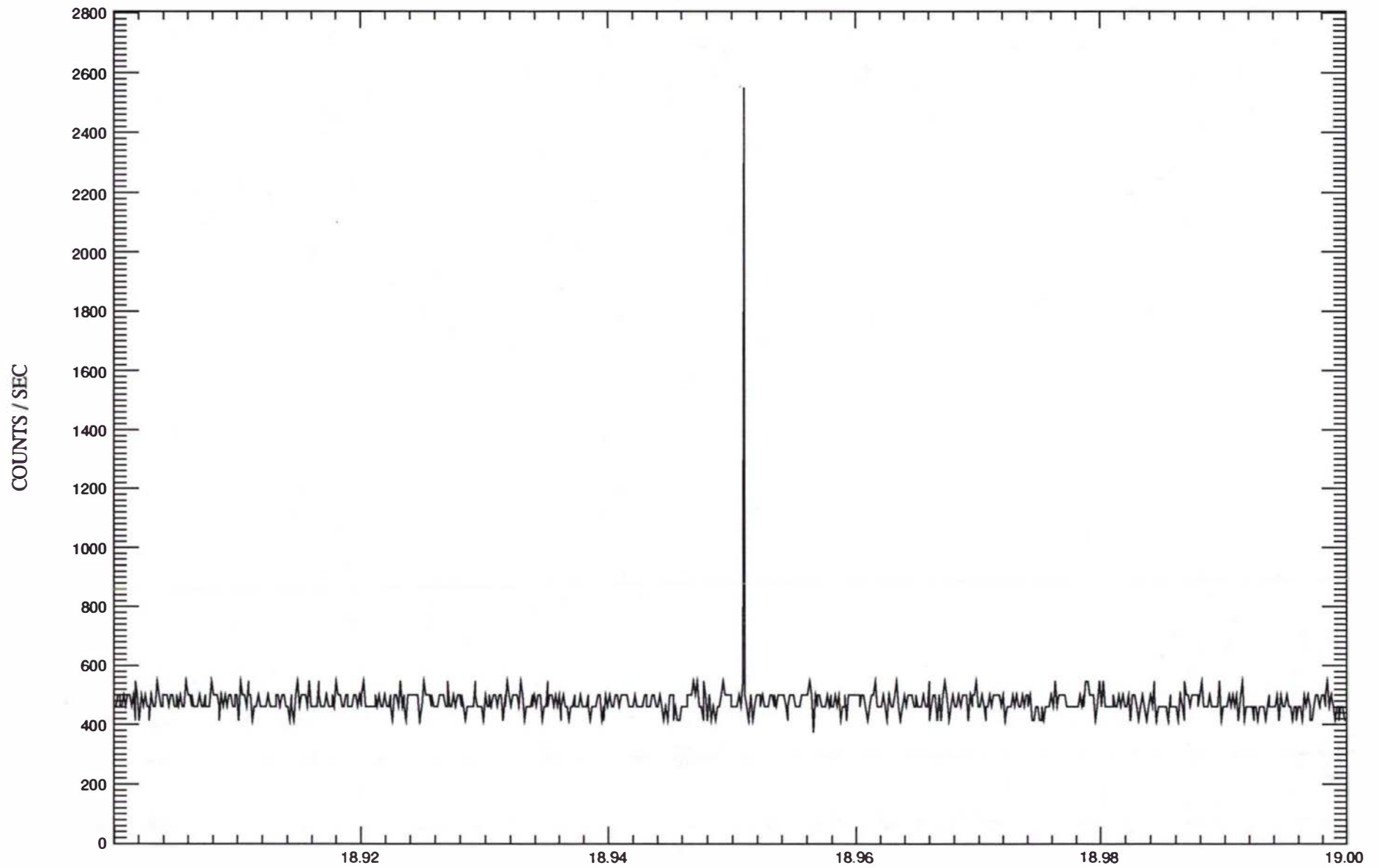
CALIBRATION DATA INCLUDED



Burst Counter 15 at UT=18.951056094699 h=68223.802 s 18:57:03.802



CALIBRATION DATA INCLUDED



RECEIVED

1 - 2 4

RECEIVED

RECEIVED

RECEIVED

RECEIVED

RECEIVED

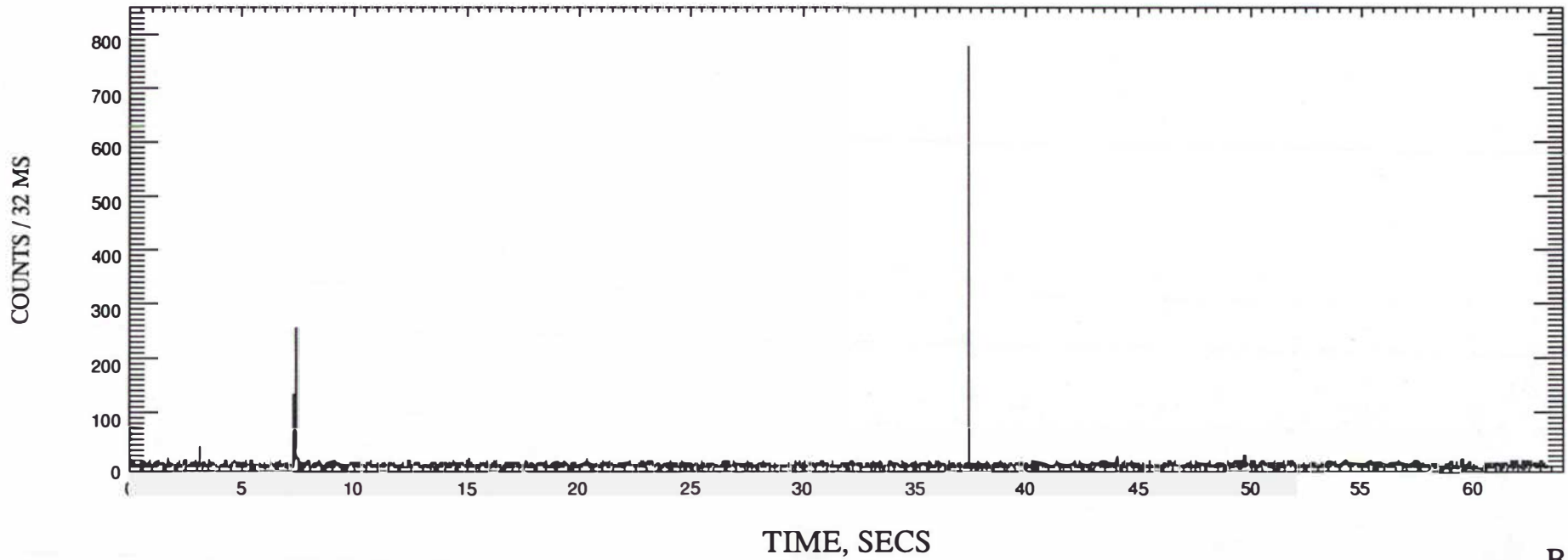
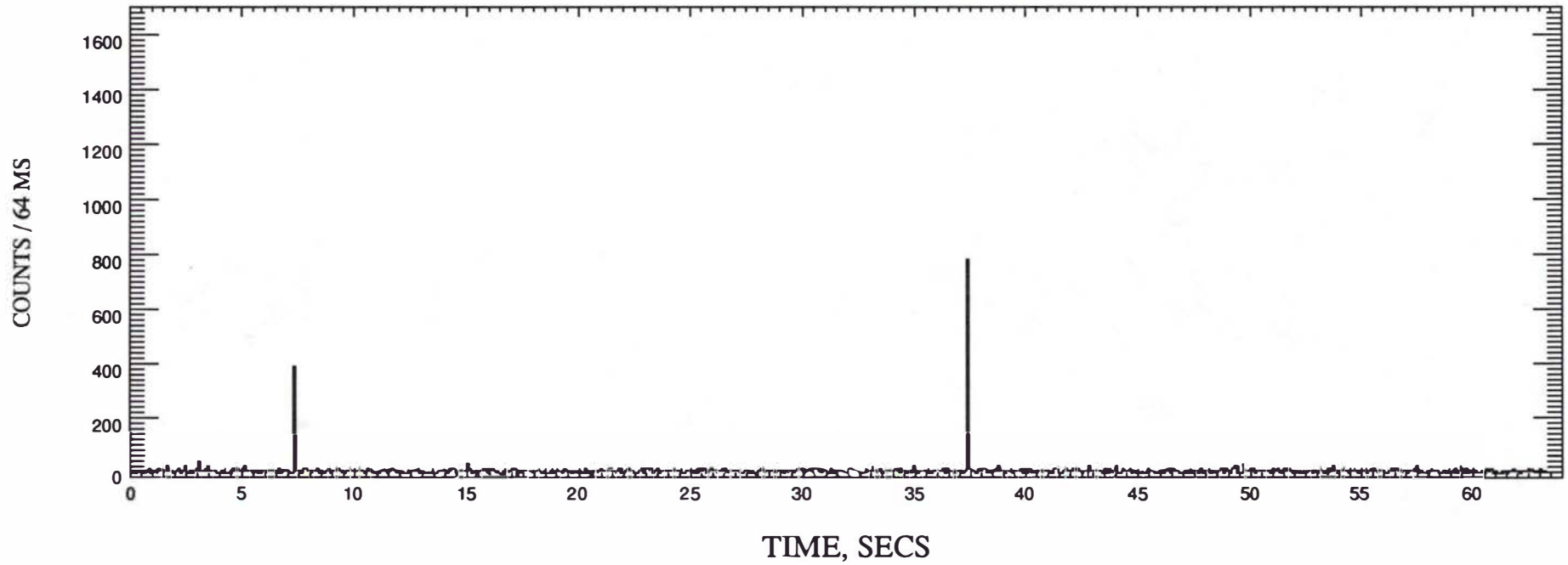
RECEIVED

RECEIVED

RECEIVED

RECEIVED

Burst Counter 0 at UT=20.232531924778 h=72837.115 s 20:13:57.115



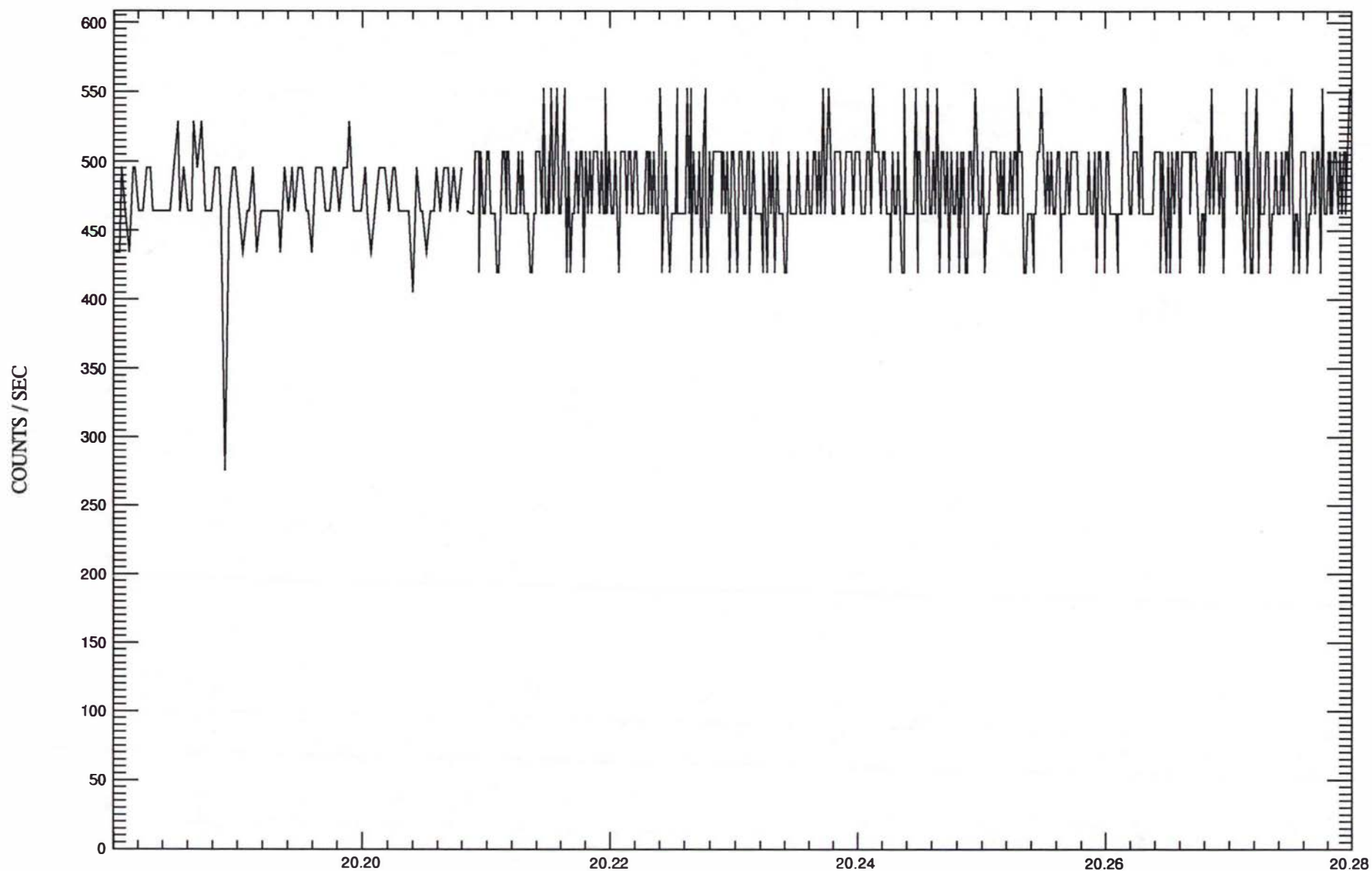
THE UNIVERSITY OF CHICAGO LIBRARY

1000 S. EAST ASIAN LIBRARY

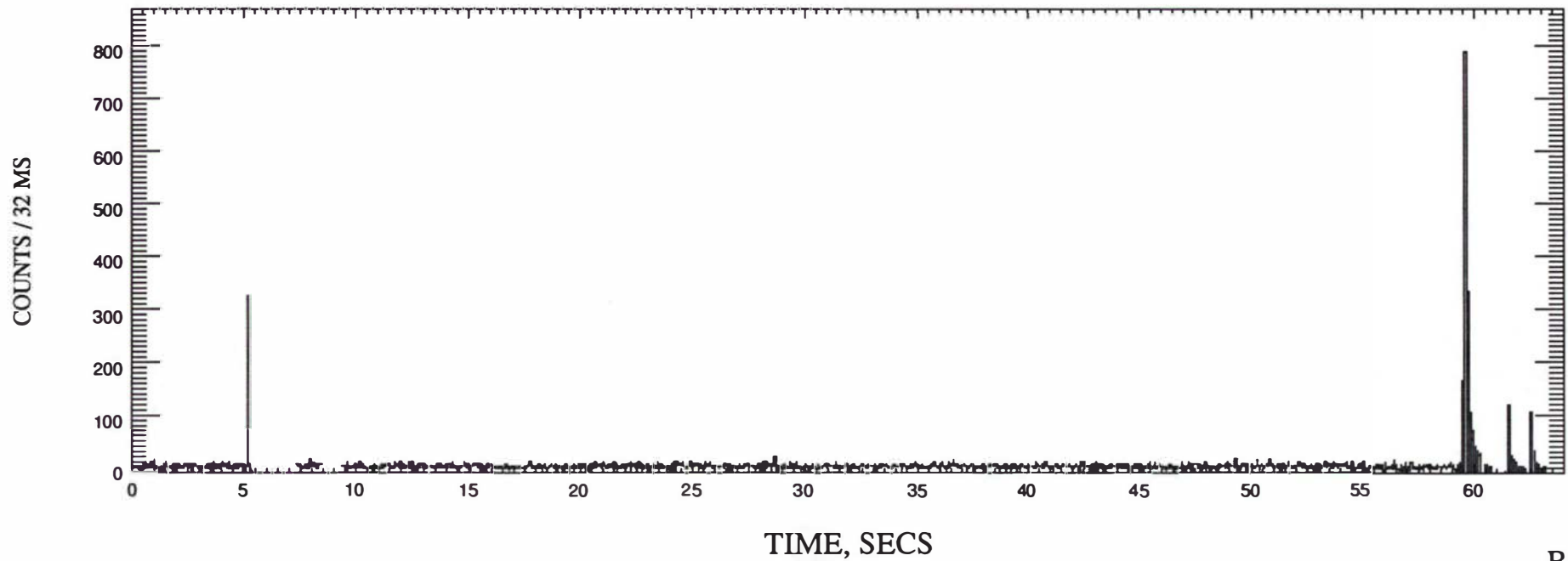
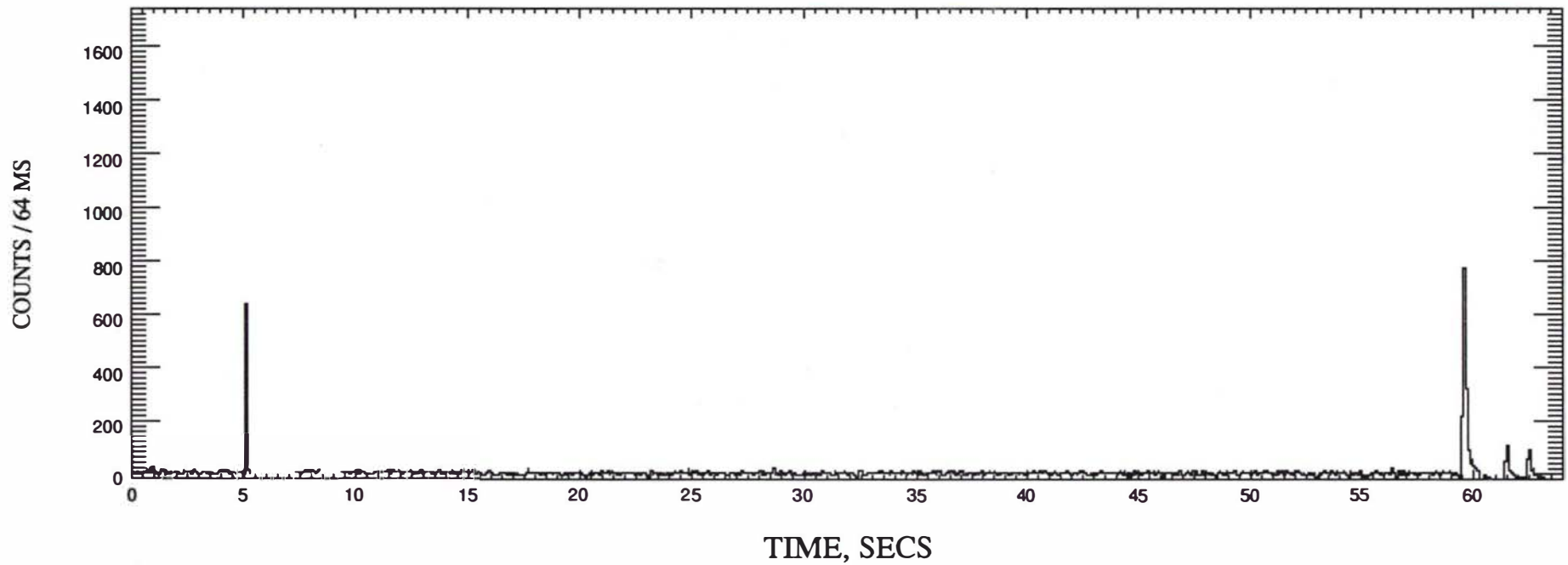
CHICAGO, ILLINOIS 60637

1000 S. EAST ASIAN LIBRARY EDR 984.204 4001 1000 10 000 2000 1000 1000 303100

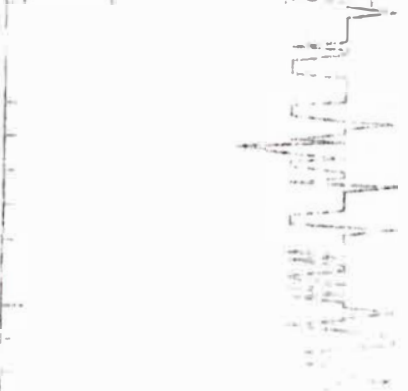
CALIBRATION DATA INCLUDED



Burst Counter 1 at UT=23.925187132094 h=86130.674 s 23:55:30.674



100 200 300 400 500 600 700 800 900 1000

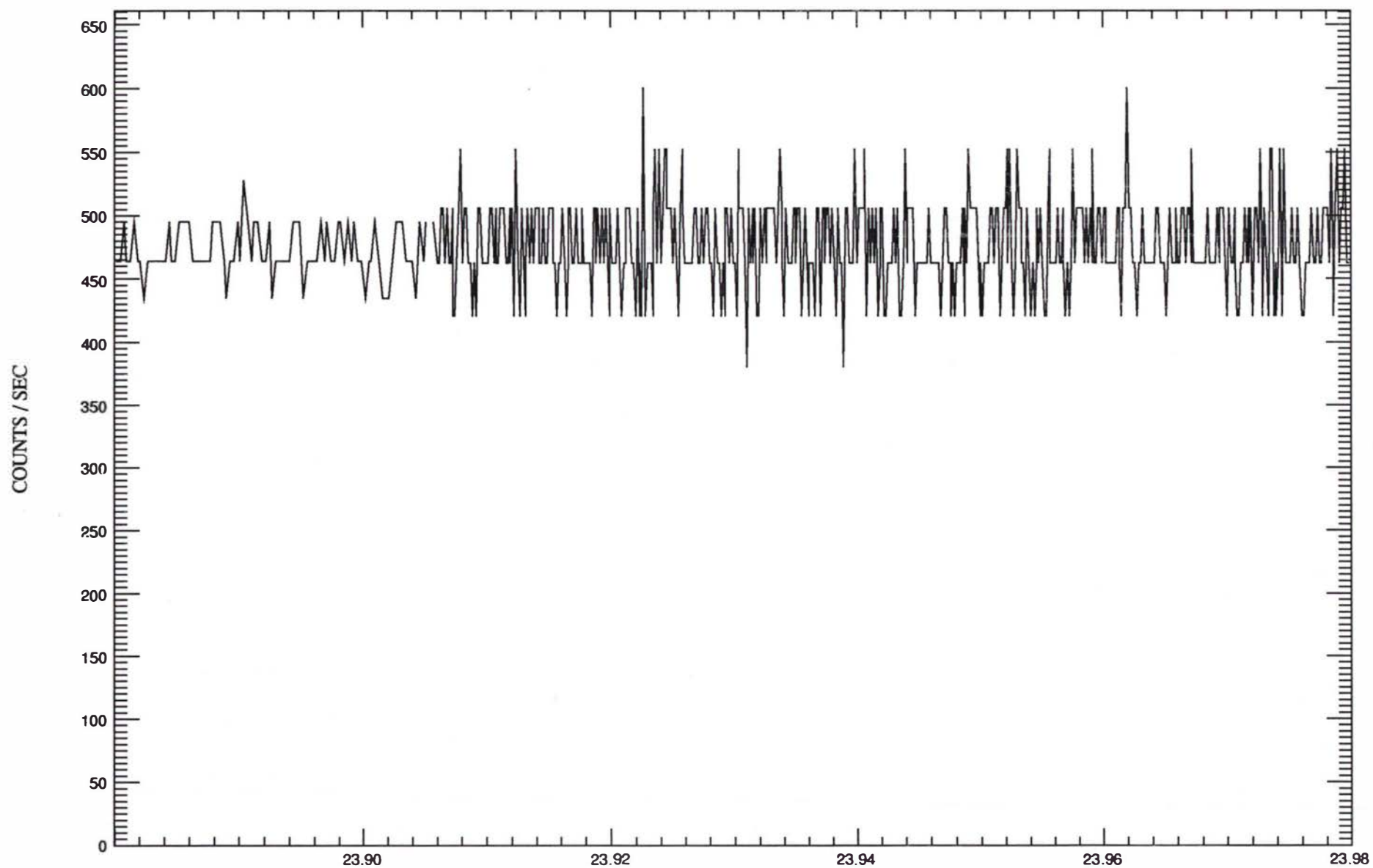


100-100000

100 200 300 400 500 600 700 800 900 1000

100-100000

CALIBRATION DATA INCLUDED



4

50 55

5

18 50 55

18 50 55

18 50 55

18 50 55

18 50 55

UNIT 5B COLLECTED 1962 AND 1964 TO 1965 OF 1966

3/3/66

