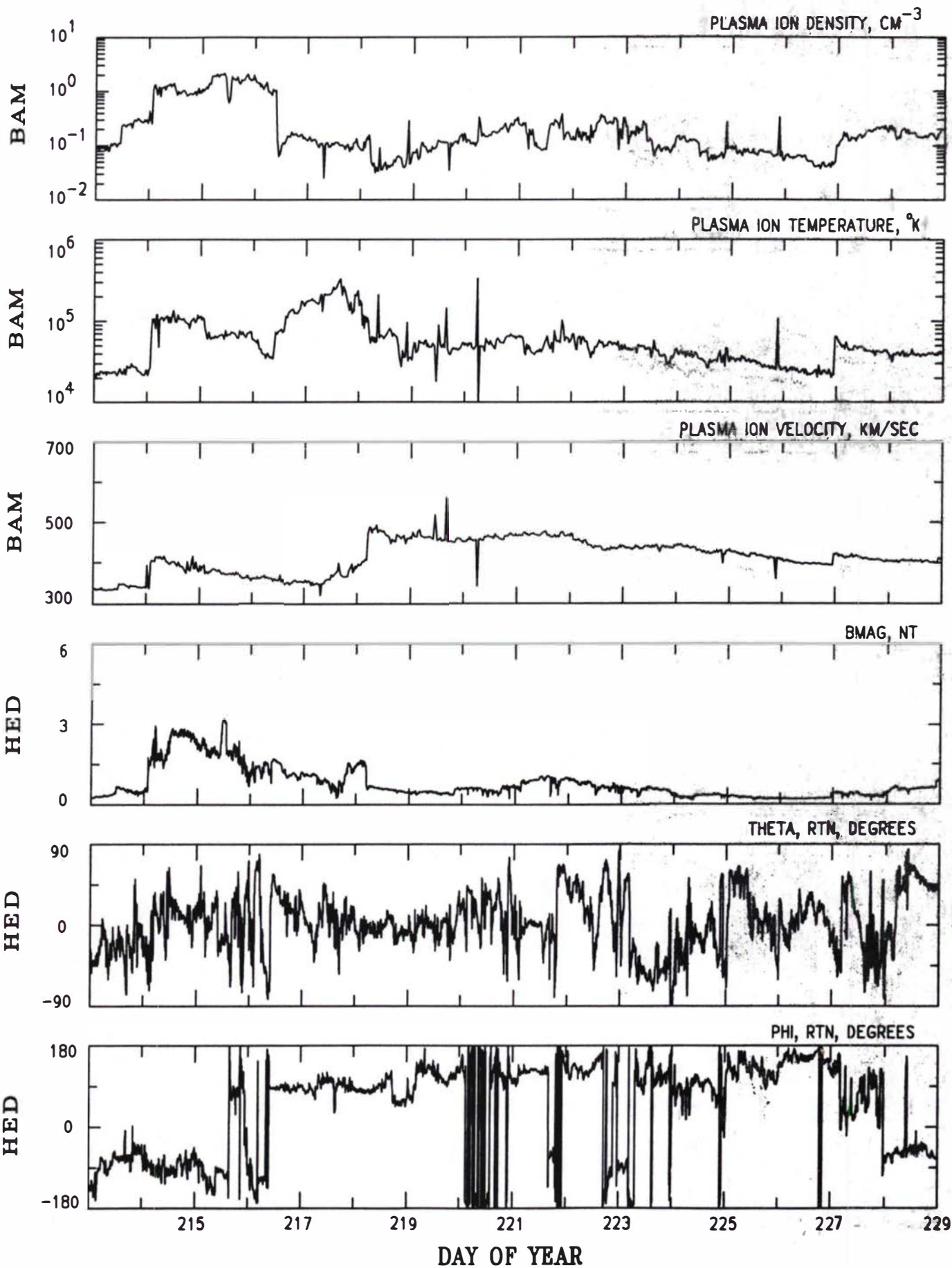


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 213 AUG 1 00:00:00.000 - 99 229 AUG 17 00:00:00.000



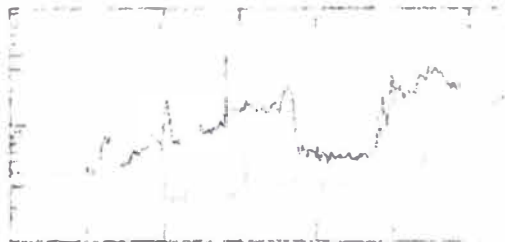
ADDITIONAL DATA

0.000000 0

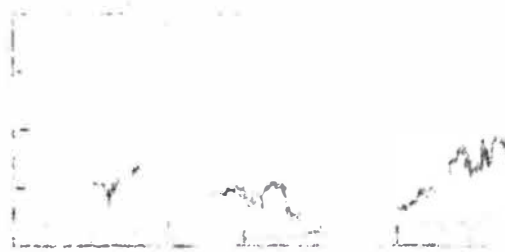
ALPHA TO BETA, CM



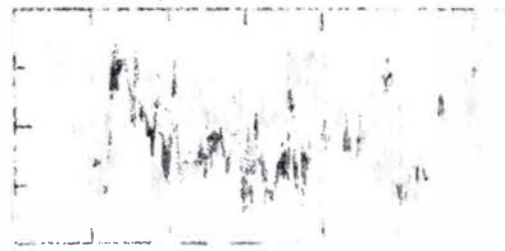
BETA TO GAMMA, CM



ALPHA ION VELOCITY, KM/SEC



THETA, RTN, DEGREES

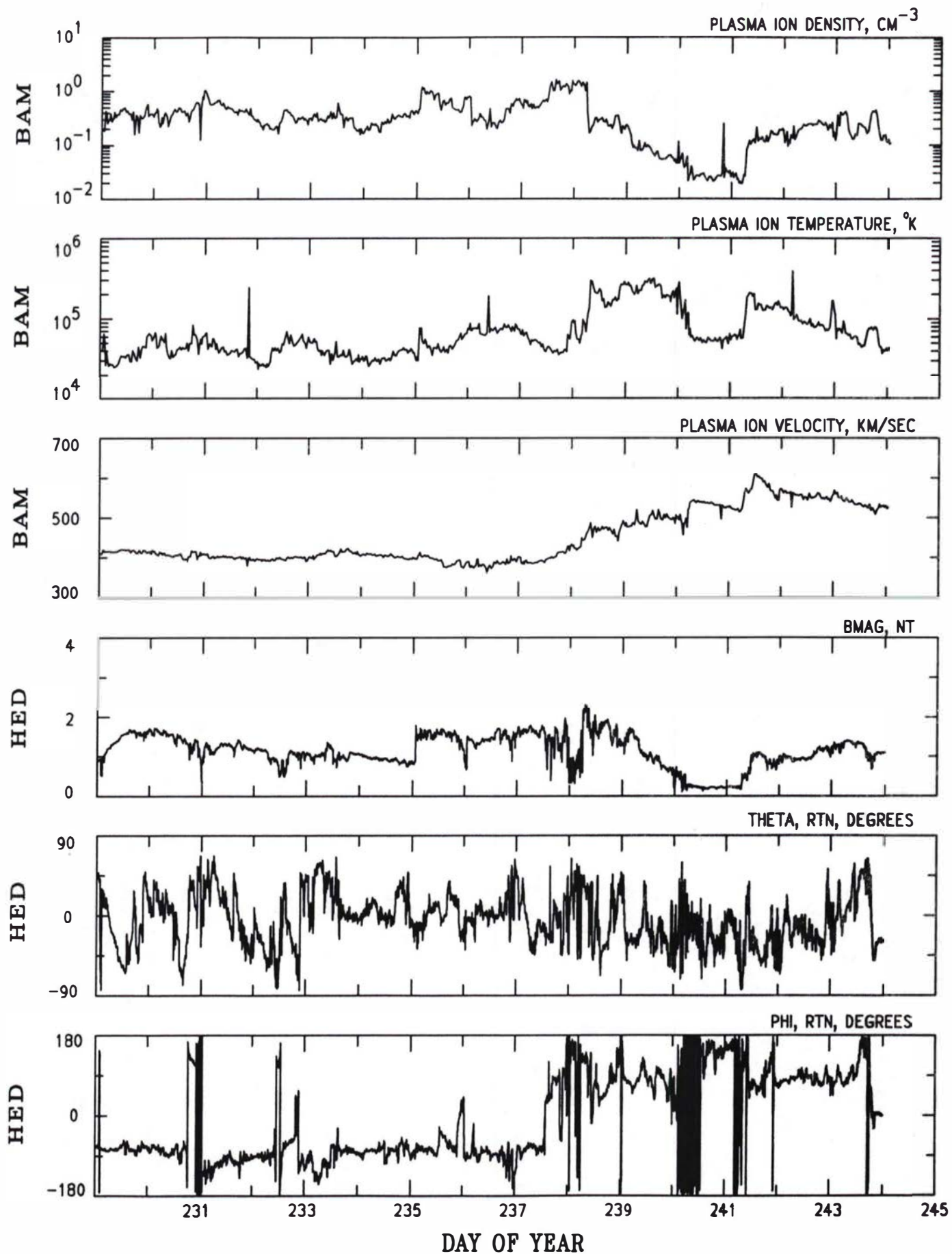


THETA, RTN, DEGREES



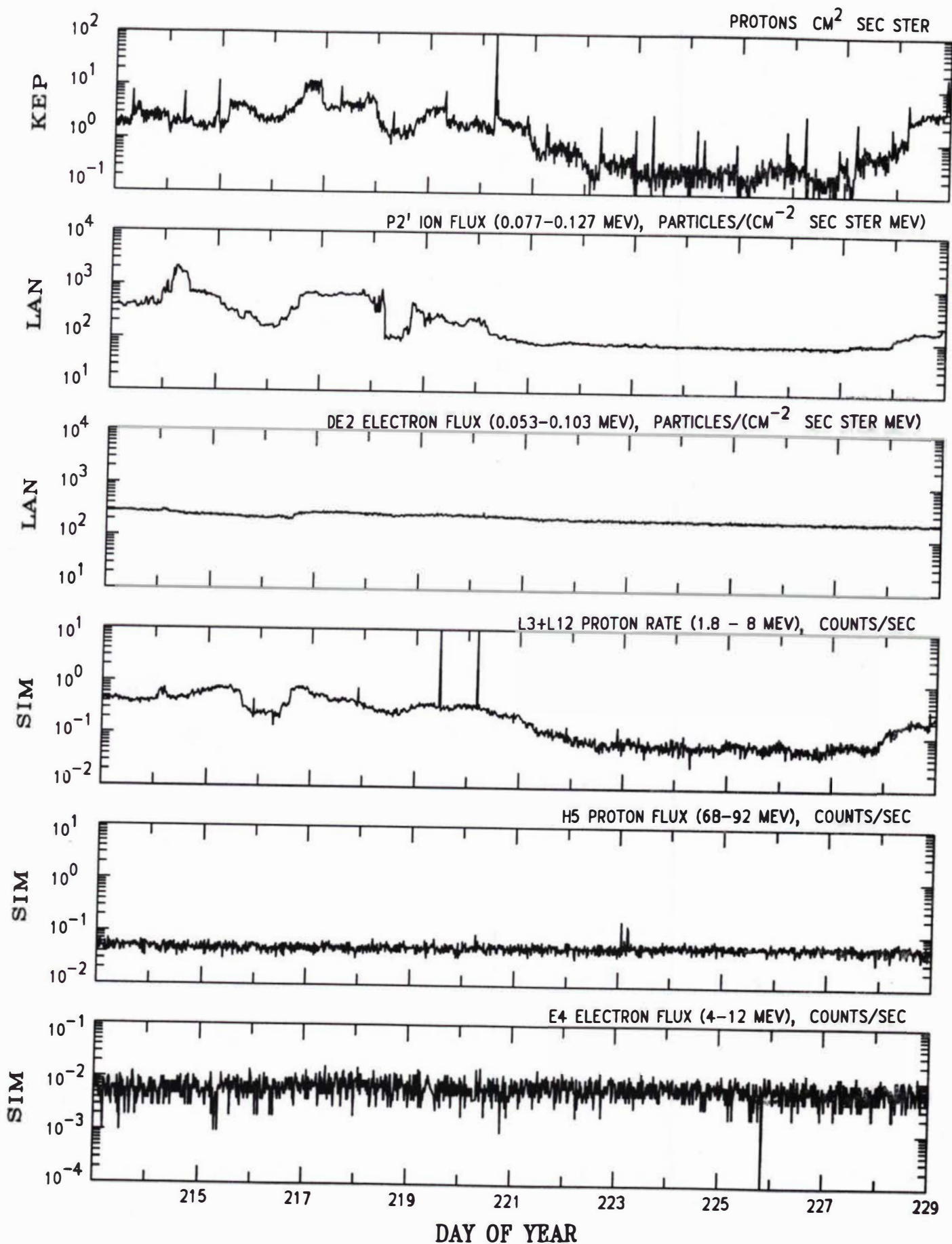
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 229 AUG 17 00:00:00.000 - 99 245 SEP 2 00:00:00.000



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

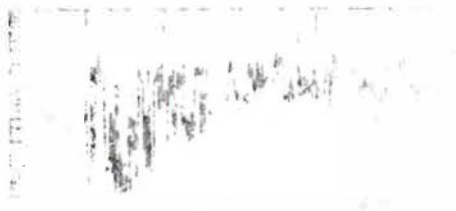
99 213 AUG 1 00:00:00.000 - 99 229 AUG 17 00:00:00.000



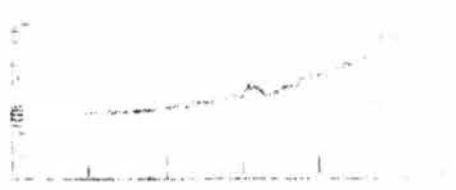
ANALYSIS OF DATA

1960

PERIOD OF 2.5 SEC



1960



PERIOD OF 2.5 SEC

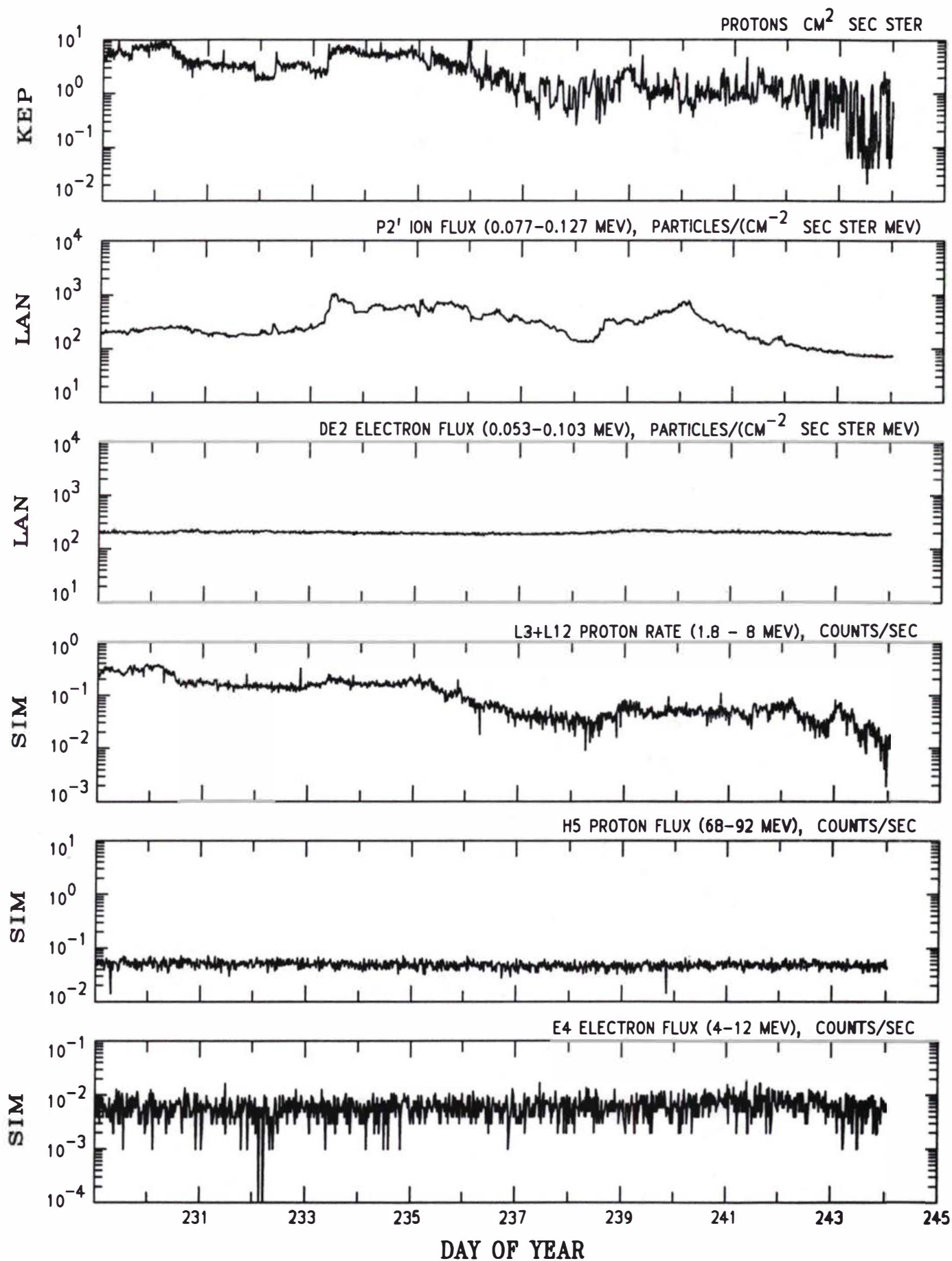


PERIOD OF 2.5 SEC

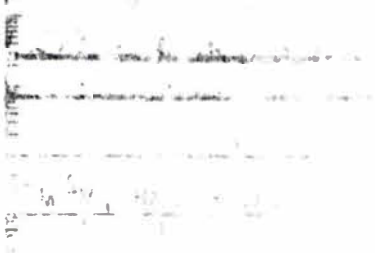
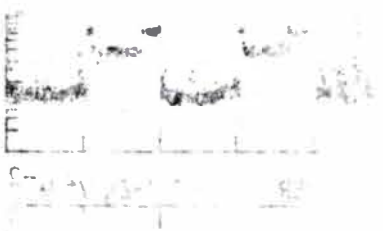


ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

99 229 AUG 17 00:00:00.000 - 99 245 SEP 2 00:00:00.000

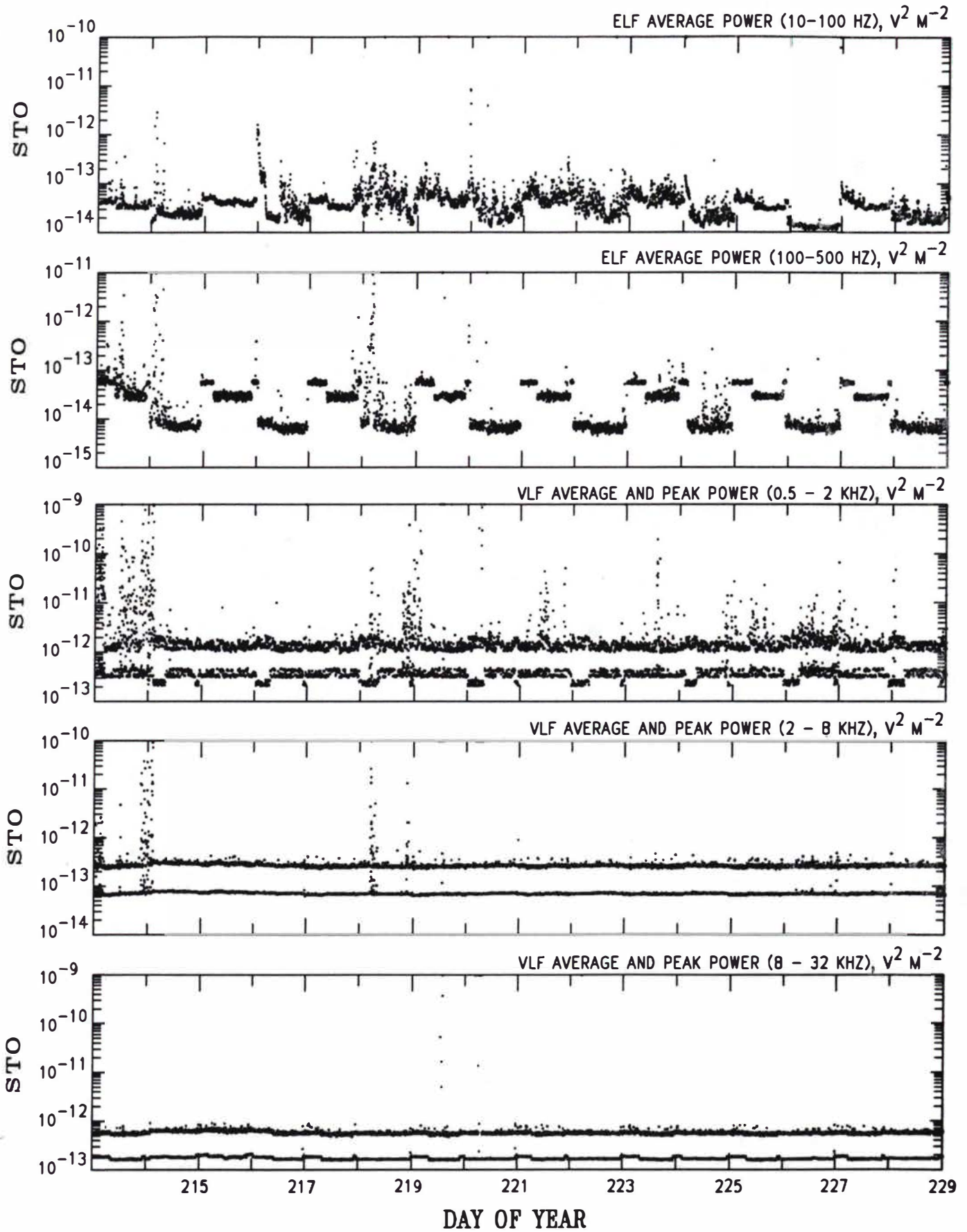


POWER 100



ULYSSES CDR - PLASMA WAVE

99 213 AUG 1 00:00:00.000 - 99 229 AUG 17 00:00:00.000



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, 26

with the same α and β as in (10) and (11).

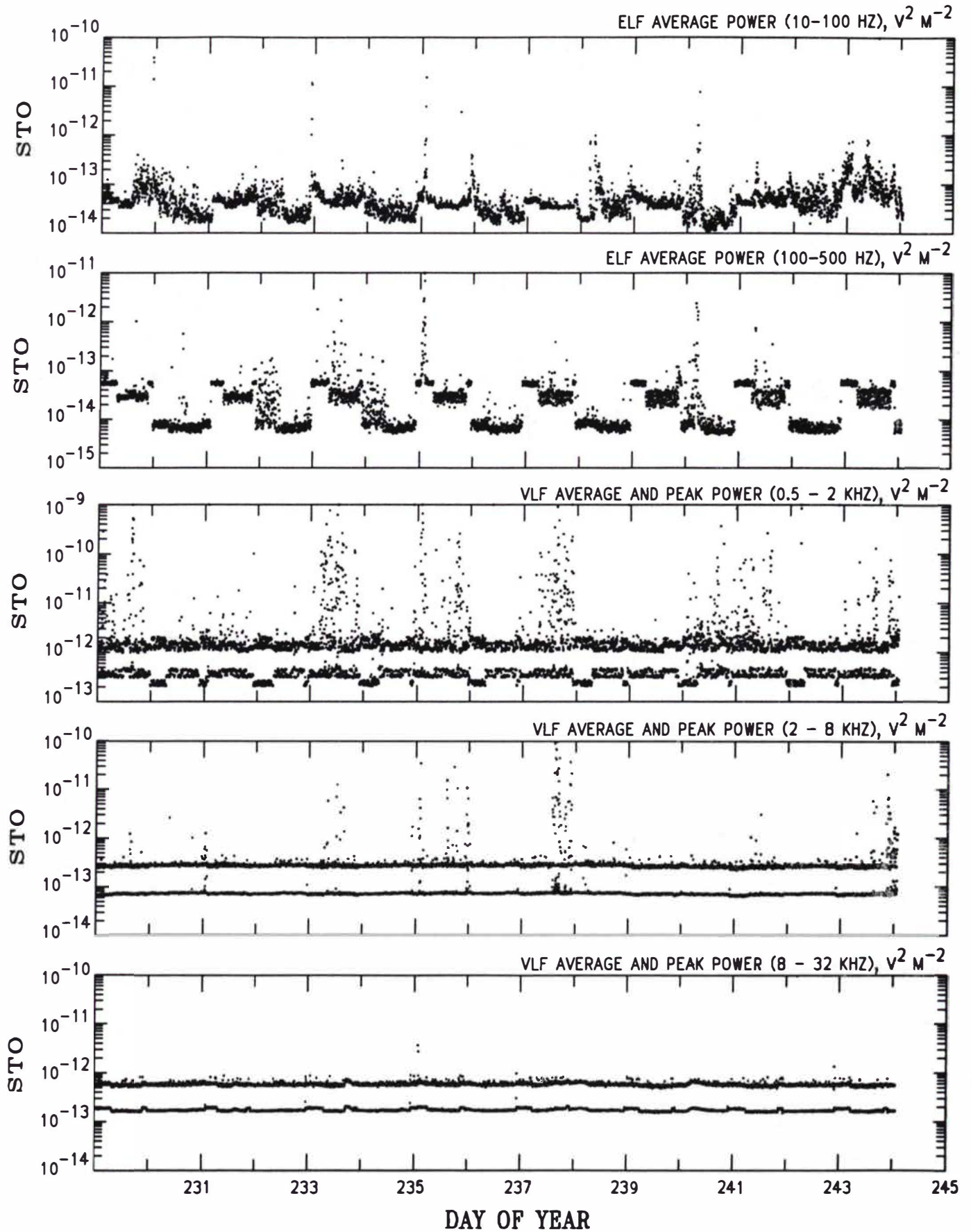
Appendix 5

1990

1. The first group of students (Group 1) was assigned to read the text and identify the main idea of the passage. They were then asked to write a short paragraph summarizing the text in their own words.

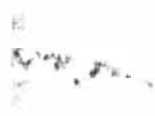
ULYSSES CDR - PLASMA WAVE

99 229 AUG 17 00:00:00.000 - 99 245 SEP 2 00:00:00.000



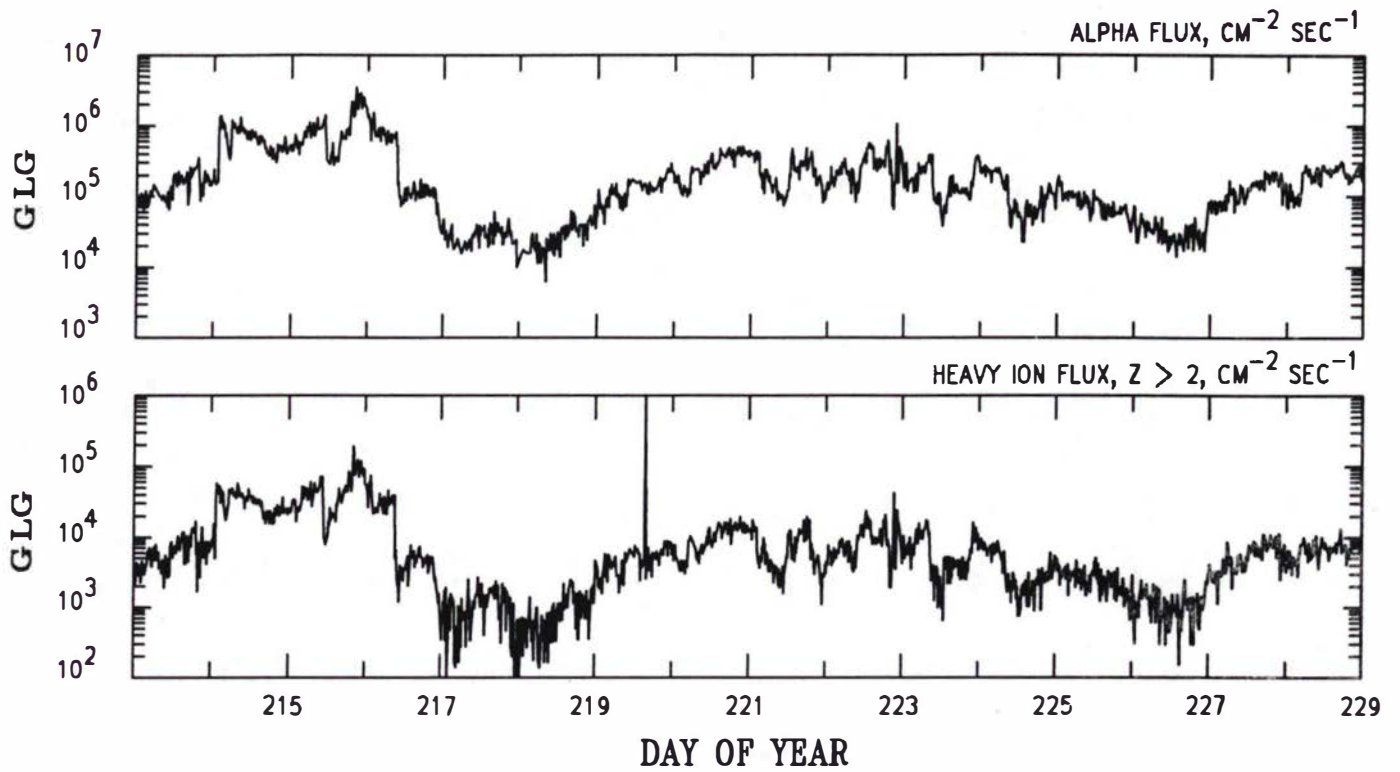
Page 10

10/10/10



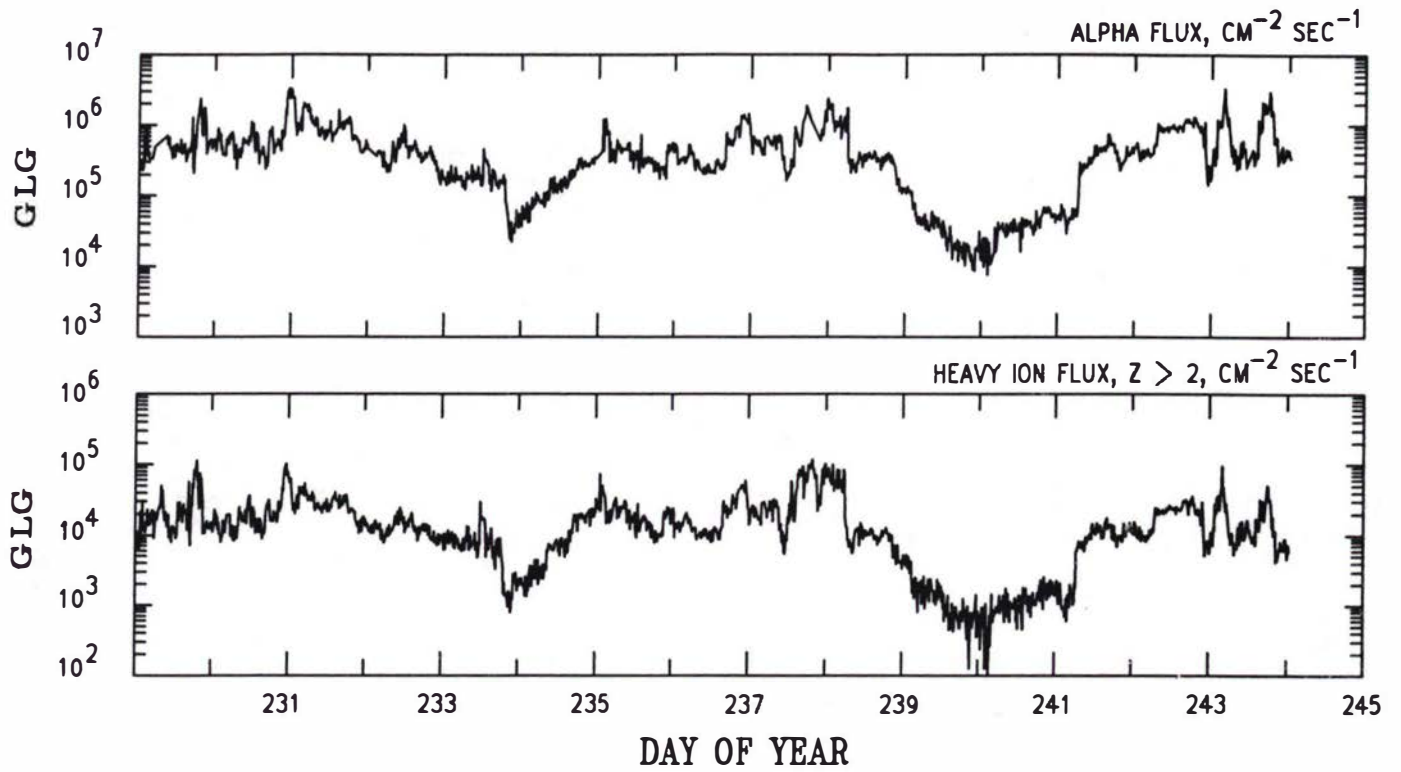
ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 213 AUG 1 00:00:00.000 - 99 229 AUG 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 229 AUG 17 00:00:00.000 - 99 245 SEP 2 00:00:00.000



From HENZE@fender.msfc.nasa.gov Tue Aug 3 15:35 PDT 1999
Date: Tue, 3 Aug 1999 17:38:02 -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, 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.: 7686

TIME: TJD=1391 ^{Aug 1} SECONDS=38294

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

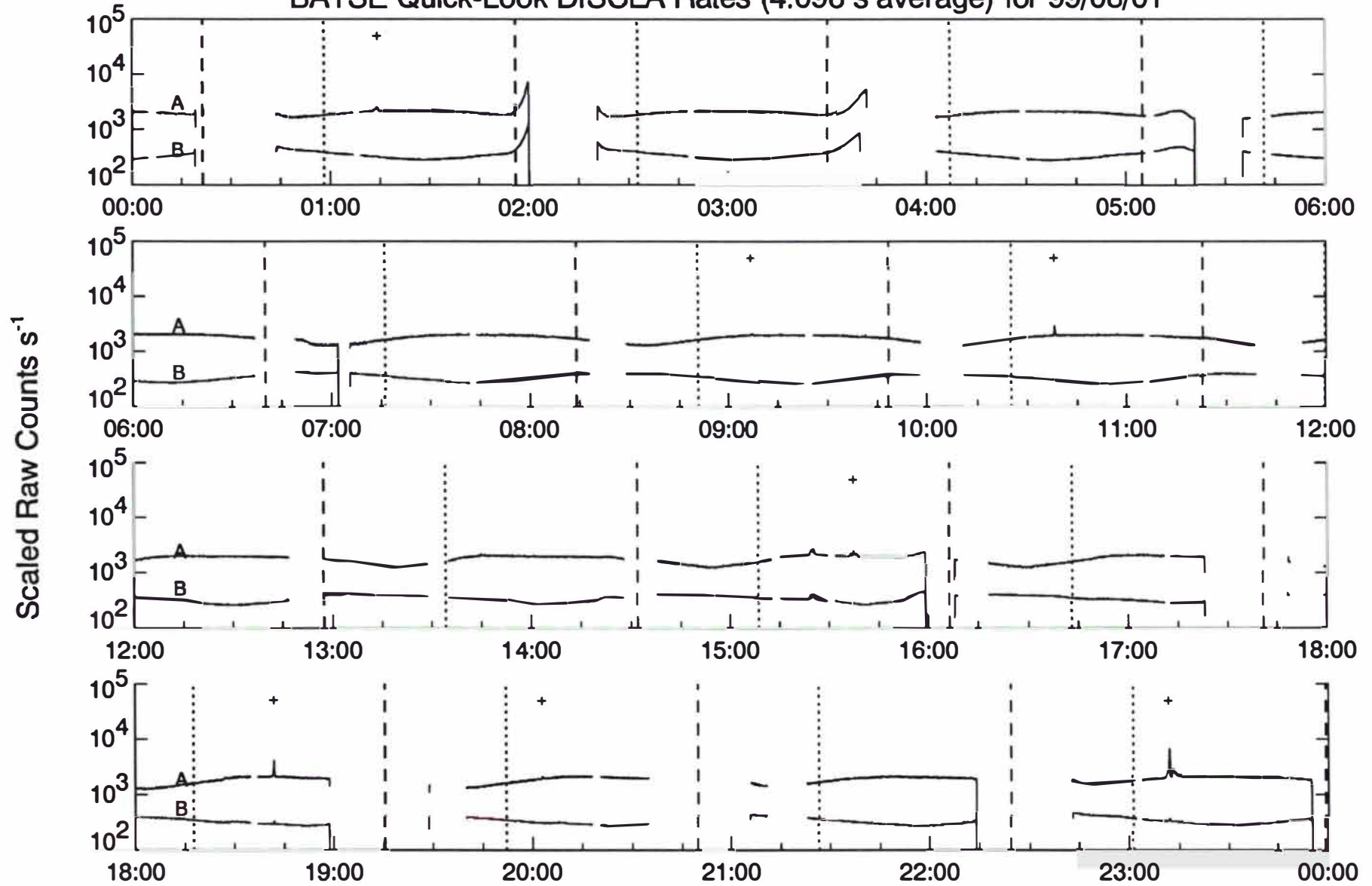
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=103.3 AZIMUTH=356.7 ERROR= 0.8 DEGREES

COMMENTS:

OPTICAL SF SOLAR FLARE, NO GOES. SINGLE PULSE WITH SUBSTRUCTURE, DUR.
APPROX. 45 S, STARTS AT APPROX. T-16 S. WEAKLY VISIBLE ABOVE 100 KEV.

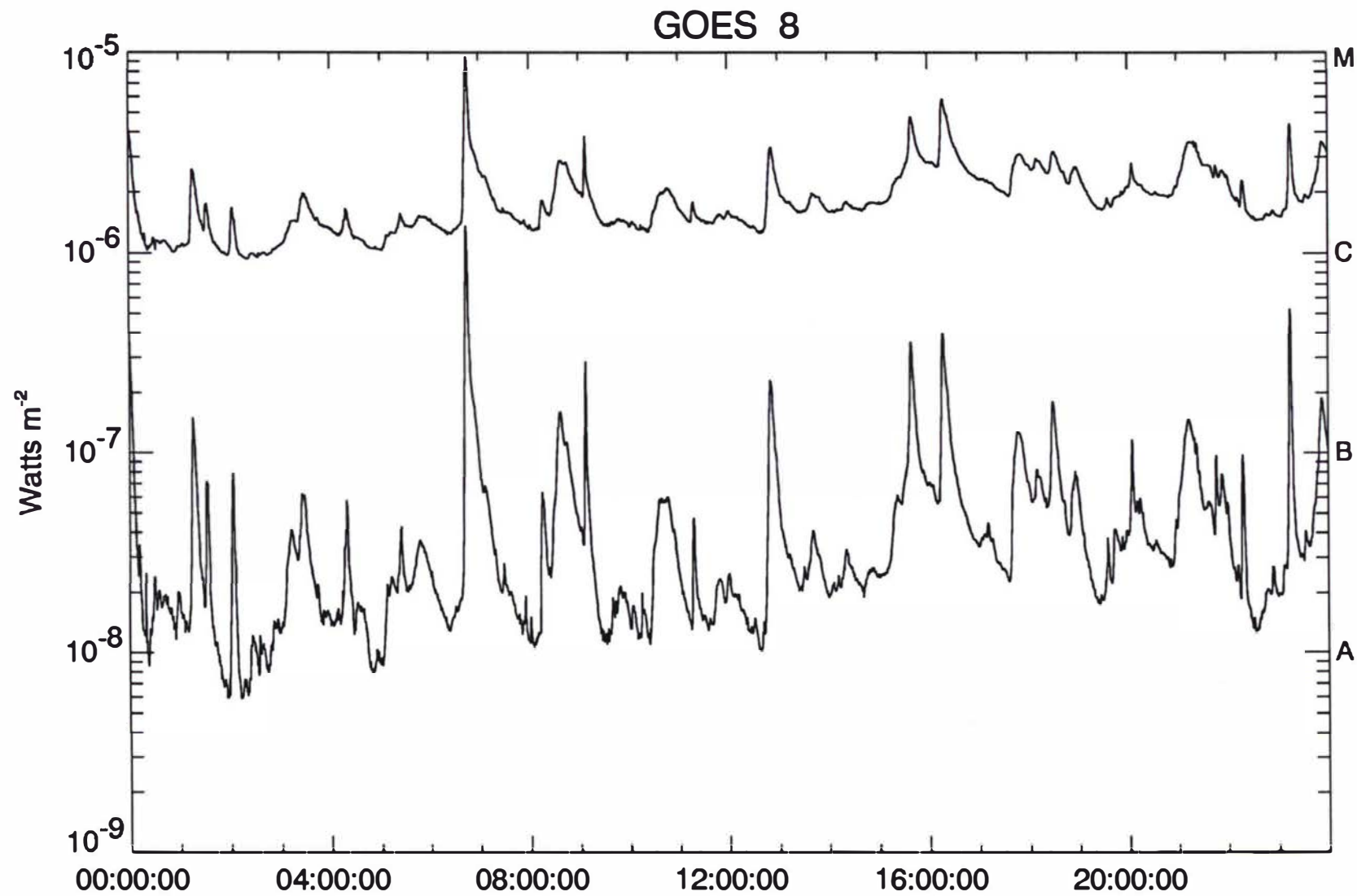
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/01



Current Time: 99/08/05, 1011 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: 99/08/01, 0000:00

Plot created: 99/08/05, 1011

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

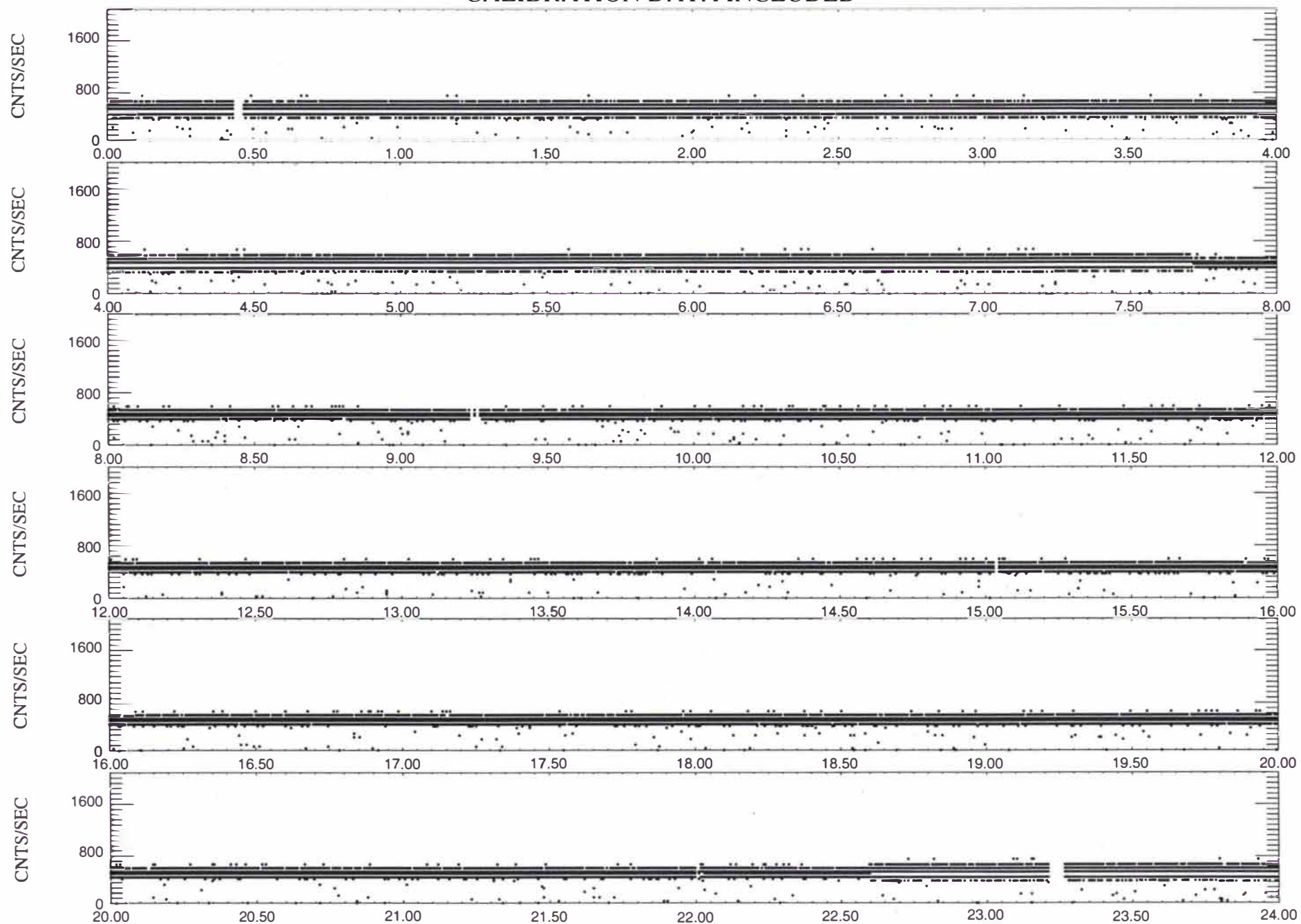
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

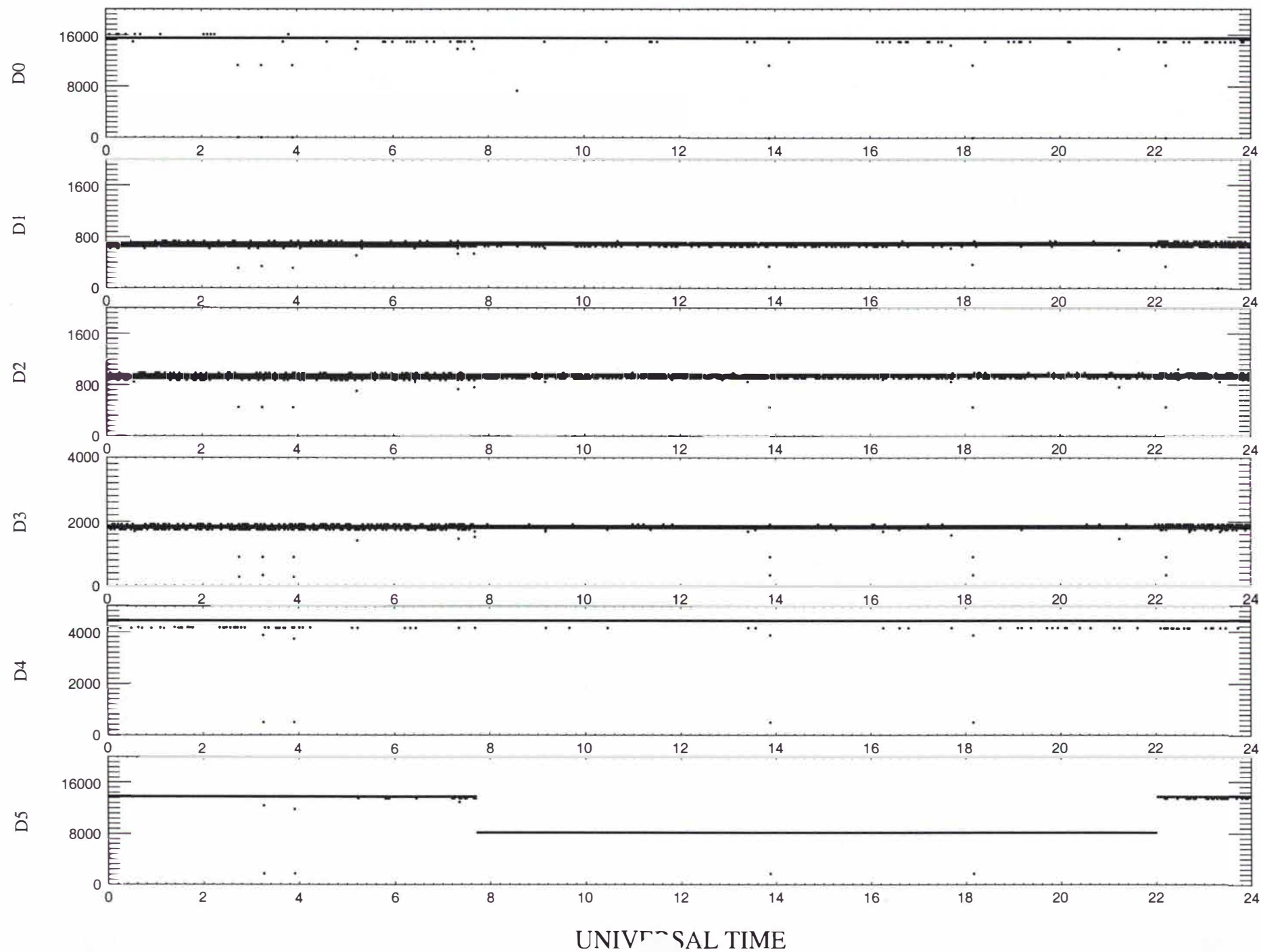
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



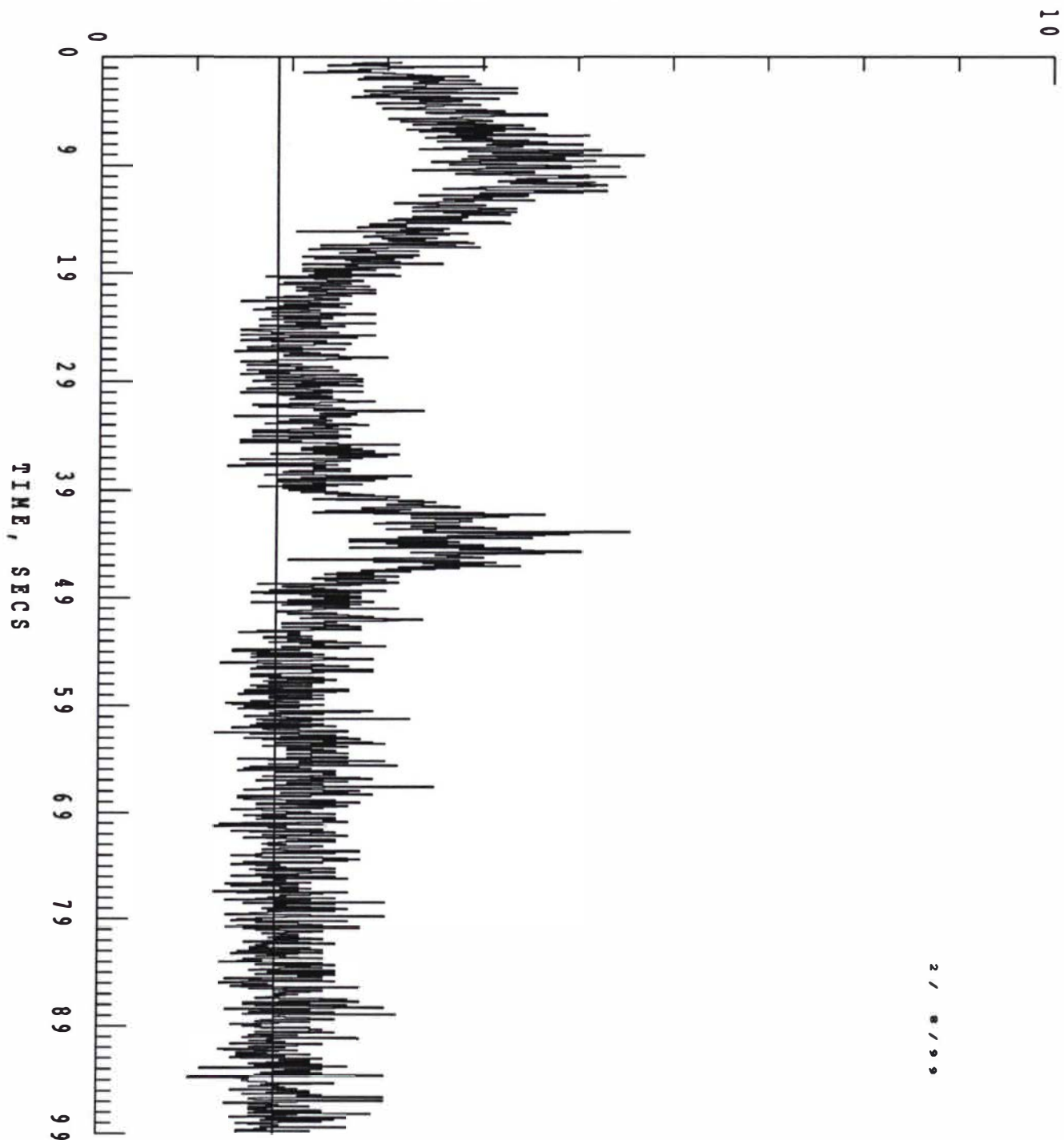
KONUS

02/08/99

1560.081

50 - 200 keV

COUNTS/0.064 S



2 / 8 / 9 9

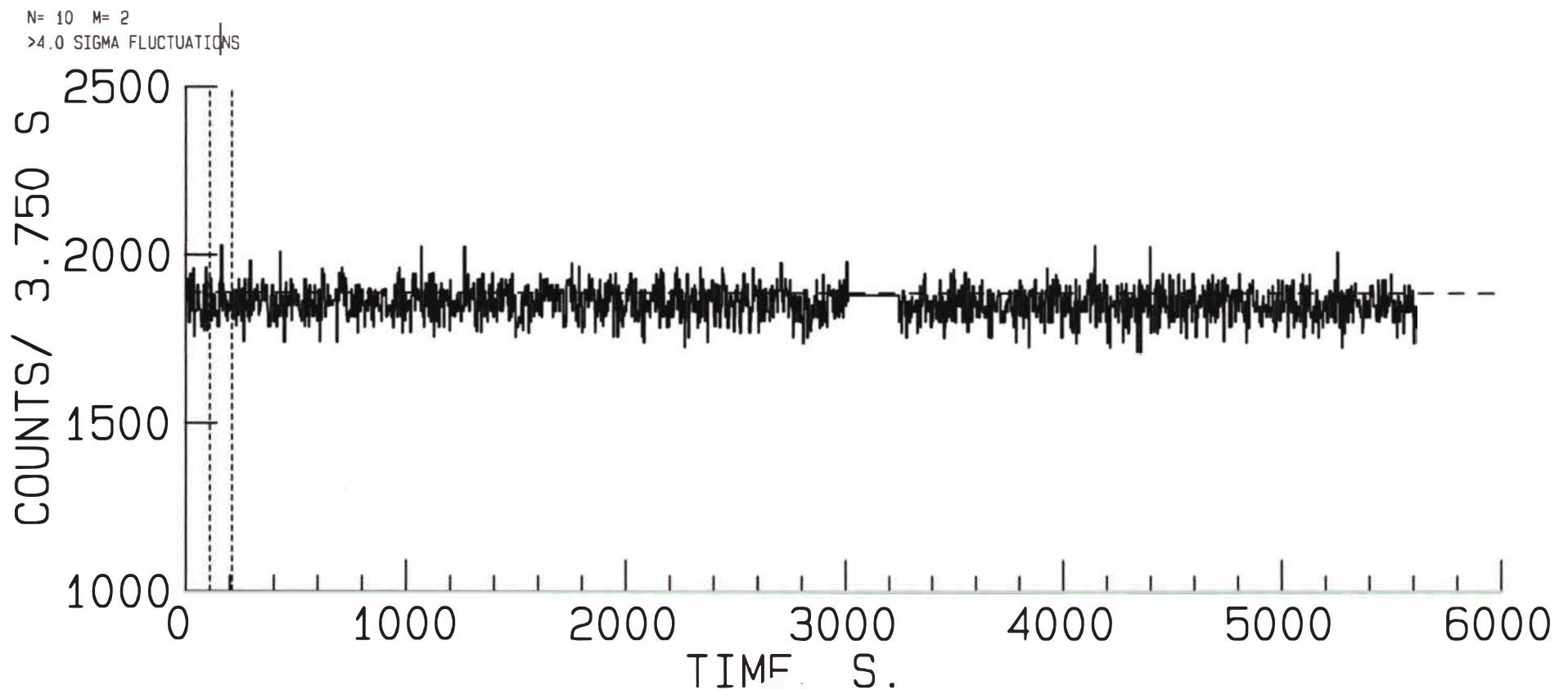
ULYSSES RT

3 / 8 / 99

1 / 8 / 99 85140.036 s

0.250 S INTERVALS REGROUPED BY 15

22- 151 keV



From RICHARDSON@fender.msfc.nasa.gov Wed Aug 4 18:28 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Wed, 4 Aug 1999 20:27:31 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7688

BATSEARCH PROGRAM

BATSE BURST # 7688
EVENT OF 1999 AUG 2 DAY OF YEAR=214
EVENT CROSSING TIME AT BATSE : 3883. S. OR 01:04:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 35.000 41.000
BATSE PEAK COUNTING RATE: 15500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 8/ 99 IS:
RA= 150.579 DEC= -9.706 DIST= 5.525 AU
BATSE-ULYSSES DISTANCE = 826570617. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 64.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1190.52 SECS.
CROSSING TIME AT ULYSSES IS 5074. S. OR 01:24:33 +/- 499.84 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 8/ 99 IS:
RA= 218.919 DEC= -16.897 DIST= 1.011 AU
MARS-BATSE DISTANCE = 151275216. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 24.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 459.75 SECS.
CROSSING TIME AT MARS IS 4343. S. OR 01:12:22 +/- 43.09 SECONDS
BATSE BURST TRIGGER

NO.: 7688

TIME: TJD=1392 SECONDS=3883

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=159.9 AZIMUTH=107.7 ERROR=0.7 DEGREES

COMMENTS:

GRB. TWO PULSES WITH STRUCTURE. FIRST PULSE AT APPROX. T-150S WITH DUR. APPROX. = 60S. SECOND PULSE AT APPROX. T-30 WITH DUR. APPROX. = 70S. TOTAL DUR. APPROX. = 200S. VISIBLE ABOVE 300KEV. POSSIBLE SOLAR FLARE DURING EVENT.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7688	990802	11392	03883	15500	035	+41	200

From ajct@iaa.es Thu Sep 9 13:13 PDT 1999
Date: Thu, 09 Sep 1999 22:21:18 +0200
From: Alberto Castro Tirado <ajct@iaa.es>
X-Accept-Language: en
TIME-Version: 1.0
To: khurley@sunspot.ssl.berkeley.edu
Subject: IPN annuli
Content-Transfer-Encoding: 7bit

Dear Kevin,

We have managed to cover a significant fraction of a few LOCBURST GRB localizations with the 0.3-m BOOTES-1 telescope beginning 30-min after both GRB 990802 (BATSE trigger 7688) and GRB 990905 (trigger 7753) ., and beginning 4-hr after GRB 990903 (trigger 7752) and GRB 990902 (trigger 7750).

I wonder if you could provide me the IPN annuli for any of these bursts, specially for GRB 990905 for which a 4.5 deg x 4.6 deg region was imaged between 0.5 and 2.5-hr after the burst !

Of course, you are invited to be co-author of the corresponding paper if any OT will be detected.

Best regards,

Alberto
9 Sep 99

Date: Feb 22 2000

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 vwx@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

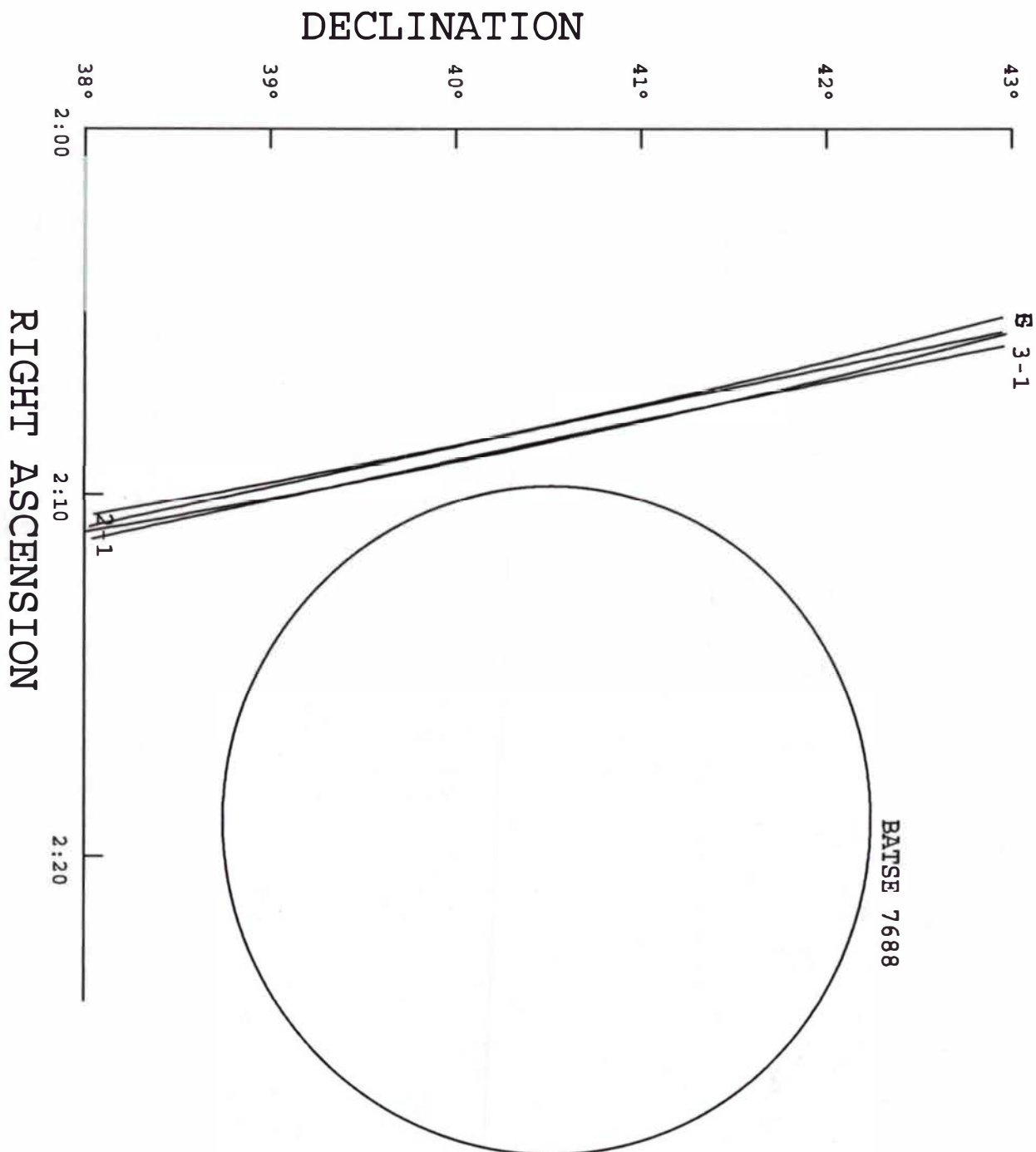
1 BATSE

2 ULYSSES

3 NEAR

EVENT OF AUG 2, 1999 1:04

22 / 2 / 0



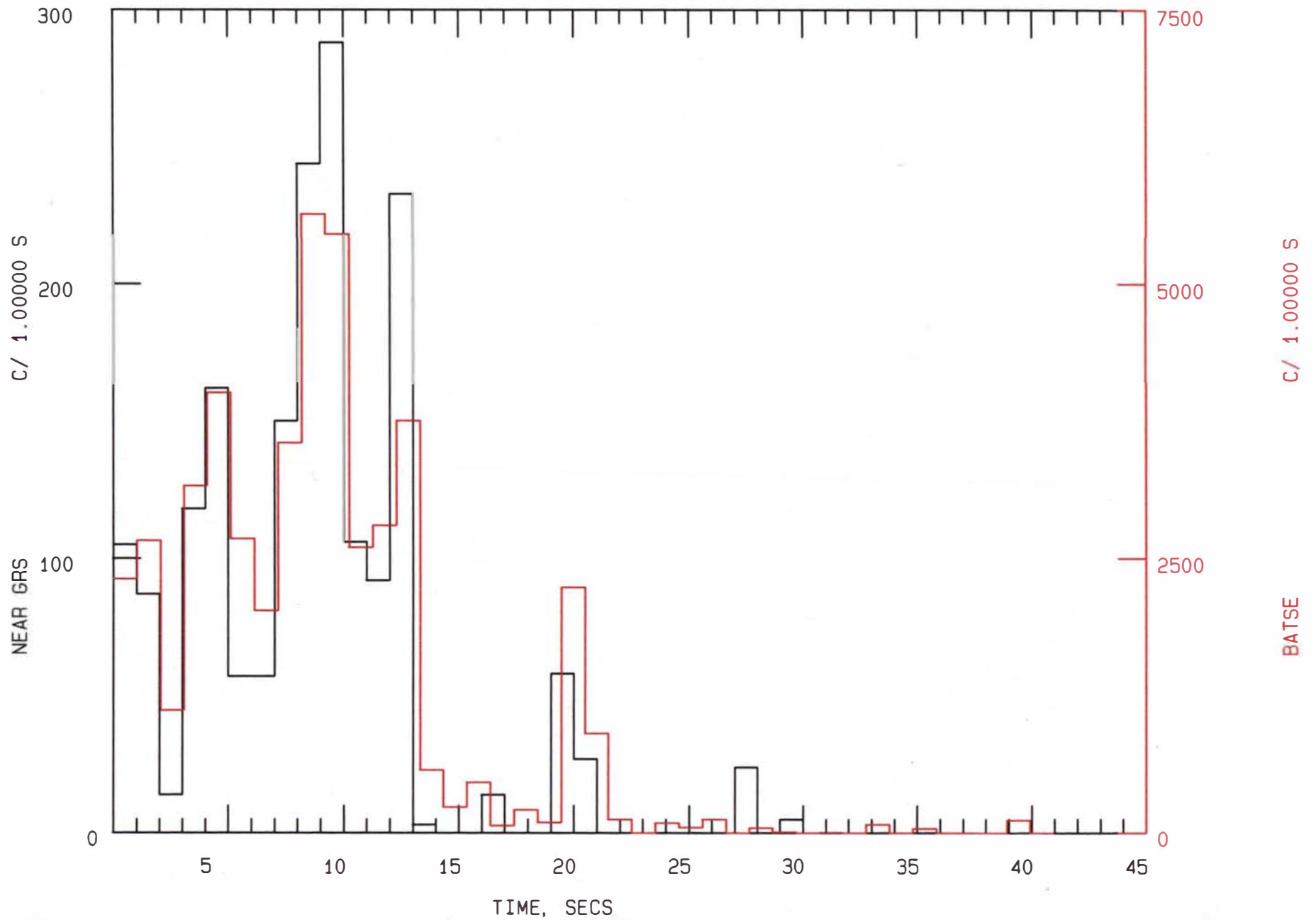
NEAR GRS -BATSE

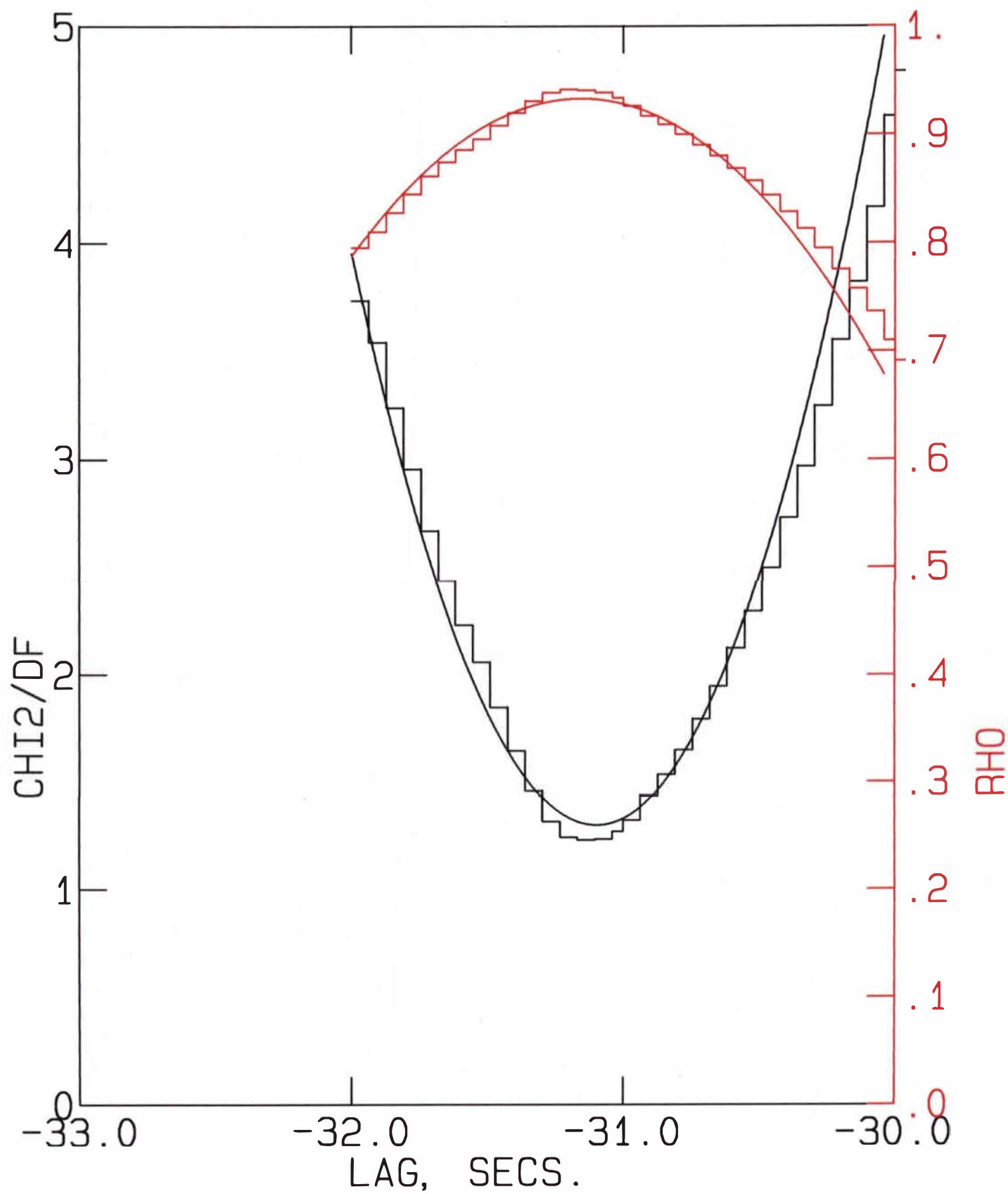
CORRELATION

02/08/99

3379.781

22/ 2/ 0





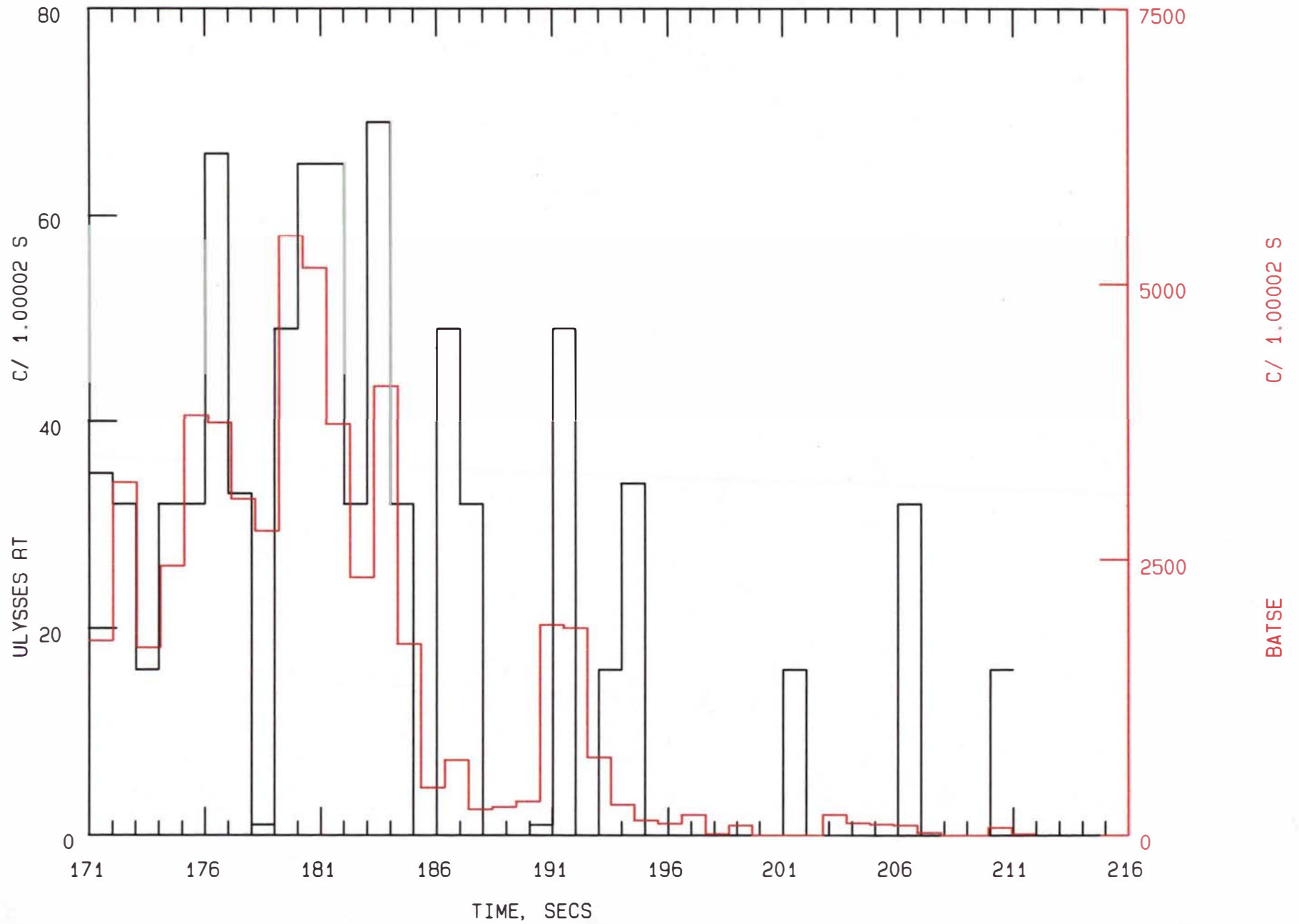
ULYSSES RT-BATSE

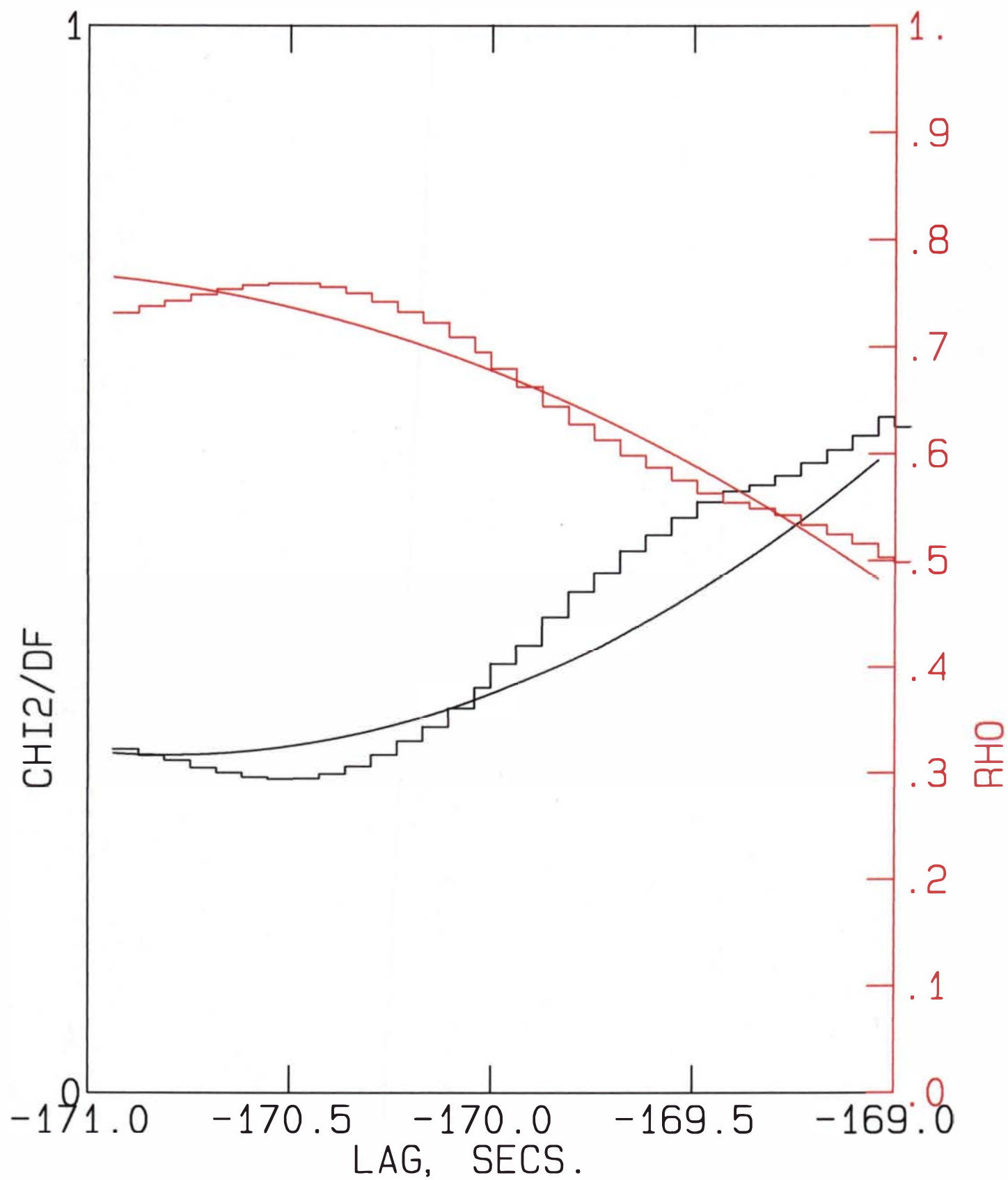
CORRELATION

2/ 8/99

5017.075

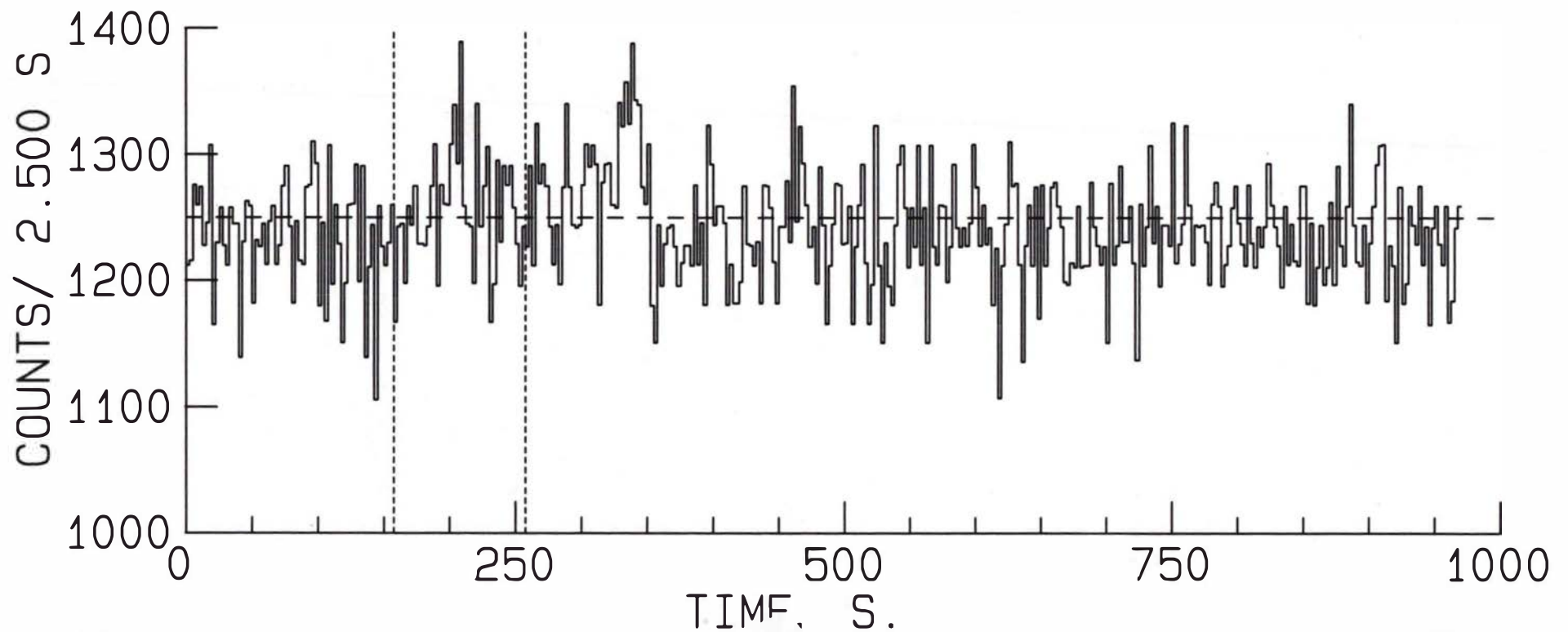
22/ 2/ 0



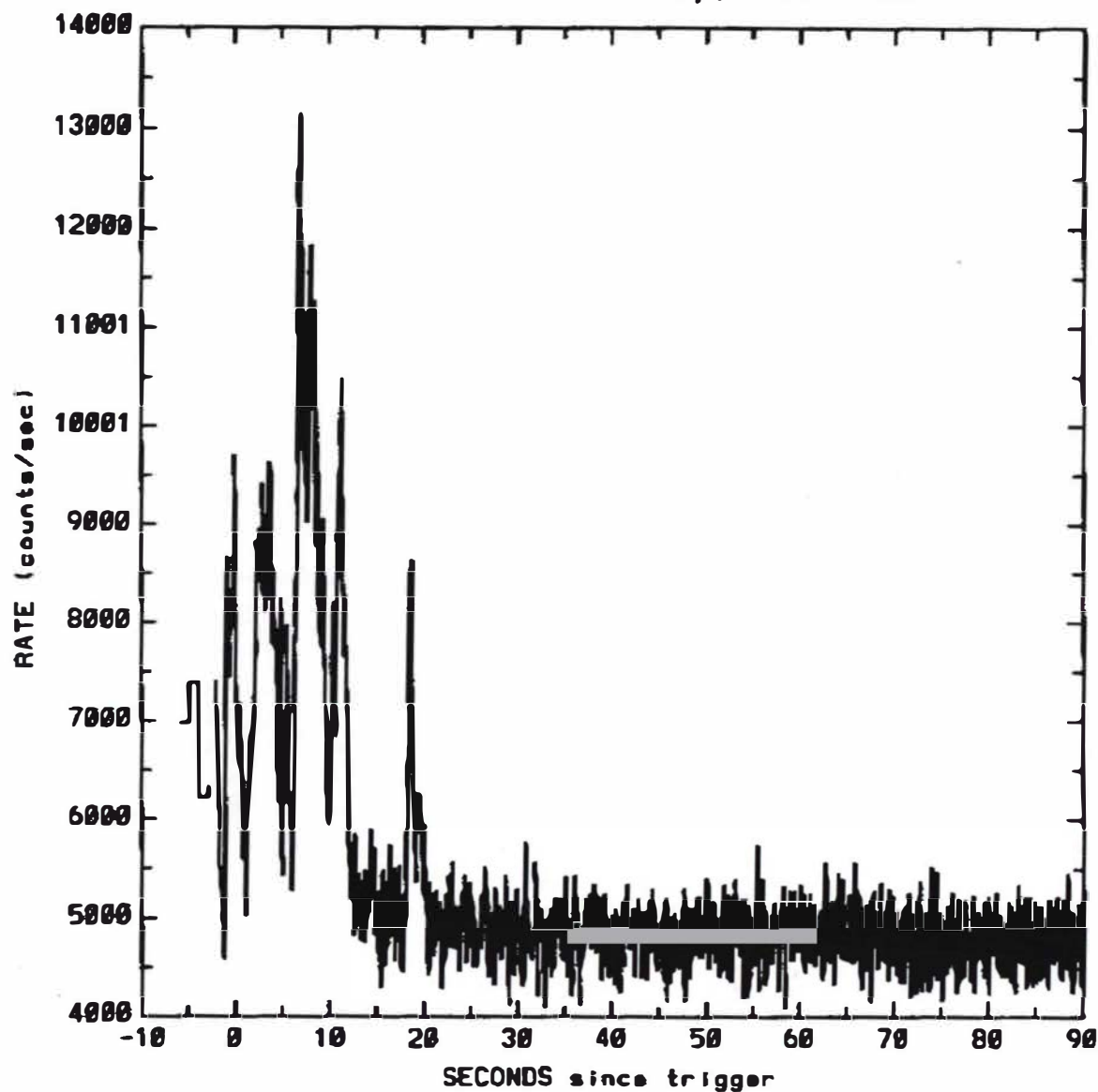


ULYSSES RT
2/ 8/99 4860.098 s
0.250 S INTERVALS REGROUPED BY 10
22- 150 keV

22 / 2 / 0



DISCSC Data for K. Hurley, No. 7688



6-AUG-1999 09:29:24

Created by MOPS 80
(Burst Display)
Version 12.28

Trigger # : 7688

Trigger Time:
11392 / 3883.513

Burst Data Type:
DISCSC

Deadline
Corrected: N

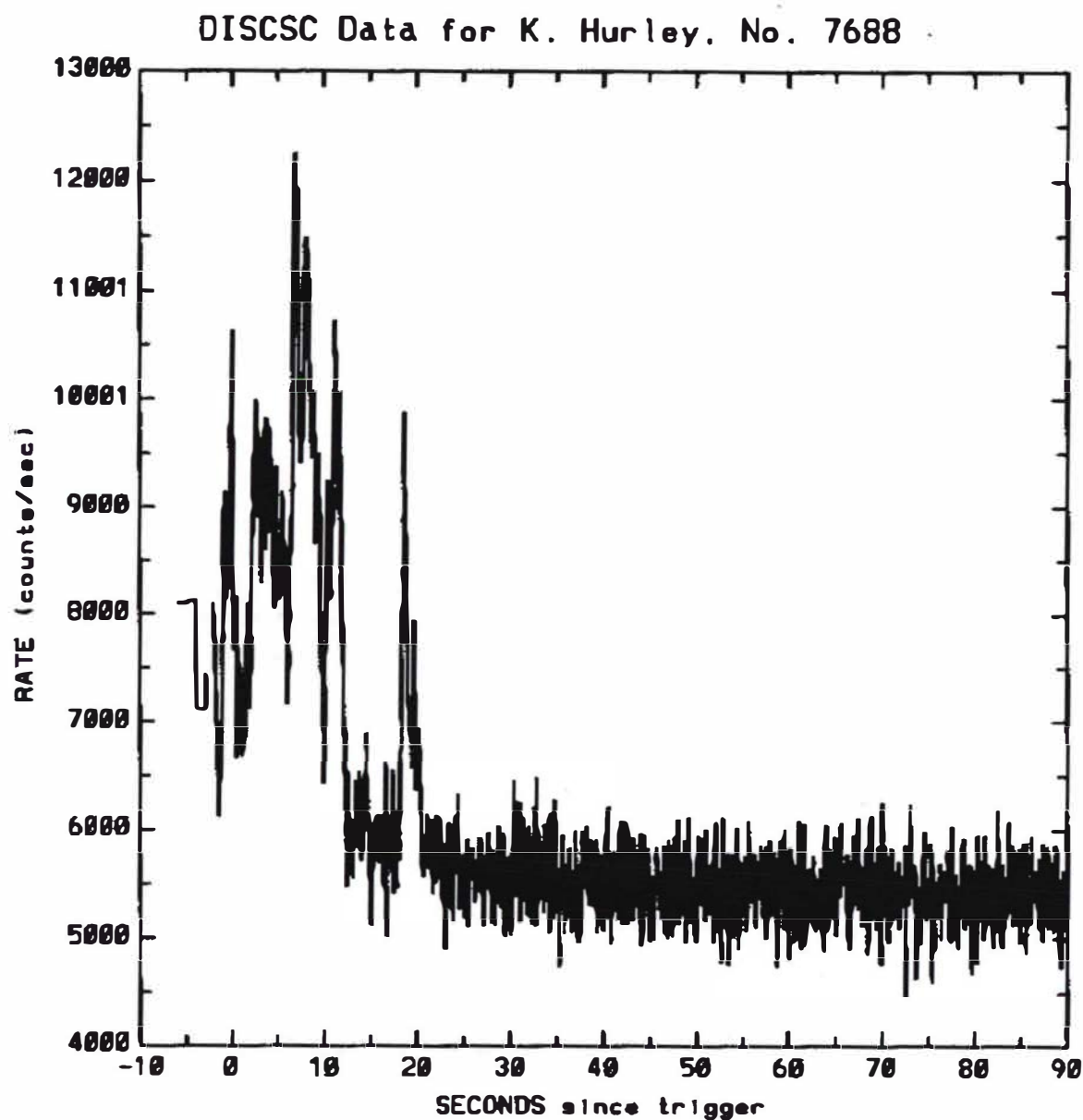
Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..8):
--5--1-

Discriminators:
(3 : 4)

Quality Mask:
801SP1



6-AUG-1999 09:30.24

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

Trigger # : 7688

Trigger Time:
11392 / 3883.513

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..8]:
--5--1-

Discriminators:
1 1 . 2 1

Quality Mask:
80[SP1

BATSE

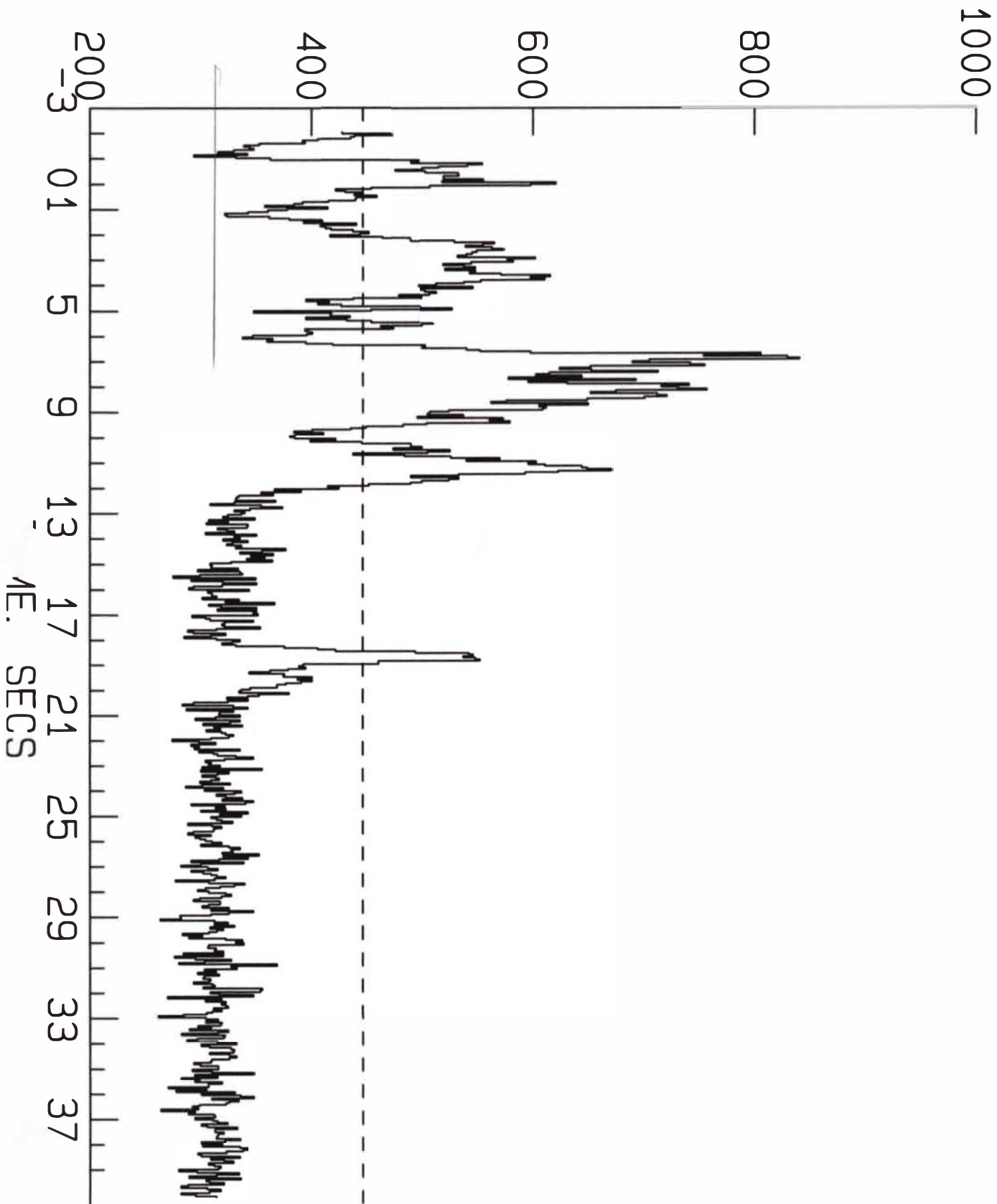
02/08/99

3883.513

100-1000 keV

COUNTS/0.064 S

17 / 8 / 99



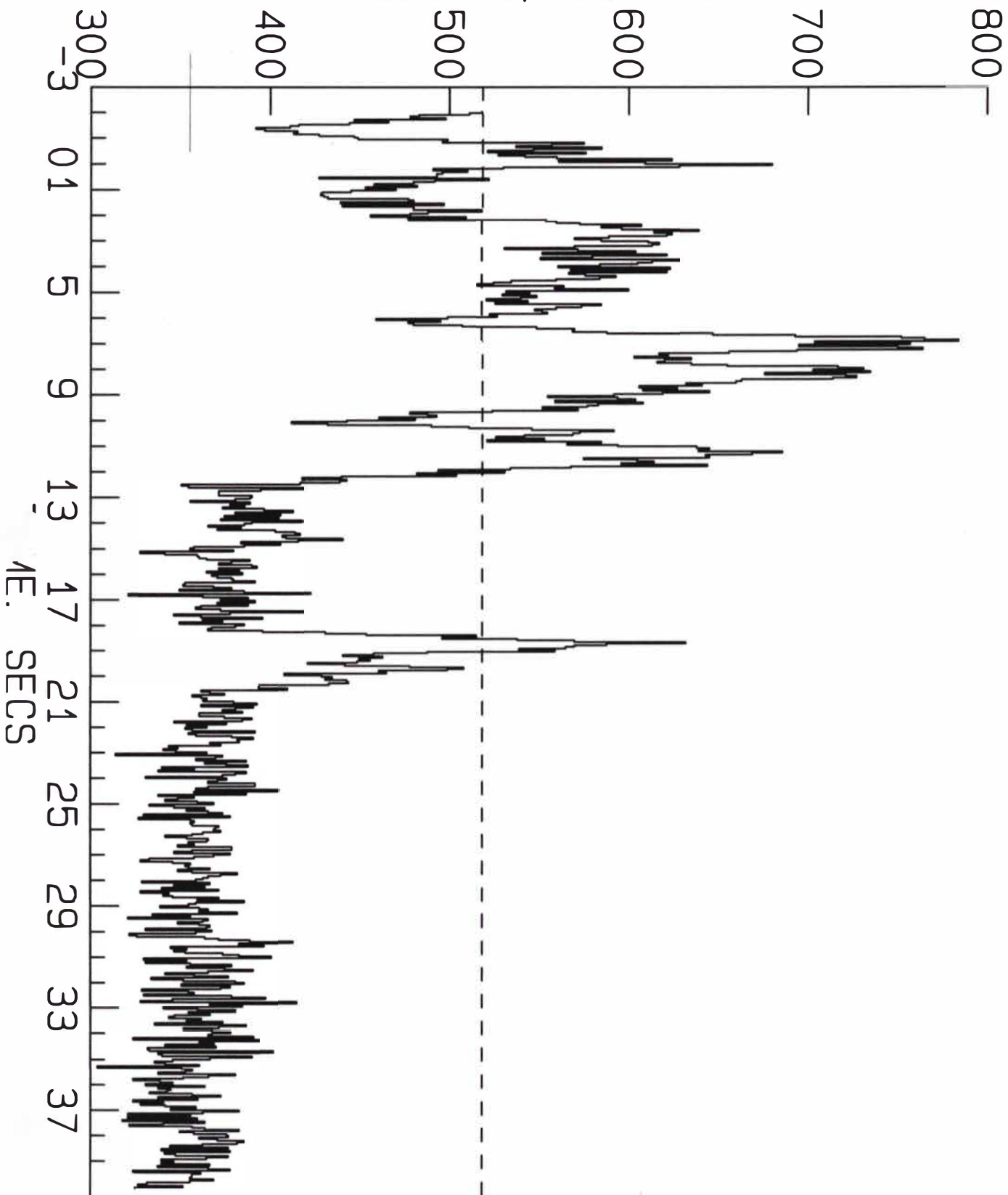
BATSE

02/08/99

3883.513

25- 100 keV

COUNTS/0.064 S



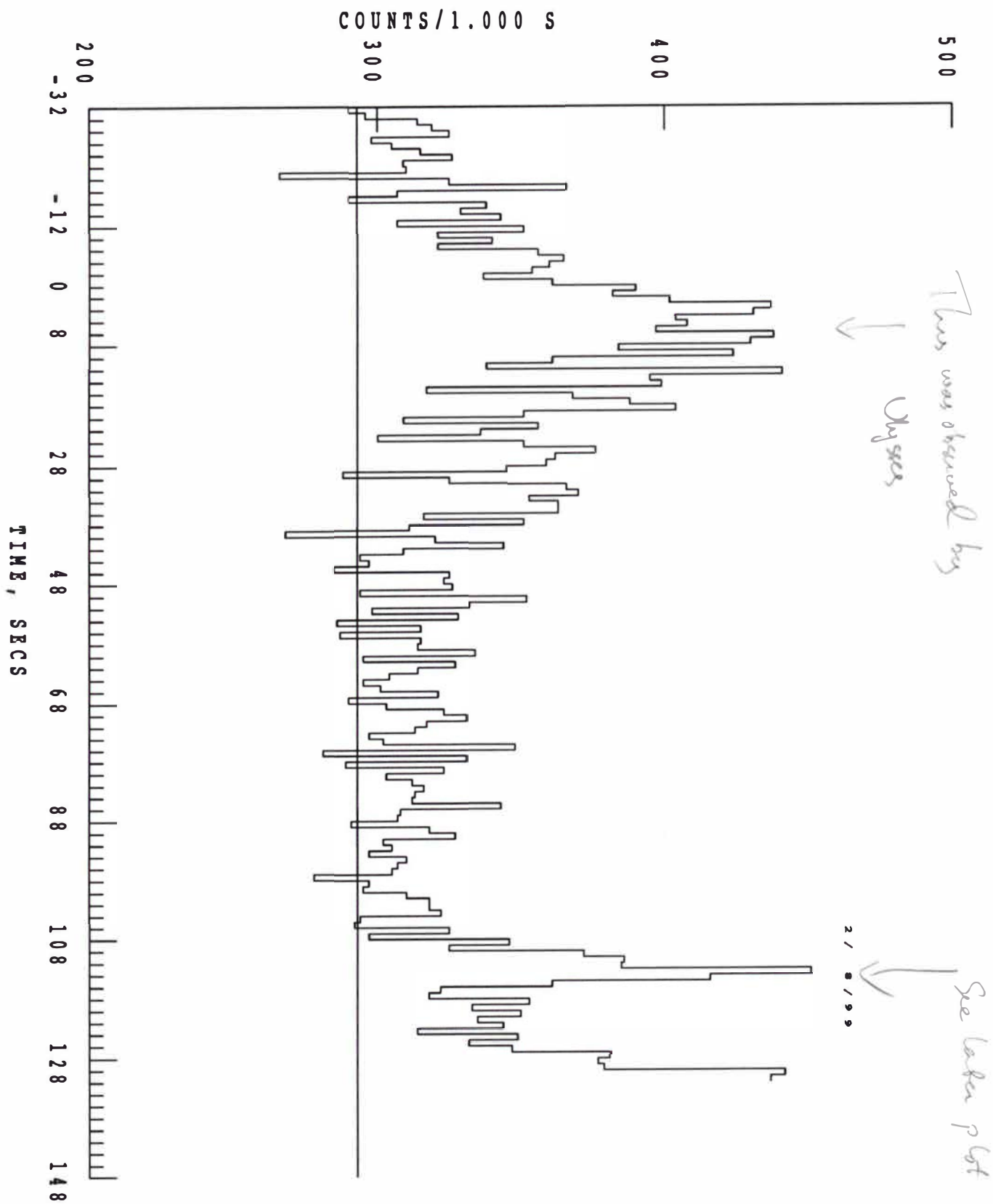
17 / 8 / 99

NEAR

02/08/99

3245.781

100-1000 keV

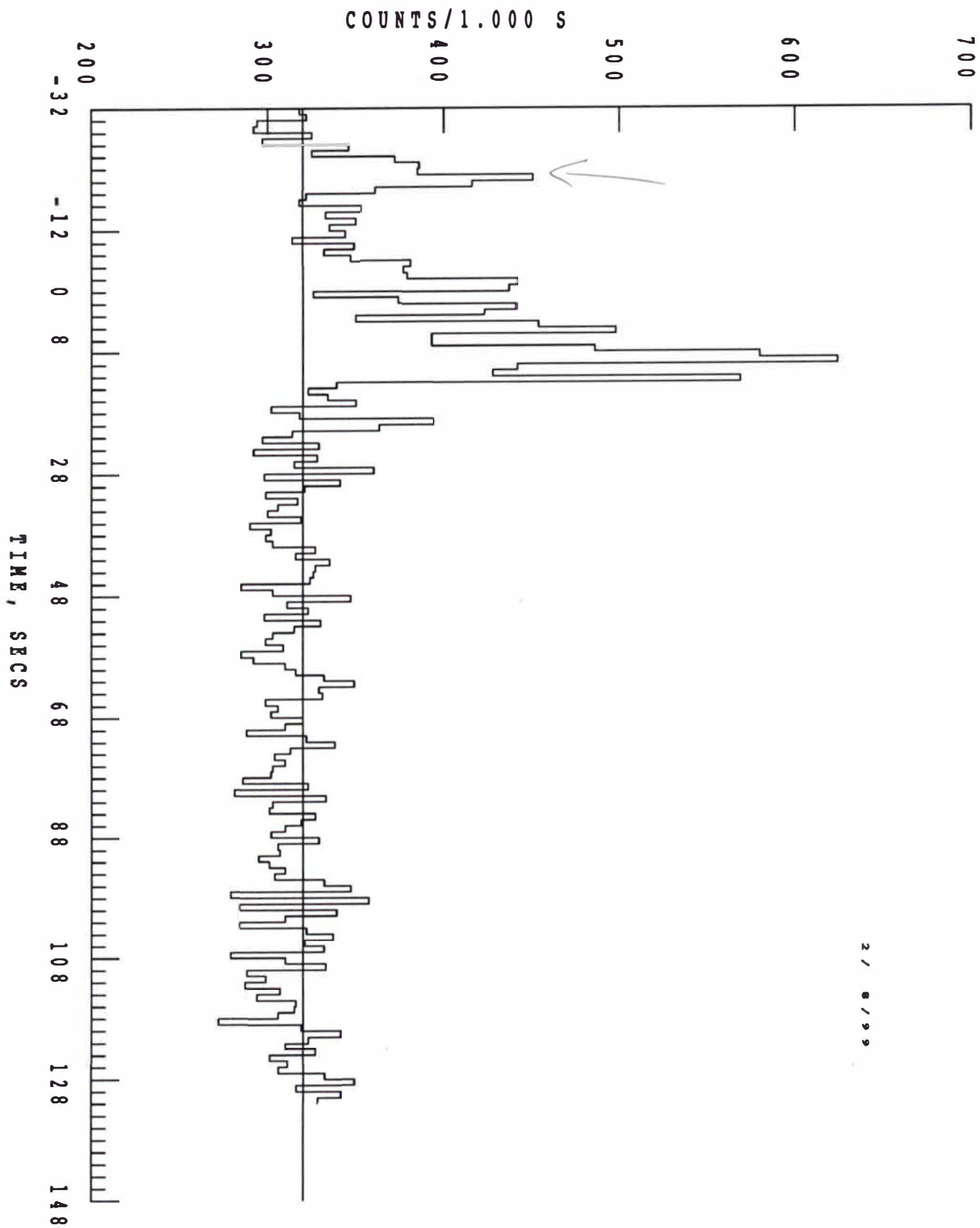


NEAR

02/08/99

3379.781

100-1000 keV



From RICHARDSON@fender.msfc.nasa.gov Wed Aug 4 18:16 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Wed, 4 Aug 1999 20:21:53 -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, 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.: 7689

TIME: TJD=1392 SECONDS=19884

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=103.3 AZIMUTH=355.6 ERROR=0.2 DEGREES

COMMENTS:

SOLAR FLARE. GOES C5.8. OPTICAL SF.

STRONG EVENT WITH STRUCTURE. DURATION APPROX. = 100SEC. NOT VISIBLE ABOVE
300KEV.

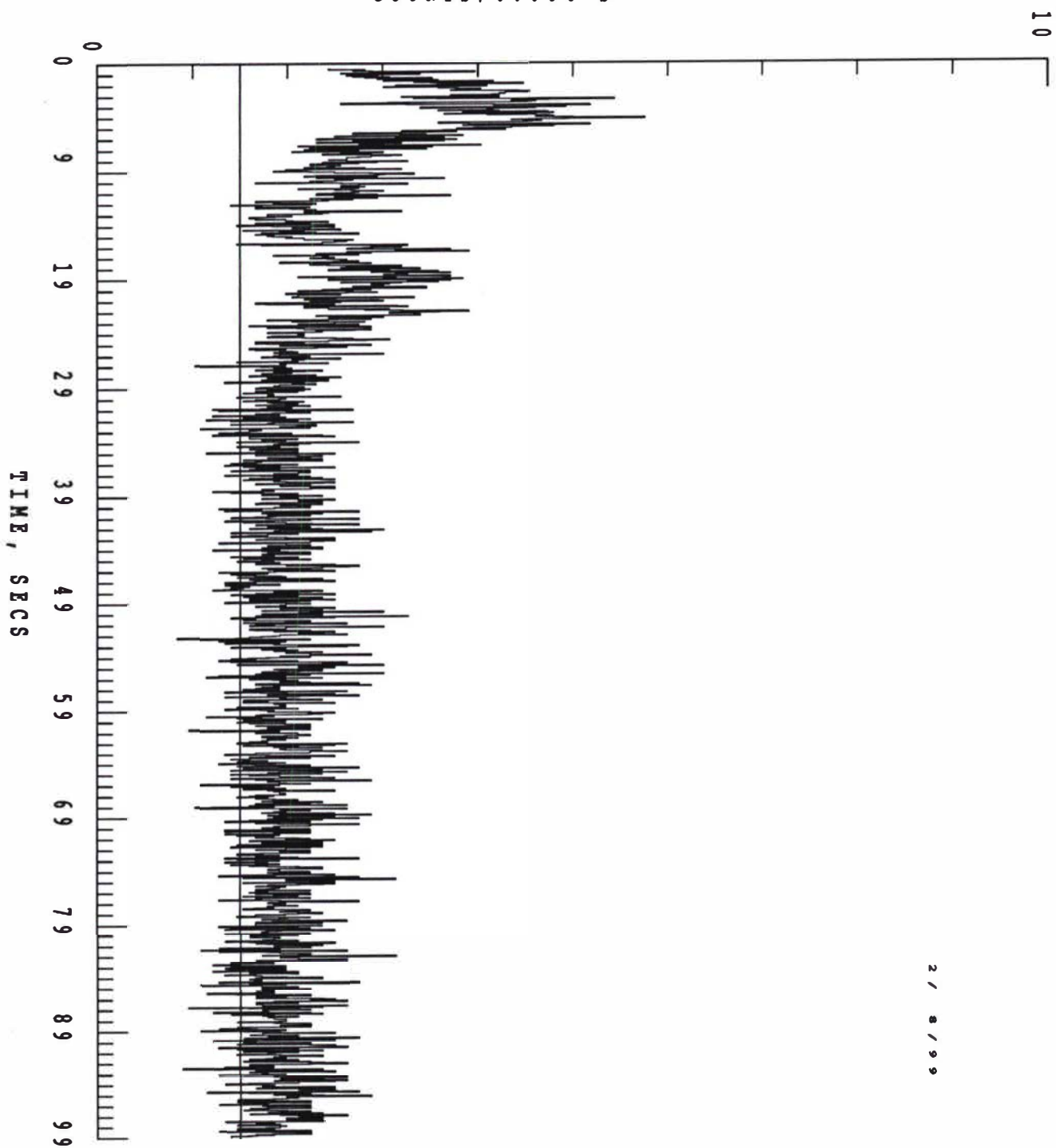
KONUS

02/08/99

23257.501

50 - 200 keV

COUNTS/0.064 S



2 / 8 / 99

KONUS1 19990802 23257

ULYSSES RT

2 / 8 / 99

2 / 8 / 99 20448.006 s

0.250 S INTERVALS REGROUPED BY 15

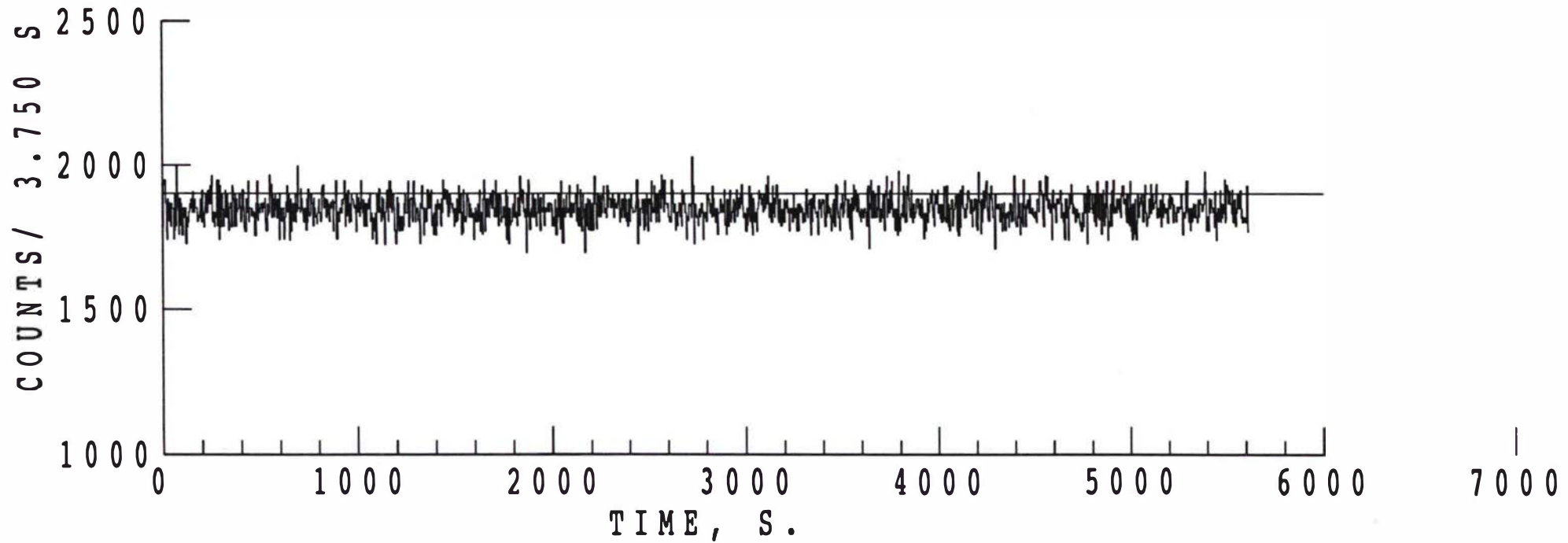
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Wed Aug 4 09:53 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Wed, 4 Aug 1999 11:57:14 -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, 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.: 7690

Aug 2

TIME: TJD=1392 SECONDS=33354

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.6 AZIMUTH=355.5 ERROR=0.296 DEGREES

COMMENTS:

GOES C3.0, NO OPTICAL. SINGLE PULSE WITH SUBSTRUCTURE, DUR APPROX 10 S, STARTS
AT APPROX T-1 S, MAX AT APPROX T+2.7 S. VISIBLE ABOVE 100 KEV. CRAB SET AT
APPROX T-360 S. CYG X-1 RISE AT APPROX T-50 S.

KONUS

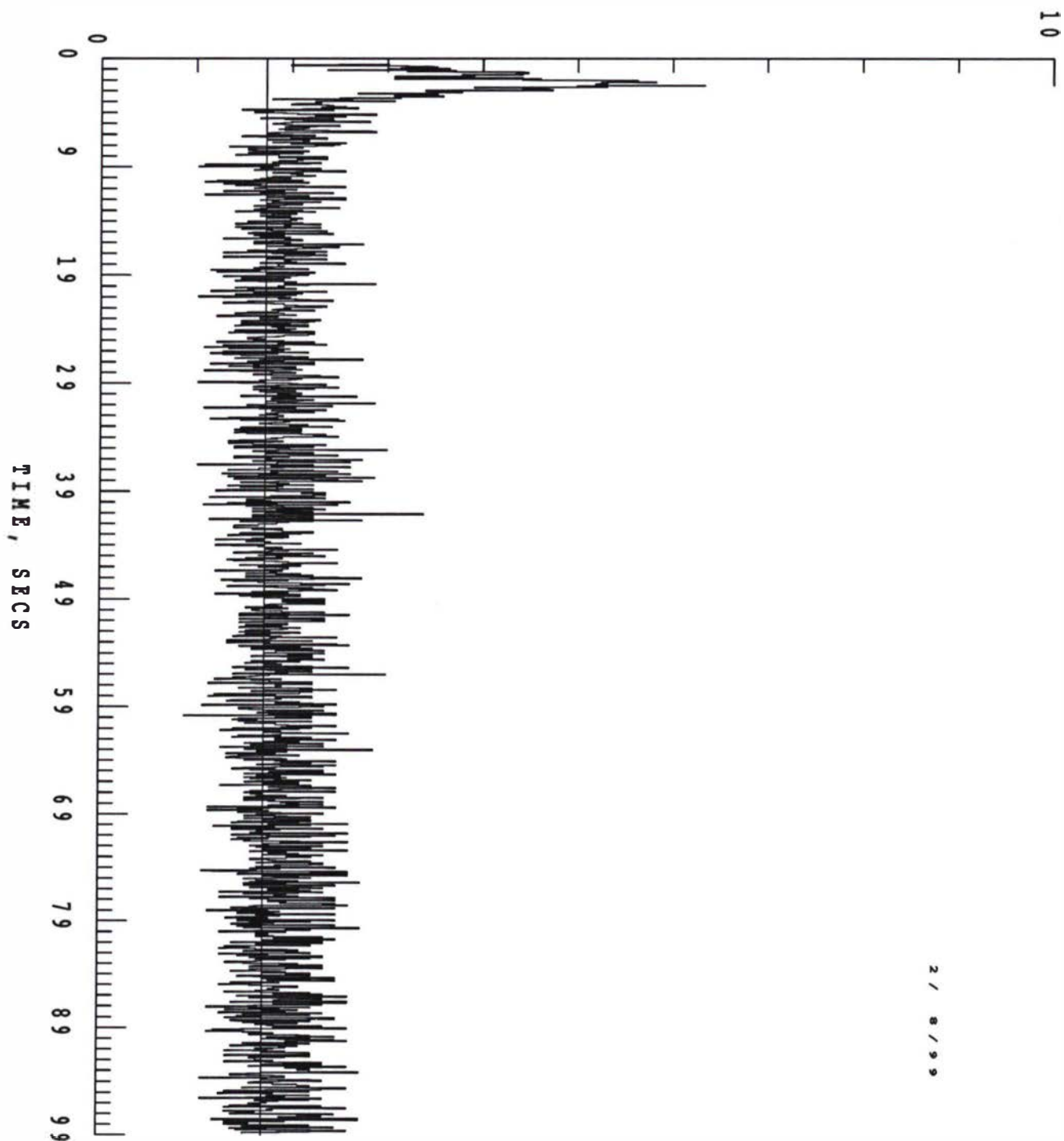
02/08/99

33353.334

50 - 200 keV

Solar - BATSE 7690

COUNTS/0.064 S



KONUS1 19990802 33353

ULYSSES RT

3 / 8 / 99

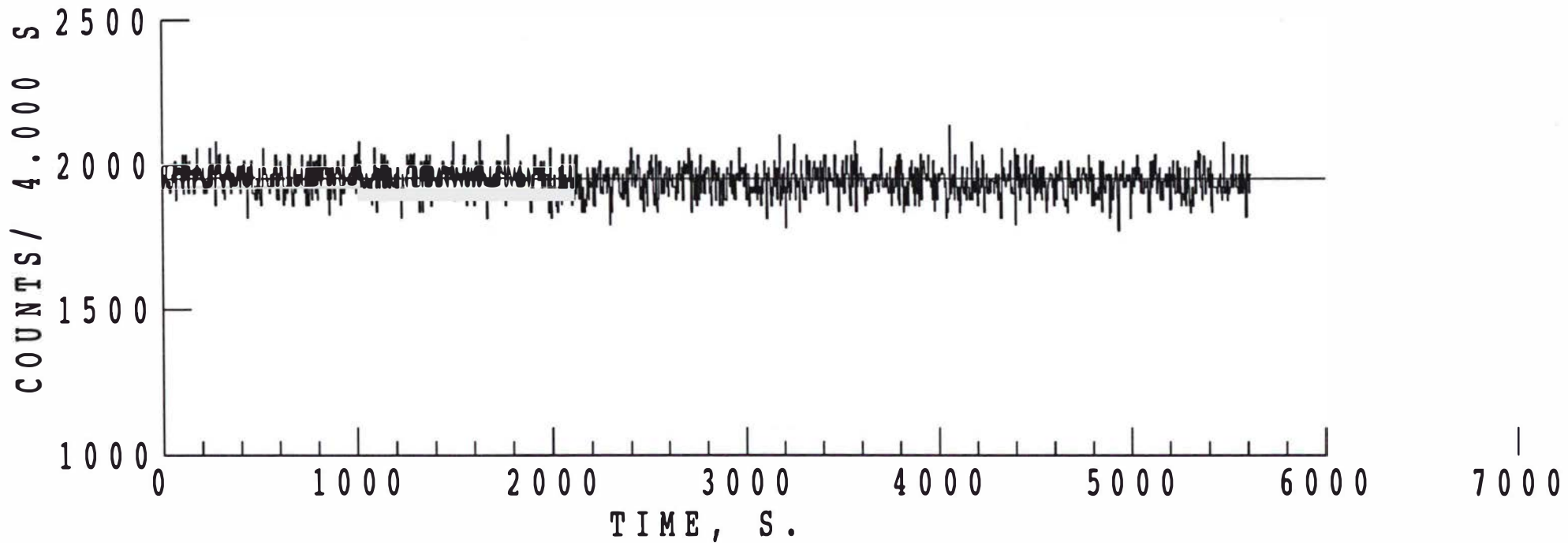
2 / 8 / 99 30528.107 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From GOGUSE@fender.msfc.nasa.gov Fri Aug 6 11:24 PDT 1999

From: GOGUSE@fender.msfc.nasa.gov

Date: Fri, 6 Aug 1999 13:30:09 -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, 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.: 7691

TIME: TJD=1392 SECONDS=42563

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.8 AZIMUTH=356.2 ERROR= 0.6 DEGREES

COMMENTS:

GOES C6.6 SF

VERY INTENSE FLARE STARTS AT T+120S, DUR. APPROX. 70 S.

KONUS

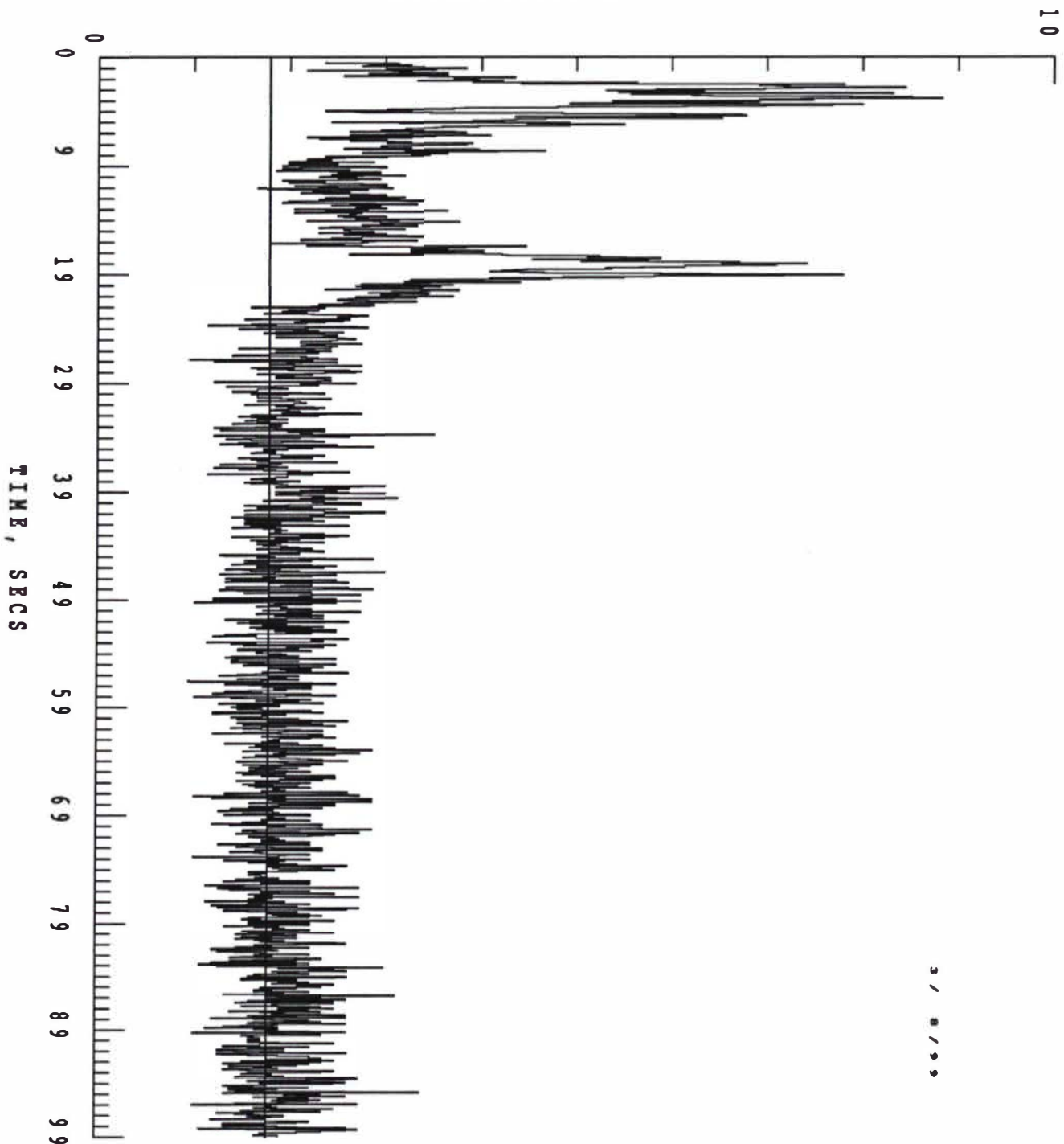
02/08/99

42703.651

50 - 200 keV

Solar - BATSE 7691

COUNTS/0.064 S



KONUS2 19990802 42703

ULYSSES RT

3 / 8 / 99

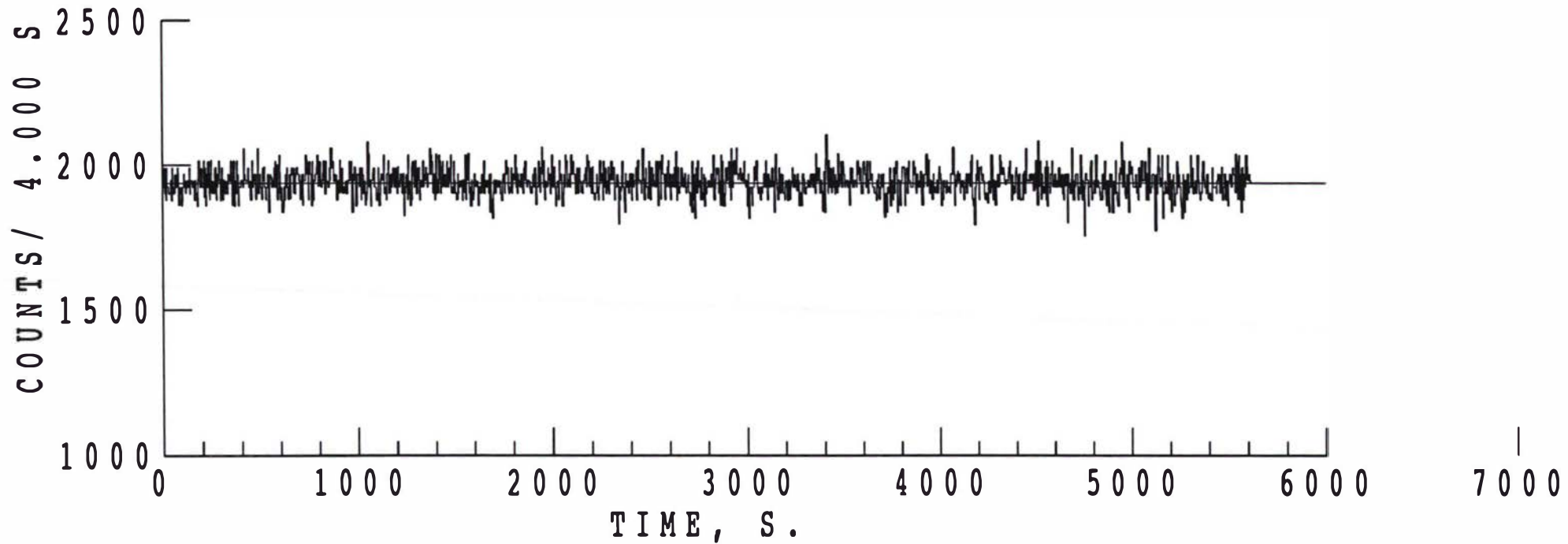
2 / 8 / 99 39888.199 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@fender.msfc.nasa.gov Thu Aug 5 08:27 PDT 1999

From: SURASAK@fender.msfc.nasa.gov

Date: Thu, 5 Aug 1999 10:25:37 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, 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.: 7692

TIME: TJD=1392 SECONDS=53159

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.3 AZIMUTH=356.1 ERROR=5.27 DEGREES

COMMENTS:

SOLAR FLARE C6.9, SF. SINGLE STRONG PULSE FOLLOWED BY WEAKER PULSE AT
ABOUT T+230S. TOTAL DURATION ABOUT 240 S. NOT VISIBLE ABOVE 300 KEV.

From WOODSP@fender.msfc.nasa.gov Wed Aug 4 12:05 PDT 1999
From: WOODSP@fender.msfc.nasa.gov
Date: Wed, 4 Aug 1999 14:11:56 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7693

BATSEARCH PROGRAM

BATSE BURST # 7693
EVENT OF 1999 AUG 2 DAY OF YEAR=214
EVENT CROSSING TIME AT BATSE : 68896. S. OR 19:08:16.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 279.000 5.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 8/ 99 IS:
RA= 150.689 DEC= -9.769 DIST= 5.528 AU
BATSE-ULYSSES DISTANCE = 826961032. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.43 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1719.65 SECS.
CROSSING TIME AT ULYSSES IS 70616. S. OR 19:36:55 +/- 450.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 8/ 99 IS:
RA= 218.919 DEC= -16.897 DIST= 1.011 AU
MARS-BATSE DISTANCE = 151275216. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -227.12 SECS.
CROSSING TIME AT MARS IS 68669. S. OR 19:04:28 +/- 74.78 SECONDS

BATSE BURST TRIGGER

NO.: 7693

TIME: TJD=1392 SECONDS=68896

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.7 AZIMUTH=218.3 ERROR=13 DEGREES

COMMENTS:

PROBABLE GRB LASTING ABOUT 0.4 SEC. SINGLE PULSE. NOT VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7693	990802	11392	68896	6000	279	+05	.4

BATSE BURST# 7693

ULYSSES RT

21 / 01 / 00

02/08/99 70164.008 s

0.500 S INTERVALS REGROUPED BY 2

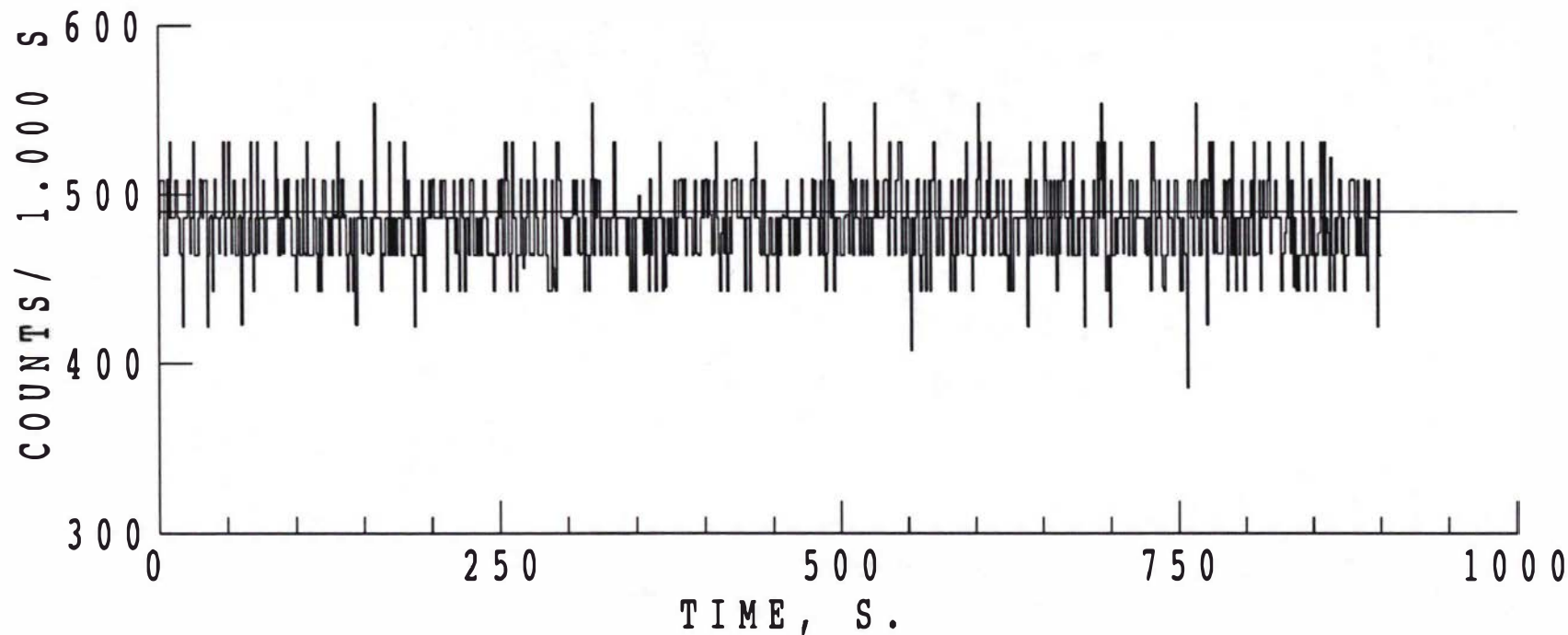
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Wed Aug 4 12:20 PDT 1999
Date: Wed, 4 Aug 1999 14:26:26 -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, 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.: 7694

TIME: TJD=1392 SECONDS=76897

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.7 AZIMUTH=355.8 ERROR= 0.1 DEGREES

COMMENTS:

GOES X1.4, OPTICAL 1B SOLAR FLARE. SINGLE EPISODE, MAIN PULSE DUR. APPROX.
150 S, MAX AT APPROX. T+100 S; FOLLOWED BY SOFTER EMISSION, TOTAL DUR. APPROX.
900 S. VISIBLE ABOVE 300 KEV.

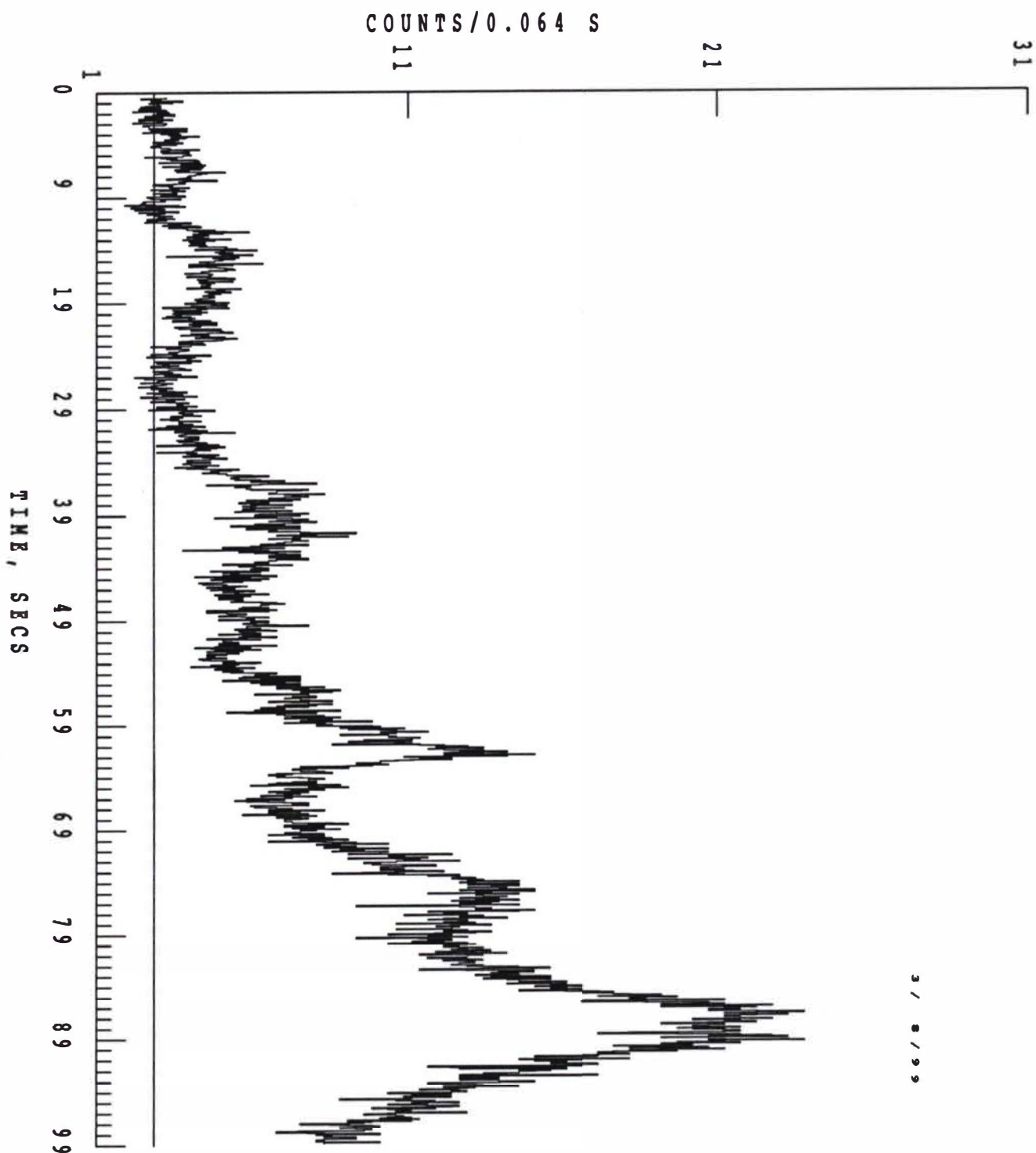
KONUS

02/08/99

76909.107

50- 200 keV

Solar. BATSE 7694



KONUS2 19990802 76909

ULYSSES RT

3 / 8 / 99

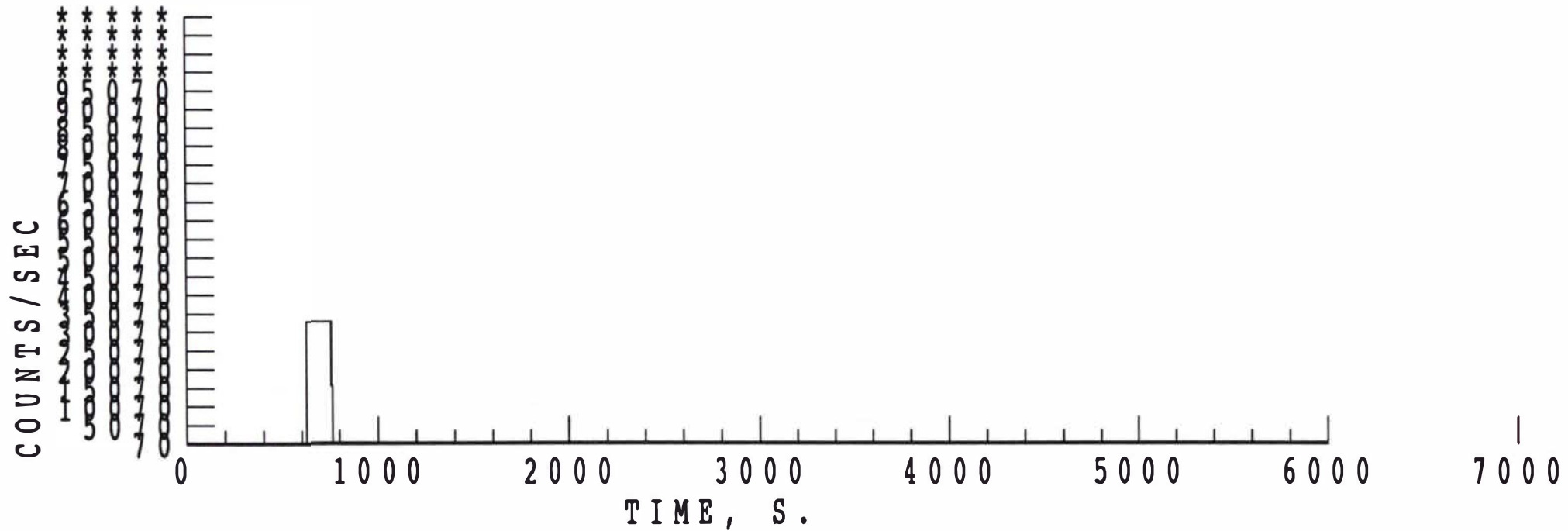
2 / 8 / 99 74088.047 s

INTERVALS REGROUPED BY 11

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



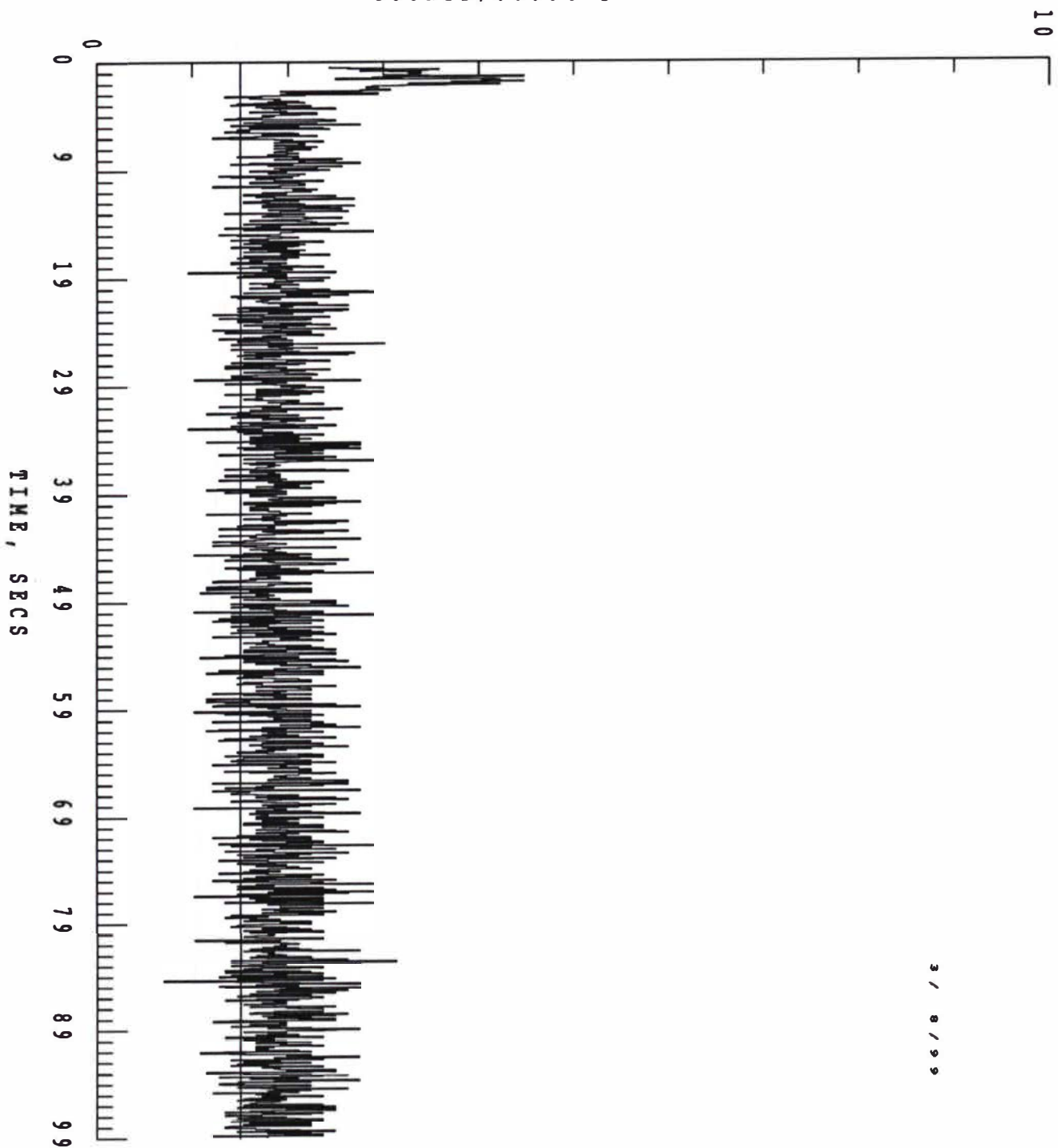
KONUS

02/08/99

82357.105

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990802 82357

ULYSSES RT

3 / 8 / 99

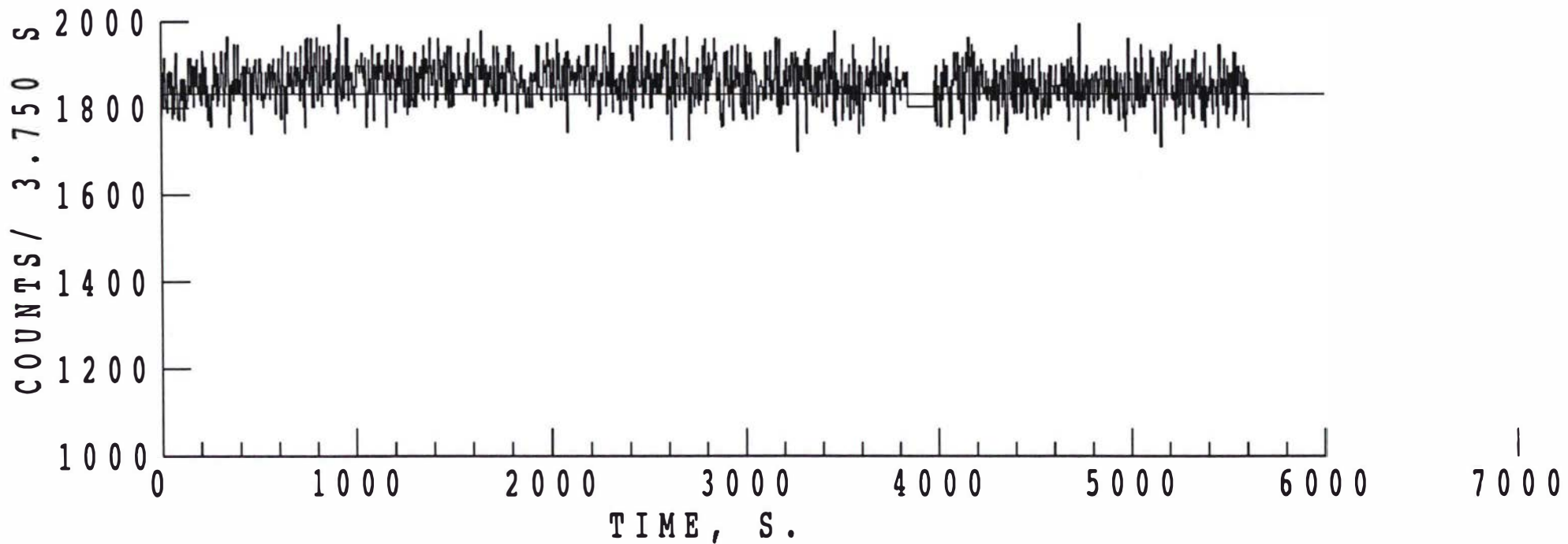
2 / 8 / 99 79560.102 s

0.250 S INTERVALS REGROUPED BY 15

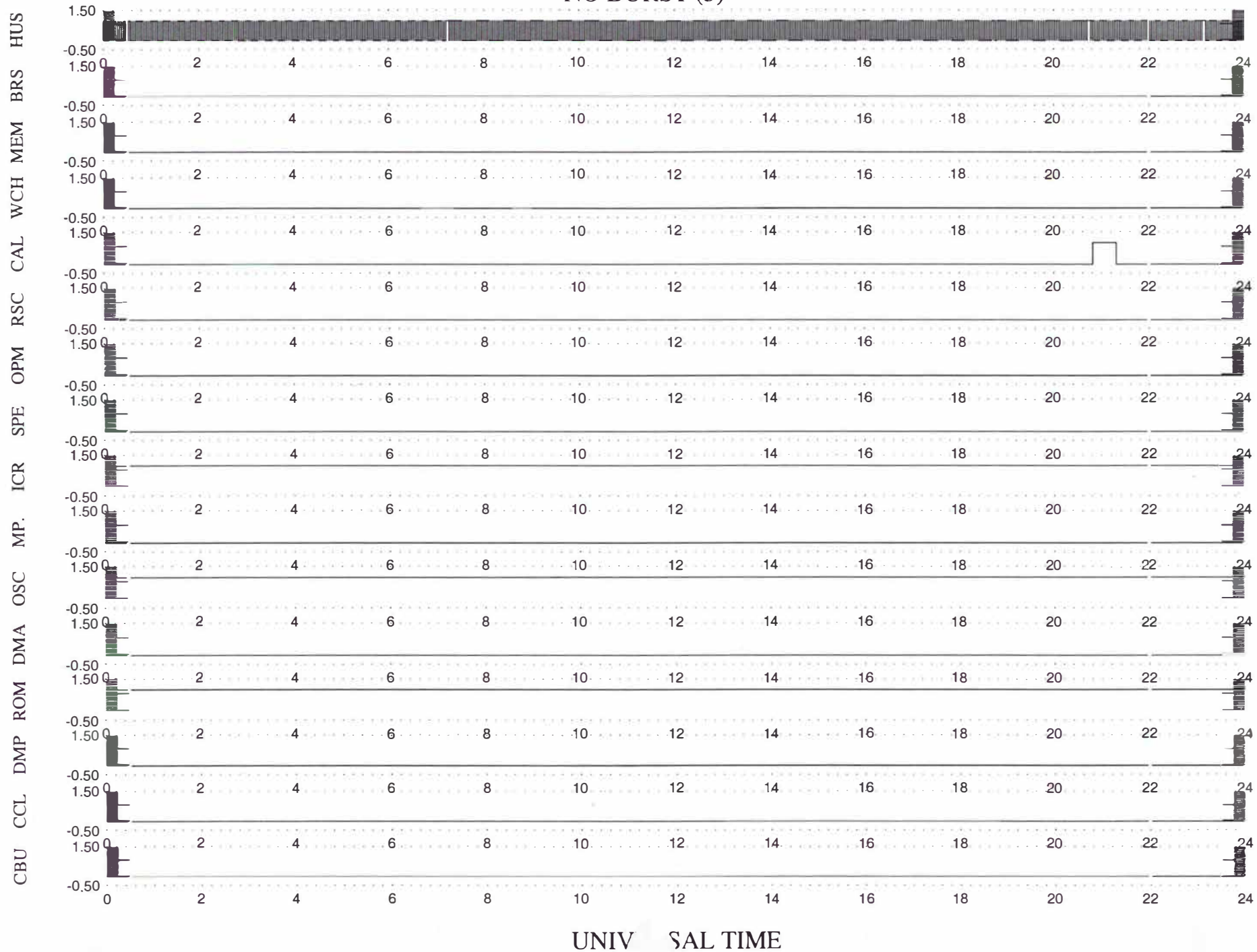
0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

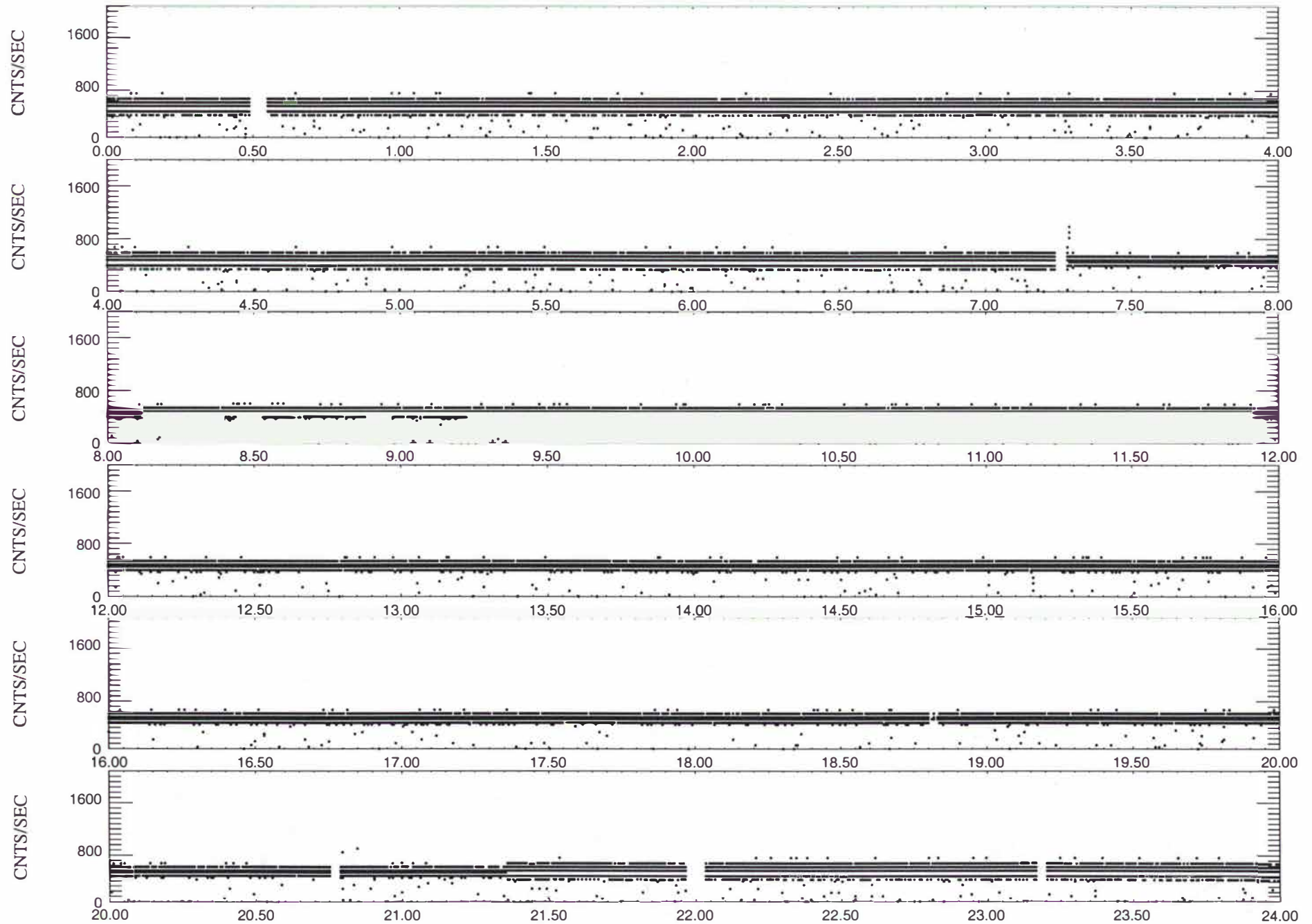
W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



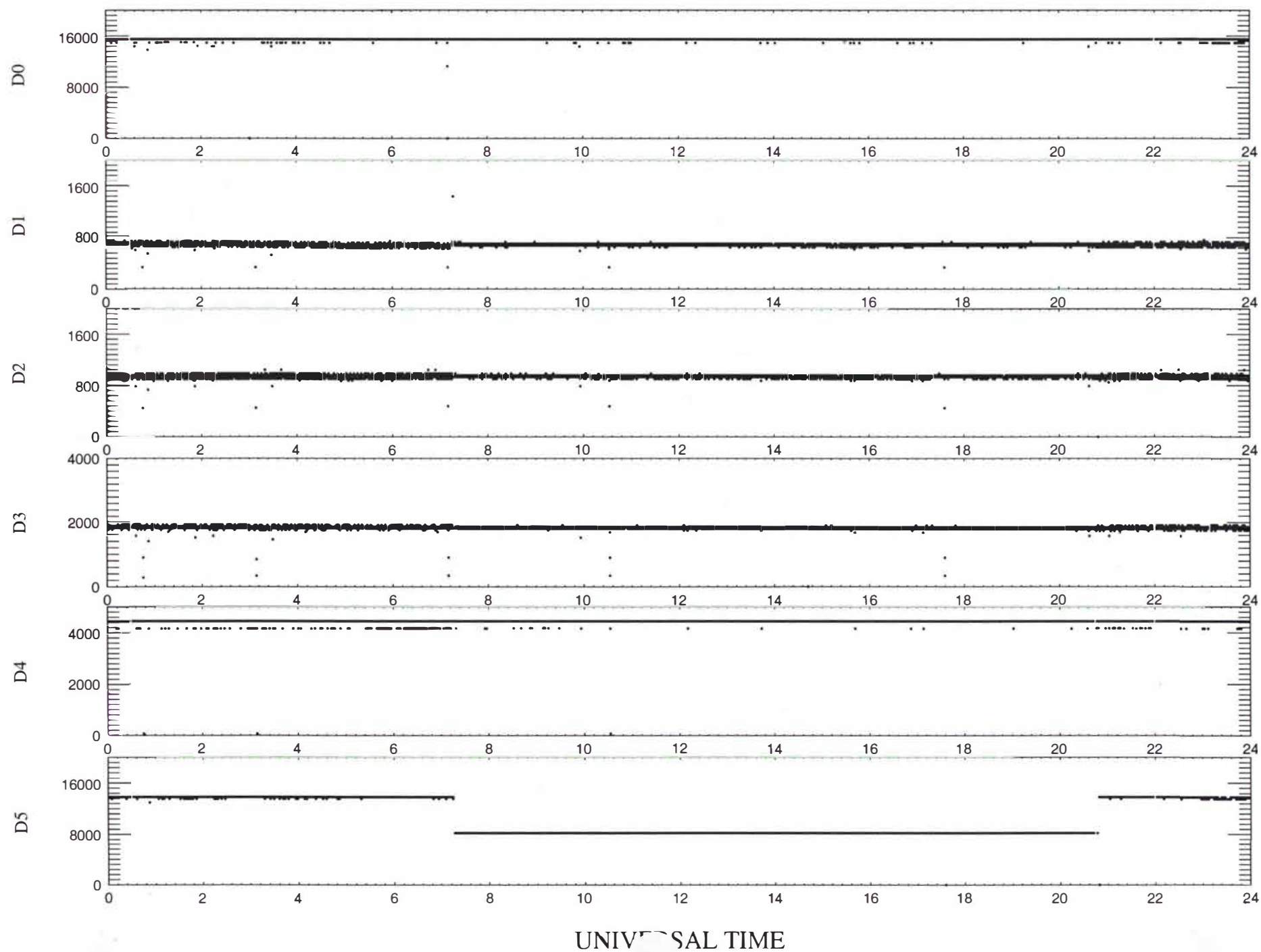
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIV SAL TIME





From PETERSON@fender.msfc.nasa.gov Fri Aug 6 09:19 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Fri, 6 Aug 1999 11:25:18 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7695

BATSEARCH PROGRAM

BATSE BURST # 7695
EVENT OF 1999 AUG 3 DAY OF YEAR=215
EVENT CROSSING TIME AT BATSE : 23375. S. OR 06:29:35.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 257.000 -2.000
BATSE PEAK COUNTING RATE: 83000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 8/ 99 IS:
RA= 150.757 DEC= -9.809 DIST= 5.529 AU
BATSE-ULYSSES DISTANCE = 827198007. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.37 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 743.62 SECS.
CROSSING TIME AT ULYSSES IS 24119. S. OR 06:41:58 +/- 522.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 8/ 99 IS:
RA= 219.420 DEC= -17.063 DIST= 1.017 AU
MARS-BATSE DISTANCE = 152180400. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -389.55 SECS.
CROSSING TIME AT MARS IS 22985. S. OR 06:23:05 +/- 50.59 SECONDS

BATSE BURST TRIGGER

NO.: 7695

TIME: TJD=1393 SECONDS=23375

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=66.2 AZIMUTH=235.1 ERROR=0.626 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SPIKEY SUBSTRUCTURE, DUR APPROX 28S, MAX AT APPROX
T+1.3S. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7695	990803	11393	23375	83000	257	-02	28

Date: 19/1/00

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?

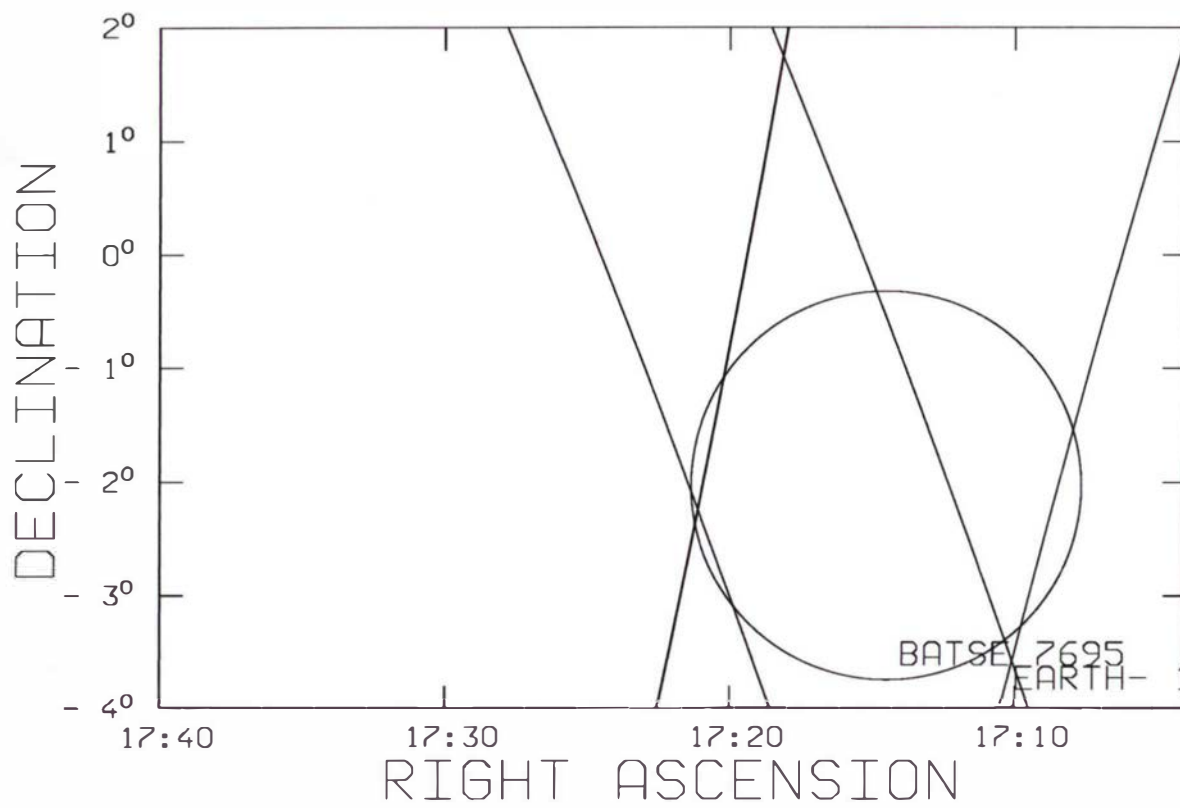
2. BATSE Data

- ☒ 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 **N/A**

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

- ☒ ACCESS database updated?



Konus - Ulysses - BATSE

BATSE

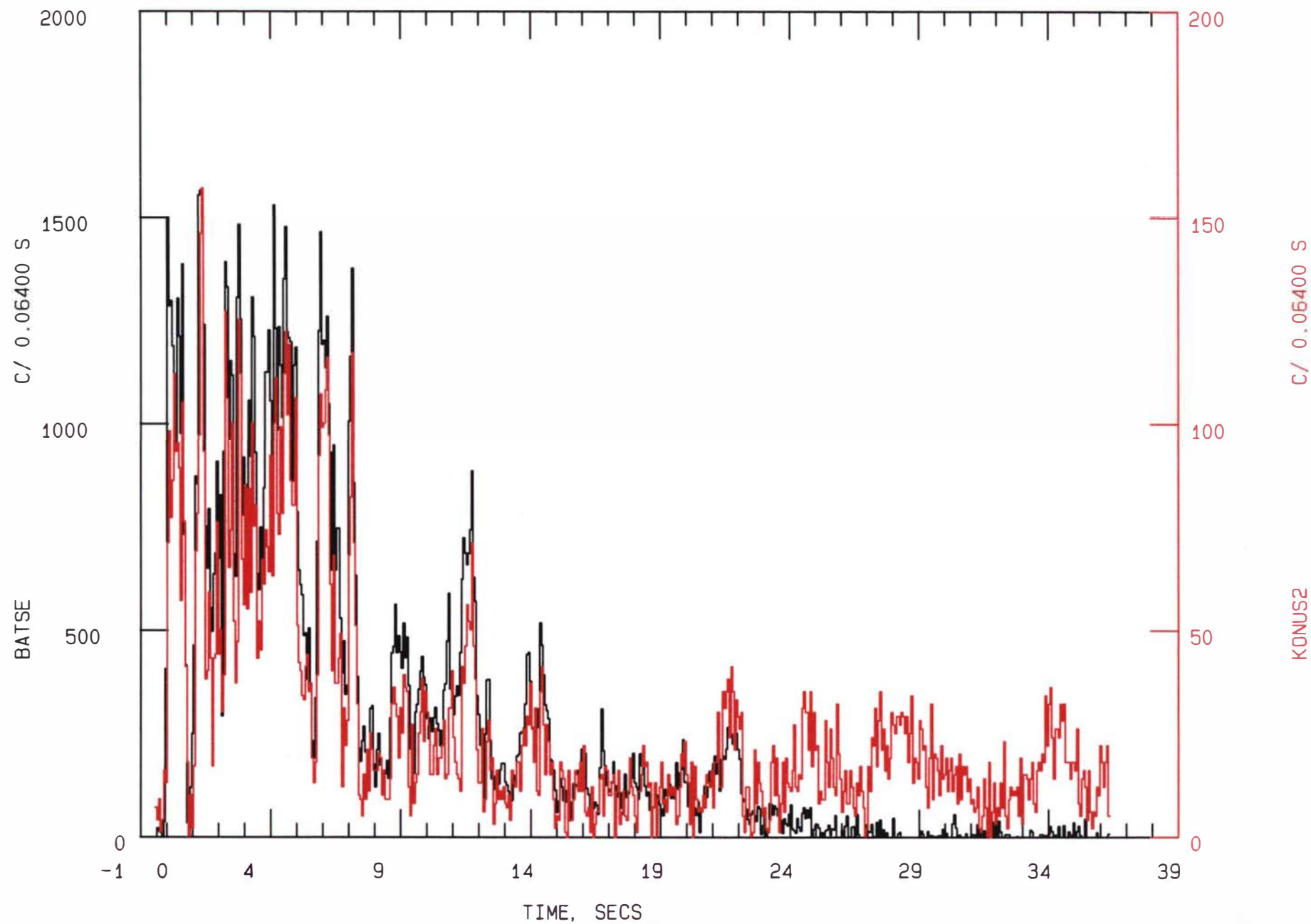
-KONUS2

CORRELATION

3/ 8/99

23375.929

12/ 4/ 0



BATSE

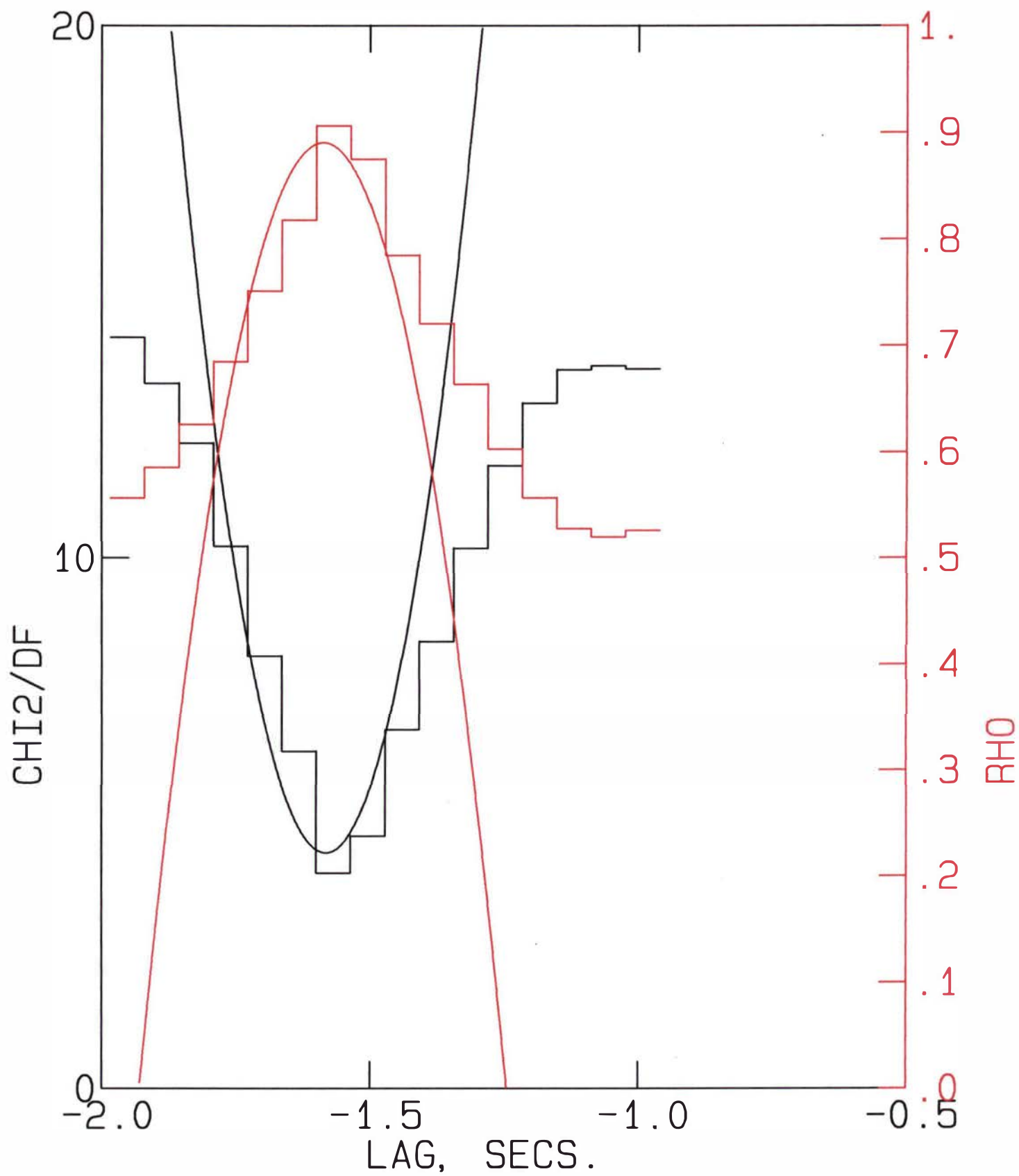
-KONUS2

CORRELATION

3/ 8/99

23375.929

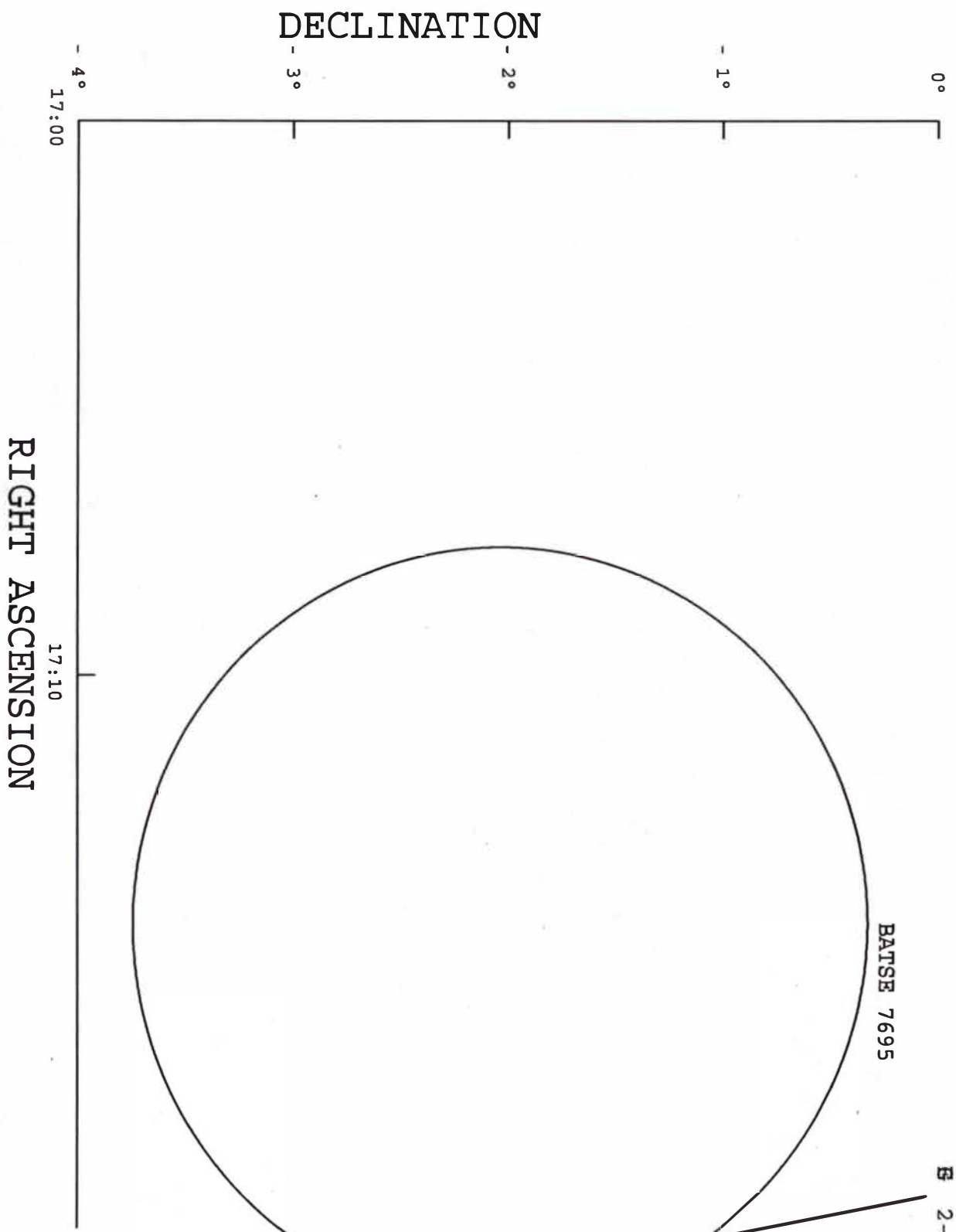
12/ 4/ 0



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 AUG 3, 1999 6:29

19/1/0



BATSE

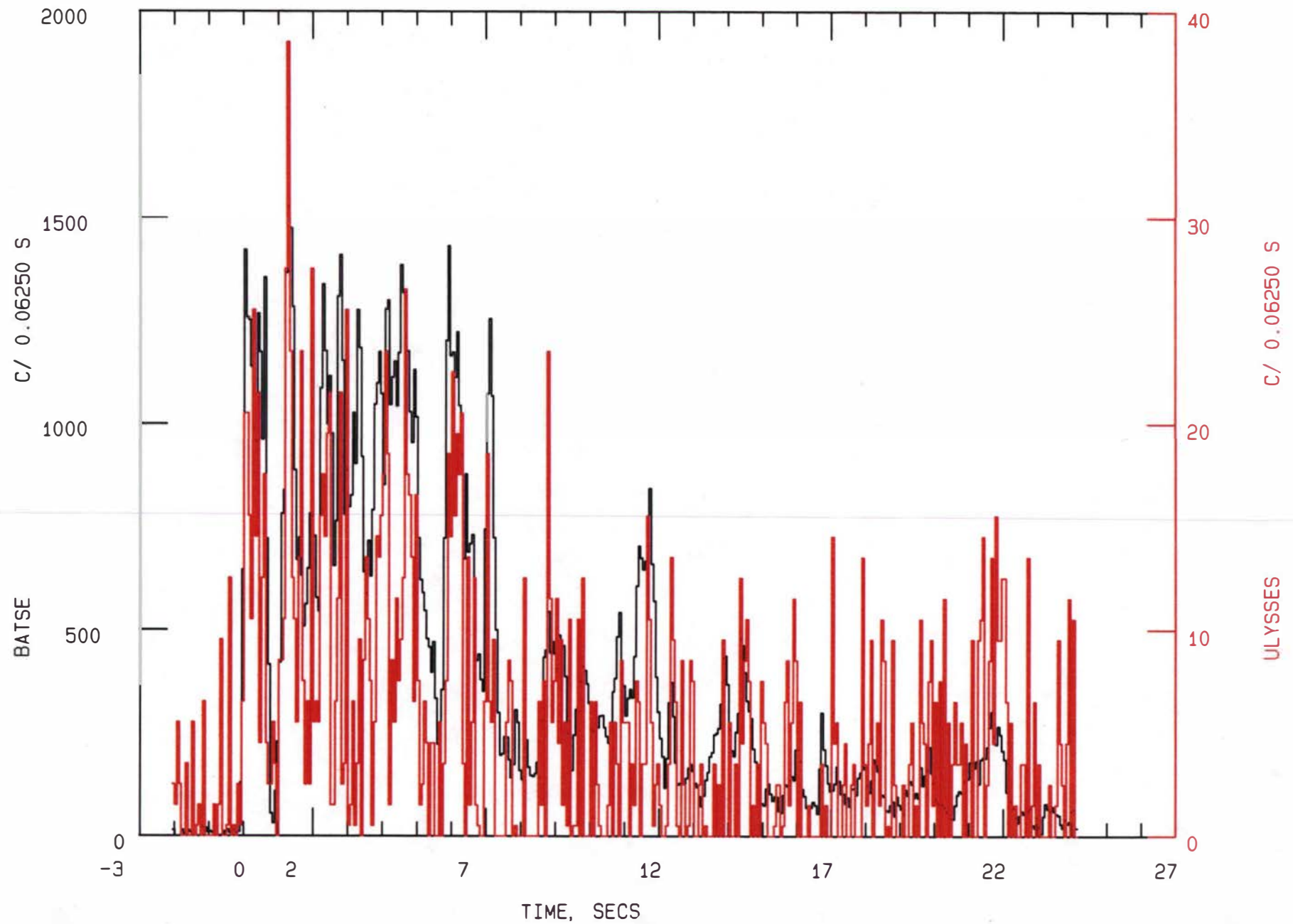
-ULYSSES

CORRELATION

3/ 8/99

23375.929

19/ 1/ 0



BATSE

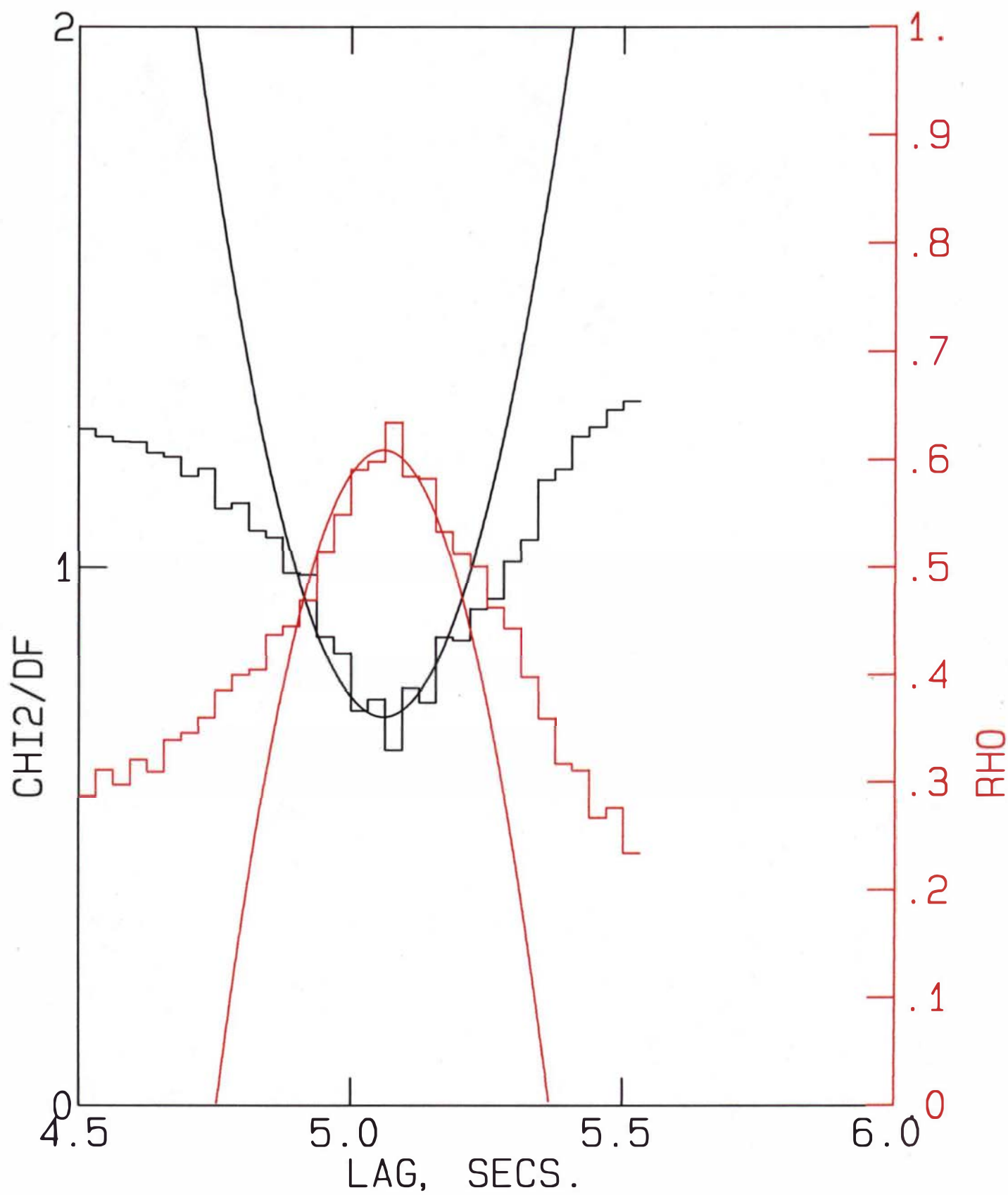
-ULYSSES

CORRELATION

3/ 8/99

23375.929

19/ 1/ 0



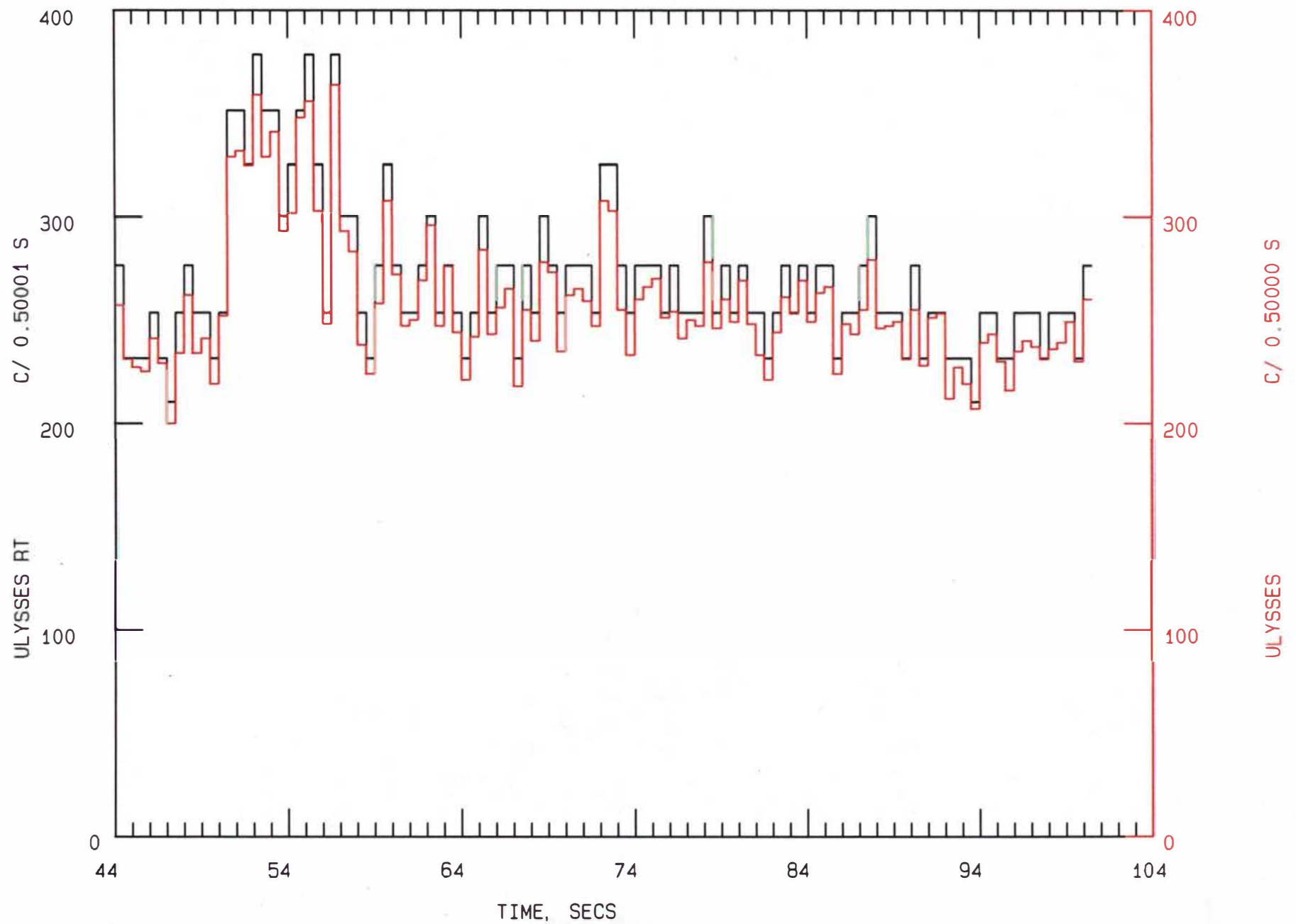
ULYSSES RT-ULYSSES

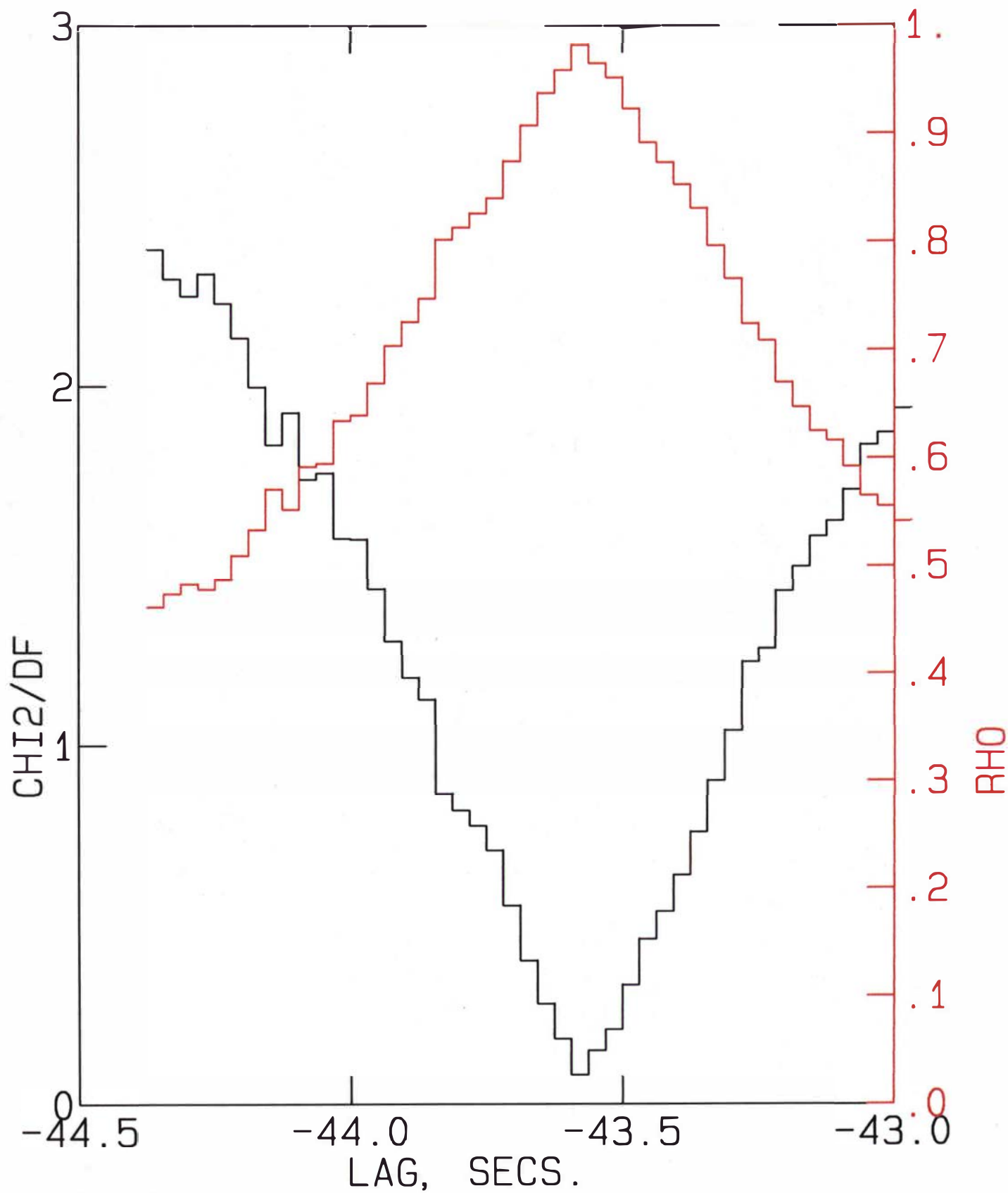
CORRELATION

3/ 8/99

24192.398

19/ 1/**

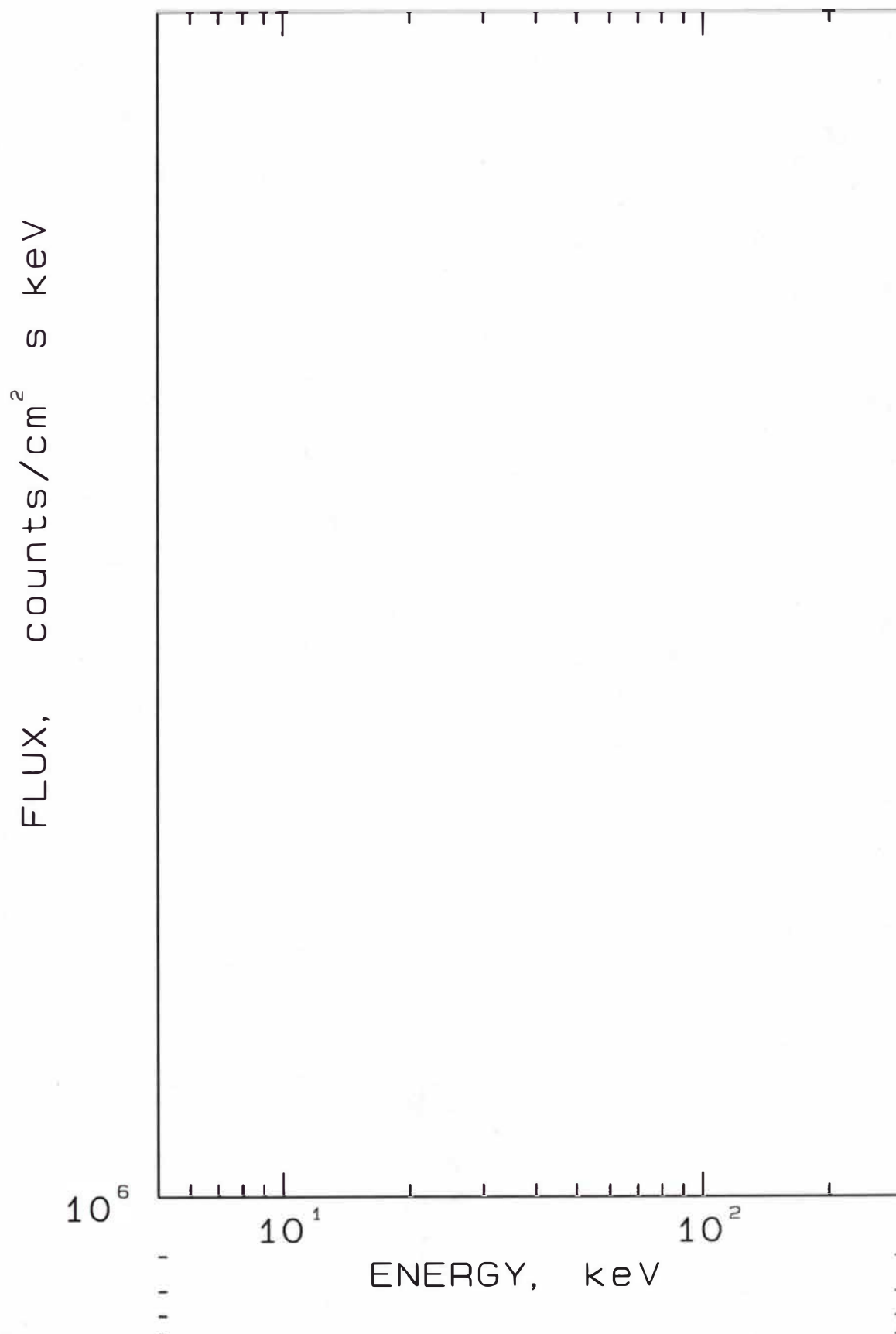




ULYSSES 03/08/99 24243.409

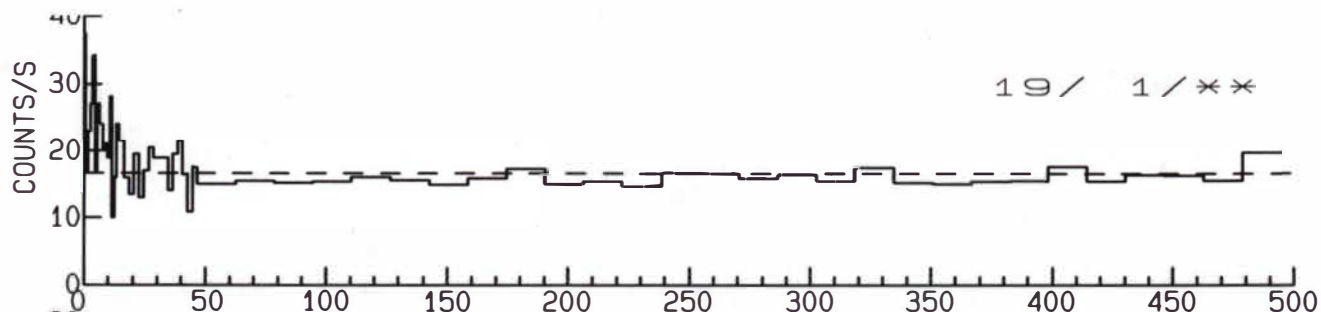
19/ 1/**

SPECTRUM INTEGRATED OVER ***** SECONDS, INTERVALS 1 TO 20

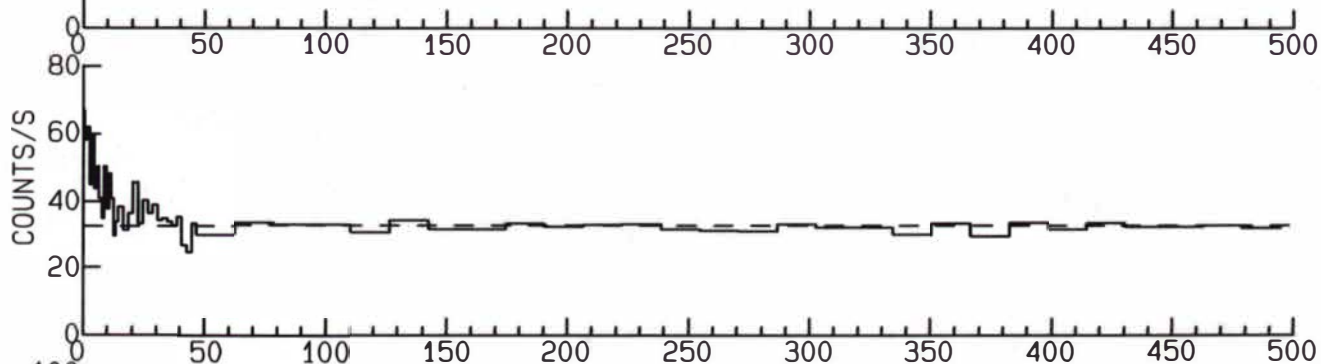


ULYSSES 03/08/99 24243.409 BURST SPECTRAL COUNT RATES

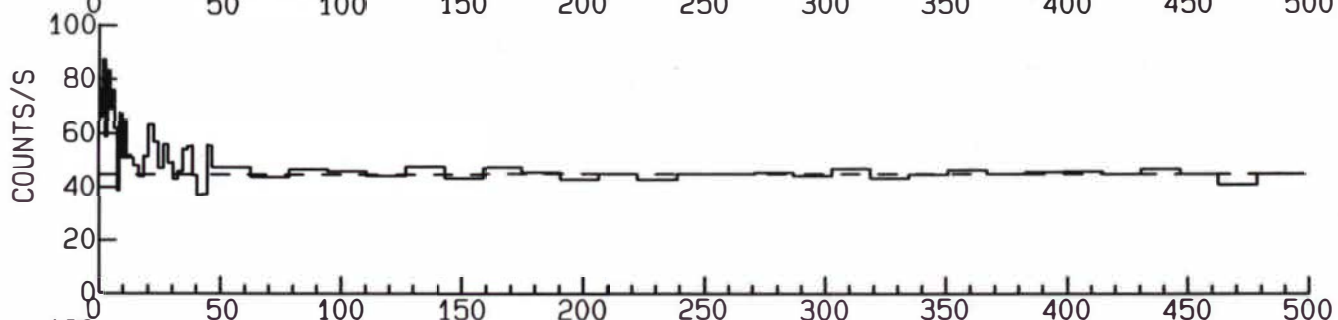
131-150 keV



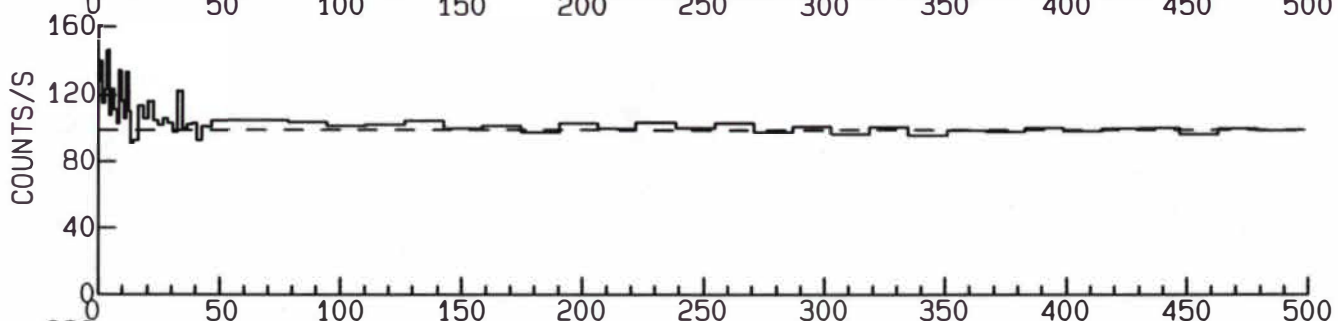
103-131 keV



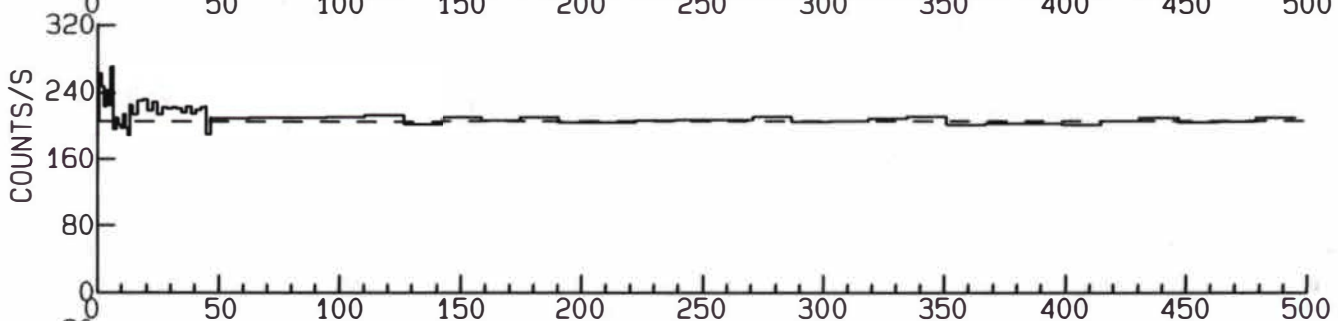
75-103 keV



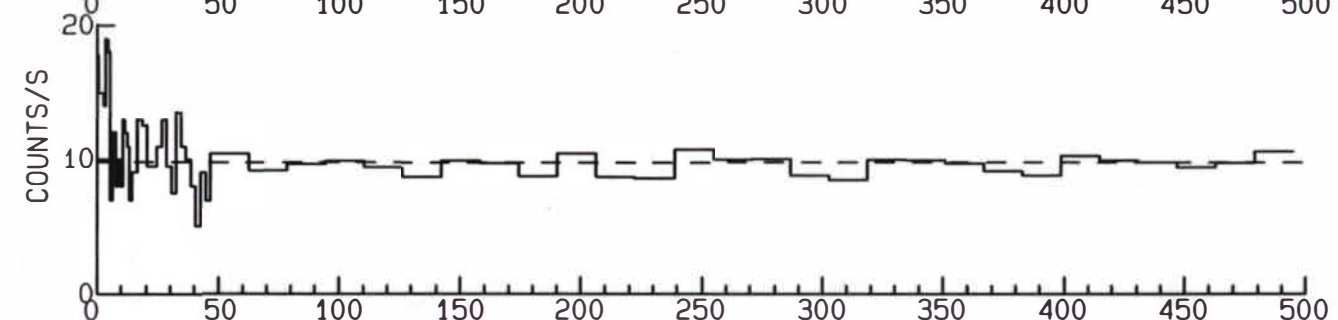
47-75 keV



18-47 keV



4-18 keV

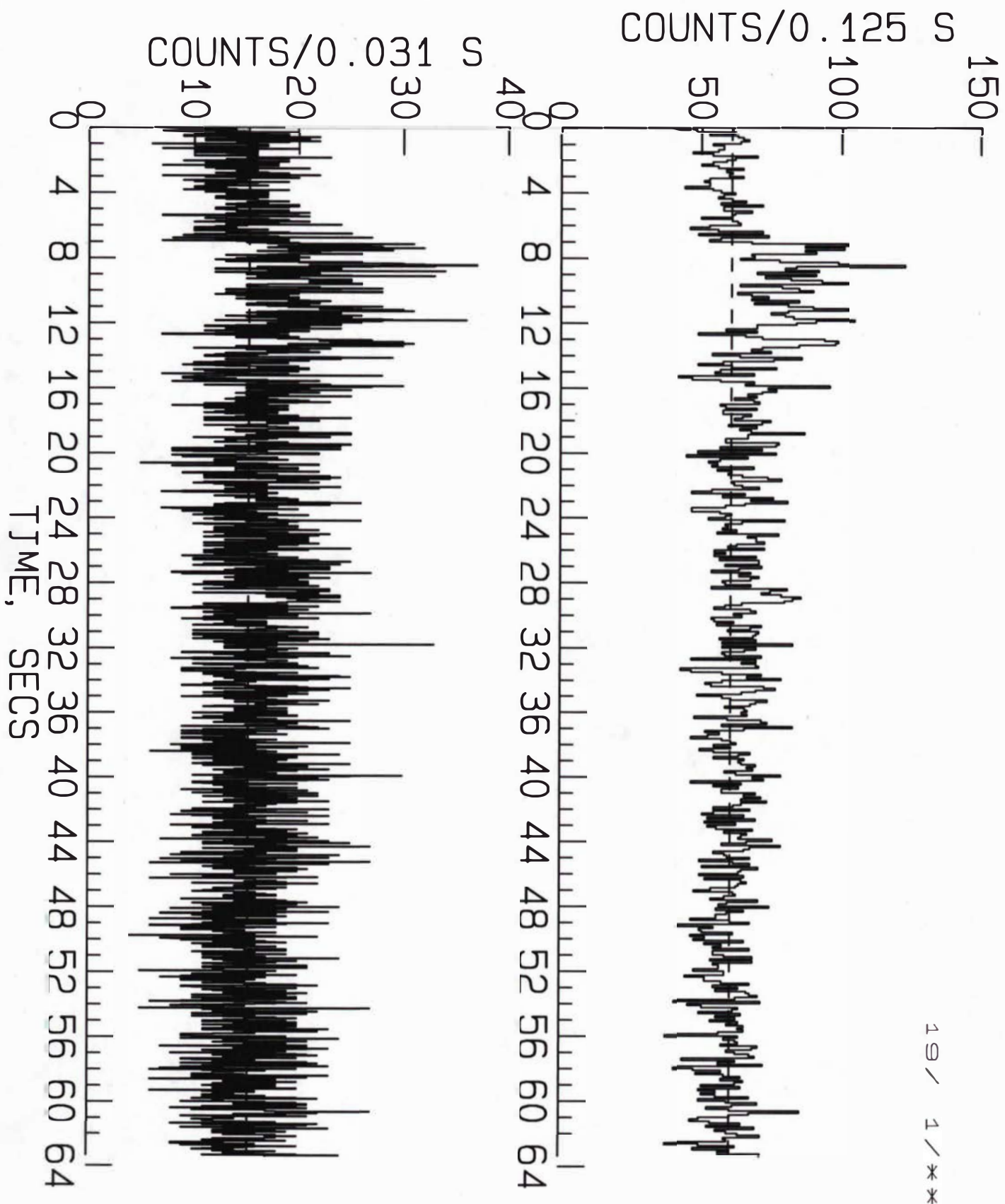


ULYSSES

03/08/99

Ttrig=24243.394

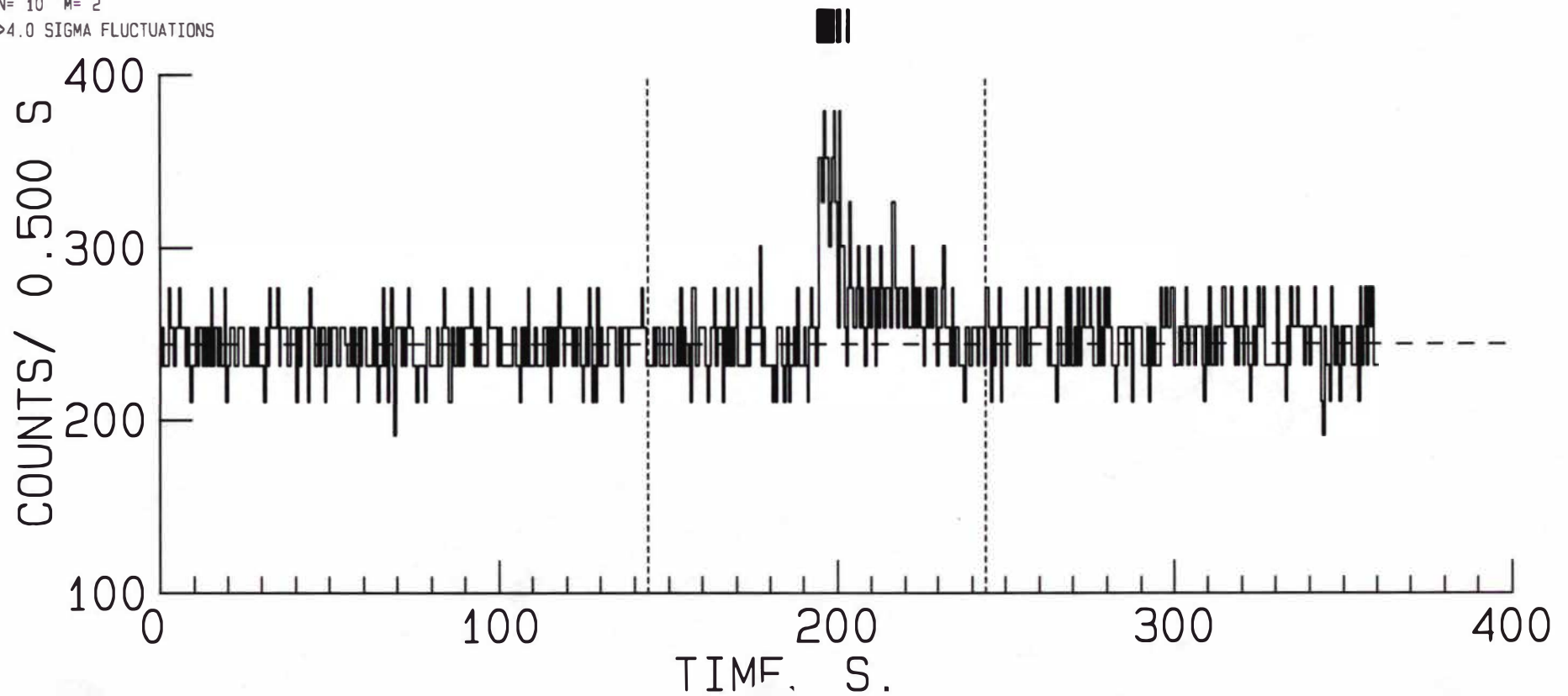
22- 150 keV



ULYSSES RT
3/ 8/99 24048.416 s
22- 150 keV

19/ 1/ 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

03/08/99

23375.929

25- 100 keV

COUNTS/0.064 S

2400—

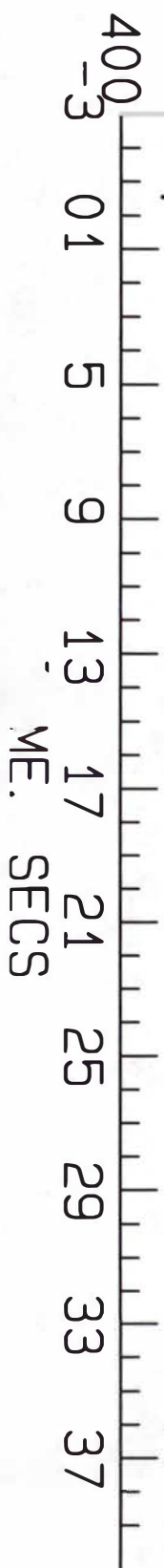
1900—

1400—

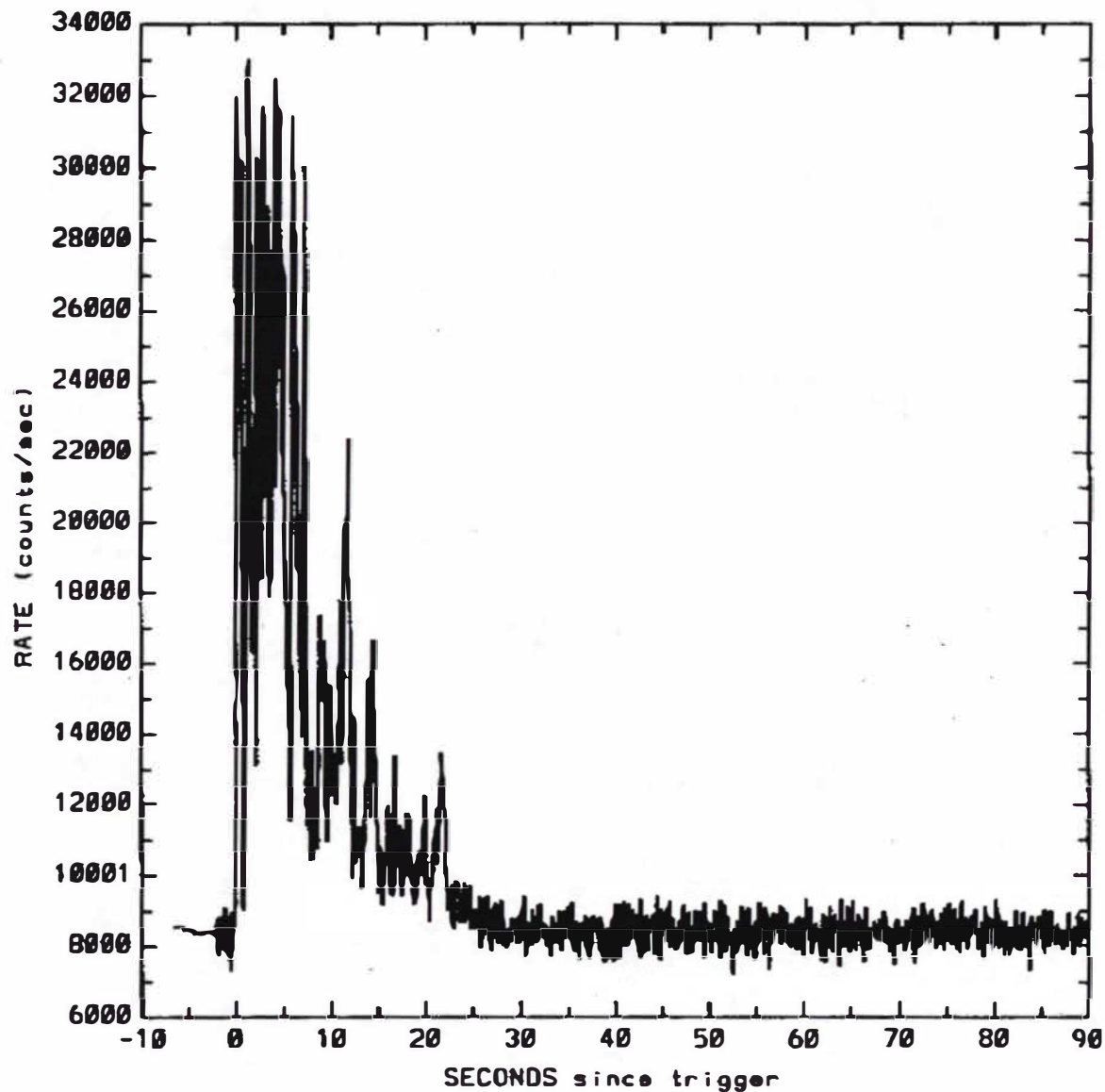
900—

400—

19 / 1 / **



DISCSC Data for K. Hurley, No. 7695



19-JAN-2000 08:59:30

Created by MDPS 80
(Burst Display)
Version 12.26

Trigger # . 7695

Trigger Time:
11393 / 23375.929

Burst Data Type:
DISCSC

Deadtime
Corrected. N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.864 seconds

Detectors (7..8).
76---2--

Discriminators:
(1 . 2)

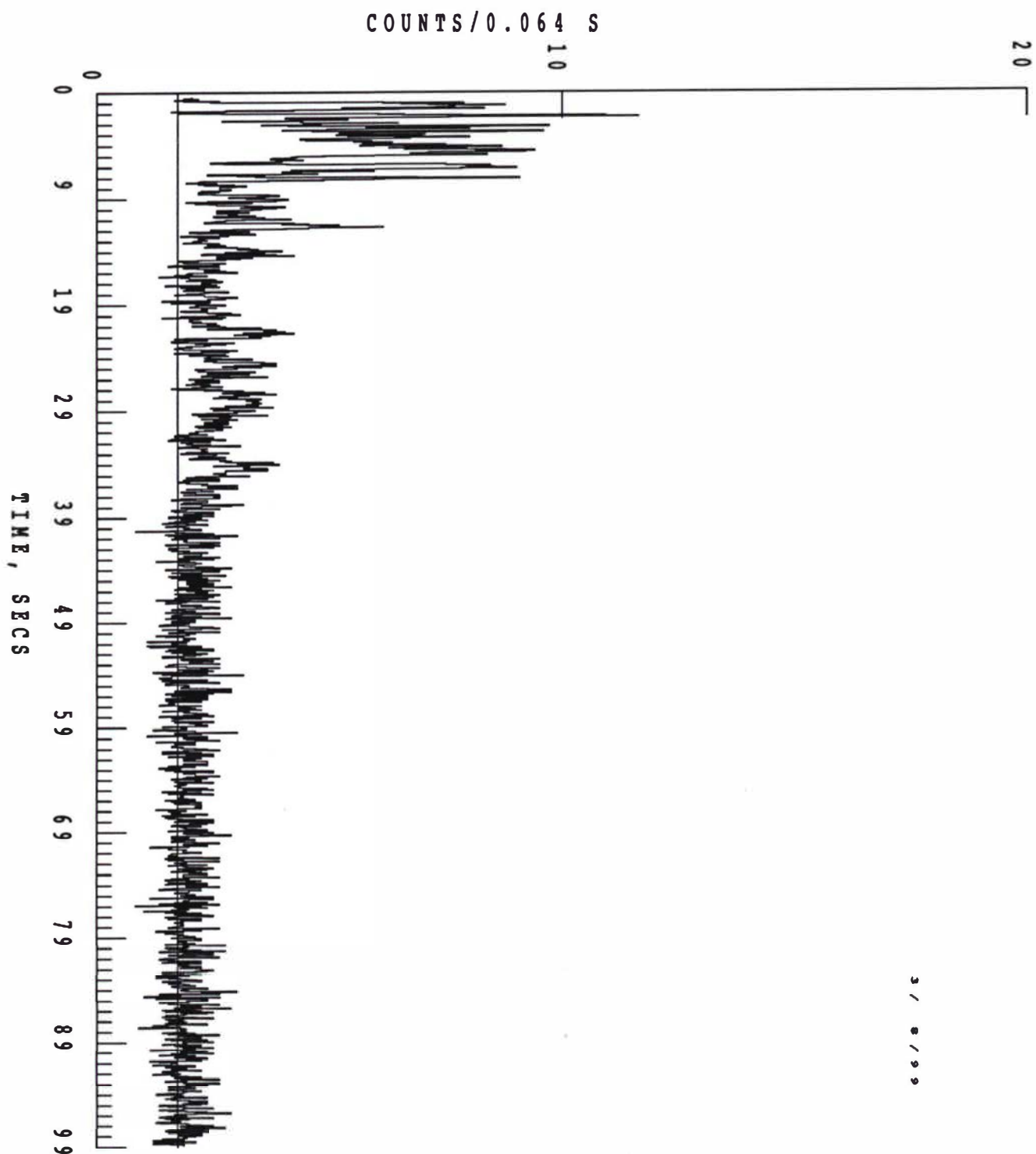
Quality Mask:
80ISP1

KONUS

03/08/99

23377.368

50 - 200 keV



From PETERSON@fender.msfc.nasa.gov Thu Aug 5 09:53 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Thu, 5 Aug 1999 11:51:06 -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, 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.: 7696

TIME: TJD=1393 SECONDS=41751

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

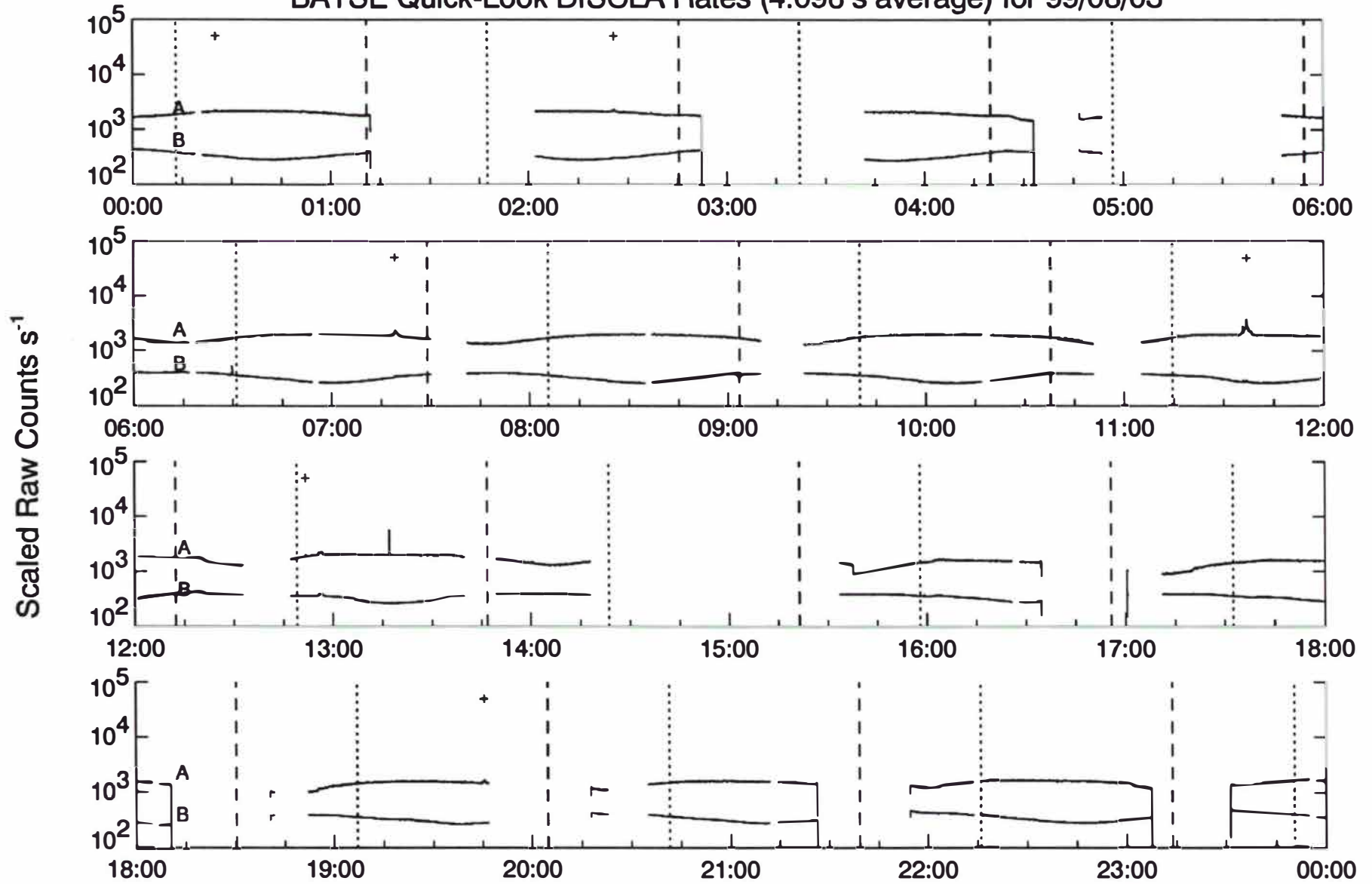
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=103.3 AZIMUTH=355.1 ERROR=1.5 DEGREES

COMMENTS:

GOES C4.6, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR APPROX 250S, STARTS
AT APPROX T-40S, MAX AT APPROX T+63S. NOT VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/03

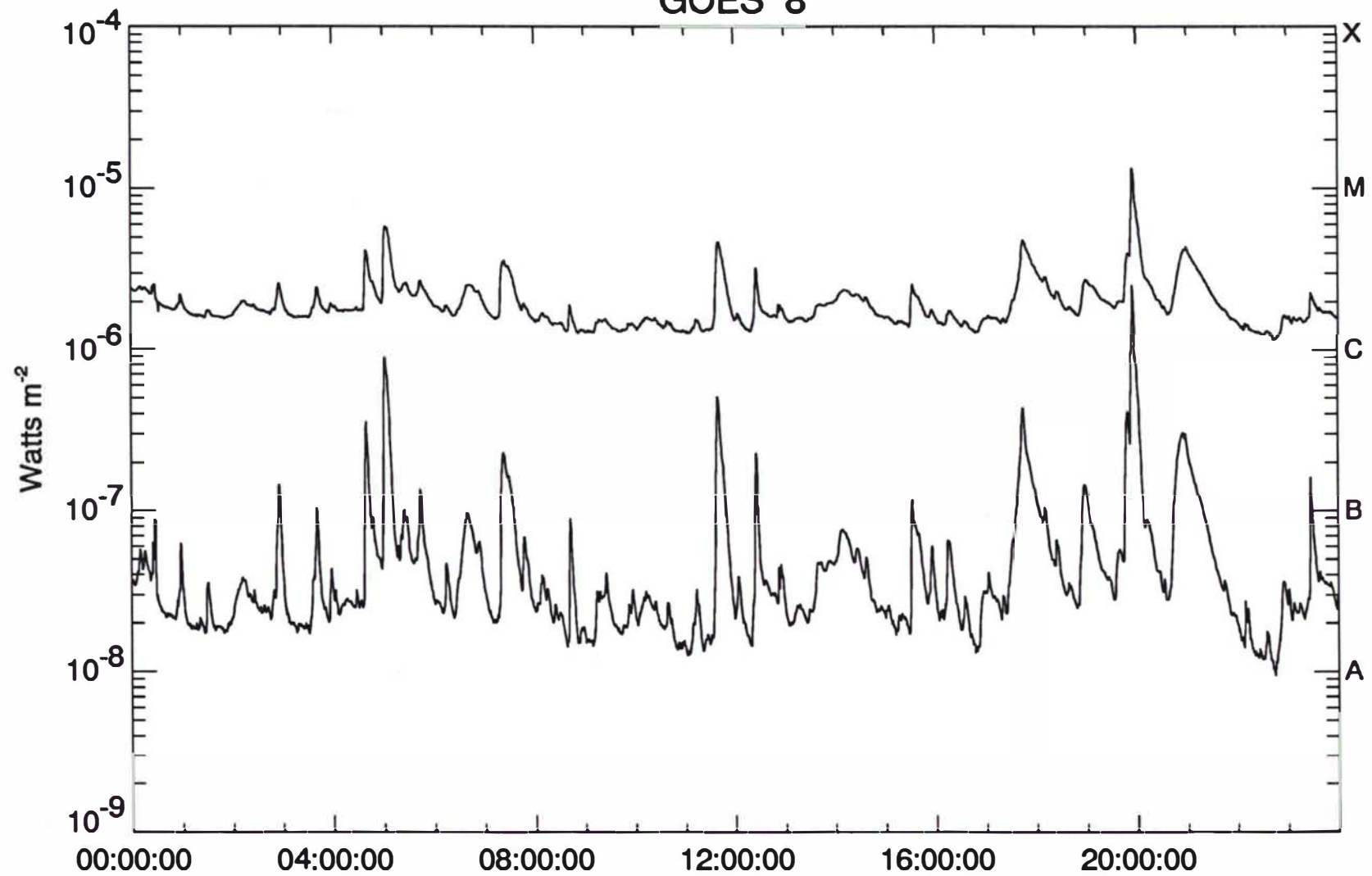


Current Time: 99/08/12, 0049 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/08/03, 0000:00

Plot created: 99/08/12, 0049

Channel

1 (1.0 - 8.0 Angstroms)

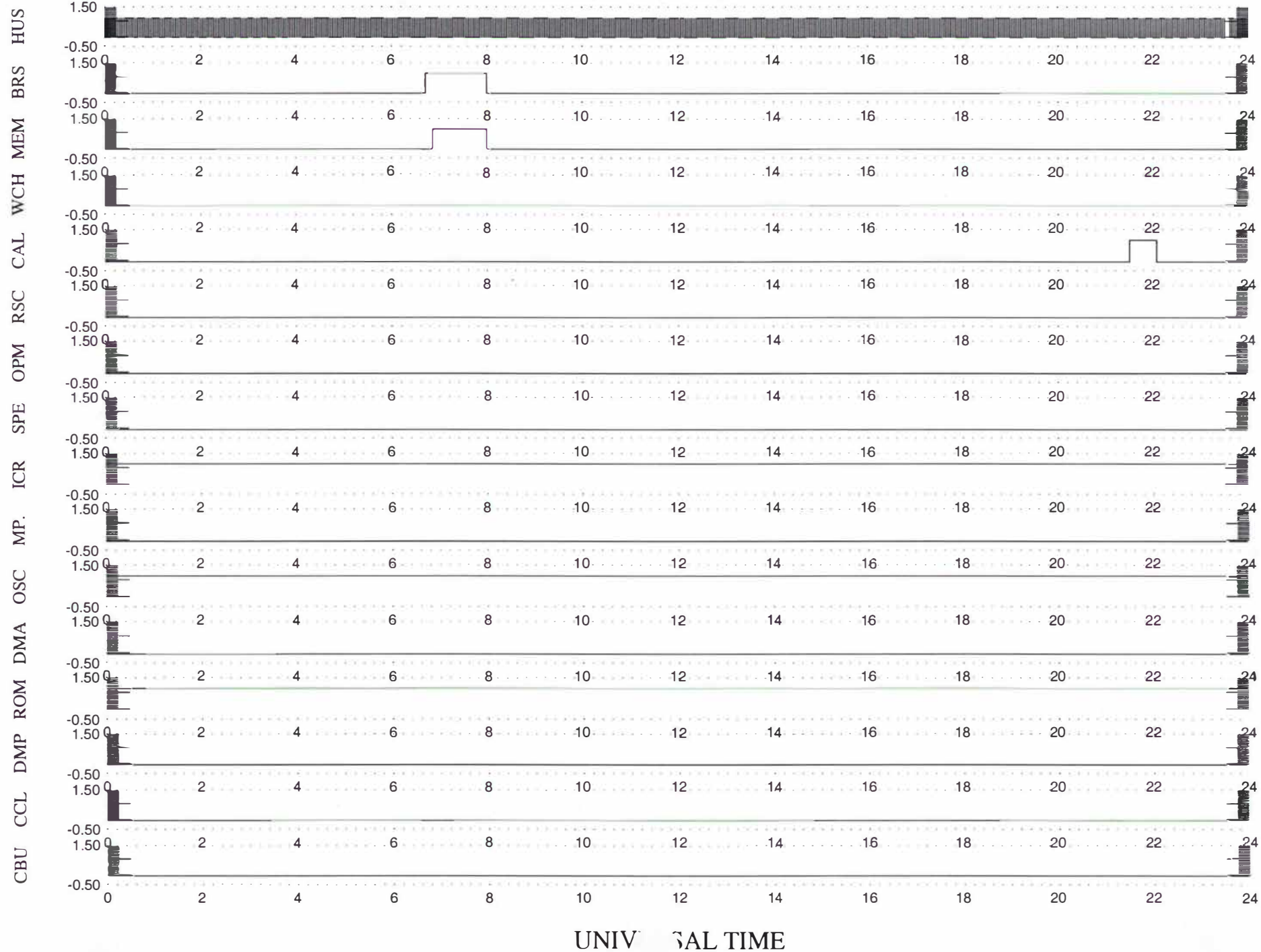
Background not subtracted

2 (0.5 - 4.0 Angstroms)

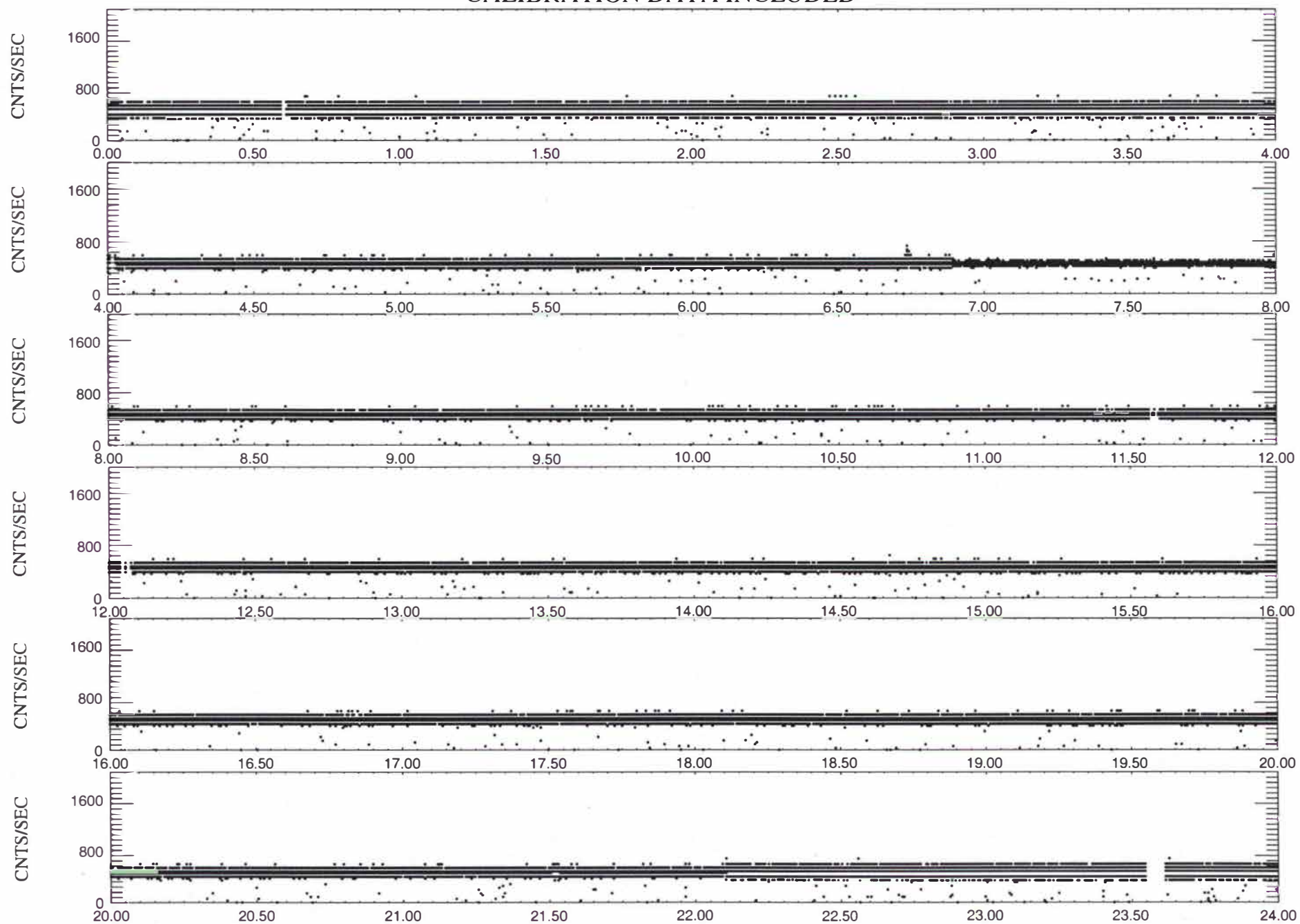
Background not subtracted

Sample average = 10

BURST NUMBER 4

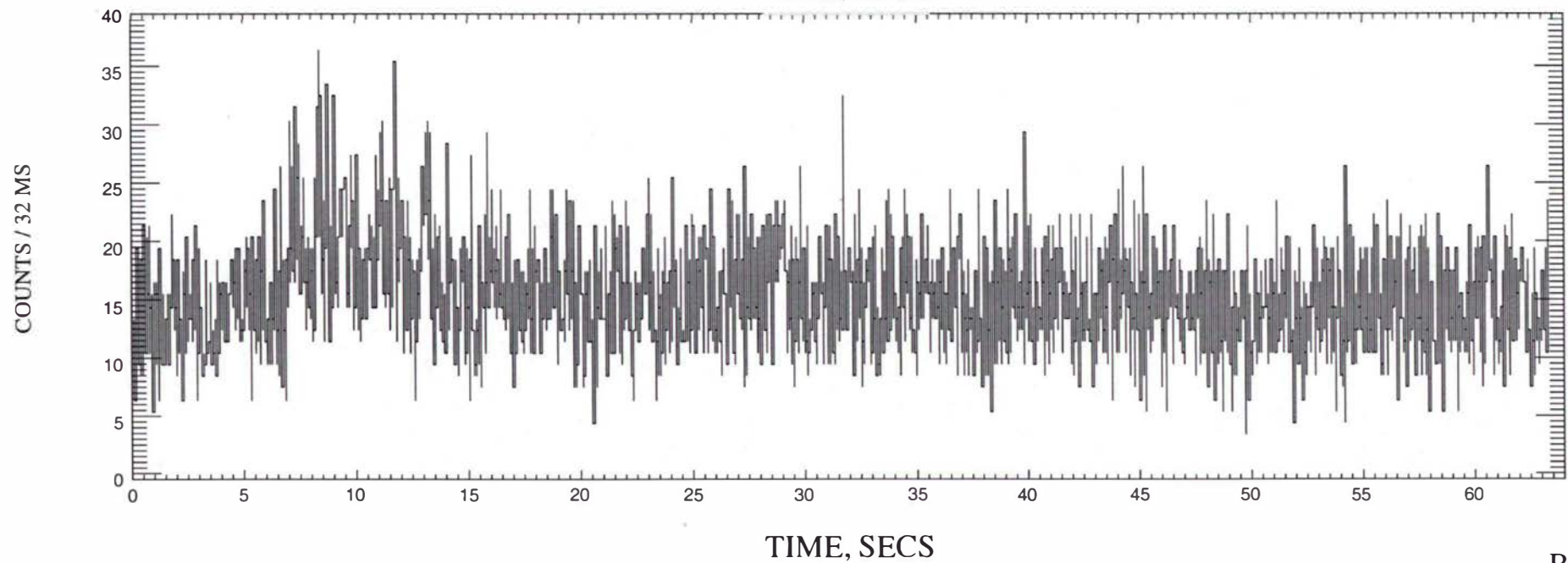
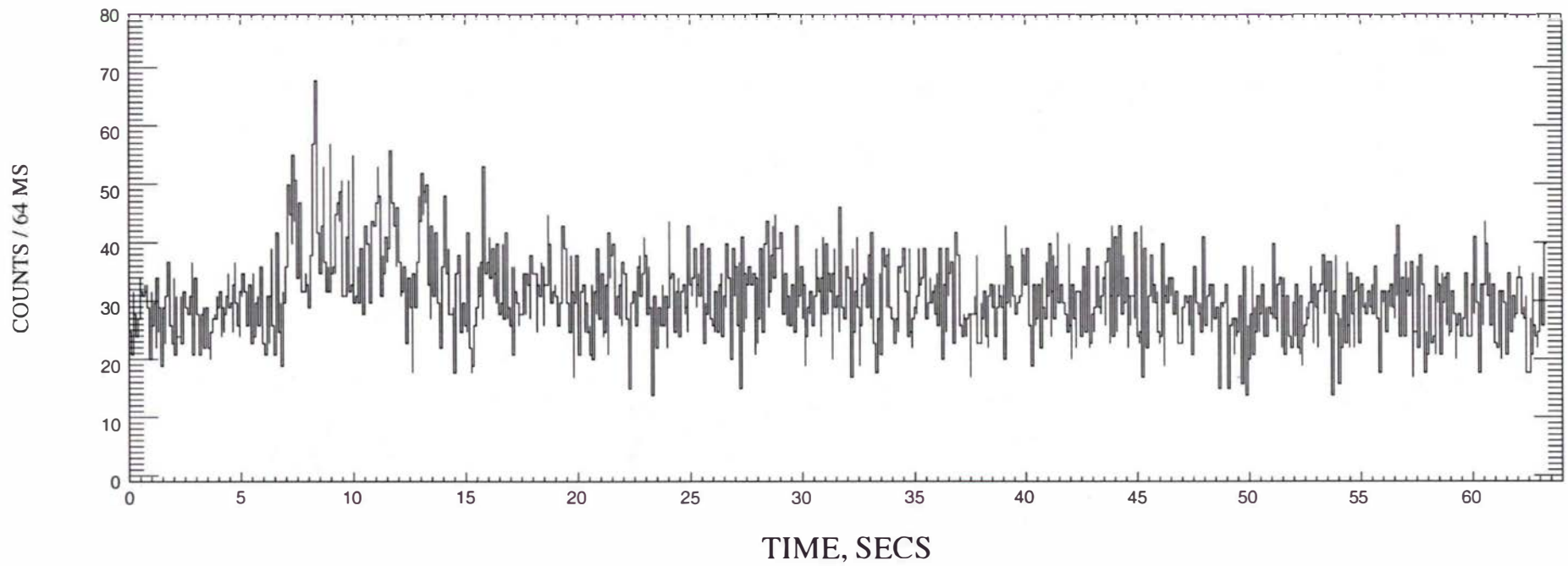


CALIBRATION DATA INCLUDED

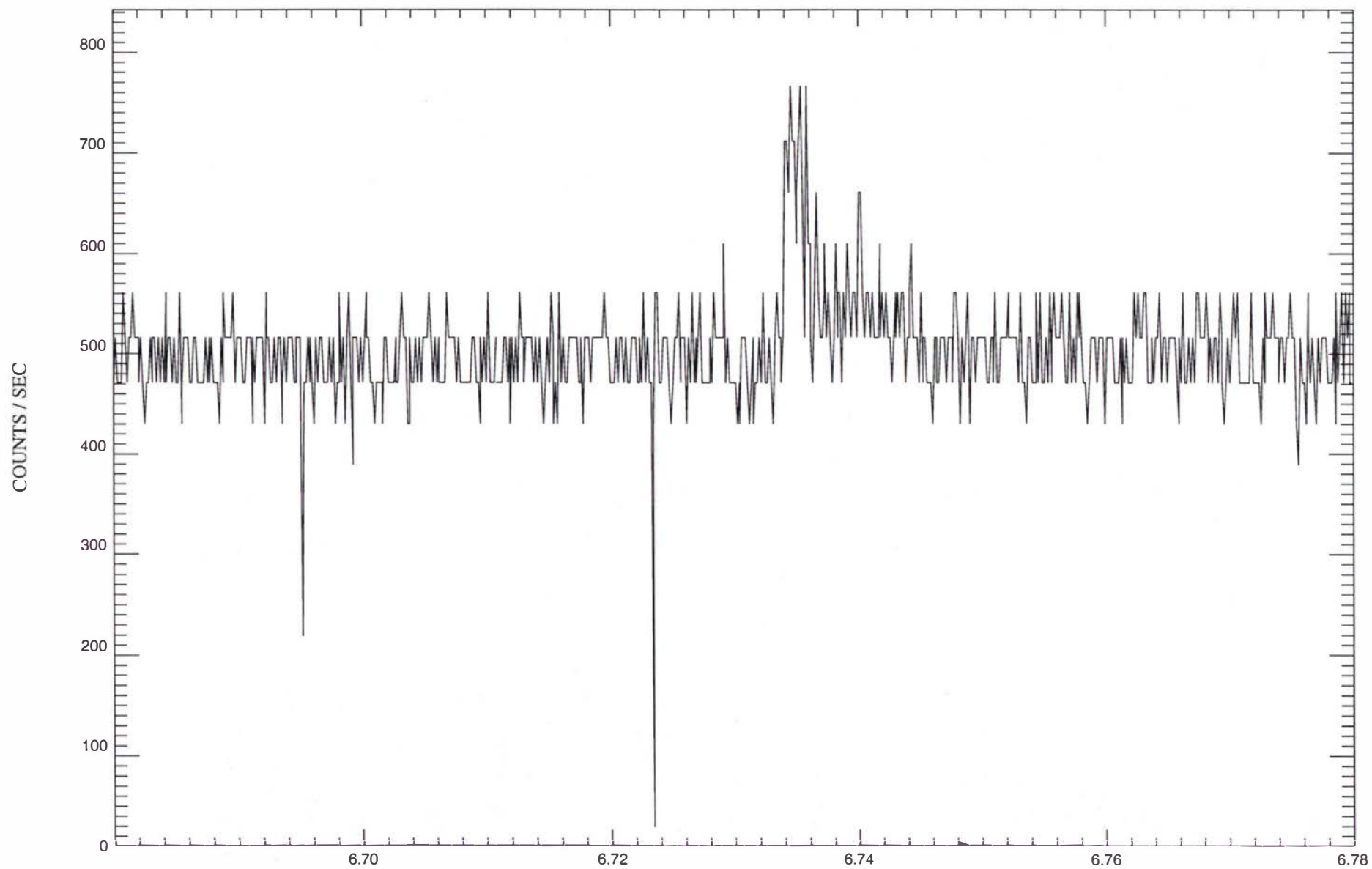


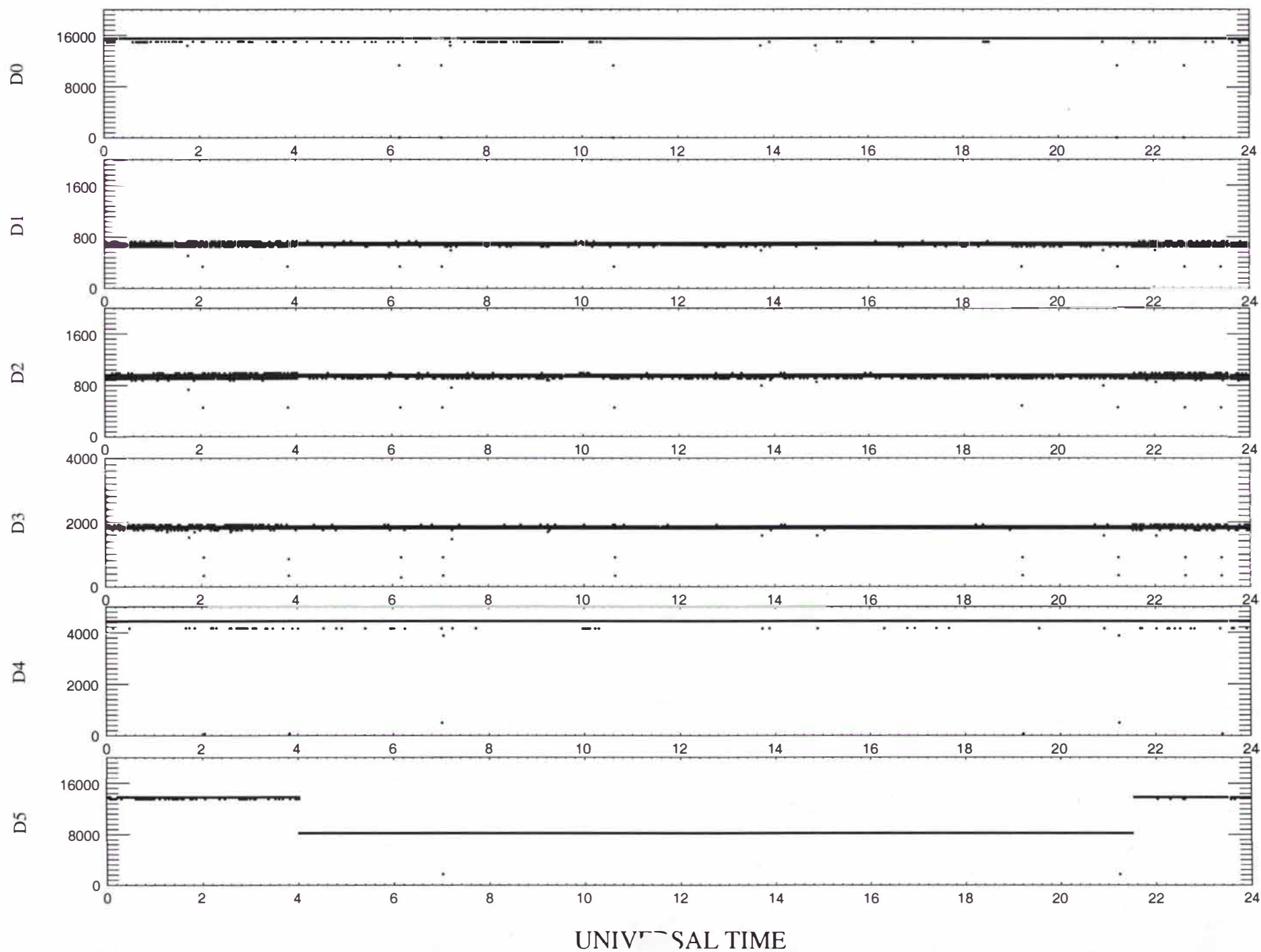
UNIVERSAL TIME

Burst Counter 4 at UT= 6.734280225966 h=24243.409 s 06:44:03.409



CALIBRATION DATA INCLUDED





JANA TAB1 19990804 39962

ULYSSES RT

05/08/05

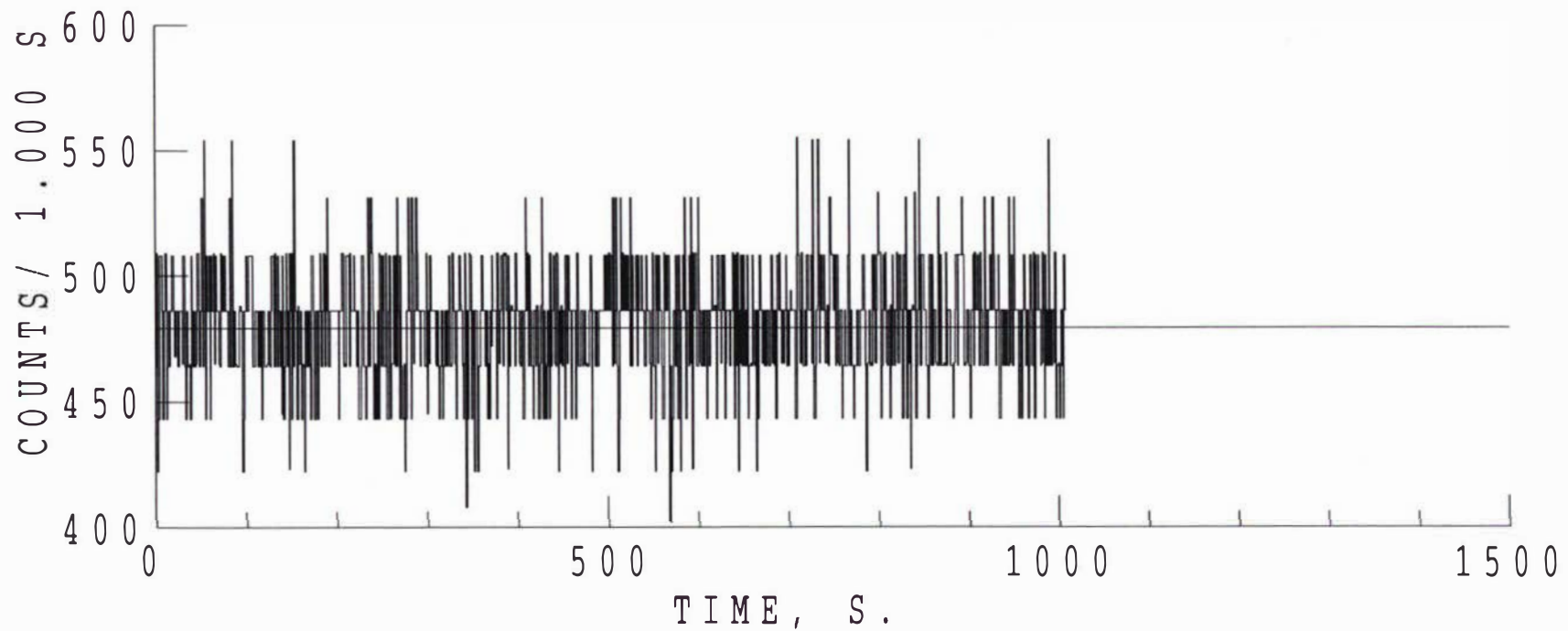
04/08/99 39456.449 s

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 SAHI@fender.msfc.nasa.gov Fri Aug 6 08:19 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 6 Aug 1999 10:25:28 -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, 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.: 7697

TIME: TJD=1394 SECONDS=73544

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=111.2 AZIMUTH=357.6 ERROR=0.97 DEGREES

COMMENTS:

SOLAR FLARE. NO GOES, NO OPTICAL ID. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 45 S
STARTS AT T-7 S. NOT VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Fri Aug 6 08:22 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Fri, 6 Aug 1999 10:28:11 -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, 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.: 7698

TIME: TJD=1394 SECONDS=84831

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

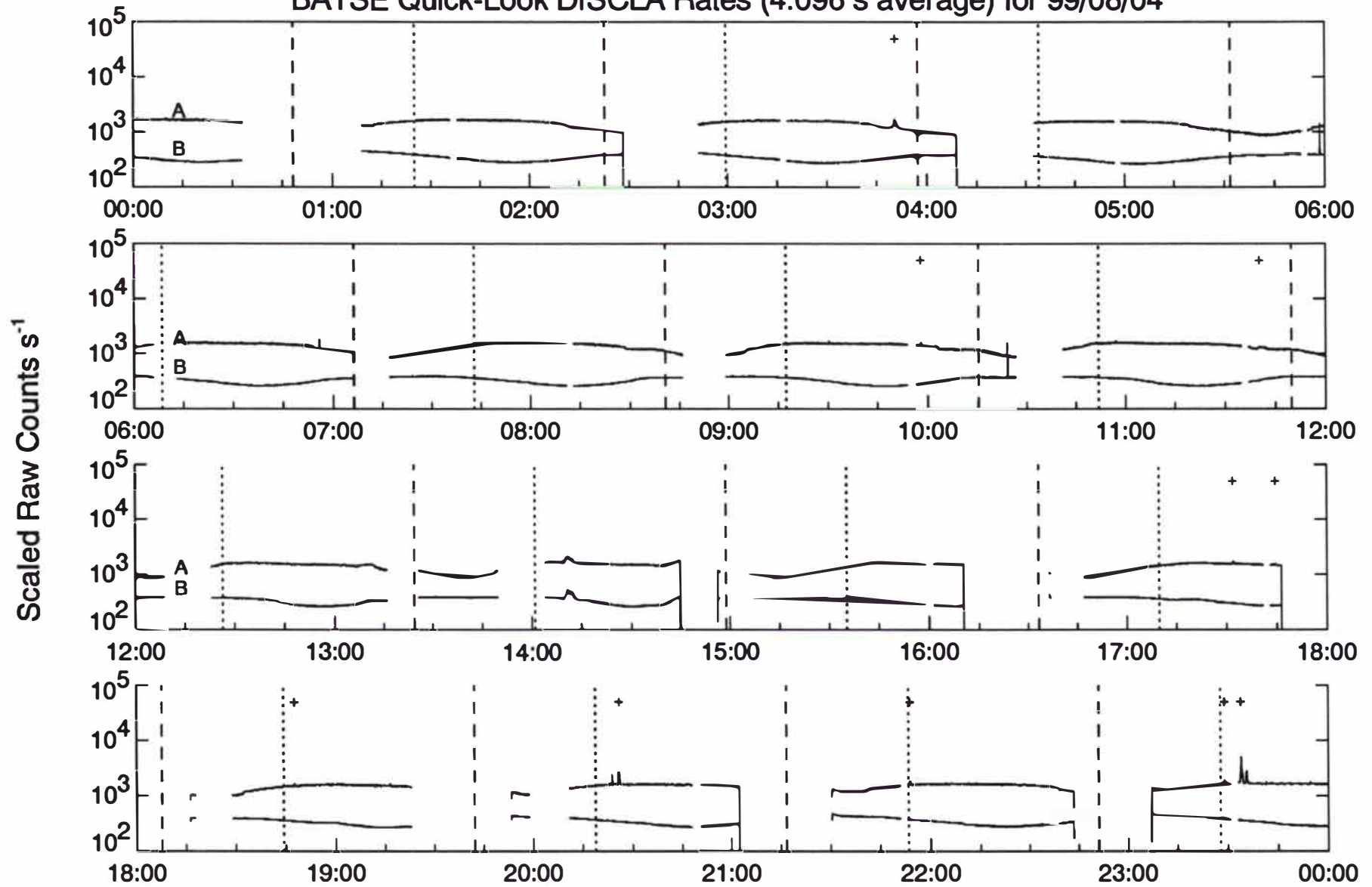
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=112.4 AZIMUTH=357.6 ERROR=0.8 DEGREES

COMMENTS:

SOLAR FLARE. GOES C5.4, NO OPTICAL ID. DOUBLE PULSE, DUR. 150 S, STARTS AT
T-20 S, MAX. AT T+6 S. NOT VISIBLE ABOVE 100 KEV. WEAK PRECURSOR AT T-300 S.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/04



Current Time: 99/08/12, 0054 EDT

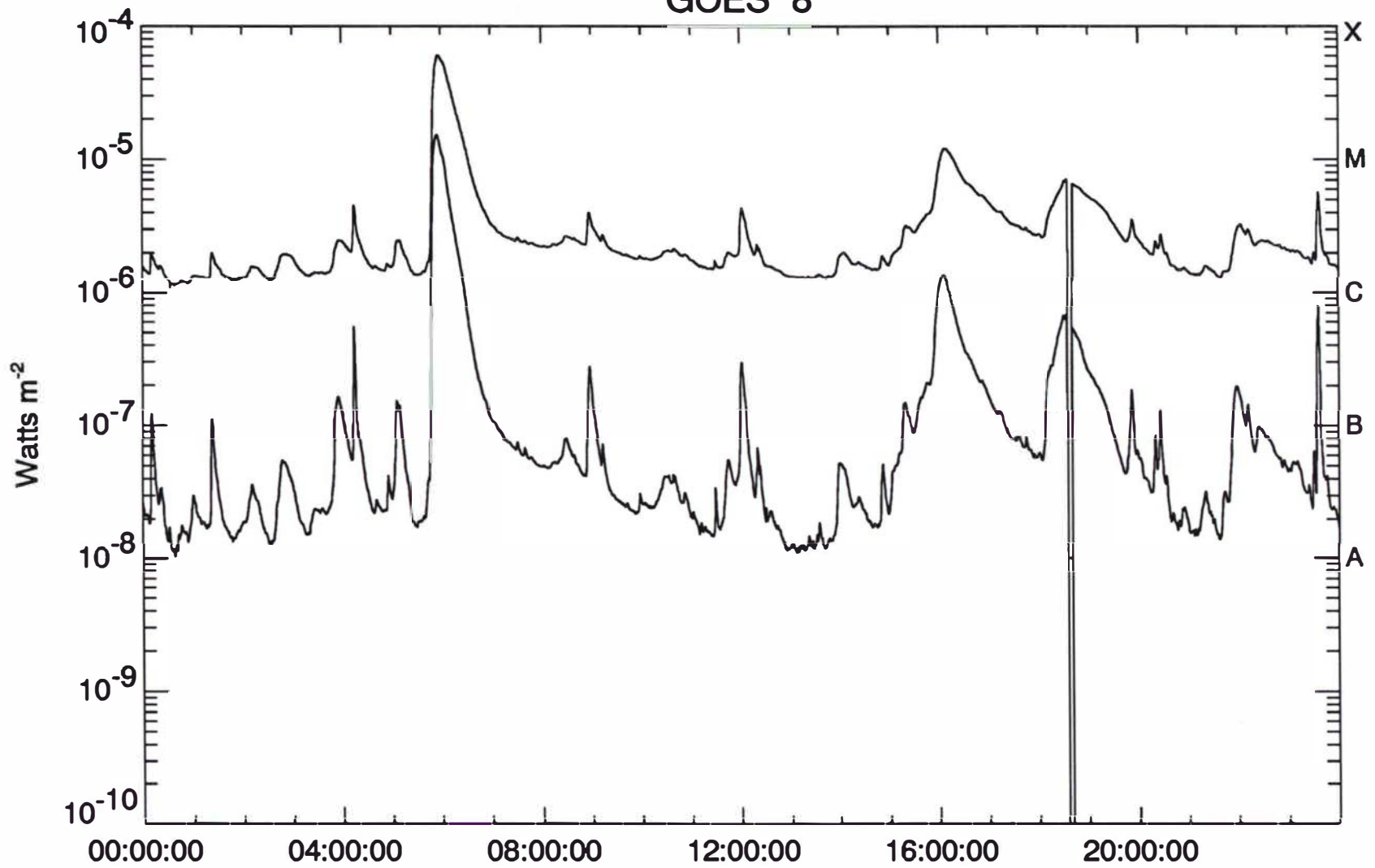
A: Channel 0 Most Sunward LAD

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: 99/08/04, 0000:00

Plot created: 99/08/12, 0053

Channel

1 (1.0 - 8.0 Angstroms)

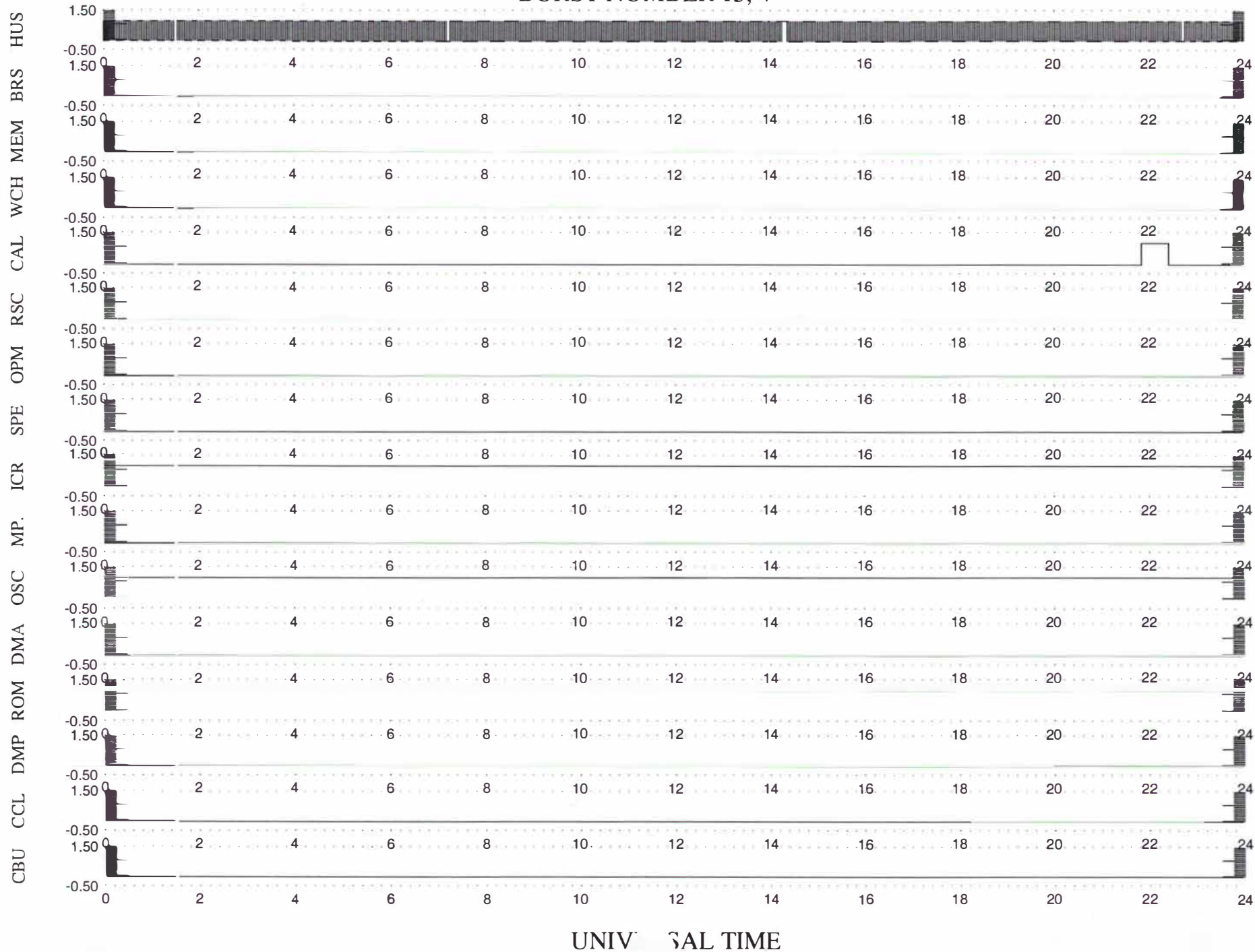
Background not subtracted

2 (0.5 - 4.0 Angstroms)

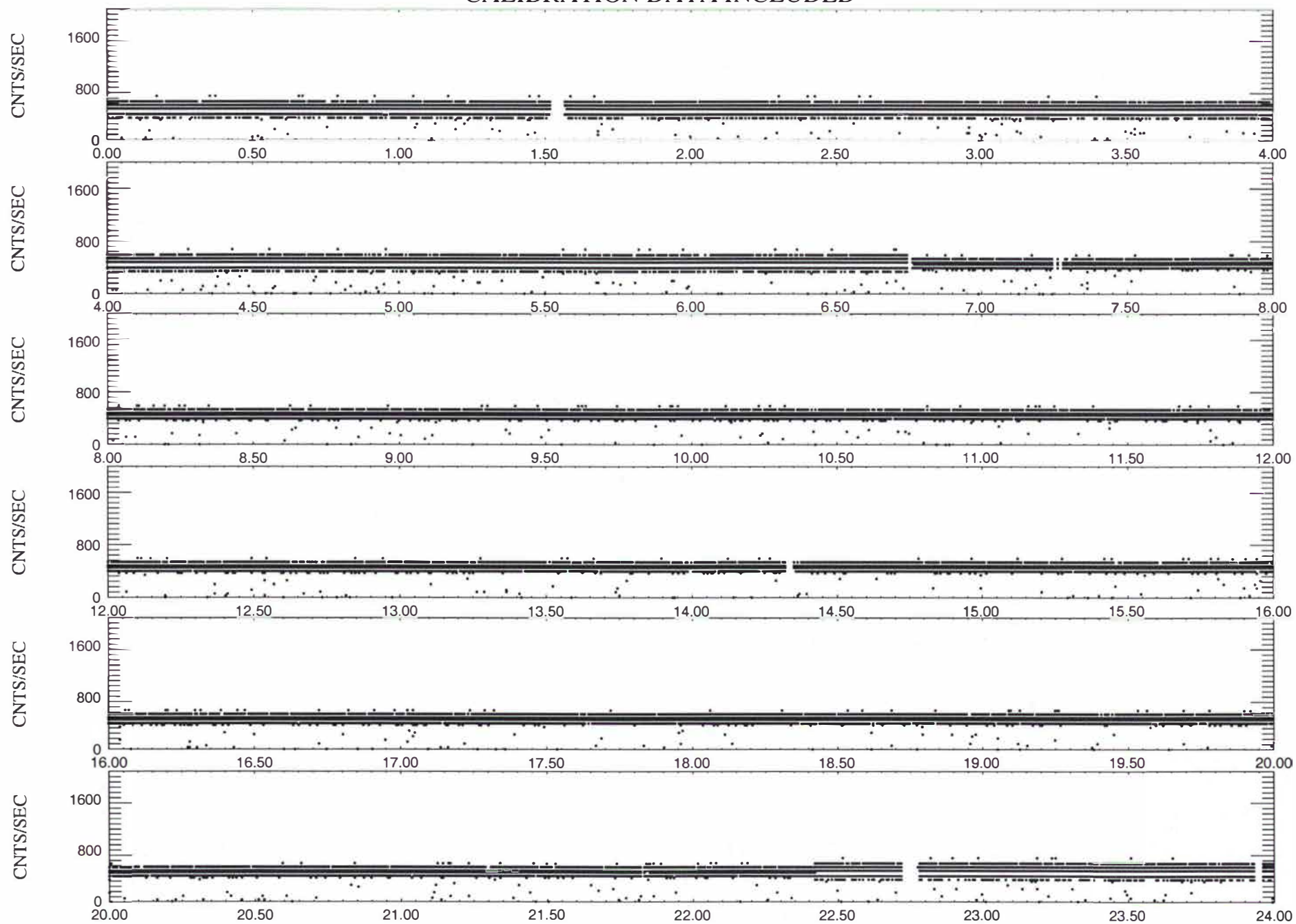
Background not subtracted

Sample average = 10

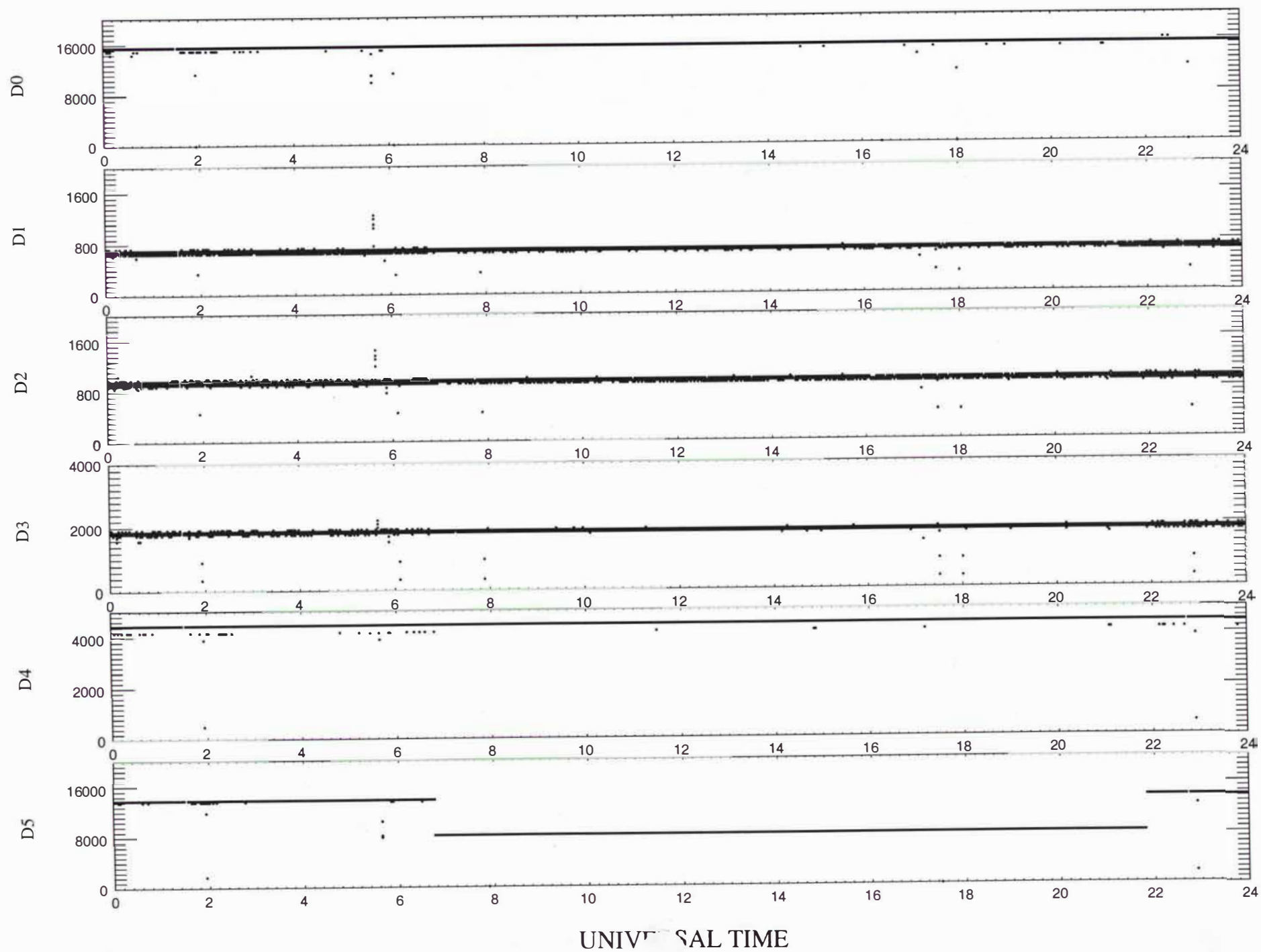
BURST NUMBER 15, 4



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From HENZE@fender.msfc.nasa.gov Mon Aug 9 12:34 PDT 1999
Date: Mon, 9 Aug 1999 14:40:10 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.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, 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.: 7699

TIME: TJD=1395 SECONDS=80117

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.2 AZIMUTH=356.8 ERROR=0.9 DEGREES

COMMENTS:

GOES M1.1 FLARE, NO OPTICAL IDENT. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX.
80 S, STARTS AT ~T-40 S. WEAKLY VISIBLE ABOVE 100 KEV.

CRAB SET (DET.1) AT ~T+56 S.

From HENZE@fender.msfc.nasa.gov Mon Aug 9 12:41 PDT 1999
Date: Mon, 9 Aug 1999 14:47:54 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
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, 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.: 7700

TIME: TJD=1395 SECONDS=84539

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

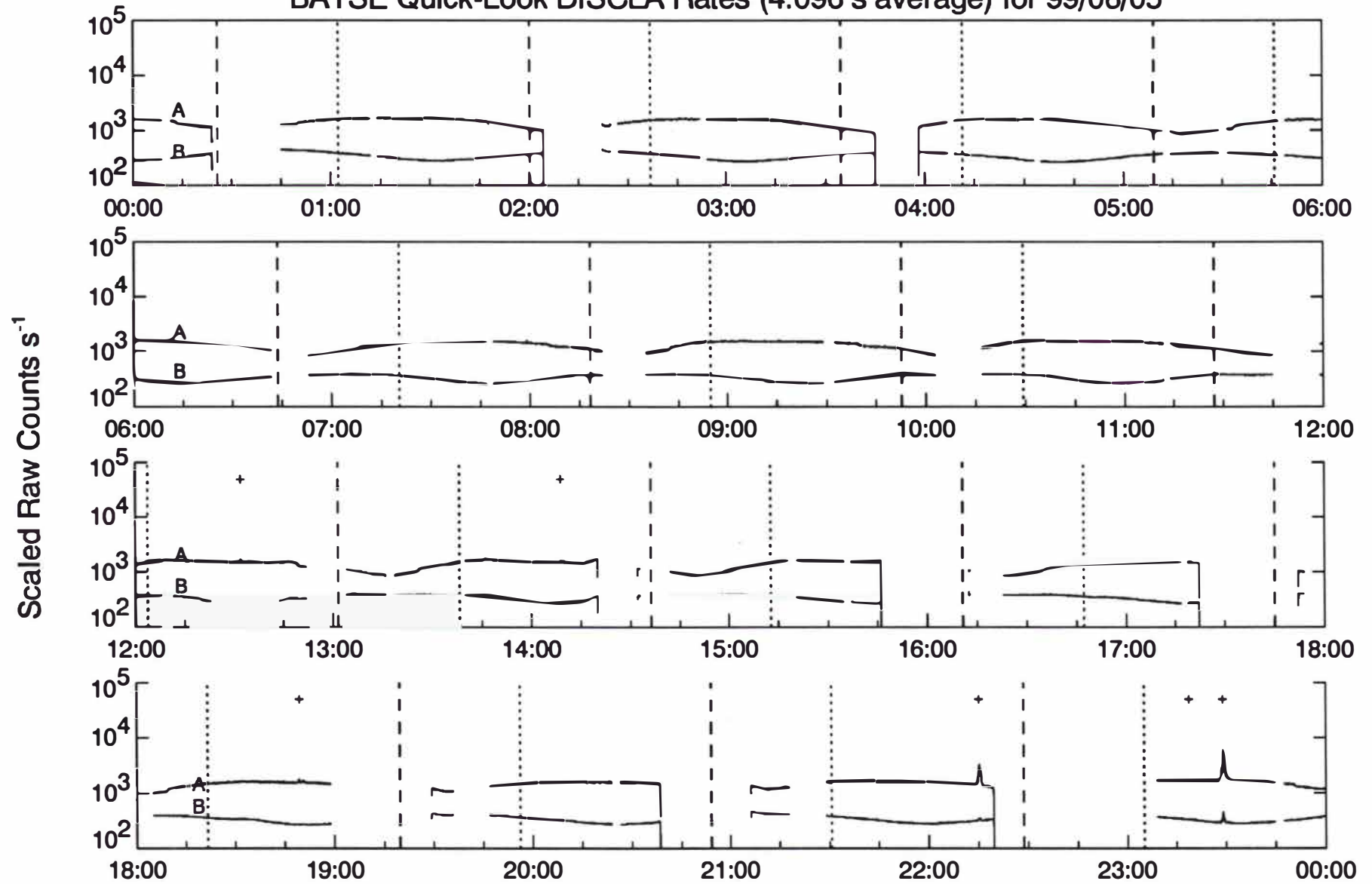
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.6 AZIMUTH=358.4 ERROR= 0.2 DEGREES

COMMENTS:

GOES C8.6 FLARE, NO OPTICAL IDENT. SINGLE EPISODE WITH STRUCTURE, DUR. APPROX. 190 S, STARTS AT APPROX. T-50 S, MAX AT APPROX. T+6 S. NOT VISIBLE ABOVE 300 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/05

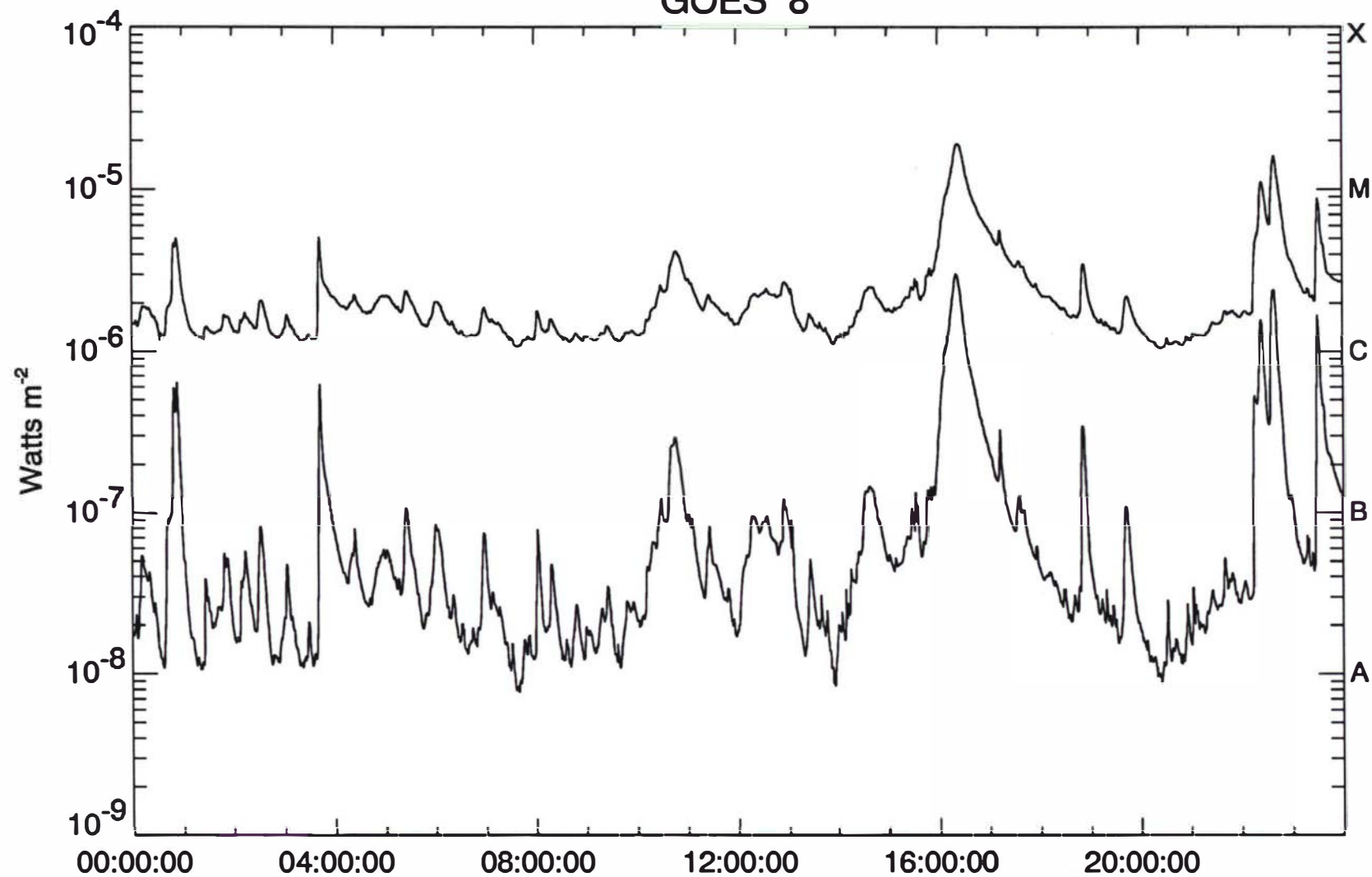


Current Time: 99/08/12, 0025 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

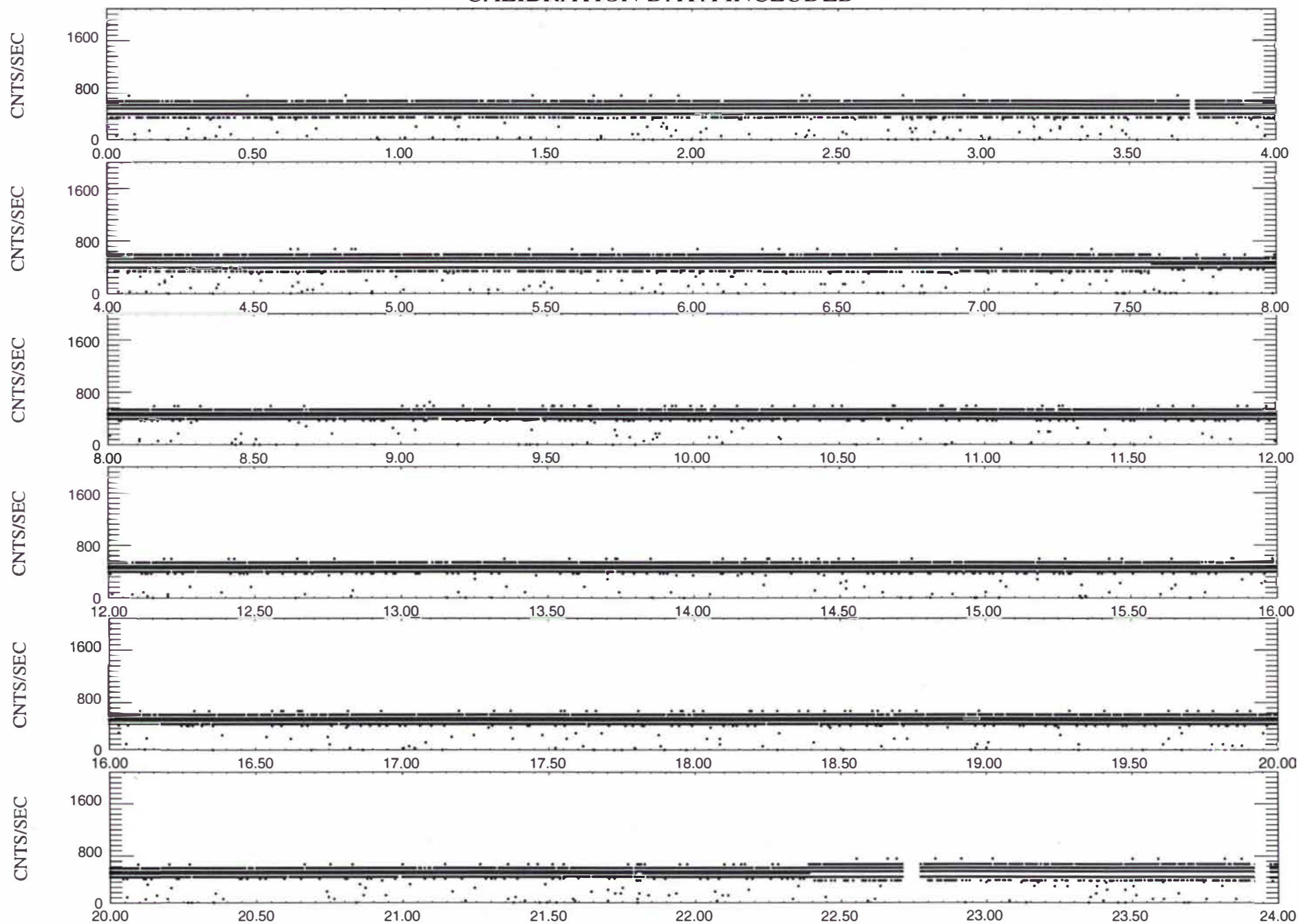


Data Start: 99/08/05, 0000:00

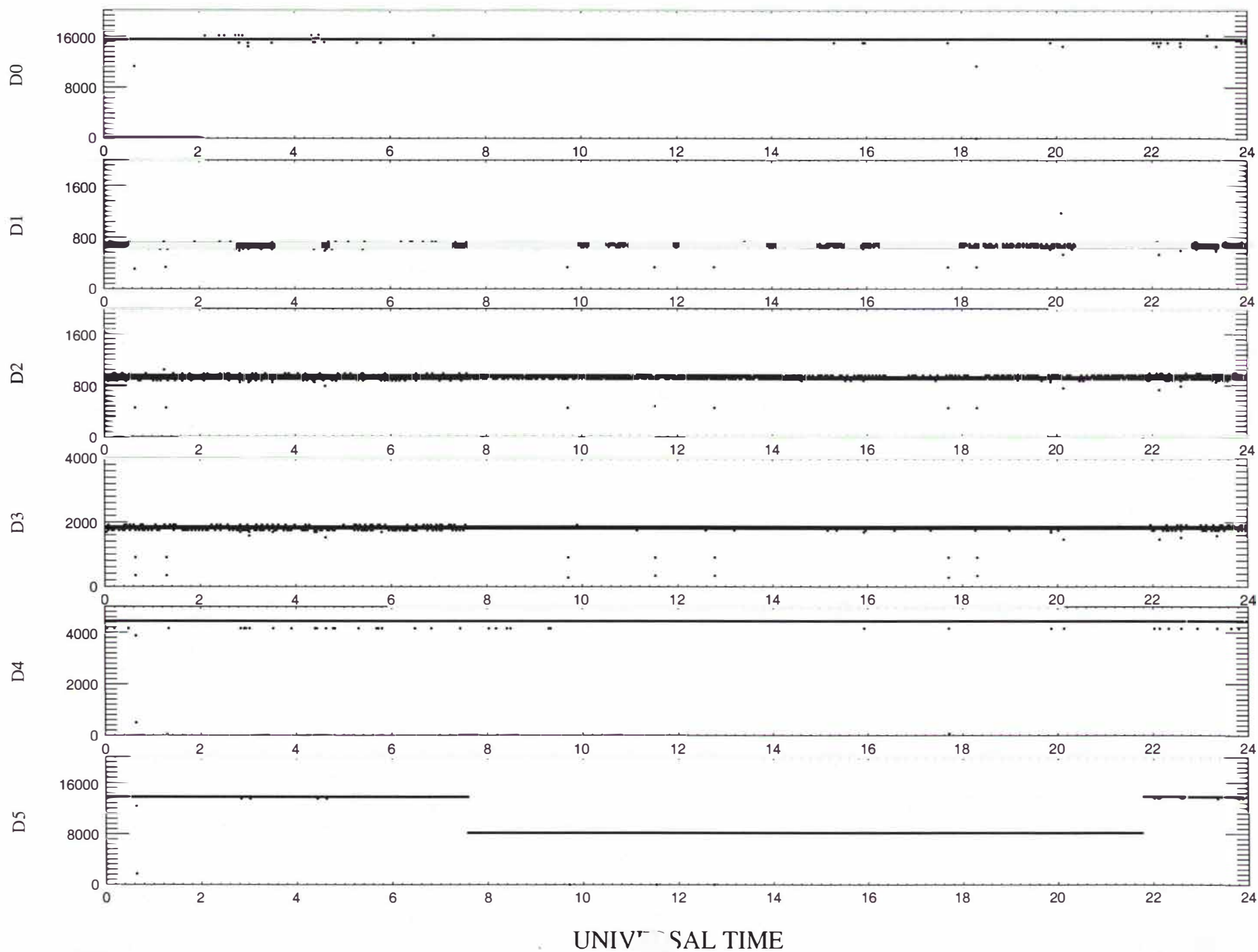
Plot created: 99/08/12, 0024

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

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Date: Jun 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

- ☐ 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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

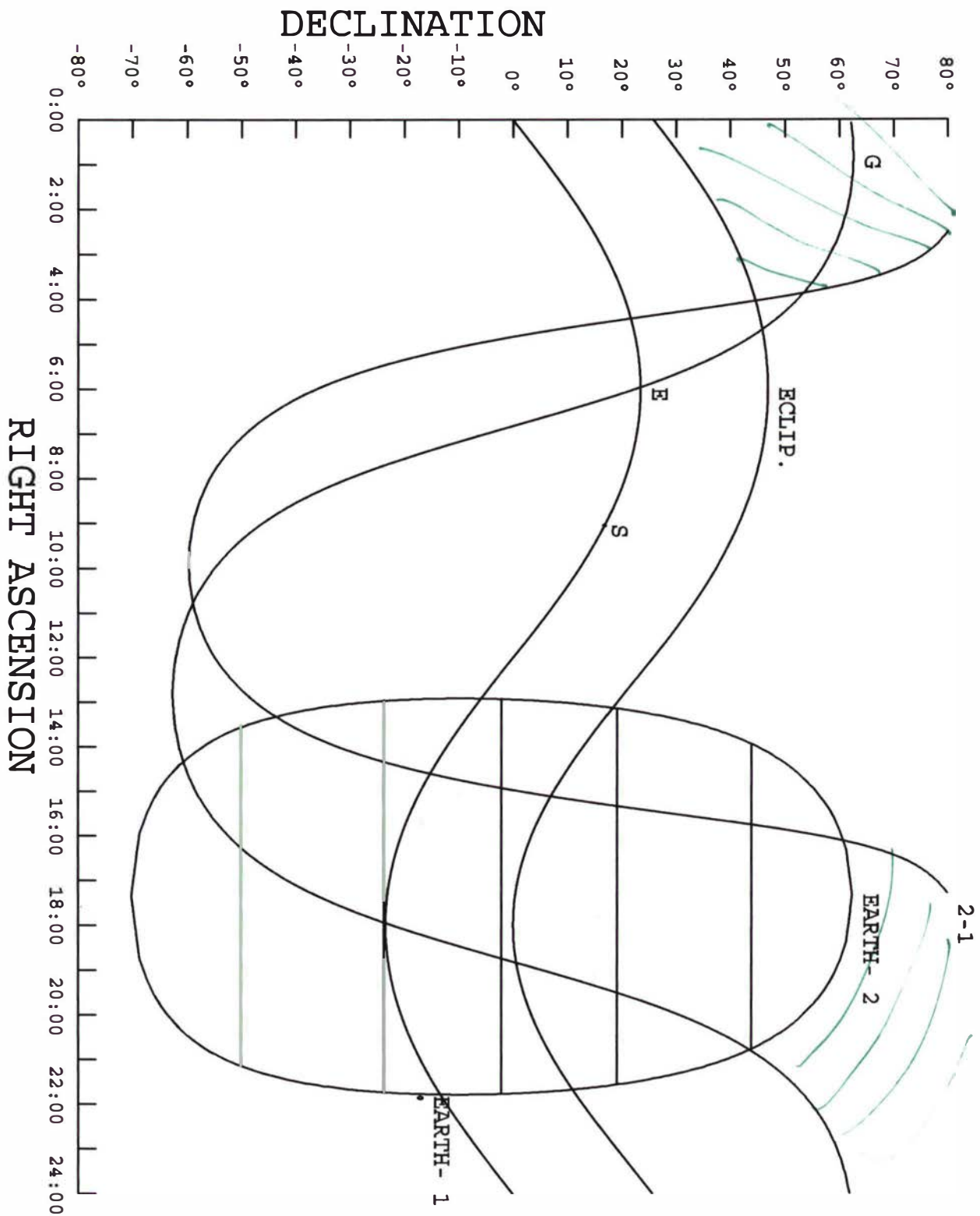
G=GALACTIC EQUATOR

1 KONUS

2 SAX

EVENT OF AUG 6, 1999 0:25

29 / 6 / 7



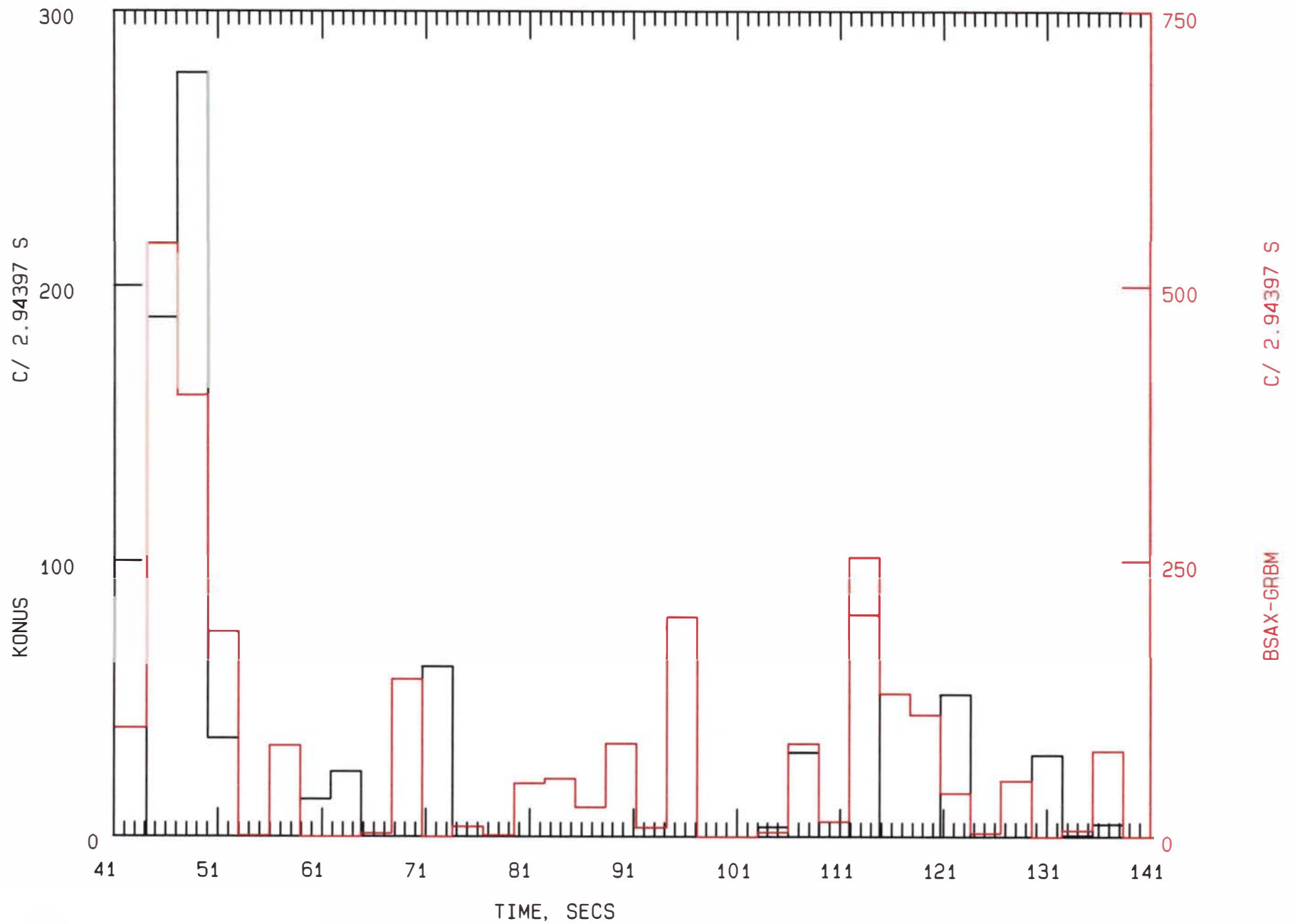
KONUS

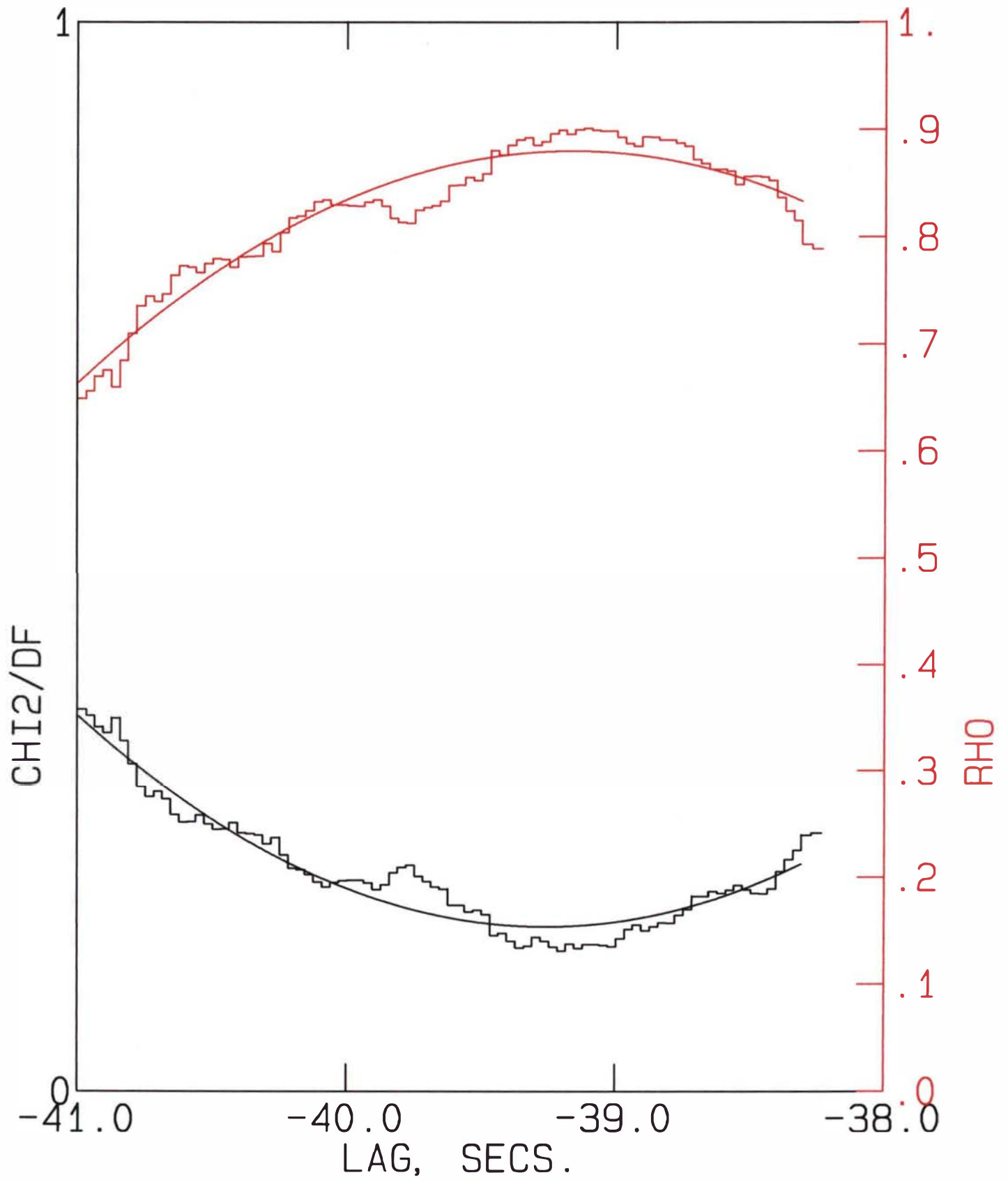
-BSAX-GRBM CORRELATION

06/08/99

1528.373

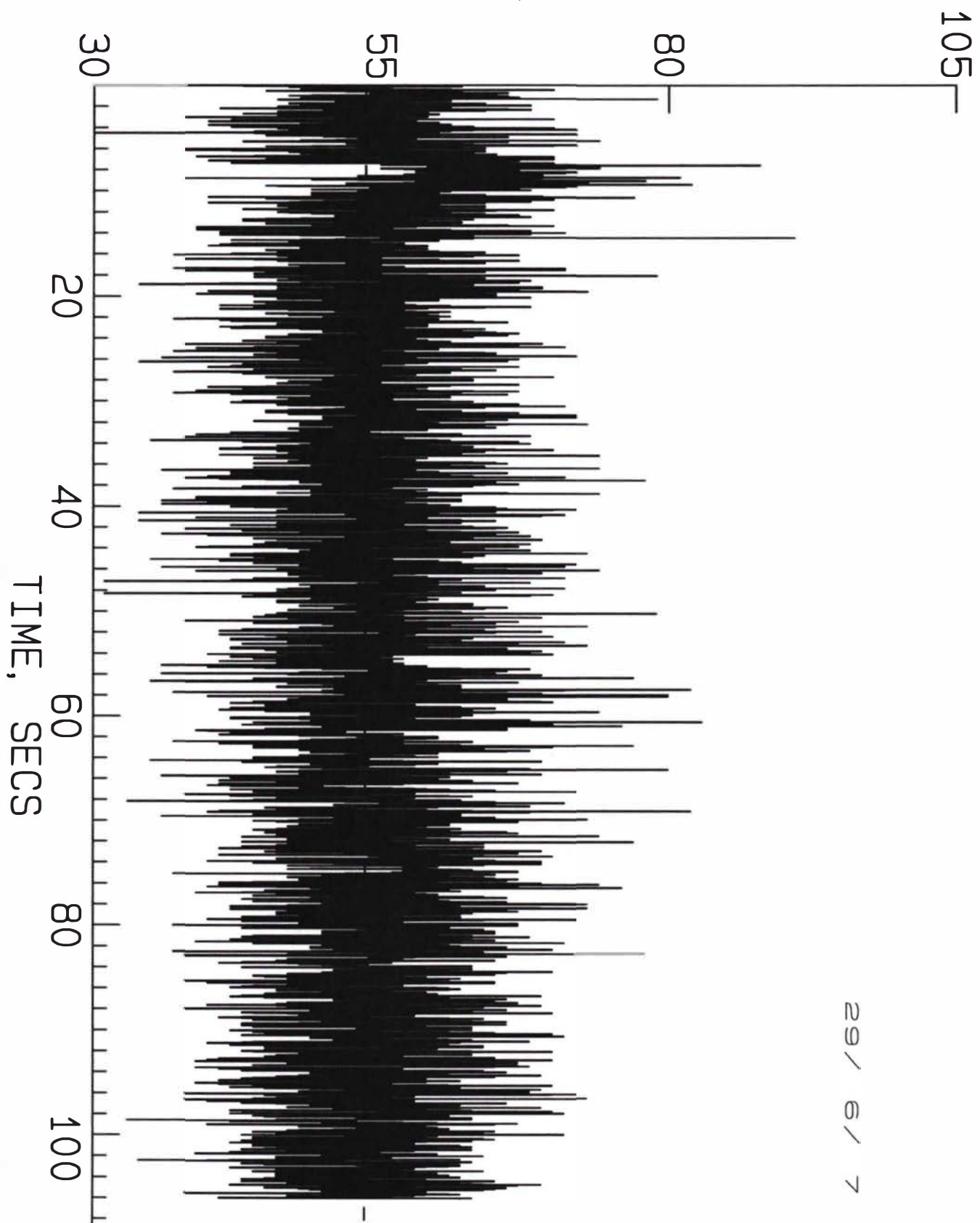
29/ 6/ 7





40- 700 keV

COUNTS/0.031 S



KONUS

06/08/99 1528.373

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

3500

DETECTOR 1 - S. ECLIPPTIC

2500

1500

500

20

40

60

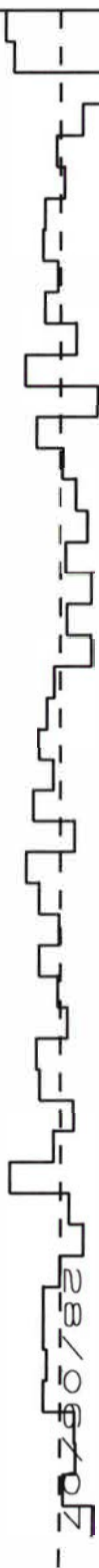
80

100

120

140

TIME, SECS



KONUS

06/08/99 1528.373

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4300

DETECTOR 2 - N. ECLIPHTIC

3300

2300

1300

300

20

40

60

80

100

120

140

TIME, SECS

28/06/07

KONUS (Aug 6 00:26)

ULYSSES RT

21 / 01 / 00

05 / 08 / 99 85176.039 s

0.250 S INTERVALS REGROUPED BY 15

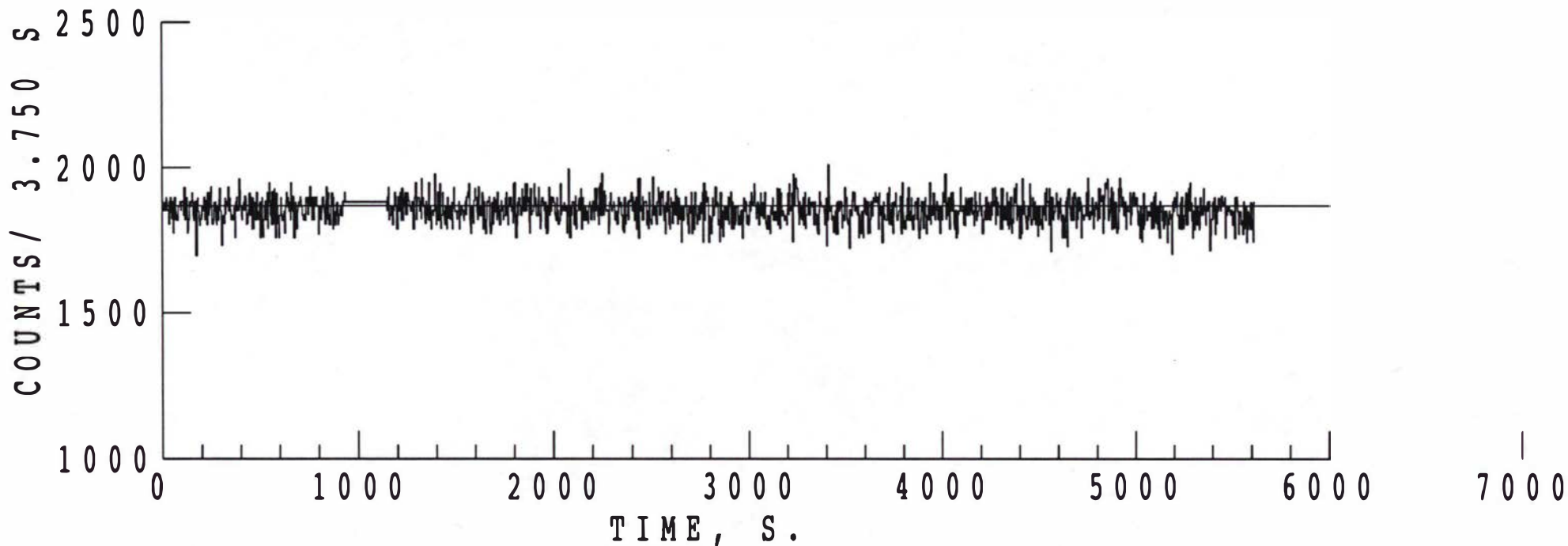
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Tue Aug 10 07:11 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Tue, 10 Aug 1999 9:17:40 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7701

BATSEARCH PROGRAM

BATSE BURST # 7701
EVENT OF 1999 AUG 6 DAY OF YEAR=218
EVENT CROSSING TIME AT BATSE : 52086. S. OR 14:28:06.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 34.000 -74.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 8/ 99 IS:
RA= 151.247 DEC= -10.101 DIST= 5.539 AU
BATSE-ULYSSES DISTANCE = 828669787. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 92.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -122.59 SECS.
CROSSING TIME AT ULYSSES IS 51963. S. OR 14:26:03 +/- 527.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 8/ 99 IS:
RA= 220.958 DEC= -17.563 DIST= 1.035 AU
MARS-BATSE DISTANCE = 154889632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 91.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -15.09 SECS.
CROSSING TIME AT MARS IS 52071. S. OR 14:27:50 +/- 89.43 SECONDS

BATSE BURST TRIGGER

NO.: 7701

TIME: TJD=1396 SECONDS=52086

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=49.7 AZIMUTH=100.1 ERROR=2.6 DEGREES

COMMENTS:

GRB. RISE FASTER THAN DECAY. DURATION APPROX. = 15 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7701	990806	11396	52086	7500	034	-74	15

Date: Feb 22 00

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 vwx@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?

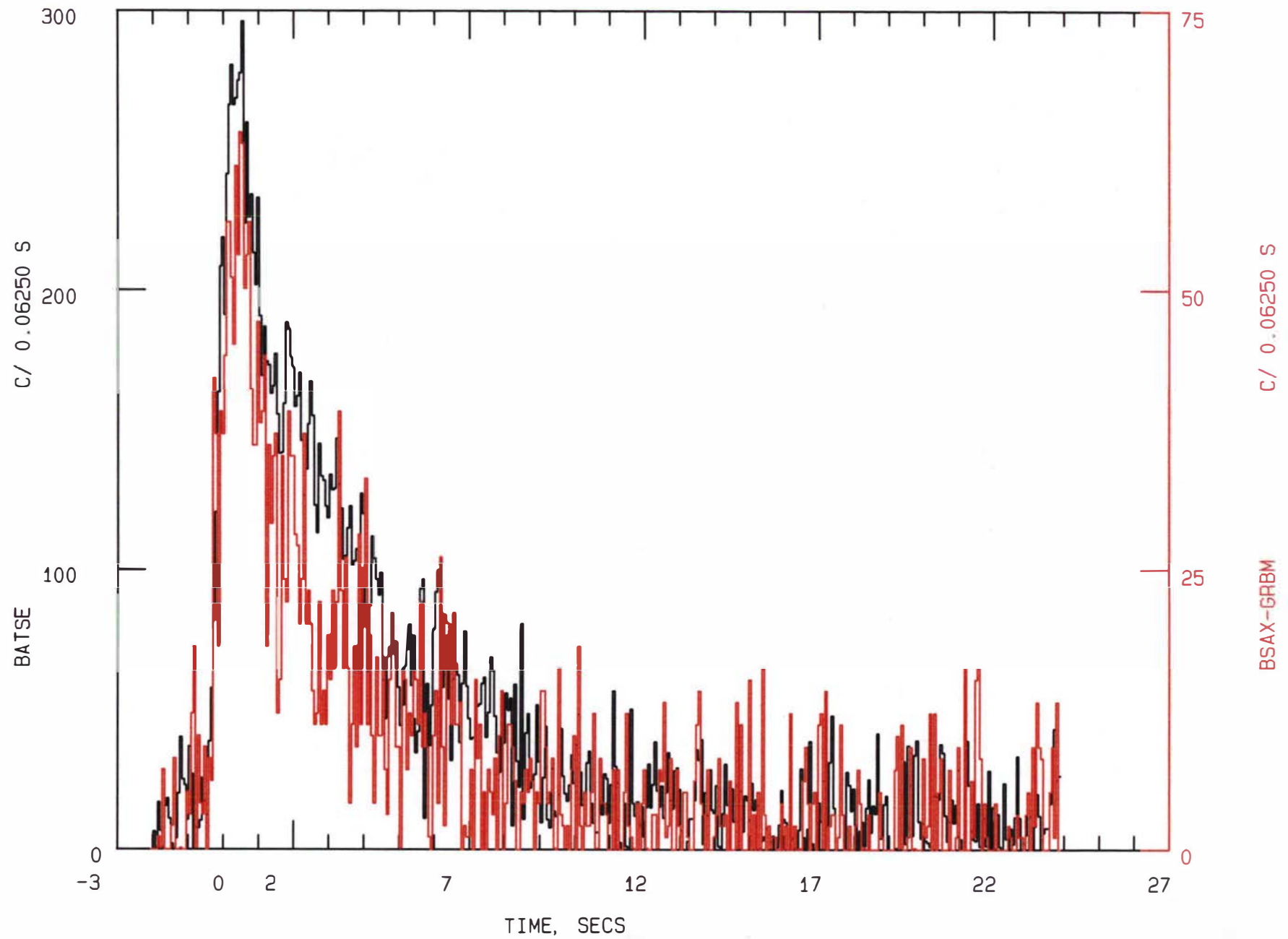
BATSE

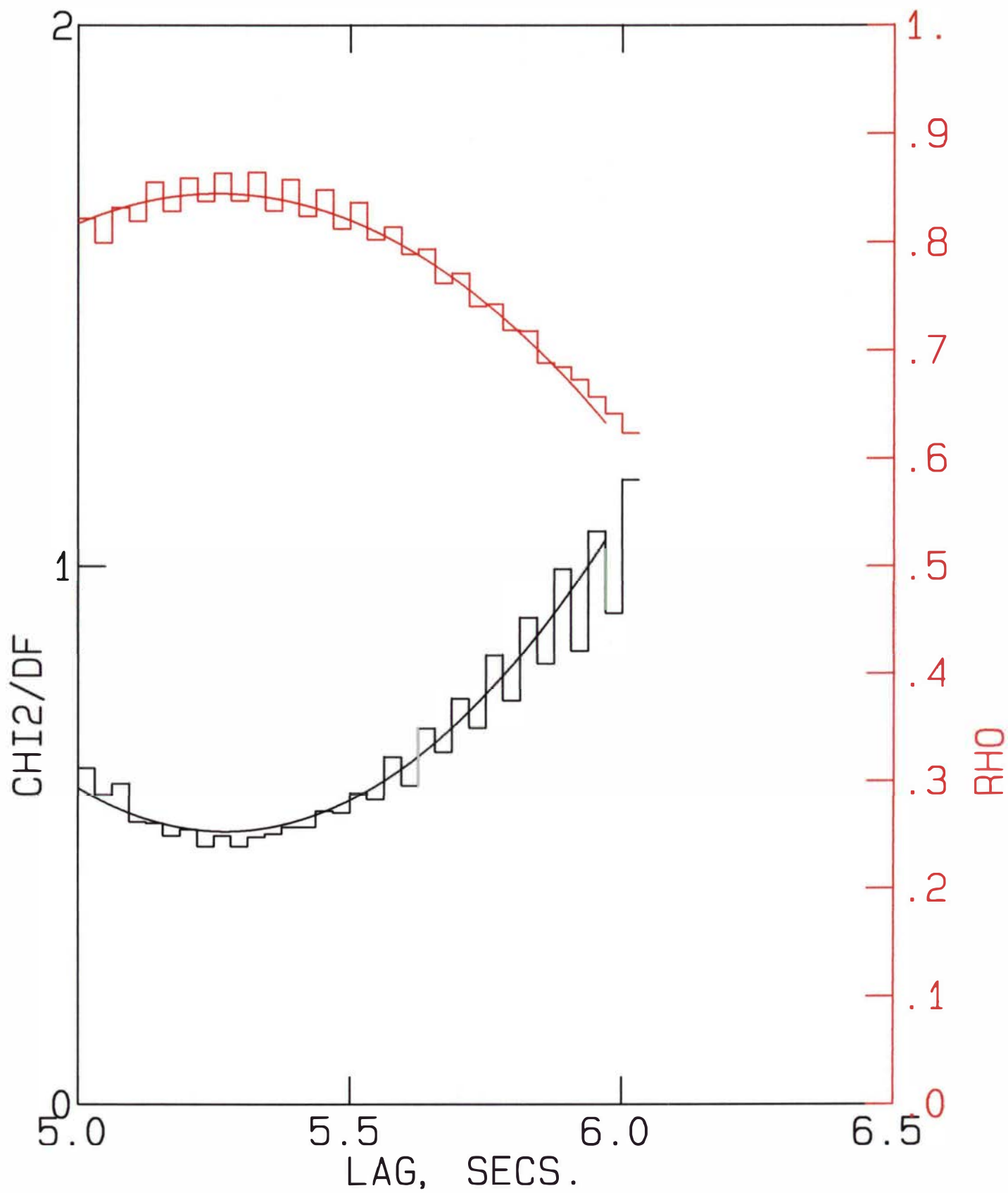
-BSAX-GRBM CORRELATION

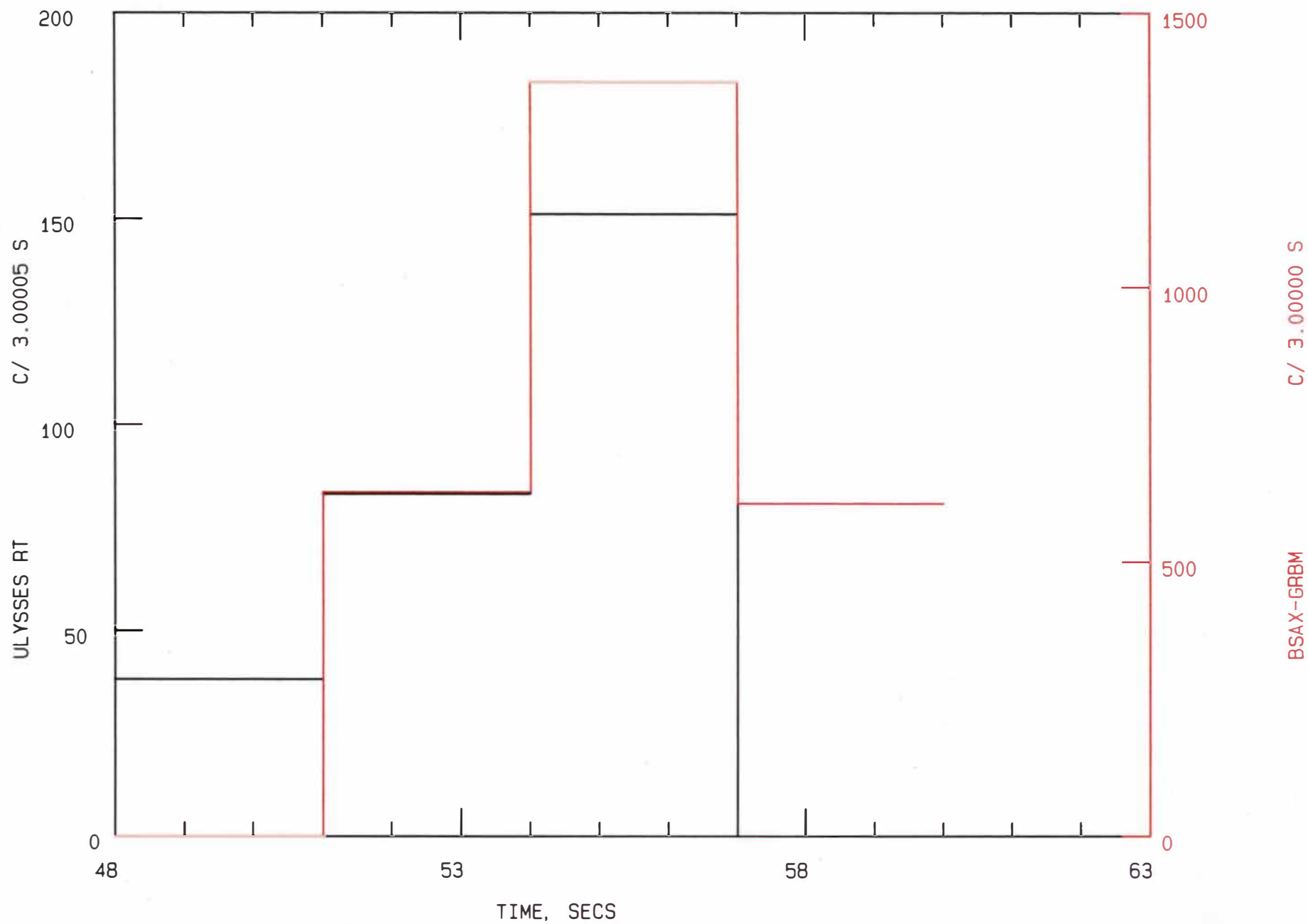
6/ 8/99

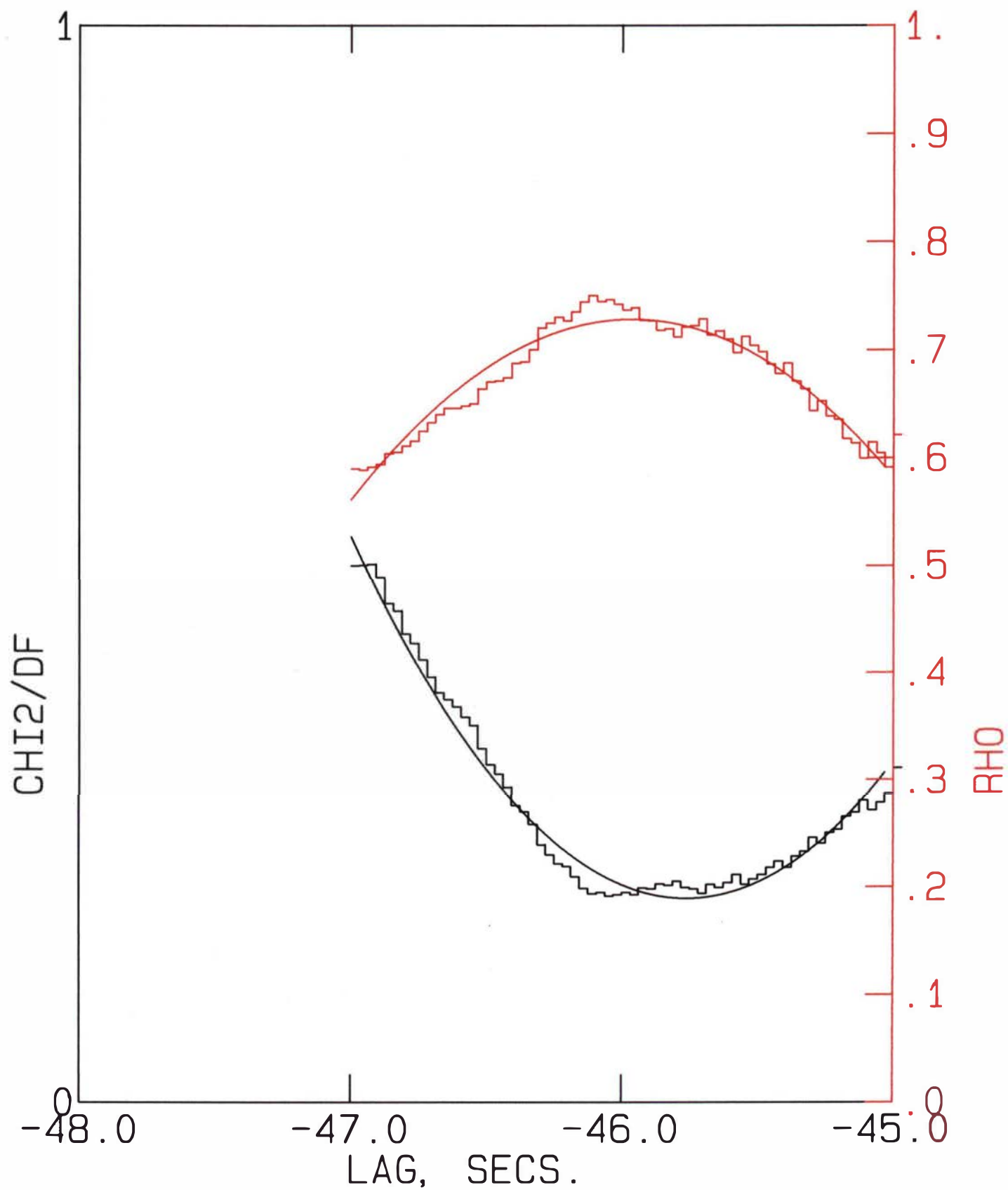
52086.521

21/ 6/ 0







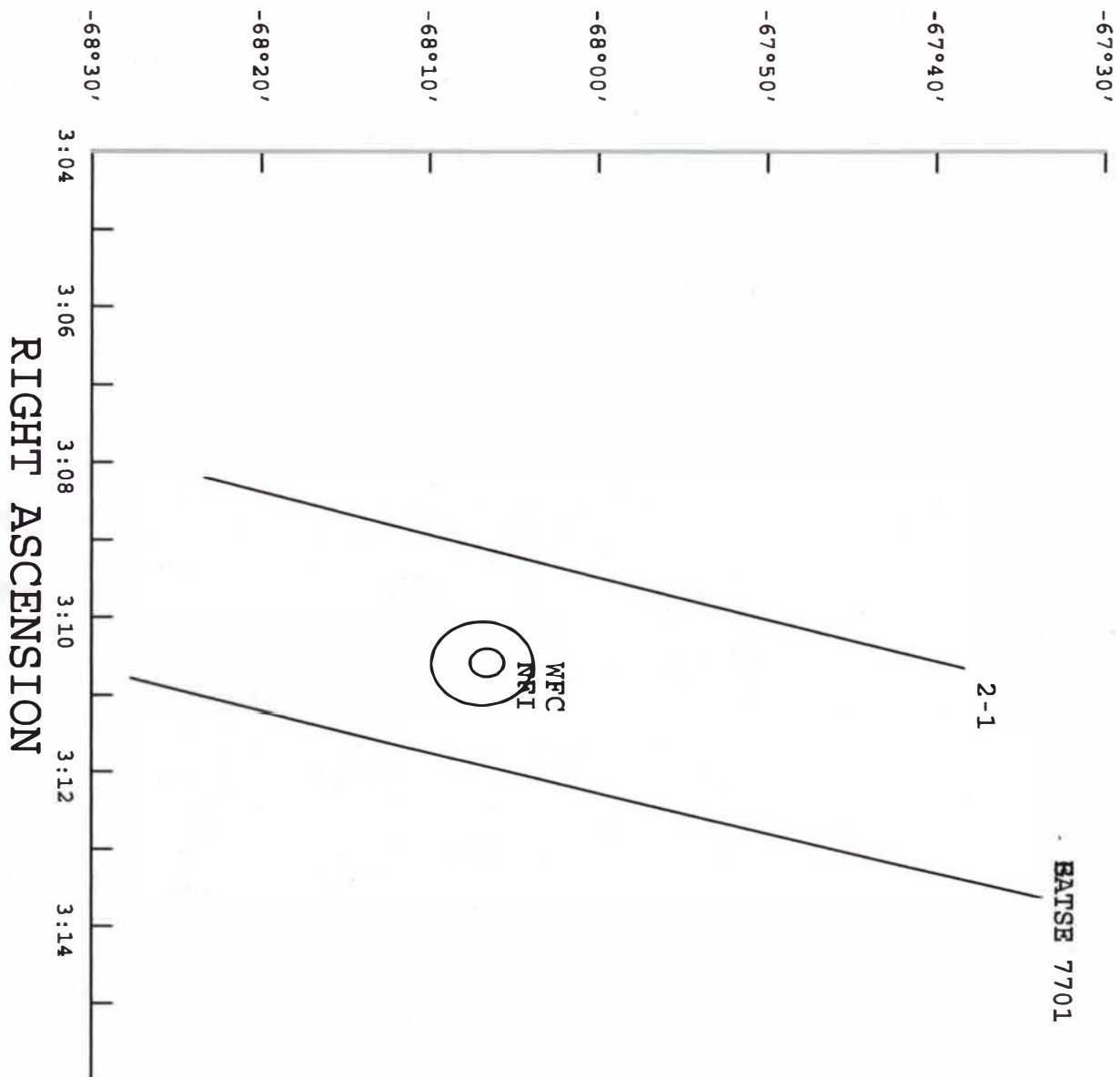


N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 BATSE 2 ULYSSES

DECLINATION

EVENT OF AUG 6, 1999 14:28

22 / 2 / 0



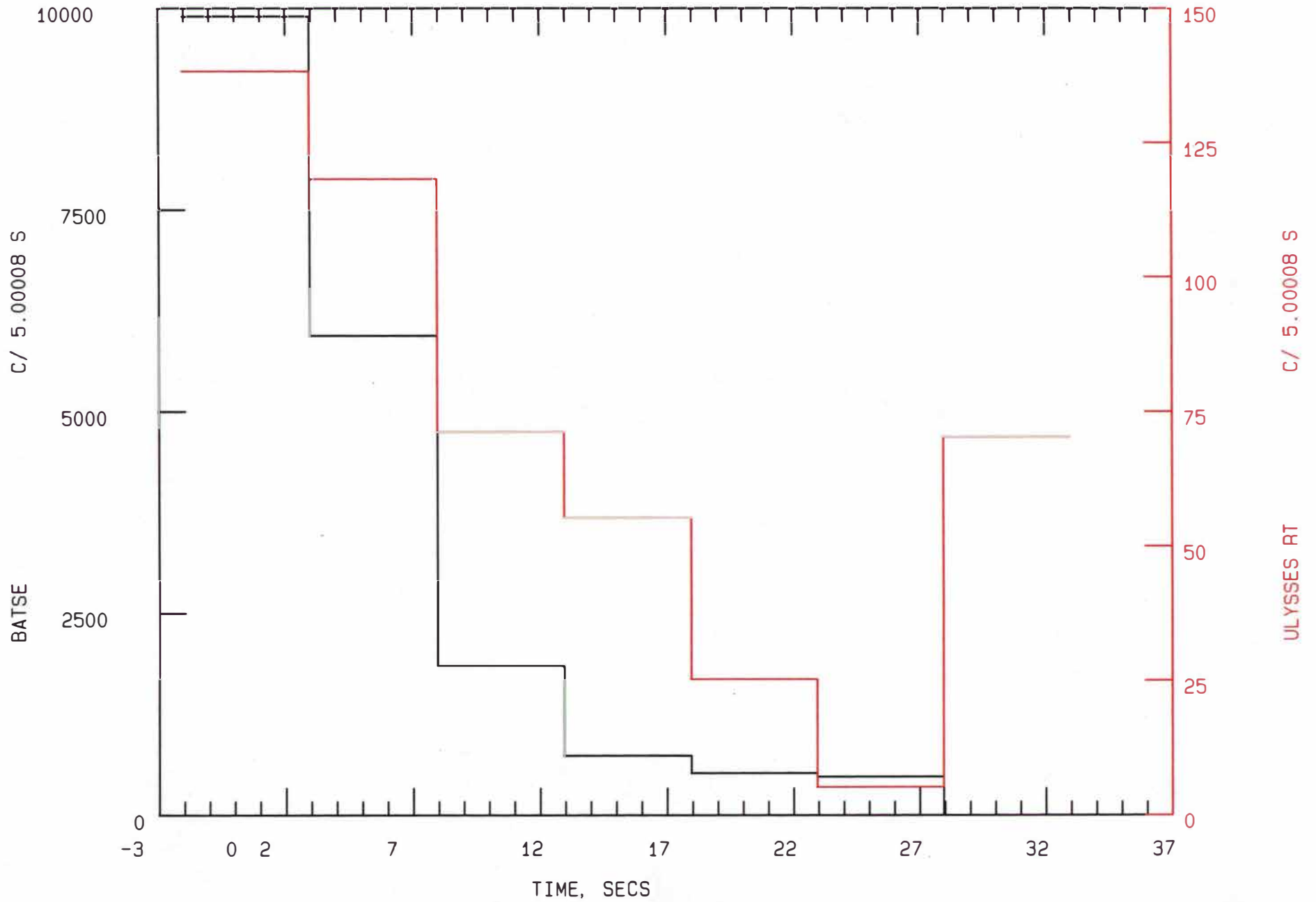
BATSE

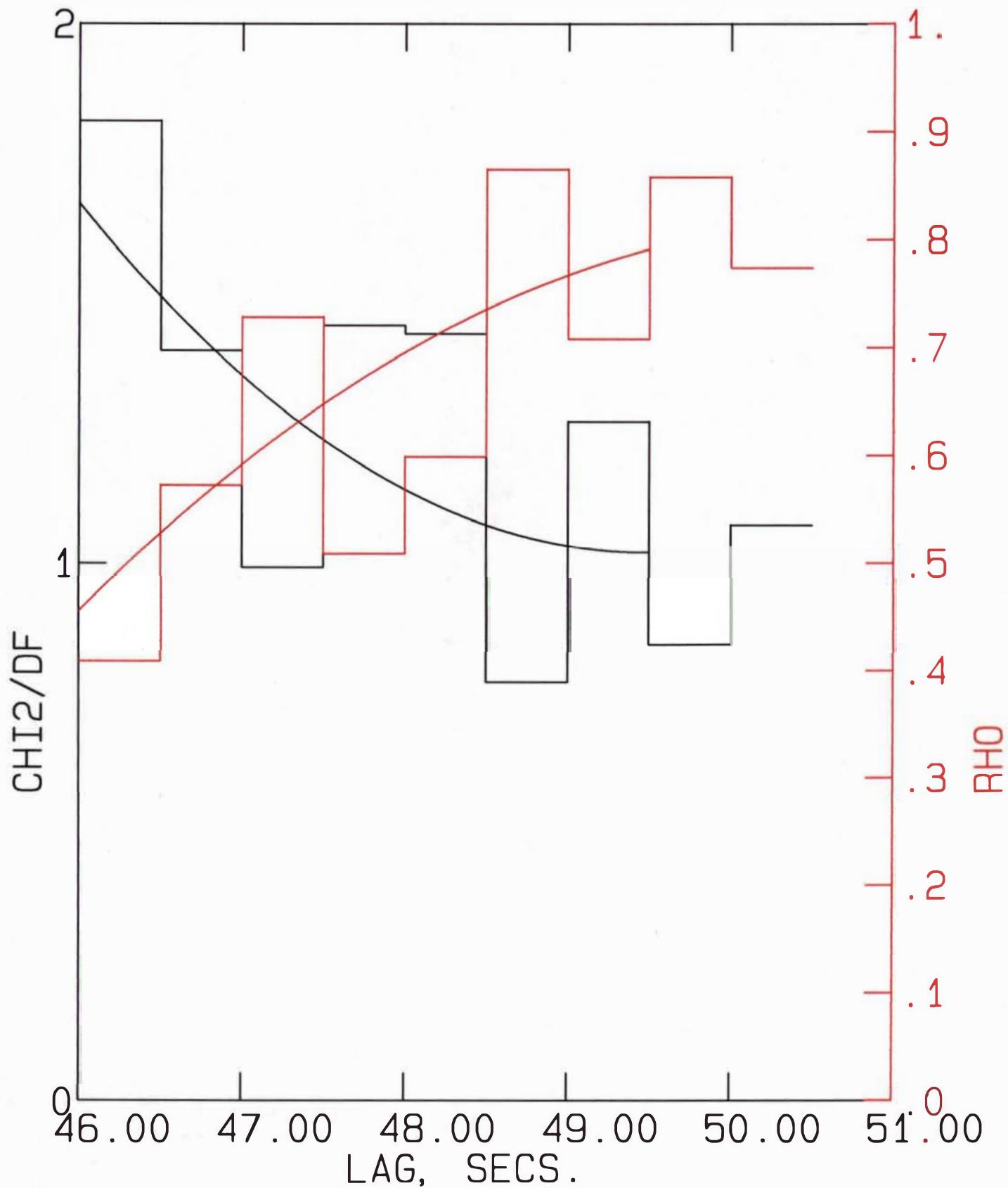
-ULYSSES RT CORRELATION

6/ 8/99

52086.521

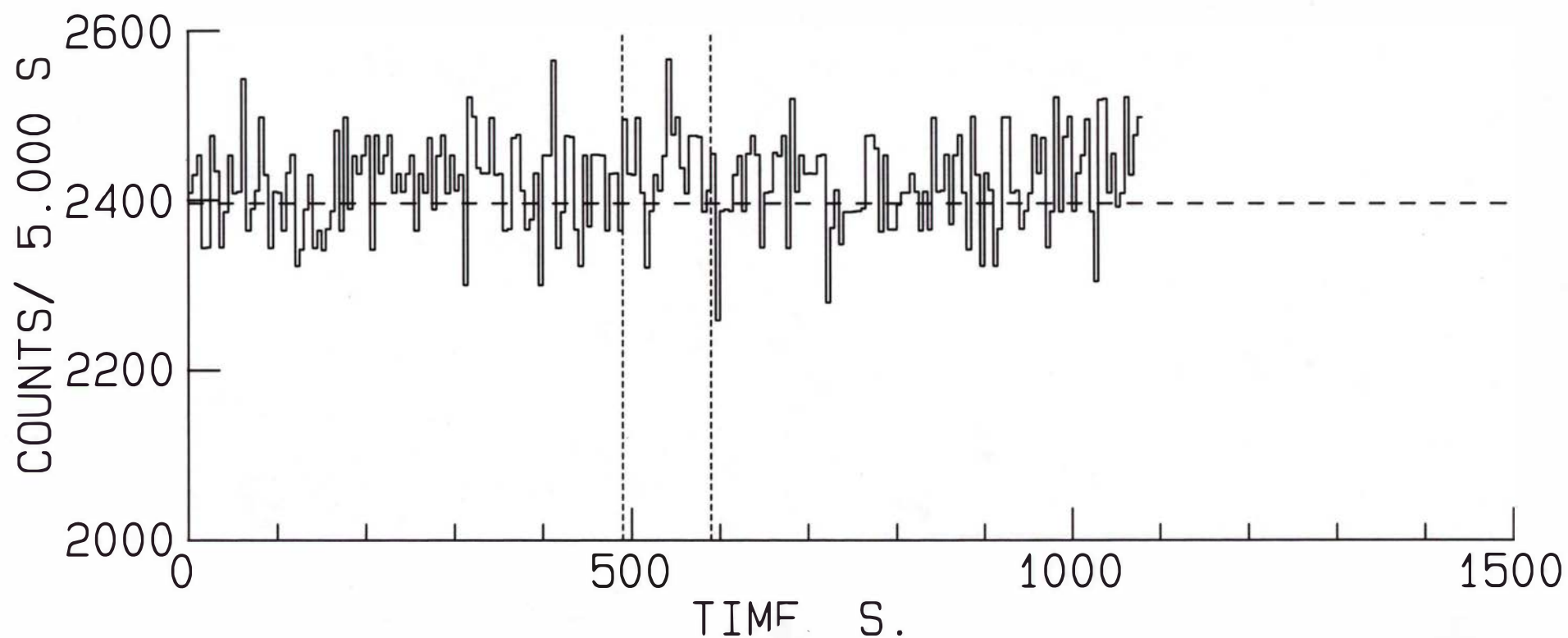
22/ 2/ 0





ULYSSES RT
6/ 8/99 51336.326 s
0.500 S INTERVALS REGROUPED BY 10
22- 150 keV

22 / 2 / 0



EVENT OF AUG 6, 1999 14:23

18/ 8/99

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

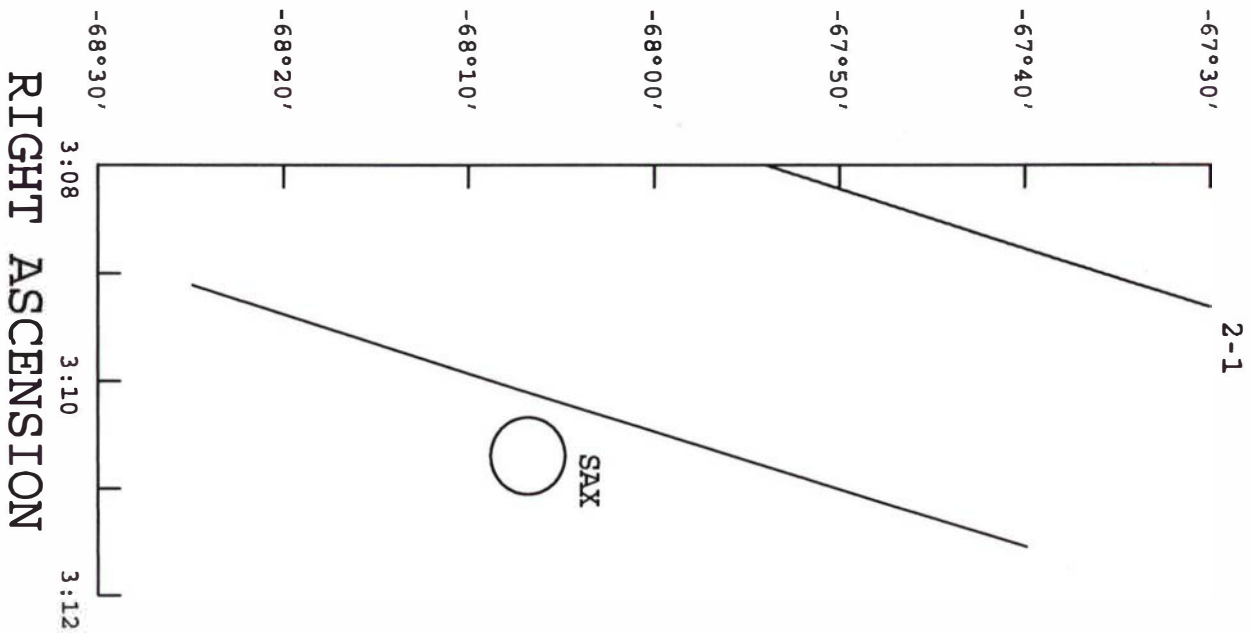
E=ECLIPTIC

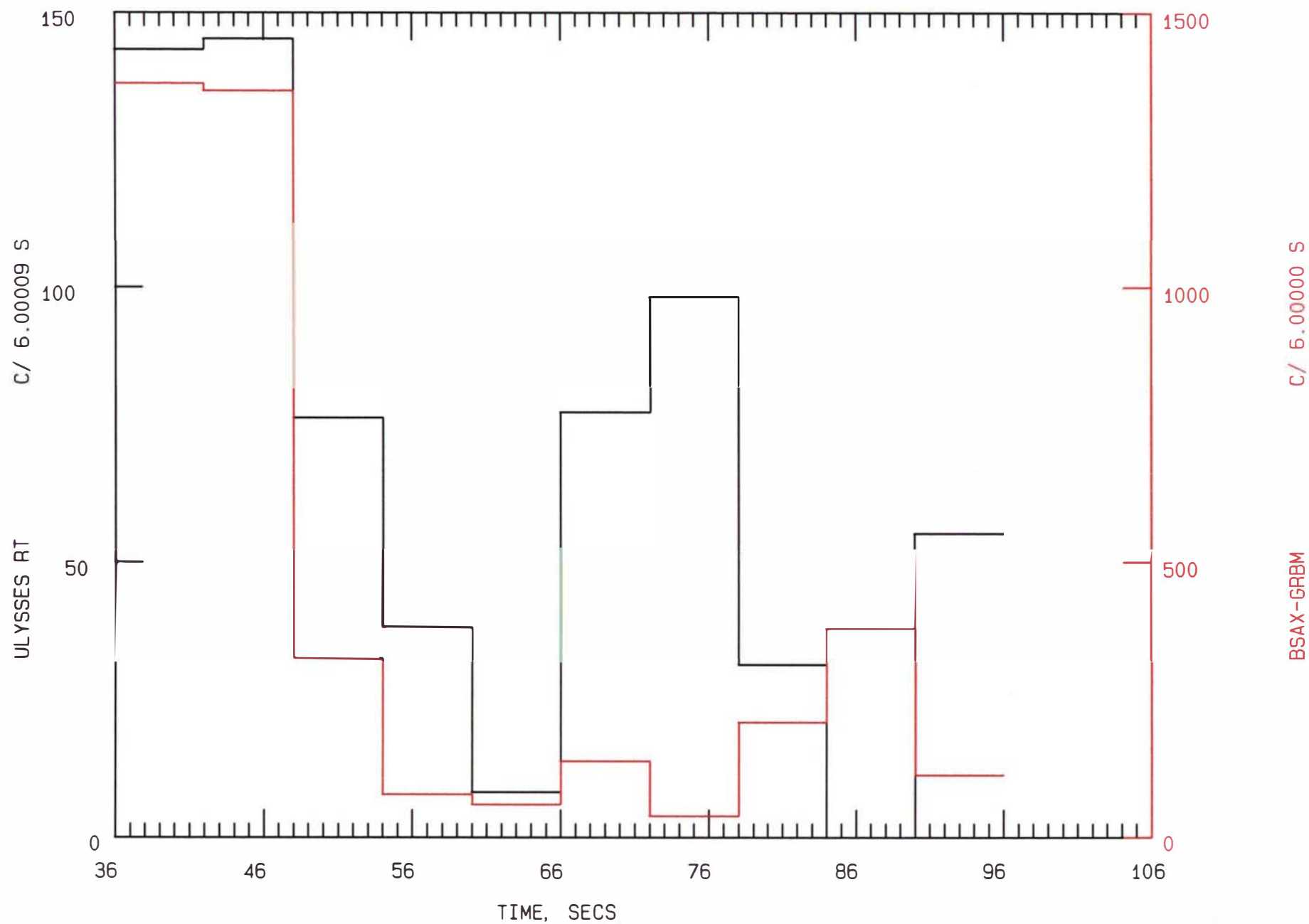
G=GALACTIC EQUATOR

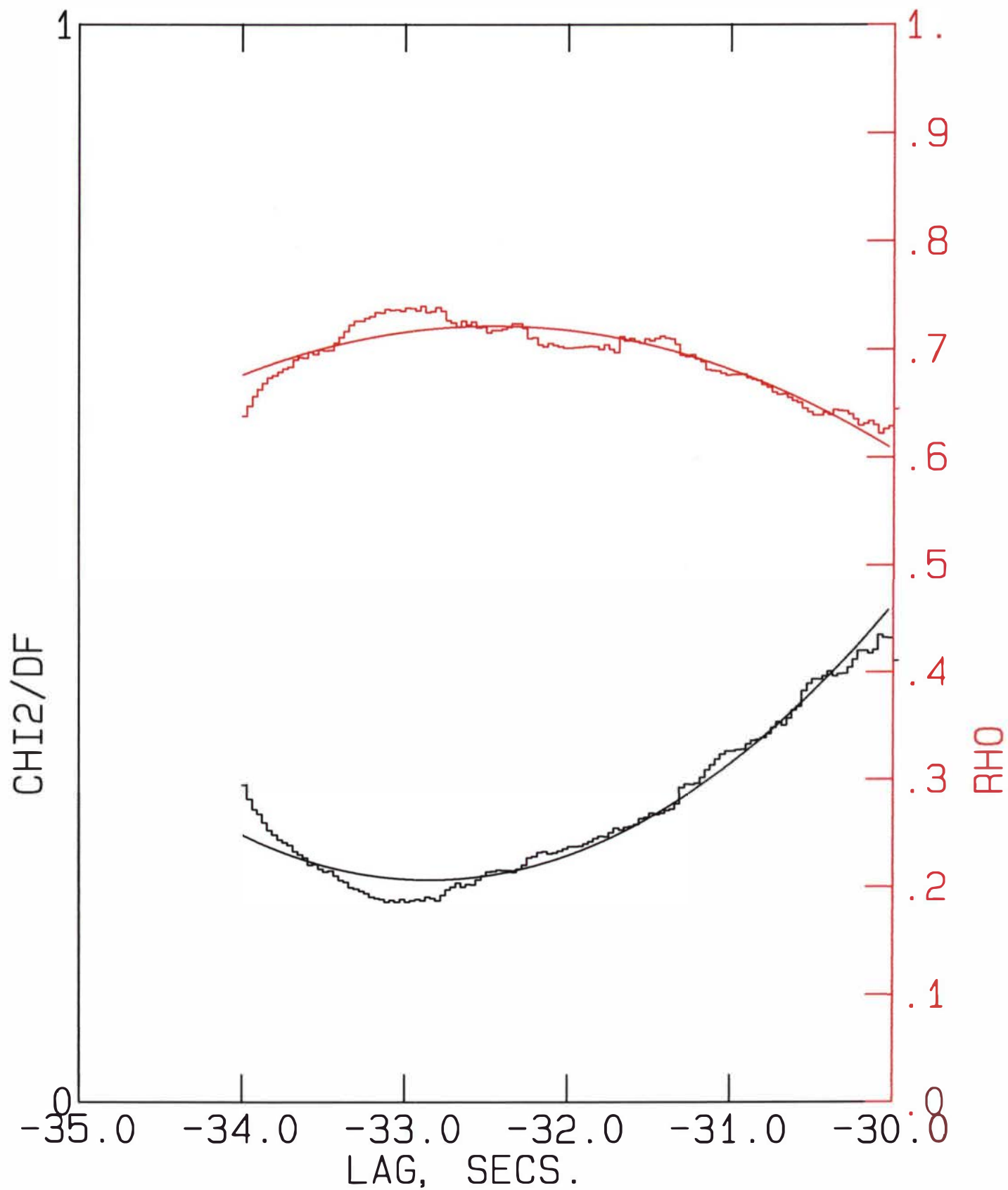
1 ULYSSES

2 SAX

DECLINATION







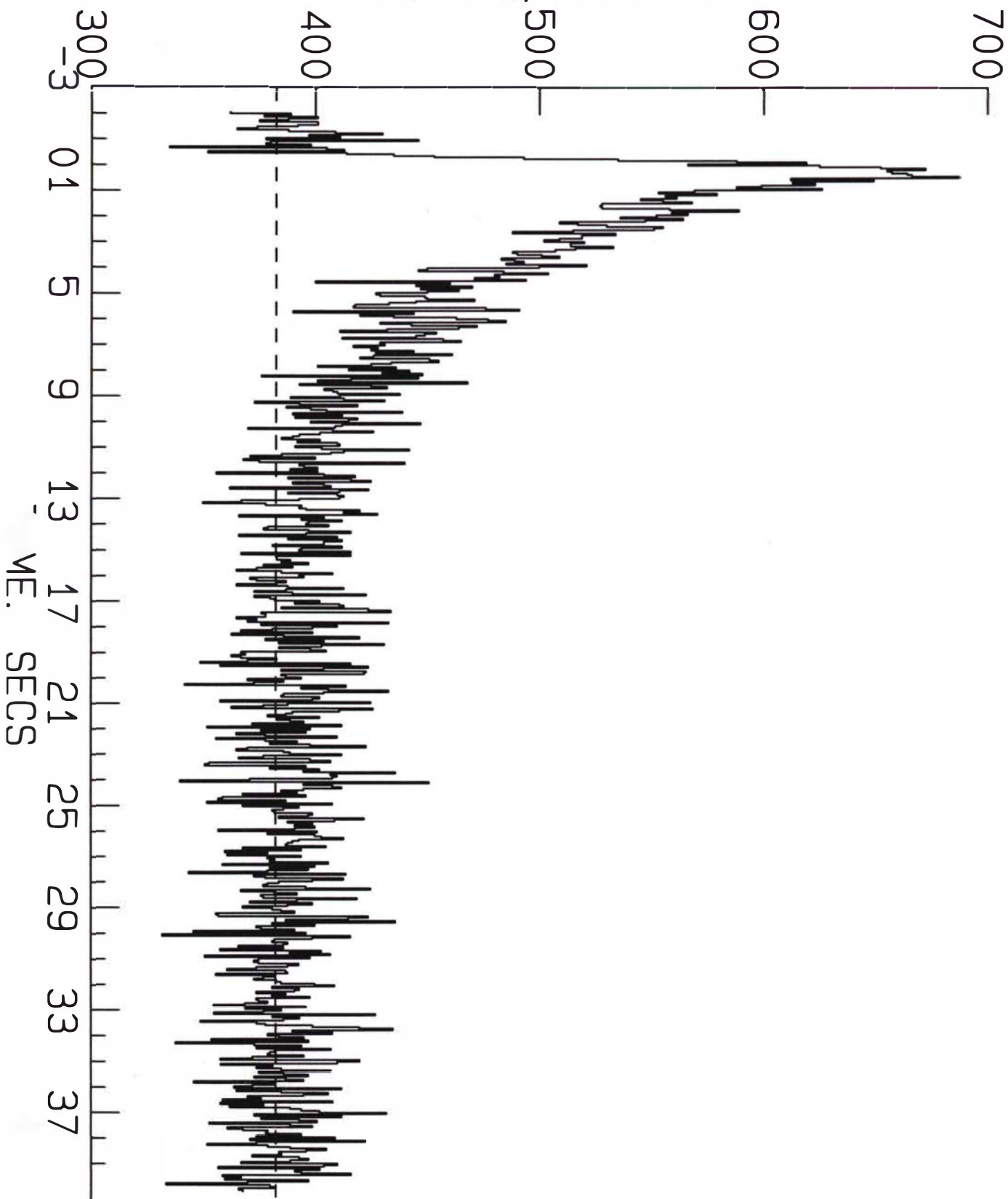
BATSE

06/08/99

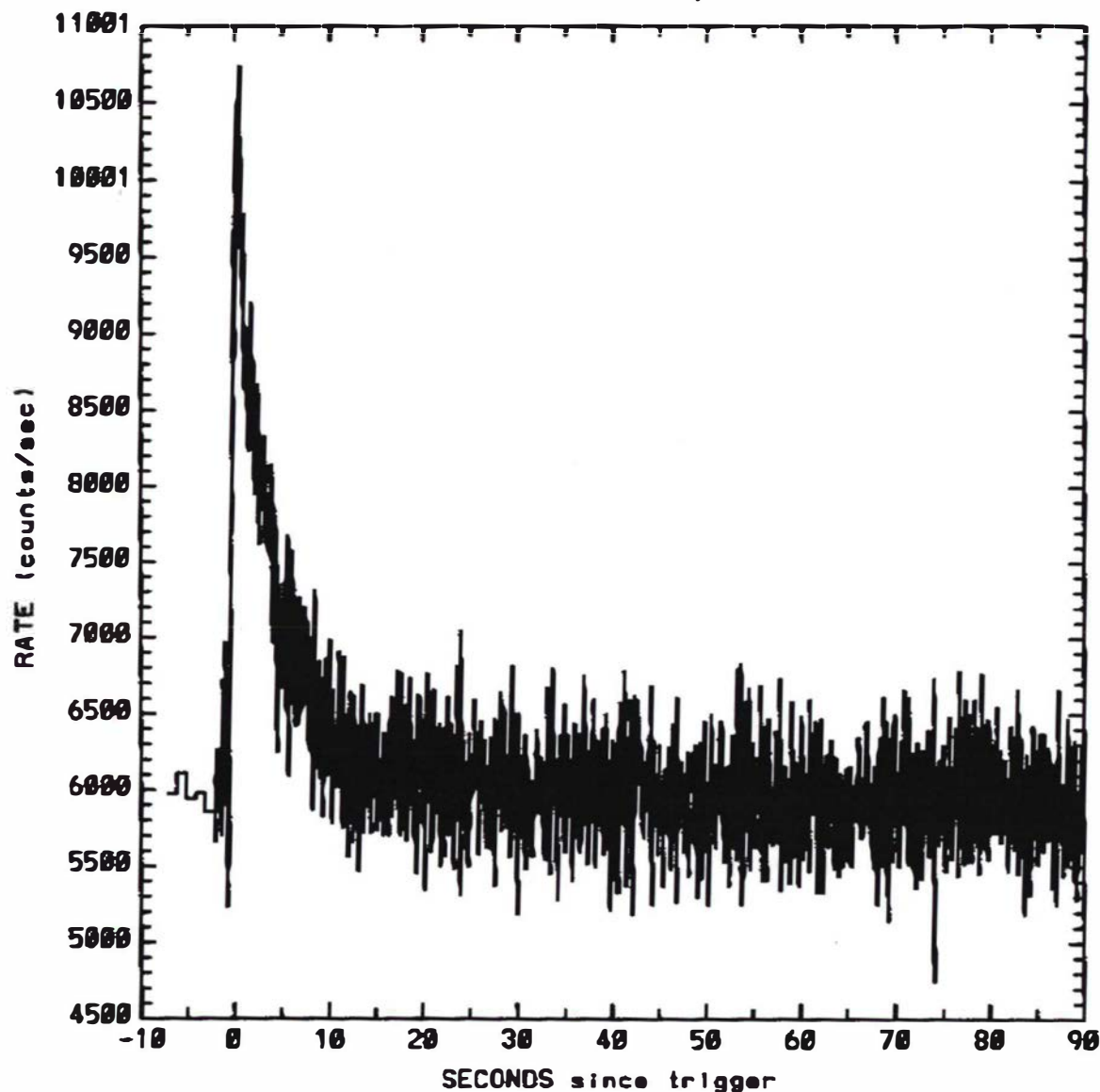
52086.521

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7701



18-AUG-1999 14.35.15

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7701

Trigger Time:
11396 / 52006.521

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..8):
---4---8

Discriminators:
(1 . 2)

Quality Mask:
BDISP1

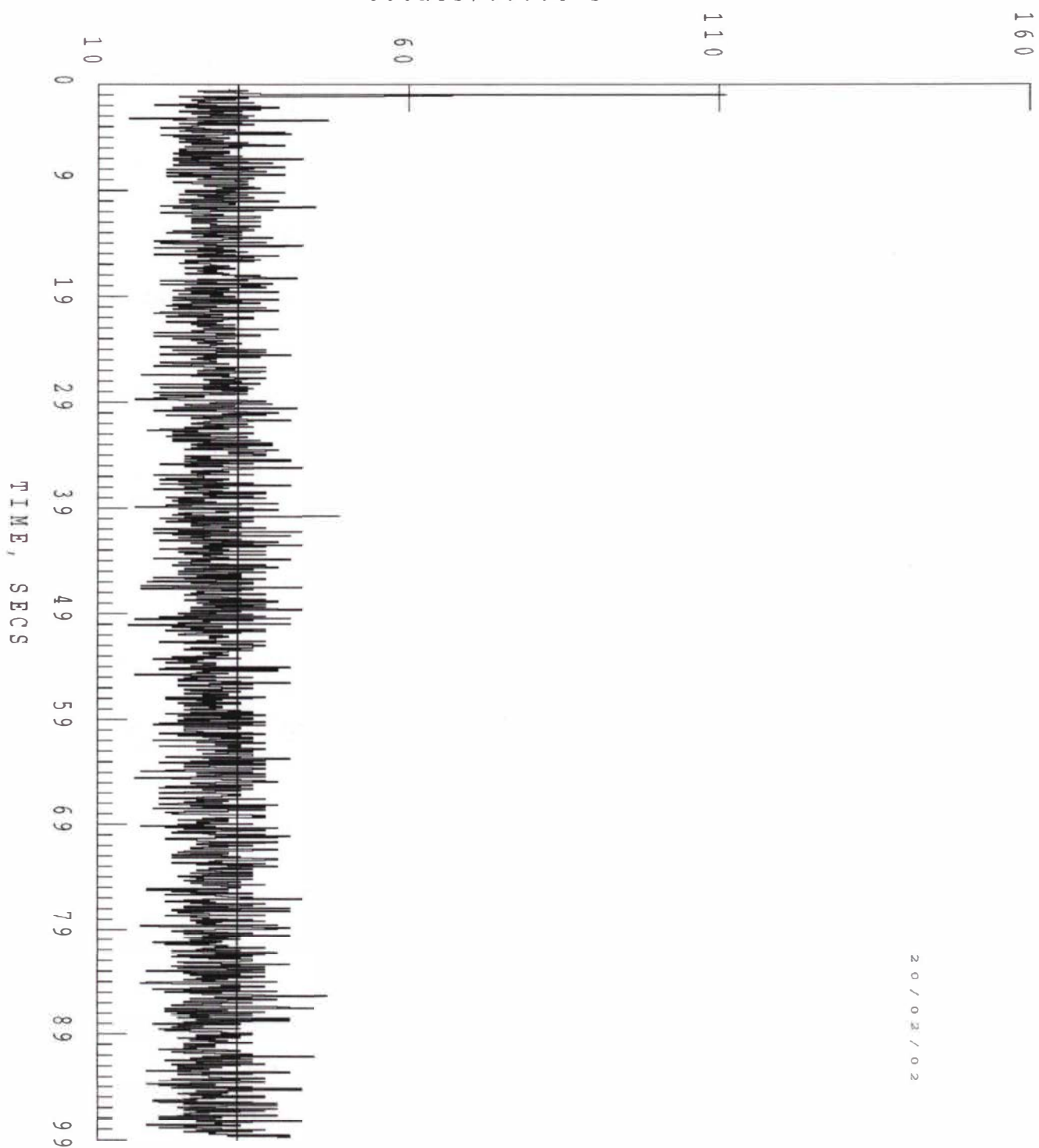
KONUS2

06/08/99

60168.676

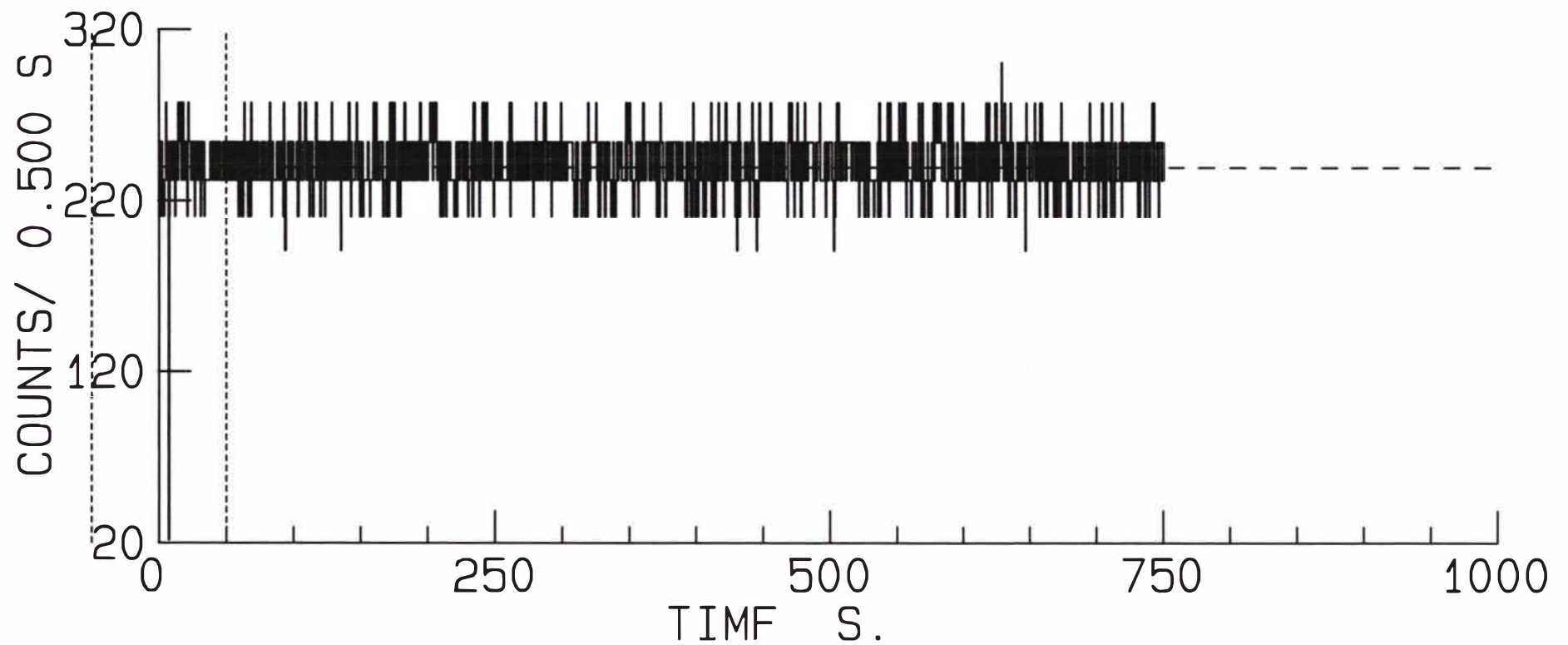
50 - 200 keV

COUNTS/0.064 S



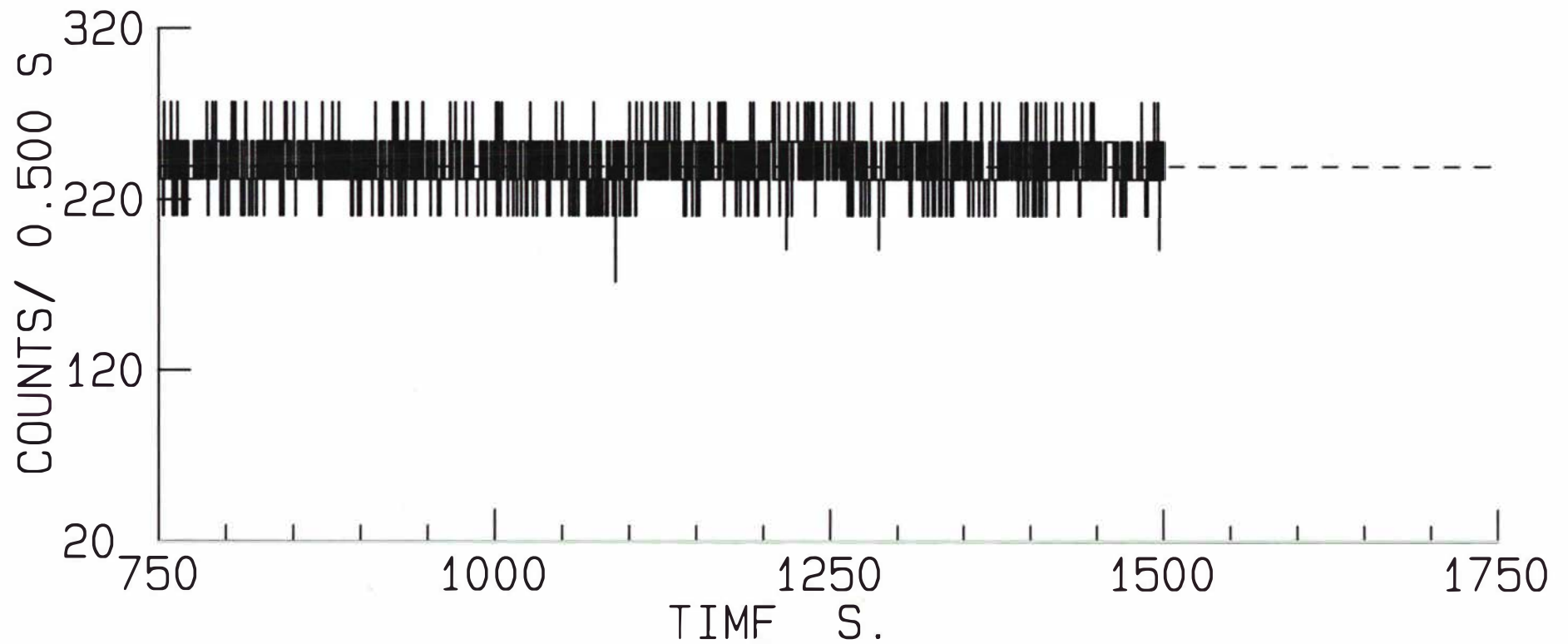
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



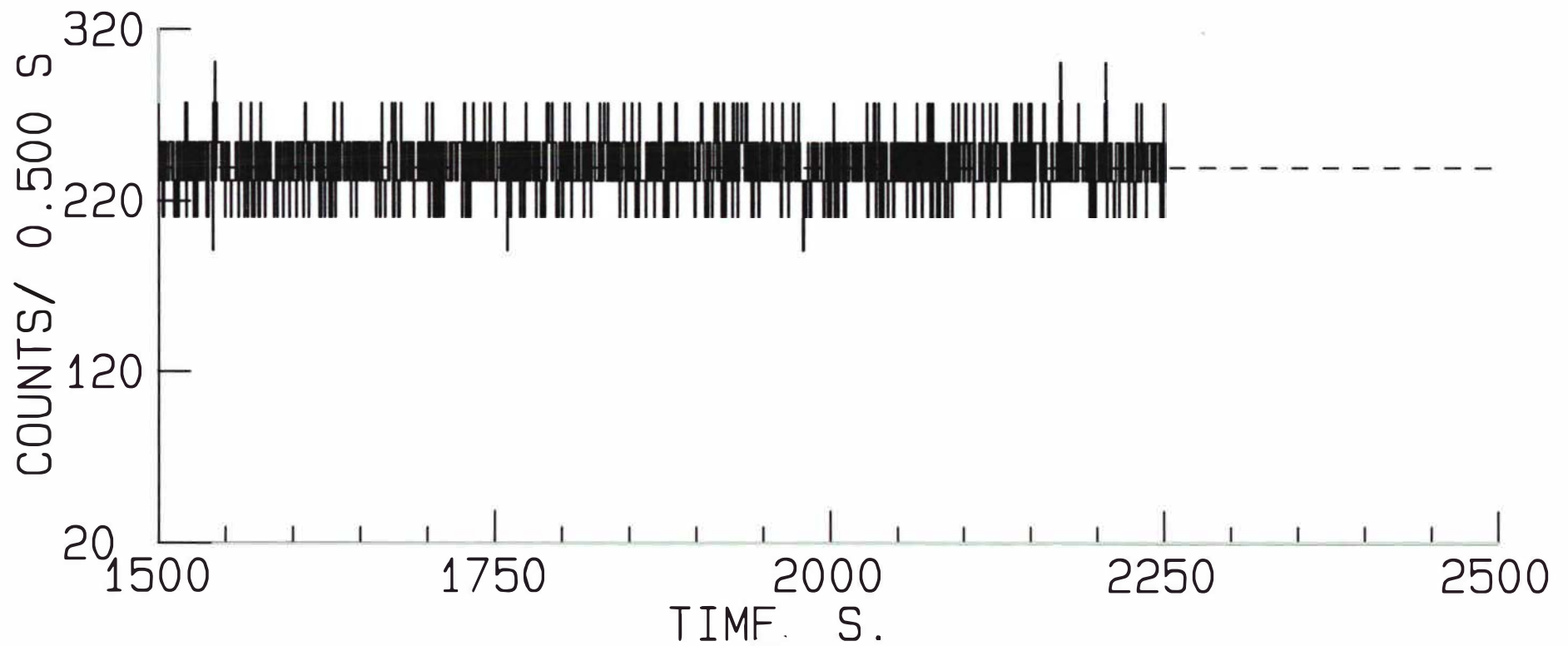
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



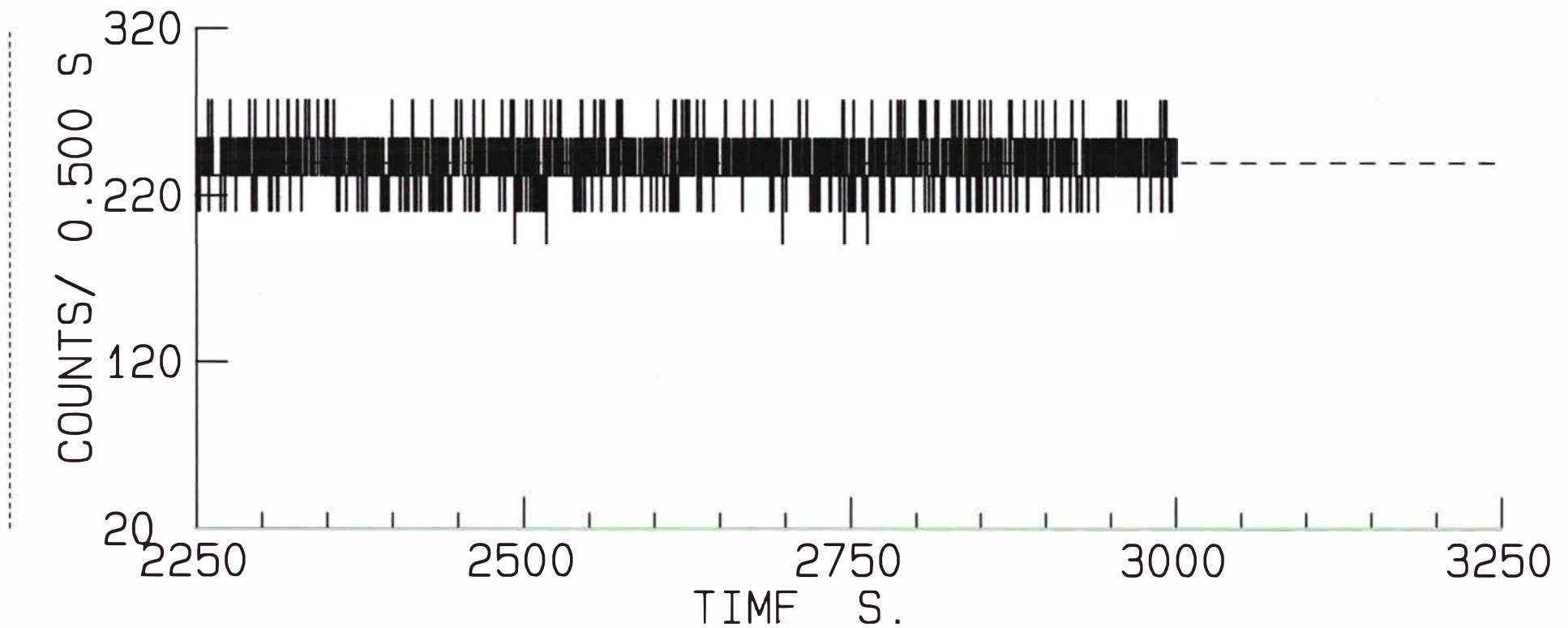
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



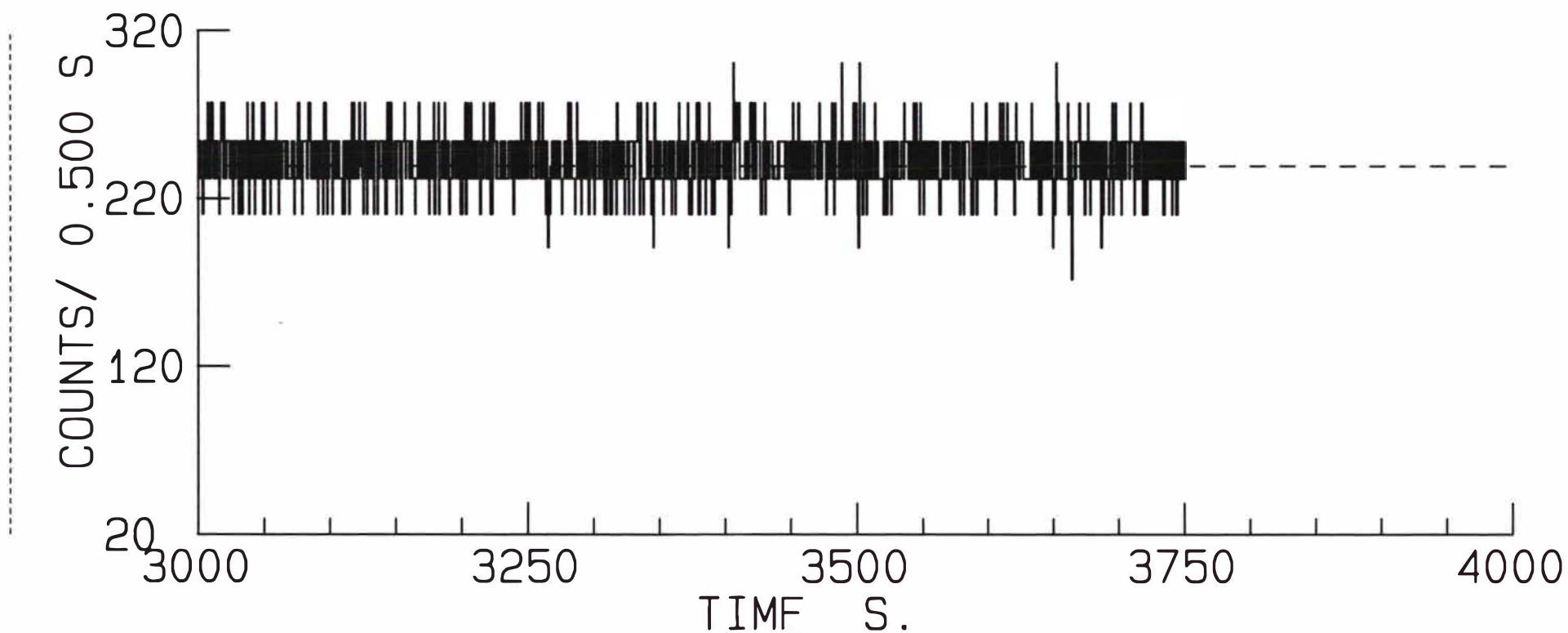
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



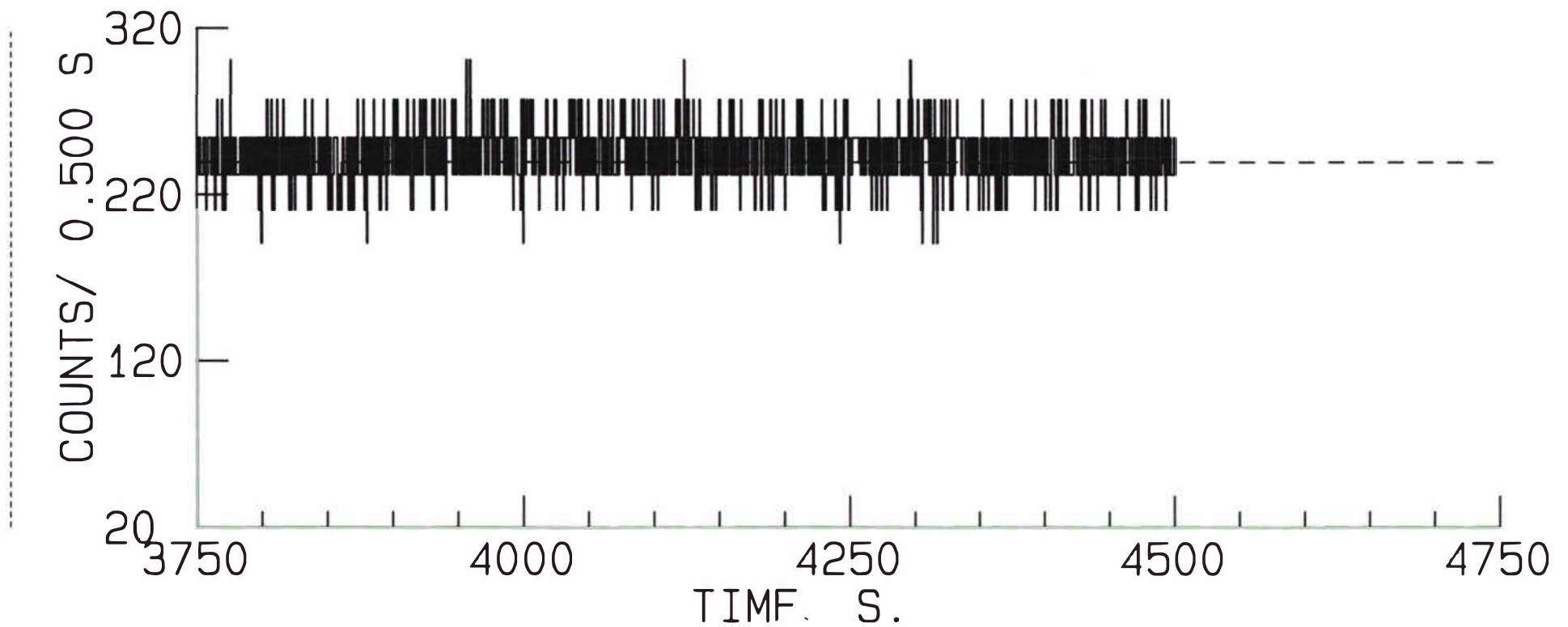
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



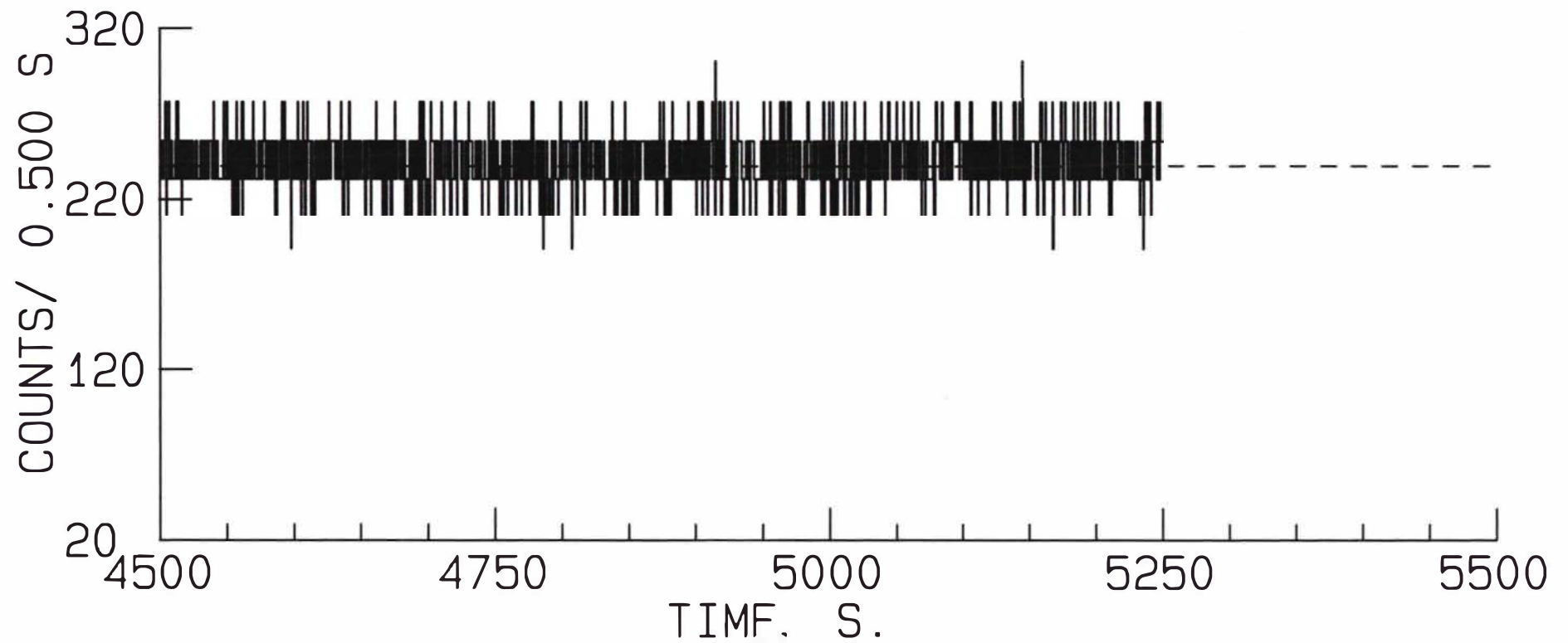
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



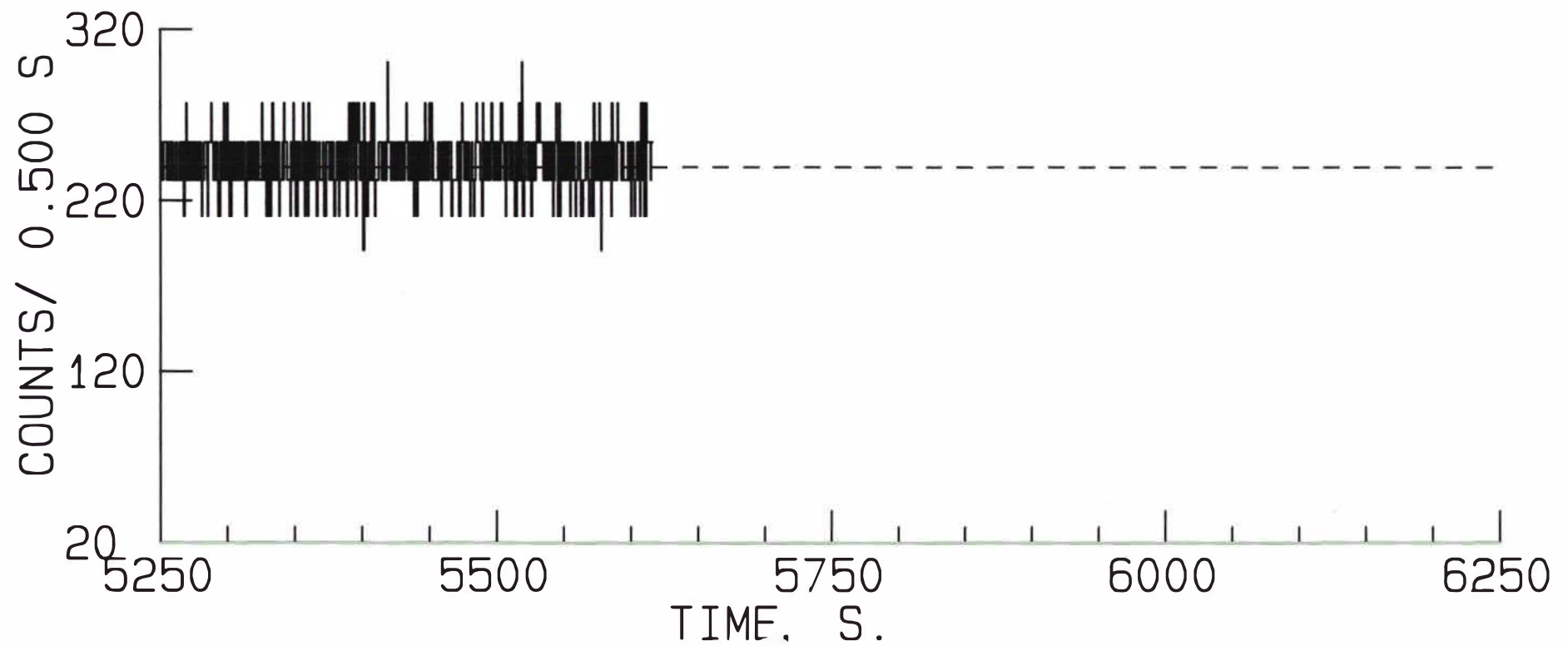
ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



ULYSSES RT
6/ 8/99 57348.383 s
22- 150 keV

2 / 1 / 9



From RICHARDSON@fender.msfc.nasa.gov Tue Aug 10 07:09 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Tue, 10 Aug 1999 9:15:18 -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, 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.: 7702

TIME: TJD=1396 SECONDS=59452

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.2 AZIMUTH=356.7 ERROR=0.2 DEGREES

COMMENTS:

SOLAR FLARE. GOES M1.8, OPTICAL SF.

STRONG EVENT WITH LOTS OF STRUCTURE. DURATION APPROX. = 460SEC.

NOT VISIBLE ABOVE 300KEV.

KNEAR GRS 19990806 72949

ULYSSES RT

11 / 8 / 99

6 / 8 / 99 70560.023 s

0.500 S INTERVALS REGROUPED BY 7

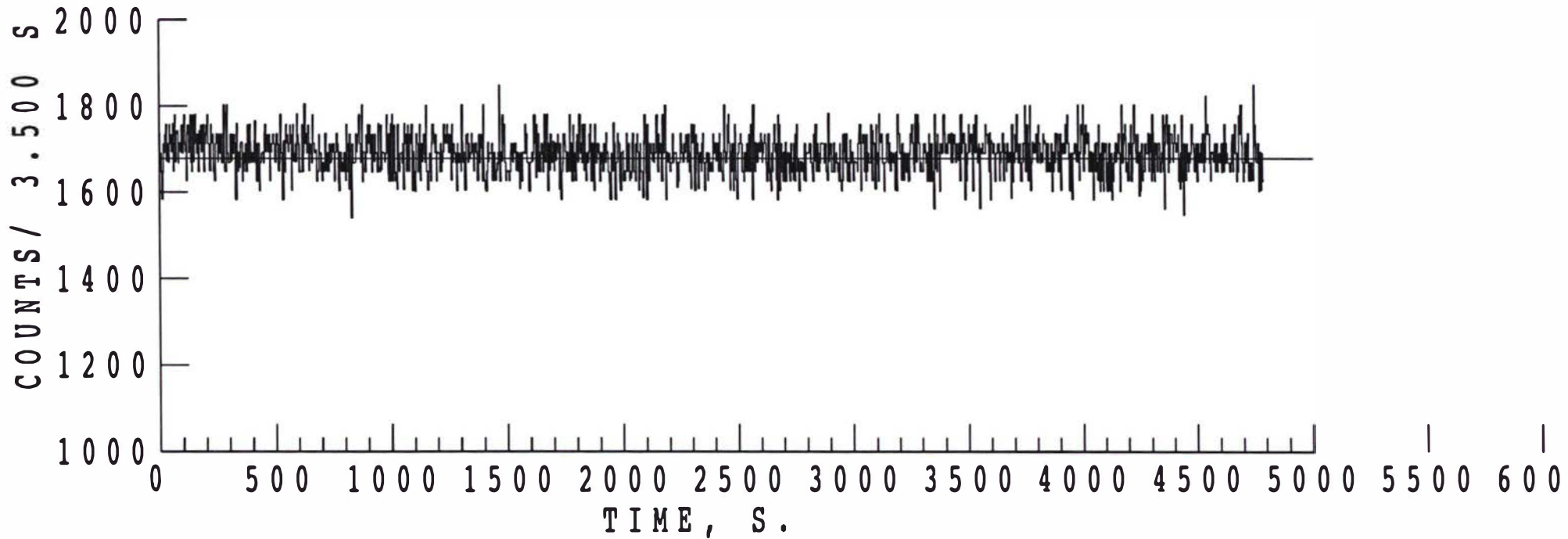
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

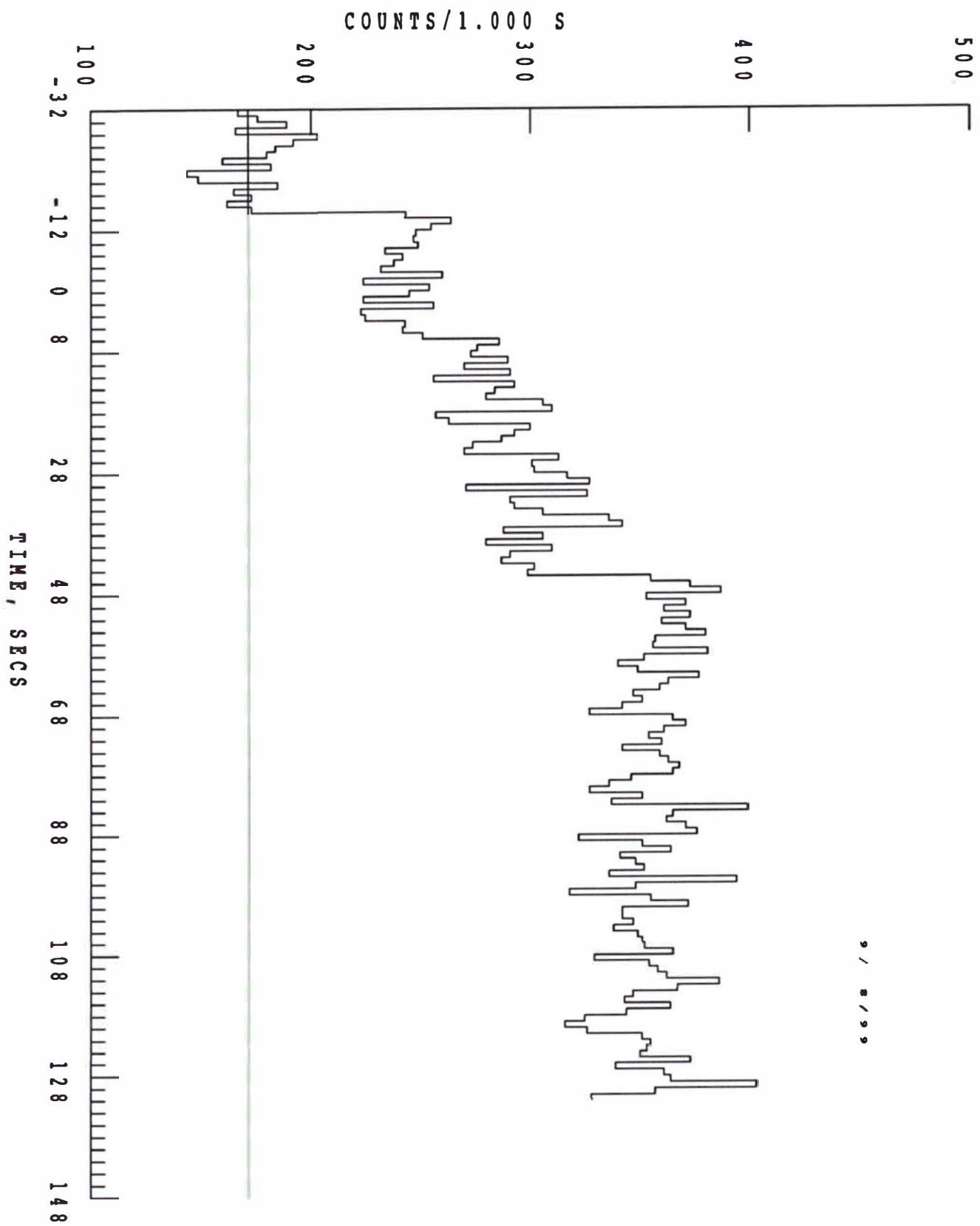


NEAR

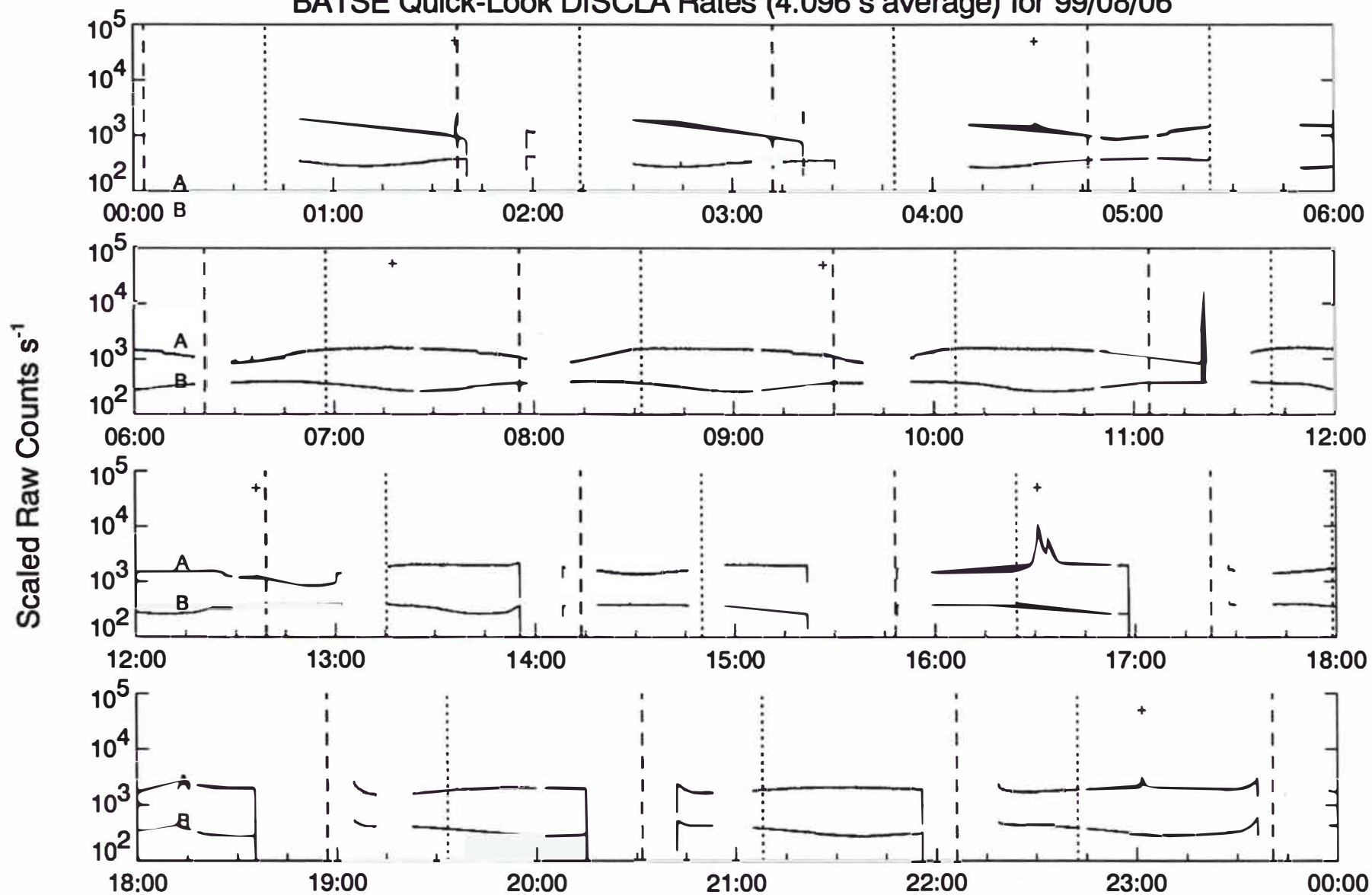
06/08/99

72949.577

100-1000 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/06



Current Time: 99/08/12, 0037 EDT

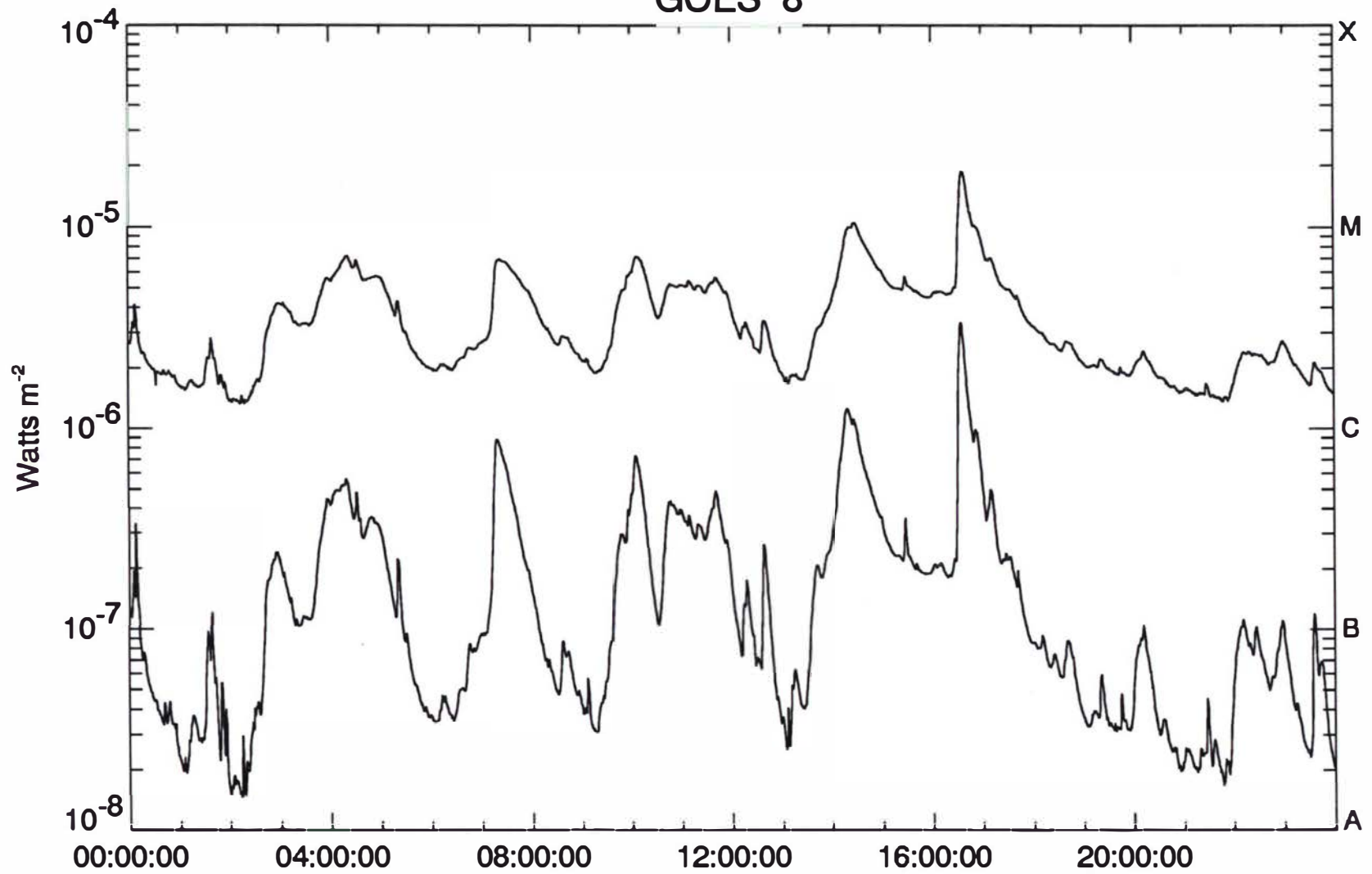
A: Channel 0 Most Sunward LAD

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: 99/08/06, 0000:00

Plot created: 99/08/12, 0036

Channel

1 (1.0 - 8.0 Angstroms)

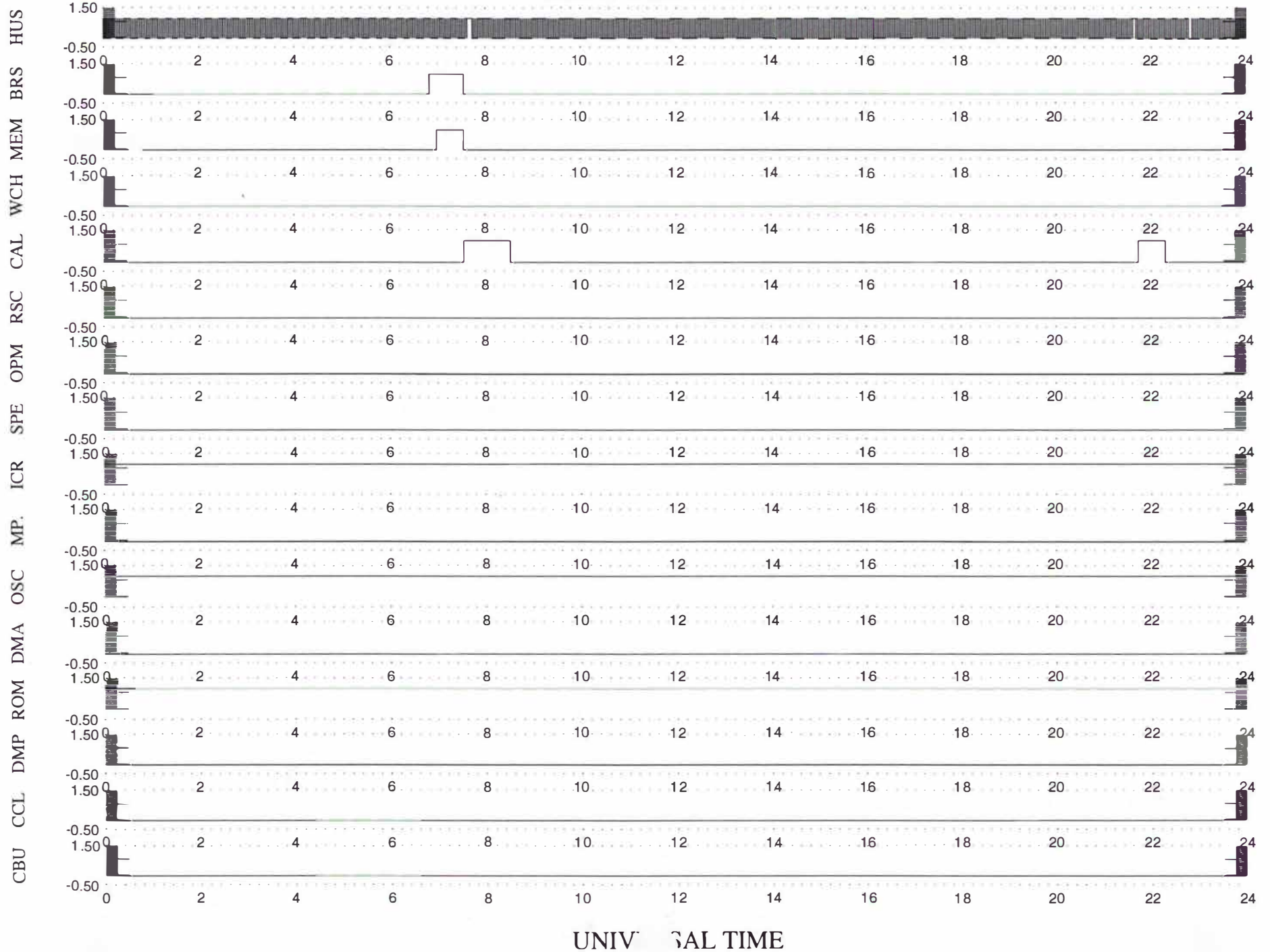
Background not subtracted

2 (0.5 - 4.0 Angstroms)

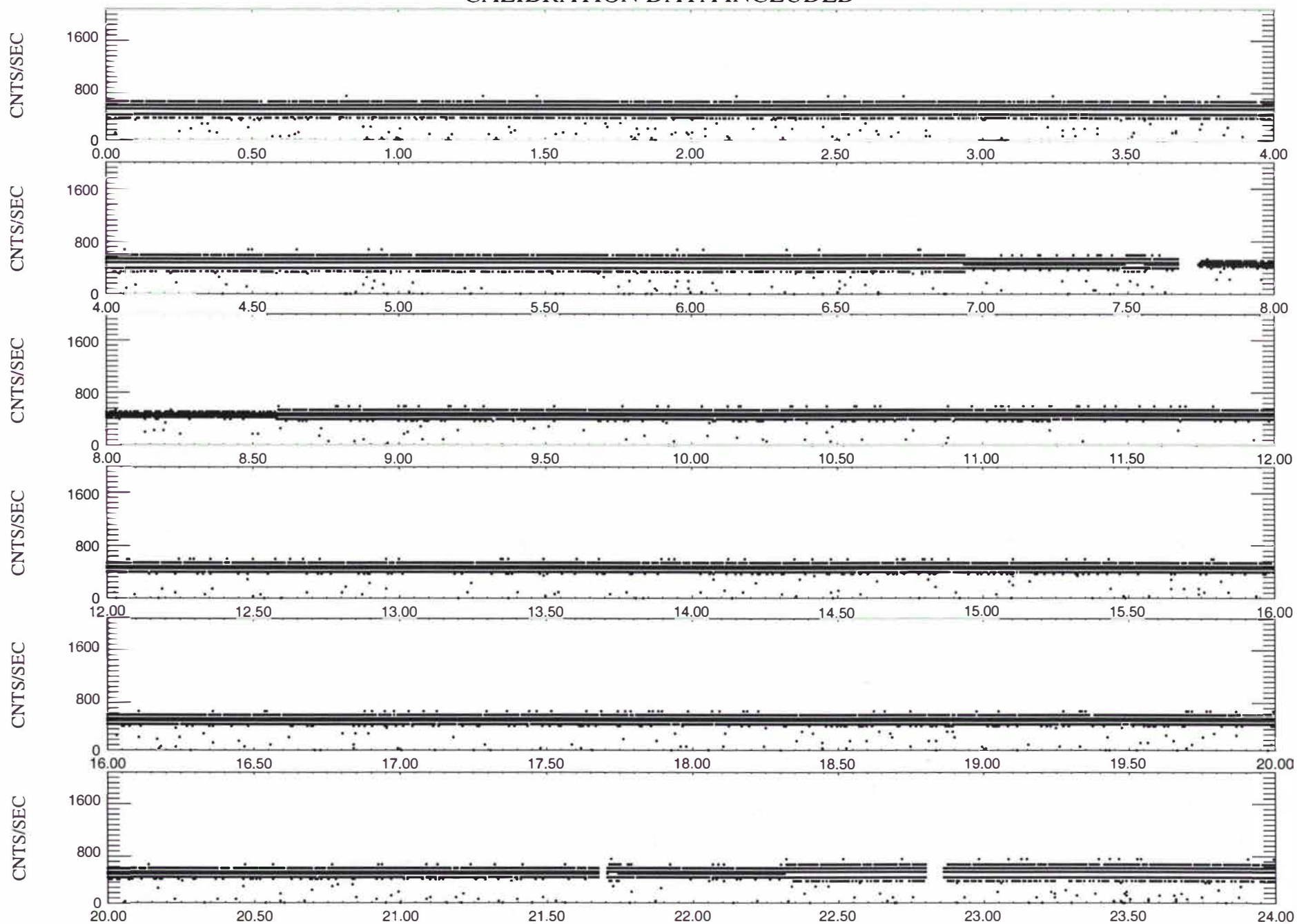
Background not subtracted

Sample average = 10

BURST NUMBER 5

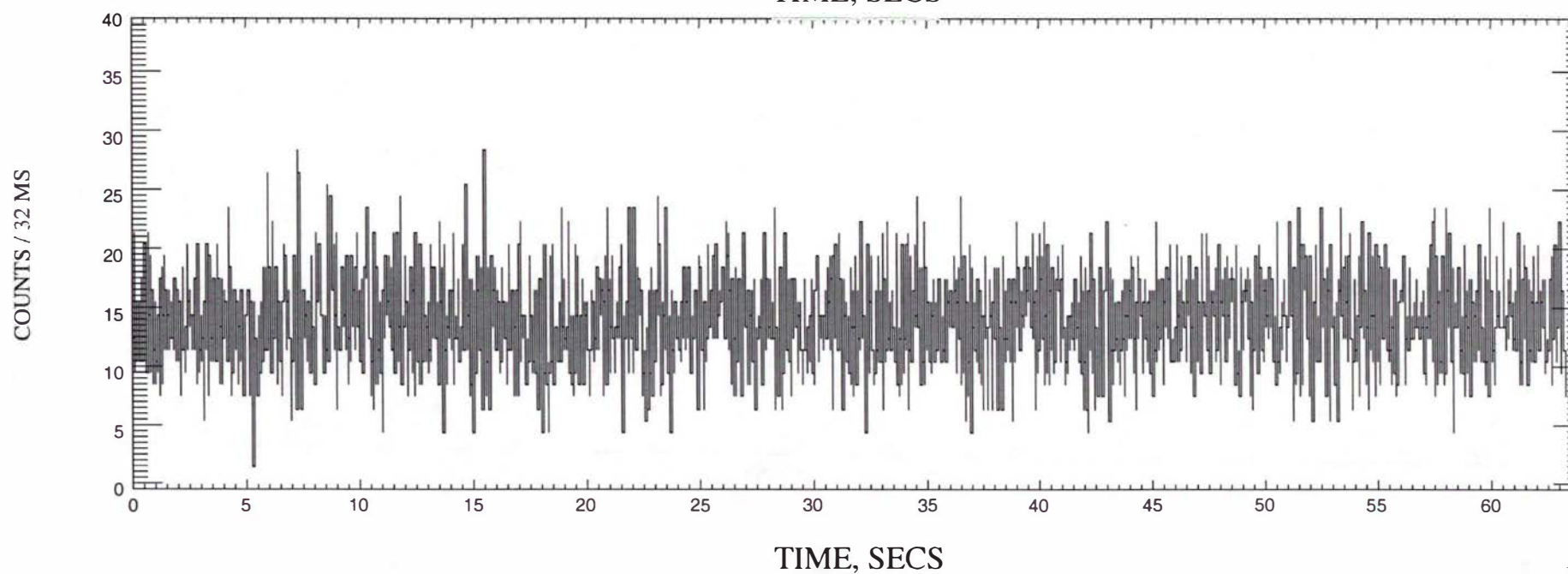
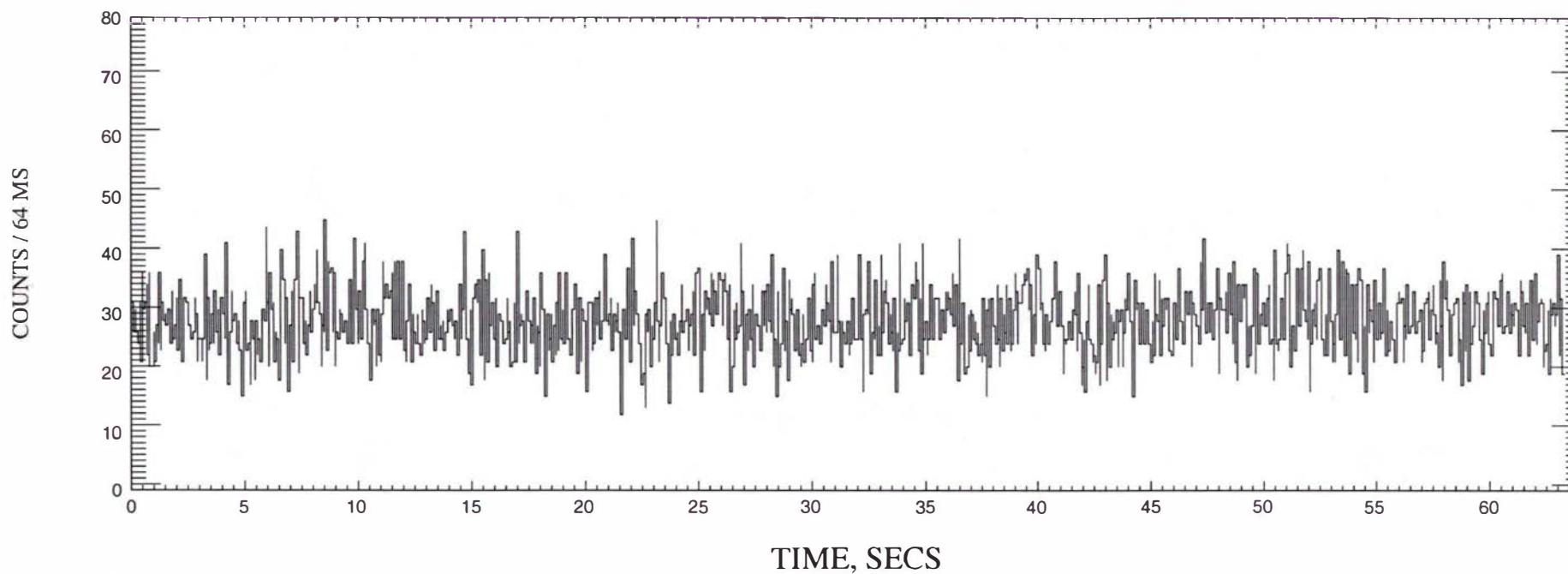


CALIBRATION DATA INCLUDED

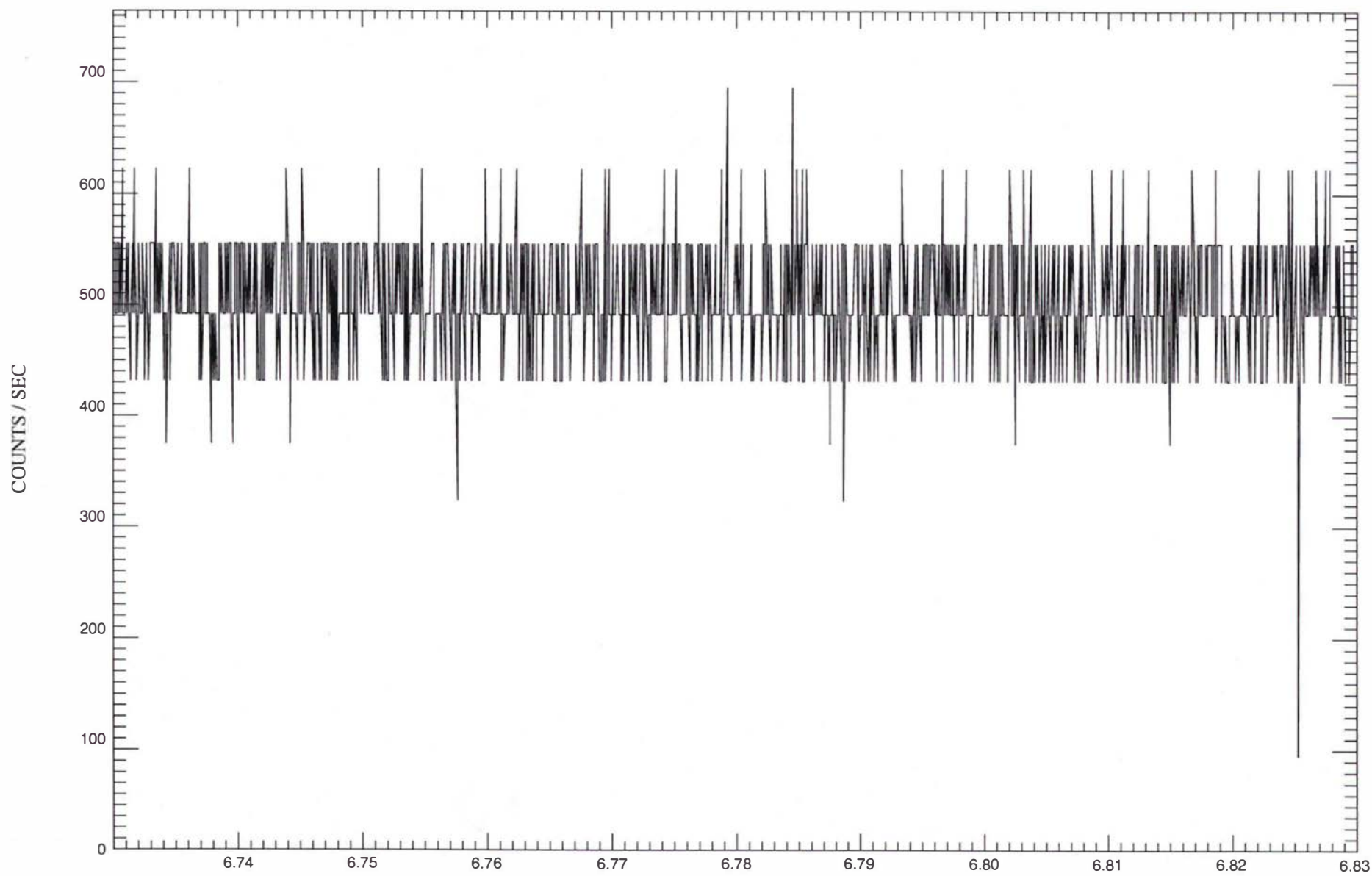


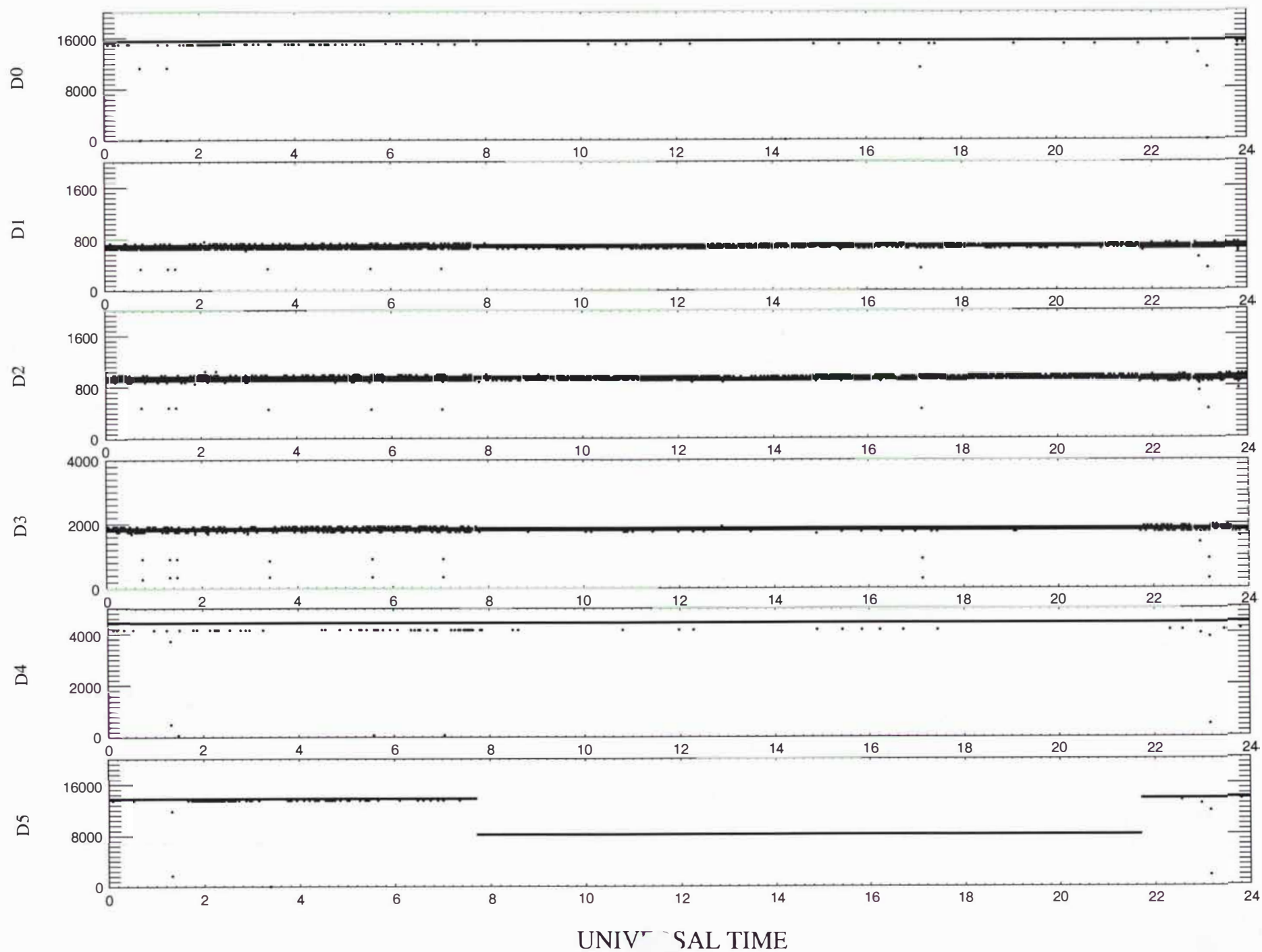
UNIVERSAL TIME

Burst Counter 5 at UT= 6.784560902913 h=24424.419 s 06:47:04.419



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Aug 10 14:43 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 10 Aug 1999 16:49:40 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7703

BATSEARCH PROGRAM

BATSE BURST # 7703
EVENT OF 1999 AUG 7 DAY OF YEAR=219
EVENT CROSSING TIME AT BATSE : 78946. S. OR 21:55:46.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 339.000 21.000
BATSE PEAK COUNTING RATE: 7000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 8/ 99 IS:
RA= 151.441 DEC= -10.219 DIST= 5.542 AU
BATSE-ULYSSES DISTANCE = 829156647. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 13.00 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2694.87 SECS.
CROSSING TIME AT ULYSSES IS 81641. S. OR 22:40:40 +/- 198.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 8/ 99 IS:
RA= 221.482 DEC= -17.729 DIST= 1.041 AU
MARS-BATSE DISTANCE = 155790464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 270.22 SECS.
CROSSING TIME AT MARS IS 79216. S. OR 22:00:16 +/- 81.17 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7703	990807	11397	78946	7000	339	+21	85

BATSE BURST TRIGGER

NO.: 7703

TIME: TJD=1397 SECONDS=78946

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.7 AZIMUTH=183.5 ERROR=1.7 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, WITH SUBSTRUCTURE, STARTS AT T-65 S, DUR. 85 S, MAX. AT T+10 S. VISIBLE ABOVE 300 KEV.

Date: Feb 22 '00

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 *N/A*

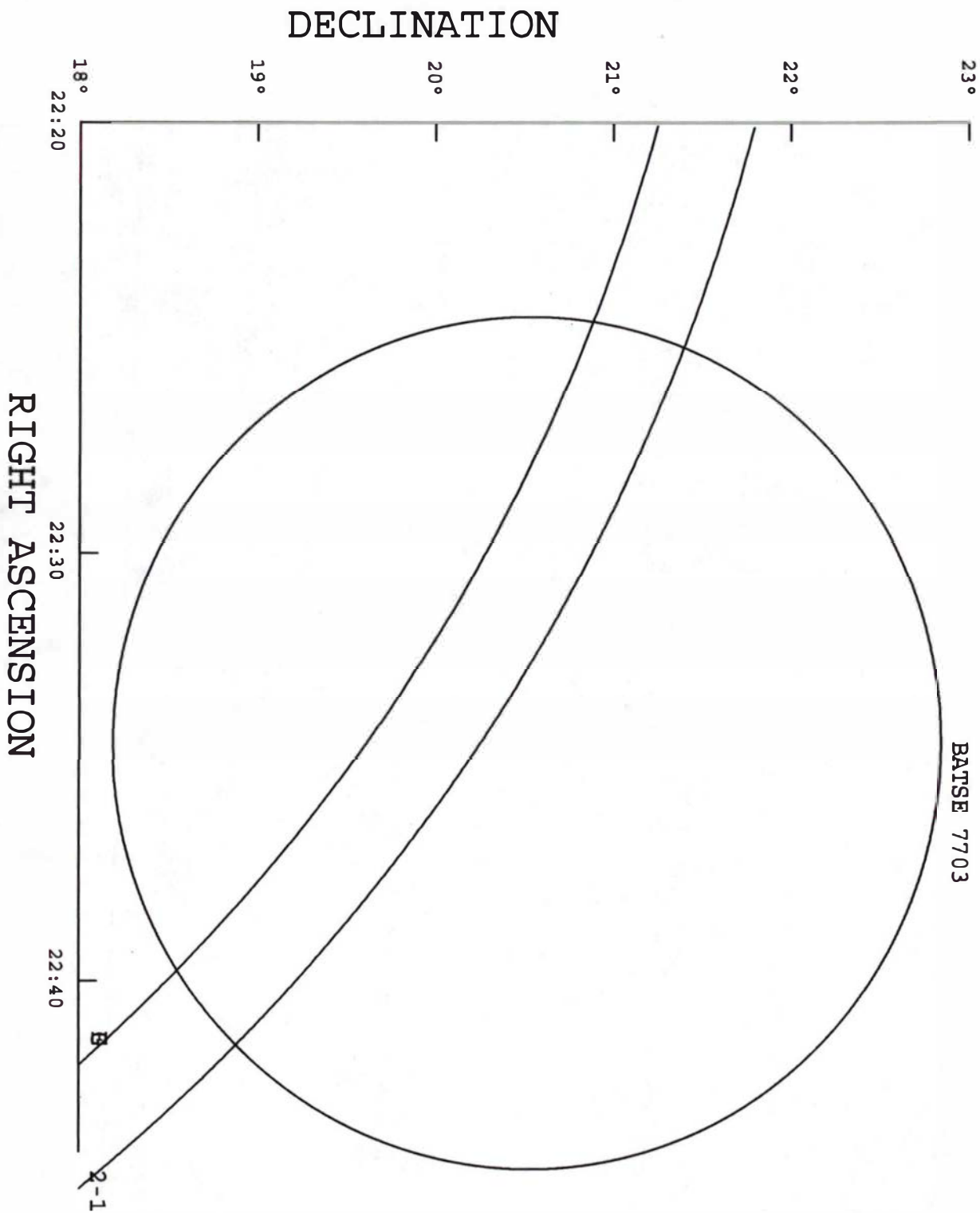
- ☐ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

- ☒ 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 AUG 7, 1999 21:55

22 / 2 / 0



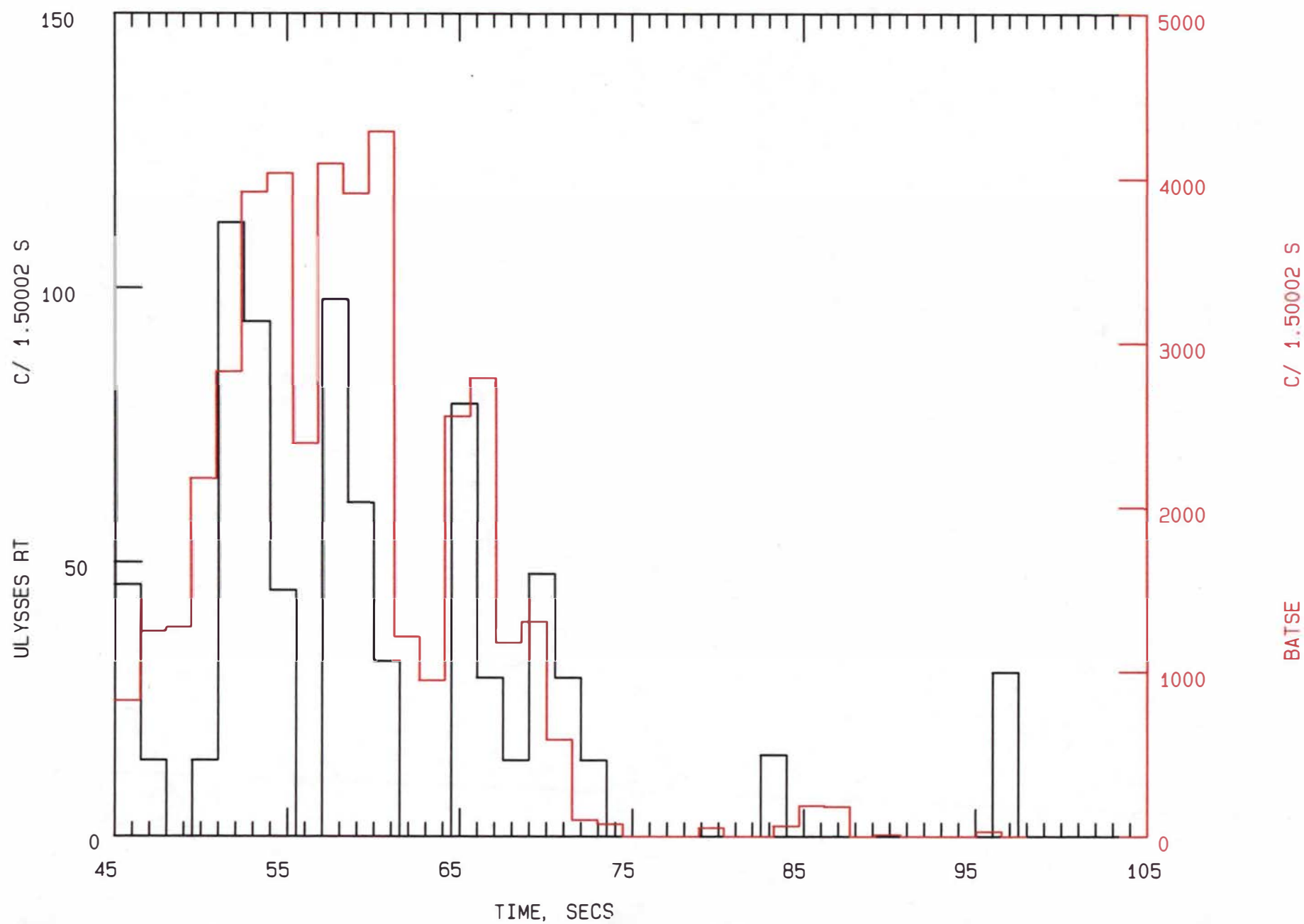
ULYSSES RT-BATSE

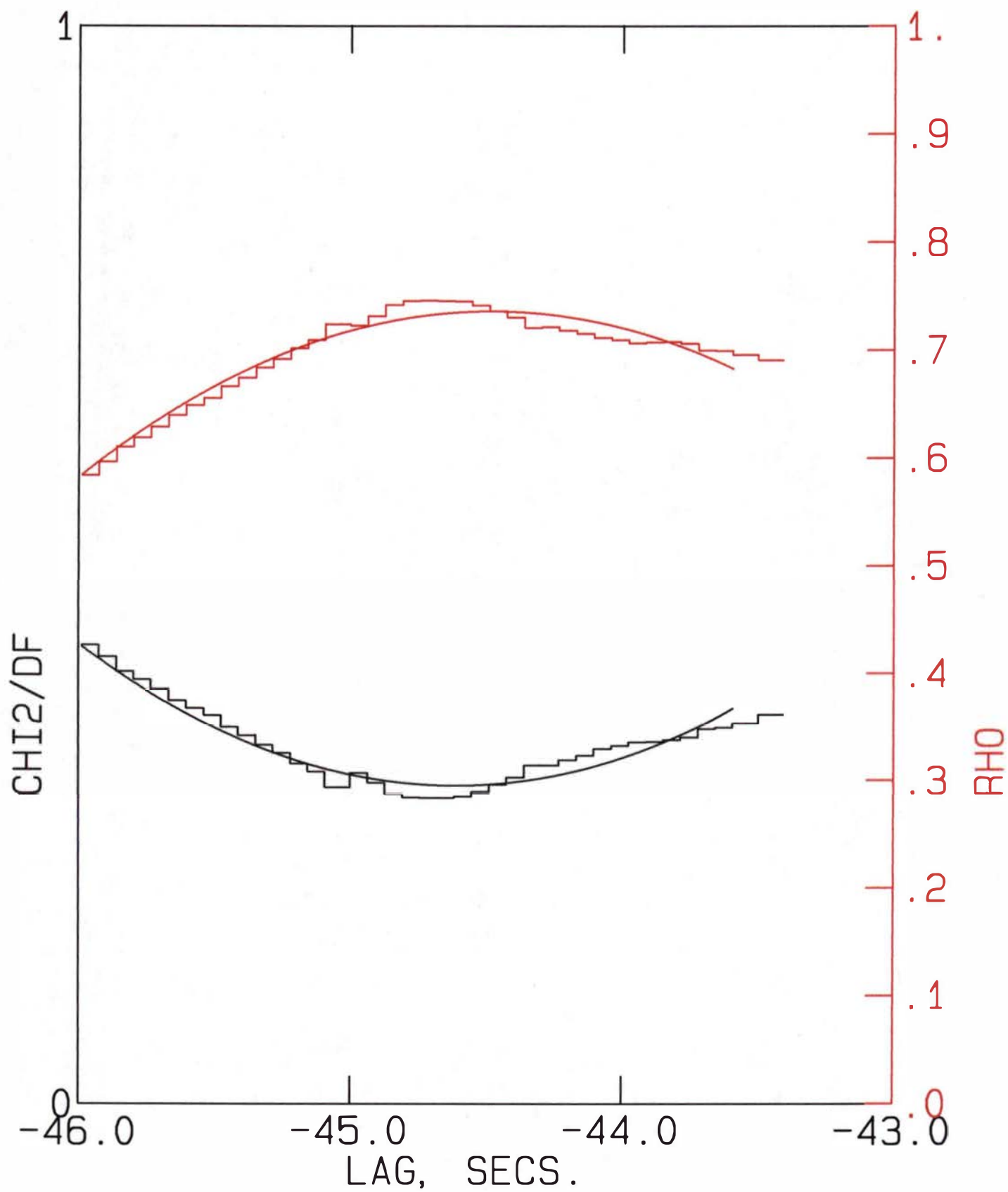
CORRELATION

7/ 8/99

81607.981

22/ 2/ 0

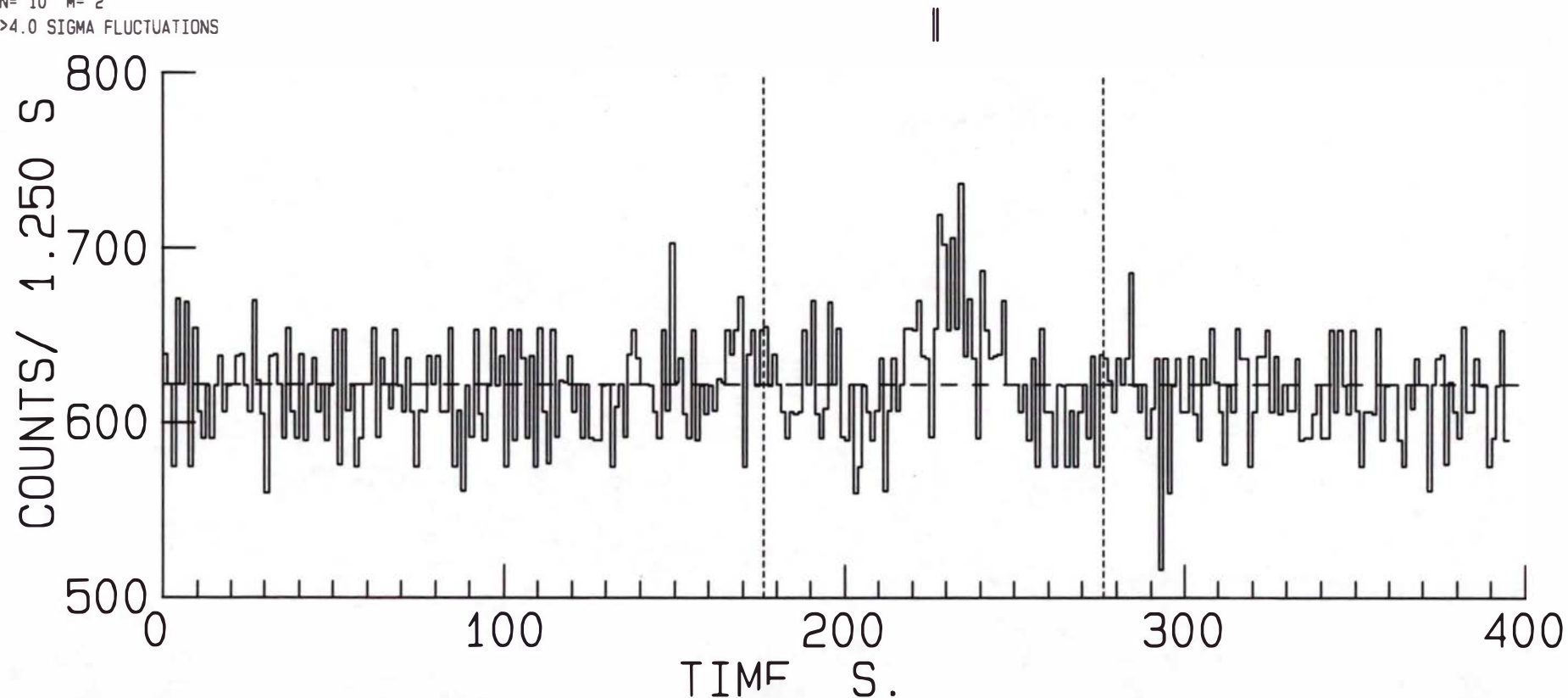




ULYSSES RT
7/ 8/99 81432.007 s
0.250 S INTERVALS REGROUPED BY 5
22- 149 keV

22 / 2 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



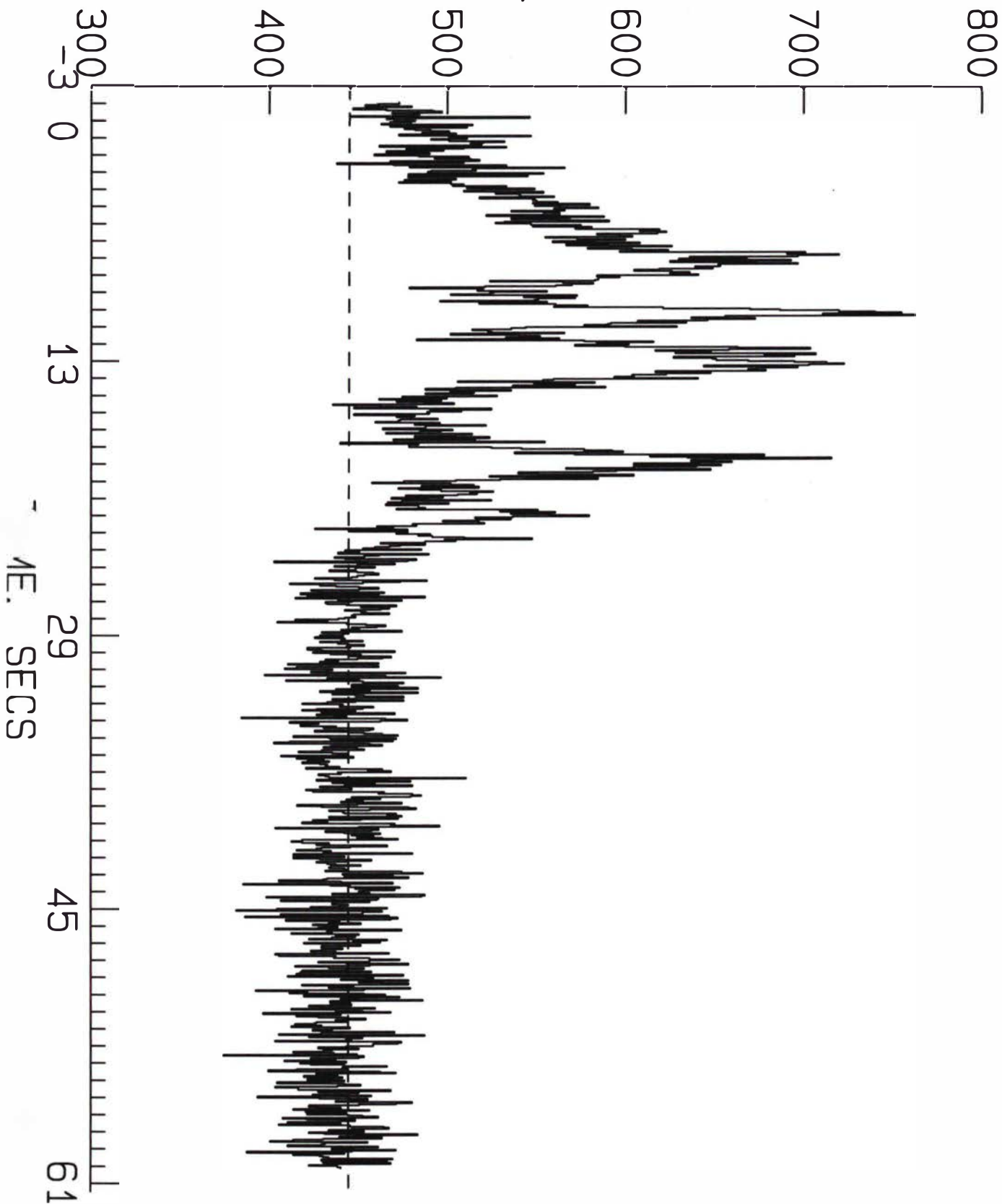
BATSE

07/08/99

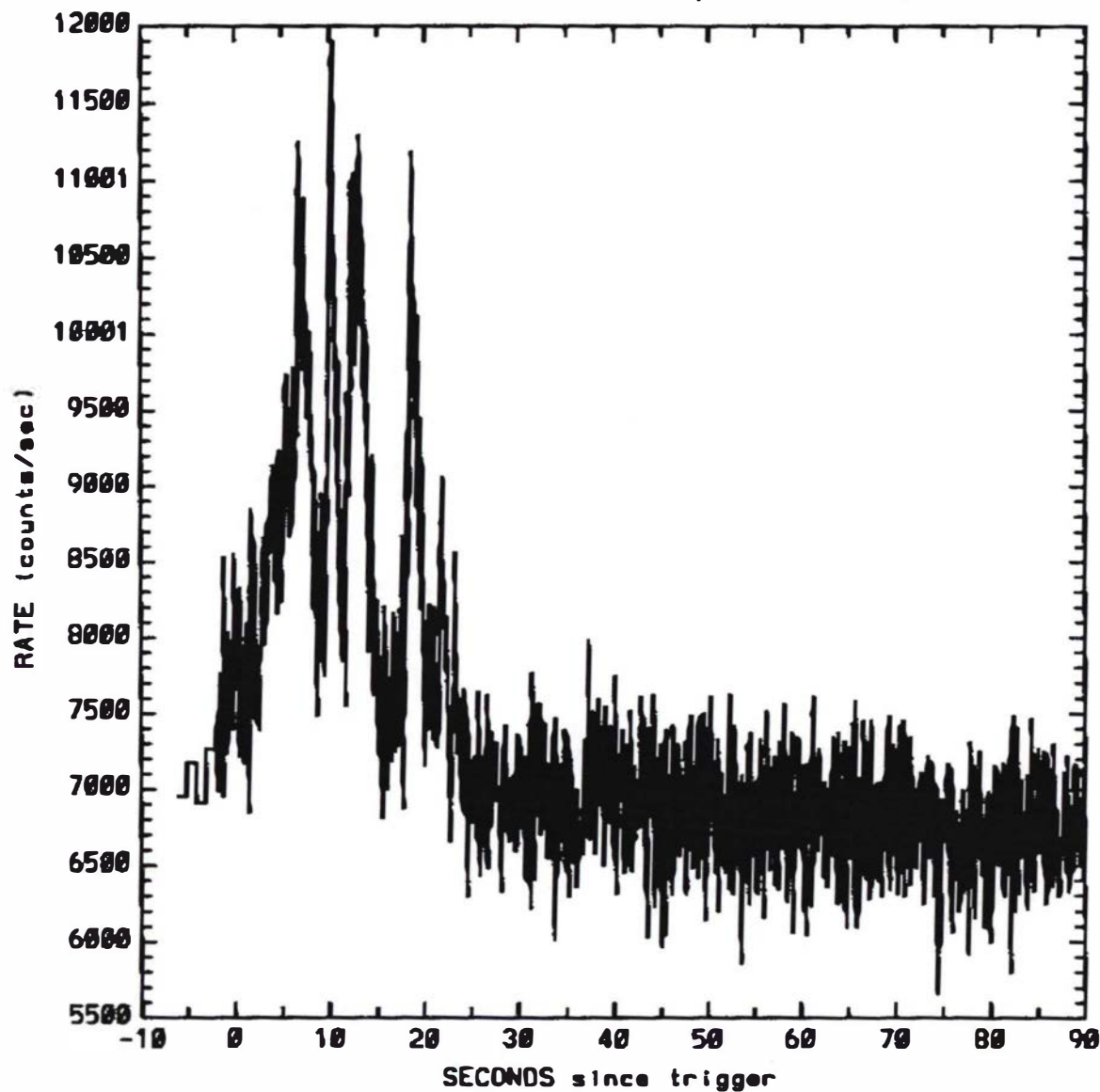
78946.041

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7703



18-AUG-1999 14.36.19

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 7703

Trigger Time:
11397 / 78946.041

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

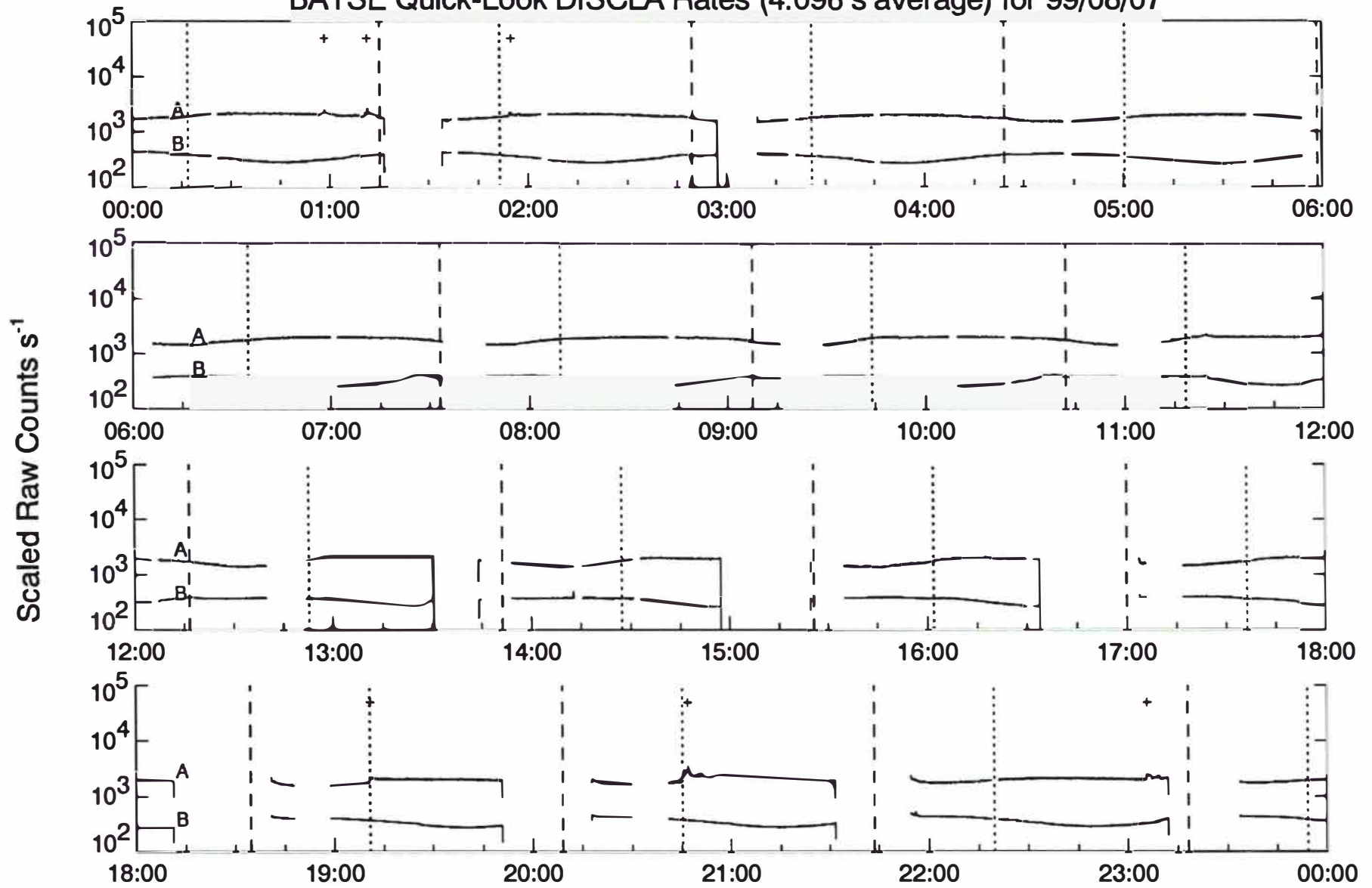
Minimum Integ. Time:
0.064 seconds

Detectors (7..0):
7-5-----

Discriminators:
(1, 2)

Quality Mask:
B0ISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/07



Current Time: 99/08/12, 1621 EDT

A: Channel 0 Most Sunward LAD

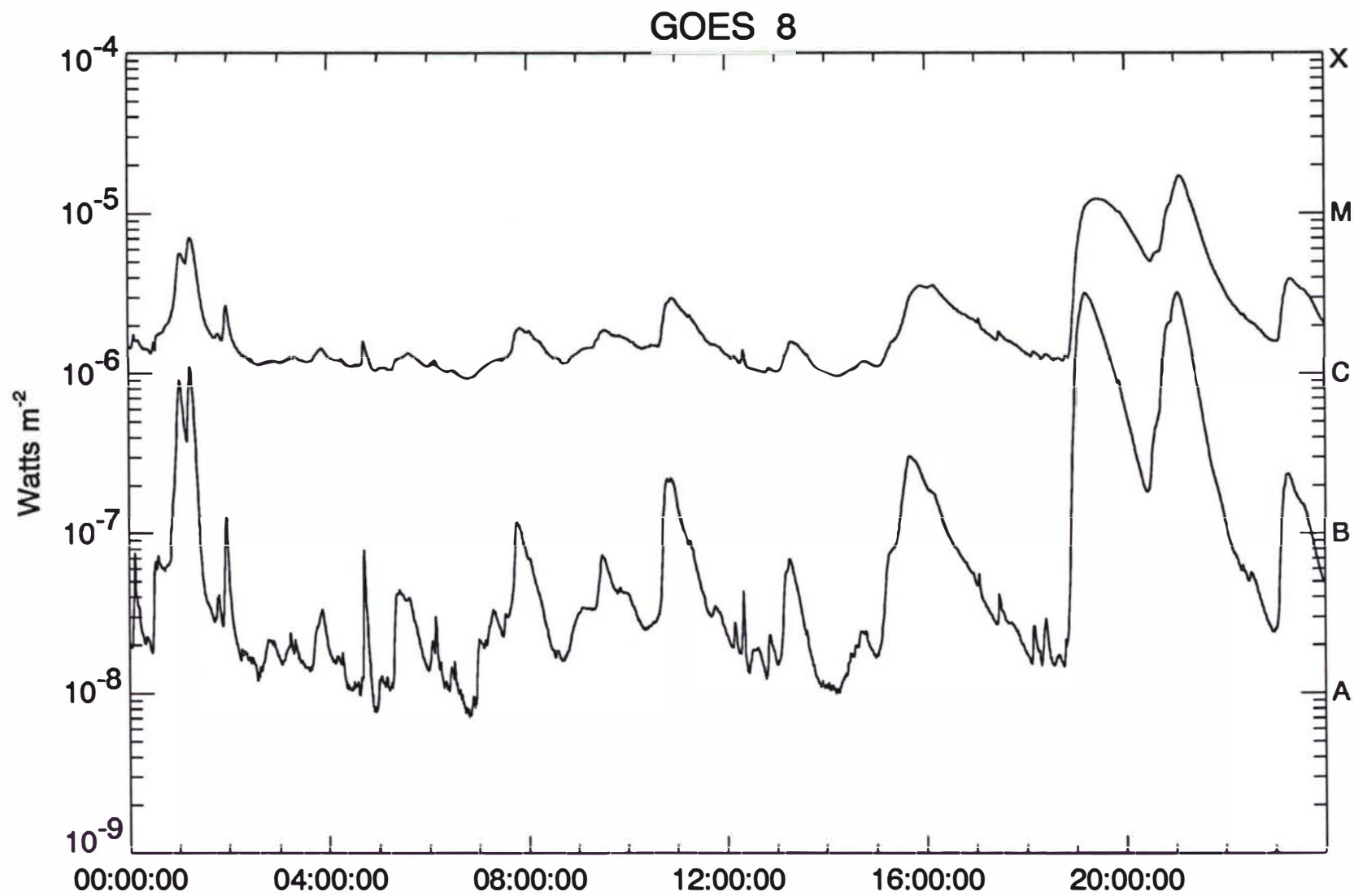
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare



Data Start: 99/08/07, 0000:00

Plot created: 99/08/12, 1620

Channel 1 (1.0 - 8.0 Angstroms)

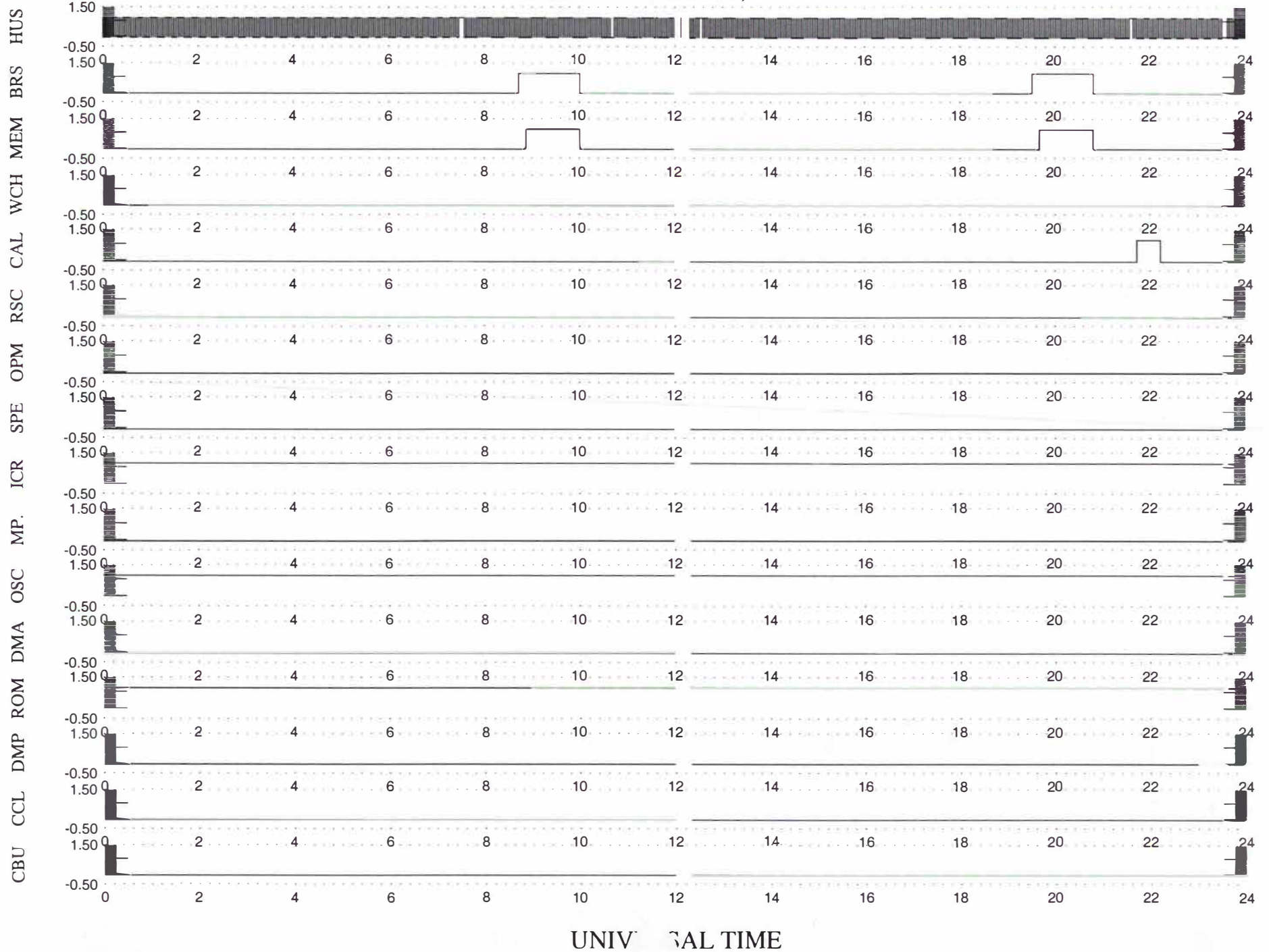
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

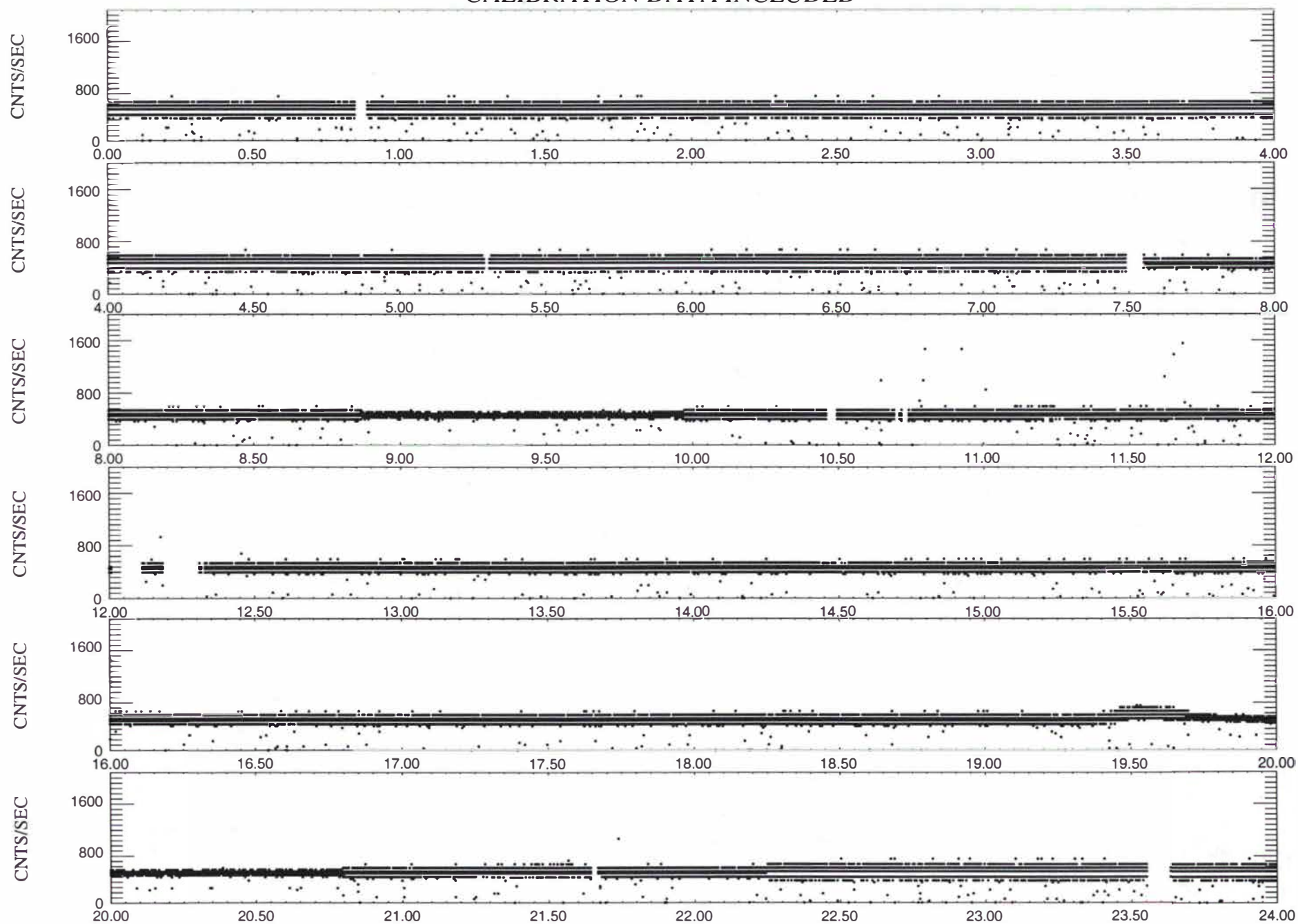
Background not subtracted

Sample average = 10

BURST NUMBER 6, 7

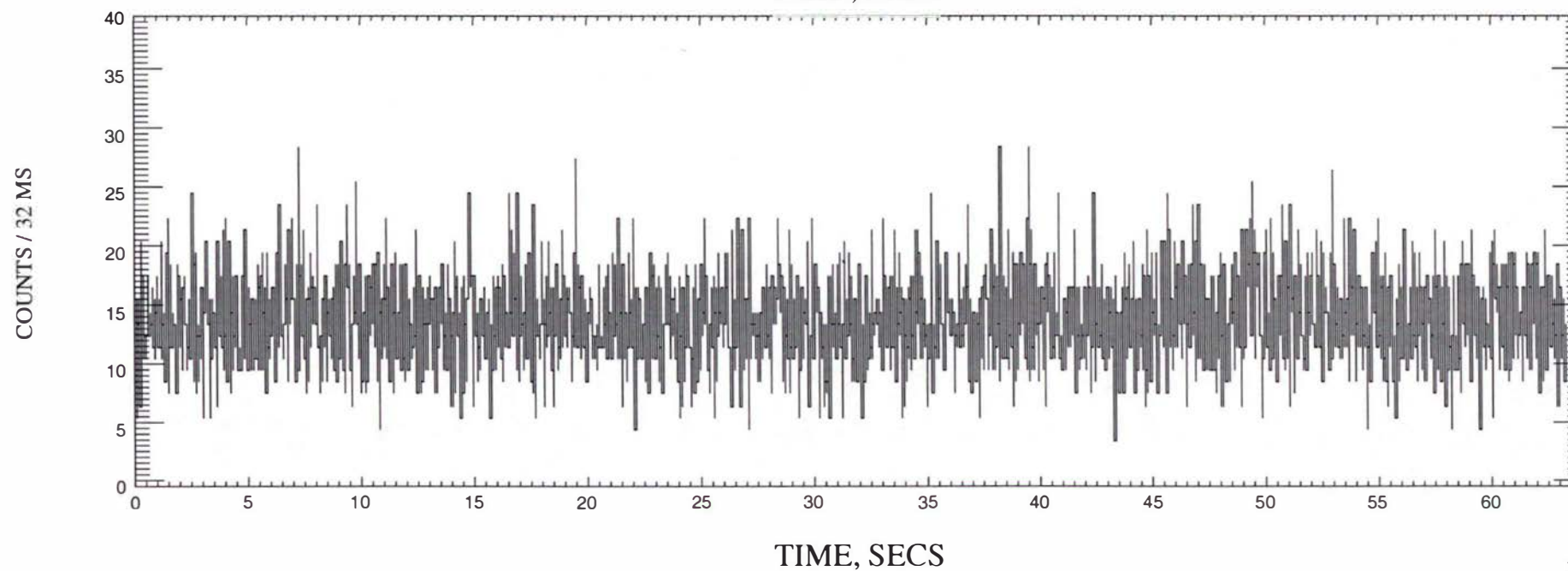
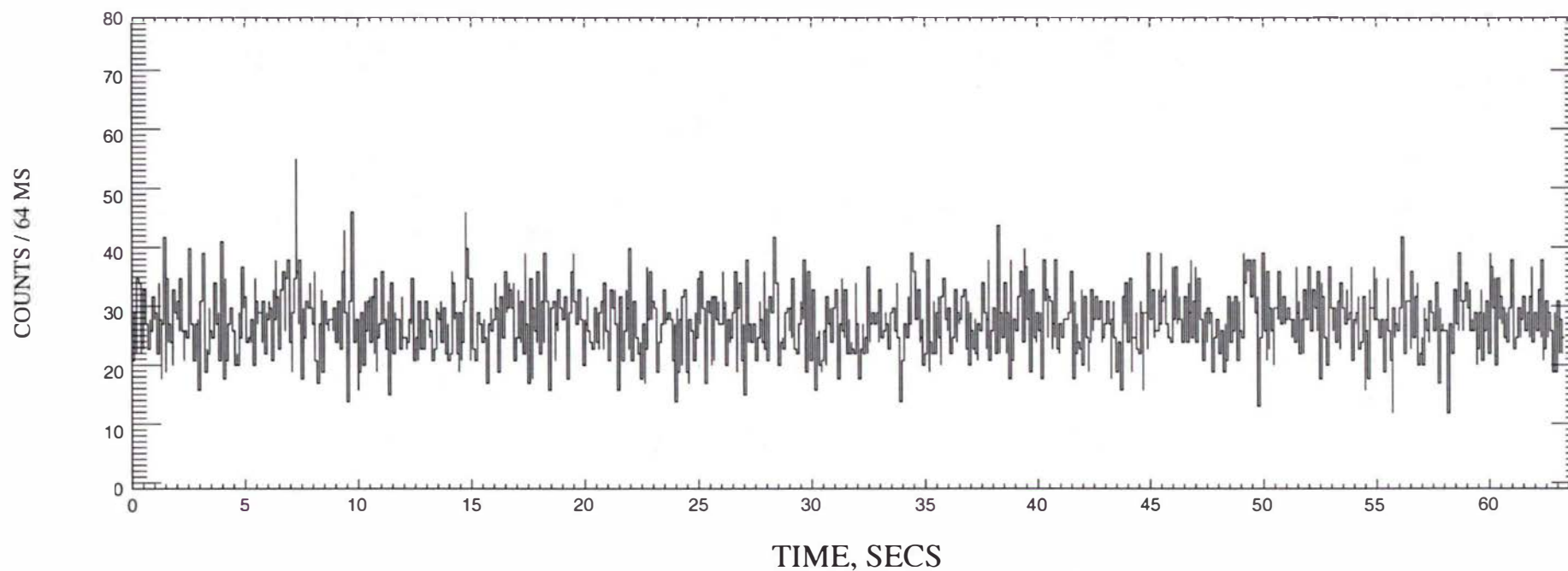


CALIBRATION DATA INCLUDED

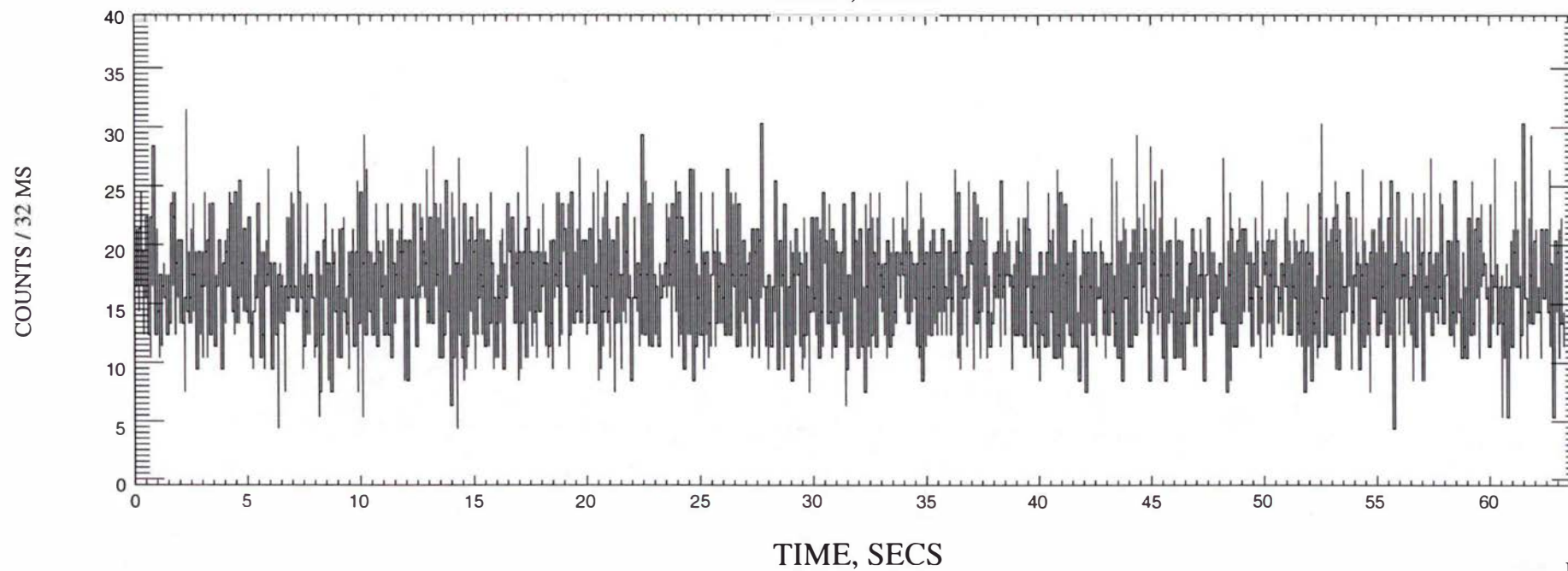
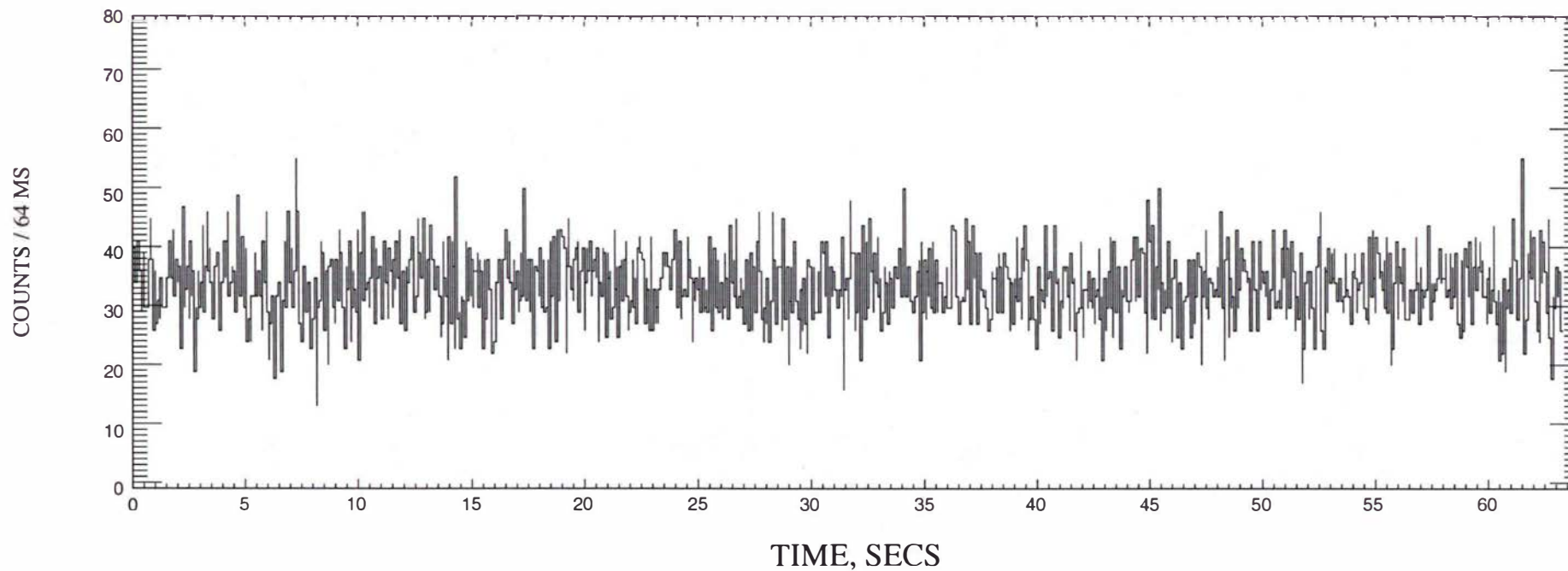


UNIVERSAL TIME

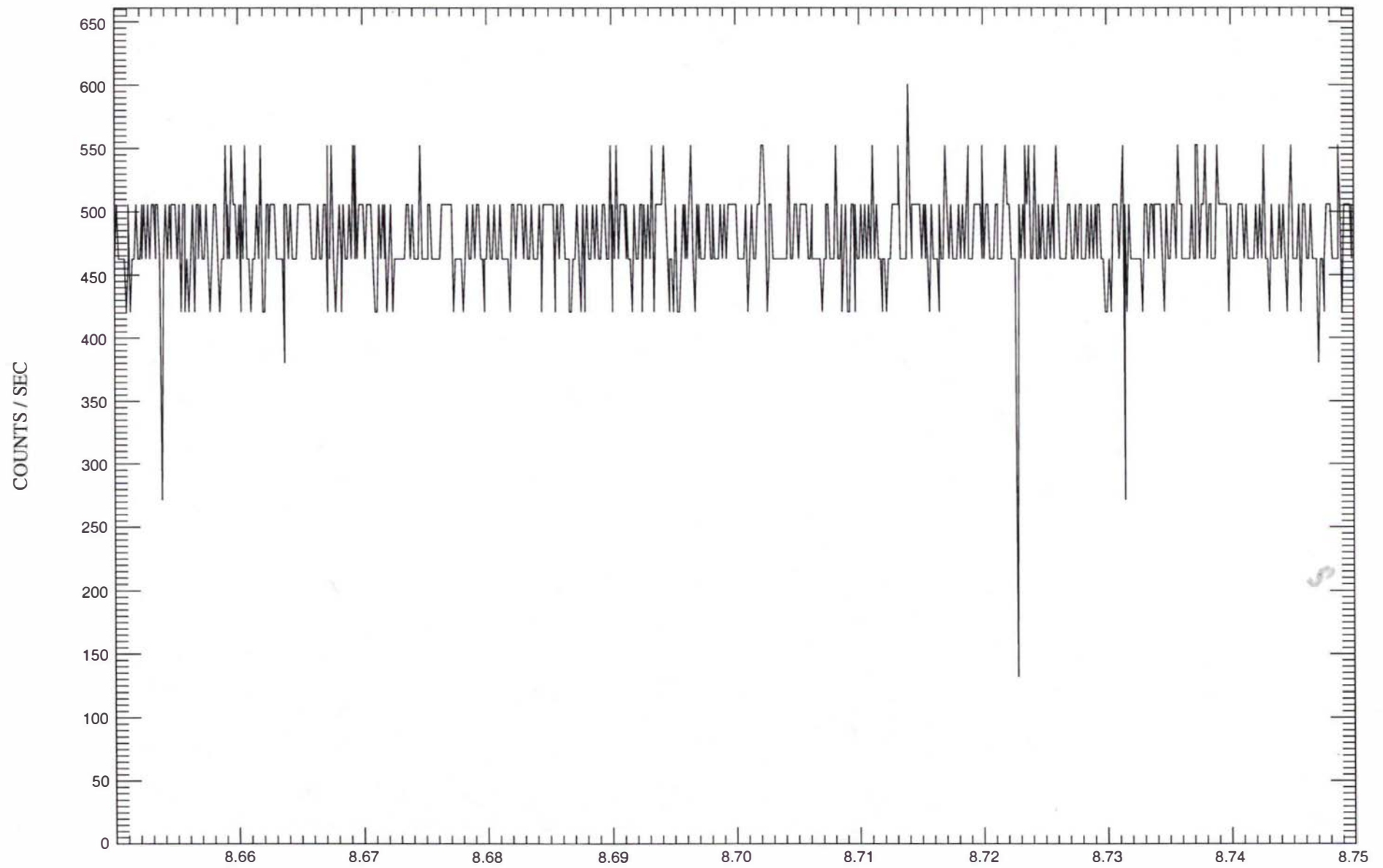
Burst Counter 6 at UT= 8.702426766290 h=31328.736 s 08:42:08.736



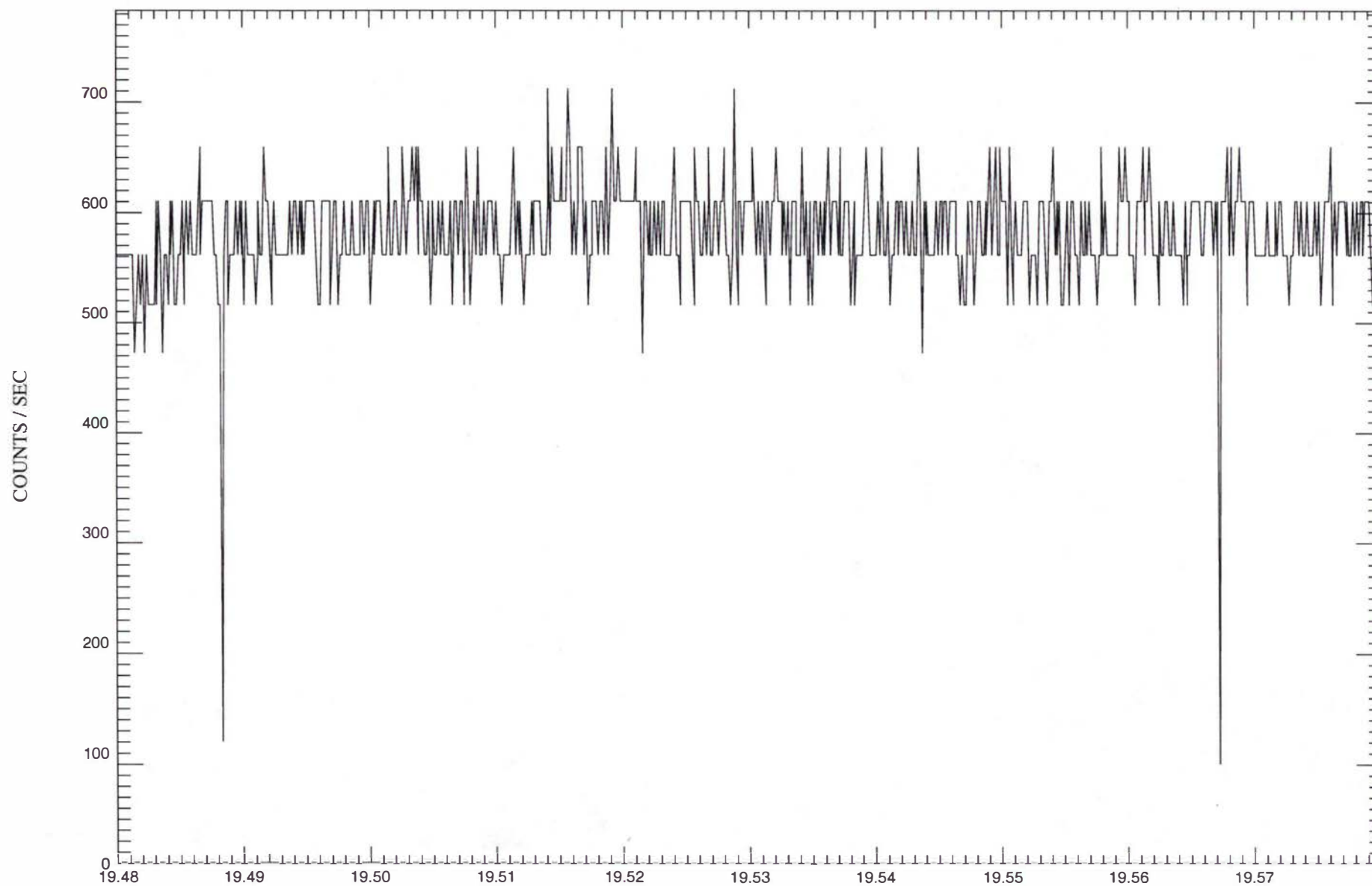
Burst Counter 7 at UT=19.528995475769 h=70304.384 s 19:31:44.384

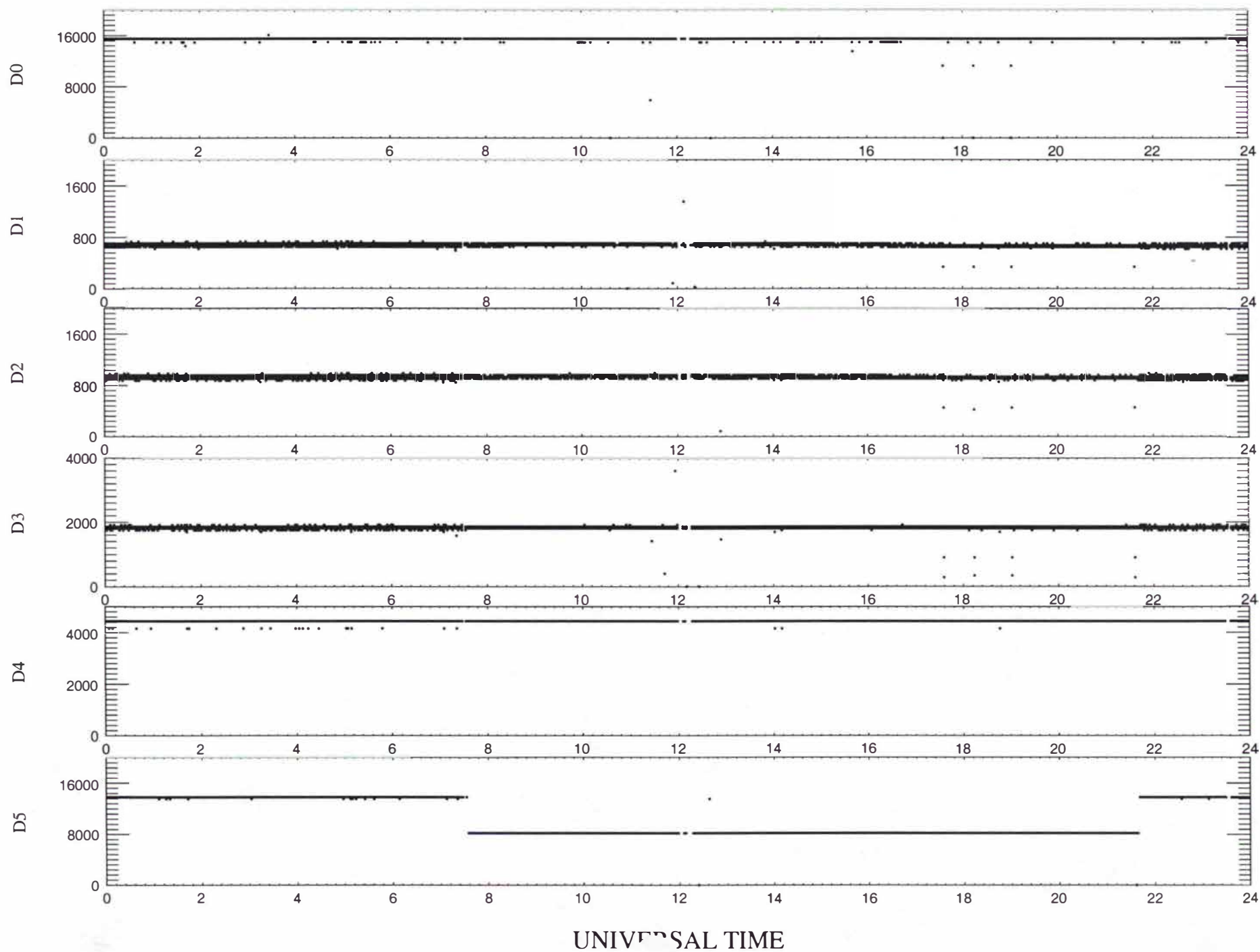


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Aug 10 14:46 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 10 Aug 1999 16:52:24 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7704

BATSEARCH PROGRAM

BATSE BURST # 7704
EVENT OF 1999 AUG 8 DAY OF YEAR=220
EVENT CROSSING TIME AT BATSE : 26114. S. OR 07:15:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 302.000 -13.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 8/ 99 IS:
RA= 151.500 DEC= -10.255 DIST= 5.543 AU
BATSE-ULYSSES DISTANCE = 829287404. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2197.63 SECS.
CROSSING TIME AT ULYSSES IS 28312. S. OR 07:51:51 +/- 375.04 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 8/ 99 IS:
RA= 222.011 DEC= -17.895 DIST= 1.047 AU
MARS-BATSE DISTANCE = 156690064. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 120.37 SECS.
CROSSING TIME AT MARS IS 25994. S. OR 07:13:13 +/- 86.47 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7704	990808	11398	26114	4000	302	-13	85

BATSE BURST TRIGGER

NO.: 7704

TIME: TJD=1398 SECONDS=26114

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=66.5 AZIMUTH=194.4 ERROR=5.5 DEGREES

COMMENTS:

GRB. TRIPLE PULSE, DUR. 85 S, STARTS AT T-3 S. NOT VISIBLE ABOVE 300 KEV.

BATSE BURST# 7704

ULYSSES RT

11 / 8 / 99

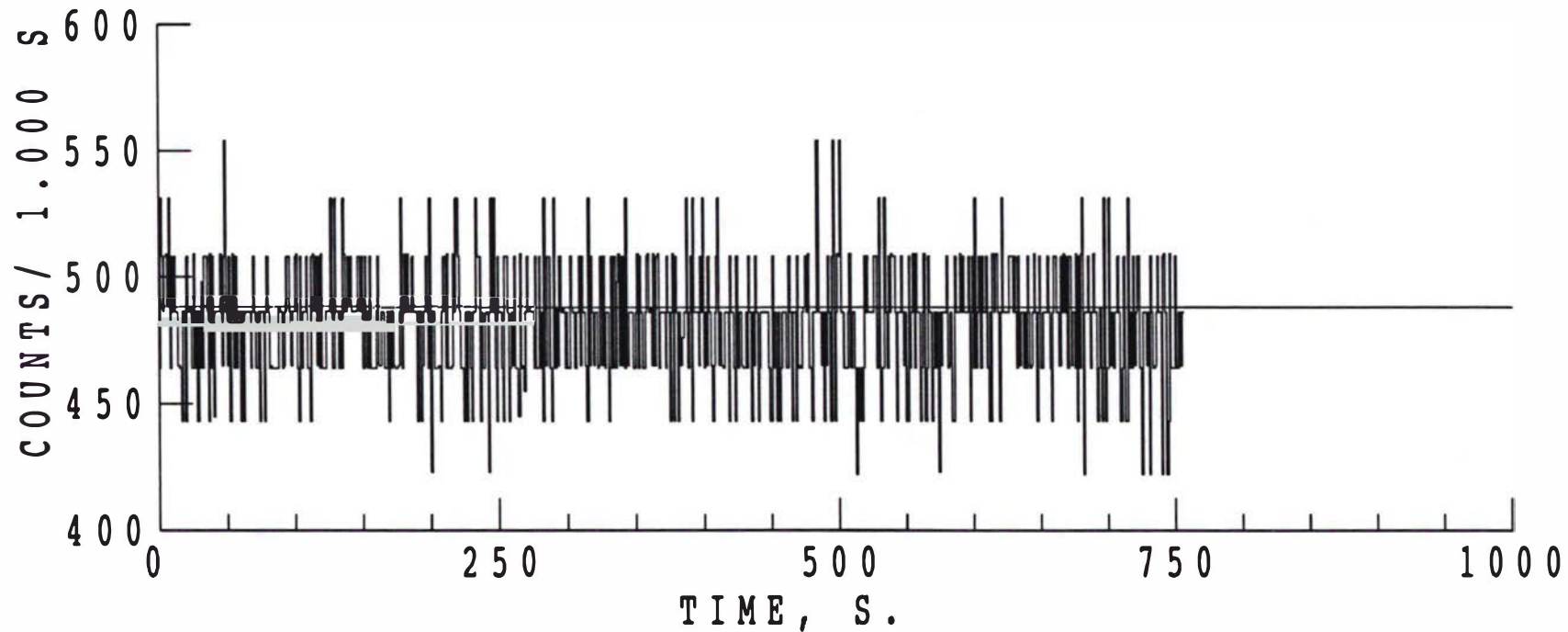
8 / 8 / 99 27936.340 s

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



KNEAR GRS 19990808 48019

ULYSSES RT

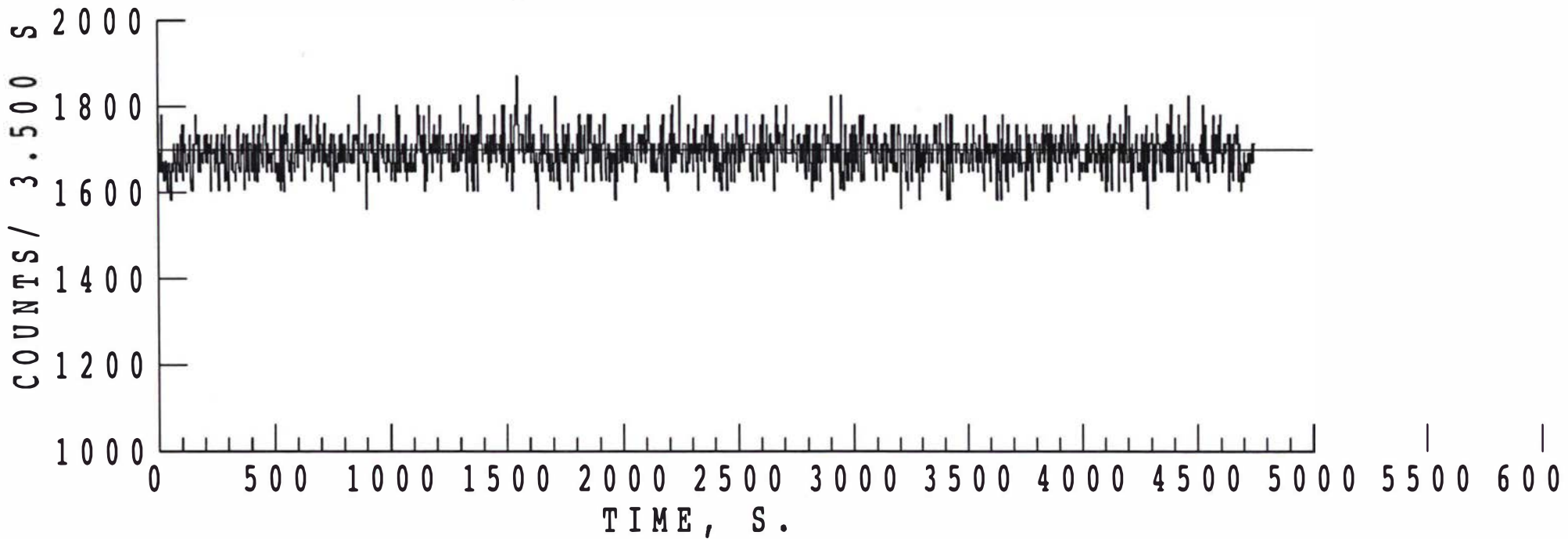
11 / 8 / 99

8 / 8 / 99 45648.020 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

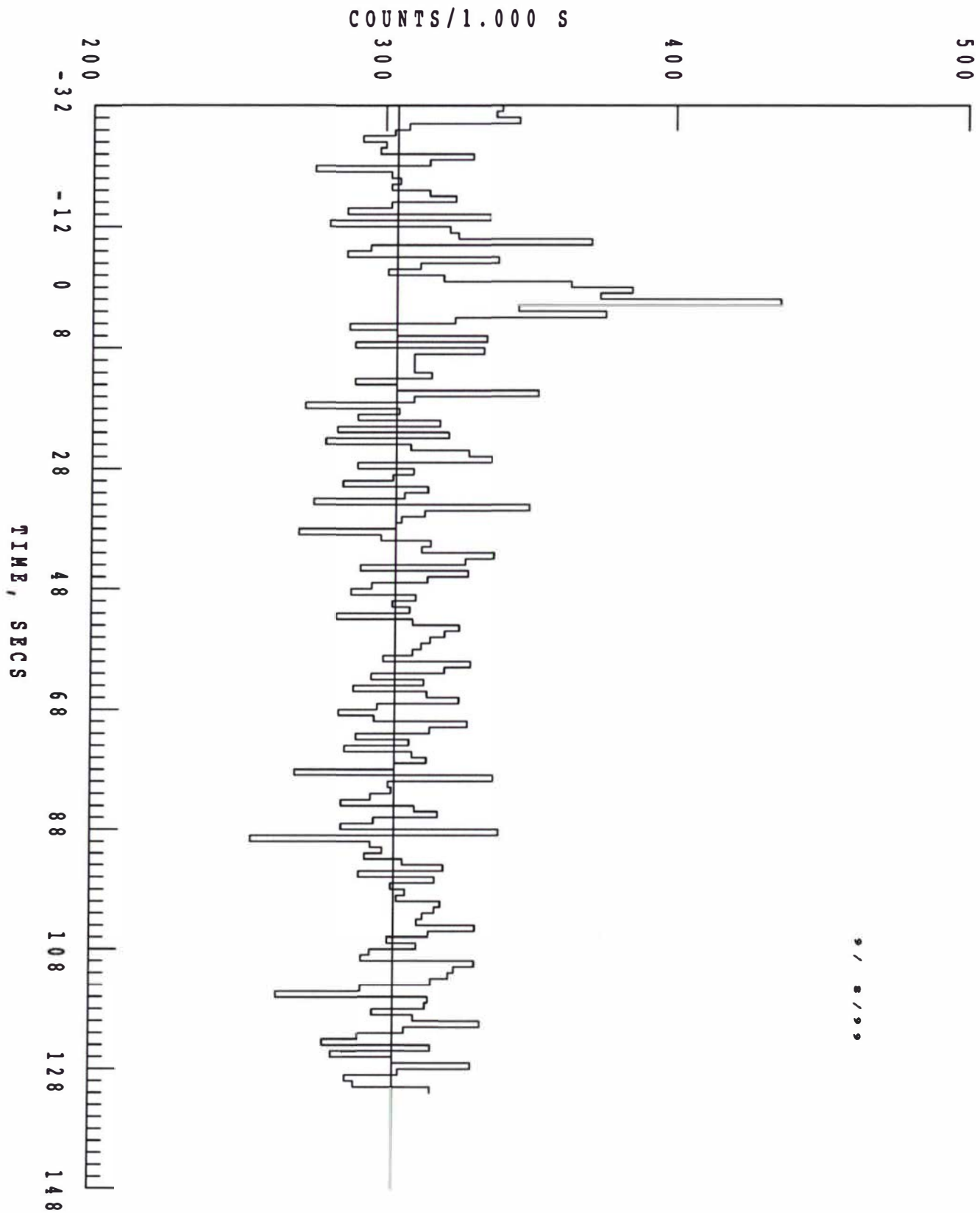


NEAR

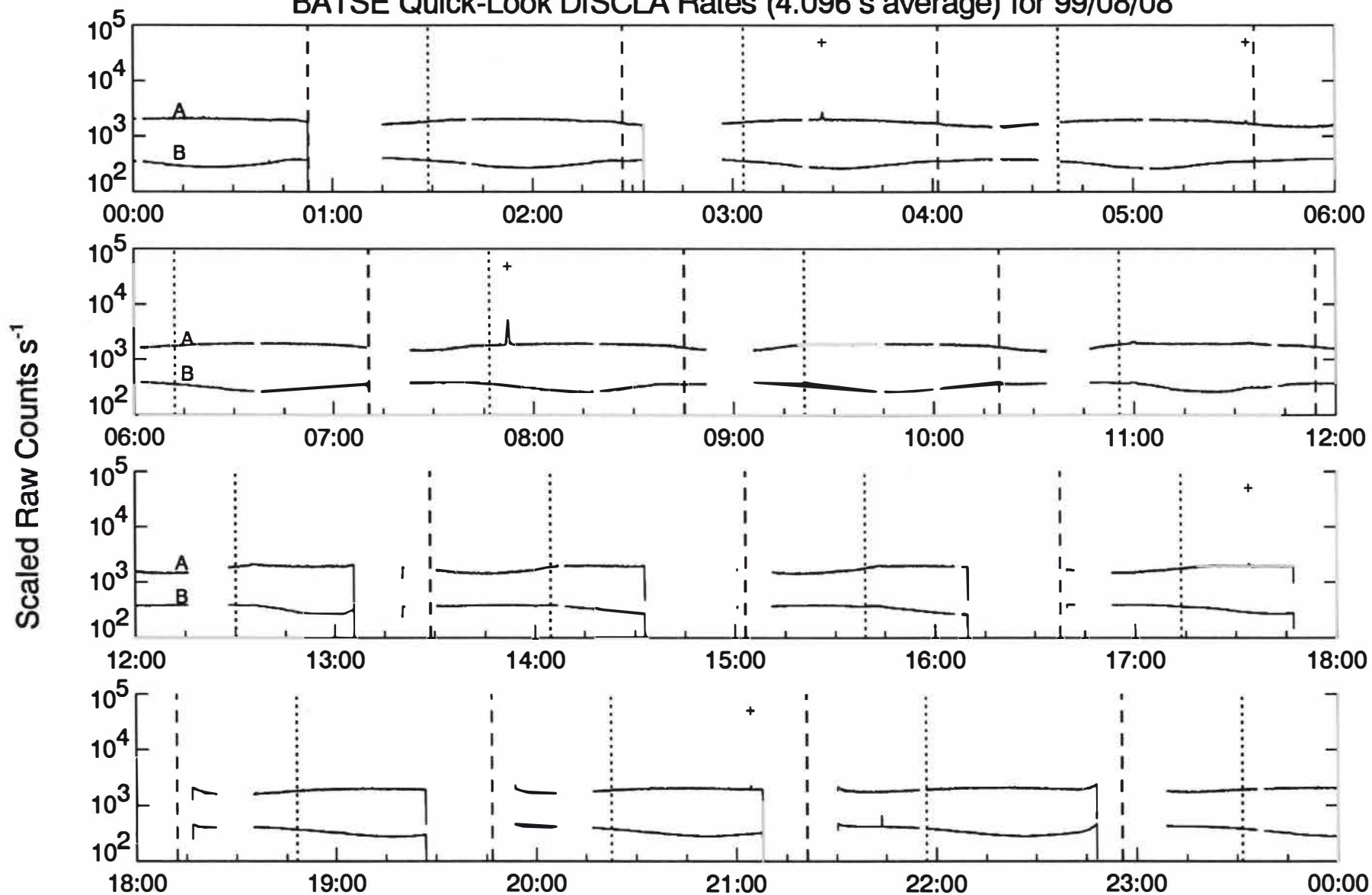
08/08/99

48019.523

100-1000 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/08

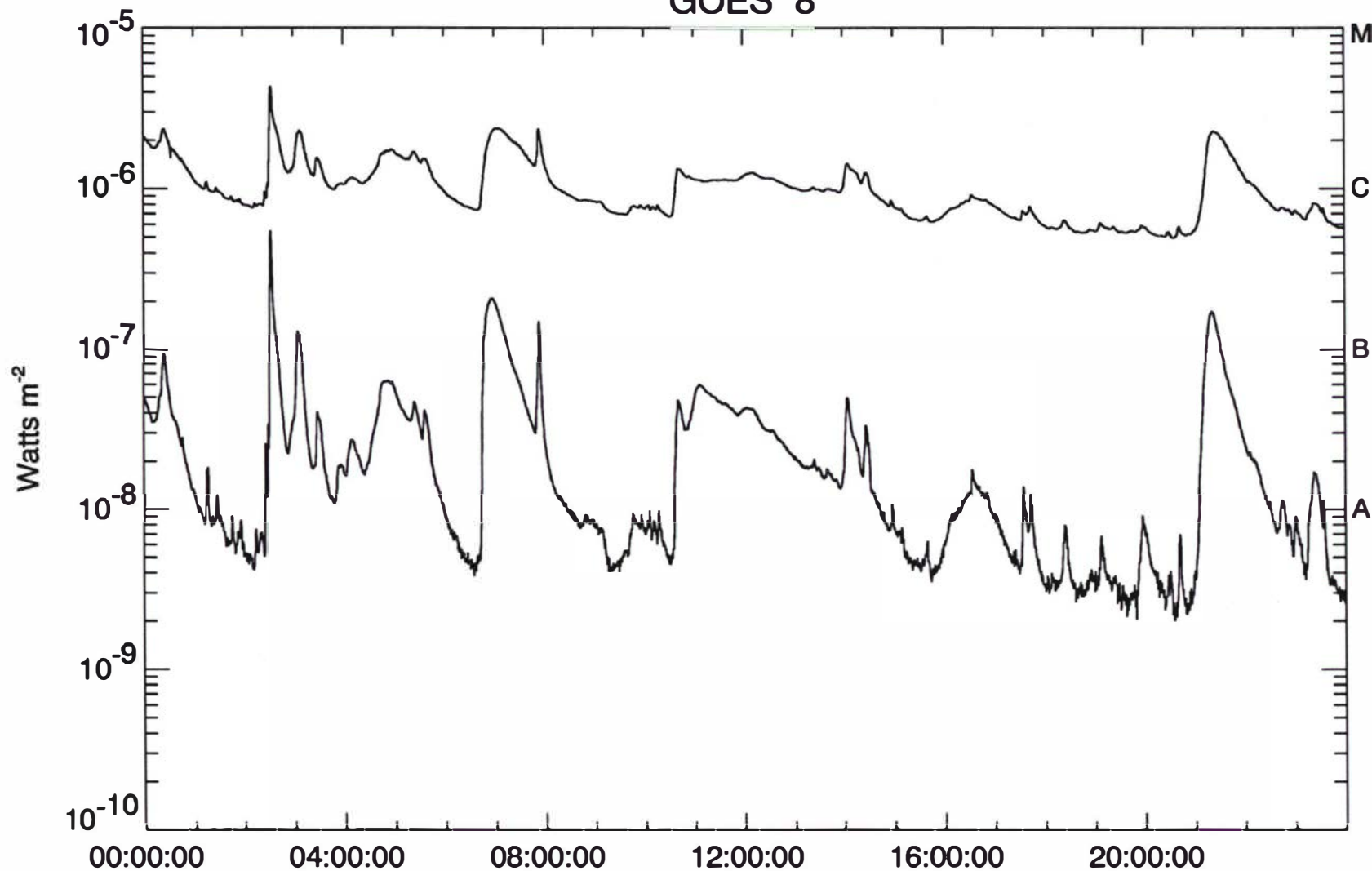


Current Time: 99/08/12, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/08, 0000:00

Plot created: 99/08/12, 1006

Channel

1 (1.0 - 8.0 Angstroms)

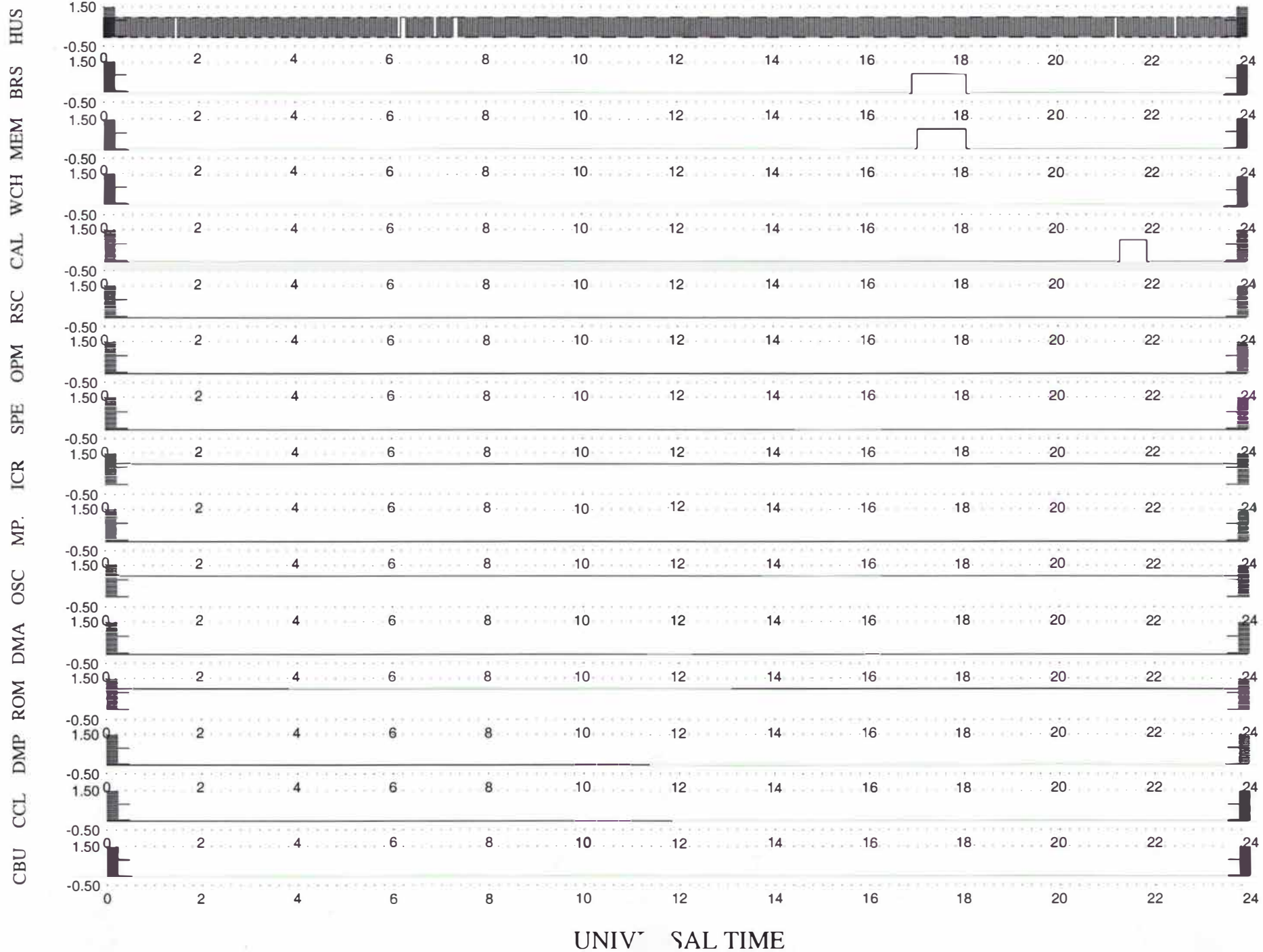
Background not subtracted

2 (0.5 - 4.0 Angstroms)

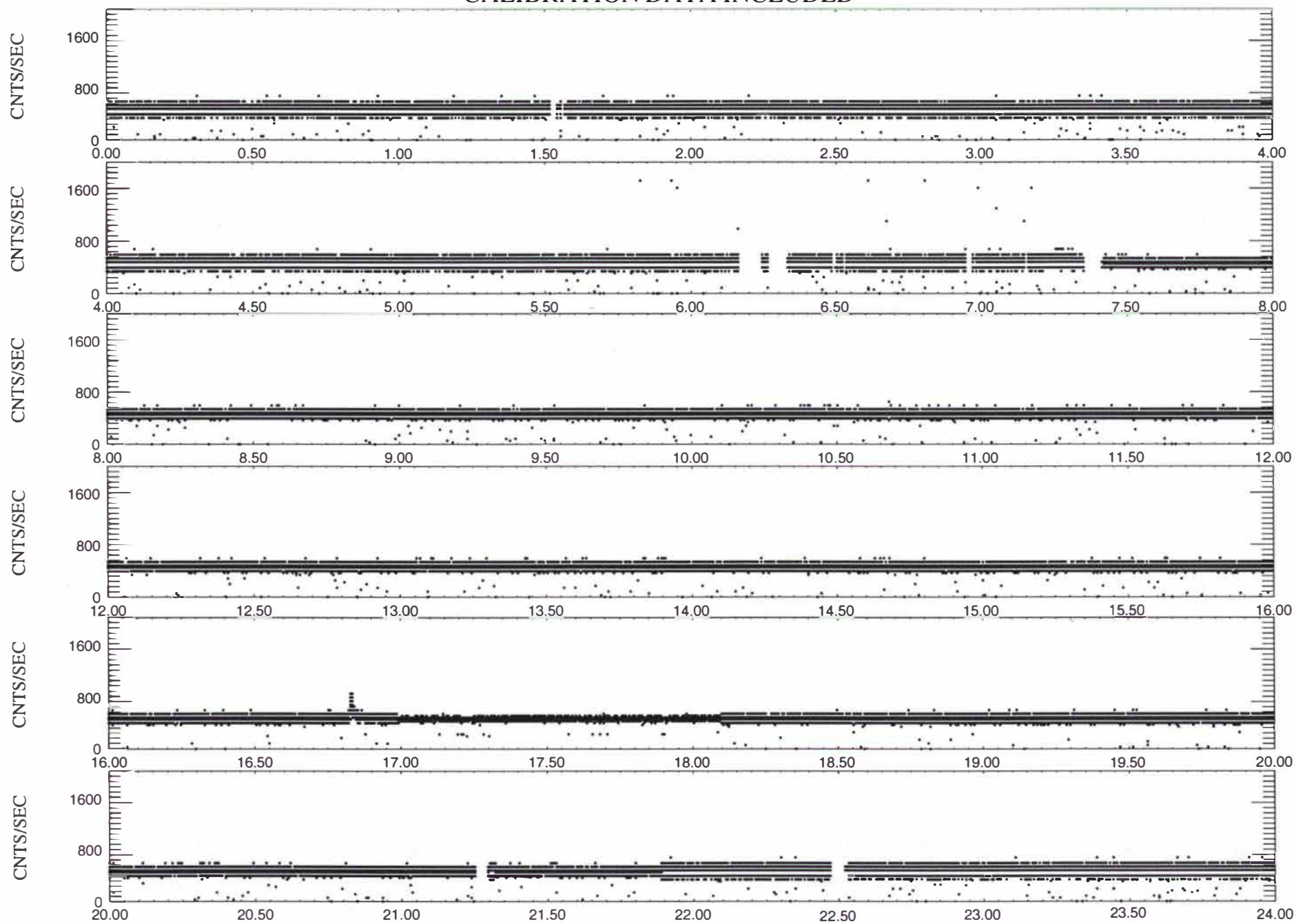
Background not subtracted

Sample average = 10

BURST NUMBER 8

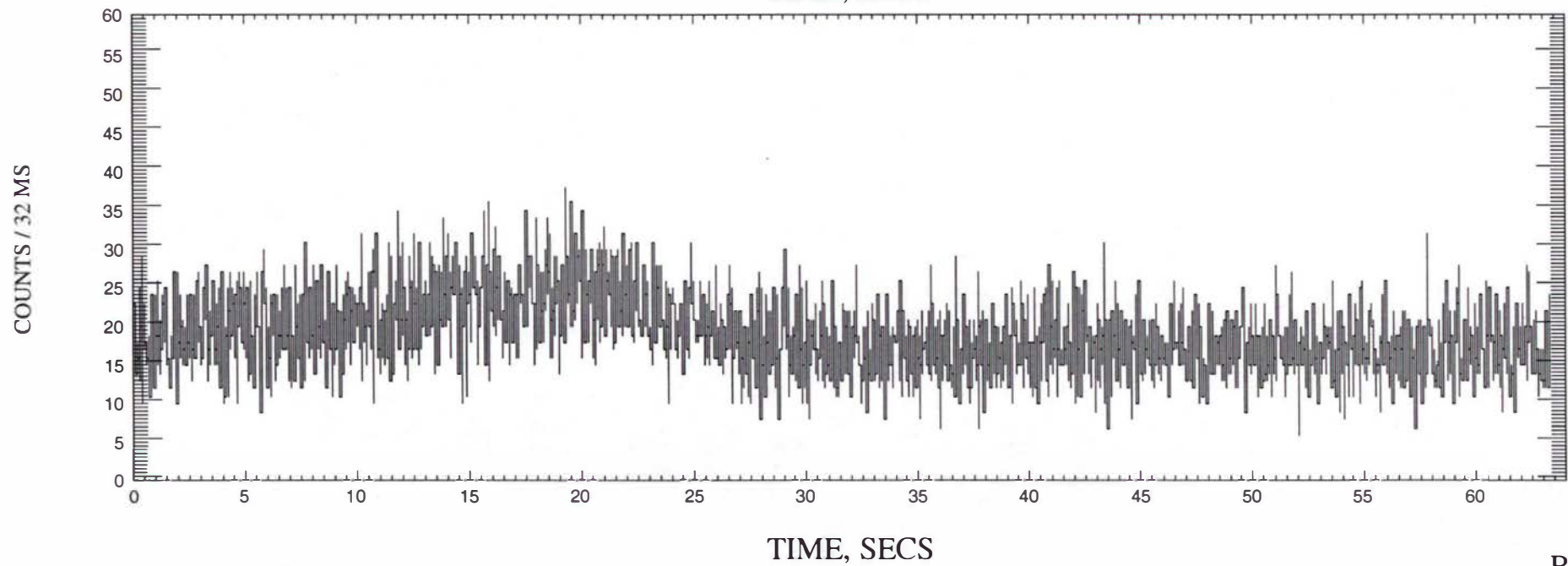
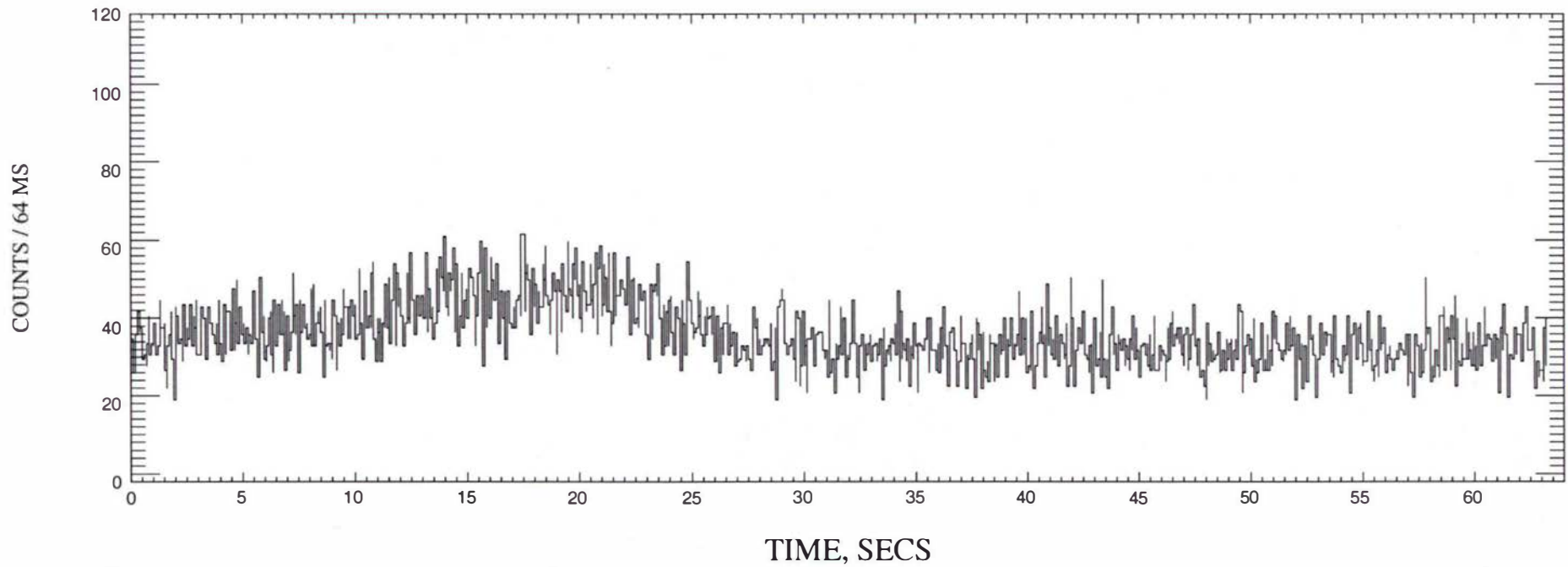


CALIBRATION DATA INCLUDED

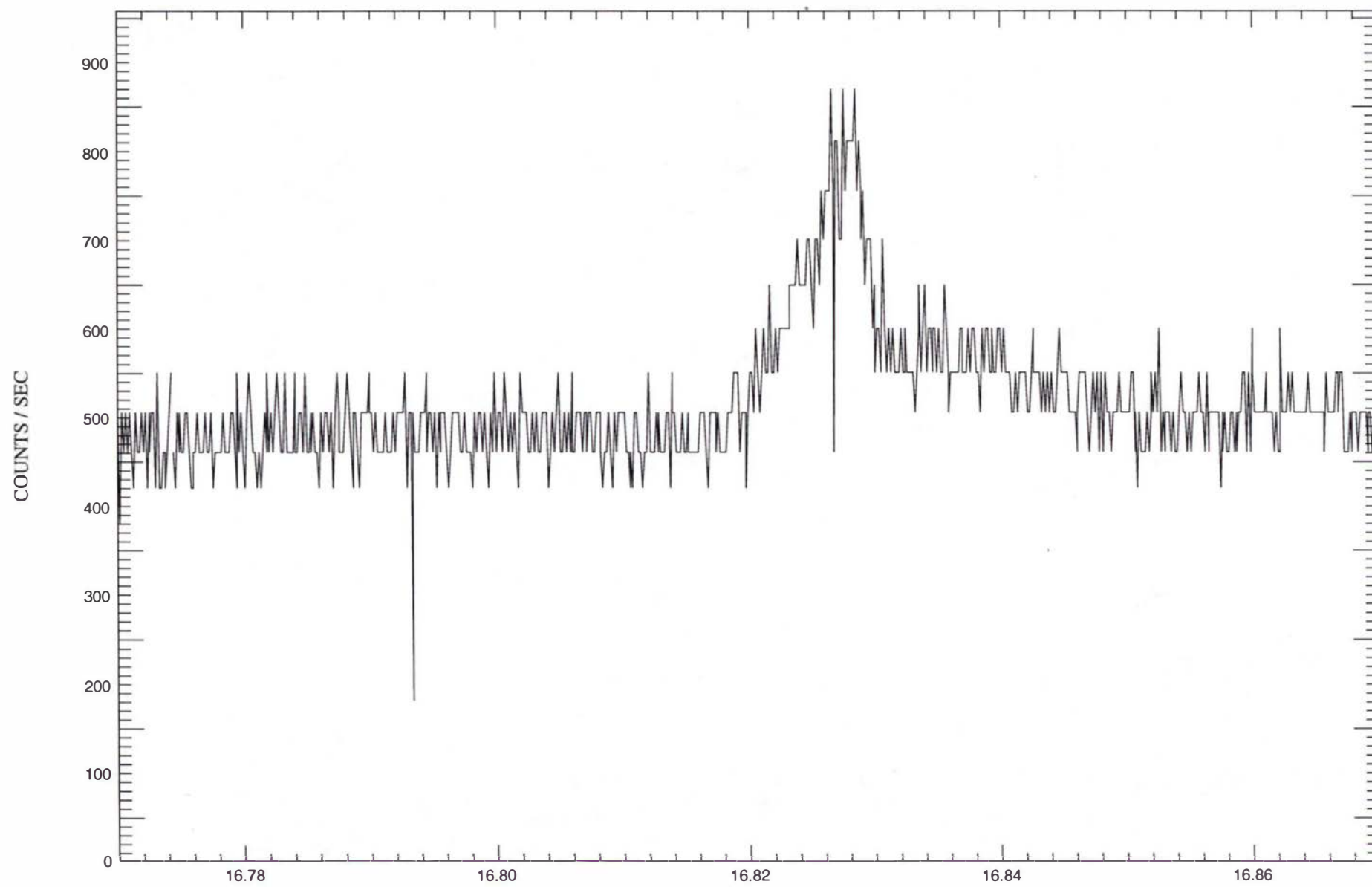


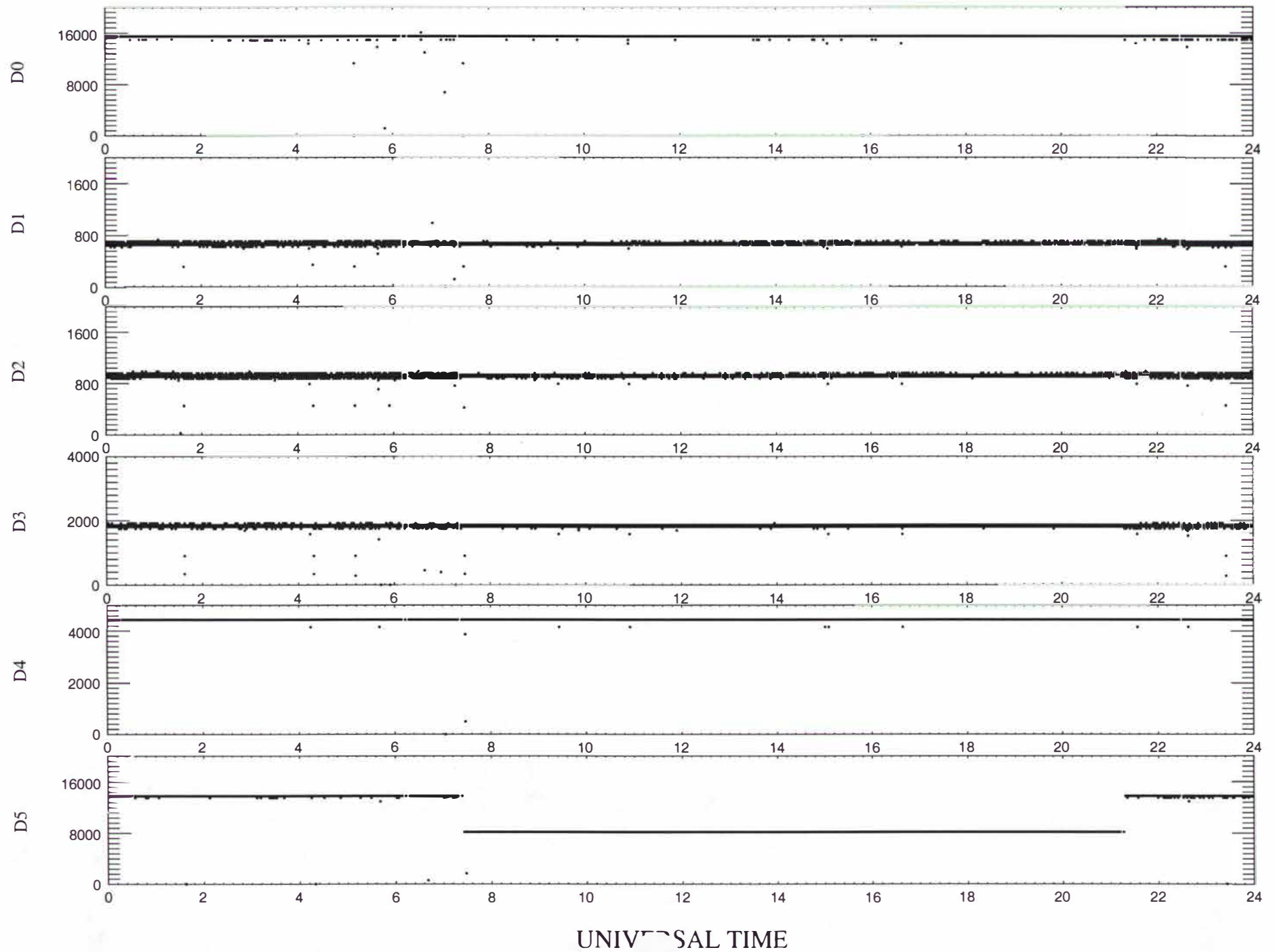
UNIVERSAL TIME

Burst Counter 8 at UT=16.824767816332 h=60569.164 s 16:49:29.164



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Aug 10 14:49 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 10 Aug 1999 16:55:18 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7705

BATSEARCH PROGRAM

BATSE BURST # 7705
EVENT OF 1999 AUG 9 DAY OF YEAR=221
EVENT CROSSING TIME AT BATSE : 45064. S. OR 12:31:04.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 89.000 45.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 8/ 99 IS:
RA= 151.683 DEC= -10.367 DIST= 5.546 AU
BATSE-ULYSSES DISTANCE = 829671400. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -531.24 SECS.
CROSSING TIME AT ULYSSES IS 44533. S. OR 12:22:12 +/- 513.48 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 8/ 99 IS:
RA= 222.545 DEC= -18.061 DIST= 1.053 AU
MARS-BATSE DISTANCE = 157588384. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 46.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 358.69 SECS.
CROSSING TIME AT MARS IS 45423. S. OR 12:37:02 +/- 72.16 SECONDS

BATSE BURST TRIGGER

NO.: 7705

TIME: TJD=1399 SECONDS=45064

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=156.0 AZIMUTH=14.9 ERROR=4.6 DEGREES

COMMENTS:

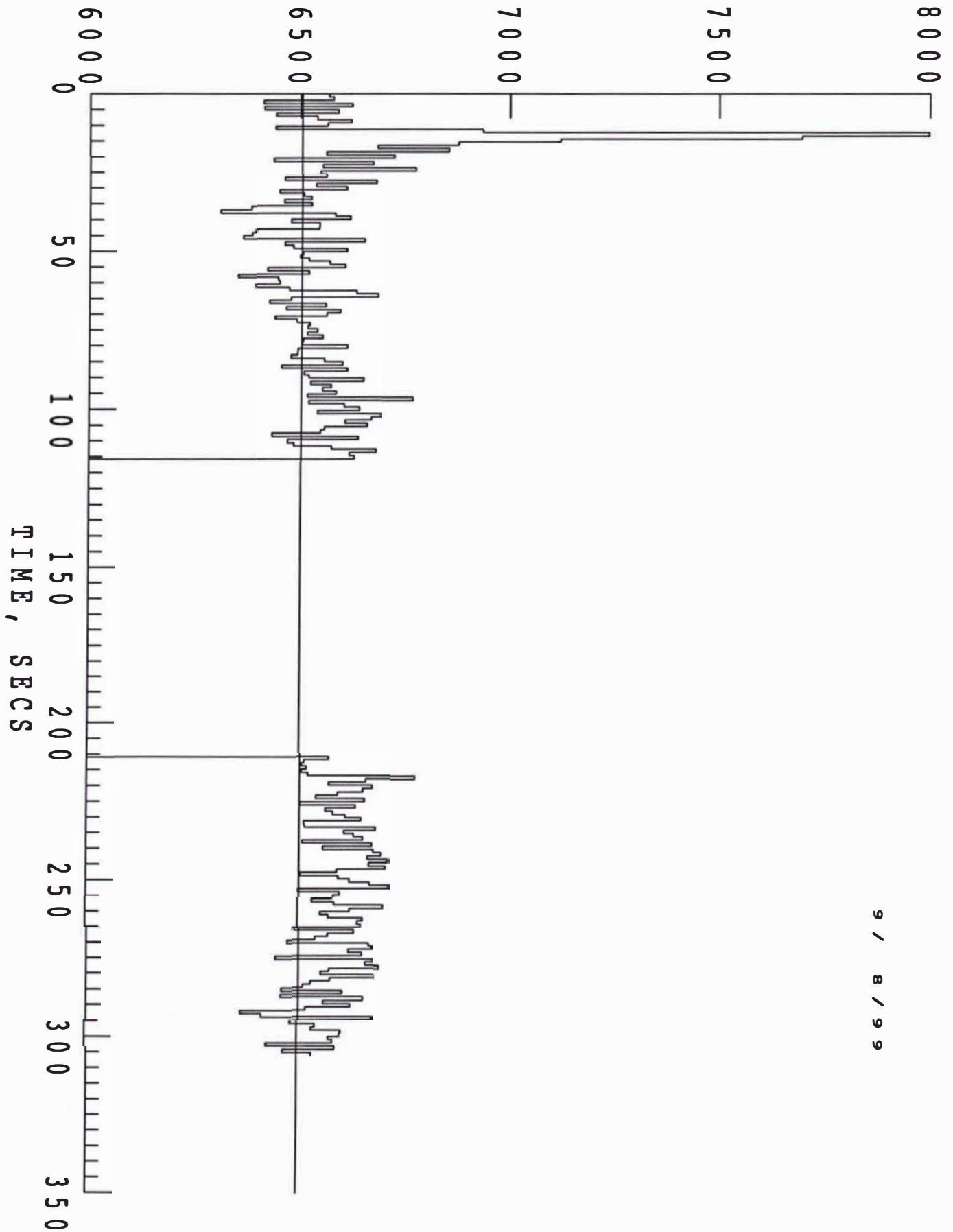
GRB. SINGLE PULSE, DUR. 20 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7705	990809	11399	45064	3000	089	+45	20

BACODINE 7705 09/08/99 45052.665

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 7705

ULYSSES RT

11 / 8 / 99

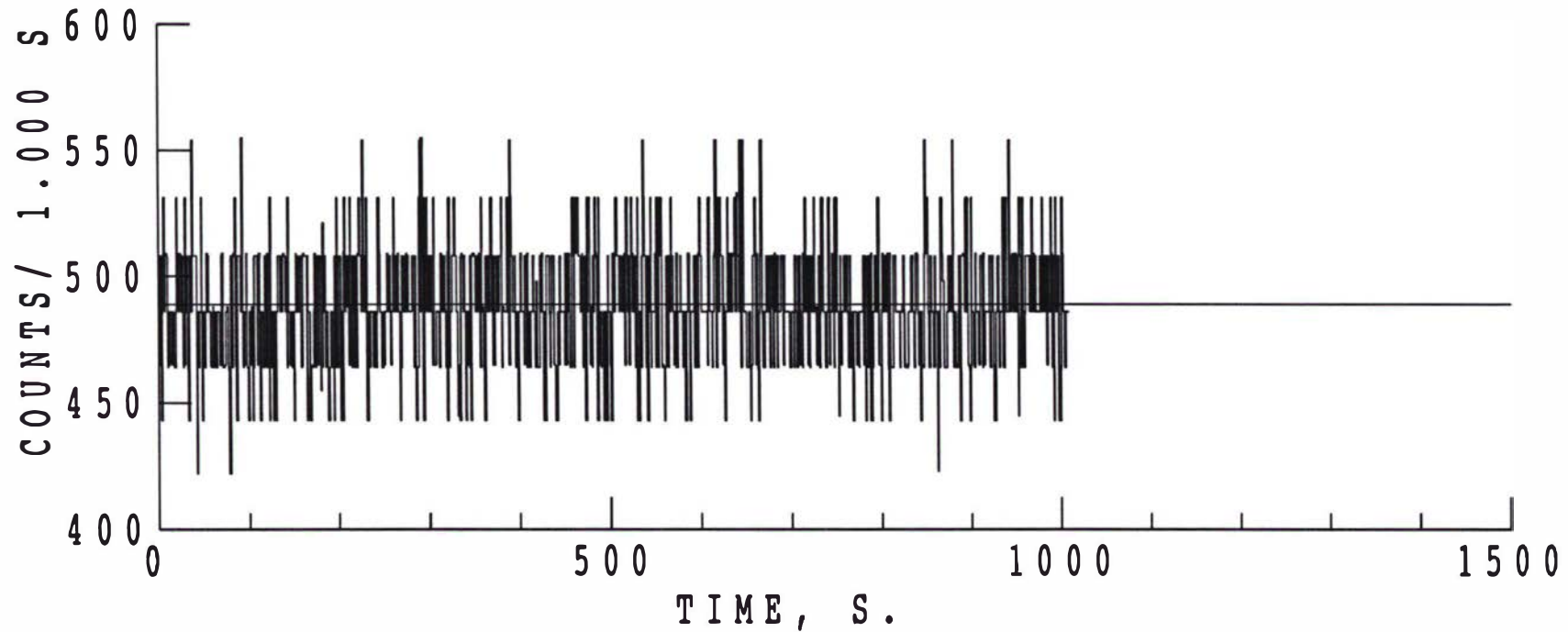
9 / 8 / 99 44028.379 s

0.500 S INTERVALS REGROUPED BY 2

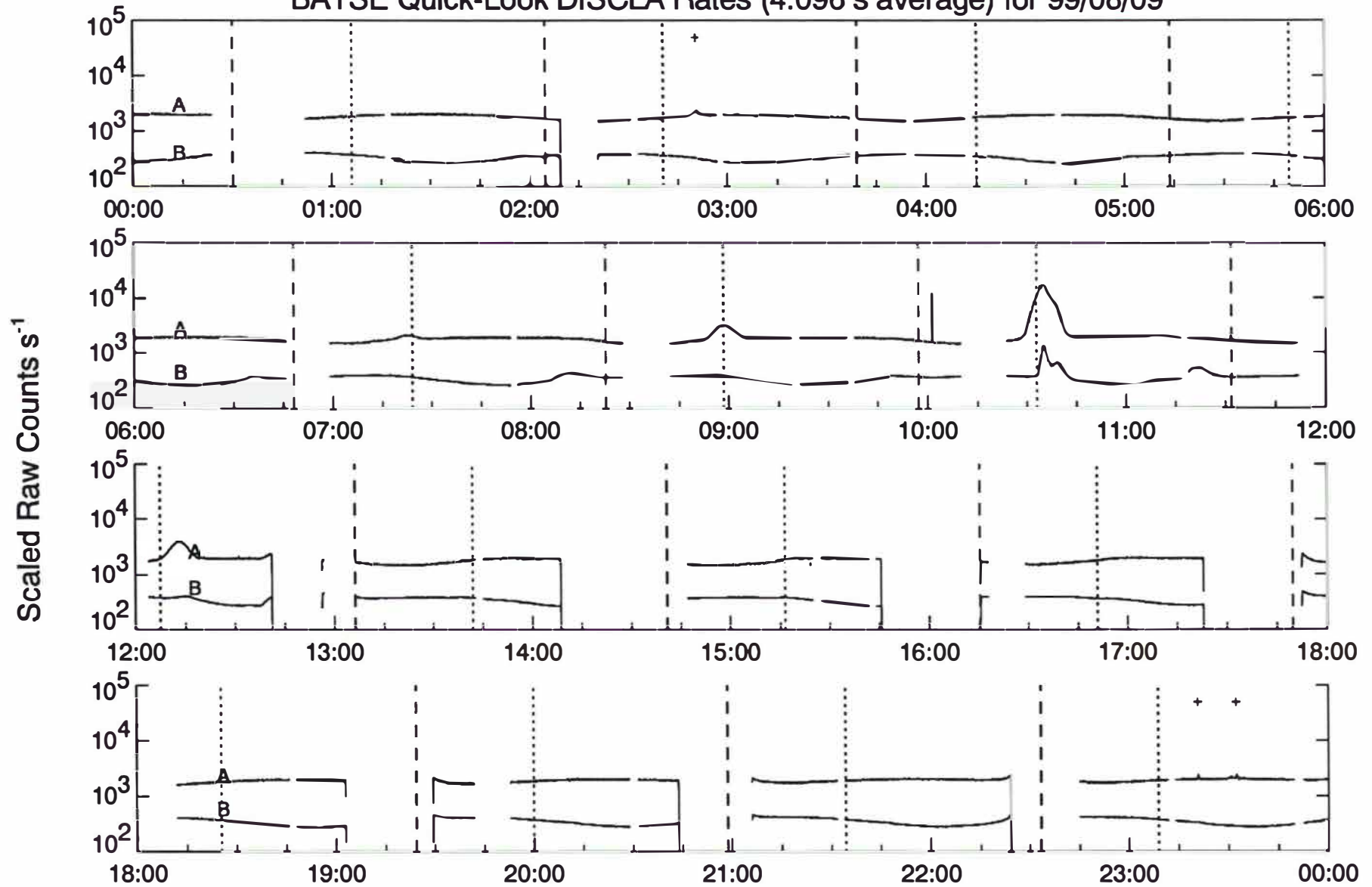
0 - 0 keV

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 99/08/09

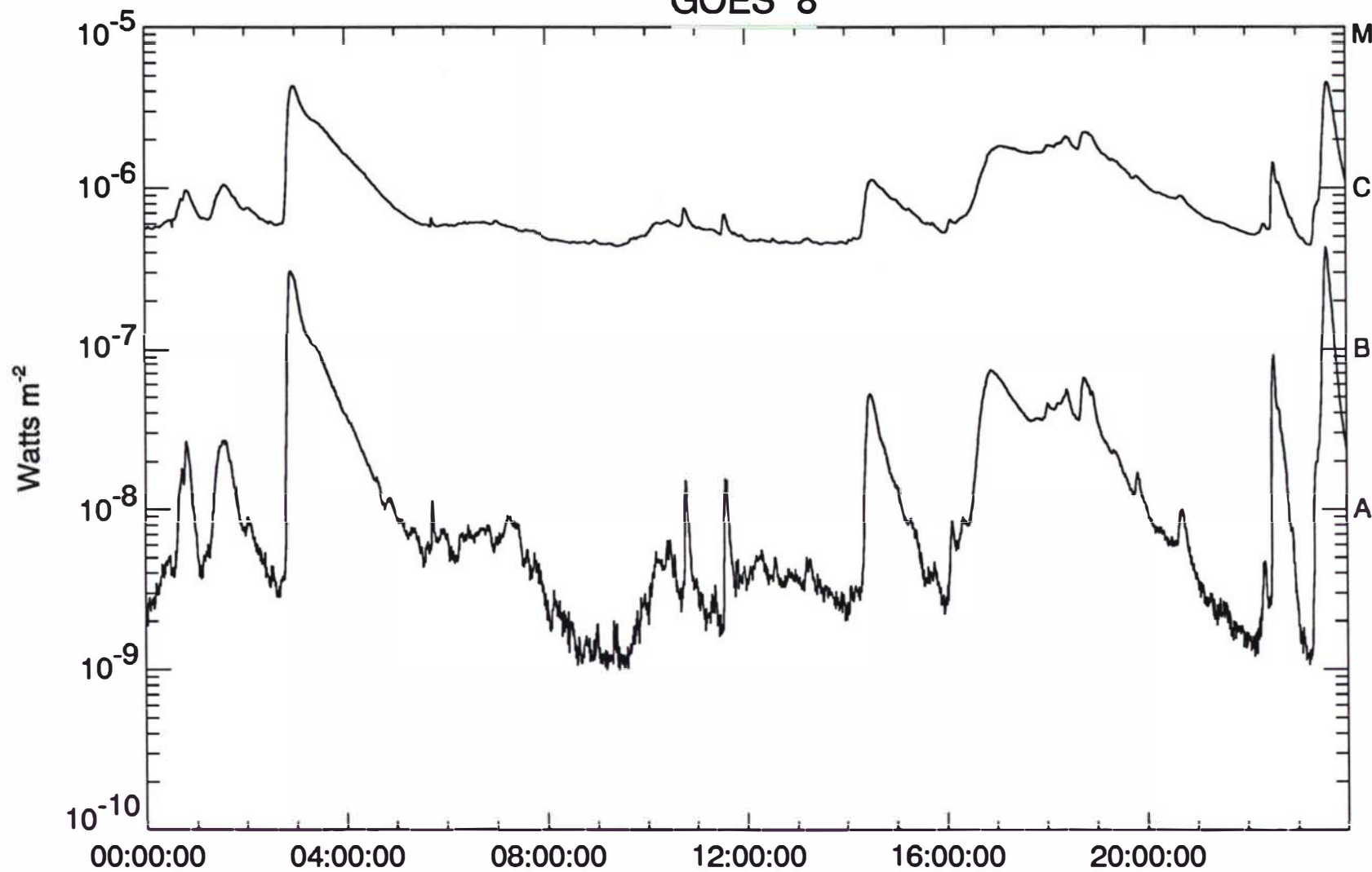


Current Time: 99/08/13, 1006 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/08/09, 0000:00

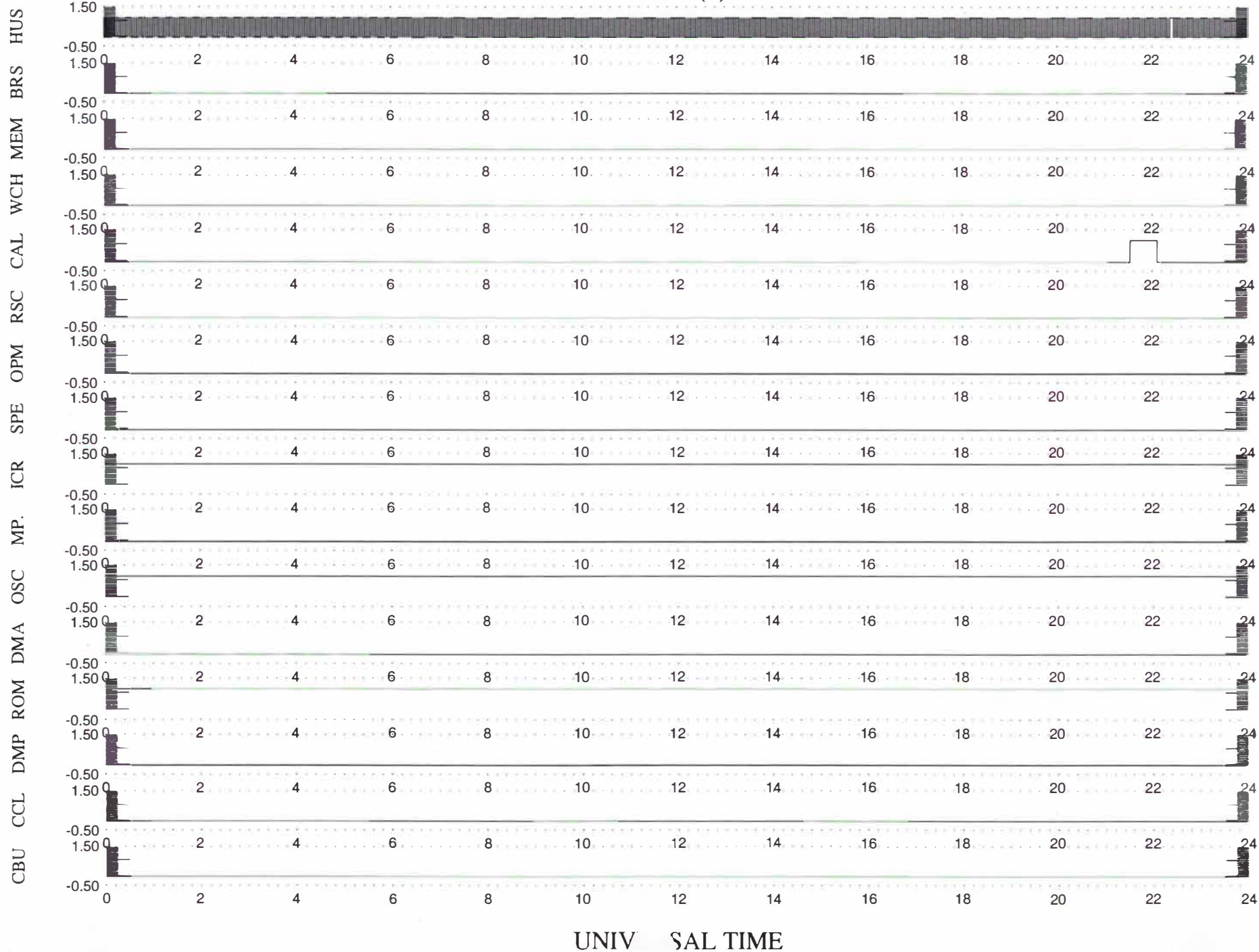
Plot created: 99/08/13, 1006

Channel

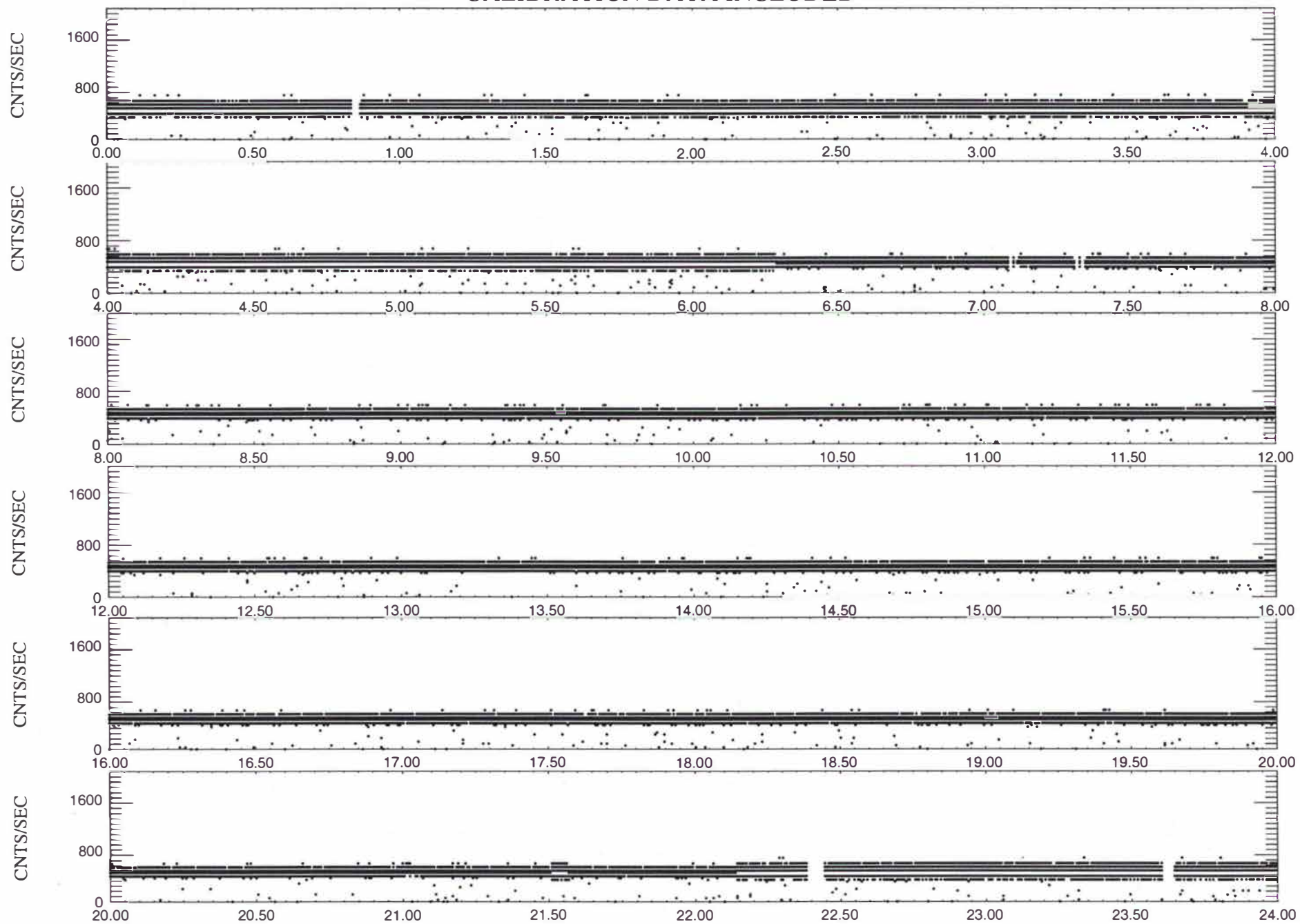
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

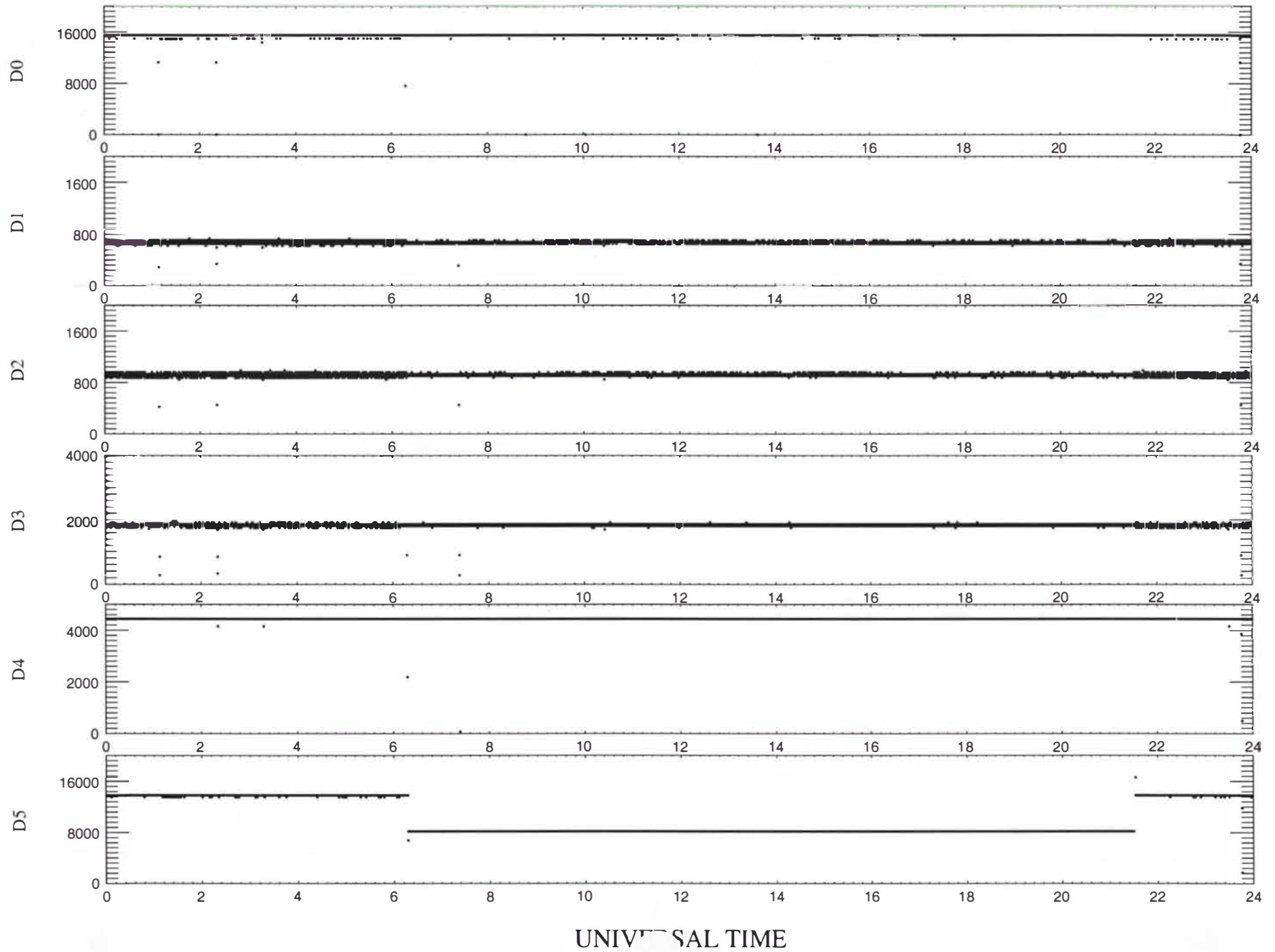
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From GOGUSE@fender.msfc.nasa.gov Wed Aug 18 09:01 PDT 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Wed, 18 Aug 1999 11:07:36 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7706

BATSEARCH PROGRAM

BATSE BURST # 7706
EVENT OF 1999 AUG 10 DAY OF YEAR=222
EVENT CROSSING TIME AT BATSE : 26693. S. OR 07:24:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 358.000 2.000
BATSE PEAK COUNTING RATE: 11000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 8/ 99 IS:
RA= 151.800 DEC= -10.440 DIST= 5.547 AU
BATSE-ULYSSES DISTANCE = 829895106. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 27.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2458.73 SECS.
CROSSING TIME AT ULYSSES IS 29152. S. OR 08:05:51 +/- 308.16 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 8/ 99 IS:
RA= 223.085 DEC= -18.227 DIST= 1.059 AU
MARS-BATSE DISTANCE = 158485344. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 360.08 SECS.
CROSSING TIME AT MARS IS 27053. S. OR 07:30:53 +/- 72.67 SECONDS

BATSE BURST TRIGGER

NO.: 7706

TIME: TJD=1400 SECONDS=26693

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.7 AZIMUTH=155.1 ERROR= 4.4 DEGREES

COMMENTS:

GRB, DOUBLE PULSES WITH STRUCTURE, DURATION APP. 0.13 S,
VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7706	990810	11400	26693	11000	358	+02	.13

BATSE BURST# 7706

ULYSSES RT

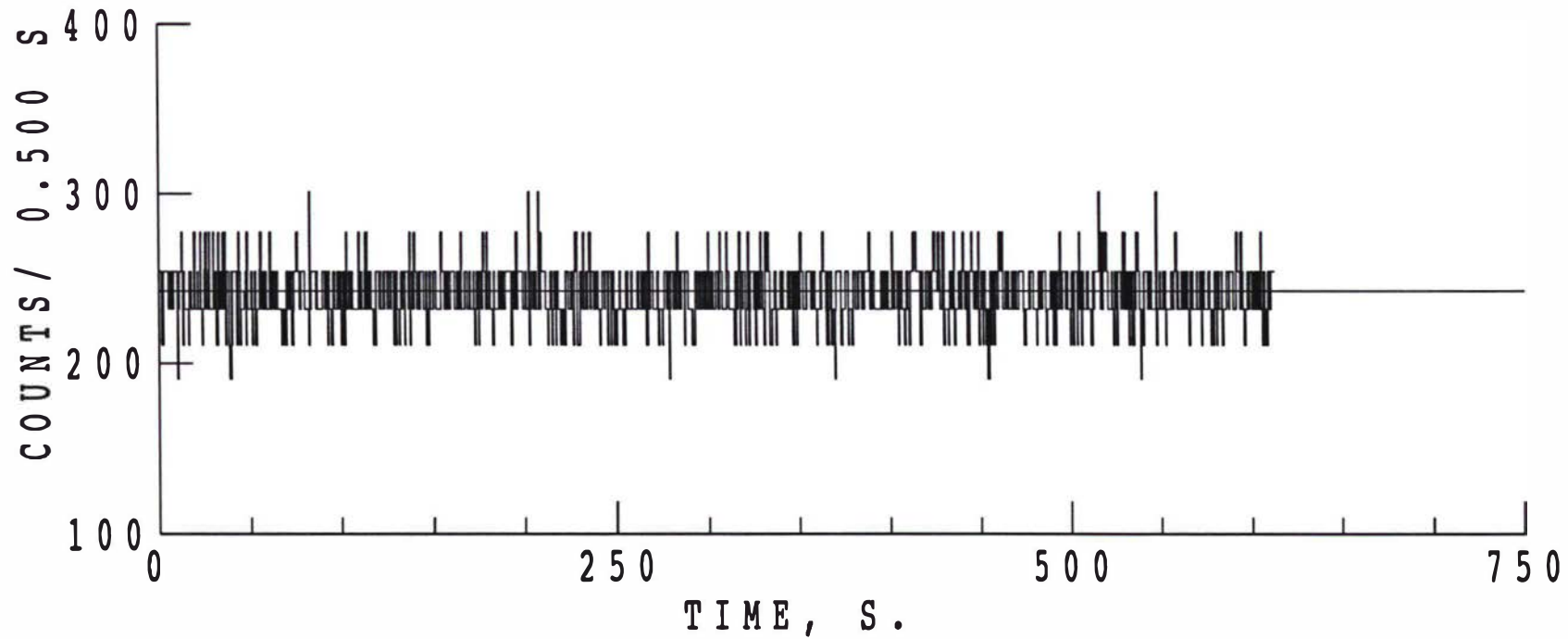
18 / 8 / 99

10 / 8 / 99 28836.100 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From GOGUSE@fender.msfc.nasa.gov Wed Aug 18 09:02 PDT 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Wed, 18 Aug 1999 11:09:09 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7707

BATSEARCH PROGRAM

BATSE BURST # 7707
EVENT OF 1999 AUG 10 DAY OF YEAR=222
EVENT CROSSING TIME AT BATSE : 64189. S. OR 17:49:49.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 326.000 2.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 8/ 99 IS:
RA= 151.866 DEC= -10.481 DIST= 5.548 AU
BATSE-ULYSSES DISTANCE = 830010169. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 10.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2724.10 SECS.
CROSSING TIME AT ULYSSES IS 66913. S. OR 18:35:13 +/- 177.22 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 8/ 99 IS:
RA= 223.085 DEC= -18.227 DIST= 1.059 AU
MARS-BATSE DISTANCE = 158485344. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 117.93 SECS.
CROSSING TIME AT MARS IS 64307. S. OR 17:51:46 +/- 91.26 SECONDS

BATSE BURST TRIGGER

NO.: 7707

TIME: TJD=1400 SECONDS=64189

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 92.3 AZIMUTH=185.3 ERROR= 6.4 DEGREES

COMMENTS:

GRB, MULTI PEAKED, DURATION APP 65 S,
NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7707	990810	11400	64189	4500	326	+02	65

BATSE BURST# 7707

ULYSSES RT

18 / 8 / 99

10 / 8 / 99 66744.484 s

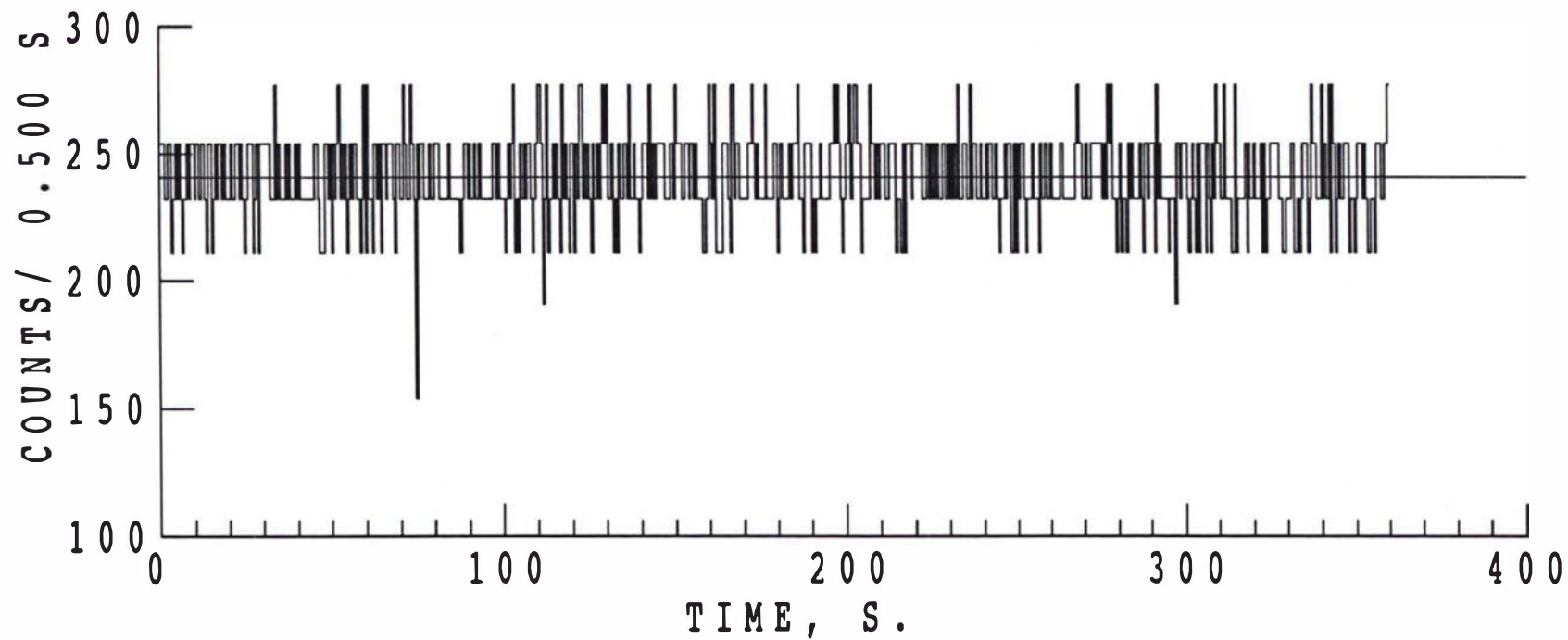
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

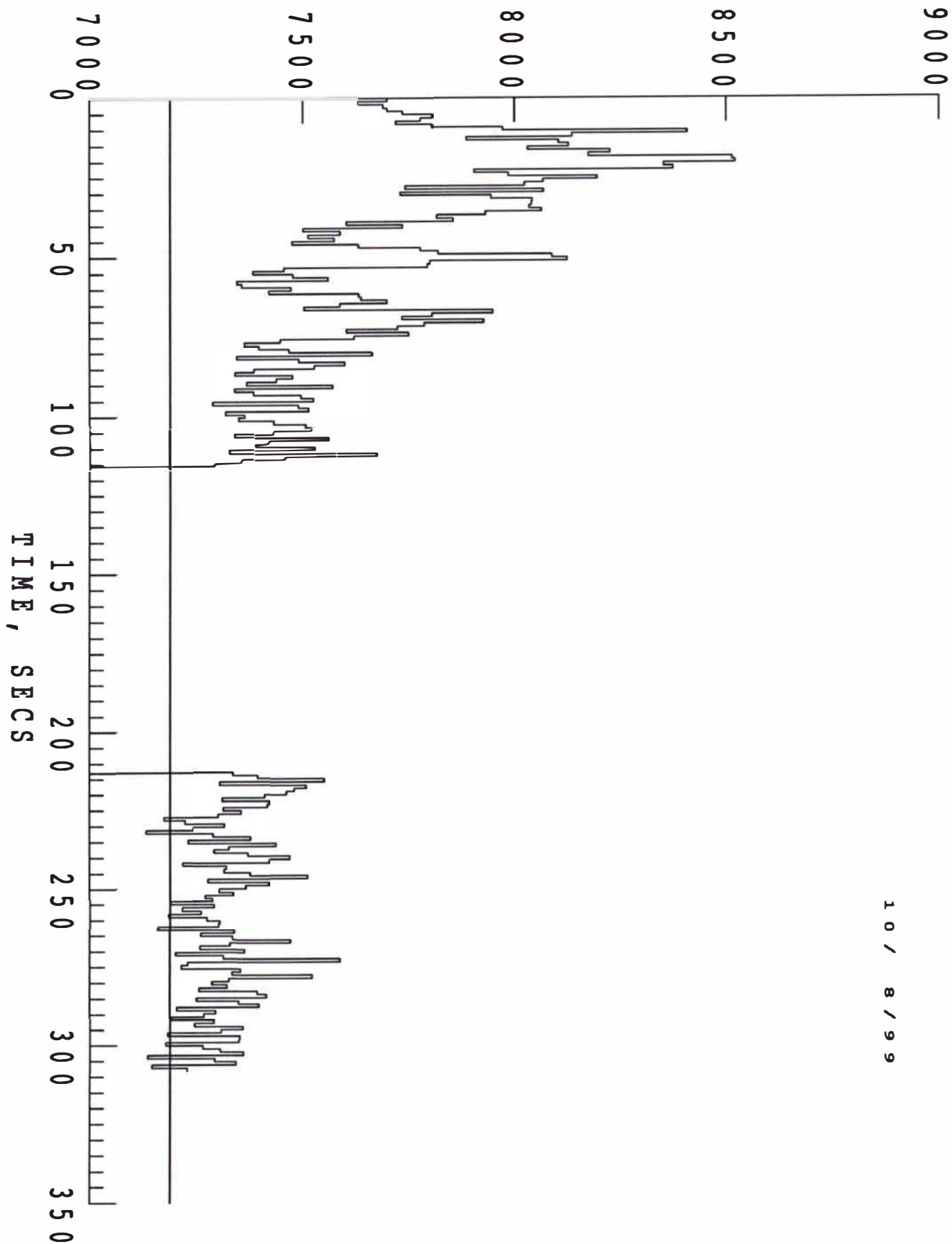
>4.0 SIGMA FLUCTUATIONS



BACODINE 7707 10/08/99 64177.913

25- 100 keV

COUNTS/1.024 S



10 / 8 / 99

ULYSSES RT

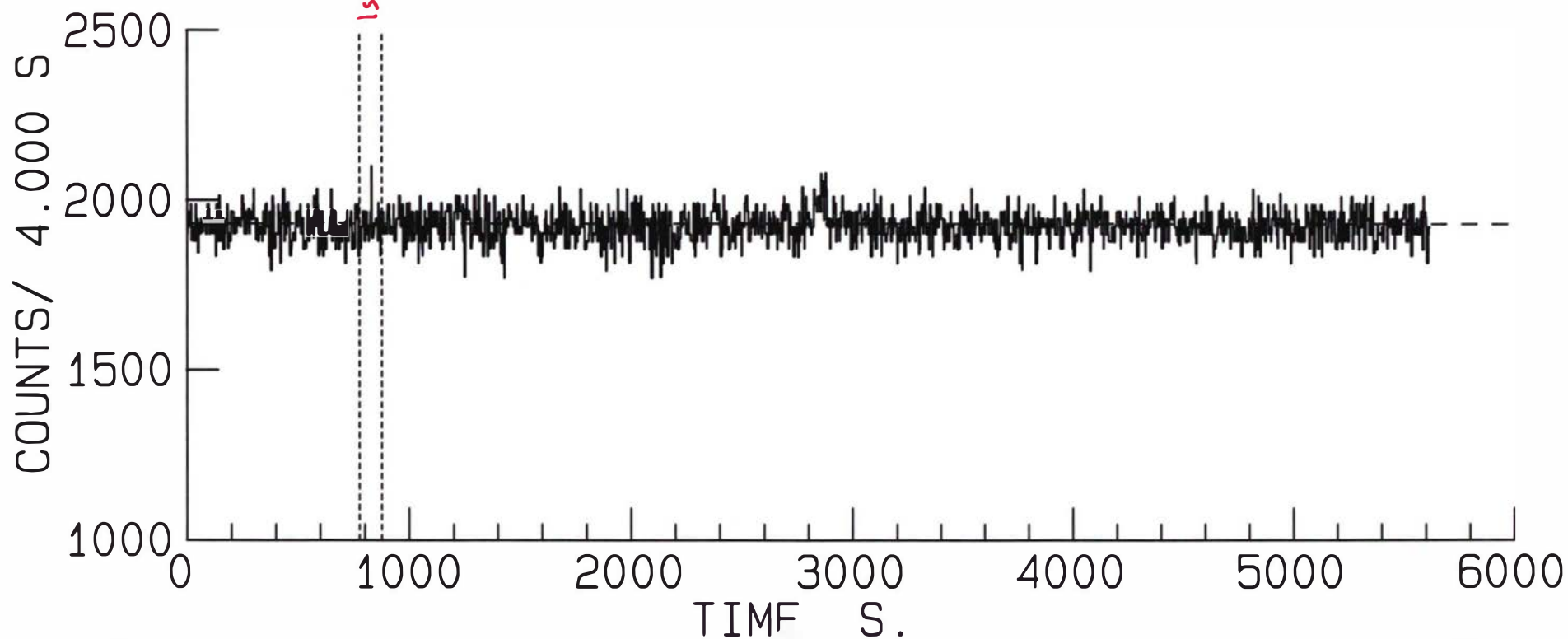
12/11/9

10/ 8/99 68328.008 s

0.500 S INTERVALS REGROUPED BY 8

22- 151 keV

1st NEAR event?



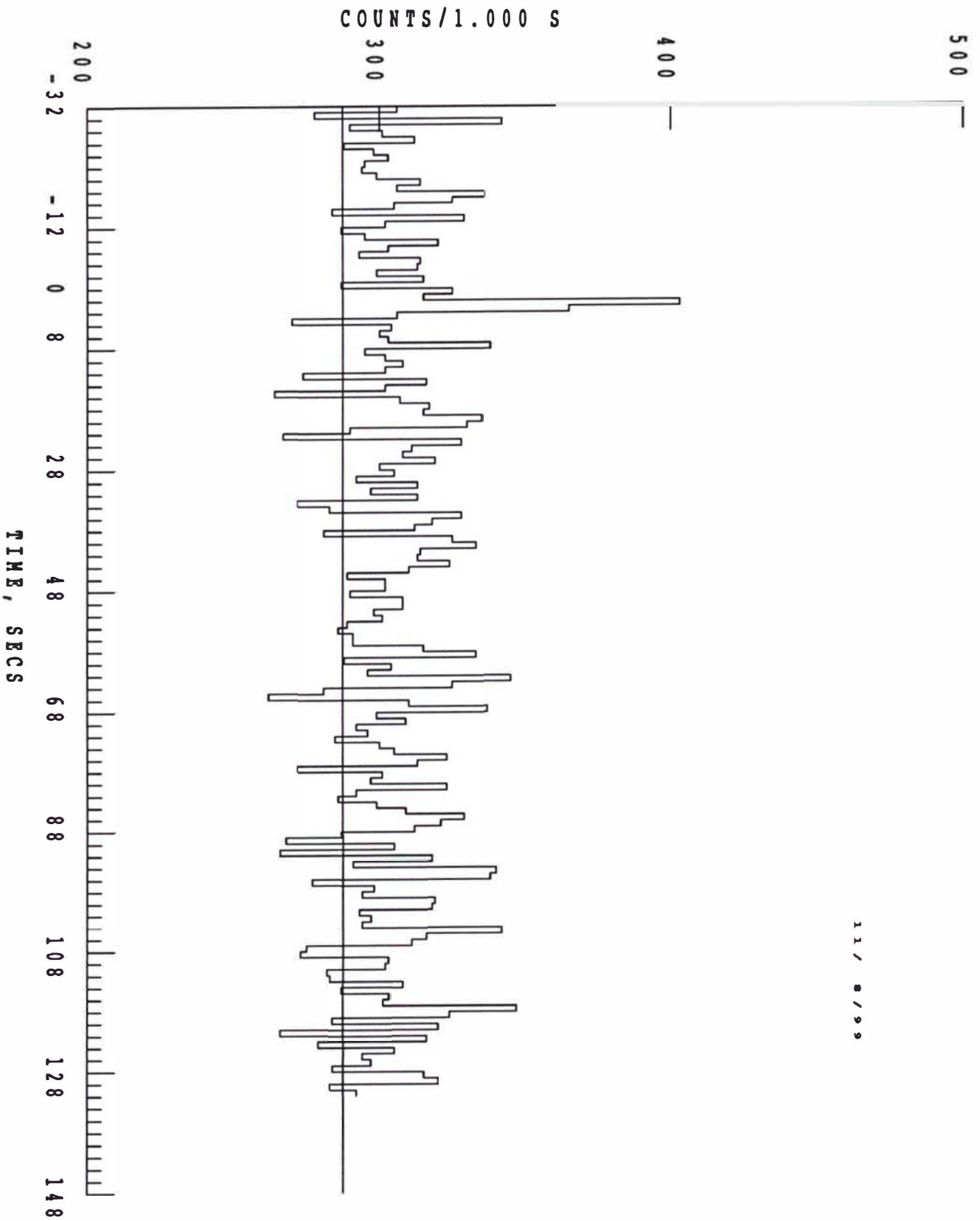
NEAR

10/08/99

70174.453

100-1000 keV

19:29:34



KNEAR GRS 19990810 70174

ULYSSES RT

11 / 8 / 99

10 / 8 / 99 67824.000 s

0.500 S INTERVALS REGROUPED BY 7

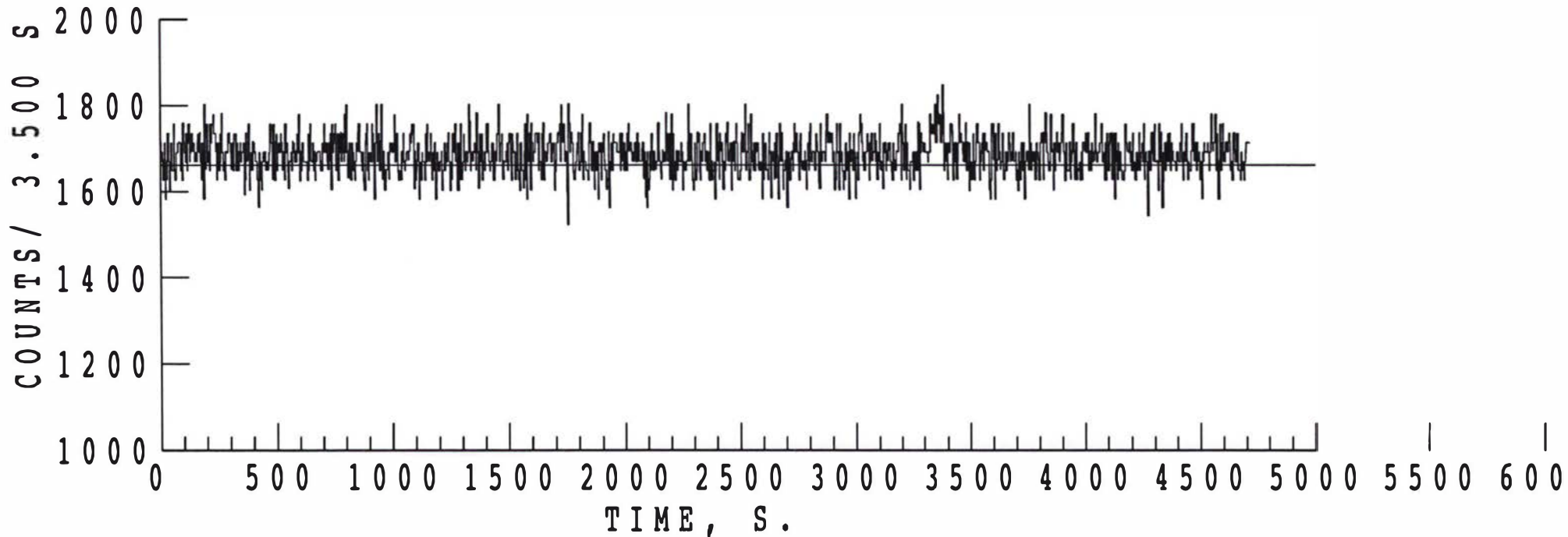
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Jan 11 '10

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 *N/A*

- ☐ 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? *N/A*

4. For Konus events

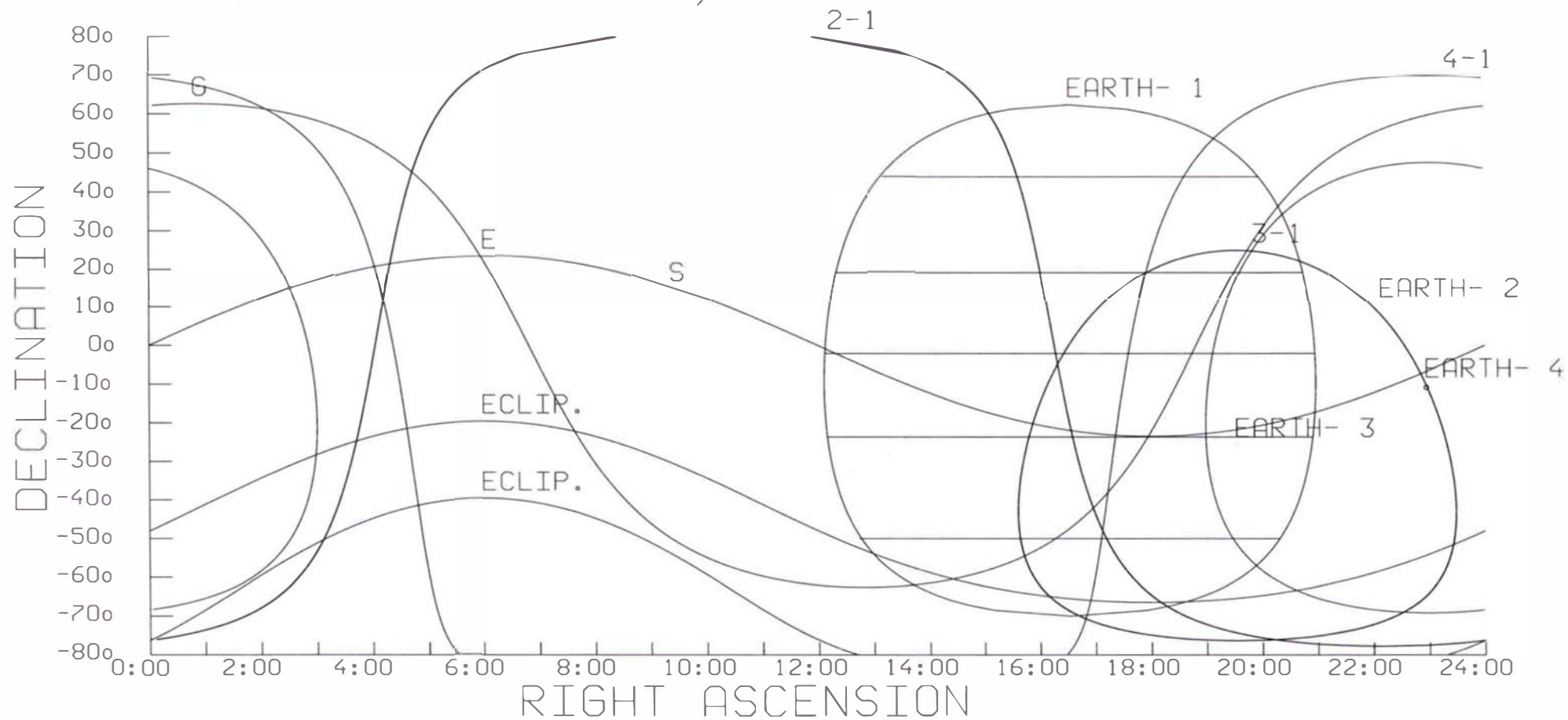
- ☒ Konus ecliptic latitude used with latest calibration?

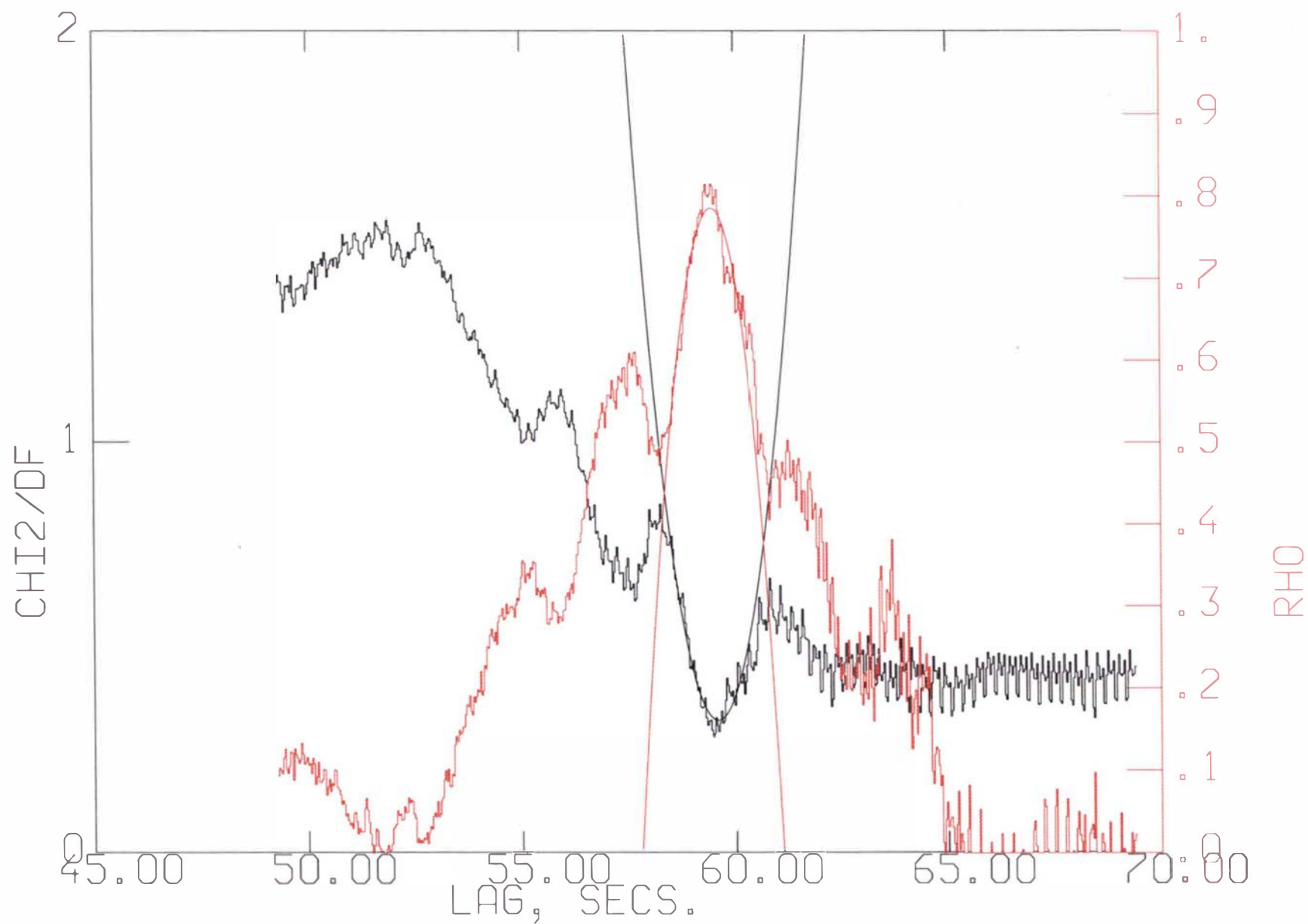
5. For 3 Spacecraft events

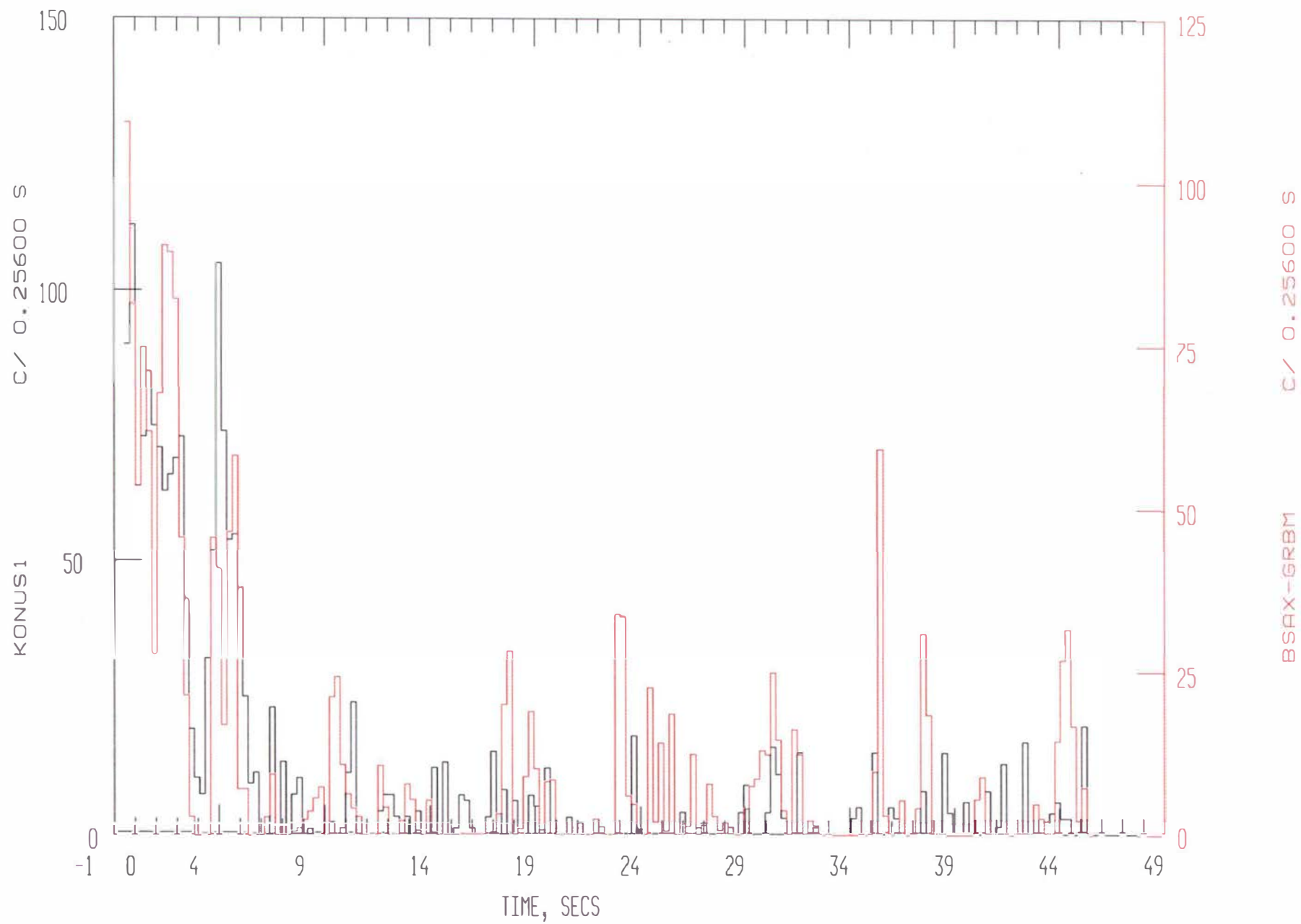
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

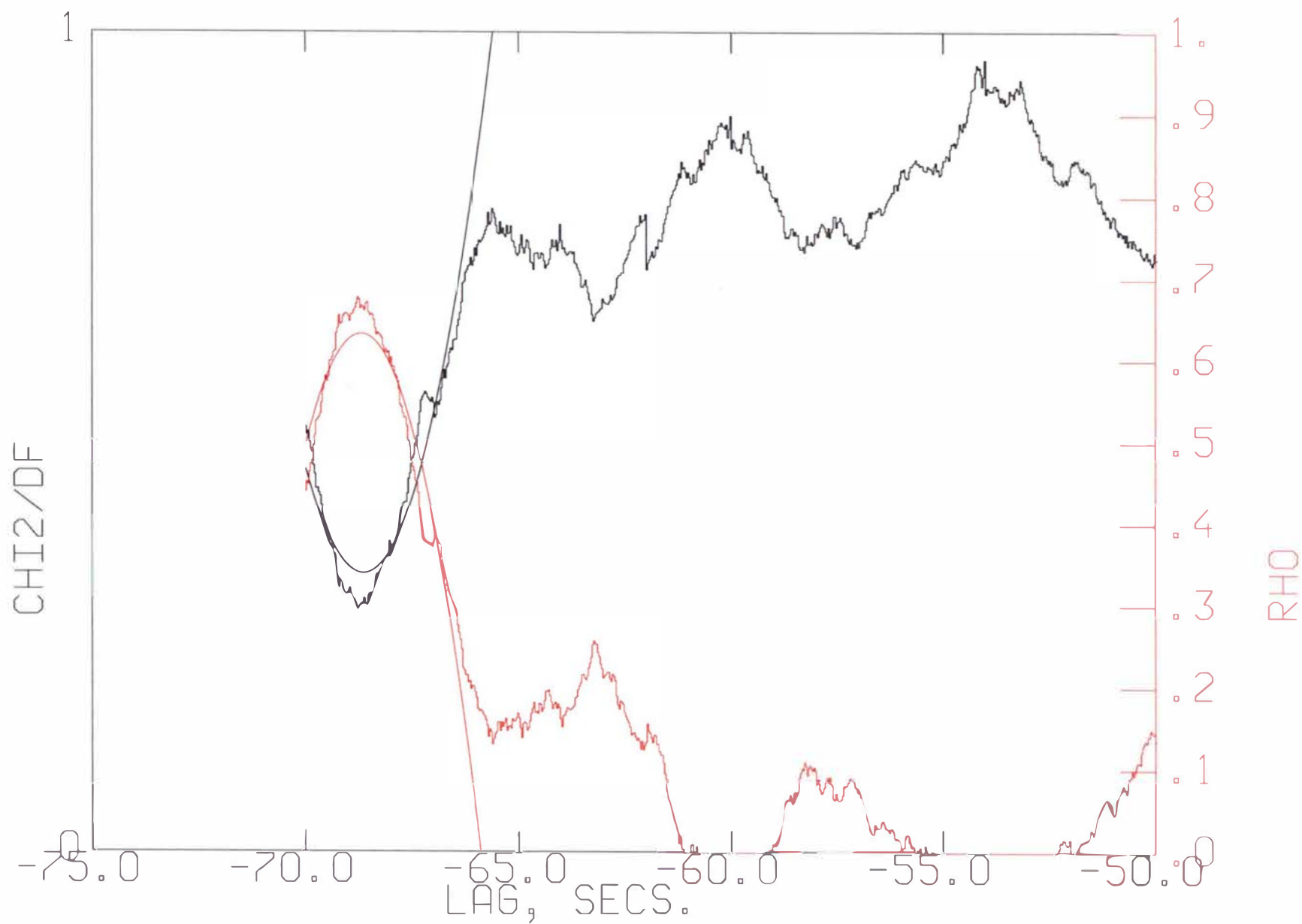
EVENT OF AUG 10, 1999 19:44

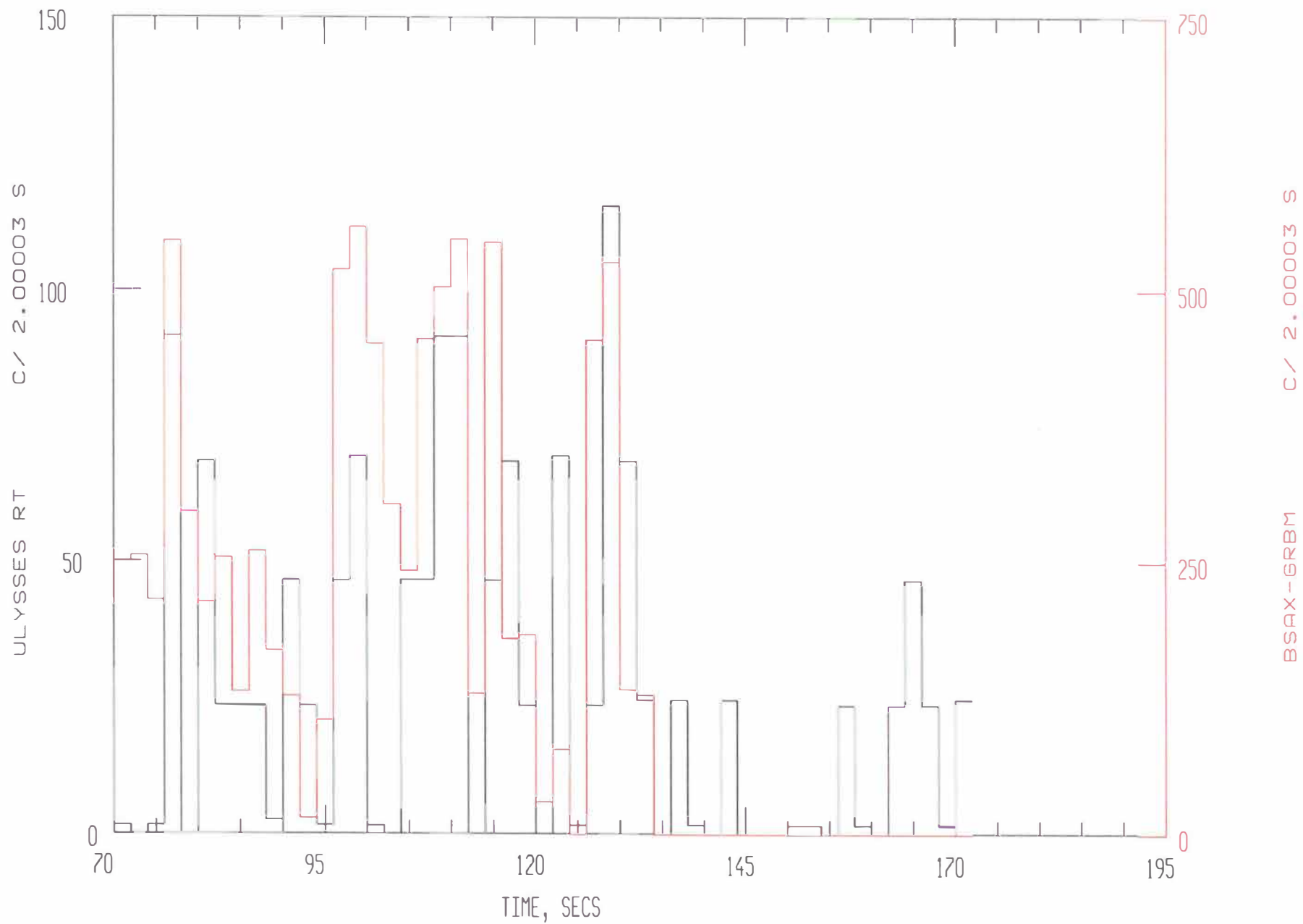
11/ 1/10

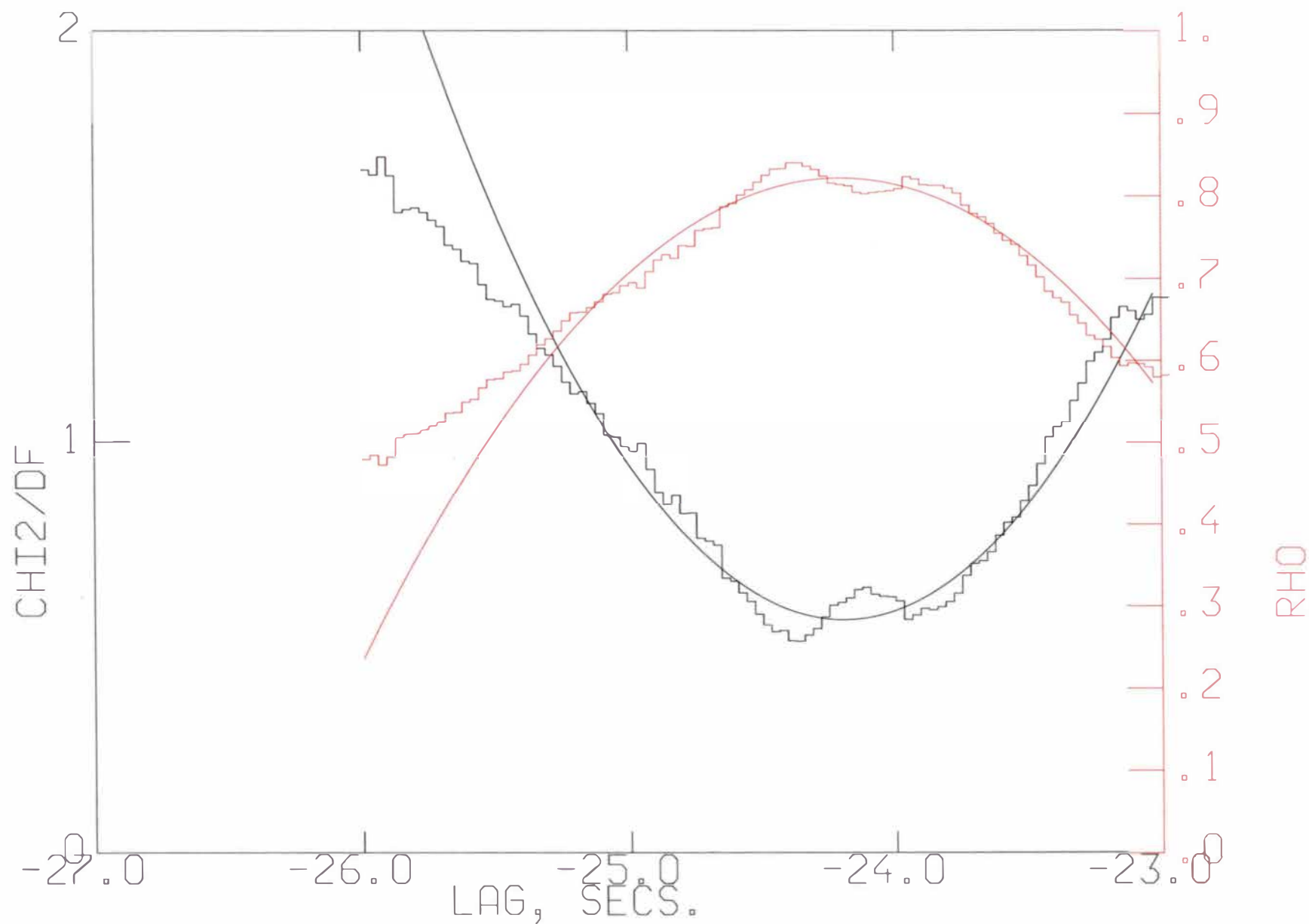


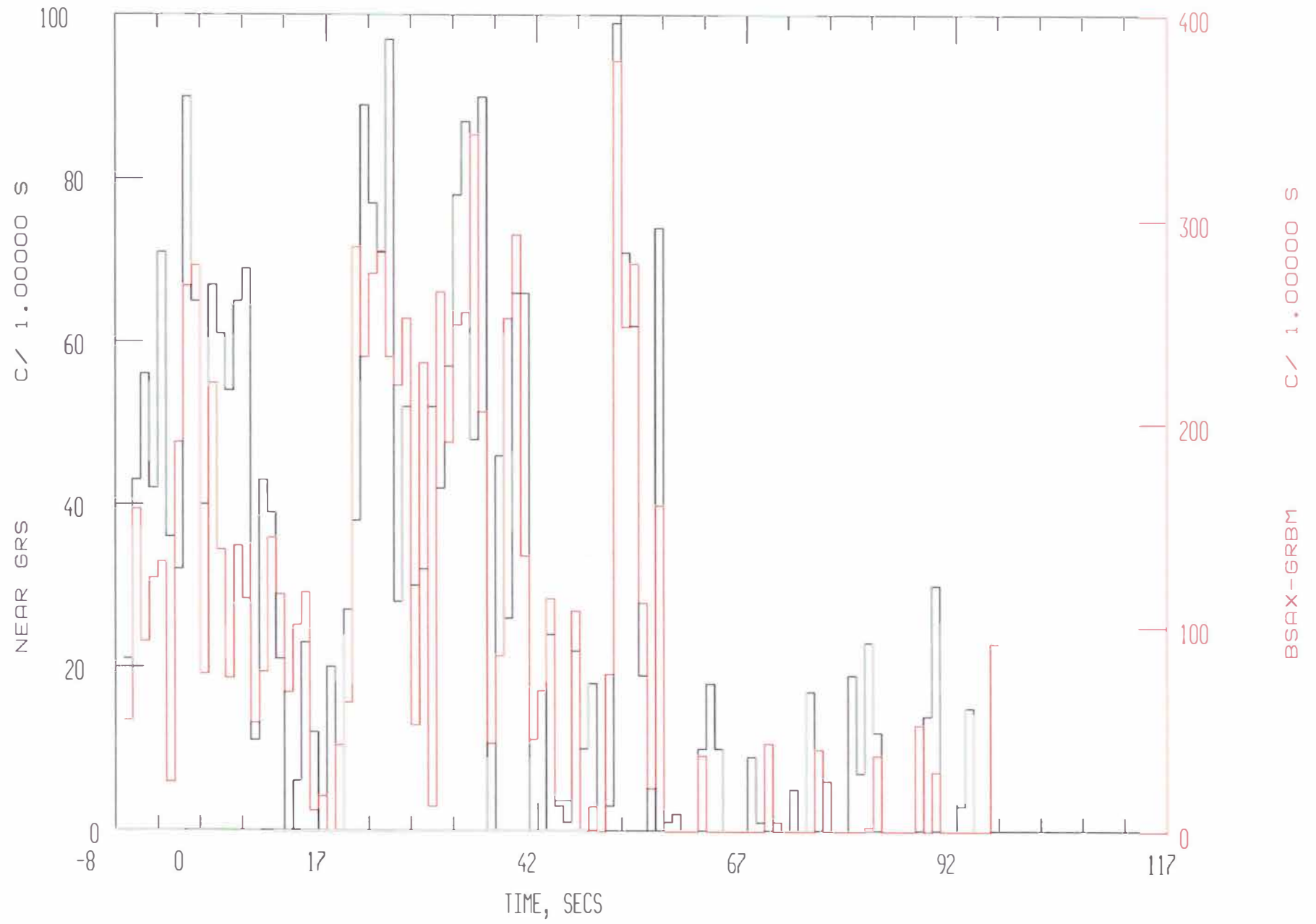








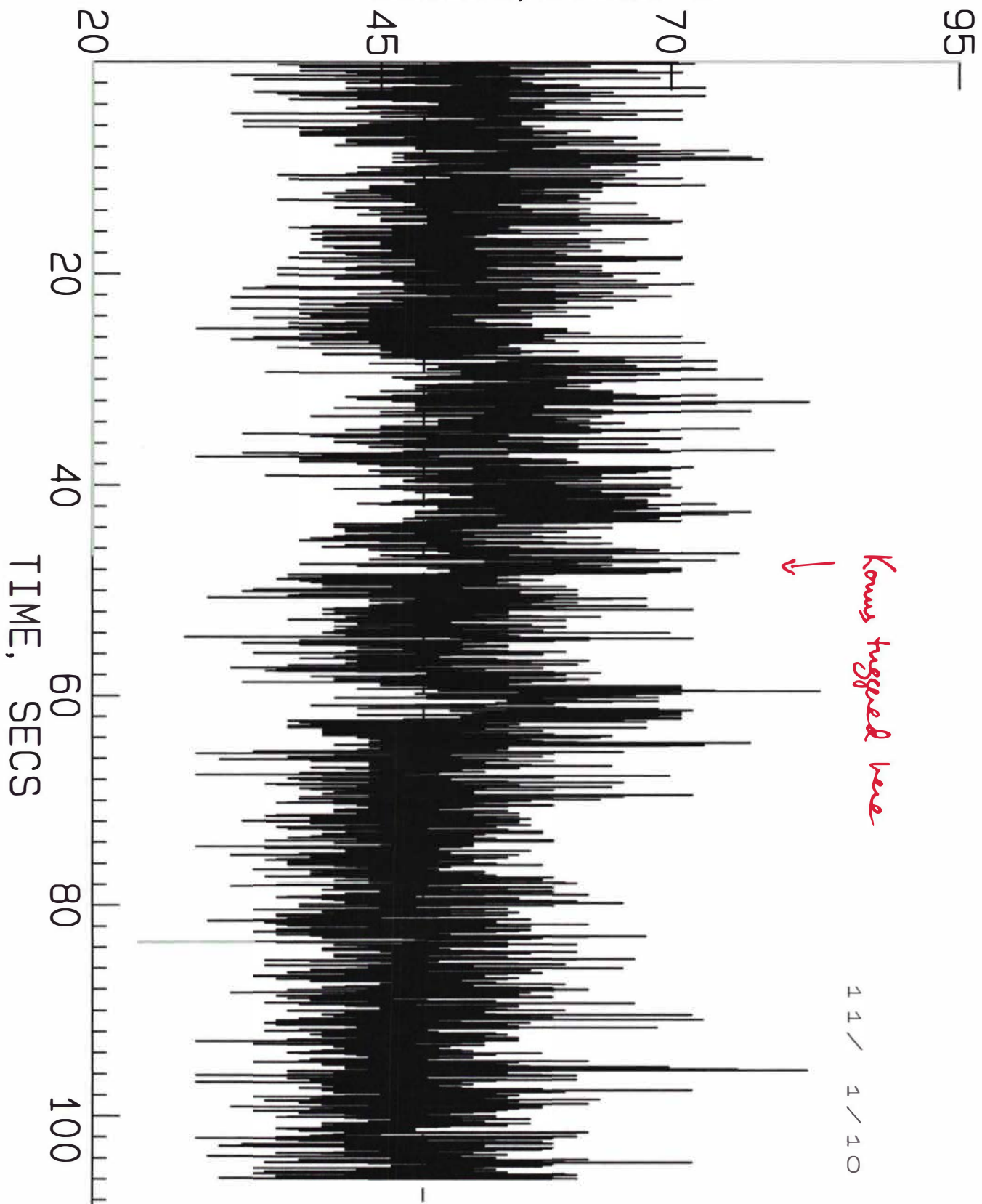




40- 700 keV

SAX 71070

COUNTS/0.031 S



KONUS1

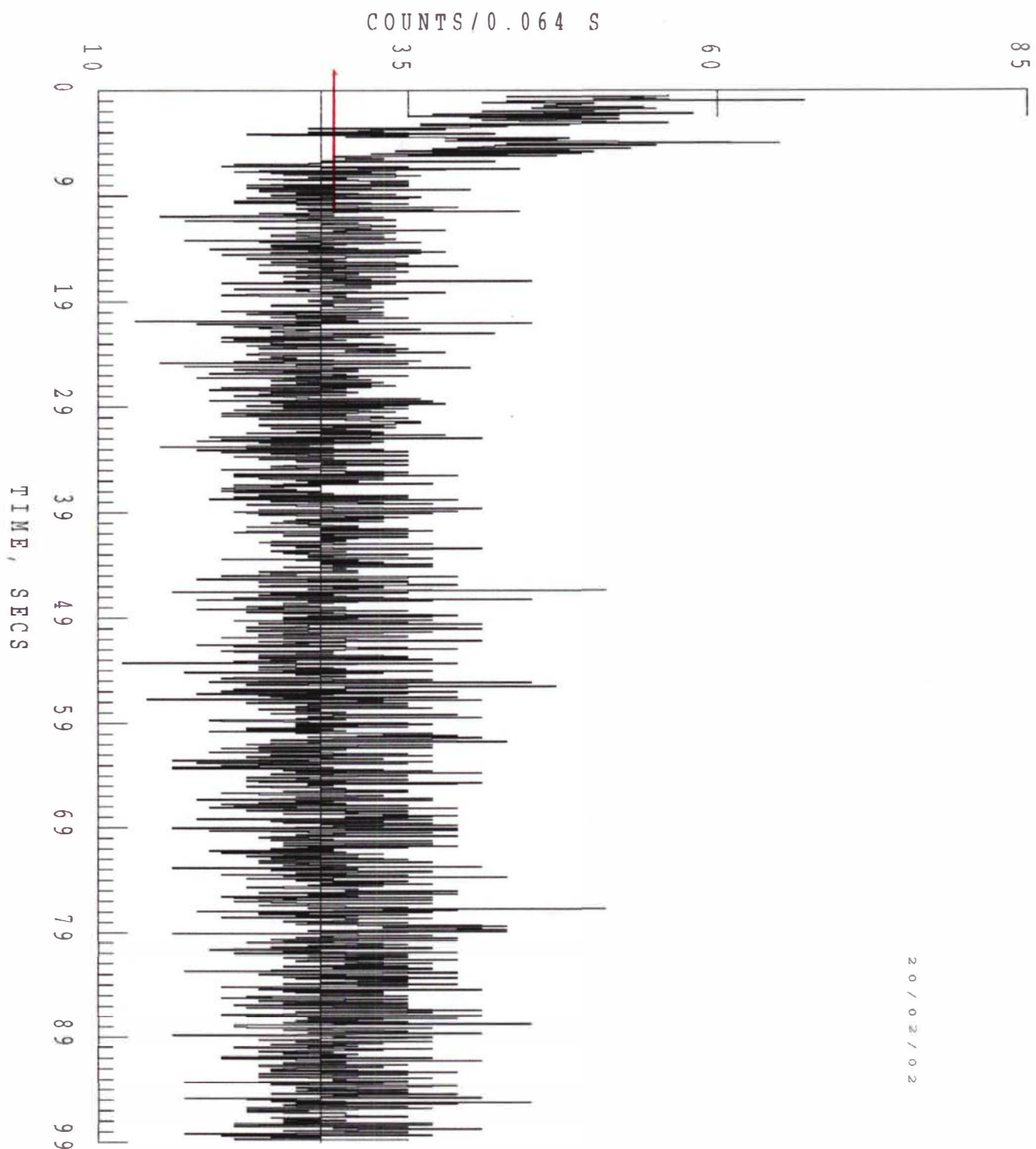
10/08/99

71130.770

50 - 200 keV

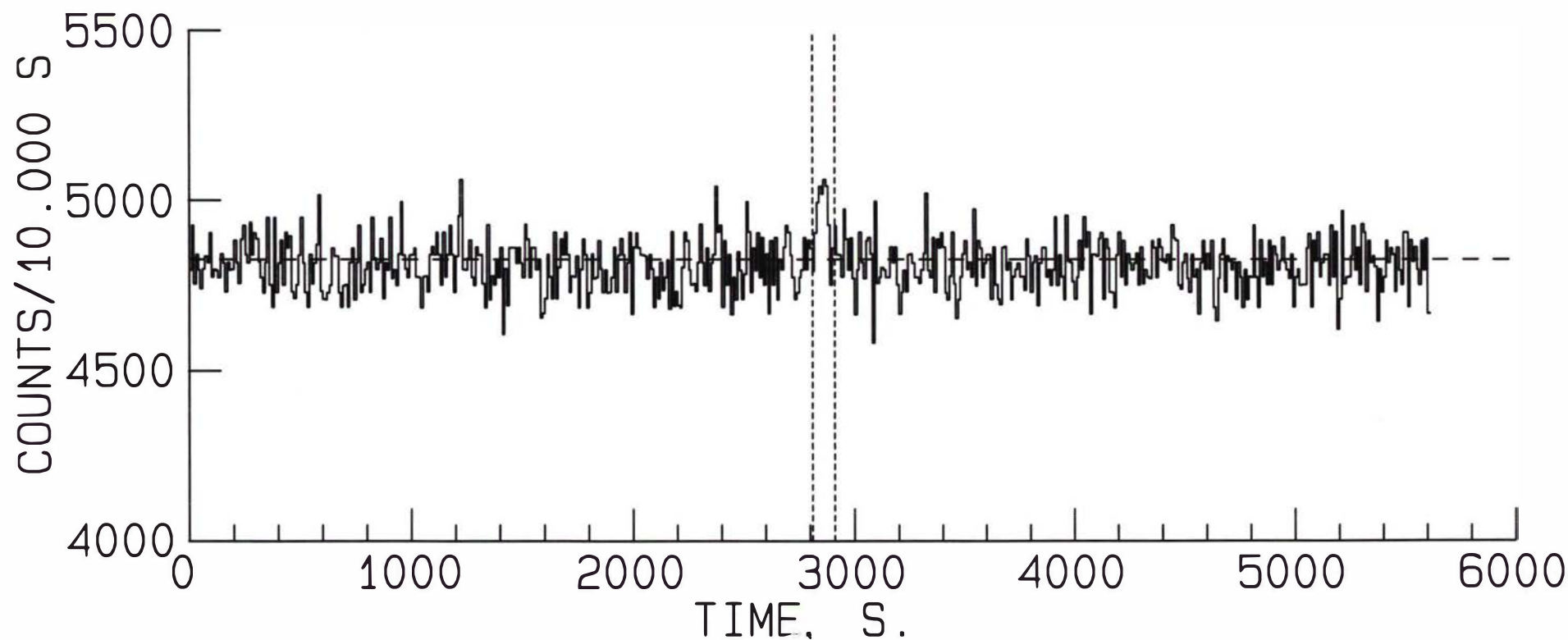
19:45:30

Missed the 1st part of the burst



ULYSSES RT
10/ 8/99 68328.008 s
0.500 S INTERVALS REGROUPED BY 20
22- 151 keV

11 / 1 / 10

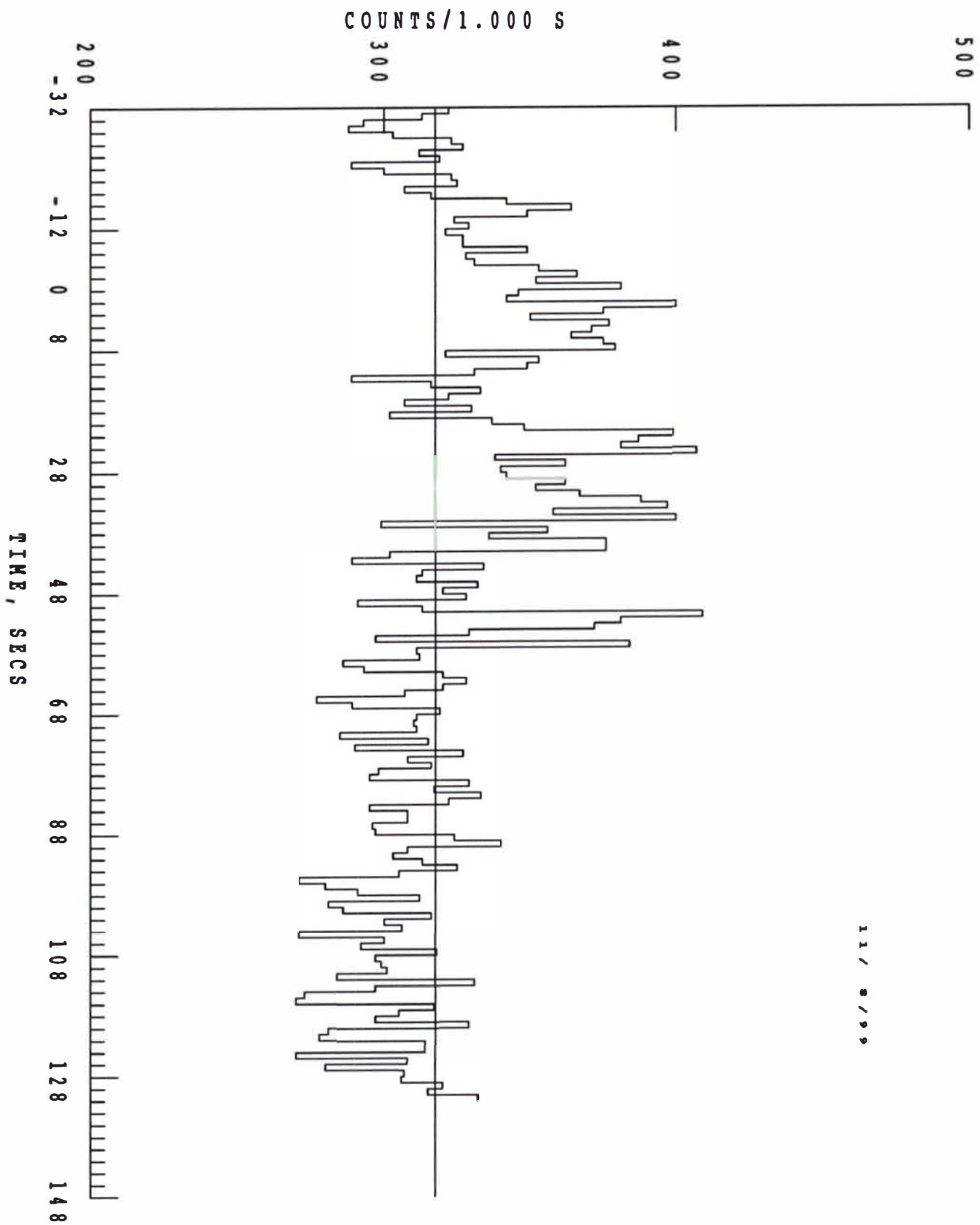


NEAR

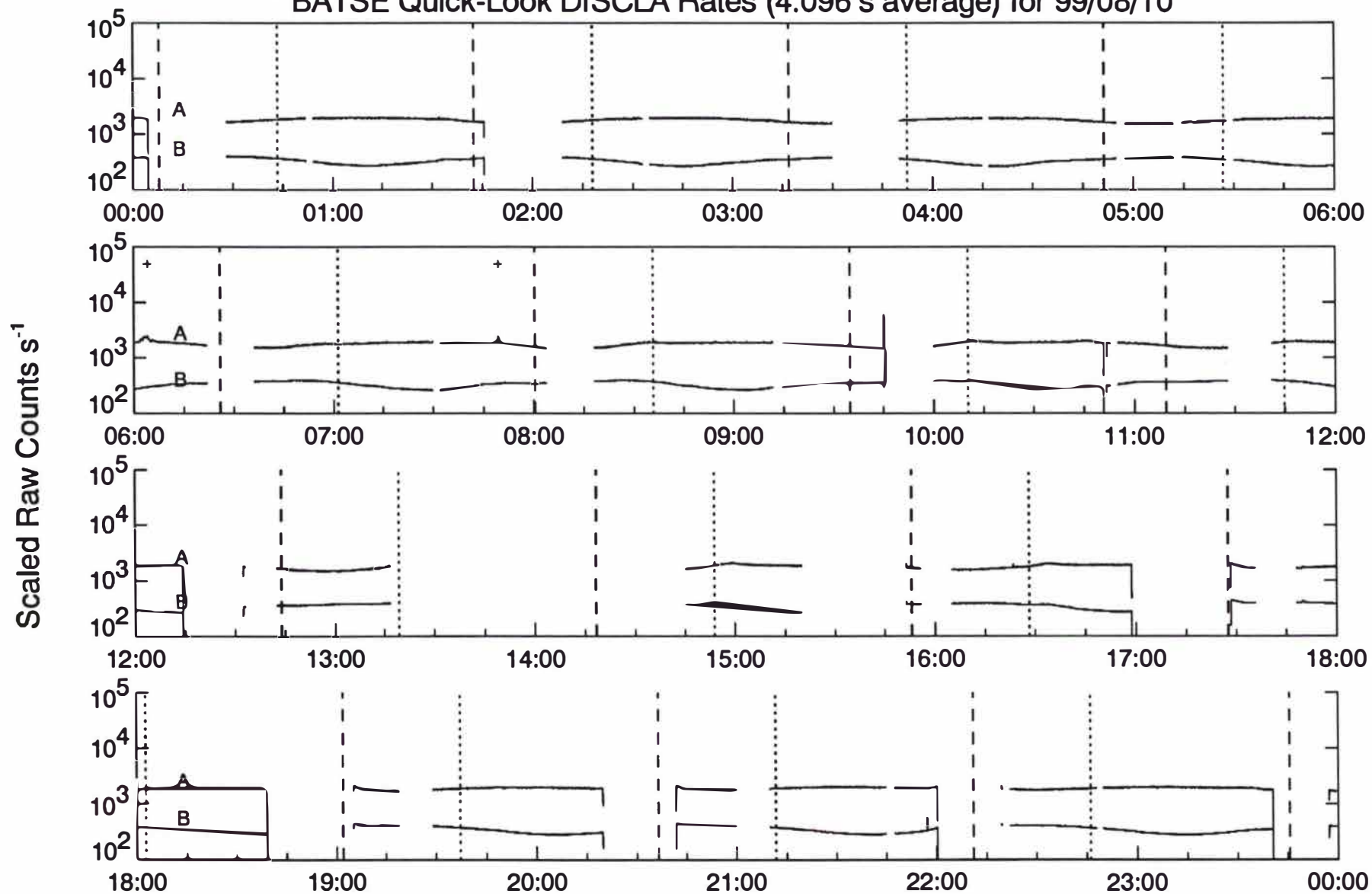
10/08/99

71703.452

100-1000 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/10



Current Time: 99/08/14, 1006 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

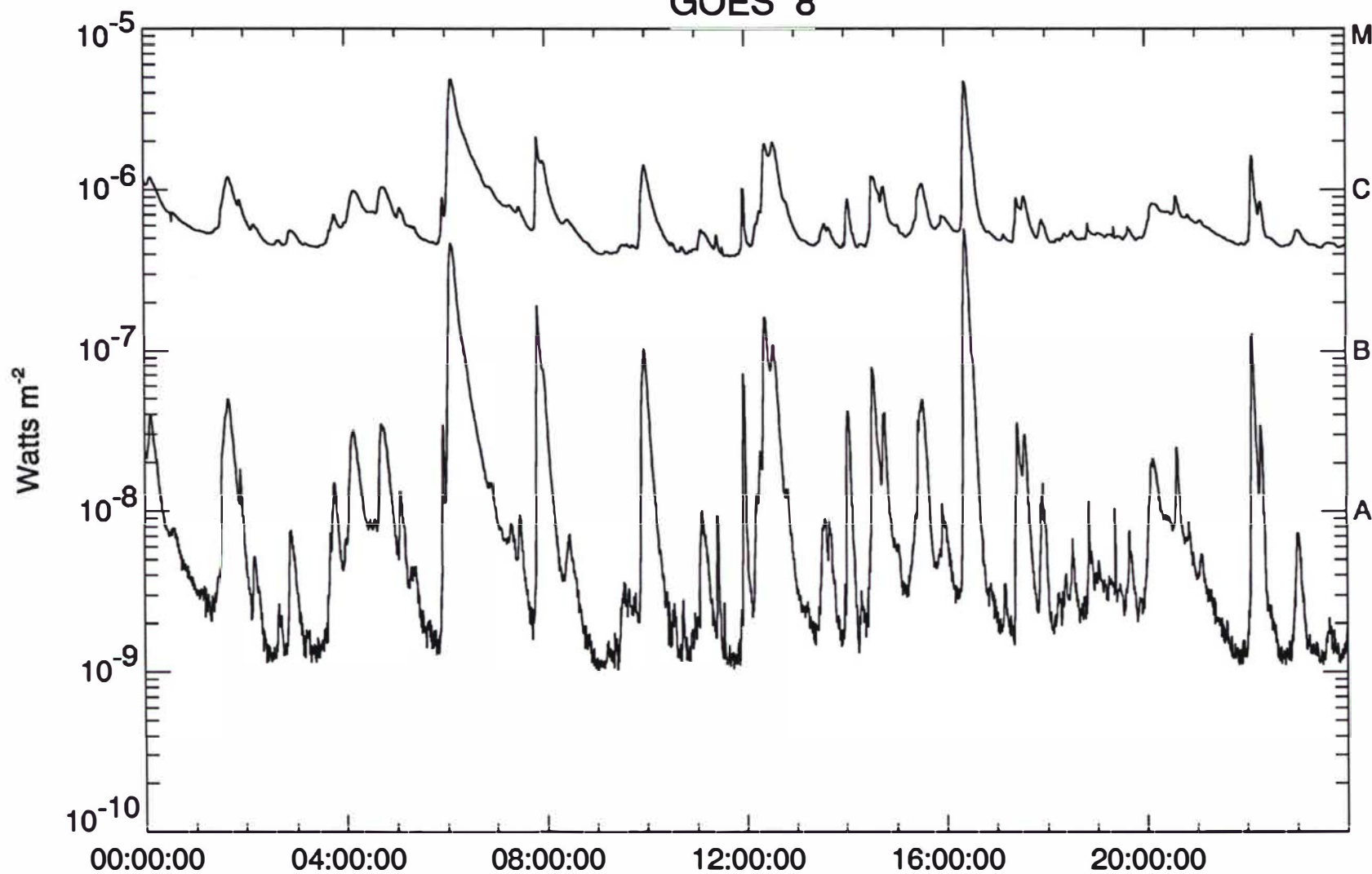
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 99/08/10, 0000:00

Plot created: 99/08/14, 1006

Channel

1 (1.0 - 8.0 Angstroms)

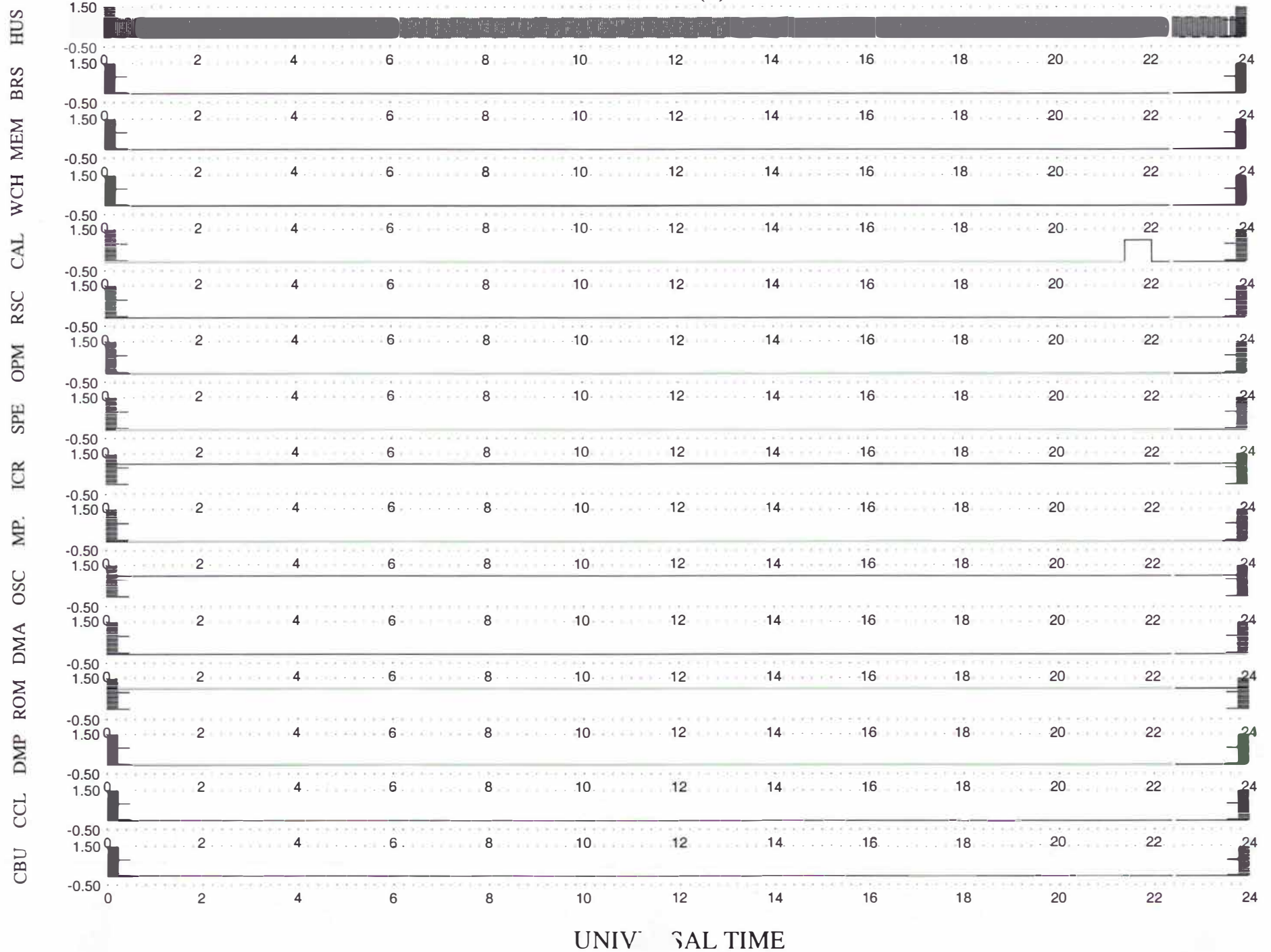
Background not subtracted

2 (0.5 - 4.0 Angstroms)

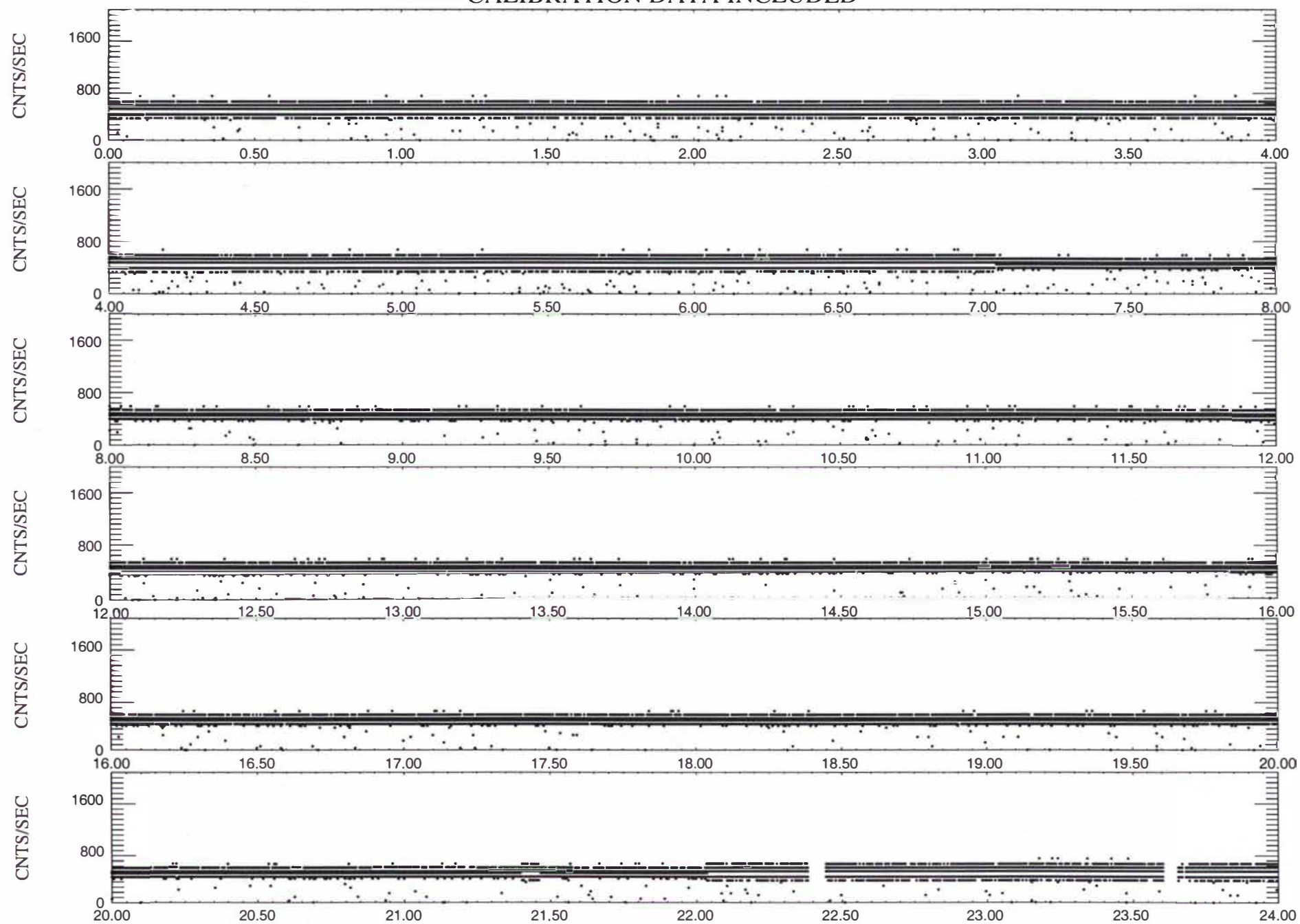
Background not subtracted

Sample average = 10

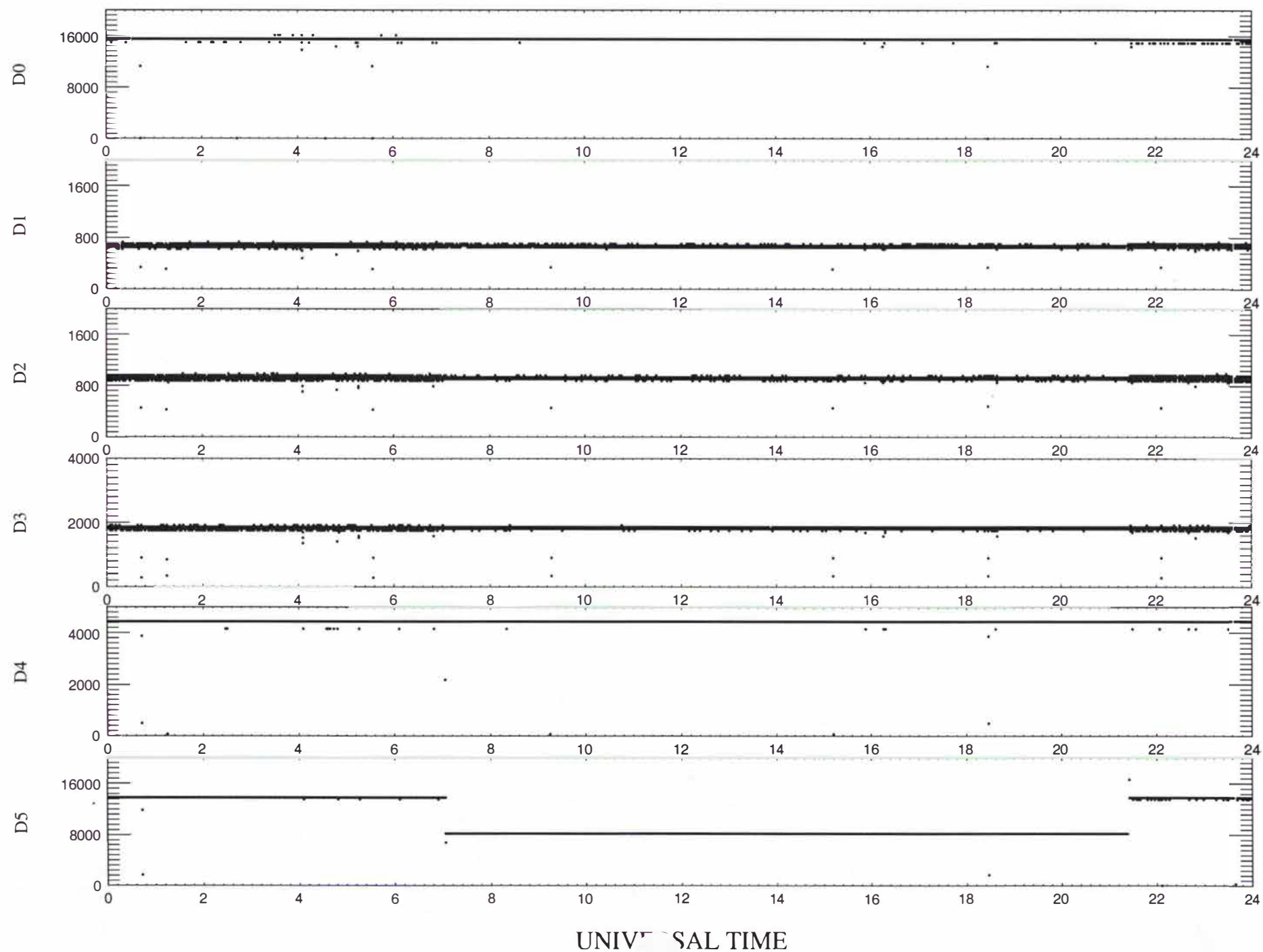
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



KNEAR GRS 19990811 43979

ULYSSES RT

12 / 8 / 99

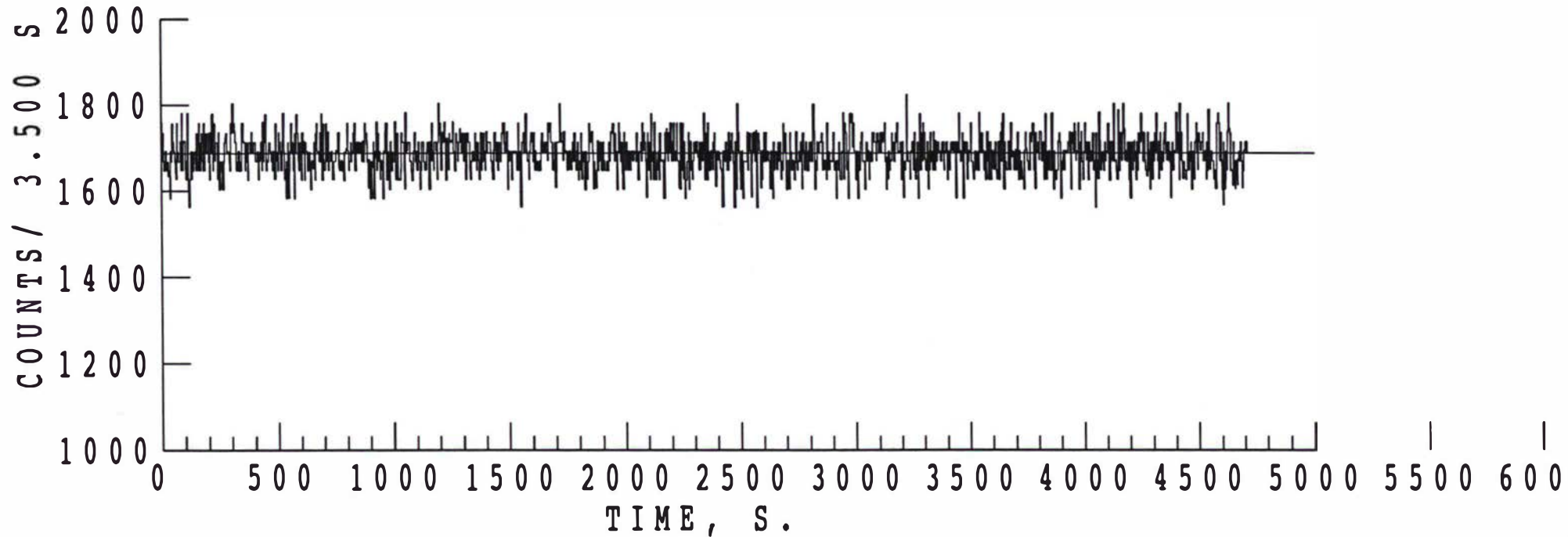
11 / 8 / 99 41616.109 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

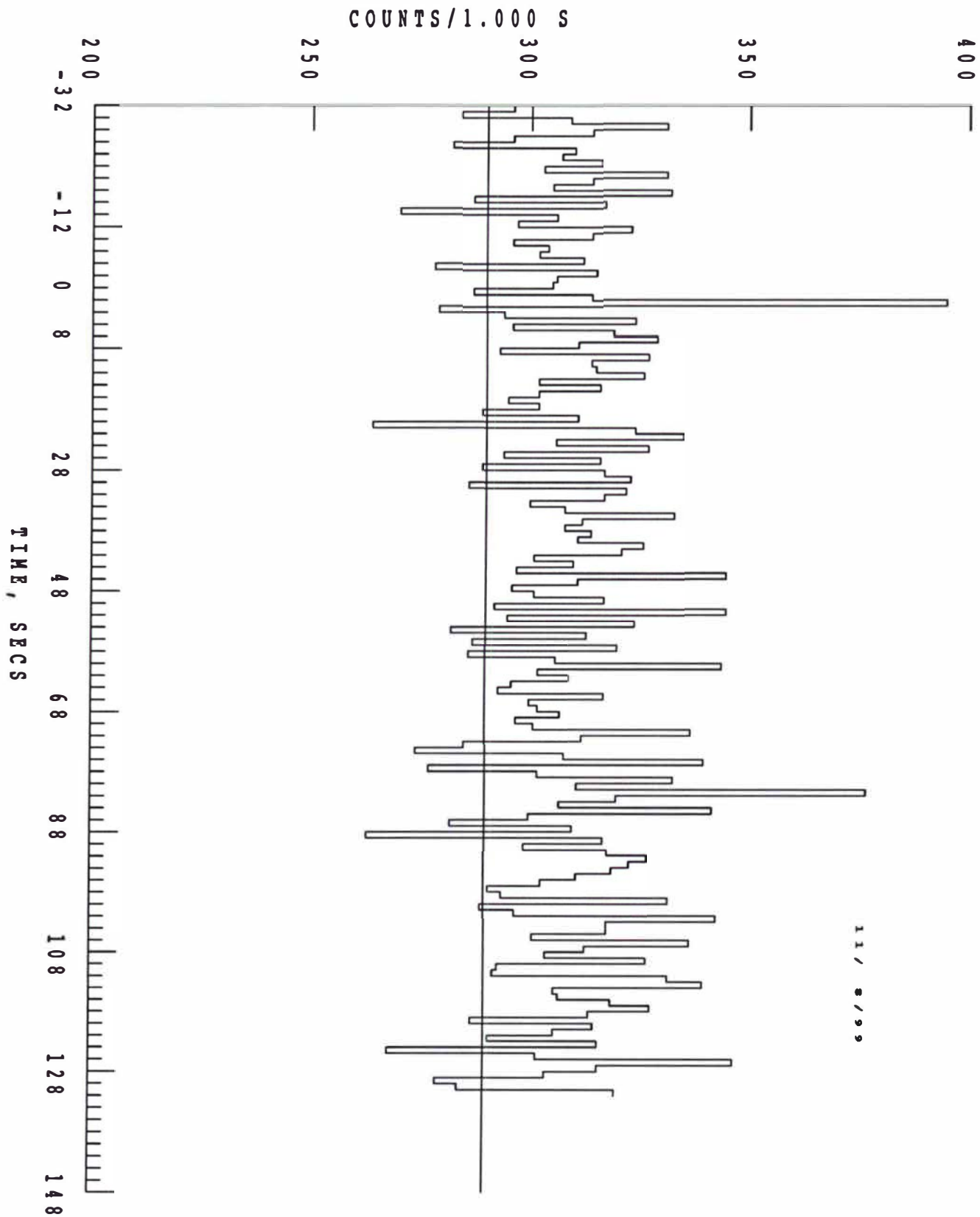


NEAR

11/08/99

43979.431

100-1000 keV



Date: June 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

N/A

- ☐ 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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

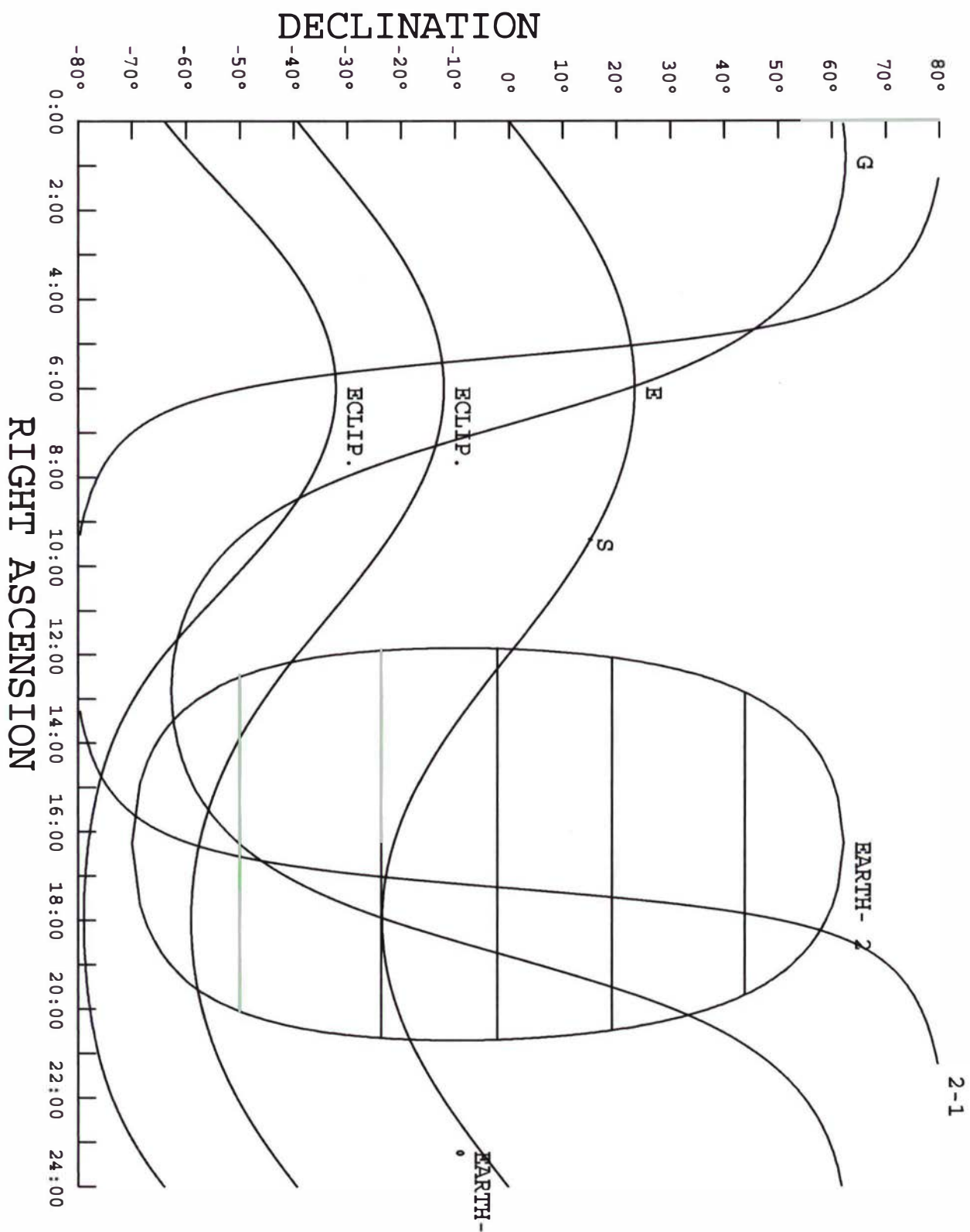
G=GALACTIC EQUATOR

1 KONUS

2 SAX

EVENT OF AUG 11, 1999 18:08

29 / 6 / 7



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

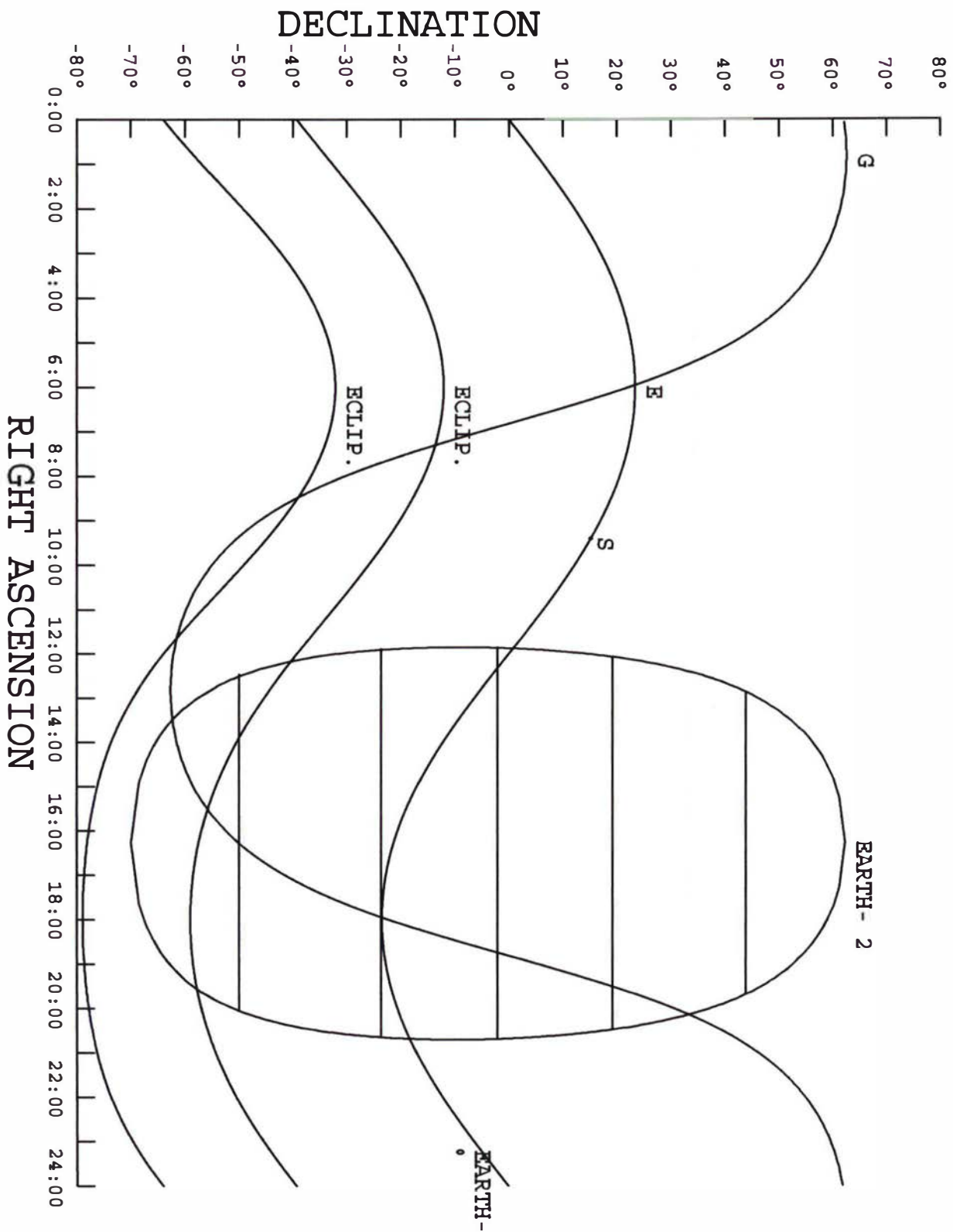
G=GALACTIC EQUATOR

1 KONUS

2 SAX

EVENT OF AUG 11, 1999 18:08

29 / 6 / 7



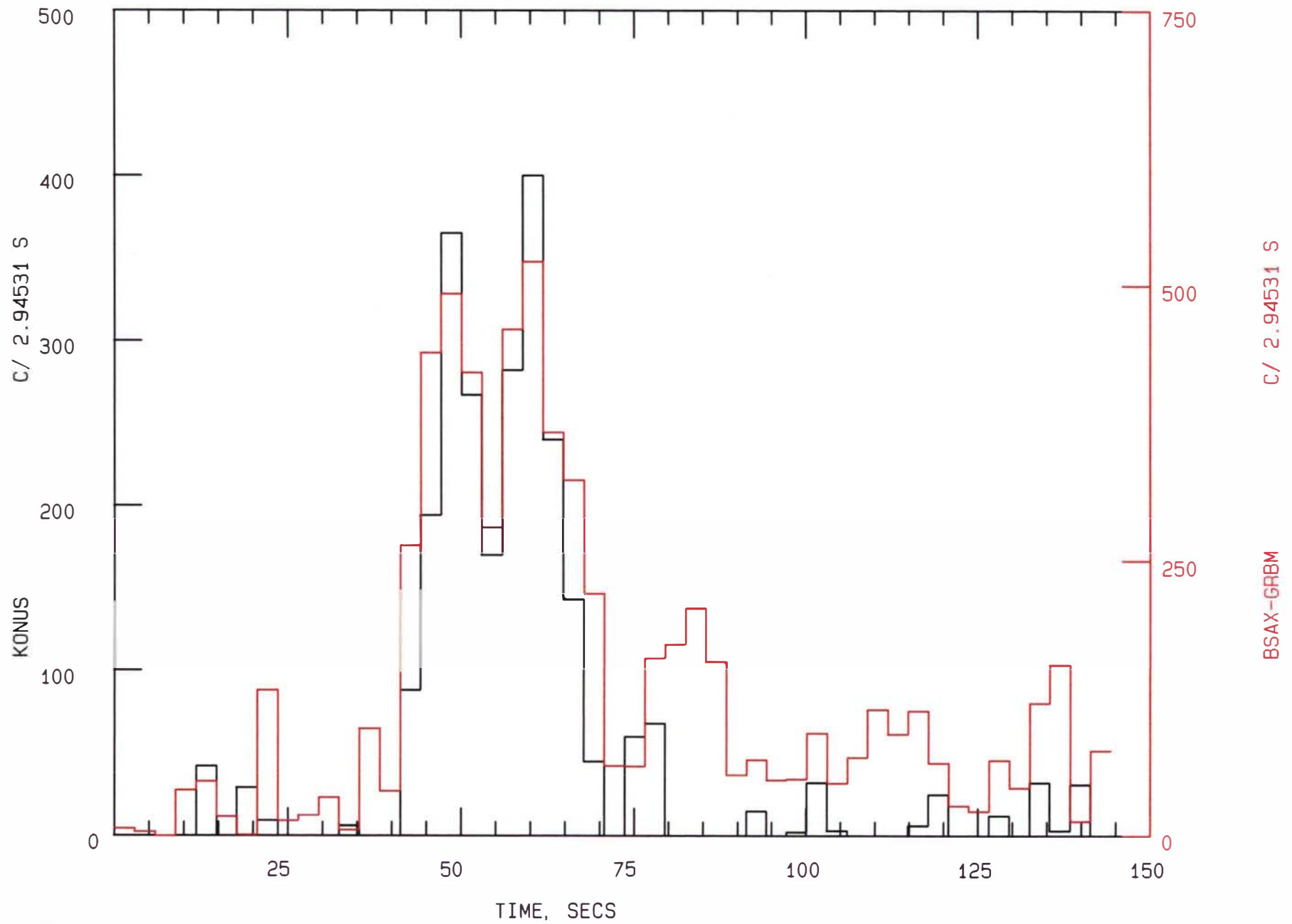
KONUS

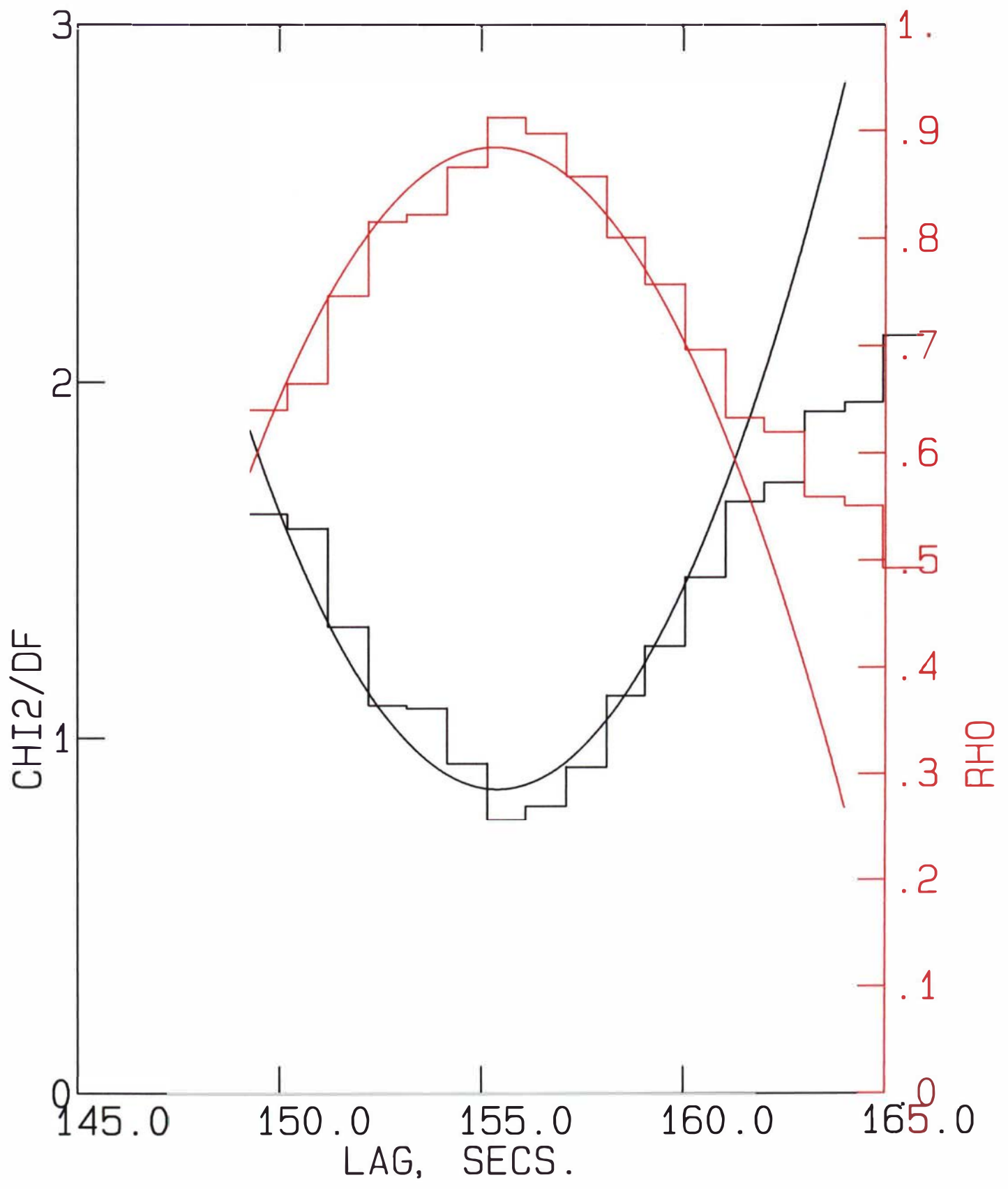
-BSAX-GRBM CORRELATION

11/08/99

65321.488

29/ 6/ 7



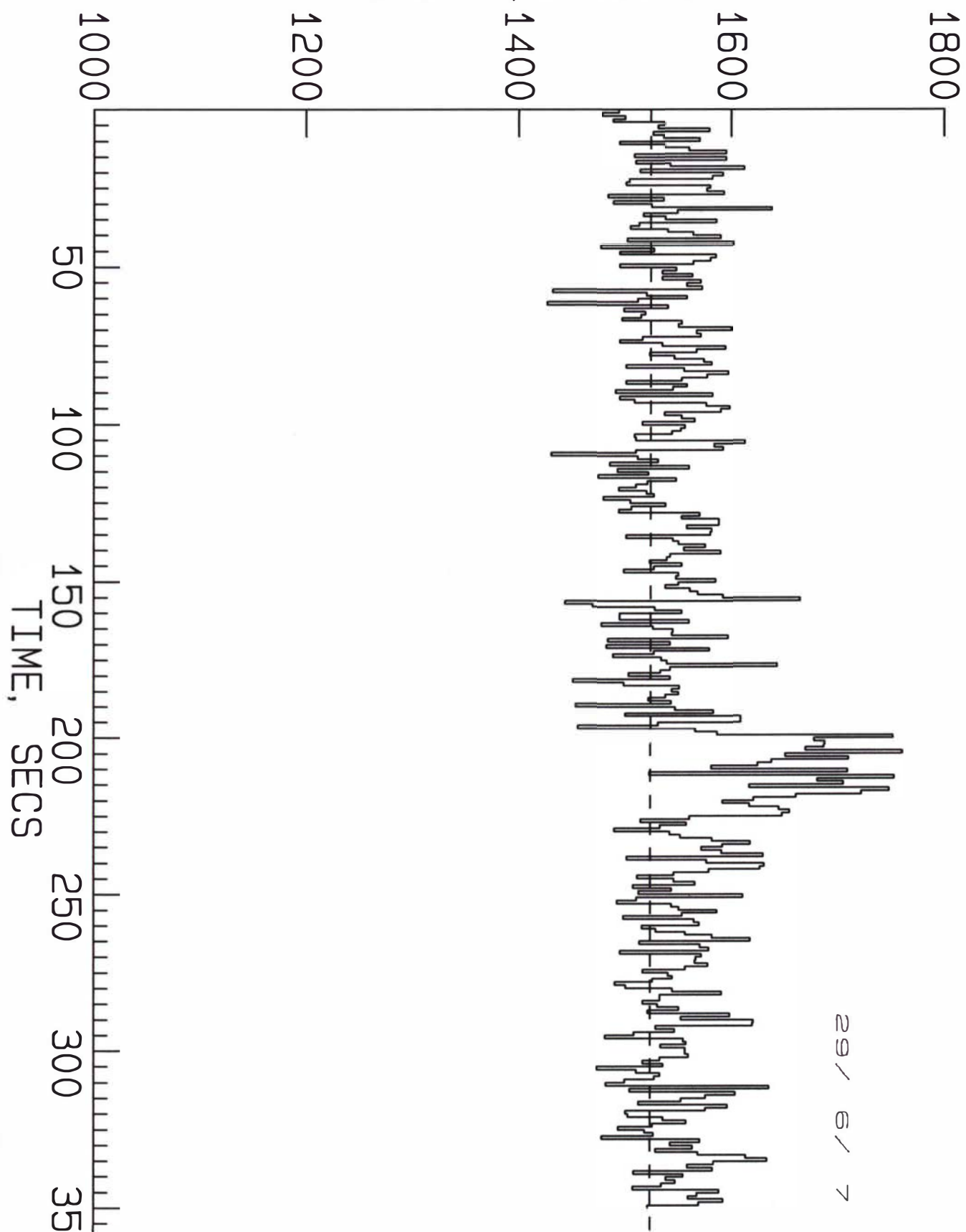


SAX GRBM

11/08/99 65163.694

40- 700 keV

COUNTS/1.000 S



KONUS

11/08/99 65321.488

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4400

3400

2400

1400

400

20

40

60

80

100

120

140

DETECTOR 1 - S. ECLIPHTIC

28/06/07

TIME, SECS



KONUS

11/08/99 65321.488

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.945 S

4300

DETECTOR 2 - N. ECLIPTIC

28/06/07

3300

2300

1300

300

20

40

60

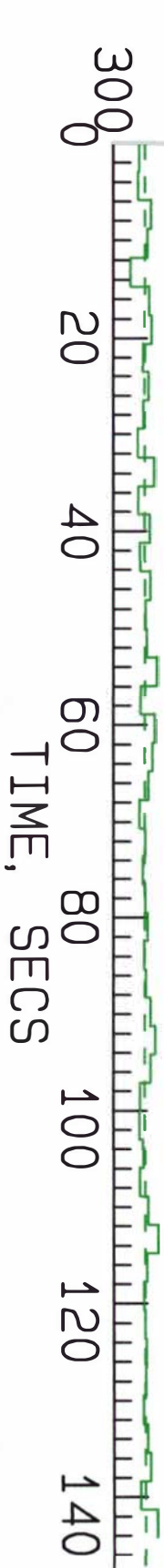
80

100

120

140

TIME, SECS



KONUS

ULYSSES RT

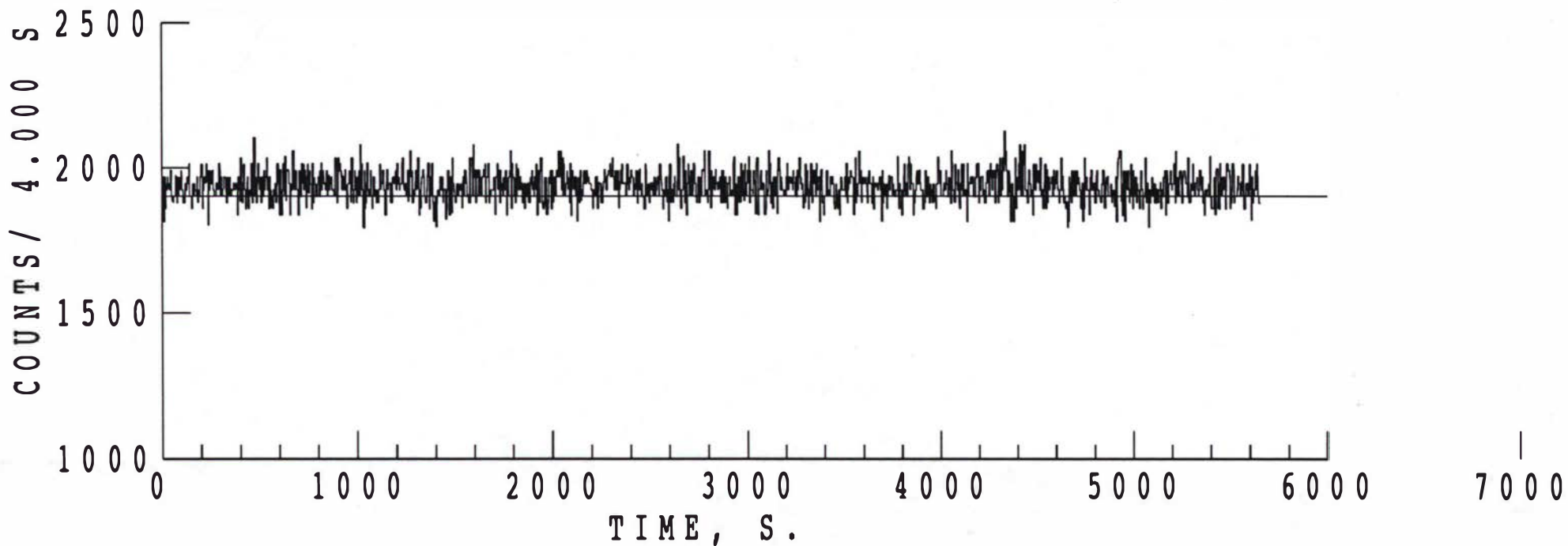
21 / 01 / 00

11 / 08 / 99 62532.320 s

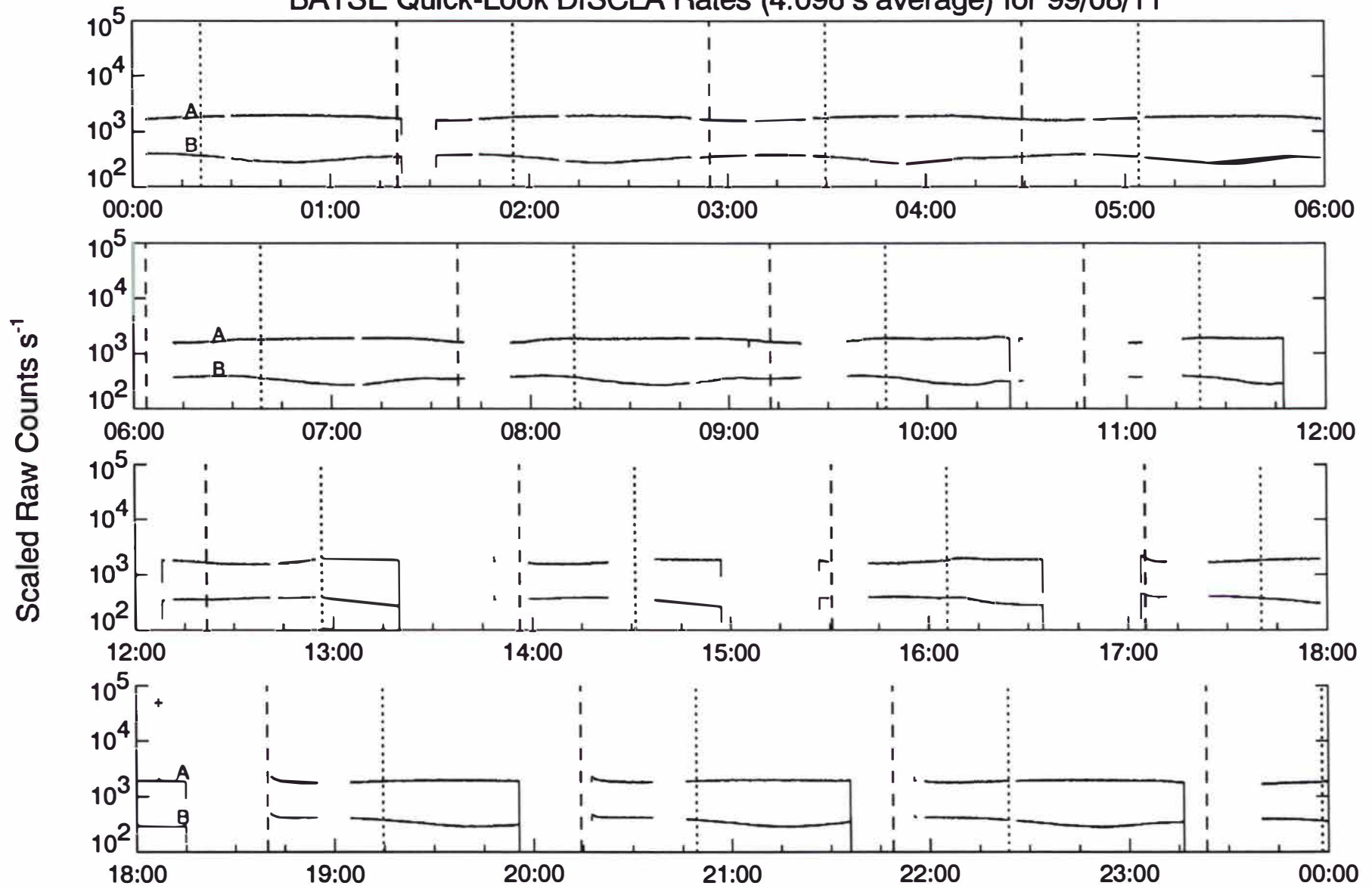
0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/11

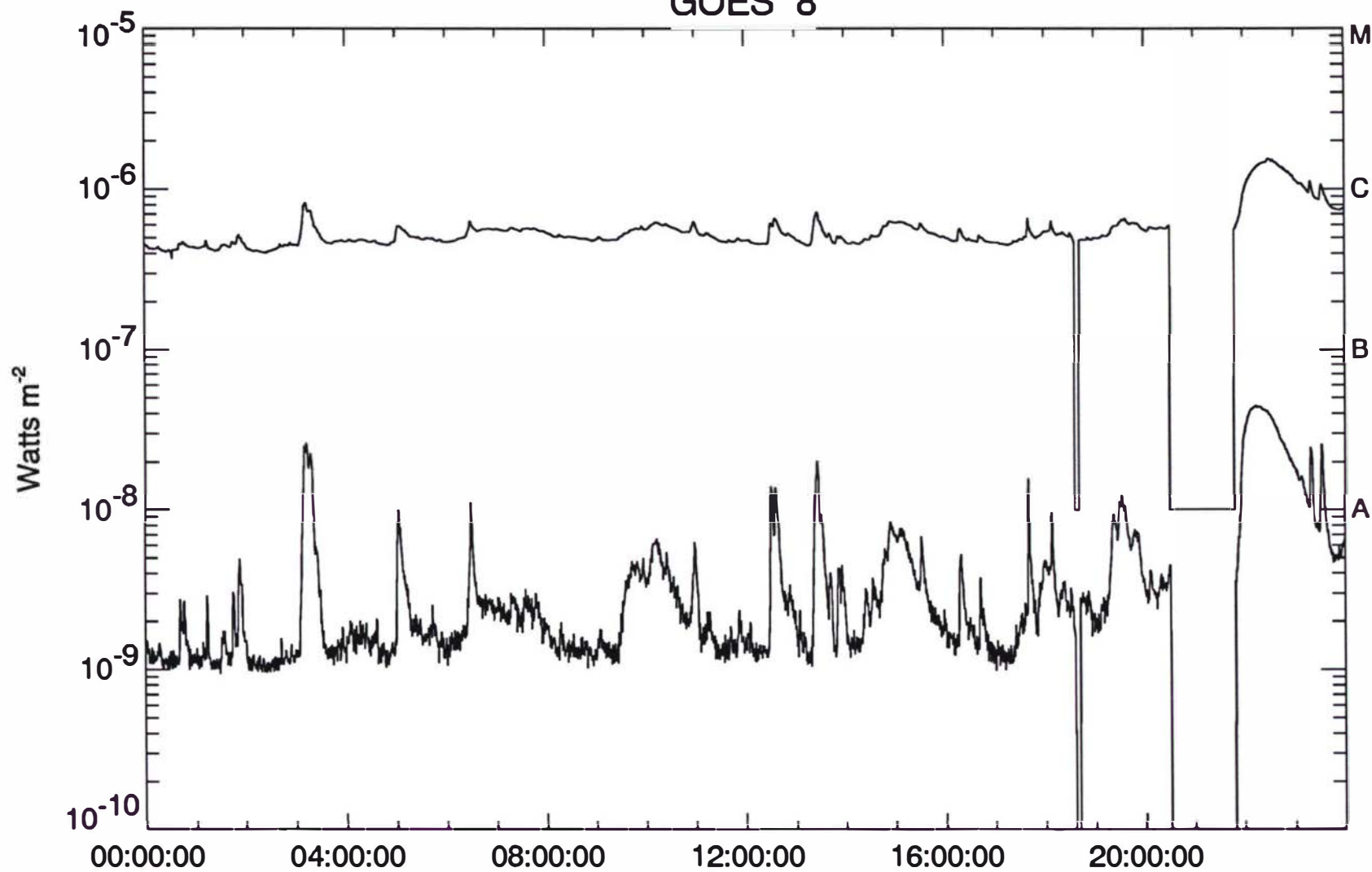


Current Time: 99/08/15, 1006 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/08/11, 0000:00

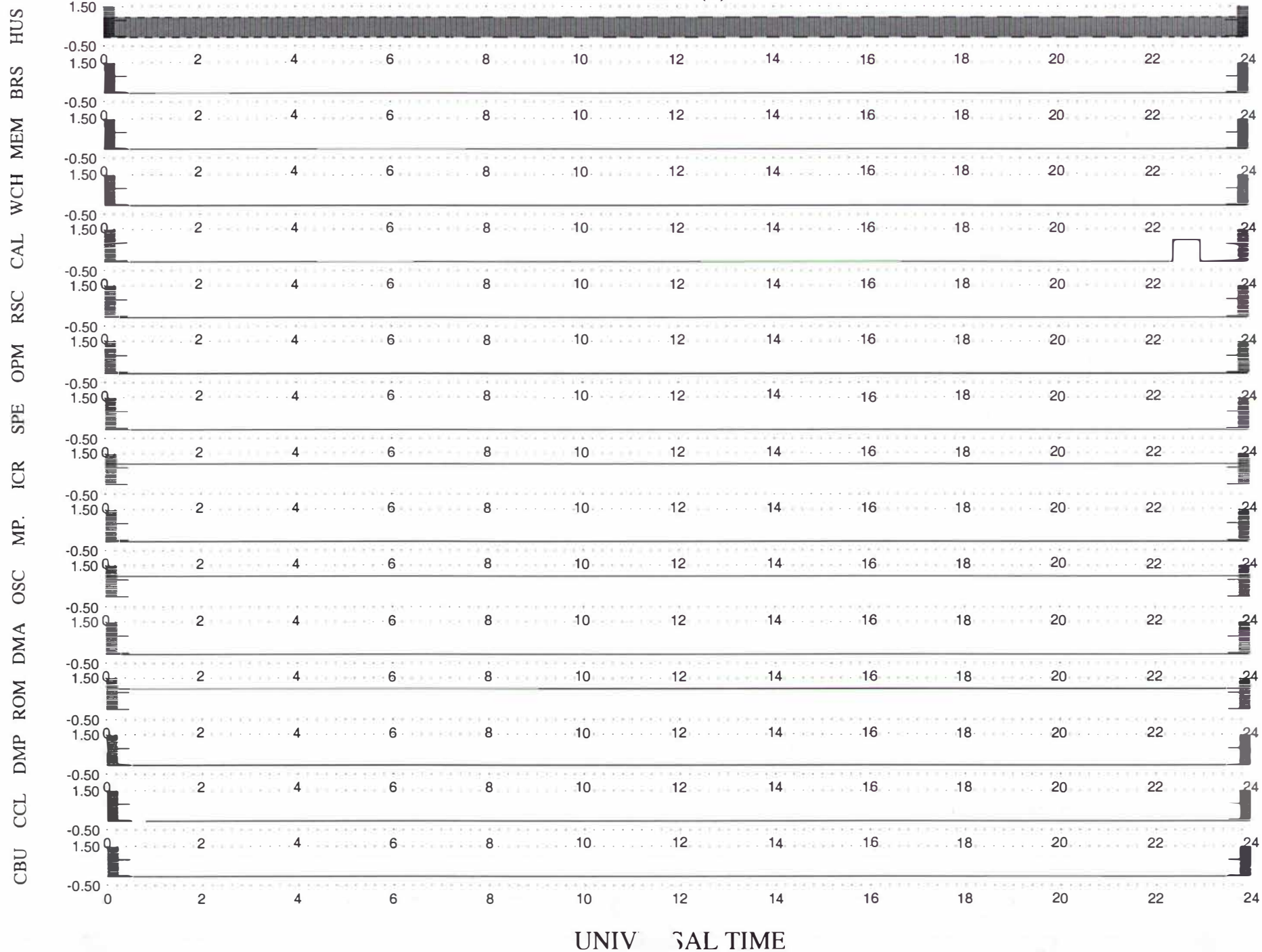
Plot created: 99/08/15, 1006

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

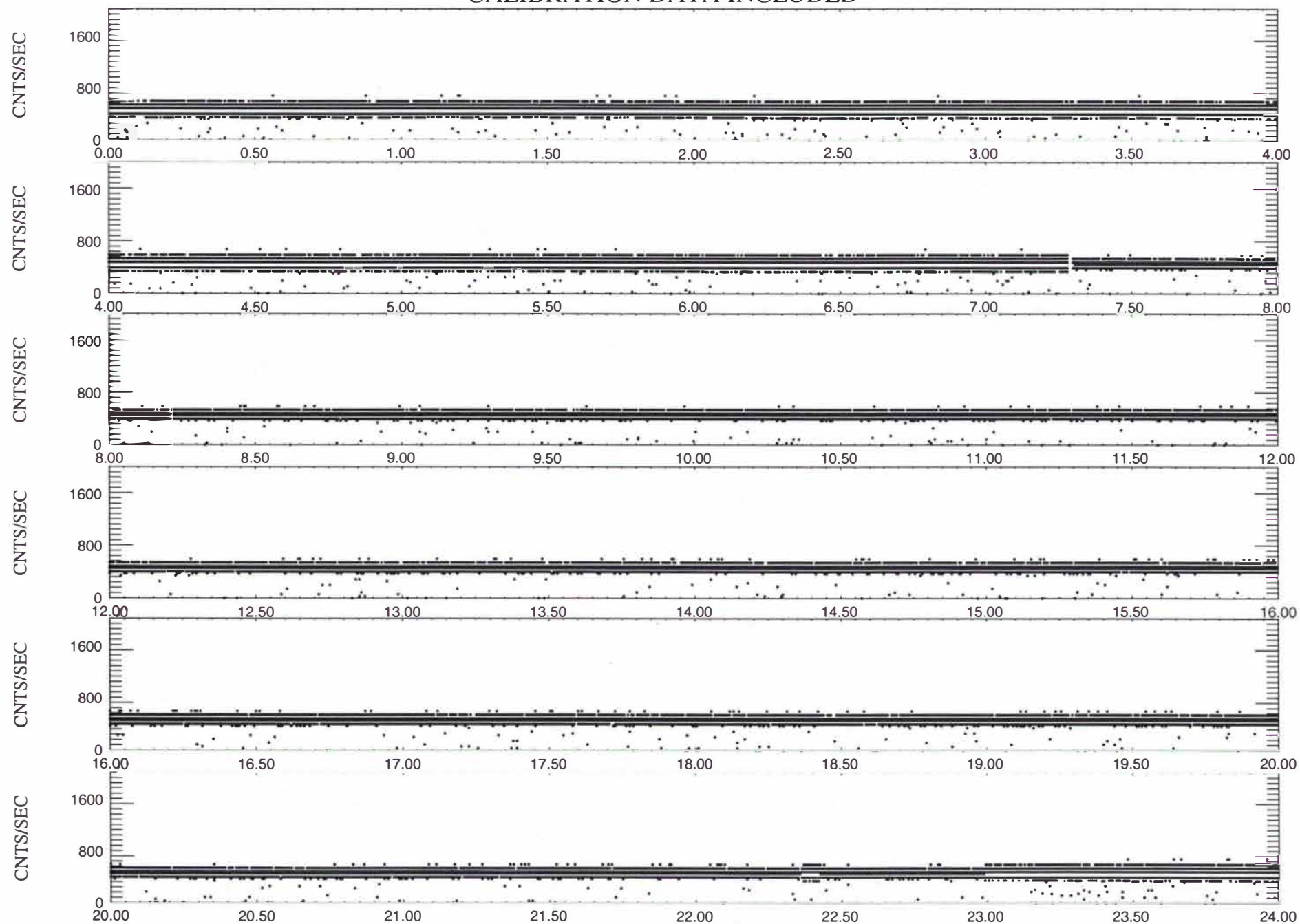
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

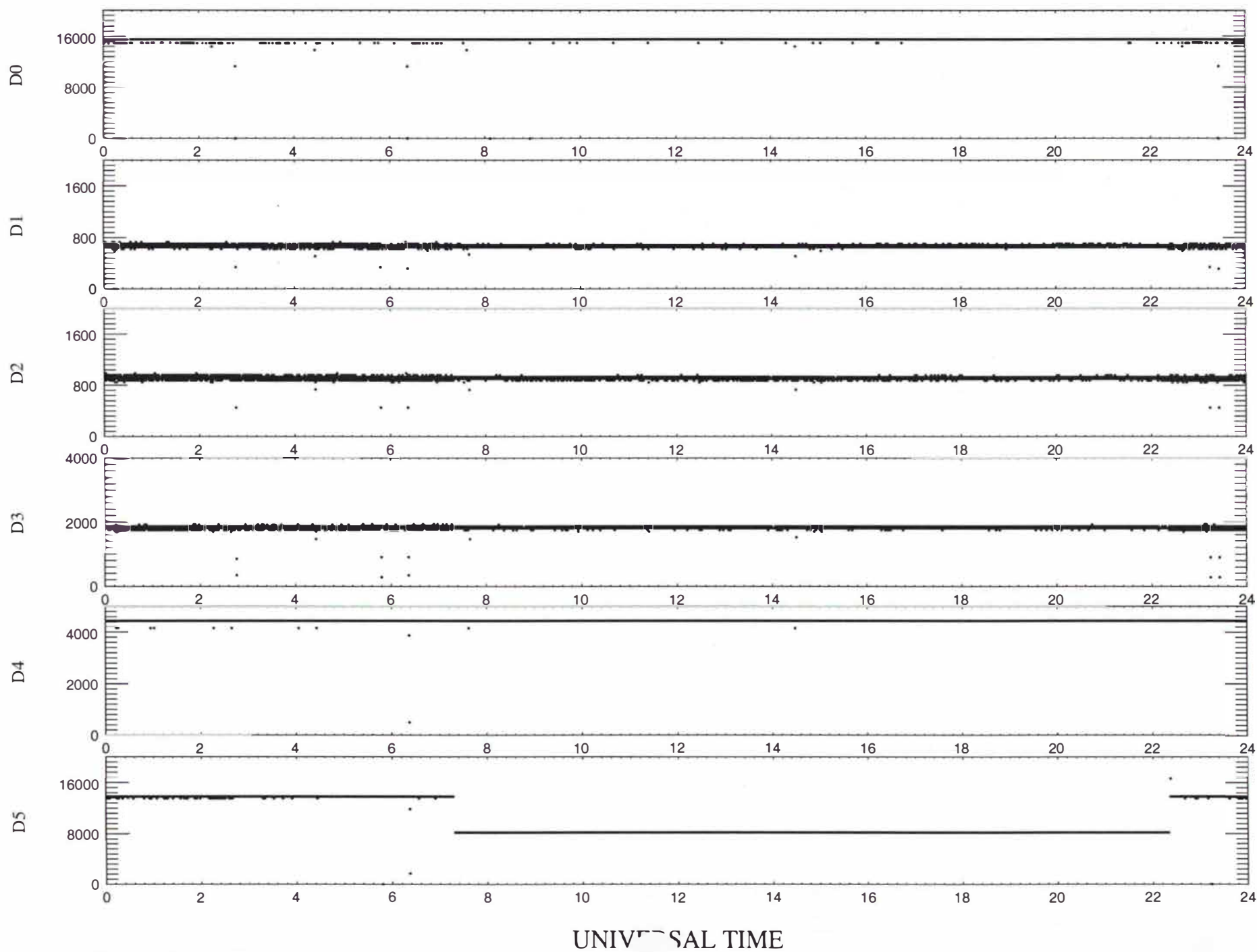
NO BURST (8)



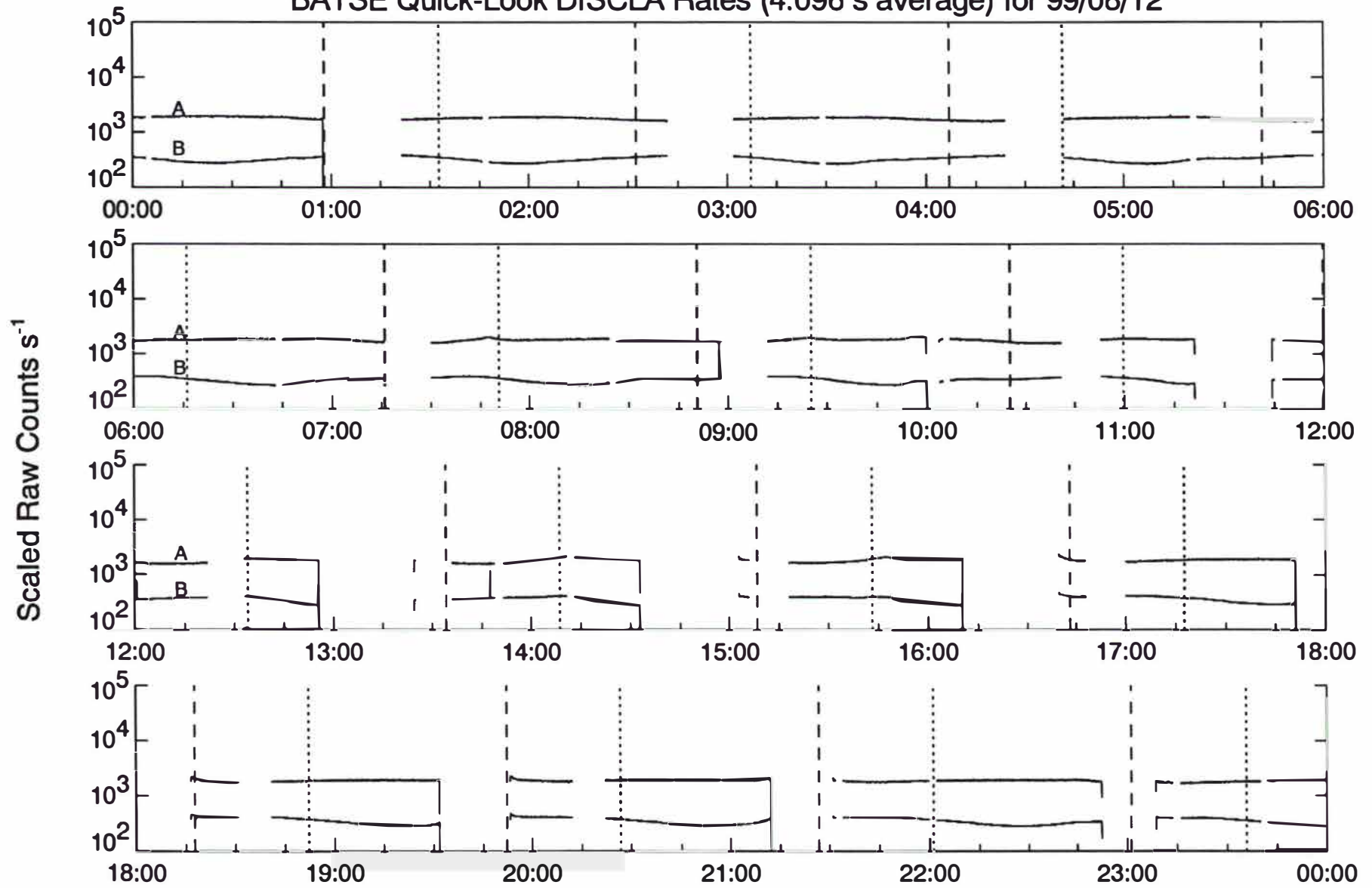
CALIBRATION DATA INCLUDED



UNIV SAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/12

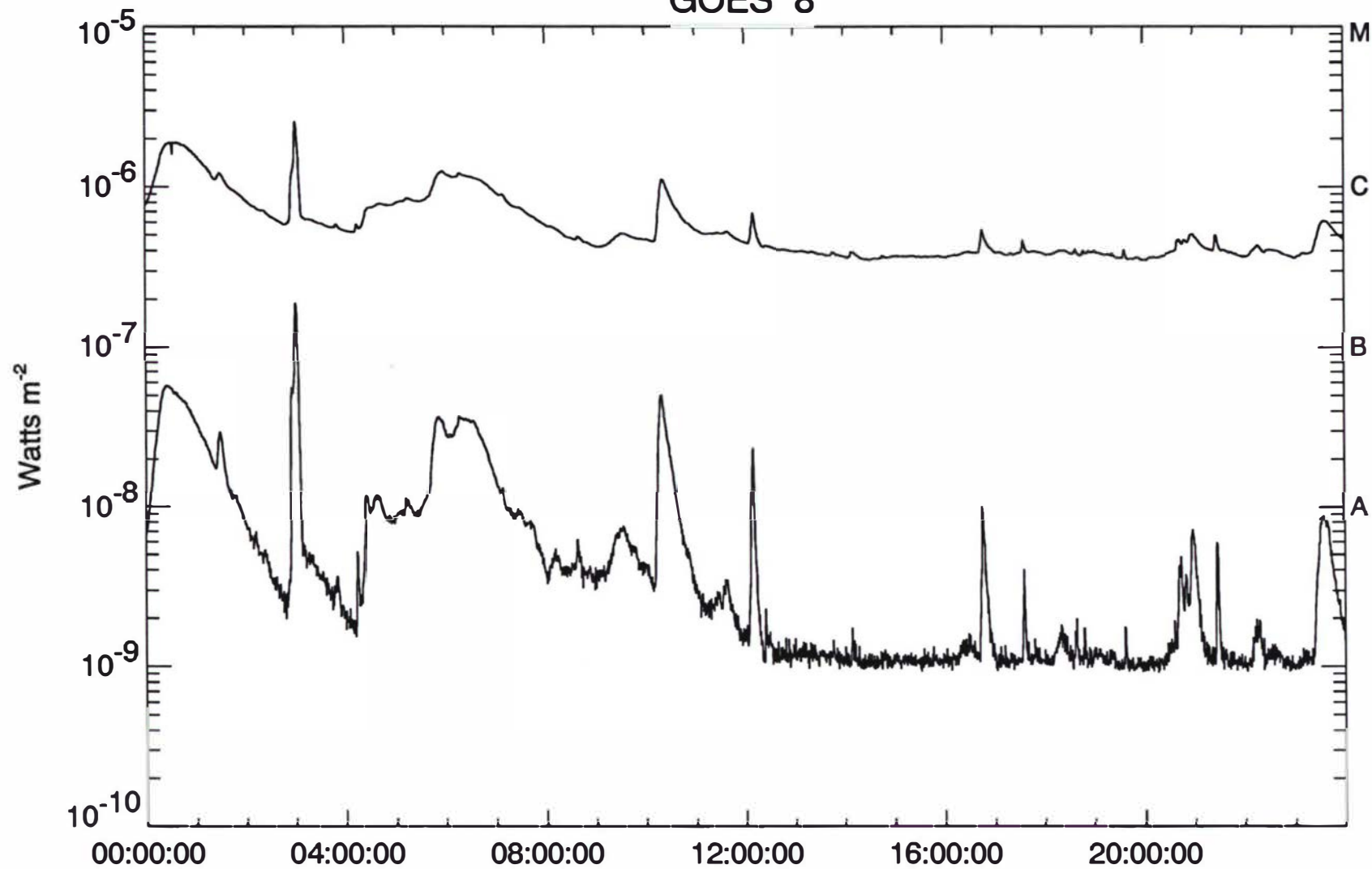


Current Time: 99/08/16, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/12, 0000:00

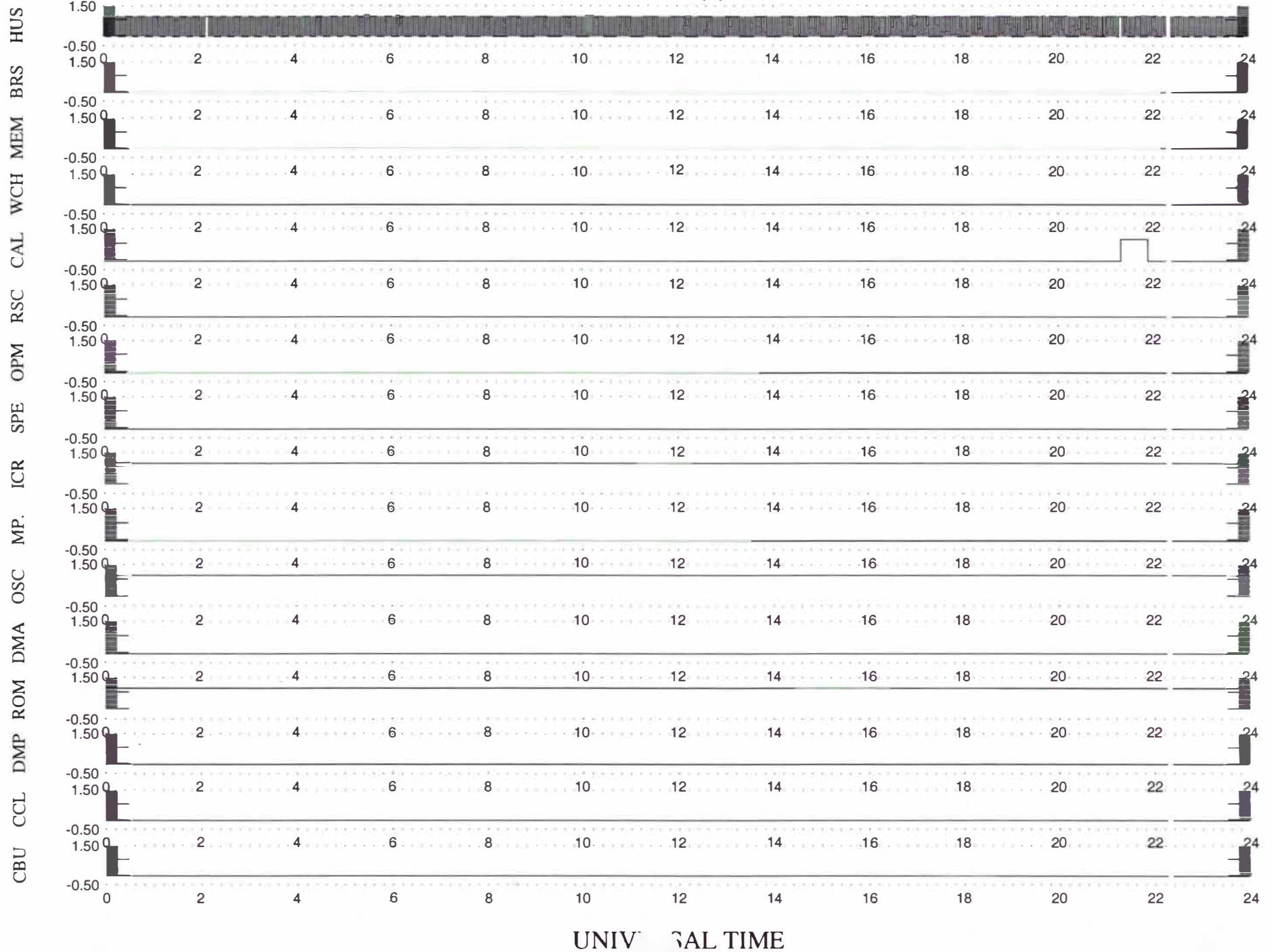
Plot created: 99/08/16, 1006

Channel

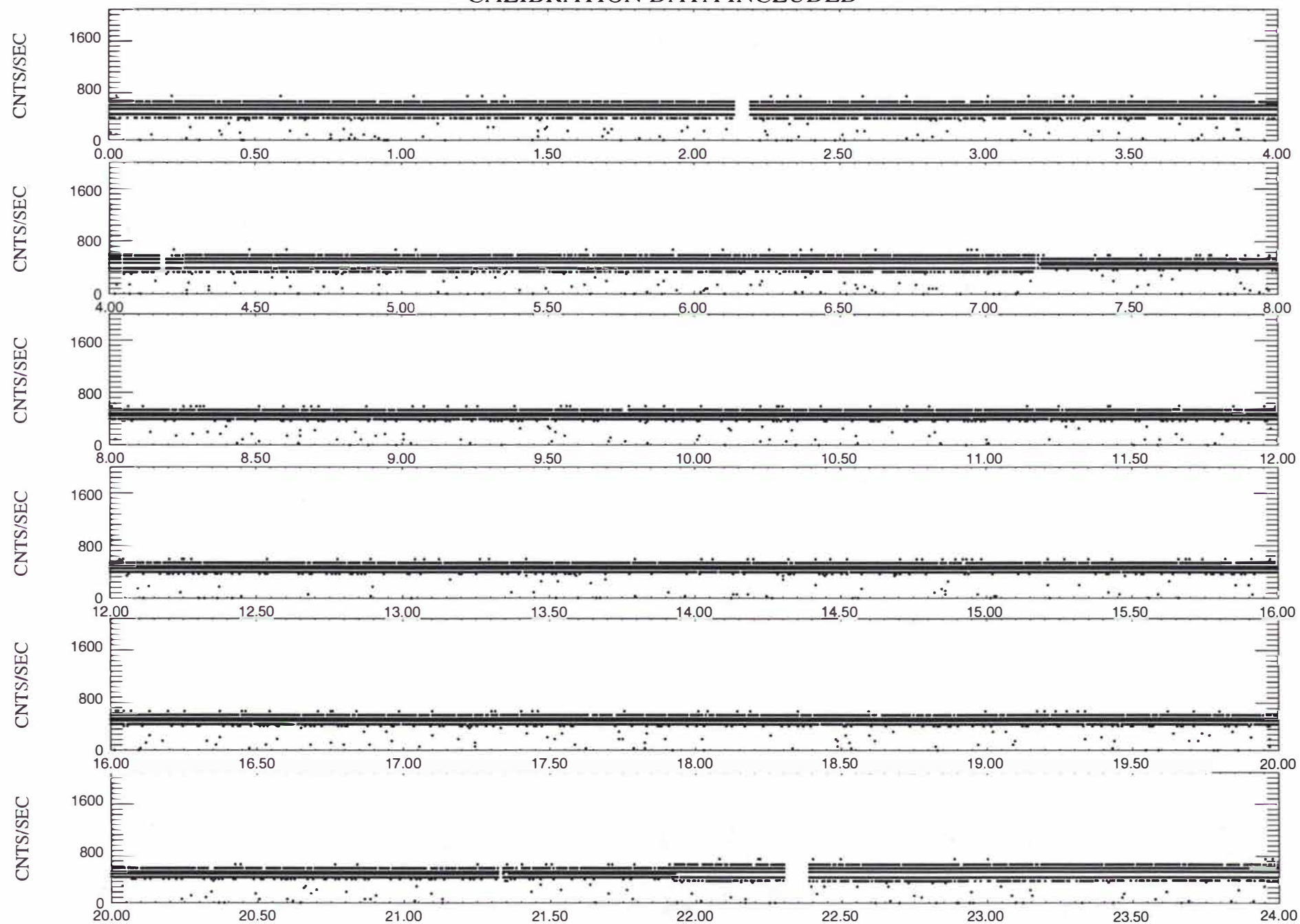
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

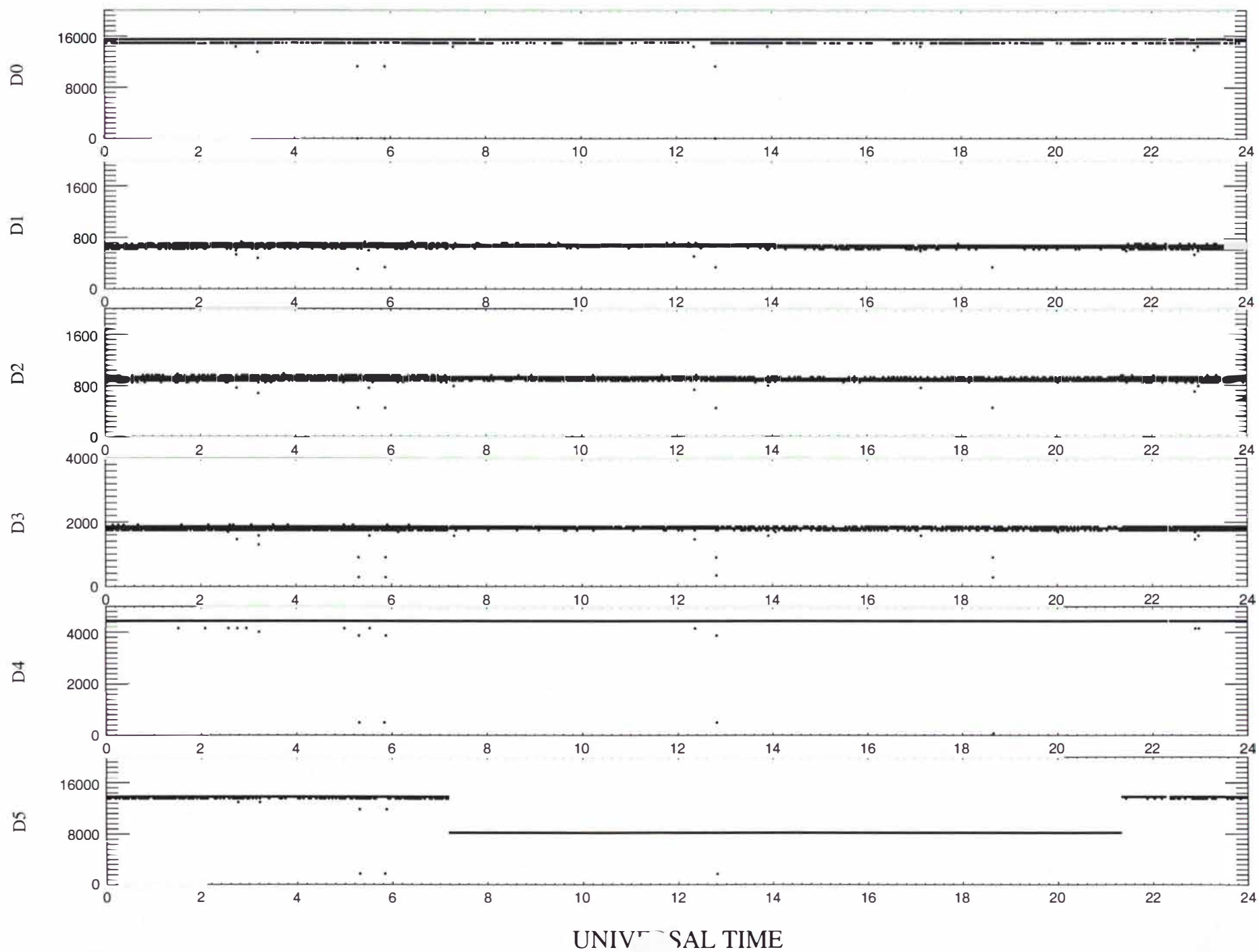
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVRSAL TIME



KONUS1 19990413 28450

ULYSSES RT

12 / 8 / 99

13 / 4 / 99 26287.285 s

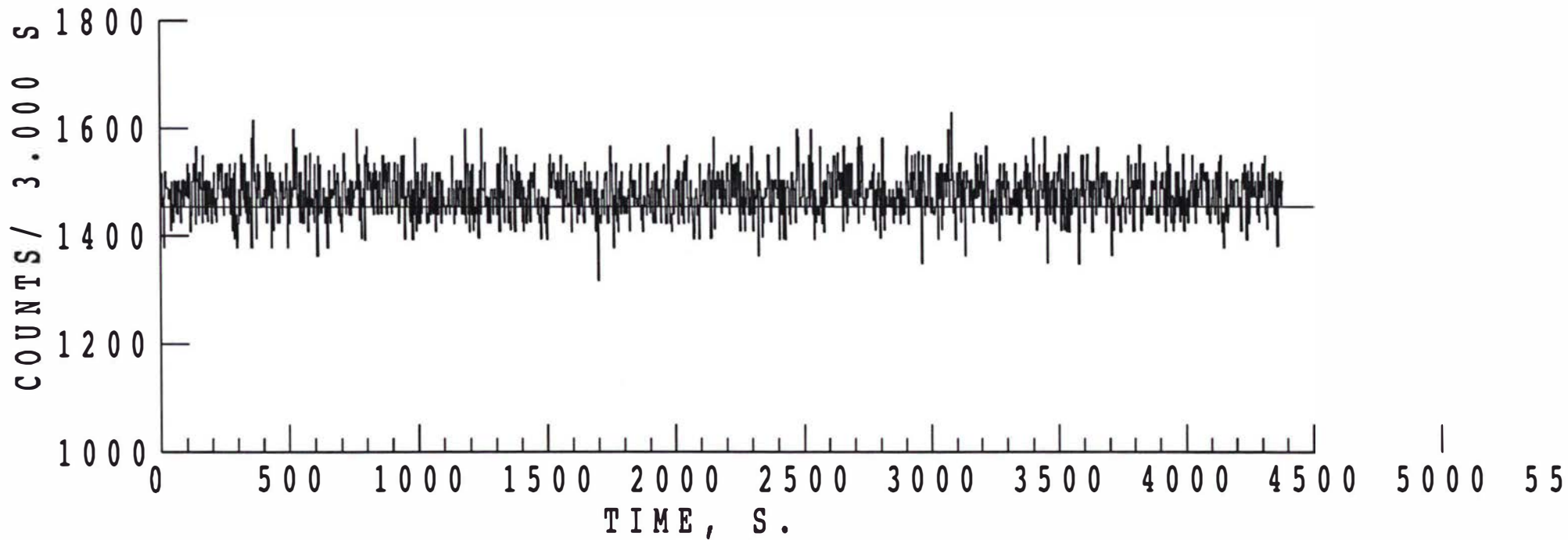
0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

|

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

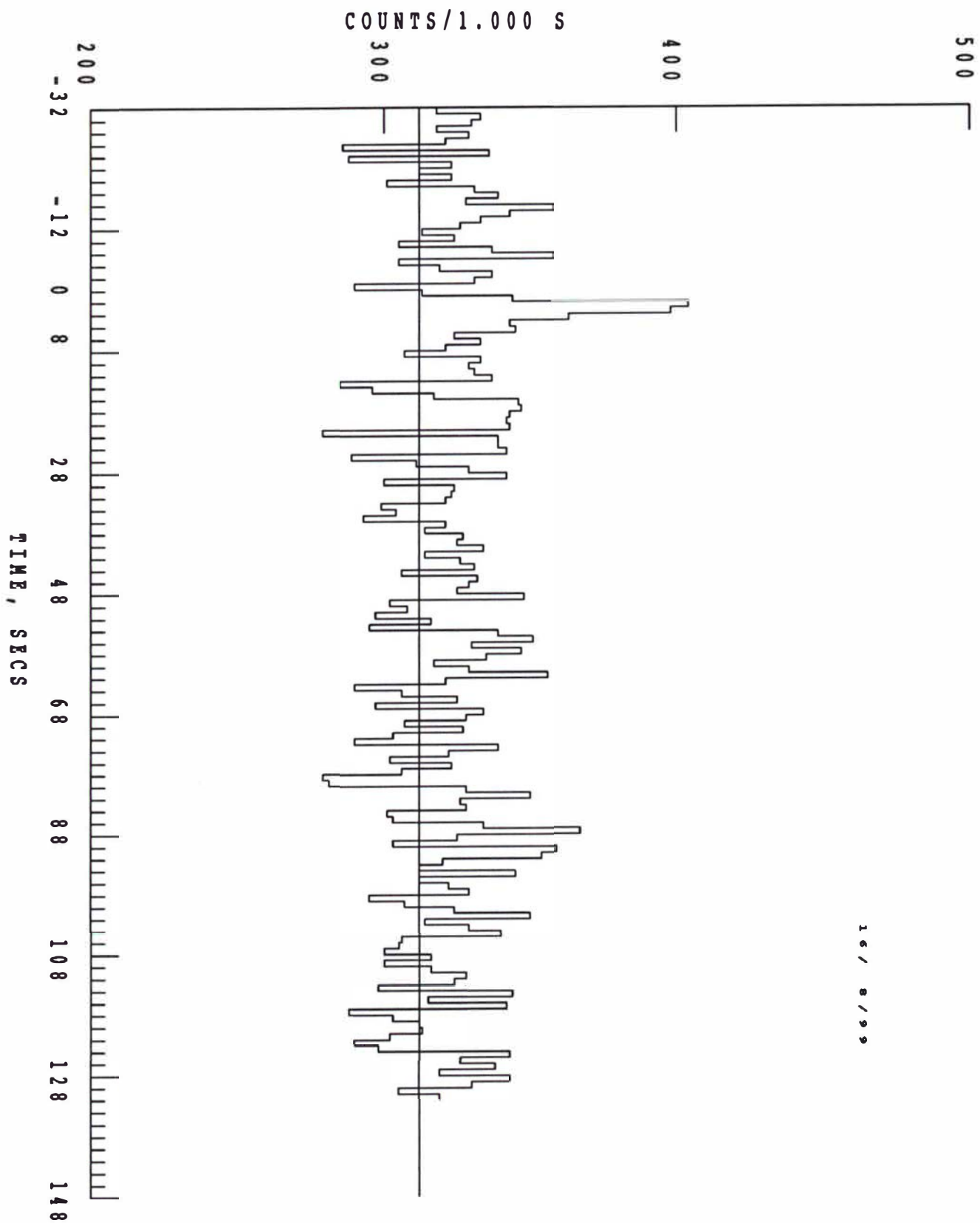


NEAR

13/08/99

86125.346

100-1000 keV



KNEAR GRS 19990813 86125

ULYSSES RT

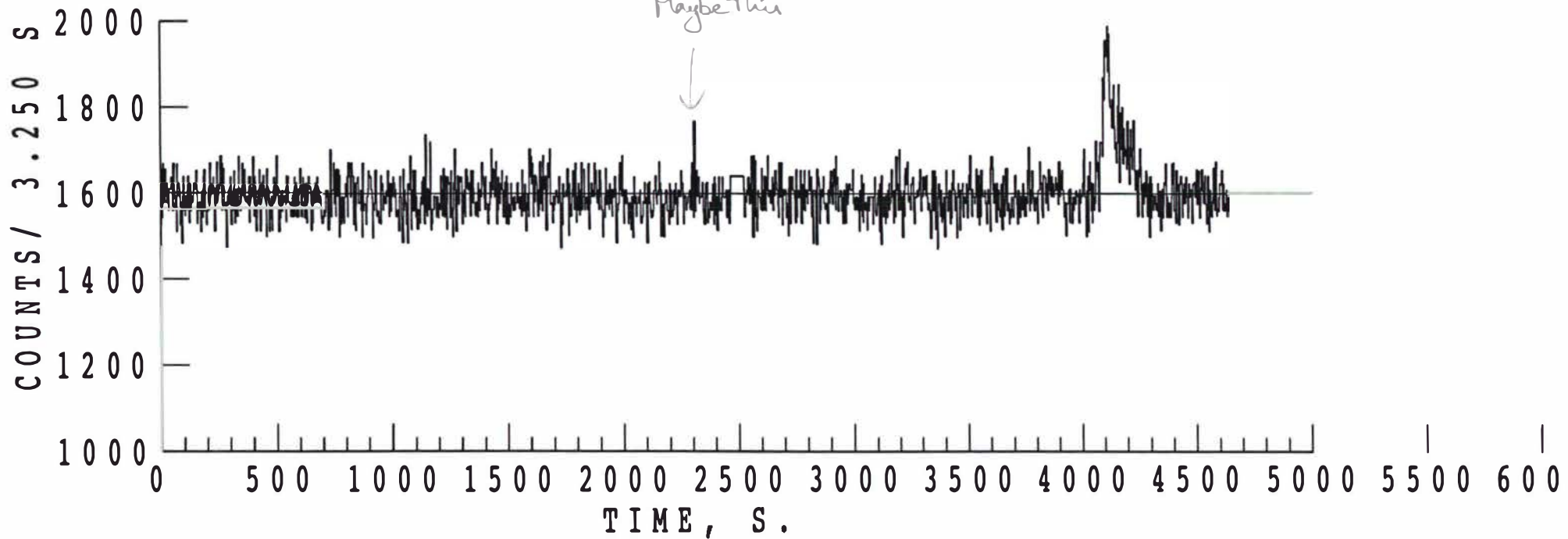
16 / 8 / 99

13 / 8 / 99 83808.039 s

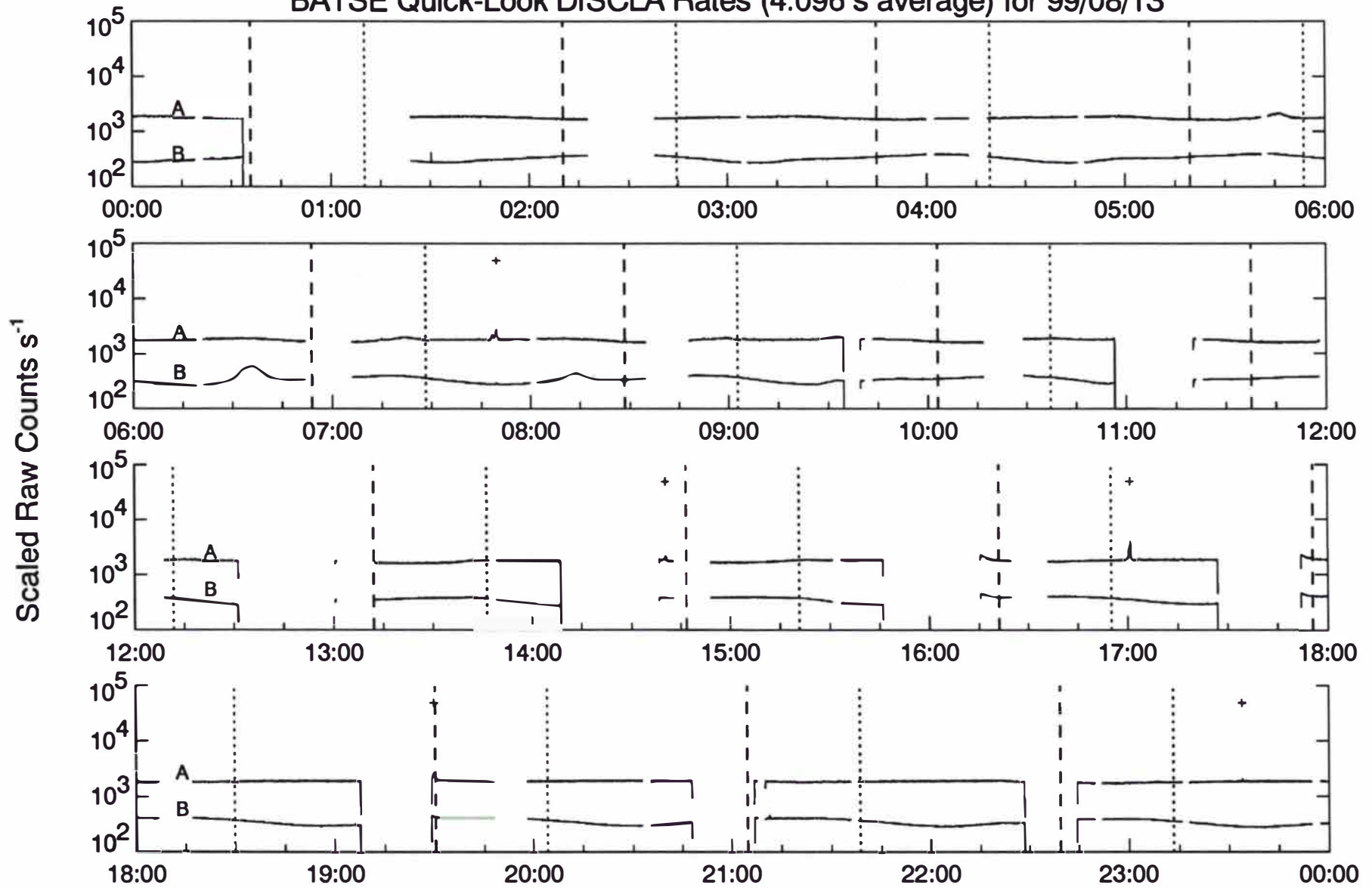
0.250 S INTERVALS REGROUPED BY 13

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/13



Current Time: 99/08/17, 1006 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

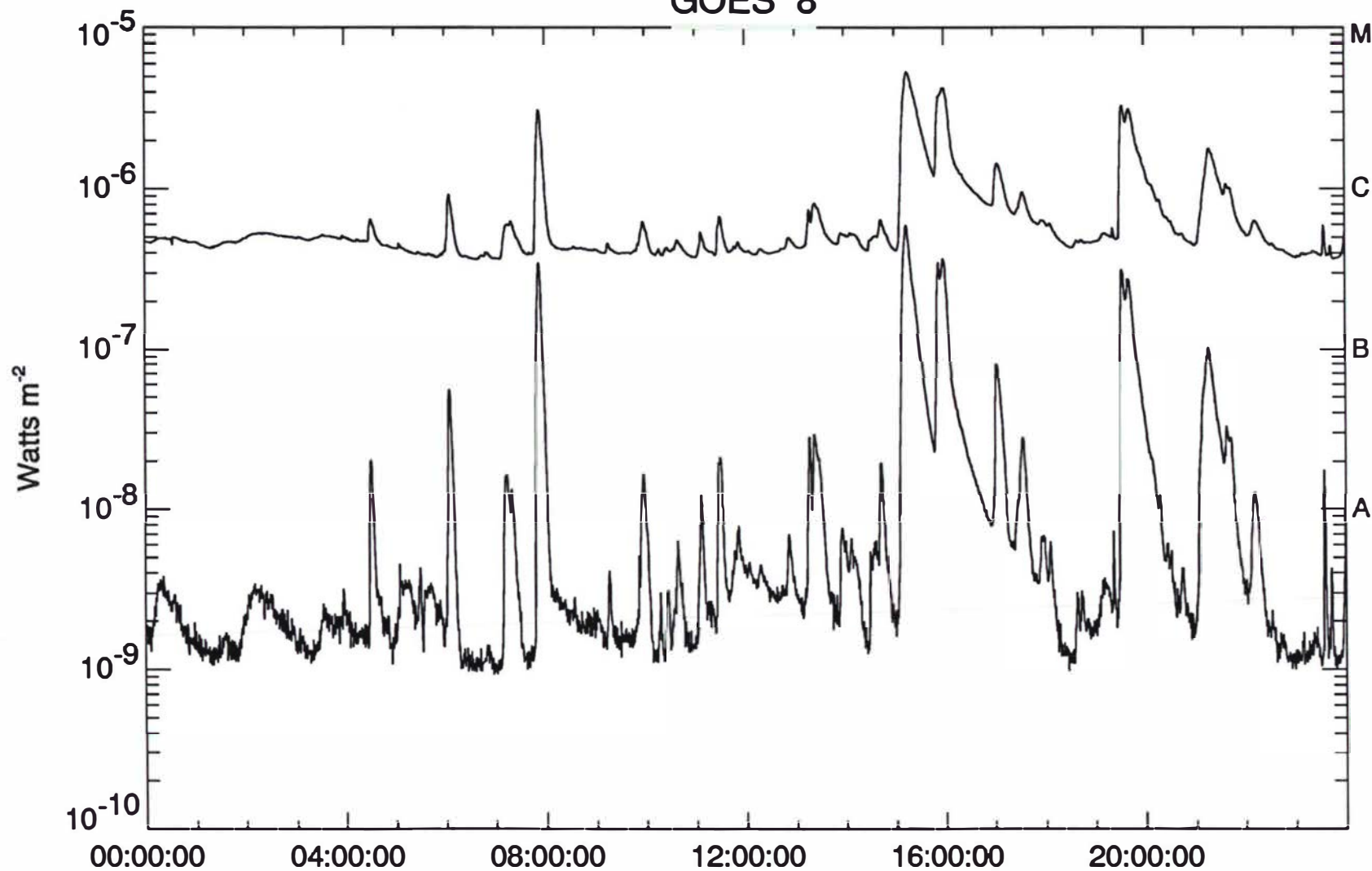
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 99/08/13, 0000:00

Plot created: 99/08/17, 1005

Channel

1 (1.0 - 8.0 Angstroms)

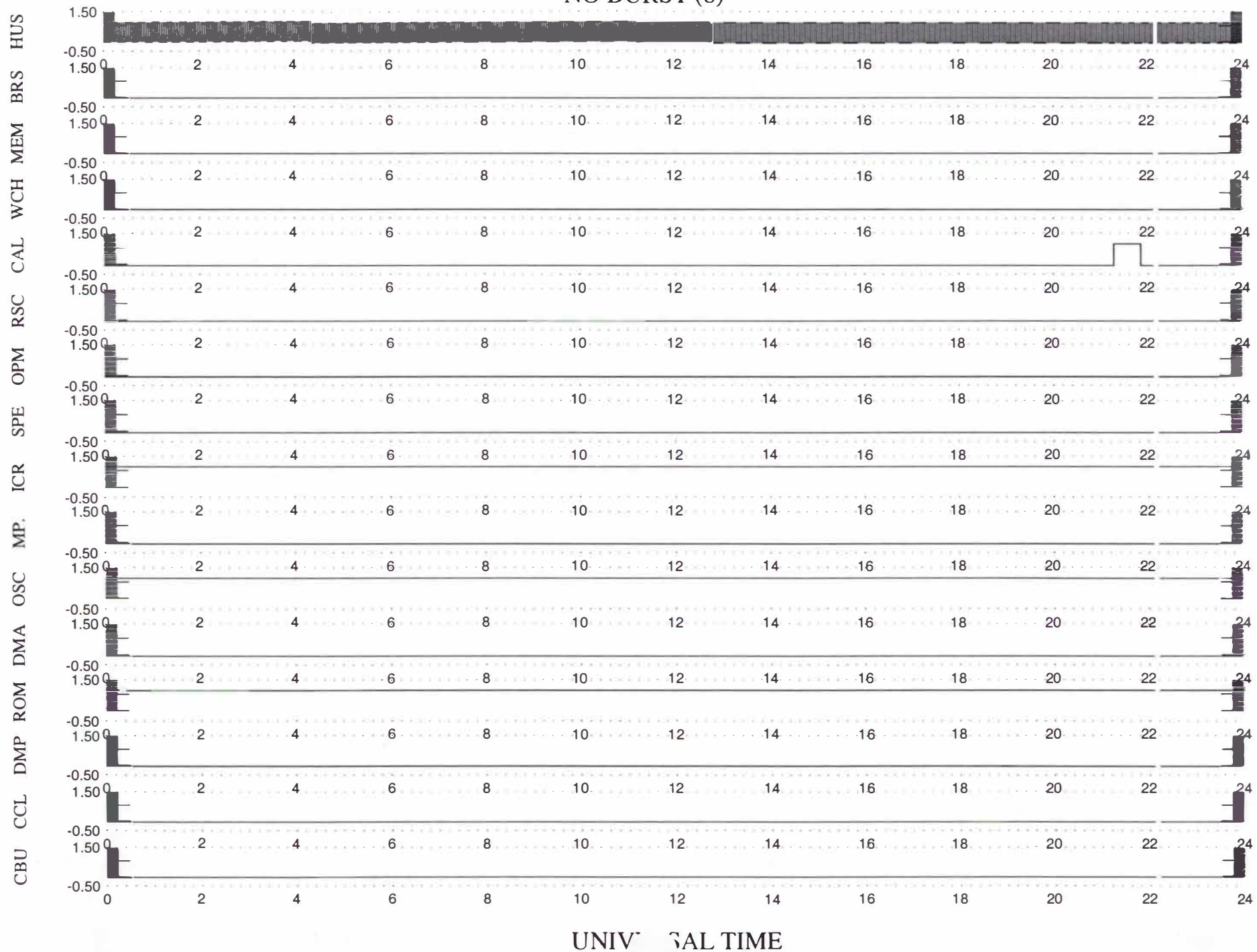
Background not subtracted

2 (0.5 - 4.0 Angstroms)

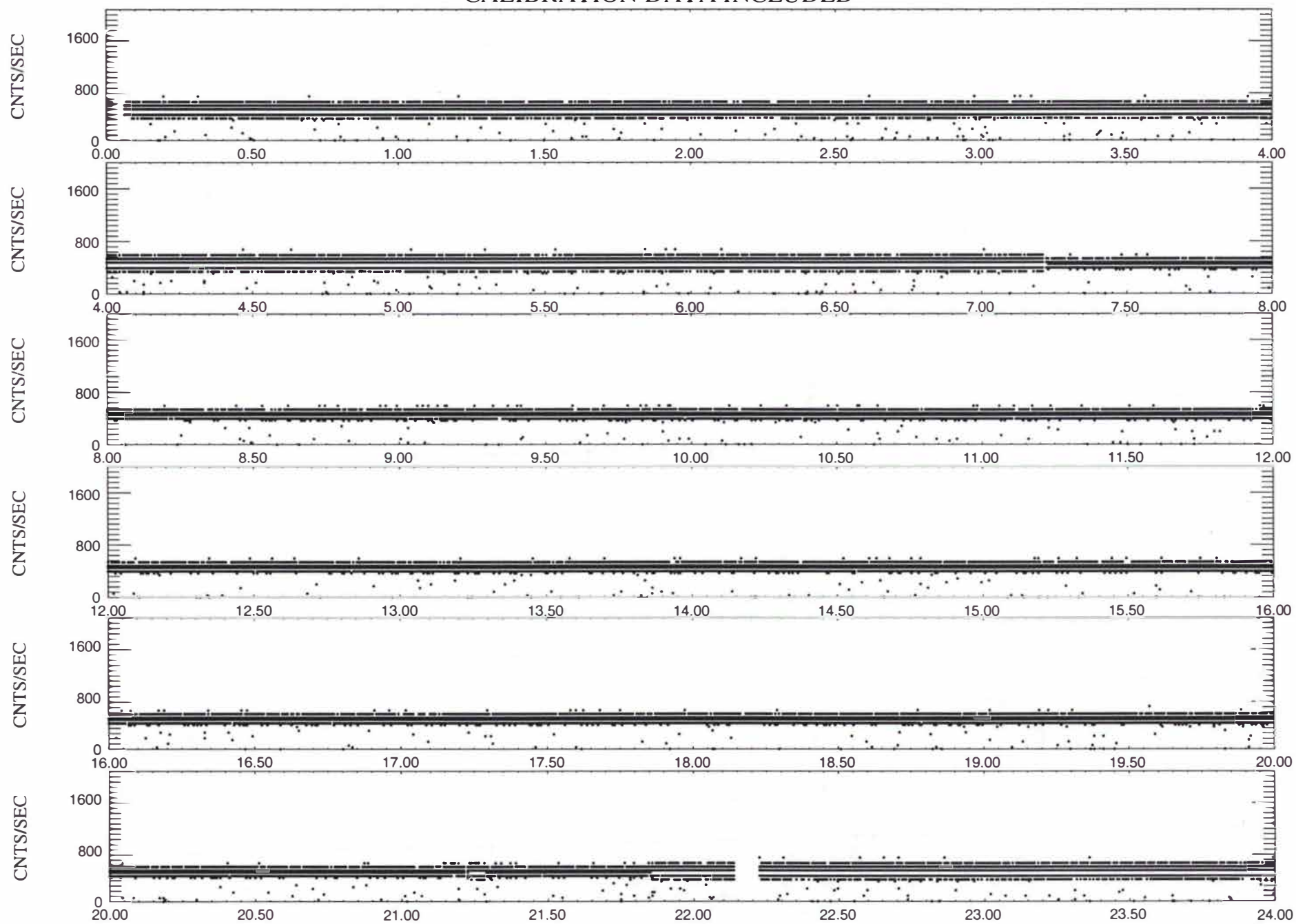
Background not subtracted

Sample average = 10

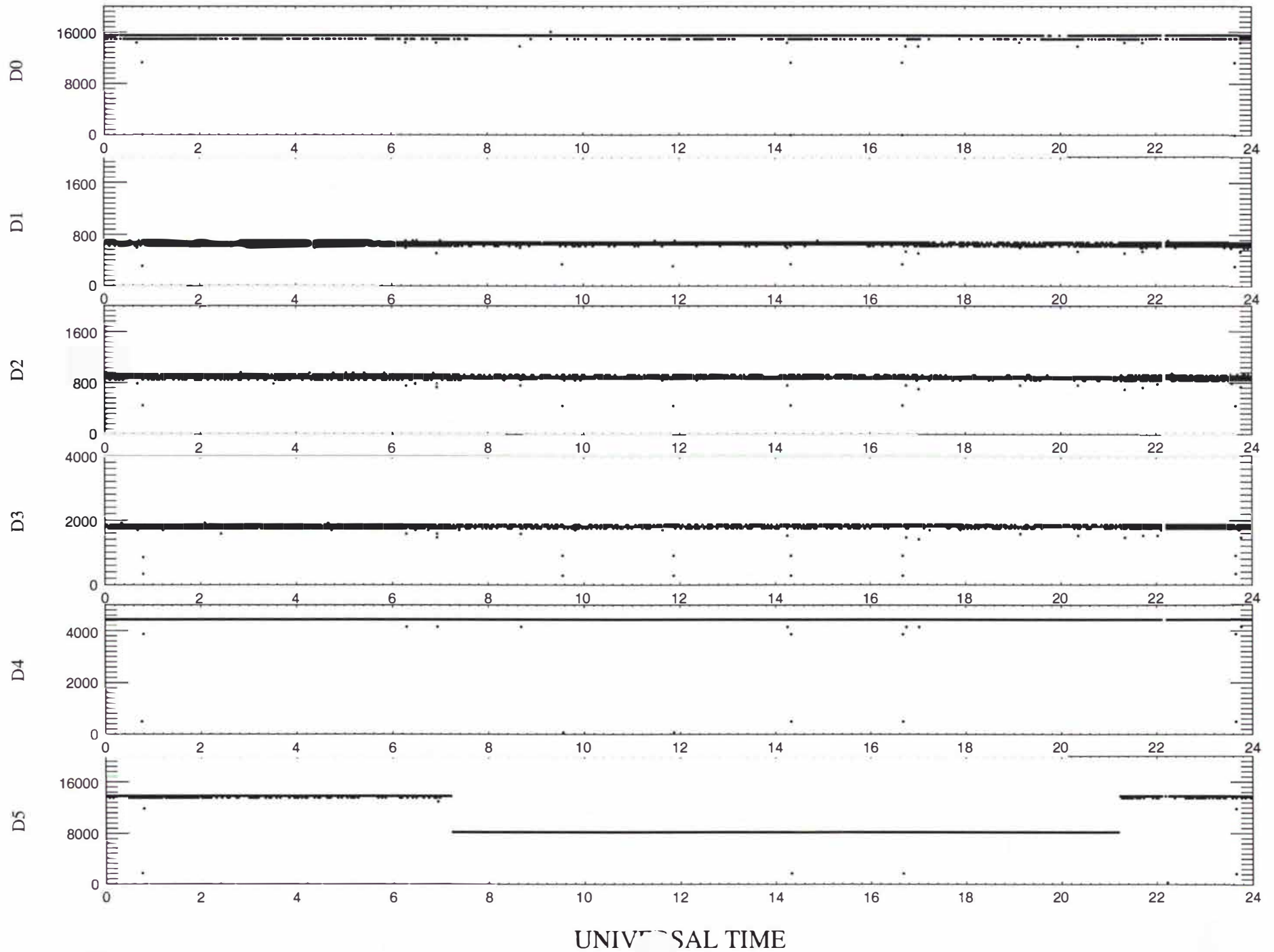
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVRSAL TIME



From BUTTERWORTH@tgrs2.gsfc.nasa.gov Mon Sep 13 12:51 PDT 1999

Date: Mon, 13 Sep 1999 15:58:20 -0400

From: BUTTERWORTH@tgrs3.gsfc.nasa.gov

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, cline@apache.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, TEEGARDEN@tgrs3.gsfc.nasa.gov

CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov

Subject: Konus report for recent Ulysses gamma-ray events not reported by BATSE

Hi Everyone,

Here is the Konus report for those events recently seen by Ulysses, but not reported by BATSE.

Paul.

Ulysses event - AUG 14 1999 02:17 Ulysses time; weak, 5 s long
Not detected by Konus.

Ulysses event - AUG 14 1999 12:06* Ulysses time; weak, 64 ms long
There was a large multi-peaked solar trigger at 12:06:49.161, which
will have prevented Konus detecting other events near that time.

Ulysses event - AUG 16 1999 00:35 Ulysses time; weak, 30 s long
Not detected by Konus.

Ulysses event - AUG 16 1999 17:50 Ulysses time; weak, 10 s long
Not detected by Konus.

Ulysses event - AUG 26 1999 16:11* Ulysses time; weak, 64 ms long
Not detected by Konus.

Ulysses event - AUG 27 1999 04:05* Ulysses time; weak, 64 ms long
There is an SGR-like signal in the Konus waiting mode data collected
in the single timebin from 03:32:05.834 to 03:32:08.778.

Ulysses event - AUG 28 1999 19:09 Ulysses time; moderate, 3 s long
There was a Konus trigger at 19:27:00.016 in the south-facing
detector. The event consisted of a single peak lasting 1 second.

Ulysses event - SEP 06 1999 00:10 Ulysses time; moderate, 10 s long
Not detected by Konus.

Ulysses event - SEP 06 1999 14:35* Ulysses time; weak, 32 ms long
Not detected by Konus.

Ulysses note: '*looks like an SGR, but which one?'

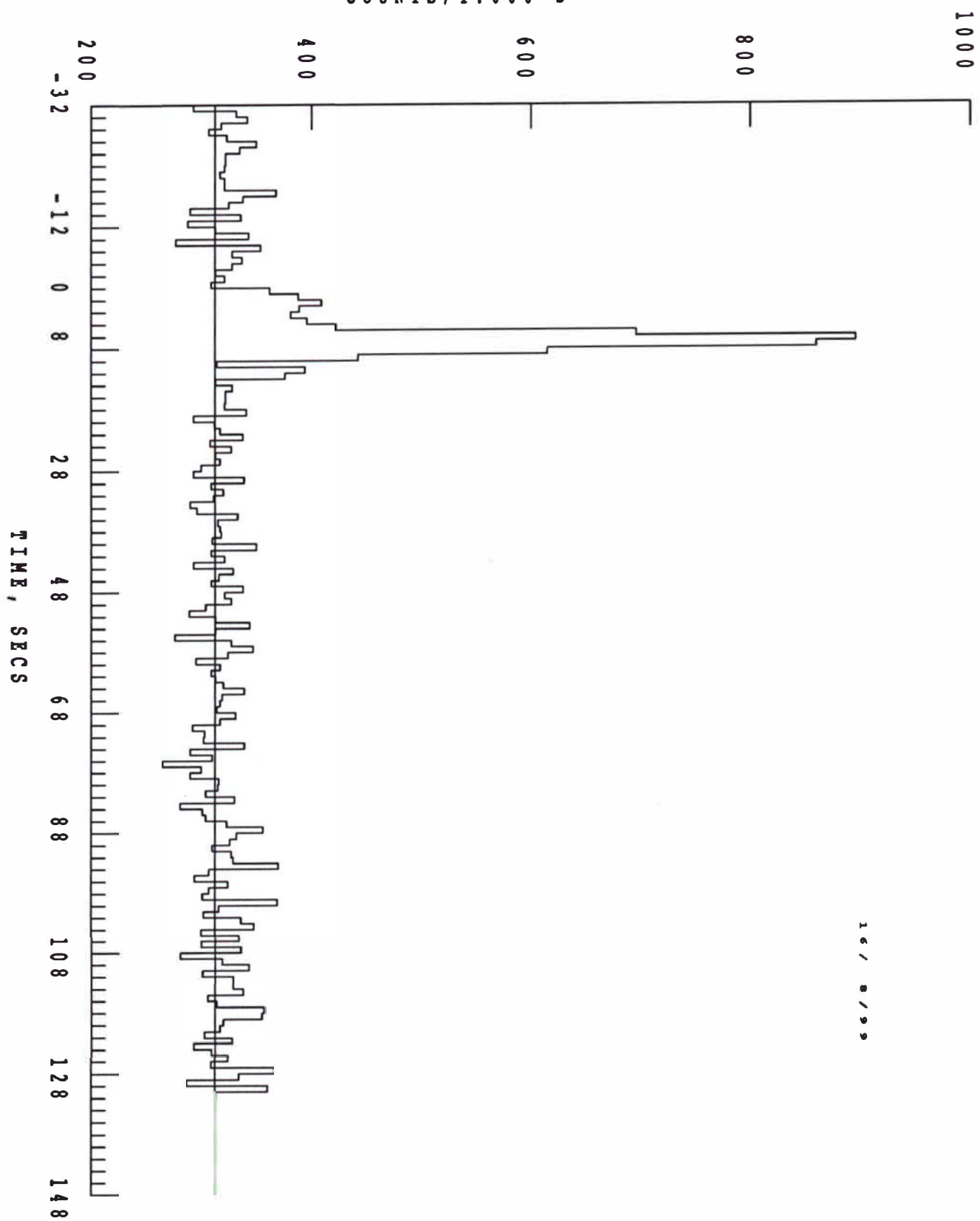
NEAR

14/08/99

6473.343

100-1000 keV

COUNTS/1.000 S



KNEAR GRS 19990814 06473

ULYSSES RT

16 / 8 / 99

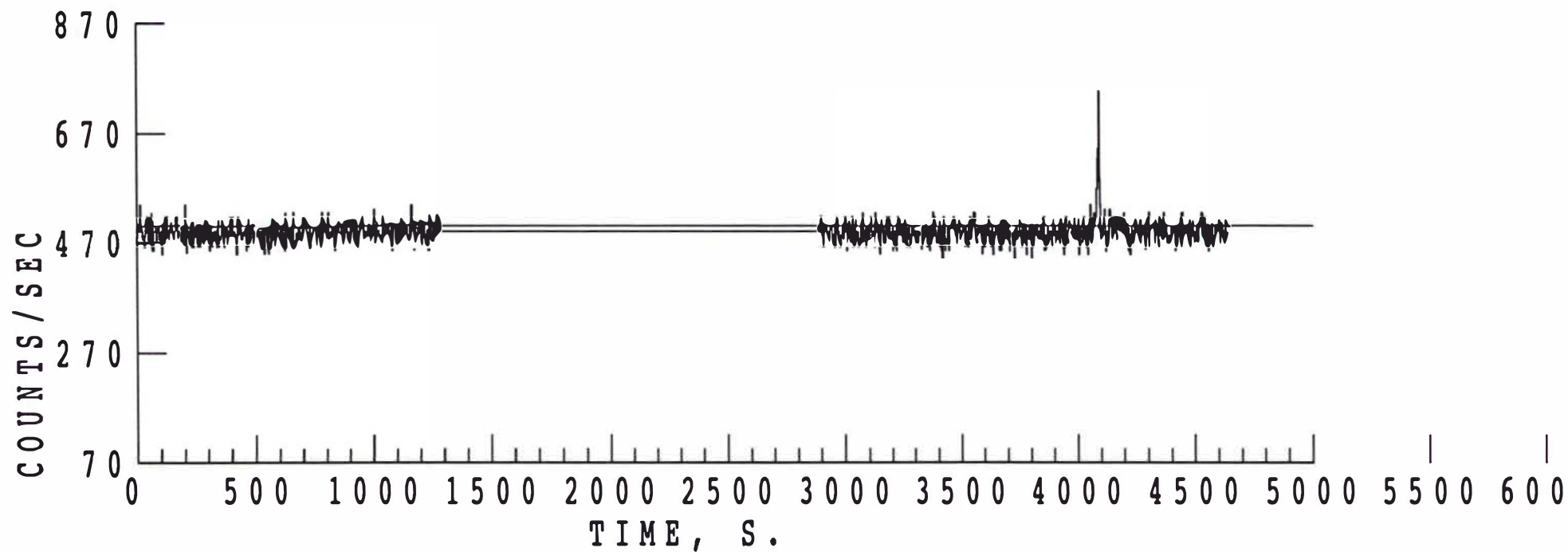
14 / 8 / 99 4140.110 s

INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Tue Aug 17 06:37 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 17 Aug 1999 8:43:33 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7708

BATSEARCH PROGRAM

BATSE BURST # 7708
EVENT OF 1999 AUG 14 DAY OF YEAR=226
EVENT CROSSING TIME AT BATSE : 33429. S. OR 09:17:09.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 155.000 -66.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 8/ 99 IS:
RA= 152.418 DEC= -10.832 DIST= 5.553 AU
BATSE-ULYSSES DISTANCE = 830728011. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=124.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1581.61 SECS.
CROSSING TIME AT ULYSSES IS 31847. S. OR 08:50:47 +/- 421.01 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 8/ 99 IS:
RA= 225.298 DEC= -18.885 DIST= 1.083 AU
MARS-BATSE DISTANCE = 162057968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.18 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -229.97 SECS.
CROSSING TIME AT MARS IS 33199. S. OR 09:13:19 +/- 81.44 SECONDS

BATSE BURST TRIGGER

NO.: 7708

TIME: TJD=1404 SECONDS=33429

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.4 AZIMUTH=53.9 ERROR=3.647 DEGREES

COMMENTS:

GBR. SINGLE PULSE WITH SUBSTRUCTURE, DUR APPROX 20S, STARTS AT APPROX T-3S,
MAX AT APPROX T+1.5S . VISIBLE ABOVE 300 KEV. TRIGGERED IN GAP.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7708	990814	11404	33429	2500	155	-66	20

BATSE BURST# 7708

ULYSSES RT

17 / 8 / 99

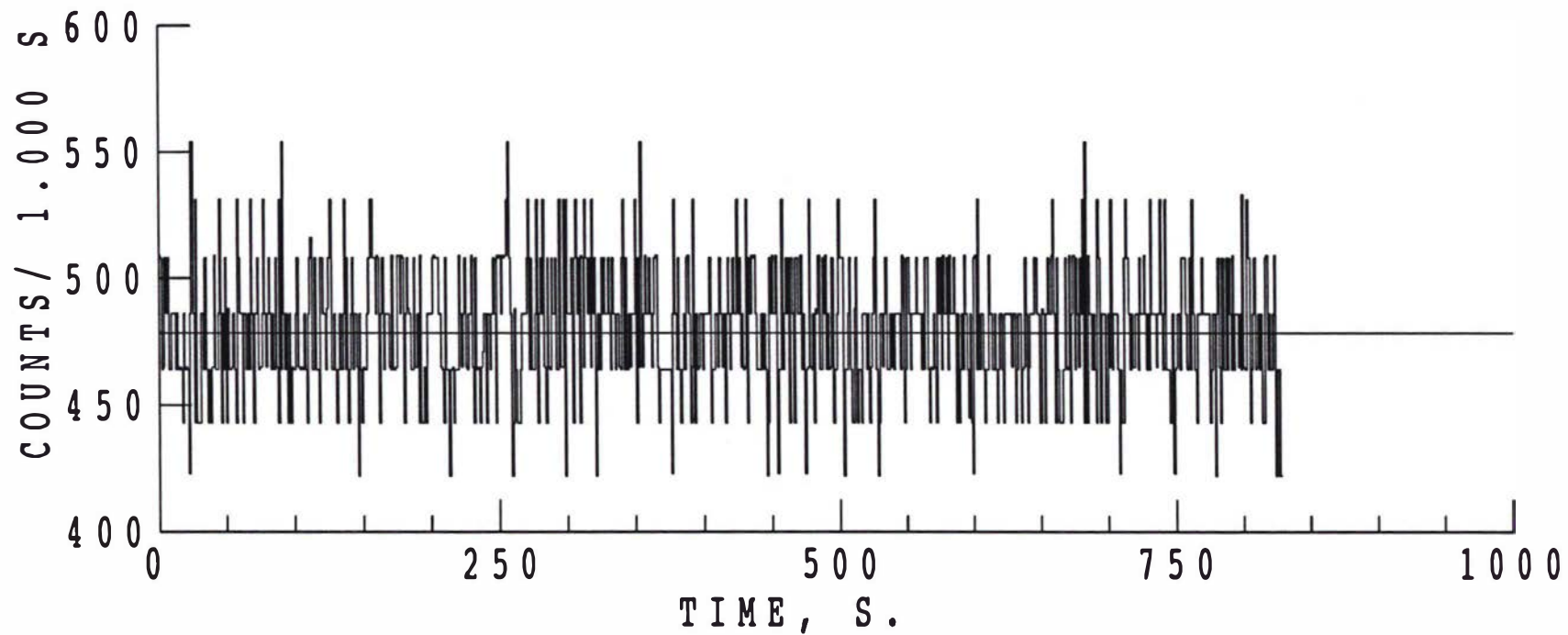
14 / 8 / 99 31428.133 s

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 SAHI@fender.msfc.nasa.gov Mon Aug 16 11:00 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 16 Aug 1999 13:06:53 -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, 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.: 7709

TIME: TJD=1404 SECONDS=43577

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=101.5 AZIMUTH=355.6 ERROR=0.07 DEGREES

COMMENTS:

SOLAR FLARE. GOES C7.2, OPTICAL 1F, HAS LOTS OF STRUCTURE. ENDS AT T+51 S WITH
HIGH VOLTAGE TURN OFF, DUR. AT LEAST 60 S. NOT VISIBLE ABOVE 300 KEV.

KONUS2 19990814 43609

ULYSSES RT

16 / 8 / 99

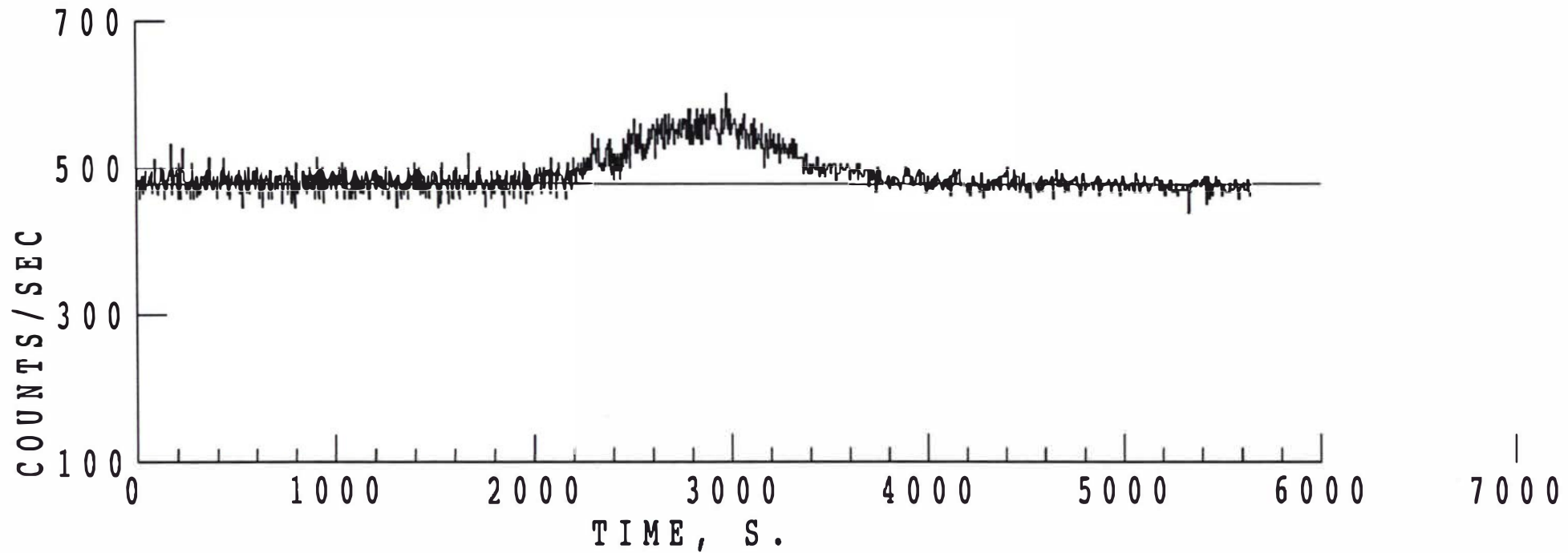
14 / 8 / 99 40788.227 s

INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

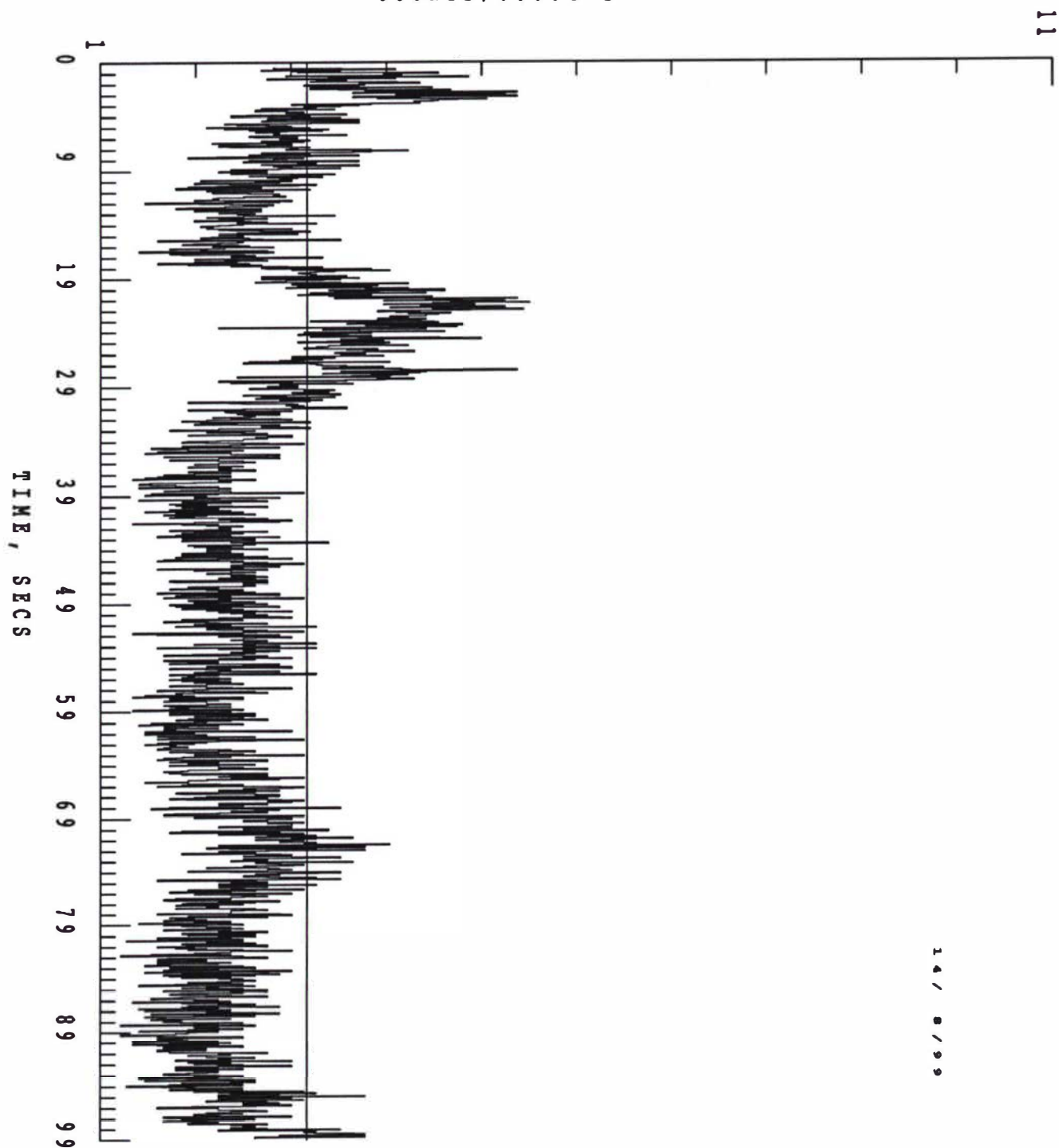
14/08/99

43609.161

50- 200 keV

Solar - BATSE 7709

COUNTS/0.064 S



From RICHARDSON@fender.msfc.nasa.gov Tue Aug 17 10:47 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Tue, 17 Aug 1999 12:52:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7710

BATSEARCH PROGRAM

BATSE BURST # 7710
EVENT OF 1999 AUG 14 DAY OF YEAR=226
EVENT CROSSING TIME AT BATSE : 78024. S. OR 21:40:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 164.000 7.000
BATSE PEAK COUNTING RATE: 7200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 8/ 99 IS:
RA= 152.497 DEC= -10.883 DIST= 5.553 AU
BATSE-ULYSSES DISTANCE = 830796635. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=158.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2583.09 SECS.
CROSSING TIME AT ULYSSES IS 75441. S. OR 20:57:20 +/- 185.03 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 8/ 99 IS:
RA= 225.298 DEC= -18.885 DIST= 1.083 AU
MARS-BATSE DISTANCE = 162057968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=114.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -222.48 SECS.
CROSSING TIME AT MARS IS 77802. S. OR 21:36:41 +/- 82.16 SECONDS

BATSE BURST TRIGGER

NO.: 7710

TIME: TJD=1404 SECONDS=78024

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

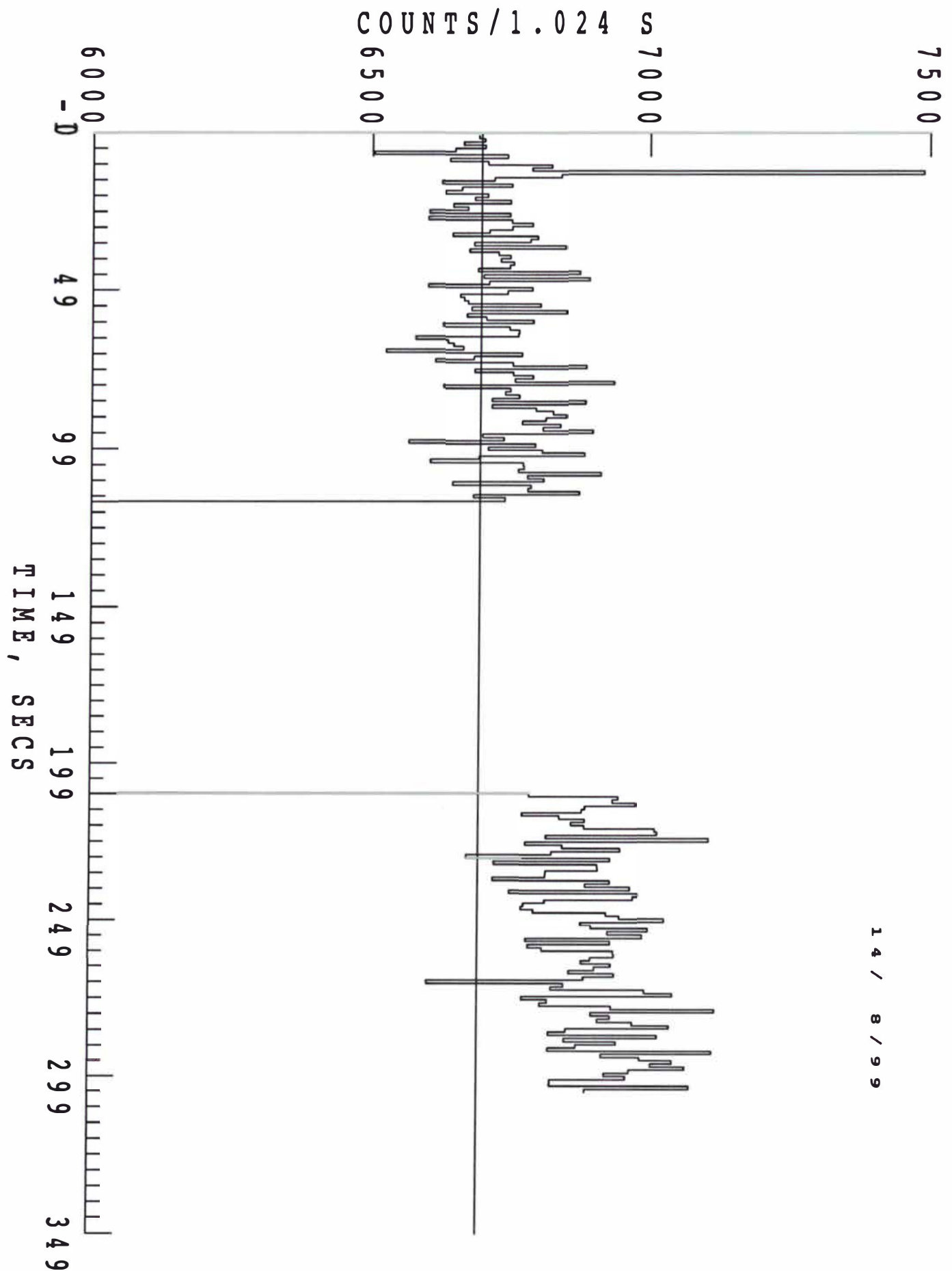
LOCATION: ZENITH=84.6 AZIMUTH=344.8 ERROR=7.6 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH STRUCTURE. DURATION APPROX. = 2 SEC. VISIBLE
ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7710	990814	11404	78024	7200	164	+07	2

BACODINE 7710 14/08/99 78012.153

25- 100 keV



BATSE BURST# 7710

17 / 8 / 99

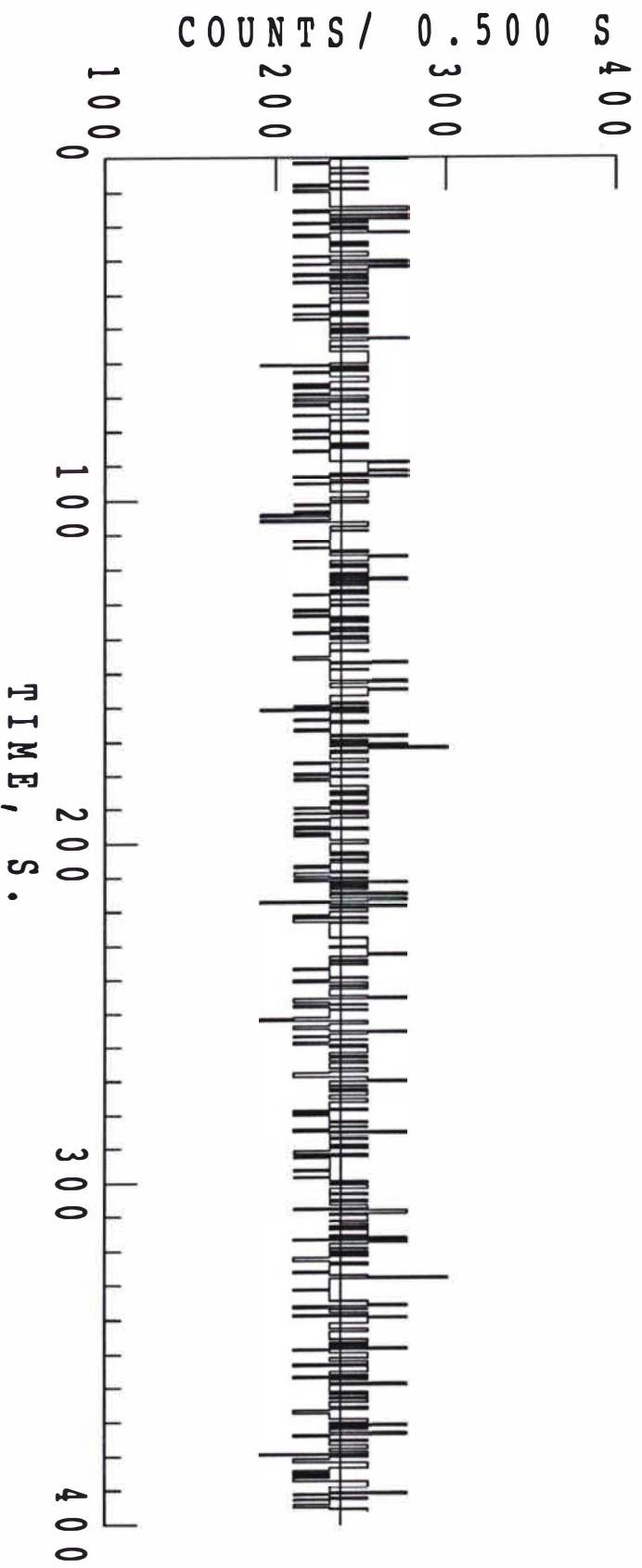
ULYSSES RT

14 / 8 / 99 75240.078 S

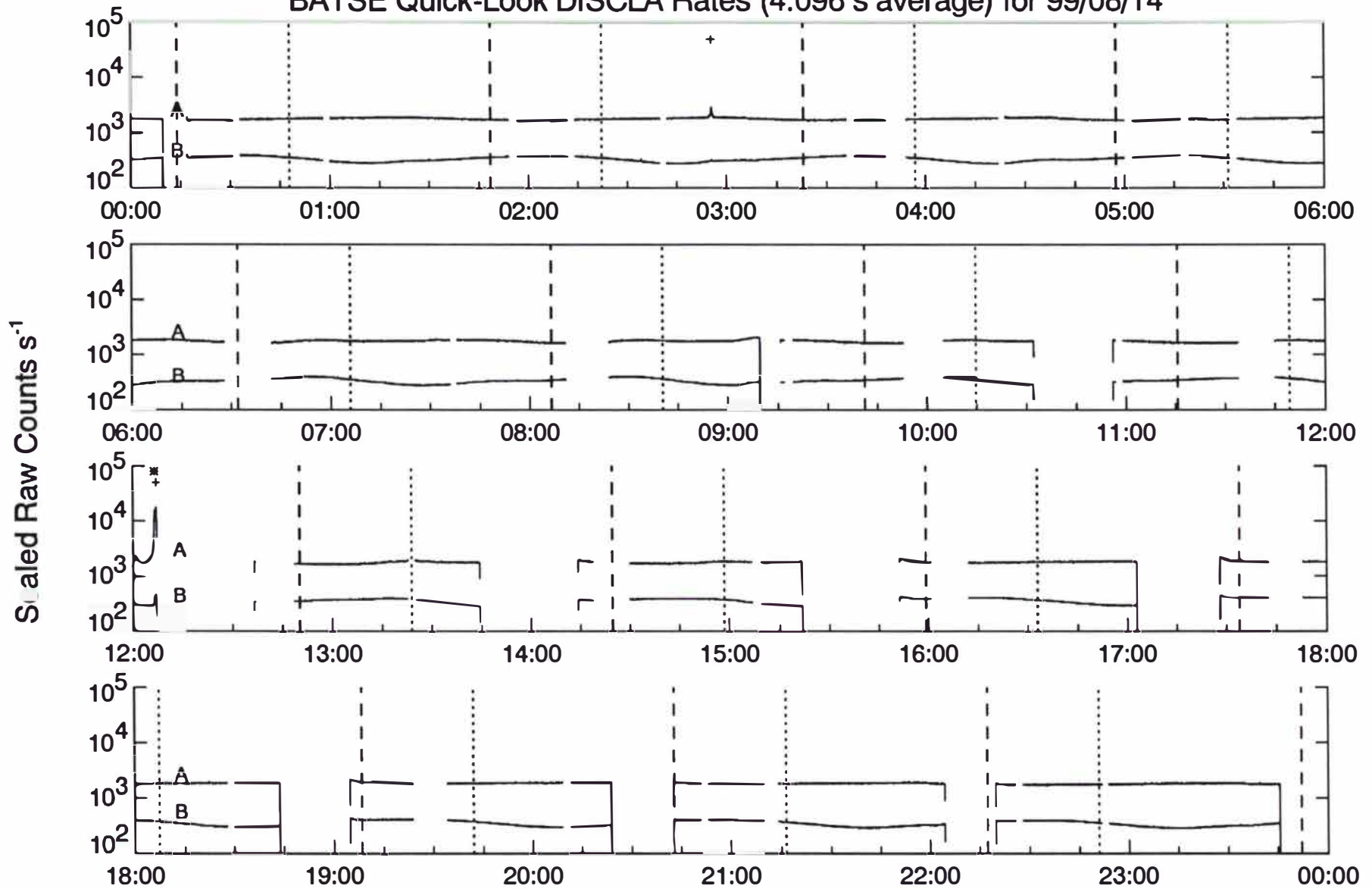
0 - 0 keV

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 99/08/14

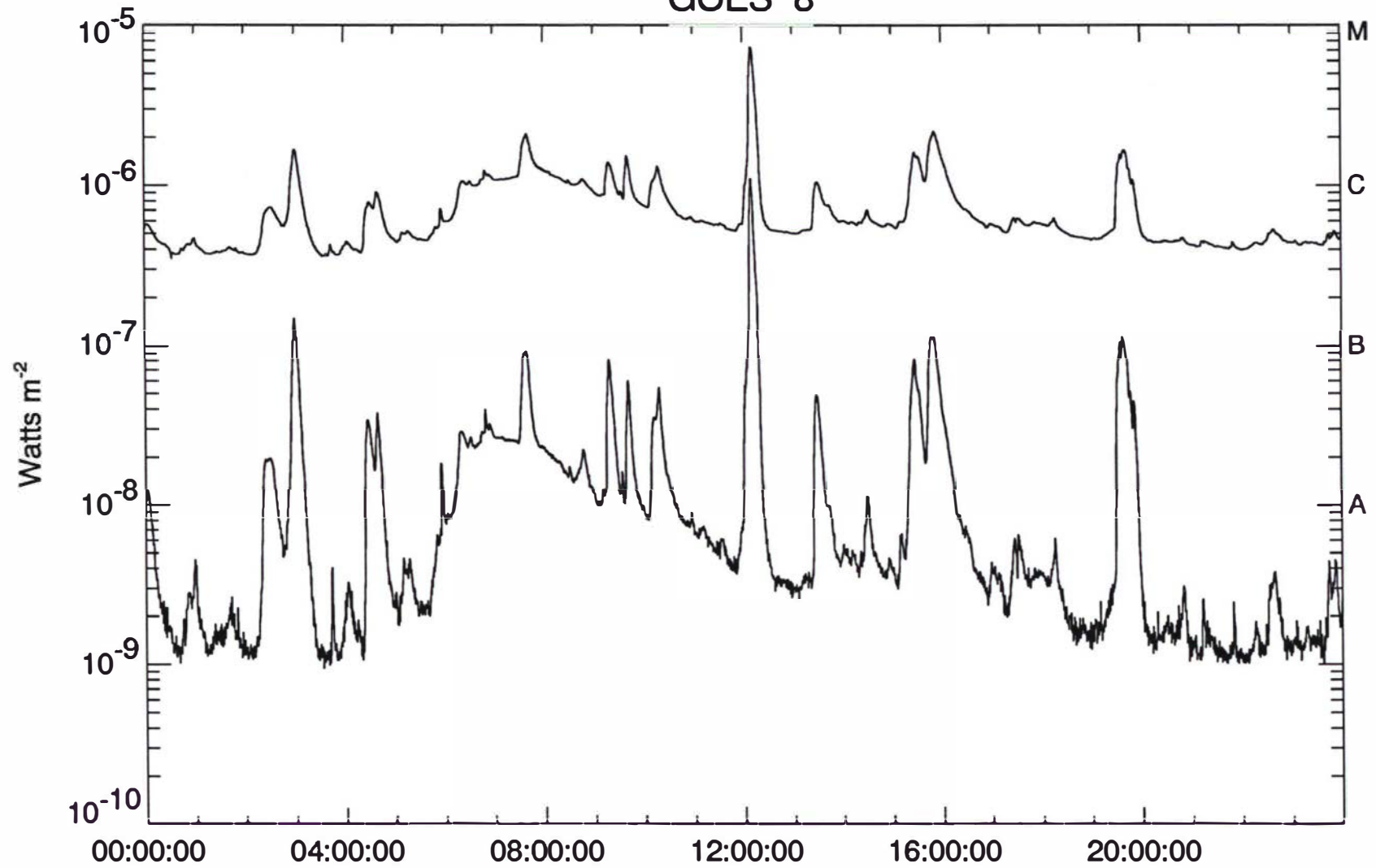


Current Time: 99/08/18, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/14, 0000:00

Plot created: 99/08/18, 1005

Channel

1 (1.0 - 8.0 Angstroms)

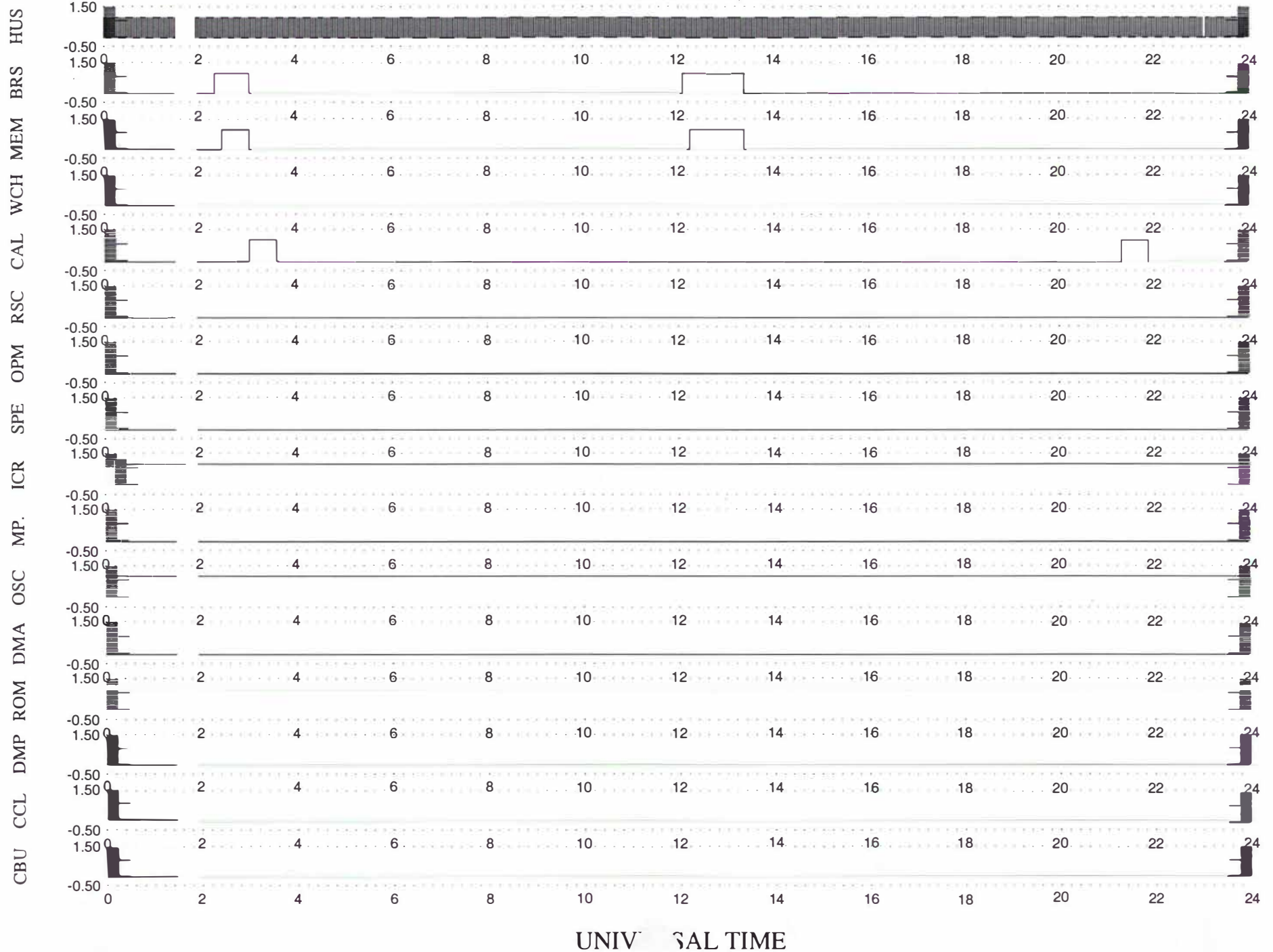
Background not subtracted

2 (0.5 - 4.0 Angstroms)

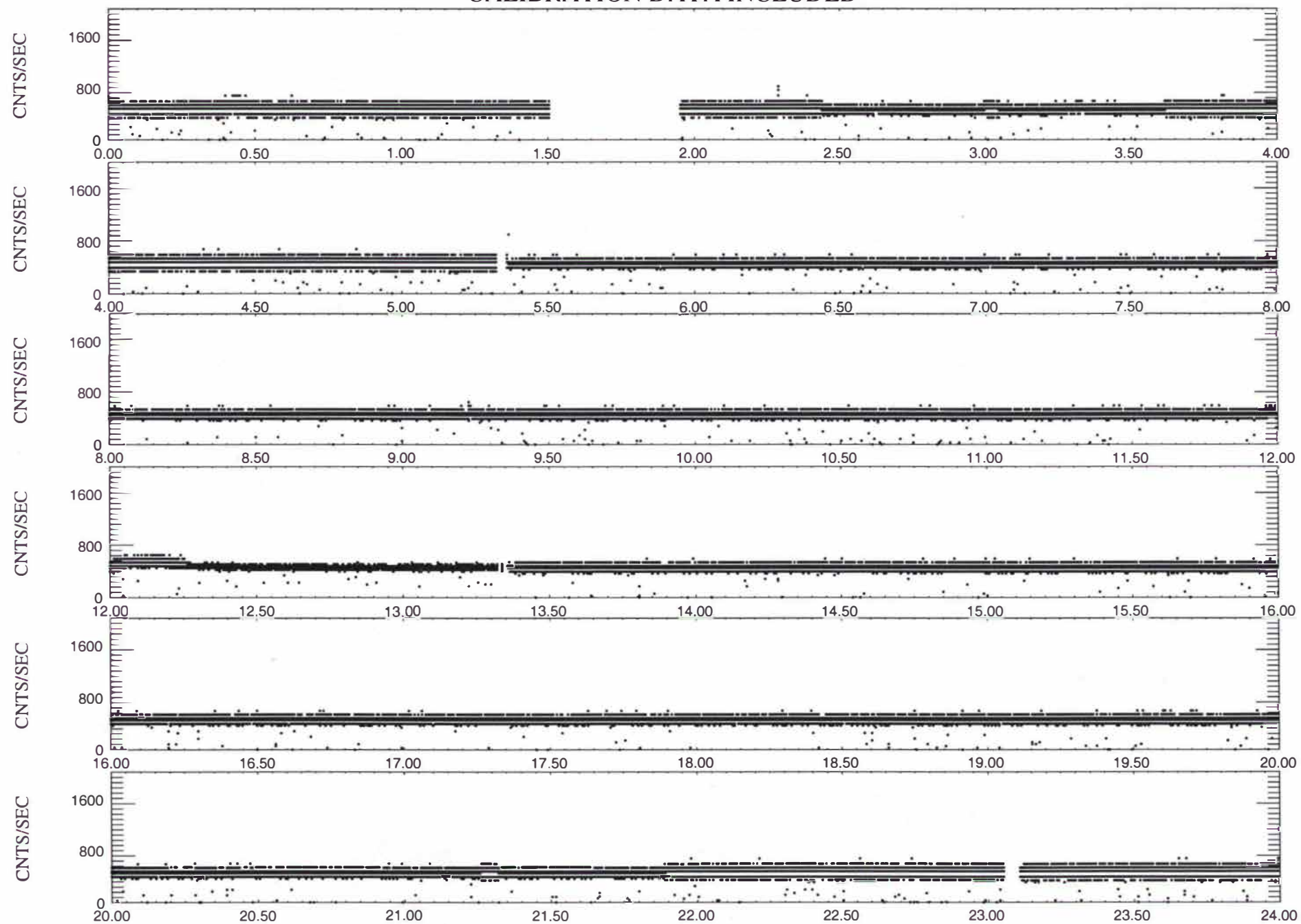
Background not subtracted

Sample average = 10

BURST NUMBER 9, 10

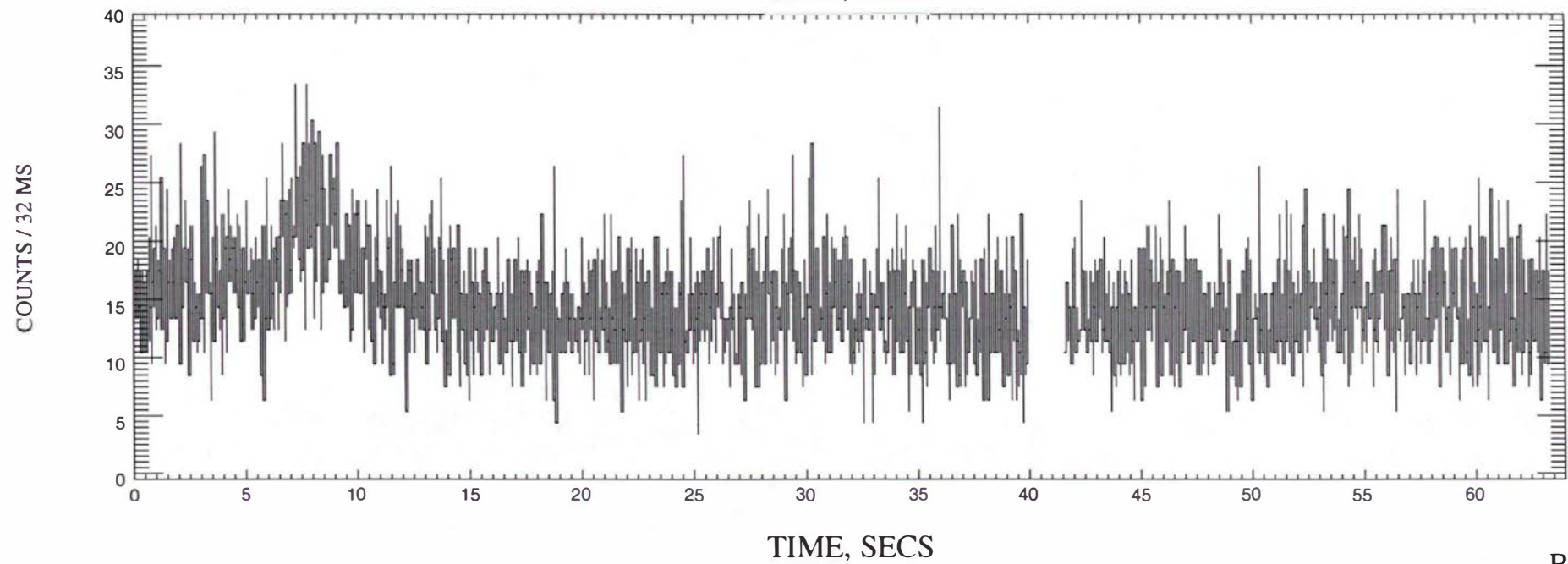
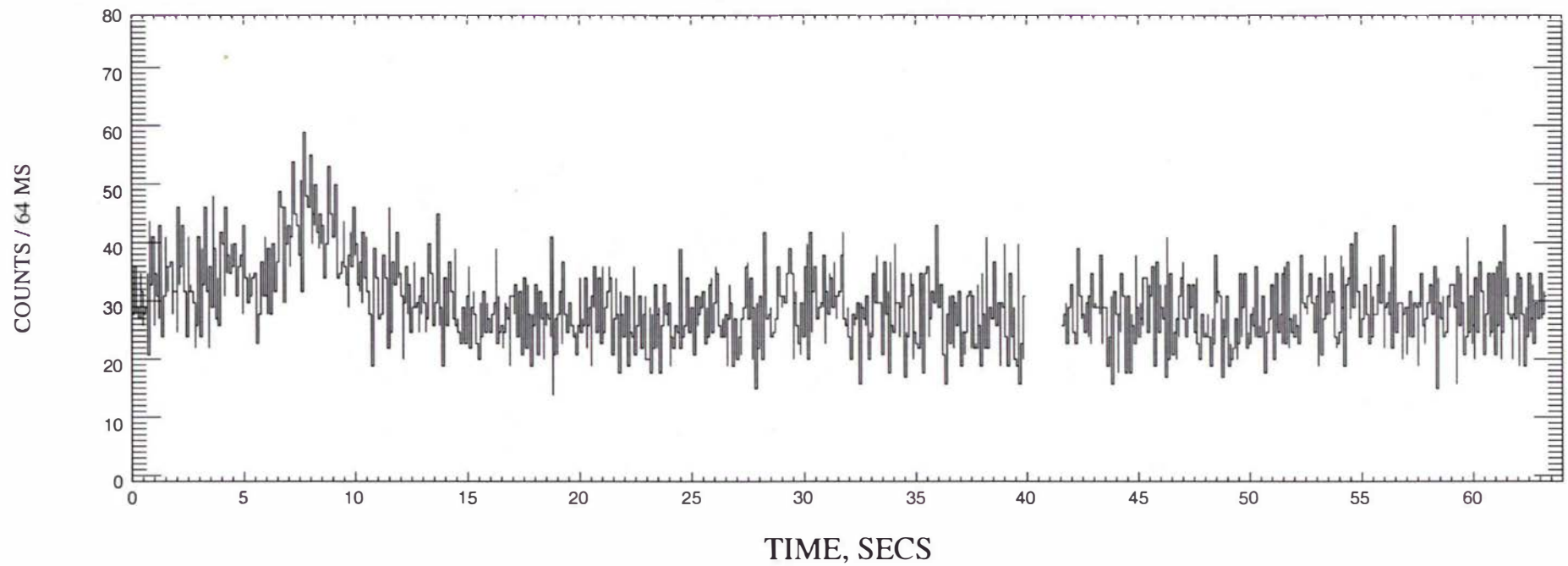


CALIBRATION DATA INCLUDED

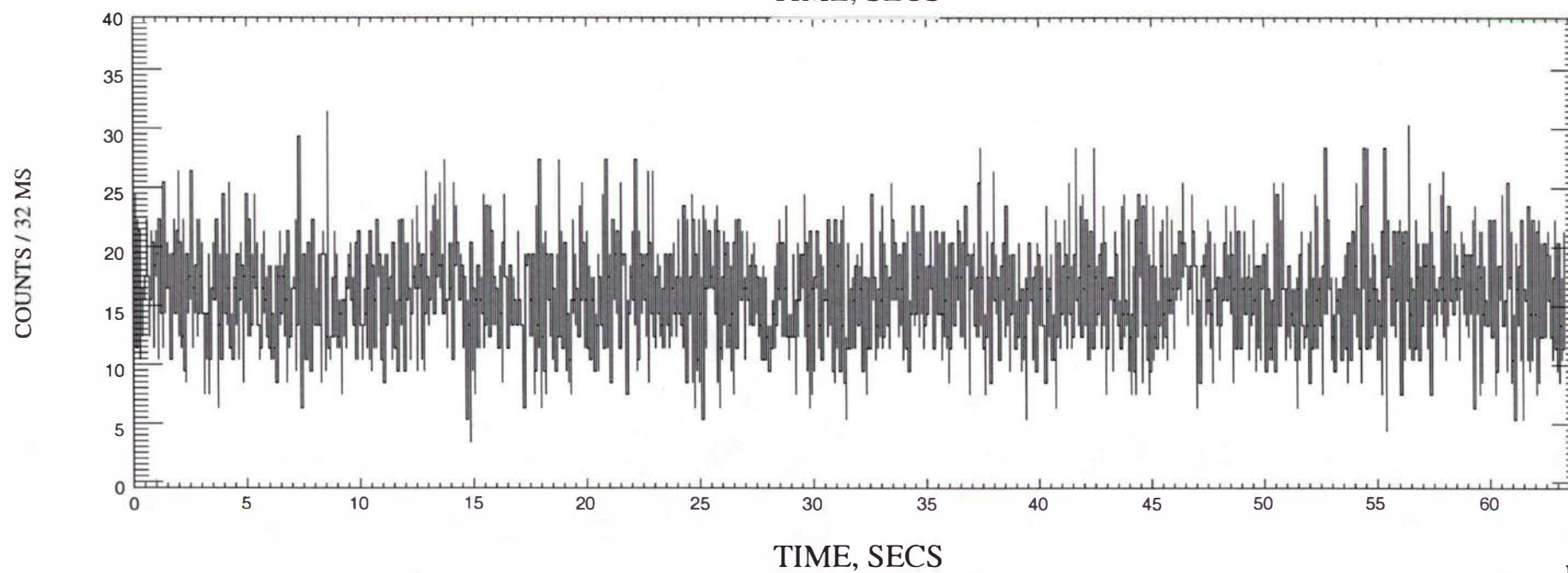
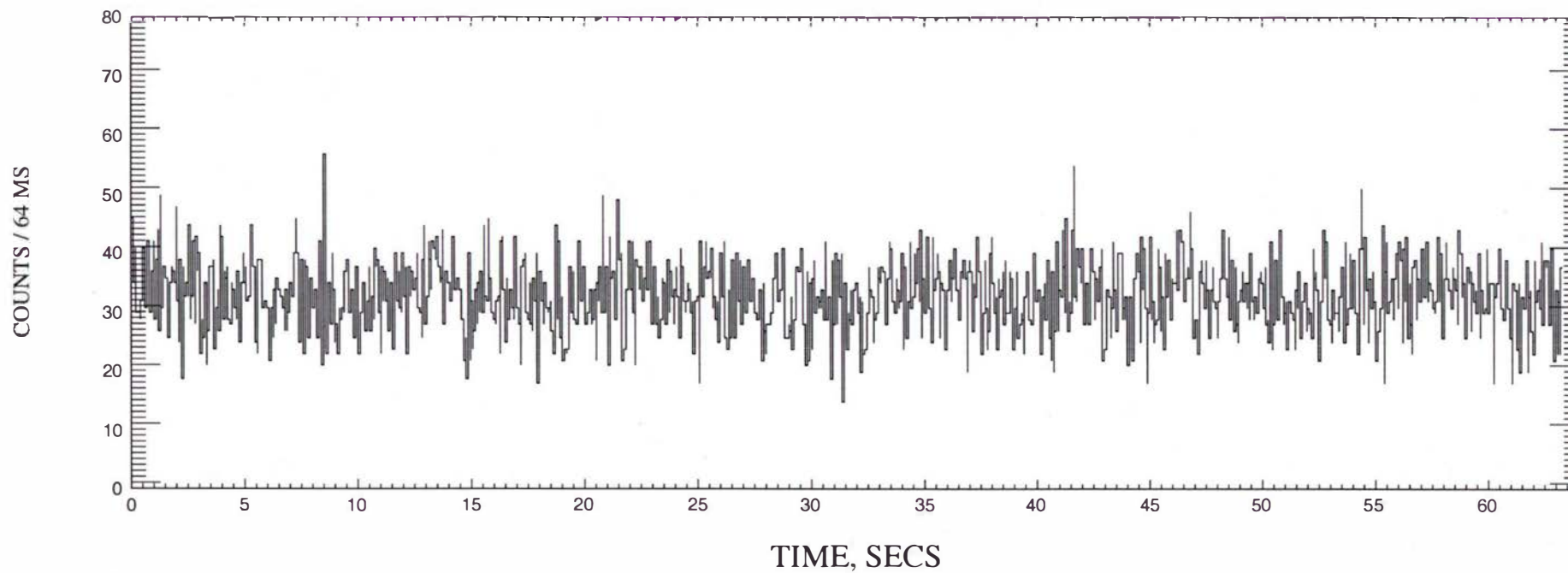


UNIVERSAL TIME

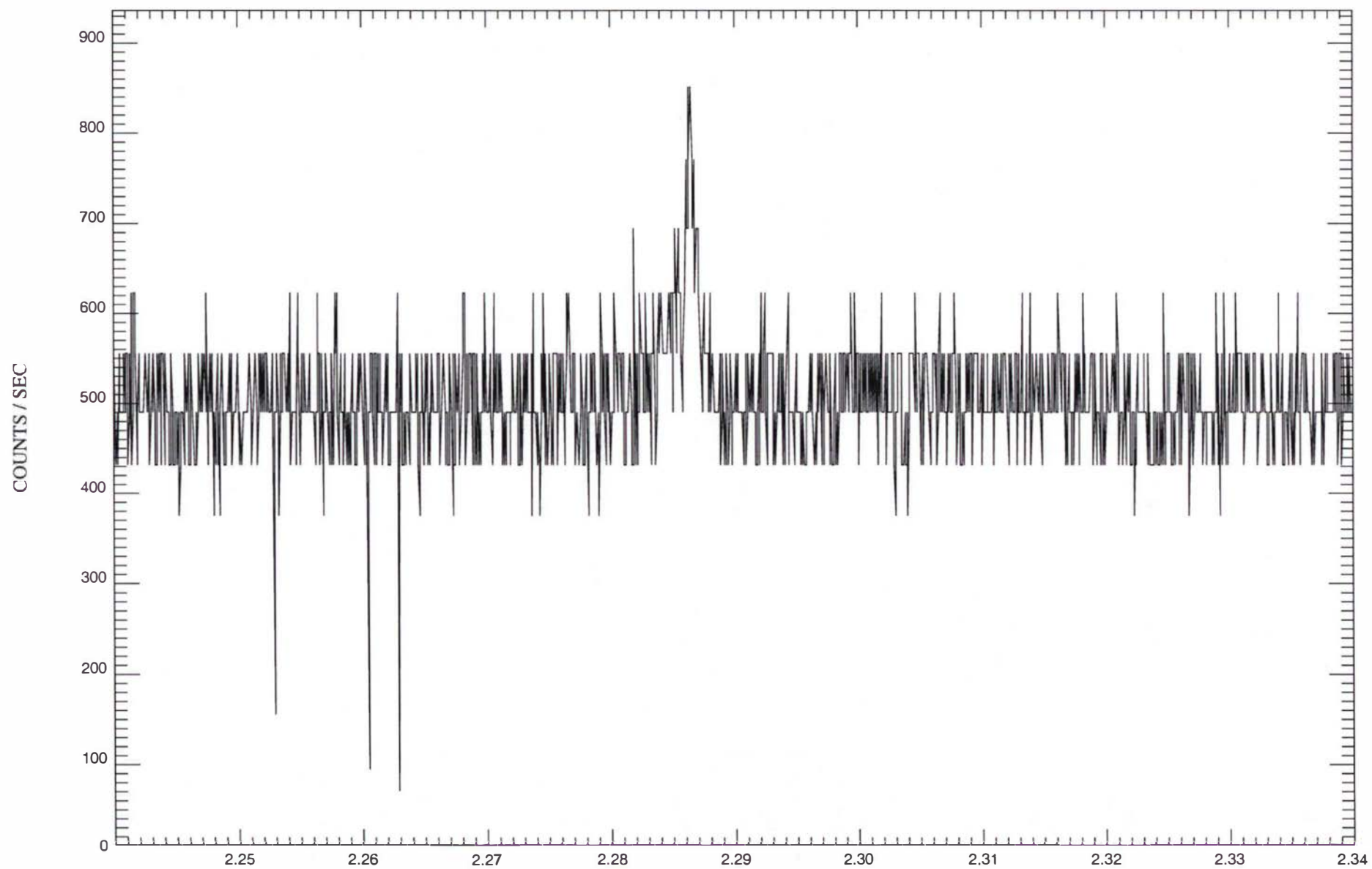
Burst Counter 9 at UT= 2.286391495599 h= 8231.009 s 02:17:11.009



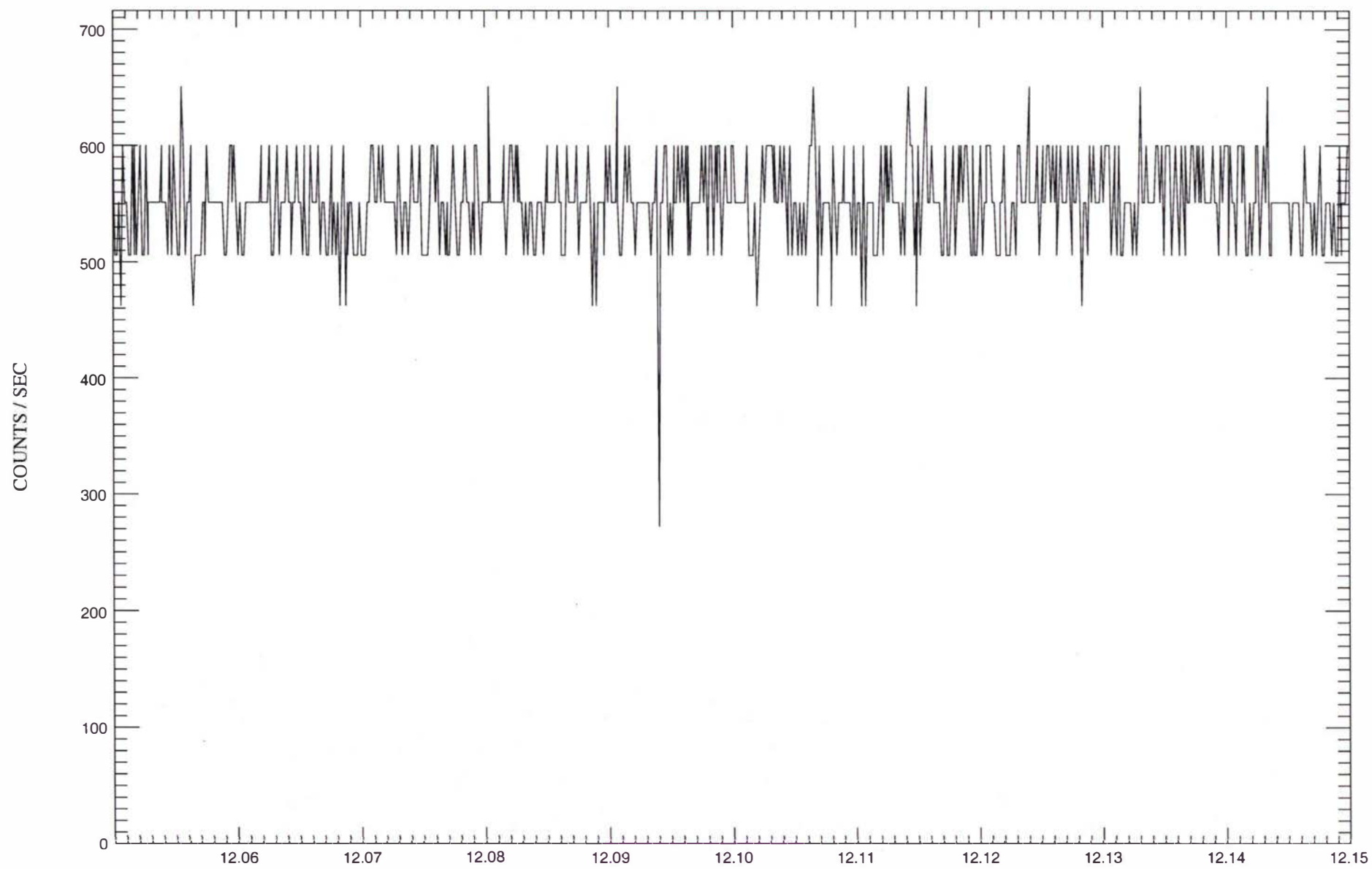
Burst Counter 10 at UT=12.104929279751 h=43577.745 s 12:06:17.745

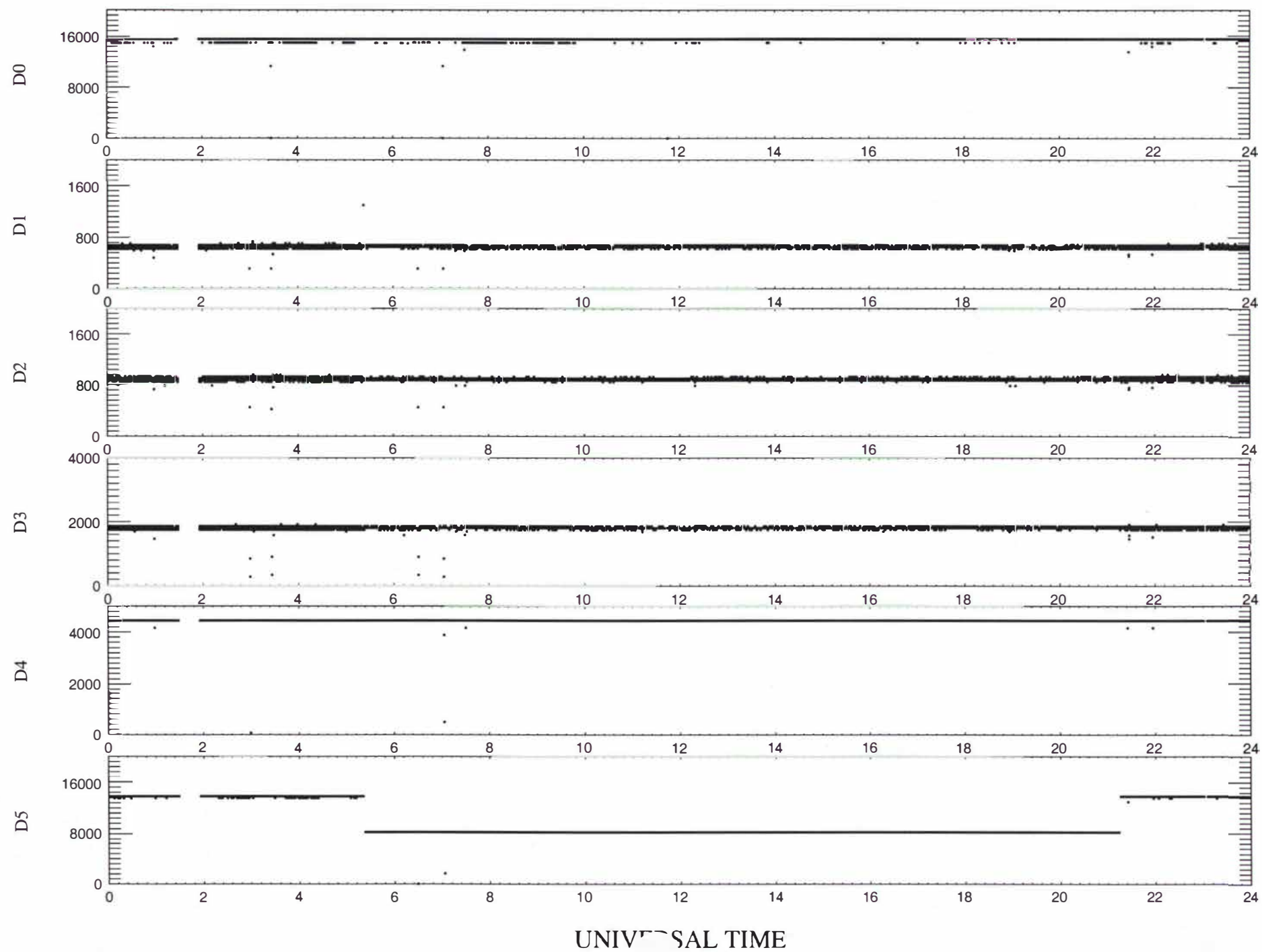


CALIBRATION DATA INCLUDED

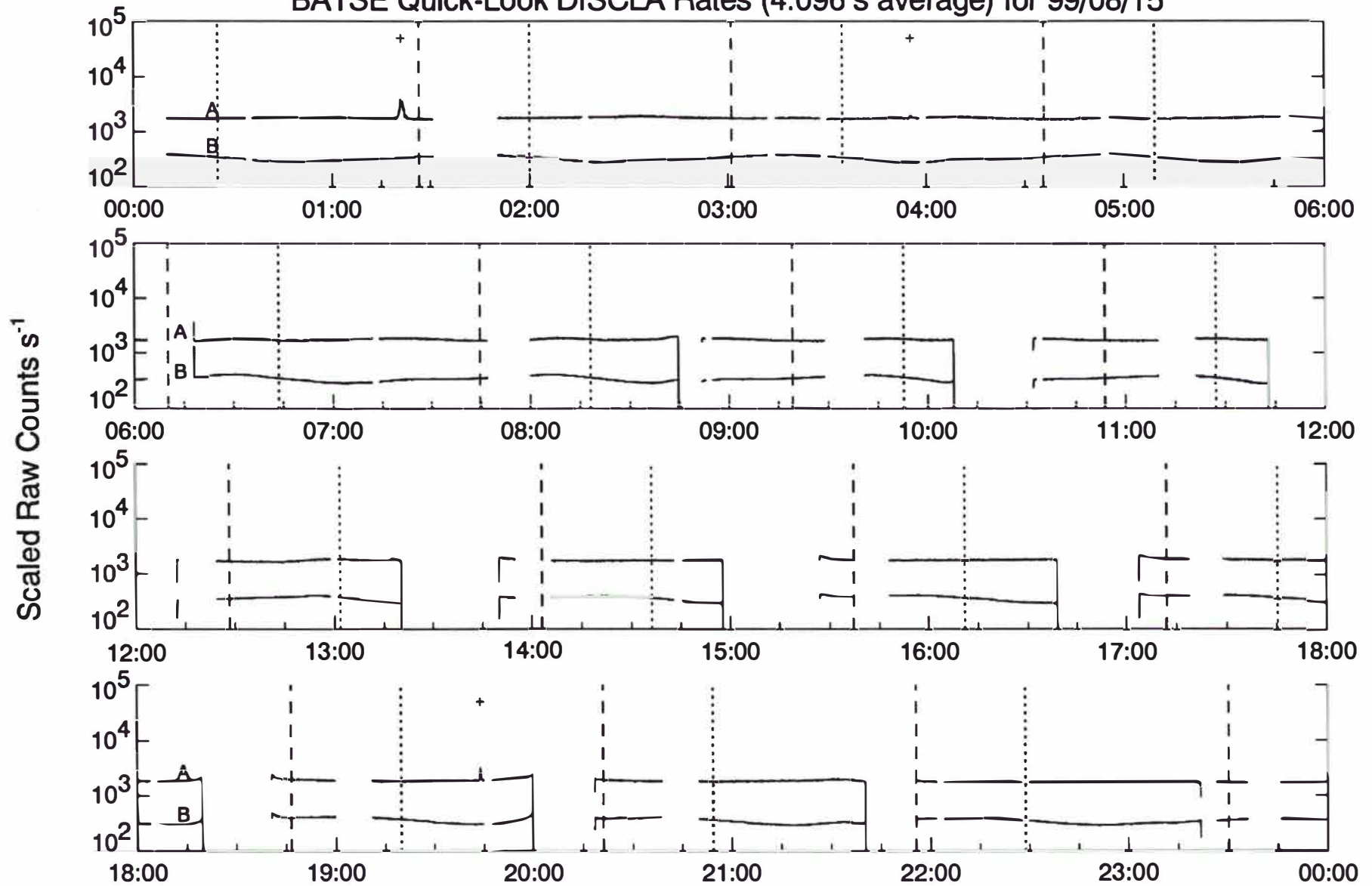


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/15

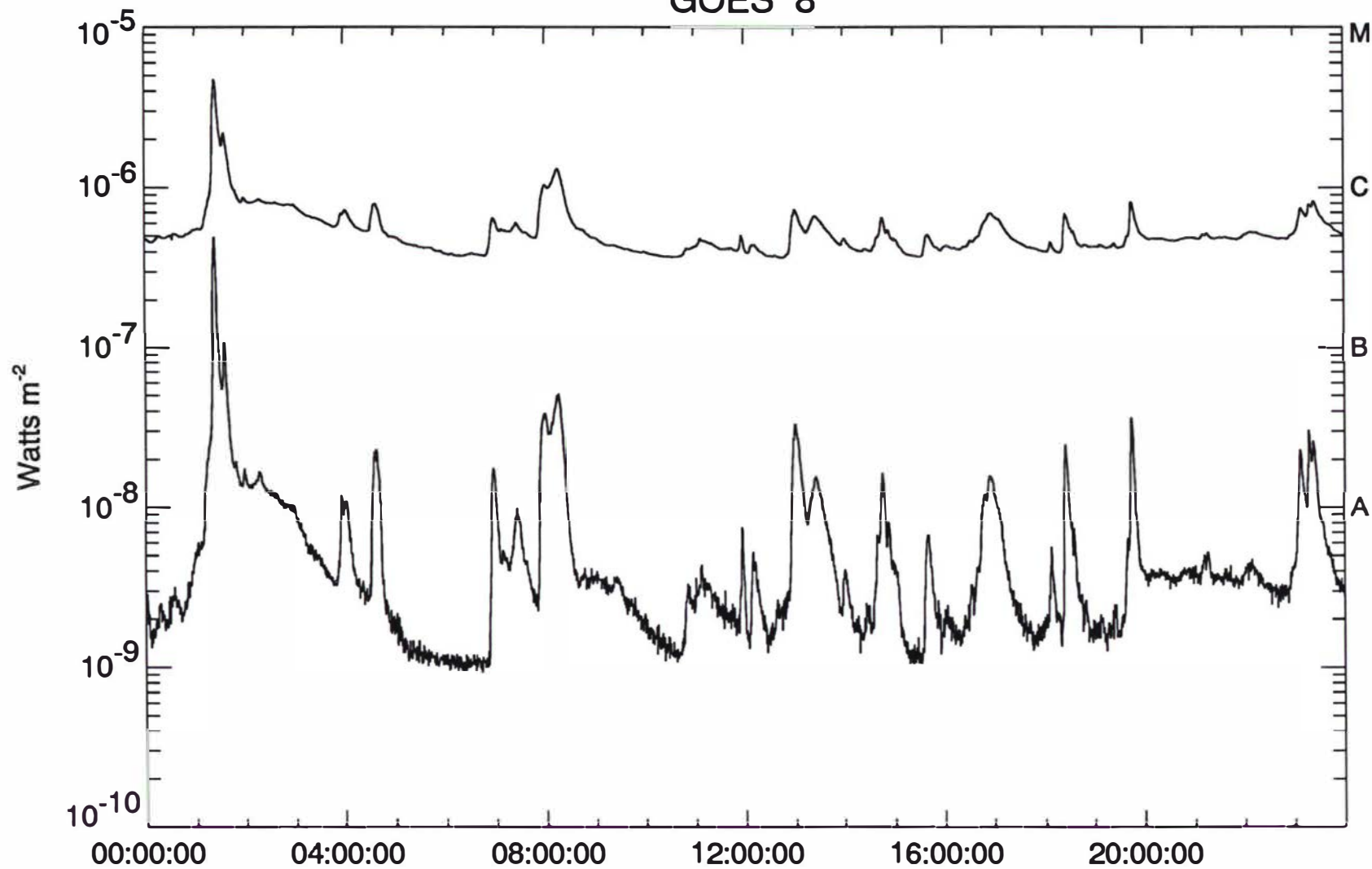


Current Time: 99/08/19, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/15, 0000:00

Plot created: 99/08/19, 1005

Channel

1 (1.0 - 8.0 Angstroms)

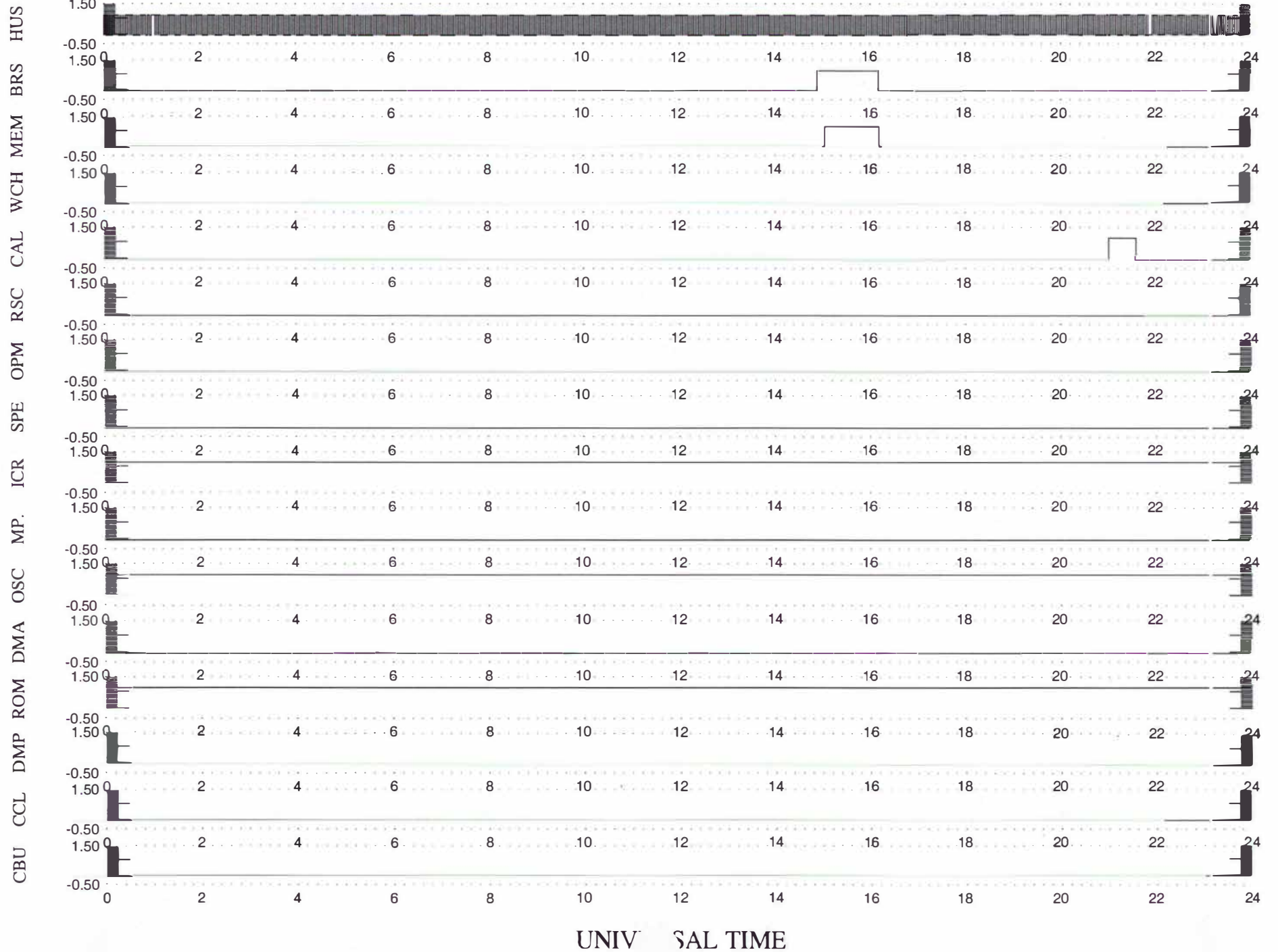
Background not subtracted

2 (0.5 - 4.0 Angstroms)

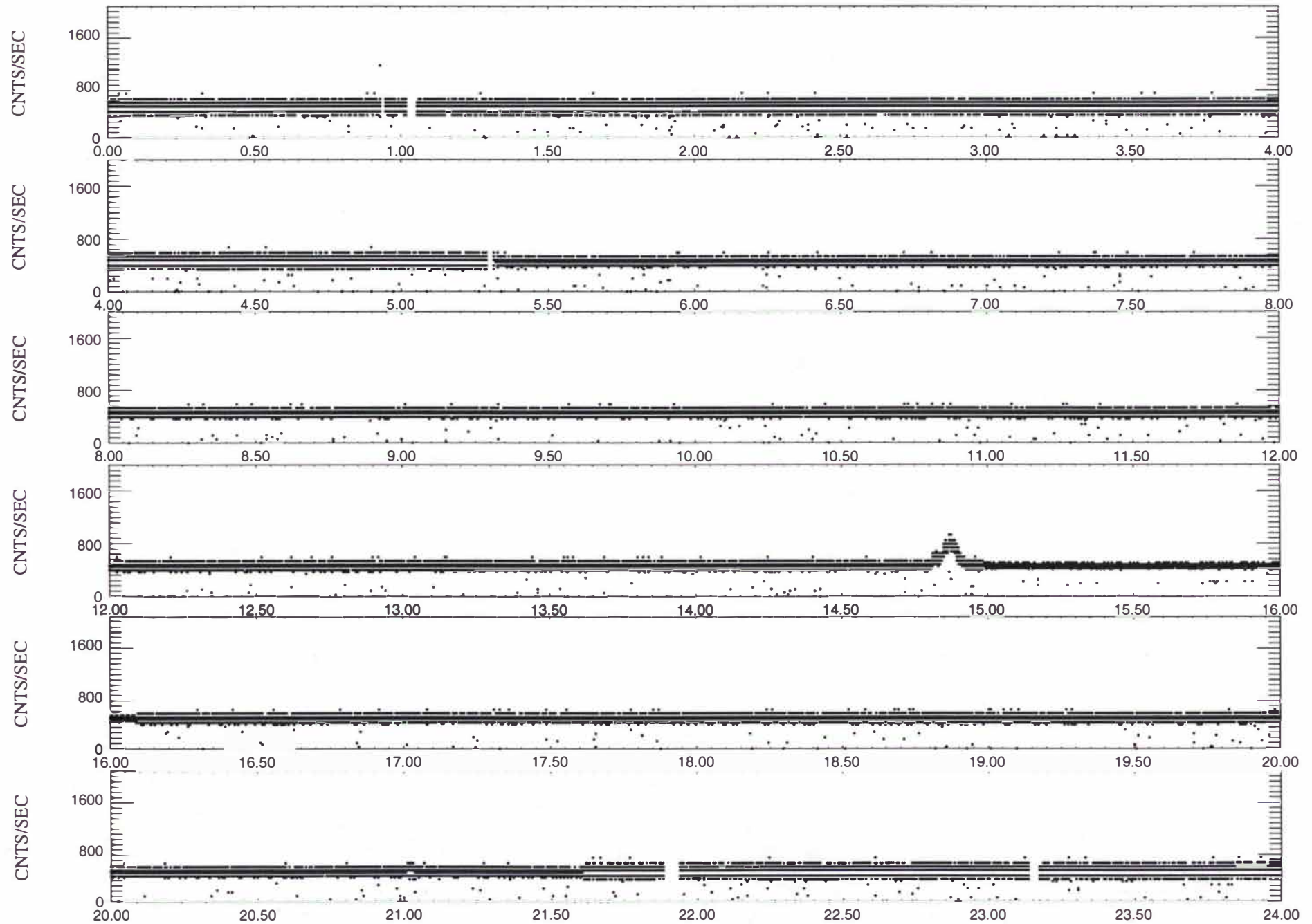
Background not subtracted

Sample average = 10

BURST NUMBER 11

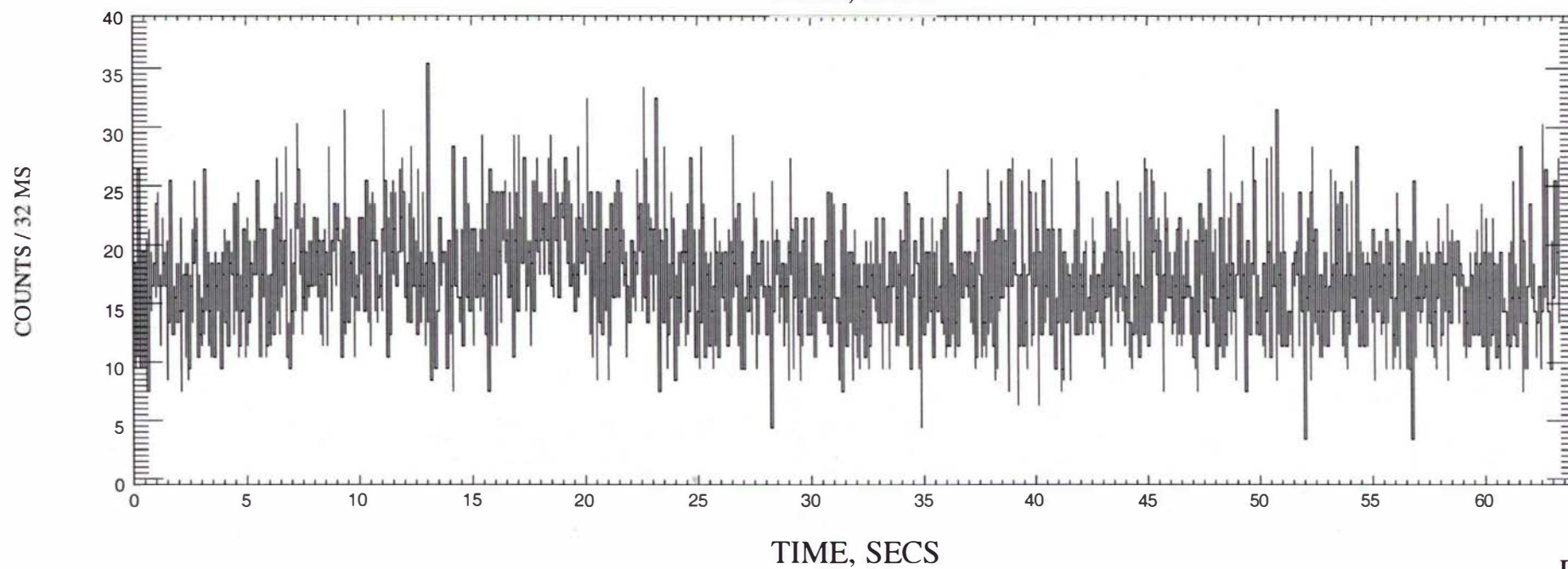
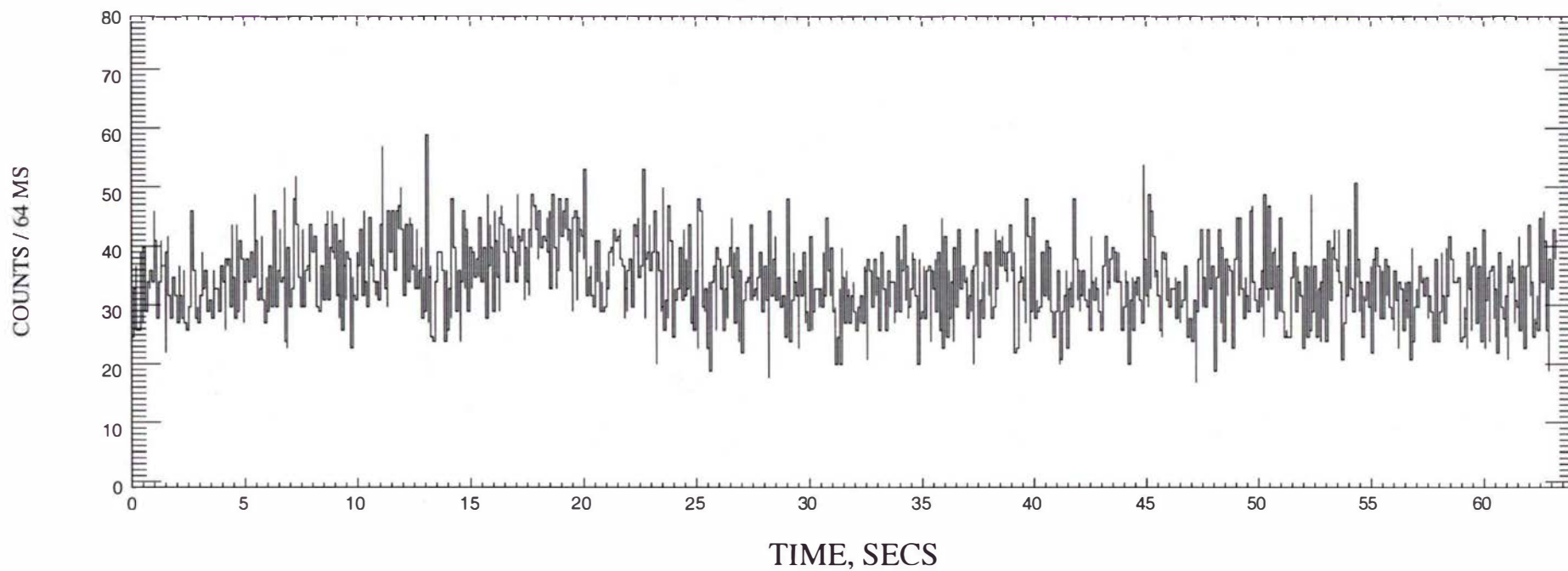


CALIBRATION DATA INCLUDED

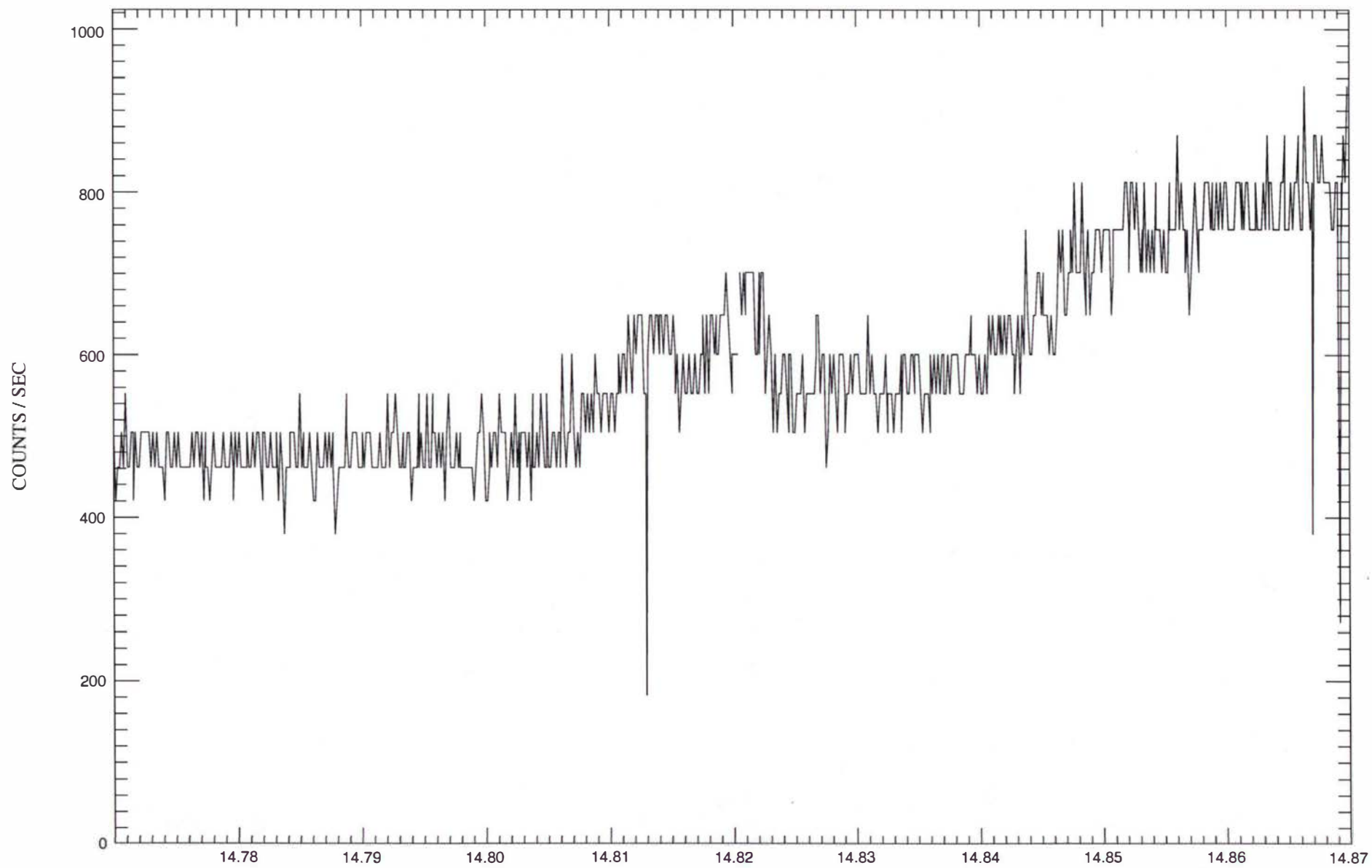


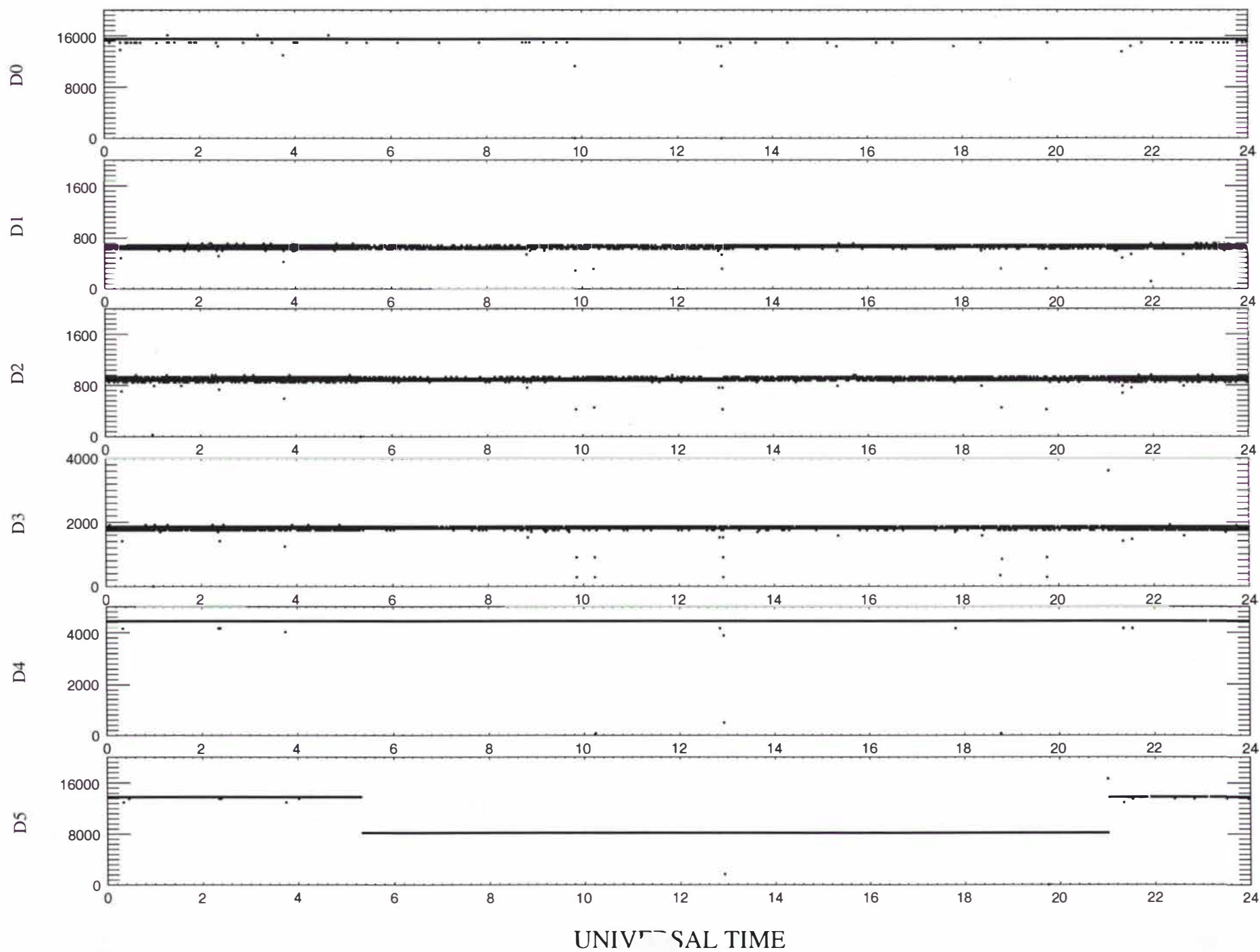
UNIVERSAL TIME

Burst Counter 11 at UT=14.818289002313 h=53345.840 s 14:49:05.840



CALIBRATION DATA INCLUDED





From BUTTERWORTH@tgrs2.gsfc.nasa.gov Mon Sep 13 12:51 PDT 1999

Date: Mon, 13 Sep 1999 15:58:20 -0400

From: BUTTERWORTH@tgrs3.gsfc.nasa.gov

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, cline@apache.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, TEEGARDEN@tgrs3.gsfc.nasa.gov

CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov

Subject: Konus report for recent Ulysses gamma-ray events not reported by BATSE

Hi Everyone,

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Paul.

Ulysses event - AUG 14 1999 02:17 Ulysses time; weak, 5 s long
Not detected by Konus.

Ulysses event - AUG 14 1999 12:06* Ulysses time; weak, 64 ms long
There was a large multi-peaked solar trigger at 12:06:49.161, which
will have prevented Konus detecting other events near that time.

Ulysses event - AUG 16 1999 00:35 Ulysses time; weak, 30 s long
Not detected by Konus.

Ulysses event - AUG 16 1999 17:50 Ulysses time; weak, 10 s long
Not detected by Konus.

Ulysses event - AUG 26 1999 16:11* Ulysses time; weak, 64 ms long
Not detected by Konus.

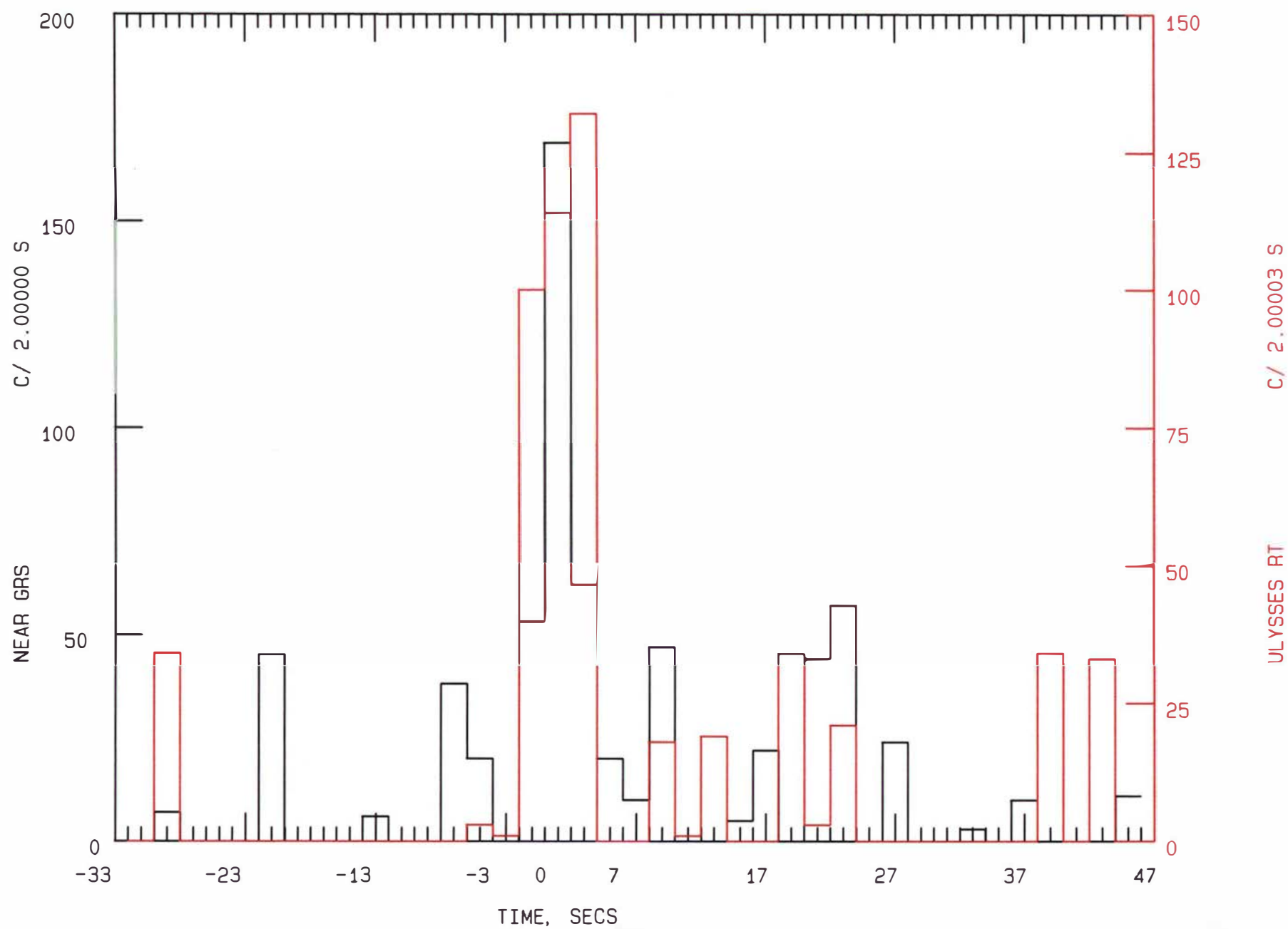
Ulysses event - AUG 27 1999 04:05* Ulysses time; weak, 64 ms long
There is an SGR-like signal in the Konus waiting mode data collected
in the single timebin from 03:32:05.834 to 03:32:08.778.

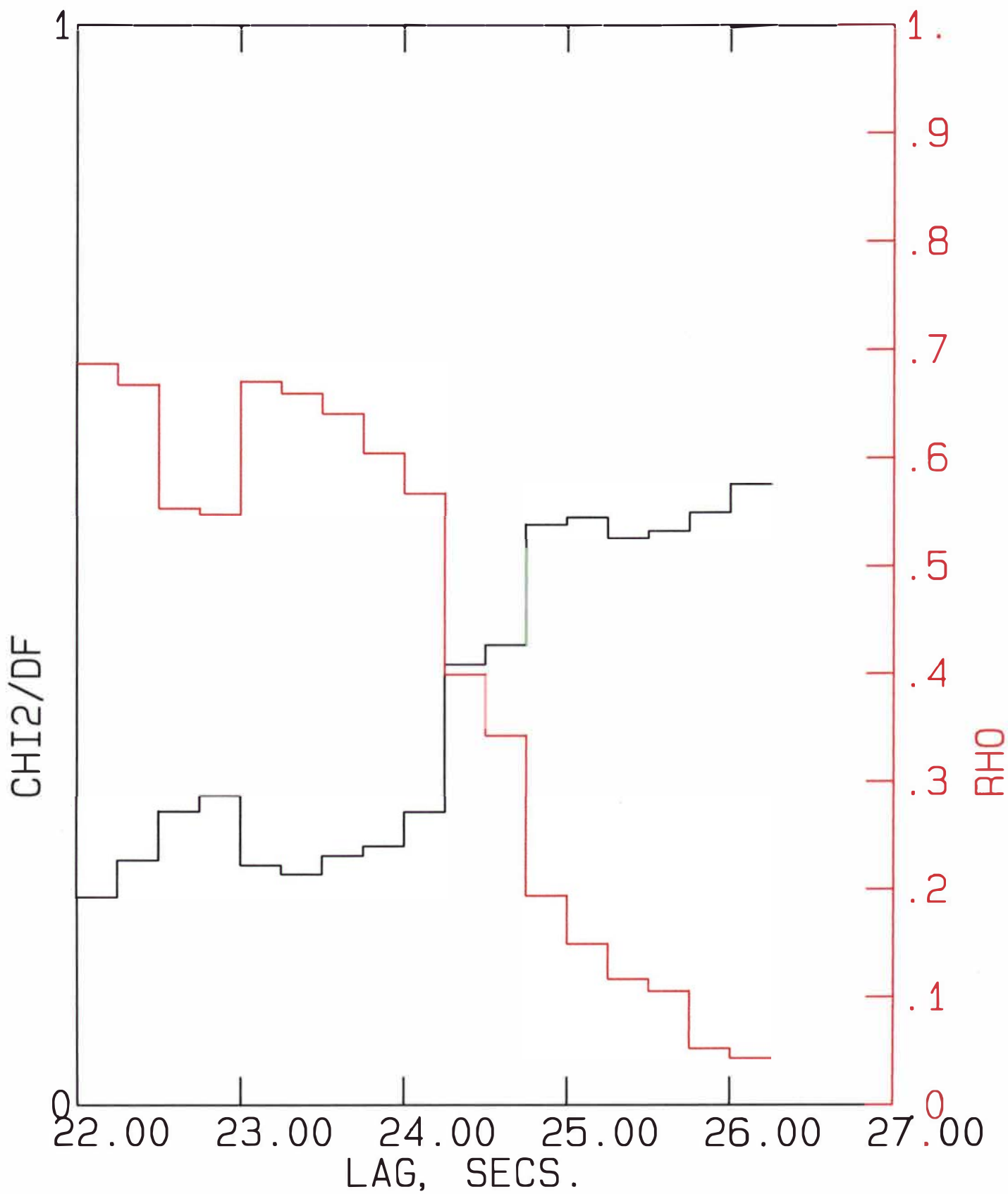
Ulysses event - AUG 28 1999 19:09 Ulysses time; moderate, 3 s long
There was a Konus trigger at 19:27:00.016 in the south-facing
detector. The event consisted of a single peak lasting 1 second.

Ulysses event - SEP 06 1999 00:10 Ulysses time; moderate, 10 s long
Not detected by Konus.

Ulysses event - SEP 06 1999 14:35* Ulysses time; weak, 32 ms long
Not detected by Konus.

Ulysses note: '*looks like an SGR, but which one?'





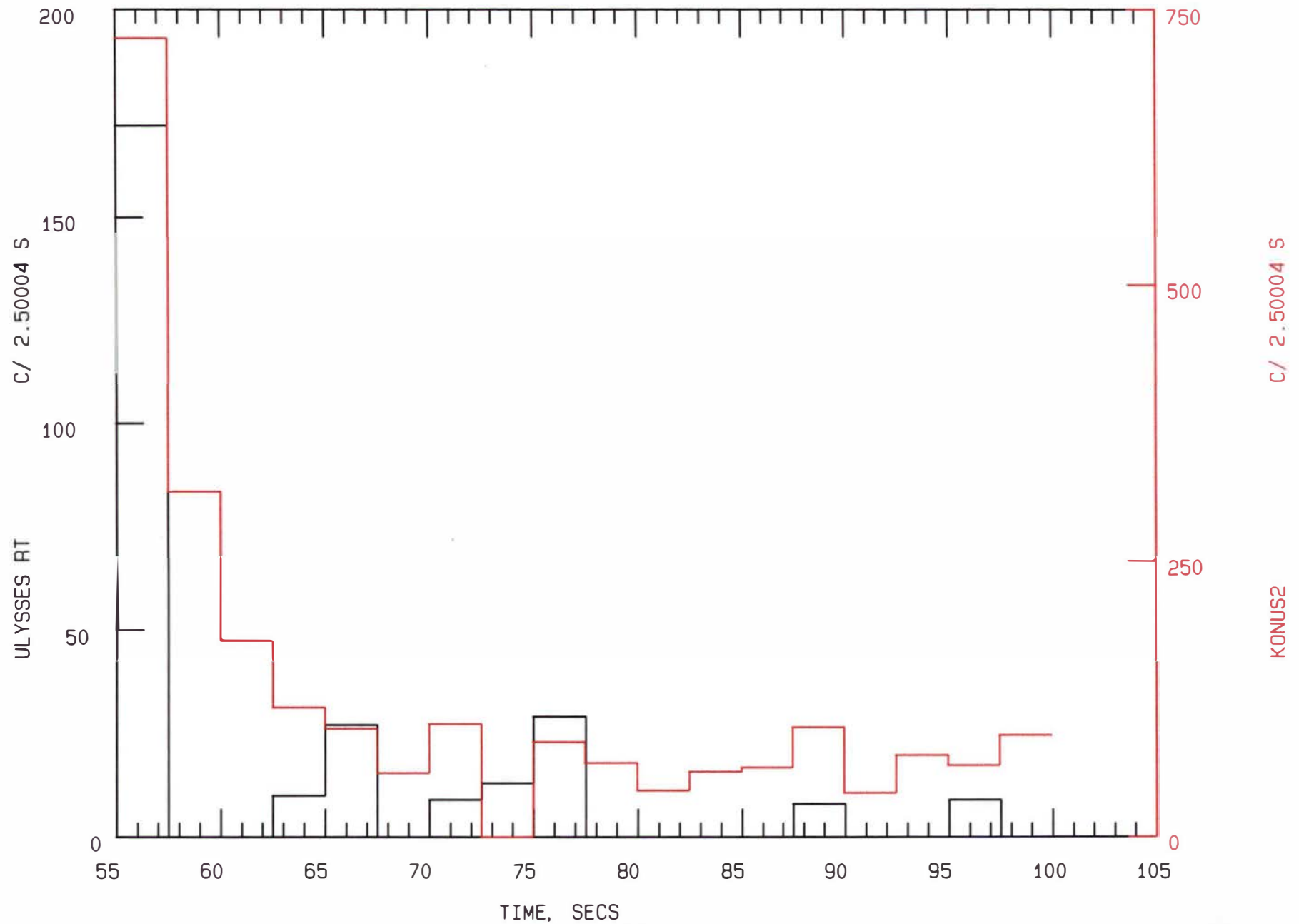
ULYSSES RT-KONUS2

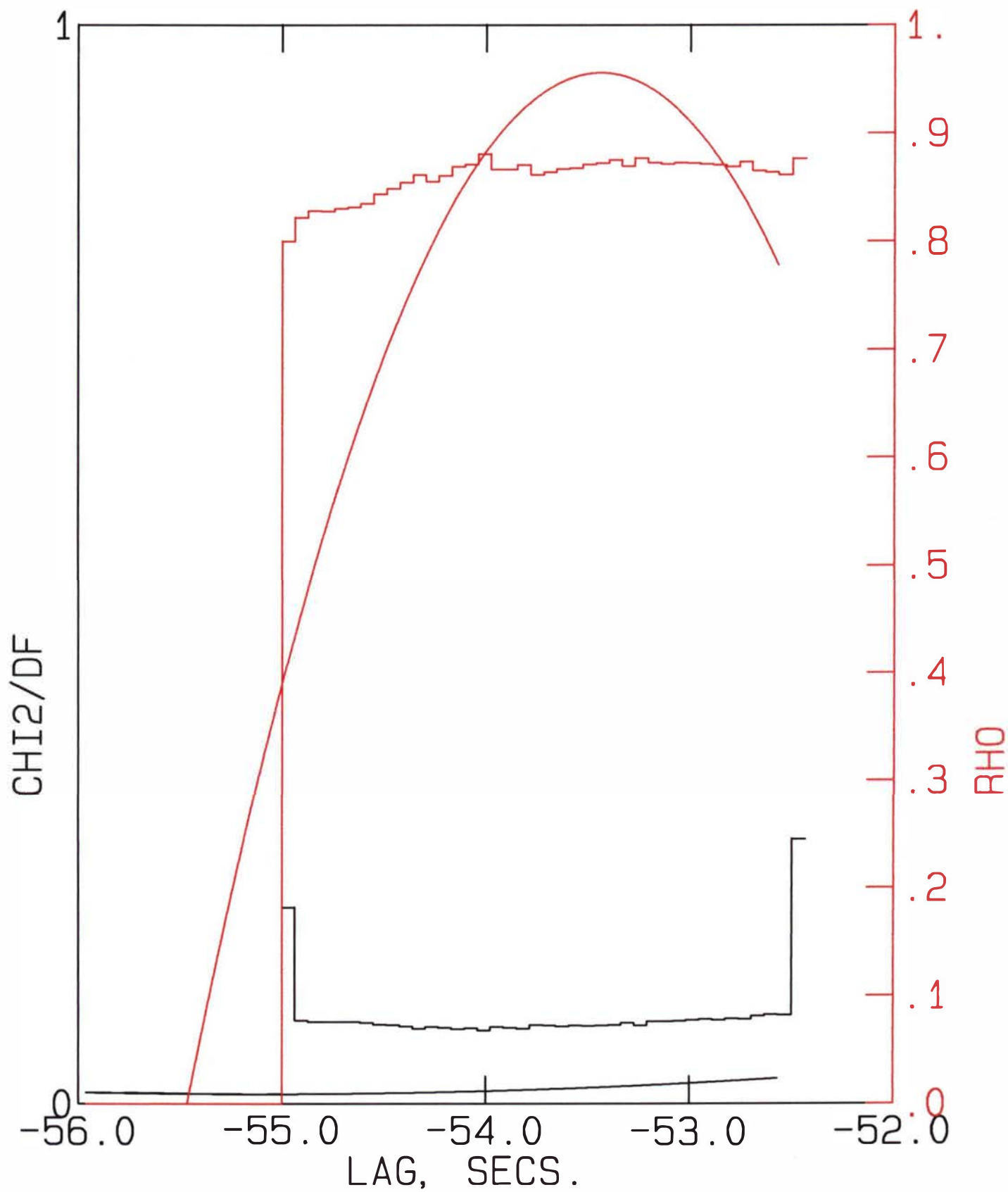
CORRELATION

16/ 8/99

7412.146

17/ 8/99





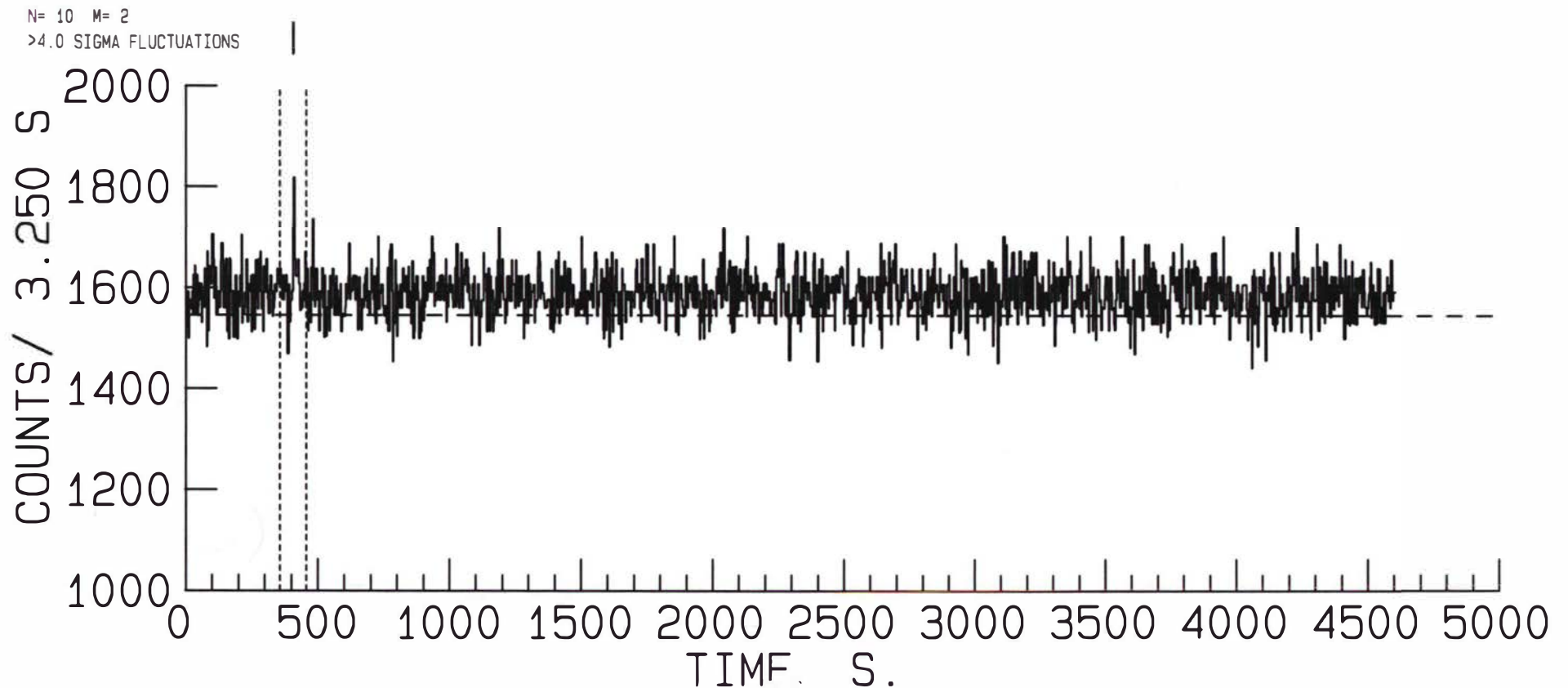
ULYSSES RT

17 / 8 / 99

16 / 8 / 99 7056.140 s

0.250 S INTERVALS REGROUPED BY 13

22- 151 keV

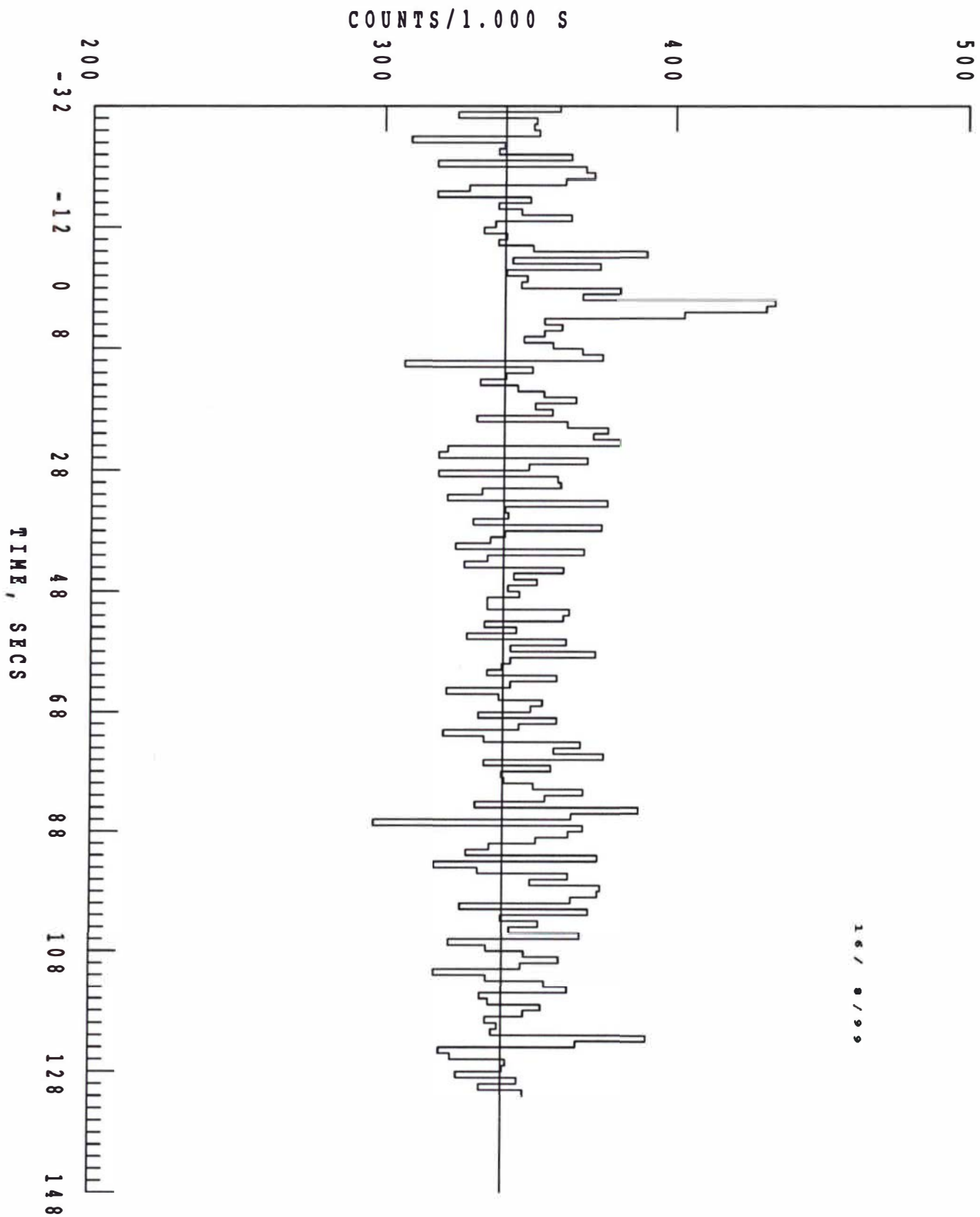


NEAR

16/08/99

9358.278

100-1000 keV



KONUS2 19990816 09883

ULYSSES RT

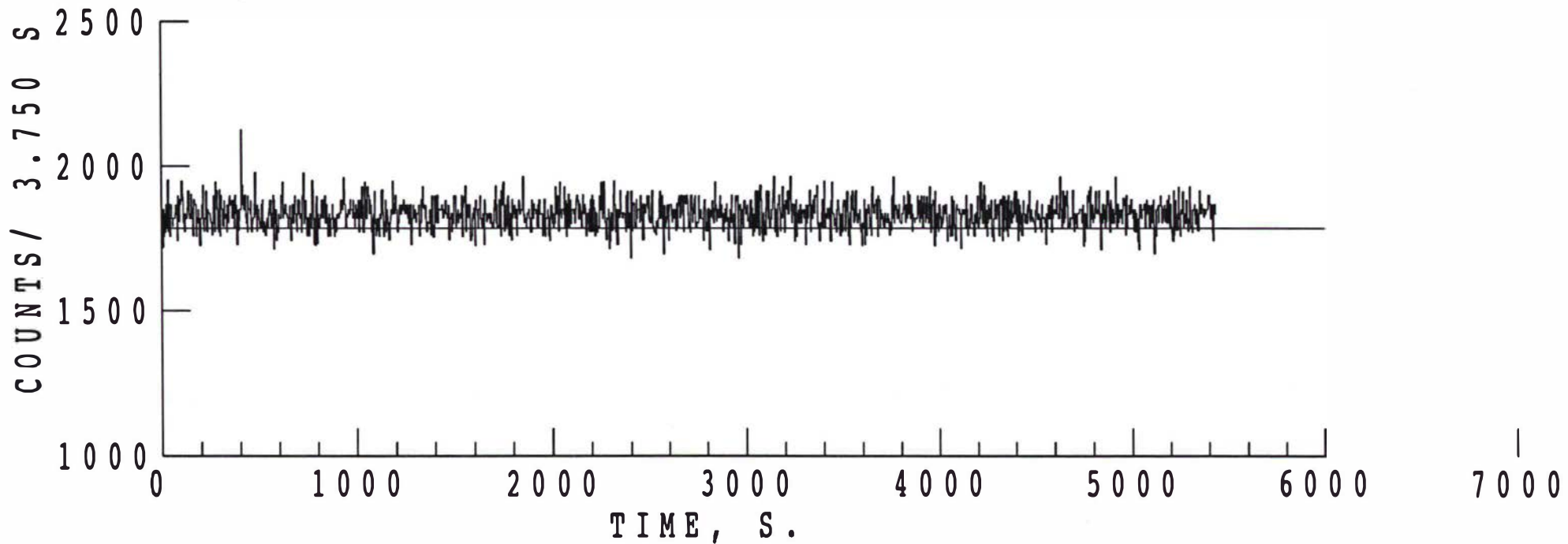
16 / 8 / 99

16 / 8 / 99 7056.140 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



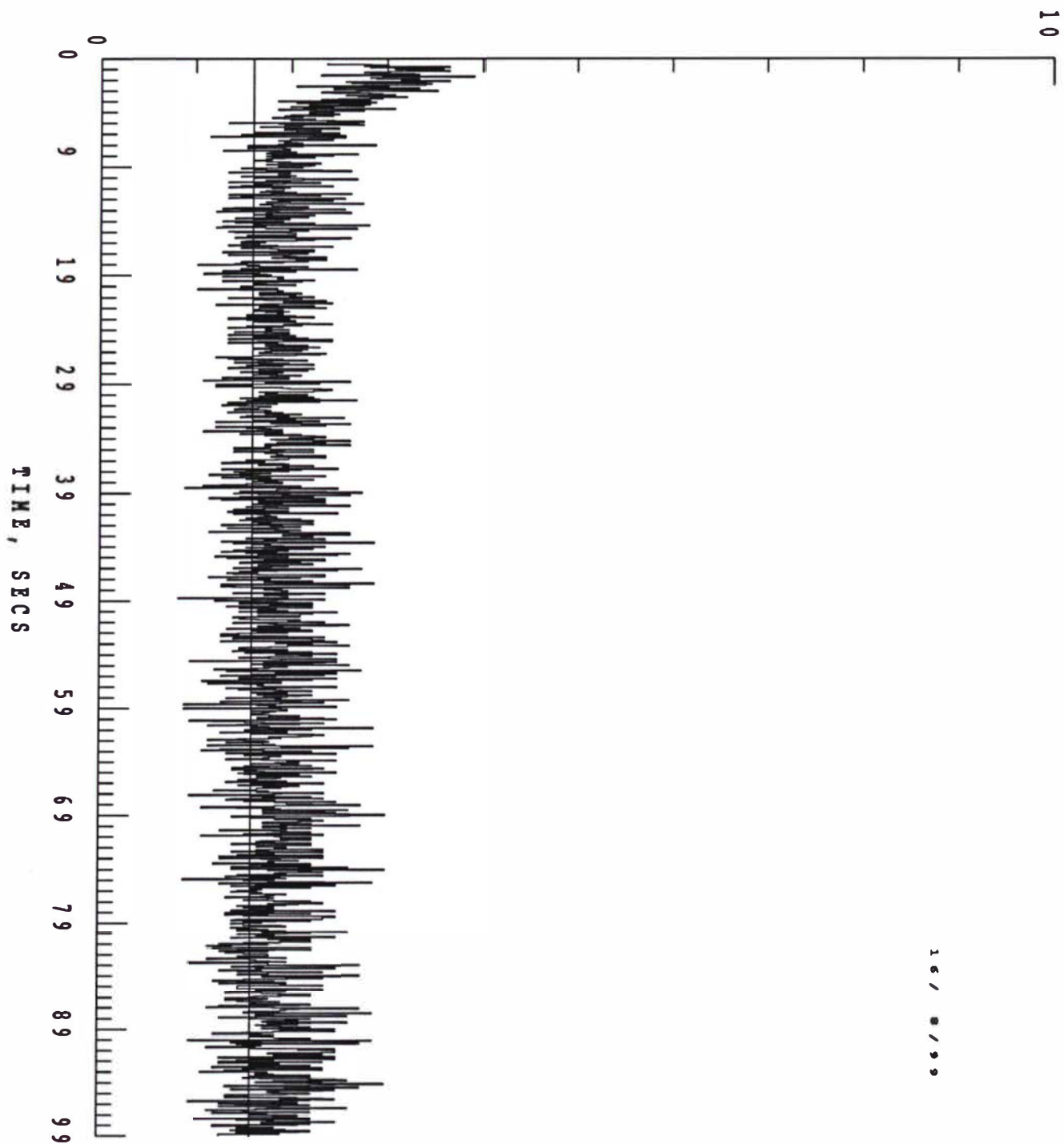
KONUS

16/08/99

9883.310

50 - 200 keV

COUNTS/0.064 S



16 / 8 / 99

From SAHI@fender.msfc.nasa.gov Tue Aug 17 14:29 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 17 Aug 1999 16:36:01 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7711

BATSEARCH PROGRAM

BATSE BURST # 7711
EVENT OF 1999 AUG 16 DAY OF YEAR=228
EVENT CROSSING TIME AT BATSE : 9983. S. OR 02:46:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 188.000 7.000
BATSE PEAK COUNTING RATE: 12000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 8/ 99 IS:
RA= 152.683 DEC= -11.004 DIST= 5.554 AU
BATSE-ULYSSES DISTANCE = 830919189. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2138.96 SECS.
CROSSING TIME AT ULYSSES IS 7844. S. OR 02:10:44 +/- 323.54 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 8/ 99 IS:
RA= 226.436 DEC= -19.211 DIST= 1.095 AU
MARS-BATSE DISTANCE = 163834128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -379.30 SECS.
CROSSING TIME AT MARS IS 9604. S. OR 02:40:03 +/- 62.54 SECONDS

BATSE BURST TRIGGER

NO.: 7711

TIME: TJD=1406 SECONDS=9883

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=73.1 AZIMUTH=323.8 ERROR=0.9 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. 40 S, MAX. AT T+2 S, RISE IS FASTER THAN FALL. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7711	990816	11406	09983	12000	188	+07	40

Date: 25/1/00

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?
- ☒ 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 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

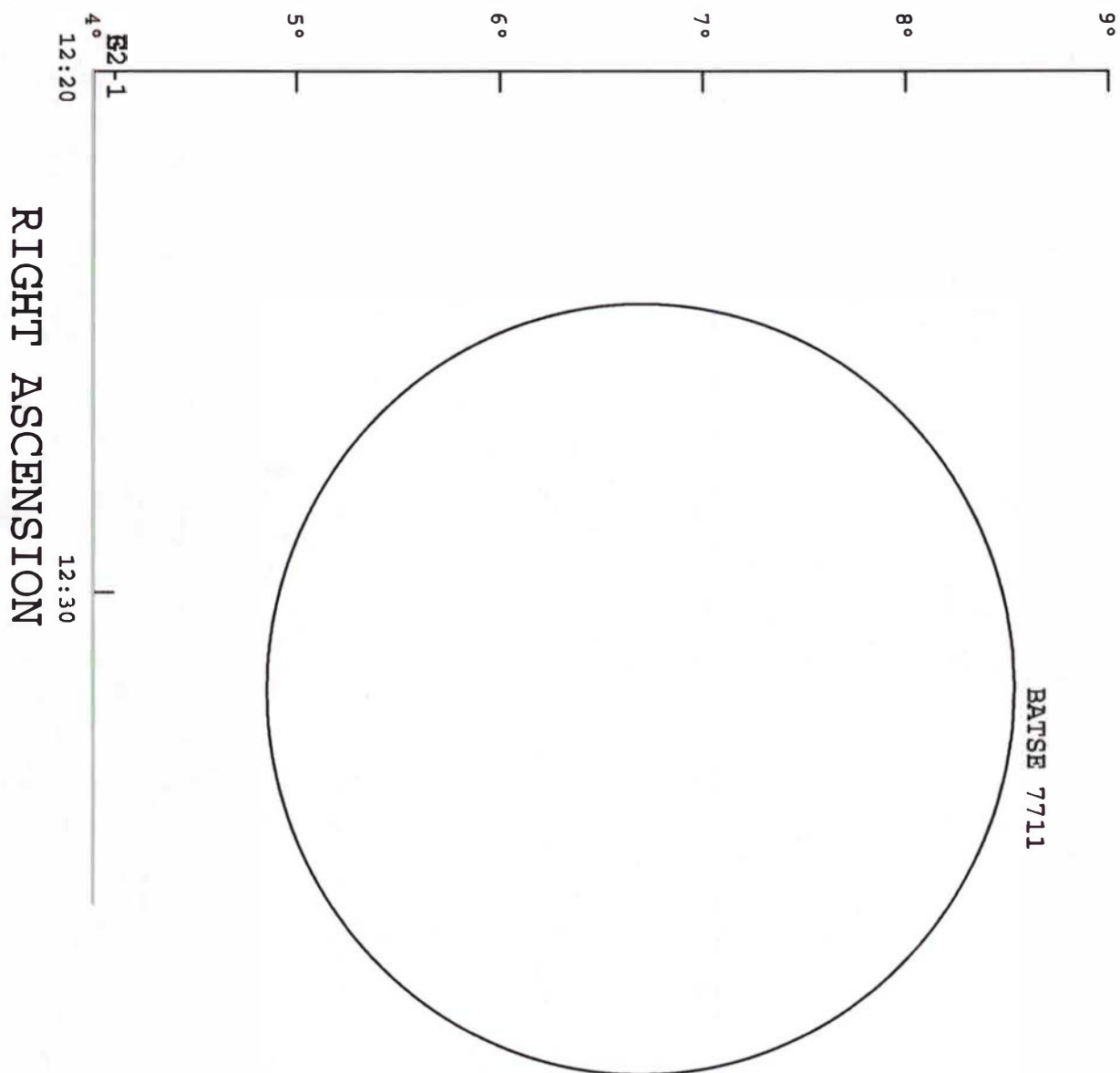
1 BATSE

2 ULYSSES

EVENT OF AUG 16, 1999 2:44

25 / 1 / 0

DECLINATION



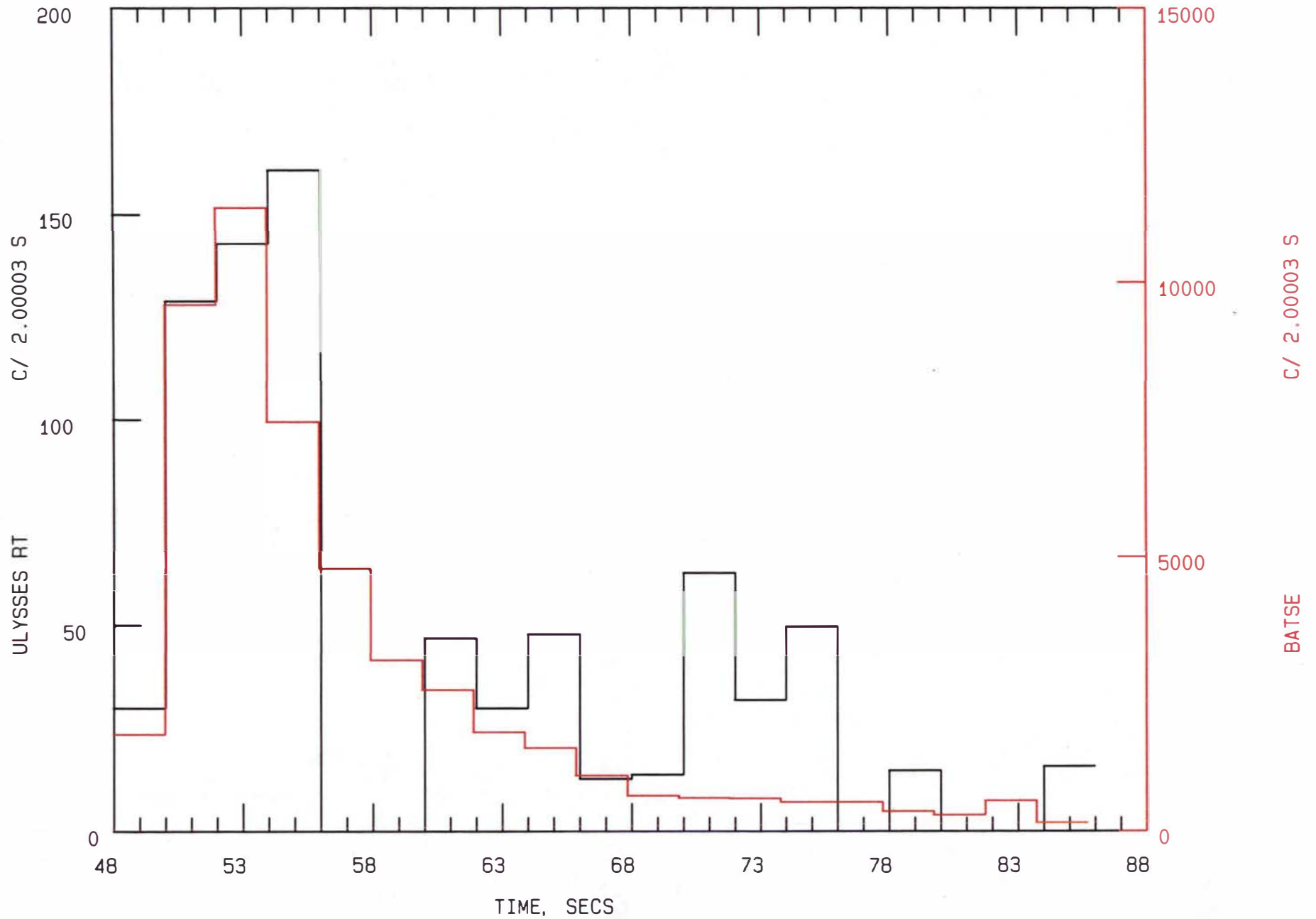
ULYSSES RT-BATSE

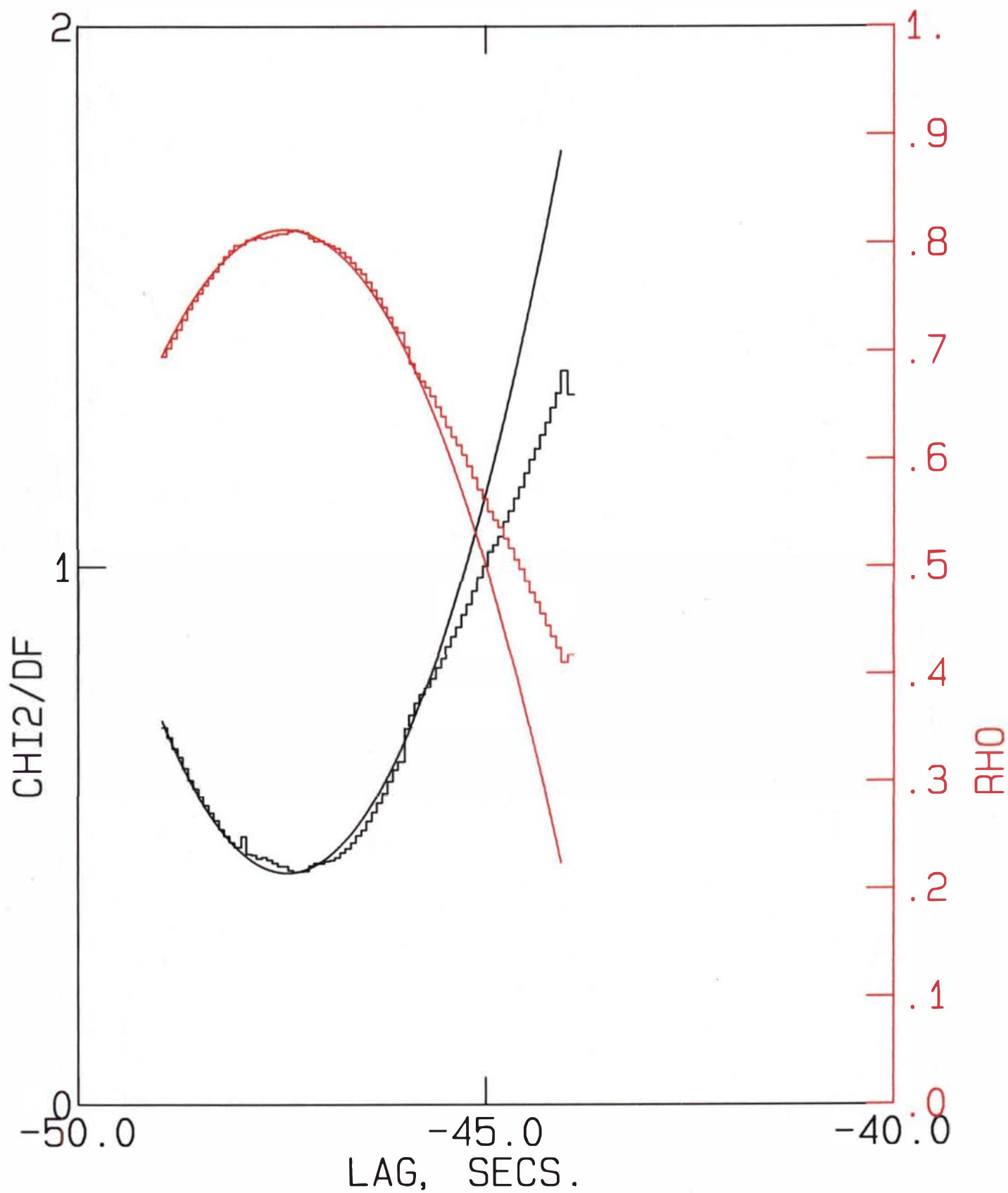
CORRELATION

16/ 8/99

7414.110

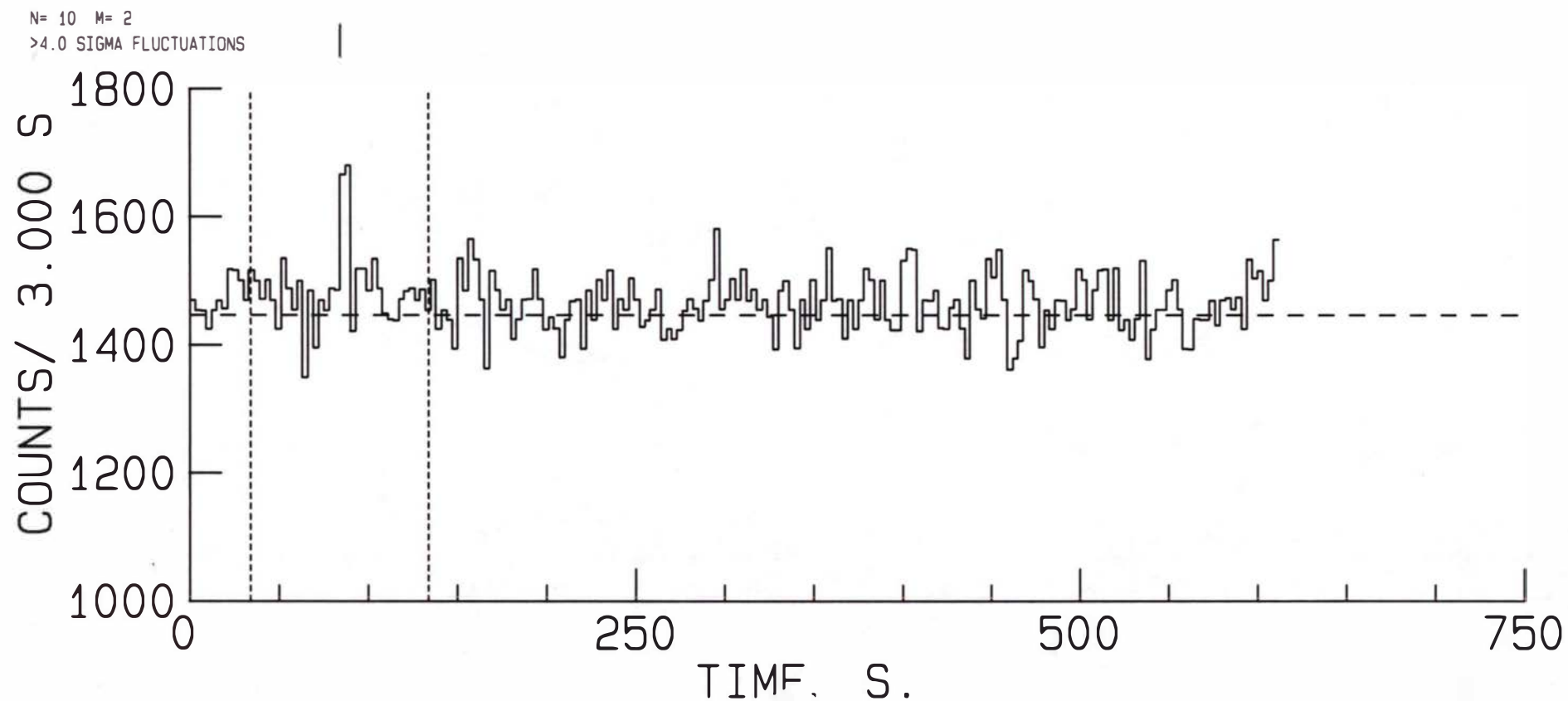
25/ 1/ 0





ULYSSES RT
16/ 8/99 7380.144 s
0.250 S INTERVALS REGROUPED BY 12
22- 150 keV

25 / 1 / 0



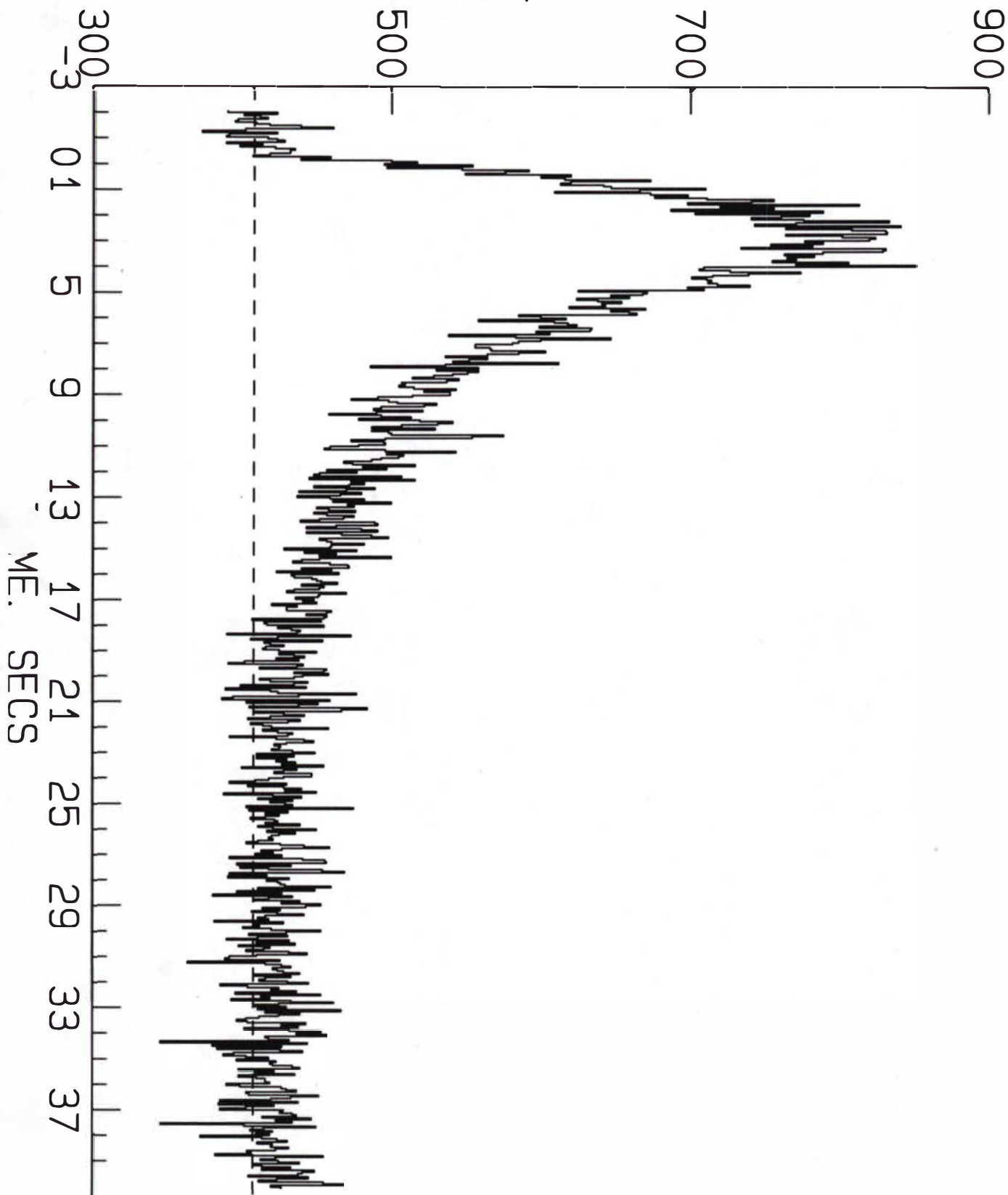
BATSE

16/08/99

9883.129

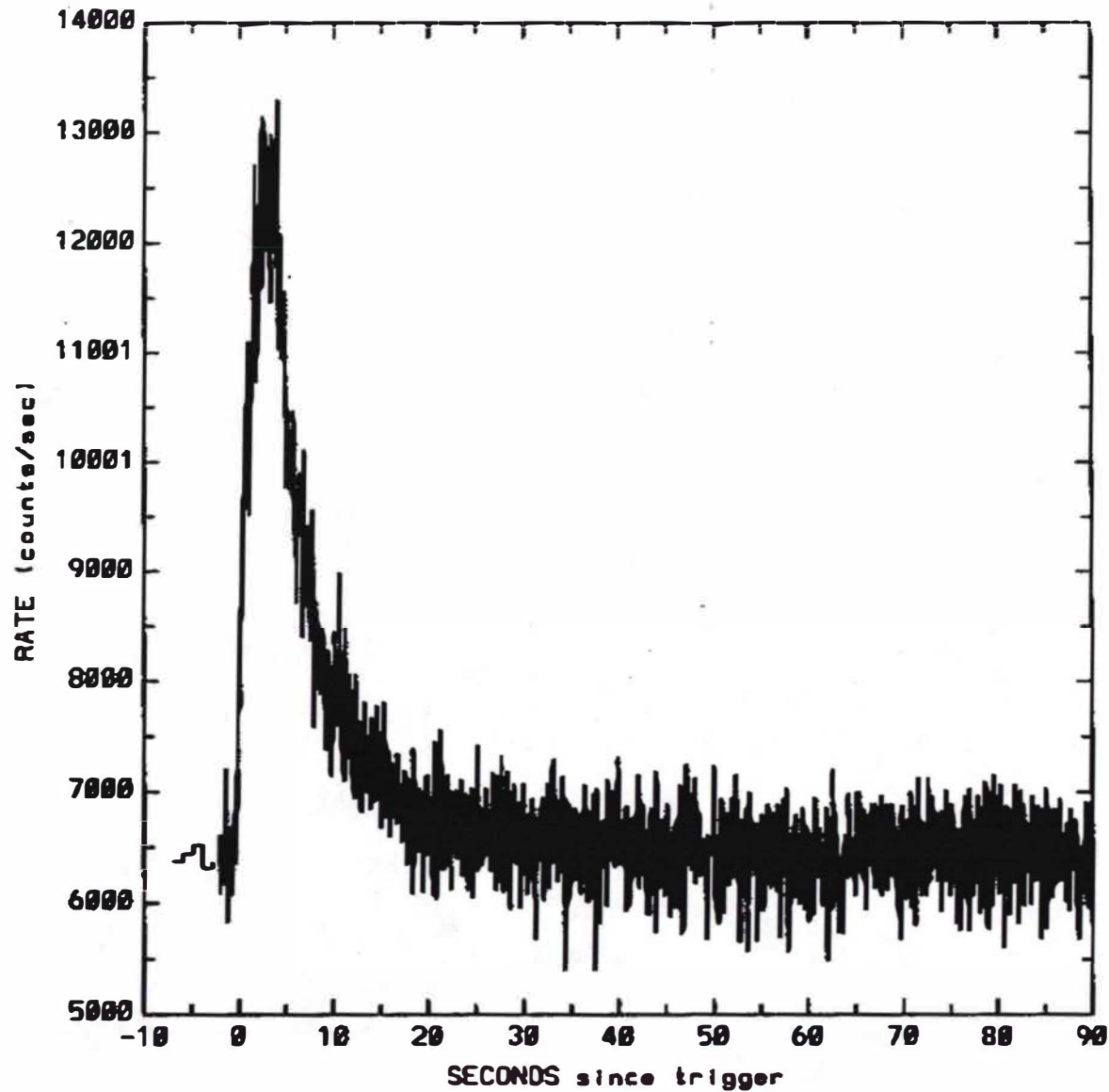
25- 100 keV

COUNTS/0.064 S



25 / 1 / **

DISCSC Data for K. Hurley, No. 7711



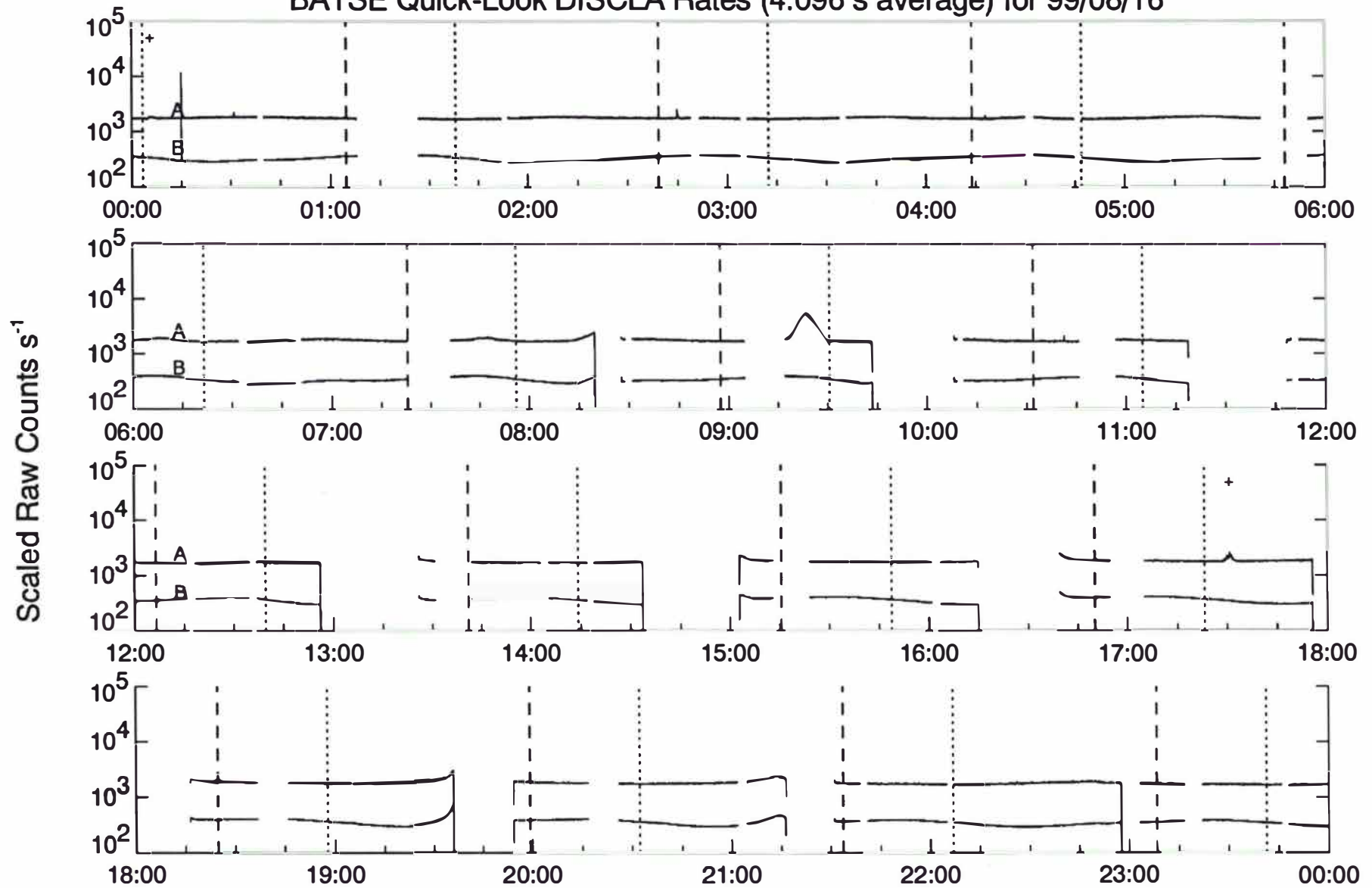
21-JAN-2000 15:33:23

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

Trigger # . 7711

Trigger Time:
11486 / 9883.129Burst Data Type:
DISCSCDeadline
Corrected: NBackground Data
Type: PRED + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8].
---32--Discriminators:
(1 . 2)Quality Mask:
B0ISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/16



Current Time: 99/08/20, 1006 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

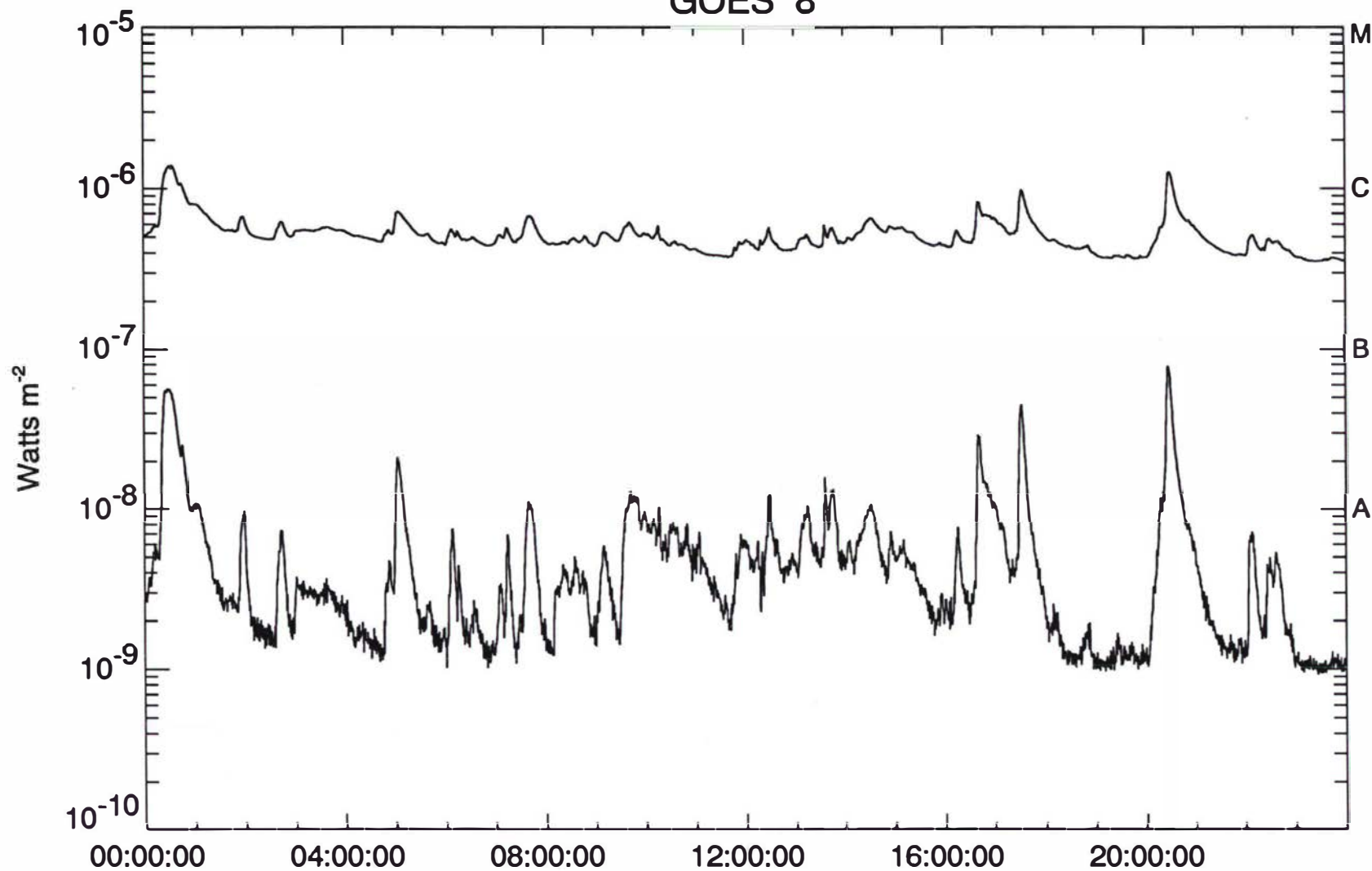
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 99/08/16, 0000:00

Plot created: 99/08/20, 1005

Channel 1 (1.0 - 8.0 Angstroms)

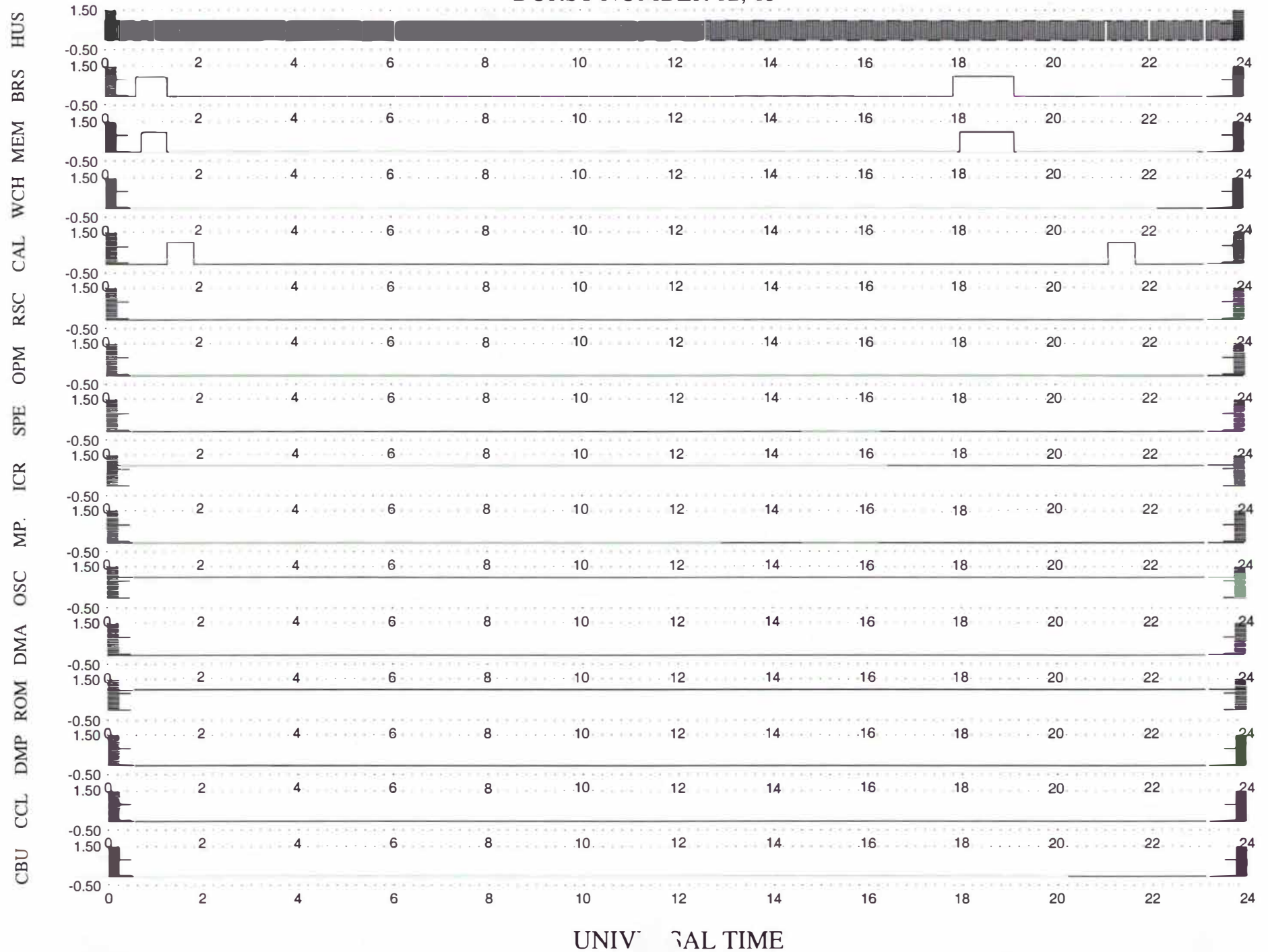
Background not subtracted

2 (0.5 - 4.0 Angstroms)

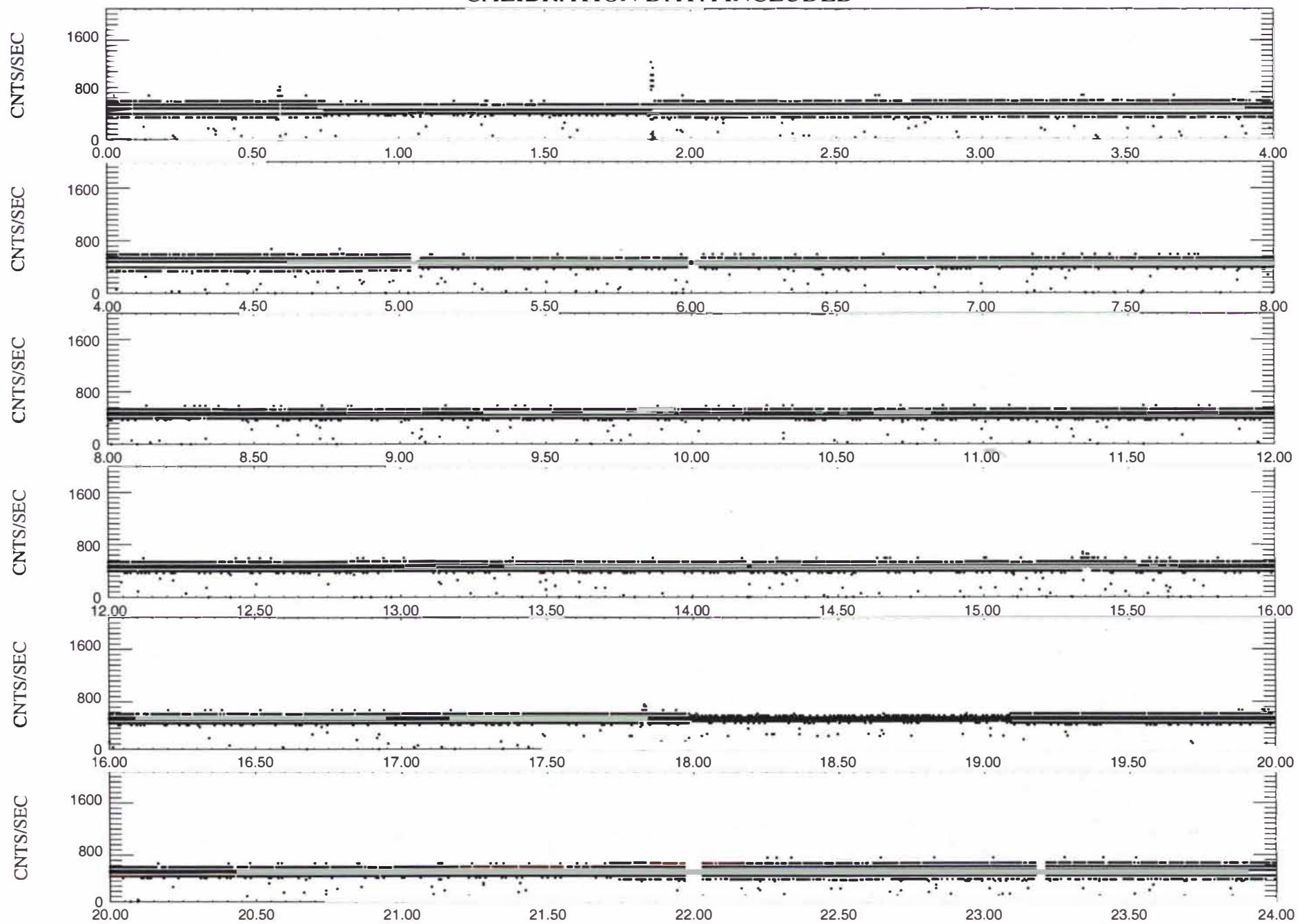
Background not subtracted

Sample average = 10

BURST NUMBER 12, 13

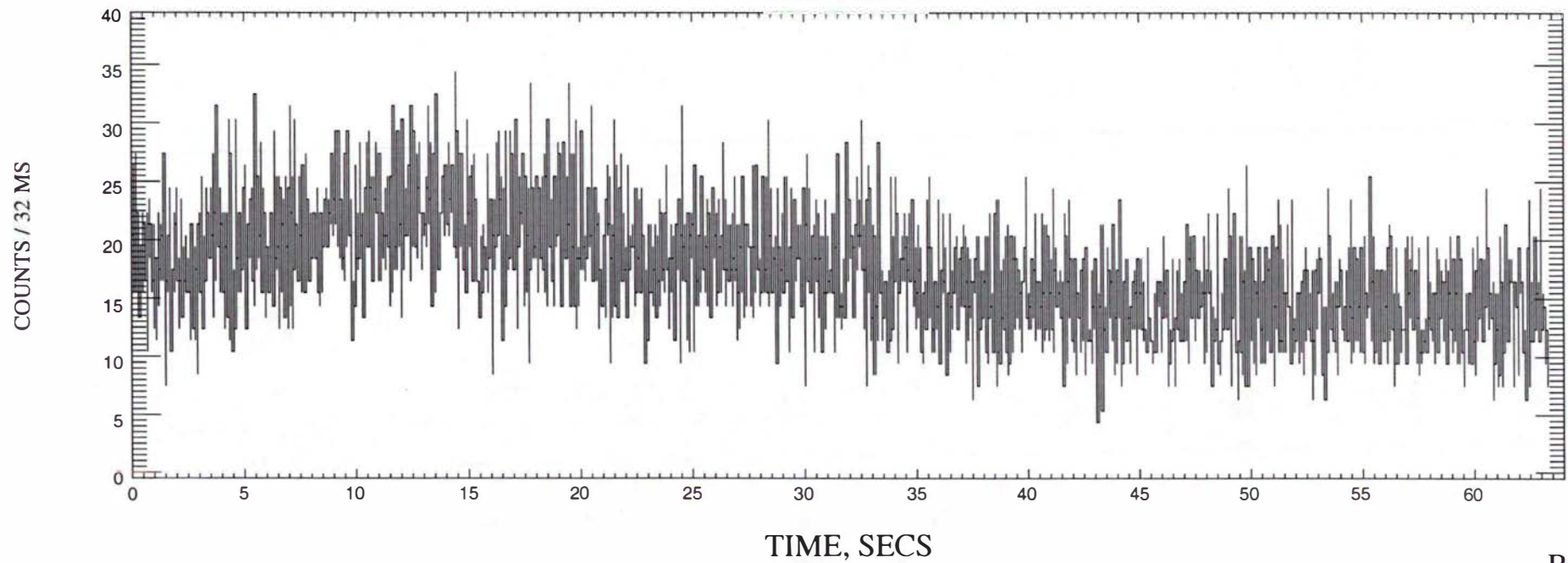
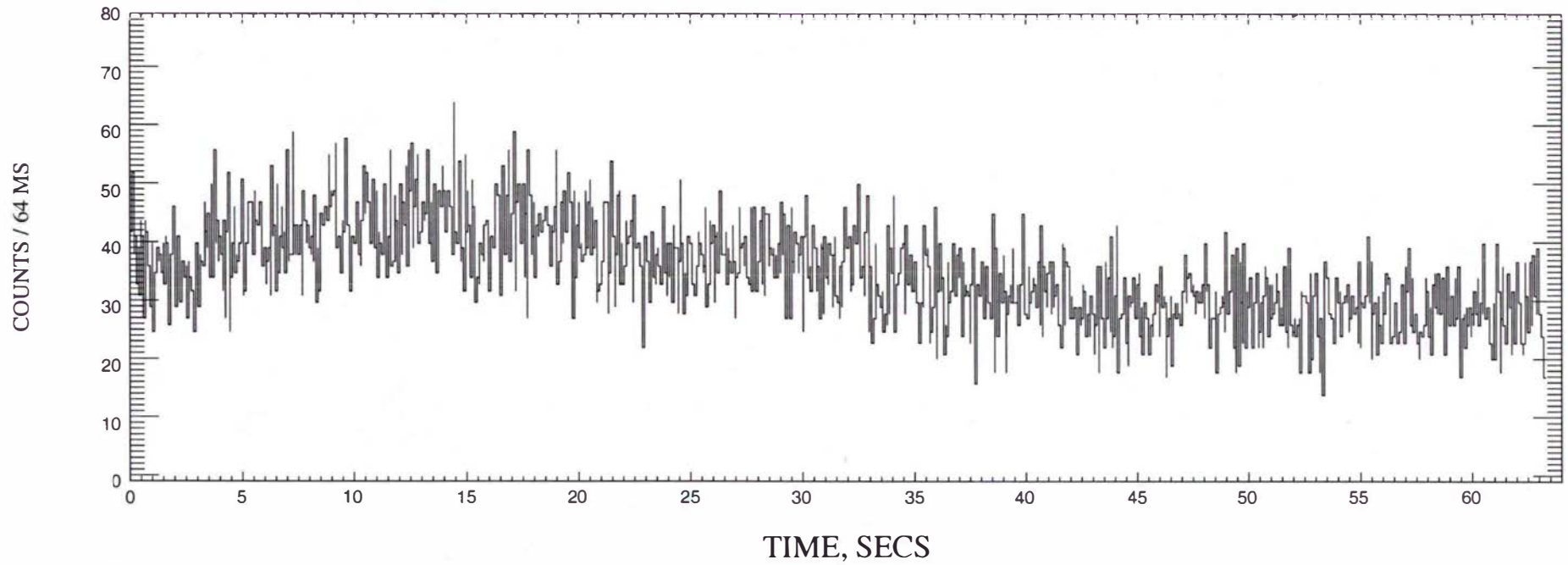


CALIBRATION DATA INCLUDED

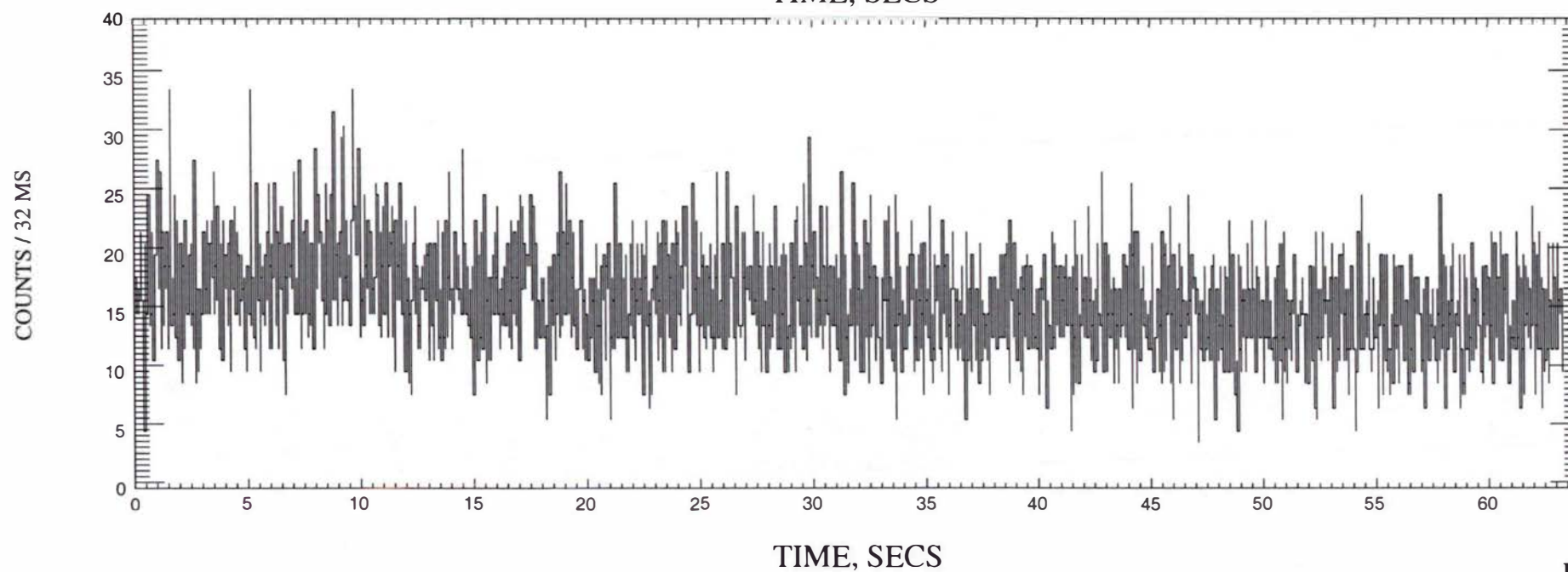
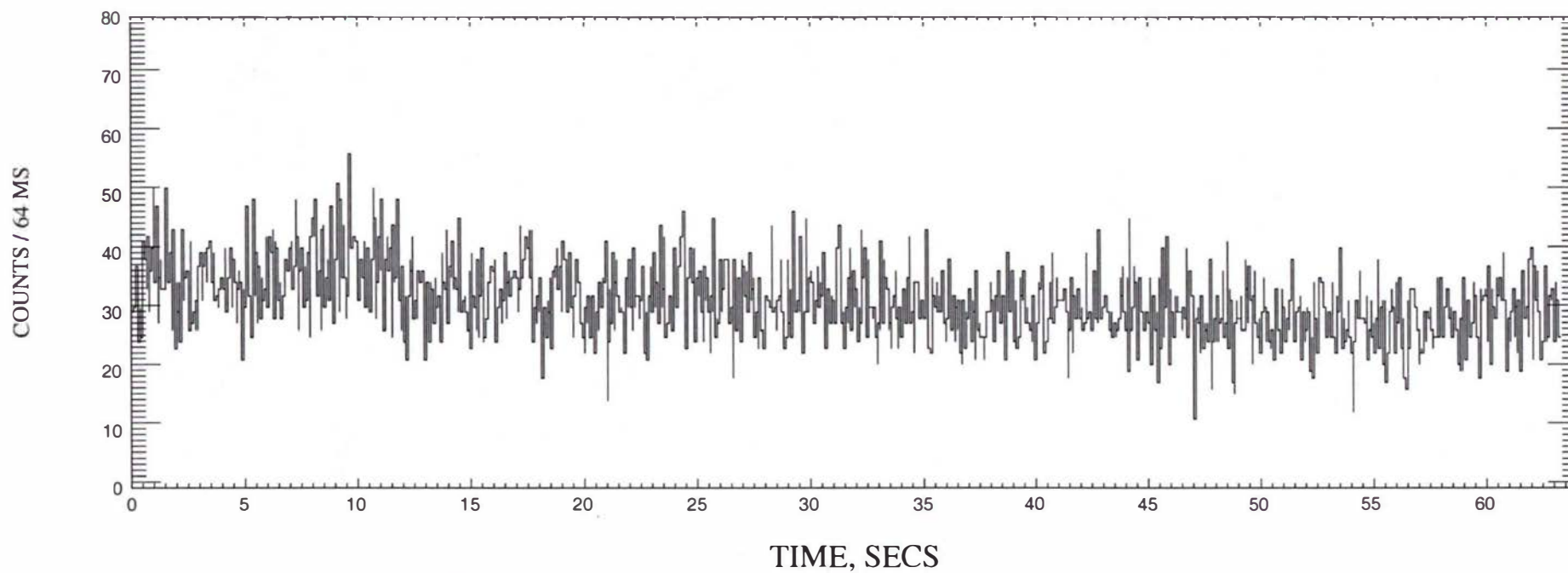


UNIVERSAL TIME

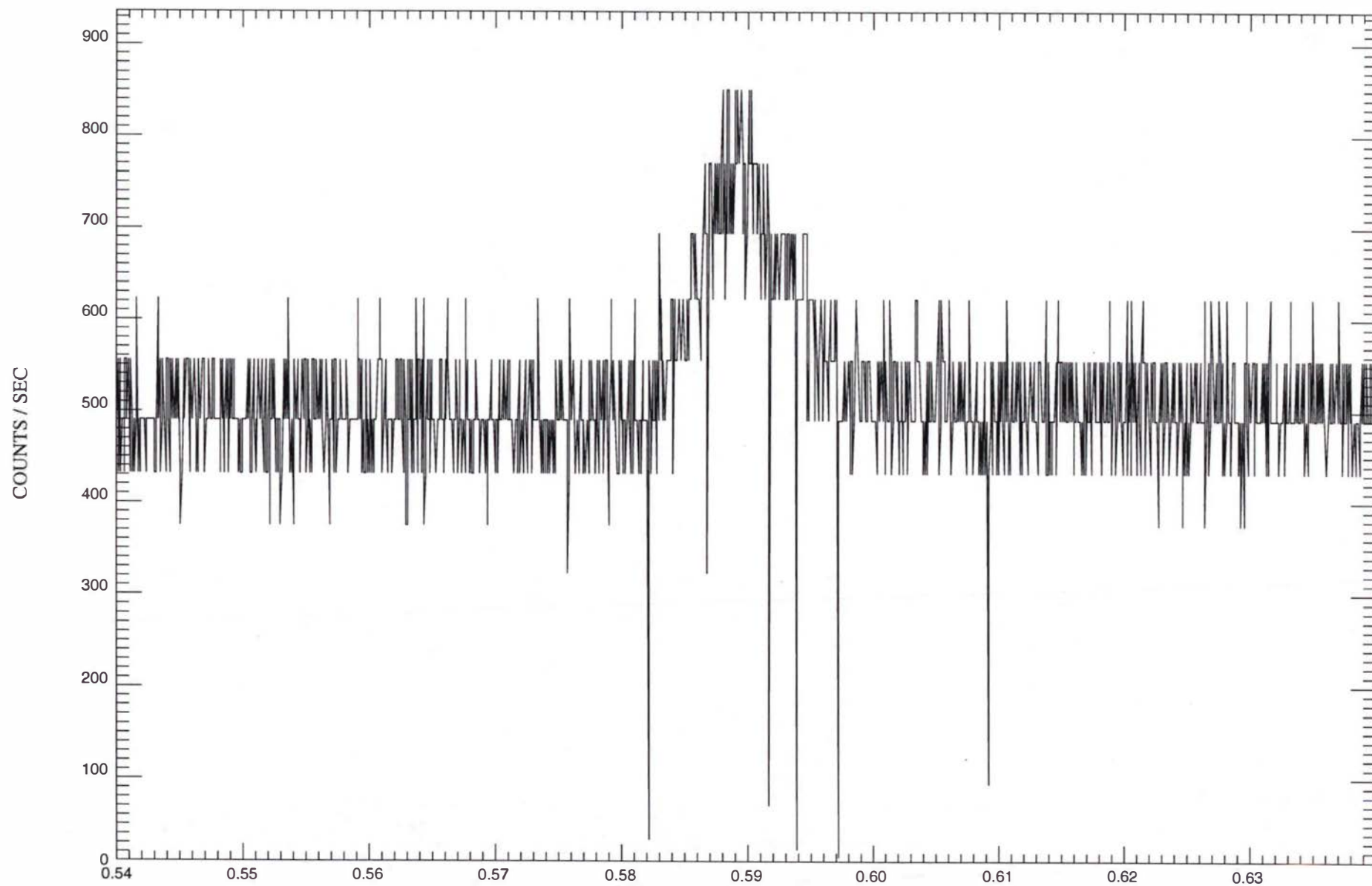
Burst Counter 12 at UT= 0.587627741496 h= 2115.460 s 00:35:15.460



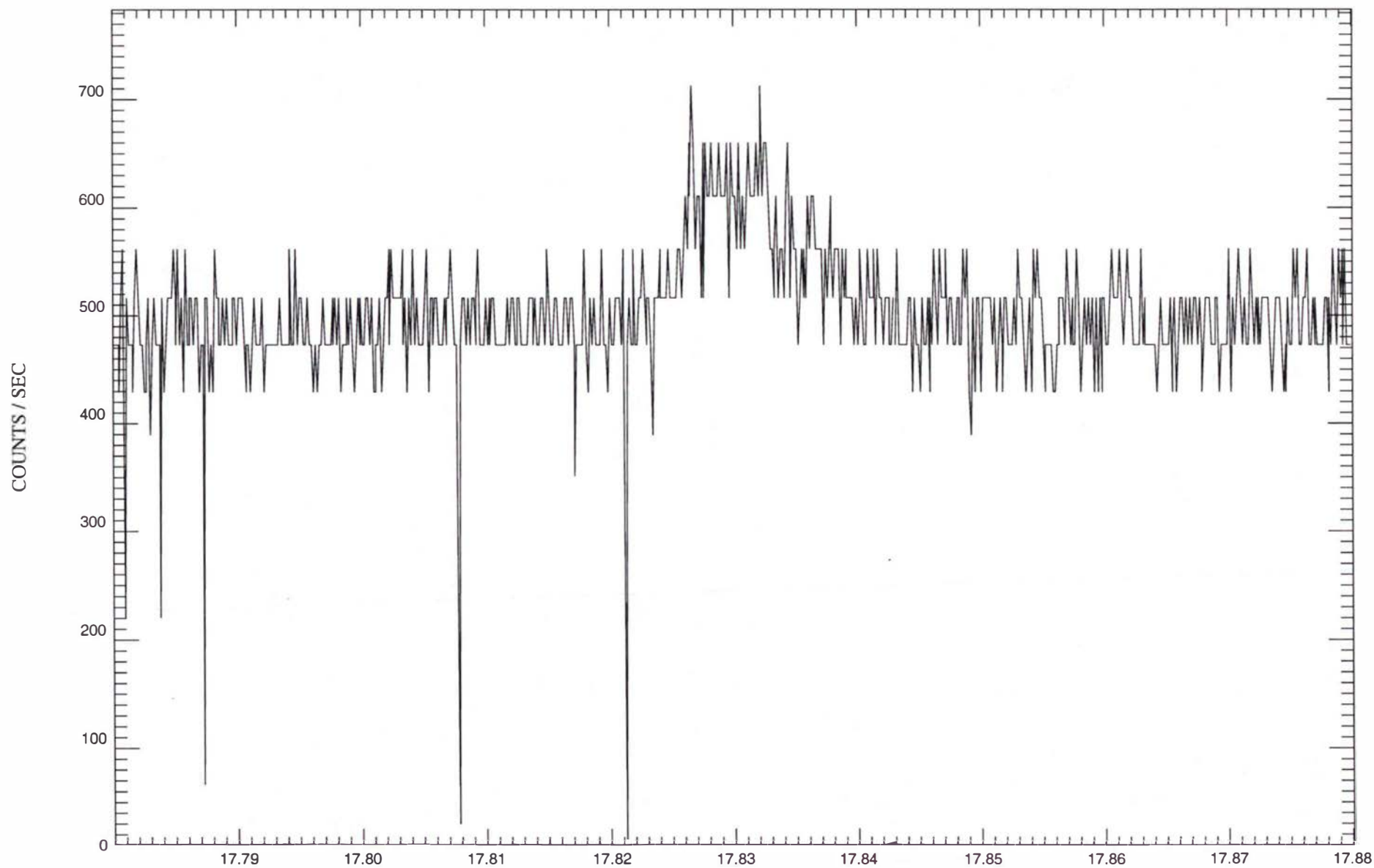
Burst Counter 13 at UT=17.831655591329 h=64193.960 s 17:49:53.960

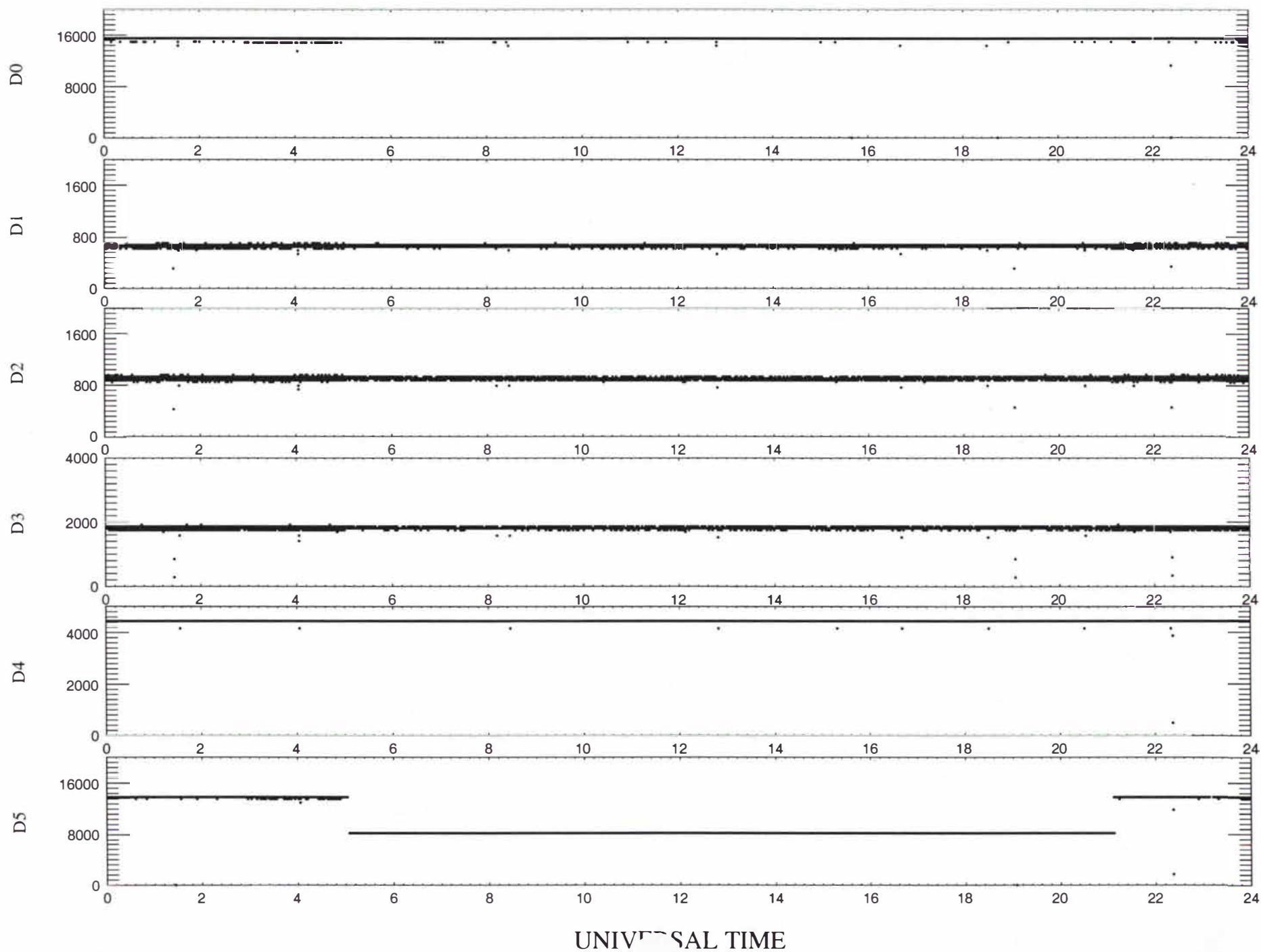


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Wed Aug 18 13:55 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Wed, 18 Aug 1999 16:01:57 -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, 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.: 7712

TIME: TJD=1407 SECONDS=12349

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT.

From SAHI@fender.msfc.nasa.gov Wed Aug 18 13:56 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Wed, 18 Aug 1999 16:03:11 -0500 (CDT)

cc: 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, 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.: 7713

TIME: TJD=1407 SECONDS=29355

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From PETERSON@fender.msfc.nasa.gov Thu Aug 19 06:45 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Thu, 19 Aug 1999 8:51:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7714

BATSEARCH PROGRAM

BATSE BURST # 7714
EVENT OF 1999 AUG 17 DAY OF YEAR=229
EVENT CROSSING TIME AT BATSE : 47714. S. OR 13:15:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 197.000 39.000
BATSE PEAK COUNTING RATE: 1300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 8/ 99 IS:
RA= 152.904 DEC= -11.149 DIST= 5.555 AU
BATSE-ULYSSES DISTANCE = 831000796. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.21 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1180.57 SECS.
CROSSING TIME AT ULYSSES IS 46533. S. OR 12:55:33 +/- 467.49 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 8/ 99 IS:
RA= 227.012 DEC= -19.372 DIST= 1.101 AU
MARS-BATSE DISTANCE = 164719456. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -234.12 SECS.
CROSSING TIME AT MARS IS 47480. S. OR 13:11:19 +/- 82.74 SECONDS

BATSE BURST TRIGGER

NO.: 7714

TIME: TJD=1407 SECONDS=47714

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.3 AZIMUTH=303.8 ERROR=5.51 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR APPROX 30S, STARTS AT APPROX T-2S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7714	990817	11407	47714	1300	197	+39	30

BATSE BURST# 7714

ULYSSES RT

19 / 8 / 99

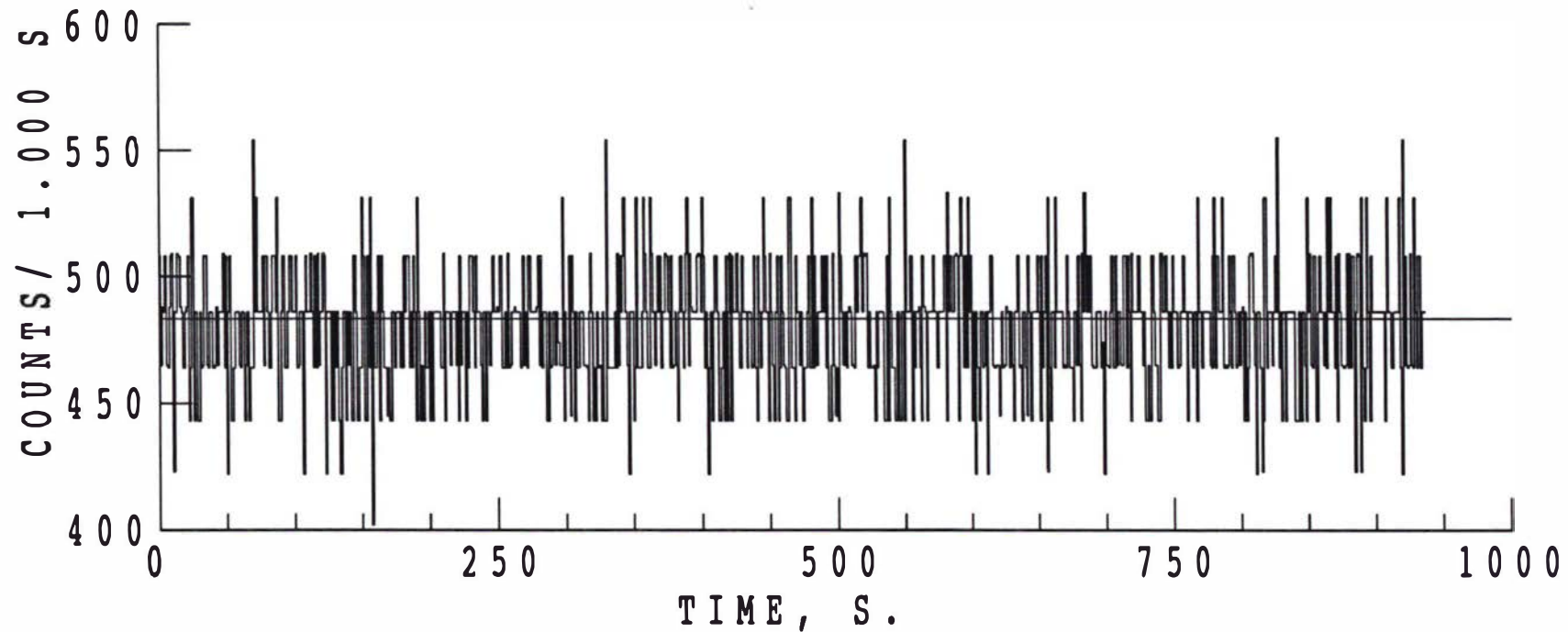
17 / 8 / 99 46080.410 s

0.500 S INTERVALS REGROUPED BY 2

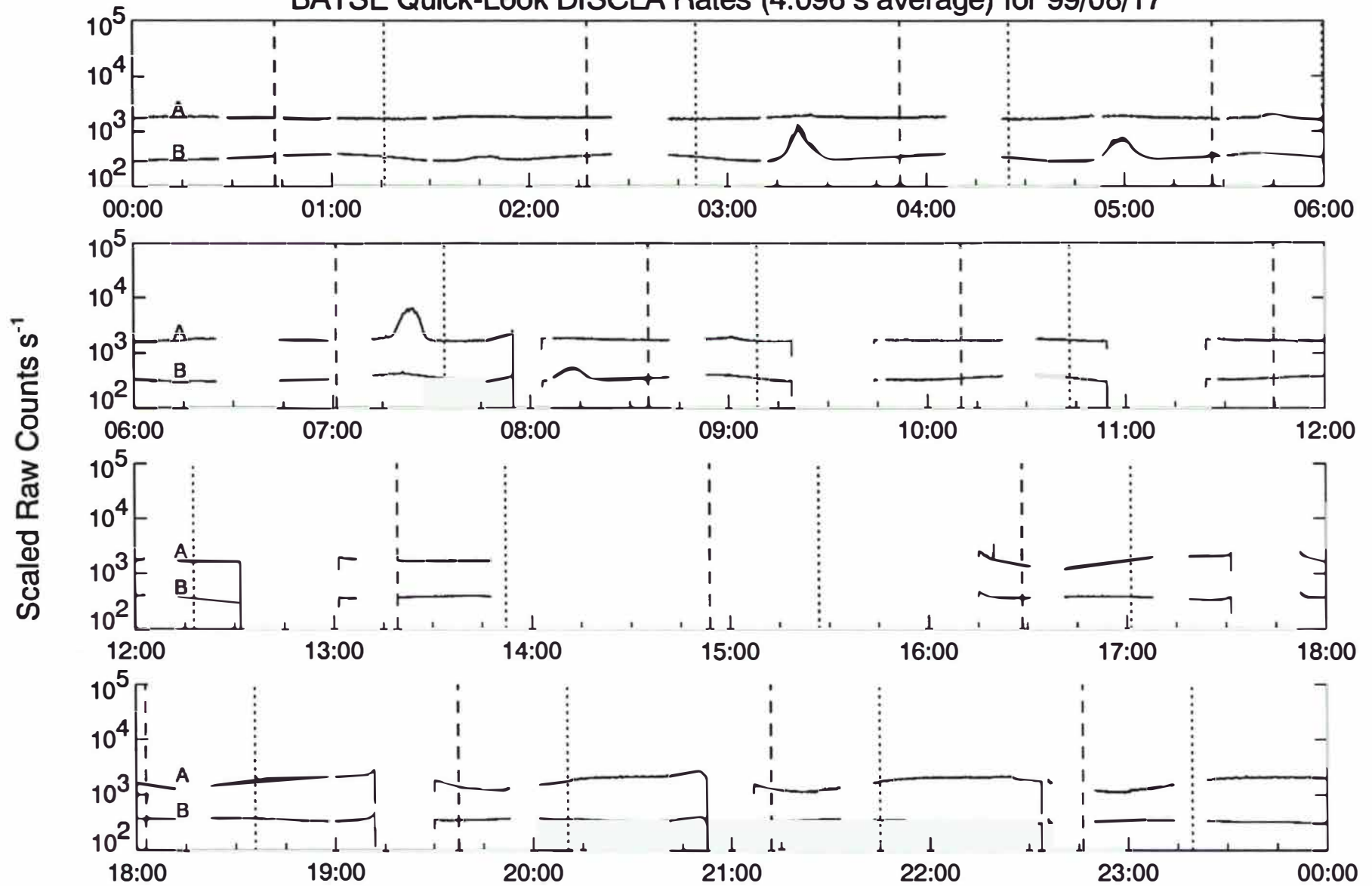
0 - 0 keV

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 99/08/17



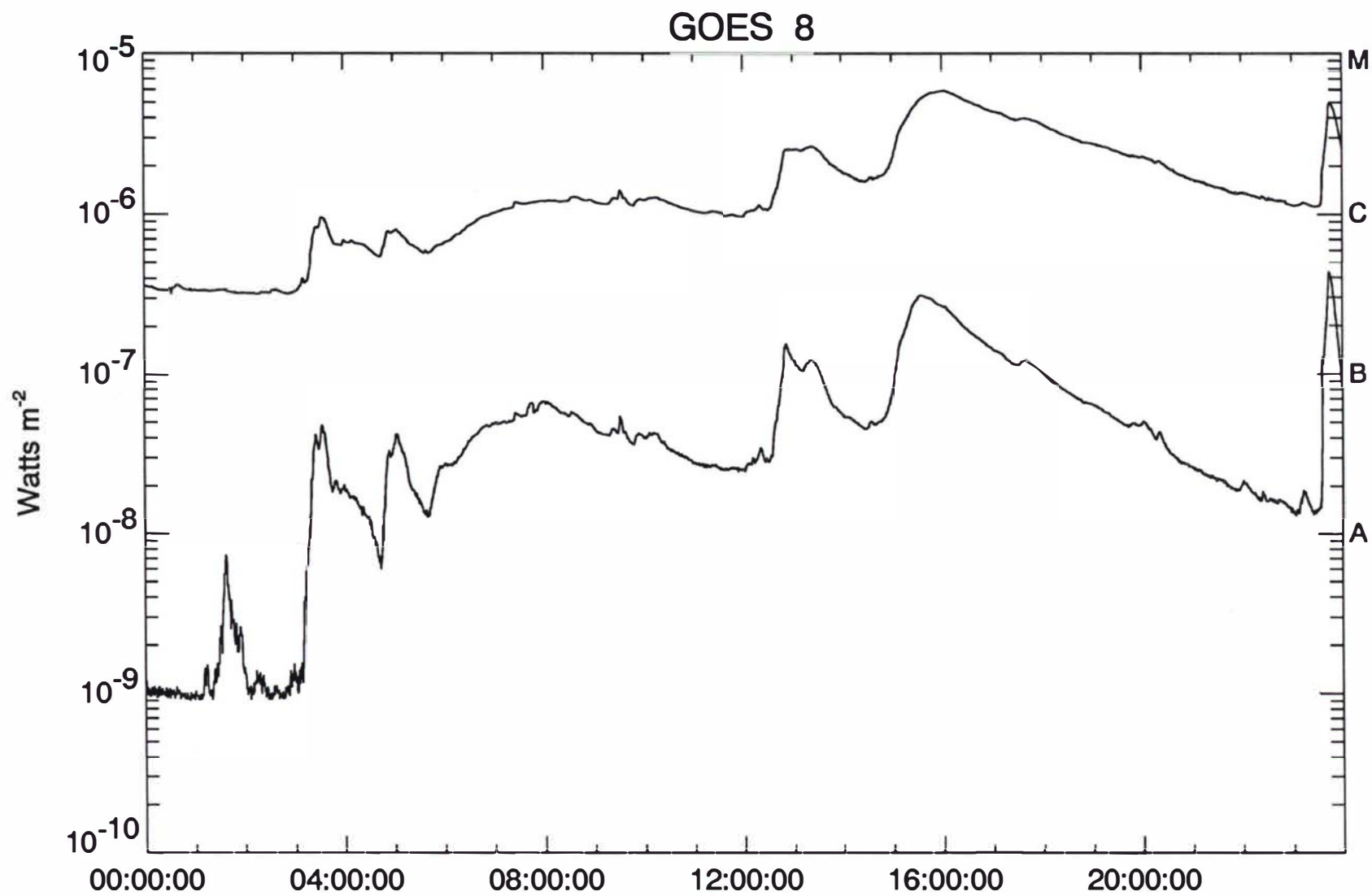
Current Time: 99/08/21, 1006 EDT

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: 99/08/17, 0000:00

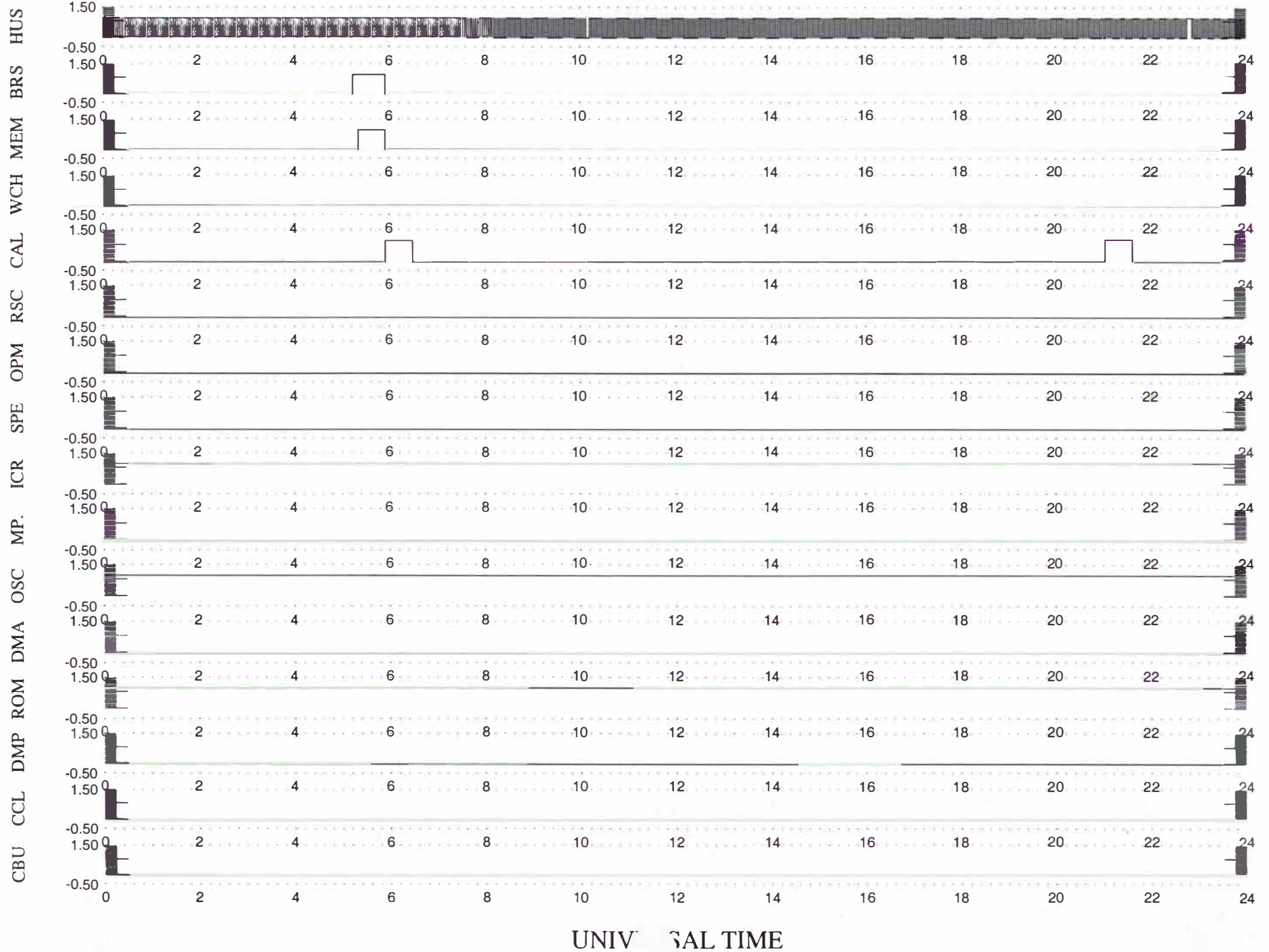
Plot created: 99/08/21, 1005

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

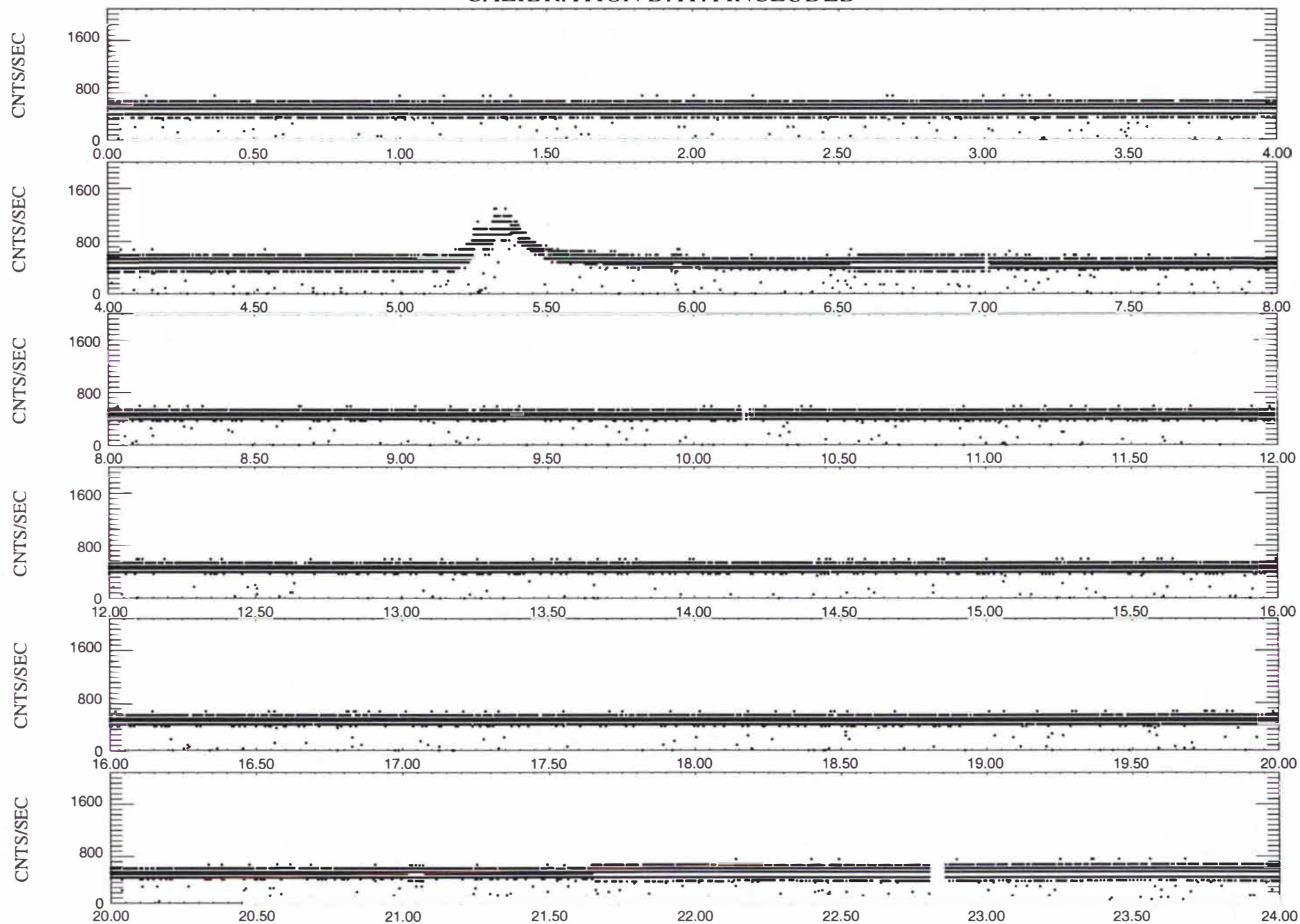
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 14

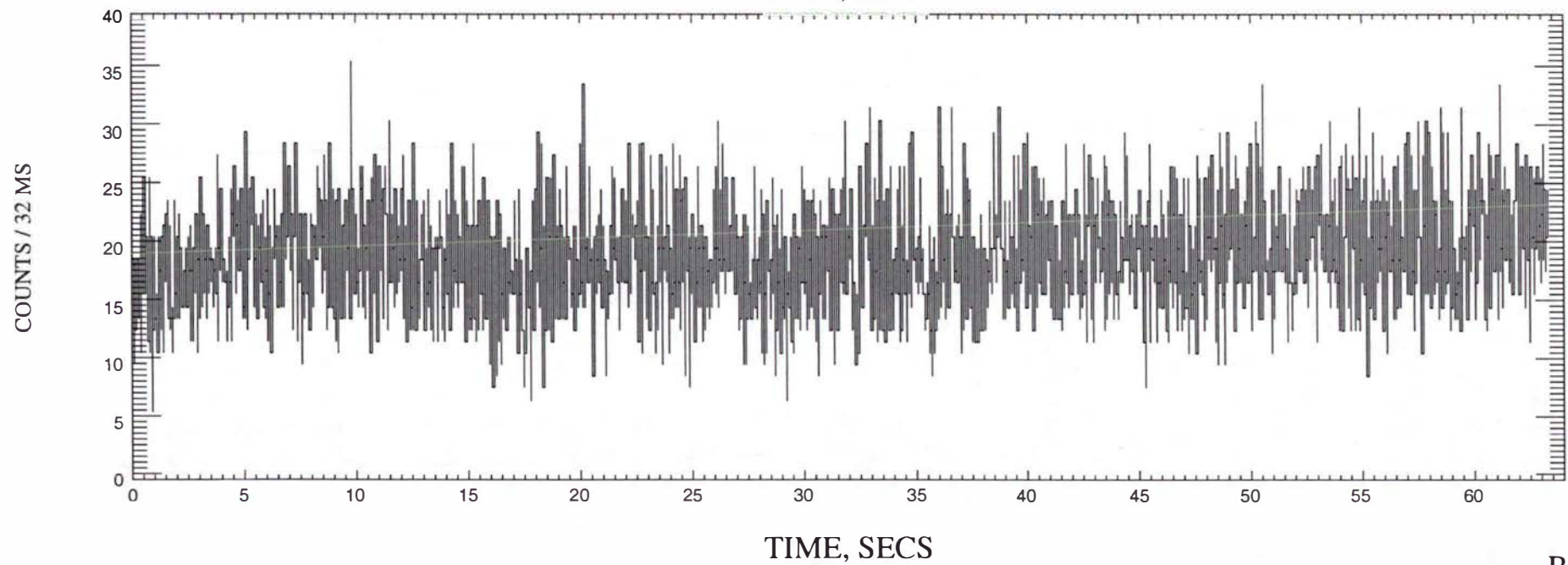
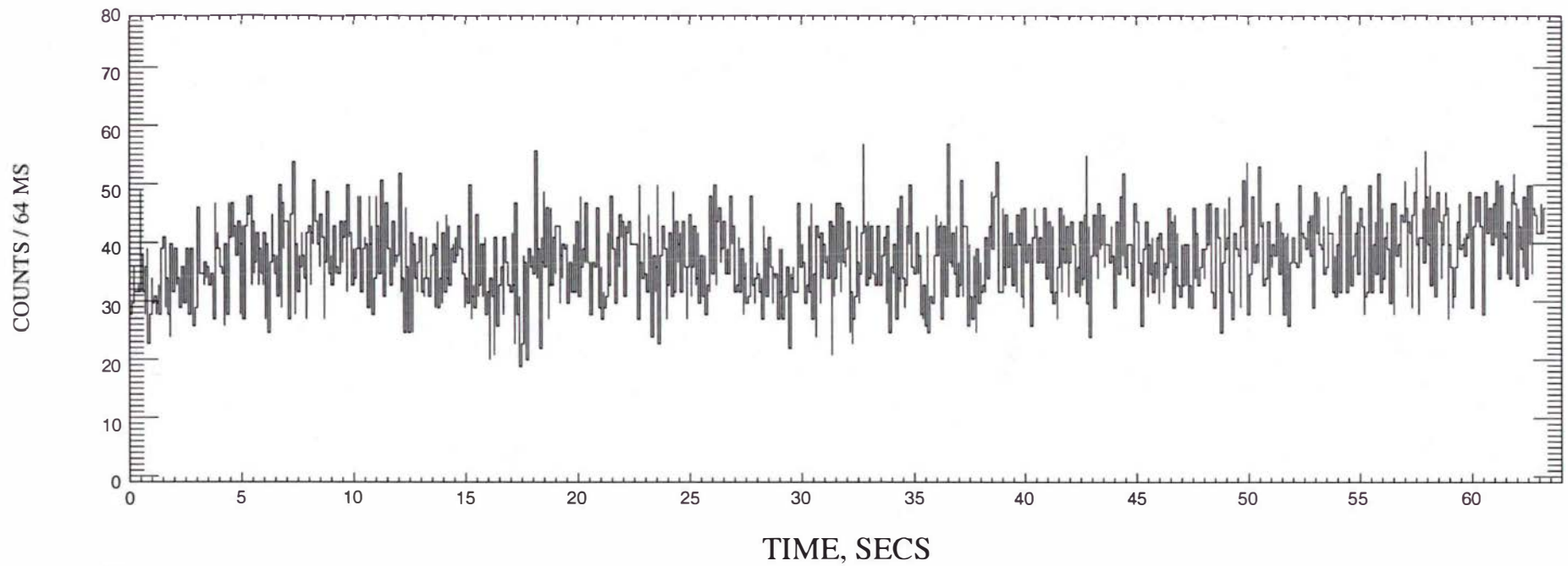


CALIBRATION DATA INCLUDED

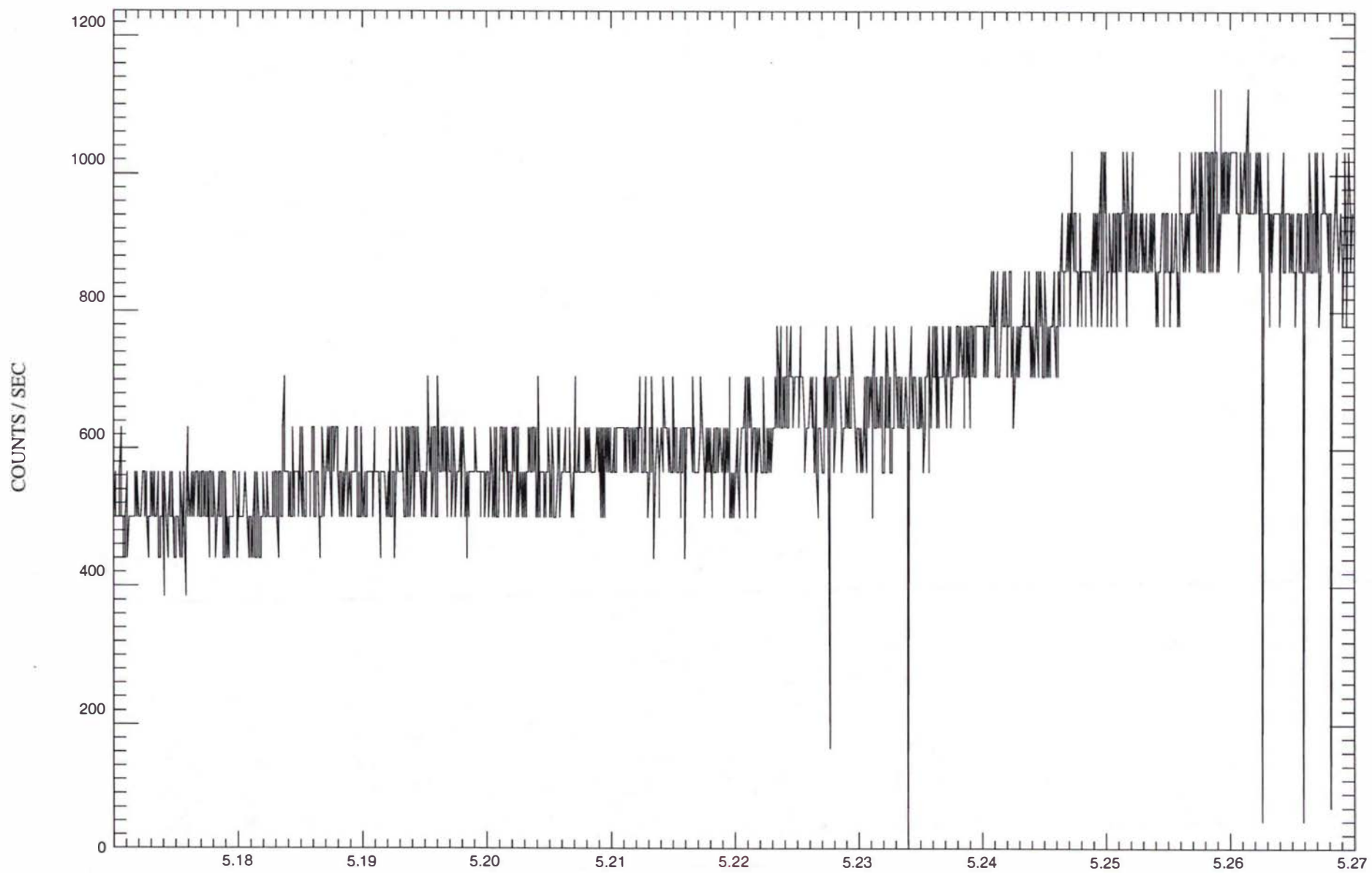


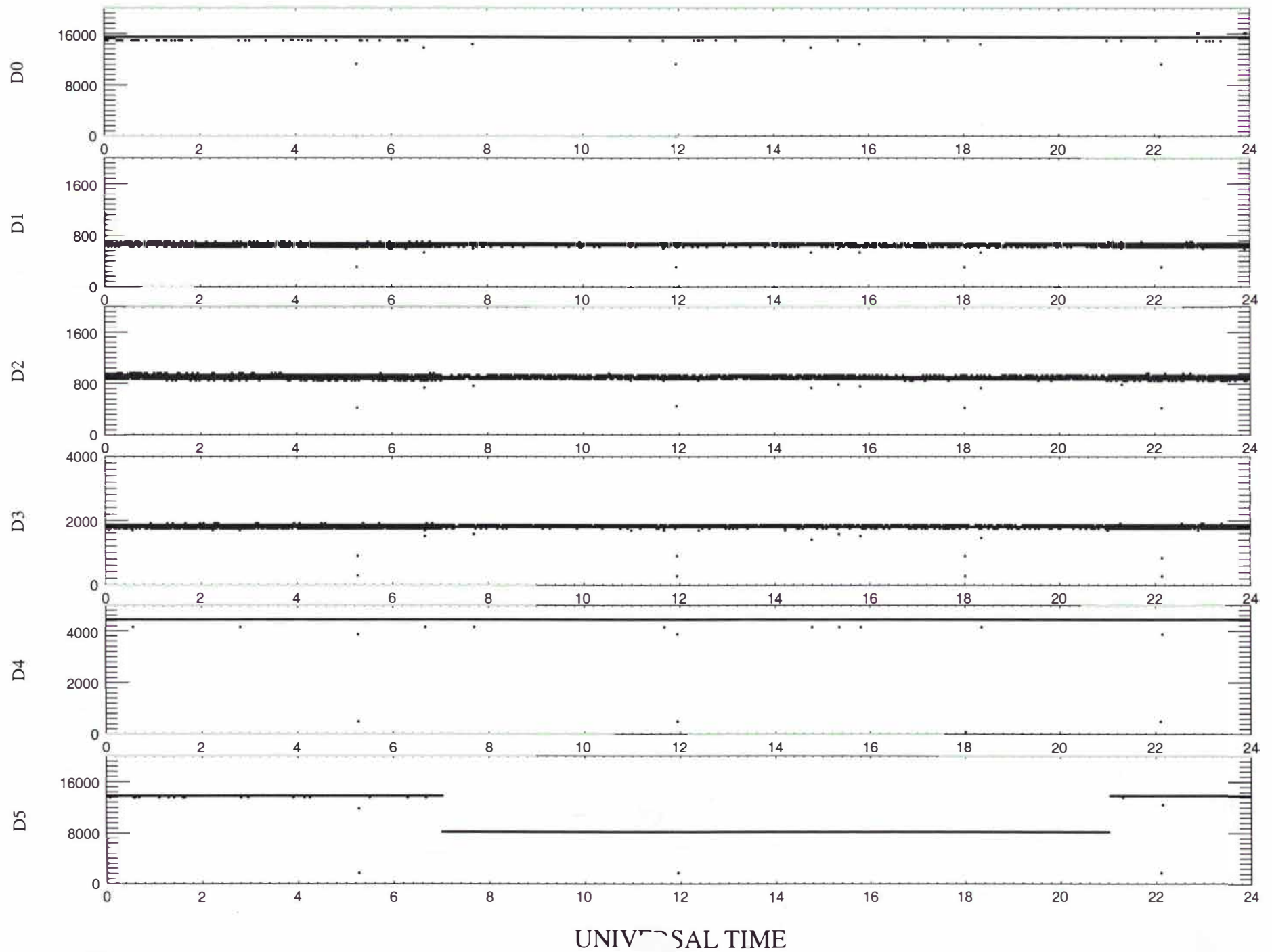
UNIVERSAL TIME

Burst Counter 14 at UT= 5.224306102329 h=18807.502 s 05:13:27.502



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Thu Aug 19 11:42 PDT 1999
Date: Thu, 19 Aug 1999 13:47:52 -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, 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.: 7715

TIME: TJD=1408 SECONDS=21916

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT OVER INDIAN OCEAN.

KONUS2 19990818 21954

ULYSSES RT

18 / 8 / 99

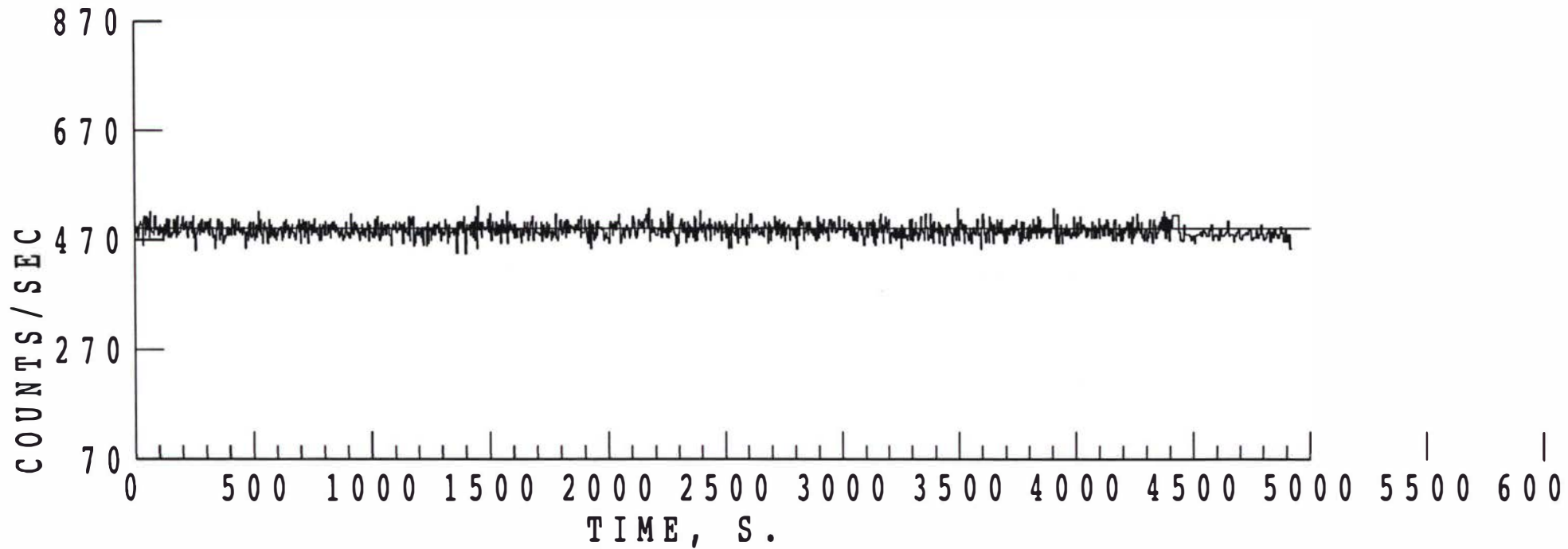
18 / 8 / 99 19116.016 s

INTERVALS REGROUPED BY 13

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

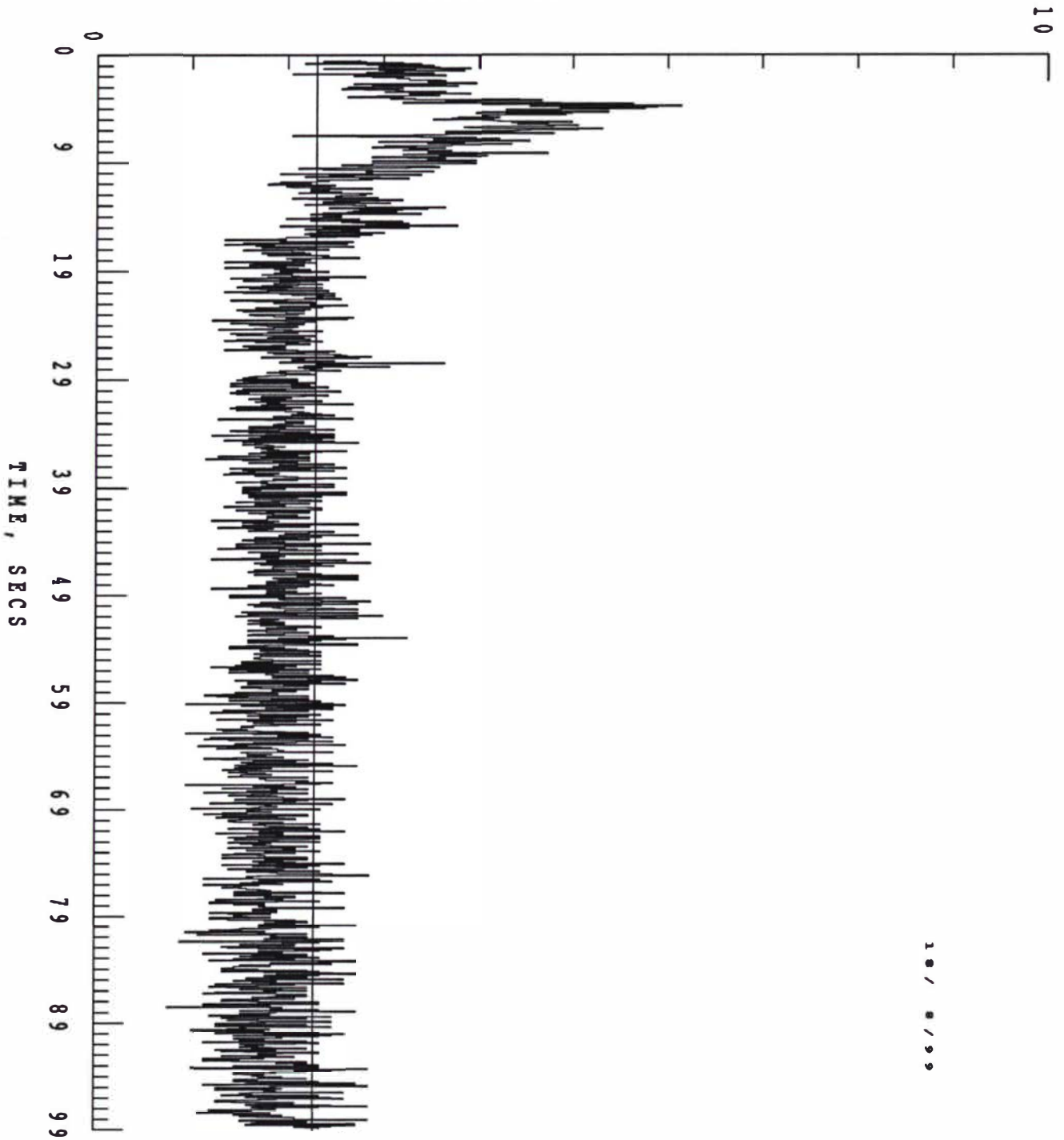
18/08/99

21954.242

50 - 200 keV

2000.8462

COUNTS/0.064 S



KONUS2 19990818 50333

ULYSSES RT

12 / 01 / 00

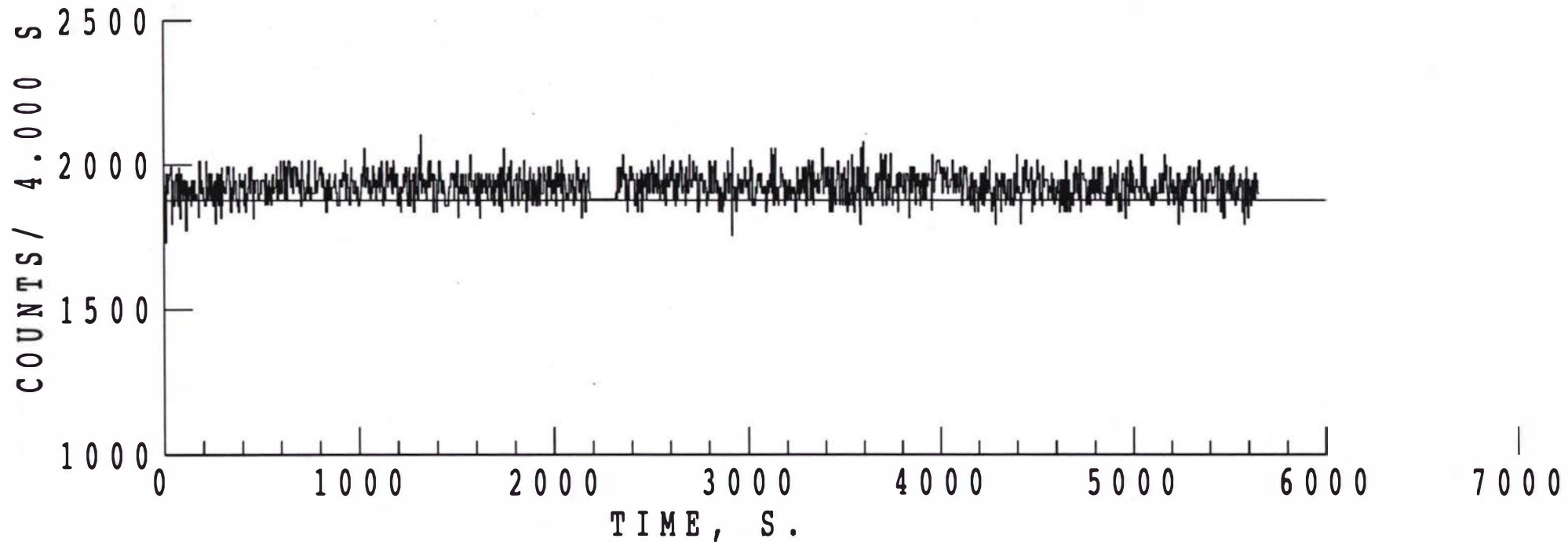
18/08/99 47520.305 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



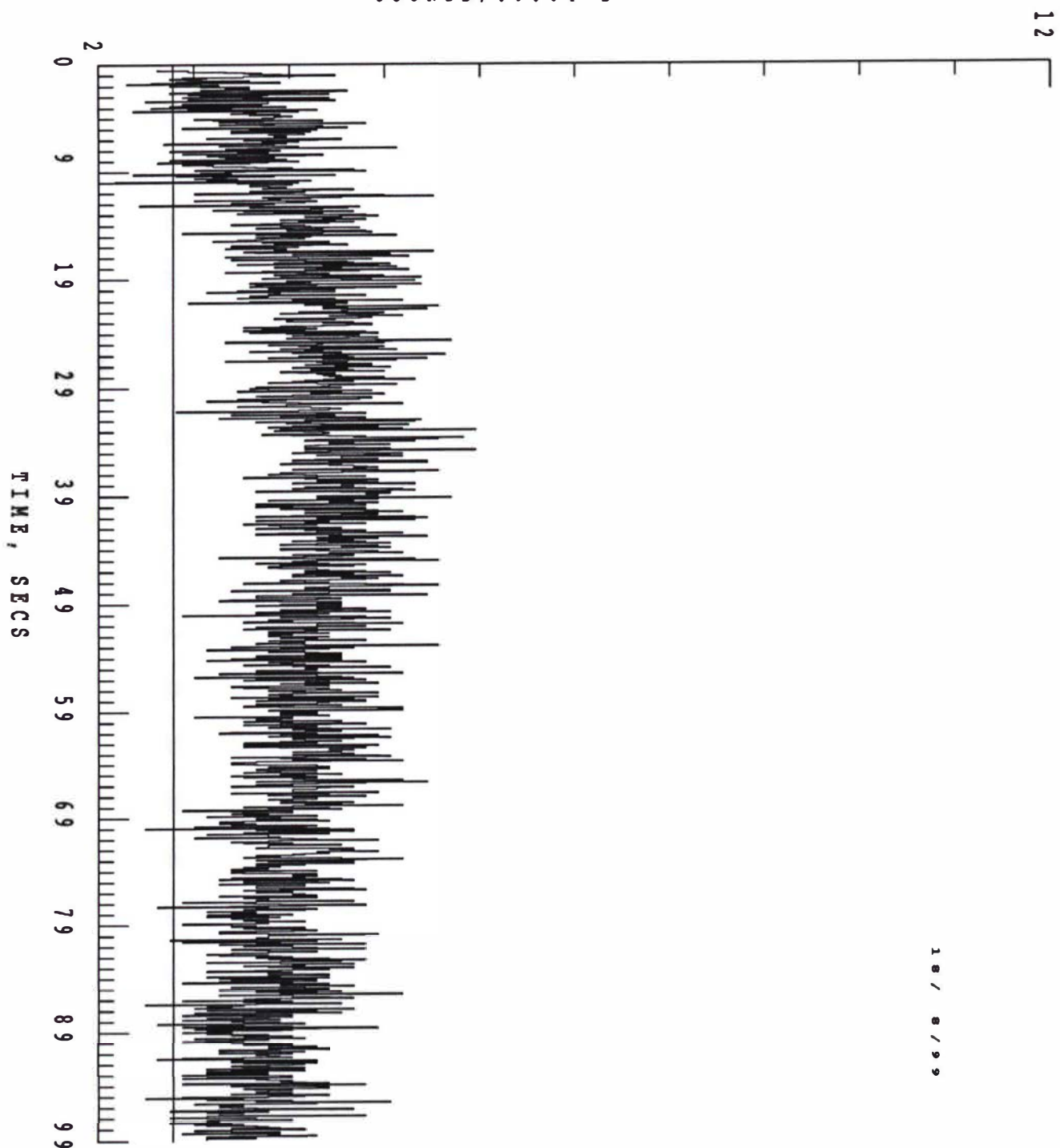
KONUS

18/08/99

50333.153

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990818 60187

ULYSSES RT

19 / 8 / 99

18 / 8 / 99 57384.398 s

0.500 S INTERVALS REGROUPED BY 8

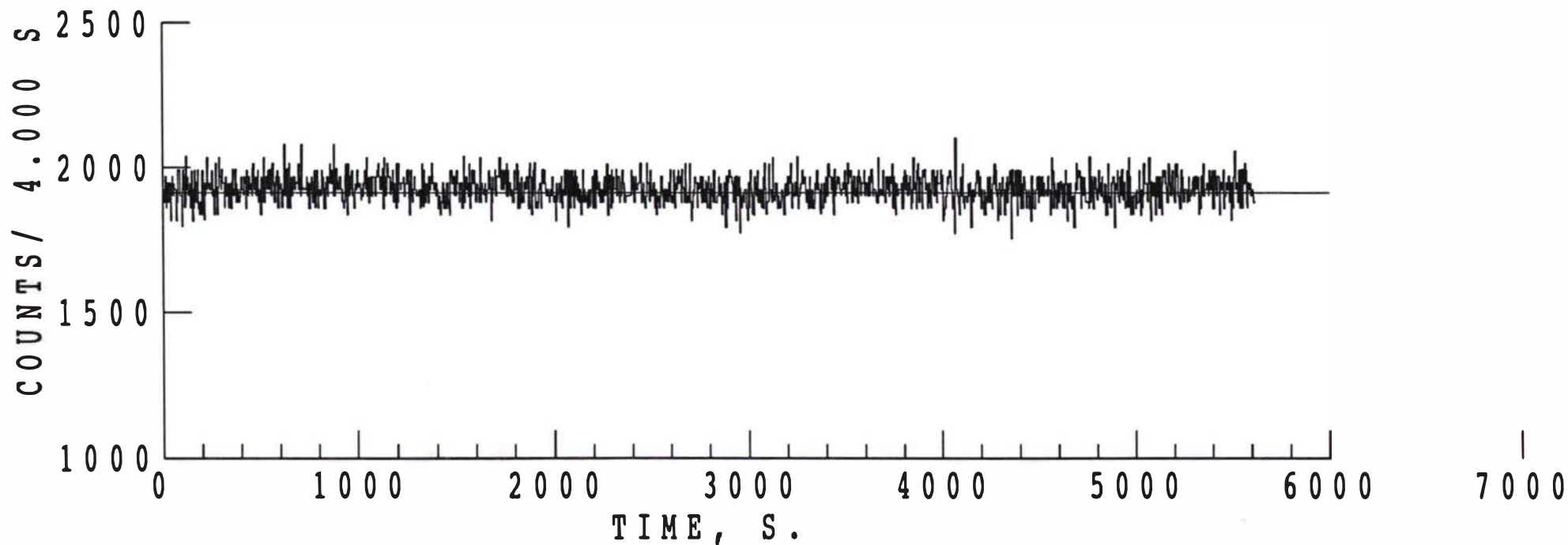
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

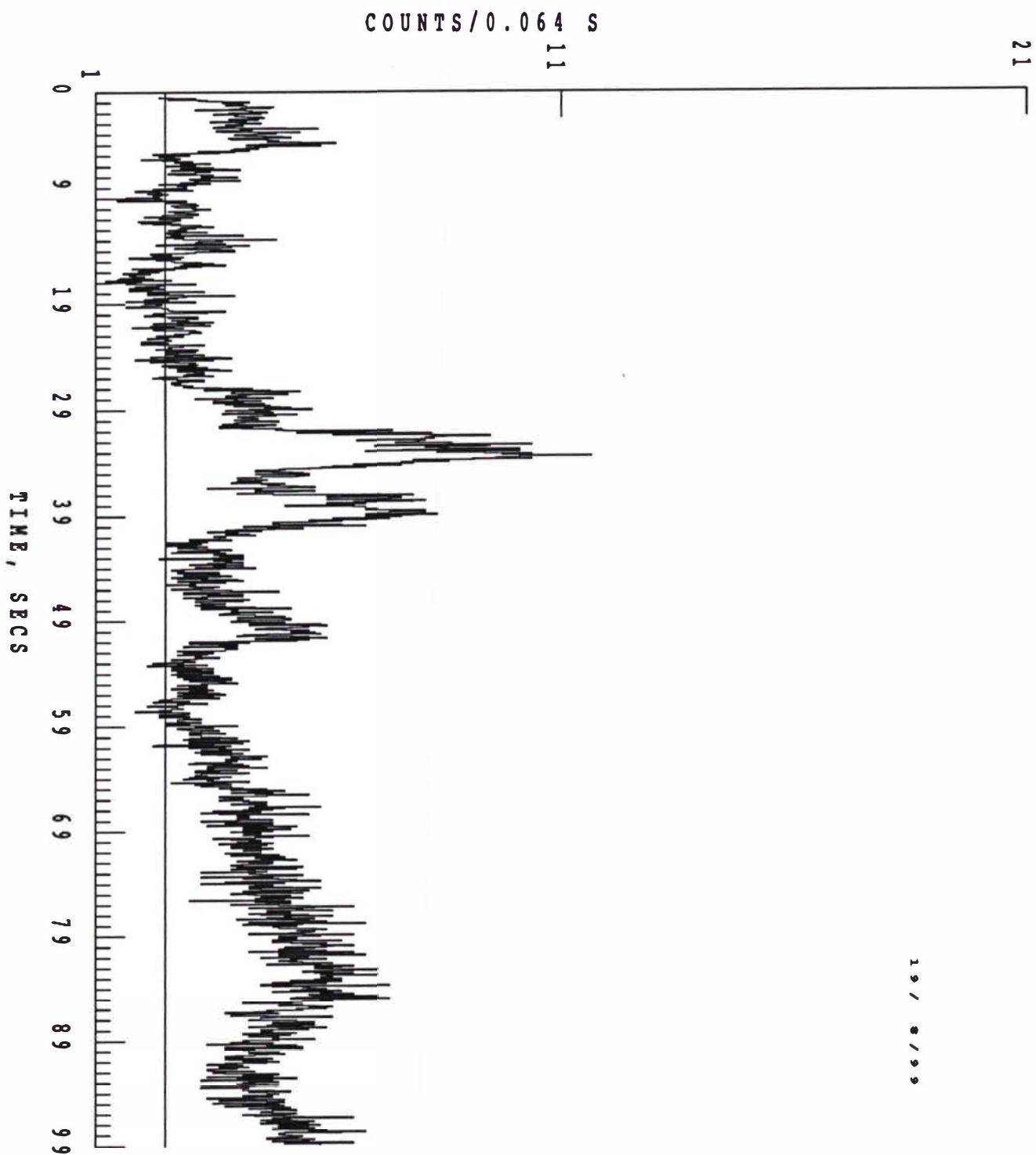


KONUS

18/08/99

60187.724

50- 200 keV



KONUS2 19990818 60187

ULYSSES RT

19 / 8 / 99

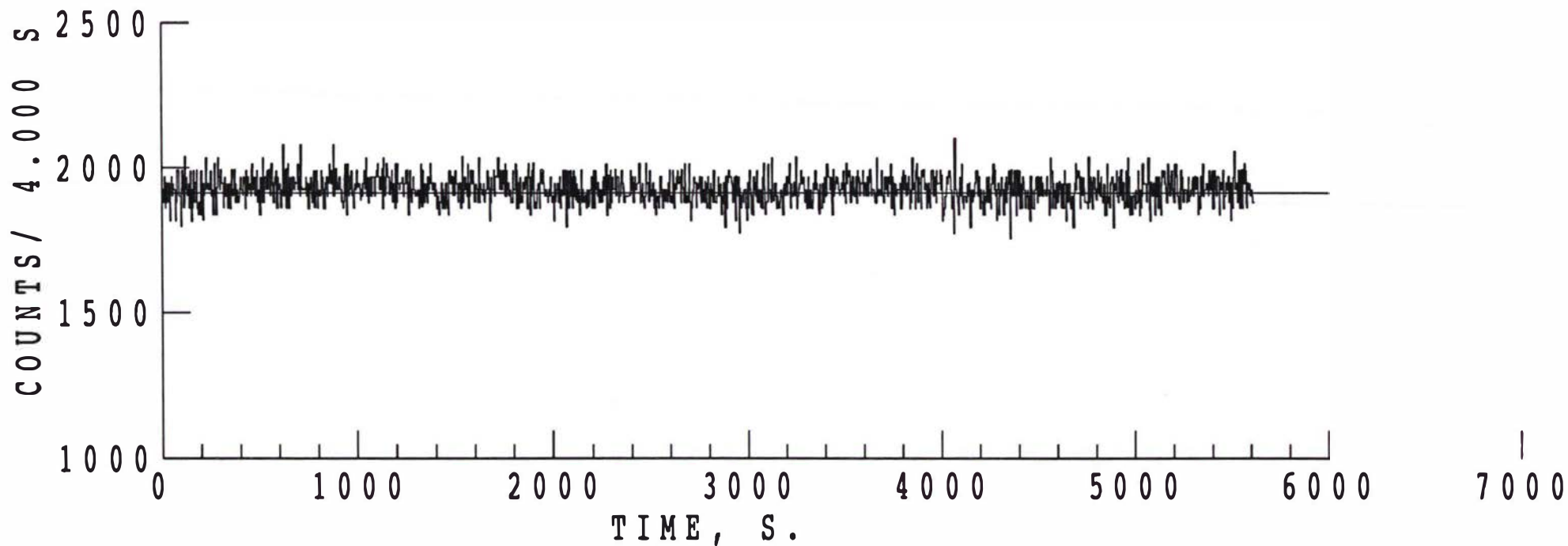
18 / 8 / 99 57384.398 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



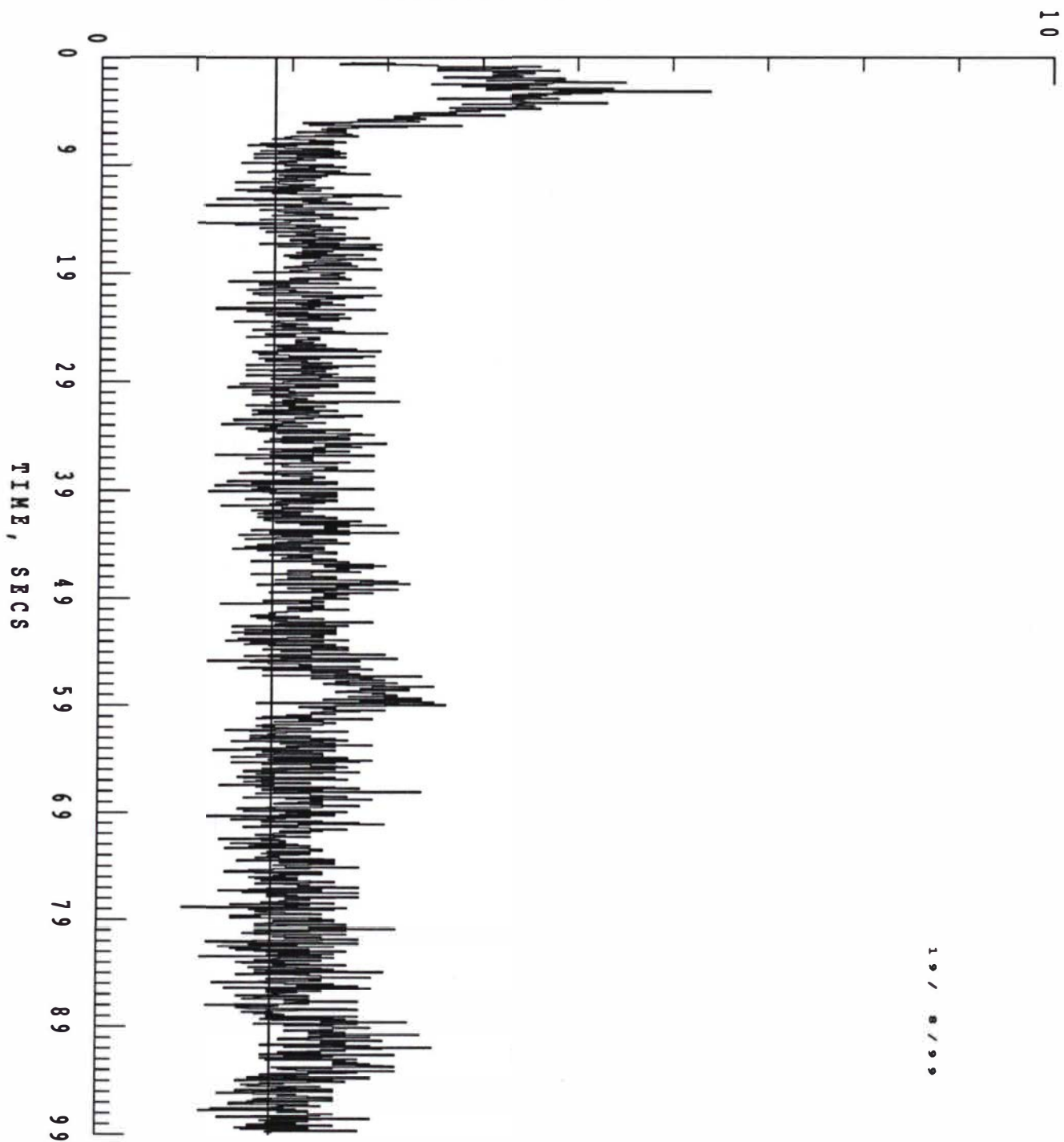
KONUS

18/08/99

72892.978

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990818 72892

ULYSSES RT

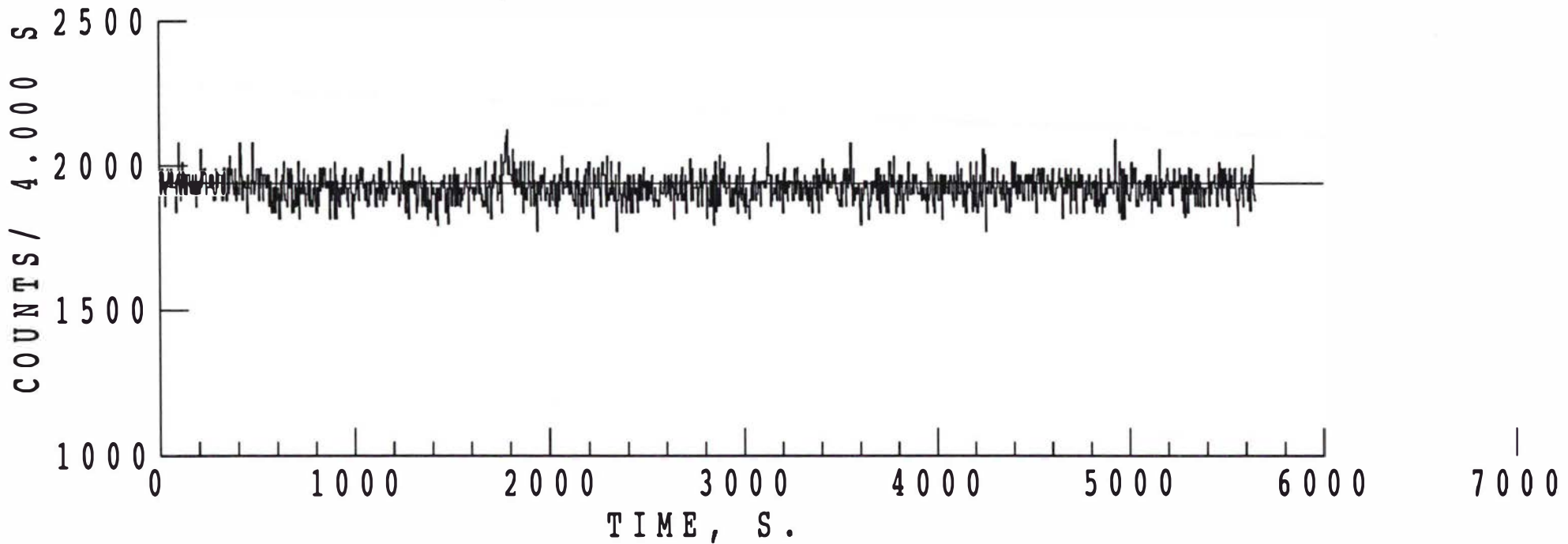
19 / 8 / 99

18 / 8 / 99 70056.031 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS1 19990818 85663

ULYSSES RT

19 / 8 / 99

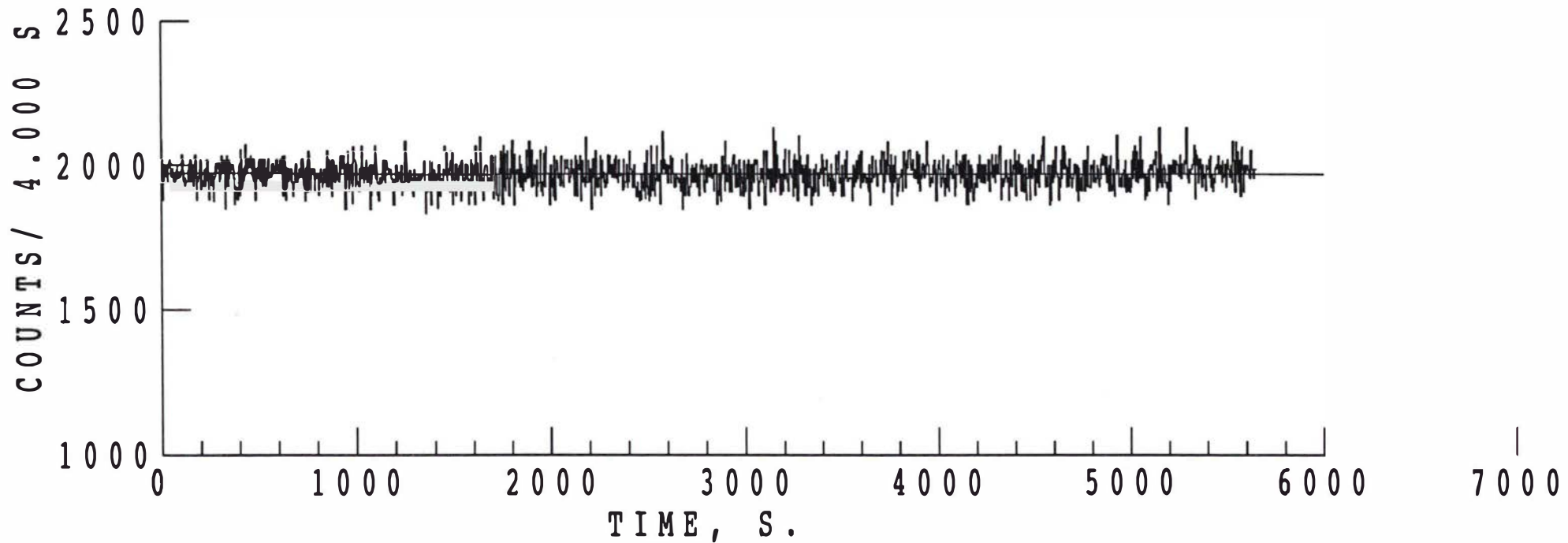
18 / 8 / 99 82836.156 s

0.250 S INTERVALS REGROUPED BY 16

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



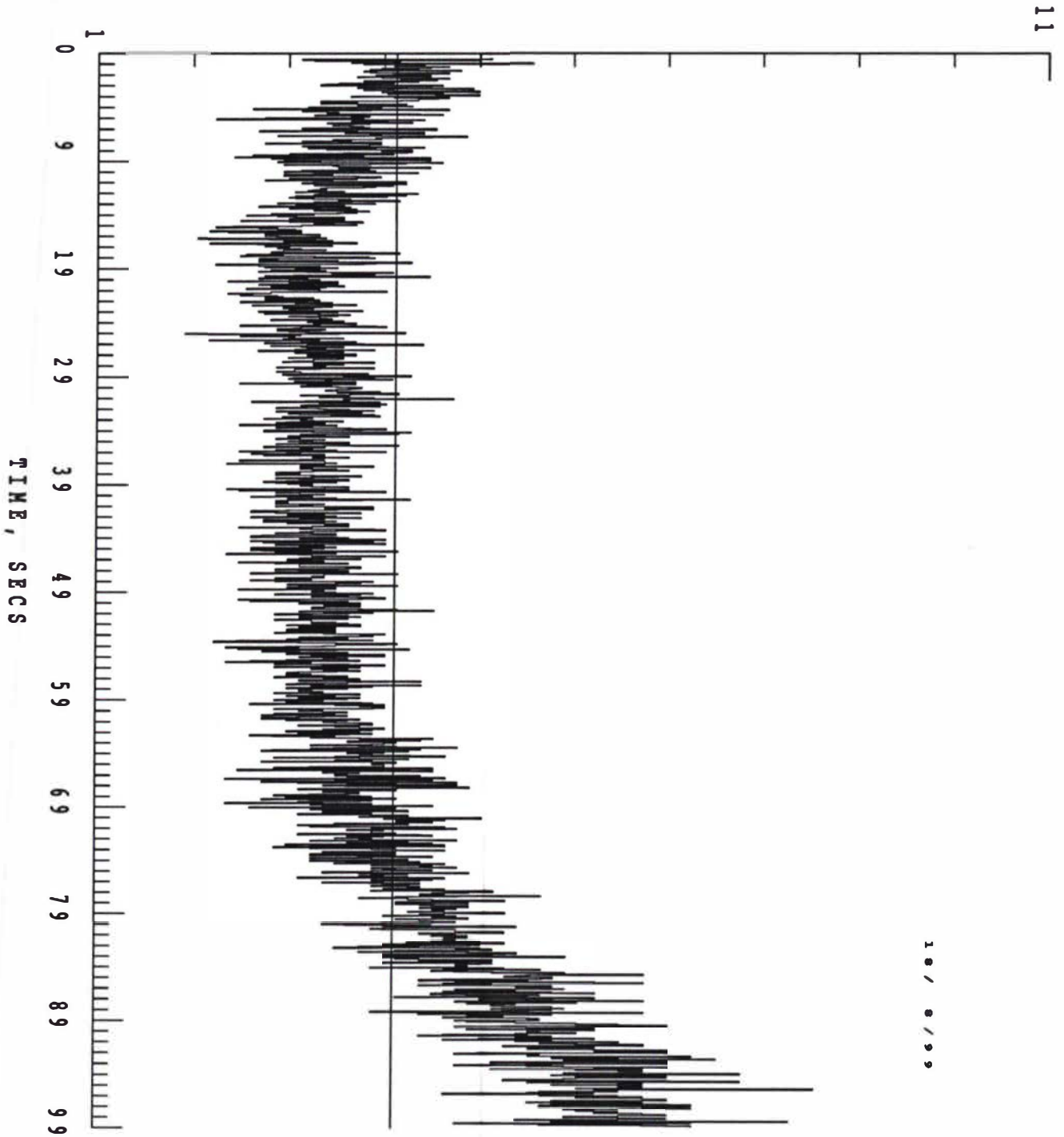
KONUS

18/08/99

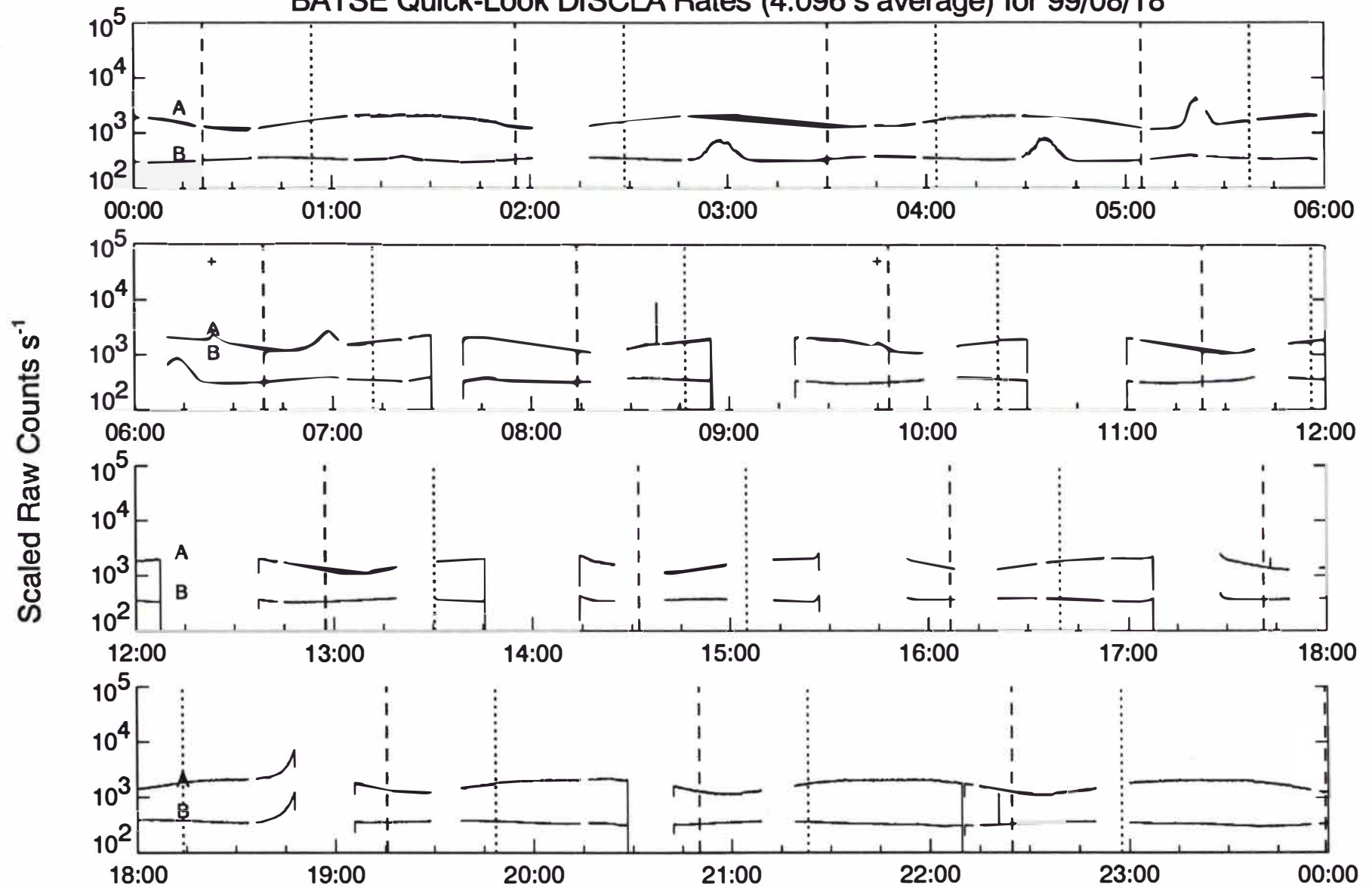
85663.876

50- 200 keV

COUNTS/0.064 S



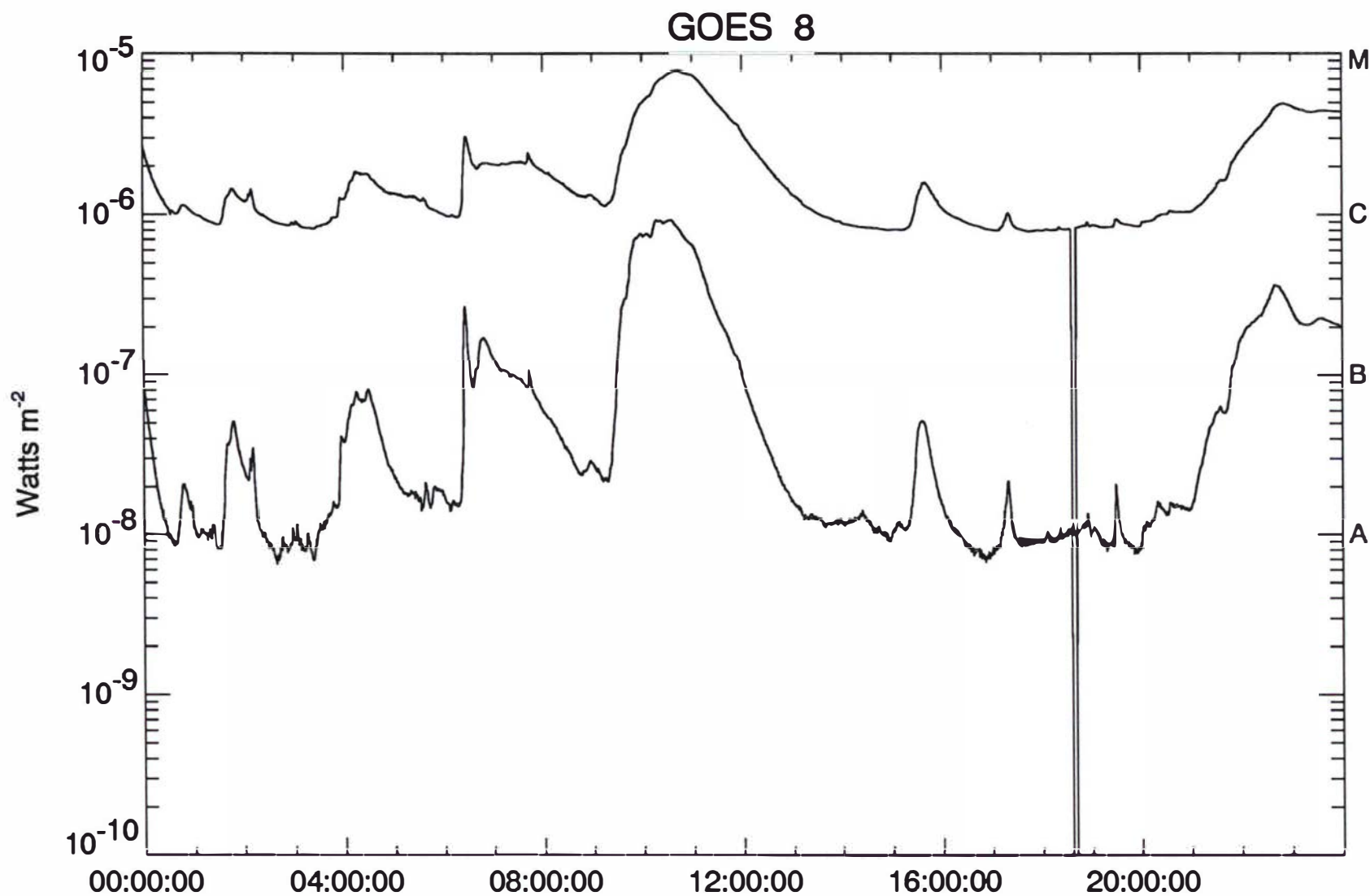
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/18



Current Time: 99/08/22, 1006 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: 99/08/18, 0000:00

Plot created: 99/08/22, 1005

Channel 1 (1.0 - 8.0 Angstroms)

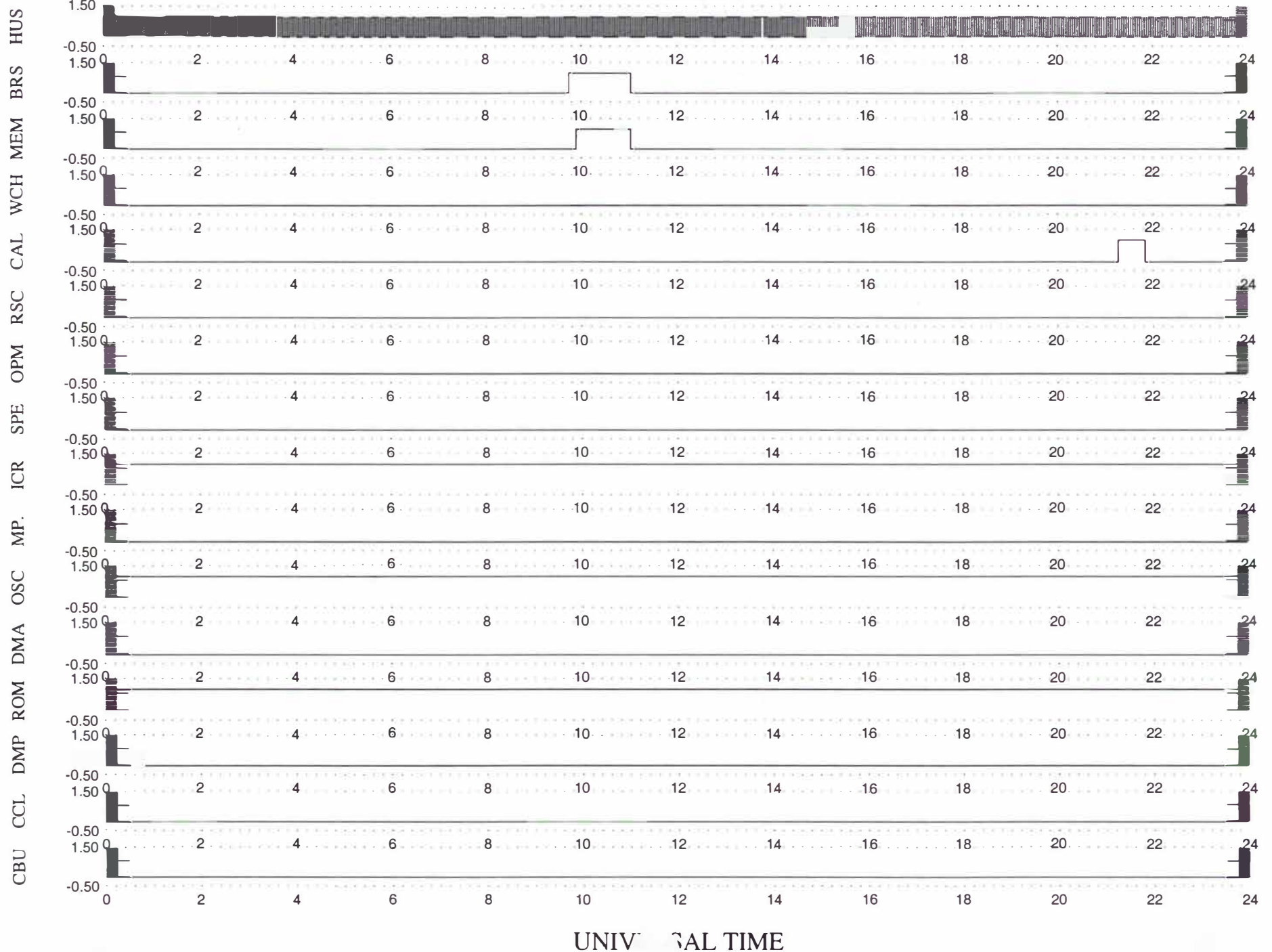
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

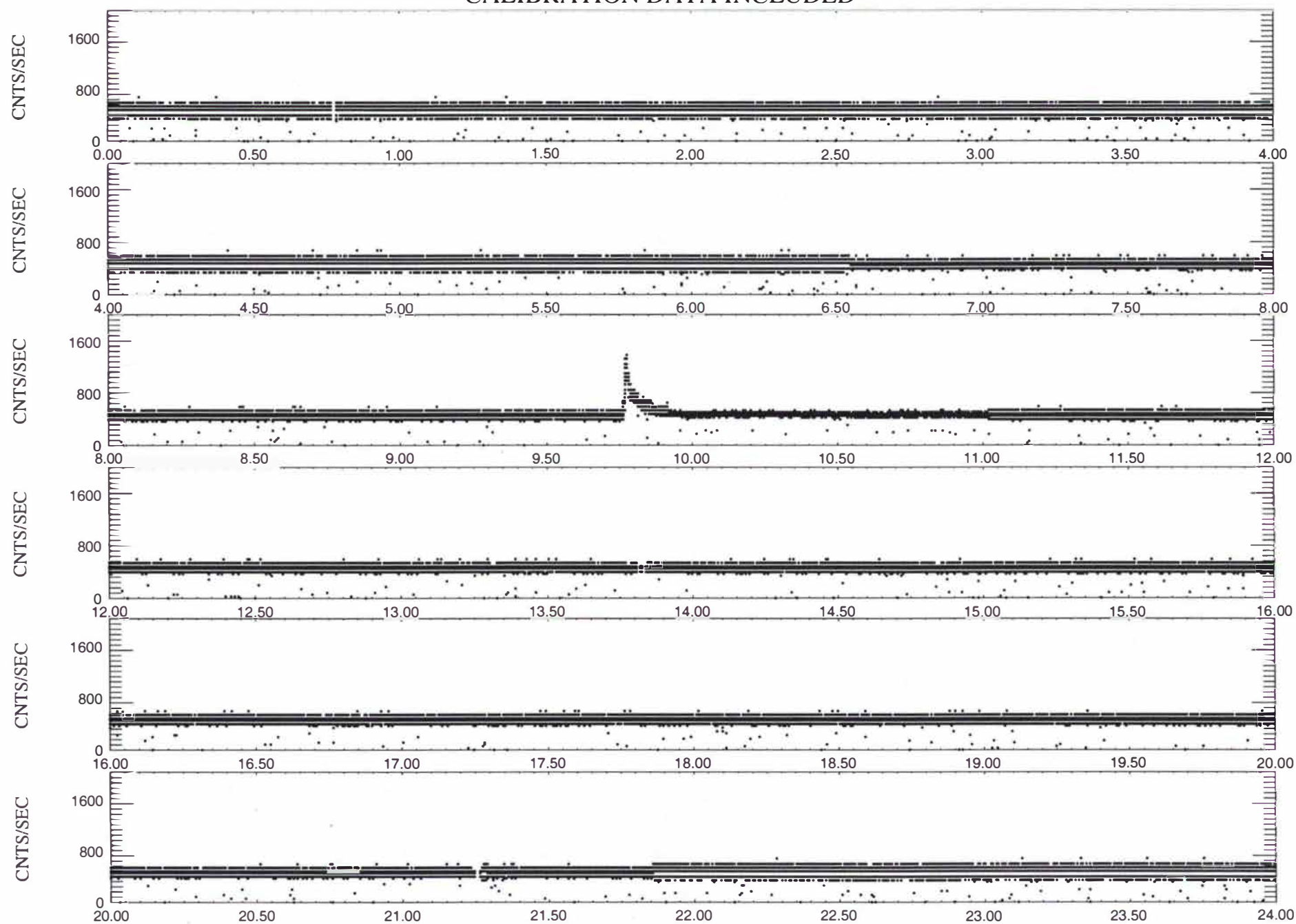
Background not subtracted

Sample average = 10

BURST NUMBER 15

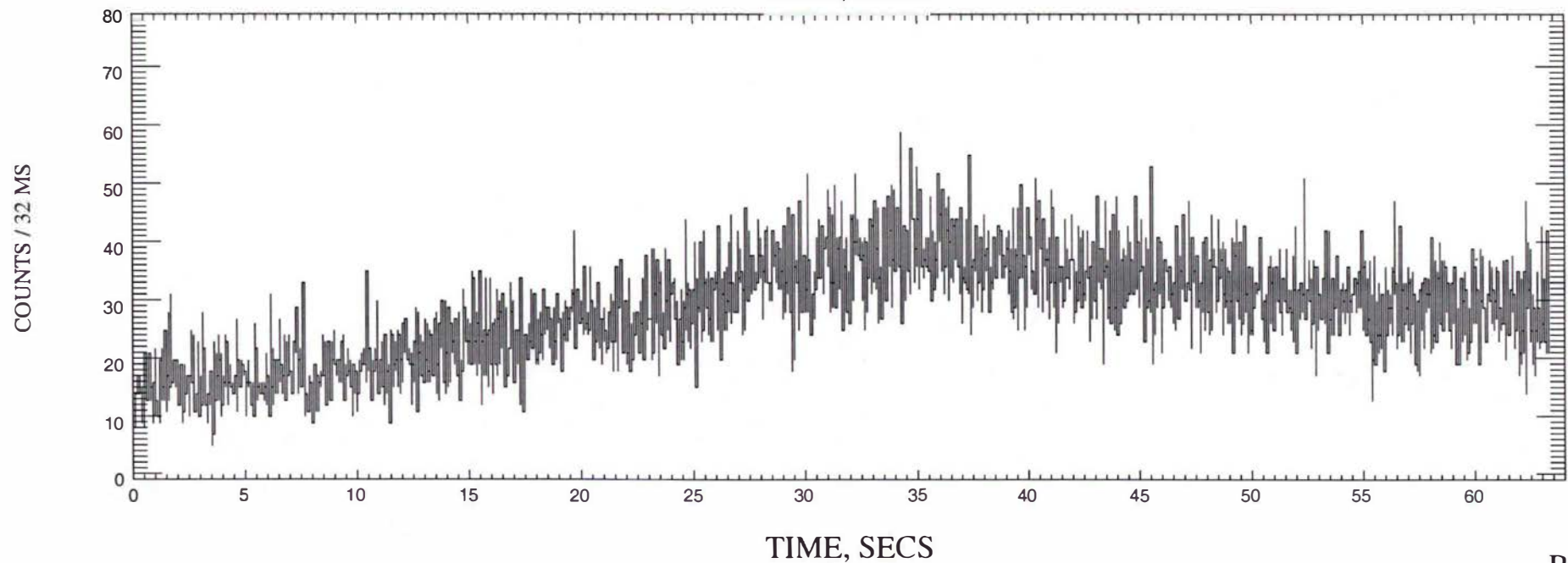
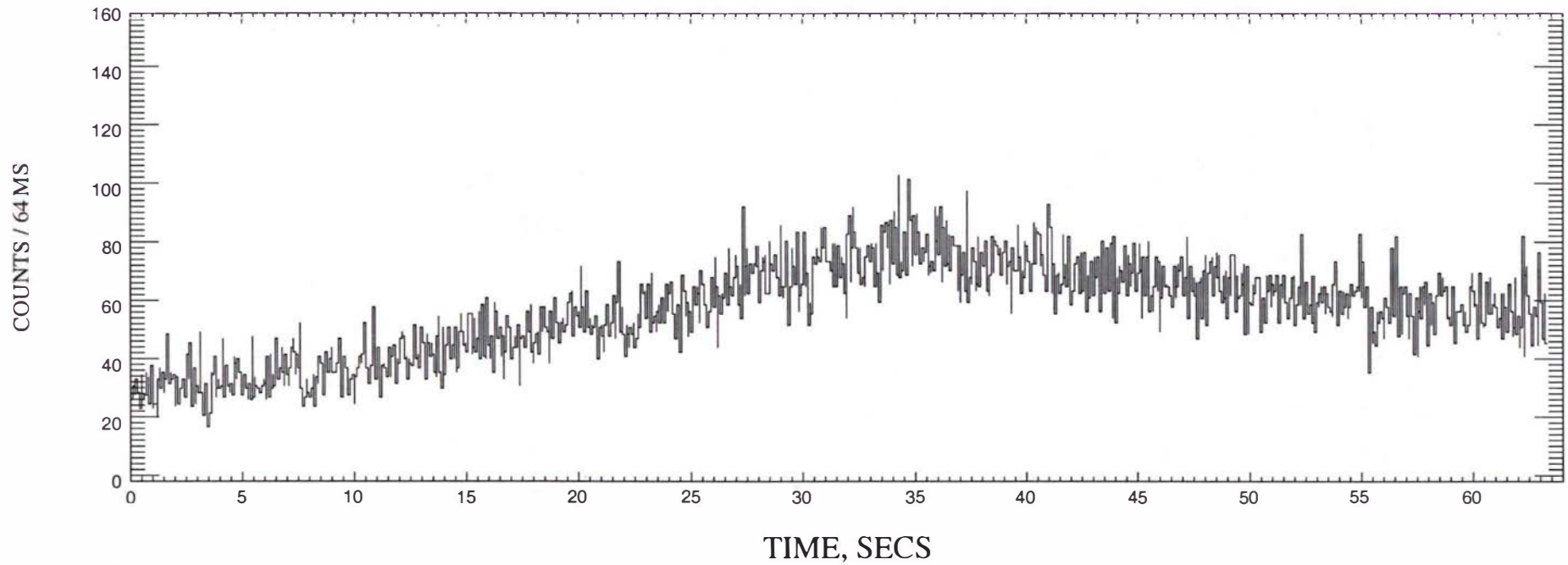


CALIBRATION DATA INCLUDED

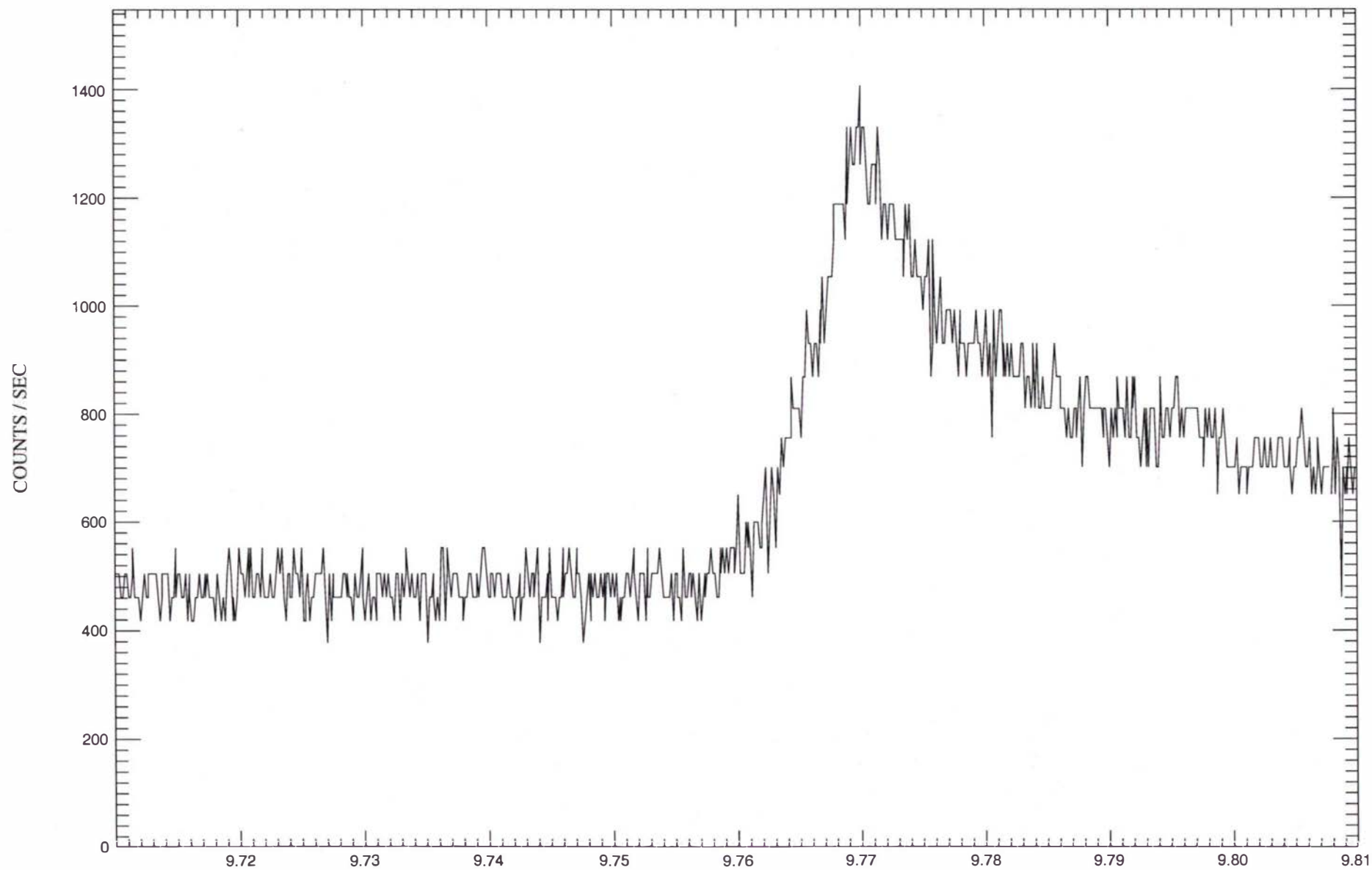


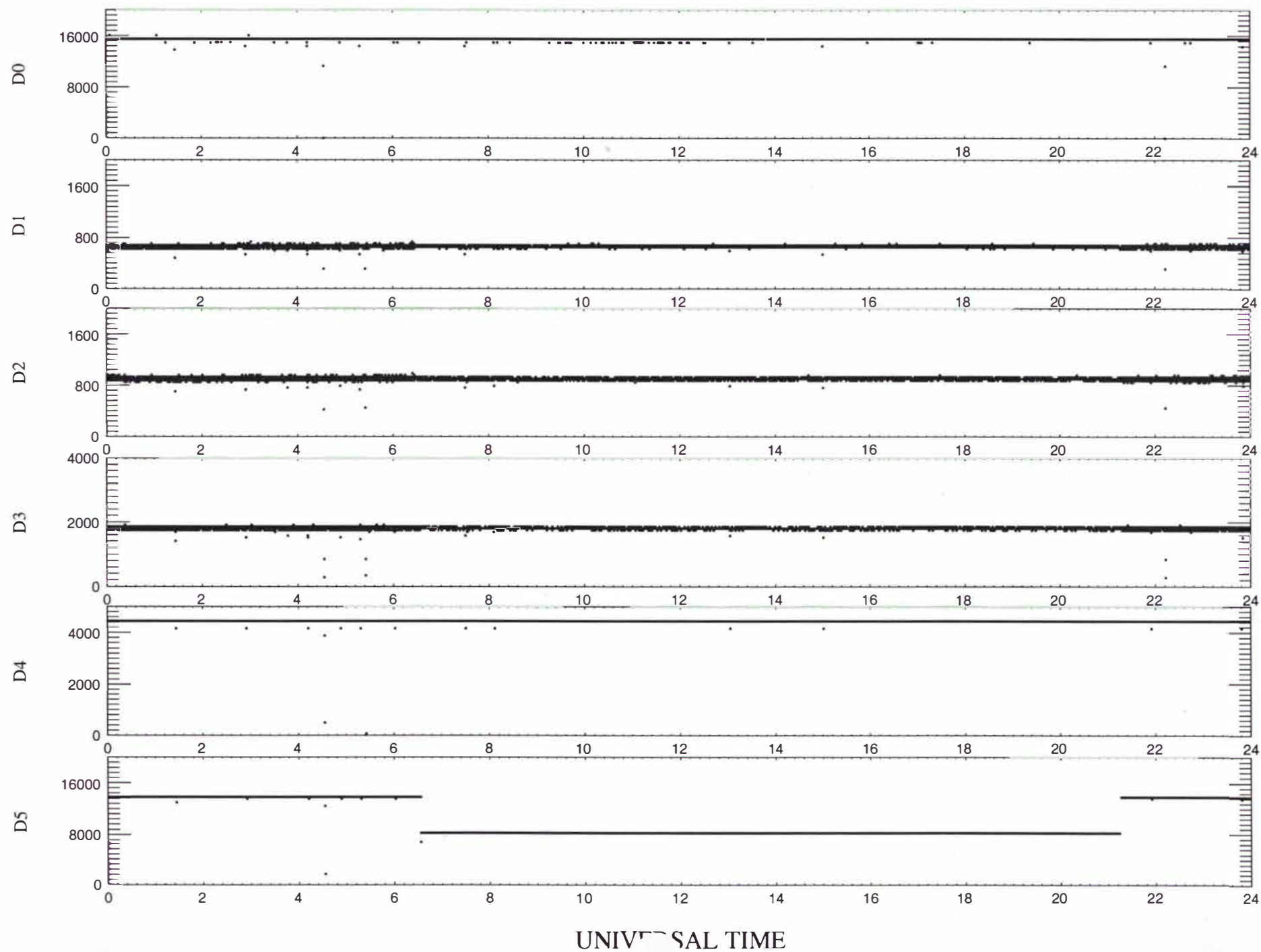
UNIVERSAL TIME

Burst Counter 15 at UT= 9.762441533407 h=35144.790 s 09:45:44.790



CALIBRATION DATA INCLUDED





KONUS2 19990819 03763

ULYSSES RT

12 / 01 / 00

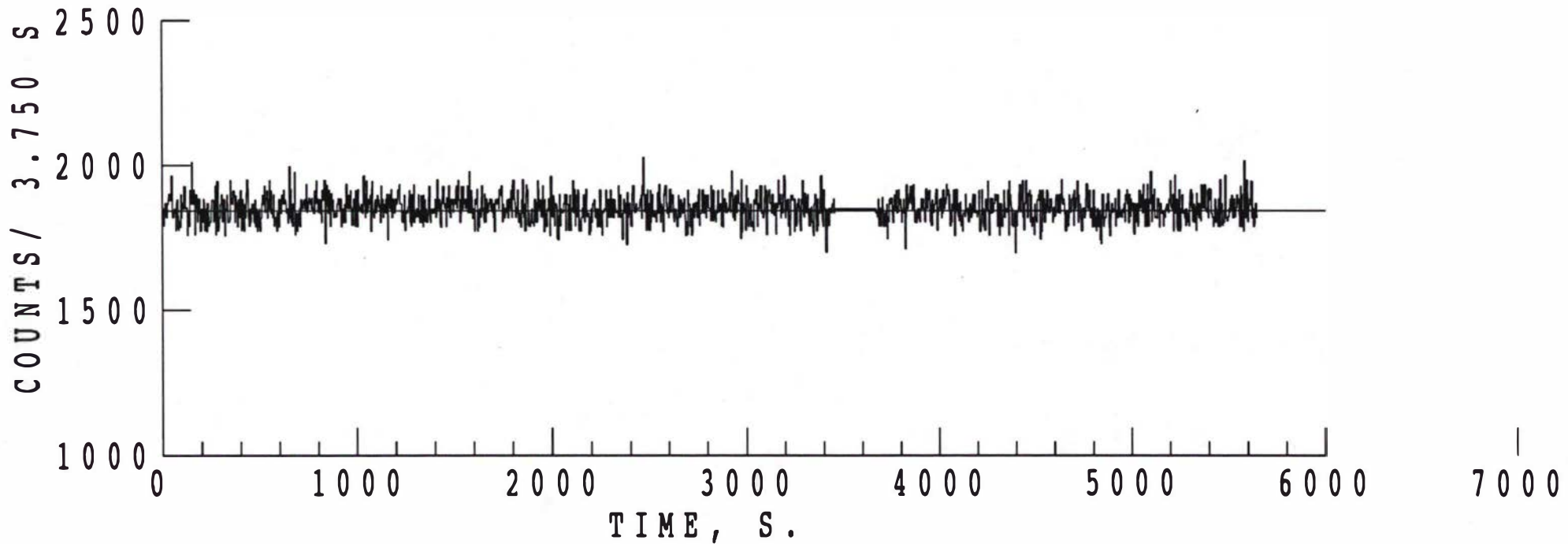
19/08/99 936.209 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

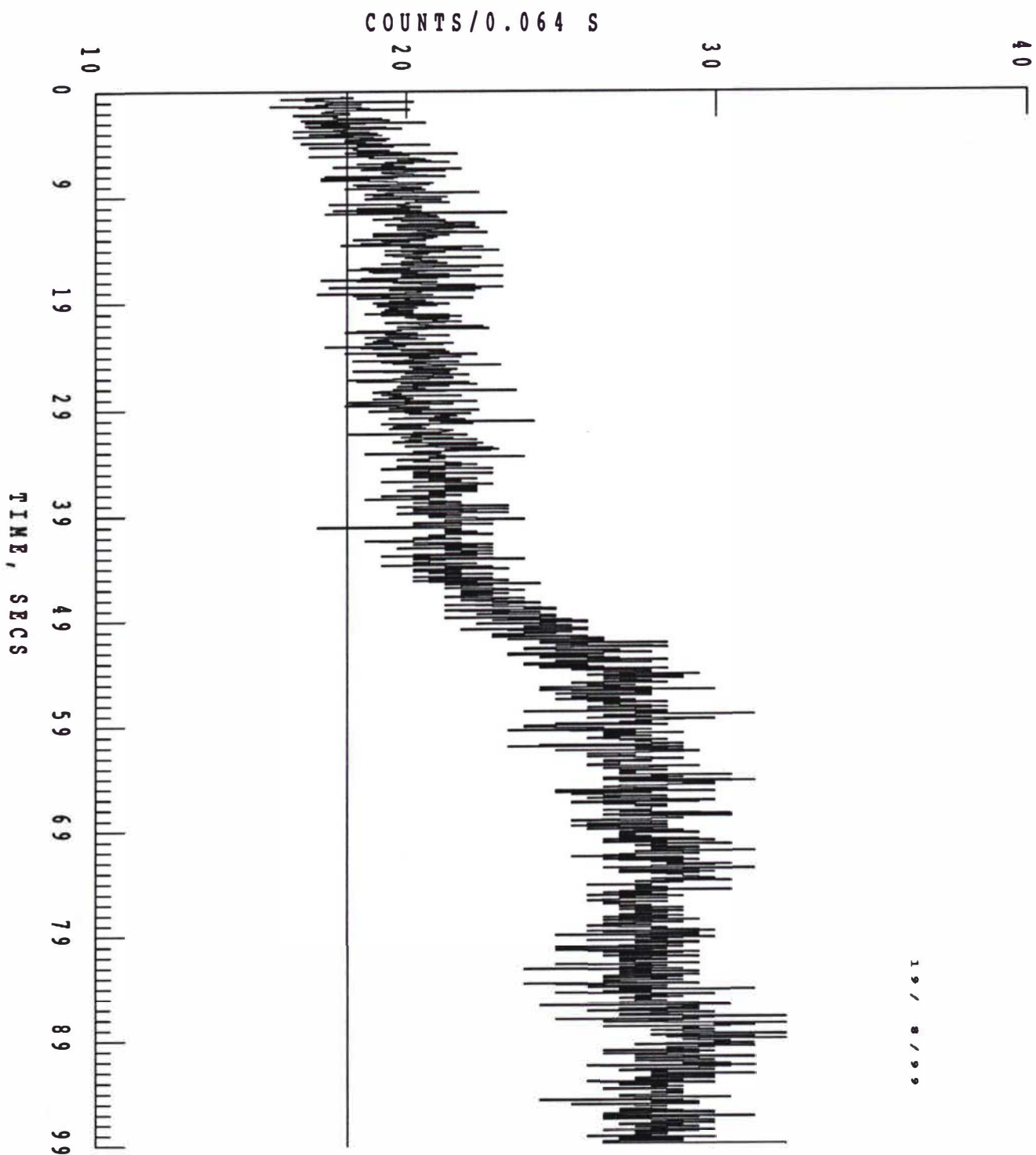


KONUS

19/08/99

3763.087

50- 200 keV



KONUS1 19990819 09459

ULYSSES RT

19 / 8 / 99

19 / 8 / 99 6624.015 s

0.250 S INTERVALS REGROUPED BY 15

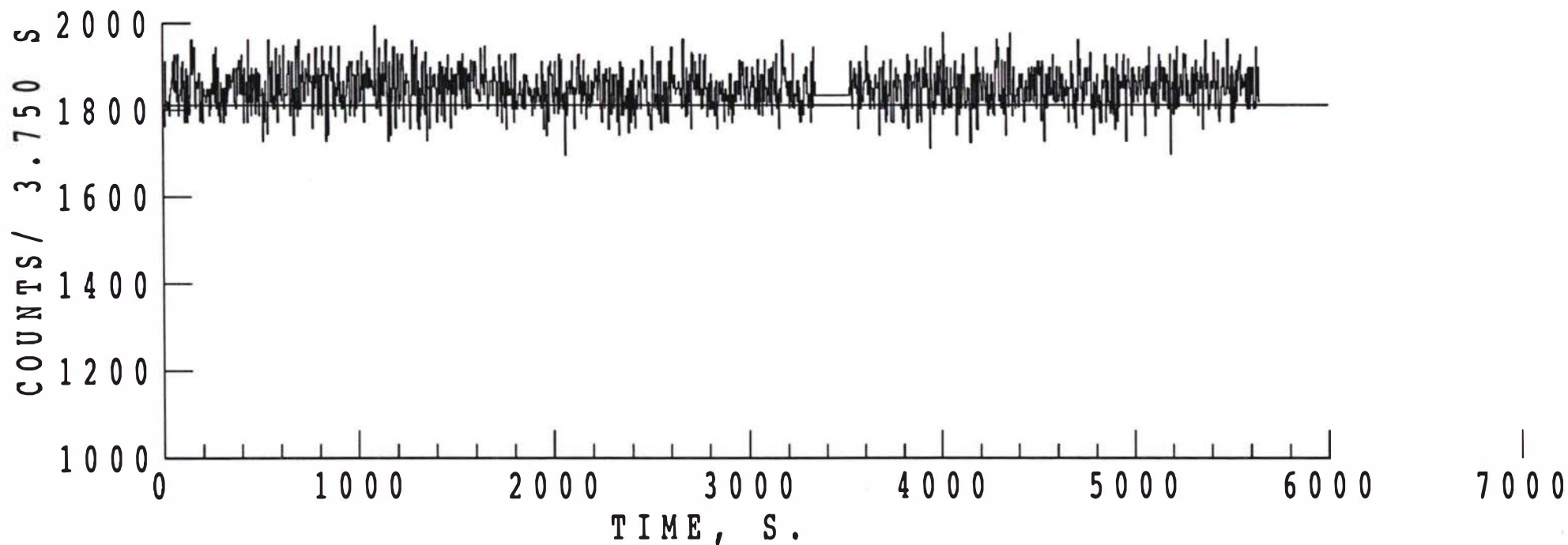
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



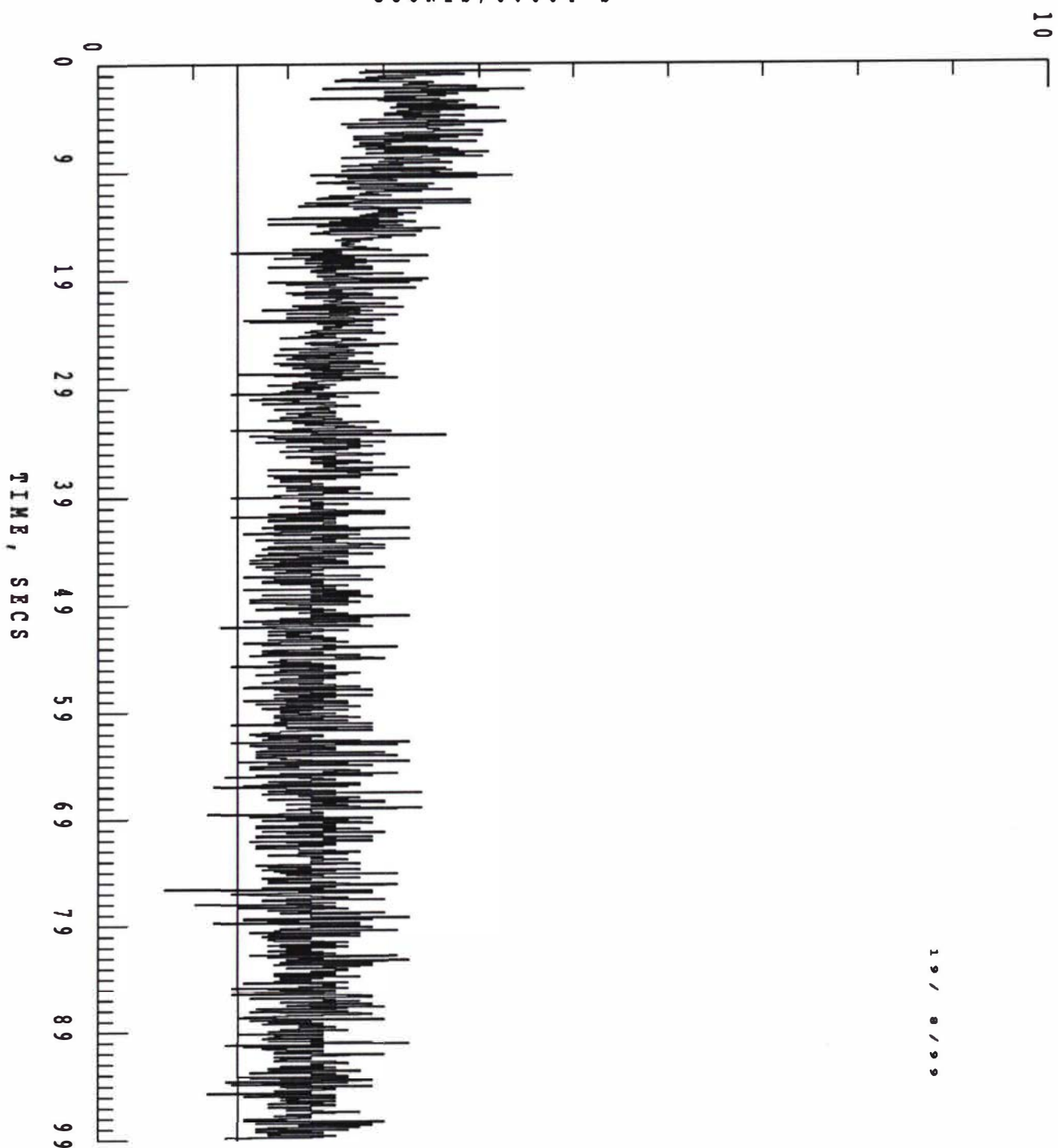
KONUS

19/08/99

9459.859

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990819 14392

ULYSSES RT

19 / 8 / 99

19 / 8 / 99 11556.067 s

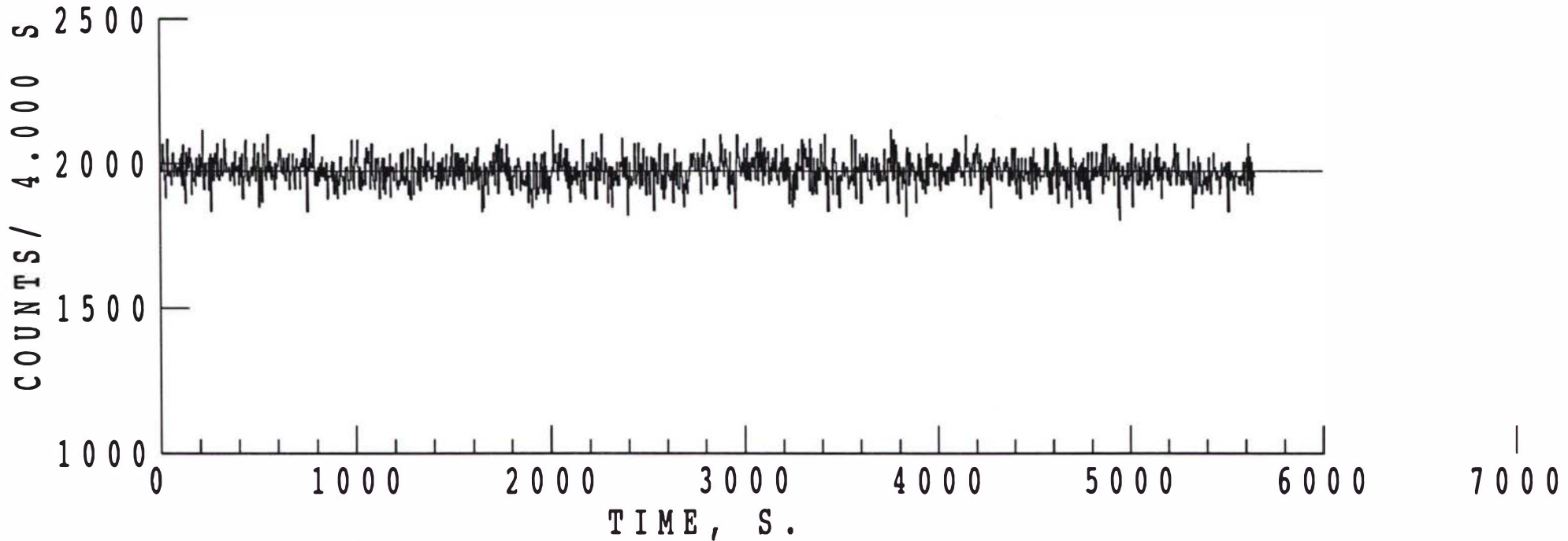
0.250 S INTERVALS REGROUPED BY 16

0 - 0 keV

| |

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



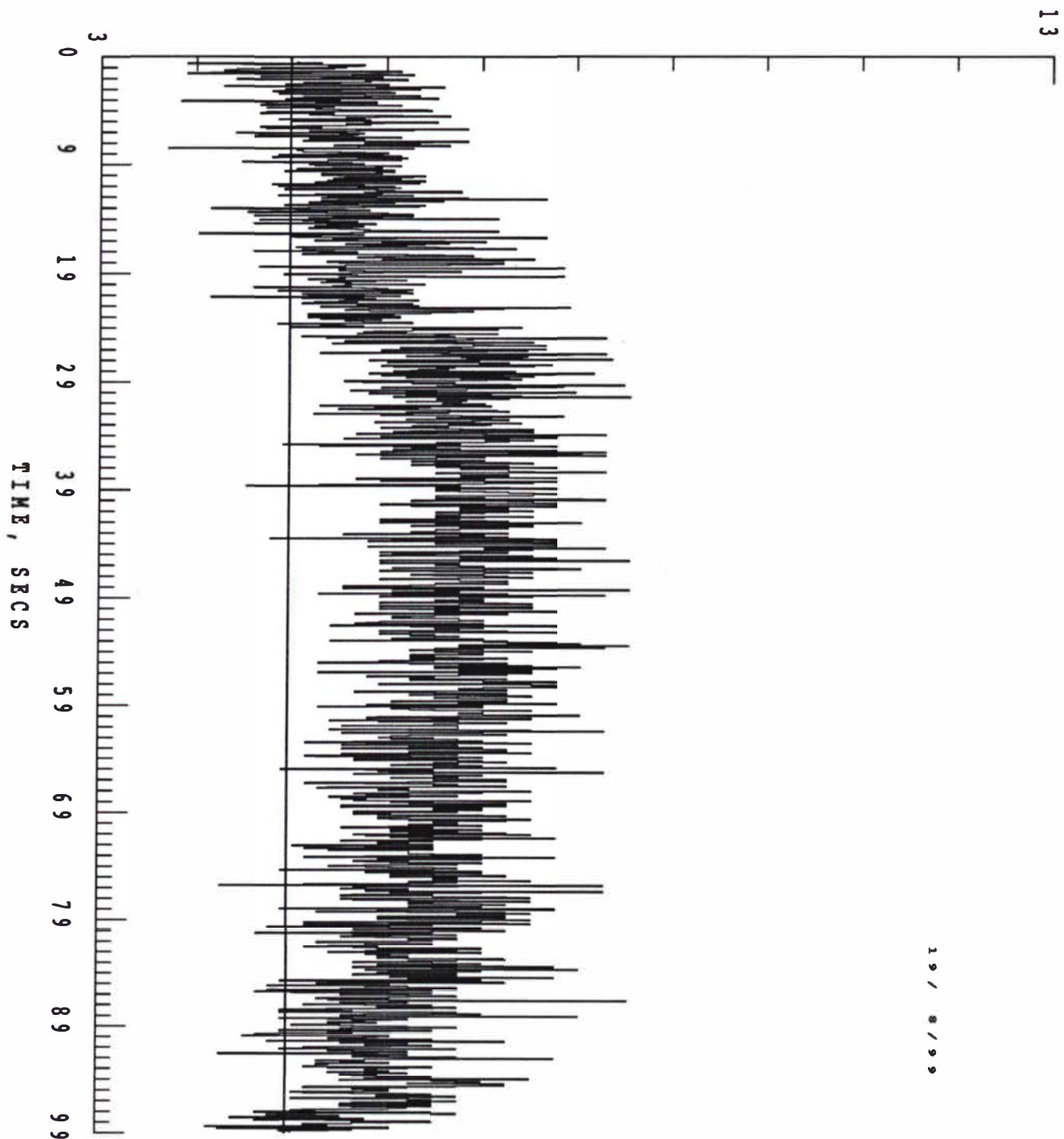
KONUS

19/08/99

14392.220

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990819 18355

ULYSSES RT

19 / 8 / 99

19 / 8 / 99 15552.106 s

0.250 S INTERVALS REGROUPED BY 15

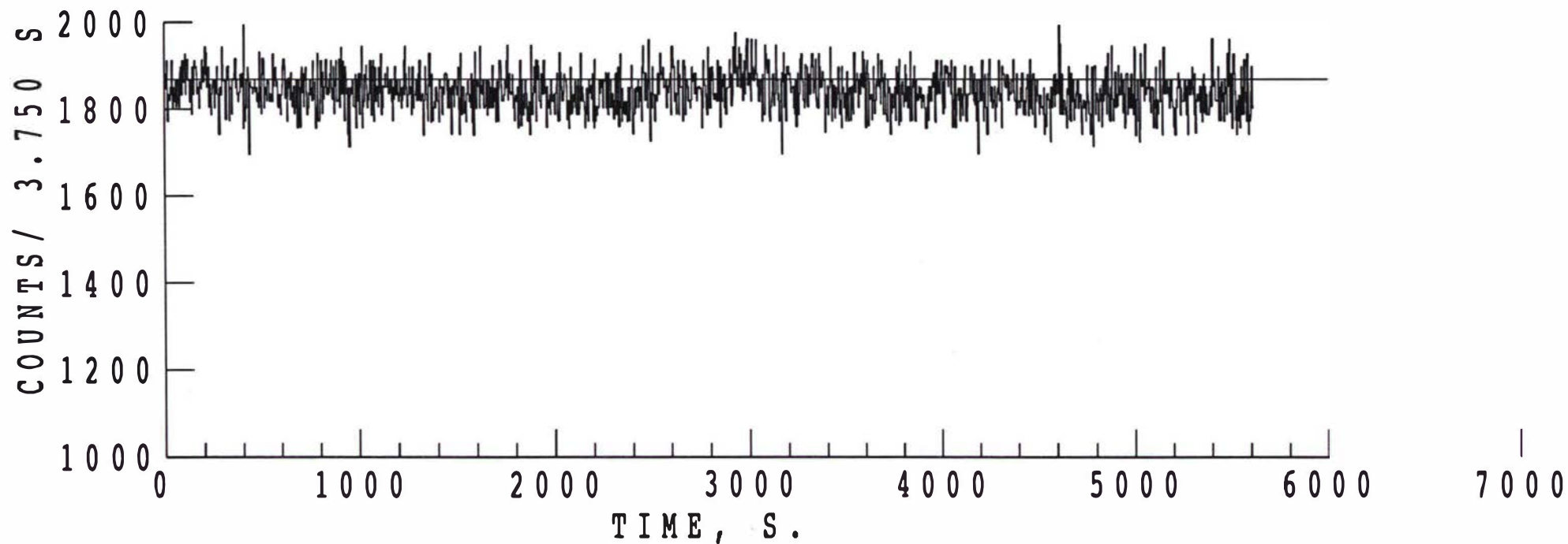
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



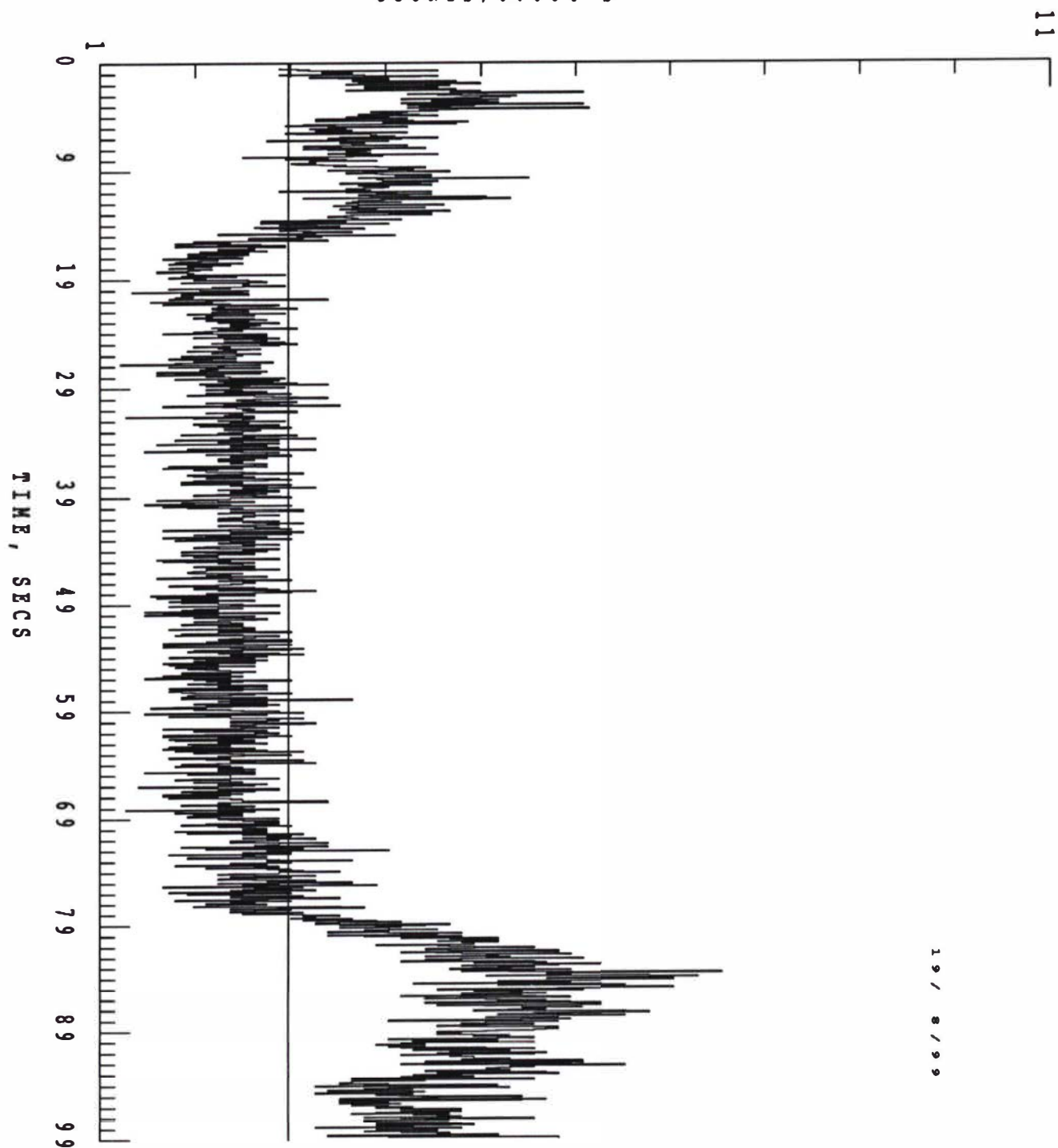
KONUS

19/08/99

18355.861

50 - 200 keV

COUNTS/0.064 S



From RICHARDSON@fender.msfc.nasa.gov Mon Aug 23 11:17 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 13:24:06 -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, 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.: 7716

TIME: TJD=1409 SECONDS=20568

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PROBABLE PARTICLE EVENT.

KONUS2 19990819 22476

ULYSSES RT

19 / 8 / 99

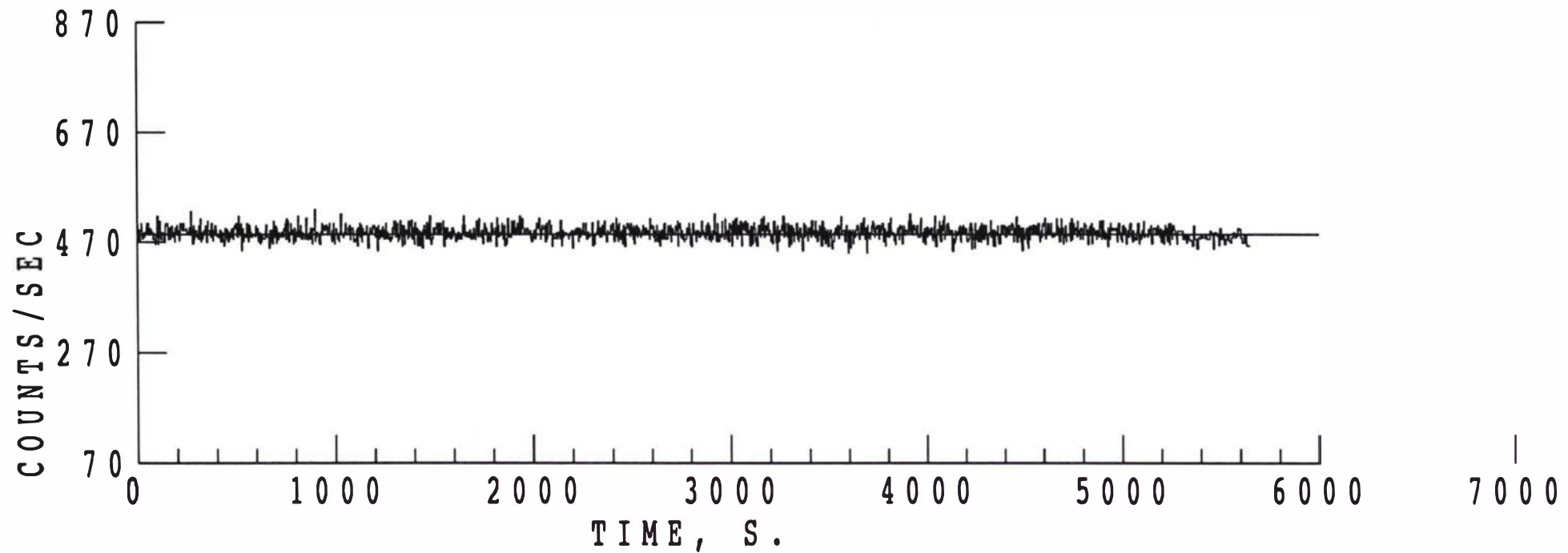
19 / 8 / 99 19656.148 s

INTERVALS REGROUPED BY 15

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

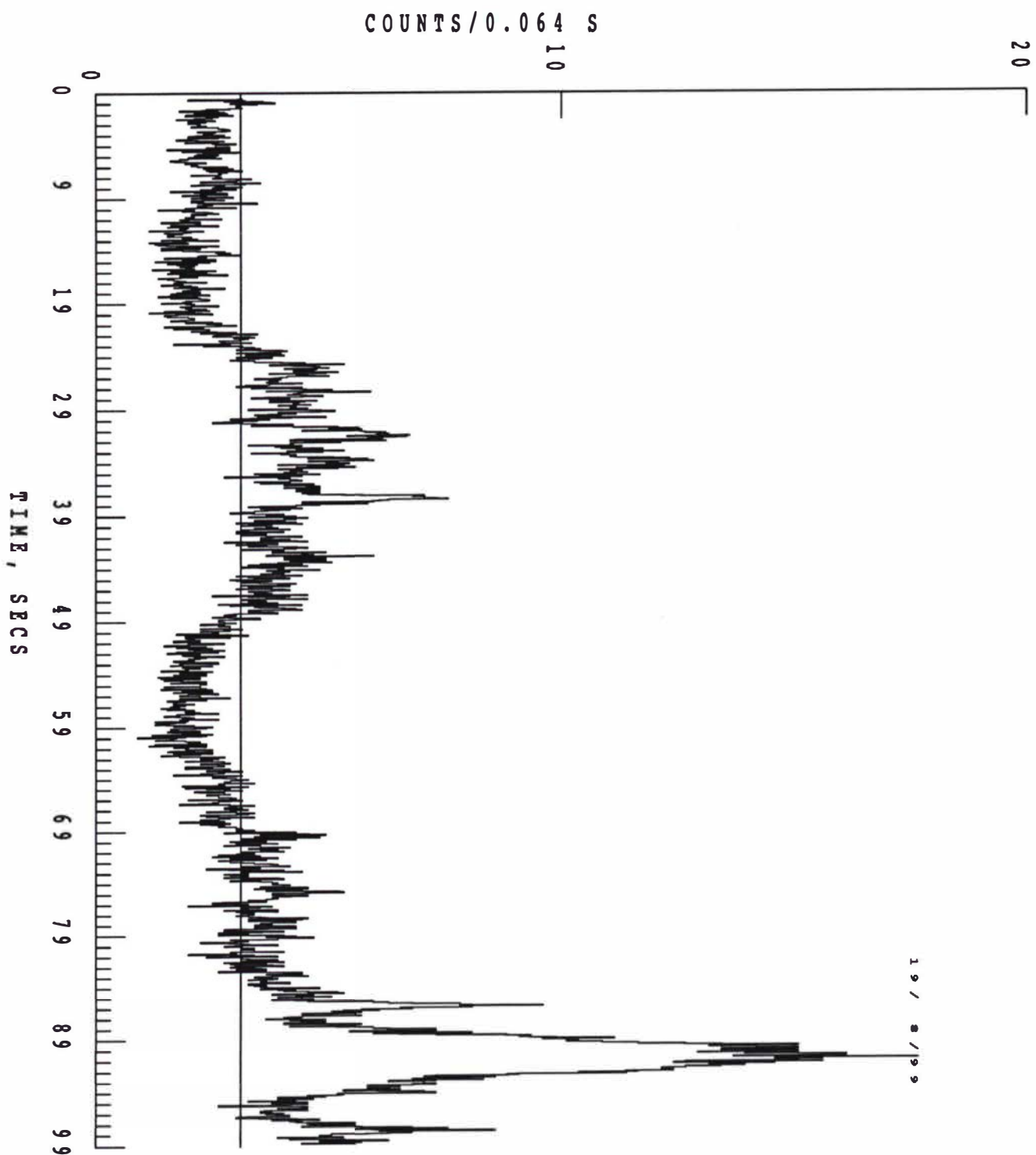


KONUS

19/08/99

22476.209

50 - 200 keV



KONUS1 19990819 27786

ULYSSES RT

20 / 8 / 99

19 / 8 / 99 24963.453 s

0.500 S INTERVALS REGROUPED BY 8

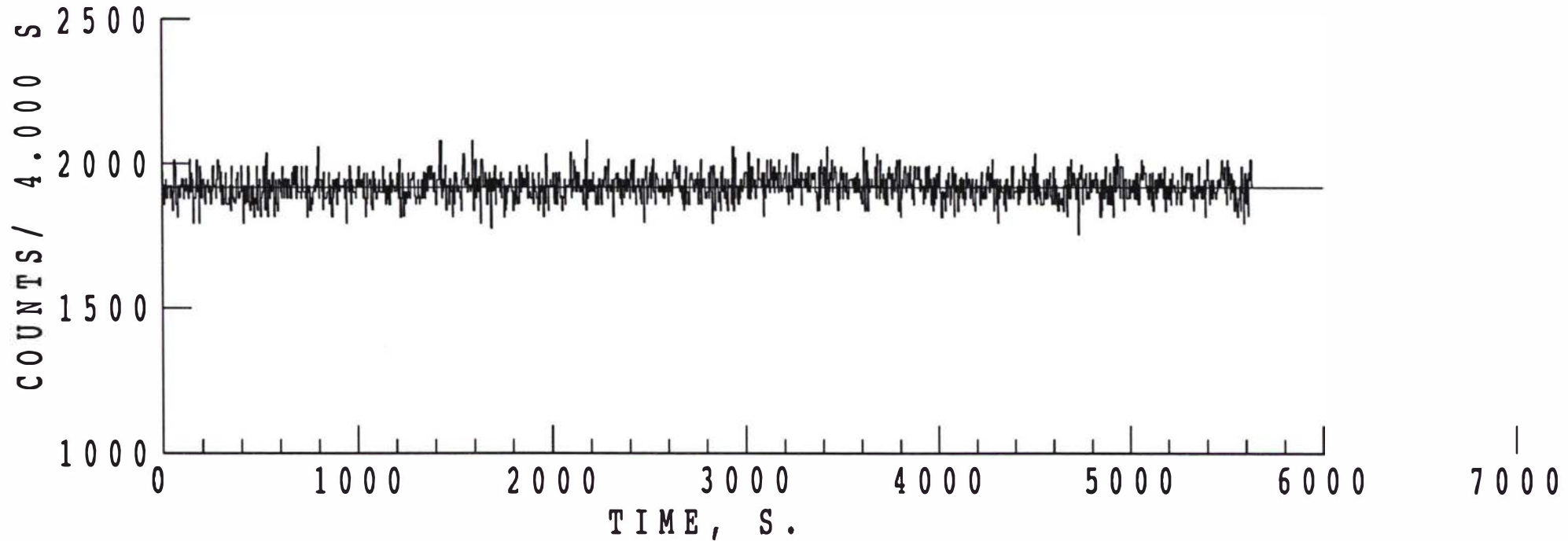
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

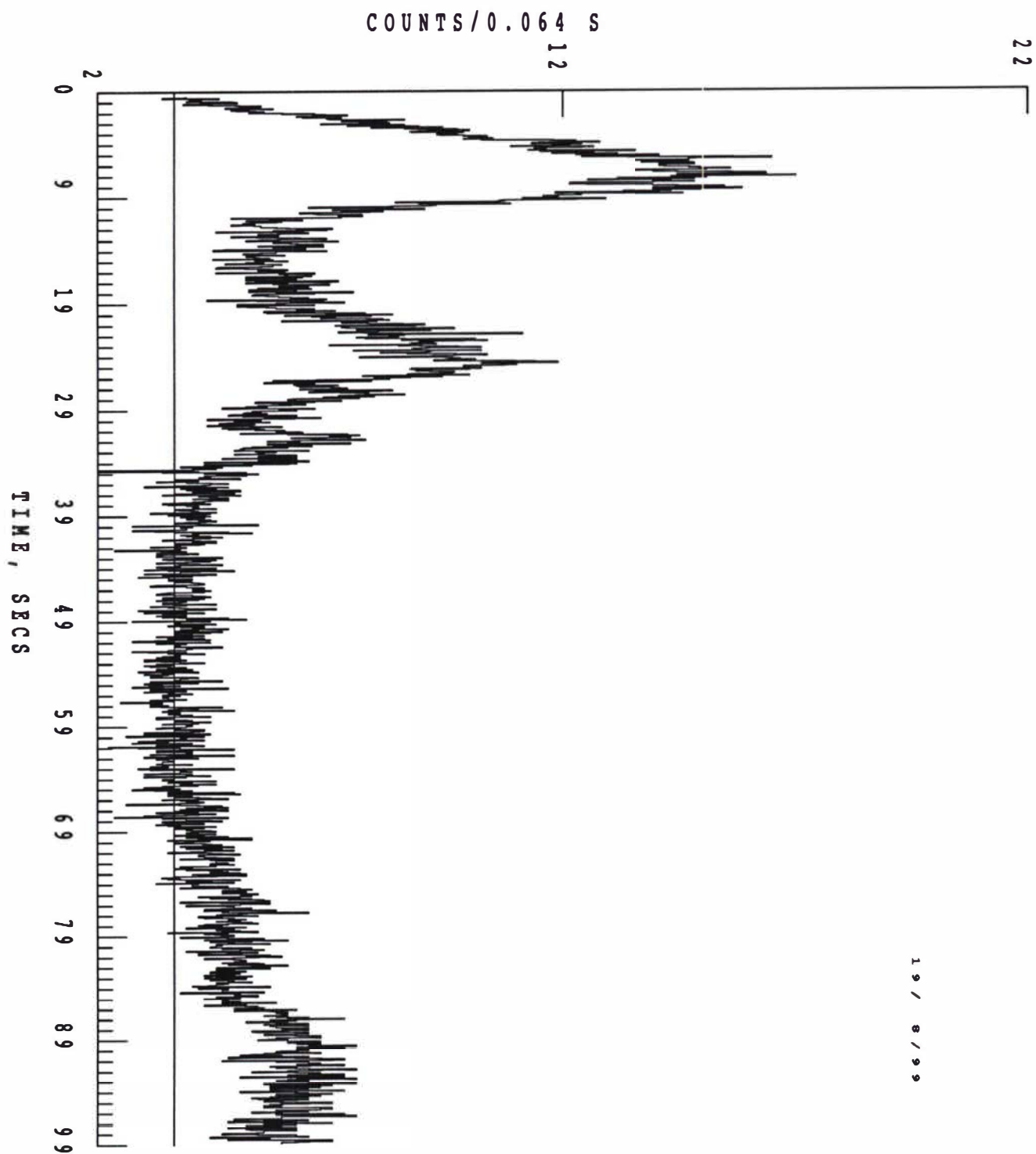


KONUS

19/08/99

27786.381

50 - 200 keV



KONUS1 19990819 33141

ULYSSES RT

20 / 8 / 99

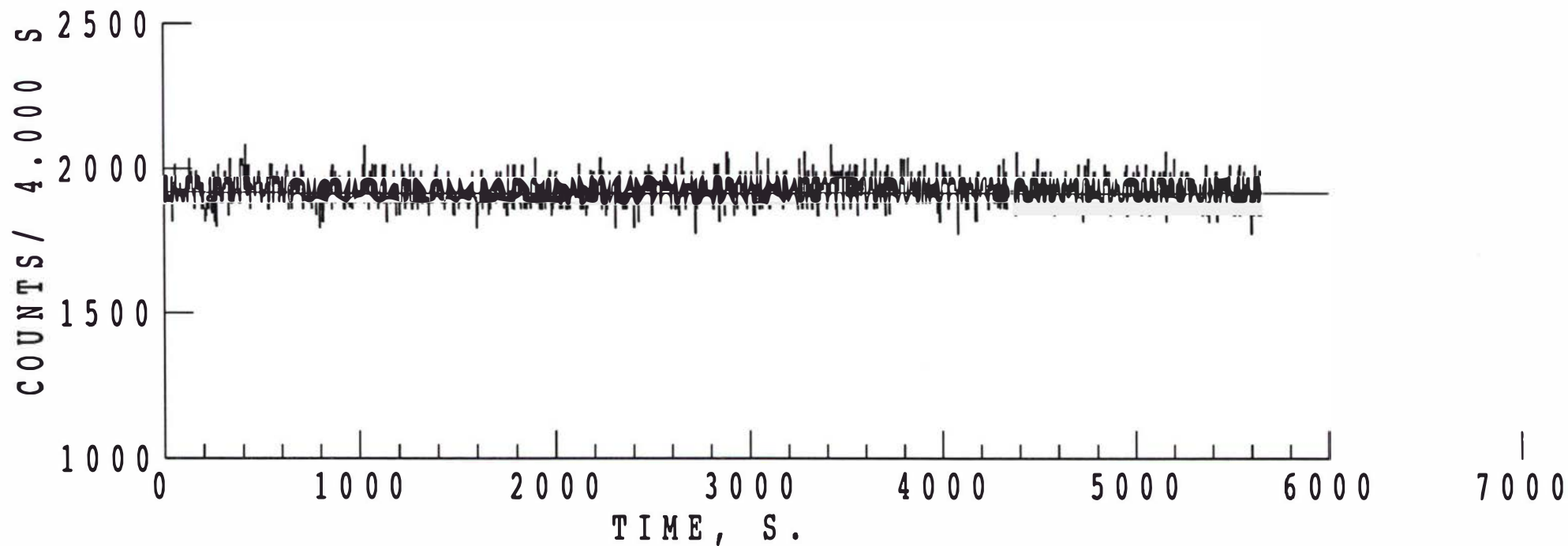
19 / 8 / 99 30312.006 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



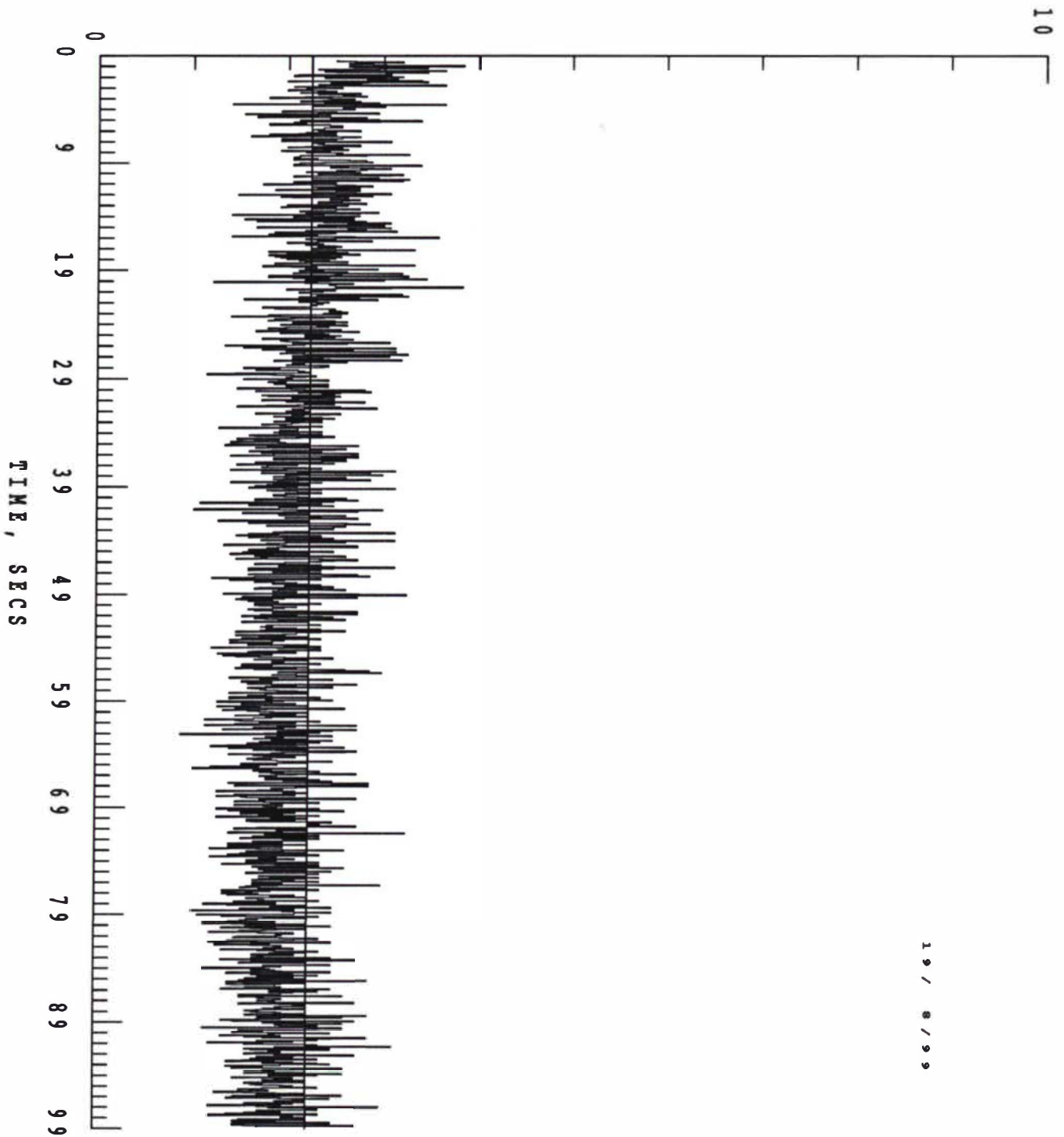
KONUS

19/08/99

33141.594

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990819 37351

ULYSSES RT

20 / 8 / 99

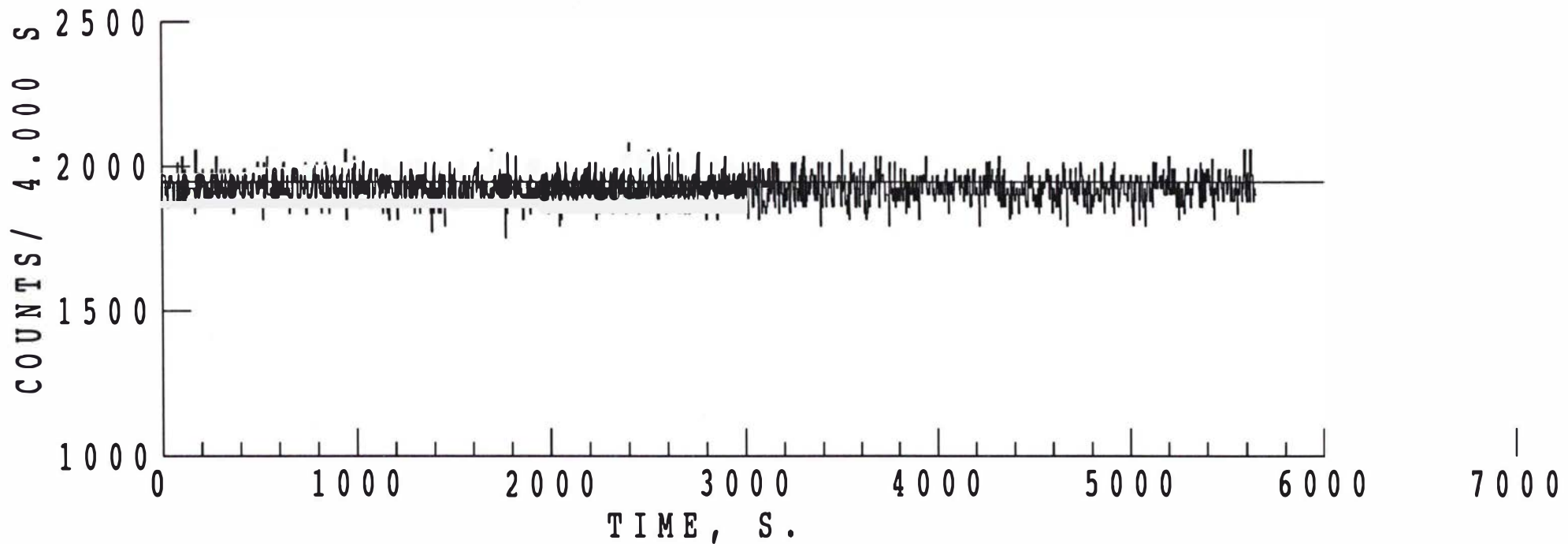
19 / 8 / 99 34524.047 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



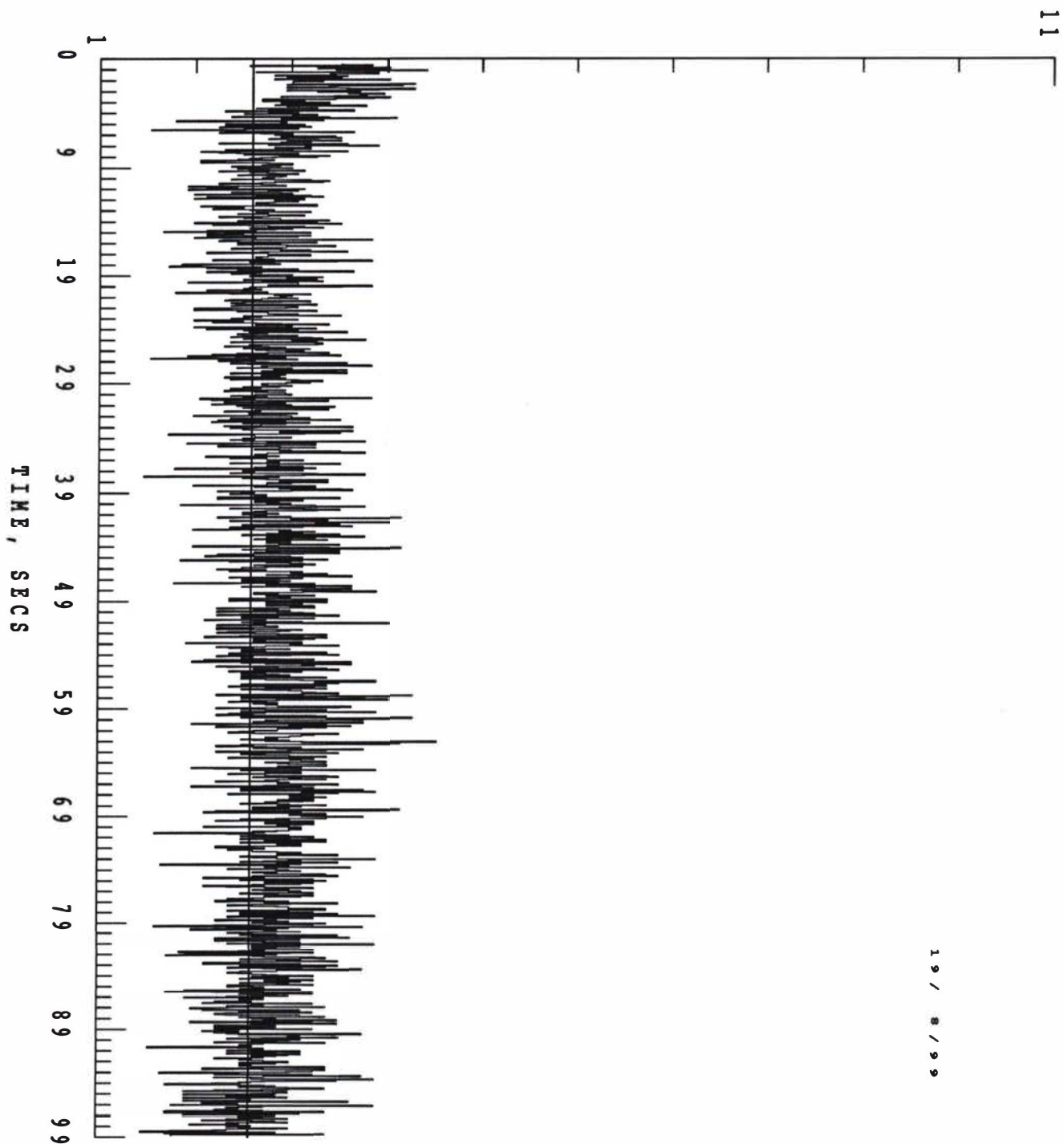
KONUS

19/08/99

37351.330

50 - 200 keV

COUNTS/0.064 S

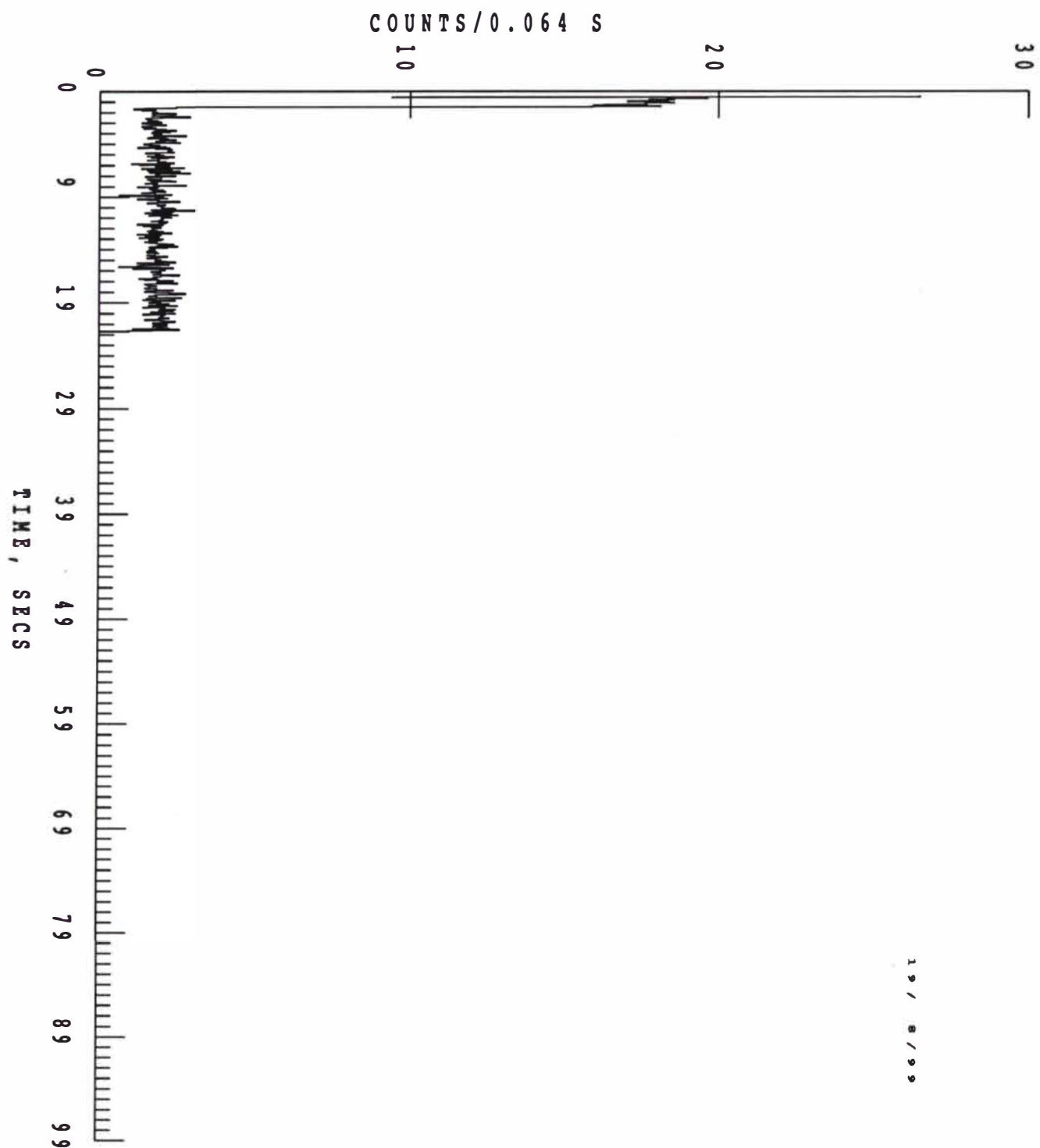


KONUS

19/08/99

43354.053

50 - 200 keV



KONUS1 19990819 43354

ULYSSES RT

20 / 8 / 99

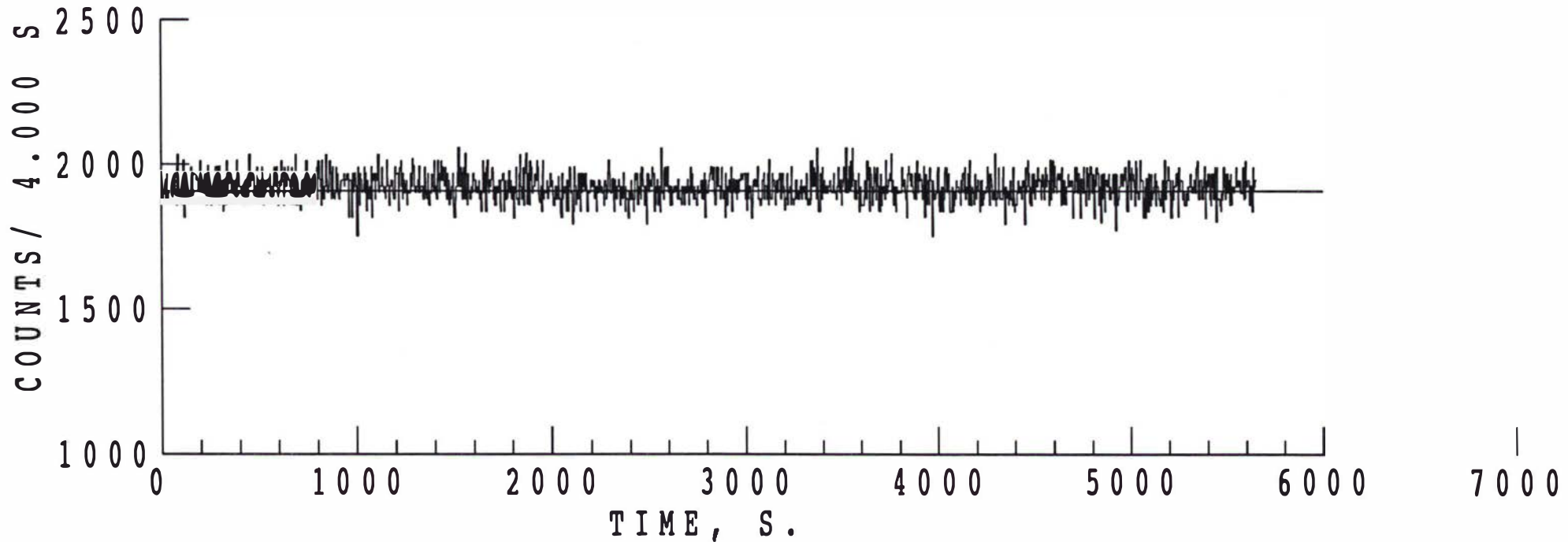
19 / 8 / 99 40536.109 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: Jan 11 '10

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

- ☐ 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 *N/A*

- ☐ 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 *N/A*

- ☐ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events *N/A*

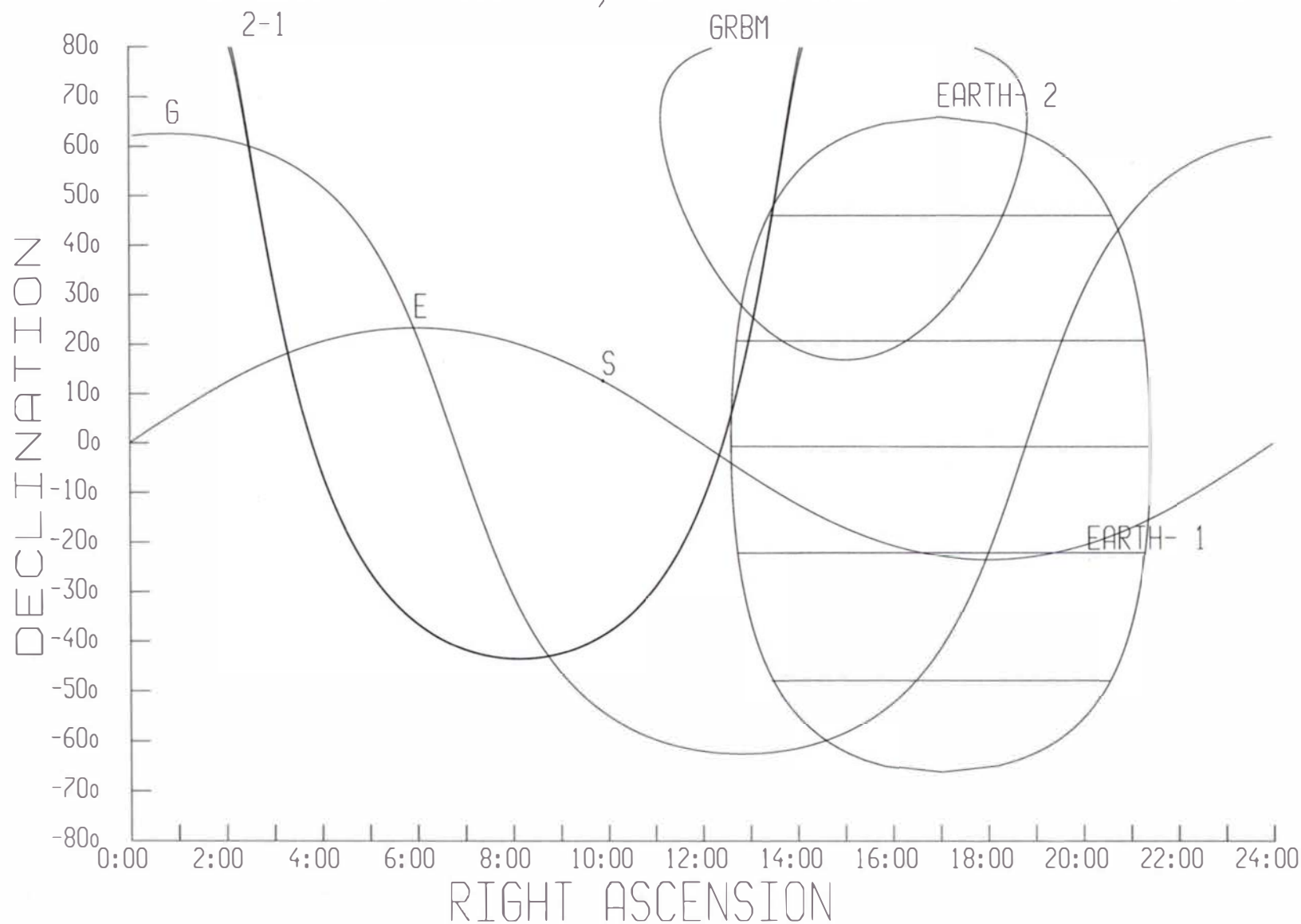
- ☐ $\Sigma 3\Delta t$'s calculated?

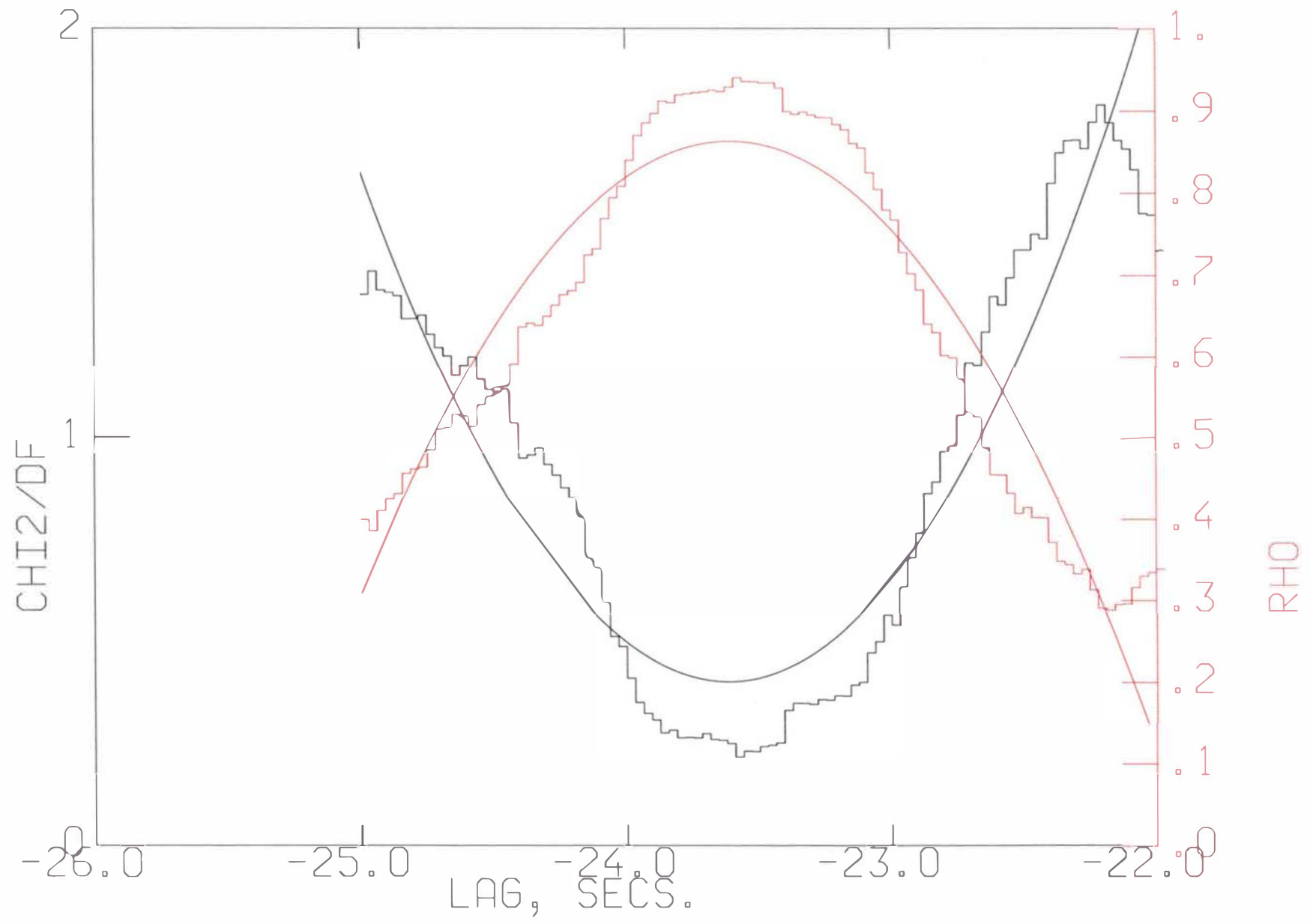
- ☒ ACCESS database updated?

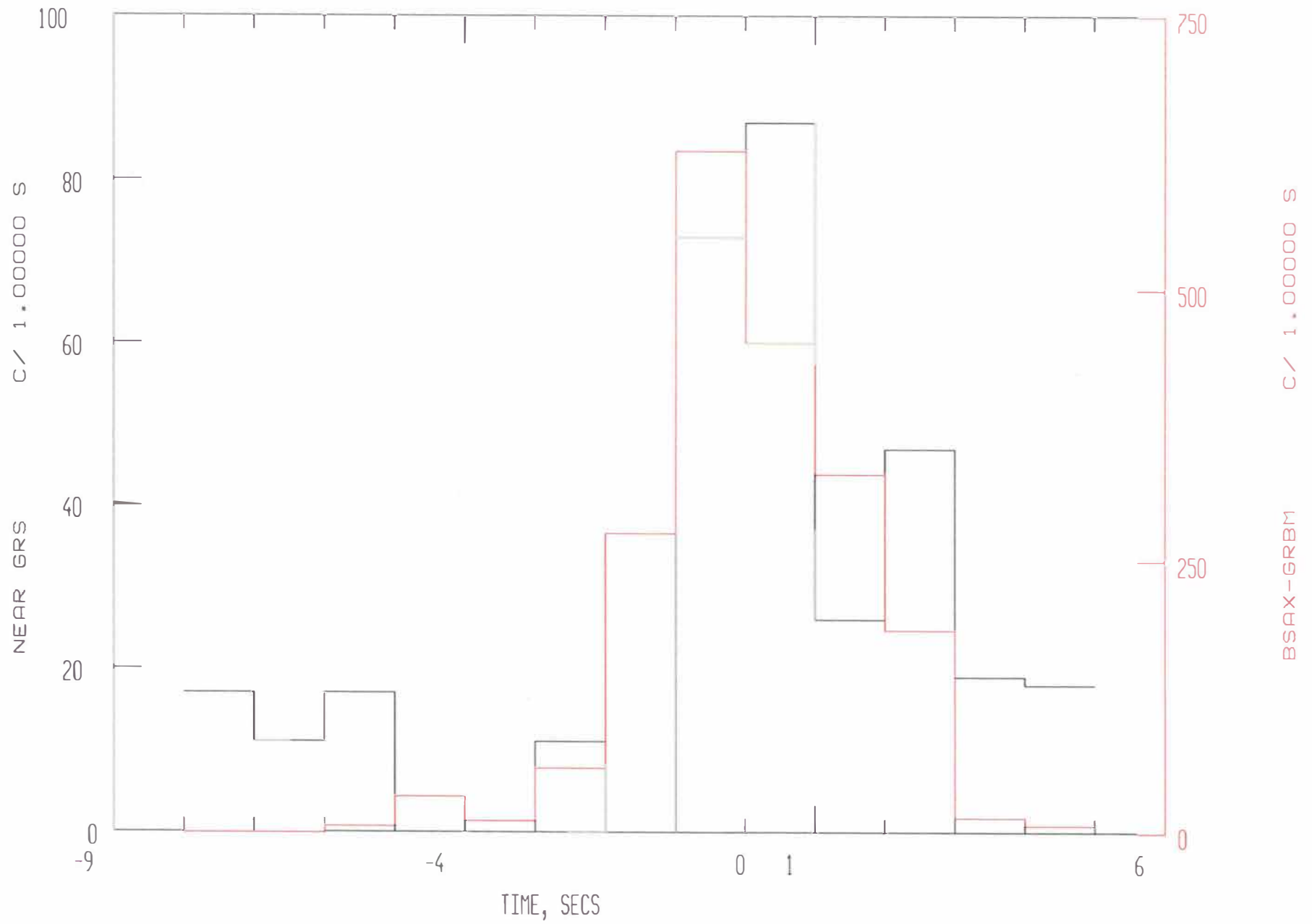
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 NEAR 2SAX

EVENT OF AUG 19, 1999 18:21

11/ 1/10





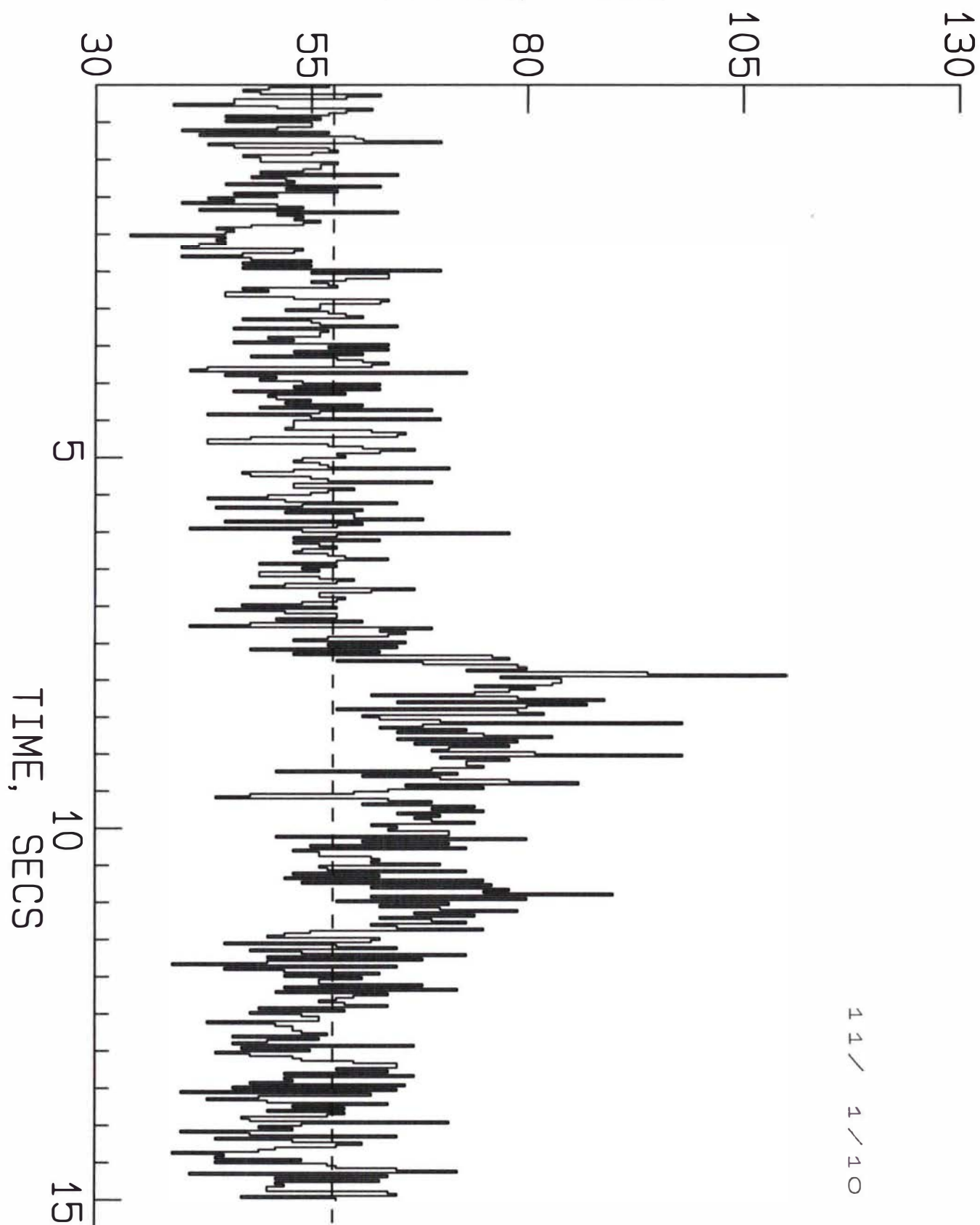


SAX GRBM

19/08/99 66478.644

40- 700 keV

COUNTS/0.031 S



11 / 1 / 10

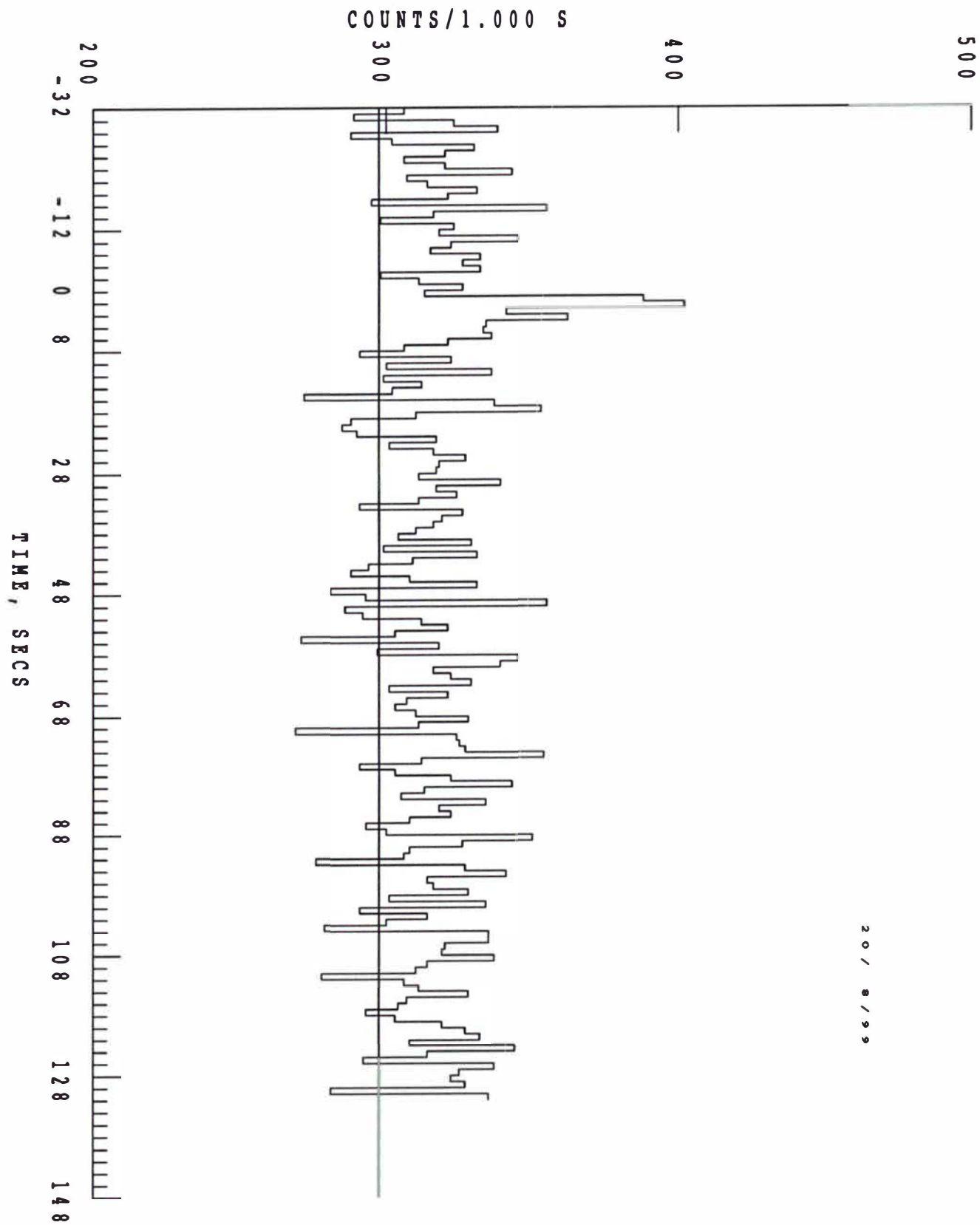
NEAR

19/08/99

66104.160

100-1000 keV

18:21:44



20 / 8 / 99

KNEAR GRS 19990819 66104

ULYSSES RT

20 / 8 / 99

19 / 8 / 99 63828.344 s

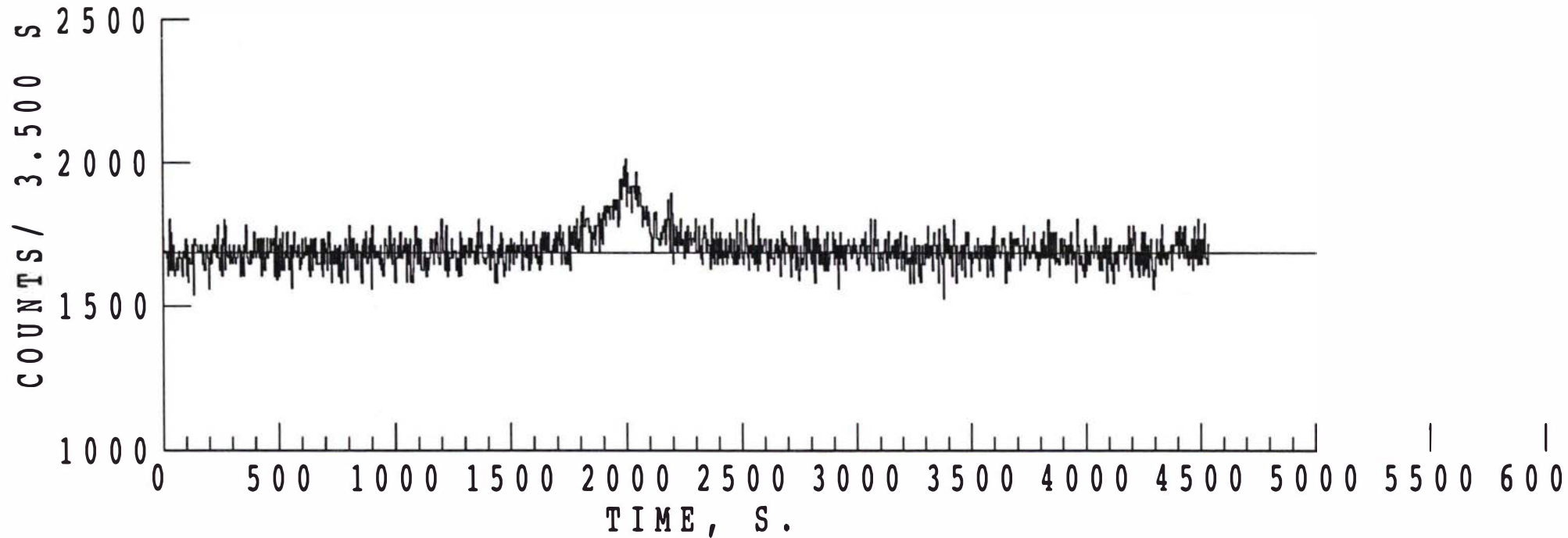
0.500 S INTERVALS REGROUPED BY 7

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 Aug 23 11:20 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 13:26:25 -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, 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.: 7717

TIME: TJD=1409 SECONDS=83931

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

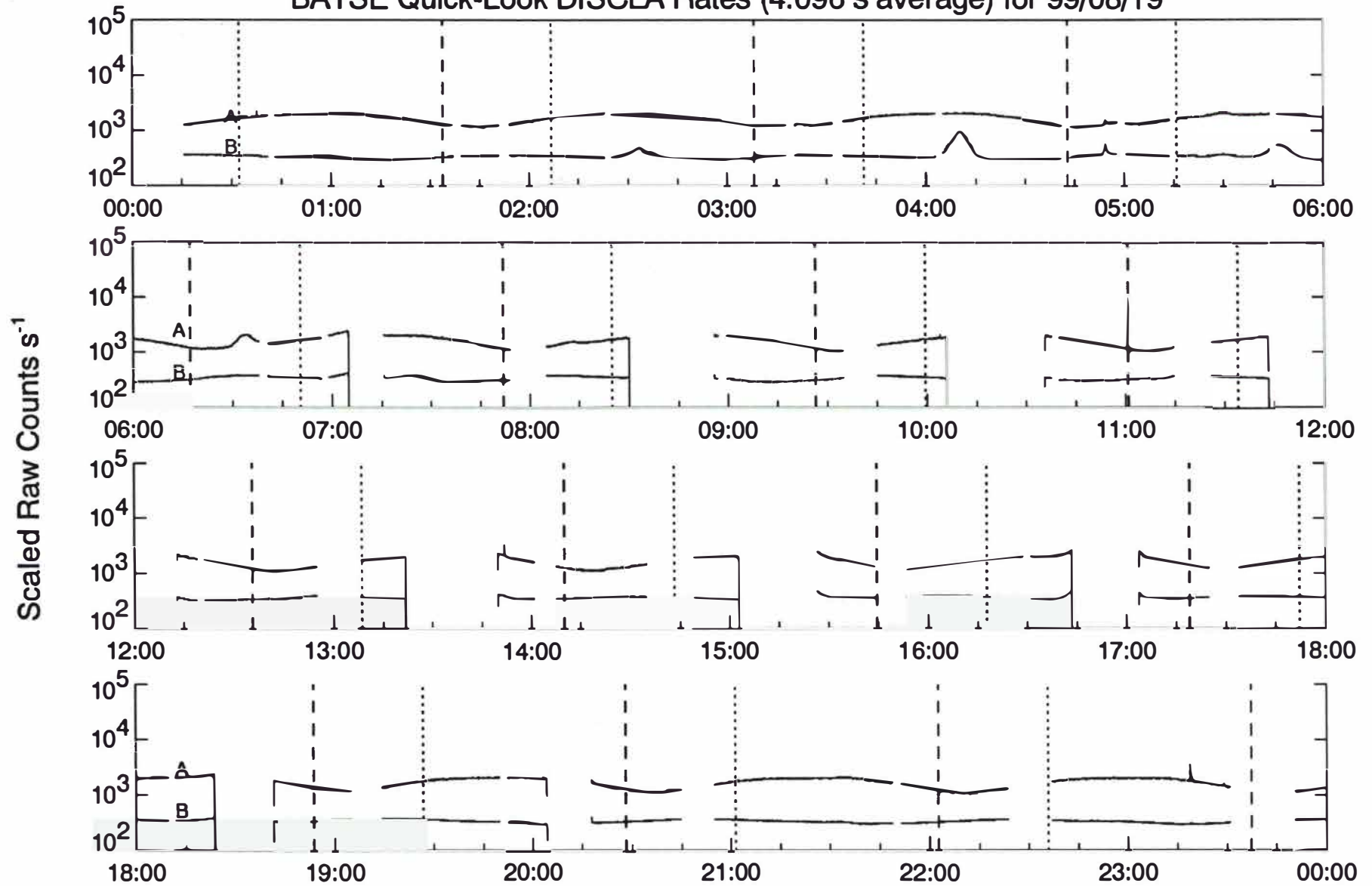
LOCATION: ZENITH=114.2 AZIMUTH=334.5 ERROR=1.0 DEGREES

COMMENTS:

SOLAR FLARE, NO GOES, NO OPTICAL

LOTS OF STRUCTURE, DURATION APPROX. = 35 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/19

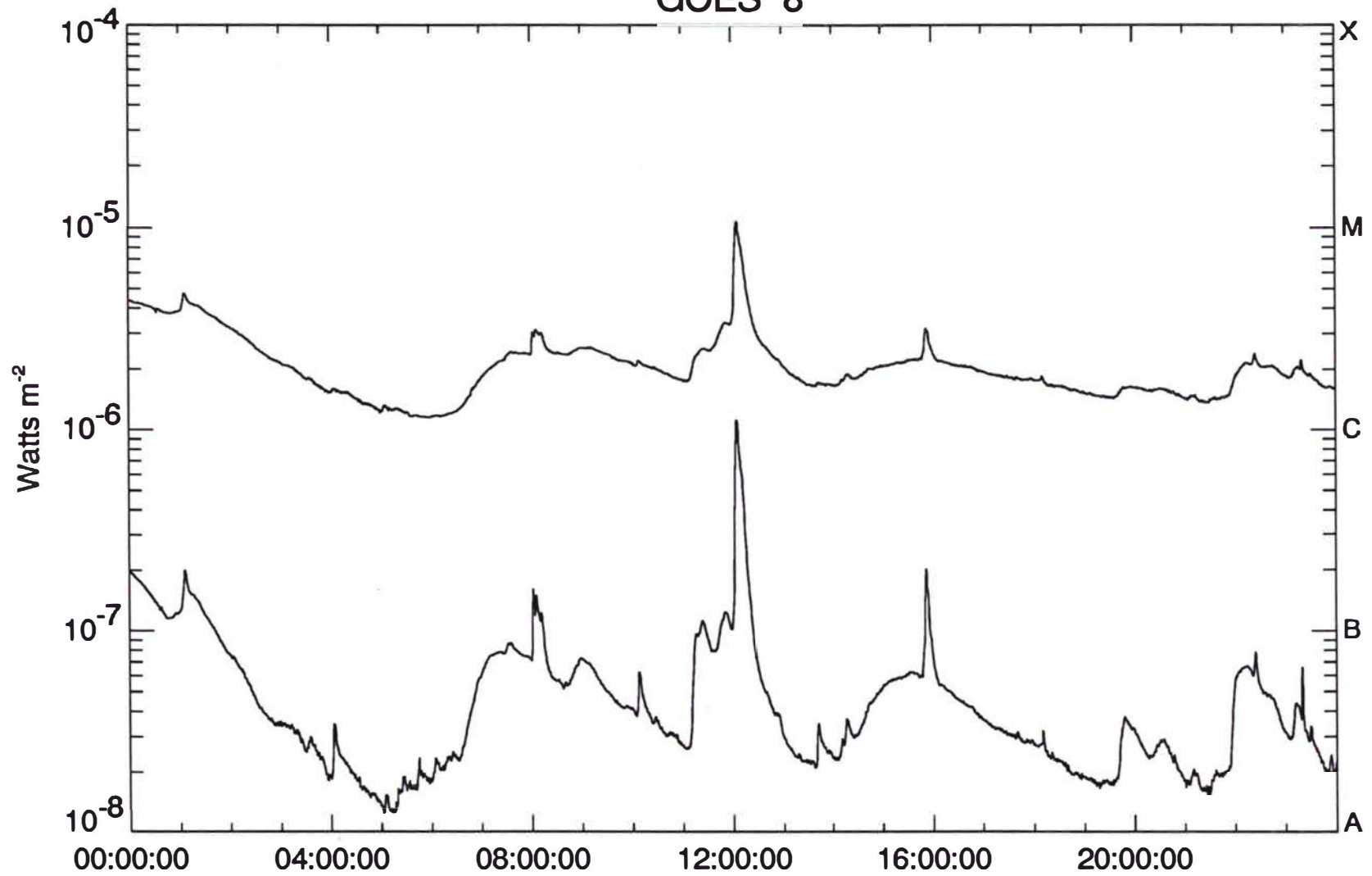


Current Time: 99/08/23, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

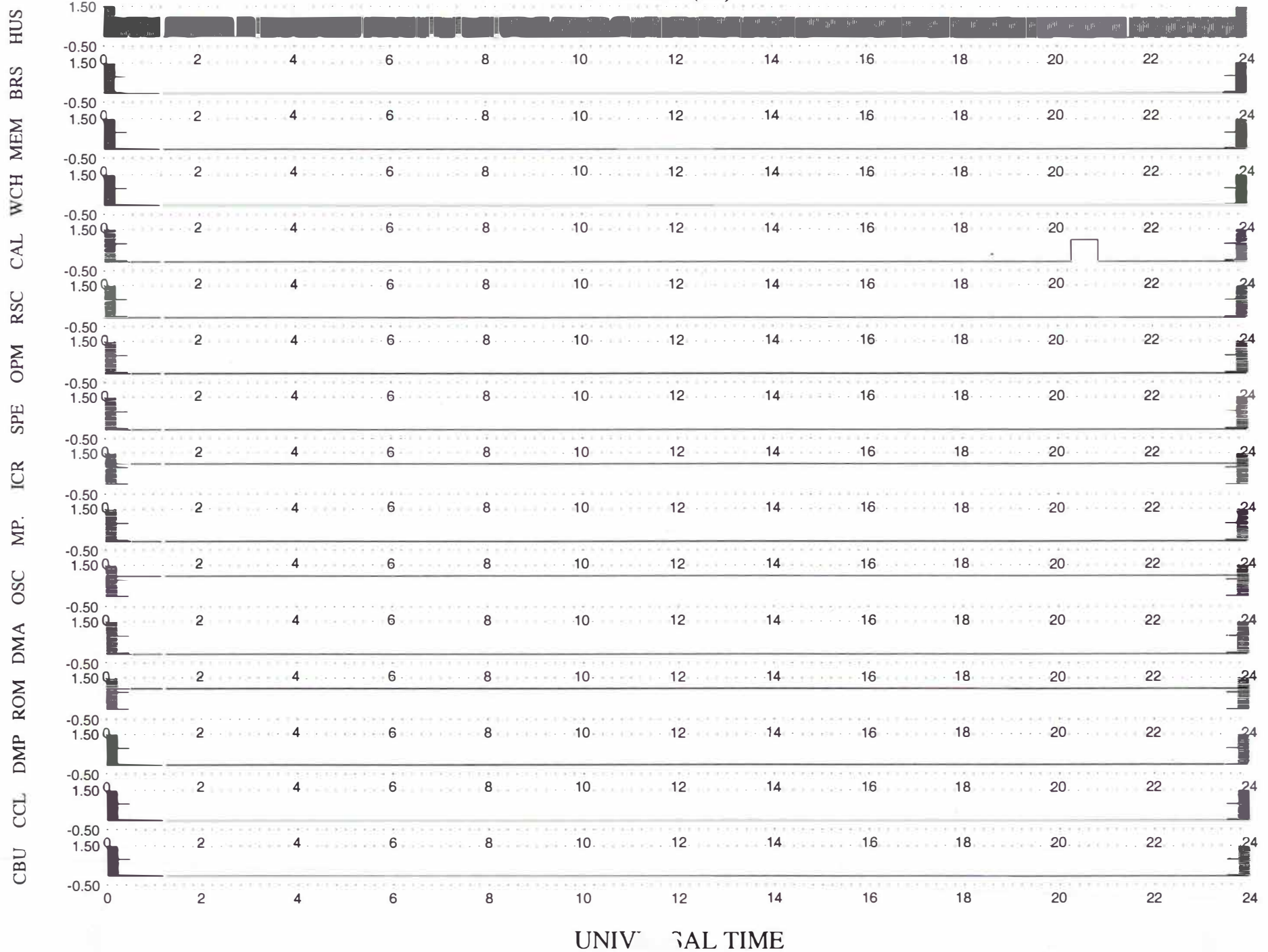


Data Start: 99/08/19, 0000:00

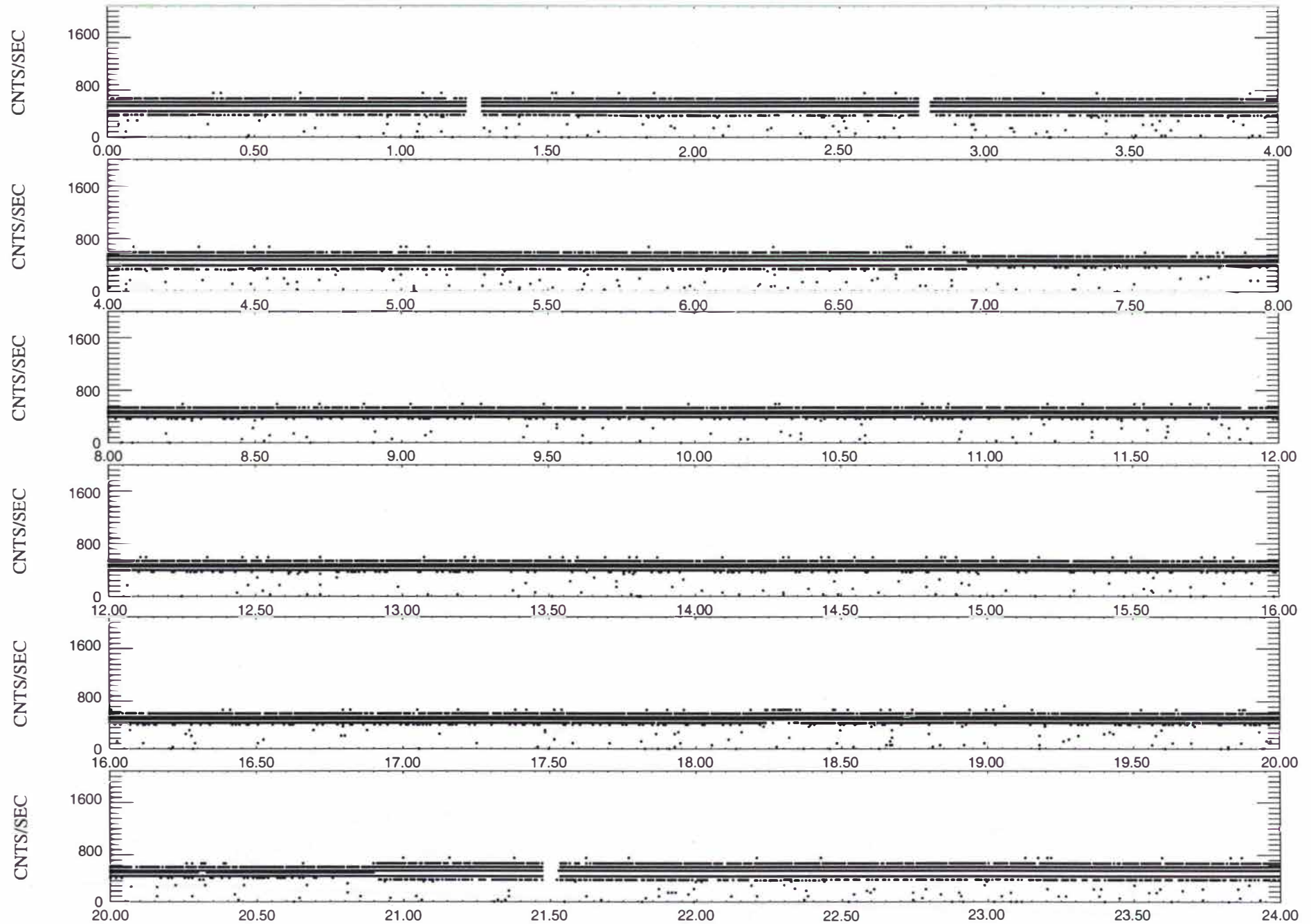
Plot created: 99/08/23, 1005

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

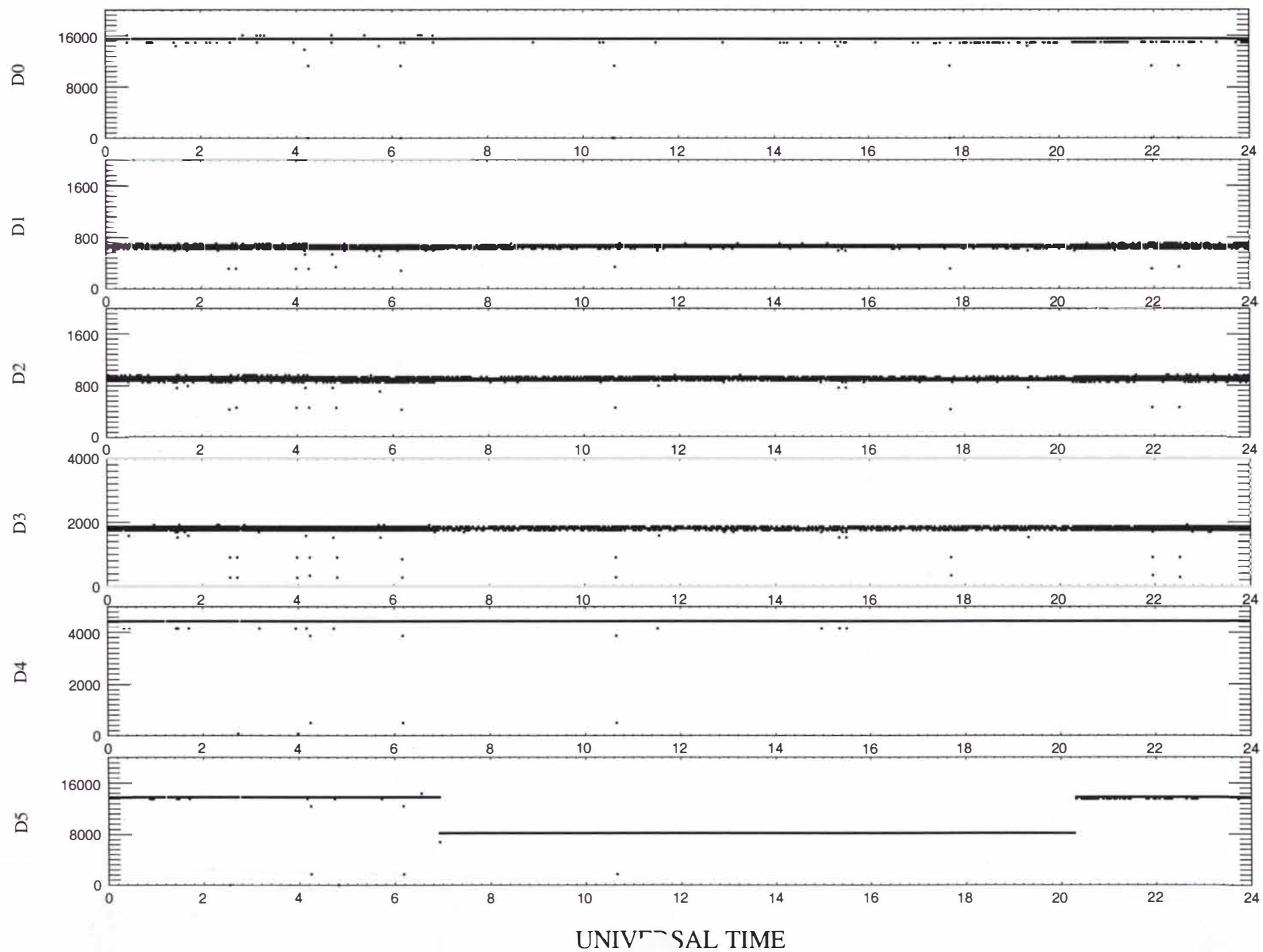
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Aug 23 11:21 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 13:28:05 -0500 (CDT)

\: 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, 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.: 7718

TIME: TJD=1410 SECONDS=12449

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.3 AZIMUTH=334.2 ERROR=0.8 DEGREES

COMMENTS:

SOLAR FLARE, NO GOES, NO OPTICAL.

SINGLE PULSE, DURATION APPROX. = 35 SEC. NOT VISIBLE ABOVE 300KEV.

From RICHARDSON@fender.msfc.nasa.gov Mon Aug 23 11:25 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 13:31:32 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, 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.: 7719

TIME: TJD=1410 SECONDS=25079

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT

From RICHARDSON@fender.msfc.nasa.gov Mon Aug 23 11:26 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 13:32:38 -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, 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.: 7720

TIME: TJD=1410 SECONDS=40677

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

From RICHARDSON@fender.msfc.nasa.gov Mon Aug 23 11:27 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 23 Aug 1999 13:34:27 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, 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.: 7721

TIME: TJD=1410 SECONDS=66449

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.3 AZIMUTH=335.2 ERROR=0.3 DEGREES

COMMENTS:

SOLAR FLARE, GOES M1.2, OPTICAL SF.

STRONG EVENT WITH LOTS OF STRUCTURE. DURATION APPROX. = 80 SEC.

VISIBLE ABOVE 300KEV.

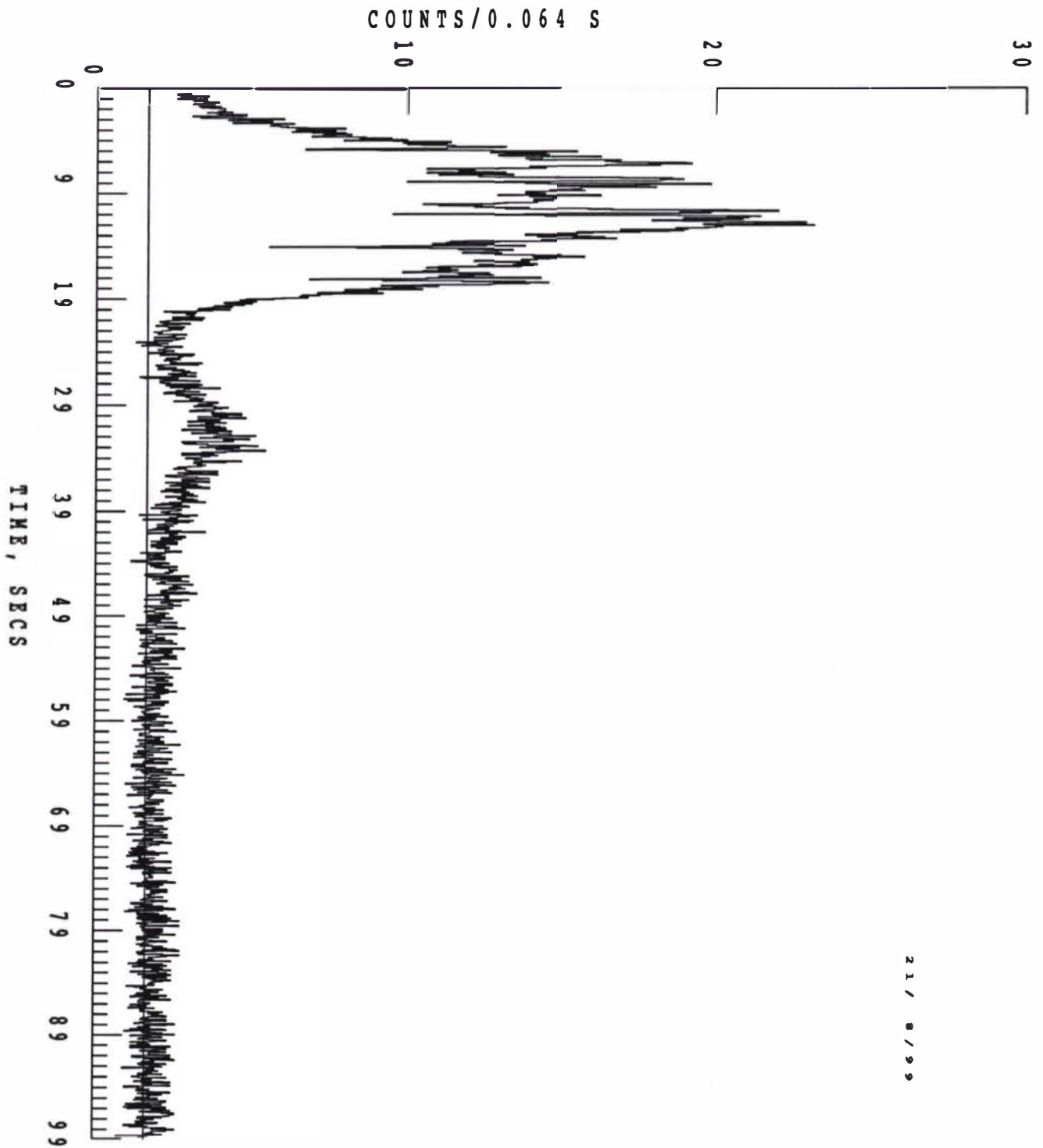
KONUS

20/08/99

66450.302

50 - 200 keV

Solar - BATSE 7721



KONUS1 19990820 66450

ULYSSES RT

23 / 8 / 99

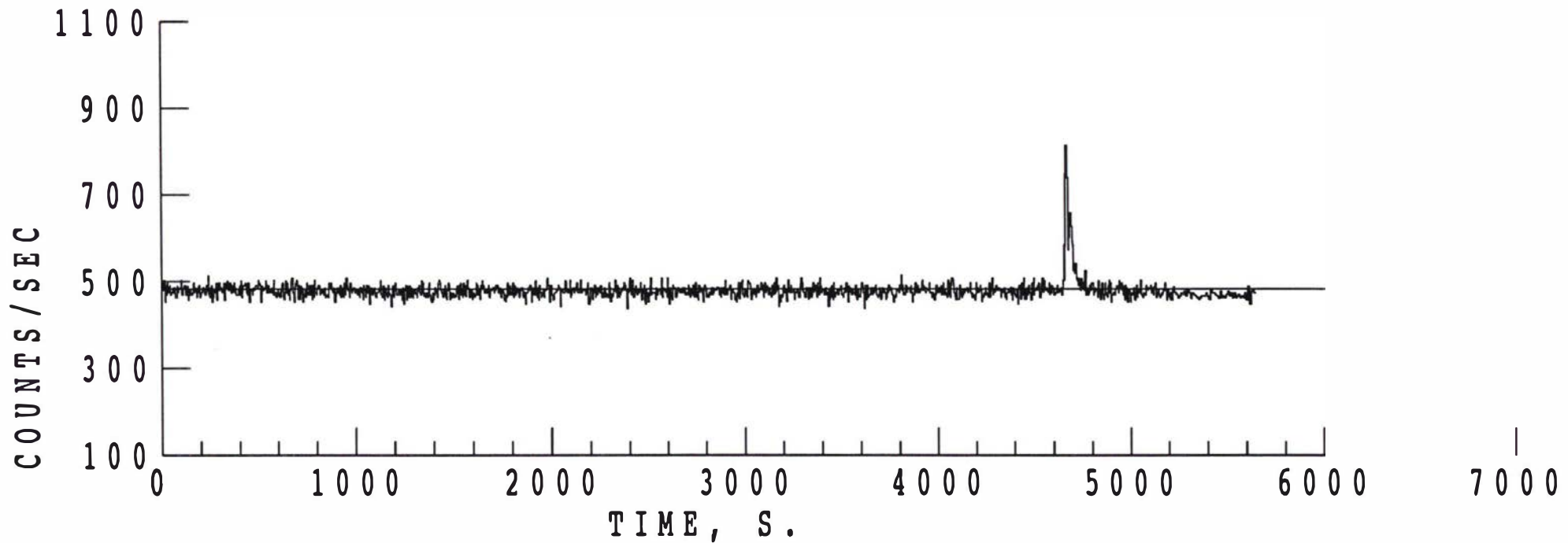
20 / 8 / 99 63612.215 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From GOGUSE@fender.msfc.nasa.gov Mon Aug 23 13:15 PDT 1999

From: GOGUSE@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 15:21:35 -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, 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.: 7722

TIME: TJD=1410 SECONDS=75369

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.8 AZIMUTH=335.7 ERROR= 0.3 DEGREES

COMMENTS:

GOES C1.5, NO OPTICAL, DURATION APPROX. 106 SEC.

SINGLE PULSE WITH STRUCTURE, PEAKS AT T+5 SEC

VISIBLE ABOVE 100 KEV

From GOGUSE@fender.msfc.nasa.gov Mon Aug 23 13:19 PDT 1999

From: GOGUSE@fender.msfc.nasa.gov

Date: Mon, 23 Aug 1999 15:26:20 -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, 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.: 7723

TIME: TJD=1410 SECONDS=83143

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.5 AZIMUTH=336.1 ERROR= 0.2 DEGREES

COMMENTS:

GOES M9.8, 1N, DURATION IS LONGER THAN 76 SEC., PEAKS AT T+25 SEC.
VISIBLE ABOVE 300 KEV

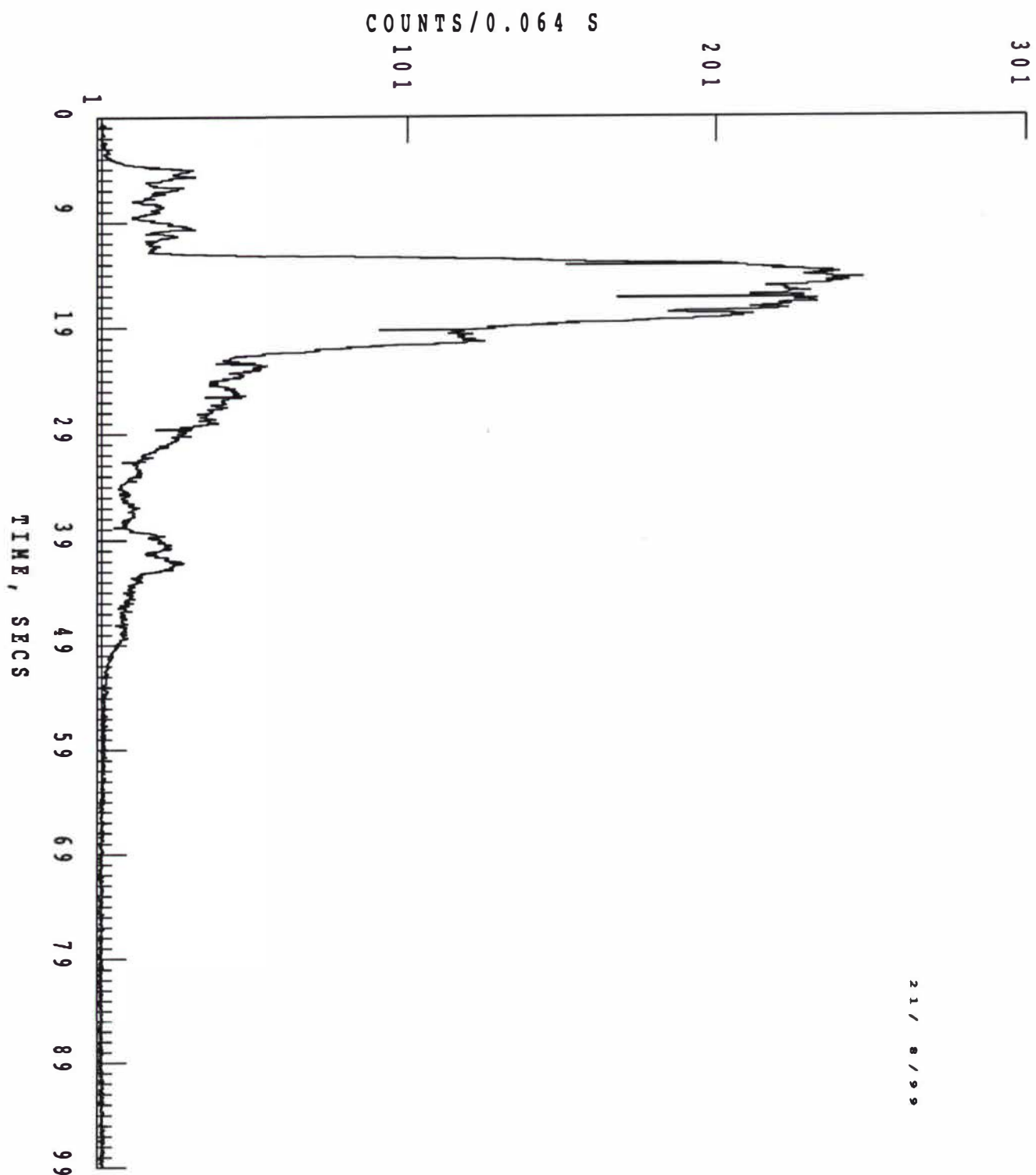
KONUS

20/08/99

83154.561

50 - 200 keV

Solar - BATSE 7723



KONUS2 19990820 83154

ULYSSES RT

23 / 8 / 99

20 / 8 / 99 80316.141 s

INTERVALS REGROUPED BY 13

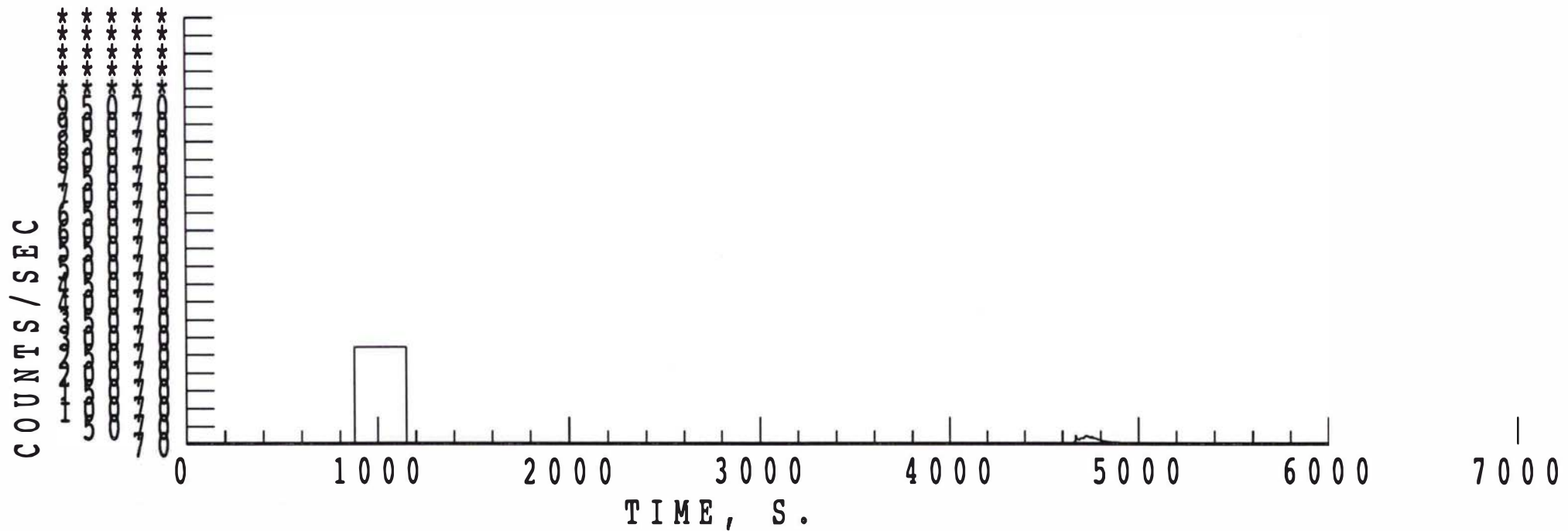
0 - 0 keV

N= 10 M= 10

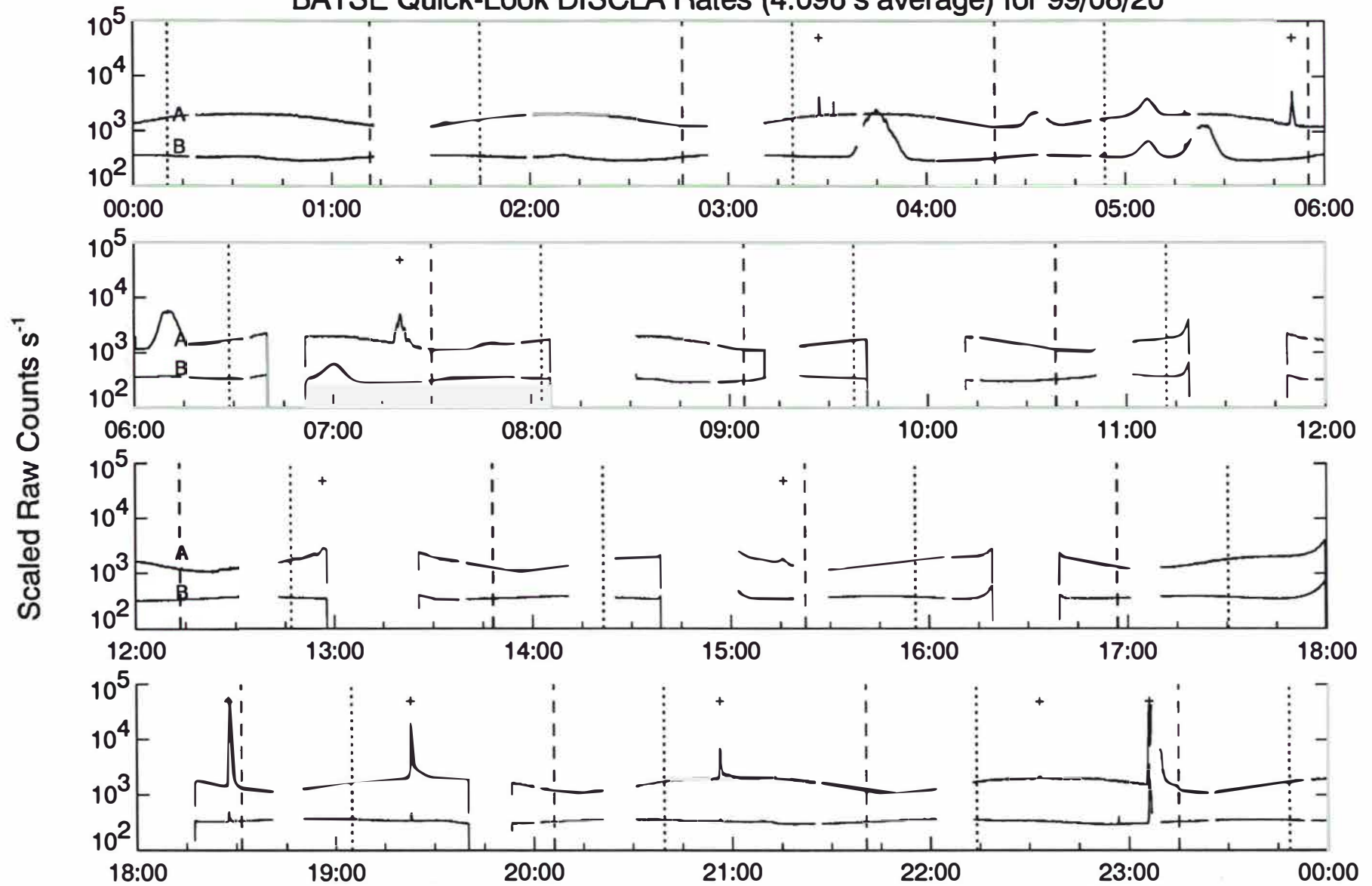
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/20

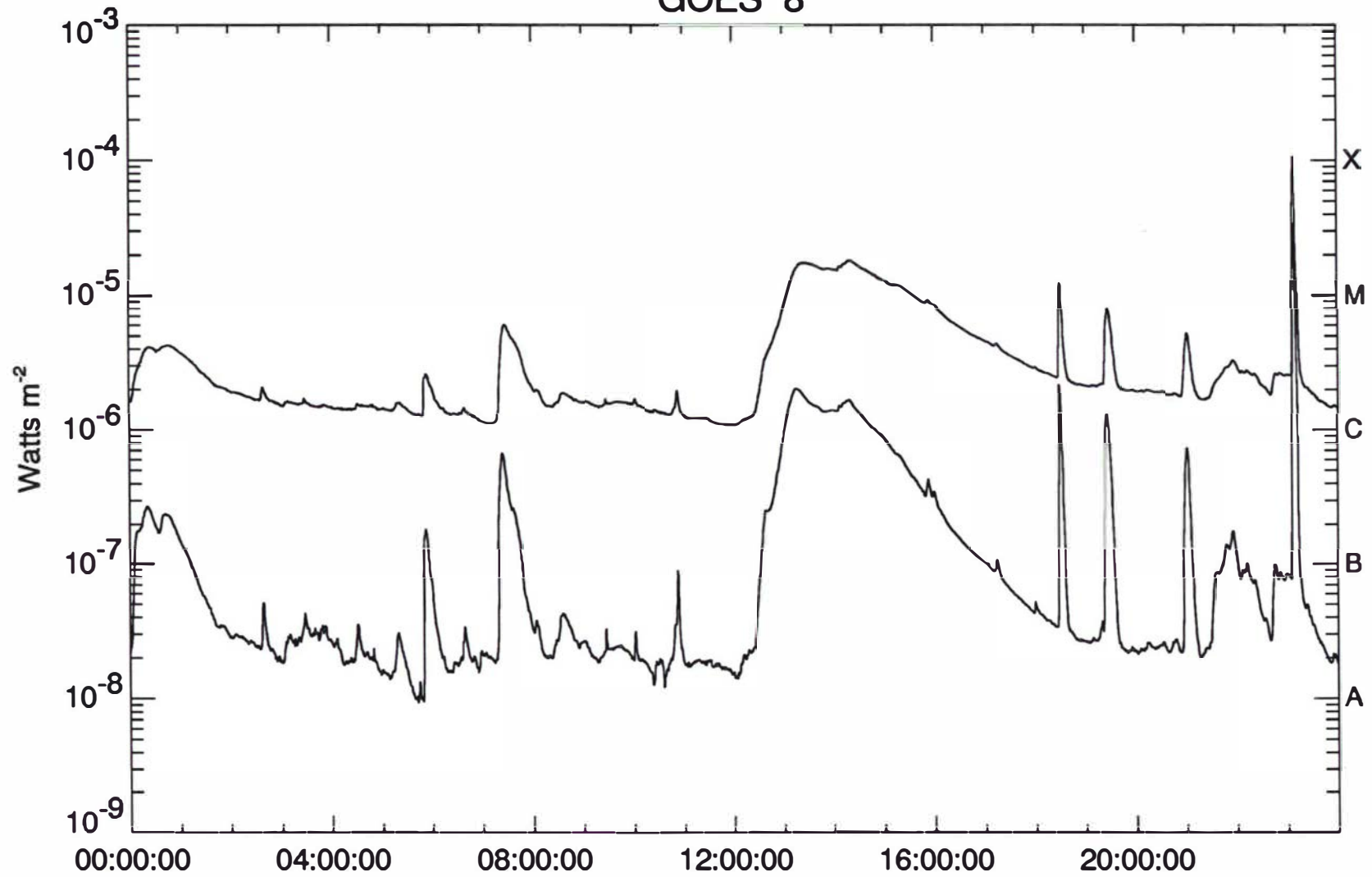


Current Time: 99/08/24, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/20, 0000:00

Plot created: 99/08/24, 1005

Channel

1 (1.0 - 8.0 Angstroms)

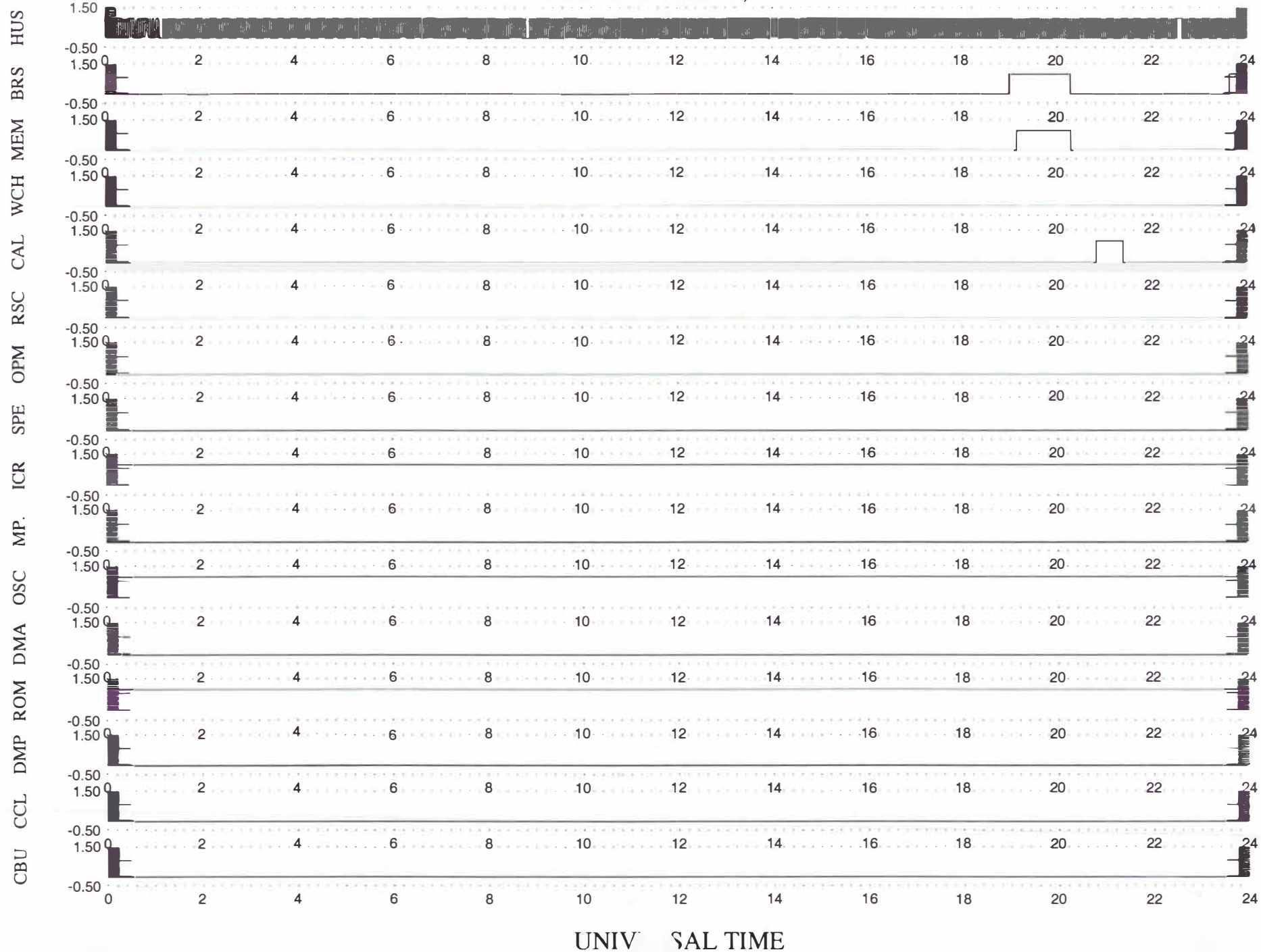
Background not subtracted

2 (0.5 - 4.0 Angstroms)

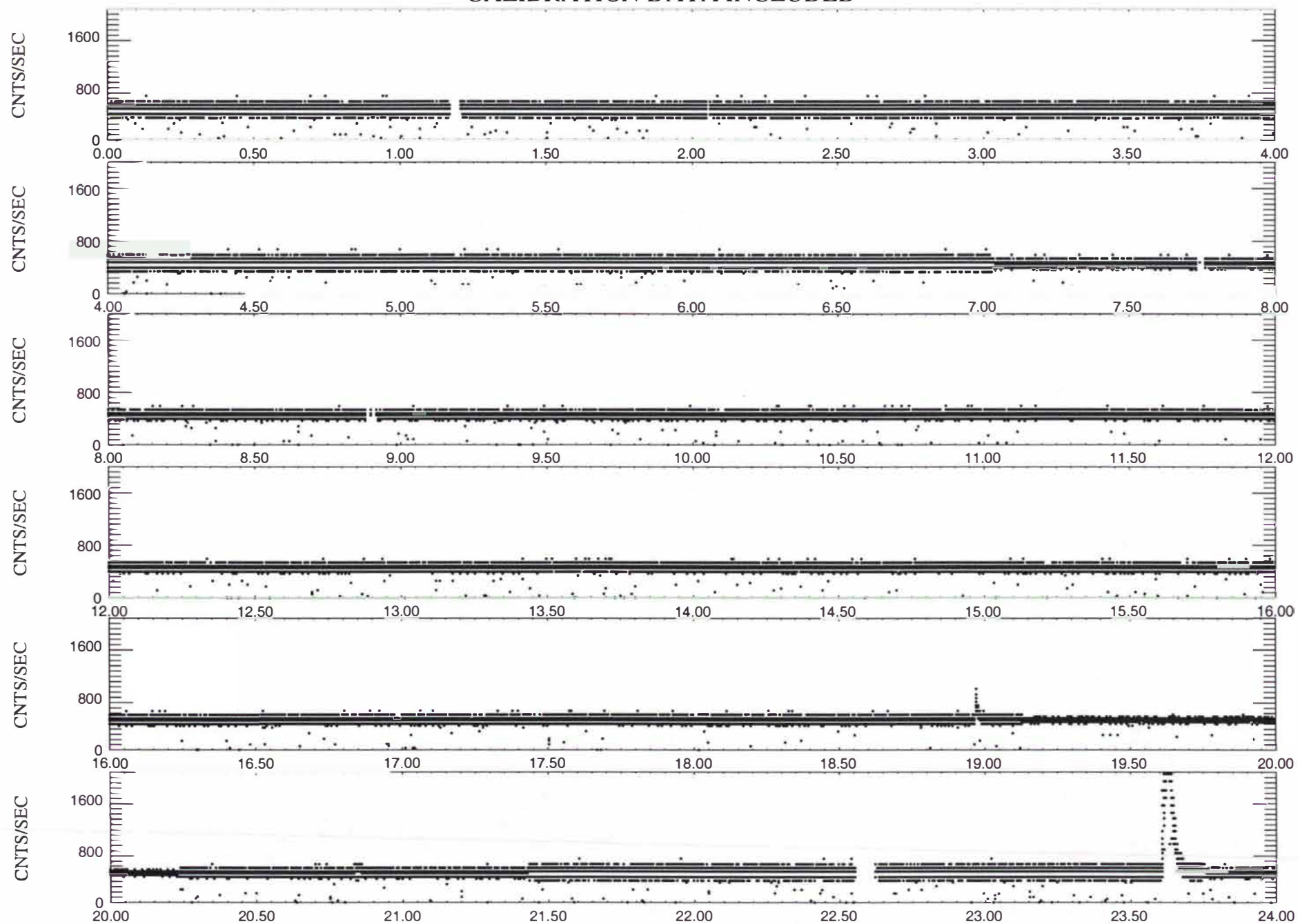
Background not subtracted

Sample average = 10

BURST NUMBER 0, 1

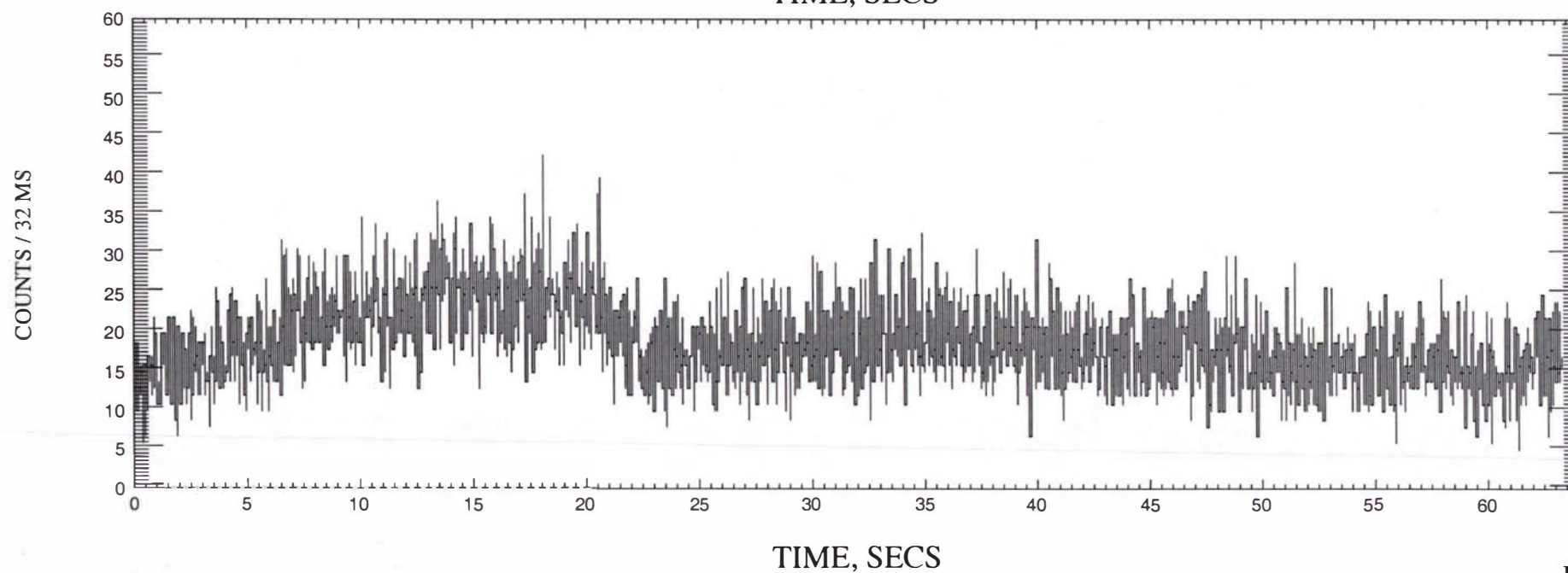
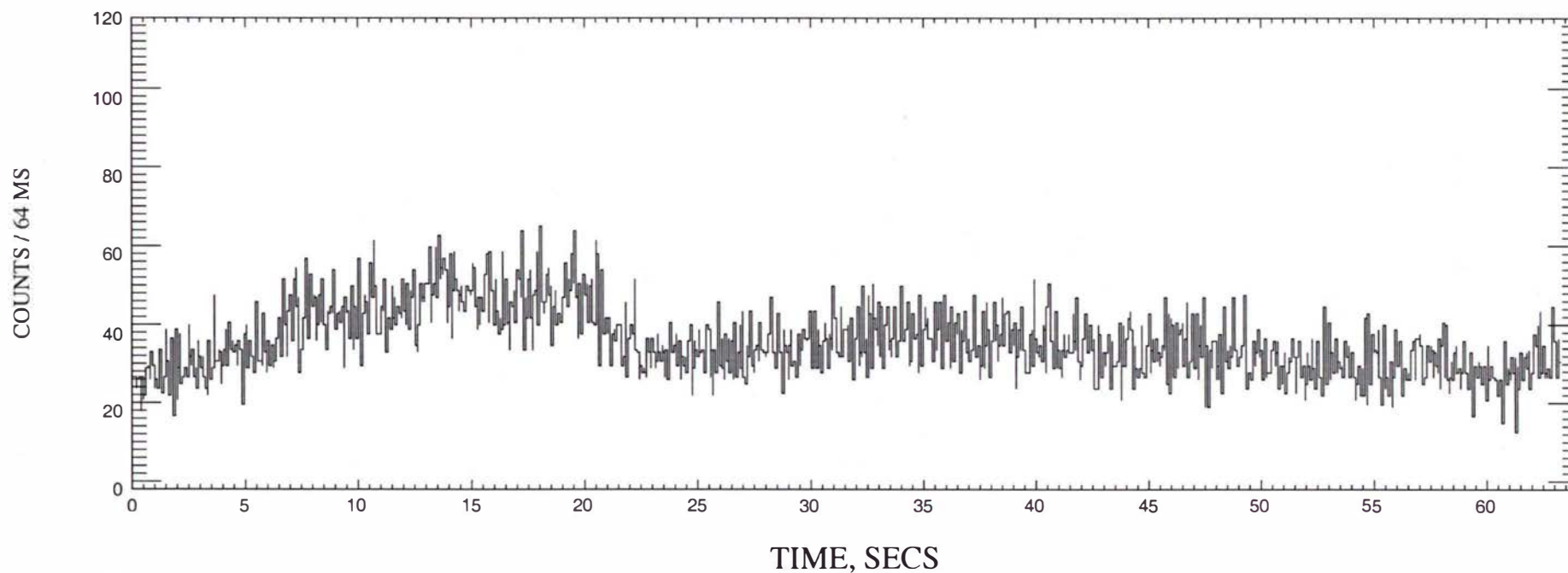


CALIBRATION DATA INCLUDED

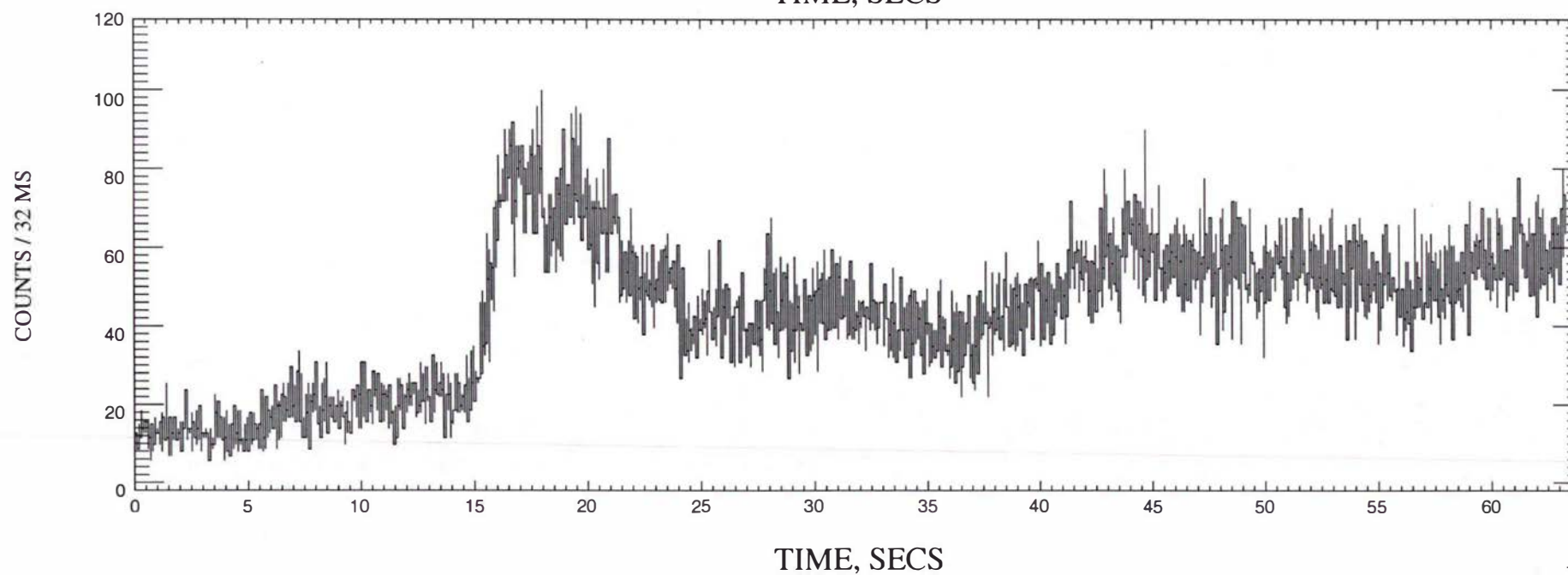
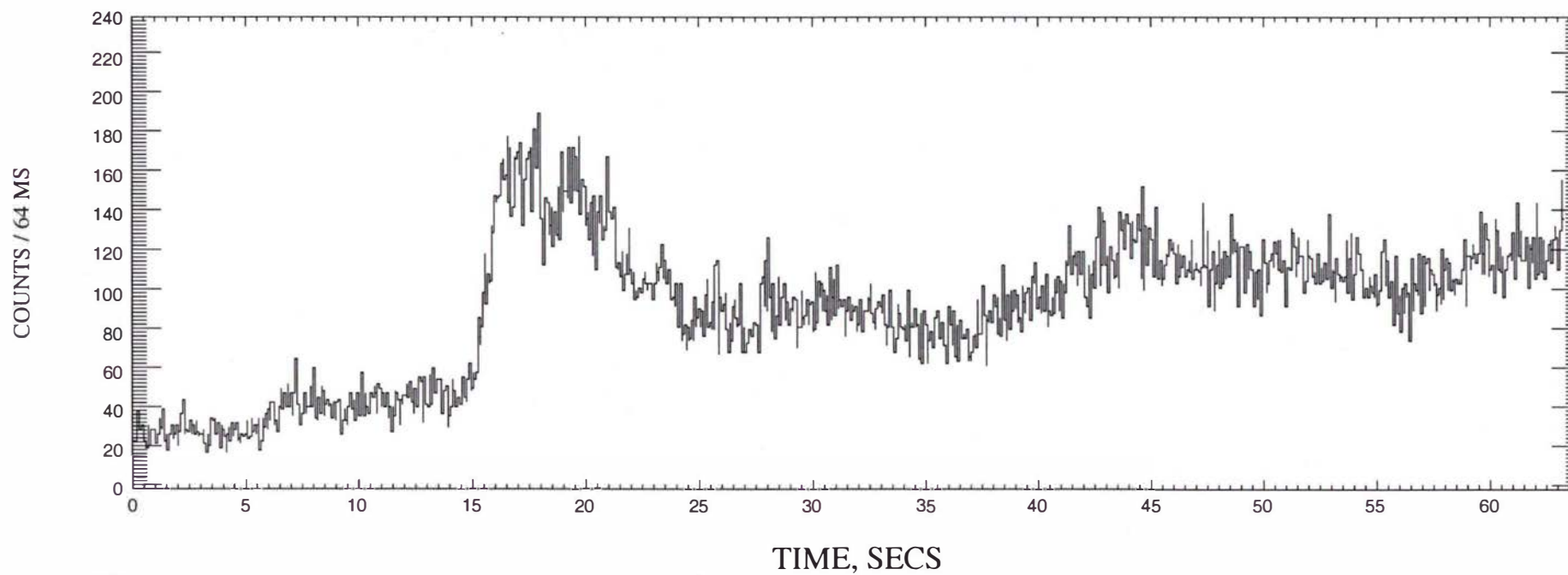


UNIV SAL TIME

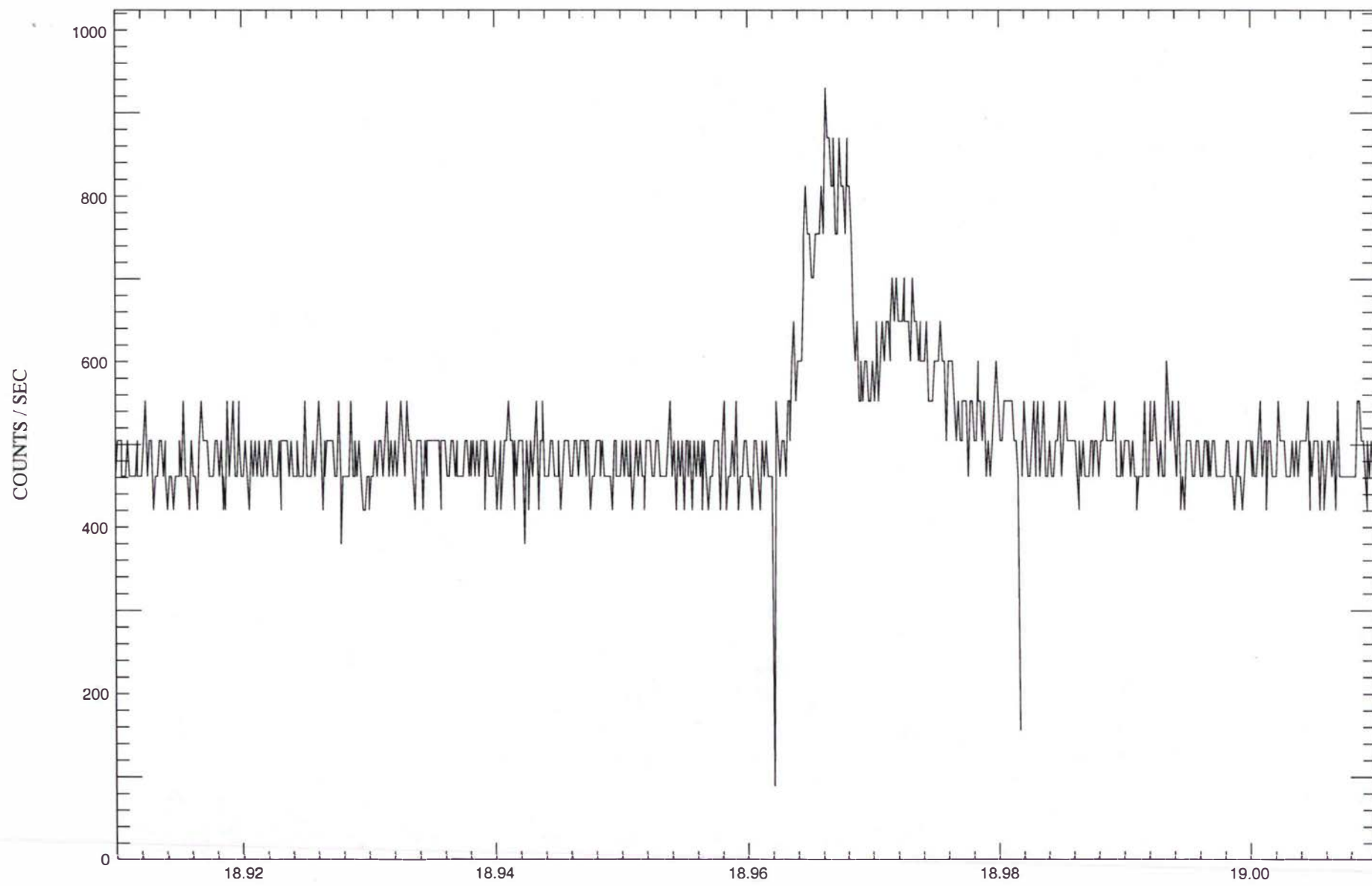
Burst Counter 0 at UT=18.964720047845 h=68272.992 s 18:57:52.992



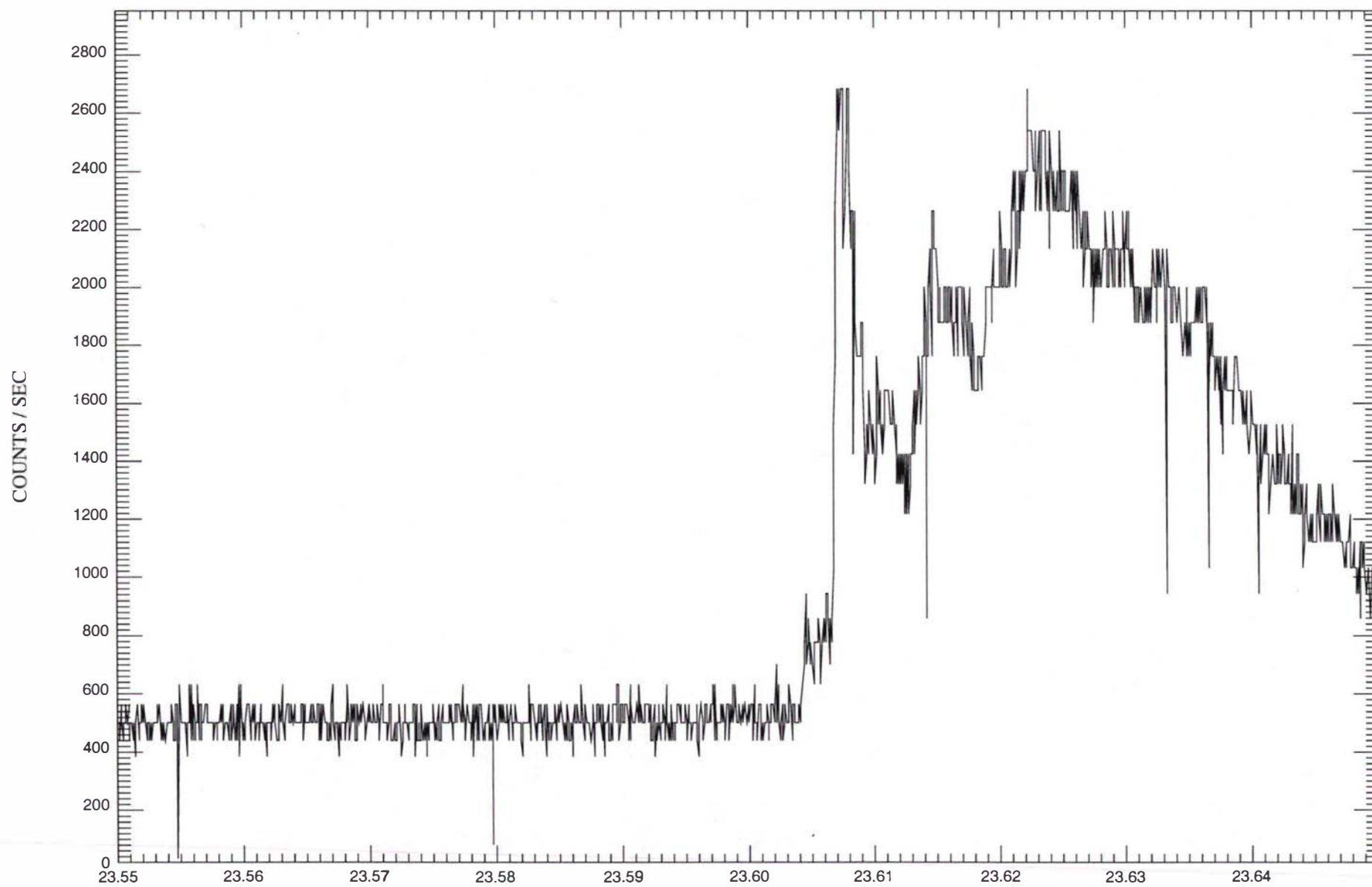
Burst Counter 1 at UT=23.604626782735 h=84976.656 s 23:36:16.656

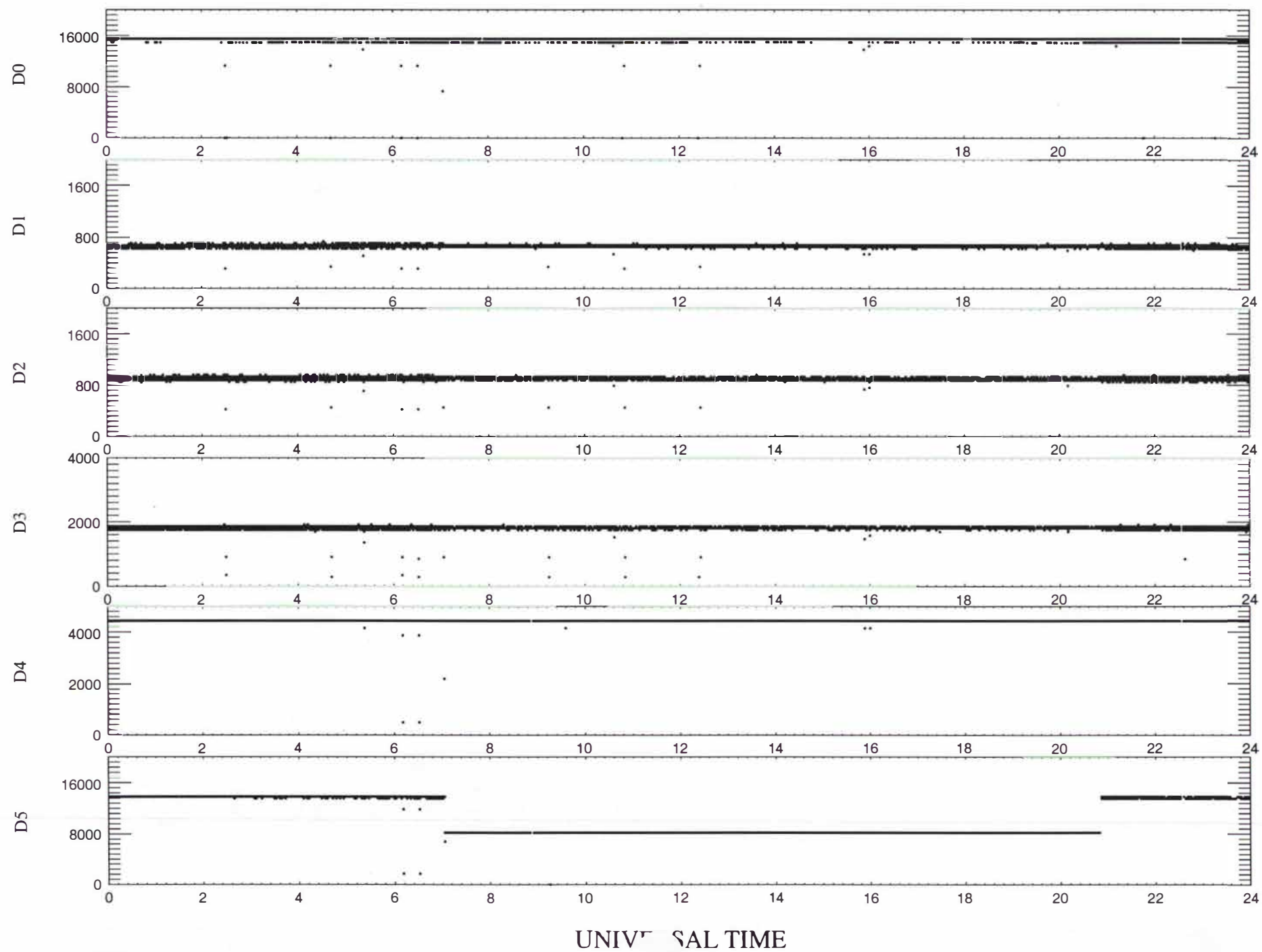


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Mon Aug 23 10:44 PDT 1999
Date: Mon, 23 Aug 1999 12:50:51 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
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, 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.: 7724

TIME: TJD=1411 SECONDS=11900

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PROBABLE PARTICLE EVENT (WITH STRUCTURE) WEST OF AUSTRALIA.

Date: Nov 13 '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? *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? *N/A*

4. For Konus events

- ☐ Konus ecliptic latitude used with latest calibration?

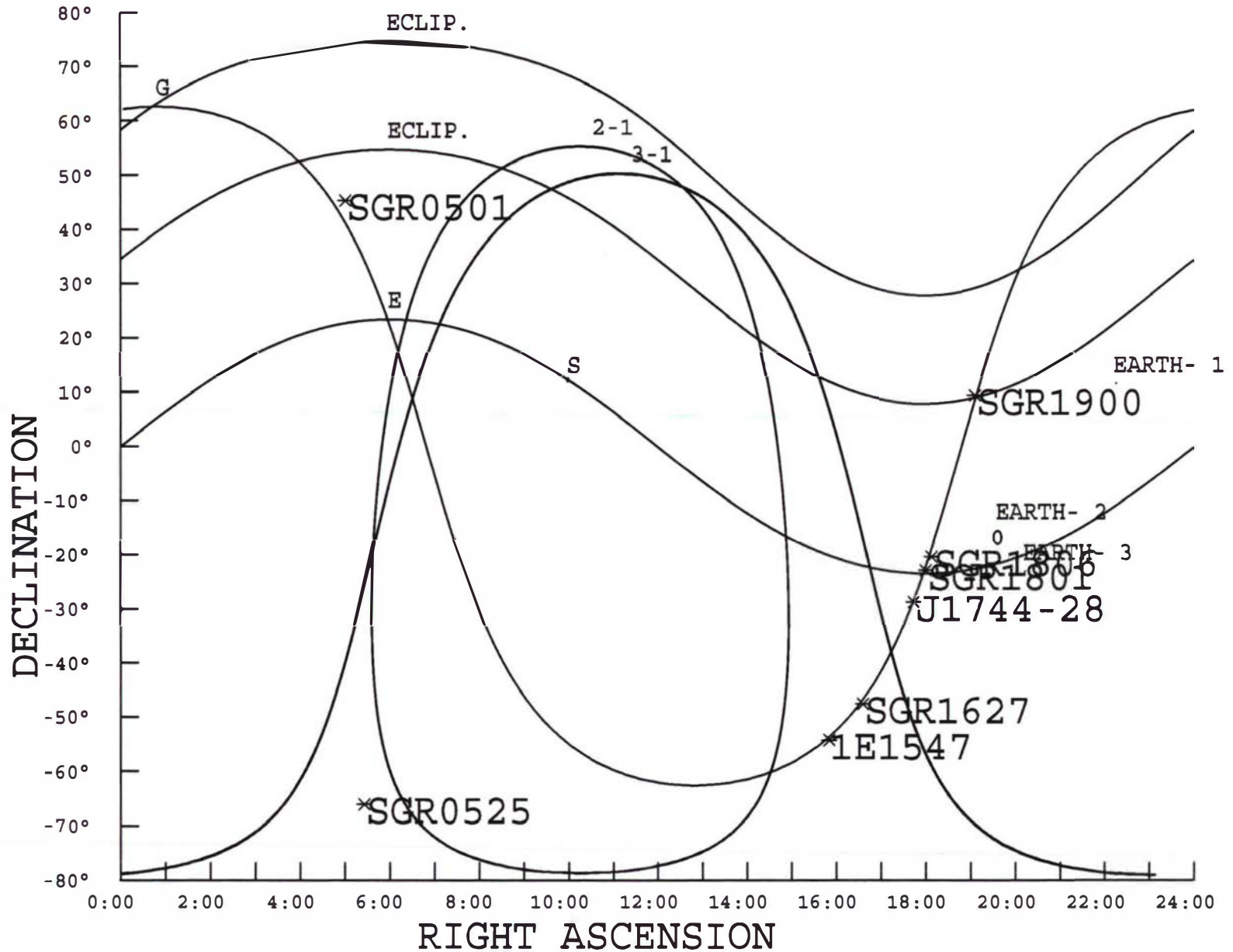
5. For 3 Spacecraft events

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

EVENT OF AUG 21, 1999 5:48

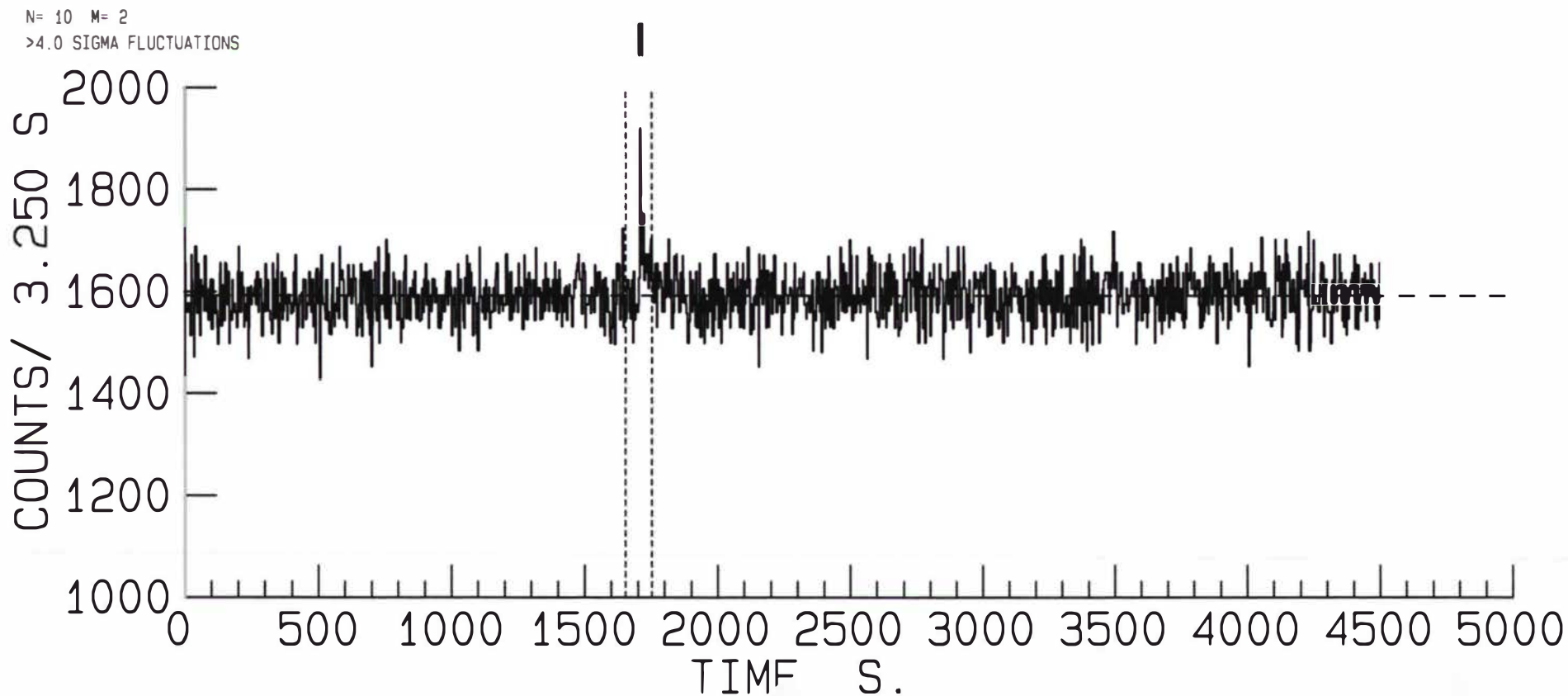
13/11/ 9

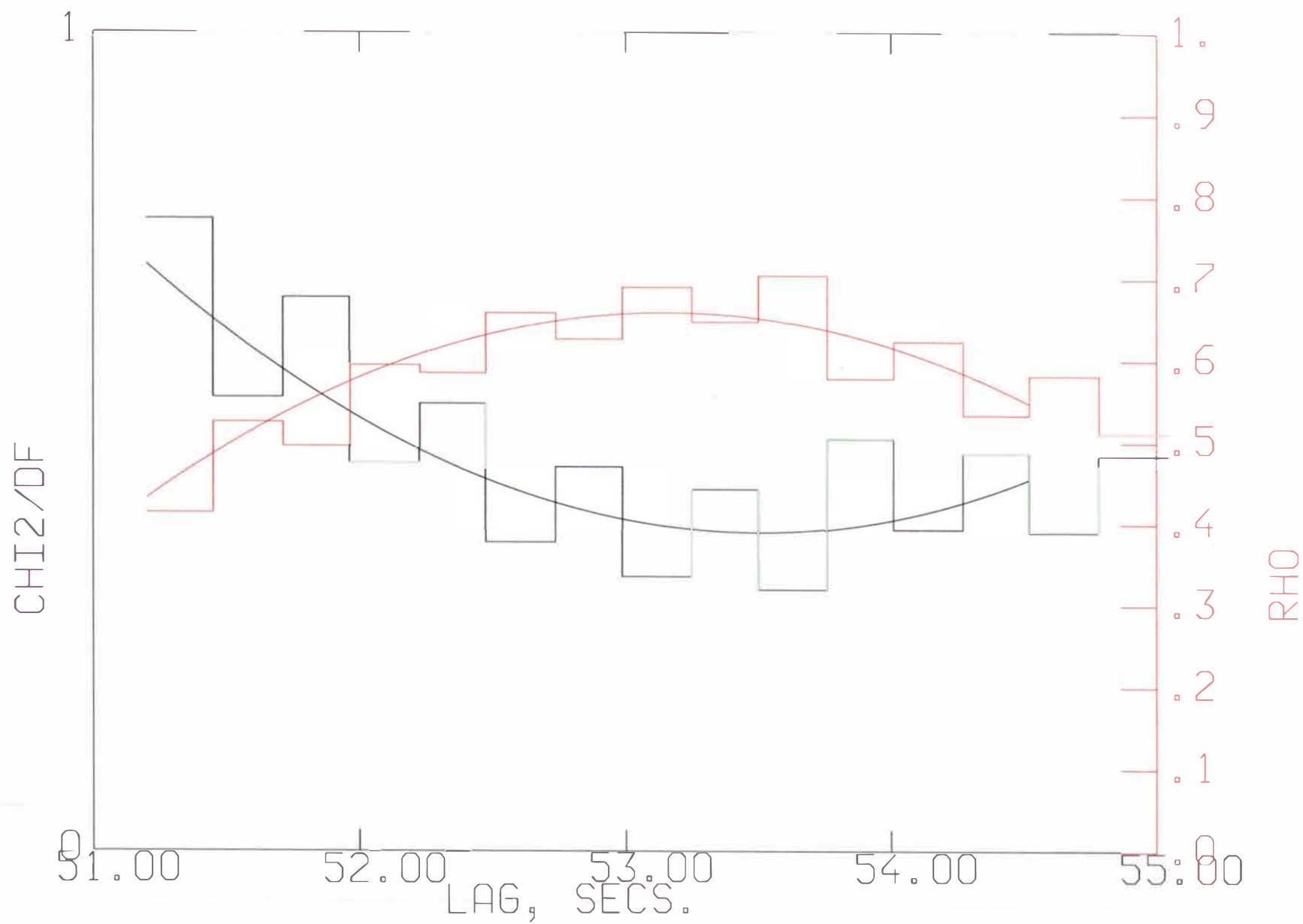
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 KONUS2 3 NEAR

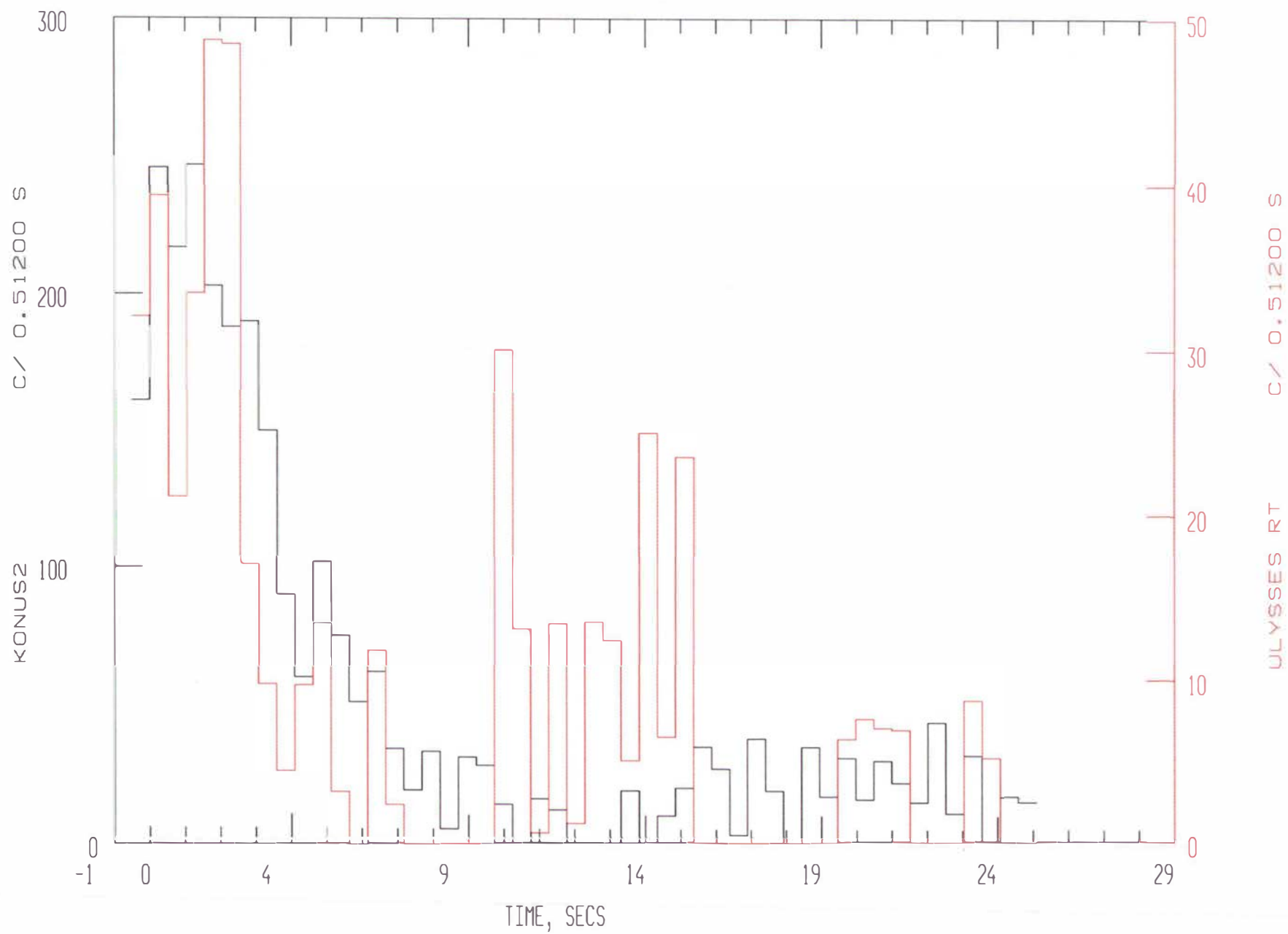


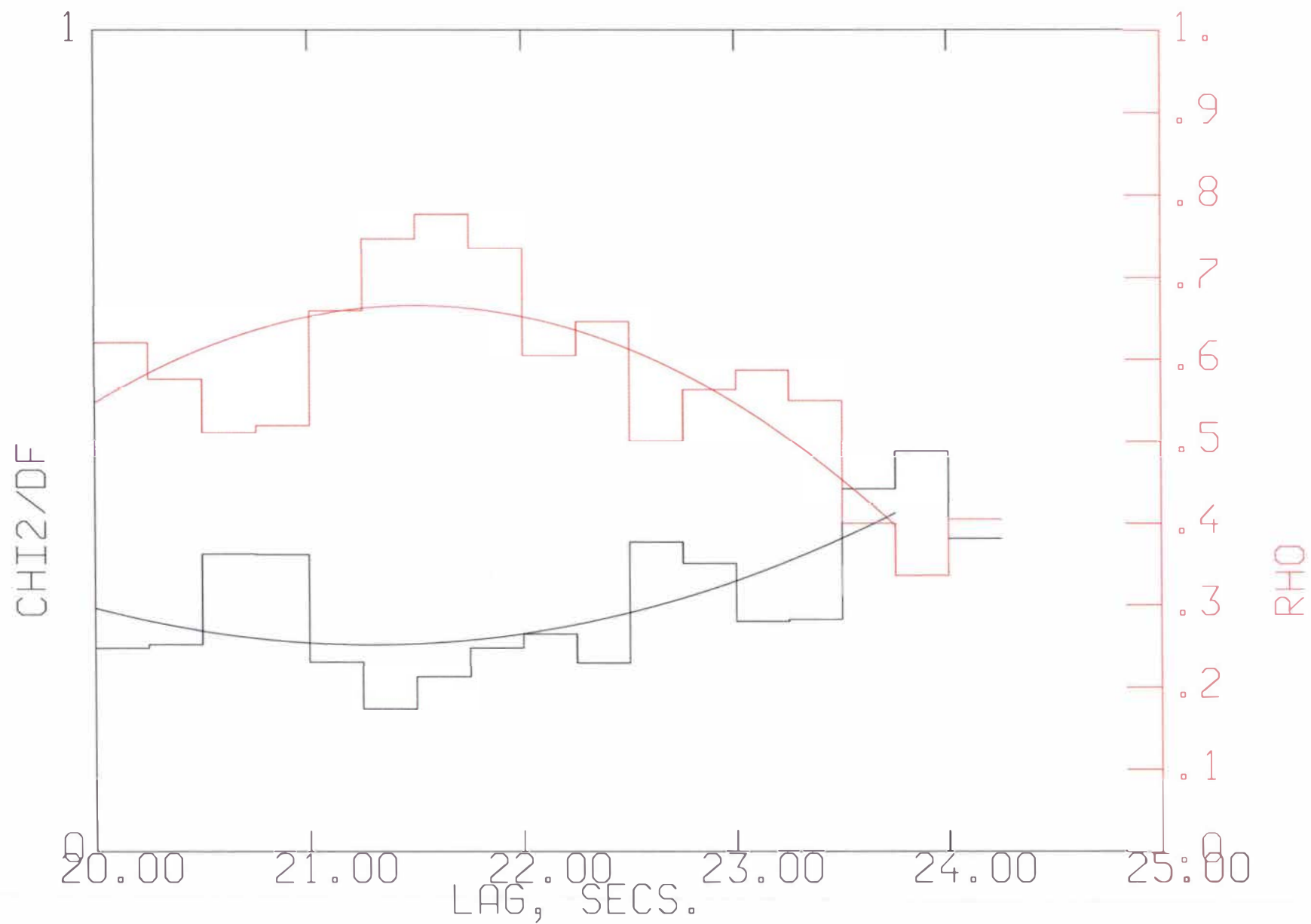
ULYSSES RT
21/ 8/99 19260.148 s
0.250 S INTERVALS REGROUPED BY 13
22- 150 keV

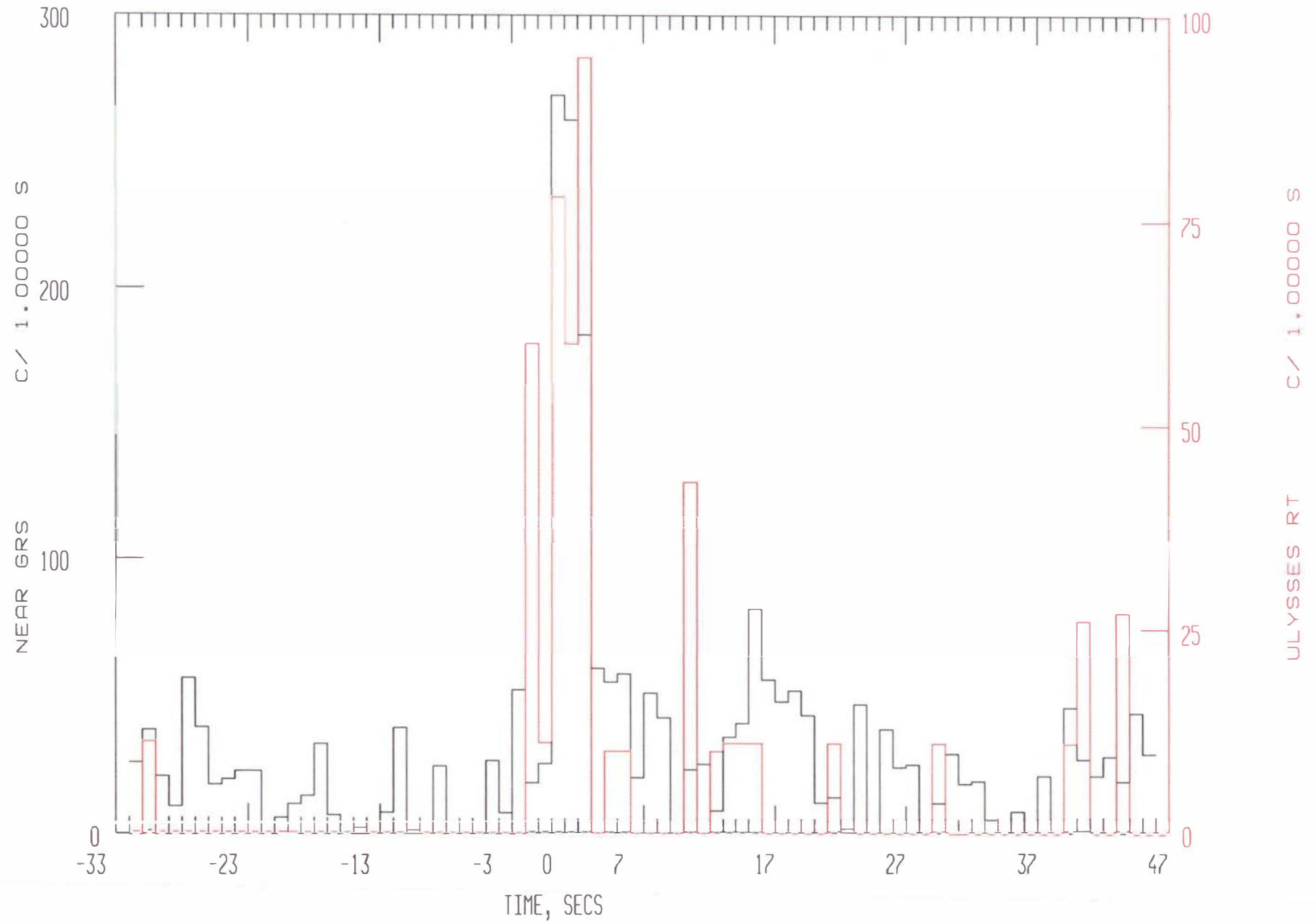
13/11/9









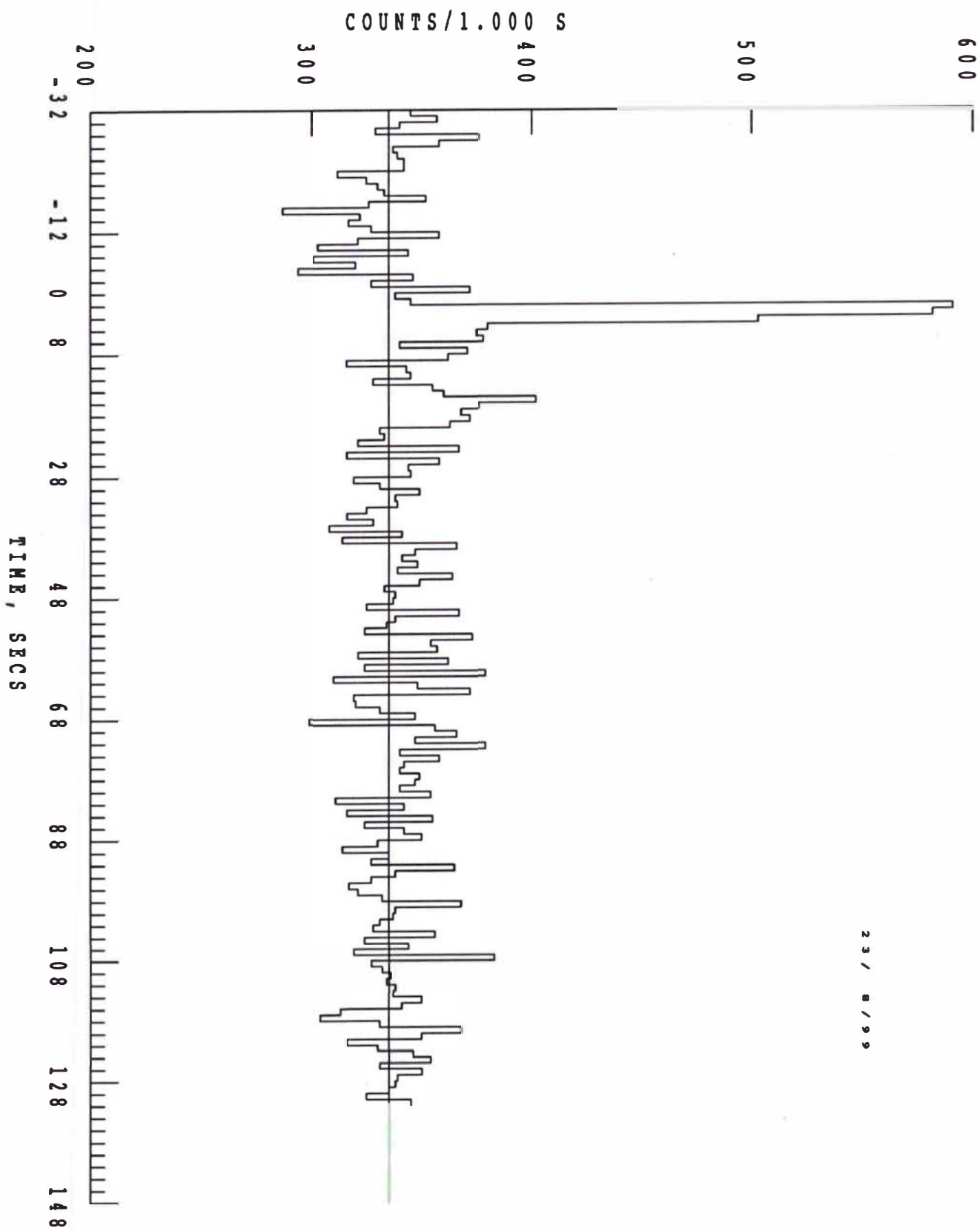


NEAR

21/08/99

21513.112

100-1000 keV



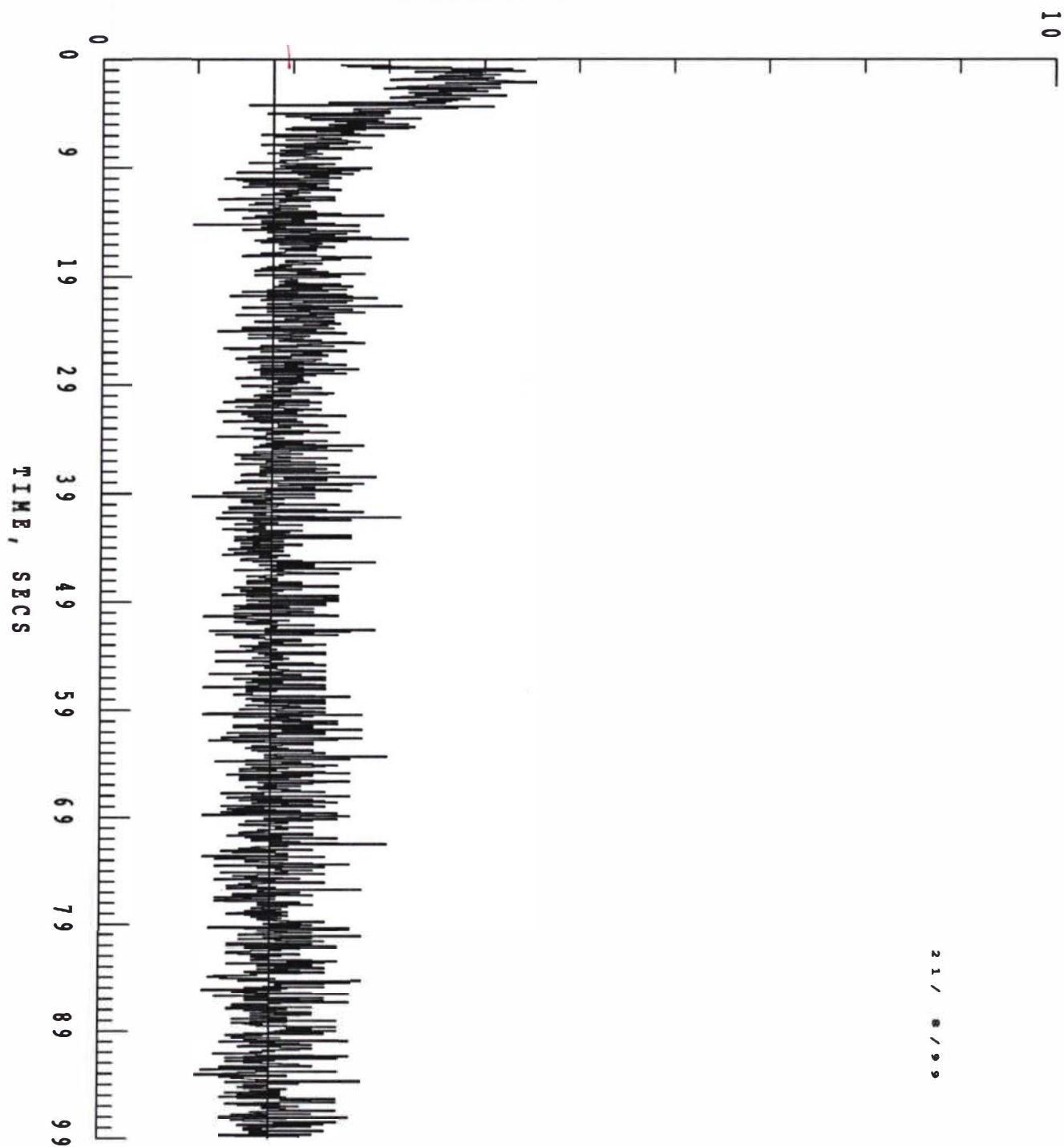
KONUS

21/08/99

22048.967

50 - 200 keV

COUNTS/0.064 S



Date: Jan 11 '10

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

- ☐ 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?

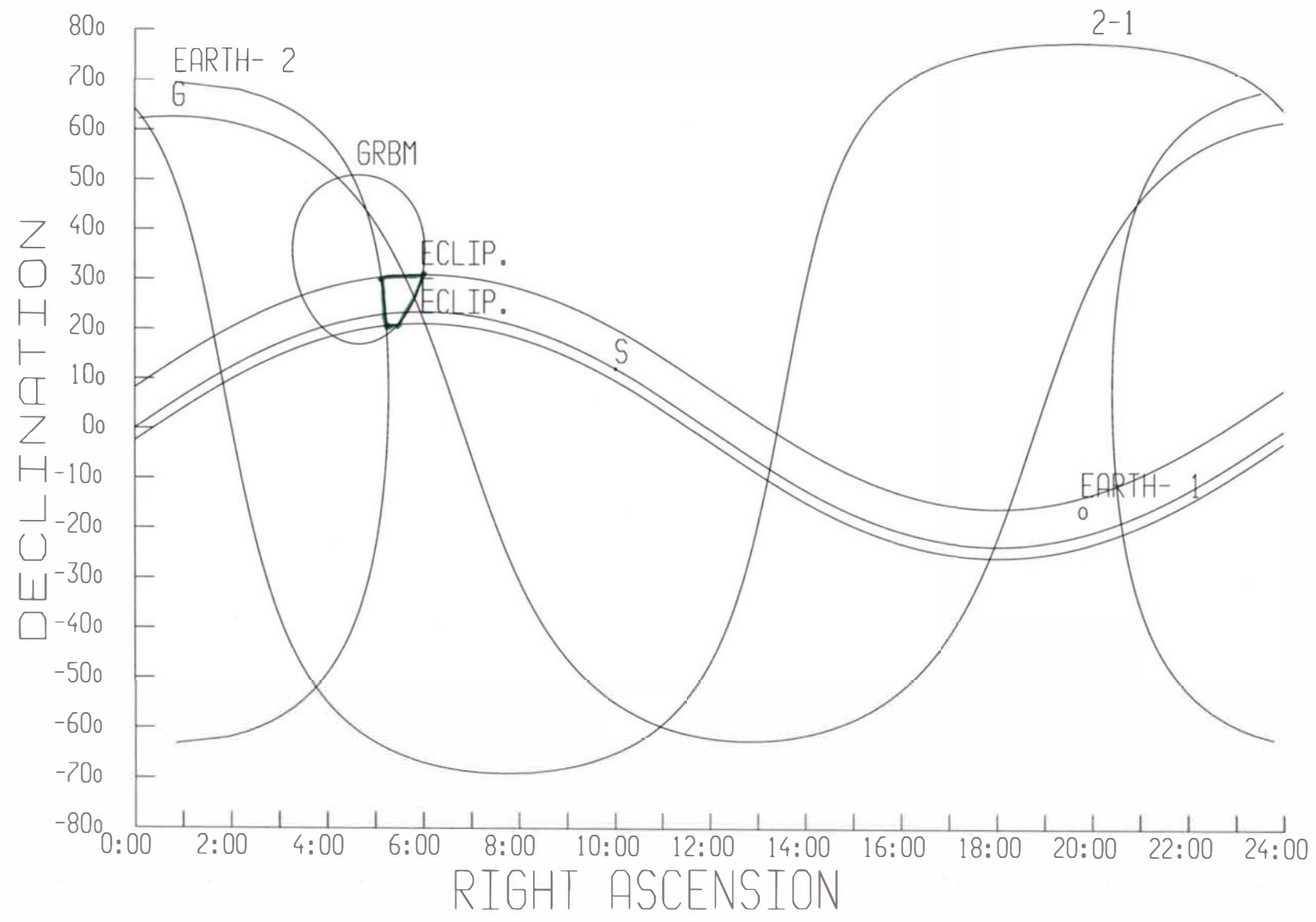
☒ ACCESS and MBL4 databases updated?

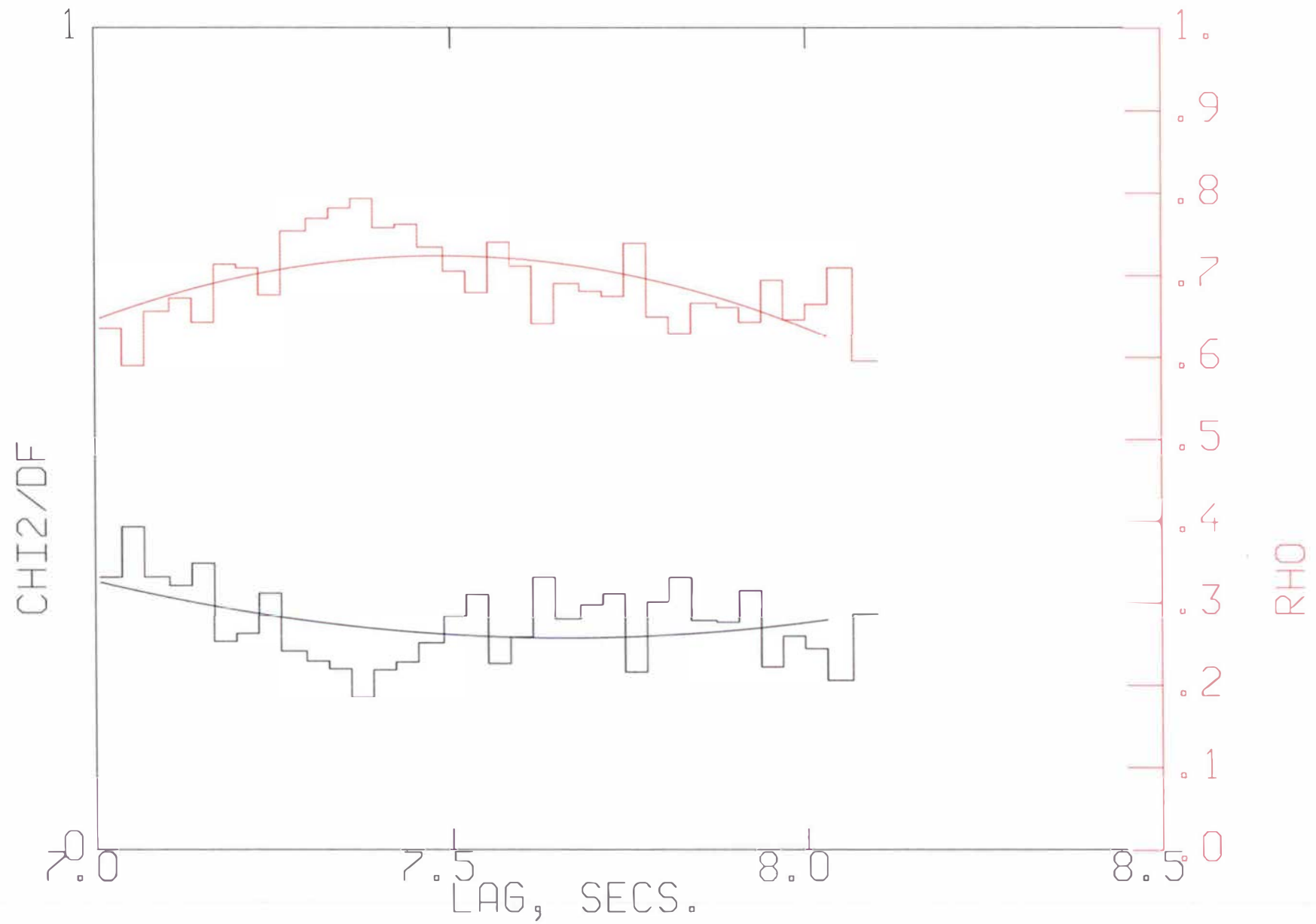
Identified as solar by Konus, GRB by SAX

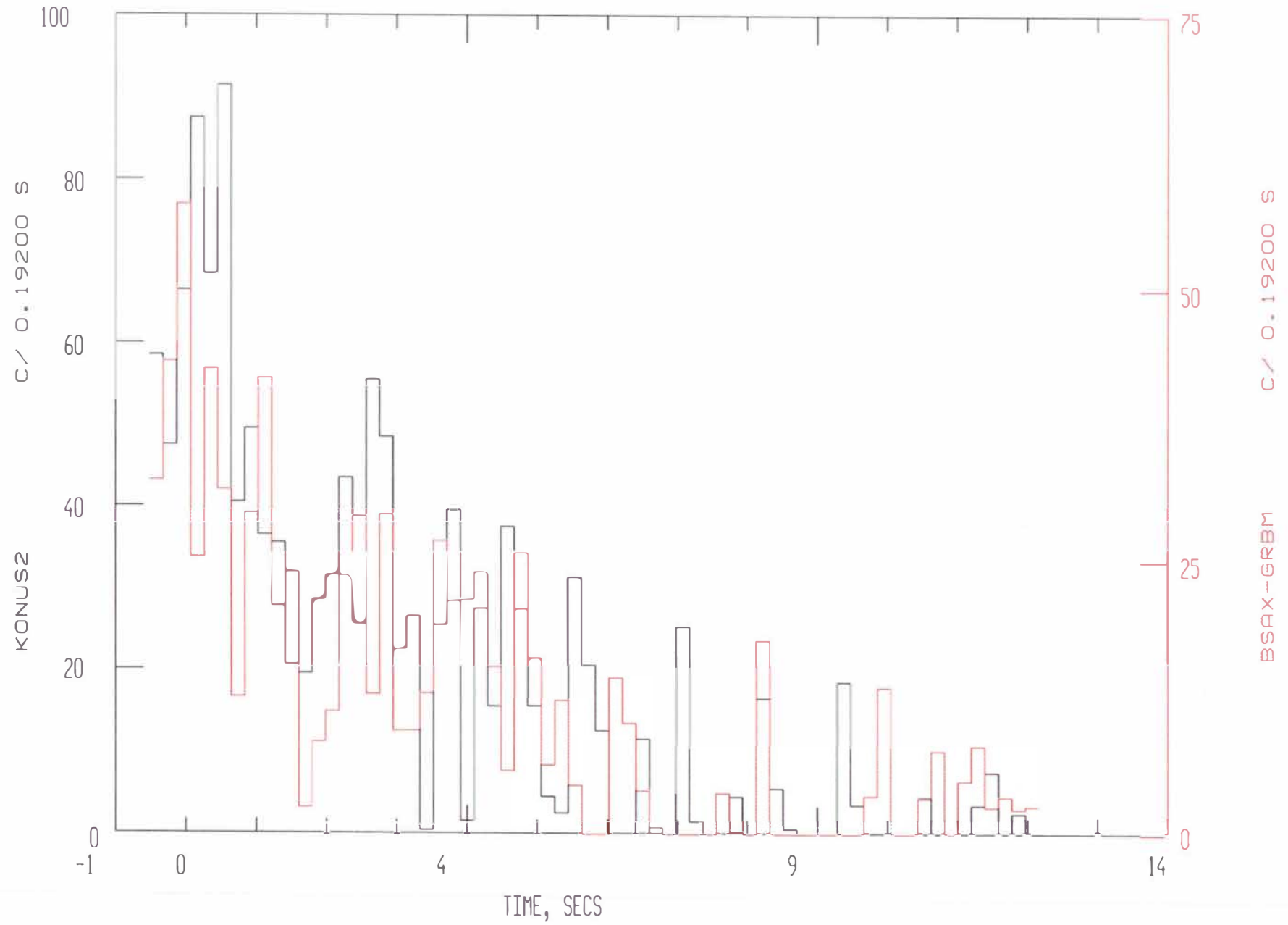
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1KONUS2 2SAX

EVENT OF AUG 21, 1999 11:02

12/ 1/10





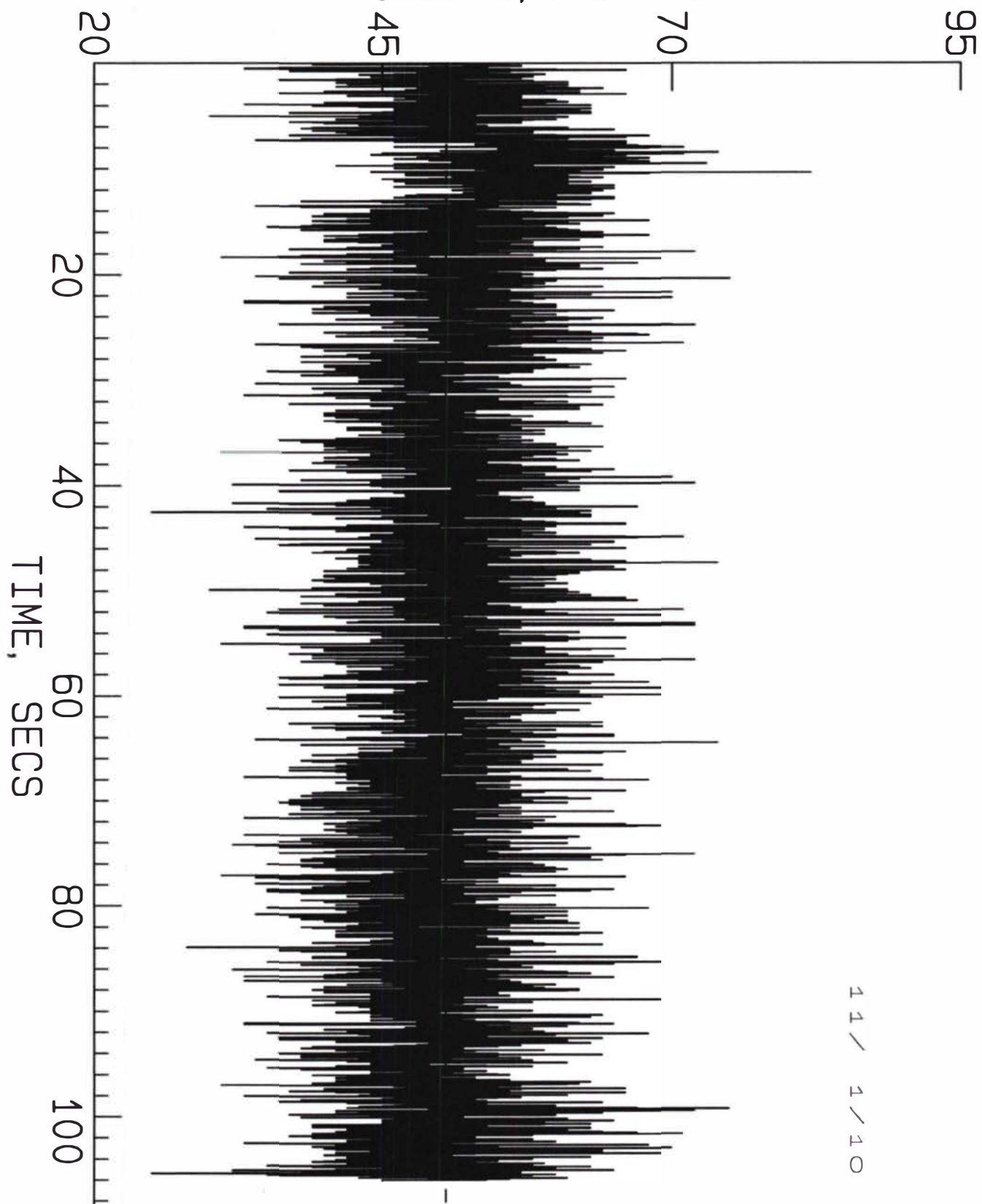


SAX GRBM

21/08/99 39755.054

40- 700 keV

COUNTS/0.031 S



11 / 110

KONUS

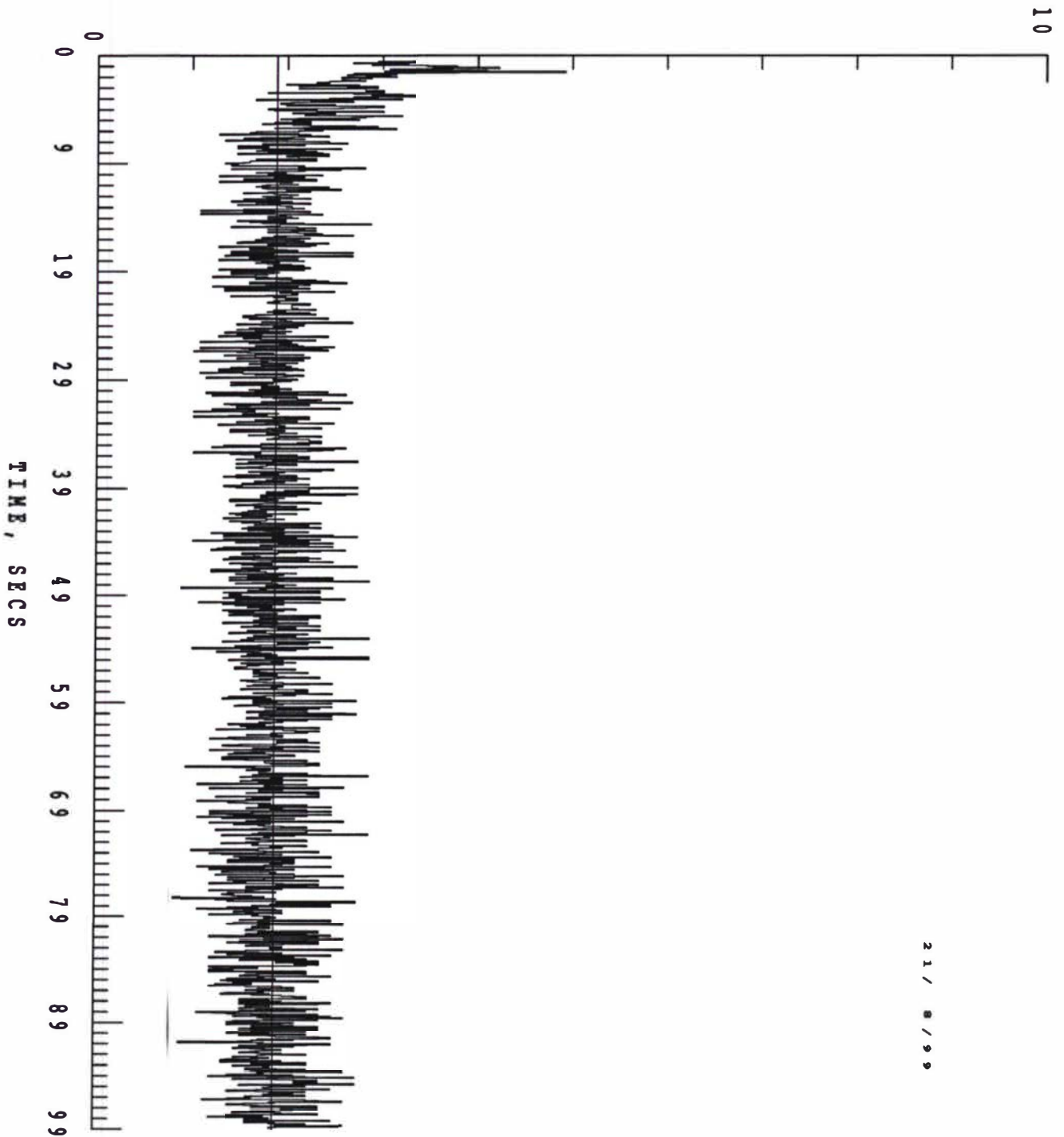
21/08/99

39761.910

50 - 200 keV

11:02:41

COUNTS/0.064 S



KONUS2 19990821 39761

ULYSSES RT

23 / 8 / 99

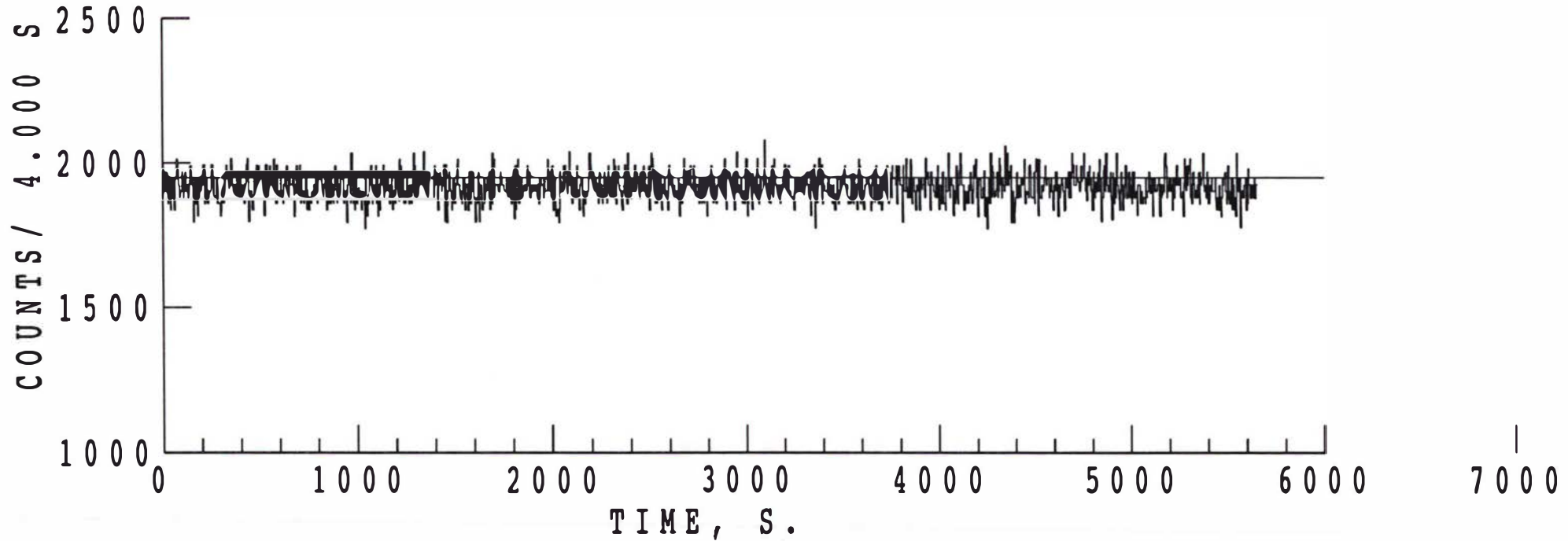
21 / 8 / 99 36936.324 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

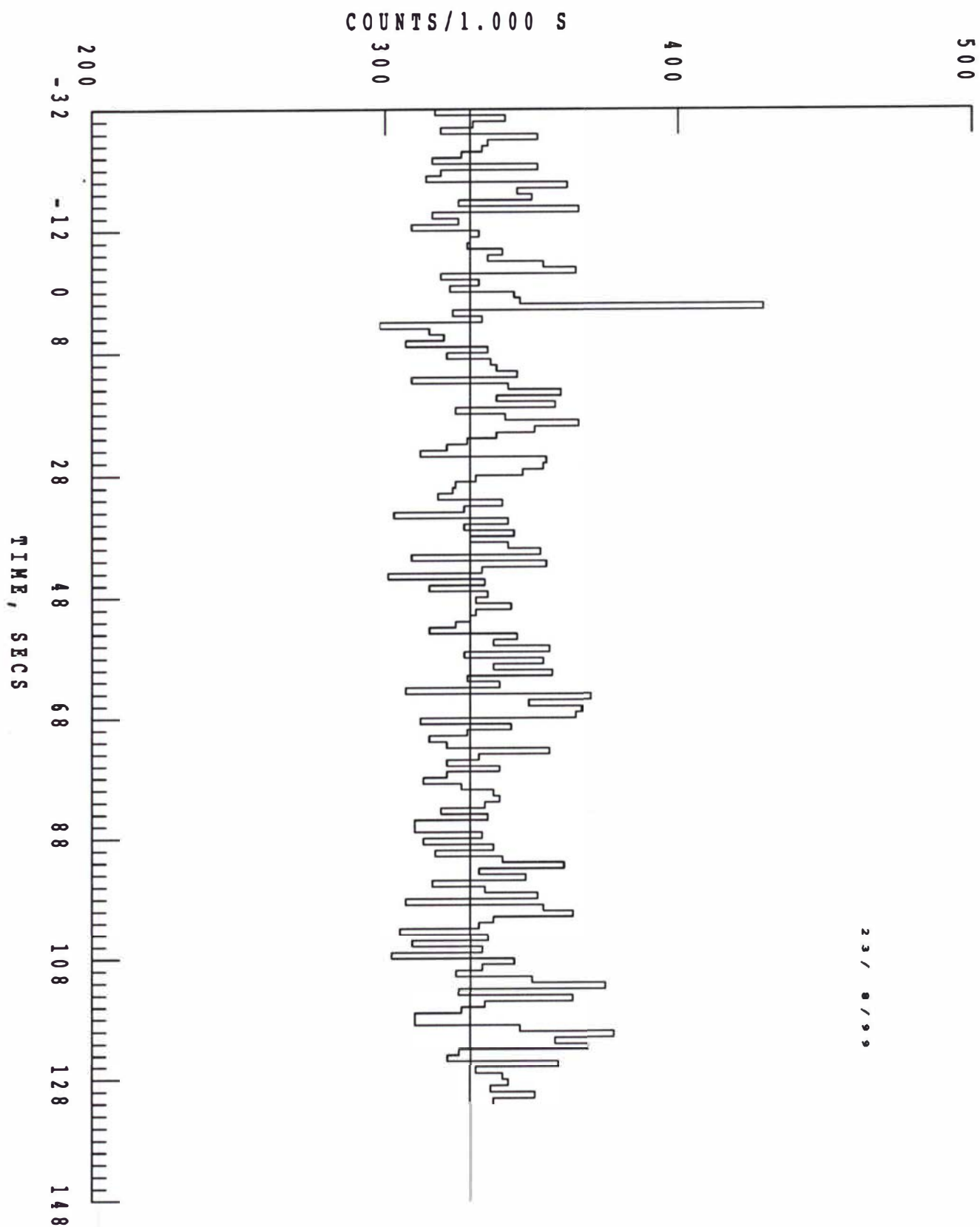


NEAR

21/08/99

50961.101

100-1000 keV



KNEAR GRS 19990821 50961

ULYSSES RT

23 / 8 / 99

21 / 8 / 99 48708.445 s

0.500 S INTERVALS REGROUPED BY 7

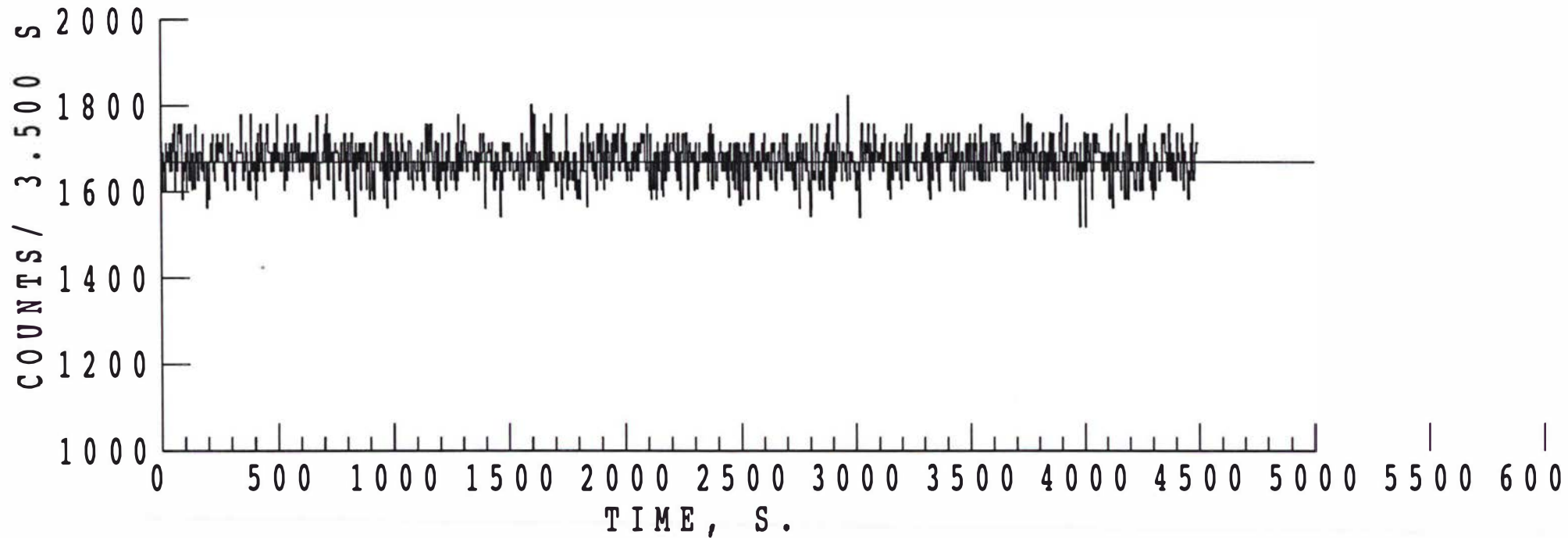
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Wed Aug 25 05:59 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Wed, 25 Aug 1999 8:05:49 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.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, 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.: 7725

TIME: TJD=1411 SECONDS=59583

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.3 AZIMUTH=336.1 ERROR=0.155 DEGREES

COMMENTS:

GOES M3.7, OPTICAL 1B. SINGLE PULSE WITH STRUCTURE, DUR APPROX 120S, STARTS AT
APPROX T-5S, MAX AT APPROX T+18S. VISIBLE ABOVE 300 KEV.

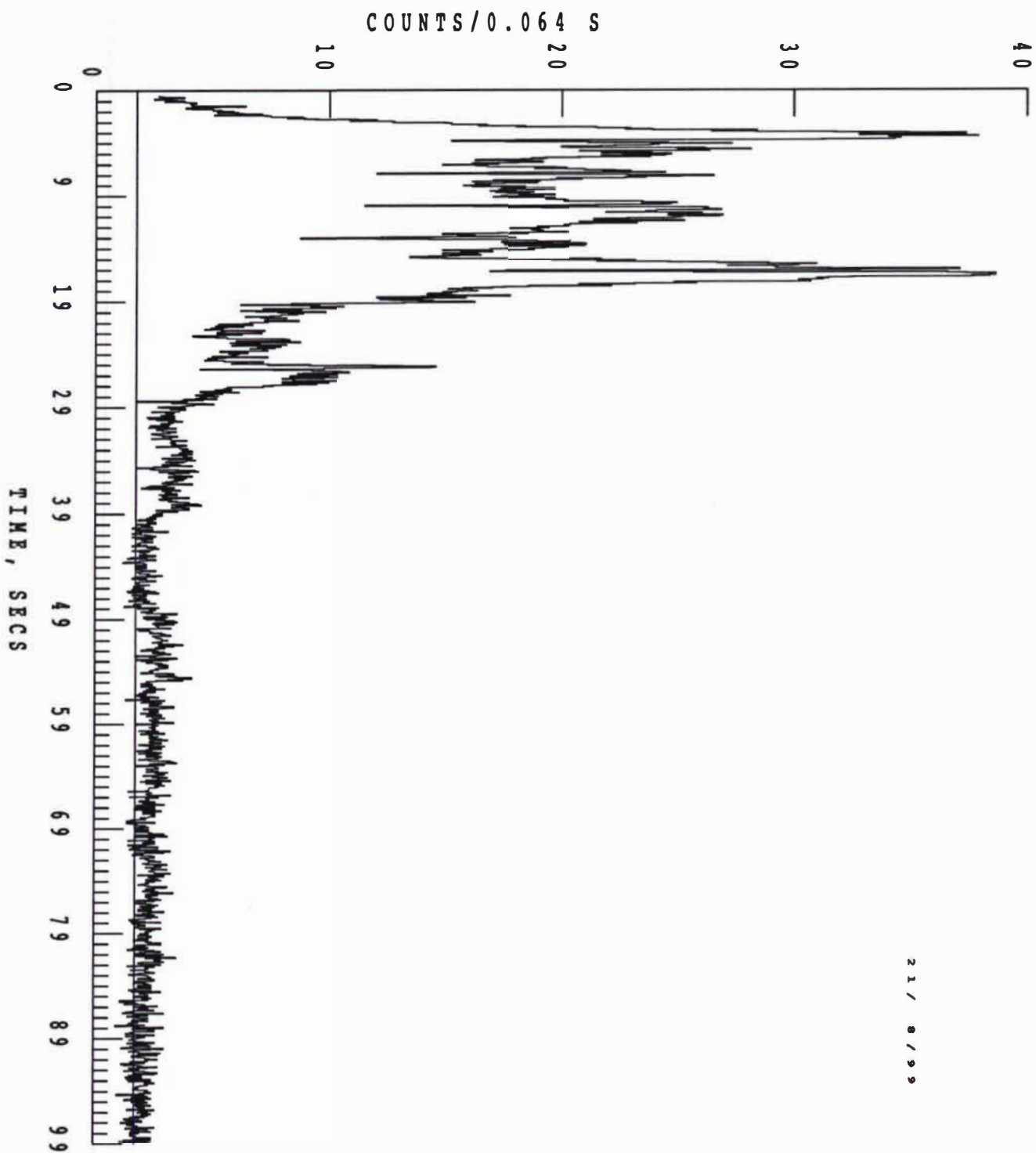
KONUS

21/08/99

59583.932

50 - 200 keV

Solar - BATSE 7725



KONUS1 19990821 59583

ULYSSES RT

23 / 8 / 99

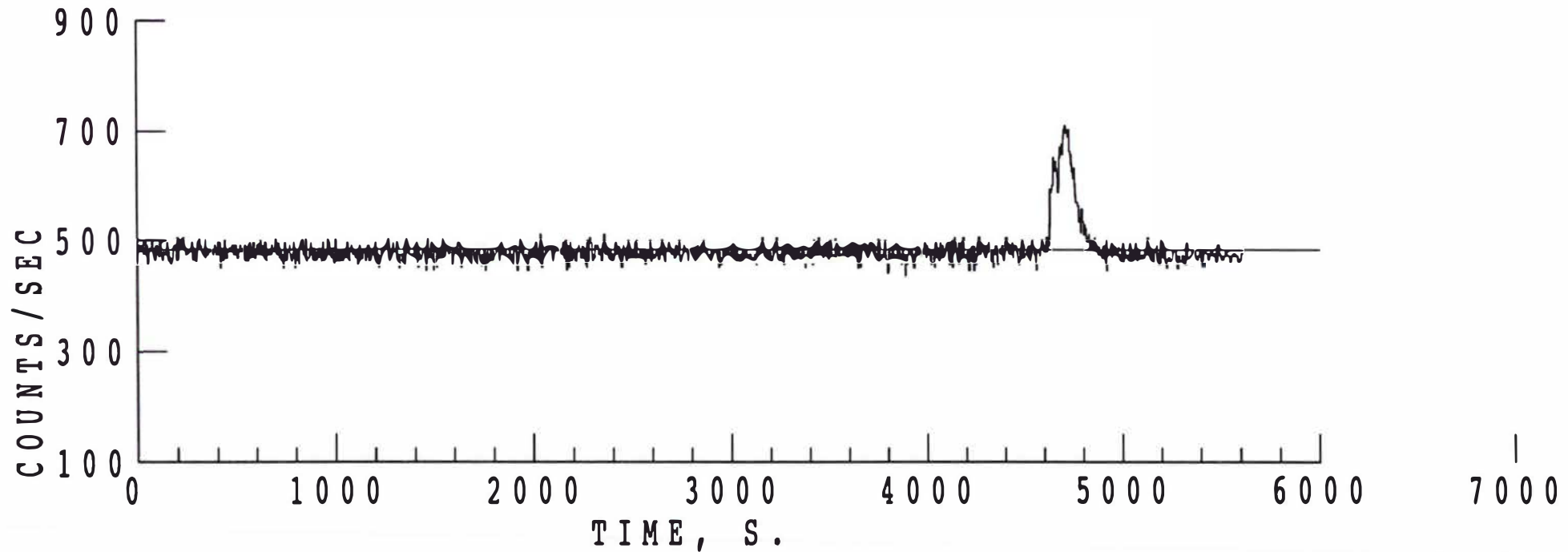
21 / 8 / 99 56772.027 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Wed Aug 25 06:05 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Wed, 25 Aug 1999 8:12:26 -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, 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.: 7726

TIME: TJD=1411 SECONDS=79966

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.8 AZIMUTH=335.9 ERROR=0.431 DEGREES

COMMENTS:

GOES M5.9, OPTICAL 1N. SINGLE PULSE, DUR APPROX 150S, STARTS AT APPROX T-5S,
MAX AT APPROX T+21S. VISIBLE ABOVE 300 KEV.

KONUS

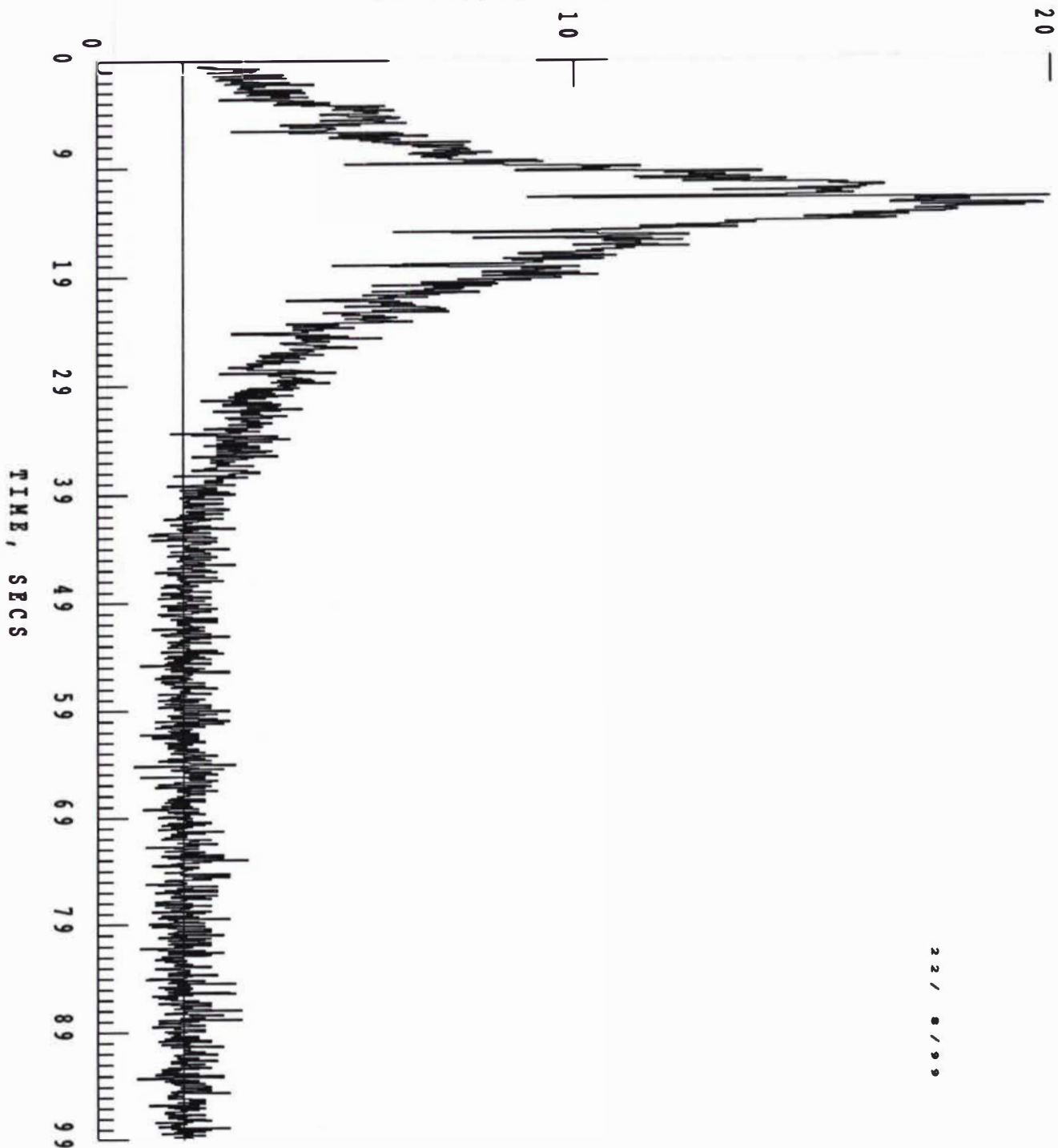
21/08/99

79974.694

50 - 200 keV

Solar - BATSE 7726

COUNTS/0.064 S



KONUS1 19990821 79974

ULYSSES RT

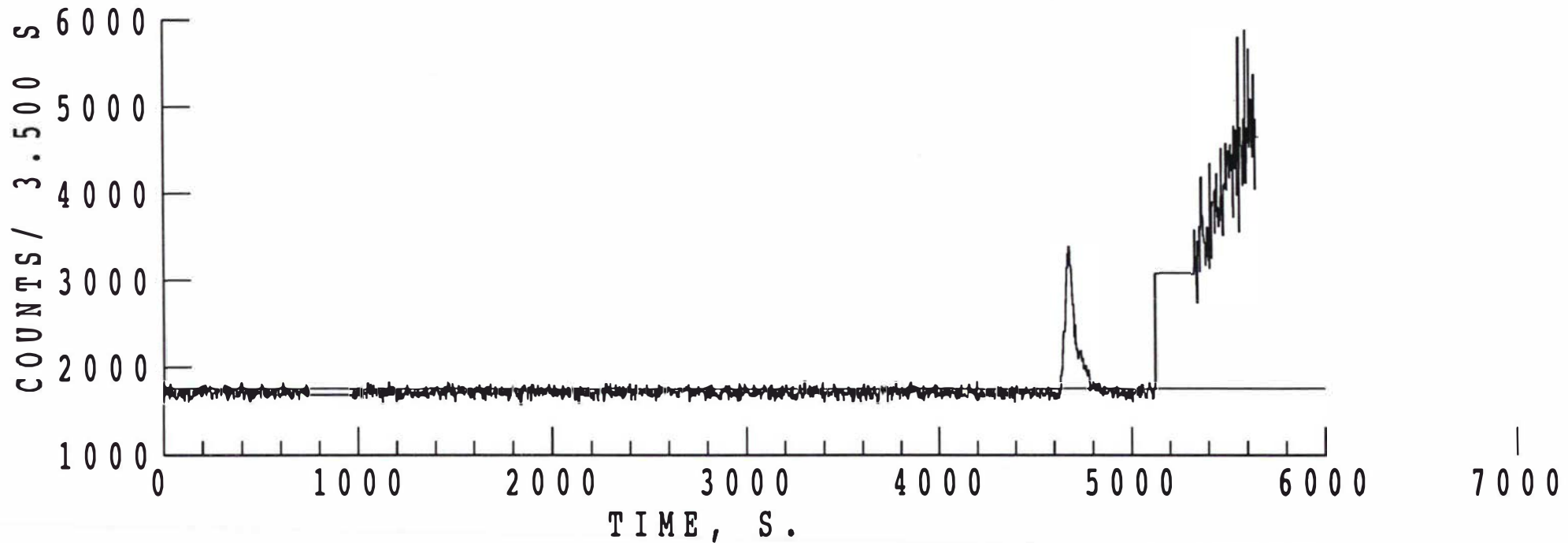
23 / 8 / 99

21 / 8 / 99 77148.234 s

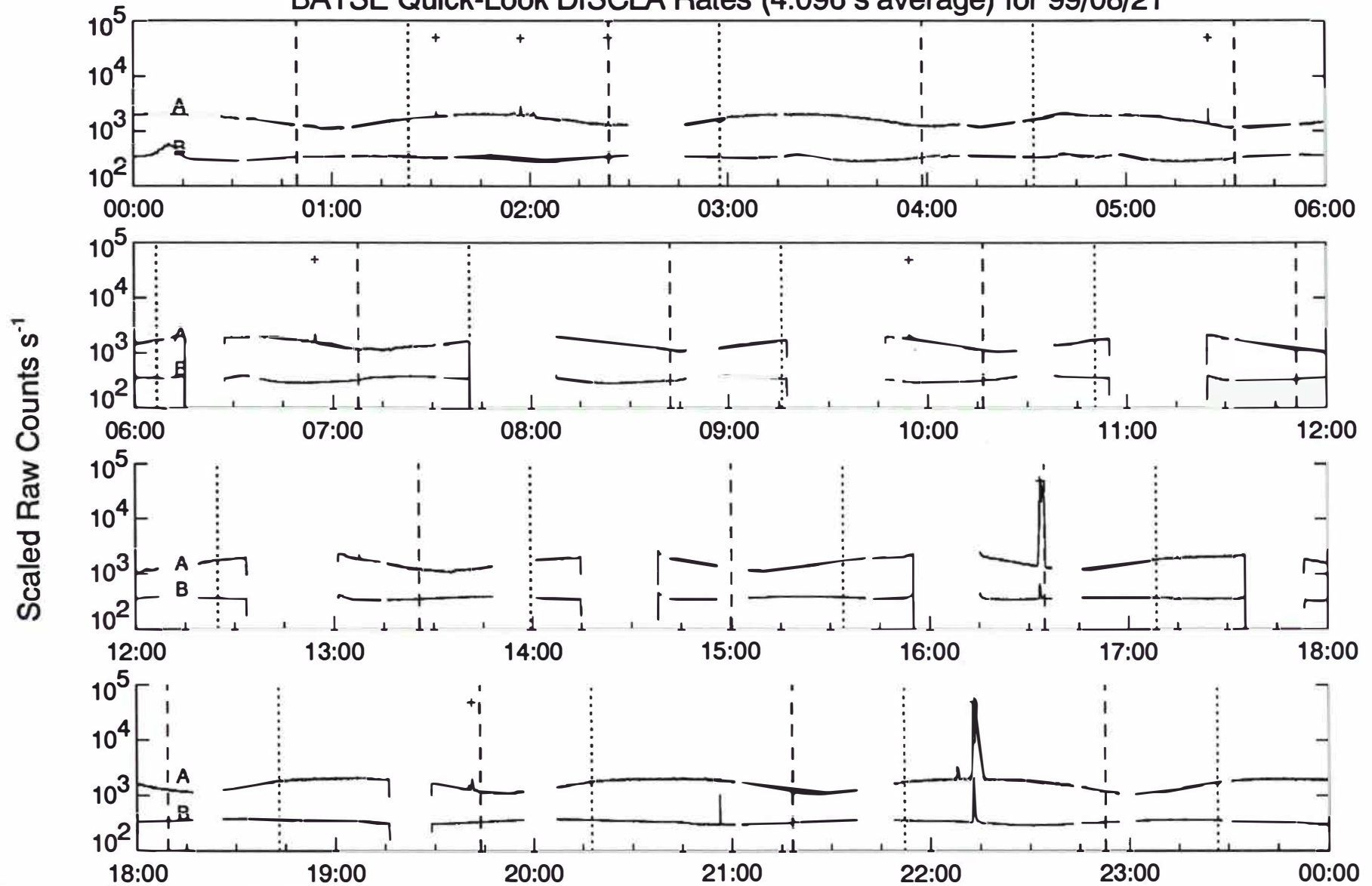
0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

B= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/21



Current Time: 99/08/25, 1006 EDT

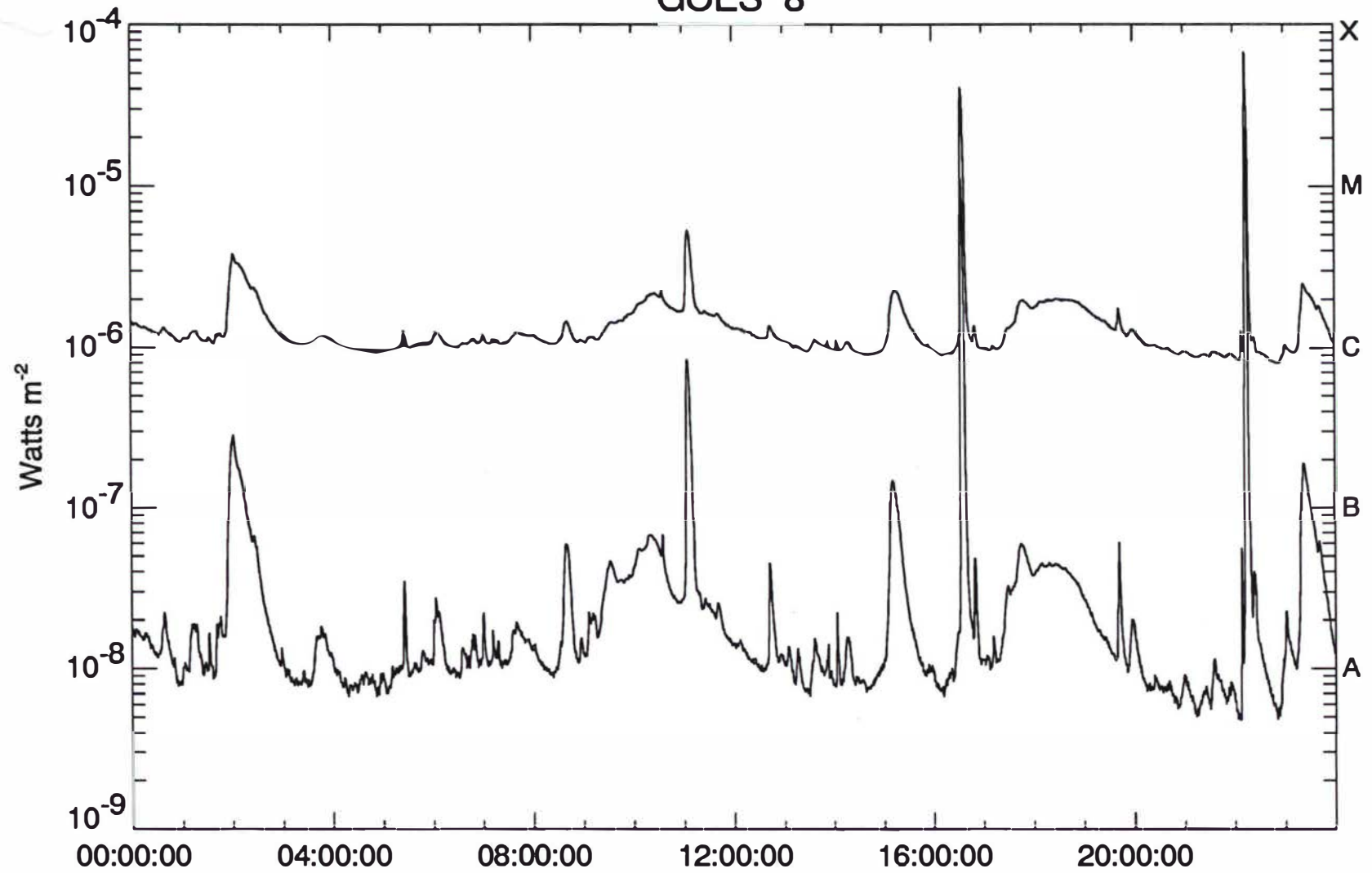
A: Channel 0 Most Sunward LAD

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: 99/08/21, 0000:00

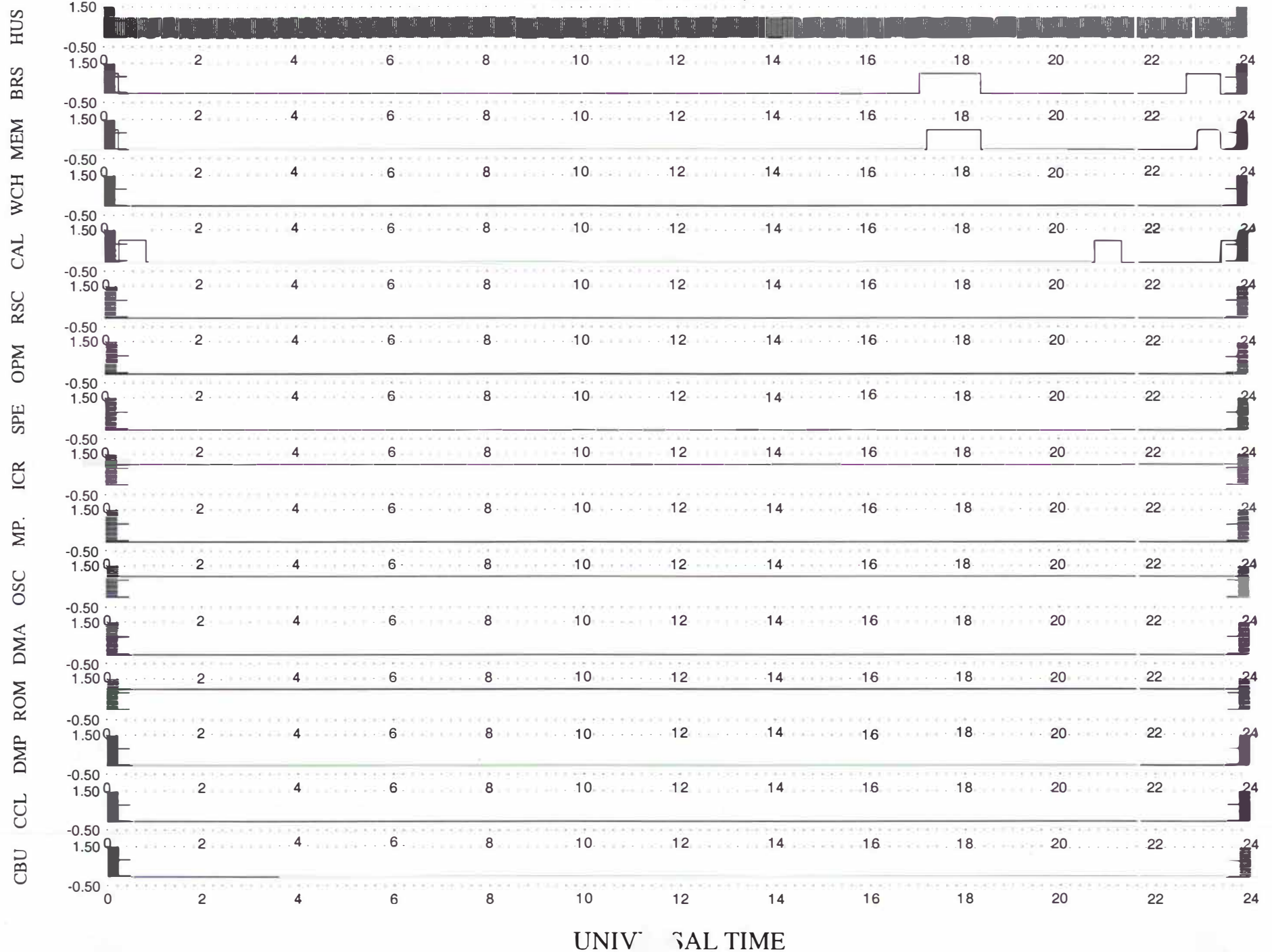
Plot created: 99/08/25, 1005

Channel

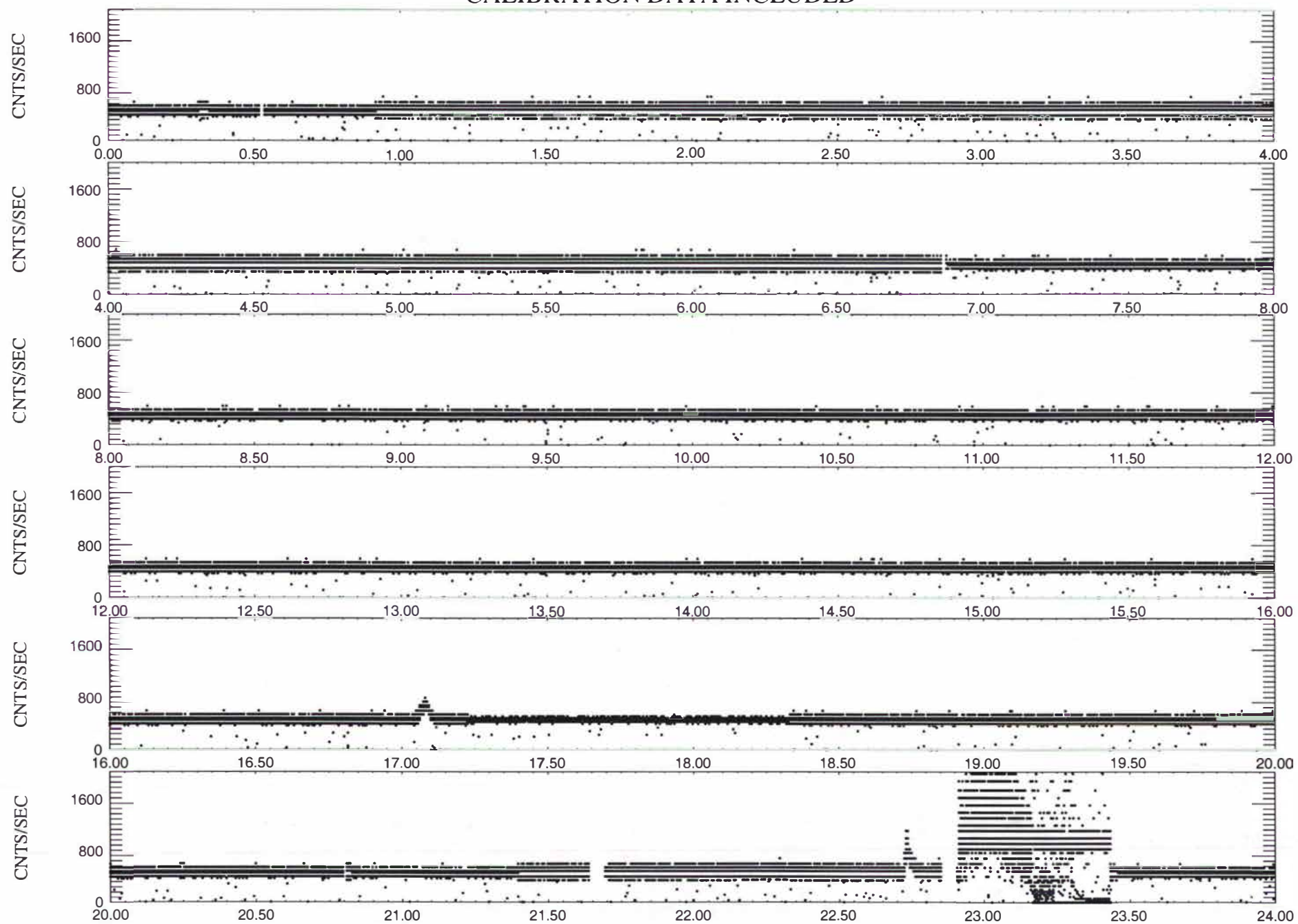
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 2, 3

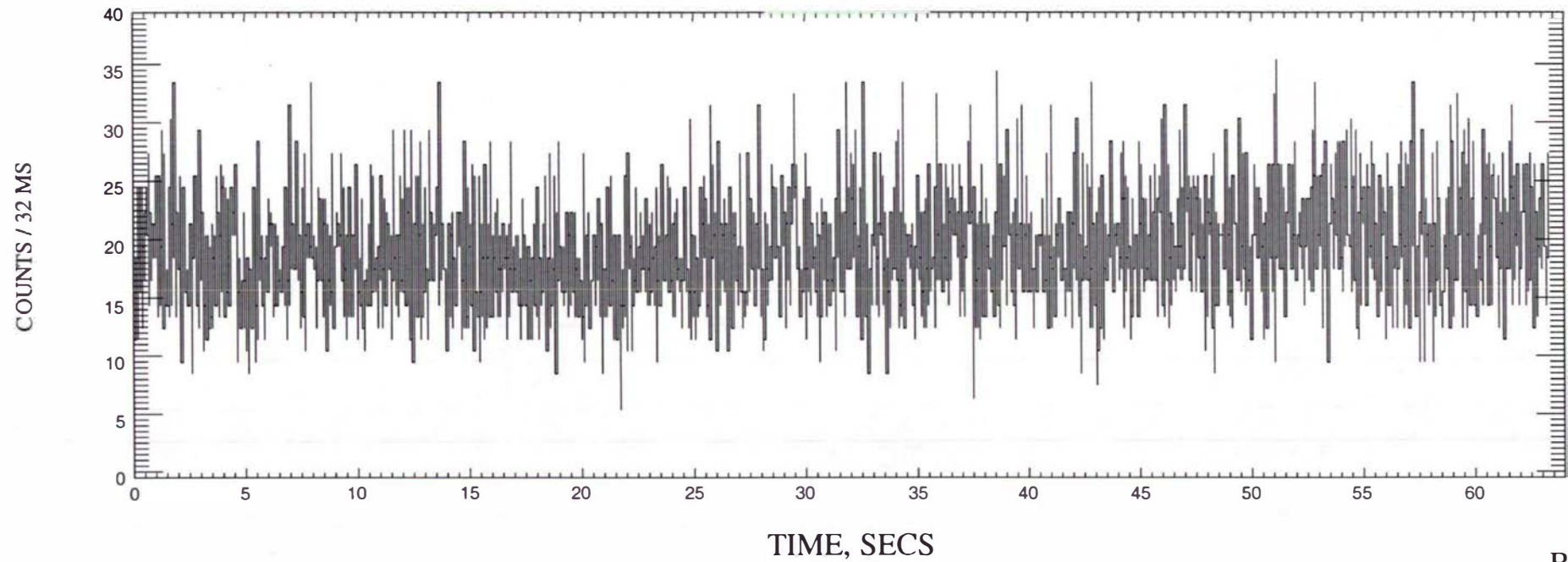
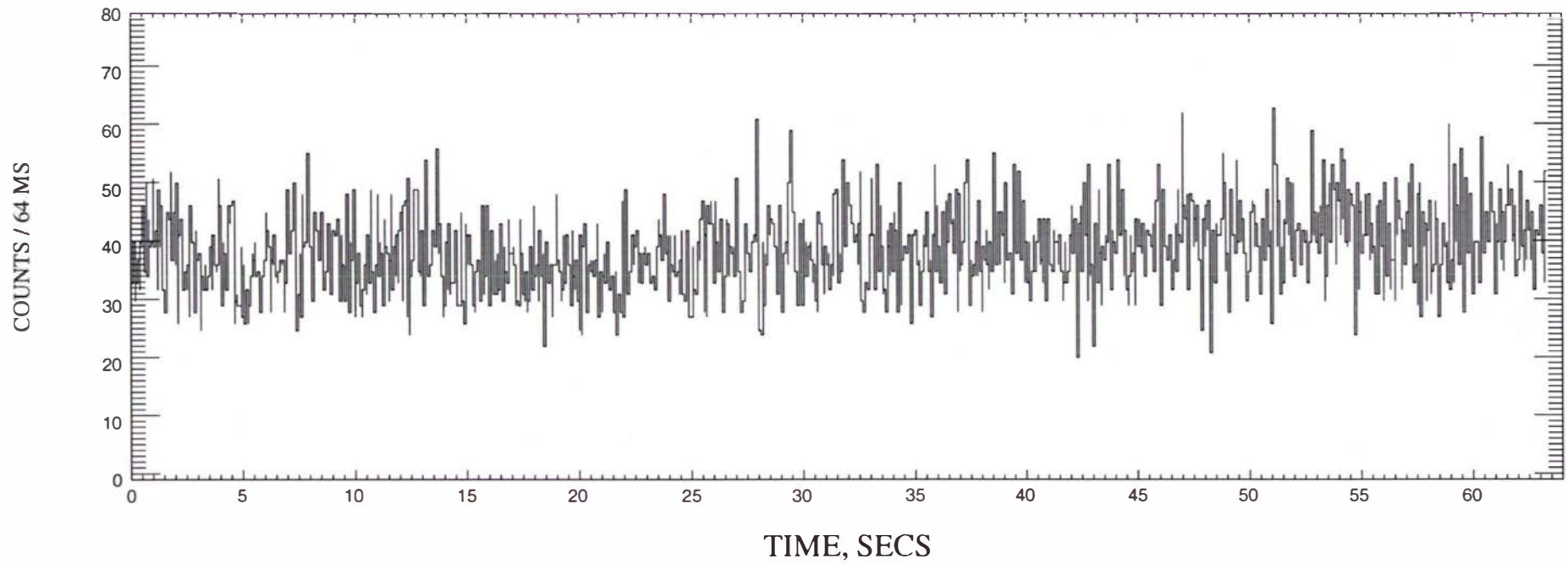


CALIBRATION DATA INCLUDED

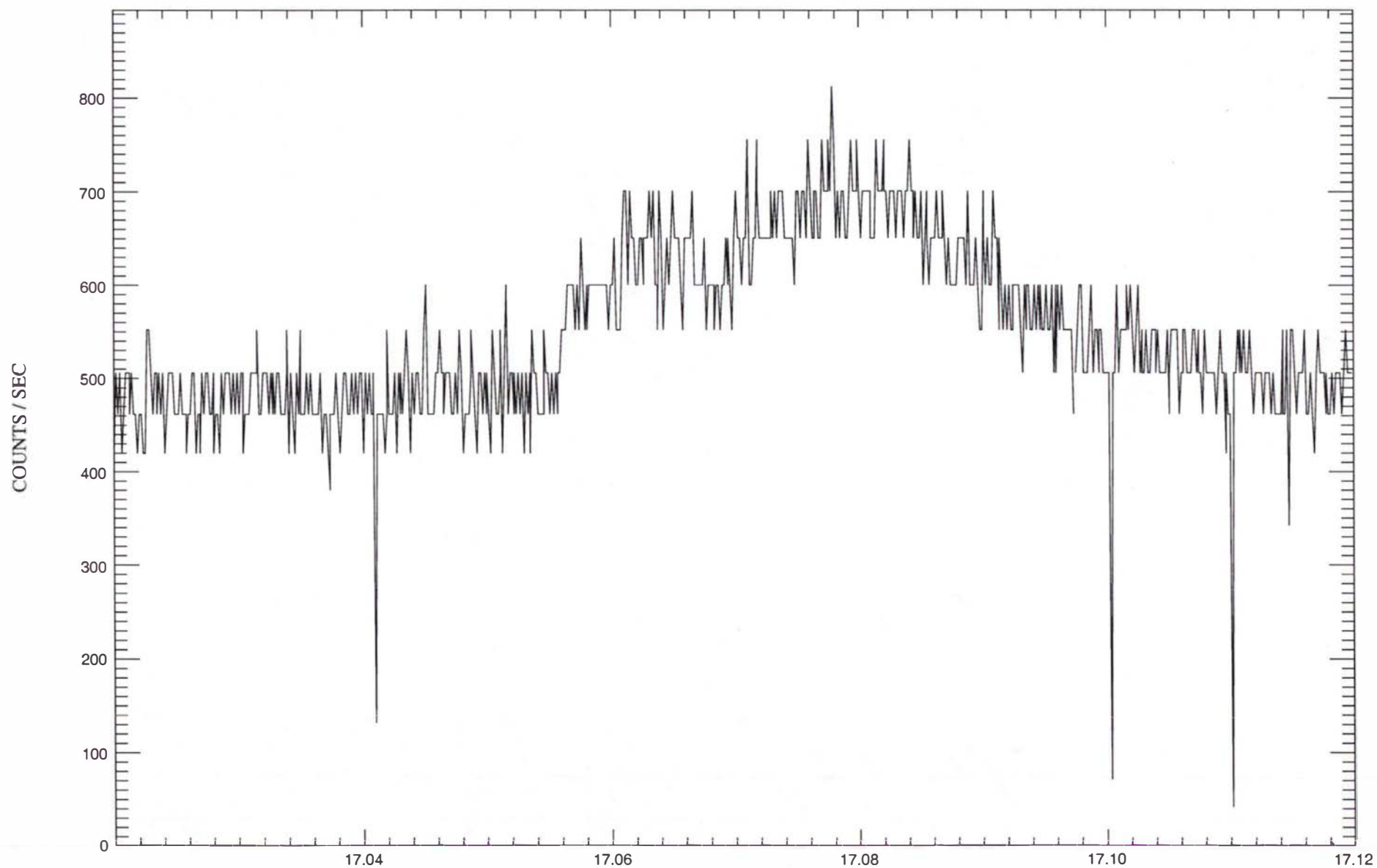


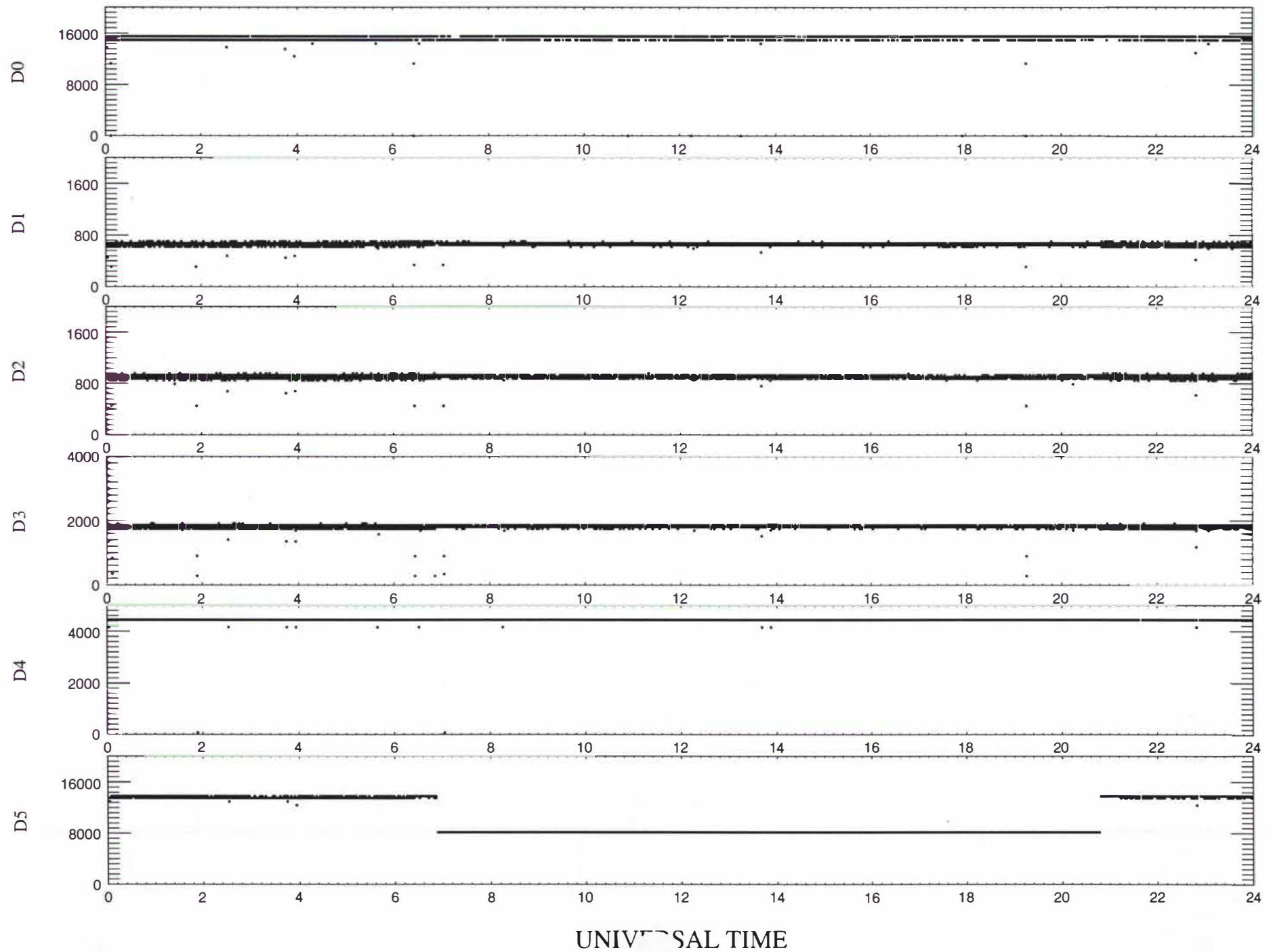
UNIV SAL TIME

Burst Counter 2 at UT=17.065055088467 h=61434.198 s 17:03:54.198



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Wed Aug 25 11:39 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 25 Aug 1999 13:46:25 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7727

BATSEARCH PROGRAM

BATSE BURST # 7727
EVENT OF 1999 AUG 22 DAY OF YEAR=234
EVENT CROSSING TIME AT BATSE : 43415. S. OR 12:03:35.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 112.000 -38.000
BATSE PEAK COUNTING RATE: 7000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 8/ 99 IS:
RA= 153.670 DEC= -11.668 DIST= 5.553 AU
BATSE-ULYSSES DISTANCE = 830769742. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=134.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1942.52 SECS.
CROSSING TIME AT ULYSSES IS 41472. S. OR 11:31:12 +/- 363.62 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 8/ 99 IS:
RA= 229.968 DEC= -20.166 DIST= 1.130 AU
MARS-BATSE DISTANCE = 169117072. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.26 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 75.97 SECS.
CROSSING TIME AT MARS IS 43491. S. OR 12:04:50 +/- 98.20 SECONDS

BATSE BURST TRIGGER

NO.: 7727

TIME: TJD=1412 SECONDS=43415

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=158.5 AZIMUTH=271.2 ERROR=0.7 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 40 S, STARTS AT T-1 S, MAX. AT T+11 S.
NOT VISIBLE ABOVE 300 KEV. CYGX-1 SET AT T+80 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7727	990822	11412	43415	7000	112	-38	40

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

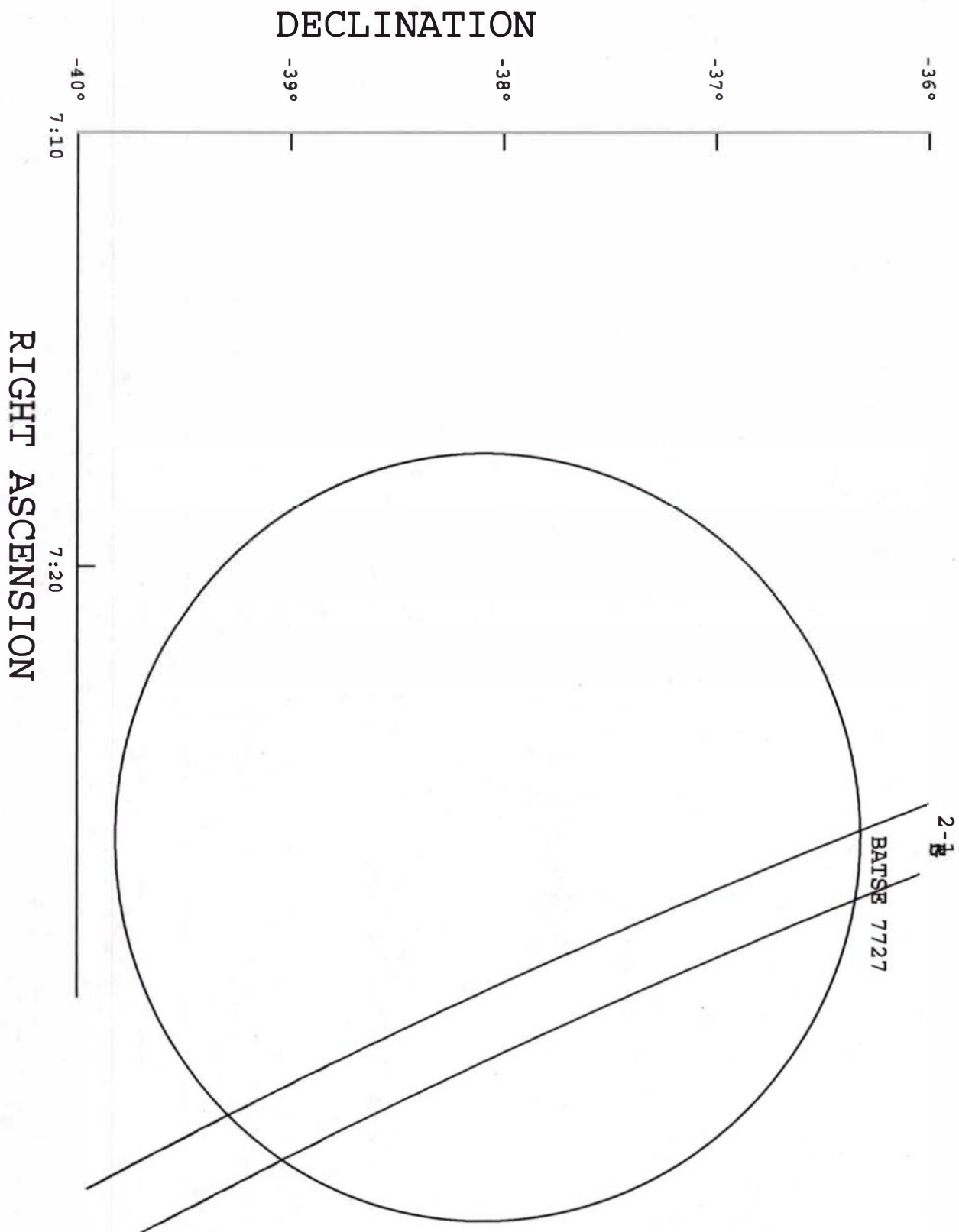
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF AUG 22, 1999 12:03

22 / 2 / 0



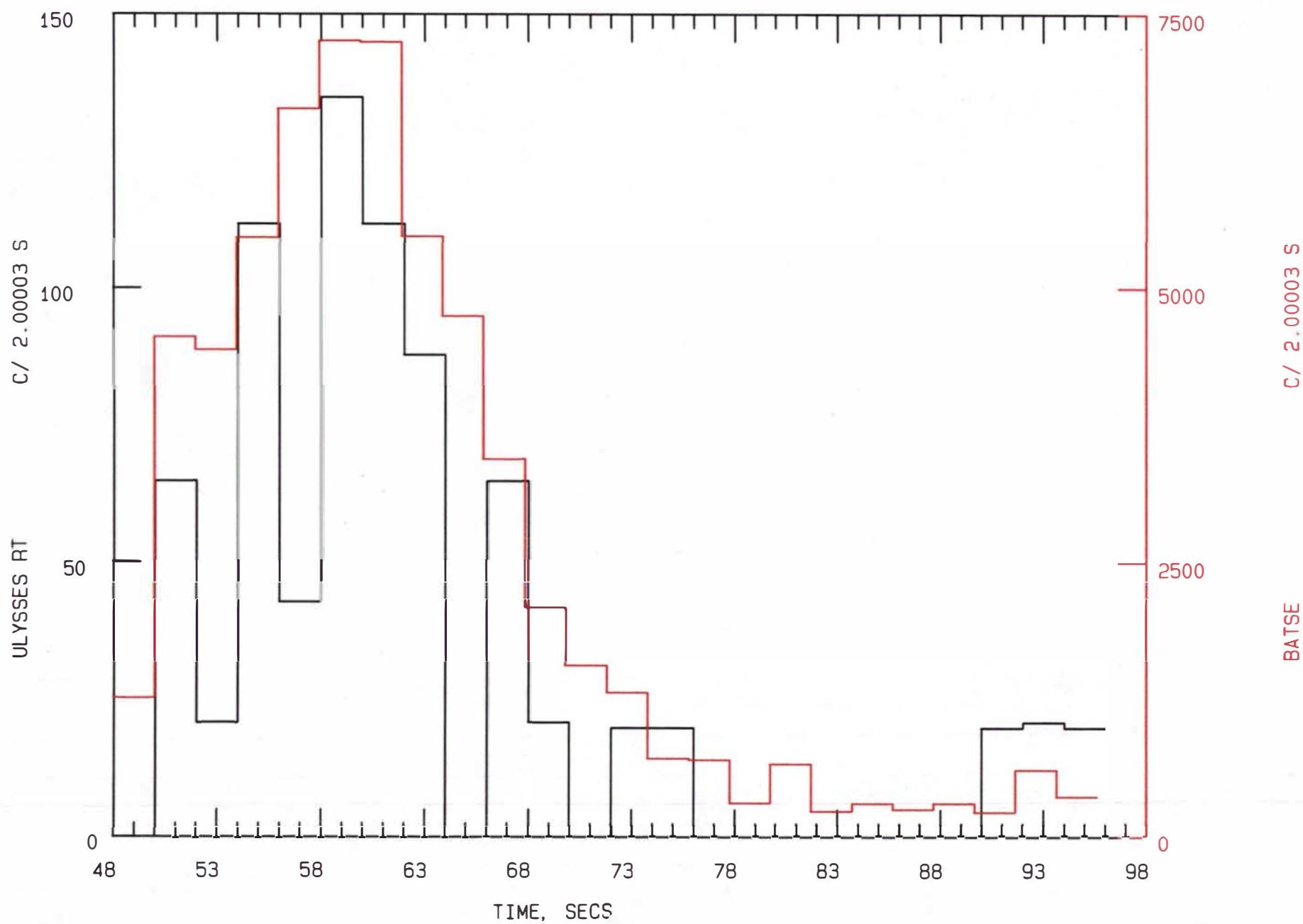
ULYSSES RT-BATSE

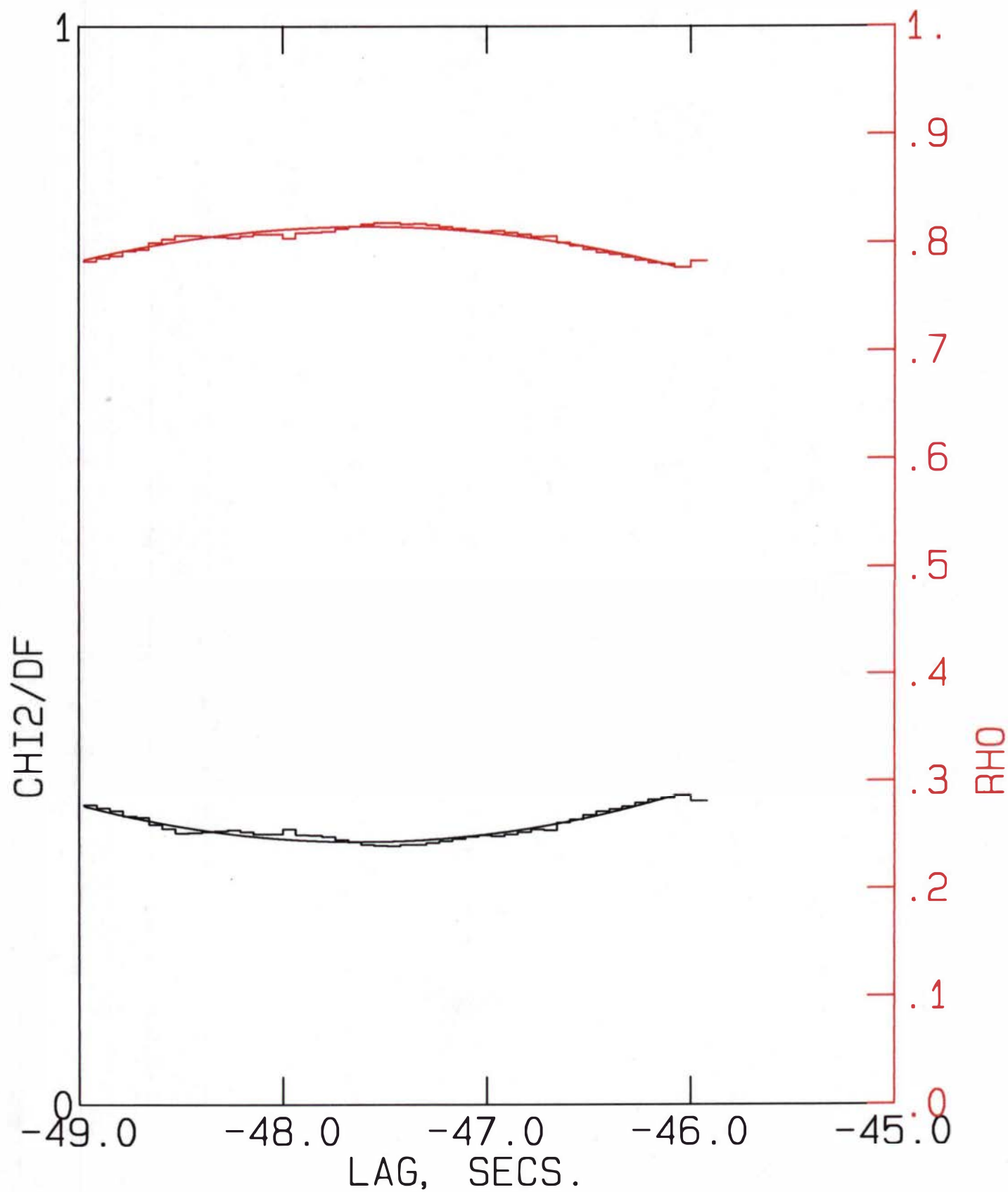
CORRELATION

22/ 8/99

41416.208

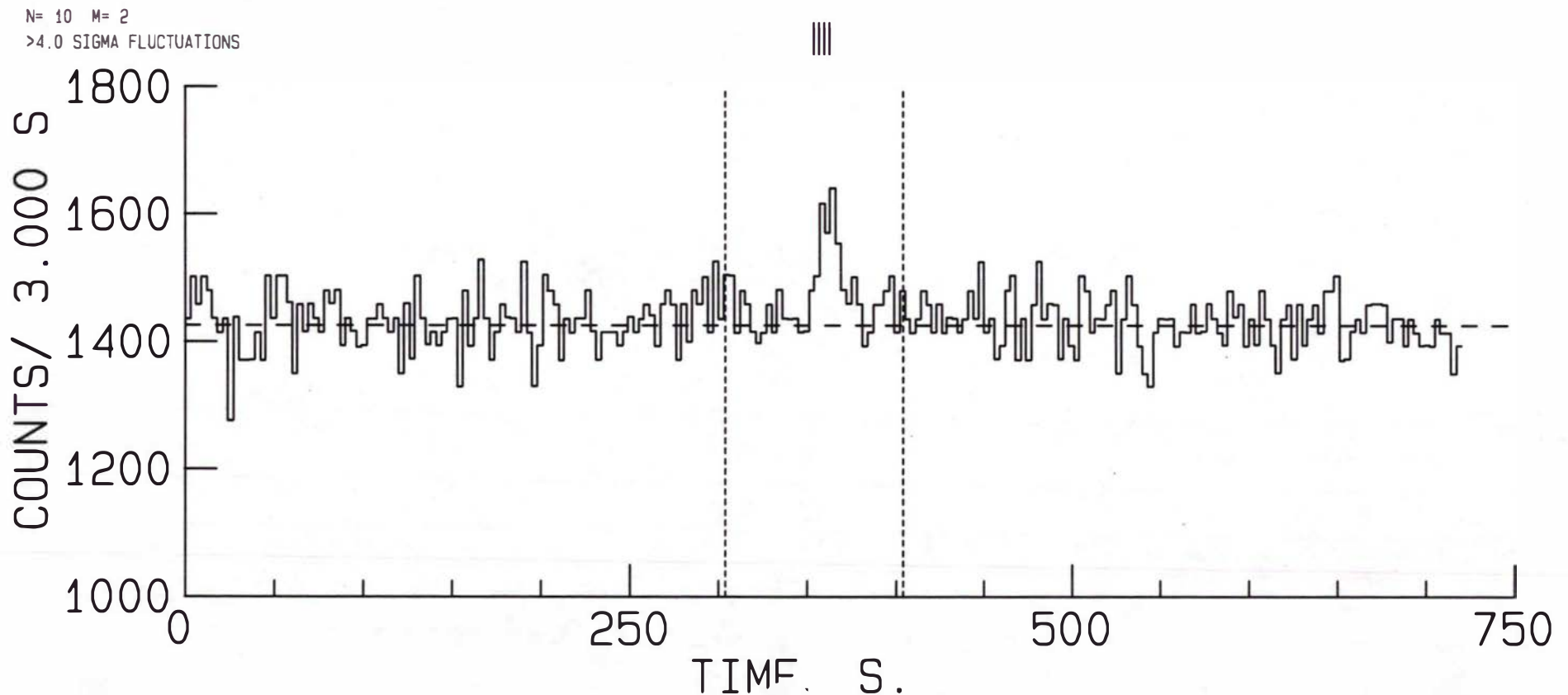
22/ 2/ 0





ULYSSES RT
22/ 8/99 41112.245 s
0.500 S INTERVALS REGROUPED BY 6
22- 151 keV

22/ 2/ 0



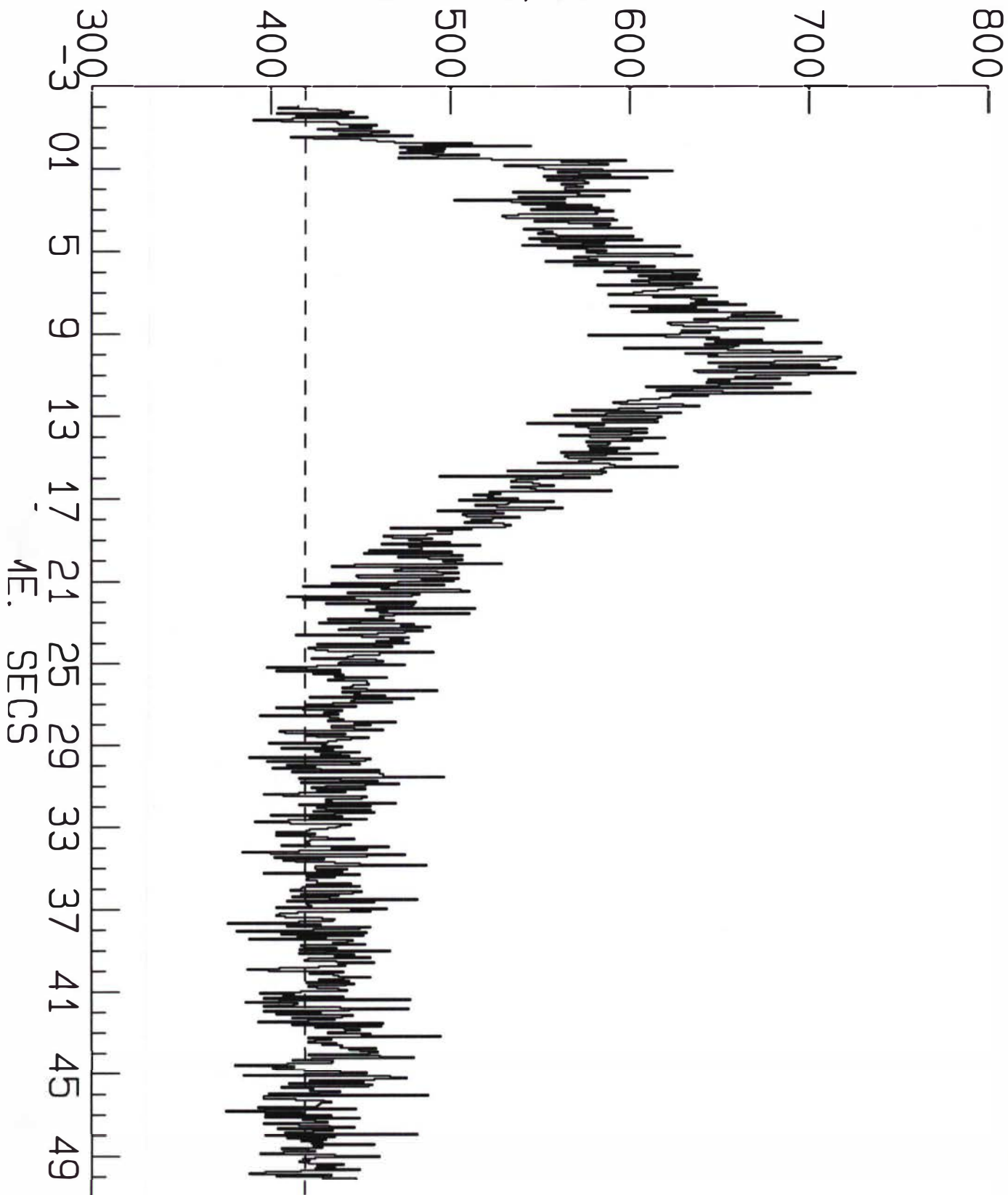
BATSE

22/08/99

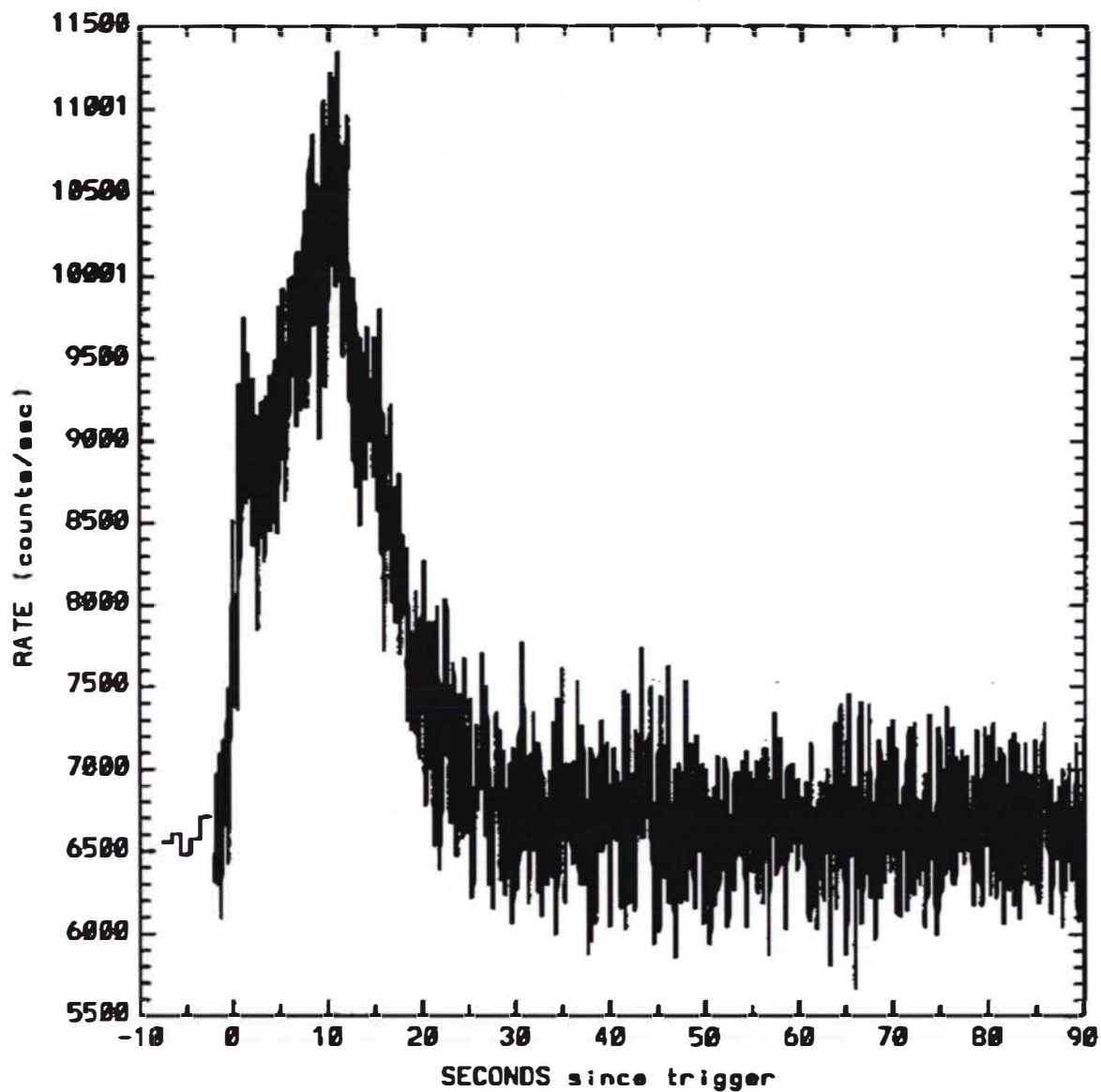
43415.801

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7727



31-AUG-1999 00:12:50

Created by MDPS 80
(Burst Display)
Version 12.26

Trigger # : 7727

Trigger Time:
11412 / 43415.801

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..0):
7---3---

Discriminators:
(1..2)

Quality Mask:
B0TSP1

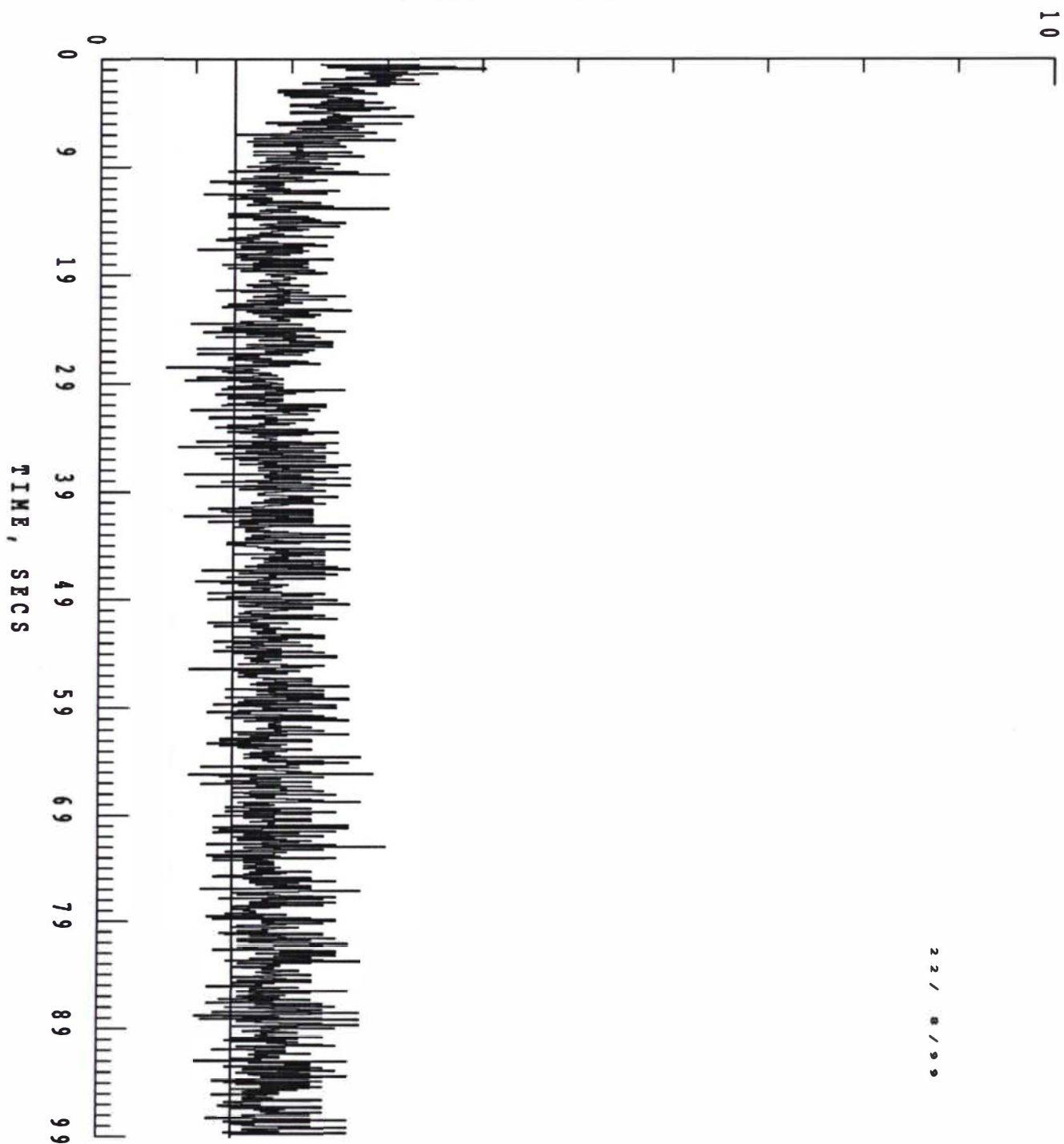
KONUS

22/08/99

43425.728

50 - 200 keV

COUNTS/0.064 S

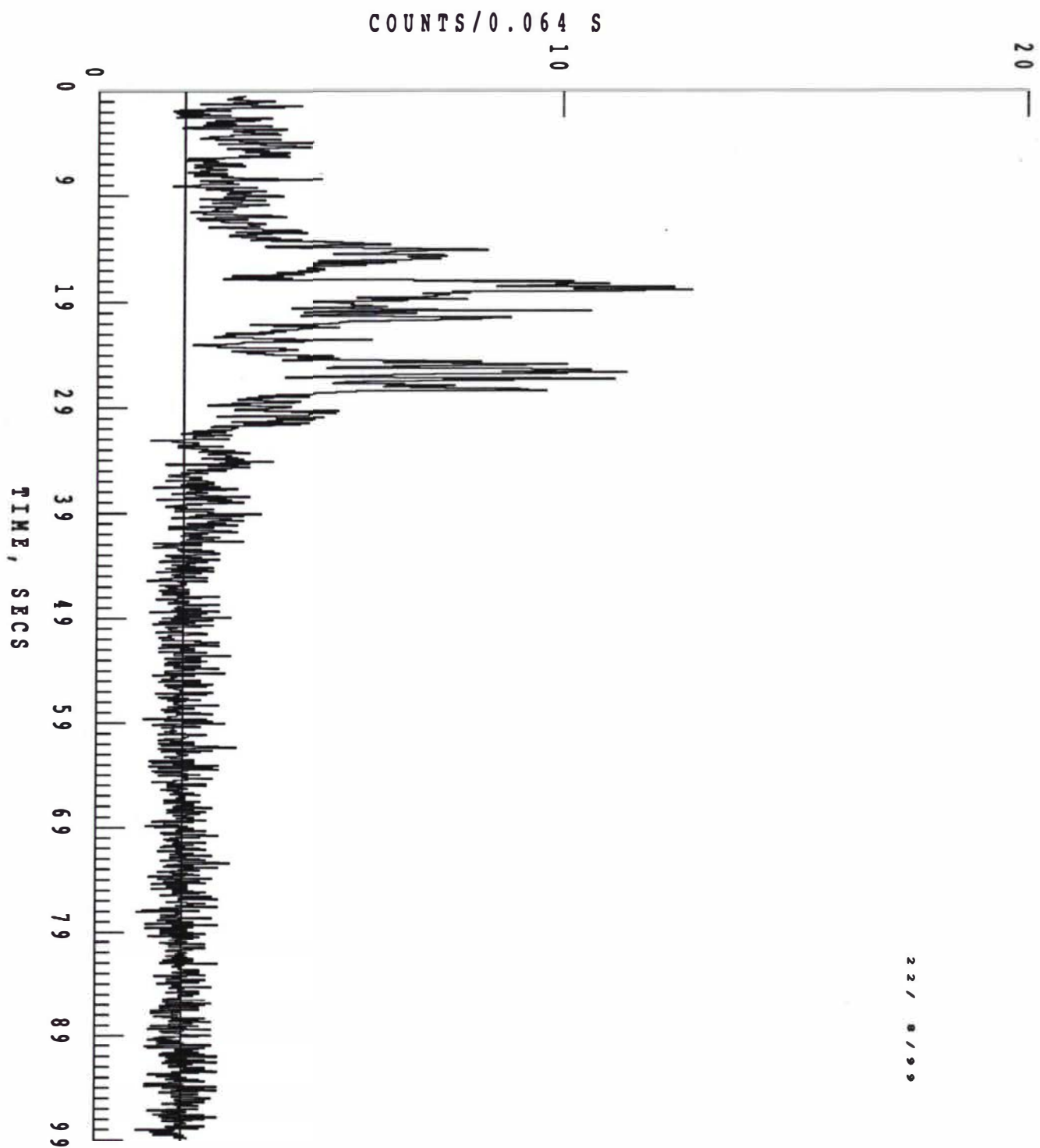


KONUS

22/08/99

51060.264

50 - 200 keV



KONUS1 19990822 51060

ULYSSES RT

23 / 8 / 99

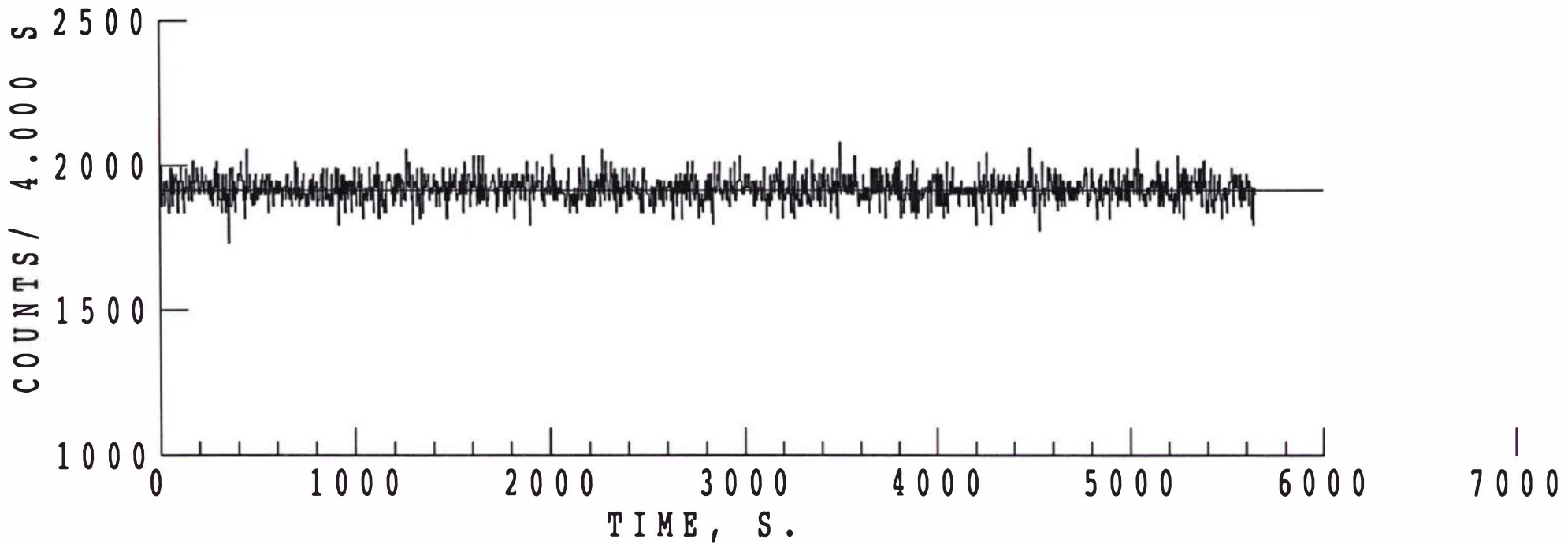
22 / 8 / 99 48240.316 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Aug 24 14:33 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 24 Aug 1999 16:39:31 -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, 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.: 7728

TIME: TJD=1412 SECONDS=55343

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=115.7 AZIMUTH=335.1 ERROR=3 DEGREES

COMMENTS:

SOLAR FLARE. GOES C9.8, OPTICAL SF. SINGLE PULSE, DUR. 70 S, STARTS AT T-40 S.
NOT VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Wed Aug 25 11:41 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 25 Aug 1999 13:48:05 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7729

BATSEARCH PROGRAM

BATSE BURST # 7729
EVENT OF 1999 AUG 22 DAY OF YEAR=234
EVENT CROSSING TIME AT BATSE : 68837. S. OR 19:07:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 23.000 69.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 8/ 99 IS:
RA= 153.716 DEC= -11.700 DIST= 5.553 AU
BATSE-ULYSSES DISTANCE = 830732220. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1158.93 SECS.
CROSSING TIME AT ULYSSES IS 69996. S. OR 19:26:35 +/- 504.60 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 8/ 99 IS:
RA= 229.968 DEC= -20.166 DIST= 1.130 AU
MARS-BATSE DISTANCE = 169117072. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 350.69 SECS.
CROSSING TIME AT MARS IS 69188. S. OR 19:13:07 +/- 82.04 SECONDS

BATSE BURST TRIGGER

NO.: 7729

TIME: TJD=1412 SECONDS=68837

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

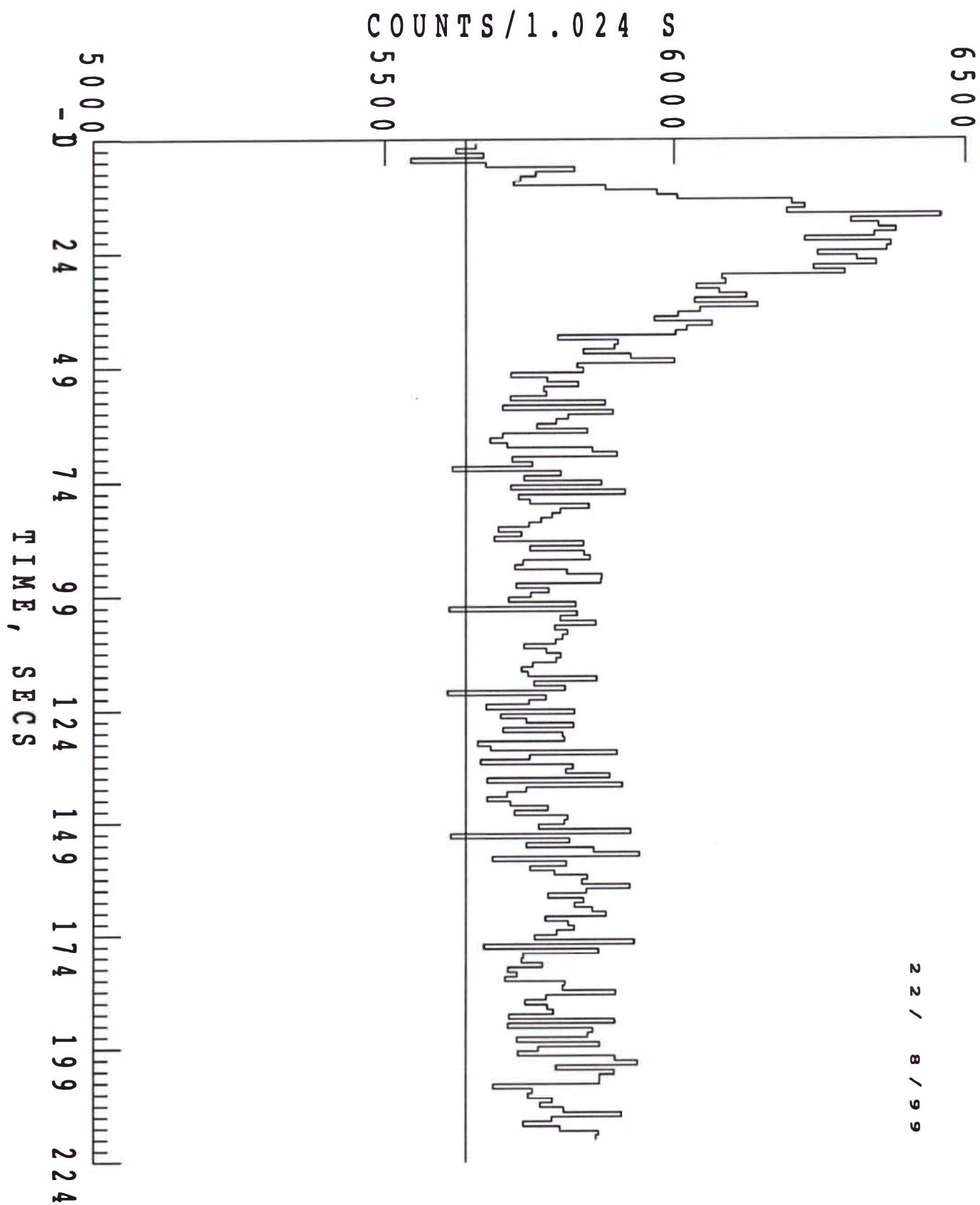
LOCATION: ZENITH=34.5 AZIMUTH=285.9 ERROR=3.4 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. 60 S, STARTS AT T-3 S, RISE IS FASTER THAN FALL.
MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7729	990822	11412	68837	2200	023	+69	60

BACODINE 7729 22/08/99 68824.825
25 - 100 keV



BATSE BURST# 7729

ULYSSES RT

25 / 8 / 99

22 / 8 / 99 69480.031 s

0.500 S INTERVALS REGROUPED BY 2

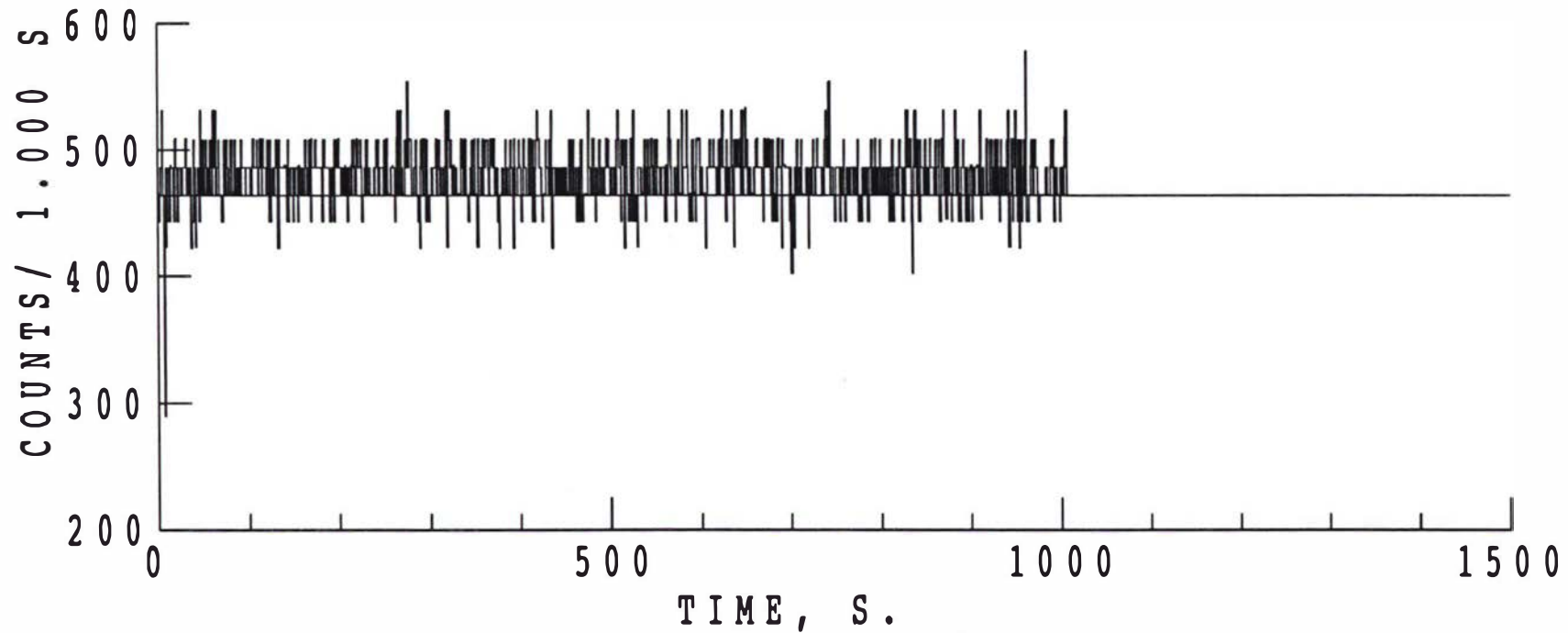
0 - 0 keV

N= 10 M= 10

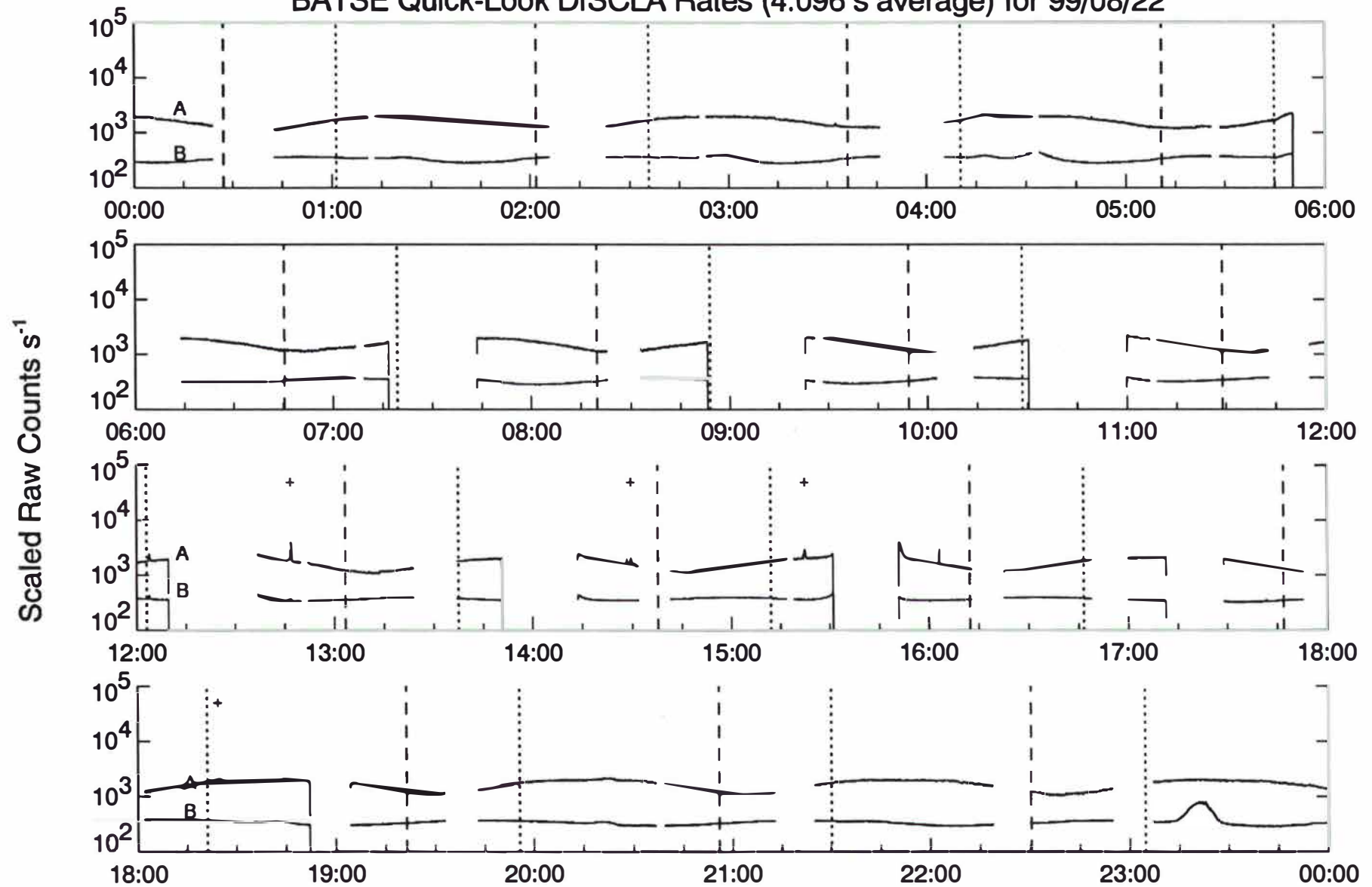
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/22

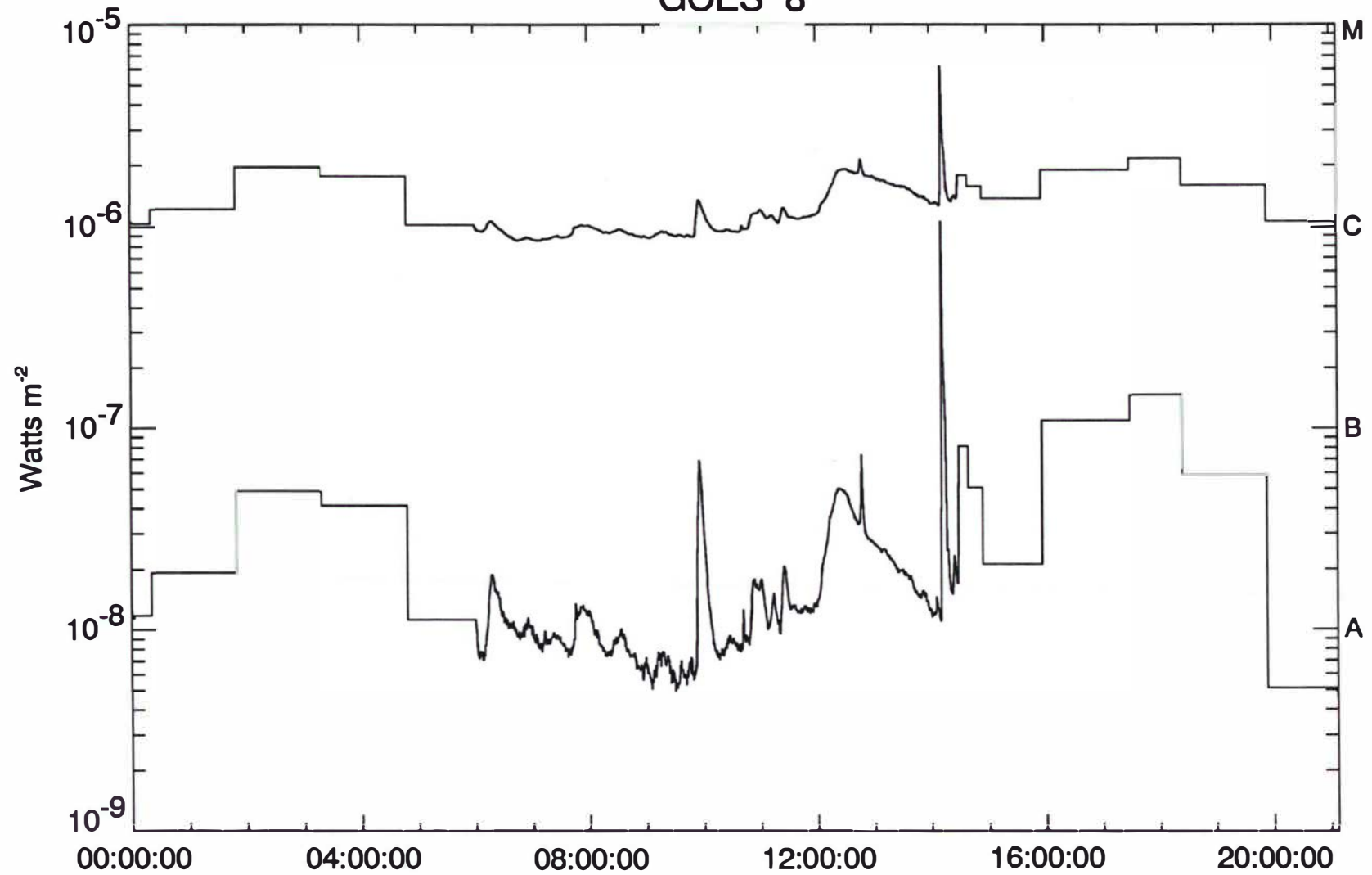


Current Time: 99/08/26, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



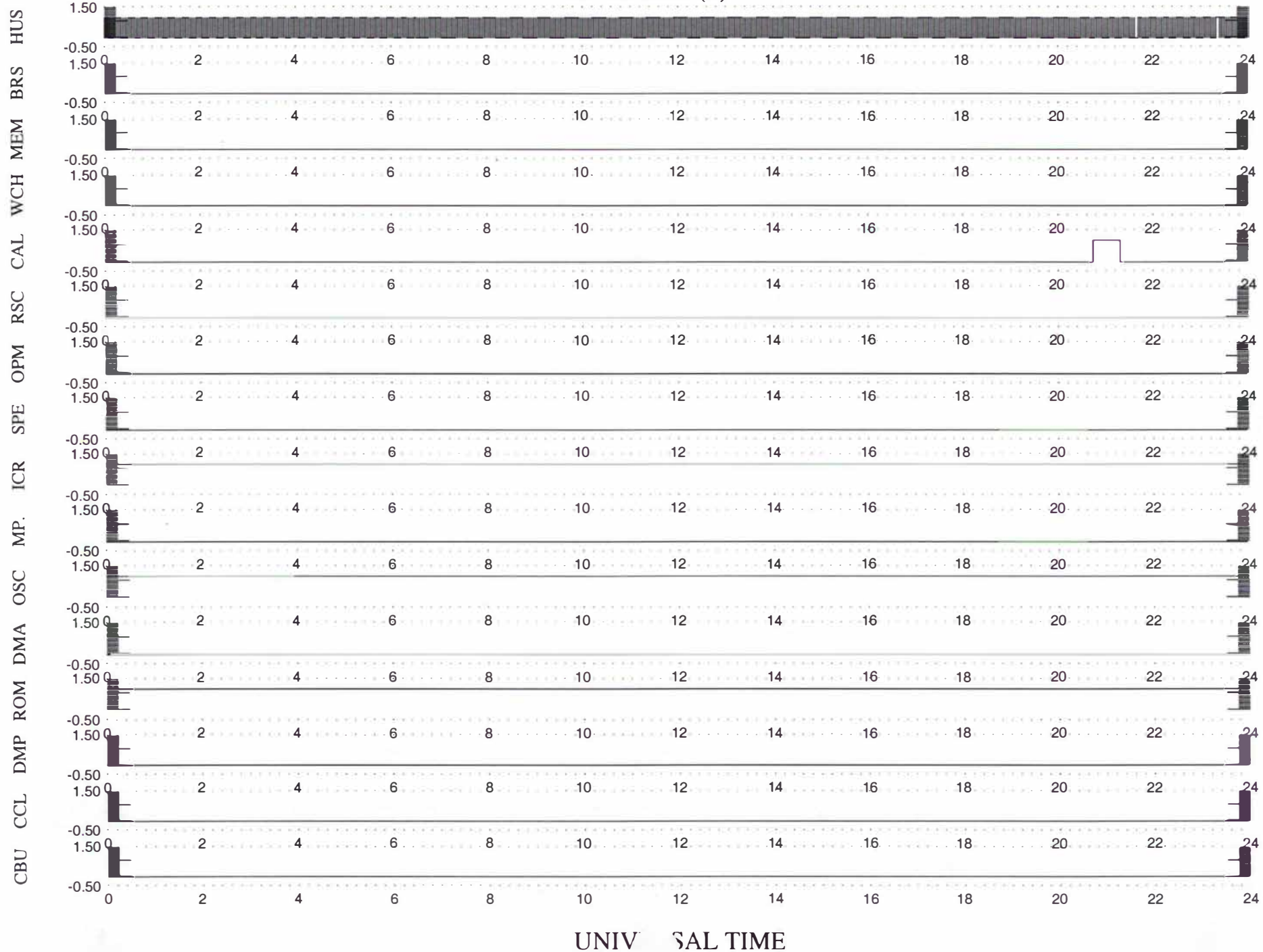
Data Start: 99/08/22, 0000:00

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

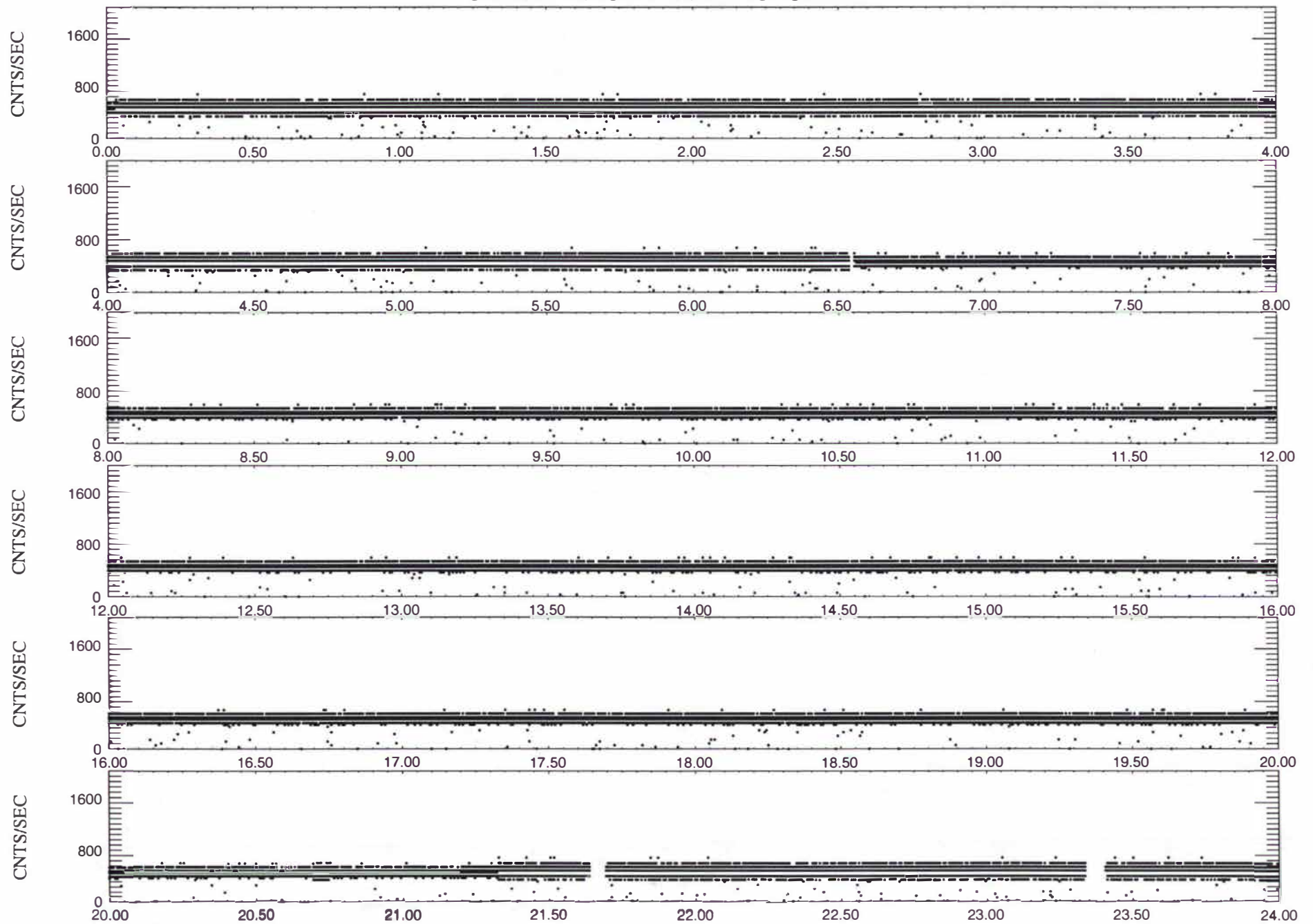
Plot created: 99/08/26, 1005

Background not subtracted
Background not subtracted
Sample average = 10

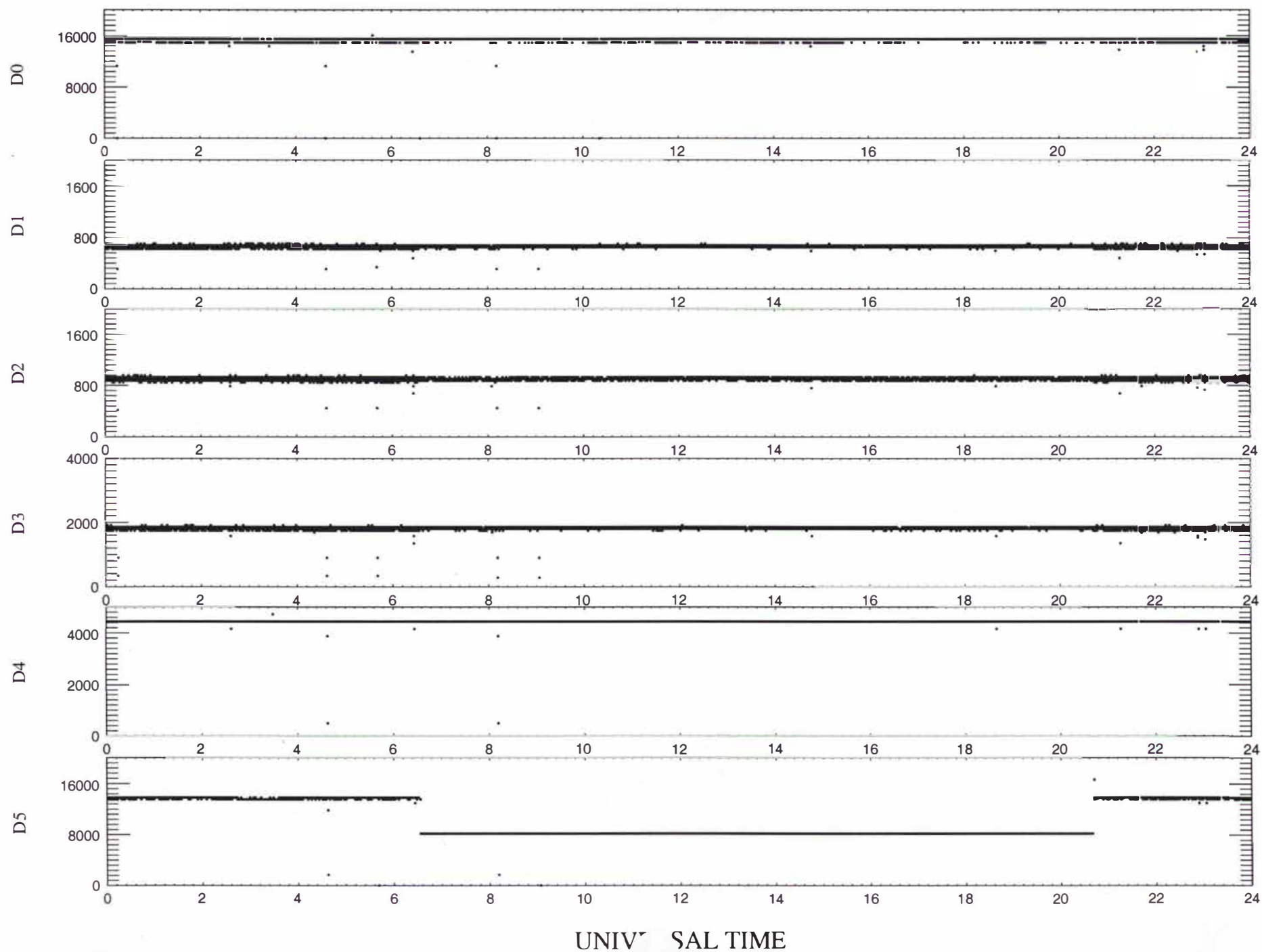
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From HENZE@fender.msfc.nasa.gov Wed Aug 25 13:53 PDT 1999
Date: Wed, 25 Aug 1999 15:59:41 -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, 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.: 7730

TIME: TJD=1413 SECONDS=08687

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT, OVER INDIAN OCEAN.

From HENZE@fender.msfc.nasa.gov Wed Aug 25 14:26 PDT 1999
Date: Wed, 25 Aug 1999 16:33:04 -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, 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.: 7731

TIME: TJD=1413 SECONDS=20919

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PROBABLY FLUCTUATION DURING PARTICLE ACTIVITY, WEST OF AUSTRALIA.

From HENZE@fender.msfc.nasa.gov Wed Aug 25 15:39 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Wed, 25 Aug 1999 17:46:05 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7732

BATSEARCH PROGRAM

BATSE BURST # 7732
EVENT OF 1999 AUG 23 DAY OF YEAR=235
EVENT CROSSING TIME AT BATSE : 46845. S. OR 13:00:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 264.000 -29.000
BATSE PEAK COUNTING RATE: 3100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 8/ 99 IS:
RA= 153.832 DEC= -11.781 DIST= 5.552 AU
BATSE-ULYSSES DISTANCE = 830619868. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 543.62 SECS.
CROSSING TIME AT ULYSSES IS 47389. S. OR 13:09:48 +/- 529.93 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 8/ 99 IS:
RA= 230.574 DEC= -20.321 DIST= 1.136 AU
MARS-BATSE DISTANCE = 169990768. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=148.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 483.61 SECS.
CROSSING TIME AT MARS IS 46361. S. OR 12:52:41 +/- 44.05 SECONDS

BATSE BURST TRIGGER

NO.: 7732

TIME: TJD=1413 SECONDS=46845

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 92.5 AZIMUTH=101.7 ERROR= 3.6 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. PROBABLY APPROX. 3 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7732	990823	11413	46845	3100	264	-29	3

BATSE BURST# 7732

ULYSSES RT

25 / 8 / 99

23 / 8 / 99 46872.184 s

0.500 S INTERVALS REGROUPED BY 2

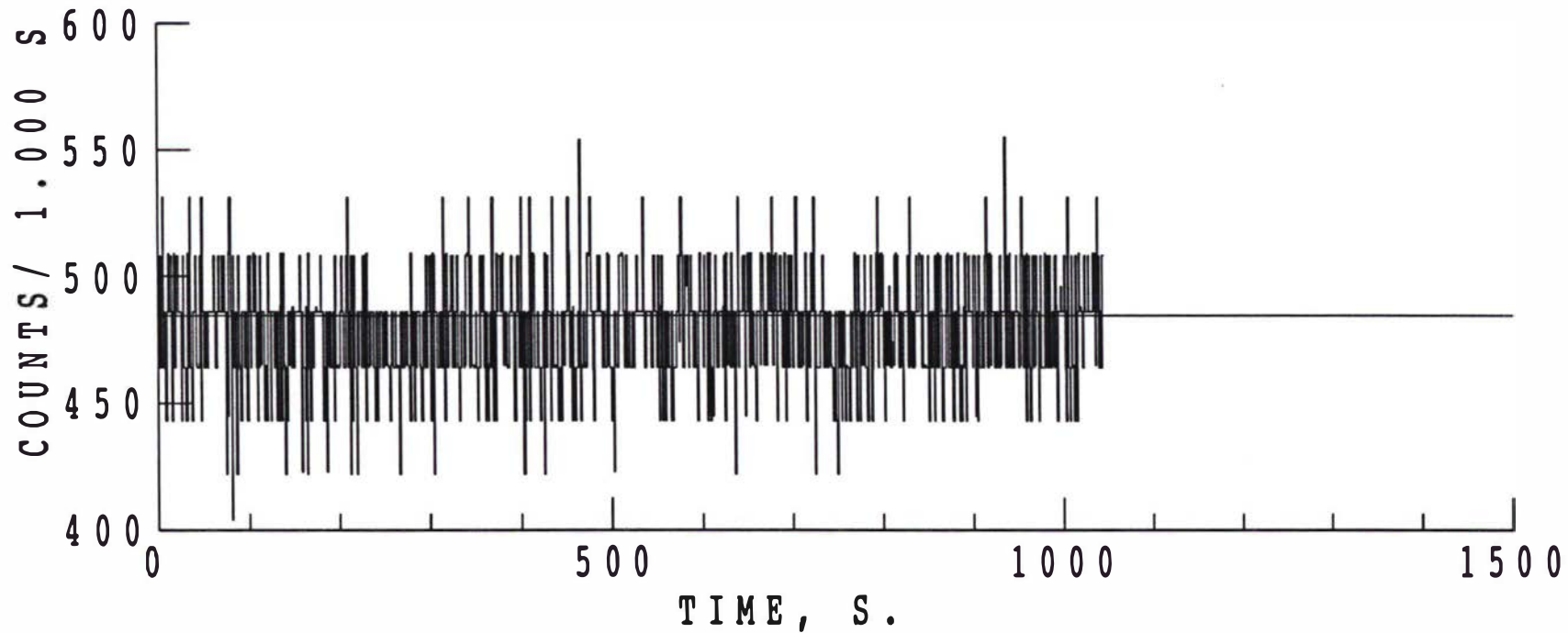
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Wed Aug 25 14:58 PDT 1999
Date: Wed, 25 Aug 1999 17:04:04 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
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, 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.: 7733

TIME: TJD=1413 SECONDS=65022

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

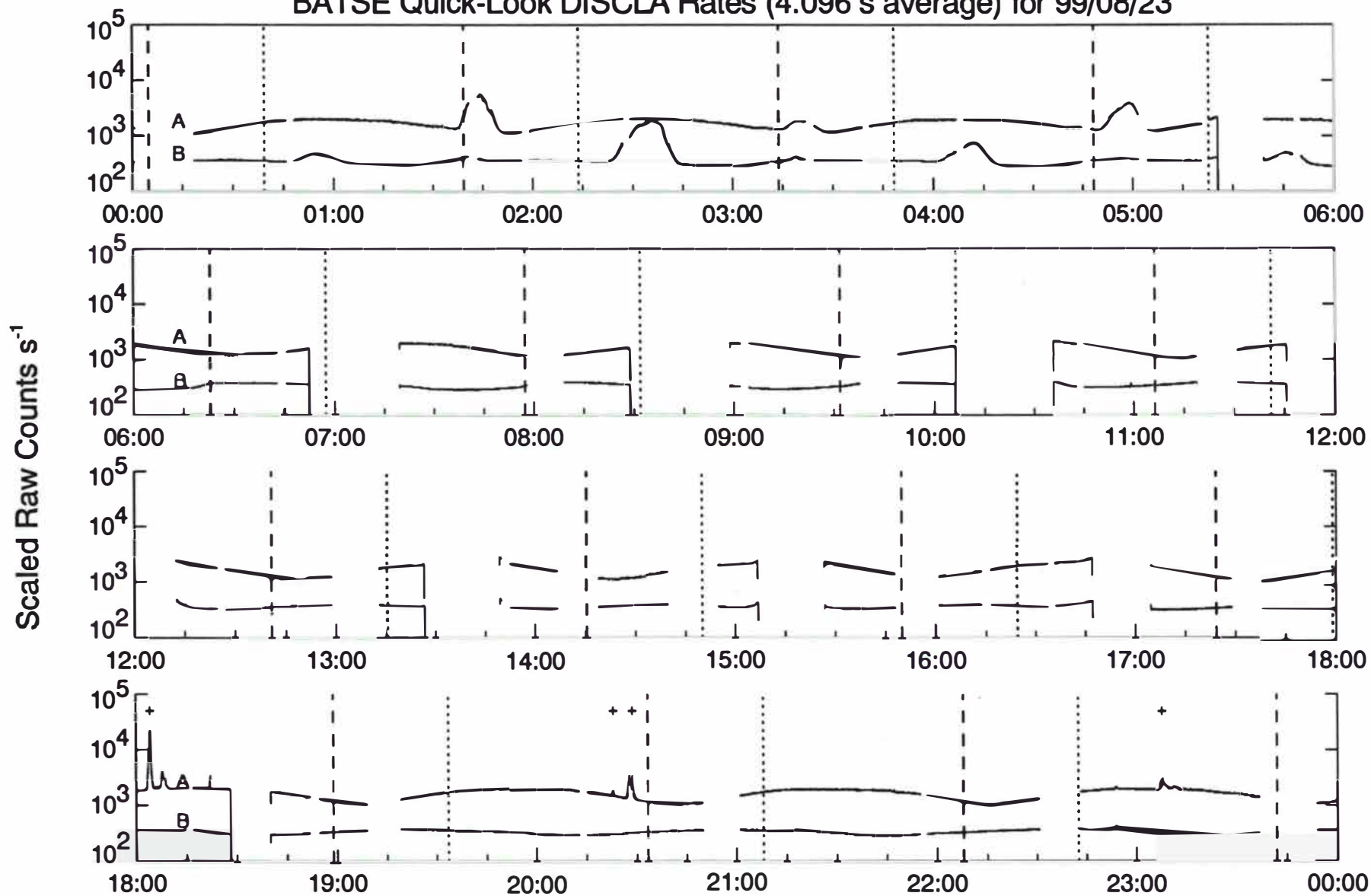
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.1 AZIMUTH=339.2 ERROR= 0.1 DEGREES

COMMENTS:

GOES C5.7 SOLAR FLARE, NO OPTICAL IDENT. TWO PULSES WITH STRUCTURE. MAIN
(TRIGGER) PULSE DUR. APPROX. 100 S, STARTS AT APPROX. T-20 S, MAX AT APPROX.
T+29 S. SUCCESSOR PULSE STARTS AT APPROX. T+220 S, DUR. APPROX. 100 S, MAX
AT APPROX. T+250 S. NOT VISIBLE ABOVE 300 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/23

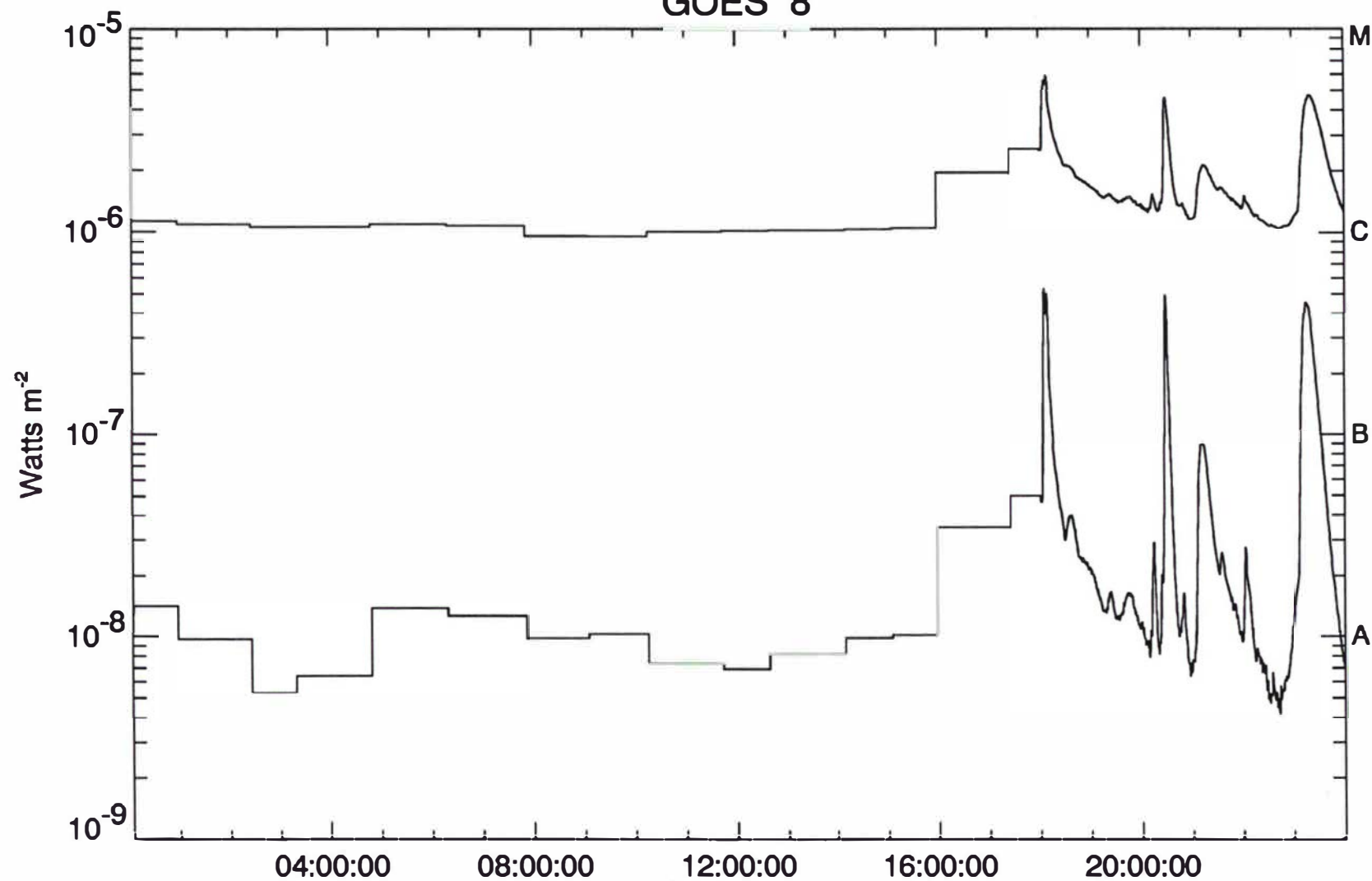


Current Time: 99/08/27, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/23, 0005:48

Plot created: 99/08/27, 1005

Channel

1 (1.0 - 8.0 Angstroms)

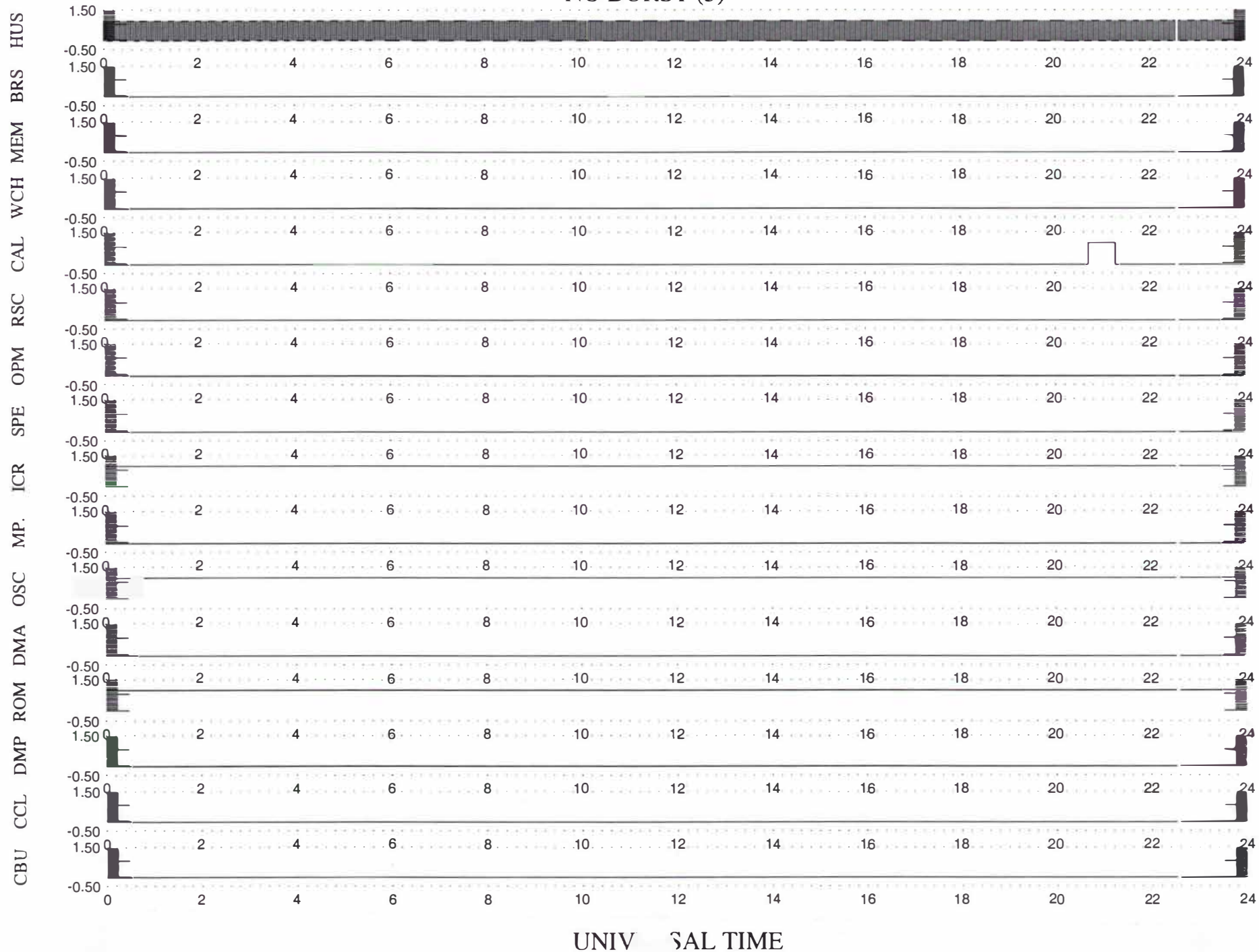
Background not subtracted

2 (0.5 - 4.0 Angstroms)

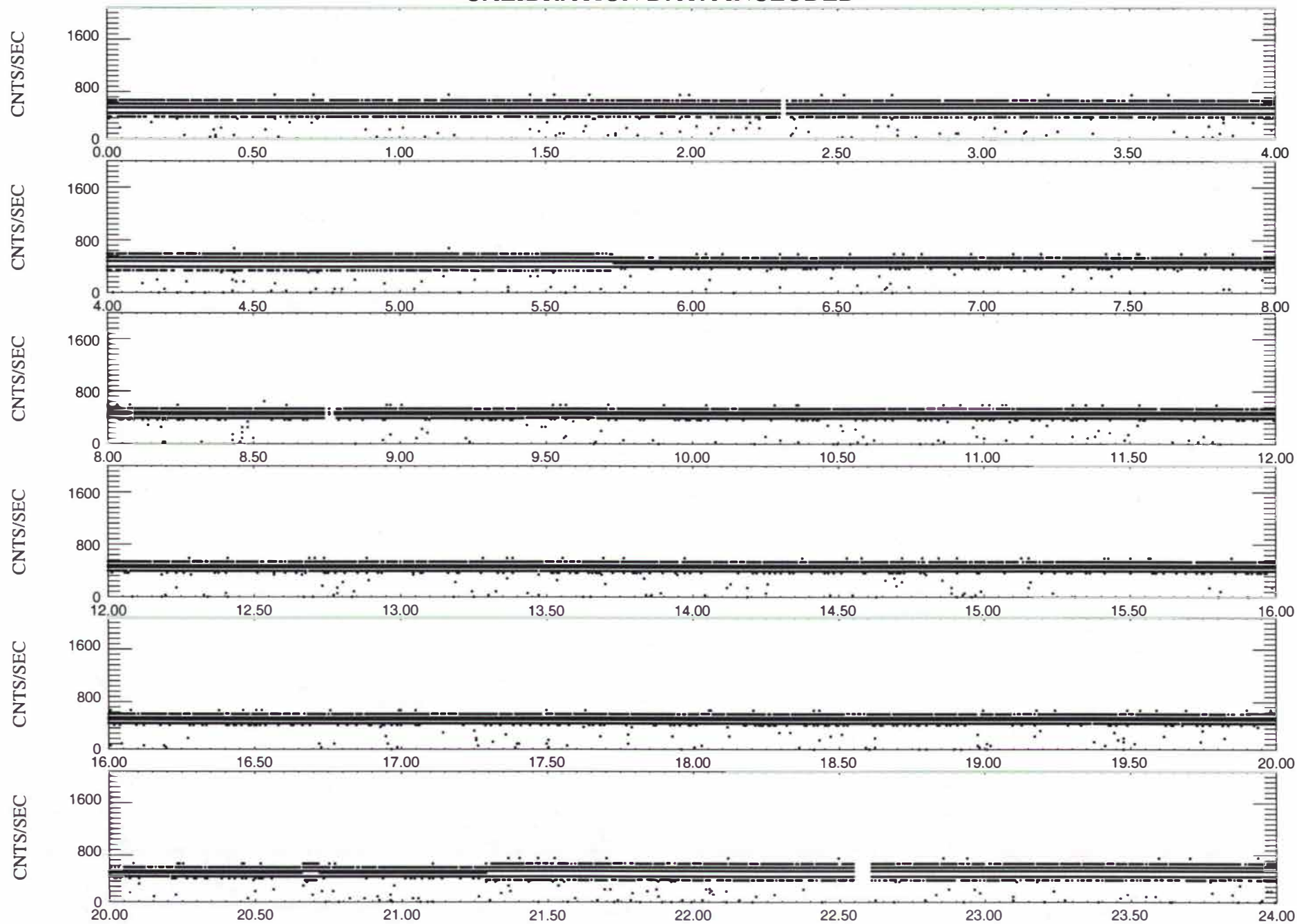
Background not subtracted

Sample average = 10

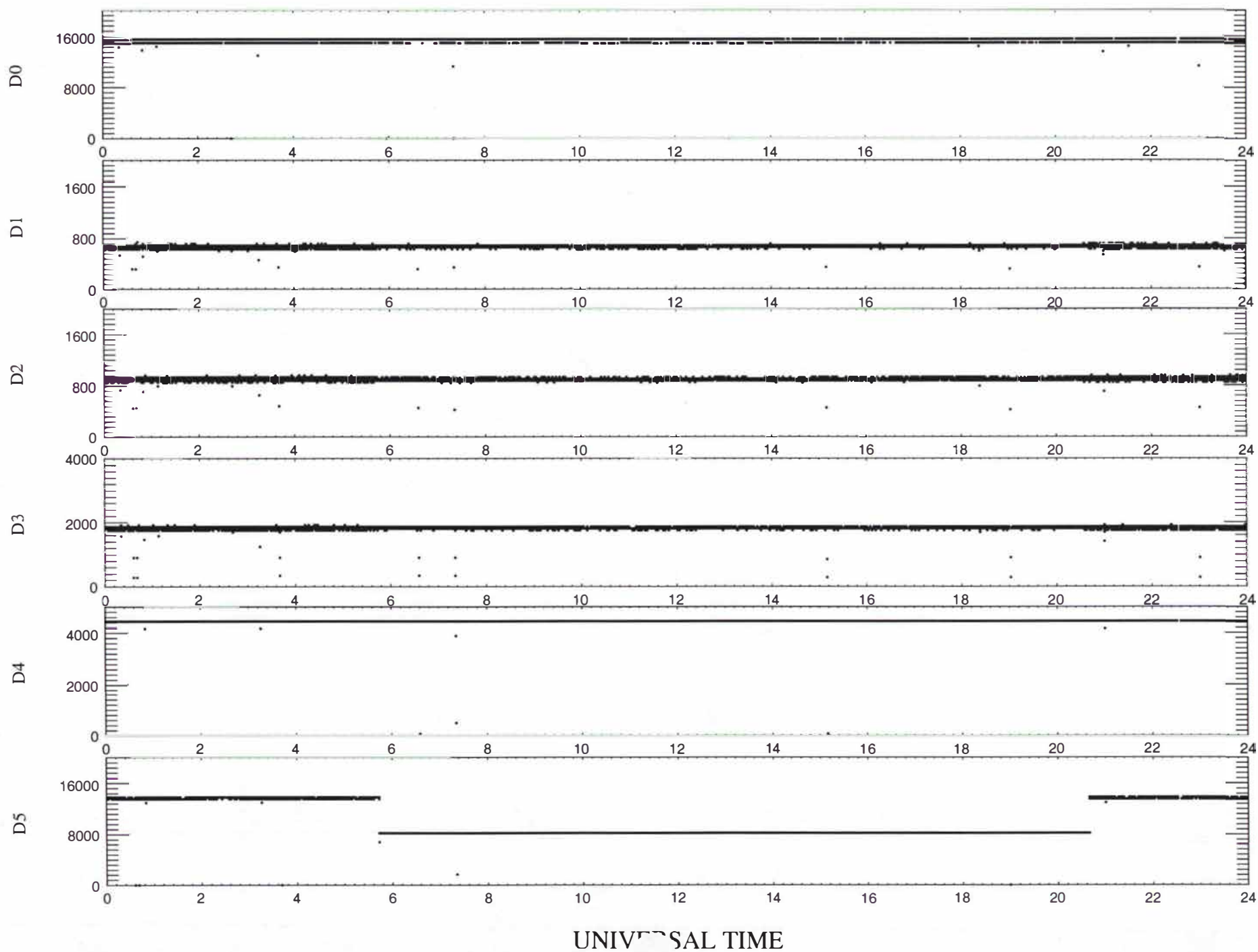
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SURASAK@fender.msfc.nasa.gov Mon Aug 30 09:07 PDT 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Mon, 30 Aug 1999 11:14:40 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7734

BATSEARCH PROGRAM

BATSE BURST # 7734
EVENT OF 1999 AUG 24 DAY OF YEAR=236
EVENT CROSSING TIME AT BATSE : 14230. S. OR 03:57:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 137.000 -31.000
BATSE PEAK COUNTING RATE: 2800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 8/ 99 IS:
RA= 153.930 DEC= -11.849 DIST= 5.552 AU
BATSE-ULYSSES DISTANCE = 830514363. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=155.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2516.26 SECS.
CROSSING TIME AT ULYSSES IS 11714. S. OR 03:15:13 +/- 212.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 8/ 99 IS:
RA= 231.184 DEC= -20.475 DIST= 1.142 AU
MARS-BATSE DISTANCE = 170862544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -69.28 SECS.
CROSSING TIME AT MARS IS 14161. S. OR 03:56:00 +/- 97.16 SECONDS

BATSE BURST TRIGGER

NO.: 7734

TIME: TJD=1414 SECONDS=14230

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=157.5 AZIMUTH=331.9 ERROR=6.29 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DURATION ABOUT 1 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7734	990824	11414	14230	2800	137	-31	1

BATSE BURST# 7734

ULYSSES RT

30 / 8 / 99

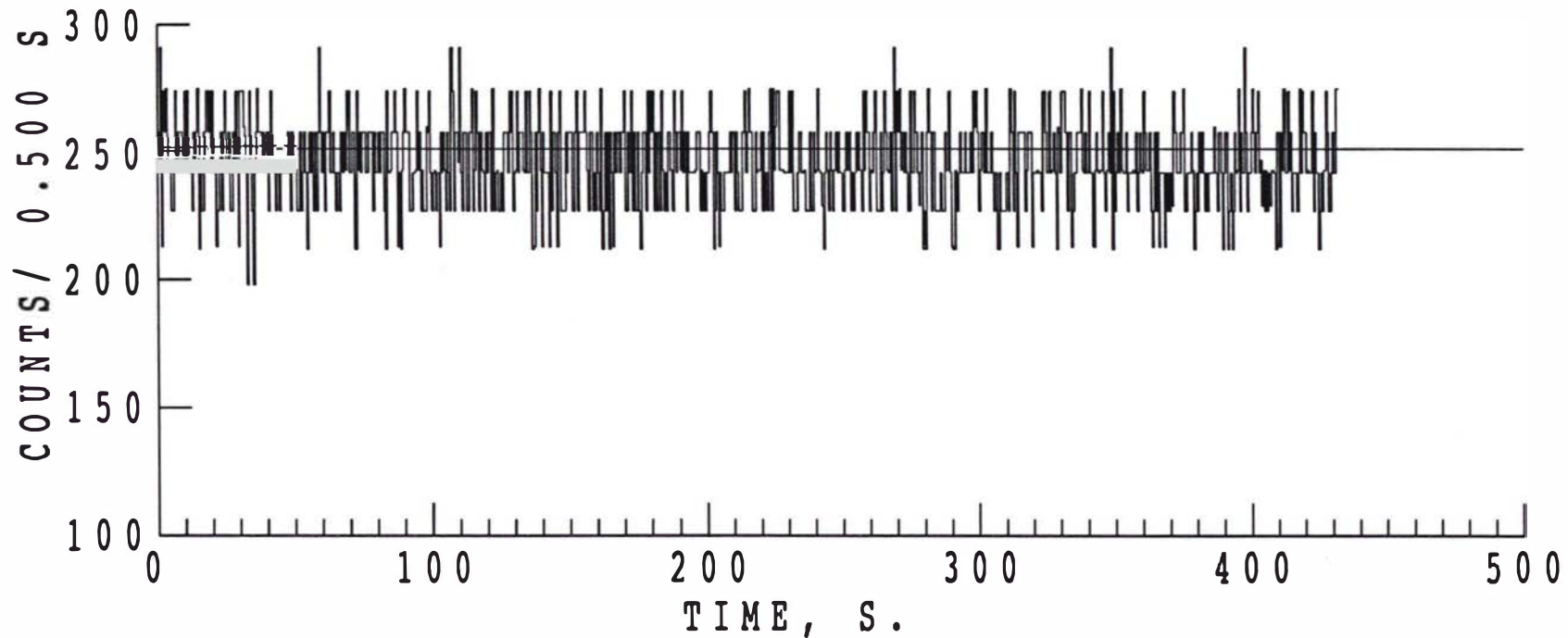
24 / 8 / 99 11484.197 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

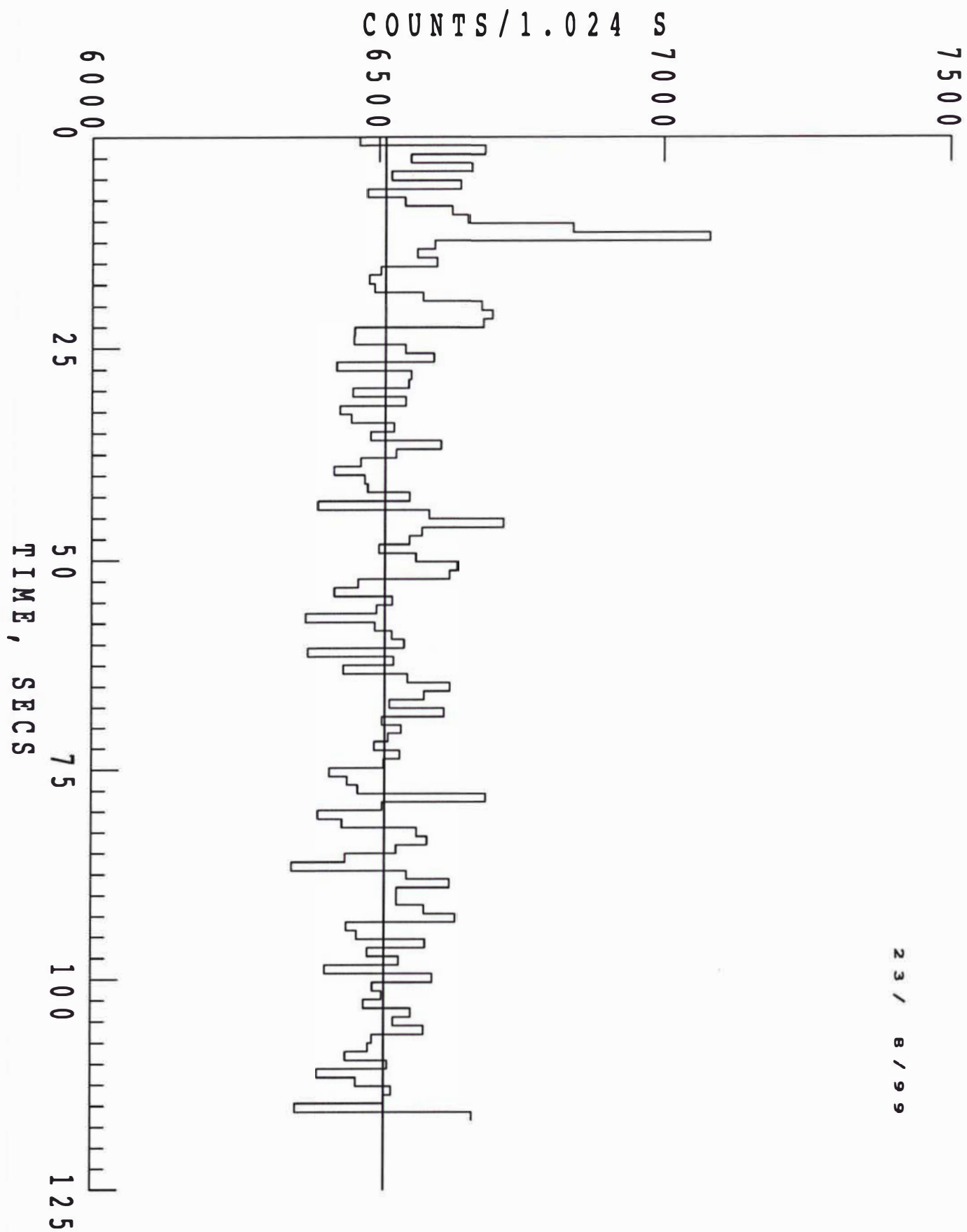
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



600

BACODINE 7734 24/08/99 14219.001
25 - 100 keV



Date: Nov 13 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *Prob. not the same event*

- ☒ 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 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?

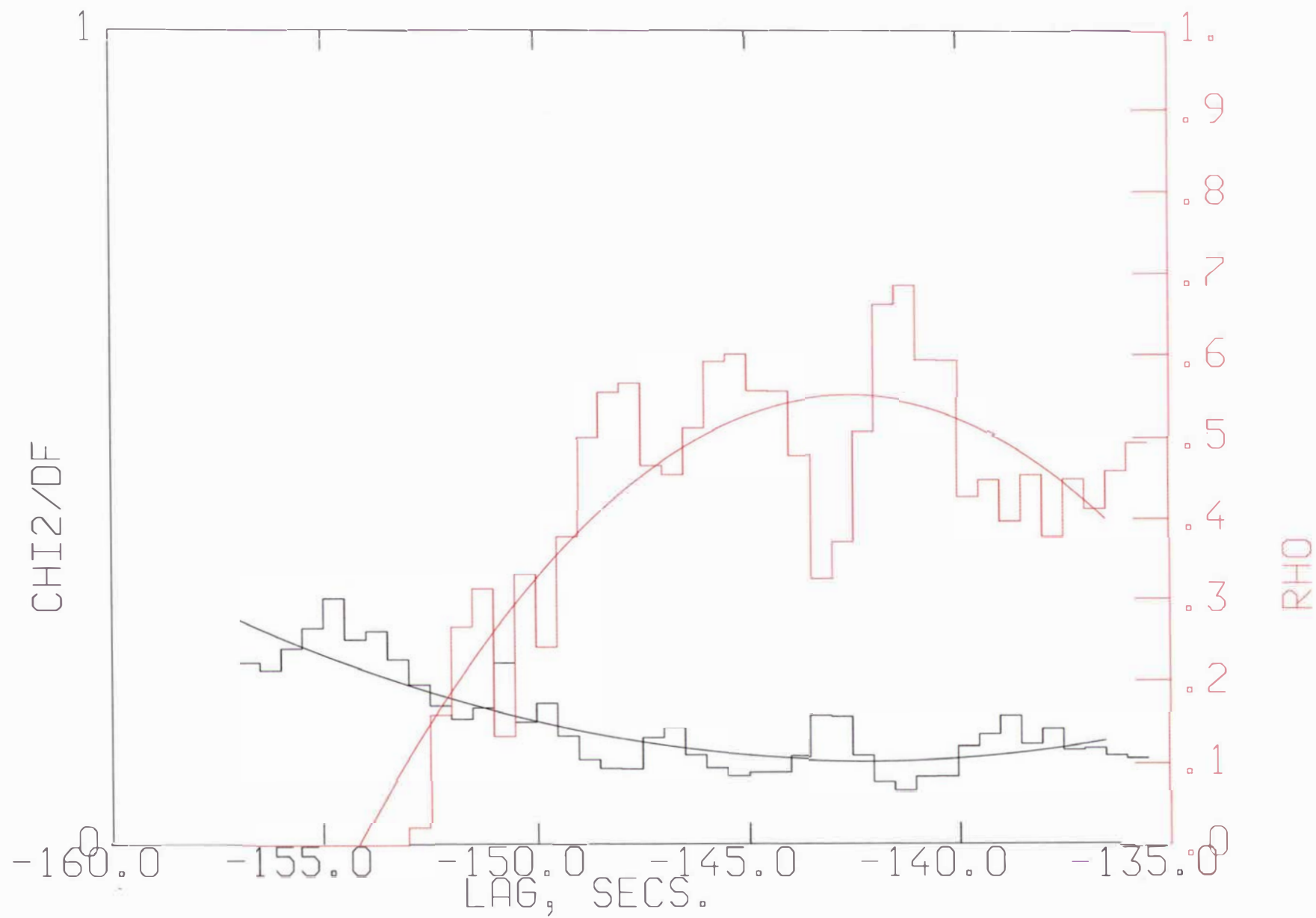
2. For 3 or More Spacecraft events

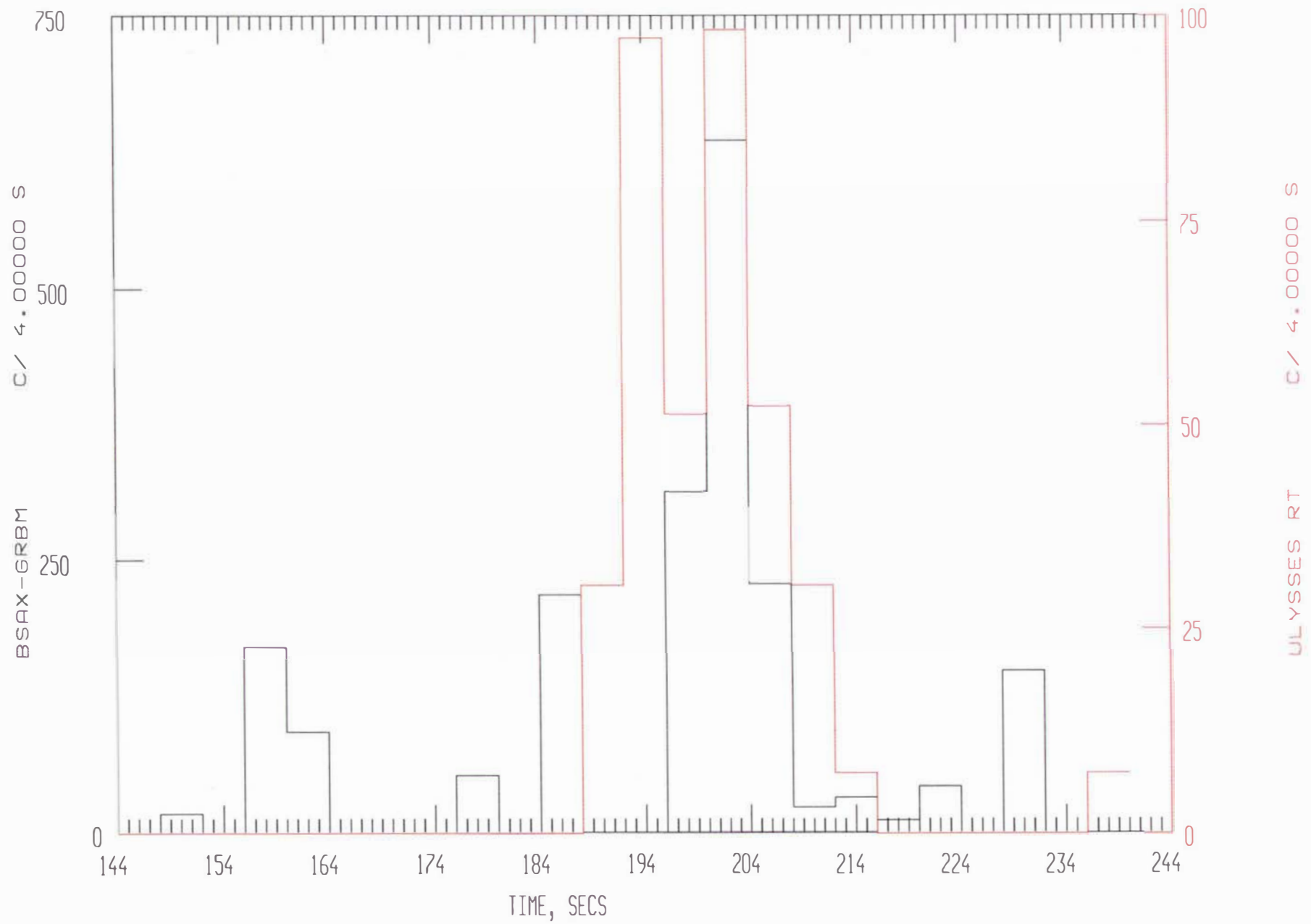
- ☐ $\Sigma 3\Delta t$'s calculated, and/or BMAPSUM executed?

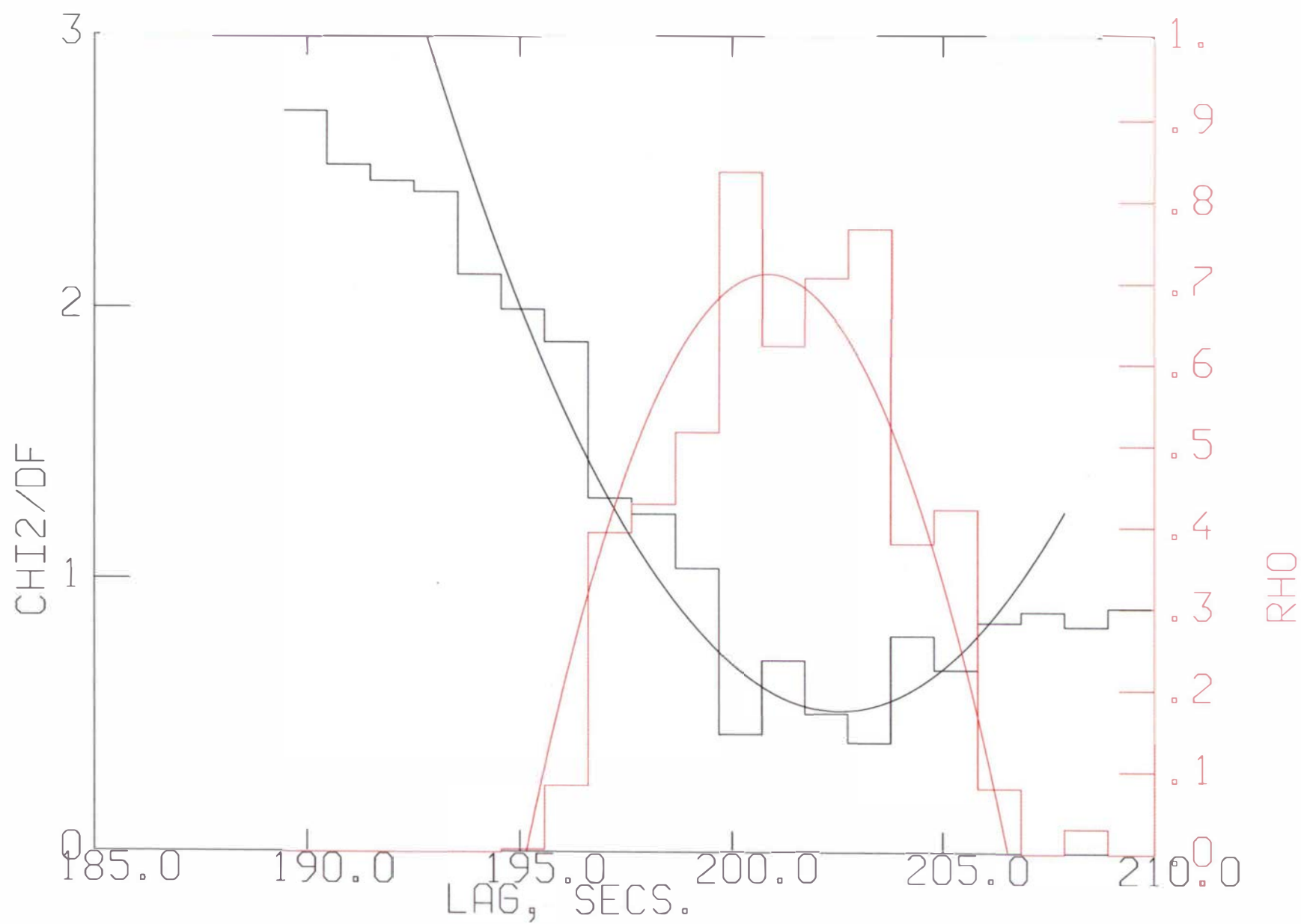
3. For INTEGRAL events

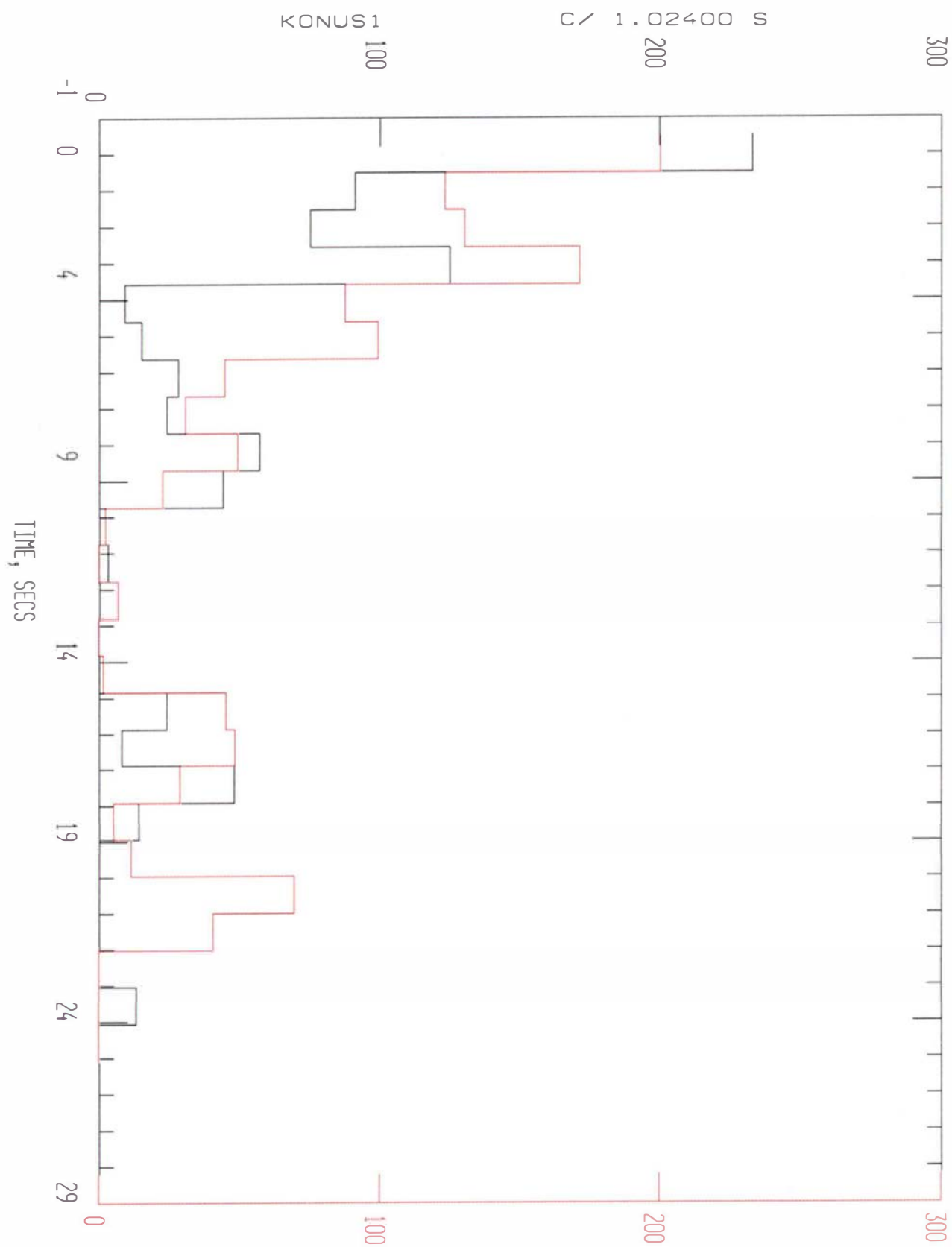
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

-
- ☒ ACCESS and MBL4 databases updated? *Too weak to Δ*







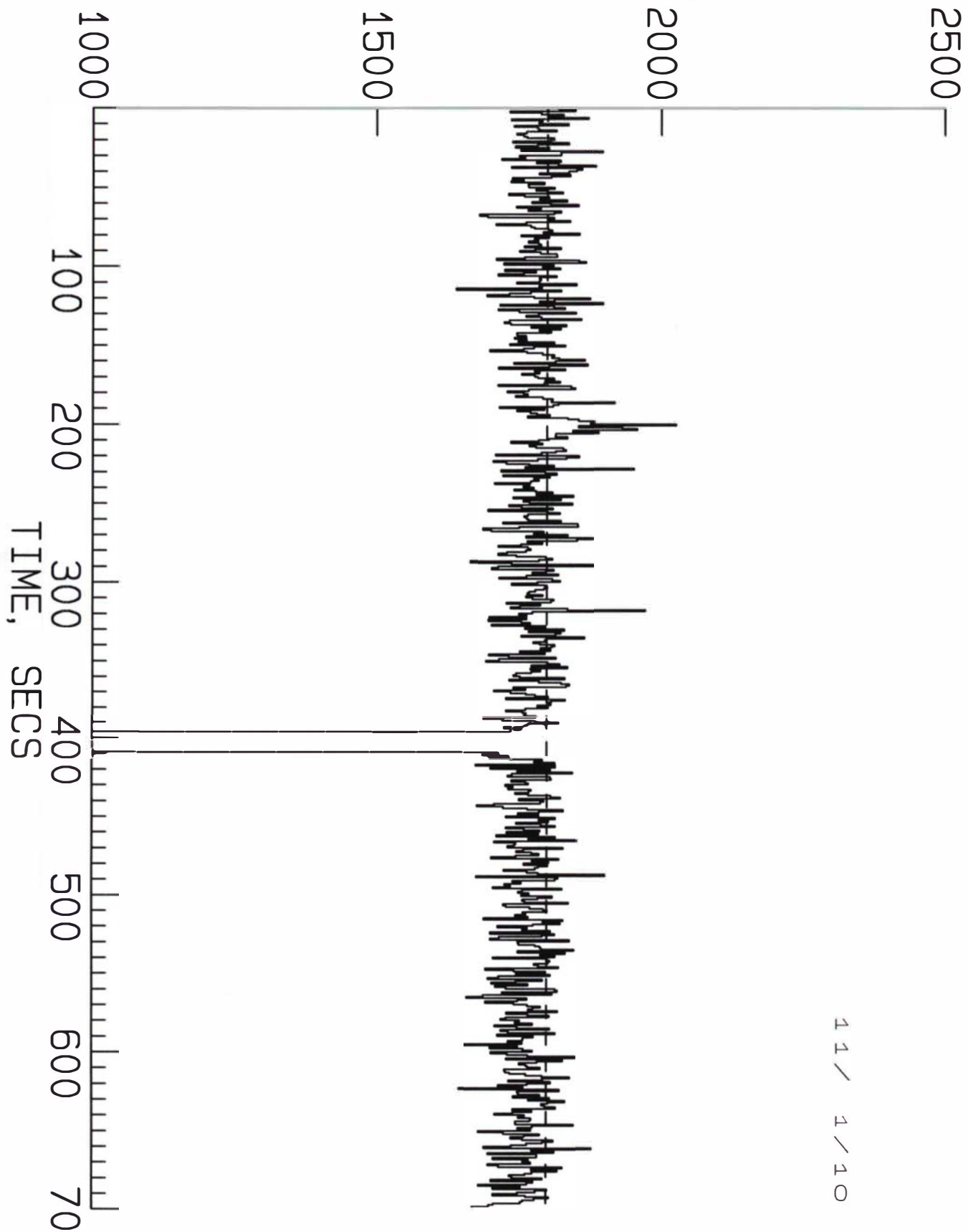


SAX GRBM

24/08/99 33621.299

40- 700 keV

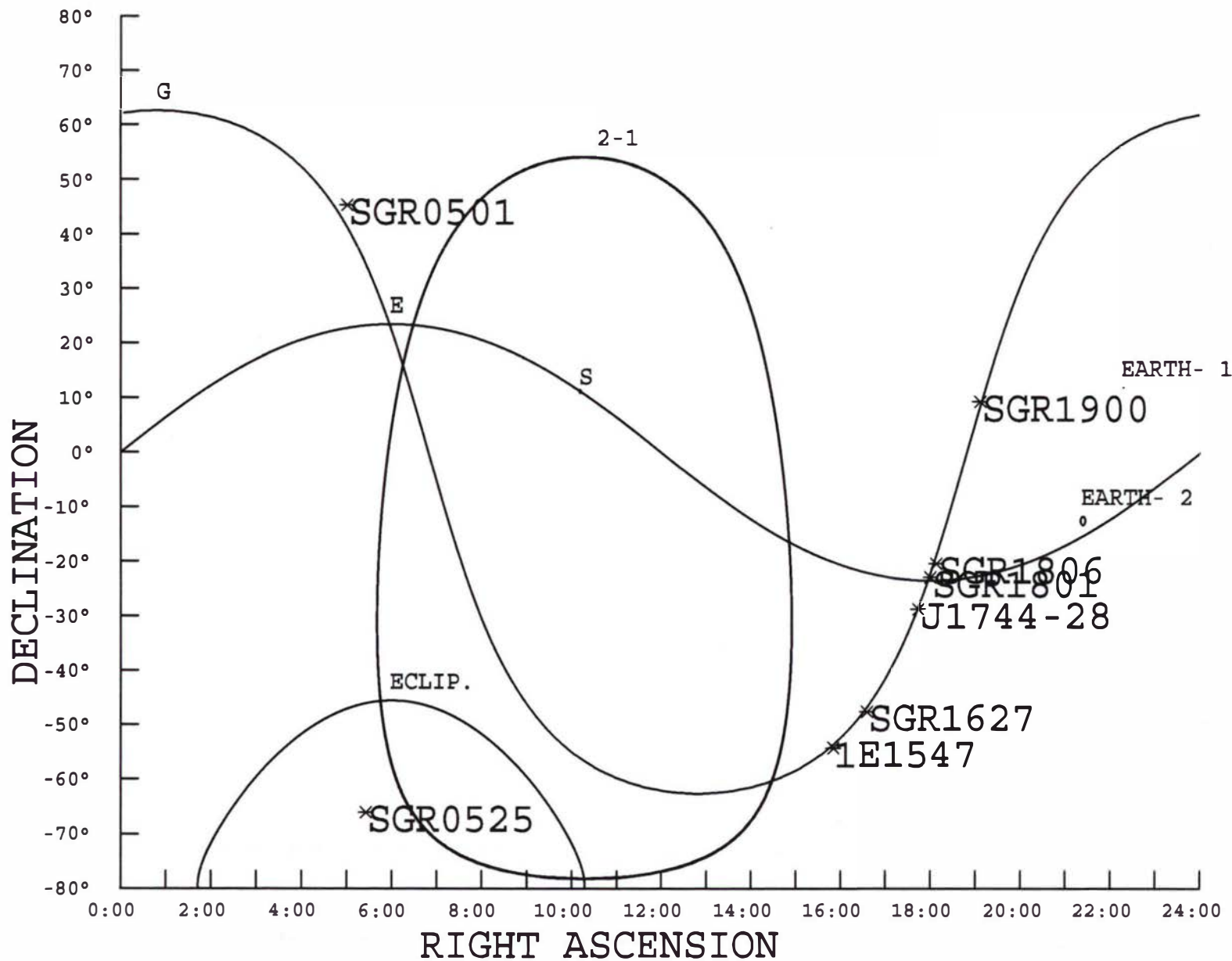
COUNTS/1.000 S



EVENT OF AUG 24, 1999 9:03

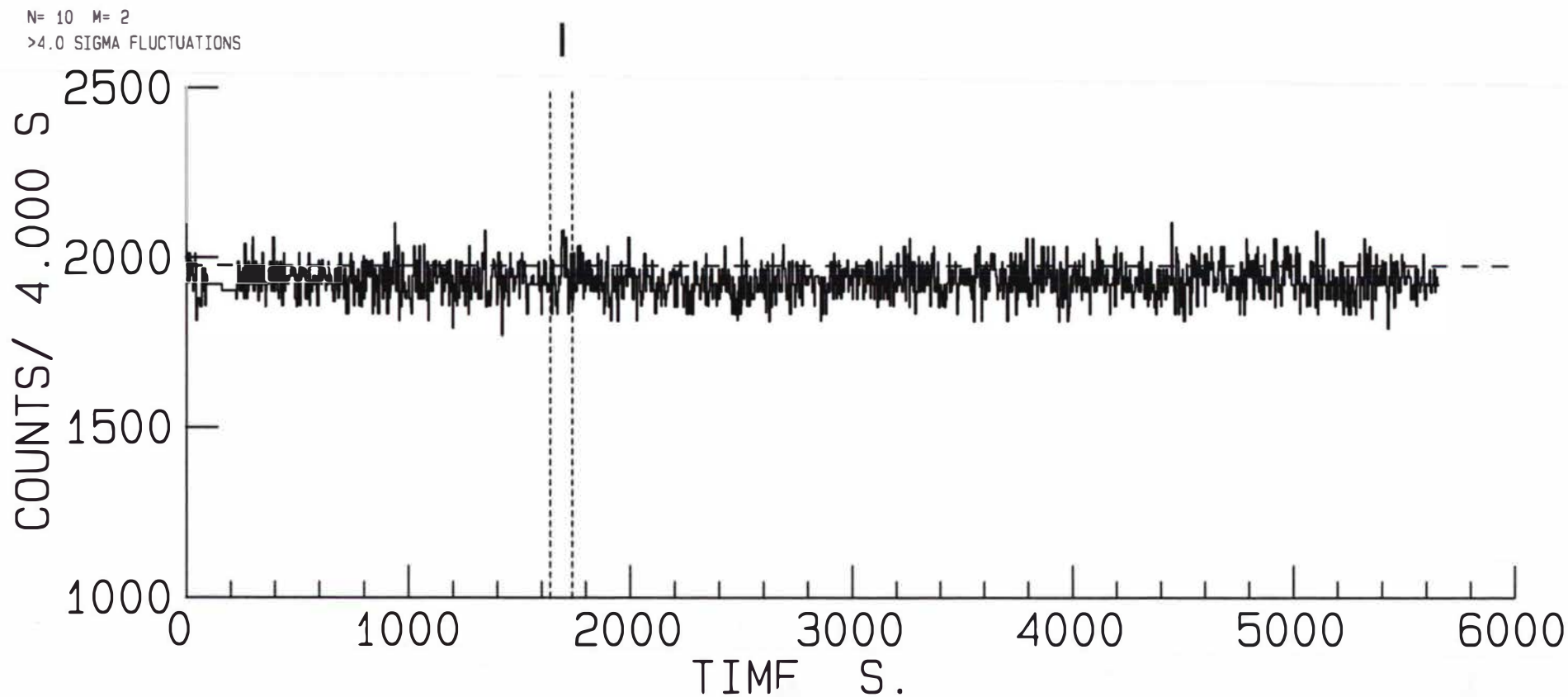
13/11/ 9

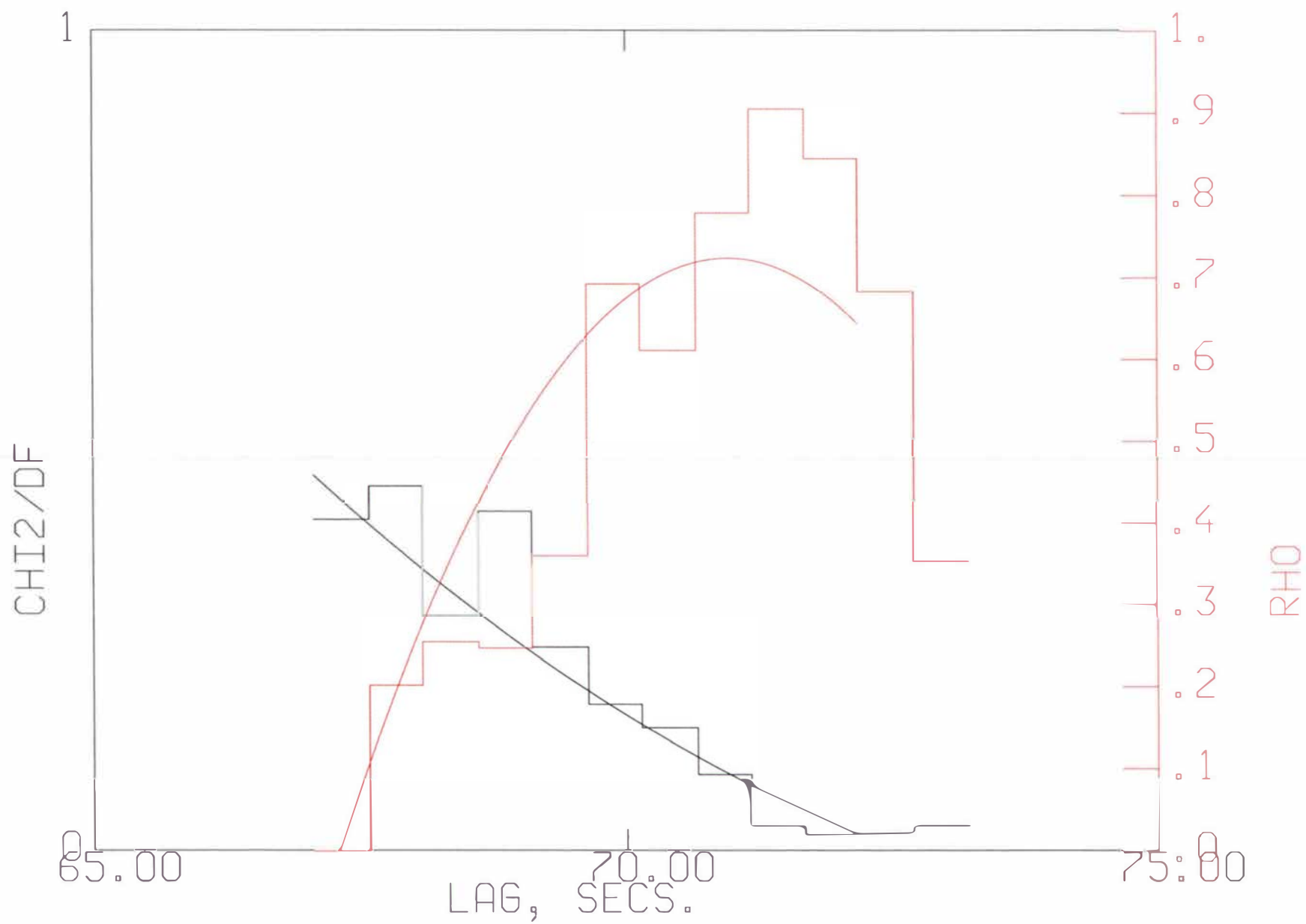
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1

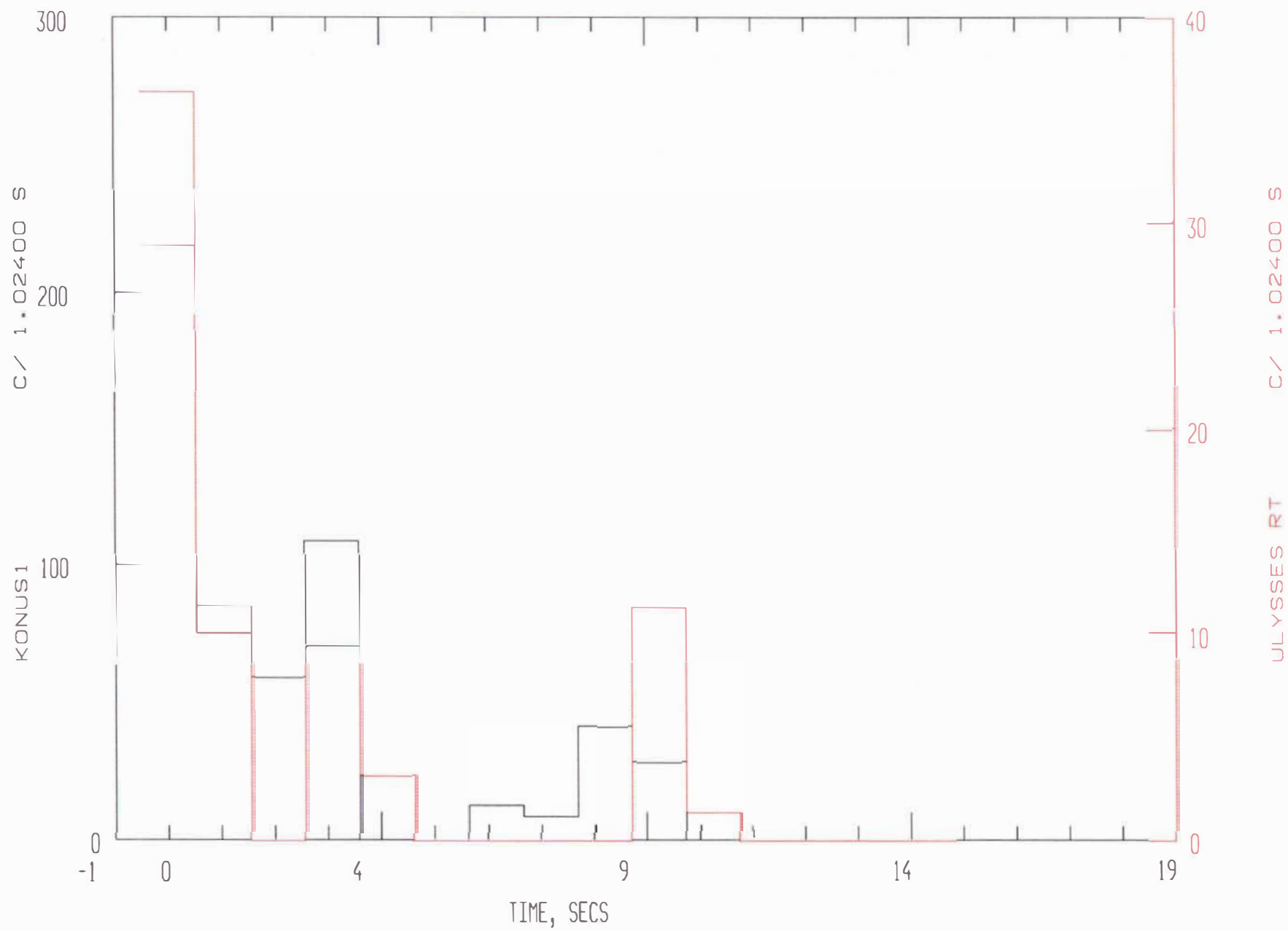


ULYSSES RT
24/ 8/99 30996.396 s
0.500 S INTERVALS REGROUPED BY 8
22- 151 keV

13/11/9







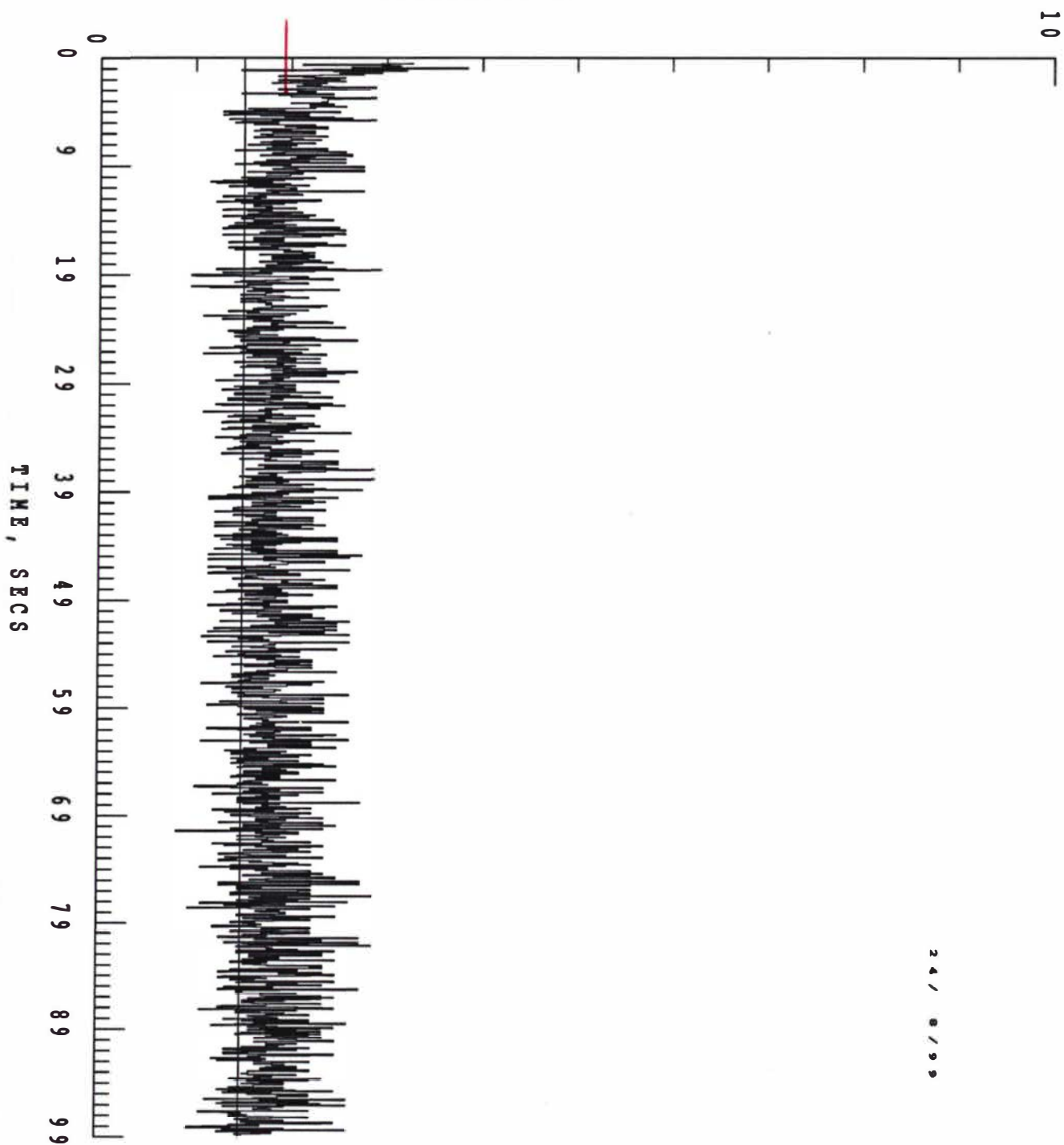
KONUS

24/08/99

33823.793

50 - 200 keV

COUNTS/0.064 S



24 / 8 / 99

KONUS1 19990824 33823

ULYSSES RT

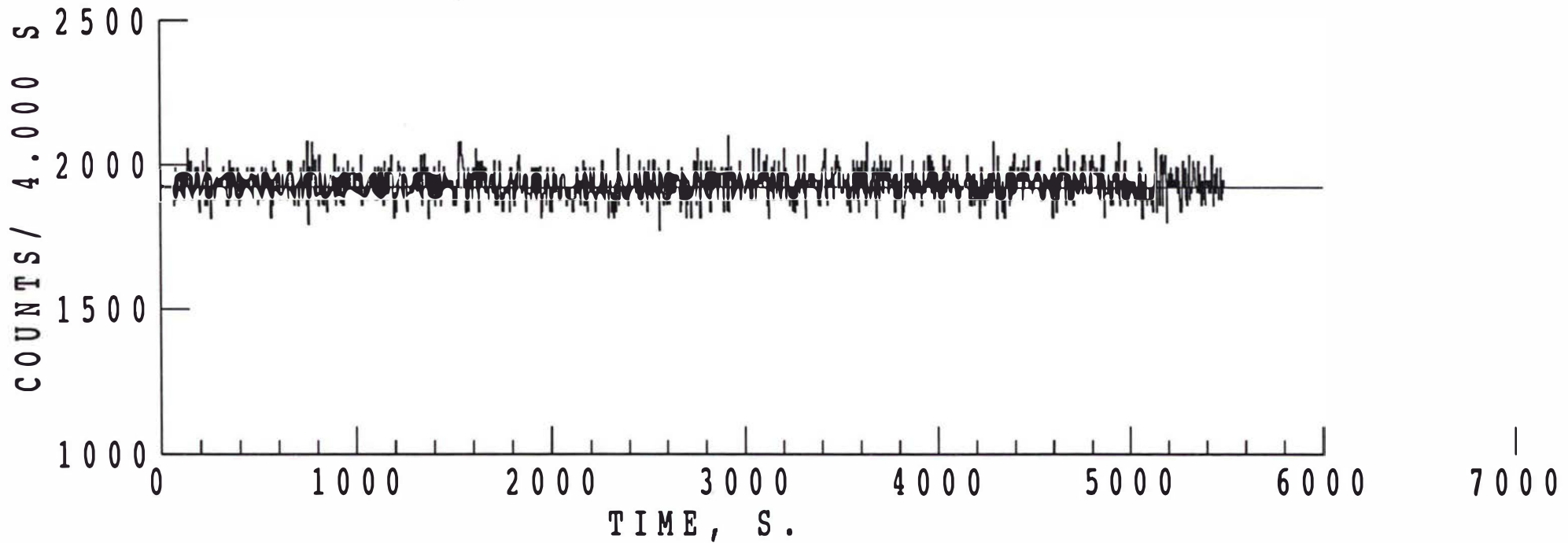
25 / 8 / 99

24 / 8 / 99 31153.900 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@fender.msfc.nasa.gov Mon Aug 30 09:09 PDT 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Mon, 30 Aug 1999 11:16:33 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7735

BATSEARCH PROGRAM

BATSE BURST # 7735
EVENT OF 1999 AUG 24 DAY OF YEAR=236
EVENT CROSSING TIME AT BATSE : 39032. S. OR 10:50:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 326.000 36.000
BATSE PEAK COUNTING RATE: 2700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 8/ 99 IS:
RA= 153.974 DEC= -11.881 DIST= 5.551 AU
BATSE-ULYSSES DISTANCE = 830458508. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2507.07 SECS.
CROSSING TIME AT ULYSSES IS 41539. S. OR 11:32:19 +/- 292.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 8/ 99 IS:
RA= 231.184 DEC= -20.475 DIST= 1.142 AU
MARS-BATSE DISTANCE = 170862544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 153.45 SECS.
CROSSING TIME AT MARS IS 39185. S. OR 10:53:05 +/- 97.63 SECONDS

BATSE BURST TRIGGER

NO.: 7735

TIME: TJD=1414 SECONDS=39032

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=20.1 AZIMUTH=175.0 ERROR=9.566 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DURATION ABOUT 0.7 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7735	990824	11414	39032	2700	326	+36	.7

BATSE BURST# 7735

ULYSSES RT

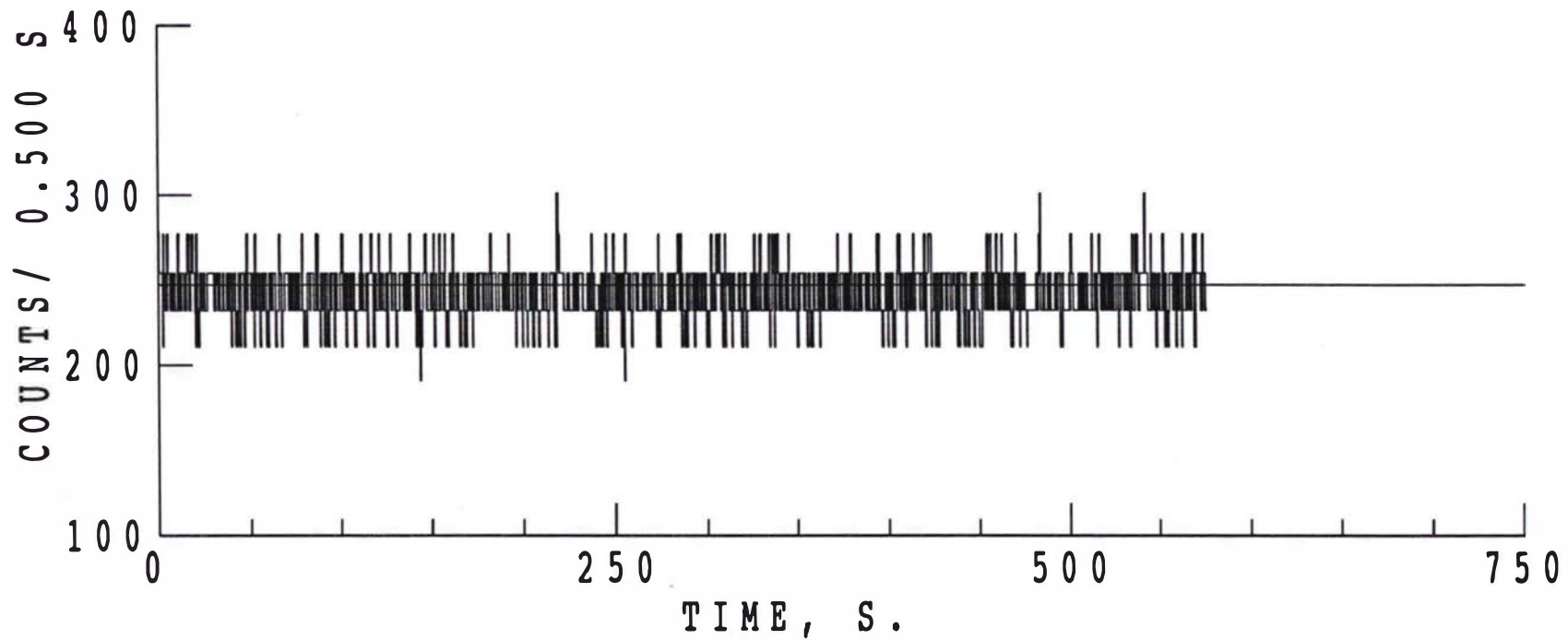
30 / 8 / 99

24 / 8 / 99 41256.496 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

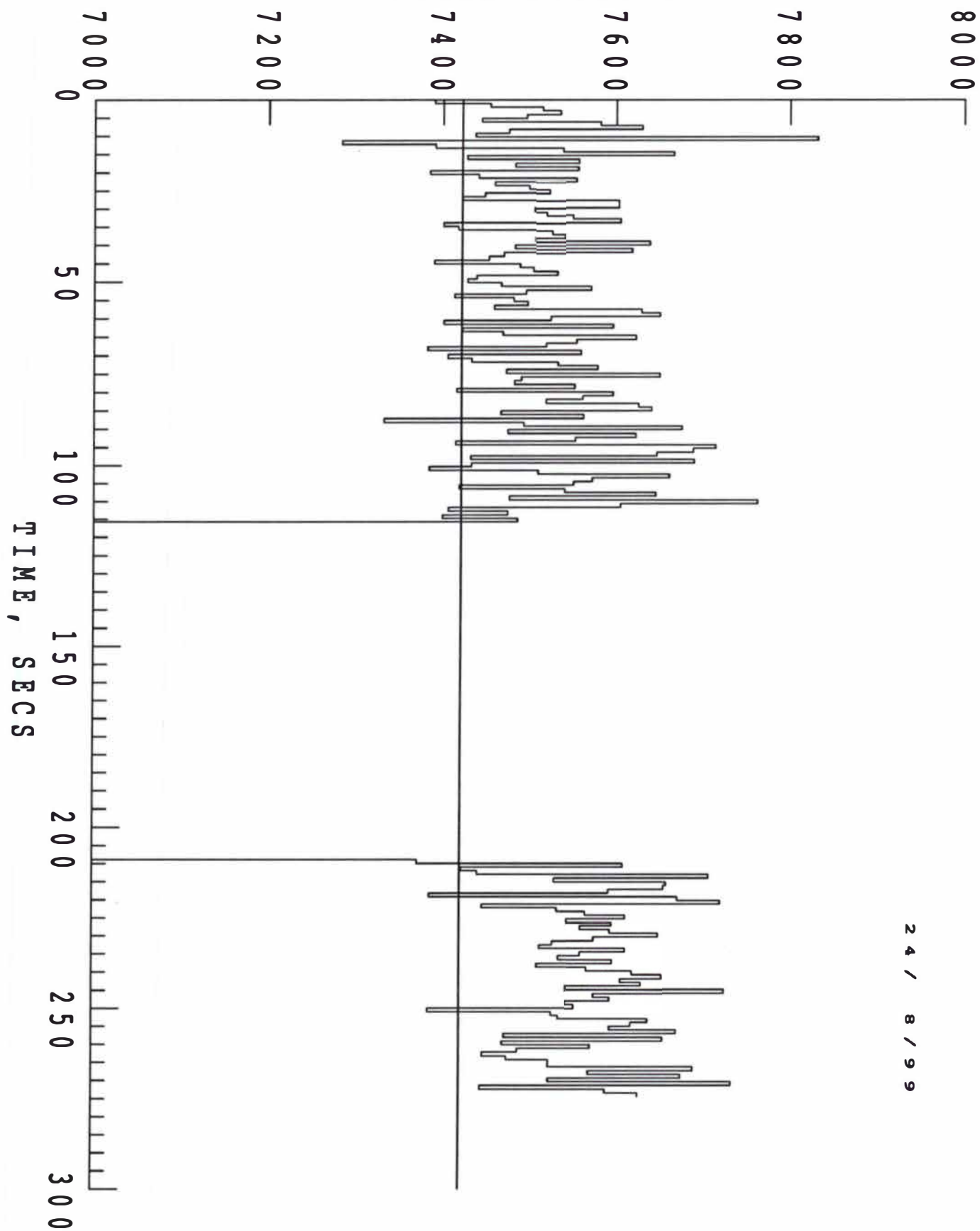
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 7735 24/08/99 39022.329

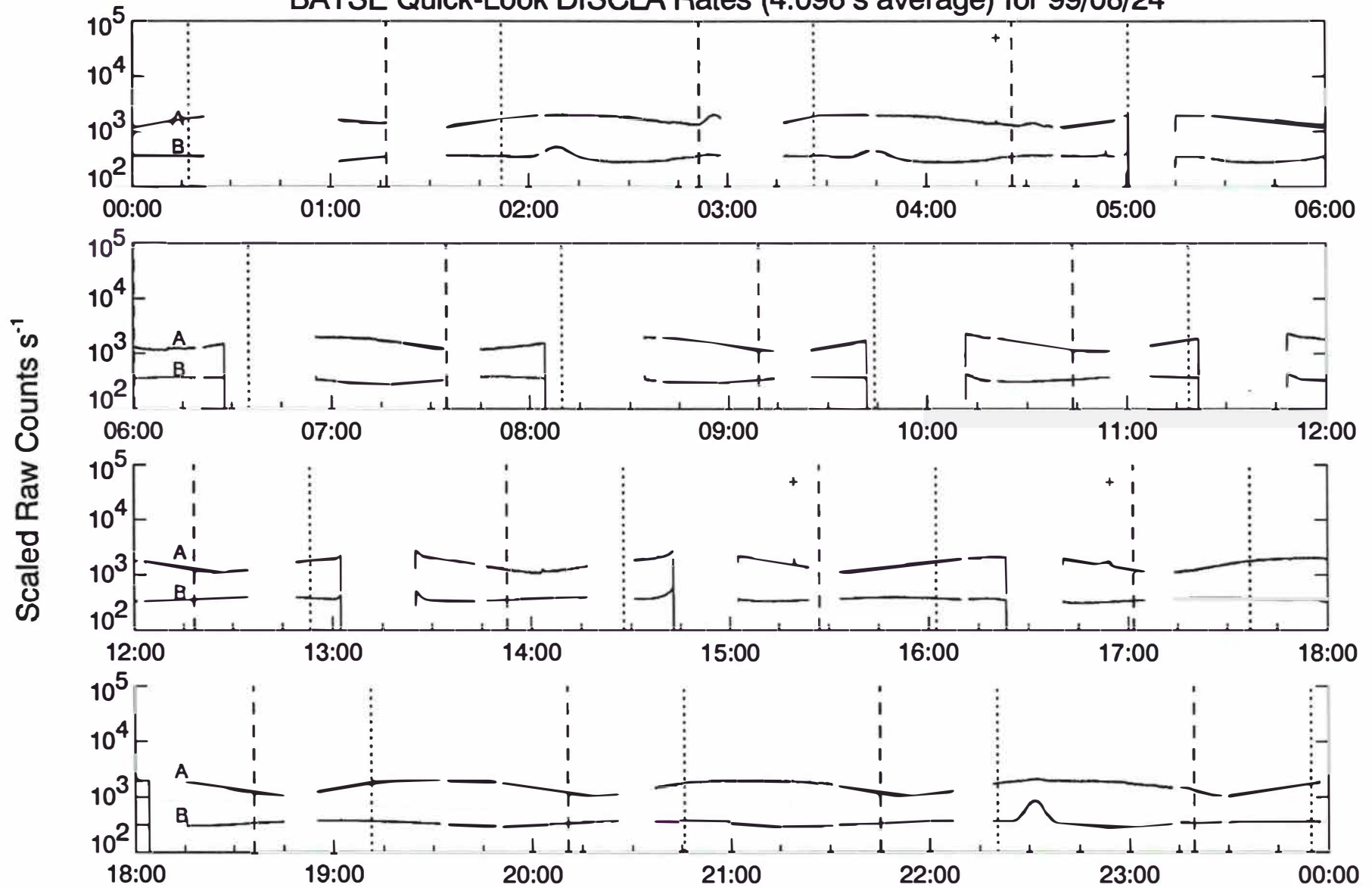
25- 100 keV

COUNTS/1.024 S



24 / 8 / 99

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/24

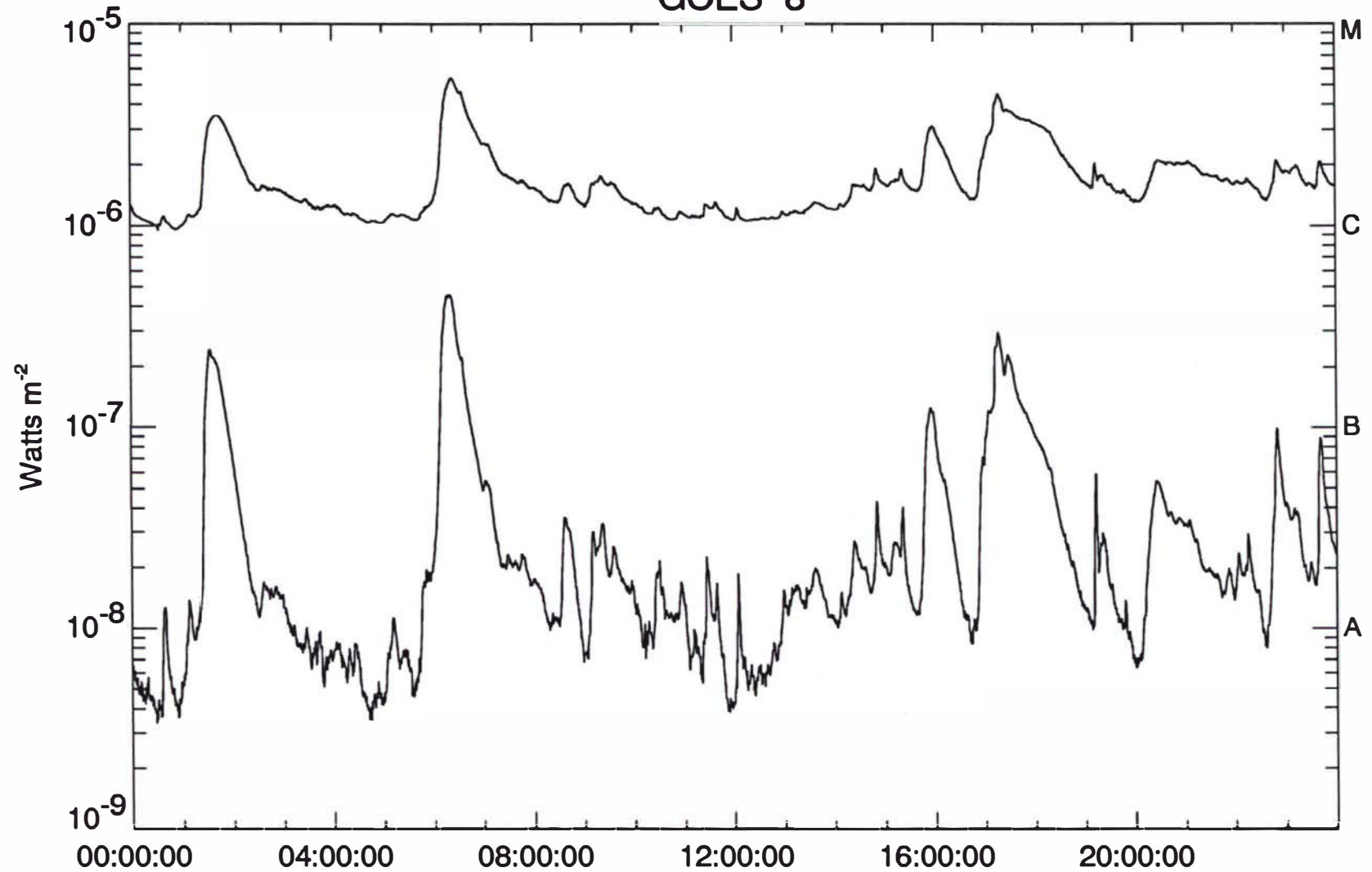


Current Time: 99/08/28, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/08/24, 0000:00

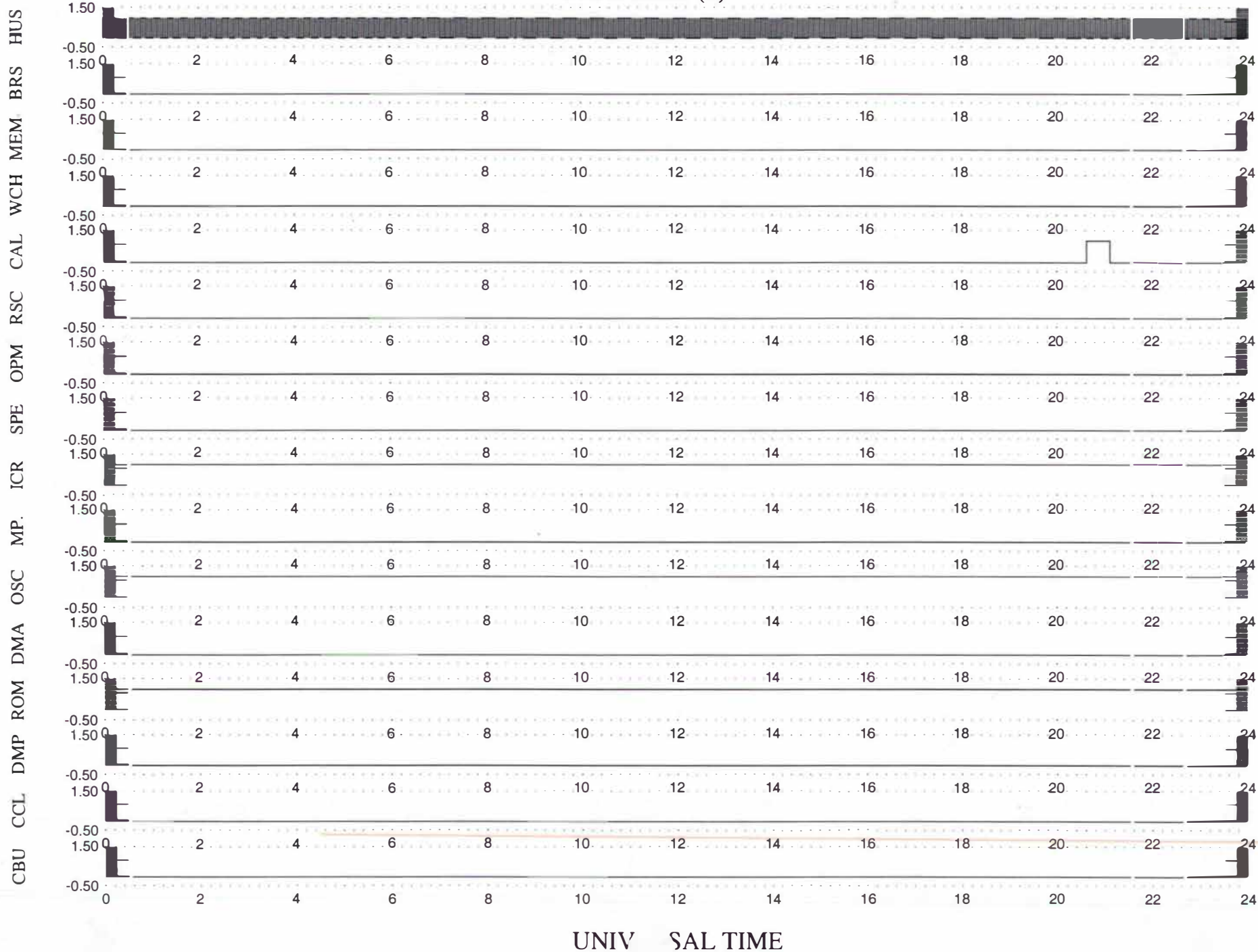
Plot created: 99/08/28, 1005

Channel

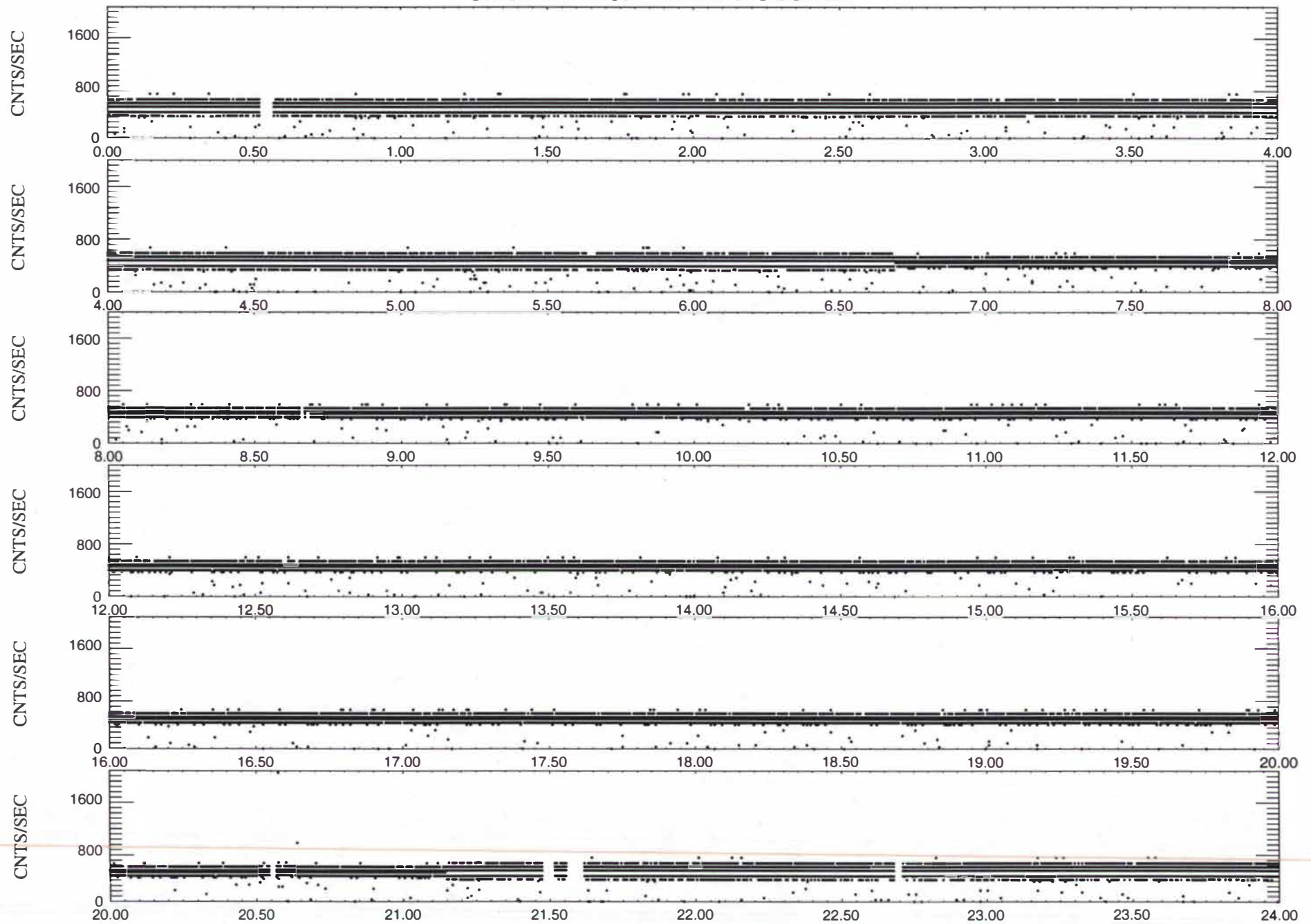
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

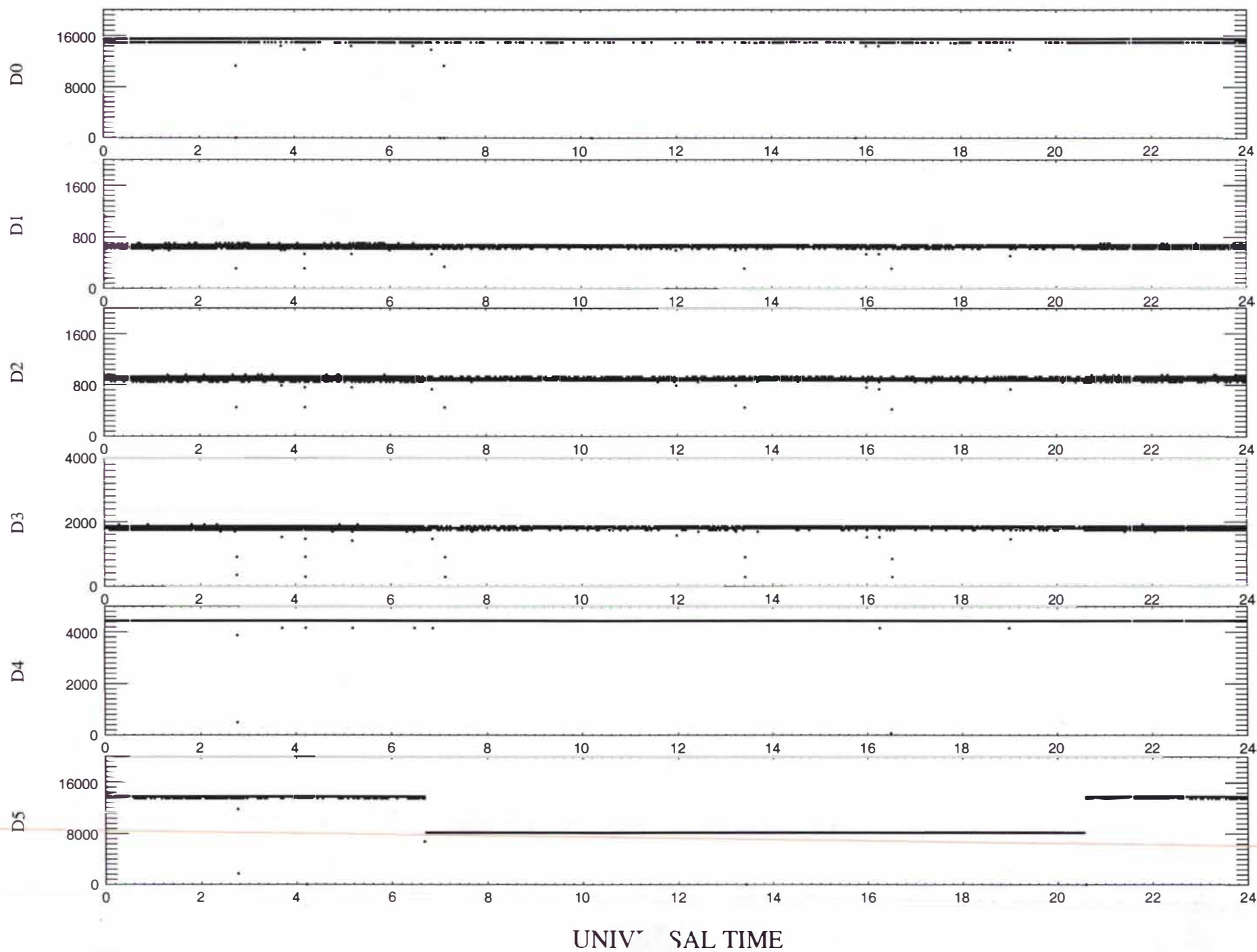
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From HENZE@fender.msfc.nasa.gov Fri Aug 27 09:46 PDT 1999
Date: Fri, 27 Aug 1999 11:52:58 -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, 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.: 7736

TIME: TJD=1415 SECONDS=05648

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.5 AZIMUTH=339.2 ERROR= 0.2 DEGREES

COMMENTS:

GOES M3.6, OPTICAL 1N FLARE. BRIGHT, COMPLEX, DUR. APPROX. 500 S, STARTS AT
APPROX. T-50 S, MAX AT APPROX. T+85 S. VISIBLE ABOVE 300 KEV.

From WOODSP@fender.msfc.nasa.gov Fri Aug 27 09:38 PDT 1999
From: WOODSP@fender.msfc.nasa.gov
Date: Fri, 27 Aug 1999 11:45:04 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7737

BATSEARCH PROGRAM

BATSE BURST # 7737
EVENT OF 1999 AUG 25 DAY OF YEAR=237
EVENT CROSSING TIME AT BATSE : 56602. S. OR 15:43:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 71.000 59.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 8/ 99 IS:
RA= 154.162 DEC= -12.013 DIST= 5.549 AU
BATSE-ULYSSES DISTANCE = 830203986. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 327.96 SECS.
CROSSING TIME AT ULYSSES IS 56930. S. OR 15:48:49 +/- 532.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 8/ 99 IS:
RA= 231.799 DEC= -20.628 DIST= 1.148 AU
MARS-BATSE DISTANCE = 171732624. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 433.74 SECS.
CROSSING TIME AT MARS IS 57036. S. OR 15:50:35 +/- 71.55 SECONDS

BATSE BURST TRIGGER

NO.: 7737

TIME: TJD=1415 SECONDS=56602

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=57.1 AZIMUTH=289.7 ERROR=2 DEGREES

COMMENTS:

GRB LASTING ABOUT 15 SEC. SINGLE PULSE WITH TWO PEAKS. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7737	1990825	11415	56602	6000	071	+59	15

Date: Feb 24 '00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

☒ 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 vwx@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

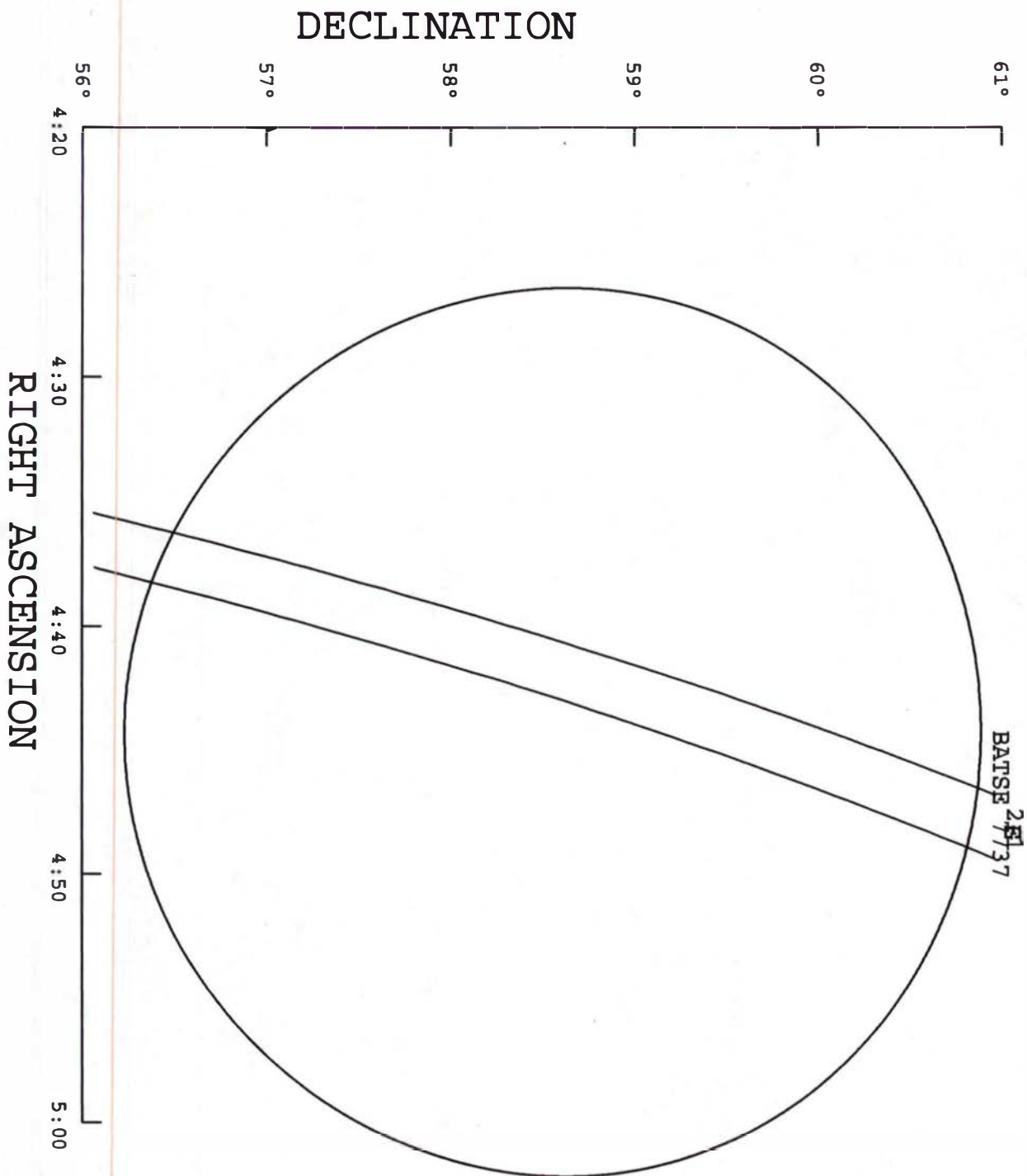
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF AUG 25, 1999 15:43

22 / 2 / 0



BATSE

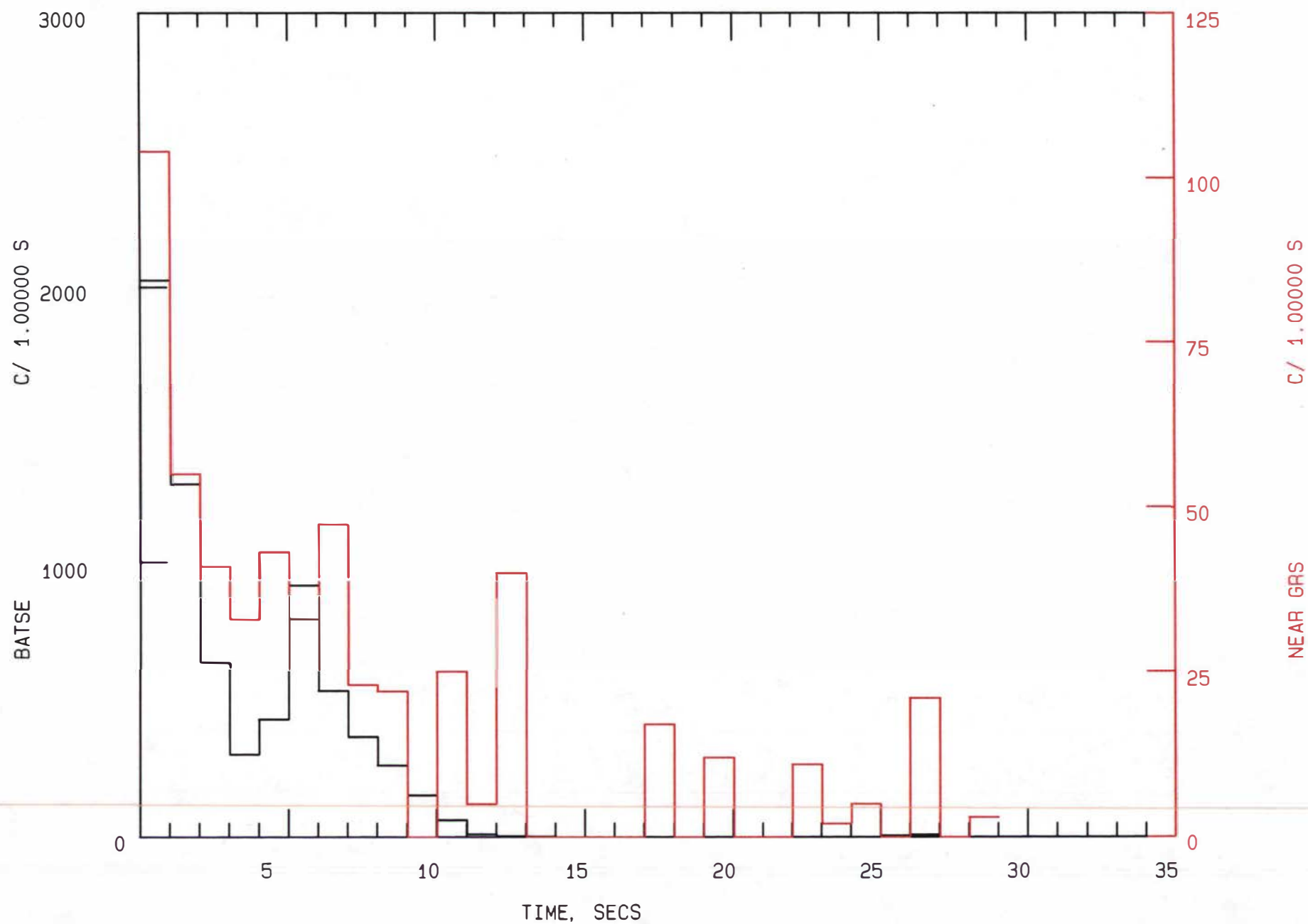
-NEAR GRS

CORRELATION

25/ 8/99

56602.105

22/ 2/ 0



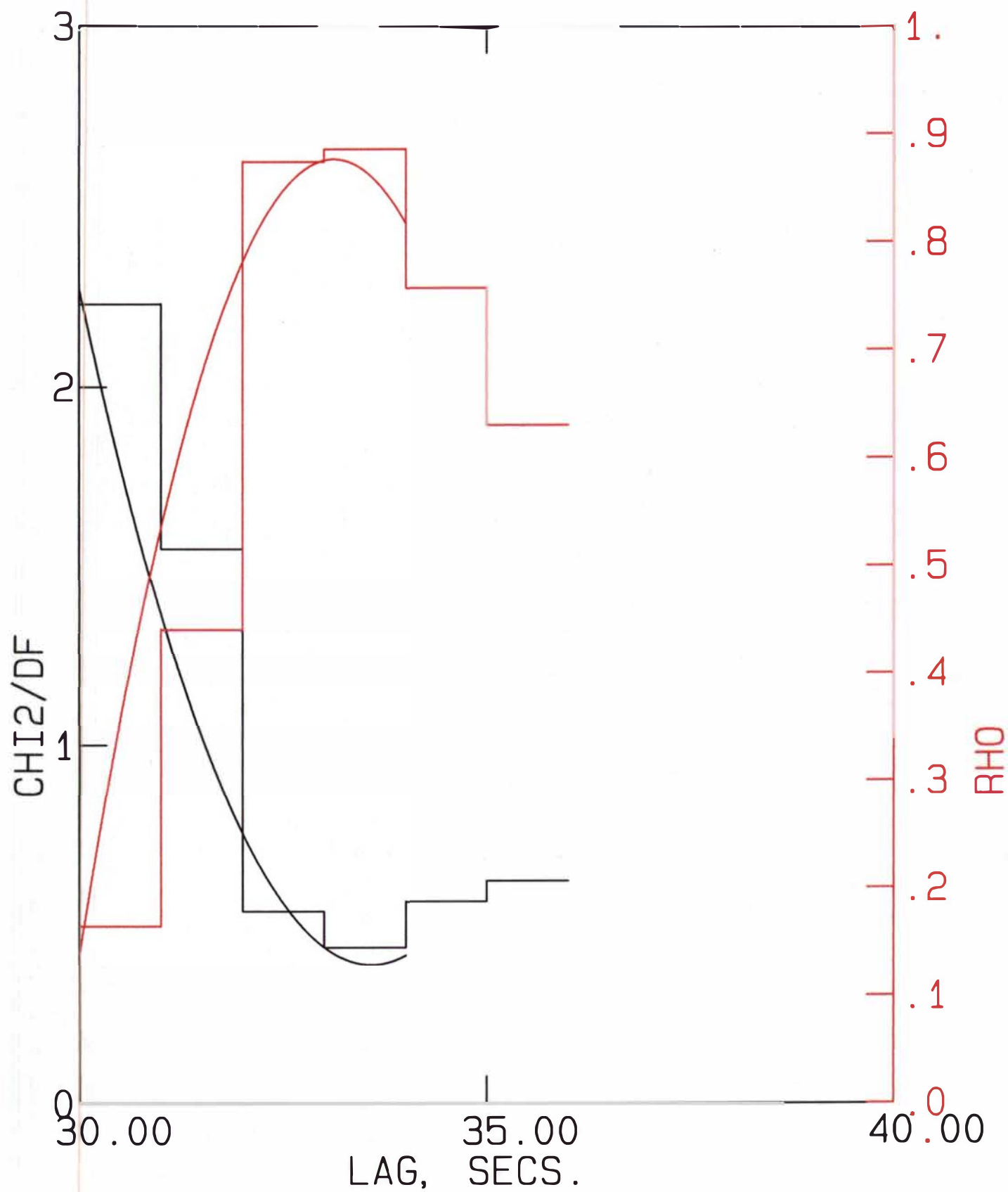
BATSE

-NEAR GRS

CORRELATION

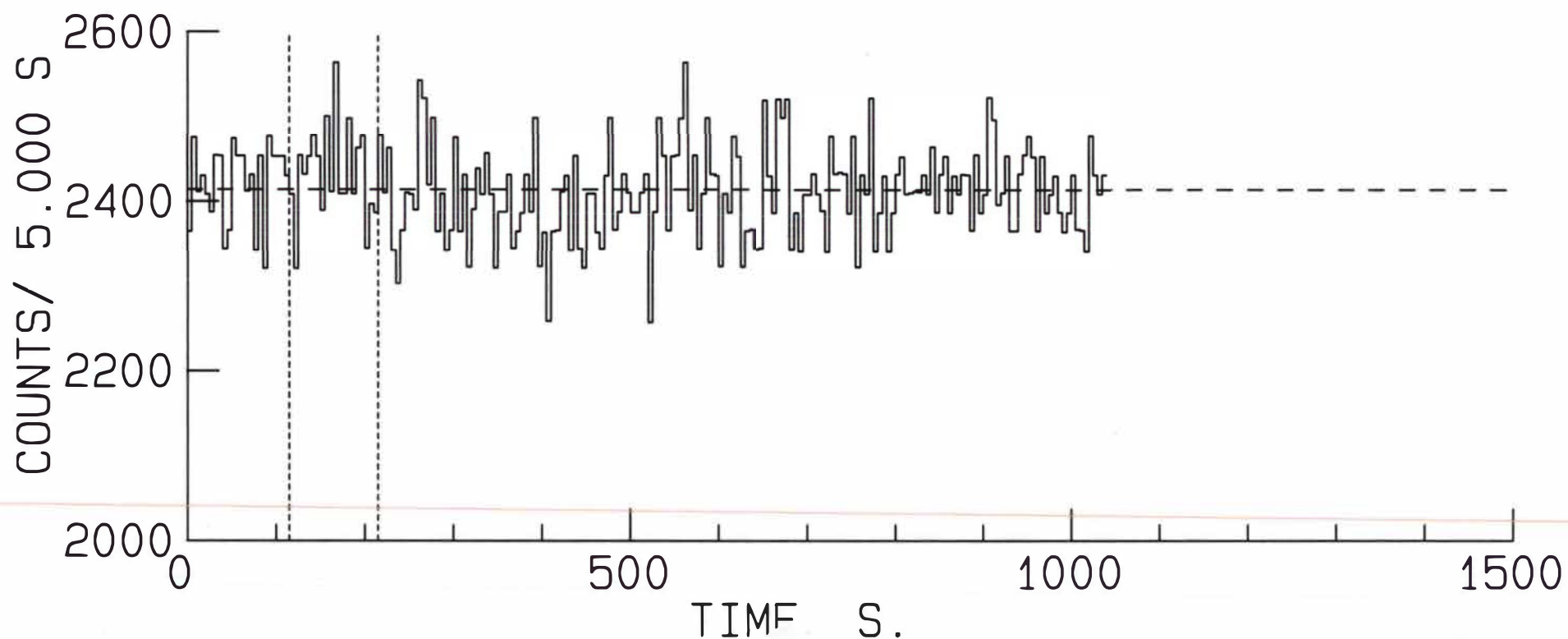
25/ 8/99

56602.105



ULYSSES RT
25/ 8/99 56412.030 s
0.500 S INTERVALS REGROUPED BY 10
22- 151 keV

2/ 9/99



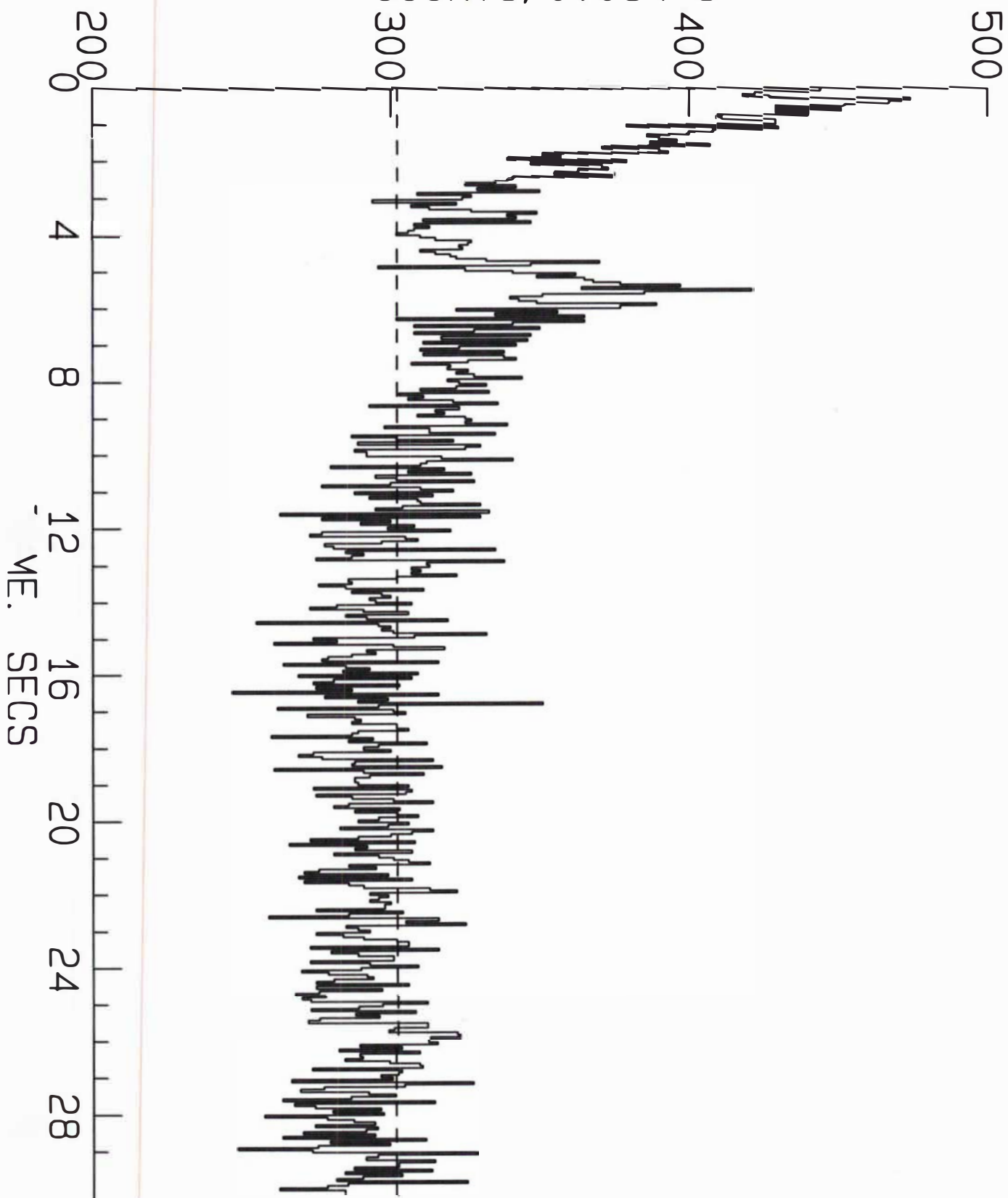
BATSE

25/08/99

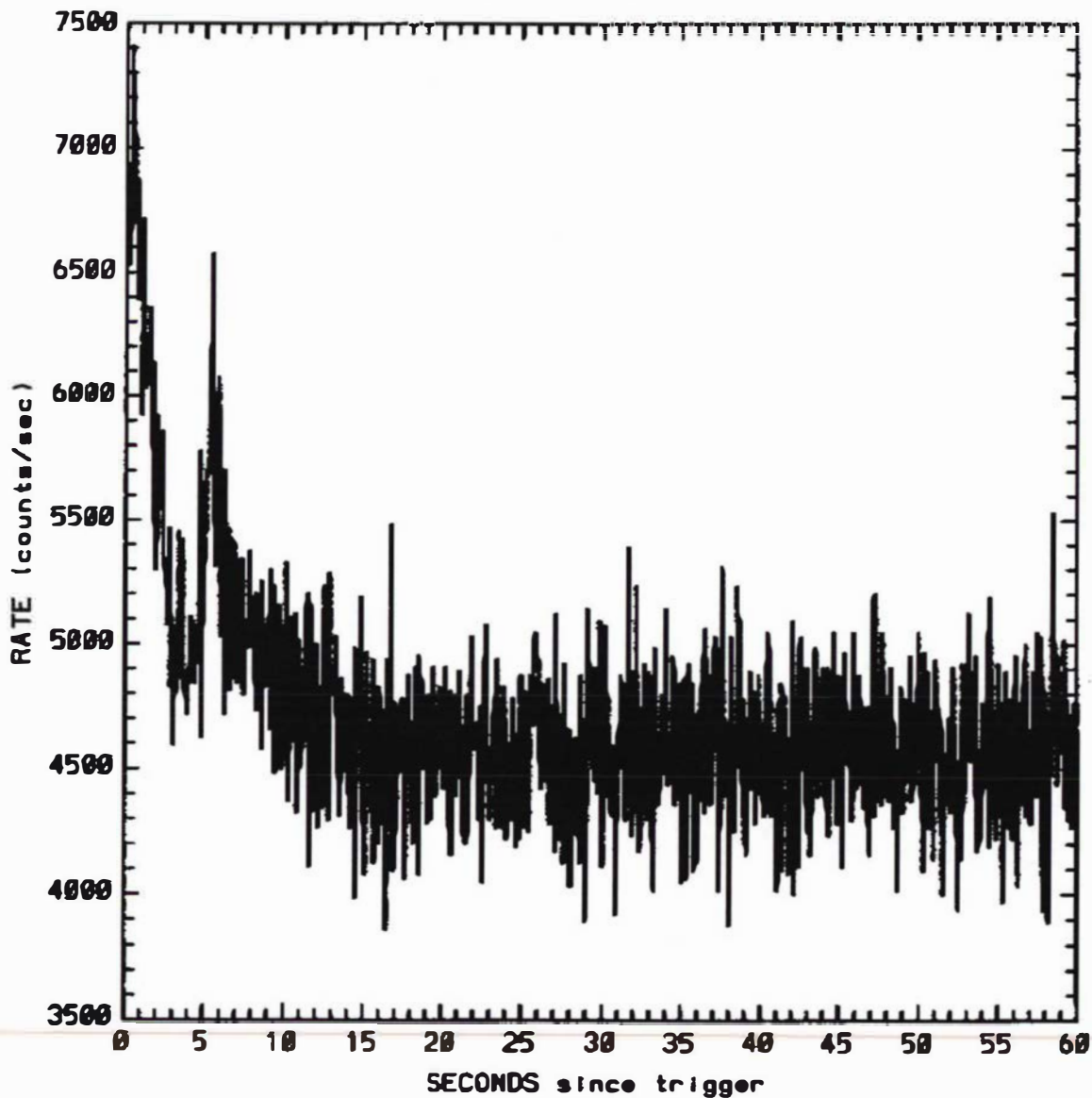
56602.105

100-1000 keV

COUNTS/0.064 S



MER Data for K. Hurley, No. 7737



31-AUG-1999 08:23:36

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 7737

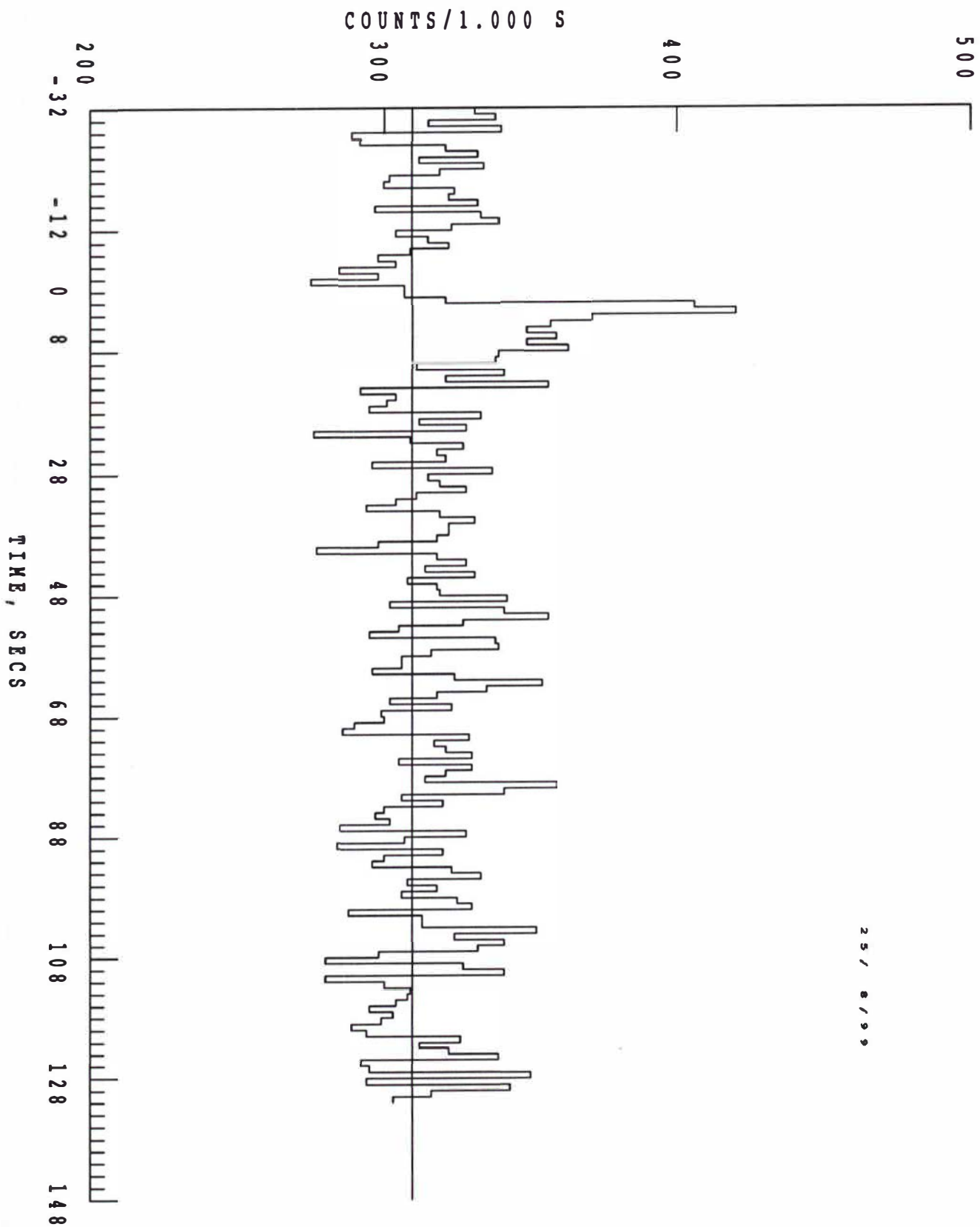
Trigger Time:
11415 / 56682.185Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.004 secondsDetectors (7..0).
-6--2--Channels:
(7 .15)Quality Mask:
BDISP1

NEAR

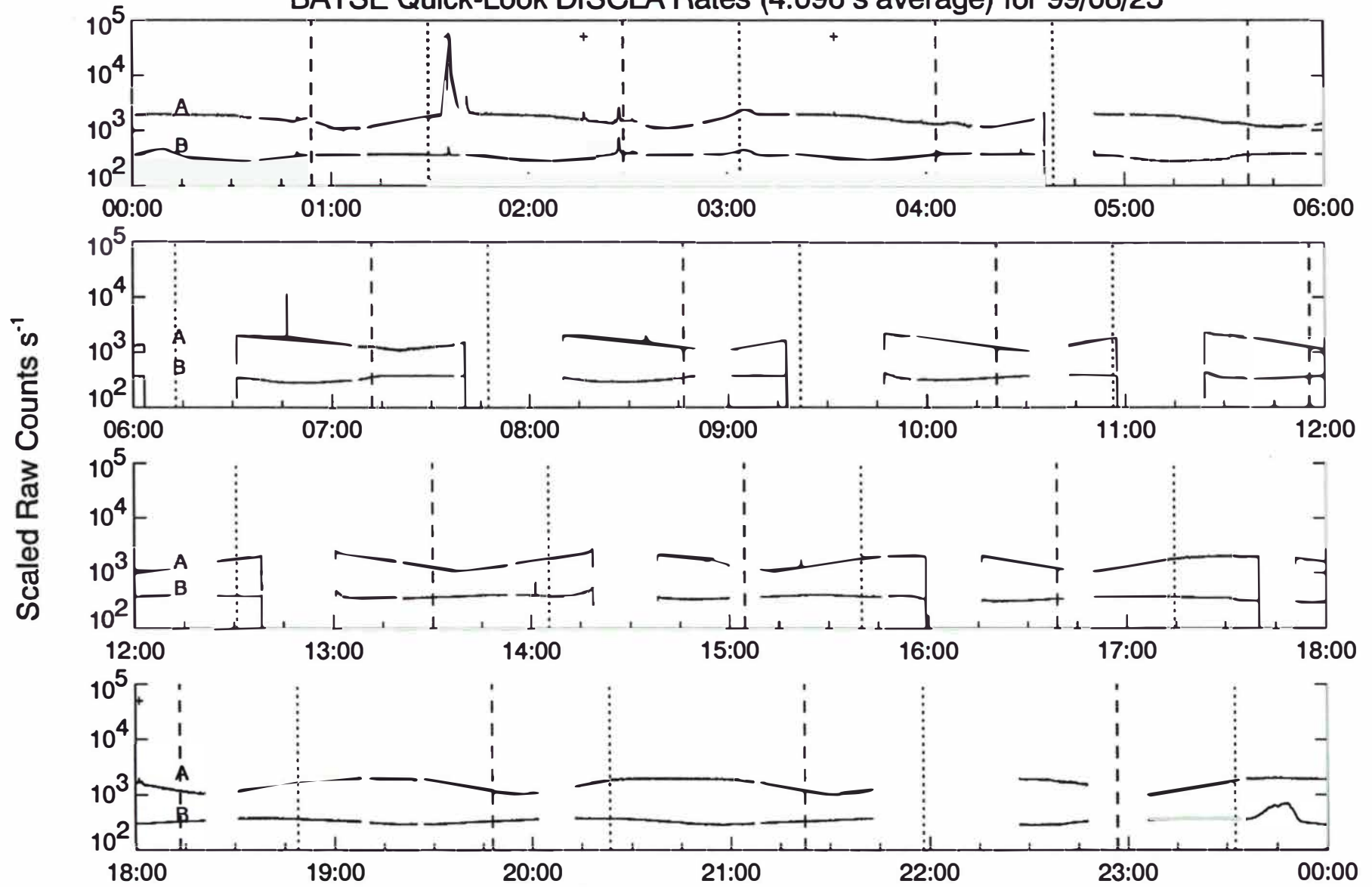
25/08/99

56038.970

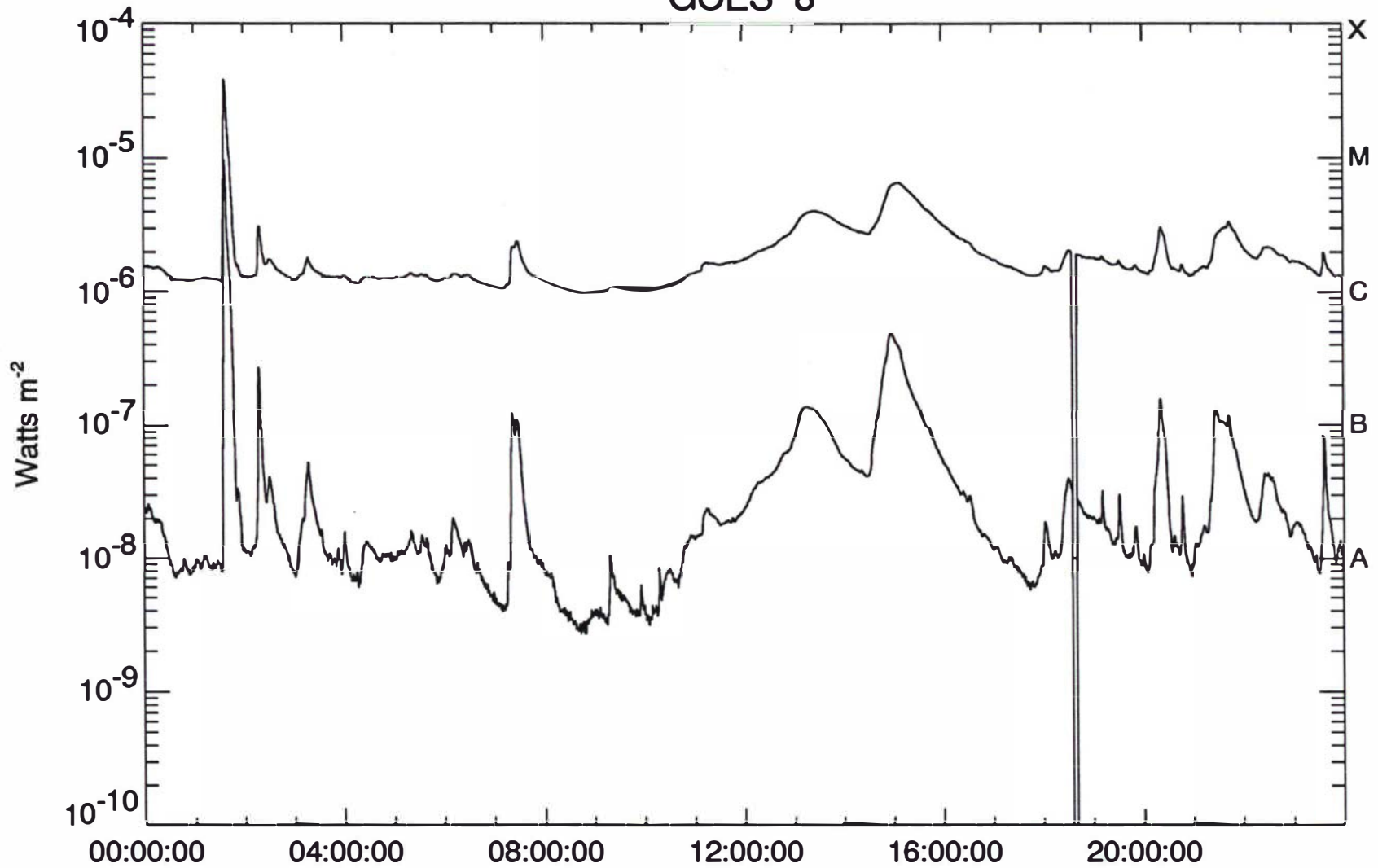
100-1000 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/25



GOES 8



Data Start: 99/08/25, 0000:00

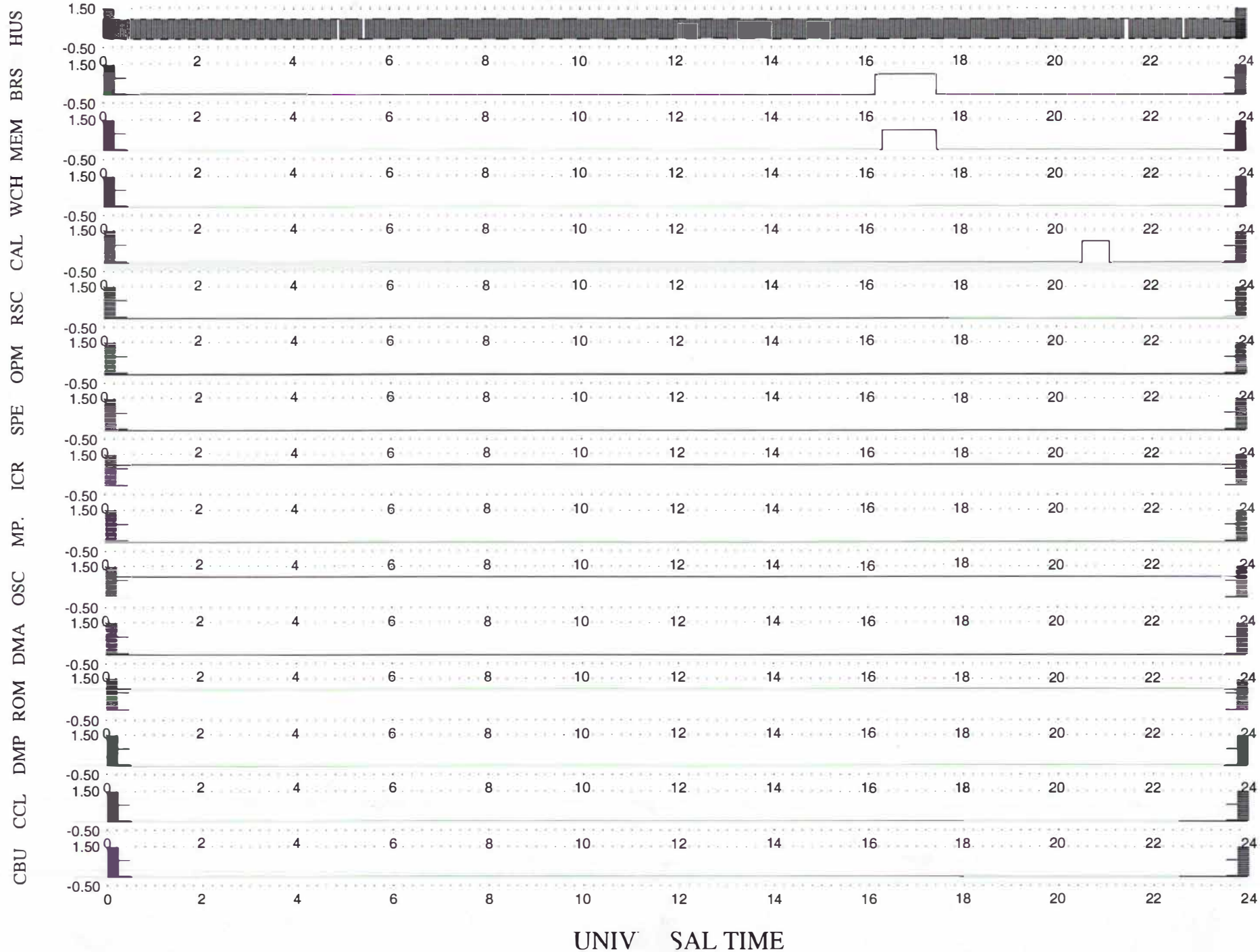
Plot created: 99/08/29, 1005

Channel

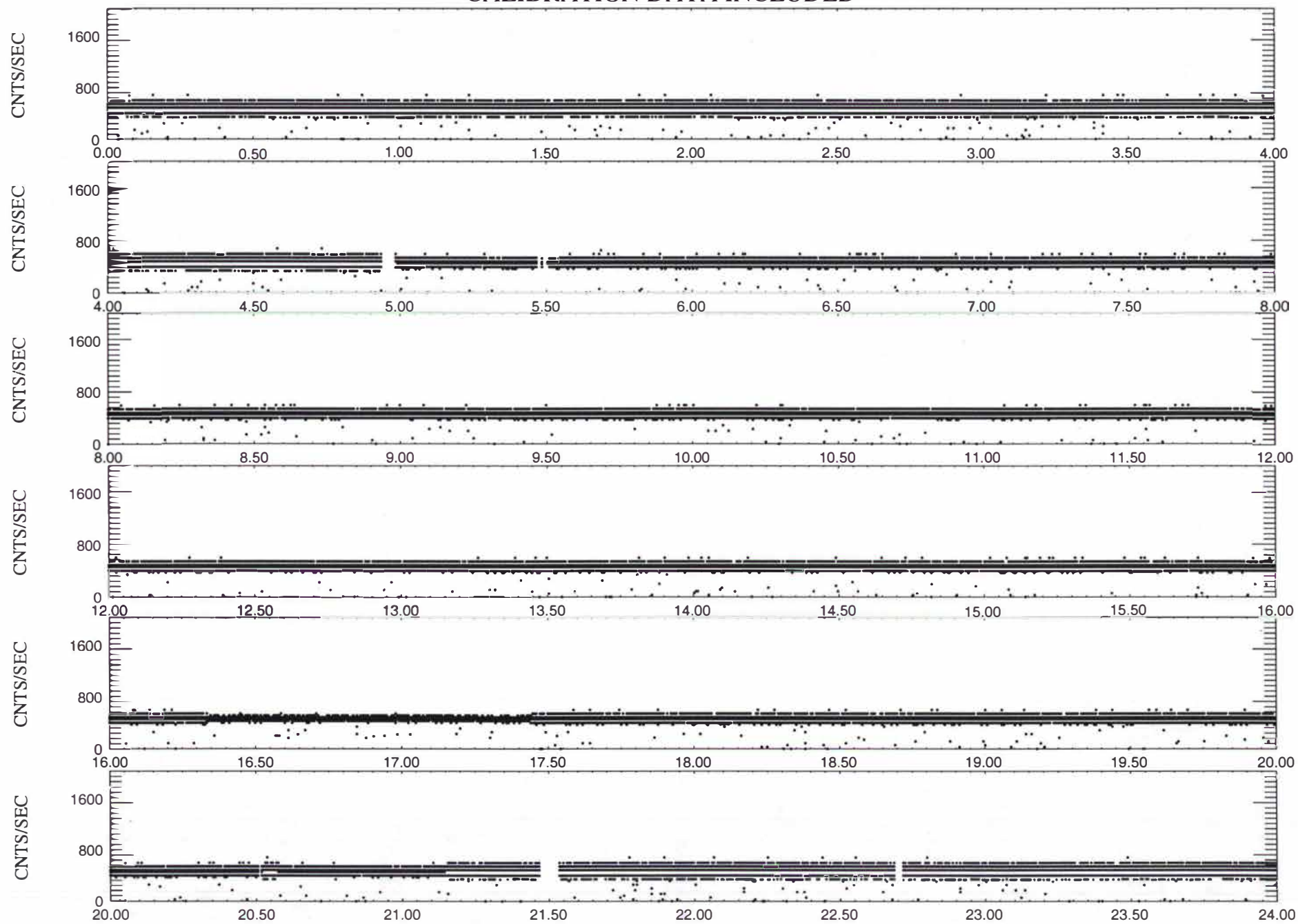
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 4

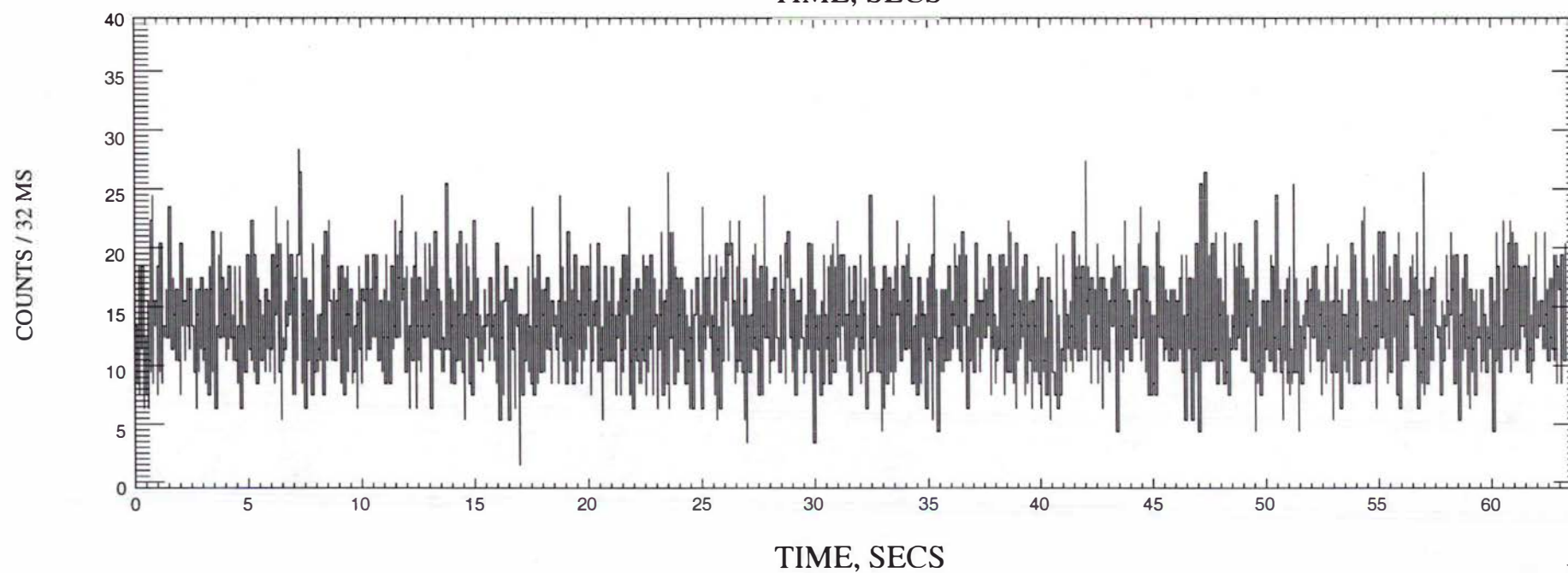
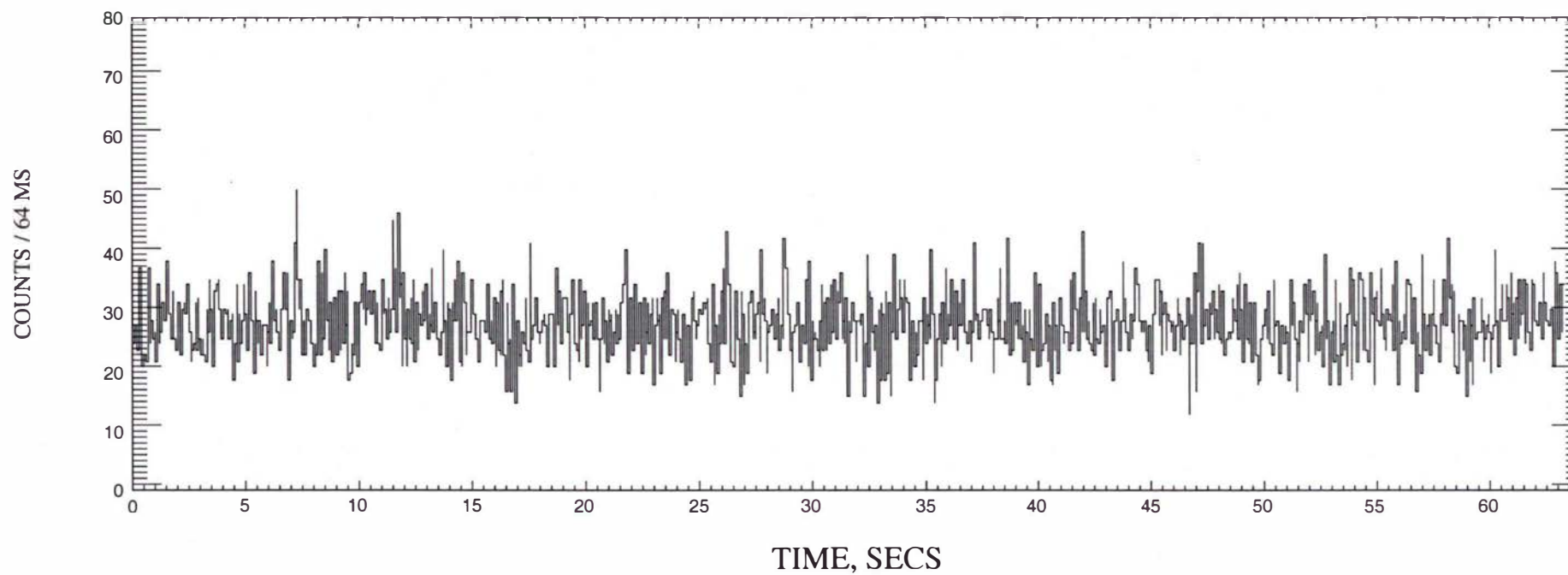


CALIBRATION DATA INCLUDED

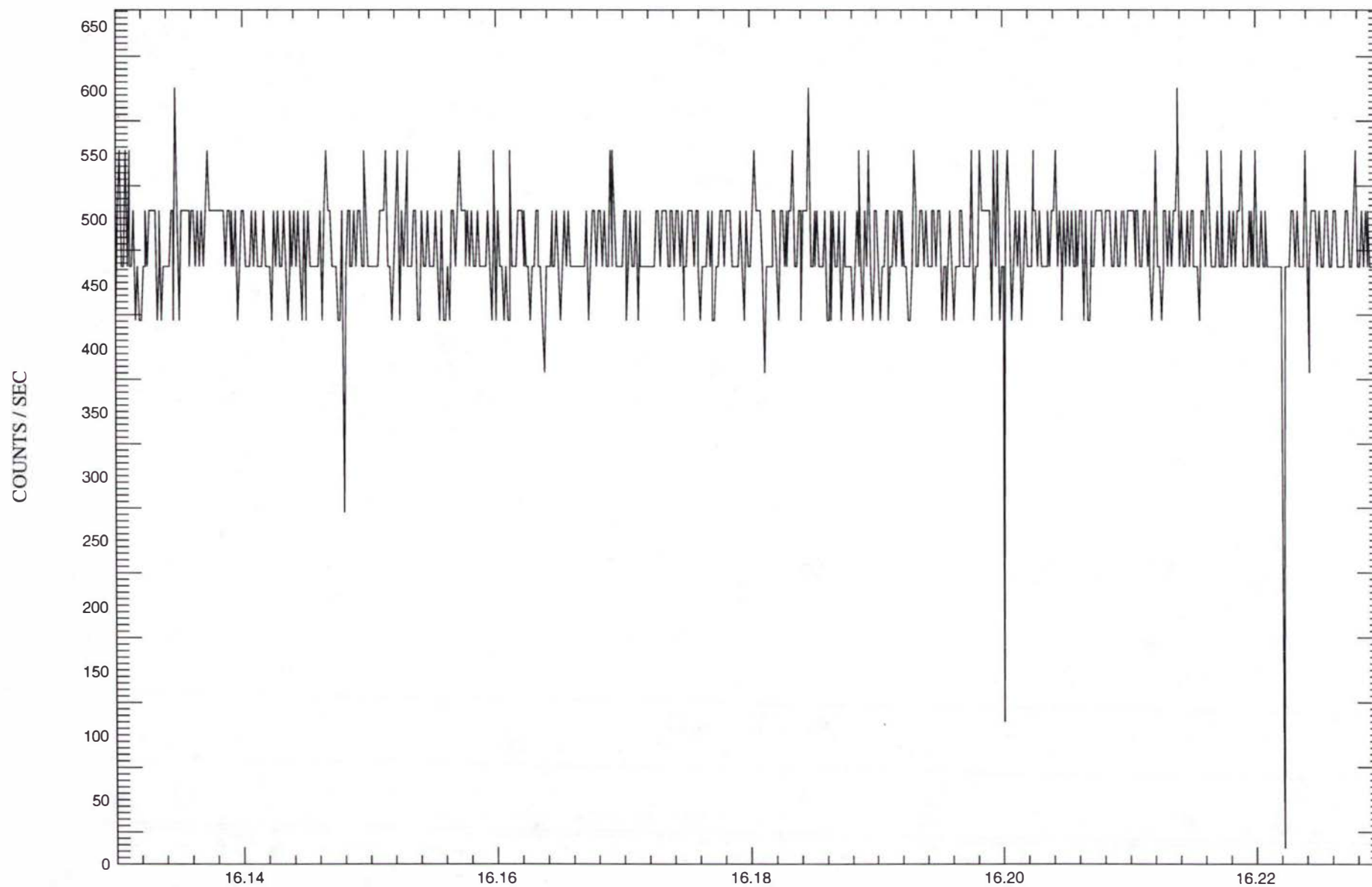


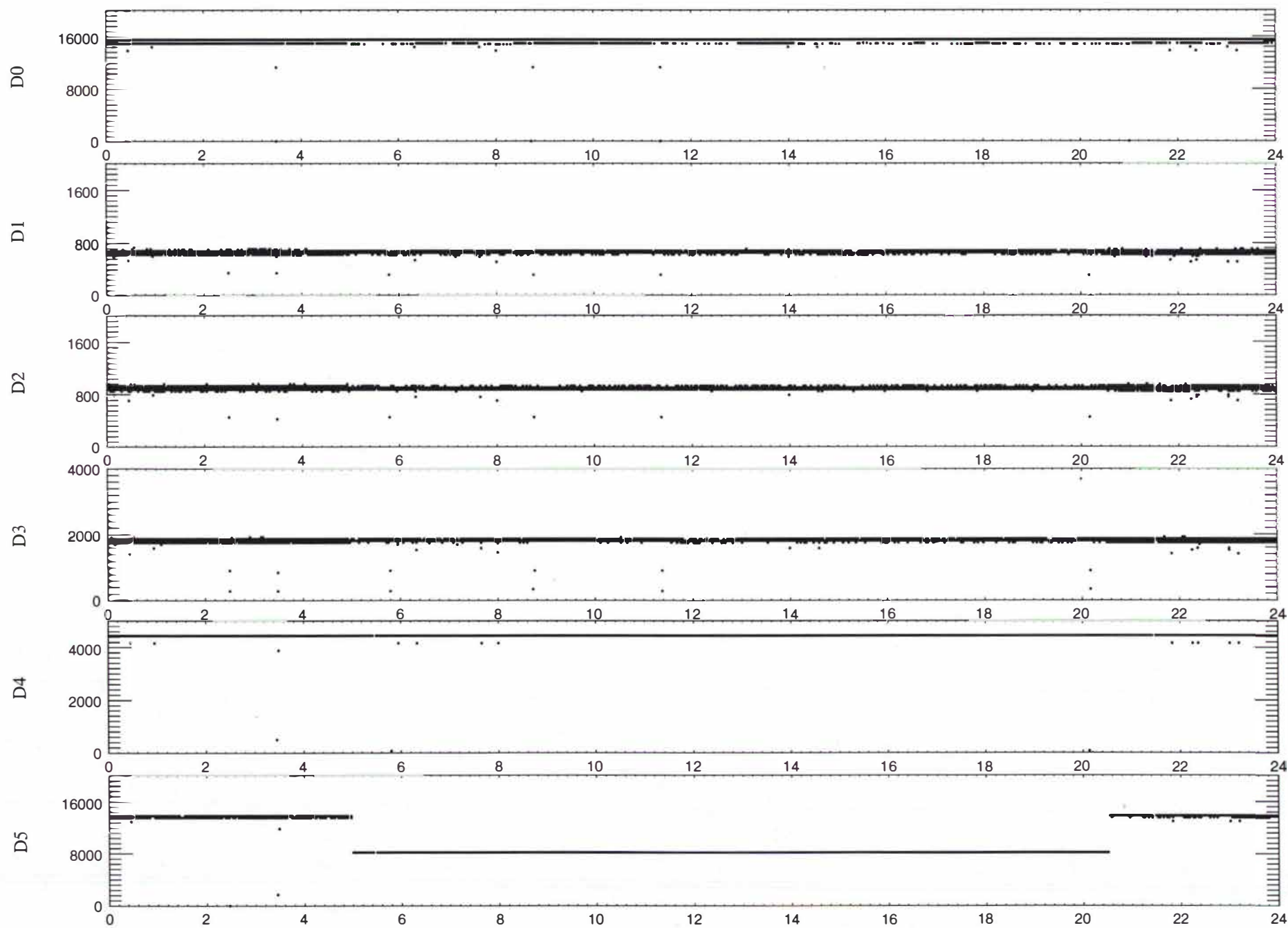
UNIVERSAL TIME

Burst Counter 4 at UT=16.183589435154 h=58260.922 s 16:11:00.922



CALIBRATION DATA INCLUDED





UNIVERSAL TIME

From BUTTERWORTH@tgrs2.gsfc.nasa.gov Mon Sep 13 12:51 PDT 1999

Date: Mon, 13 Sep 1999 15:58:20 -0400

From: BUTTERWORTH@tgrs3.gsfc.nasa.gov

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, cline@apache.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, TEEGARDEN@tgrs3.gsfc.nasa.gov

CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov

Subject: Konus report for recent Ulysses gamma-ray events not reported by BATSE

Hi Everyone,

Here is the Konus report for those events recently seen by Ulysses, but not reported by BATSE.

Paul.

Ulysses event - AUG 14 1999 02:17 Ulysses time; weak, 5 s long
Not detected by Konus.

Ulysses event - AUG 14 1999 12:06* Ulysses time; weak, 64 ms long
There was a large multi-peaked solar trigger at 12:06:49.161, which
will have prevented Konus detecting other events near that time.

Ulysses event - AUG 16 1999 00:35 Ulysses time; weak, 30 s long
Not detected by Konus.

Ulysses event - AUG 16 1999 17:50 Ulysses time; weak, 10 s long
Not detected by Konus.

Ulysses event - AUG 26 1999 16:11* Ulysses time; weak, 64 ms long
Not detected by Konus.

Ulysses event - AUG 27 1999 04:05* Ulysses time; weak, 64 ms long
There is an SGR-like signal in the Konus waiting mode data collected
in the single timebin from 03:32:05.834 to 03:32:08.778.

Ulysses event - AUG 28 1999 19:09 Ulysses time; moderate, 3 s long
There was a Konus trigger at 19:27:00.016 in the south-facing
detector. The event consisted of a single peak lasting 1 second.

Ulysses event - SEP 06 1999 00:10 Ulysses time; moderate, 10 s long
Not detected by Konus.

Ulysses event - SEP 06 1999 14:35* Ulysses time; weak, 32 ms long
Not detected by Konus.

Ulysses note: '*looks like an SGR, but which one?'

From HENZE@fender.msfc.nasa.gov Fri Aug 27 09:52 PDT 1999
Date: Fri, 27 Aug 1999 11:58:40 -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, 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.: 7738

TIME: TJD=1416 SECONDS=40028

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

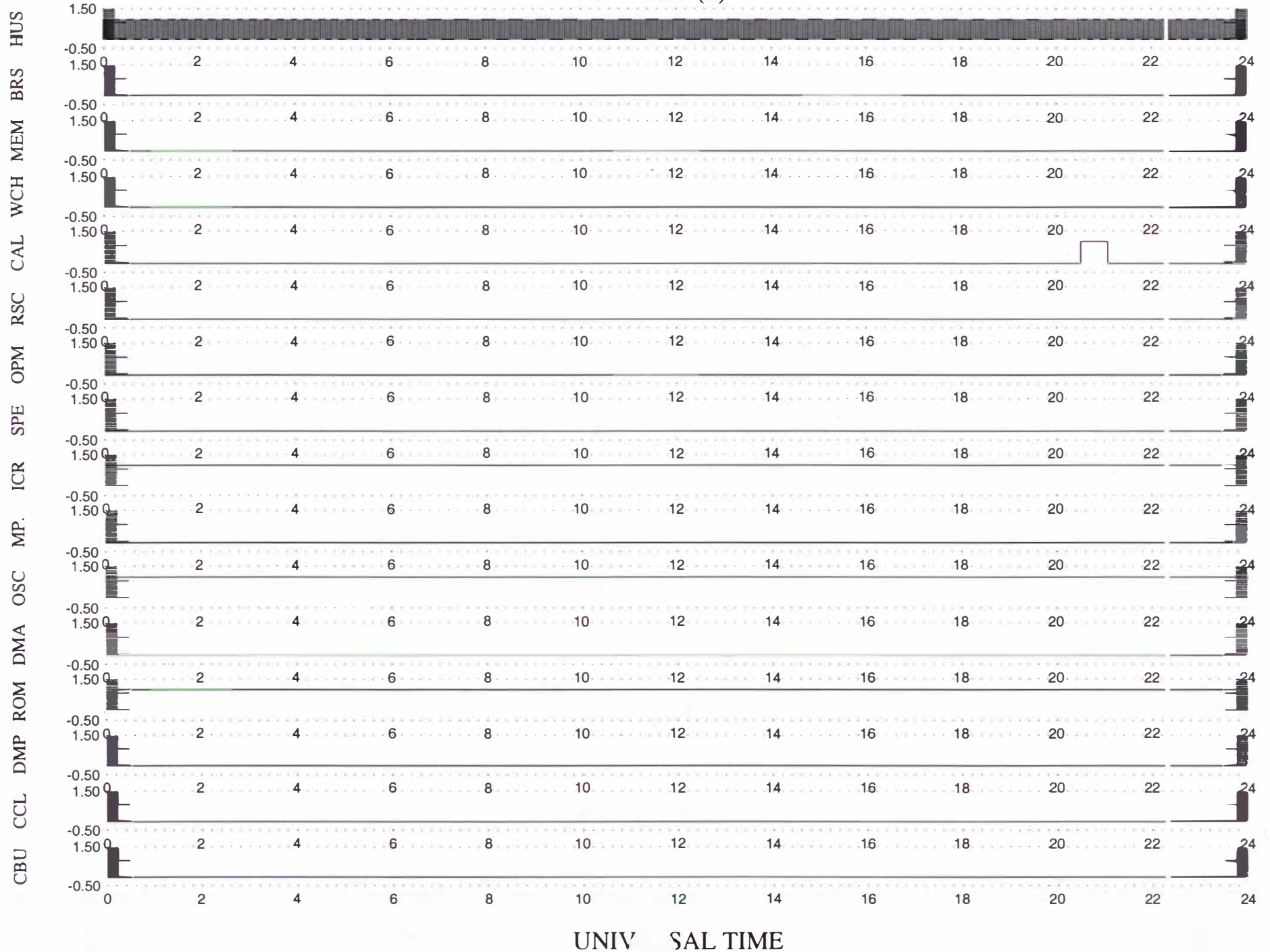
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.7 AZIMUTH=342.3 ERROR= 0.1 DEGREES

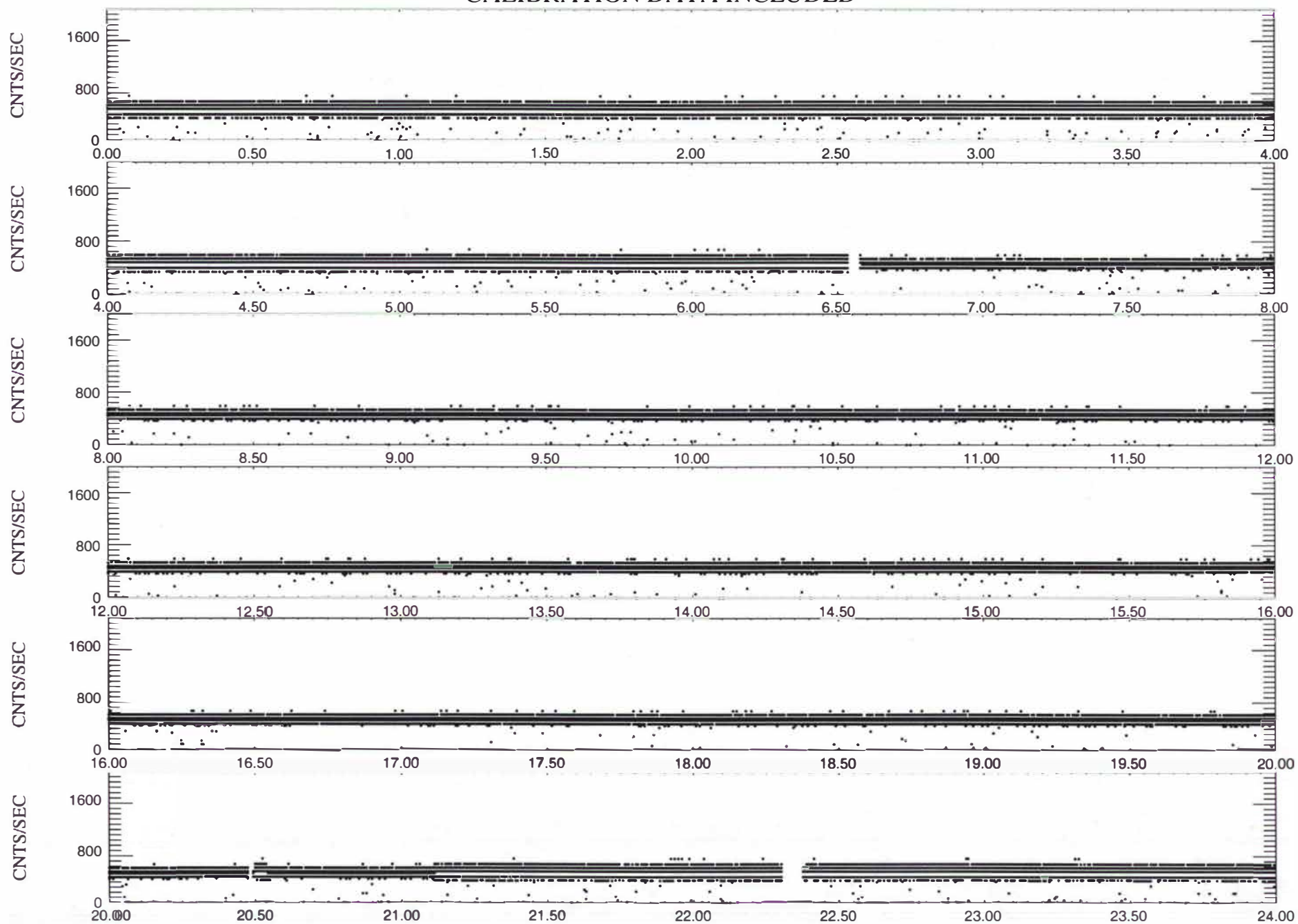
COMMENTS:

GOES C4.4, OPTICAL SN FLARE. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 150 S, STARTS AT APPROX. T-25 S, MAX AT APPROX. T+33 S. NOT VISIBLE ABOVE 300 KEV. CYG X-1 RISE AT APPROX. T+130 S (MOSTLY IN DETS. 0,4).

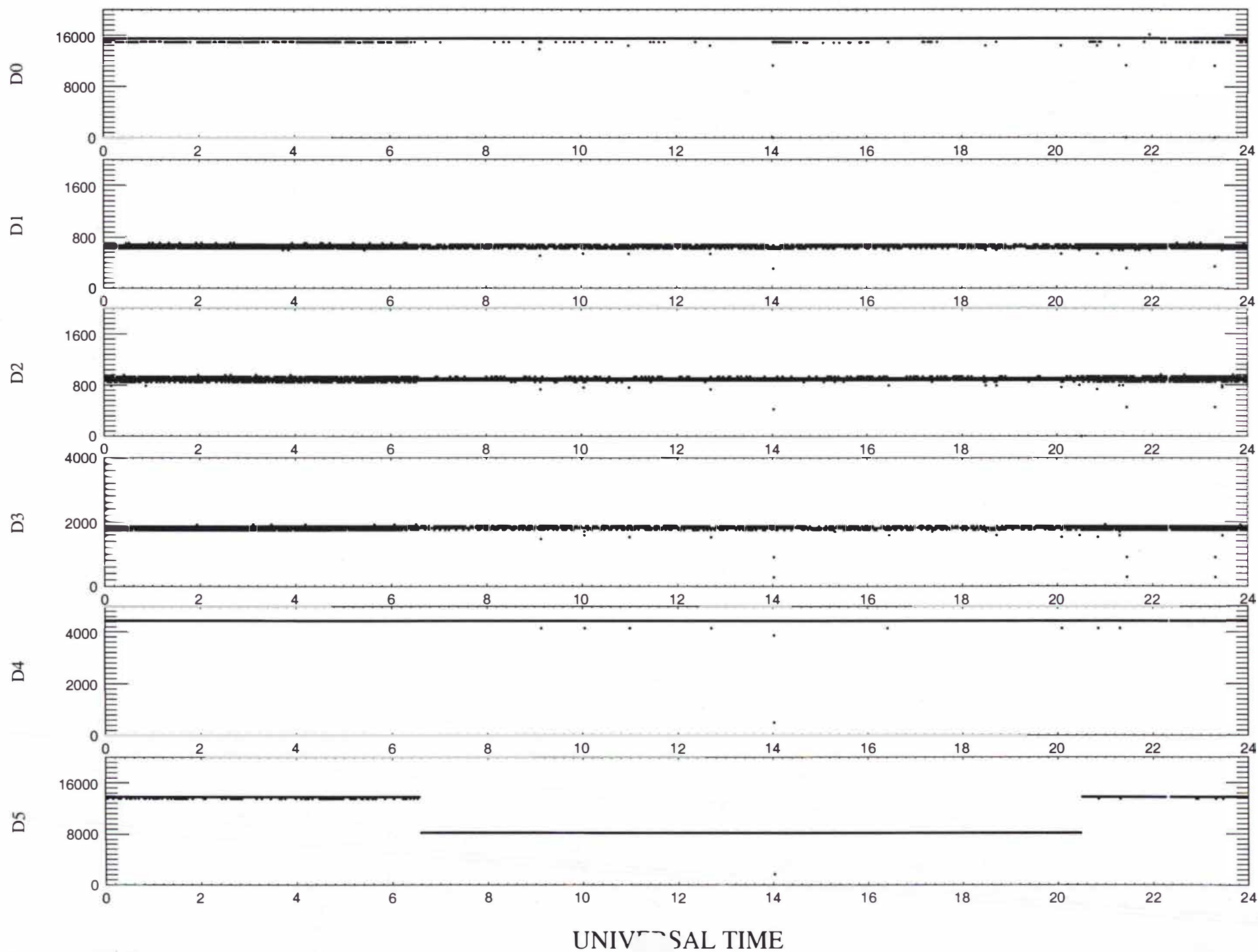
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



KONUS

ULYSSES RT

21 / 01 / 00

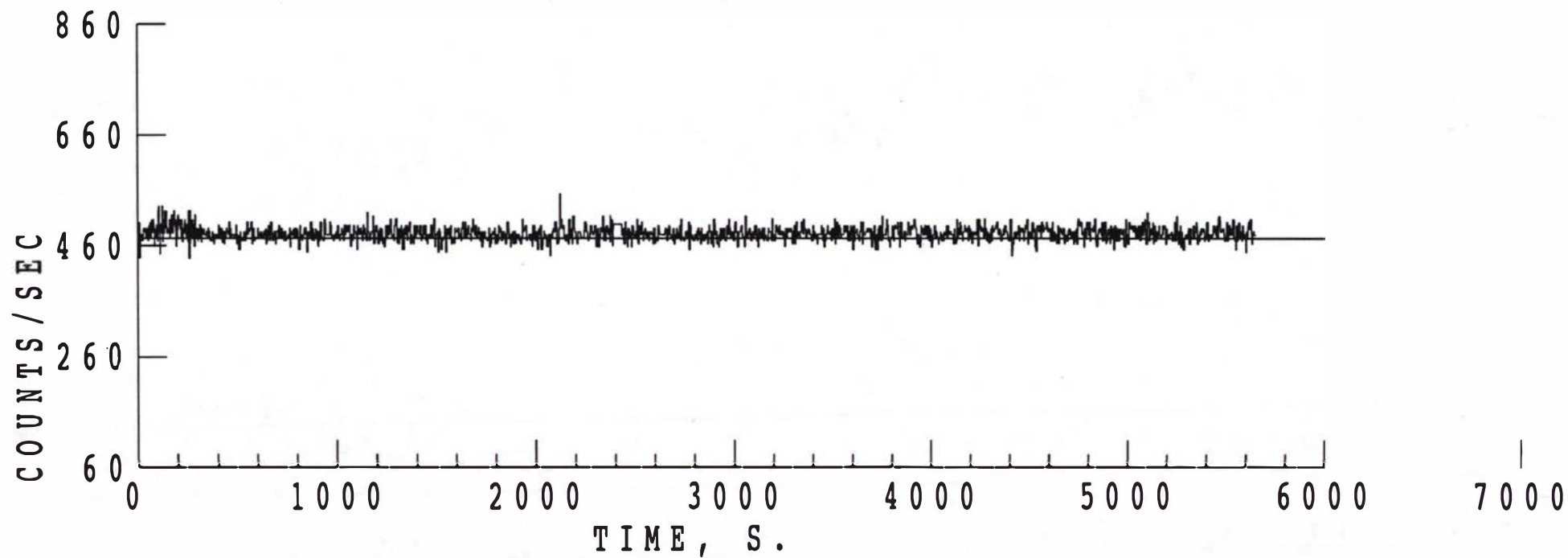
27 / 08 / 99 17172.389 s

INTERVALS REGROUPED BY 8

0 - 0 keV

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



SAX GRBM

HUS DATA

19 / 07 / 05

ULYSSES RT

27/08/99 69372.367 s

INTERVALS REGROUPED BY 8

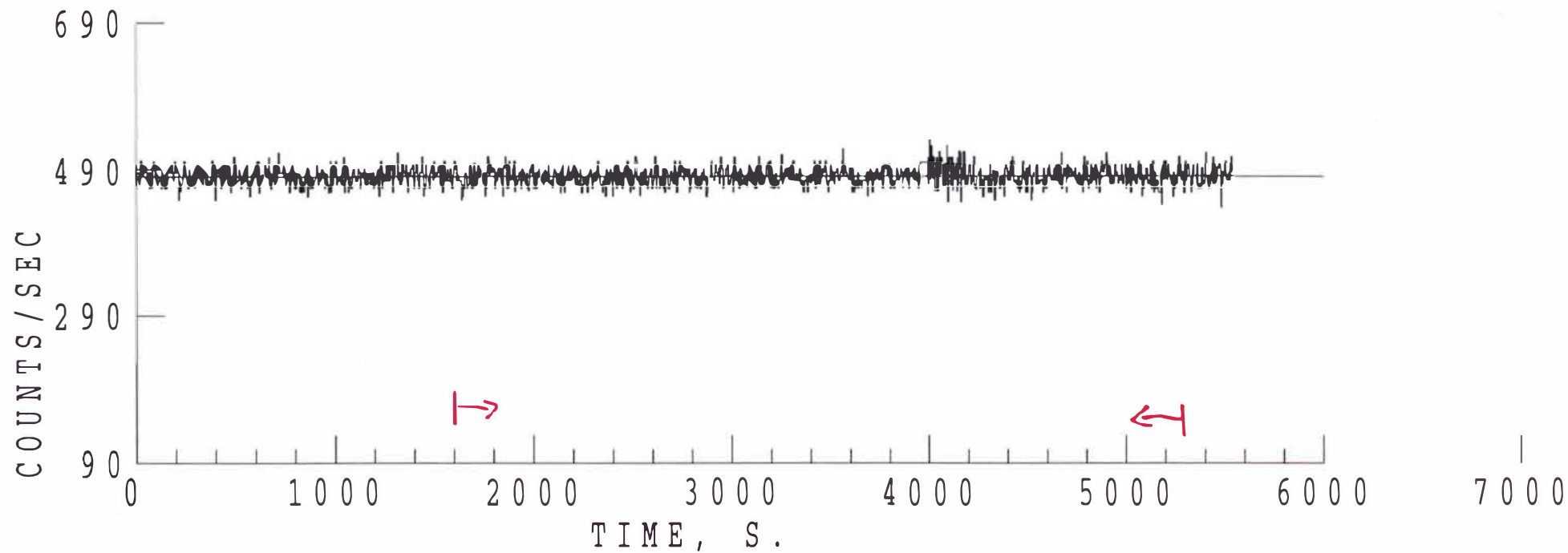
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From BUTTERWORTH@tgrs2.gsfc.nasa.gov Mon Sep 13 12:51 PDT 1999

Date: Mon, 13 Sep 1999 15:58:20 -0400

From: BUTTERWORTH@tgrs3.gsfc.nasa.gov

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, cline@apache.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, TEEGARDEN@tgrs3.gsfc.nasa.gov

CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov

Subject: Konus report for recent Ulysses gamma-ray events not reported by BATSE

Hi Everyone,

Here is the Konus report for those events recently seen by Ulysses, but not reported by BATSE.

Paul.

Ulysses event - AUG 14 1999 02:17	Ulysses time;	weak, 5 s long
Not detected by Konus.		
Ulysses event - AUG 14 1999 12:06*	Ulysses time;	weak, 64 ms long
There was a large multi-peaked solar trigger at 12:06:49.161, which will have prevented Konus detecting other events near that time.		
Ulysses event - AUG 16 1999 00:35	Ulysses time;	weak, 30 s long
Not detected by Konus.		
Ulysses event - AUG 16 1999 17:50	Ulysses time;	weak, 10 s long
Not detected by Konus.		
Ulysses event - AUG 26 1999 16:11*	Ulysses time;	weak, 64 ms long
Not detected by Konus.		
Ulysses event - AUG 27 1999 04:05*	Ulysses time;	weak, 64 ms long
There is an SGR-like signal in the Konus waiting mode data collected in the single timebin from 03:32:05.834 to 03:32:08.778.		
Ulysses event - AUG 28 1999 19:09	Ulysses time;	moderate, 3 s long
There was a Konus trigger at 19:27:00.016 in the south-facing detector. The event consisted of a single peak lasting 1 second.		
Ulysses event - SEP 06 1999 00:10	Ulysses time;	moderate, 10 s long
Not detected by Konus.		
Ulysses event - SEP 06 1999 14:35*	Ulysses time;	weak, 32 ms long
Not detected by Konus.		

Ulysses note: '*looks like an SGR, but which one?'

From GOGUSE@fender.msfc.nasa.gov Mon Aug 30 09:29 PDT 1999

From: GOGUSE@fender.msfc.nasa.gov

Date: Mon, 30 Aug 1999 11:35:32 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, 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.: 7739

TIME: TJD=1417 SECONDS=44398

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.1 AZIMUTH=343.6 ERROR= 0.8 DEGREES

COMMENTS:

SOLAR FLARE, NO GOES, NO OPTICAL

DURATION APP. 12 SEC., VISIBLE ABOVE 100 KEV

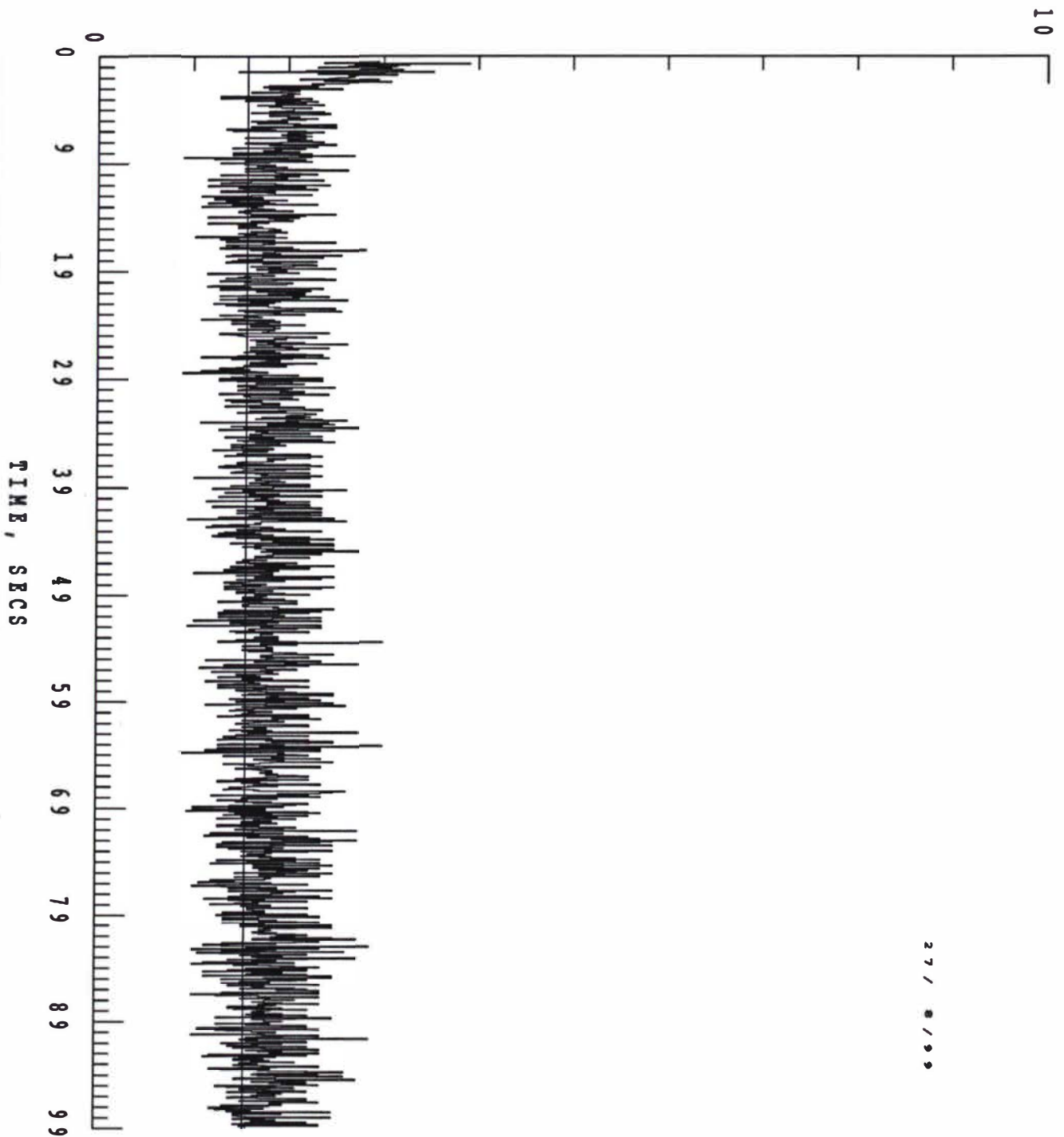
KONUS

27/08/99

49510.018

50 - 200 keV

COUNTS/0.064 S



27 / 8 / 99

KONUS2 19990827 49510

ULYSSES RT

30 / 8 / 99

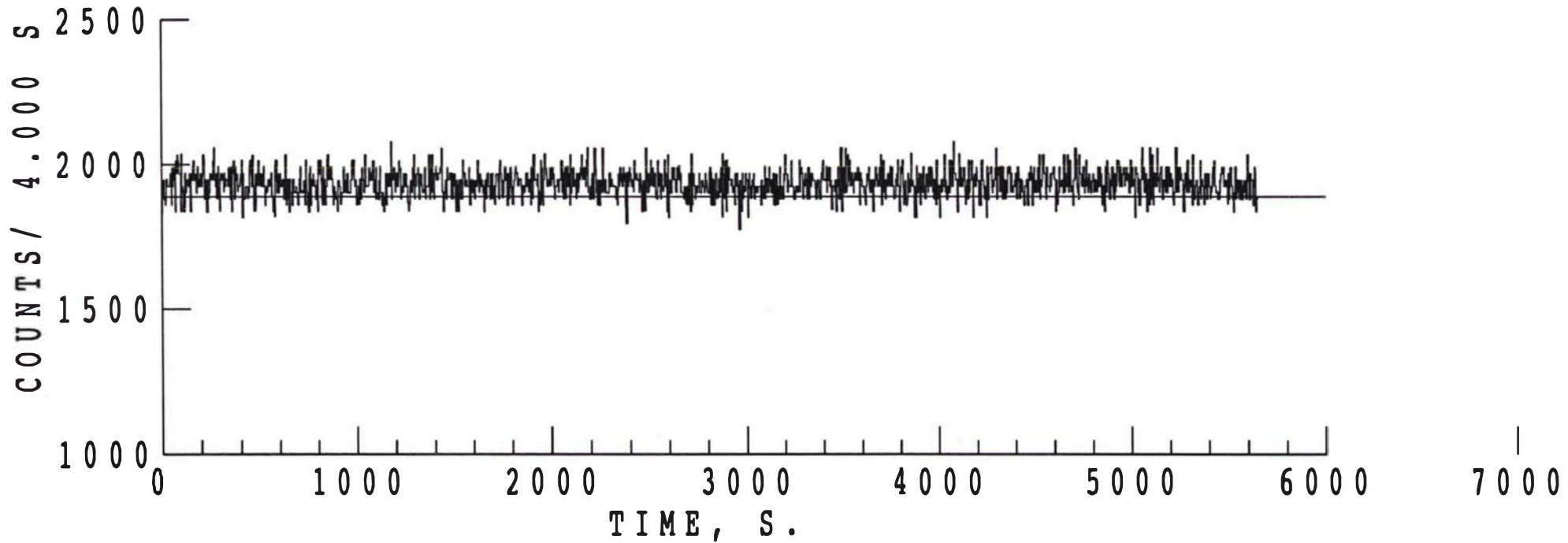
27 / 8 / 99 46692.141 s

0.500 S INTERVALS REGROUPED BY 8

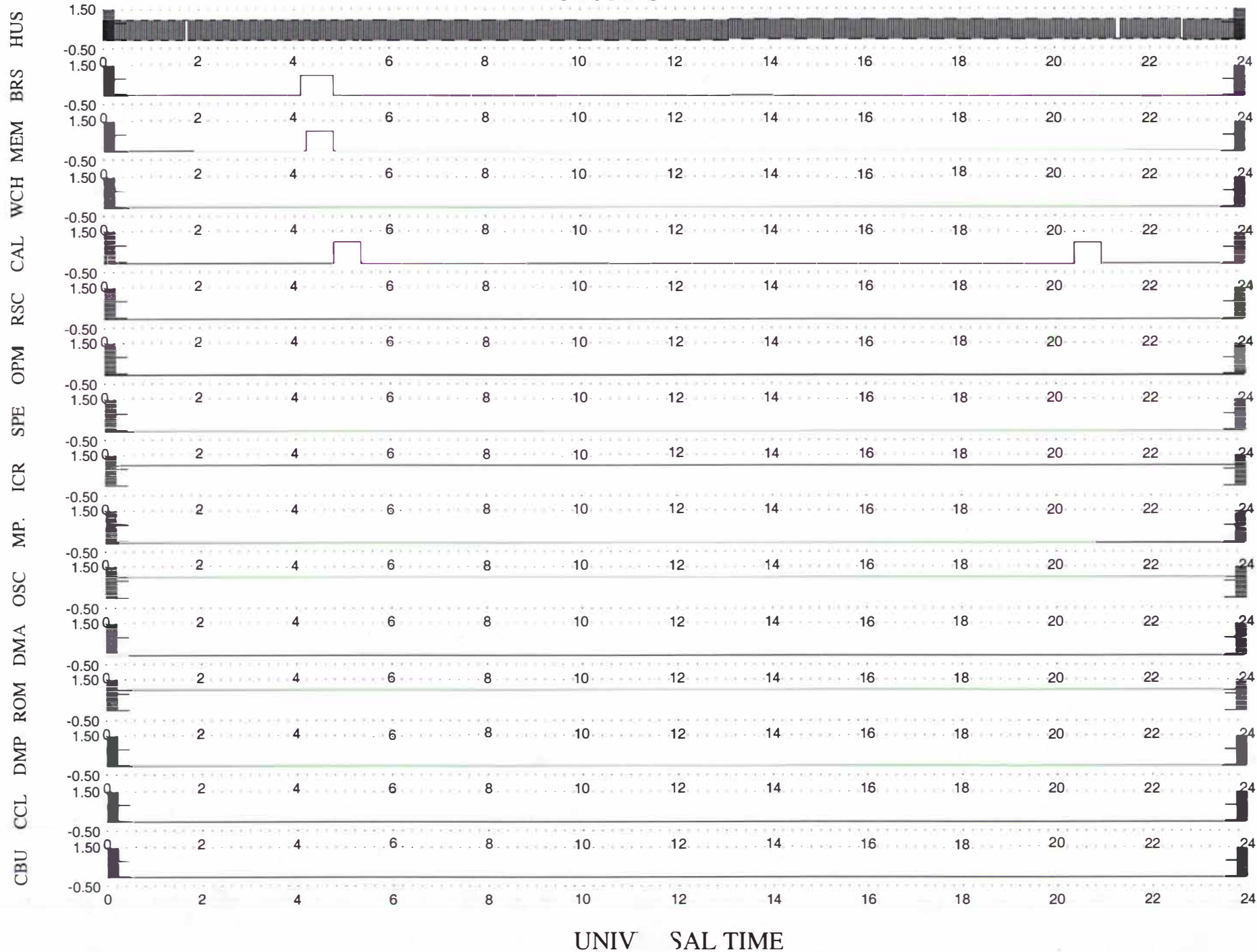
0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

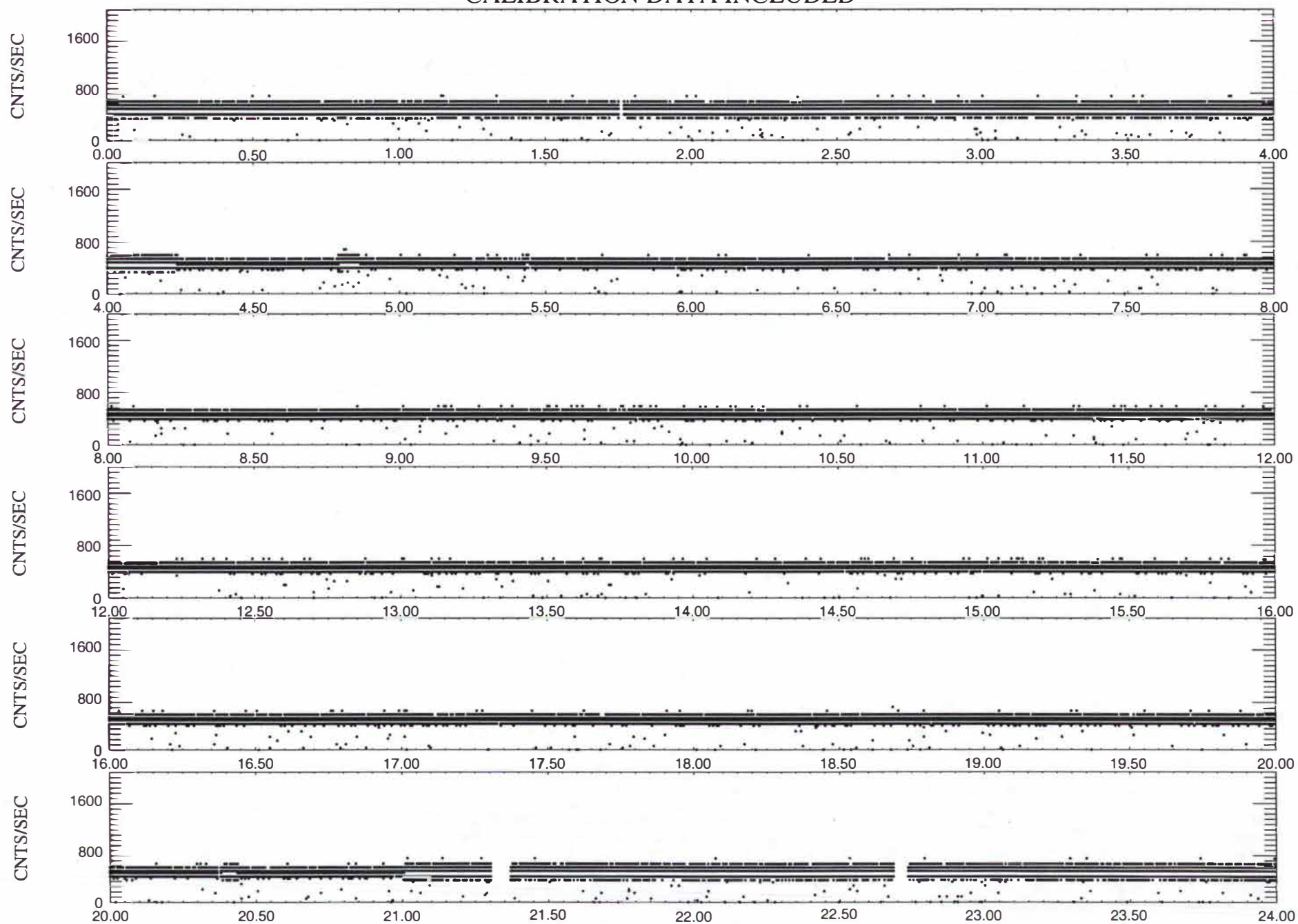
W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BURST NUMBER 5

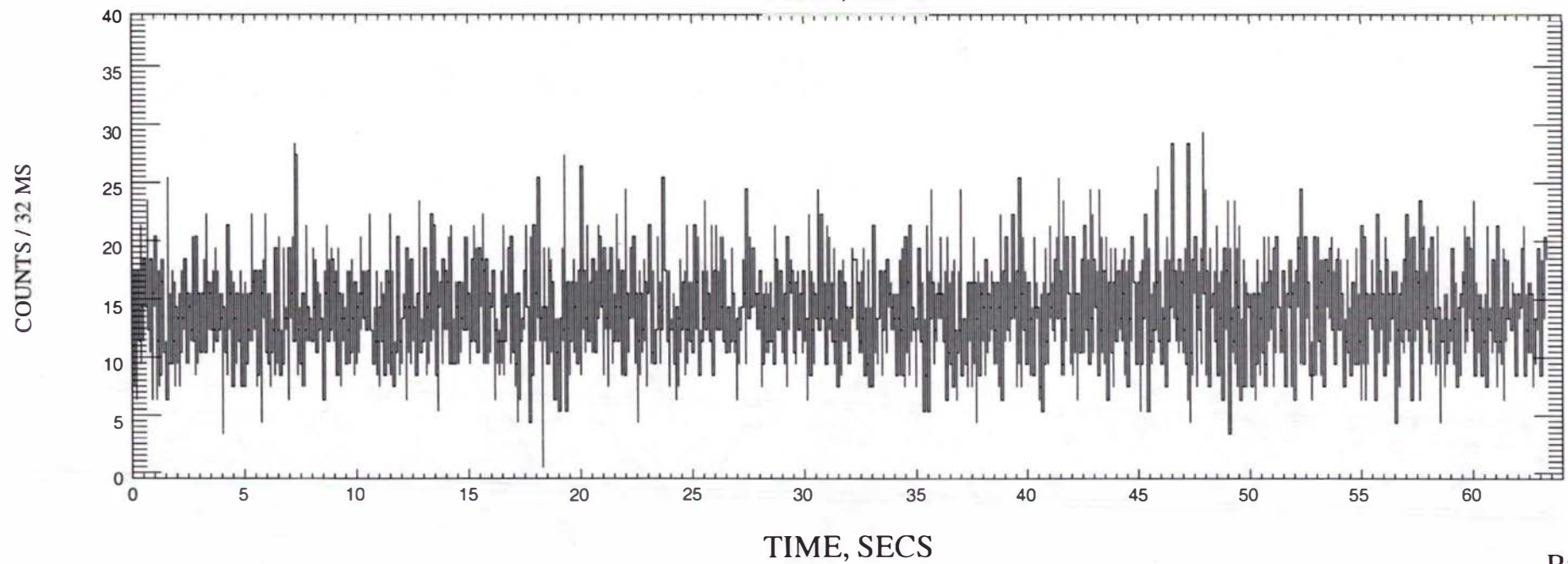
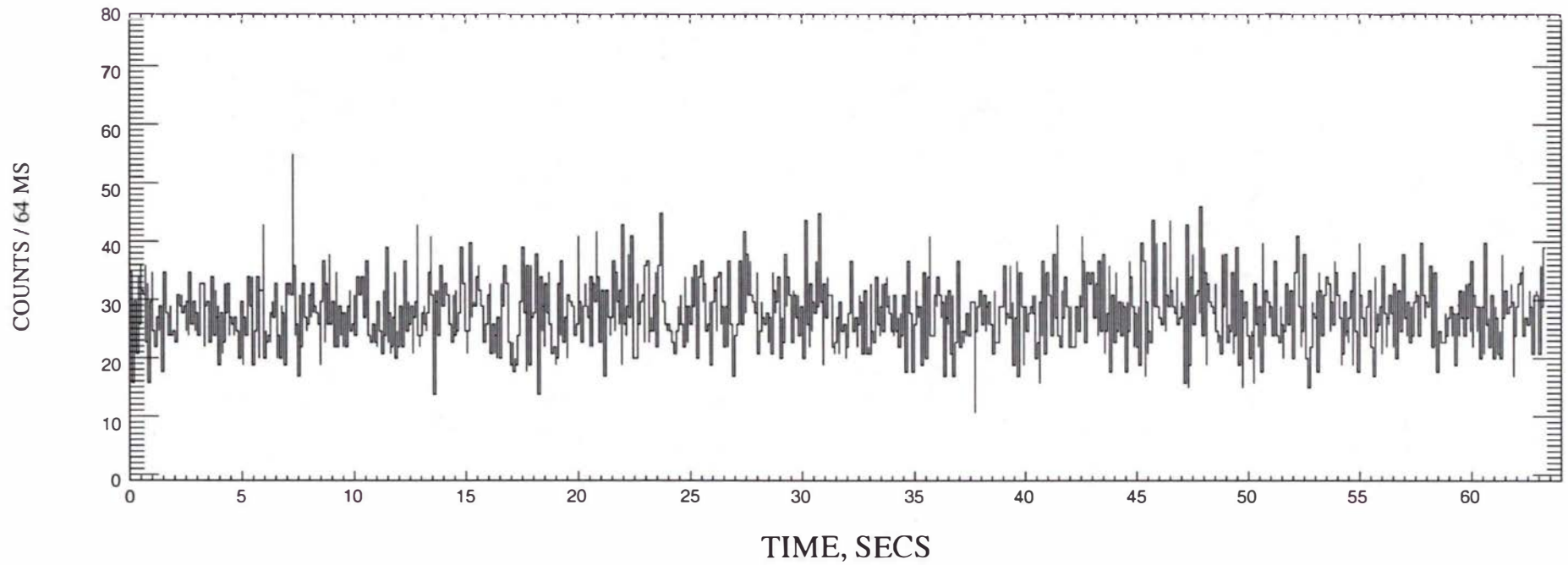


CALIBRATION DATA INCLUDED

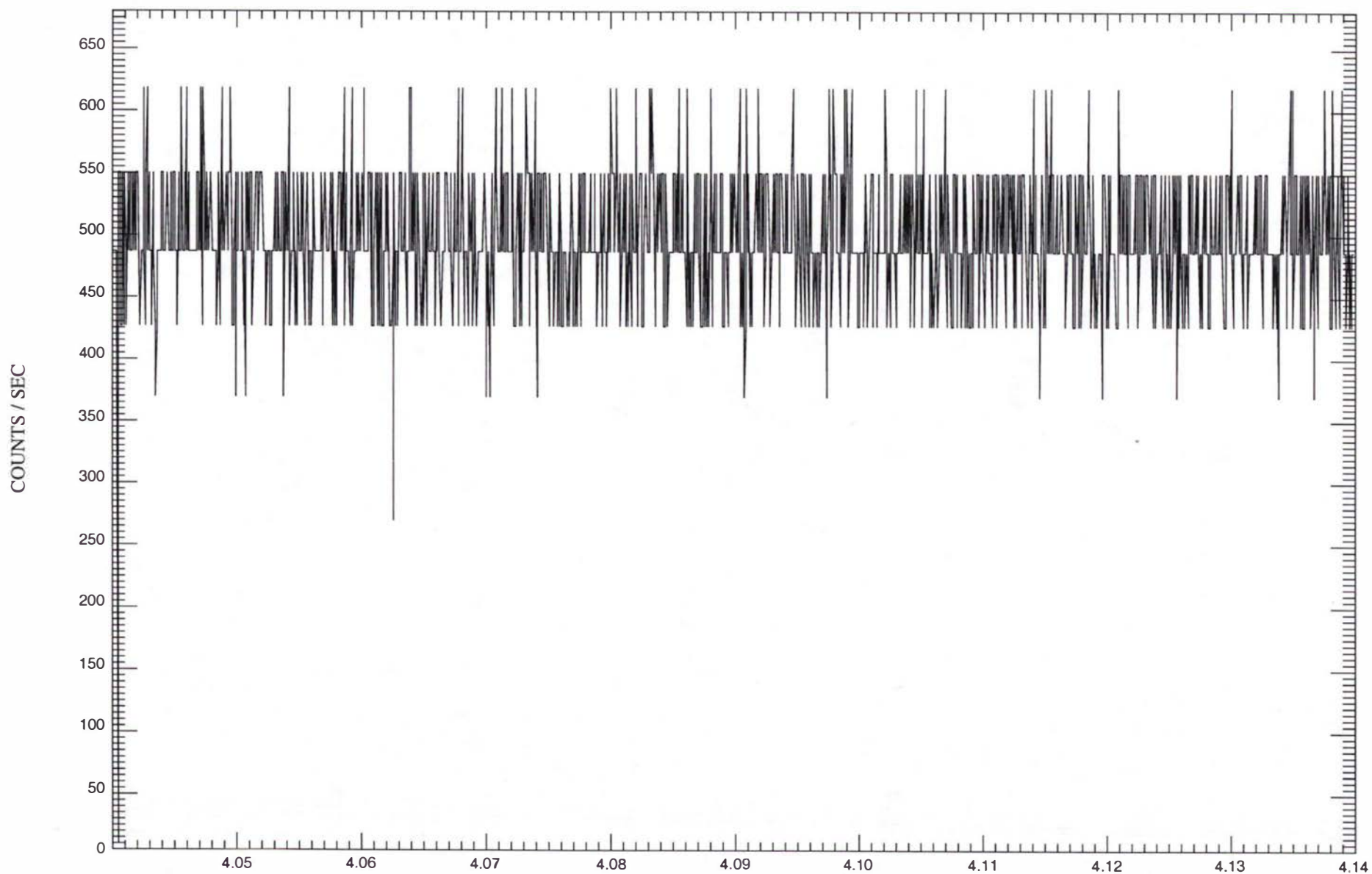


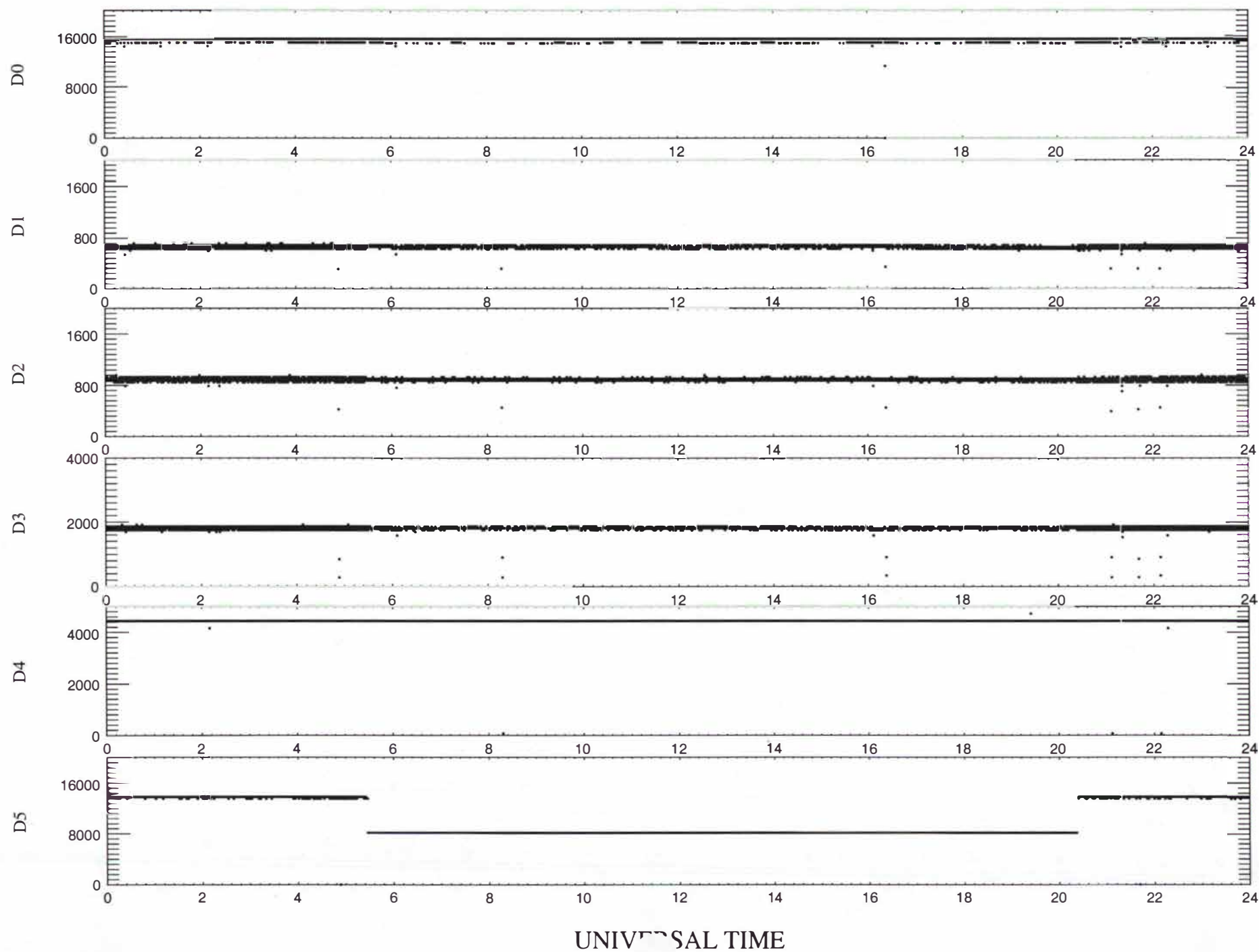
UNIVERSAL TIME

Burst Counter 5 at UT= 4.088188412984 h=14717.478 s 04:05:17.478



CALIBRATION DATA INCLUDED





From BUTTERWORTH@tgrs2.gsfc.nasa.gov Mon Sep 13 12:51 PDT 1999

Date: Mon, 13 Sep 1999 15:58:20 -0400

From: BUTTERWORTH@tgrs3.gsfc.nasa.gov

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, cline@apache.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, TEEGARDEN@tgrs3.gsfc.nasa.gov

CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov

Subject: Konus report for recent Ulysses gamma-ray events not reported by BATSE

Hi Everyone,

Here is the Konus report for those events recently seen by Ulysses, but not reported by BATSE.

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Not detected by Konus.		
Ulysses event - AUG 26 1999 16:11*	Ulysses time;	weak, 64 ms long
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Ulysses event - SEP 06 1999 14:35*	Ulysses time;	weak, 32 ms long
Not detected by Konus.		

Ulysses note: '*looks like an SGR, but which one?'

From PETERSON@fender.msfc.nasa.gov Tue Aug 31 05:55 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Tue, 31 Aug 1999 8:02:19 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.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, 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.: 7740

TIME: TJD=1418 SECONDS= 3303

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.7 AZIMUTH=343.1 ERROR=0.203 DEGREES

COMMENTS:

GOES M2.8, OPTICAL 1F. SINGLE PULSE WITH STRUCTURE, DUR APPROX 320S, STARTS AT
APPROX T-40S, MAX AT APPROX T+100S. NOT VISIBLE ABOVE 300 KEV. CYG X-1 RISE AT
APPROX T+66S. CRAB SET AT APPROX T+450S.

KONUS

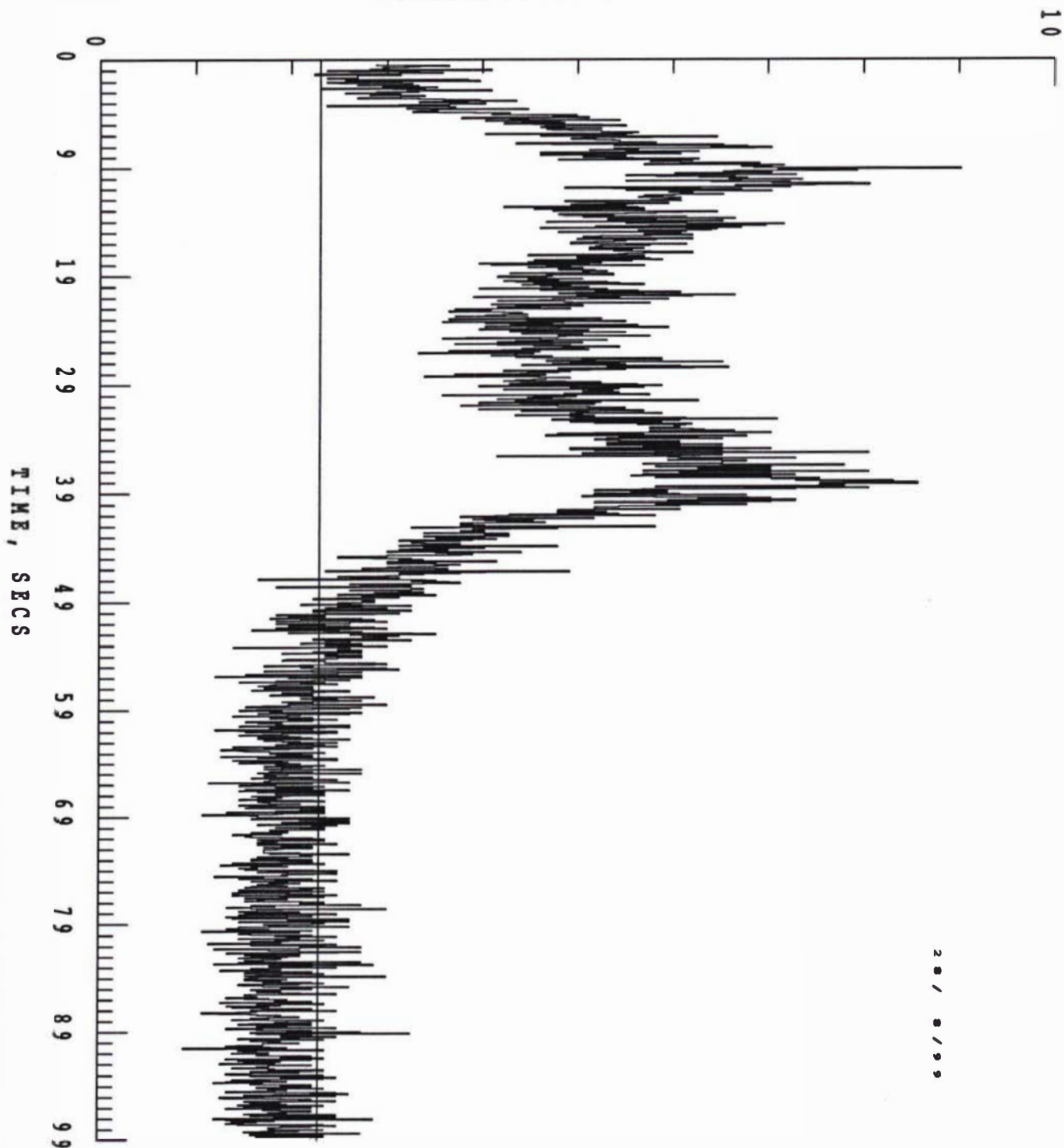
28/08/99

3362.083

50 - 200 keV

Solar - BATSE 7740

COUNTS/0.064 S



KONUS2 19990828 03362

ULYSSES RT

30 / 8 / 99

28 / 8 / 99 540.049 s

0.250 S INTERVALS REGROUPED BY 16

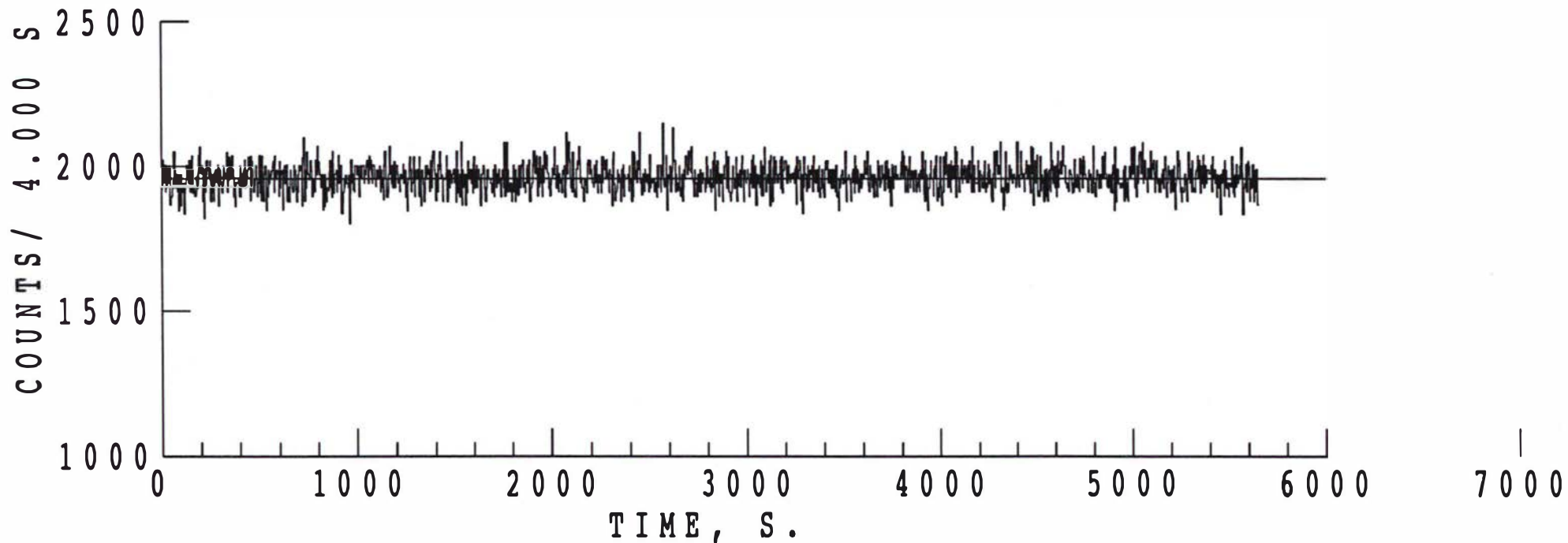
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Aug 31 12:51 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 31 Aug 1999 14:57:57 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7741

BATSEARCH PROGRAM

BATSE BURST # 7741
EVENT OF 1999 AUG 28 DAY OF YEAR=240
EVENT CROSSING TIME AT BATSE : 49224. S. OR 13:40:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 249.000 -13.000
BATSE PEAK COUNTING RATE: 1800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 8/ 99 IS:
RA= 154.620 DEC= -12.342 DIST= 5.544 AU
BATSE-ULYSSES DISTANCE = 829389984. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 68.11 SECS.
CROSSING TIME AT ULYSSES IS 49292. S. OR 13:41:32 +/- 531.20 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 8/ 99 IS:
RA= 233.672 DEC= -21.077 DIST= 1.165 AU
MARS-BATSE DISTANCE = 174331632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=163.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -556.93 SECS.
CROSSING TIME AT MARS IS 48667. S. OR 13:31:07 +/- 20.58 SECONDS

BATSE BURST TRIGGER

NO.: 7741

TIME: TJD=1418 SECONDS=49224

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.7 AZIMUTH=81.9 ERROR=2.7 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 70 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7741	990828	11418	49224	1800	249	-13	70

BATSE BURST# 7741

ULYSSES RT

31 / 8 / 99

28 / 8 / 99 48744.039 s

0.500 S INTERVALS REGROUPED BY 2

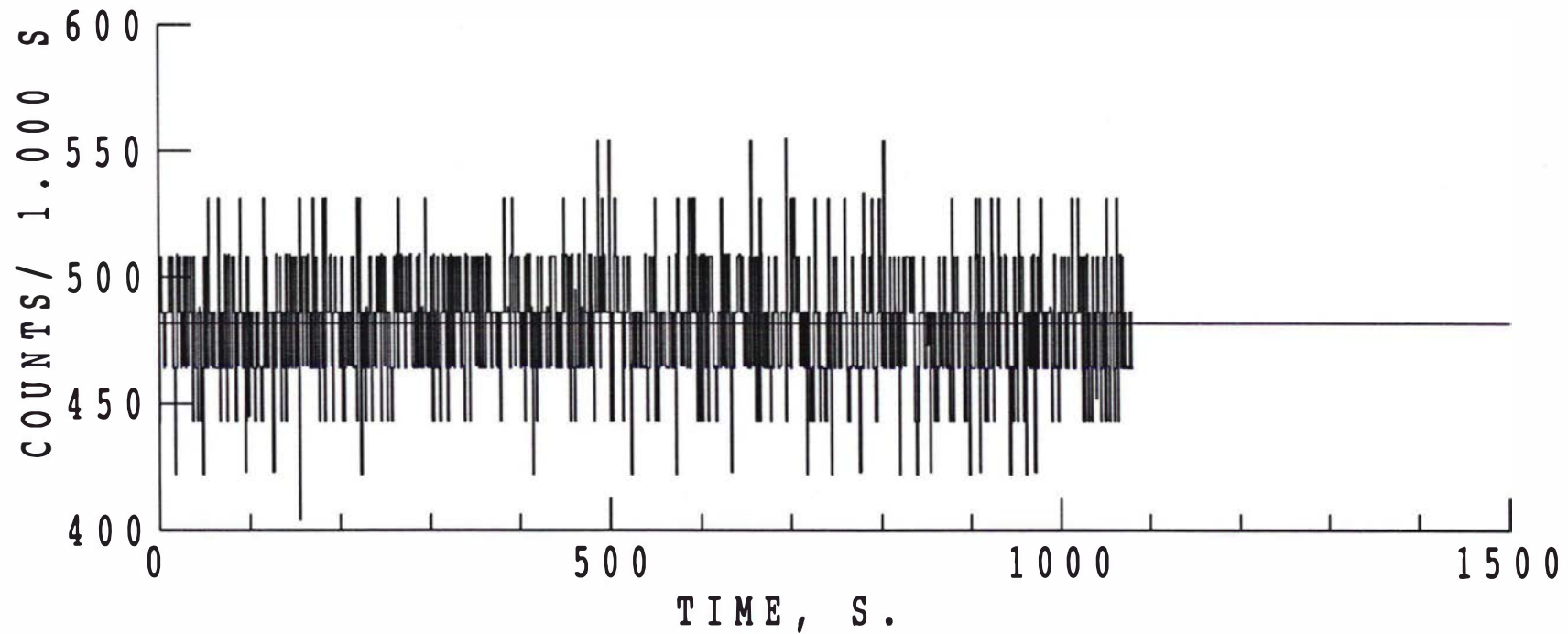
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Aug 31 12:30 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 31 Aug 1999 14:37:31 -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, 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.: 7742

TIME: TJD=1418 SECONDS=64534

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=112.1 AZIMUTH=346.3 ERROR=0.03 DEGREES

COMMENTS:

SOLAR FLARE. GOES. X1.1, OPTICAL 2N. SINGLE PULSE WITH SUBSTRUCTURE, DUR.
GREATER THAN 1000 S, MAX. AT T+223 S. VISIBLE ABOVE 100 KEV.

KONUS

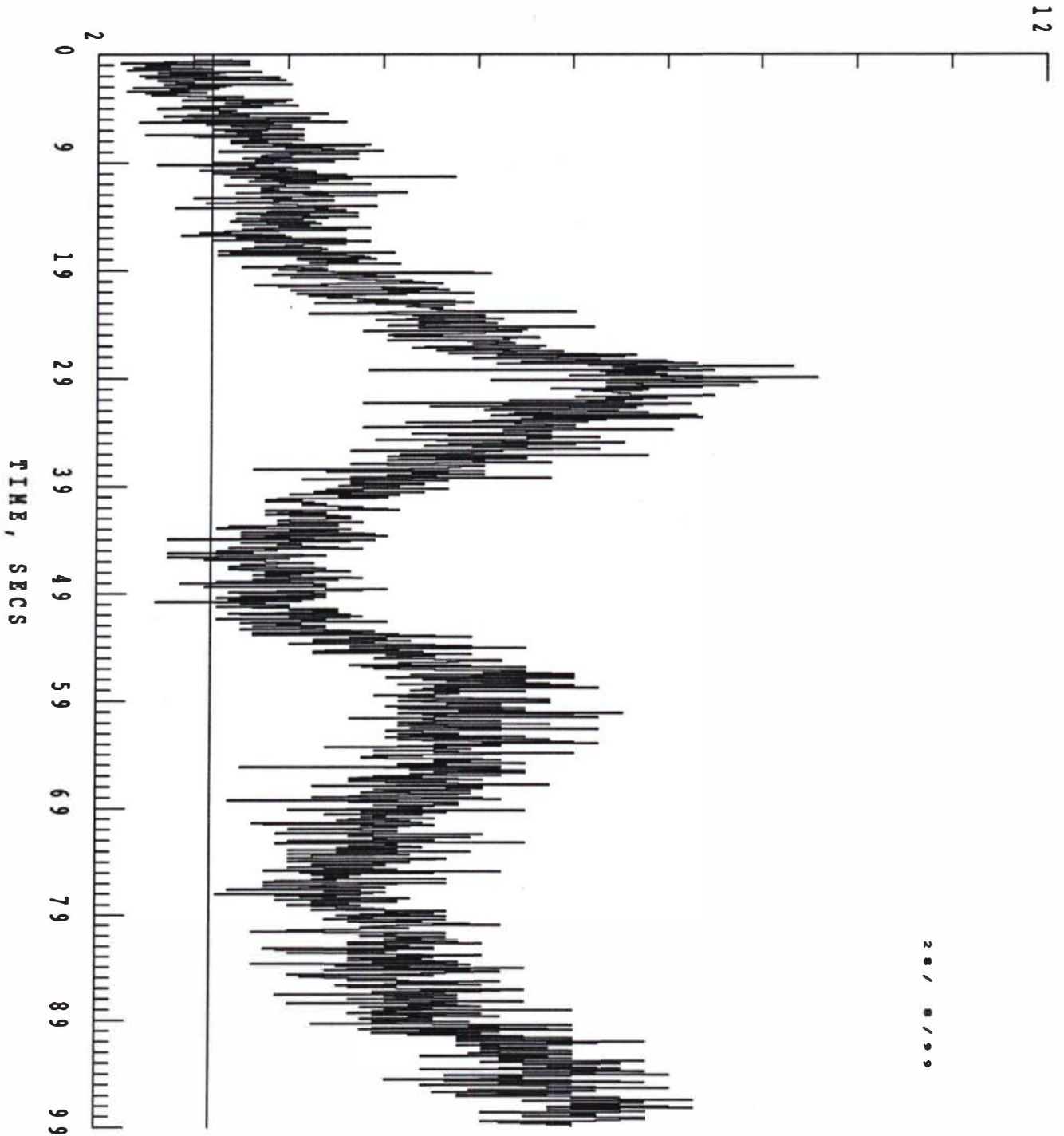
28/08/99

64550.744

50 - 200 keV

Solar - BATSE 7742

COUNTS/0.064 S



KONUS2 19990828 64550

ULYSSES RT

30 / 8 / 99

28 / 8 / 99 61740.168 s

0.500 S INTERVALS REGROUPED BY 8

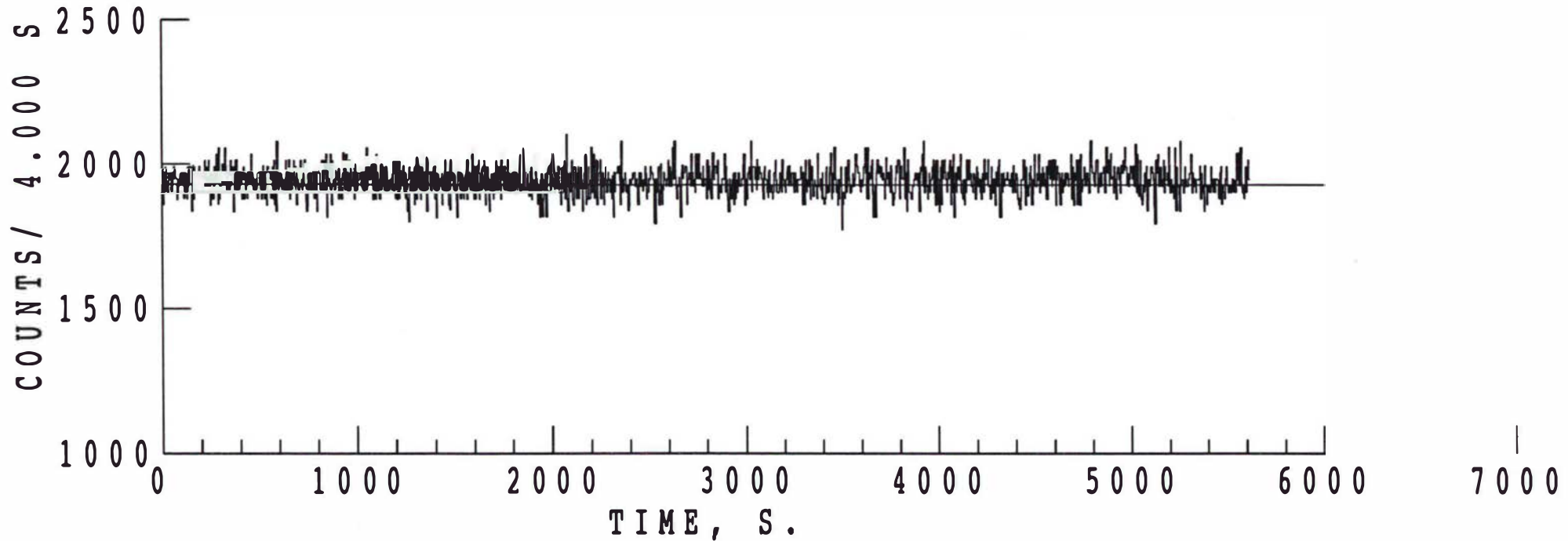
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE time corrected
Date: Sep 26 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?

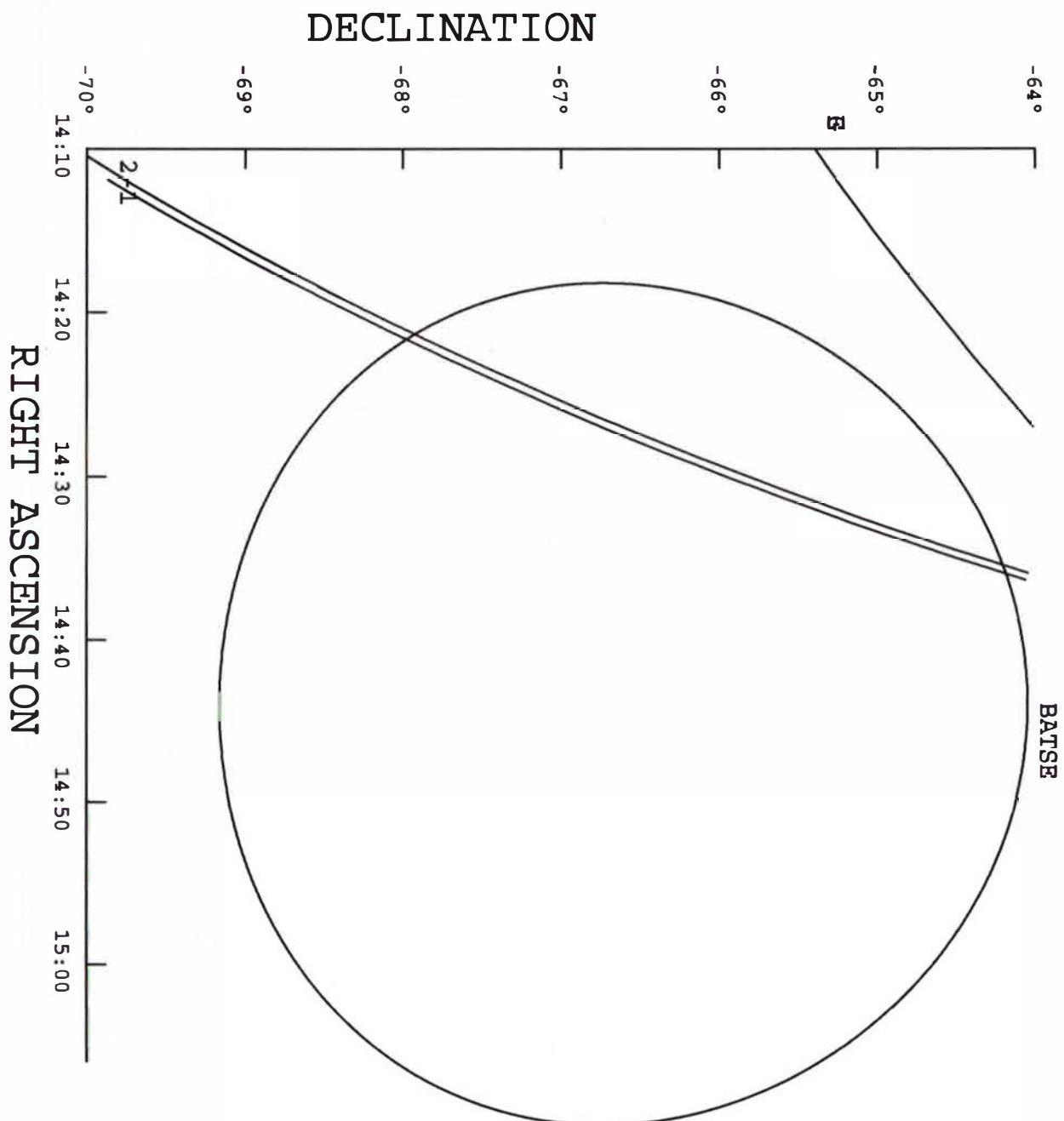
3. NEAR Data

- ☐ 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 AUG 28, 1999 19:26

17/ 6/ 2



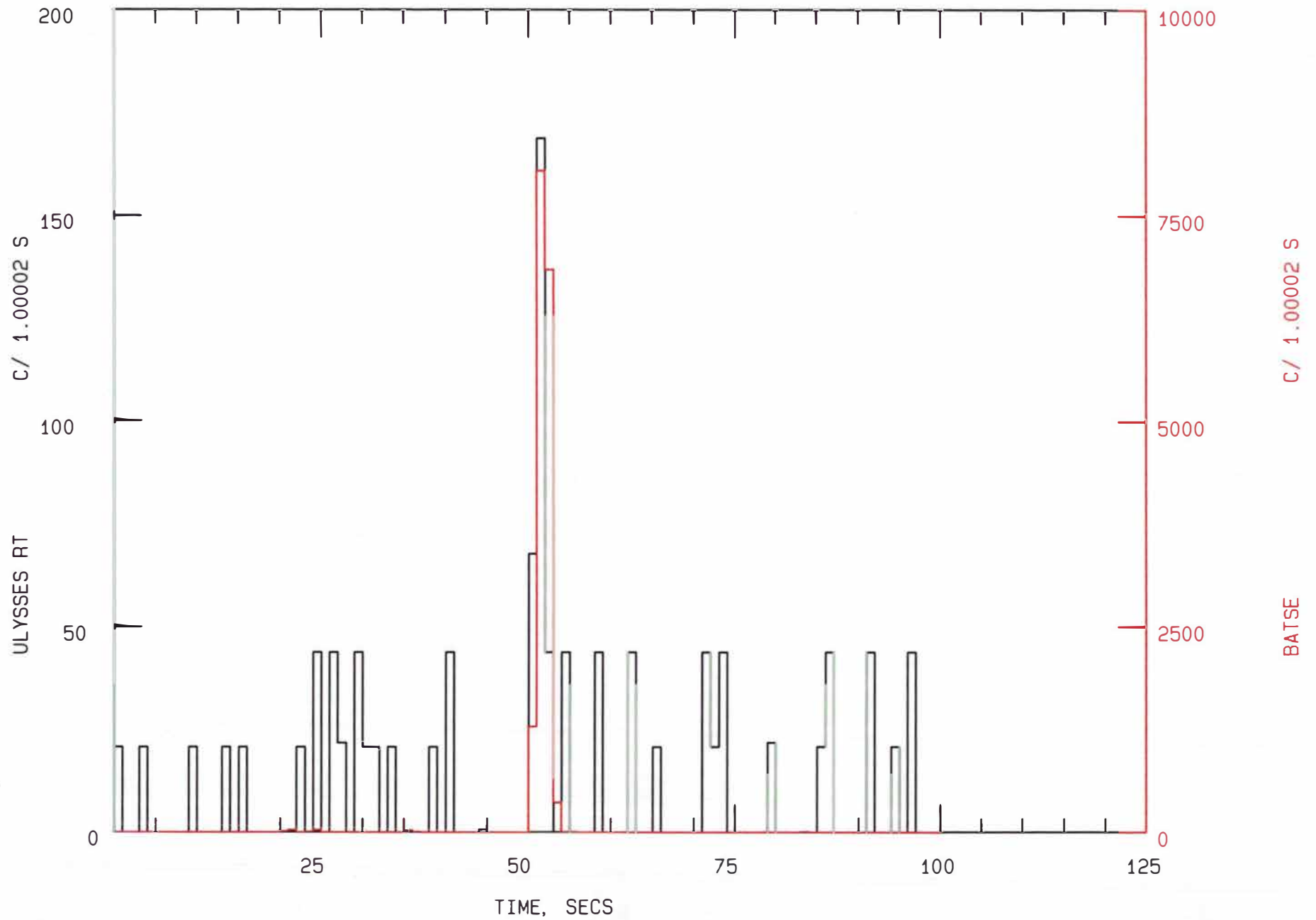
ULYSSES RT-BATSE

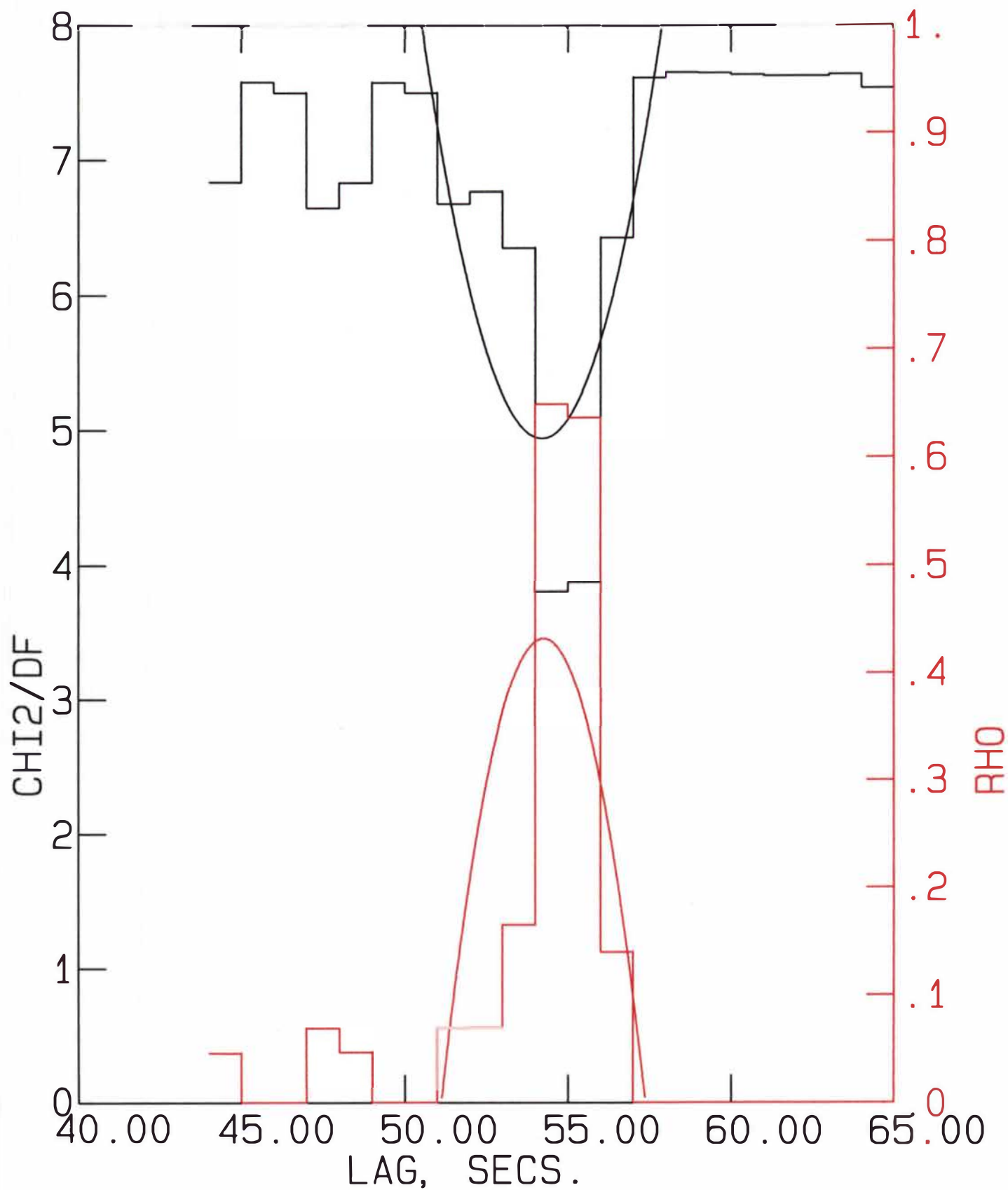
CORRELATION

28/ 8/99

68910.244

17/ 6/ 2





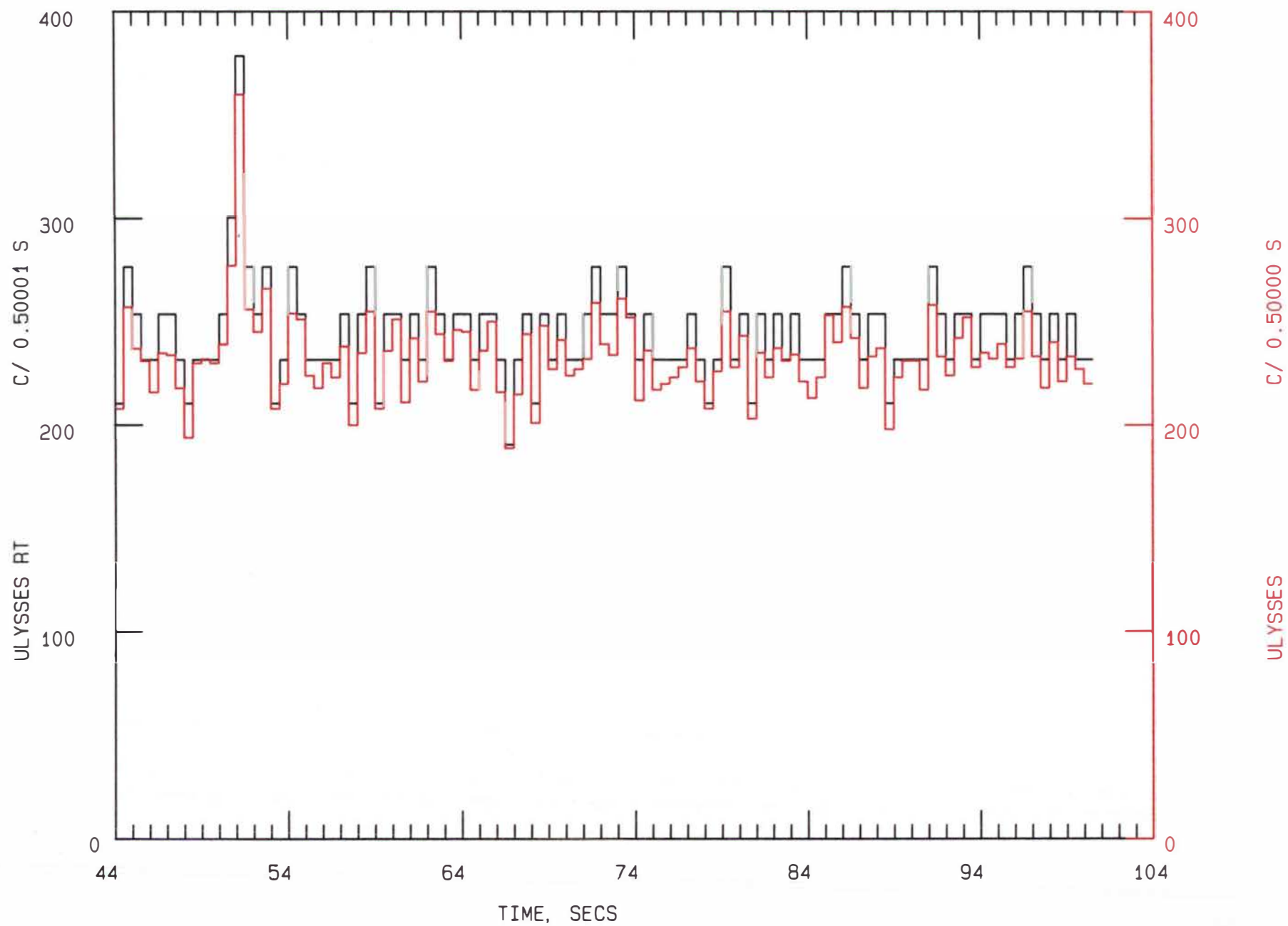
ULYSSES RT-ULYSSES

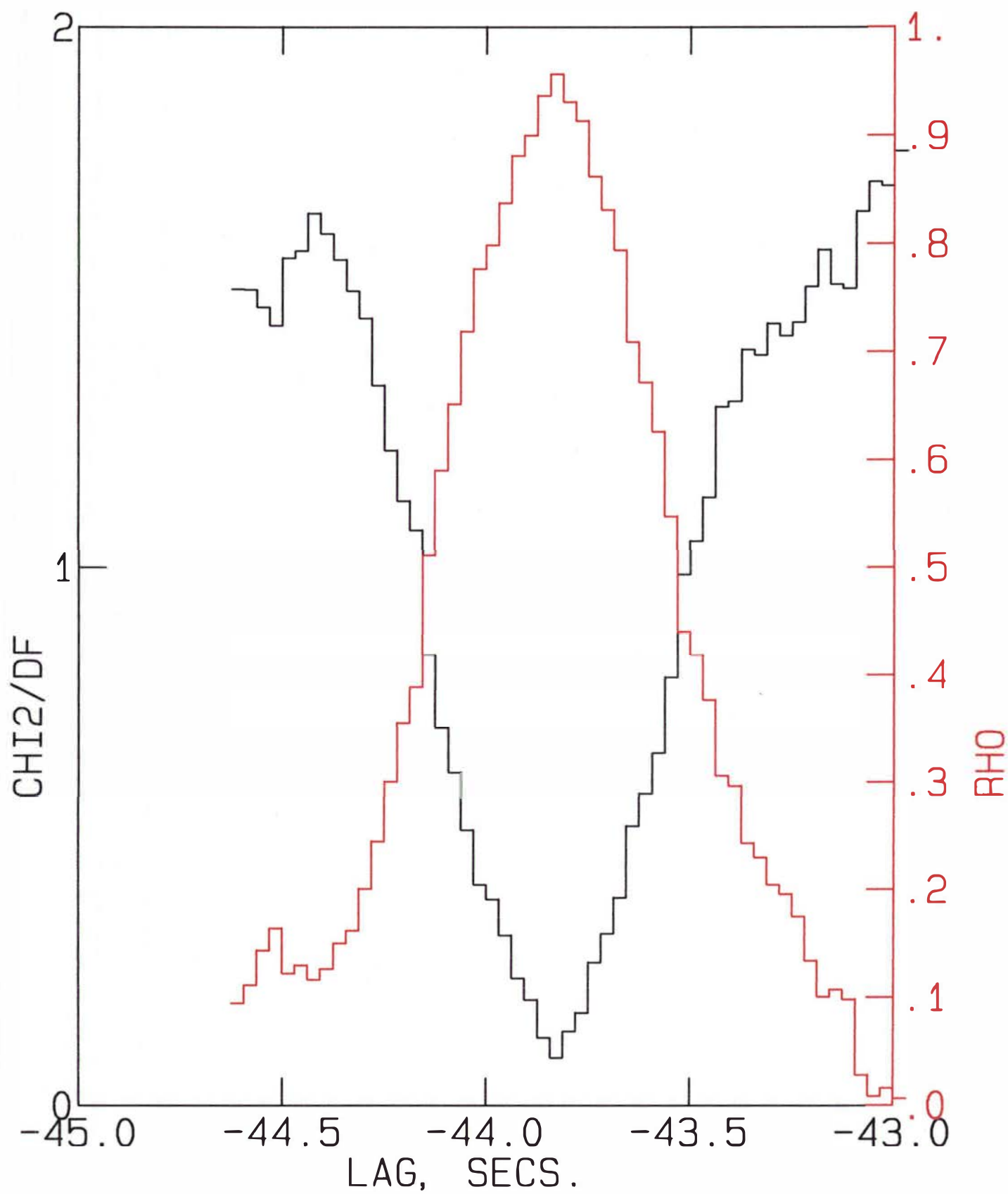
CORRELATION

28/ 8/99

68910.244

17/ 6/ 2

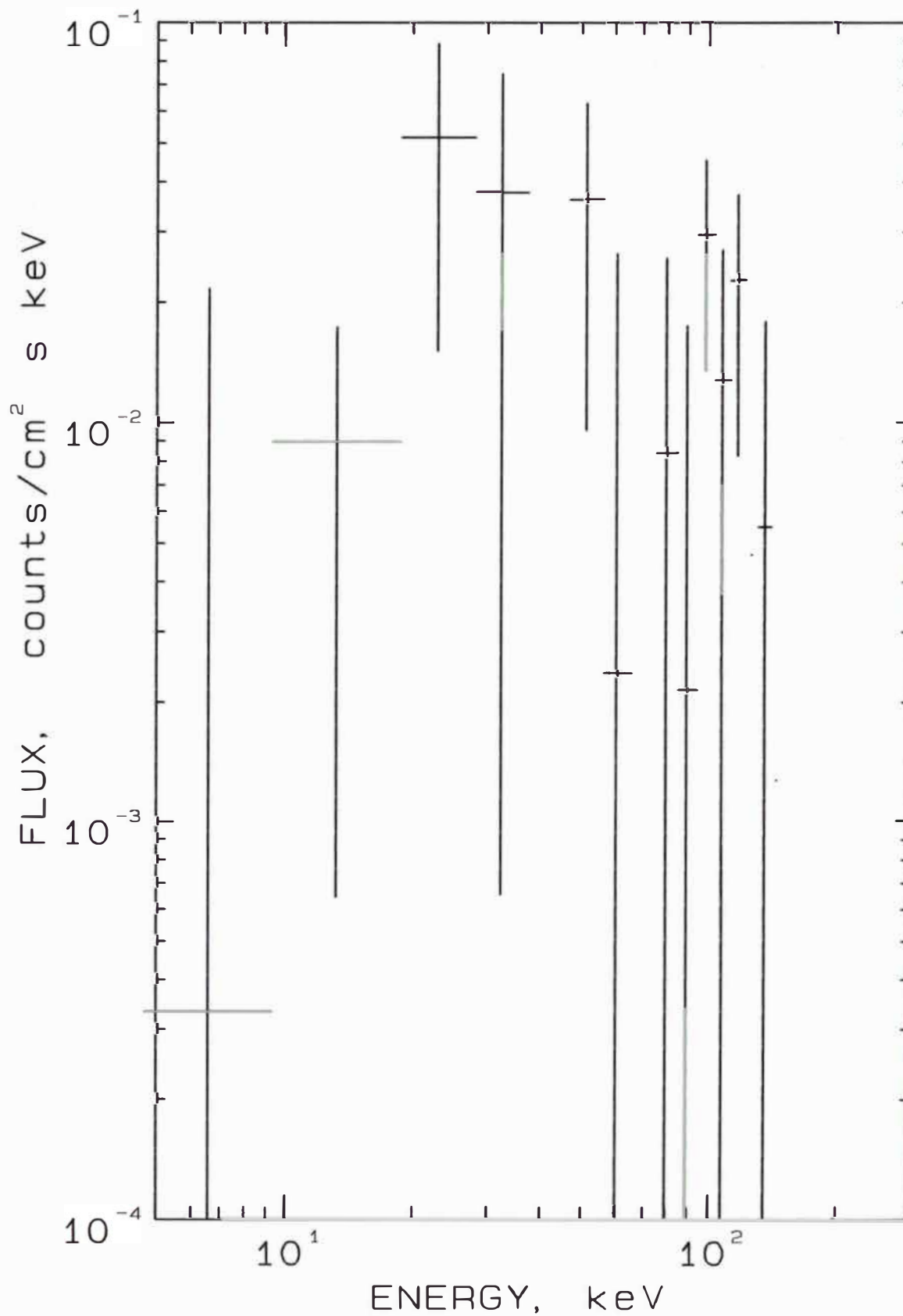




ULYSSES 28/08/99 68961.470

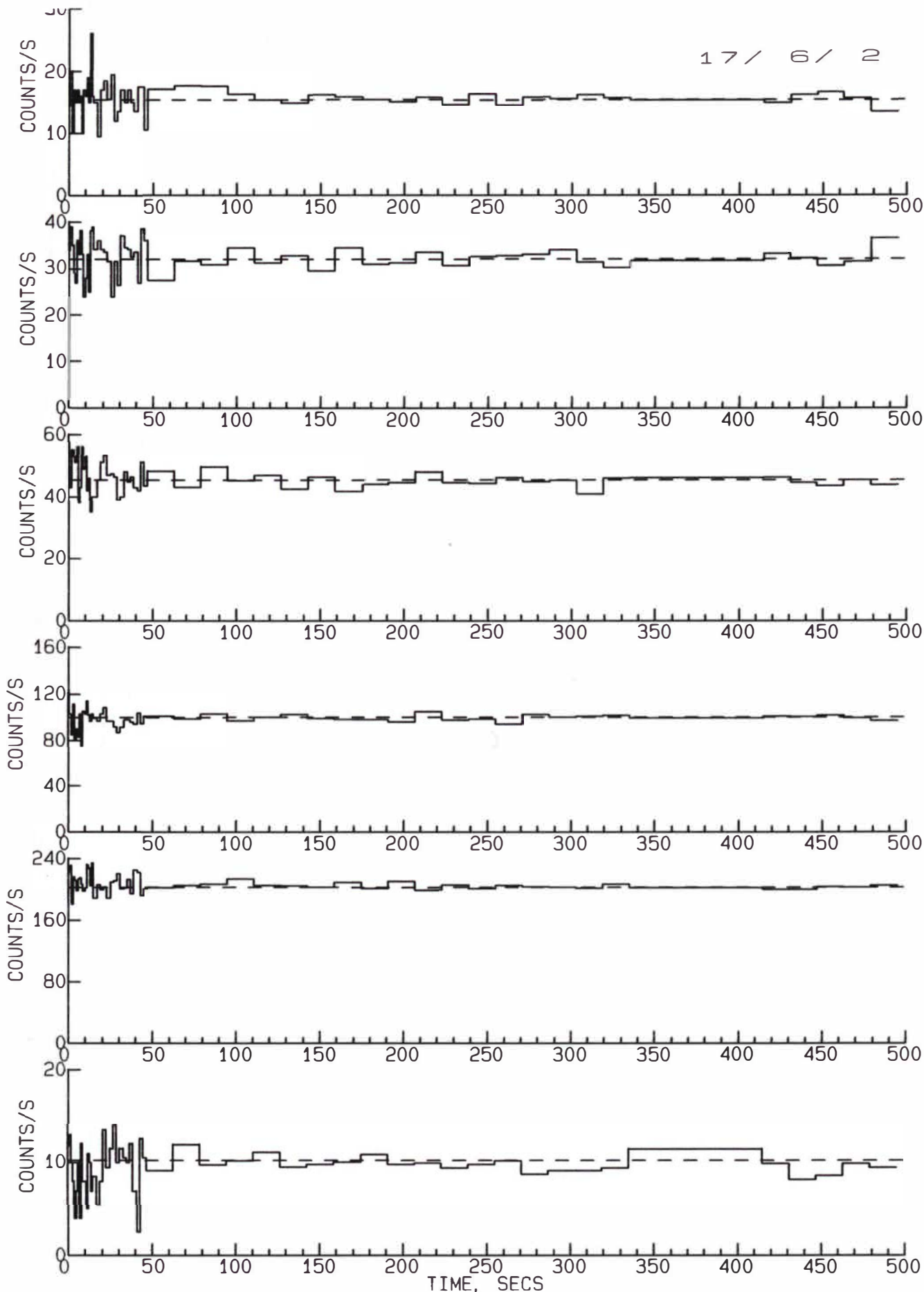
17/ 6/ 2

SPECTRUM INTEGRATED OVER 2.8 SECONDS, INTERVALS 2 TO 4



ULYSSES 28/08/99 68961.470 BURST SPECTRAL COUNT RATES

4- 18 keV

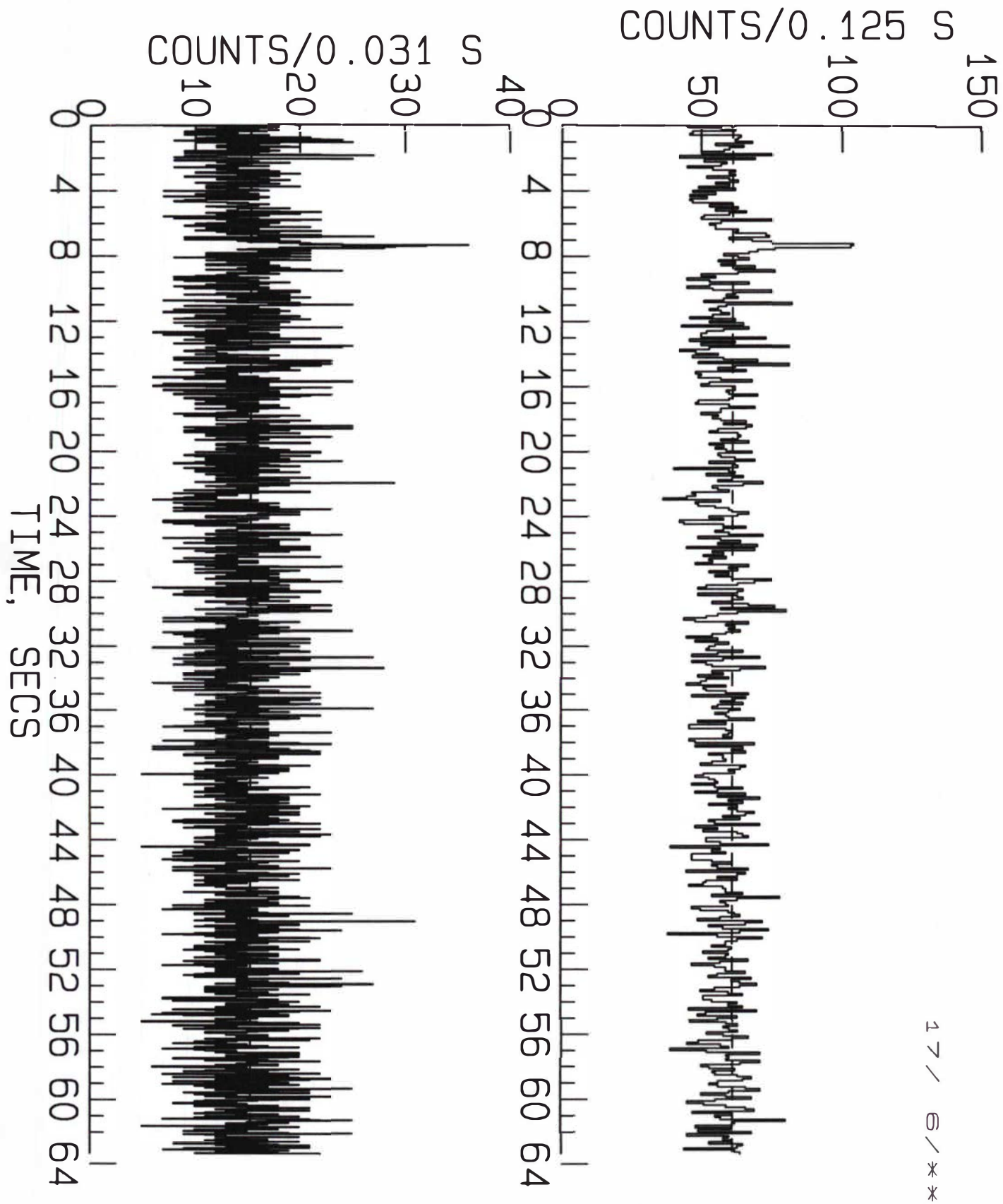


ULYSSES

28/08/99

Ttrig=68961.487

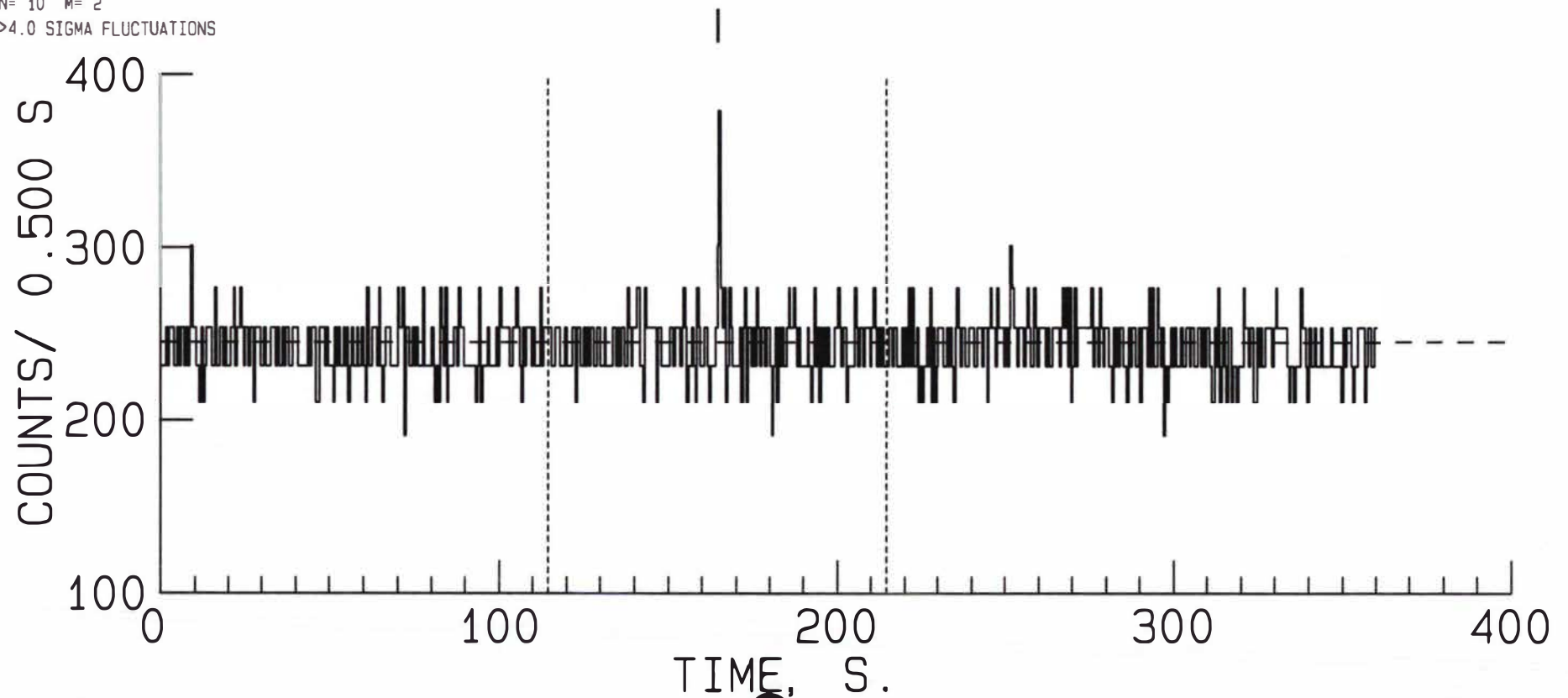
22- 150 keV



ULYSSES RT
28/ 8/99 68796.242 s
22- 150 keV

17 / 6 / 2

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



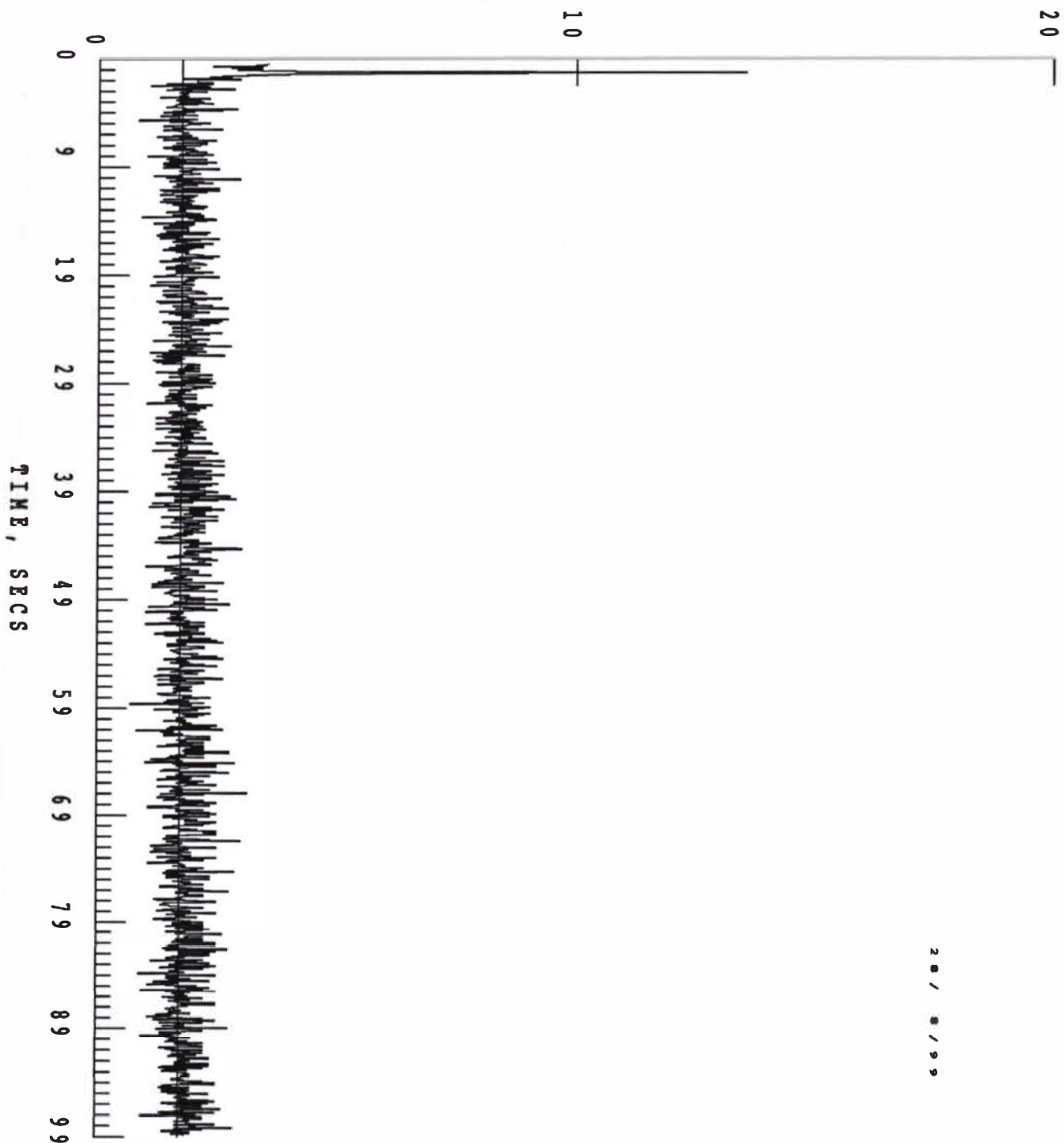
KONUS

28/08/99

70020.016

50 - 200 keV

COUNTS/0.064 S



From SAHI@fender.msfc.nasa.gov Tue Aug 31 12:34 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 31 Aug 1999 14:40:53 -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, 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.: 7743

TIME: TJD=1418 SECONDS=84036

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

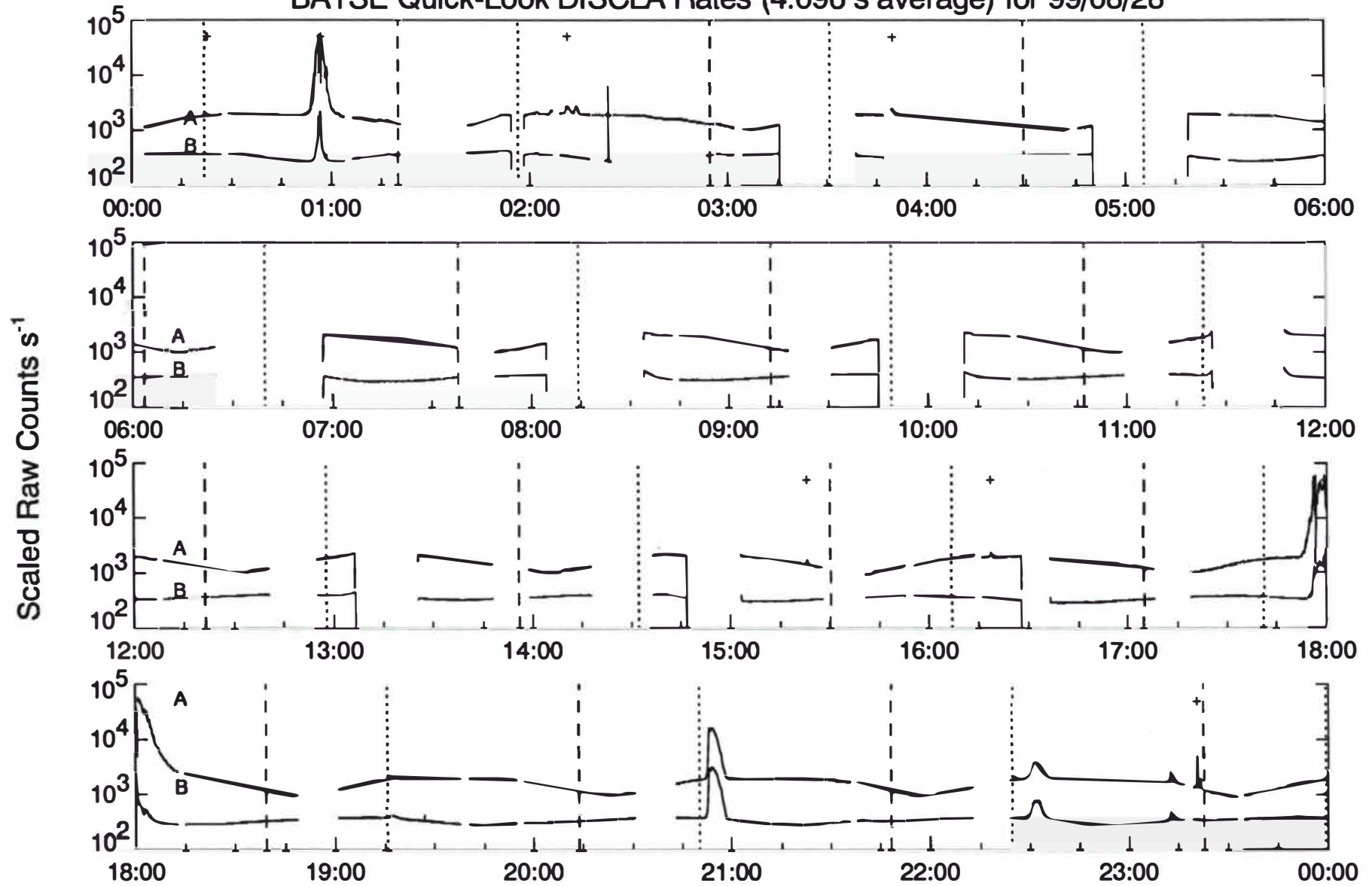
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=115.0 AZIMUTH=343.4 ERROR=2.35 DEGREES

COMMENTS:

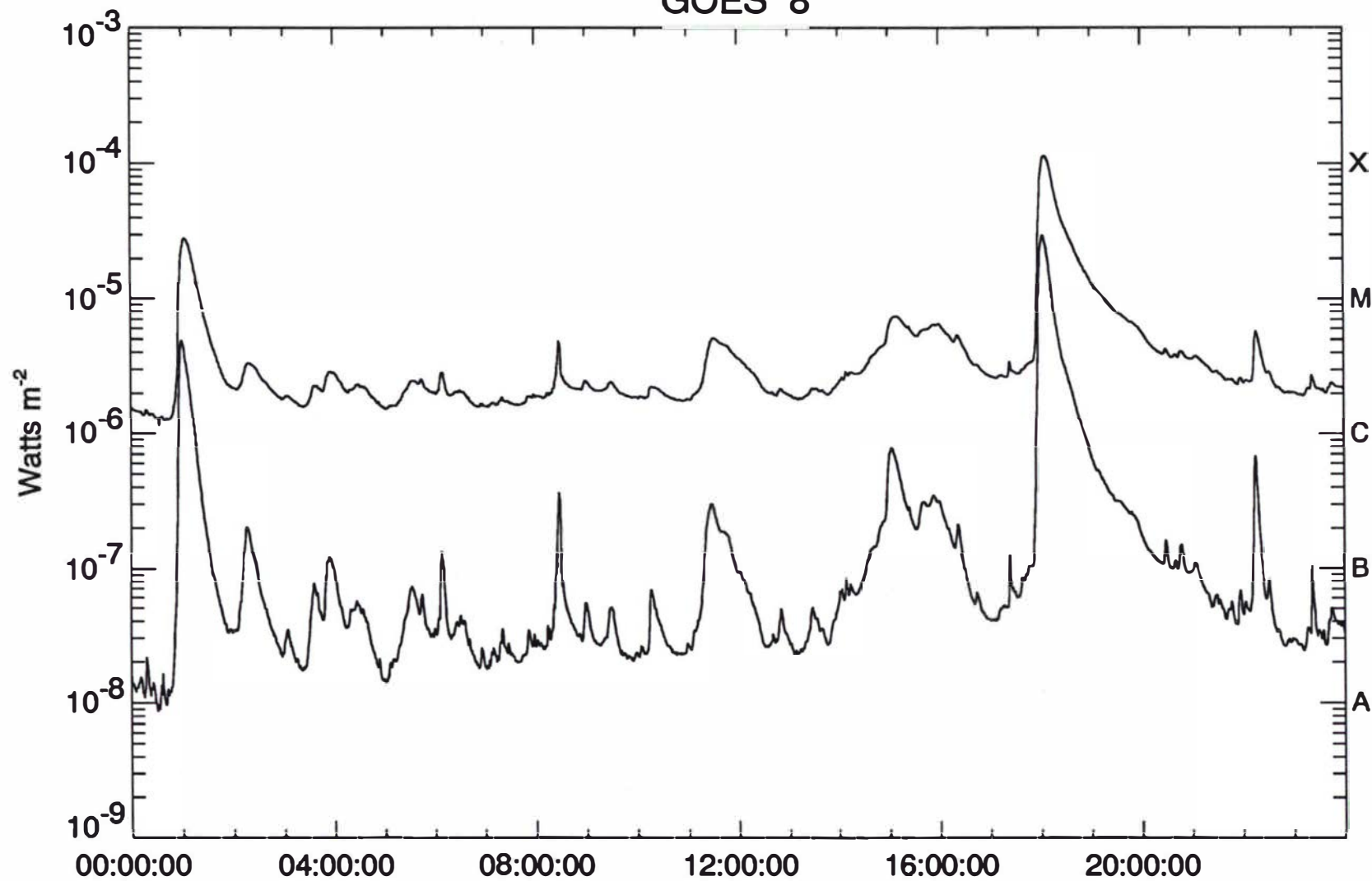
SOLAR FLARE. NO GOES OR OPTICAL ID. SINGLE PULSE, DUR. 45 S, STARTS AT T-13 S, MAX. AT T+5 S. NOT VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/28



Current Time: 99/09/01, 1006 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

GOES 8



Data Start: 99/08/28, 0000:00

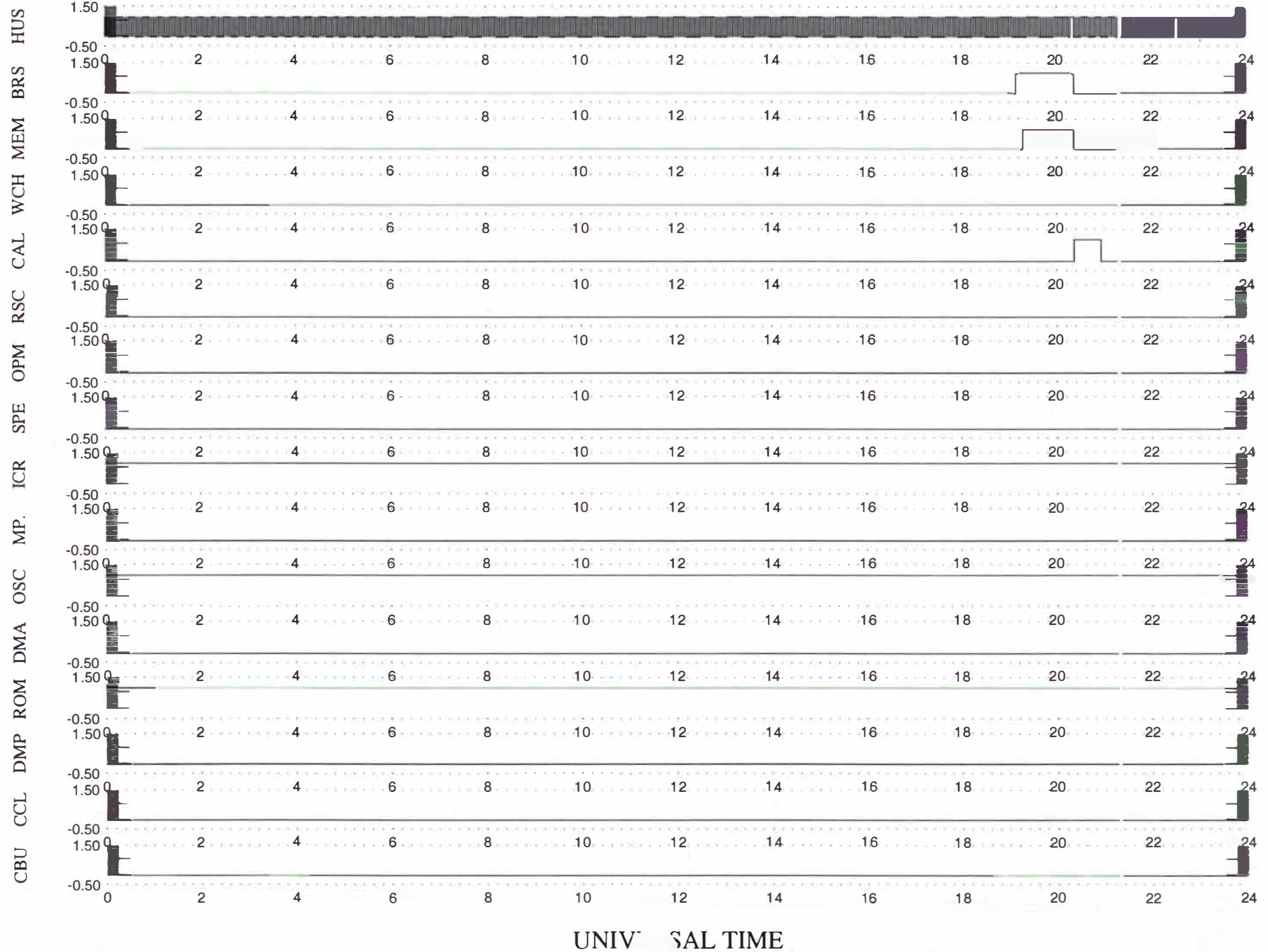
Plot created: 99/09/01, 1005

Channel

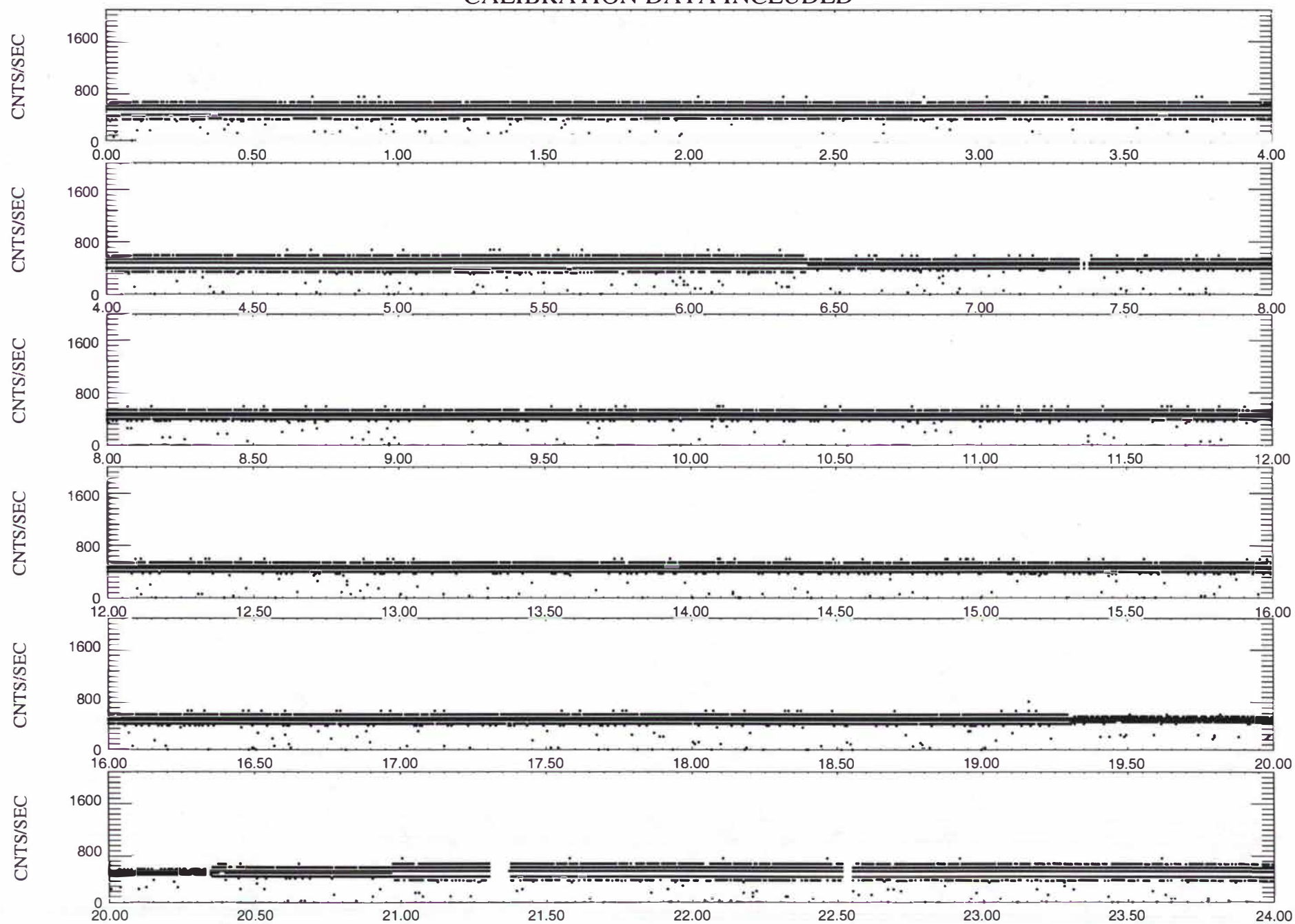
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 6

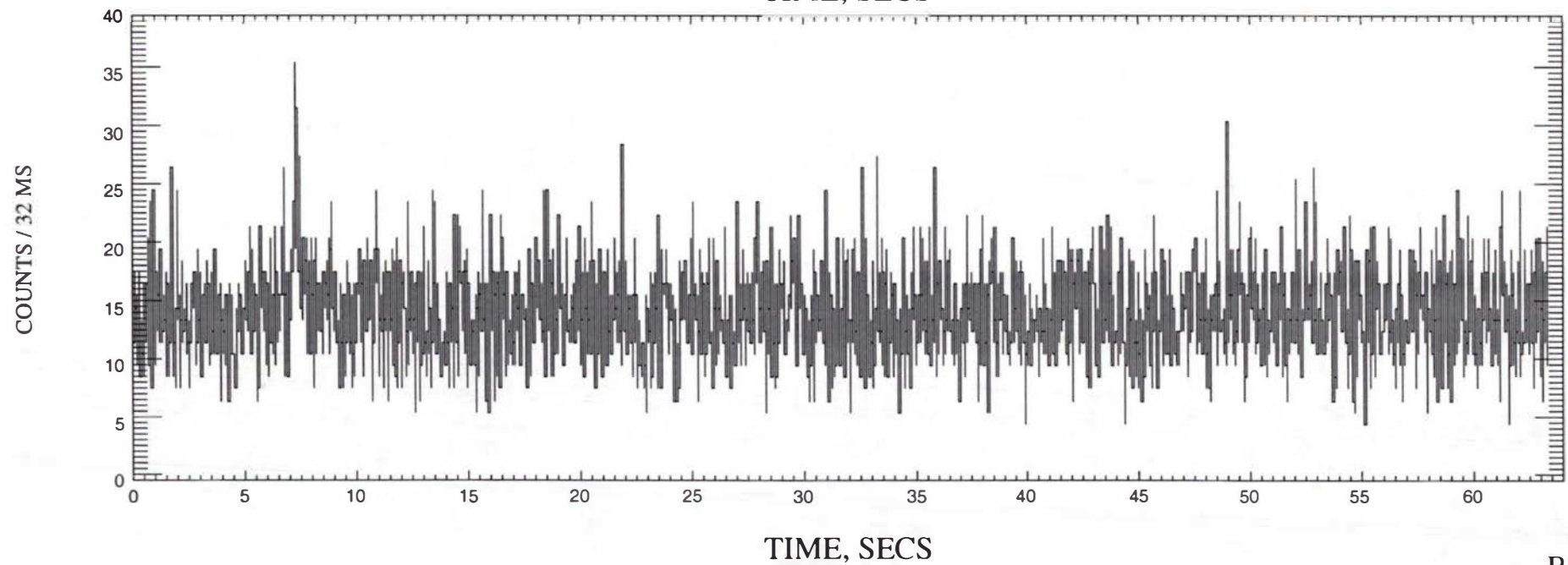
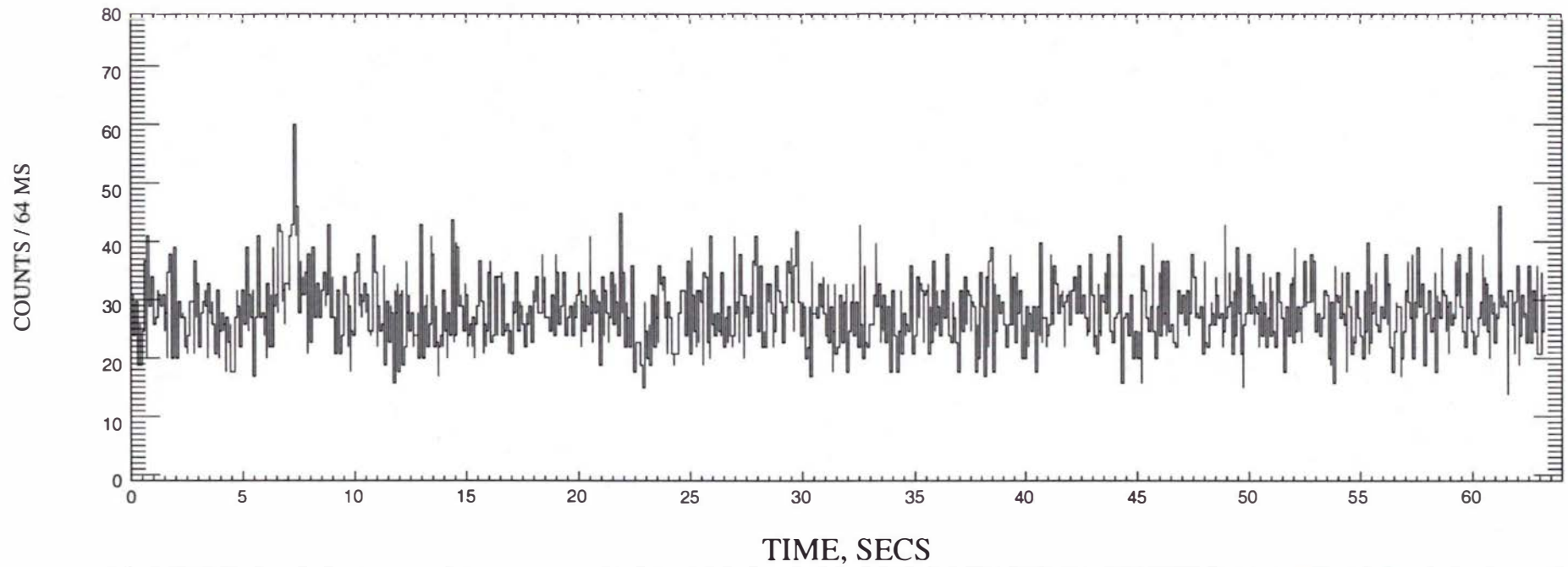


CALIBRATION DATA INCLUDED

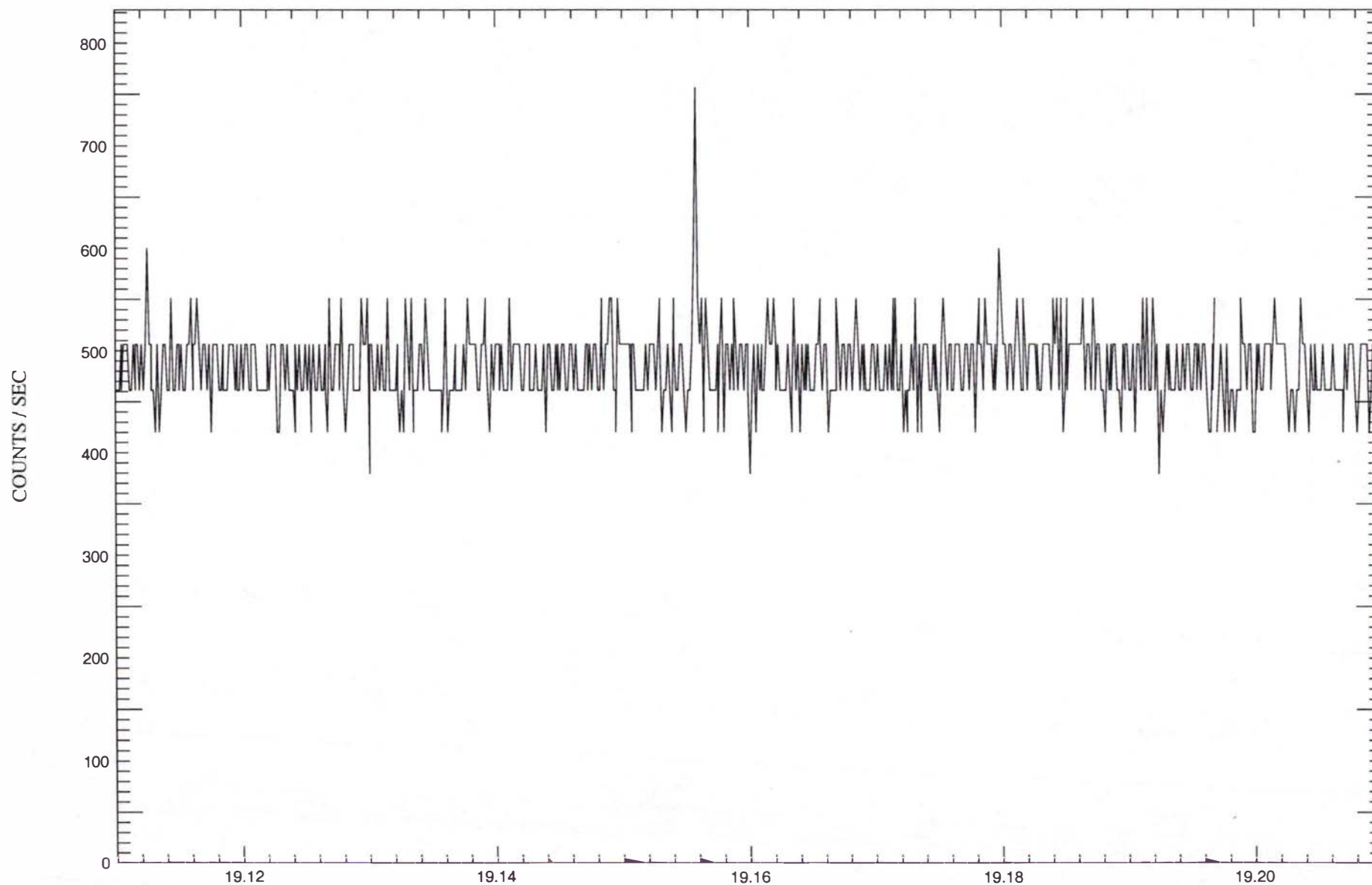


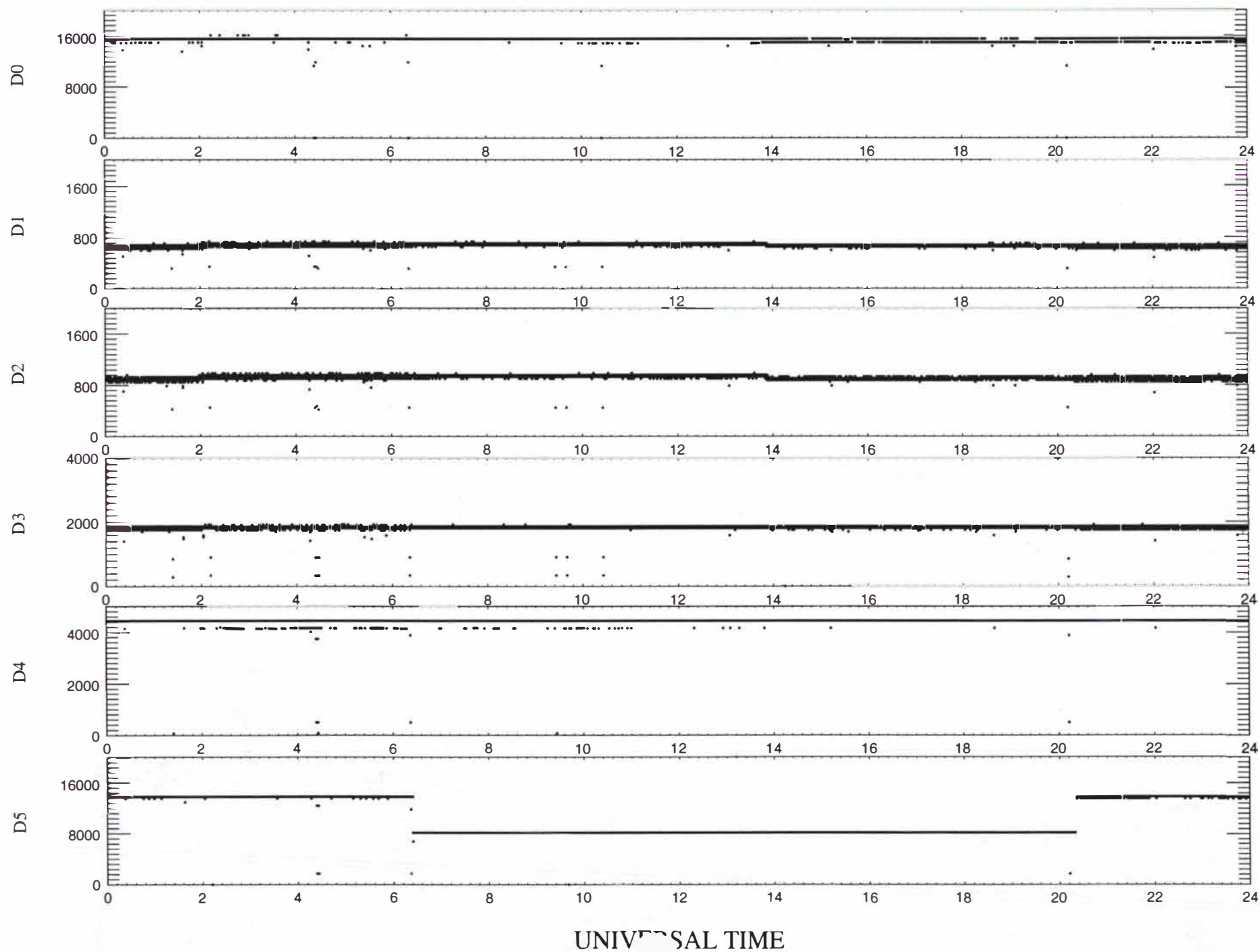
UNIVERSAL TIME

Burst Counter 6 at UT=19.155963800218 h=68961.470 s 19:09:21.470



CALIBRATION DATA INCLUDED





Date: 29 Jun 2007

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 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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

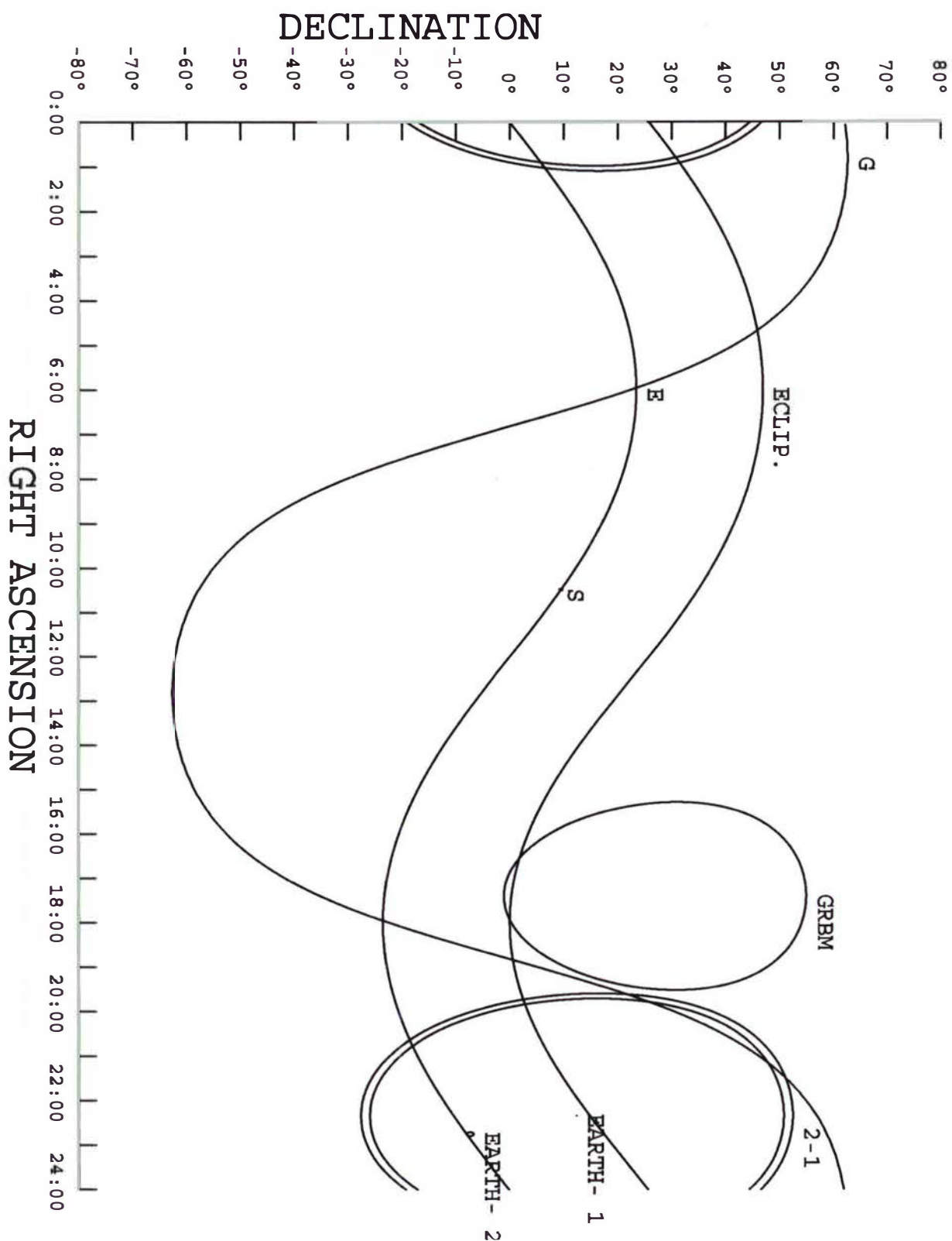
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS

EVENT OF AUG 29, 1999 3:54

29 / 6 / 7



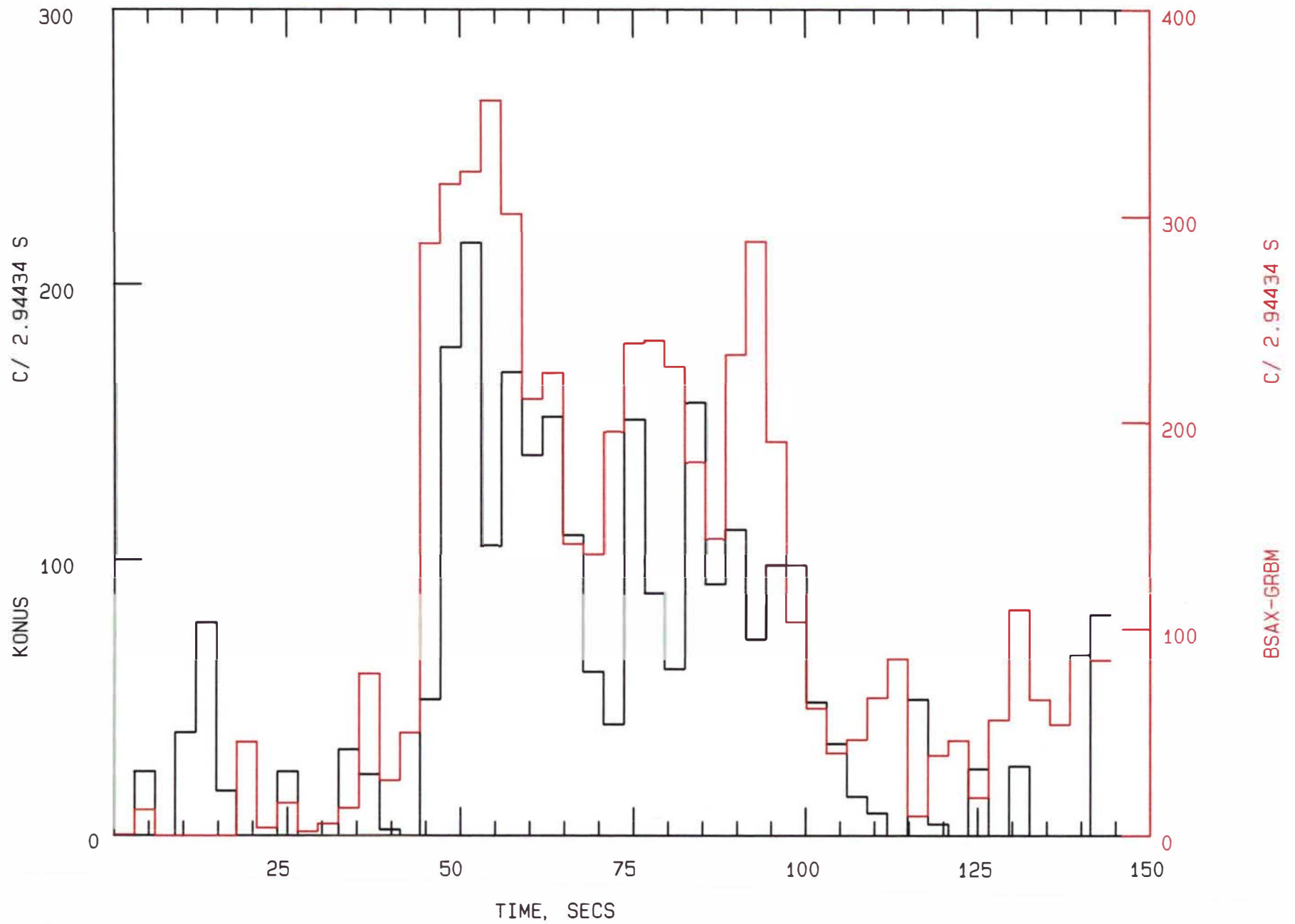
KONUS

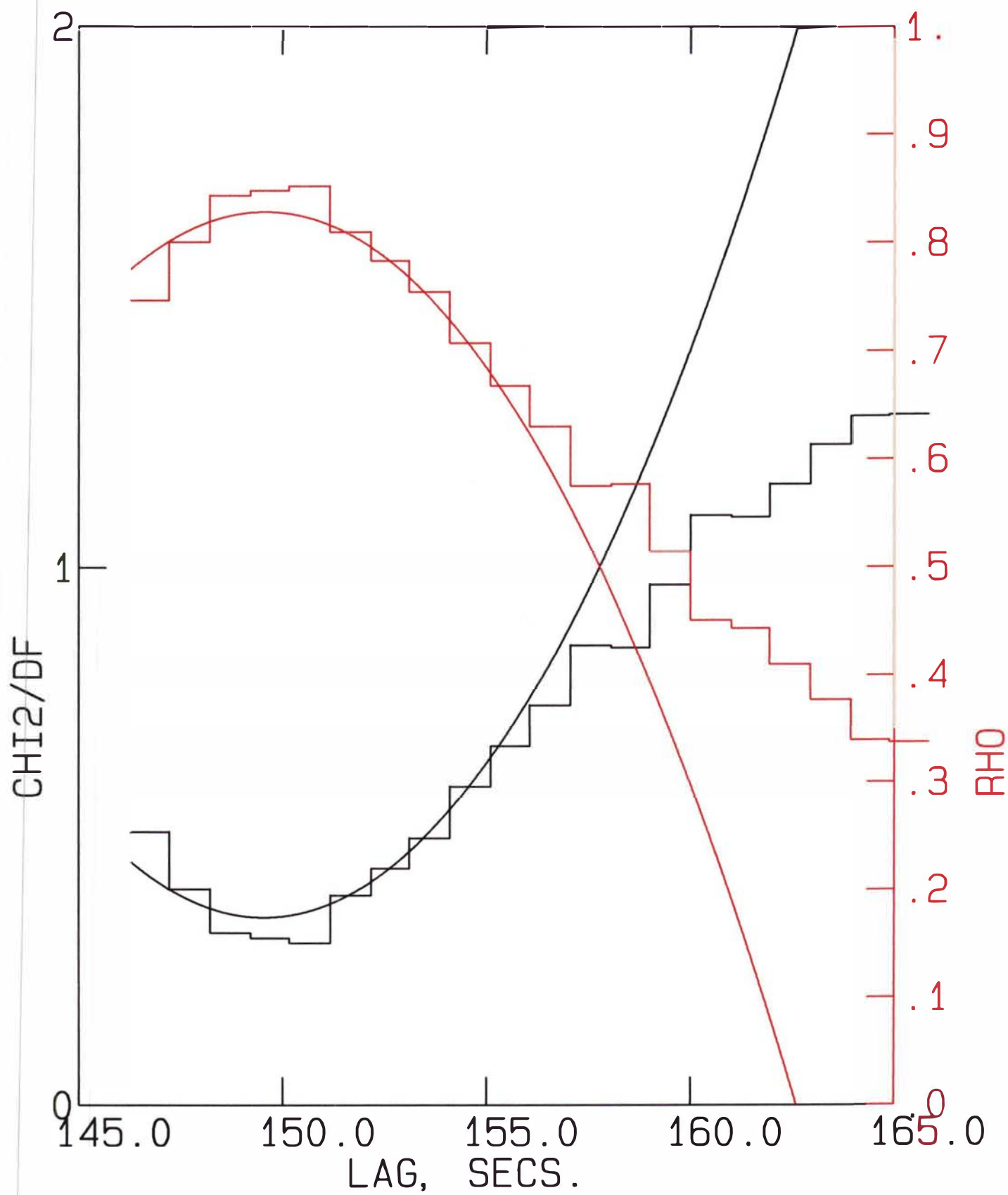
-BSAX-GRBM CORRELATION

29/08/99

11946.687

29/ 6/ 7





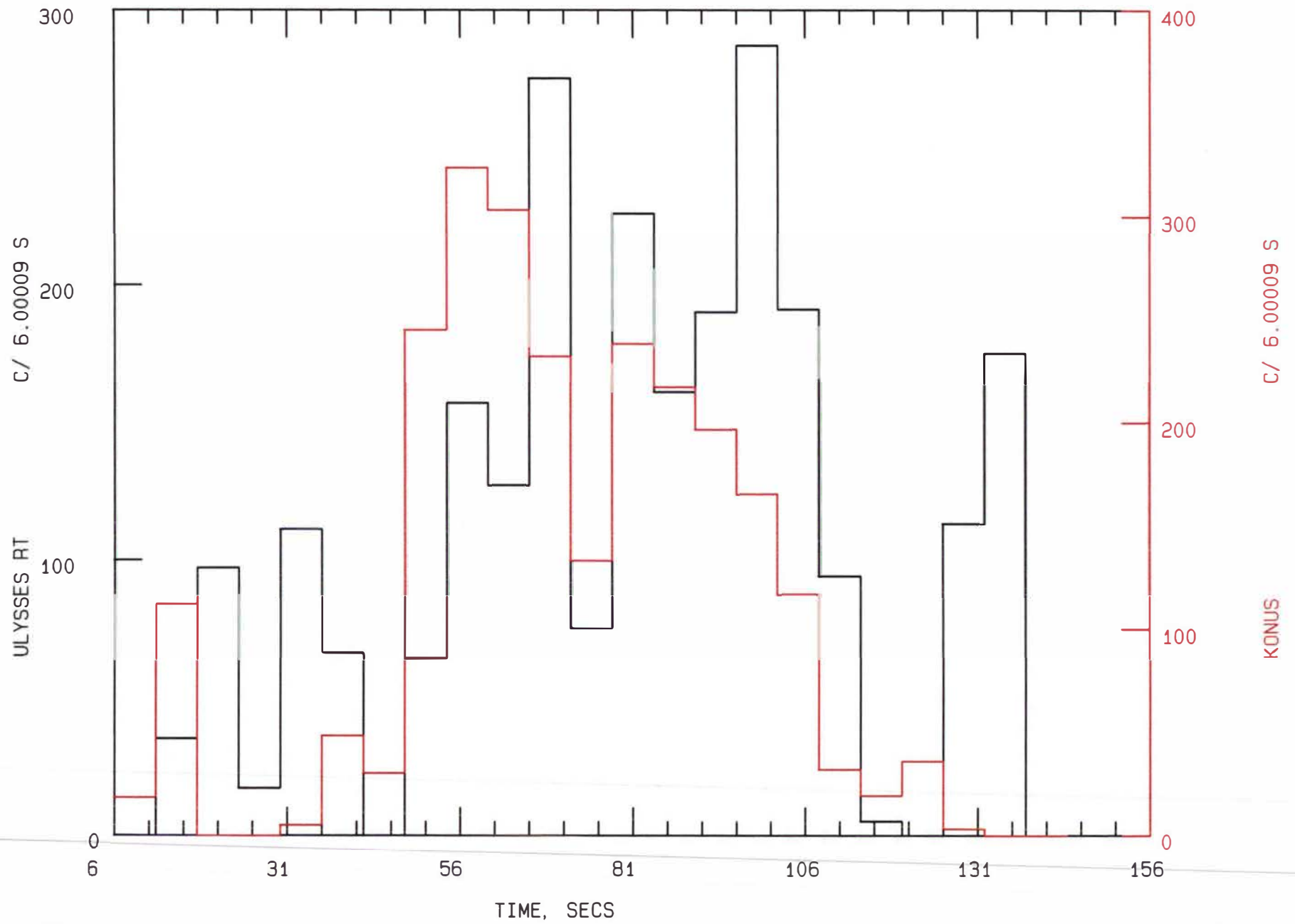
ULYSSES RT-KONUS

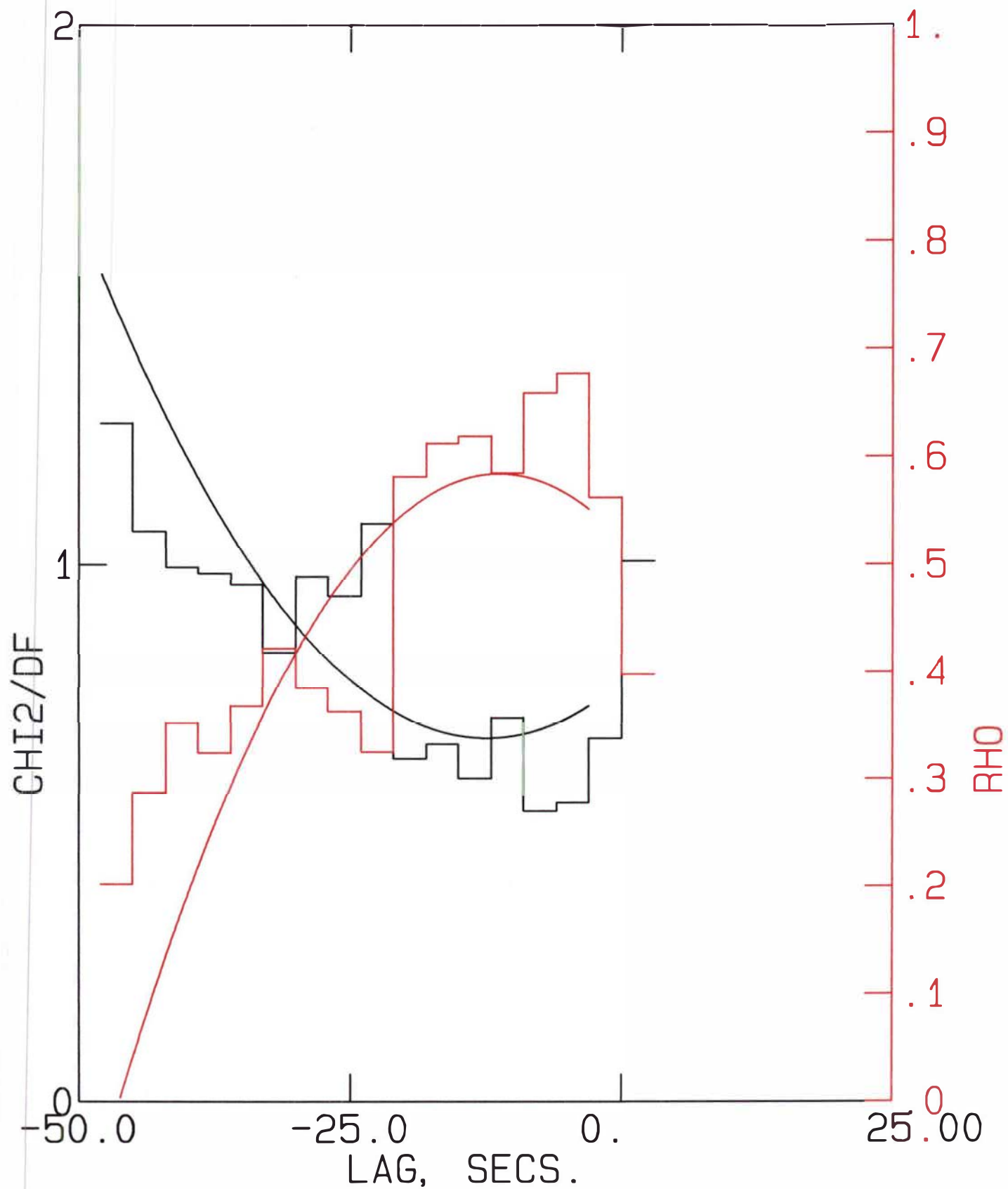
CORRELATION

29/ 8/99

14080.068

29/ 6/ 7





KONUS

29/08/99 11946.687

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

3400

DETECTOR 1 - S. ECLIPTIC

2400

1400

400

20

40

60

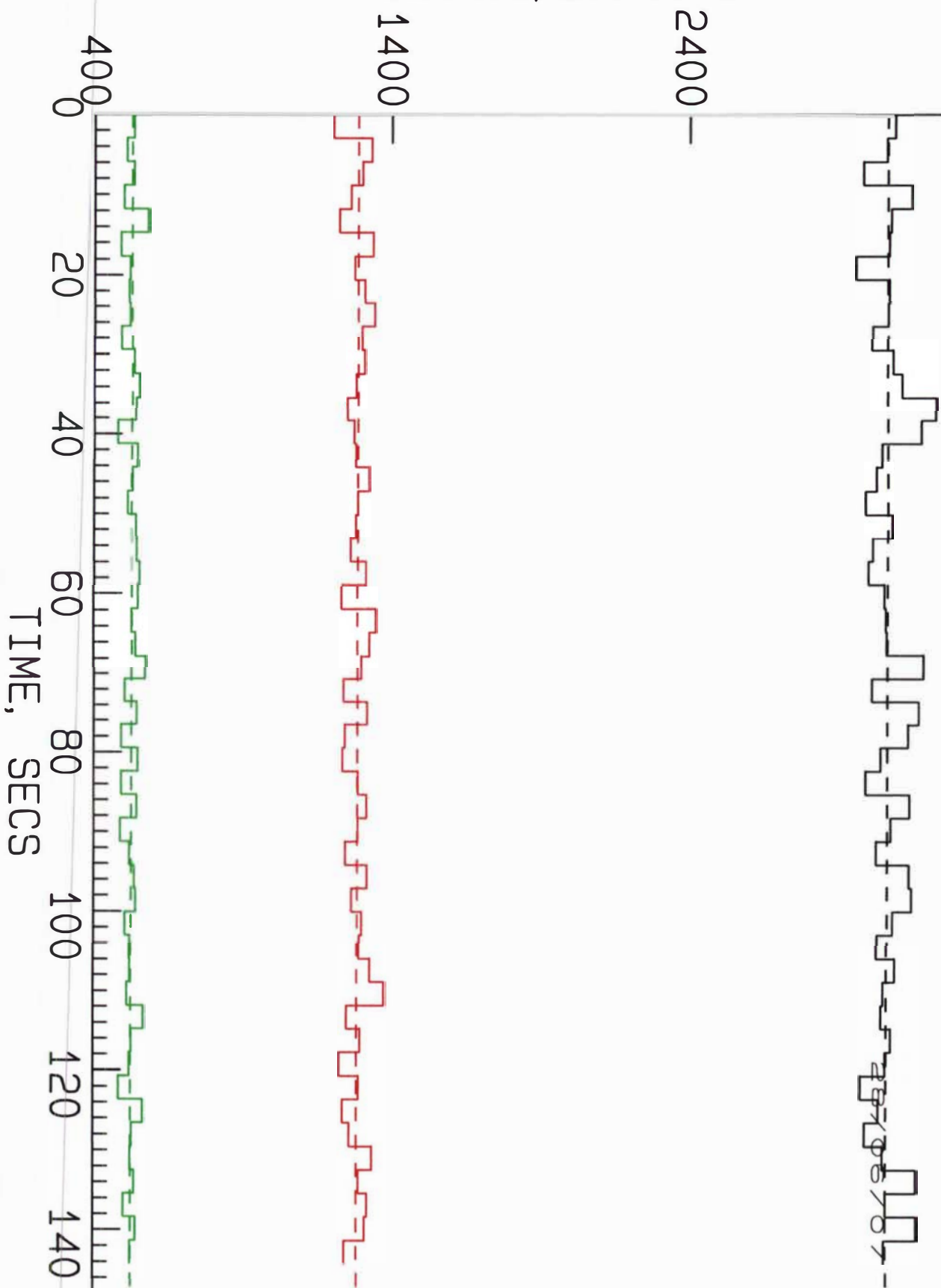
80

100

120

140

TIME, SECS



KONUS

29/08/99 11946.687

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.944 S

4300

DETECTOR 2 - N. ECLIPTIC

28/06/07

3300

2300

1300

300

20

40

60

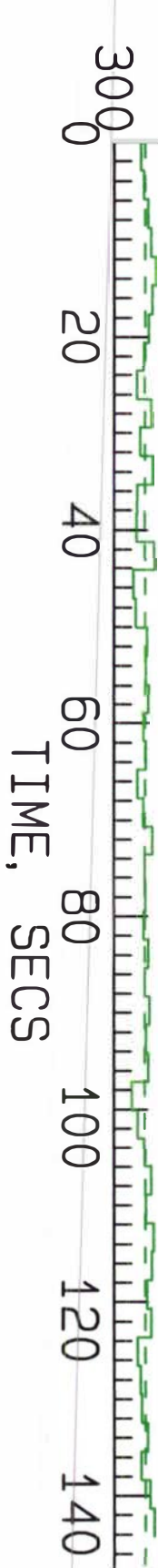
80

100

120

140

TIME, SECS

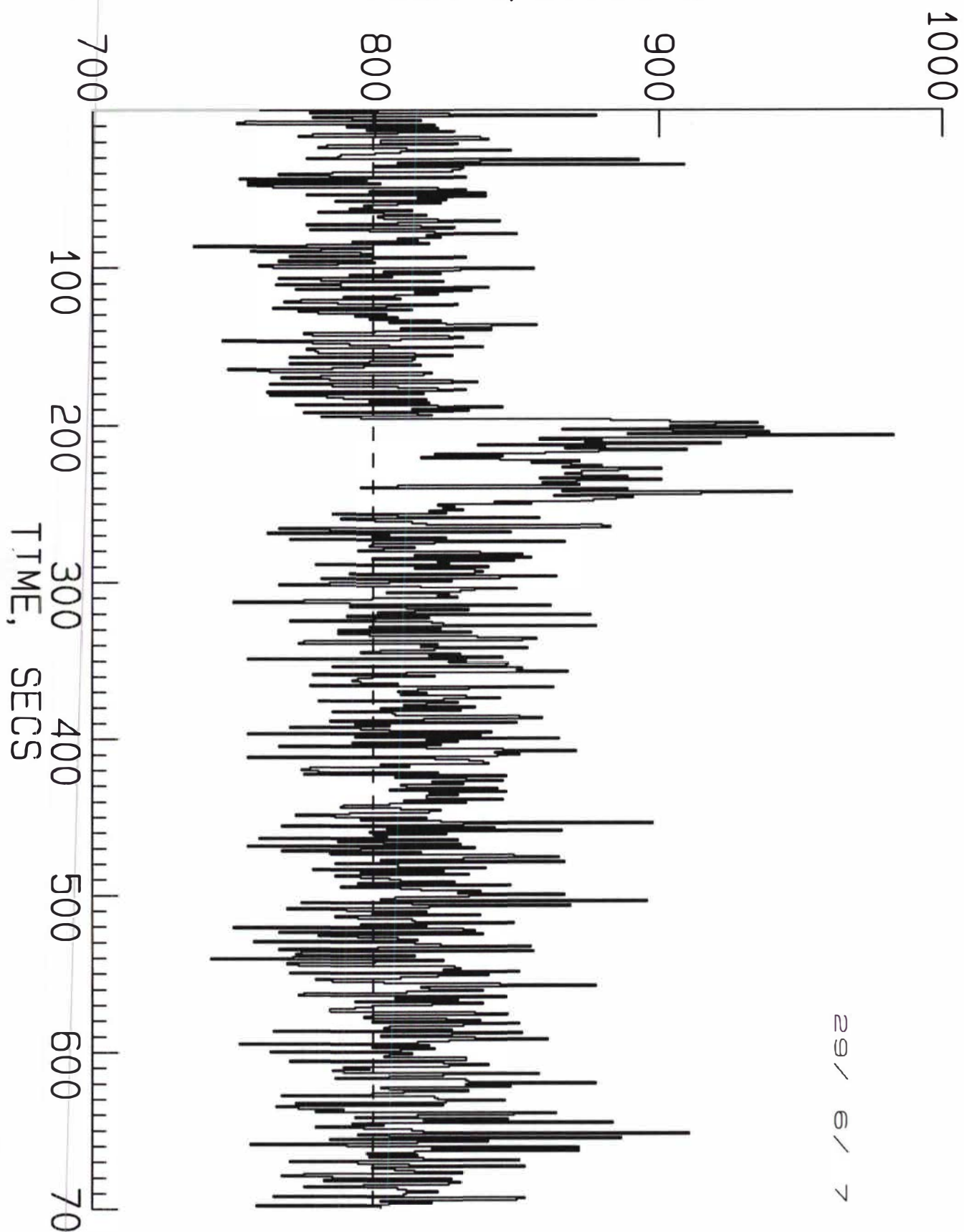


SAX GRBM

29/08/99 11795.154

40- 700 keV

COUNTS/1.000 S



KONUS

ULYSSES RT

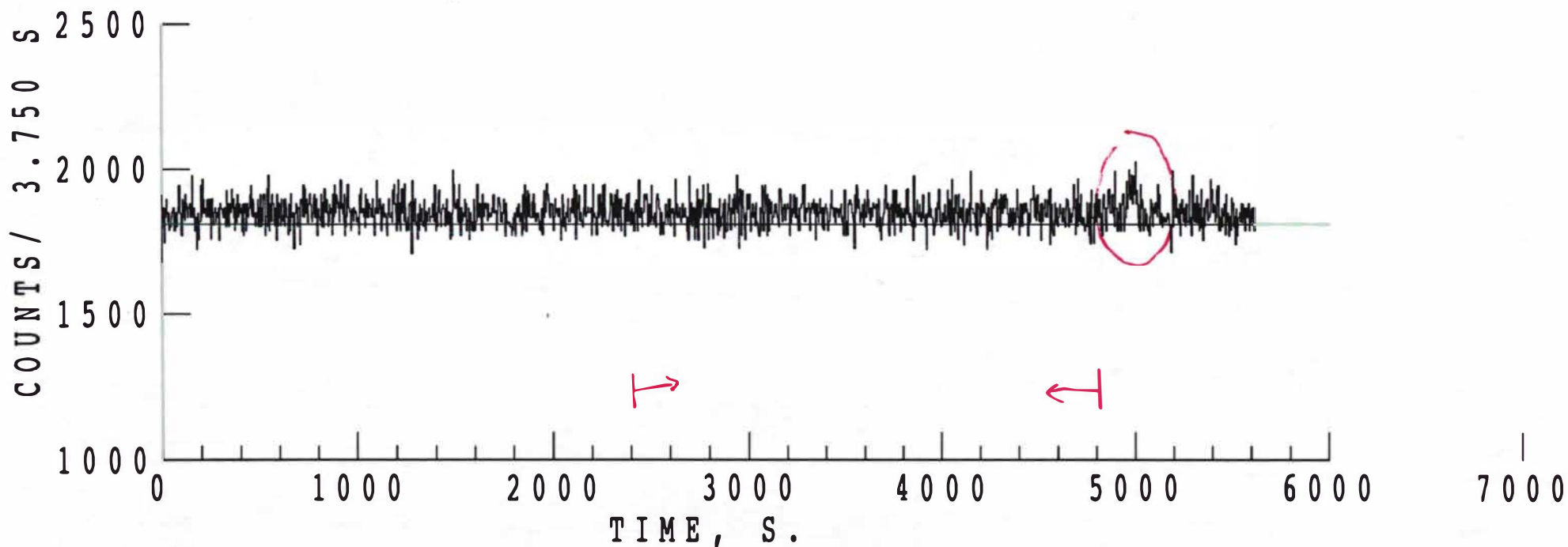
21 / 01 / 00

29 / 08 / 99 9180.011 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Tue Aug 31 14:43 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Tue, 31 Aug 1999 16:50:11 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7744

BATSEARCH PROGRAM

BATSE BURST # 7744
EVENT OF 1999 AUG 29 DAY OF YEAR=241
EVENT CROSSING TIME AT BATSE : 20620. S. OR 05:43:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 339.000 -2.000
BATSE PEAK COUNTING RATE: 8200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 8/ 99 IS:
RA= 154.725 DEC= -12.419 DIST= 5.543 AU
BATSE-ULYSSES DISTANCE = 829165065. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 15.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2671.17 SECS.
CROSSING TIME AT ULYSSES IS 23291. S. OR 06:28:11 +/- 215.09 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 8/ 99 IS:
RA= 234.305 DEC= -21.224 DIST= 1.171 AU
MARS-BATSE DISTANCE = 175194544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 130.72 SECS.
CROSSING TIME AT MARS IS 20751. S. OR 05:45:50 +/- 100.87 SECONDS

BATSE BURST TRIGGER

NO.: 7744

TIME: TJD=1419 SECONDS=20620

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=59.9 AZIMUTH=172.9 ERROR=1.4 DEGREES

COMMENTS:

GRB. RISE FASTER THAN DECAY. PEAK AT APPROX. T+4 SEC. DECAY HAS STRUCTURE
AT APPROX. T+30 SEC. TOTAL DURATION APPROX. = 100SEC.
VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7744	990829	11419	20620	8200	339	-02	100

Date: Feb 24 '00

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?

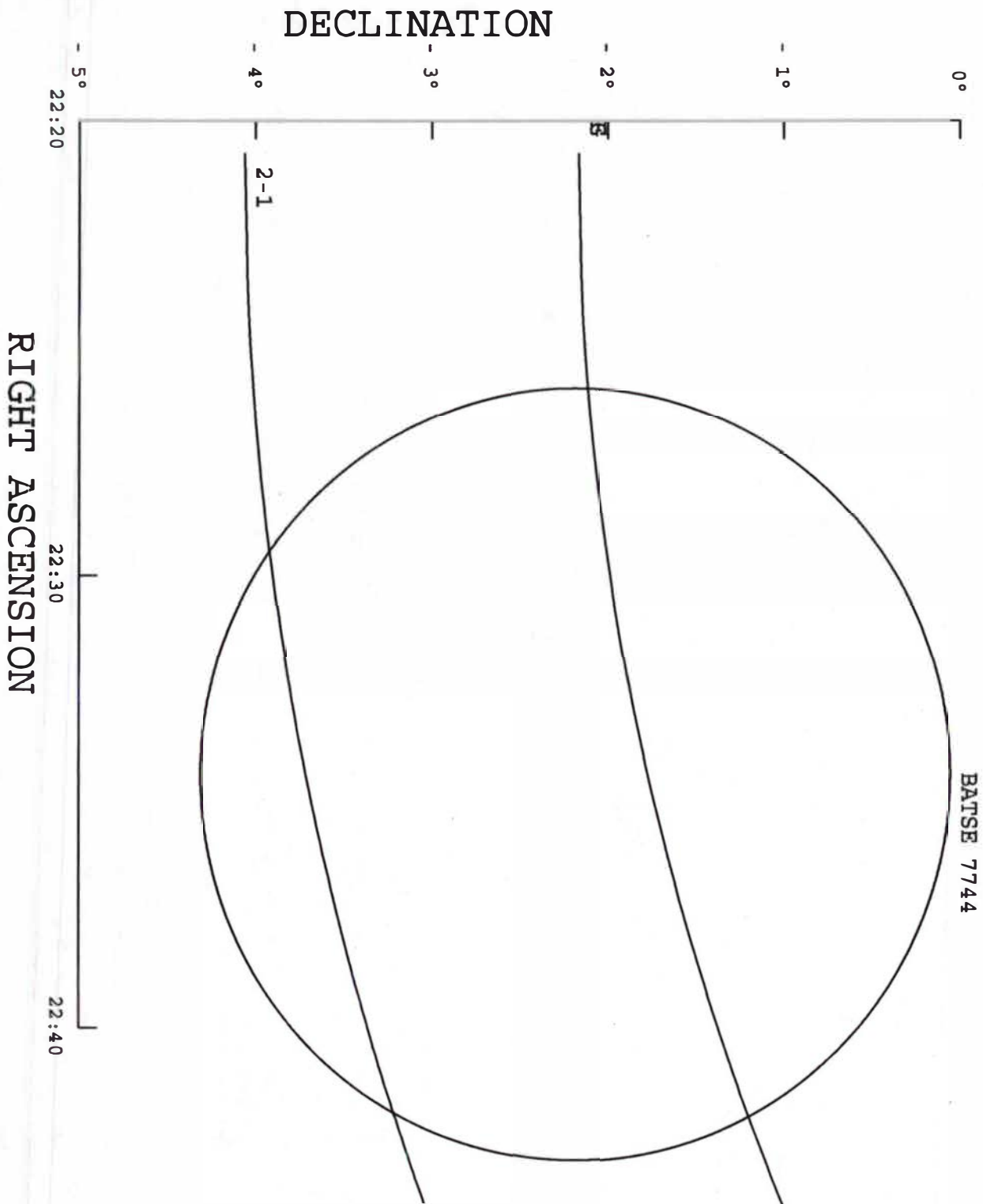
3. NEAR Data N/A

- ☐ Final, correct time used? (Files postmarked vwx@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 AUG 29, 1999 5:43

22 / 2 / 0



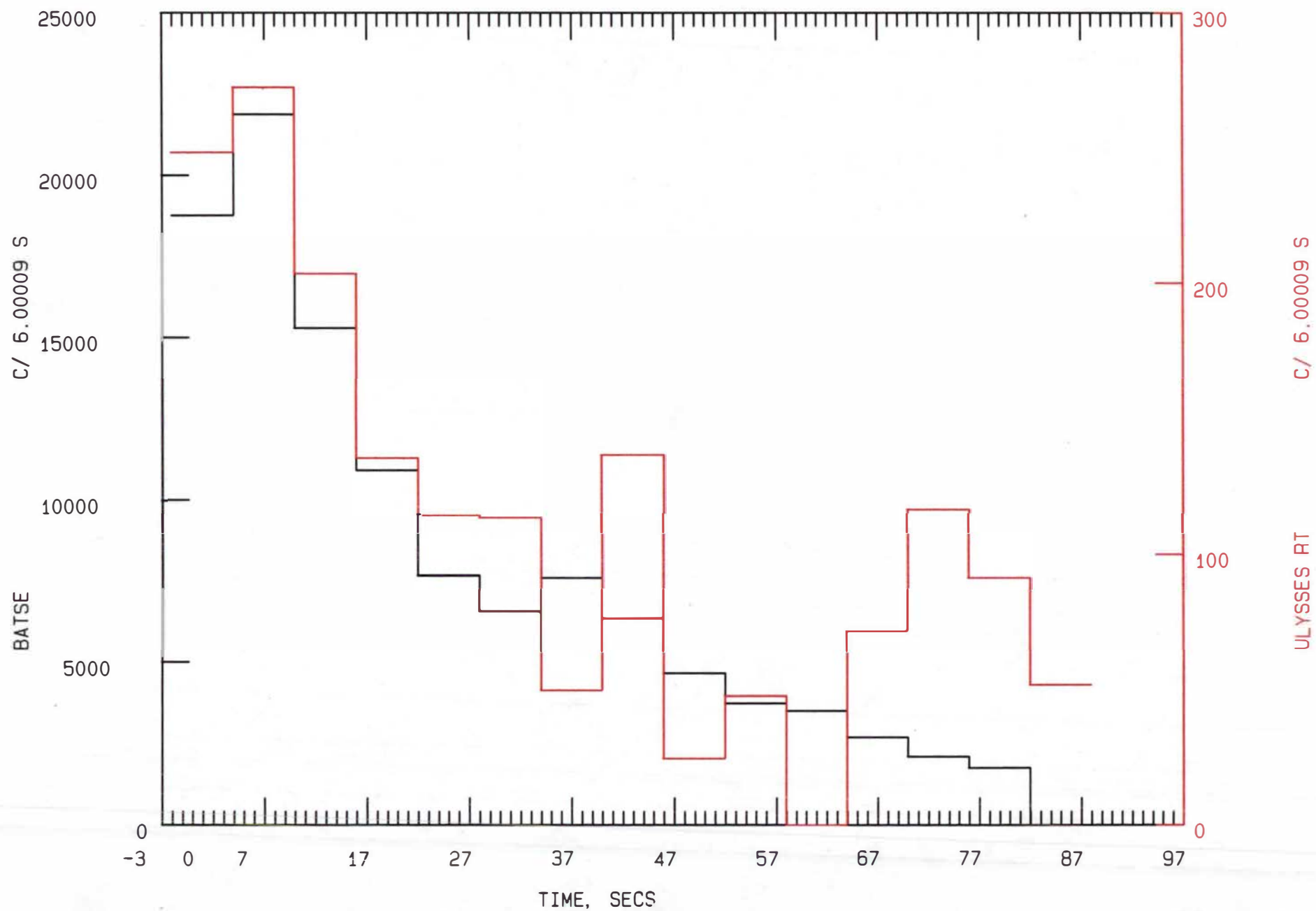
BATSE

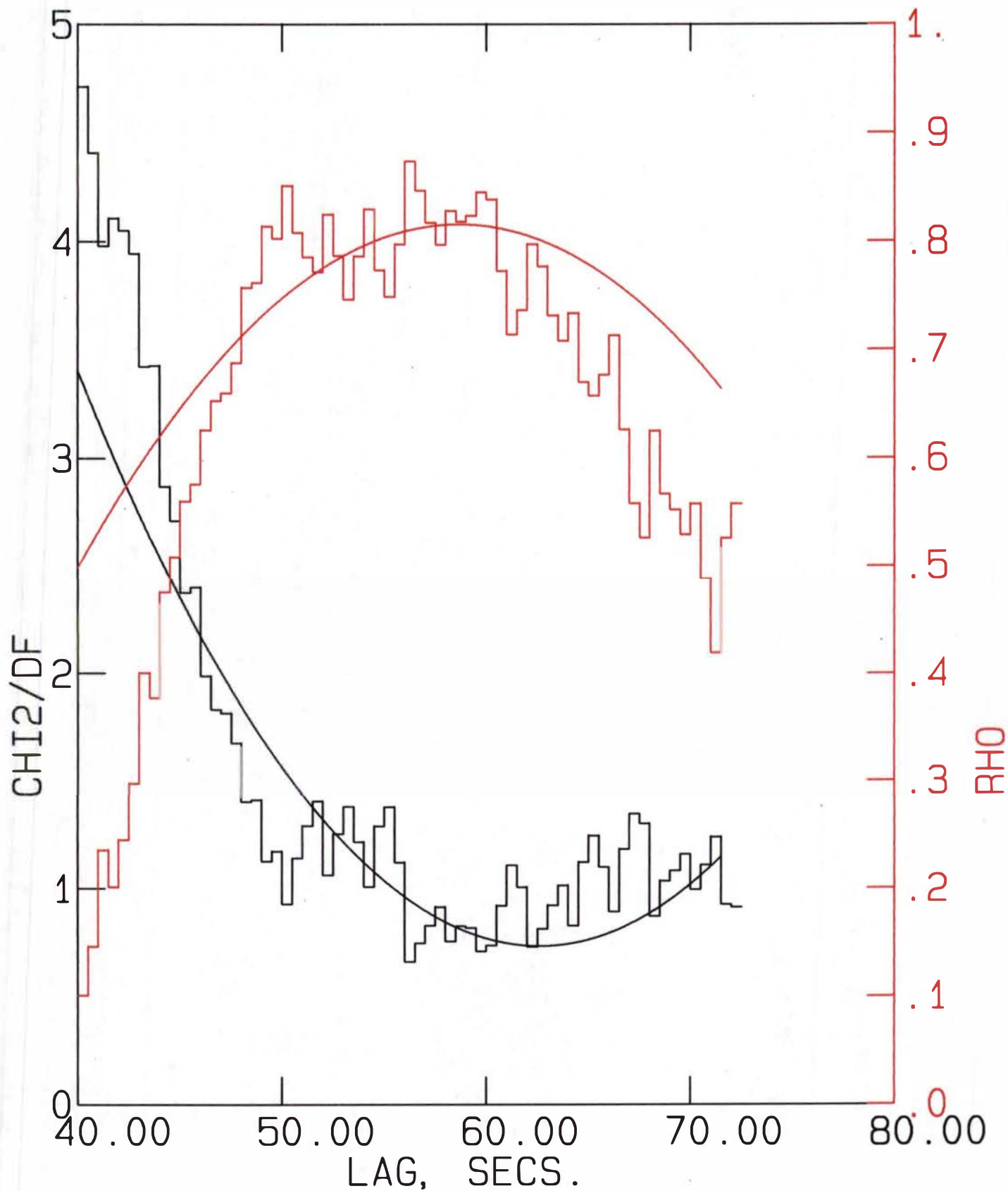
-ULYSSES RT CORRELATION

29/ 8/99

20620.025

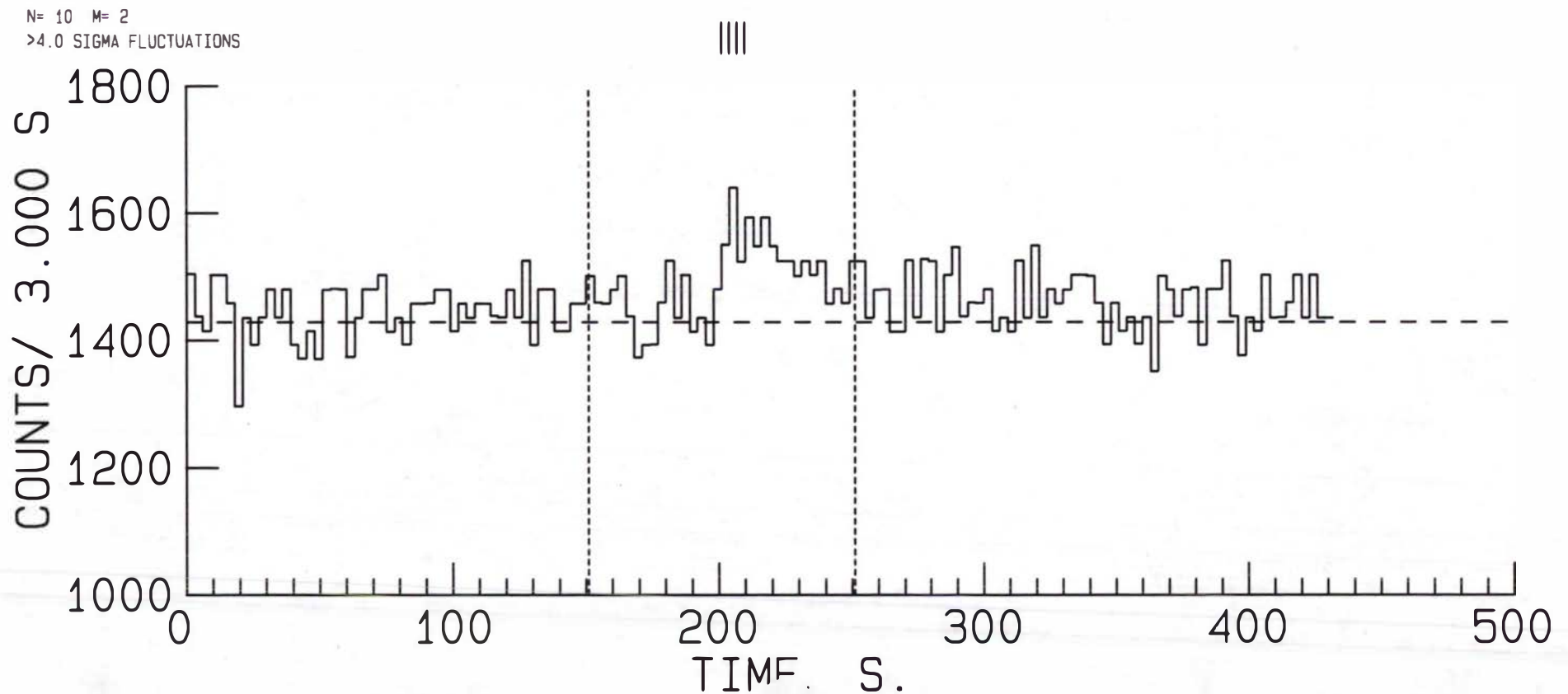
22/ 2/ 0





ULYSSES RT
29/ 8/99 23076.150 s
0.500 S INTERVALS REGROUPED BY 6
22- 151 keV

22 / 2 / 0



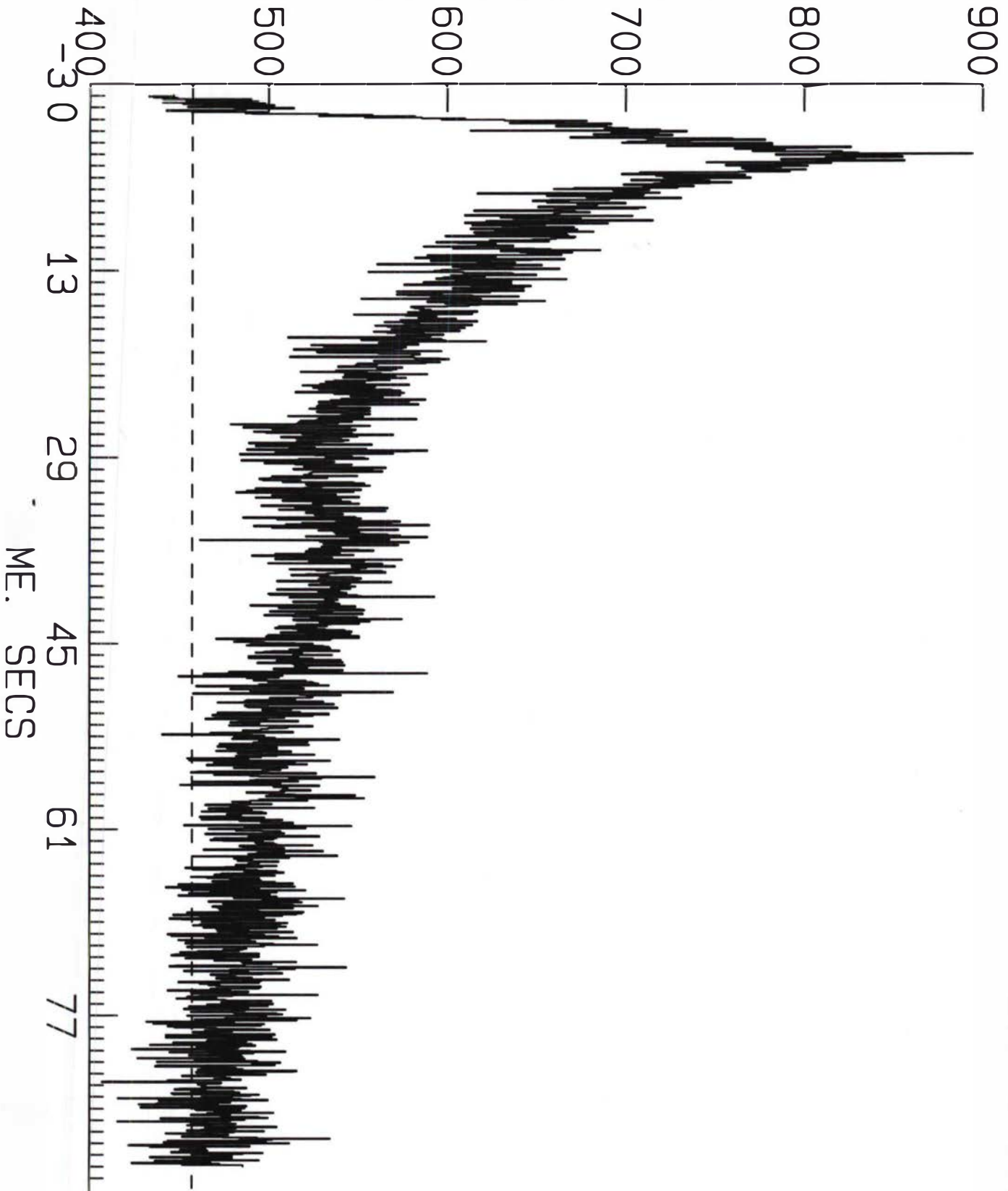
BATSE

29/08/99

20620.025

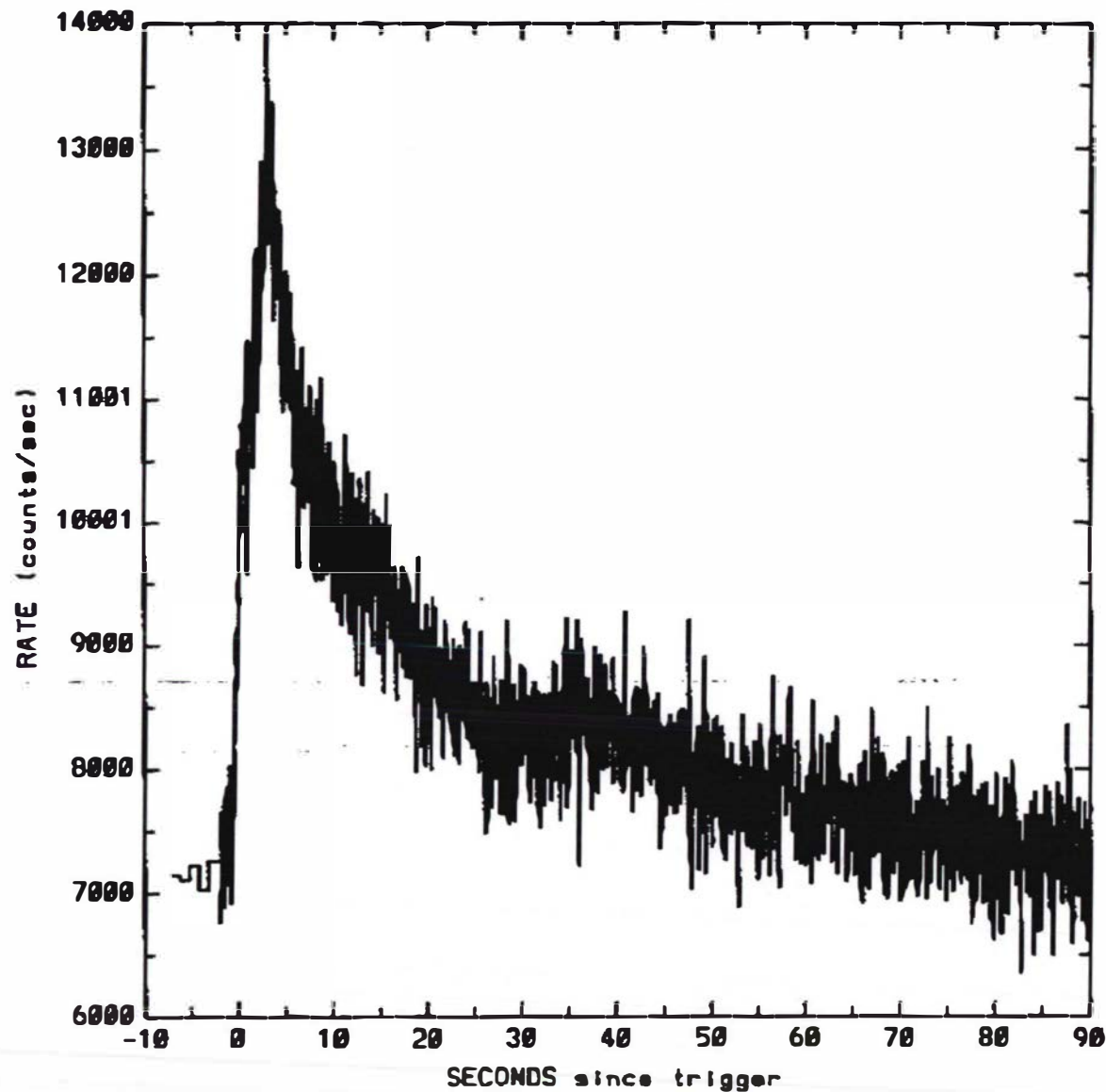
25- 100 keV

COUNTS/0.064 S



30 / 9/99

DISCSC Data for K. Hurley, No. 7744



28-SEP-1999 14:35:04

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

Trigger # : 7744

Trigger Time:
11419 / 28629.025

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..0):
-6-4---

Discriminators:
(1 . 2)

Quality Mask:
BDISP1

From RICHARDSON@fender.msfc.nasa.gov Tue Aug 31 14:45 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Tue, 31 Aug 1999 16:51:55 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7745

BATSEARCH PROGRAM

BATSE BURST # 7745
EVENT OF 1999 AUG 29 DAY OF YEAR=241
EVENT CROSSING TIME AT BATSE : 77798. S. OR 21:36:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 259.000 -57.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 8/ 99 IS:
RA= 154.829 DEC= -12.495 DIST= 5.541 AU
BATSE-ULYSSES DISTANCE = 828928091. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 92.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -141.74 SECS.
CROSSING TIME AT ULYSSES IS 77656. S. OR 21:34:16 +/- 527.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 8/ 99 IS:
RA= 234.305 DEC= -21.224 DIST= 1.171 AU
MARS-BATSE DISTANCE = 175194544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -446.98 SECS.
CROSSING TIME AT MARS IS 77351. S. OR 21:29:11 +/- 58.57 SECONDS

BATSE BURST TRIGGER

NO.: 7745

TIME: TJD=1419 SECONDS=77798

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=119.3 AZIMUTH=112.8 ERROR=6.1 DEGREES

COMMENTS:

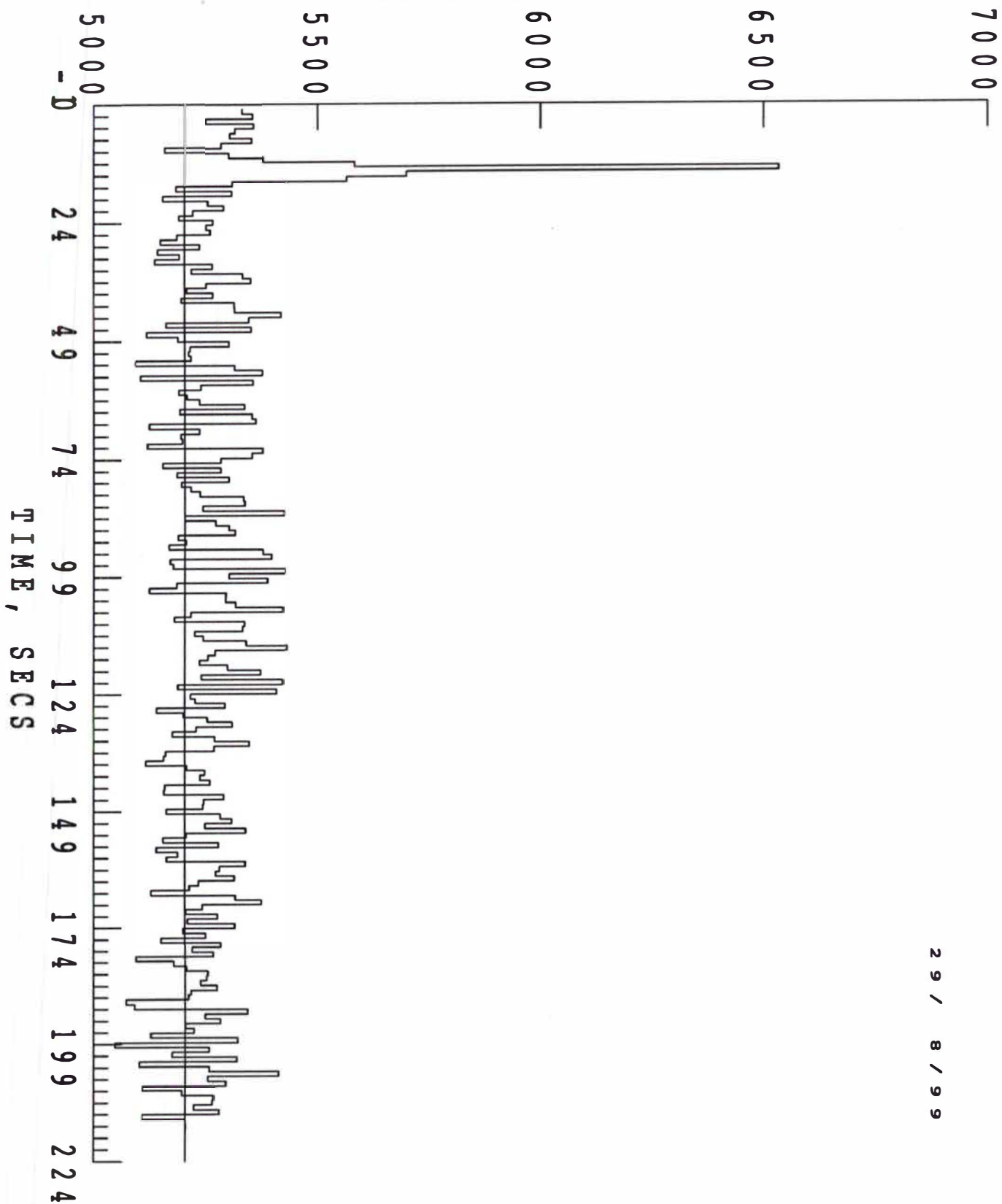
GRB. SINGLE PULSE. DURATION APPROX. = 1.5 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7745	990829	11419	77798	3000	259	-57	1.5

BACODINE 7745 29/08/99 77785.849

25 - 100 keV

COUNTS/1.024 S



29 / 8 / 99

BATSE BURST# 7745

ULYSSES RT

31 / 8 / 99

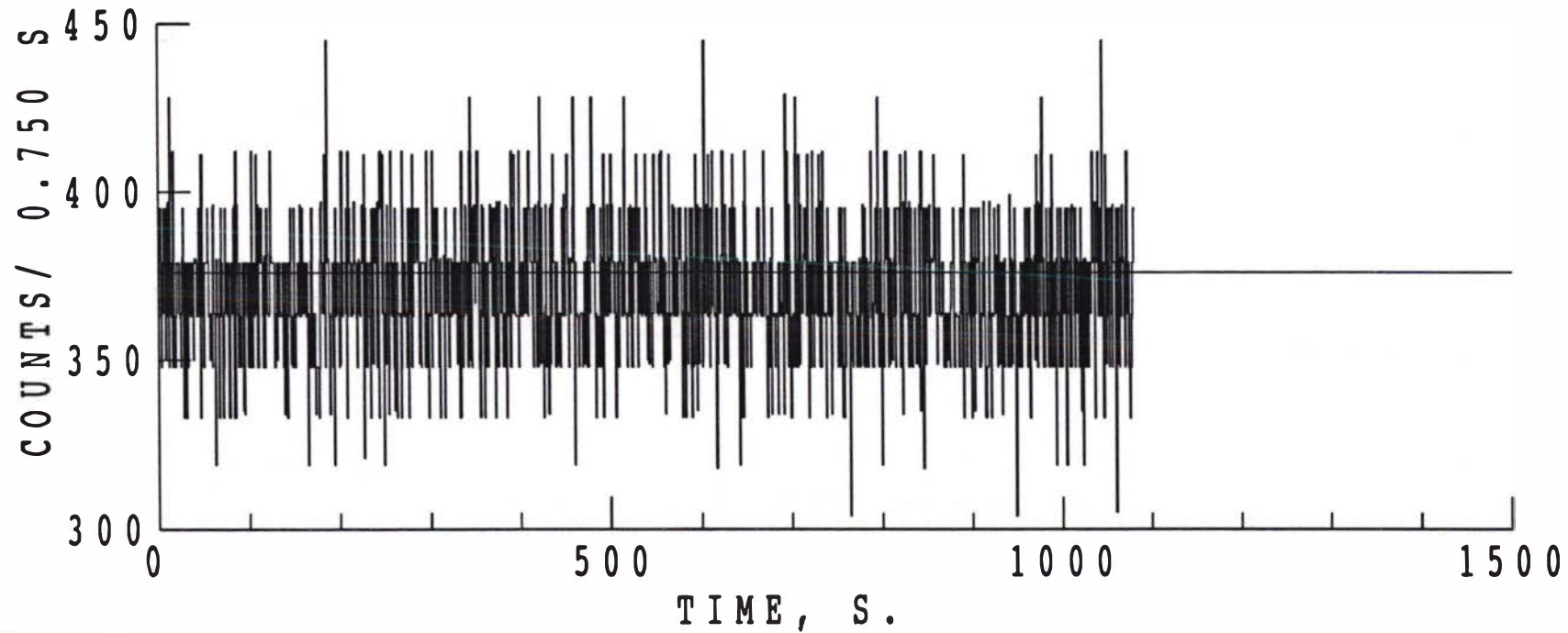
29 / 8 / 99 77112.203 s

0.250 S INTERVALS REGROUPED BY 3

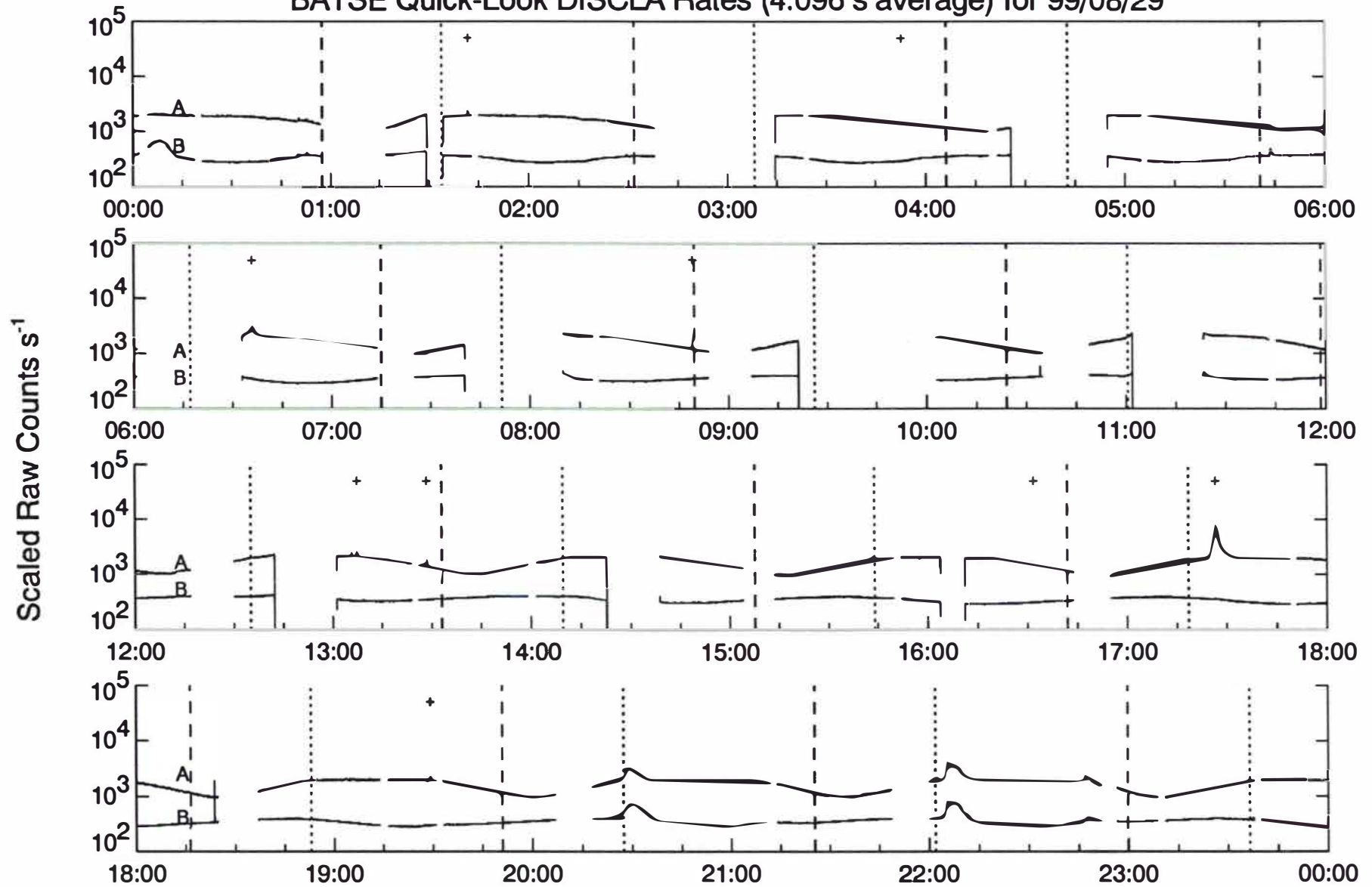
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/29



Current Time: 99/09/02, 1005 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

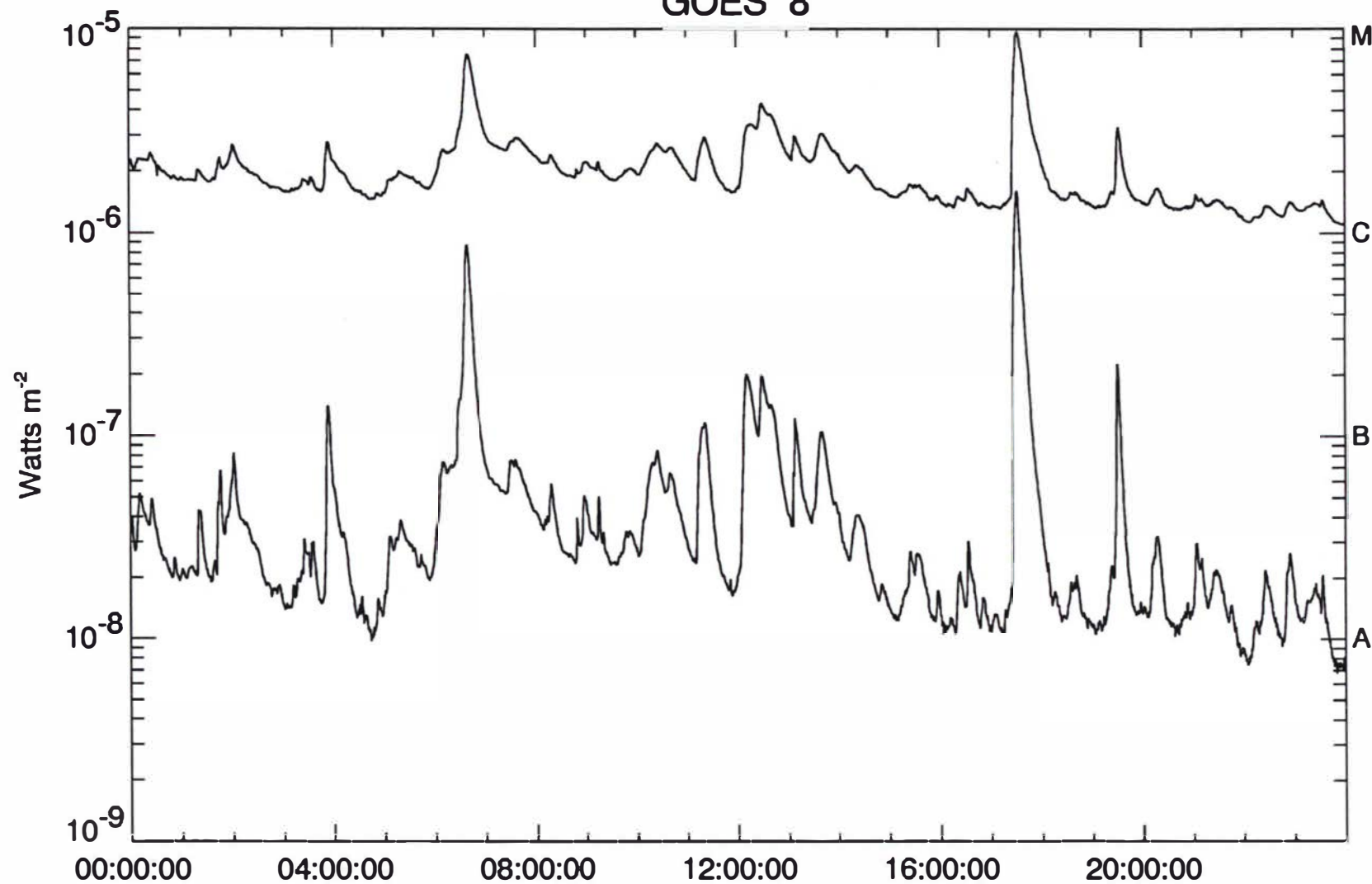
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 99/08/29, 0000:00

Plot created: 99/09/02, 1005

Channel

1 (1.0 - 8.0 Angstroms)

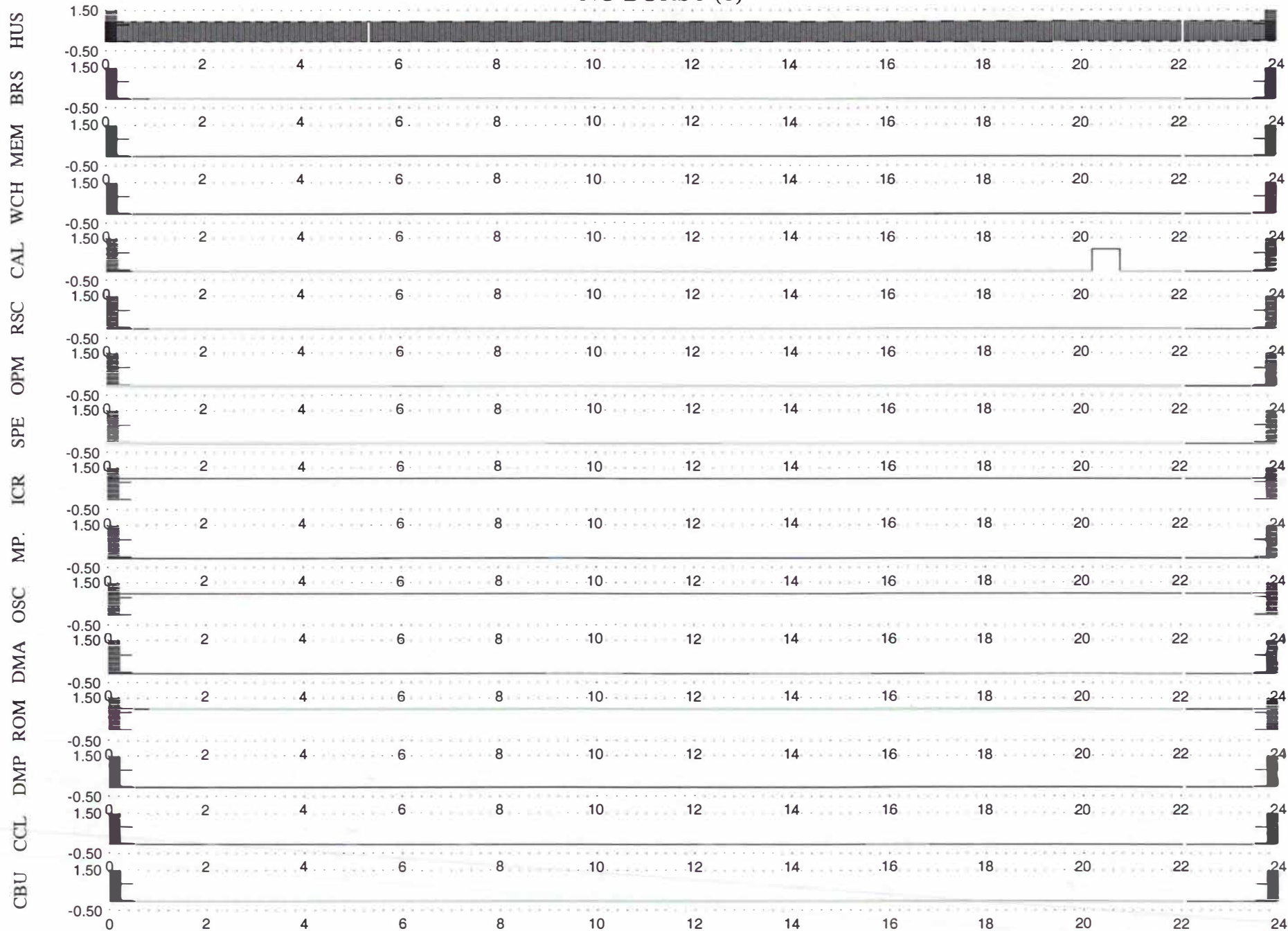
Background not subtracted

2 (0.5 - 4.0 Angstroms)

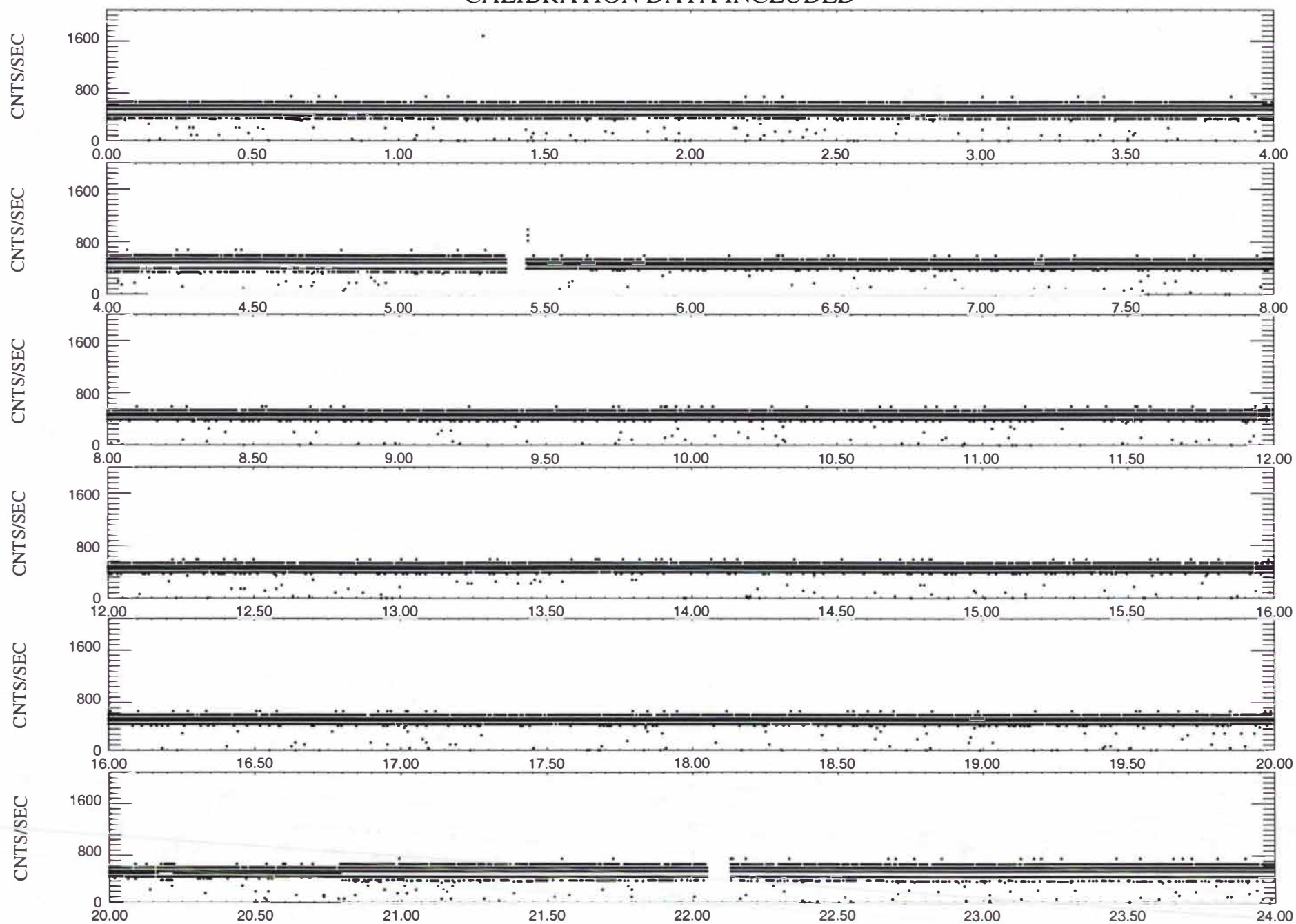
Background not subtracted

Sample average = 10

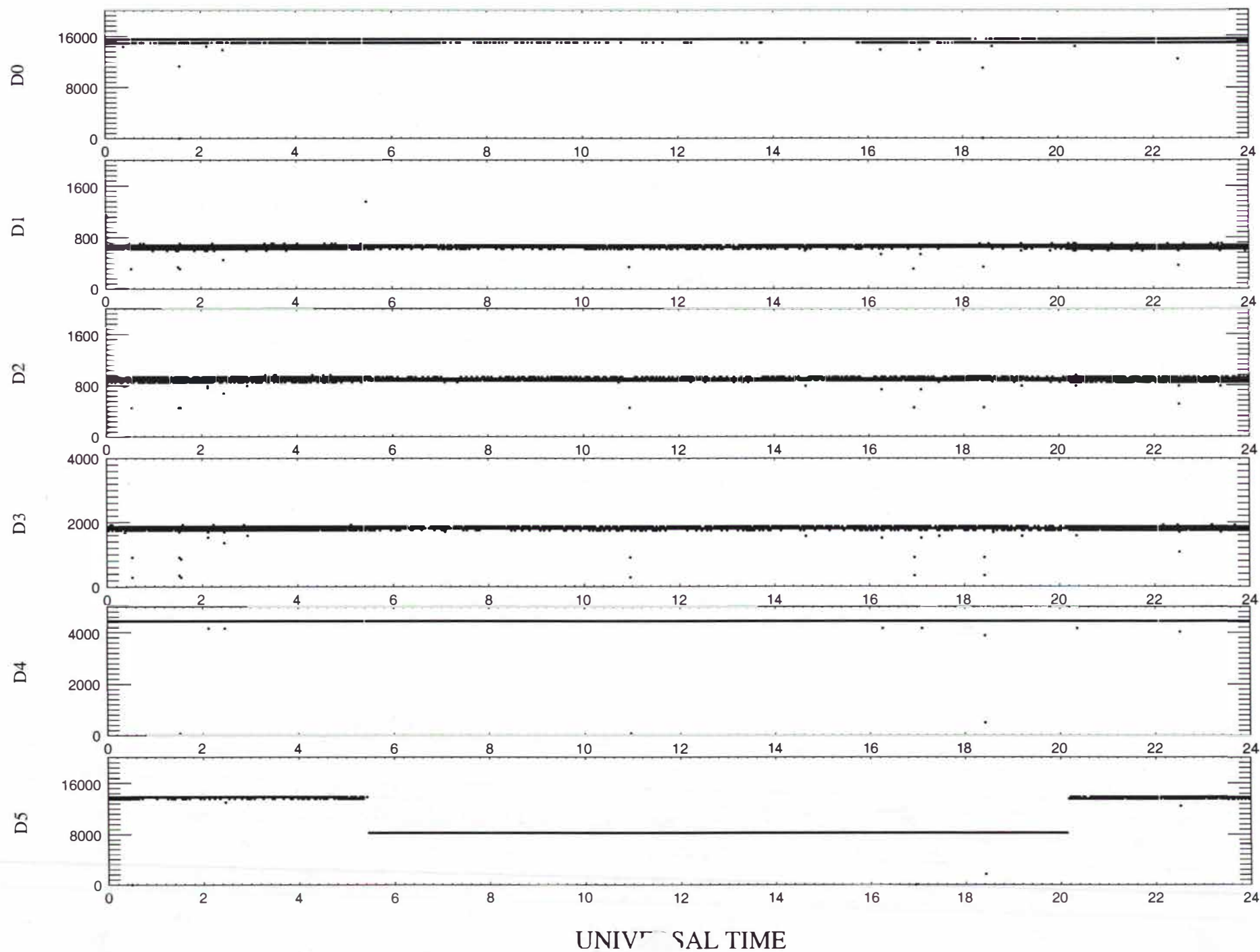
UNIV SAL TIME



CALIBRATION DATA INCLUDED



UNIV SAL TIME

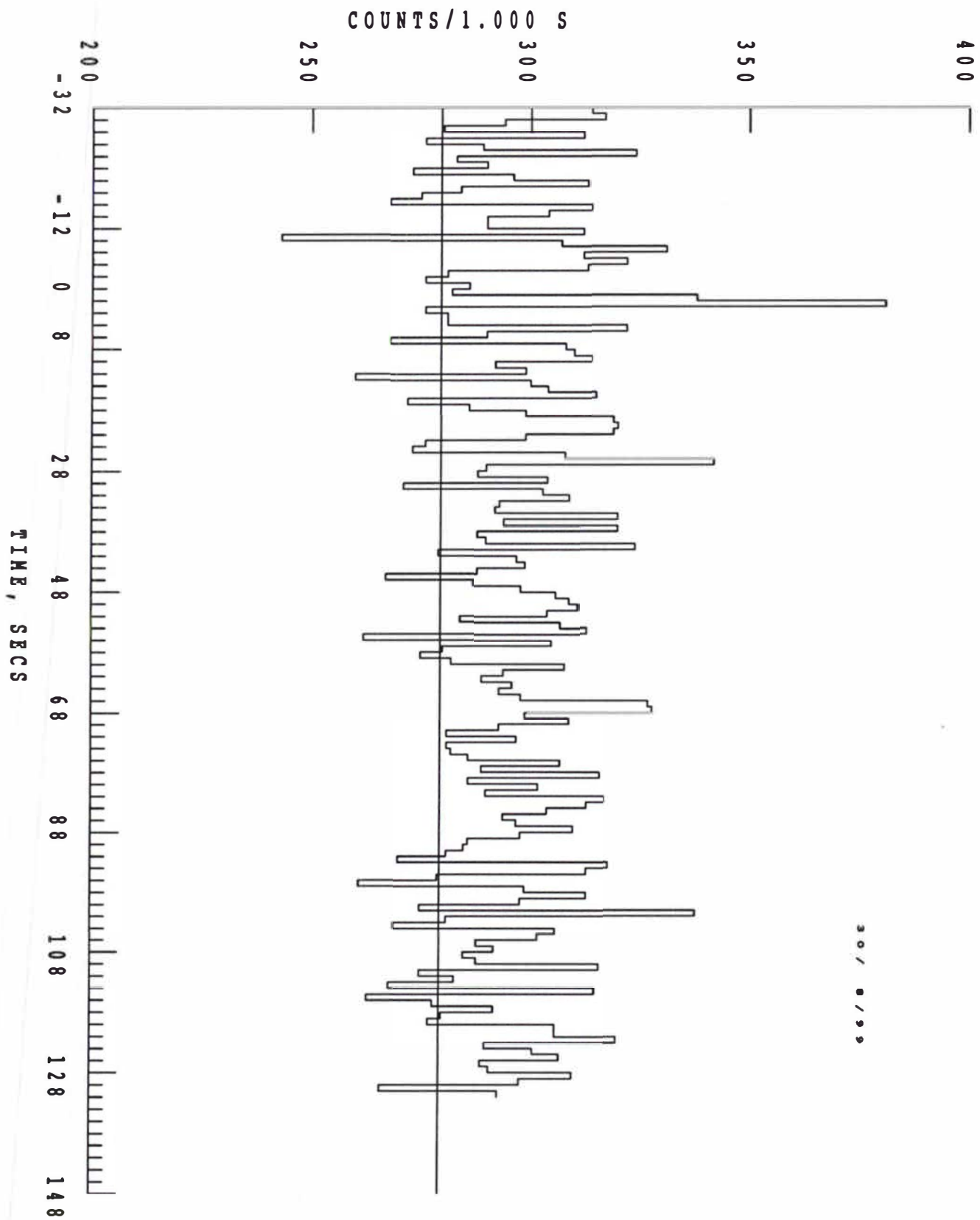


NEAR

30/08/99

24215.821

100-1000 keV



KNEAR GRS 19990830 24215

ULYSSES RT

30 / 8 / 99

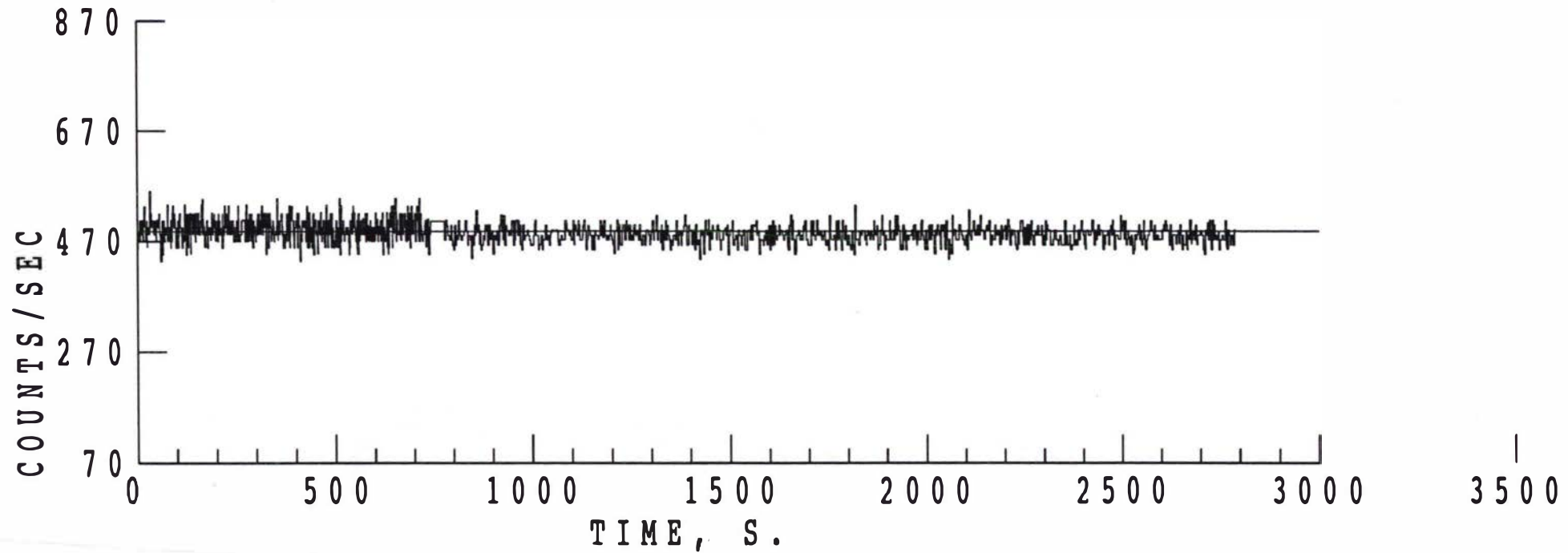
30 / 8 / 99 22032.016 s

INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Wed Sep 1 11:33 PDT 1999
Date: Wed, 1 Sep 1999 13:39:26 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
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, 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.: 7746

TIME: TJD=1420 SECONDS=53014

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=118.7 AZIMUTH=340.2 ERROR= 0.2 DEGREES

COMMENTS:

GOES C9.4, OPTICAL 1N SOLAR FLARE. SINGLE EPISODE WITH STRUCTURE, DUR. PROB.
APPROX. 75 S, PROBABLY STARTS AT APPROX. T-9 S, MAX AT APPROX. T+11 S.
POSSIBLY WEAKLY VISIBLE ABOVE 100 KEV.

From HENZE@fender.msfc.nasa.gov Wed Sep 1 11:35 PDT 1999
Date: Wed, 1 Sep 1999 13:42:36 -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, 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.: 7747

TIME: TJD=1420 SECONDS=75310

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

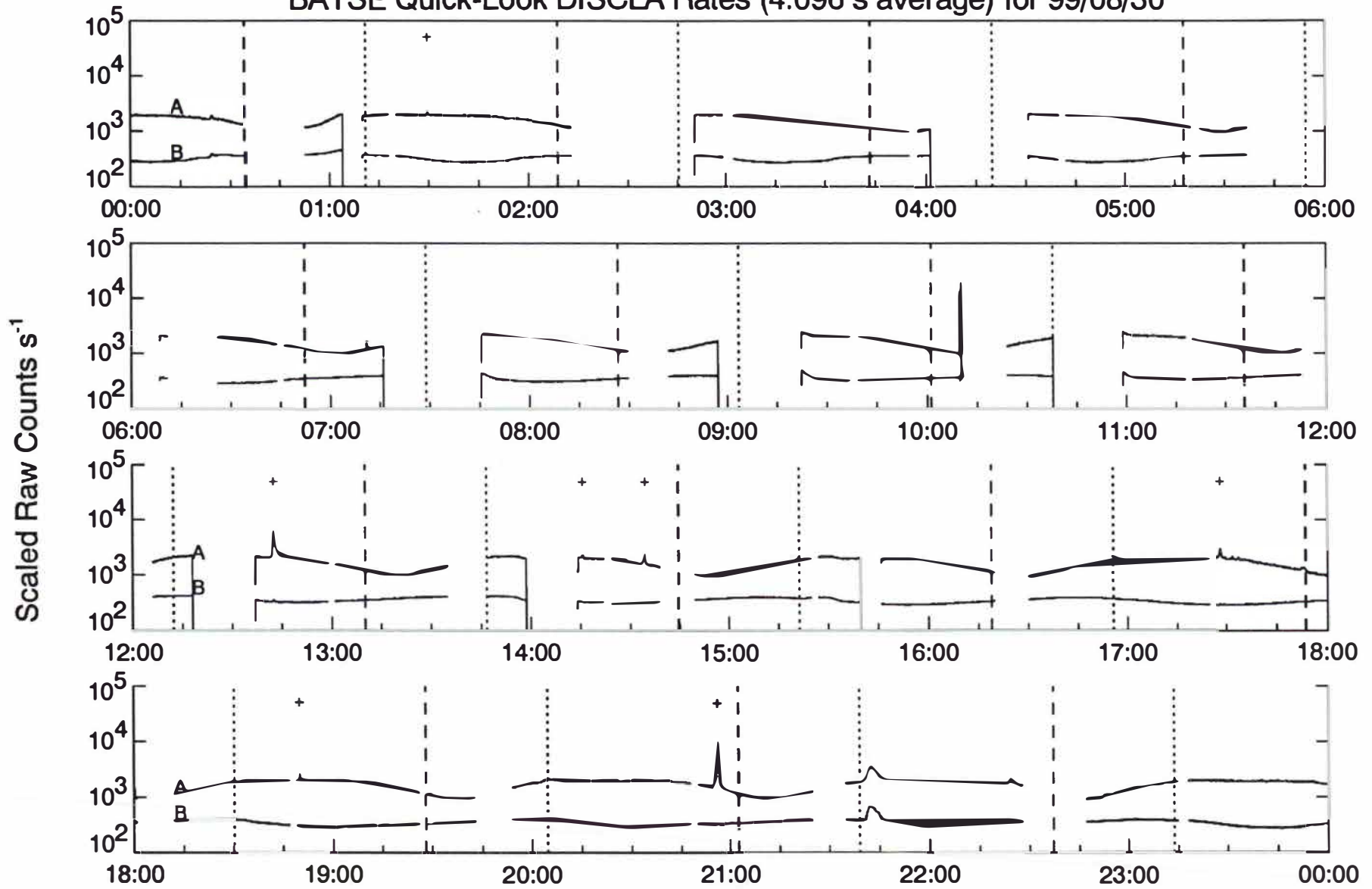
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.5 AZIMUTH=346.4 ERROR= 0.2 DEGREES

COMMENTS:

OPTICAL SF SOLAR FLARE, NO GOES. SINGLE EPISODE WITH STRUCTURE, DUR. APPROX.
170 S, STARTS AT APPROX. T-20 S, MAX AT APPROX. T+58 S. WEAKLY VISIBLE ABOVE
100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/30

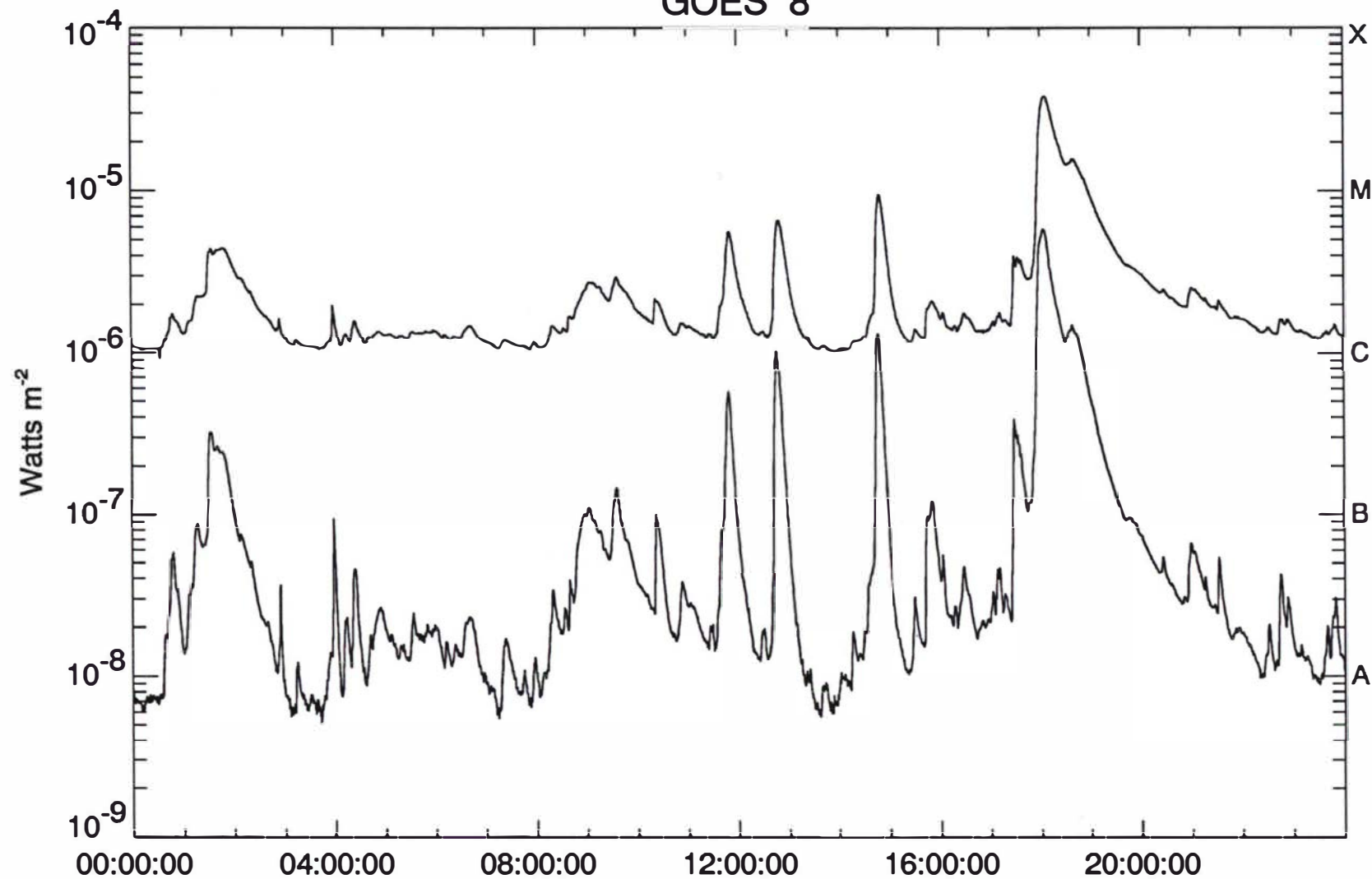


Current Time: 99/09/03, 1005 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/08/30, 0000:00

Plot created: 99/09/03, 1005

Channel

1 (1.0 - 8.0 Angstroms)

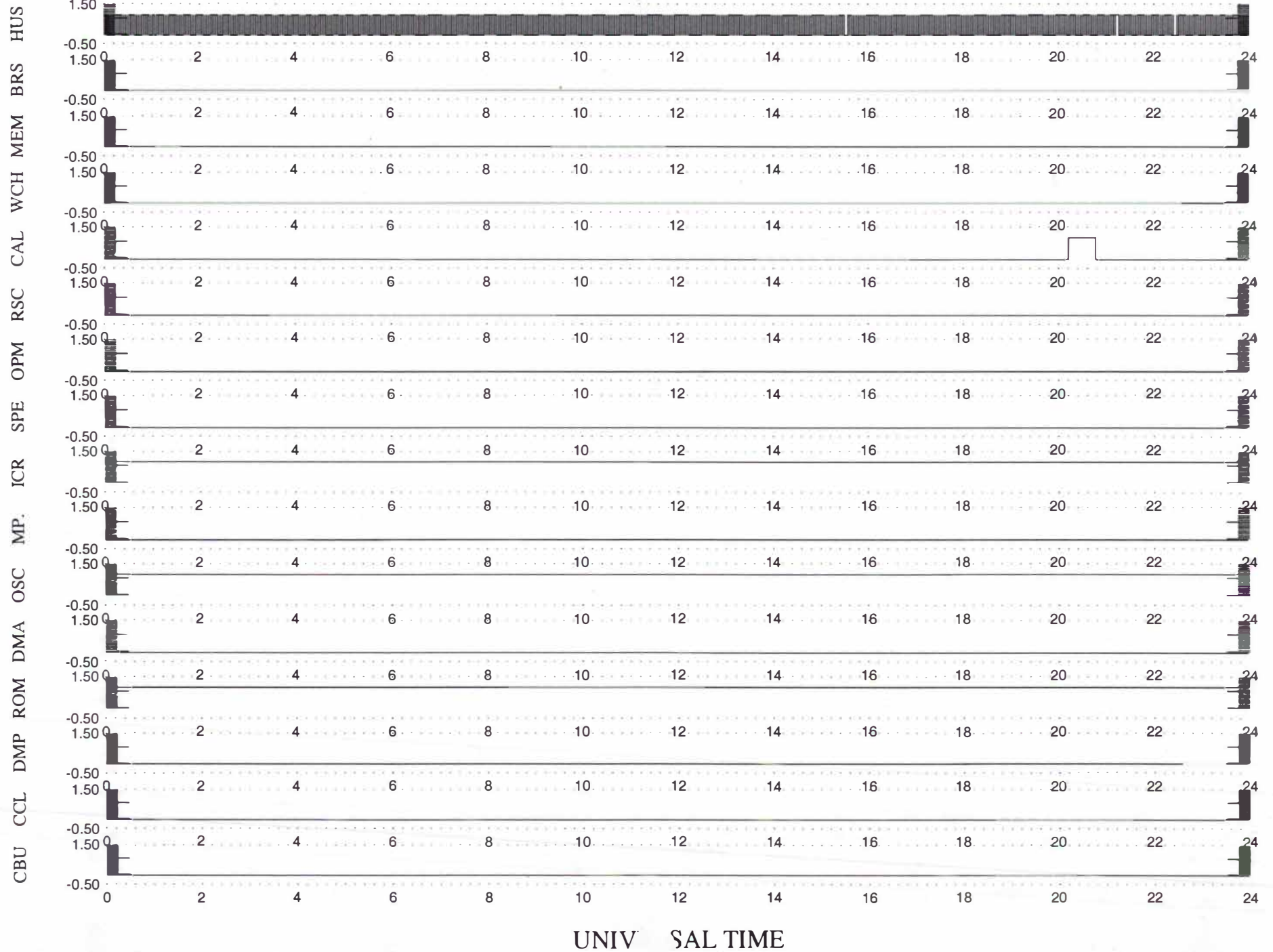
Background not subtracted

2 (0.5 - 4.0 Angstroms)

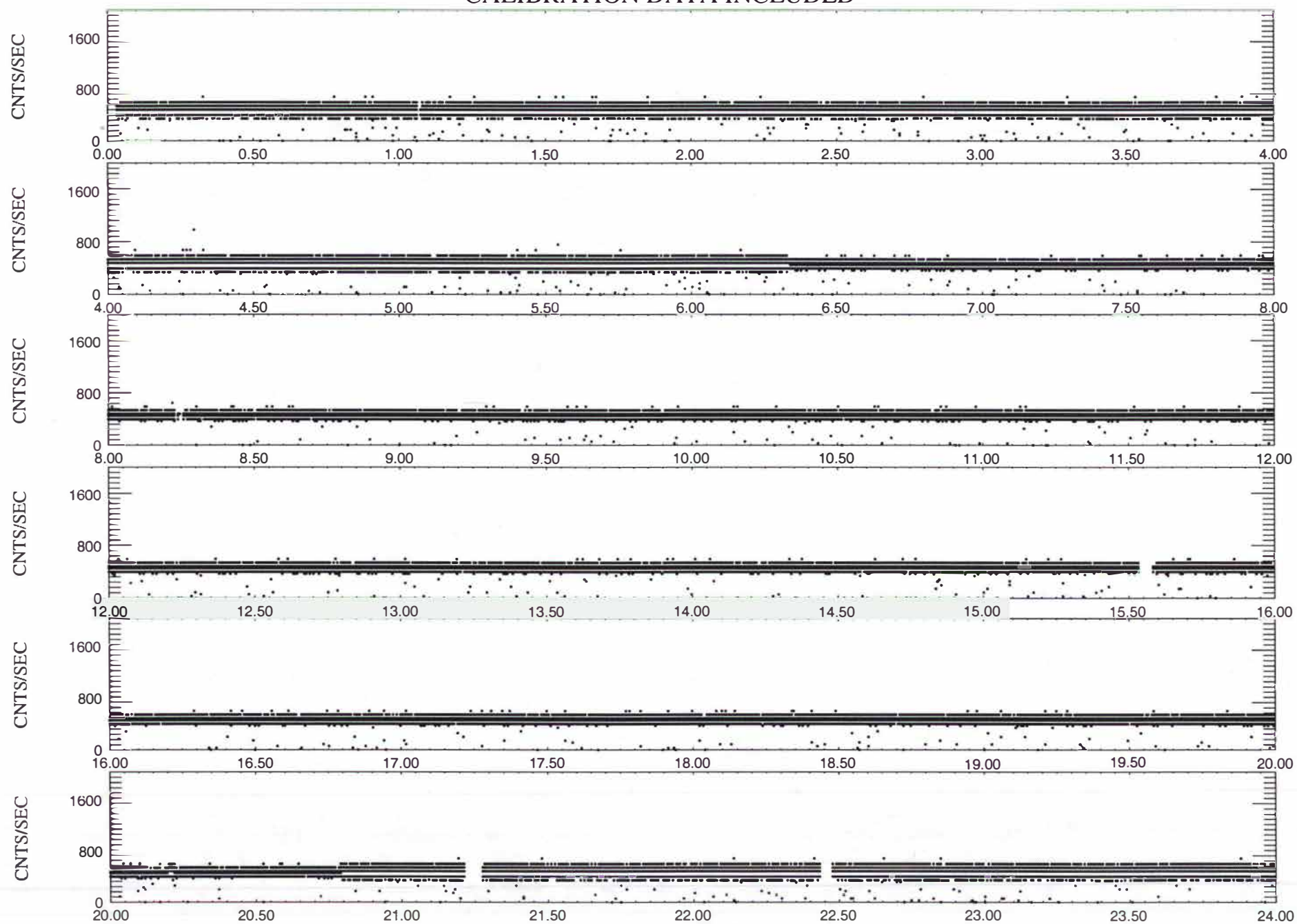
Background not subtracted

Sample average = 10

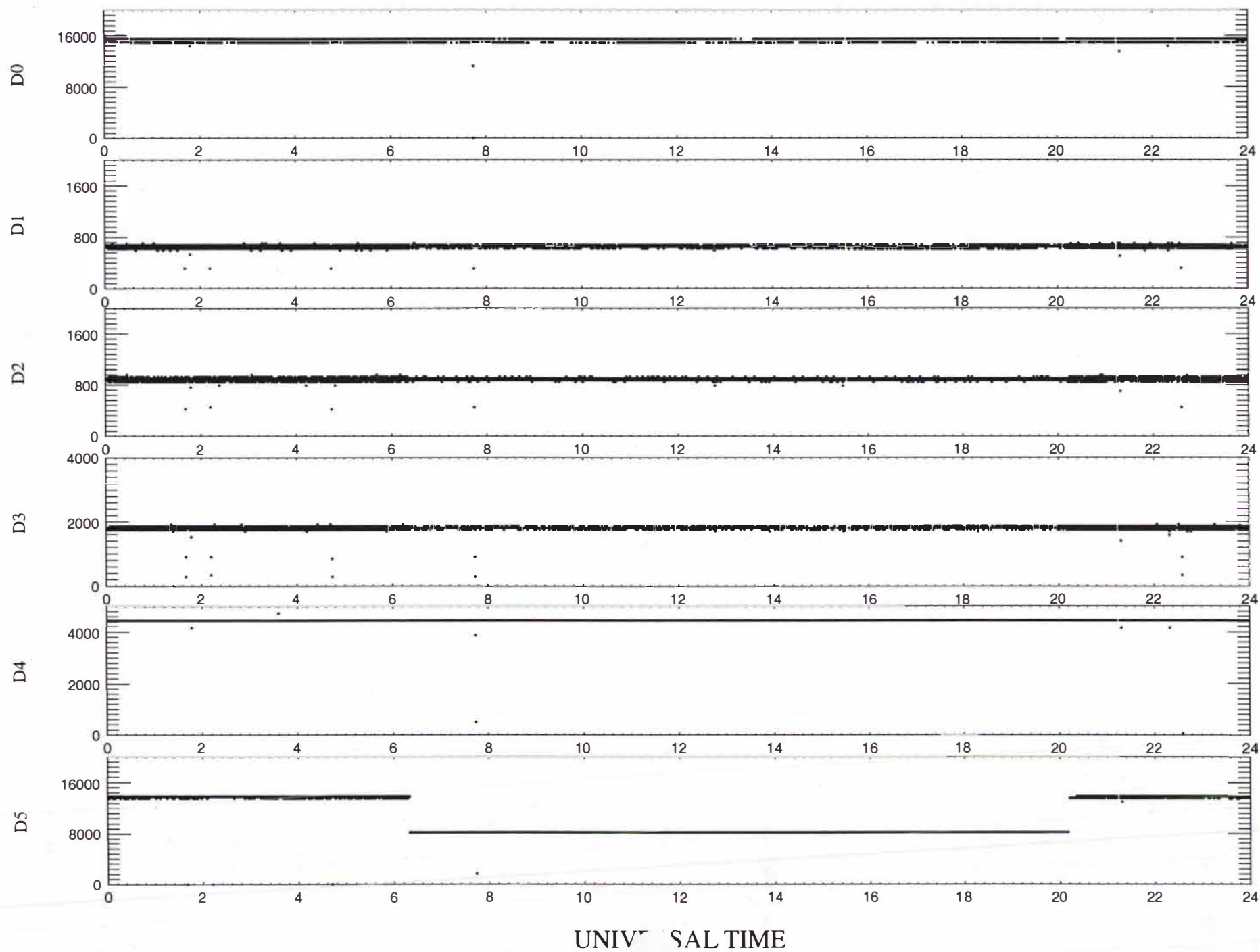
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



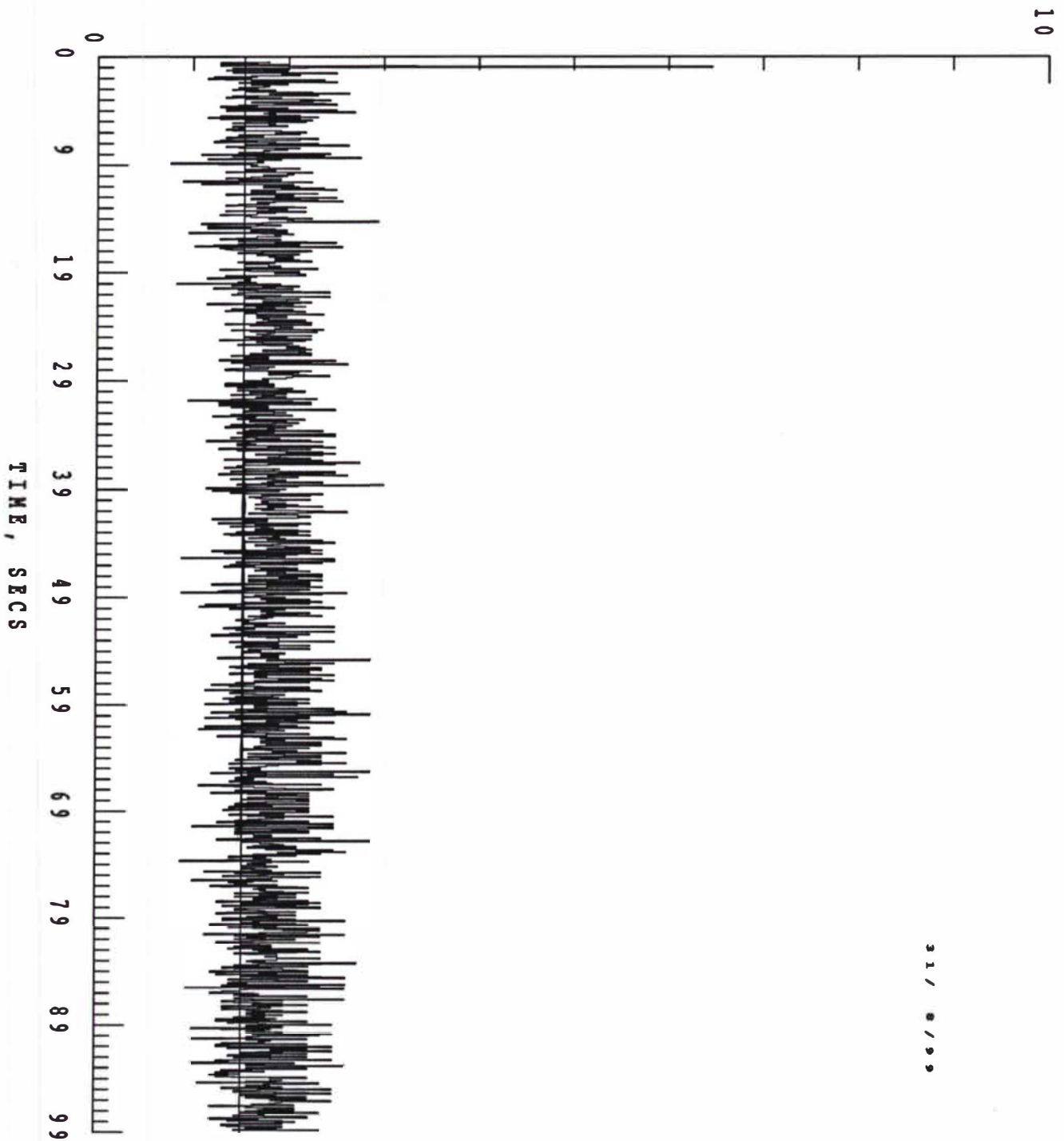
KONUS

31/08/99

41835.091

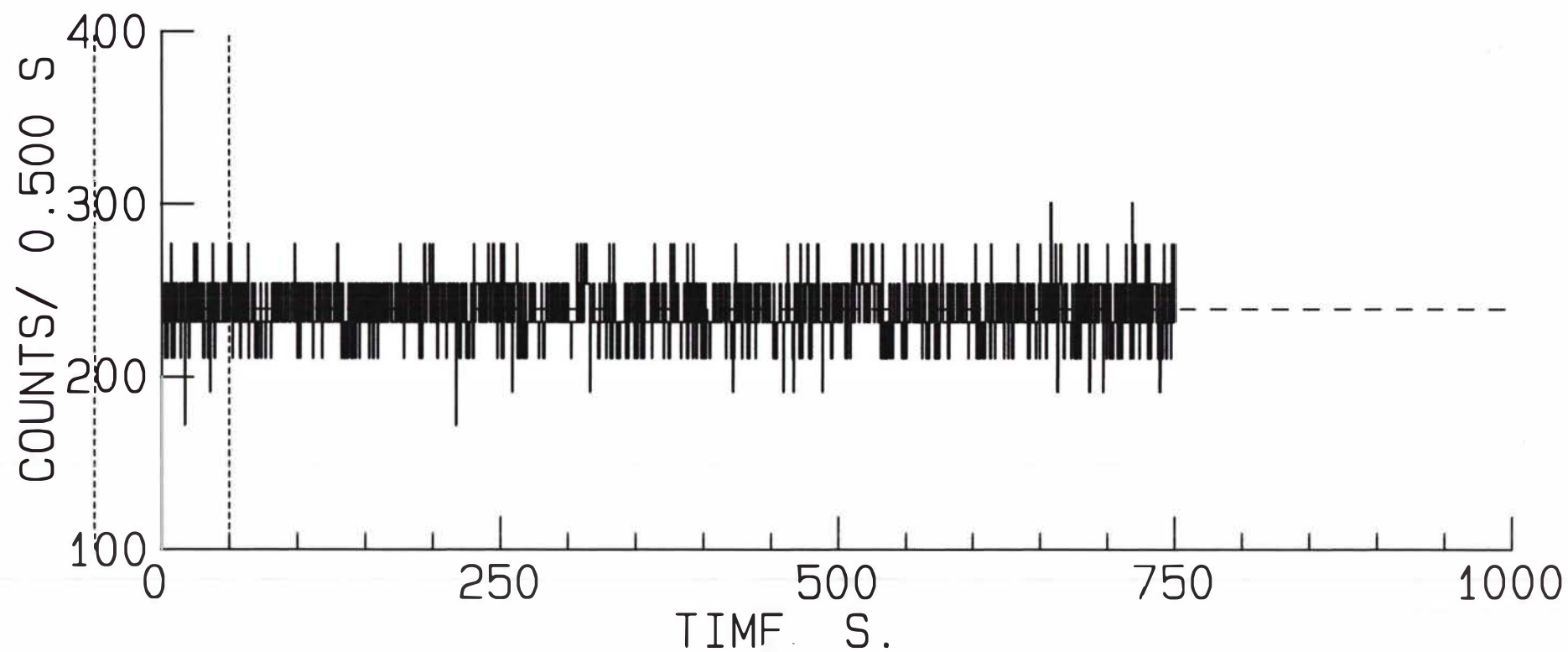
50- 200 keV

COUNTS/0.064 S



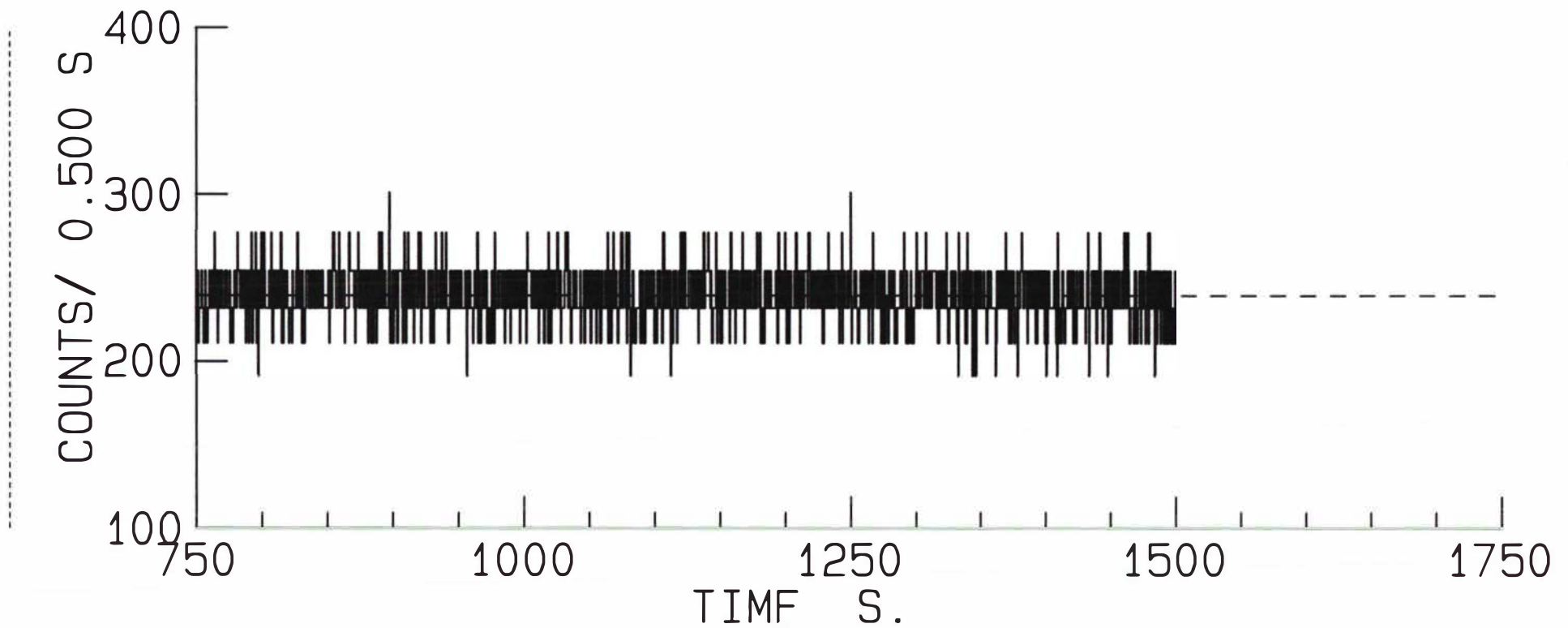
ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

2 / 1 / 9



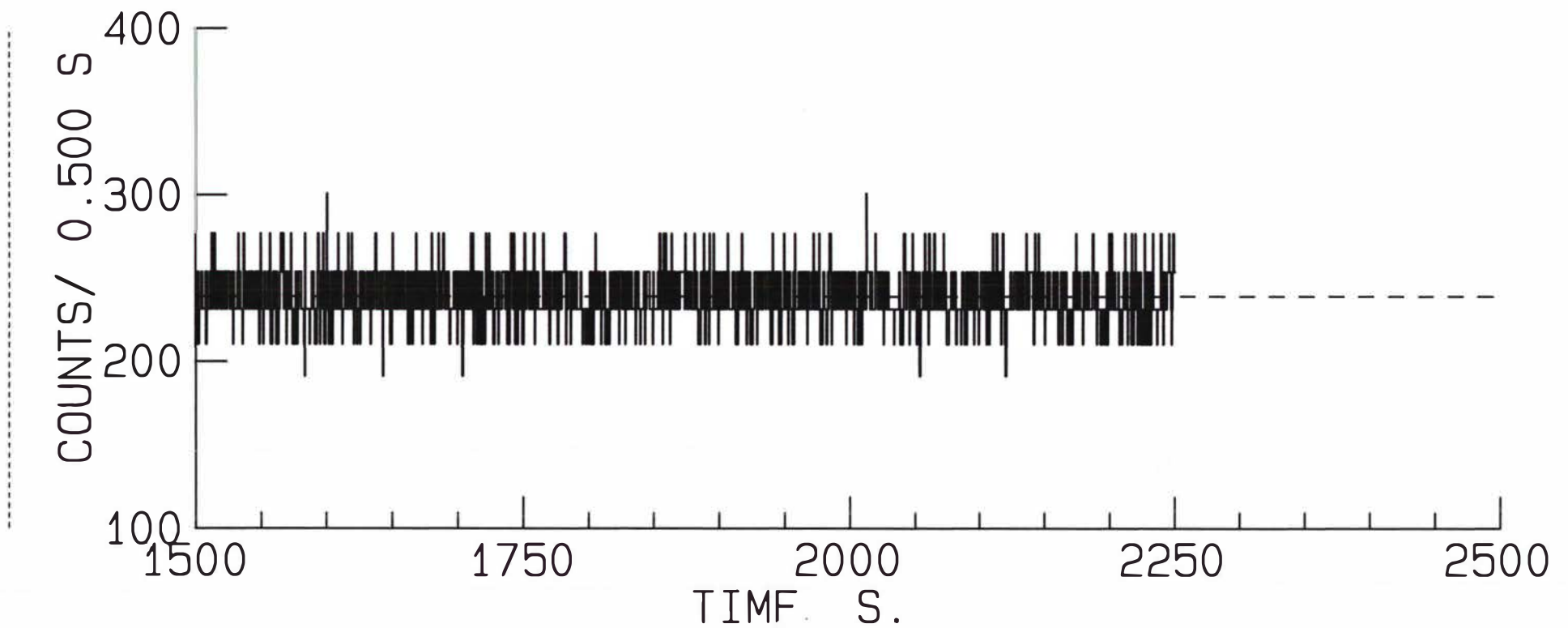
ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

2 / 1 / 9



ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

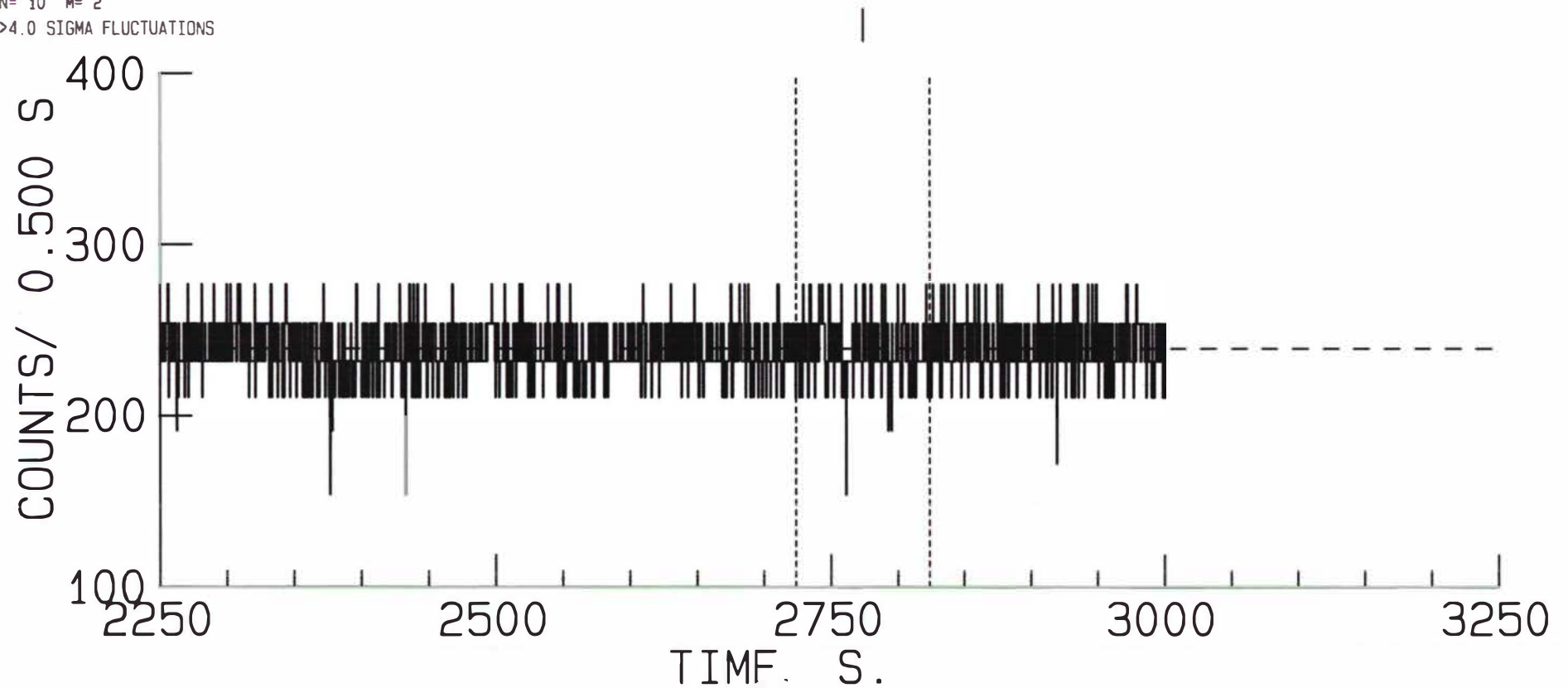
2 / 1 / 9



ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

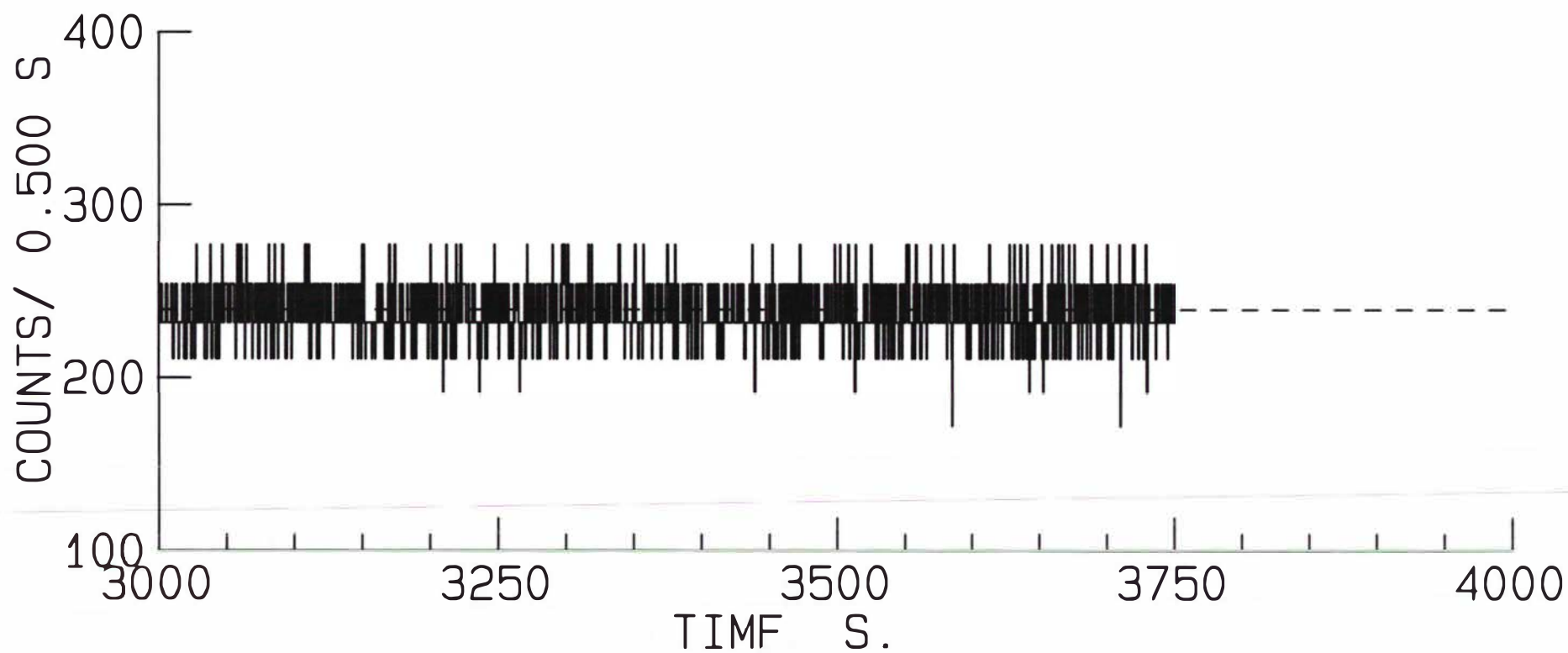
2 / 1 / 9

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



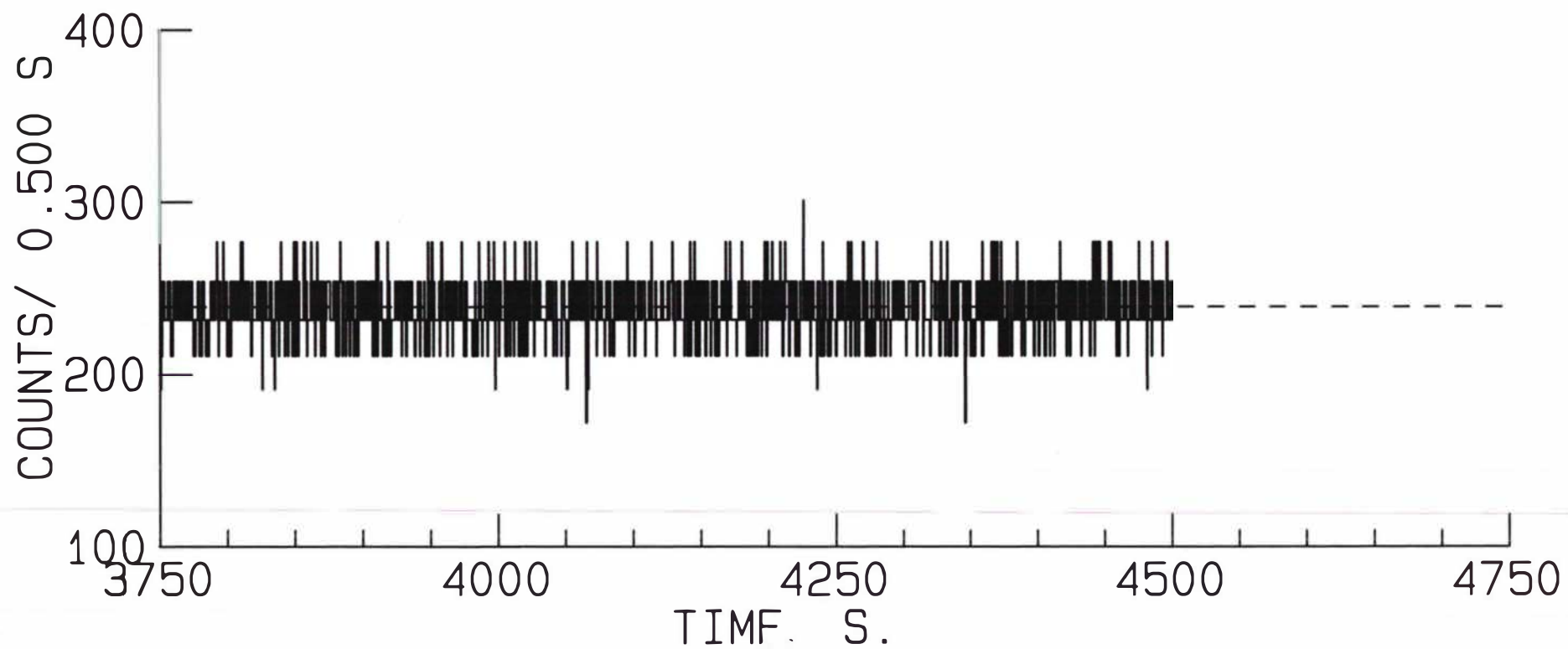
ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

2 / 1 / 9



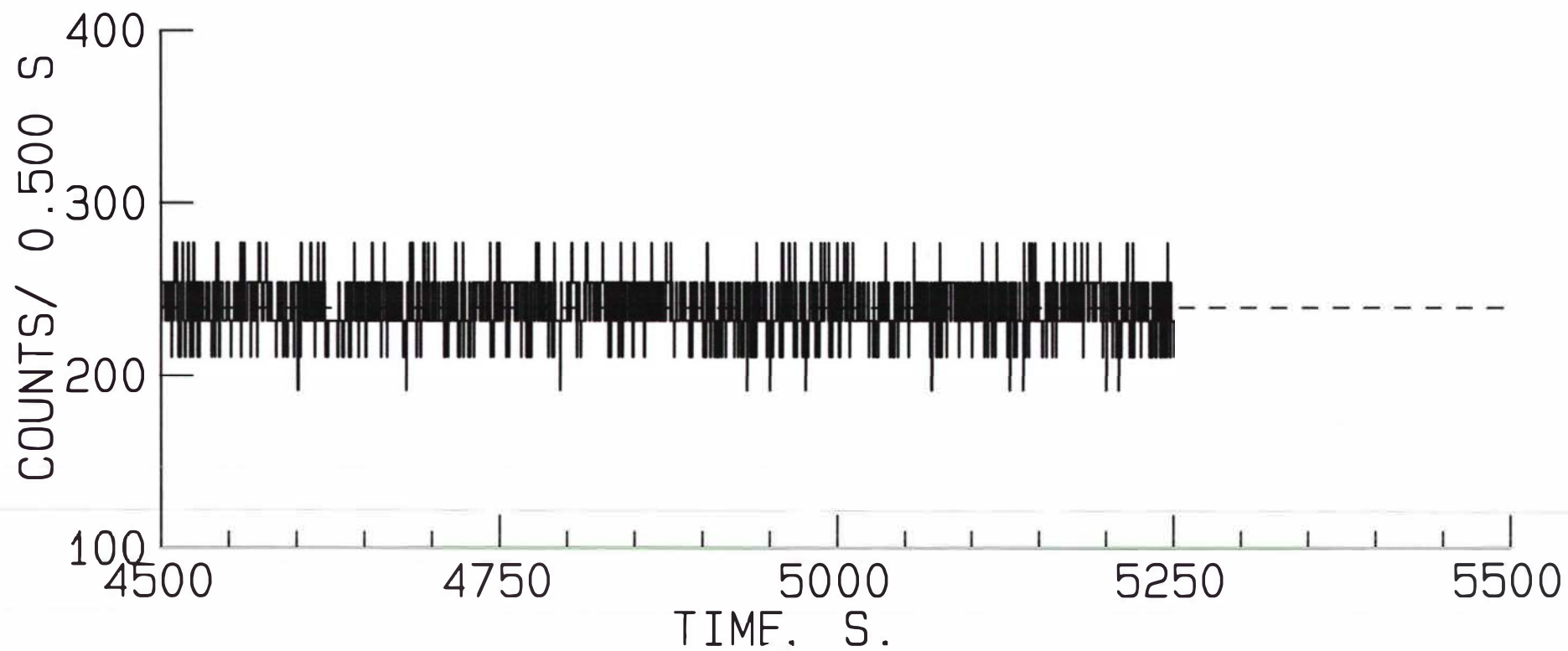
ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

2 / 1 / 9



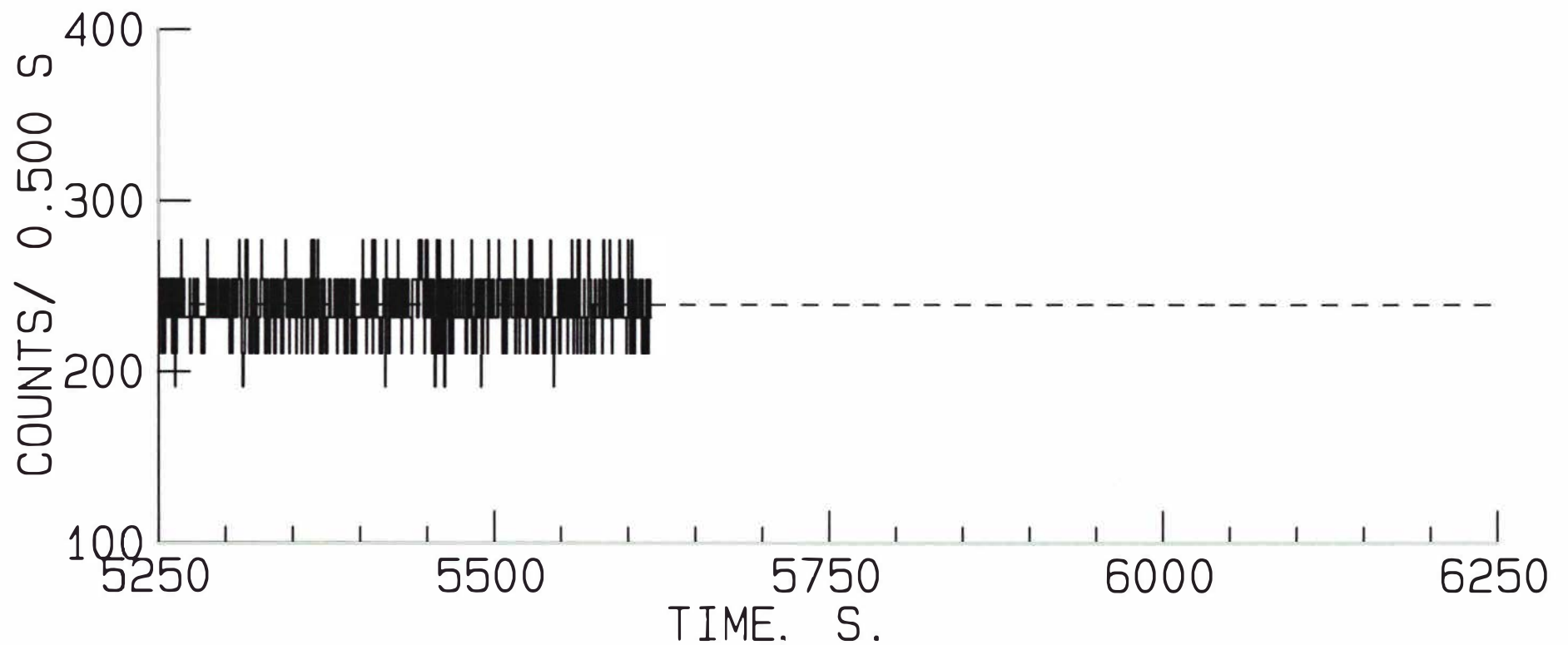
ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

2 / 1 / 9



ULYSSES RT
31/ 8/99 39024.062 s
22- 150 keV

2 / 1 / 9

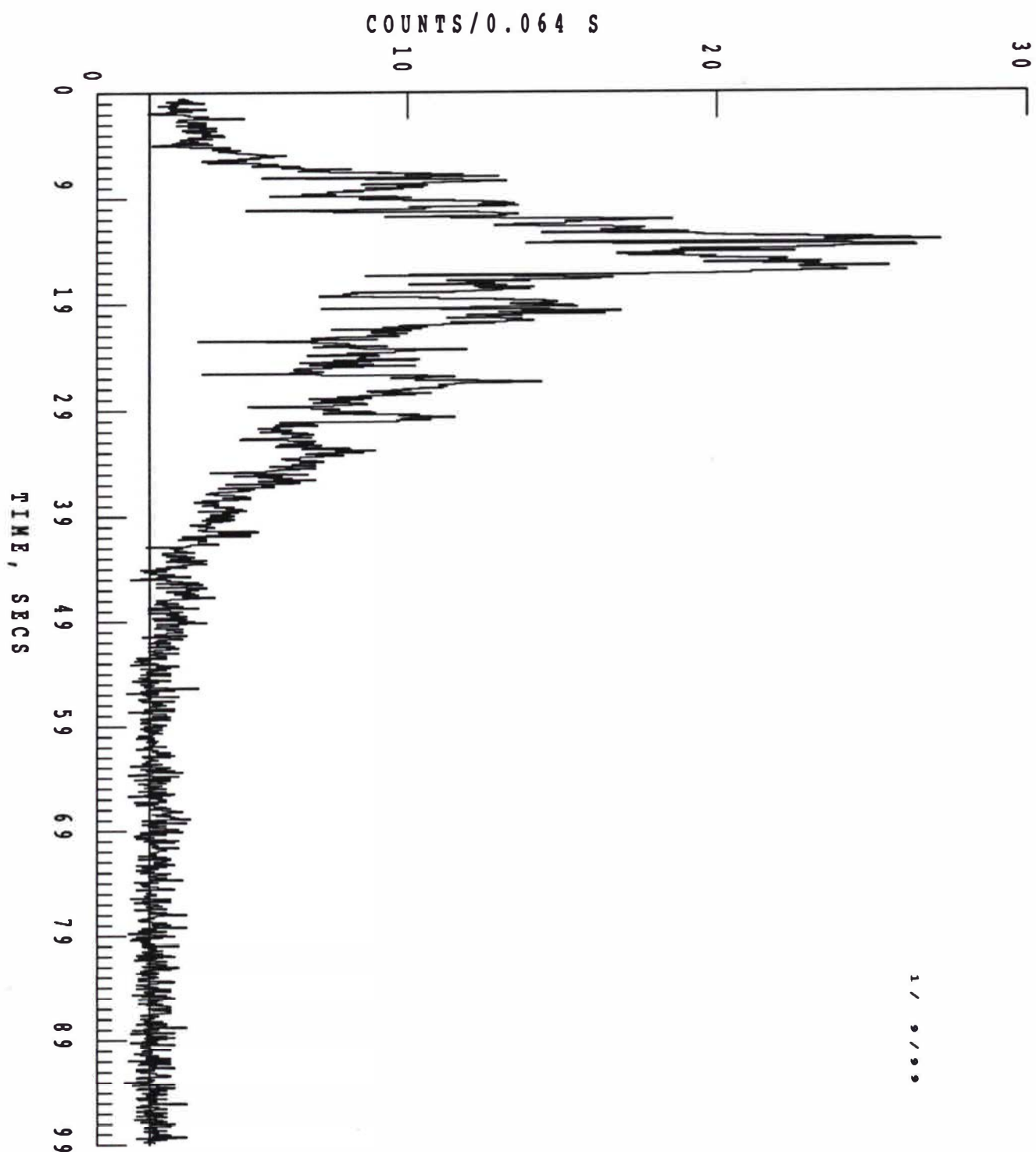


KONUS

31/08/99

46762.258

50- 200 keV

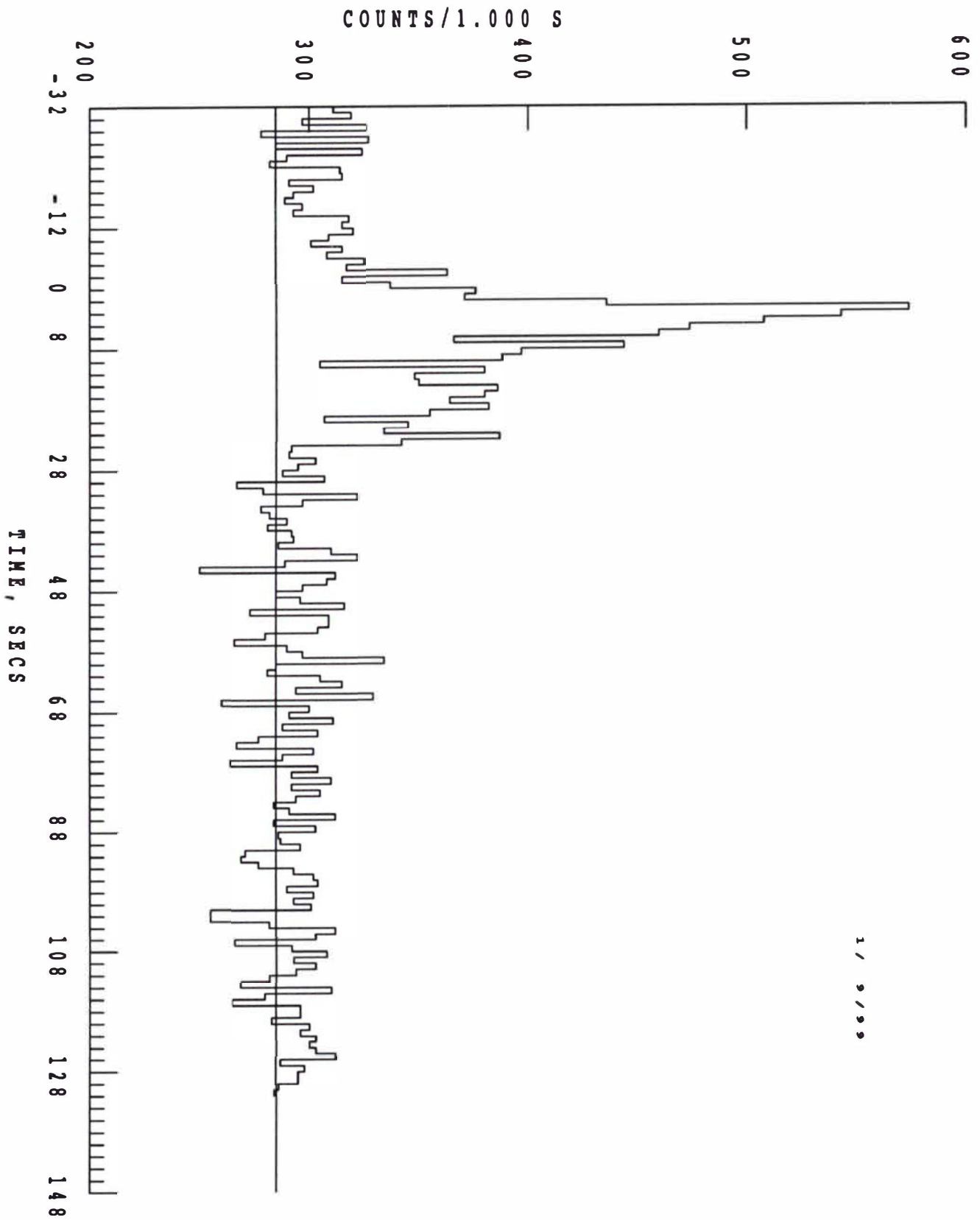


NEAR

31/08/99

46841.780

100-1000 keV



KONUS1 19990831 46762

ULYSSES RT

1 / 9 / 99

31 / 8 / 99 43956.113 s

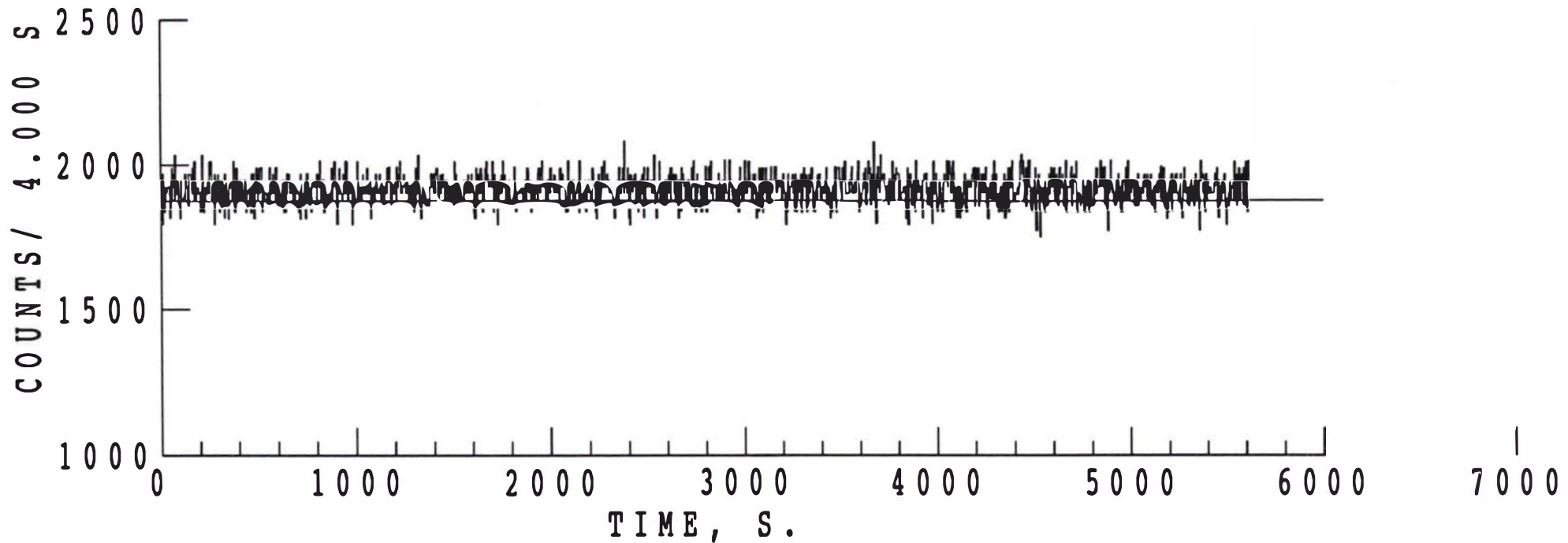
0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

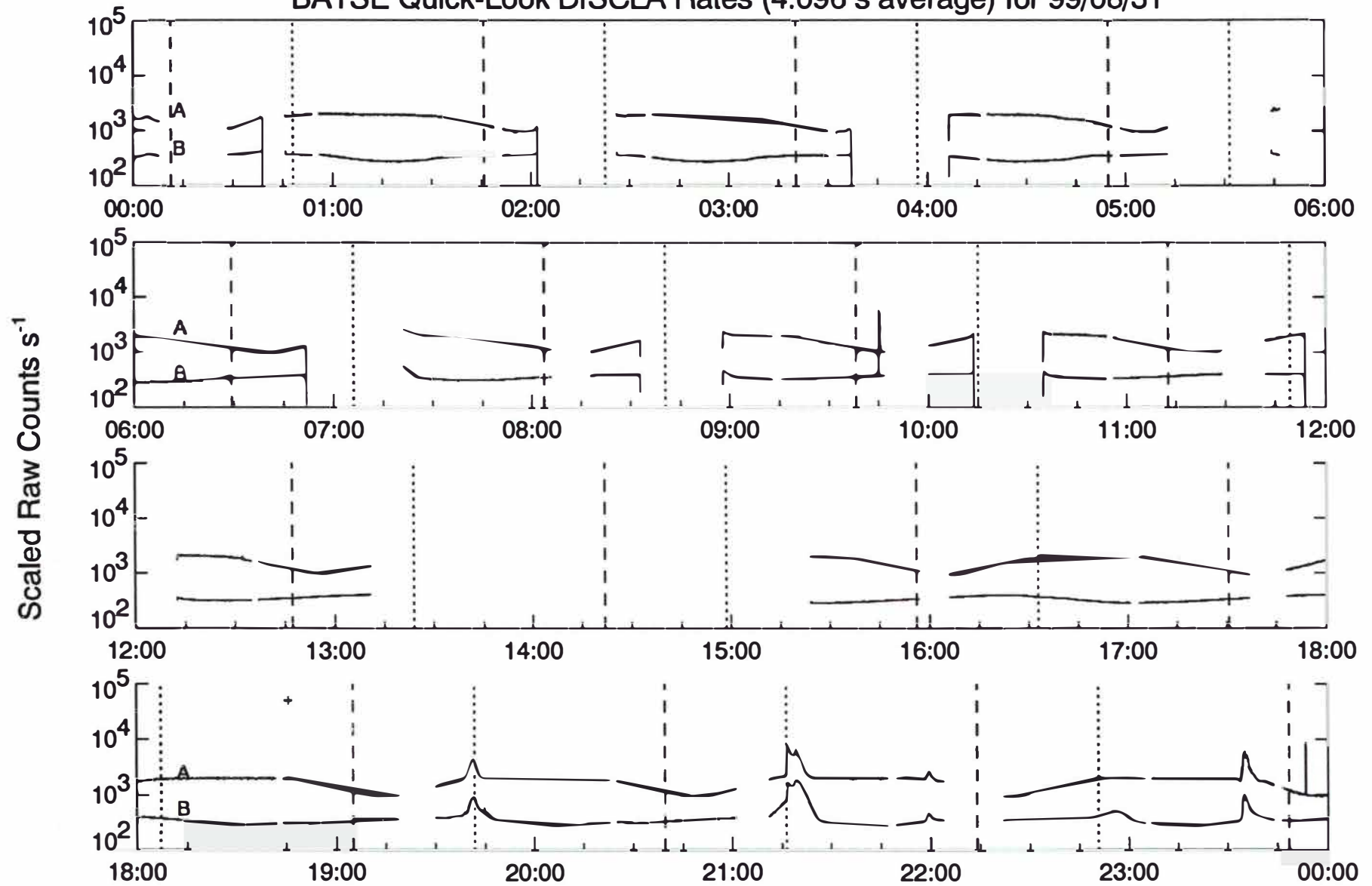
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

1

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/08/31



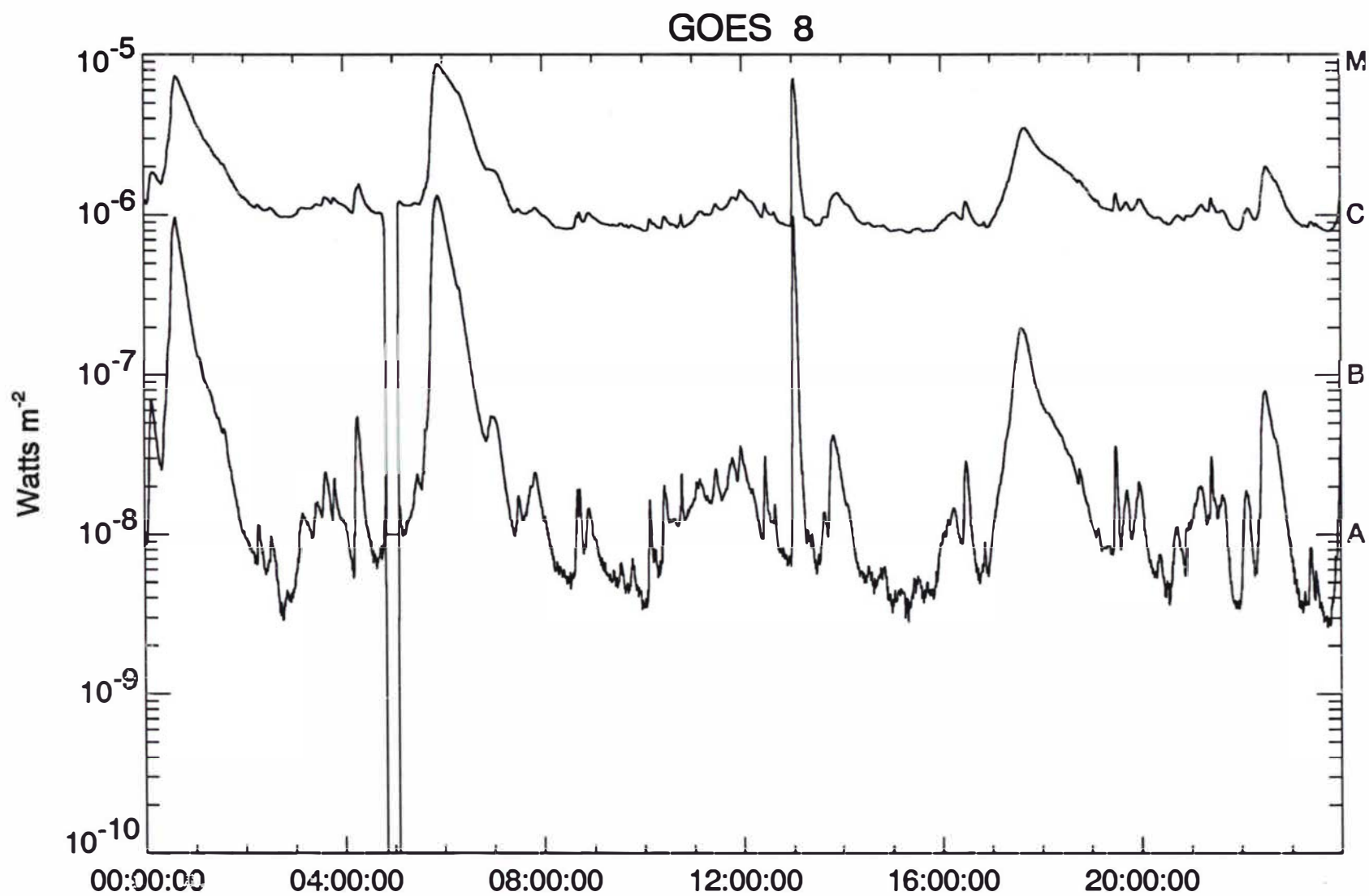
Current Time: 99/09/04, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

5th
 1st
 2nd
 3rd
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 99th
 100th





Data Start: 99/08/31, 0000:00

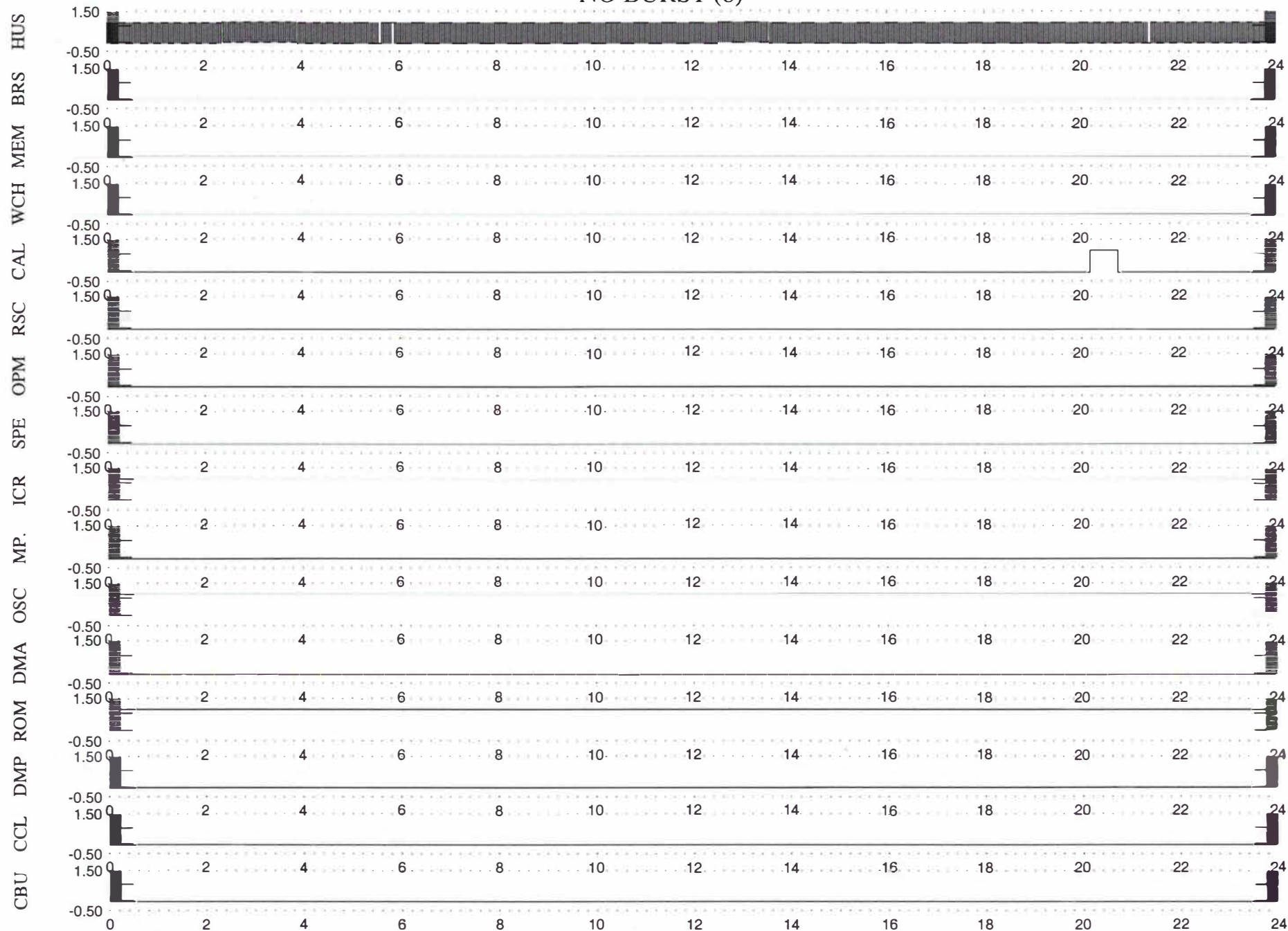
Plot created: 99/09/04, 1005

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

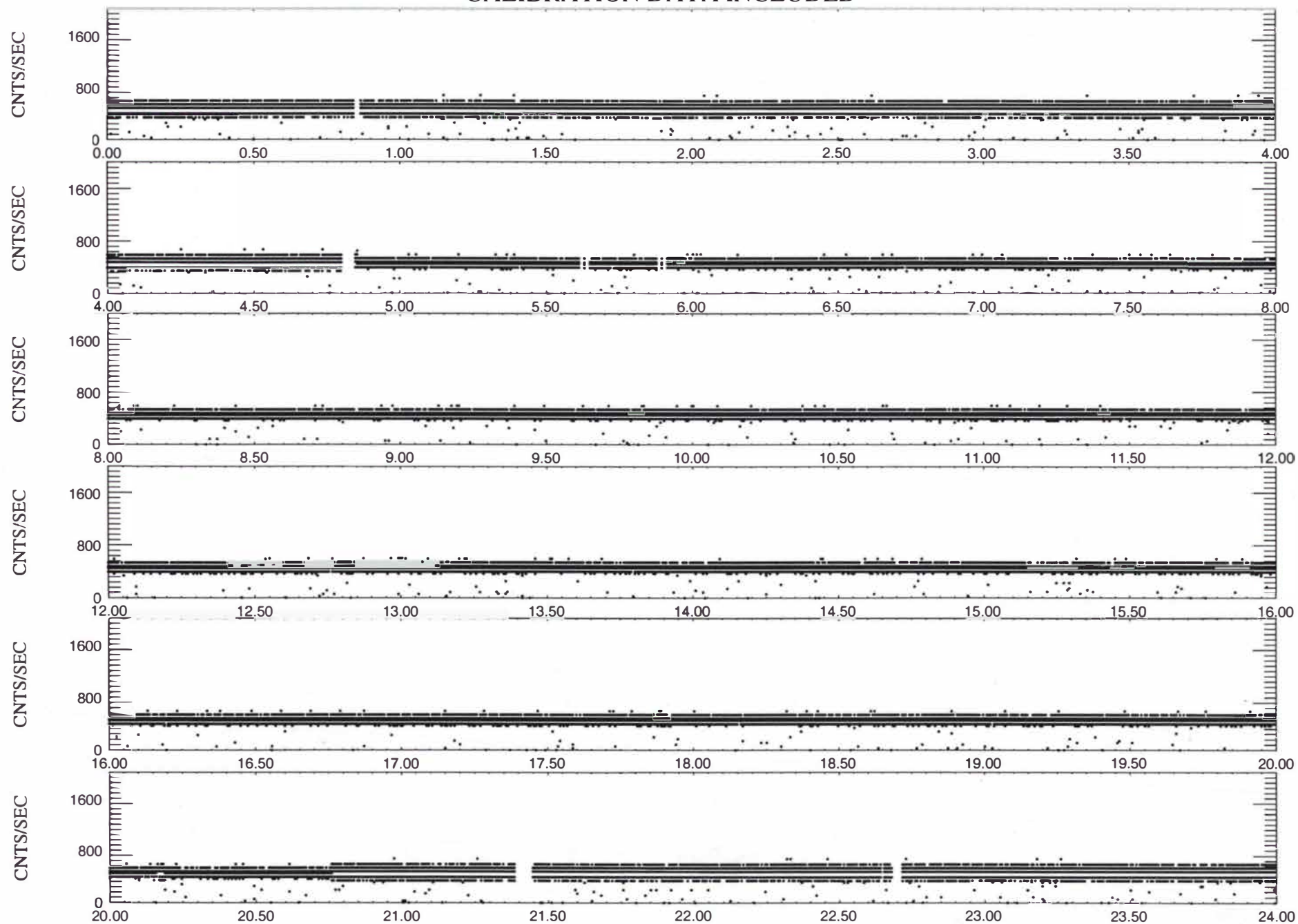
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

UNIV. SAL TIME



CALIBRATION DATA INCLUDED



UNIV SAL TIME

