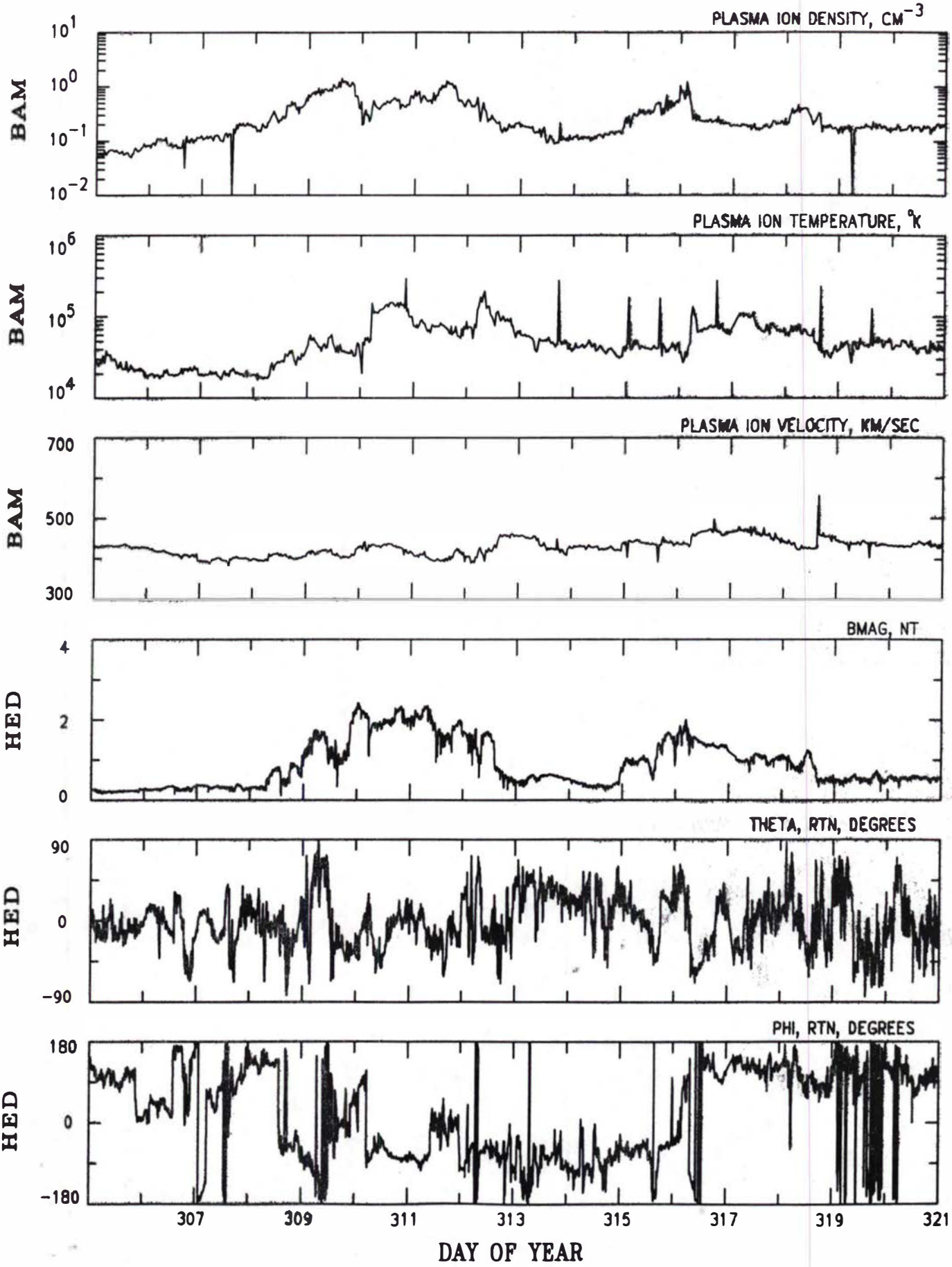
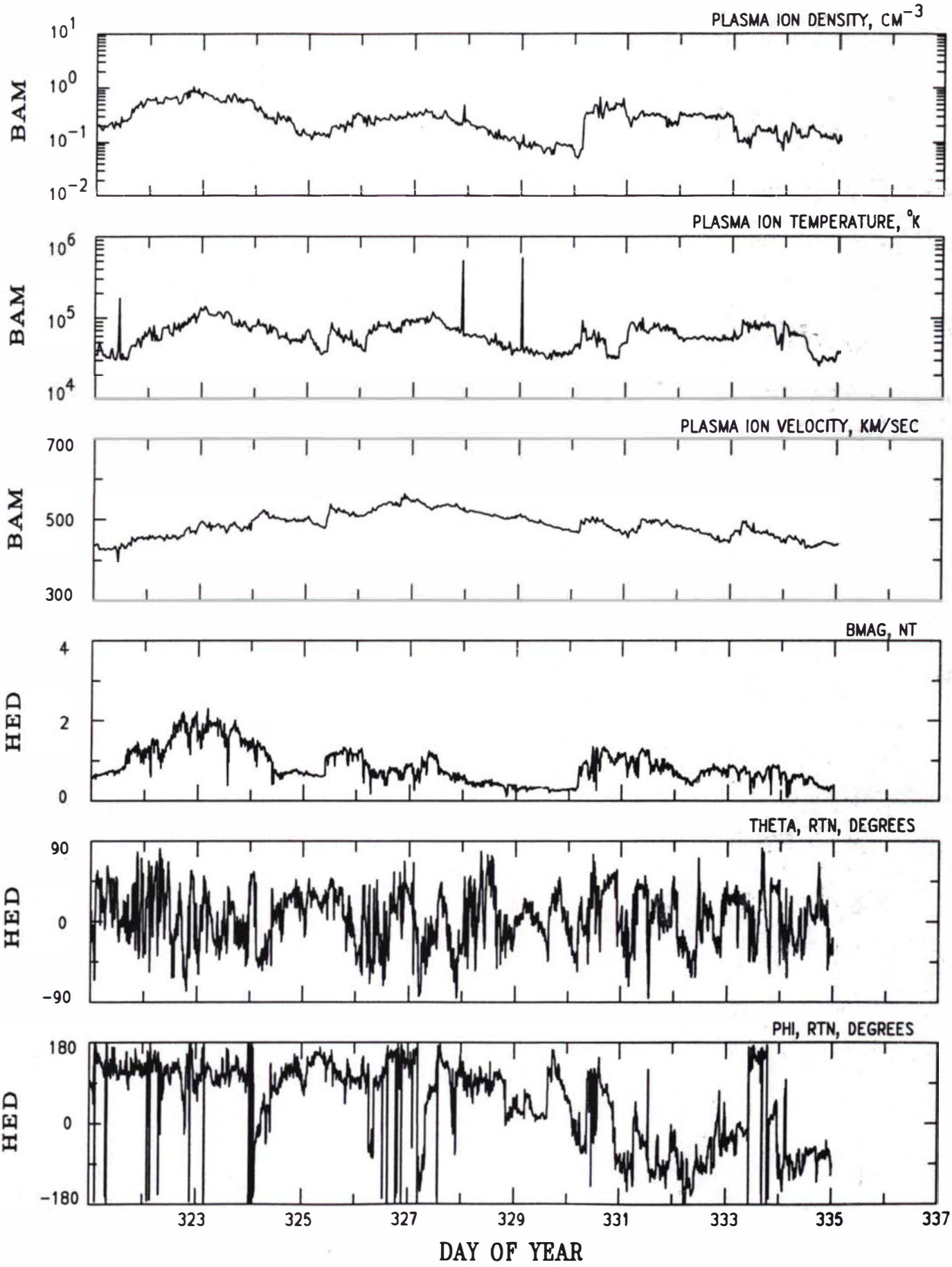
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

99 305 NOV 1 00:00:00.000 – 99 321 NOV 17 00:00:00.000



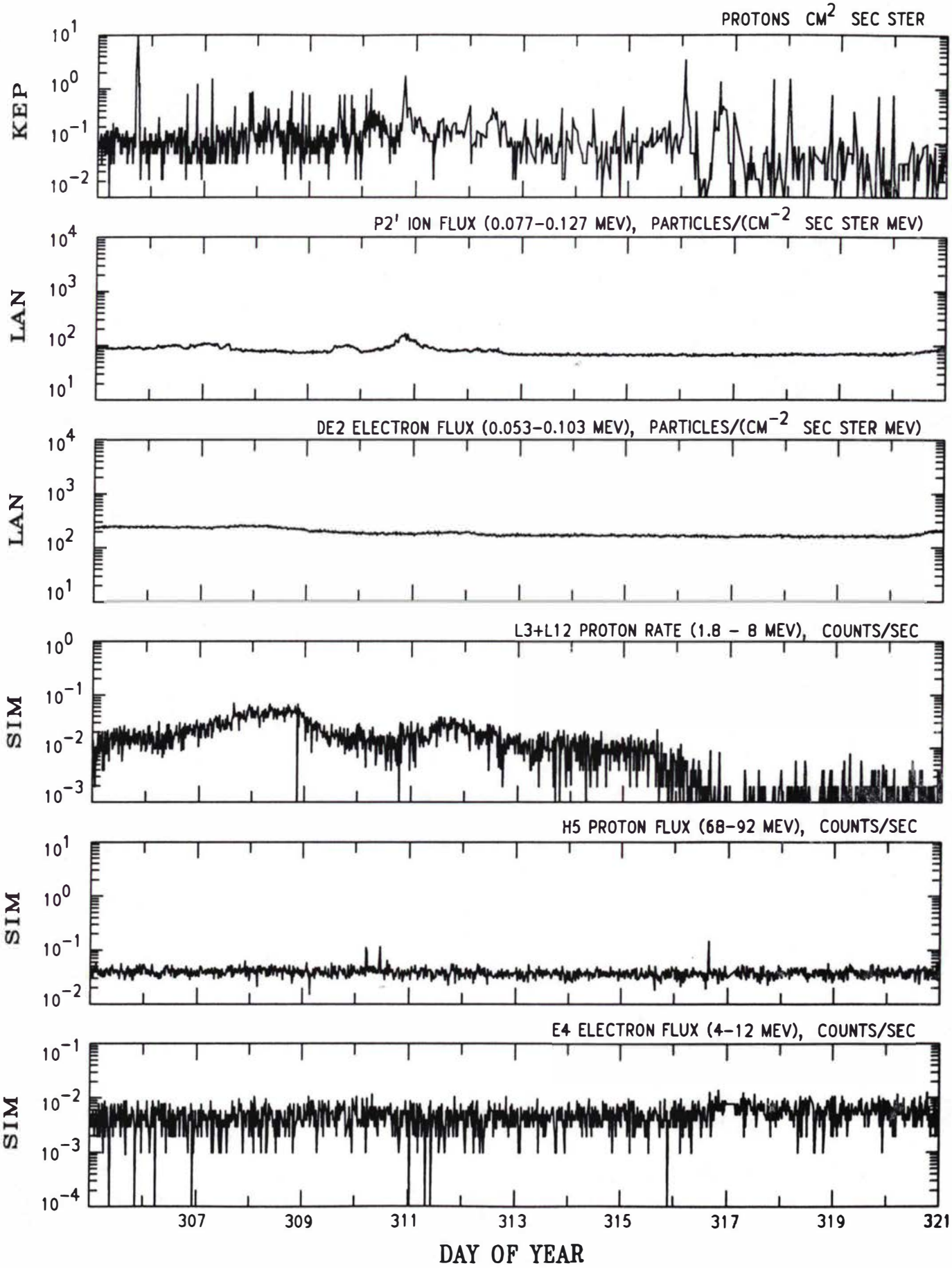
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 321 NOV 17 00:00:00.000 - 99 337 DEC 3 00:00:00.000



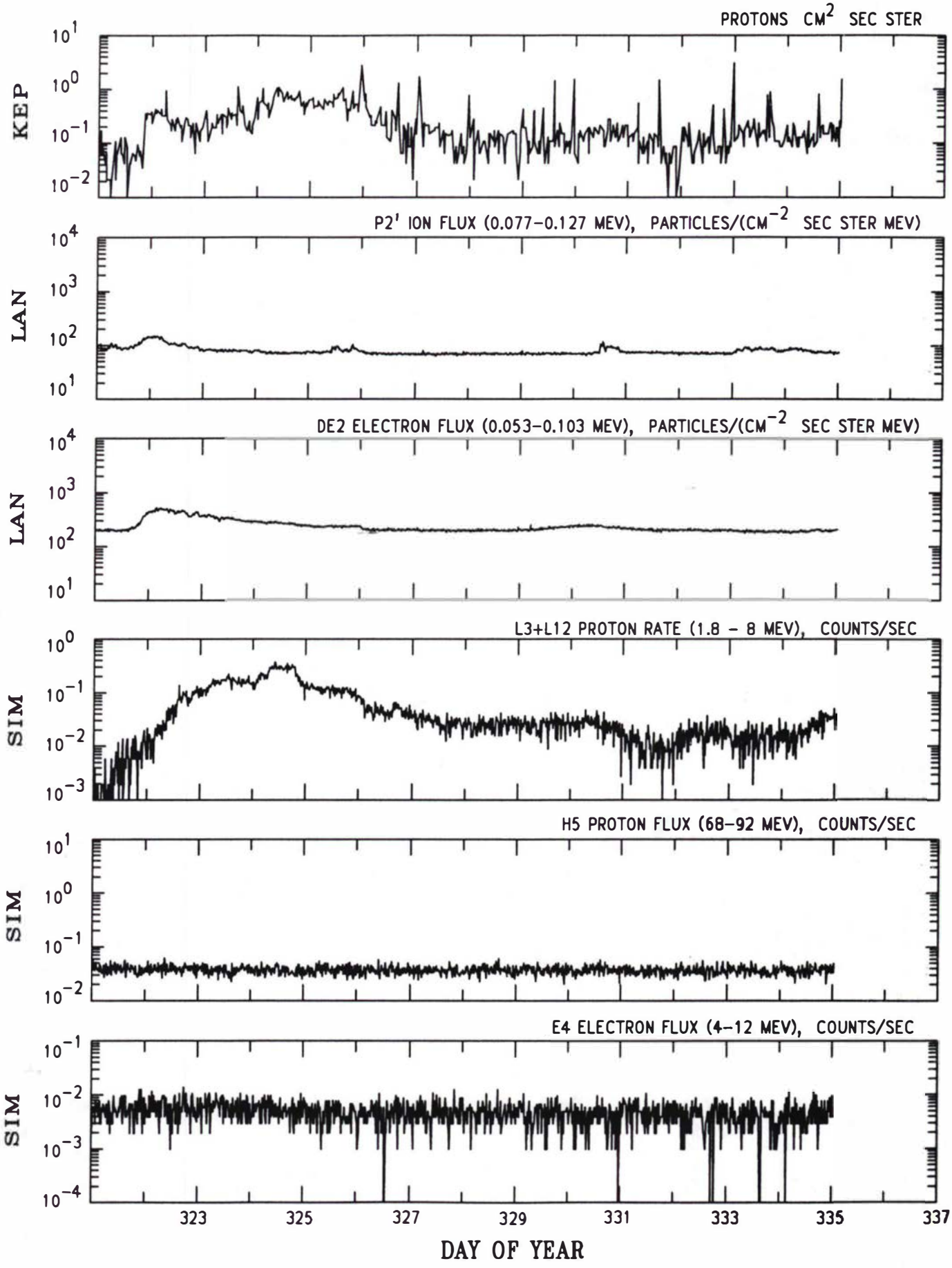
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

99 305 NOV 1 00:00:00.000 – 99 321 NOV 17 00:00:00.000



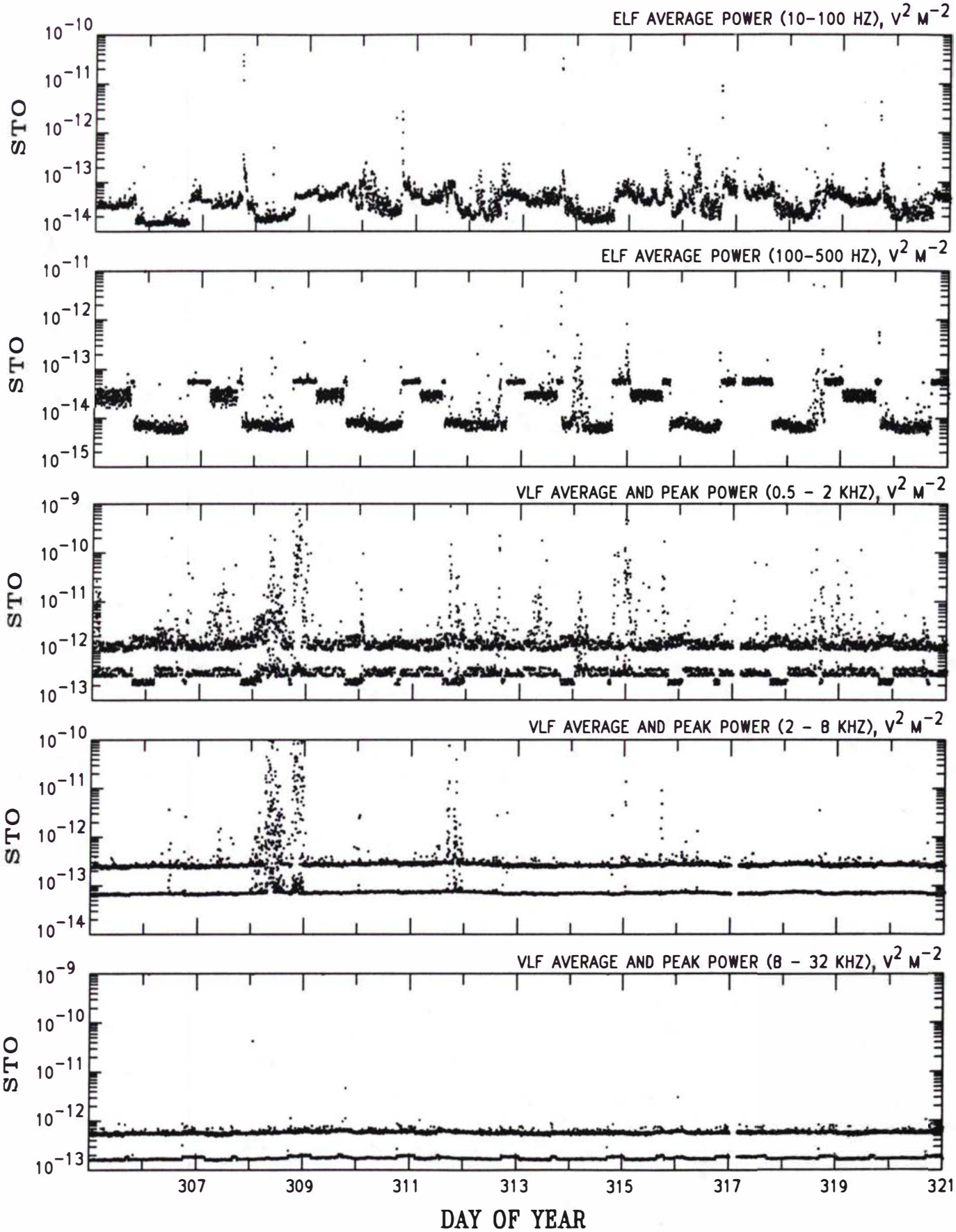
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

99 321 NOV 17 00:00:00.000 - 99 337 DEC 3 00:00:00.000



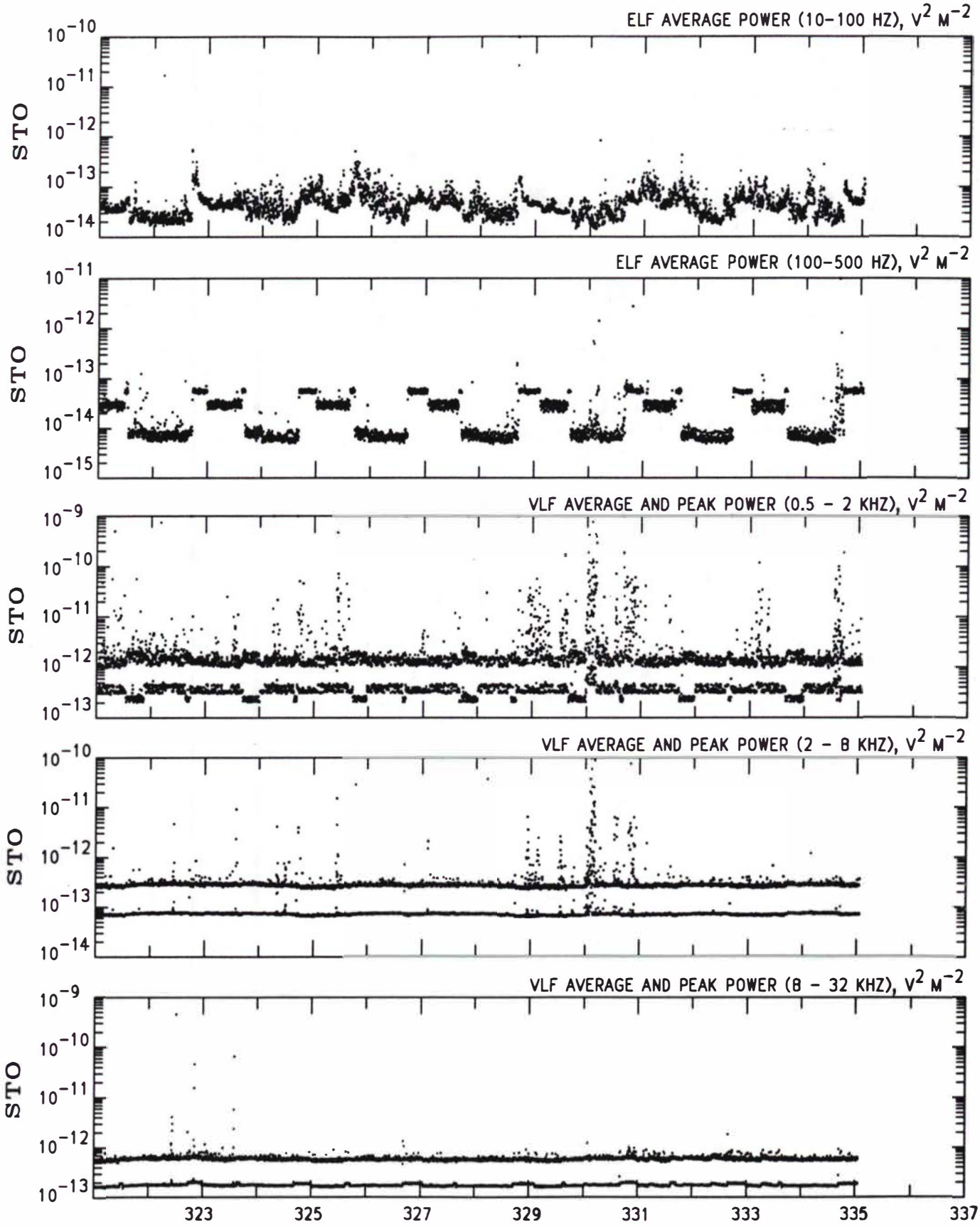
ULYSSES CDR – PLASMA WAVE

99 305 NOV 1 00:00:00.000 – 99 321 NOV 17 00:00:00.000



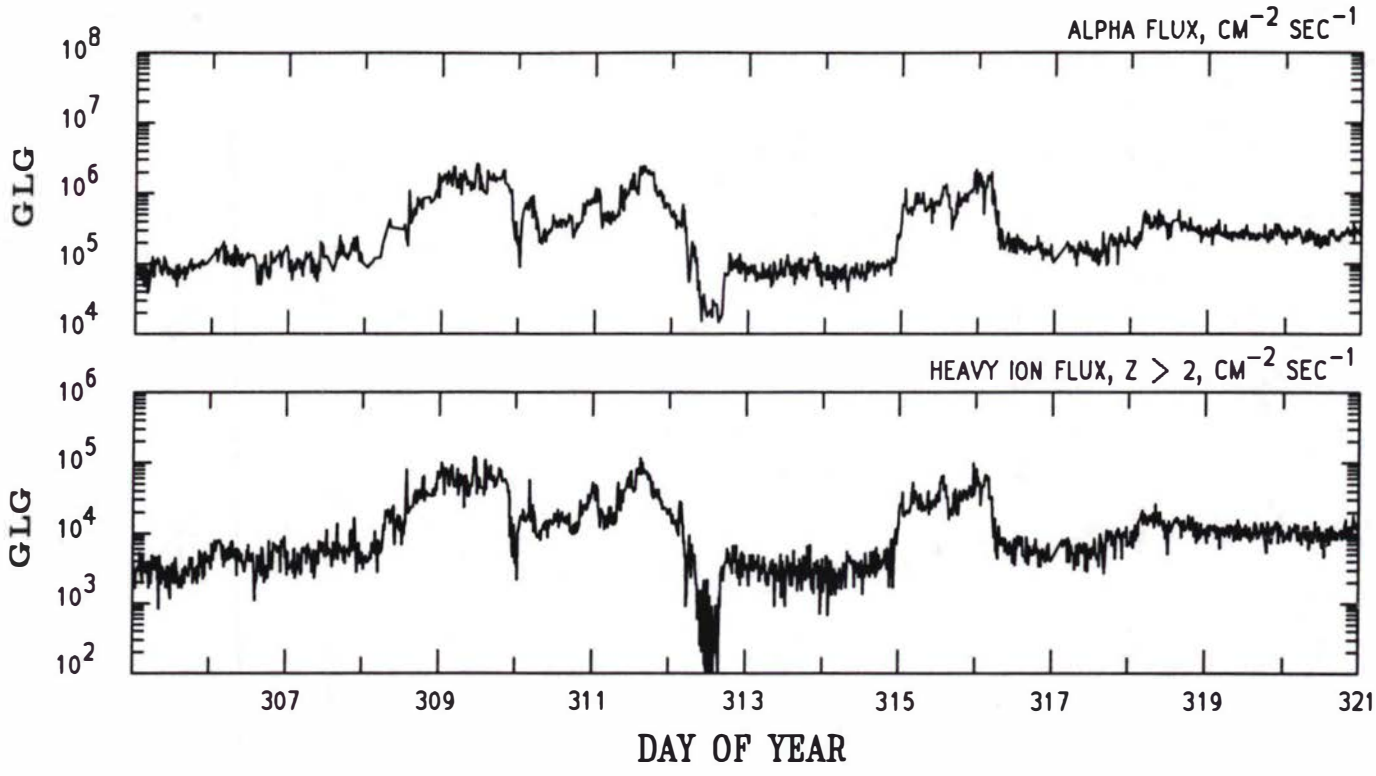
ULYSSES CDR - PLASMA WAVE

99 321 NOV 17 00:00:00.000 - 99 337 DEC 3 00:00:00.000



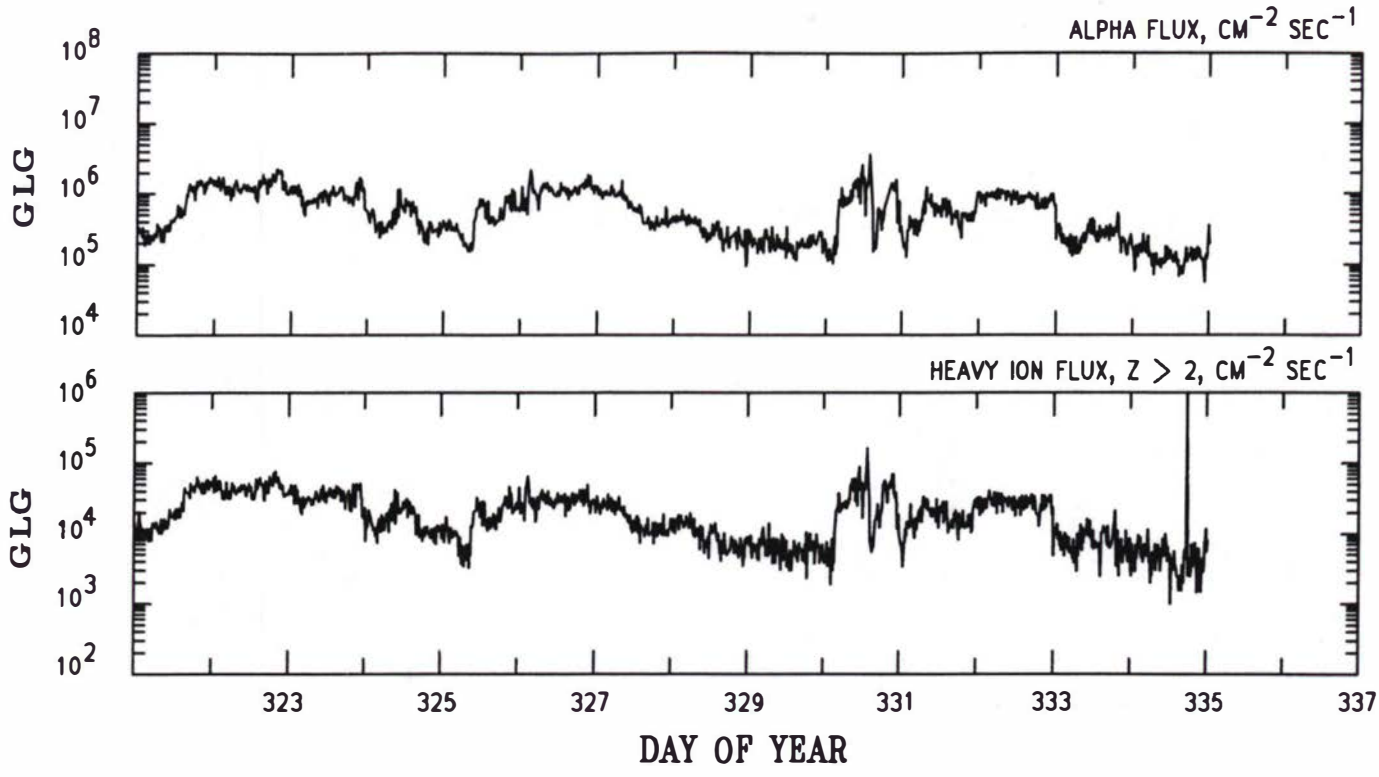
ULYSSES CDR – SOLAR WIND ION COMPOSITION

99 305 NOV 1 00:00:00.000 – 99 321 NOV 17 00:00:00.000



ULYSSES CDR – SOLAR WIND ION COMPOSITION

99 321 NOV 17 00:00:00.000 – 99 337 DEC 3 00:00:00.000



Date: Jul 9 '07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☐ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☐ Σ 3Δt's calculated, and/or BMAPSUM executed?

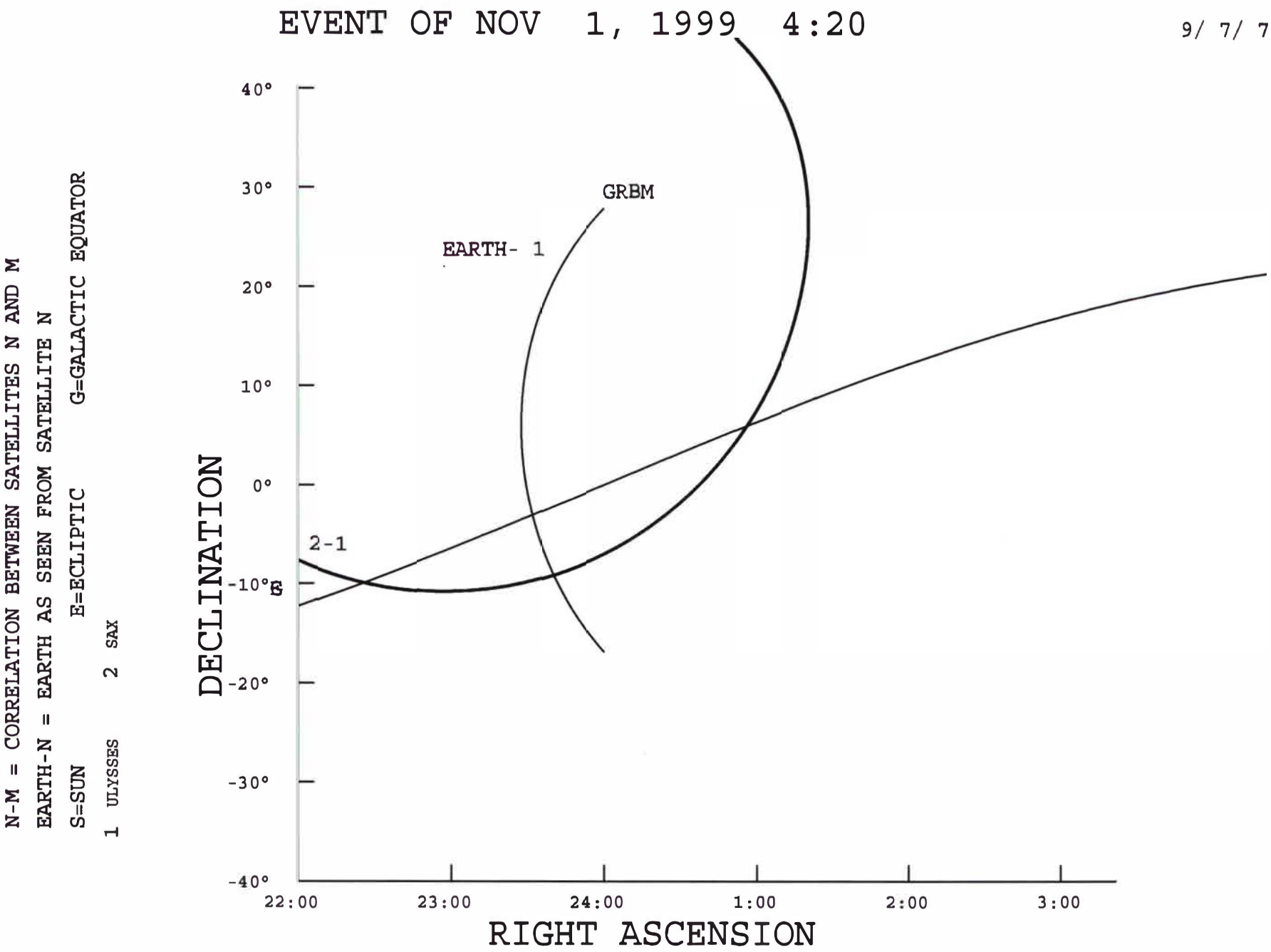
3. For INTEGRAL events

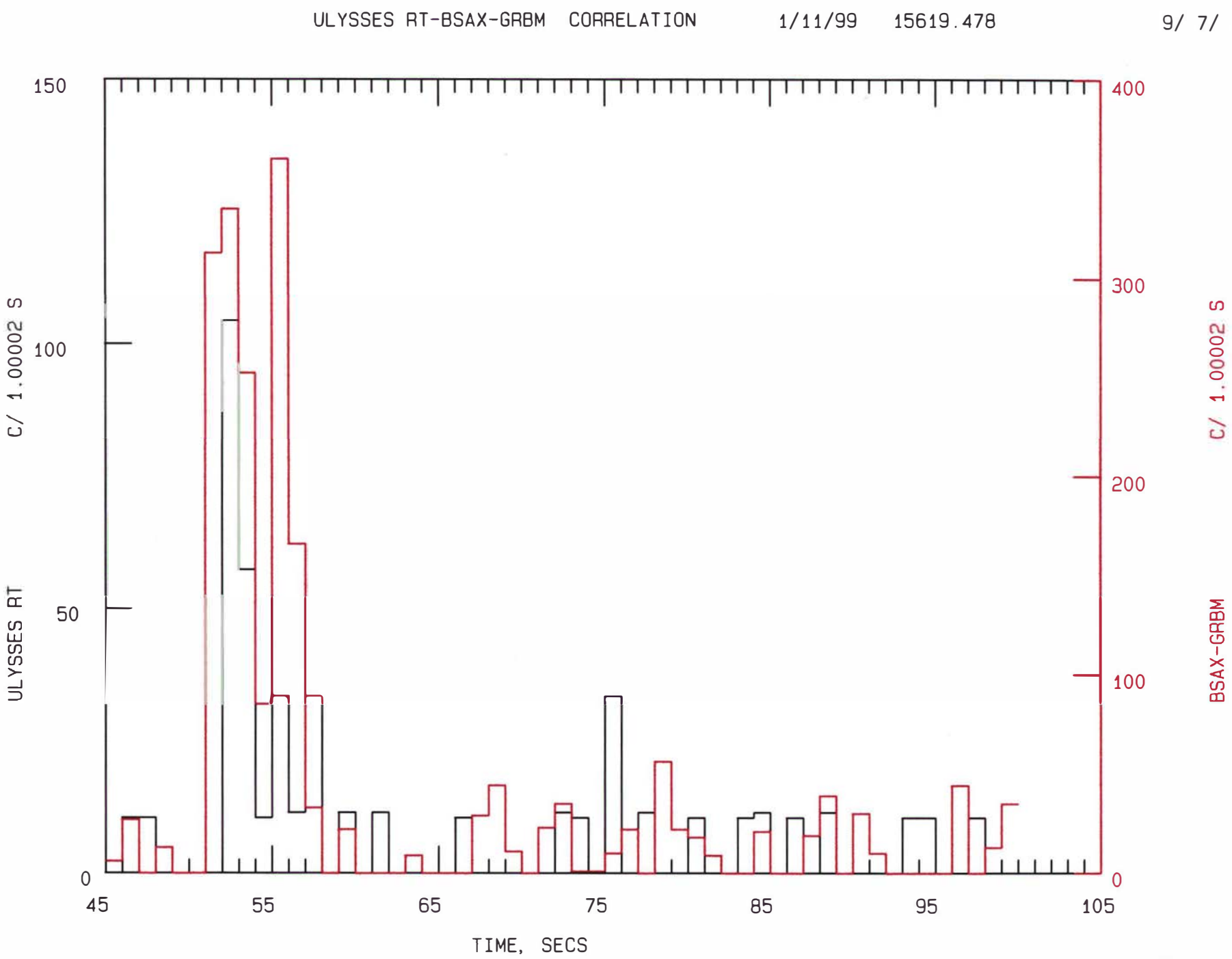
☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

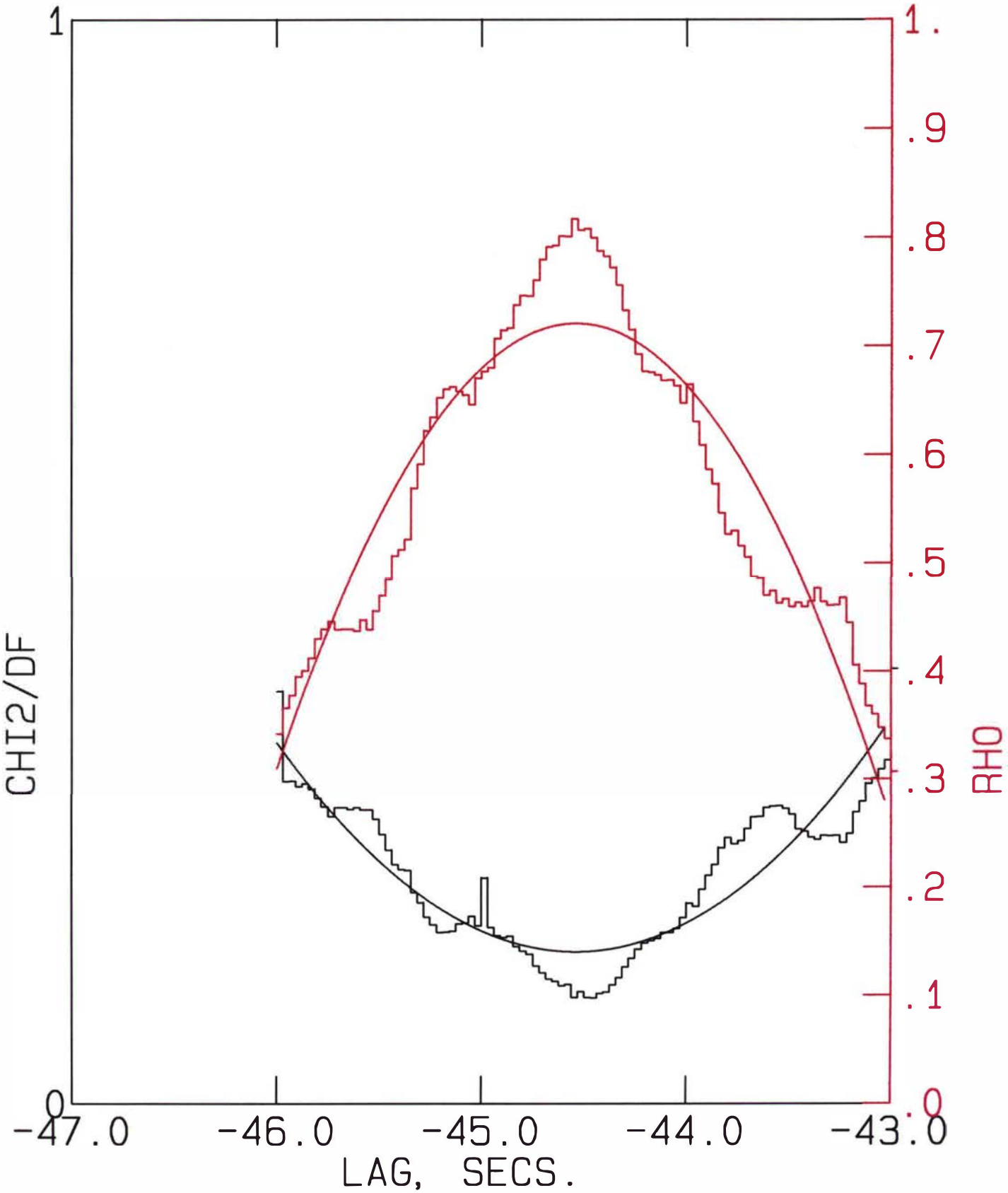
☐ Updated ephemeris used for bursts prior to September 30, 2003?

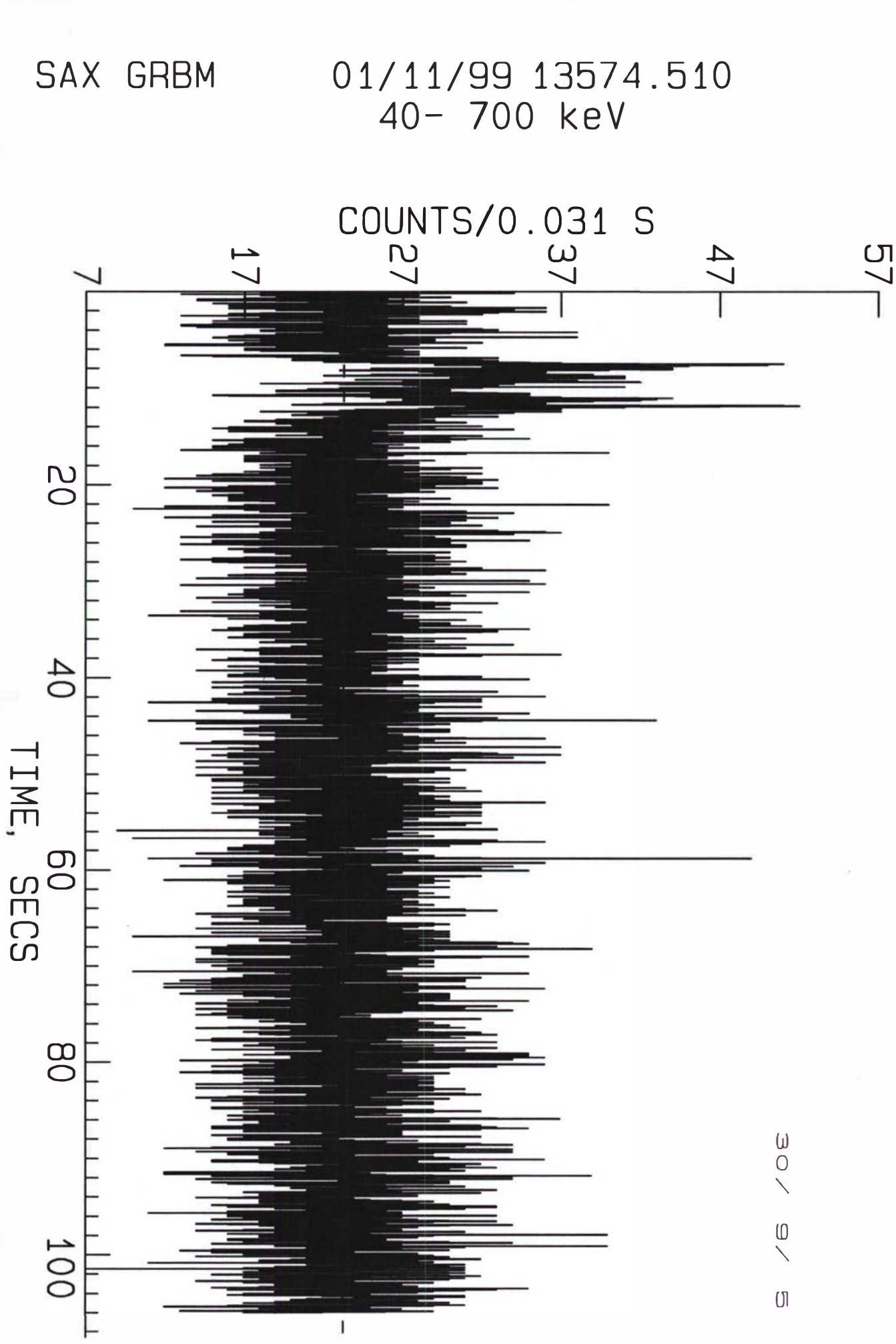
☑ ACCESS and MBL4 databases updated?


EVENT OF NOV 1, 1999 4:20
9/ 7/ 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 ULYSSES 2 SAX
GRBM
EARTH- 1
2-1
DECLINATION
RIGHT ASCENSION
40°
30°
20°
10°
0°
-10°
-20°
-30°
-40°
22:00
23:00
24:00
1:00
2:00
3:00


ULYSSES RT-BSAX-GRBM CORRELATION 1/11/99 15619.478 9/ 7/ 7
150
100
50
0
C/ 1.00002 S
ULYSSES RT
400
300
200
100
0
C/ 1.00002 S
BSAX-GRBM
45
55
65
75
85
95
105
TIME, SECS

ULYSSES RT-BSAX-GRBM CORRELATION 1/11/99 15619.478




SAX GRBM
01/11/99 13574.510
40- 700 keV
COUNTS/0.031 S
7
17
27
37
47
57
20
40
60
80
100
TIME, SECS
30 / 9 / 5

SAX GRBM
HUS DATA

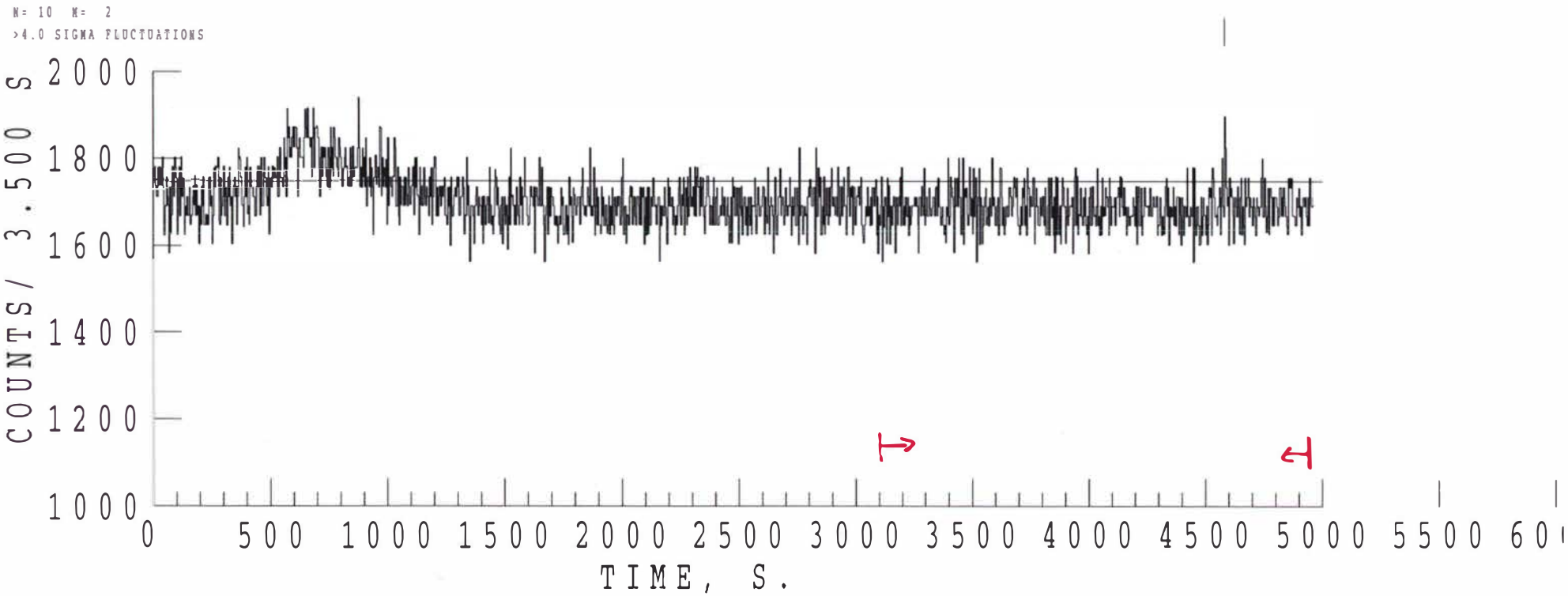
19/07/05

ULYSSES RT

01/11/99 11088.400 s

0.500 S INTERVALS REGROUPED BY 7

0- 0 keV



From HENZE@fender.msfc.nasa.gov Thu Nov 4 09:41 PST 1999
From: HENZE@fender.msfc.nasa.gov
Date: Thu, 4 Nov 1999 11:49:11 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7834

****
BATSEARCH PROGRAM
****

BATSE BURST # 7834
EVENT OF 1999 NOV 1 DAY OF YEAR=305
EVENT CROSSING TIME AT BATSE : 15577. S. OR 04:19:37.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 204.000 -61.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/11/ 99 IS:
RA= 163.855 DEC= -21.981 DIST= 4.968 AU
BATSE-ULYSSES DISTANCE = 743278989. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1663.68 SECS.
CROSSING TIME AT ULYSSES IS 13913. S. OR 03:51:53 +/- 343.88 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/11/ 99 IS:
RA= 282.040 DEC= -24.668 DIST= 1.521 AU
MARS-BATSE DISTANCE = 227582784. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -346.42 SECS.
CROSSING TIME AT MARS IS 15231. S. OR 04:13:50 +/- 112.01 SECONDS

BATSE BURST TRIGGER
NO.: 7834

TIME: TJD=1483 SECONDS=15577

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=130.6 AZIMUTH= 22.9 ERROR= 3.2 DEGREES

COMMENTS:
TWO PULSES. FIRST START APPROX. T-4 S, MAX AT APPROX. T+4 S, DUR. APPROX. 25 S.
SECOND STARTS APPROX. T+76 S, MAX AT APPROX. T+79 S, DUR. APPROX. 14 S.
MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7834	991101	11483	15577	4500	204	-61	94

BATSE BURST# 7834

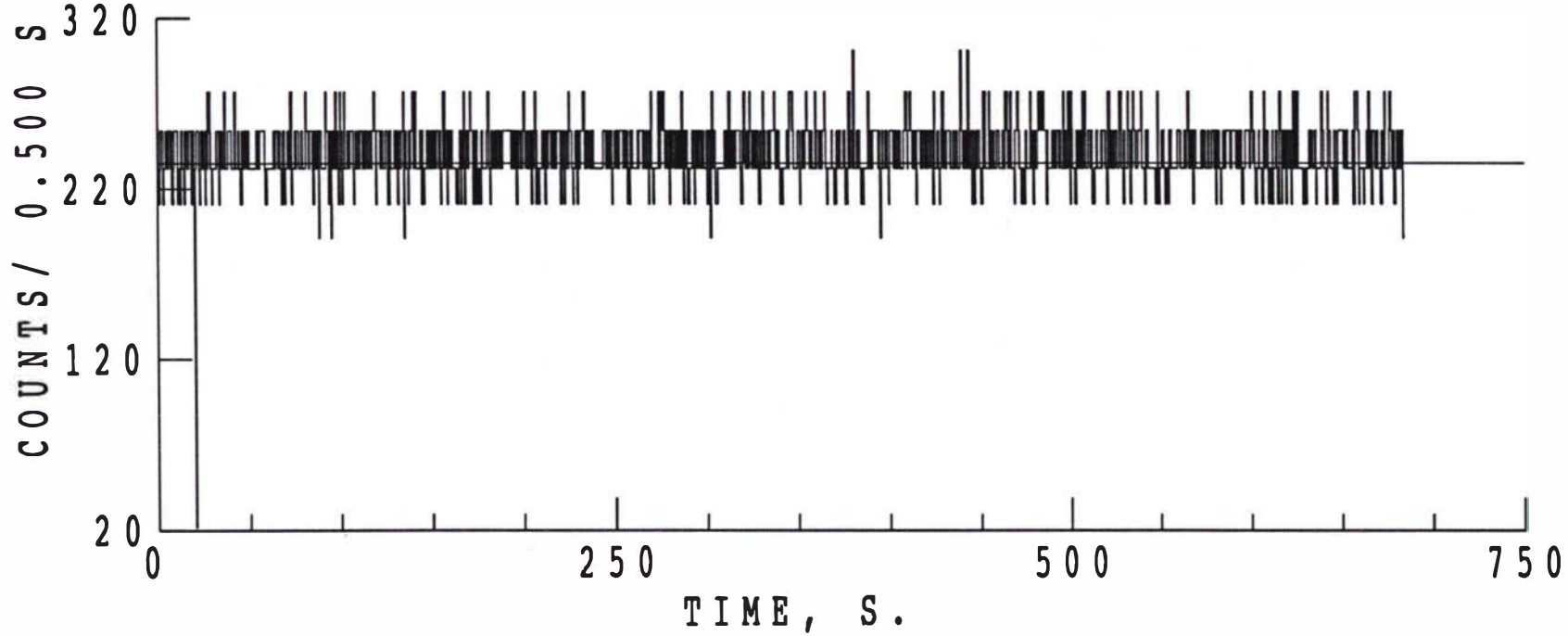
ULYSSES RT 4/11/99

1/11/99 13572.425 s

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Fri Dec 3 16:12 PST 1999
From: HENZE@fender.msfc.nasa.gov
Date: Fri, 3 Dec 1999 18:21:37 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7835

****
BATSEARCH PROGRAM
****

BATSE BURST # 7835
EVENT OF 1999 NOV 1 DAY OF YEAR=305
EVENT CROSSING TIME AT BATSE : 54481. S. OR 15:08:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 259.000 78.000
BATSE PEAK COUNTING RATE: 2300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/11/ 99 IS:
RA= 163.903 DEC= -22.063 DIST= 4.962 AU
BATSE-ULYSSES DISTANCE = 742280587. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 952.12 SECS.
CROSSING TIME AT ULYSSES IS 55433. S. OR 15:23:53 +/- 461.27 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/11/ 99 IS:
RA= 282.040 DEC= -24.668 DIST= 1.521 AU
MARS-BATSE DISTANCE = 227582784. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 177.92 SECS.
CROSSING TIME AT MARS IS 54659. S. OR 15:10:58 +/- 130.83 SECONDS

BATSE BURST TRIGGER
NO.: 7835

TIME: TJD=1483 SECONDS=54481

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 43.5 AZIMUTH=253.6 ERROR= 4.6 DEGREES

COMMENTS:
PROBABLE GRB WITH POSSIBLE PARTICLE CONTAMINATION. COMPLEX, TOTAL DUR. APPROX. 160 S, TRIGGER PULSE DUR. APPROX. 19 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7835	991101	11483	54481	2300	259	+78	160

BATSE BURST# 7835

ULYSSES RT 3/12/99

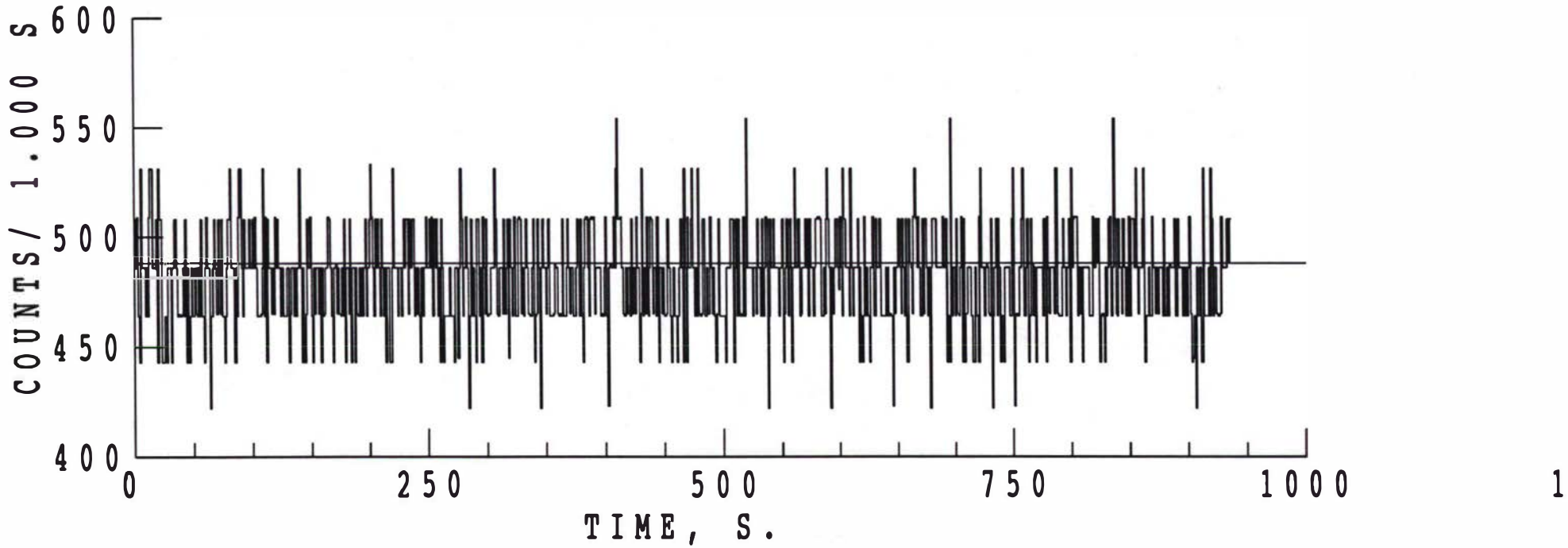
1/11/99 54972.344 s

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



1

From HENZE@fender.msfc.nasa.gov Wed Nov 3 15:56 PST 1999
Date: Wed, 3 Nov 1999 18:03:56 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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.: 7836

TIME: TJD=1483 SECONDS=60532

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT, WEST OF NORTH AMERICA.

From HENZE@fender.msfc.nasa.gov Thu Nov 4 09:56 PST 1999
Date: Thu, 4 Nov 1999 12:04:26 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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.: 7837

TIME: TJD=1483 SECONDS=76936

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=103.7 AZIMUTH=337.4 ERROR= 1.9 DEGREES

COMMENTS:
GOES B9, OPTICAL SF FLARE. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 60 S,
STARTS AT APPROX. T-18 S. NOT VISIBLE ABOVE 300 KEV.

Date: Jan 16 2018

BURST TRIANGULATION CHECKLIST

1. Suzaku Data

□ 1 second timing error corrected? (Jan 1 – Apr 24 2009, and July 1 – August 20, 2012 – leap sec.)

2. AGILE Data

□ 1 second timing error corrected?

3. MESSENGER Data

□ Coarse or Precision oscillator (C or P bronte.jhuapl.edu/spice/kernels/sclk/timekeeping/OPS_TIME_ENGR.txt)?

□ Timing checked after ~ 1 week?

4. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

5. 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). For later data, was timing checked after ~1 week?

□ 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?

6. For 3 or More Spacecraft events

□ Σ 3Δt's calculated, and/or BMAPSUM executed?

7. For INTEGRAL events

□ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

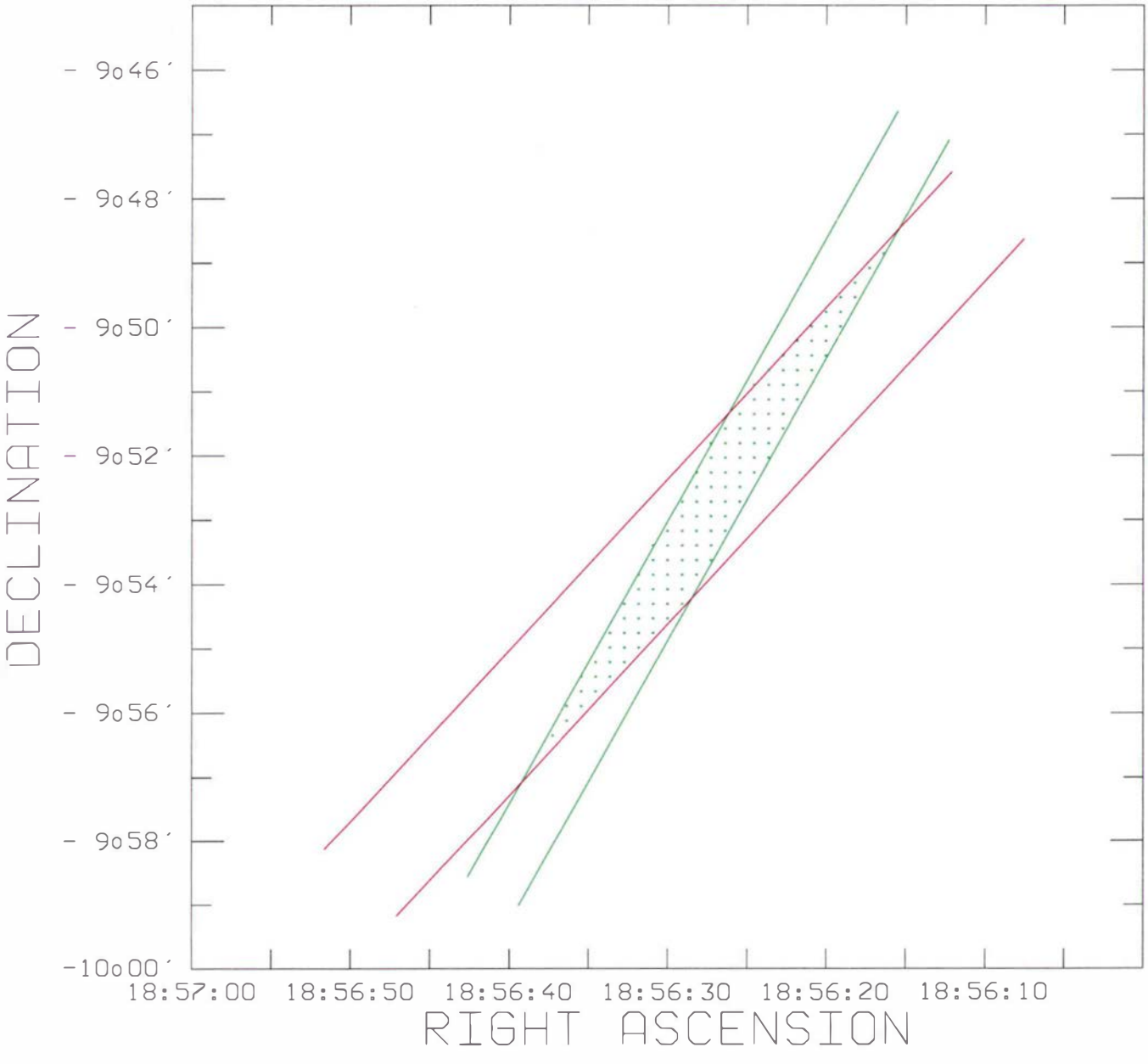
□ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

□ Updated ephemeris used for bursts prior to September 30, 2003?

□ Hand-extracted data used (record starts at -30.000 s)?

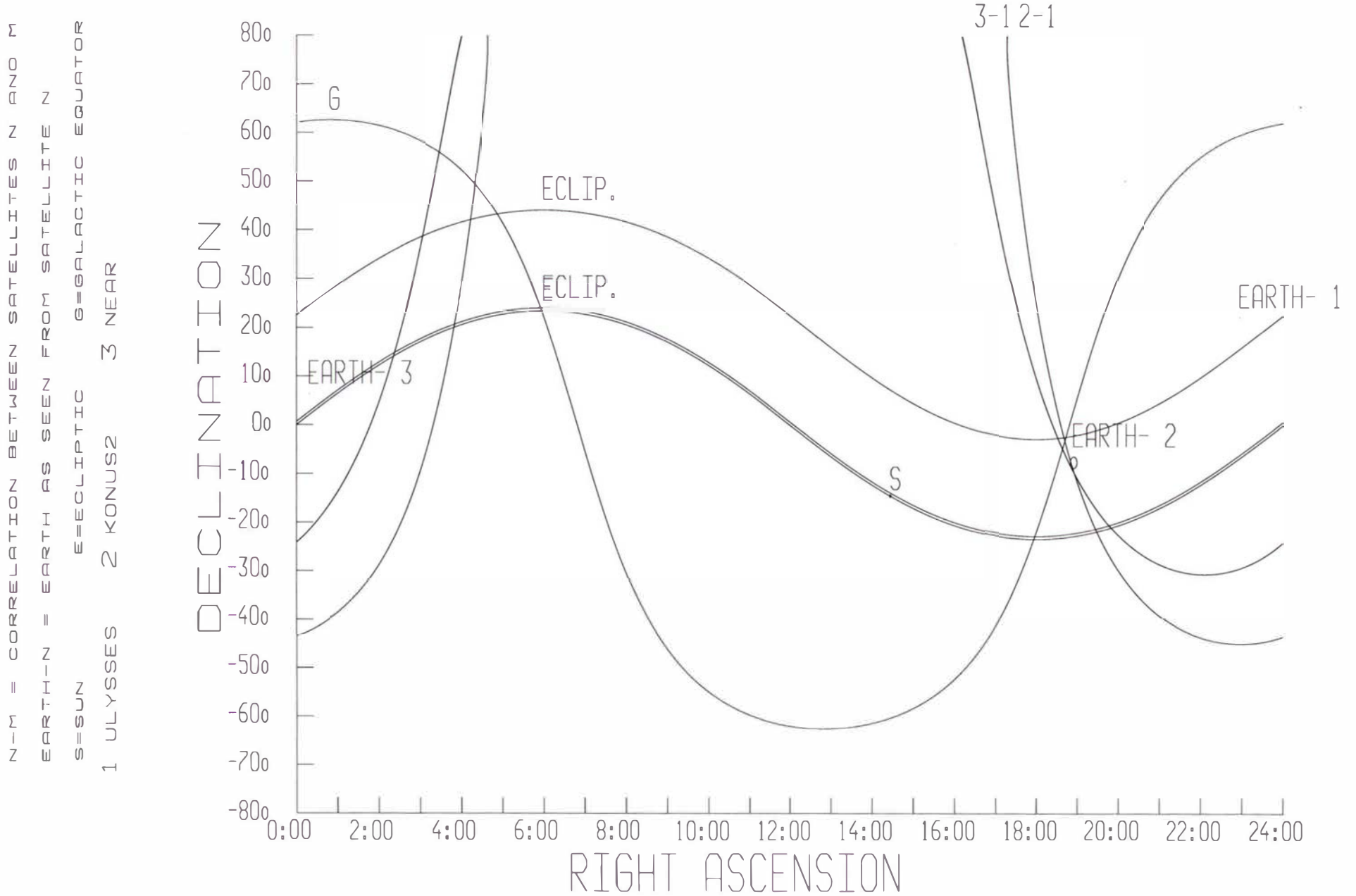
□ Volodymyr's website checked ? (http://isdc.unige.ch/~savchenk/spiacs-online/spiacs-ipnlc.pl)

☑ ACCESS and MBL4 databases updated, with identical times?

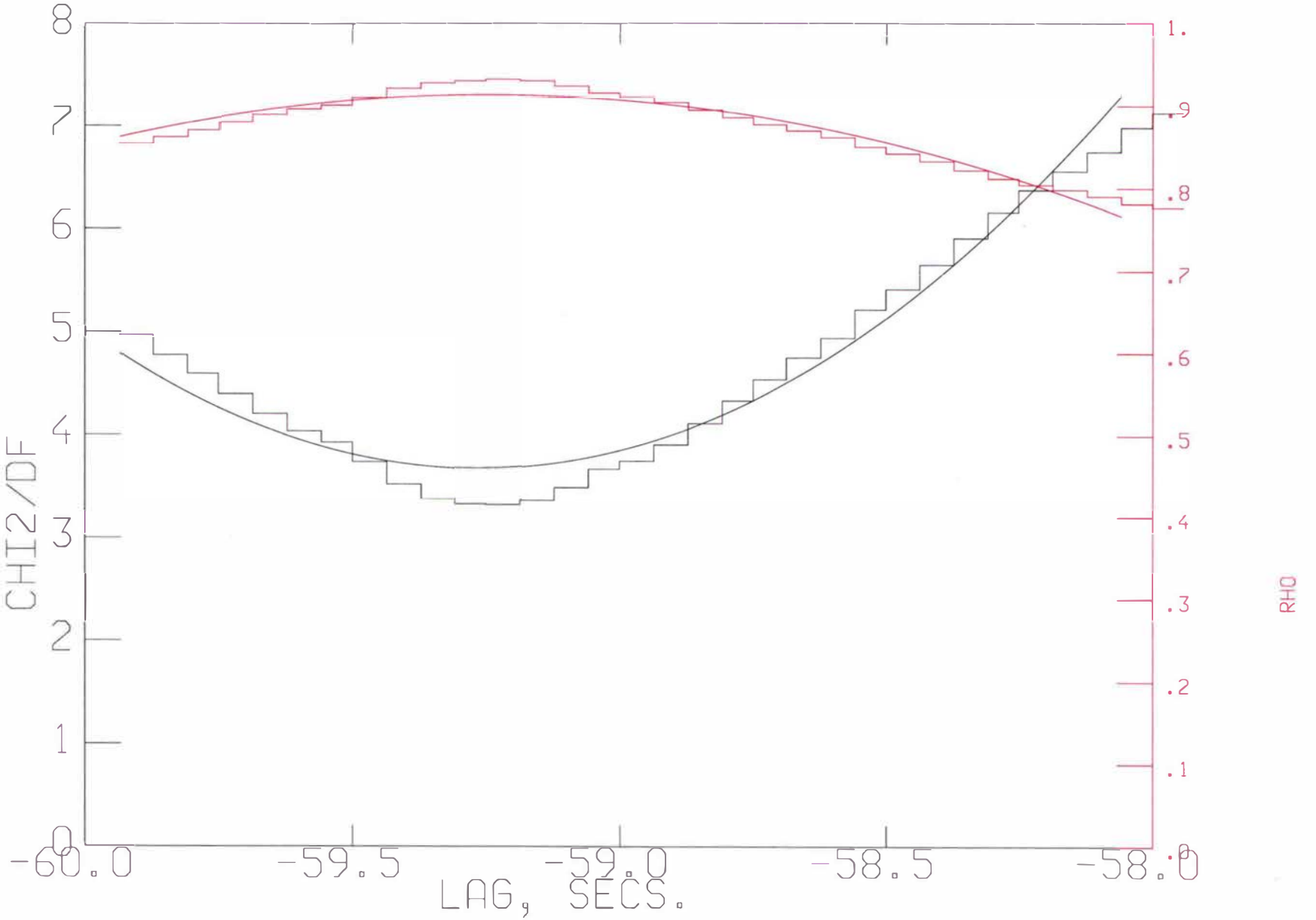

- 9o46'
- 9o48'
- 9o50'
- 9o52'
- 9o54'
- 9o56'
- 9o58'
-10o00'
DECLINATION
18:57:00
18:56:50
18:56:40
18:56:30
18:56:20
18:56:10
RIGHT ASCENSION

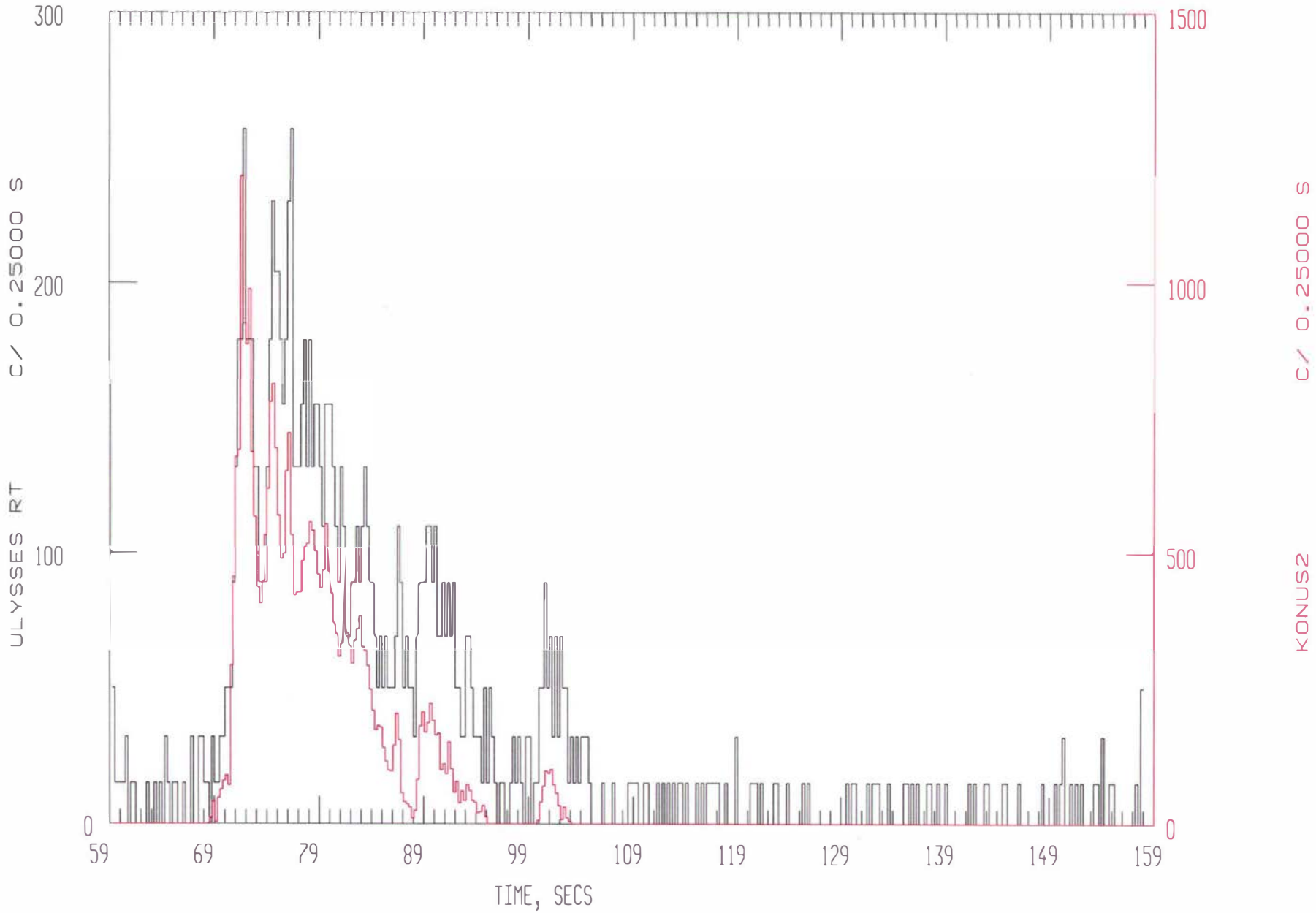
EVENT OF NOV 1, 1999 23:15

16/02/2018

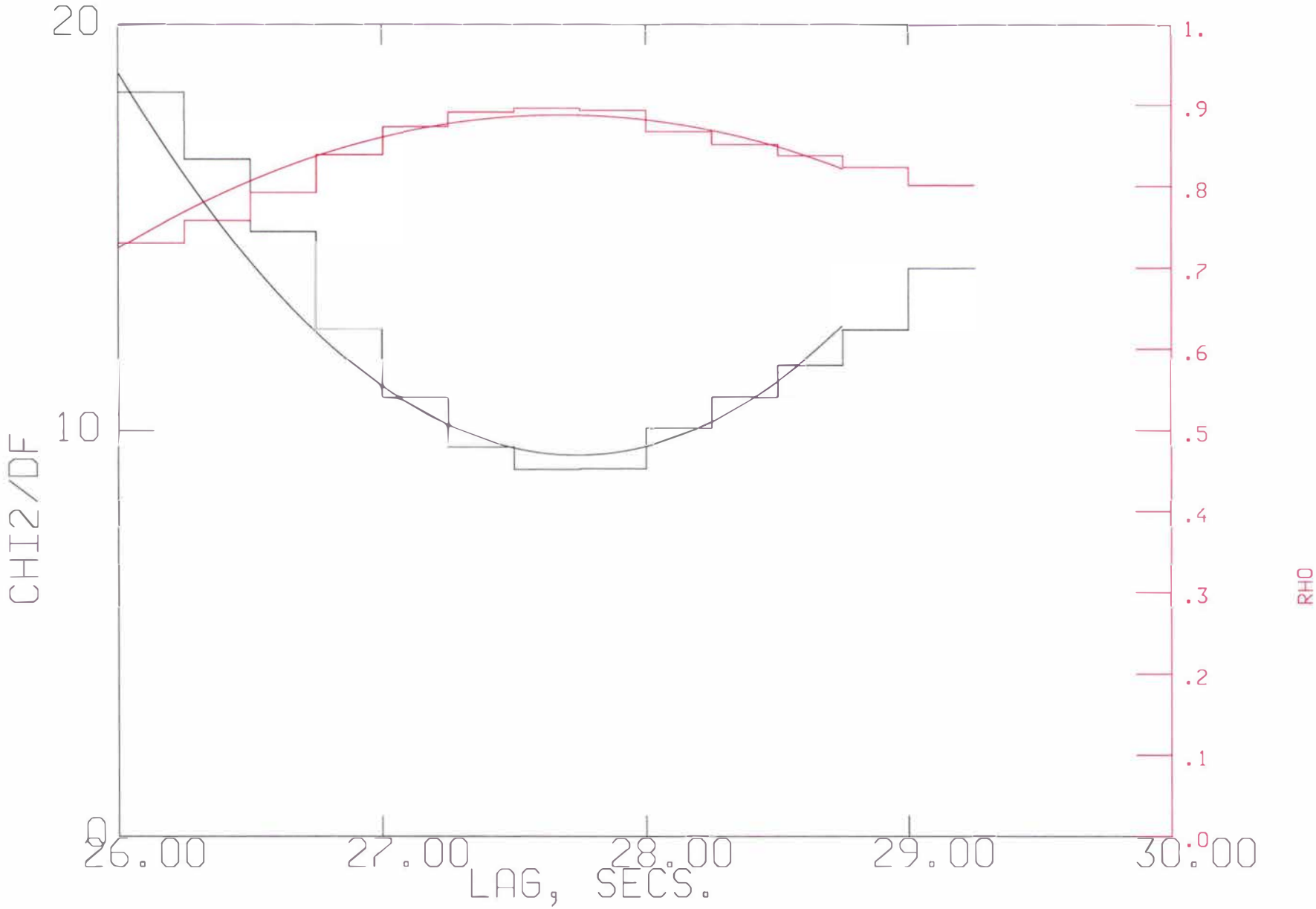


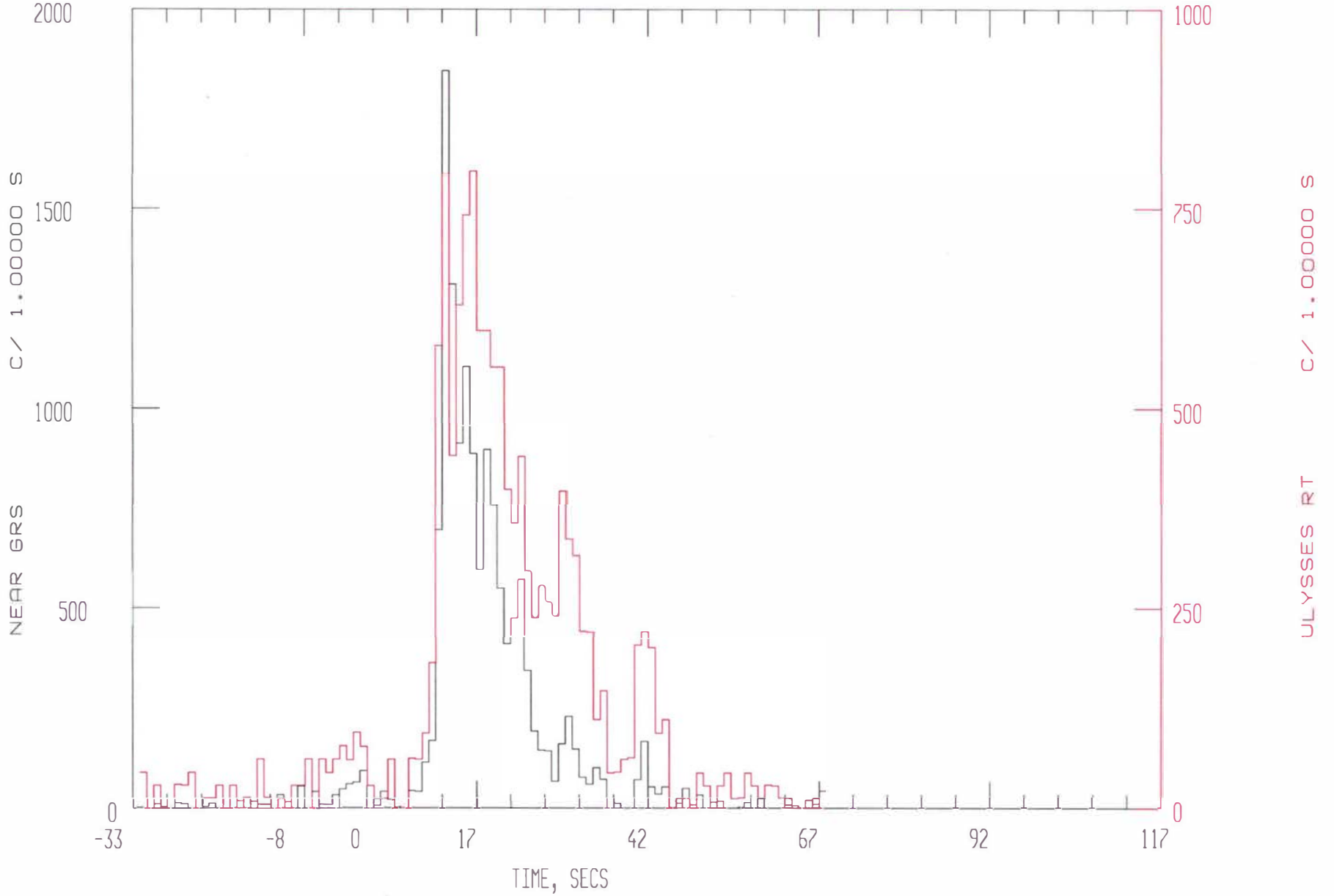
ULYSSES RT-KONUS2 CORRELATION 1/11/99 83716.165




300
200
100
0
C/ 0.25000 S
ULYSSES RT
1500
1000
500
0
C/ 0.25000 S
KONUS2
59
69
79
89
99
109
119
129
139
149
159
TIME, SECS

NEAR GRS -ULYSSES RT CORRELATION 01/11/99 82948.366




2000
1500
1000
500
0
NEAR GRS
C/ 1.00000 S
1000
750
500
250
0
ULYSSES RT
C/ 1.00000 S
-33
-8
0
17
42
67
92
117
TIME, SECS

From marshall@khamseen.gsfc.nasa.gov Tue Nov 2 06:26 PST 1999
Date: Tue, 2 Nov 1999 09:33:15 -0500
From: Frank Marshall <marshall@khamseen.gsfc.nasa.gov>
To: Kevin Hurley <khurley@ssl.berkeley.edu>, scott@milkyway.gsfc.nasa.gov
Cc: david.palmer@gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
swank@khamseen.gsfc.nasa.gov, tom.cline@gsfc.nasa.gov,
scott@khamseen.gsfc.nasa.gov,
frank marshall <marshall@khamseen.gsfc.nasa.gov>
Subject: Possible GRB Nov 1 23h00m
Mime-Version: 1.0

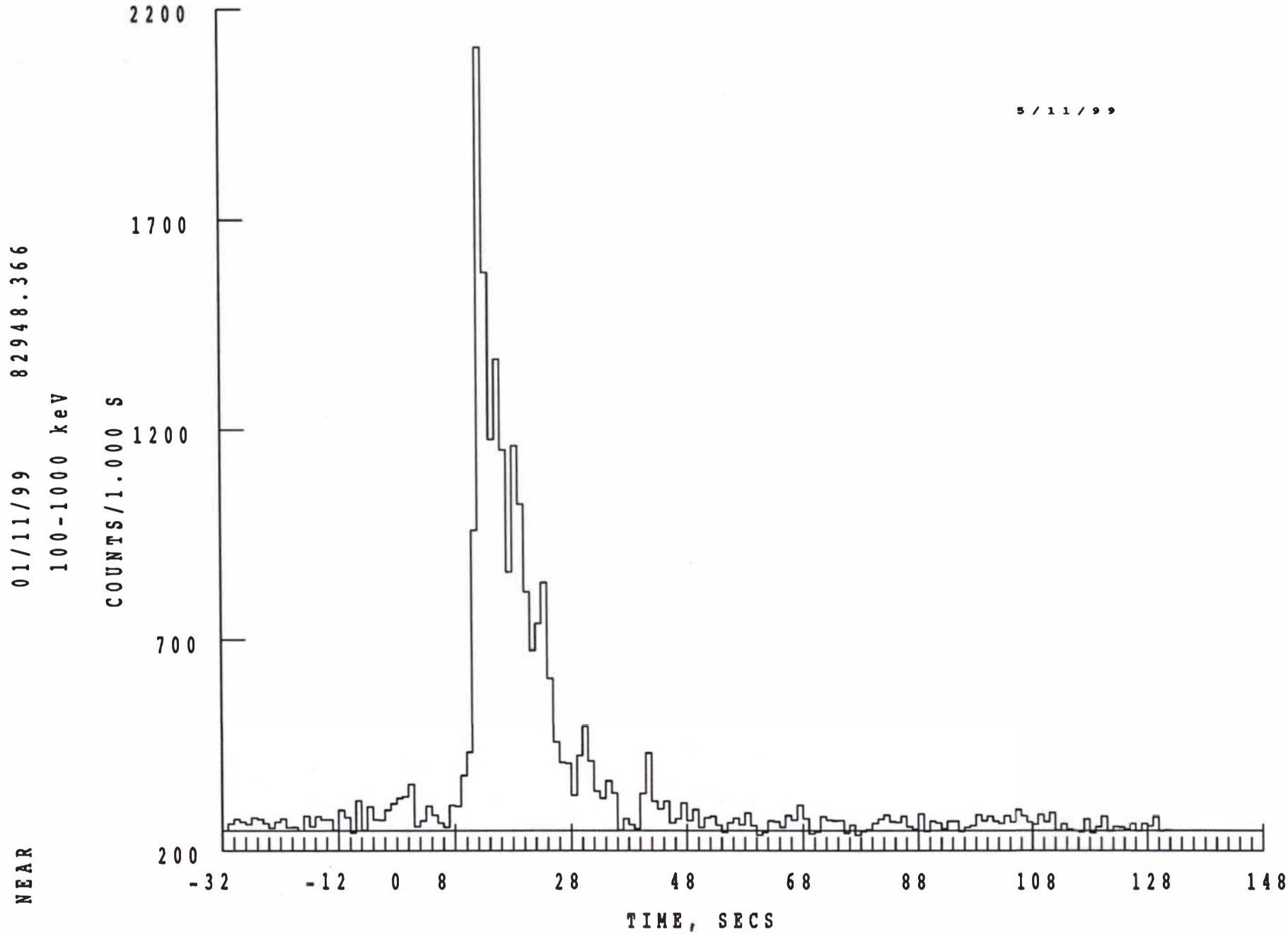
All,

82824s

XTE appears to have detected a bright "FRED-ish" GRB at 23h00m24s UT Nov 1st.
No burst was reported by BATSE at this time.
It does not appear to be solar as there was no particular
solar activity and the Sun was visible to GRO.

Frank

Observed by PCA, but this side of counter


NEAR
01/11/99 82948.366
100-1000 keV
COUNTS/1.000 S
2200
1700
1200
700
200
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
5/11/99

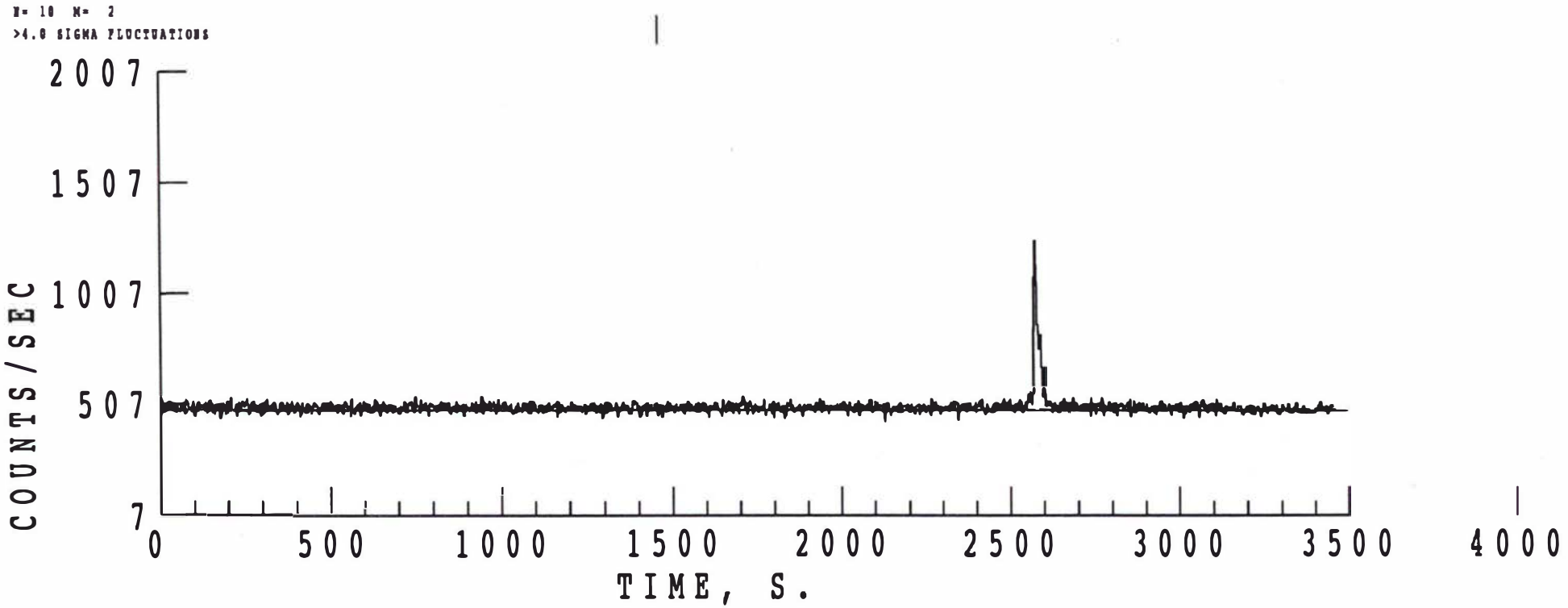
KNEAR GRS 19991101 82948

ULYSSES RT 5/11/99

1/11/99 81216.109 s

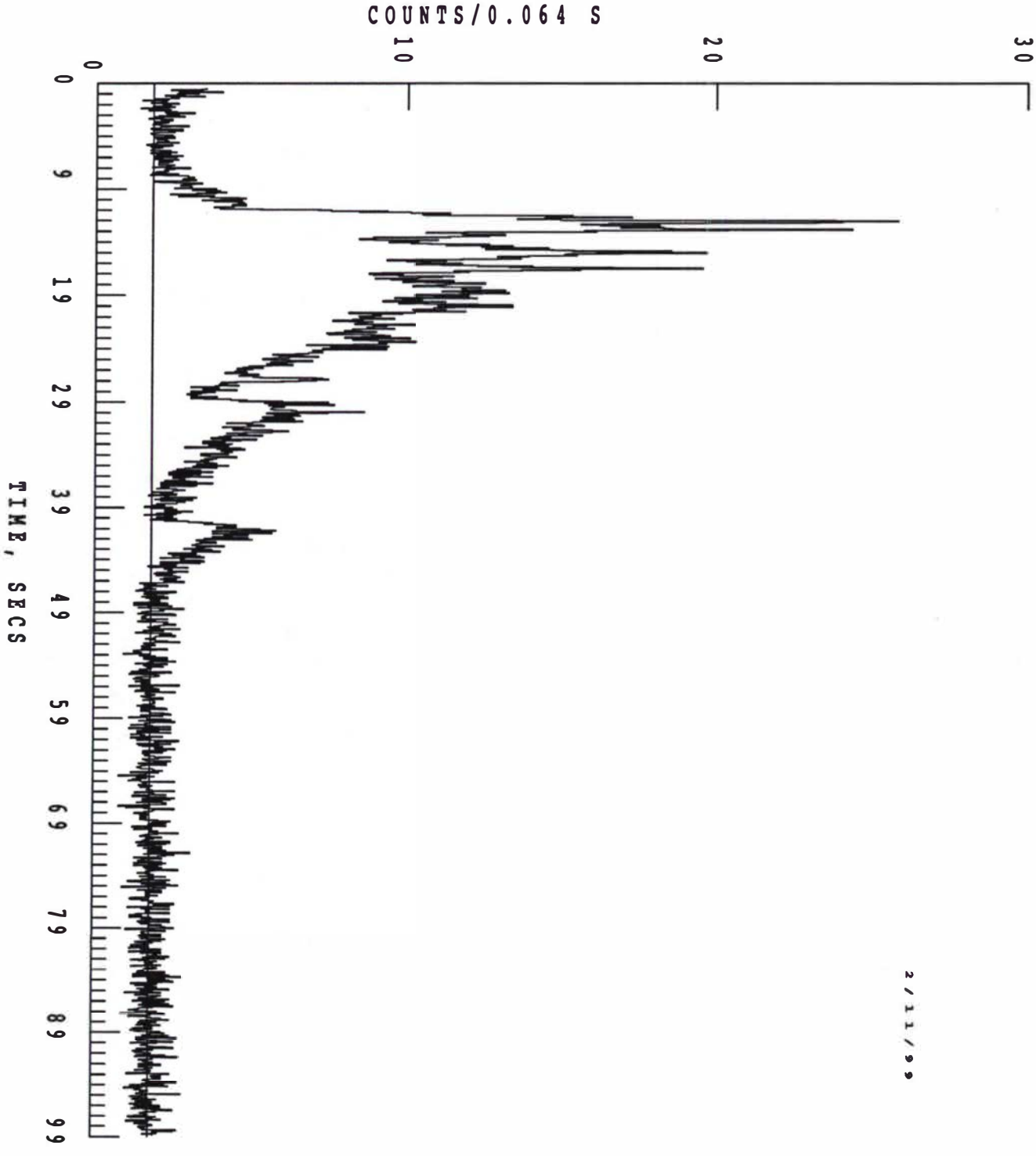
INTERVALS REGROUPED BY 9

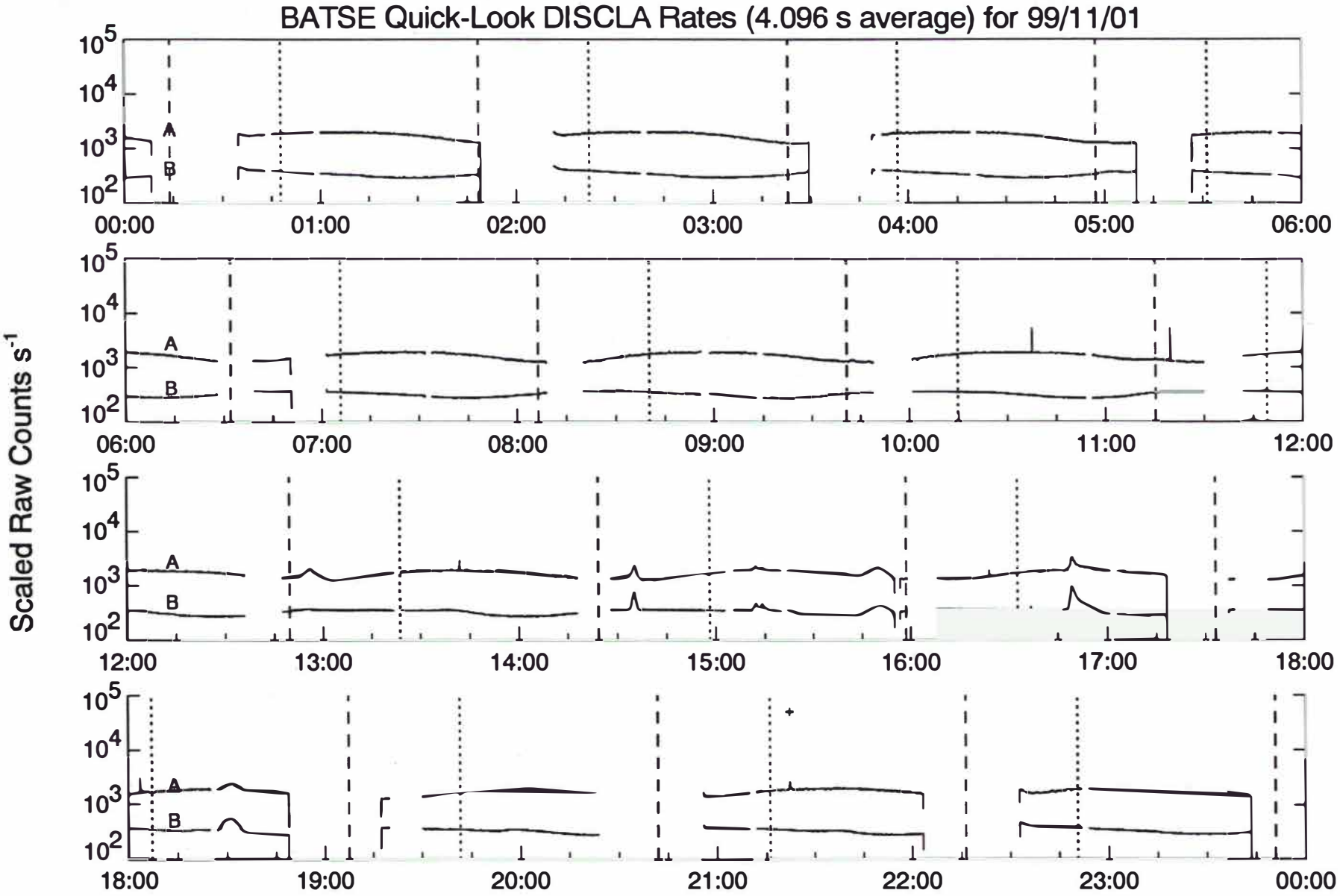
0- 0 keV

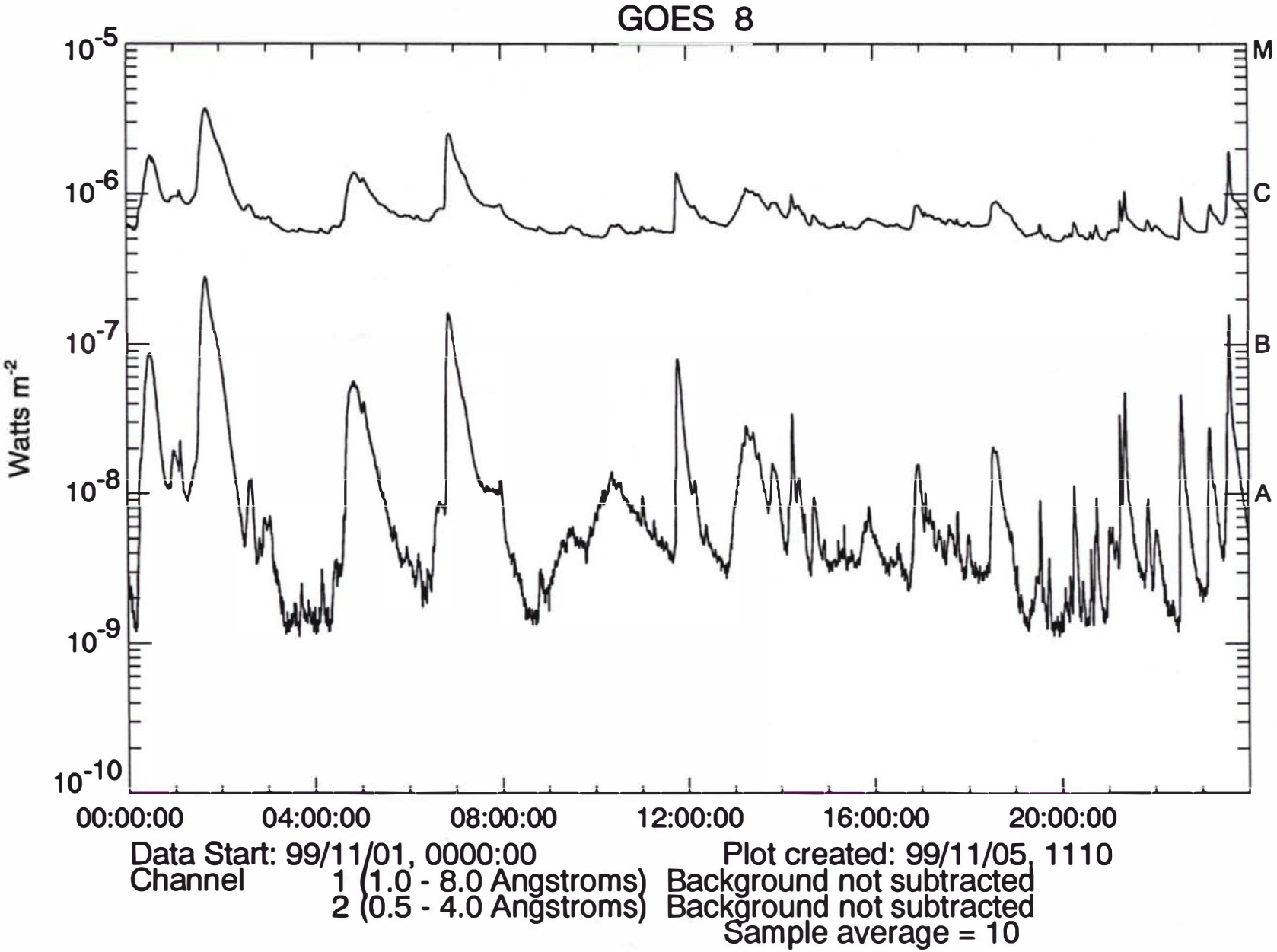


KONUS 01/11/99 82817.527

50- 200 keV

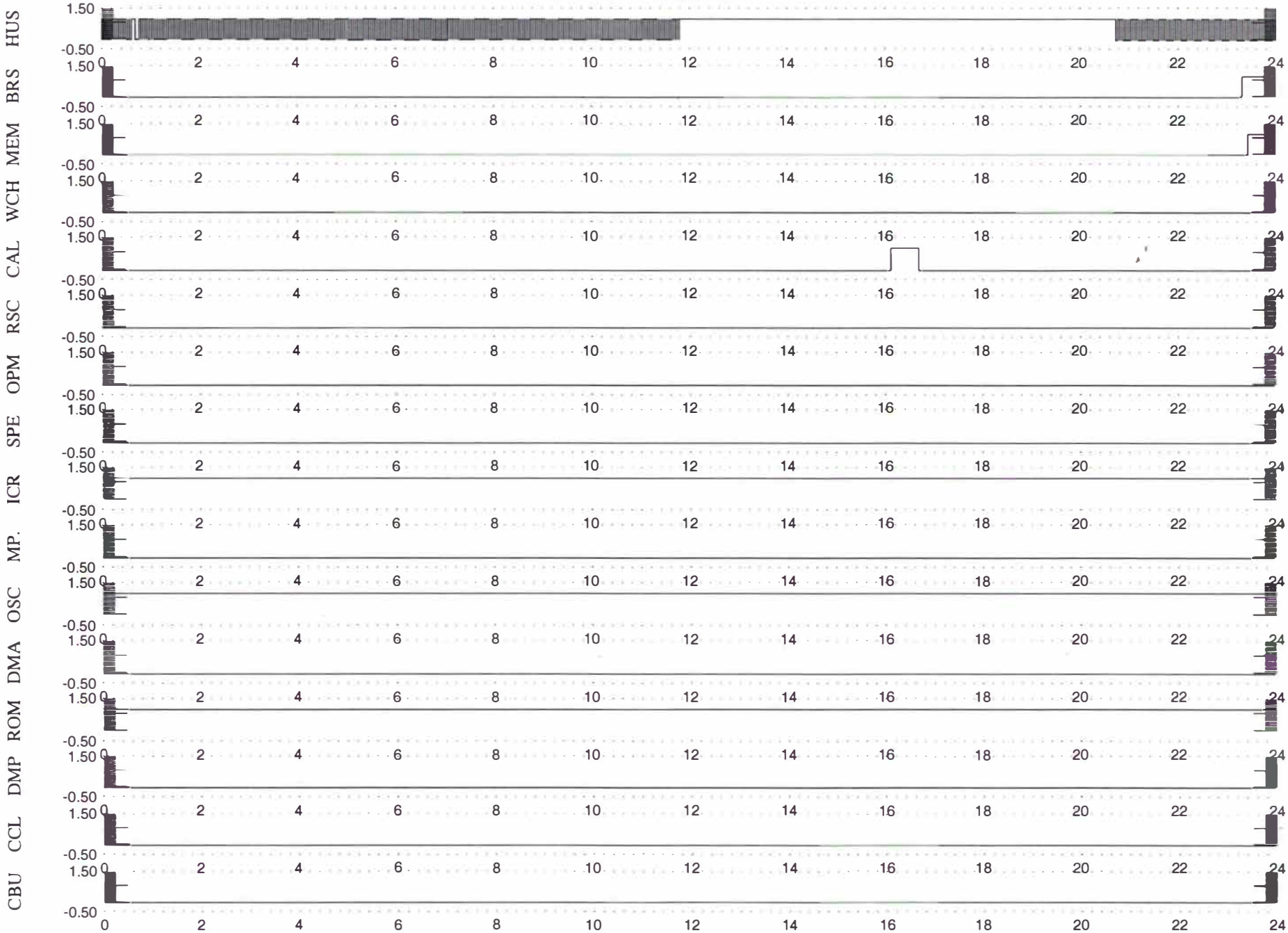



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/01
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/05, 1110 EDT
A: Channel 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
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/01, 0000:00
Plot created: 99/11/05, 1110
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 305, year 1999 to day 305, year 1999 03/21/00

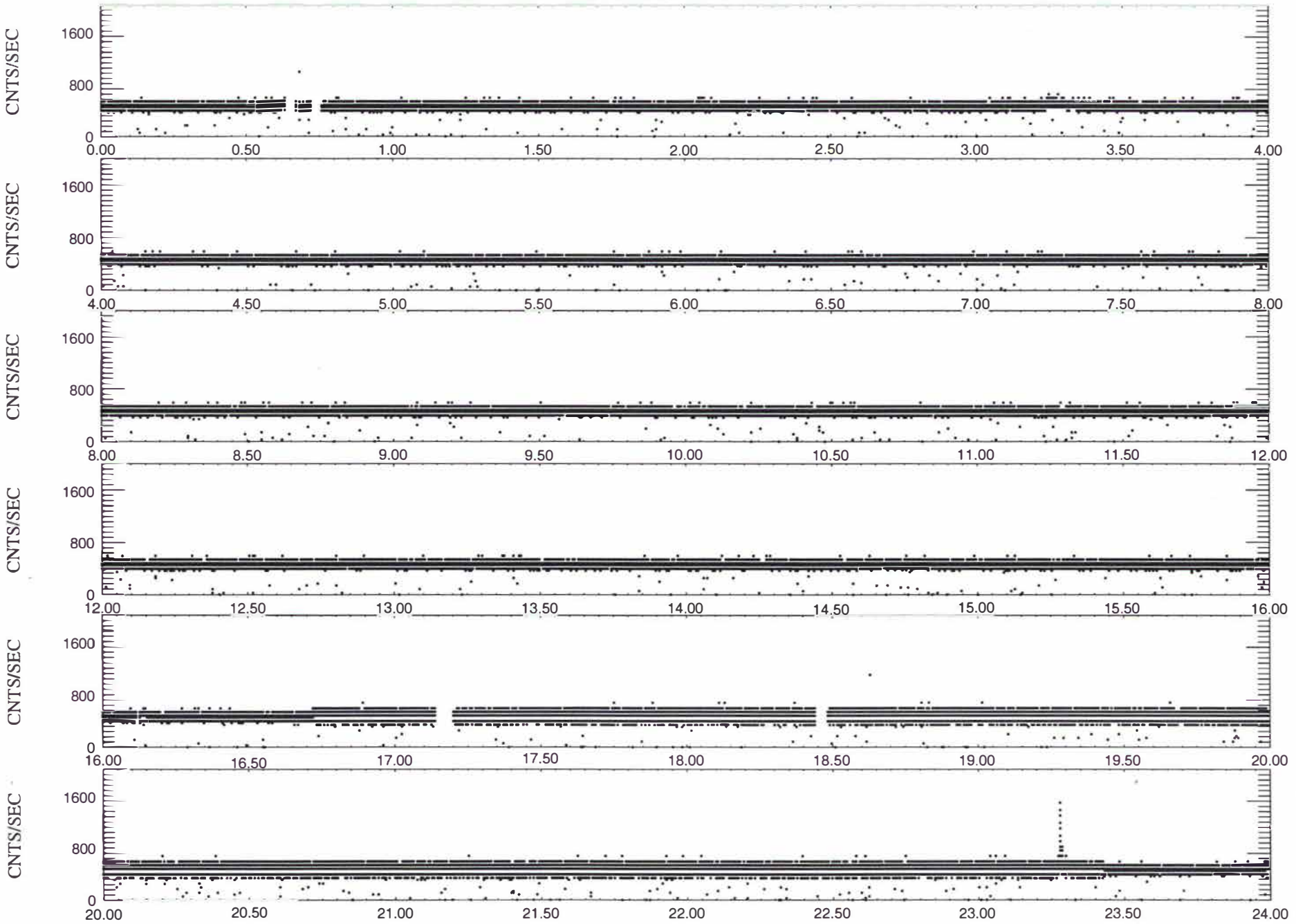
BURST NUMBER 2



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 01/11/1999 DOY = 305 03/21/00

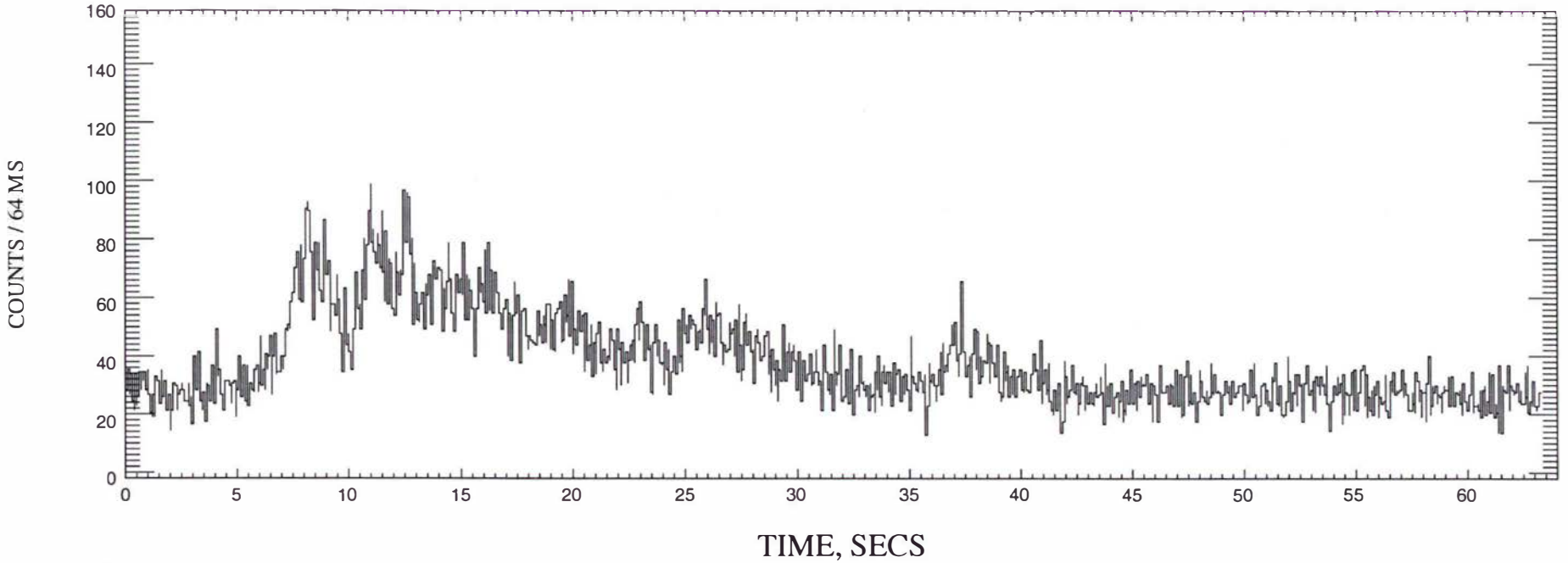
CALIBRATION DATA INCLUDED

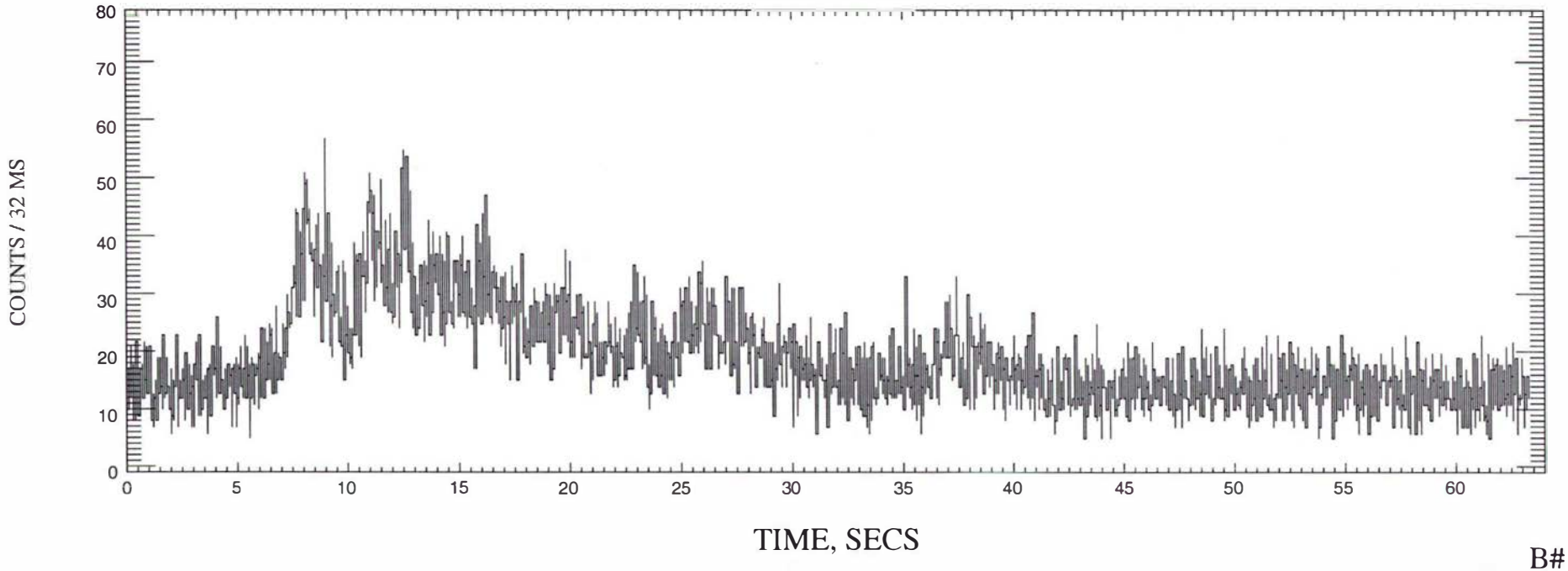


UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 01/11/1999 DOY = 305 03/21/00

Burst Counter 2 at UT=23.274201516045 h=83787.125 s 23:16:27.125

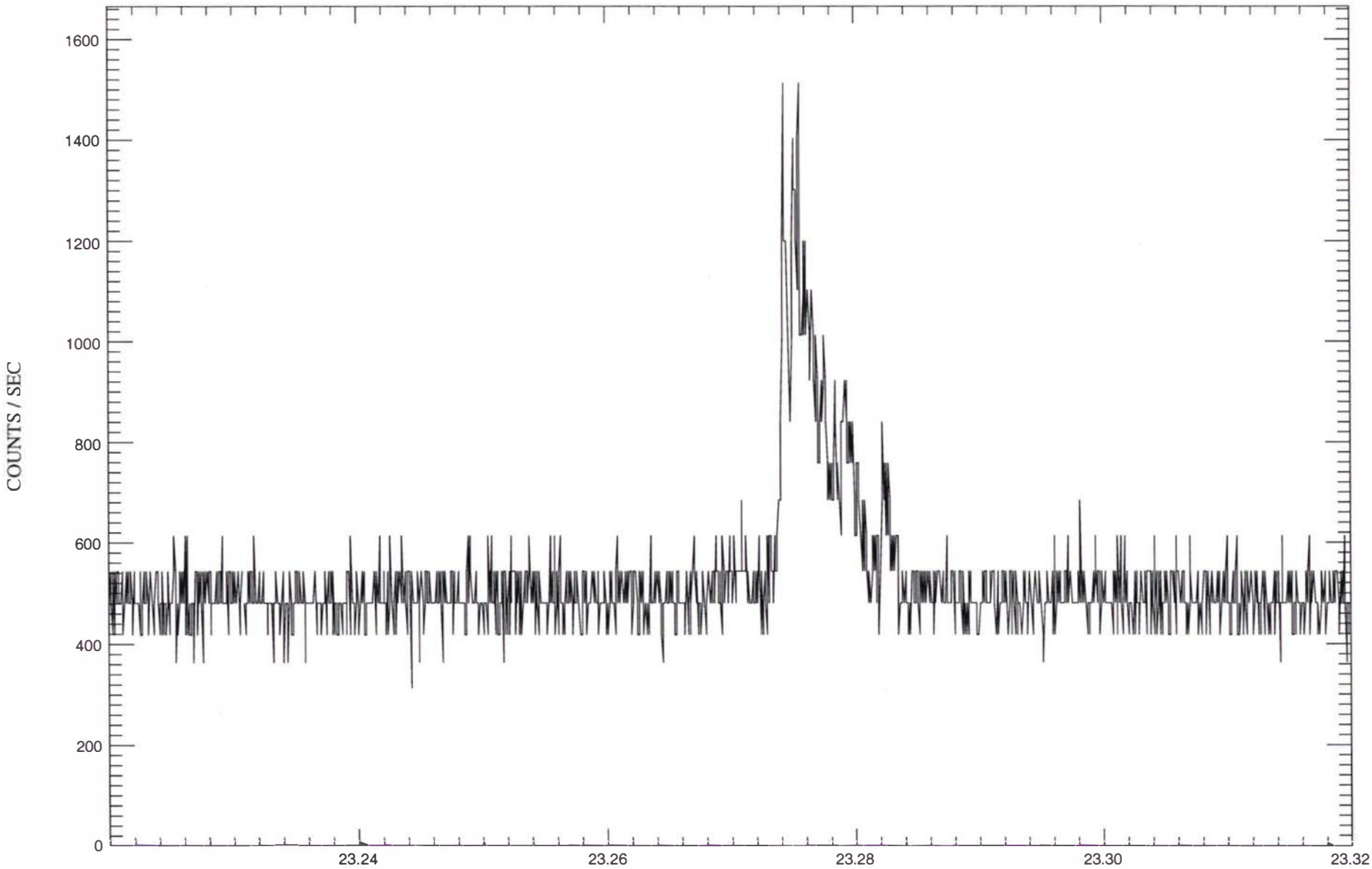




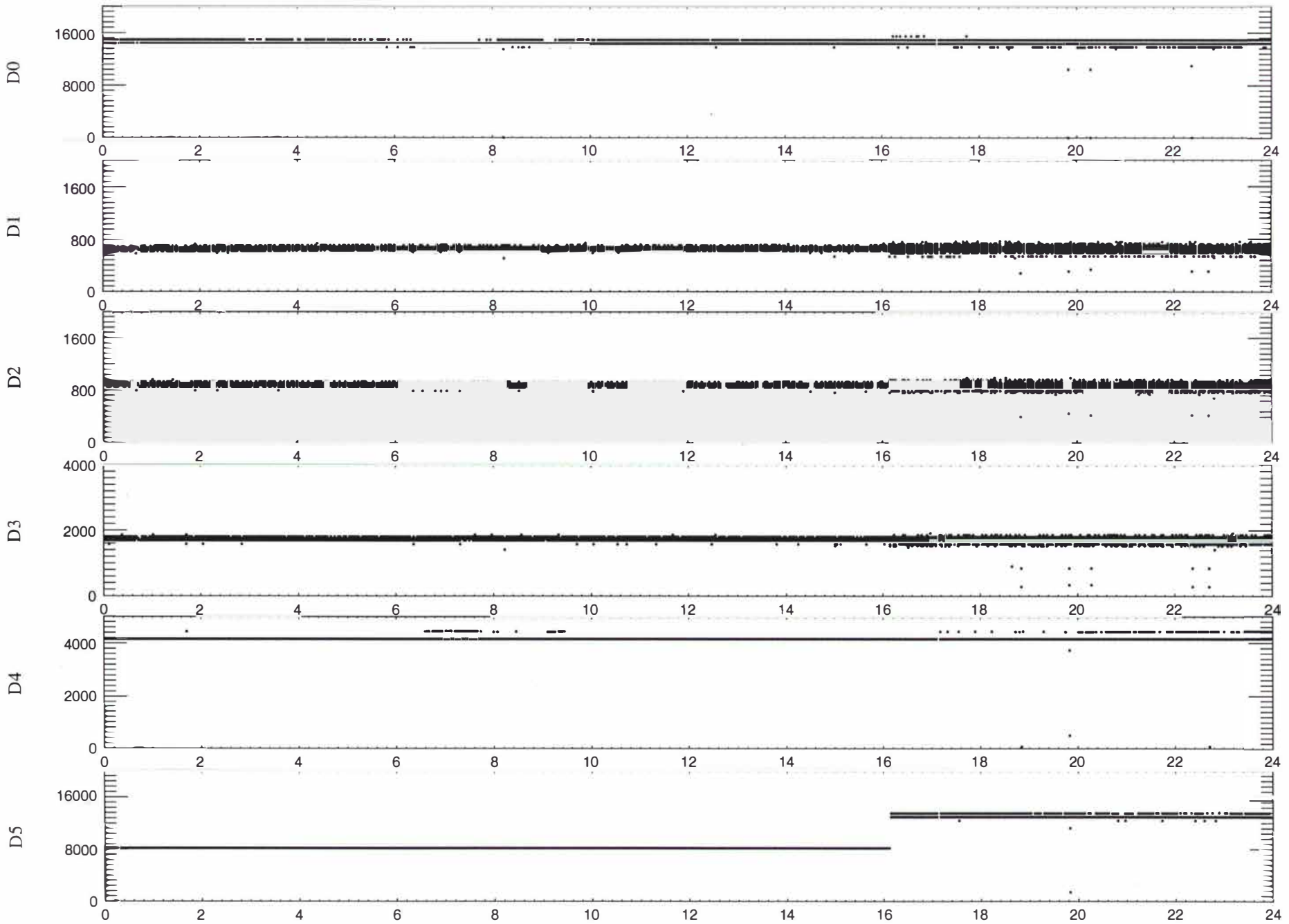
B# 1

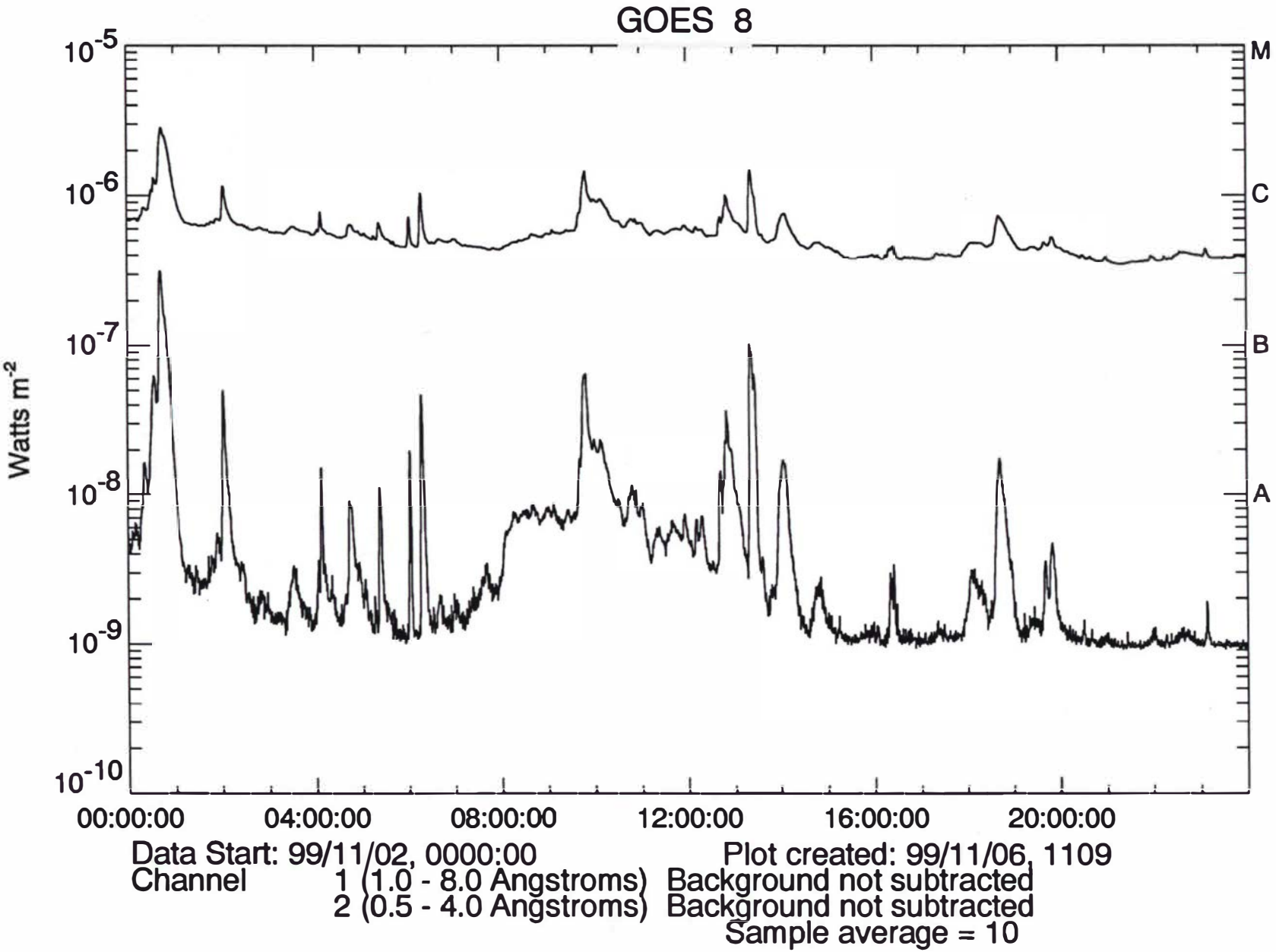
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 01/11/1999 DOY = 305 03/21/00

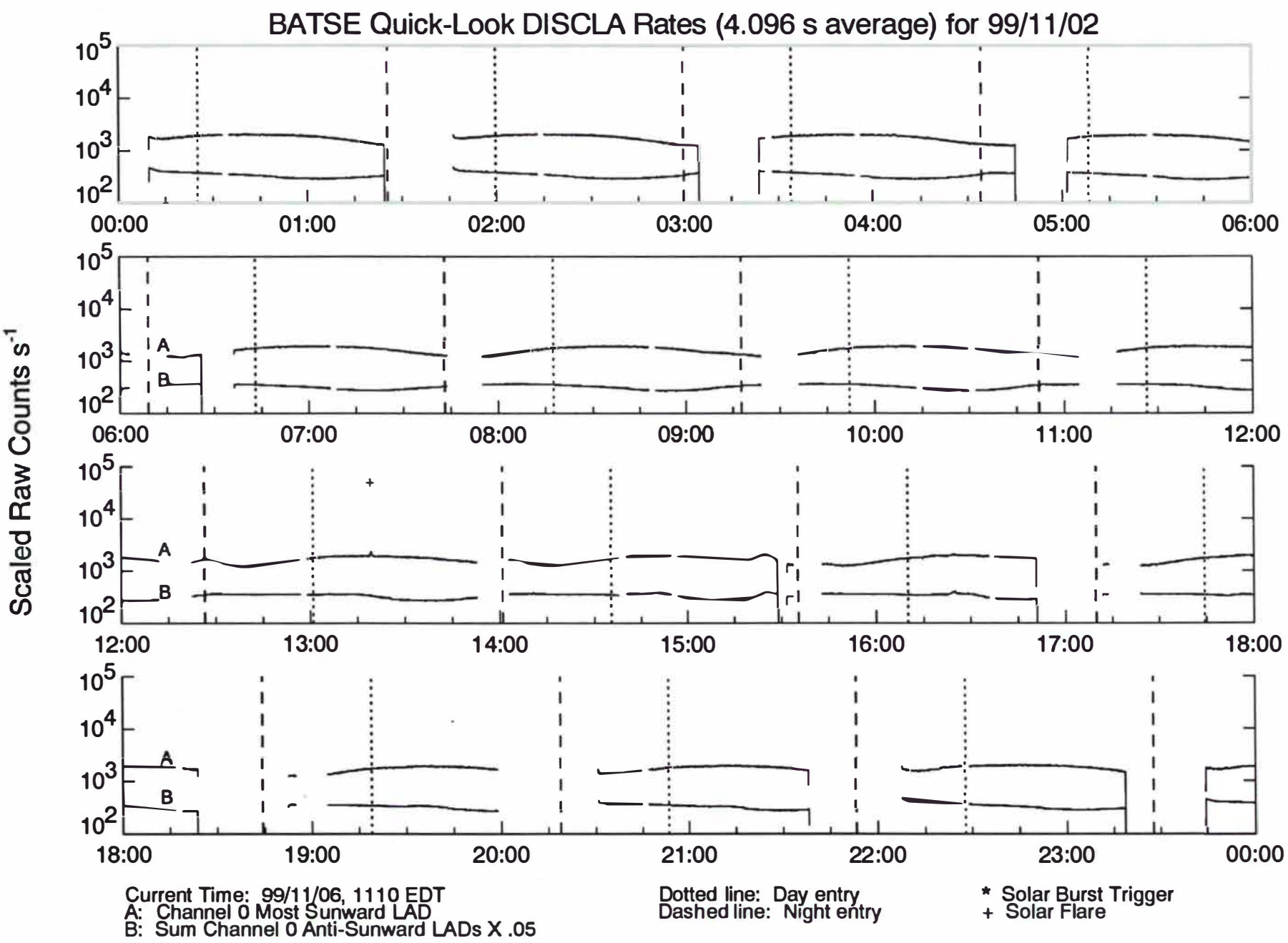
CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 305, year 1999 to day 305, year 1999 03/21/00

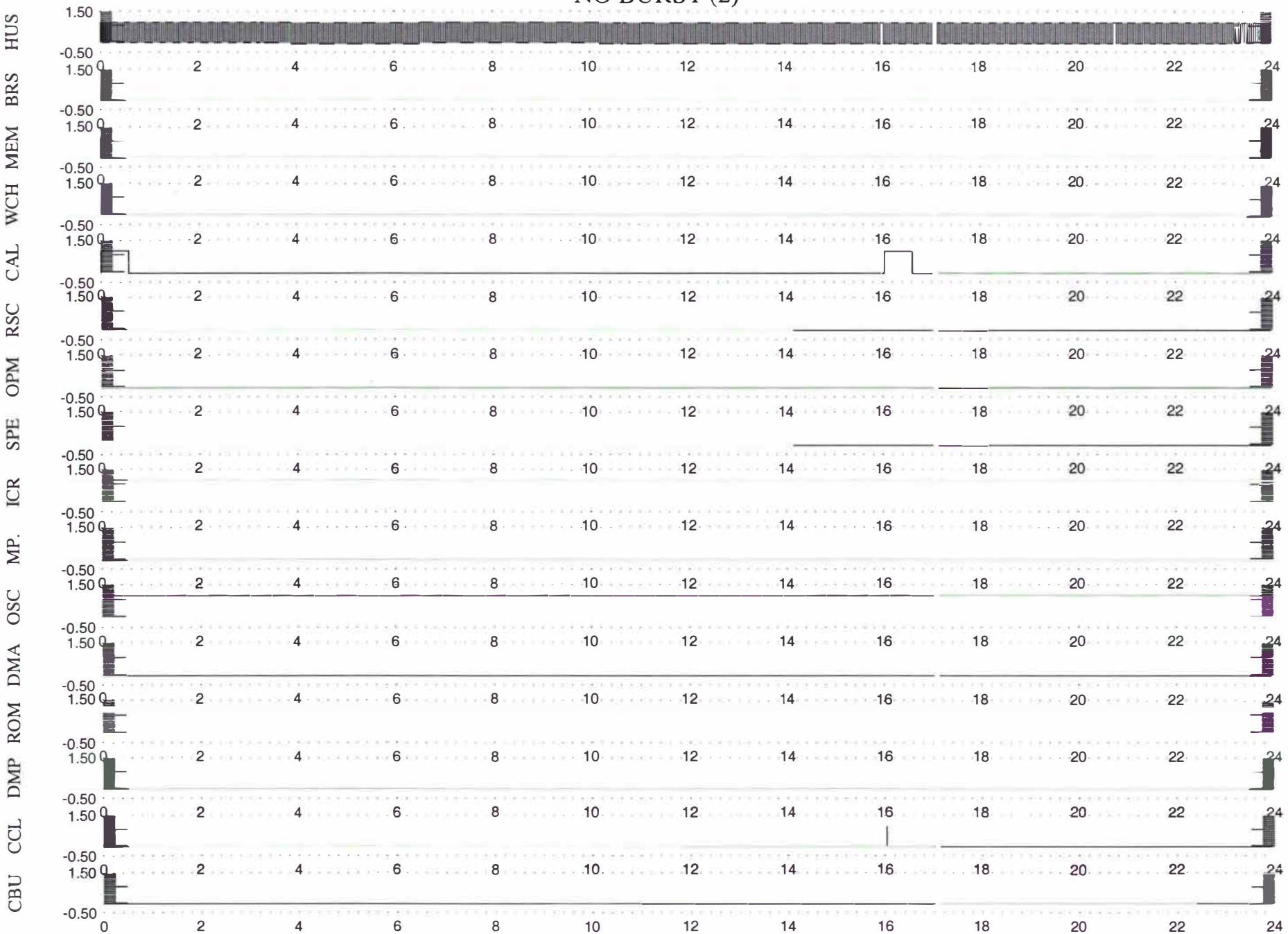



GOES 8
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/02, 0000:00
Plot created: 99/11/06, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/02
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/06, 1110 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

HUS MODES EDR day 306, year 1999 to day 306, year 1999 03/21/00

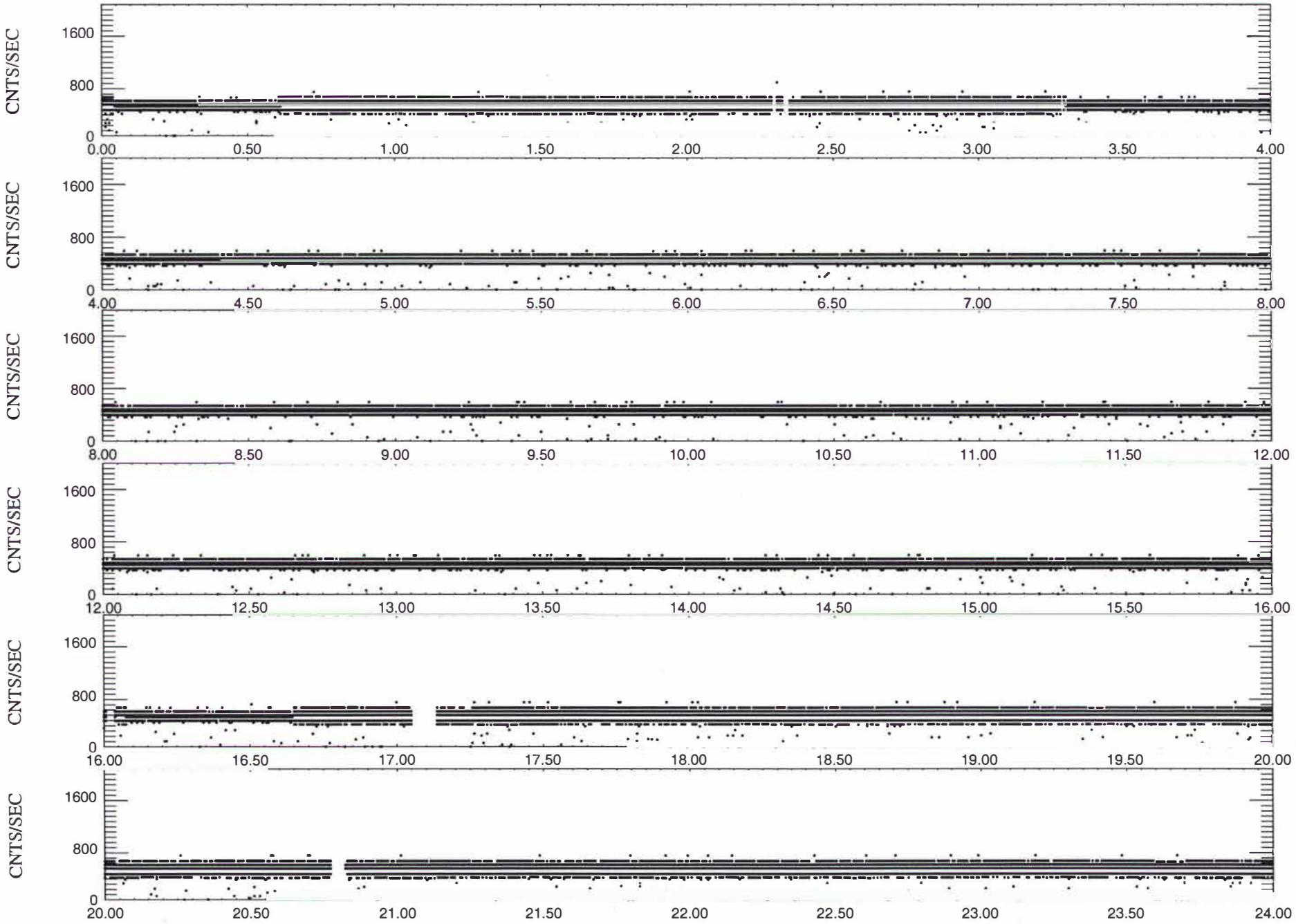
NO BURST (2)



UNIV SAL TIME

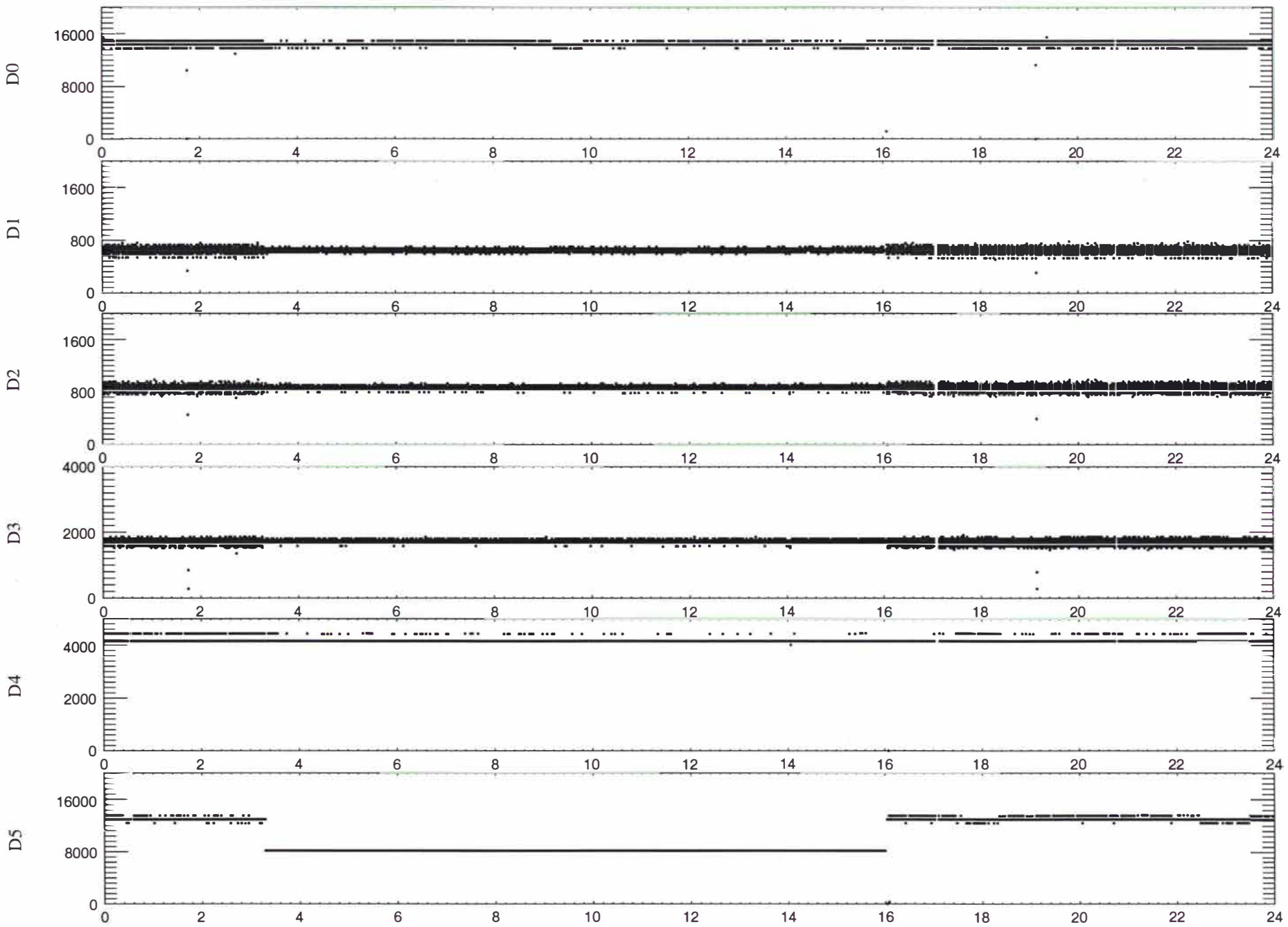
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 02/11/1999 DOY = 306 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 306, year 1999 to day 306, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Fri Nov 5 13:28 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 5 Nov 1999 15:36:11 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7838

****
BATSEARCH PROGRAM
****

BATSE BURST # 7838
EVENT OF 1999 NOV 3 DAY OF YEAR=307
EVENT CROSSING TIME AT BATSE : 67360. S. OR 18:42:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 321.000 15.000
BATSE PEAK COUNTING RATE: 5500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/11/ 99 IS:
RA= 164.128 DEC= -22.460 DIST= 4.930 AU
BATSE-ULYSSES DISTANCE = 737456925. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 23.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2262.60 SECS.
CROSSING TIME AT ULYSSES IS 69623. S. OR 19:20:22 +/- 251.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/11/ 99 IS:
RA= 283.665 DEC= -24.523 DIST= 1.532 AU
MARS-BATSE DISTANCE = 229168080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -452.00 SECS.
CROSSING TIME AT MARS IS 66908. S. OR 18:35:07 +/- 100.16 SECONDS

BATSE BURST TRIGGER
NO.: 7838

TIME: TJD=1485 SECONDS=67360

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=26.7 AZIMUTH=88.9 ERROR=2.7 DEGREES

COMMENTS:
GRB. COMPLEX, DUR. 90 S, STARTS AT T-10 S, MAX. AT T+52 S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7838	991103	11485	67360	5500	321	+15	90

BATSE BURST# 7838

ULYSSES RT 5/11/99

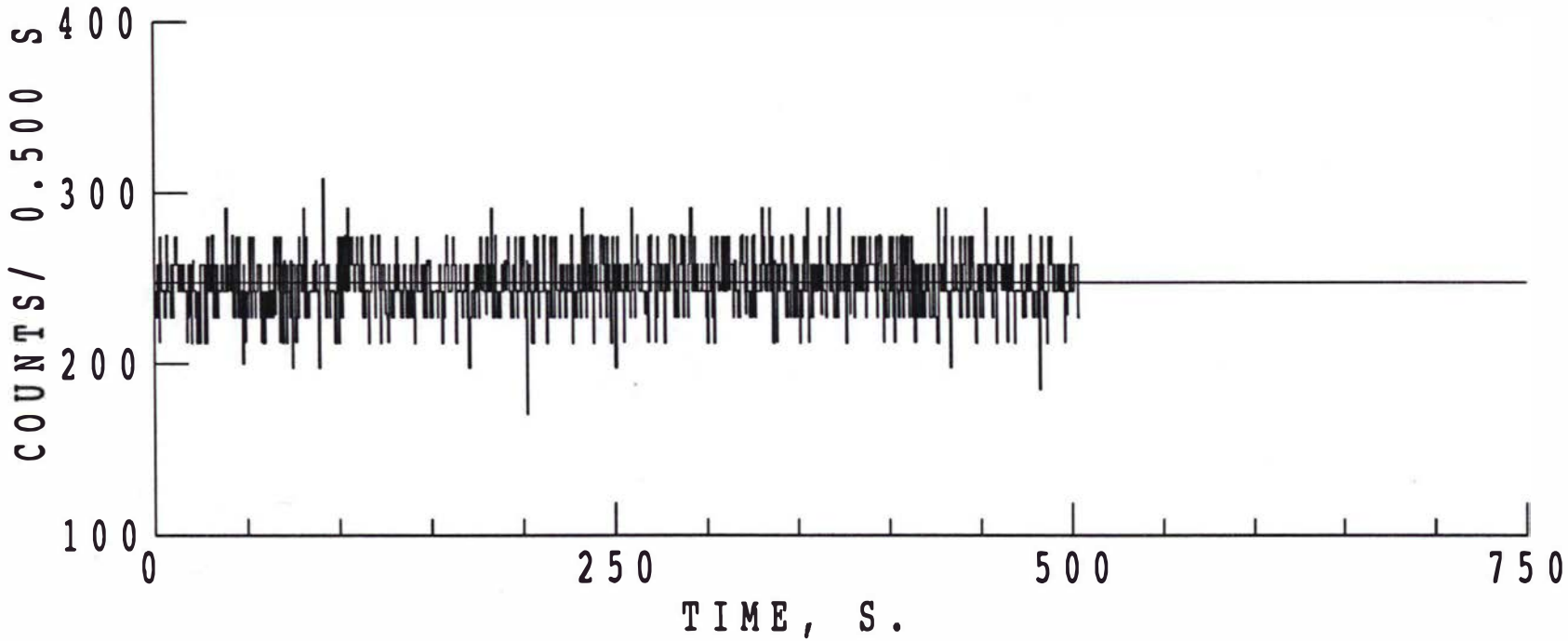
3/11/99 69372.234 s

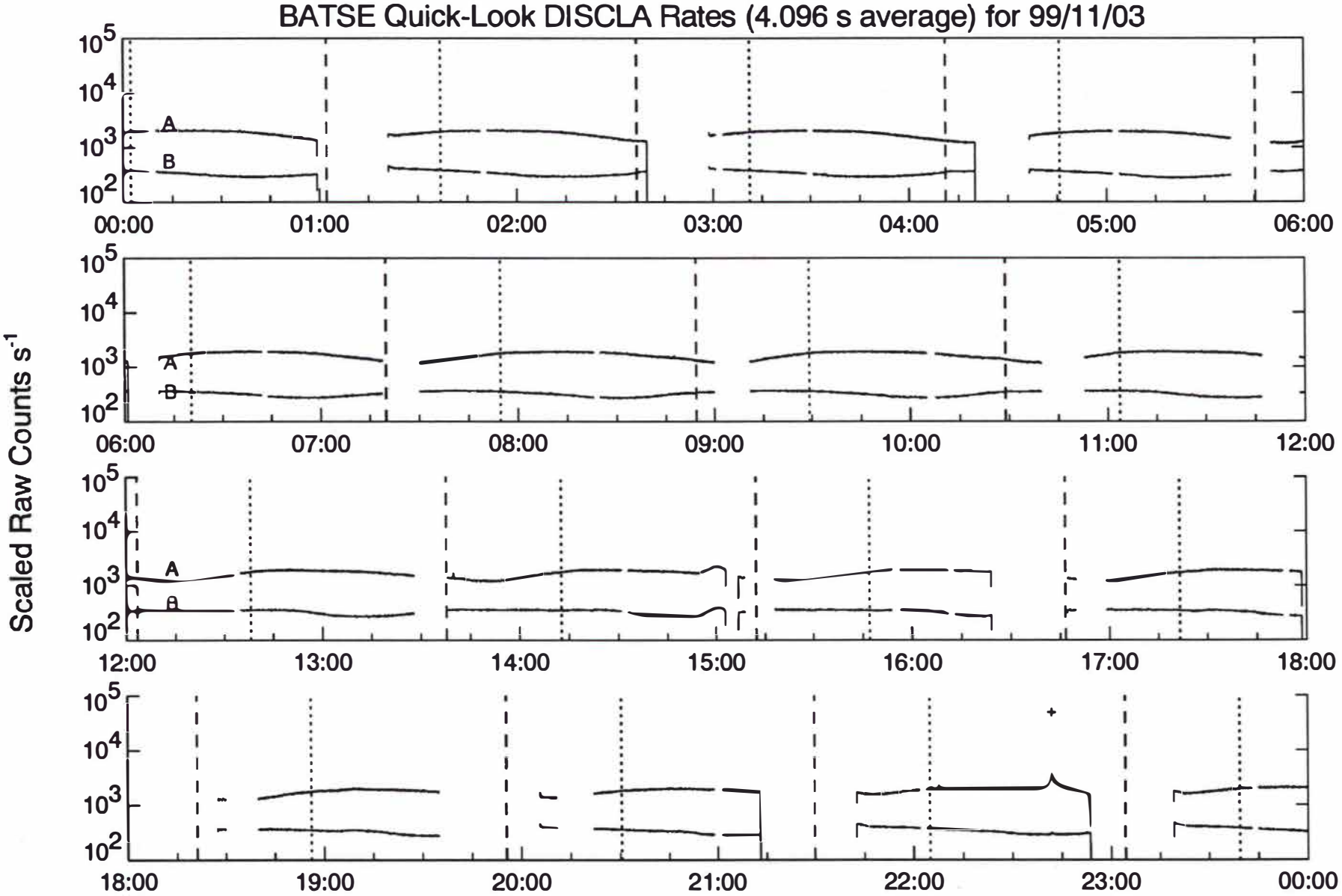
0.250 S INTERVALS REGROUPED BY 2

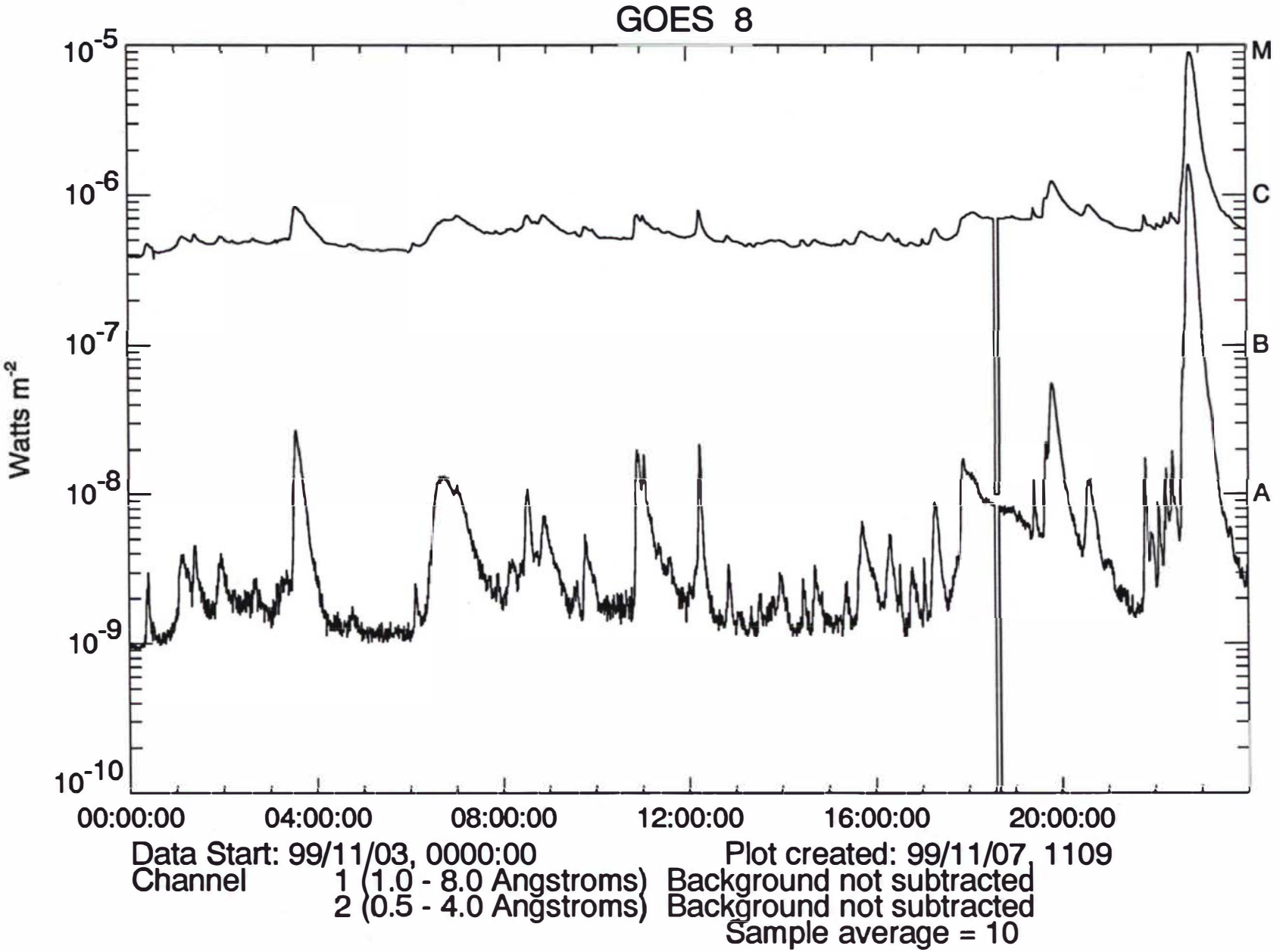
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

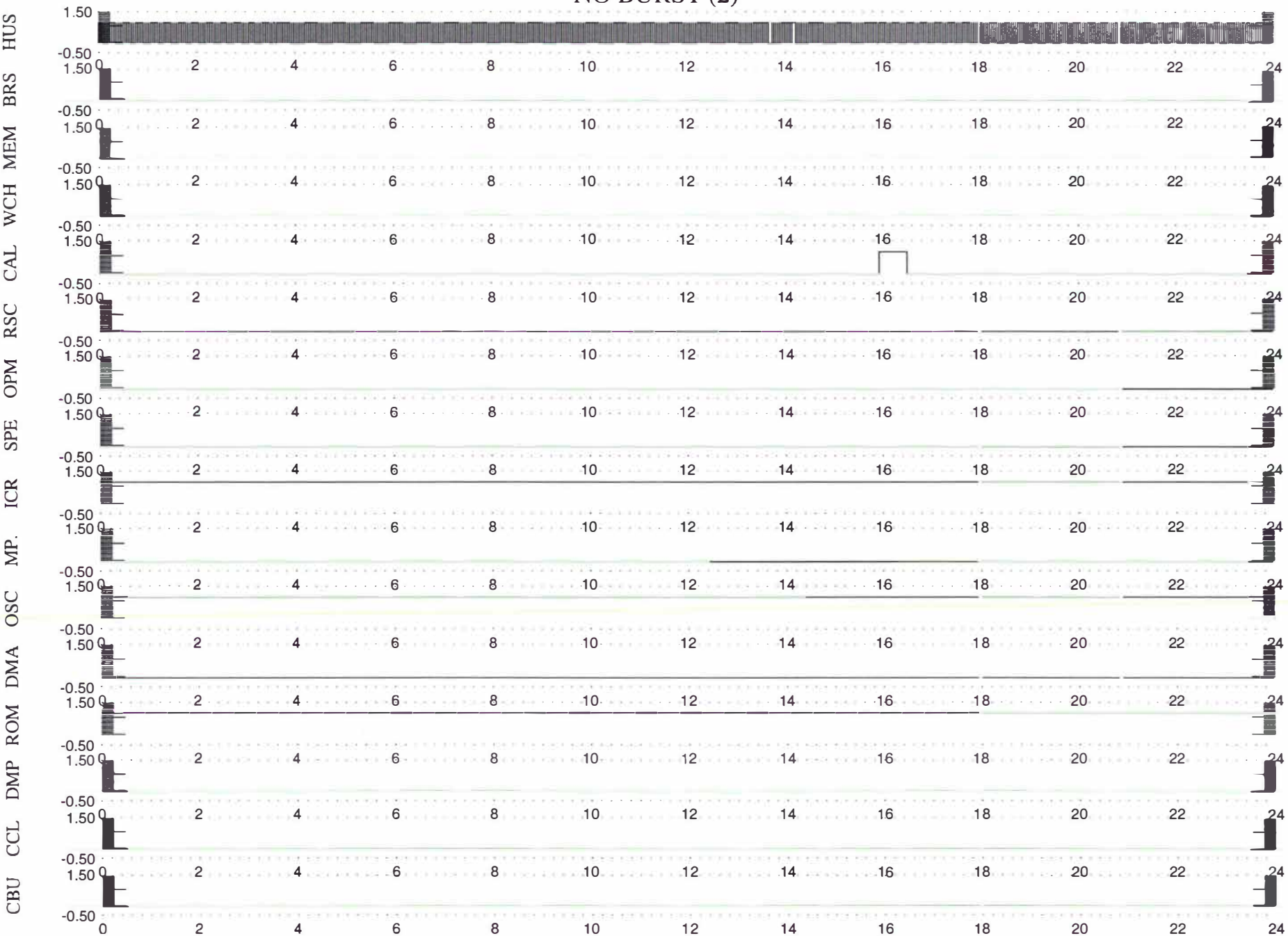



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/03
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/07, 1110 EDT
A: Channel 0 Most 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
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/03, 0000:00
Plot created: 99/11/07, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 307, year 1999 to day 307, year 1999 03/21/00

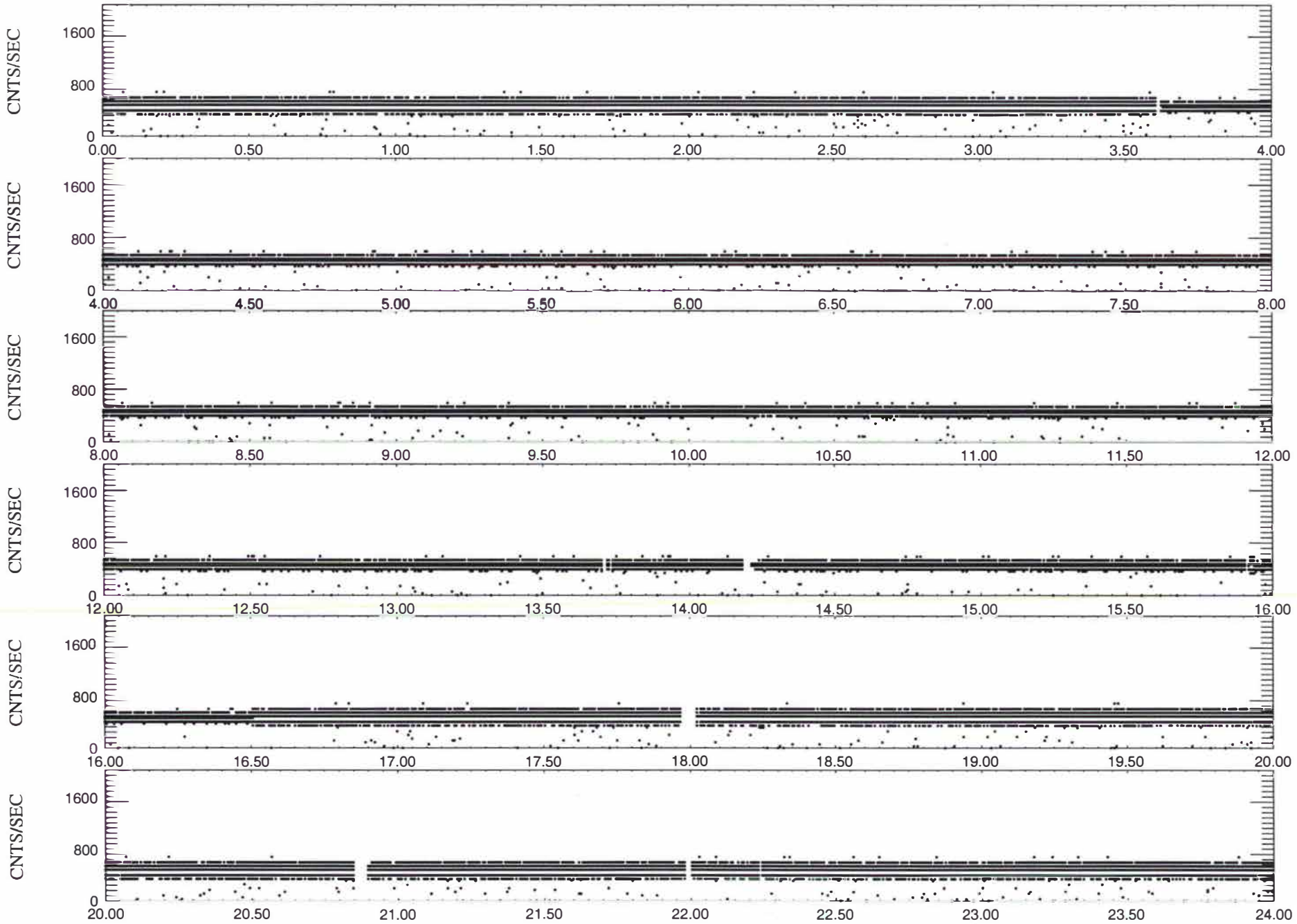
NO BURST (2)



UNIV SAL TIME

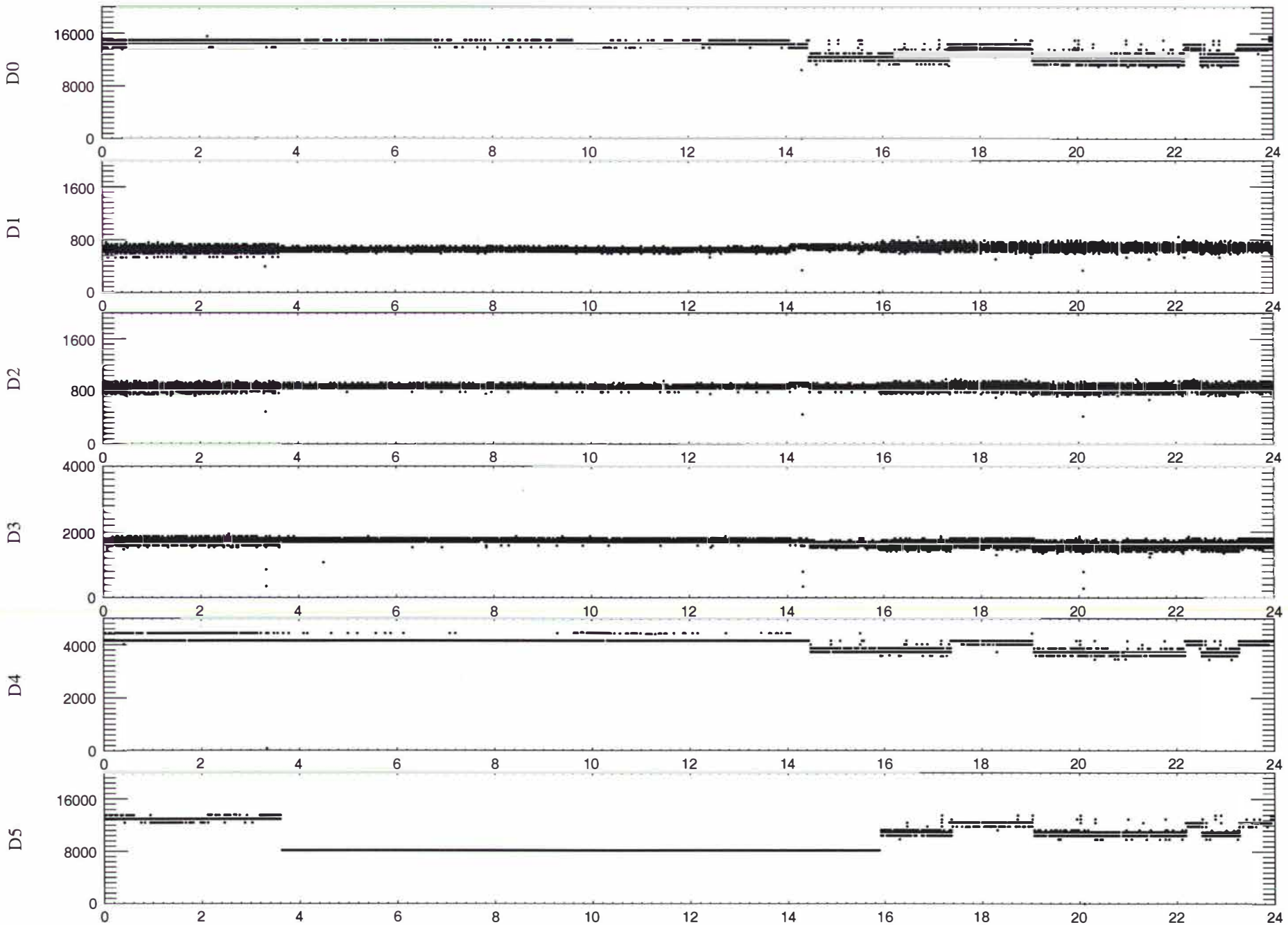
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 03/11/1999 DOY = 307 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 307, year 1999 to day 307, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Mon Nov 8 12:50 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 8 Nov 1999 14:47:39 -0600 (CST)
To: burst@comptel.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.: 7839

TIME: TJD=1486 SECONDS=5445

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=101.7 AZIMUTH=340.6 ERROR=2.9 DEGREES

COMMENTS:
SOLAR FLARE. GOES C2.9, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 15 S,
STARTS AT T-5 S. NOT VISIBLE ABOVE 100 KEV.

From SURASAK@fender.msfc.nasa.gov Tue Nov 9 13:07 PST 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Tue, 9 Nov 1999 15:14:57 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7840

****
BATSEARCH PROGRAM
****

BATSE BURST # 7840
EVENT OF 1999 NOV 4 DAY OF YEAR=308
EVENT CROSSING TIME AT BATSE : 61627. S. OR 17:07:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 53.000 55.000
BATSE PEAK COUNTING RATE: 8600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/11/ 99 IS:
RA= 164.222 DEC= -22.634 DIST= 4.915 AU
BATSE-ULYSSES DISTANCE = 735332716. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1243.27 SECS.
CROSSING TIME AT ULYSSES IS 62870. S. OR 17:27:50 +/- 435.97 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/11/ 99 IS:
RA= 284.478 DEC= -24.444 DIST= 1.537 AU
MARS-BATSE DISTANCE = 229960736. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 48.38 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= 509.48 SECS.
CROSSING TIME AT MARS IS 62136. S. OR 17:15:36 +/- 107.29 SECONDS

BATSE BURST TRIGGER
NO.: 7840

TIME: TJD=1486 SECONDS=61627

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=66.0 AZIMUTH=203.4 ERROR=0.76 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH DOUBLE PEAK. DURATION ABOUT 29 S. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7840	991104	11486	61627	8600	053	+55	29

Date: May 3 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

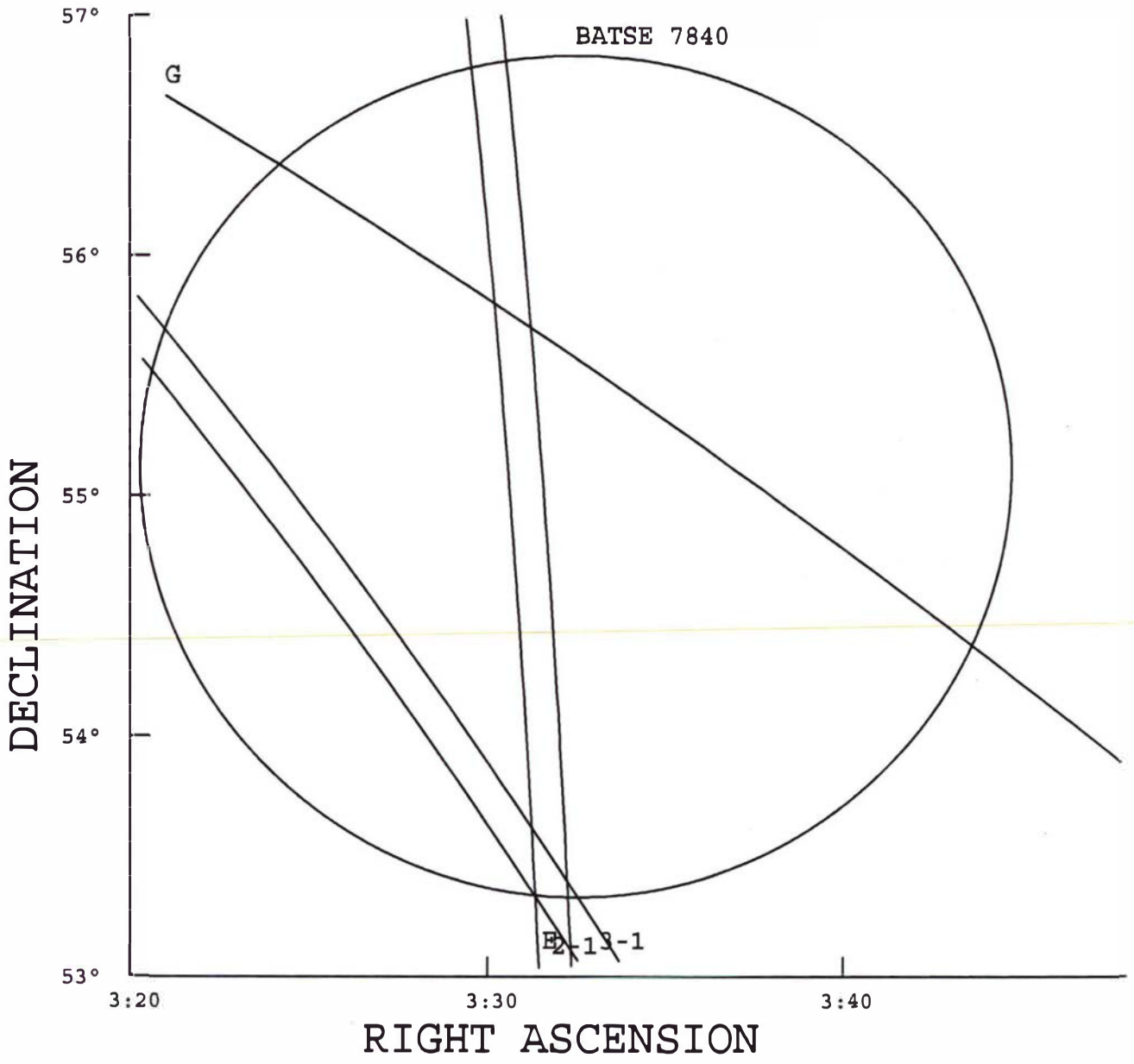
☑ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

☑ BATSE >100 keV data used for NEAR correlation?

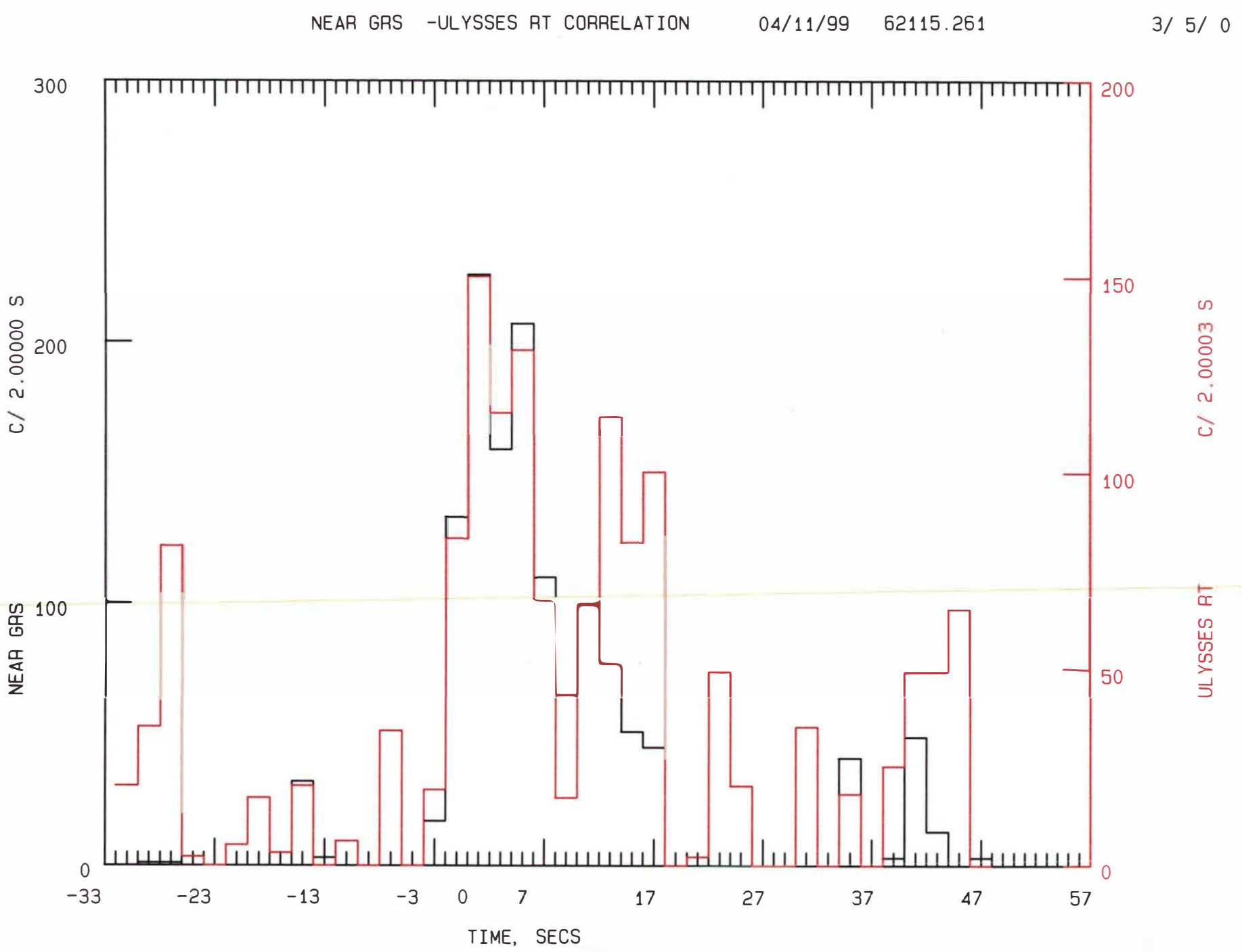
☑ ACCESS database updated?

EVENT OF NOV 4, 1999 17:07

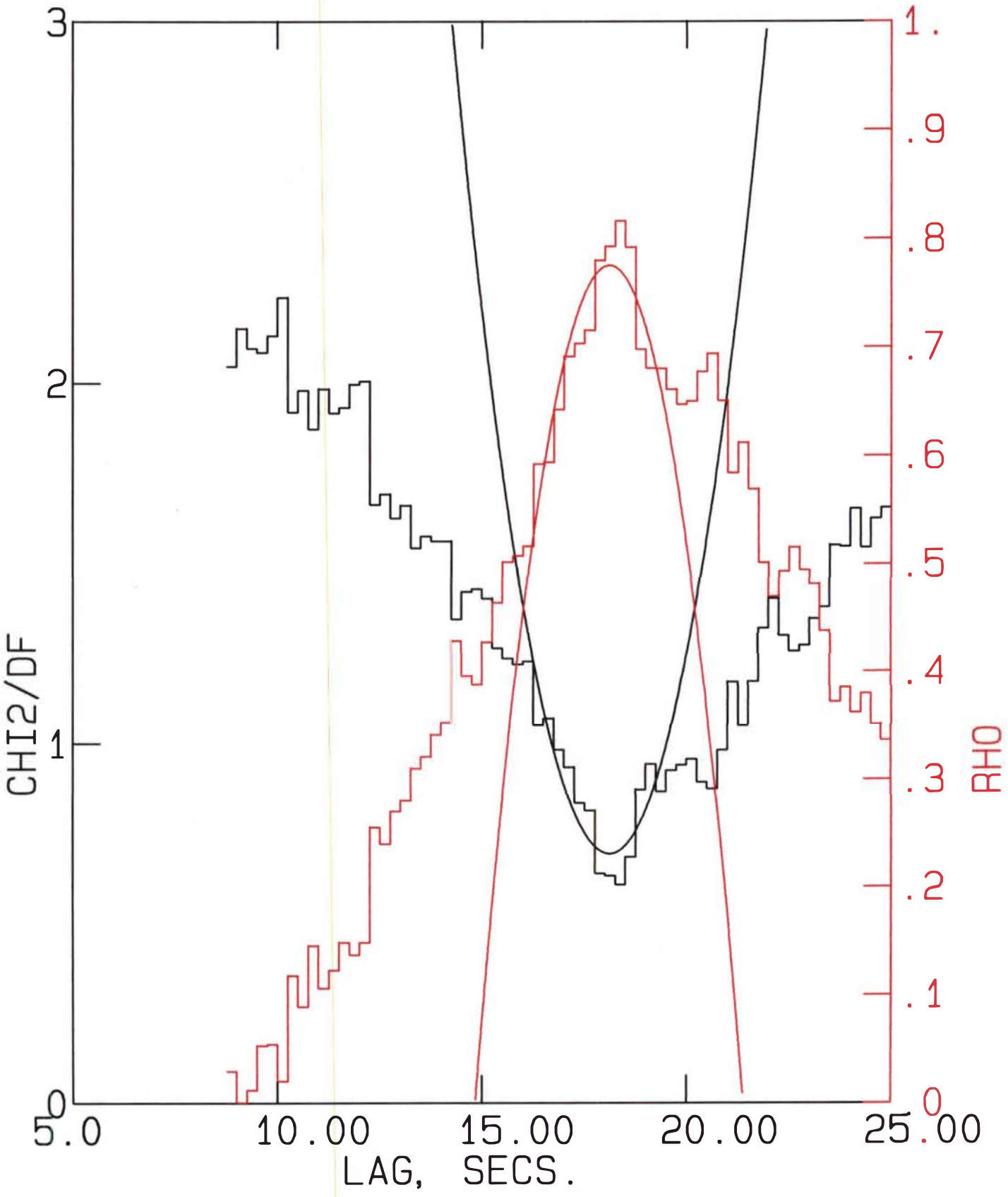
3/ 5/ 0

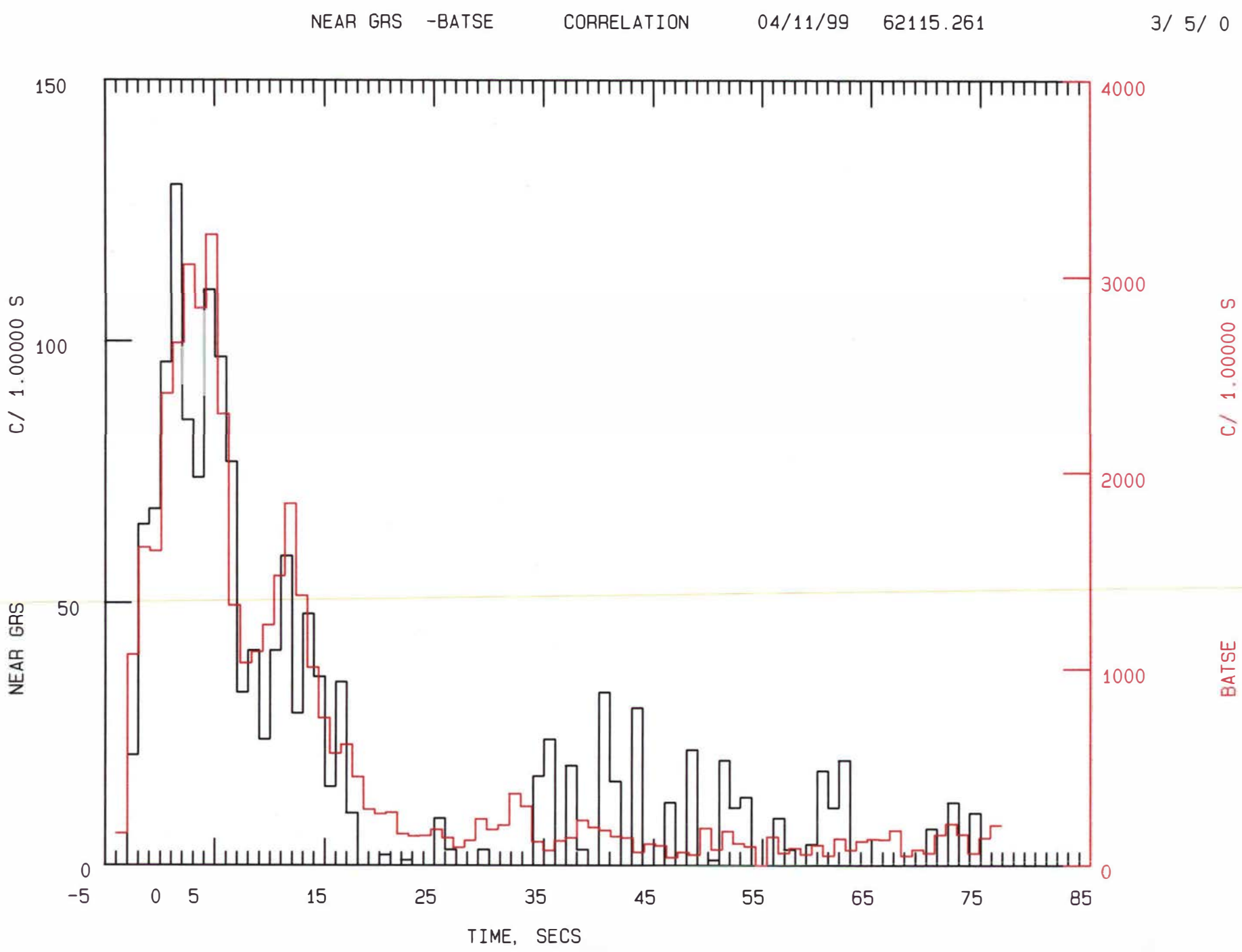


N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 ULYSSES 3 NEAR

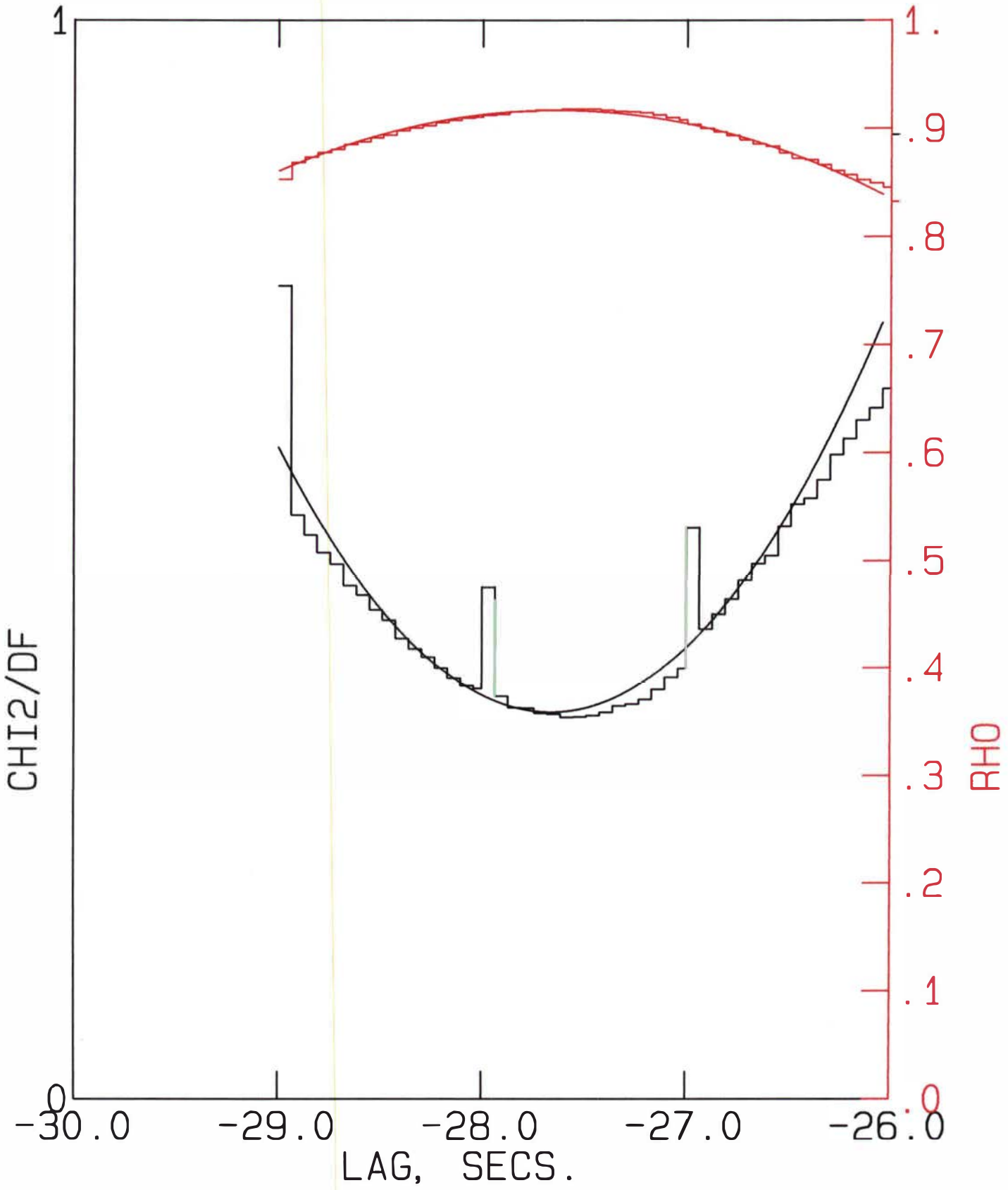

NEAR GRS -ULYSSES RT CORRELATION 04/11/99 62115.261 3/ 5/ 0
300
200
100
0
C/ 2.00000 S
NEAR GRS
200
150
100
50
0
C/ 2.00003 S
ULYSSES RT
-33
-23
-13
-3
0
7
17
27
37
47
57
TIME, SECS

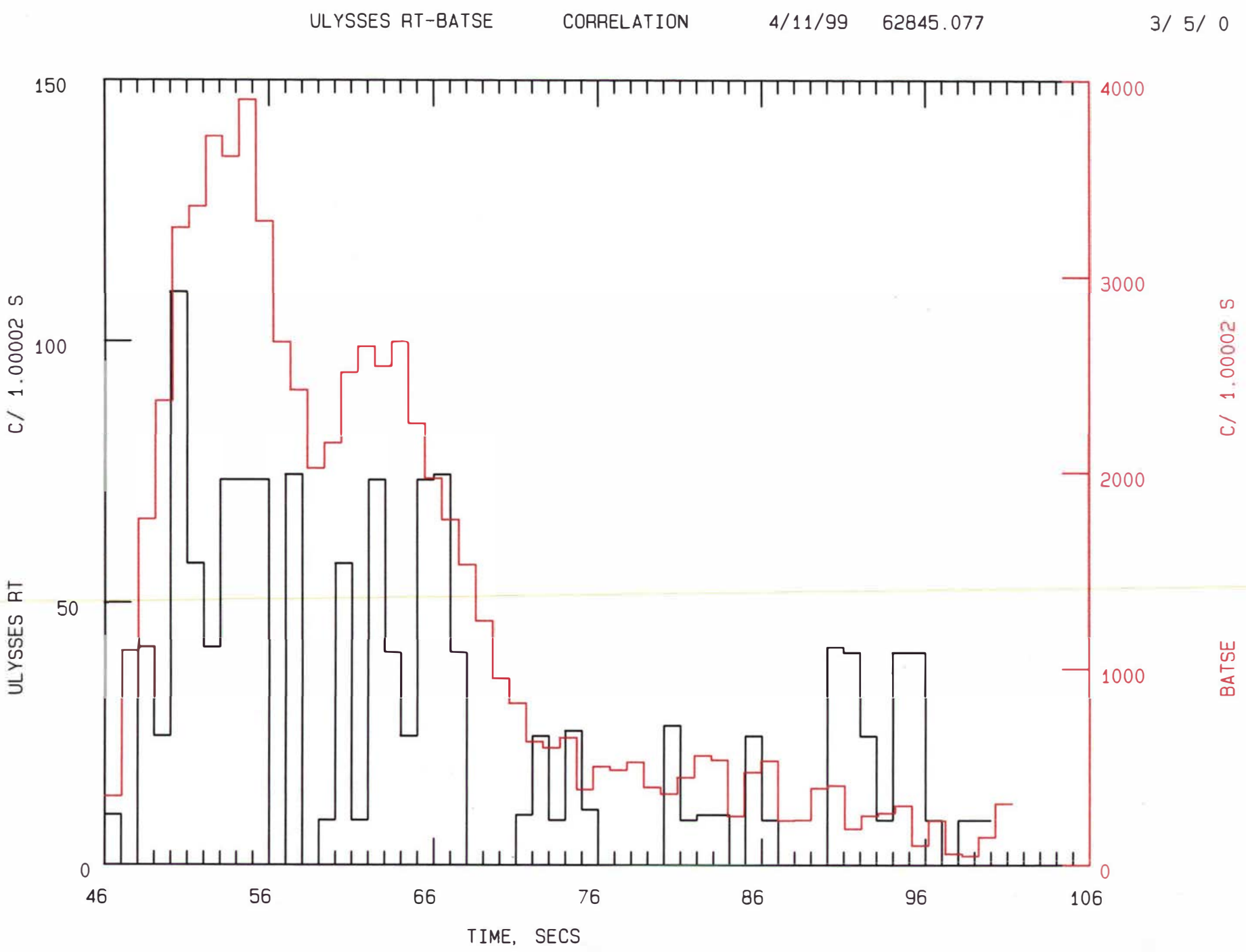
NEAR GRS -ULYSSES RT CORRELATION 04/11/99 62115.261



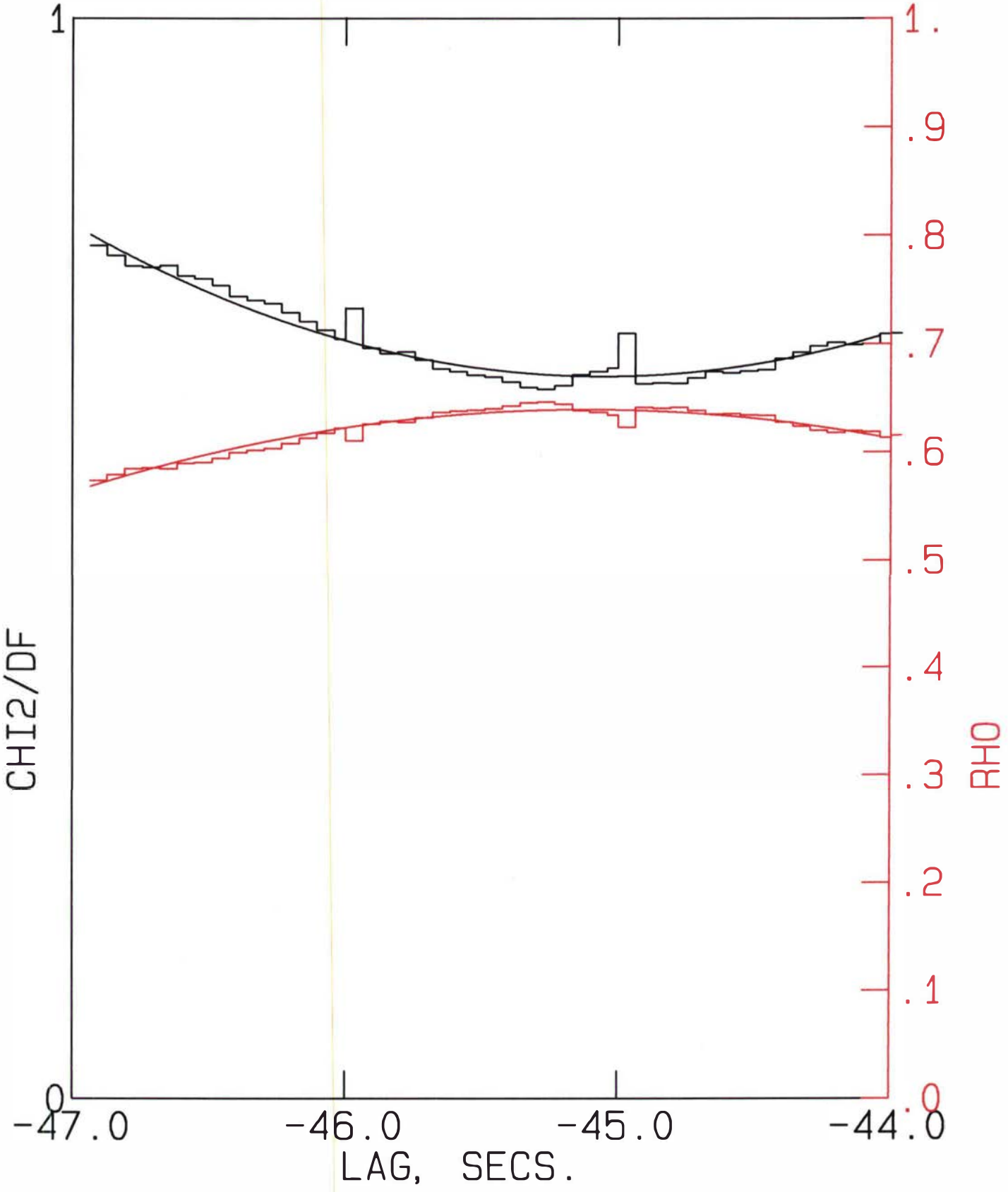

NEAR GRS -BATSE CORRELATION 04/11/99 62115.261 3/ 5/ 0
150
100
50
0
C/ 1.00000 S
NEAR GRS
4000
3000
2000
1000
0
C/ 1.00000 S
BATSE
-5
0
5
15
25
35
45
55
65
75
85
TIME, SECS

NEAR GRS -BATSE CORRELATION 04/11/99 62115.261




ULYSSES RT-BATSE CORRELATION 4/11/99 62845.077 3/ 5/ 0
150
100
50
0
ULYSSES RT
C/ 1.00002 S
4000
3000
2000
1000
0
BATSE
C/ 1.00002 S
46
56
66
76
86
96
106
TIME, SECS

ULYSSES RT-BATSE CORRELATION 4/11/99 62845.077



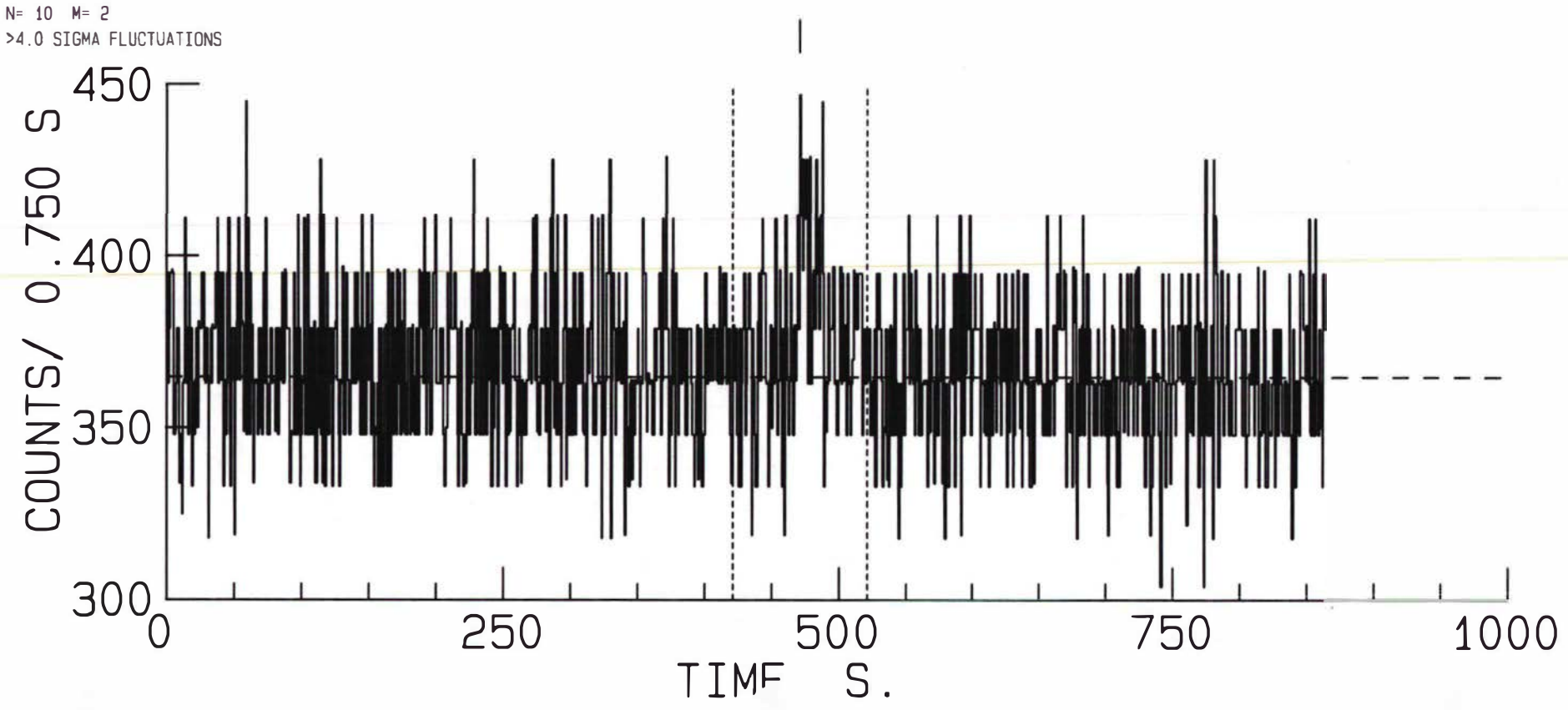
ULYSSES RT

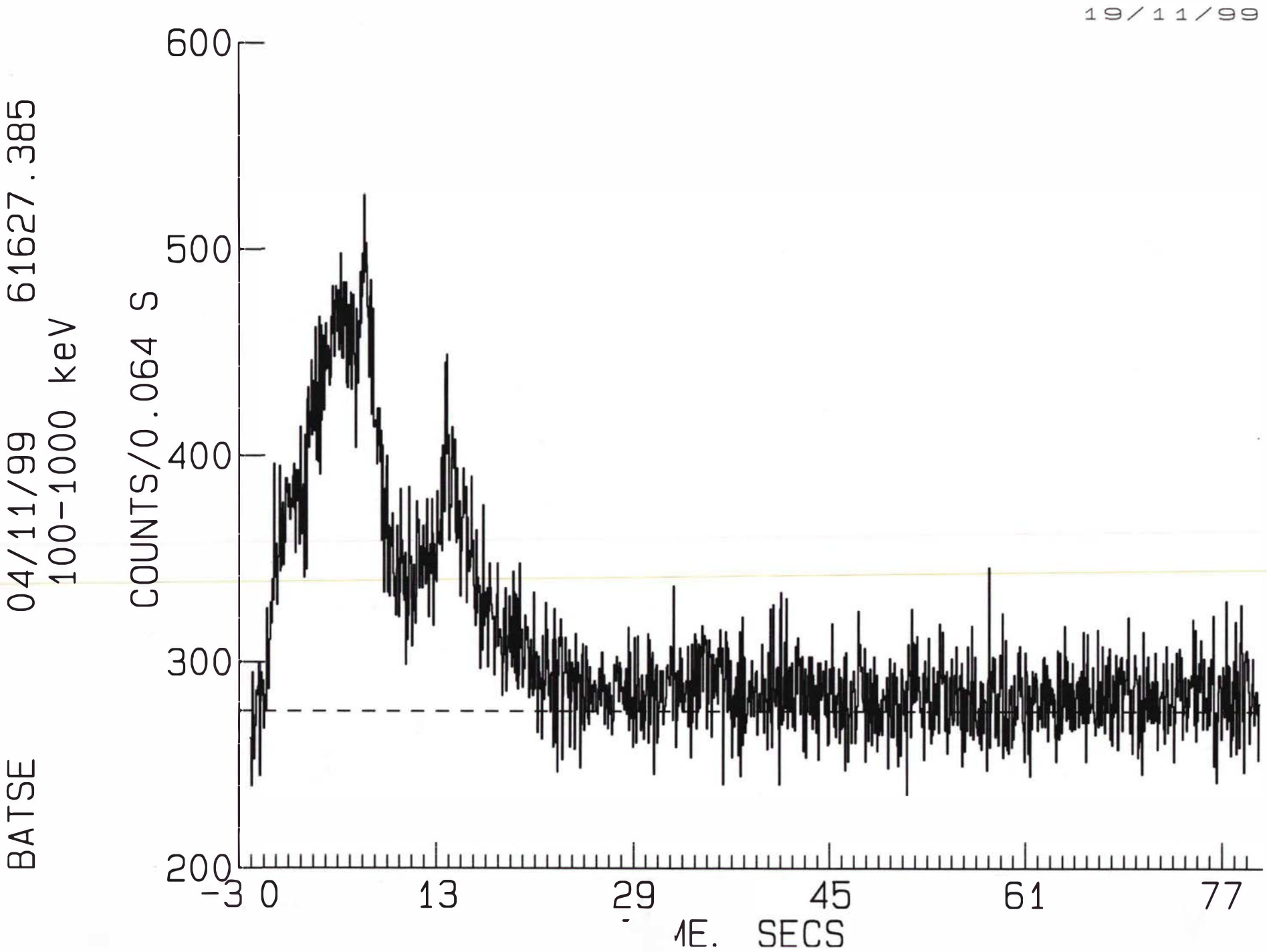
3/ 5/ 0

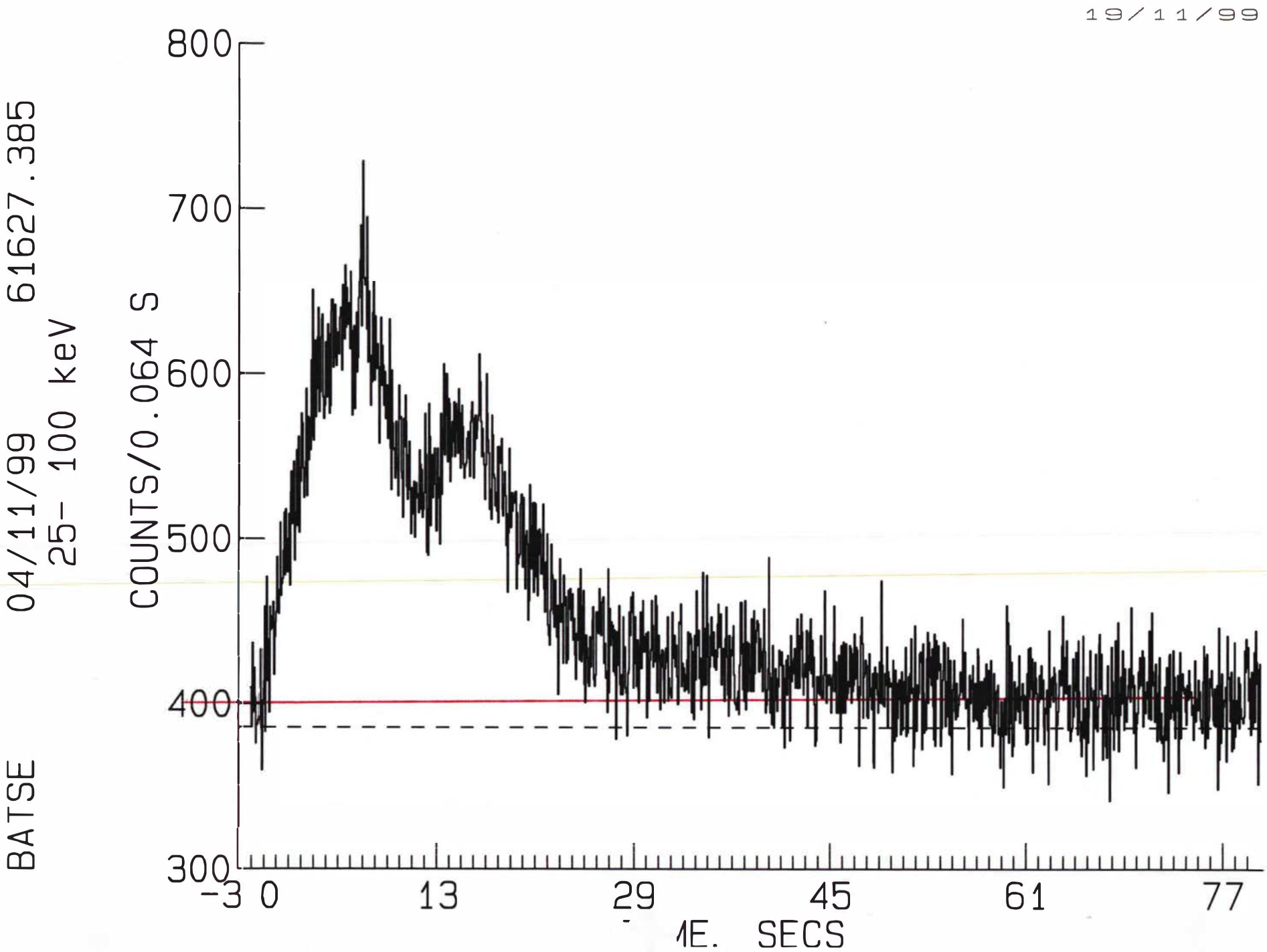
4/11/99 62424.032 s

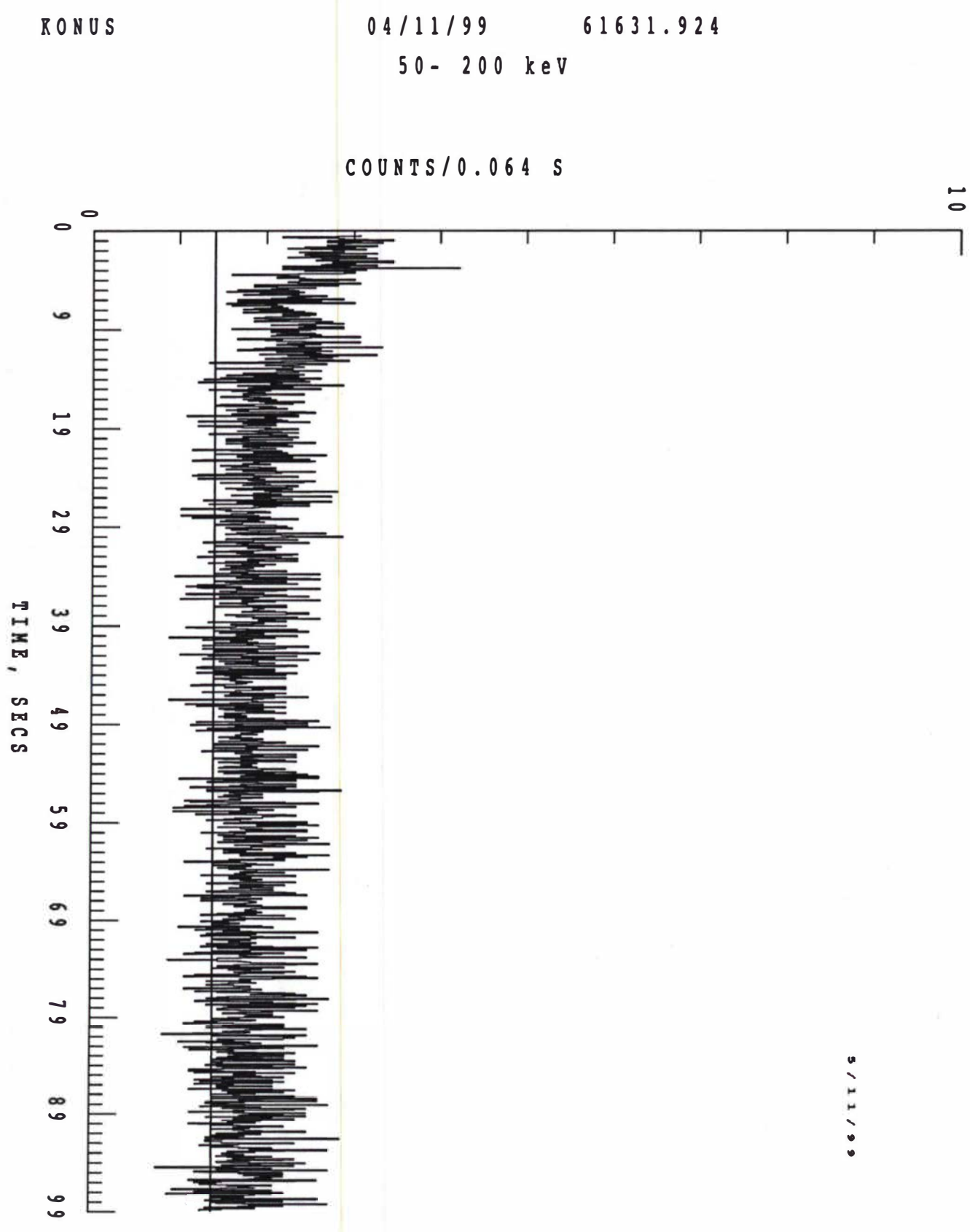
0.250 S INTERVALS REGROUPED BY 3

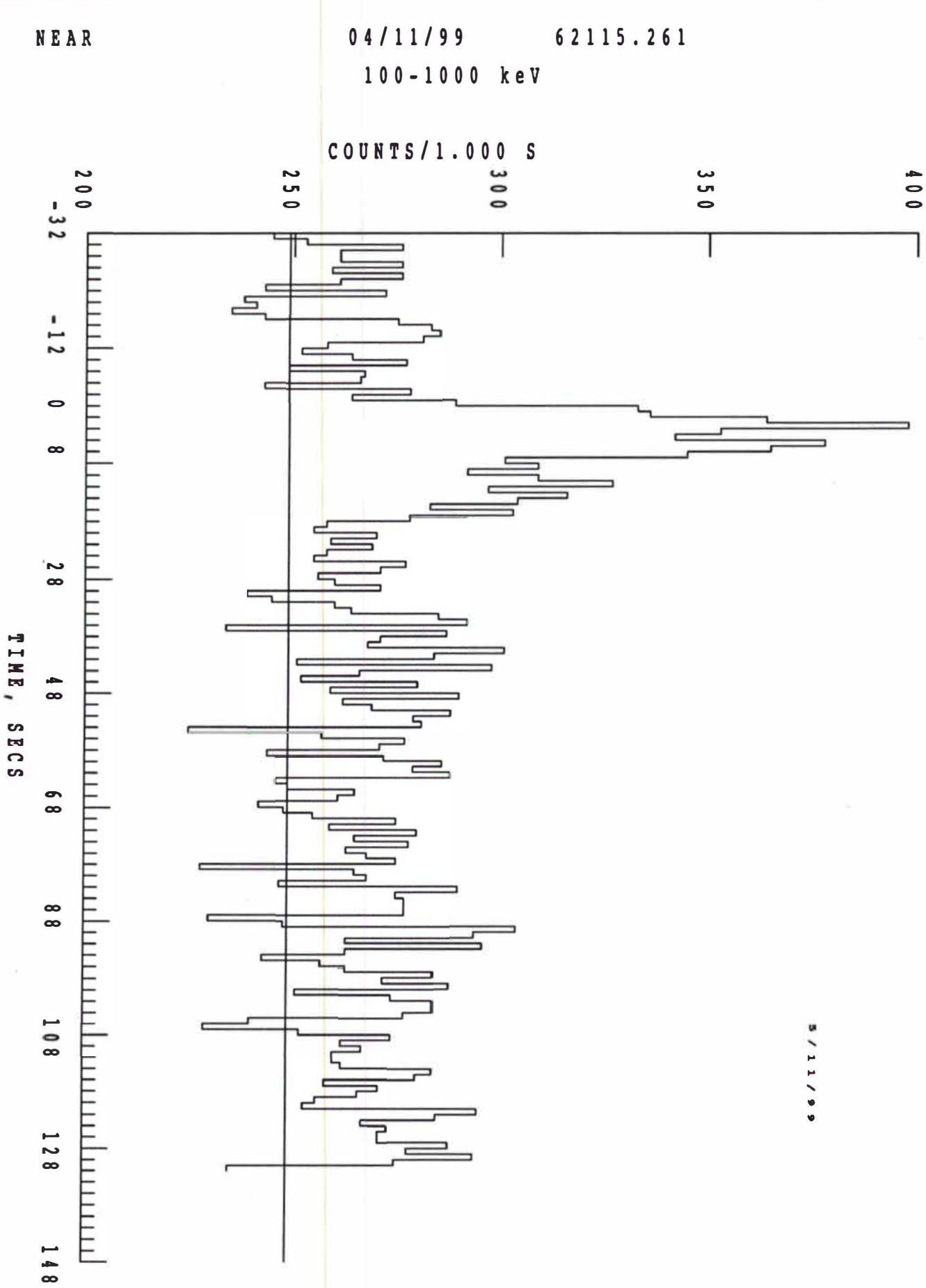
22- 151 keV

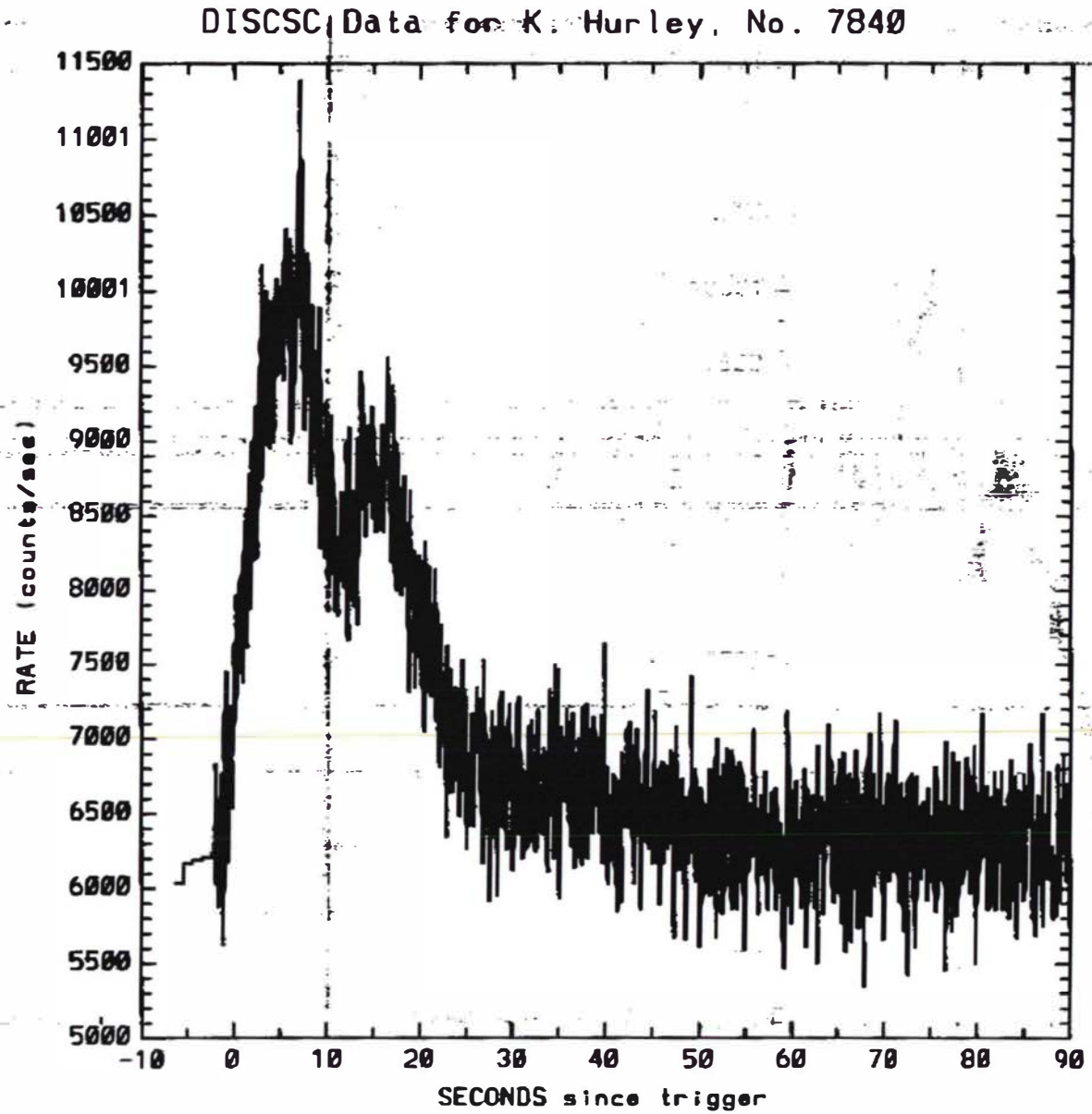



19/11/99
BATSE 04/11/99 61627.385
100-1000 keV
COUNTS/0.064 S
600
500
400
300
200
-3 0
13
29
45
61
77
1E. SECS


19/11/99
BATSE 04/11/99 61627.385
25- 100 keV
COUNTS/0.064 S
800
700
600
500
400
300
-3 0
13
29
45
61
77
1E. SECS


KONUS
04/11/99 61631.924
50- 200 keV
COUNTS/0.064 S
0
10
TIME, SECS
0
9
19
29
39
49
59
69
79
89
99
5/11/99


NEAR
04/11/99
62115.261
100-1000 keV
COUNTS/1.000 S
200
250
300
350
400
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
5/11/99



17-NOV-1999 12.41.18

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

Trigger # . 7840

Trigger Time:
11486 / 61627.385

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DPSELA

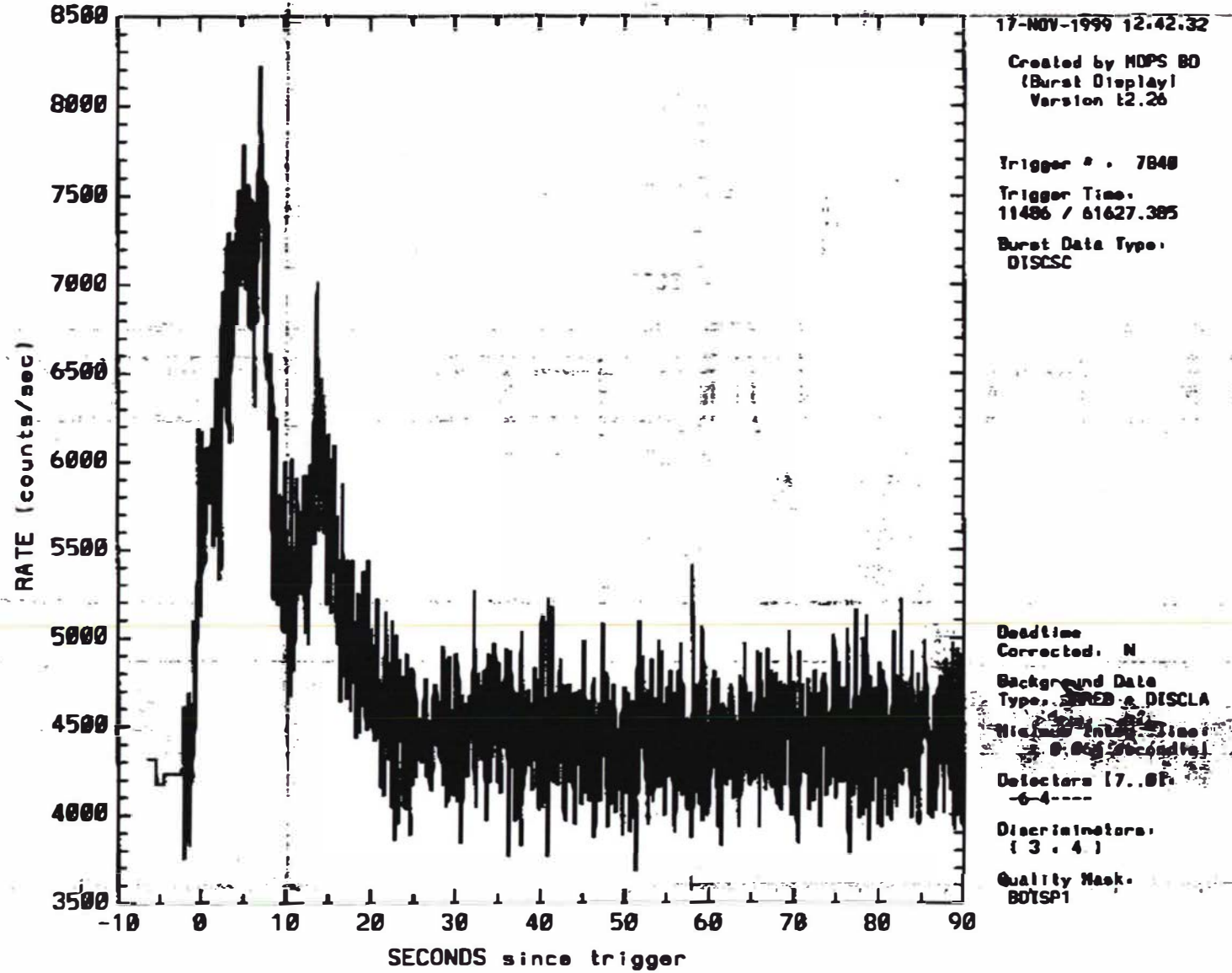
Minimum Integ. Time:
0.064 second(s)

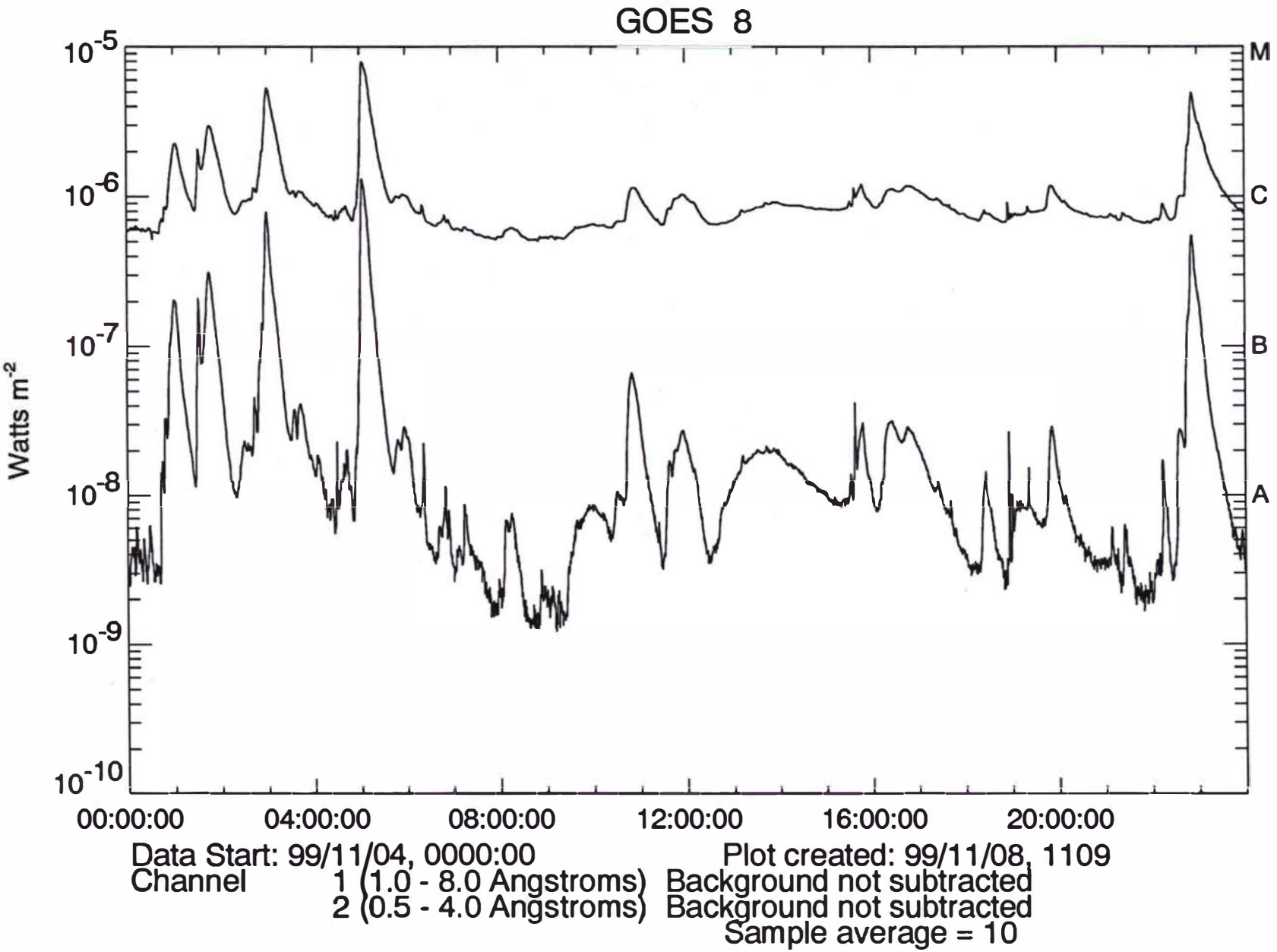
Detectors [7..0]:
-6-4----

Discriminators:
[1 . 2]

Quality Mask:
BDISP1

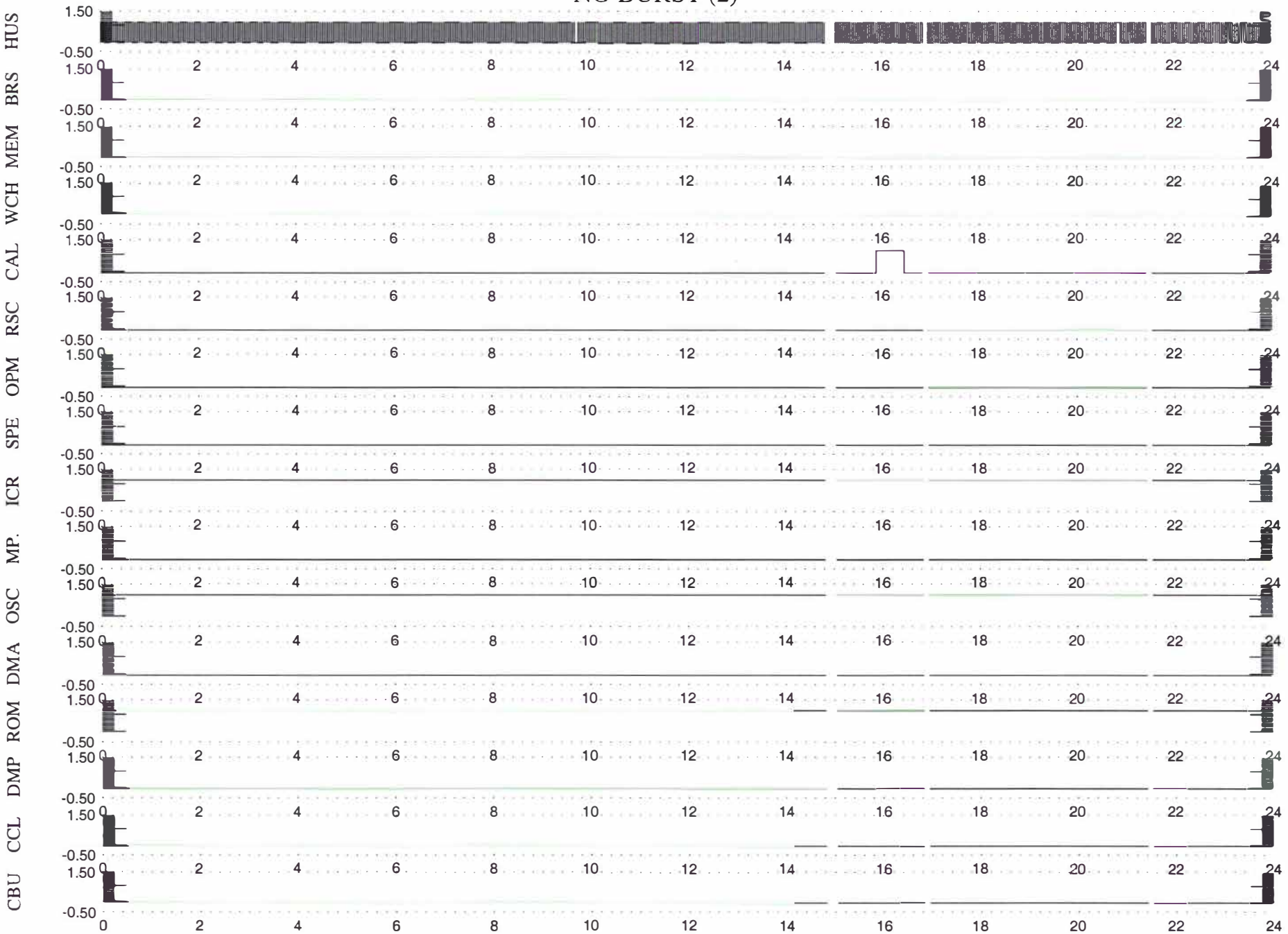
DISCSC Data for K. Hurley, No. 7840




GOES 8
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/04, 0000:00
Plot created: 99/11/08, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 308, year 1999 to day 308, year 1999 03/21/00

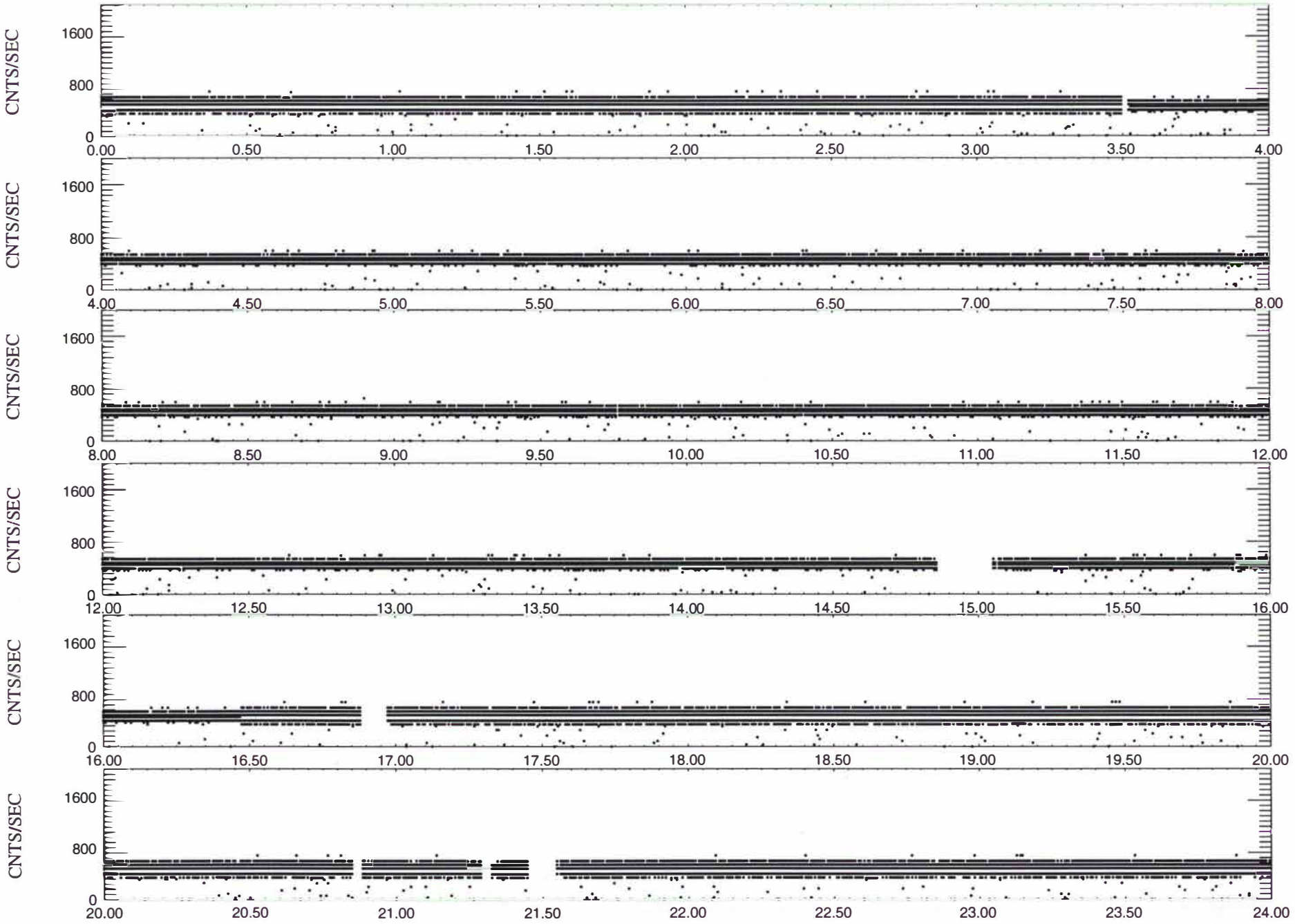
NO BURST (2)



UNIV SAL TIME

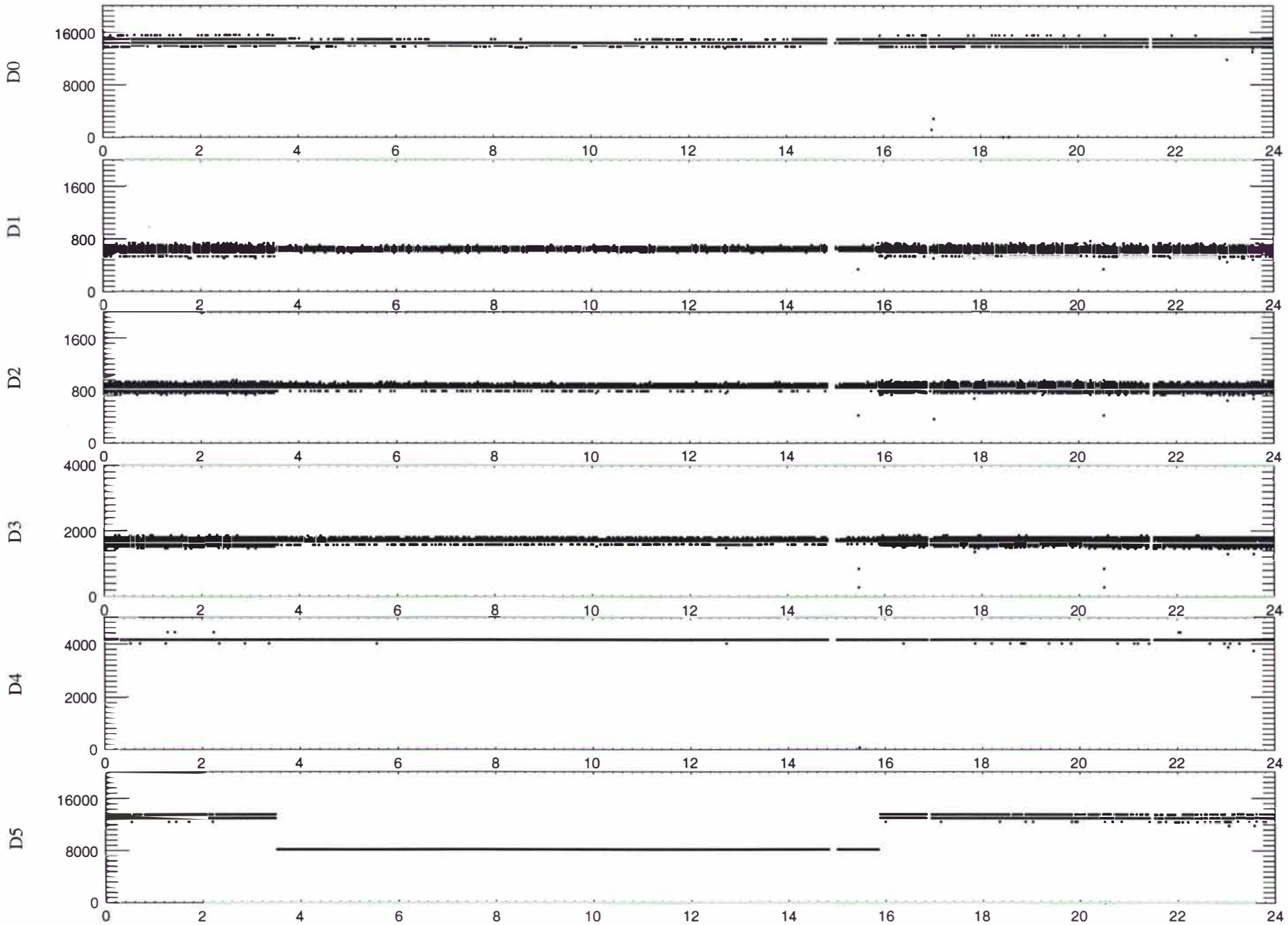
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 04/11/1999 DOY = 308 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 308, year 1999 to day 308, year 1999 03/21/00



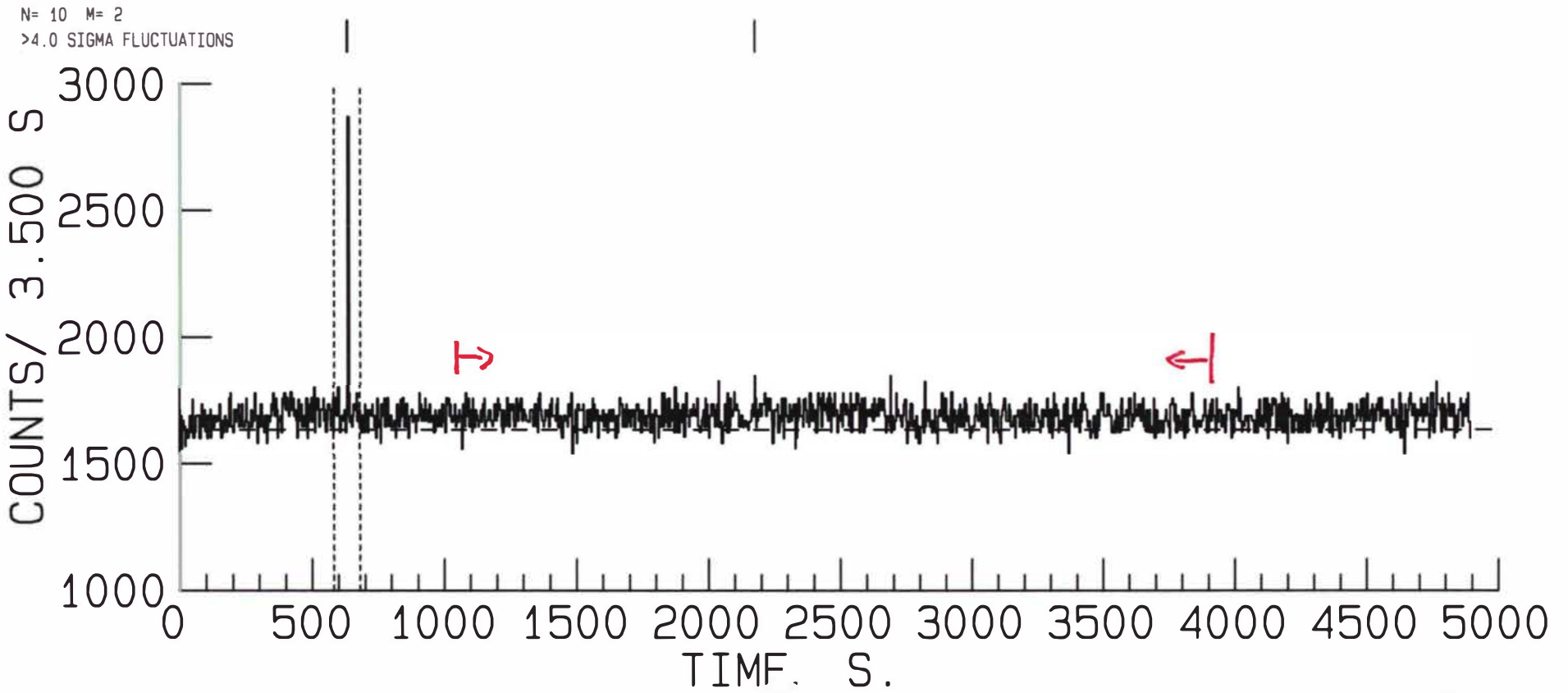
ULYSSES RT

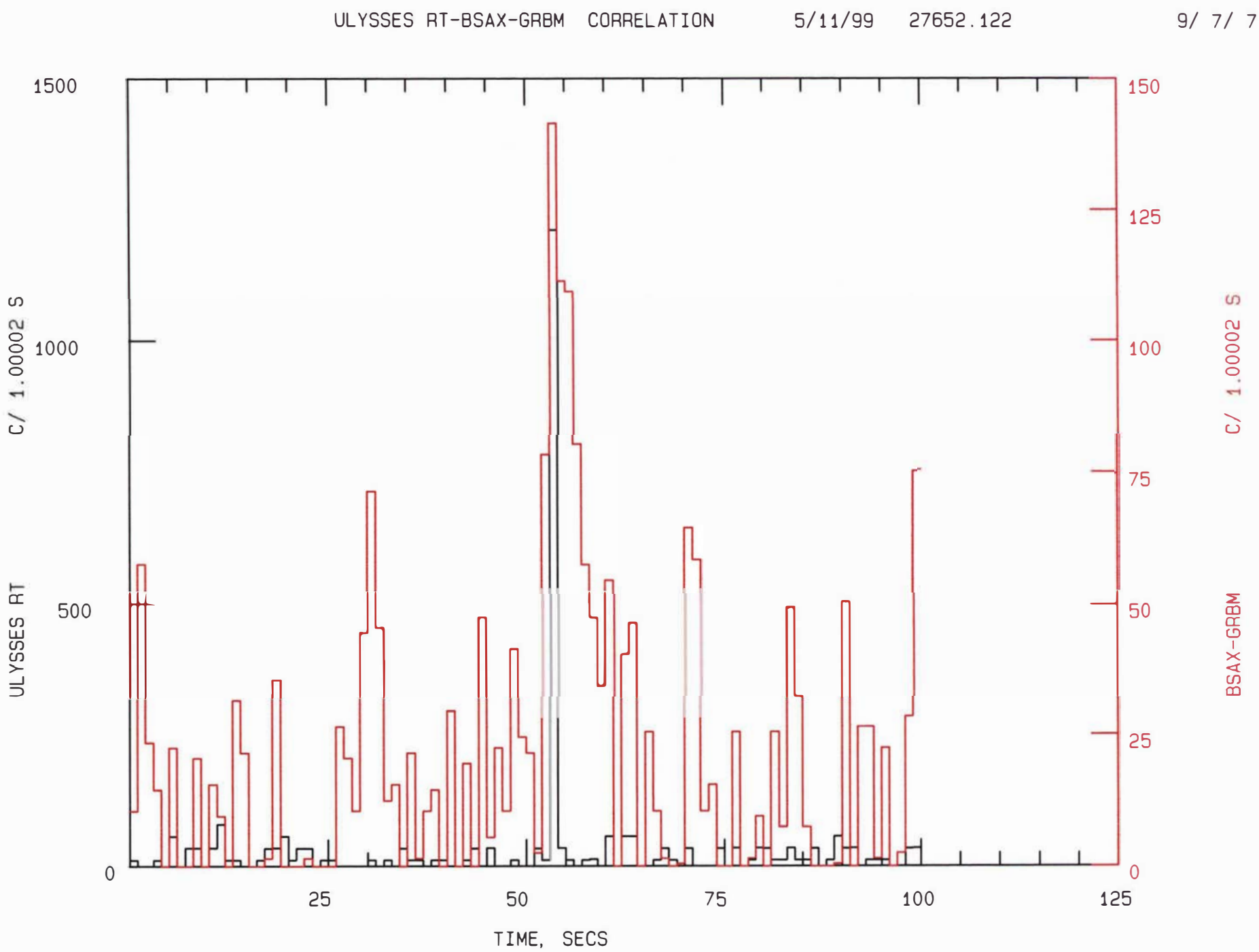
9/ 7/ 7

5/11/99 27072.088 s

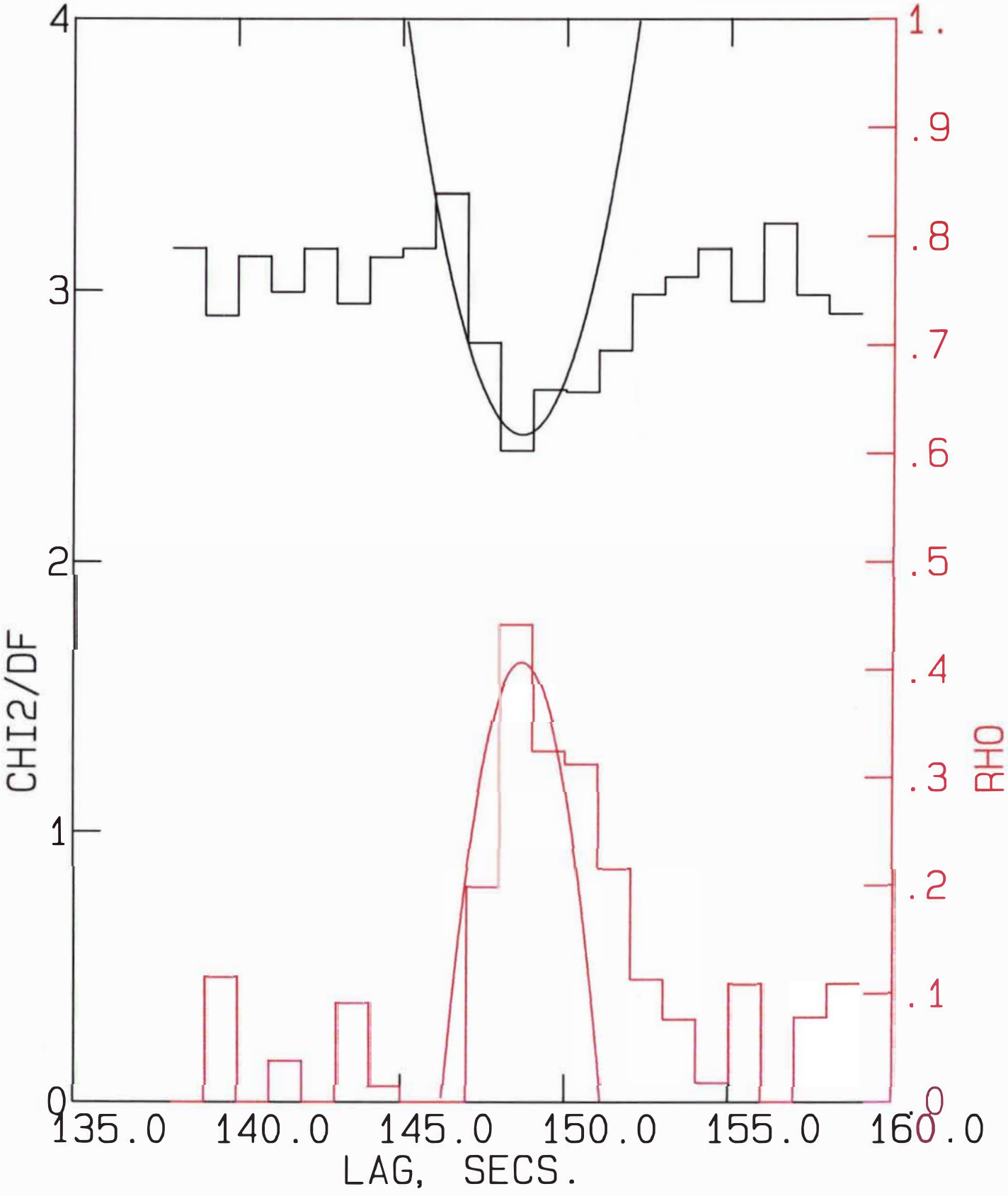
0.500 S INTERVALS REGROUPED BY 7

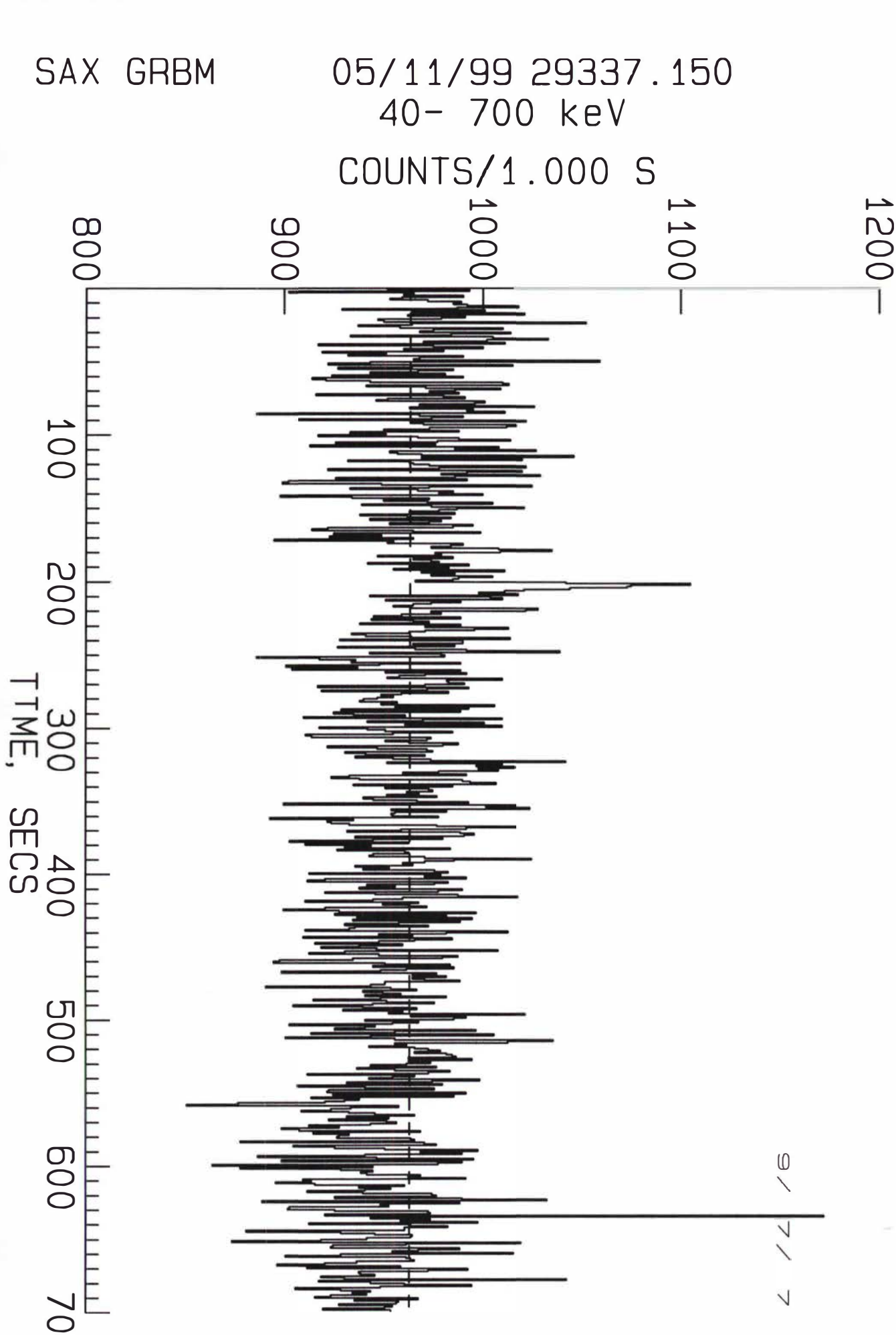
22- 151 keV




ULYSSES RT-BSAX-GRBM CORRELATION 5/11/99 27652.122 9/ 7/ 7
1500
1000
500
0
C/ 1.00002 S
ULYSSES RT
150
125
100
75
50
25
0
C/ 1.00002 S
BSAX-GRBM
25
50
75
100
125
TIME, SECS

ULYSSES RT-BSAX-GRBM CORRELATION 5/11/99 27652.122




SAX GRBM
05/11/99 29337.150
40- 700 keV
COUNTS/1.000 S
800
900
1000
1100
1200
100
200
300
400
500
600
700
TIME, SECS
9/ 7/ 7

grbm 19991105 39753

ULYSSES RT 06/07/07

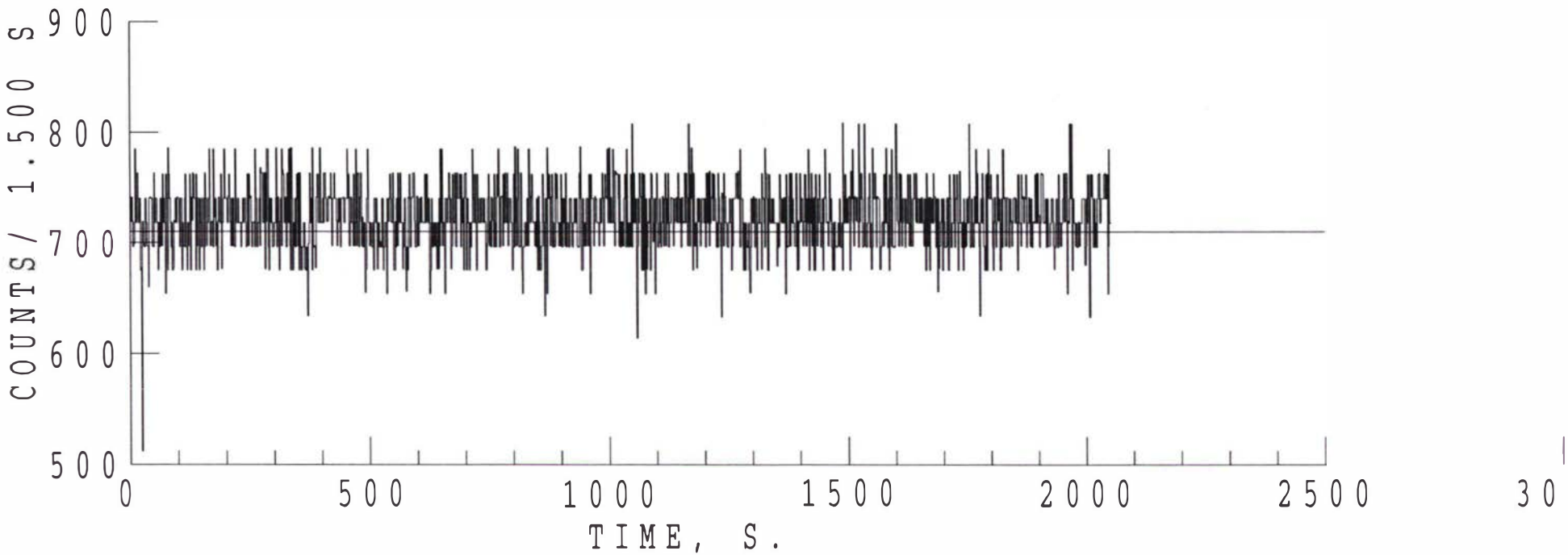
05/11/99 38736.207 s

0.500 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Mon Nov 8 12:53 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 8 Nov 1999 14:55:04 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7841

****
BATSEARCH PROGRAM
****

BATSE BURST # 7841
EVENT OF 1999 NOV 5 DAY OF YEAR=309
EVENT CROSSING TIME AT BATSE : 60044. S. OR 16:40:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 168.000 -64.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/11/ 99 IS:
RA= 164.320 DEC= -22.817 DIST= 4.900 AU
BATSE-ULYSSES DISTANCE = 733081246. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1838.31 SECS.
CROSSING TIME AT ULYSSES IS 58206. S. OR 16:10:05 +/- 302.04 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/11/ 99 IS:
RA= 285.291 DEC= -24.361 DIST= 1.542 AU
MARS-BATSE DISTANCE = 230753360. KM.
`NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.82 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= -144.43 SECS.
CROSSING TIME AT MARS IS 59900. S. OR 16:38:19 +/- 129.07 SECONDS

BATSE BURST TRIGGER
NO.: 7841

TIME: TJD=1487 SECONDS=60044

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=146.1 AZIMUTH=30.6 ERROR=2.4 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR.70 S, STARTS AT T-25 S, MAX. AT T+4.8 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7841	991105	11487	60044	10000	168	-64	70

Date: May 3 2000

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?

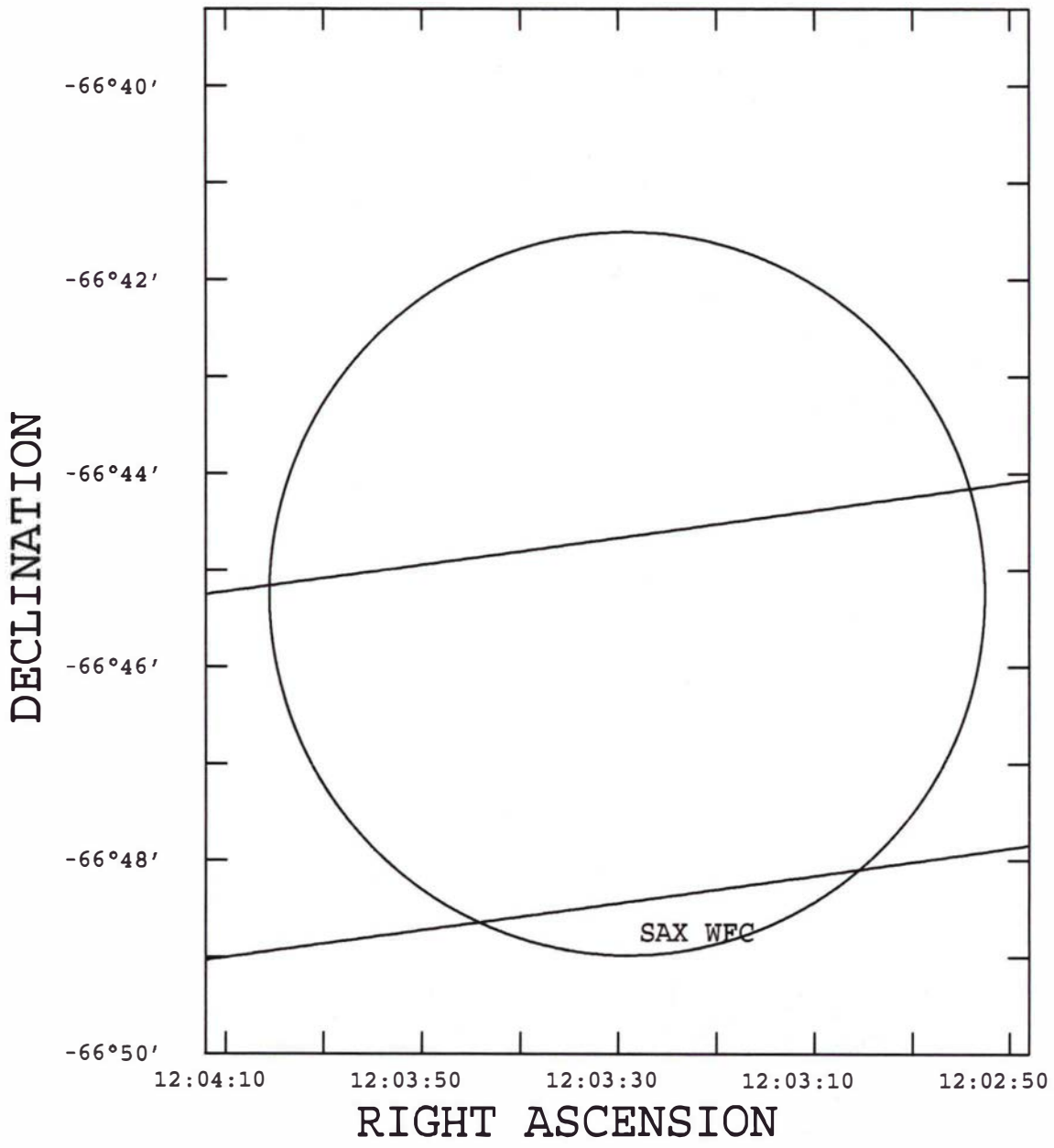
☐ If MER data were used, is a 30 ms systematic error included?

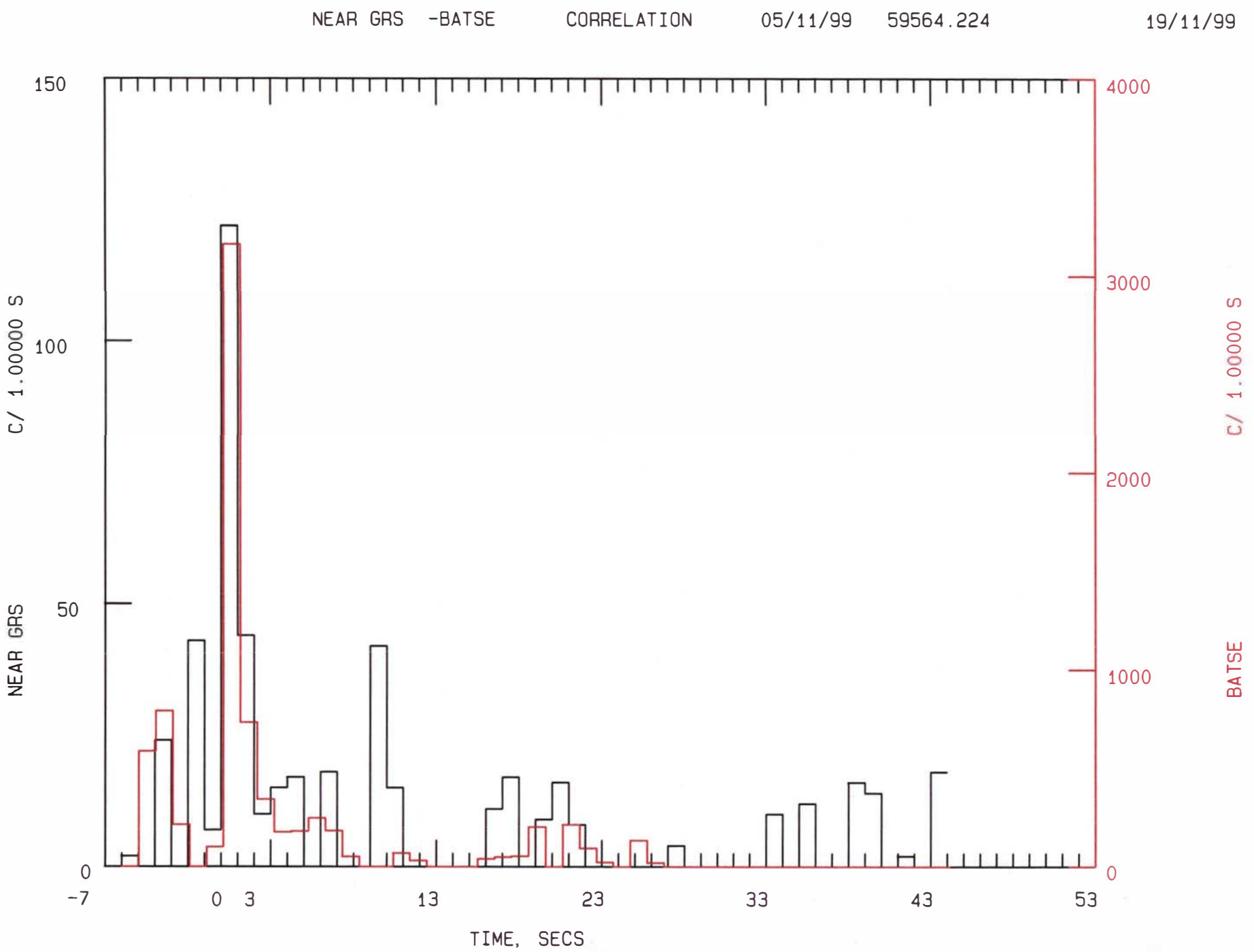
3. NEAR Data

☑ Final, correct time used? (Files postmarked vwx@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?

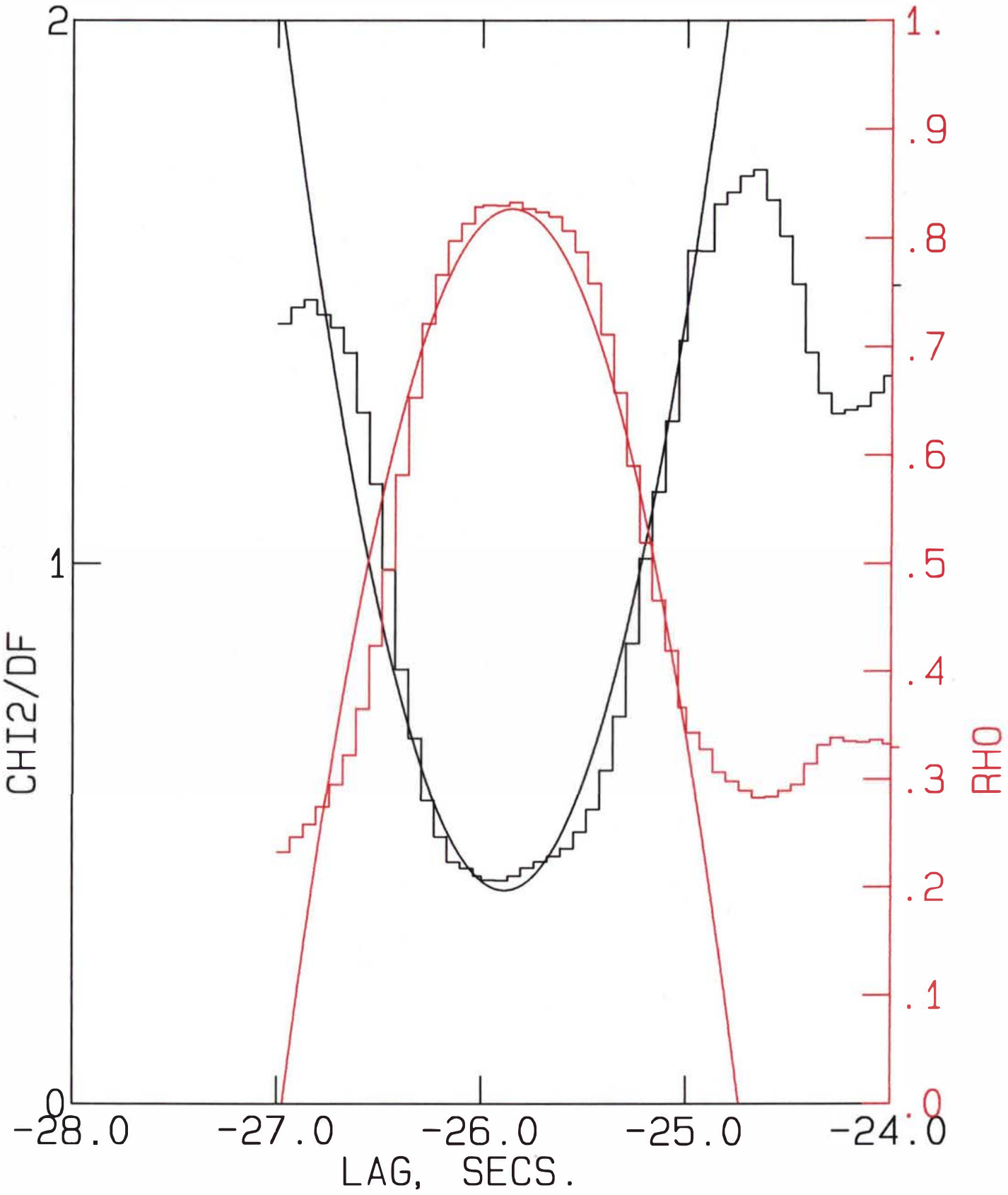
☑ ACCESS database updated?

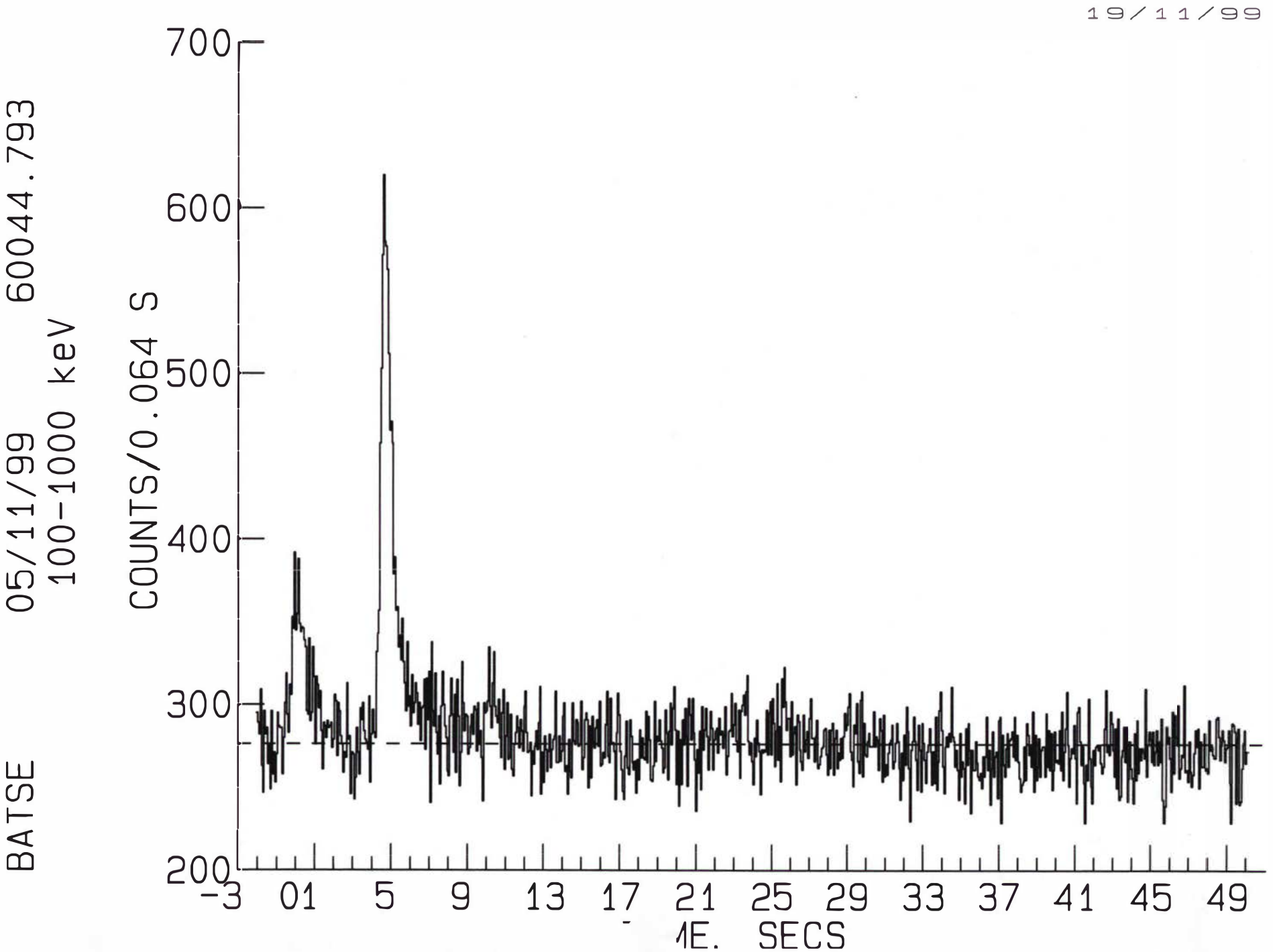

-66°40′
-66°42′
-66°44′
-66°46′
-66°48′
-66°50′
DECLINATION
12:04:10
12:03:50
12:03:30
12:03:10
12:02:50
RIGHT ASCENSION
SAX WFC

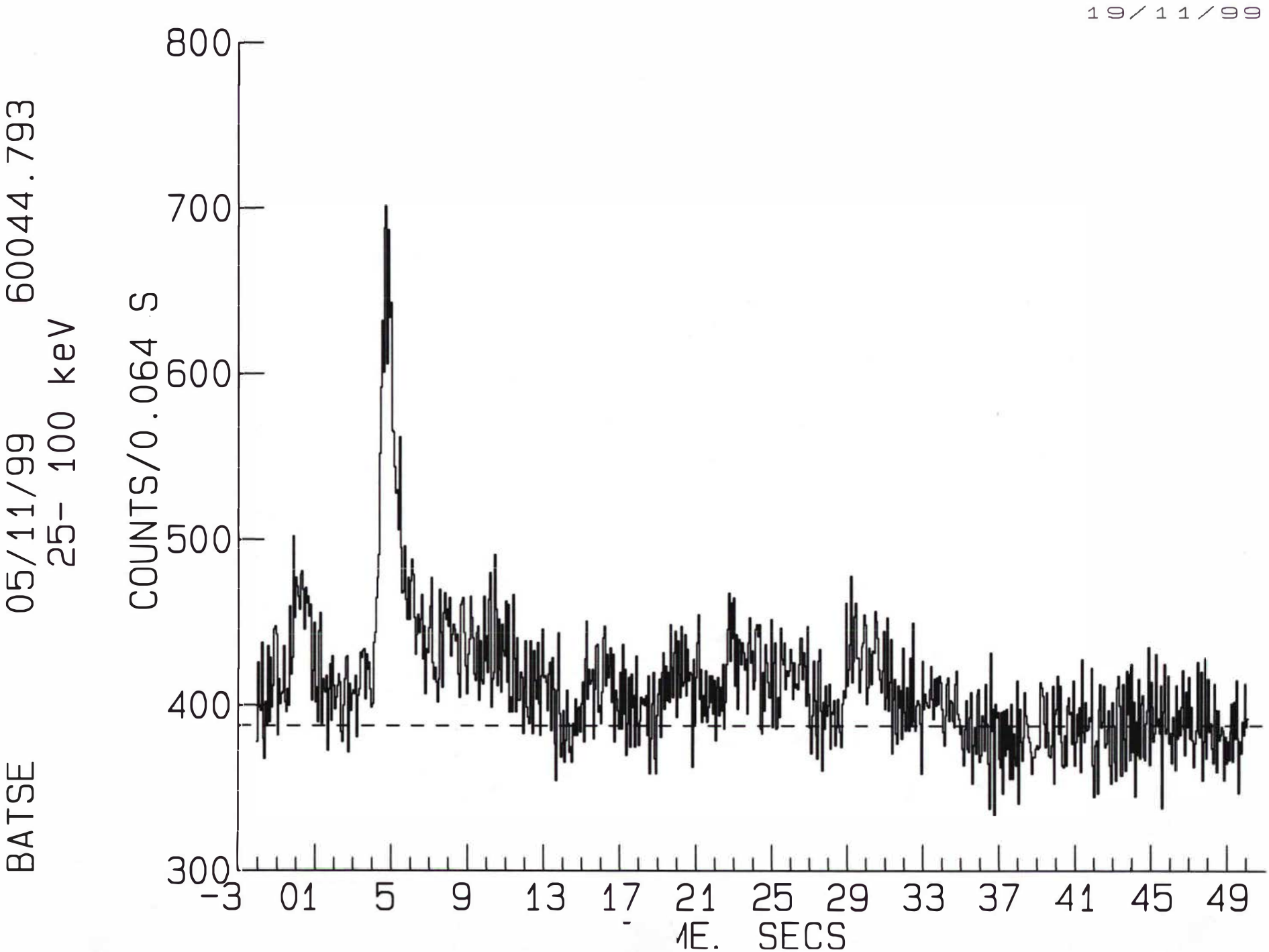

NEAR GRS -BATSE CORRELATION 05/11/99 59564.224 19/11/99
150
100
50
0
C/ 1.00000 S
NEAR GRS
4000
3000
2000
1000
0
C/ 1.00000 S
BATSE
-7
0
3
13
23
33
43
53
TIME, SECS

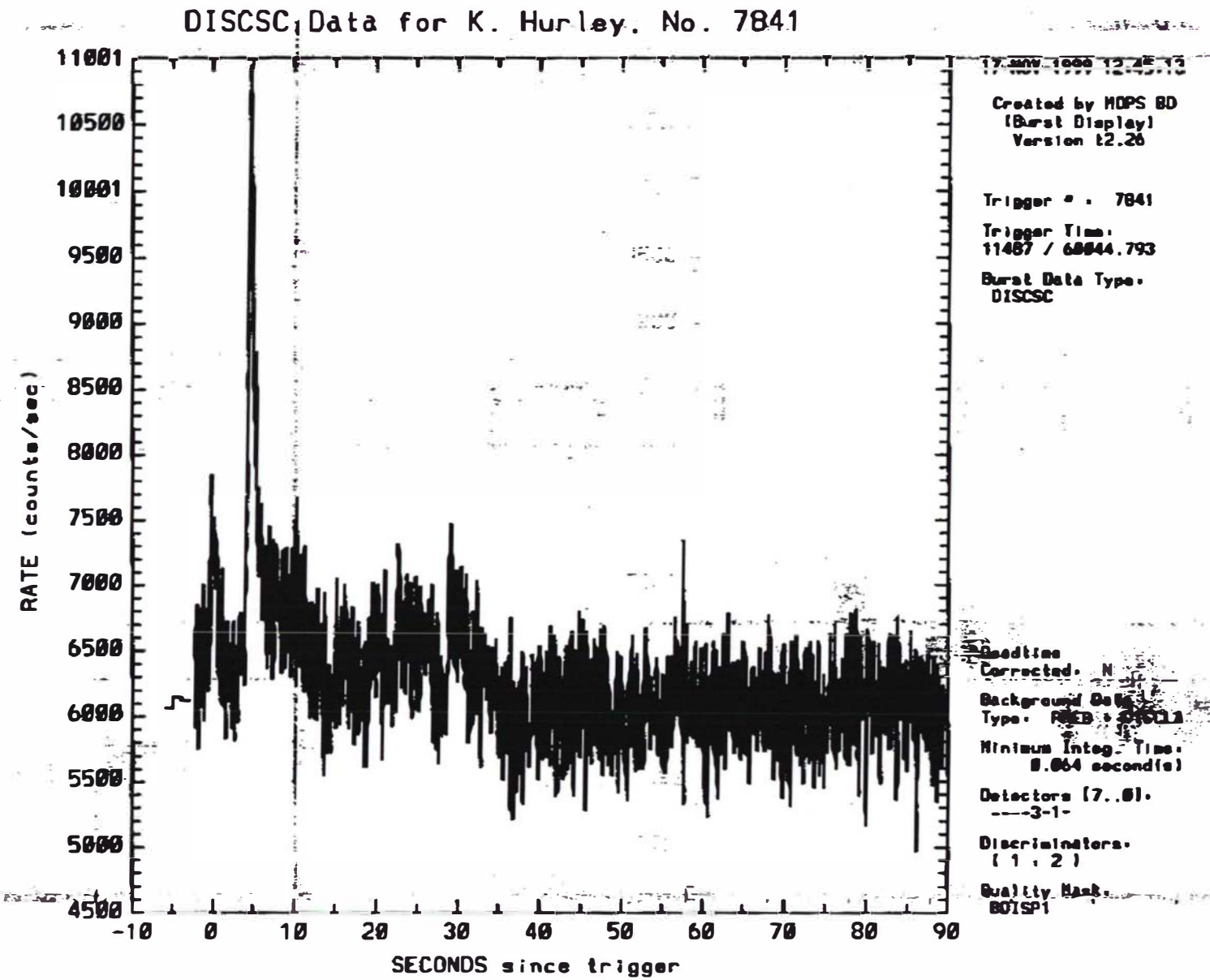
19/11/99

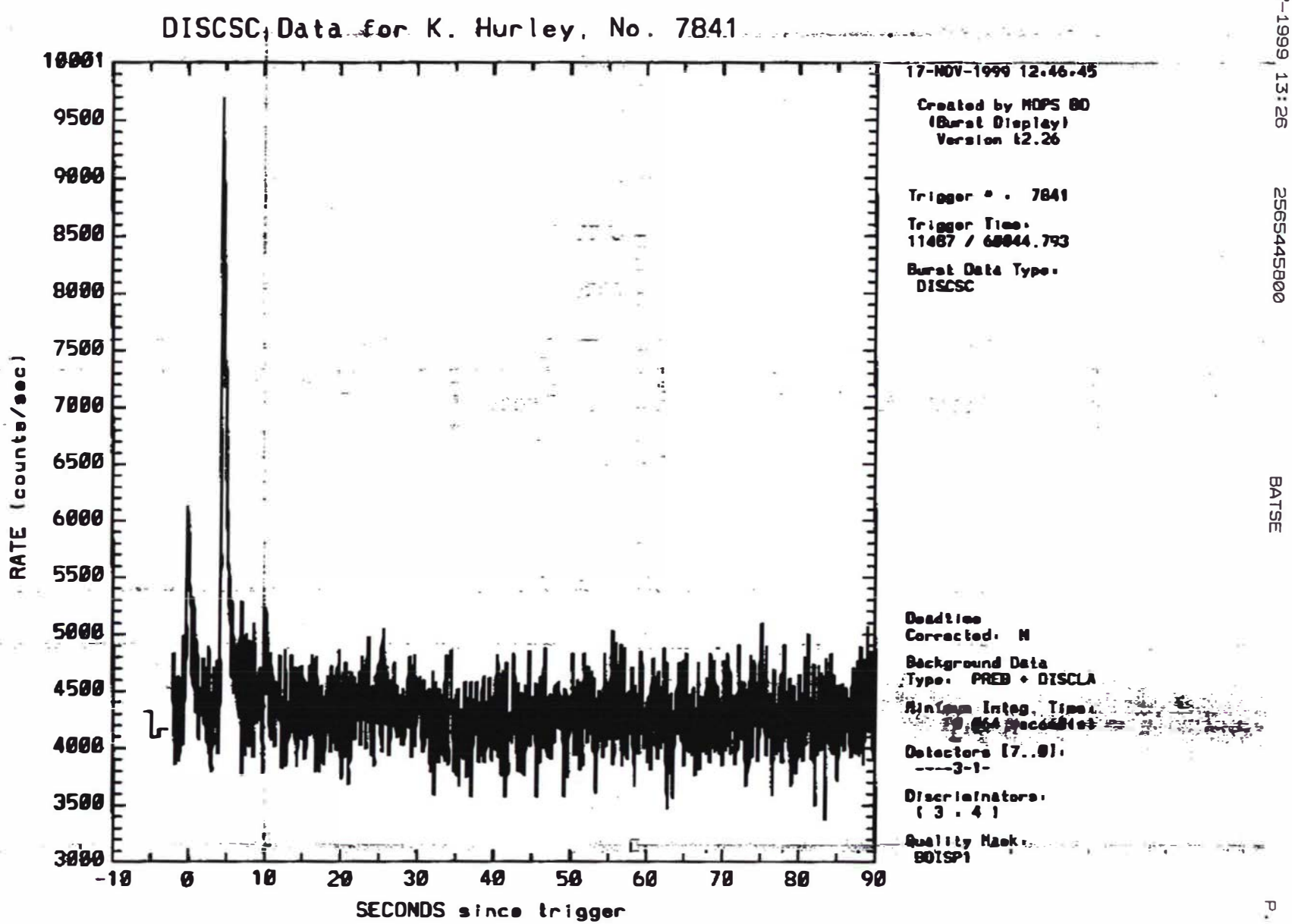
NEAR GRS -BATSE CORRELATION 05/11/99 59564.224

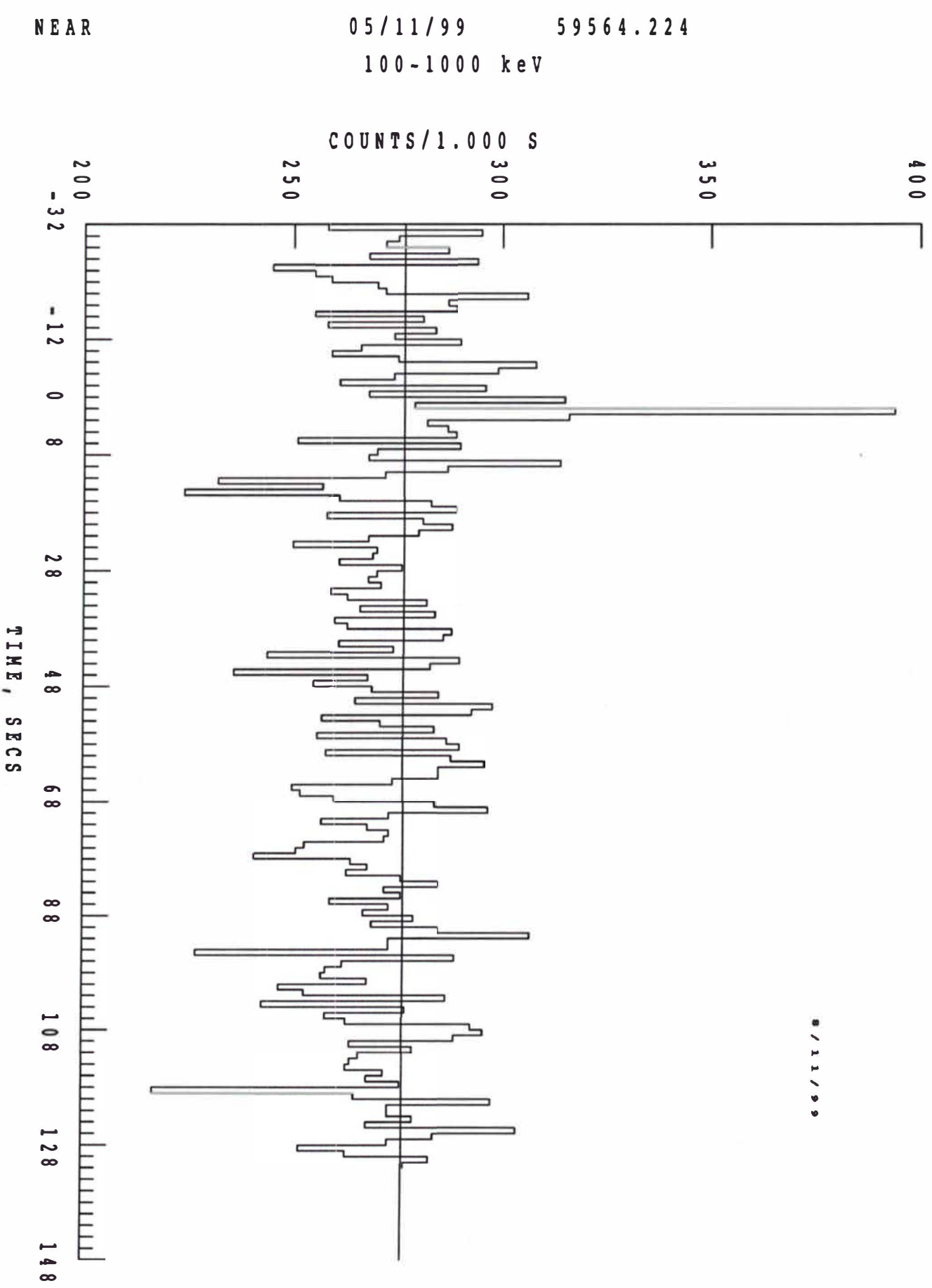



19/11/99
BATSE 05/11/99 60044.793
100-1000 keV
COUNTS/0.064 S
700
600
500
400
300
200
-3 01 5 9 13 17 21 25 29 33 37 41 45 49
1E. SECS


19/11/99
BATSE 05/11/99 60044.793
25- 100 keV
COUNTS/0.064 S
800
700
600
500
400
300
-3 01 5 9 13 17 21 25 29 33 37 41 45 49
1E. SECS

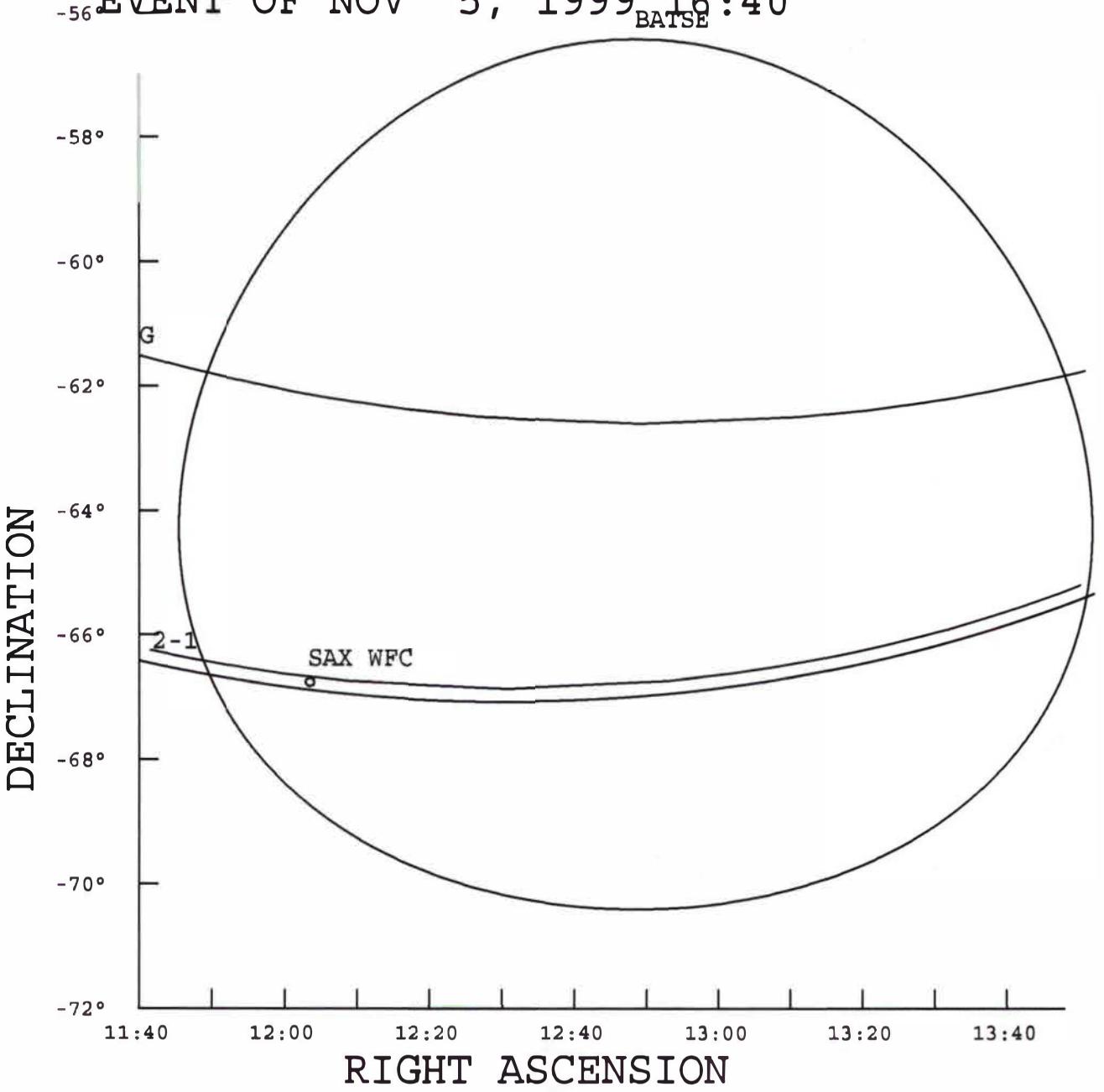

DISCSC Data for K. Hurley. No. 7841
RATE (counts/sec)
11001
10500
10001
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
Created by MDPS BD
(Burst Display)
Version t2.26
Trigger # : 7841
Trigger Time:
11487 / 60844.793
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Minimum Integ. Time:
0.064 second(s)
Detectors (7..0):
---3-1-
Discriminators:
(1 , 2)
Quality Mask:
BDISP1


DISCSC Data for K. Hurley, No. 7841
RATE (counts/sec)
10001
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
17-NOV-1999 12:46:45
Created by MOPS BD
(Burst Display)
Version 12.26
Trigger # : 7841
Trigger Time:
11487 / 68044.793
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Detectors [7..0]:
----3-1-
Discriminators:
[3 , 4]
Quality Mask:
BDISP1

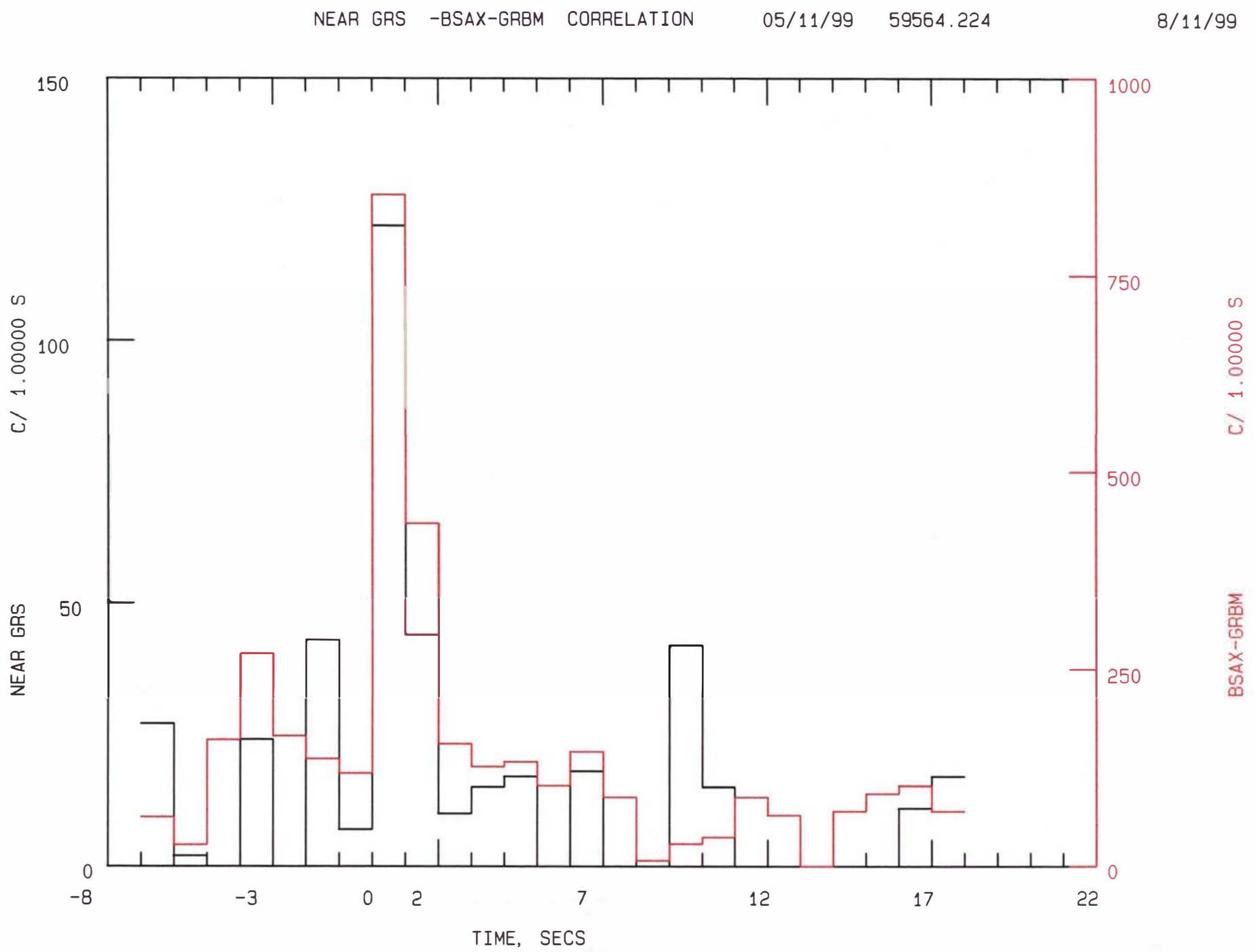

NEAR
05/11/99
59564.224
100-1000 keV
COUNTS/1.000 S
200
250
300
350
400
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
5/11/99

EVENT OF NOV 5, 1999 16:40

8/11/99

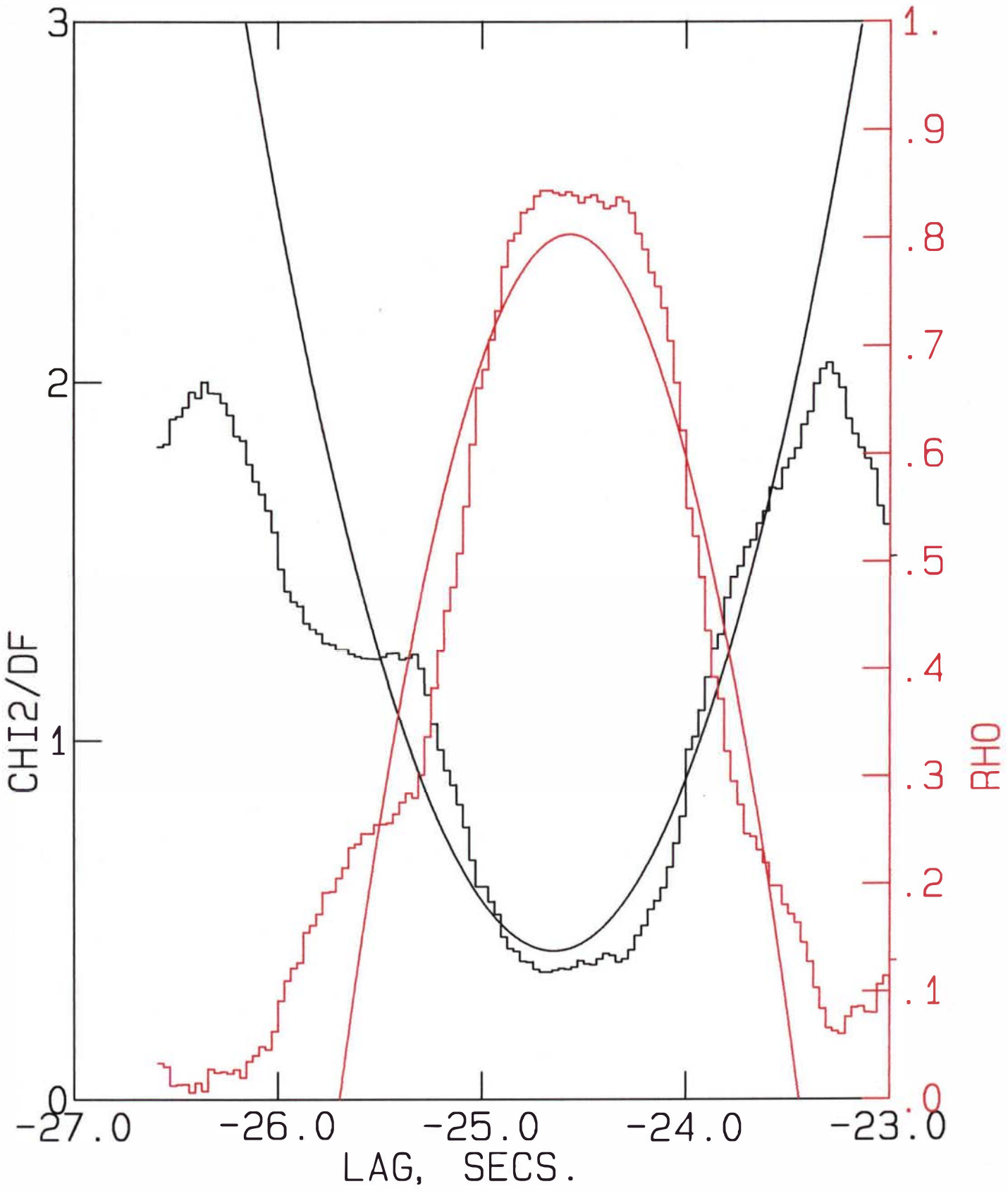


N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 NEAR


NEAR GRS -BSAX-GRBM CORRELATION 05/11/99 59564.224 8/11/99
150
100
50
0
C/ 1.00000 S
NEAR GRS
1000
750
500
250
0
C/ 1.00000 S
BSAX-GRBM
-8
-3
0
2
7
12
17
22
TIME, SECS

8/11/99

NEAR GRS -BSAX-GRBM CORRELATION 05/11/99 59564.224



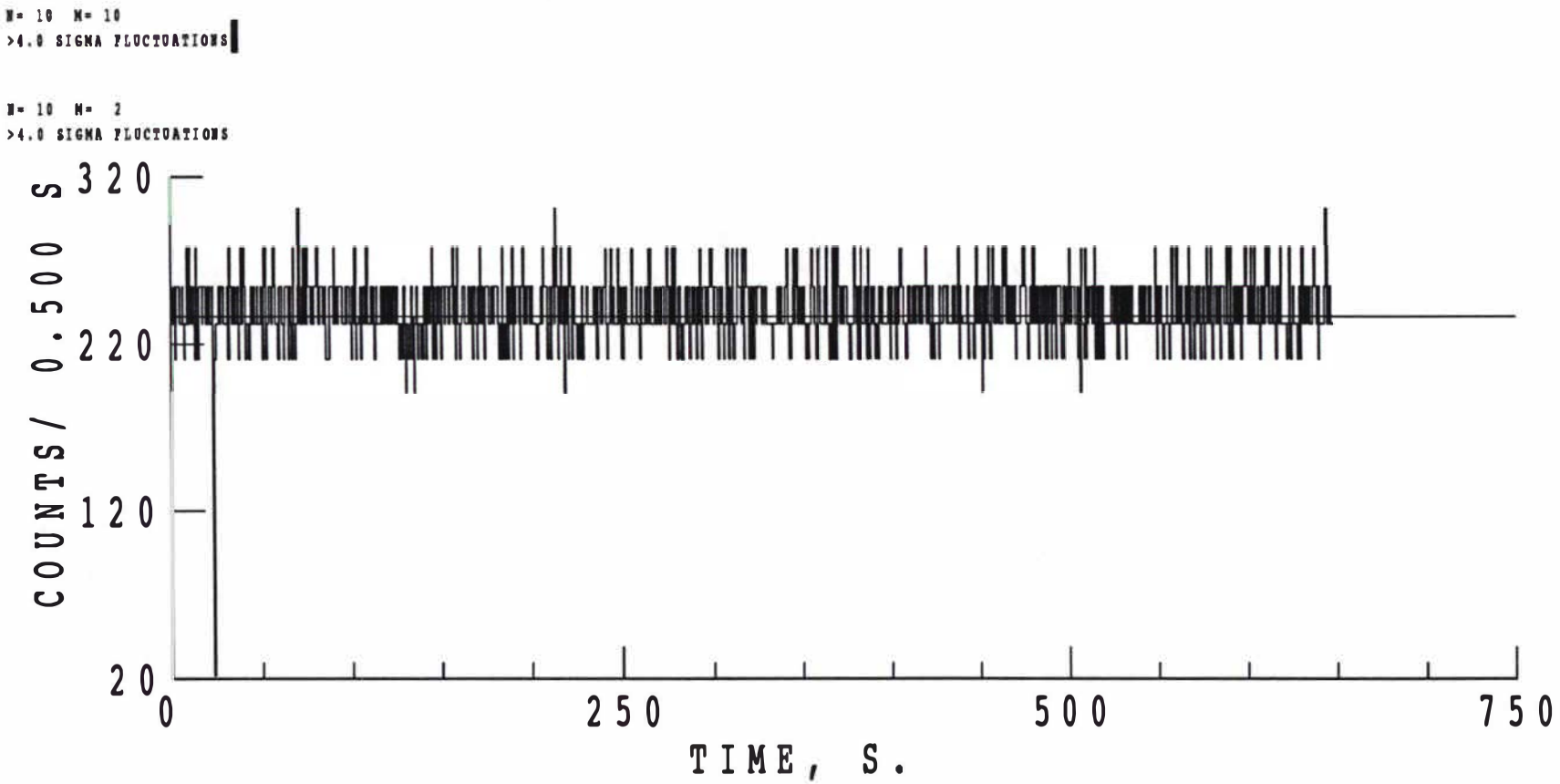
SAX

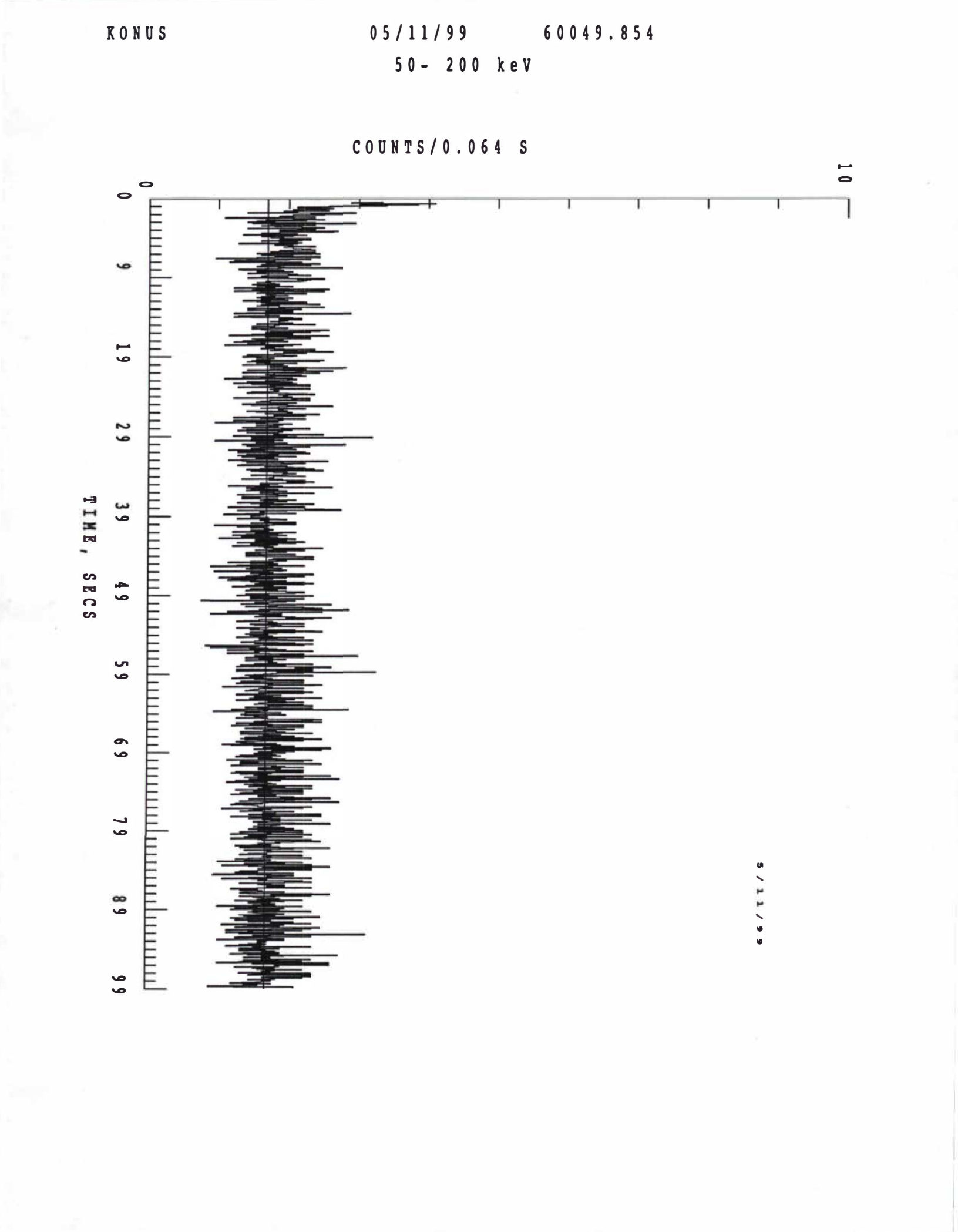
ULYSSES RT

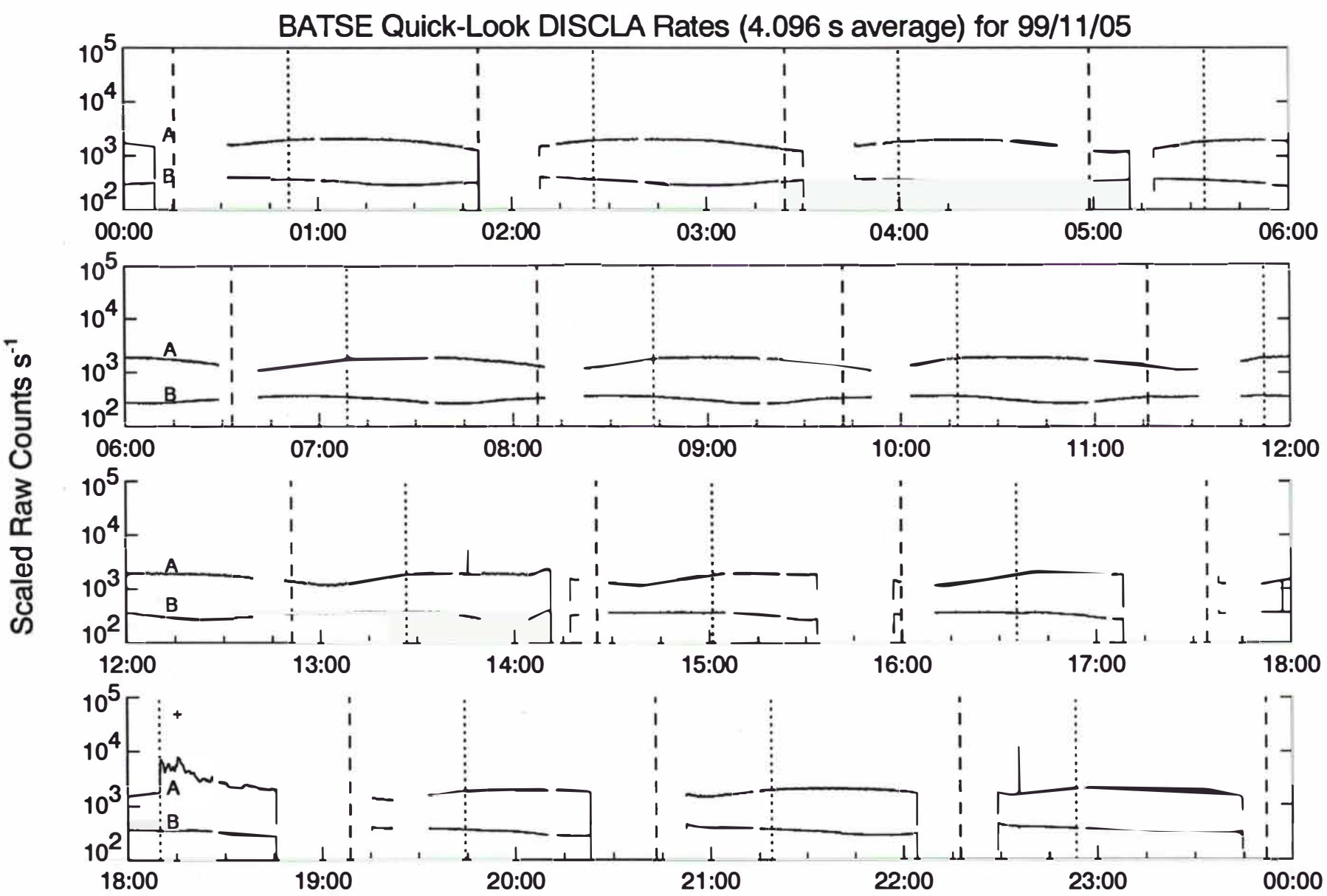
5/11/99

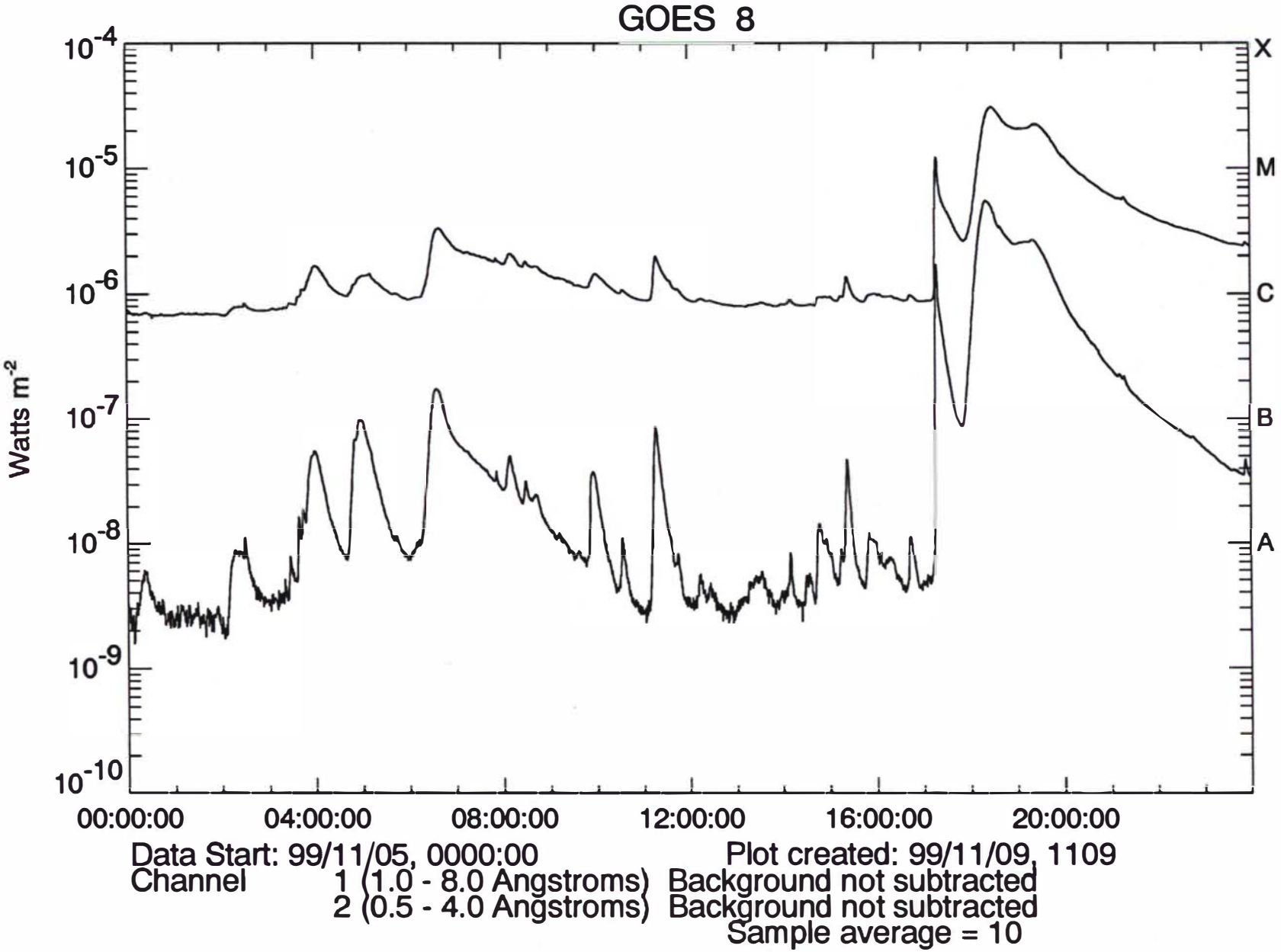
5/11/99 57996.402 s

0- 0 keV



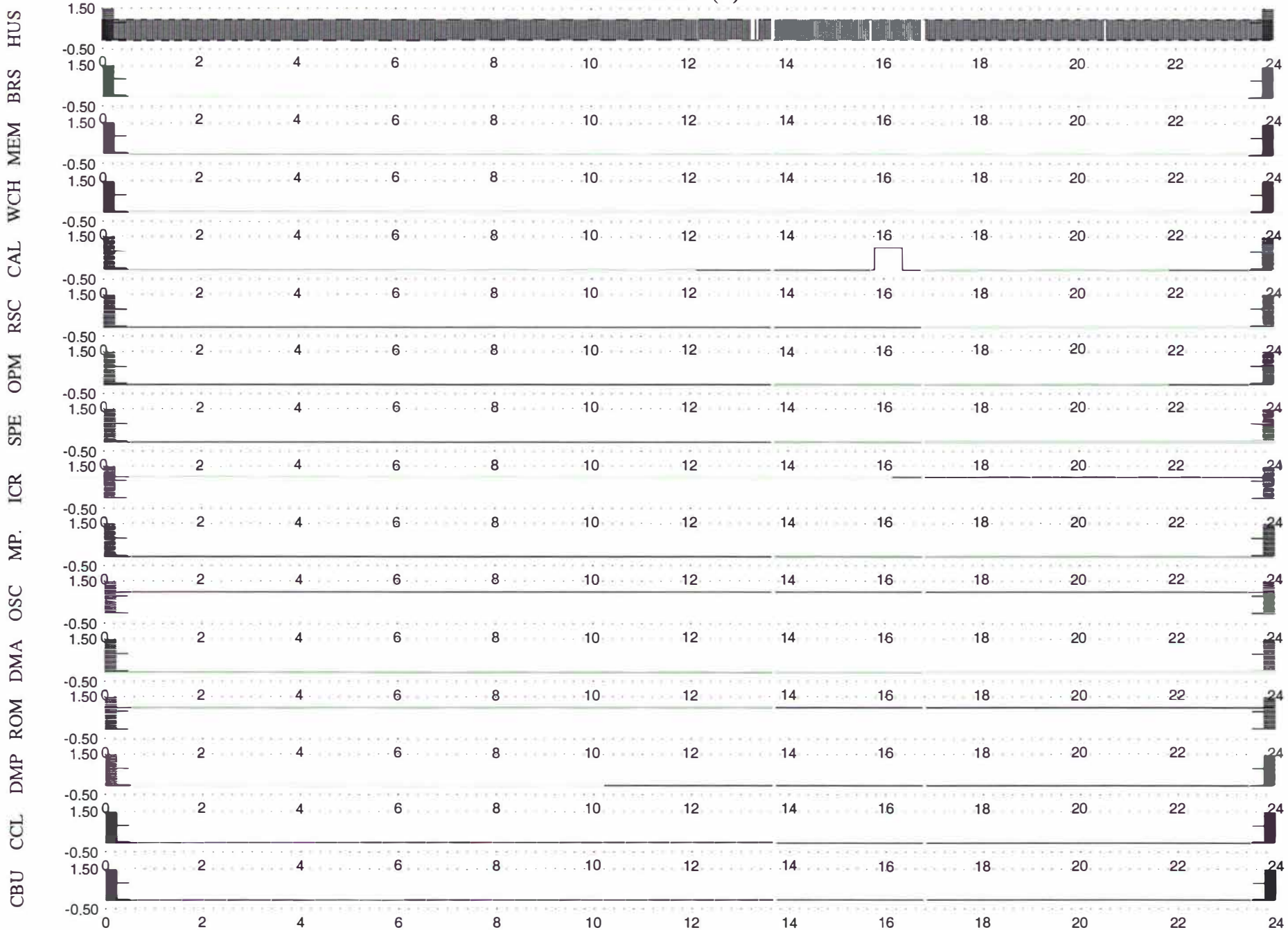

KONUS
05/11/99
60049.854
50- 200 keV
COUNTS/0.064 S
0
10
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
5/11/99


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/05
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
+
Current Time: 99/11/09, 1110 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
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
10-10
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/05, 0000:00
Plot created: 99/11/09, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 309, year 1999 to day 309, year 1999 03/21/00

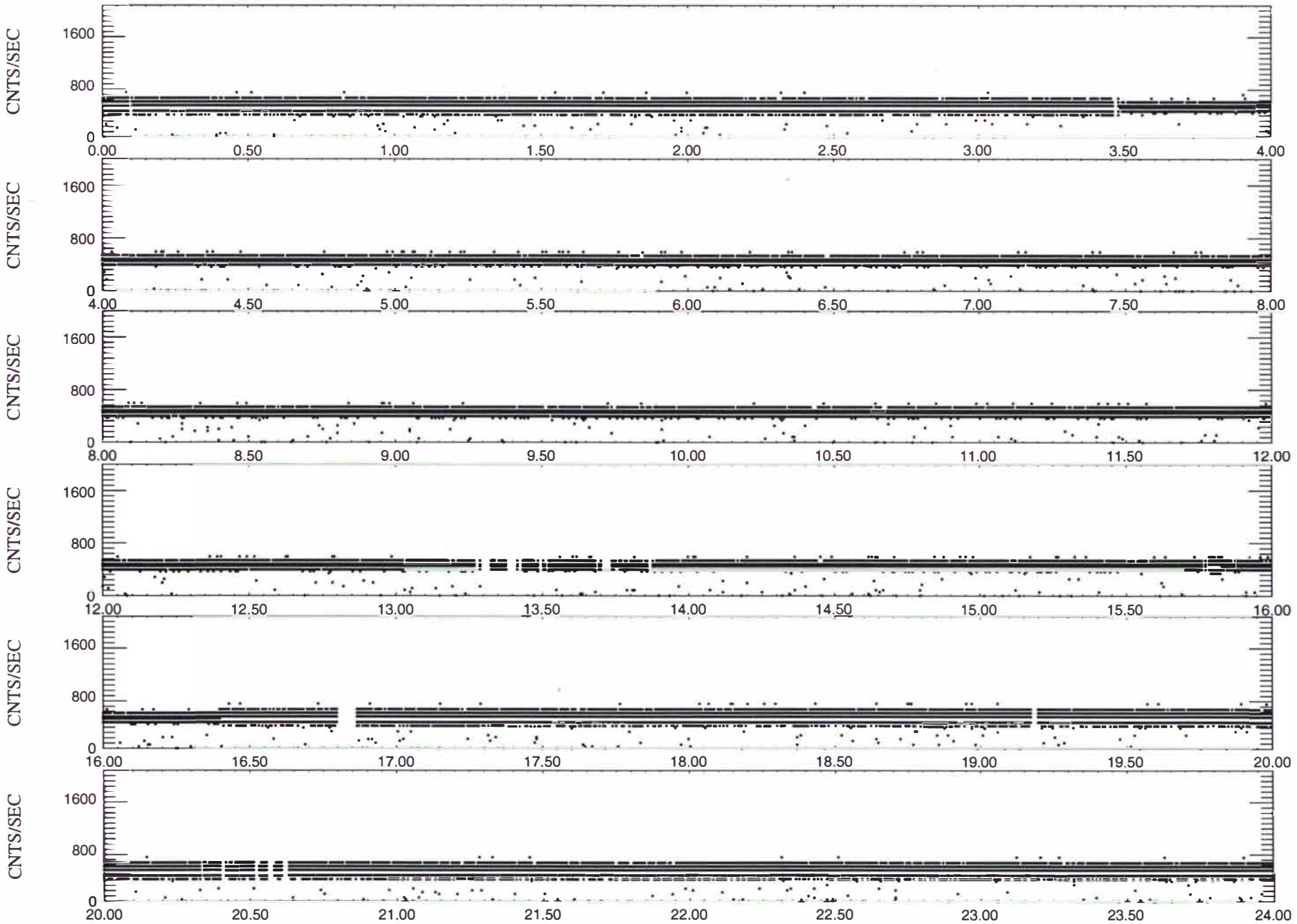
NO BURST (2)



UNIV SAL TIME

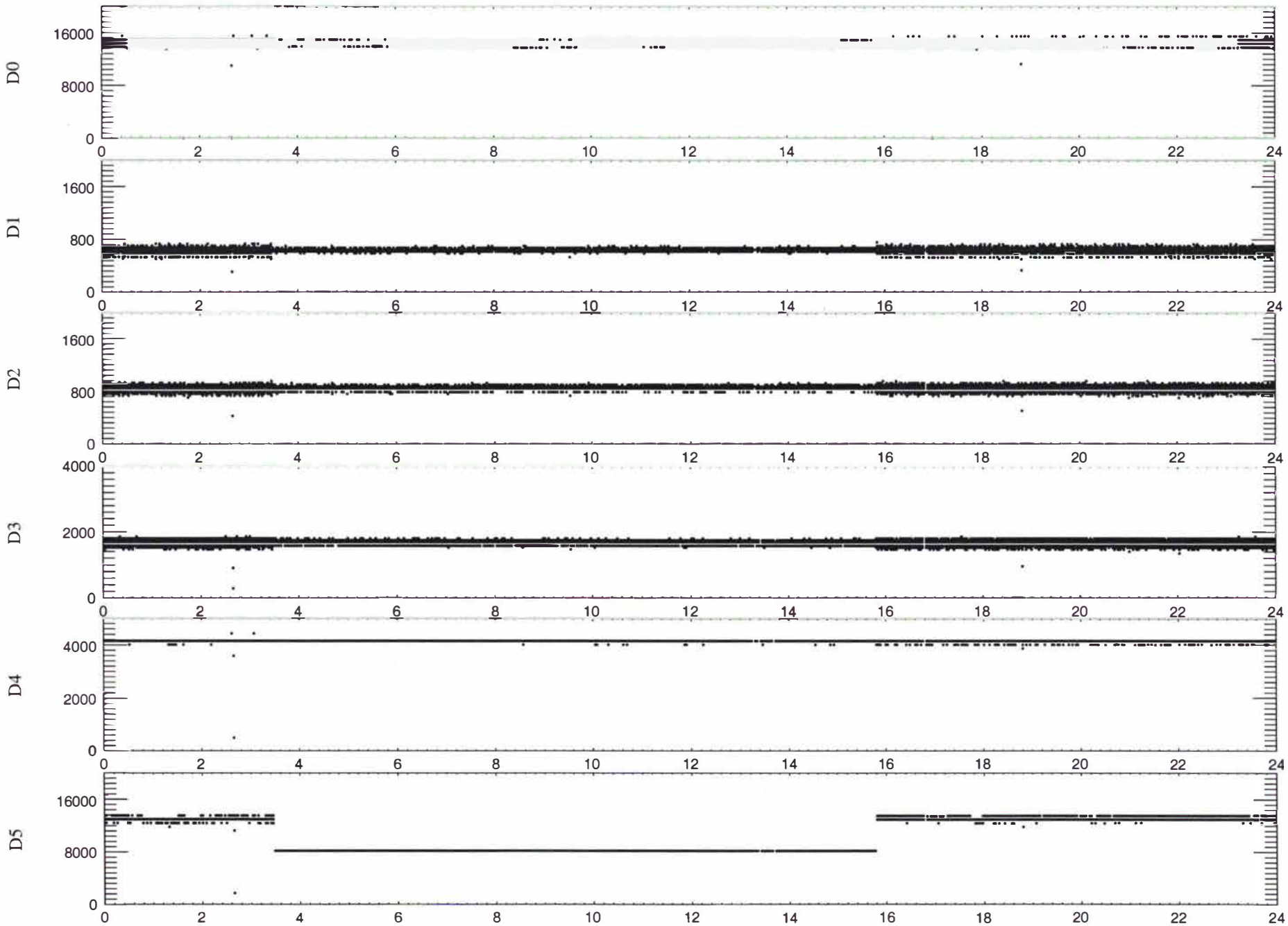
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 05/11/1999 DOY = 309 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 309, year 1999 to day 309, year 1999 03/21/00



From feroci@ias.rm.cnr.it Fri Nov 12 05:43 PST 1999
Date: Fri, 12 Nov 1999 14:44:15 +0100 (NFT)
From: Marco Feroci <feroci@ias.rm.cnr.it>
To: Kevin Hurley <khurley@ssl.berkeley.edu>
Subject: SGR?
MIME-Version: 1.0

Dear Kevin,
we are investigating the nature of the 991106 event. In fact, BATSE did not confirm our 3-4 sigma detection in the GRBM, therefore it was a statistical fluctuation and this event should have been similar to the one presented by John Heise in Huntsville.
However, the event spectrum and spectral evolution is definitely different from X-ray bursts and it showed a soft-to-hard evolution.
Since it was on the galactic plane, I am wondering if it was something similar to the 2 hard events from SGR1900 but from a NEW repeater, with some significant intensity and maybe temperature differences since it was not detected by BATSE.
In this context, could the event you detected on the SAME day a 'regular' burst from the same, new repeater?
I see no easy way to check this. One way is if you compute the expected GRBM arrival time for such an event, on the assumption it was from the 991106 coordinates, I can check for an untriggered detection by the GRBM.

What do you think about it?

Ciao,
Marco

Mon, 8 Nov 1999, Kevin Hurley wrote:

> Dear Marco,
>
> We had a short burst on Ulysses on Nov 6 which is almost certainly
> an SGR. It was fairly intense, and arrived at Ulysses at 22:24 UT.
> Ulysses was 2430 light-seconds from Earth. BATSE has not reported
> anything at this time, at least, not yet. Did you observe anything
> on the GRBM? Maybe we could use this as an excuse to trigger our
> ToO.
>
> The Earth-crossing windows for the SGRs are:
>
> 0525-66: 980 seconds later than Ulysses time
>
> 1806-20: 316 seconds earlier
>
> 1900+14: 1345 seconds earlier
>
> 1627-41: 845 seconds later
>
> 1801-23: 197 seconds earlier
>
> Ciao,
>
> Kevin

Marco Feroci
Istituto di Astrofisica Spaziale

From feroci@ias.rm.cnr.it Fri Nov 12 08:34 PST 1999
Date: Fri, 12 Nov 1999 17:34:56 +0100 (NFT)
From: Marco Feroci <feroci@ias.rm.cnr.it>
To: Kevin Hurley <khurley@ssl.berkeley.edu>
Subject: Re: SGR?
MIME-Version: 1.0

Too nice to be true ....
I have no trigger at that time, and there is no increase in the ratemeters
(that is not surprising if it was a 32 ms event).

Ciao,
Marco

On Fri, 12 Nov 1999, Kevin Hurley wrote:

> Dear Marco,
>
> That's an interesting idea. If the Ulysses Nov 6 event was from
> the same source as the SAX event, you would have seen it 2070
> seconds earlier.
>
> Ciao,
>
> Kevin
>

Marco Feroci
Istituto di Astrofisica Spaziale
C.N.R. - Area di Ricerca di Roma - Tor Vergata
Phone: +39-06-4993-4099 Via Fosso del Cavaliere, Roma, I-00133 ITALY
Fax : +39-06-2066-0188 E-mail: feroci@ias.rm.cnr.it

From BUTTERWORTH@tgrs2.gsfc.nasa.gov Wed Nov 10 11:49 PST 1999
Date: Wed, 10 Nov 1999 14:56:05 -0500
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: Ulysses event of 991106 was not detected by Konus

Hi Everyone,

Konus didn't trigger near this time, and there are no obvious features in the low time-resolution (3 second bin) waiting-mode data.

Paul.

re:

Date: Tue, 9 Nov 1999 10:12:07 -0800
From: khurley@ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199911091812.KAA20696@scylla.>
To: scott@milkyway.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, bonnard@milkyway.gsfc.nasa.gov,
jterrell@lanl.gov, woods@eagles.msfc.nasa.gov, yosimori@rikkyo.ac.jp,
kraken@origin.gsfc.nasa.gov
Subject: GRB991106
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
NOV 6 1999* 22:24	moderate, 32 ms long	2430

Was this event detected by anyone else?

*This burst was almost certainly an SGR. The Earth-crossing windows for the SGRs are:

0525-66: 980 seconds later than Ulysses time

1806-20: 316 seconds earlier

1900+14: 1345 seconds earlier

1627-41: 845 seconds later

1-23: 197 seconds earlier

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, feroci, frontera, henze, kraken, teegarden,

SAX

ULYSSES RT

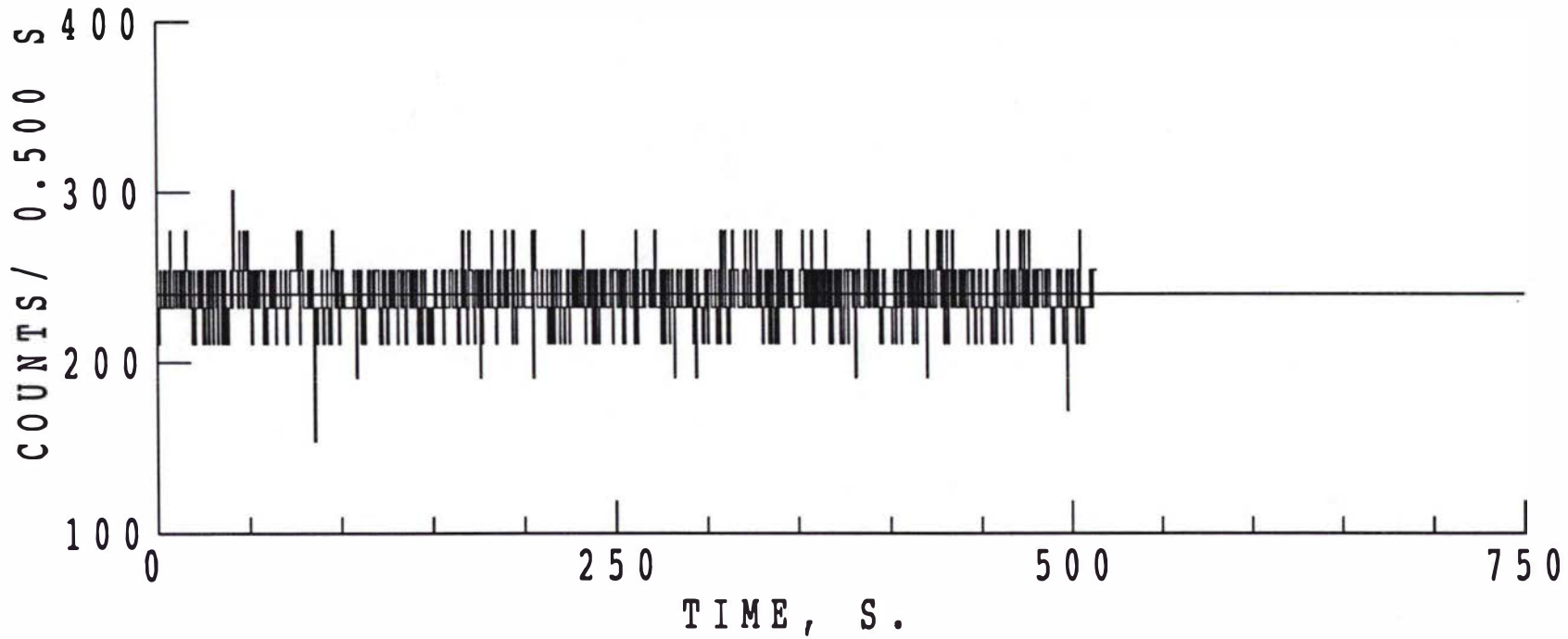
6/11/99

6/11/99 41138.609 s

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



YANA TAB1 19991106 59674

ULYSSES RT 05/08/05

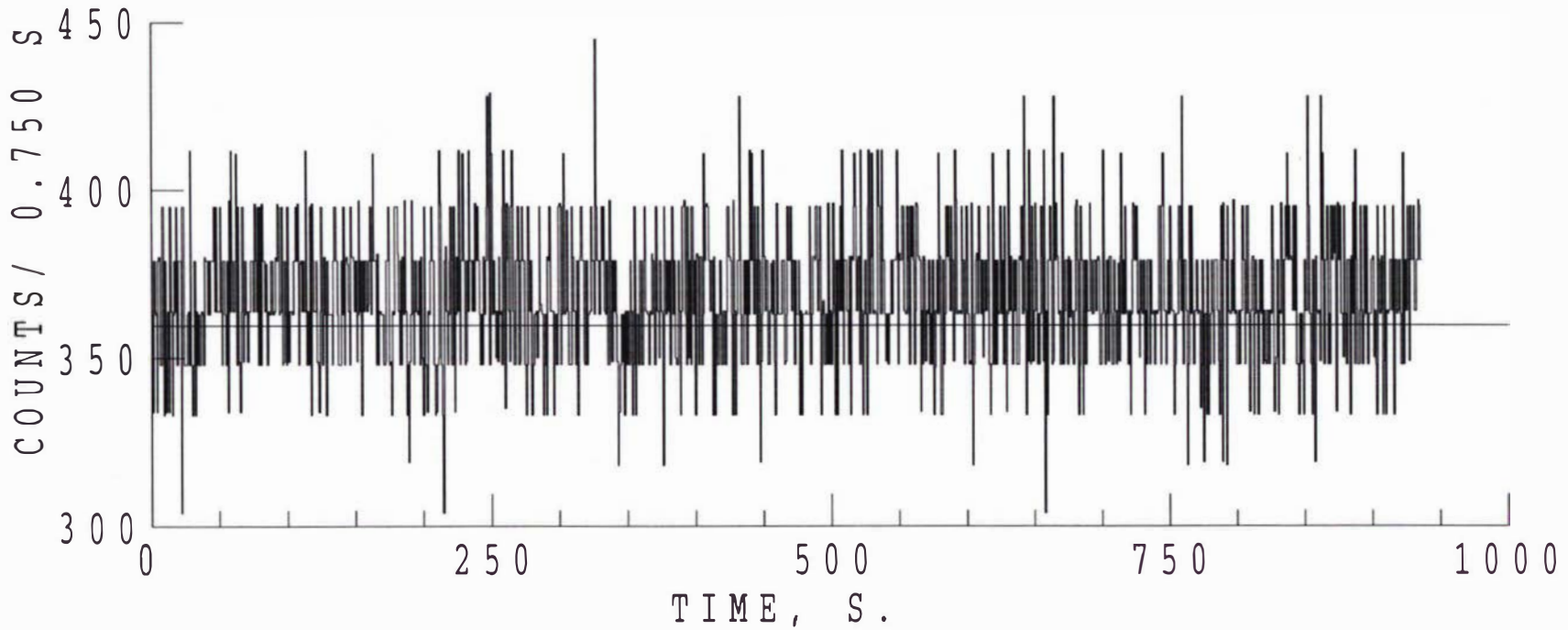
06/11/99 59220.043 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Nov 9 14:11 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 9 Nov 1999 16:20:03 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7842

****
BATSEARCH PROGRAM
****

BATSE BURST # 7842
EVENT OF 1999 NOV 6 DAY OF YEAR=310
EVENT CROSSING TIME AT BATSE : 68612. S. OR 19:03:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 39.000 61.000
BATSE PEAK COUNTING RATE: 1000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/11/ 99 IS:
RA= 164.426 DEC= -23.023 DIST= 4.883 AU
BATSE-ULYSSES DISTANCE = 730533807. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1463.80 SECS.
CROSSING TIME AT ULYSSES IS 70076. S. OR 19:27:55 +/- 410.46 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/11/ 99 IS:
RA= 286.104 DEC= -24.274 DIST= 1.548 AU
MARS-BATSE DISTANCE = 231545952. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.89 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= 410.51 SECS.
CROSSING TIME AT MARS IS 69023. S. OR 19:10:22 +/- 119.82 SECONDS

BATSE BURST TRIGGER
NO.: 7842

TIME: TJD=1488 SECONDS=68612

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=56.9 AZIMUTH=204.7 ERROR=0.9 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH SUBSTRUCTURE DUR. 25 S, MAX. AT T+5 S. VISIBLE ABOVE 300 KEV. CYGX-1 SET AT T+90 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7842	991106	11488	68612	1000	039	+61	25

Date: May 3 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

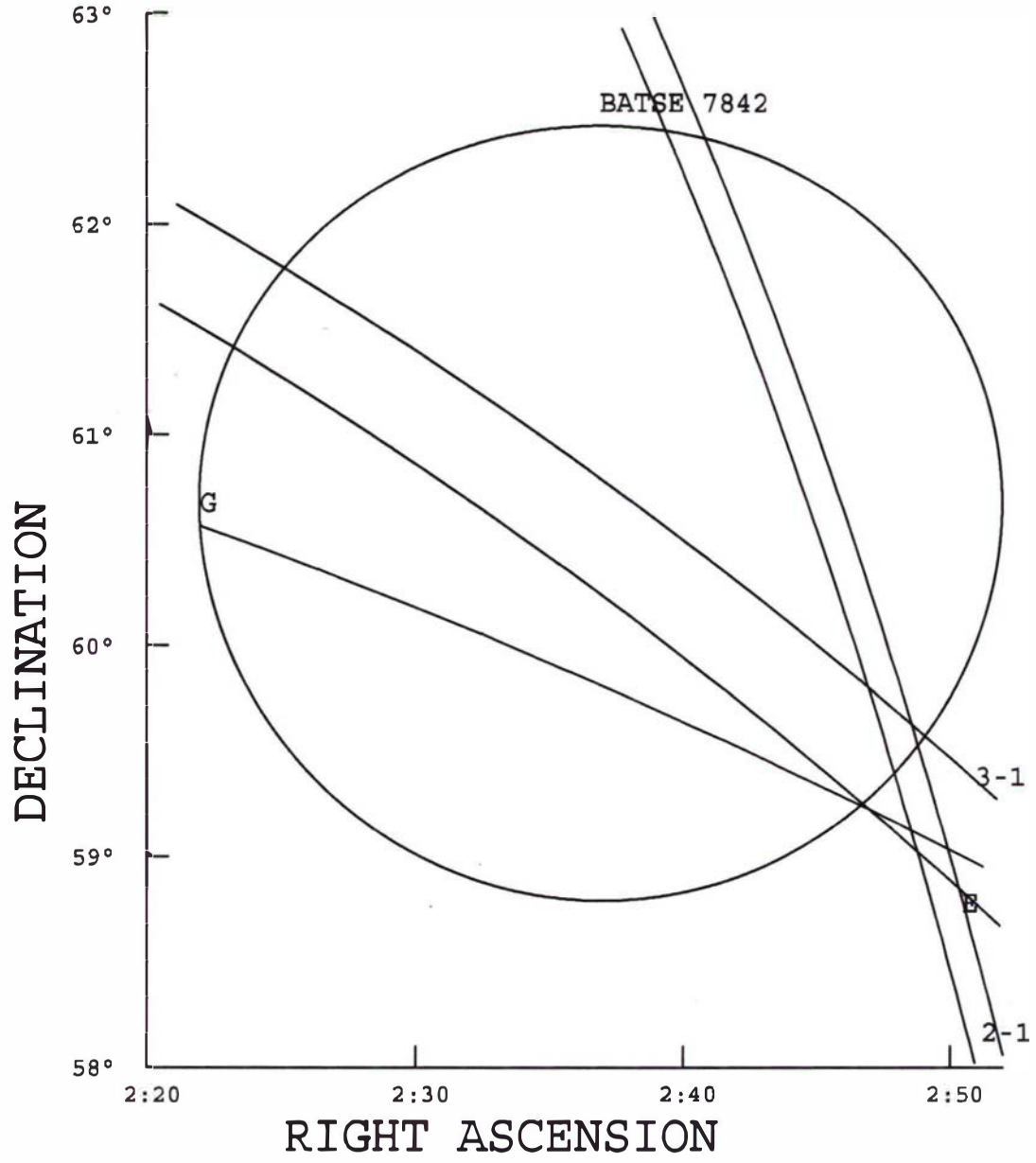
☑ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

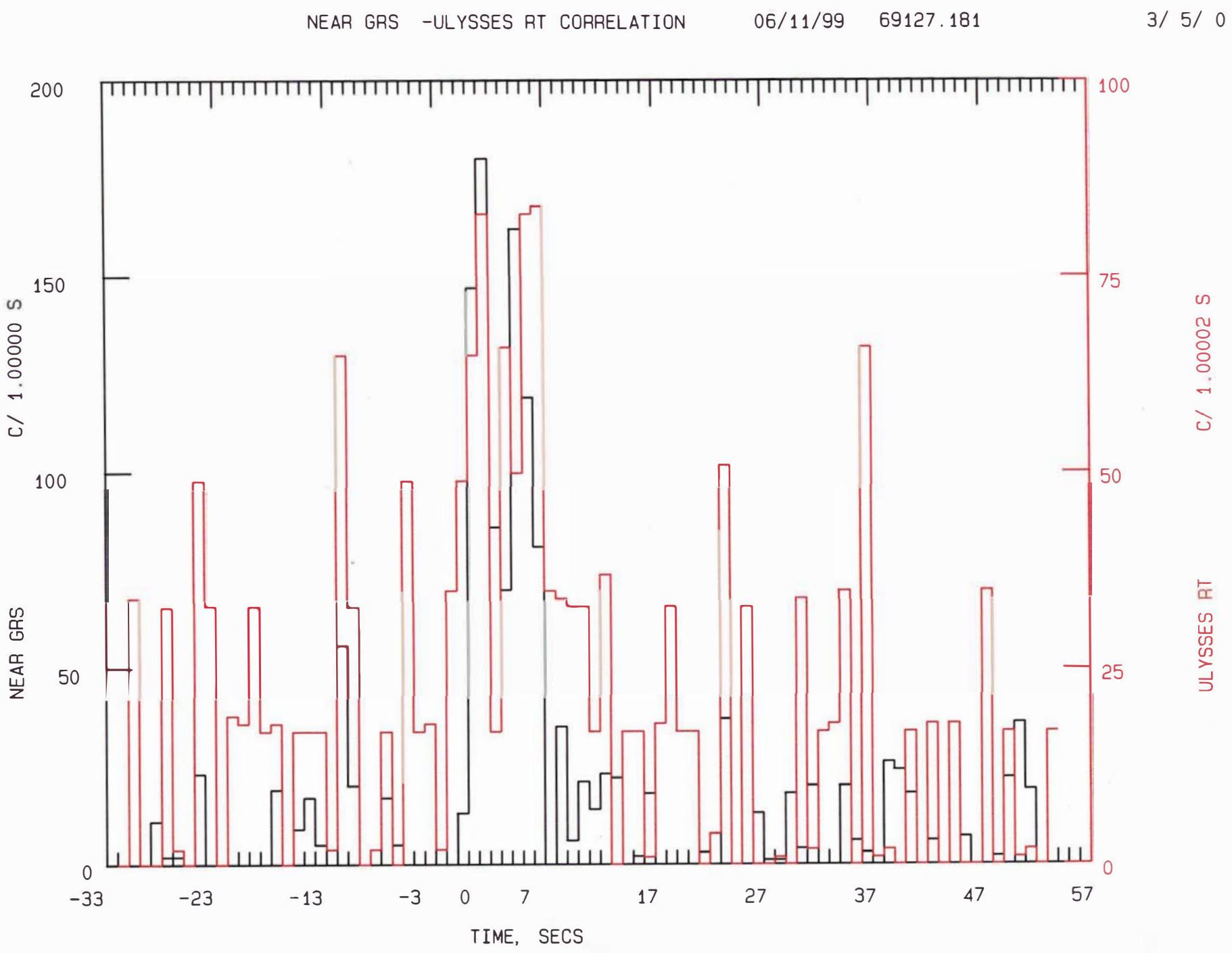
☐ BATSE >100 keV data used for NEAR correlation? No - BATSE data truncated

☑ ACCESS database updated?

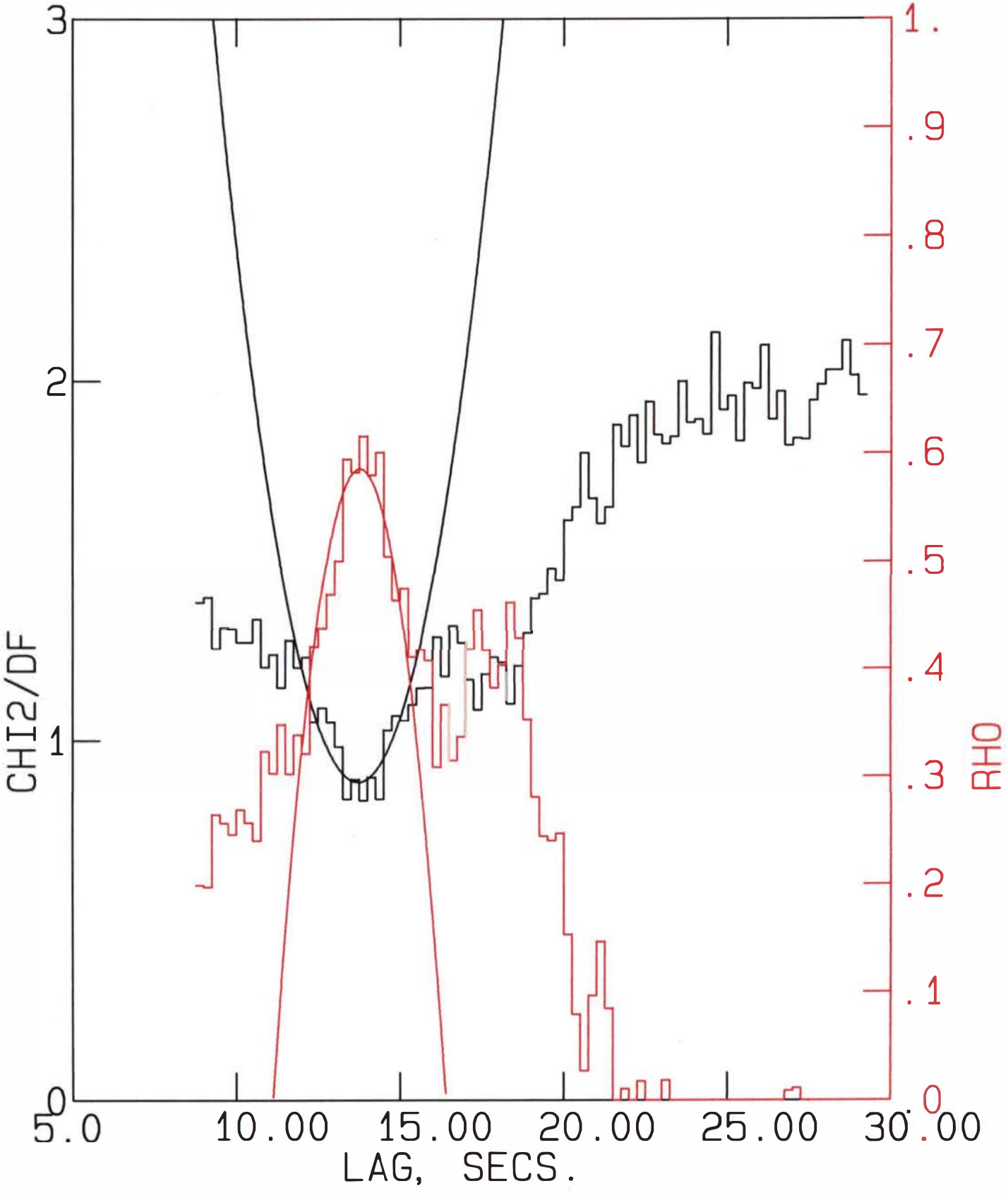
EVENT OF NOV 6, 1999 19:03

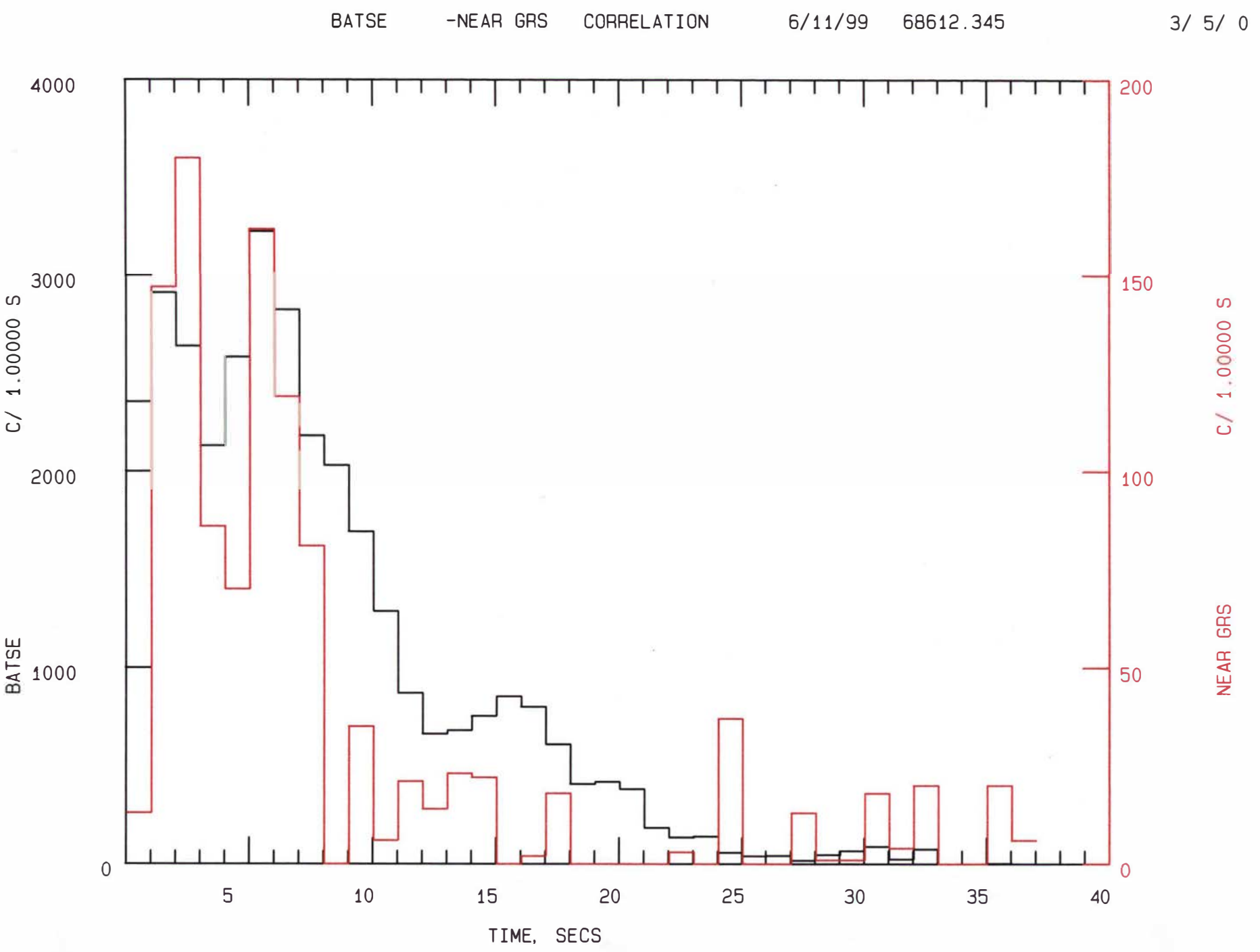
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 ULYSSES 3 NEAR



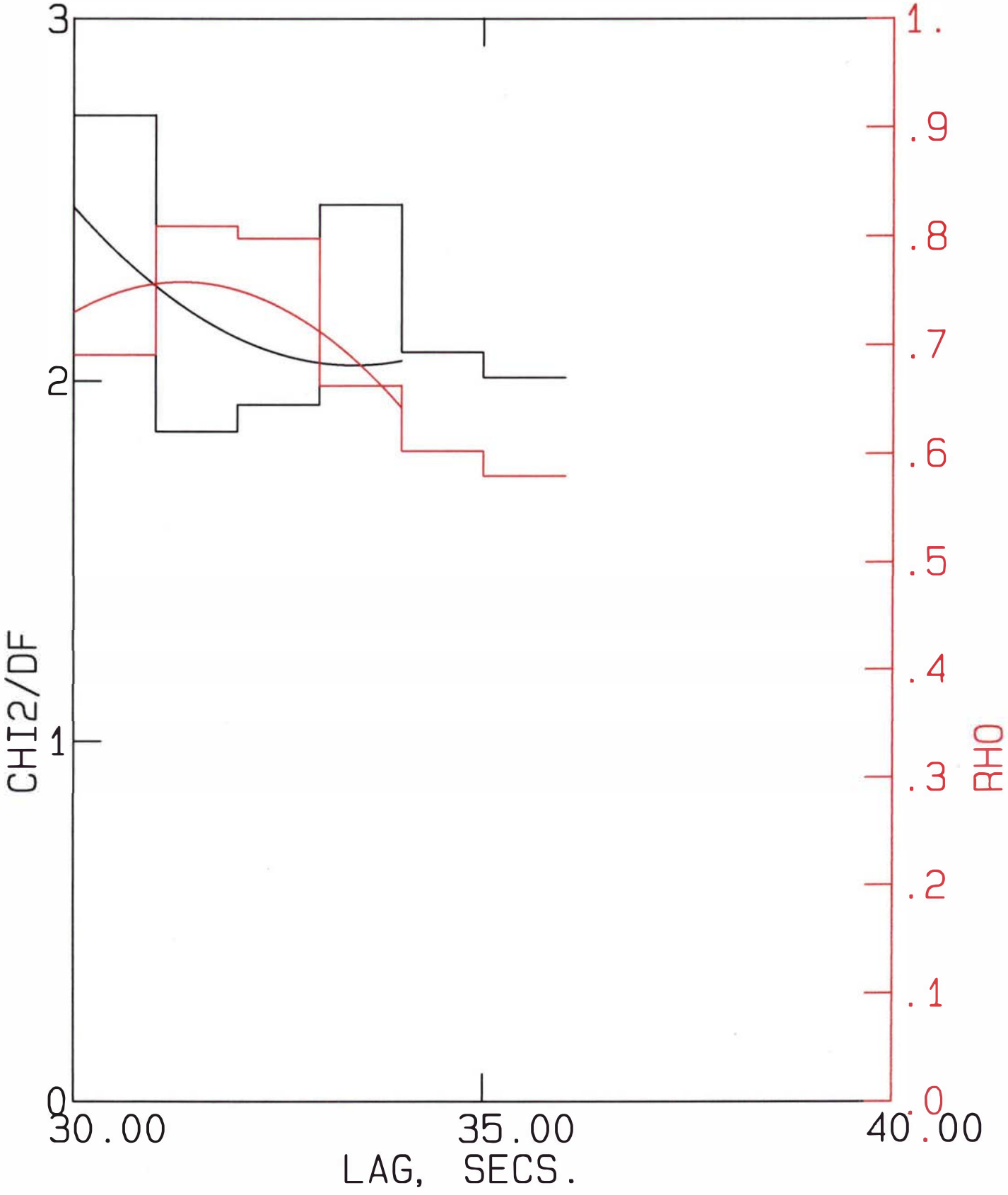

NEAR GRS -ULYSSES RT CORRELATION 06/11/99 69127.181 3/ 5/ 0
200
150
100
50
0
C/ 1.00000 S
NEAR GRS
100
75
50
25
0
C/ 1.00002 S
ULYSSES RT
-33
-23
-13
-3
0
7
17
27
37
47
57
TIME, SECS

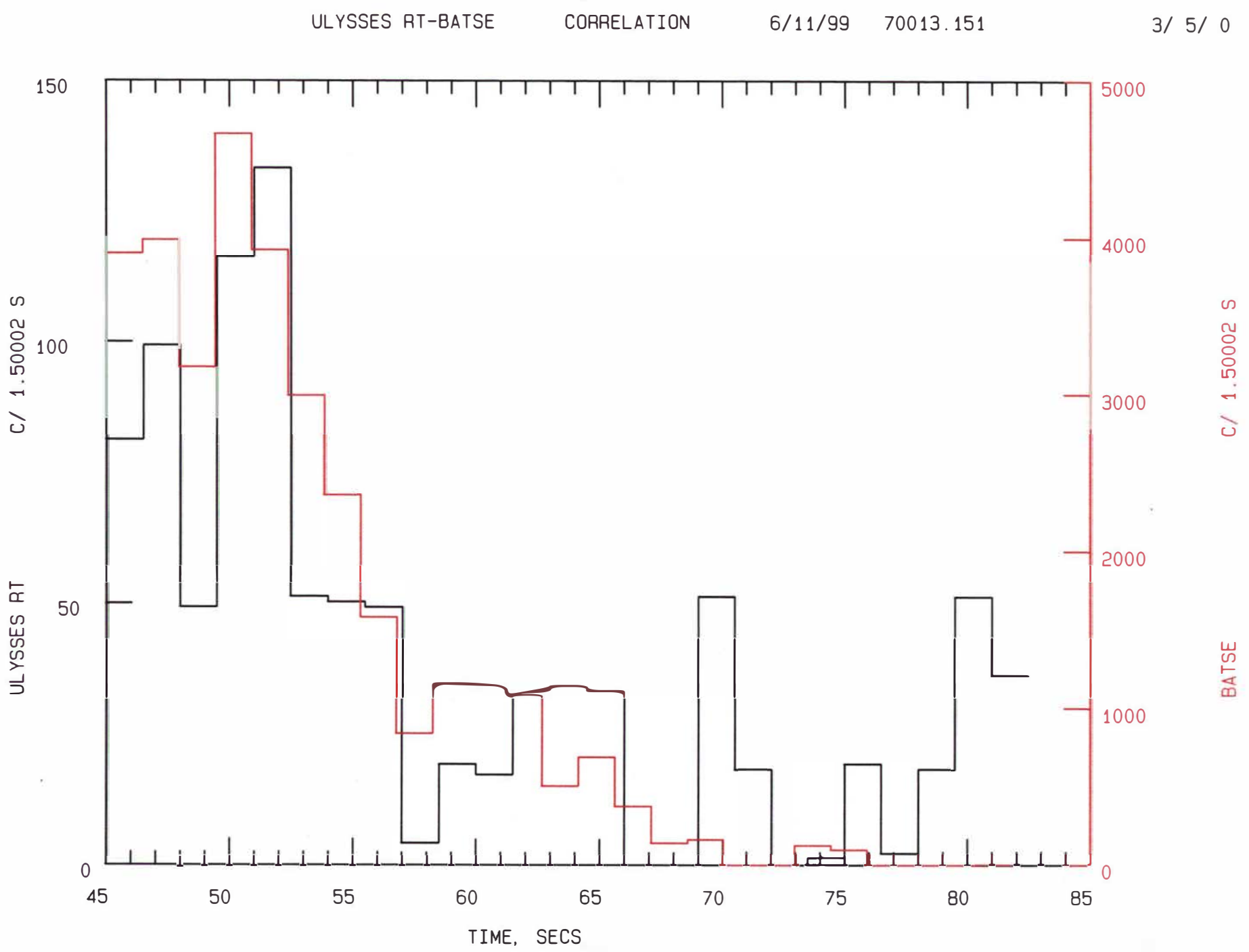
NEAR GRS -ULYSSES RT CORRELATION 06/11/99 69127.181



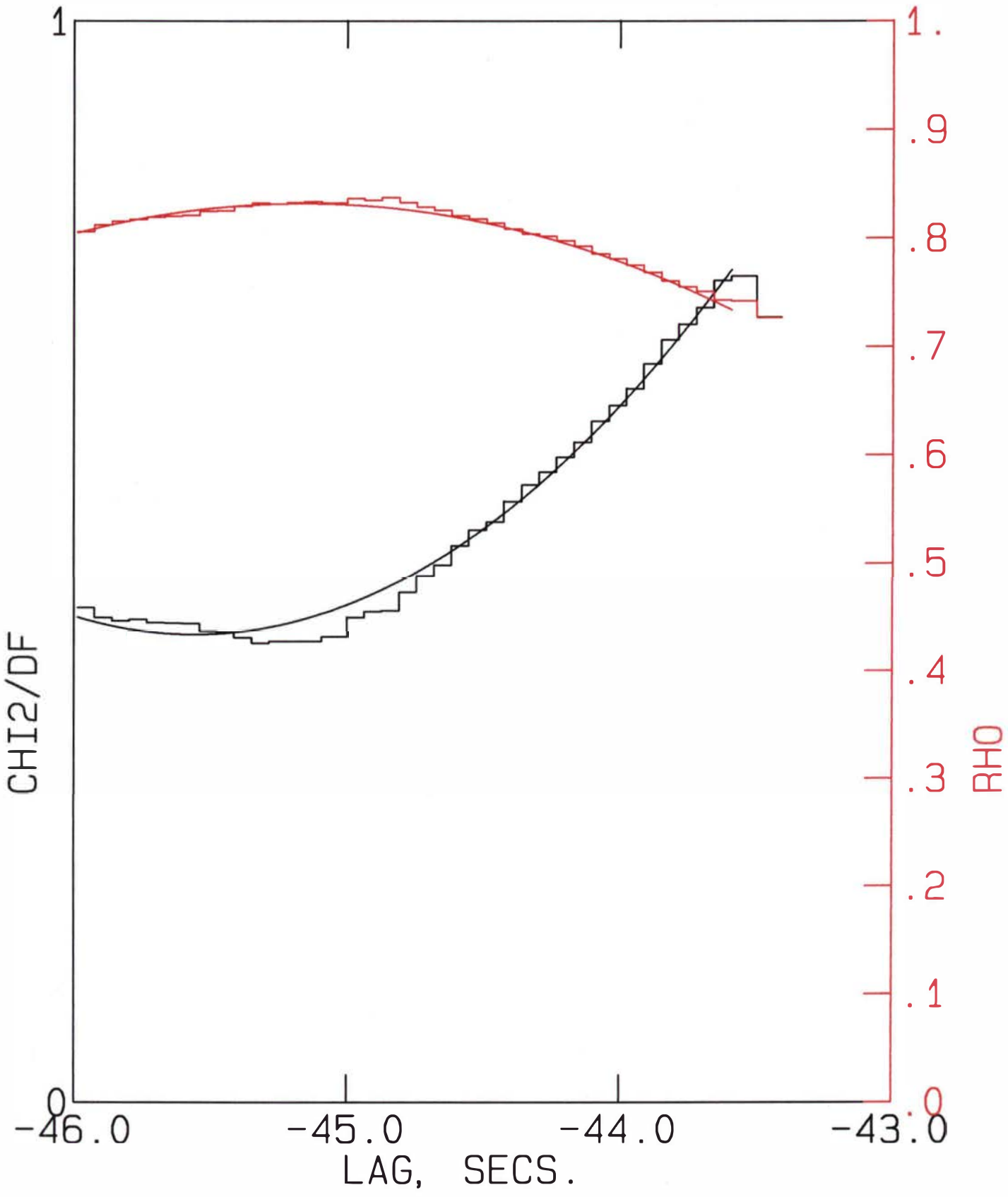

BATSE -NEAR GRS CORRELATION 6/11/99 68612.345 3/ 5/ 0
4000
3000
2000
1000
0
C/ 1.00000 S
BATSE
200
150
100
50
0
C/ 1.00000 S
NEAR GRS
5
10
15
20
25
30
35
40
TIME, SECS

BATSE -NEAR GRS CORRELATION 6/11/99 68612.345




ULYSSES RT-BATSE CORRELATION 6/11/99 70013.151 3/ 5/ 0
150
100
50
0
ULYSSES RT
C/ 1.50002 S
5000
4000
3000
2000
1000
0
BATSE
C/ 1.50002 S
45
50
55
60
65
70
75
80
85
TIME, SECS

ULYSSES RT-BATSE CORRELATION 6/11/99 70013.151



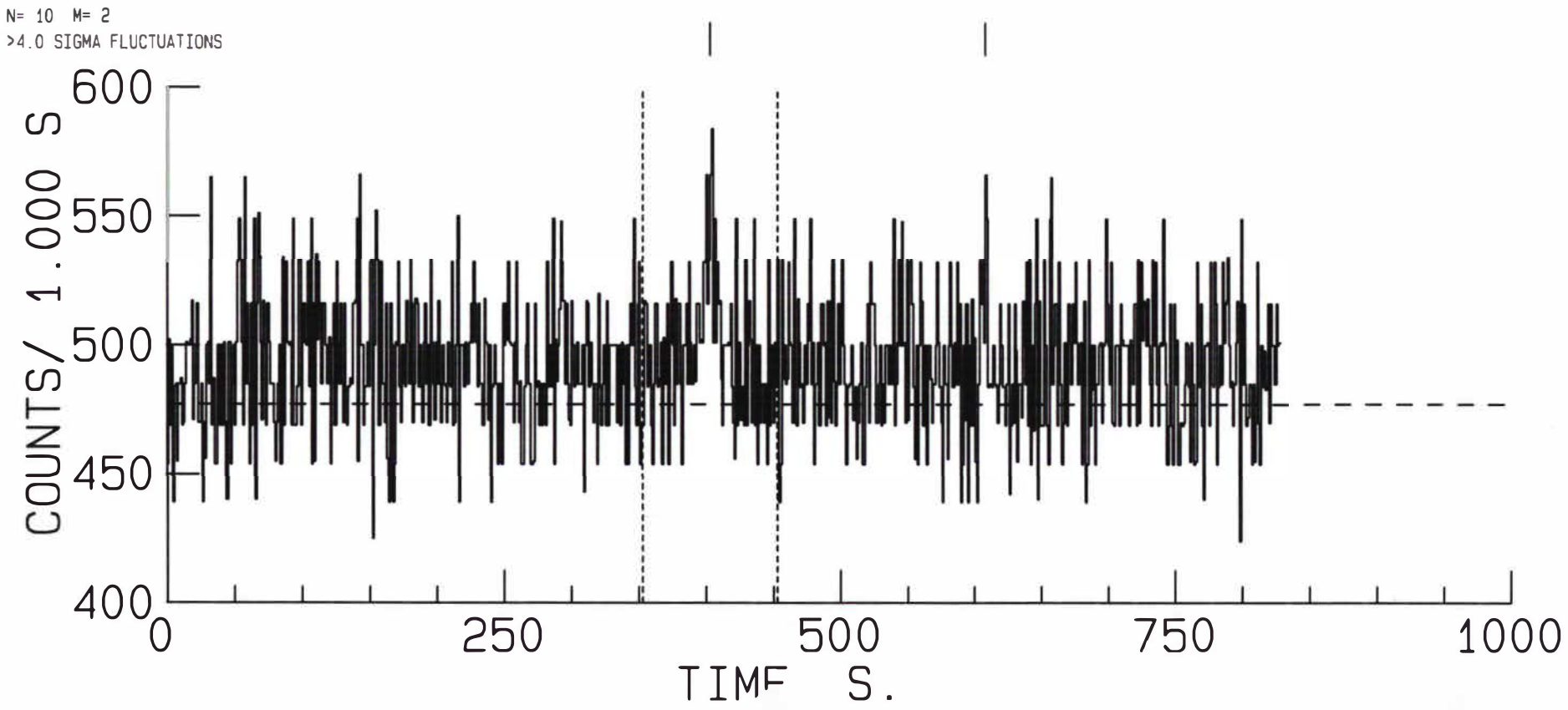
ULYSSES RT

3/ 5/ 0

6/11/99 69660.147 s

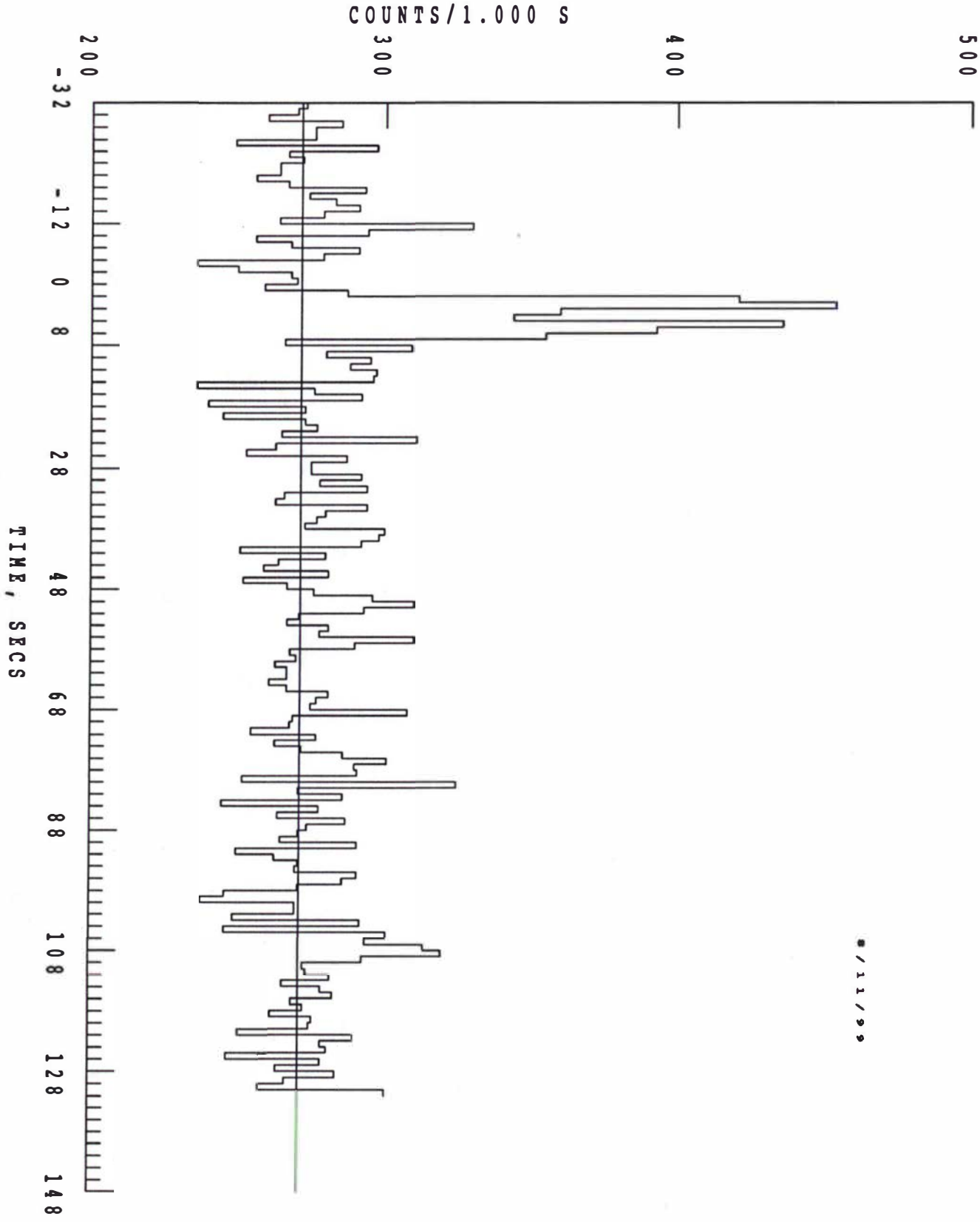
0.250 S INTERVALS REGROUPED BY 4

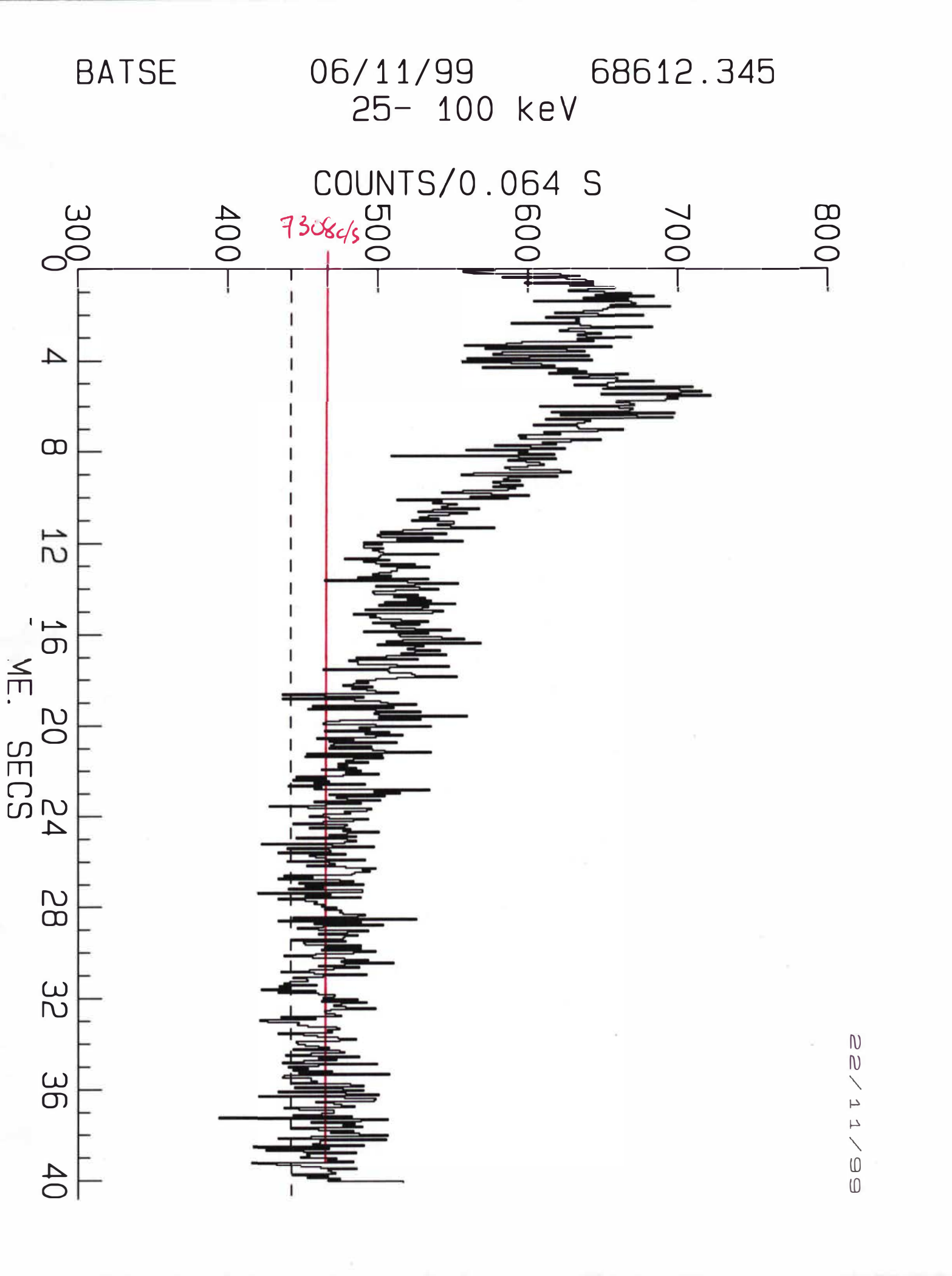
22- 151 keV

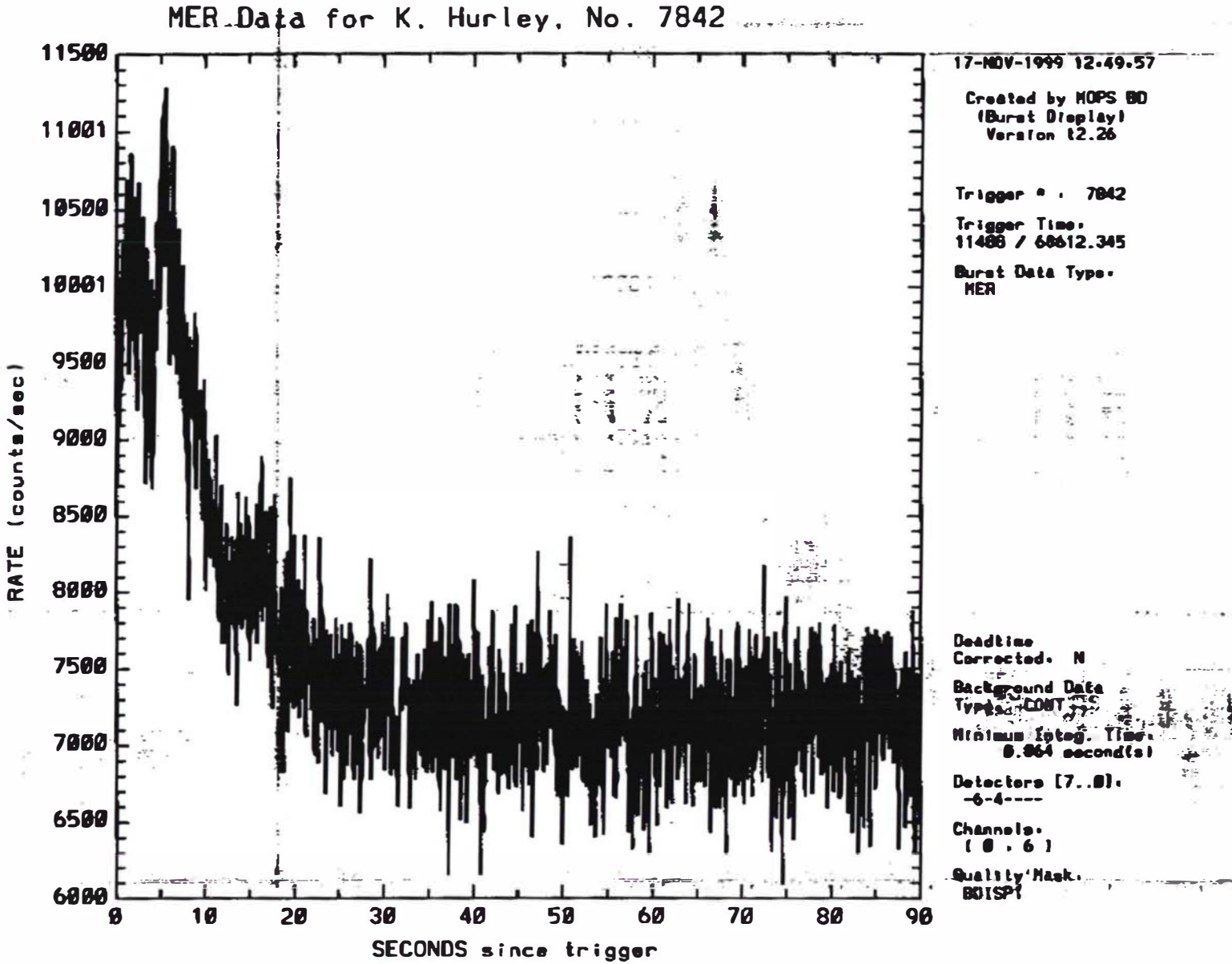


NEAR 06/11/99 69127.181

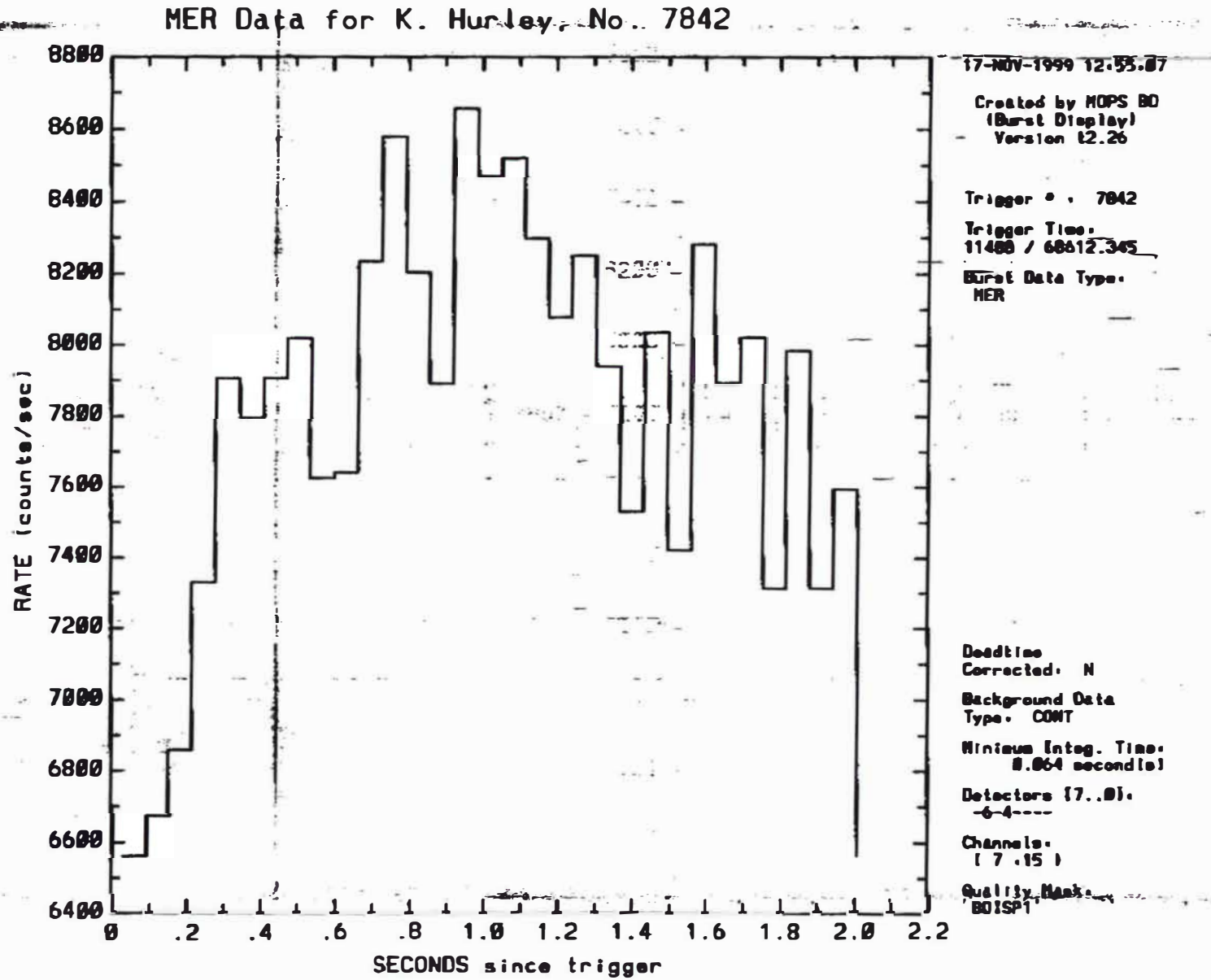
100-1000 keV




BATSE 06/11/99 68612.345
25- 100 keV
COUNTS/0.064 S
300
400
500
600
700
800
7308c/s
0
4
8
12
16
20
24
28
32
36
40
TIME SECS
22/11/99


MER Data for K. Hurley, No. 7842
RATE (counts/sec)
11500
11001
10500
10001
9500
9000
8500
8000
7500
7000
6500
6000
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
17-NOV-1999 12:49.57
Created by MOPS BD
(Burst Display)
Version t2.26
Trigger # : 7842
Trigger Time:
11488 / 68612.345
Burst Data Type:
MER
Deadtime
Corrected: N
Background Data
Type: CONT
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
-6-4----
Channels:
[0 , 6]
Quality Mask:
BDISP1

BATSE >100 kev data truncated!
Use 25-100 instead



From khurley@sunspot.ssl.berkeley.edu Tue Nov 9 10:05 PST 1999
Date: Tue, 9 Nov 1999 10:12:07 -0800
From: khurley@ssl.berkeley.edu (Kevin Hurley)
To: scott@milkyway.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
feroci@saturn.ias.rm.cnr.it, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, bonnard@milkyway.gsfc.nasa.gov,
jterrell@lanl.gov, woods@eagles.msfc.nasa.gov, yosimori@rikkyo.ac.jp,
kraken@origin.gsfc.nasa.gov
Subject: GRB991106

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
NOV 6 1999* 22:24	moderate, 32 ms long	2430

Was this event detected by anyone else?

*This burst was almost certainly an SGR. The Earth-crossing windows for the SGRs are:

0525-66: 980 seconds later than Ulysses time

1806-20: 316 seconds earlier

1900+14: 1345 seconds earlier

1627-41: 845 seconds later

1801-23: 197 seconds earlier

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, feroci, frontera, henze, kraken, teegarden,

From feroci@ias.rm.cnr.it Tue Nov 9 09:30 PST 1999
Date: Tue, 9 Nov 1999 18:32:41 +0100 (NFT)
From: Marco Feroci <feroci@ias.rm.cnr.it>
To: Kevin Hurley <khurley@ssl.berkeley.edu>
Subject: Re: SGR1900?
MIME-Version: 1.0

Dear Kevin,
I have a trigger at 6 Nov 1999 21:16:17:89093
and one at 6 Nov 1999 22:45:23:53693

Therefore SGR1900 is at about the right time for the second event but with the wrong sign! In addition, this event looks like a spike.
Thence, I believe that the only answer is that we did not triggered the event. I can look if I can find it in the realtime data (using your earth crossing times). How long was it?

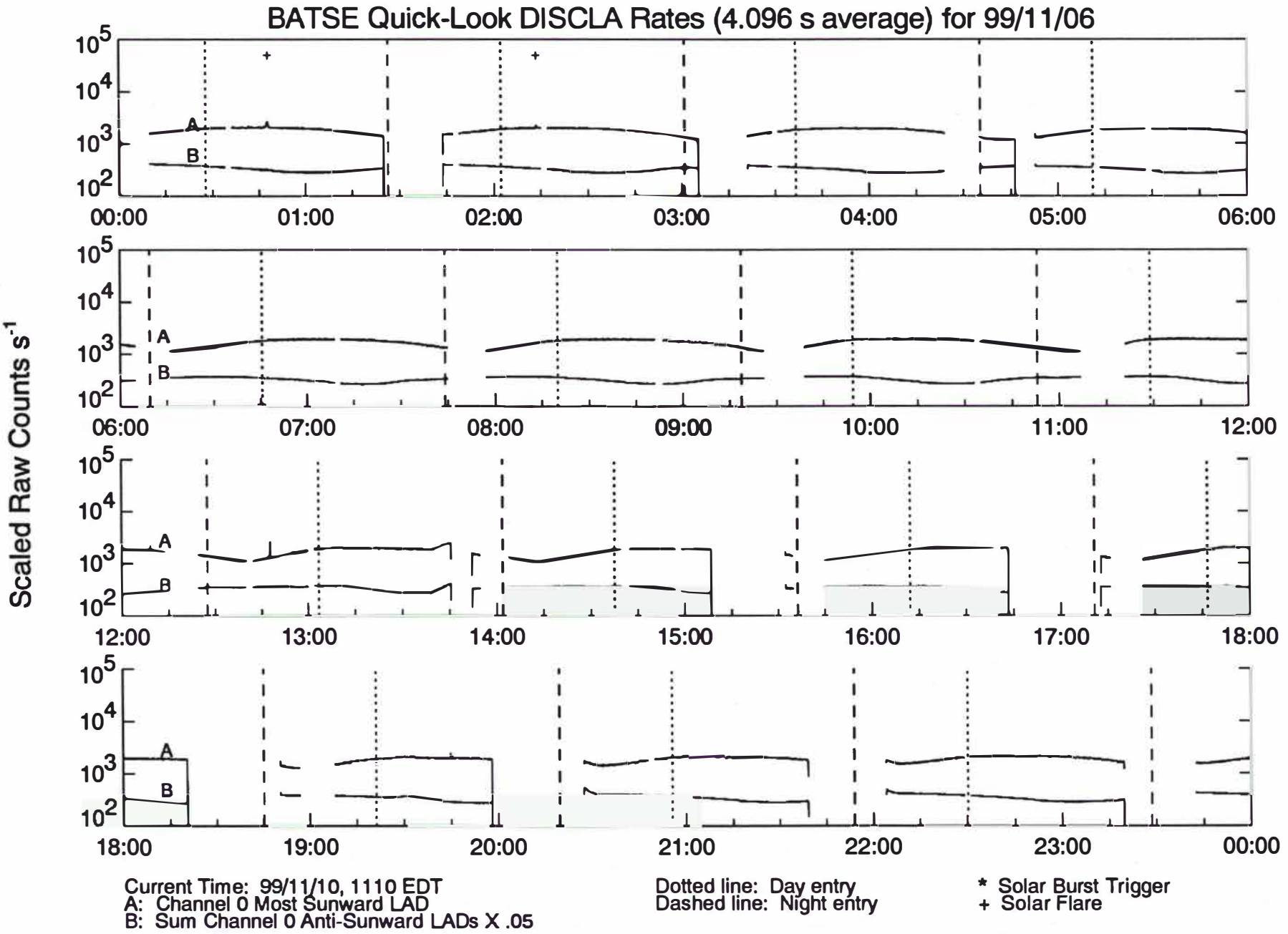
Ciao
Marco

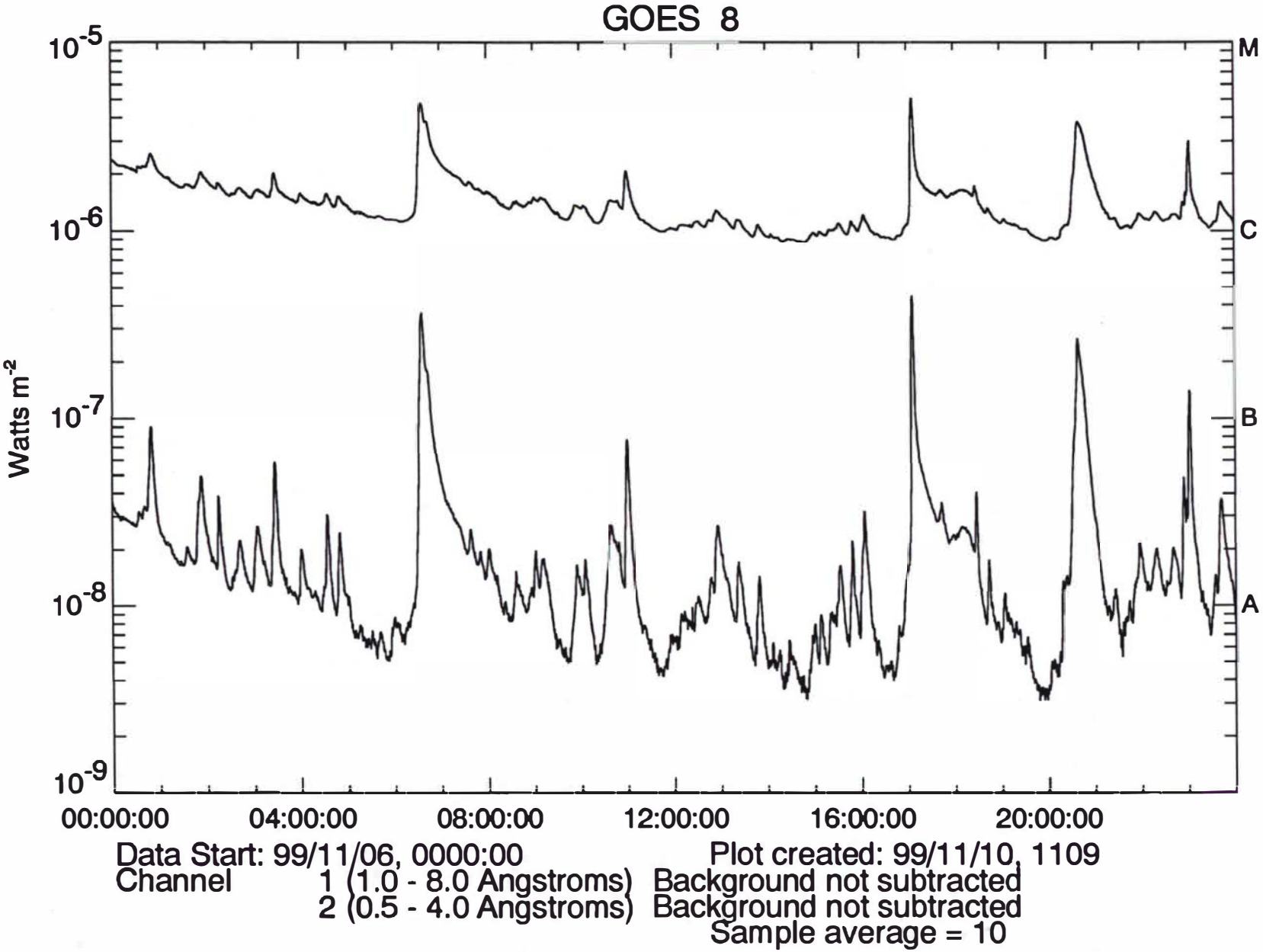
On Mon, 8 Nov 1999, Kevin Hurley wrote:

> Dear Marco,
>
> We had a short burst on Ulysses on Nov 6 which is almost certainly
> an SGR. It was fairly intense, and arrived at Ulysses at 22:24 UT.
> Ulysses was 2430 light-seconds from Earth. BATSE has not reported
> anything at this time, at least, not yet. Did you observe anything
> on the GRBM? Maybe we could use this as an excuse to trigger our
> ToO.

> The Earth-crossing windows for the SGRs are:
>
> 0525-66: 980 seconds later than Ulysses time
>
> 1806-20: 316 seconds earlier
>
> 1900+14: 1345 seconds earlier
>
> 1627-41: 845 seconds later
>
> 1801-23: 197 seconds earlier
>
> Ciao,
>
> Kevin
>

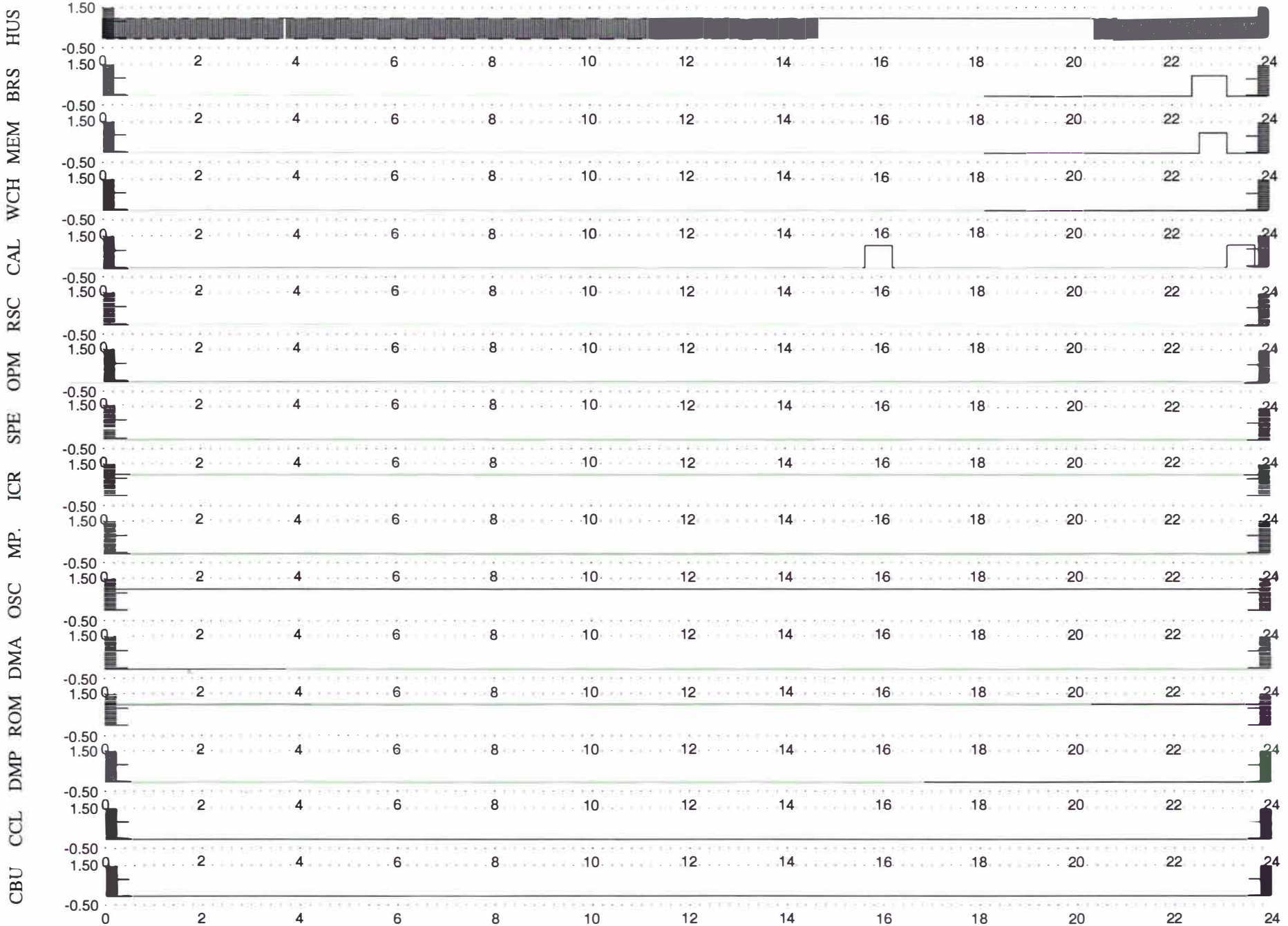
Marco Feroci
Istituto di Astrofisica Spaziale
C.N.R. - Area di Ricerca di Roma - Tor Vergata
Phone: +39-06-4993-4099 Via Fosso del Cavaliere, Roma, I-00133 ITALY
Fax : +39-06-2066-0188 E-mail: feroci@ias.rm.cnr.it


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/06
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/10, 1110 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
Watts m-2
10-5
10-6
10-7
10-8
10-9
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/06, 0000:00
Plot created: 99/11/10, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 310, year 1999 to day 310, year 1999 03/21/00

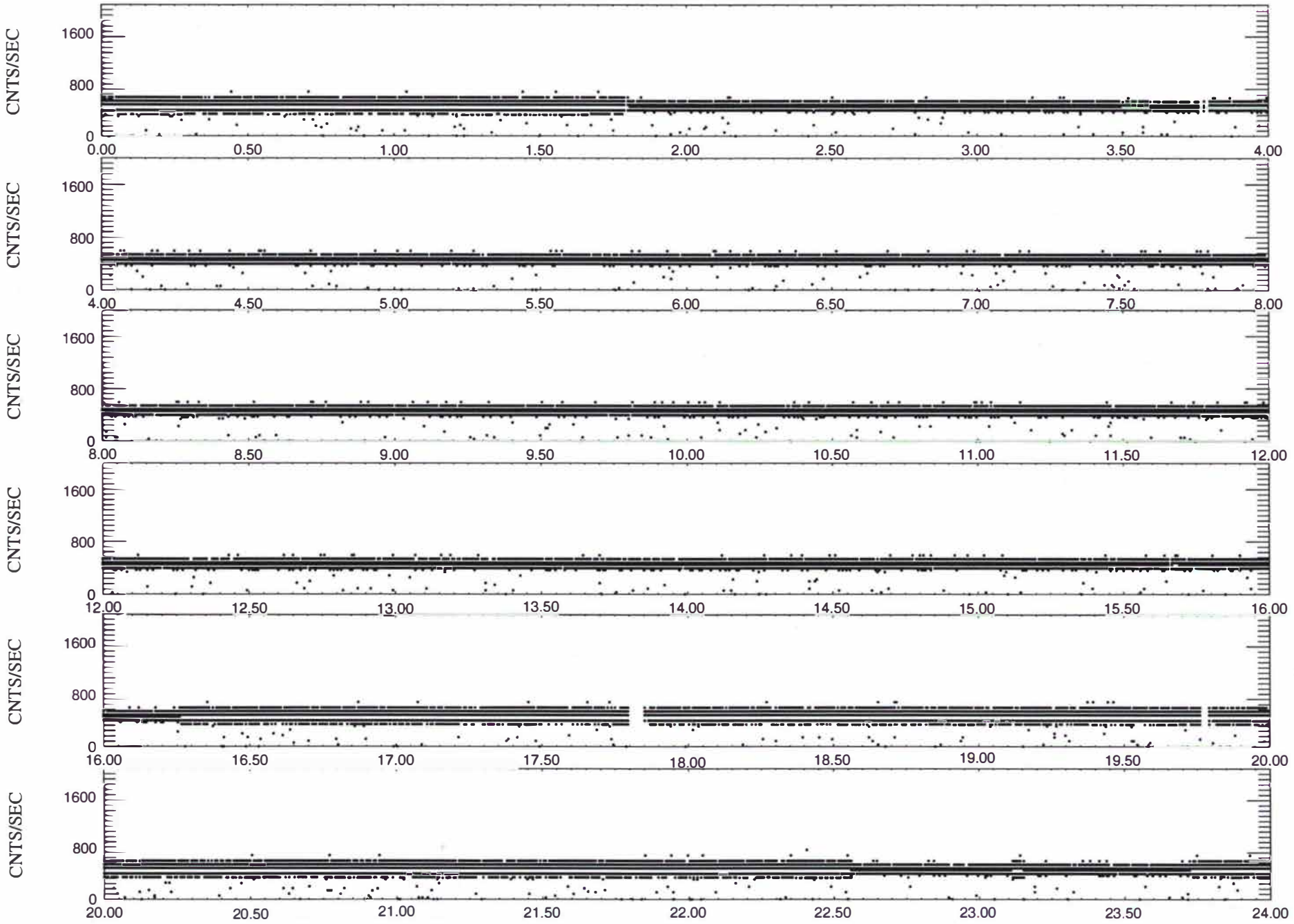
BURST NUMBER 3



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 06/11/1999 DOY = 310 03/21/00

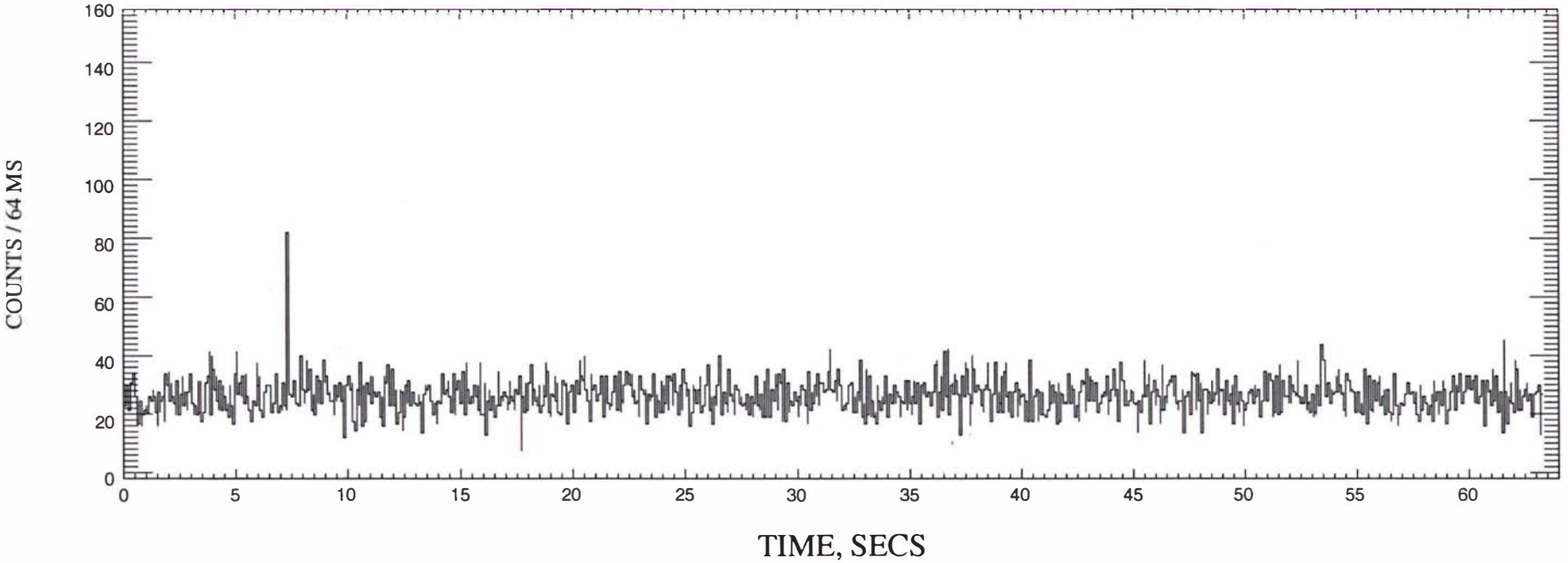
CALIBRATION DATA INCLUDED

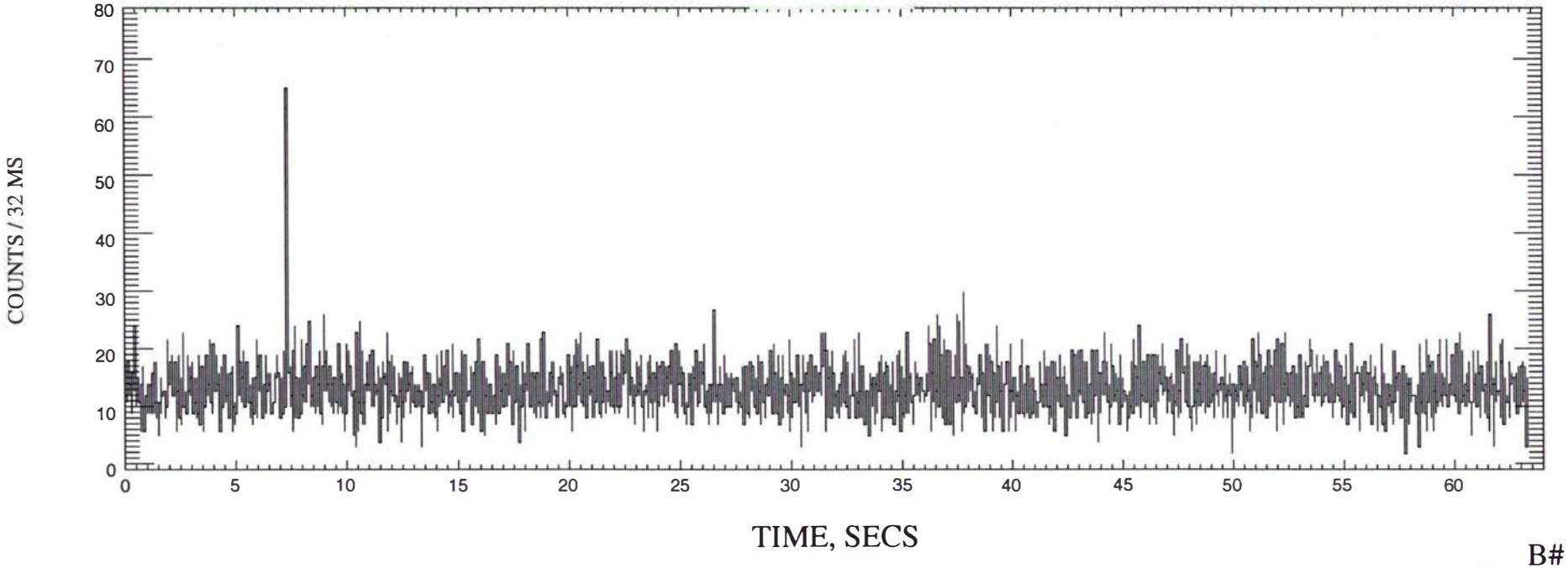


UNIV[illegible]SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 06/11/1999 DOY = 310 03/21/00

Burst Counter 3 at UT=22.401562881470 h=80645.626 s 22:24:05.626

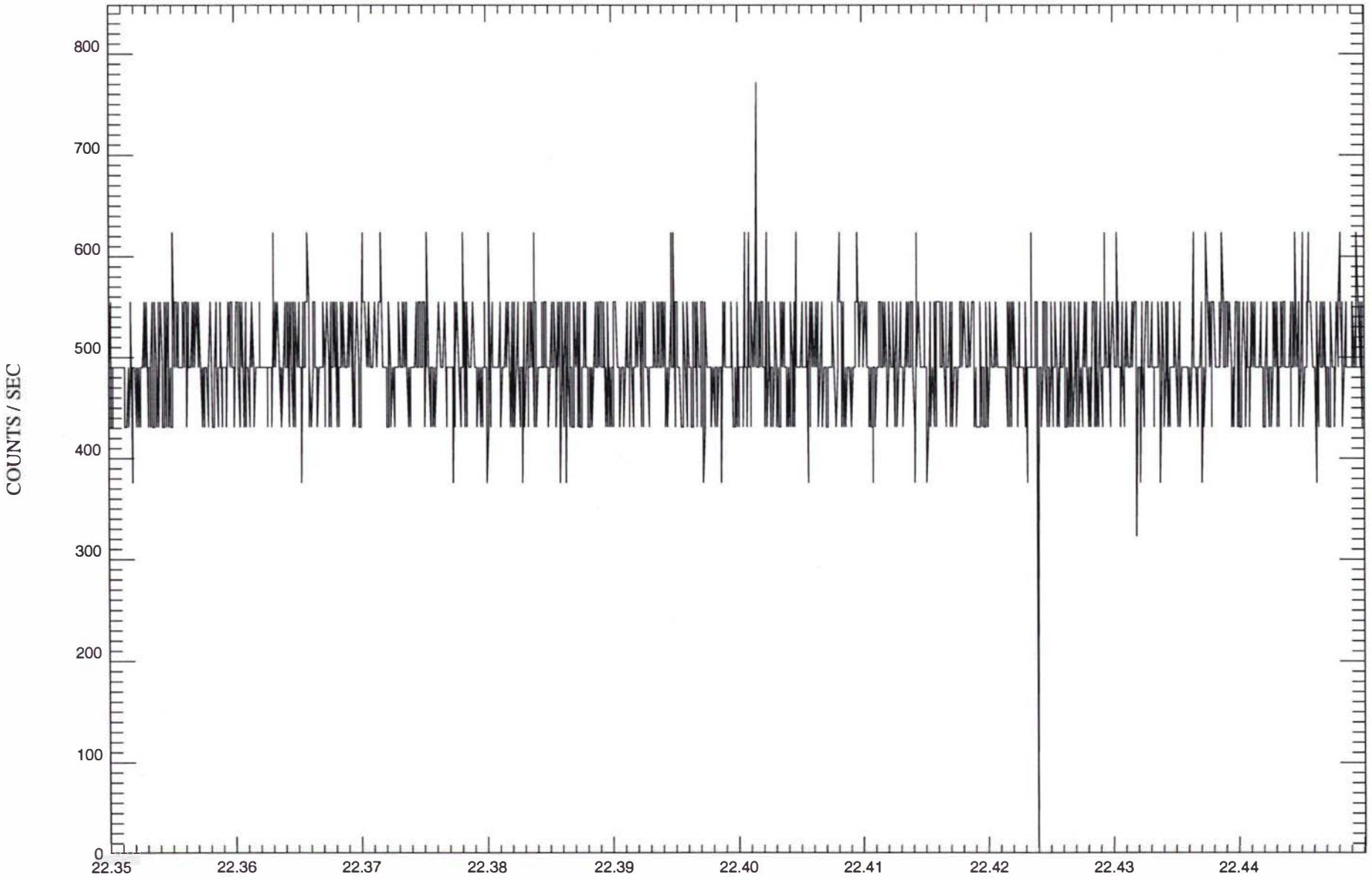




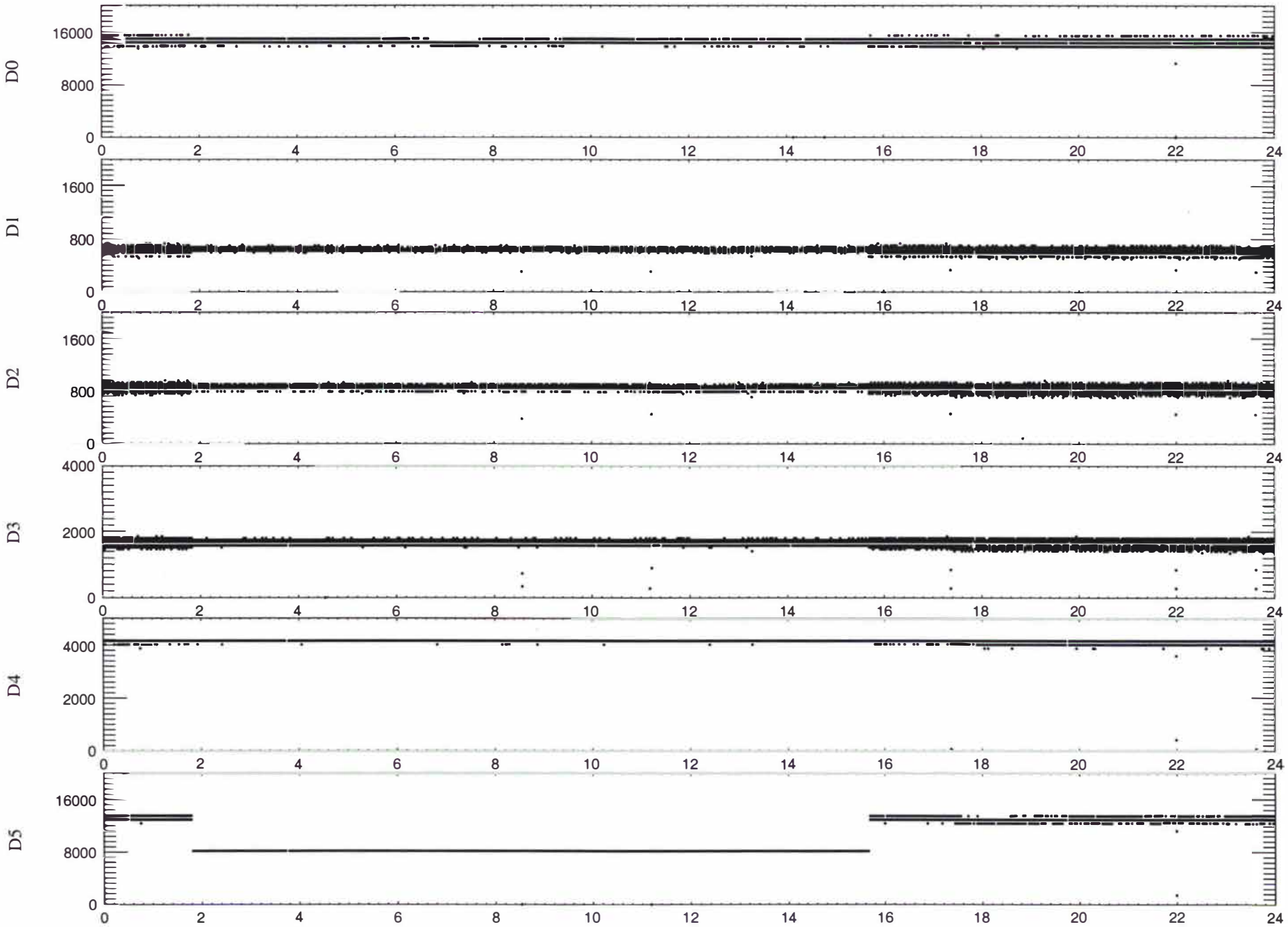
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 06/11/1999 DOY = 310 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 310, year 1999 to day 310, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Tue Nov 9 14:13 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 9 Nov 1999 16:21:51 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7843

****
BATSEARCH PROGRAM
****

BATSE BURST # 7843
EVENT OF 1999 NOV 7 DAY OF YEAR=311
EVENT CROSSING TIME AT BATSE : 29011. S. OR 08:03:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 156.000 -54.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/11/ 99 IS:
RA= 164.478 DEC= -23.126 DIST= 4.875 AU
BATSE-ULYSSES DISTANCE = 729266901. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=148.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2073.50 SECS.
CROSSING TIME AT ULYSSES IS 26937. S. OR 07:28:57 +/- 239.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/11/ 99 IS:
RA= 286.918 DEC= -24.182 DIST= 1.553 AU
MARS-BATSE DISTANCE = 232338496. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 15.35 SECS.
CROSSING TIME AT MARS IS 29026. S. OR 08:03:46 +/- 134.76 SECONDS

BATSE BURST TRIGGER
NO.: 7843

TIME: TJD=1489 SECONDS=29011

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

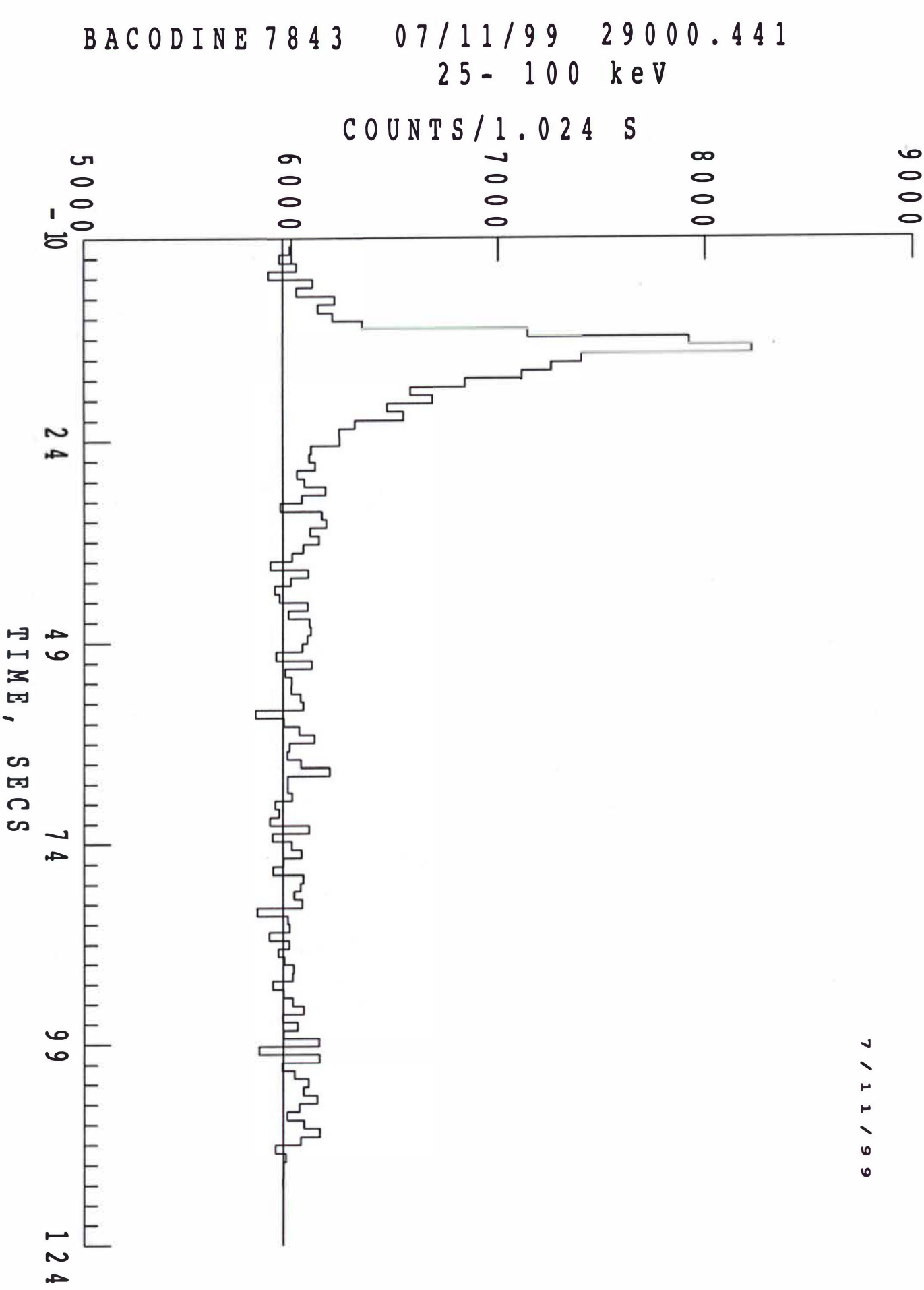
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=156.1 AZIMUTH=18.6 ERROR=2.03 DEGREES

COMMENTS:
GRB. SINGLE PULSE, DUR. 28 S. RISE IS FASTER THAN FALL. POSSIBLE PRECURSOR AT T-50 S. WEAKLY VISIBLE ABOVE 300 KEV. CYGX-1 RISE AT T+60 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7843	991107	11489	29011	4500	156	-54	28


BACODINE 7843 07/11/99 29000.441
25- 100 keV
COUNTS/1.024 S
5000
6000
7000
8000
9000
-10
24
49
74
99
124
TIME, SECS
7/11/99

BATSE BURST# 7843

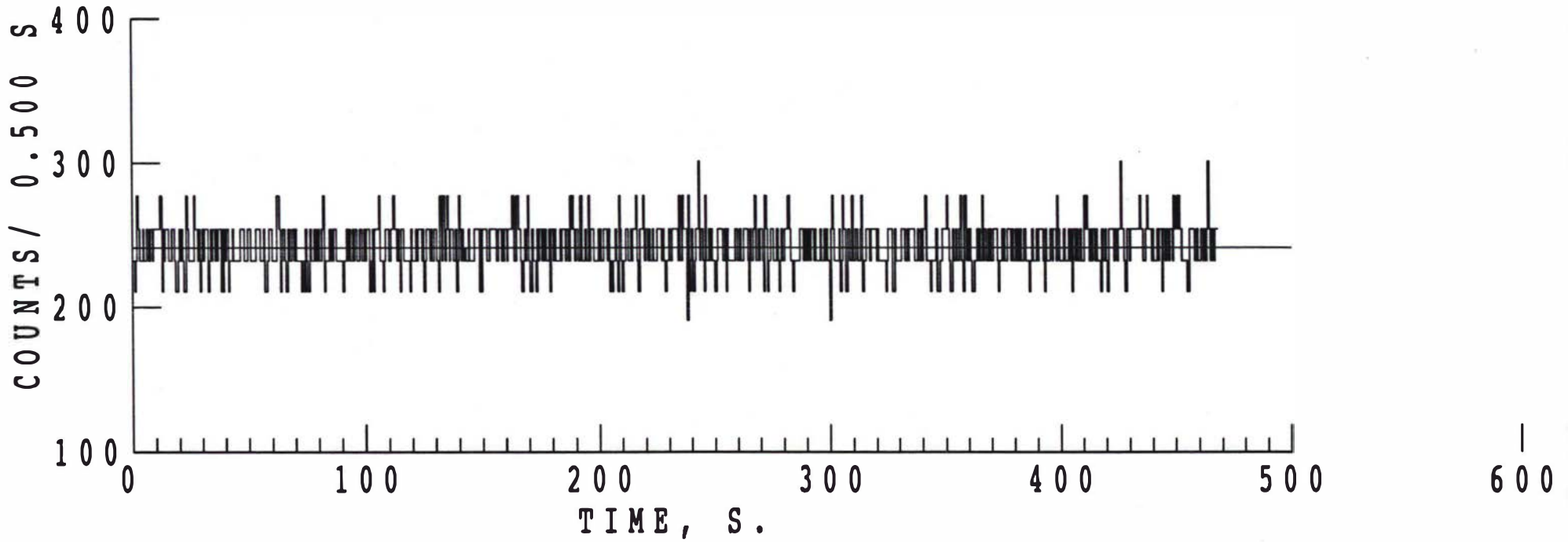
ULYSSES RT 9/11/99

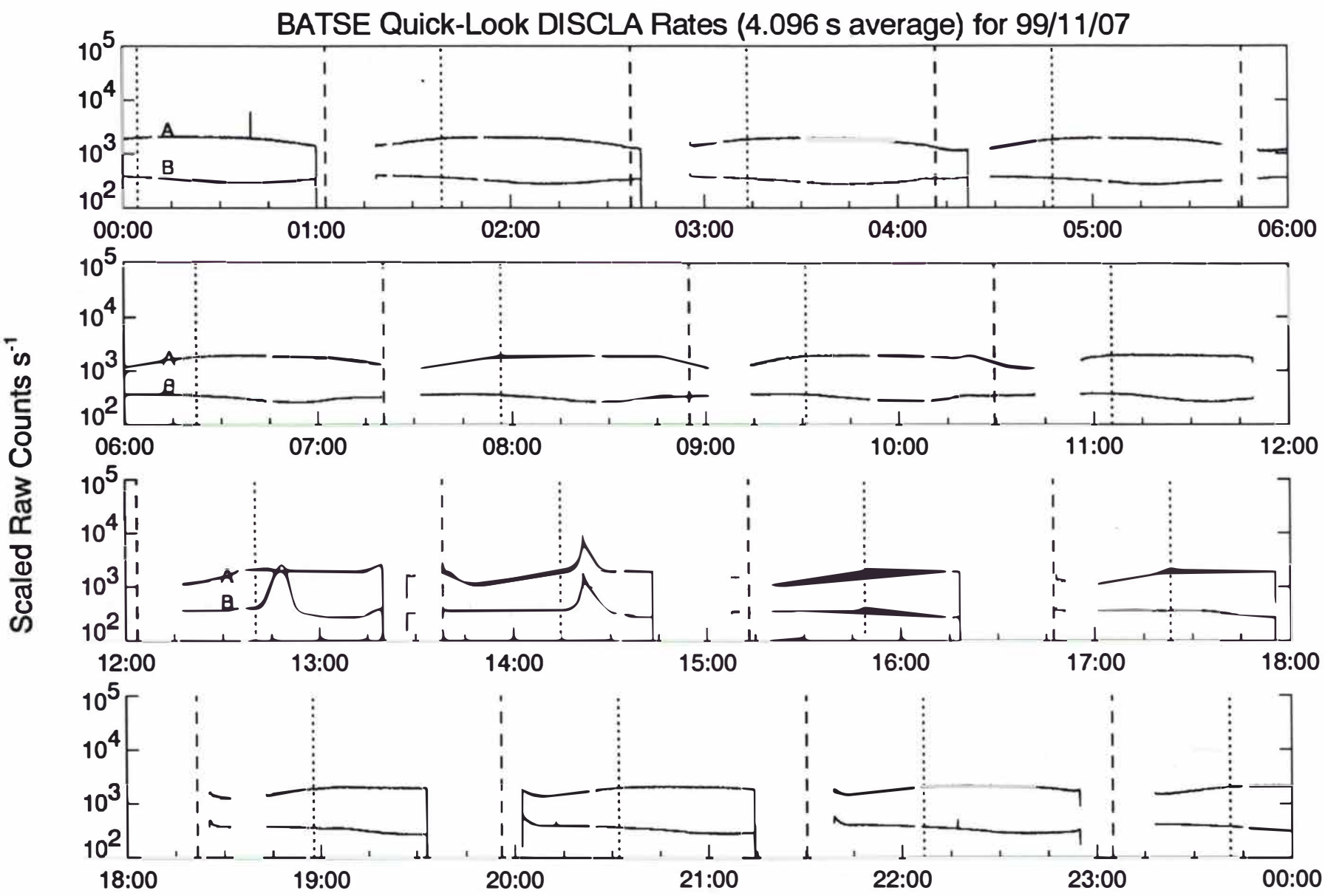
7/11/99 26712.336 s

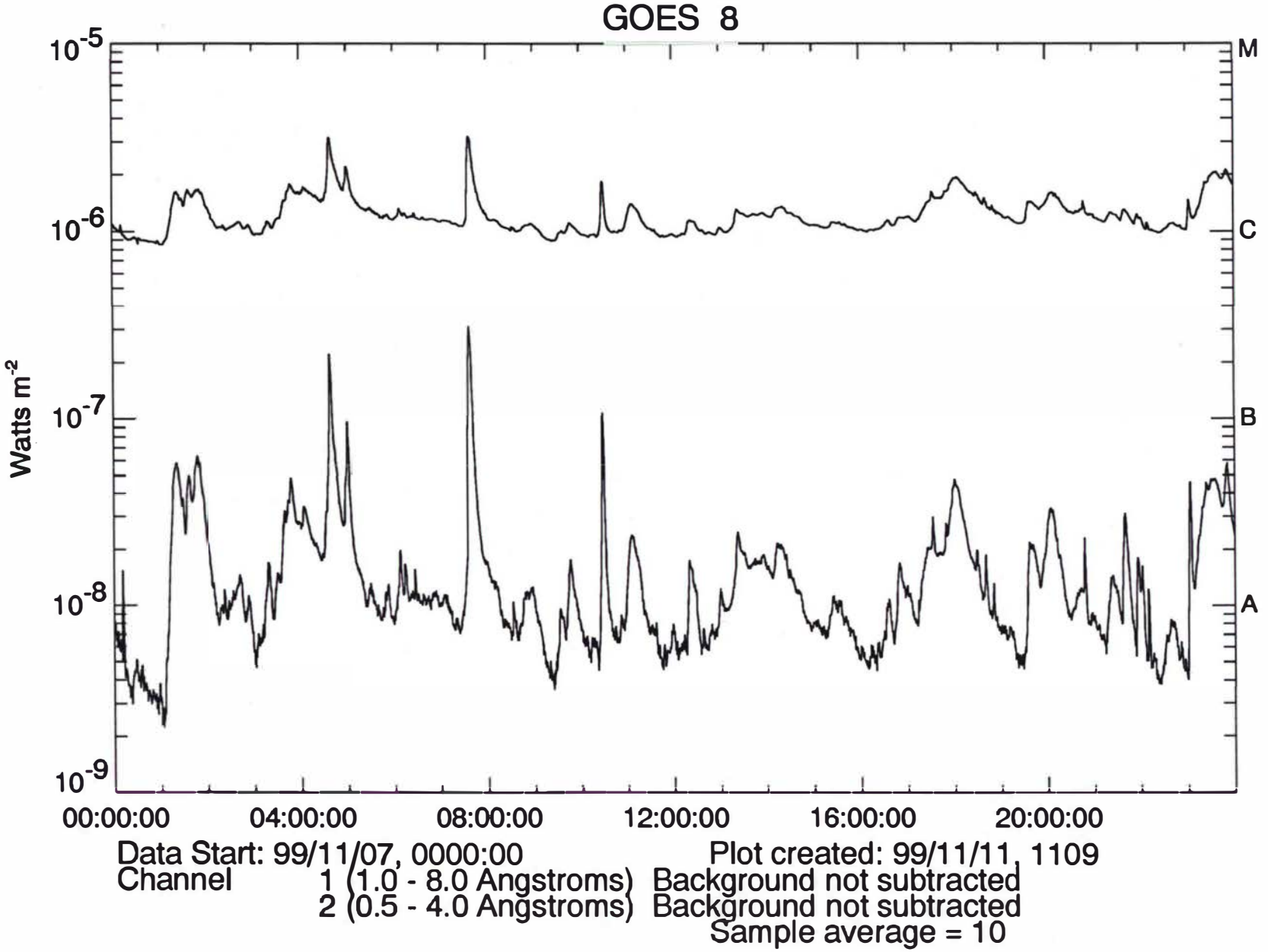
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

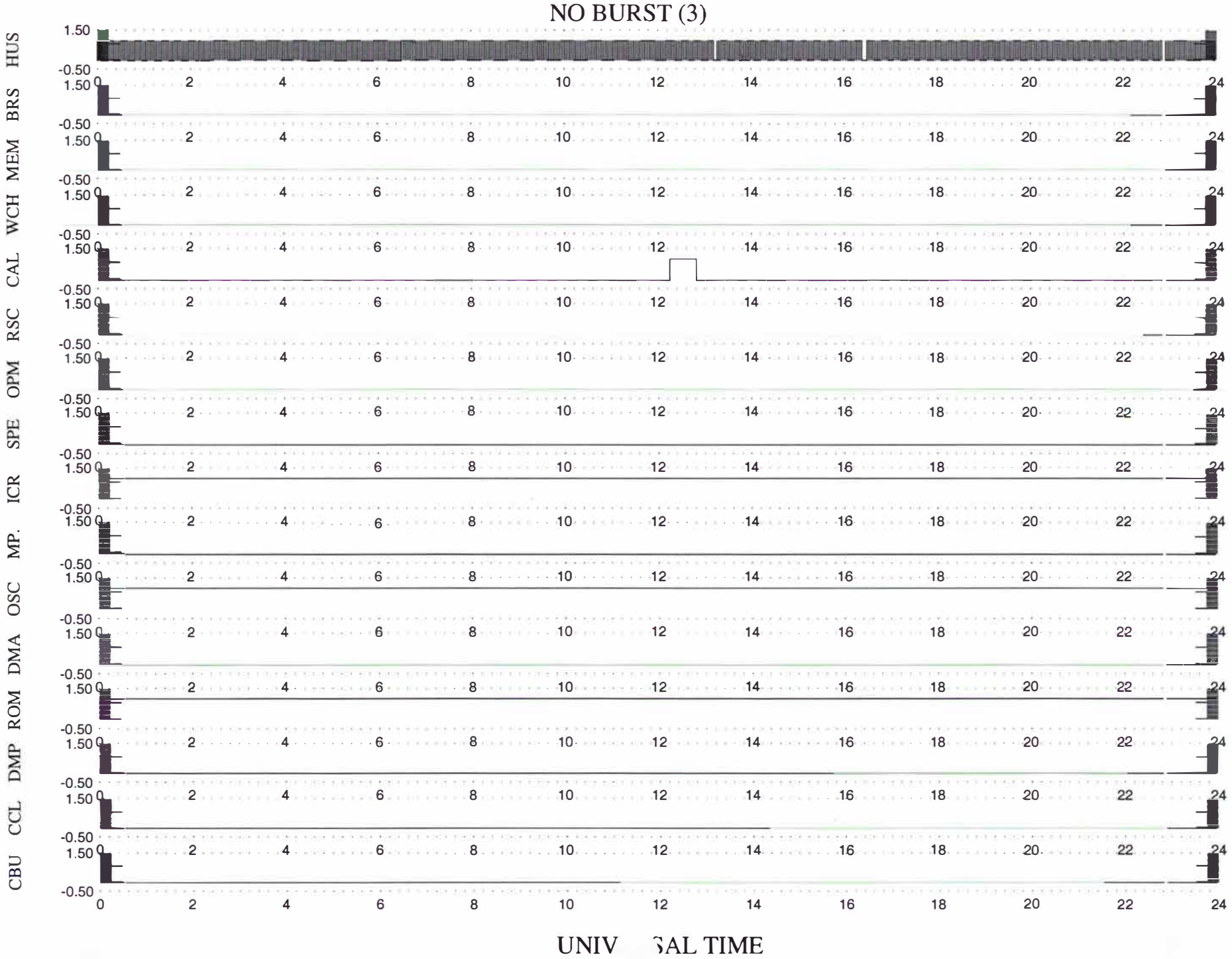
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/07
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/11, 1110 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

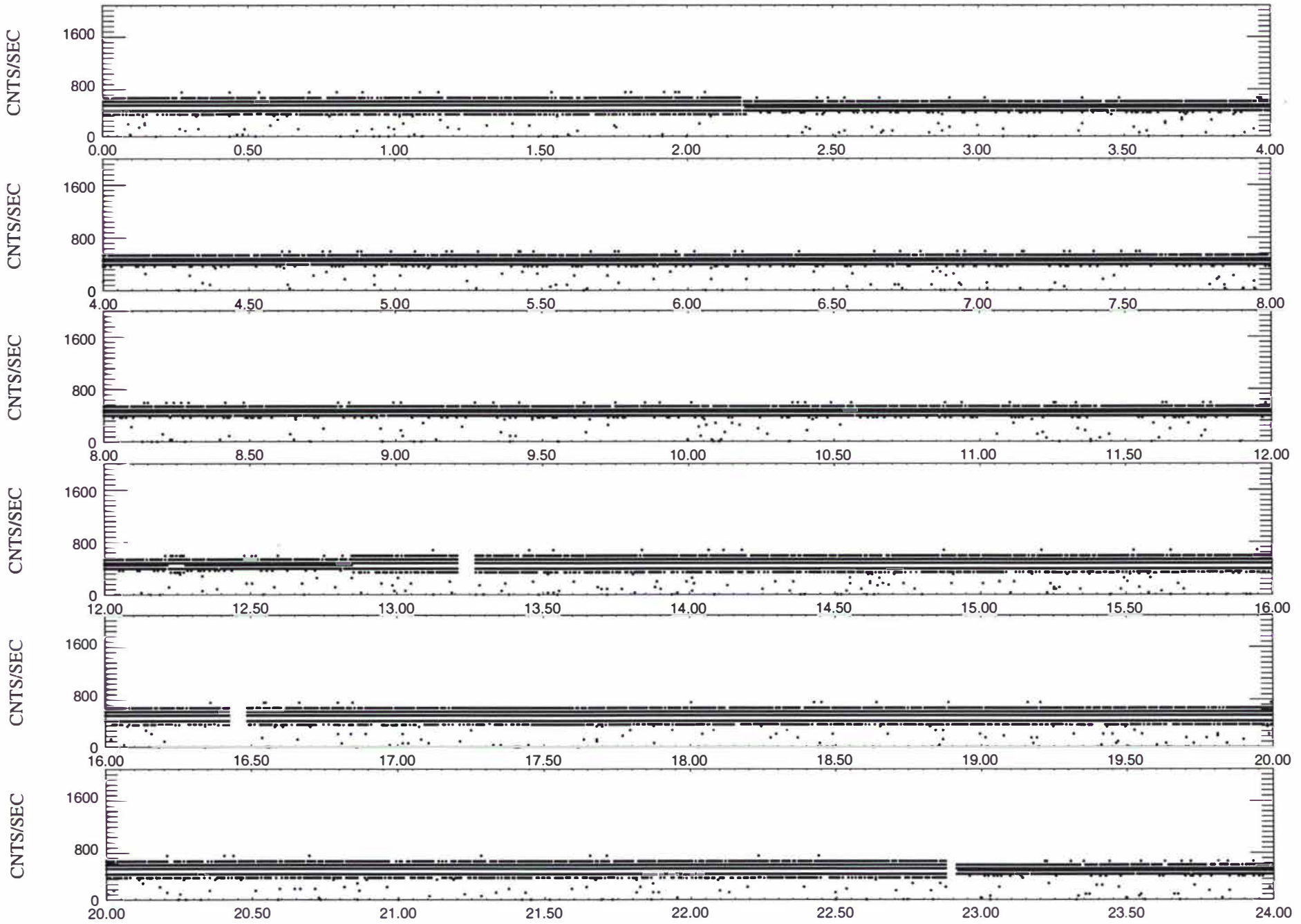

GOES 8
Watts m-2
10-5
10-6
10-7
10-8
10-9
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/07, 0000:00
Plot created: 99/11/11, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 311, year 1999 to day 311, year 1999 03/21/00



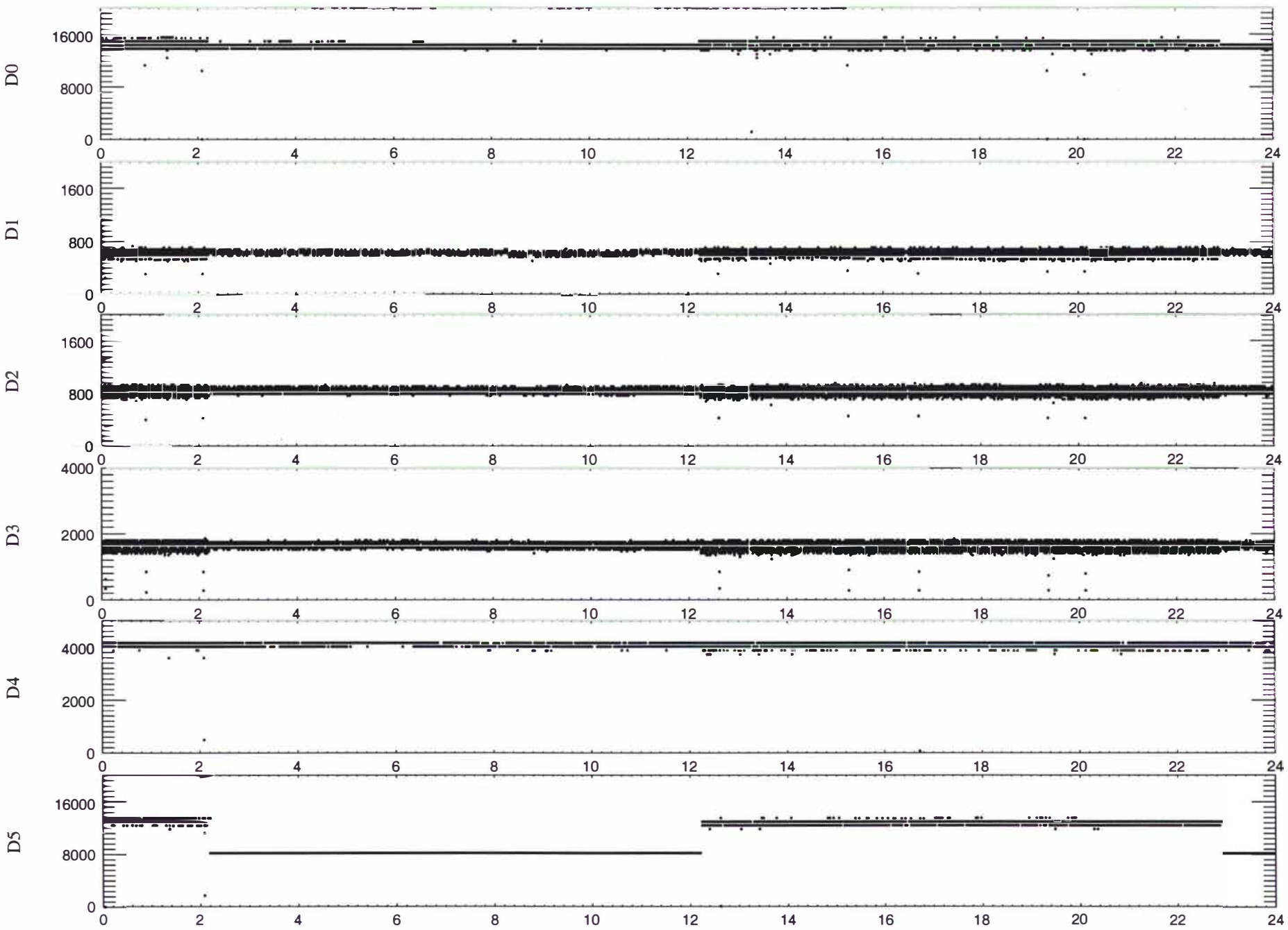
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 07/11/1999 DOY = 311 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 311, year 1999 to day 311, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Wed Nov 10 13:53 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 10 Nov 1999 16:01:51 -0600 (CST)
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.: 7844

TIME: TJD=1490 SECONDS=17993

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.5 AZIMUTH=172.0 ERROR=2.1 DEGREES

COMMENTS:
TGF. SINGLE SPIKE WITH SUBSTRUCTURE, DUR.0.005 S, MAX. AT T-0.027 S, PROBABLE PRECURSOR AT T-0.04 S. WEAKLY VISIBLE BELOW 50 KEV. OVERWRITTEN DURING TTS, BUT TTE AND STTE ARE COMPLETE.

From SAHI@fender.msfc.nasa.gov Wed Nov 10 14:08 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 10 Nov 1999 16:16:21 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7845

****
BATSEARCH PROGRAM
****

BATSE BURST # 7845
EVENT OF 1999 NOV 8 DAY OF YEAR=312
EVENT CROSSING TIME AT BATSE : 24365. S. OR 06:46:05.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 4.000 -55.000
BATSE PEAK COUNTING RATE: 16000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/11/ 99 IS:
RA= 164.566 DEC= -23.305 DIST= 4.860 AU
BATSE-ULYSSES DISTANCE = 727052025. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 418.79 SECS.
CROSSING TIME AT ULYSSES IS 24784. S. OR 06:53:03 +/- 471.08 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/11/ 99 IS:
RA= 287.731 DEC= -24.086 DIST= 1.558 AU
MARS-BATSE DISTANCE = 233130960. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -356.62 SECS.
CROSSING TIME AT MARS IS 24008. S. OR 06:40:08 +/- 114.56 SECONDS

BATSE BURST TRIGGER
NO.: 7845

TIME: TJD=1490 SECONDS=24365

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.6 AZIMUTH=90.1 ERROR=1.05 DEGREES

COMMENTS:
GRB. COMPLEX, DUR. 70 S, MAX. AT T+5.3 S. VISIBLE ABOVE 300 KEV. OVERWROTE PREVIOUS DURING TTS; SO STTE BELONGS TO # 7844.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7845	991108	11490	24365	16000	004	-55	70

Date: May 4 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 N/A

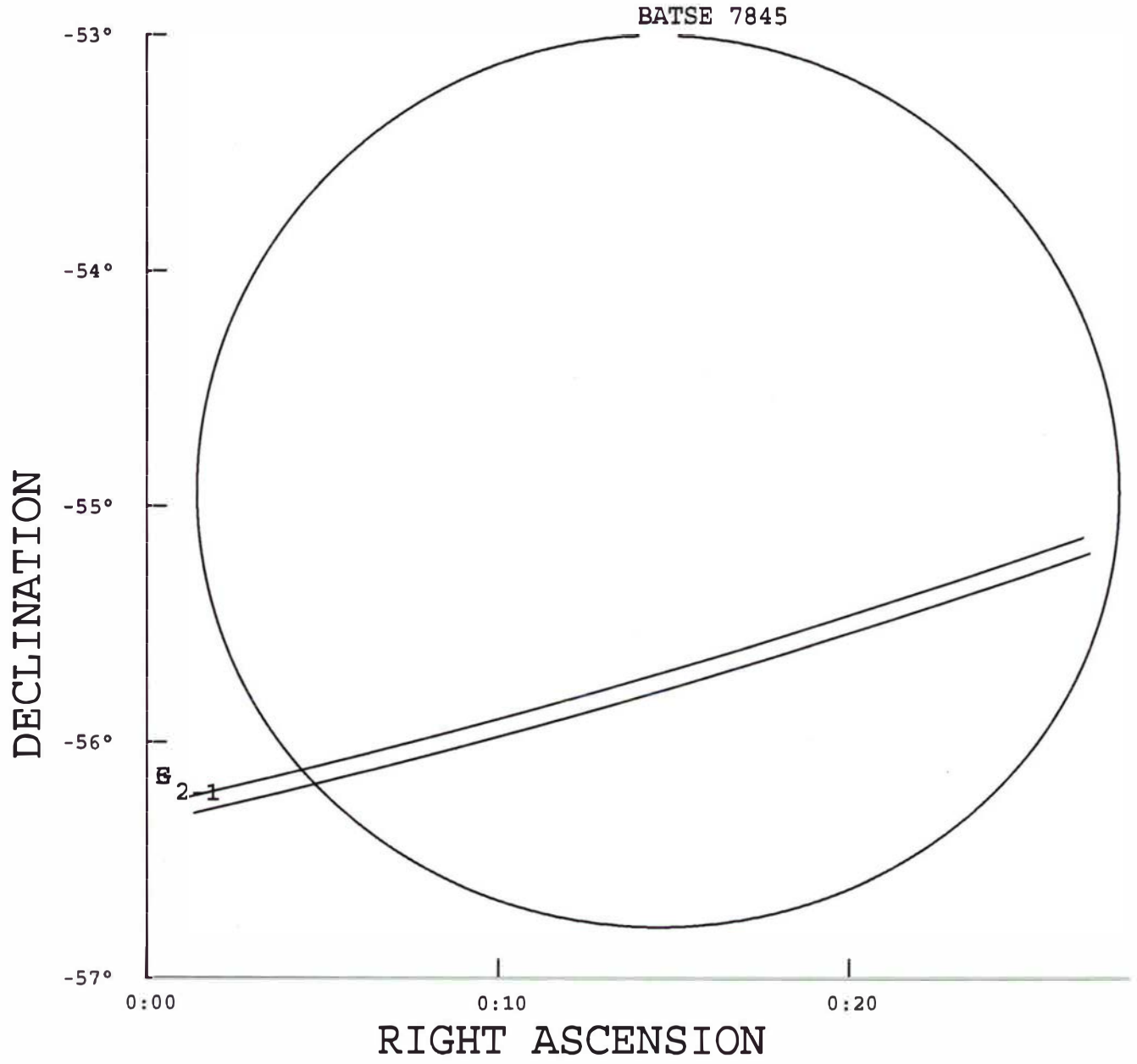
☐ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

☐ BATSE >100 keV data used for NEAR correlation?

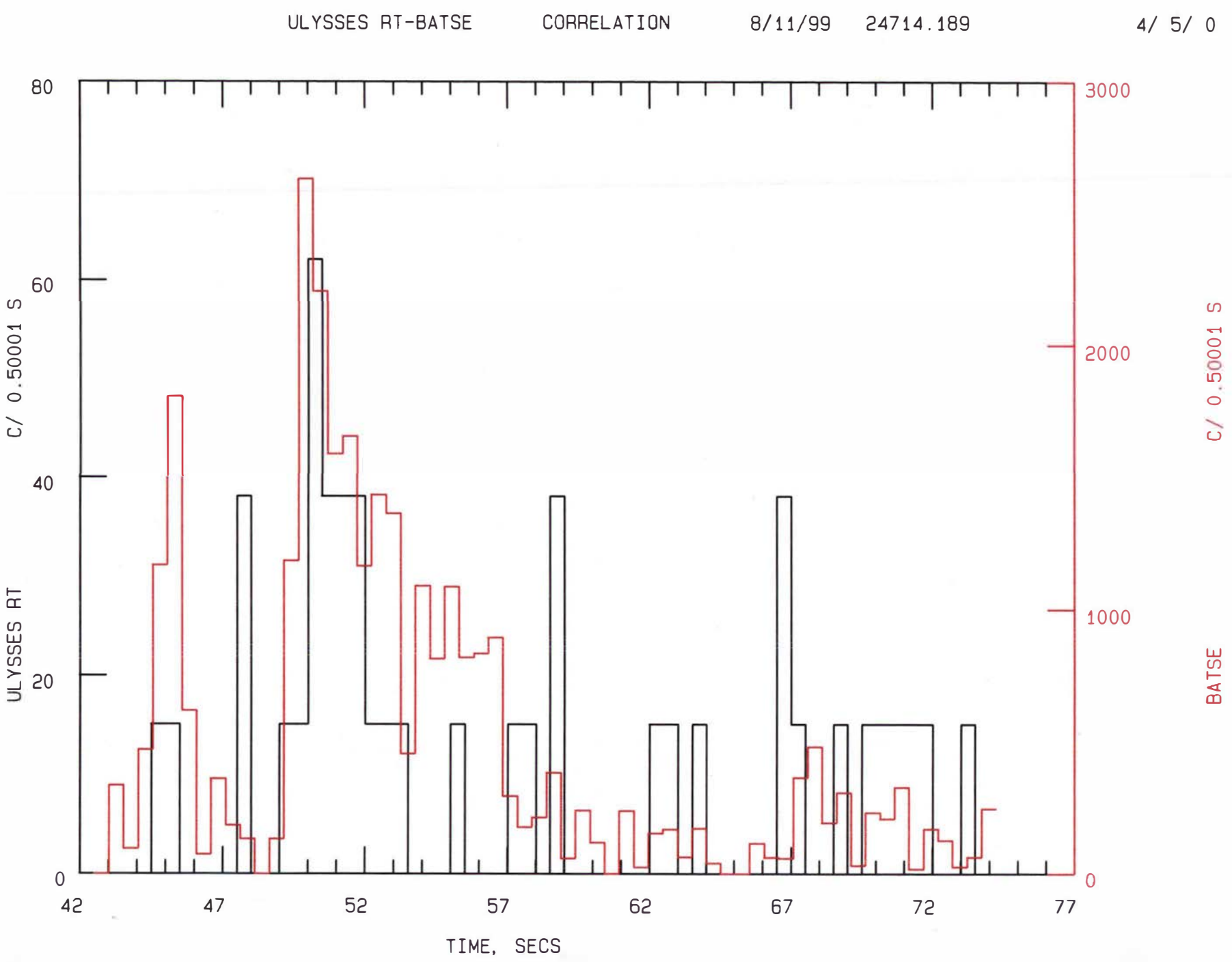
☑ ACCESS database updated?

EVENT OF NOV 8, 1999 6:46

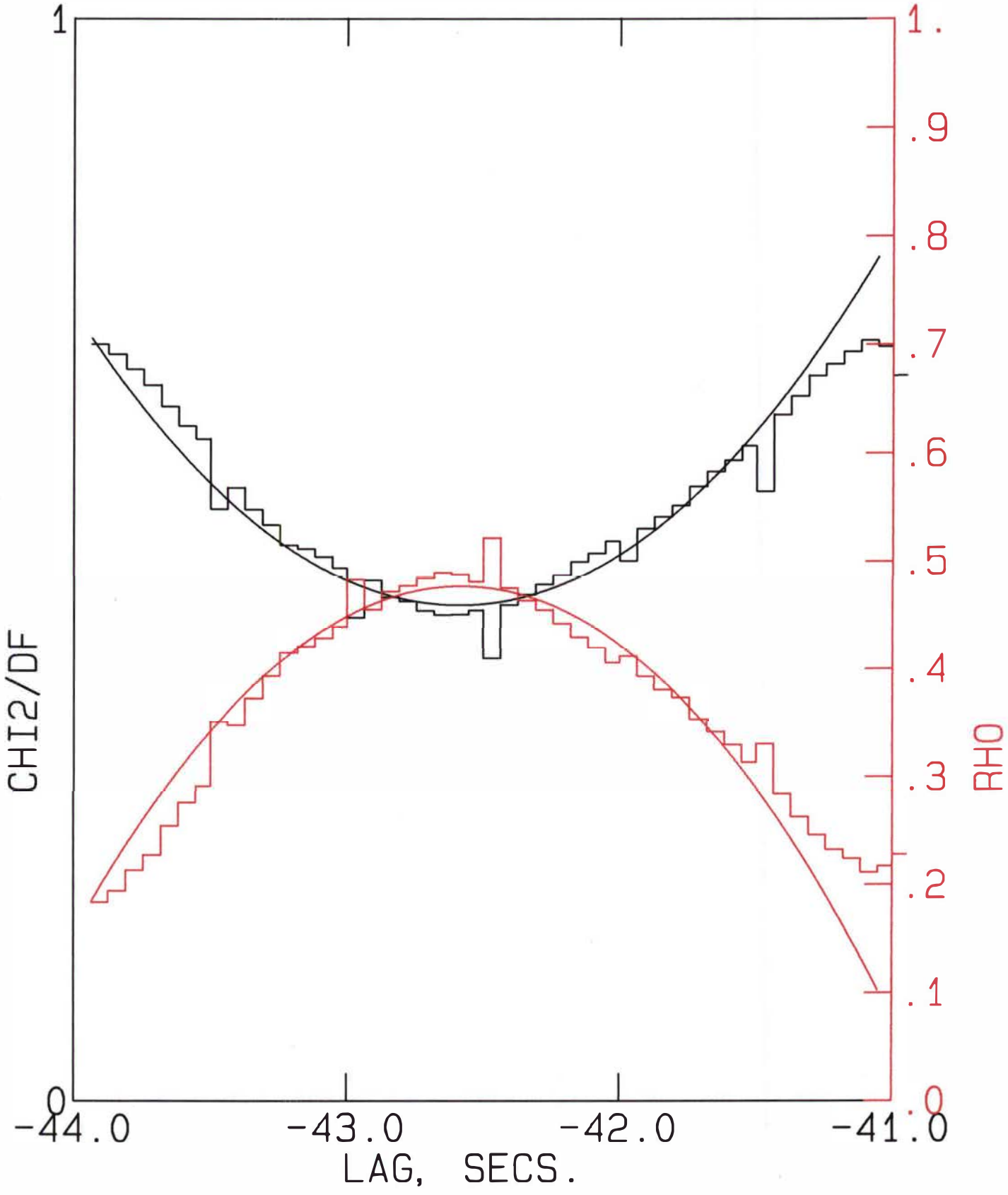
4/ 5/ 0



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


ULYSSES RT-BATSE CORRELATION 8/11/99 24714.189 4/ 5/ 0
80
60
40
20
0
3000
2000
1000
0
C/ 0.50001 S
ULYSSES RT
C/ 0.50001 S
BATSE
42
47
52
57
62
67
72
77
TIME, SECS

ULYSSES RT-BATSE CORRELATION 8/11/99 24714.189



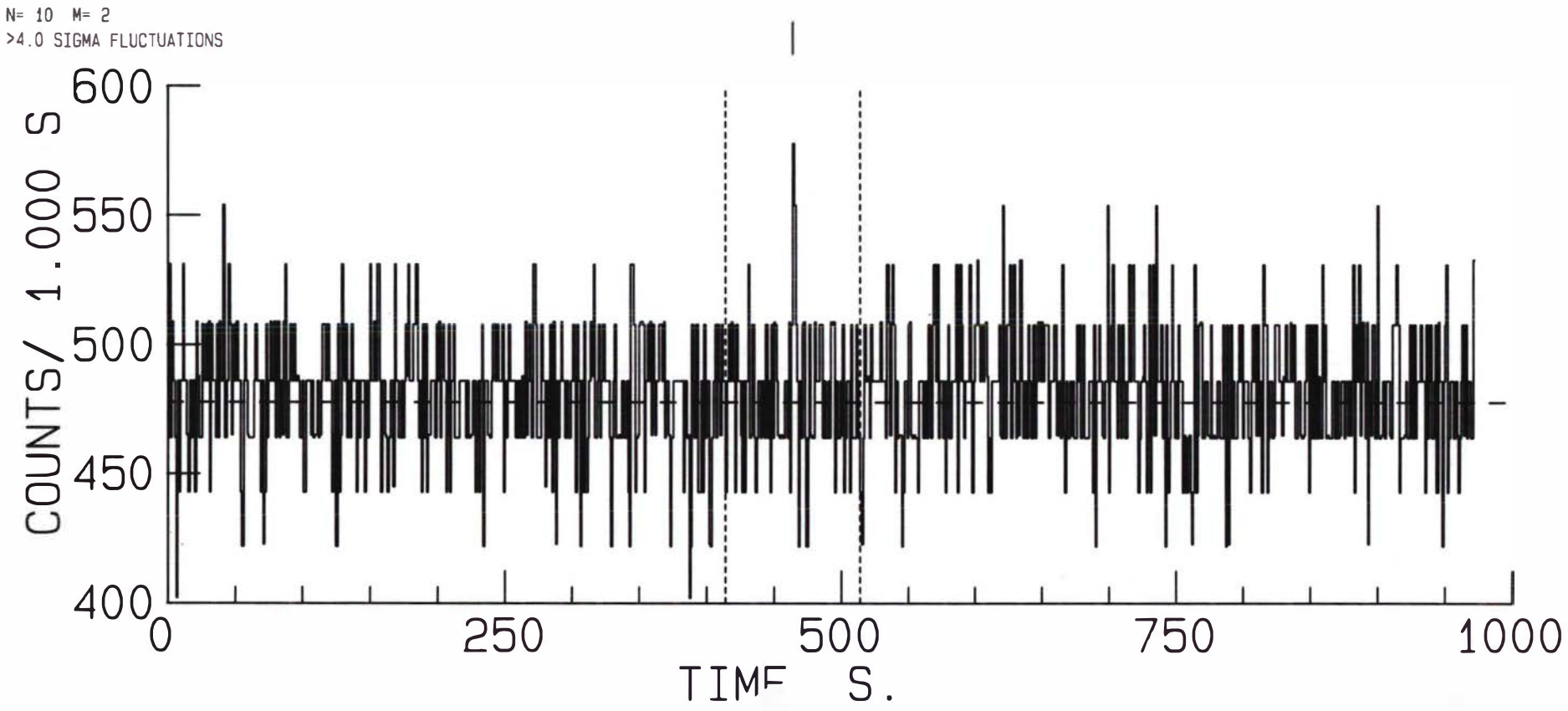
ULYSSES RT

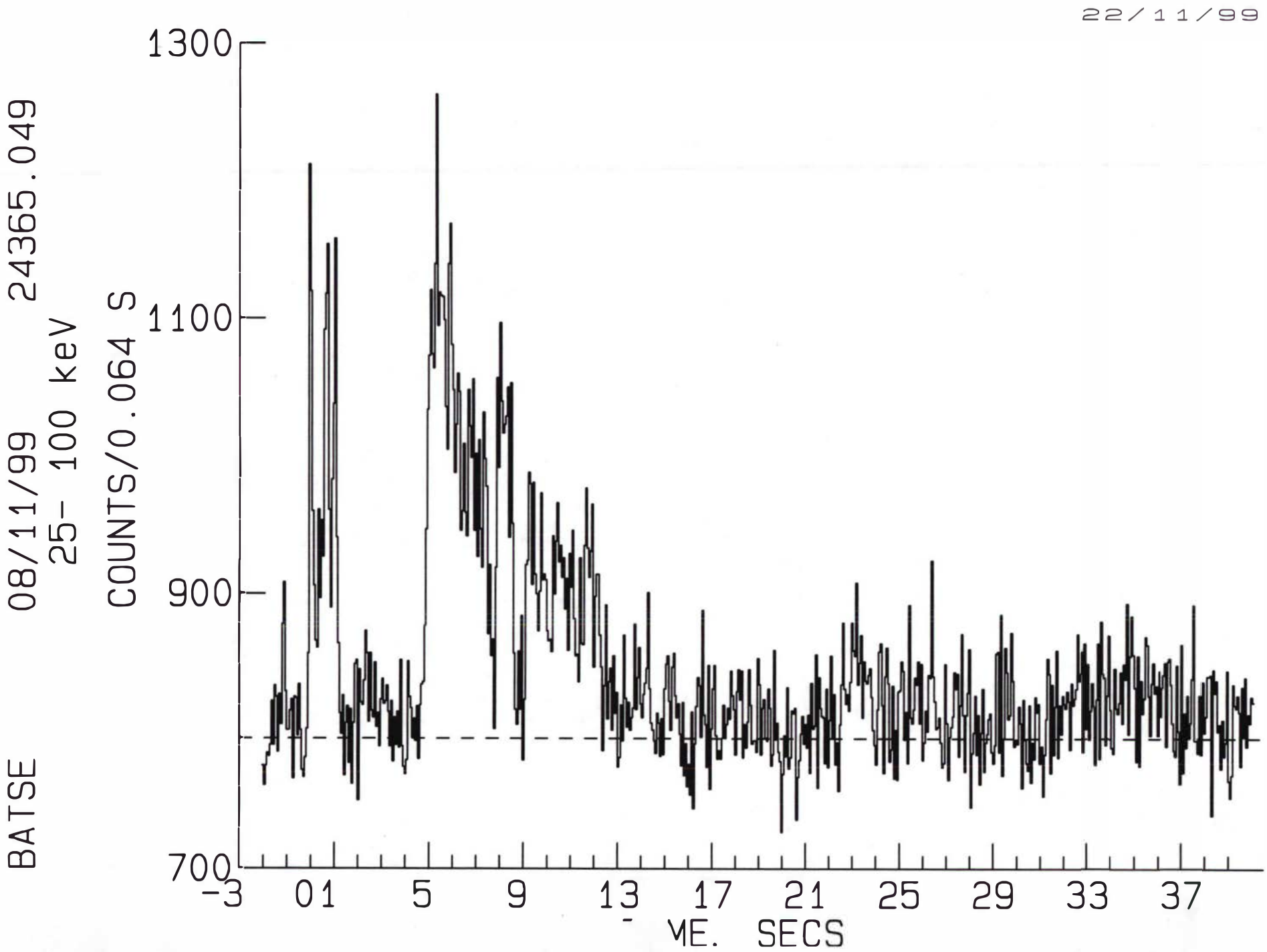
4/ 5/ 0

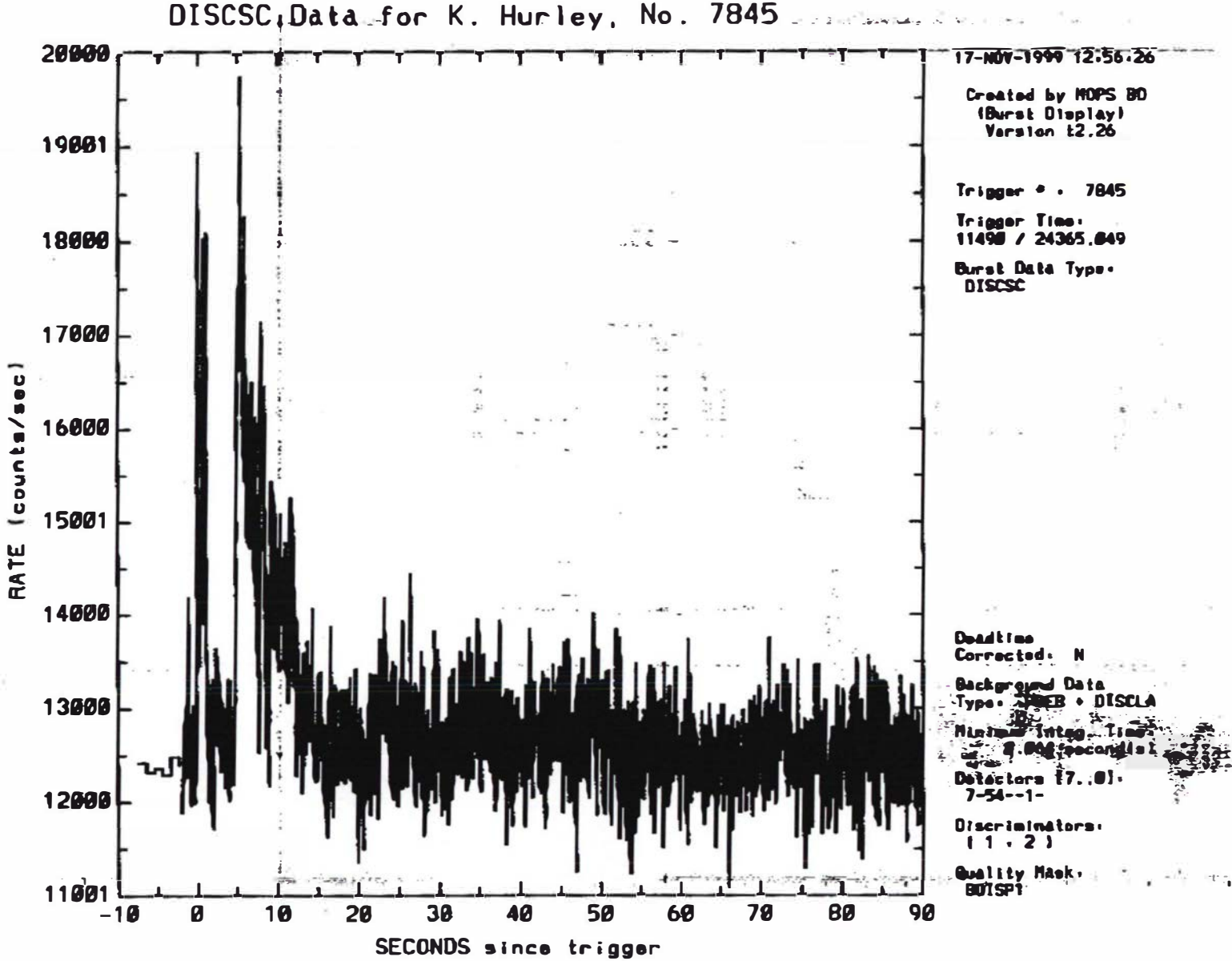
8/11/99 24300.191 s

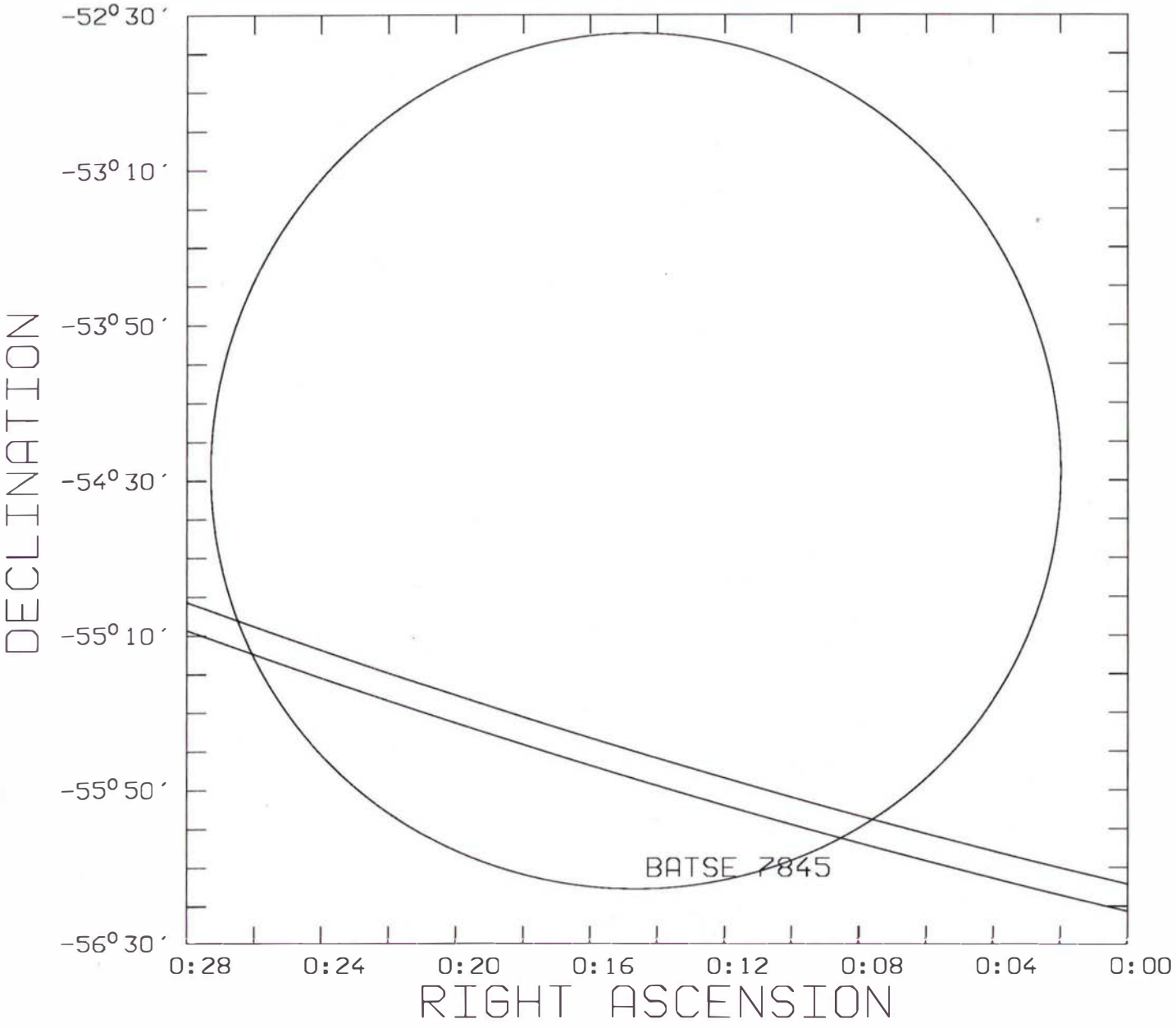
0.500 S INTERVALS REGROUPED BY 2

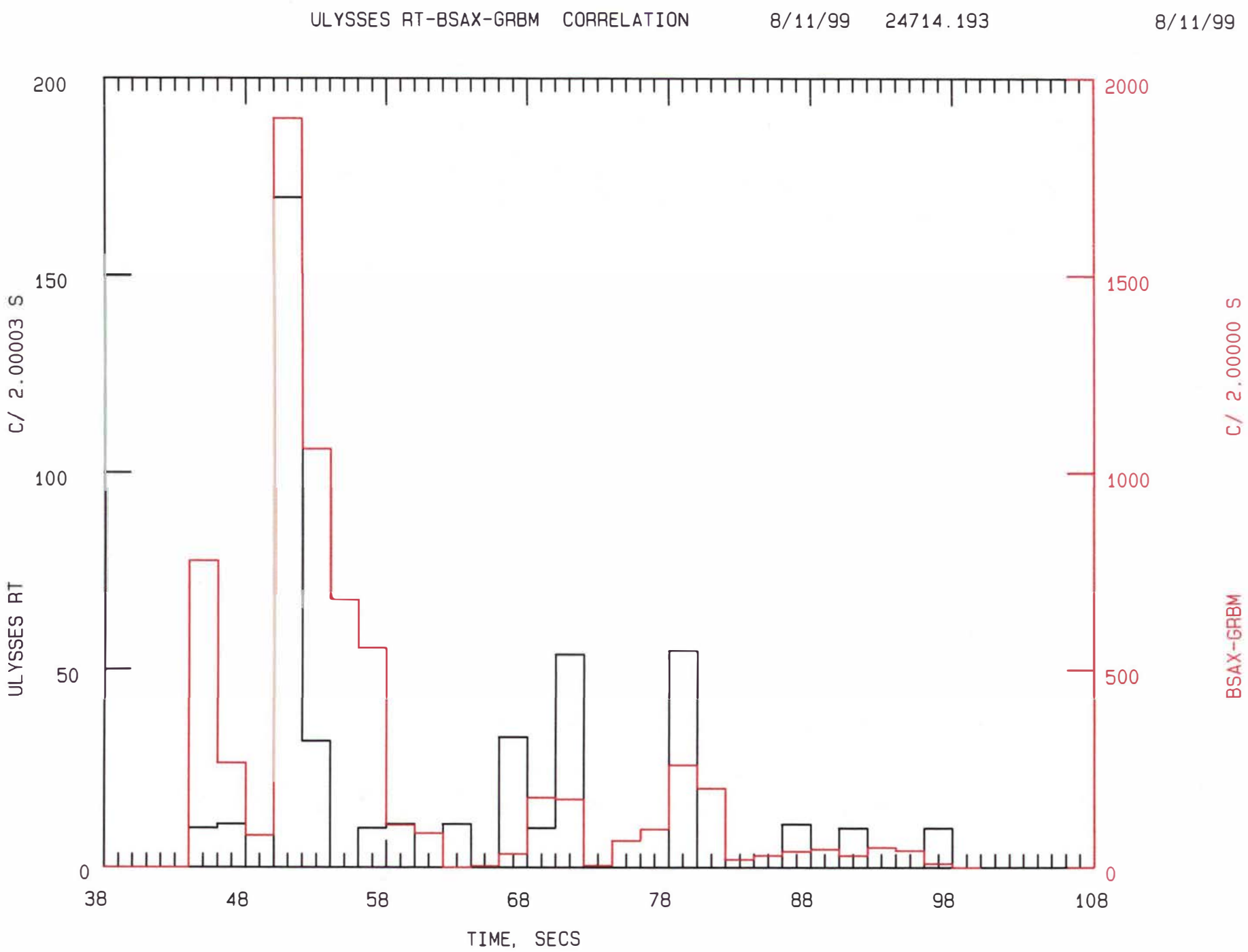
22- 152 keV



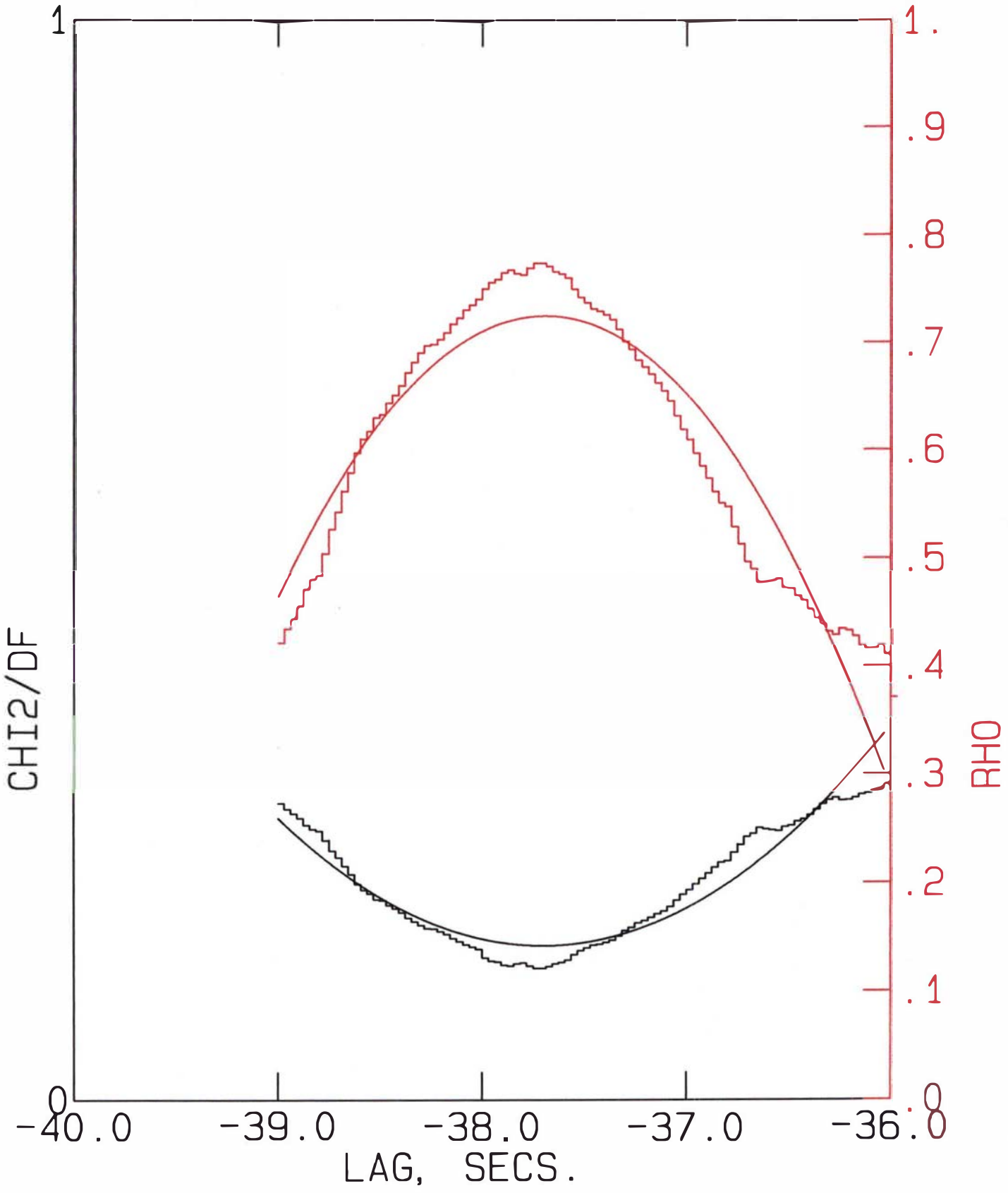

22/11/99
BATSE 08/11/99 24365.049
25- 100 keV
COUNTS/0.064 S
1300
1100
900
700
-3
01
5
9
13
17
21
25
29
33
37
ME. SECS

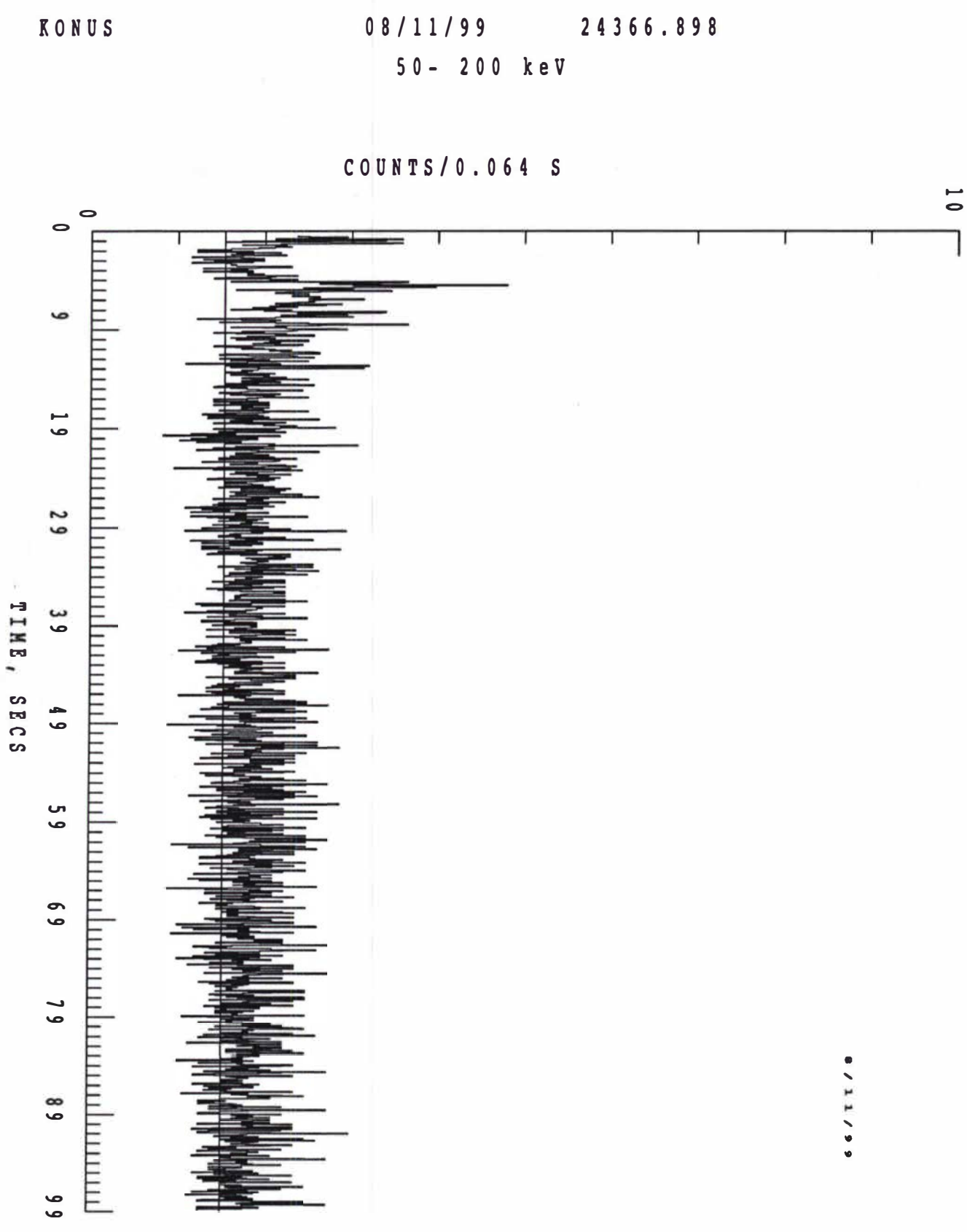

DISCSC Data for K. Hurley, No. 7845
RATE (counts/sec)
20000
19001
18000
17000
16000
15001
14000
13000
12000
11001
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
17-NOV-1999 12:56:26
Created by MOPS BD
(Burst Display)
Version t2.26
Trigger # : 7845
Trigger Time:
11498 / 24365.849
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: [illegible] DISCLA
Detectors [7..0]:
7-54--1-
Discriminators:
(1 . 2)
Quality Mask:
BDISP1


-52° 30′
-53° 10′
-53° 50′
-54° 30′
-55° 10′
-55° 50′
-56° 30′
DECLINATION
BATSE 7845
0:28
0:24
0:20
0:16
0:12
0:08
0:04
0:00
RIGHT ASCENSION


ULYSSES RT-BSAX-GRBM CORRELATION 8/11/99 24714.193 8/11/99
200
150
100
50
0
C/ 2.00003 S
ULYSSES RT
2000
1500
1000
500
0
C/ 2.00000 S
BSAX-GRBM
38
48
58
68
78
88
98
108
TIME, SECS

ULYSSES RT-BSAX-GRBM CORRELATION 8/11/99 24714.193




KONUS
08/11/99
24366.898
50- 200 keV
COUNTS/0.064 S
0
10
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
8/11/99

KONUS1 19991108 24366

ULYSSES RT 9/11/99

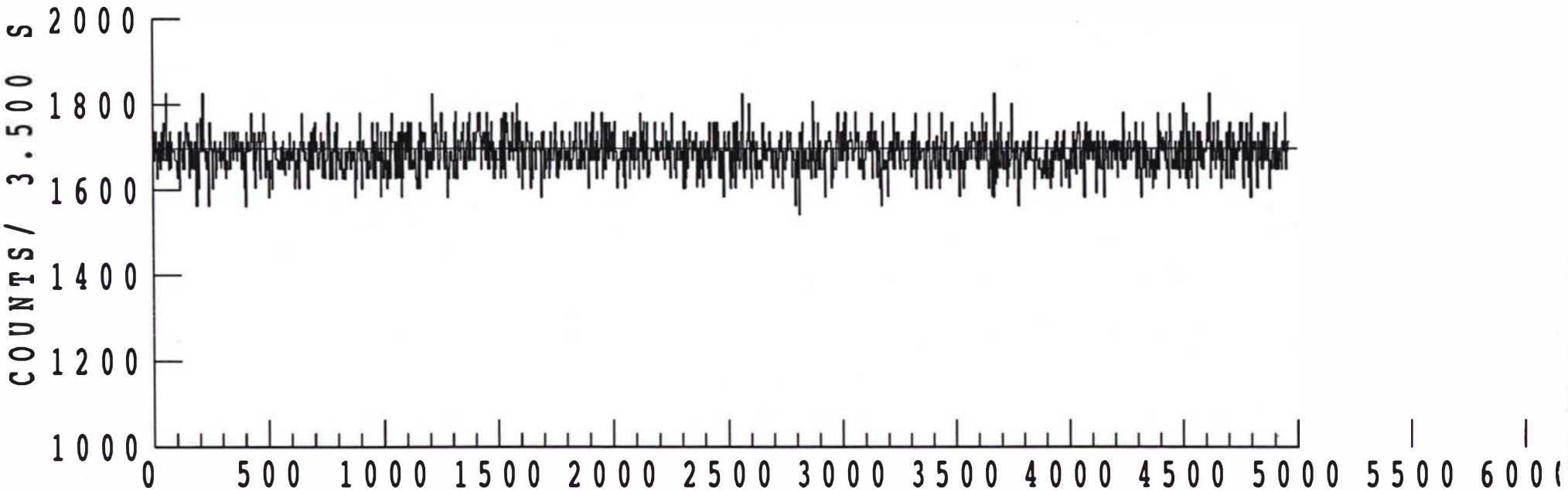
8/11/99 21888.164 s

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



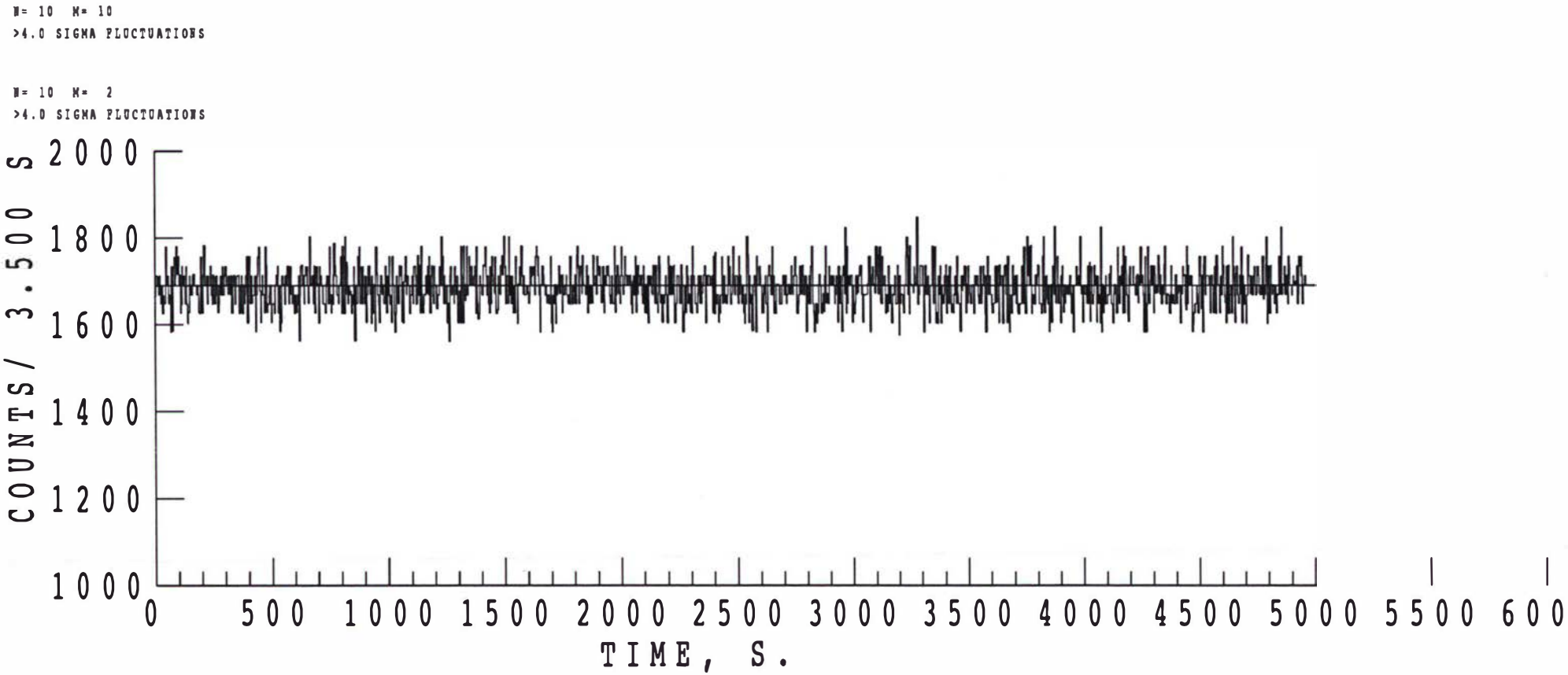
KONUS

ULYSSES RT 01/05/00

08/11/99 35316.301 s

0.500 S INTERVALS REGROUPED BY 7

0- 0 keV



From HENZE@fender.msfc.nasa.gov Thu Dec 2 13:30 PST 1999
Date: Thu, 2 Dec 1999 15:38:57 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7846

TIME: TJD=1490 SECONDS=35556

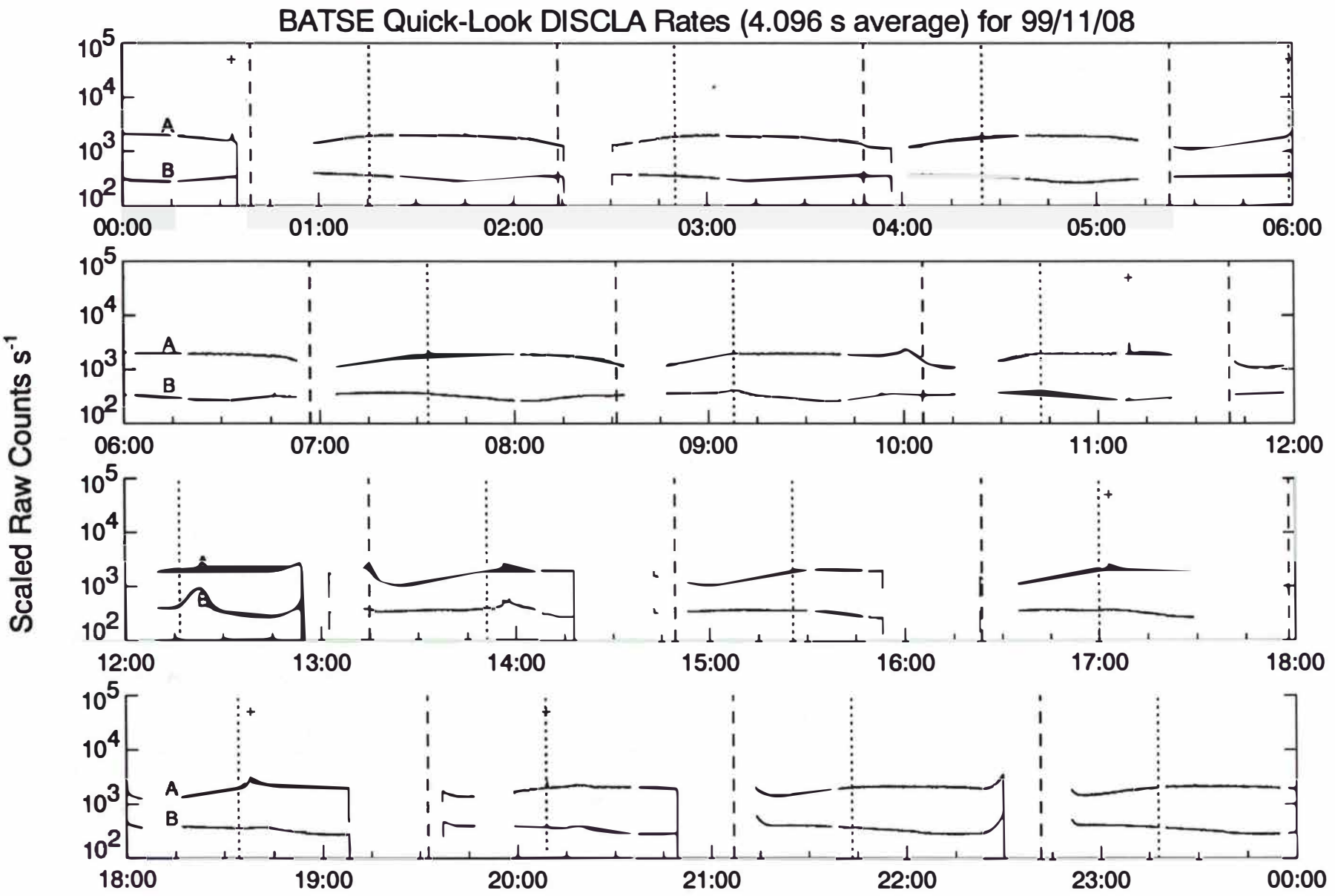
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

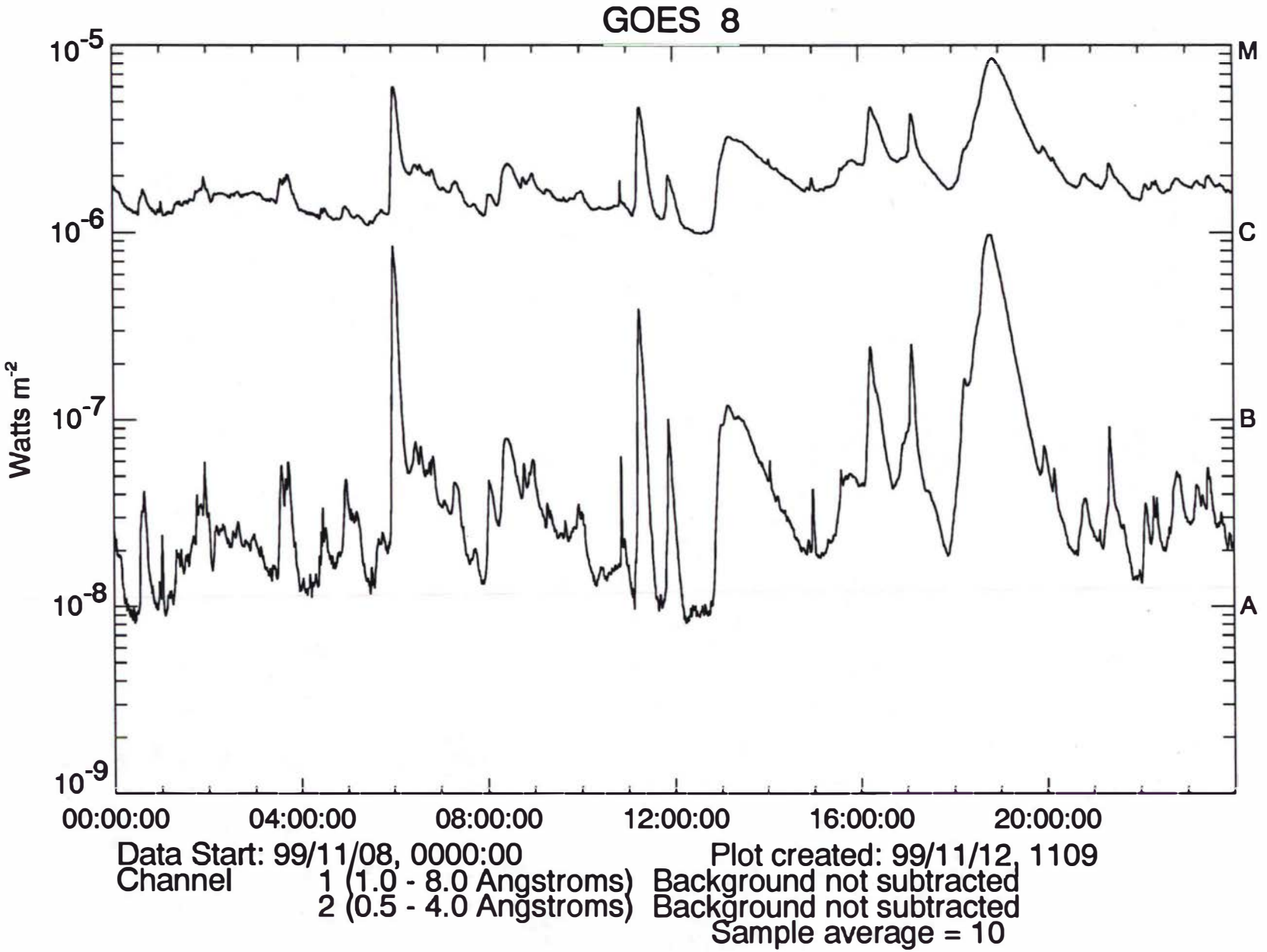
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

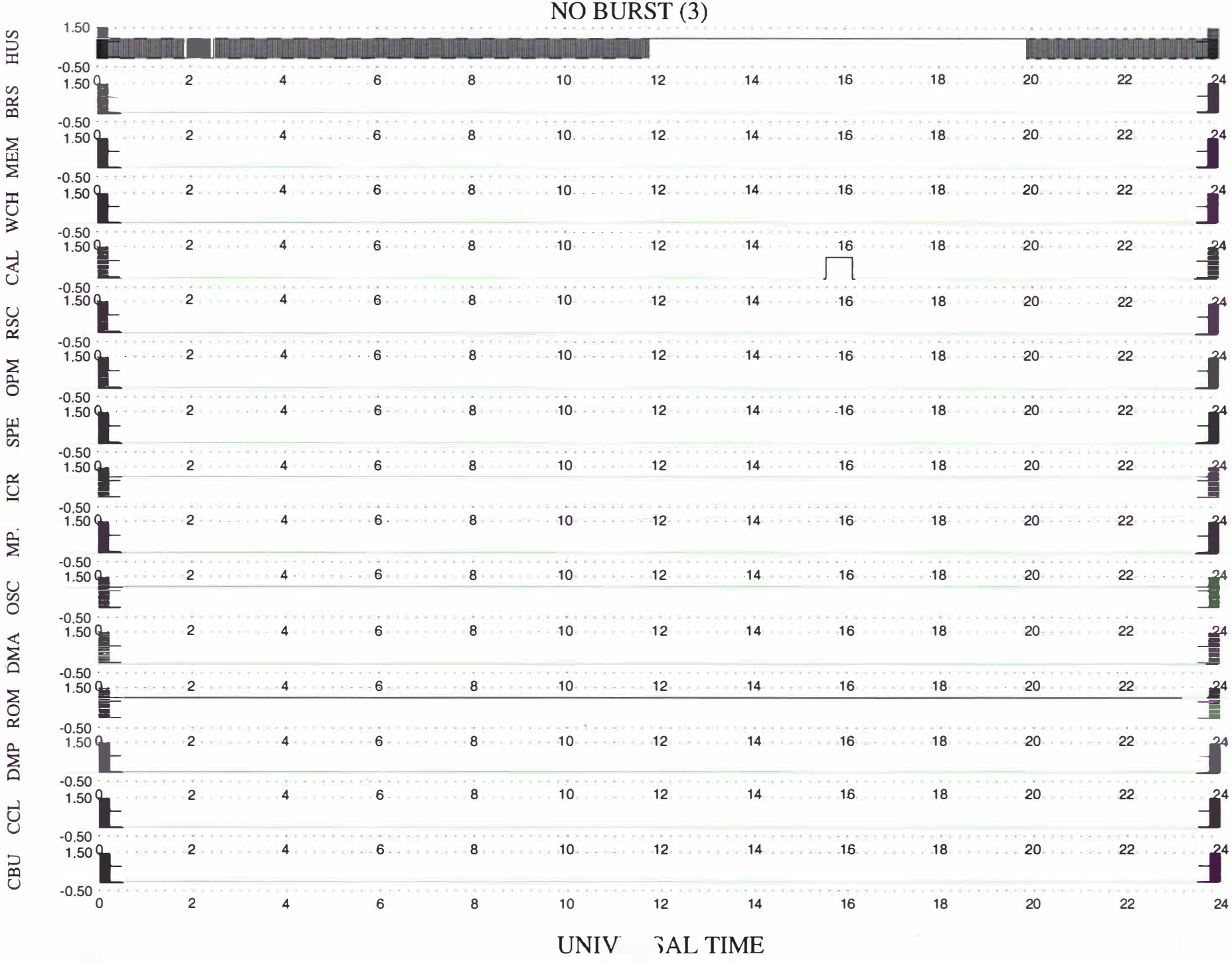
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT WEST OF AUSTRALIA.
PROBABLE UNTRIGGERED GRB AT APPROX. T+470 S.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/08
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/12, 1110 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

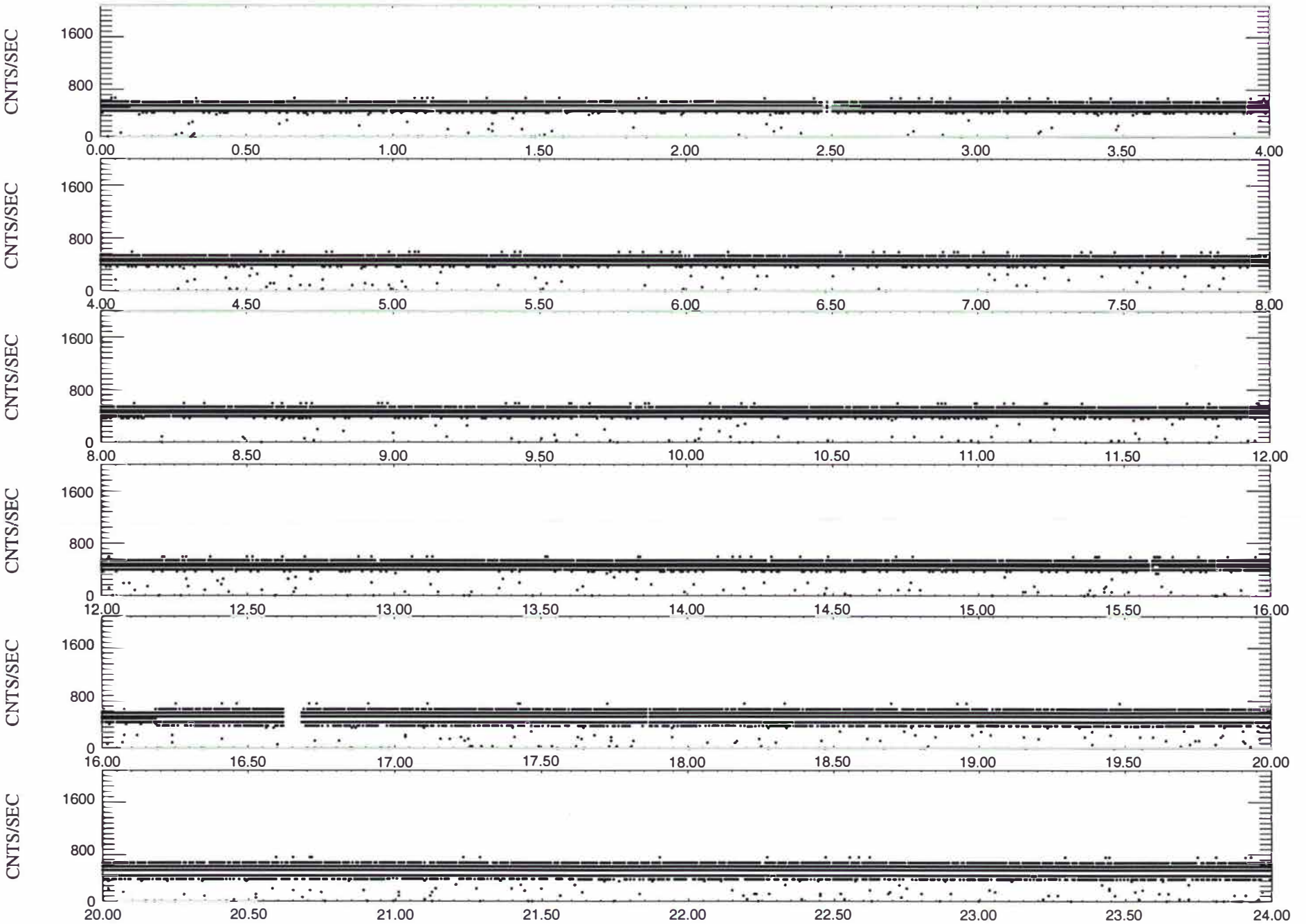

GOES 8
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/08, 0000:00
Plot created: 99/11/12, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 312, year 1999 to day 312, year 1999 03/21/00



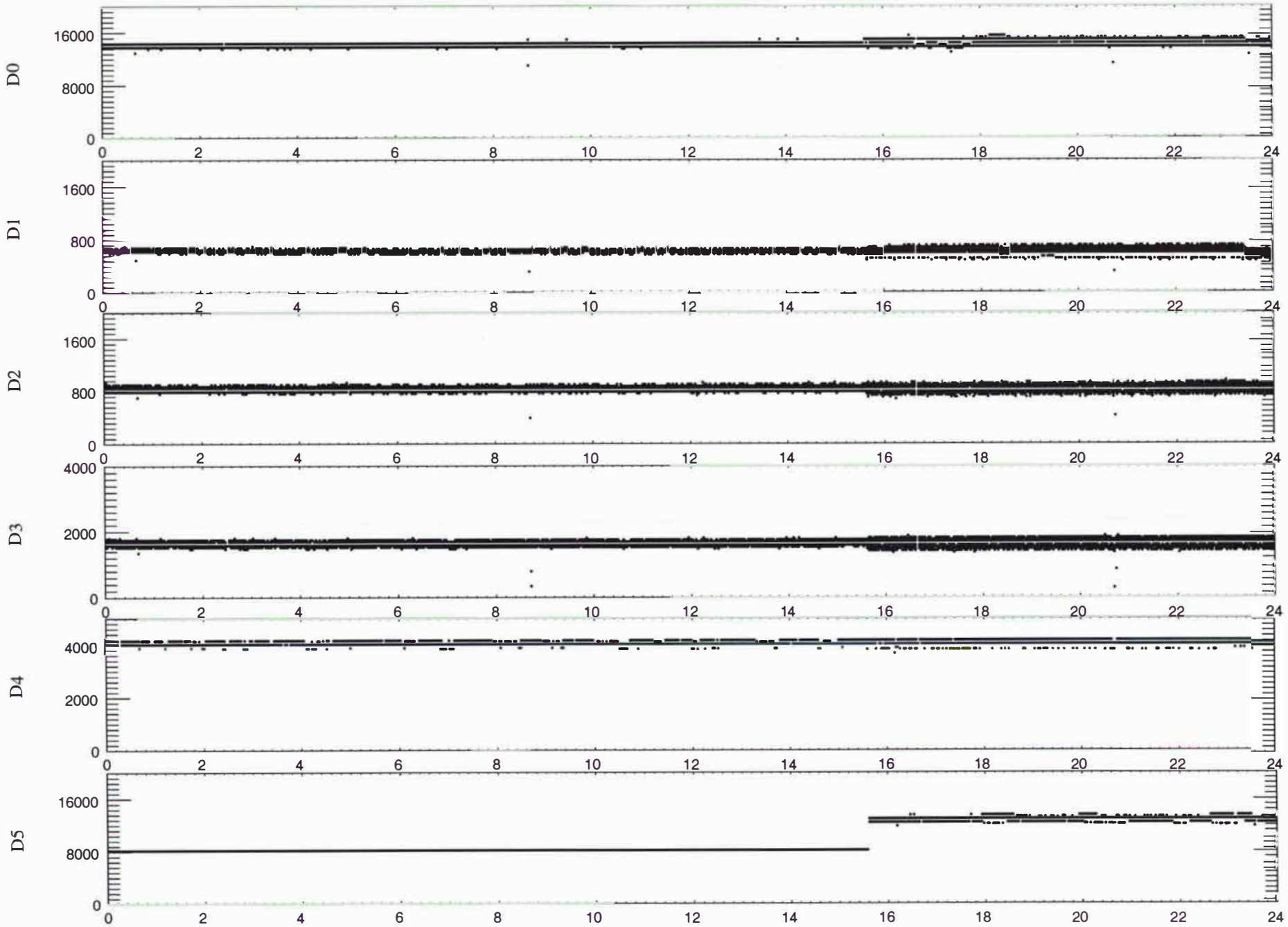
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 08/11/1999 DOY = 312 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 312, year 1999 to day 312, year 1999 03/21/00



From RICHARDSON@fender.msfc.nasa.gov Fri Nov 12 11:01 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Fri, 12 Nov 1999 13:09:34 -0600 (CST)
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.: 7847

TIME: TJD=1491 SECONDS=22377

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

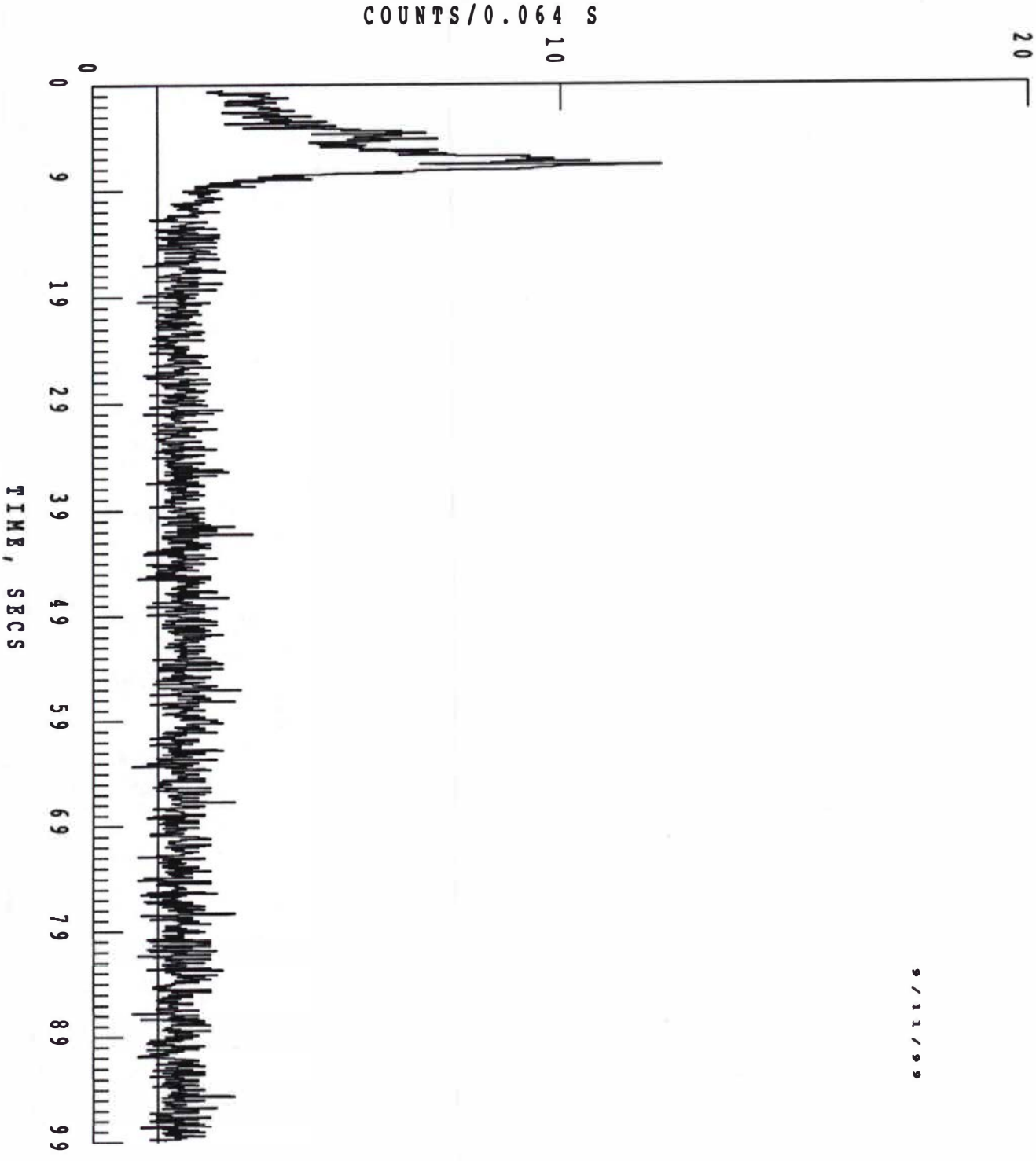
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=97.1 AZIMUTH=344.8 ERROR=0.8 DEGREES

COMMENTS:
SOLAR FLARE, GOES C8.6, OPTICAL SF.
TRIGGERED EVENT STARTS AT APPROX. T-5 SEC. WITH PRE-EMISSION AT APPROX. T-65 SEC. AND T-400SEC. TRIGGERED PULSE DURATION APPROX. = 20SEC. OTHER PULSES AT APPROX. T+150 SEC. WITH DURATION APPROX. 200SEC. TOTAL DURATION APPROX. 750SEC.
T VISIBLE ABOVE 300KEV.

KONUS 09/11/99 30381.312

50- 200 keV



KONUS2 19991109 30381

ULYSSES RT 10/11/99

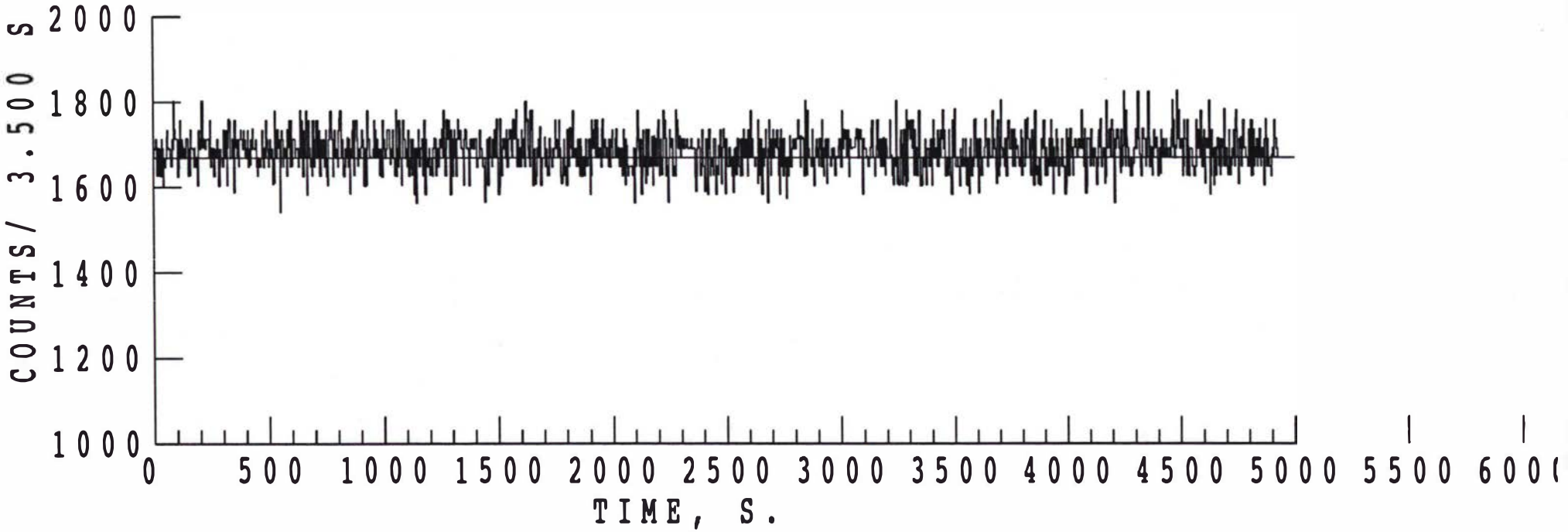
9/11/99 27900.100 s

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 Fri Nov 12 11:04 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Fri, 12 Nov 1999 13:12:23 -0600 (CST)
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.: 7848

TIME: TJD=1491 SECONDS=34850

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

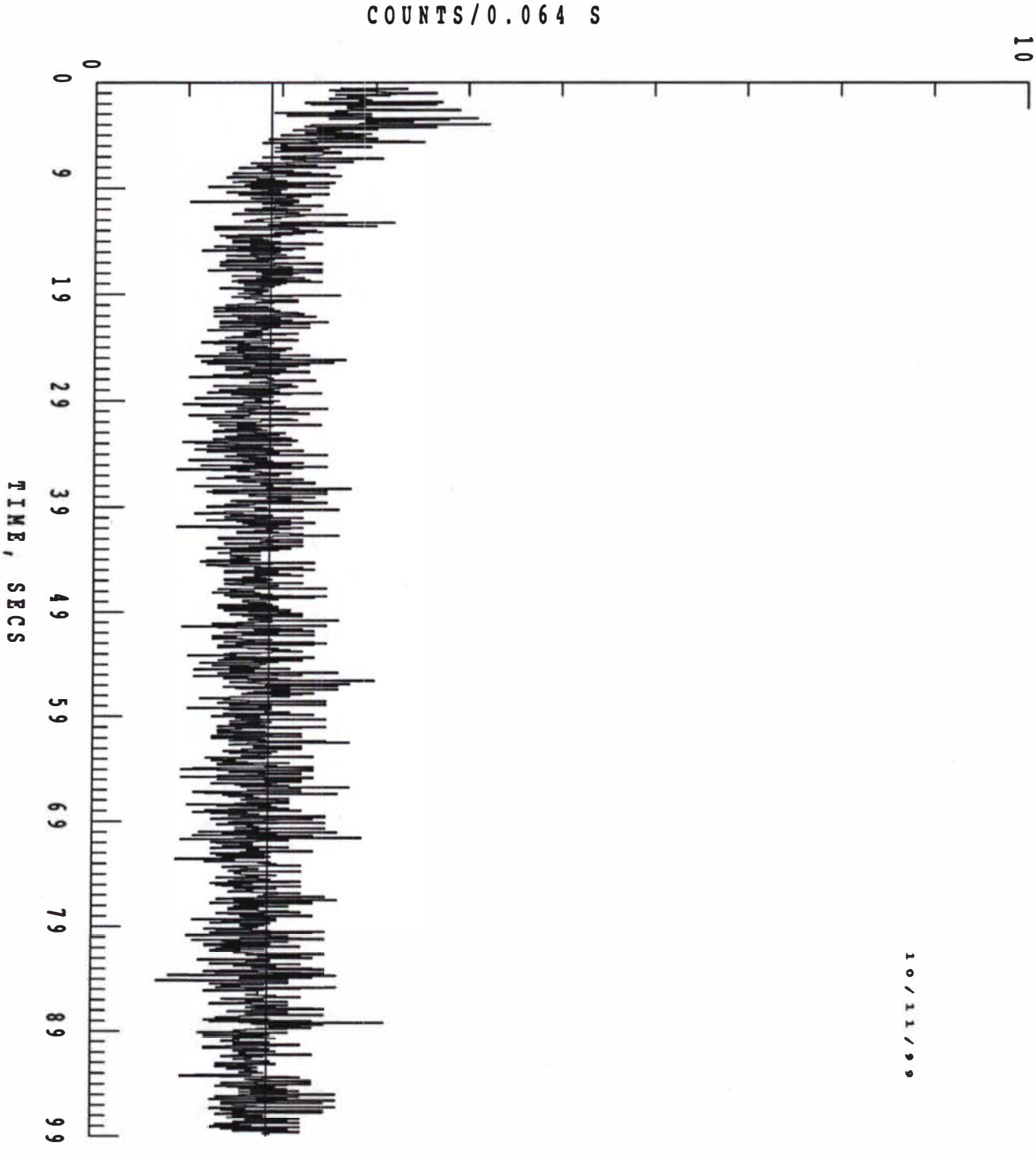
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.8 AZIMUTH=341.2 ERROR=7.1 DEGREES

COMMENTS:
SOLAR FLARE, NO GOES, NO OPTICAL.
TRIGGERED EVENT BEGINS AT APPROX. T-5 SEC. WITH DURATION APPROX. 13 SEC.
PRE-EMISSION PULSE BEGINS AT APPROX. 235 SEC. WITH DURATION APPROX. 25 SEC.
TOTAL EVENT DURATION APPROX. = 245 SEC. NOT VISIBLE ABOVE 100KEV.

KONUS 09/11/99 56083.106

50- 200 keV



KONUS1 19991109 56083

ULYSSES RT 10/11/99

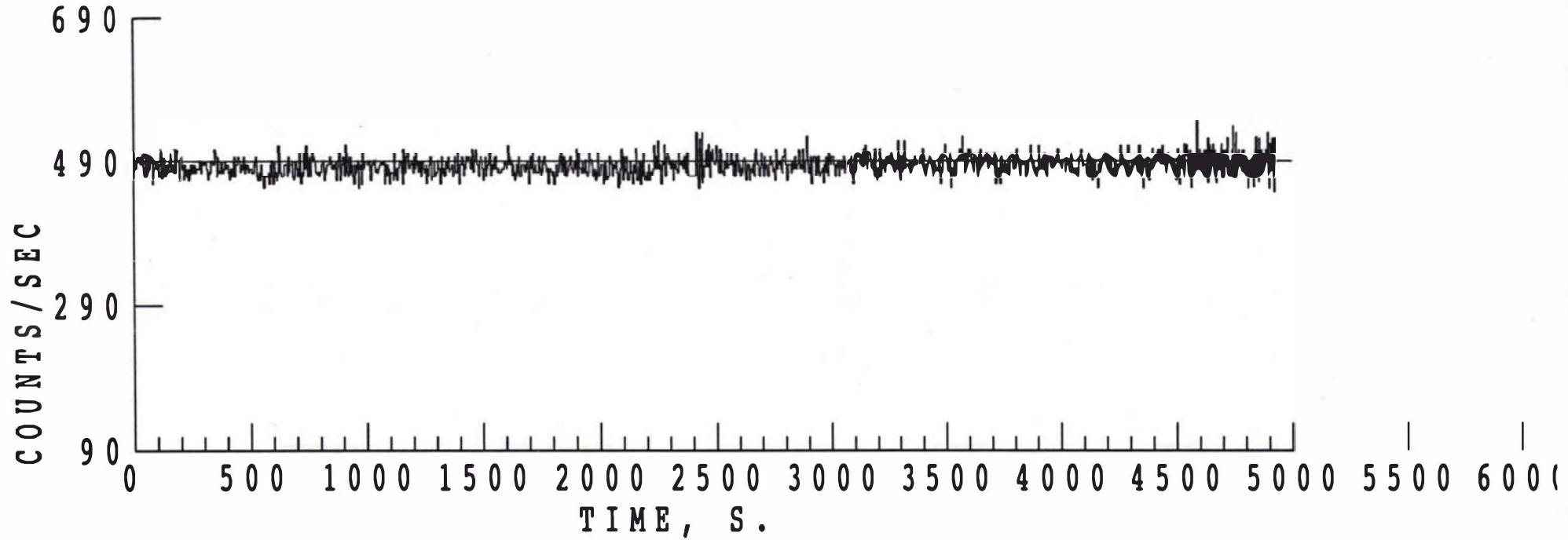
9/11/99 53604.363 s

INTERVALS REGROUPED BY 8

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Fri Nov 12 11:11 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Fri, 12 Nov 1999 13:19:45 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7849

****
BATSEARCH PROGRAM
****

BATSE BURST # 7849
EVENT OF 1999 NOV 9 DAY OF YEAR=313
EVENT CROSSING TIME AT BATSE : 65683. S. OR 18:14:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 277.000 76.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/11/ 99 IS:
RA= 164.700 DEC= -23.587 DIST= 4.837 AU
BATSE-ULYSSES DISTANCE = 723548843. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.81 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1140.11 SECS.
CROSSING TIME AT ULYSSES IS 66823. S. OR 18:33:43 +/- 436.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/11/ 99 IS:
RA= 288.544 DEC= -23.985 DIST= 1.564 AU
MARS-BATSE DISTANCE = 233923328. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 138.79 SECS.
CROSSING TIME AT MARS IS 65822. S. OR 18:17:01 +/- 135.42 SECONDS

BATSE BURST TRIGGER
NO.: 7849

TIME: TJD=1491 SECONDS=65683

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=38.8 AZIMUTH=252.5 ERROR=10.2 DEGREES

COMMENTS:
GRB. SHORT WEAK SINGLE SPIKE. DURATION APPROX. = 0.4 SEC.
NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7849	991109	11491	65683	3000	277	+76	.4

BACODINE 7849 09/11/99 65671.929

25- 100 keV

COUNTS/1.024 S

6000 6500 7000 7500 8000

0 49 99 149 199 249 299

TIME, SECS

9/11/99

BATSE BURST# 7849

ULYSSES RT 12/11/99

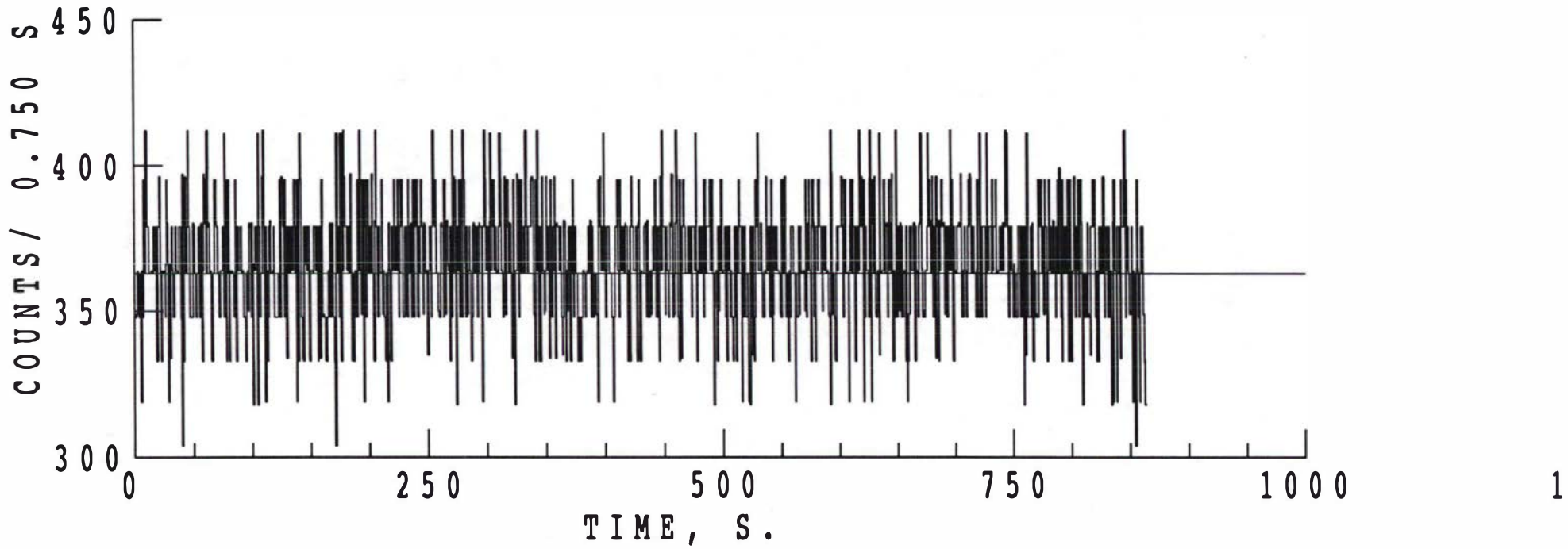
9/11/99 66384.242 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

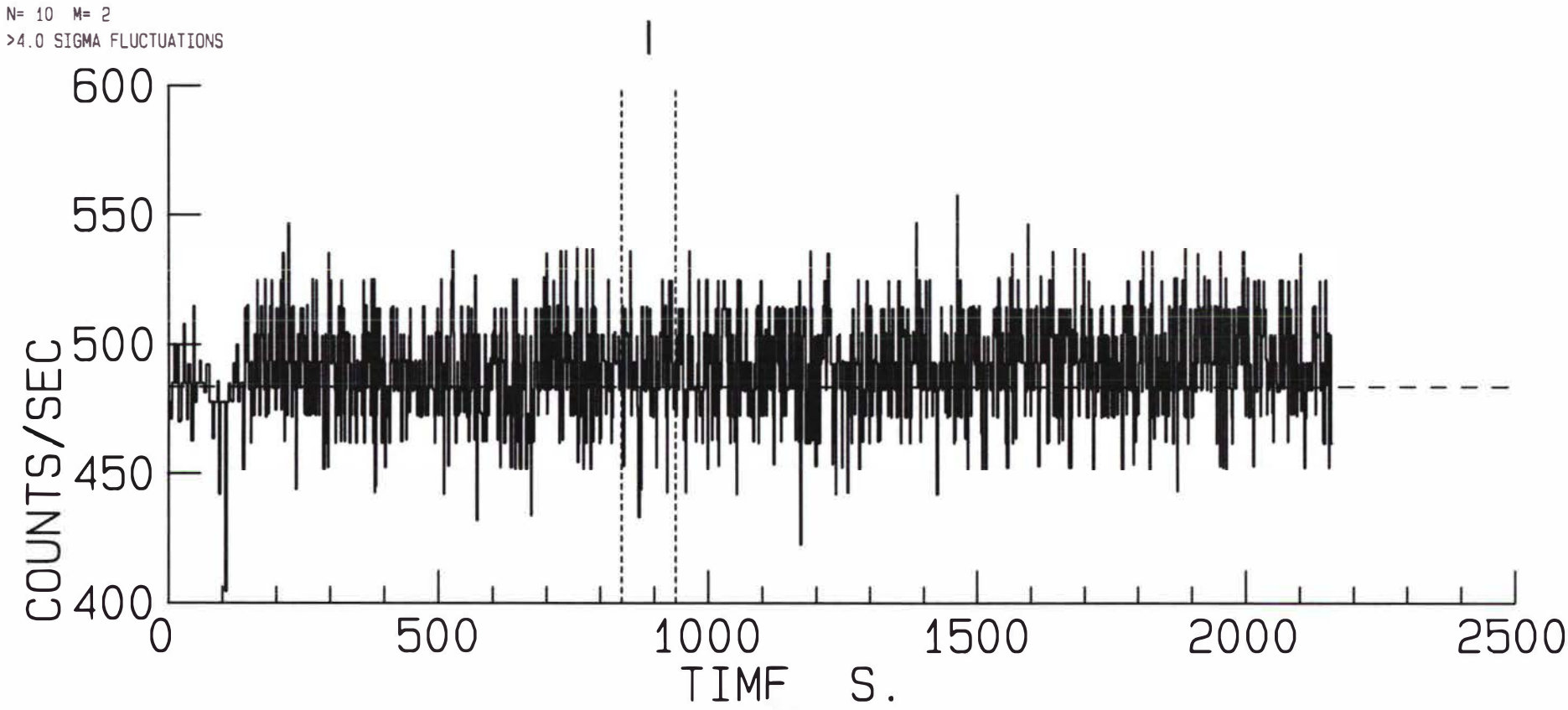
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

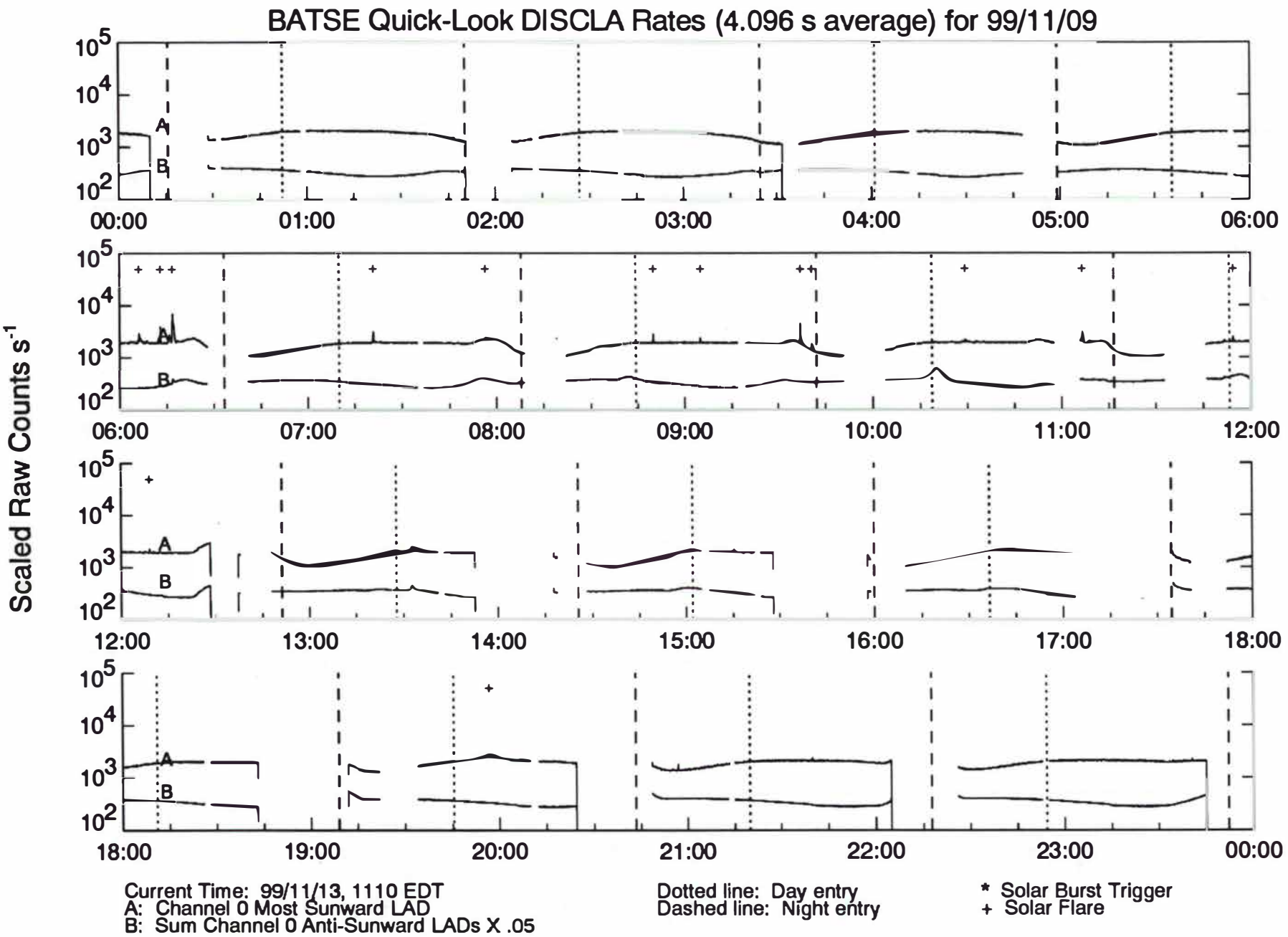


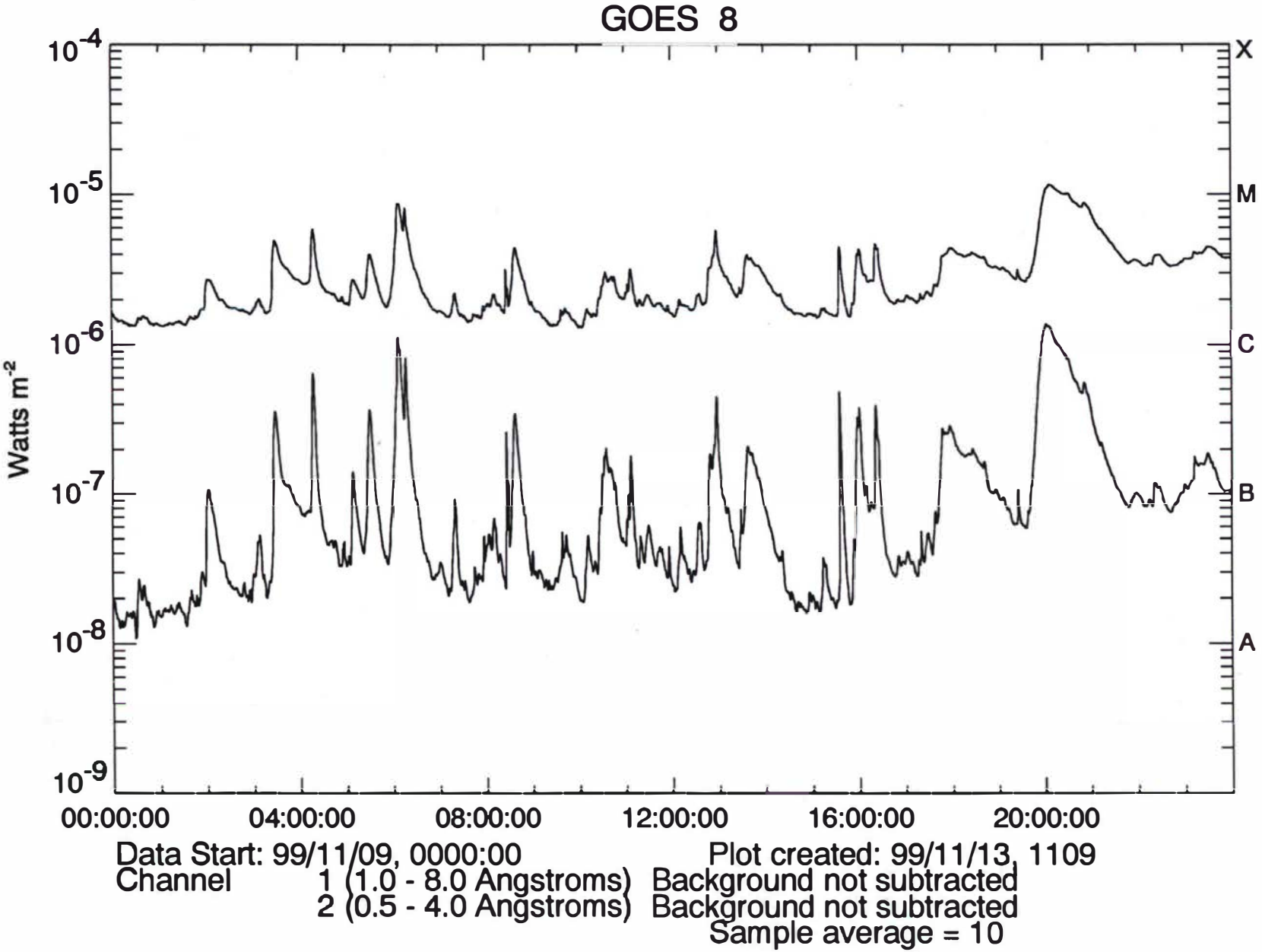
GRBM 75701s

6/ 7/ 7

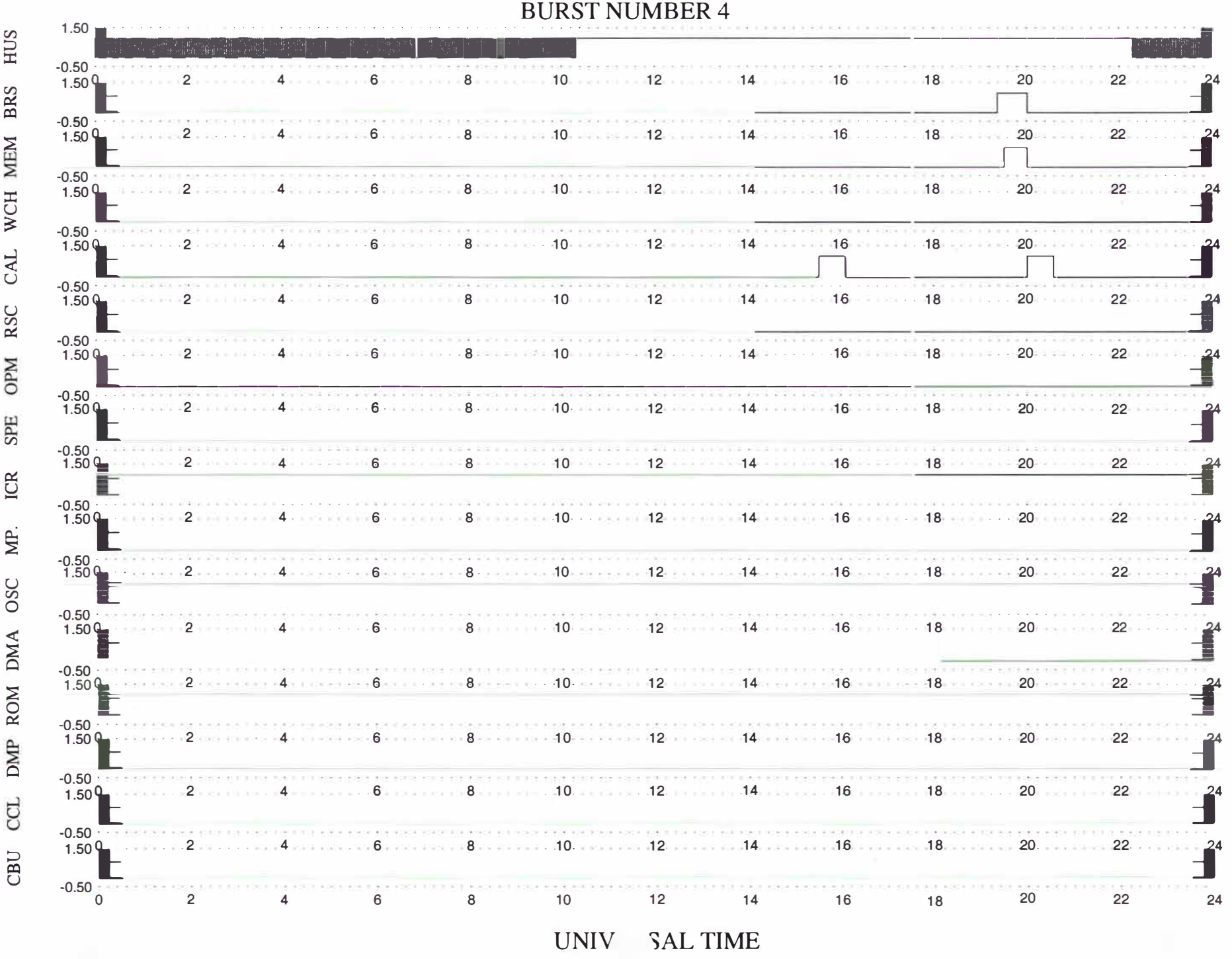
ULYSSES RT
9/11/99 74124.070 s
INTERVALS REGROUPED BY 6
22- 150 keV




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/09
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/13, 1110 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

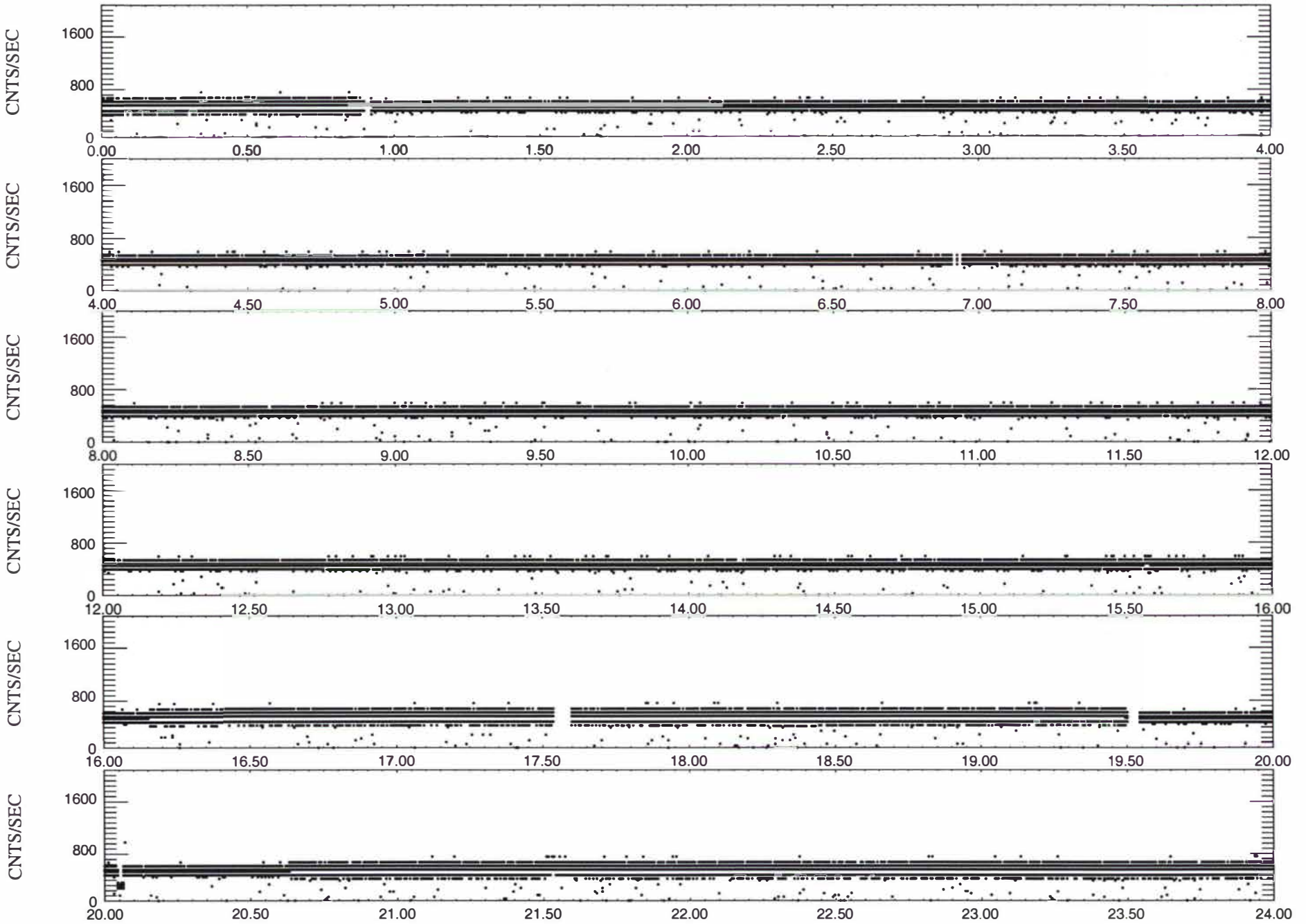

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/09, 0000:00
Plot created: 99/11/13, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 313, year 1999 to day 313, year 1999 03/21/00



HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 09/11/1999 DOY = 313 03/21/00

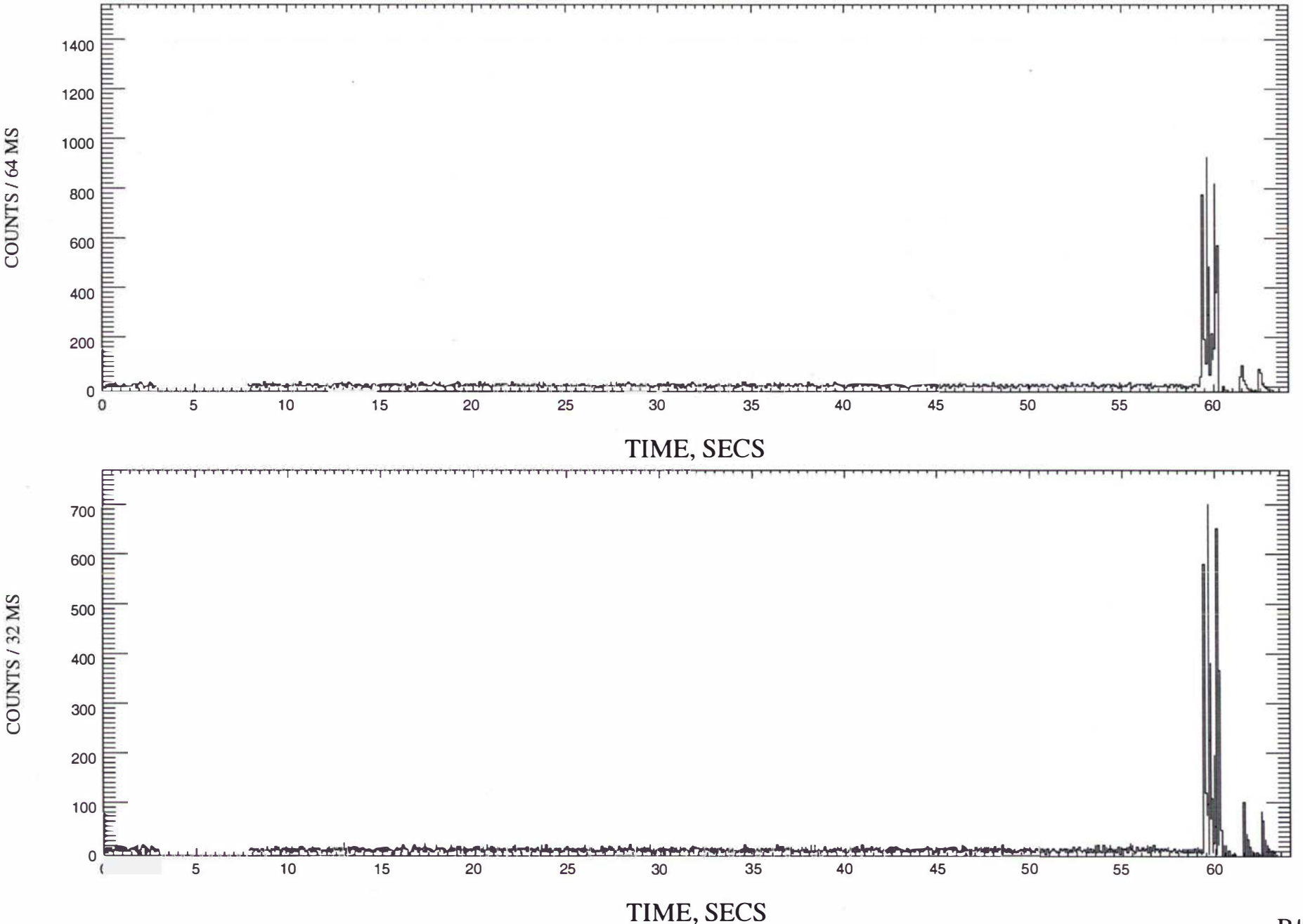
CALIBRATION DATA INCLUDED



UNIV[illegible]SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 09/11/1999 DOY = 313 03/21/00

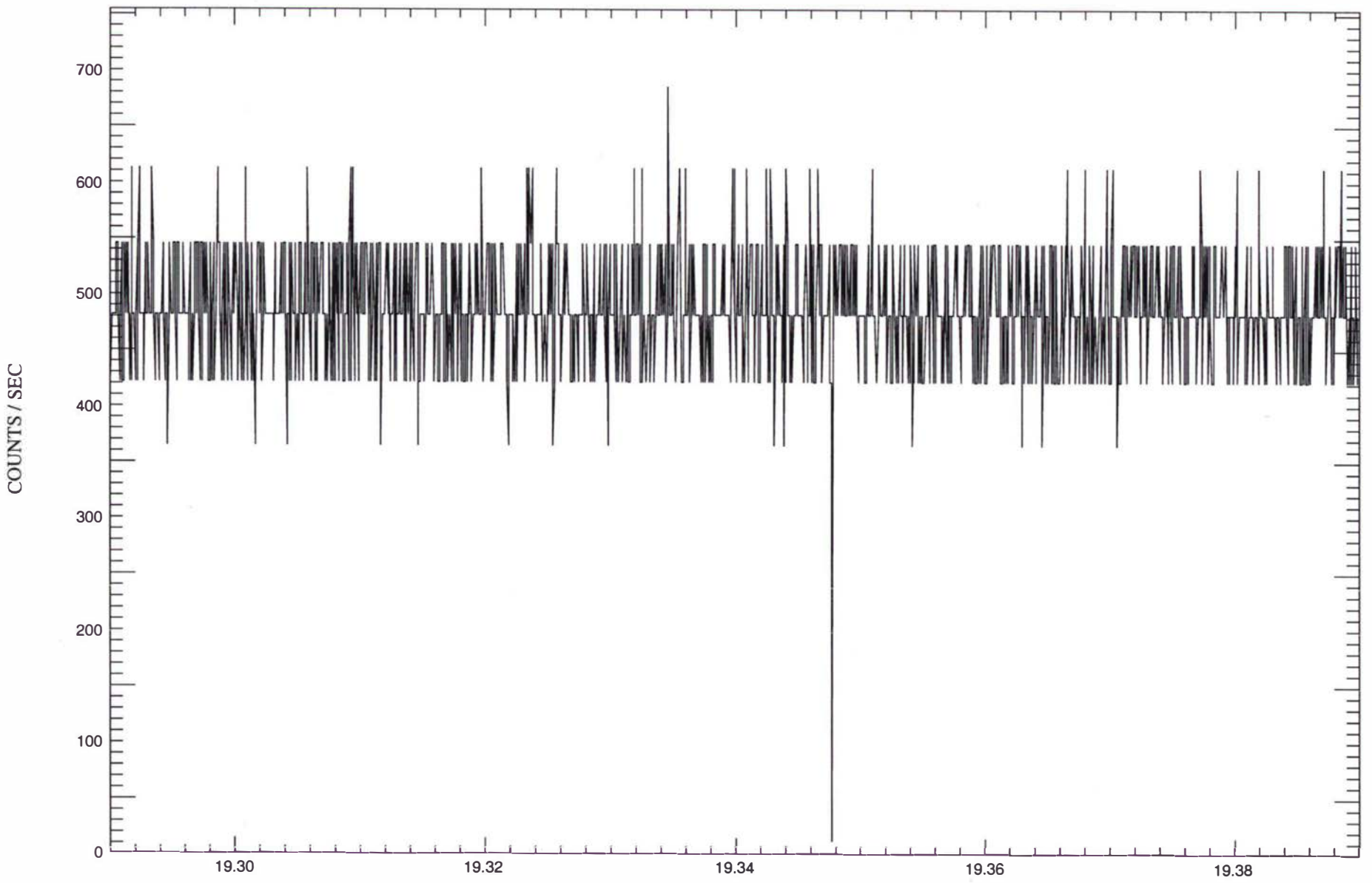
Burst Counter 4 at UT=19.344067895677 h=69638.644 s 19:20:38.644



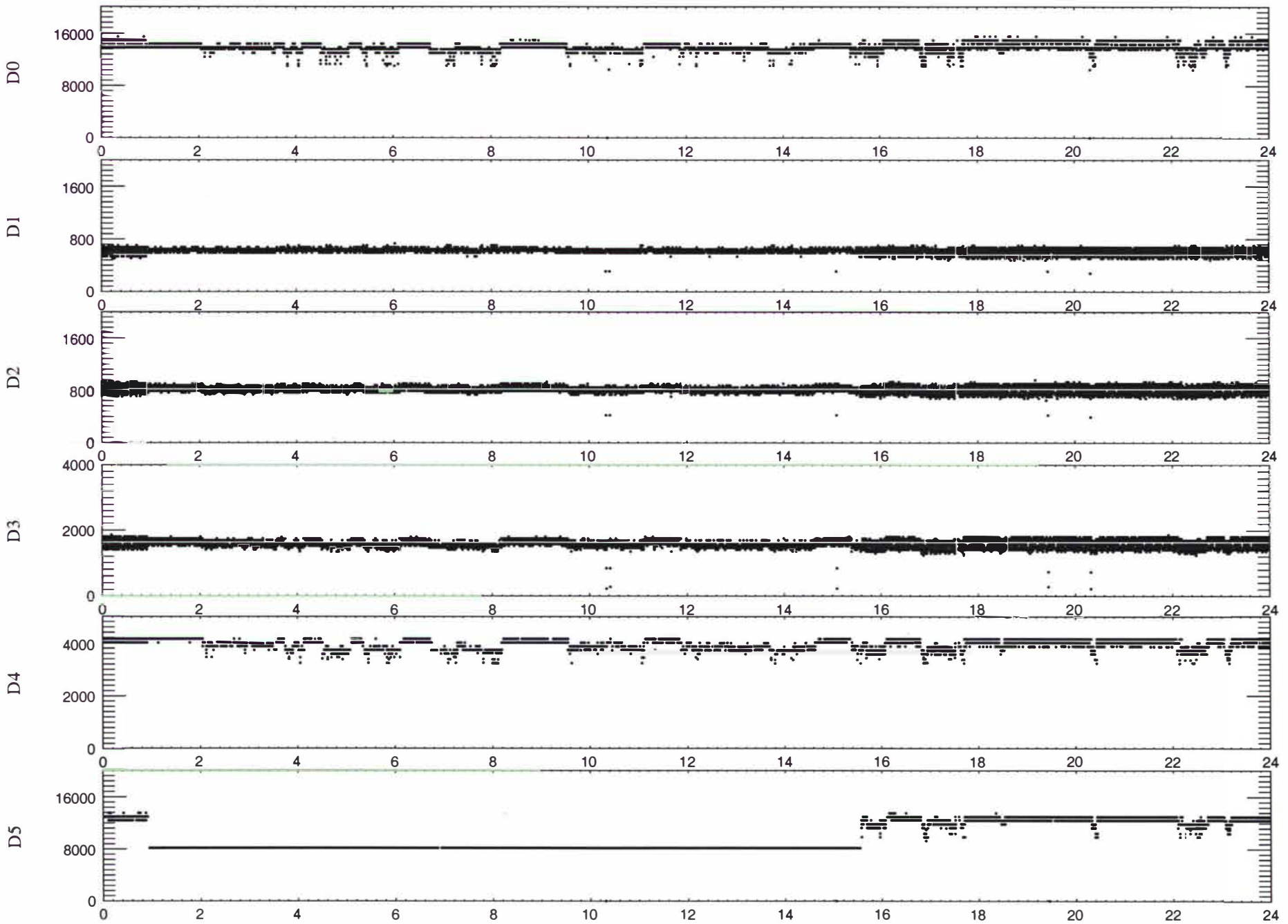
B# 1

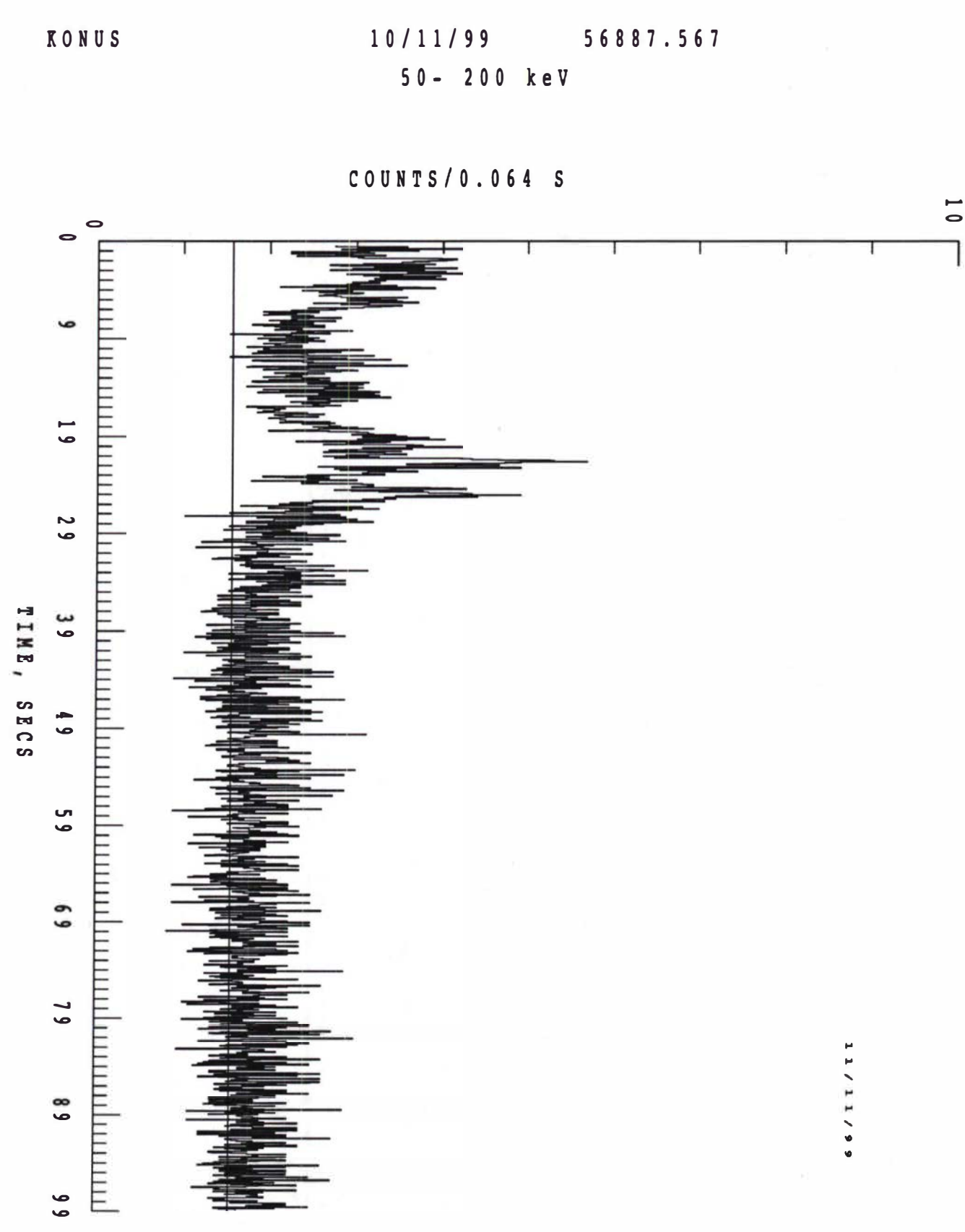
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 09/11/1999 DOY = 313 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 313, year 1999 to day 313, year 1999 03/21/00




KONUS
10/11/99
56887.567
50- 200 keV
COUNTS/0.064 S
0
10
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
11/11/99

KONUS2 19991110 56887

ULYSSES RT 11/11/99

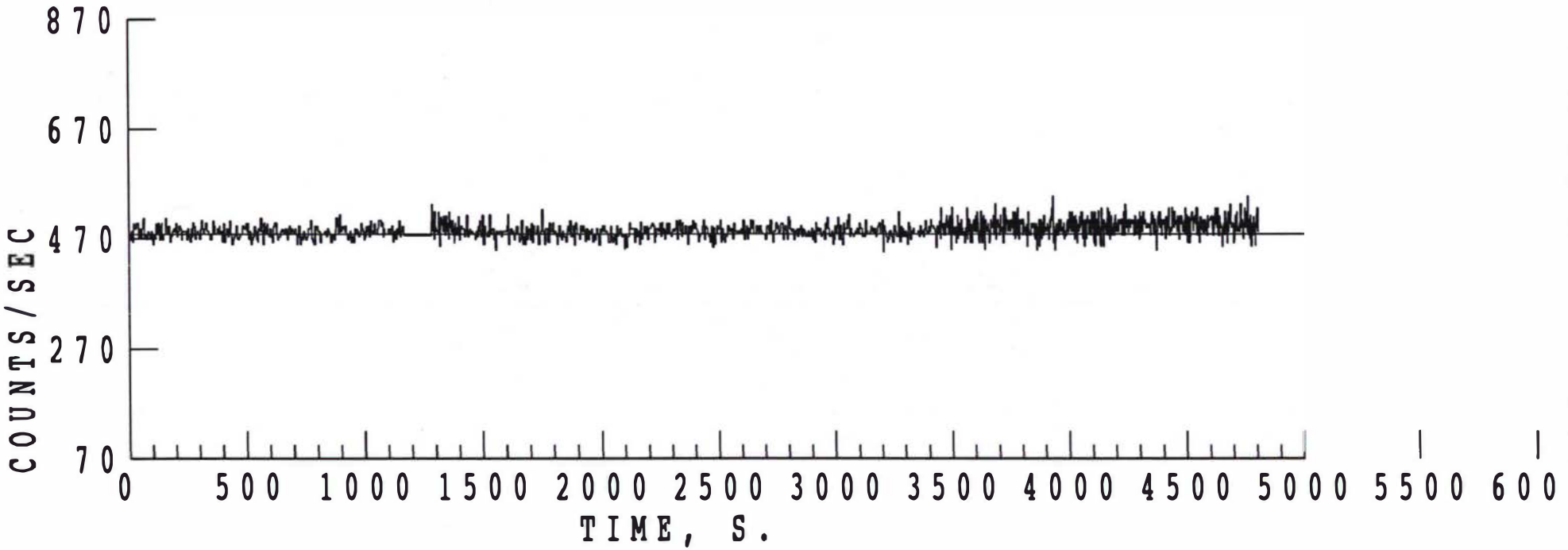
10/11/99 54432.242 s

INTERVALS REGROUPED BY 9

0- 0 keV

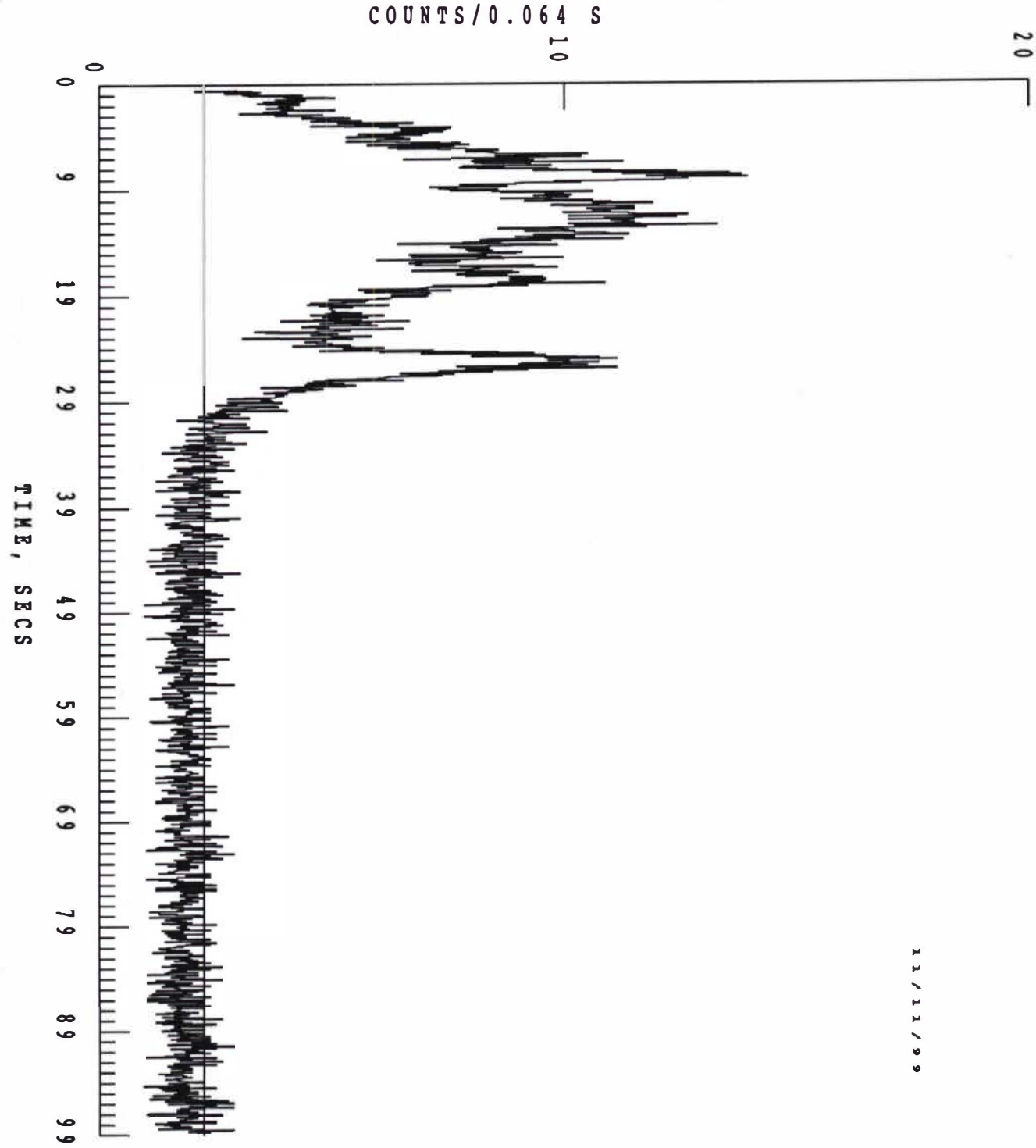
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS 10/11/99 79910.091

50- 200 keV



KONUS2 19991110 79910

ULYSSES RT 11/11/99

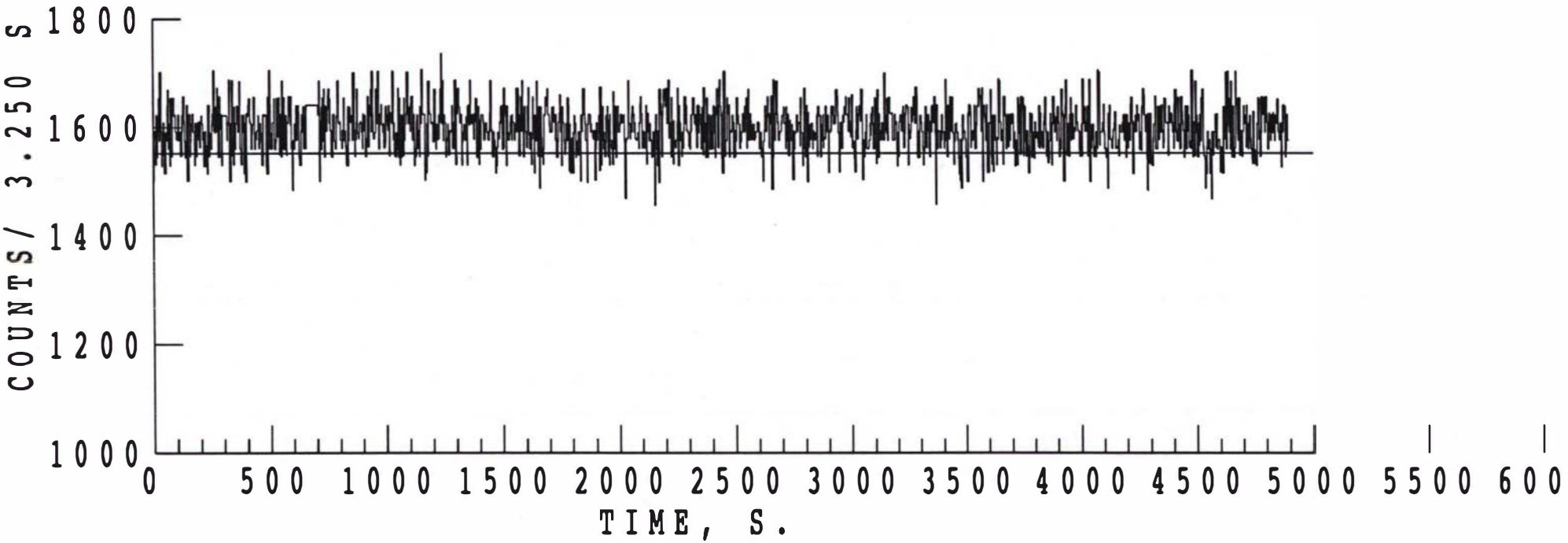
10/11/99 77472.234 s

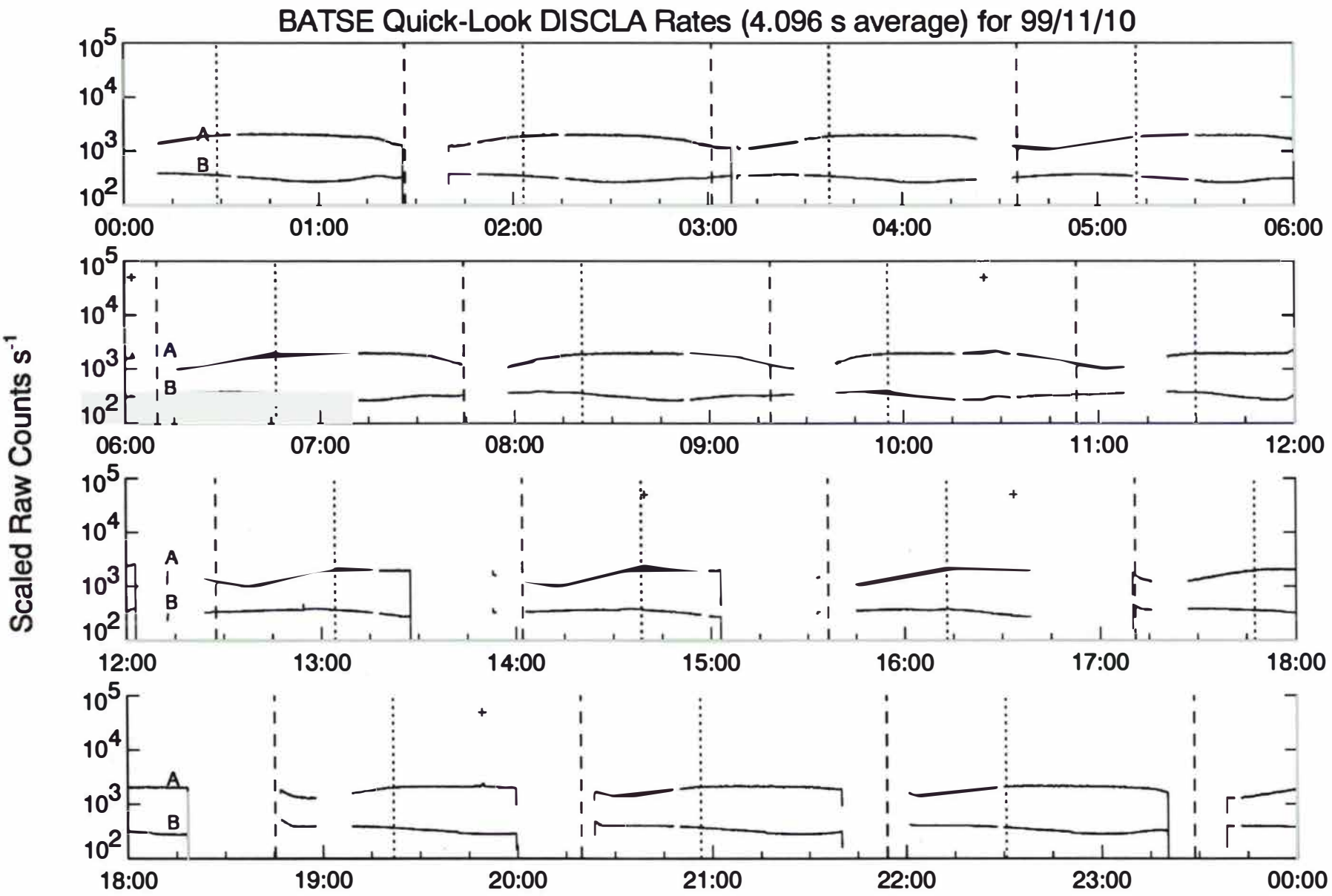
0.250 S INTERVALS REGROUPED BY 13

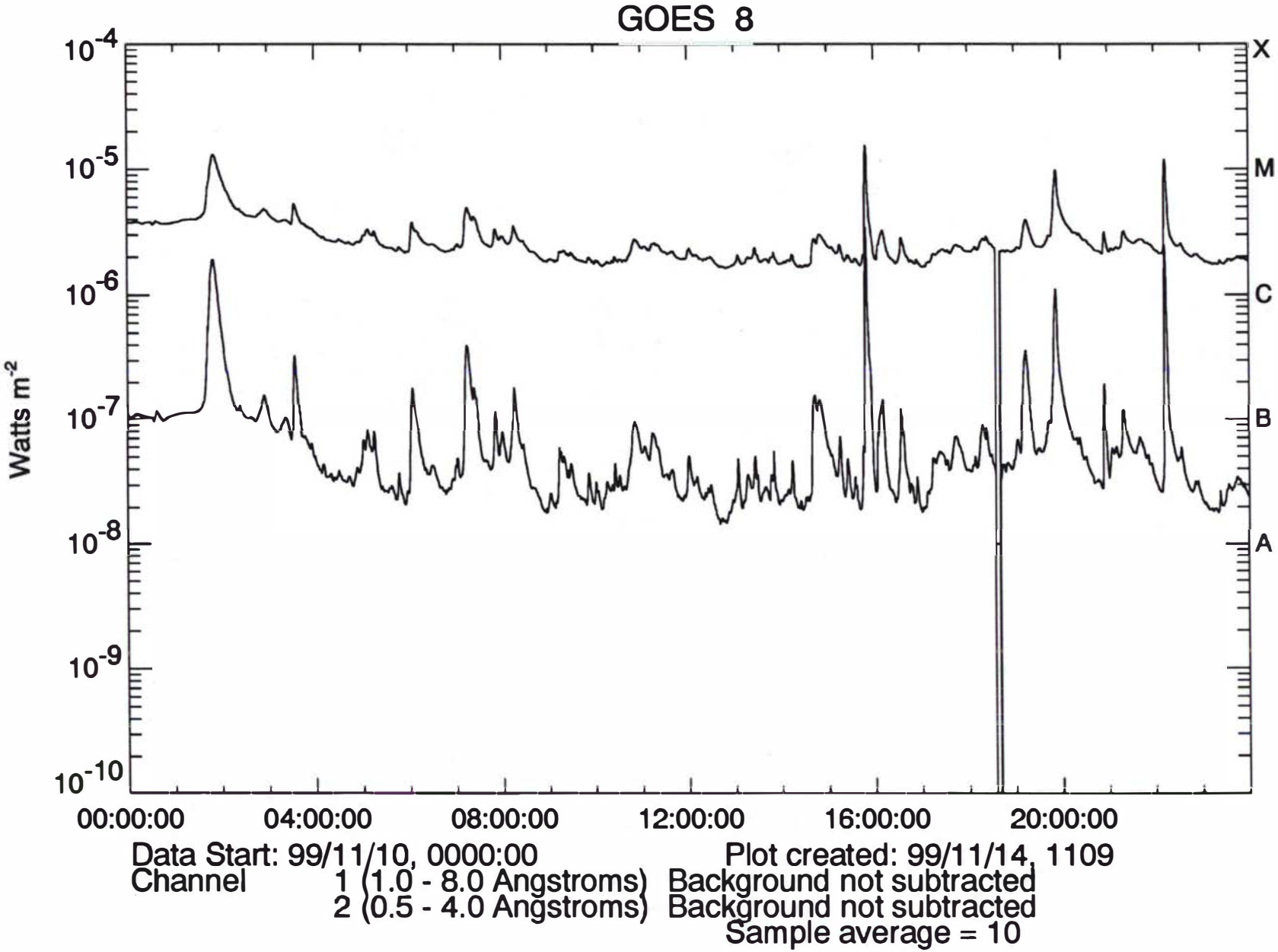
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

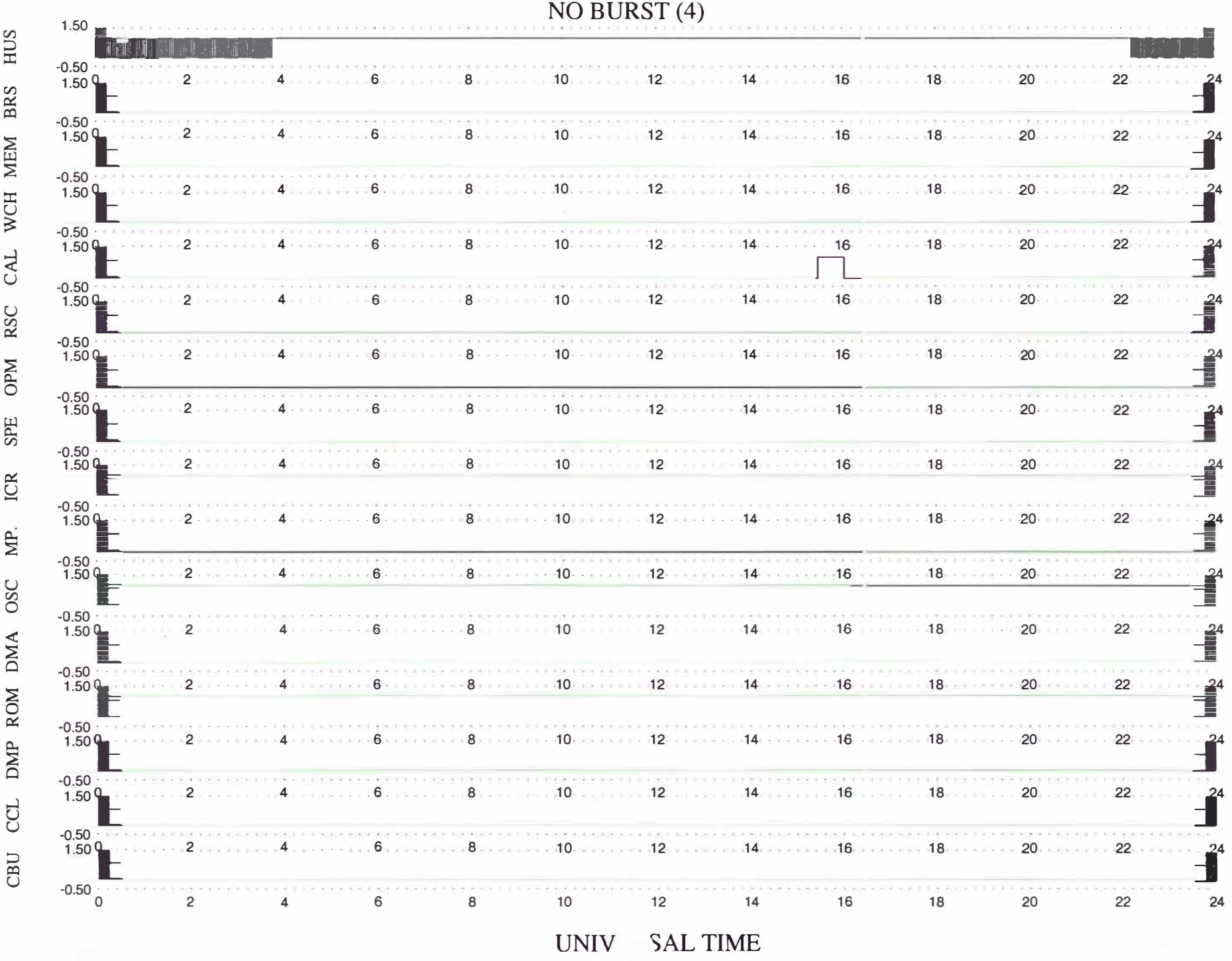
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/10
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/14, 1110 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

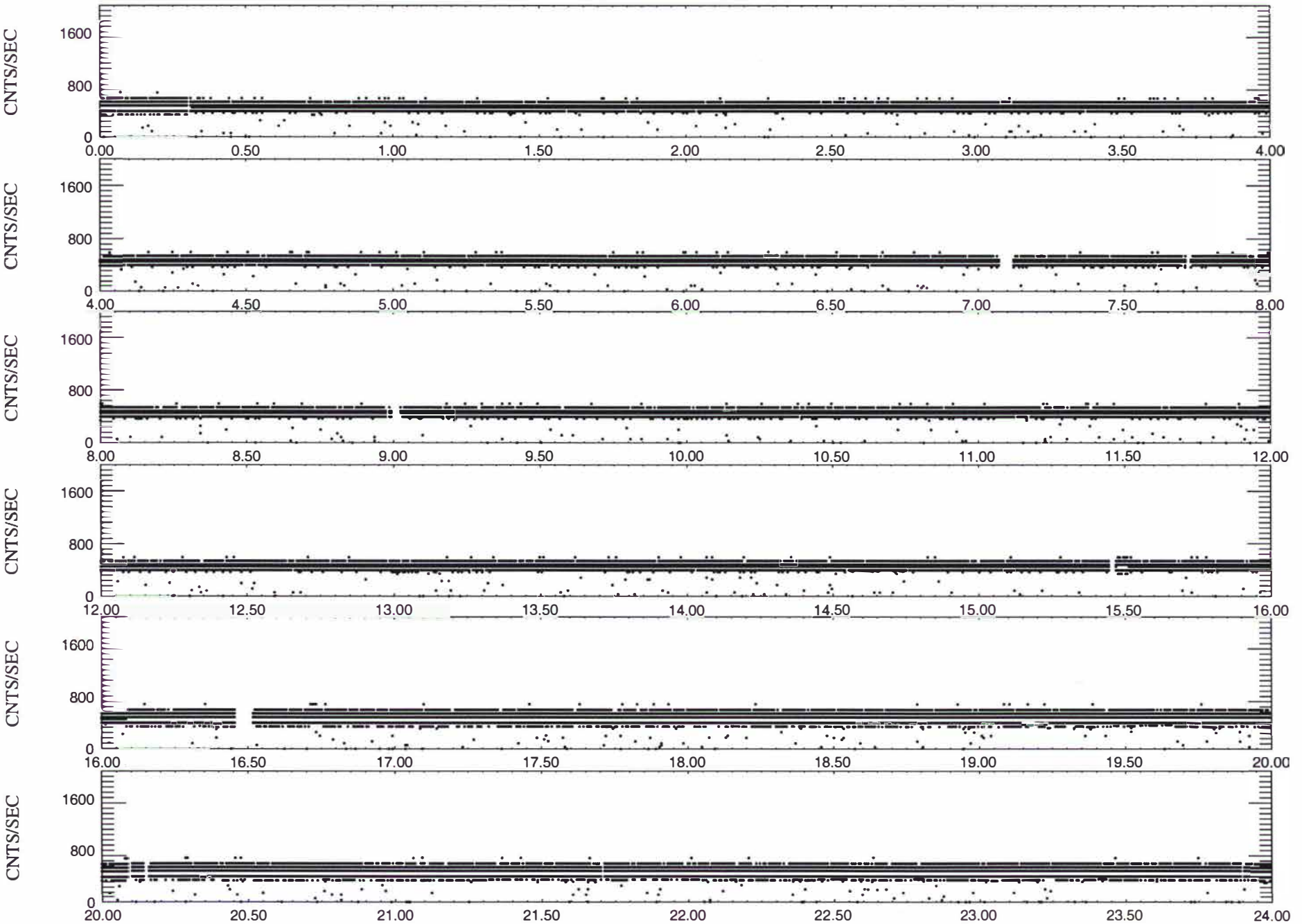

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
10-10
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/10, 0000:00
Plot created: 99/11/14, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 314, year 1999 to day 314, year 1999 03/21/00



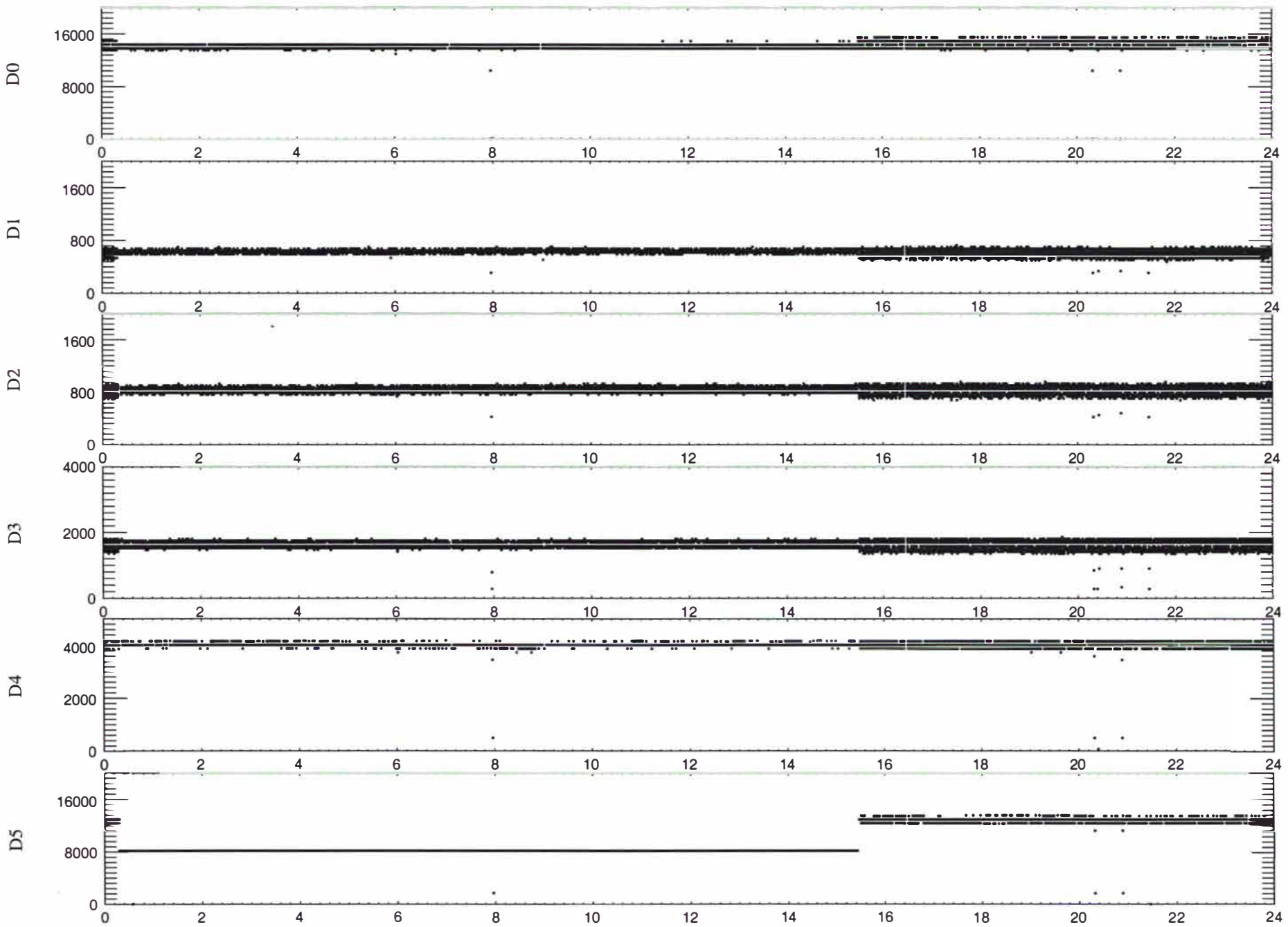
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 10/11/1999 DOY = 314 03/21/00

CALIBRATION DATA INCLUDED



UNIV`SAL TIME

HUS 2B COUNTS / SEC EDR day 314, year 1999 to day 314, year 1999 03/21/00



From RICHARDSON@fender.msfc.nasa.gov Mon Nov 15 10:00 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 15 Nov 1999 12:08:57 -0600 (CST)
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.: 7850

TIME: TJD=1493 SECONDS=13891

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=95.0 AZIMUTH=346.7 ERROR=1.2 DEGREES

COMMENTS:
SOLAR FLARE. NO GOES, NO OPTICAL.
MULTIPLE PULSED WITH STRUCTURE. MAIN PULSE PEAKS AT APPROX. T. TOTAL
DURATION APPROX = 80 SEC. NOT VISIBLE ABLVE 100KEV.

From RICHARDSON@fender.msfc.nasa.gov Mon Nov 15 10:02 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 15 Nov 1999 12:10:24 -0600 (CST)
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.: 7851

TIME: TJD=1493 SECONDS=28294

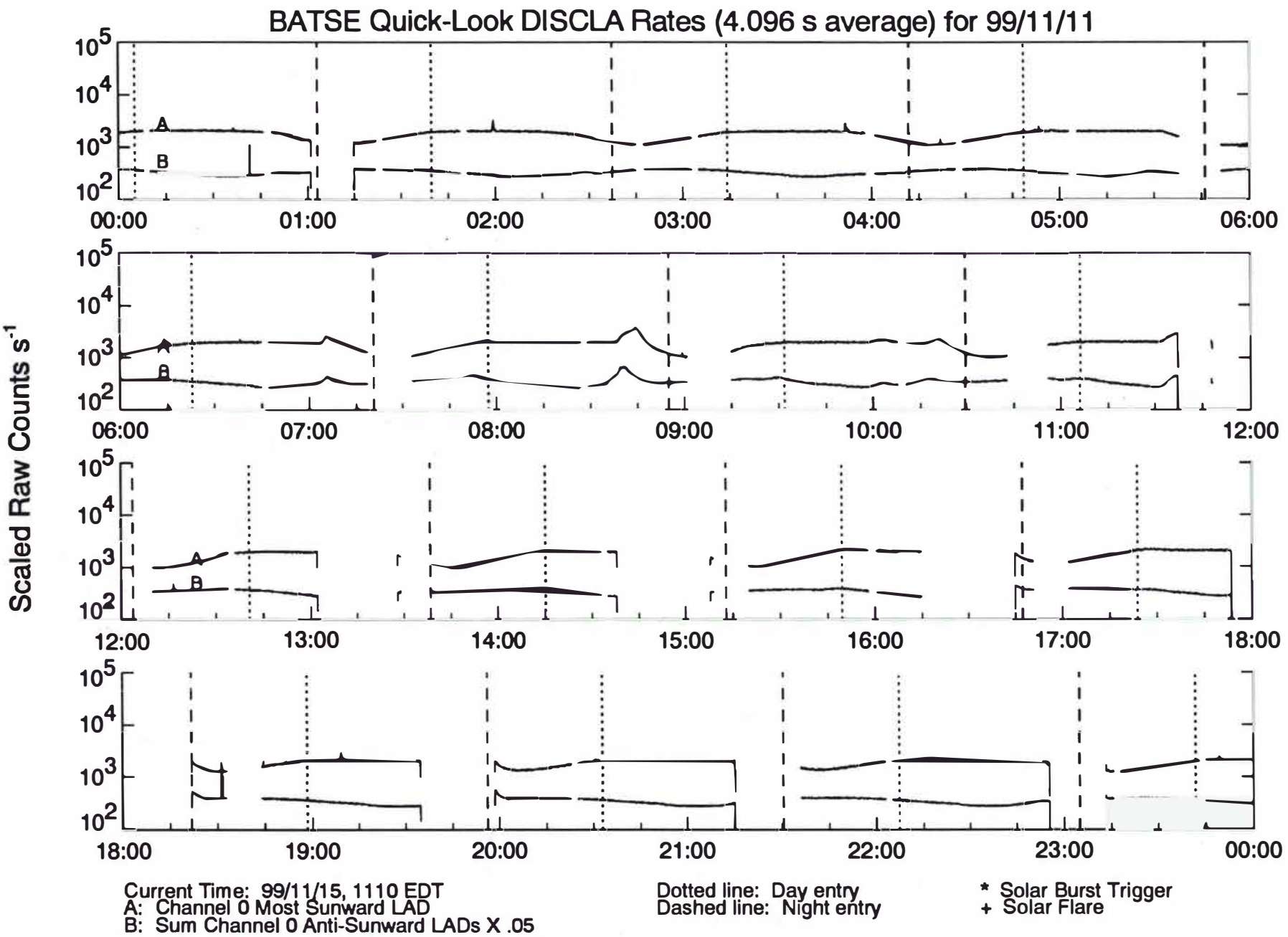
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

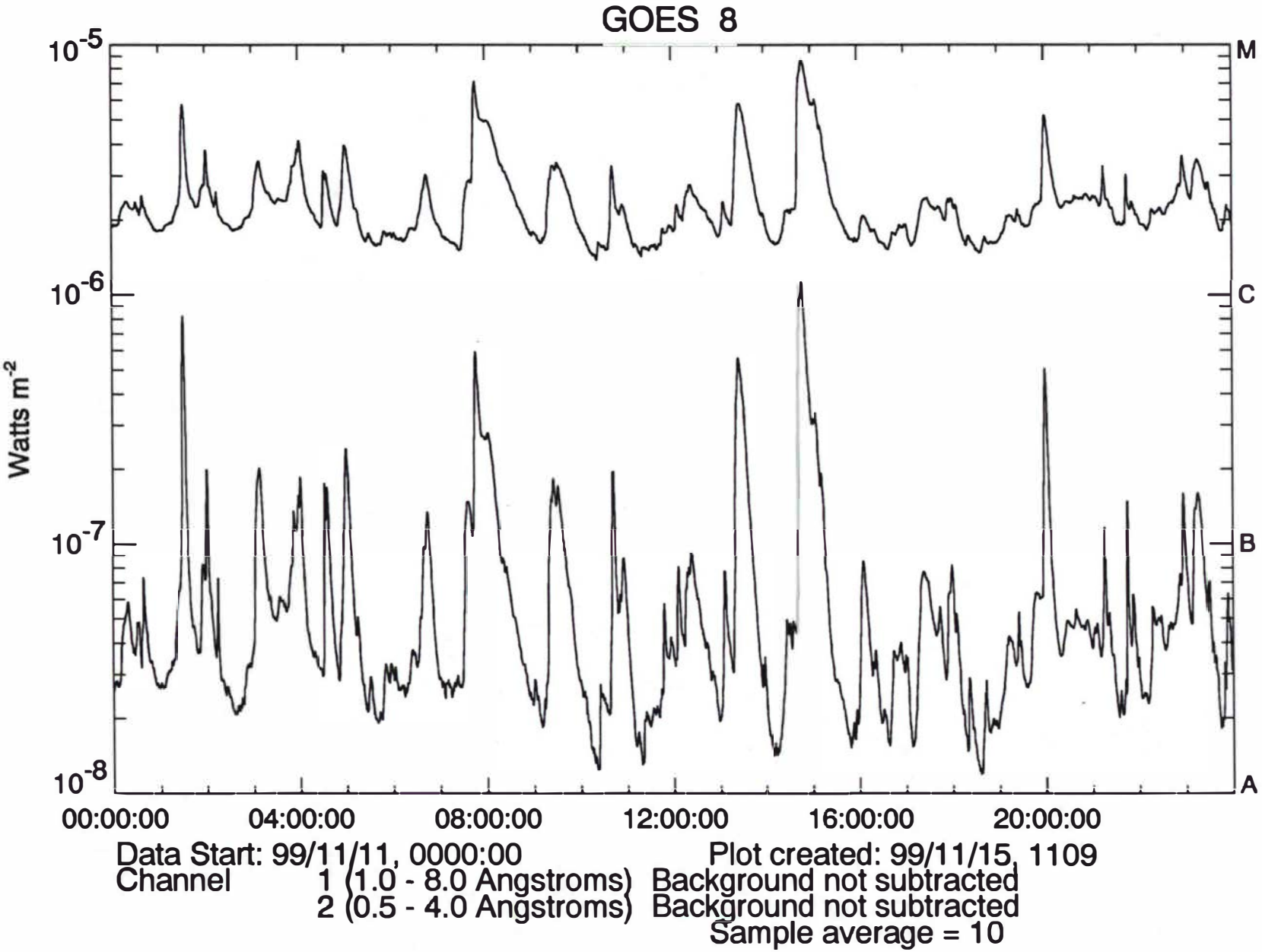
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

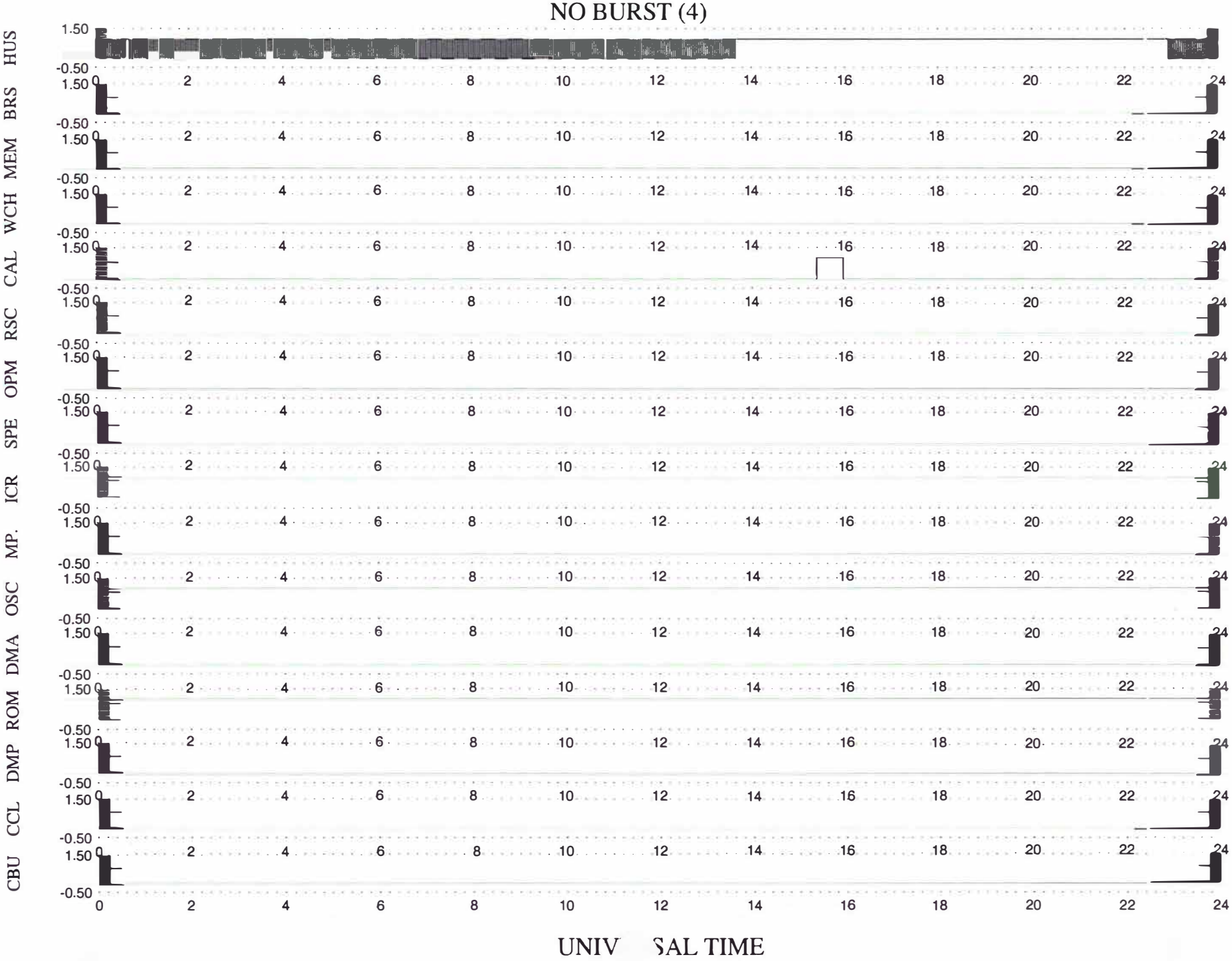
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/11
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/15, 1110 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

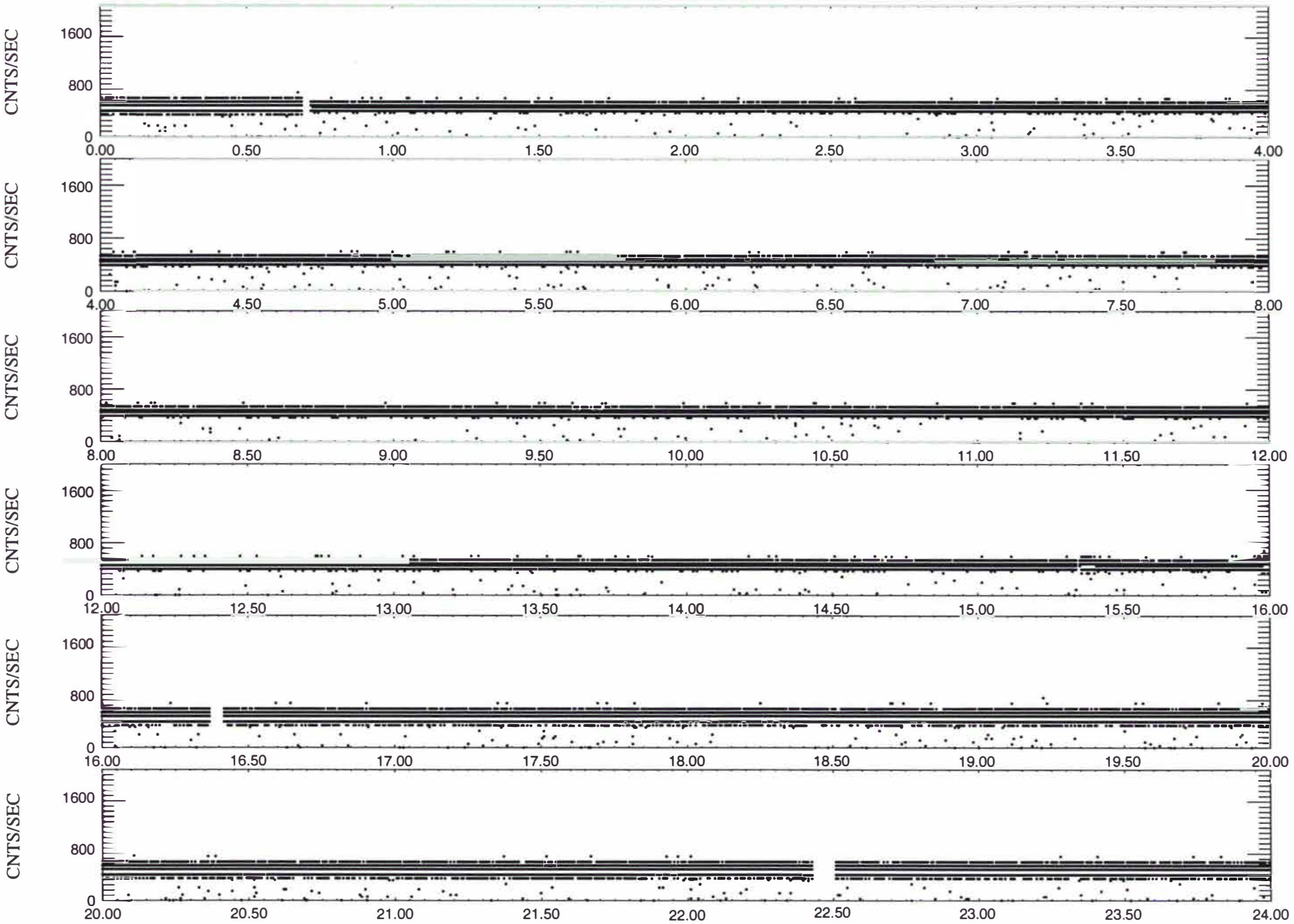

GOES 8
10-5
10-6
10-7
10-8
M
C
B
A
Watts m-2
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/11, 0000:00
Plot created: 99/11/15, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 315, year 1999 to day 315, year 1999 03/21/00



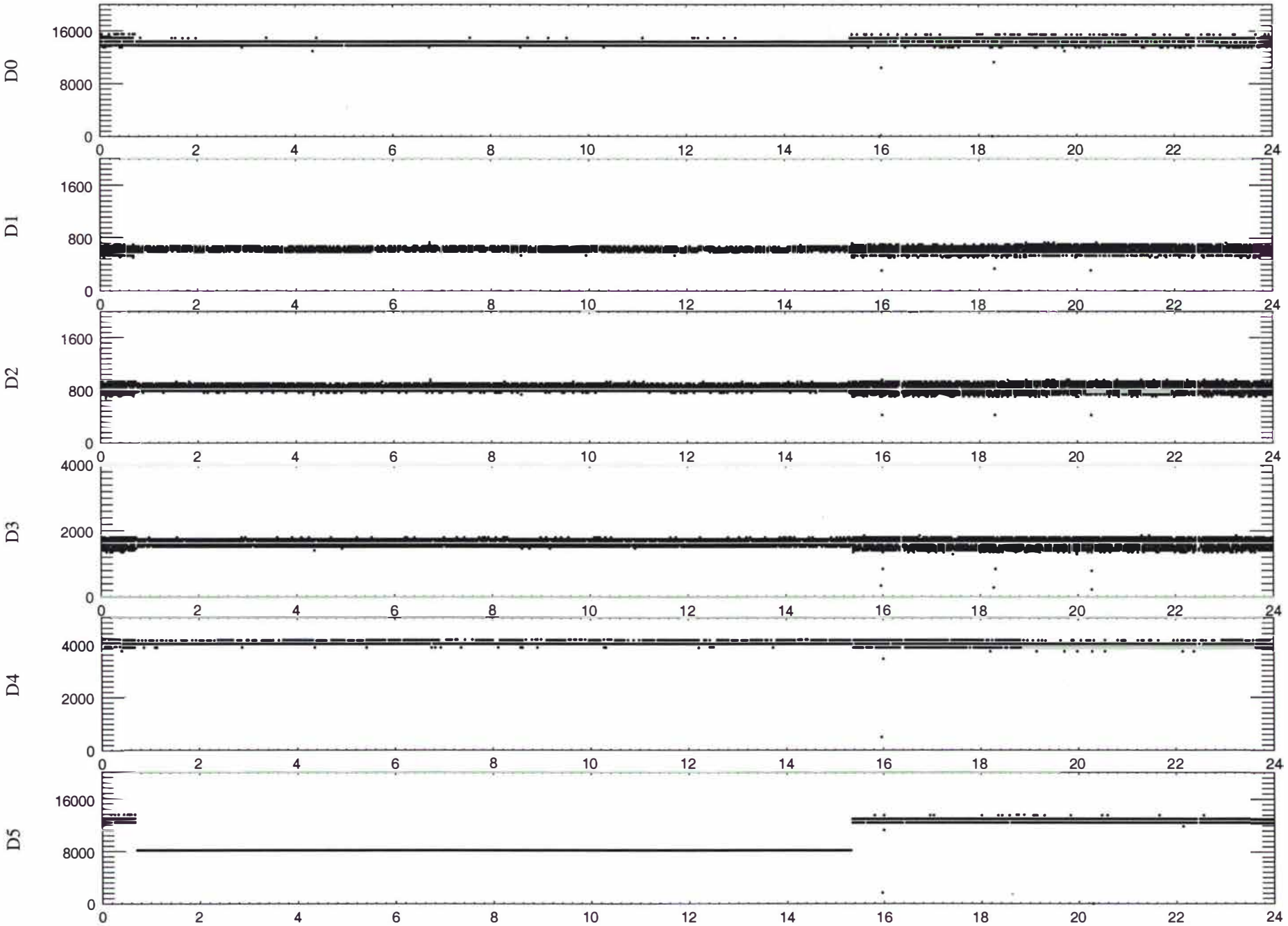
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 11/11/1999 DOY = 315 03/21/00

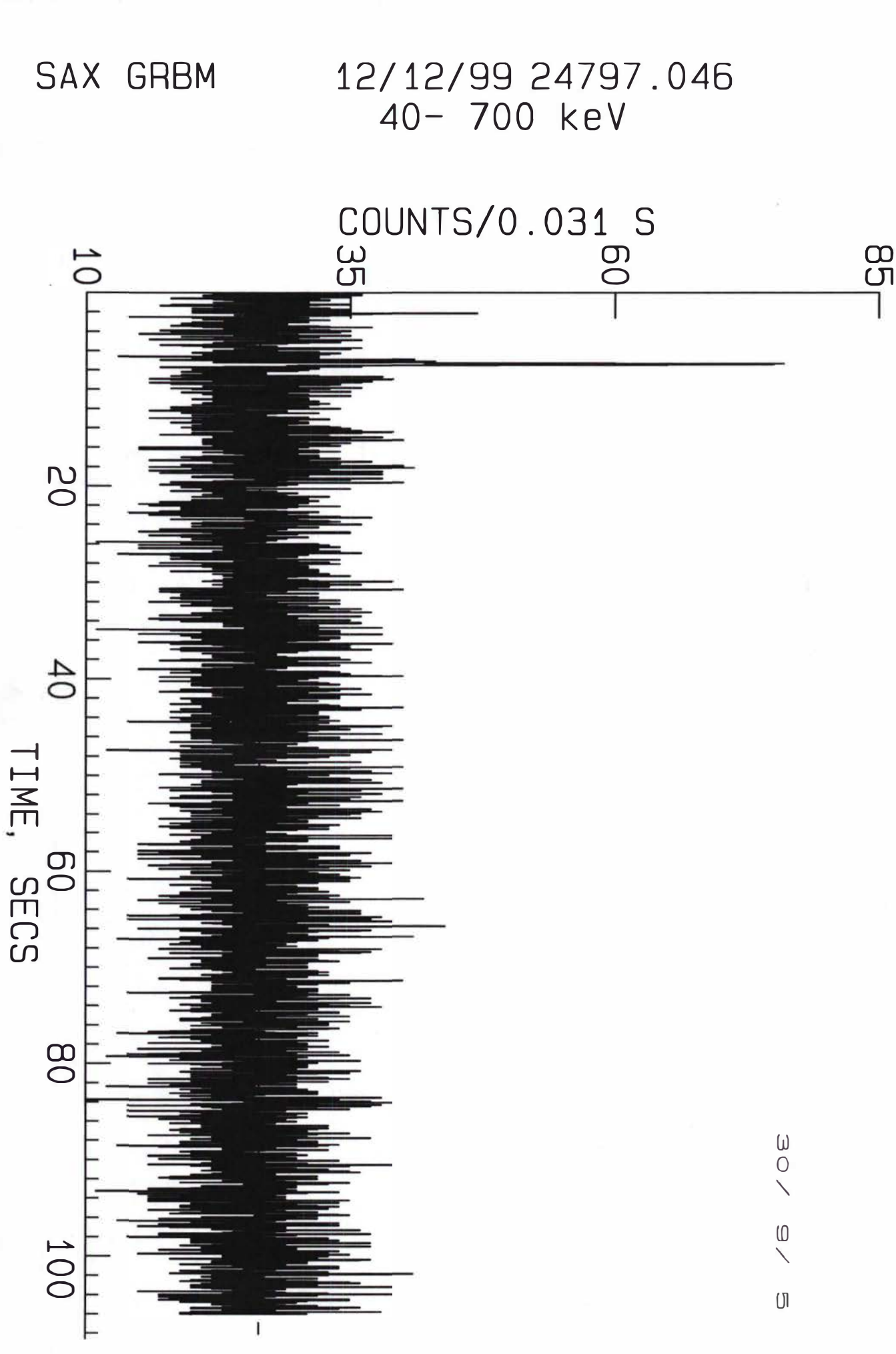
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 315, year 1999 to day 315, year 1999 03/21/00




SAX GRBM
12/12/99 24797.046
40- 700 keV
COUNTS/0.031 S
10
35
60
85
20
40
60
80
100
TIME, SECS

From HENZE@fender.msfc.nasa.gov Tue Nov 16 16:00 PST 1999
From: HENZE@fender.msfc.nasa.gov
Date: Tue, 16 Nov 1999 18:09:10 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7852

****
BATSEARCH PROGRAM
****

BATSE BURST # 7852
EVENT OF 1999 NOV 12 DAY OF YEAR=316
EVENT CROSSING TIME AT BATSE : 79703. S. OR 22:08:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 242.000 25.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/11/ 99 IS:
RA= 164.970 DEC= -24.196 DIST= 4.786 AU
BATSE-ULYSSES DISTANCE = 715934205. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -29.43 SECS.
CROSSING TIME AT ULYSSES IS 79674. S. OR 22:07:53 +/- 464.13 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/11/ 99 IS:
RA= 290.984 DEC= -23.658 DIST= 1.580 AU
MARS-BATSE DISTANCE = 236299856. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -295.74 SECS.
CROSSING TIME AT MARS IS 79407. S. OR 22:03:27 +/- 122.36 SECONDS

BATSE BURST TRIGGER
NO.: 7852

TIME: TJD=1494 SECONDS=79703

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 56.8 AZIMUTH=323.5 ERROR= 2.5 DEGREES

COMMENTS:
COMPLEX, TOTAL DUR. APPROX. 150 S, STARTS AT APPROX. T-50 S. MAXES AT APPROX. T AND T+60 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7852	991112	11494	79703	3000	242	+25	150

BATSE BURST# 7852

ULYSSES RT 16/11/99

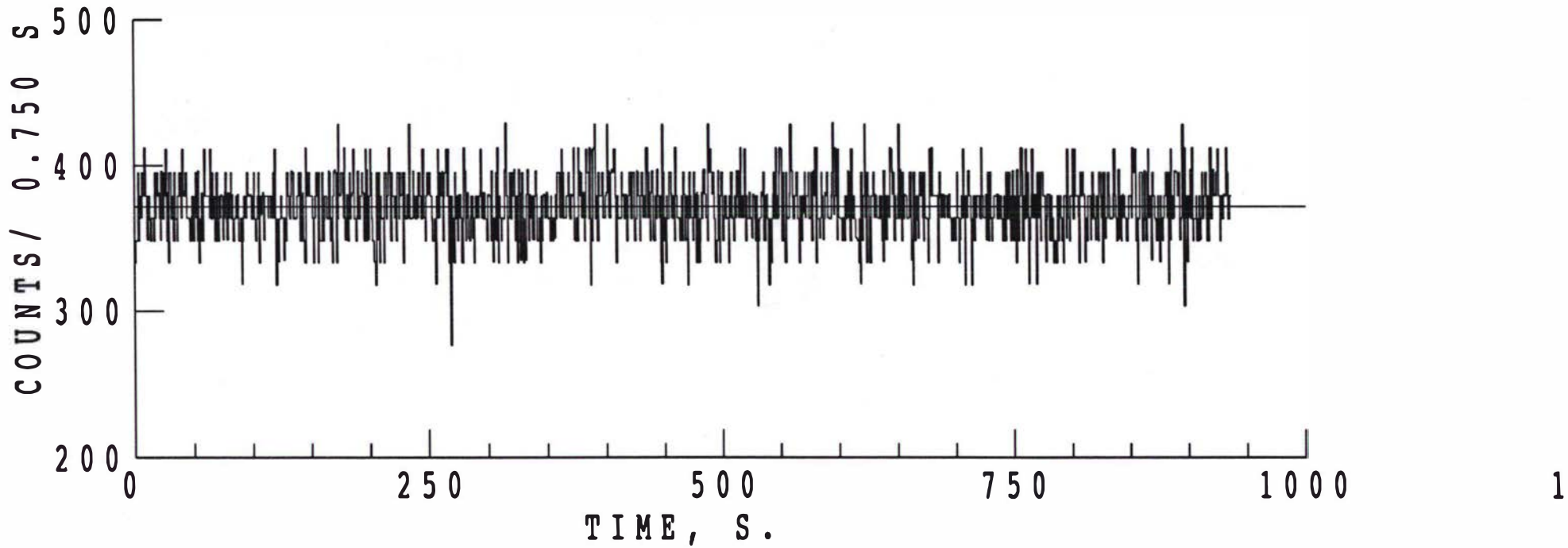
12/11/99 79200.000 s

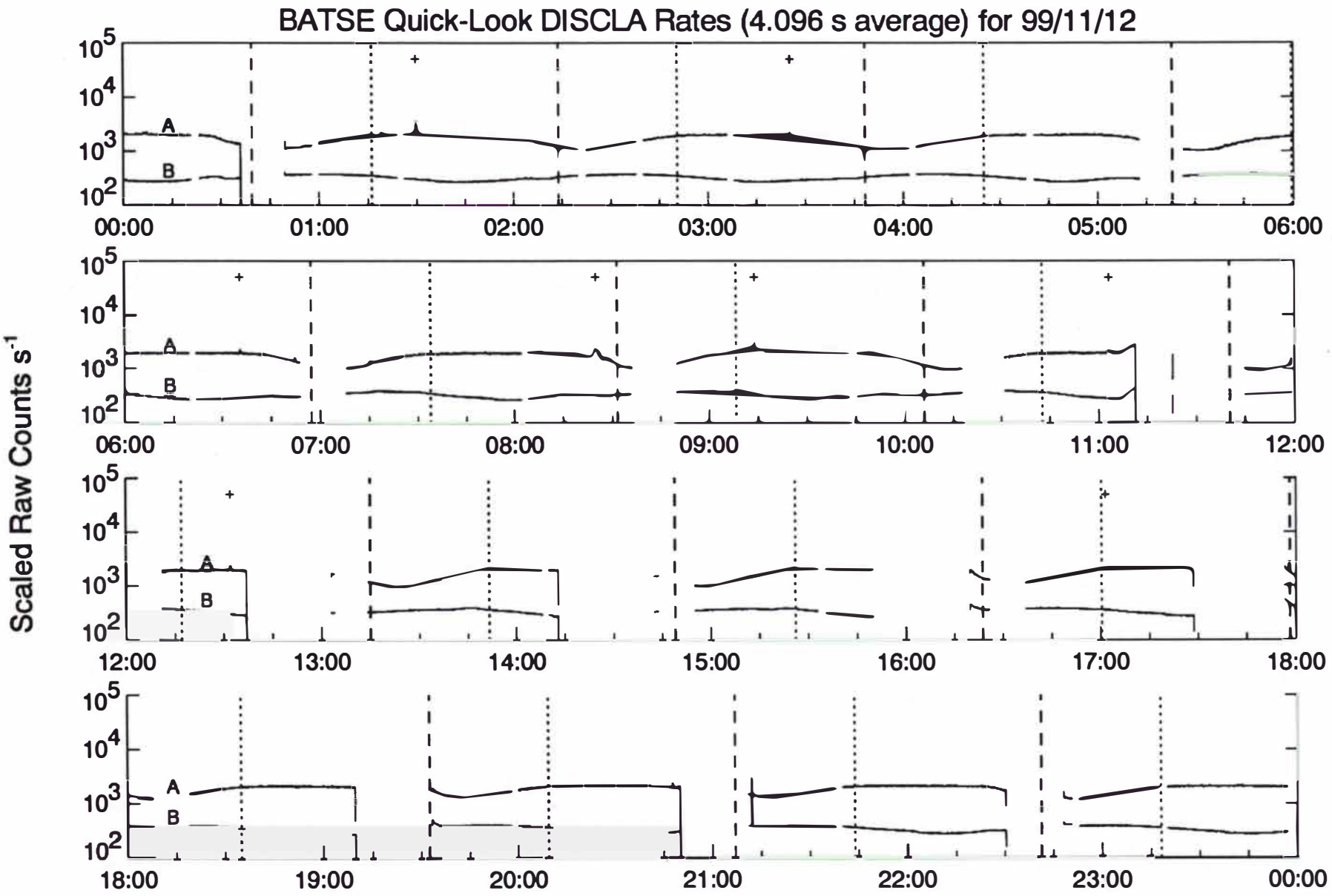
0.250 S INTERVALS REGROUPED BY 3

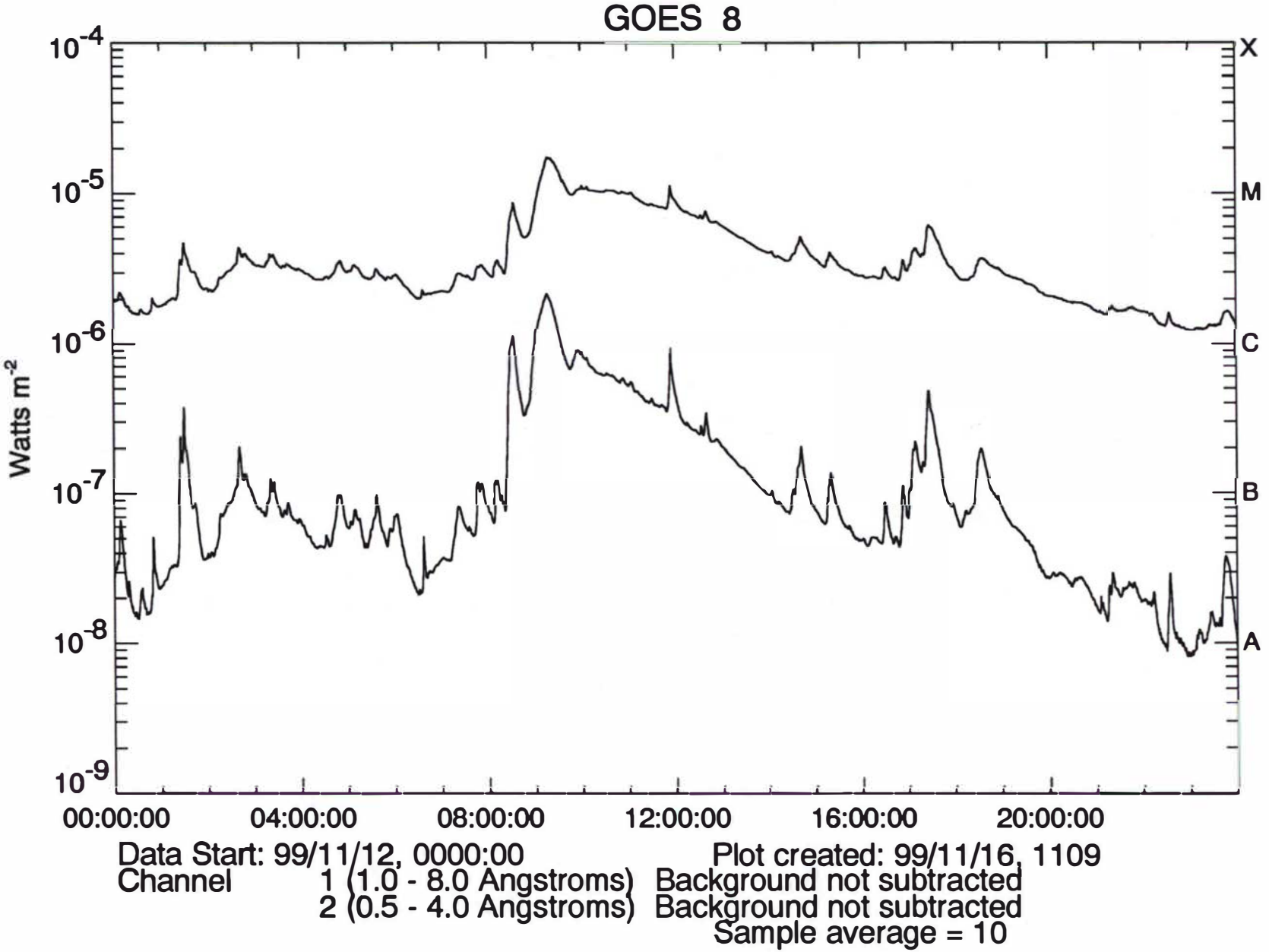
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

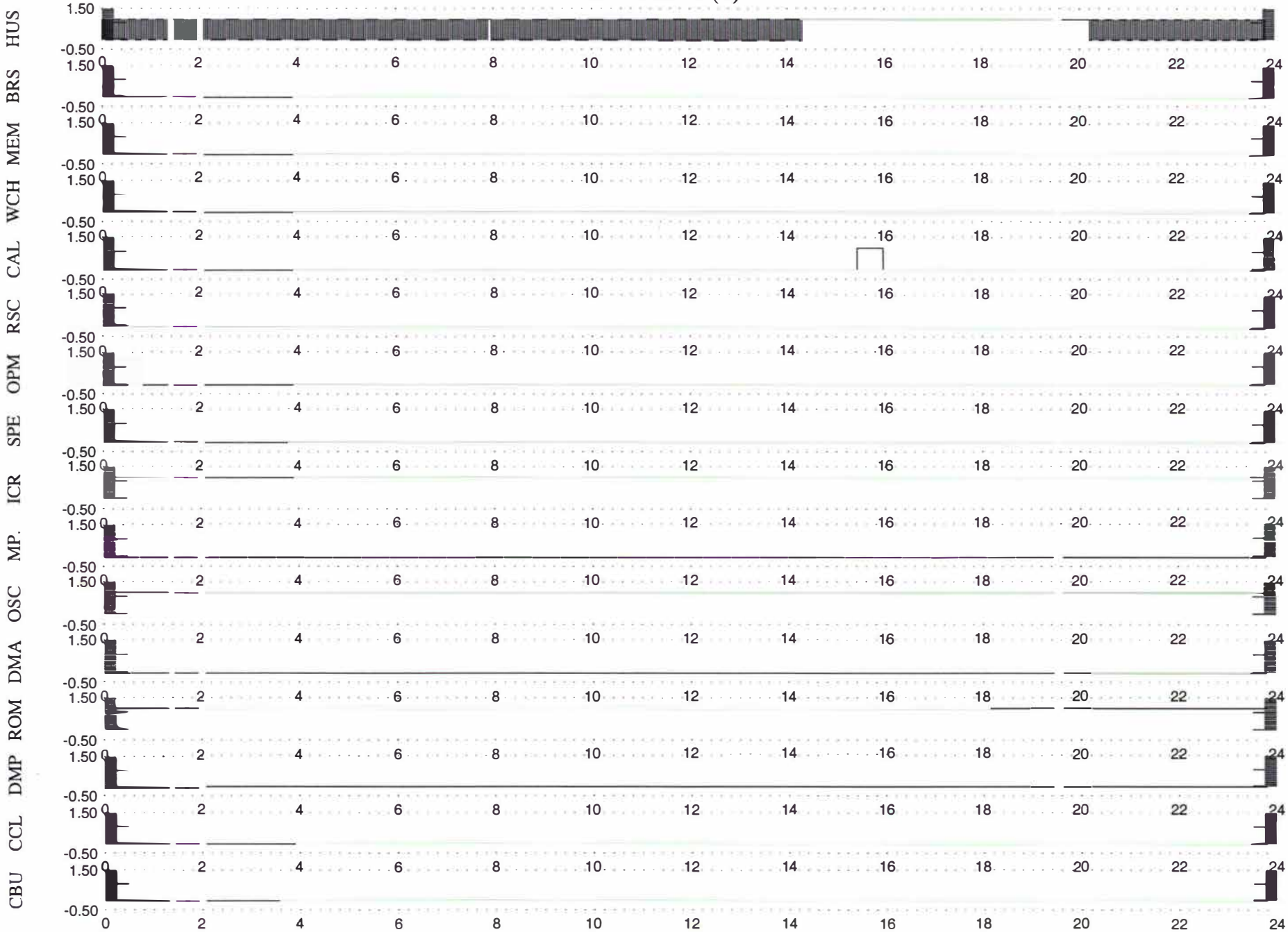



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/12
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/16, 1109 EDT
A: Channel 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
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/12, 0000:00
Plot created: 99/11/16, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 316, year 1999 to day 316, year 1999 03/21/00

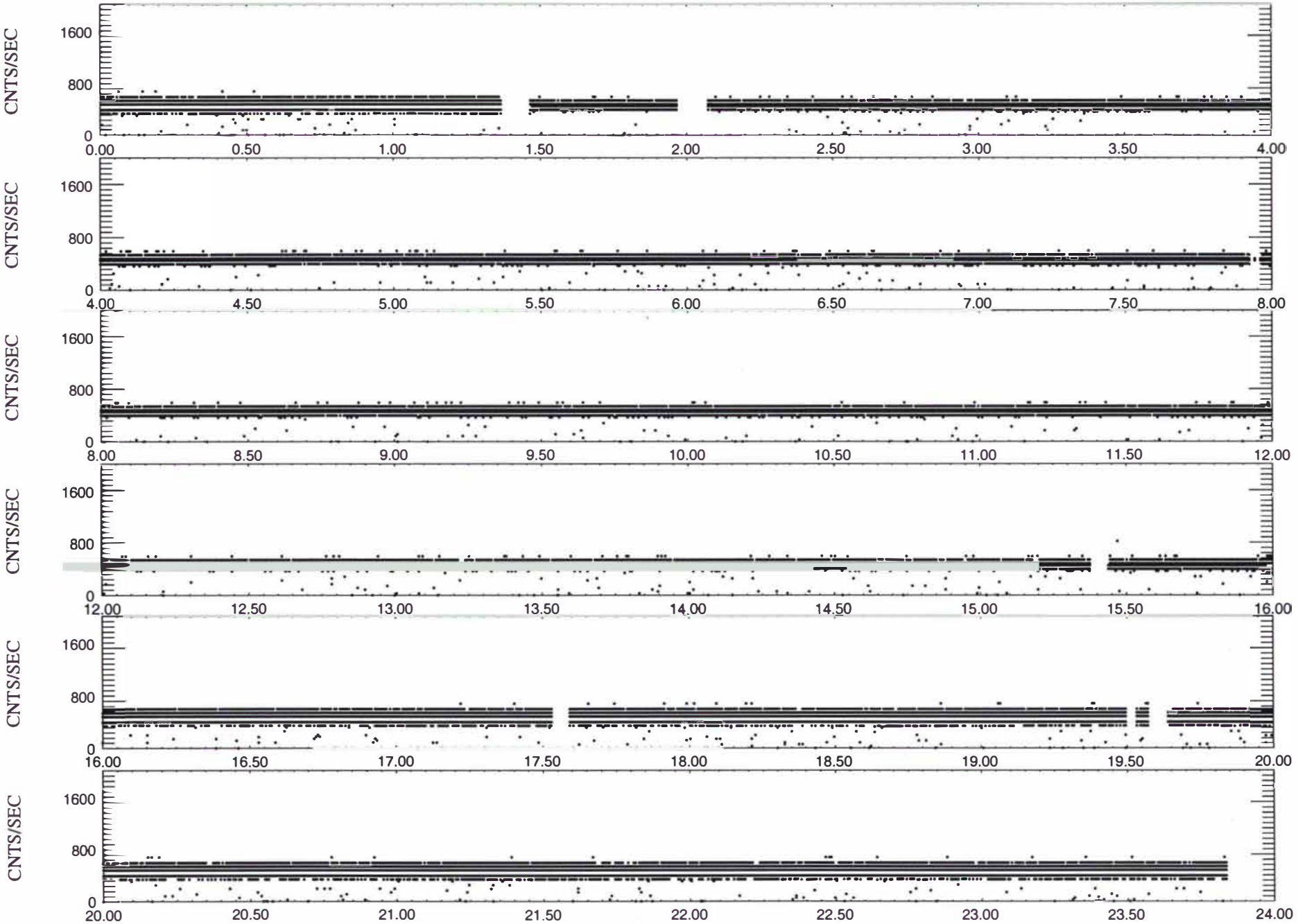
NO BURST (4)



UNIV SAL TIME

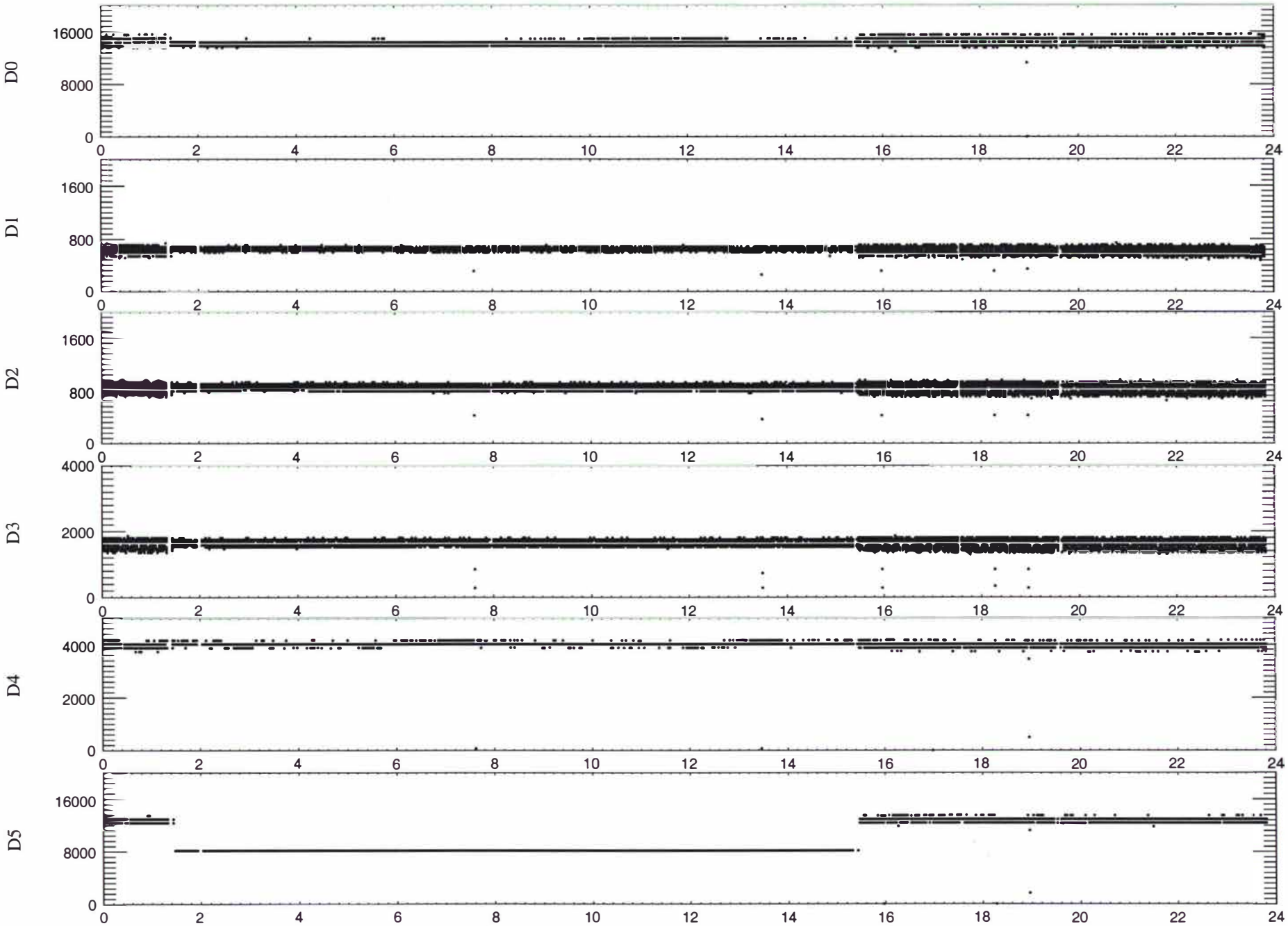
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 12/11/1999 DOY = 316 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 316, year 1999 to day 316, year 1999 03/21/00



From SURASAK@fender.msfc.nasa.gov Mon Nov 15 12:23 PST 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Mon, 15 Nov 1999 14:31:55 -0600 (CST)
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.: 7853

TIME: TJD=1495 SECONDS=28947

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=93.3 AZIMUTH=347.7 ERROR=0.579 DEGREES

COMMENTS:
SOLAR FLARE. GOES C2.4, OPTICAL SF. DOUBLE PULSE. FIRST PULSE IS STRONGER.
TOTAL DURATION ABOUT 80 S. MARGINALLY VISIBLE ABOVE 100 KEV.

From SURASAK@fender.msfc.nasa.gov Tue Nov 16 14:43 PST 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Tue, 16 Nov 1999 16:52:03 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7854

****
BATSEARCH PROGRAM
****

BATSE BURST # 7854
EVENT OF 1999 NOV 13 DAY OF YEAR=317
EVENT CROSSING TIME AT BATSE : 81660. S. OR 22:41:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 3.000 33.000
BATSE PEAK COUNTING RATE: 19000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/11/ 99 IS:
RA= 165.052 DEC= -24.395 DIST= 4.769 AU
BATSE-ULYSSES DISTANCE = 713436487. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 17.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2264.52 SECS.
CROSSING TIME AT ULYSSES IS 83925. S. OR 23:18:44 +/- 211.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/11/ 99 IS:
RA= 291.796 DEC= -23.541 DIST= 1.585 AU
MARS-BATSE DISTANCE = 237091712. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 91.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -23.88 SECS.
CROSSING TIME AT MARS IS 81636. S. OR 22:40:36 +/- 136.88 SECONDS

BATSE BURST TRIGGER
NO.: 7854

TIME: TJD=1495 SECONDS=81660

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=44.4 AZIMUTH=160 ERROR=0.53 DEGREES

COMMENTS:
GRB. COMPLEX. DURATION ABOUT 110 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7854	991113	11495	81660	19000	003	+33	110

Date: May 4 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?

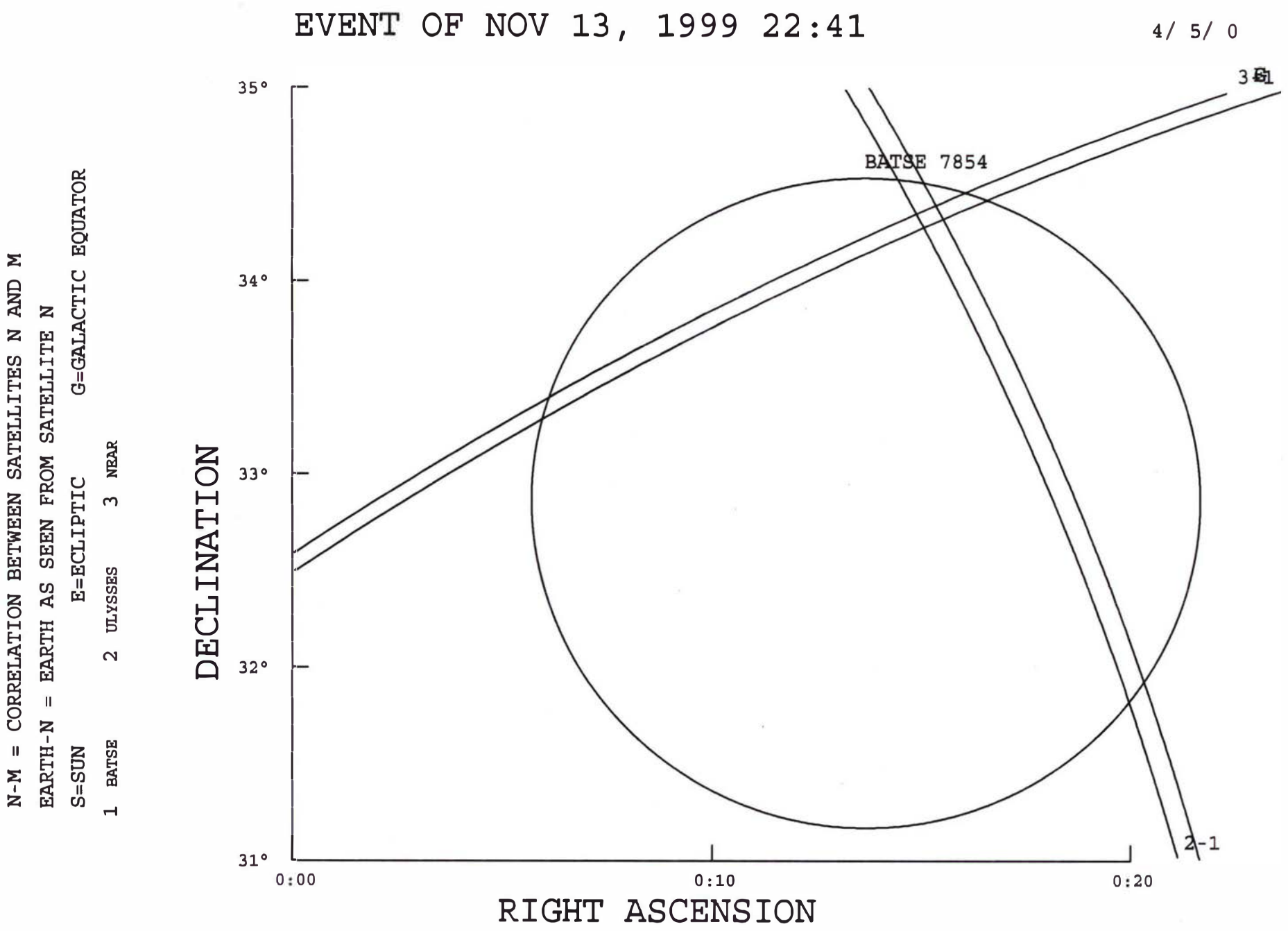
☐ If MER data were used, is a 30 ms systematic error included?

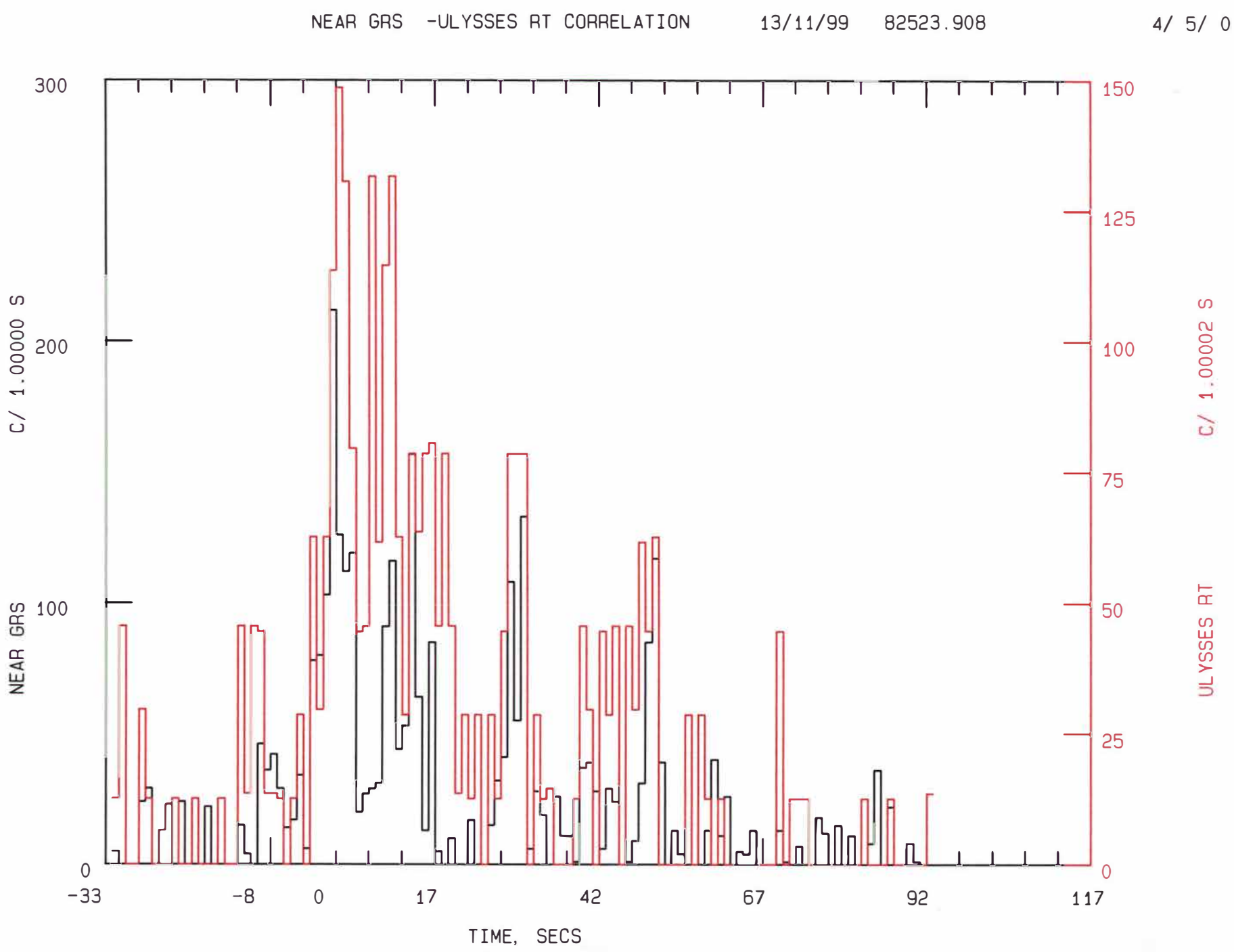
3. NEAR Data

☑ Final, correct time used? (Files postmarked vwx@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?


EVENT OF NOV 13, 1999 22:41
4/ 5/ 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 3 NEAR
BATSE 7854
3-1
2-1
DECLINATION
35°
34°
33°
32°
31°
0:00
0:10
0:20
RIGHT ASCENSION


NEAR GRS -ULYSSES RT CORRELATION 13/11/99 82523.908 4/ 5/ 0
300
200
100
0
C/ 1.00000 S
NEAR GRS
150
125
100
75
50
25
0
C/ 1.00002 S
ULYSSES RT
-33
-8
0
17
42
67
92
117
TIME, SECS

From HENZE@fender.msfc.nasa.gov Thu Nov 18 13:36 PST 1999
Date: Thu, 18 Nov 1999 15:44:29 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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.: 7859

TIME: TJD=1498 SECONDS=21954

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 91.1 AZIMUTH=350.0 ERROR= 0.1 DEGREES

COMMENTS:
GOES M2.3, OPTICAL 1N FLARE. COMPLEX, DUR. APPROX. 500 S, STARTS AT APPROX. T-150 S, MAX AT APPROX. T+98 S. NOT VISIBLE ABOVE 300 KEV.

From PETERSON@fender.msfc.nasa.gov Fri Nov 19 08:46 PST 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Fri, 19 Nov 1999 10:54:28 -0600 (CST)
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.: 7860

TIME: TJD=1498 SECONDS=35590

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=91.4 AZIMUTH=350.2 ERROR=0.697 DEGREES

COMMENTS:
SOLAR FLARE, NO GOES, OPTICAL SF OR SN. SINGLE PULSE WITH SUBSTURCTURE, DUR APPROX 5S. nOT VISIBLE ABOVE 300KEV. PHOSPHORESCENCE SPIKE AT APPROX T-100S IN LAD 2. CRAB RISE AT APPROX T+320S IN LAD 7.

Date: Jul 9 '07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☑ Σ 3Δt's calculated, and/or BMAPSUM executed?

3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

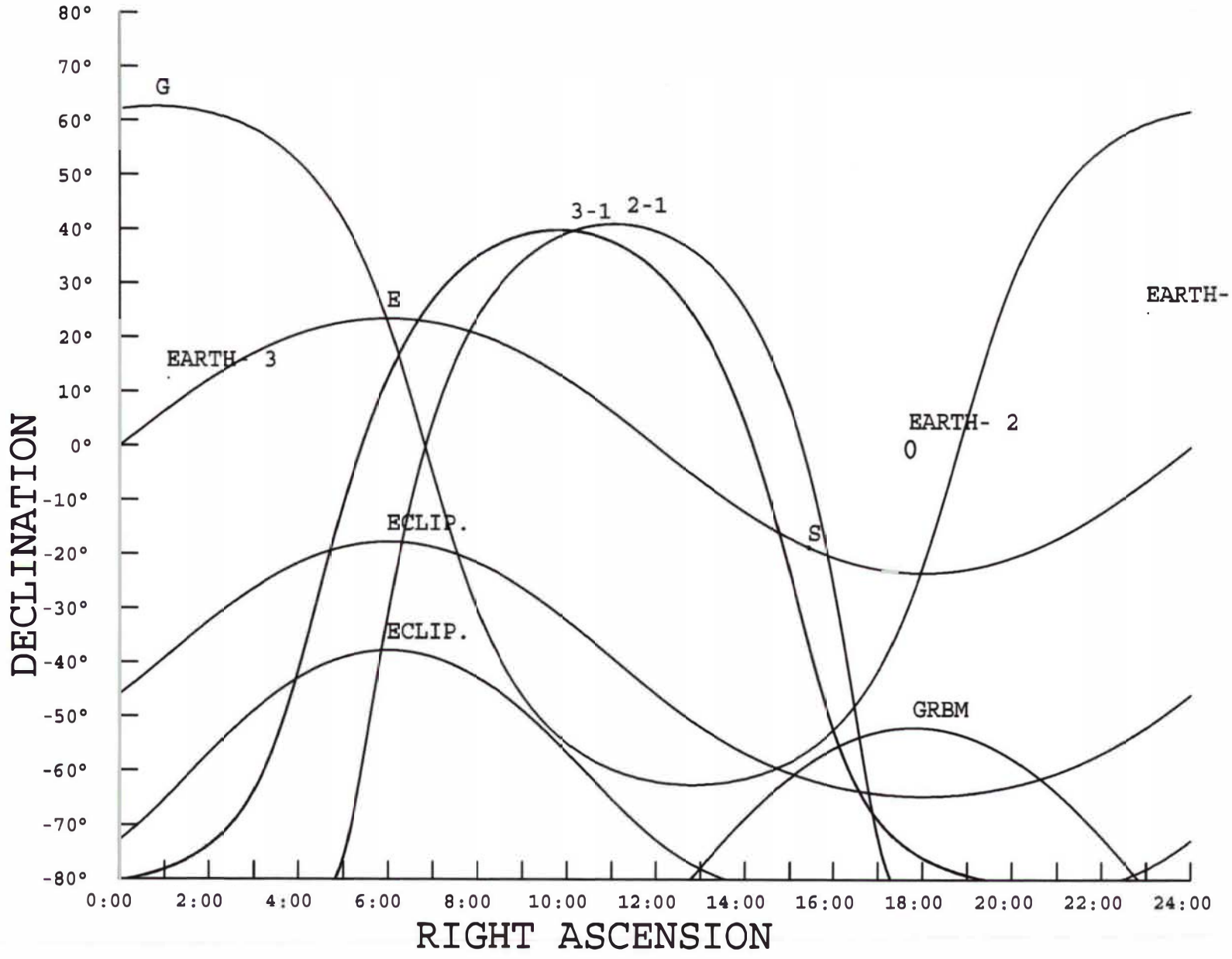
☐ Updated ephemeris used for bursts prior to September 30, 2003?

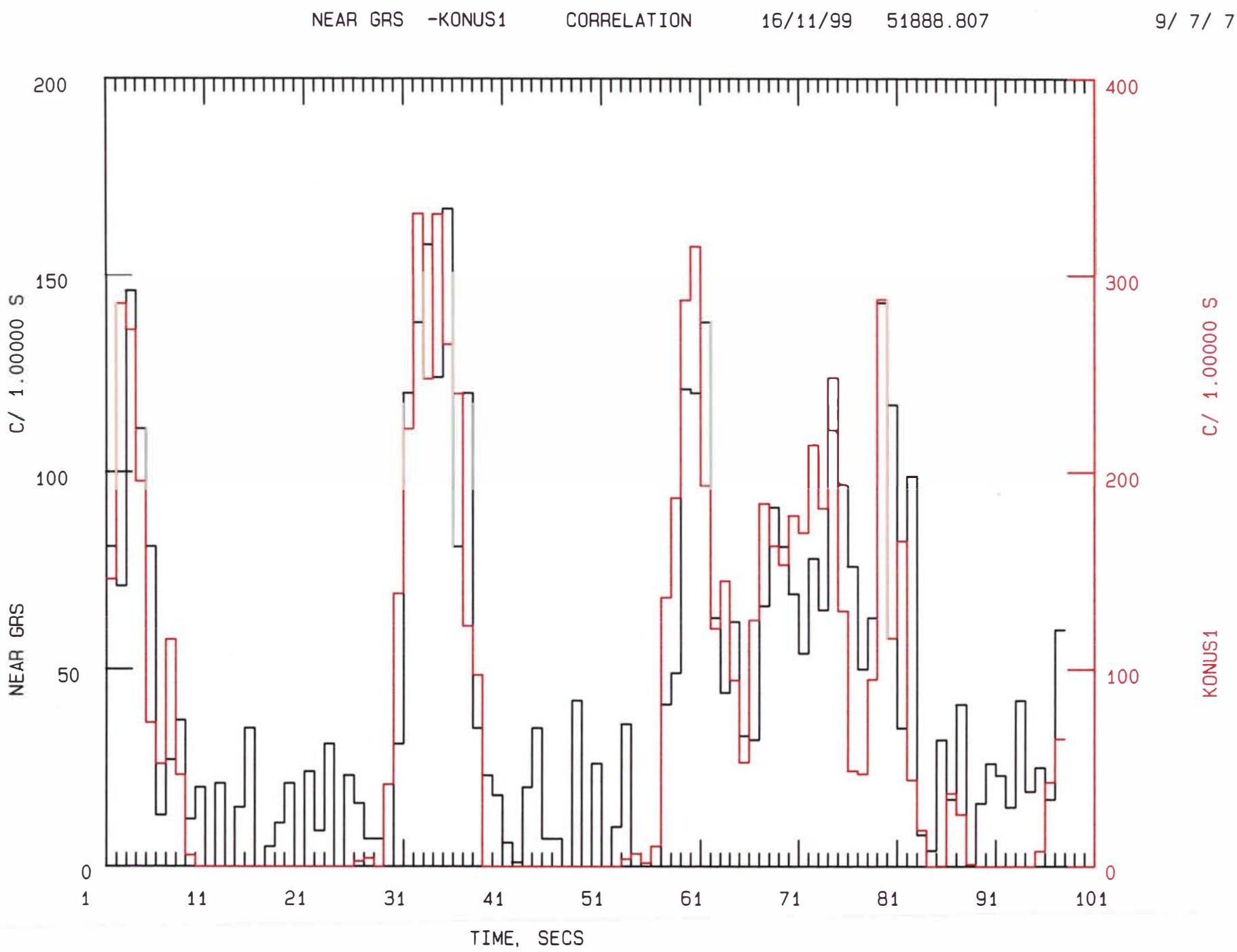
☑ ACCESS and MBL4 databases updated?

EVENT OF NOV 16, 1999 14:12

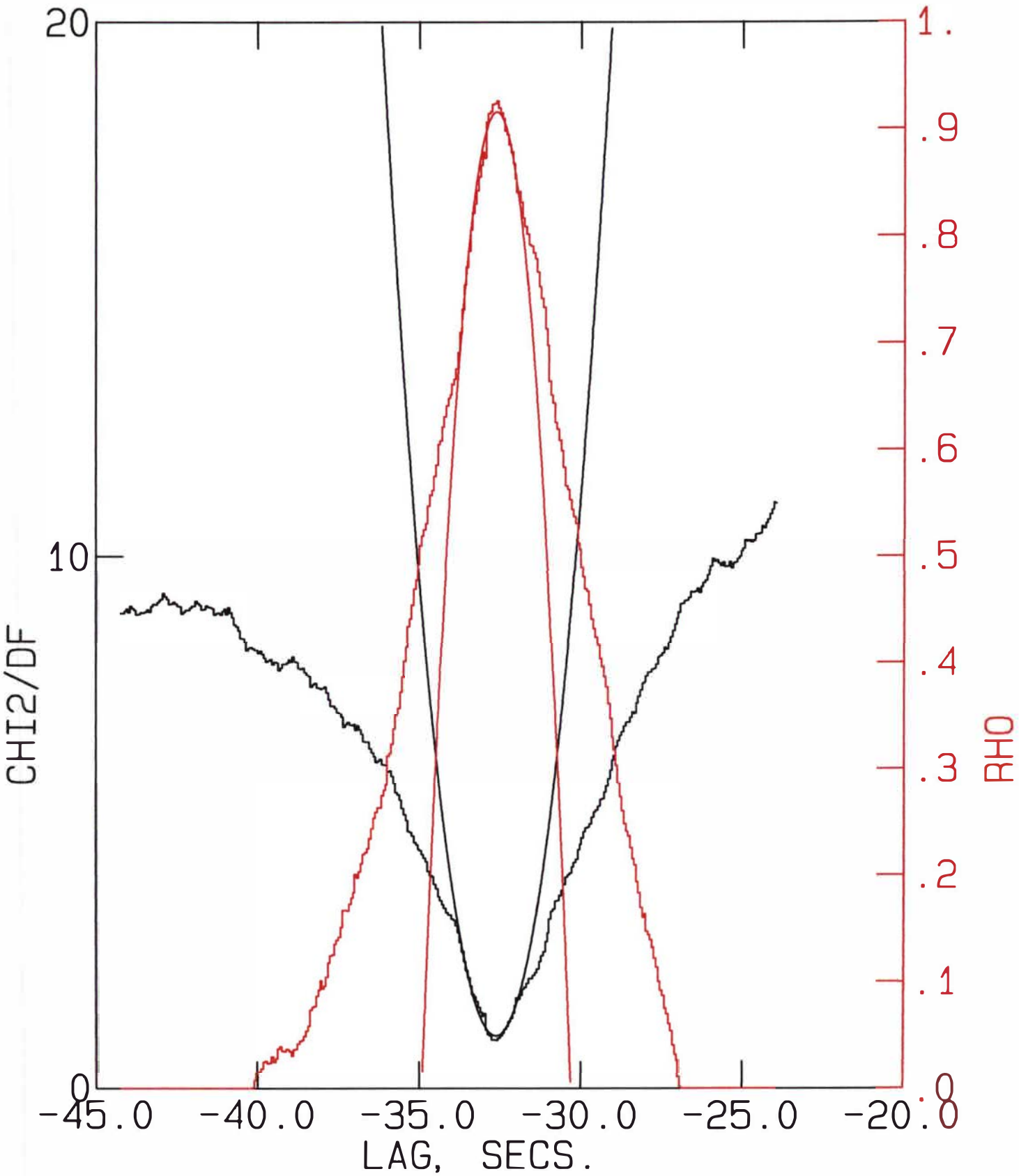
9/ 7/ 7

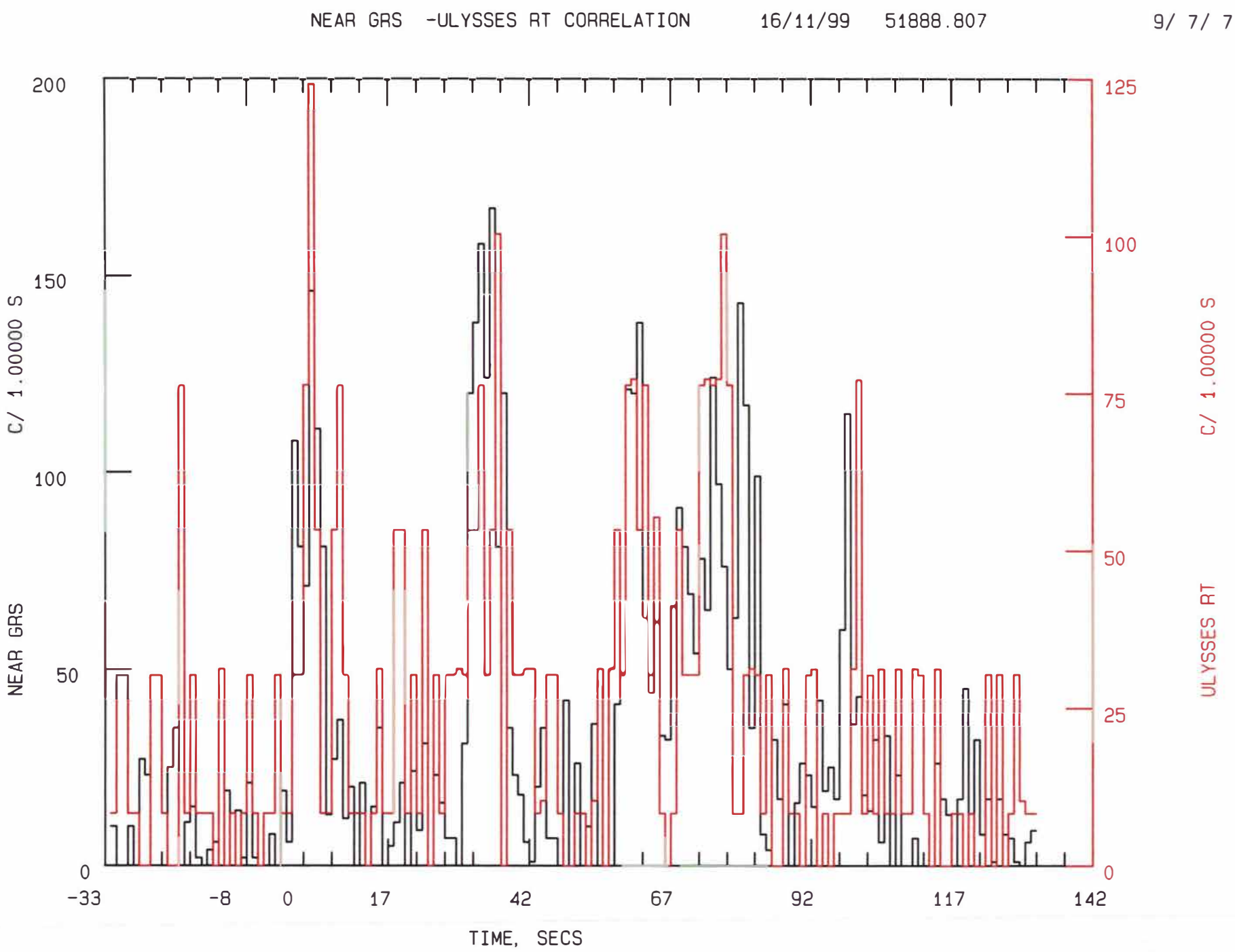
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1 3 NEAR



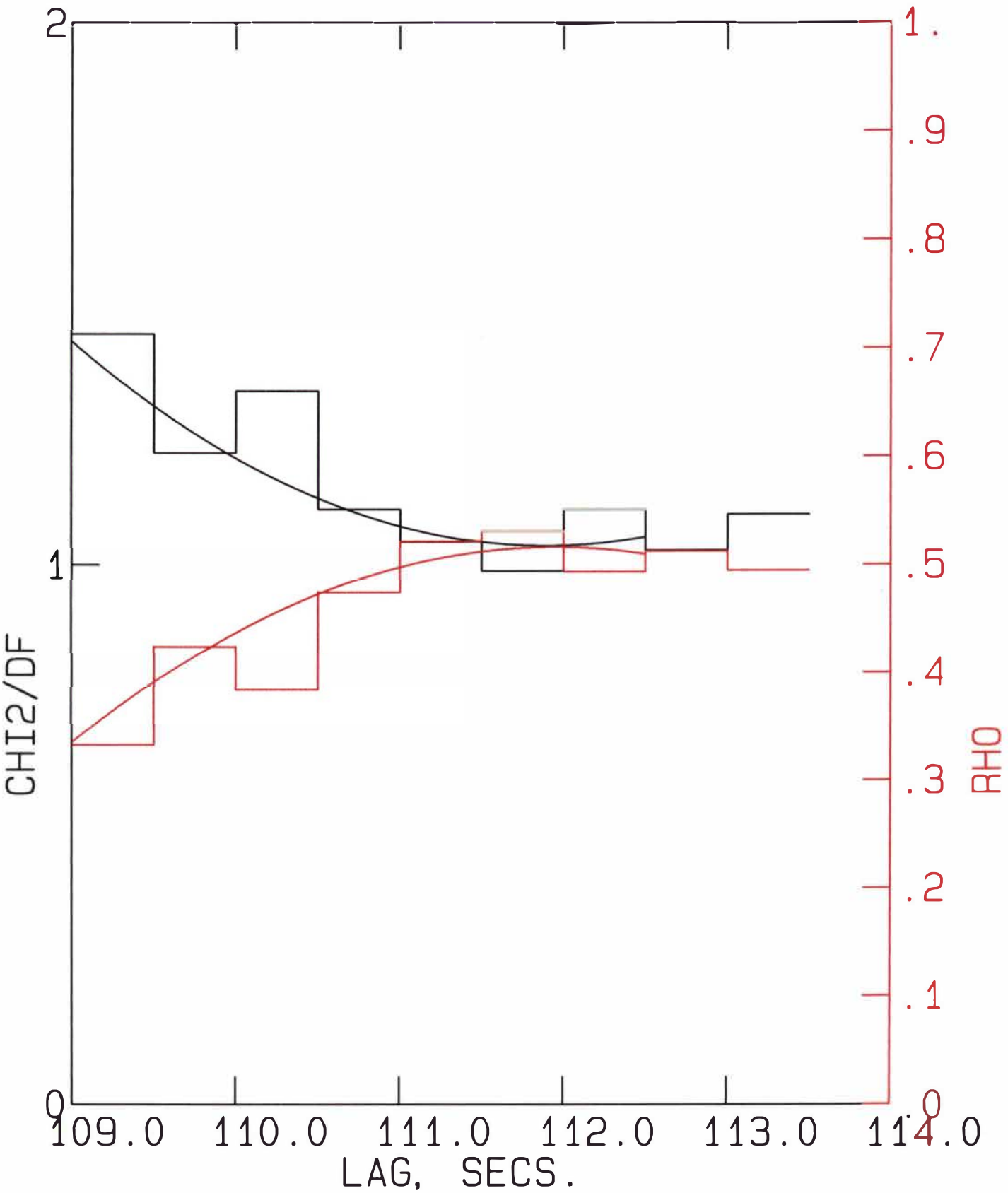

NEAR GRS -KONUS1 CORRELATION 16/11/99 51888.807 9/ 7/ 7
200
150
100
50
0
C/ 1.00000 S
NEAR GRS
400
300
200
100
0
C/ 1.00000 S
KONUS1
1
11
21
31
41
51
61
71
81
91
101
TIME, SECS

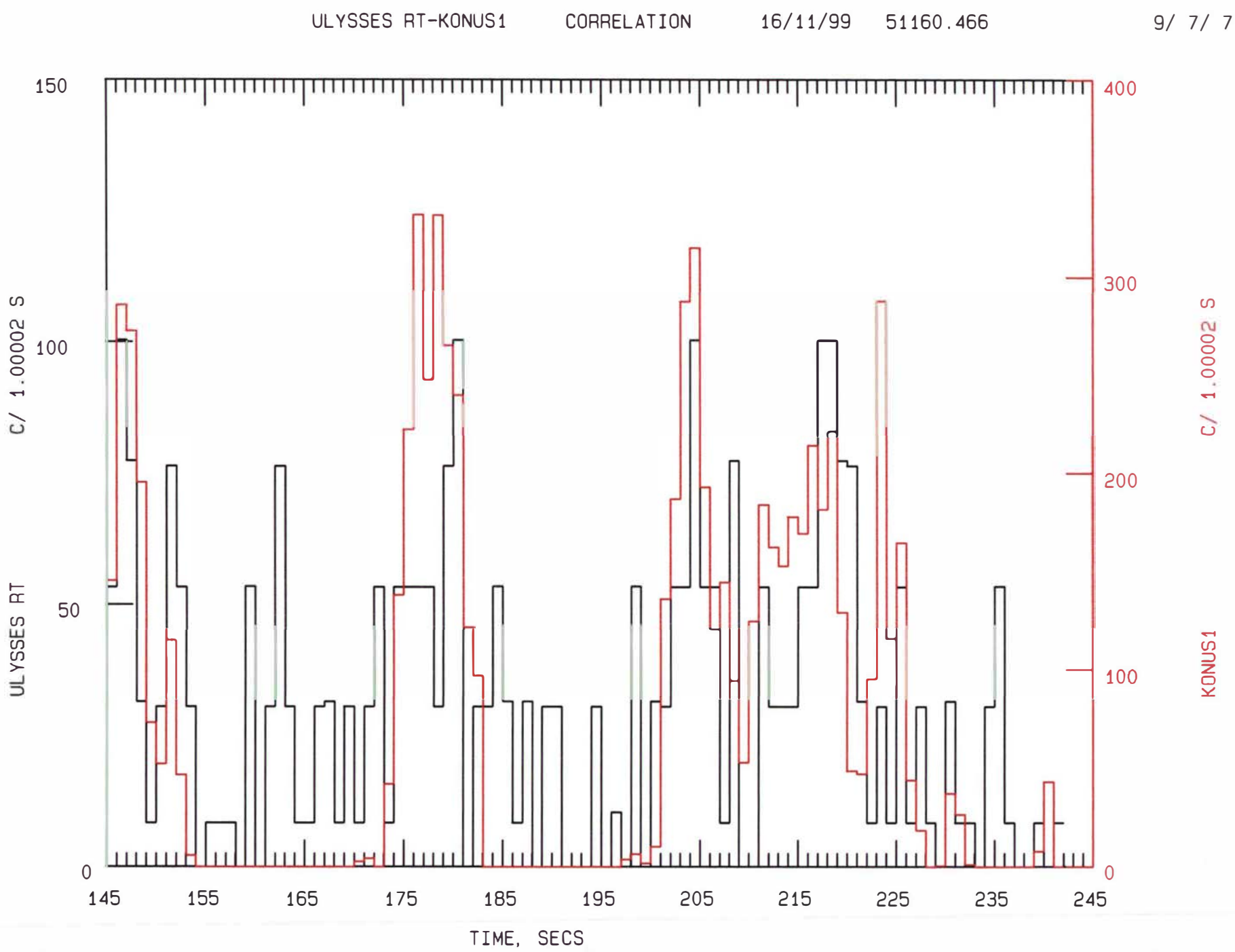
NEAR GRS -KONUS1 CORRELATION 16/11/99 51888.807



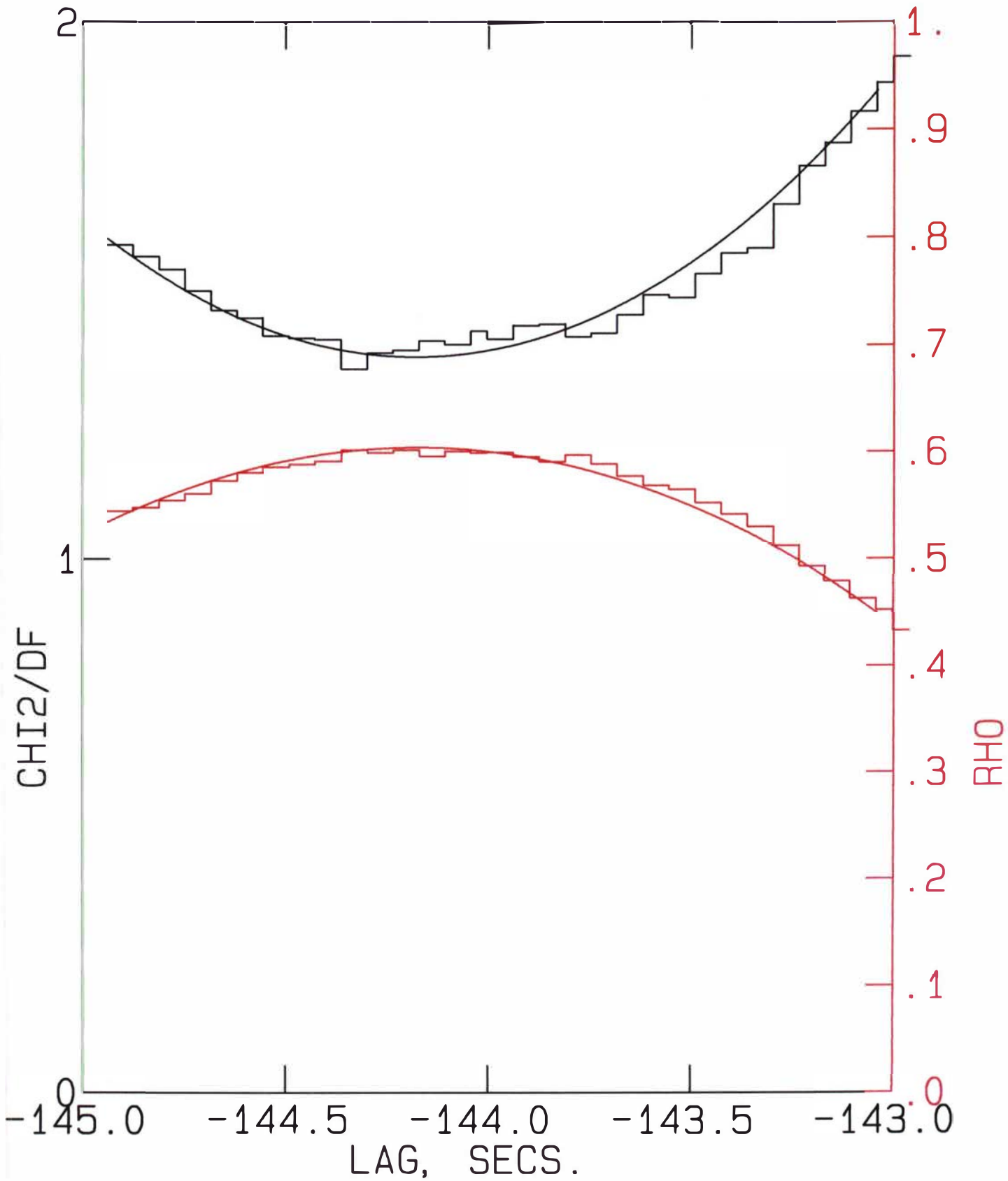

NEAR GRS -ULYSSES RT CORRELATION 16/11/99 51888.807 9/ 7/ 7
200
150
100
50
0
C/ 1.00000 S
NEAR GRS
125
100
75
50
25
0
C/ 1.00000 S
ULYSSES RT
-33
-8
0
17
42
67
92
117
142
TIME, SECS

NEAR GRS -ULYSSES RT CORRELATION 16/11/99 51888.807




ULYSSES RT-KONUS1 CORRELATION 16/11/99 51160.466 9/ 7/ 7
150
100
50
0
C/ 1.00002 S
ULYSSES RT
400
300
200
100
0
C/ 1.00002 S
KONUS1
145
155
165
175
185
195
205
215
225
235
245
TIME, SECS

ULYSSES RT-KONUS1 CORRELATION 16/11/99 51160.466



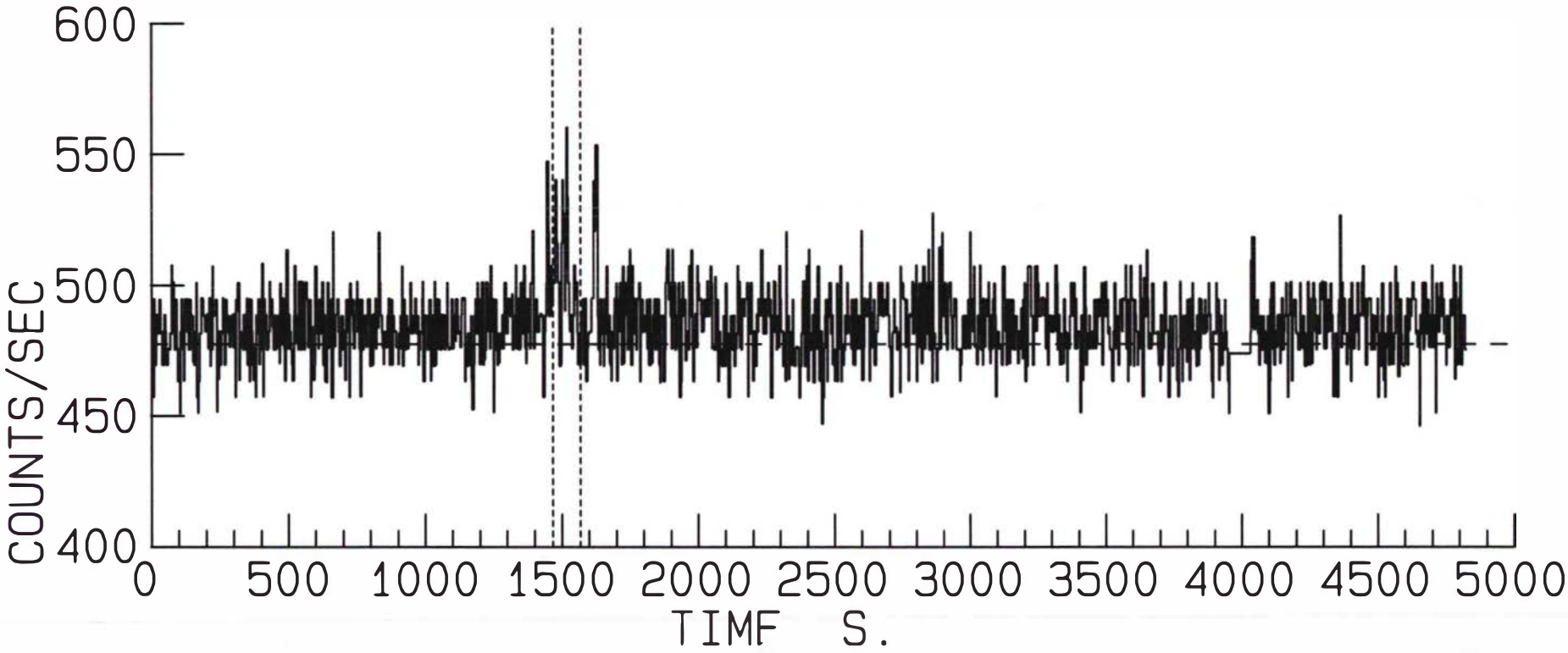
ULYSSES RT

9/ 7/ 7

16/11/99 49860.461 s

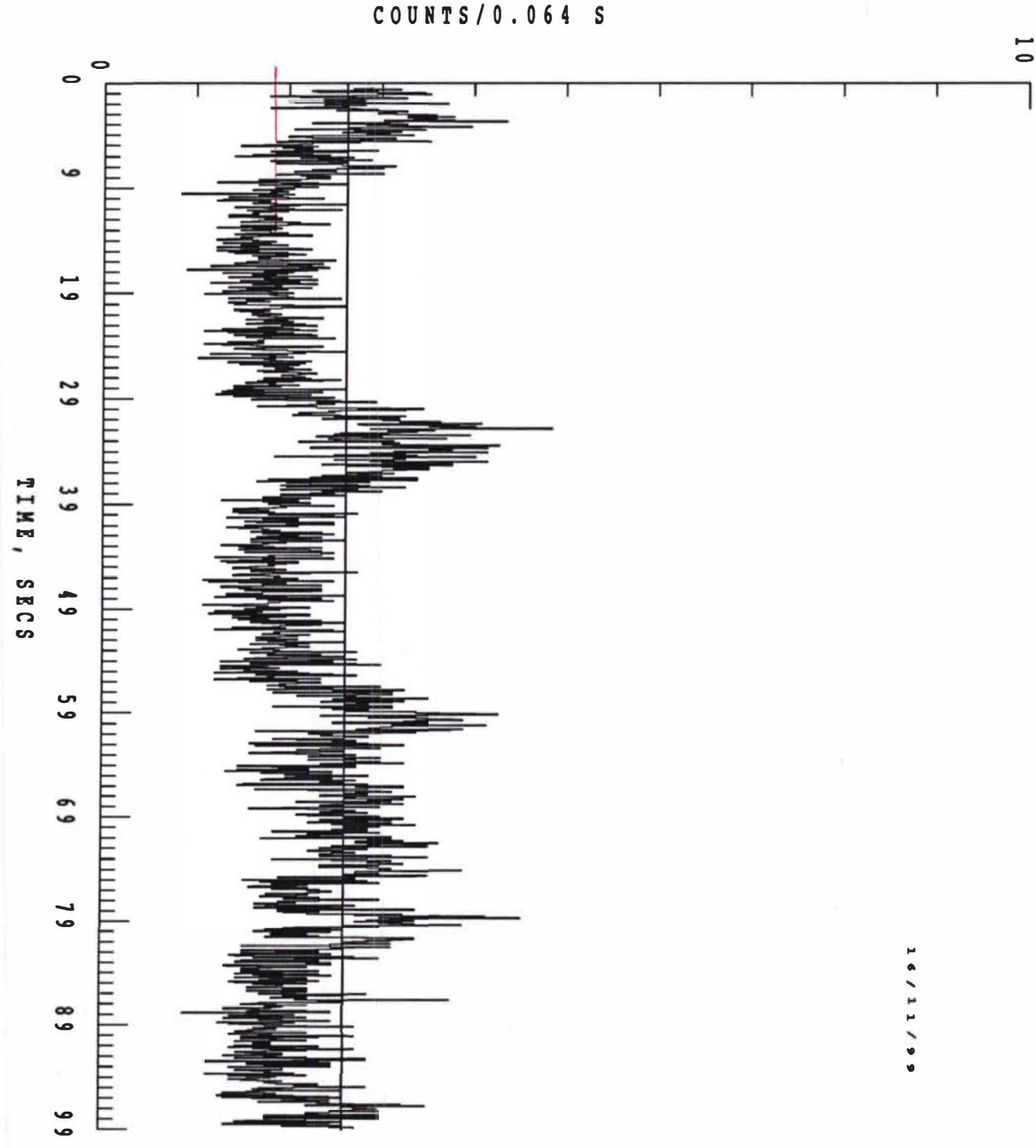
INTERVALS REGROUPED BY 7

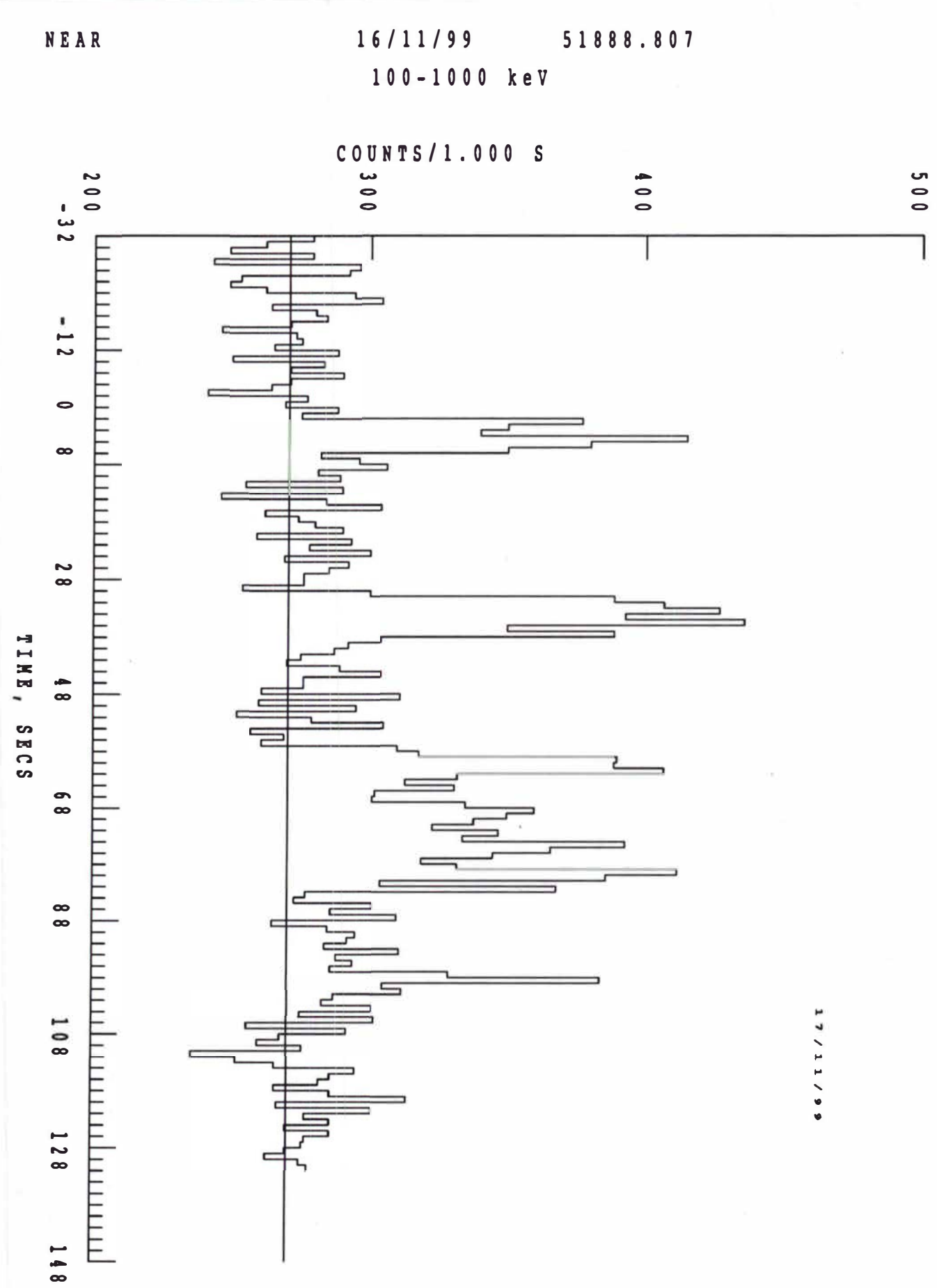
22- 152 keV

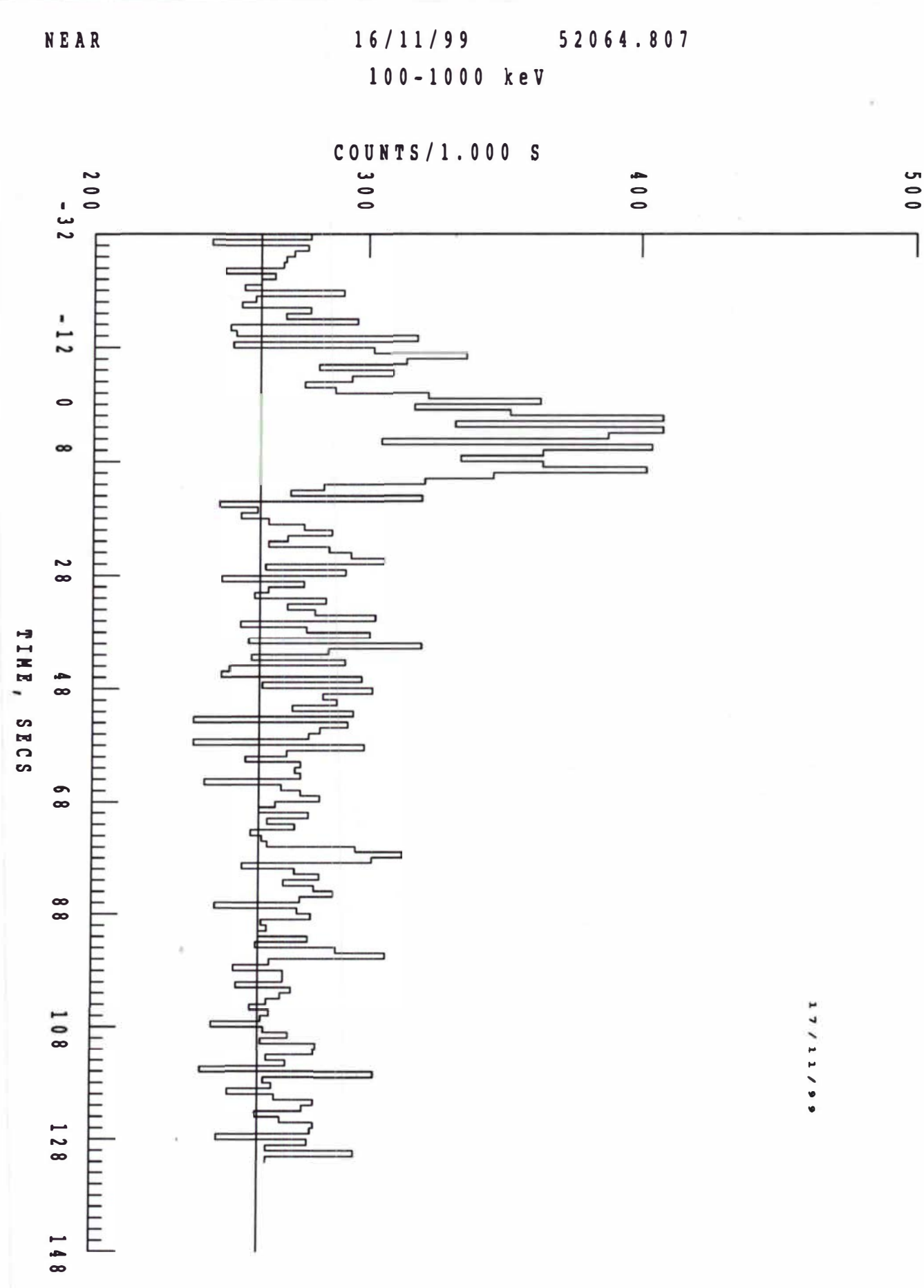


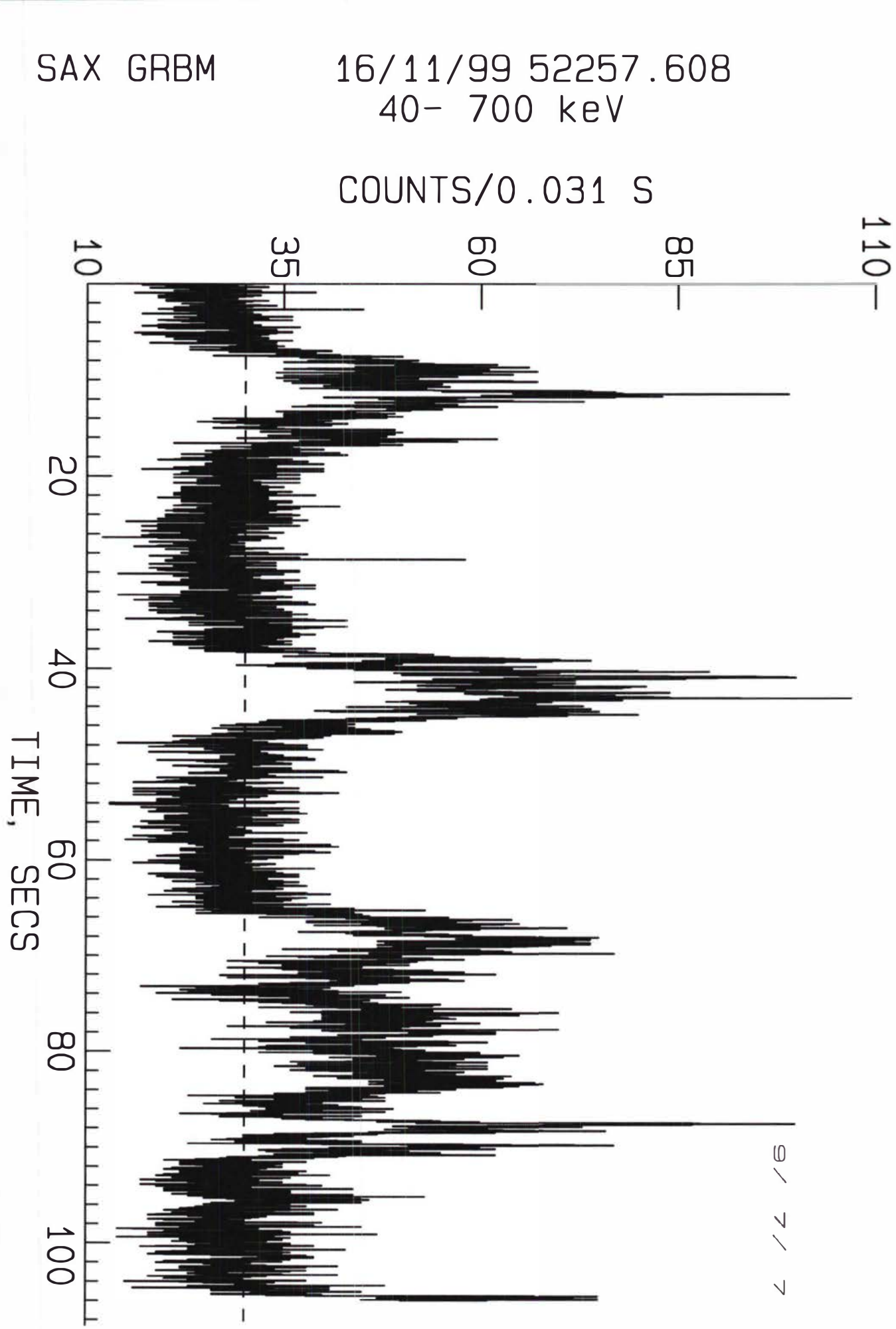
KONUS 16/11/99 52266.924

50- 200 keV




NEAR
16/11/99
51888.807
100-1000 keV
COUNTS/1.000 S
200
300
400
500
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
17/11/99


NEAR
16/11/99
52064.807
100-1000 keV
COUNTS/1.000 S
200
300
400
500
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
17/11/99


SAX GRBM
16/11/99 52257.608
40- 700 keV
COUNTS/0.031 S
10
35
60
85
110
20
40
60
80
100
TIME, SECS
9/ 7/ 7

From HENZE@fender.msfc.nasa.gov Thu Nov 18 13:55 PST 1999
Date: Thu, 18 Nov 1999 16:03:49 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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.: 7861

TIME: TJD=1498 SECONDS=84772

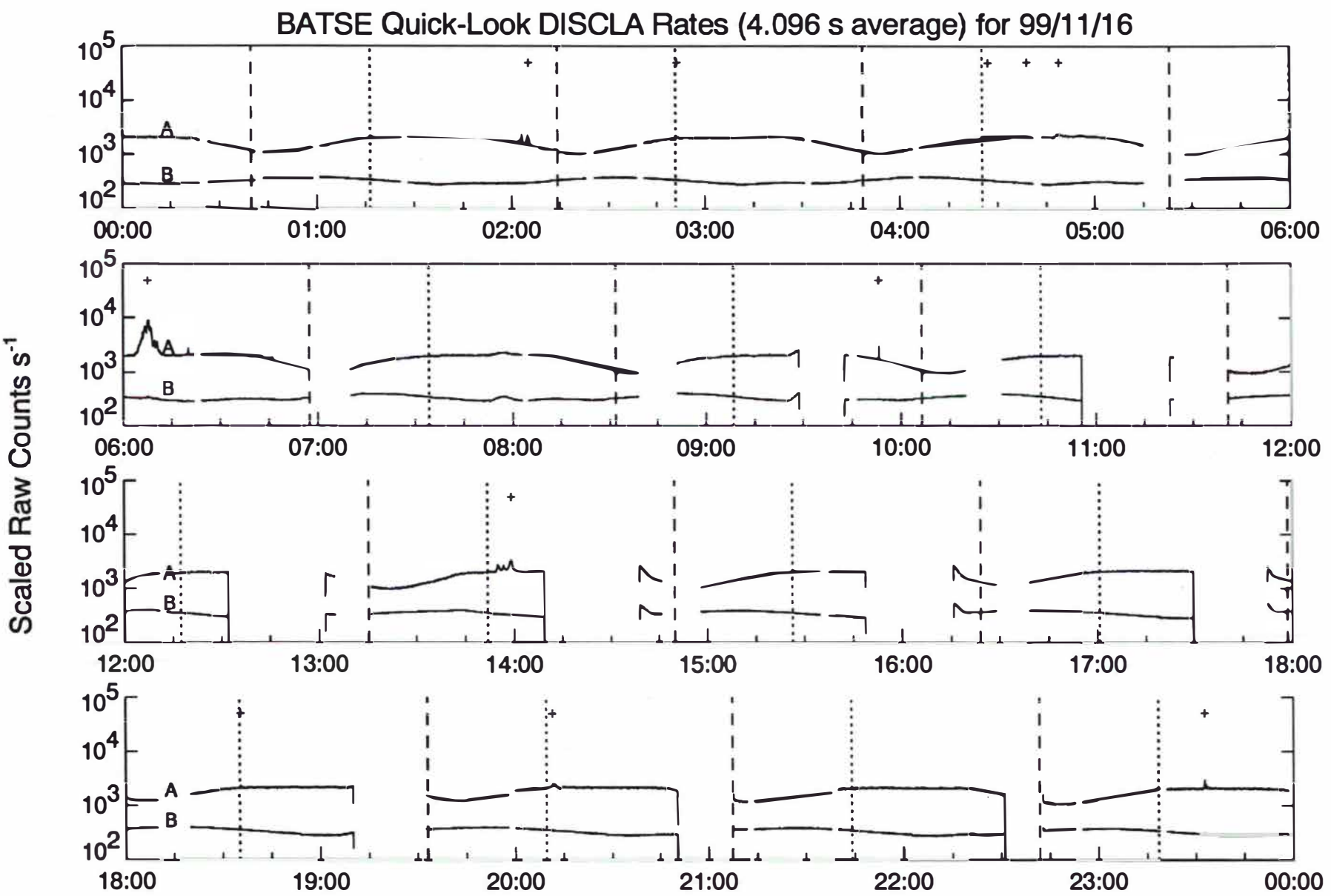
TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

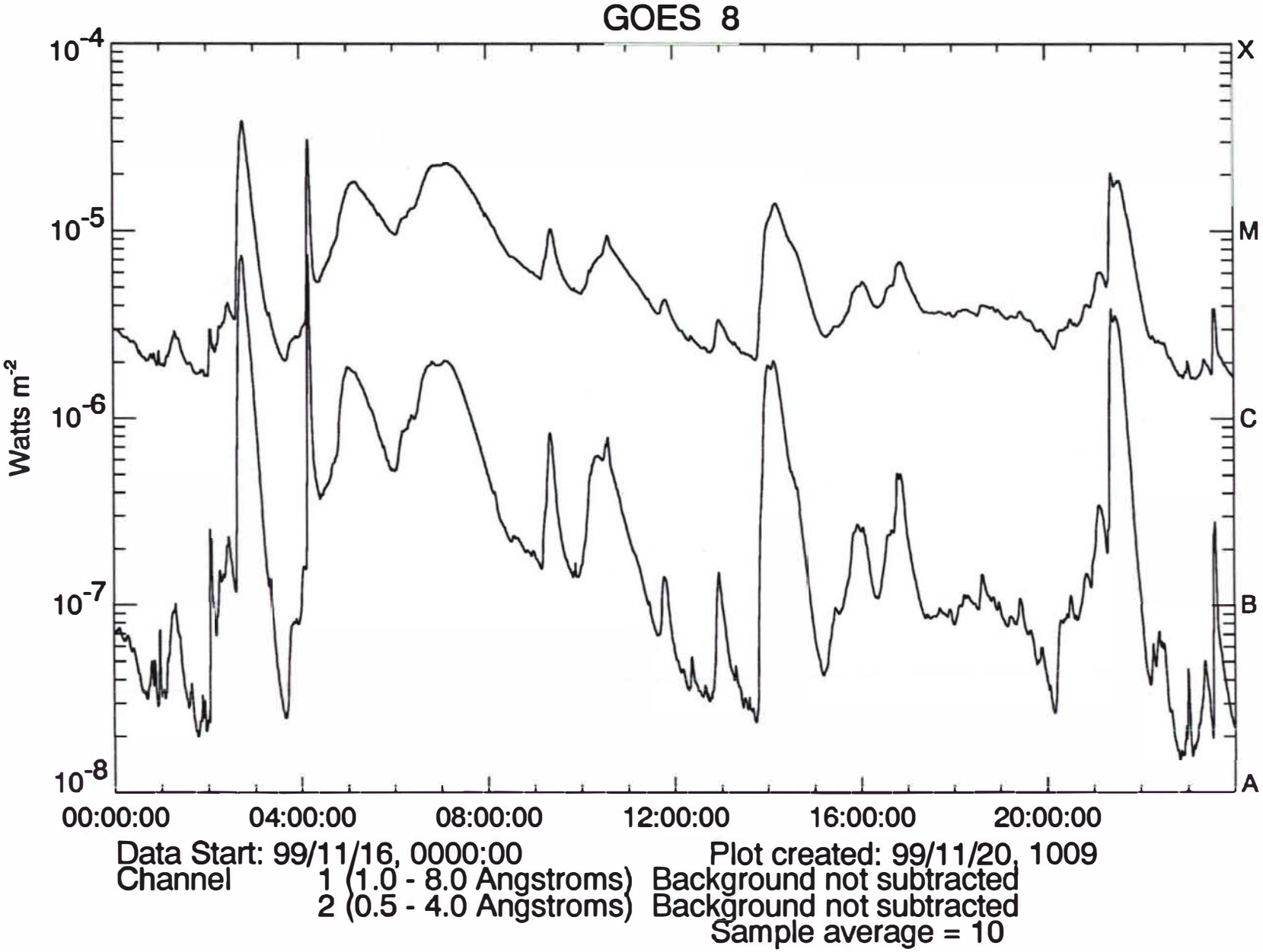
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 90.7 AZIMUTH=350.1 ERROR= 0.7 DEGREES

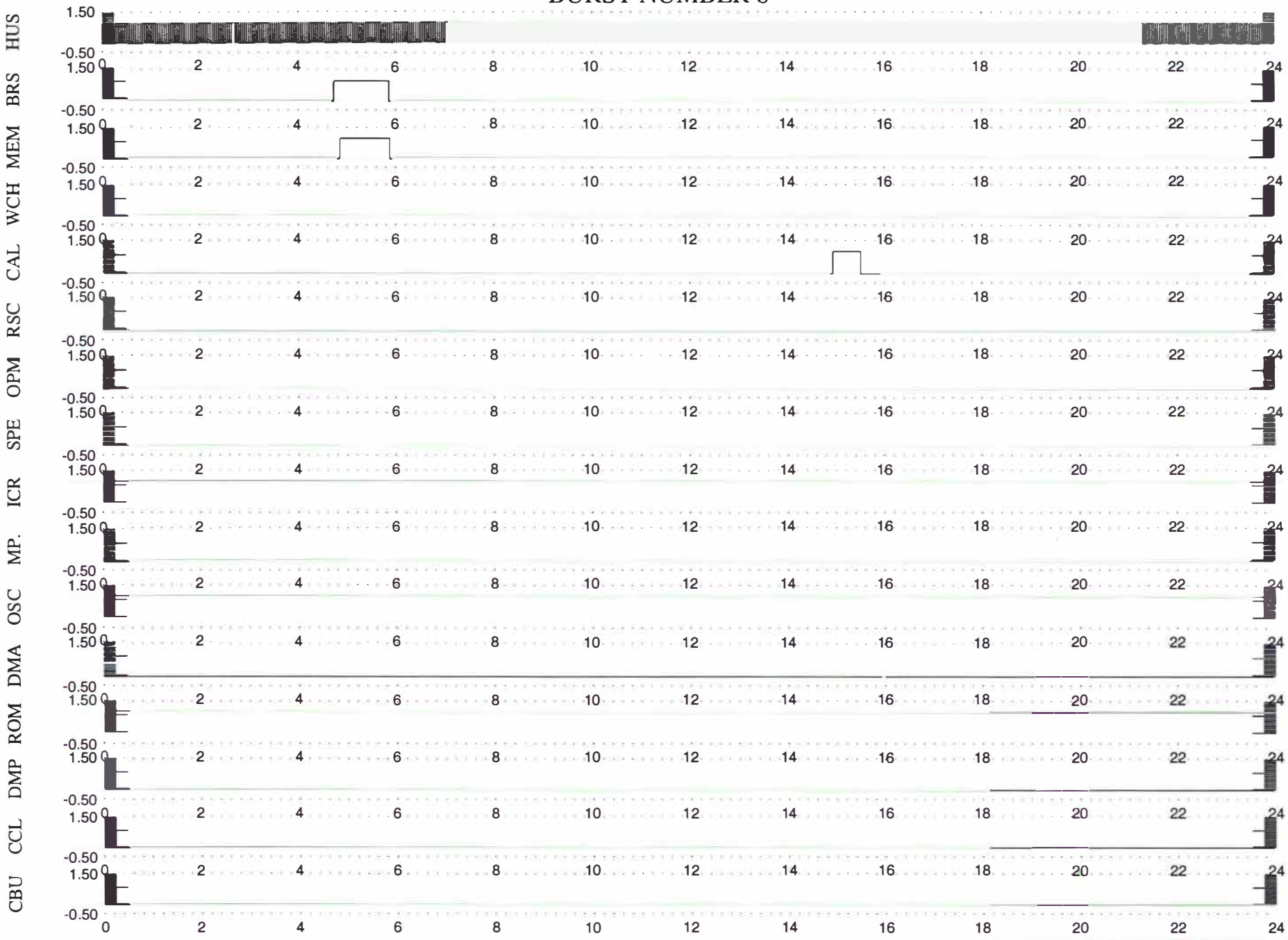
COMMENTS:
GOES C3.8, OPTICAL SN FLARE. COMPLEX, DUR. APPROX. 110 S, STARTS AT APPROX. T-25 S. WEAKLY VISIBLE ABOVE 100 KEV.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/16
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/20, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/16, 0000:00
Plot created: 99/11/20, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 320, year 1999 to day 320, year 1999 03/21/00

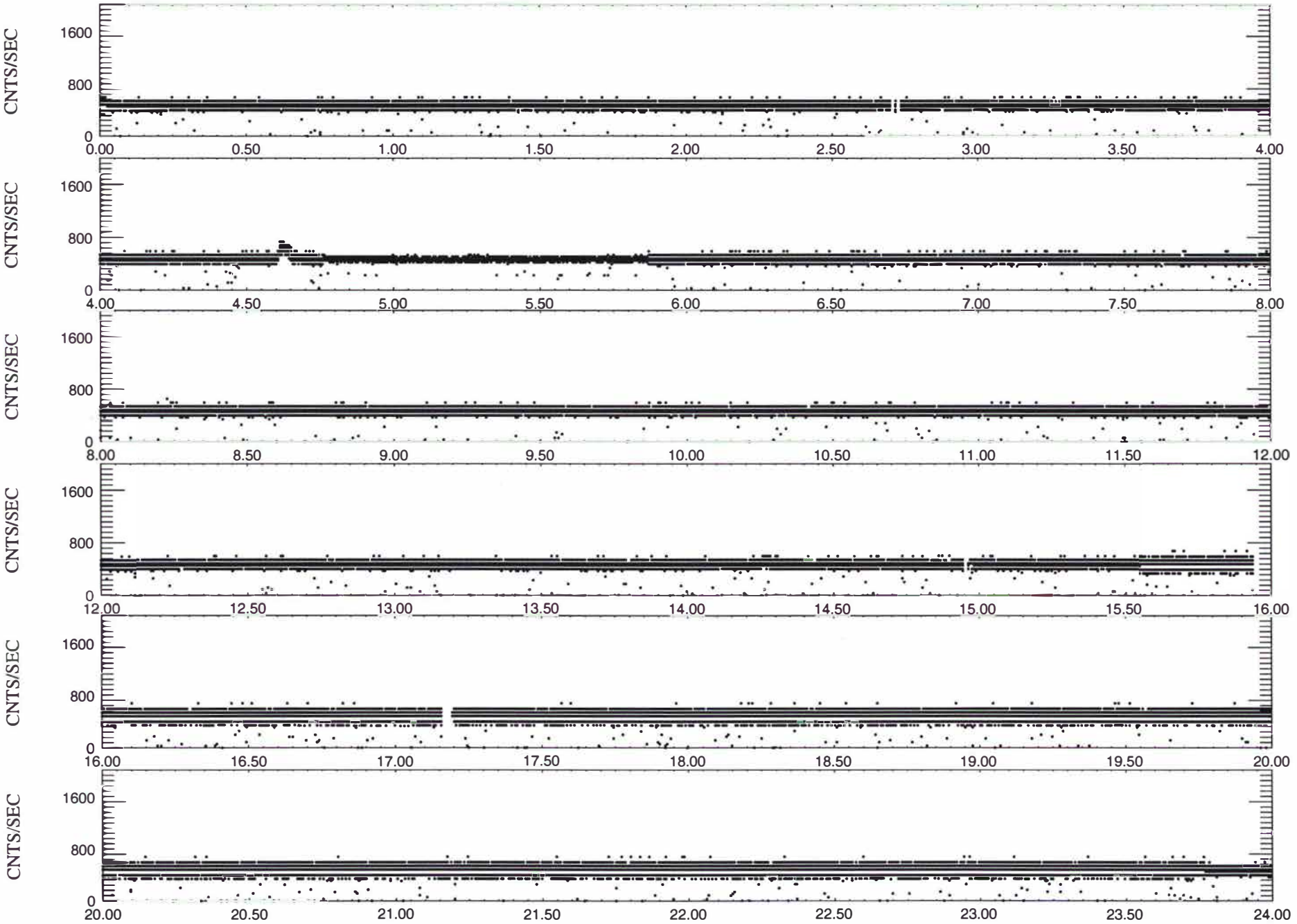
BURST NUMBER 8



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 16/11/1999 DOY = 320 03/21/00

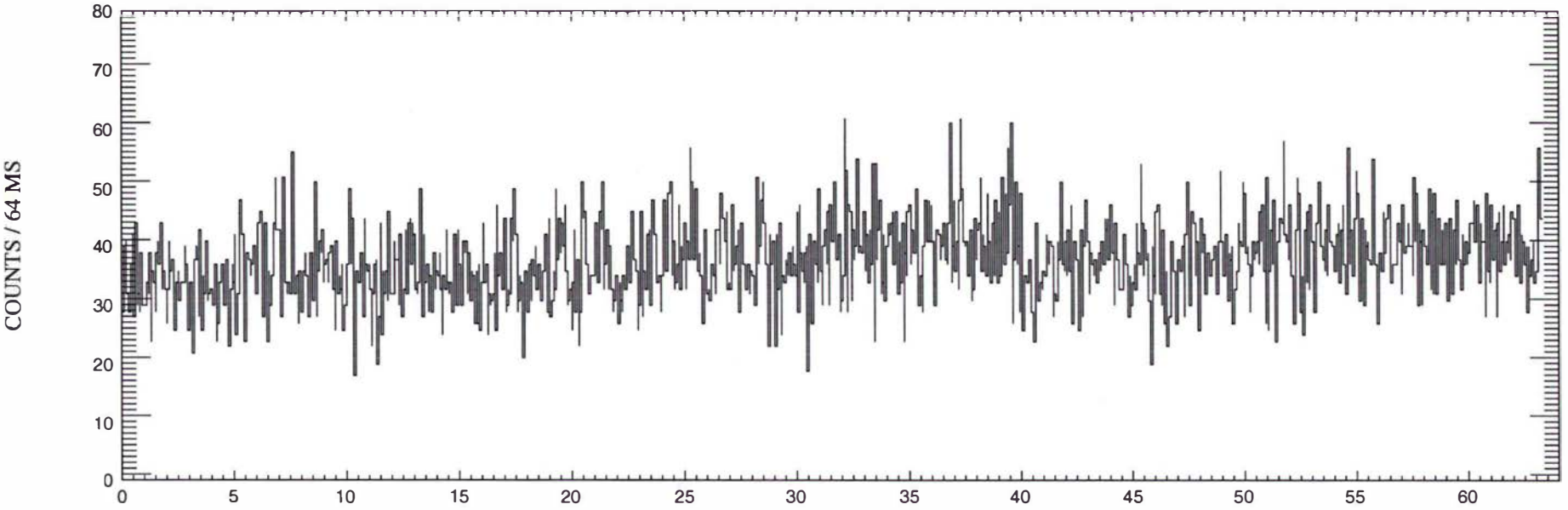
CALIBRATION DATA INCLUDED

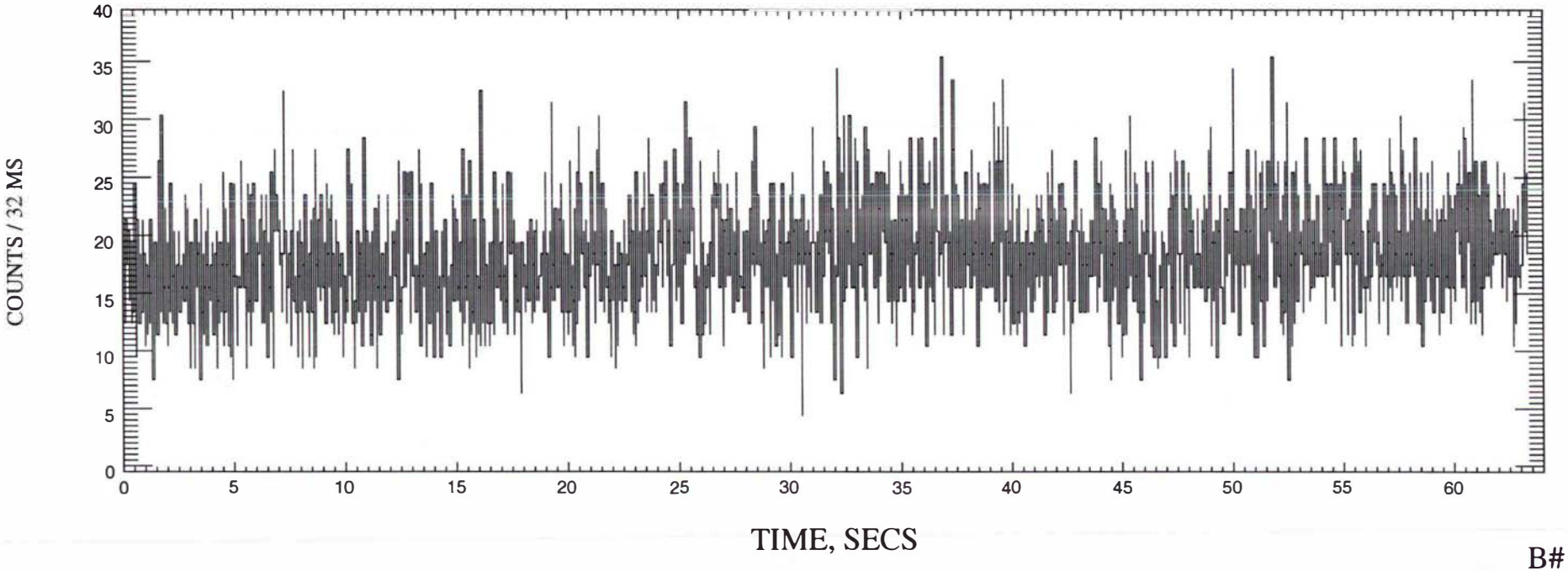


UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 16/11/1999 DOY = 320 03/21/00

Burst Counter 8 at UT= 4.607601602342 h=16587.366 s 04:36:27.366

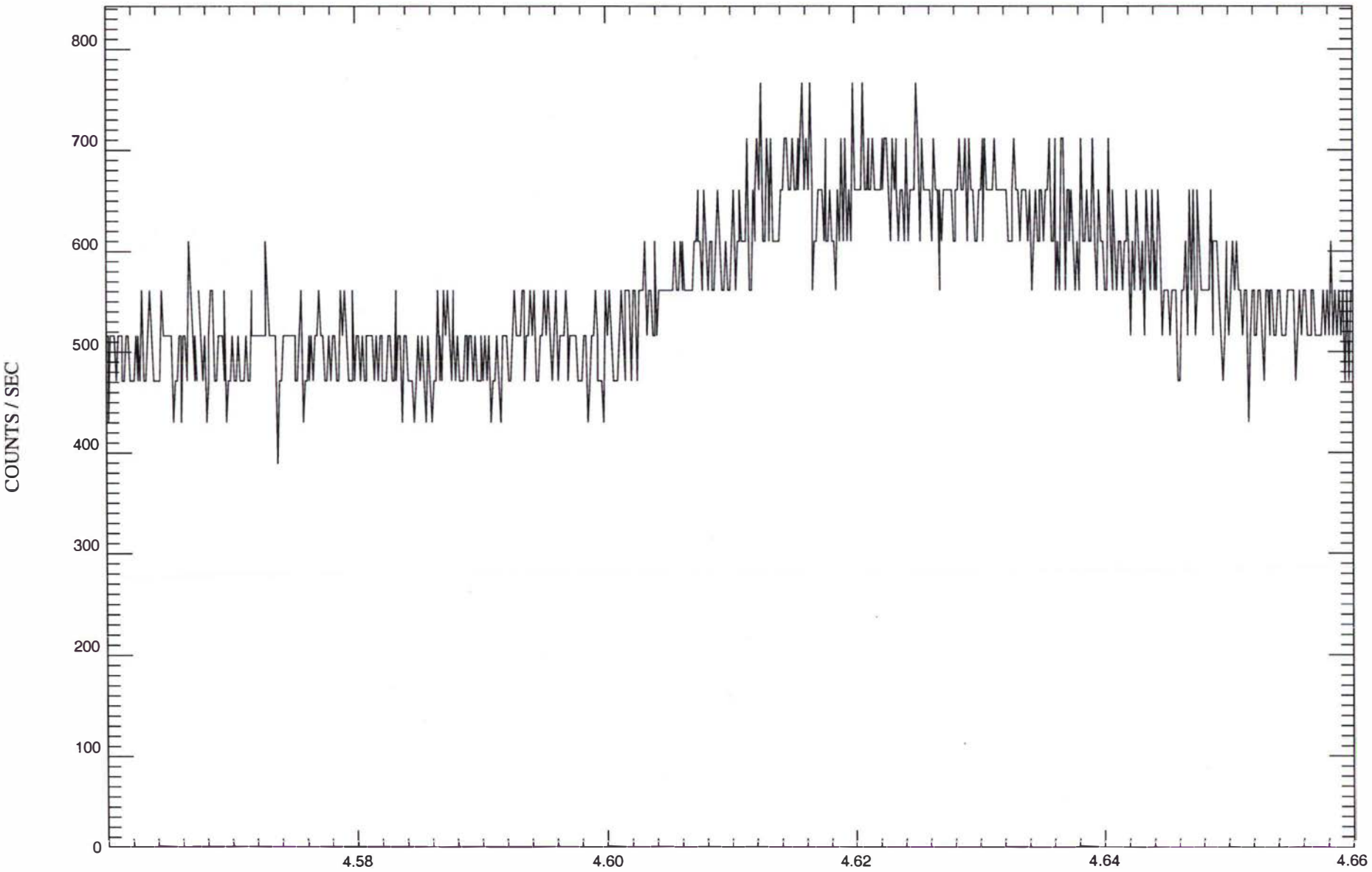




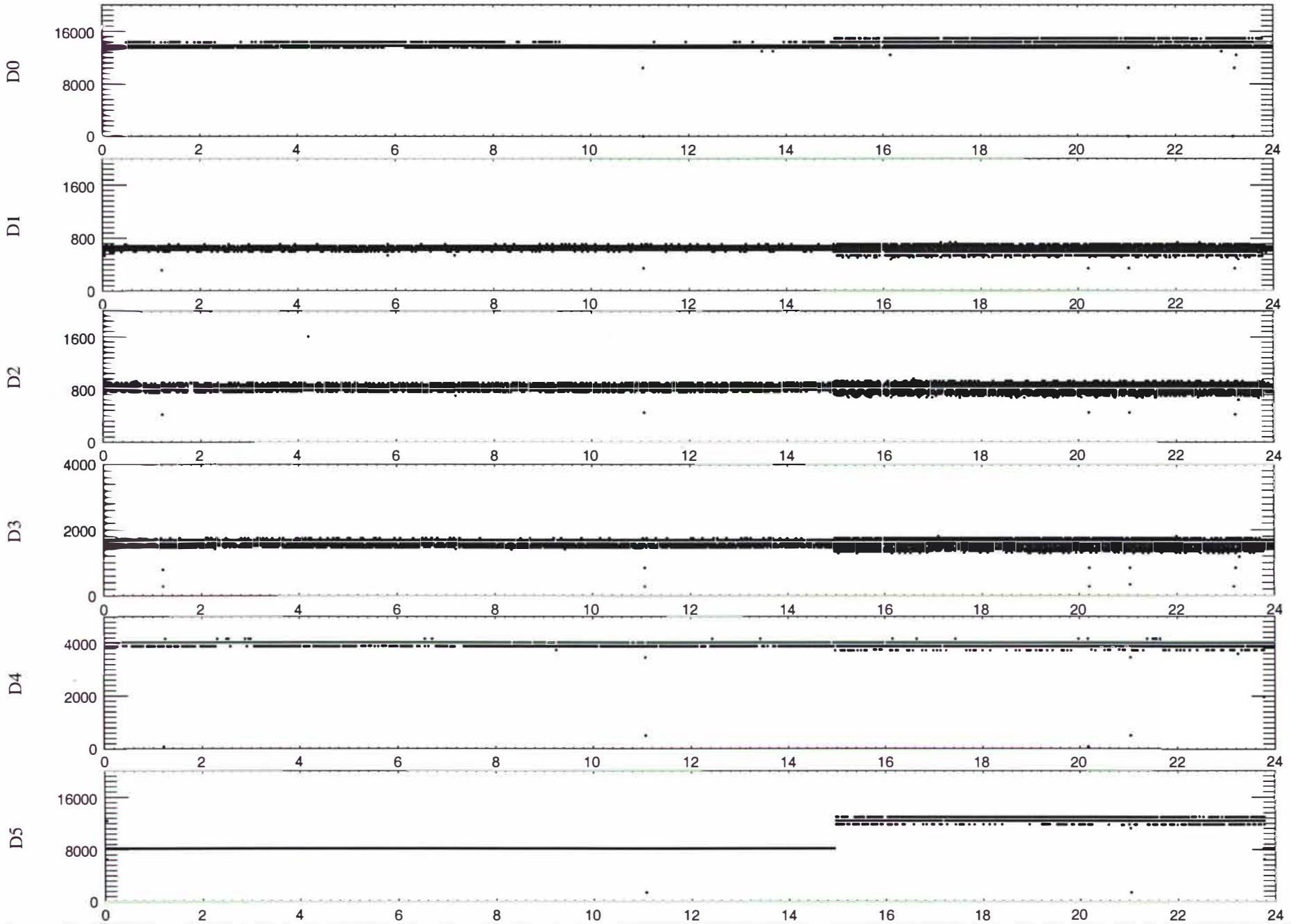
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 16/11/1999 DOY = 320 03/21/00

CALIBRATION DATA INCLUDED

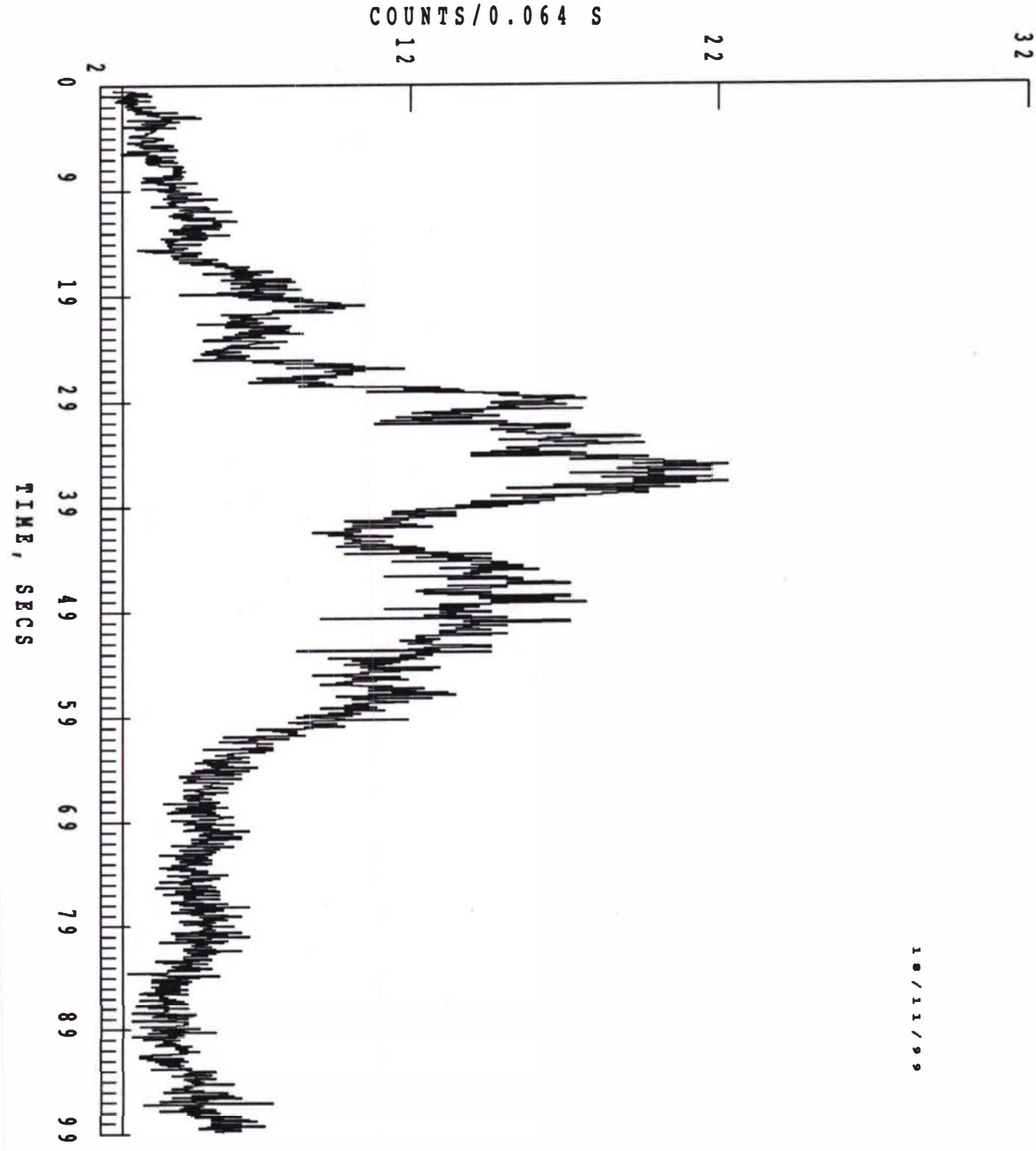


HUS 2B COUNTS / SEC EDR day 320, year 1999 to day 320, year 1999 03/21/00



KONUS 17/11/99 35523.586

50- 200 keV



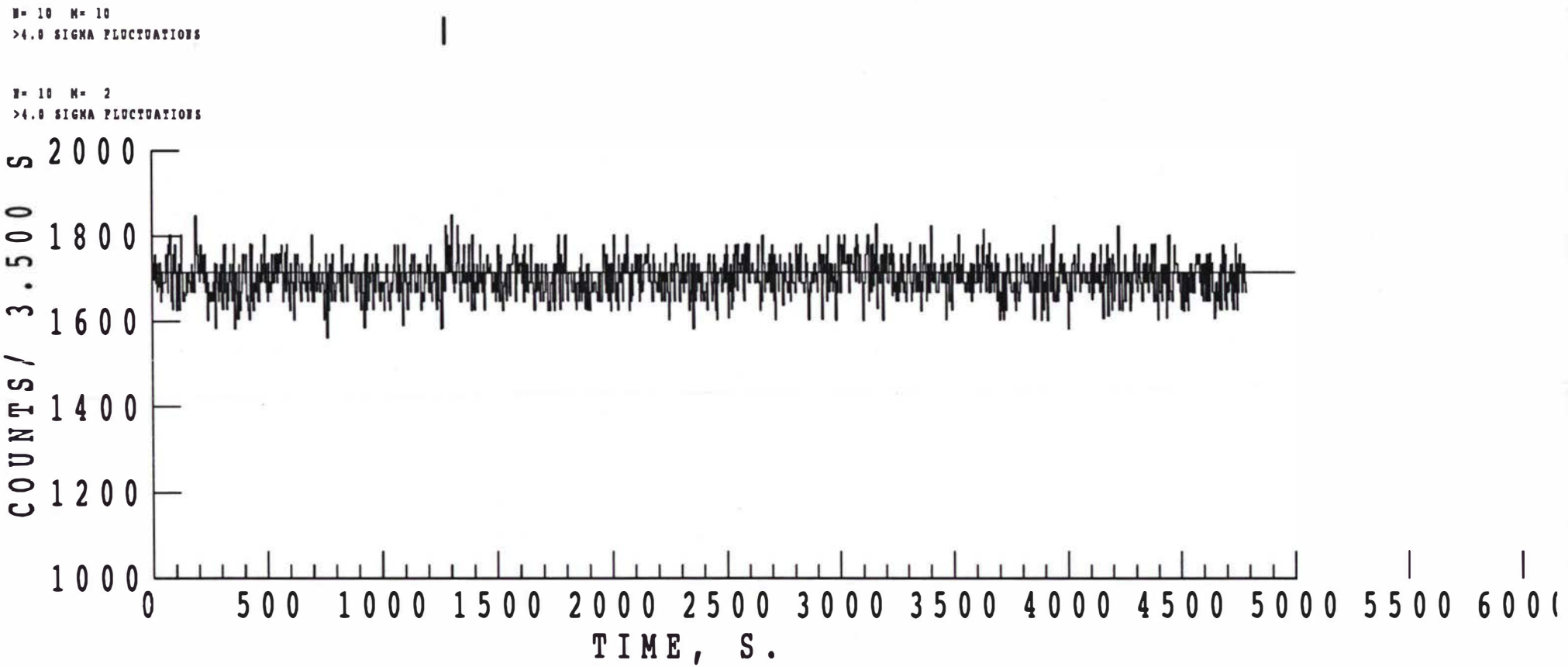
KONUS2 19991117 35523

ULYSSES RT 18/11/99

17/11/99 33120.168 s

0.500 S INTERVALS REGROUPED BY 7

0- 0 keV



From HENZE@fender.msfc.nasa.gov Fri Nov 19 12:45 PST 1999
From: HENZE@fender.msfc.nasa.gov
Date: Fri, 19 Nov 1999 14:54:30 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7862

```
          ********************
          *BATSEARCH PROGRAM*
          ********************

 BATSE BURST #    7862
 EVENT OF 1999 NOV 17 DAY OF YEAR=321
 EVENT CROSSING TIME AT BATSE     : 78373. S. OR 21:46:13.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 207.000  -43.000
 BATSE PEAK COUNTING RATE:   4900    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 17/11/  99 IS:
 RA=  165.342 DEC=  -25.175 DIST=    4.703 AU
 BATSE-ULYSSES DISTANCE =  703598557. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.69 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1841.46 SECS.
 CROSSING TIME AT ULYSSES    IS 76532. S. OR   21:15:31 +/-  274.66 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 17/11/  99 IS:
 RA=  295.041 DEC=  -23.029 DIST=    1.606 AU
 MARS-BATSE DISTANCE =  240258160. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.85 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -232.25 SECS.
 CROSSING TIME AT MARS       IS 78141. S. OR   21:42:20 +/-  129.64 SECONDS


                BATSE BURST TRIGGER
NO.:  7862

TIME: TJD=1499 SECONDS=78373

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH= 81.9  AZIMUTH= 31.4  ERROR=  5.9 DEGREES

COMMENTS:
SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 3.5 S, STARTS AT APPROX. T-1.5 S.
POSSIBLE WEAK PRECURSOR EMISSION BEGINNING APPROX. T-11 S.  POSSIBLE WEAK TAIL
EXTENDING TO APPROX. T+40 S.  VERY WEAKLY VISIBLE ABOVE 300 KEV.


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   7862   991117   11499   78373     4900   207   -43   3.5
```

BATSE BURST# 7862

ULYSSES RT

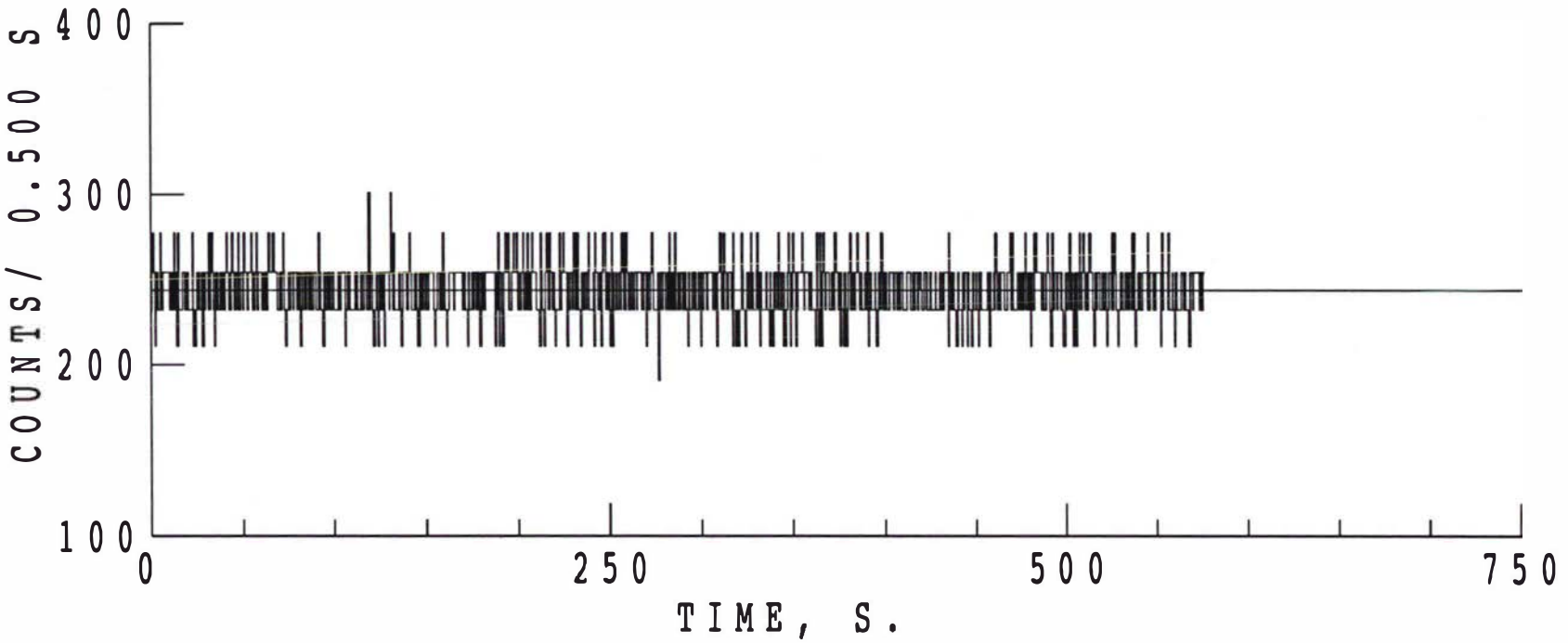
21/03/00

17/11/99 76248.102 s

0- 0 keV

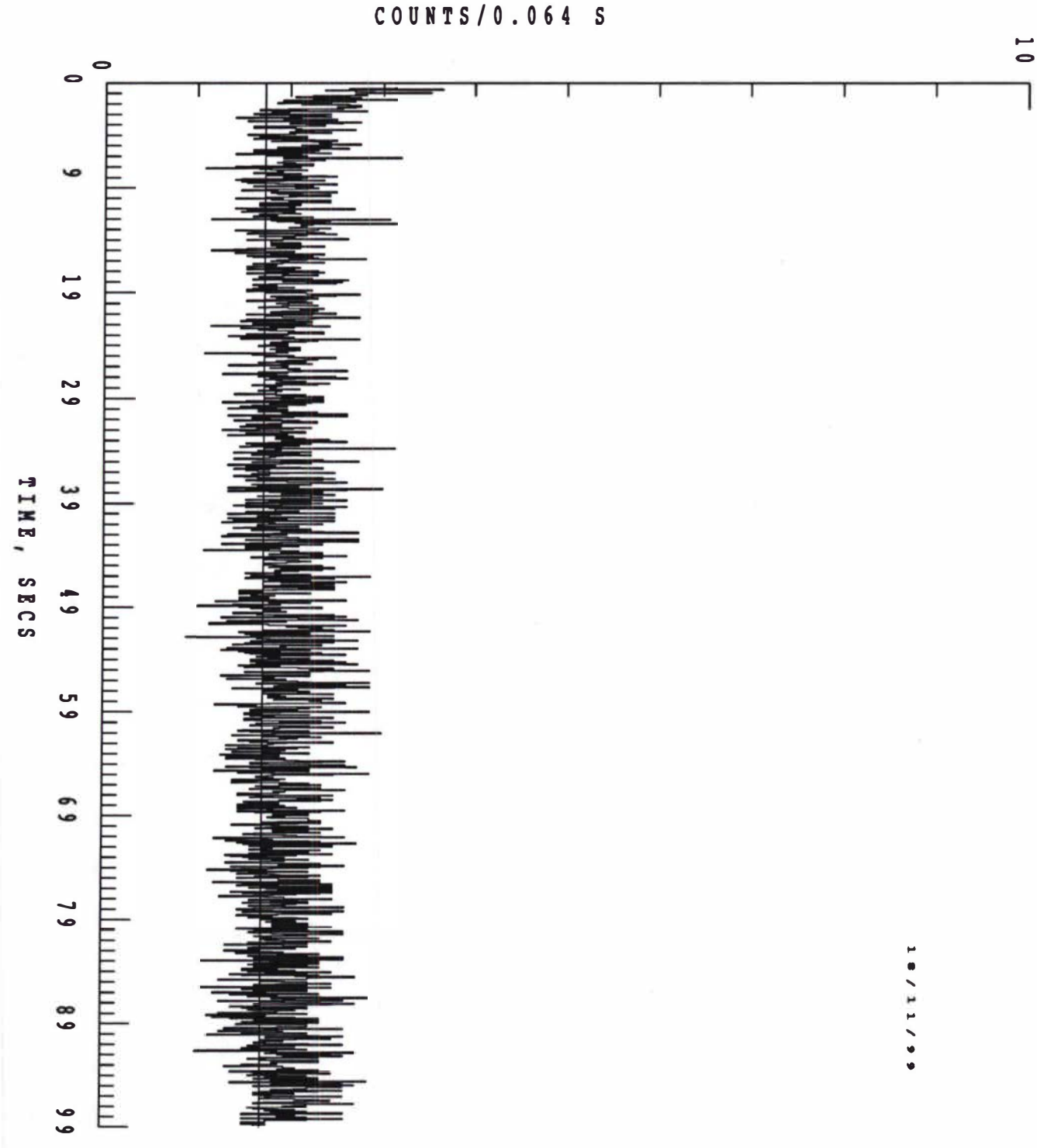
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

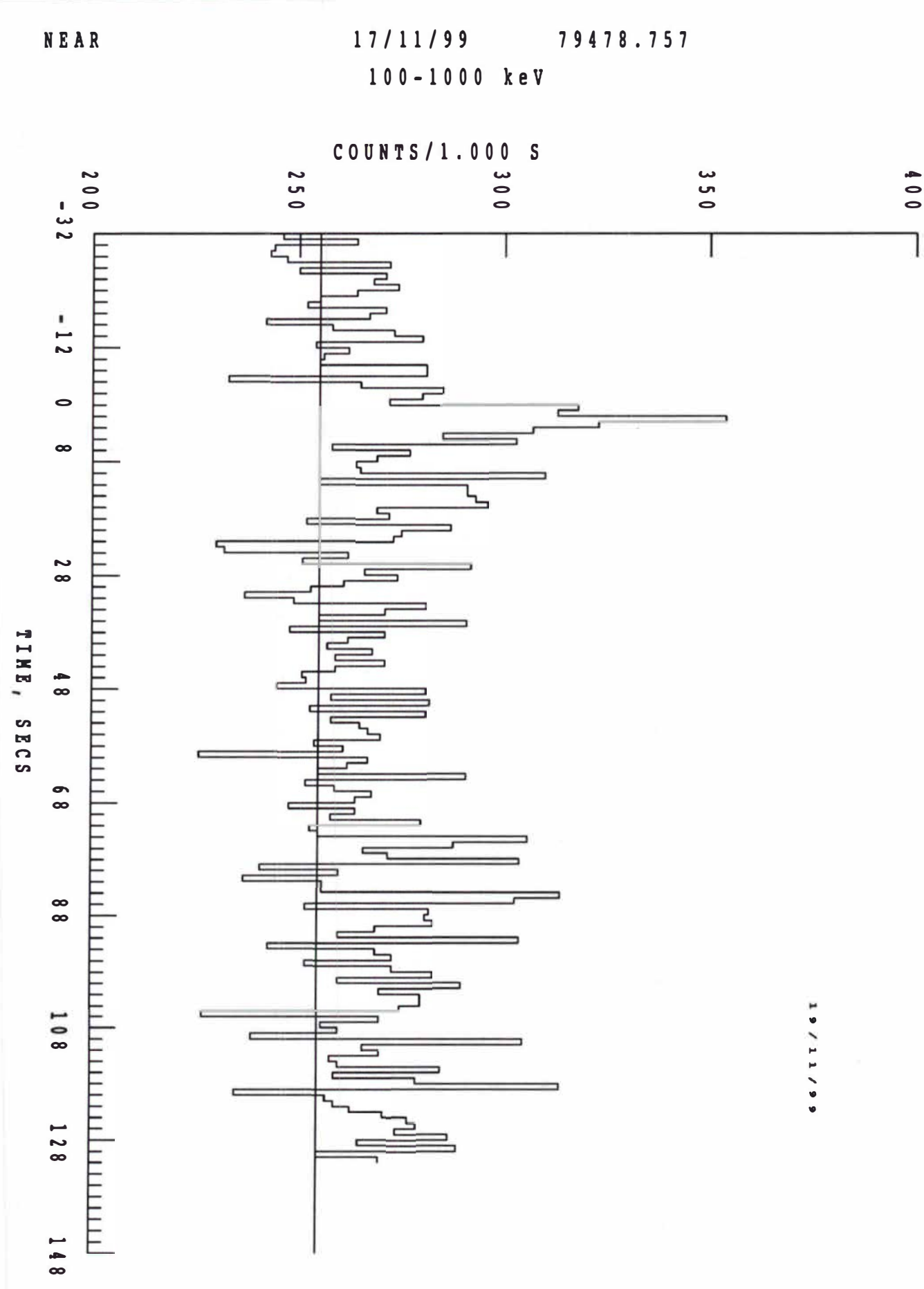
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS 17/11/99 79939.324

50- 200 keV




NEAR
17/11/99
79478.757
100-1000 keV
COUNTS/1.000 S
200
250
300
350
400
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
19/11/99

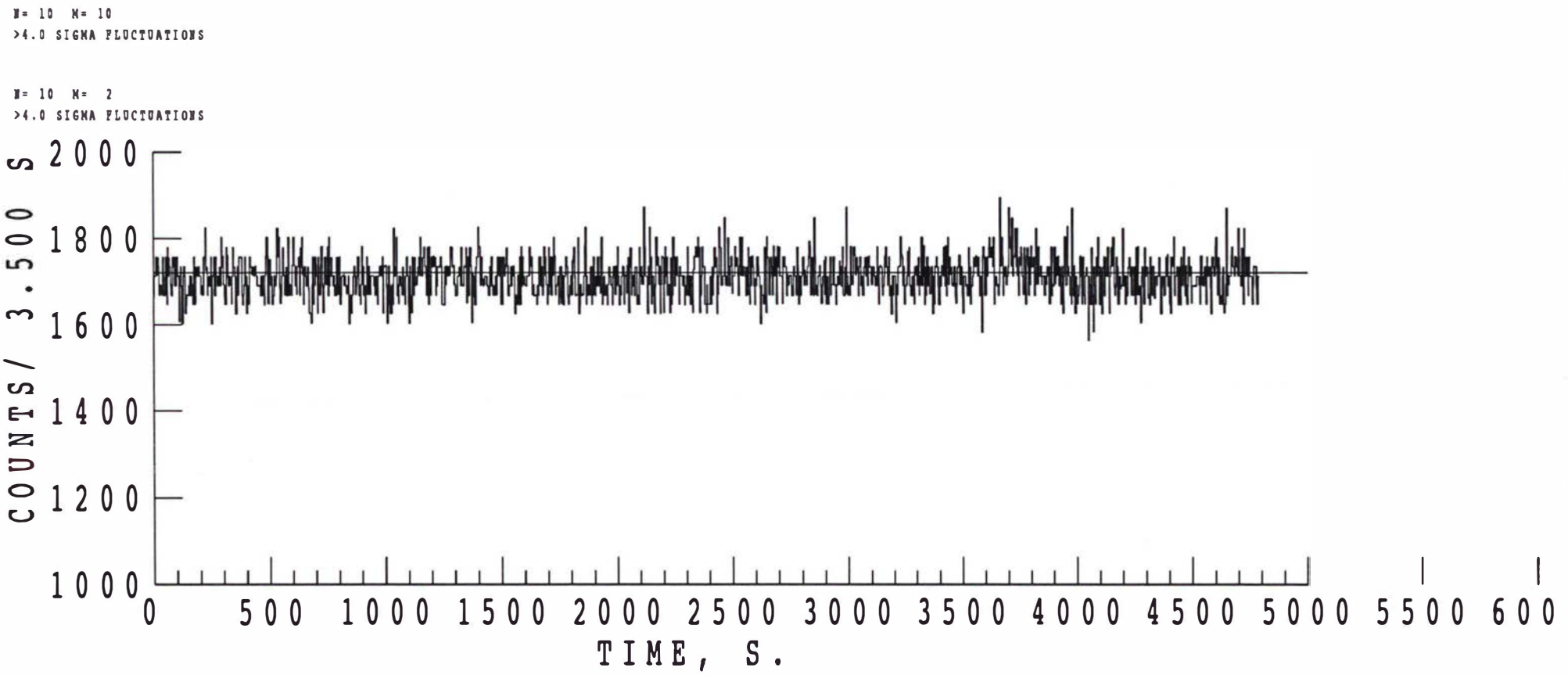
KONUS1 19991117 79939

ULYSSES RT 21/03/00

17/11/99 77544.109 s

0.500 S INTERVALS REGROUPED BY 7

0- 0 keV



KNEAR GRS 19991117 79478

ULYSSES RT 21/03/00

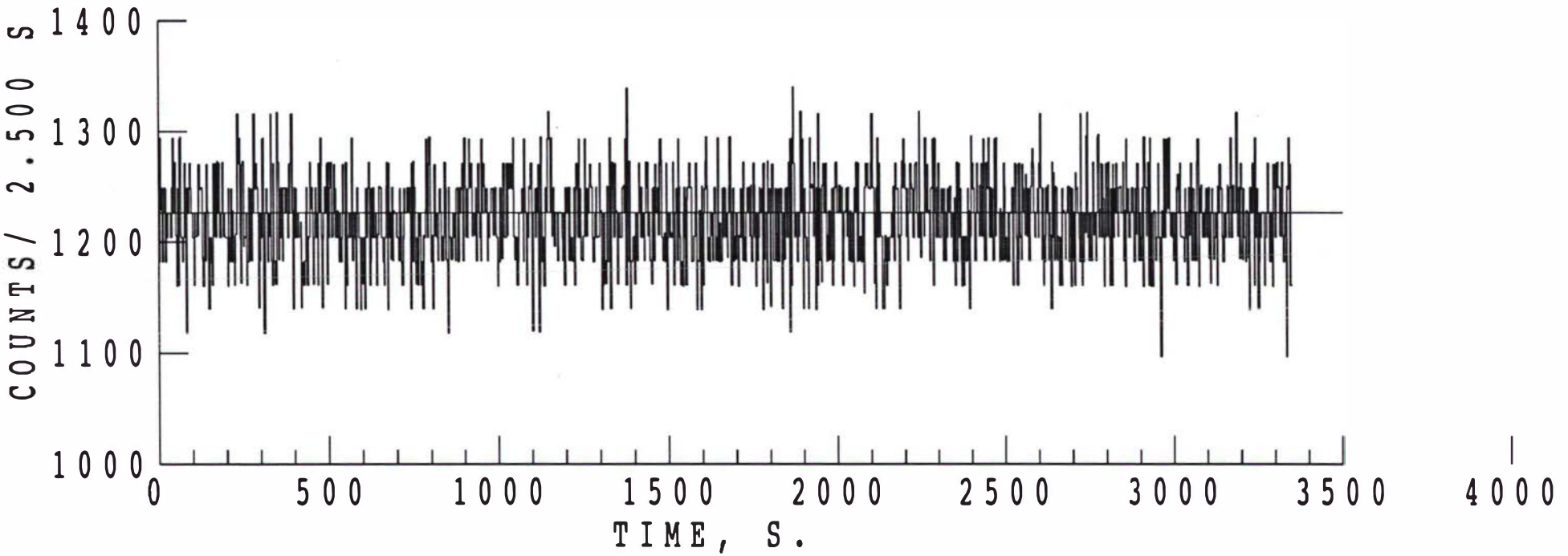
17/11/99 77796.117 s

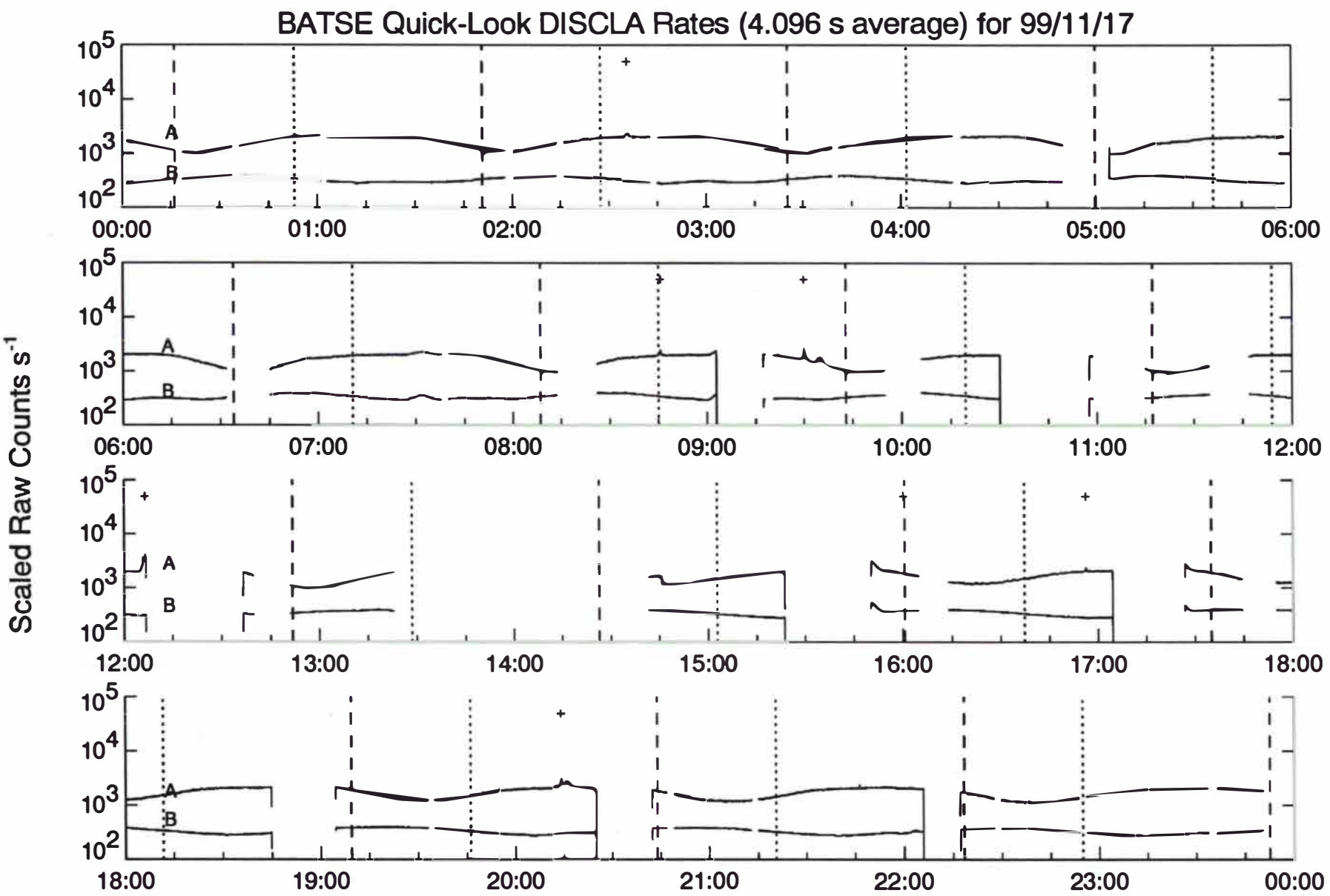
0.500 S INTERVALS REGROUPED BY 5

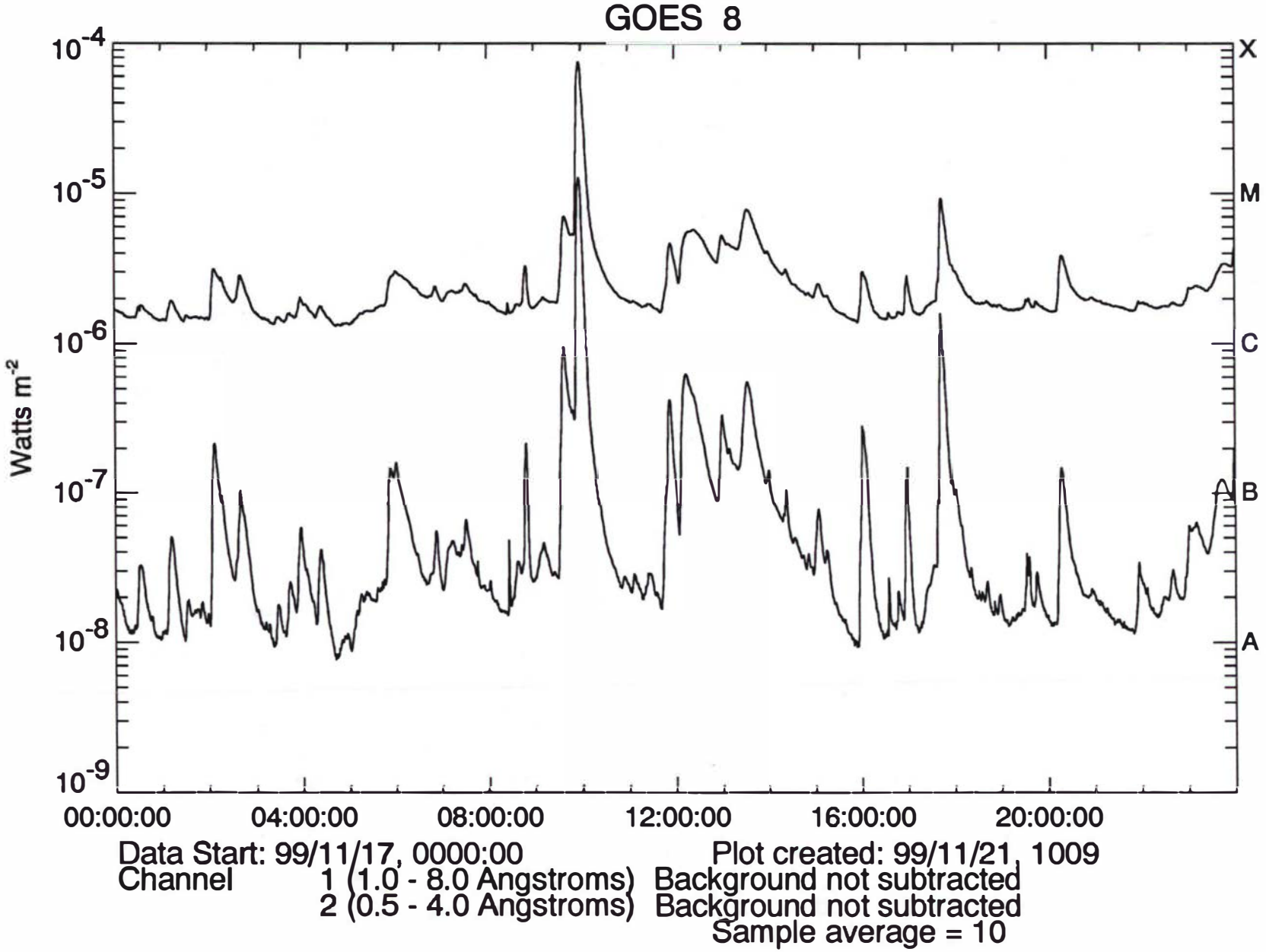
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

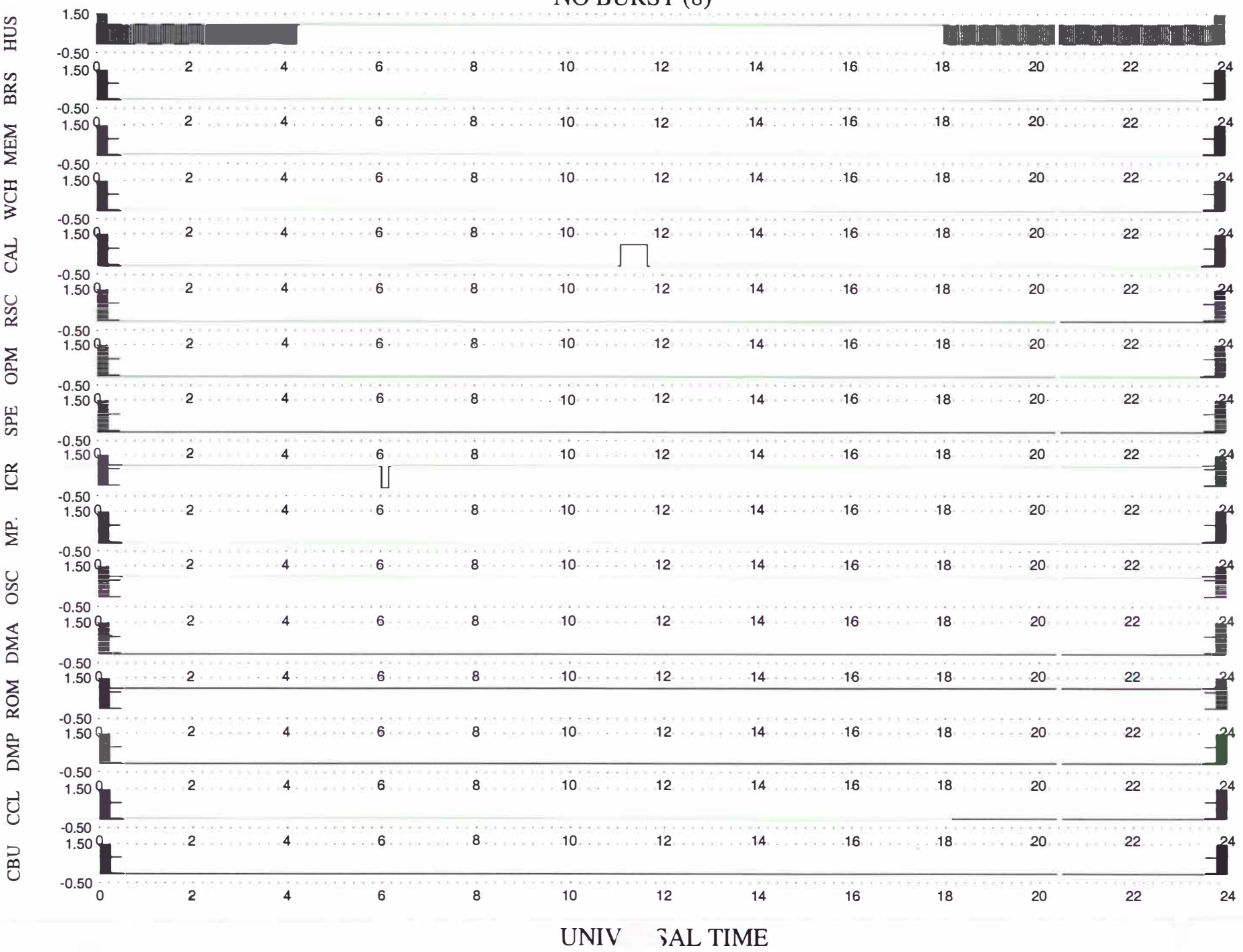
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/17
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/21, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

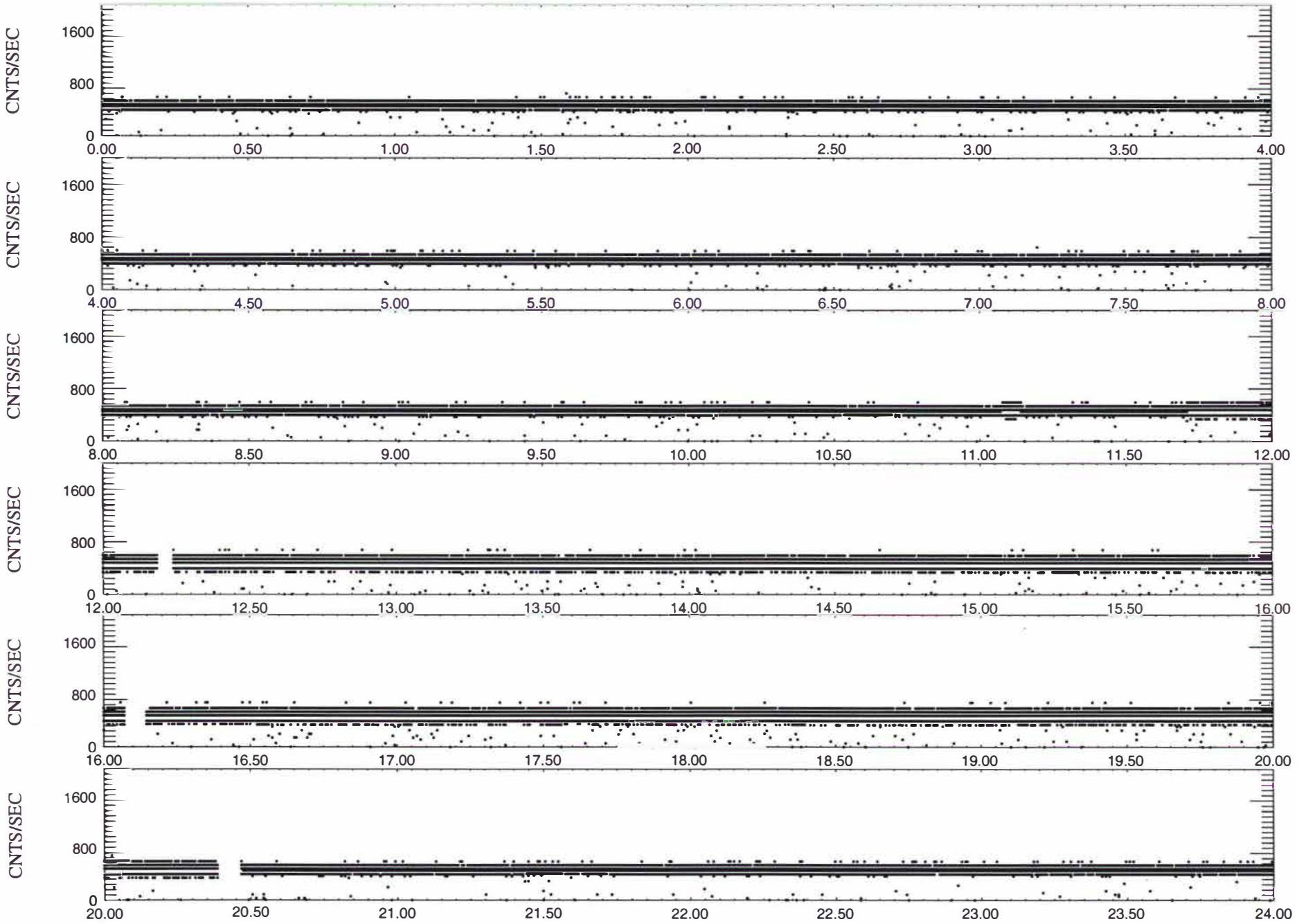

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/17, 0000:00
Plot created: 99/11/21, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 321, year 1999 to day 321, year 1999 03/21/00



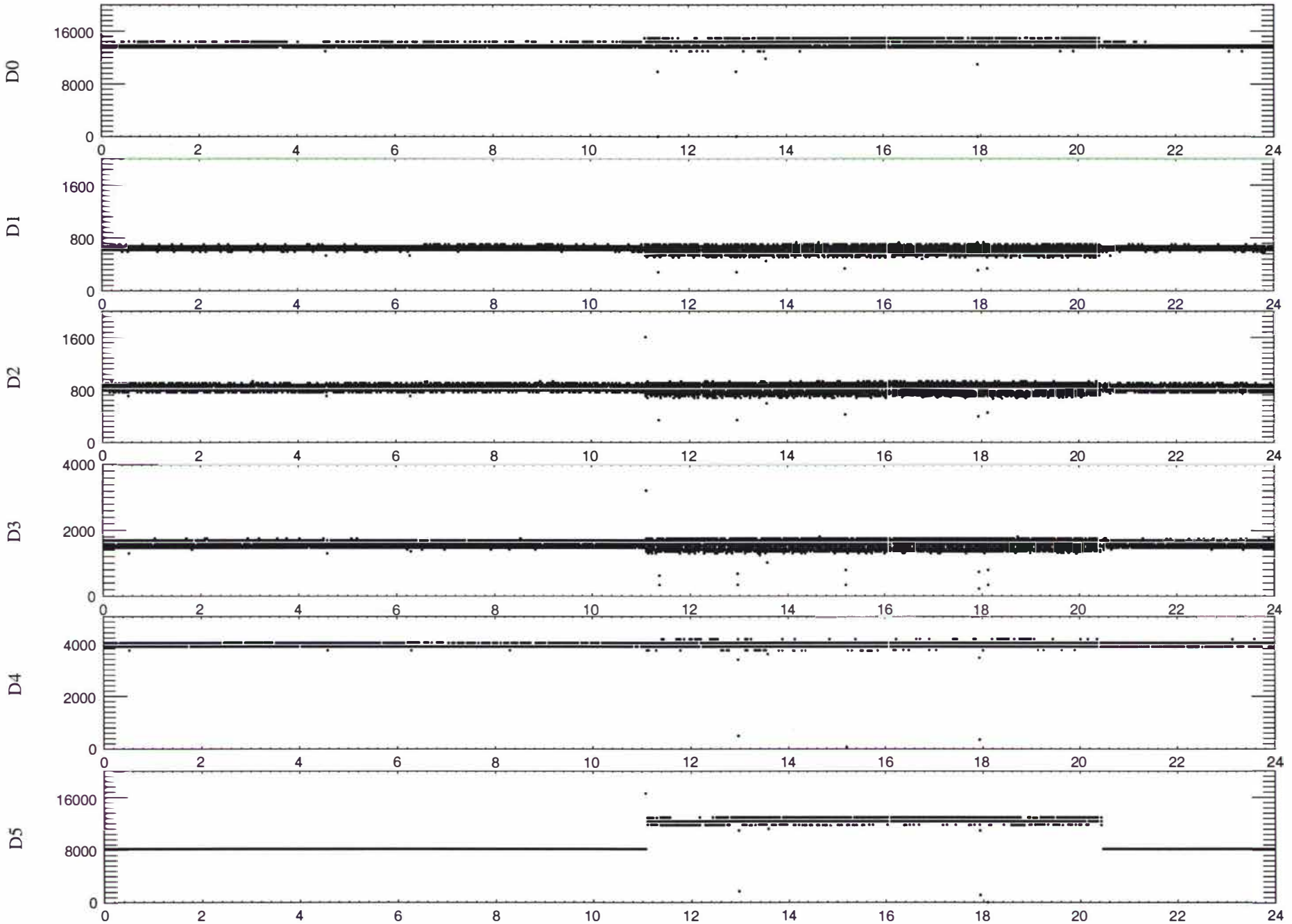
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 17/11/1999 DOY = 321 03/21/00

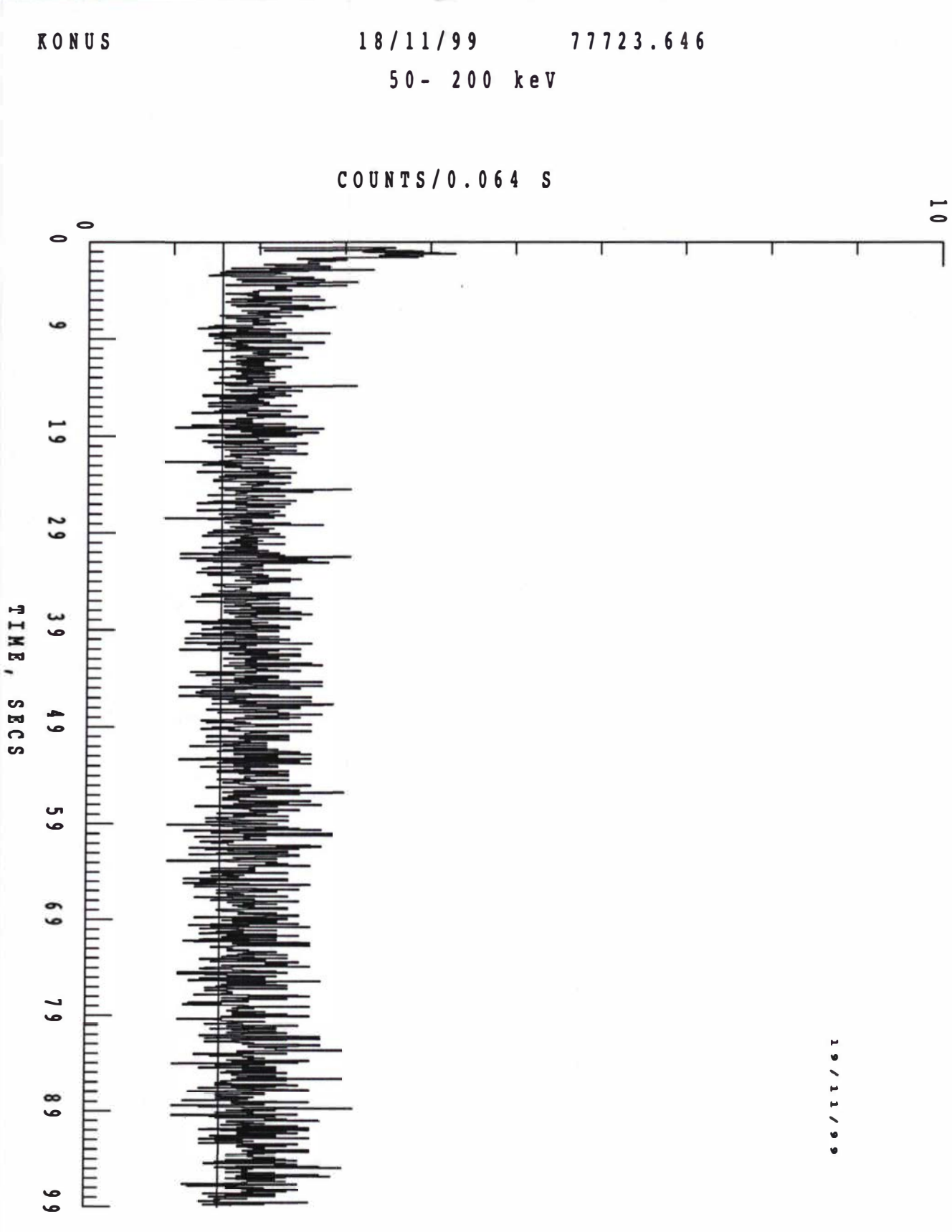
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 321, year 1999 to day 321, year 1999 03/21/00




KONUS
18/11/99
77723.646
50- 200 keV
COUNTS/0.064 S
0
10
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
19/11/99

KONUS2 19991118 77723

ULYSSES RT 19/11/99

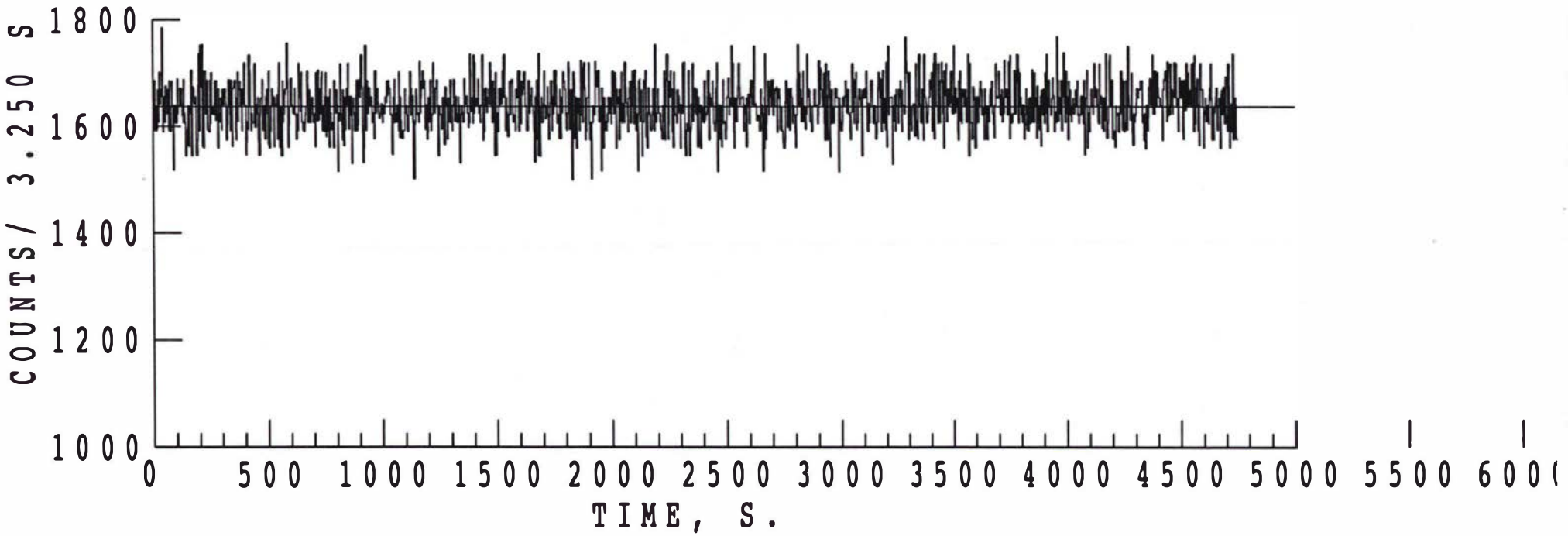
18/11/99 75348.227 s

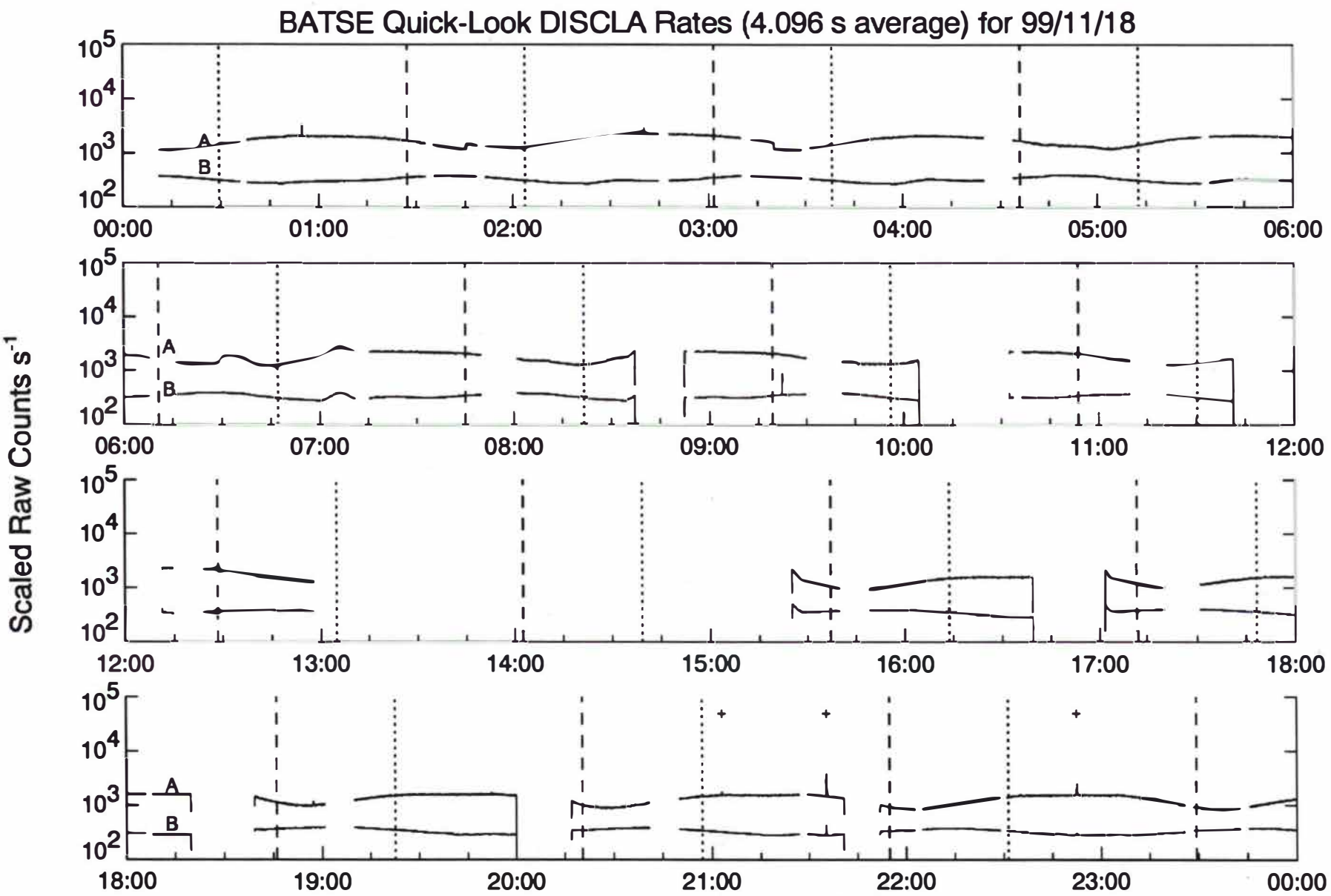
0.250 S INTERVALS REGROUPED BY 13

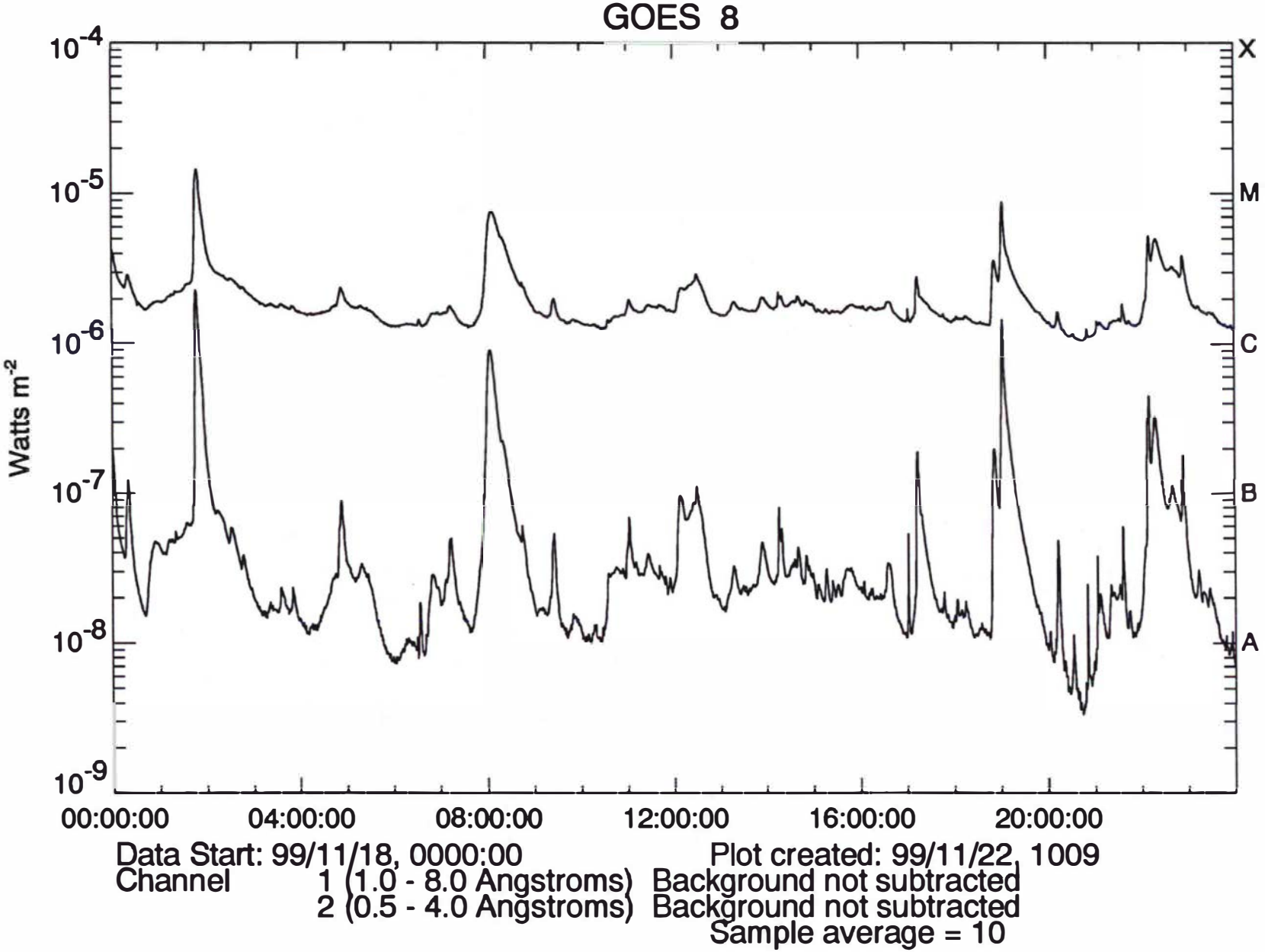
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

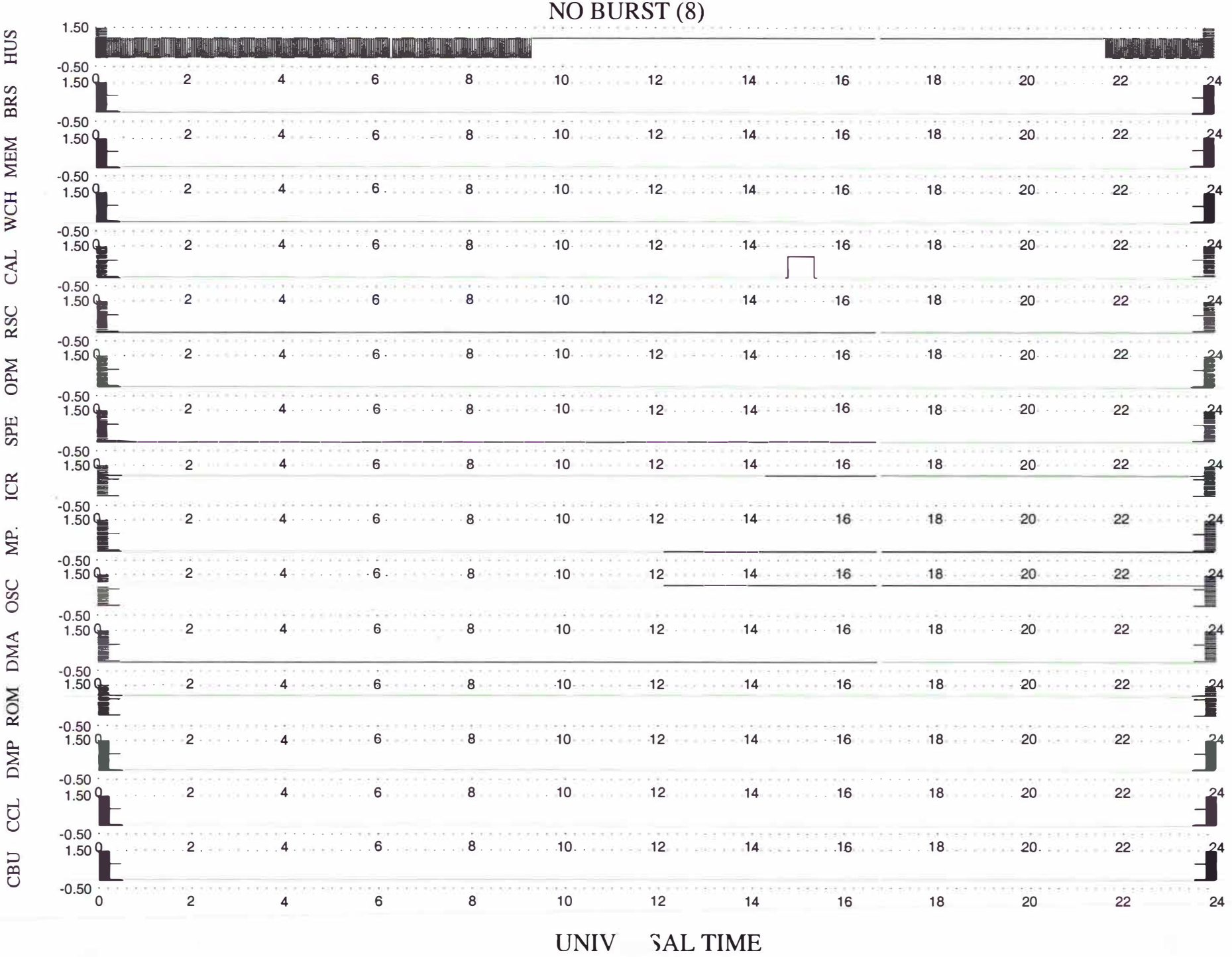
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/18
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/22, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

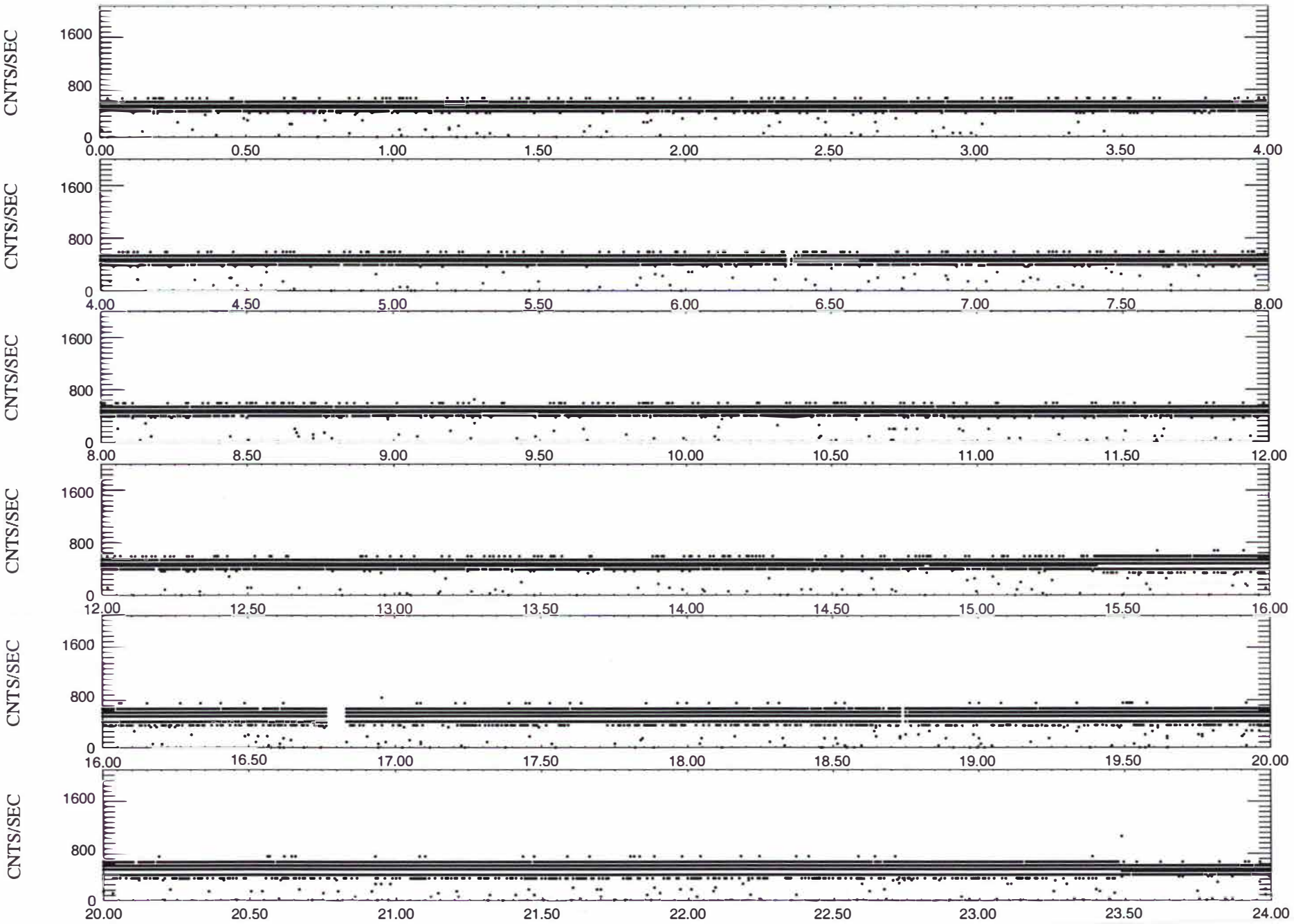

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/18, 0000:00
Plot created: 99/11/22, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 322, year 1999 to day 322, year 1999 03/21/00



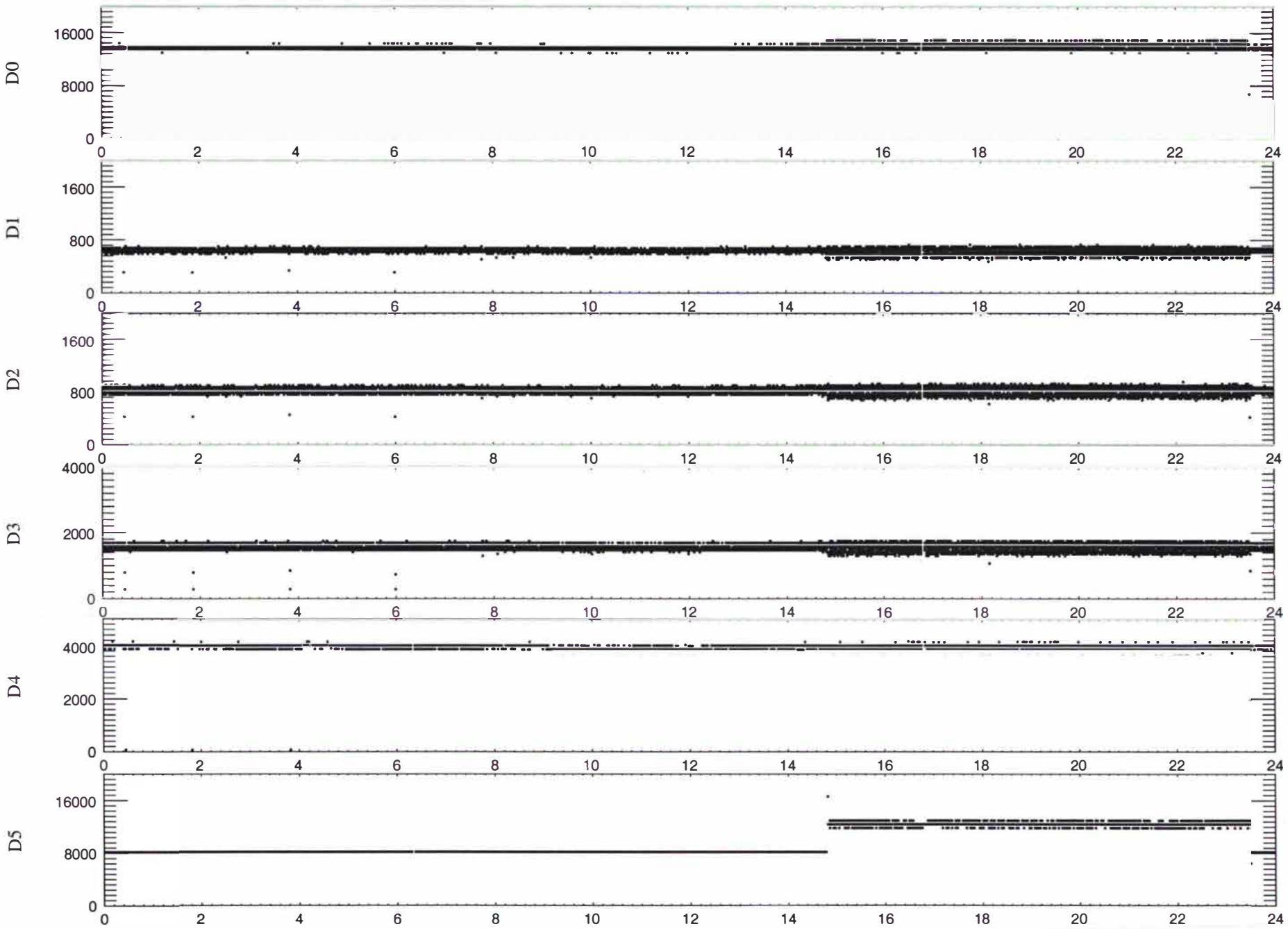
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 18/11/1999 DOY = 322 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 322, year 1999 to day 322, year 1999 03/21/00



From khurley@sunspot.ssl.berkeley.edu Wed Nov 24 17:09 PST 1999
Date: Wed, 24 Nov 1999 17:17:51 -0800
From: khurley@ssl.berkeley.edu (Kevin Hurley)
To: feroci@ias.rm.cnr.it
Subject: GRB 991119, 991115
Cc: khurley@sunspot.ssl.berkeley.edu

Dear Marco

52435

> 19 Nov 1999 14:33:55:78917 (3-4 s long)

Good data, but nothing evident.

> 15 Nov 1999 18:48:09:92932 (~15 s long)

Incomplete data. I'll look again later when the full data set is available.

Ciao

Kevin

From feroci@ias.rm.cnr.it Wed Nov 24 02:20 PST 1999
Date: Wed, 24 Nov 1999 11:21:30 +0100 (NFT)
From: Marco Feroci <feroci@ias.rm.cnr.it>
  ': Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
  bject: GRB 991119
MIME-Version: 1.0

Dear Kevin,
these are a couple of e-mail GRBM alerts you did not get:

19 Nov 1999 14:33:55:78917   (3-4 s long)
15 Nov 1999 18:48:09:92932   (~15 s long)

Ciao
Marco

Marco Feroci
Istituto di Astrofisica Spaziale
C.N.R. - Area di Ricerca di Roma - Tor Vergata
Phone: +39-06-4993-4099 Via Fosso del Cavaliere, Roma, I-00133 ITALY
Fax : +39-06-2066-0188 E-mail: feroci@ias.rm.cnr.it

grbm 19991119 52321

ULYSSES RT 06/07/07

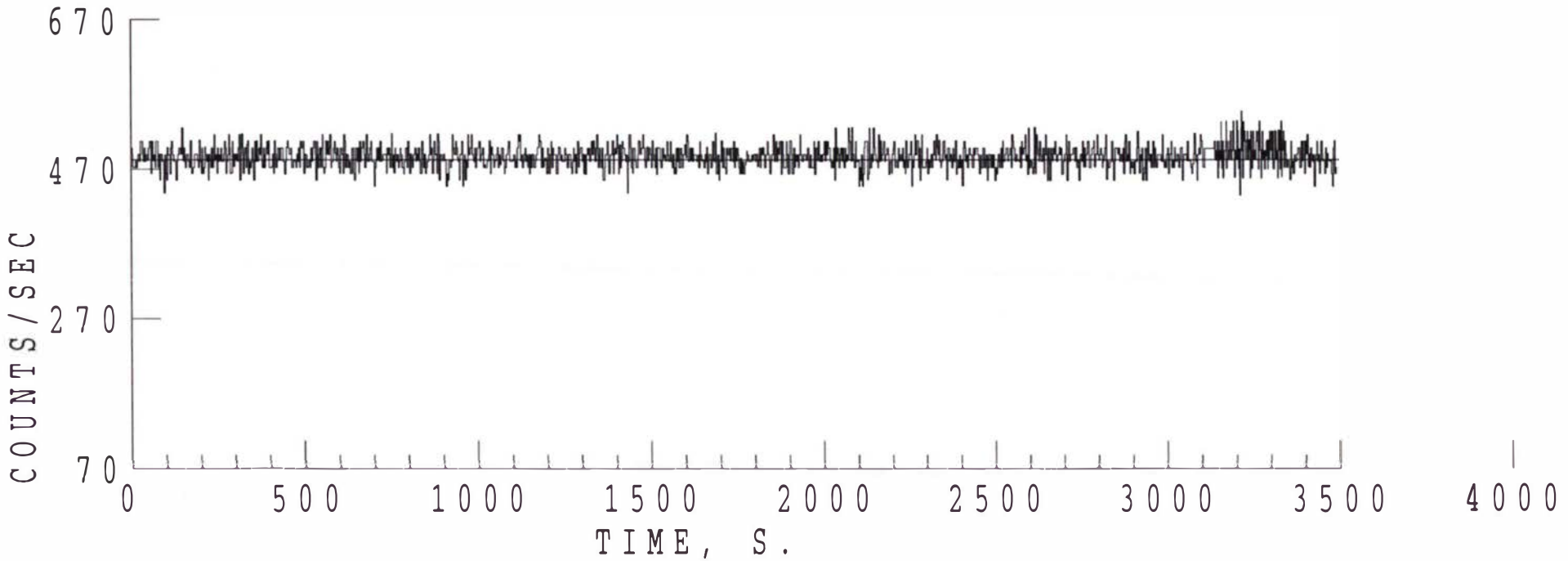
19/11/99 50580.098 s

INTERVALS REGROUPED BY 5

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Wed Nov 24 07:23 PST 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 24 Nov 1999 9:31:31 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7863

TIME: TJD=1501 SECONDS=82327

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.0 AZIMUTH=0.2 ERROR=1.232 DEGREES

COMMENTS:
SOLAR FLARE, NO GOES, NO OPTICAL. SINGLE PULSE WITH SPIKELY SUBSTRUCTURE. DUR APPROX 11S, STARTS AT APPROX T-3S. WEAKLY VISIBLE ABOVE 100KEV.

KONUS

ULYSSES RT

02/05/00

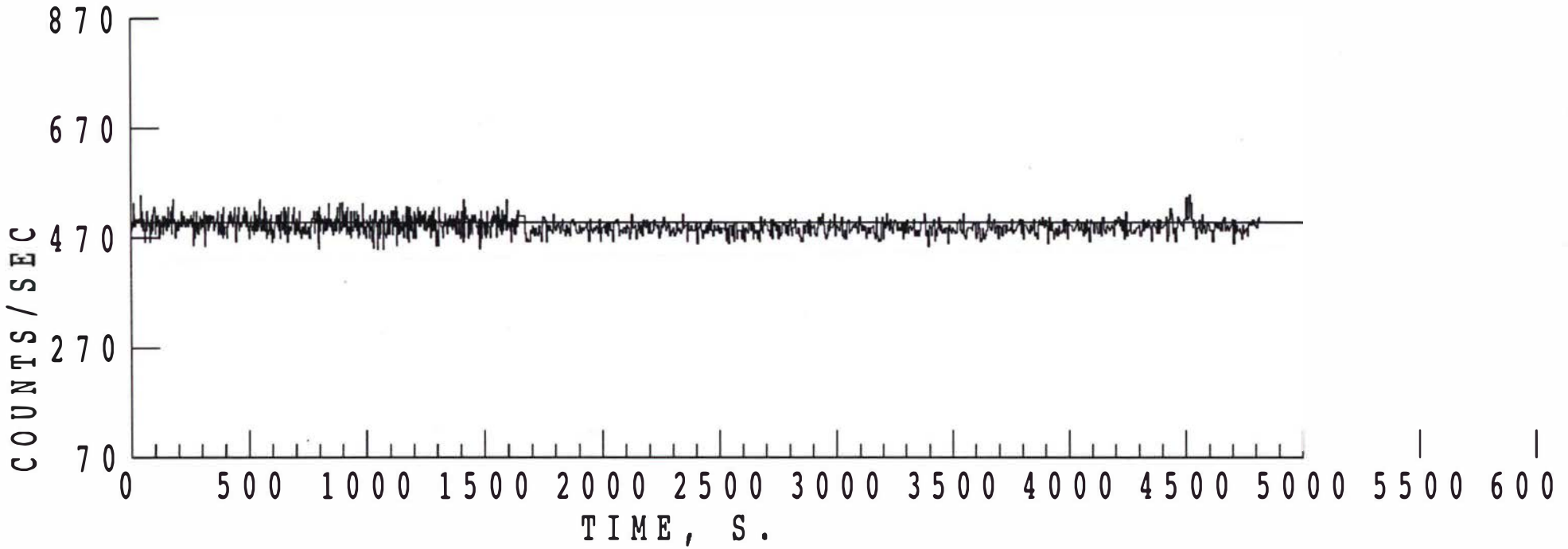
19/11/99 83772.188 s

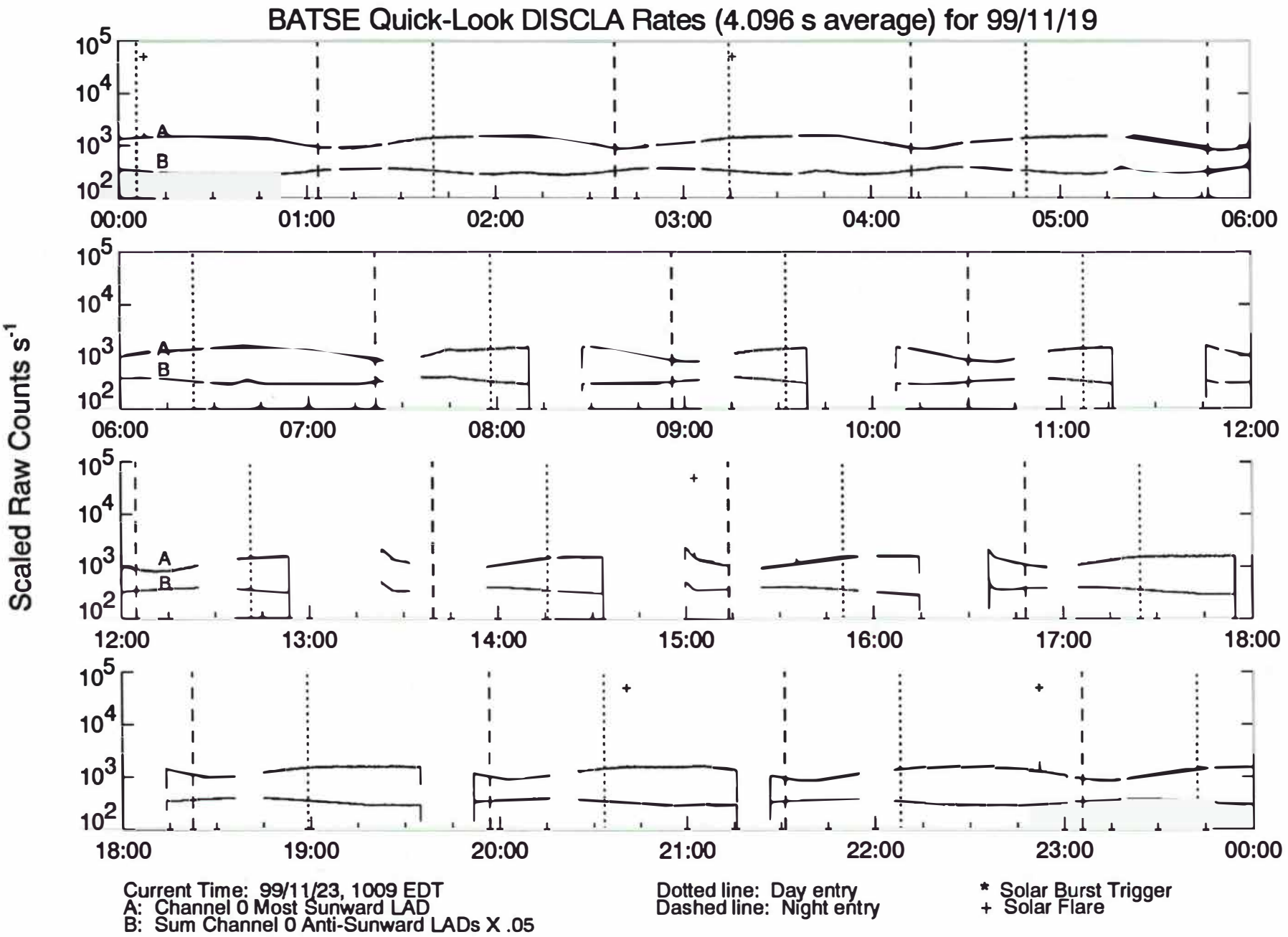
INTERVALS REGROUPED BY 9

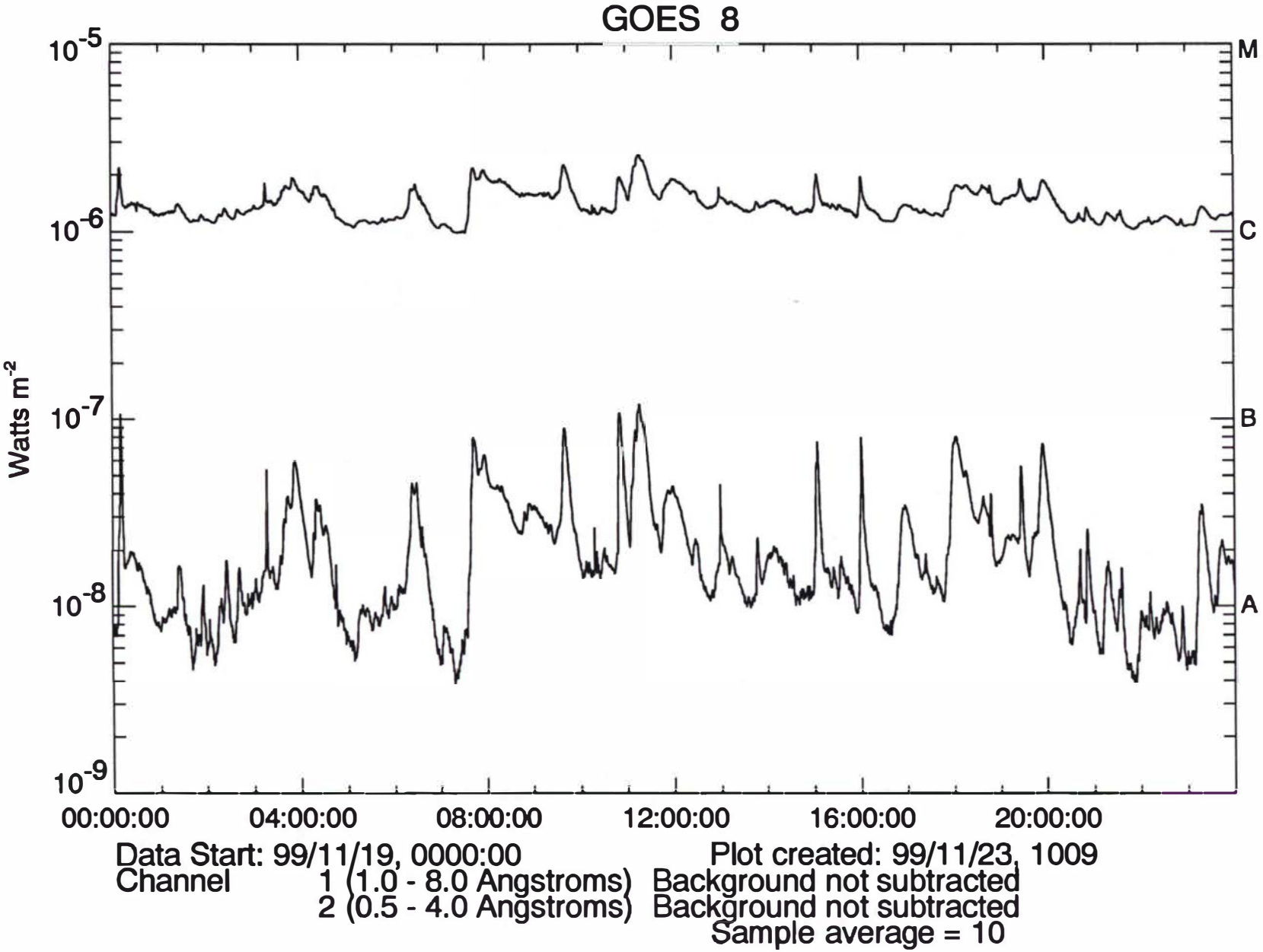
0- 0 keV

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 99/11/19
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/23, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/19, 0000:00
Plot created: 99/11/23, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 323, year 1999 to day 323, year 1999 03/21/00

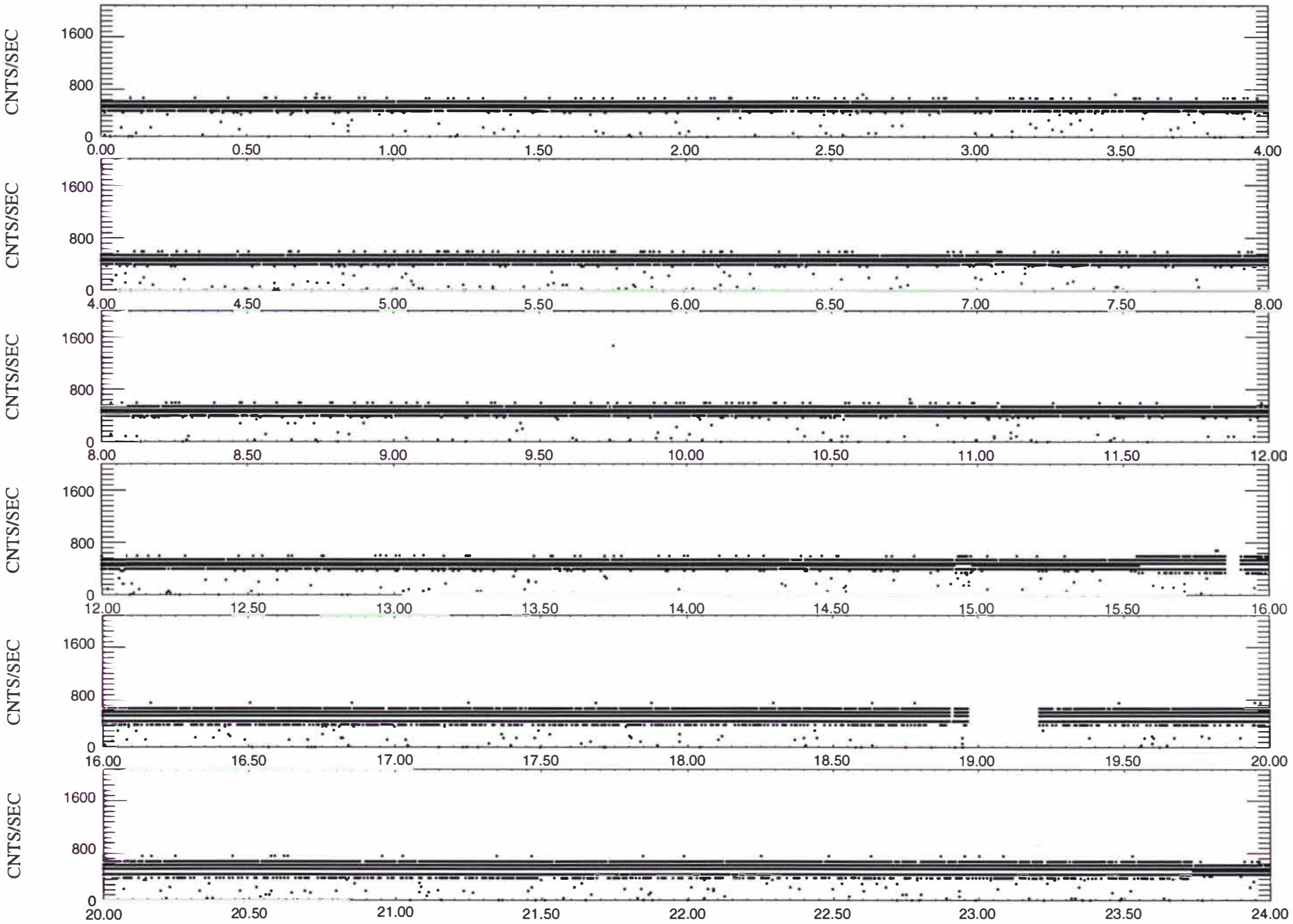
NO BURST (8)



UNIV SAL TIME

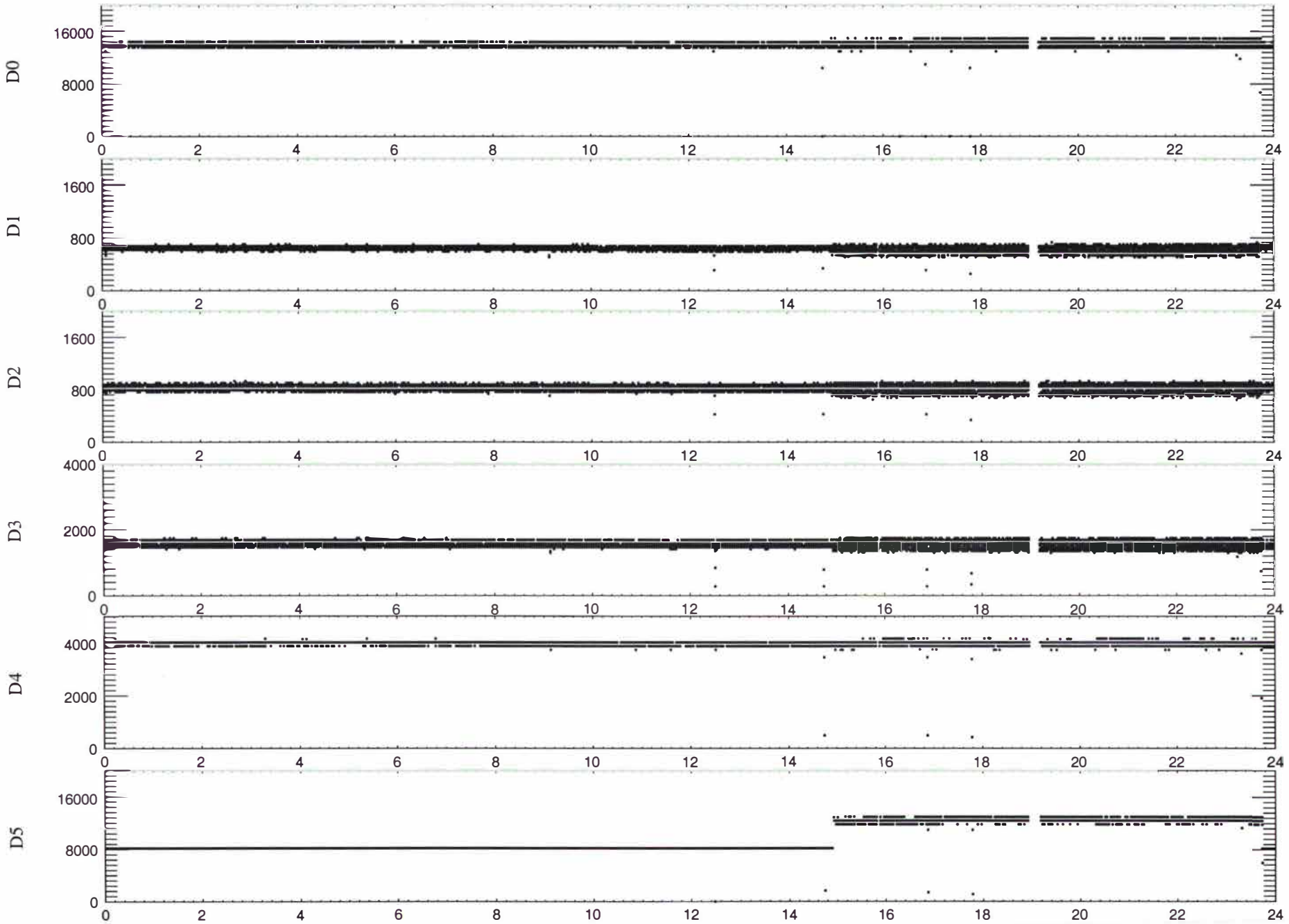
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 19/11/1999 DOY = 323 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 323, year 1999 to day 323, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Mon Nov 29 14:28 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 29 Nov 1999 16:37:20 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7864

****
BATSEARCH PROGRAM
****

BATSE BURST # 7864
EVENT OF 1999 NOV 20 DAY OF YEAR=324
EVENT CROSSING TIME AT BATSE : 20809. S. OR 05:46:49.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 51.000 -57.000
BATSE PEAK COUNTING RATE: 12000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/11/ 99 IS:
RA= 165.493 DEC= -25.641 DIST= 4.664 AU
BATSE-ULYSSES DISTANCE = 697701163. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -370.86 SECS.
CROSSING TIME AT ULYSSES IS 20438. S. OR 05:40:38 +/- 443.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/11/ 99 IS:
RA= 297.468 DEC= -22.602 DIST= 1.622 AU
MARS-BATSE DISTANCE = 242633376. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.98 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= -98.39 SECS.
CROSSING TIME AT MARS IS 20711. S. OR 05:45:10 +/- 137.98 SECONDS

BATSE BURST TRIGGER

NO.: 7864

TIME: TJD=1502 SECONDS=20809

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=12.2 AZIMUTH=79.8 ERROR=0.049 DEGREES

COMMENTS:
GRB. SINGLE PULSE, DUR. 30 S, MAX. AT T+4 S. VISIBLE ABOVE 300 KEV. CYGX-1 SET AT T+100 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7864	991120	11502	20809	12000	051	-57	30

Date: May 4 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 N/A

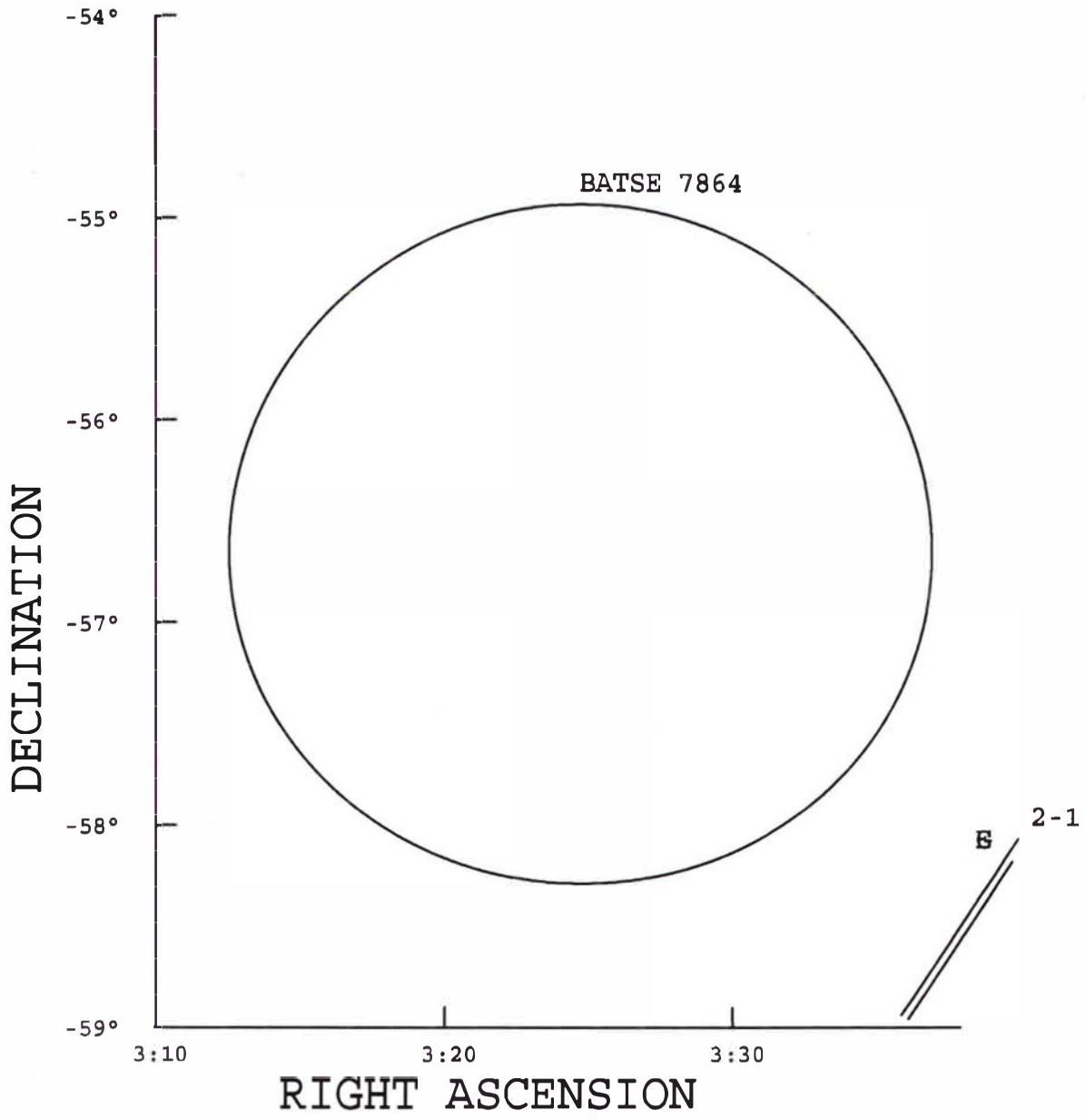
☐ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

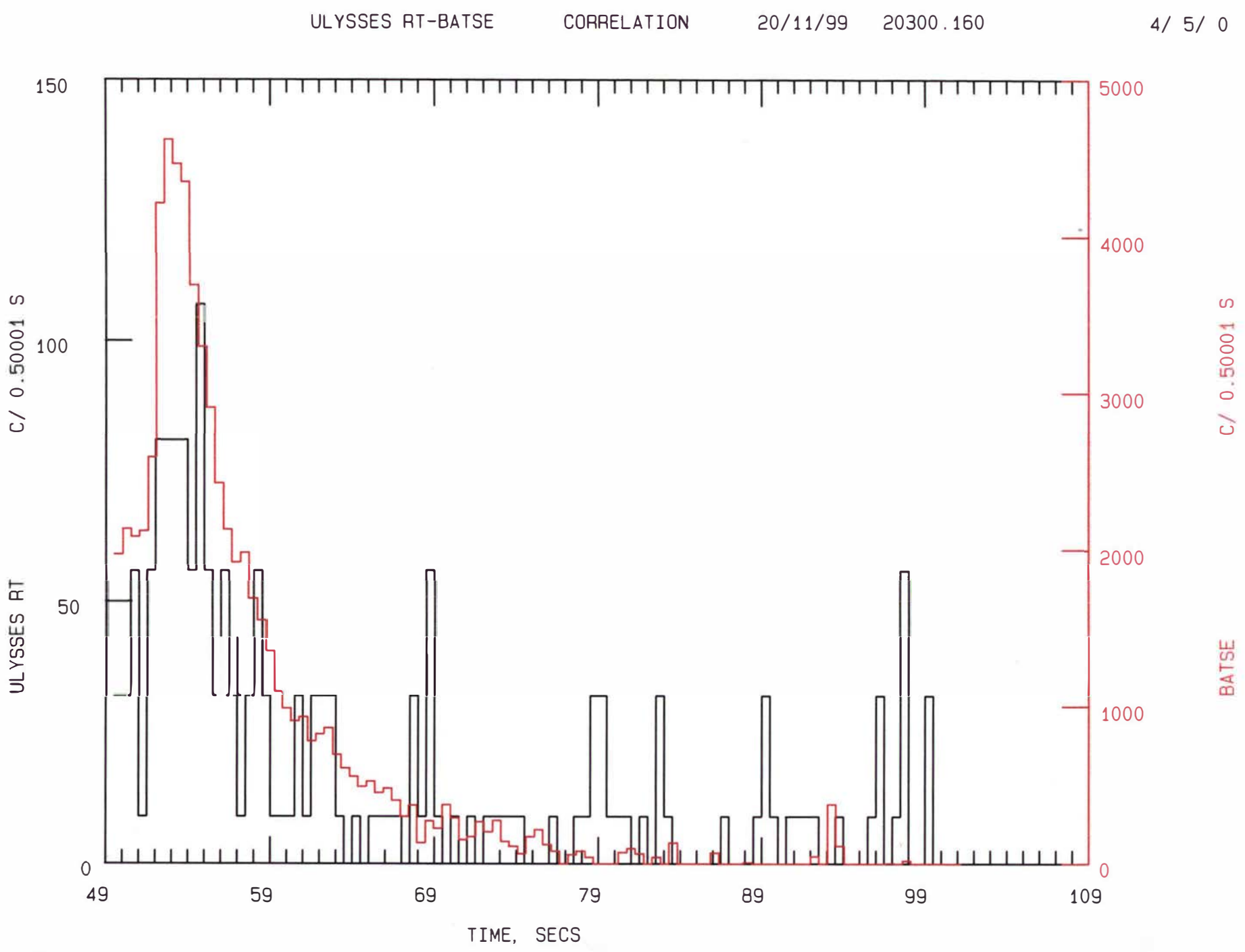
☐ BATSE >100 keV data used for NEAR correlation?

☑ ACCESS database updated?

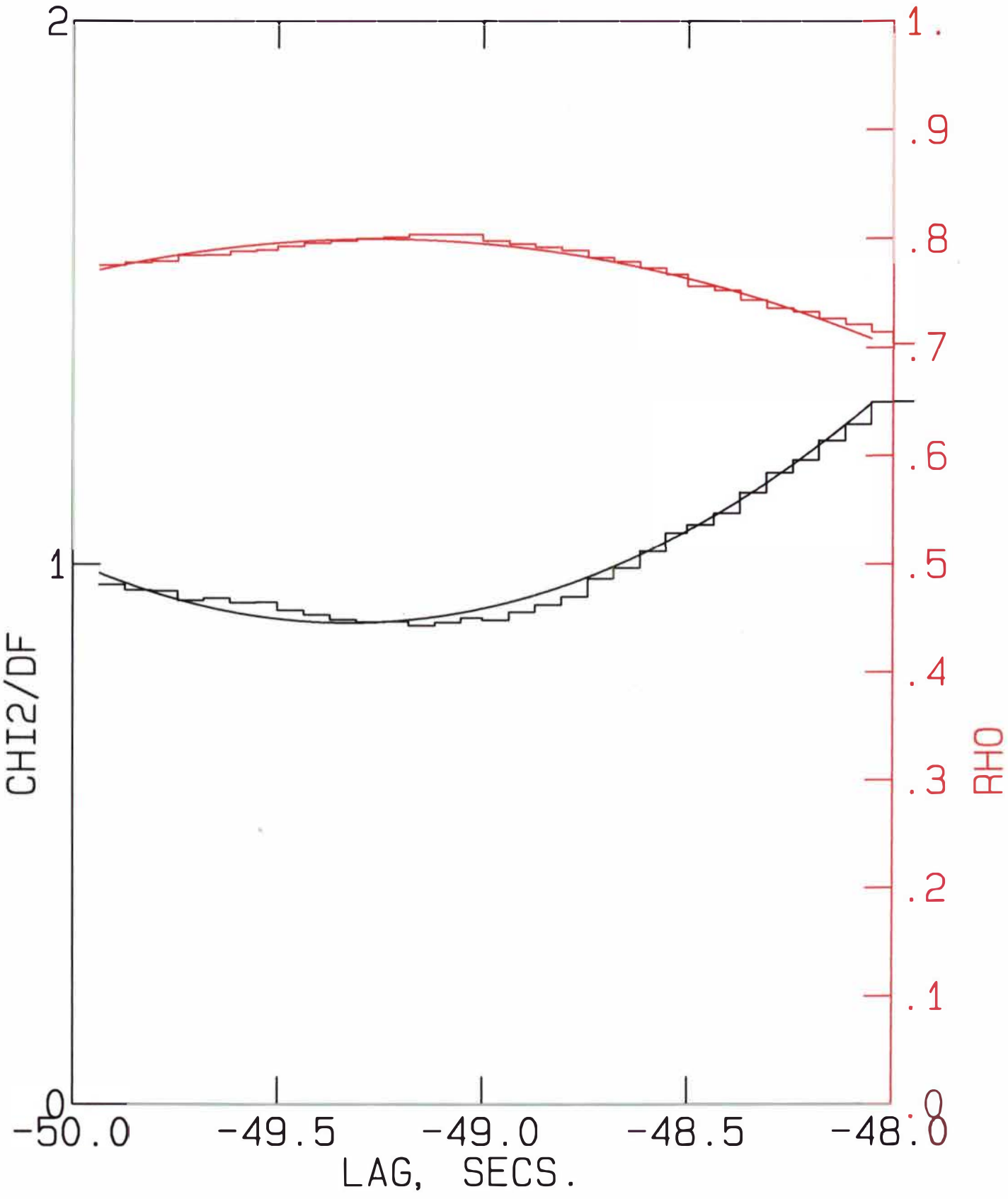
EVENT OF NOV 20, 1999 5:46

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




ULYSSES RT-BATSE CORRELATION 20/11/99 20300.160 4/ 5/ 0
150
100
50
0
ULYSSES RT
C/ 0.50001 S
5000
4000
3000
2000
1000
0
BATSE
C/ 0.50001 S
49
59
69
79
89
99
109
TIME, SECS

ULYSSES RT-BATSE CORRELATION 20/11/99 20300.160



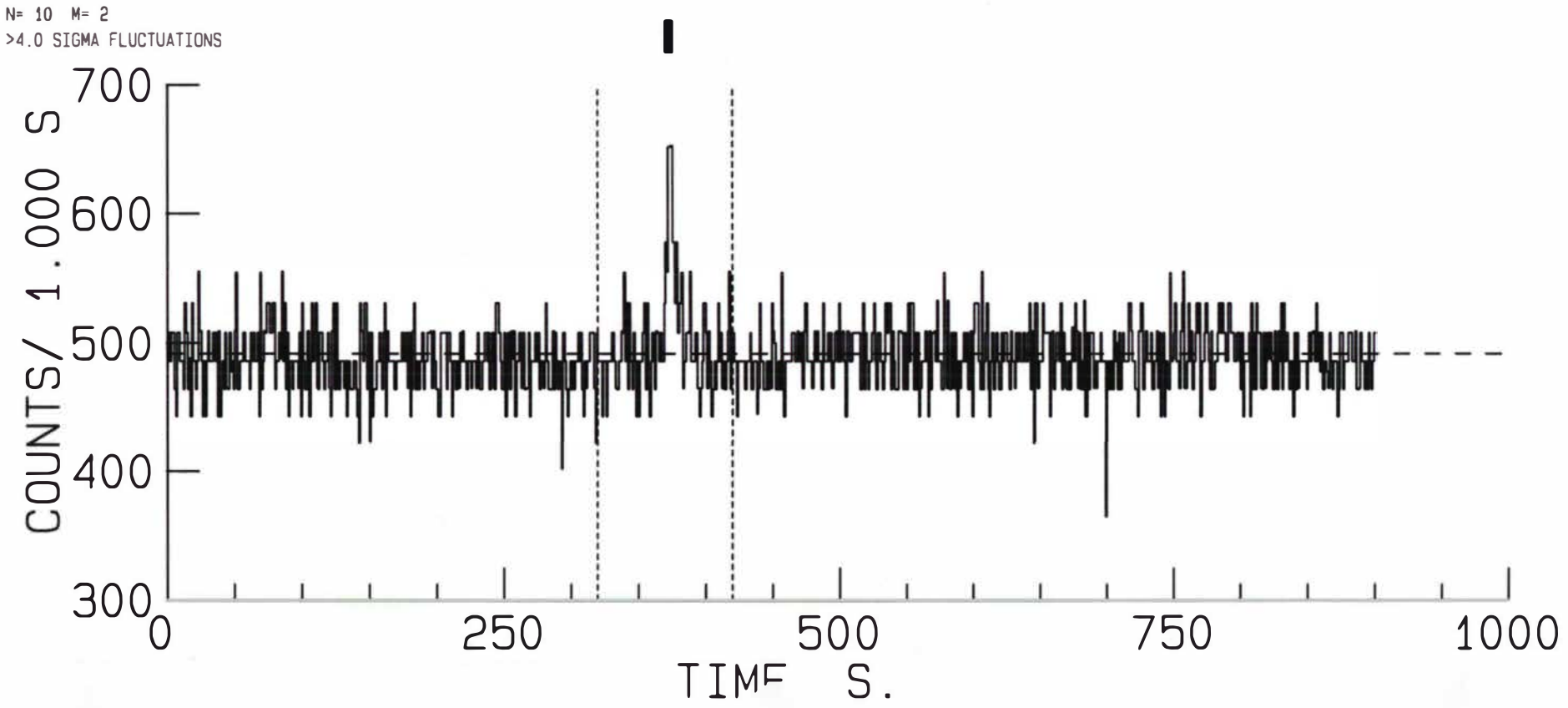
ULYSSES RT

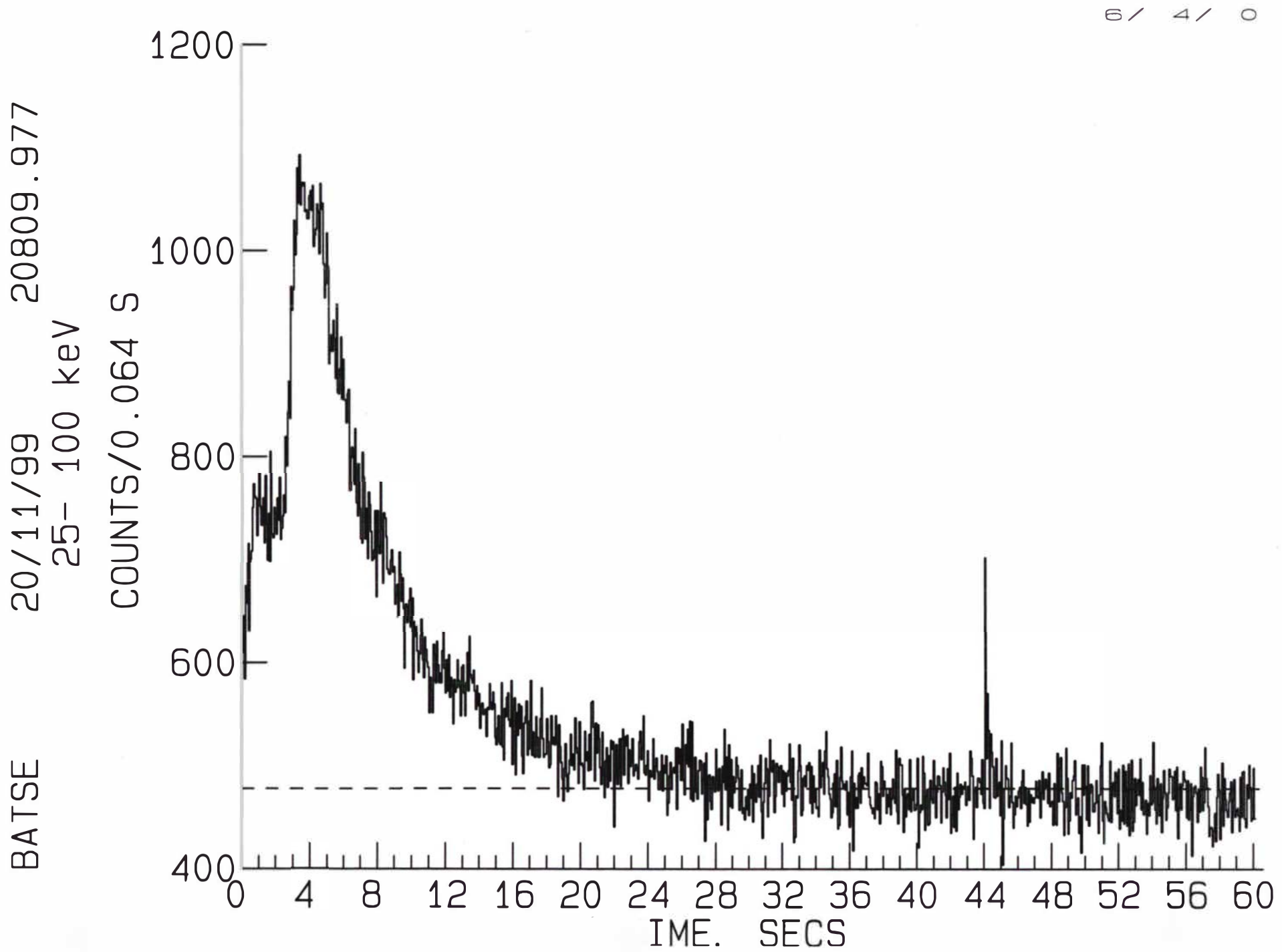
4/ 5/ 0

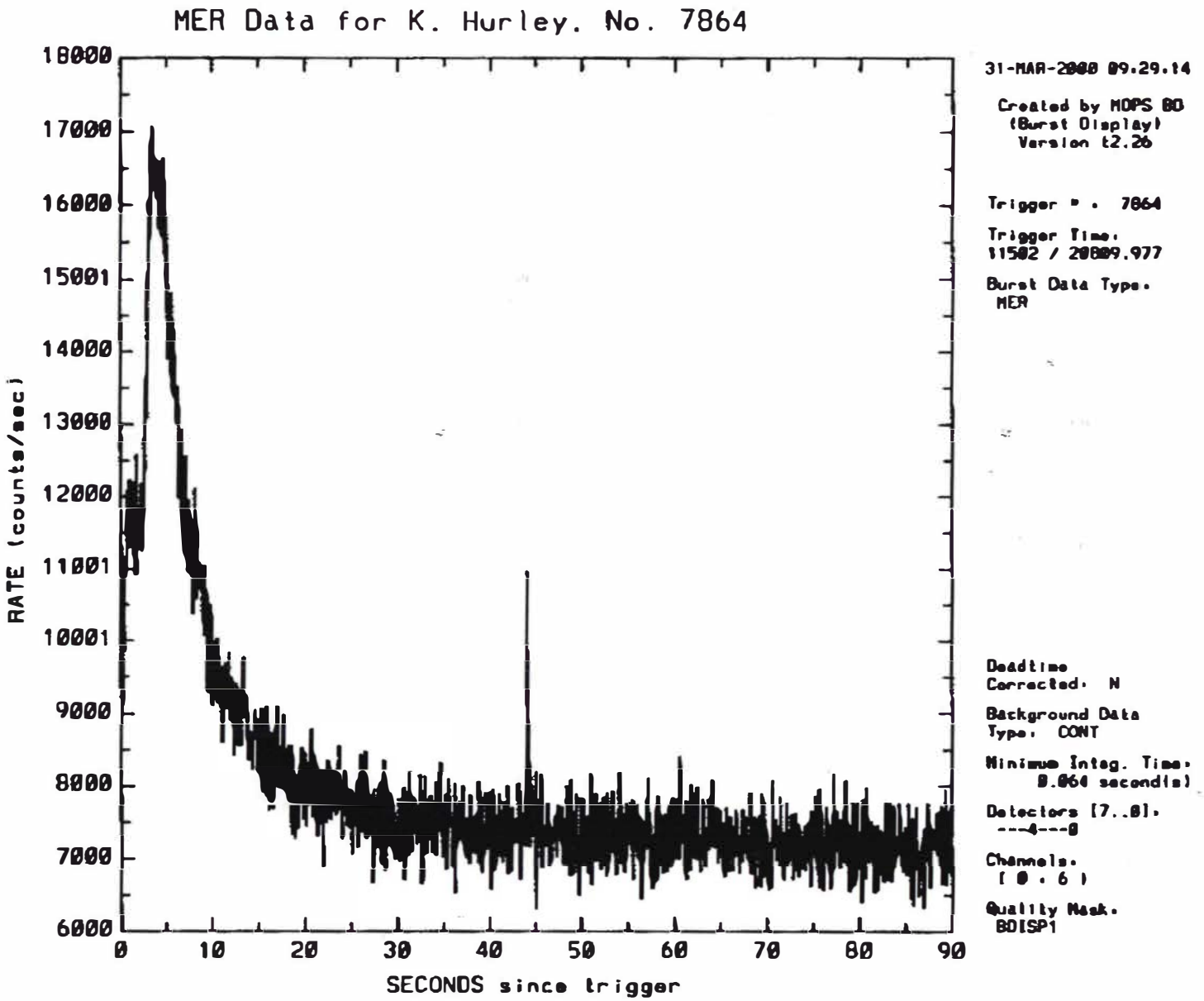
20/11/99 19980.160 s

0.500 S INTERVALS REGROUPED BY 2

22- 150 keV

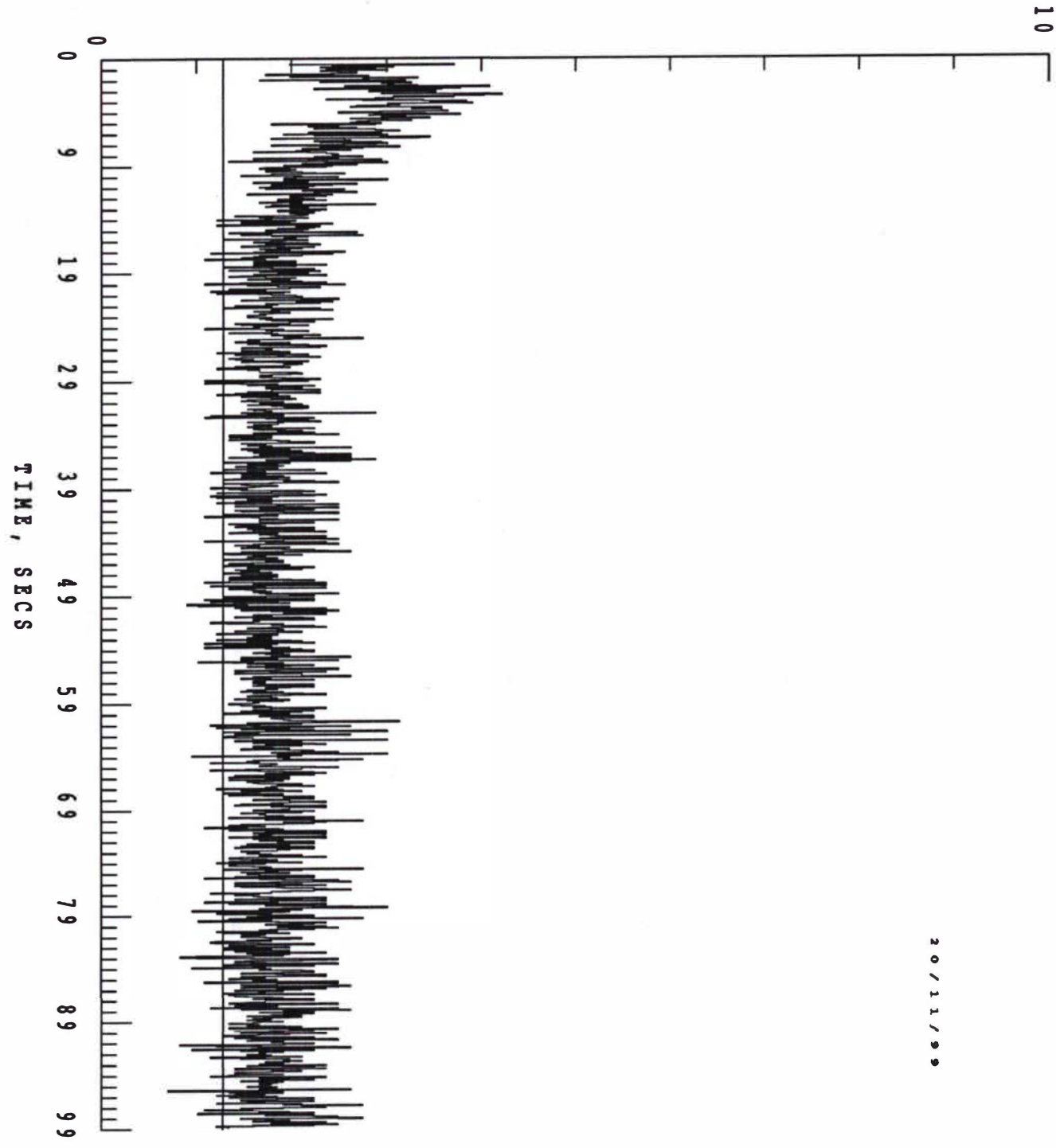



6/ 4/ 0
BATSE 20/11/99 20809.977
25- 100 keV
COUNTS/0.064 S
1200
1000
800
600
400
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60
IME. SECS


MER Data for K. Hurley. No. 7864
RATE (counts/sec)
18000
17000
16000
15001
14000
13000
12000
11001
10001
9000
8000
7000
6000
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
31-MAR-2000 09.29.14
Created by MOPS BD
(Burst Display)
Version t2.26
Trigger # . 7864
Trigger Time:
11502 / 20809.977
Burst Data Type:
MER
Deadtime
Corrected: N
Background Data
Type: CONT
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
---4---0
Channels:
[0 . 6]
Quality Mask:
BDISP1

KONUS 20/11/99 20811.456

50- 200 keV



Date: Oct 15 2002

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 vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

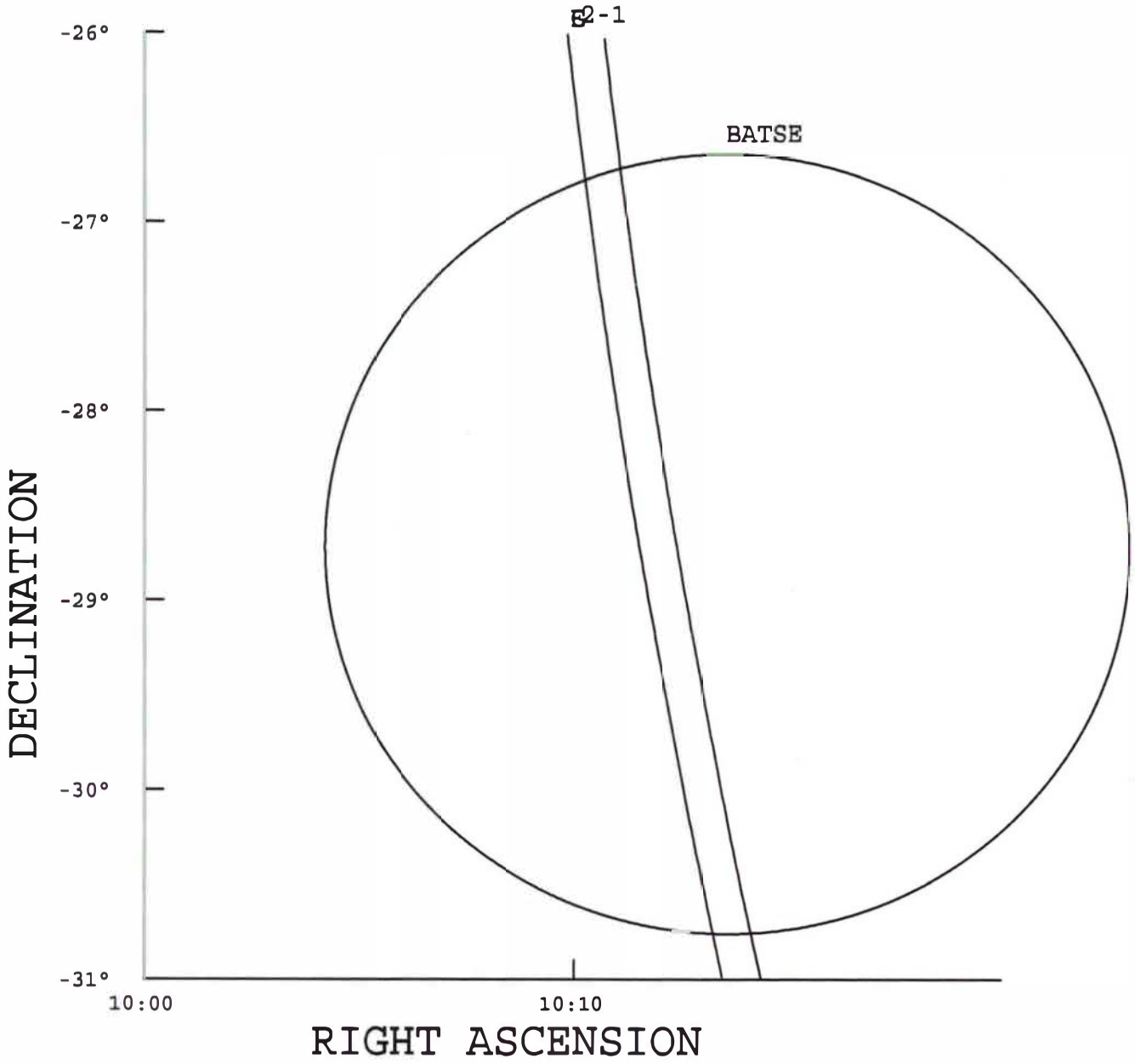
☐ BATSE >100 keV data used for NEAR correlation? No

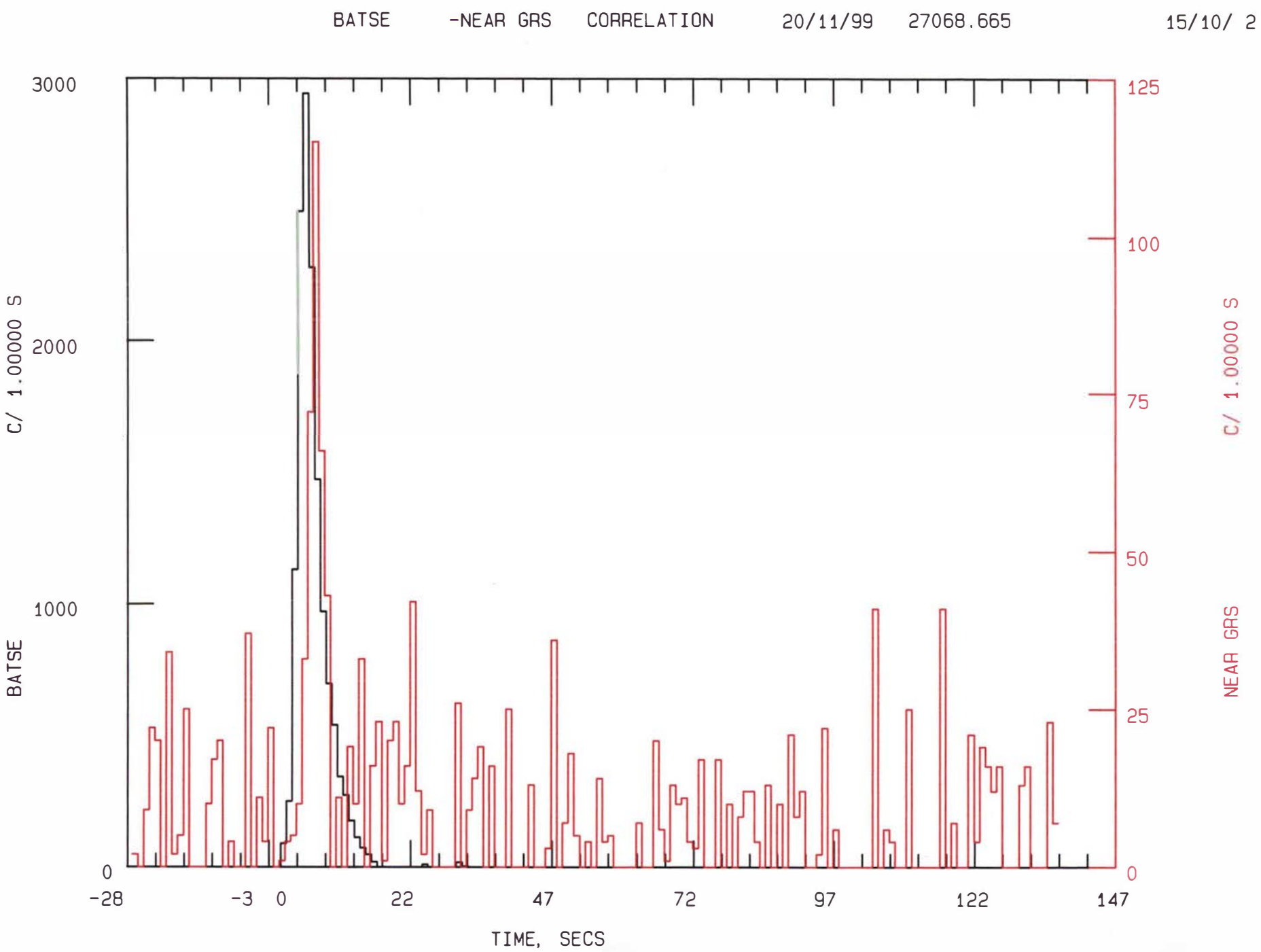
☑ ACCESS database updated?

EVENT OF NOV 20, 1999 7:31

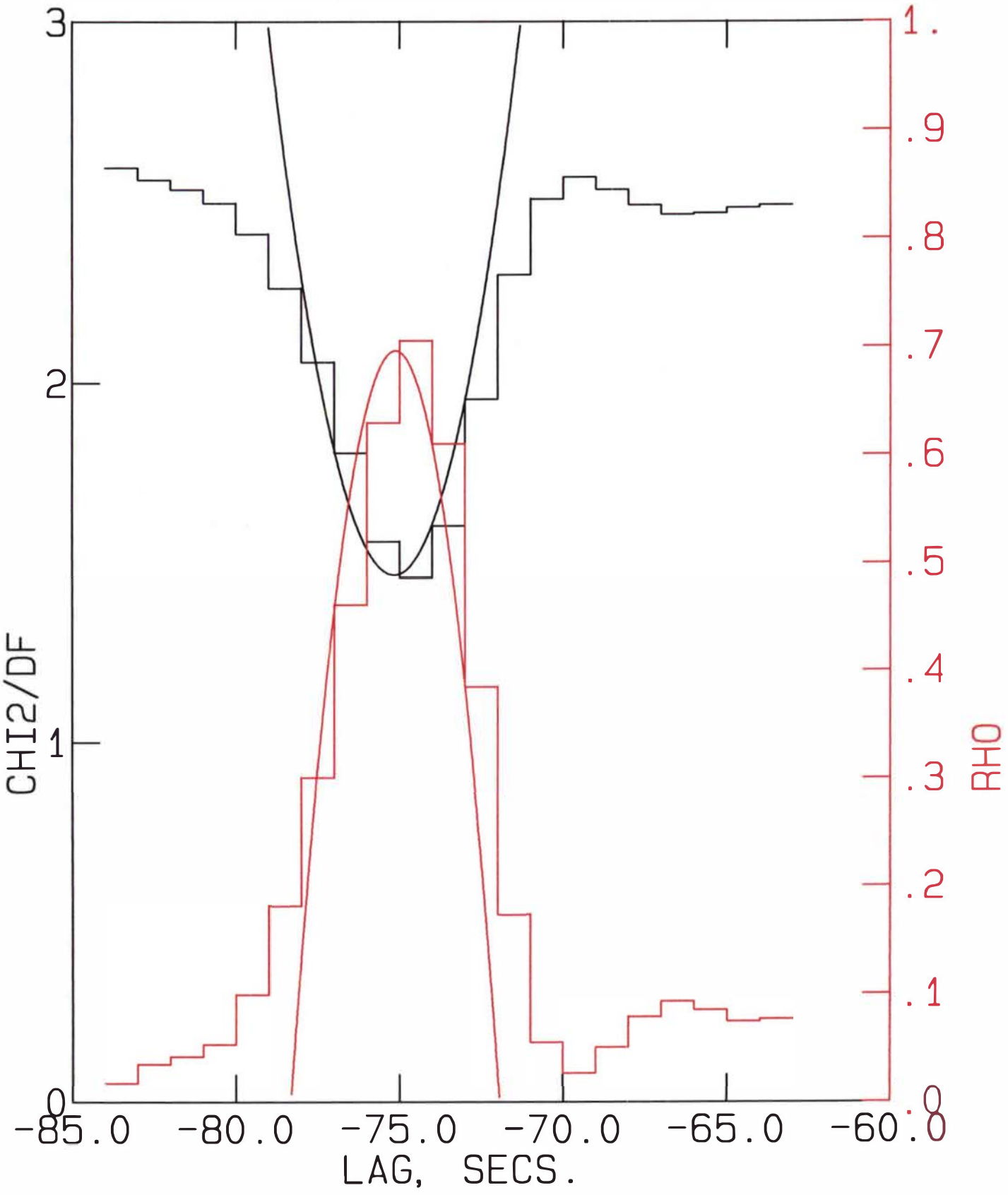
15/10/ 2

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



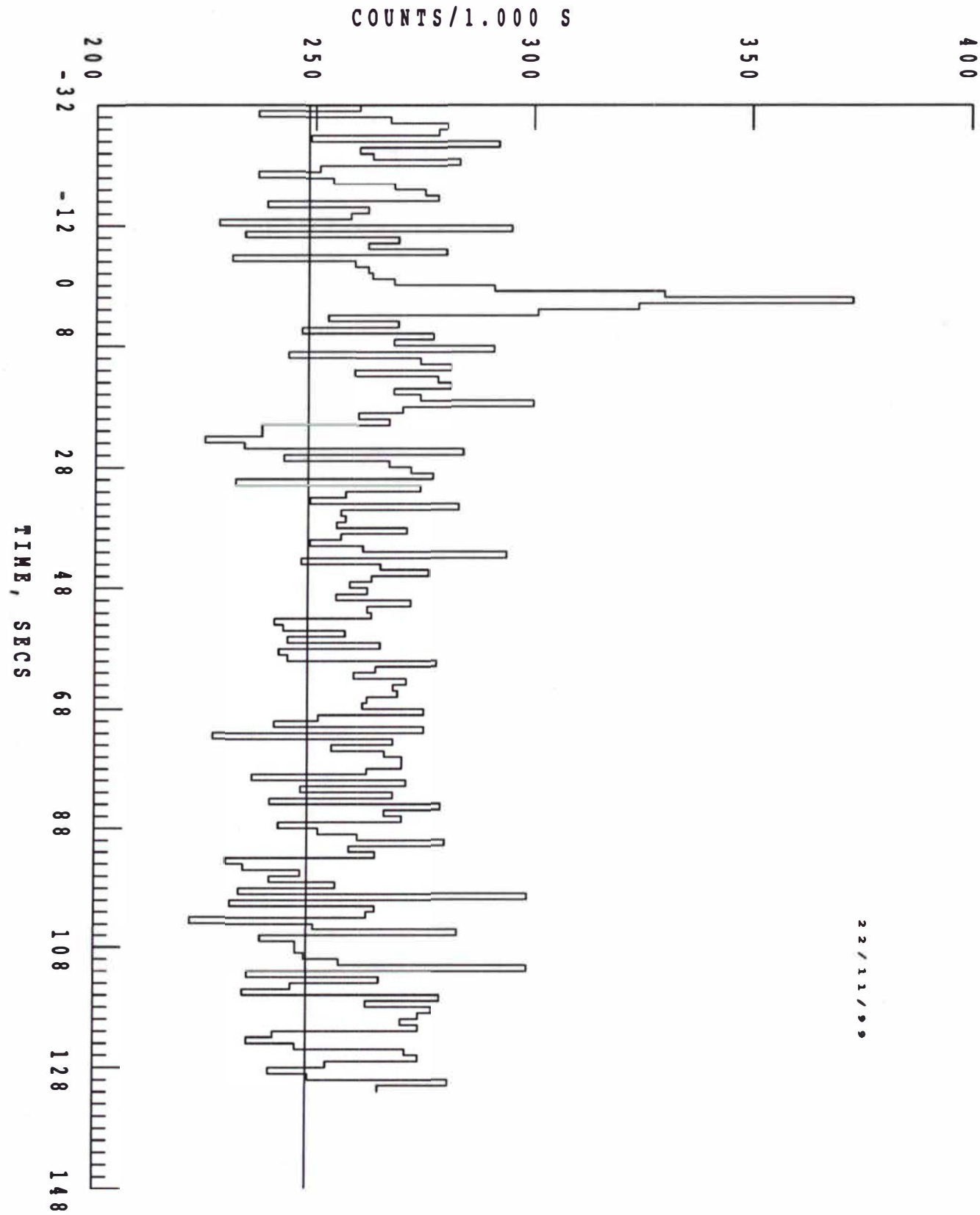

BATSE -NEAR GRS CORRELATION 20/11/99 27068.665 15/10/ 2
3000
2000
1000
0
C/ 1.00000 S
BATSE
125
100
75
50
25
0
C/ 1.00000 S
NEAR GRS
-28
-3
0
22
47
72
97
122
147
TIME, SECS

BATSE -NEAR GRS CORRELATION 20/11/99 27068.665



NEAR 20/11/99 26406.665

100-1000 keV



KNEAR GRS 19991120 26406

ULYSSES RT 24/11/99

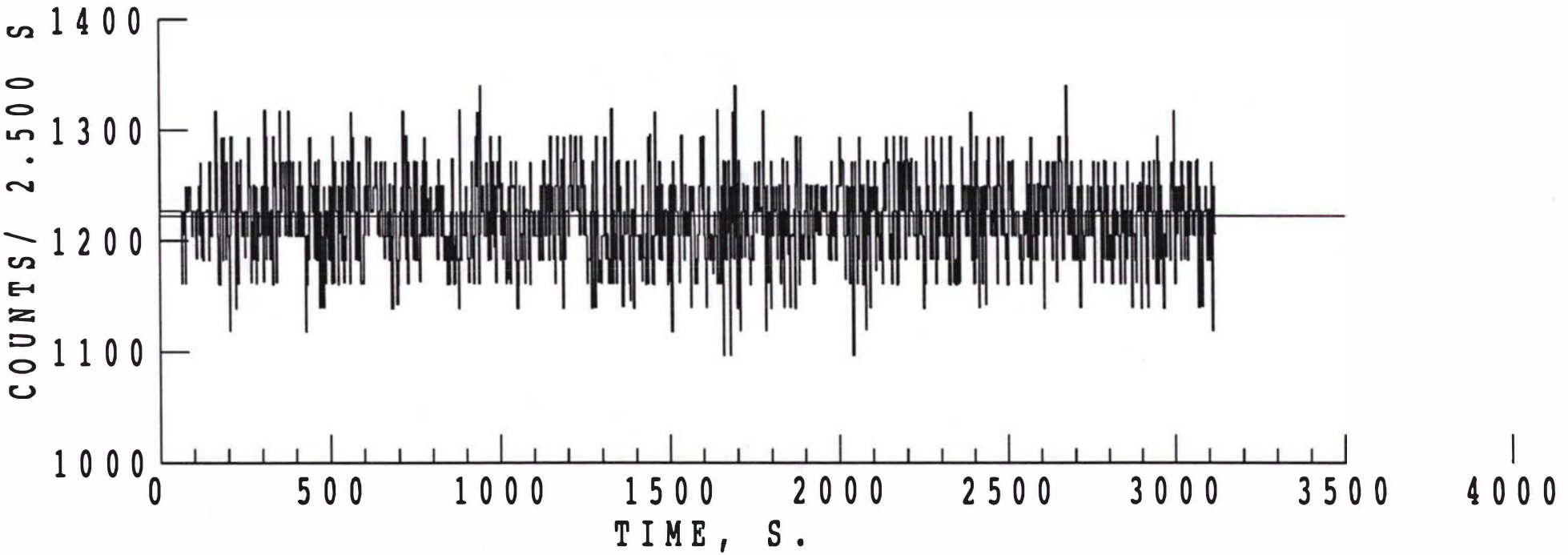
20/11/99 24958.717 s

0.500 S INTERVALS REGROUPED BY 5

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Mon Nov 29 14:25 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 29 Nov 1999 16:34:33 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7865

TIME: TJD=1502 SECONDS=80813

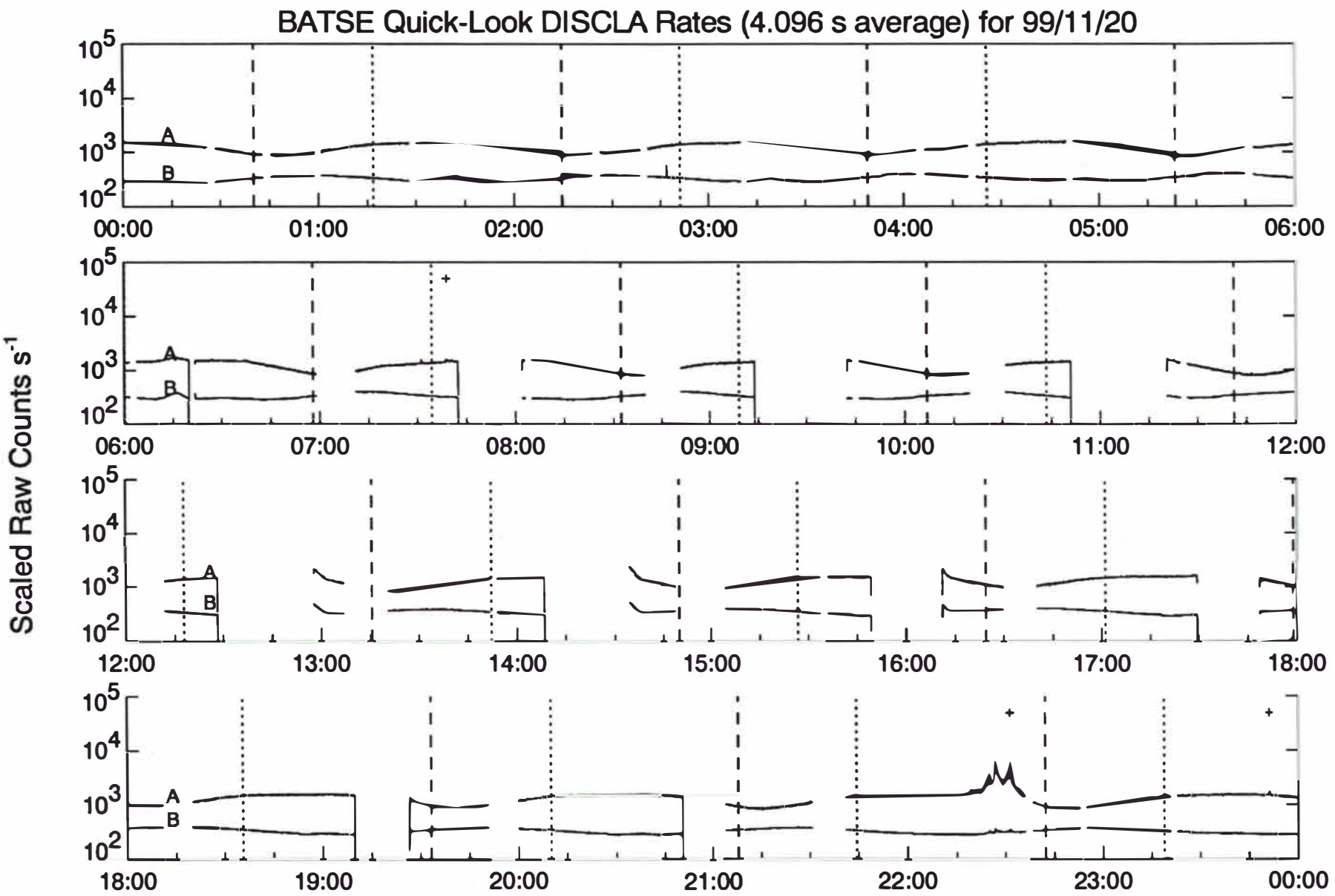
TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

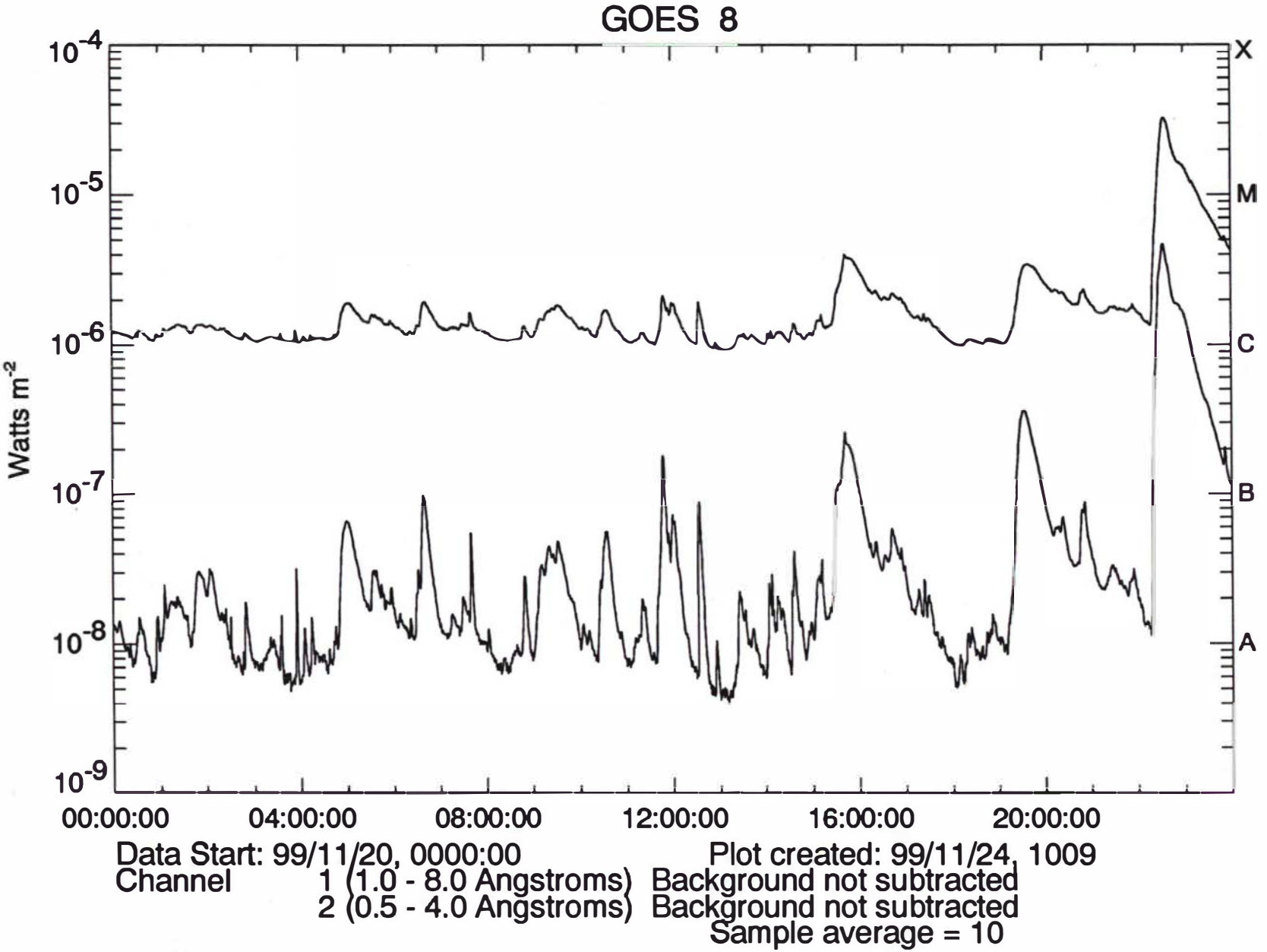
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

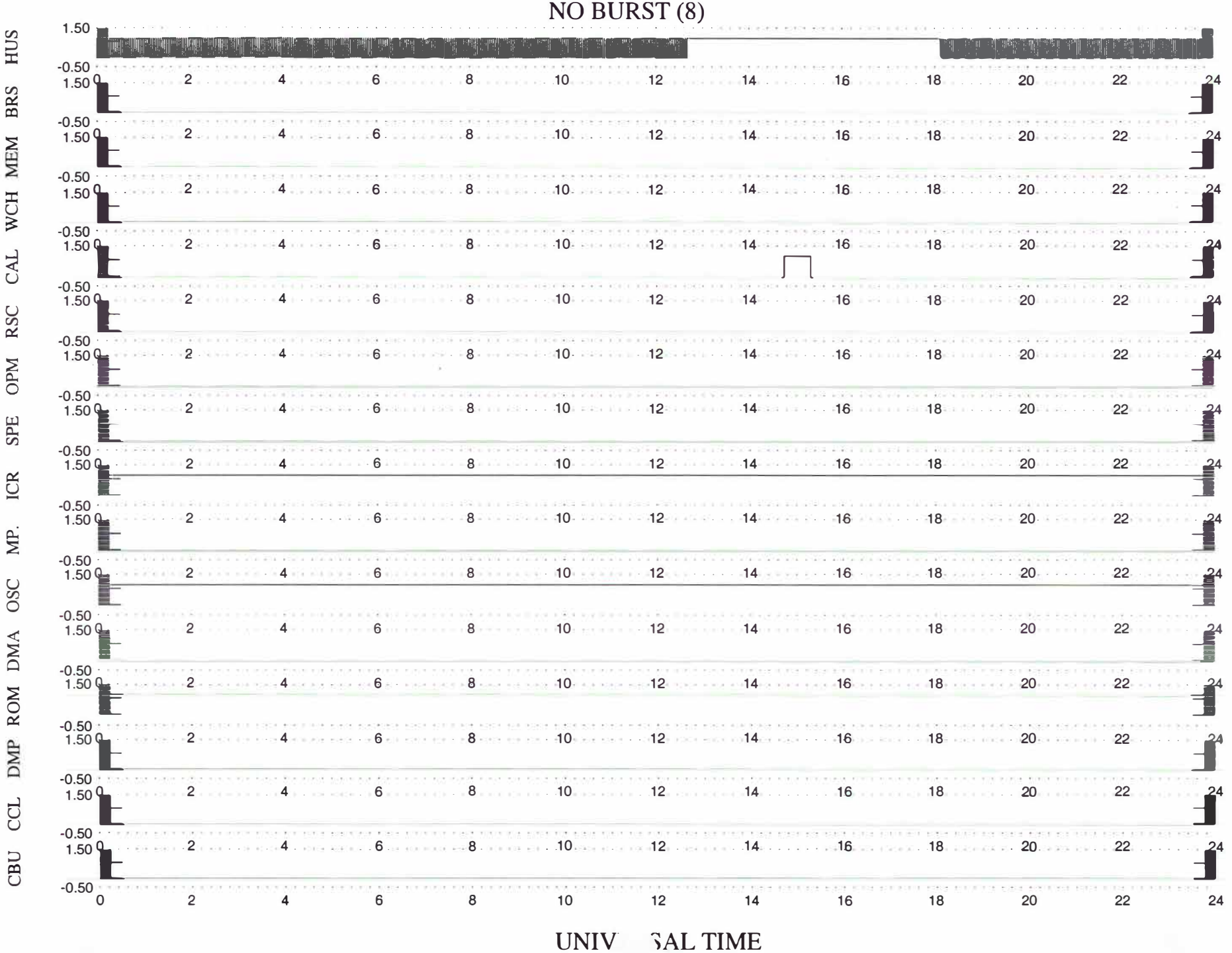
LOCATION: ZENITH=100.2 AZIMUTH=353.8 ERROR=3.25 DEGREES

COMMENTS:
SOLAR FLARE. GOES. M3.2, OPTICAL 2B, DUR. 1000 S, STARTS AT T-450 S, MAX. AT T+279 S. WEAKLY VISIBLE ABOVE 100 KEV. OVERWRITTEN DURING TTS, BUT STTE IS COMPLETE.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/20
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/24, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

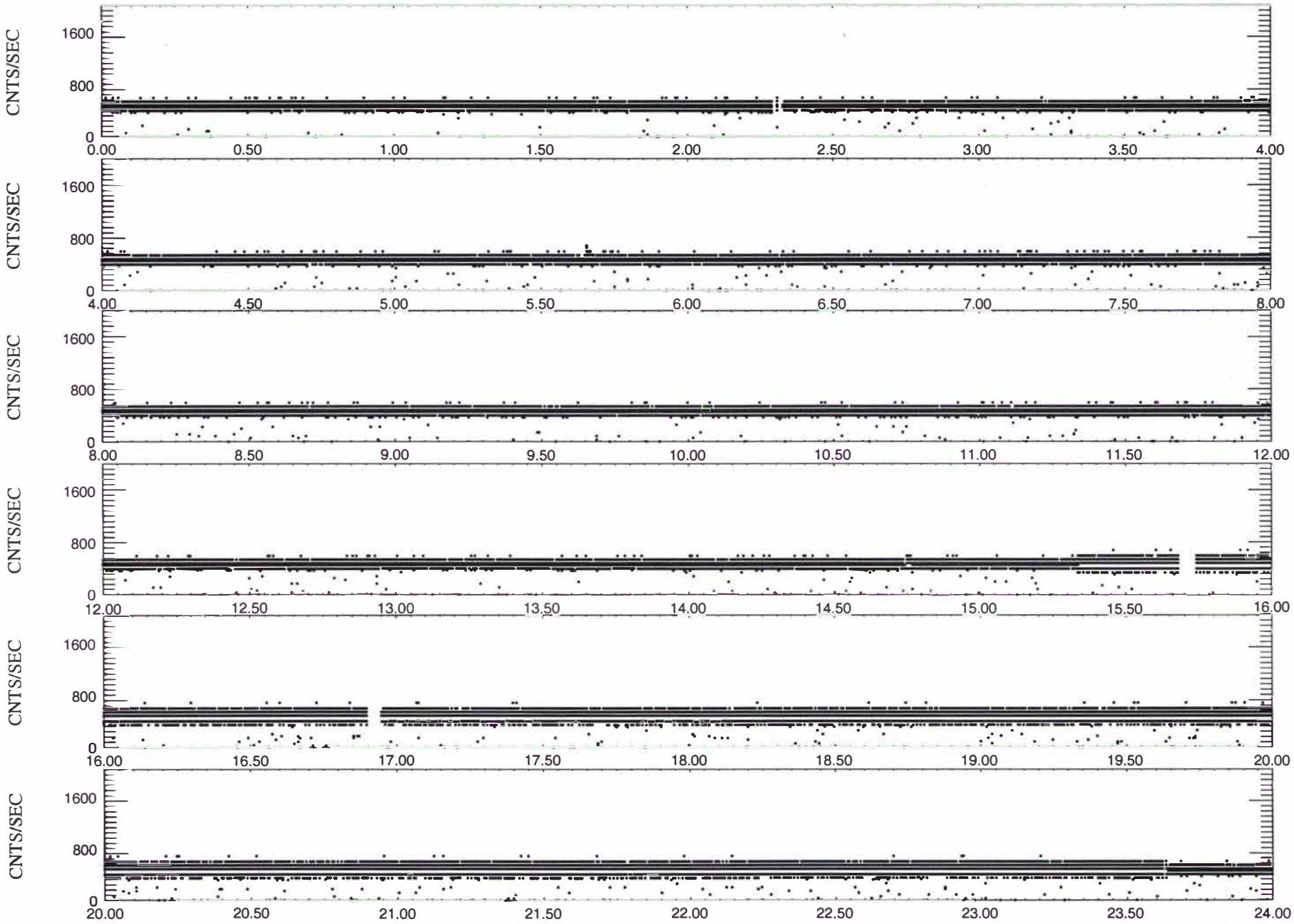

GOES 8
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/20, 0000:00
Plot created: 99/11/24, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 324, year 1999 to day 324, year 1999 03/21/00



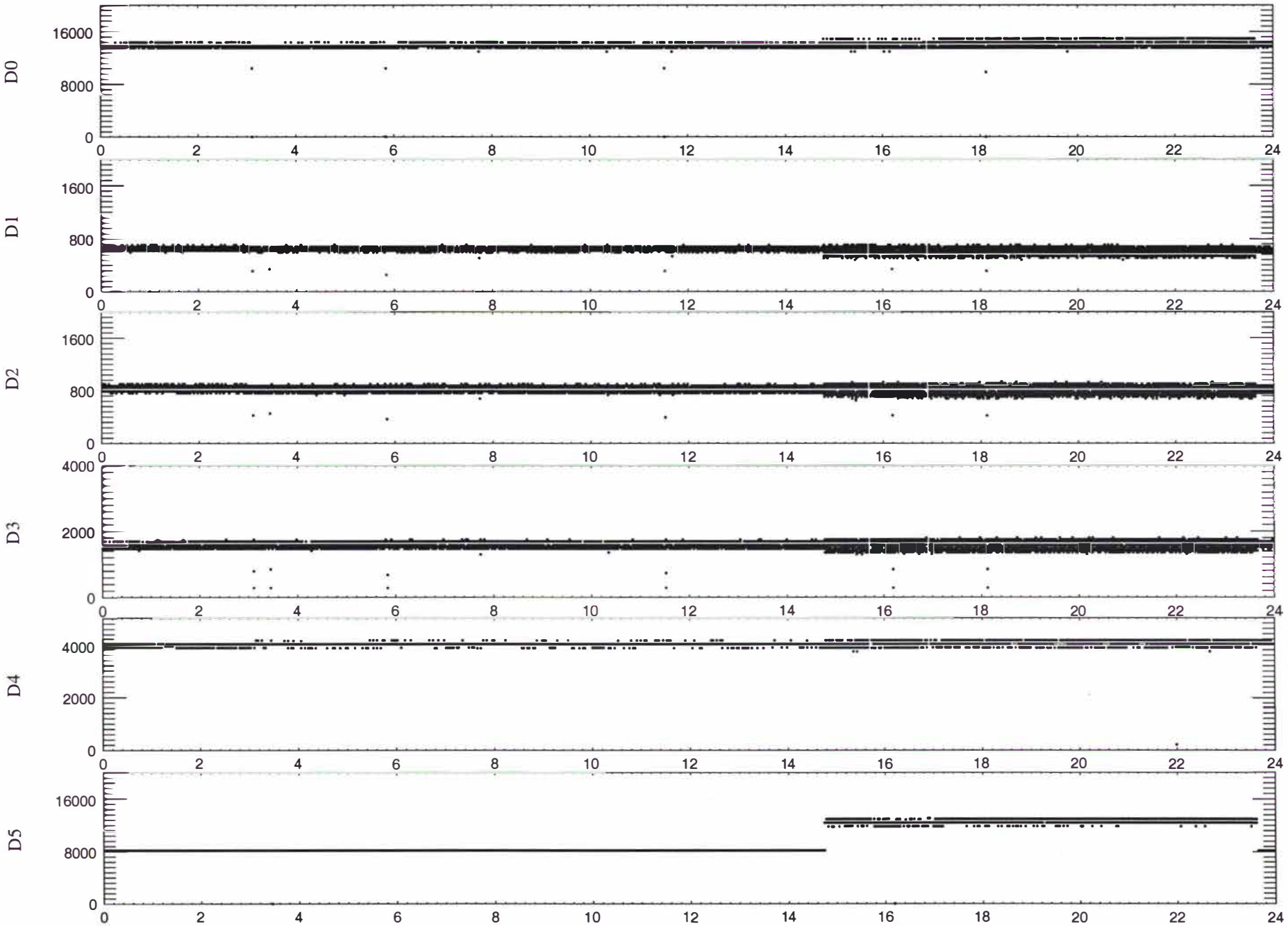
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 20/11/1999 DOY = 324 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 324, year 1999 to day 324, year 1999 03/21/00



From SURASAK@fender.msfc.nasa.gov Tue Nov 23 11:16 PST 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Tue, 23 Nov 1999 13:24:36 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7866

TIME: TJD=1503 SECONDS=666

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 108. AZIMUTH=355.9 ERROR=0.169 DEGREES

COMMENTS:
GOES M1.3, OPTICAL 1N. SOLAR FLARE. SINGLE VARIABLE PULSE. START
AT ABOUT T-250S. DURATION ABOUT 550 S. WEAKLY VISIBLE ABOVE 100 KEV.

From SURASAK@fender.msfc.nasa.gov Tue Nov 23 11:23 PST 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Tue, 23 Nov 1999 13:32:15 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7867

TIME: TJD=1503 SECONDS=28987

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.2 AZIMUTH=357.5 ERROR=0.19 DEGREES

COMMENTS:
SOLAR FLARE. C4.2, SF. SINGLE PULSE WITH STRUCTURE. START AT ABOUT
T-10S. DURATION ABOUT 210 S. MARGINALLY VISIBLE ABOVE 100 MEV.

From GOGUSE@fender.msfc.nasa.gov Tue Nov 23 10:49 PST 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Tue, 23 Nov 1999 12:58:28 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7868

****
BATSEARCH PROGRAM
****

BATSE BURST # 7868
EVENT OF 1999 NOV 21 DAY OF YEAR=325
EVENT CROSSING TIME AT BATSE : 40904. S. OR 11:21:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 302.000 -62.000
BATSE PEAK COUNTING RATE: 7750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/11/ 99 IS:
RA= 165.565 DEC= -25.888 DIST= 4.643 AU
BATSE-ULYSSES DISTANCE = 694565854. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 94.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -184.11 SECS.
CROSSING TIME AT ULYSSES IS 40720. S. OR 11:18:39 +/- 448.17 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/11/ 99 IS:
RA= 298.275 DEC= -22.452 DIST= 1.627 AU
MARS-BATSE DISTANCE = 243425472. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.37 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= -625.37 SECS.
CROSSING TIME AT MARS IS 40279. S. OR 11:11:18 +/- 80.42 SECONDS

BATSE BURST TRIGGER
NO.: 7868

TIME: TJD=1503 SECONDS=40904

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 47.3 AZIMUTH=343.9 ERROR= 0.8 DEGREES

COMMENTS:
GRB, MULTI-PEAKED WITH STRUCTURE, DURATION APPROX. 125 SEC
FIRST PEAK IS MARGINALLY, SECOND PEAK IS WEAKLY VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7868	991121	11503	40904	7750	302	-62	125

Date: May 4 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? No - bad stats

2. BATSE Data

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data N/A

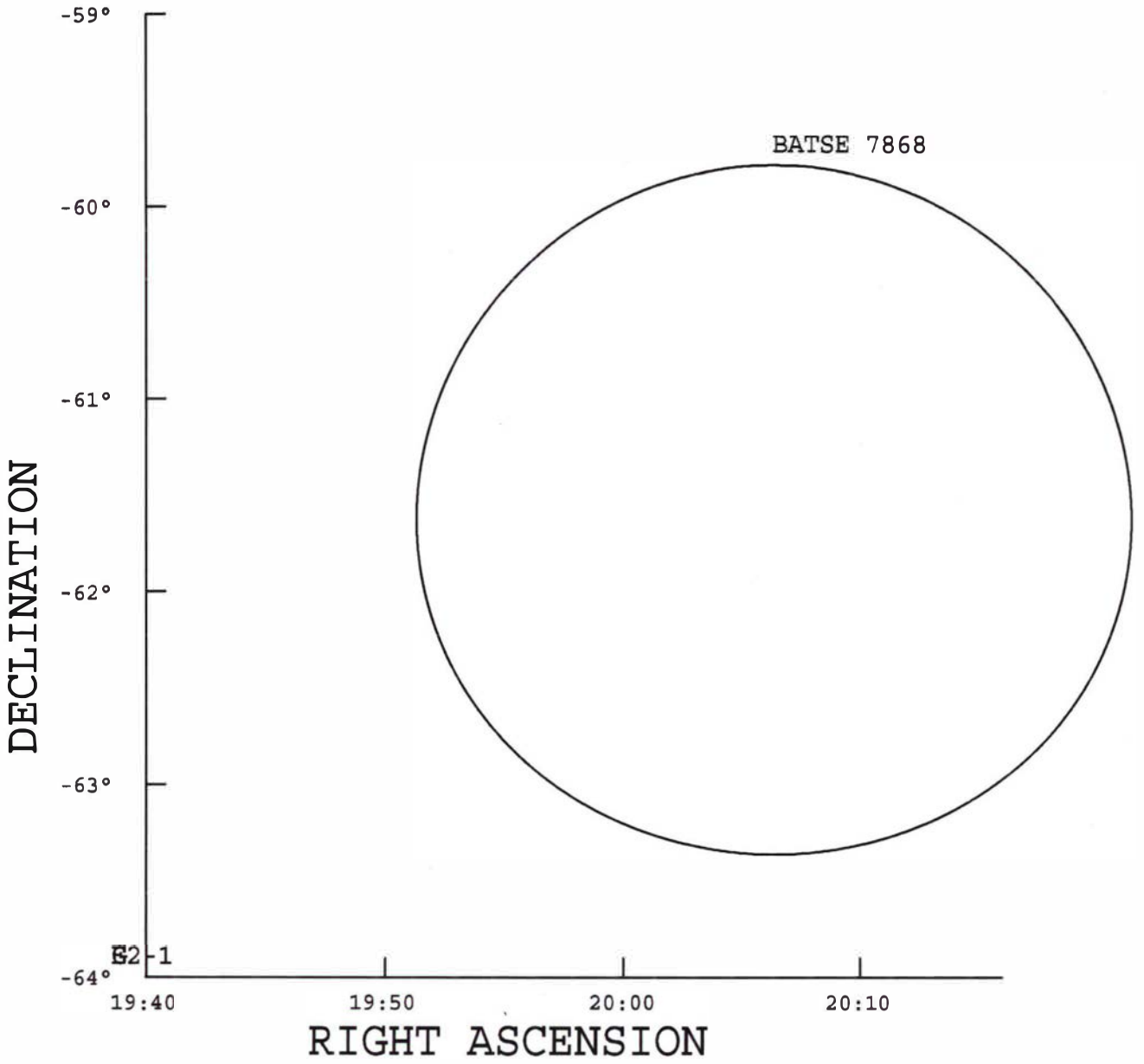
☐ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

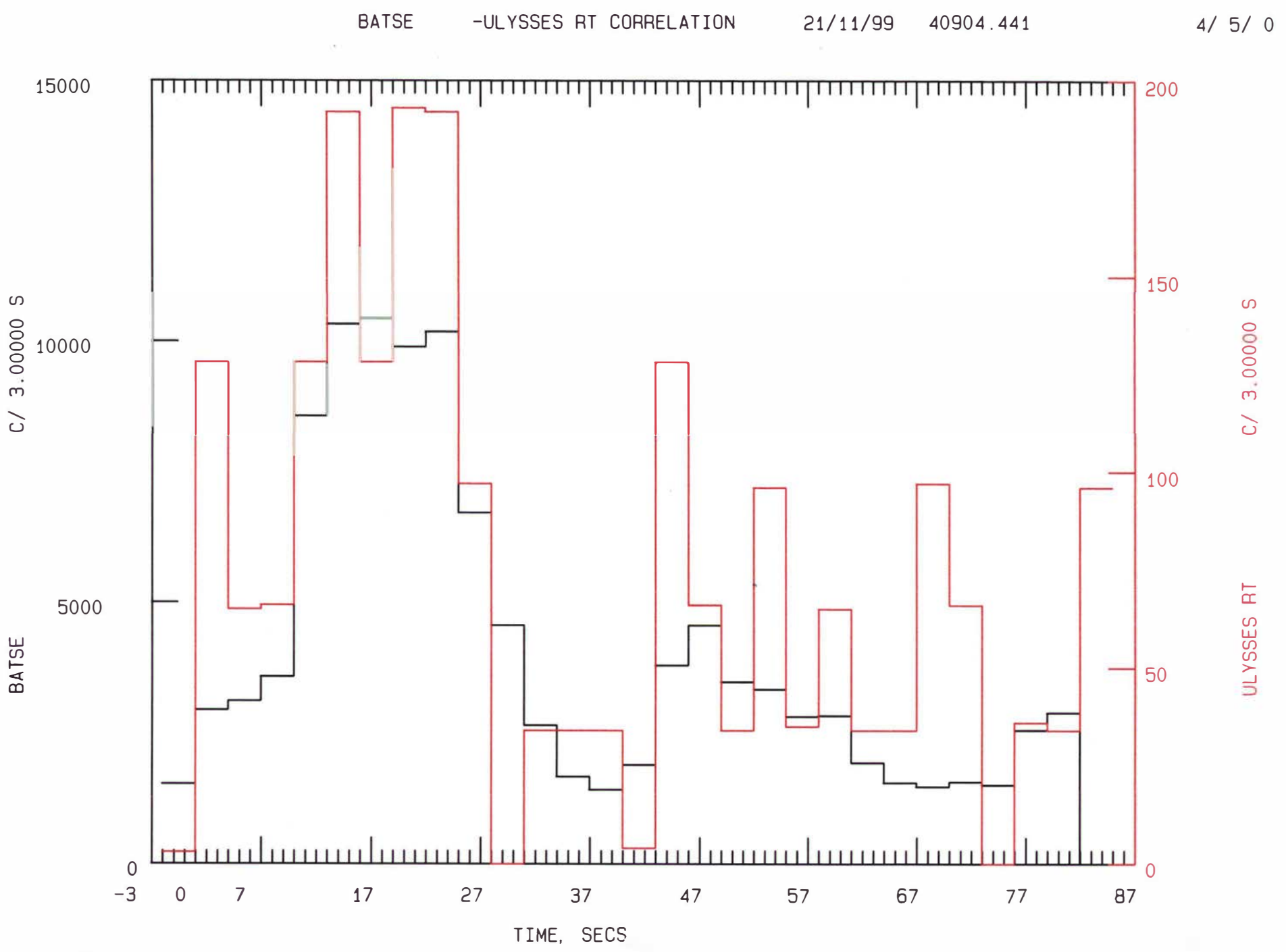
☐ BATSE >100 keV data used for NEAR correlation?

☑ ACCESS database updated?

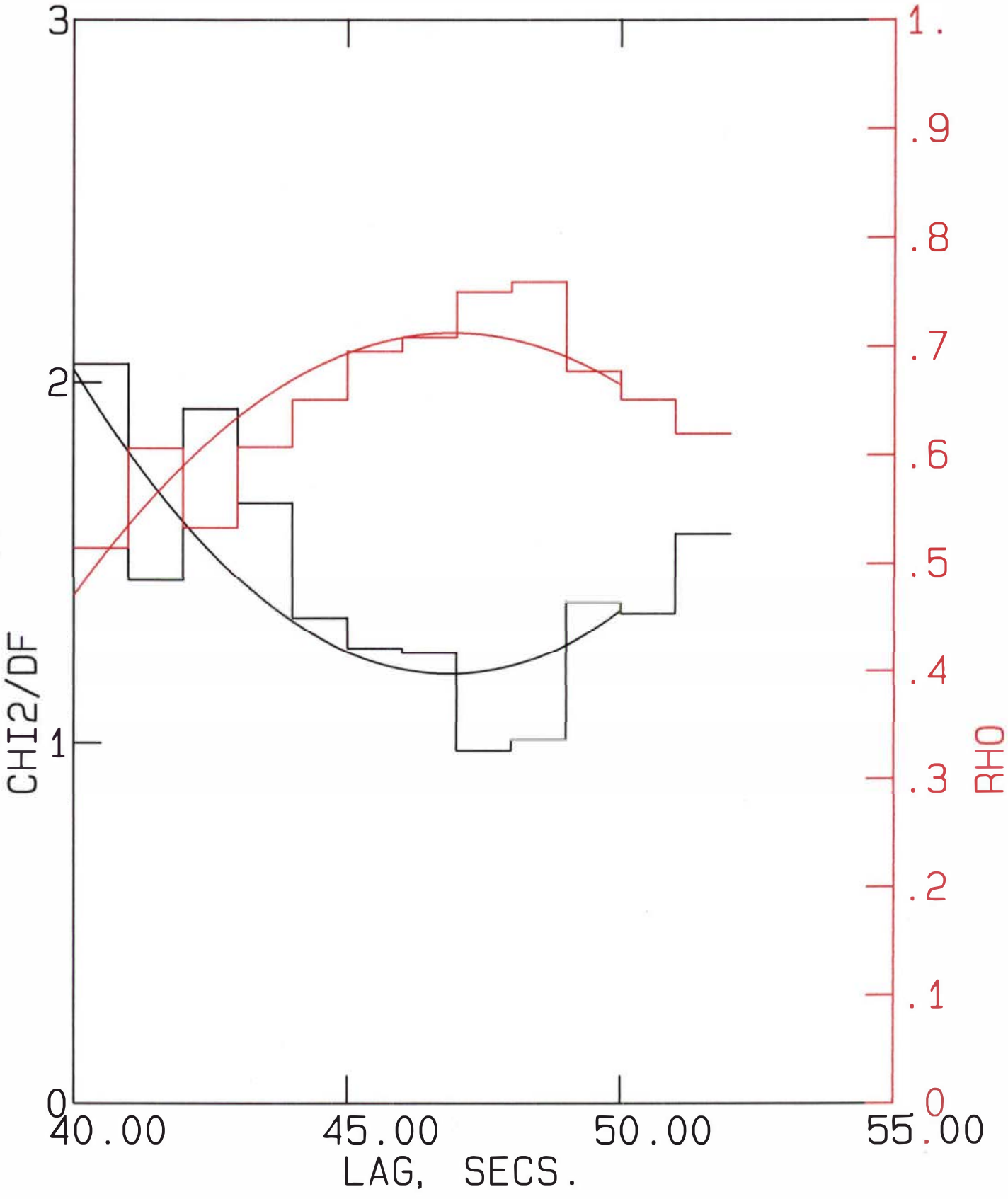
EVENT OF NOV 21, 1999 11:21

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




BATSE -ULYSSES RT CORRELATION 21/11/99 40904.441 4/ 5/ 0
15000
10000
5000
0
C/ 3.00000 S
BATSE
200
150
100
50
0
C/ 3.00000 S
ULYSSES RT
-3
0
7
17
27
37
47
57
67
77
87
TIME, SECS

BATSE -ULYSSES RT CORRELATION 21/11/99 40904.441

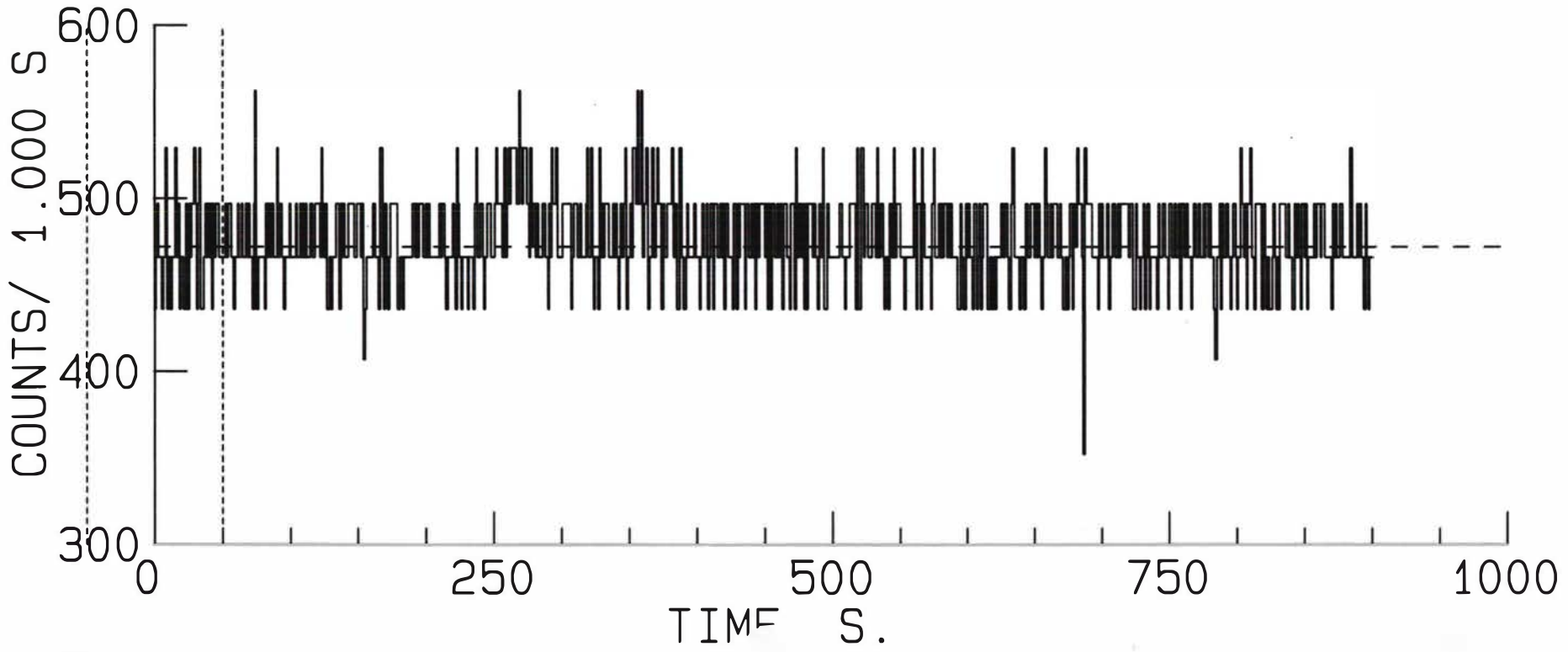


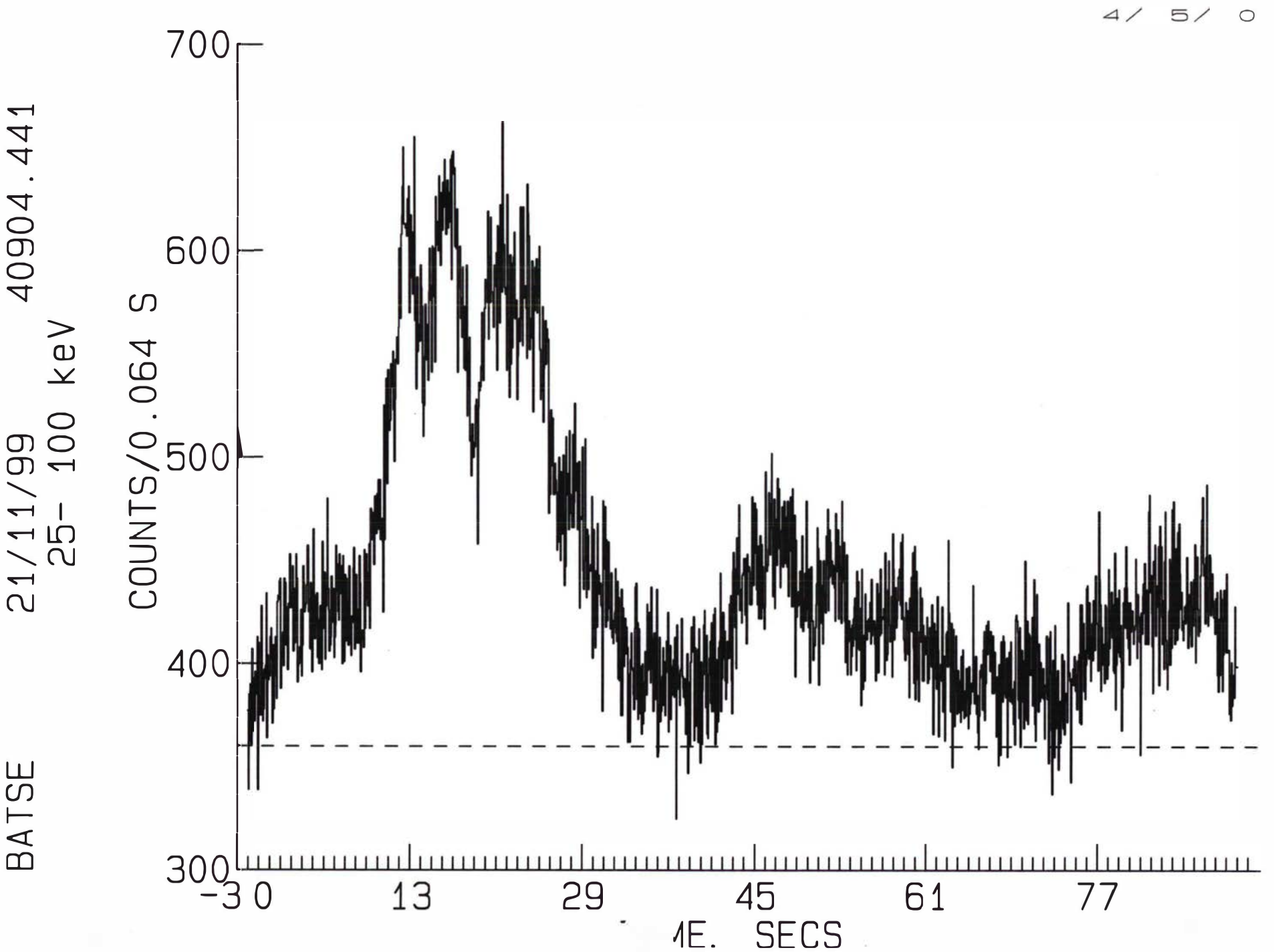
ULYSSES RT

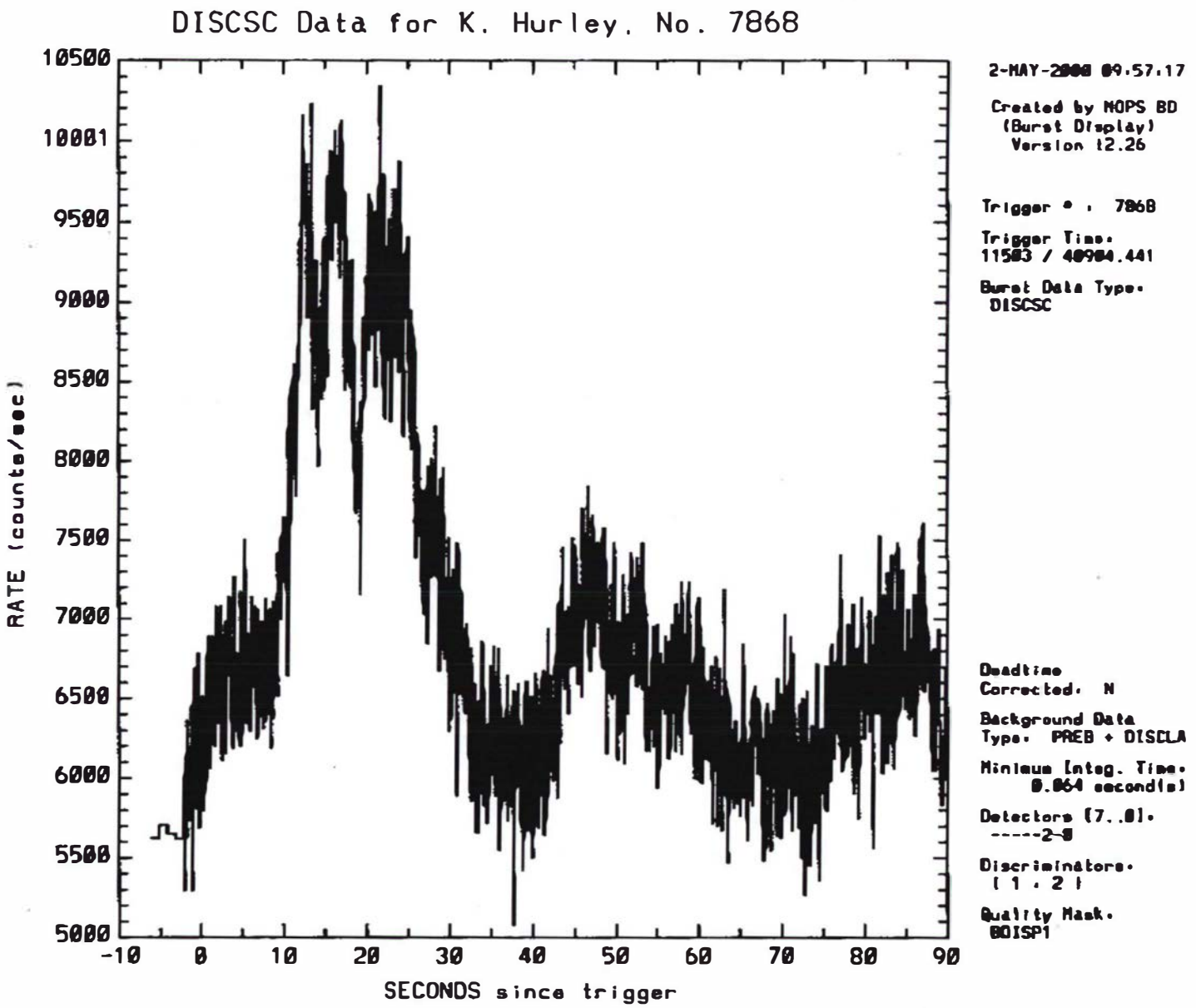
4/ 5/ 0

21/11/99 40284.245 s

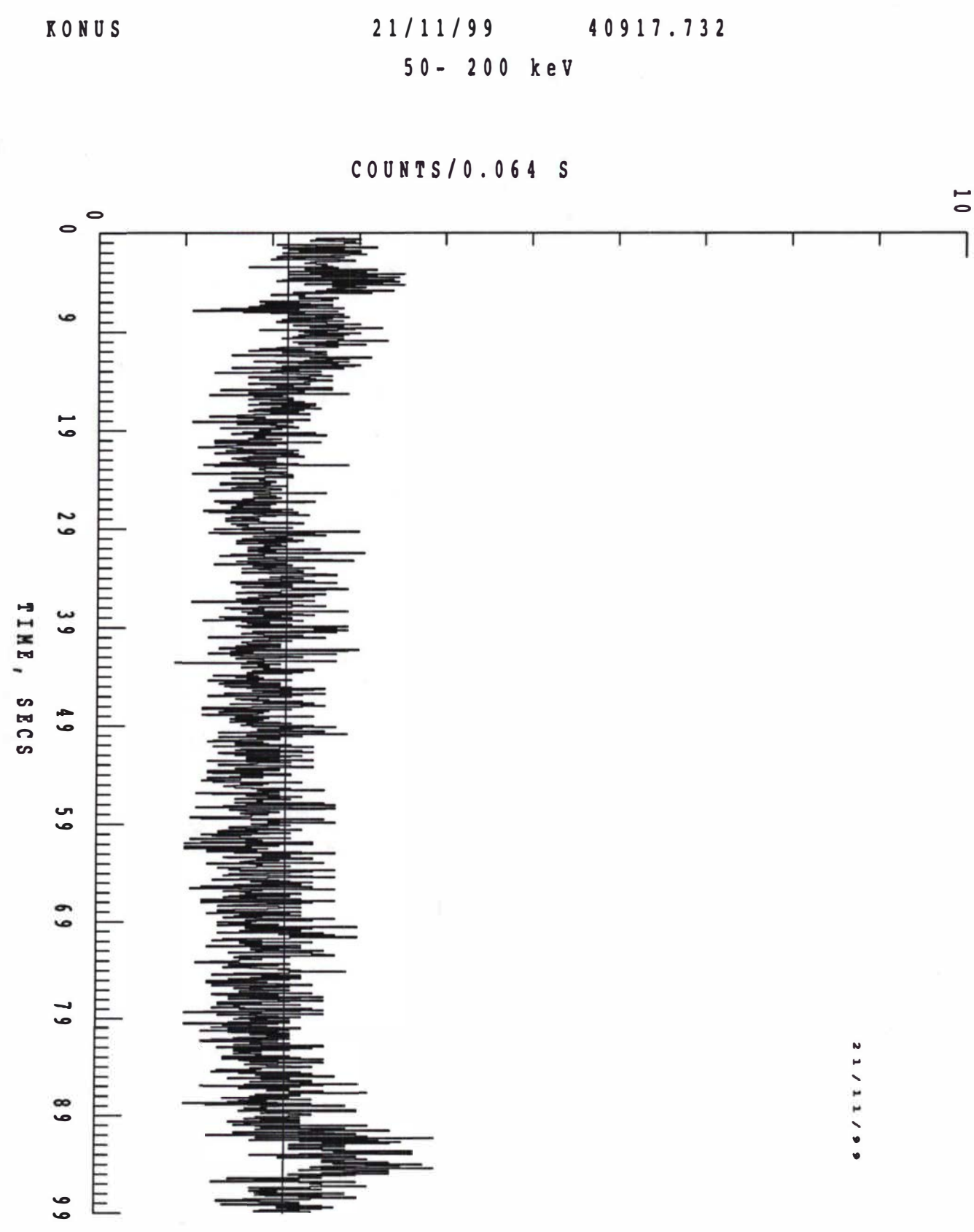
22- 150 keV




4/ 5/ 0
700
600
500
400
300
BATSE 21/11/99 40904.441
25- 100 keV
COUNTS/0.064 S
-3 0
13
29
45
61
77
1E. SECS



05-02-2000 09:06 2565445800 BATSE P.02


KONUS
21/11/99
40917.732
50- 200 keV
COUNTS/0.064 S
0
10
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
21/11/99

From GOGUSE@fender.msfc.nasa.gov Tue Nov 23 10:42 PST 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Tue, 23 Nov 1999 12:51:25 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7869

TIME: TJD=1503 SECONDS=65616 18:13:36

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

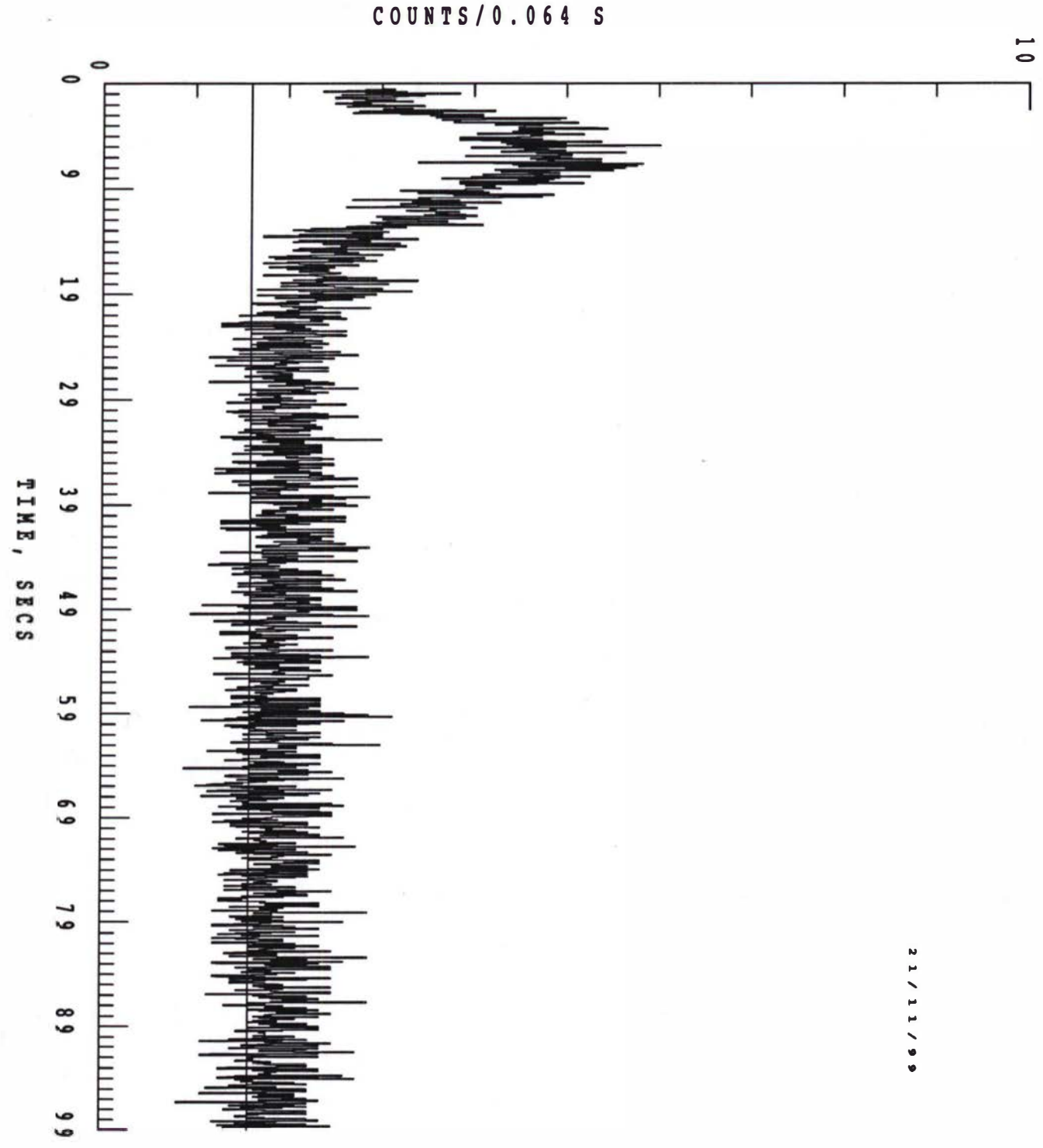
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.3 AZIMUTH=357.6 ERROR= 0.2 DEGREES

COMMENTS:
GOES M3.4, OPTICAL 2N, DURATION APPROX. 700 SEC.,
MAIN PEAK IS AT APPROX. 100 SEC, NOT VISIBLE ABOVE 300 KEV

KONUS 21/11/99 65715.045

50- 200 keV Prob. solar (BATSE 7869)



KONUS2 19991121 65715

ULYSSES RT

24/11/99

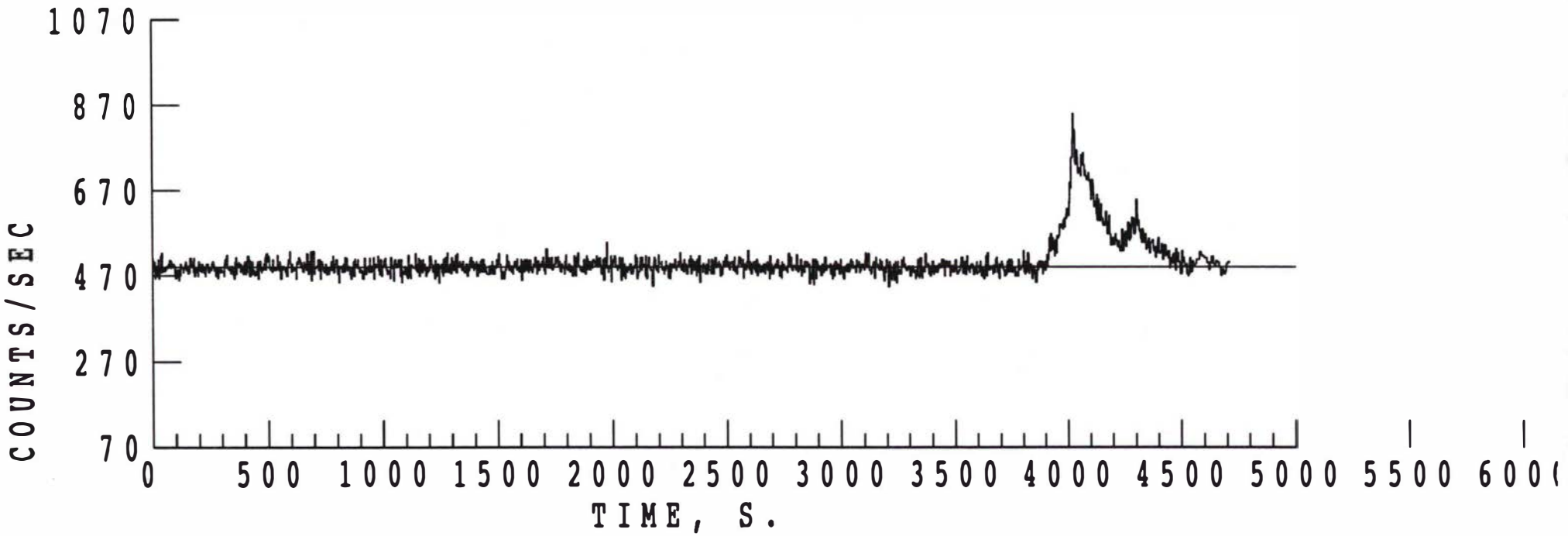
21/11/99 63360.227 s

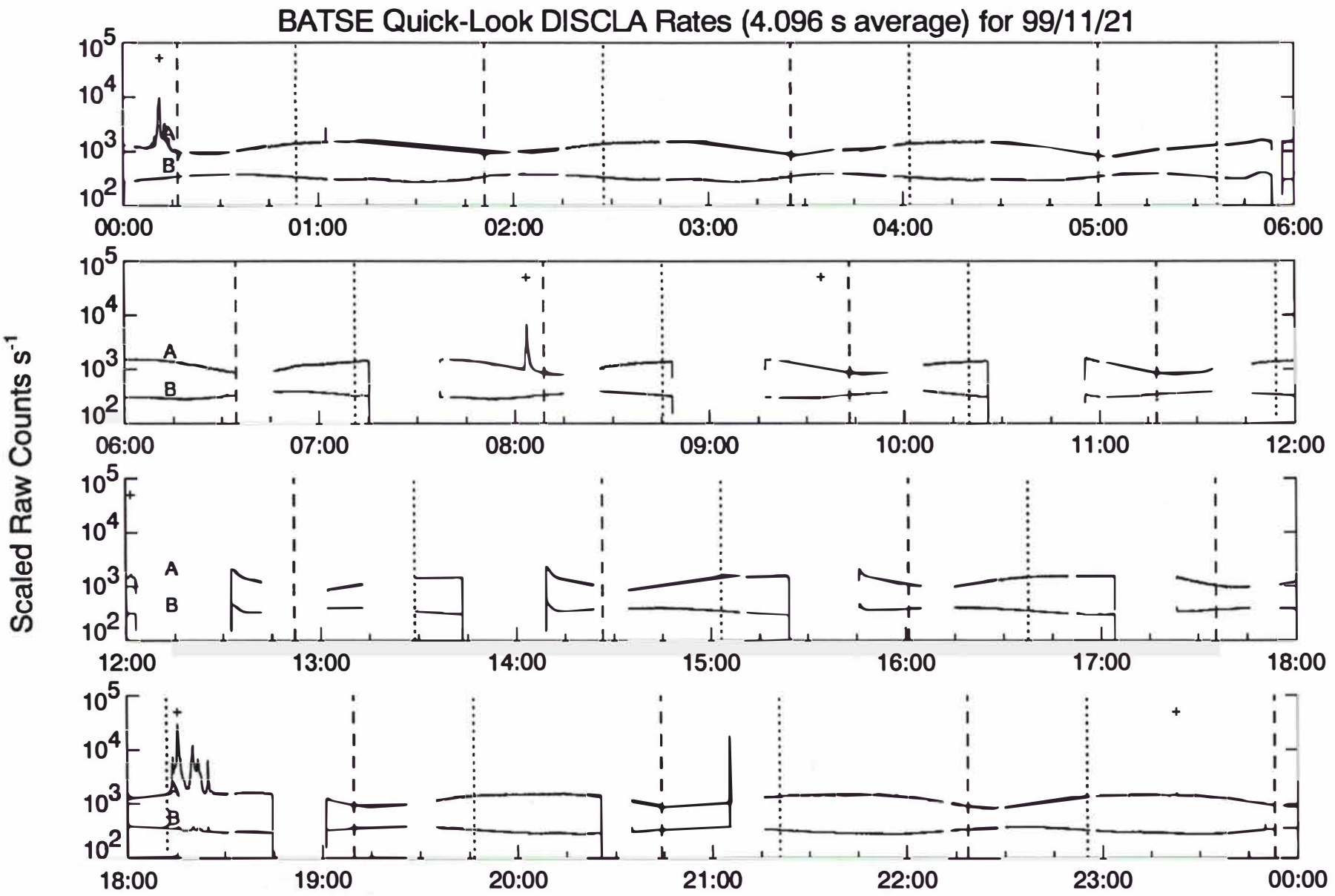
INTERVALS REGROUPED BY 13

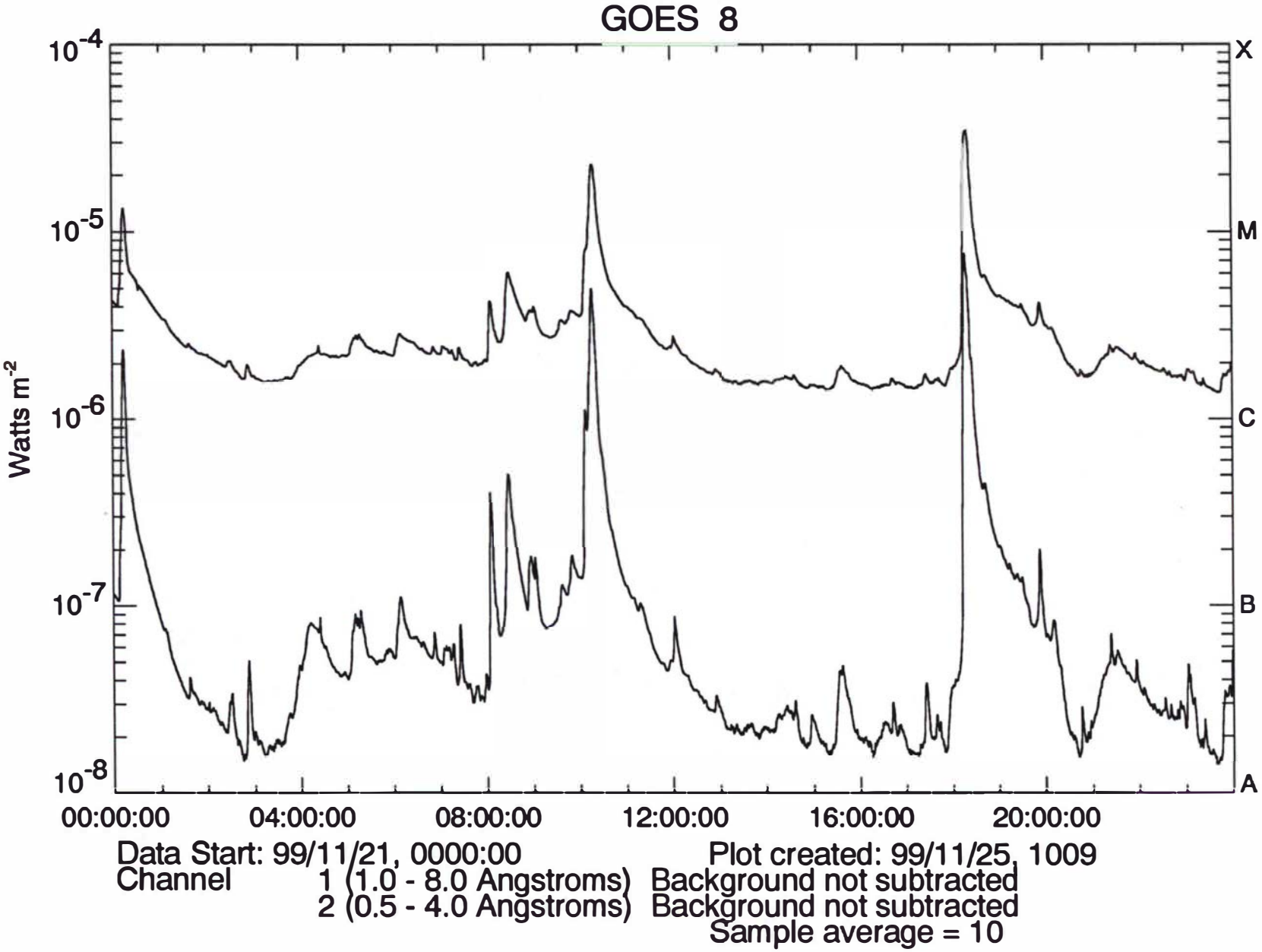
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

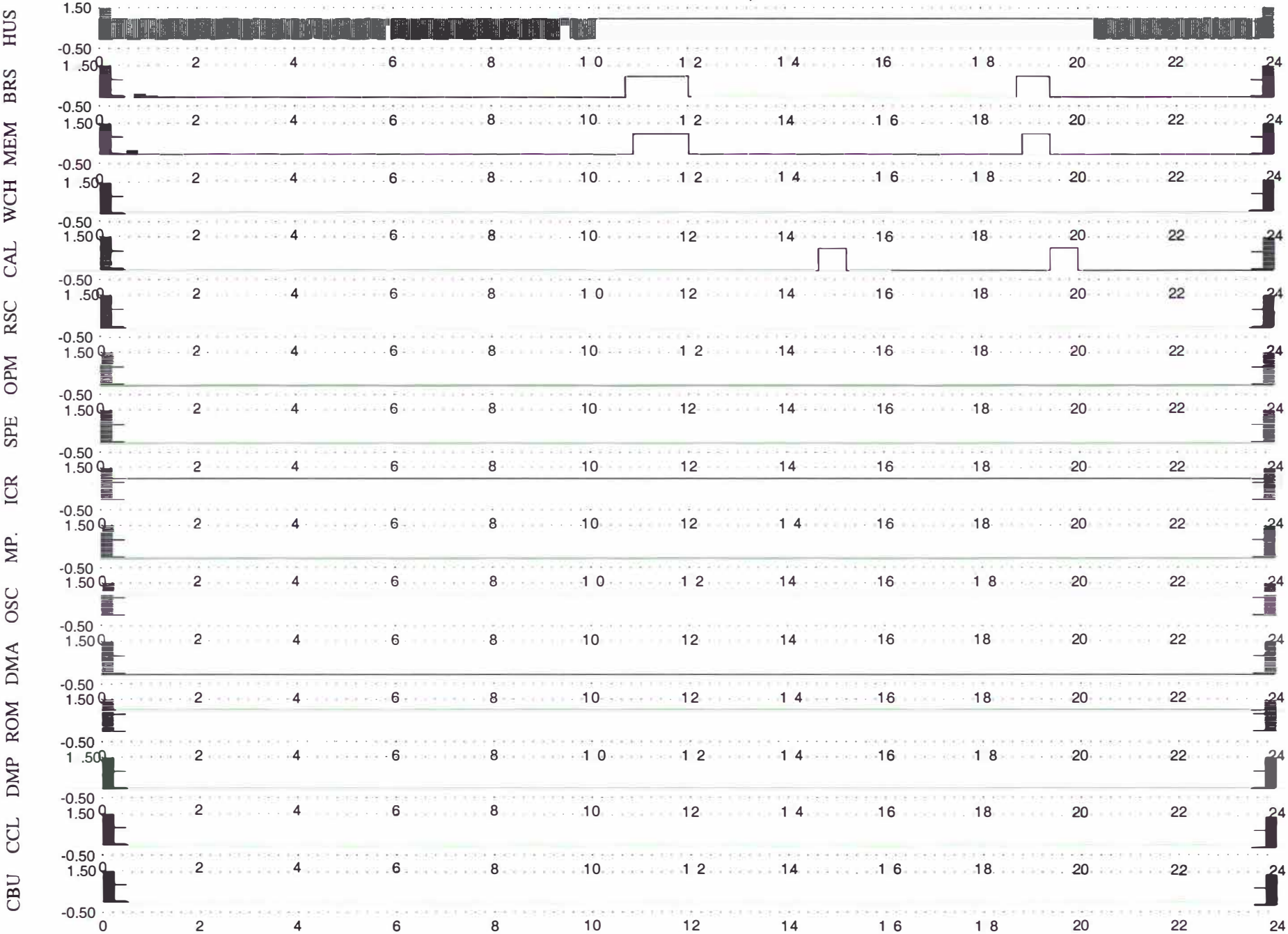



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/21
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/25, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
Watts m^{-2}
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/21, 0000:00
Plot created: 99/11/25, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 325, year 1999 to day 325, year 1999 03/21/00

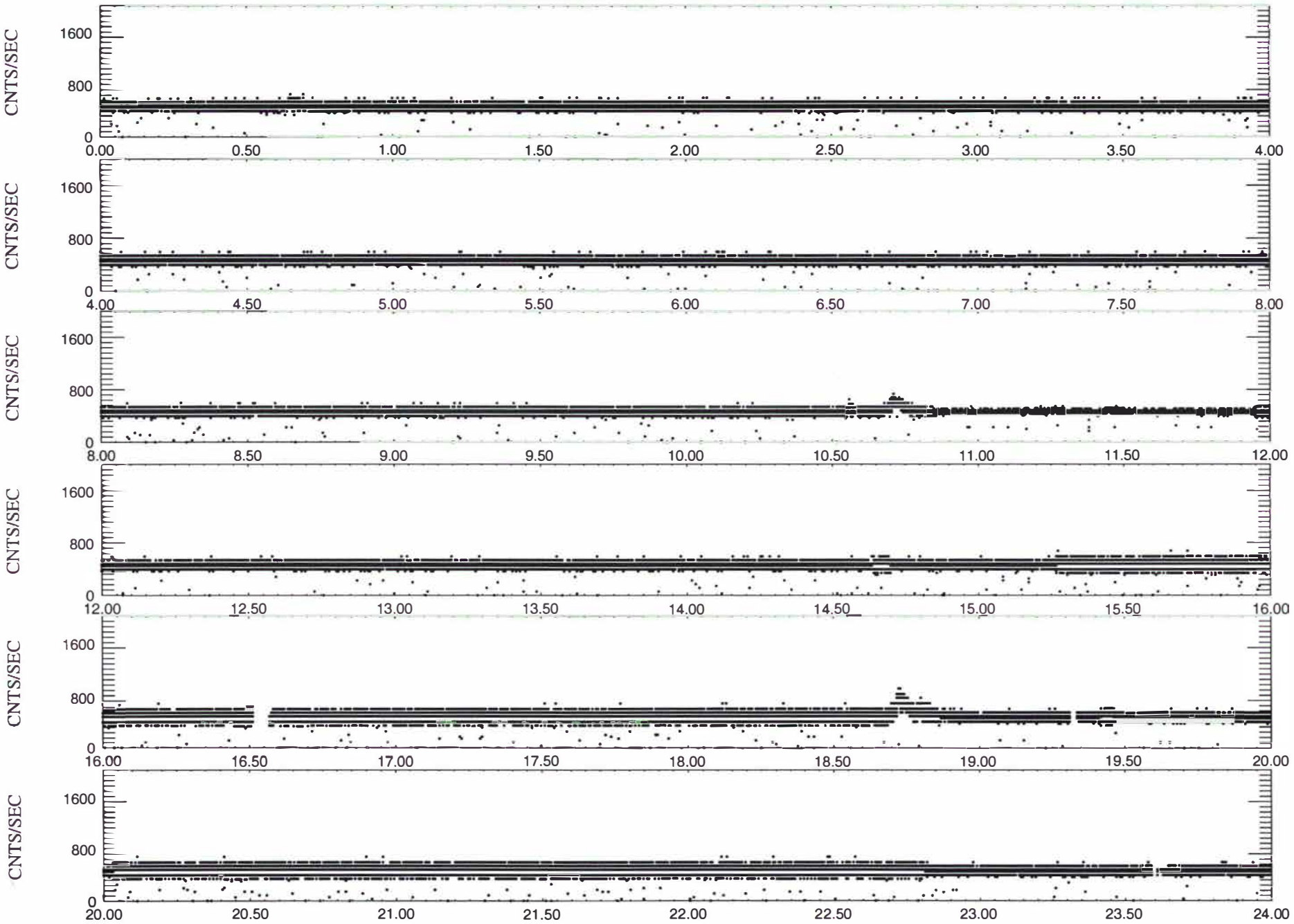
BURST NUMBER 9, 10



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 21/11/1999 DOY = 325 03/21/00

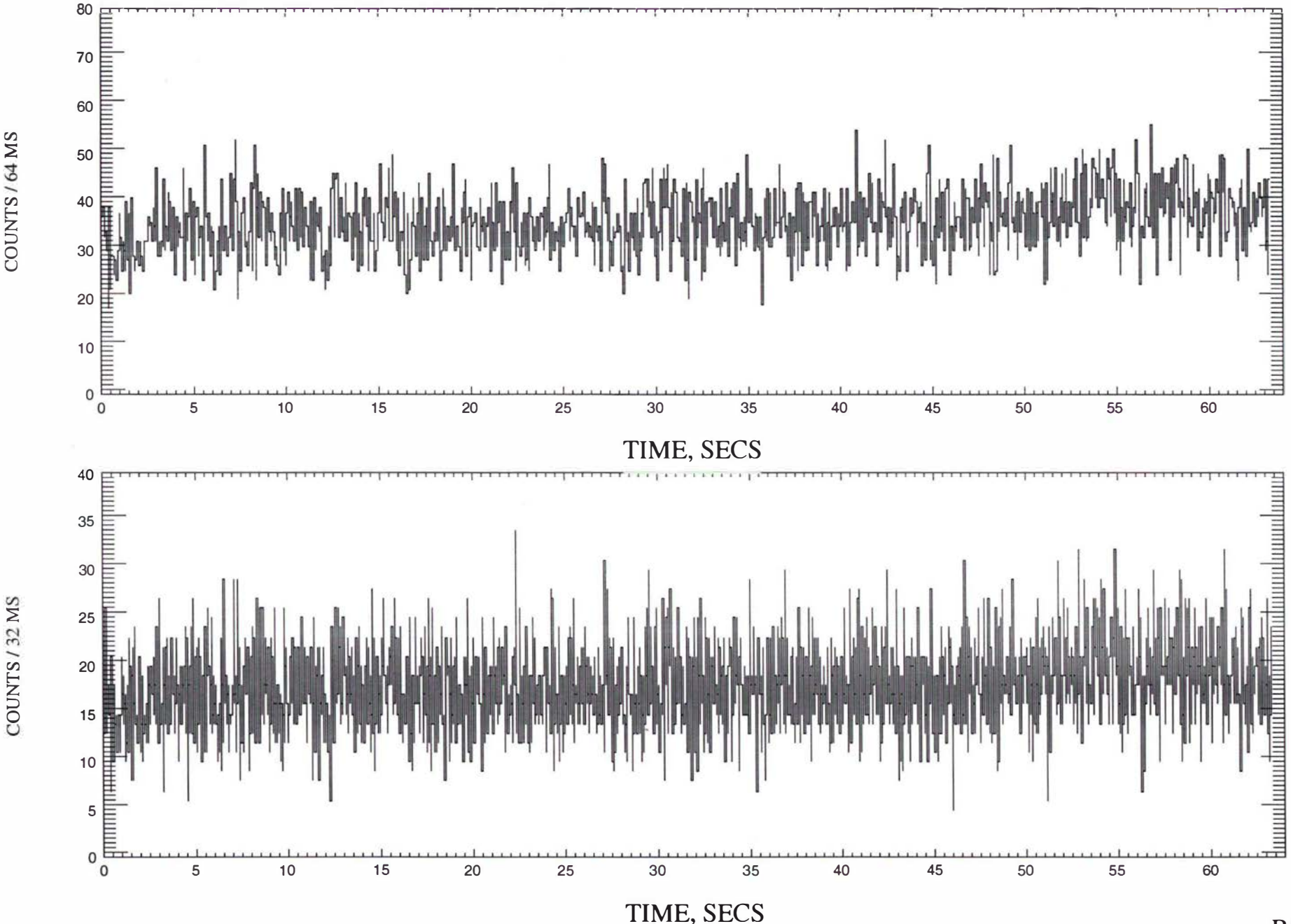
CALIBRATION DATA INCLUDED



UNIV[illegible]SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 21/11/1999 DOY = 325 03/21/00

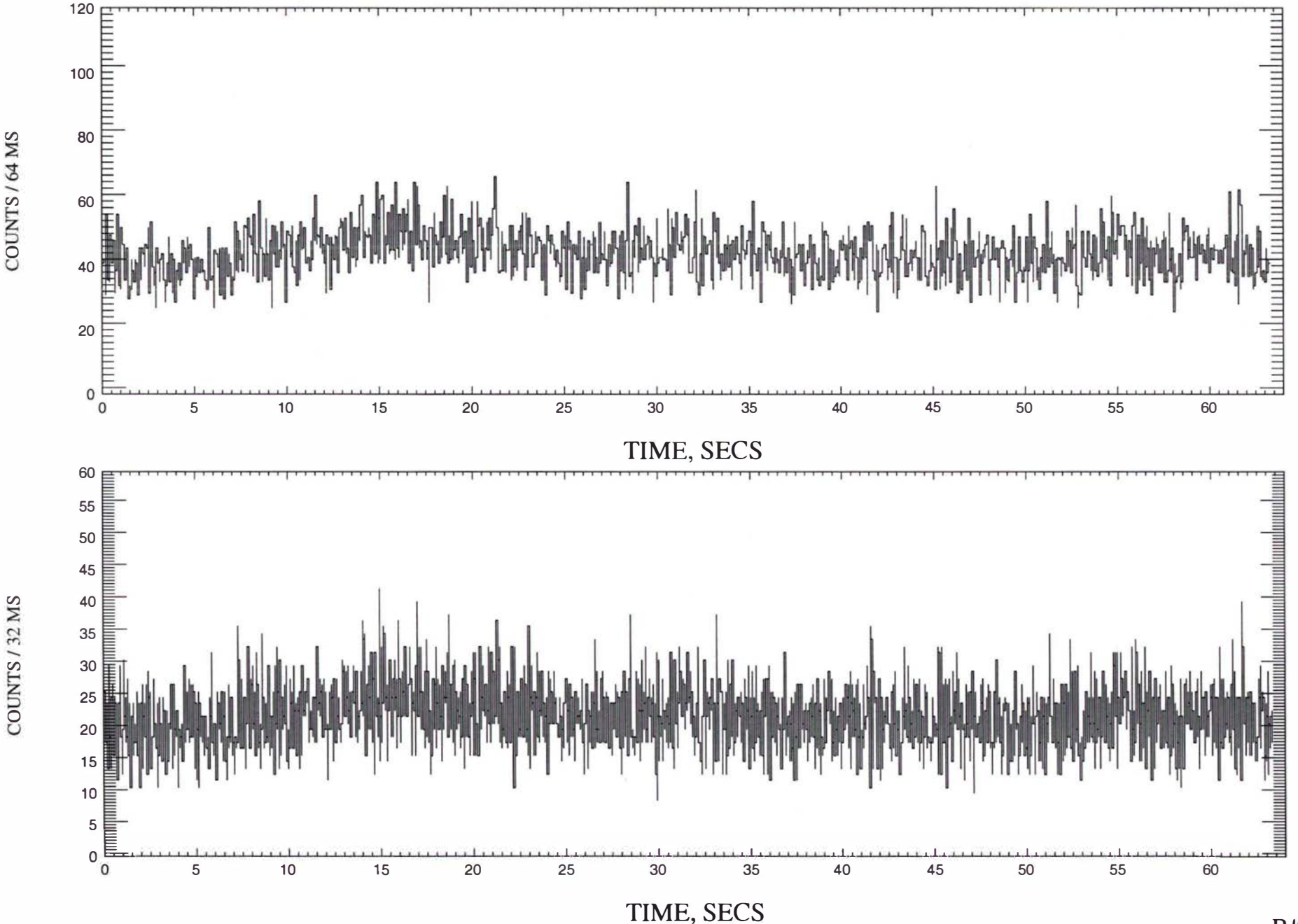
Burst Counter 9 at UT=10.697979104784 h=38512.725 s 10:41:52.725



B# 1

HUS 2A TRIGGERED DATA EDR DMY = 21/11/1999 DOY = 325 03/21/00

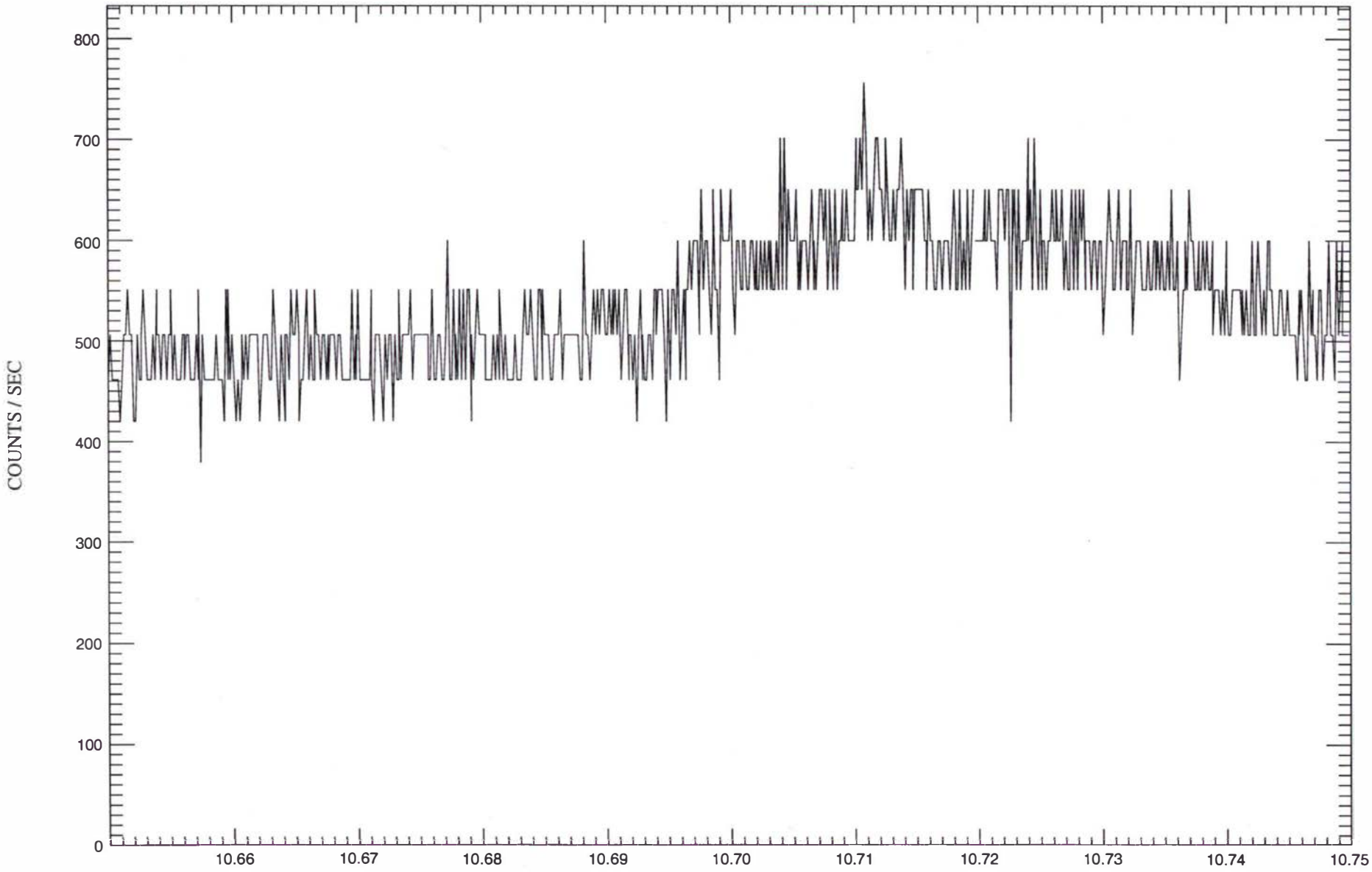
Burst Counter 10 at UT=18.716044731140 h=67377.761 s 18:42:57.761



B# 2

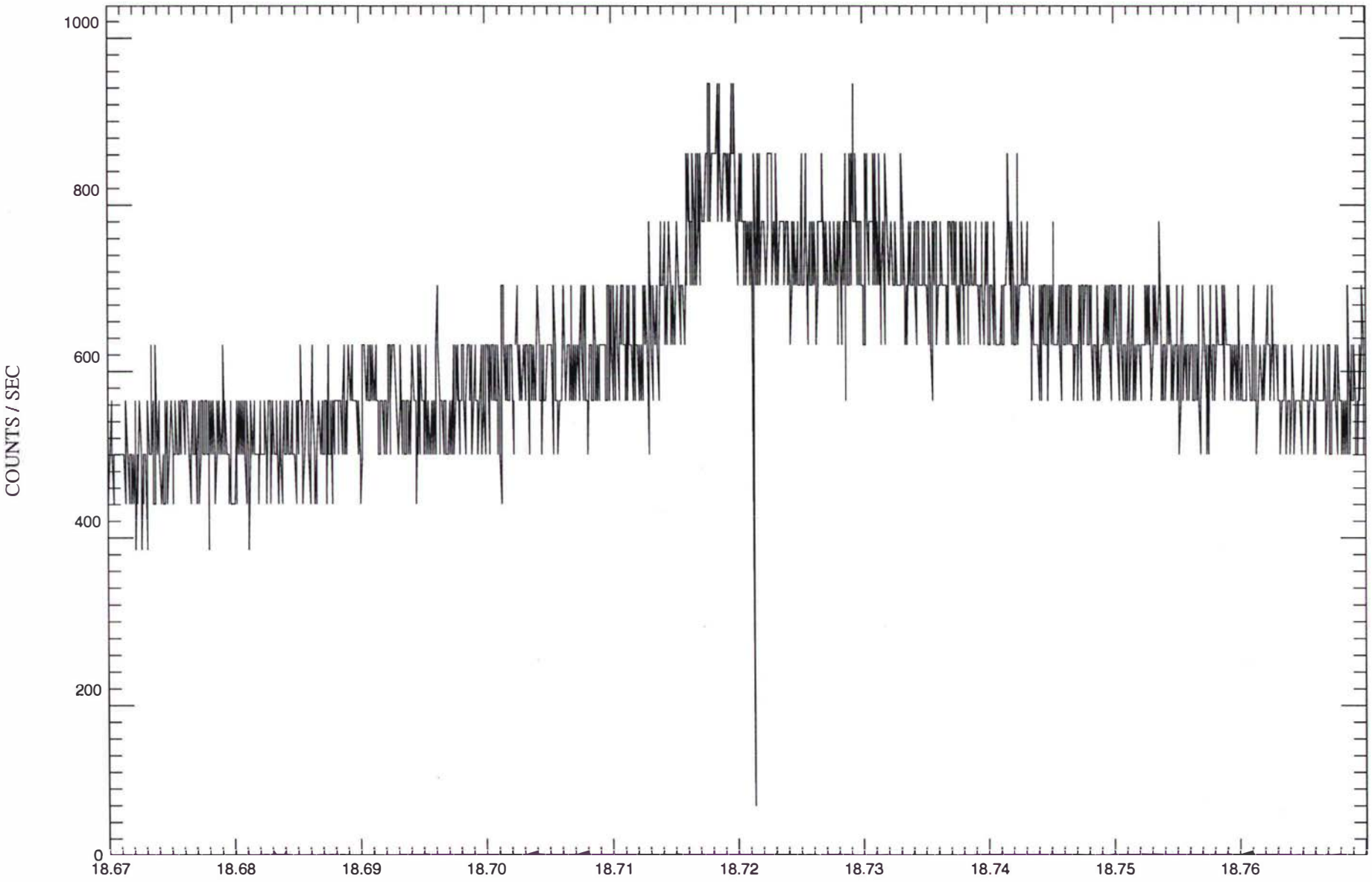
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 21/11/1999 DOY = 325 03/21/00

CALIBRATION DATA INCLUDED

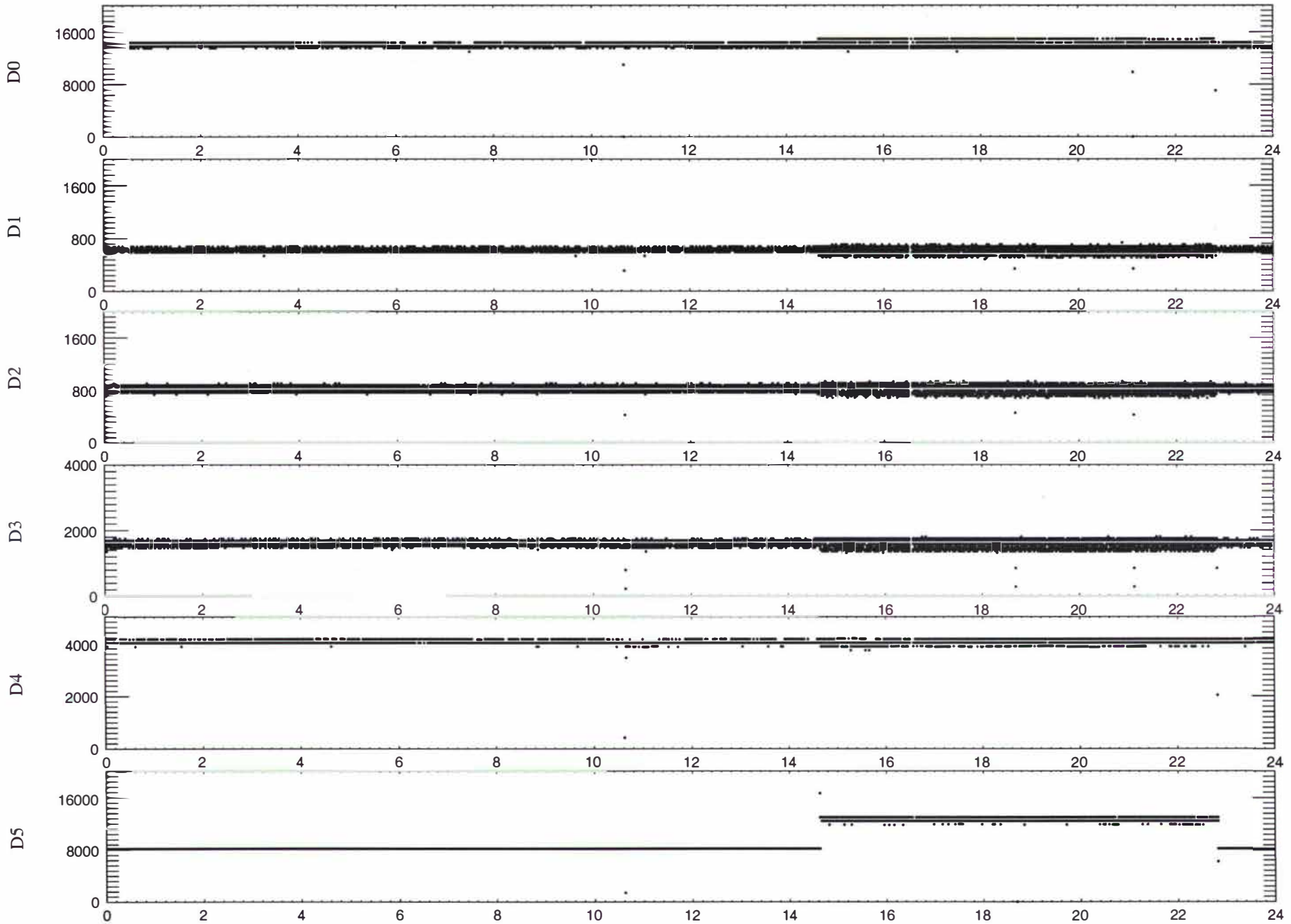


HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 21/11/1999 DOY = 325 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 325, year 1999 to day 325, year 1999 03/21/00



Date: July 9 '07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data...")

☐ Was Mars-blocking used?

☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☑ Σ $3\Delta t$'s calculated, and/or BMAPSUM executed?

3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

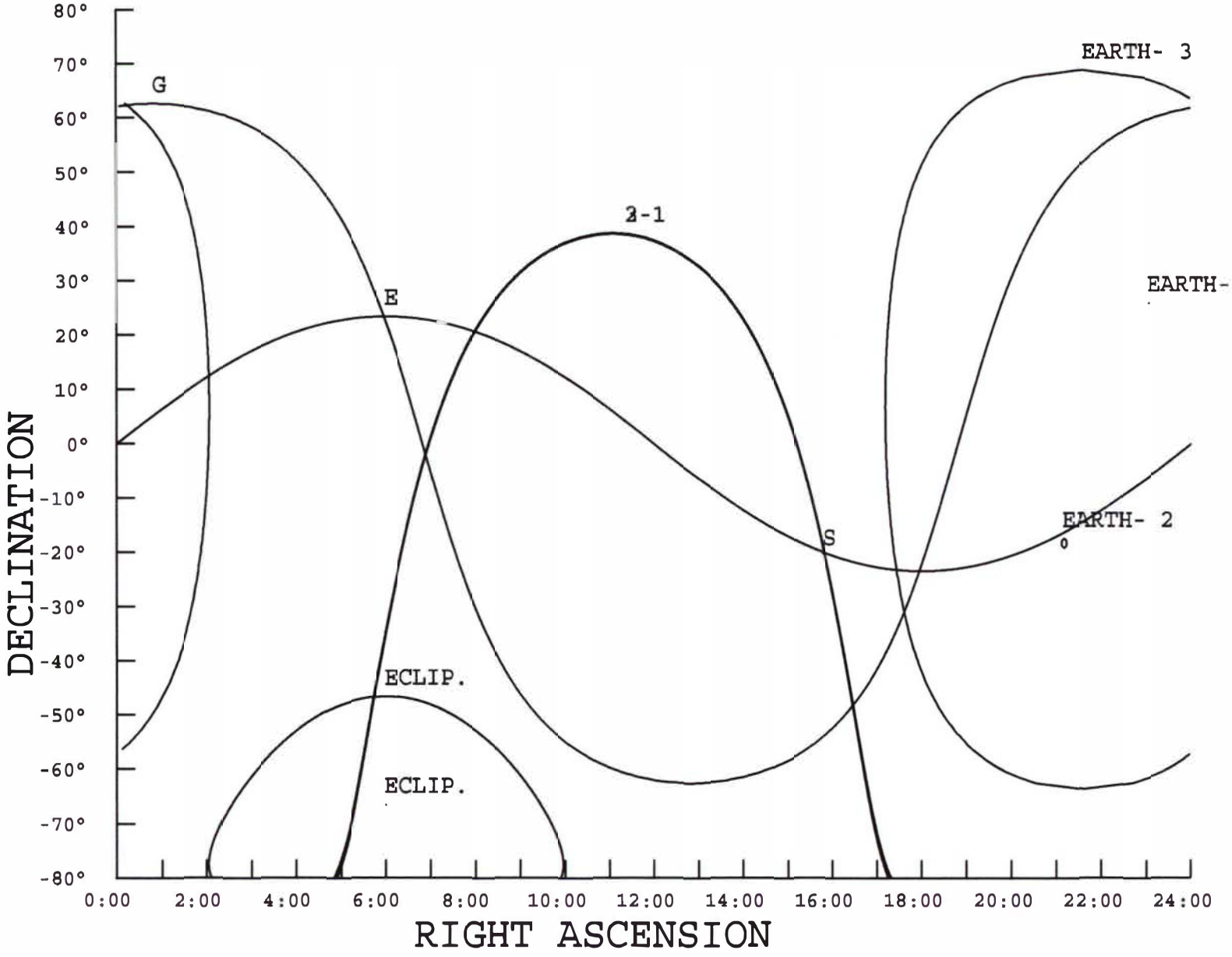
☐ Updated ephemeris used for bursts prior to September 30, 2003?

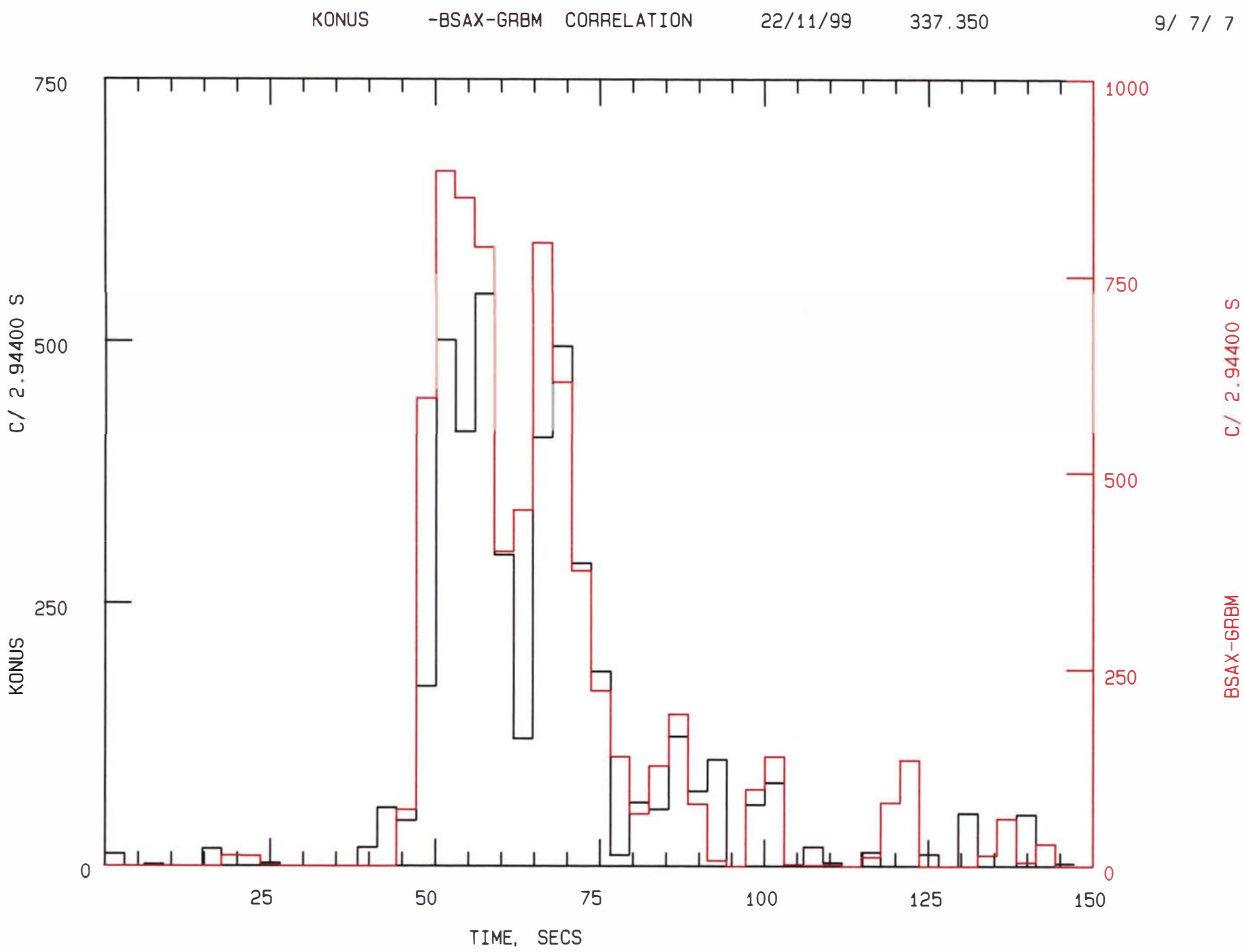
☑ ACCESS and MBL4 databases updated?

EVENT OF NOV 21, 1999 23:49

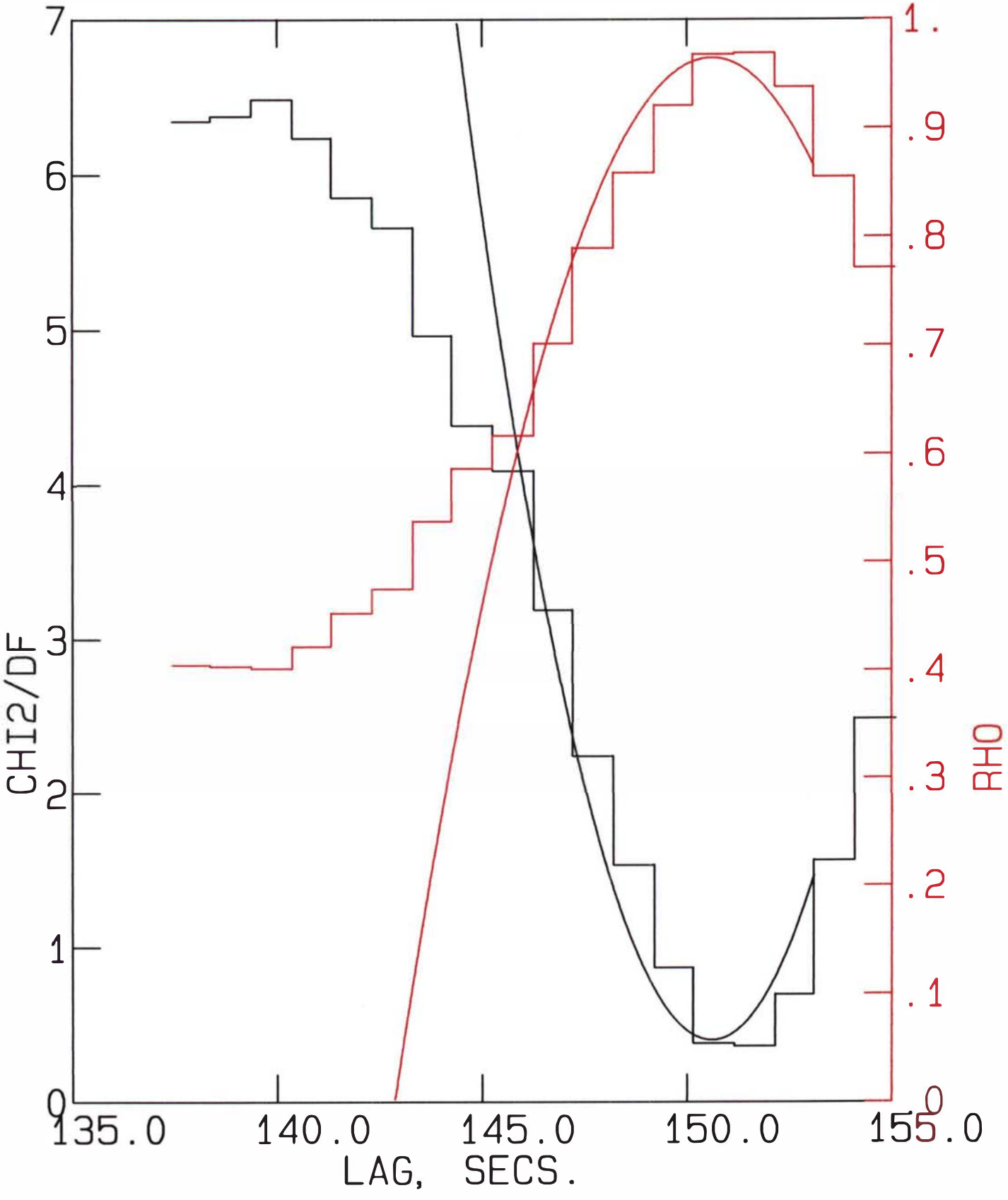
9/ 7/ 7

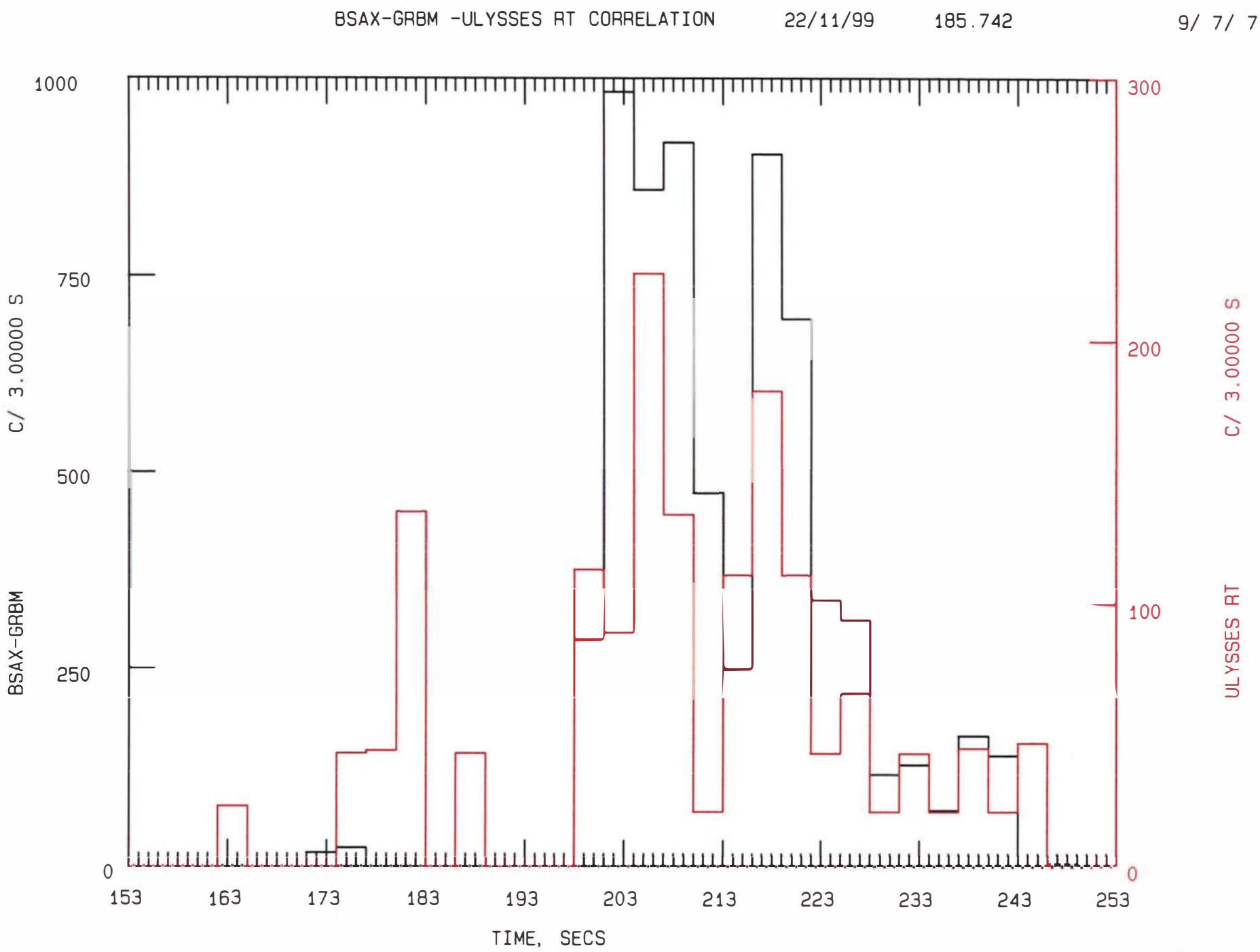
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS 3 SAX



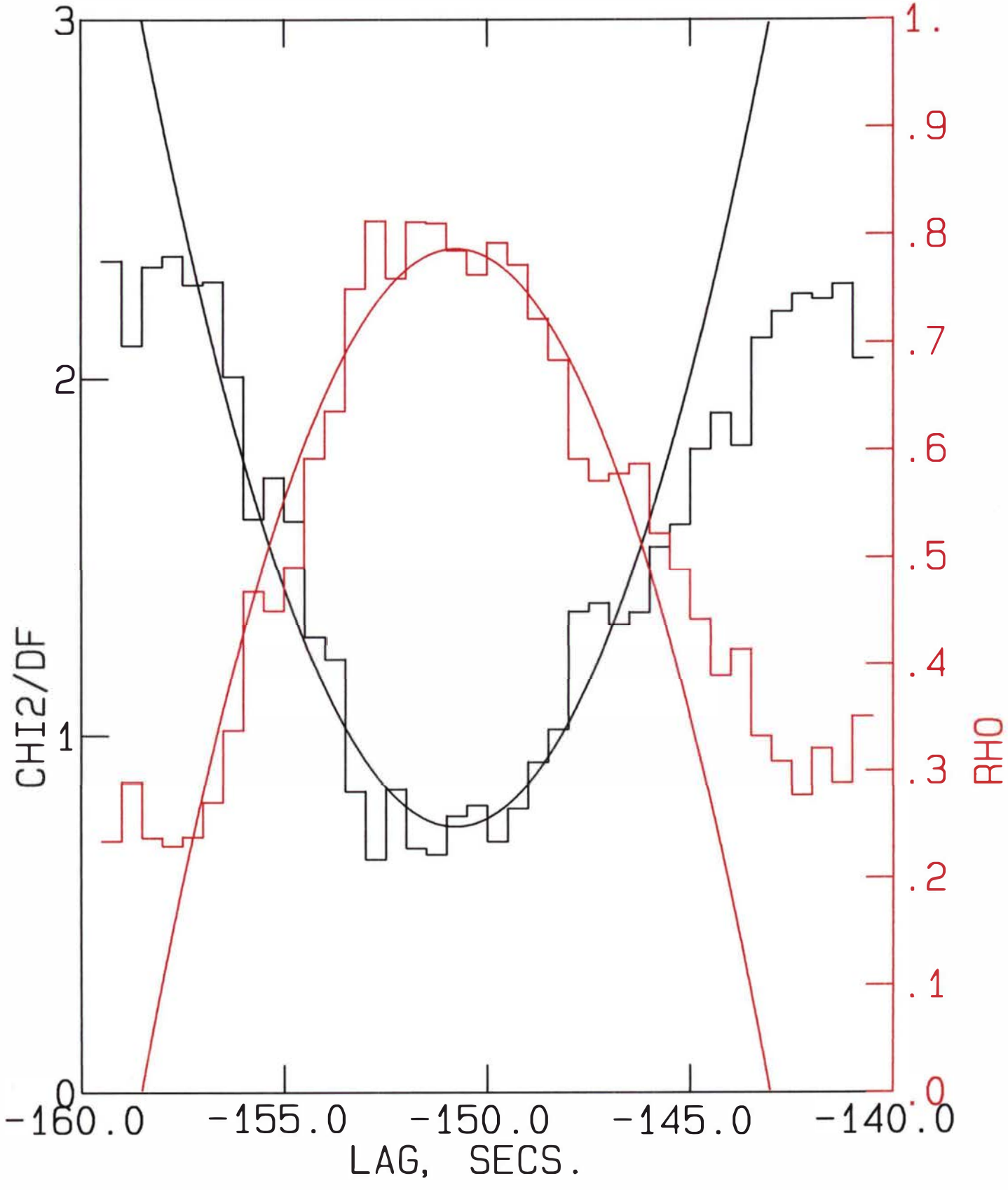

KONUS -BSAX-GRBM CORRELATION 22/11/99 337.350 9/ 7/ 7
750
500
250
0
1000
750
500
250
0
C/ 2.94400 S
KONUS
BSAX-GRBM
25
50
75
100
125
150
TIME, SECS

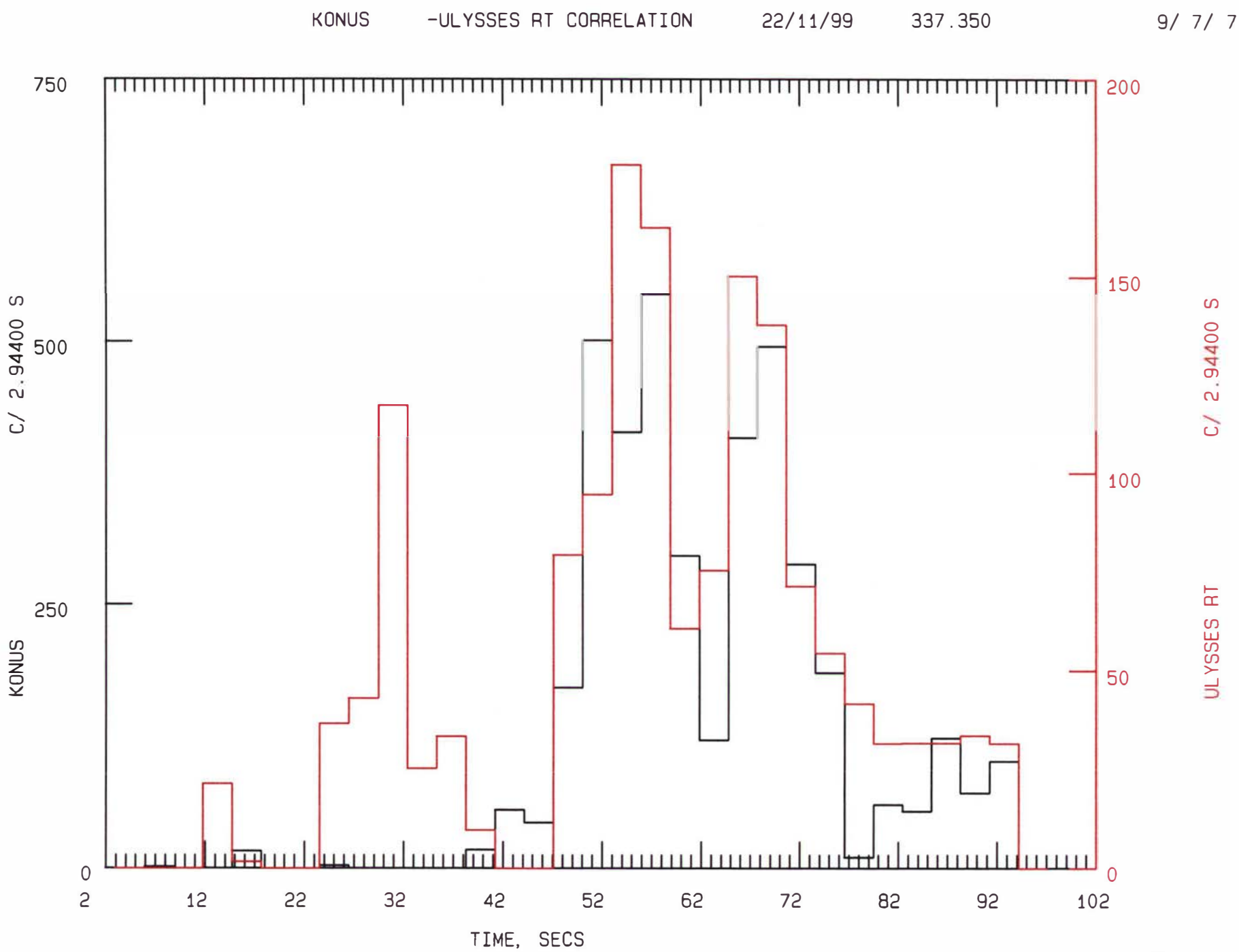
KONUS -BSAX-GRBM CORRELATION 22/11/99 337.350



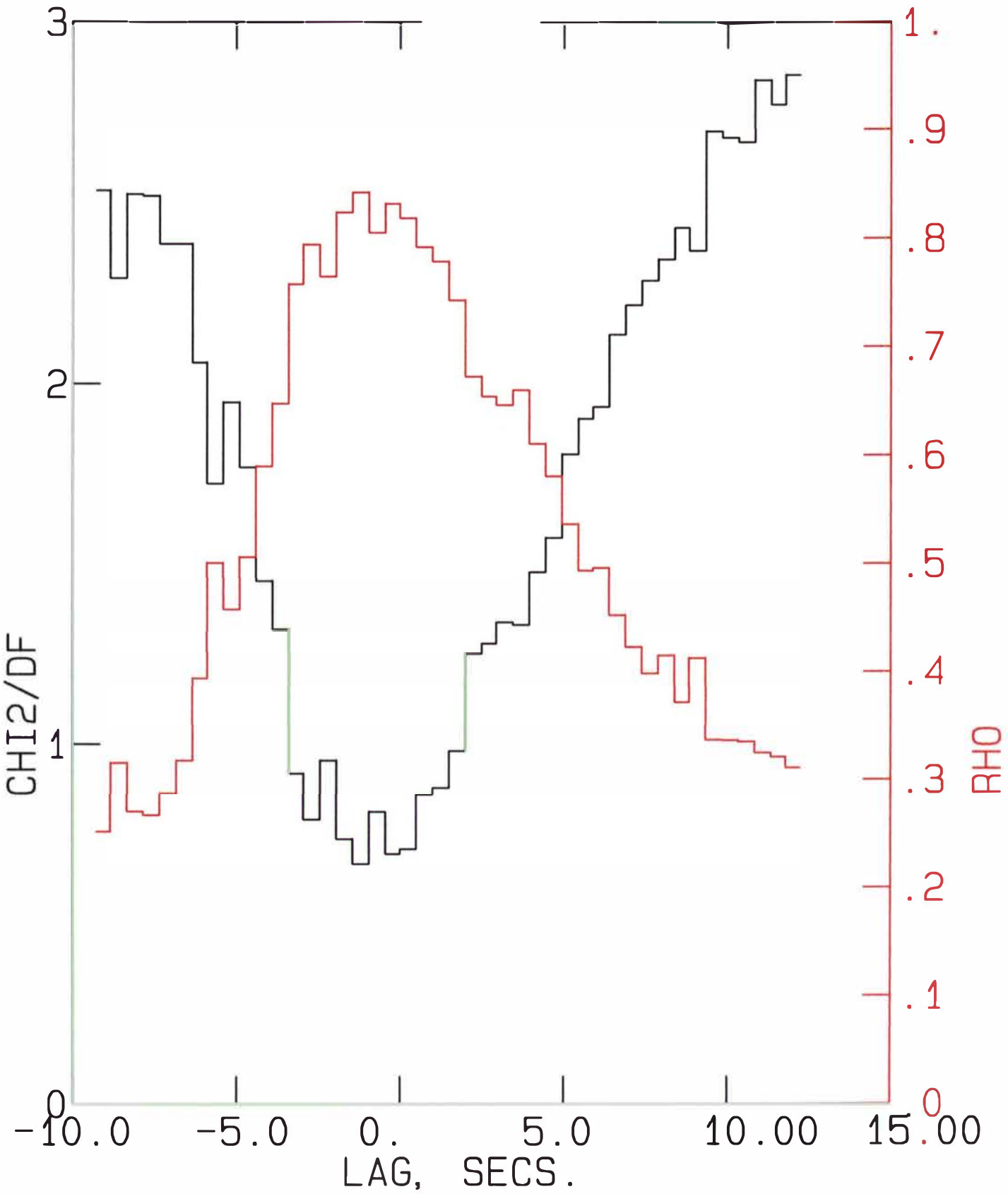

BSAX-GRBM -ULYSSES RT CORRELATION 22/11/99 185.742 9/ 7/ 7
1000
750
500
250
0
C/ 3.00000 S
BSAX-GRBM
300
200
100
0
C/ 3.00000 S
ULYSSES RT
153
163
173
183
193
203
213
223
233
243
253
TIME, SECS

BSAX-GRBM -ULYSSES RT CORRELATION 22/11/99 185.742




KONUS -ULYSSES RT CORRELATION 22/11/99 337.350 9/ 7/ 7
750
500
250
0
C/ 2.94400 S
KONUS
200
150
100
50
0
C/ 2.94400 S
ULYSSES RT
2
12
22
32
42
52
62
72
82
92
102
TIME, SECS

KONUS -ULYSSES RT CORRELATION 22/11/99 337.350

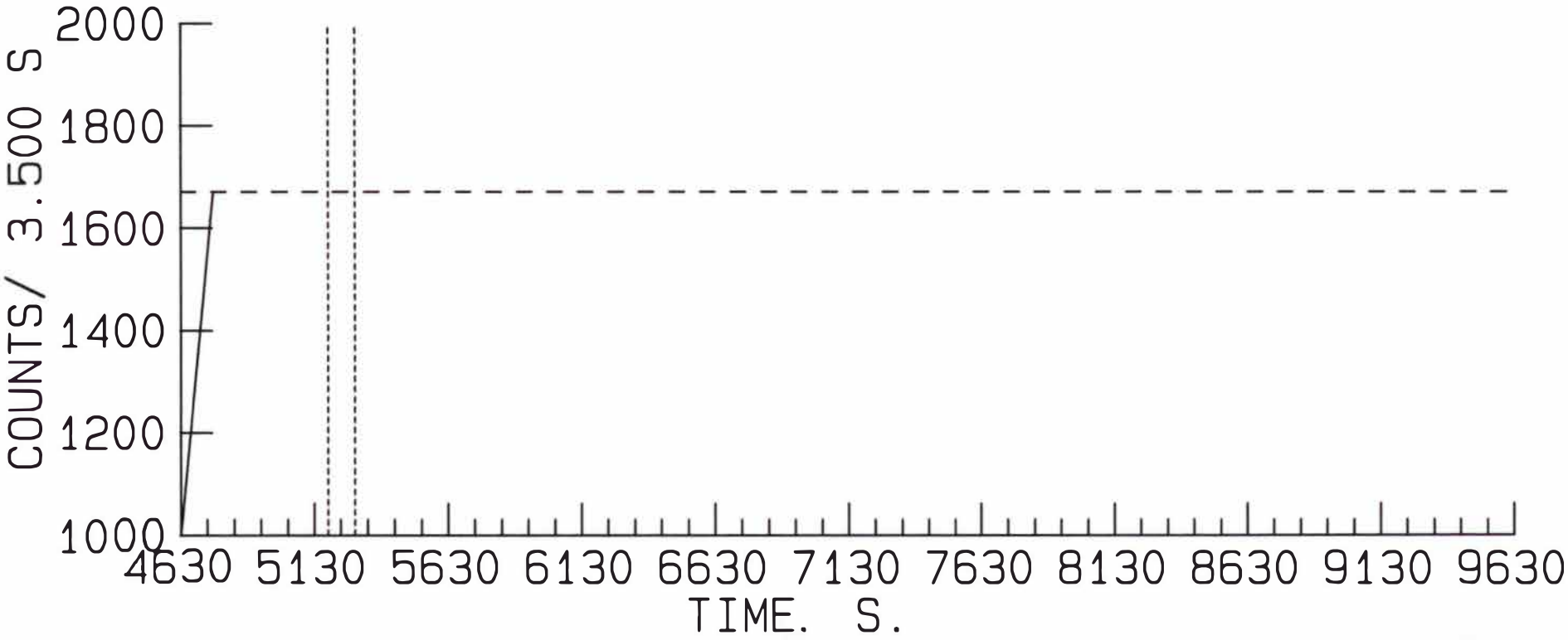


ULYSSES RT 9/ 7/ 7

21/11/99 84420.195 s

0.500 S INTERVALS REGROUPED BY 7

22- 150 keV



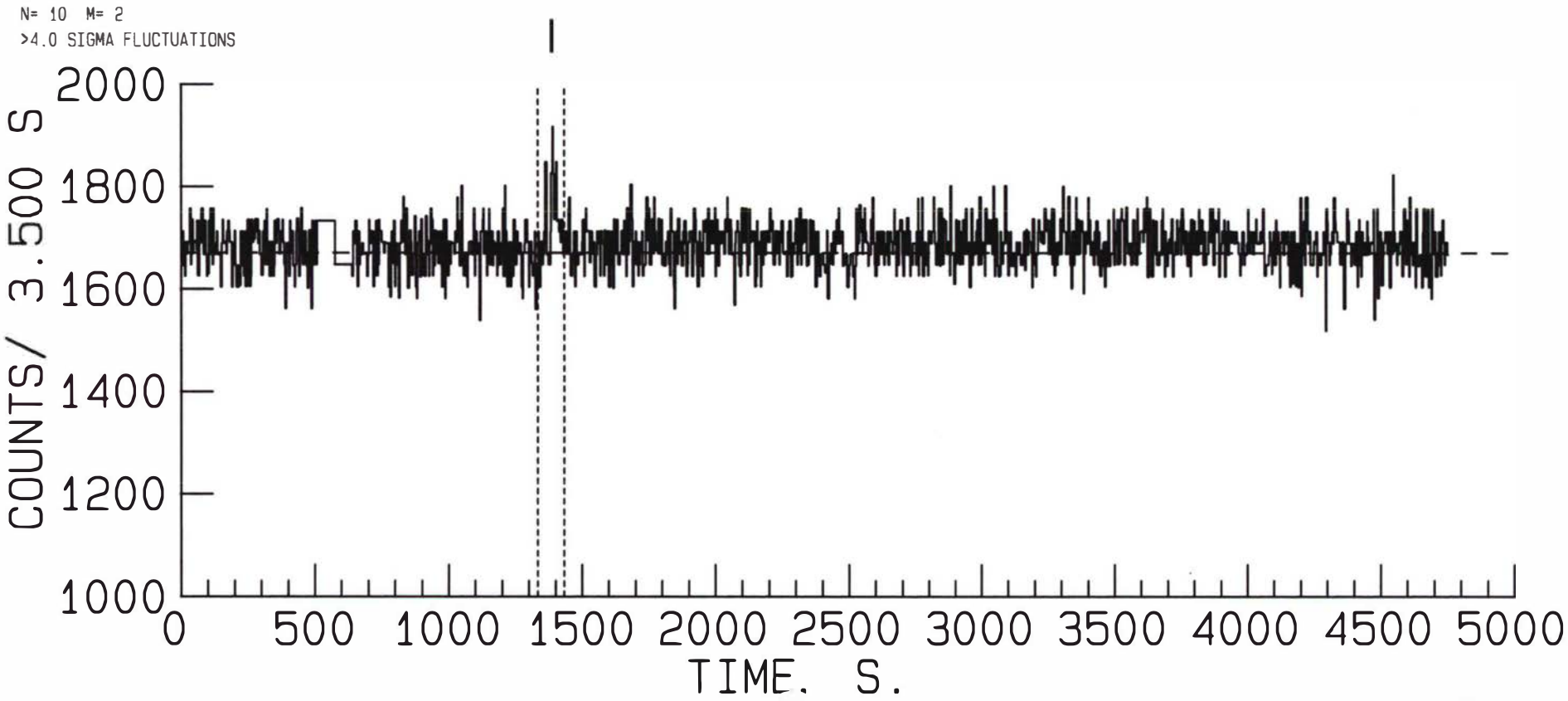
ULYSSES RT

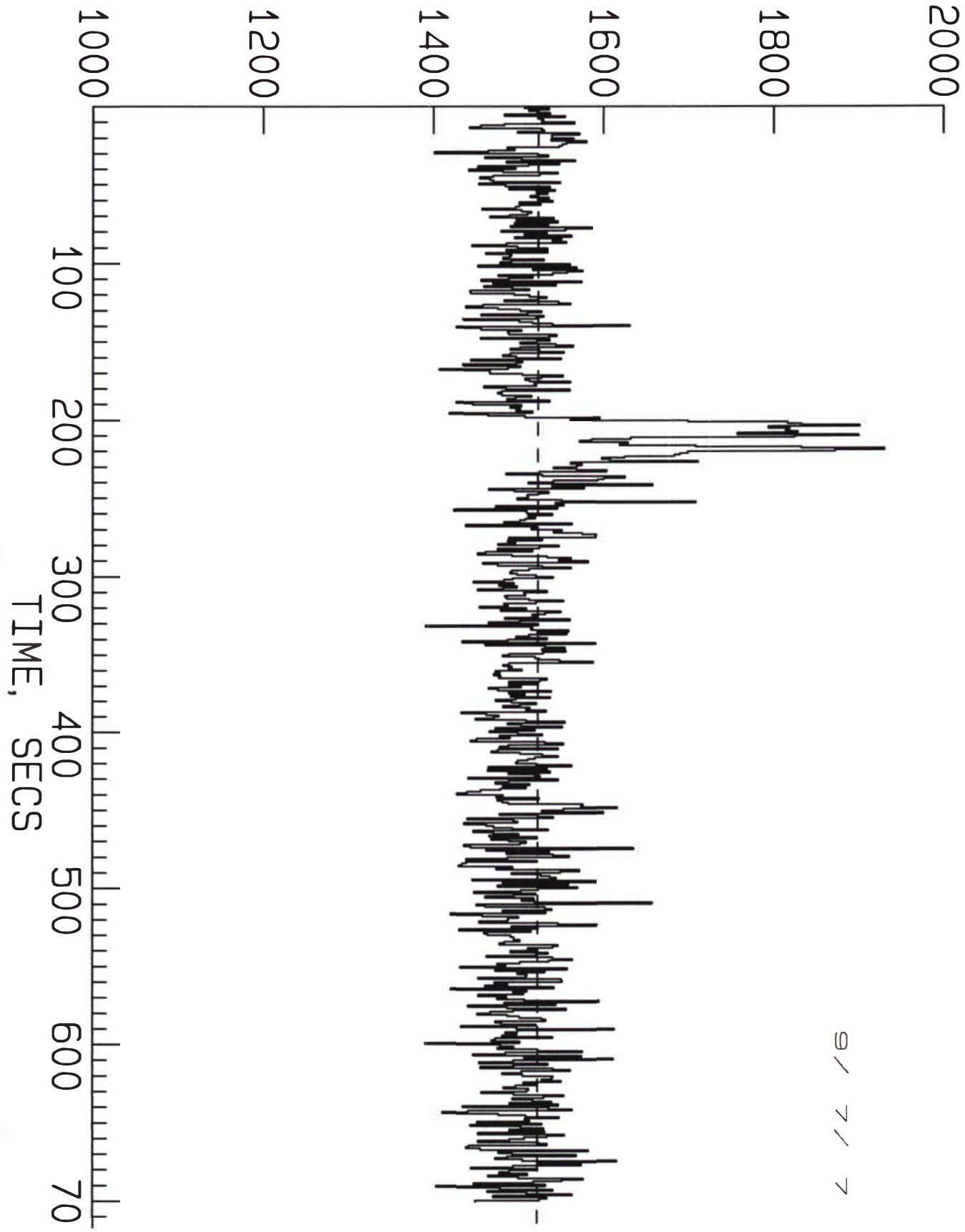
9/ 7/ 7

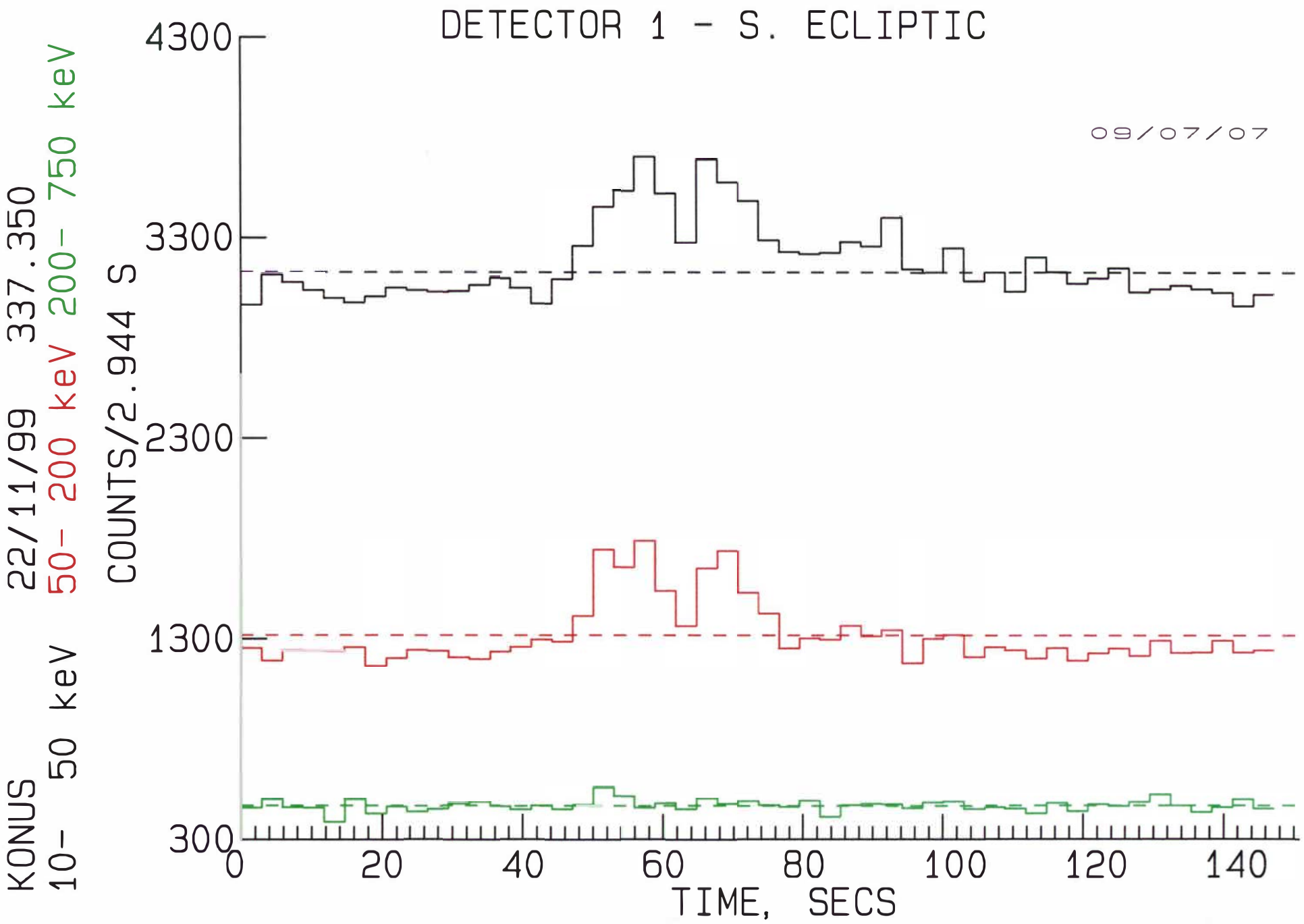
21/11/99 84420.195 s

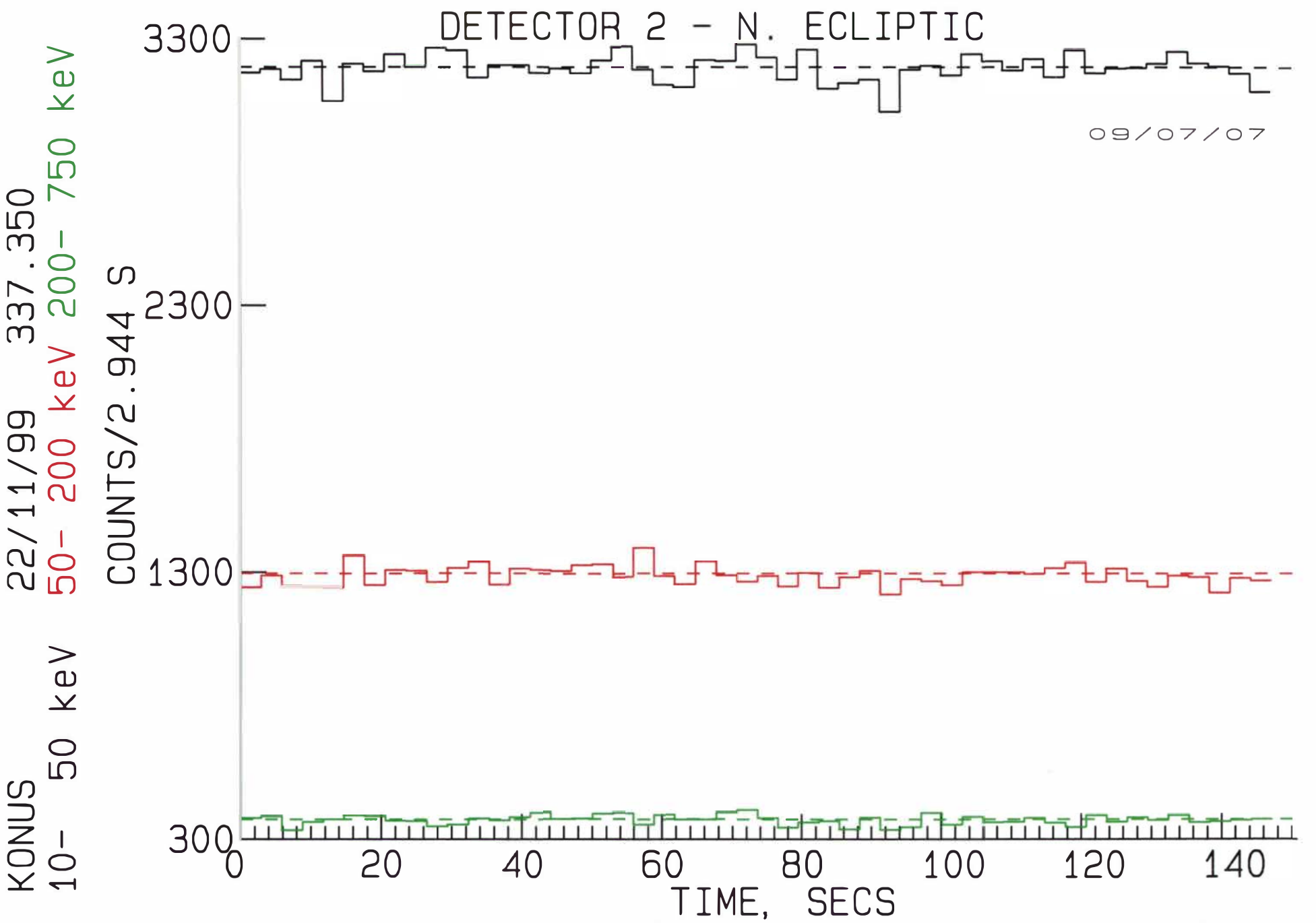
0.500 S INTERVALS REGROUPED BY 7

22- 150 keV




SAX GRBM
22/11/99 185.742
40- 700 keV
COUNTS/1.000 S
1000
1200
1400
1600
1800
2000
100
200
300
400
500
600
700
TIME, SECS


DETECTOR 1 - S. ECLIPTIC
09/07/07
KONUS 22/11/99 337.350
10- 50 keV 50- 200 keV 200- 750 keV
COUNTS/2.944 S
4300
3300
2300
1300
300
0
20
40
60
80
100
120
140
TIME, SECS


DETECTOR 2 - N. ECLIPTIC
09/07/07
KONUS 22/11/99 337.350
10- 50 keV 50- 200 keV 200- 750 keV
COUNTS/2.944 S
3300
2300
1300
300
0
20
40
60
80
100
120
140
TIME, SECS

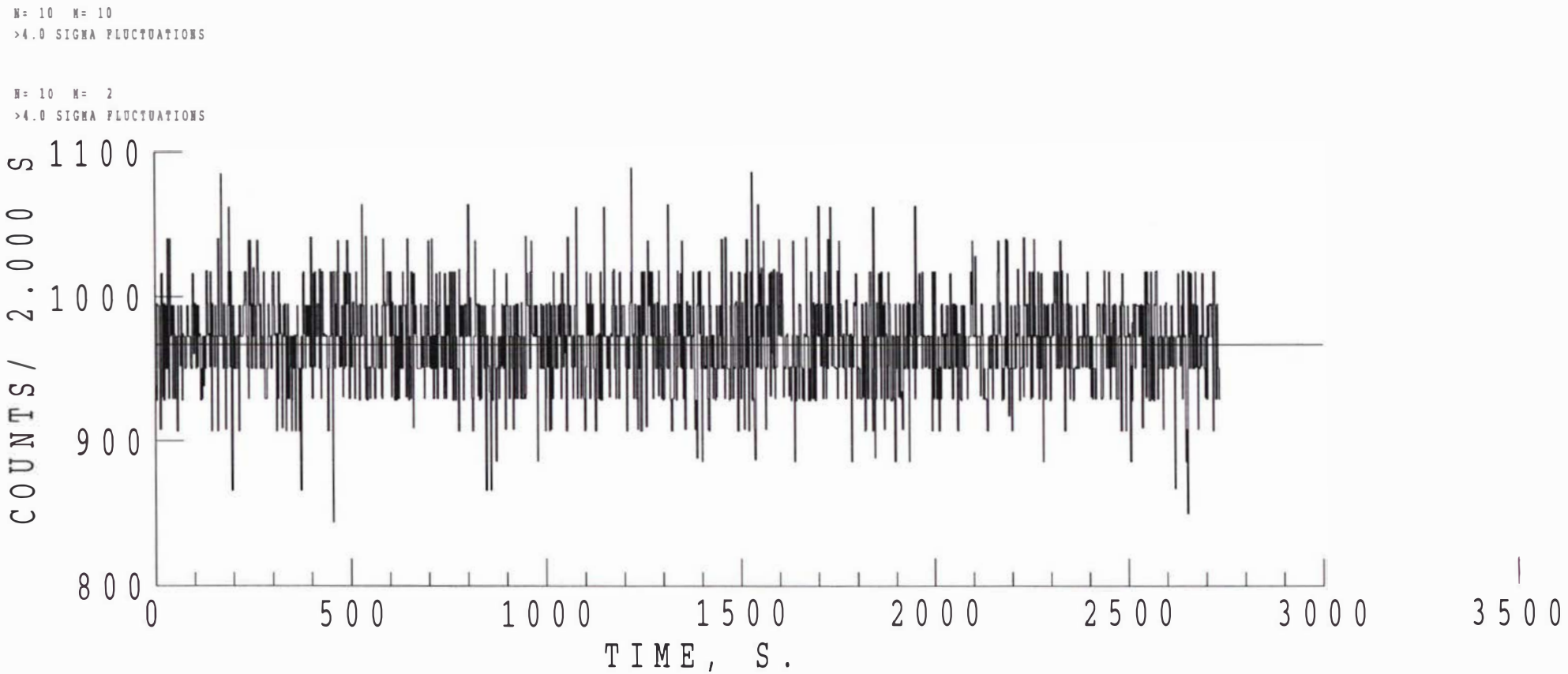
GRBM 19991122 33234

ULYSSES RT 06/07/07

22/11/99 31860.033 s

0.500 S INTERVALS REGROUPED BY 4

0- 0 keV



From SAHI@fender.msfc.nasa.gov Wed Dec 1 12:23 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 1 Dec 1999 14:32:19 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7870

TIME: TJD=1504 SECONDS=8138

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.1 AZIMUTH=356.9 ERROR=0.47 DEGREES

COMMENTS:
SOLAR FLARE. GOES C3.2, OPTICAL SN. SINGLE PULSE WITH SUBSTRUCTURE, DUR.50 S, STARTS AT T-18 S. NOT VISIBLE ABOVE 100 KEV. OVERWRITTEN DURING STTE, SO MORE COMPLETE STTE IS READ OUT AS #7871.

From SAHI@fender.msfc.nasa.gov Wed Dec 1 12:26 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 1 Dec 1999 14:35:19 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER
NO.: 7871

TIME: TJD=1504 SECONDS=10475

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

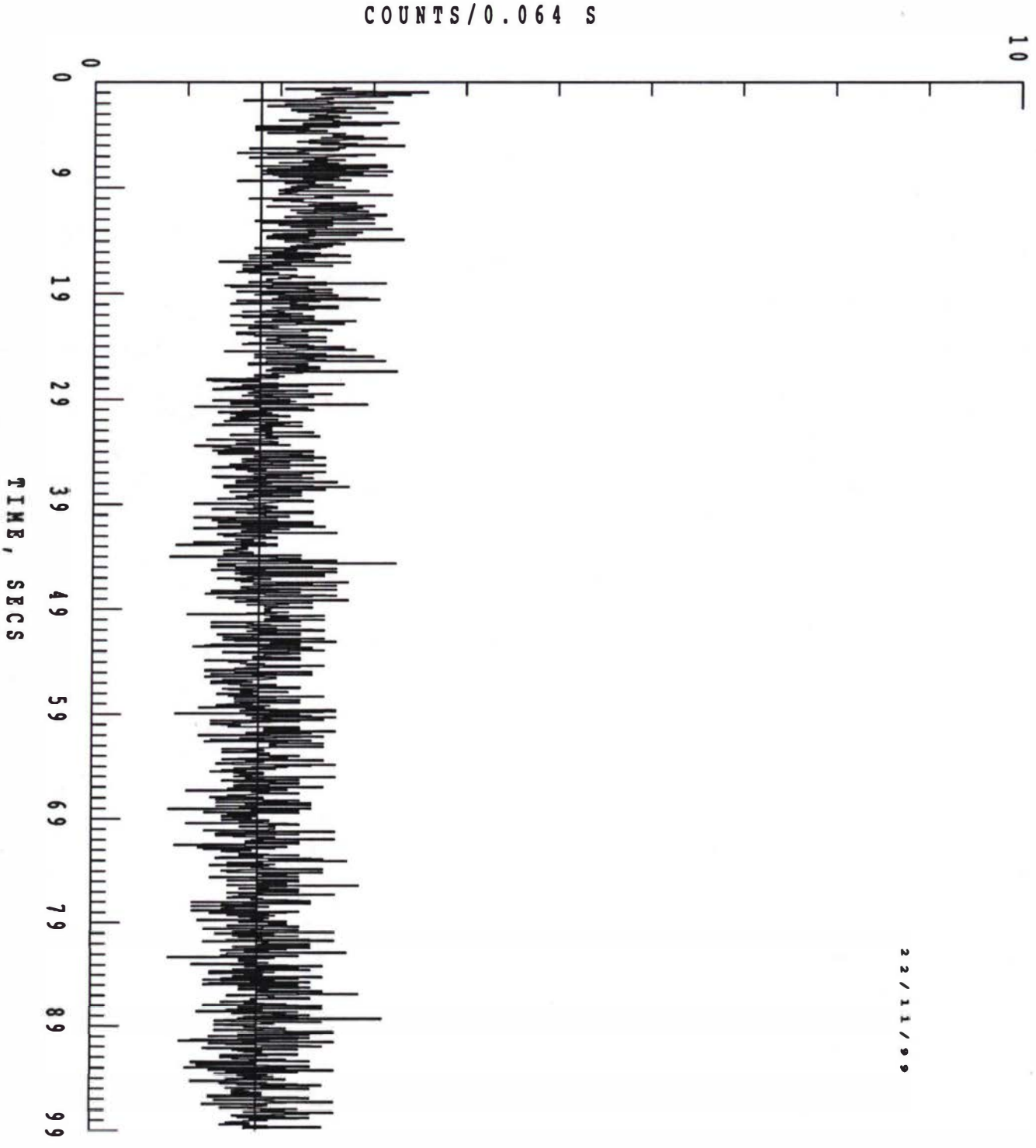
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.1 AZIMUTH=358.1 ERROR=0.1 DEGREES

COMMENTS:
SOLAR FLARE. GOES C2.9, NO OPTICAL ID. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 60 S
 STARTS AT T-15 S, MAX. AT T+8 S. VISIBLE ABOVE 100 KEV. OVERWROTE DURING STTE
SO STTE BELONGS TO # 7870.

KONUS 22/11/99 10479.287

50- 200 keV Solar. BATSE 7871



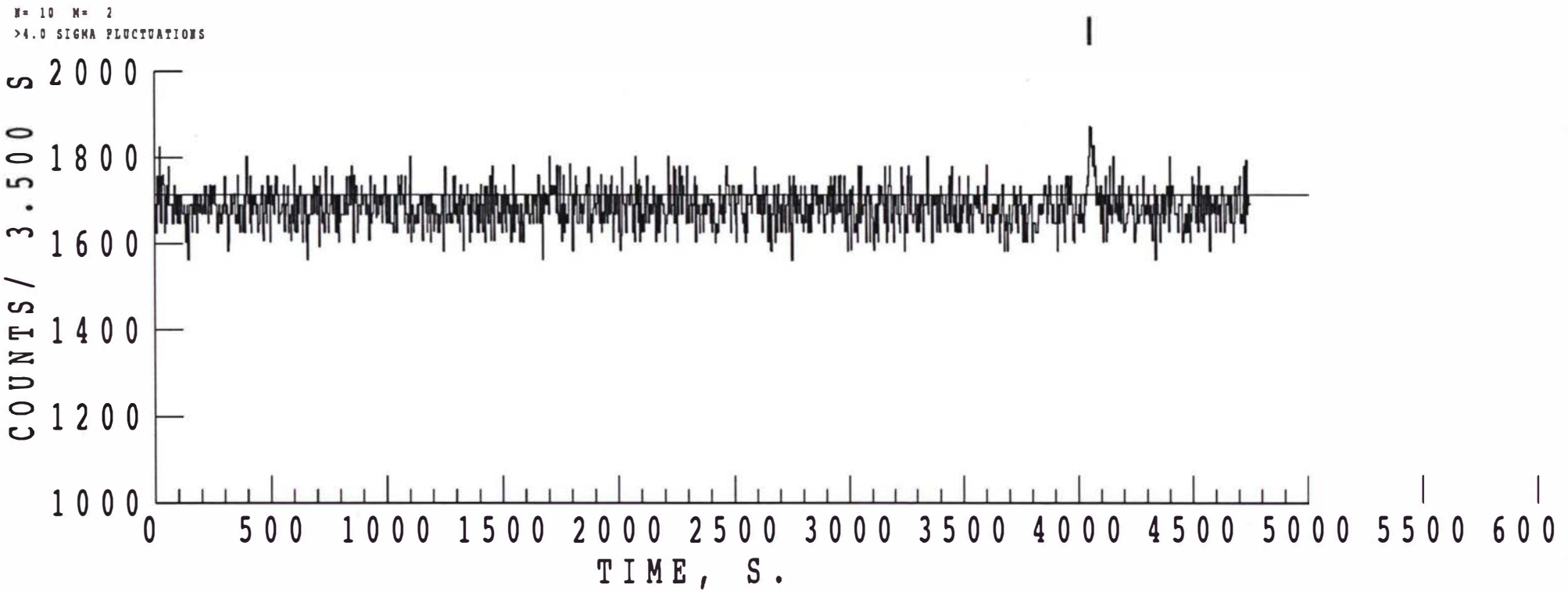
KONUS2 19991122 10479

ULYSSES RT 21/03/00

22/11/99 8100.296 s

0.500 S INTERVALS REGROUPED BY 7

0- 0 keV



From SAHI@fender.msfc.nasa.gov Wed Dec 1 12:31 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 1 Dec 1999 14:40:31 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7872

****
BATSEARCH PROGRAM
****

BATSE BURST # 7872
EVENT OF 1999 NOV 22 DAY OF YEAR=326
EVENT CROSSING TIME AT BATSE : 26490. S. OR 07:21:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 215.000 -60.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/11/ 99 IS:
RA= 165.613 DEC= -26.056 DIST= 4.629 AU
BATSE-ULYSSES DISTANCE = 692429447. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1553.95 SECS.
CROSSING TIME AT ULYSSES IS 24936. S. OR 06:55:36 +/- 323.07 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/11/ 99 IS:
RA= 299.081 DEC= -22.298 DIST= 1.632 AU
MARS-BATSE DISTANCE = 244217840. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -306.54 SECS.
CROSSING TIME AT MARS IS 26183. S. OR 07:16:23 +/- 126.38 SECONDS

BATSE BURST TRIGGER
NO.: 7872

TIME: TJD=1504 SECONDS=26490

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

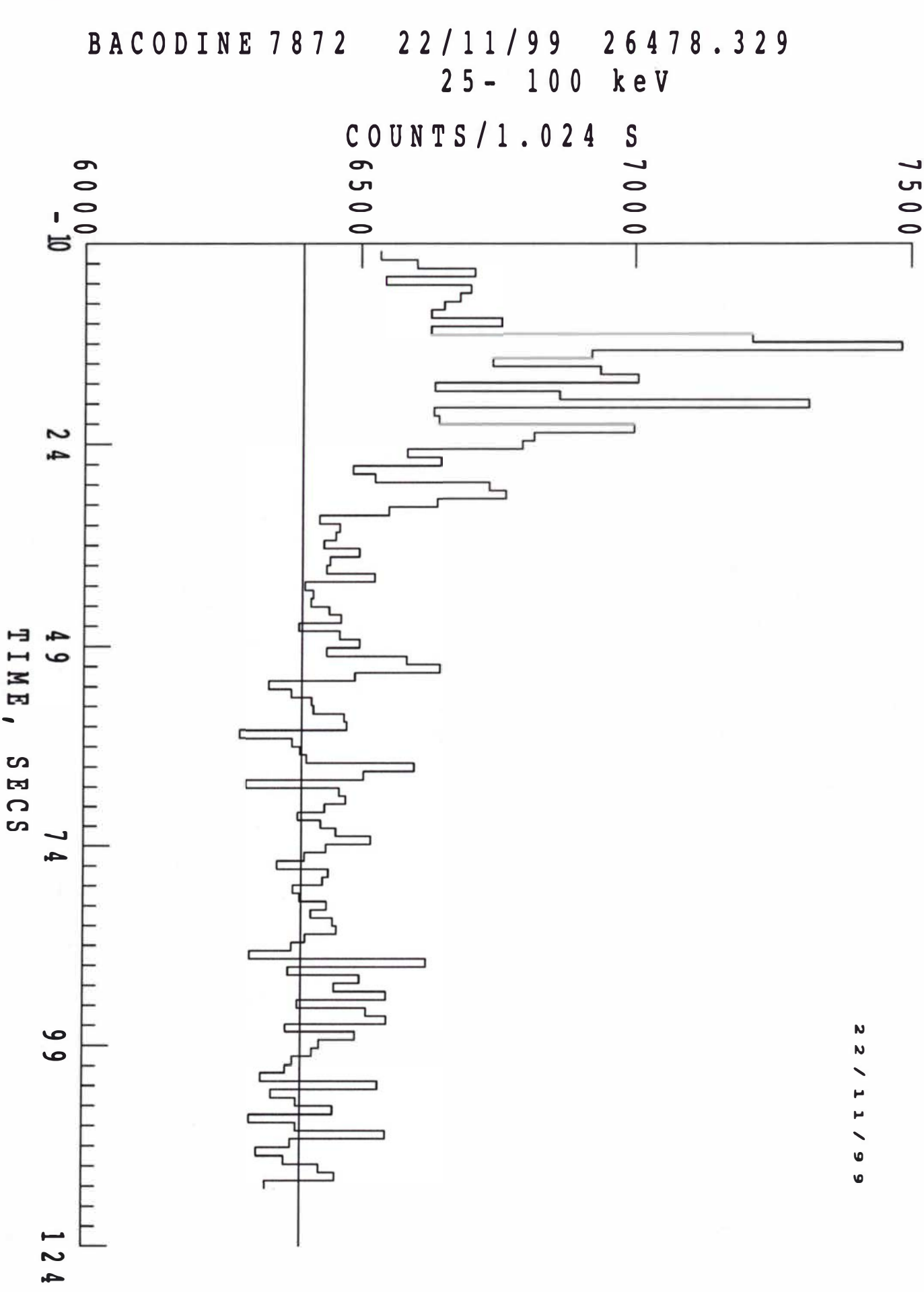
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=69.2 AZIMUTH=23.0 ERROR=5.1 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR.45 S, STARTS AT T-12 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7872	991122	11504	26490	4000	215	-60	45

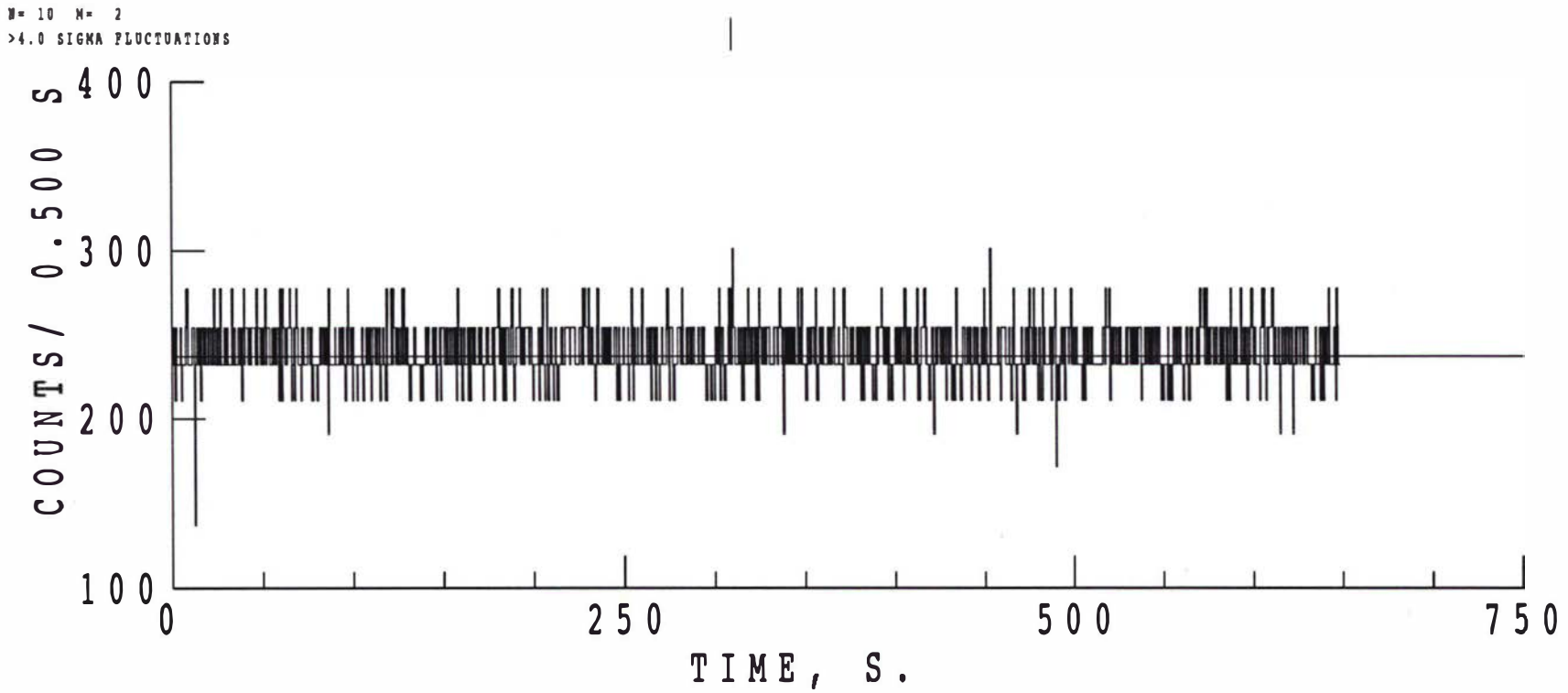

BACODINE 7872 22/11/99 26478.329
25- 100 keV
COUNTS/1.024 S
6000
6500
7000
7500
-10
24
49
74
99
124
TIME, SECS
22/11/99

BATSE BURST# 7872

ULYSSES RT 21/03/00

22/11/99 24624.463 s

0- 0 keV



From RICHARDSON@fender.msfc.nasa.gov Thu Dec 2 09:50 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Thu, 2 Dec 1999 11:58:00 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7873

TIME: TJD=1504 SECONDS=38574

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.3 AZIMUTH=356.5 ERROR=0.7 DEGREES

COMMENTS:
SOLAR FLARE. NO GOES, NO OPTICAL.
SINGLE PULSE, DURATION APPROX. = 13 SEC. SLIGHTLY VISIBLE ABOVE 300KEV.

From RICHARDSON@fender.msfc.nasa.gov Thu Dec 2 09:50 PST 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Thu, 2 Dec 1999 11:59:11 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7874

TIME: TJD=1504 SECONDS=76827

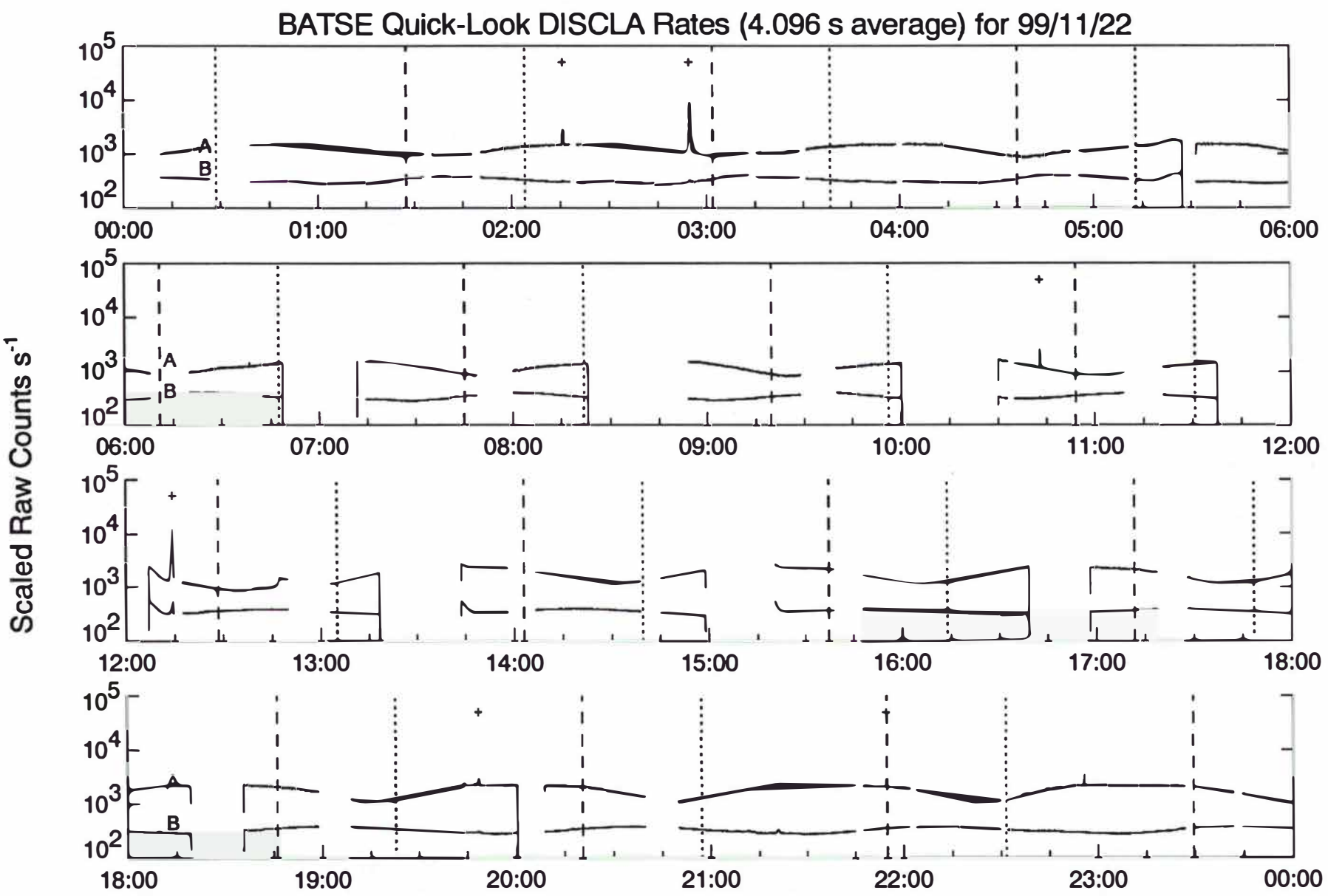
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

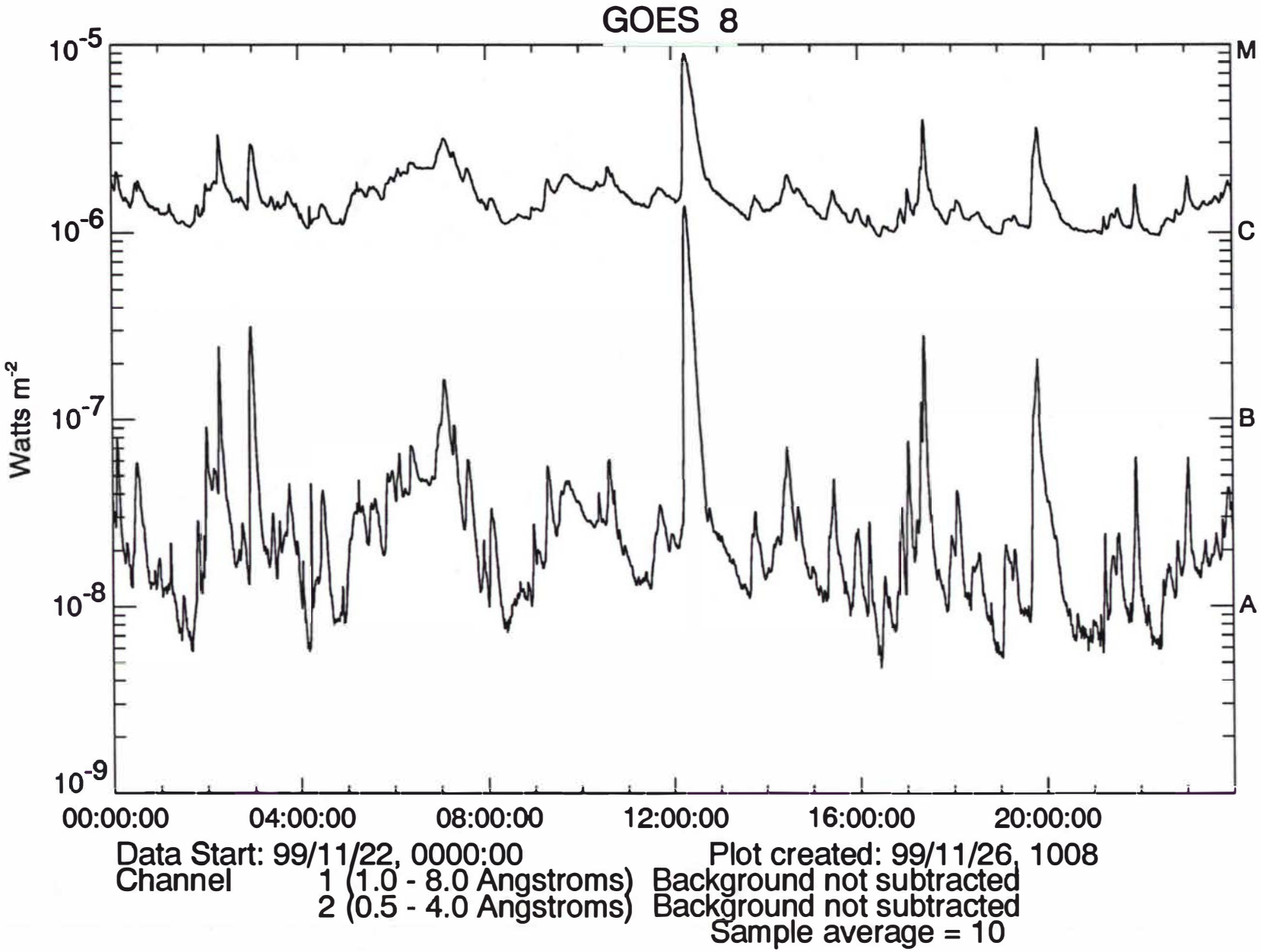
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

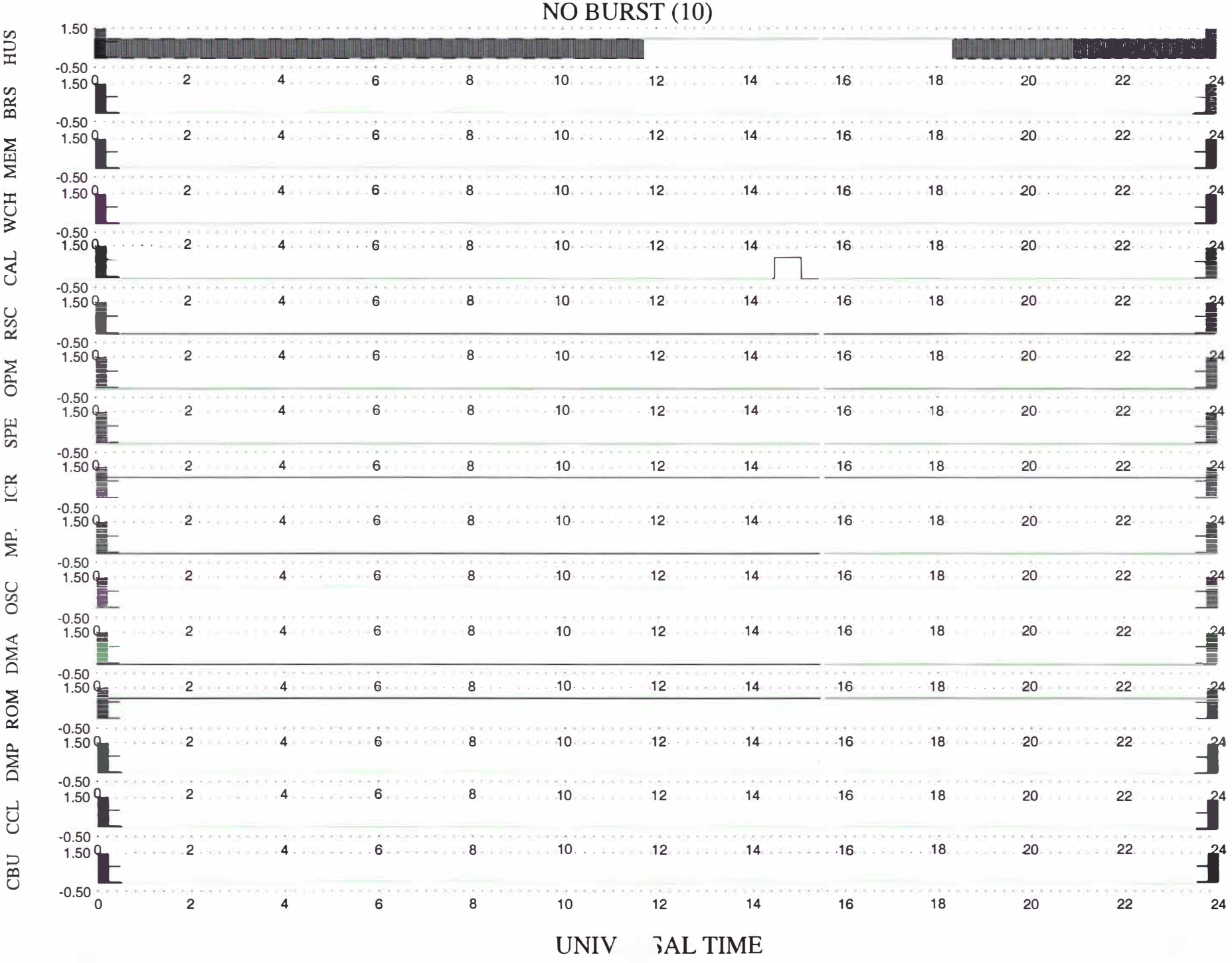
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/22
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/26, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

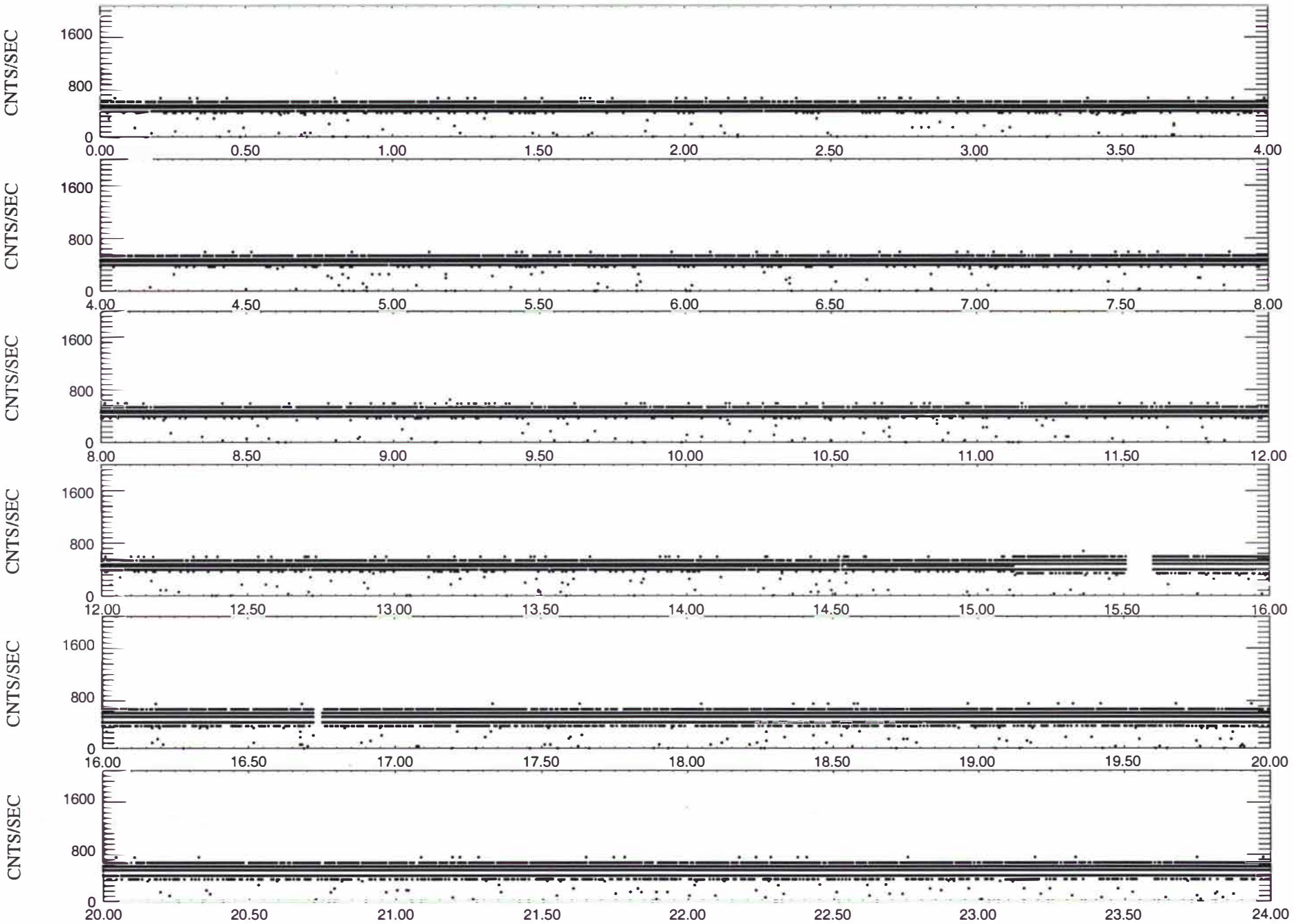

GOES 8
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/22, 0000:00
Plot created: 99/11/26, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 326, year 1999 to day 326, year 1999 03/21/00



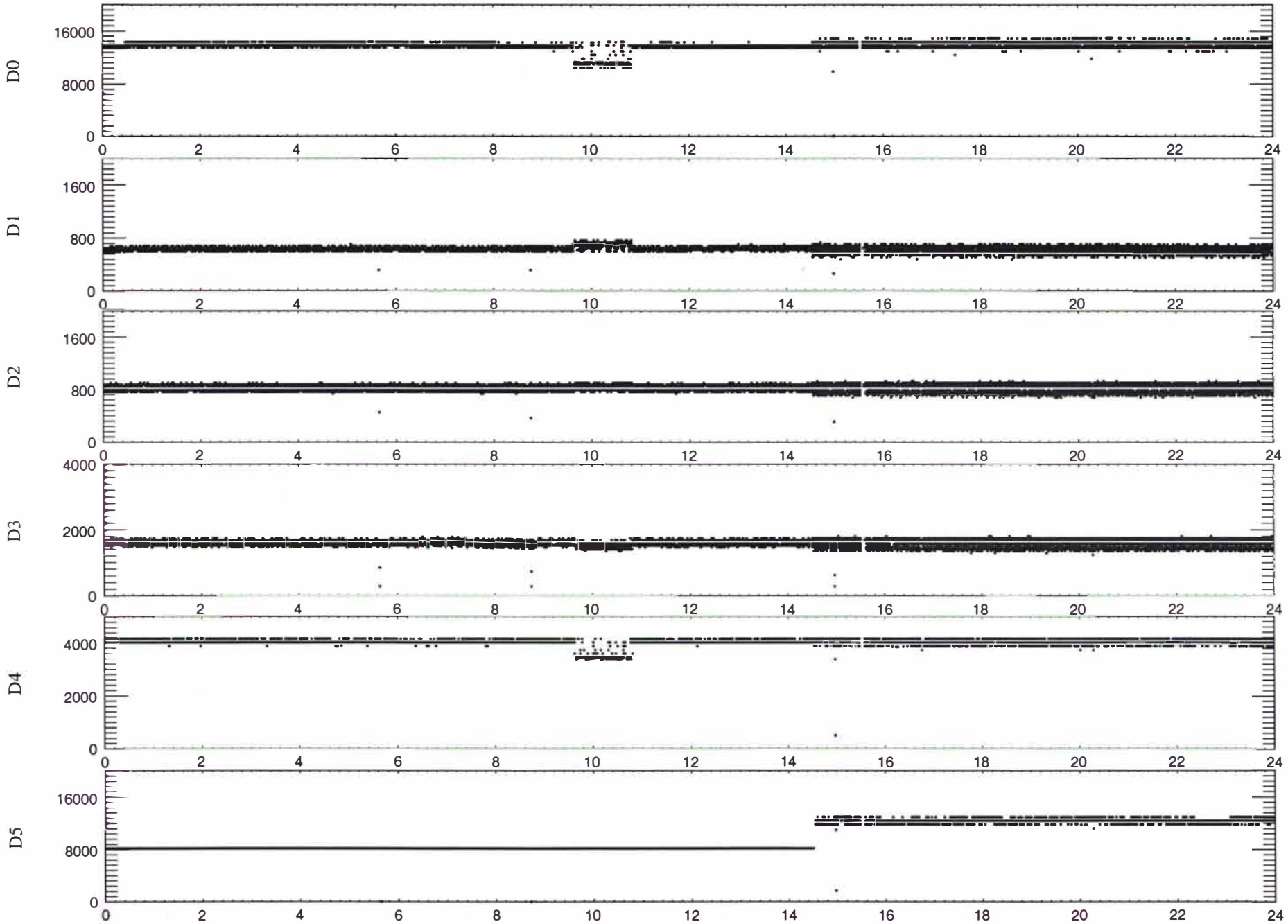
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 22/11/1999 DOY = 326 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 326, year 1999 to day 326, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Mon Nov 29 14:29 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 29 Nov 1999 16:38:48 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7875

****
BATSEARCH PROGRAM
****

BATSE BURST # 7875
EVENT OF 1999 NOV 23 DAY OF YEAR=327
EVENT CROSSING TIME AT BATSE : 18525. S. OR 05:08:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 157.000 27.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/11/ 99 IS:
RA= 165.661 DEC= -26.241 DIST= 4.613 AU
BATSE-ULYSSES DISTANCE = 690094373. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1356.61 SECS.
CROSSING TIME AT ULYSSES IS 17168. S. OR 04:46:08 +/- 352.27 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/11/ 99 IS:
RA= 299.886 DEC= -22.139 DIST= 1.638 AU
MARS-BATSE DISTANCE = 245010560. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.98 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= 677.70 SECS.
CROSSING TIME AT MARS IS 19203. S. OR 05:20:02 +/- 89.60 SECONDS

BATSE BURST TRIGGER
NO.: 7875

TIME: TJD=1505 SECONDS=18525

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

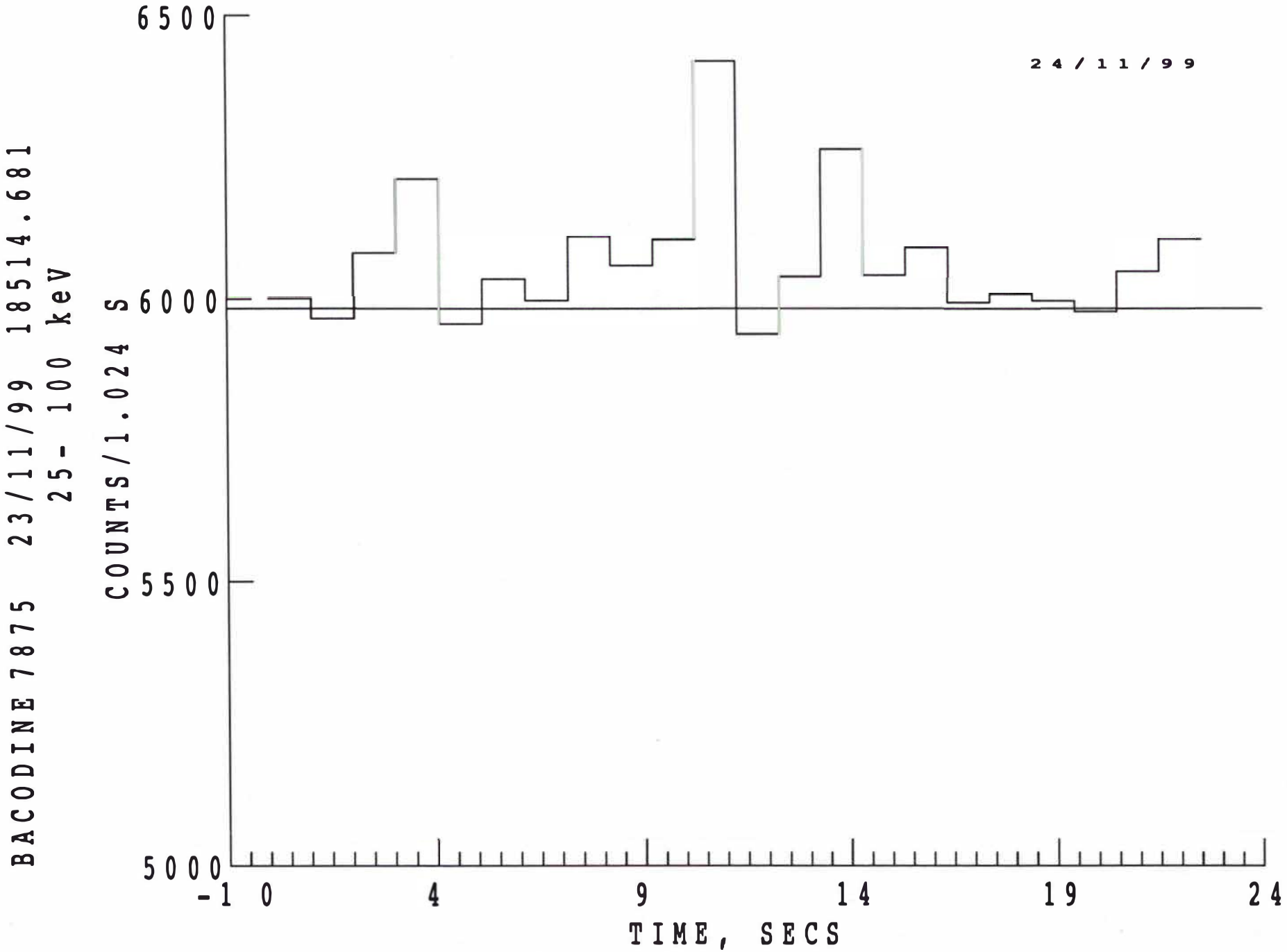
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=132.0 AZIMUTH=105.9 ERROR=4.7 DEGREES

COMMENTS:
GRB. SINGLE SPIKE, DUR. 0.1 S. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7875	991123	11505	18525	10000	157	+27	.1


BACODINE 7875 23/11/99 18514.681
25- 100 keV
COUNTS/1.024 S
6500
6000
5500
5000
24/11/99
-1 0
4
9
14
19
24
TIME, SECS

BATSE BURST# 7875

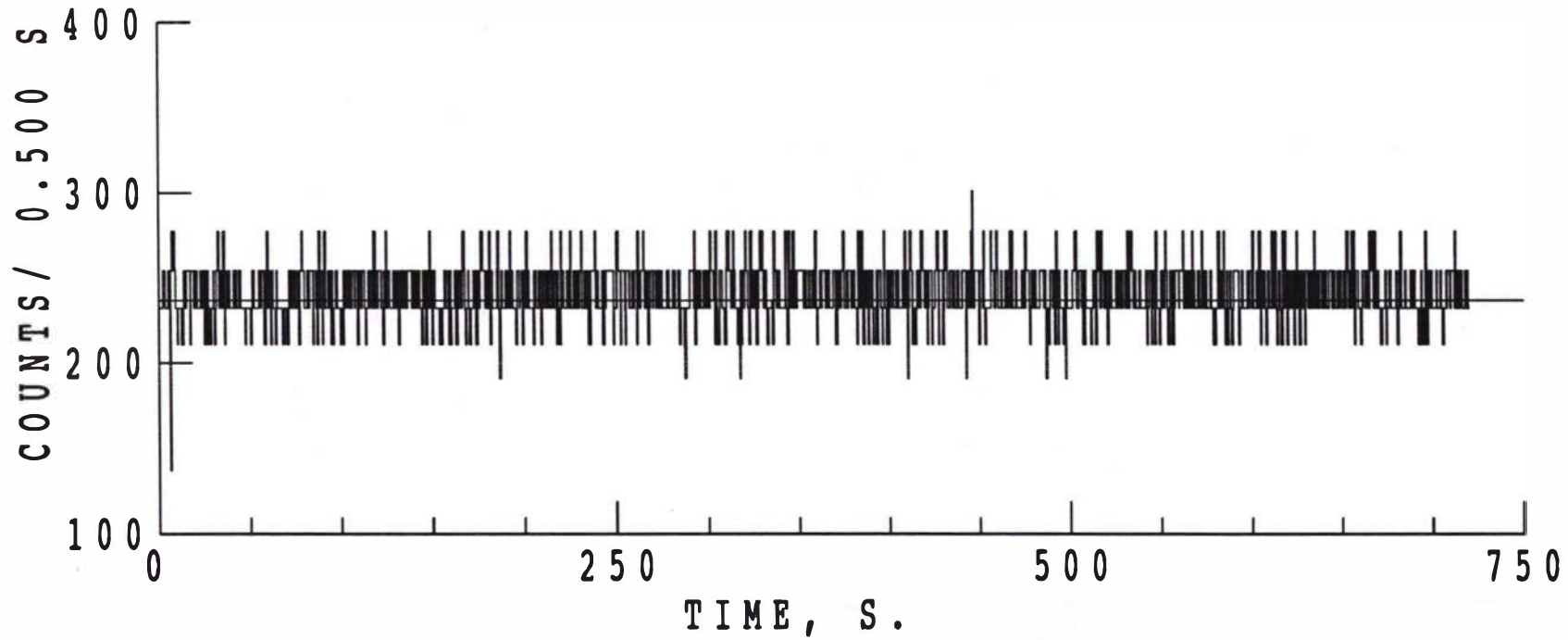
ULYSSES RT 29/11/99

23/11/99 16812.260 s

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 Nov 29 14:40 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 29 Nov 1999 16:48:53 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7876

****
BATSEARCH PROGRAM
****

BATSE BURST # 7876
EVENT OF 1999 NOV 23 DAY OF YEAR=327
EVENT CROSSING TIME AT BATSE : 80127. S. OR 22:15:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 183.000 -27.000
BATSE PEAK COUNTING RATE: 12000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/11/ 99 IS:
RA= 165.697 DEC= -26.385 DIST= 4.601 AU
BATSE-ULYSSES DISTANCE = 688254148. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=164.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2212.71 SECS.
CROSSING TIME AT ULYSSES IS 77914. S. OR 21:38:34 +/- 122.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/11/ 99 IS:
RA= 299.886 DEC= -22.139 DIST= 1.638 AU
MARS-BATSE DISTANCE = 245010560. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 165.19 SECS.
CROSSING TIME AT MARS IS 80292. S. OR 22:18:12 +/- 141.47 SECONDS

BATSE BURST TRIGGER

NO.: 7876

TIME: TJD=1505 SECONDS=80127

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=126.0 AZIMUTH=310.3 ERROR=5.2 DEGREES

COMMENTS:
GRB. DOUBLE SPIKE, DUR. 0.072 S, STARTS AT T-0.062 S, MAX. AT T-0.056 S.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7876	991123	11505	80127	12000	183	-27	.072

BATSE BURST# 7876

ULYSSES RT

29/11/99

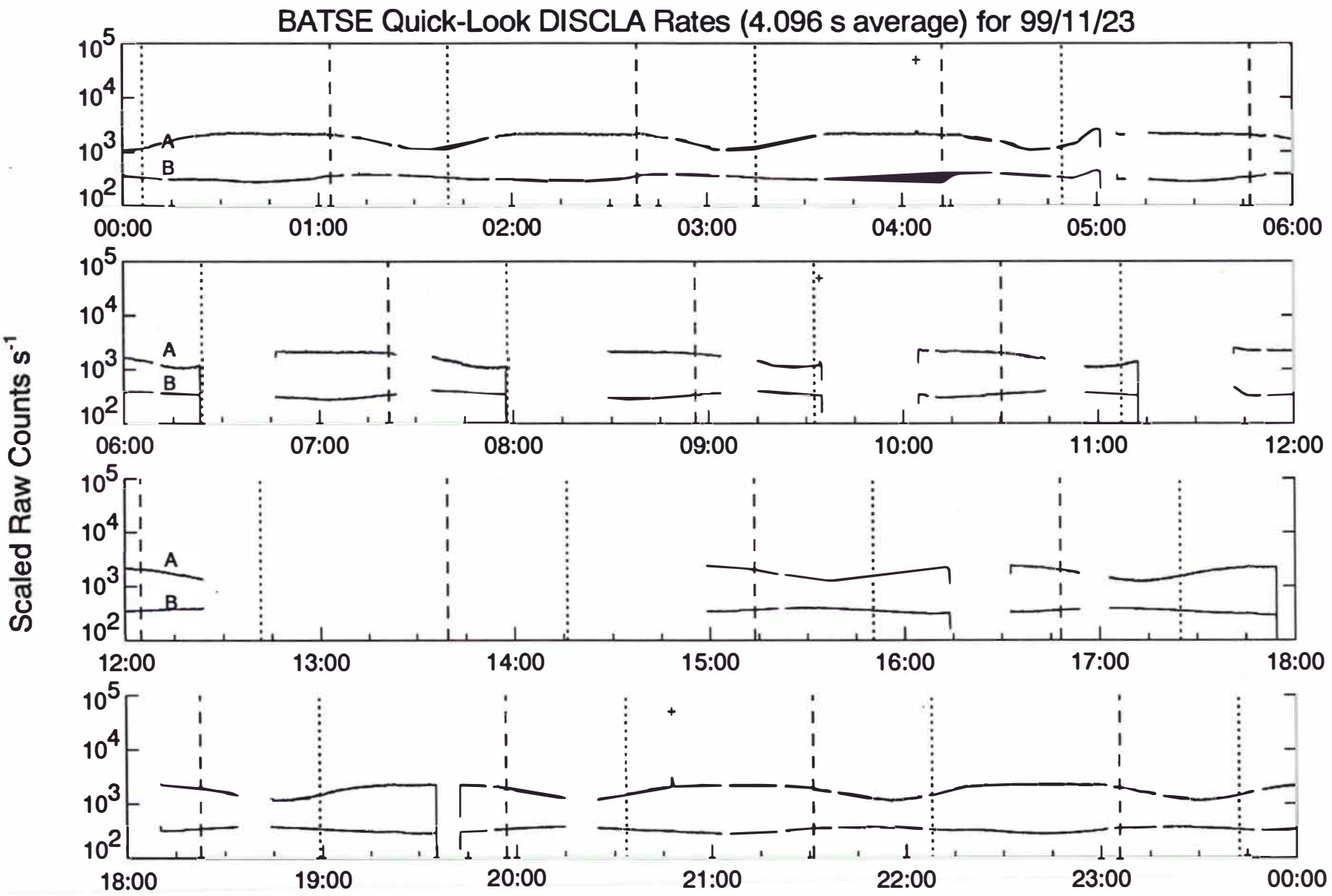
23/11/99 77796.125 s

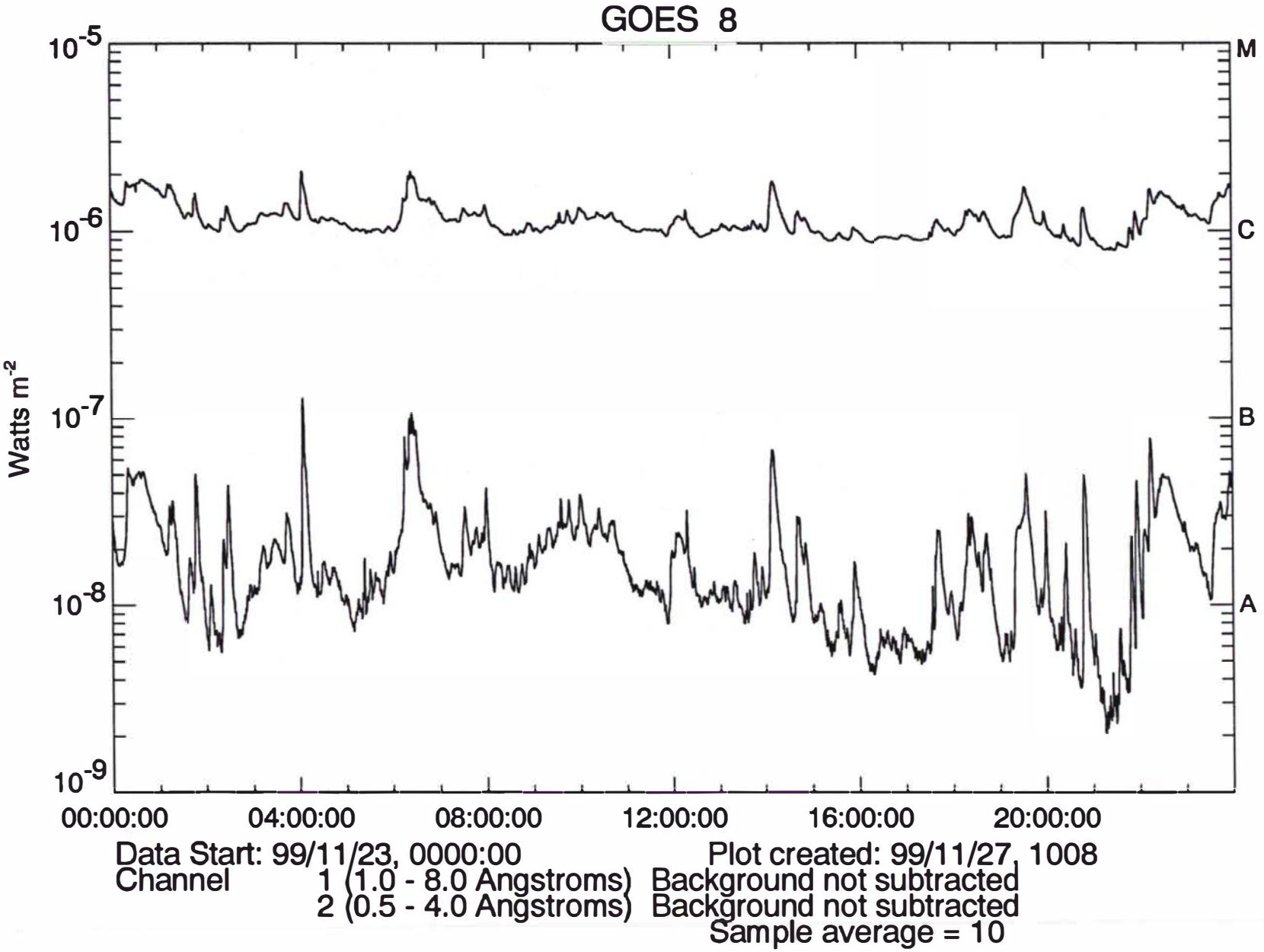
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

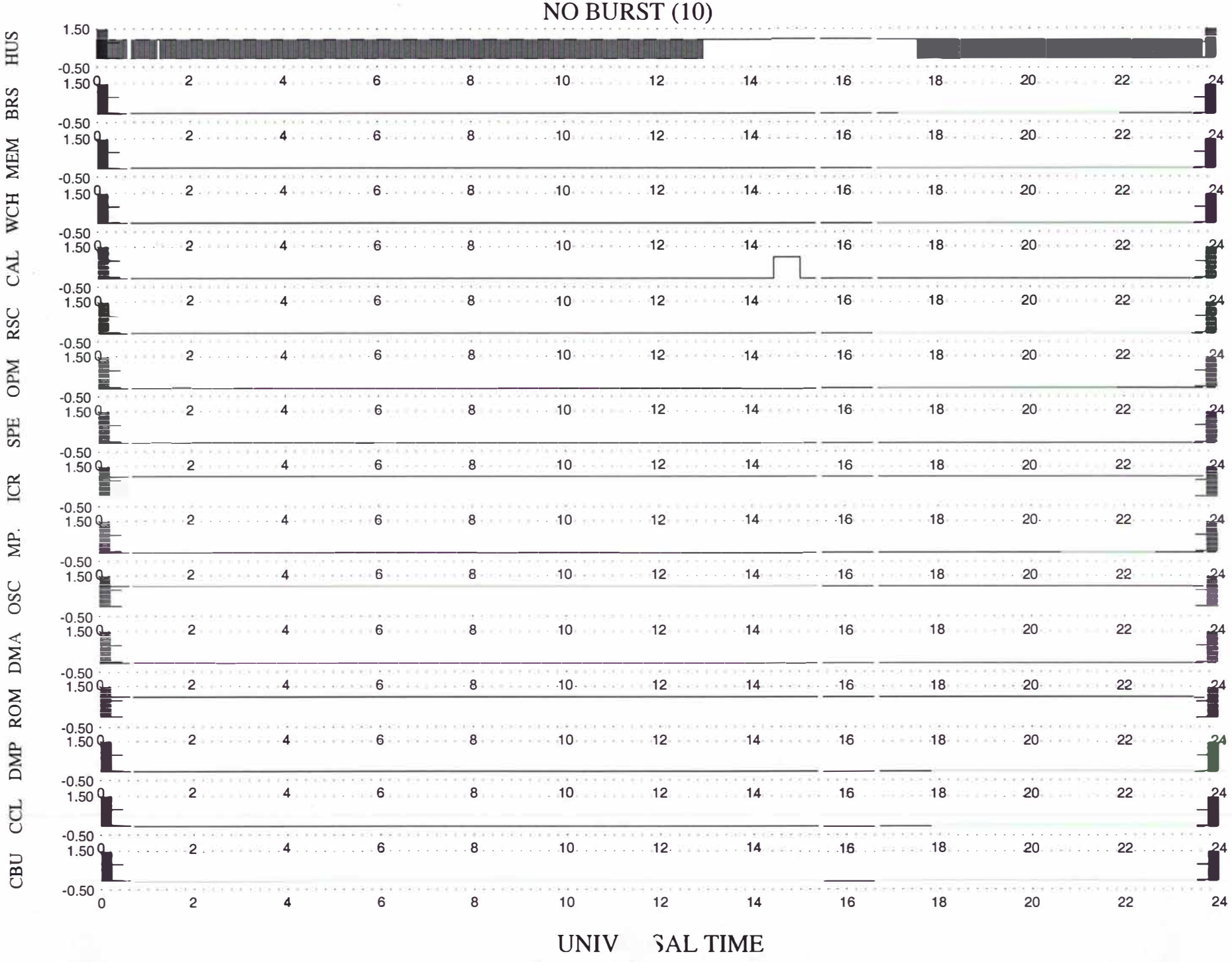
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/23
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/27, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

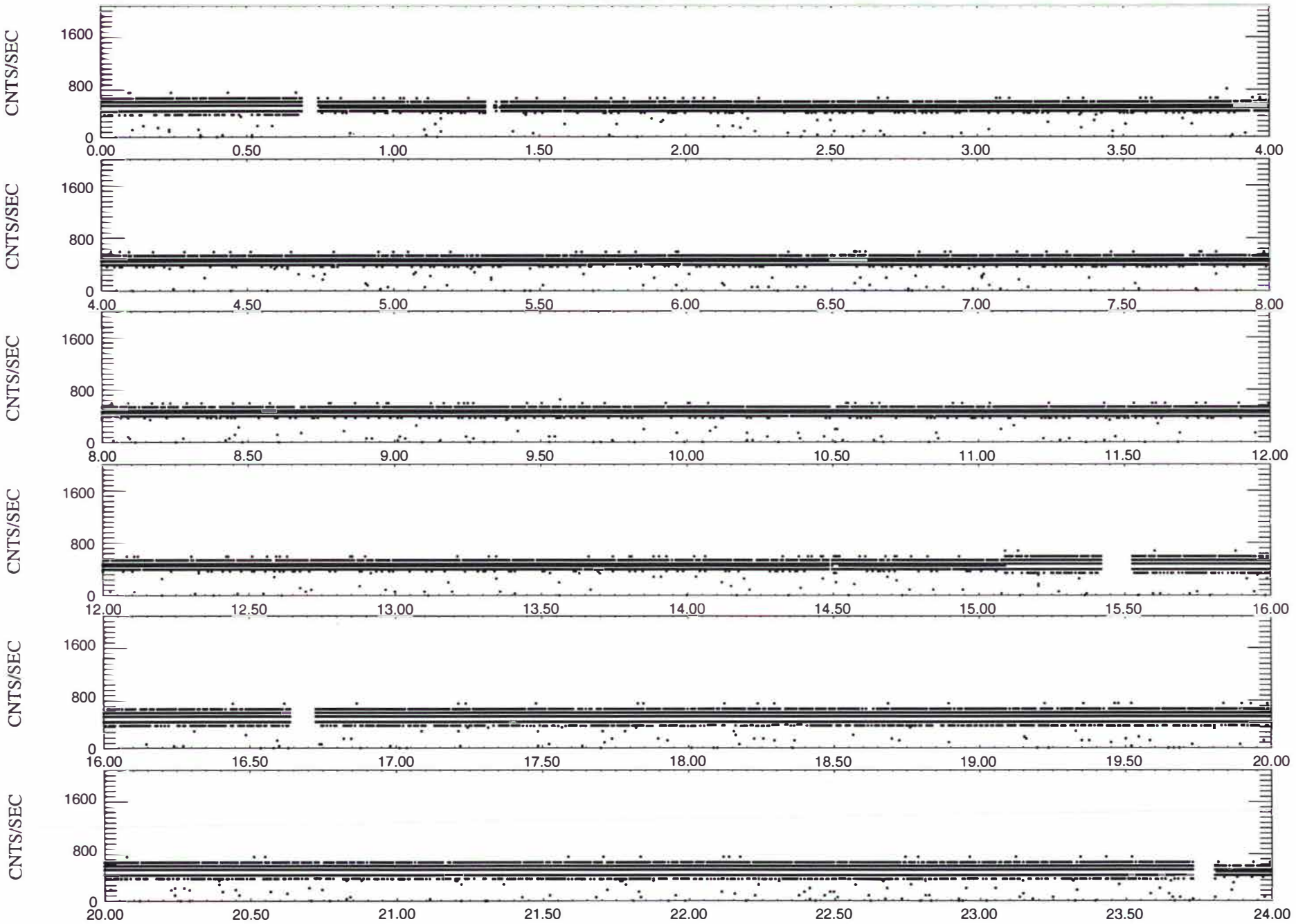

GOES 8
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/23, 0000:00
Plot created: 99/11/27, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 327, year 1999 to day 327, year 1999 03/21/00



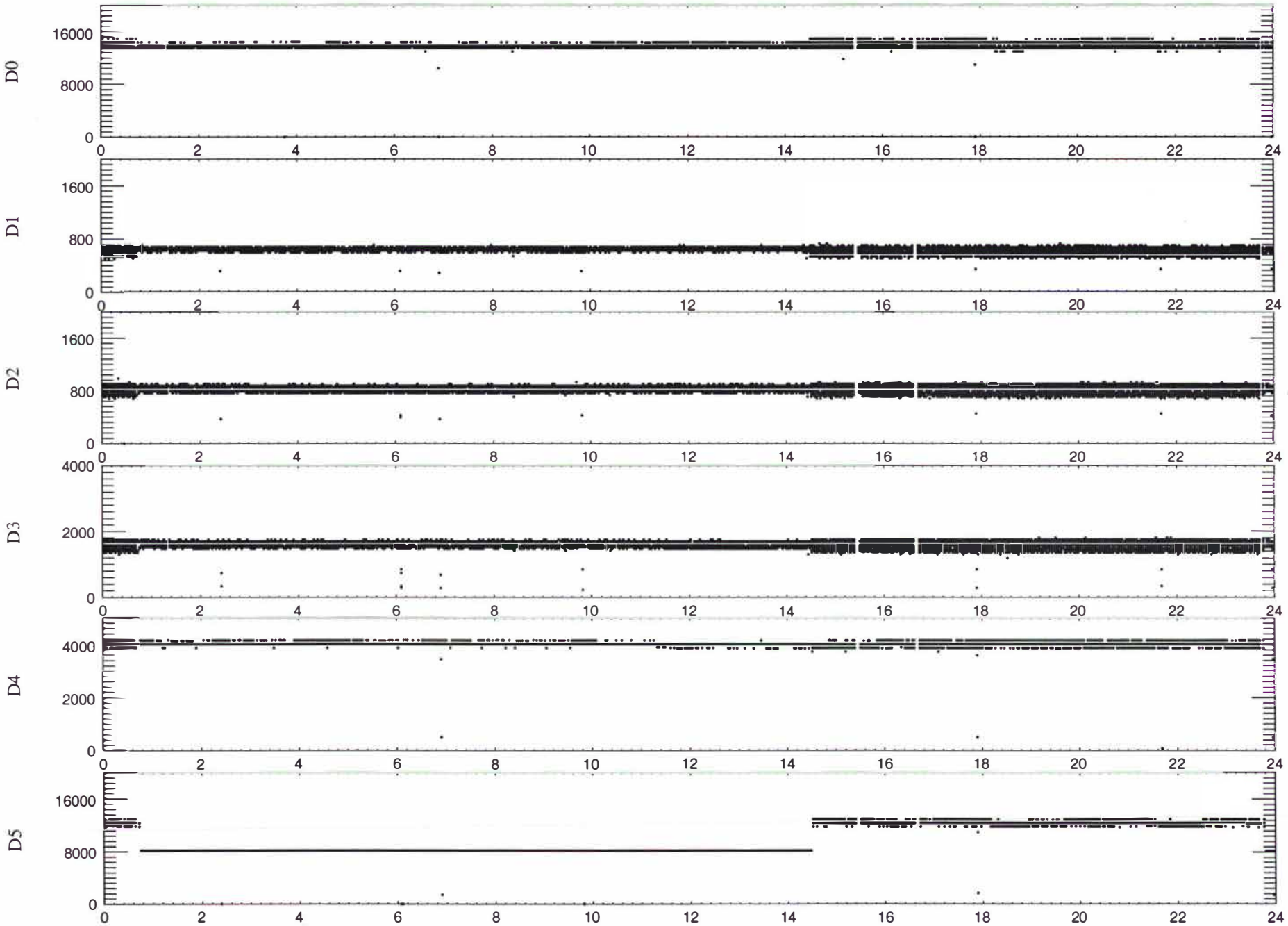
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 23/11/1999 DOY = 327 03/21/00

CALIBRATION DATA INCLUDED



UNIV`SAL TIME

HUS 2B COUNTS / SEC EDR day 327, year 1999 to day 327, year 1999 03/21/00



From SAHI@fender.msfc.nasa.gov Thu Dec 2 12:00 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 2 Dec 1999 13:19:19 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7877

TIME: TJD=1506 SECONDS=8750

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

Date: July 10 '07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

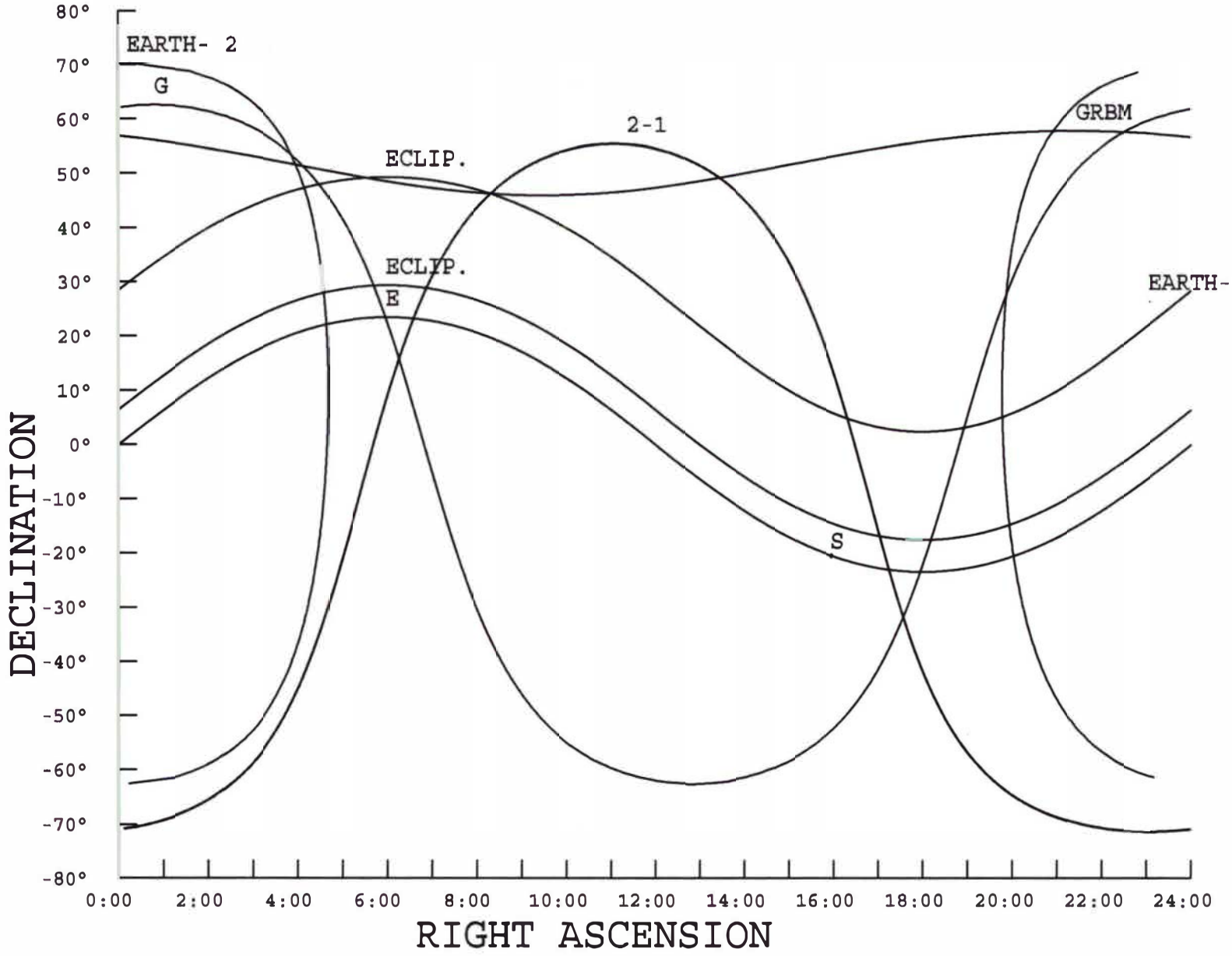
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

EVENT OF NOV 24, 1999 6:35

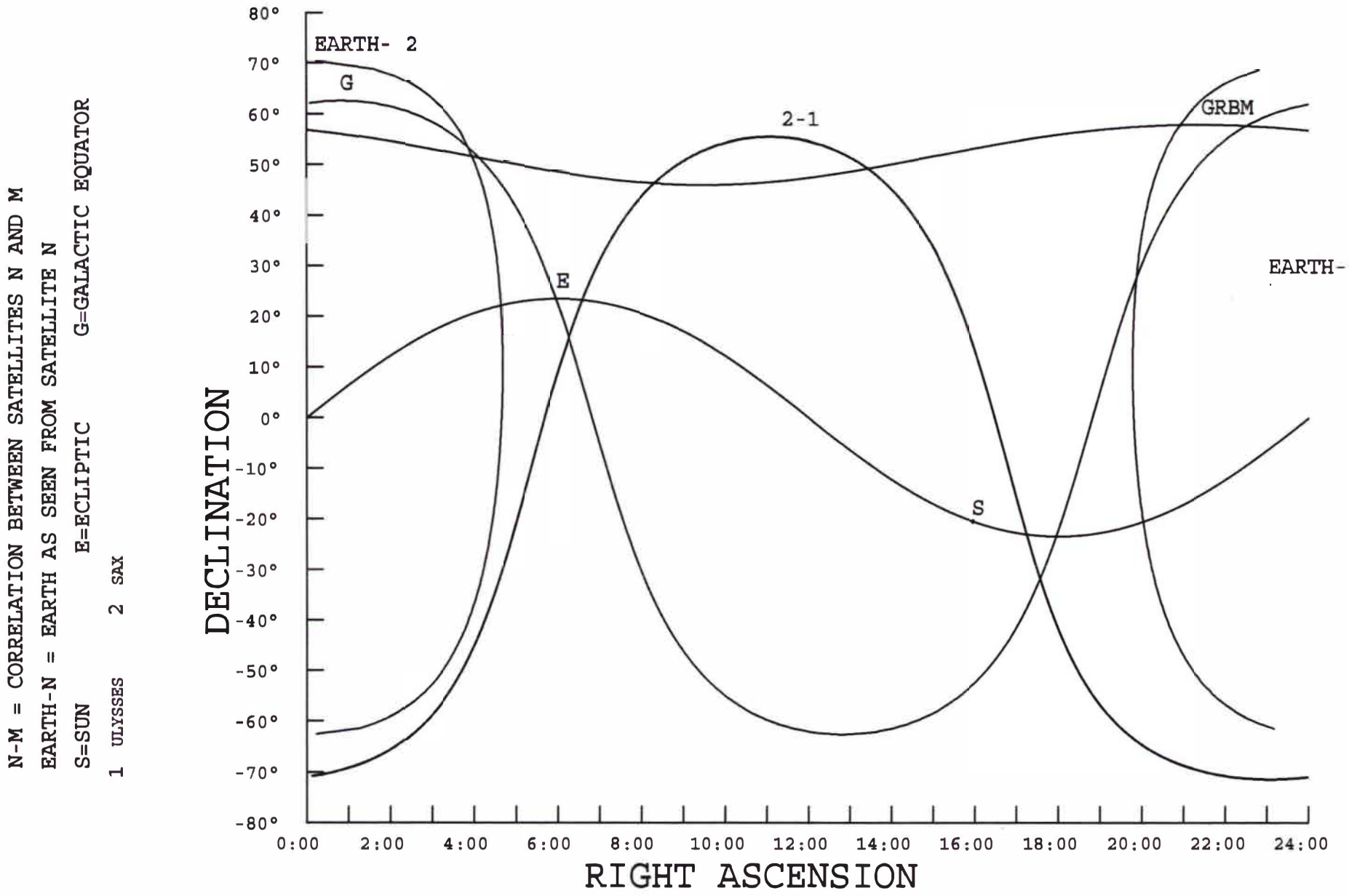
10/ 7/ 7

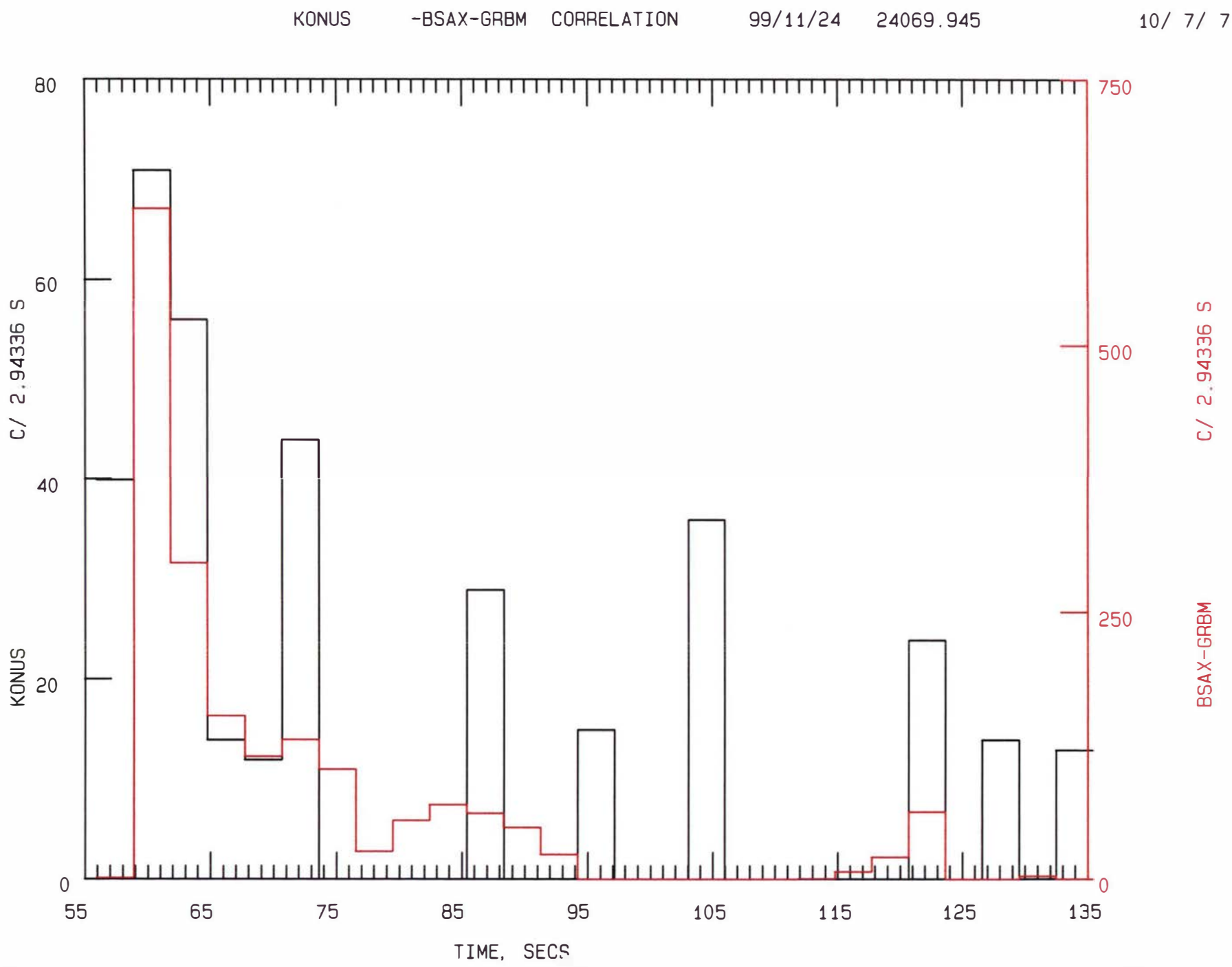
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 SAX



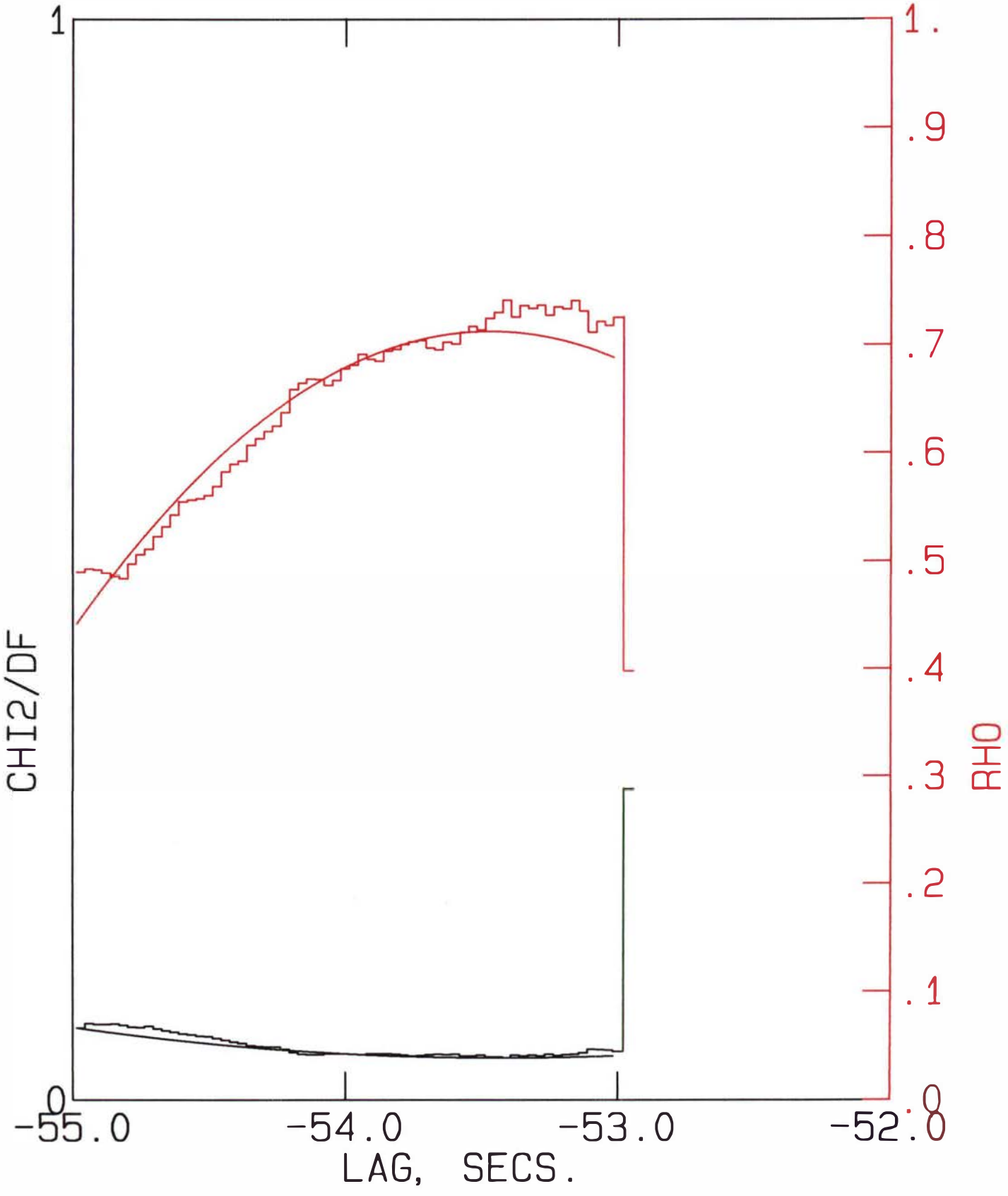
EVENT OF NOV 24, 1999 6:35

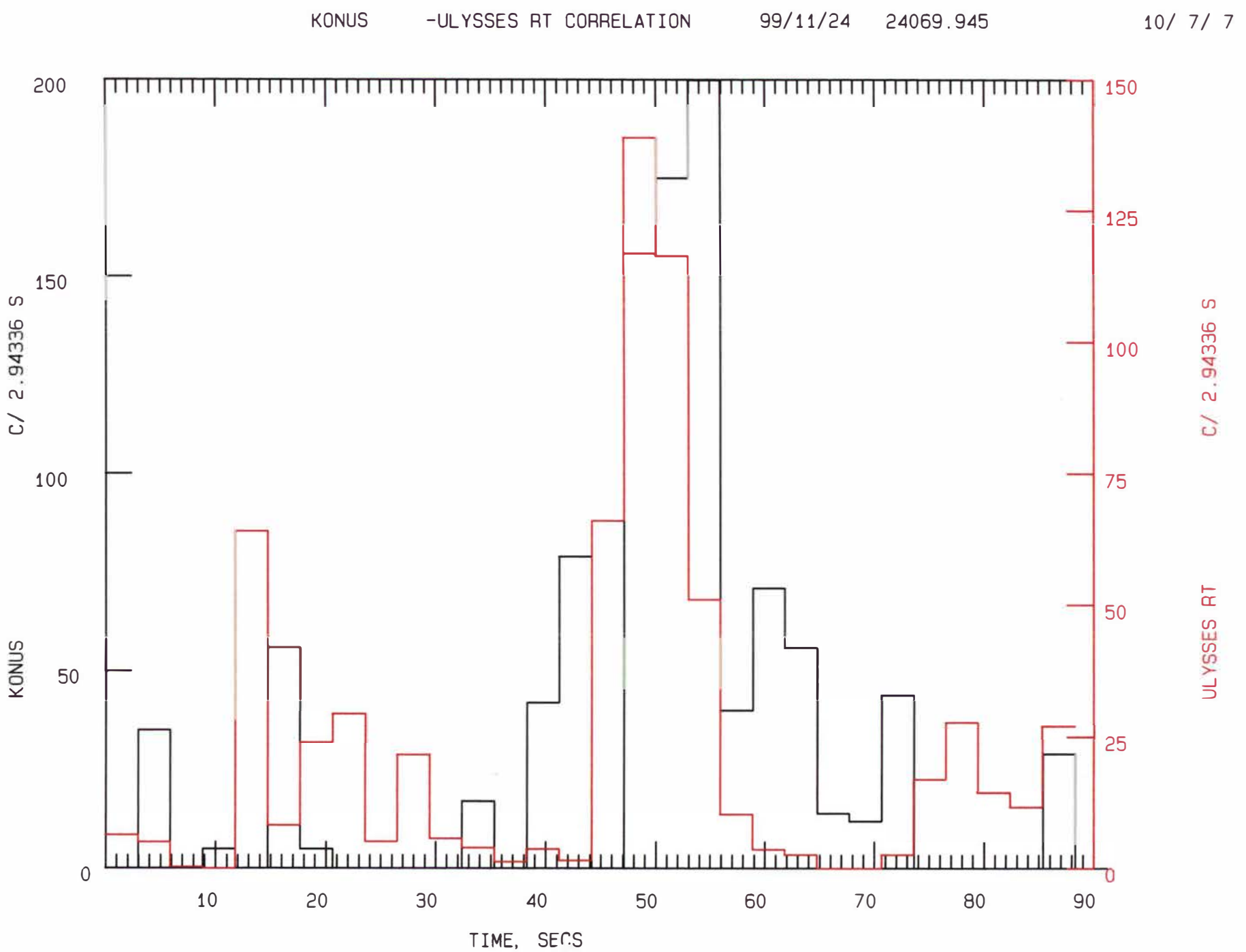
10/ 7/ 7



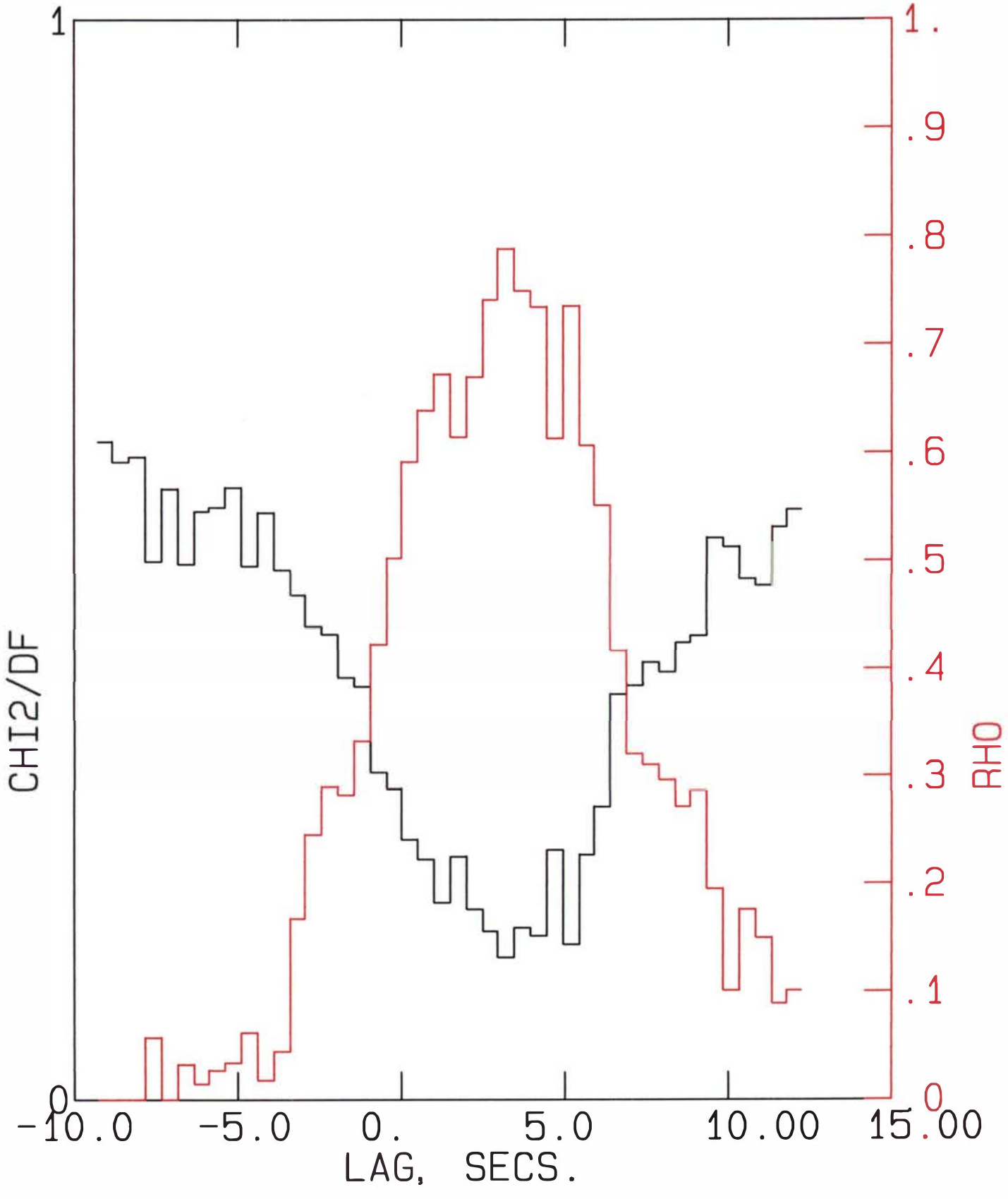

KONUS -BSAX-GRBM CORRELATION 99/11/24 24069.945 10/ 7/ 7
80
60
40
20
0
KONUS
C/ 2.94336 S
750
500
250
0
BSAX-GRBM
C/ 2.94336 S
55
65
75
85
95
105
115
125
135
TIME, SECS

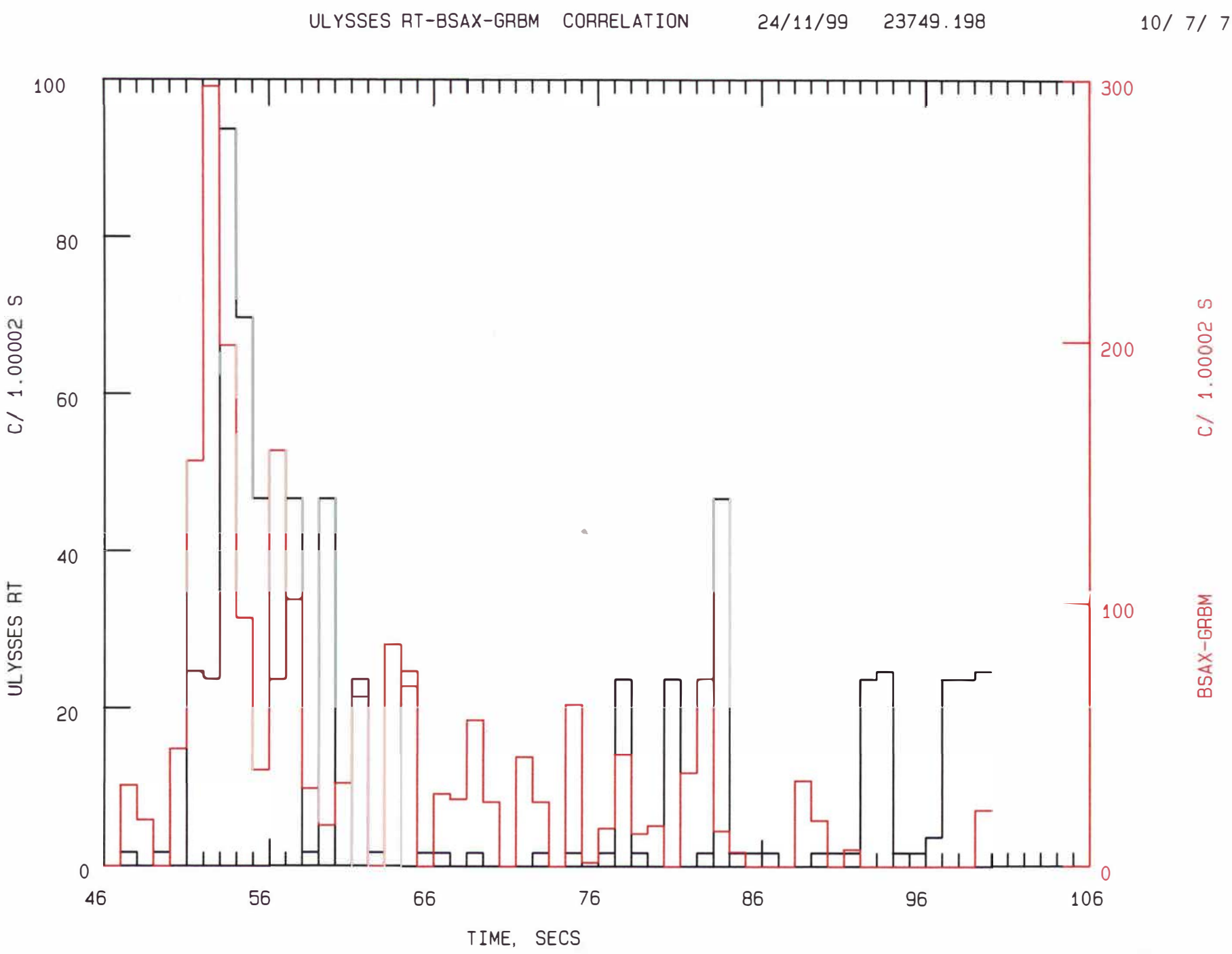
KONUS -BSAX-GRBM CORRELATION 99/11/24 24069.945



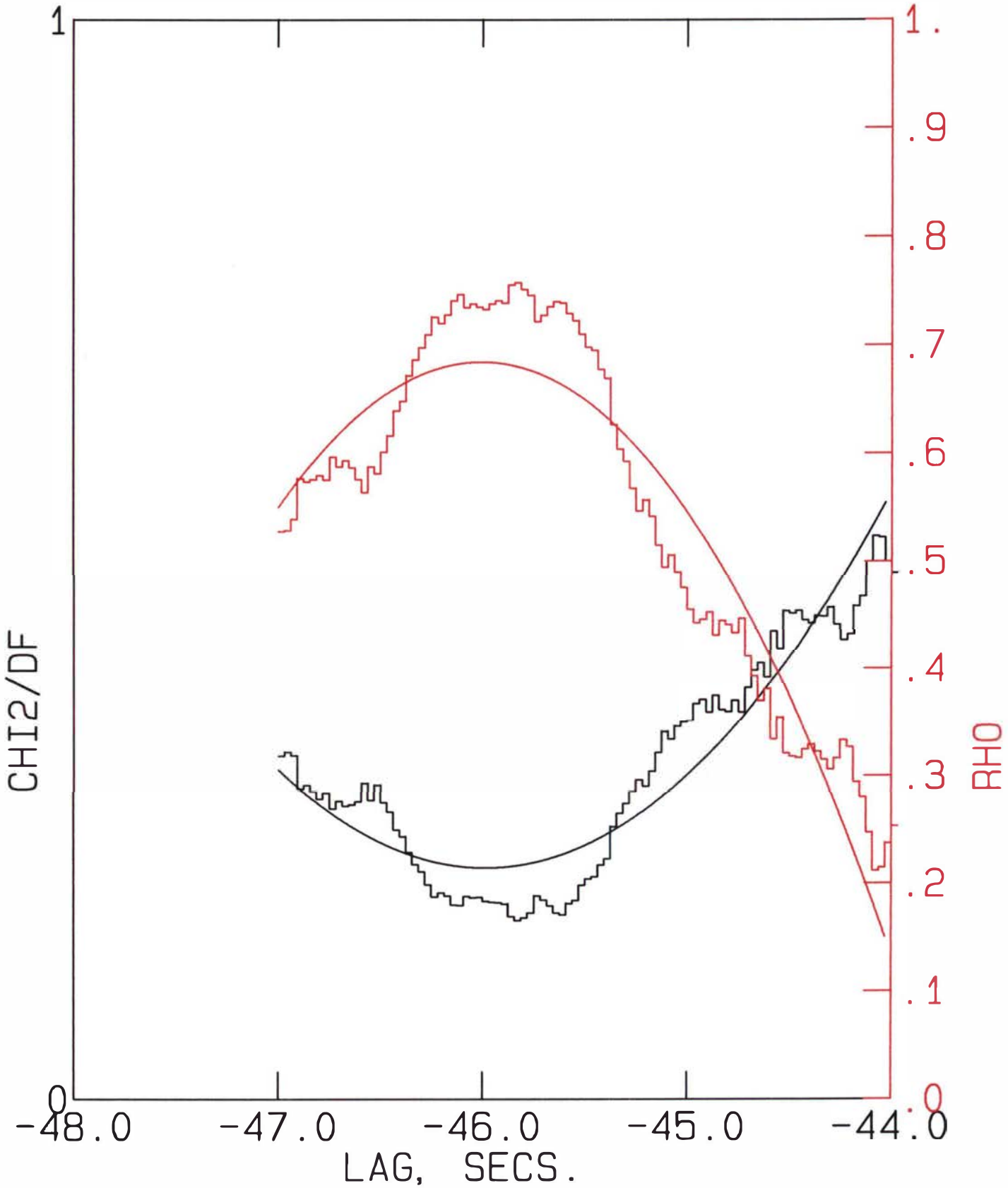

KONUS -ULYSSES RT CORRELATION 99/11/24 24069.945 10/ 7/ 7
200
150
100
50
0
C/ 2.94336 S
KONUS
150
125
100
75
50
25
0
C/ 2.94336 S
ULYSSES RT
10
20
30
40
50
60
70
80
90
TIME, SECS

KONUS -ULYSSES RT CORRELATION 99/11/24 24069.945




ULYSSES RT-BSAX-GRBM CORRELATION 24/11/99 23749.198 10/ 7/ 7
100
80
60
40
20
0
ULYSSES RT
C/ 1.00002 S
300
200
100
0
BSAX-GRBM
C/ 1.00002 S
46
56
66
76
86
96
106
TIME, SECS

ULYSSES RT-BSAX-GRBM CORRELATION 24/11/99 23749.198

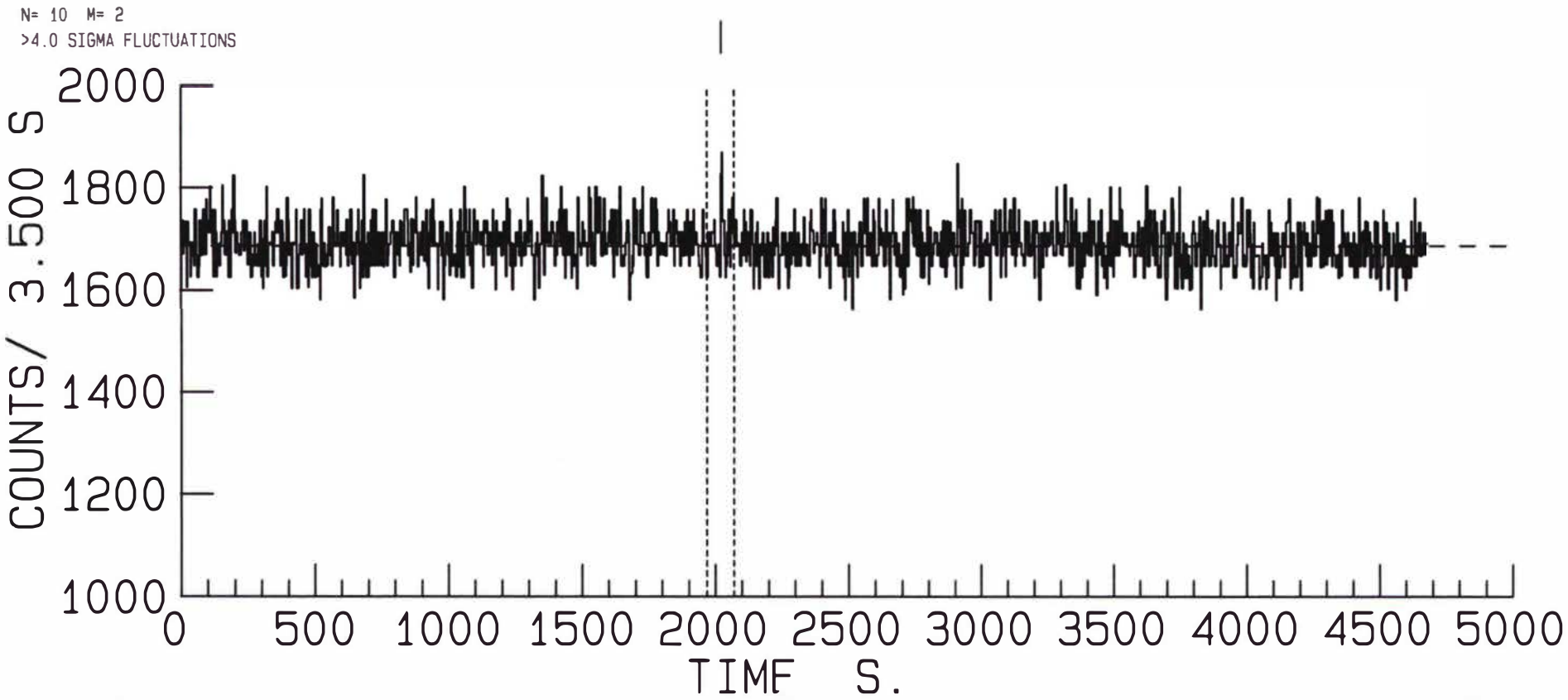


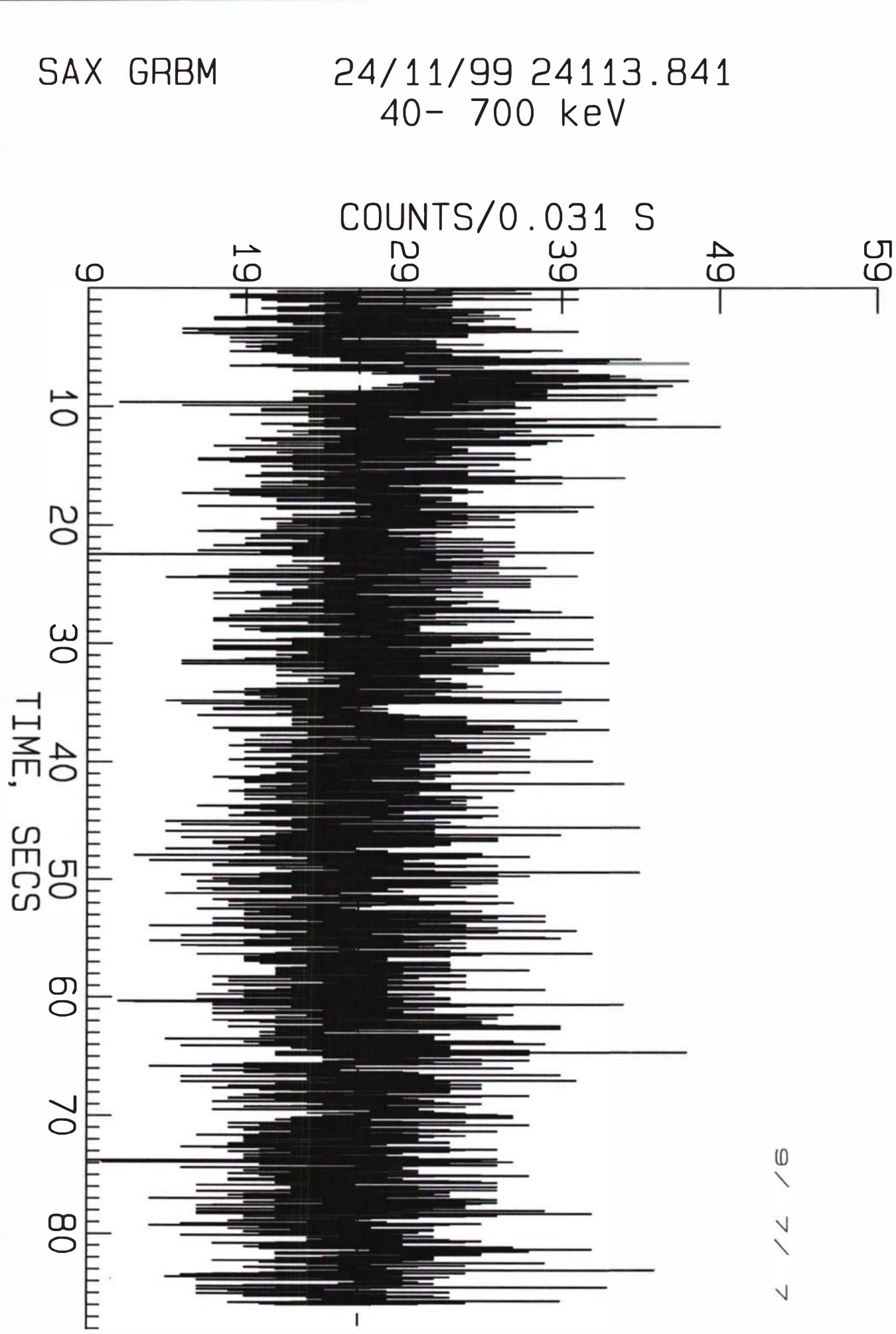
ULYSSES RT 9/ 7/ 7

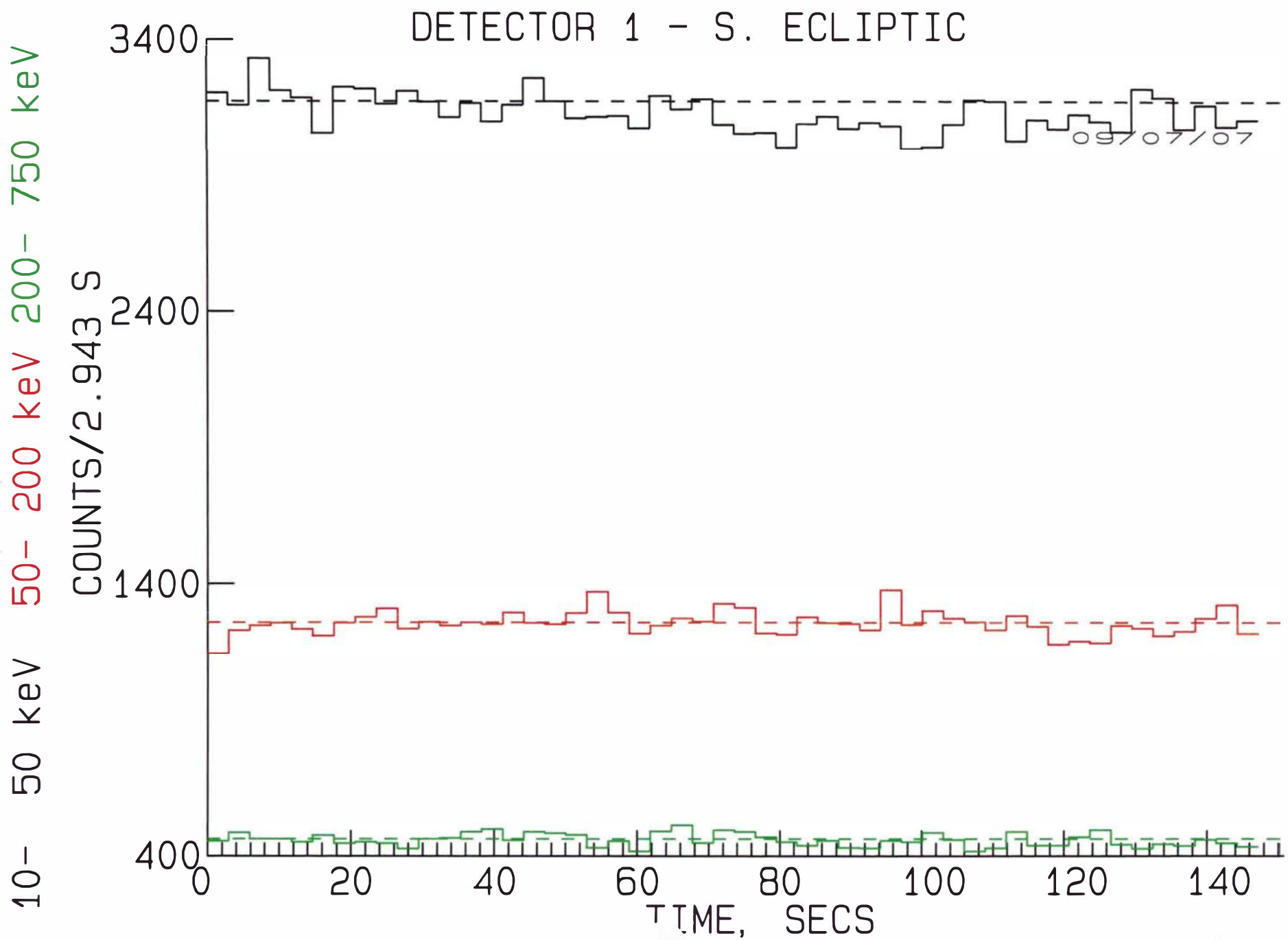
24/11/99 21780.184 s

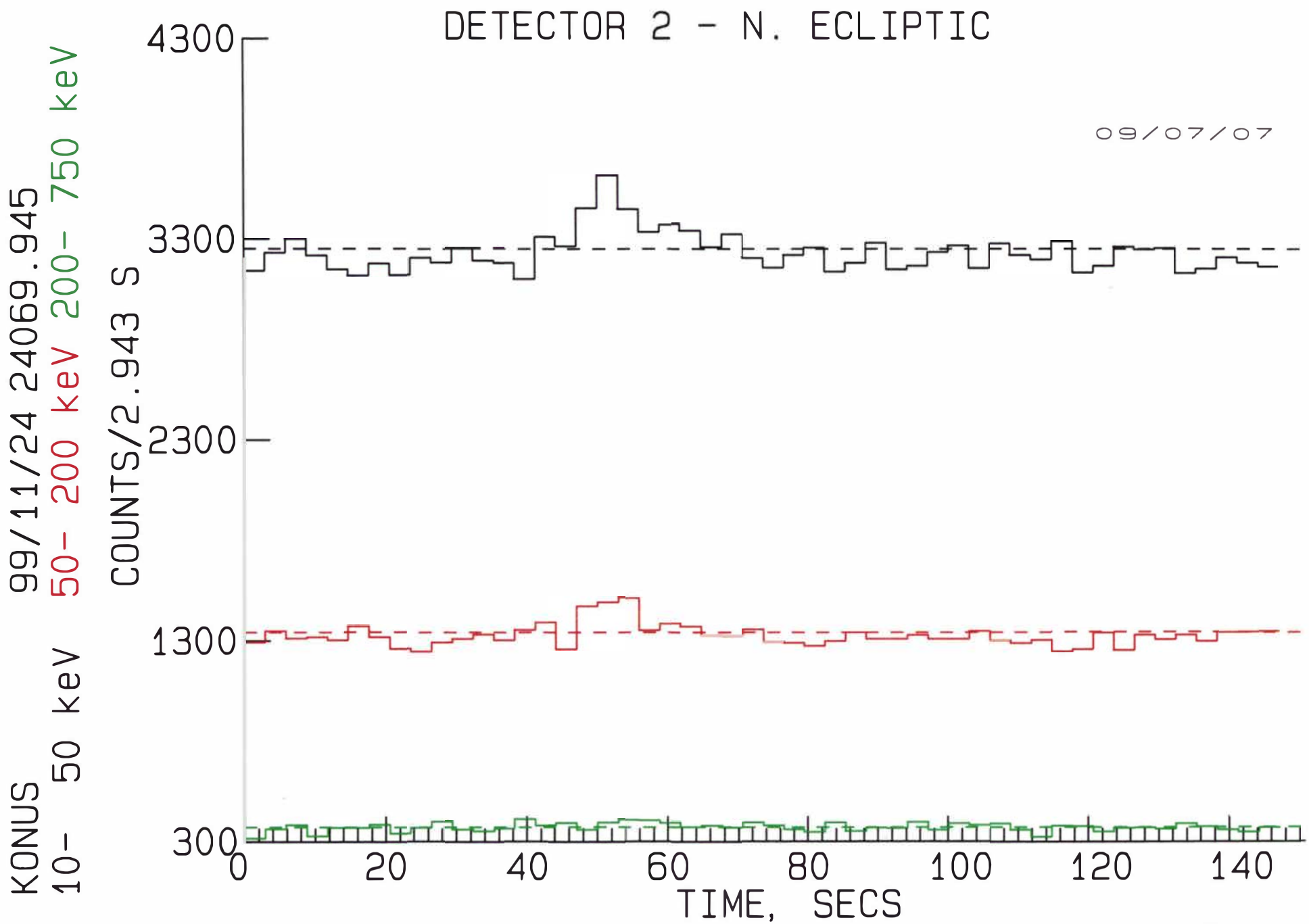
0.500 S INTERVALS REGROUPED BY 7

22- 150 keV




SAX GRBM
24/11/99 24113.841
40- 700 keV
COUNTS/0.031 S
9
19
29
39
49
59
10
20
30
40
50
60
70
80
TIME, SECS
9/ 7/ 7


DETECTOR 1 - S. ECLIPTIC
09/07/07
3400
2400
1400
400
COUNTS/2.943 S
10- 50 keV 50- 200 keV 200- 750 keV
0
20
40
60
80
100
120
140
TIME, SECS


DETECTOR 2 - N. ECLIPTIC
09/07/07
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
99/11/24 24069.945
COUNTS/2.943 S
4300
3300
2300
1300
300
0
20
40
60
80
100
120
140
TIME, SECS

Date: Jul 10 '07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☑ Σ $3\Delta t$'s calculated, and/or BMAPSUM executed?

3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

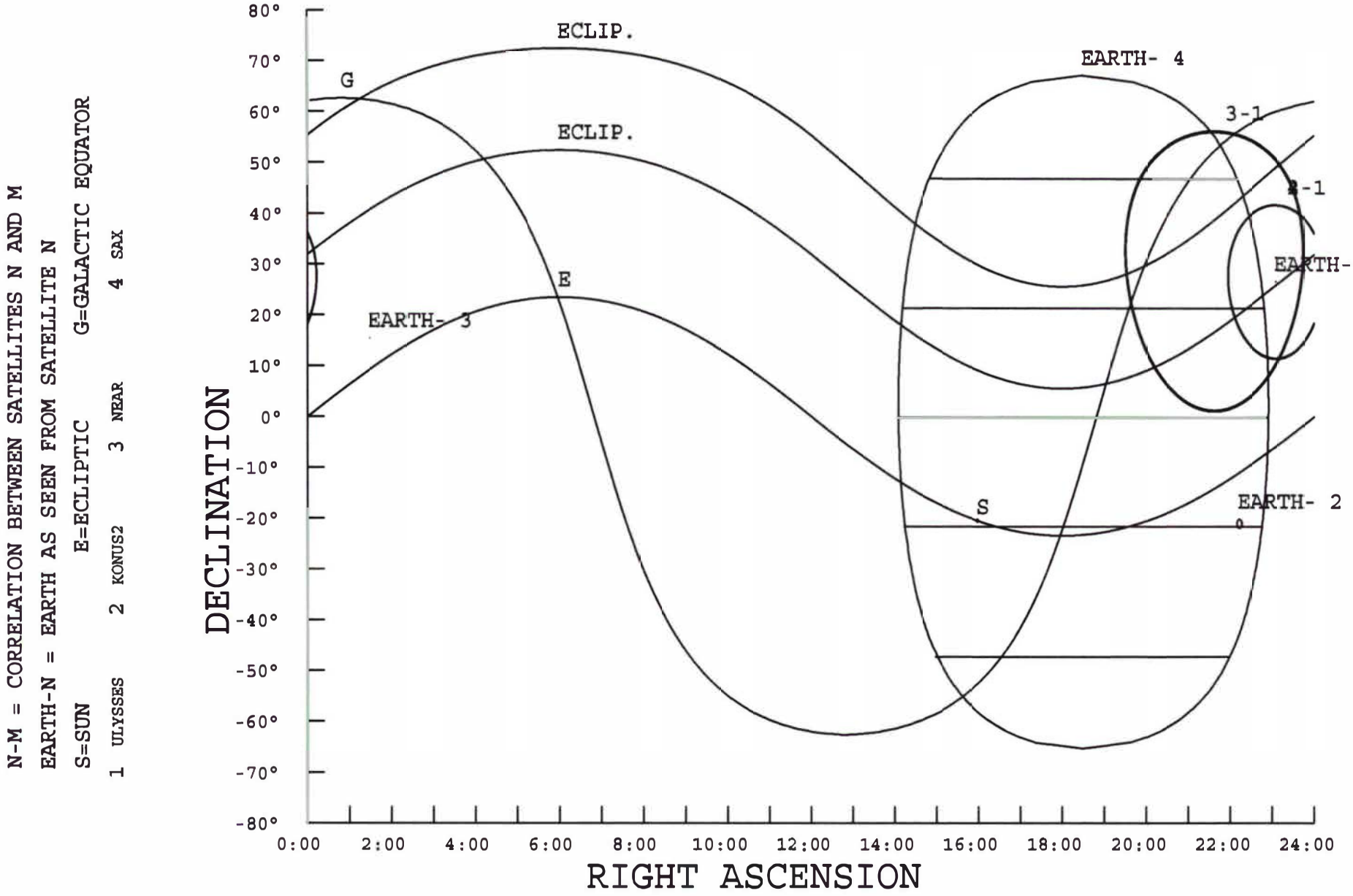
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

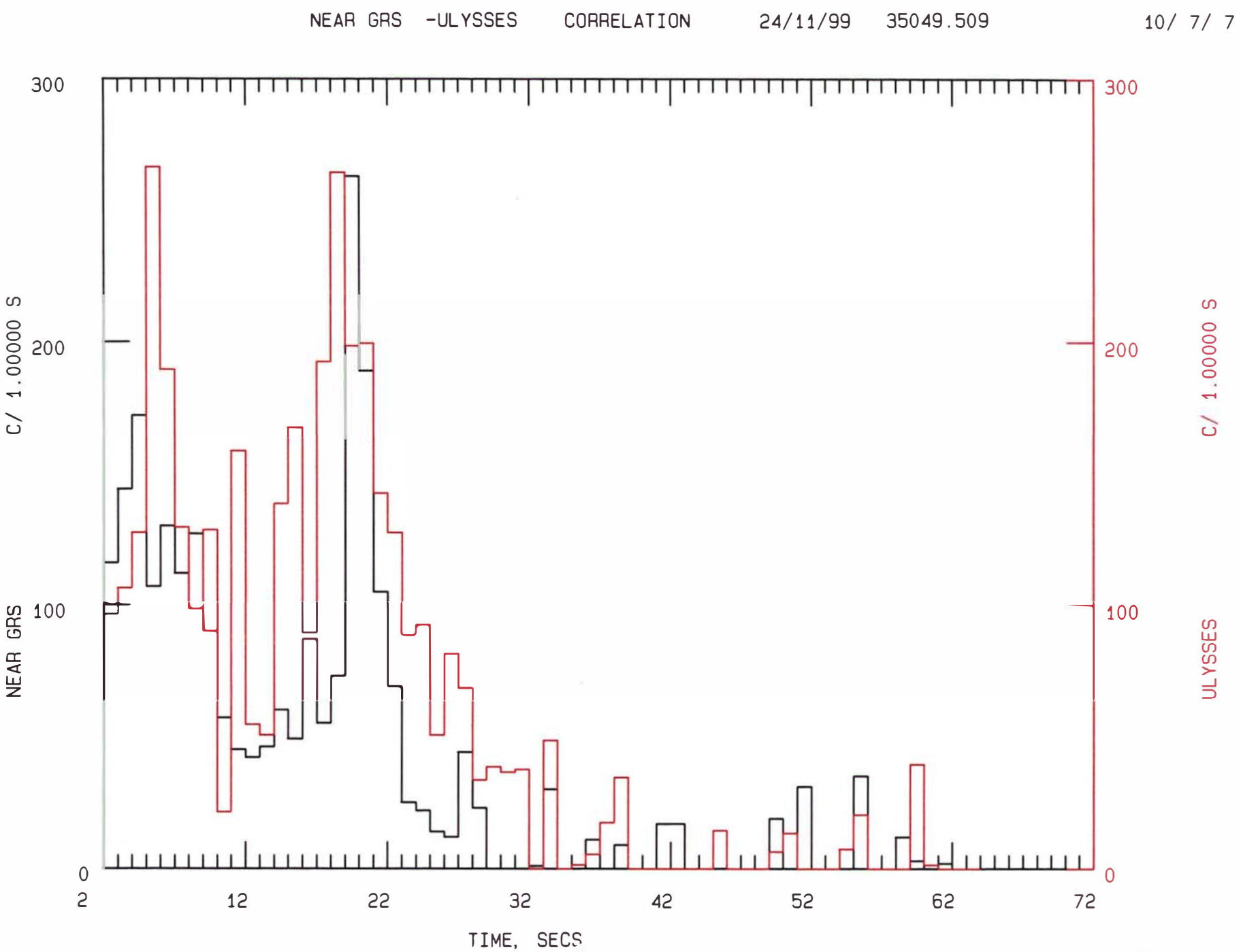
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

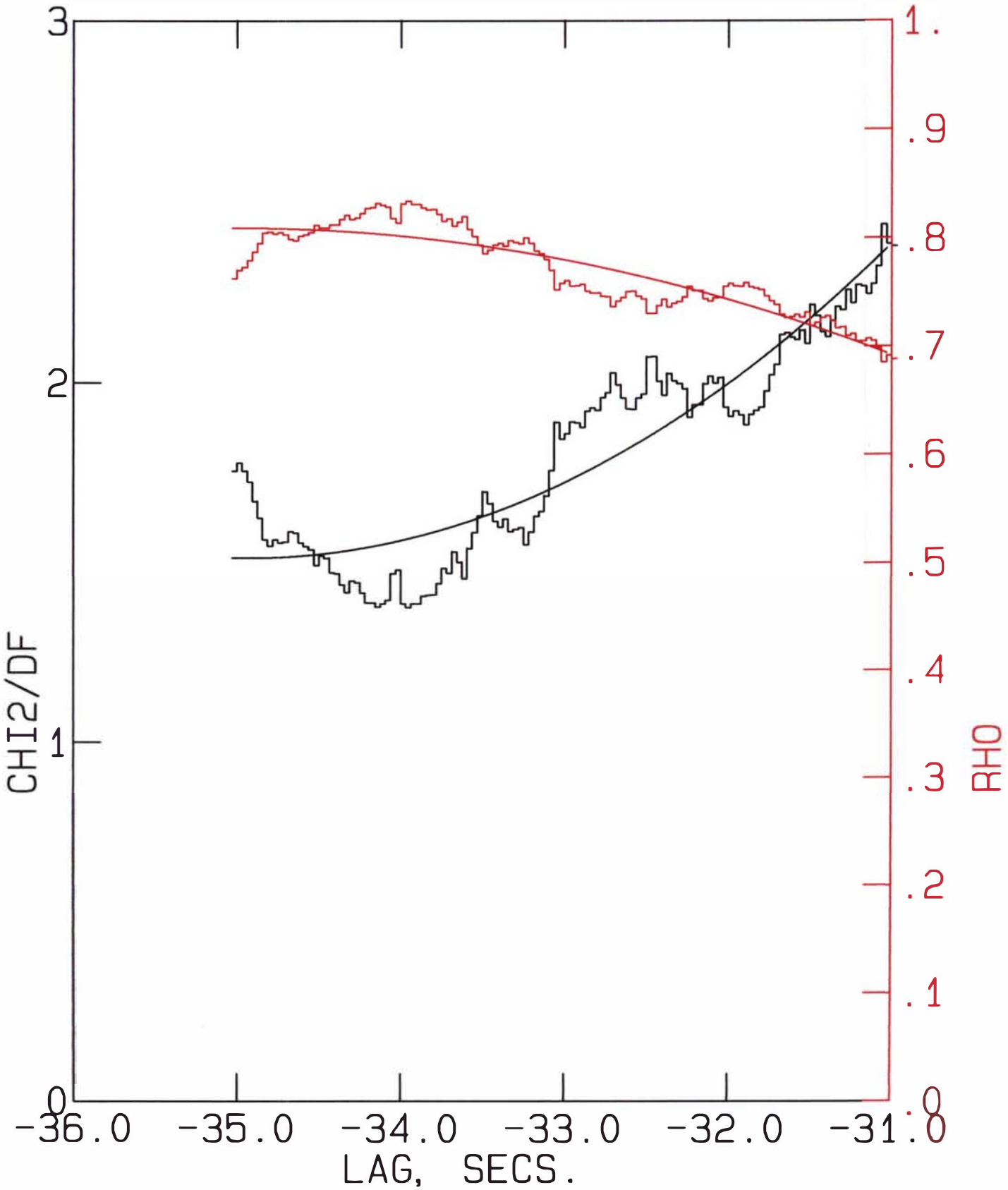
EVENT OF NOV 24, 1999 10:08

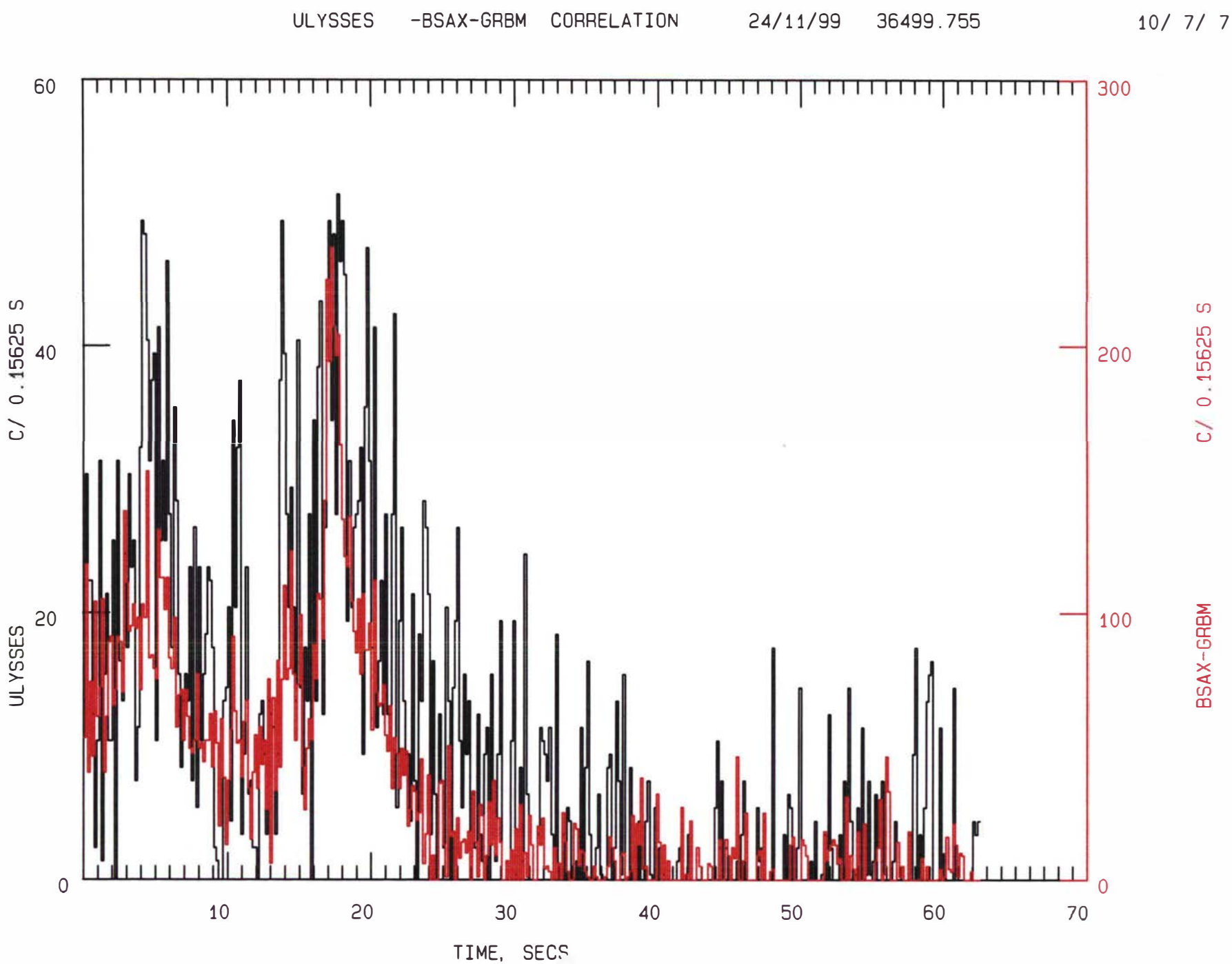
10/ 7/ 7



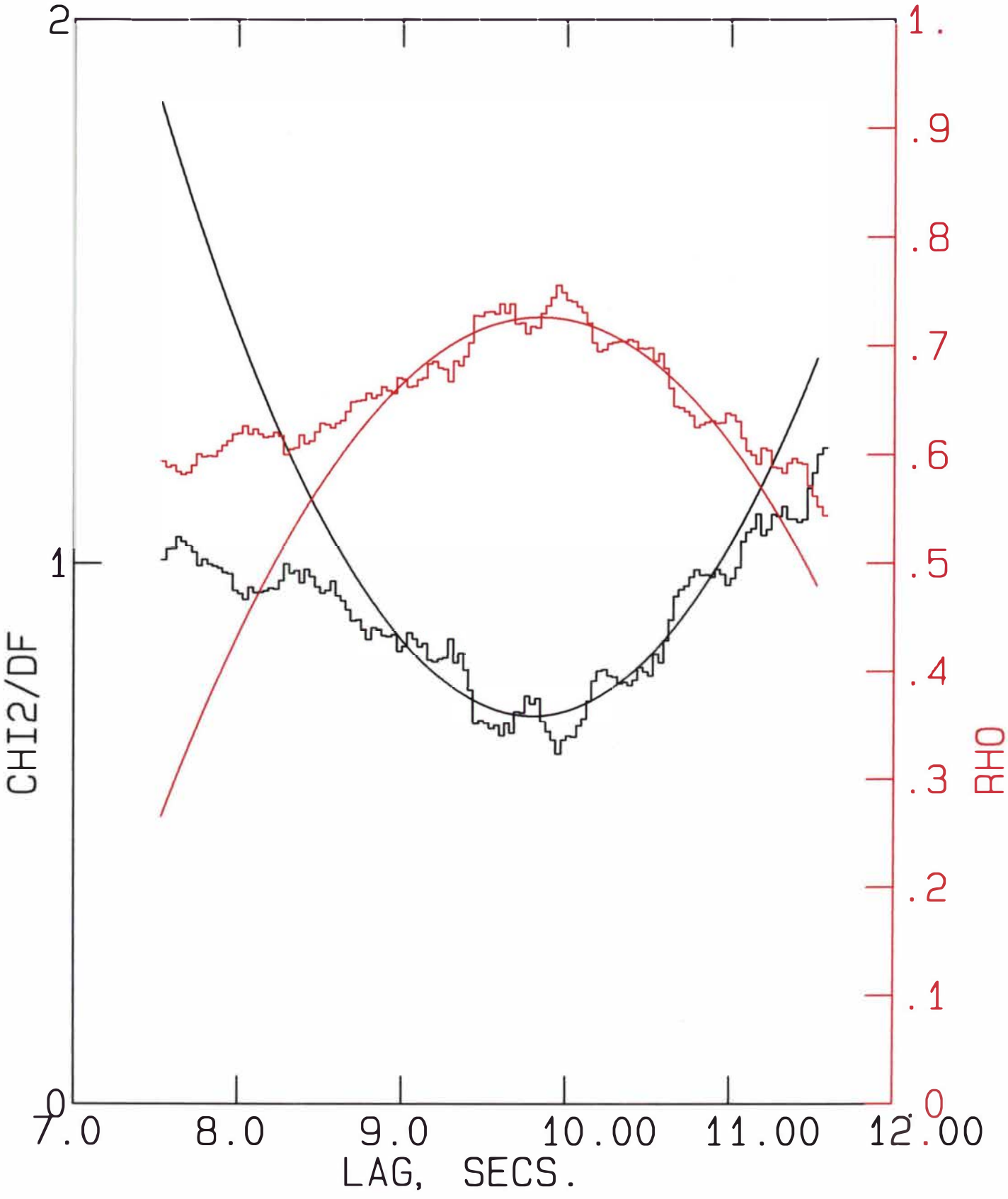

NEAR GRS -ULYSSES CORRELATION 24/11/99 35049.509 10/ 7/ 7
300
200
100
0
C/ 1.00000 S
NEAR GRS
2
12
22
32
42
52
62
72
TIME, SECS
ULYSSES

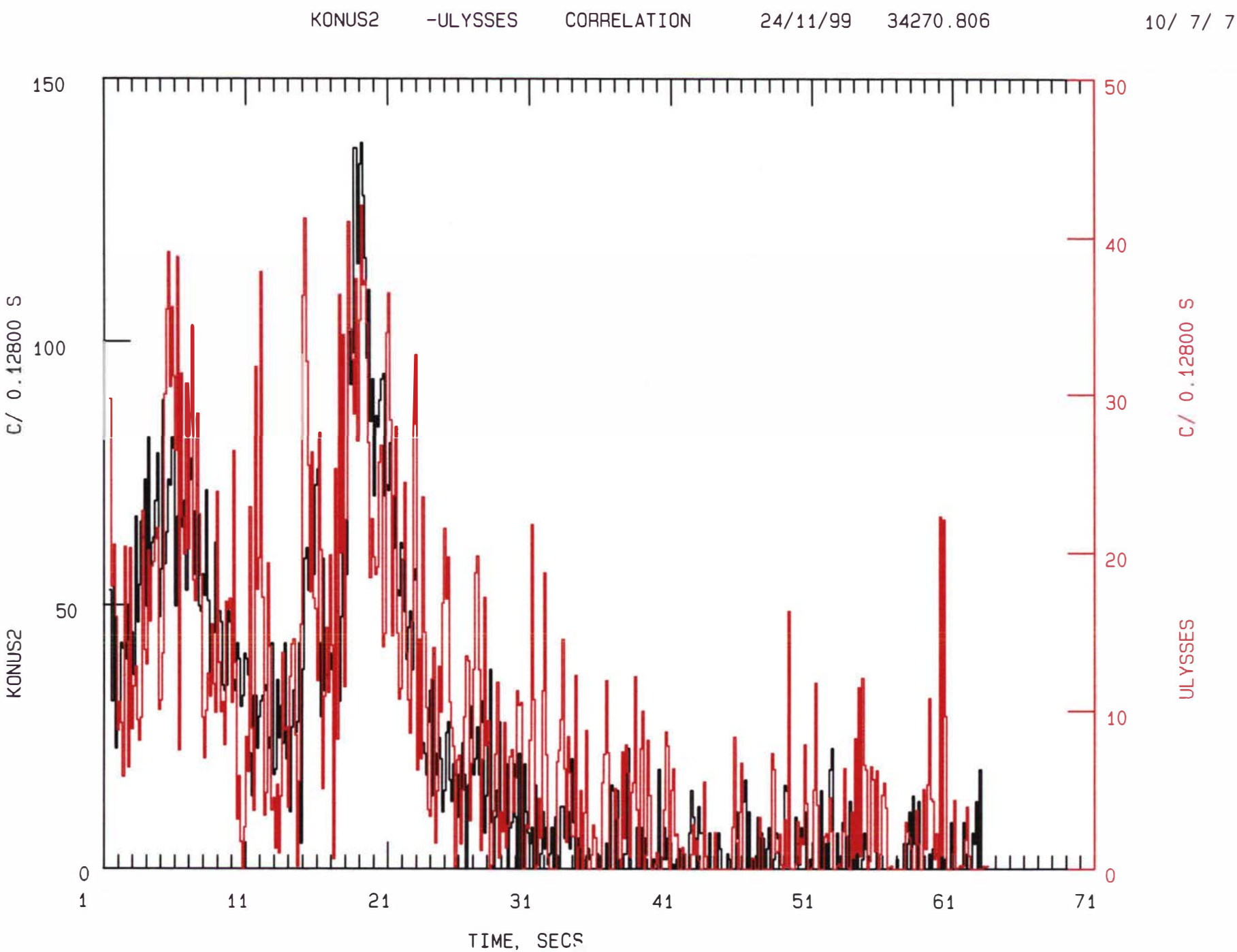
NEAR GRS -ULYSSES CORRELATION 24/11/99 35049.509



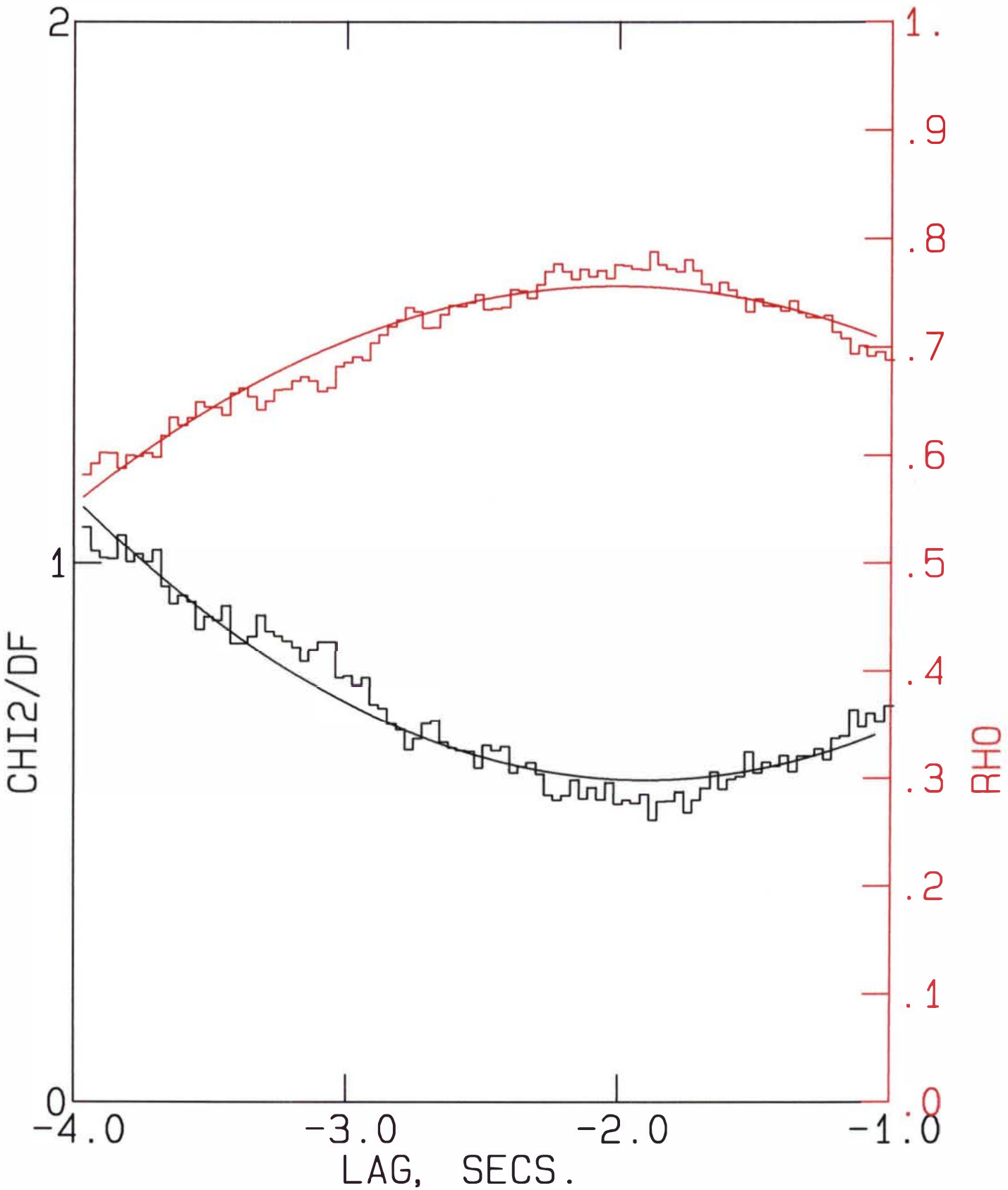

ULYSSES -BSAX-GRBM CORRELATION 24/11/99 36499.755 10/ 7/ 7
60
40
20
0
C/ 0.15625 S
ULYSSES
300
200
100
0
C/ 0.15625 S
BSAX-GRBM
10
20
30
40
50
60
70
TIME, SECS

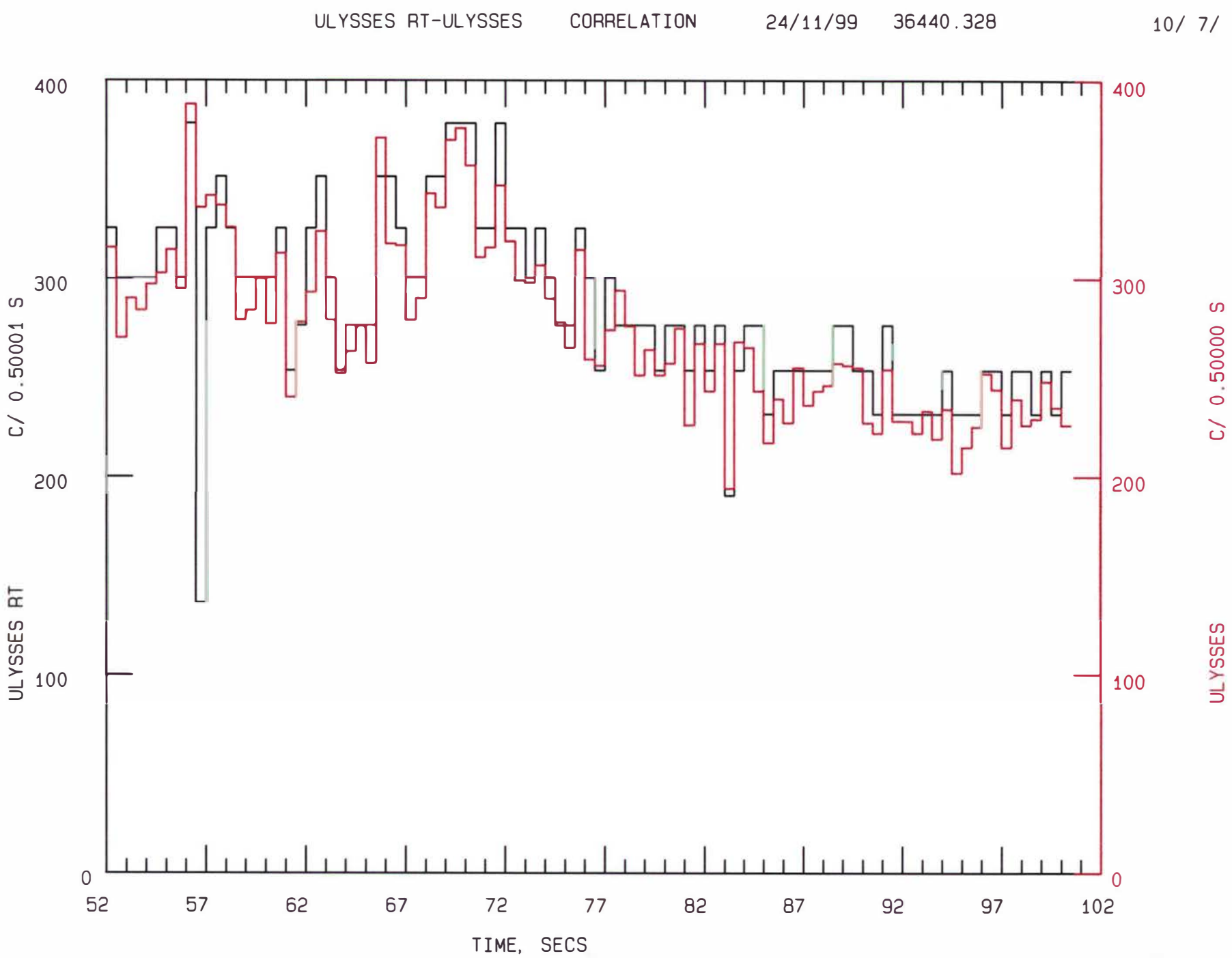
ULYSSES -BSAX-GRBM CORRELATION 24/11/99 36499.755



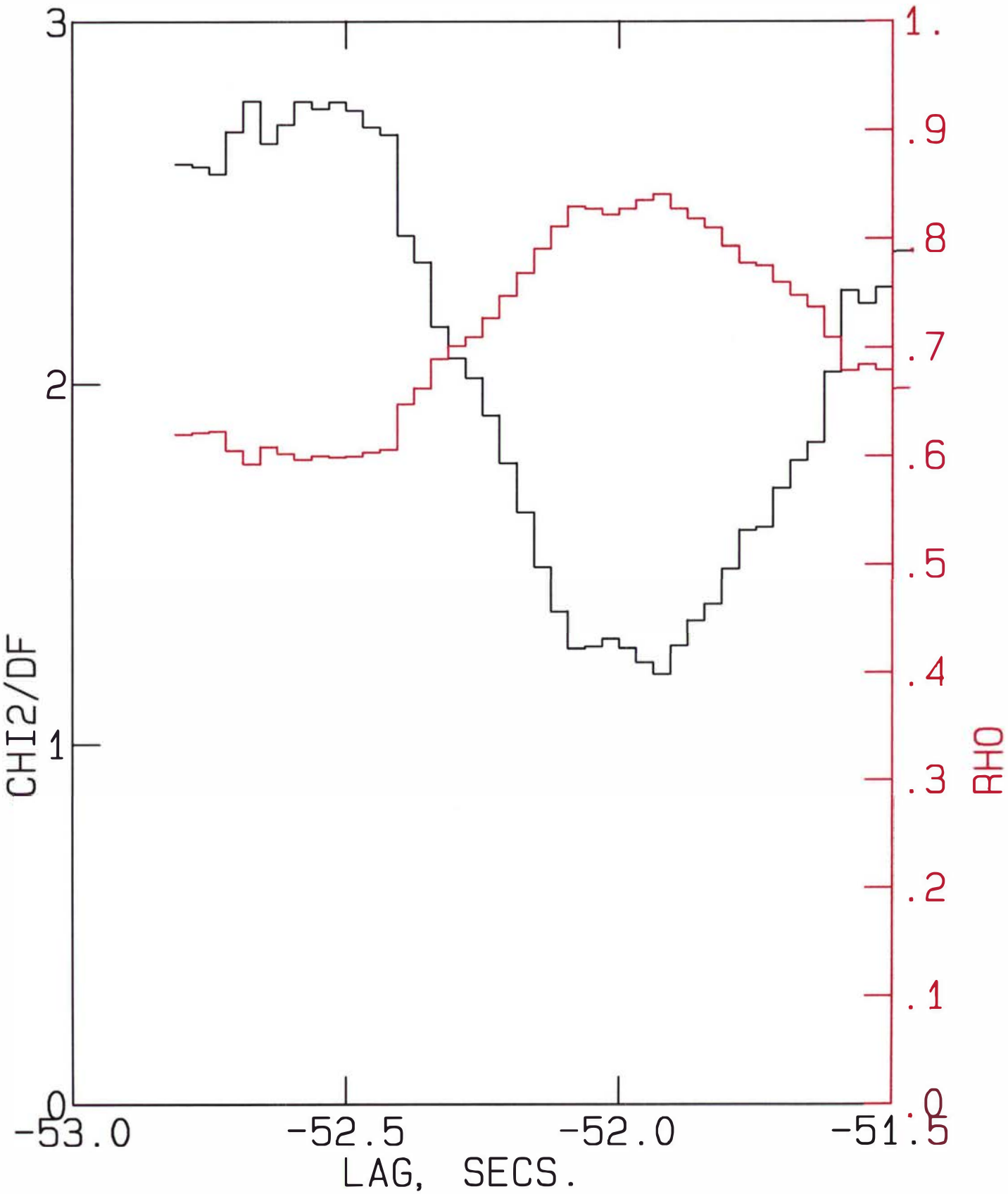

KONUS2 -ULYSSES CORRELATION 24/11/99 34270.806 10/ 7/ 7
150
100
50
0
C/ 0.12800 S
KONUS2
50
40
30
20
10
0
C/ 0.12800 S
ULYSSES
1
11
21
31
41
51
61
71
TIME, SECS

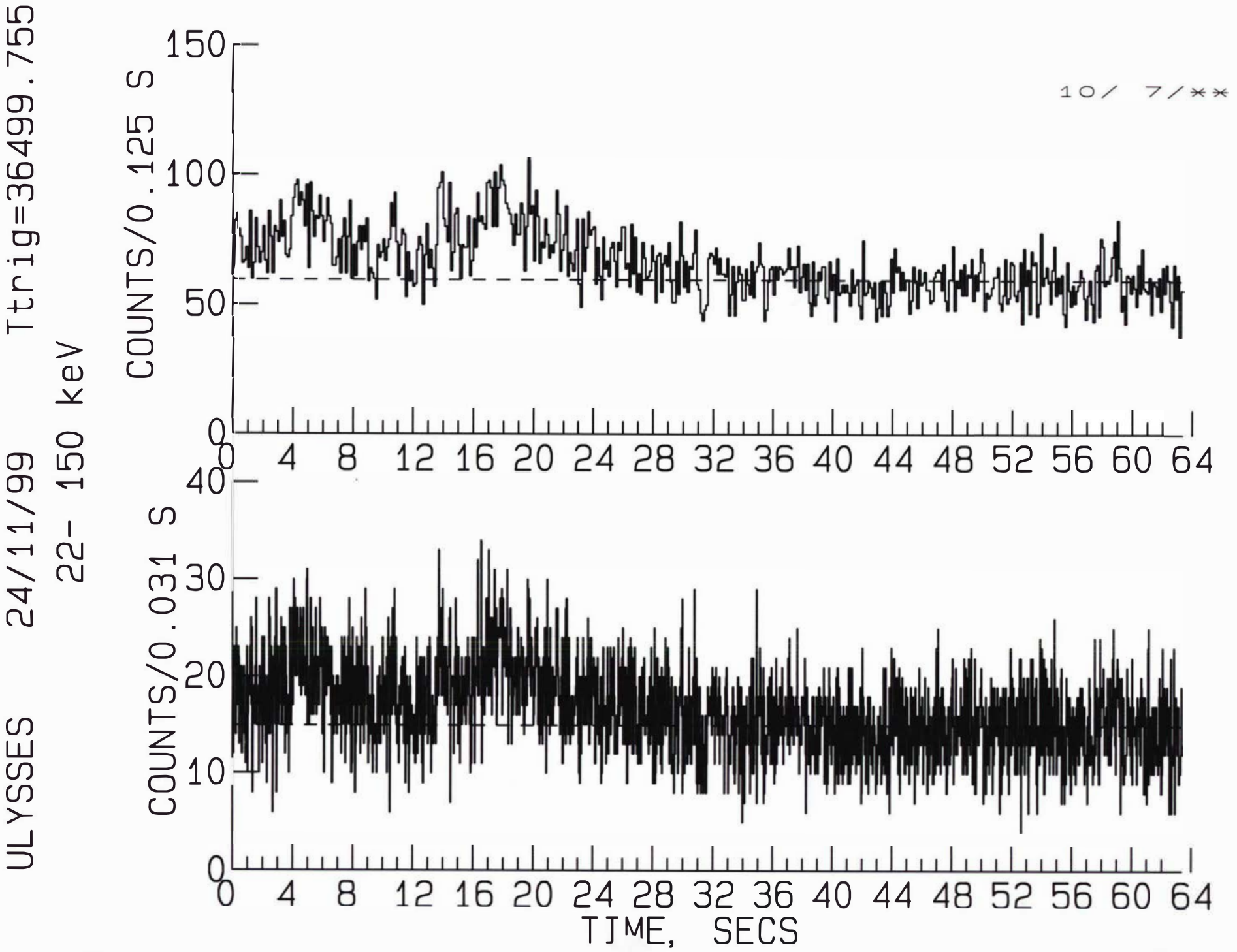
KONUS2 -ULYSSES CORRELATION 24/11/99 34270.806




ULYSSES RT-ULYSSES CORRELATION 24/11/99 36440.328
10/ 7/ 7
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
52
57
62
67
72
77
82
87
92
97
102
TIME, SECS

ULYSSES RT-ULYSSES CORRELATION 24/11/99 36440.328



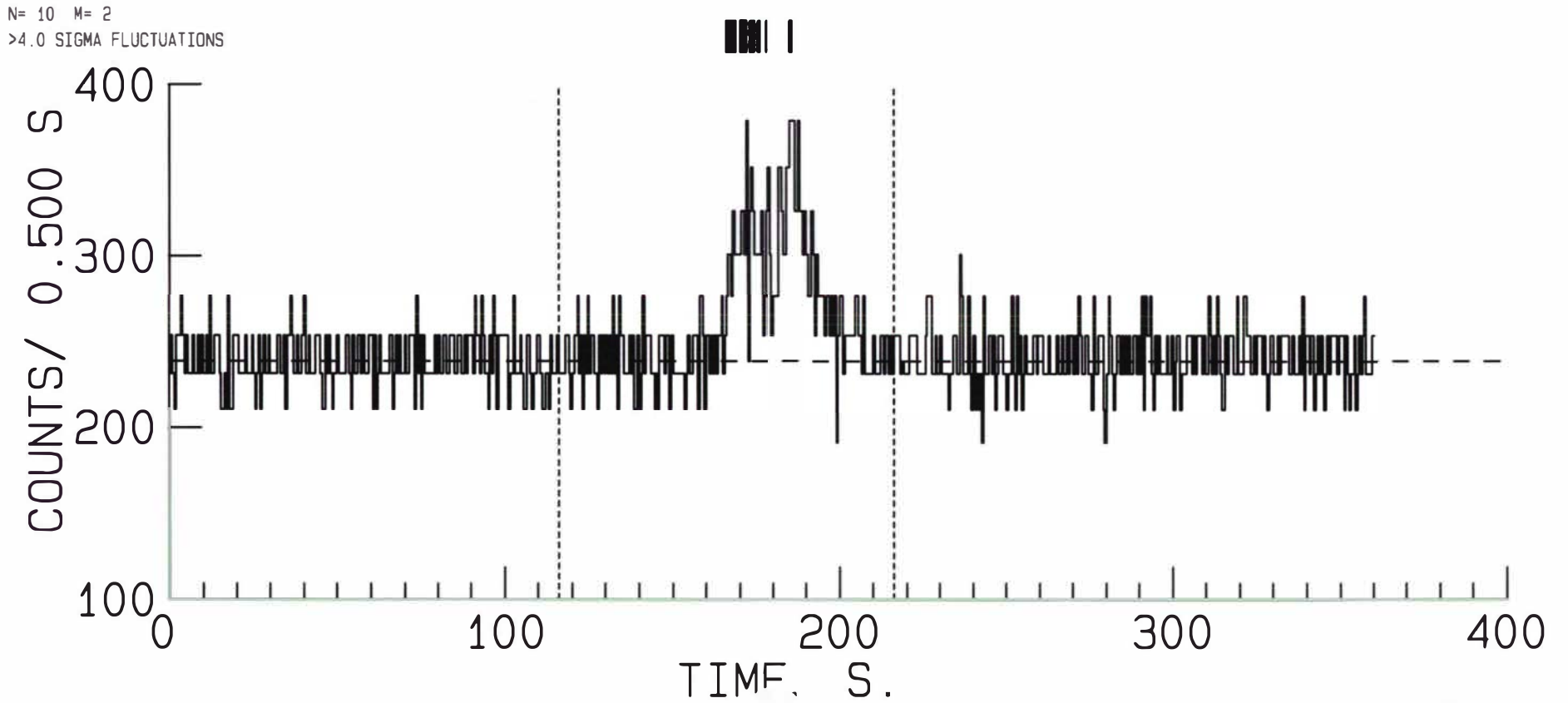

ULYSSES 24/11/99 Ttrig=36499.755
22- 150 keV
10/ 7/**
COUNTS/0.125 S
150
100
50
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
COUNTS/0.031 S
40
30
20
10
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
TIME, SECS

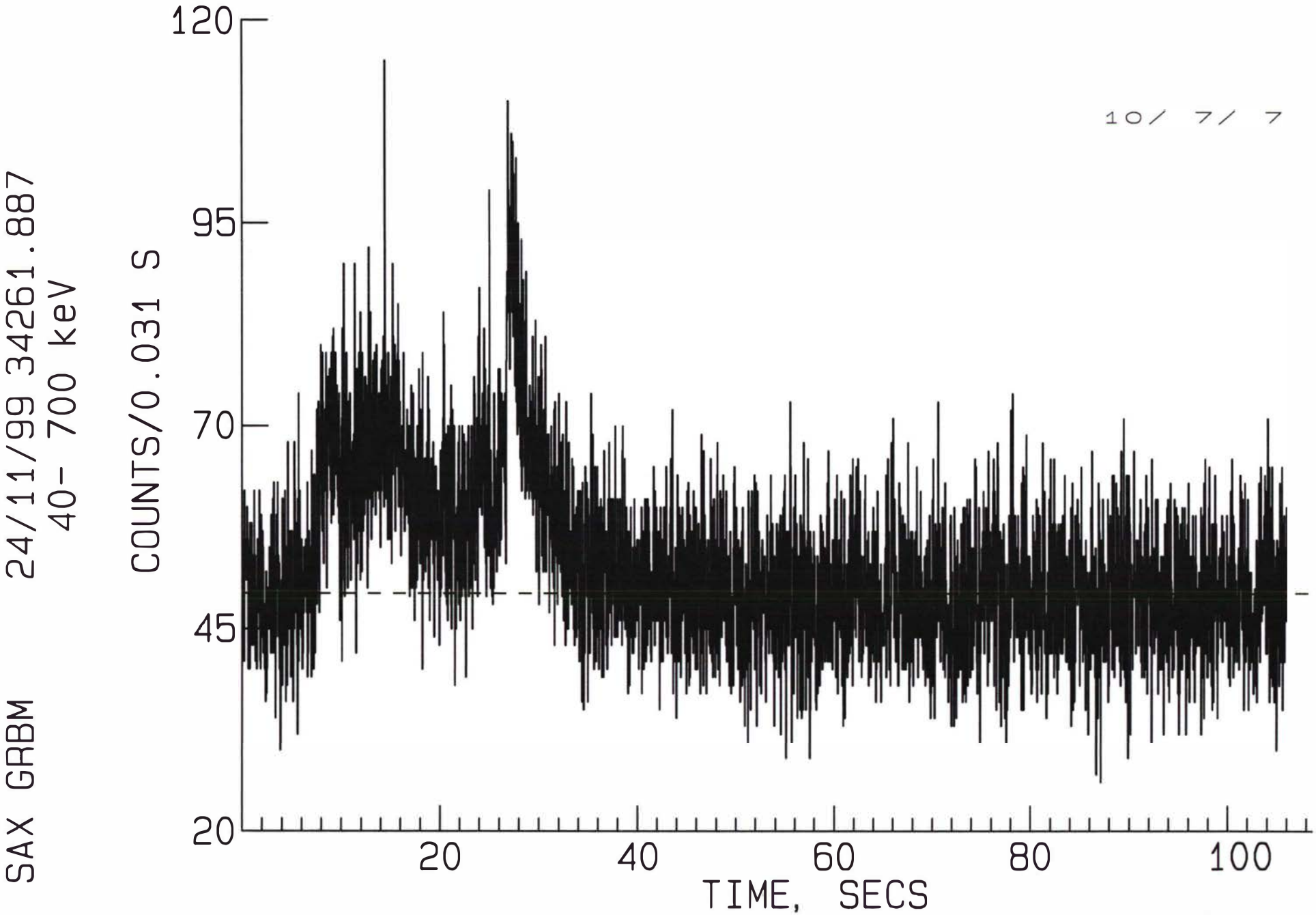
ULYSSES RT

10/ 7/ 7

24/11/99 36324.336 s

22- 150 keV




SAX GRBM
24/11/99 34261.887
40- 700 keV
COUNTS/0.031 S
120
95
70
45
20
20
40
60
80
100
TIME, SECS
10/ 7/ 7

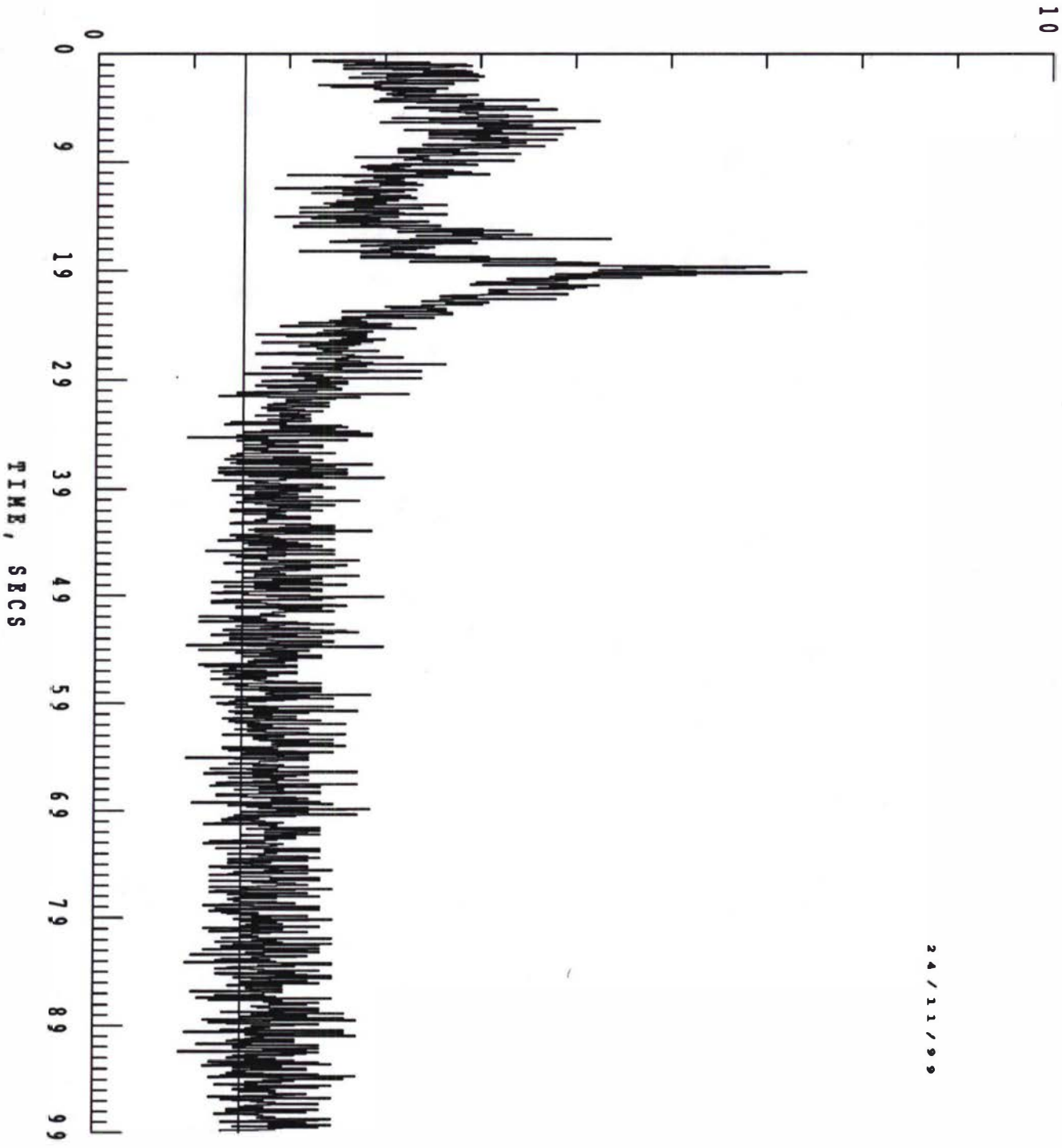
KONUS 24/11/99 34270.806

50- 200 keV

Prob. solar (see GOES @ 9:30)

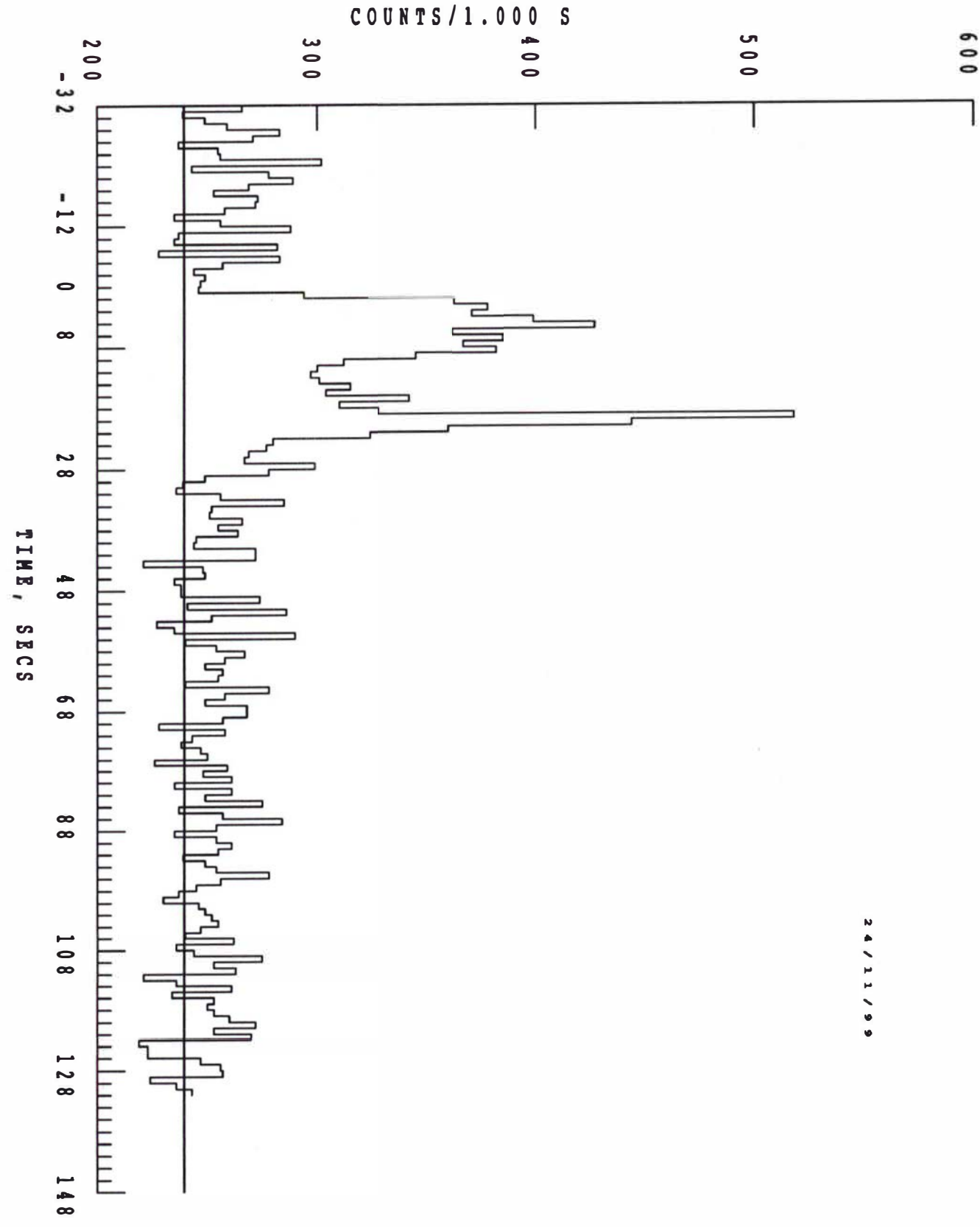
GRB according to Konus list

COUNTS/0.064 S



NEAR 24/11/99 35049.509

100-1000 keV



From SAHI@fender.msfc.nasa.gov Thu Dec 2 12:20 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 2 Dec 1999 13:22:41 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7878

TIME: TJD=1506 SECONDS=67608

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

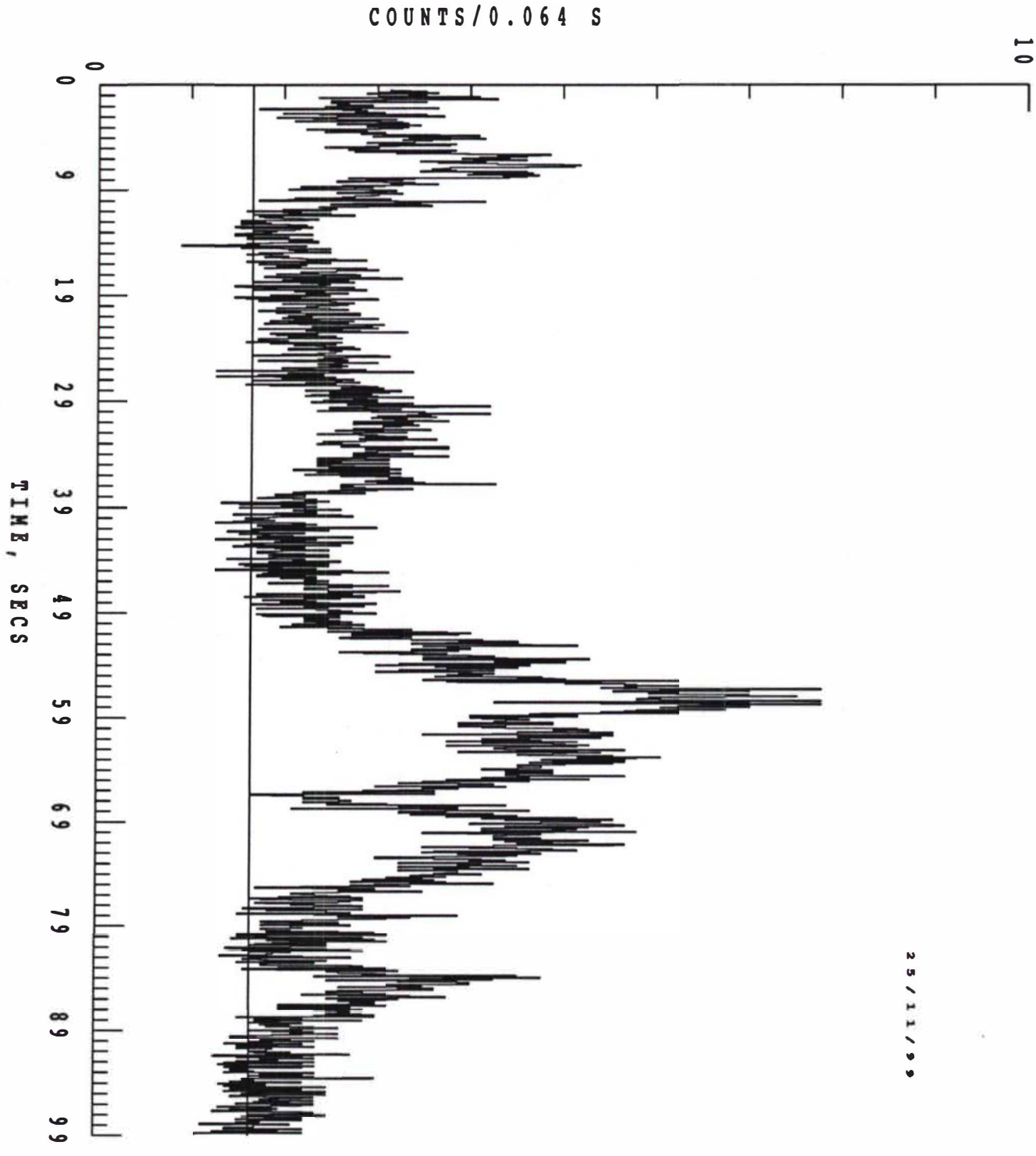
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=76.5 AZIMUTH=329.4 ERROR=1.3 DEGREES

COMMENTS:
SOLAR FLARE. GOES C6.6, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR 30 S.
STARTS AT T-12 S. PRECURSOR AT T-75 S. WEAKLY VISIBLE ABOVE 100 KEV.

KONUS 24/11/99 78906.146

50- 200 keV



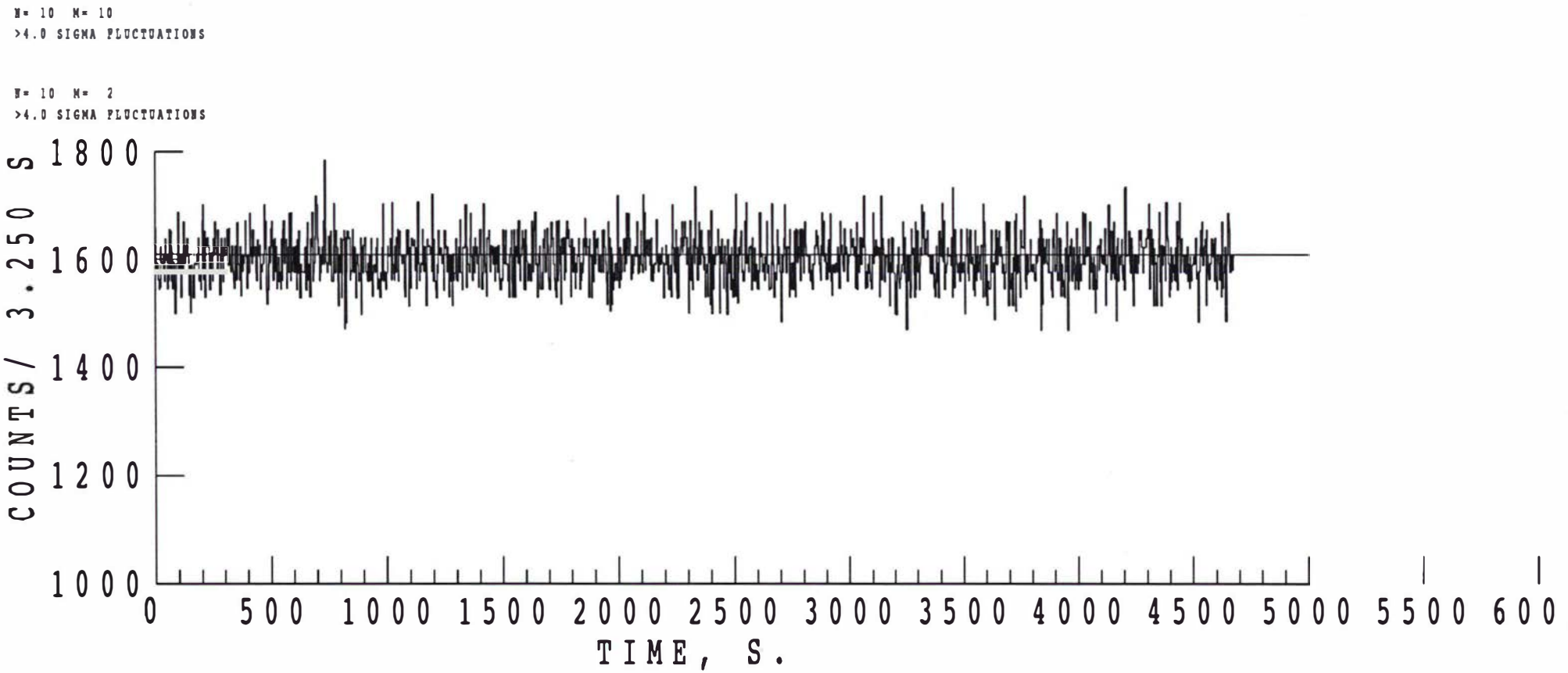
KONUS2 19991124 78906

ULYSSES RT 21/03/00

24/11/99 76572.242 s

0.250 S INTERVALS REGROUPED BY 13

0- 0 keV



From SAHI@fender.msfc.nasa.gov Thu Dec 2 11:50 PST 1999
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 2 Dec 1999 13:27:00 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7879

TIME: TJD=1506 SECONDS=81847

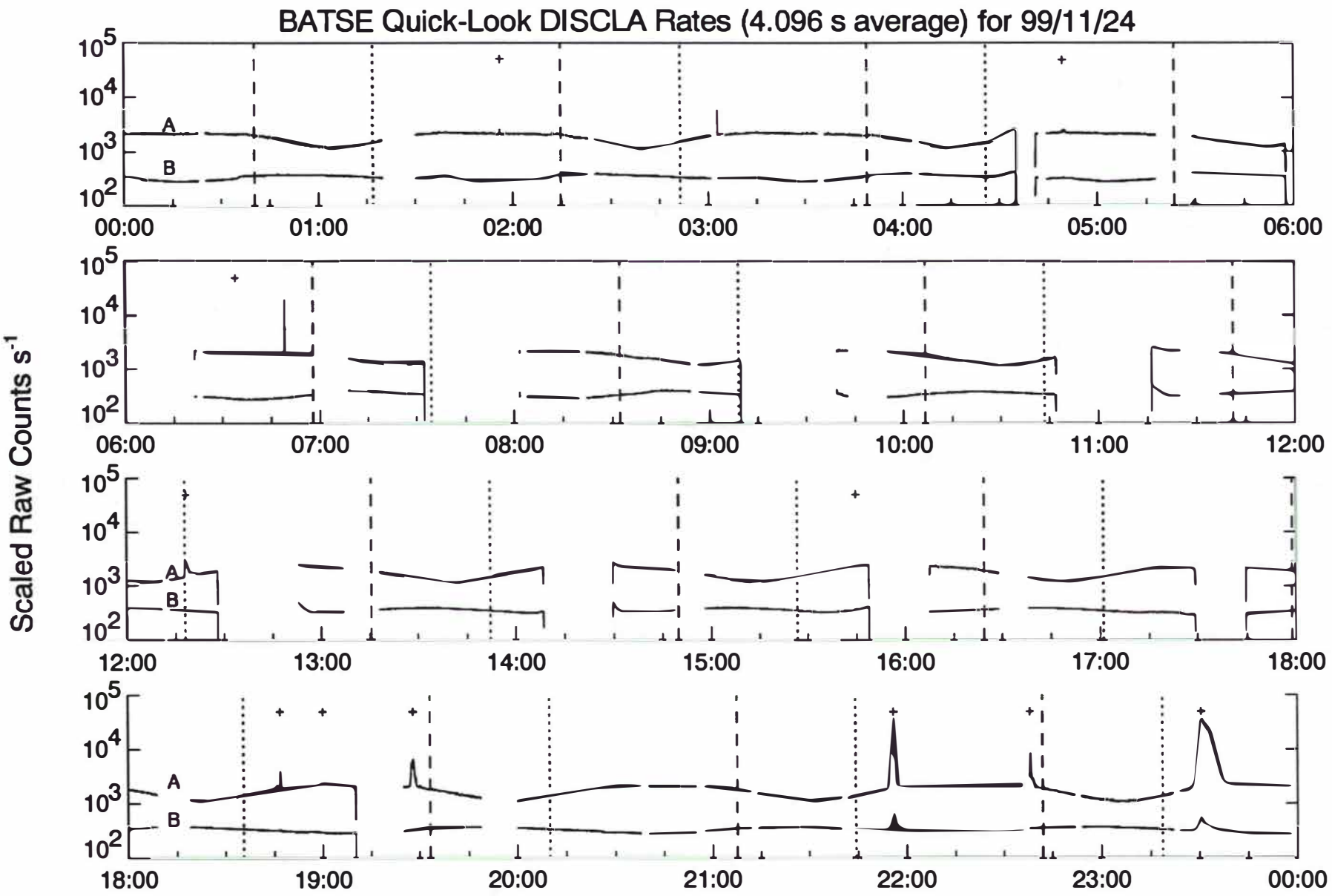
TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

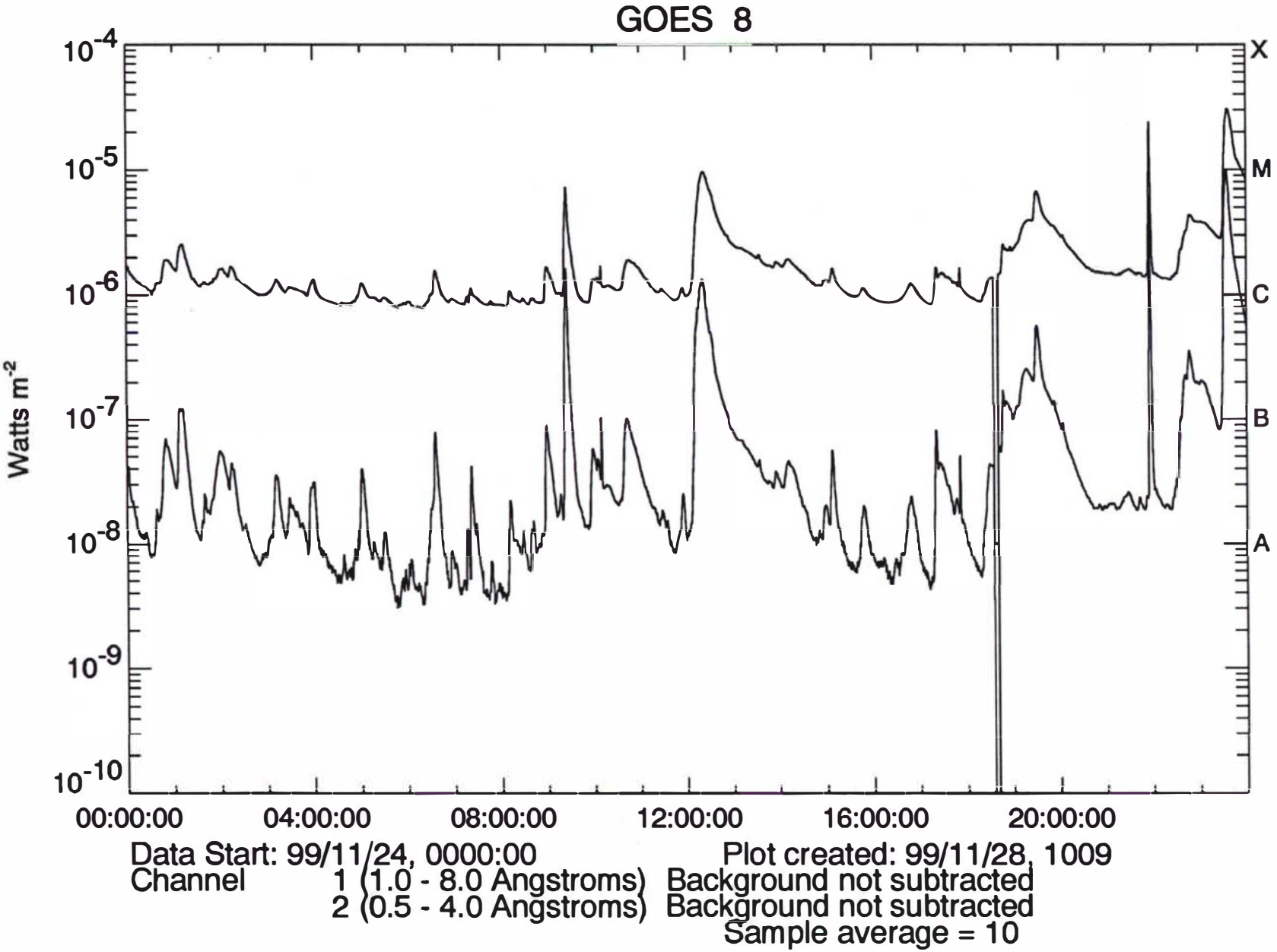
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

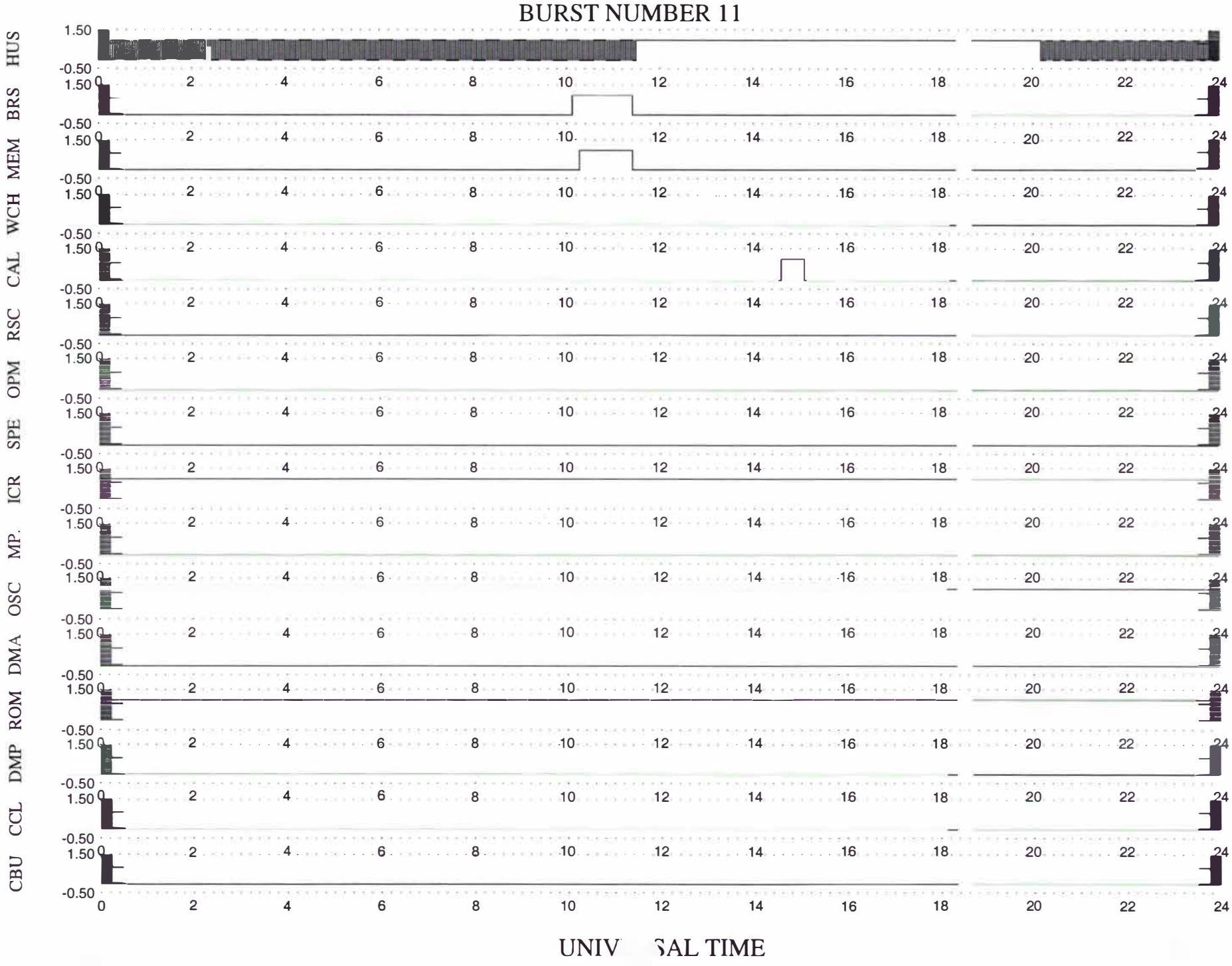
LOCATION: ZENITH=76.2 AZIMUTH=331.3 ERROR=0.4 DEGREES

COMMENTS:
SOLAR FLARE. GOES C4.3, NO OPTICAL ID. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 100 S, STARTS AT T-10 S, MAX. AT T+4 S. MARGINALLY VISIBLE ABOVE 100 KEV.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/28, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

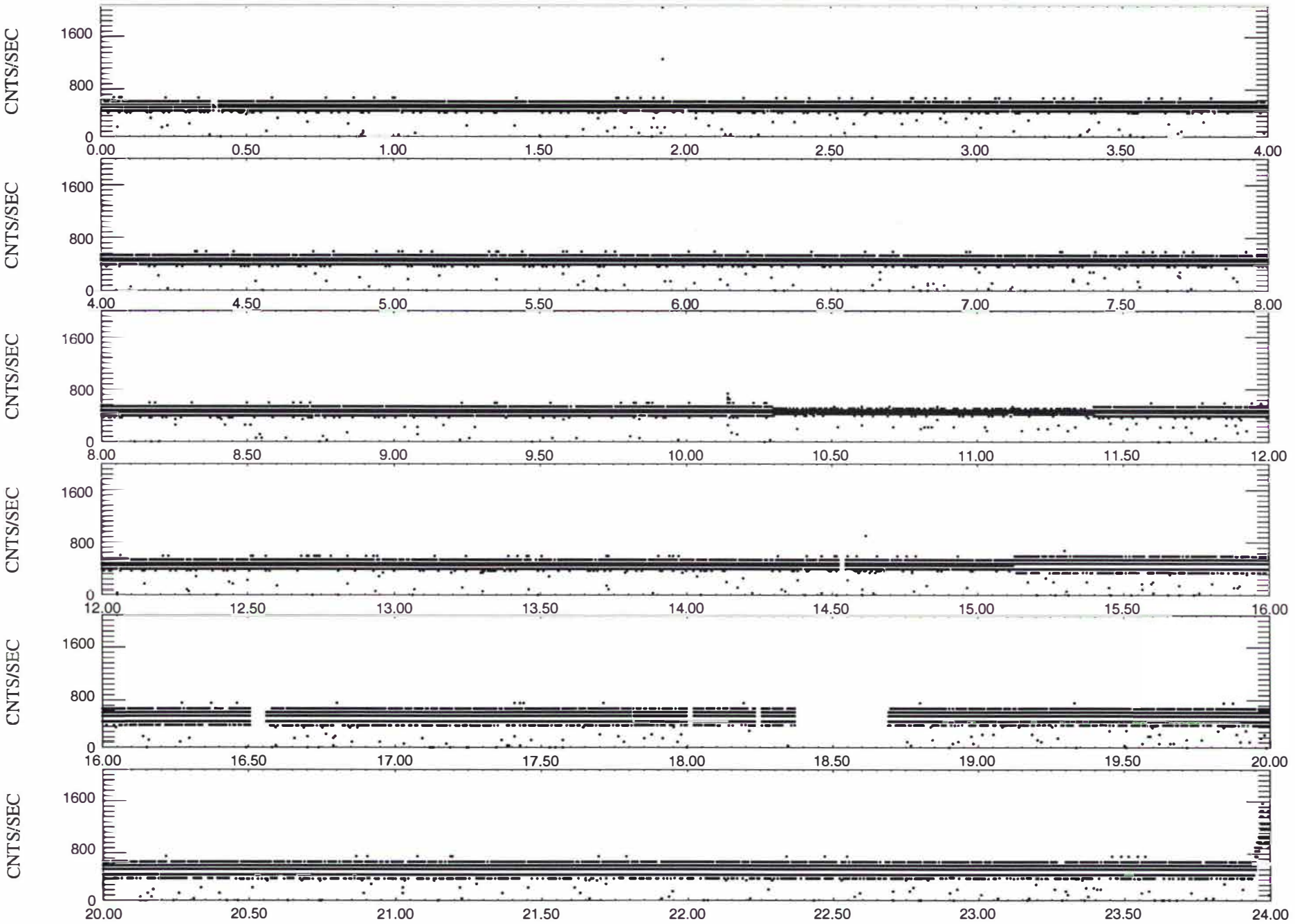

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
10-10
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/24, 0000:00
Plot created: 99/11/28, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 328, year 1999 to day 328, year 1999 03/21/00



HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 24/11/1999 DOY = 328 03/21/00

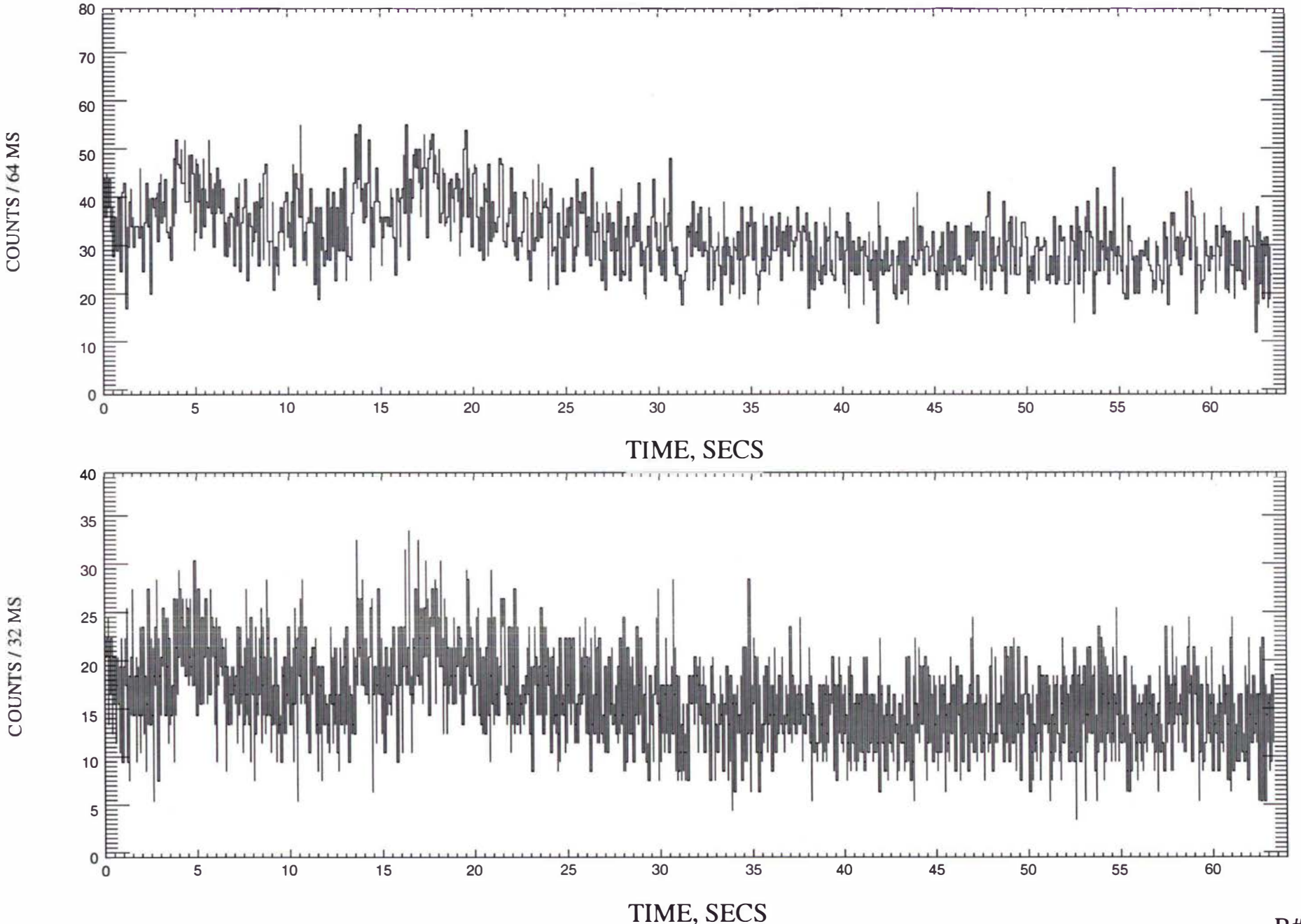
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 24/11/1999 DOY = 328 03/21/00

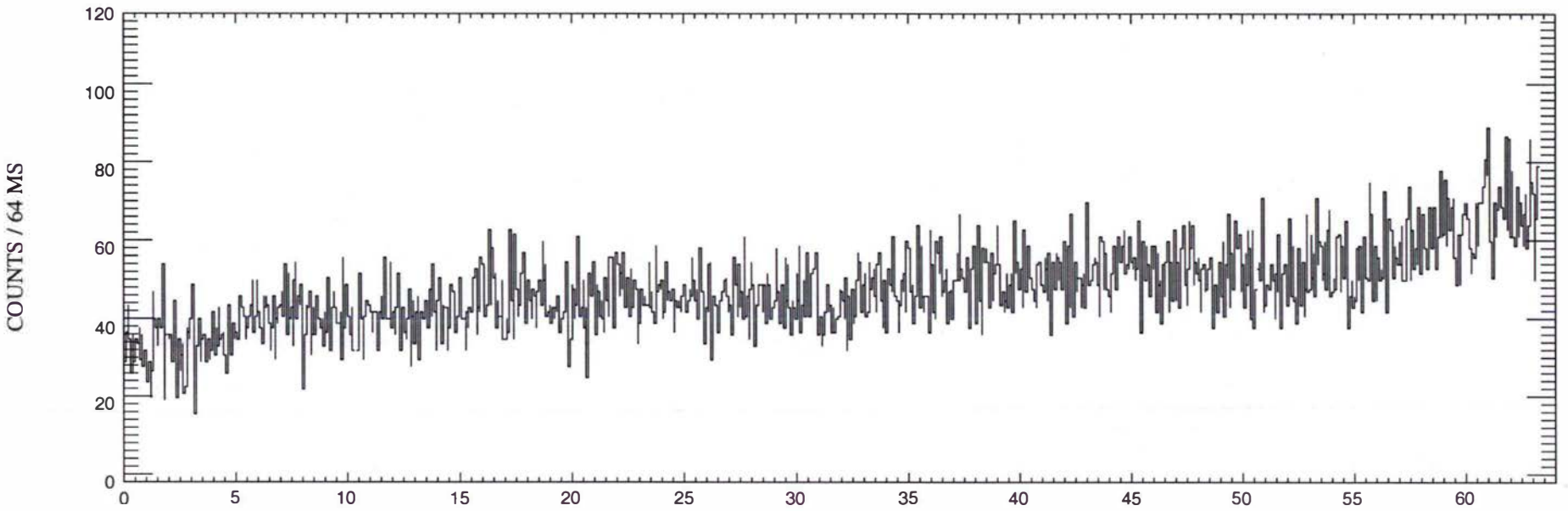
Burst Counter 11 at UT=10.138819732666 h=36499.751 s 10:08:19.751

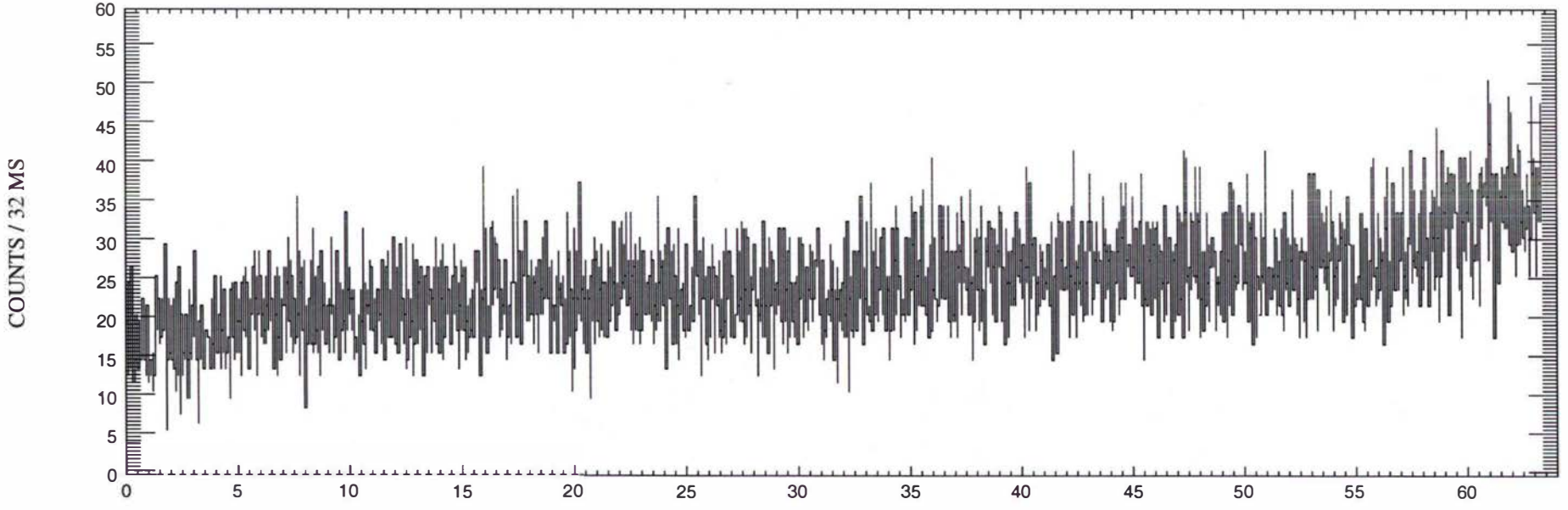


B# 1

HUS 2A TRIGGERED DATA EDR DMY = 24/11/1999 DOY = 328 03/21/00

Burst Counter 12 at UT=23.948703219096 h=86215.332 s 23:56:55.332

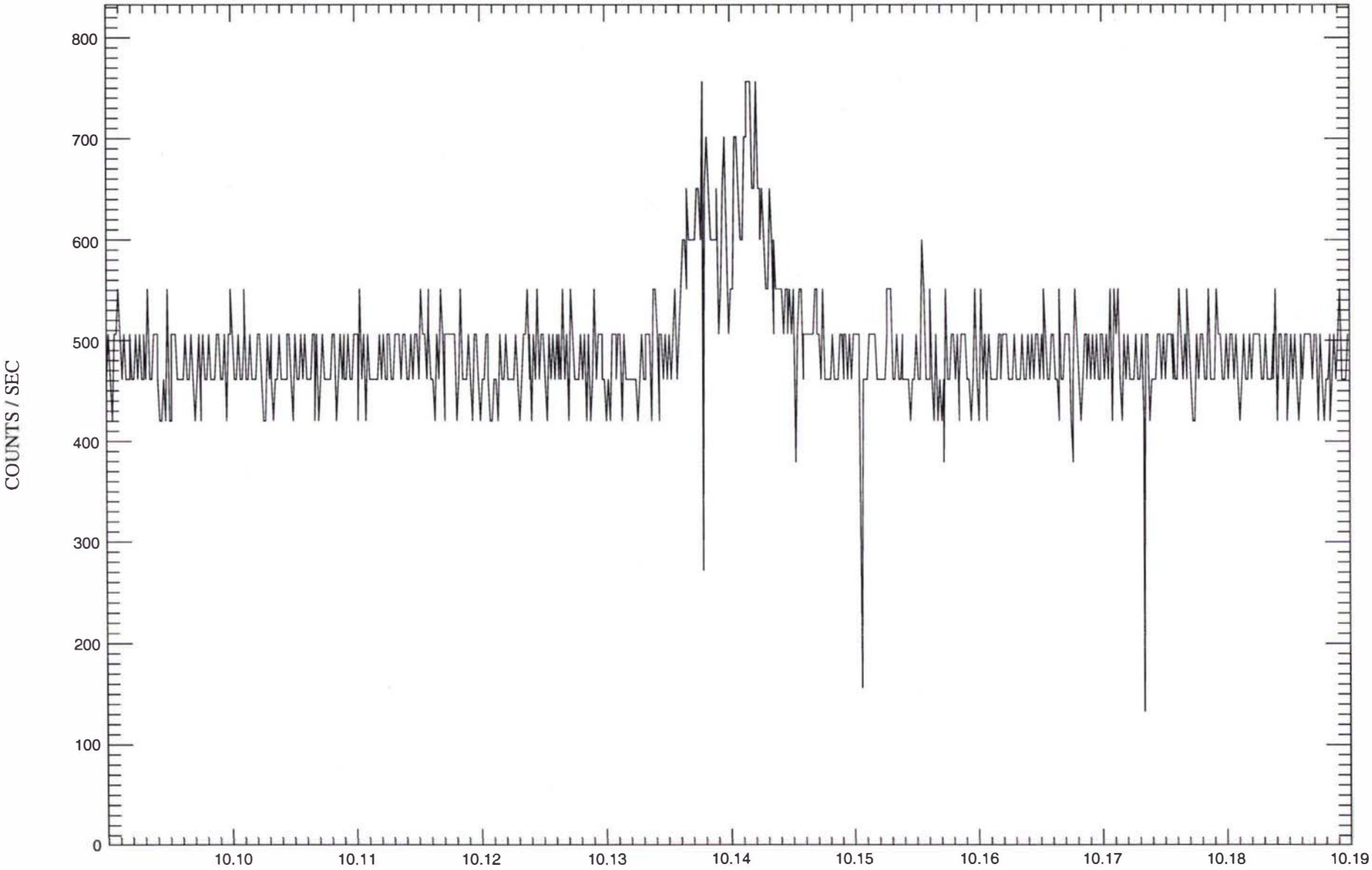




B# 2

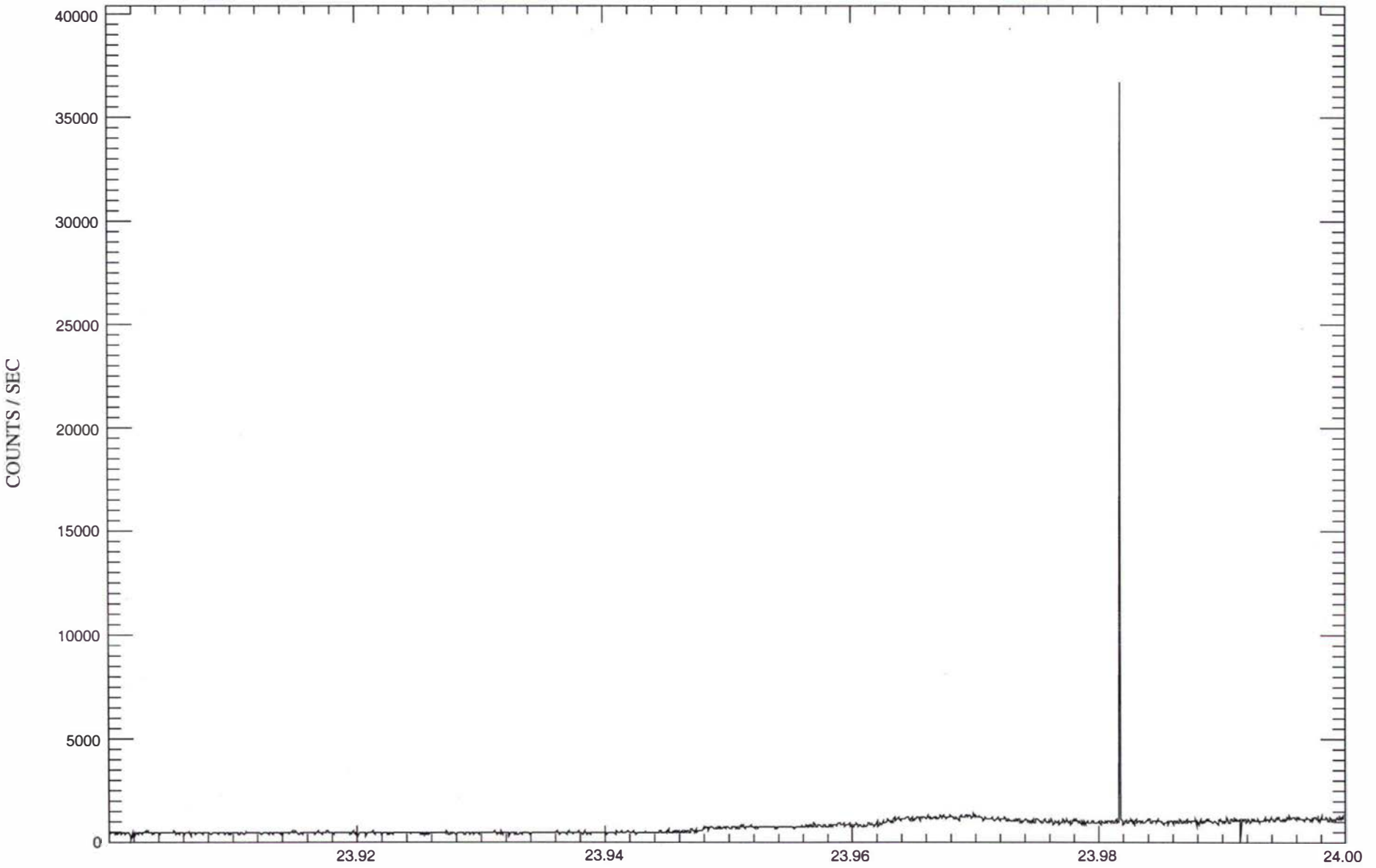
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 24/11/1999 DOY = 328 03/21/00

CALIBRATION DATA INCLUDED

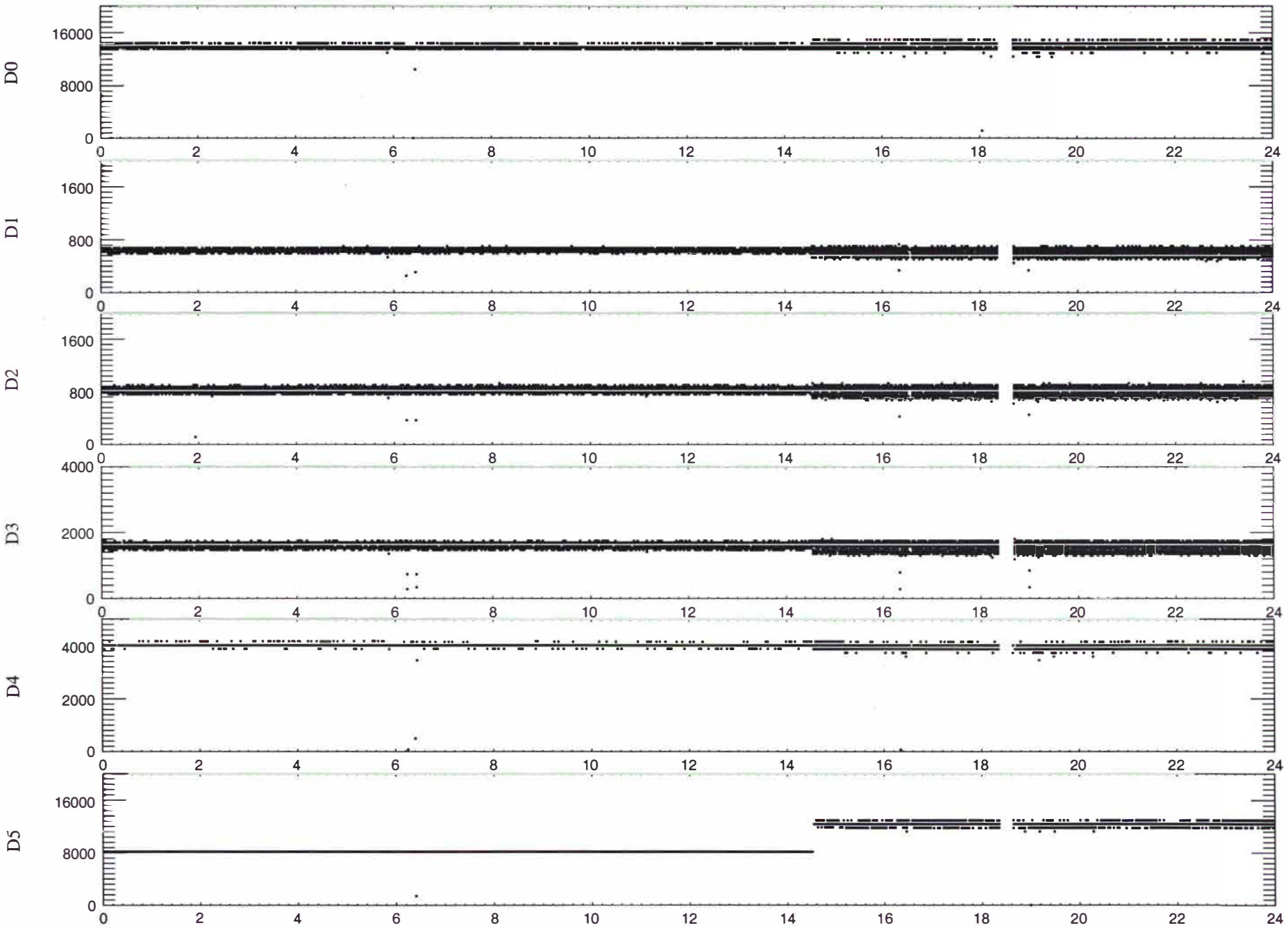


HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 24/11/1999 DOY = 328 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 328, year 1999 to day 328, year 1999 03/21/00



From HENZE@fender.msfc.nasa.gov Wed Dec 1 12:22 PST 1999
Date: Wed, 1 Dec 1999 14:30:53 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7880

TIME: TJD=1507 SECONDS= 9880

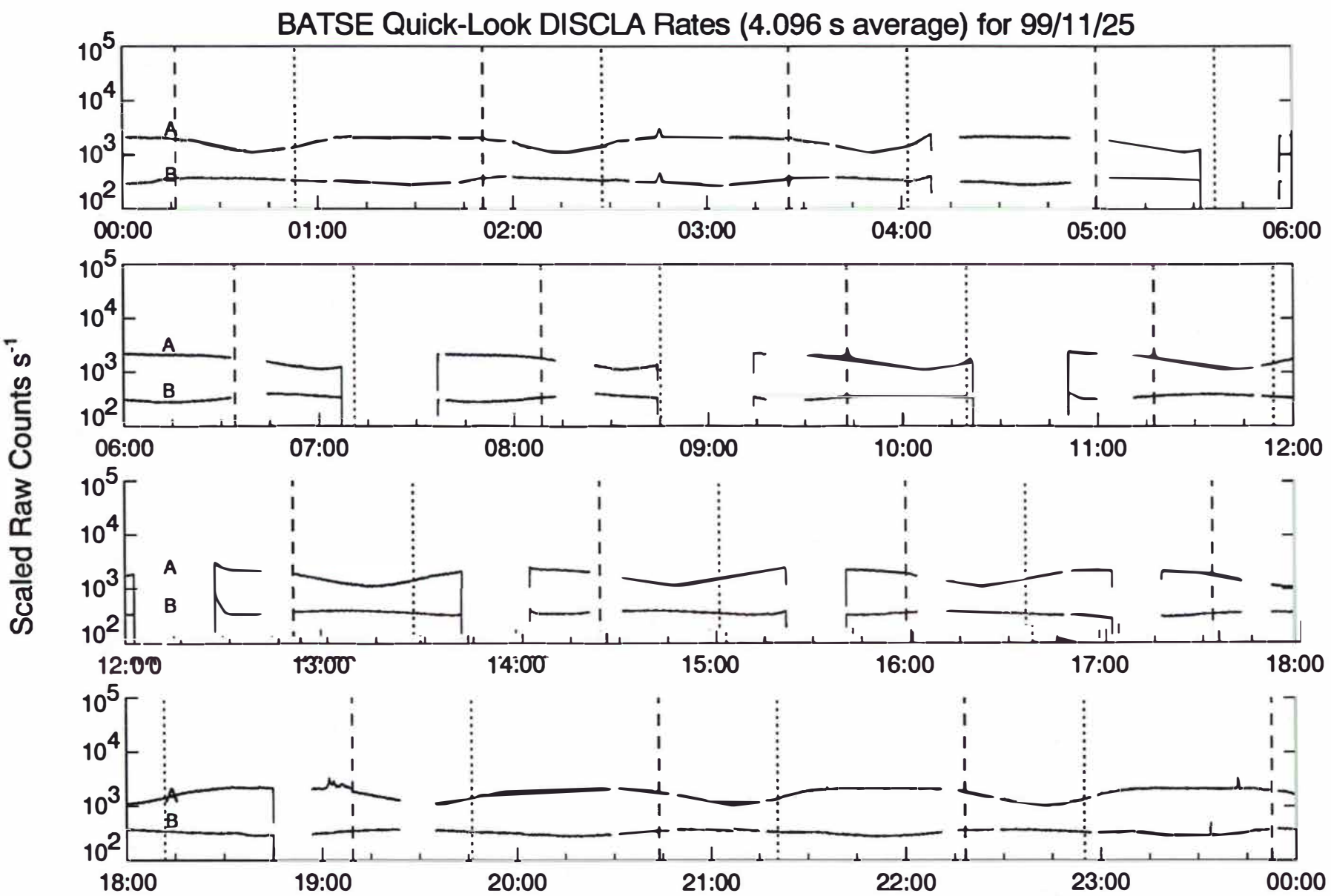
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

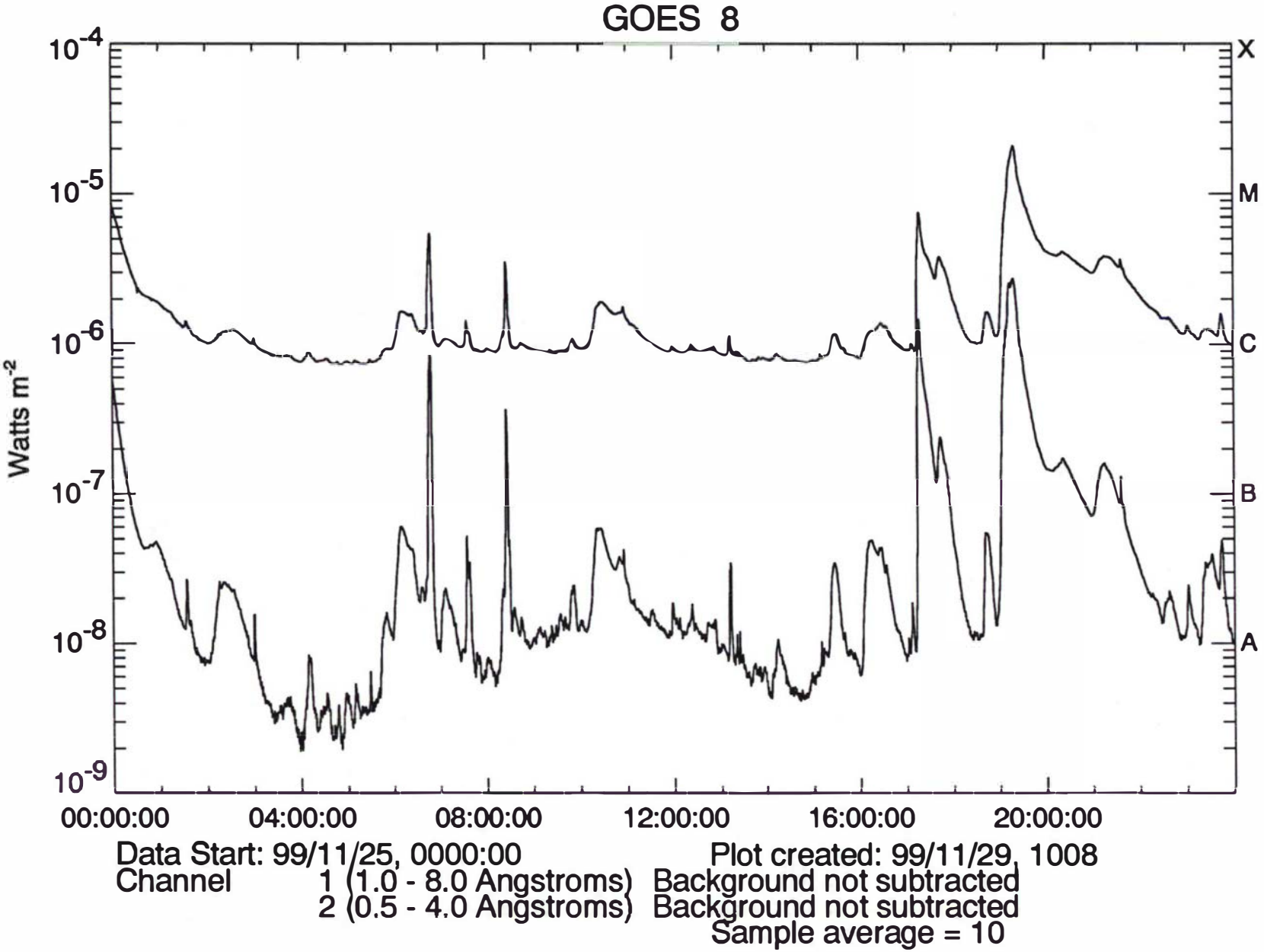
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

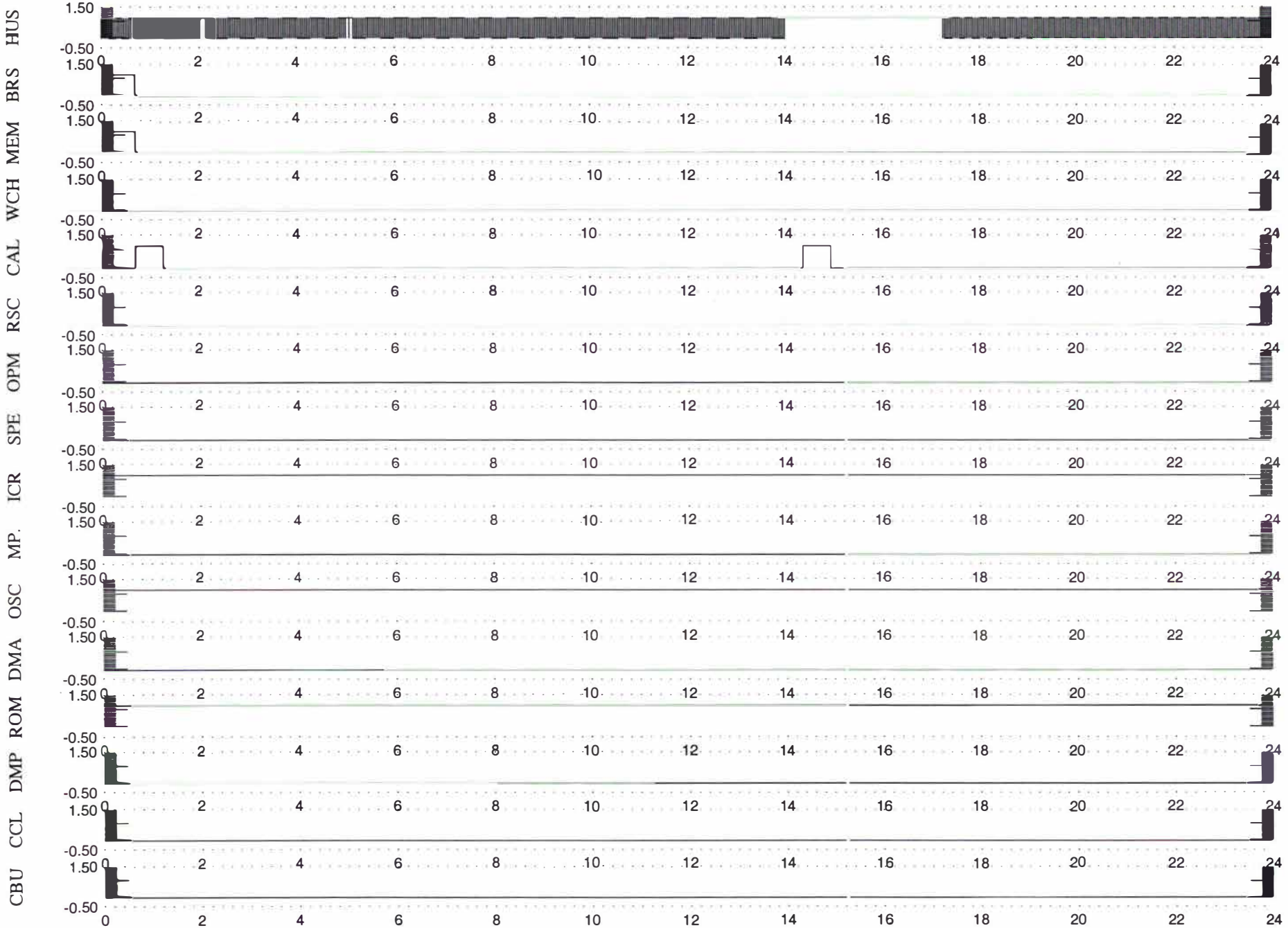
COMMENTS:
PARTICLE EVENT, WEST OF AUSTRALIA.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/25
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/29, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
Watts m^{-2}
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/25, 0000:00
Plot created: 99/11/29, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 329, year 1999 to day 329, year 1999 03/21/00

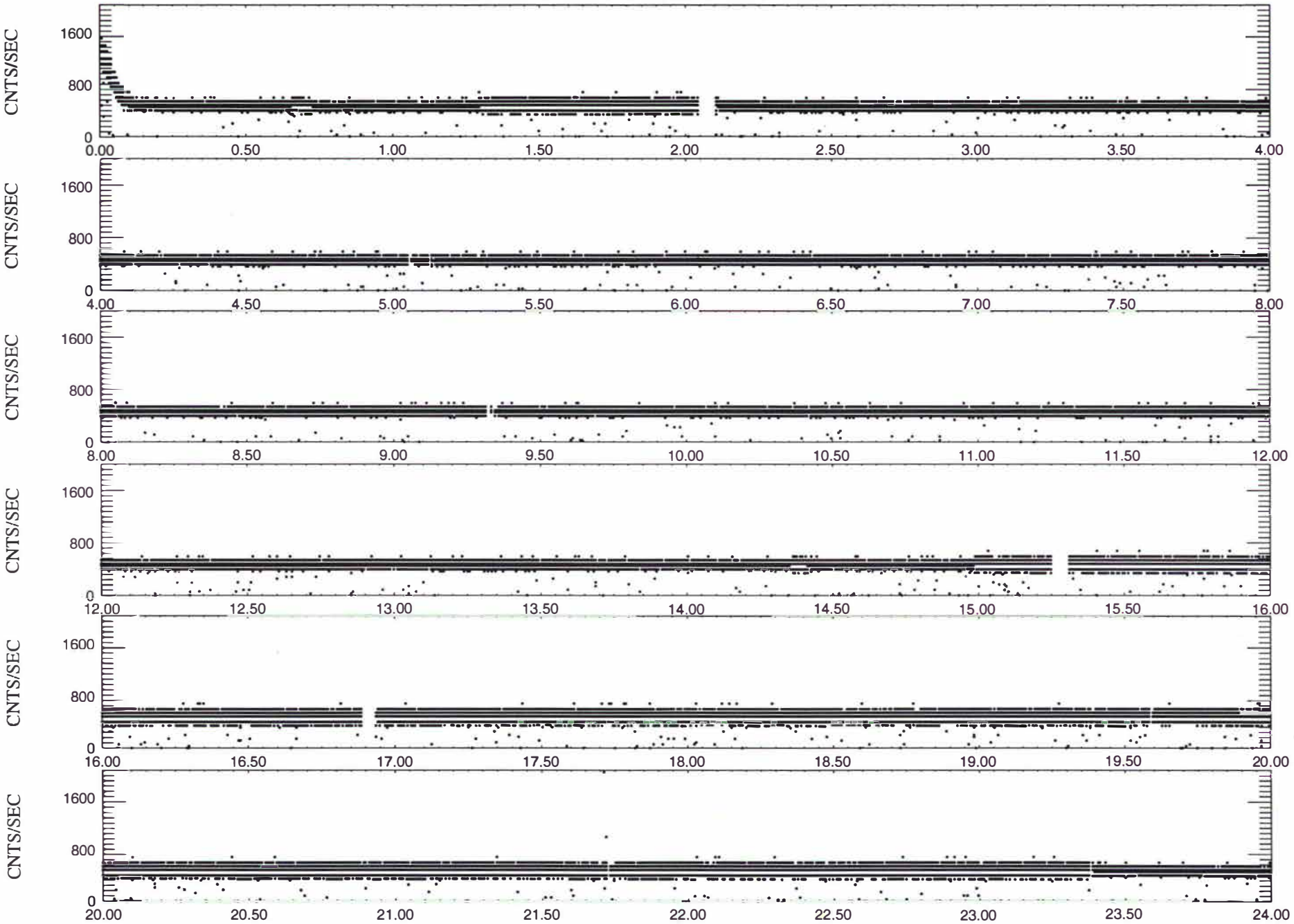
BURST NUMBER 12



UNIV SAL TIME

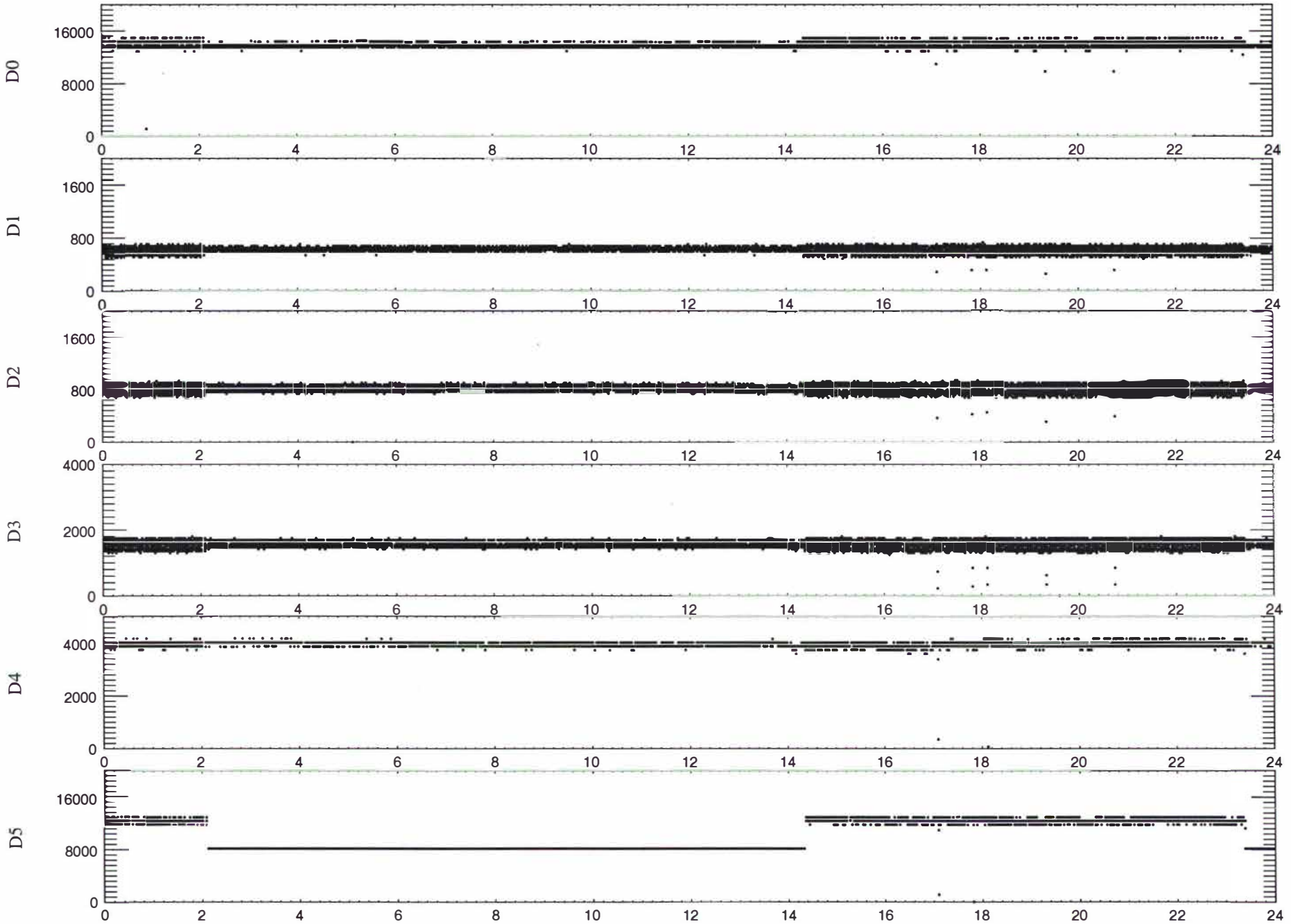
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 25/11/1999 DOY = 329 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 329, year 1999 to day 329, year 1999 03/21/00



From PETERSON@fender.msfc.nasa.gov Wed Dec 8 07:14 PST 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 8 Dec 1999 9:19:32 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7881

TIME: TJD=1508 SECONDS= 4754 1:19:14

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

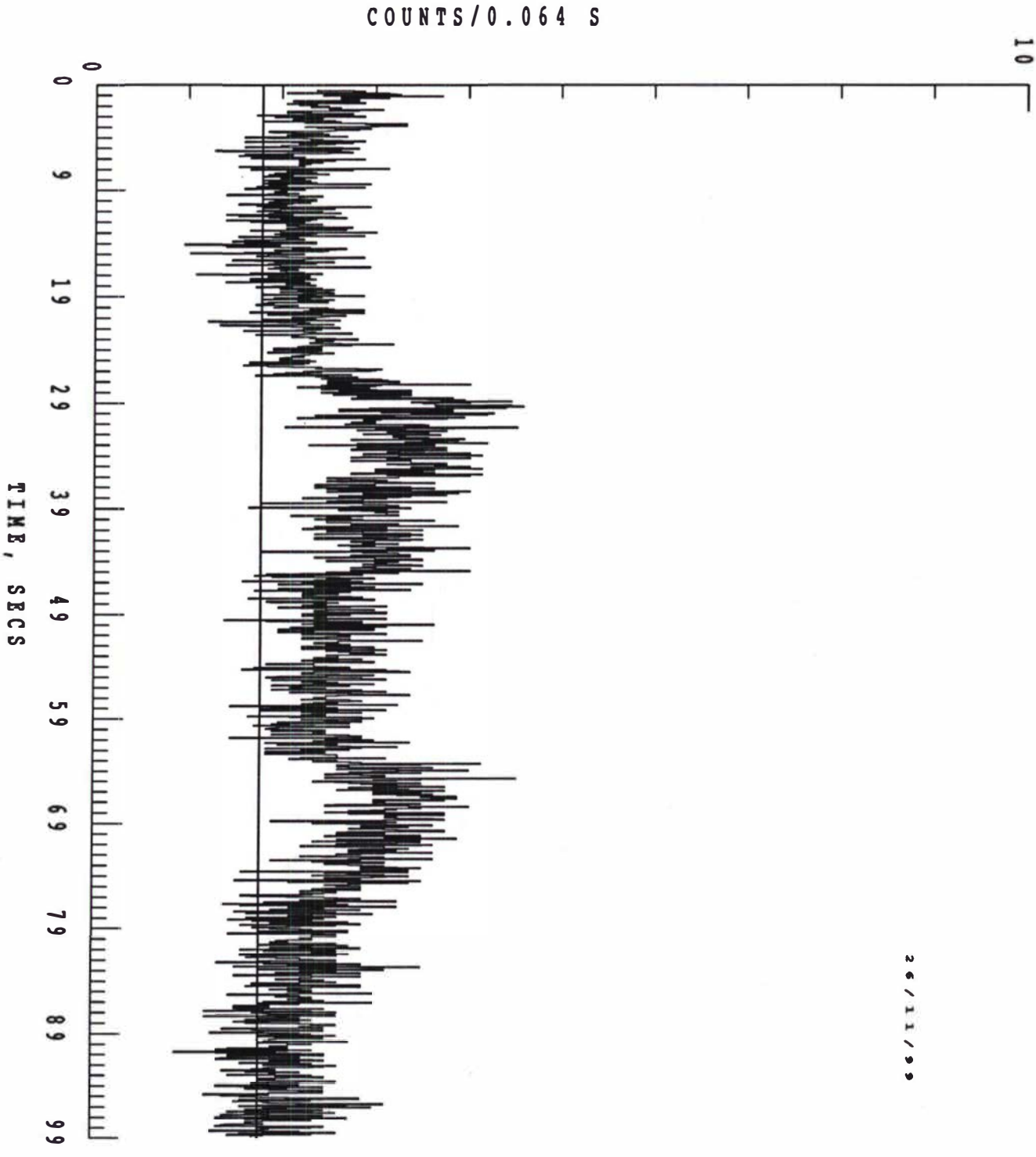
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=79.9 AZIMUTH=332.1 ERROR=0.054 DEGREES

COMMENTS:
GOSE M5.7, OPTICAL 3B. SINGLE PULSE WITH SPIKEY SUBSTRUCTURE. DUR APPROX 550S, STARTS AT APPROX T-80, MAX AT APPROX T+43S. NOT VISIBLE ABOVE 100KEV.

KONUS 26/11/99 4768.241

50- 200 keV Solar. BATSE 7581



KONUS2 19991126 04768

ULYSSES RT 29/11/99

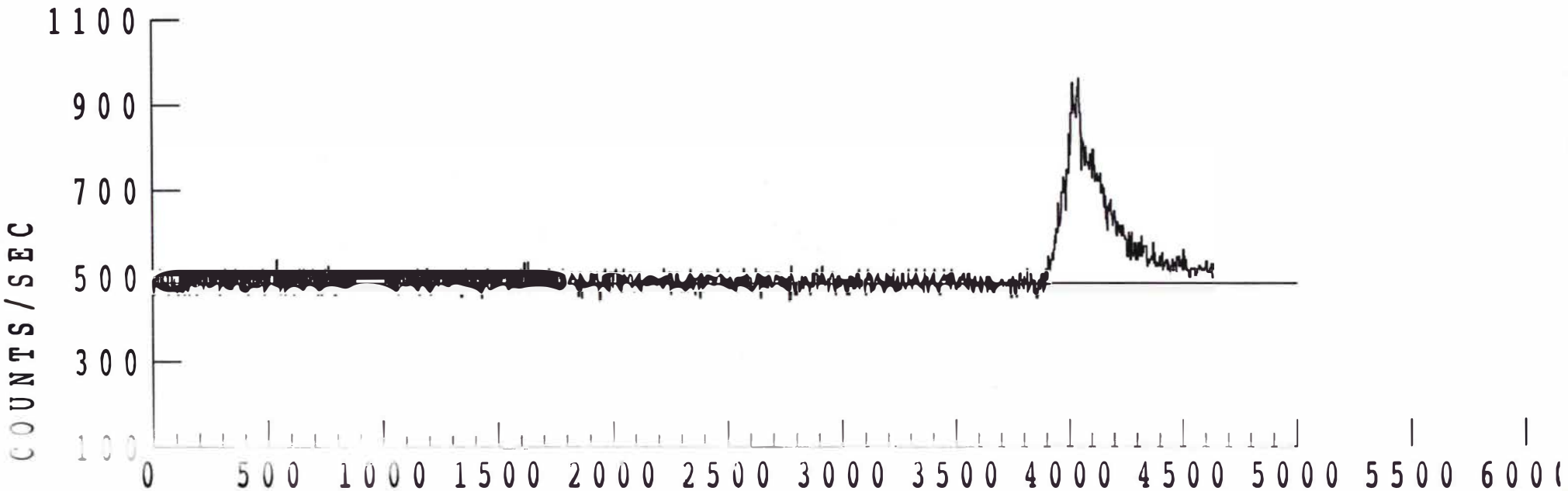
26/11/99 2448.244 s

INTERVALS REGROUPED BY 6

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 Dec 8 07:14 PST 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 8 Dec 1999 9:14:16 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7882

TIME: TJD=1508 SECONDS=13960

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=76.5 AZIMUTH=332.2 ERROR=0.846 DEGREES

COMMENTS:
GOES M1.9, OPTICAL 2B. COMPLEX, DUR GREATER THAN 500S, MAX AT APPROX T+150S.
NOT VISIBLE ABOVE 100KEV.

From PETERSON@fender.msfc.nasa.gov Wed Dec 8 07:07 PST 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 8 Dec 1999 9:10:17 -0600 (CST)
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, s-matz@nwu.edu
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7883

TIME: TJD=1508 SECONDS=49270 13:41:10

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

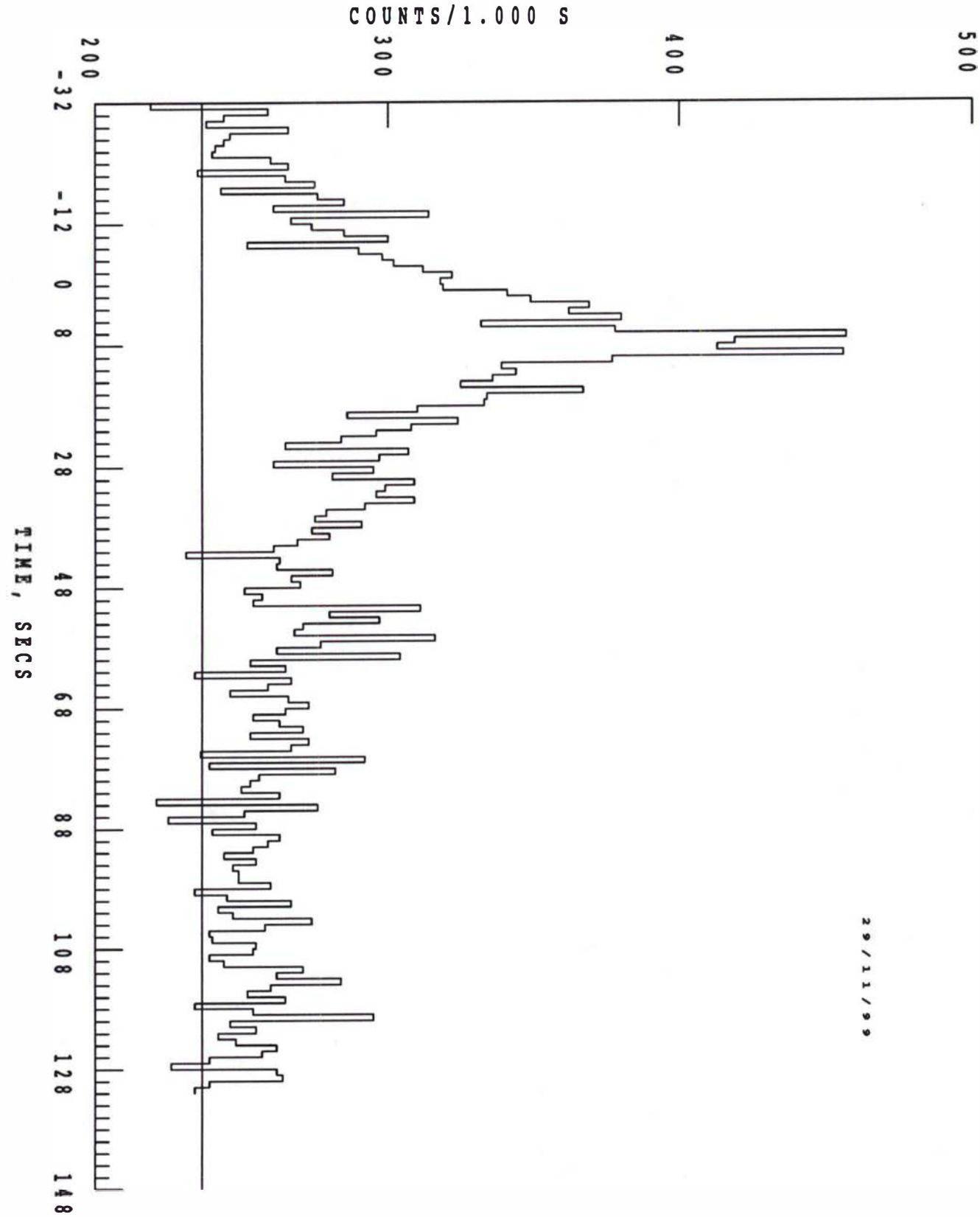
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=74.4 AZIMUTH=332 ERROR=0.41 DEGREES

COMMENTS:
GOES M6.0, OPTICAL 2N. SINGLE PULSE WITH SUBSTRUCTURE. DUR APPROX 750S, STARTS AT APPROX T-15S. VISIBLE ABOVE 300KEV, POSSIBLE DUE TO PULSE PILE-UP.

NEAR 26/11/99 49433.426

100-1000 keV Prob solar - BATSE 7883



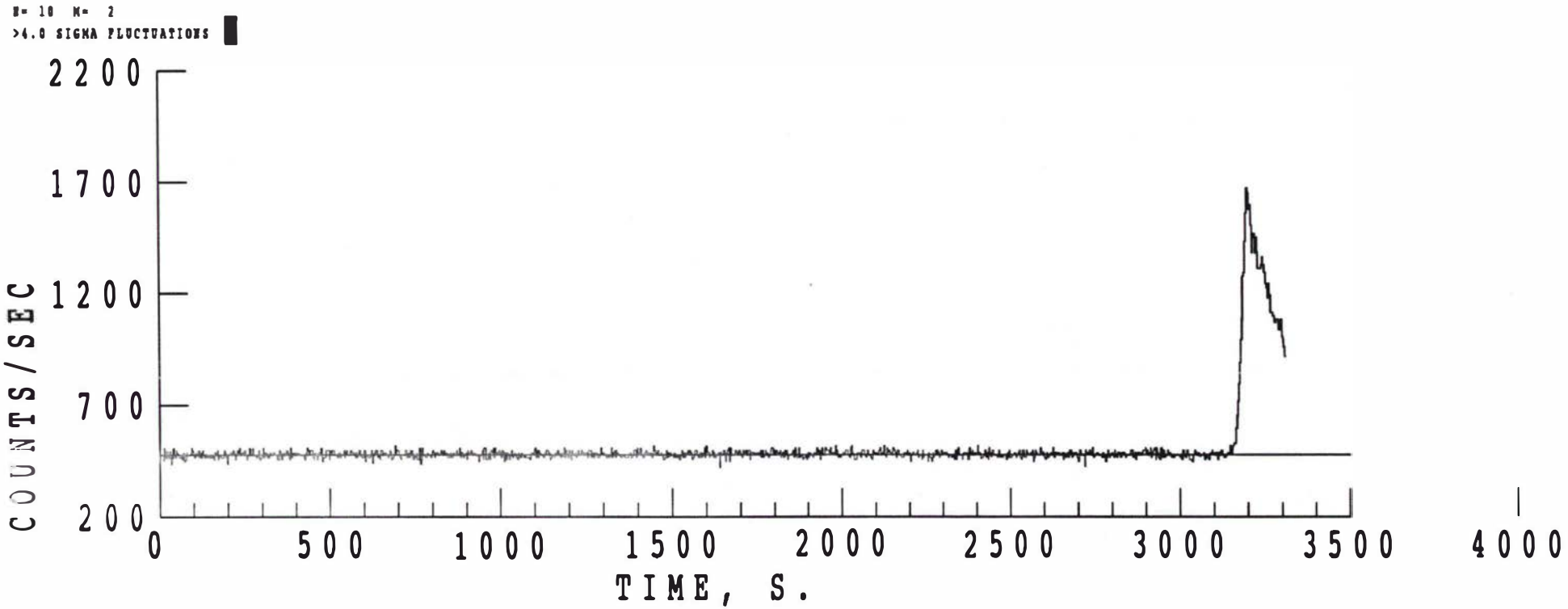
KNEAR GRS 19991126 49433

ULYSSES RT 29/11/99

26/11/99 47772.199 s

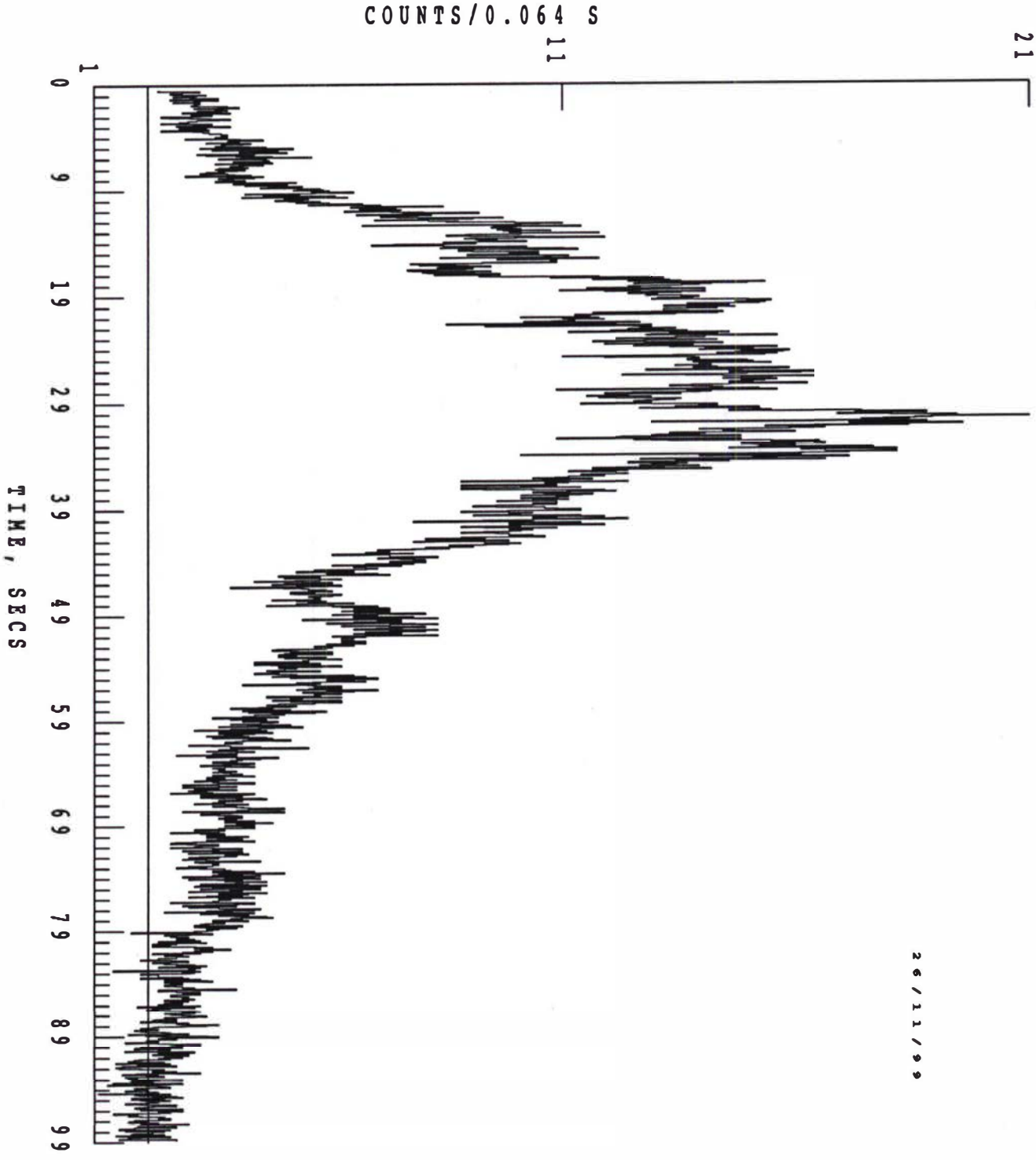
INTERVALS REGROUPED BY 3

0- 0 keV



KONUS 26/11/99 49285.079

50- 200 keV



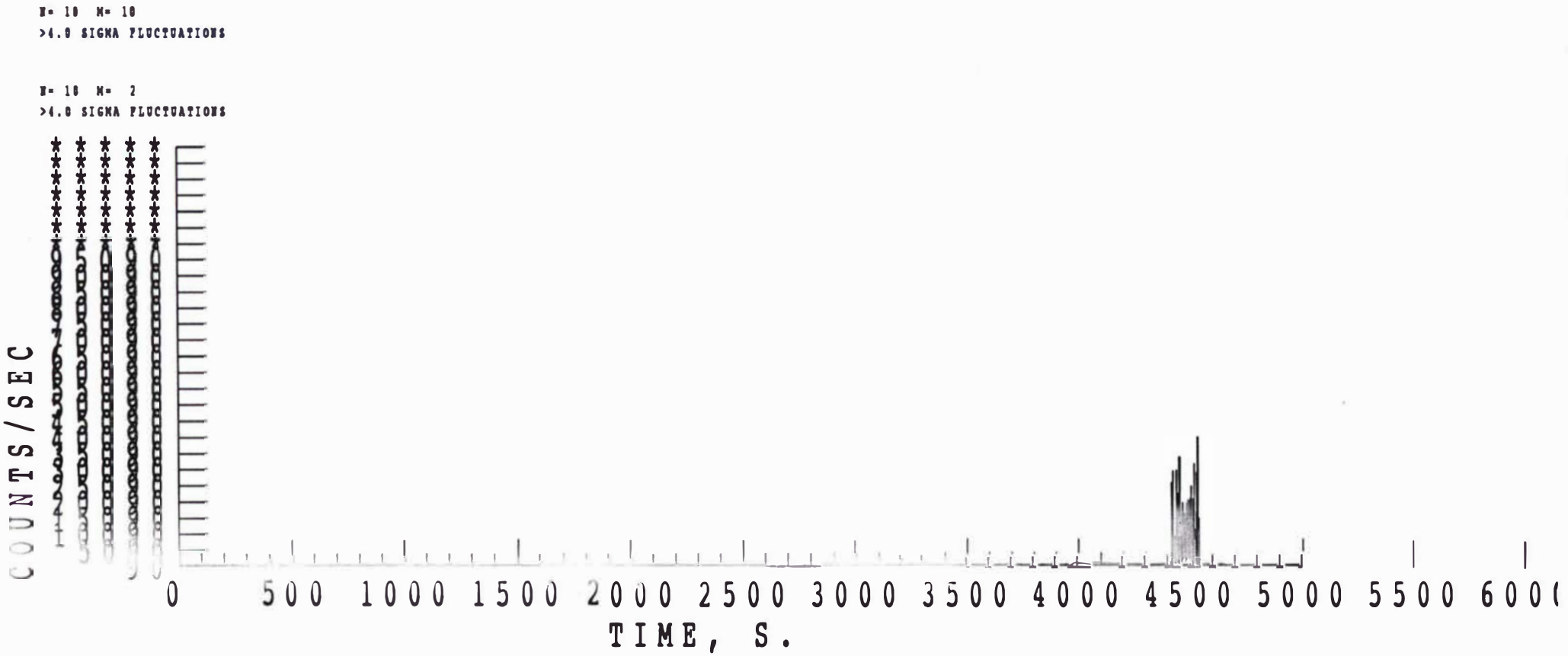
KONUS2 19991126 49285

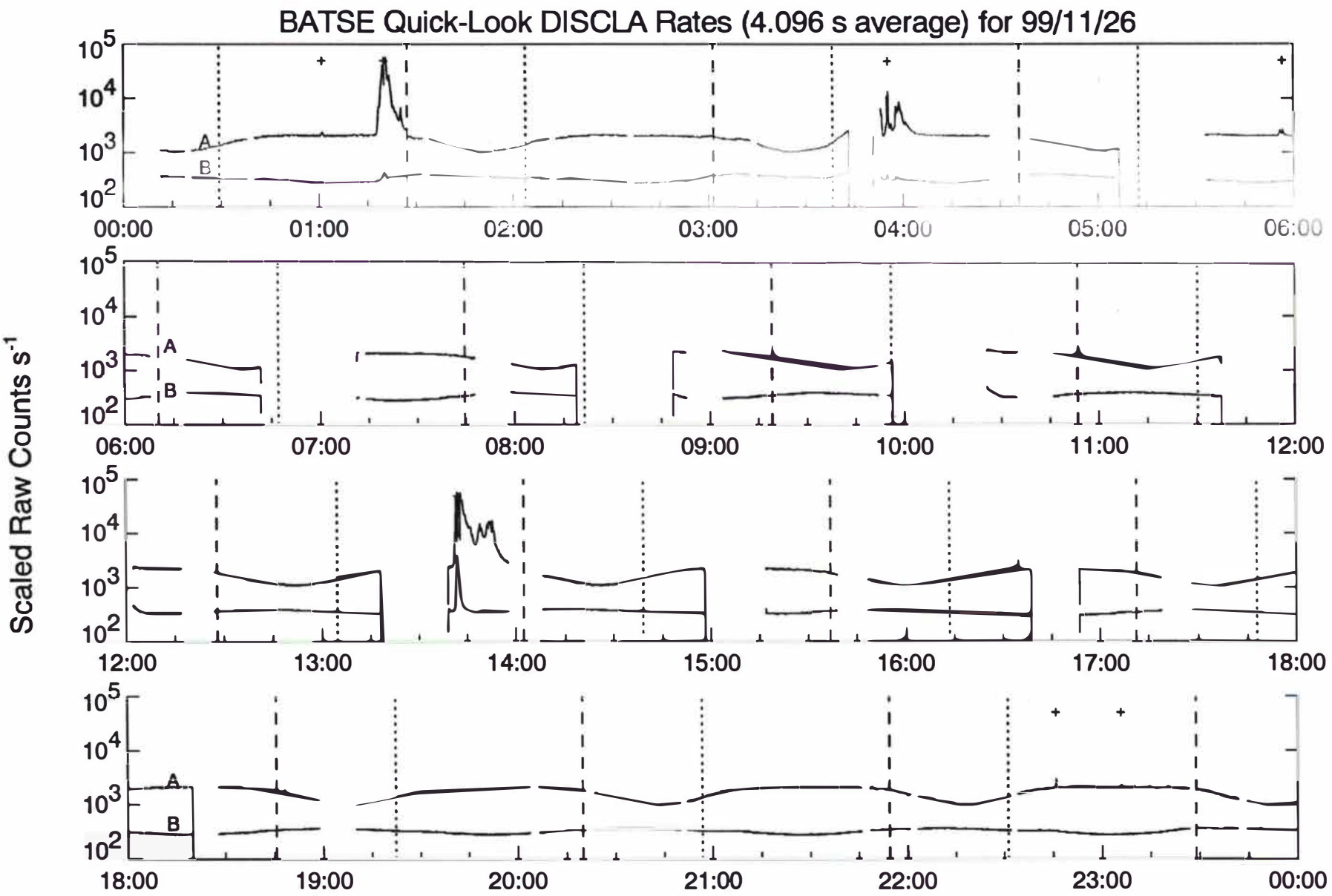
ULYSSES RT 29/11/99

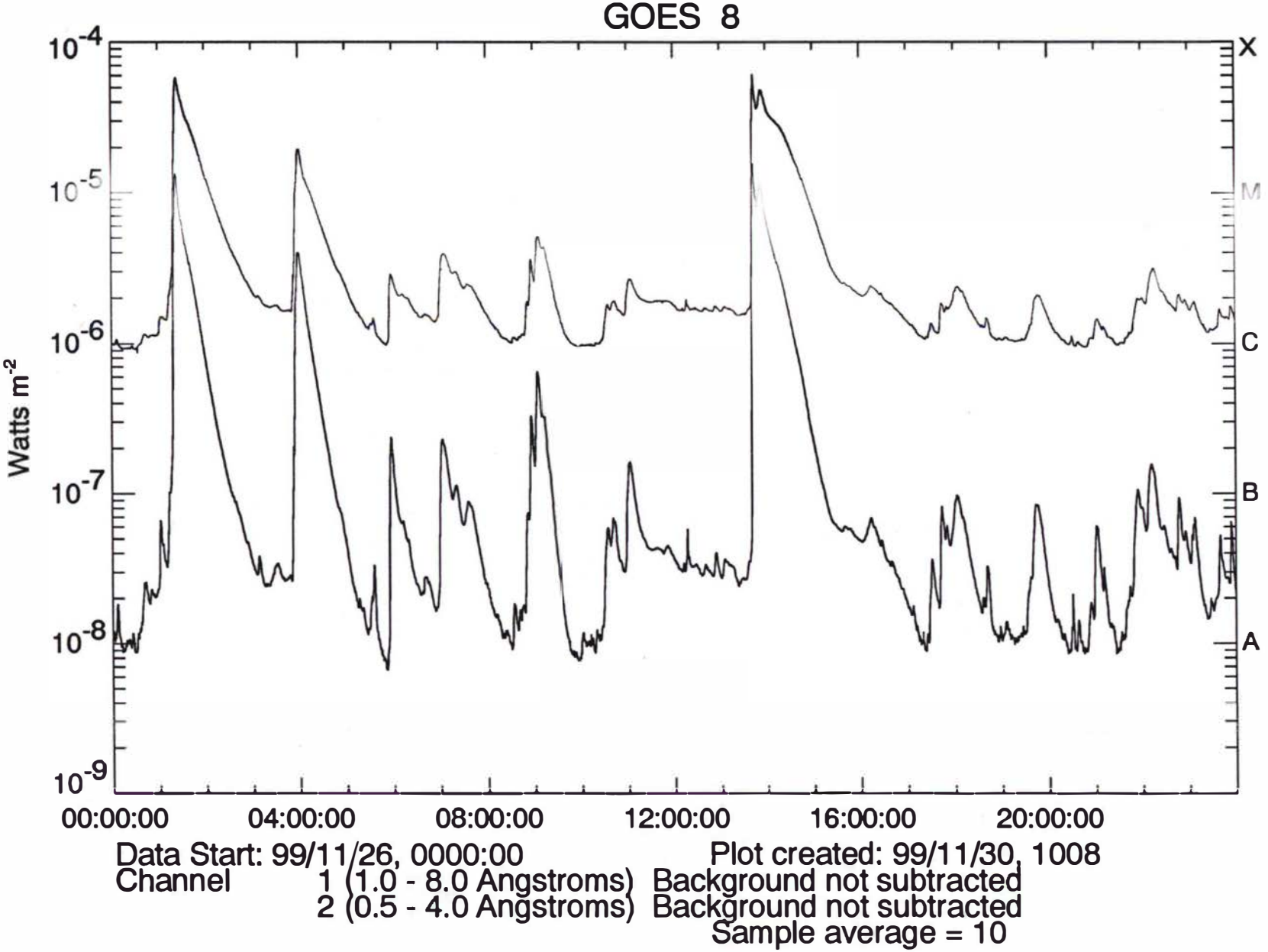
26/11/99 46980.195 s

INTERVALS REGROUPED BY 5

0- 0 keV

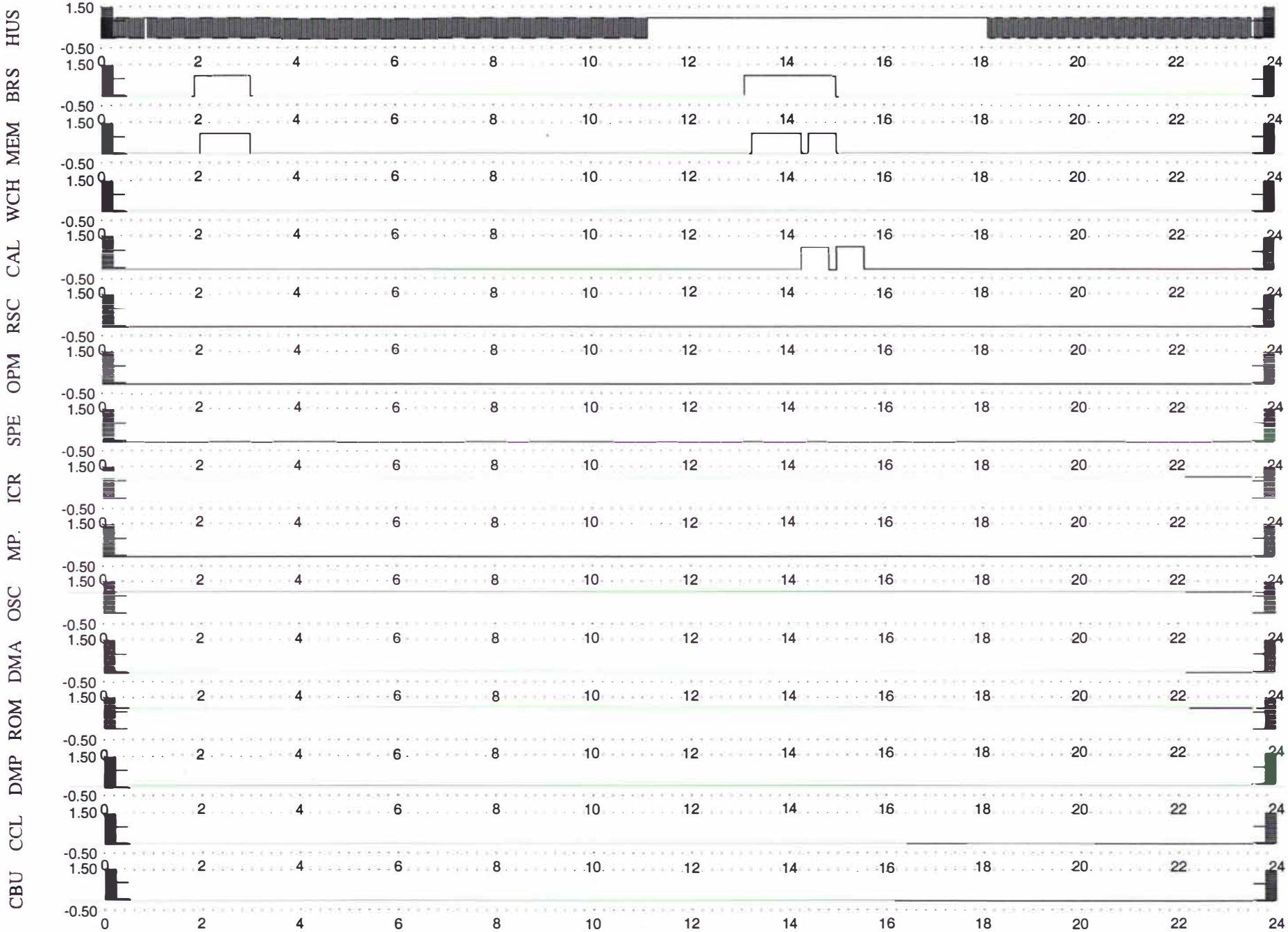



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/26
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/11/30, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/26, 0000:00
Plot created: 99/11/30, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 330, year 1999 to day 330, year 1999 03/21/00

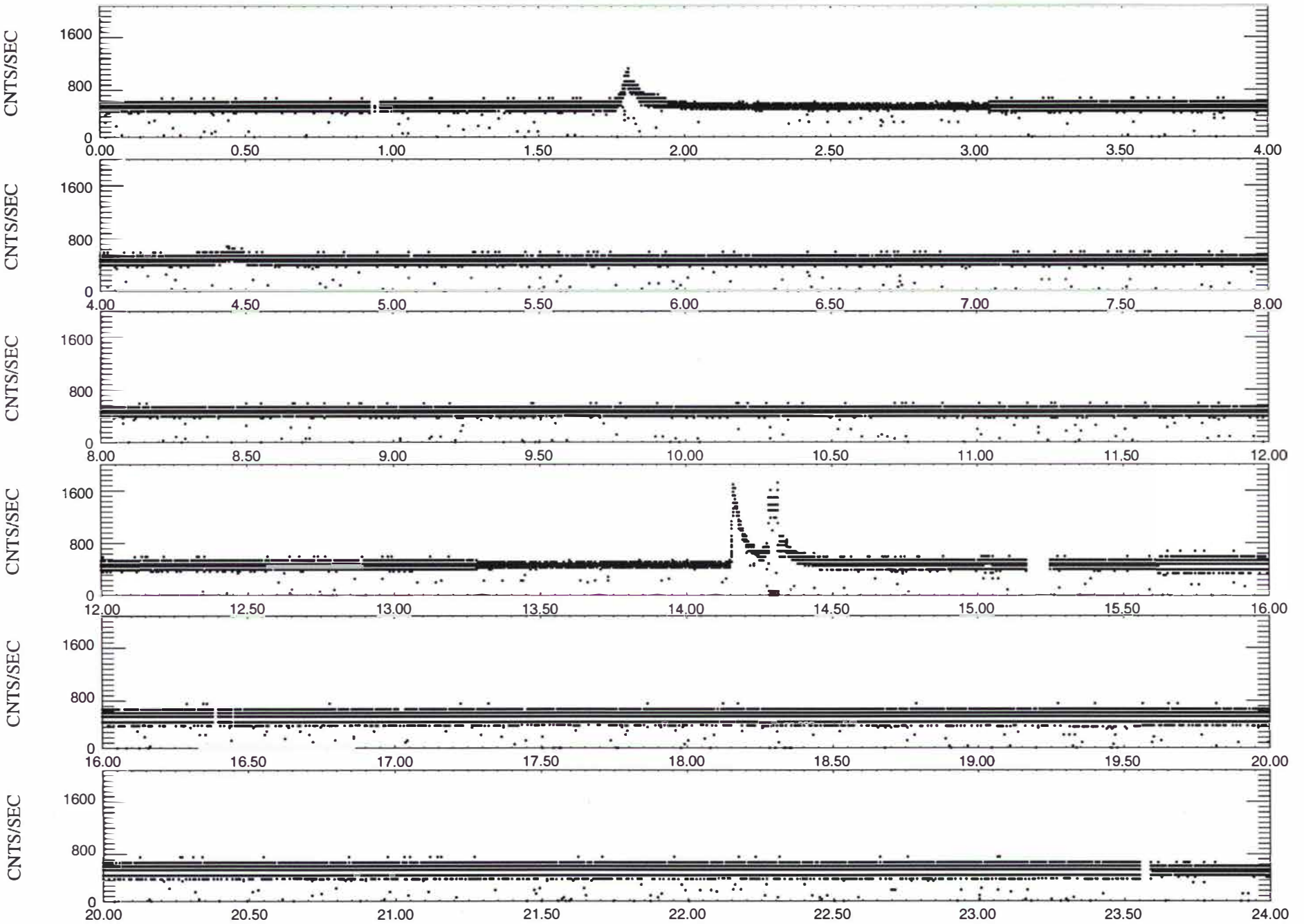
BURST NUMBER 13 - 15



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 26/11/1999 DOY = 330 03/21/00

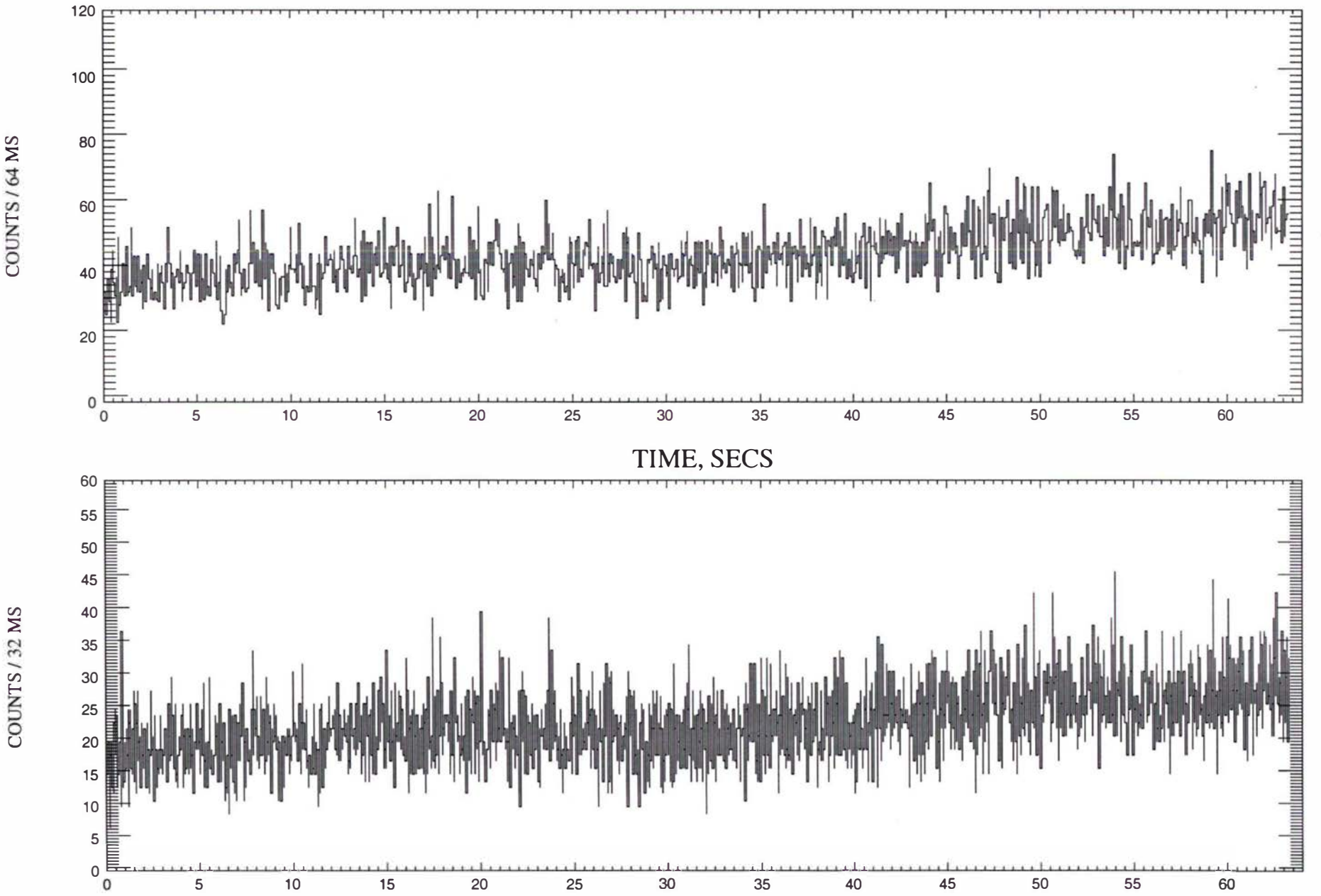
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 26/11/1999 DOY = 330 03/21/00

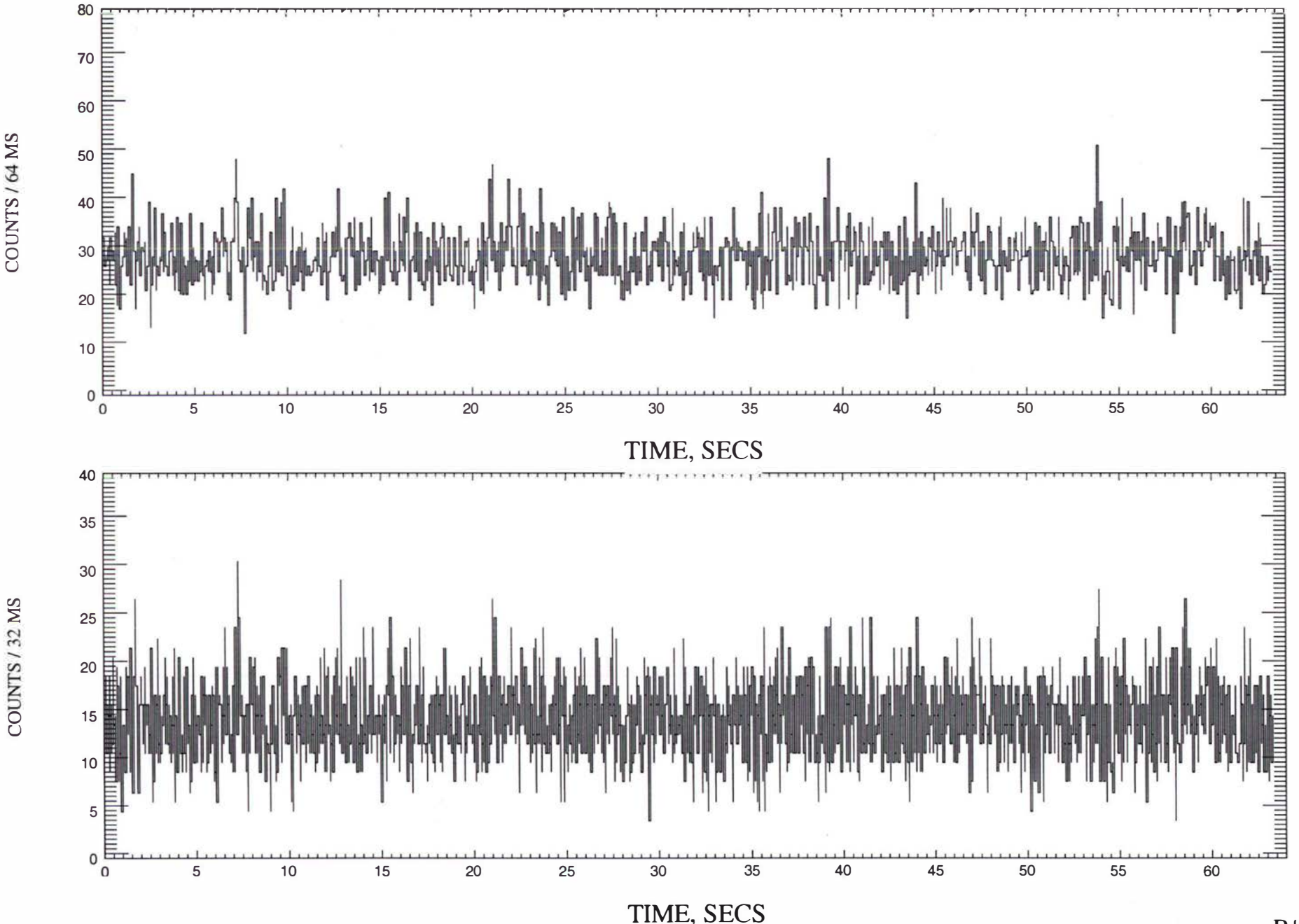
Burst Counter 13 at UT= 1.781775012546 h= 6414.390 s 01:46:54.390



B# 1

HUS 2A TRIGGERED DATA EDR DMY = 26/11/1999 DOY = 330 03/21/00

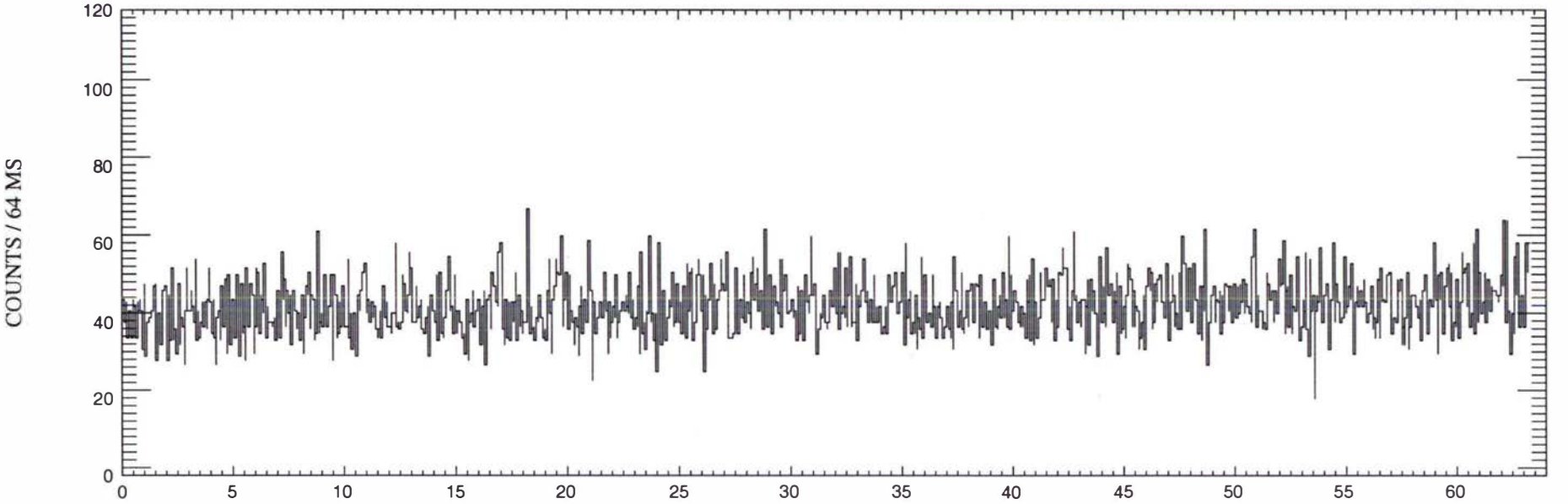
Burst Counter 14 at UT=13.123071700202 h=47243.058 s 13:07:23.058

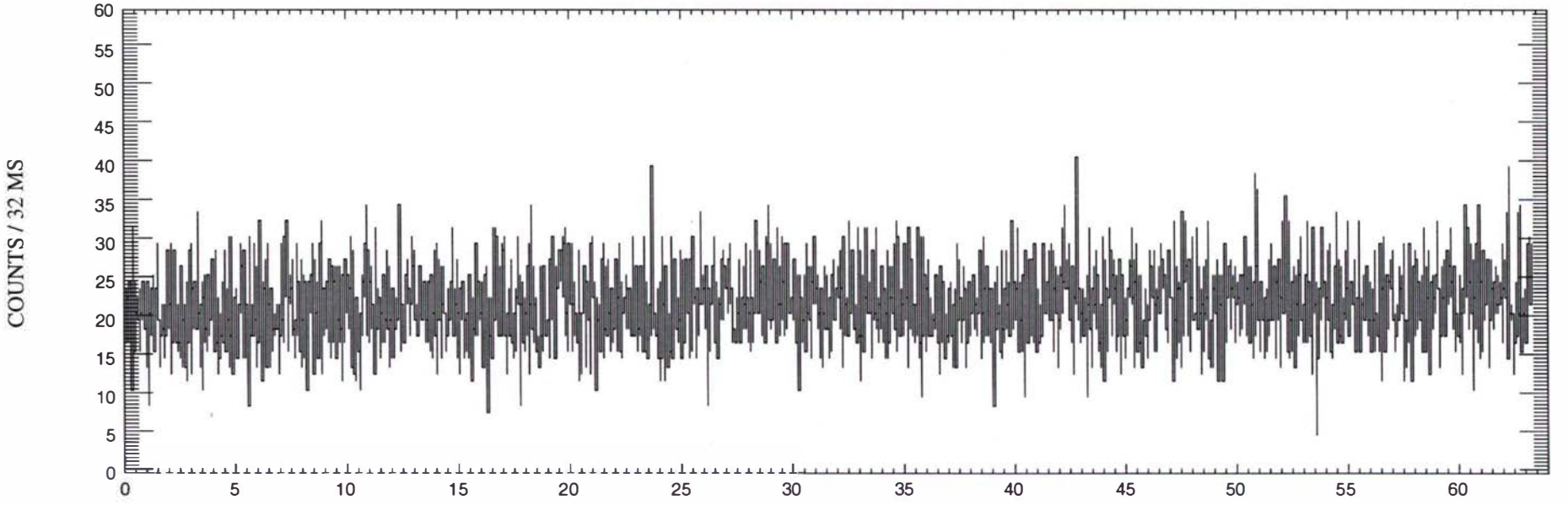


B# 2

HUS 2A TRIGGERED DATA EDR DMY = 26/11/1999 DOY = 330 03/21/00

Burst Counter 15 at UT=14.314995168050 h=51533.983 s 14:18:53.983

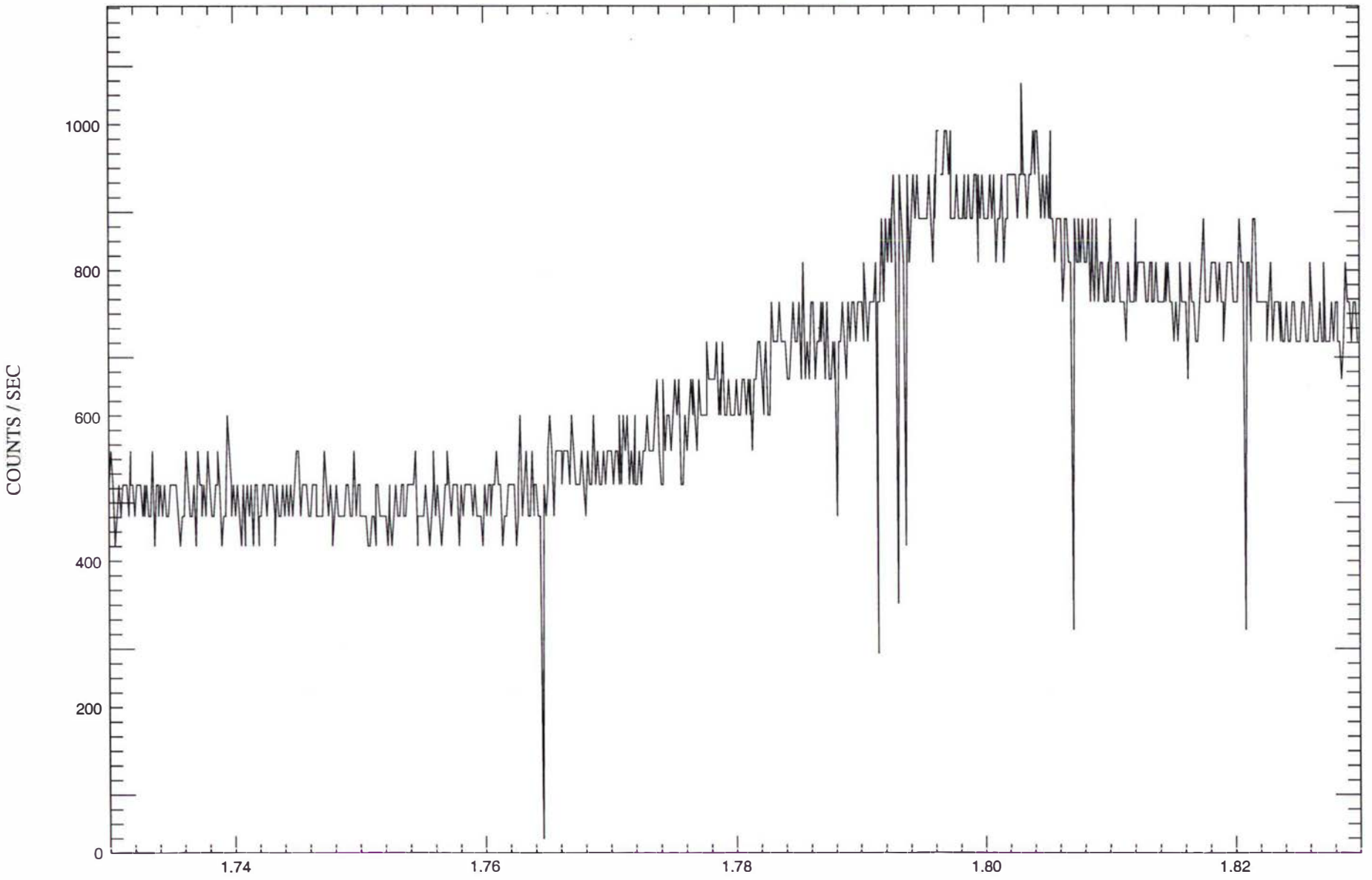




B# 3

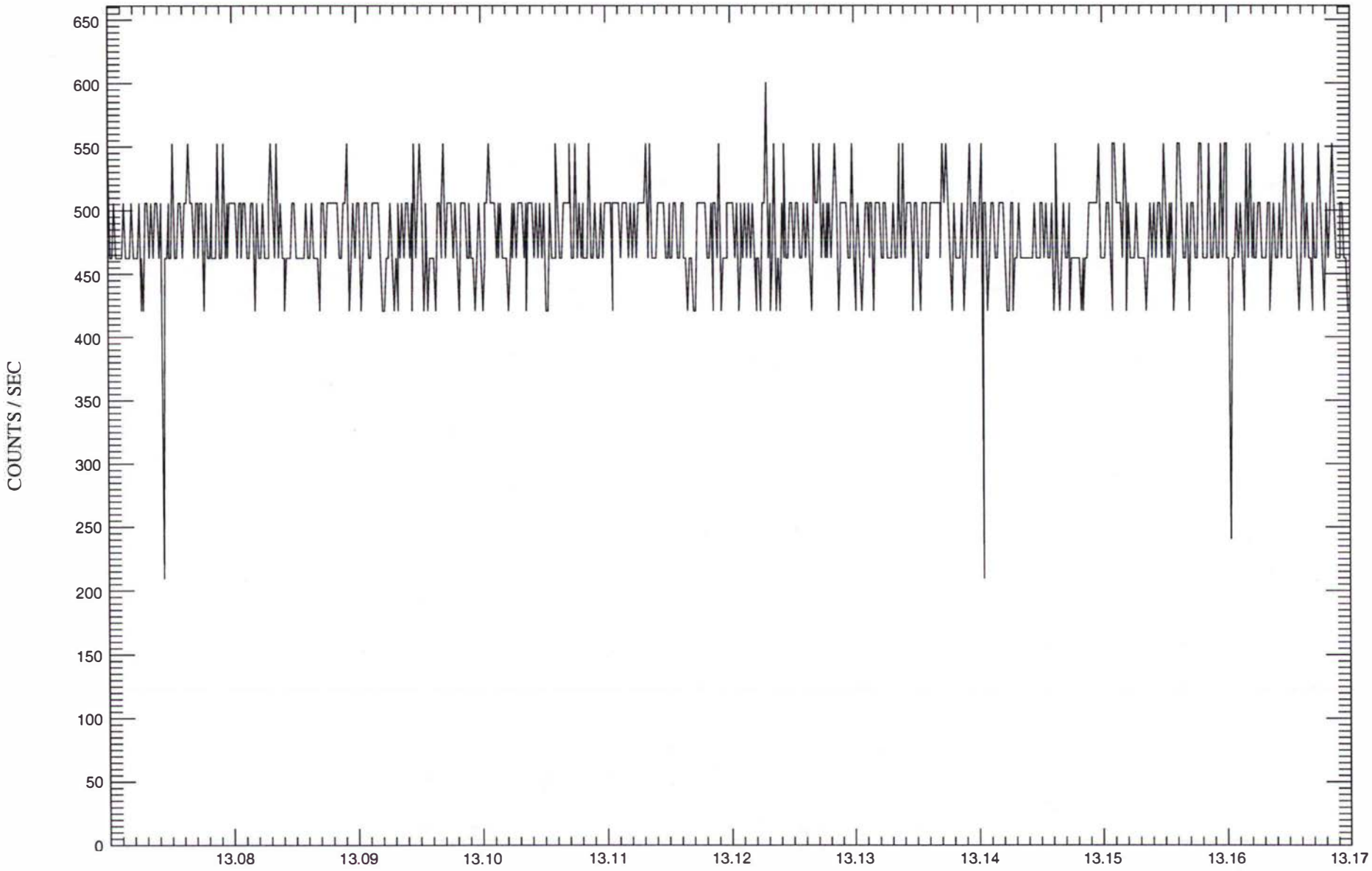
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 26/11/1999 DOY = 330 03/21/00

CALIBRATION DATA INCLUDED



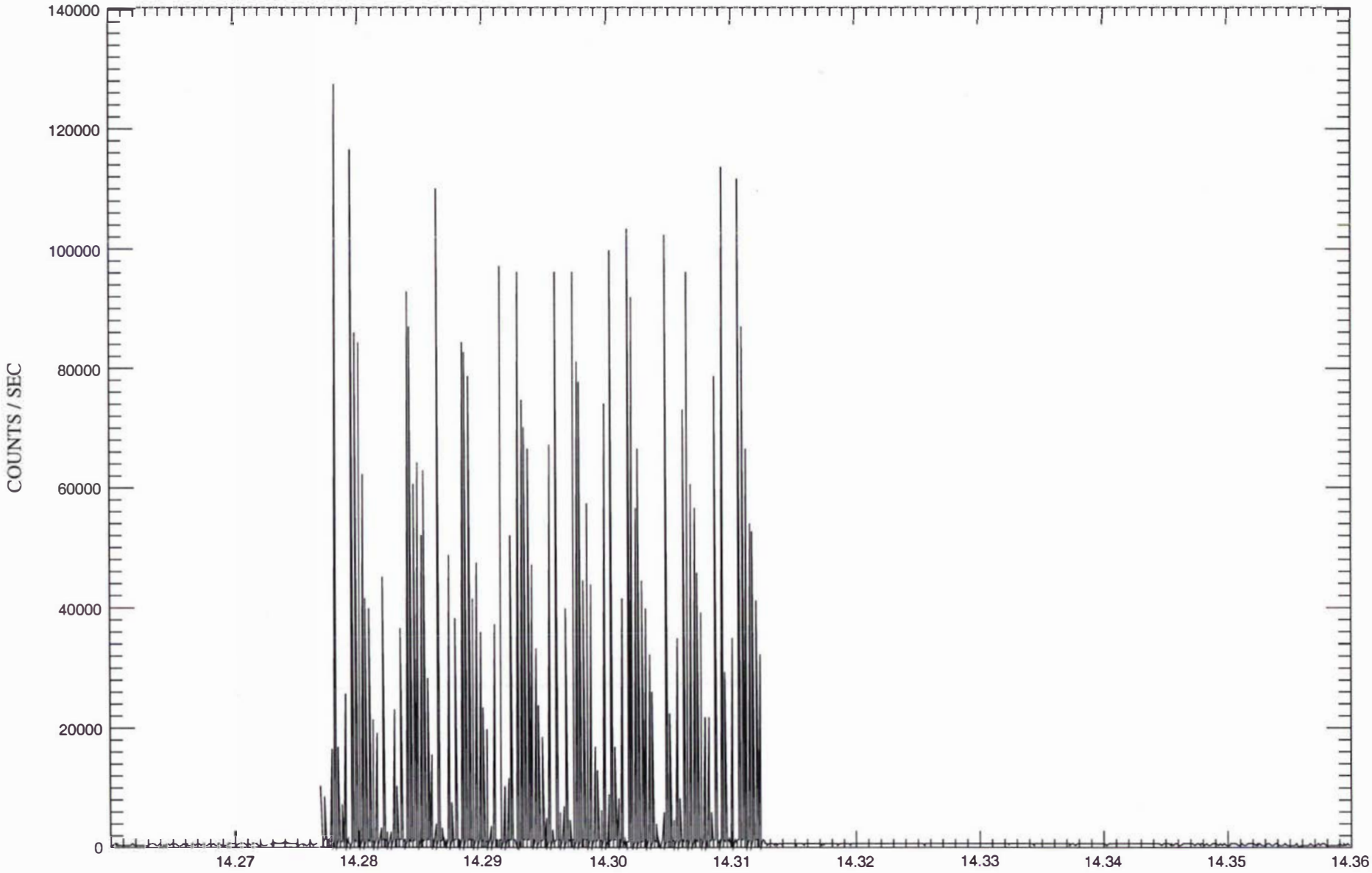
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 26/11/1999 DOY = 330 03/21/00

CALIBRATION DATA INCLUDED

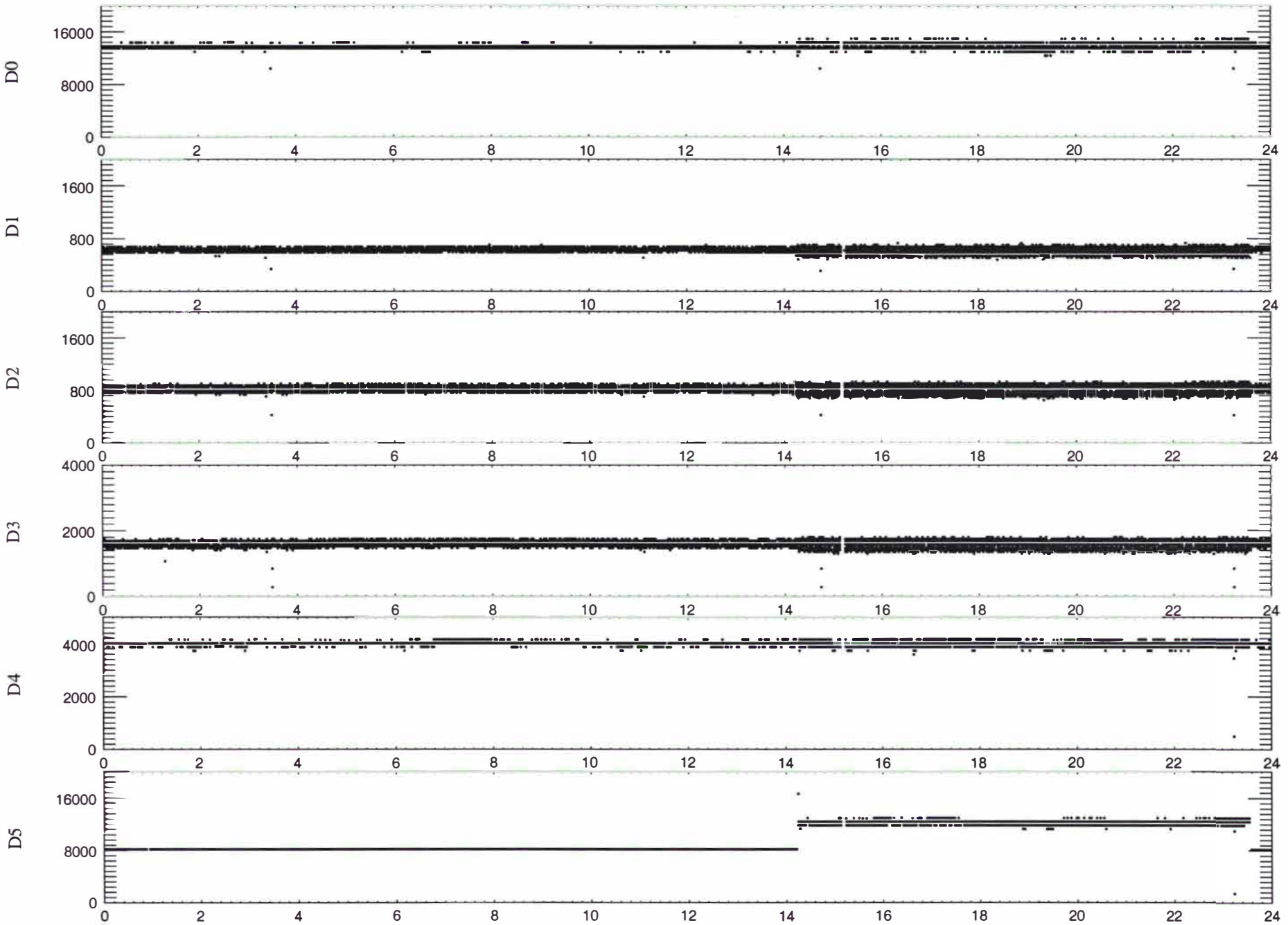


HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 26/11/1999 DOY = 330 03/21/00

CALIBRATION DATA INCLUDED

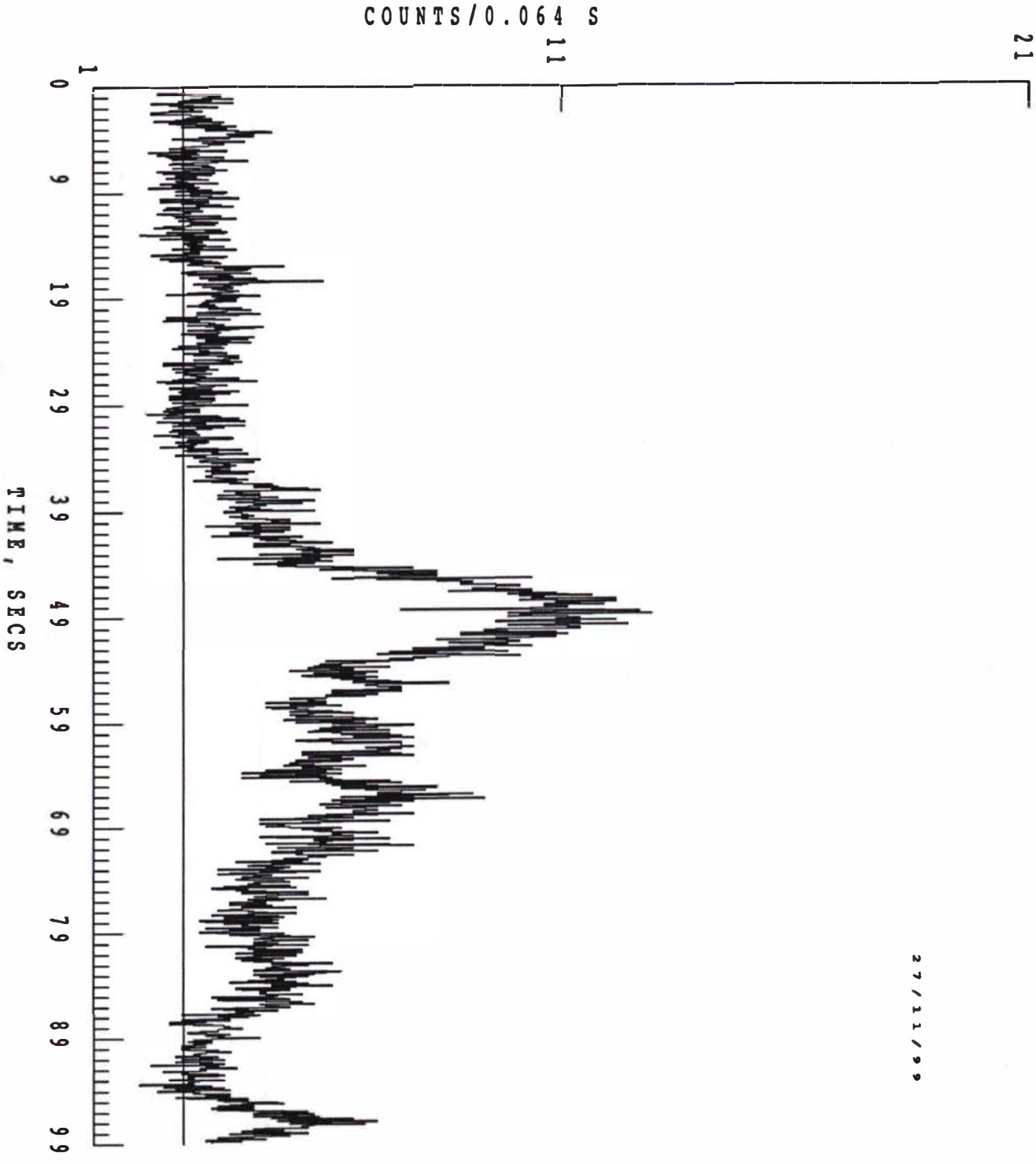


HUS 2B COUNTS / SEC EDR day 330, year 1999 to day 330, year 1999 03/21/00



KONUS 27/11/99 43735.804 12:08:55

50- 200 keV Prob solar. See GOES



KONUS2 19991127 43735

ULYSSES RT 29/11/99

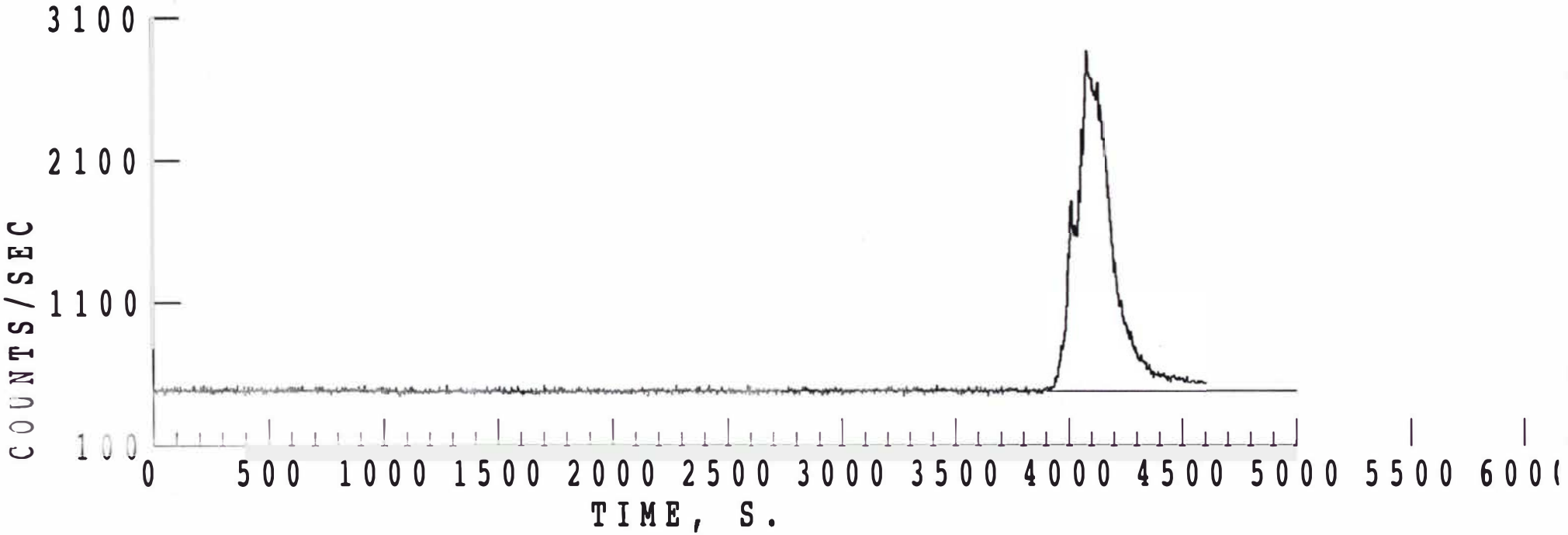
27/11/99 41436.016 s

INTERVALS REGROUPED BY 7

0- 0 keV

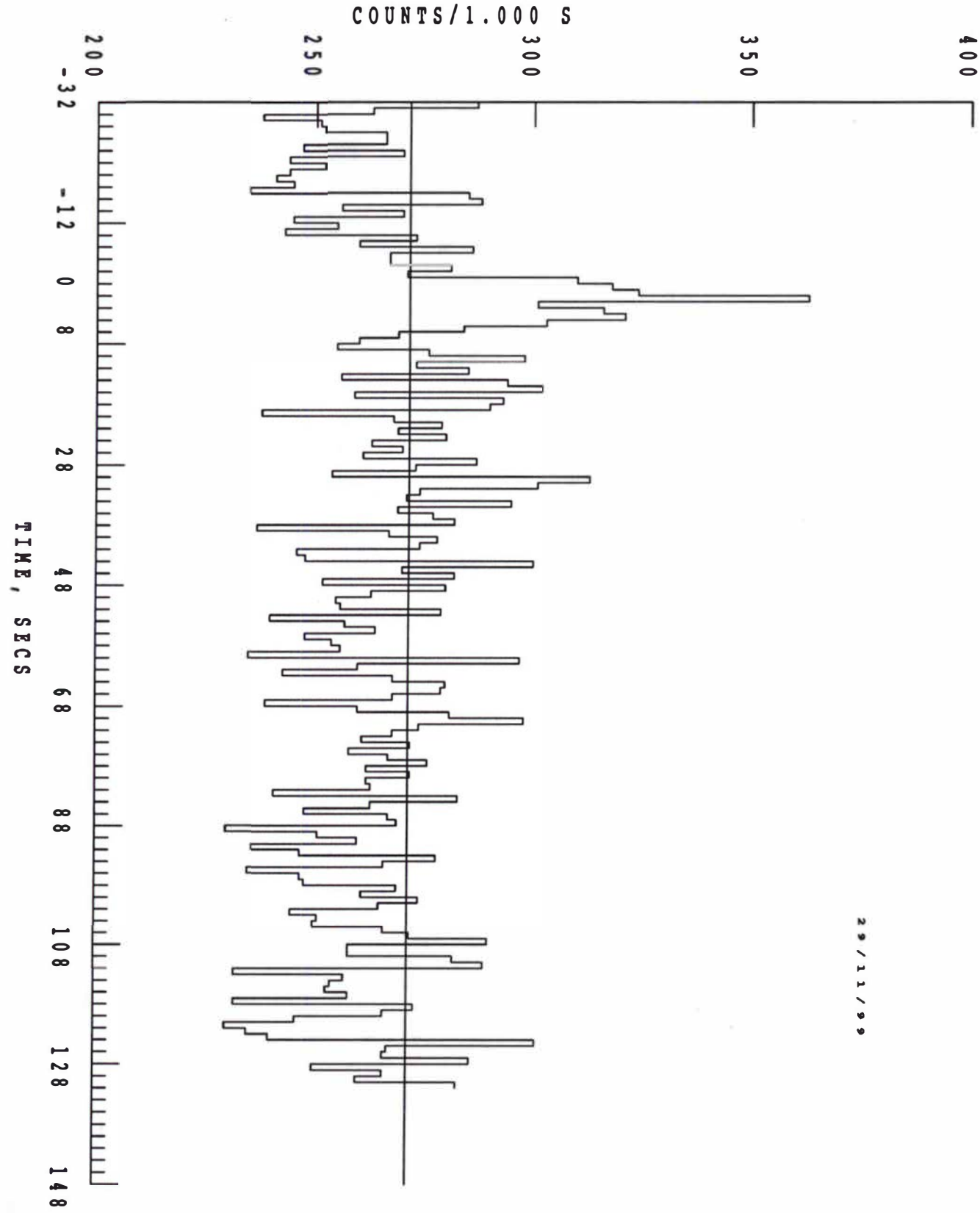
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



NEAR 27/11/99 43909.390

100-1000 keV



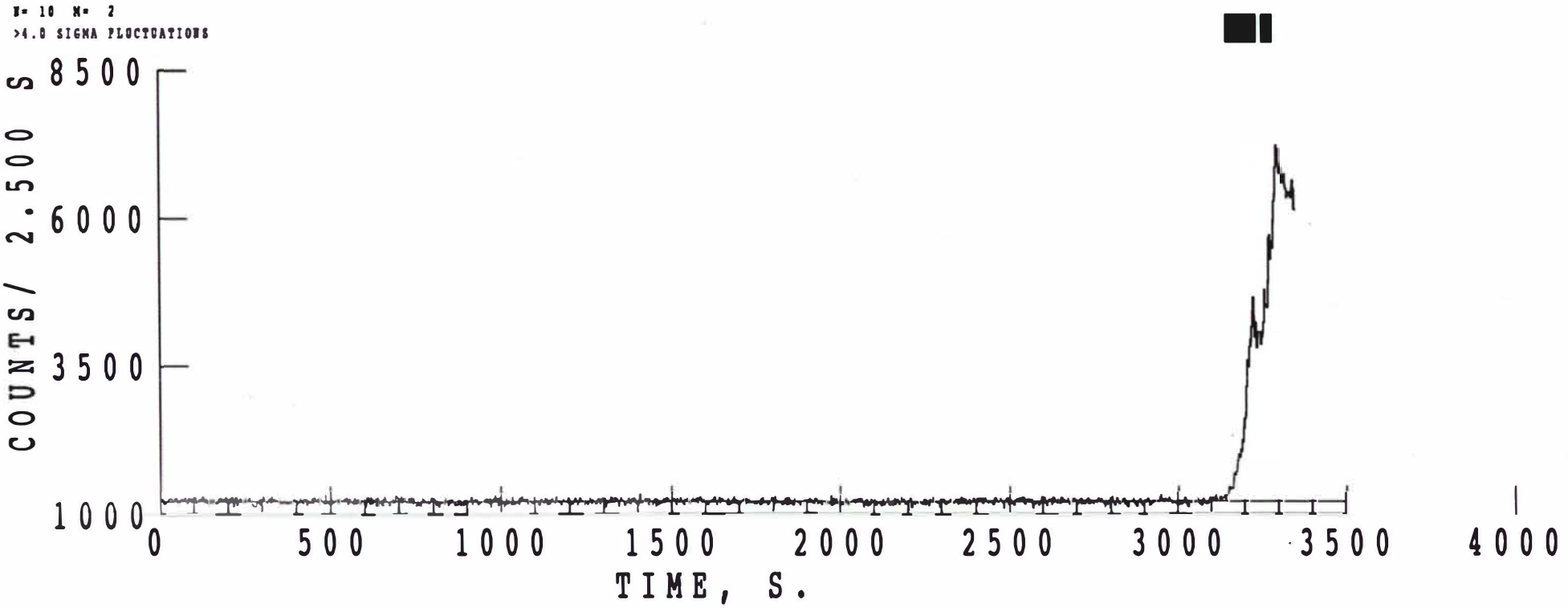
KNEAR GRS 19991127 43909

ULYSSES RT 29/11/99

27/11/99 42228.023 s

0.500 S INTERVALS REGROUPED BY 5

0- 0 keV



From HENZE@fender.msfc.nasa.gov Wed Dec 1 16:05 PST 1999
From: HENZE@fender.msfc.nasa.gov
Date: Wed, 1 Dec 1999 18:14:07 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7884

****
BATSEARCH PROGRAM
****

BATSE BURST # 7884
EVENT OF 1999 NOV 27 DAY OF YEAR=331
EVENT CROSSING TIME AT BATSE : 53699. S. OR 14:54:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 17.000 -10.000
BATSE PEAK COUNTING RATE: 48000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/11/ 99 IS:
RA= 165.860 DEC= -27.142 DIST= 4.536 AU
BATSE-ULYSSES DISTANCE = 678633575. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1518.62 SECS.
CROSSING TIME AT ULYSSES IS 55218. S. OR 15:20:17 +/- 364.51 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/11/ 99 IS:
RA= 303.095 DEC= -21.467 DIST= 1.659 AU
MARS-BATSE DISTANCE = 248185952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -262.94 SECS.
CROSSING TIME AT MARS IS 53436. S. OR 14:50:36 +/- 132.29 SECONDS

BATSE BURST TRIGGER
NO.: 7884

TIME: TJD=1509 SECONDS=53699

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 85.6 AZIMUTH=104.3 ERROR= 0.3 DEGREES

COMMENTS:
COMPLEX, DUR. OF MAIN GROUP OF SPIKES APPROX. 30 S, TOTAL DUR. APPROX. 120 S, MAX AT APPROX. T+18 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7884	991127	11509	53699	48000	017	-10	30

Date: May 4 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@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

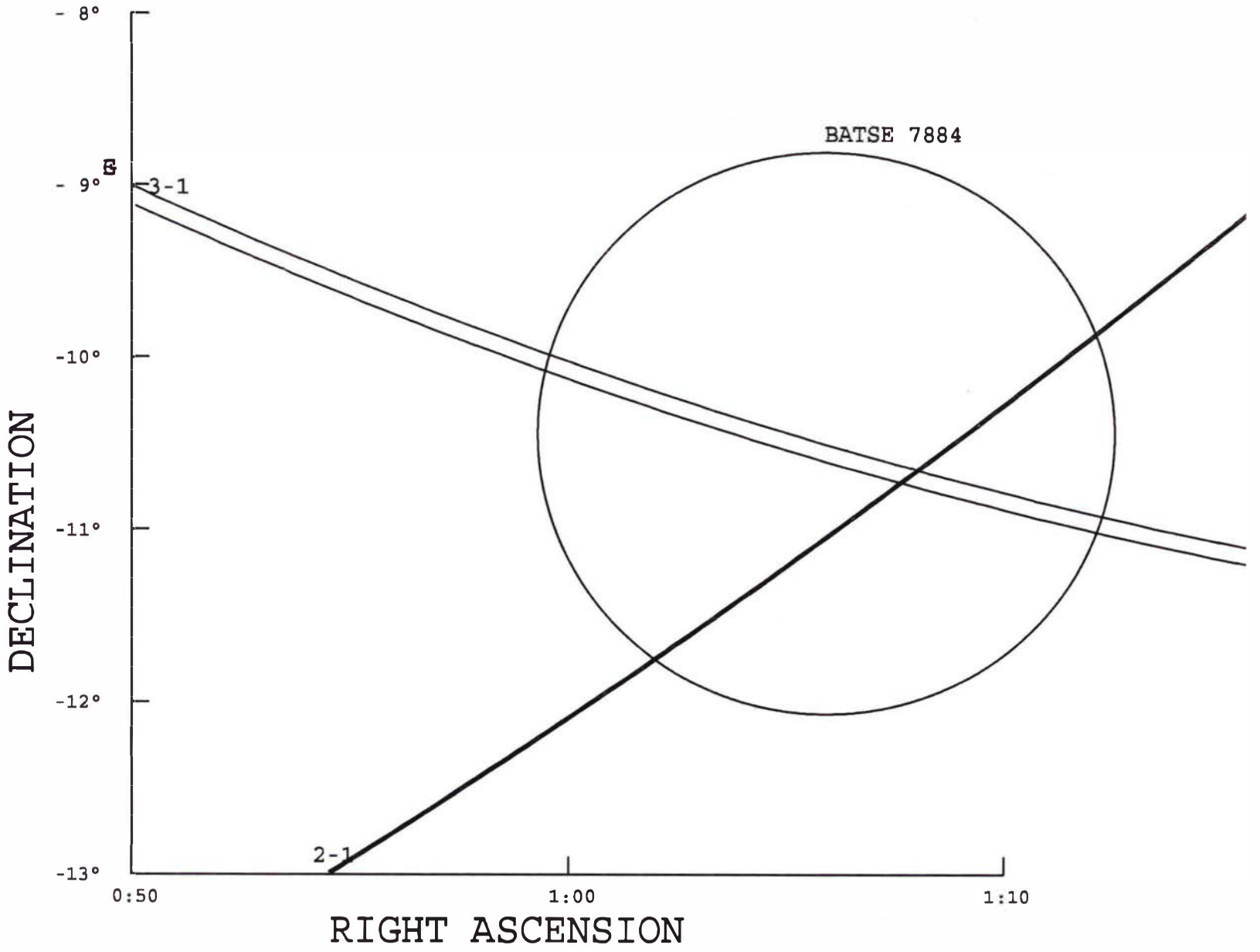
☑ BATSE >100 keV data used for NEAR correlation?

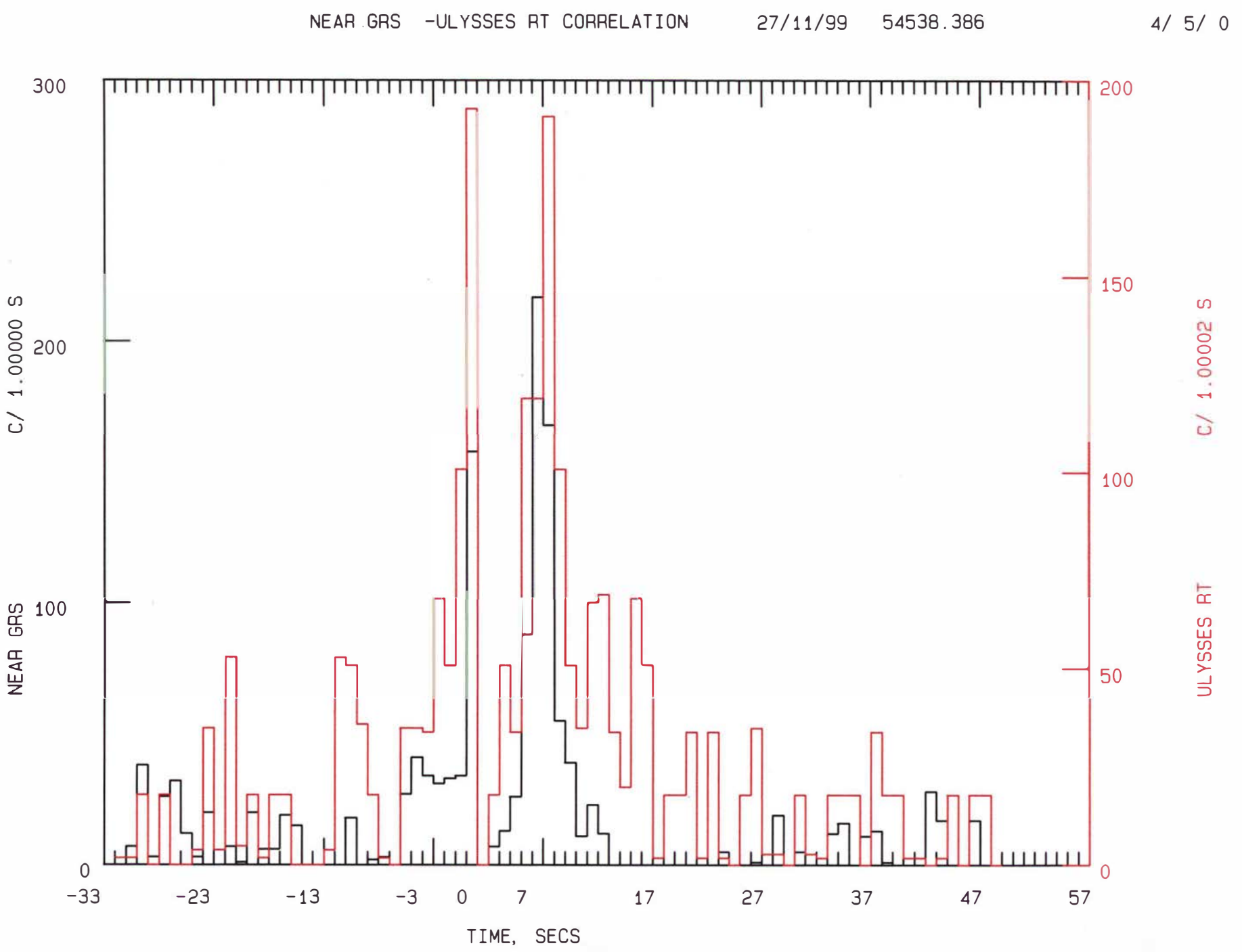
☑ ACCESS database updated?

EVENT OF NOV 27, 1999 14:54

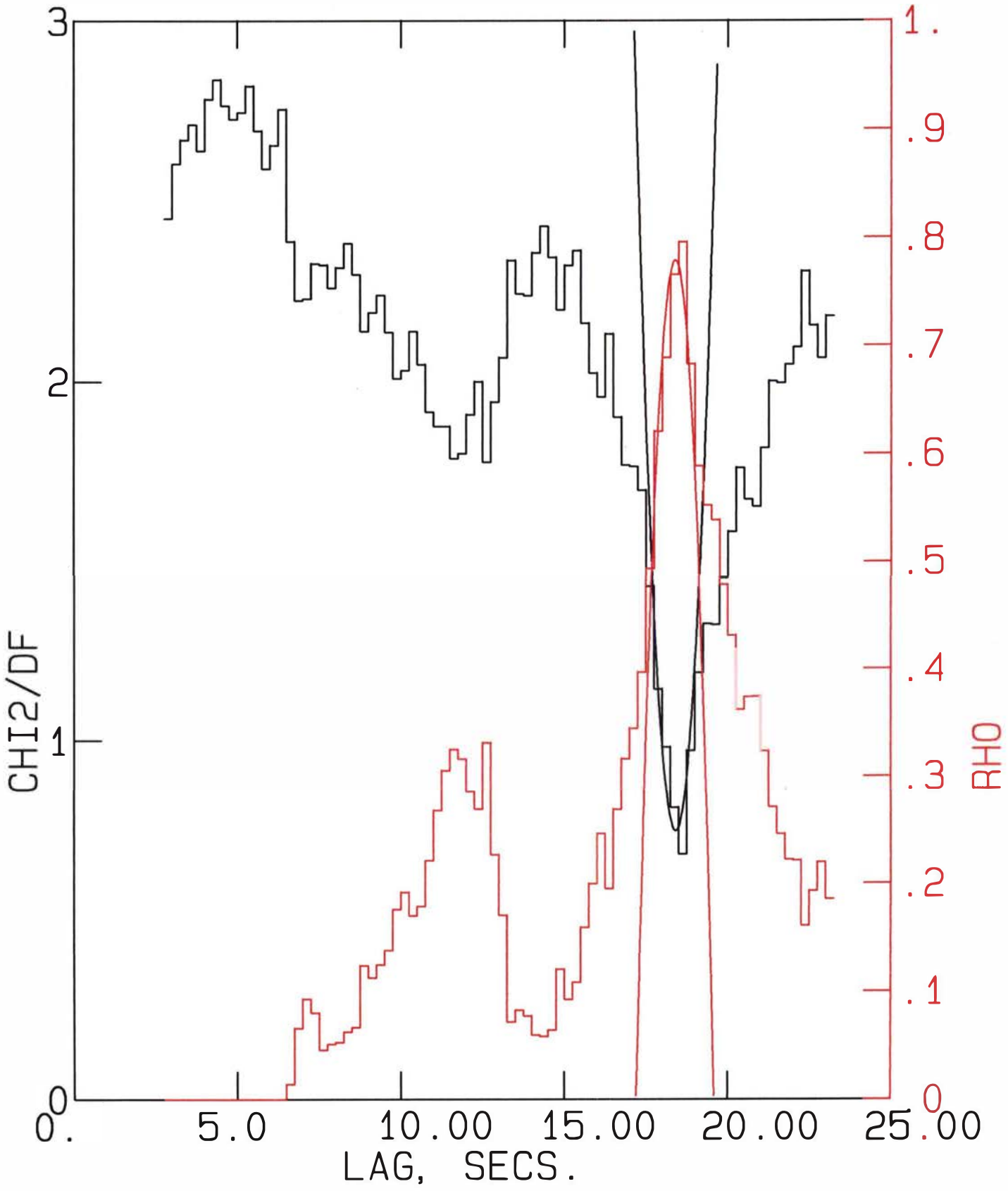
4/ 5/ 0

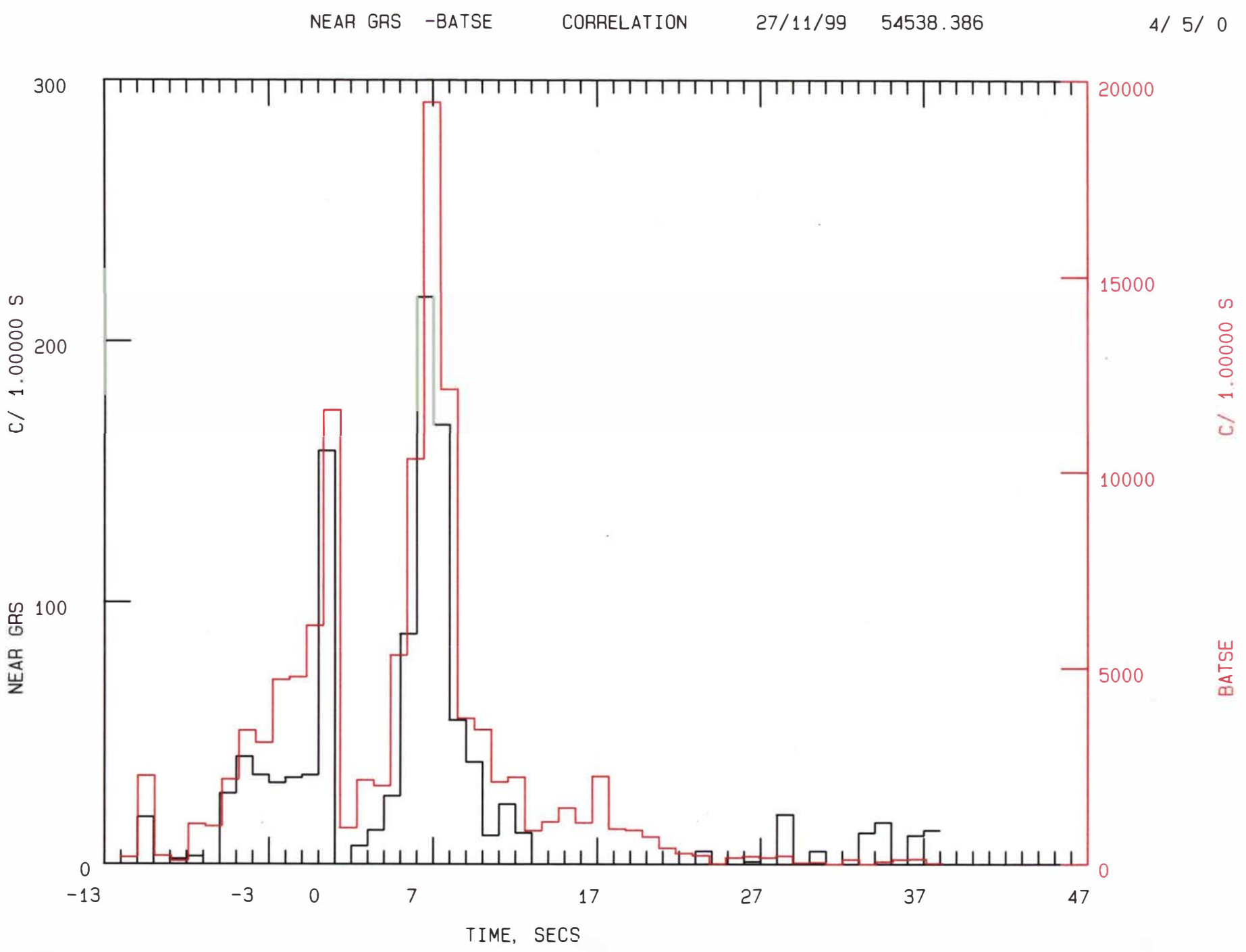
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 ULYSSES 3 NEAR



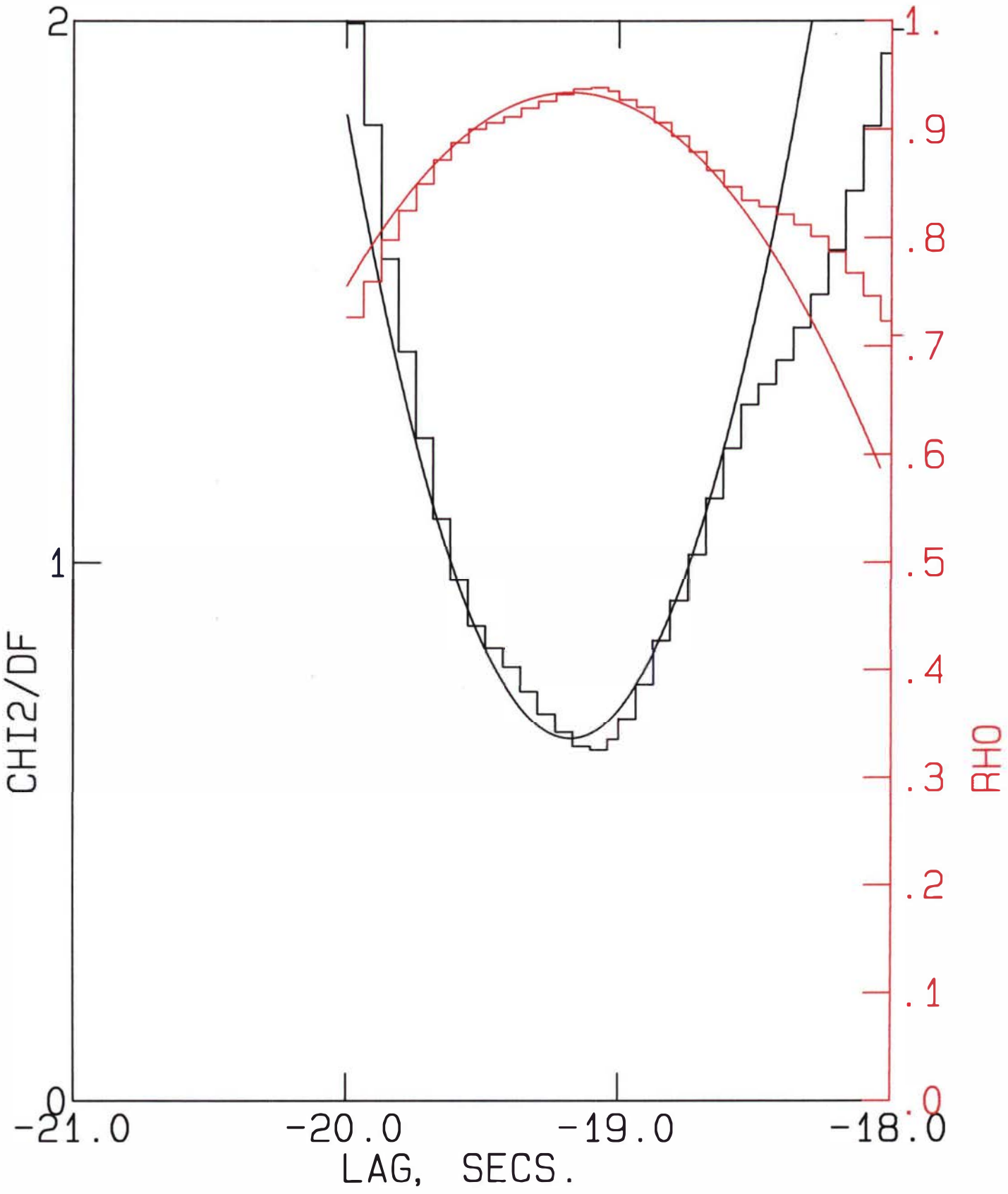

NEAR GRS -ULYSSES RT CORRELATION 27/11/99 54538.386 4/ 5/ 0
300
200
100
0
C/ 1.00000 S
NEAR GRS
200
150
100
50
0
C/ 1.00002 S
ULYSSES RT
-33
-23
-13
-3
0
7
17
27
37
47
57
TIME, SECS

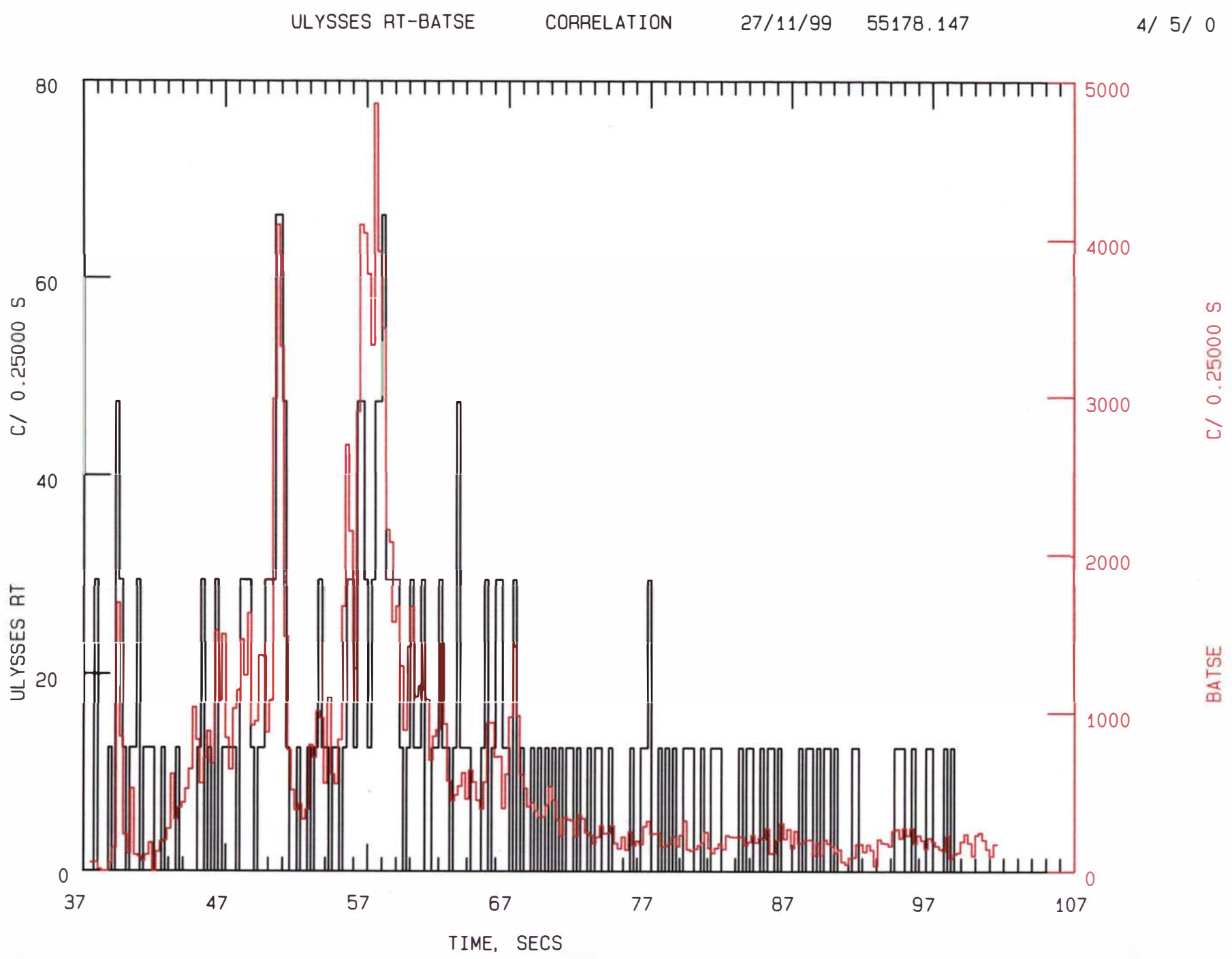
NEAR GRS -ULYSSES RT CORRELATION 27/11/99 54538.386



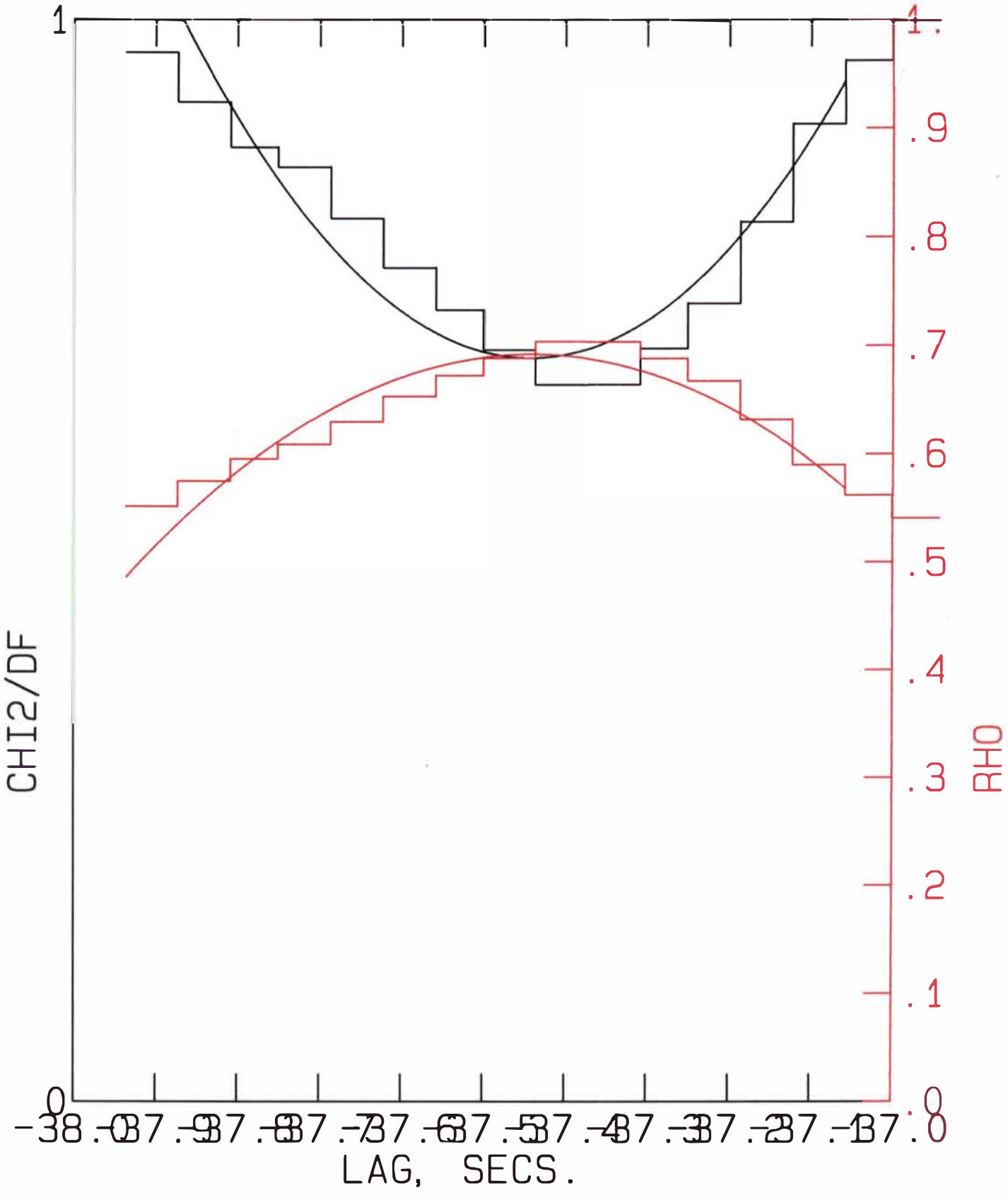

NEAR GRS -BATSE CORRELATION 27/11/99 54538.386
4/ 5/ 0
300
200
100
0
C/ 1.00000 S
NEAR GRS
20000
15000
10000
5000
0
C/ 1.00000 S
BATSE
-13
-3
0
7
17
27
37
47
TIME, SECS

NEAR GRS -BATSE CORRELATION 27/11/99 54538.386




ULYSSES RT-BATSE CORRELATION 27/11/99 55178.147 4/ 5/ 0
80
60
40
20
0
C/ 0.25000 S
ULYSSES RT
5000
4000
3000
2000
1000
0
C/ 0.25000 S
BATSE
37
47
57
67
77
87
97
107
TIME, SECS

ULYSSES RT-BATSE CORRELATION 27/11/99 55178.147



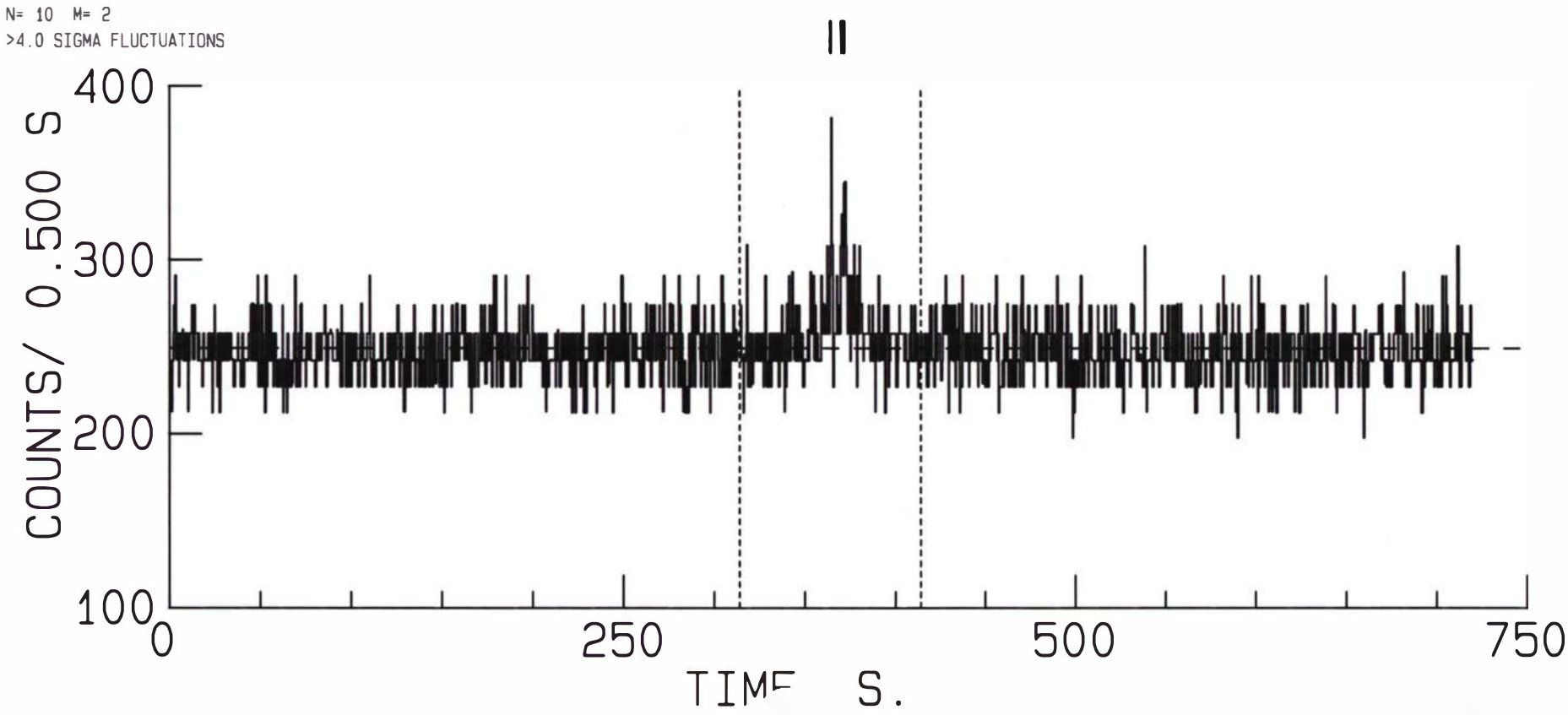
ULYSSES RT

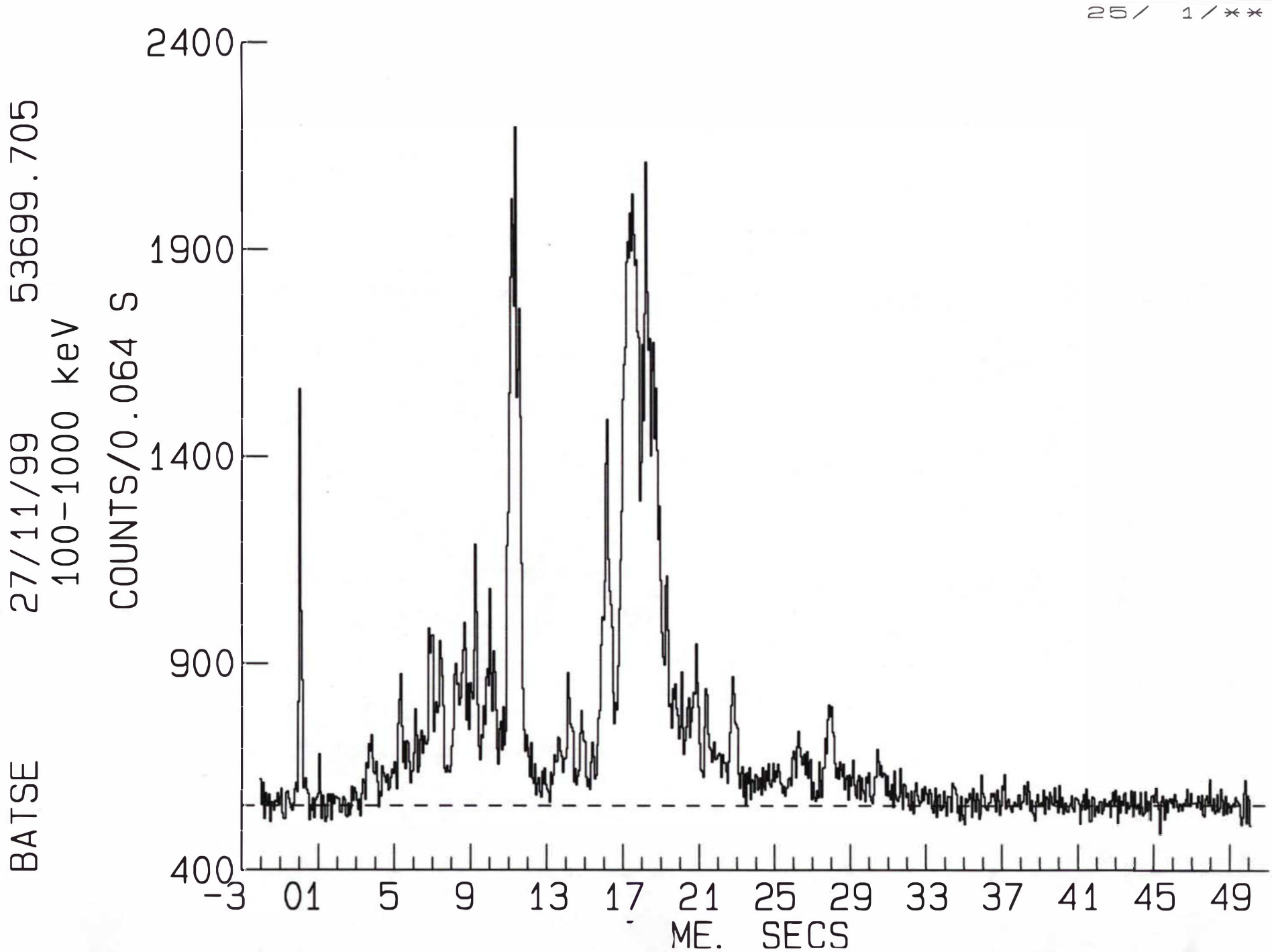
4/ 5/ 0

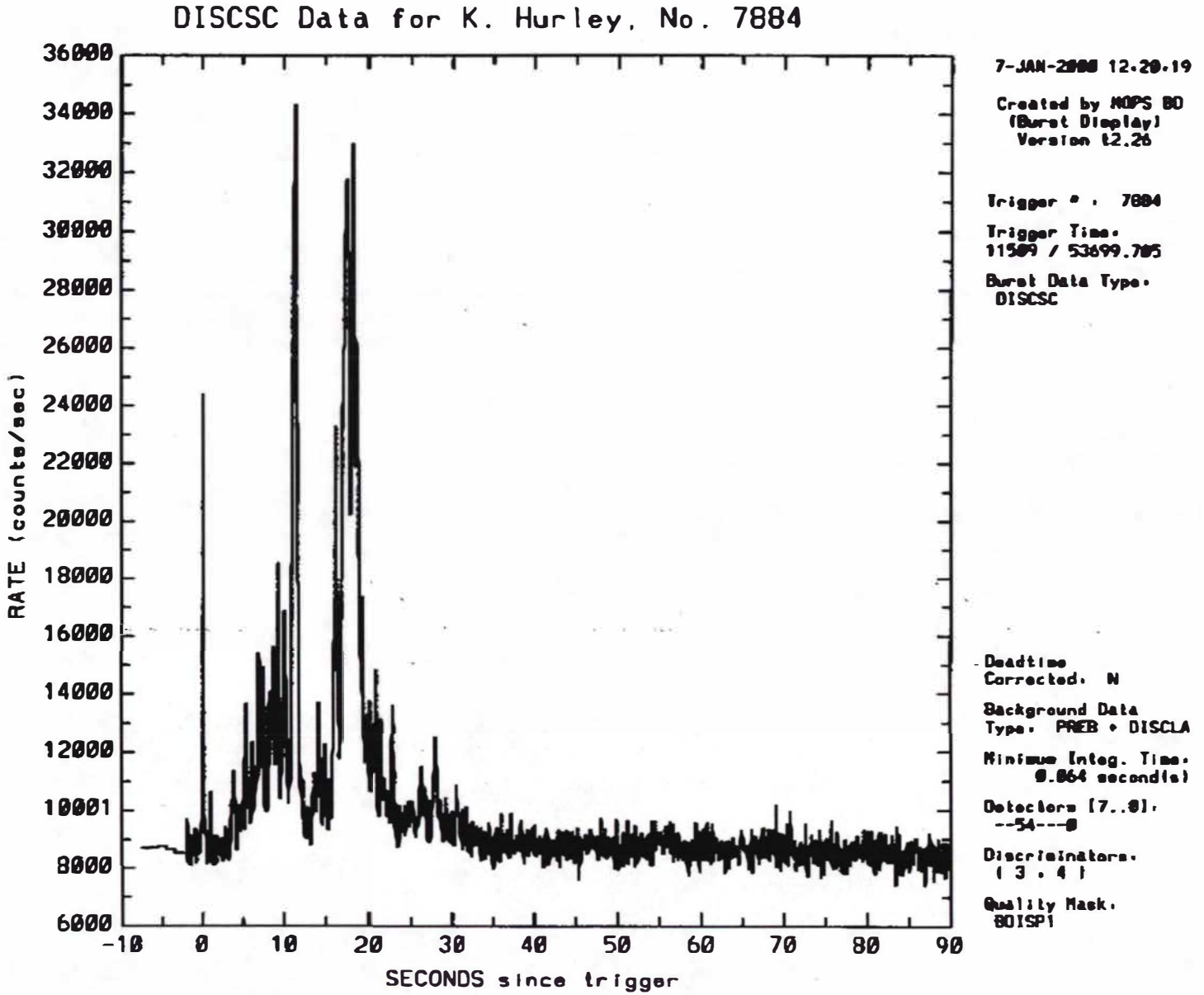
27/11/99 54864.152 s

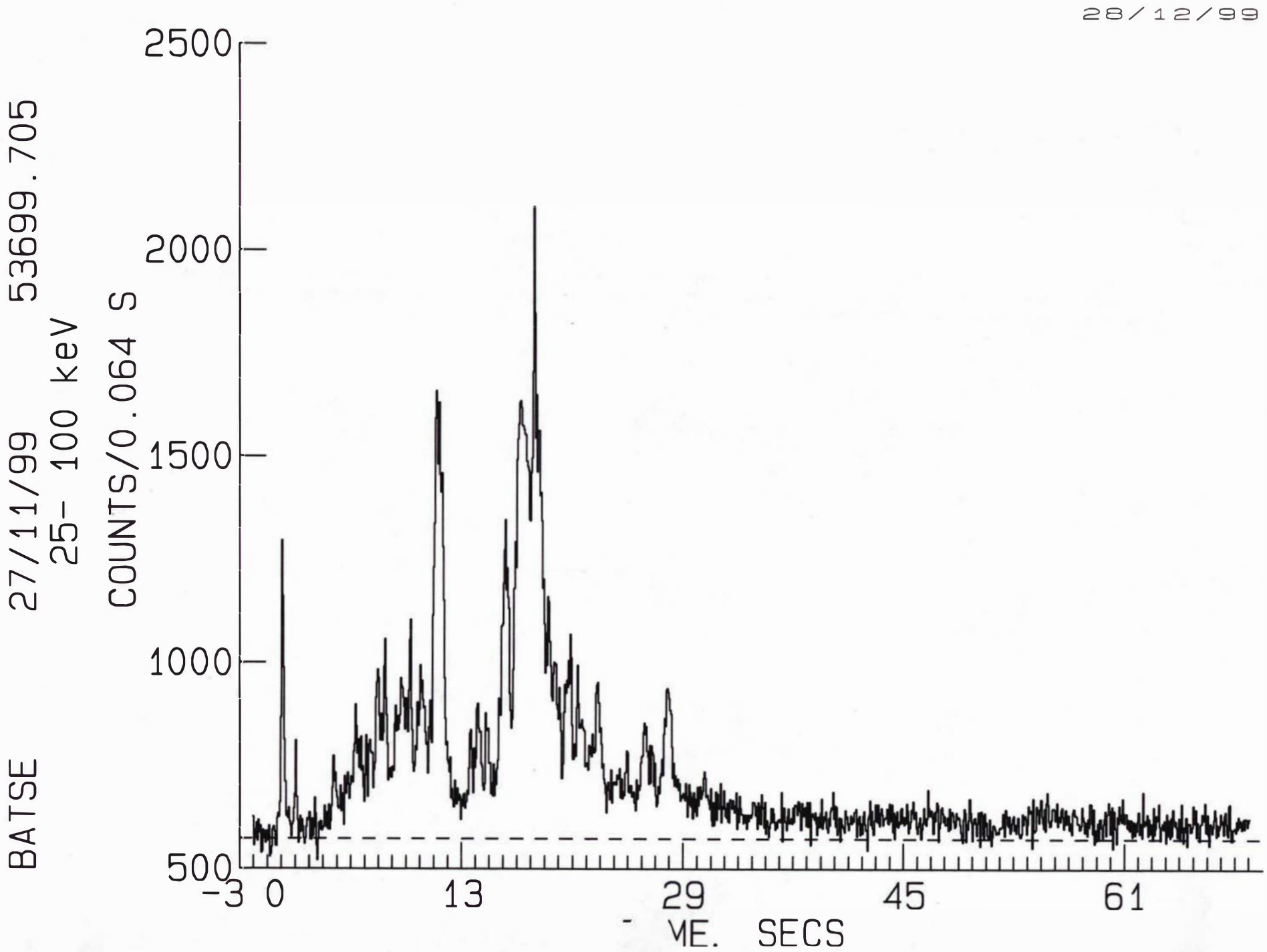
0.250 S INTERVALS REGROUPED BY 2

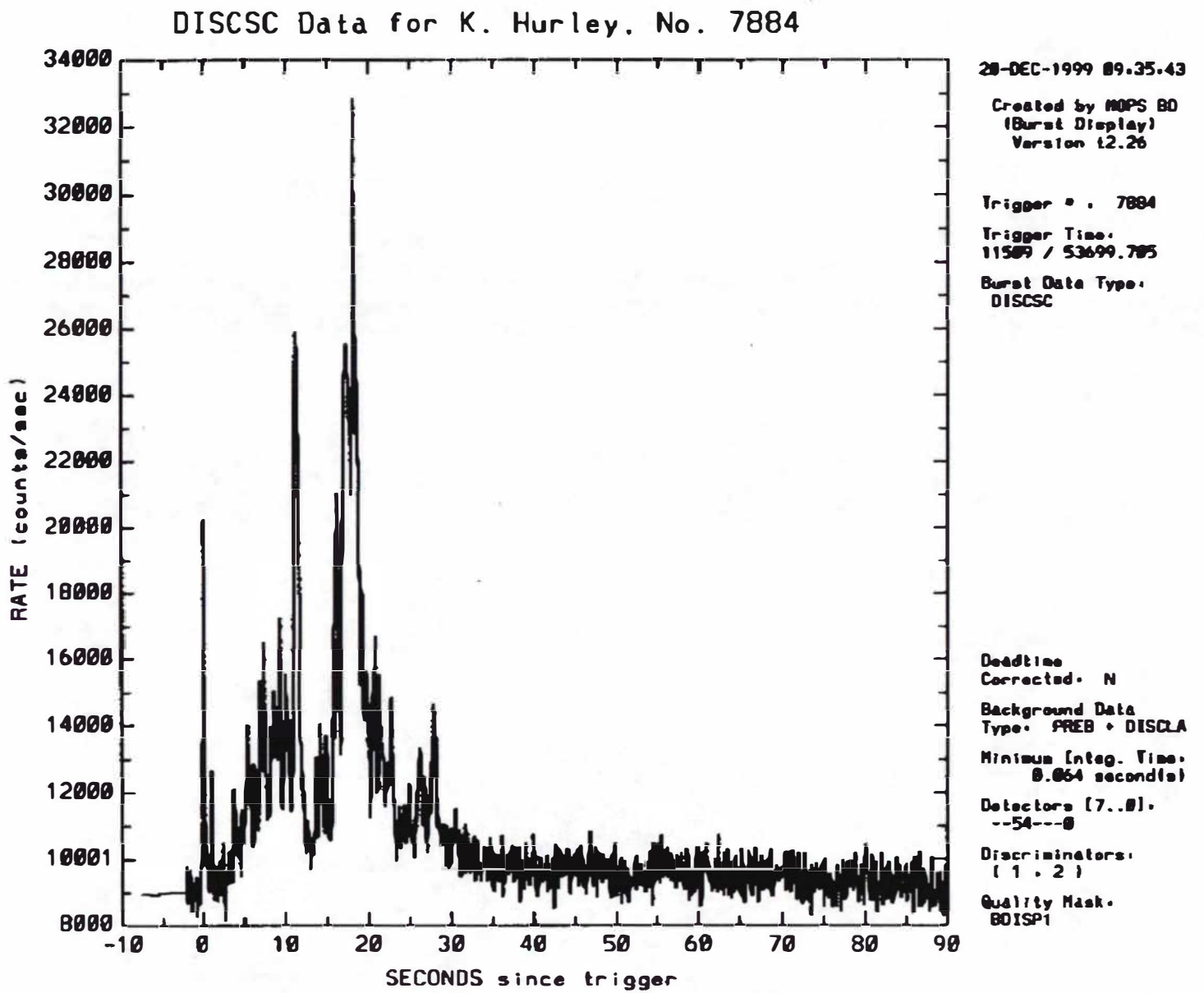
22- 150 keV




25/ 1/**
BATSE 27/11/99 53699.705
100-1000 keV
COUNTS/0.064 S
2400
1900
1400
900
400
-3 01 5 9 13 17 21 25 29 33 37 41 45 49
ME. SECS

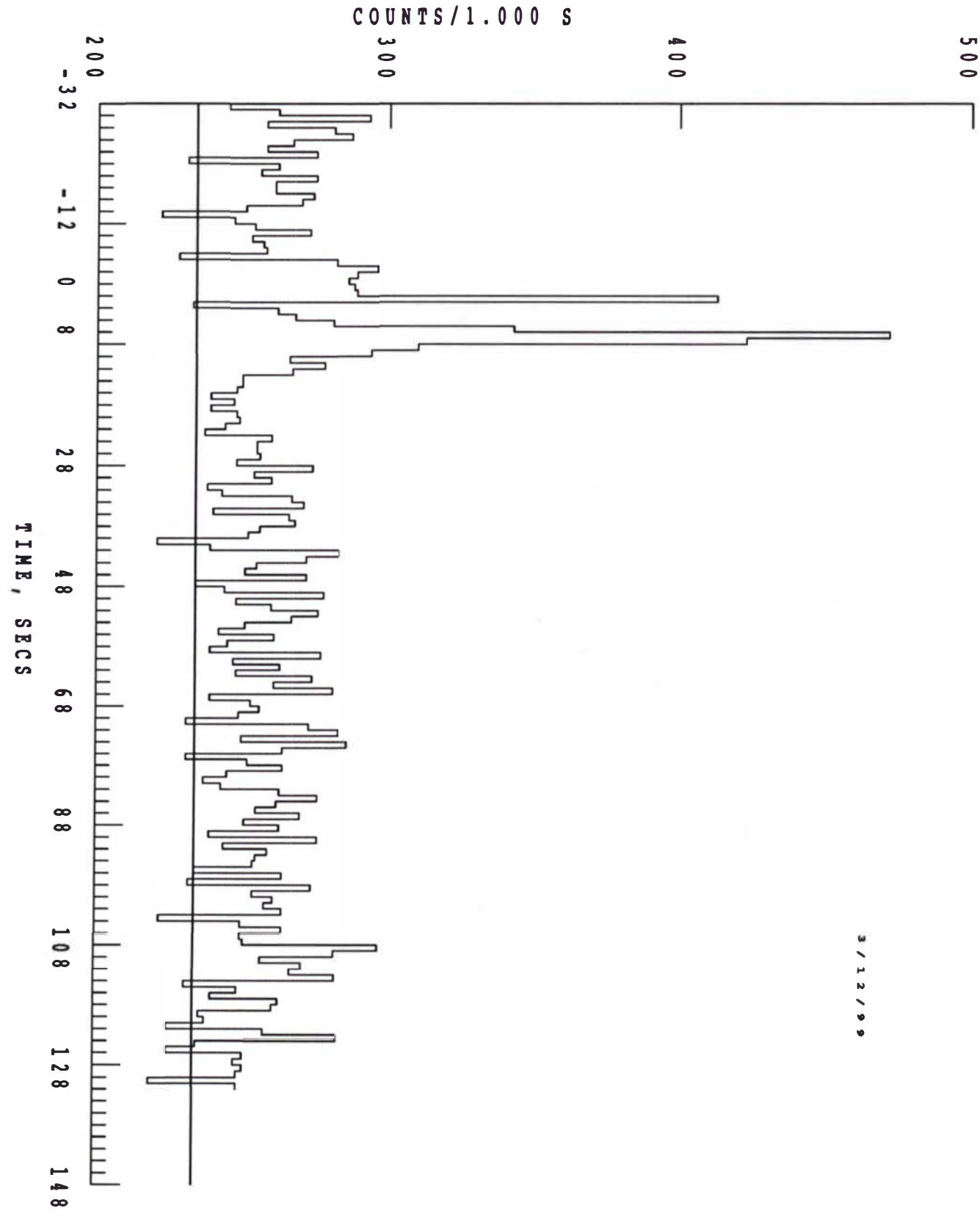

DISCSC Data for K. Hurley, No. 7884
RATE (counts/sec)
36000
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10001
8000
6000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
7-JAN-2000 12:20:19
Created by MOPS BD
(Burst Display)
Version t2.26
Trigger # : 7884
Trigger Time:
11509 / 53699.705
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
--54---0
Discriminators:
[3 , 4]
Quality Mask:
BDISP1

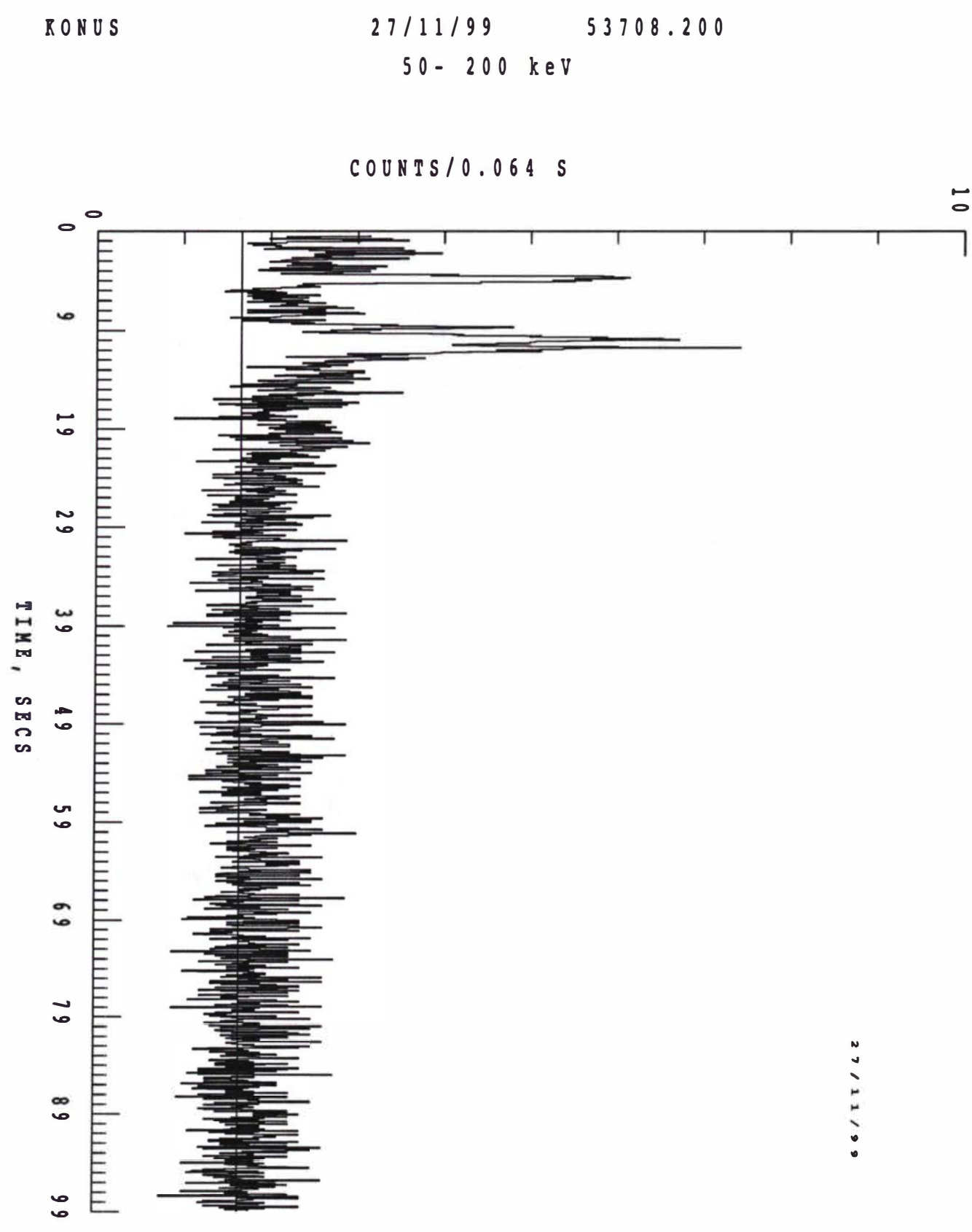

28/12/99
BATSE 27/11/99 53699.705
25- 100 keV
COUNTS/0.064 S
2500
2000
1500
1000
500
-3
0
13
29
45
61
ME. SECS

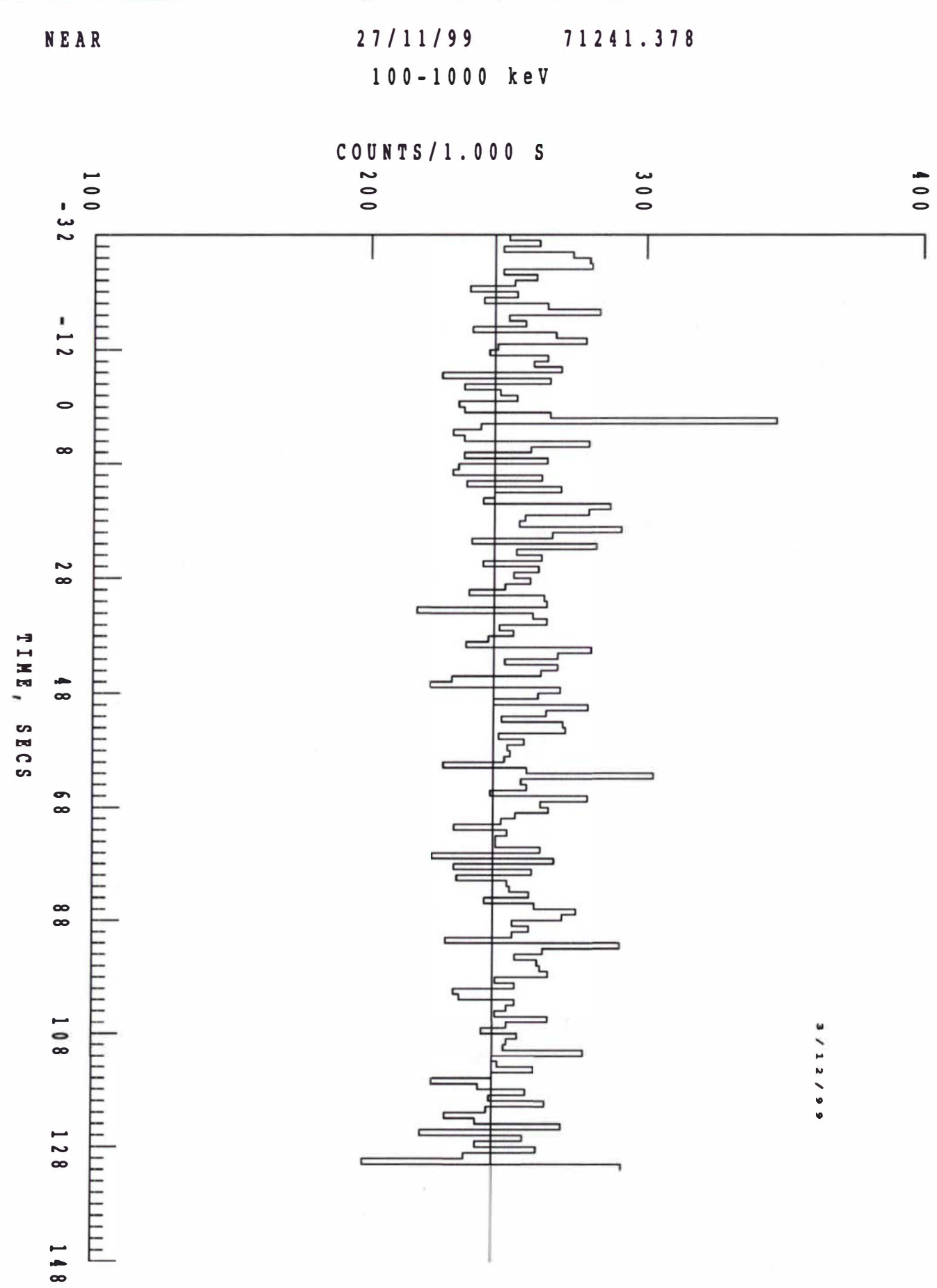

DISCSC Data for K. Hurley, No. 7884
RATE (counts/sec)
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10001
8000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
28-DEC-1999 09.35.43
Created by MOPS BD
(Burst Display)
Version 12.26
Trigger # : 7884
Trigger Time:
11589 / 53699.785
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors (7..0):
--54---0
Discriminators:
(1 , 2)
Quality Mask:
BDISP1

NEAR 27/11/99 54538.386

100-1000 keV




KONUS
27/11/99
53708.200
50- 200 keV
COUNTS/0.064 S
0
10
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
27/11/99


NEAR
27/11/99
71241.378
100-1000 keV
COUNTS/1.000 S
100
200
300
400
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
3/12/99

KNEAR GRS 19991127 71241

ULYSSES RT 3/12/99

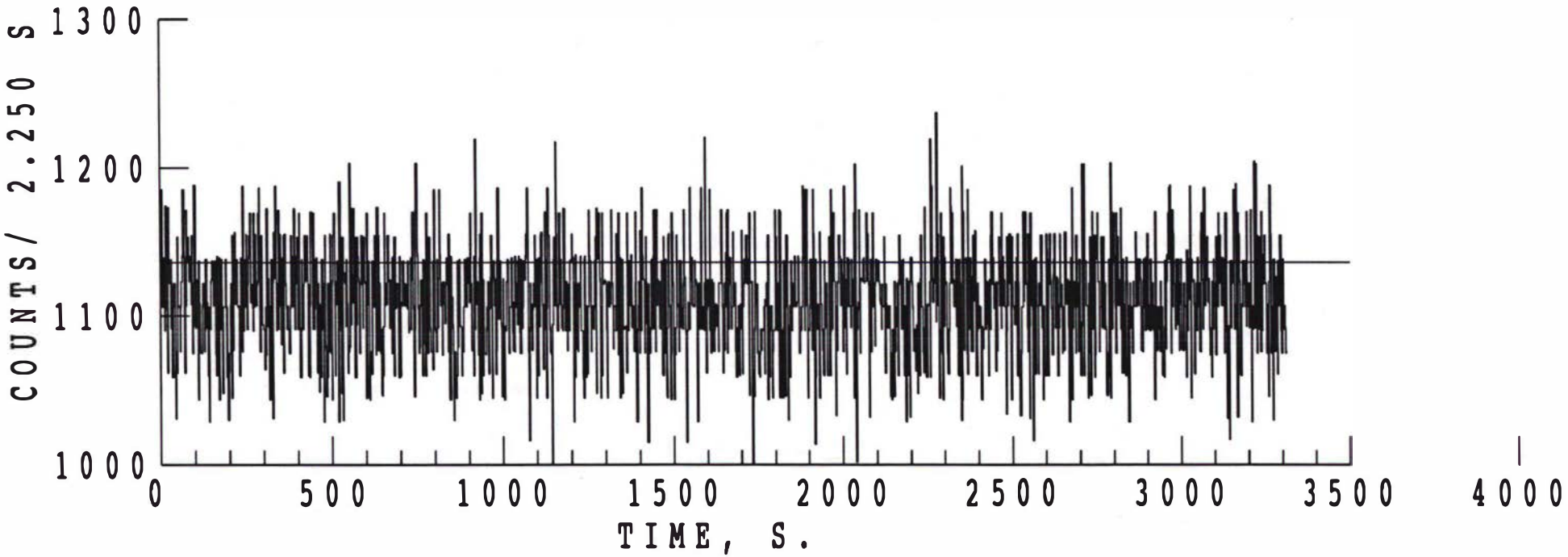
27/11/99 69588.047 s

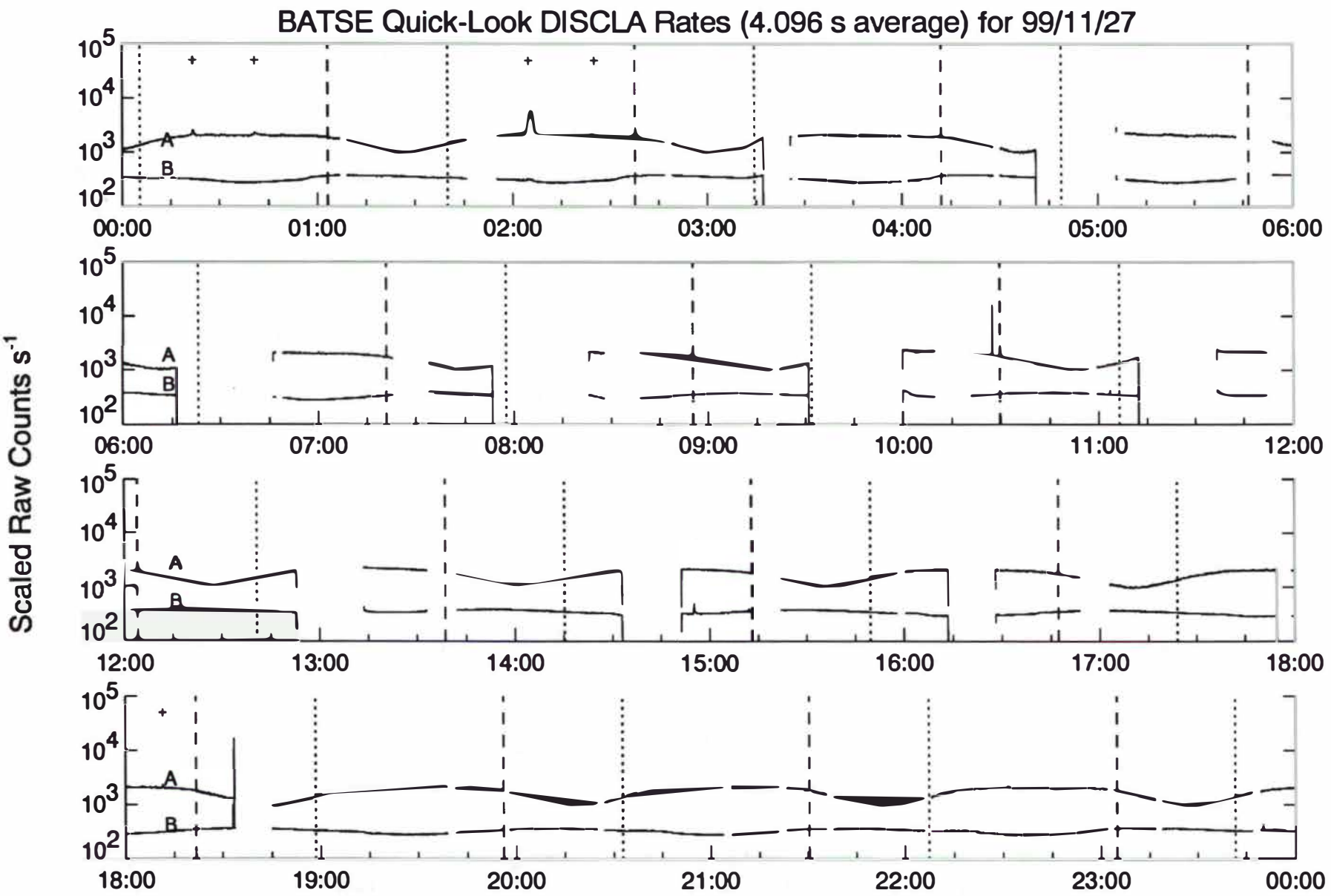
0.250 S INTERVALS REGROUPED BY 9

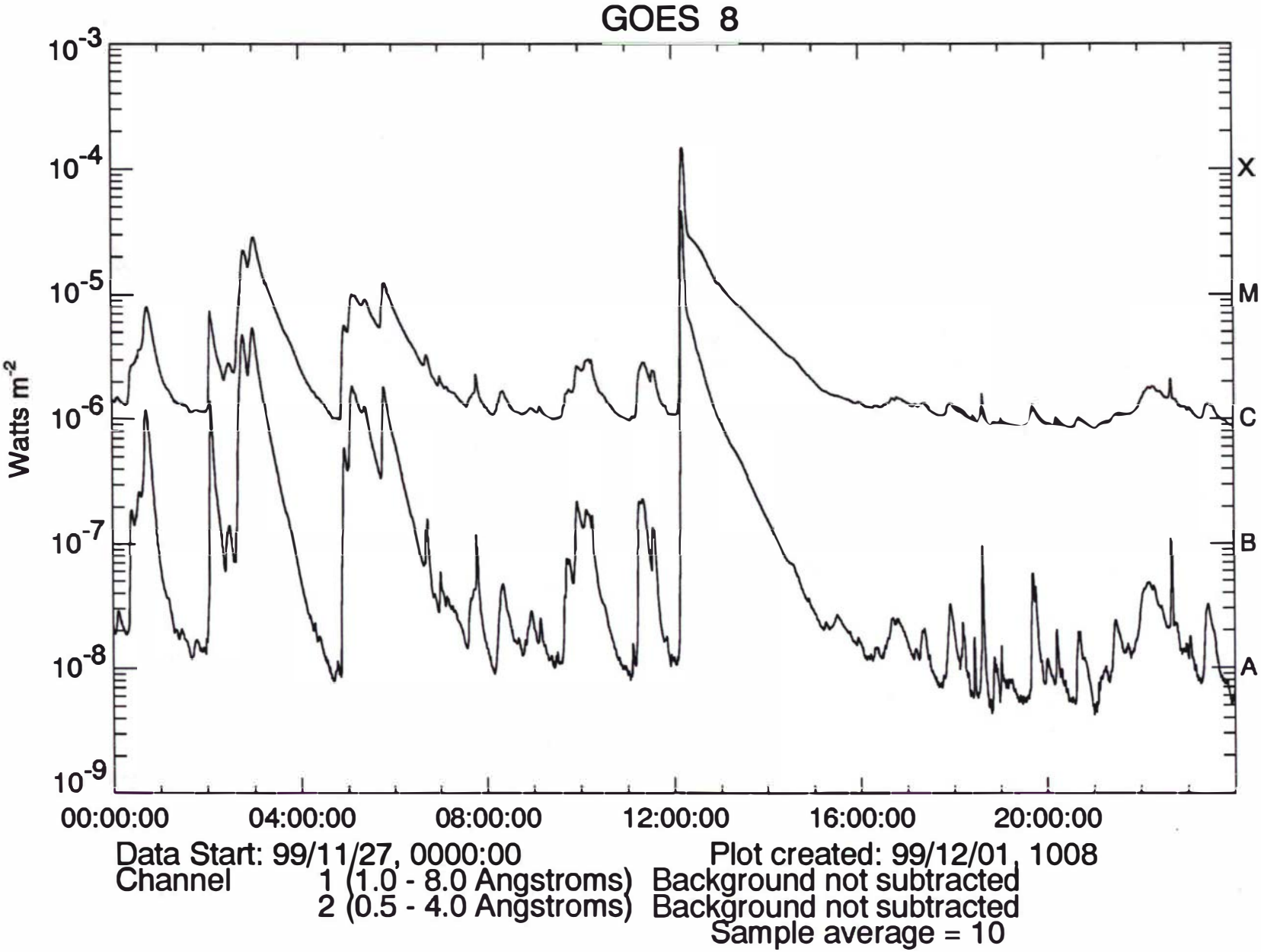
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

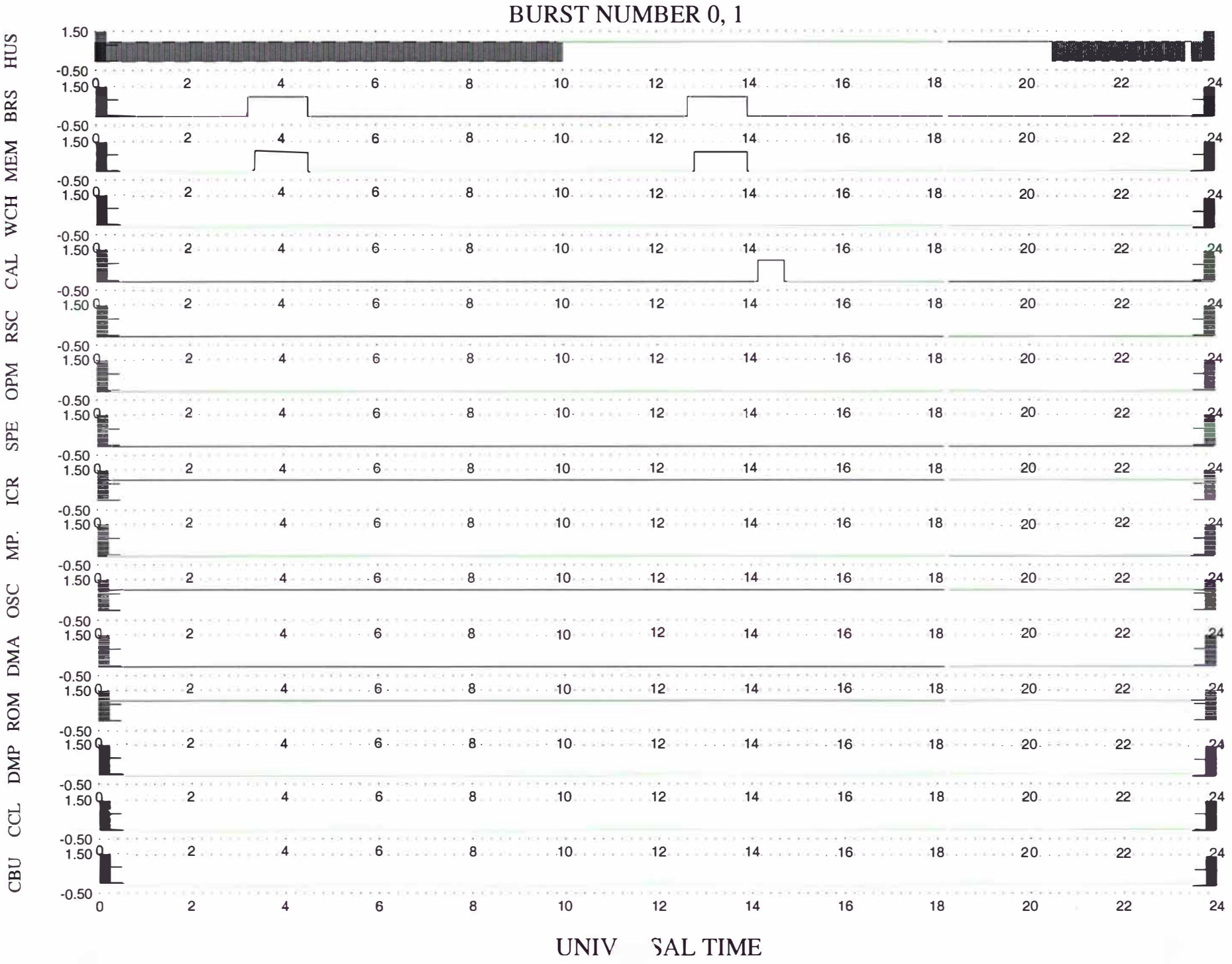
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/27
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/12/01, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

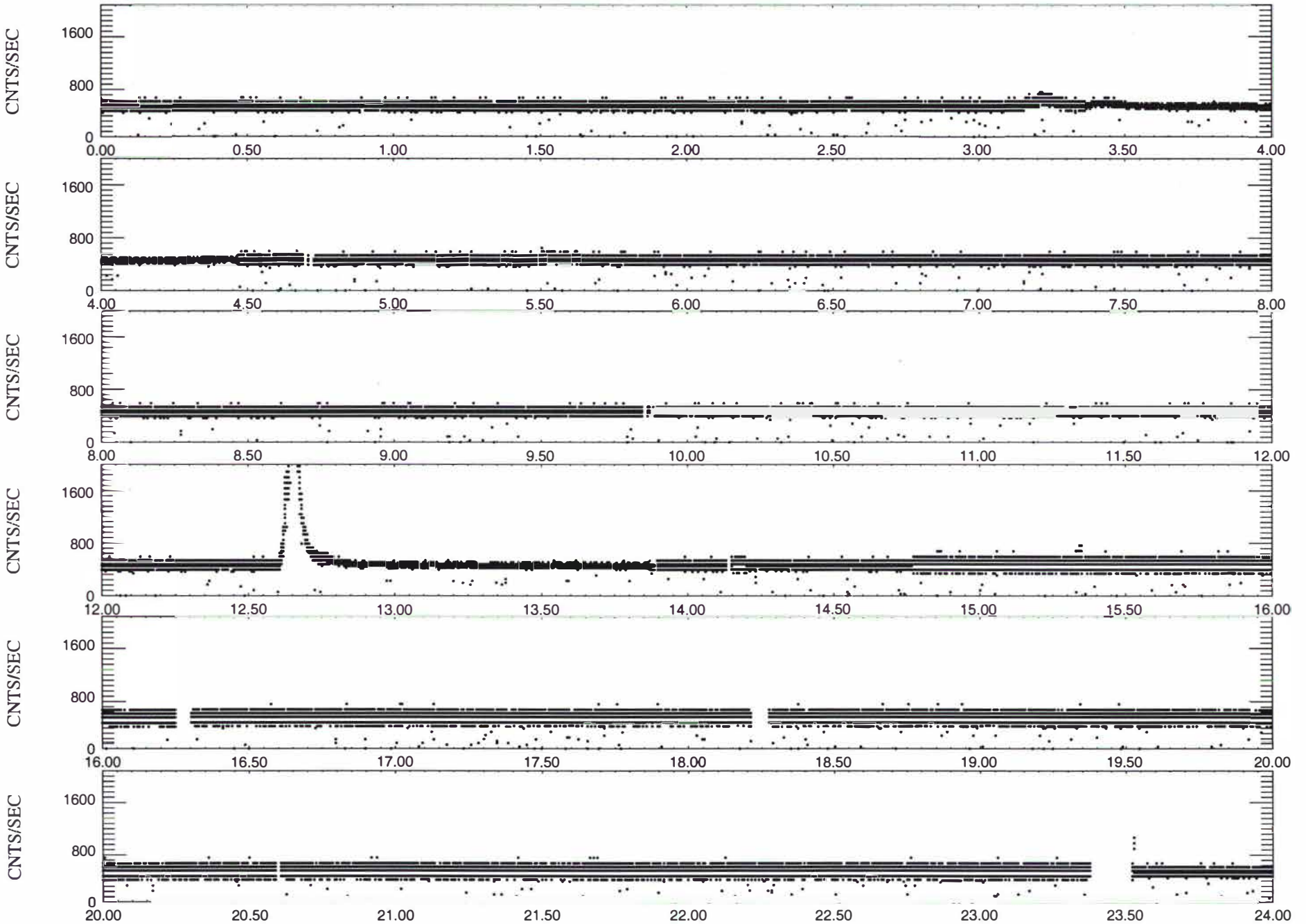

GOES 8
Watts m-2
10-3
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/27, 0000:00
Plot created: 99/12/01, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 331, year 1999 to day 331, year 1999 03/21/00



HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 27/11/1999 DOY = 331 03/21/00

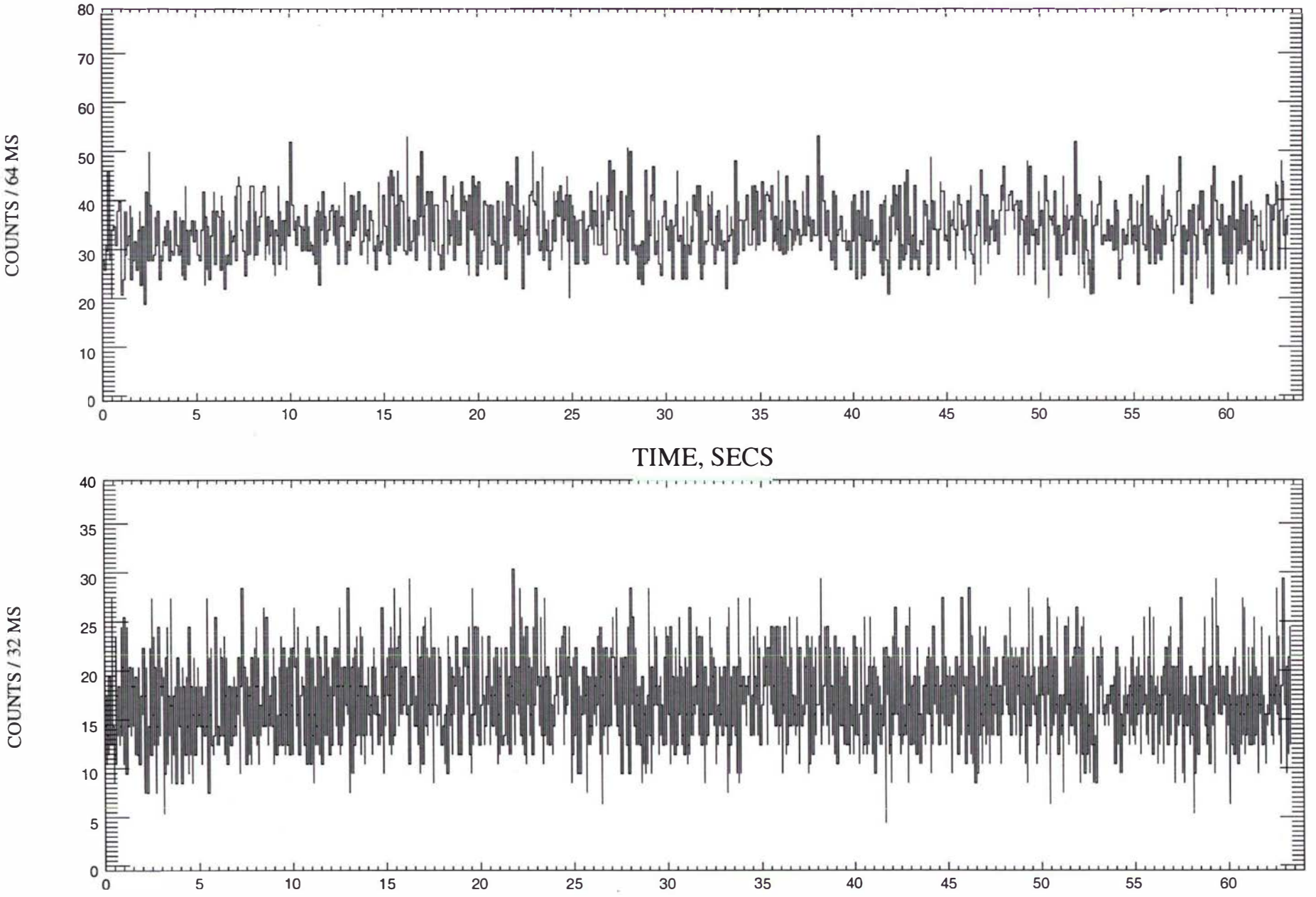
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 27/11/1999 DOY = 331 03/21/00

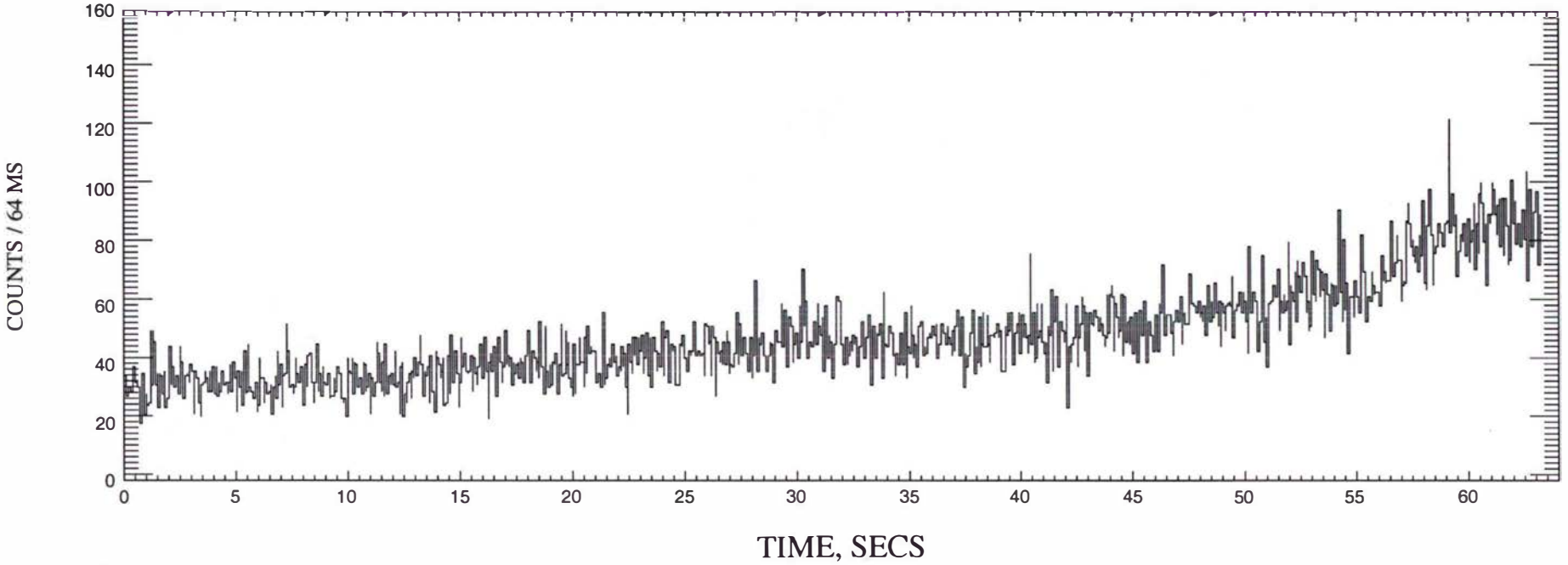
Burst Counter 0 at UT= 3.205058407254 h=11538.210 s 03:12:18.210

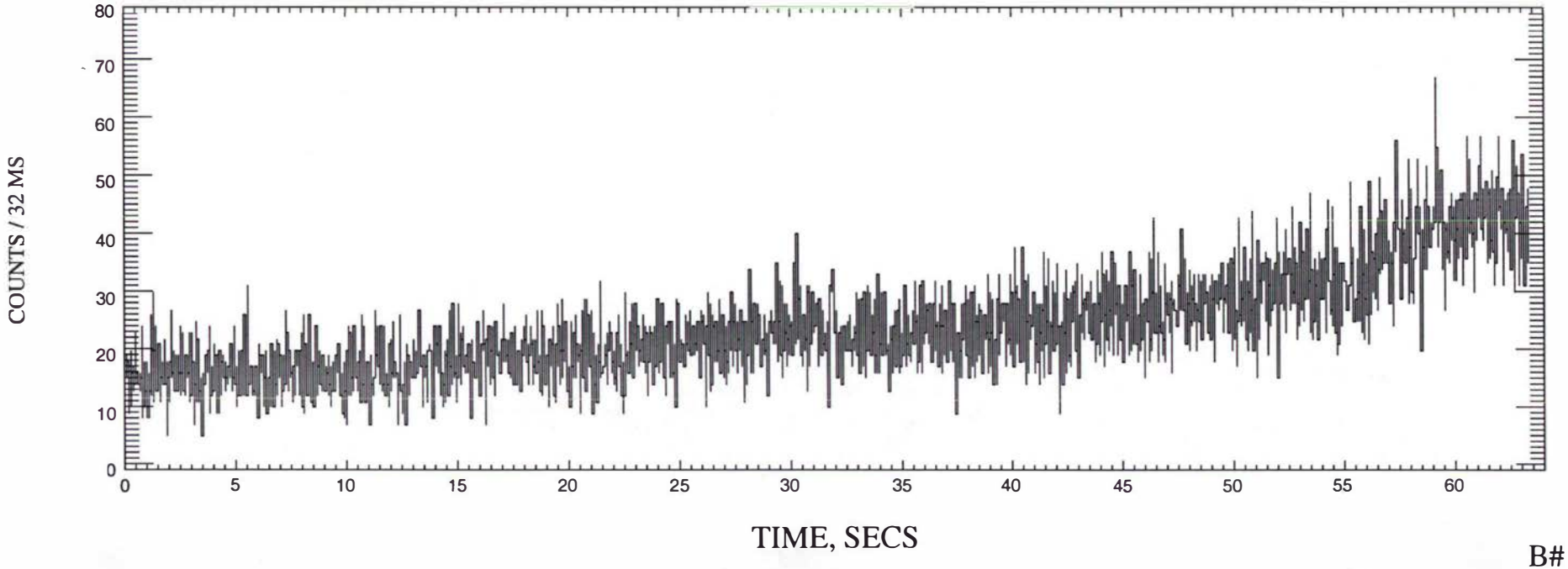


B# 1

HUS 2A TRIGGERED DATA EDR DMY = 27/11/1999 DOY = 331 03/21/00

Burst Counter 1 at UT=12.606855002509 h=45384.678 s 12:36:24.678

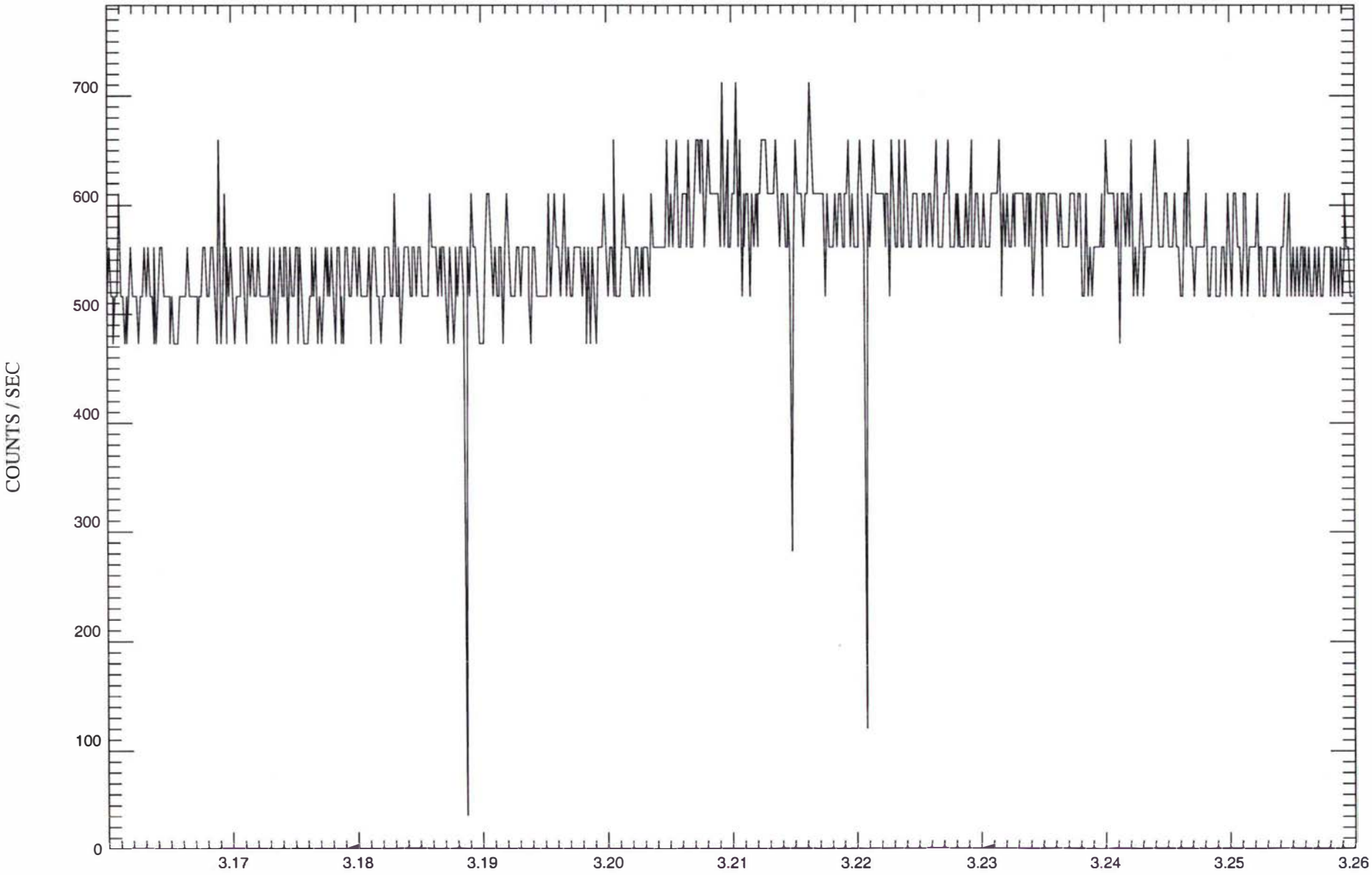




B# 2

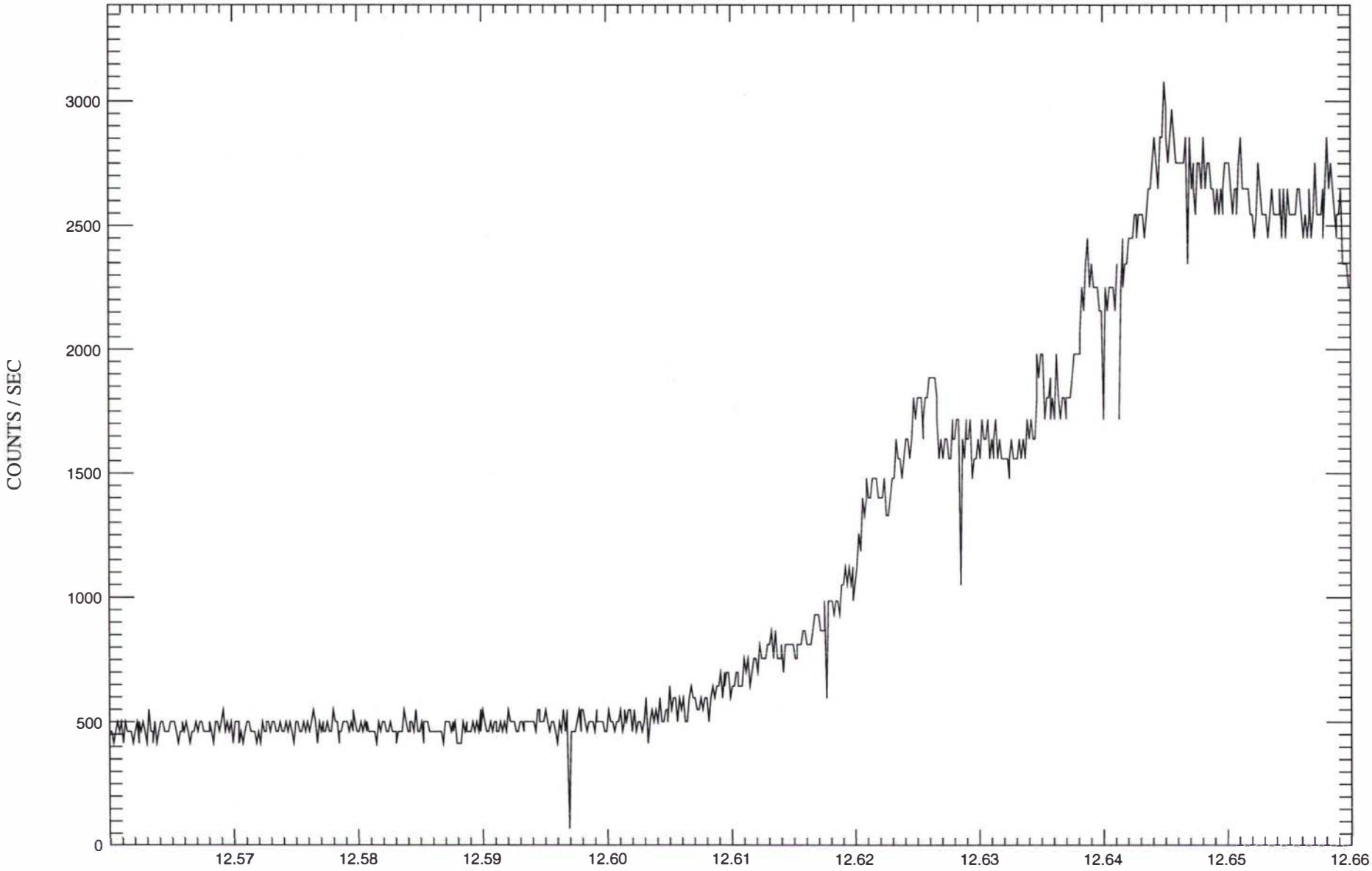
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 27/11/1999 DOY = 331 03/21/00

CALIBRATION DATA INCLUDED

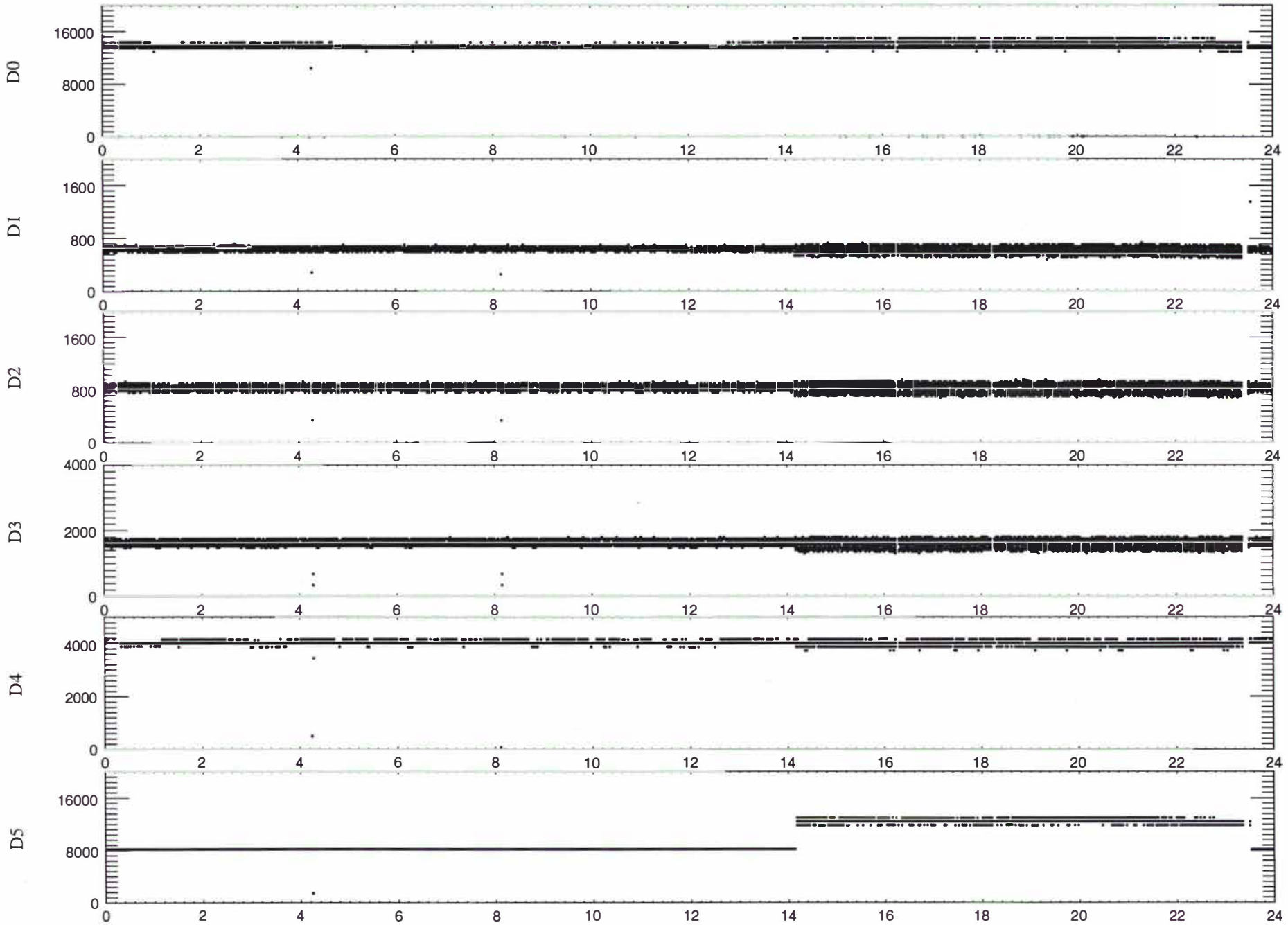


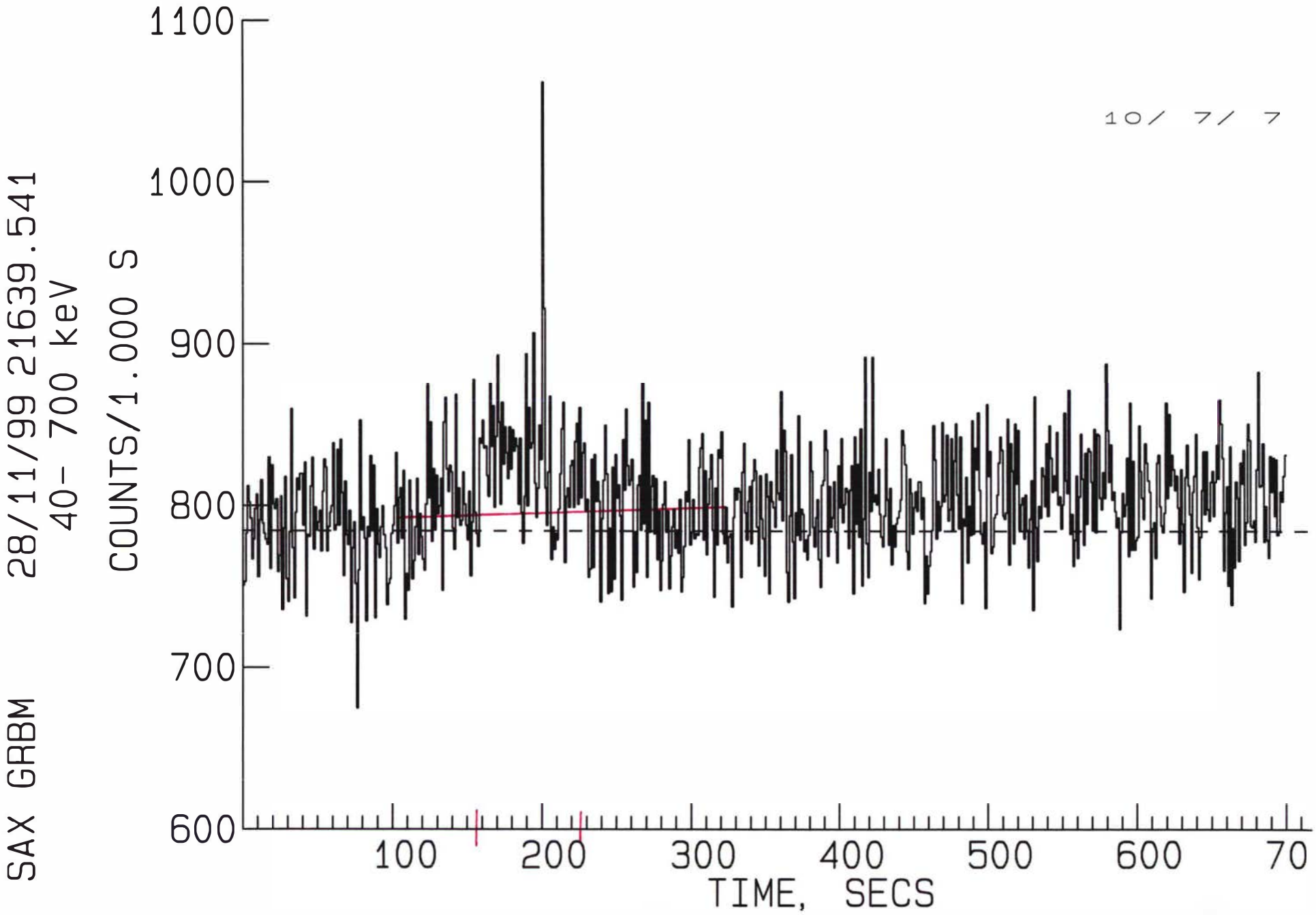
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 27/11/1999 DOY = 331 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 331, year 1999 to day 331, year 1999 03/21/00




SAX GRBM
28/11/99 21639.541
40- 700 keV
COUNTS/1.000 S
1100
1000
900
800
700
600
100
200
300
400
500
600
70
TIME, SECS
10/ 7/ 7

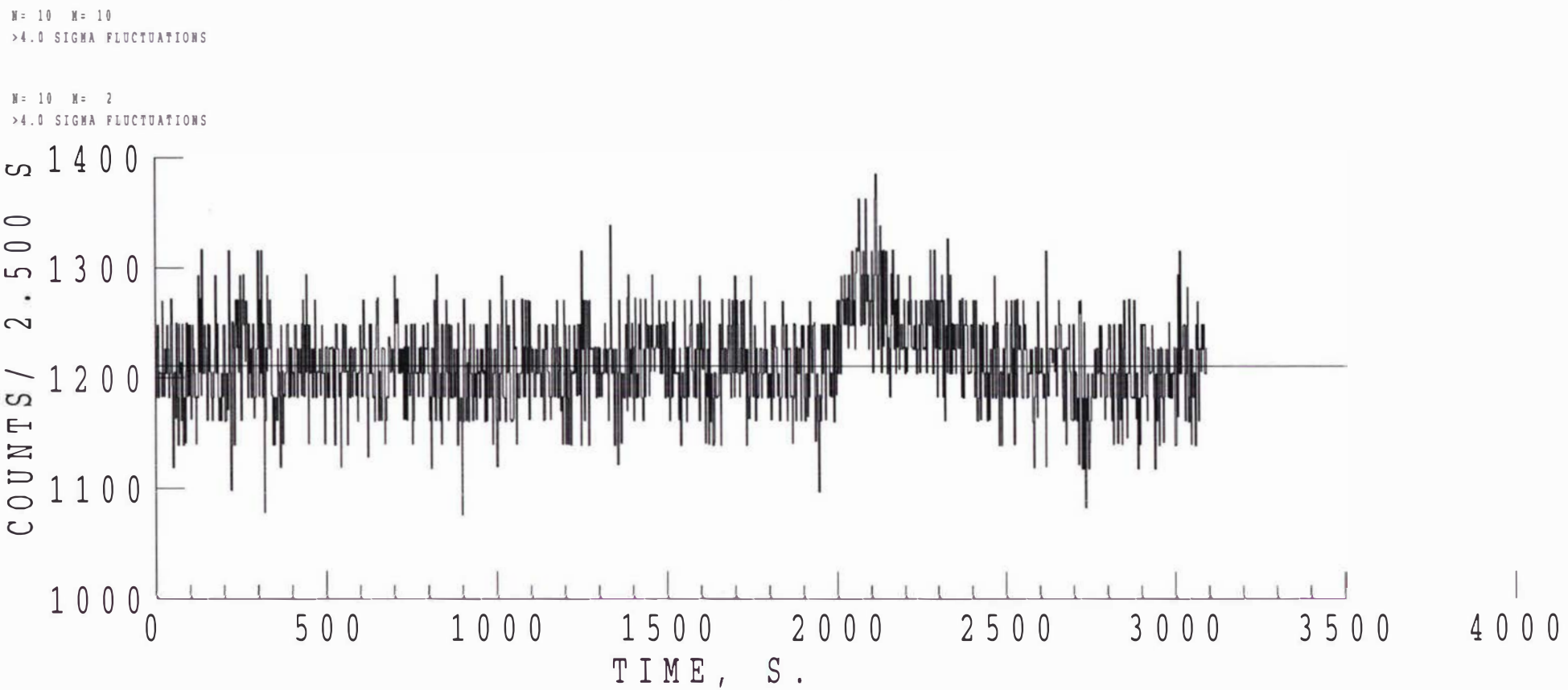
GRBM 19991128 22334

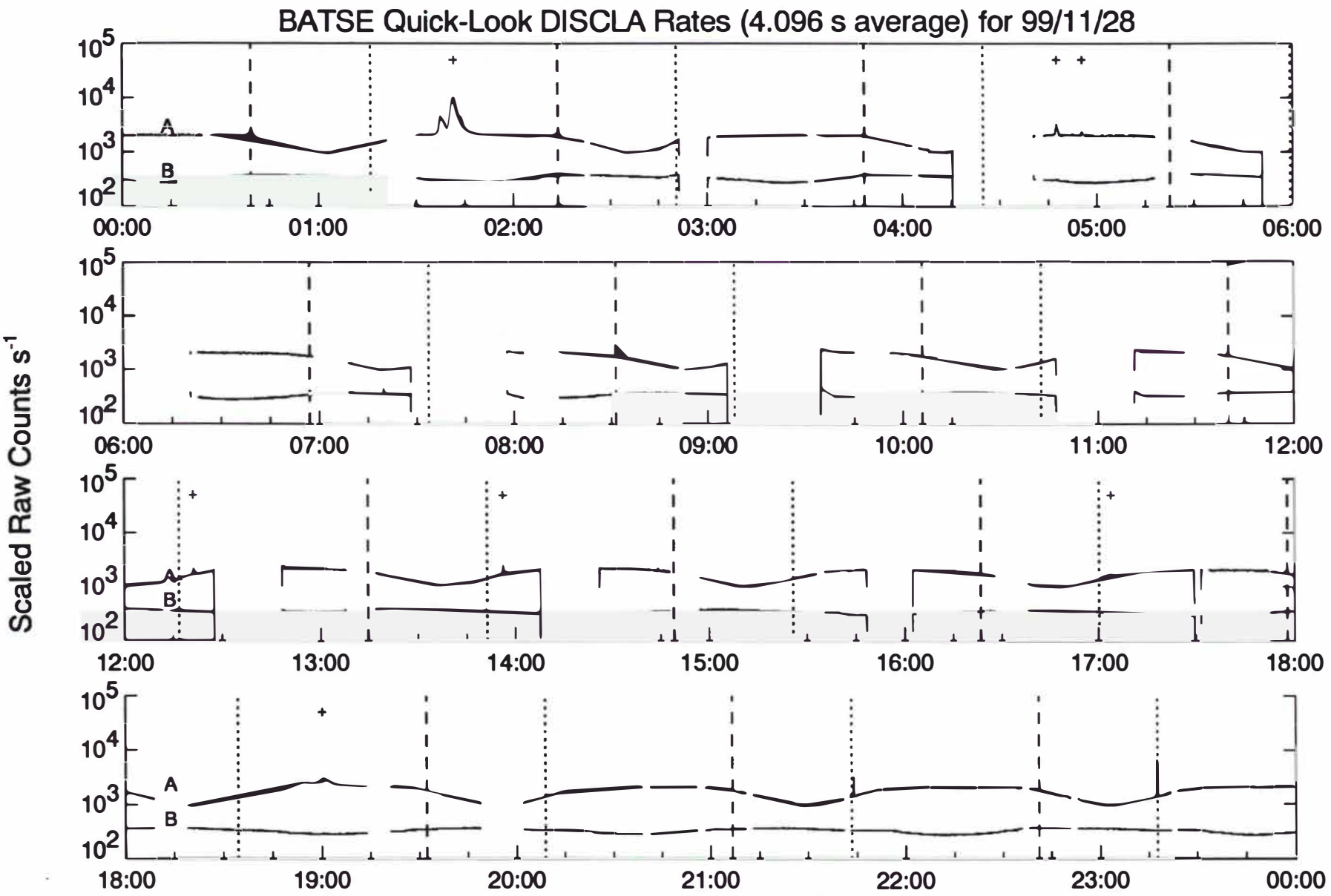
ULYSSES RT 06/07/07

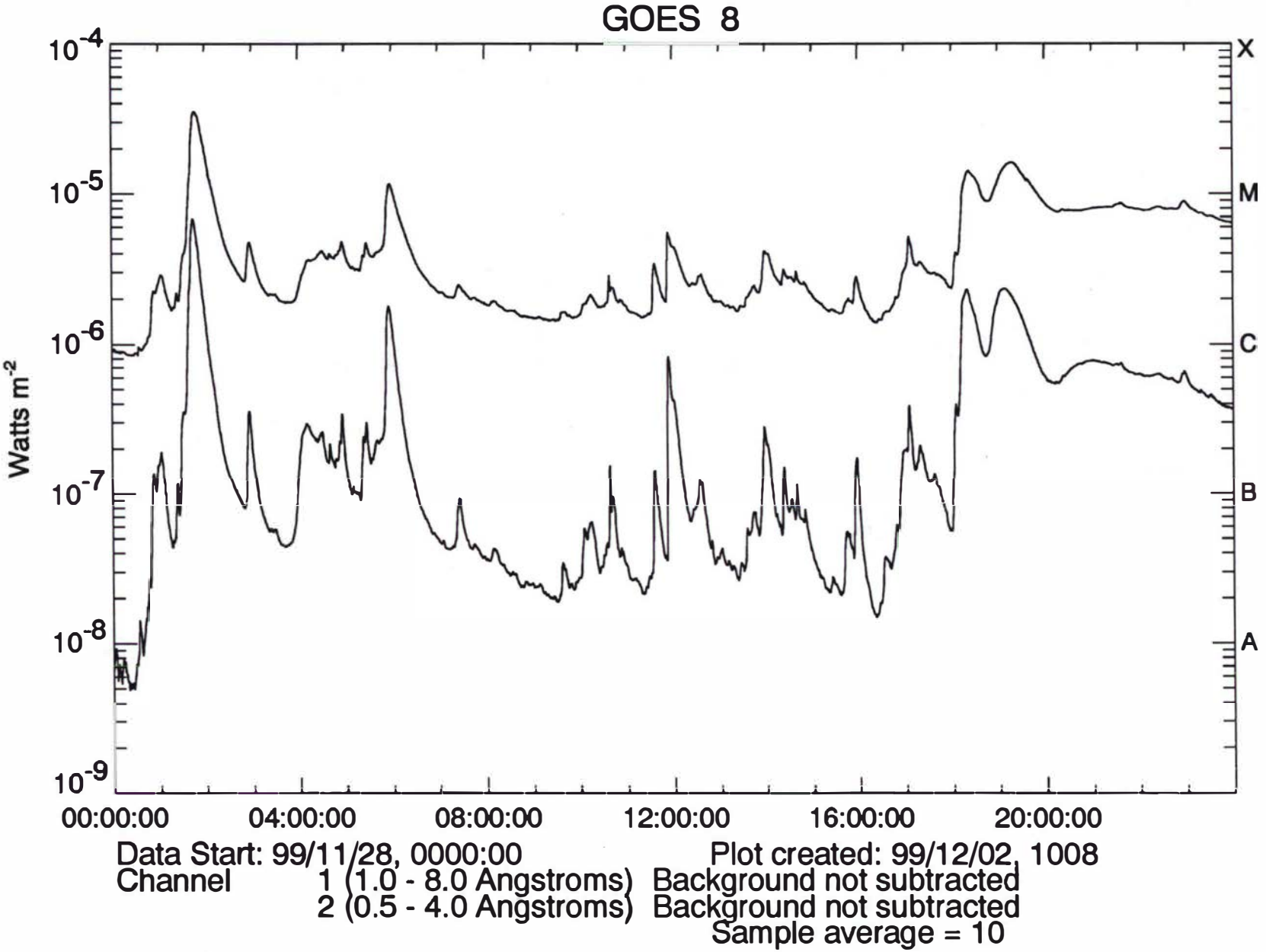
28/11/99 20772.178 s

0.500 S INTERVALS REGROUPED BY 5

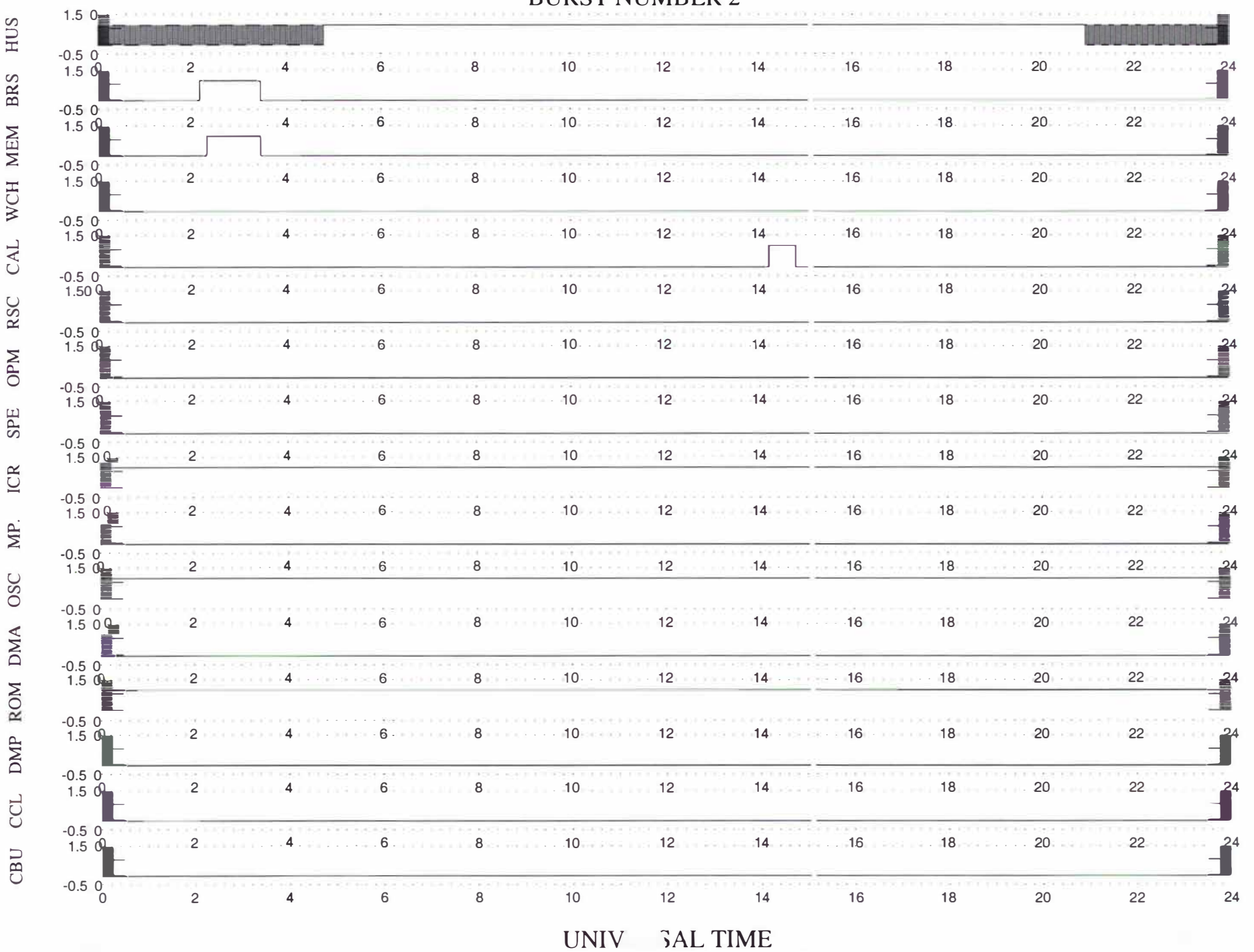
0- 0 keV




BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/28
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 99/12/02, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

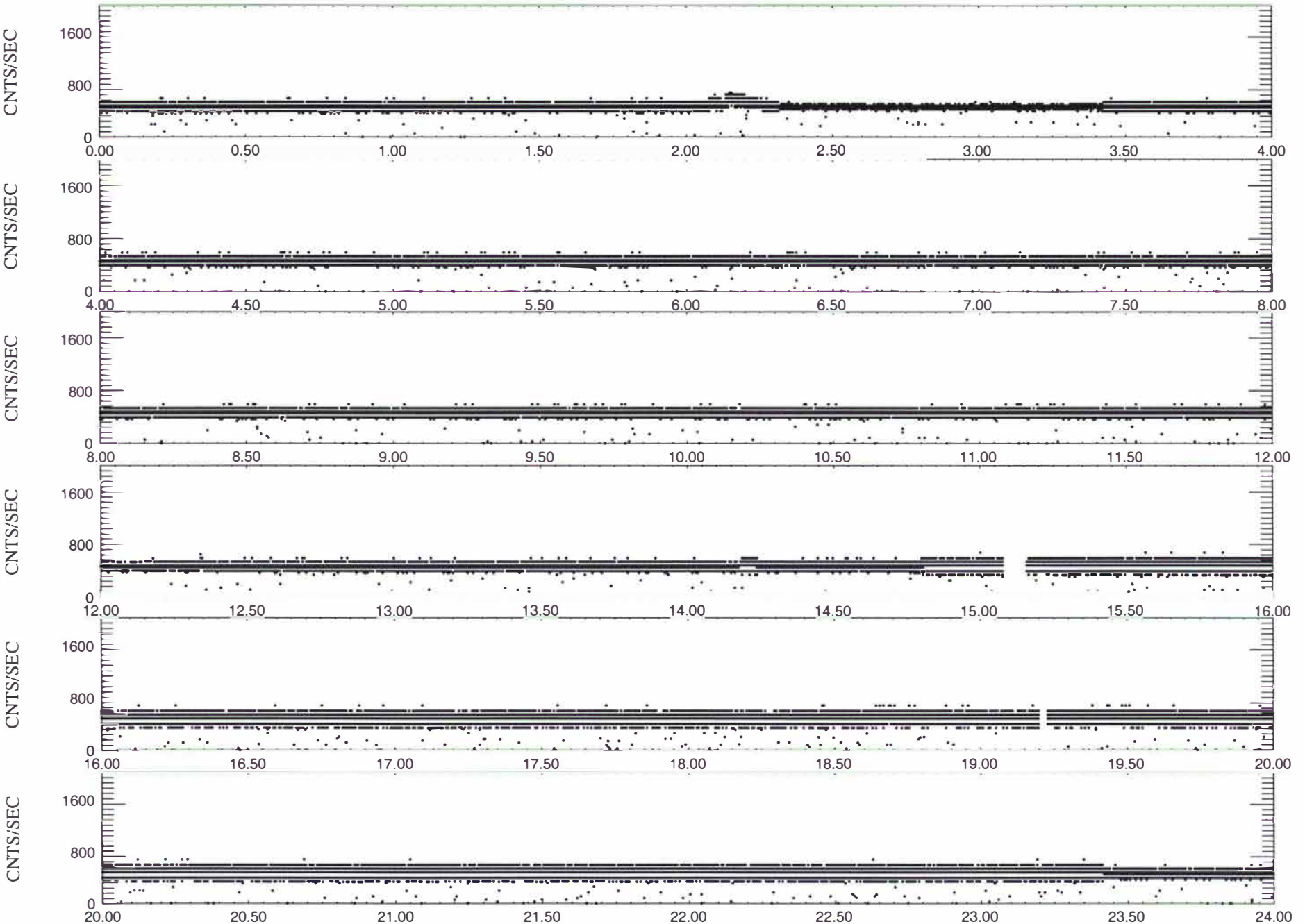

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/28, 0000:00
Plot created: 99/12/02, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 332, year 1999 to day 332, year 1999 04/28/00



HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 28/11/1999 DOY = 332 04/28/00

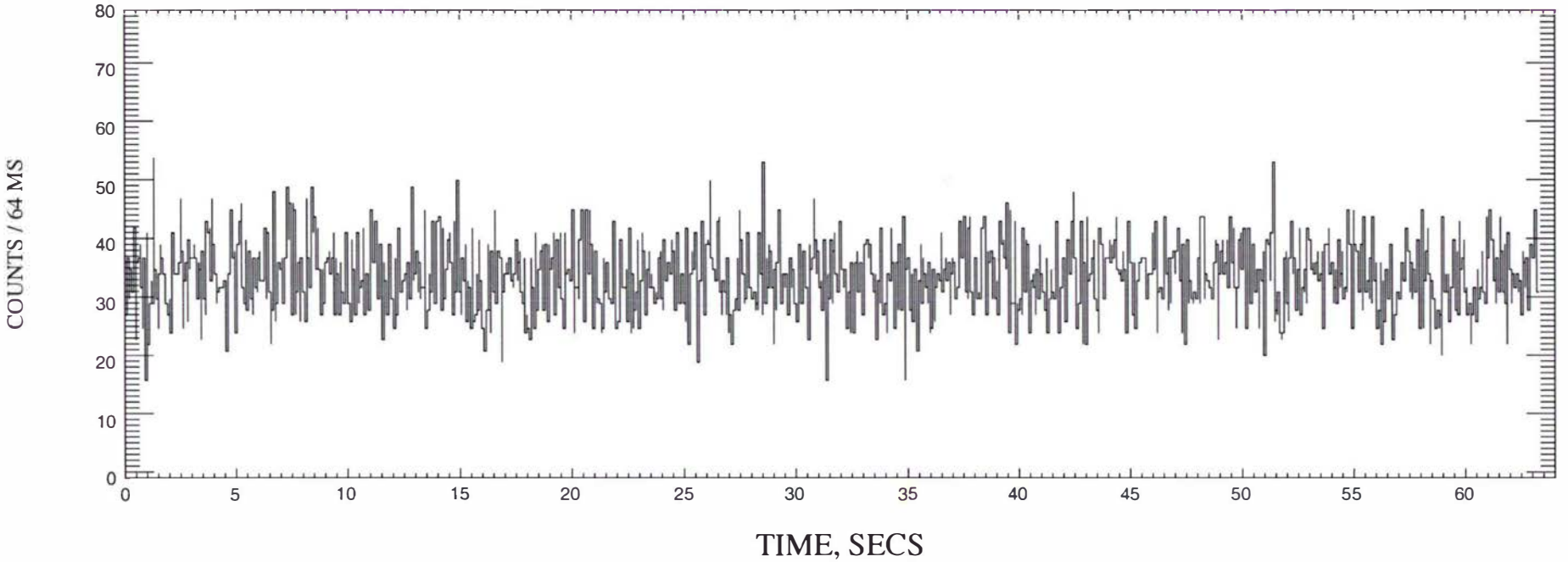
CALIBRATION DATA INCLUDED

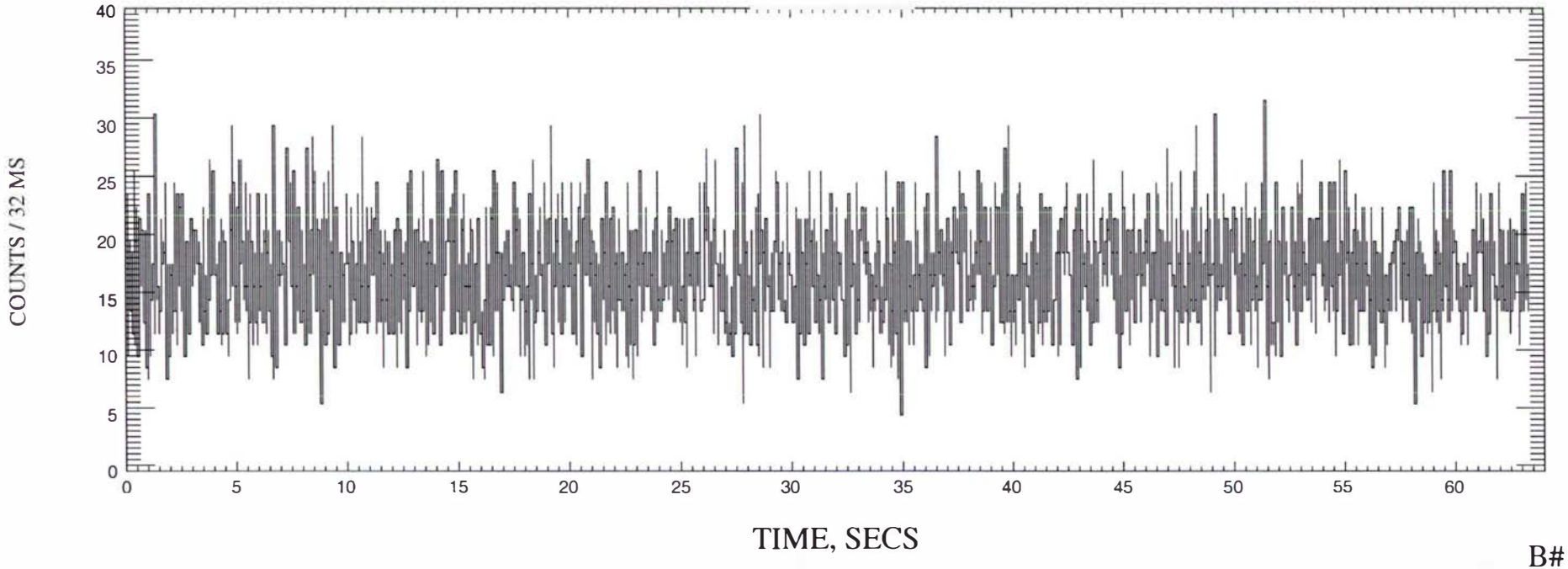


UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 28/11/1999 DOY = 332 03/21/00

Burst Counter 2 at UT= 2.165426656935 h= 7795.536 s 02:09:55.536

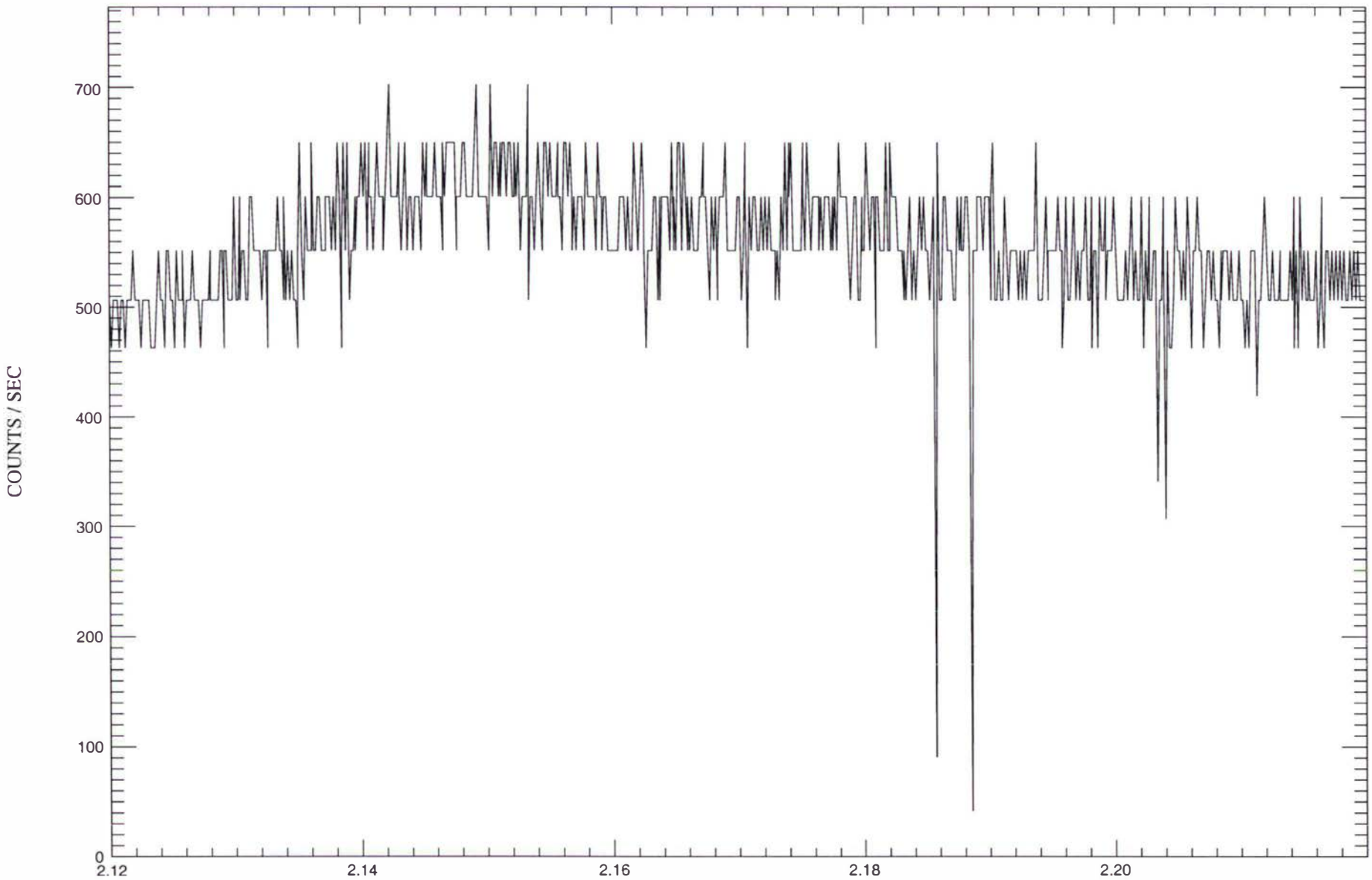




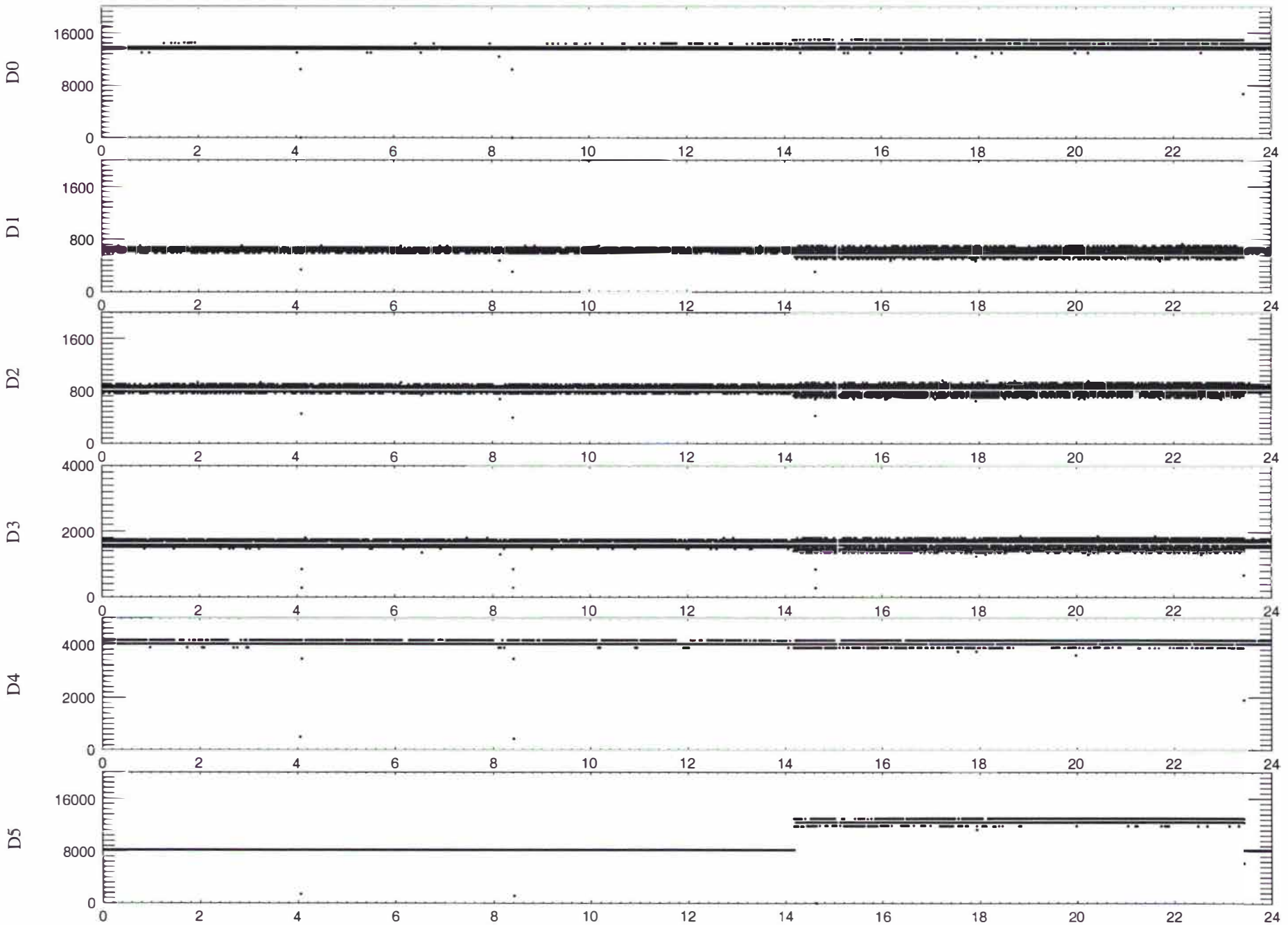
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 28/11/1999 DOY = 332 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 332, year 1999 to day 332, year 1999 03/21/00



From GOGUSE@fender.msfc.nasa.gov Fri Dec 3 09:13 PST 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Fri, 3 Dec 1999 11:22:20 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7885

****
BATSEARCH PROGRAM
****

BATSE BURST # 7885
EVENT OF 1999 NOV 29 DAY OF YEAR=333
EVENT CROSSING TIME AT BATSE : 29211. S. OR 08:06:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 39.000 -34.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/11/ 99 IS:
RA= 165.920 DEC= -27.497 DIST= 4.506 AU
BATSE-ULYSSES DISTANCE = 674113371. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 412.75 SECS.
CROSSING TIME AT ULYSSES IS 29624. S. OR 08:13:43 +/- 440.03 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/11/ 99 IS:
RA= 304.692 DEC= -21.108 DIST= 1.670 AU
MARS-BATSE DISTANCE = 249776912. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -119.37 SECS.
CROSSING TIME AT MARS IS 29092. S. OR 08:04:51 +/- 141.35 SECONDS

BATSE BURST TRIGGER
NO.: 7885

TIME: TJD=1511 SECONDS=29211

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=115.2 AZIMUTH= 95.6 ERROR= 7.1 DEGREES

COMMENTS:
GRB, MULTI PEAKED, DURATION APPROXIMATELY 5 SEC.,
NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7885	991129	11511	29211	2200	039	-34	5

BATSE BURST# 7885

ULYSSES RT 3/12/99

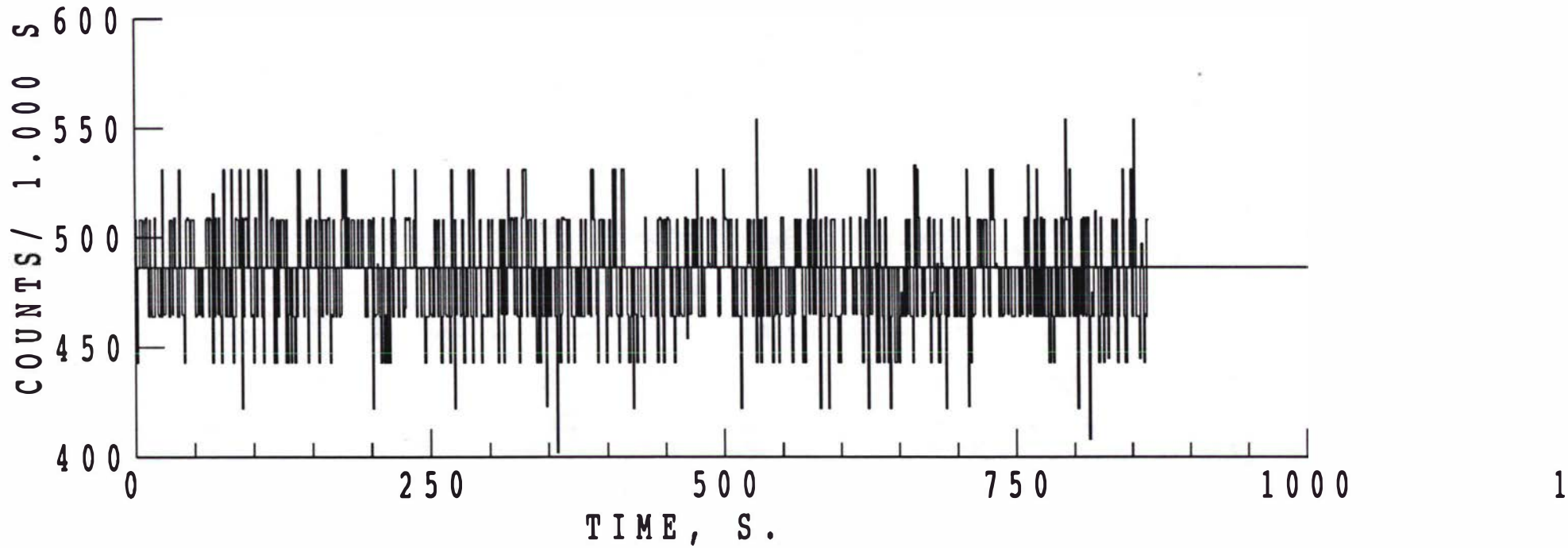
29/11/99 29196.141 s

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 SURASAK@fender.msfc.nasa.gov Fri Dec 3 12:18 PST 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Fri, 3 Dec 1999 14:27:03 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7886

****
BATSEARCH PROGRAM
****

BATSE BURST # 7886
EVENT OF 1999 NOV 29 DAY OF YEAR=333
EVENT CROSSING TIME AT BATSE : 45487. S. OR 12:38:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 314.000 57.000
BATSE PEAK COUNTING RATE: 4800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/11/ 99 IS:
RA= 165.925 DEC= -27.536 DIST= 4.503 AU
BATSE-ULYSSES DISTANCE = 673620876. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1792.21 SECS.
CROSSING TIME AT ULYSSES IS 47279. S. OR 13:07:59 +/- 312.52 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/11/ 99 IS:
RA= 304.692 DEC= -21.108 DIST= 1.670 AU
MARS-BATSE DISTANCE = 249776912. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.50 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -166.11 SECS.
CROSSING TIME AT MARS IS 45321. S. OR 12:35:20 +/- 139.22 SECONDS

BATSE BURST TRIGGER
NO.: 7866

TIME: TJD=1511 SECONDS=45487

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

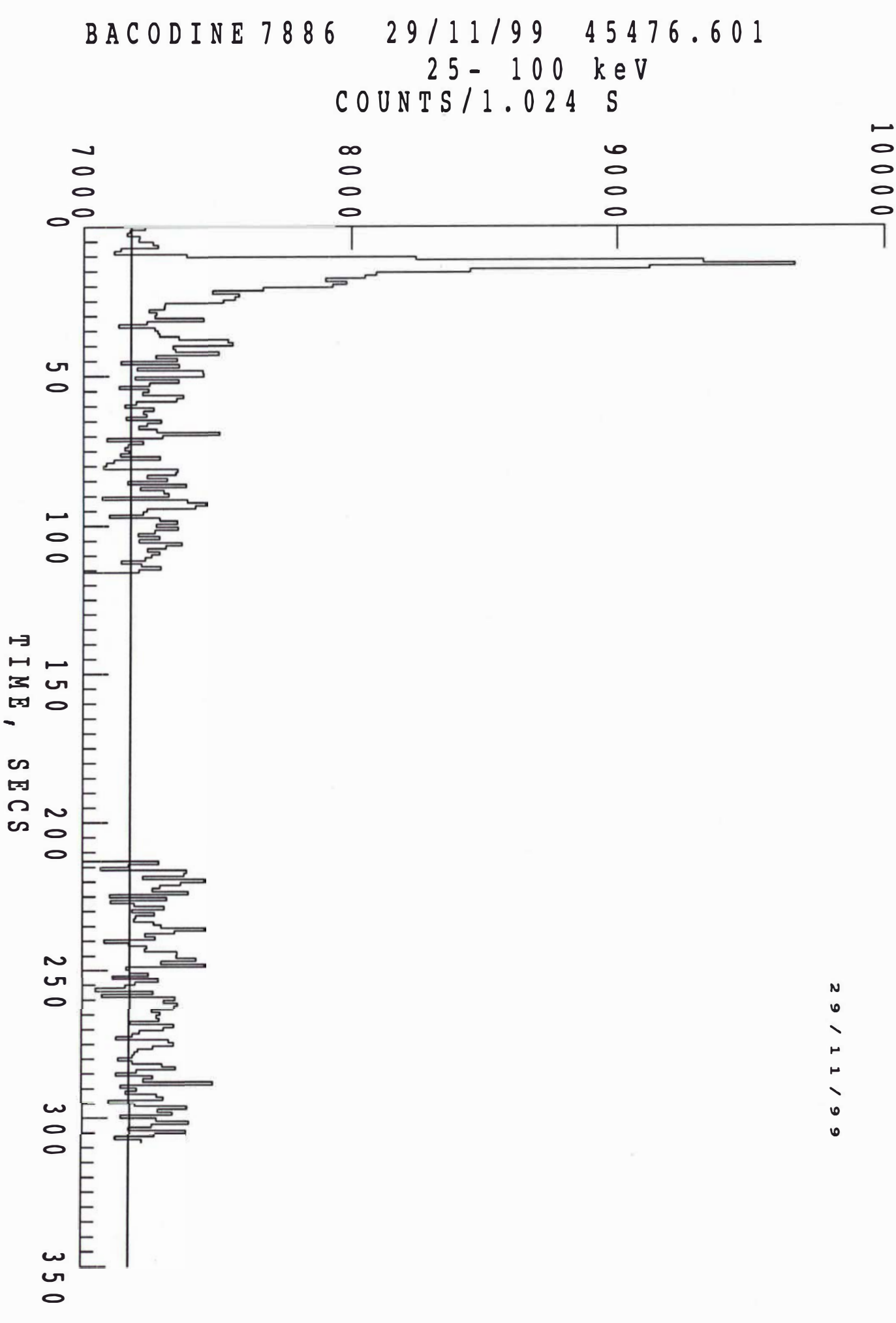
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=24.3 AZIMUTH=191.8 ERROR=2.748 DEGREES

COMMENTS:
GRB. SINGLE PULSE FRED WITH SOME TAIL. DURATION ABOUT 40 S.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7886	991129	11511	45487	4800	314	+57	40


BACODINE 7886 29/11/99 45476.601
25- 100 keV
COUNTS/1.024 S
7000
8000
9000
10000
0
50
100
150
200
250
300
350
TIME, SECS
29/11/99

BATSE BURST# 7886

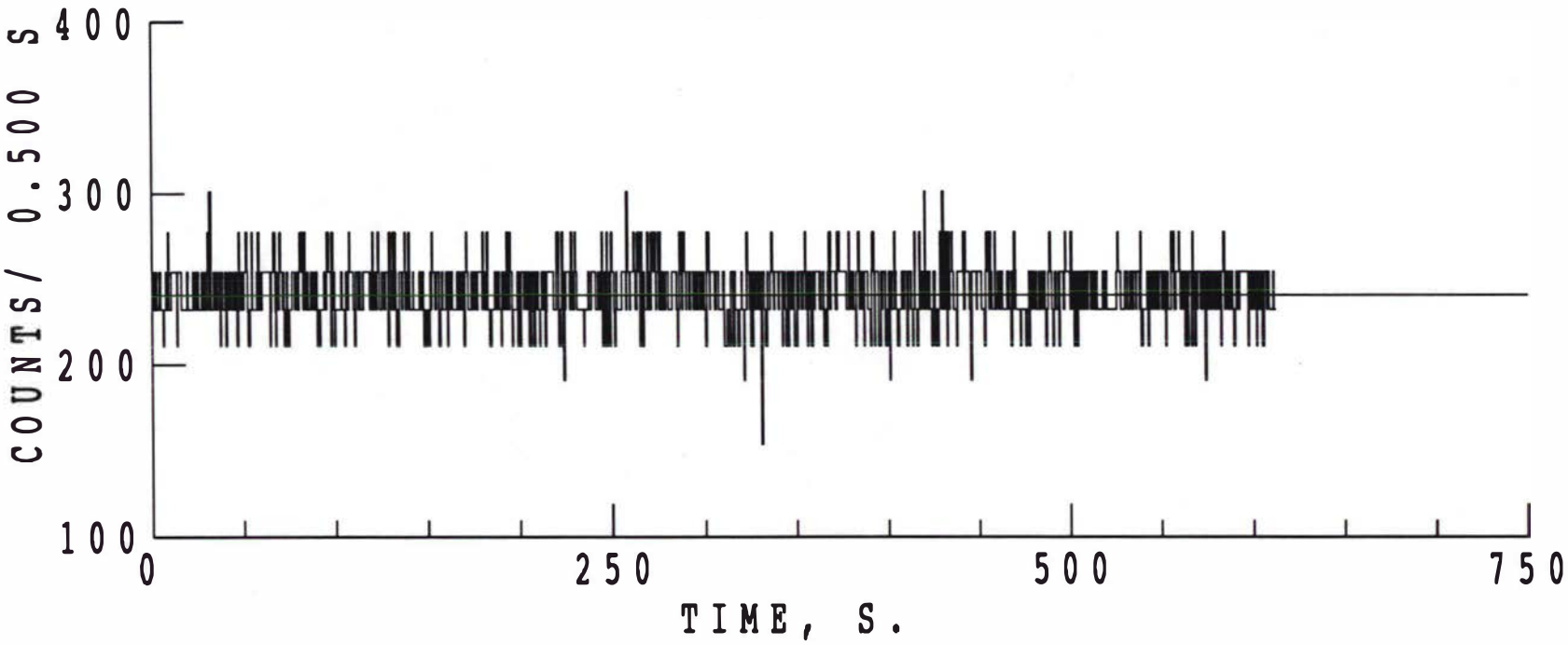
ULYSSES RT 3/12/99

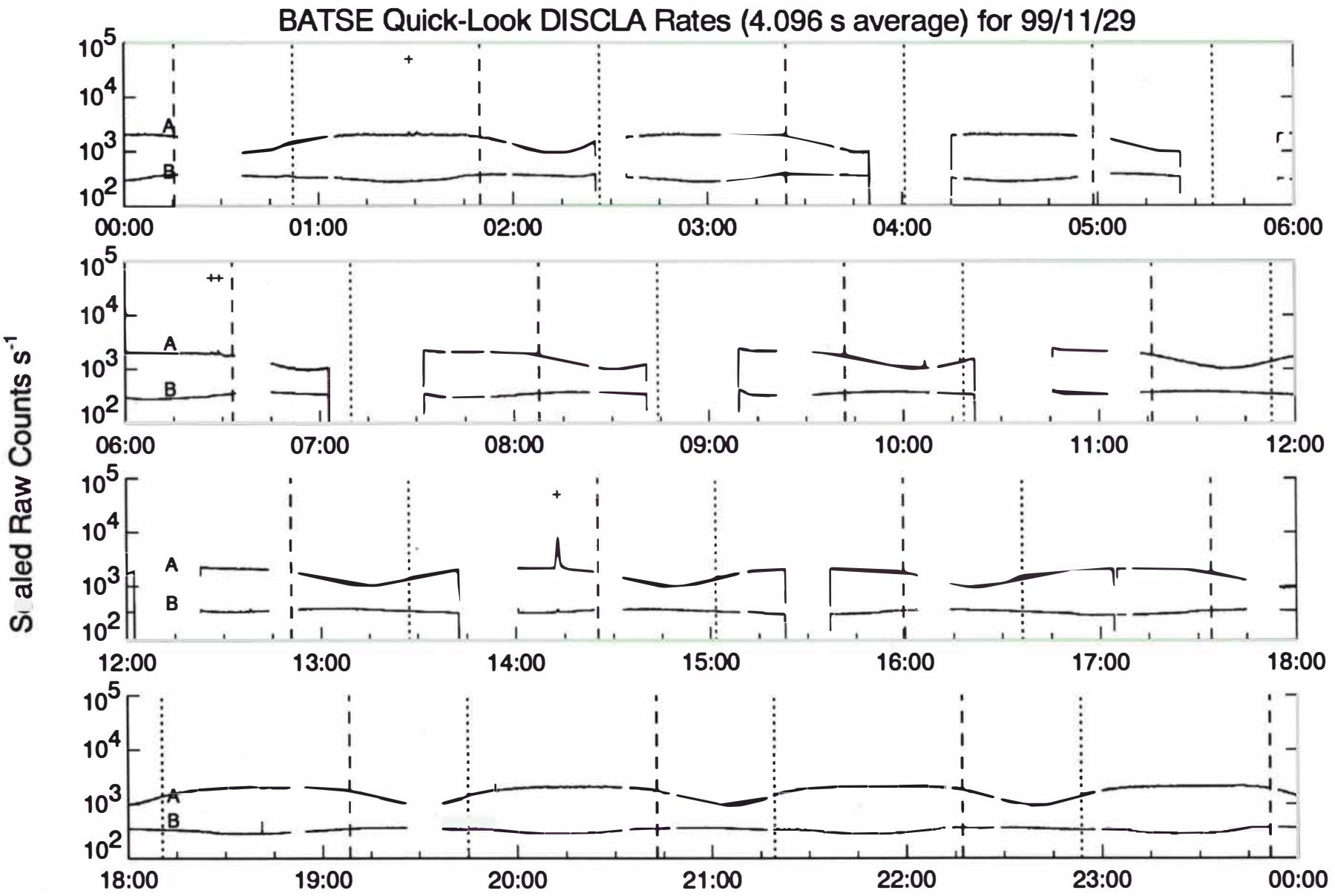
29/11/99 46980.320 s

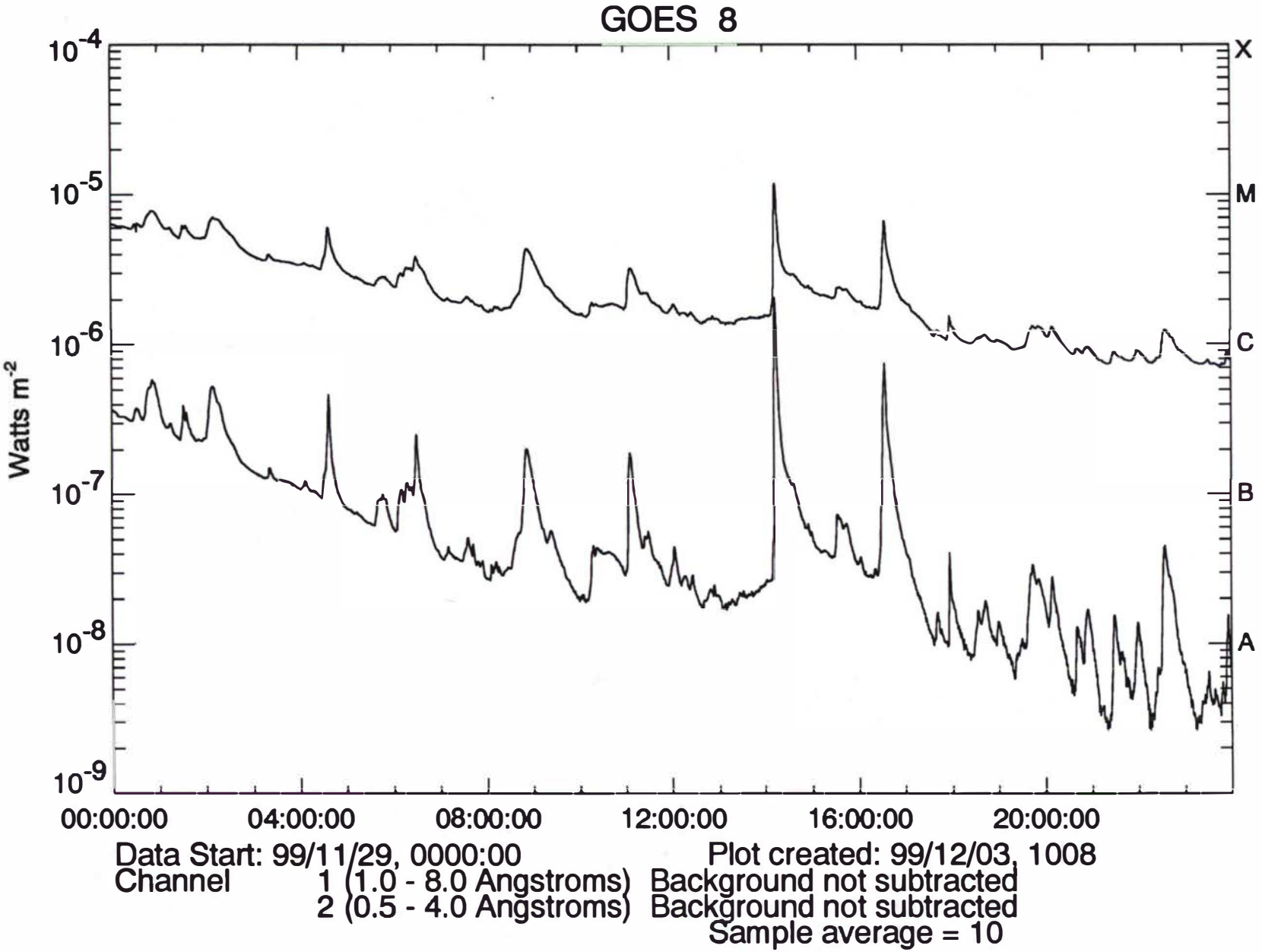
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

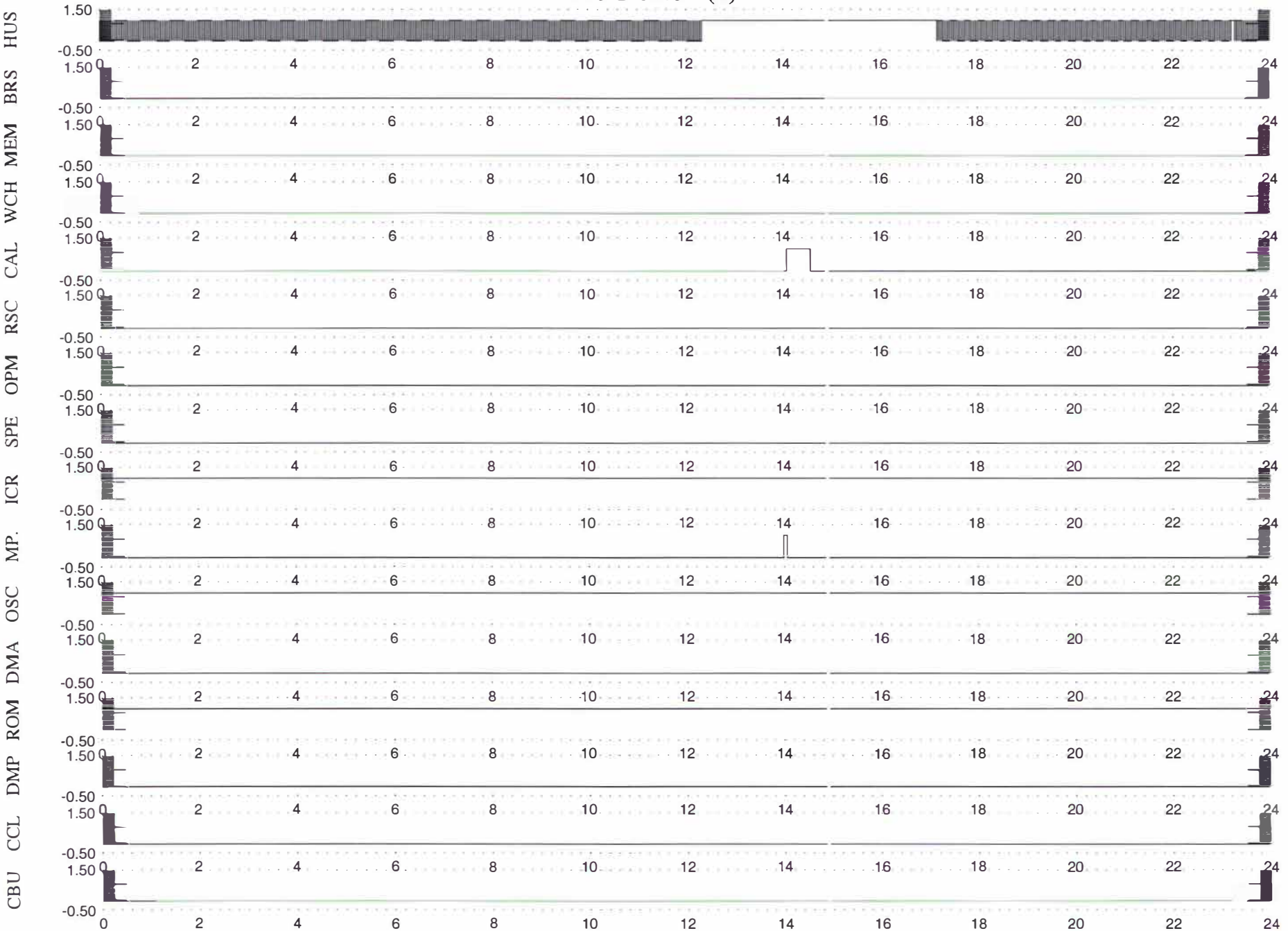



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/29
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/12/03, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/29, 0000:00
Plot created: 99/12/03, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 333, year 1999 to day 333, year 1999 04/28/00

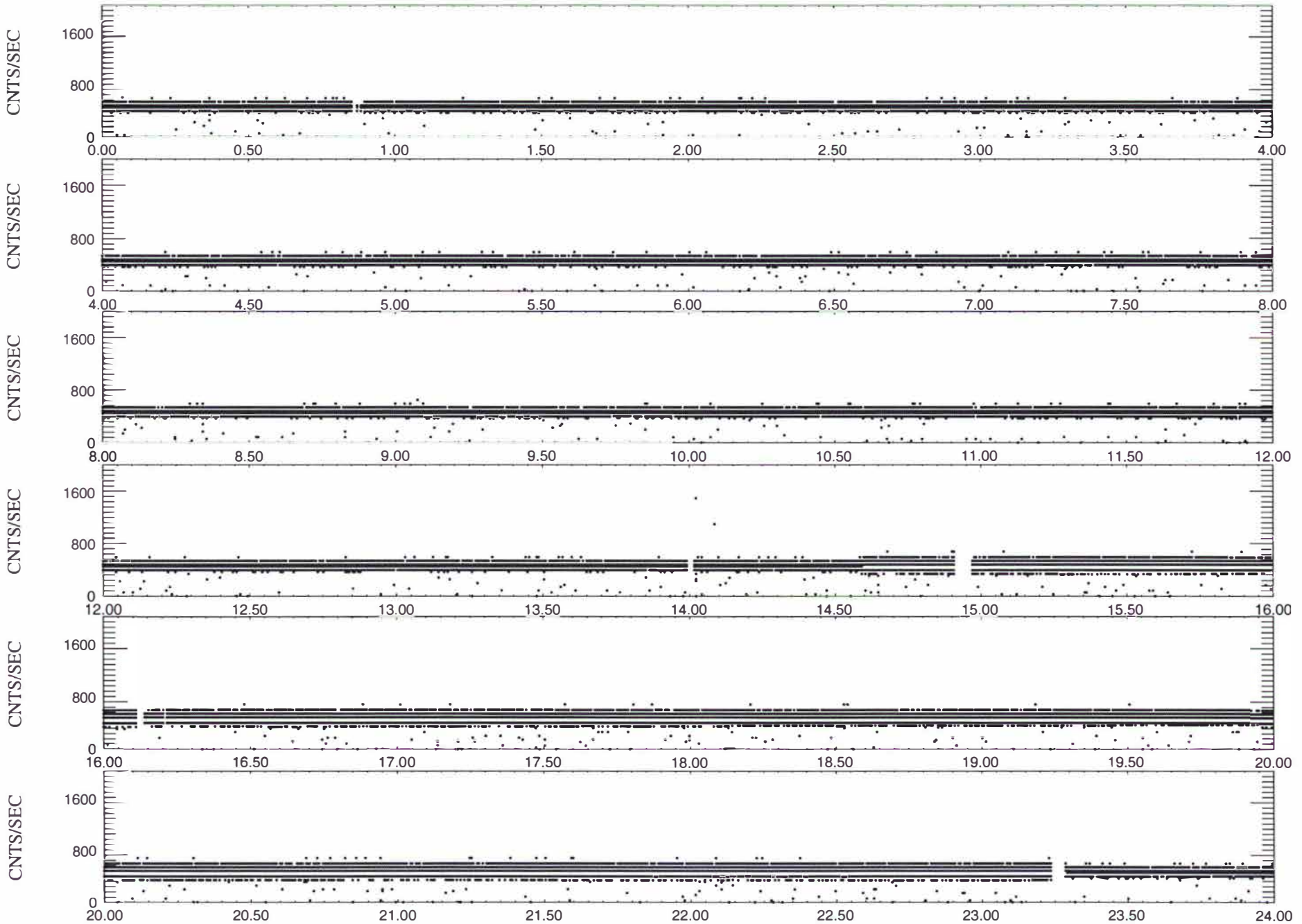
NO BURST (2)



UNIV SAL TIME

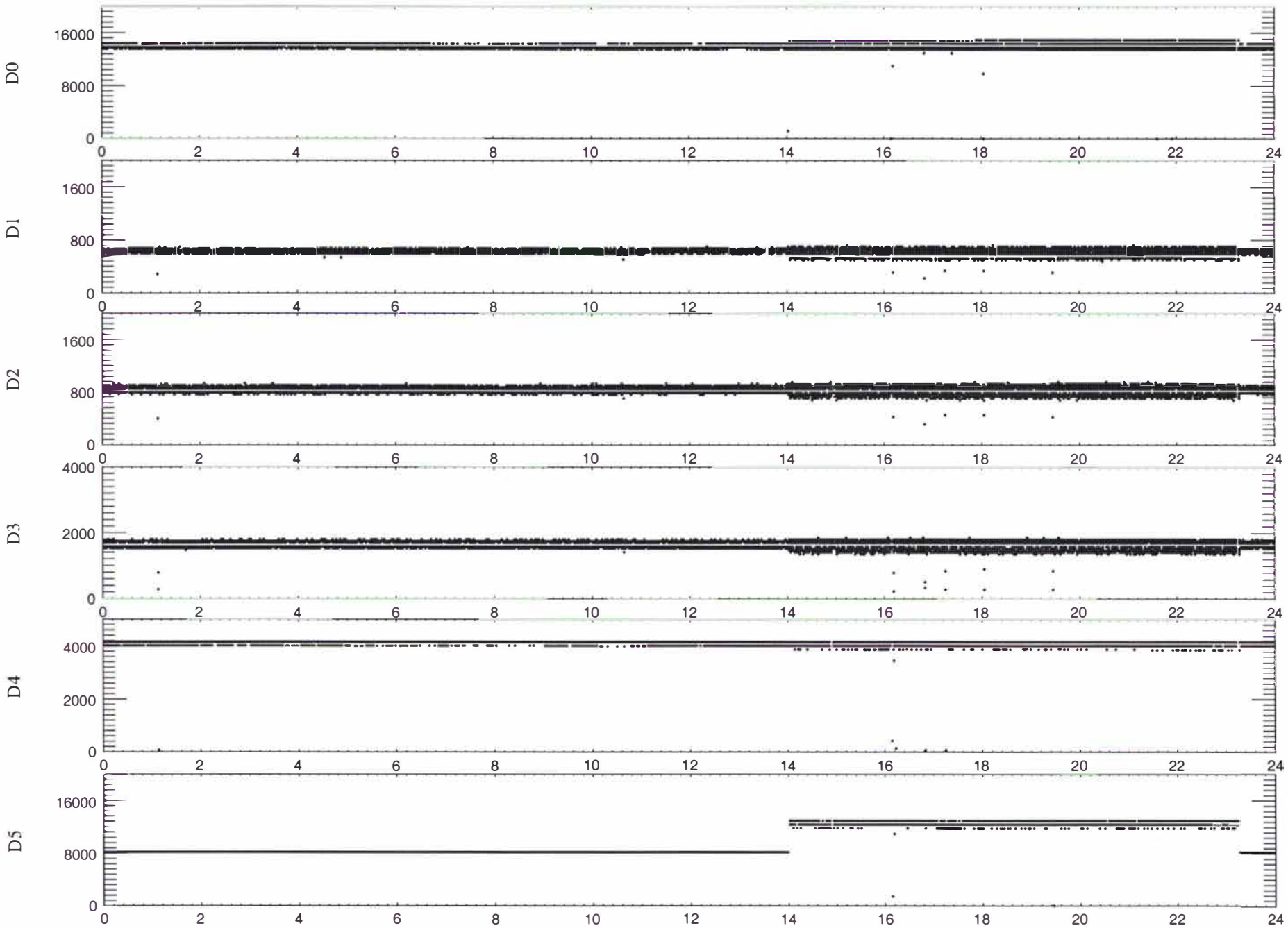
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 29/11/1999 DOY = 333 04/28/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 333, year 1999 to day 333, year 1999 03/21/00



From HENZE@fender.msfc.nasa.gov Fri Dec 3 16:10 PST 1999
From: HENZE@fender.msfc.nasa.gov
Date: Fri, 3 Dec 1999 18:19:56 -0600 (CST)
`: khurley@sunspot.ssl.berkeley.edu
bject: Crossing Windows for BATSE Burst 7887

****
BATSEARCH PROGRAM
****

BATSE BURST # 7887
EVENT OF 1999 NOV 30 DAY OF YEAR=334
EVENT CROSSING TIME AT BATSE : 47218. S. OR 13:06:58.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 115.000 41.000
BATSE PEAK COUNTING RATE: 5100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/11/ 99 IS:
RA= 165.950 DEC= -27.715 DIST= 4.488 AU
BATSE-ULYSSES DISTANCE = 671346935. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -259.31 SECS.
CROSSING TIME AT ULYSSES IS 46959. S. OR 13:02:38 +/- 432.24 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/11/ 99 IS:
RA= 305.488 DEC= -20.923 DIST= 1.675 AU
MARS-BATSE DISTANCE = 250573264. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 21.96 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= 775.19 SECS.
CROSSING TIME AT MARS IS 47993. S. OR 13:19:53 +/- 66.03 SECONDS

BATSE BURST TRIGGER
NO.: 7887

TIME: TJD=1512 SECONDS=47218

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.1 AZIMUTH=206.6 ERROR= 1.8 DEGREES

COMMENTS:
SINGLE PULSE, RISE FASTER THAN DECAY, DUR. APPROX. 15 S.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7887	991130	11512	47218	5100	115	+41	15

BATSE BURST# 7887

ULYSSES RT 3/12/99

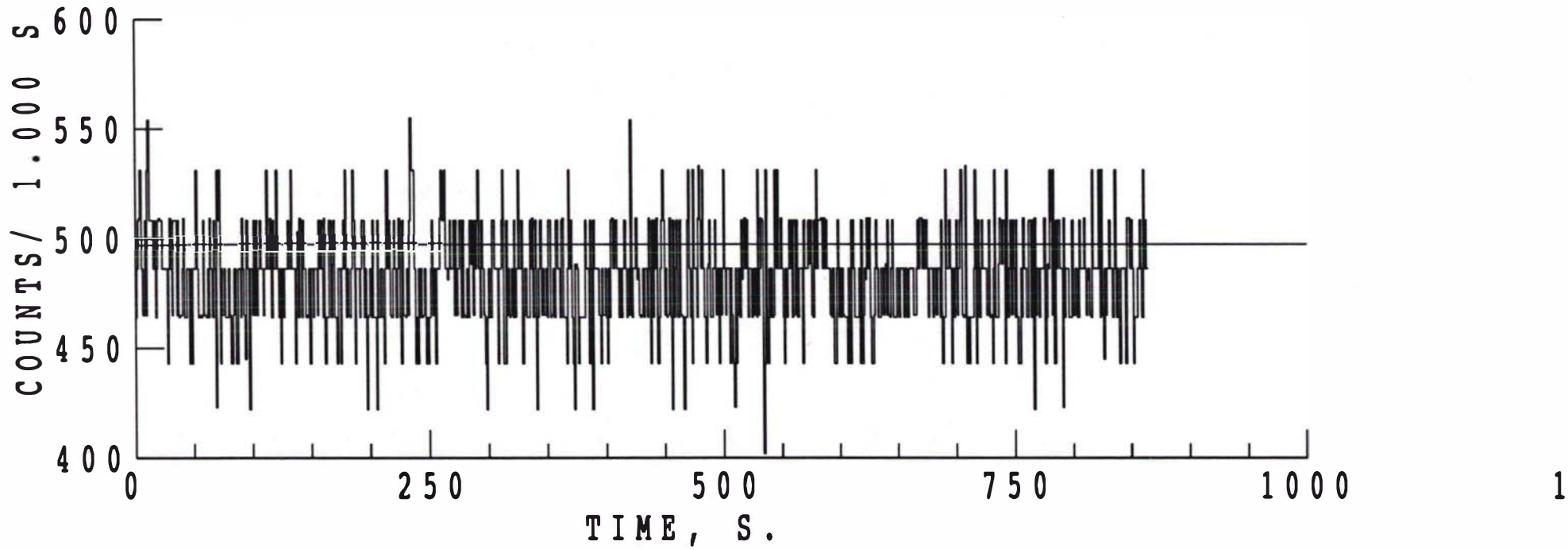
30/11/99 46512.191 s

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



HUS MODES EDR day 334, year 1999 to day 334, year 1999 04/28/00

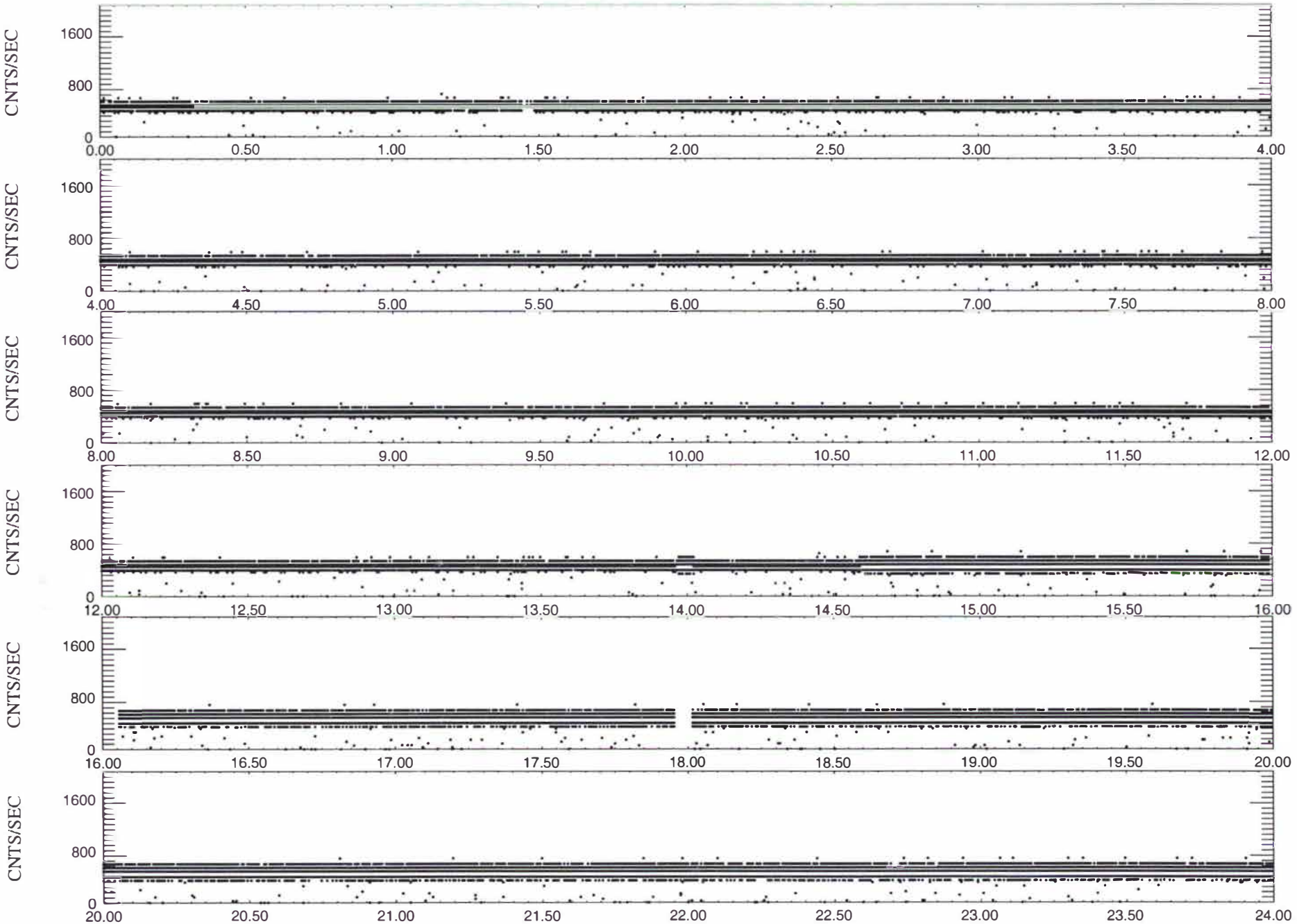
NO BURST (2)



UNIV SAL TIME

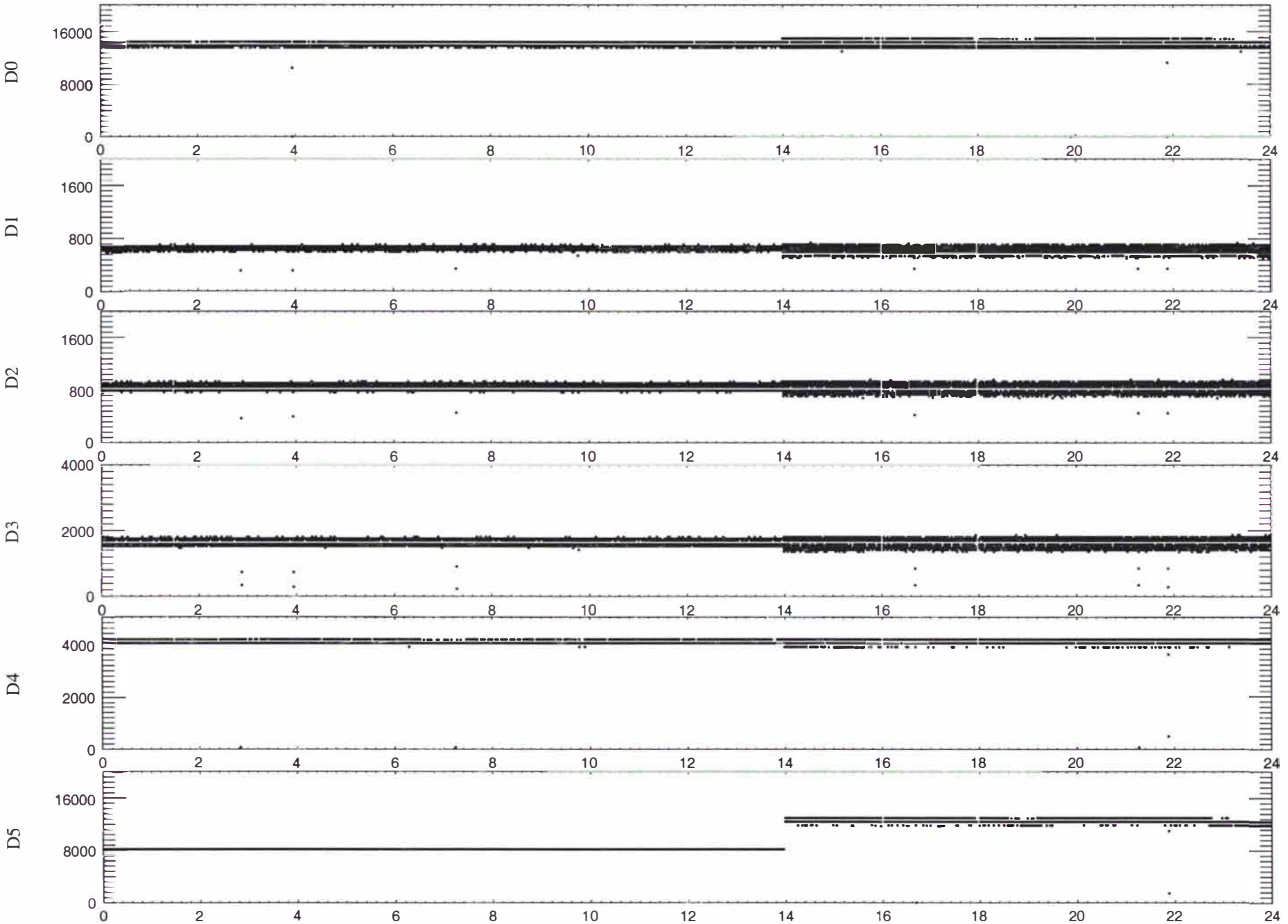
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 30/11/1999 DOY = 334 04/28/00

CALIBRATION DATA INCLUDED

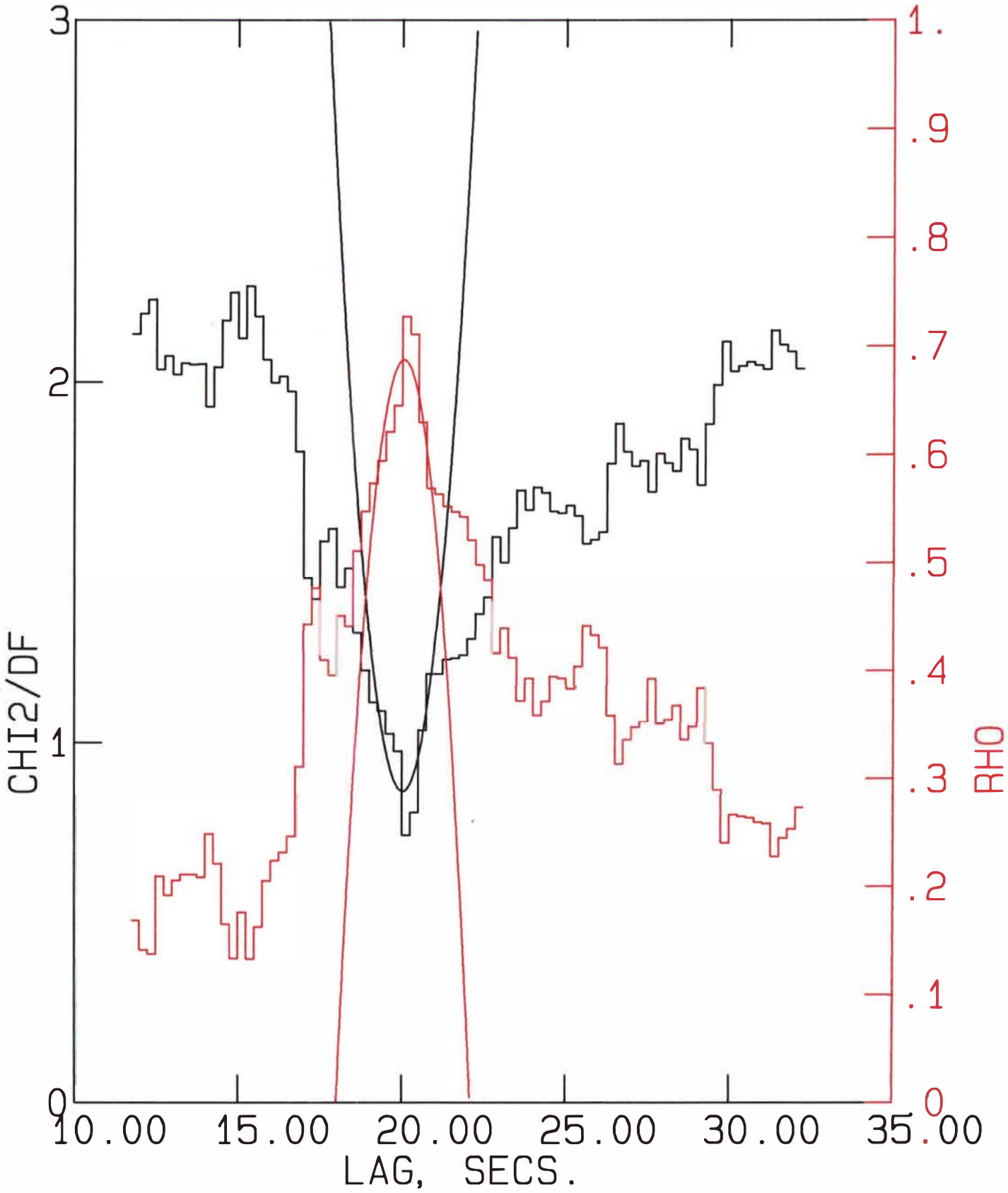


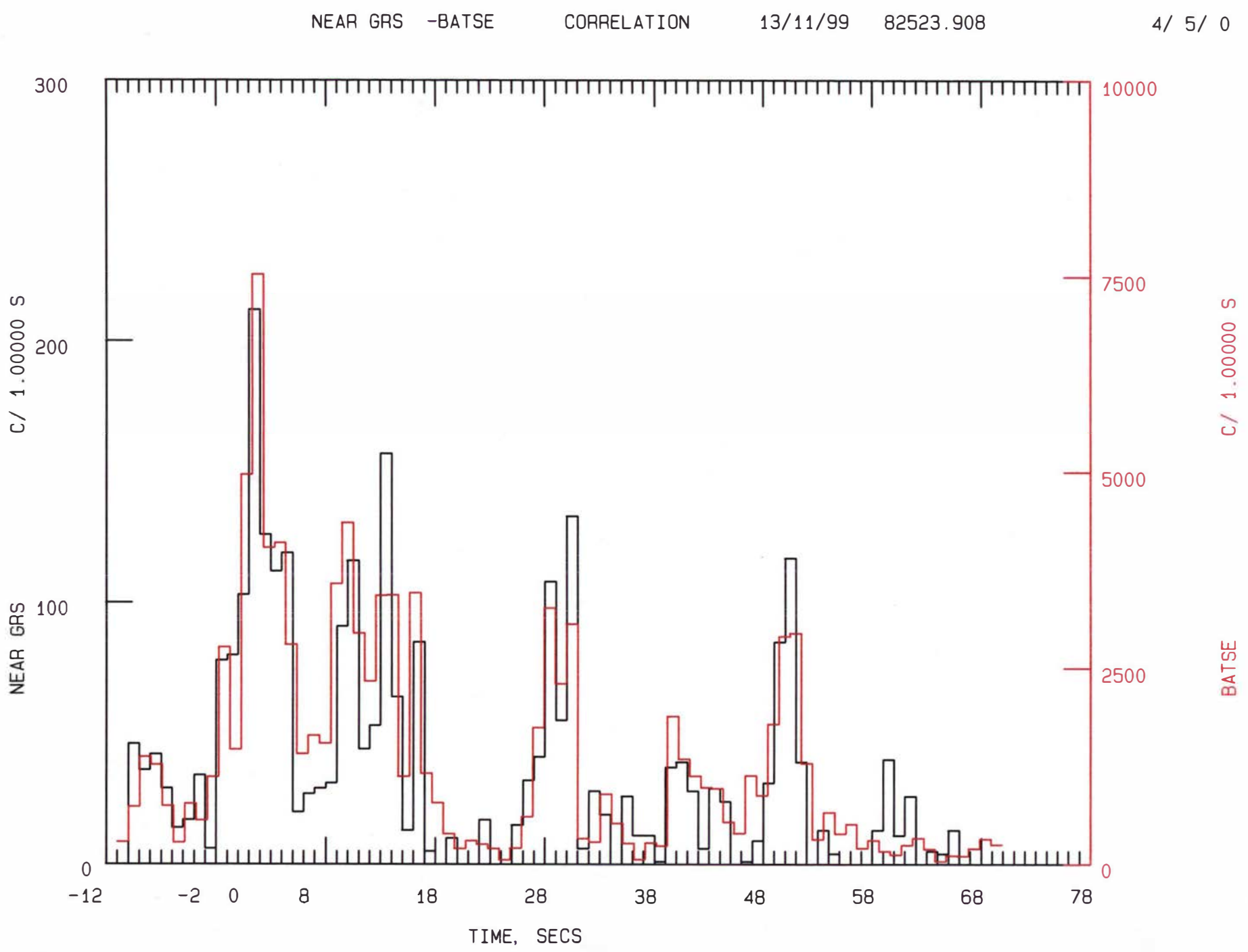
UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 334, year 1999 to day 334, year 1999 03/21/00

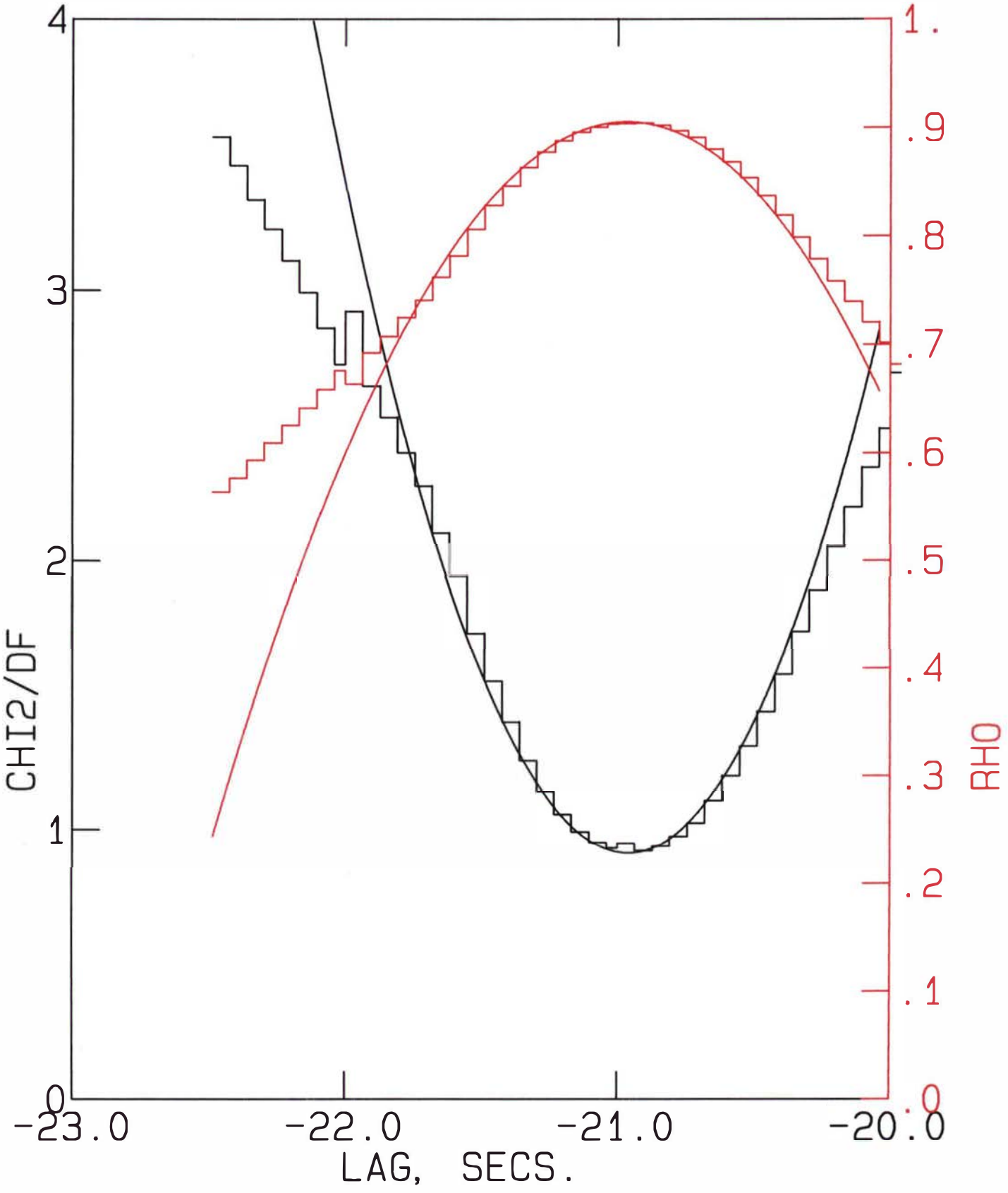


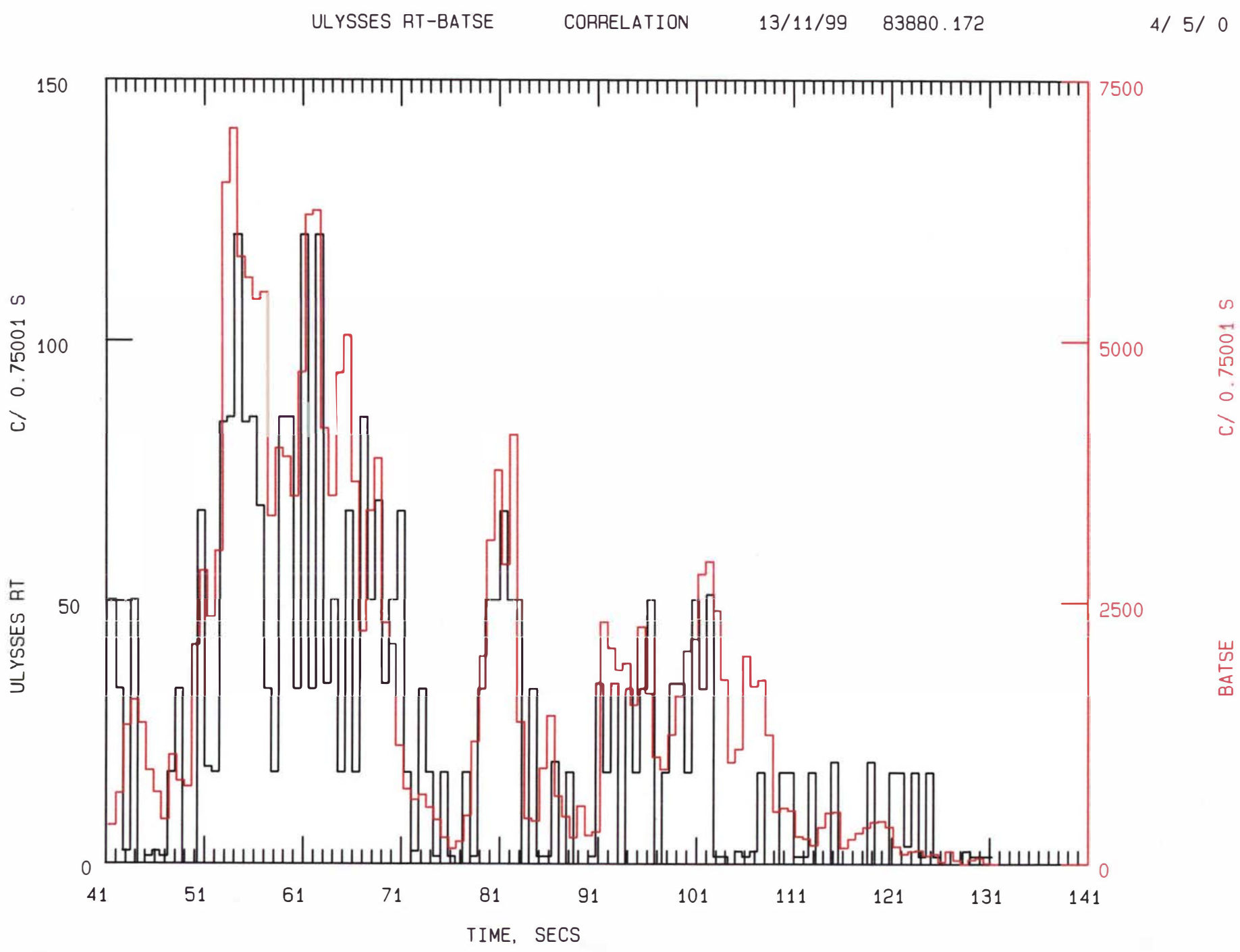
NEAR GRS -ULYSSES RT CORRELATION 13/11/99 82523.908



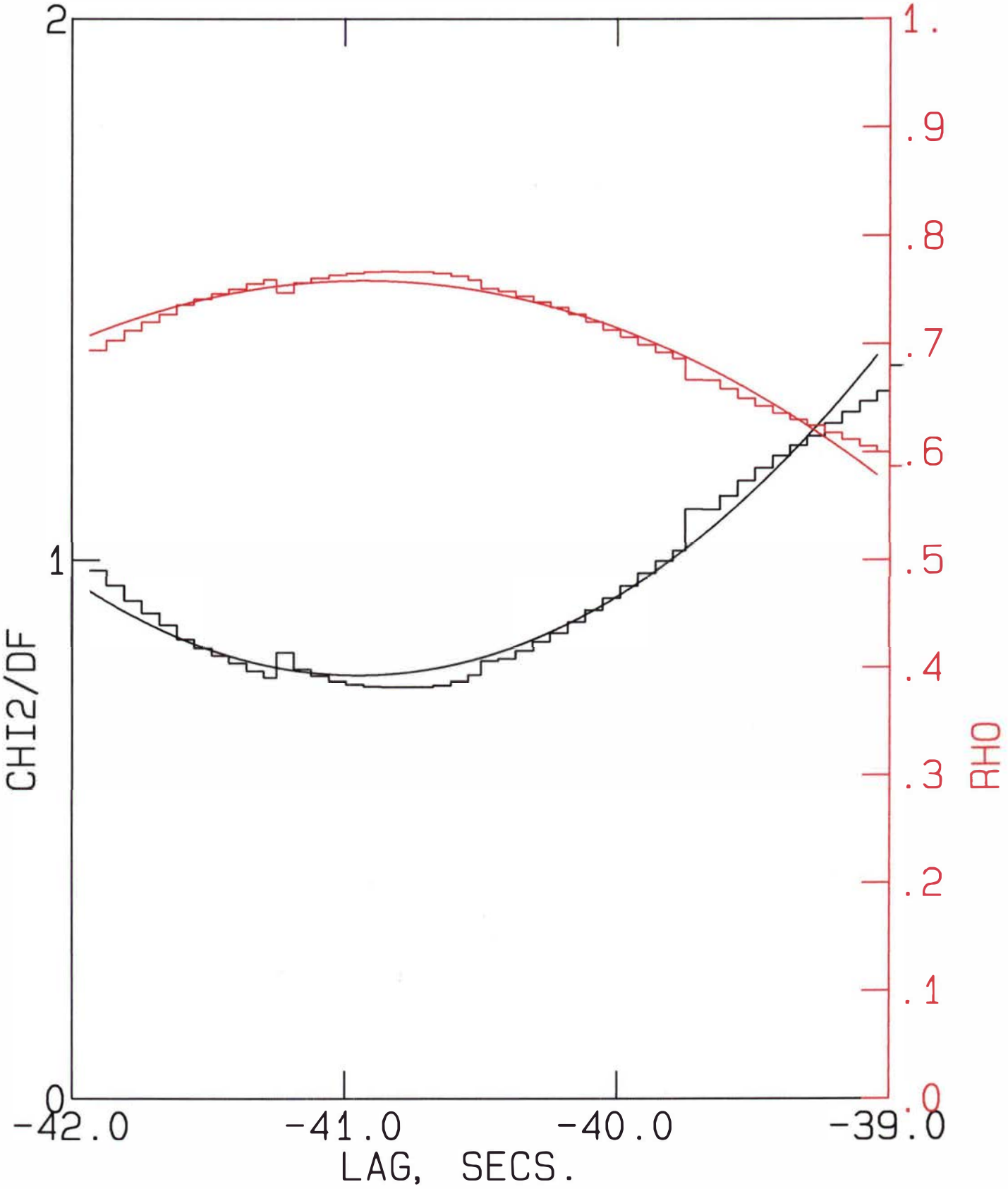

NEAR GRS -BATSE CORRELATION 13/11/99 82523.908 4/ 5/ 0
300
200
100
0
C/ 1.00000 S
NEAR GRS
10000
7500
5000
2500
0
C/ 1.00000 S
BATSE
-12
-2
0
8
18
28
38
48
58
68
78
TIME, SECS

NEAR GRS -BATSE CORRELATION 13/11/99 82523.908




ULYSSES RT-BATSE CORRELATION 13/11/99 83880.172 4/ 5/ 0
150
100
50
0
7500
5000
2500
0
C/ 0.75001 S
ULYSSES RT
C/ 0.75001 S
BATSE
41
51
61
71
81
91
101
111
121
131
141
TIME, SECS

ULYSSES RT-BATSE CORRELATION 13/11/99 83880.172



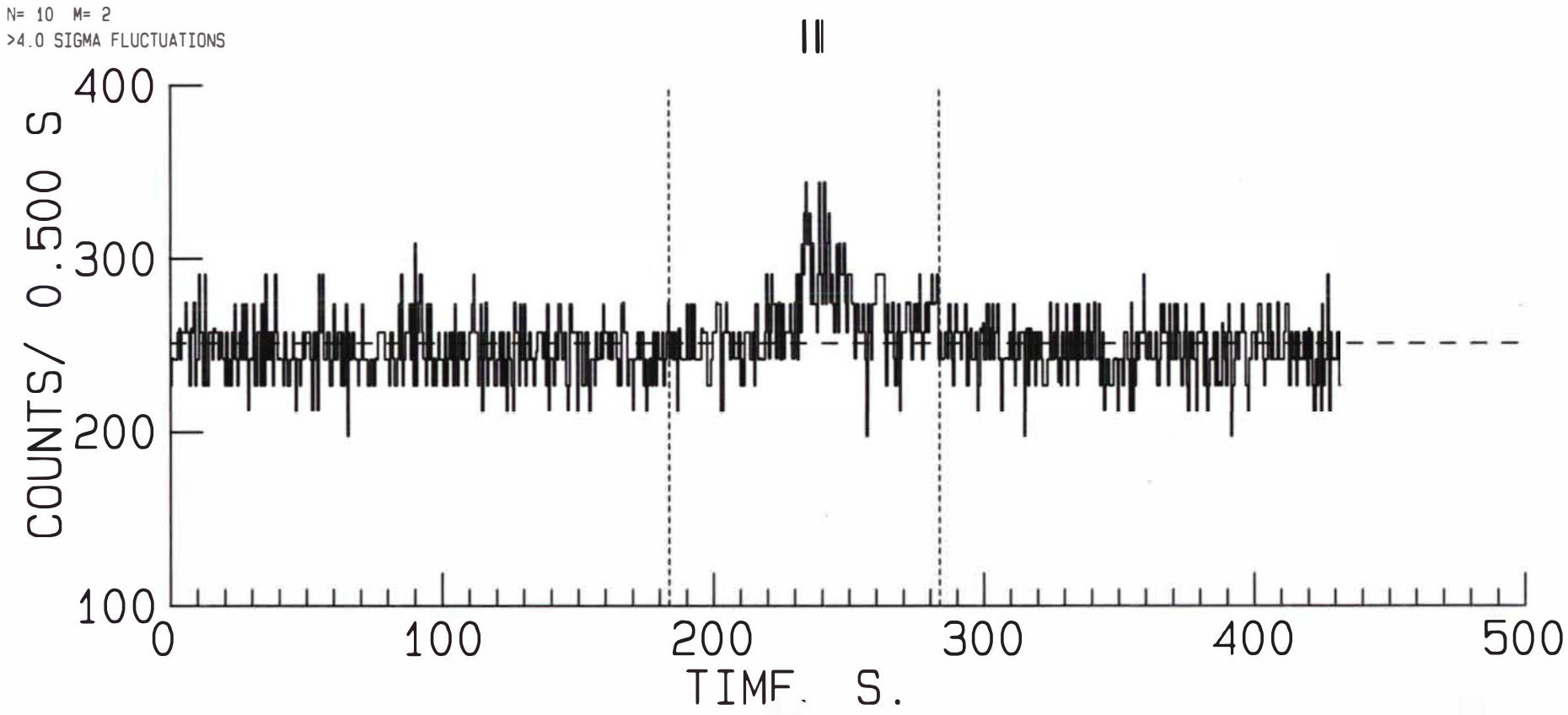
ULYSSES RT

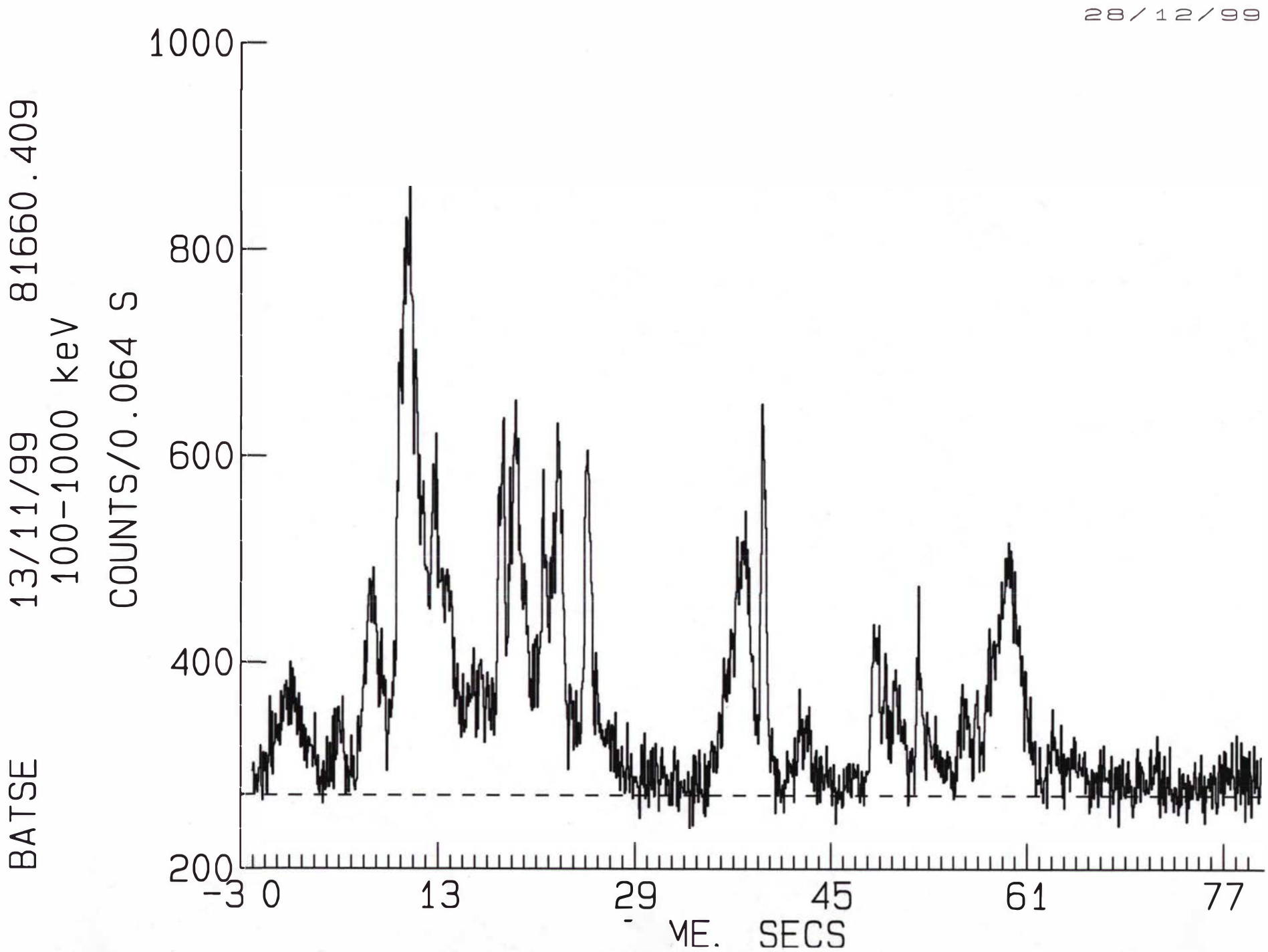
4/ 5/ 0

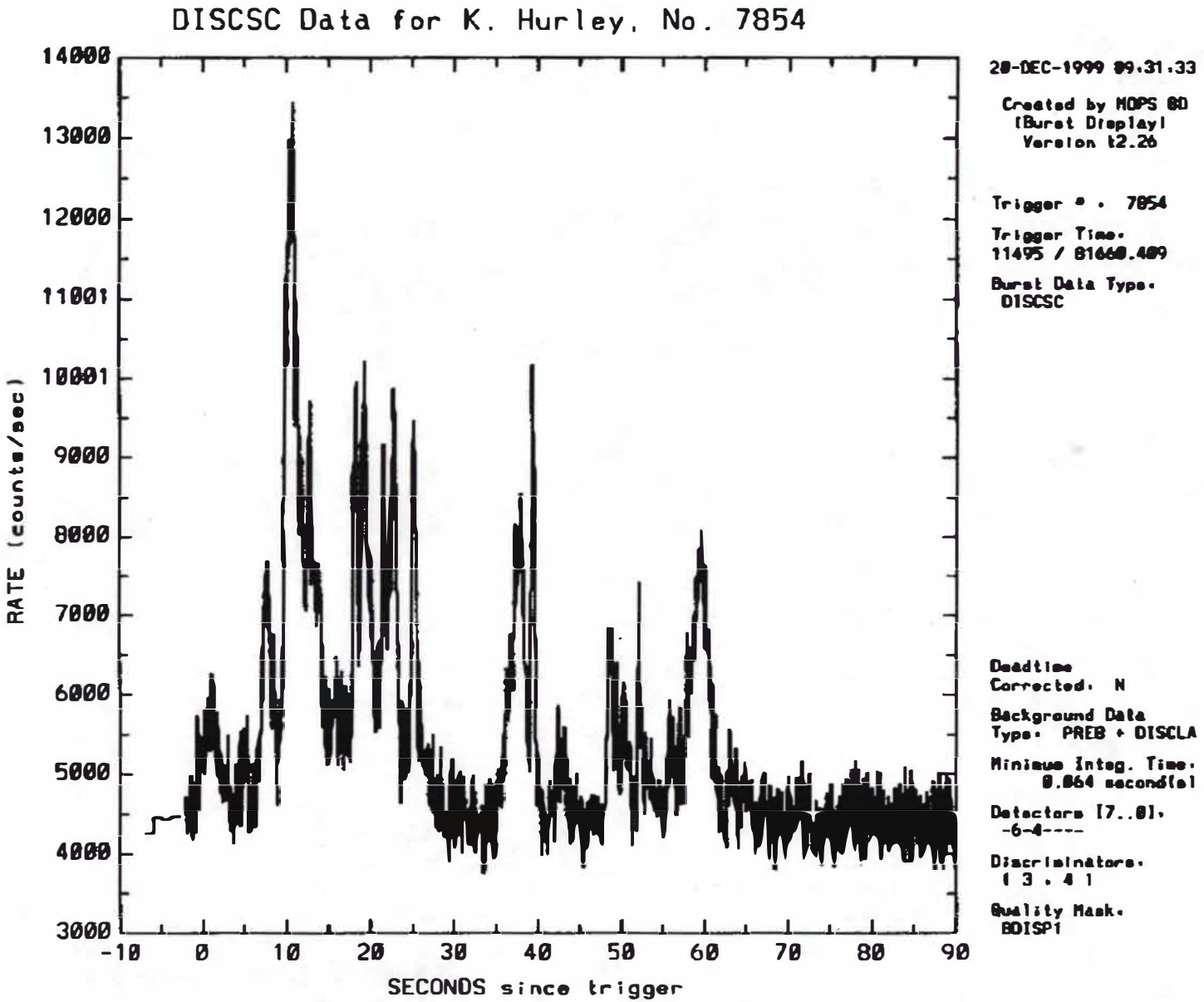
13/11/99 83700.174 s

0.250 S INTERVALS REGROUPED BY 2

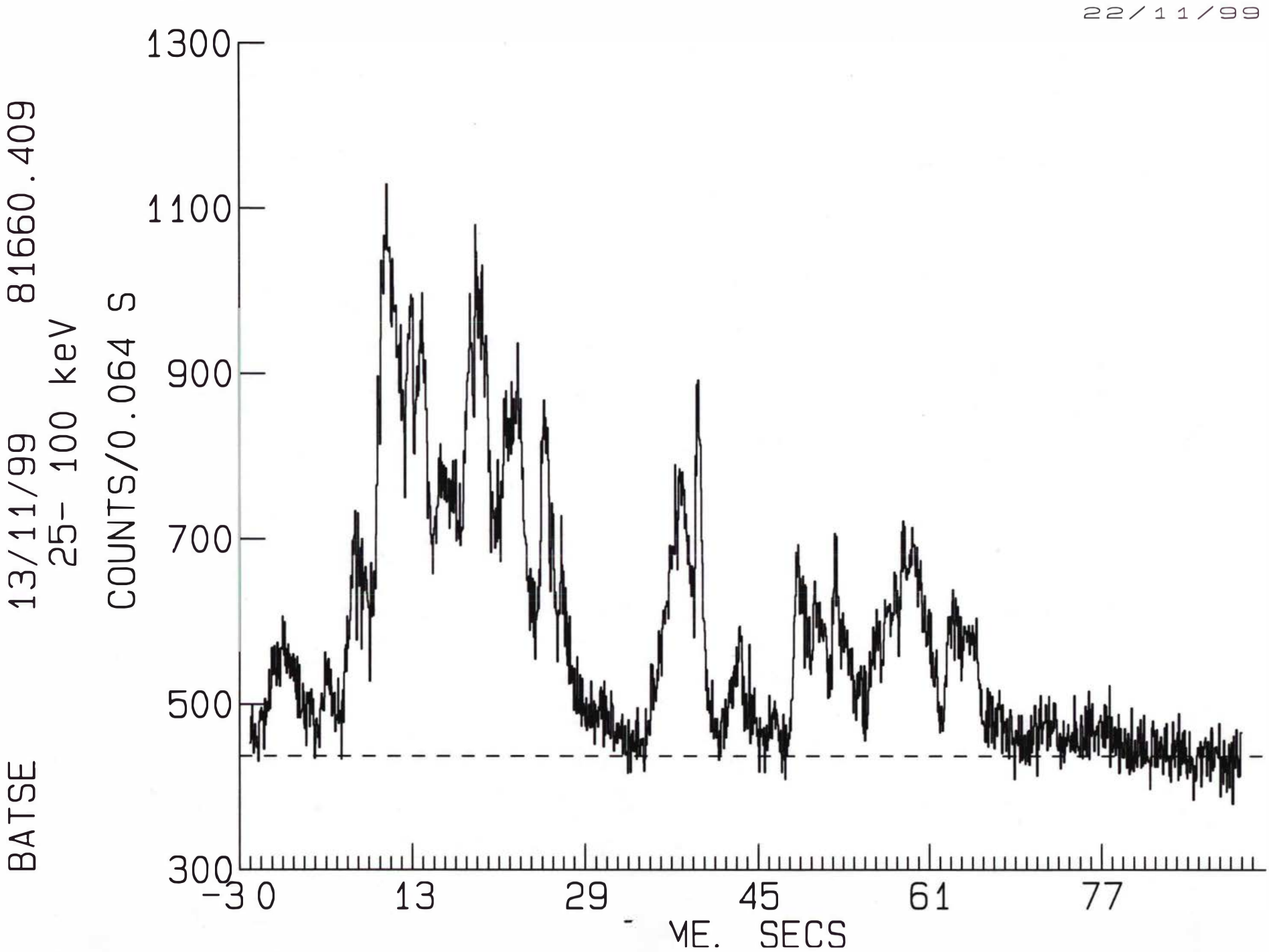
22- 151 keV

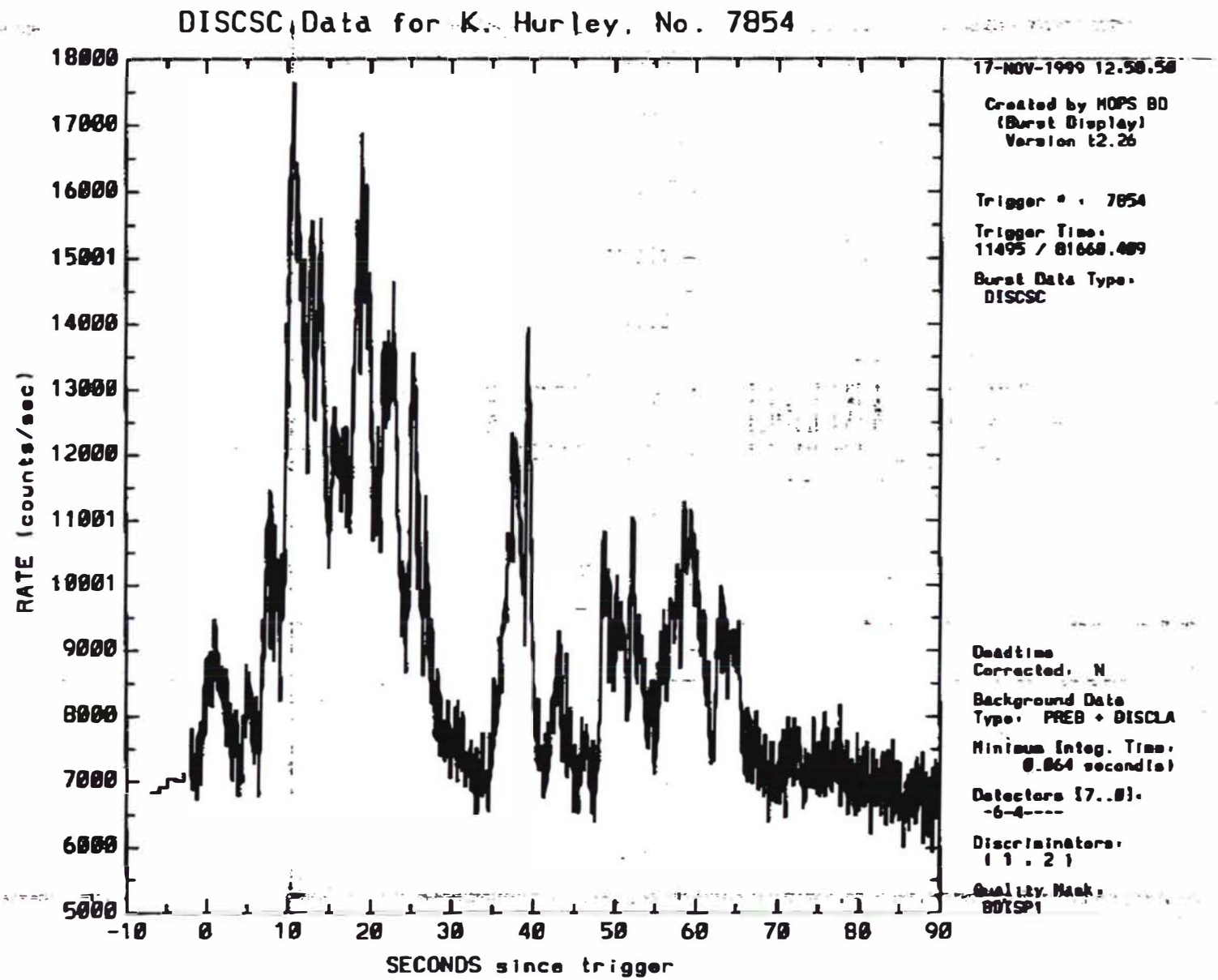


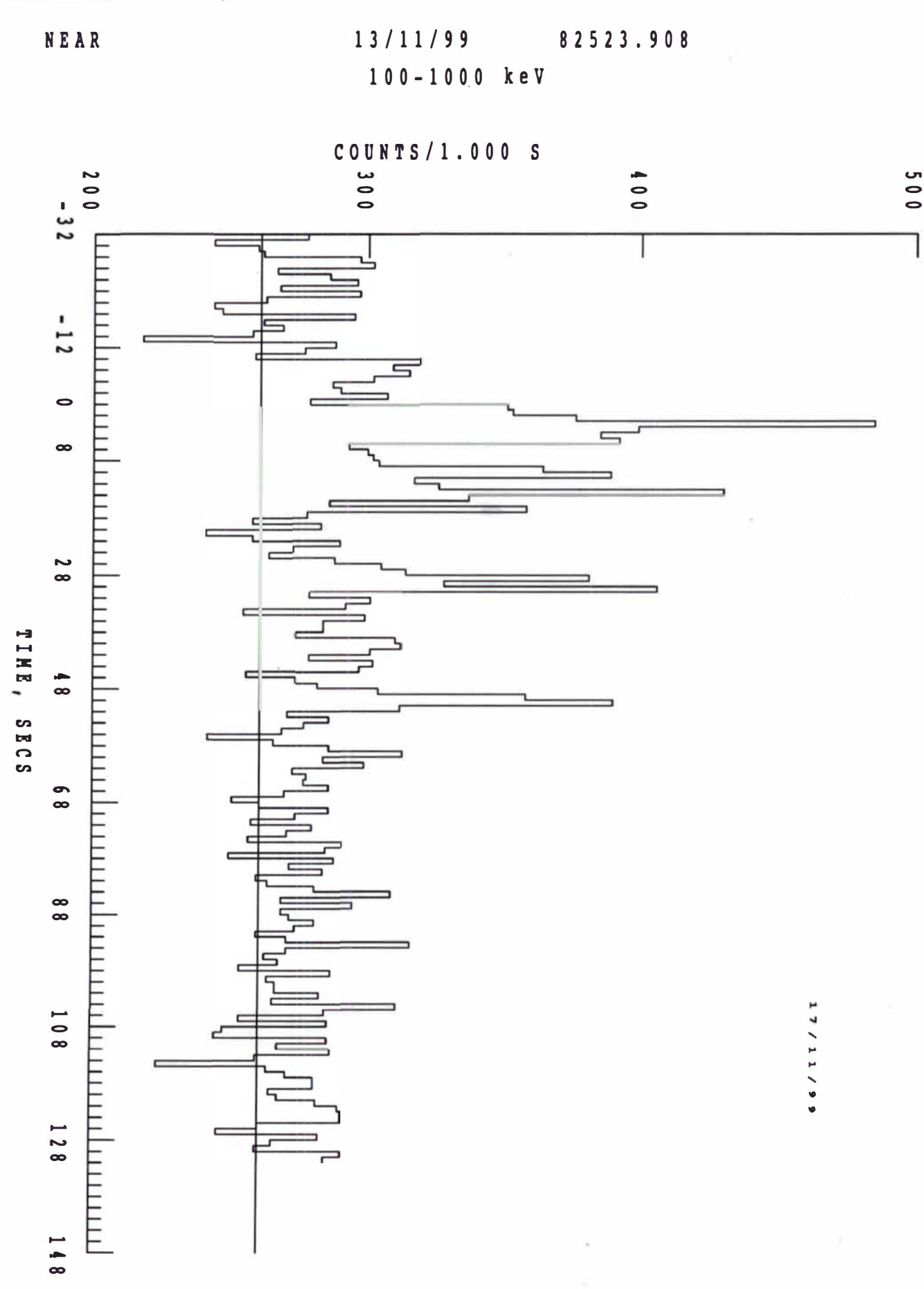

28/12/99
BATSE 13/11/99 816660.409
100-1000 keV
COUNTS/0.064 S
1000
800
600
400
200
-3 0
13
29
45
61
77
ME. SECS

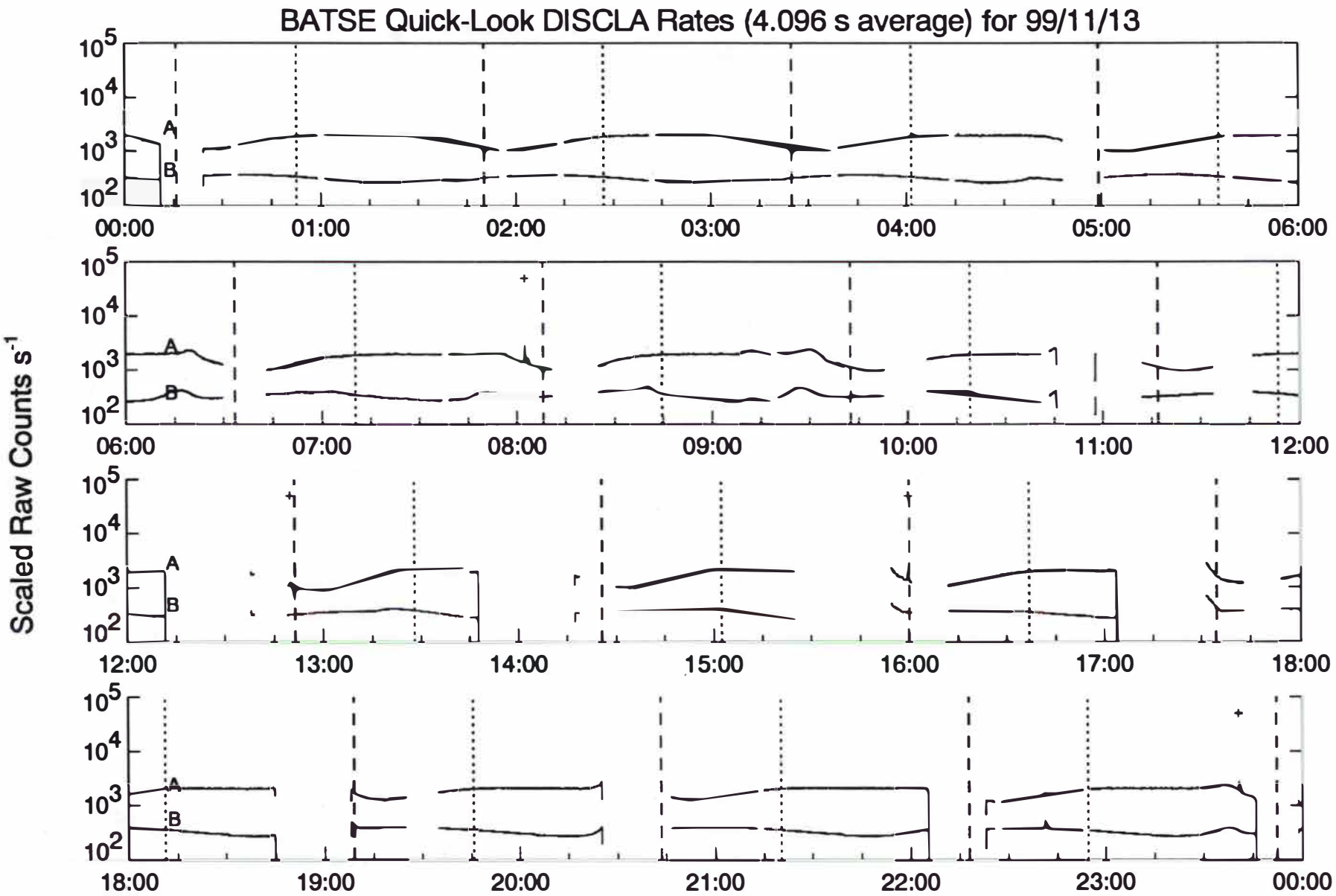


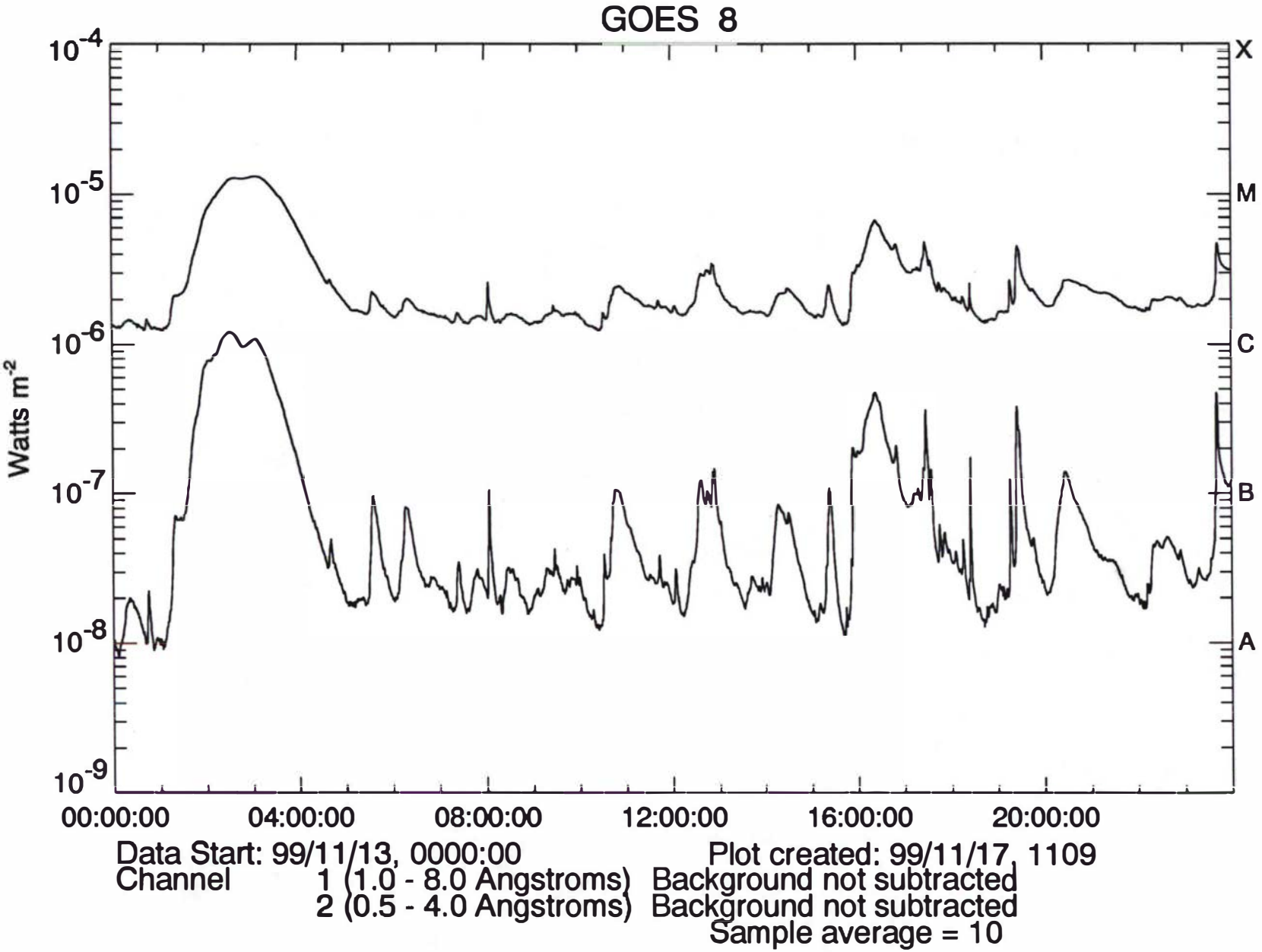
12-20-1999 09:38 2565445800 BATSE P.02


22/11/99
BATSE 13/11/99 816660.409
25- 100 keV
COUNTS/0.064 S
1300
1100
900
700
500
300
-30
13
29
45
61
77
ME. SECS


DISCSC Data for K. Hurley, No. 7854
RATE (counts/sec)
18000
17000
16000
15001
14000
13000
12000
11001
10001
9000
8000
7000
6000
5000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
17-NOV-1999 12.58.58
Created by MOPS BD
(Burst Display)
Version t2.26
Trigger # : 7854
Trigger Time:
11495 / 81668.489
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
-6-4----
Discriminators:
(1 , 2)
Quality Mask:
BDISP1

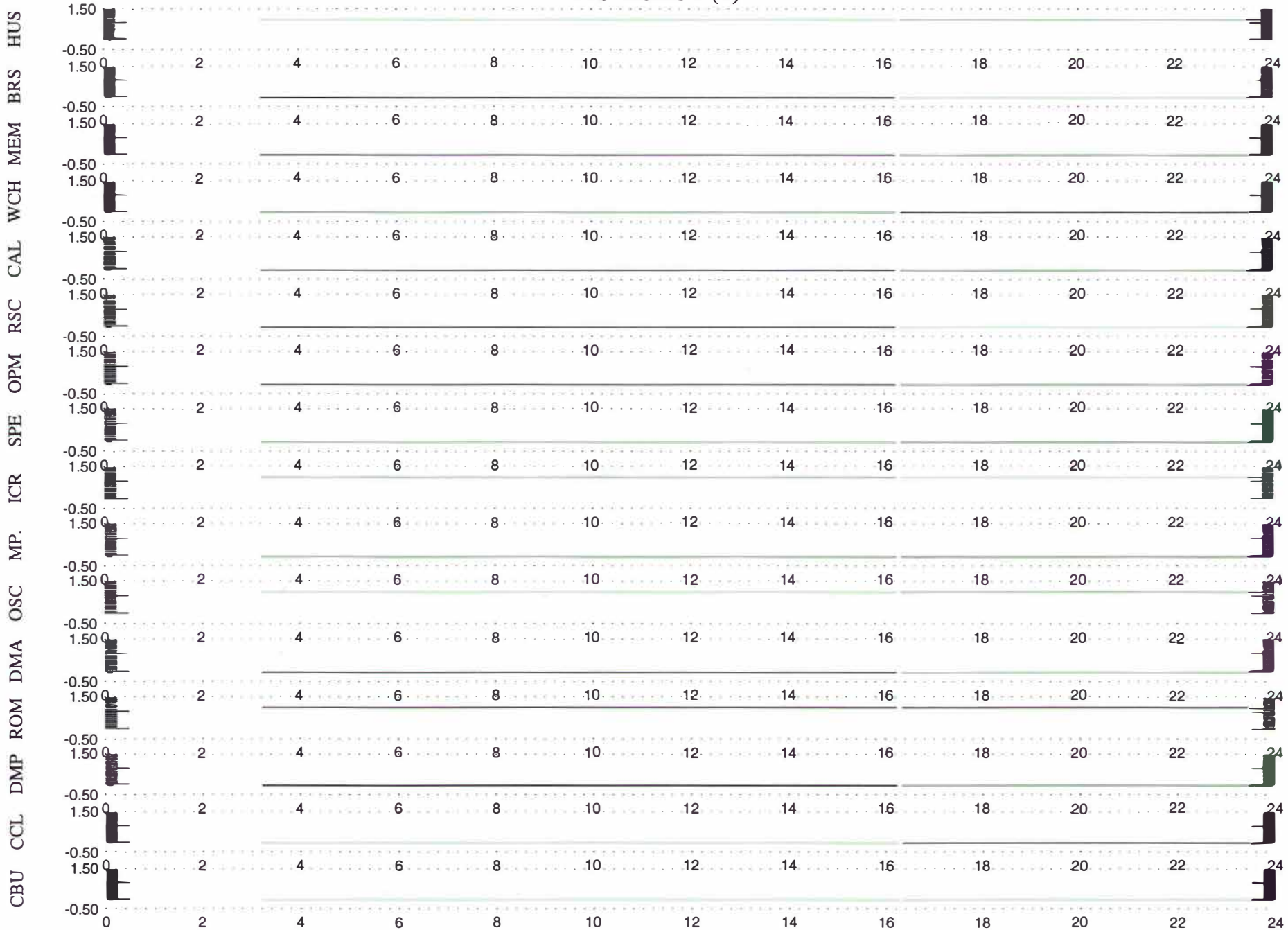

NEAR
13/11/99
82523.908
100-1000 keV
COUNTS/1.000 S
200
300
400
500
-32
-12
0
8
28
48
68
88
108
128
148
TIME, SECS
17/11/99


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/13
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/17, 1110 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
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/13, 0000:00
Plot created: 99/11/17, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 317, year 1999 to day 317, year 1999 03/21/00

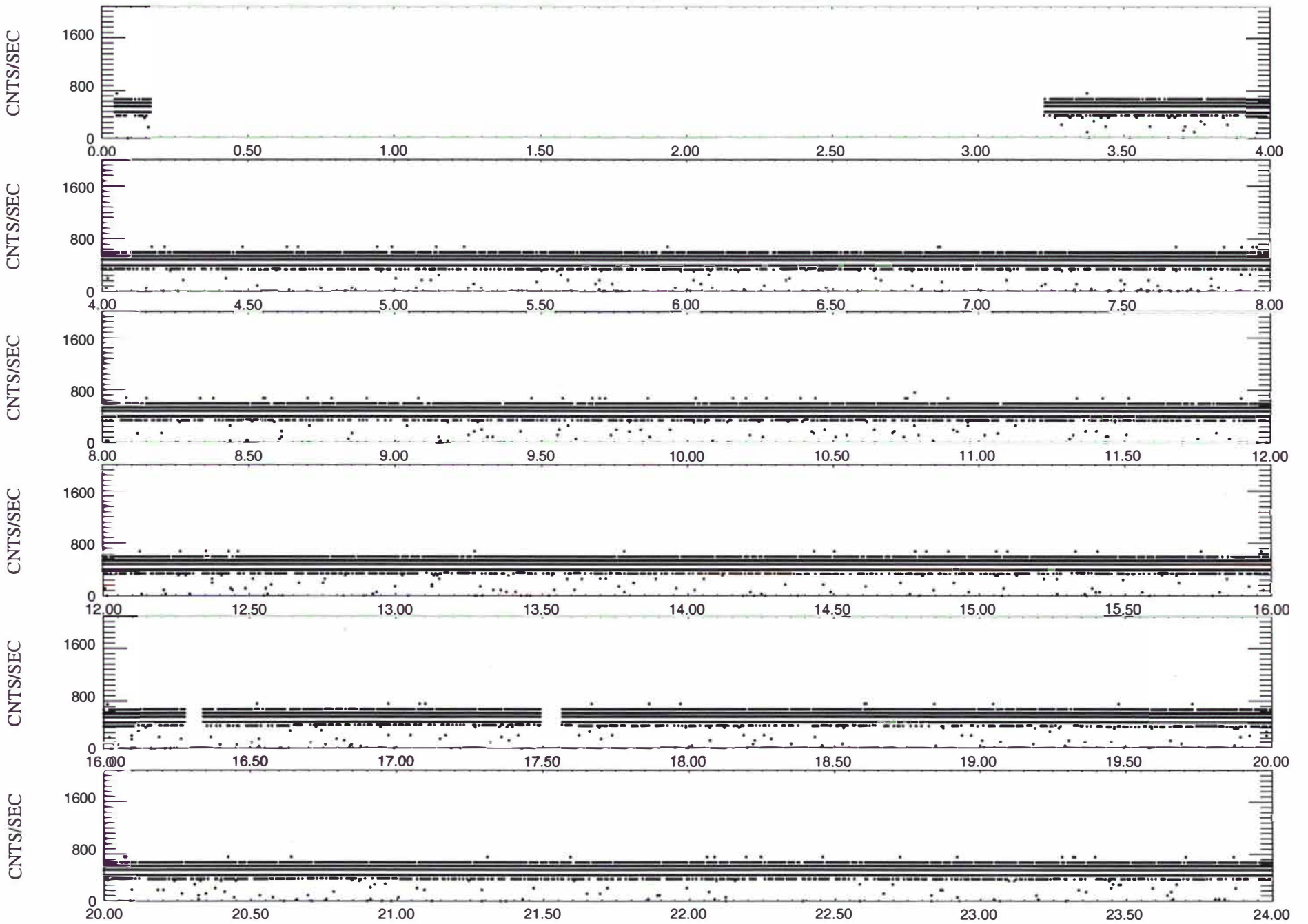
NO BURST (4)



UNIV SAL TIME

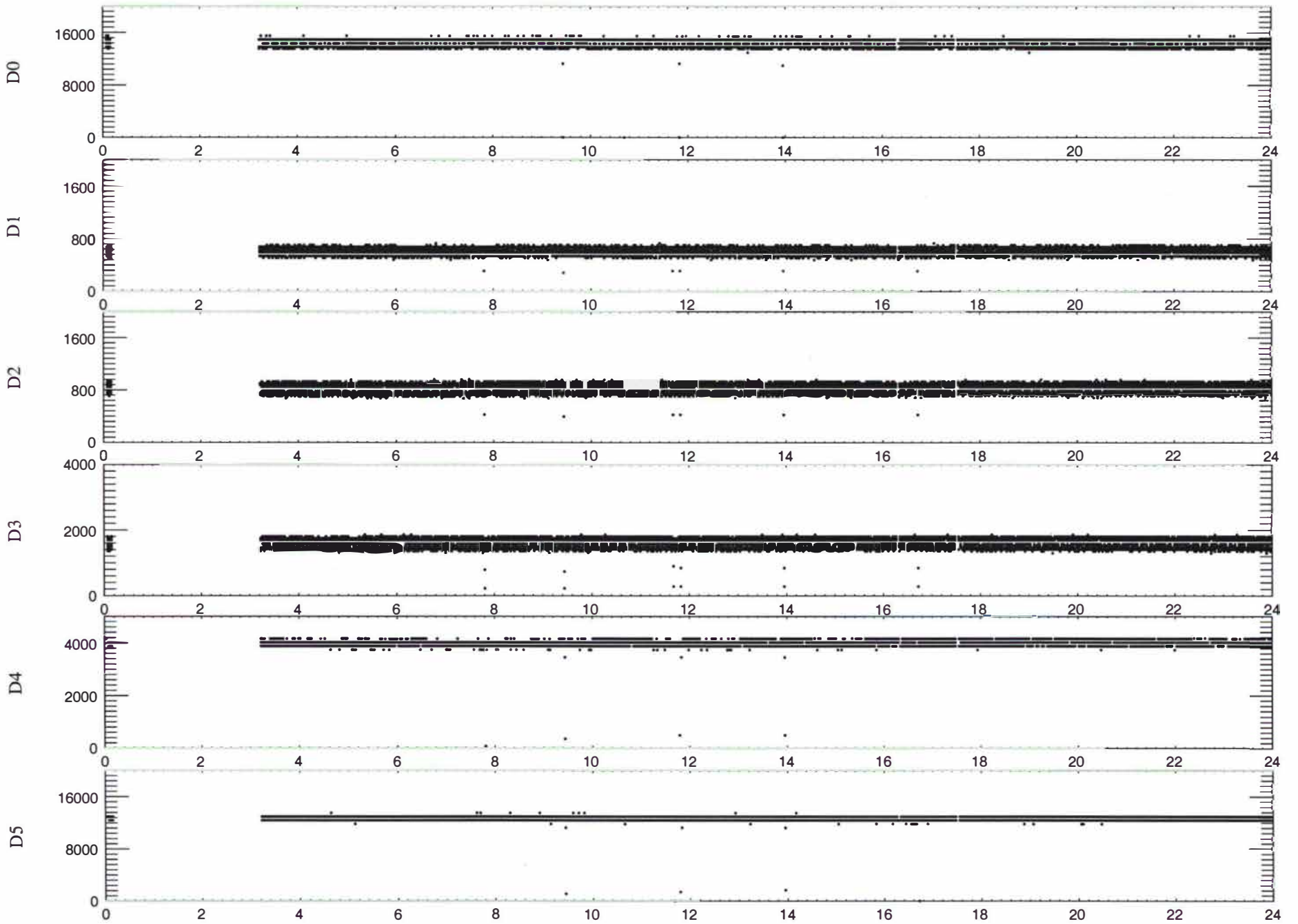
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 13/11/1999 DOY = 317 03/21/00

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 317, year 1999 to day 317, year 1999 03/21/00



From BUTTERWORTH@tgrs2.gsfc.nasa.gov Tue Nov 23 09:34 PST 1999
From: BUTTERWORTH@tgrs2.gsfc.nasa.gov
Date: Tue, 23 Nov 1999 12:41:07 -0500
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@tgrs2.gsfc.nasa.gov
CC: BUTTERWORTH@tgrs2.gsfc.nasa.gov
Subject: Ulysses events of 991114 and 991115 were not detected by Konus

Hi Everyone,

Konus didn't trigger near these times, and there are no obvious features in the low time-resolution (3 second bin) waiting-mode data - apart from a lot of solar activity.

Paul.

re:

From: khurley@ssl.berkeley.edu (Kevin Hurley):

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
V 14 1999 02:43*	weak, 32 ms long	2420
V 15 1999 00:19*	weak, 64 ms long	2370
NOV 15 1999 11:42*	weak, 32 ms long	2370

*Looks like an SGR. The Earth-crossing windows for the SGRs are approximately:

0525-66: 980 seconds later than Ulysses time

1806-20: 316 seconds earlier

1900+14: 1345 seconds earlier

1627-41: 845 seconds later

1801-23: 197 seconds earlier

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, feroci, frontera, henze, kraken, teegarden, terrell, woods, yoshimori)

From GOGUSE@fender.msfc.nasa.gov Wed Nov 17 07:06 PST 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Wed, 17 Nov 1999 9:15:01 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7855

****
BATSEARCH PROGRAM
****

BATSE BURST # 7855
EVENT OF 1999 NOV 14 DAY OF YEAR=318
EVENT CROSSING TIME AT BATSE : 47721. S. OR 13:15:21.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 274.000 37.000
BATSE PEAK COUNTING RATE: 2600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/11/ 99 IS:
RA= 165.098 DEC= -24.514 DIST= 4.759 AU
BATSE-ULYSSES DISTANCE = 711943021. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1151.99 SECS.
CROSSING TIME AT ULYSSES IS 48873. S. OR 13:34:32 +/- 428.04 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/11/ 99 IS:
RA= 292.608 DEC= -23.419 DIST= 1.590 AU
MARS-BATSE DISTANCE = 237883440. KM.
NGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.09 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= -361.31 SECS.
CROSSING TIME AT MARS IS 47360. S. OR 13:09:19 +/- 117.17 SECONDS

BATSE BURST TRIGGER
NO.: 7855

TIME: TJD=1496 SECONDS=47721

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

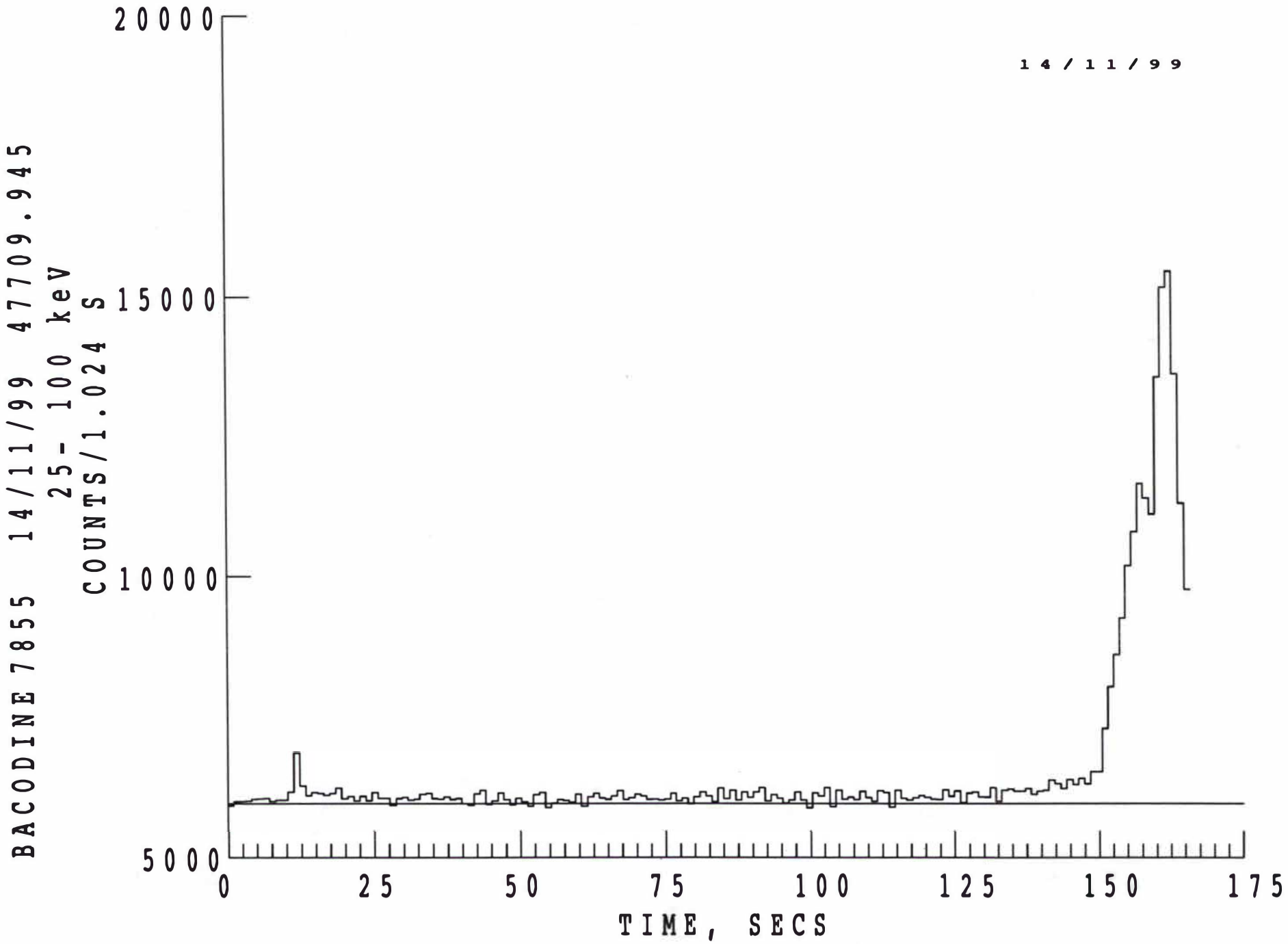
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 26.6 AZIMUTH=325.7 ERROR= 5.9 DEGREES

COMMENTS:
GRB, SINGLE PULSE WITH STRUCTURE, DURATION APPROX 1.2 SEC.
VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7855	991114	11496	47721	2600	274	+37	1.3


BACODINE 7855 14/11/99 47709.945
25- 100 keV
COUNTS/1.024 S
20000
15000
10000
5000
14/11/99
0
25
50
75
100
125
150
175
TIME, SECS

From HENZE@fender.msfc.nasa.gov Thu Nov 18 13:23 PST 1999
Date: Thu, 18 Nov 1999 15:31:41 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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.: 7856

TIME: TJD=1496 SECONDS=53707

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

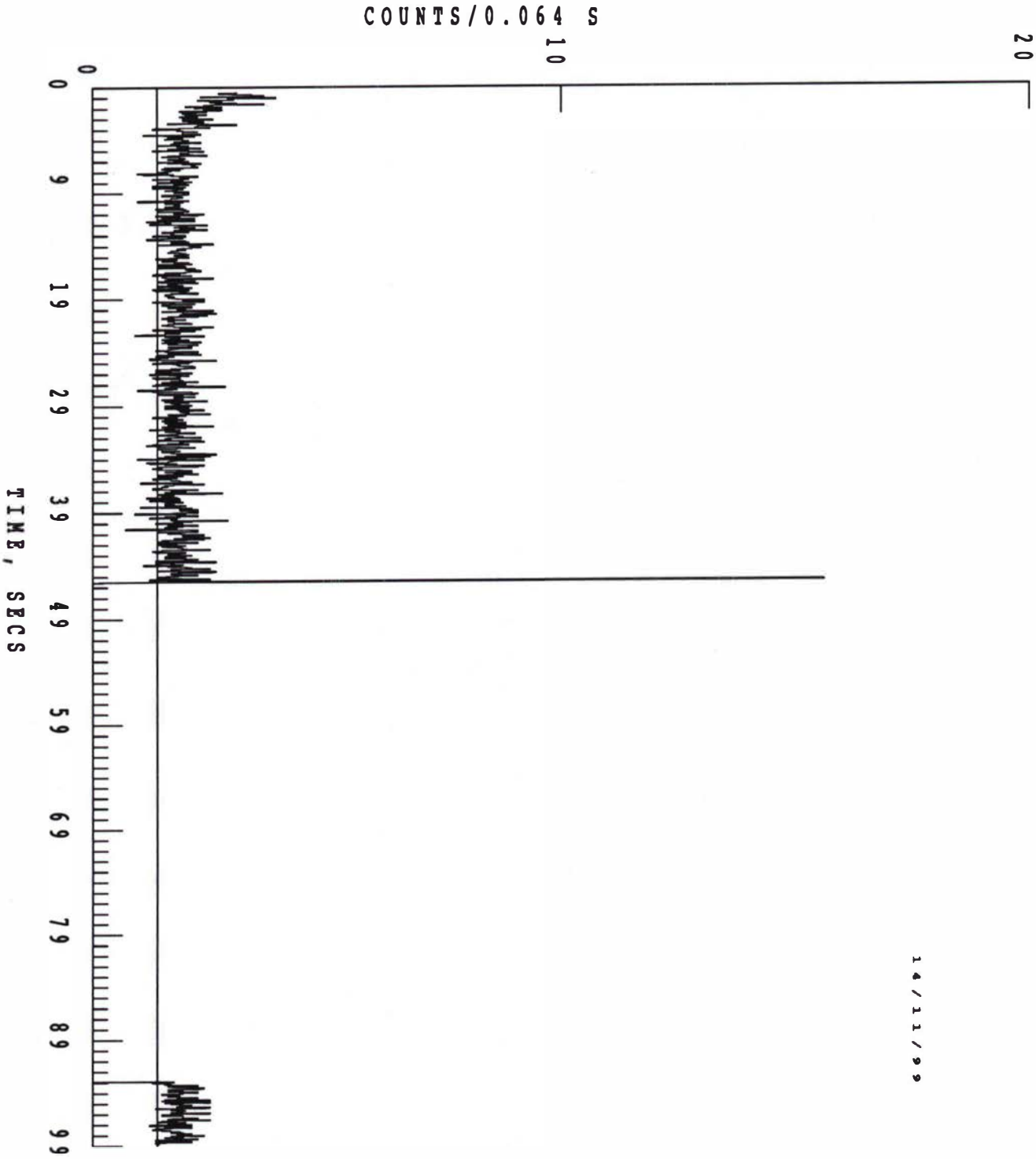
LOCATION: ZENITH= 91.9 AZIMUTH=350.1 ERROR= 0.2 DEGREES

COMMENTS:
GOES M2.8, OPTICAL ? FLARE. SINGLE TRIGGER PULSE, DUR. APPROX. 10 S, STARTS AT APPROX. T-2 S. SUCCESSOR PULSES WITH MAXES AT APPROX. T+55 S, T+250 S. NOT VISIBLE ABOVE 300 KEV.

KONUS 14/11/99 53708.128

50- 200 keV

Solar - BATSE 7856



KONUS2 19991114 53708

ULYSSES RT 15/11/99

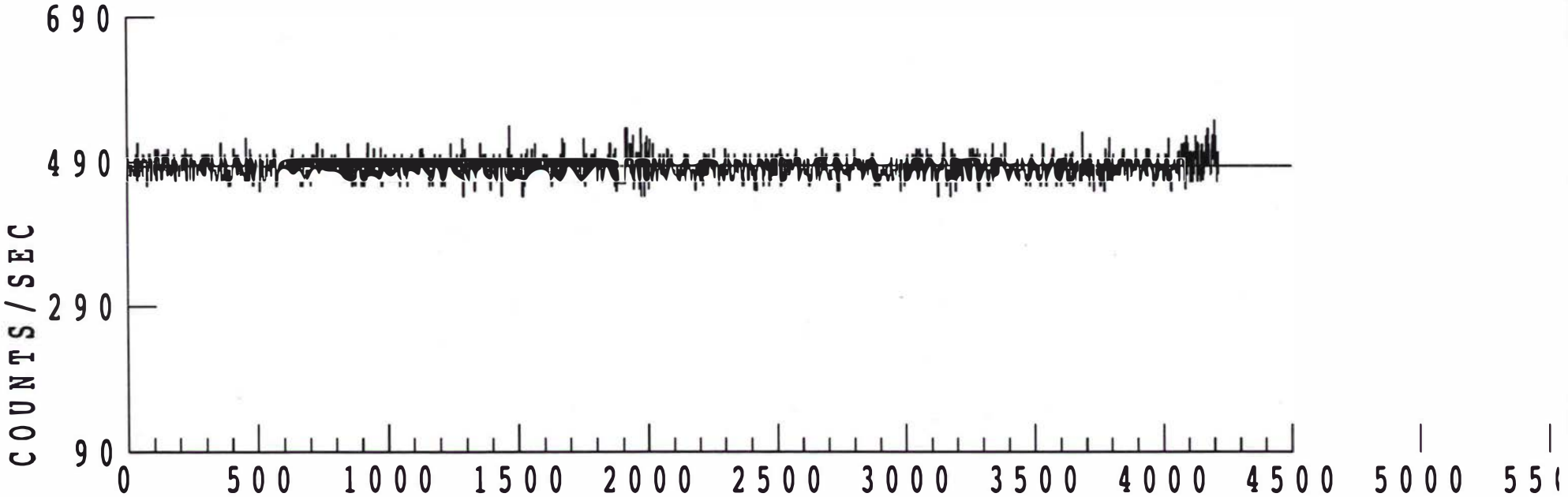
14/11/99 51905.727 s

INTERVALS REGROUPED BY 6

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 Thu Nov 18 13:29 PST 1999
Date: Thu, 18 Nov 1999 15:37:03 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@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.: 7857

TIME: TJD=1496 SECONDS=65144

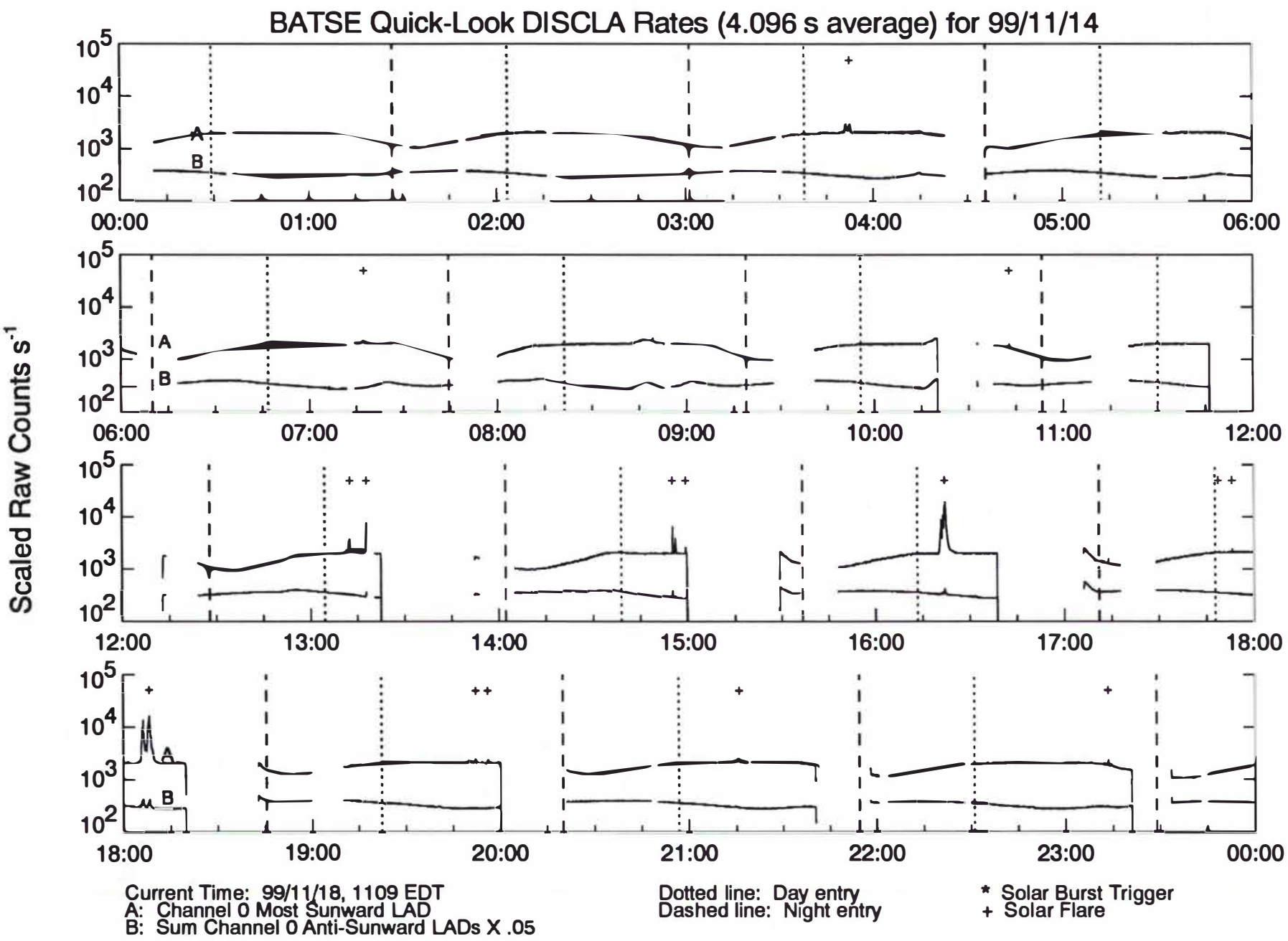
TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

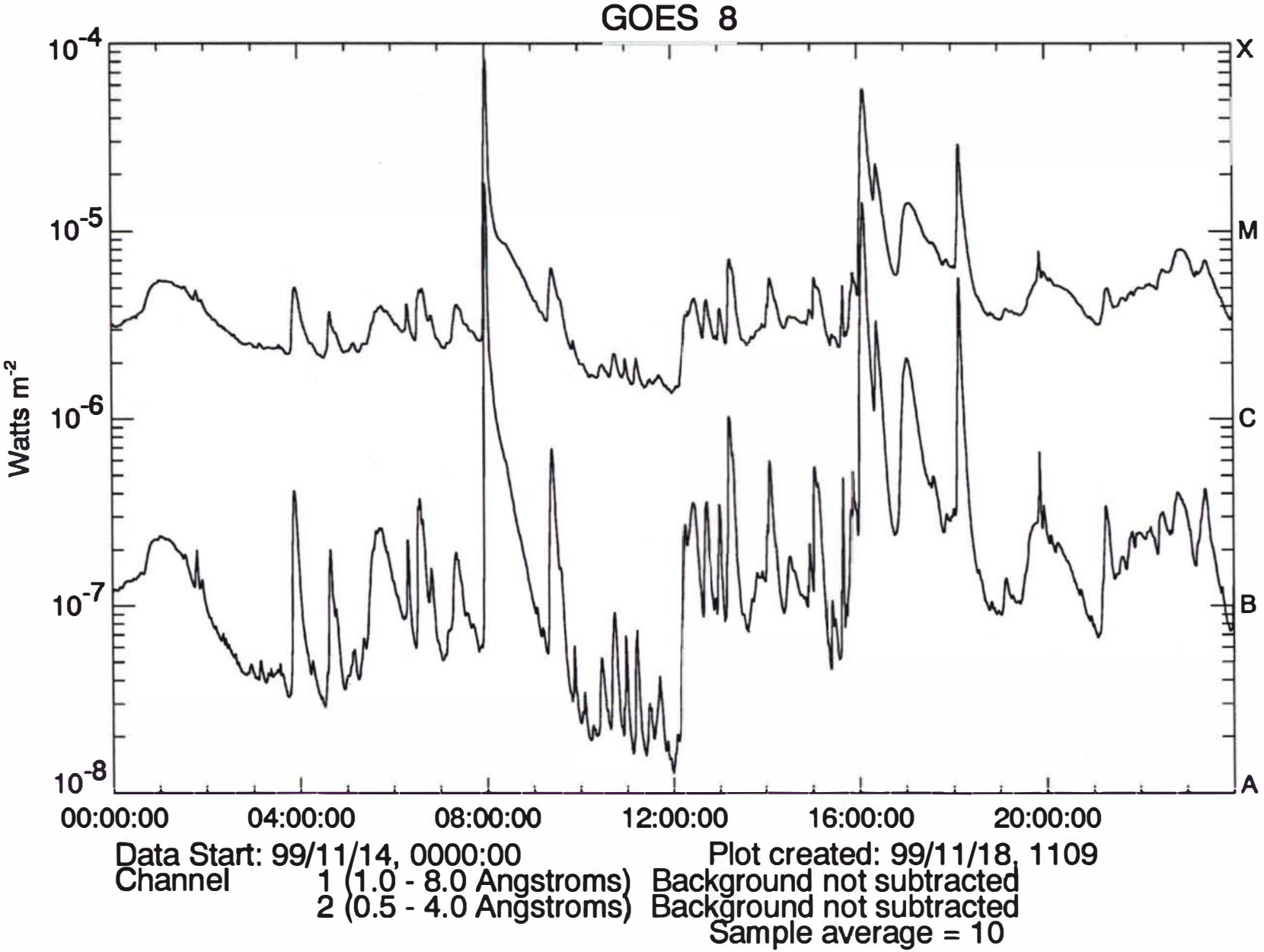
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

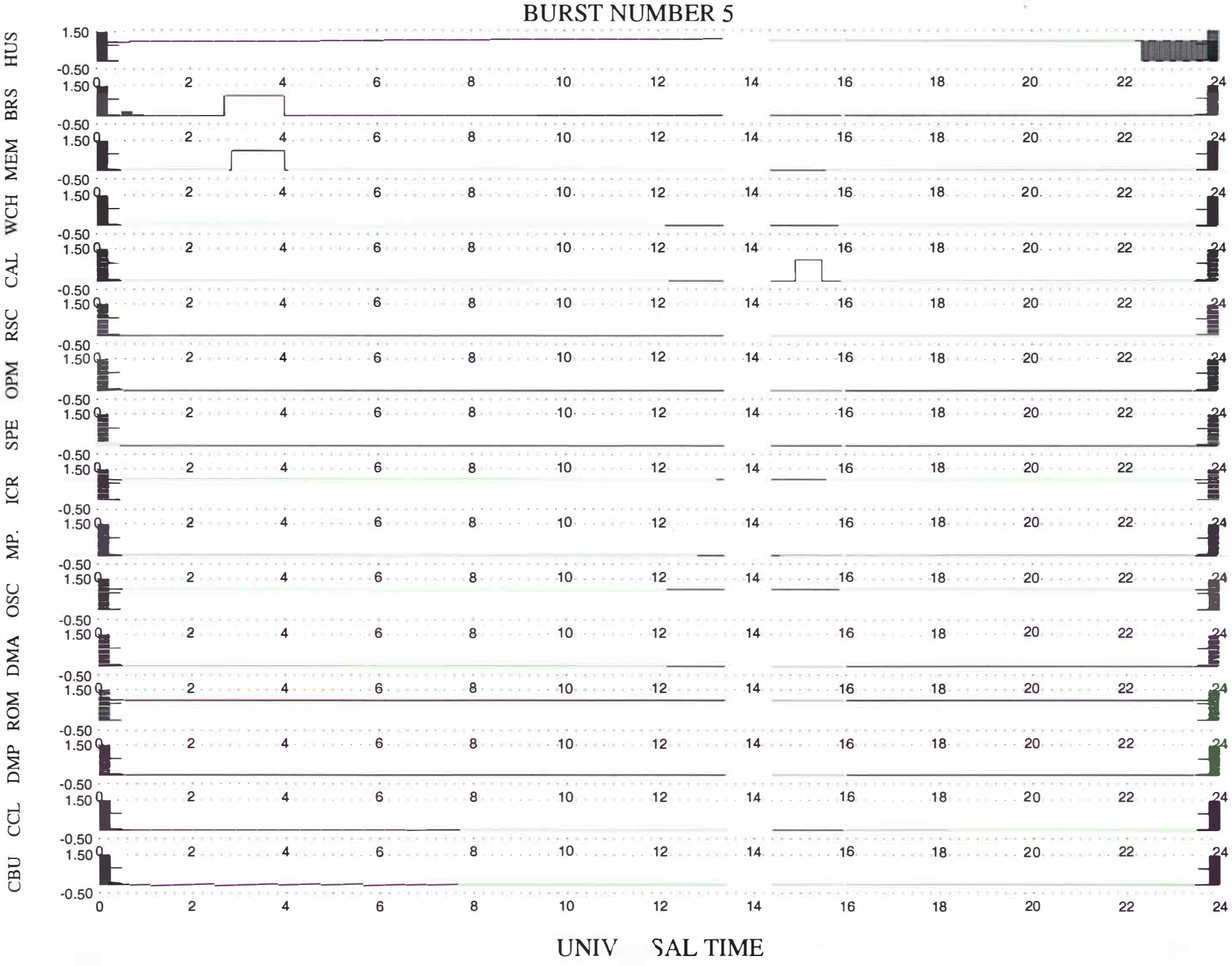
LOCATION: ZENITH= 92.4 AZIMUTH=348.0 ERROR= 0.1 DEGREES

COMMENTS:
NO GOES, NO OPTICAL IDENT. MULTIPLE PULSES WITH TWO MAIN PULSES, TOTAL DUR. APPROX. 320 S, STARTS AT APPROX. T-30 S, MAXES AT APPROX. T+30 S, T+150 S. NOT VISIBLE ABOVE 100 KEV.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/14
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/18, 1109 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

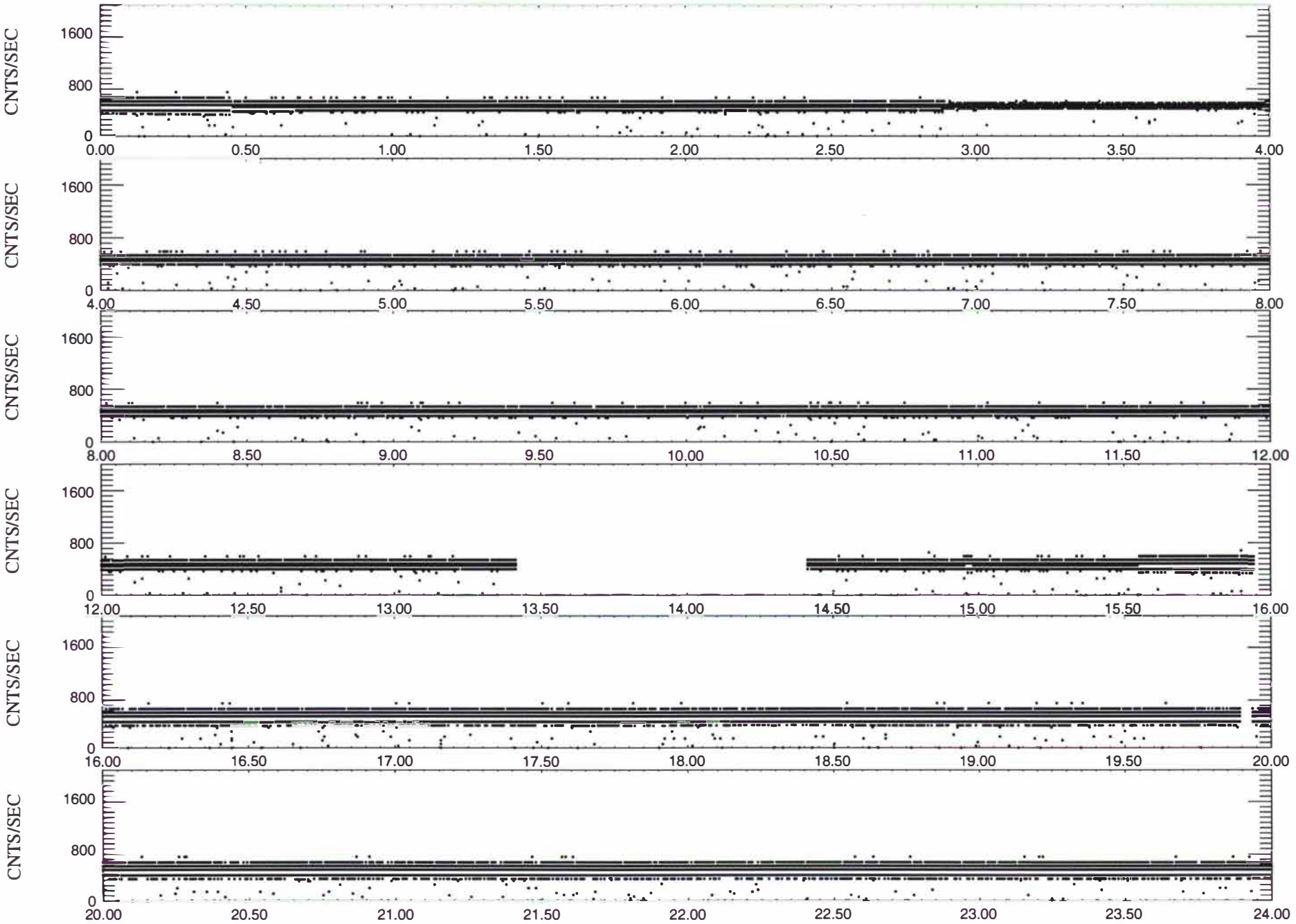

GOES 8
Watts m-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/14, 0000:00
Plot created: 99/11/18, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 318, year 1999 to day 318, year 1999 03/21/00



HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 14/11/1999 DOY = 318 03/21/00

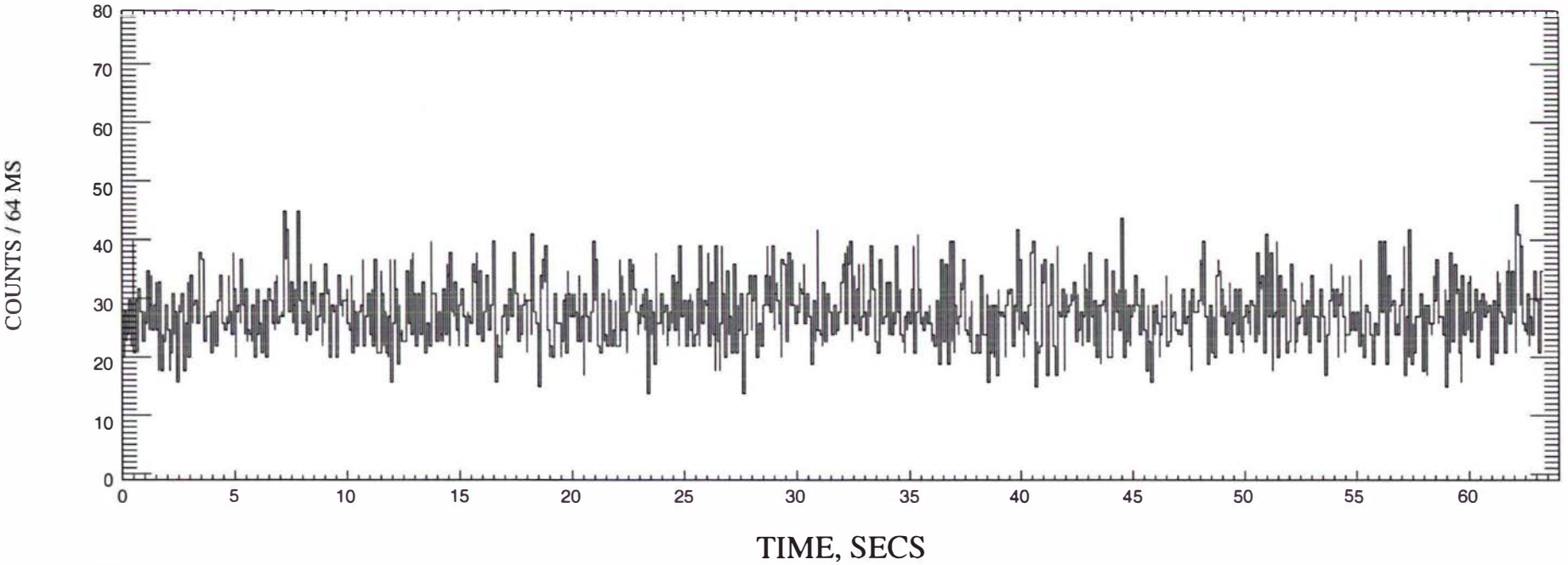
CALIBRATION DATA INCLUDED

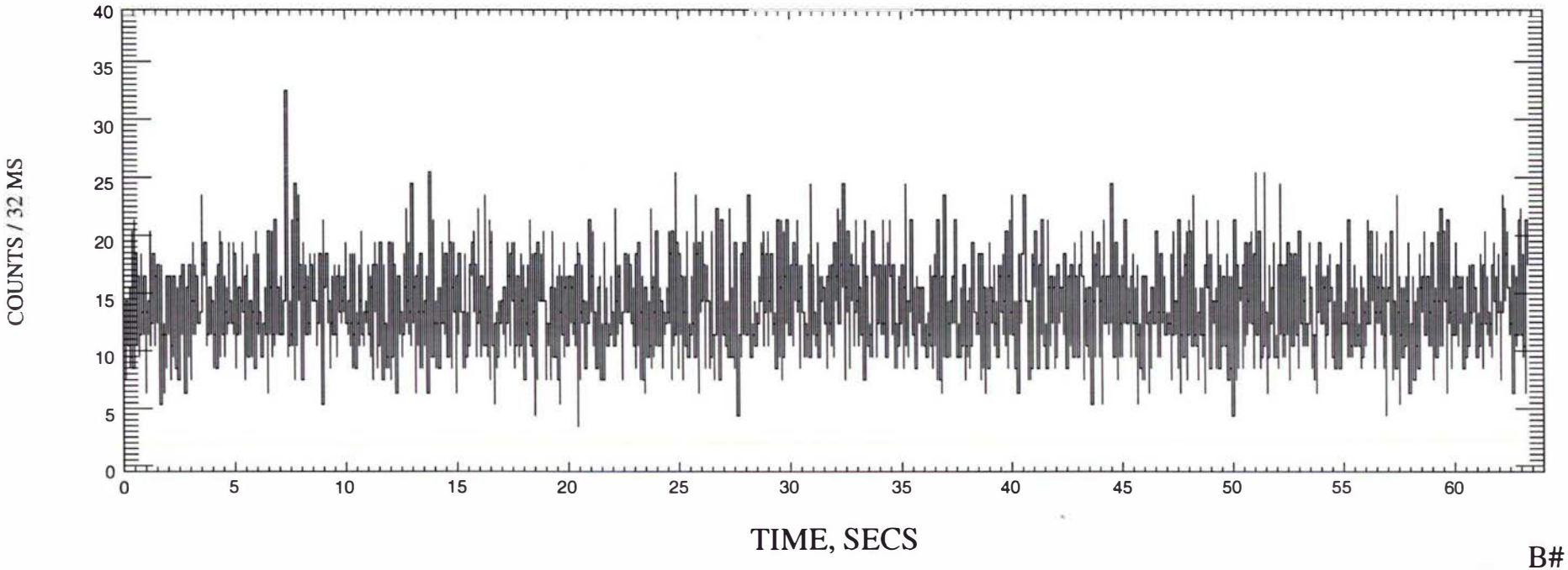


UNIV`SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 14/11/1999 DOY = 318 03/21/00

Burst Counter 5 at UT= 2.715670933194 h= 9776.415 s 02:42:56.415

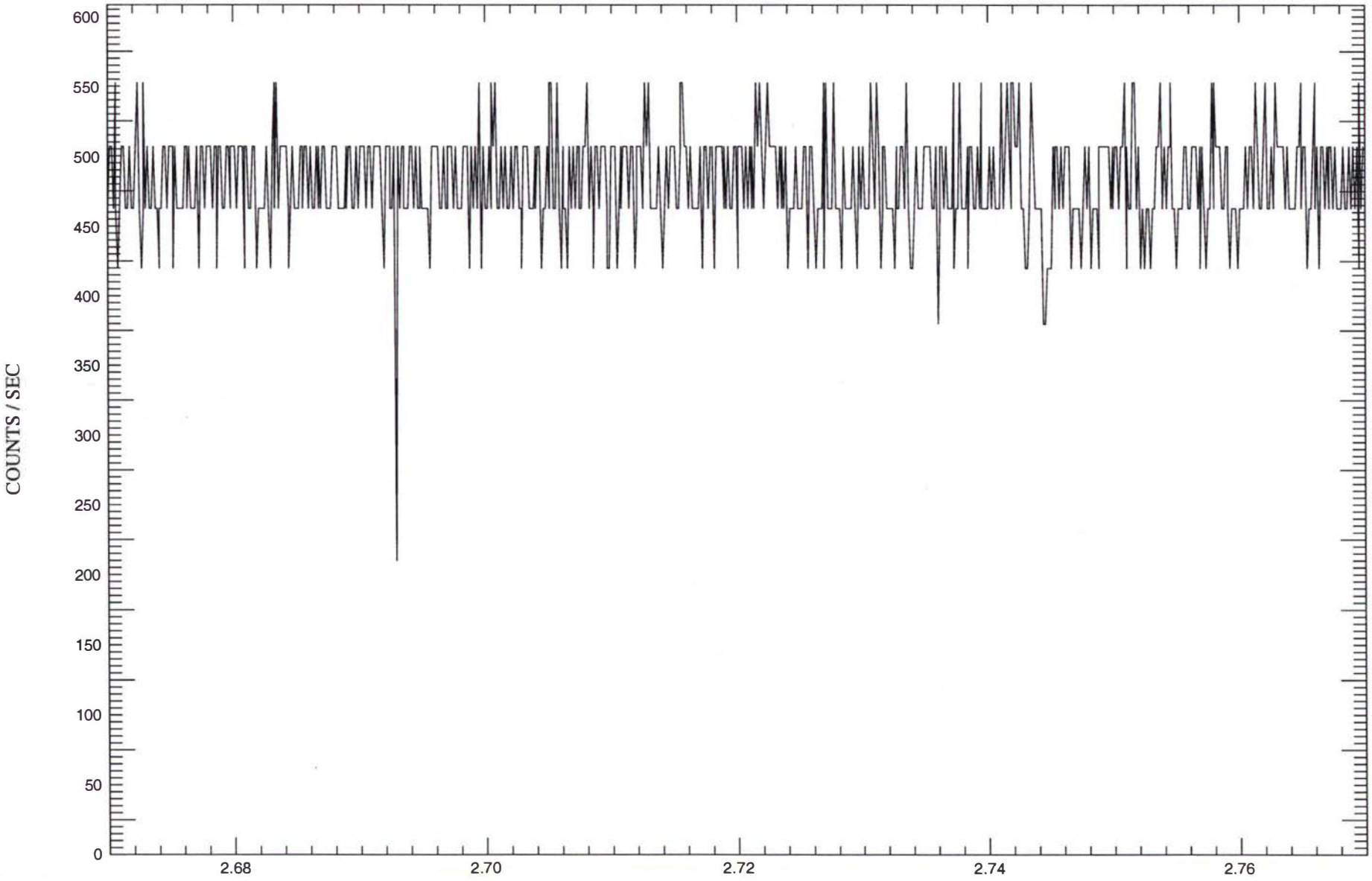




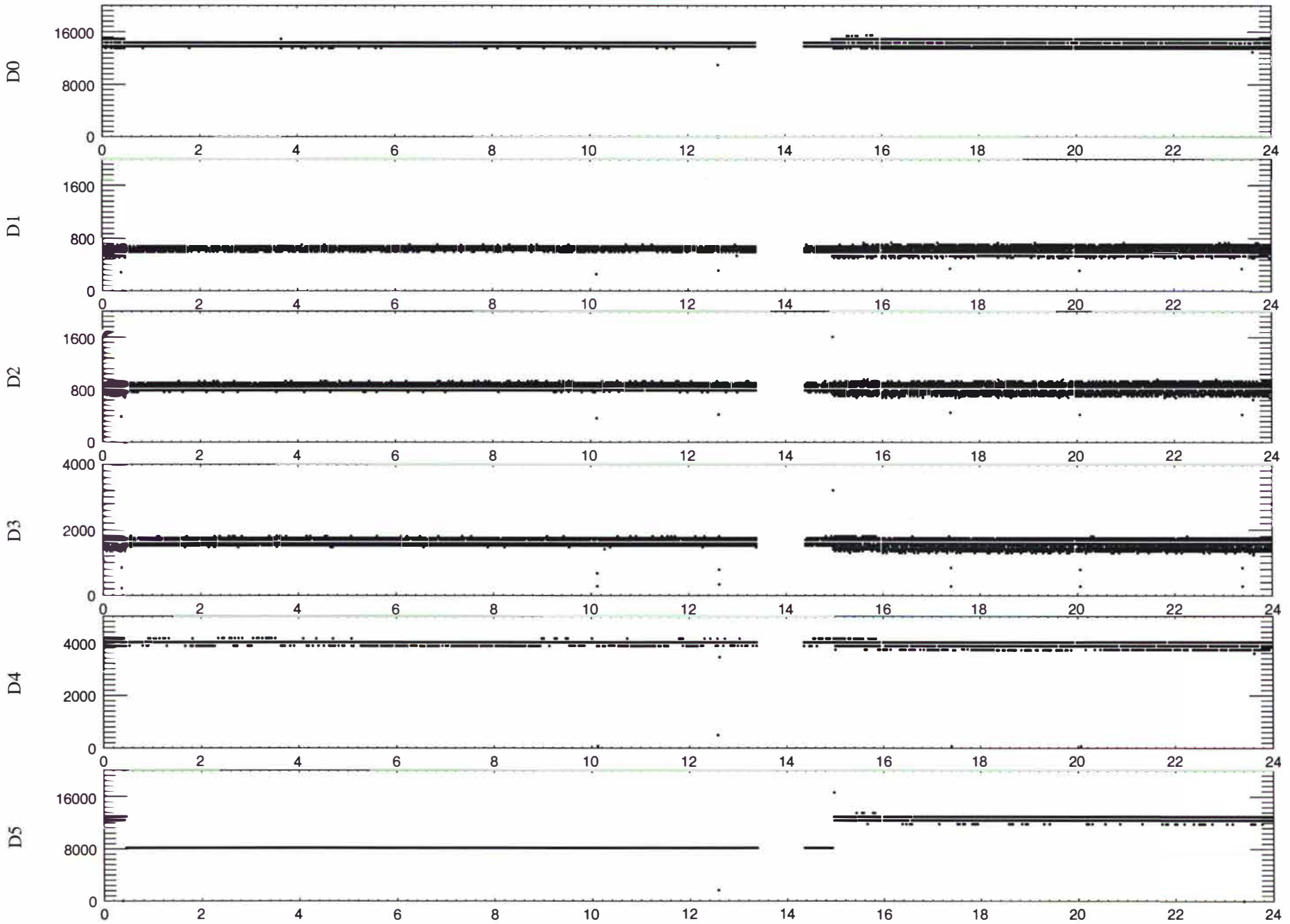
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 14/11/1999 DOY = 318 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 318, year 1999 to day 318, year 1999 03/21/00



From BUTTERWORTH@tgrs2.gsfc.nasa.gov Tue Nov 23 09:34 PST 1999
From: BUTTERWORTH@tgrs2.gsfc.nasa.gov
Date: Tue, 23 Nov 1999 12:41:07 -0500
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@tgrs2.gsfc.nasa.gov
CC: BUTTERWORTH@tgrs2.gsfc.nasa.gov
Subject: Ulysses events of 991114 and 991115 were not detected by Konus

Hi Everyone,

Konus didn't trigger near these times, and there are no obvious features in the low time-resolution (3 second bin) waiting-mode data - apart from a lot of solar activity.

Paul.

re:

From: khurley@ssl.berkeley.edu (Kevin Hurley):

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
NOV 14 1999 02:43*	weak, 32 ms long	2420
NOV 15 1999 00:19*	weak, 64 ms long	2370
NOV 15 1999 11:42*	weak, 32 ms long	2370

*Looks like an SGR. The Earth-crossing windows for the SGRs are approximately:

0525-66: 980 seconds later than Ulysses time

1806-20: 316 seconds earlier

1900-14: 1345 seconds earlier

1627-41: 845 seconds later

1801-23: 197 seconds earlier

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, feroci, frontera, henze, kraken, teegarden, terrell, woods, yoshimori)

From feroci@ias.rm.cnr.it Wed Nov 24 02:20 PST 1999
Date: Wed, 24 Nov 1999 11:21:30 +0100 (NFT)
From: Marco Feroci <feroci@ias.rm.cnr.it>
To: Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
Subject: GRB 991119
MIME-Version: 1.0

Dear Kevin,
these are a couple of e-mail GRBM alerts you did not get:

19 Nov 1999 14:33:55:78917 (3-4 s long) 52435
15 Nov 1999 18:48:09:92932 (~15 s long) 67689

Ciao
Marco

Marco Feroci
Istituto di Astrofisica Spaziale
C.N.R. - Area di Ricerca di Roma - Tor Vergata
Phone: +39-06-4993-4099 Via Fosso del Cavaliere, Roma, I-00133 ITALY
Fax : +39-06-2066-0188 E-mail: feroci@ias.rm.cnr.it

From khurley@sunspot.ssl.berkeley.edu Wed Nov 24 17:09 PST 1999
Date: Wed, 24 Nov 1999 17:17:51 -0800
From: khurley@ssl.berkeley.edu (Kevin Hurley)
To: feroci@ias.rm.cnr.it
Subject: GRB 991119, 991115
Cc: khurley@sunspot.ssl.berkeley.edu

Dear Marco
> 19 Nov 1999 14:33:55:78917 (3-4 s long)

Good data, but nothing evident.

> 15 Nov 1999 18:48:09:92932 (~15 s long)

Incomplete data. I'll look again later when the full data set is available.

Ciao

Kevin

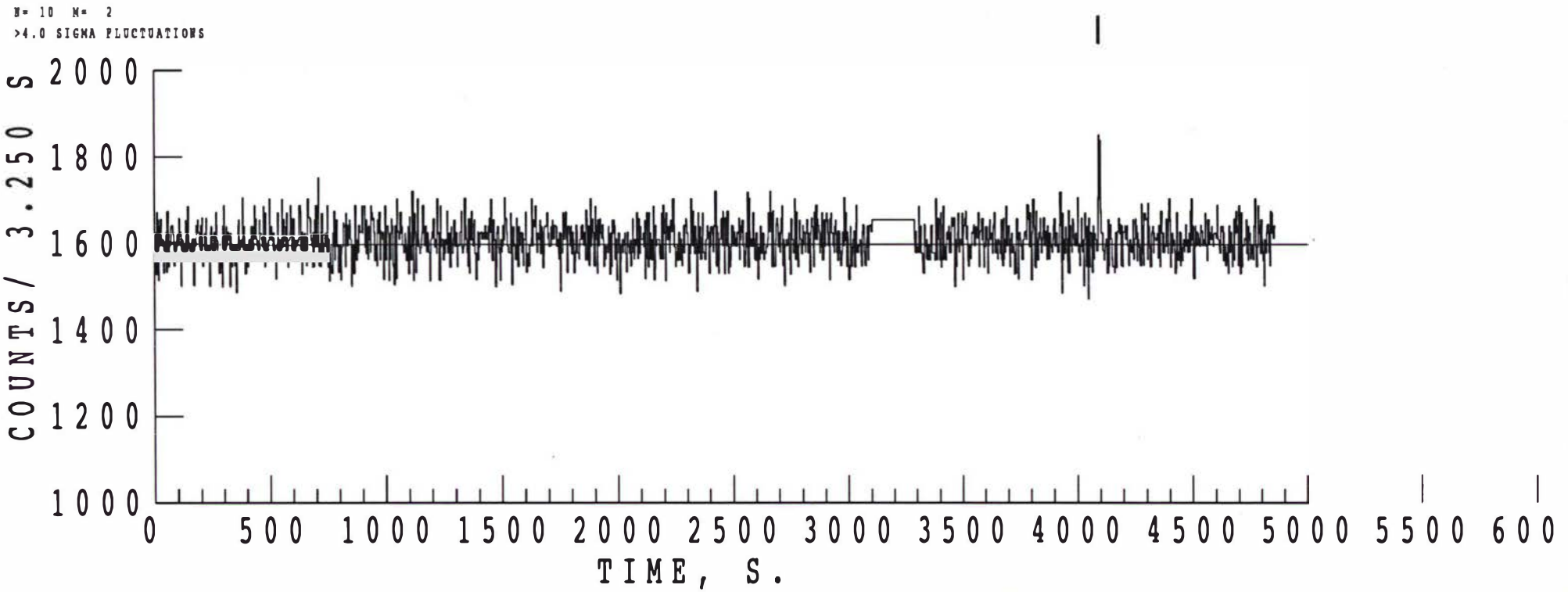
SAX

ULYSSES RT 21/03/00

15/11/99 65268.238 s

0.250 S INTERVALS REGROUPED BY 13

0- 0 keV



From PETERSON@fender.msfc.nasa.gov Wed Nov 17 12:55 PST 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 17 Nov 1999 15:03:53 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7858

****
BATSEARCH PROGRAM
****

Also observed by NEAR, SAX

BATSE BURST # 7858
EVENT OF 1999 NOV 15 DAY OF YEAR=319
EVENT CROSSING TIME AT BATSE : 67687. S. OR 18:48:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 294.000 40.000
BATSE PEAK COUNTING RATE: 15000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/11/ 99 IS:
RA= 165.192 DEC= -24.755 DIST= 4.739 AU
BATSE-ULYSSES DISTANCE = 708901446. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 45.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1667.40 SECS.
CROSSING TIME AT ULYSSES IS 69354. S. OR 19:15:54 +/- 366.42 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/11/ 99 IS:
RA= 293.420 DEC= -23.293 DIST= 1.595 AU
MARS-BATSE DISTANCE = 238675088. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -357.77 SECS.
CROSSING TIME AT MARS IS 67329. S. OR 18:42:09 +/- 118.05 SECONDS

BATSE BURST TRIGGER
NO.: 7858

TIME: TJD=1497 SECONDS=67687

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=10.7 AZIMUTH=321.1 ERROR=0.560 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR APPROX 15S, STARTA AT APPROX T-2.5S, MAX AT APPROX T+4S. NOT VISIBLE ABOVE 300KEV. CYGX-1 SET AT APPROX T+107S IN LAD (0,2).

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7858	991115	11497	67687	15000	294	+40	15

Date: May 4 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?

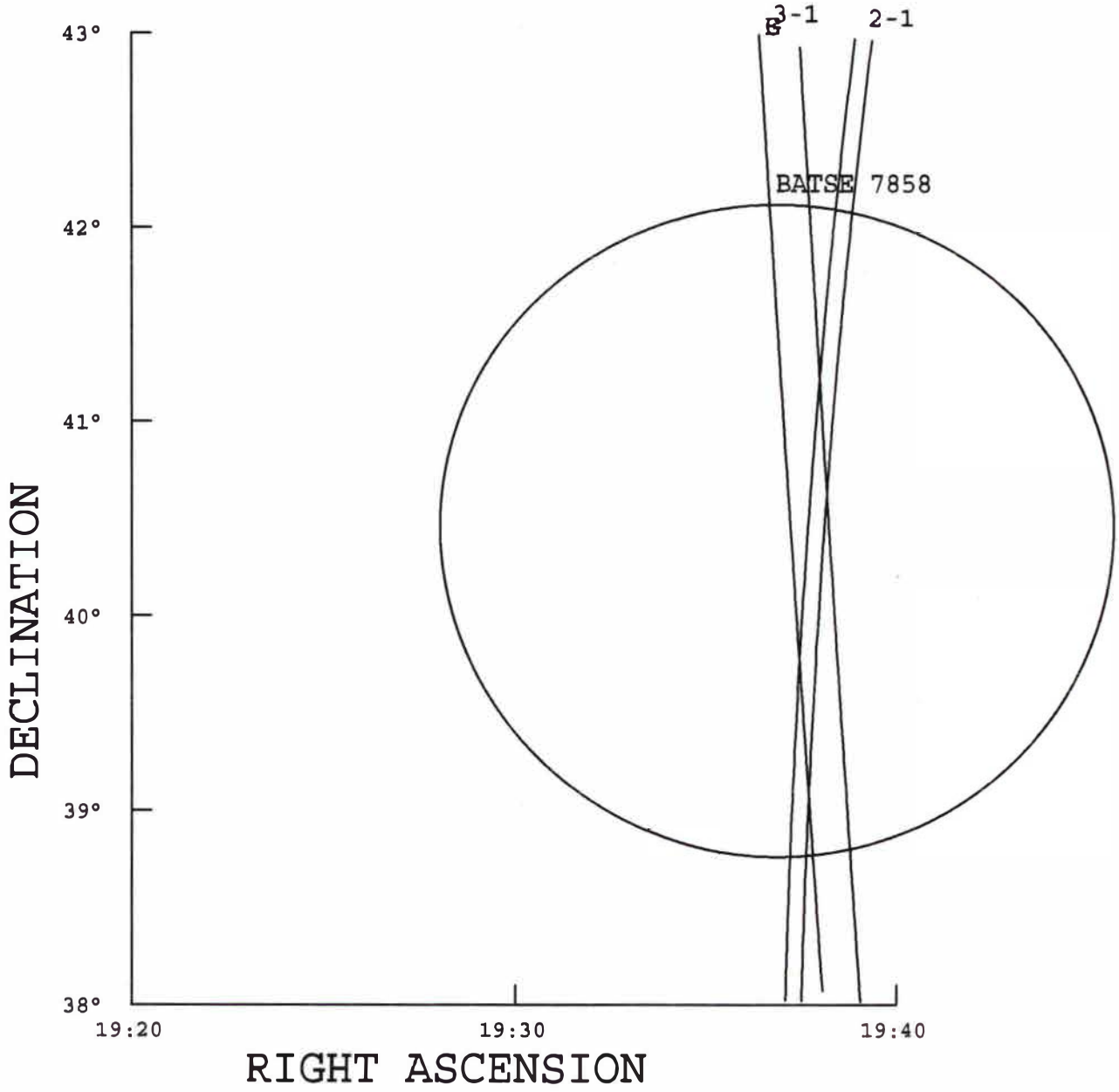
3. NEAR Data

☑ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

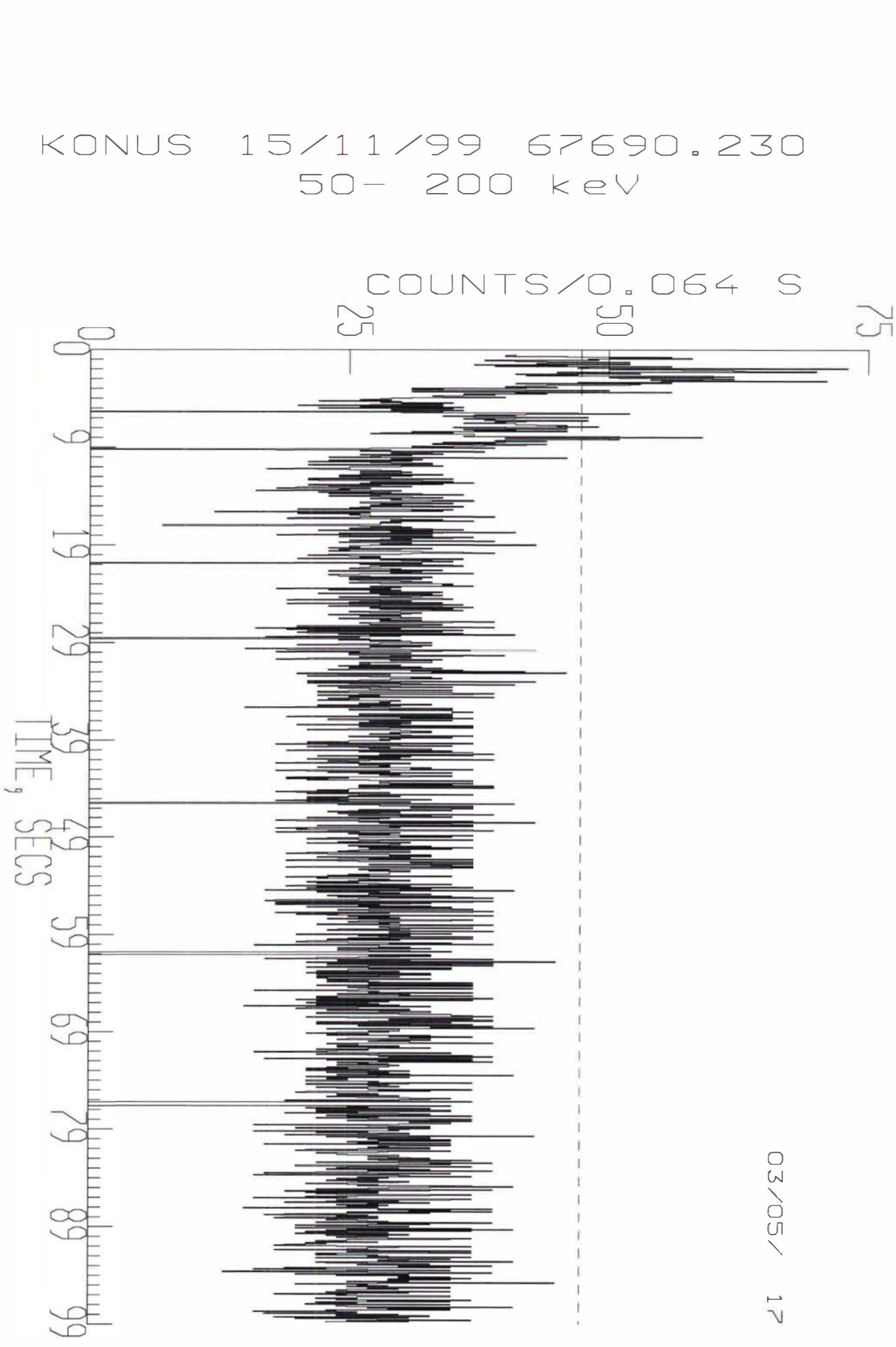
☑ BATSE >100 keV data used for NEAR correlation?

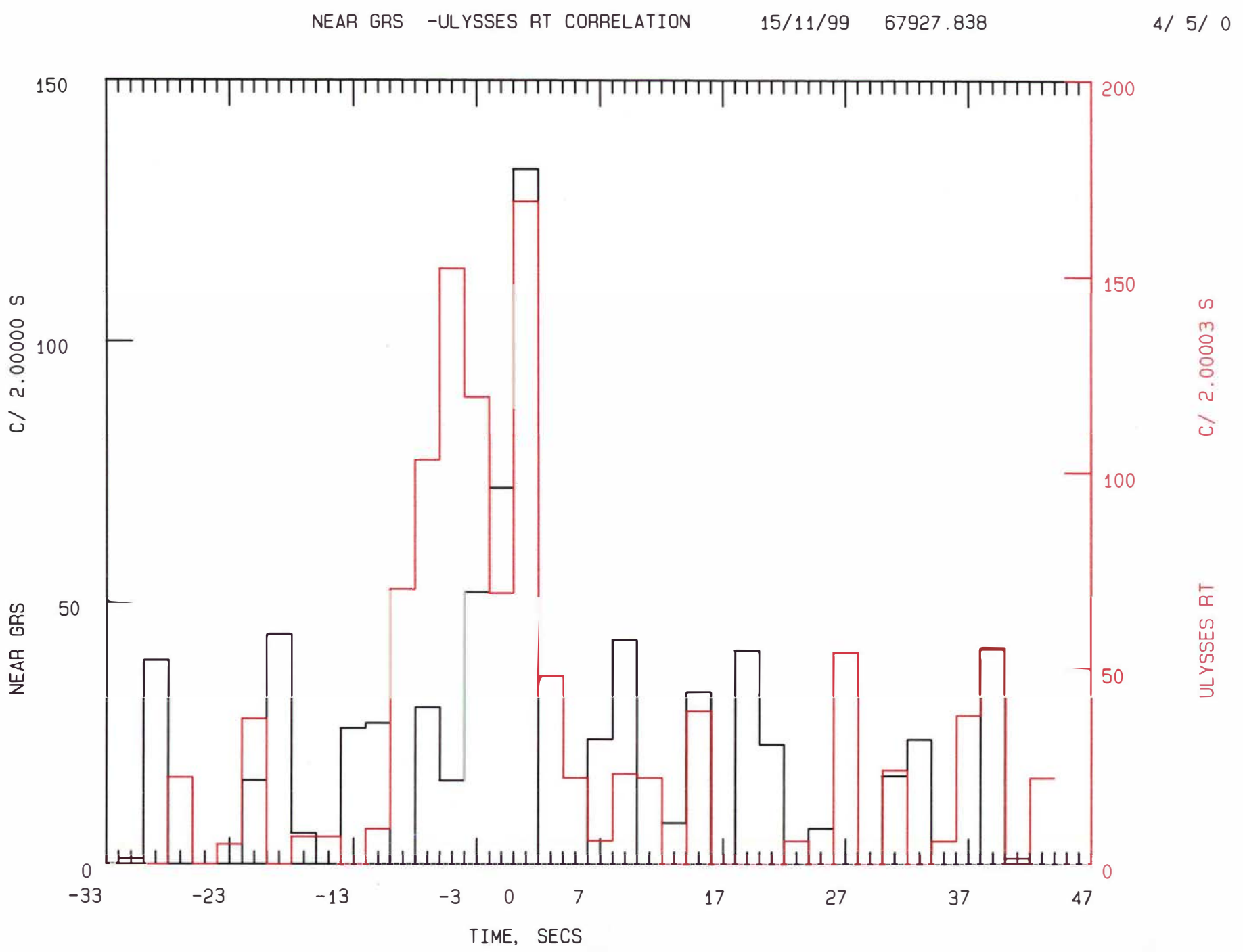
☑ ACCESS database updated?

EVENT OF NOV 15, 1999 18:48

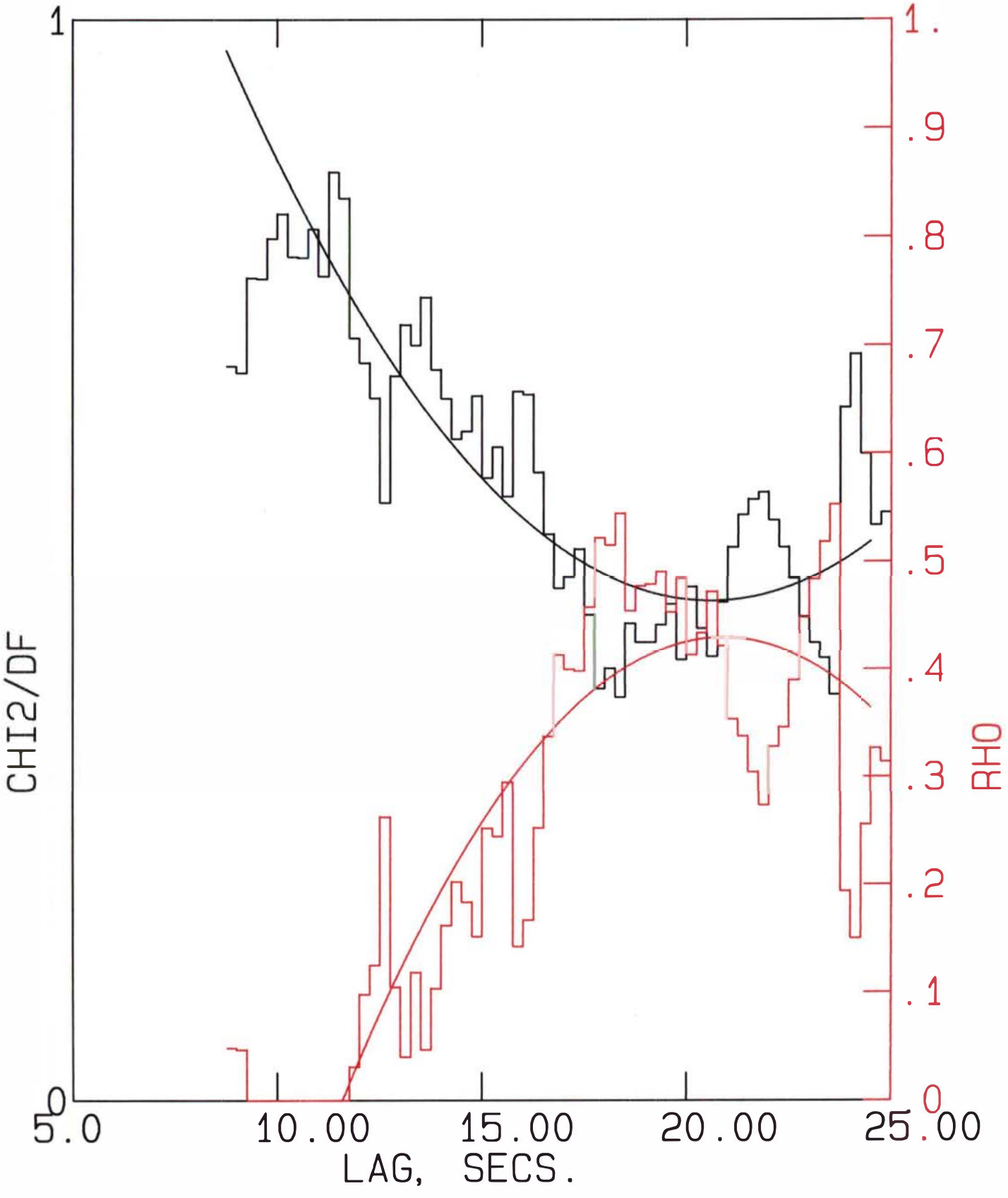


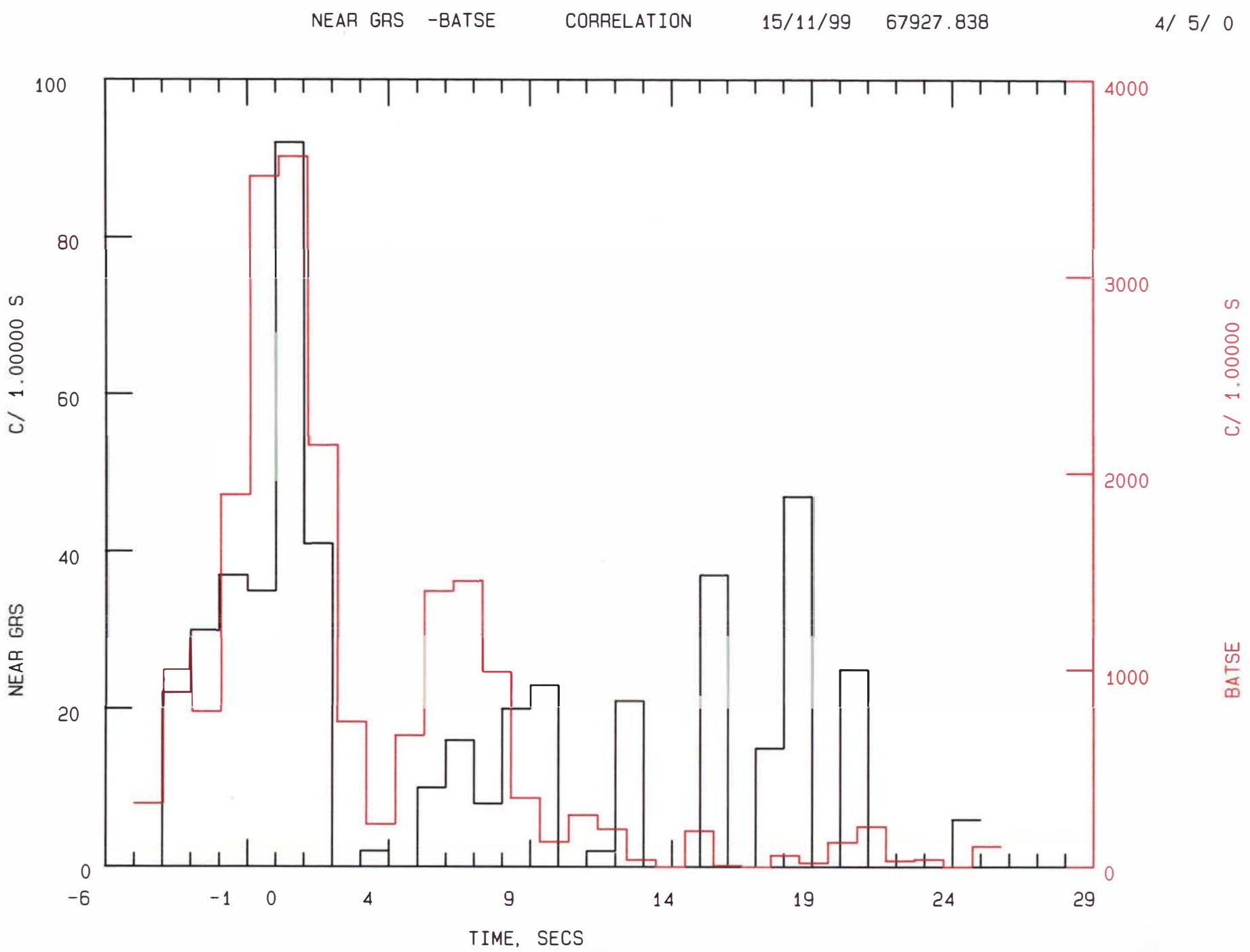
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 ULYSSES 3 NEAR


KONUS 15/11/99 67690.230
50- 200 keV
COUNTS/0.064 S
0
25
50
75
TIME, SECS
0
9
19
29
39
49
59
69
79
89
99
03/05/ 17

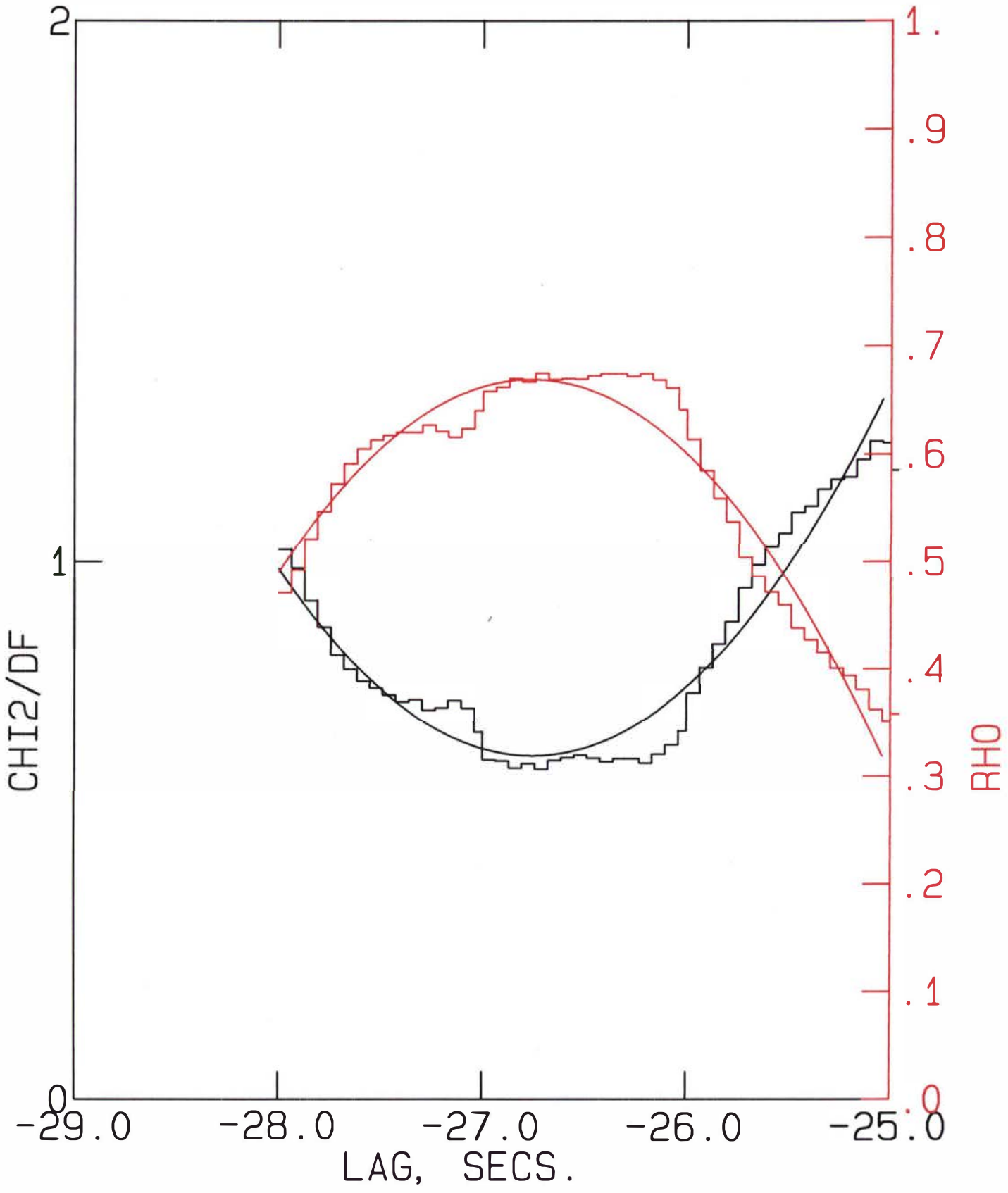

NEAR GRS -ULYSSES RT CORRELATION 15/11/99 67927.838 4/ 5/ 0
150
100
50
0
C/ 2.00000 S
NEAR GRS
200
150
100
50
0
C/ 2.00003 S
ULYSSES RT
-33
-23
-13
-3
0
7
17
27
37
47
TIME, SECS

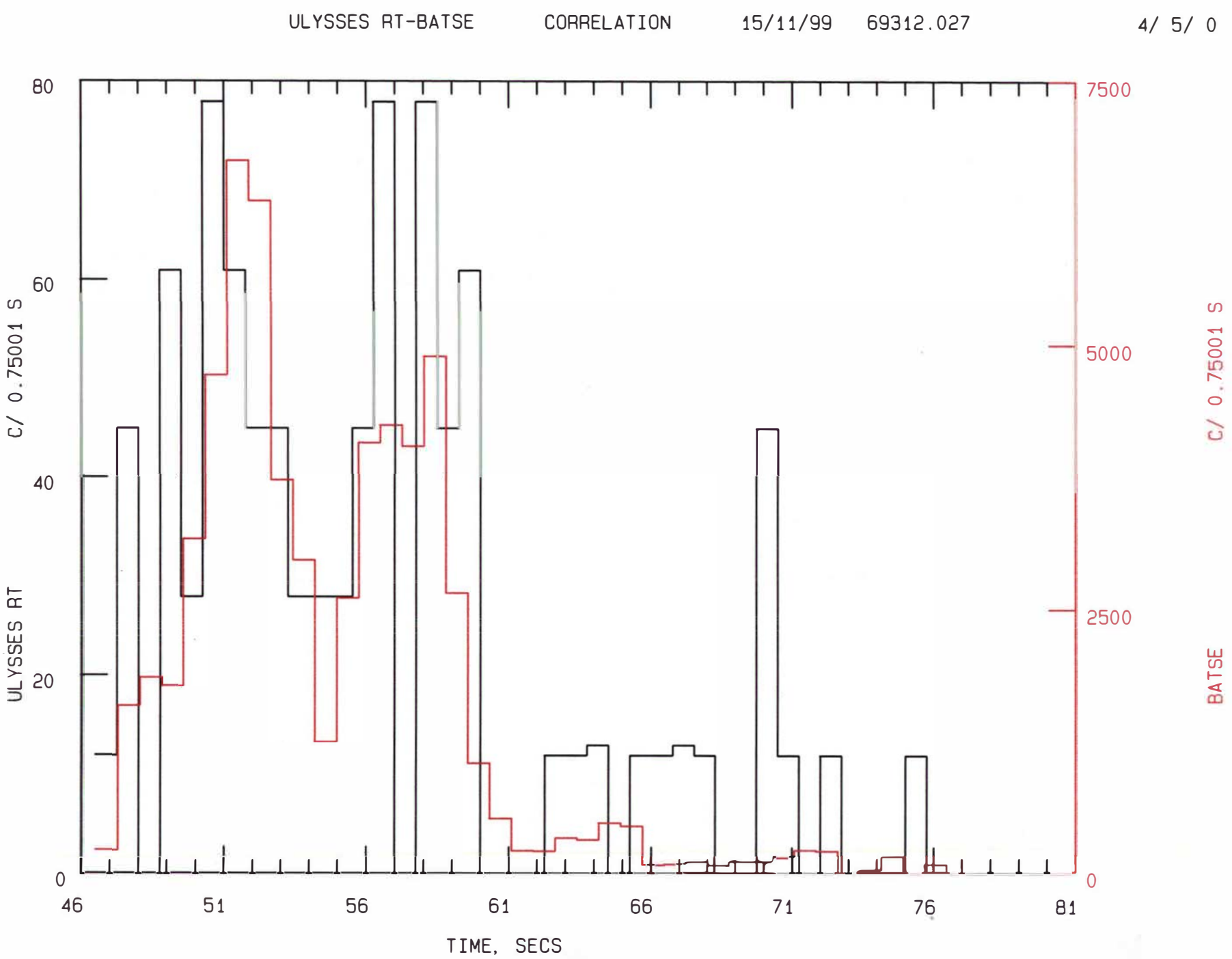
NEAR GRS -ULYSSES RT CORRELATION 15/11/99 67927.838



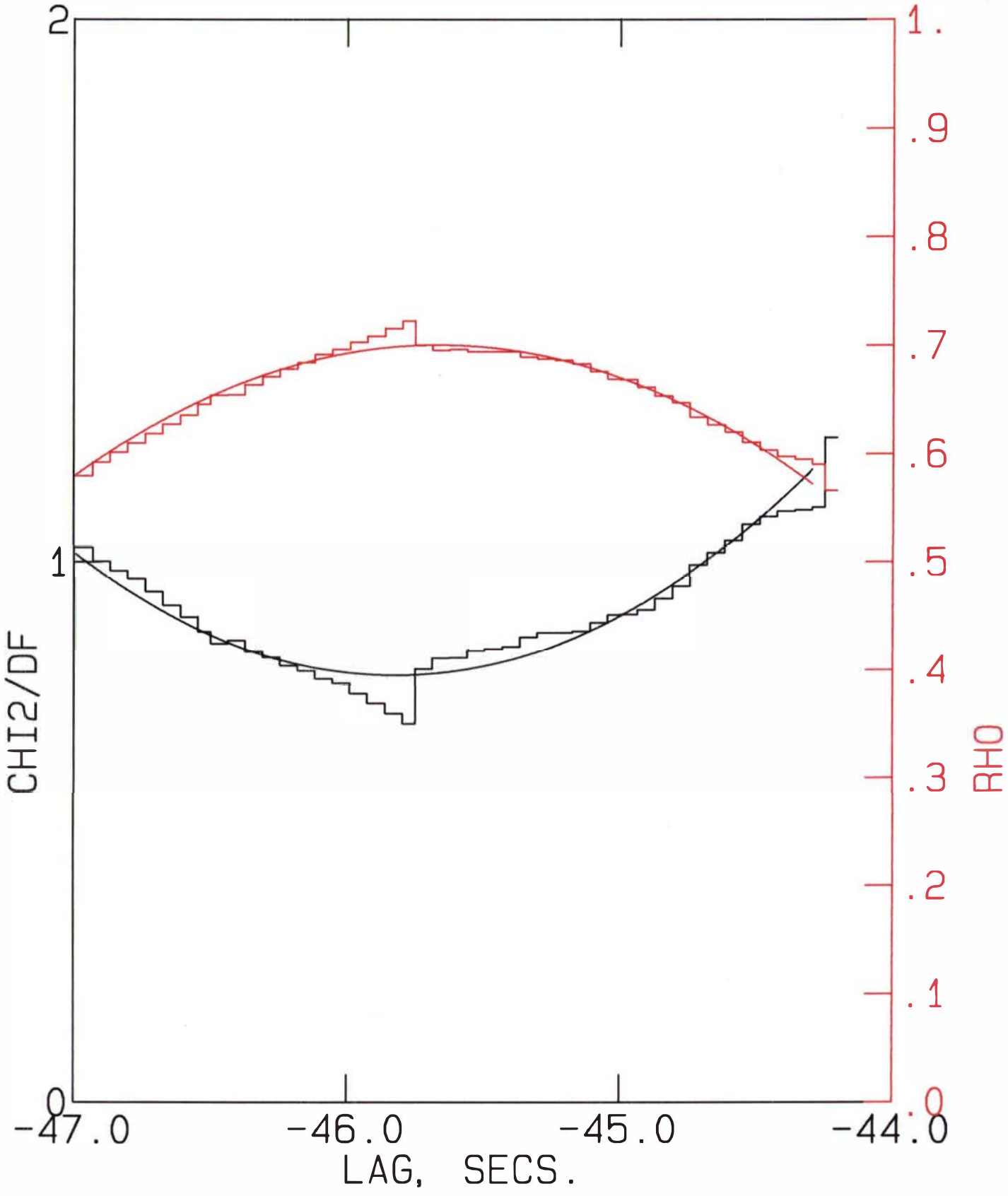

NEAR GRS -BATSE CORRELATION 15/11/99 67927.838 4/ 5/ 0
100
80
60
40
20
0
C/ 1.00000 S
NEAR GRS
4000
3000
2000
1000
0
C/ 1.00000 S
BATSE
-6
-1
0
4
9
14
19
24
29
TIME, SECS

NEAR GRS -BATSE CORRELATION 15/11/99 67927.838




ULYSSES RT-BATSE CORRELATION 15/11/99 69312.027 4/ 5/ 0
80
60
40
20
0
C/ 0.75001 S
ULYSSES RT
7500
5000
2500
0
C/ 0.75001 S
BATSE
46
51
56
61
66
71
76
81
TIME, SECS

ULYSSES RT-BATSE CORRELATION 15/11/99 69312.027



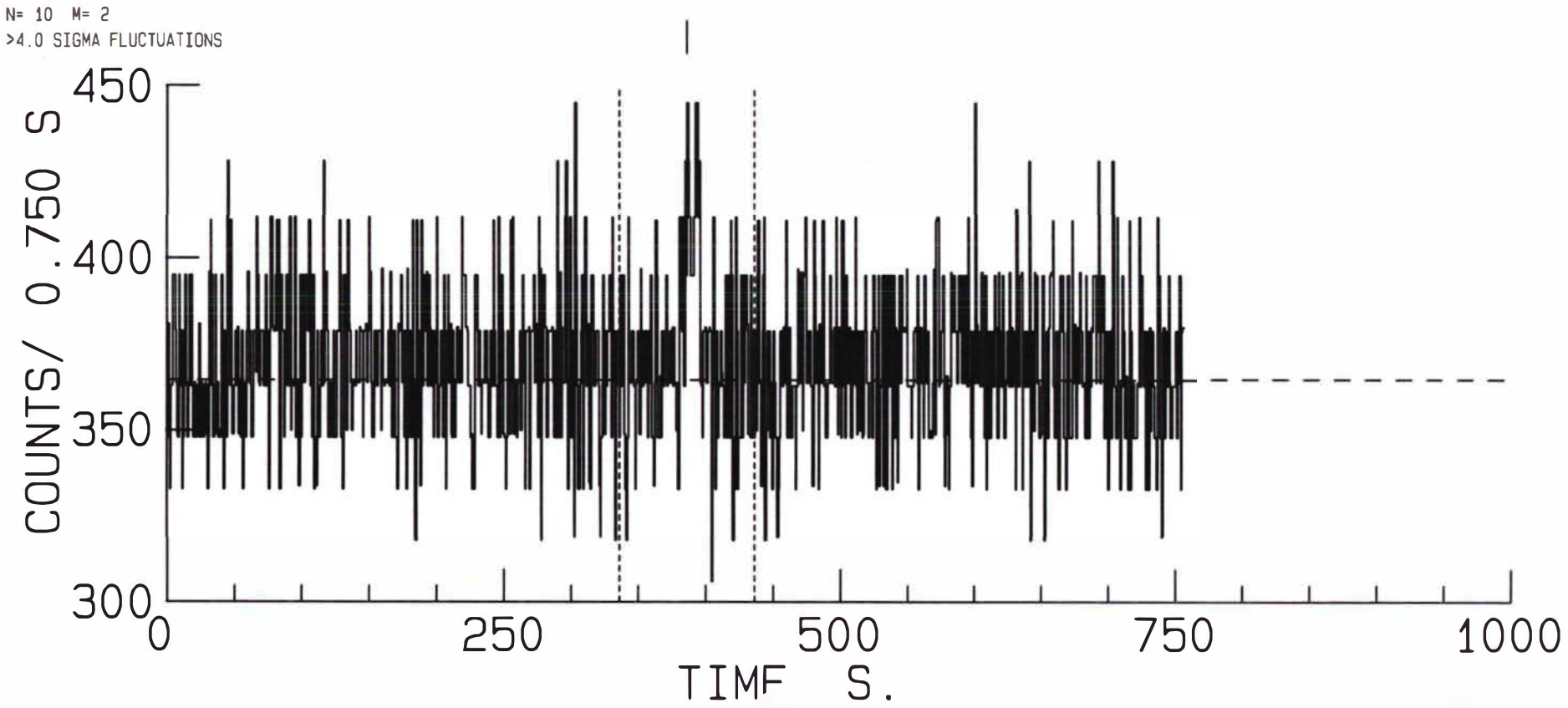
ULYSSES RT

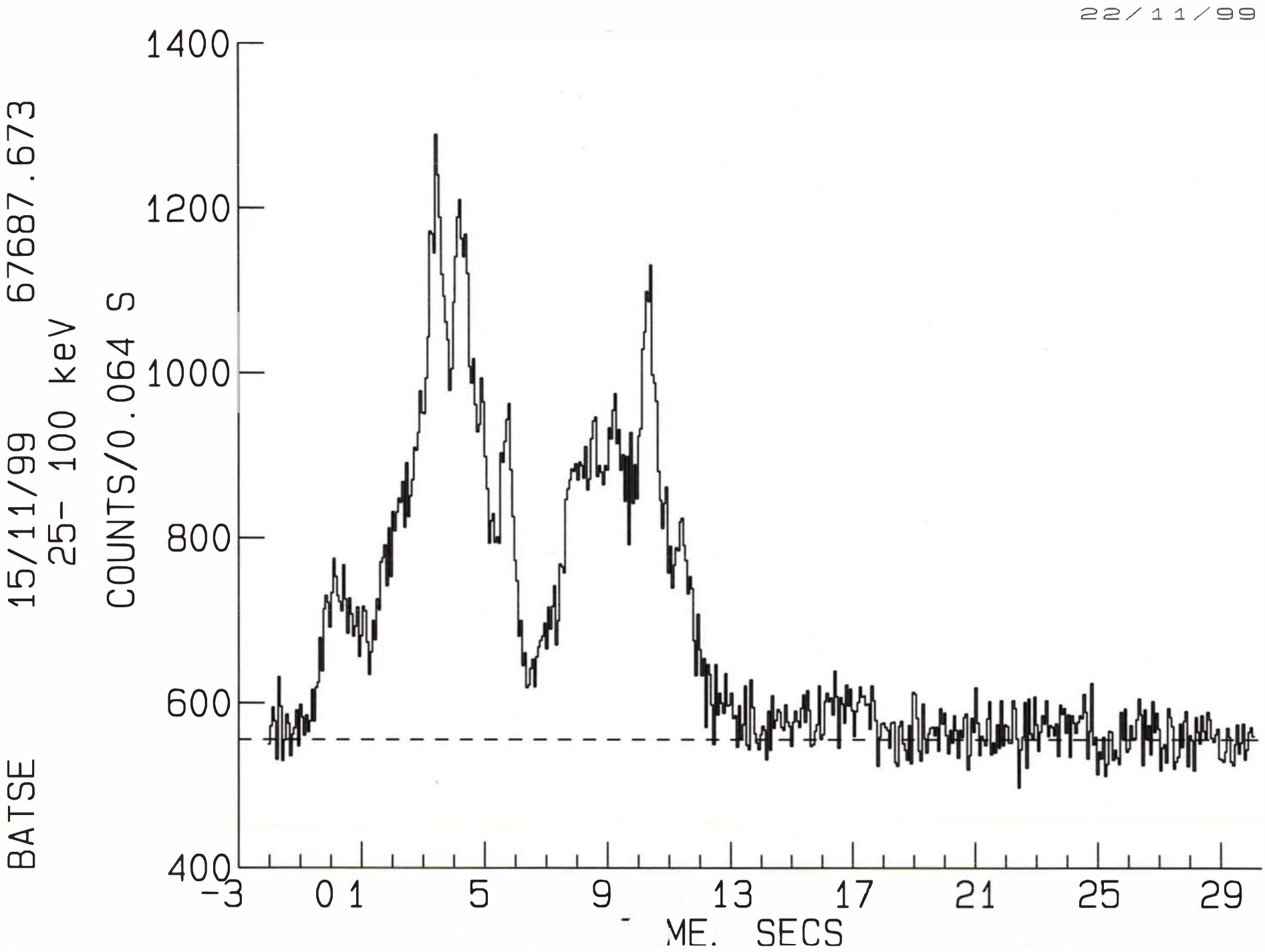
4/ 5/ 0

15/11/99 68976.028 s

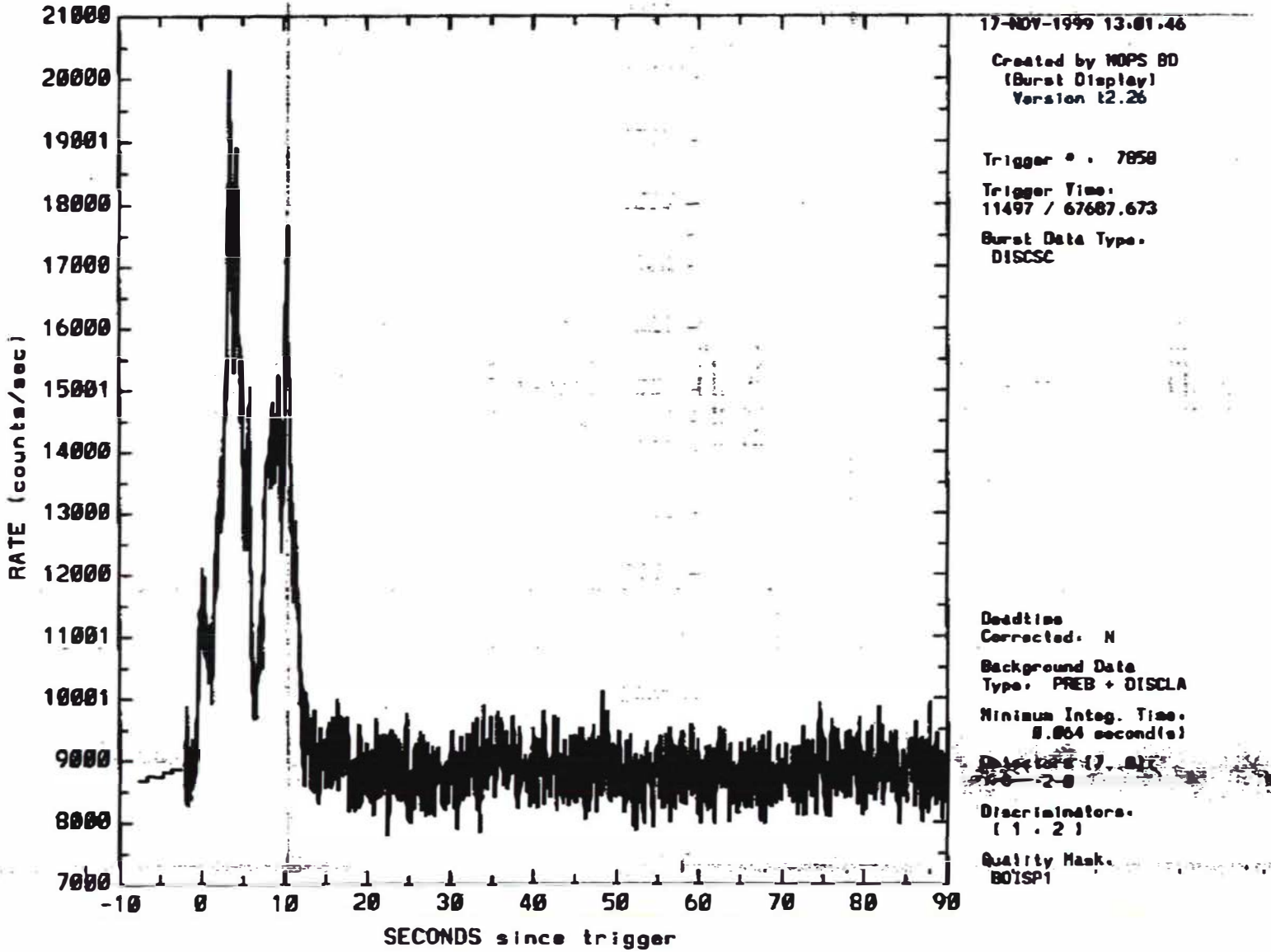
0.250 S INTERVALS REGROUPED BY 3

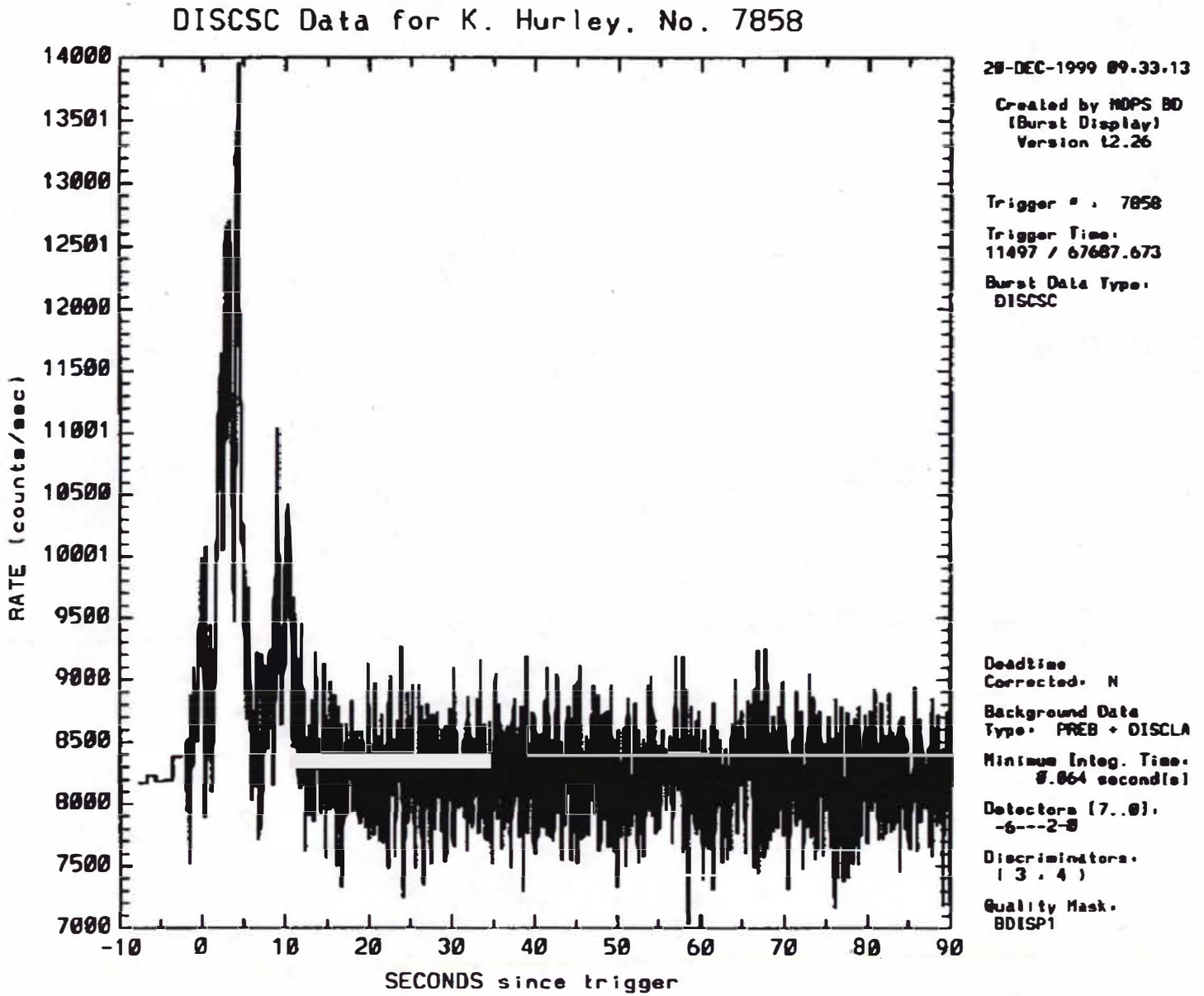
22- 150 keV



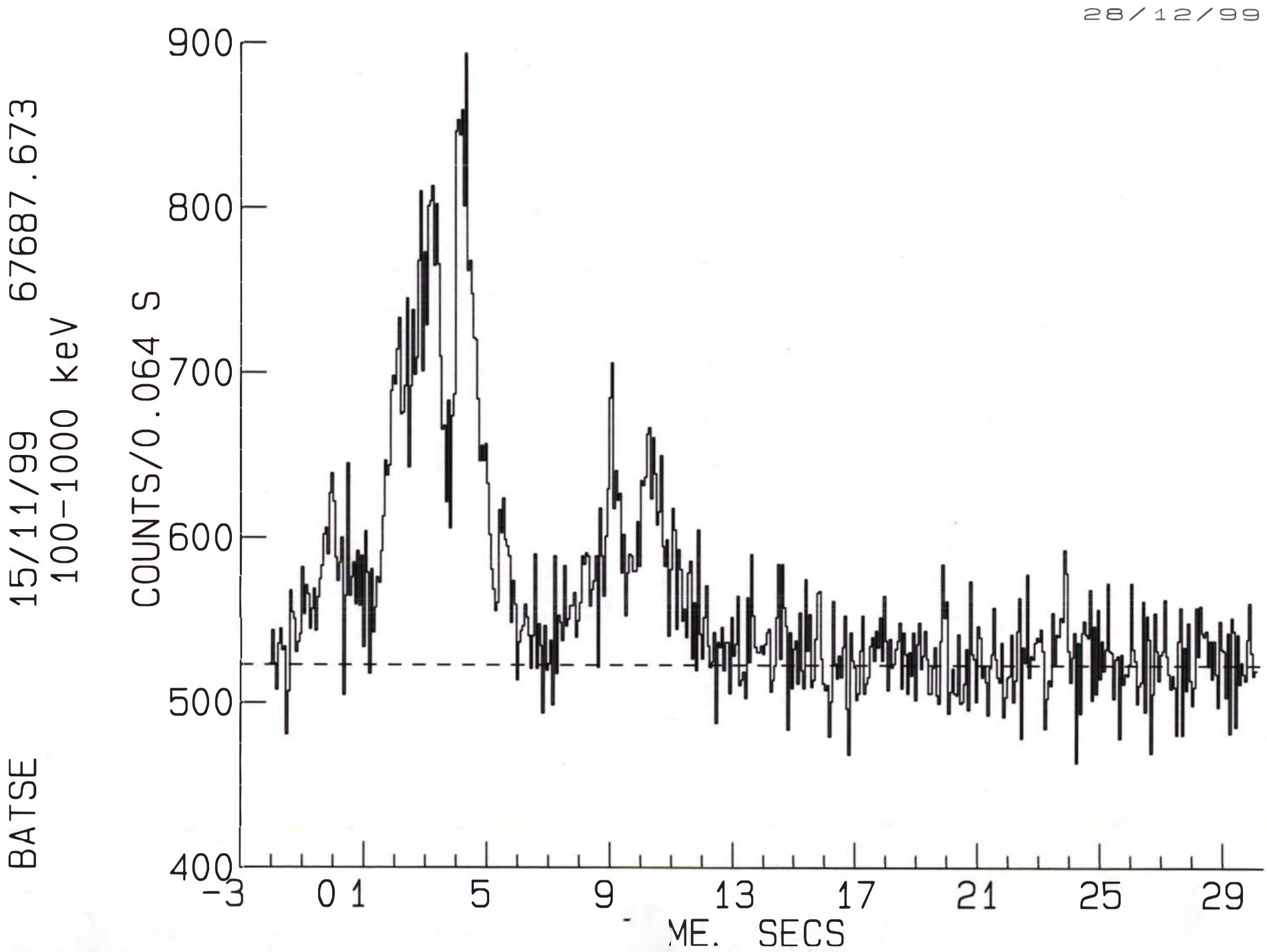

22/11/99
BATSE 15/11/99 67687.673
25- 100 keV
COUNTS/0.064 S
1400
1200
1000
800
600
400
-3
0 1
5
9
13
17
21
25
29
ME. SECS

DISCSC Data for K. Hurley, No. 7858



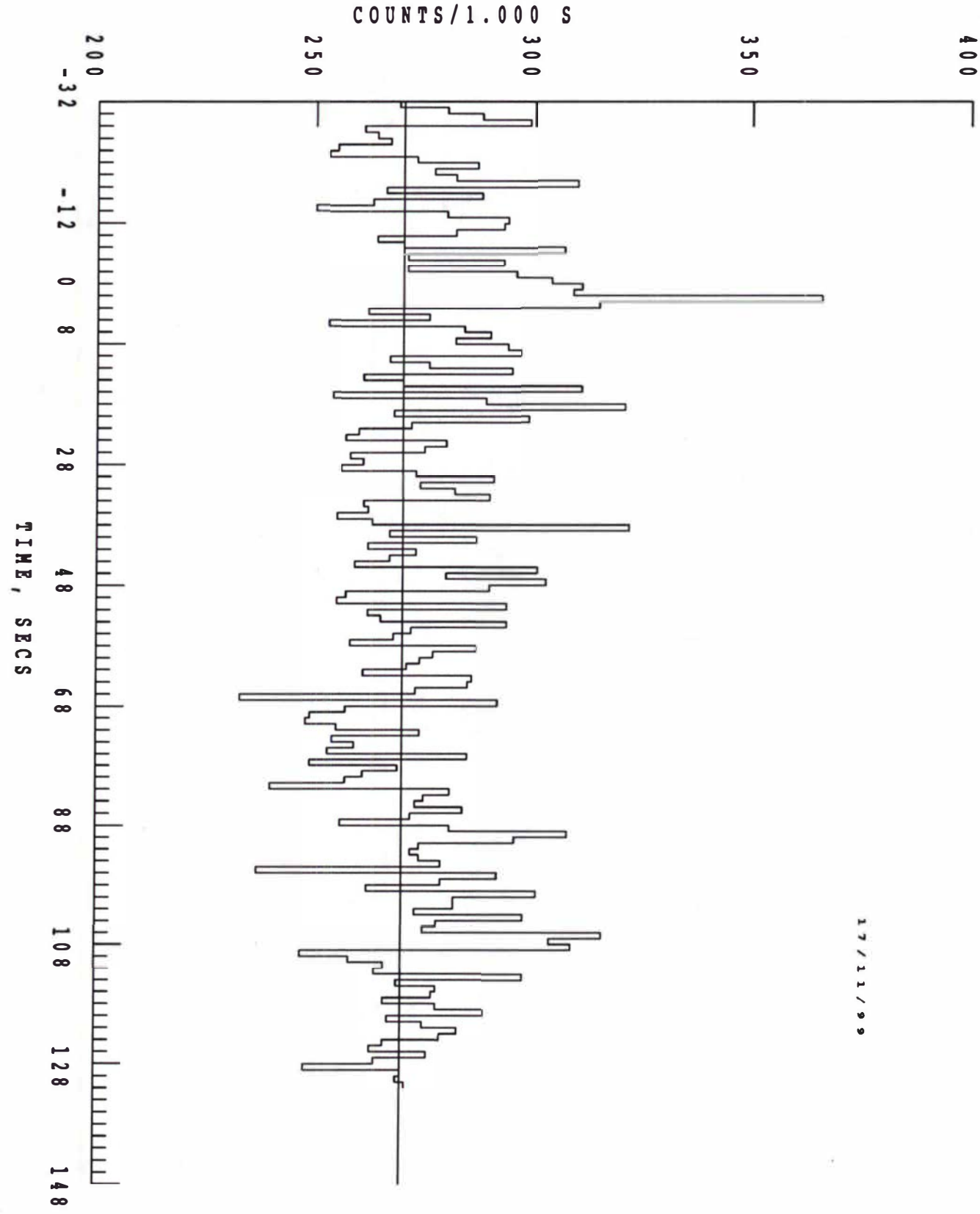


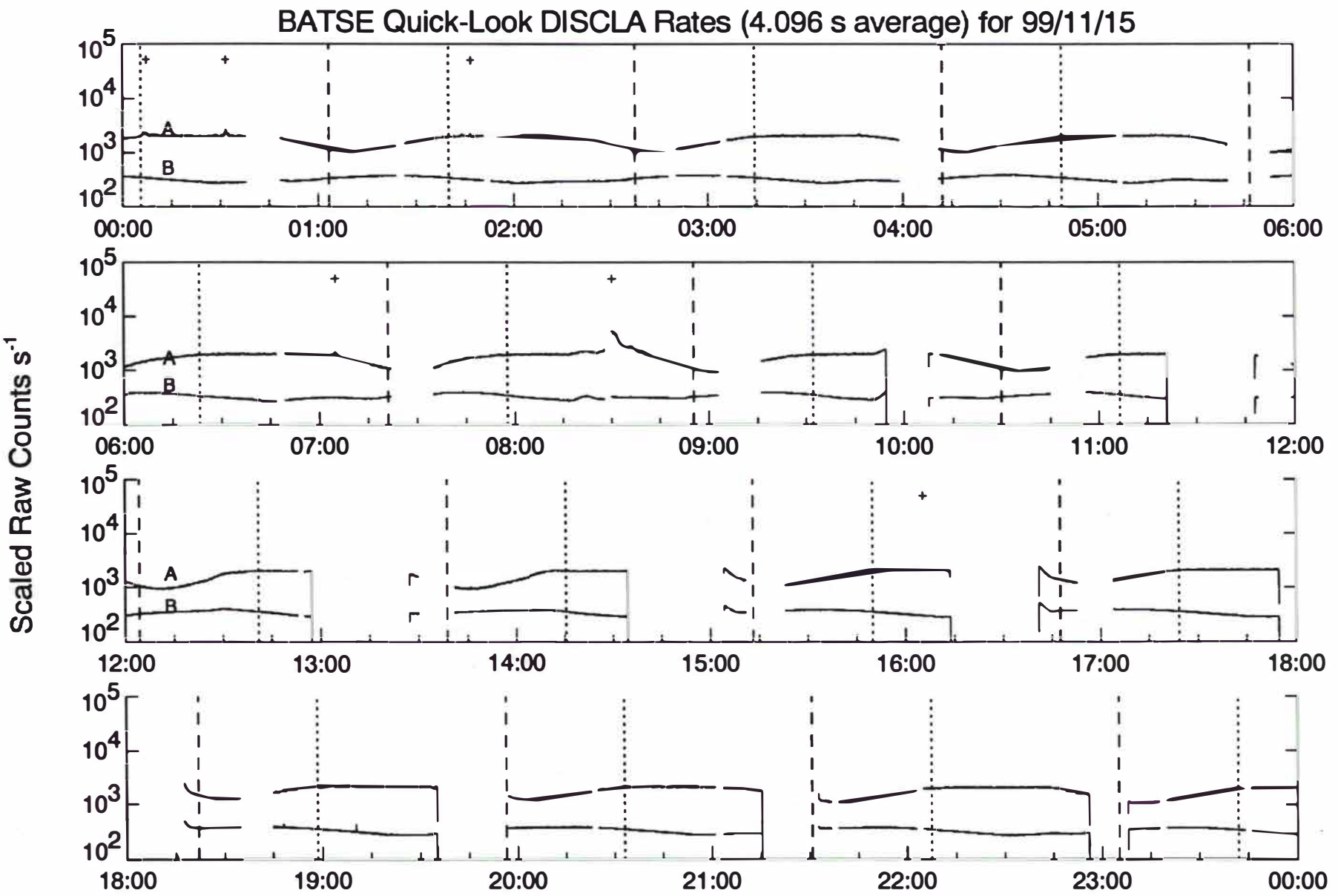
12-20-1999 09:39 2565445800 BATSE P.03

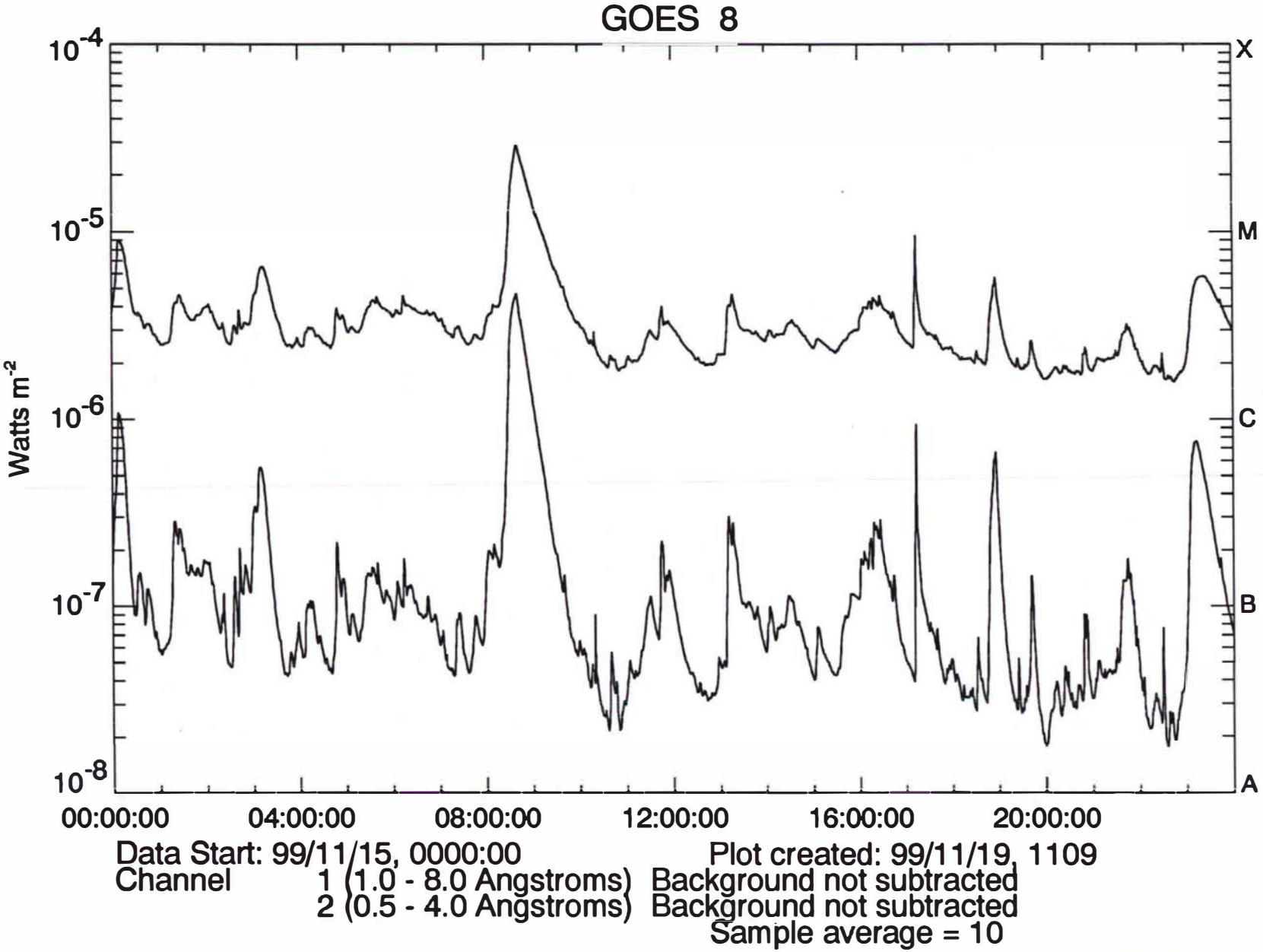

28/12/99
BATSE 15/11/99 67687.673
100-1000 keV
COUNTS/0.064 S
900
800
700
600
500
400
-3
0 1
5
9
13
17
21
25
29
ME. SECS

NEAR 15/11/99 67927.838

100-1000 keV

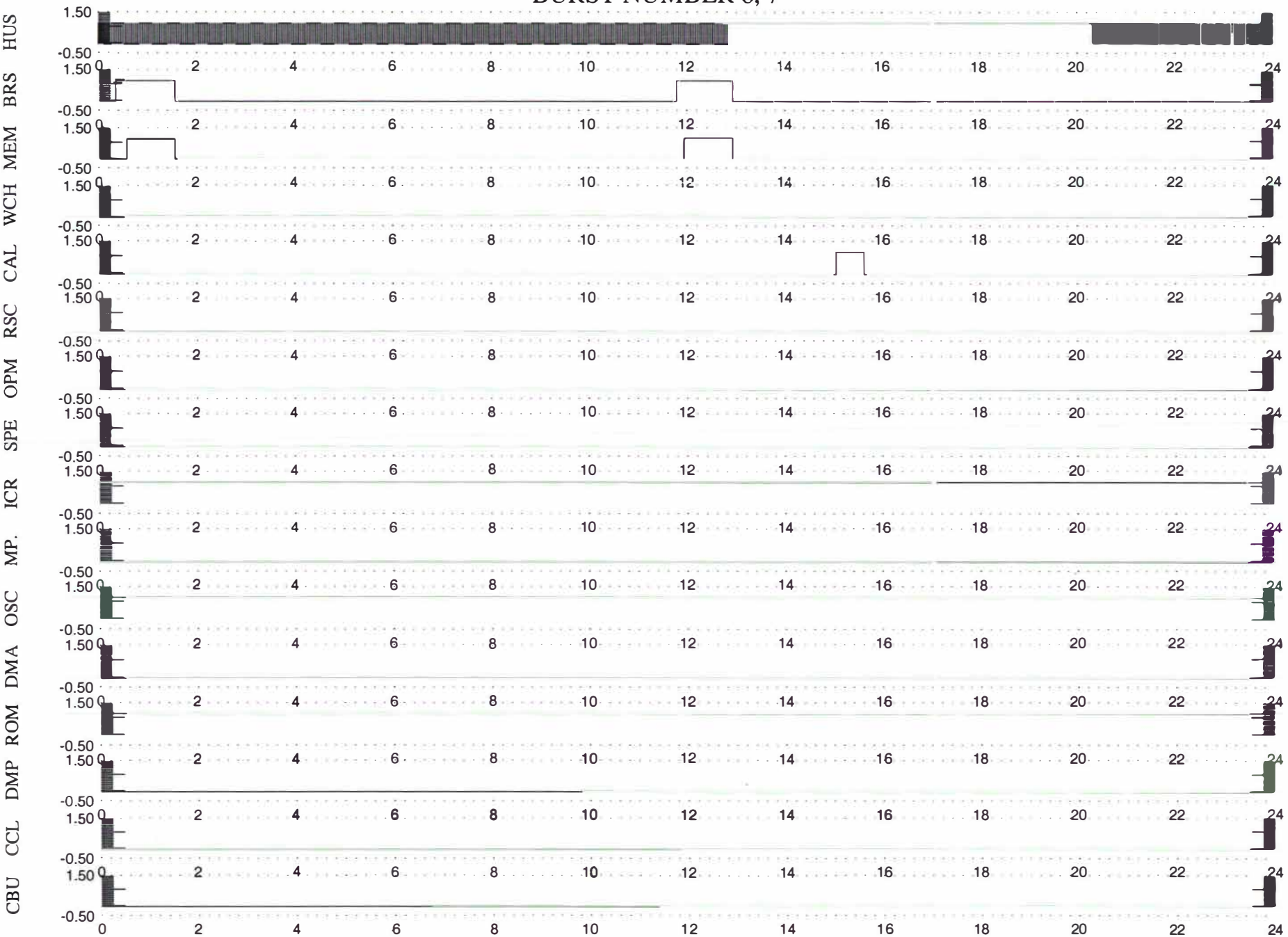



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/11/15
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 99/11/19, 1109 EDT
A: Channel 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
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
Watts m^{-2}
X
M
C
B
A
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 99/11/15, 0000:00
Plot created: 99/11/19, 1109
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 319, year 1999 to day 319, year 1999 03/21/00

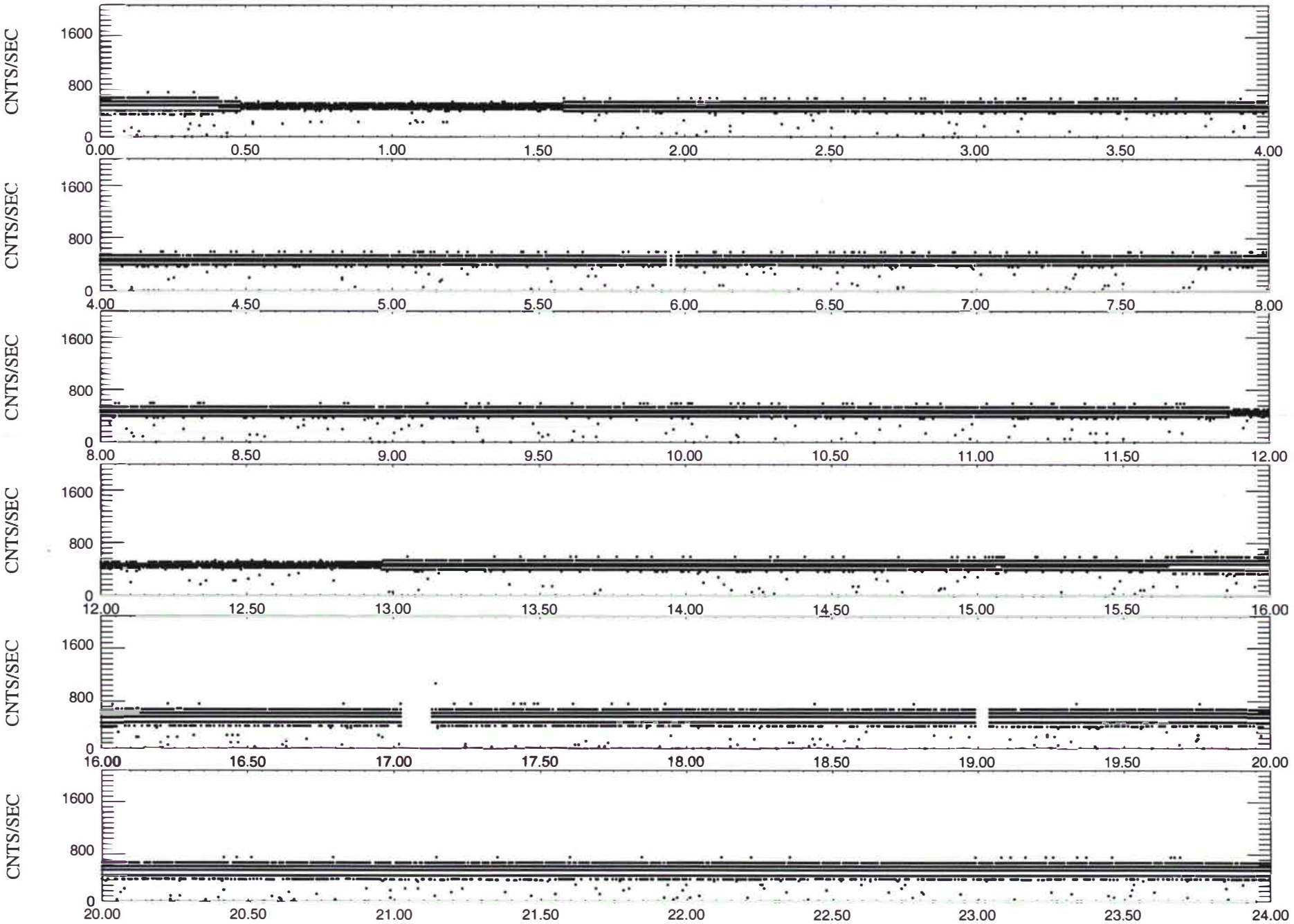
BURST NUMBER 6, 7



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 15/11/1999 DOY = 319 03/21/00

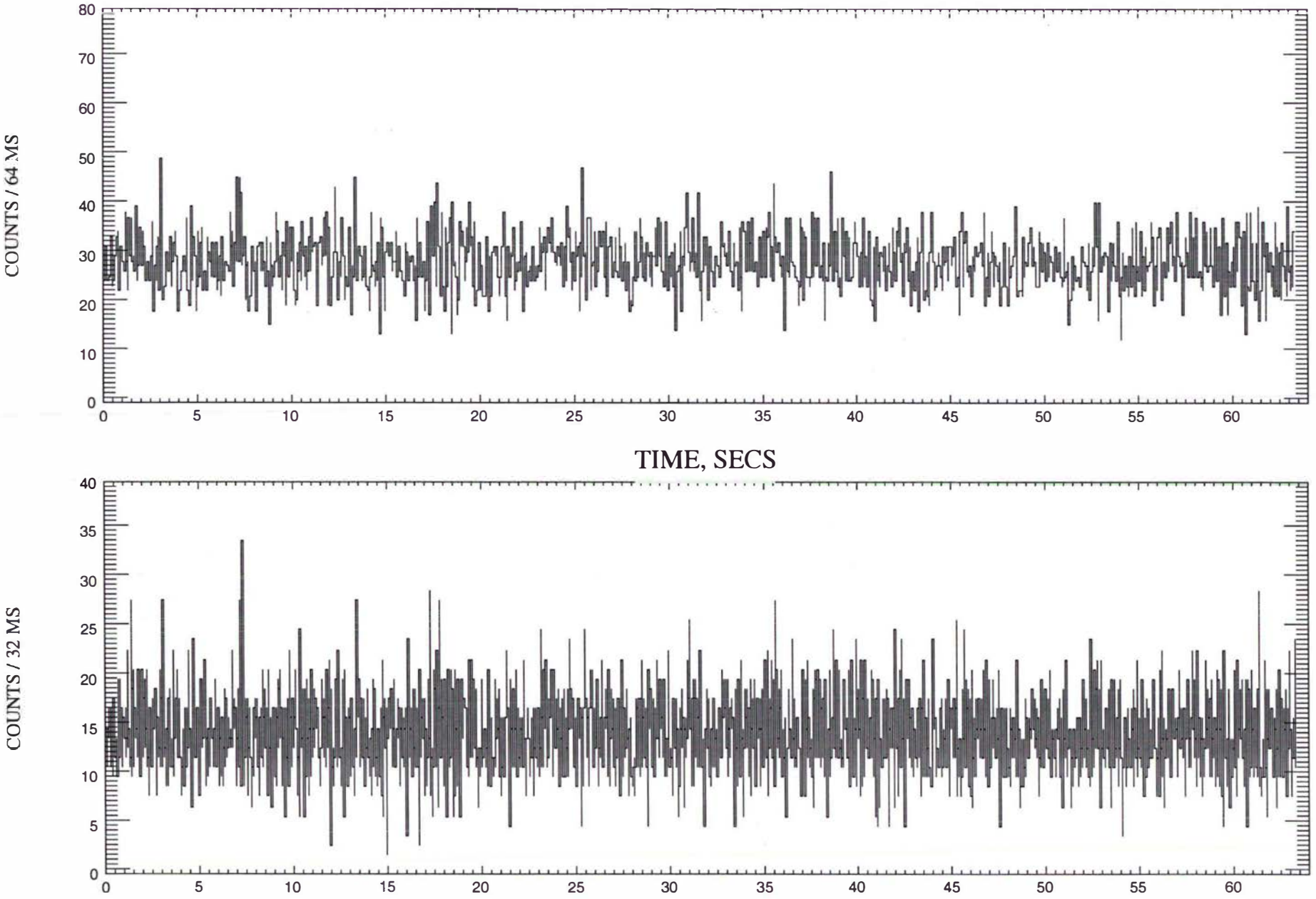
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR DMY = 15/11/1999 DOY = 319 03/21/00

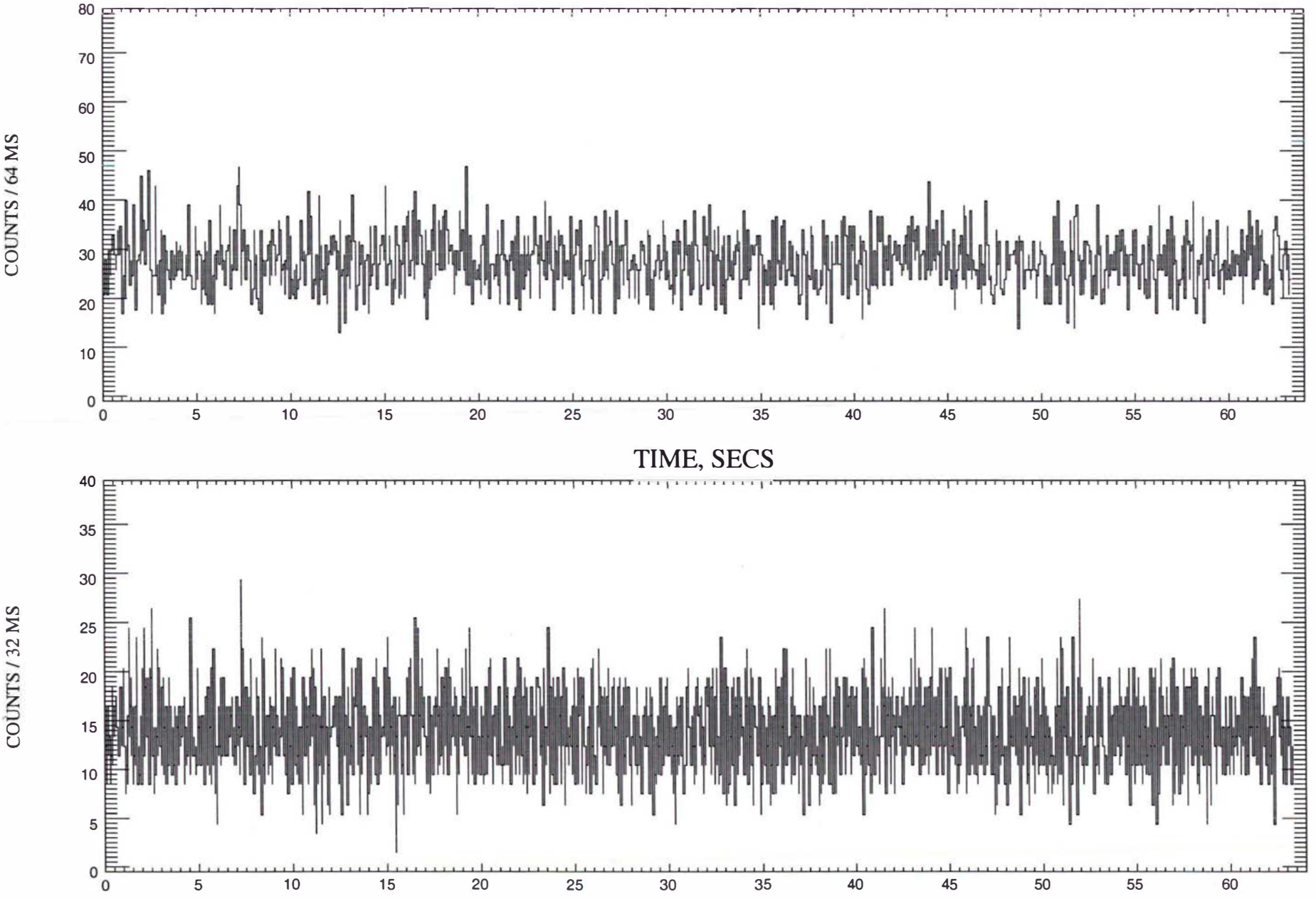
Burst Counter 6 at UT= 0.319154811435 h= 1148.957 s 00:19:08.957



B# 1

HUS 2A TRIGGERED DATA EDR DMY = 15/11/1999 DOY = 319 03/21/00

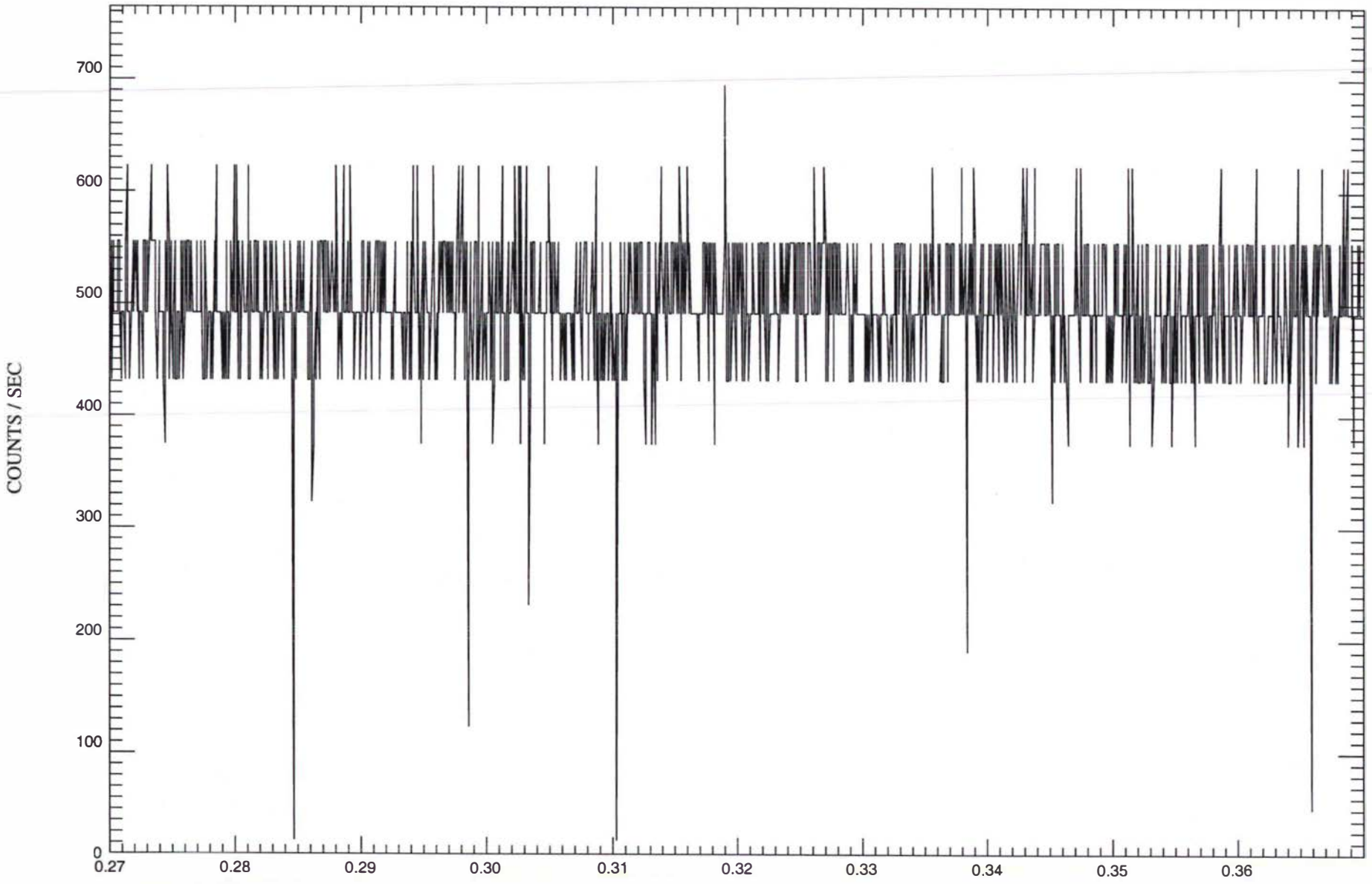
Burst Counter 7 at UT=11.706770214505 h=42144.373 s 11:42:24.373



B# 2

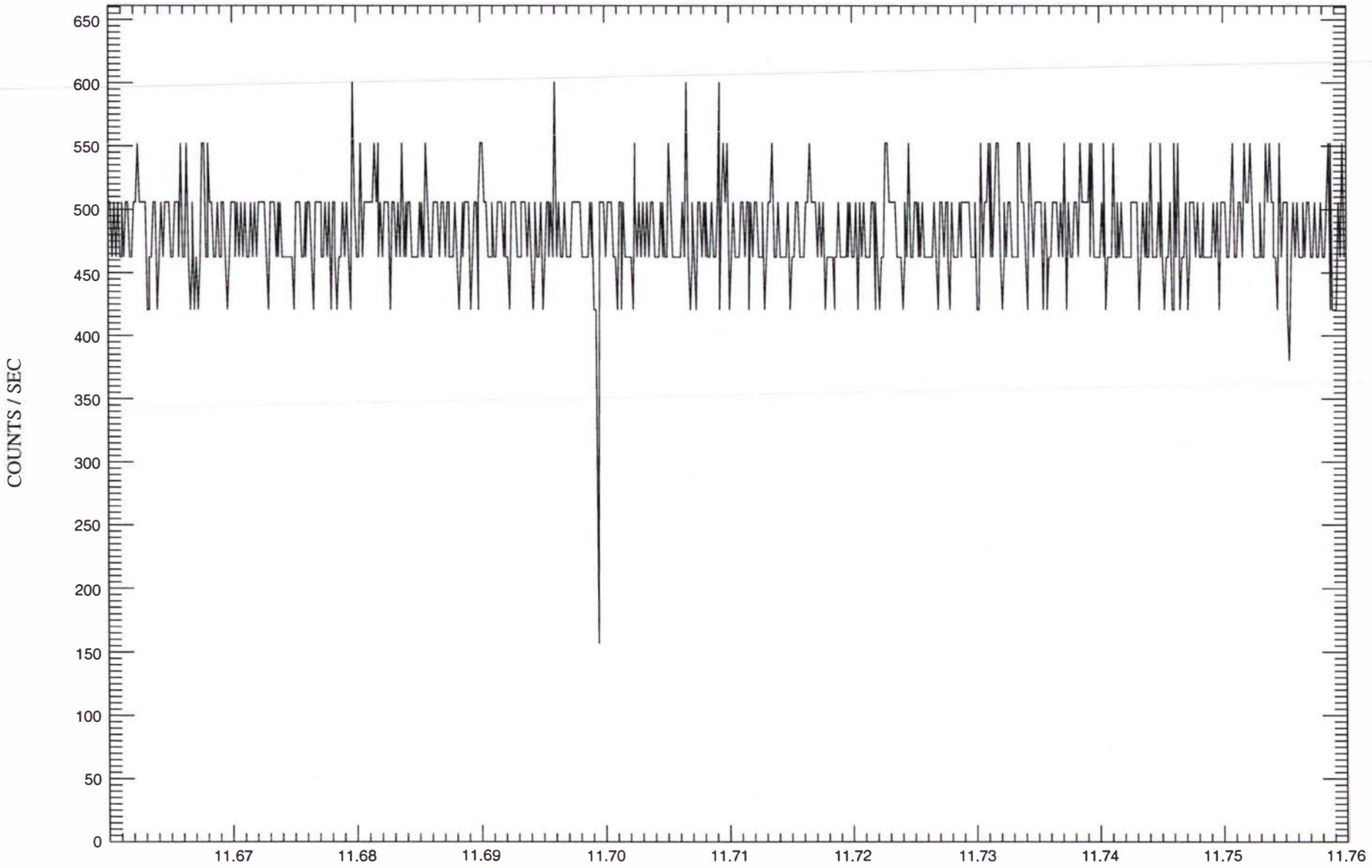
HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 15/11/1999 DOY = 319 03/21/00

CALIBRATION DATA INCLUDED



HUS 2A, MODE 1, NOT AVERAGED EDR DMY = 15/11/1999 DOY = 319 03/21/00

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 319, year 1999 to day 319, year 1999 03/21/00

