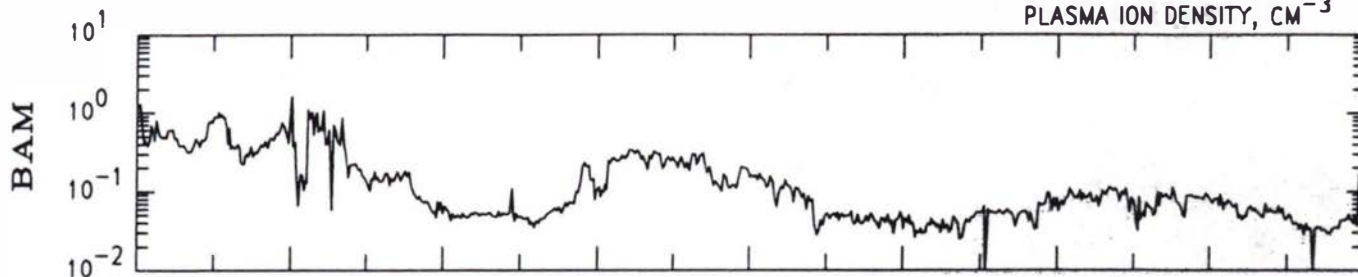


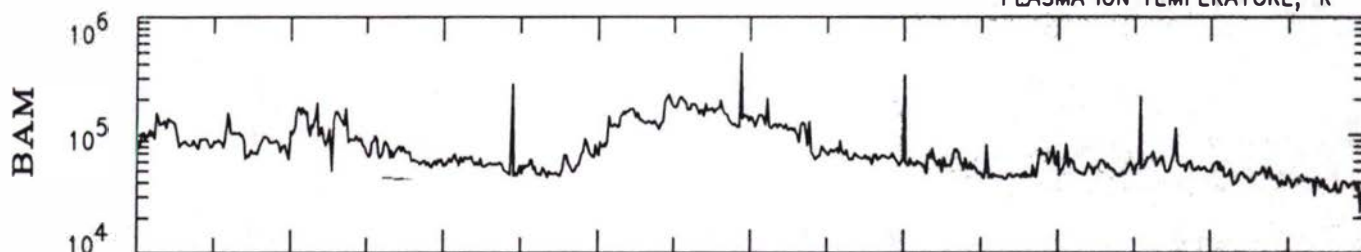
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 182 JUL 1 00:00:00.000 - 99 198 JUL 17 00:00:00.000

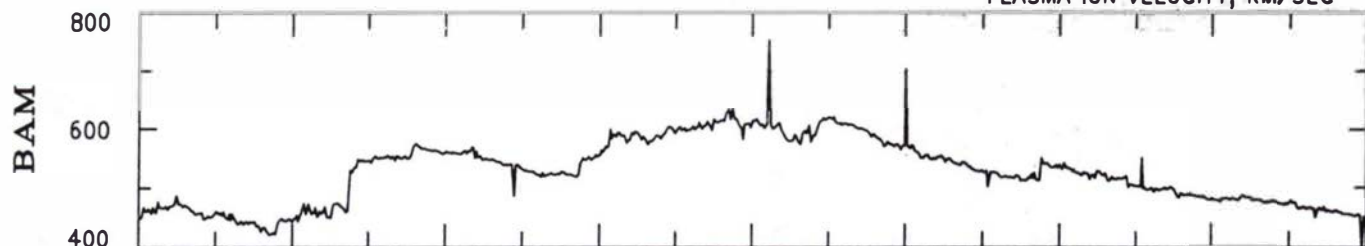
PLASMA ION DENSITY, CM^{-3}



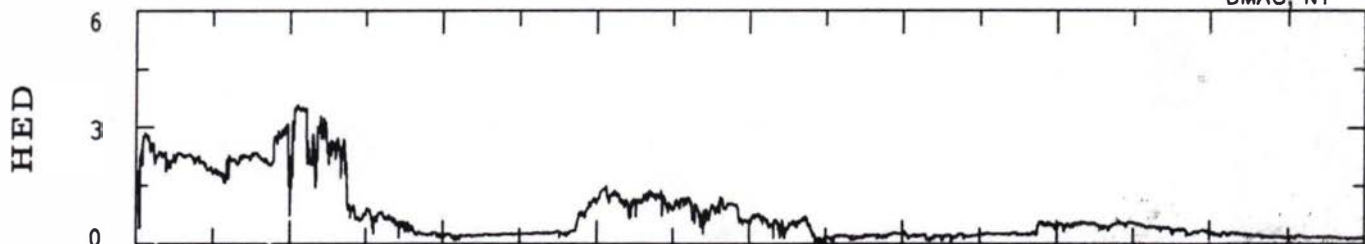
PLASMA ION TEMPERATURE, $^{\circ}\text{K}$



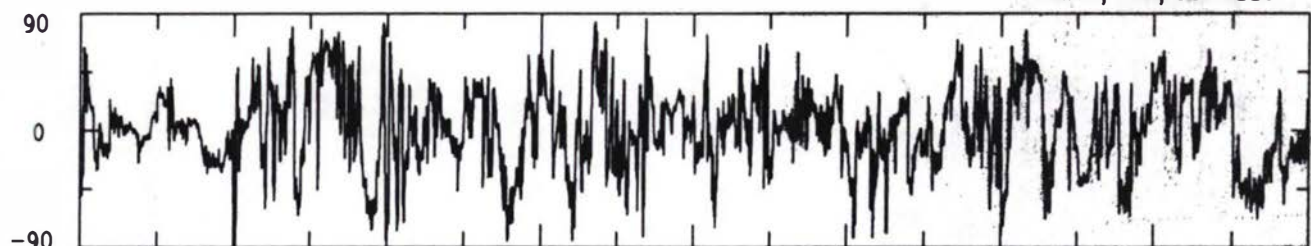
PLASMA ION VELOCITY, KM/SEC



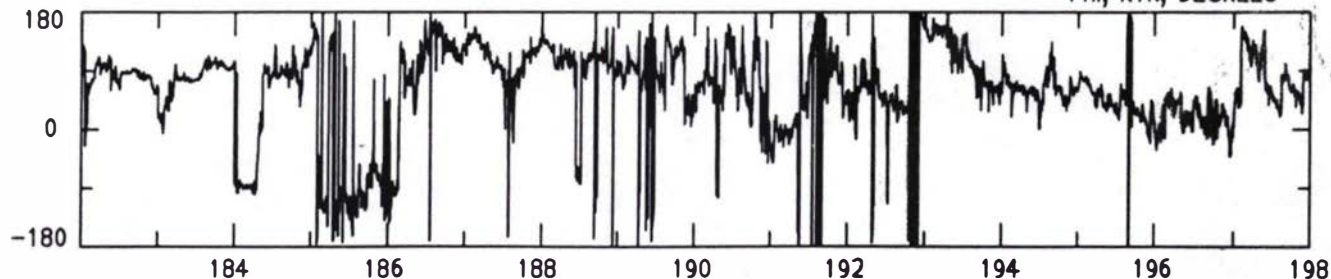
BMAG, NT



THETA, RTN, DEGREES



PHI, RTN, DEGREES

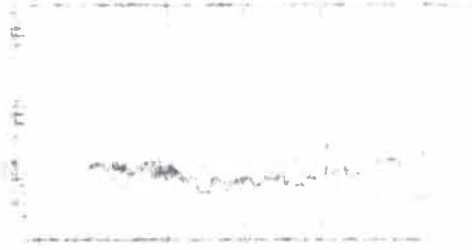


DAY OF YEAR

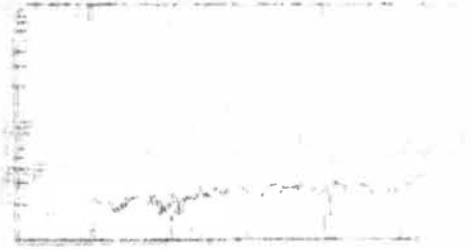
02. 10. 1971

10. 10. 1971

10. 10. 1971



10. 10. 1971

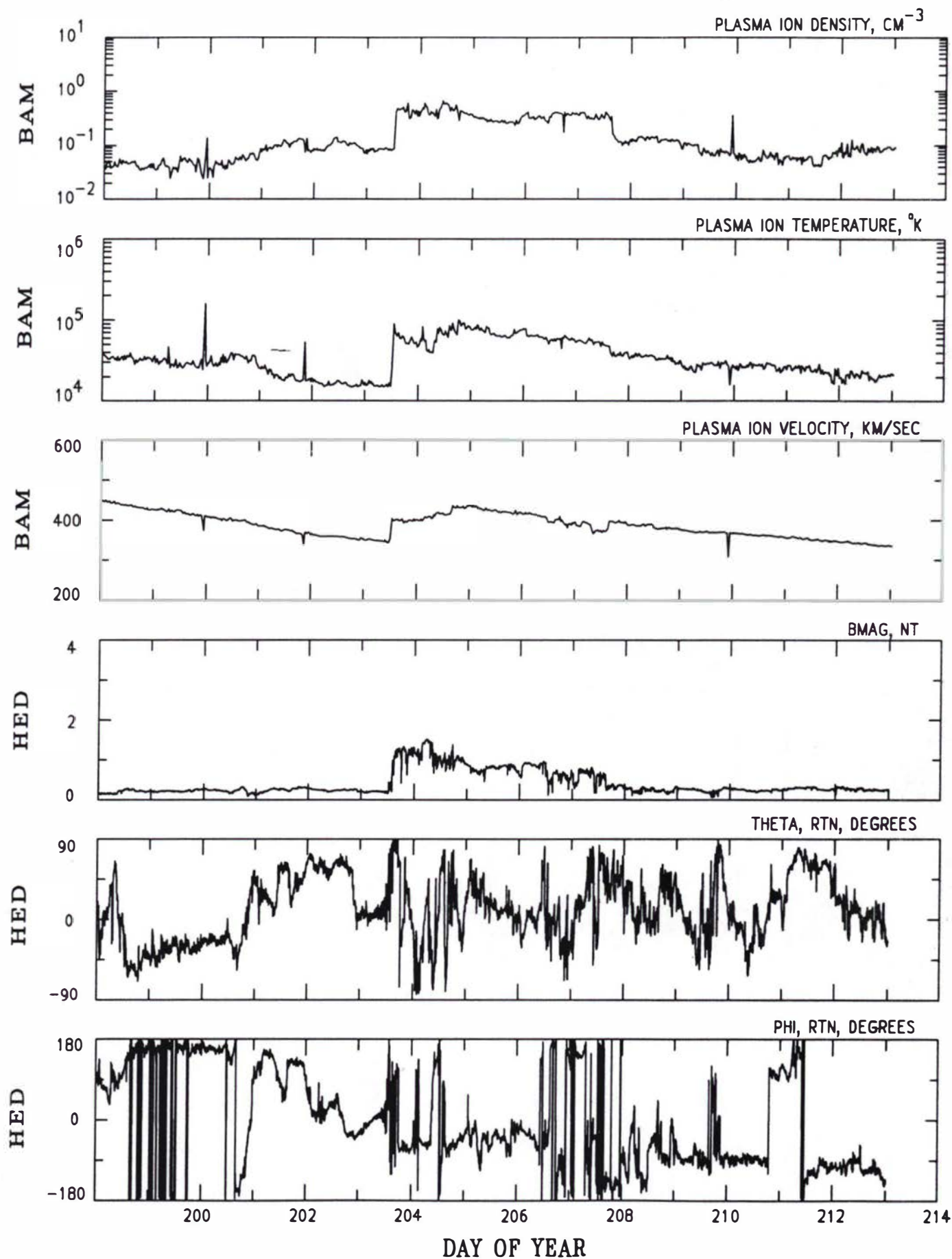


10. 10. 1971



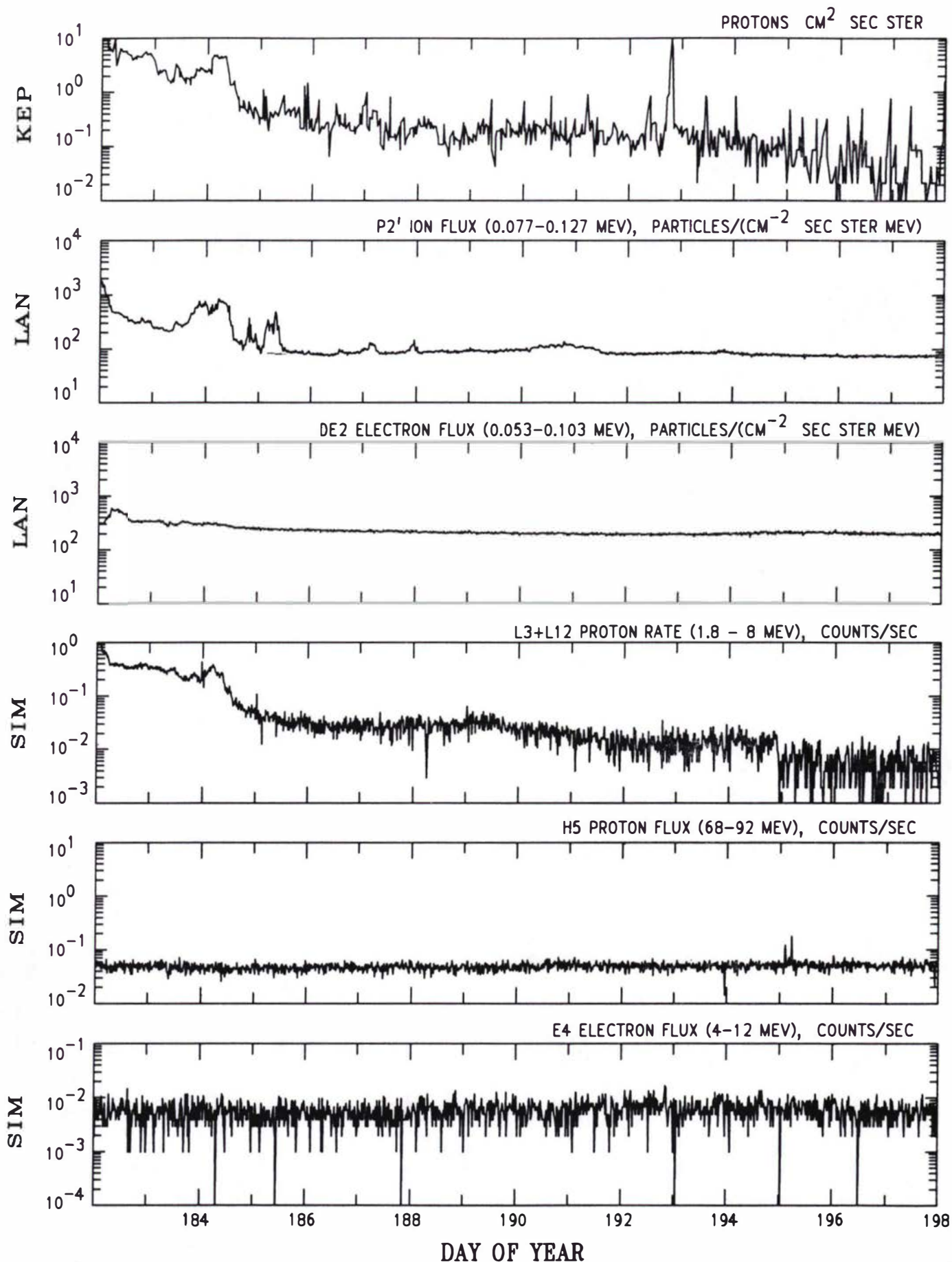
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 198 JUL 17 00:00:00.000 - 99 214 AUG 2 00:00:00.000



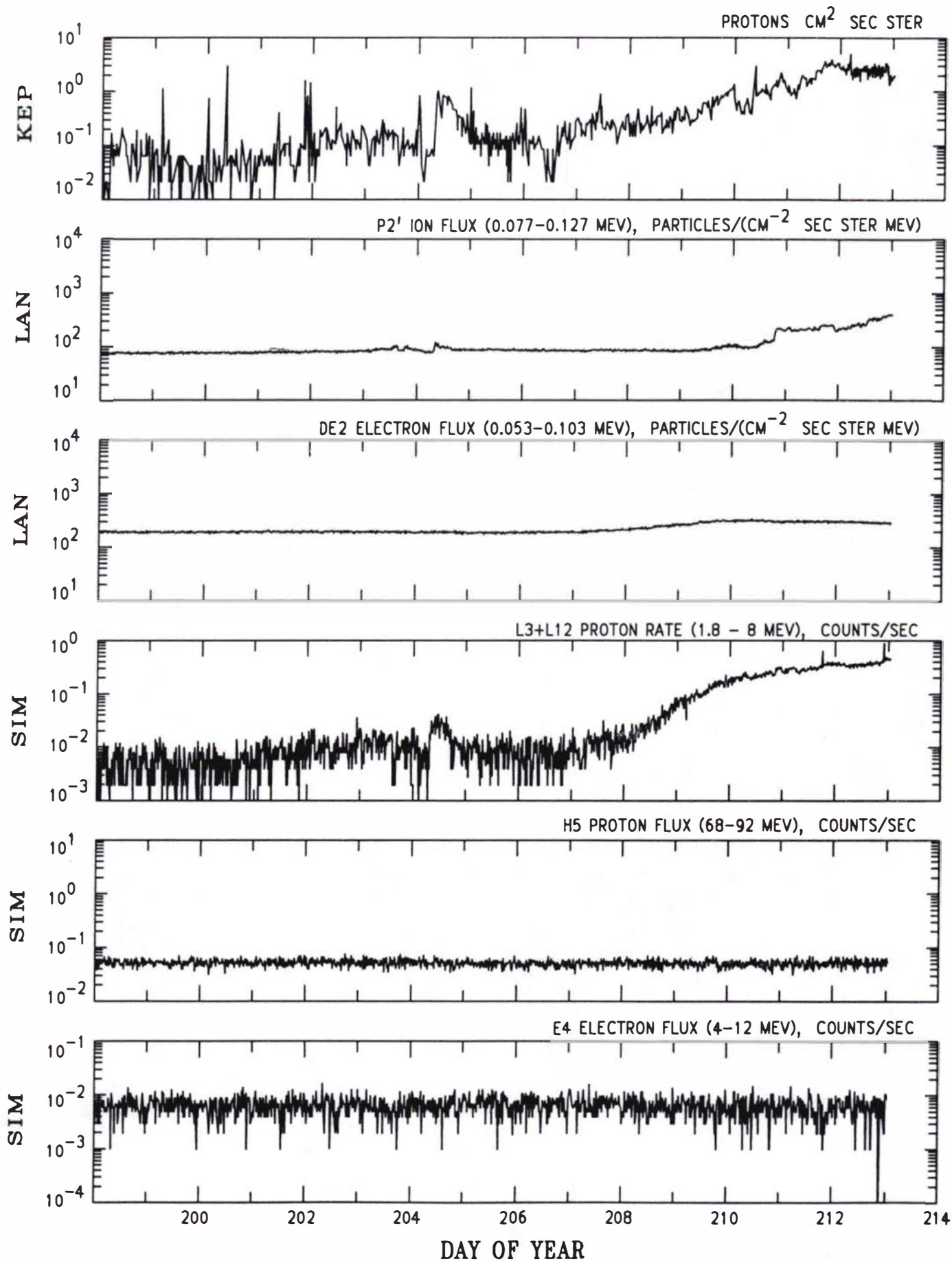
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

99 182 JUL 1 00:00:00.000 - 99 198 JUL 17 00:00:00.000



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

99 198 JUL 17 00:00:00.000 - 99 214 AUG 2 00:00:00.000



Handwritten text at the top of the page, possibly a title or header.

Handwritten text in the upper left section, appearing to be a list or series of notes.

Handwritten text in the middle left section, continuing the list or notes.

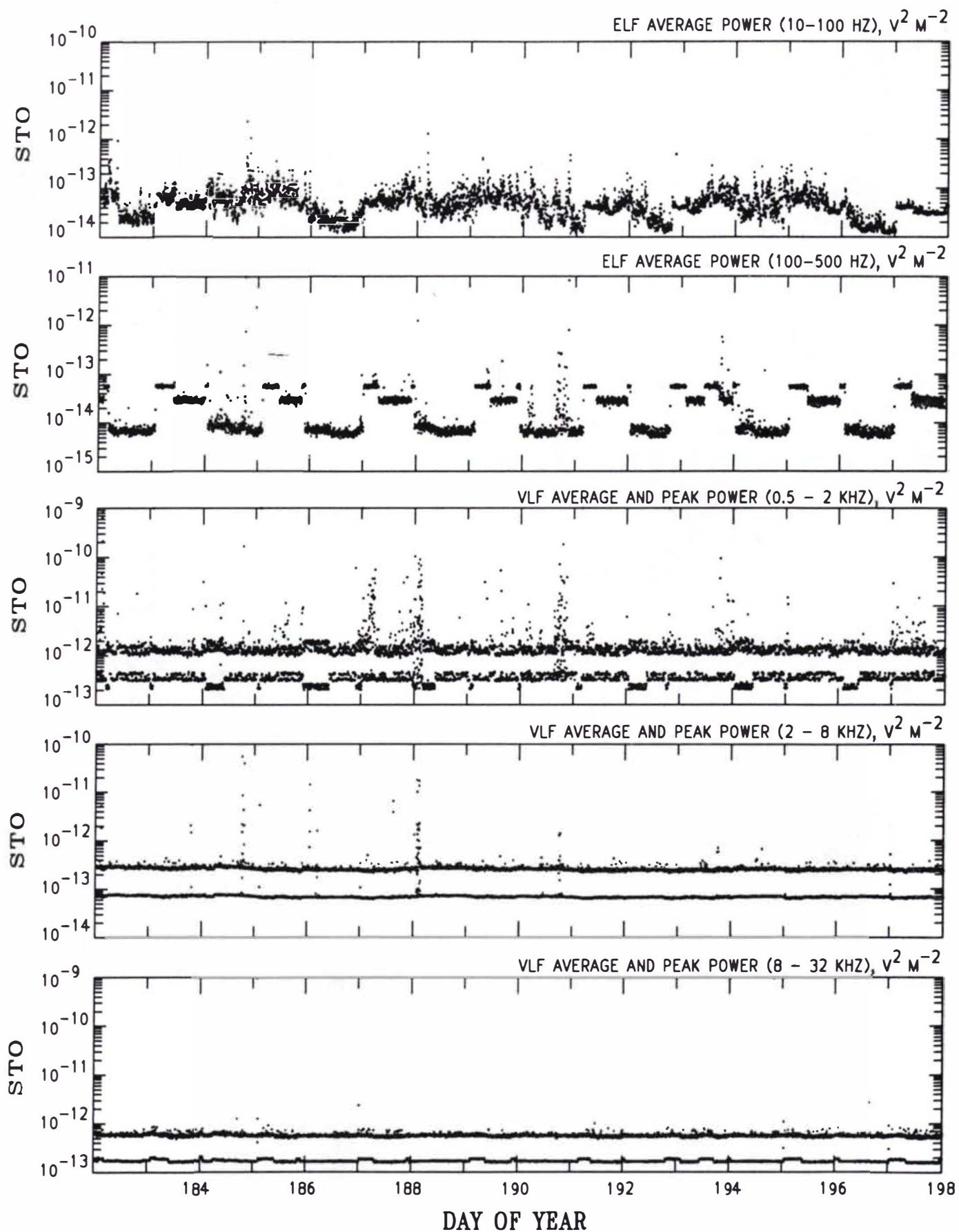
Handwritten text in the lower left section, possibly a conclusion or summary.

Handwritten text at the bottom left, likely a signature or date.

Main body of handwritten text on the right side of the page, consisting of several paragraphs.

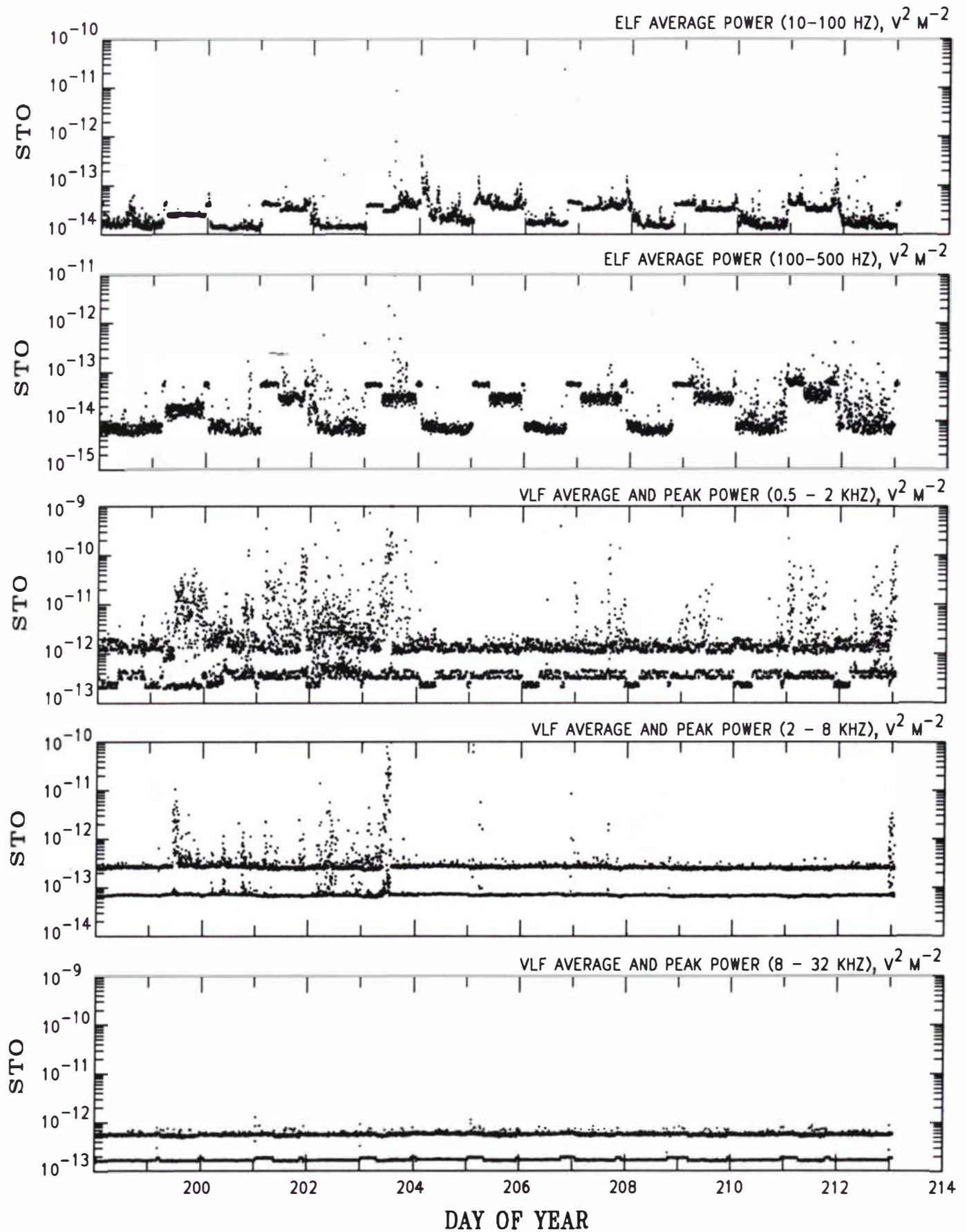
ULYSSES CDR - PLASMA WAVE

99 182 JUL 1 00:00:00.000 - 99 198 JUL 17 00:00:00.000



ULYSSES CDR - PLASMA WAVE

99 198 JUL 17 00:00:00.000 - 99 214 AUG 2 00:00:00.000



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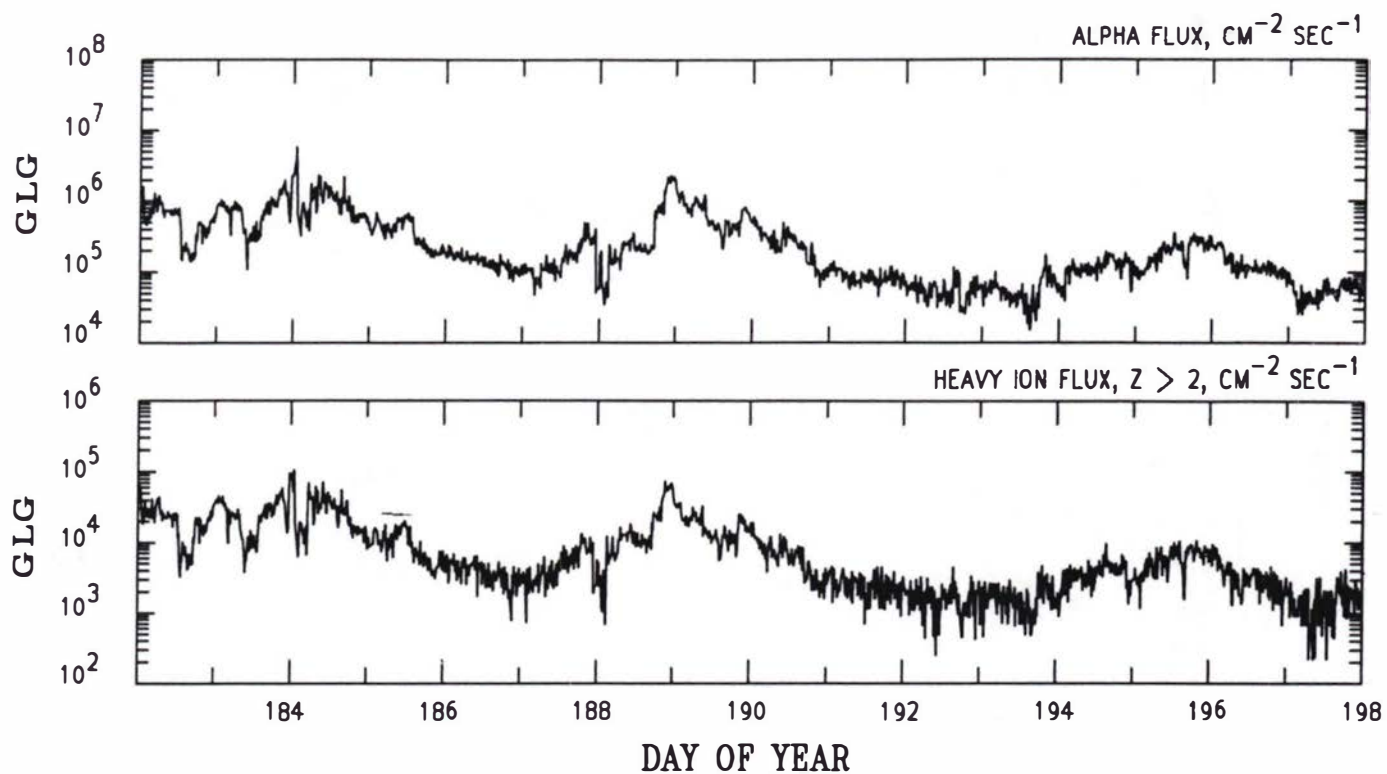
1000

1000

1000

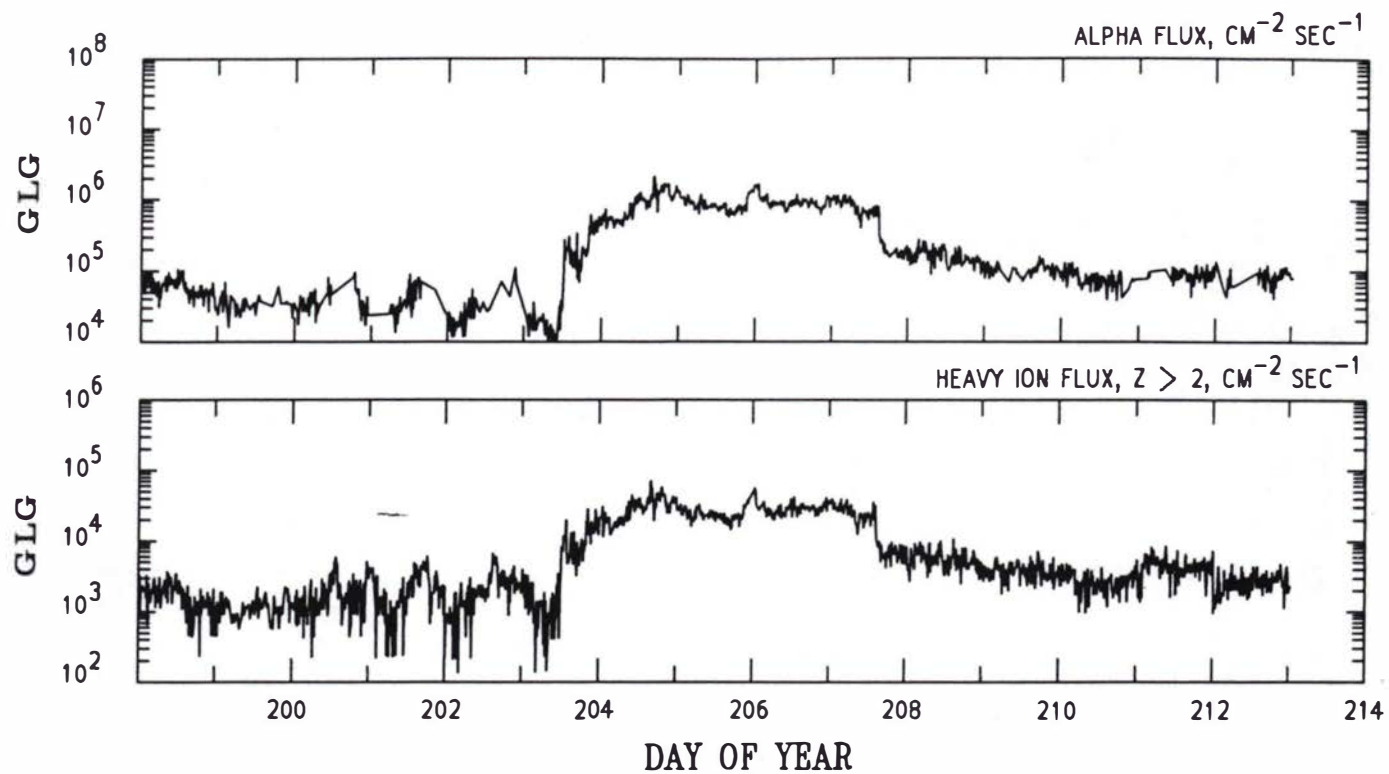
ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 182 JUL 1 00:00:00.000 - 99 198 JUL 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 198 JUL 17 00:00:00.000 - 99 214 AUG 2 00:00:00.000



From SAHI@fender.msfc.nasa.gov Fri Jul 2 10:11 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 2 Jul 1999 12:16:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7625

BATSEARCH PROGRAM

BATSE BURST # 7625
EVENT OF 1999 JUL 1 DAY OF YEAR=182
EVENT CROSSING TIME AT BATSE : 12943. S. OR 03:35:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 35.000 22.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 7/ 99 IS:
RA= 146.514 DEC= -7.633 DIST= 5.313 AU
BATSE-ULYSSES DISTANCE = 794837813. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1025.44 SECS.
CROSSING TIME AT ULYSSES IS 13968. S. OR 03:52:48 +/- 490.06 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 7/ 99 IS:
RA= 206.272 DEC= -12.024 DIST= 0.816 AU
MARS-BATSE DISTANCE = 122132632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 13.00 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 396.95 SECS.
CROSSING TIME AT MARS IS 13340. S. OR 03:42:19 +/- 21.94 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7625	990701	11360	12943	3000	035	+22	35

BATSE BURST TRIGGER

NO.: 7625

TIME: TJD=1360 SECONDS=12943

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

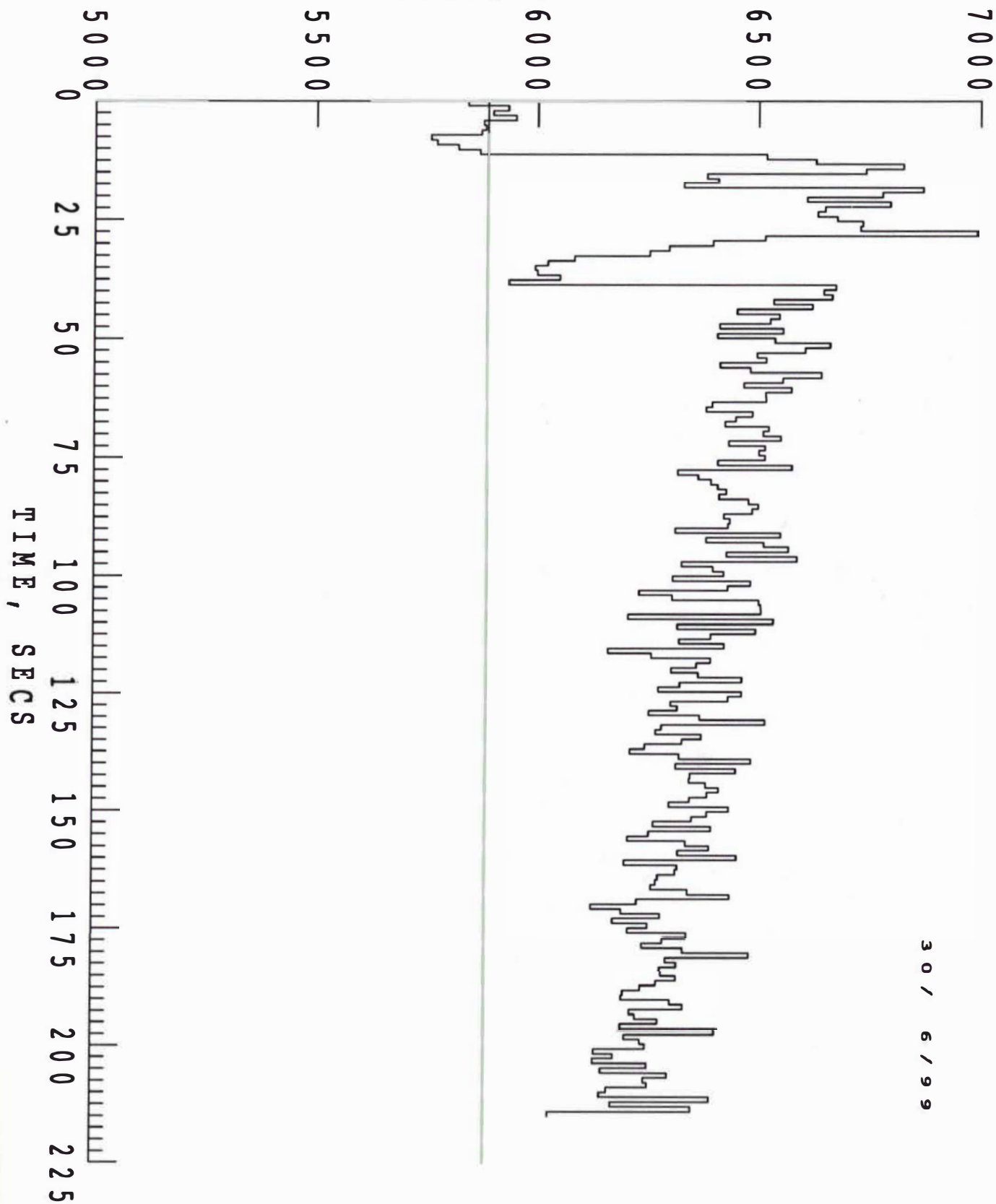
LOCATION: ZENITH=108.5 AZIMUTH=343.5 ERROR=3.9 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, DUR. APPROX. 35 S, STARTS AT T-2 S, MAX. AT T+2 S.
MARGINALLY VISIBLE ABOVE 300 KEV.

BACODINE 7625 01/07/99 12930.809
25- 100 keV

COUNTS/1.024 S



BATSE BURST# 7625

ULYSSES RT

17/01/00

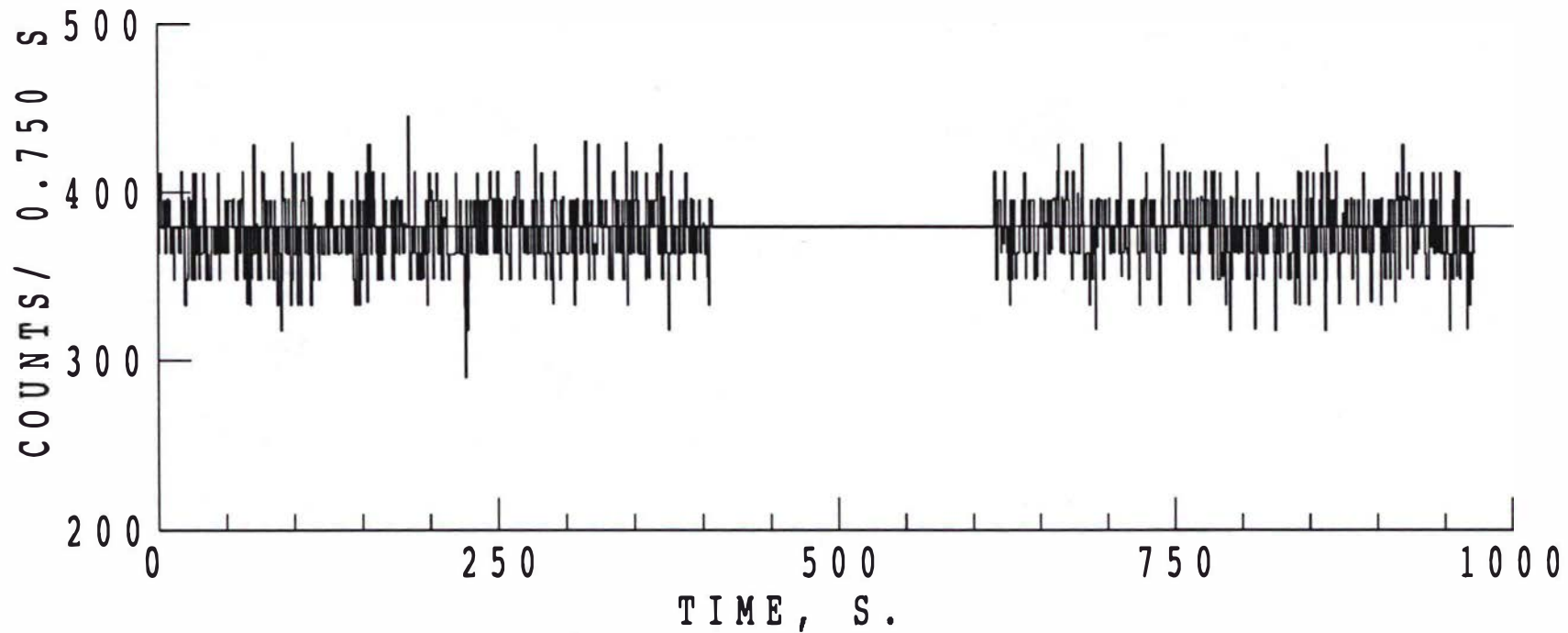
01/07/99 13464.136 s

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



SAX GRBM

HUS DATA

19 / 07 / 05

ULYSSES RT

01/07/99 37188.129 s

0.500 S INTERVALS REGROUPED BY 8

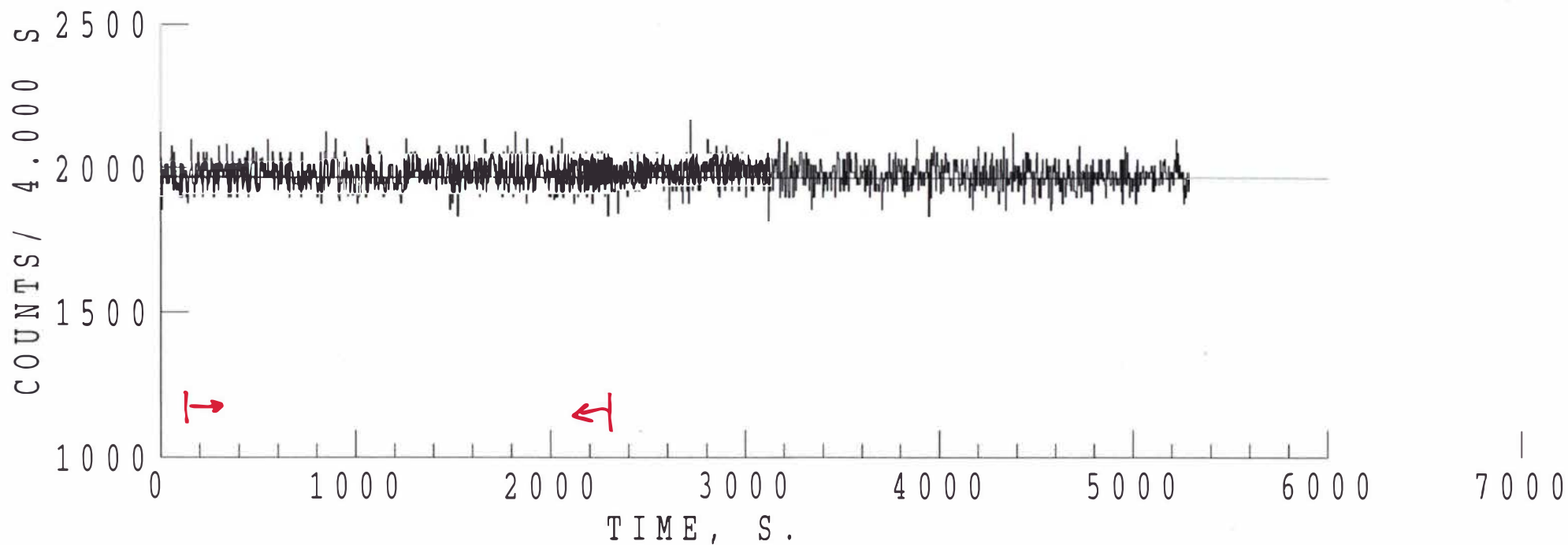
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Fri Jul 2 10:13 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 2 Jul 1999 12:17:58 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7626

BATSEARCH PROGRAM

BATSE BURST # 7626
EVENT OF 1999 JUL 1 DAY OF YEAR=182
EVENT CROSSING TIME AT BATSE : 77525. S. OR 21:32:05.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 217.000 34.000
BATSE PEAK COUNTING RATE: 19000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 7/ 99 IS:
RA= 146.593 DEC= -7.667 DIST= 5.320 AU
BATSE-ULYSSES DISTANCE = 795889859. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -533.38 SECS.
CROSSING TIME AT ULYSSES IS 76992. S. OR 21:23:11 +/- 493.42 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 7/ 99 IS:
RA= 206.272 DEC= -12.024 DIST= 0.816 AU
MARS-BATSE DISTANCE = 122132632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -277.10 SECS.
CROSSING TIME AT MARS IS 77248. S. OR 21:27:27 +/- 47.64 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7626	990701	11360	77525	19000	217	+34	.2

BATSE BURST TRIGGER

NO.: 7626

TIME: TJD=1360 SECONDS=77525

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.6 AZIMUTH=220.7 ERROR=5.8 DEGREES

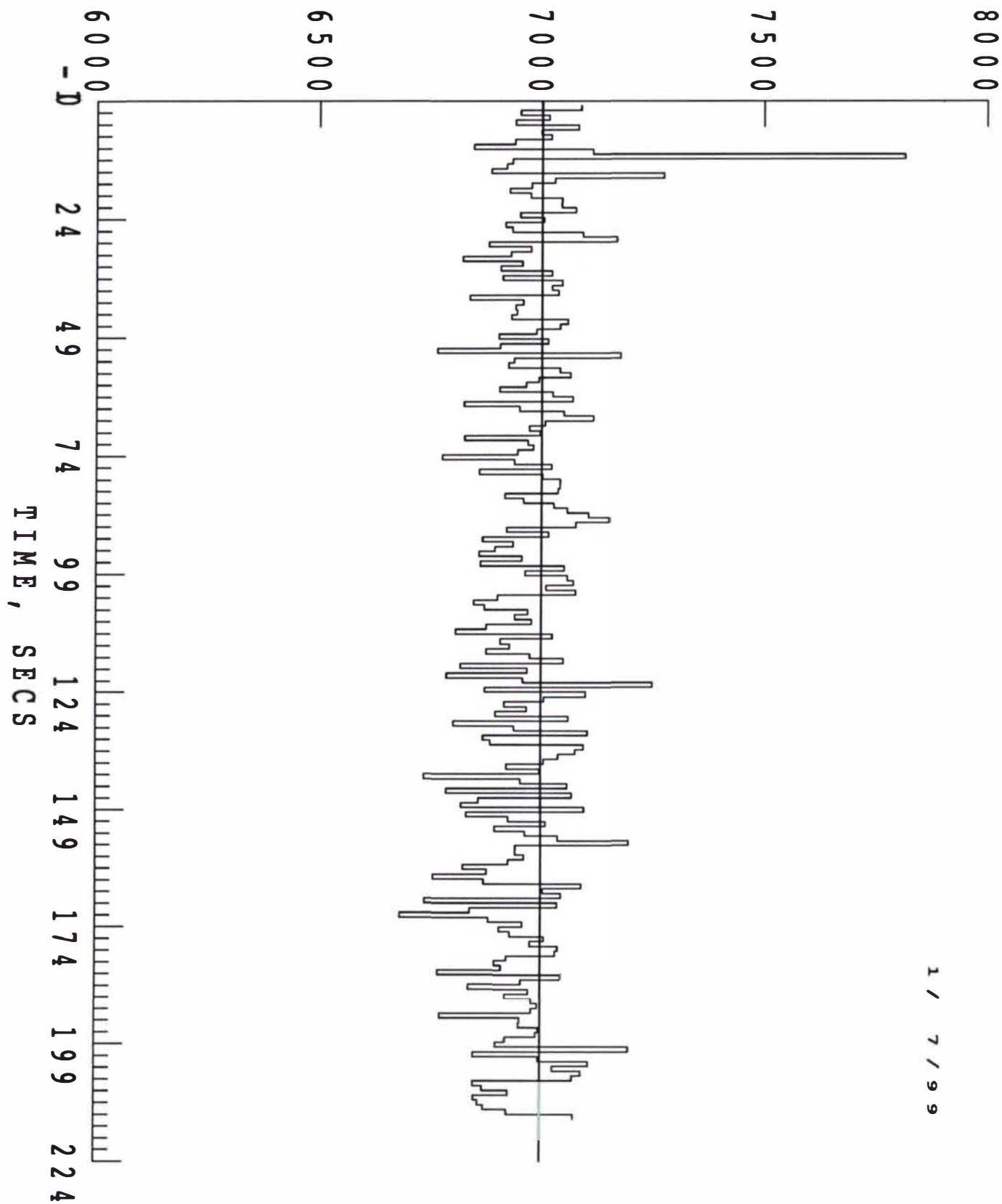
COMMENTS:

GRB. SINGLE SPIKE, DUR. 0.2 S. VISIBLE ABOVE 300 KEV.

BACODINE 7626 01/07/99 77514.489

25- 100 keV

COUNTS/1.024 S



BACODINE# 7626

ULYSSES RT

11/01/00

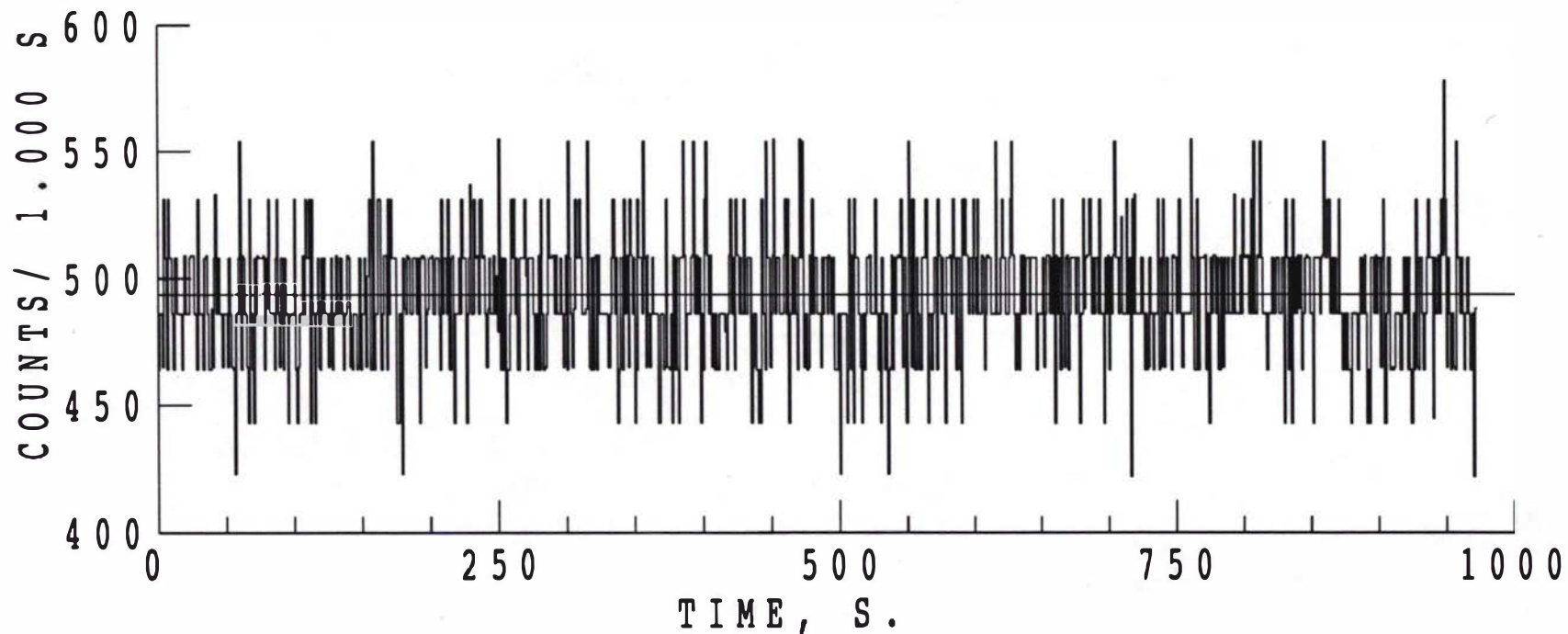
01/07/99 76320.023 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

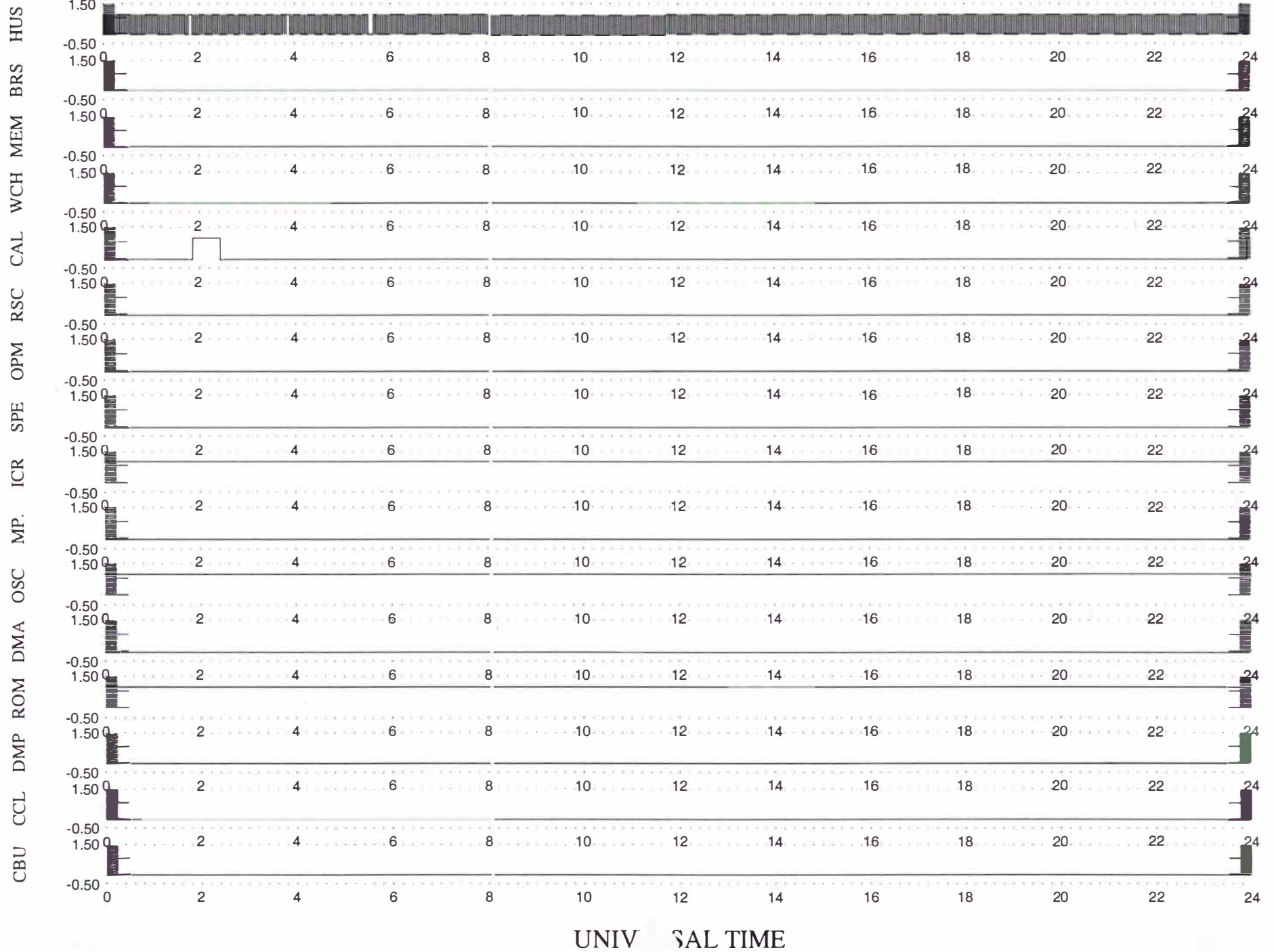
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

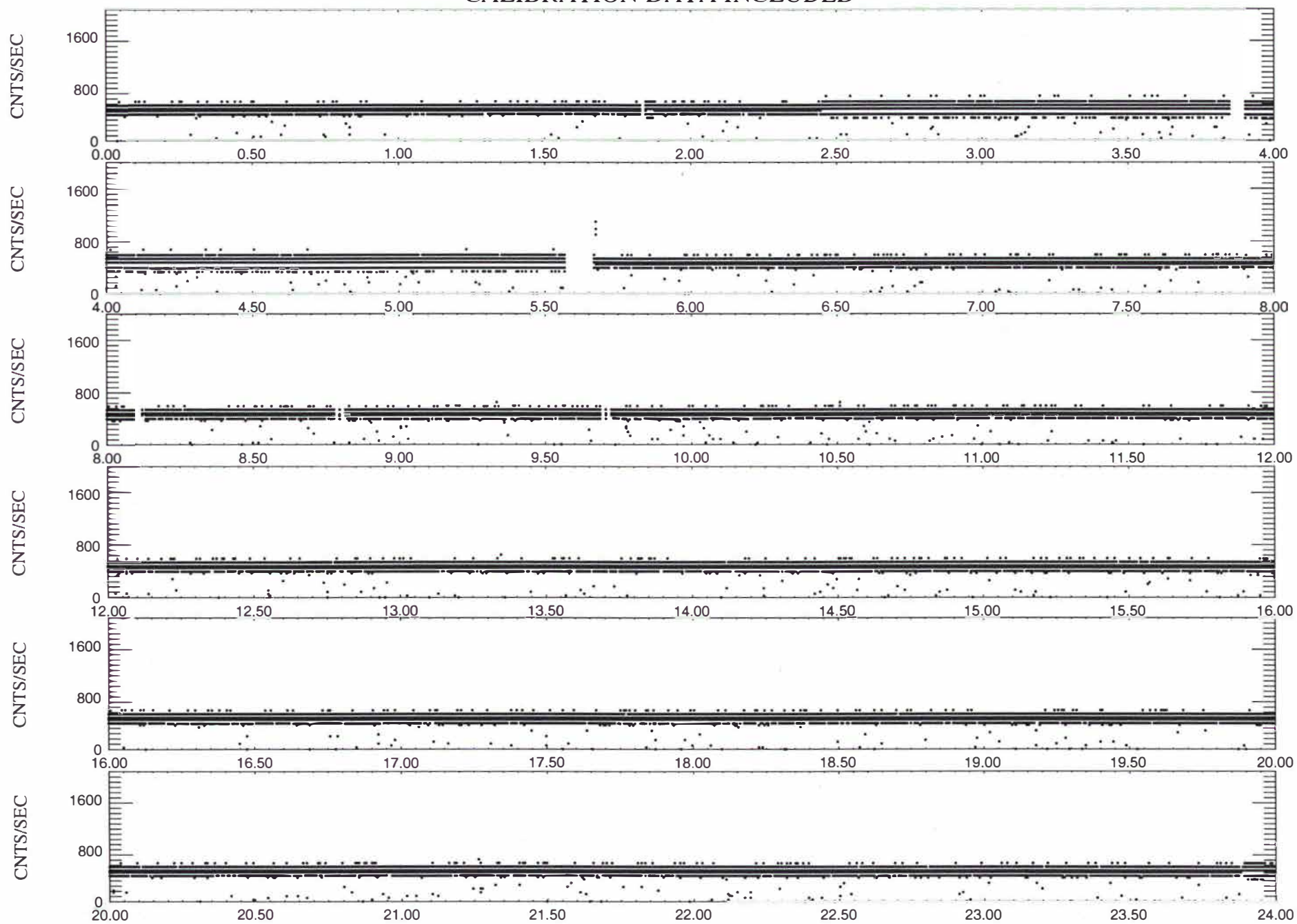




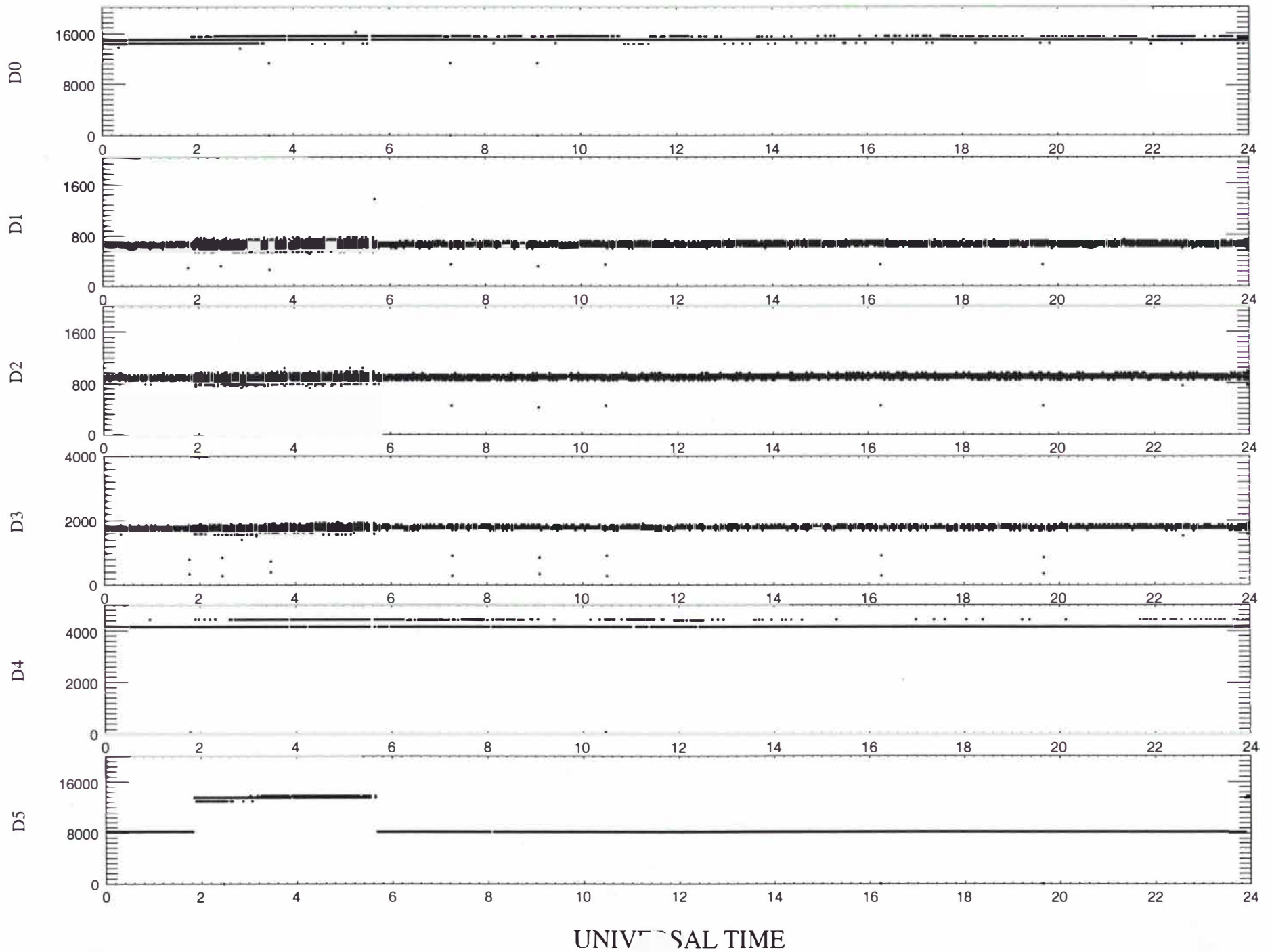
NO BURST (1)



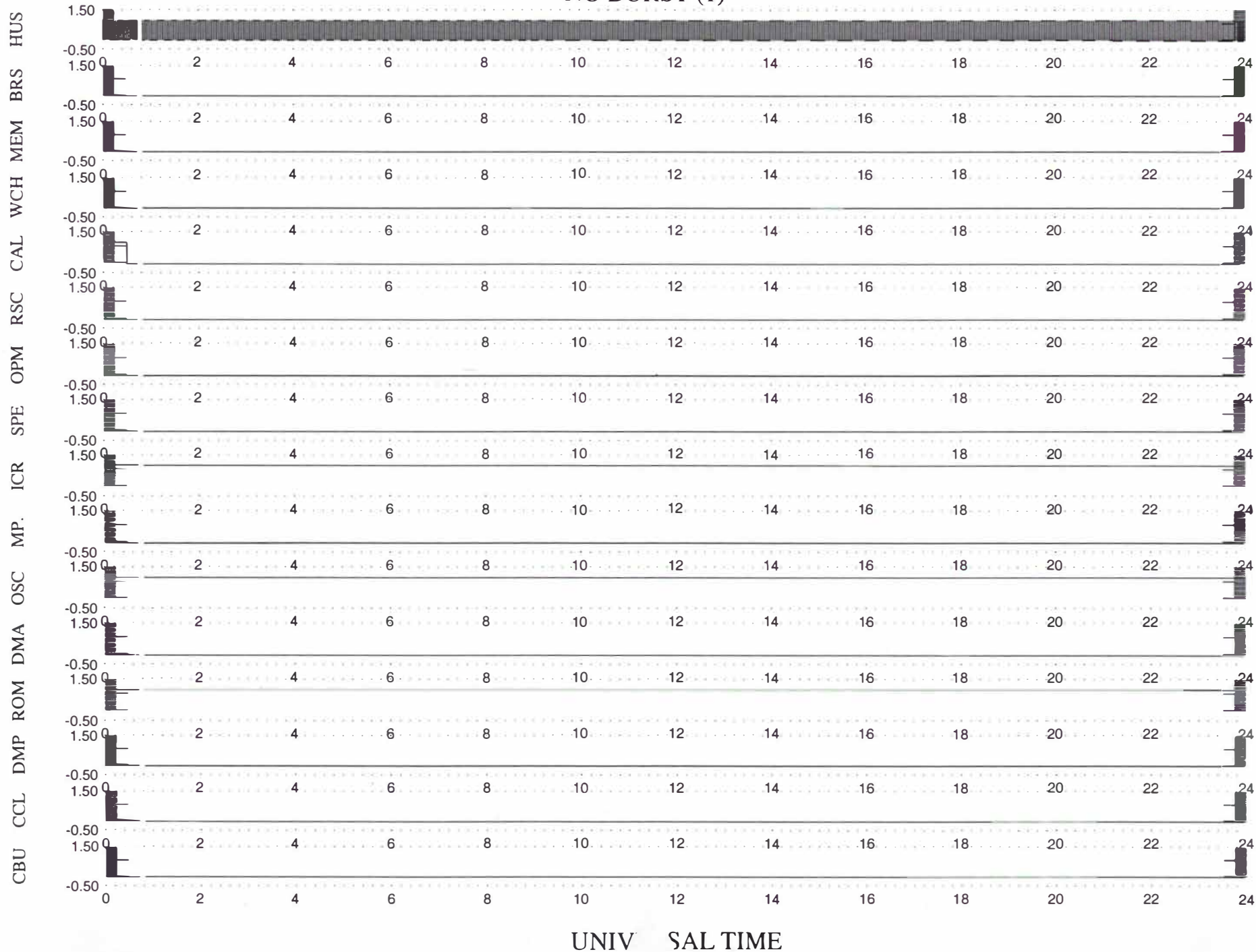
CALIBRATION DATA INCLUDED



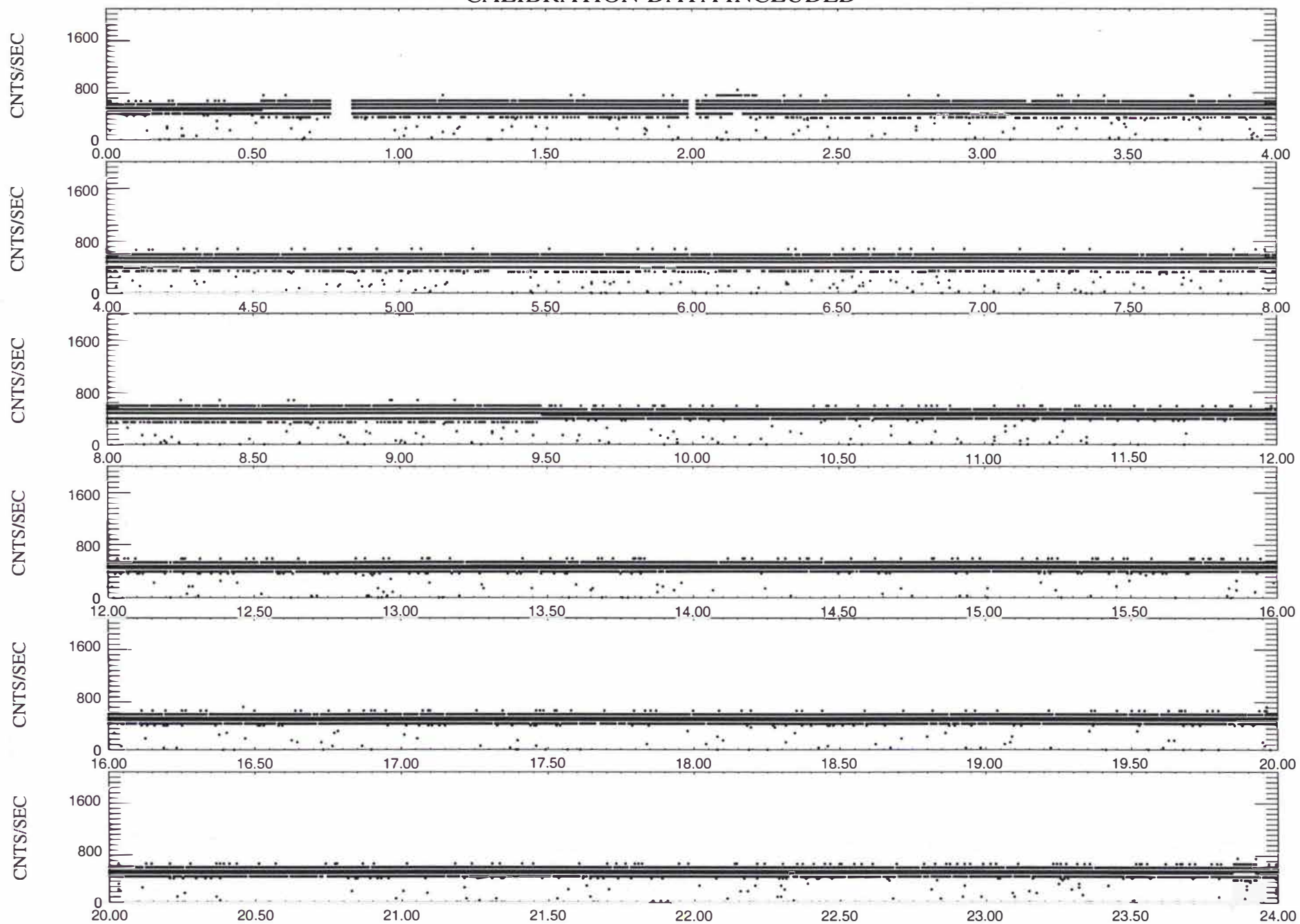
UNIVSAL TIME



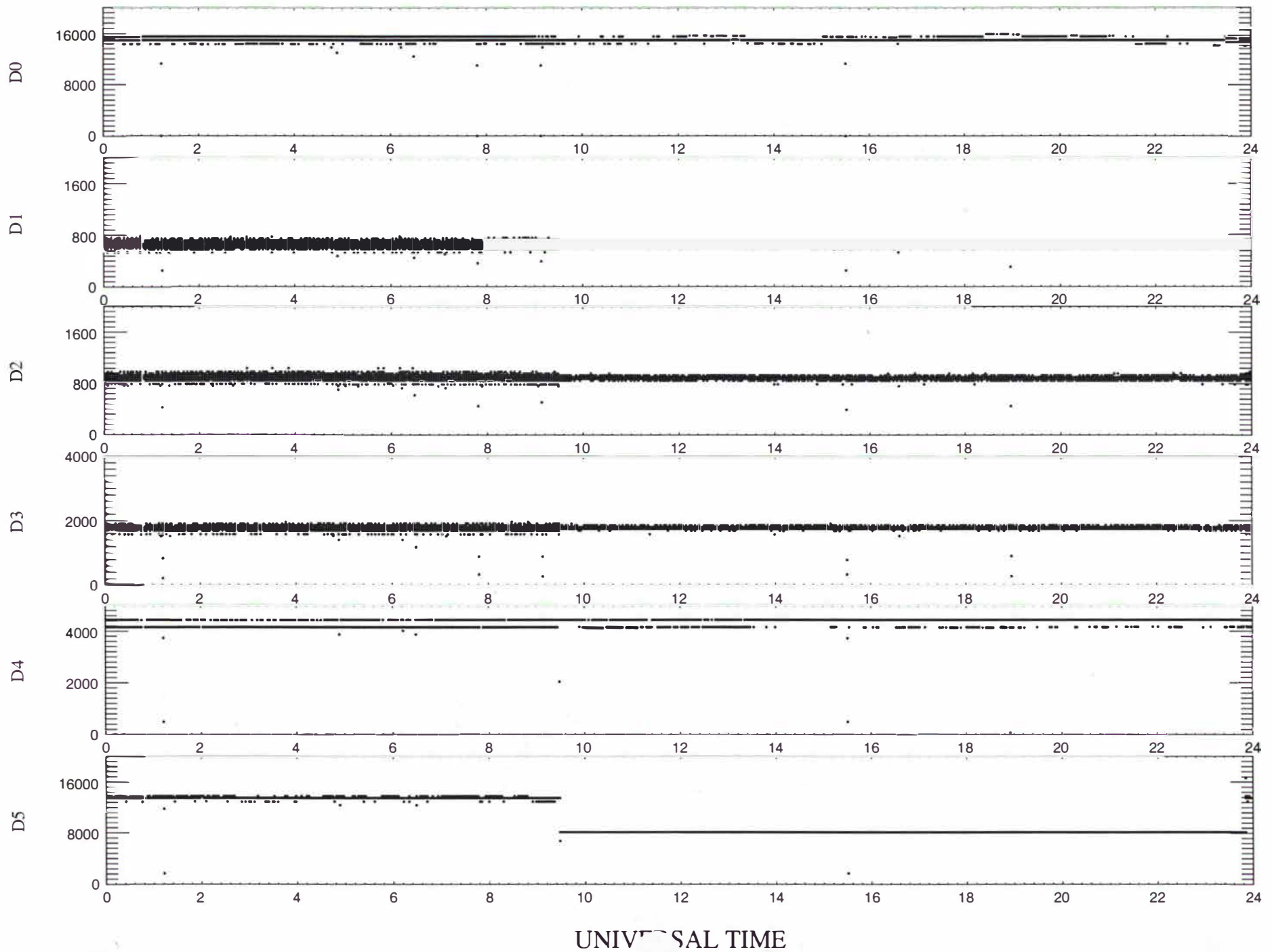
NO BURST (1)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Thu Jul 8 08:40 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 8 Jul 1999 10:45:22 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7630

BATSEARCH PROGRAM

BATSE BURST # 7630
EVENT OF 1999 JUL 3 DAY OF YEAR=184
EVENT CROSSING TIME AT BATSE : 39439. S. OR 10:57:19.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 175.000 79.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 7/ 99 IS:
RA= 146.761 DEC= -7.741 DIST= 5.335 AU
BATSE-ULYSSES DISTANCE = 798042245. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 91.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -91.43 SECS.
CROSSING TIME AT ULYSSES IS 39348. S. OR 10:55:47 +/- 510.50 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 7/ 99 IS:
RA= 206.840 DEC= -12.280 DIST= 0.828 AU
MARS-BATSE DISTANCE = 123925048. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 20.83 SECS.
CROSSING TIME AT MARS IS 39460. S. OR 10:57:39 +/- 71.99 SECONDS

BATSE BURST TRIGGER

NO.: 7630

TIME: TJD=1362 SECONDS=39439

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=86.7 AZIMUTH=268.6 ERROR=1.8 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, WITH SUBSTRUCTURE, DUR. ABOUT 17 S, MAX. AT T+13.4 S. WEAKLY
VISIBLE ABOVE 300 KEV. CRAB SET AT T+320 S. CYGX-1 RISE AT T+100 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7630	990703	11362	39439	10000	175	+79	17

Date:

Mar 6 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data

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

3. NEAR Data

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

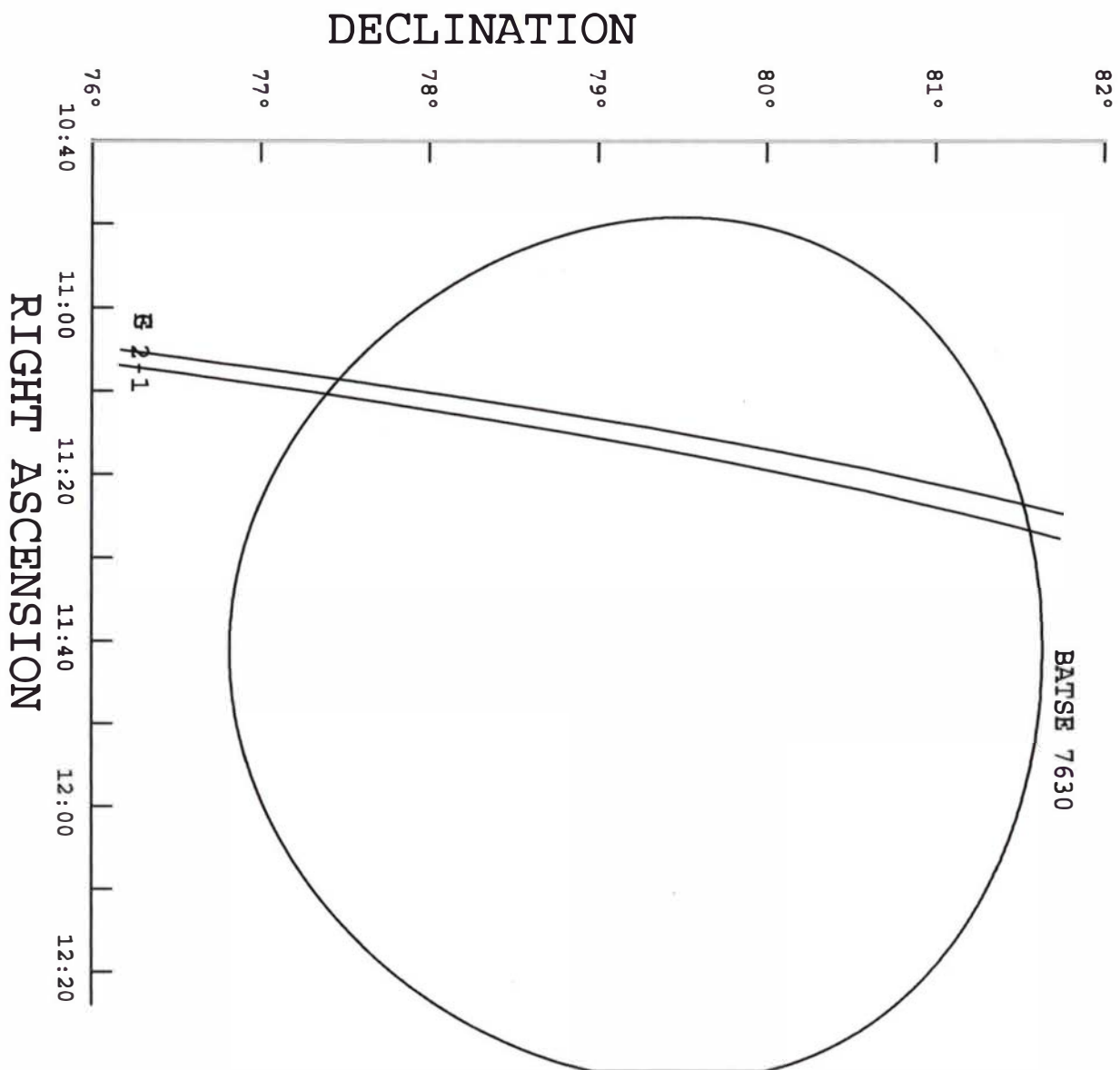
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF JUL 3, 1999 10:57

6 / 3 / 0



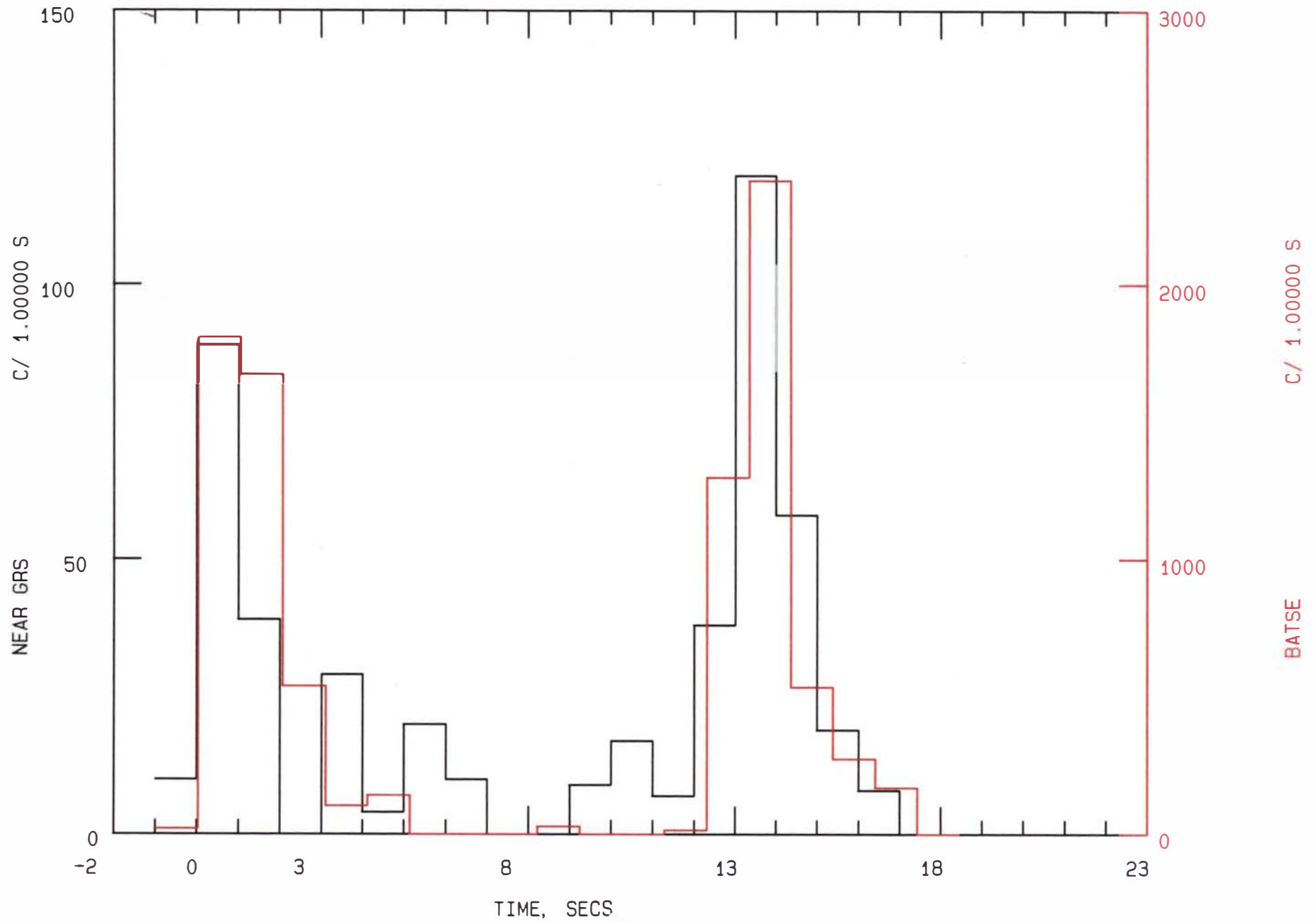
NEAR GRS -BATSE

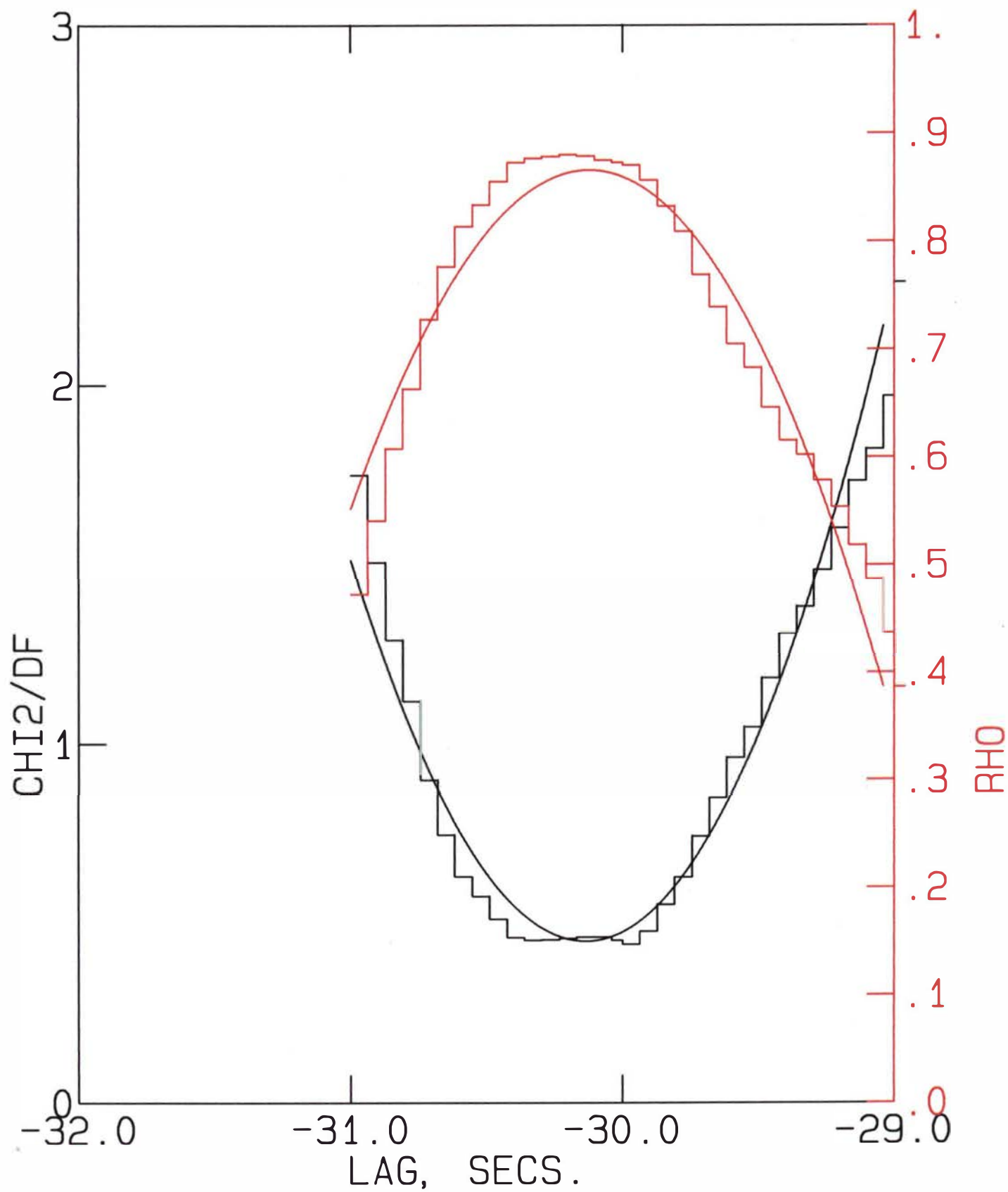
CORRELATION

03/07/99

38951.612

6/ 3/ 0





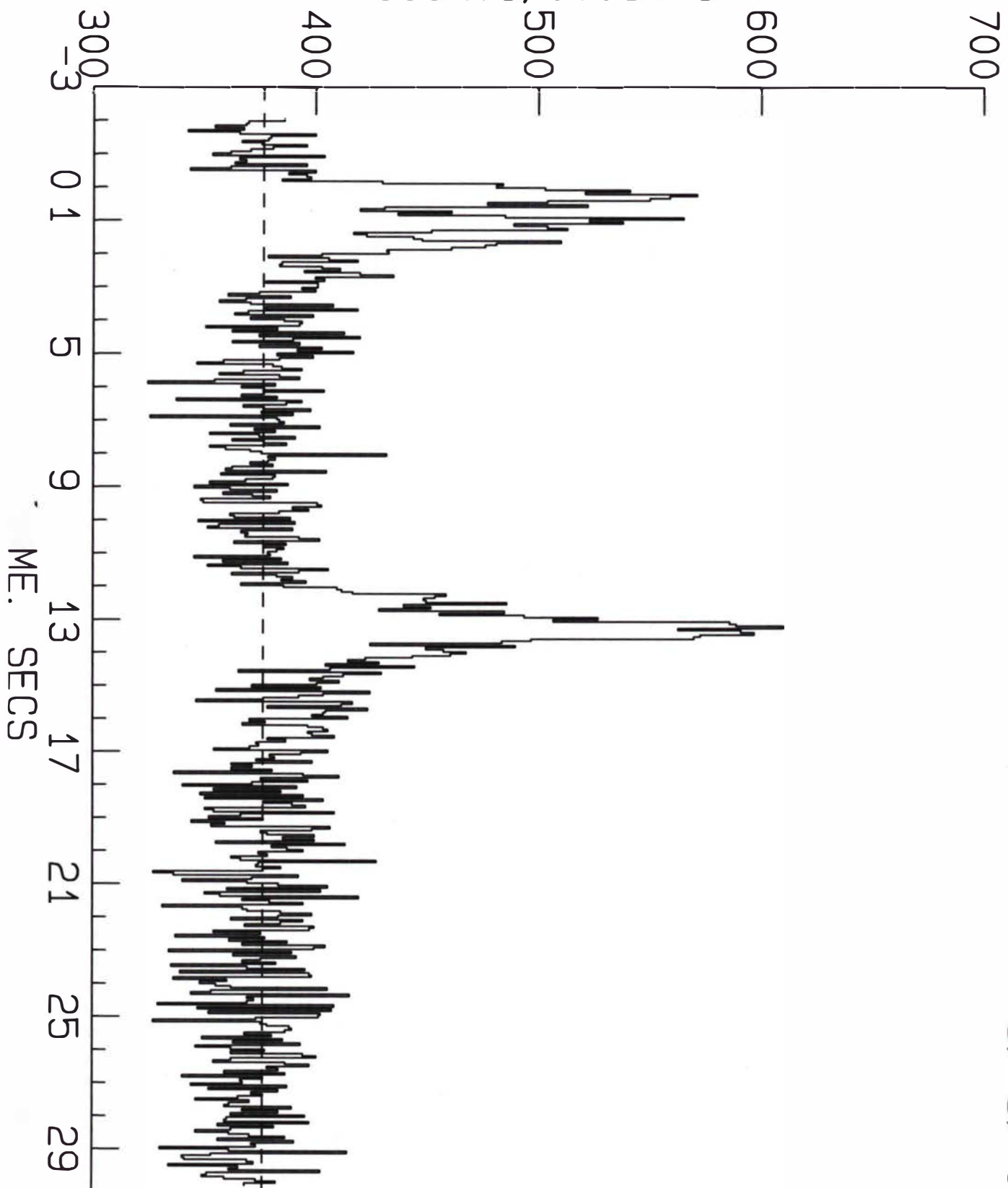
BATSE

03/07/99

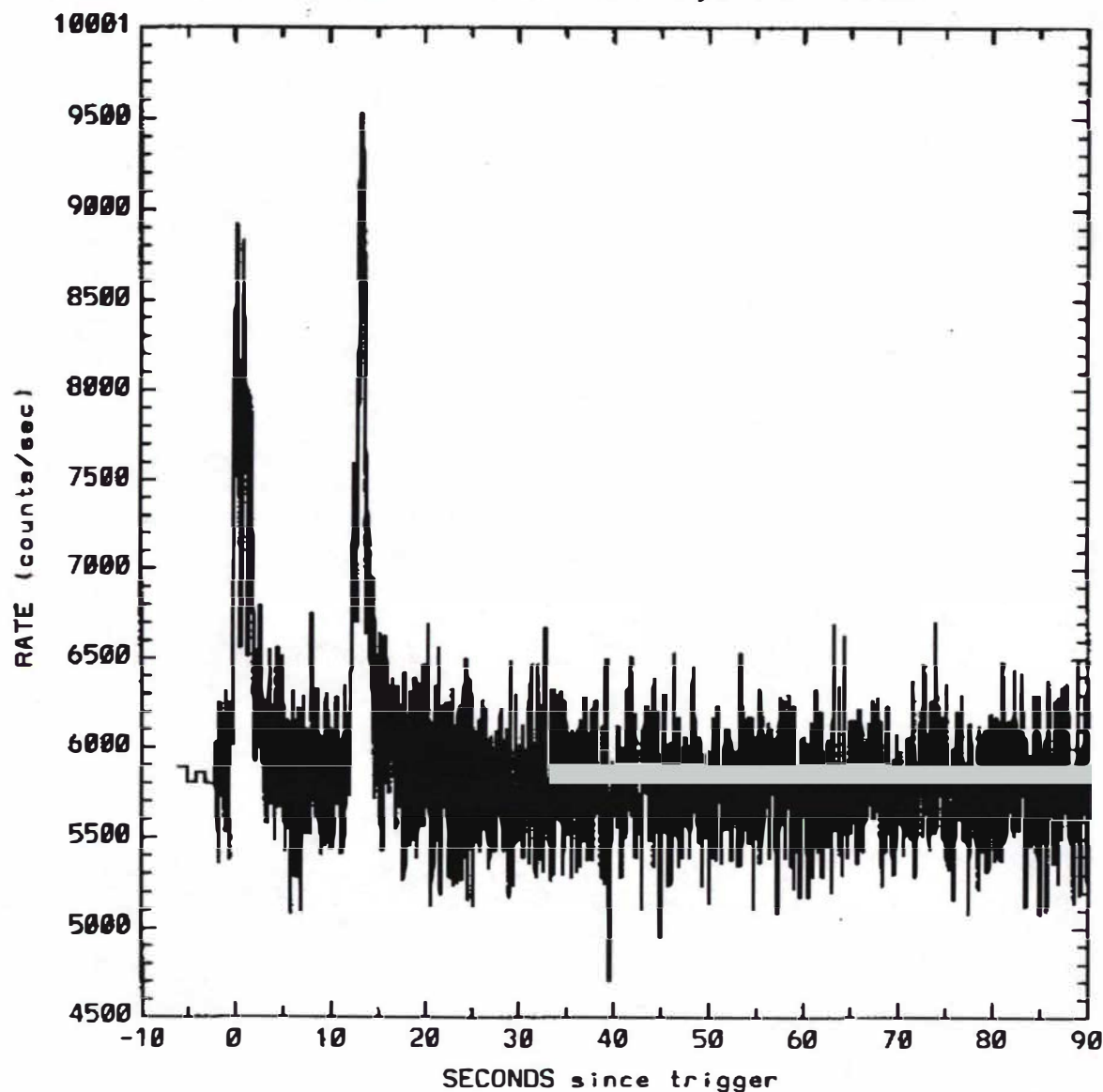
39439.097

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7630



24-FEB-2000 12:46:14

Created by MOPS 8D
(Burst Display)
Version 12.26

Trigger # : 7630

Trigger Time:
11362 / 39439.097

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors [7..0]:
-6--32--

Discriminators:
[3 : 4]

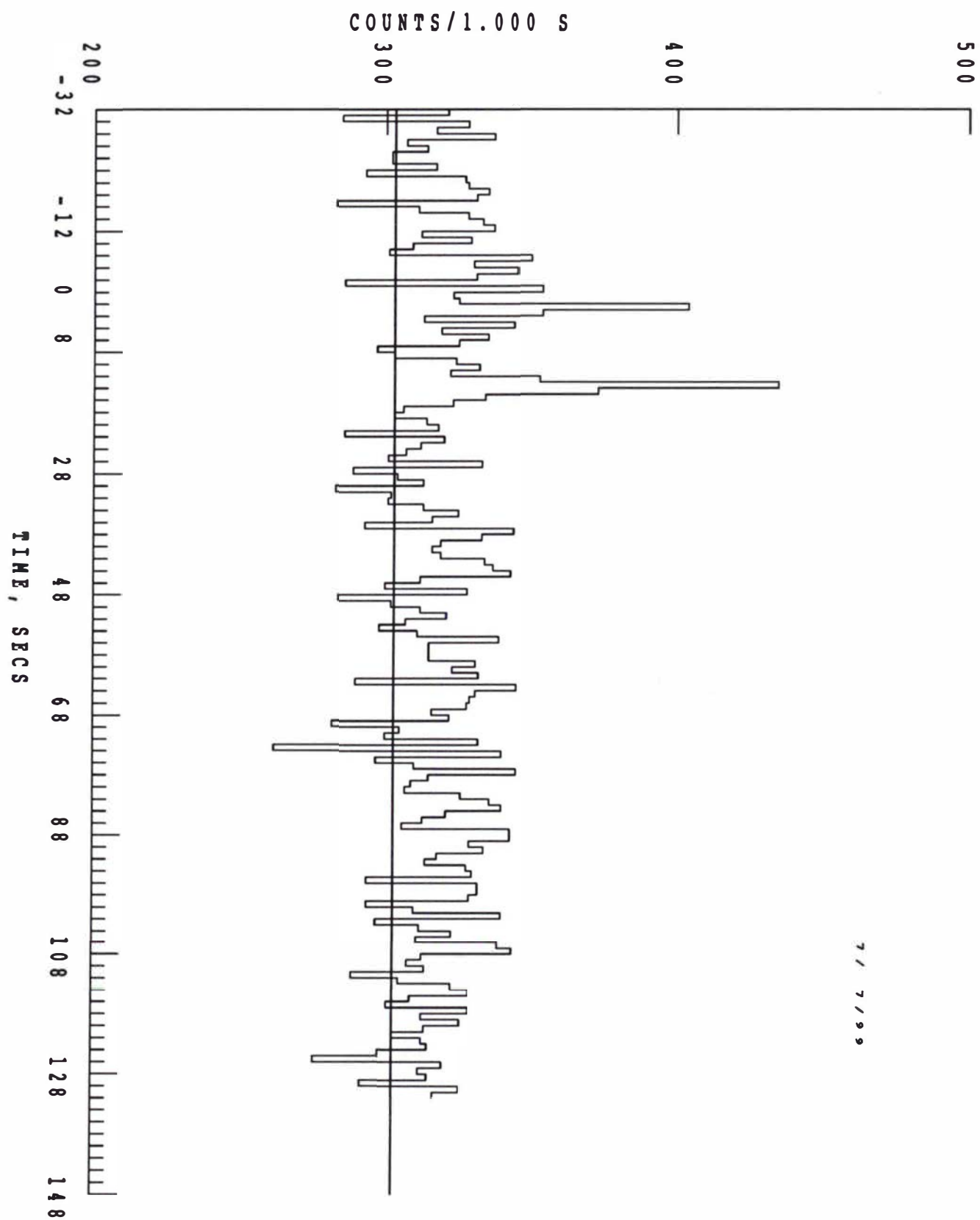
Quality Mask:
B0ISP1

NEAR

03/07/99

38951.612

100-1000 keV



7 / 7 / 9 9

BATSE BURST# 7630

ULYSSES RT

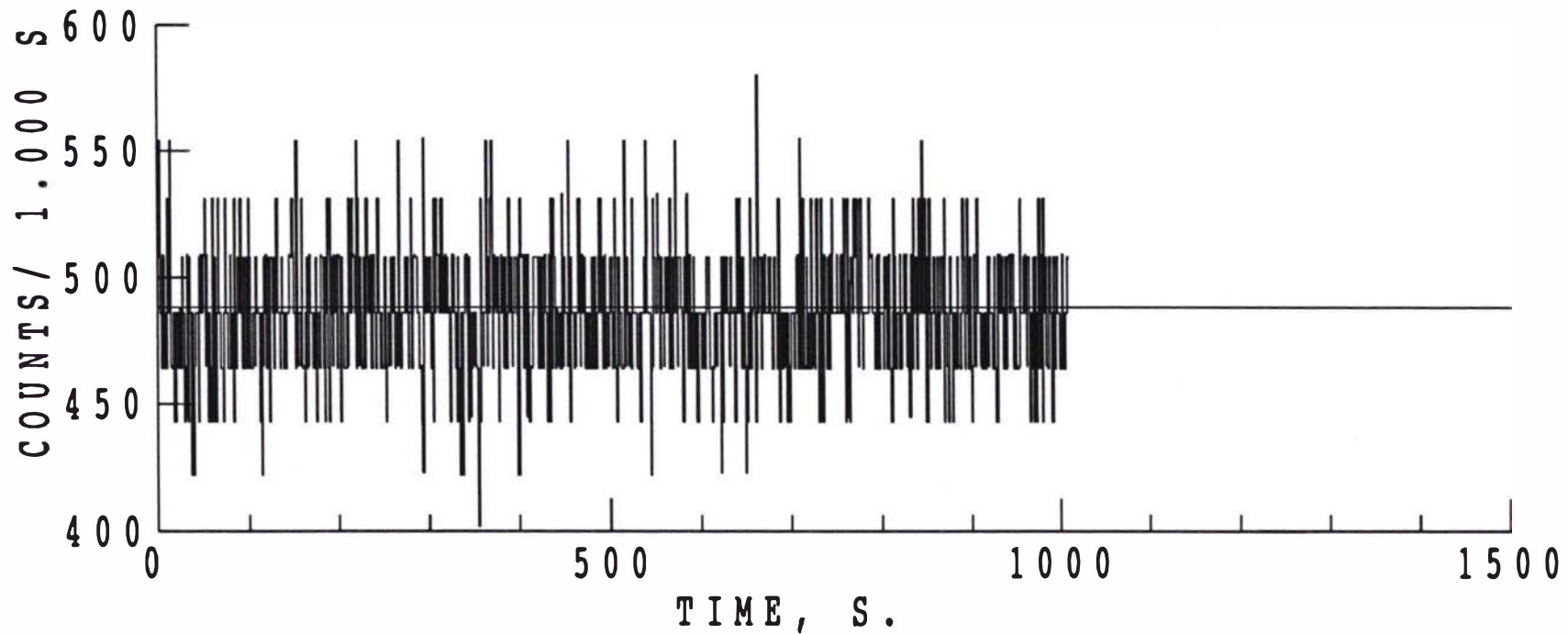
8 / 7 / 99

3 / 7 / 99 38844.395 s

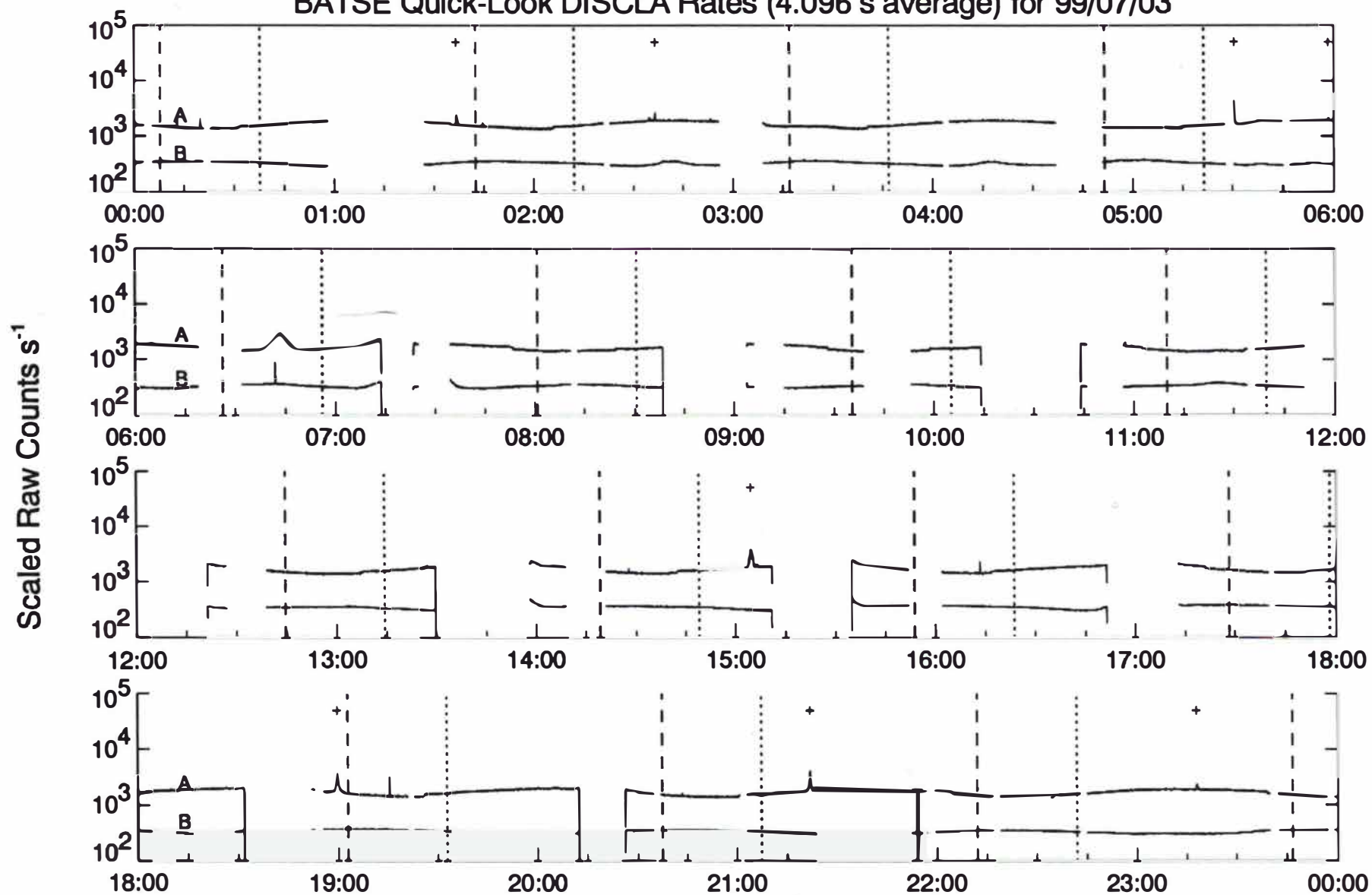
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/03



Current Time: 99/07/07, 1012 EDT

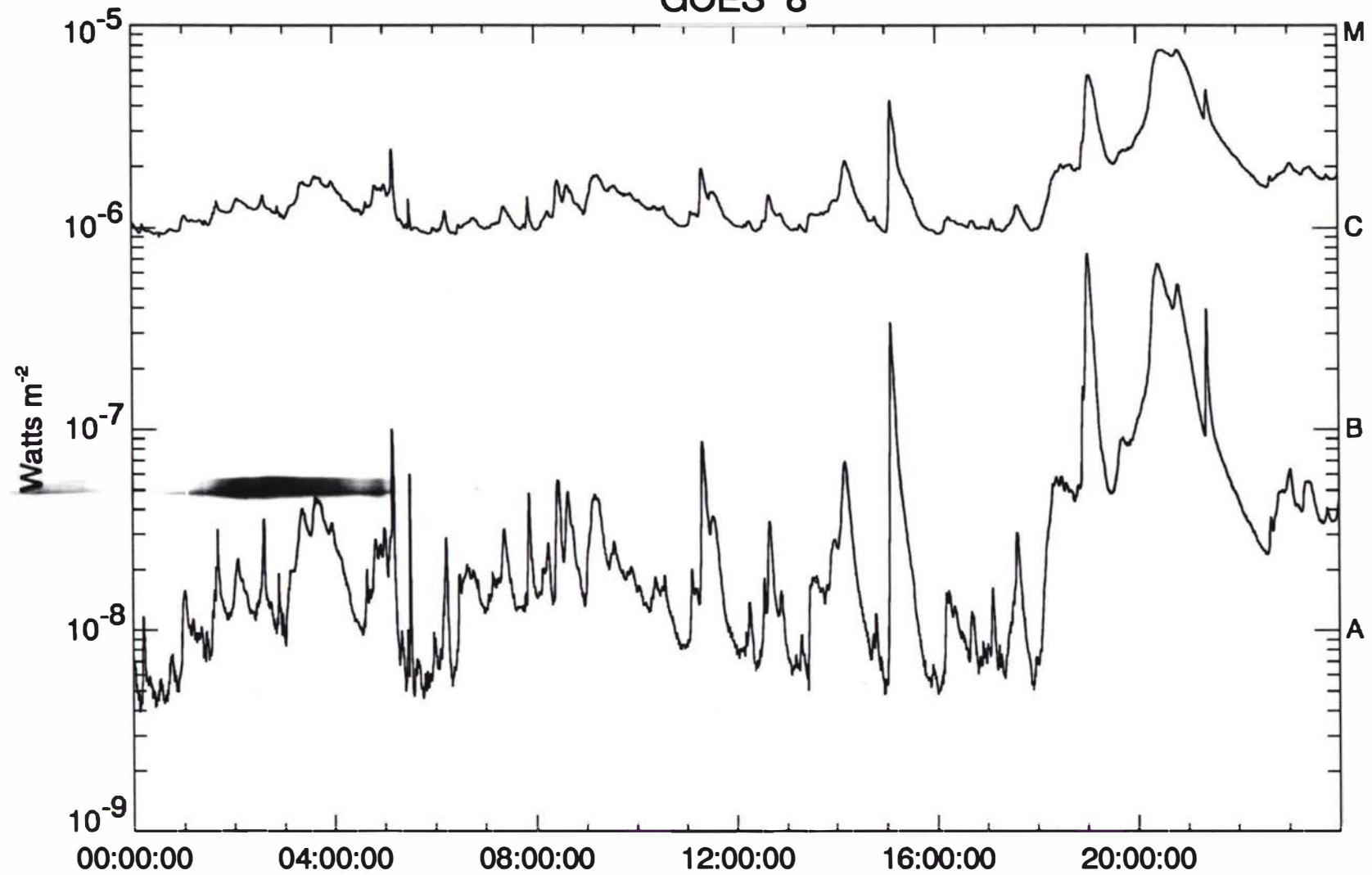
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/07/03, 0000:00

Plot created: 99/07/07, 1011

Channel 1 (1.0 - 8.0 Angstroms)

Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

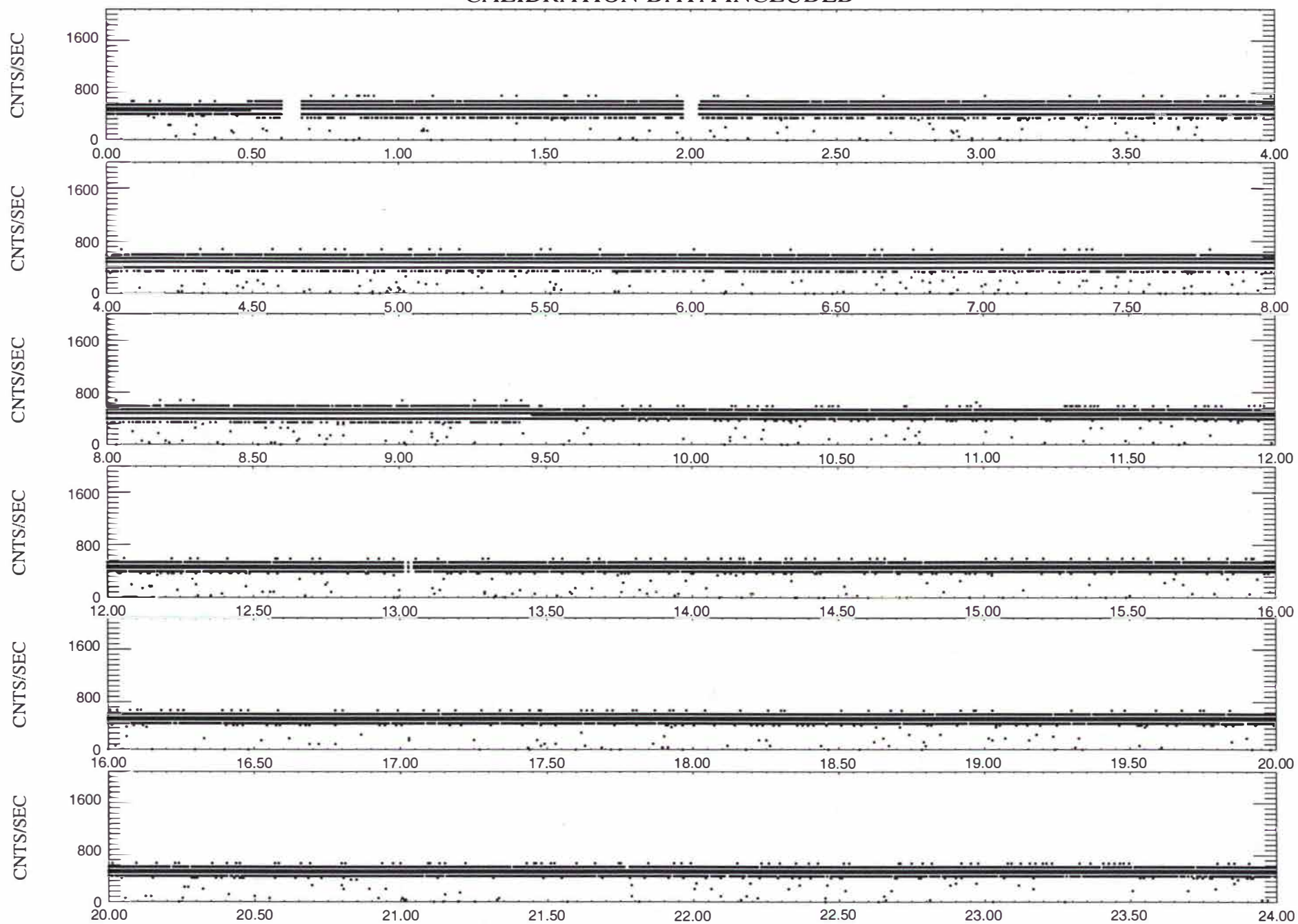
Background not subtracted

Sample average = 10

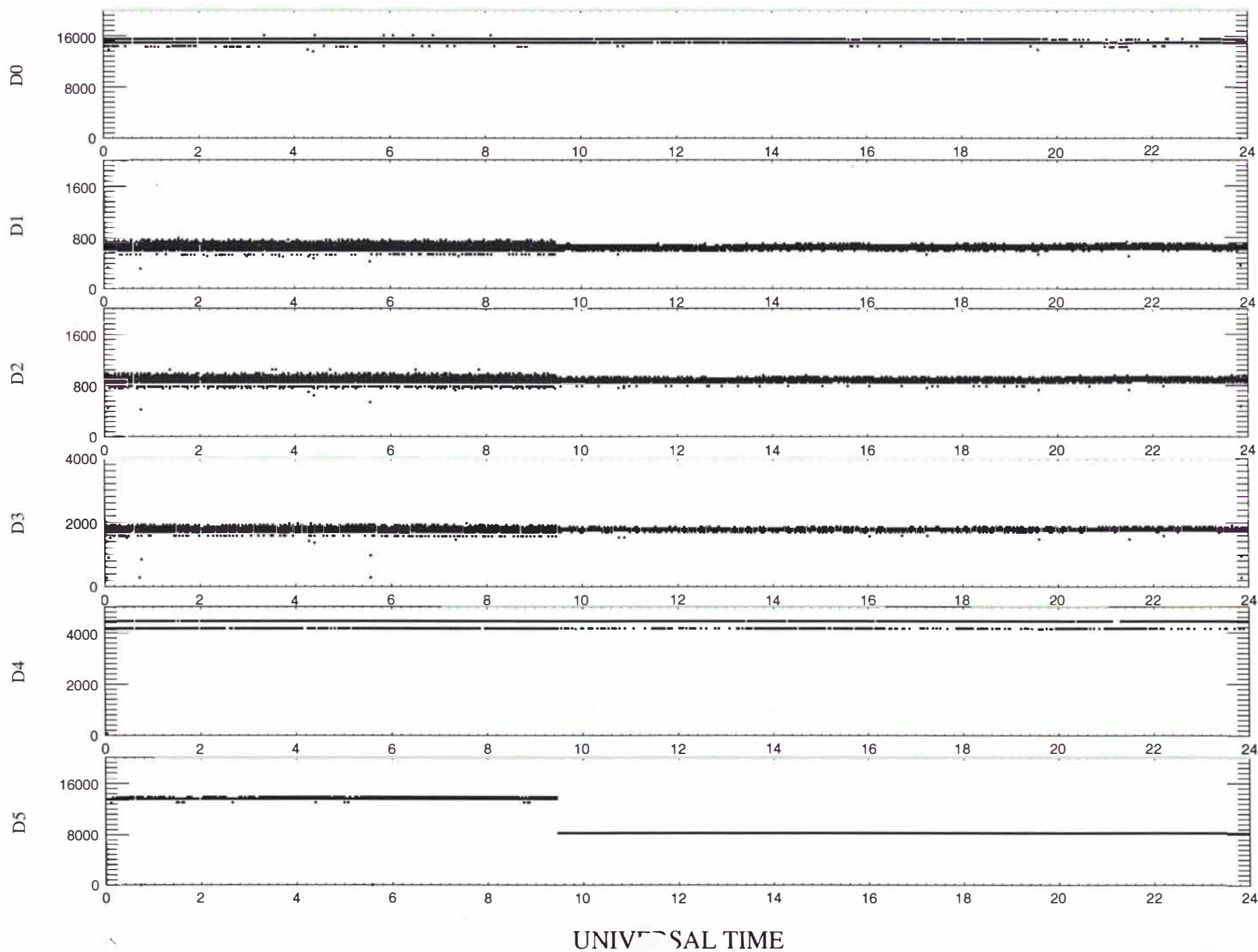
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Date: May 12 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

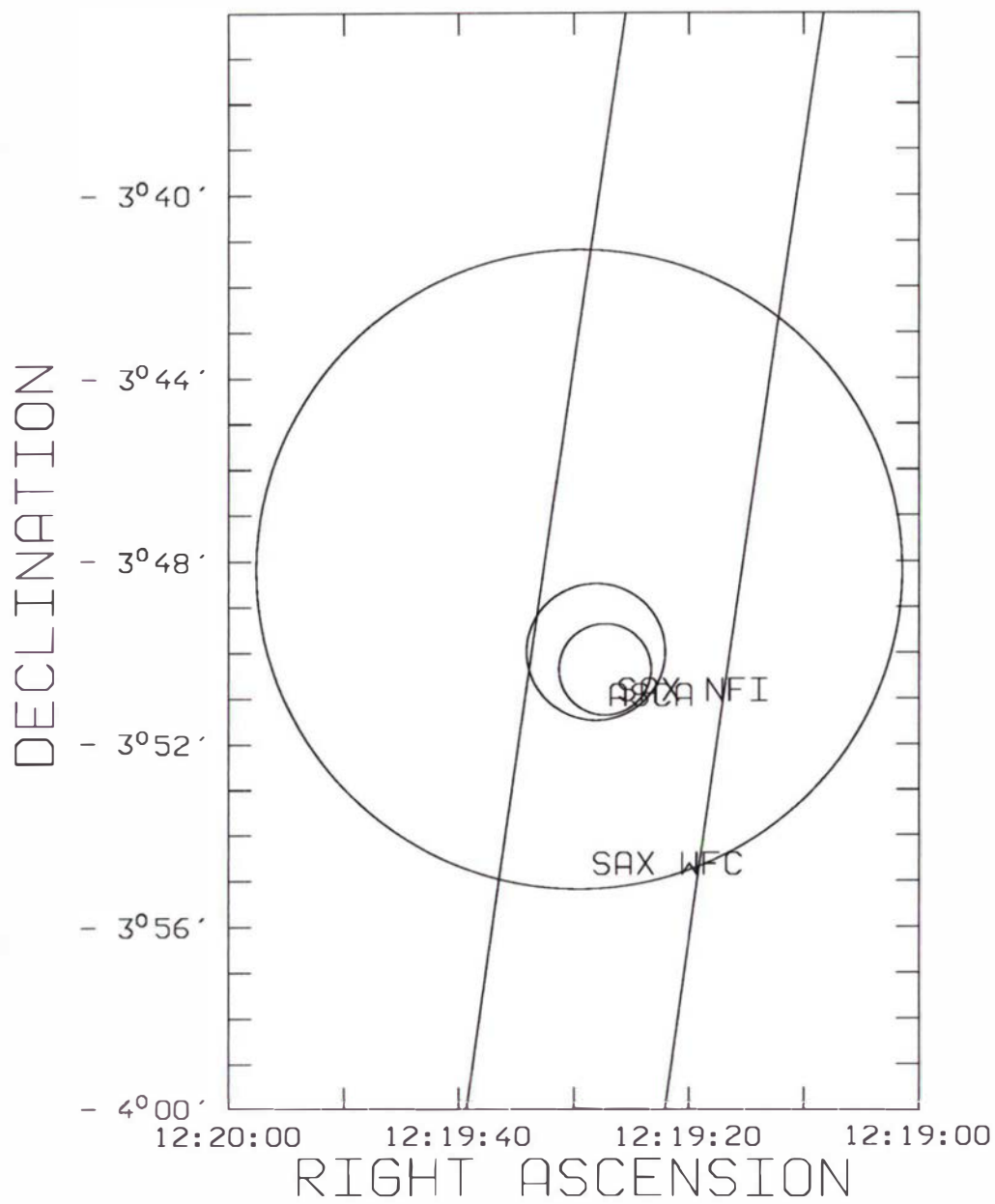
2. BATSE Data *N/A*

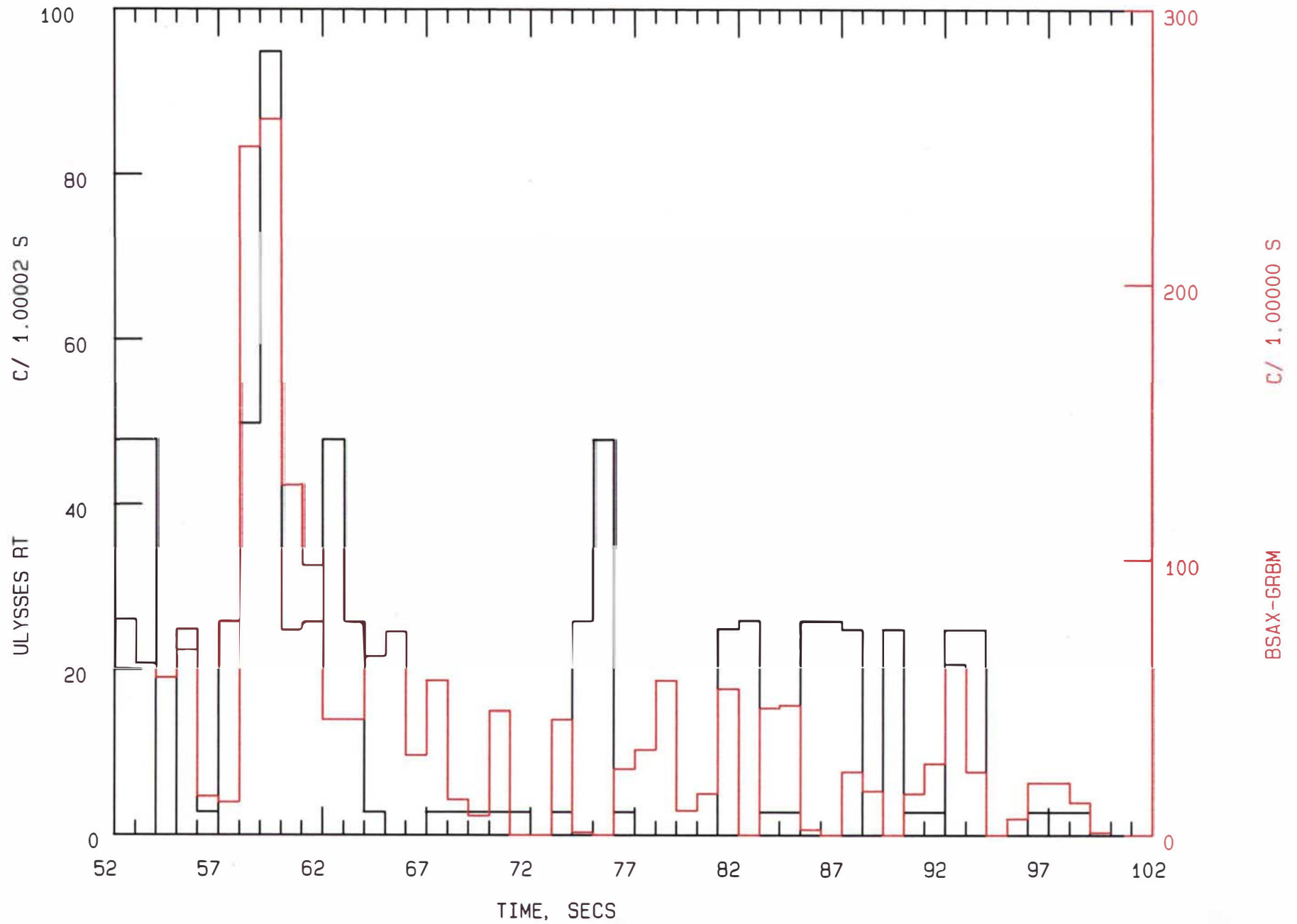
- ☐ BATSE ephemeris for T_0 ?
- ☐ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

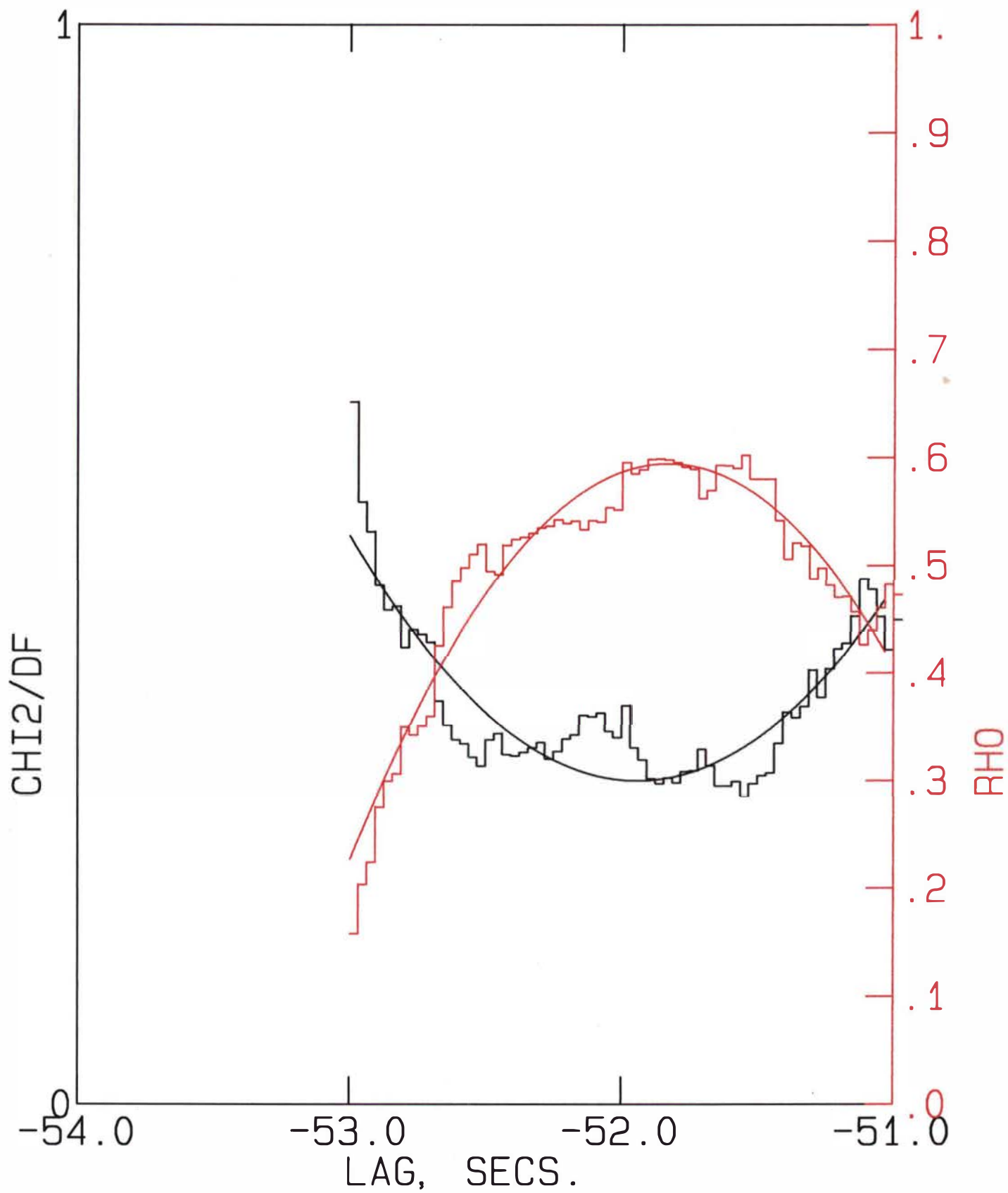
3. NEAR Data

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

- ☒ ACCESS database updated?



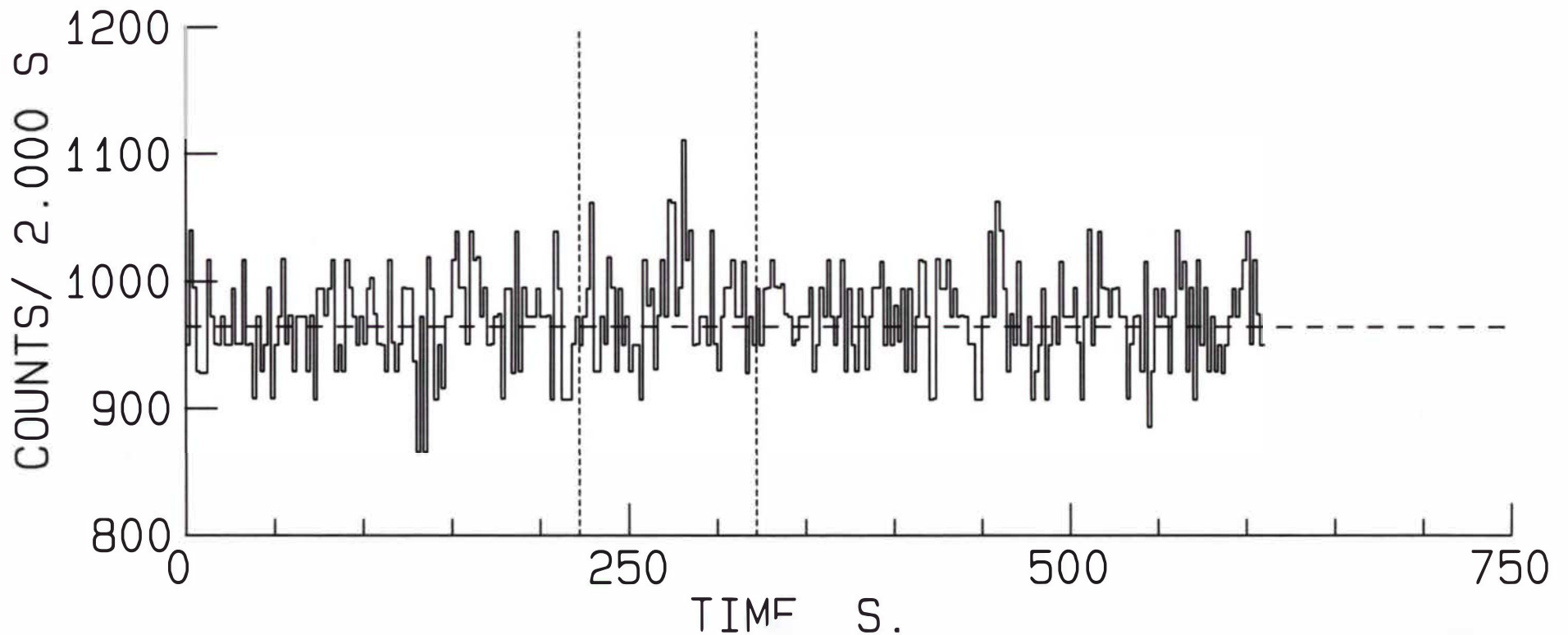




ULYSSES RT
4/ 7/99 60624.496 s
0.500 S INTERVALS REGROUPED BY 4
22- 150 keV

12 / 5 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

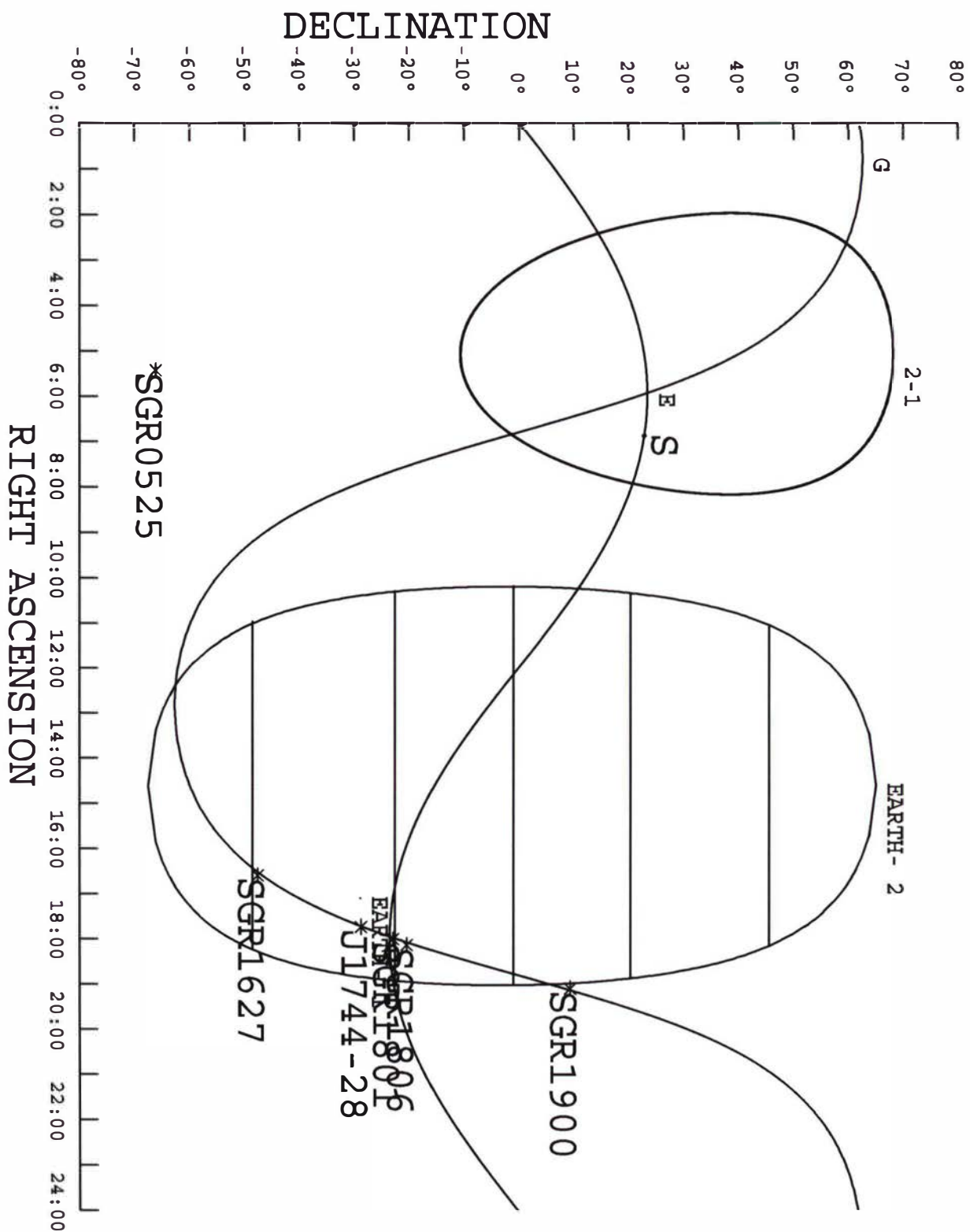
G=GALACTIC EQUATOR

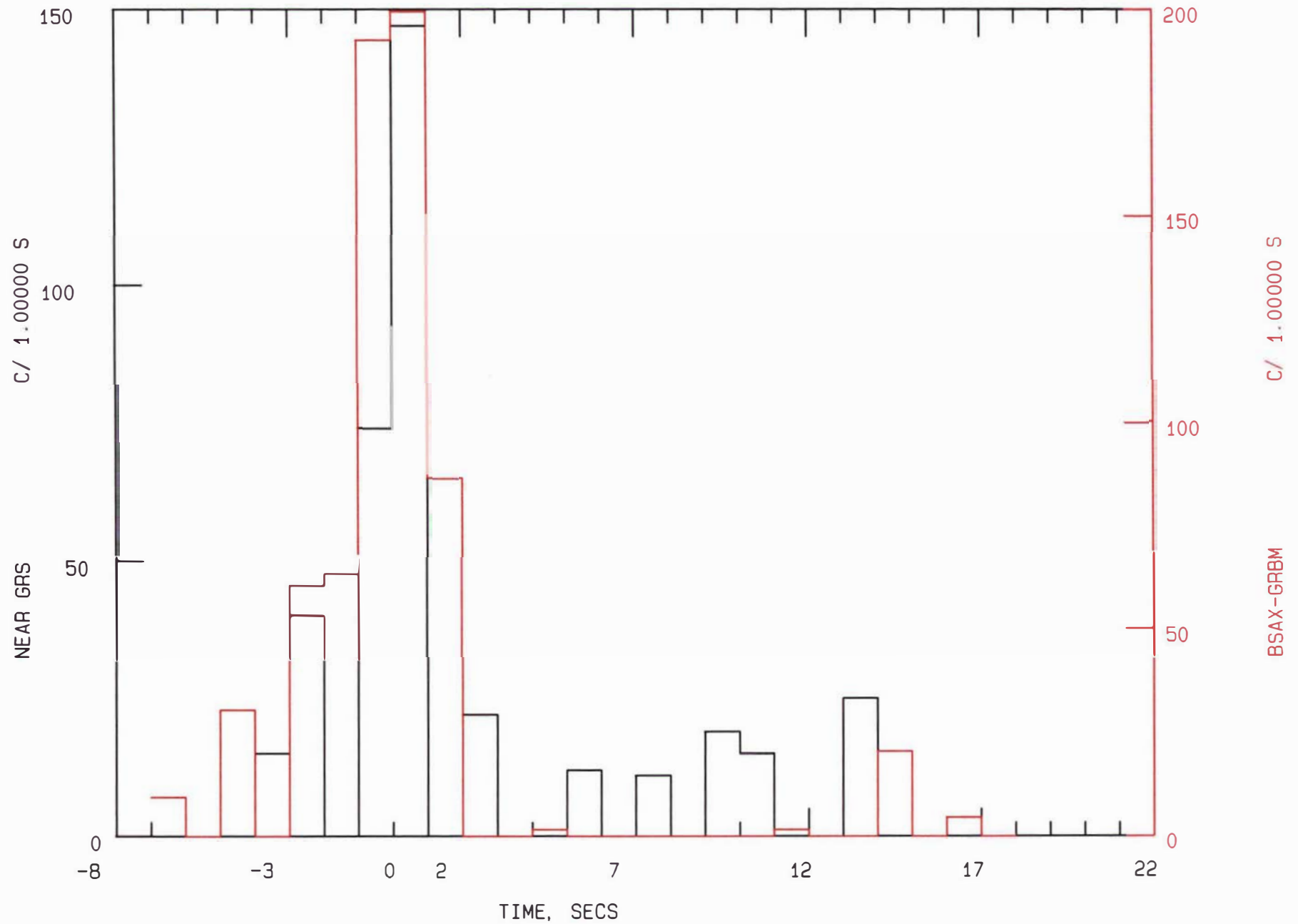
1 NEAR

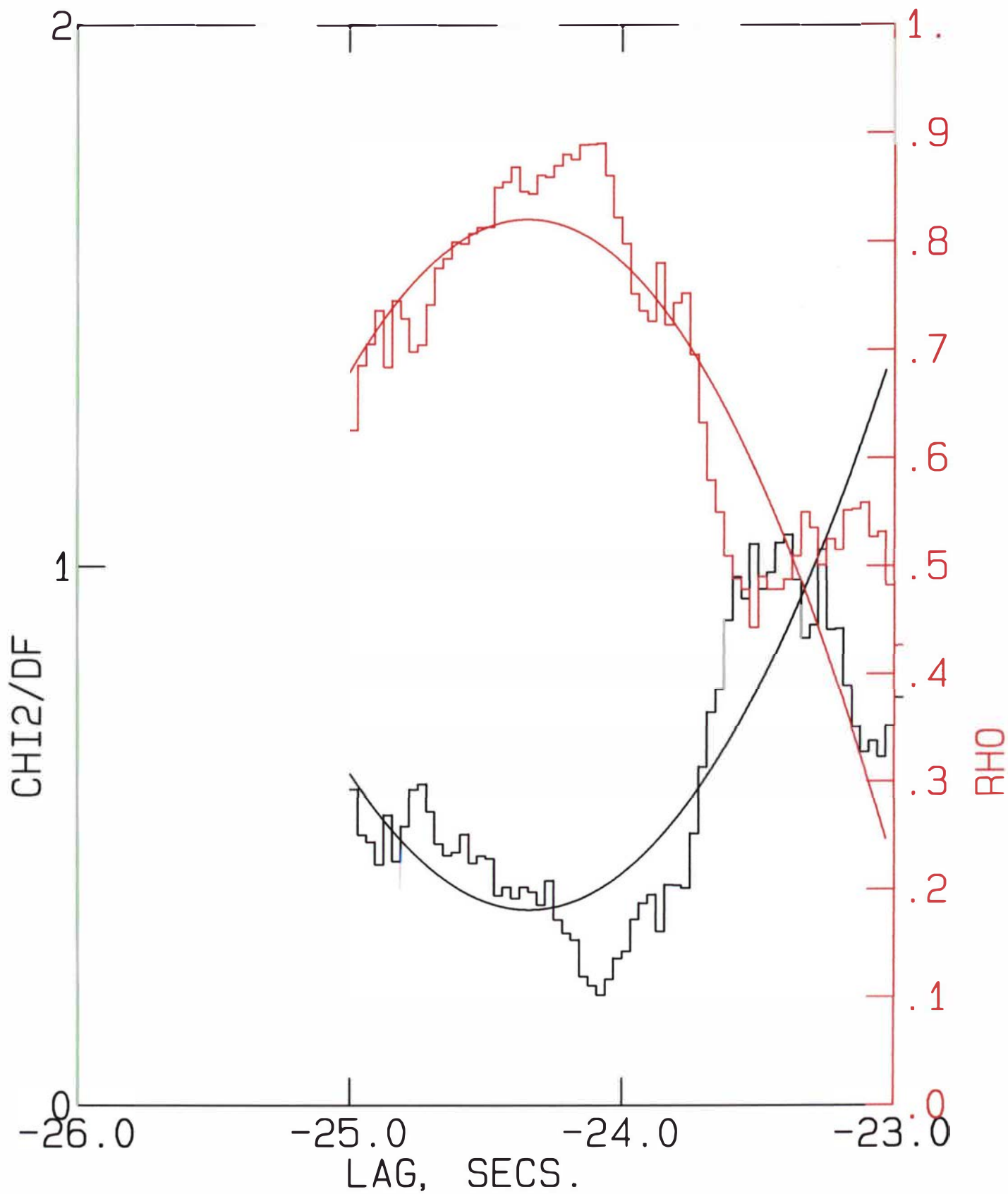
2 SAX

EVENT OF JUL 4, 1999 19:38

29 / 6 / 7







Date: June 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data

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

3. NEAR Data

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

4. For Konus events *N/A*

- ☐ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

- ☐ $\Sigma 3\Delta t$'s calculated?

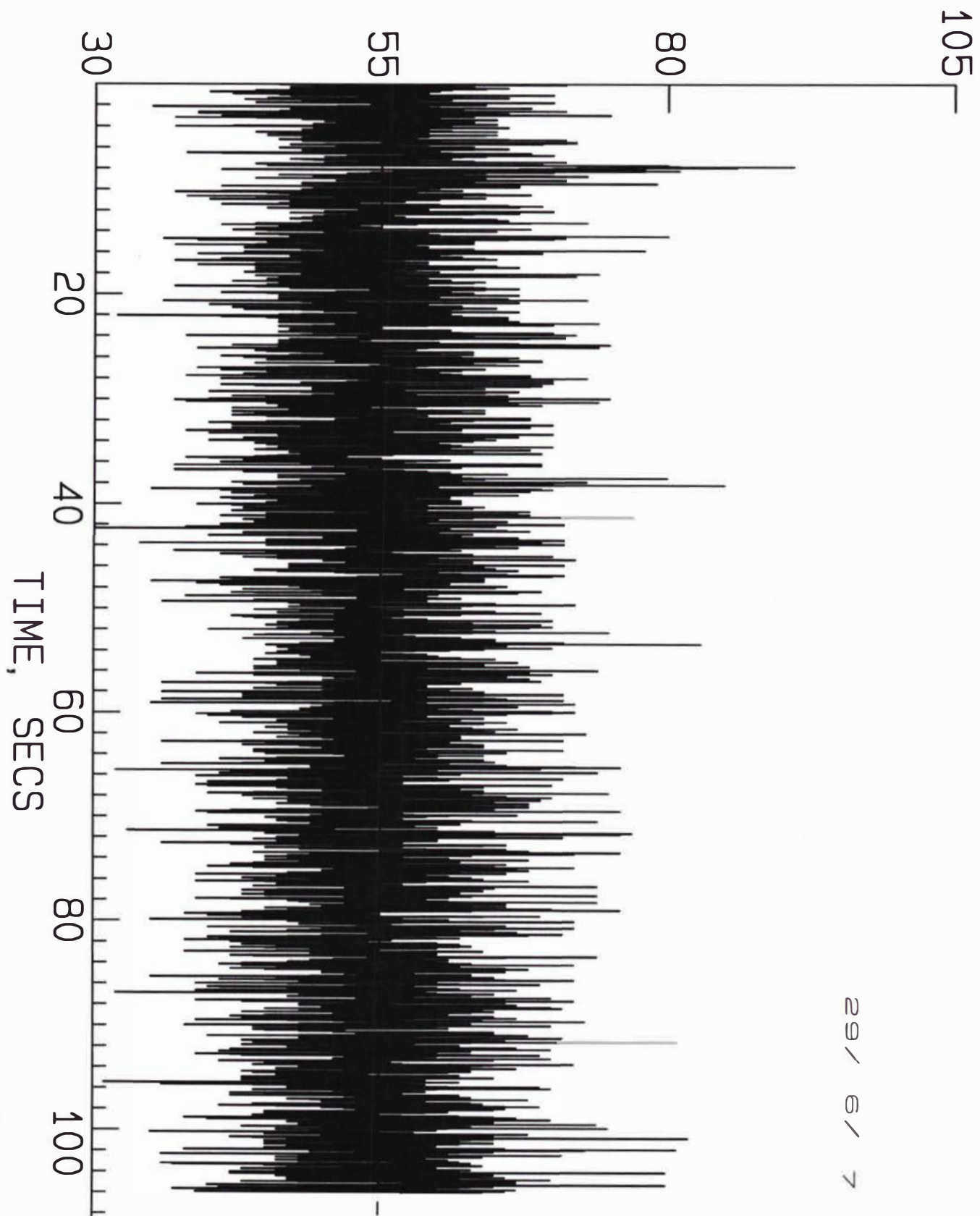
- ☒ ACCESS database updated?

SAX GRBM

04/07/99 71511.188

40- 700 keV

COUNTS/0.031 S

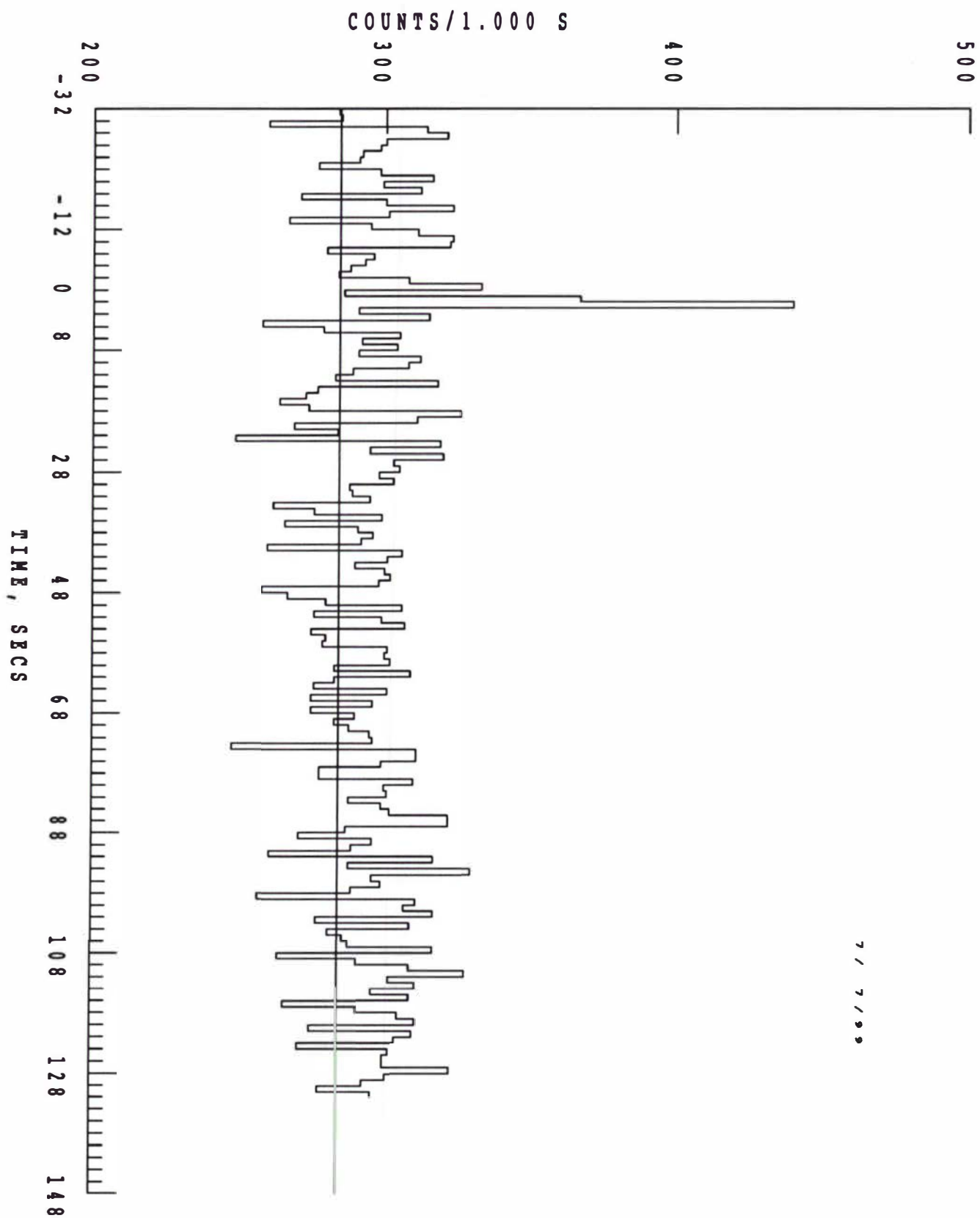


NEAR

04/07/99

70705.576

100-1000 keV



19990704 71045

ULYSSES RT

29 / 06 / 07

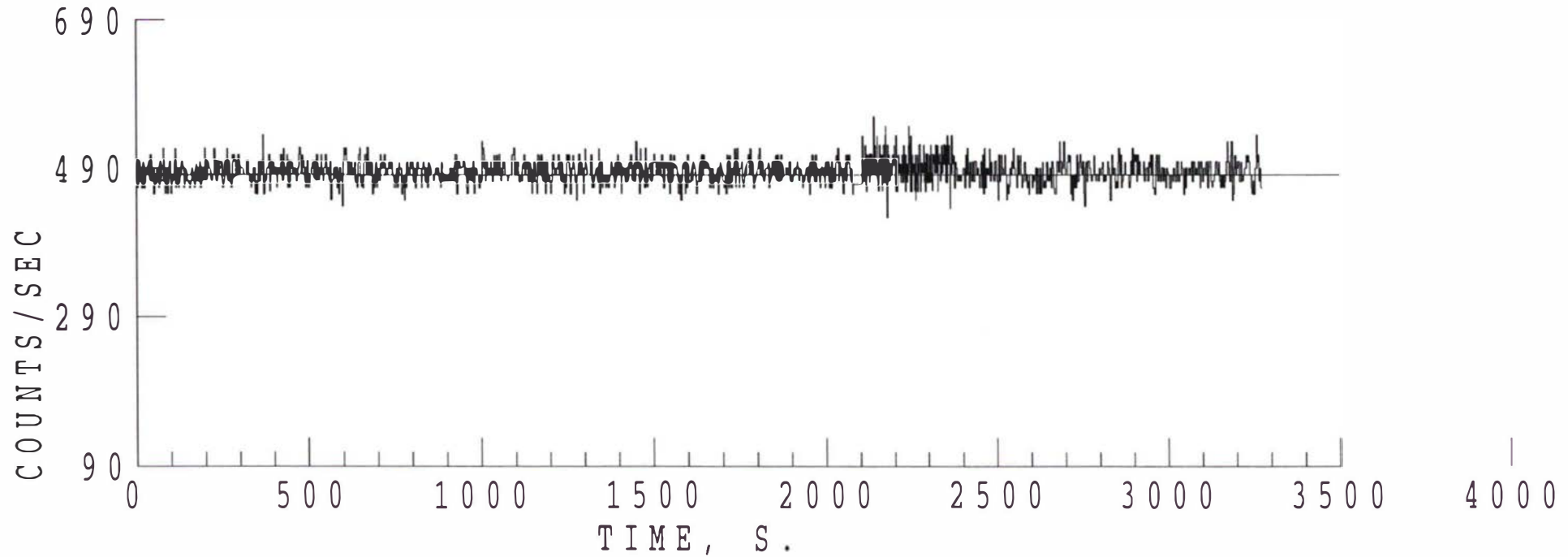
04/07/99 69408.078 s

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 Thu Jul 8 11:51 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Thu, 8 Jul 1999 13:56:08 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7631

BATSEARCH PROGRAM

BATSE BURST # 7631
EVENT OF 1999 JUL 4 DAY OF YEAR=185
EVENT CROSSING TIME AT BATSE : 81932. S. OR 22:45:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 100.000 25.000
BATSE PEAK COUNTING RATE: 11000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 7/ 99 IS:
RA= 146.925 DEC= -7.814 DIST= 5.348 AU
BATSE-ULYSSES DISTANCE = 800052105. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=123.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1483.15 SECS.
CROSSING TIME AT ULYSSES IS 80449. S. OR 22:20:48 +/- 412.66 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 7/ 99 IS:
RA= 207.136 DEC= -12.412 DIST= 0.834 AU
MARS-BATSE DISTANCE = 124825096. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 146.41 SECS.
CROSSING TIME AT MARS IS 82078. S. OR 22:47:58 +/- 69.90 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7631	990704	11363	81932	11000	100	+25	70

BATSE BURST TRIGGER

NO.: 7631

TIME: TJD=1363 SECONDS=81932

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

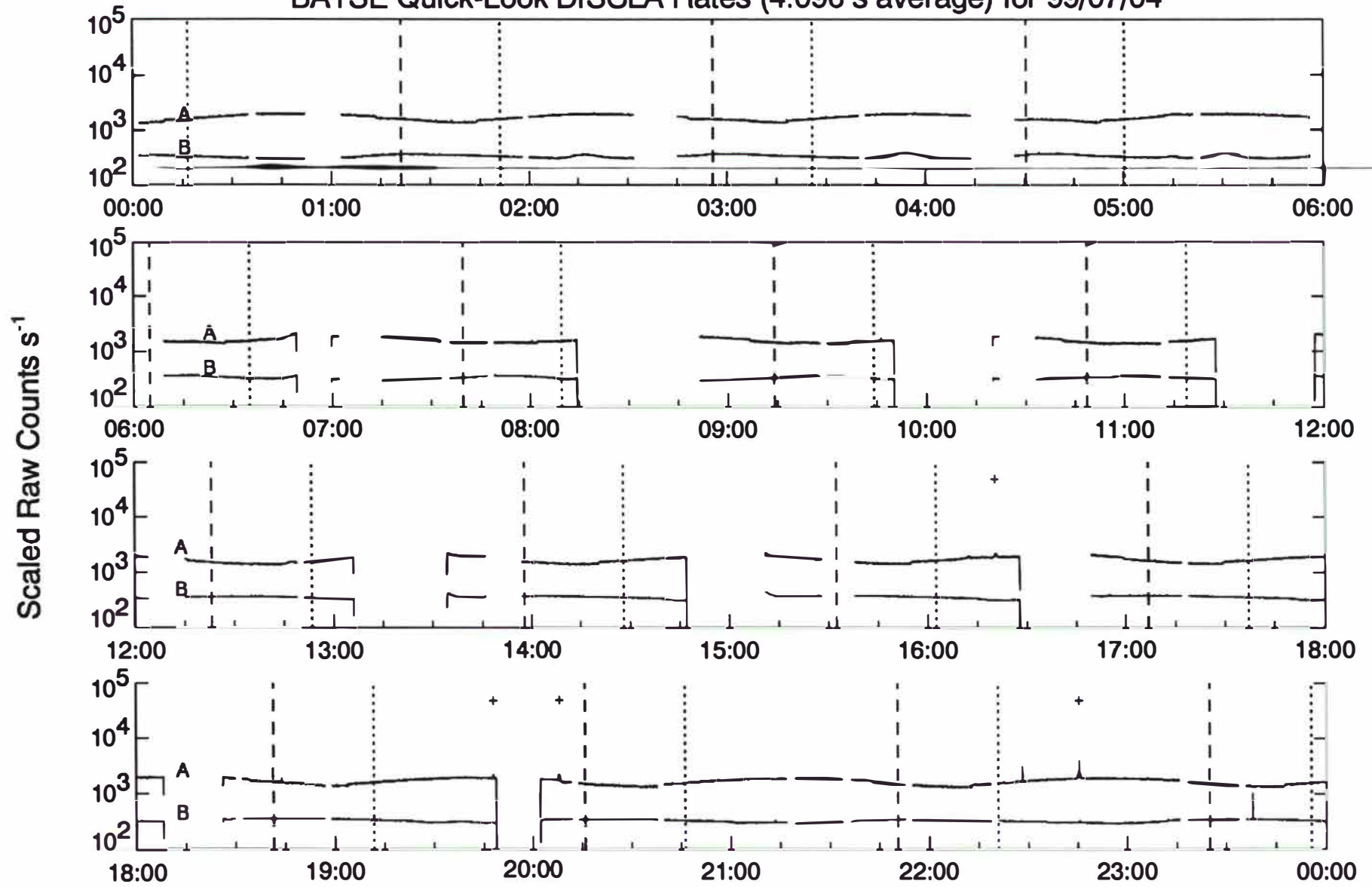
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=51.0 AZIMUTH=325.8 ERROR=1.256 DEGREES

COMMENTS:

NO GOES, NO OPTICAL. MULTI PEAK, DUR. APPROX. 70 S, STARTS AT APPROX. T-35 S.
WEAKLY VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/04

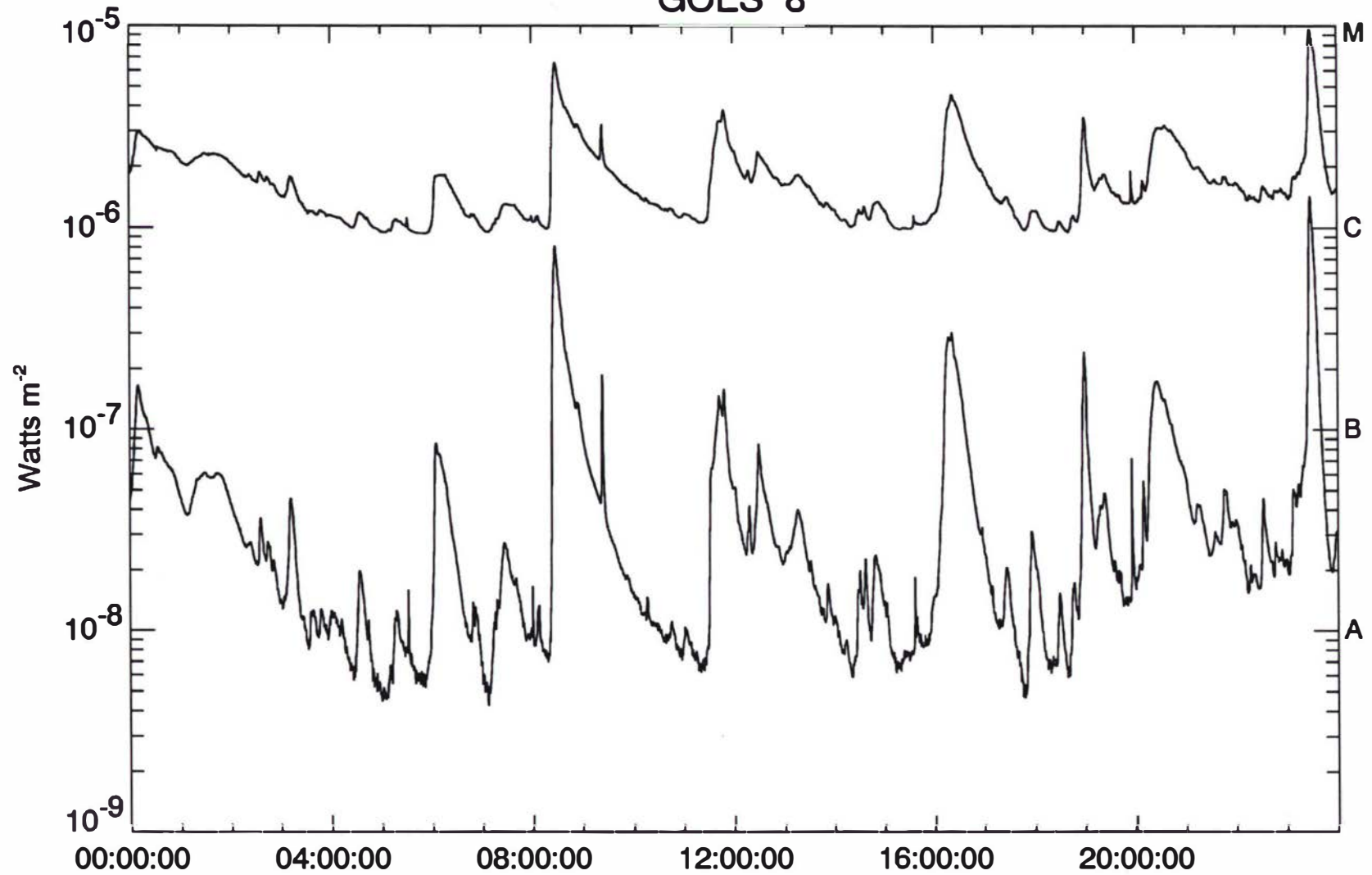


Current Time: 99/07/08, 1012 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/07/04, 0000:00

Plot created: 99/07/08, 1011

Channel

1 (1.0 - 8.0 Angstroms)

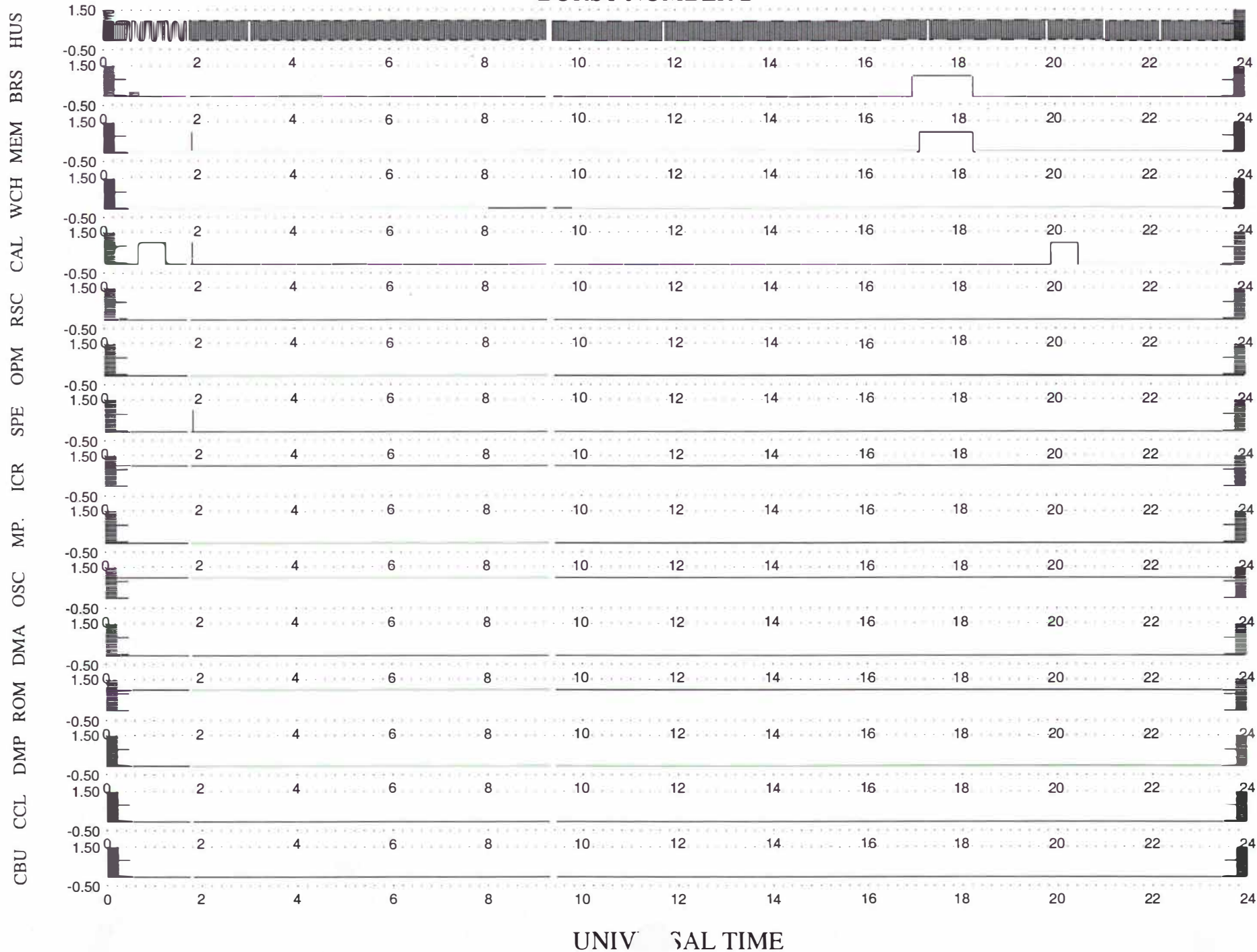
Background not subtracted

2 (0.5 - 4.0 Angstroms)

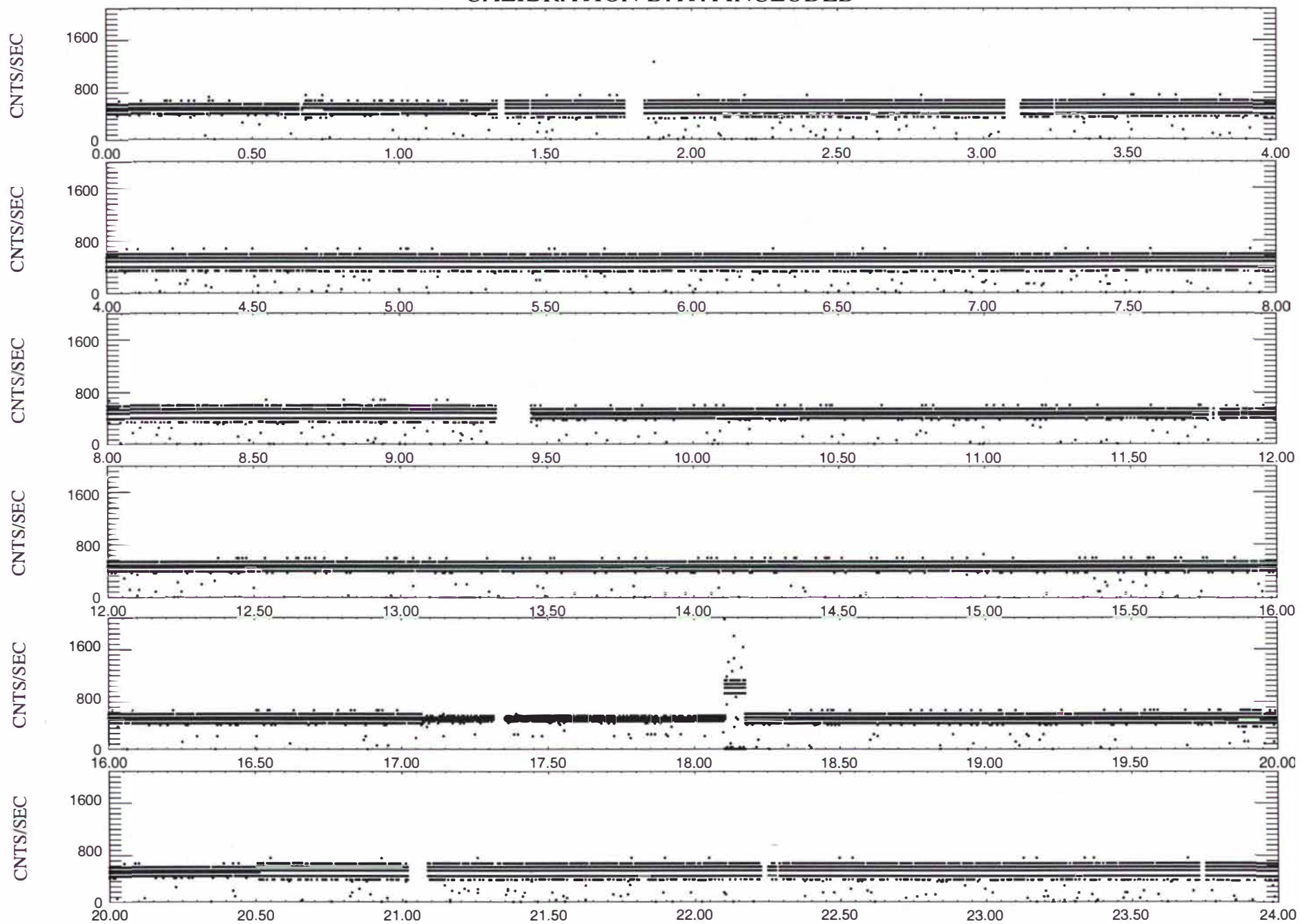
Background not subtracted

Sample average = 10

BURST NUMBER 2

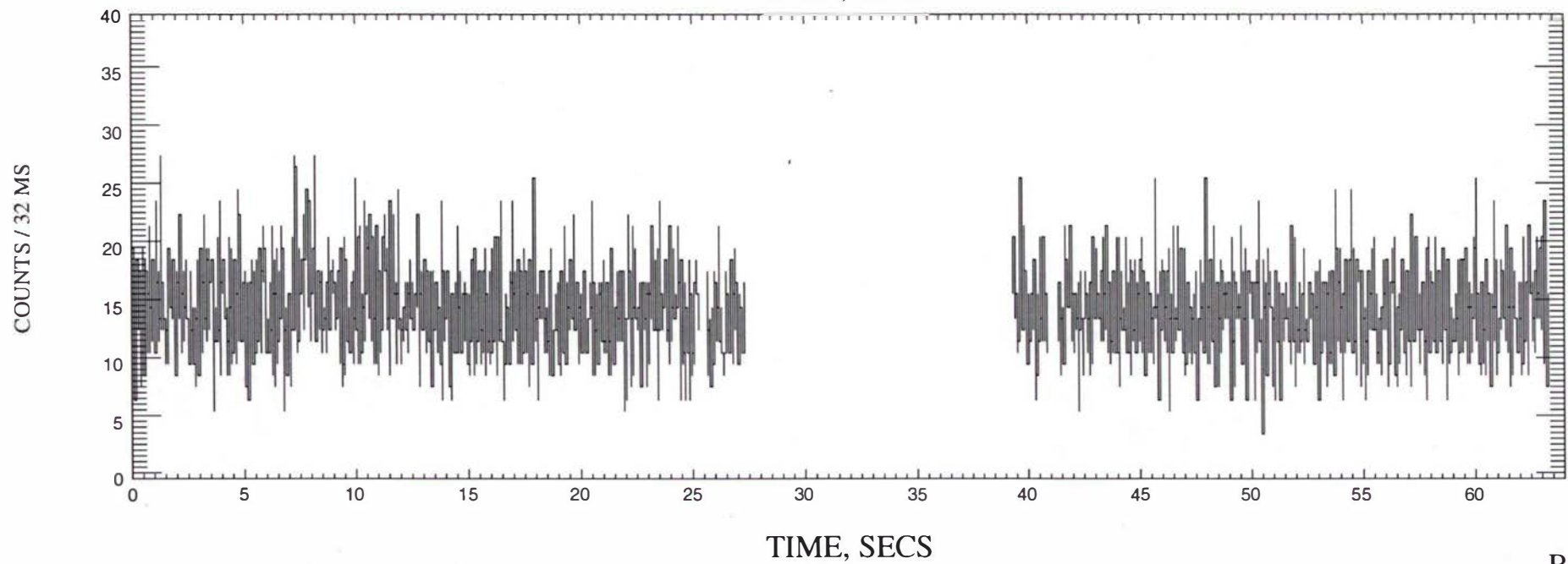
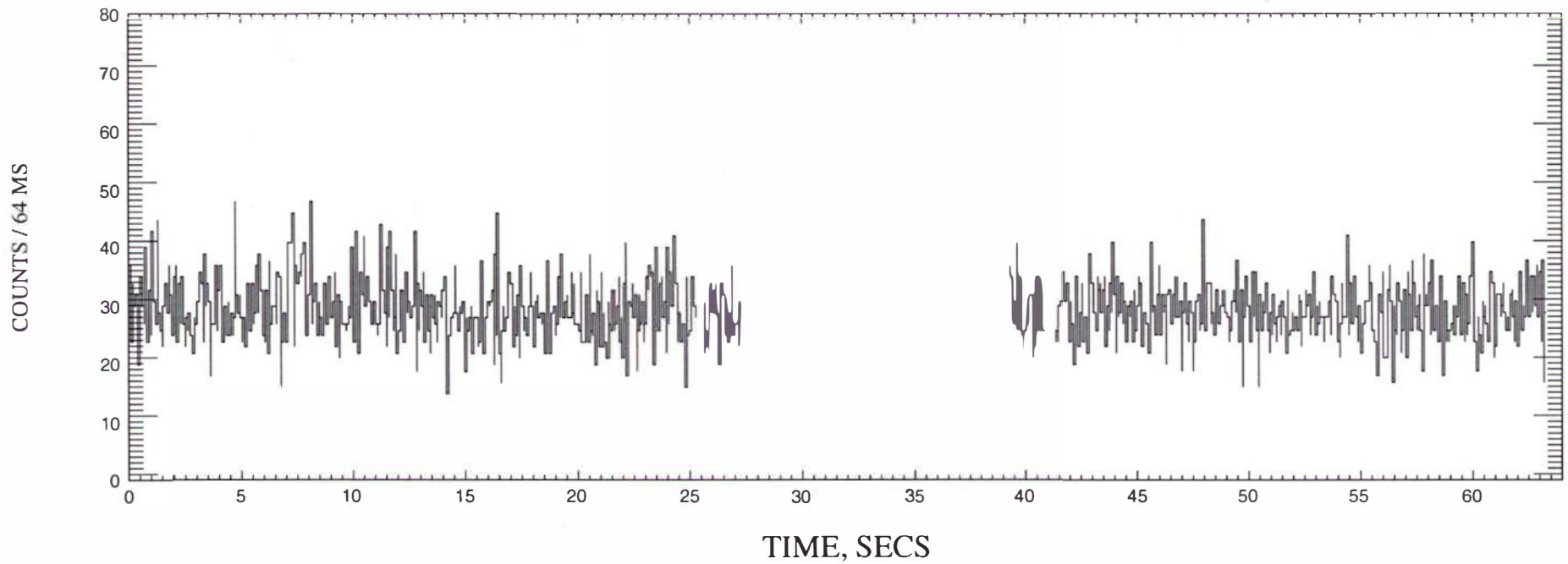


CALIBRATION DATA INCLUDED

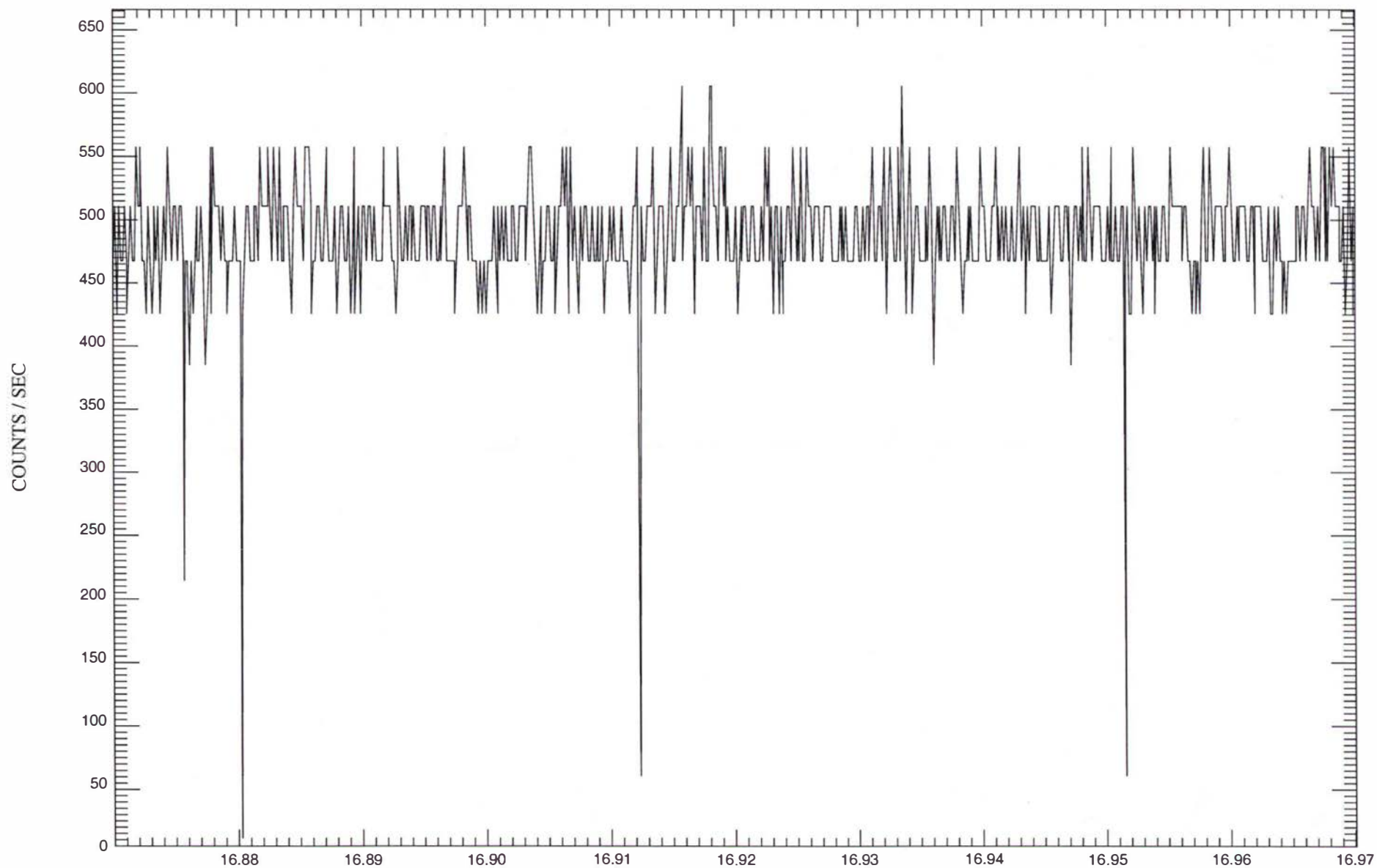


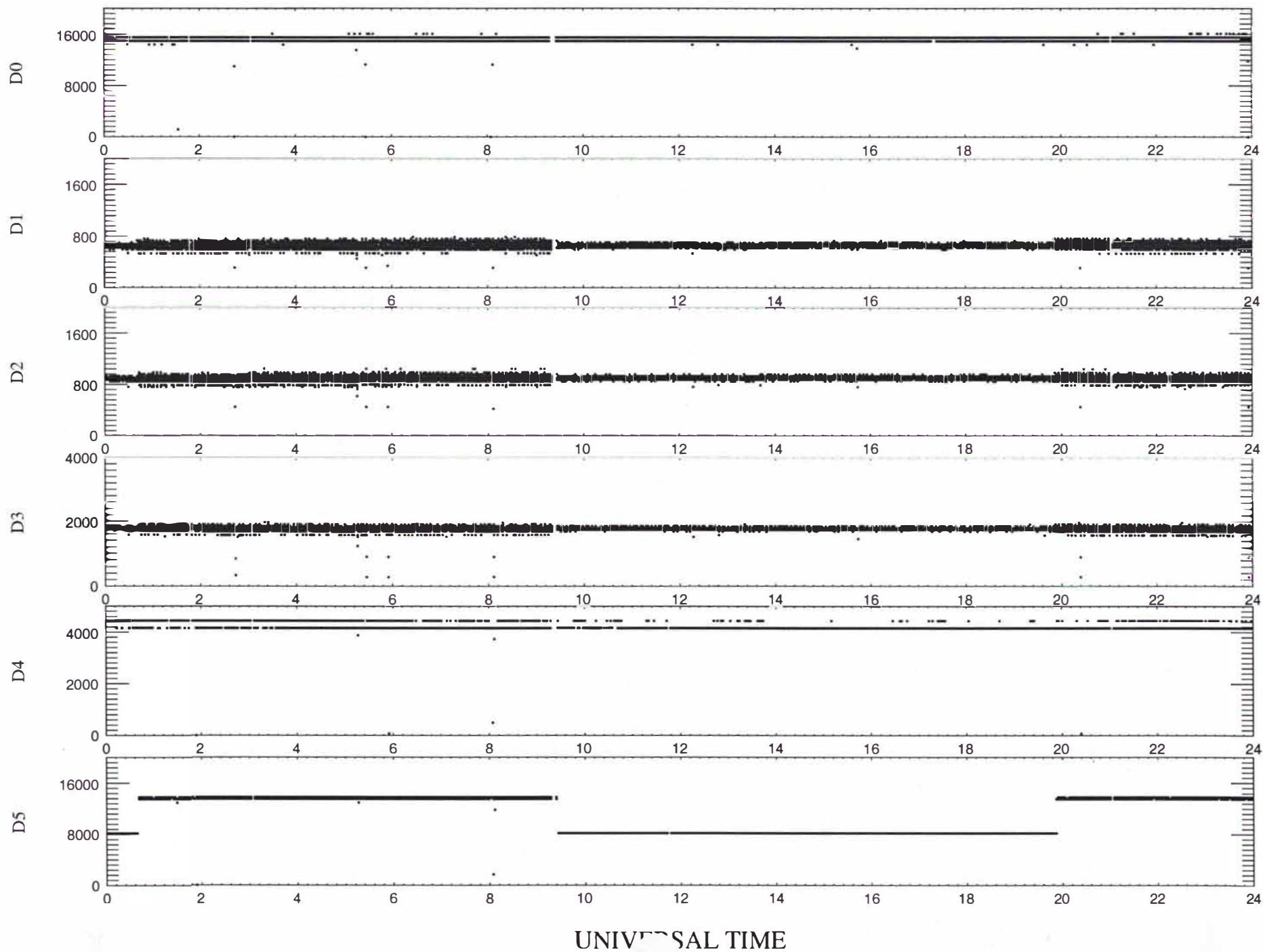
UNIVERSAL TIME

Burst Counter 2 at UT=16.918156462775 h=60905.363 s 16:55:05.363



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Thu Jul 8 08:42 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 8 Jul 1999 10:47:47 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7632

BATSEARCH PROGRAM

BATSE BURST # 7632
EVENT OF 1999 JUL 5 DAY OF YEAR=186
EVENT CROSSING TIME AT BATSE : 13354. S. OR 03:42:34.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 195.000 49.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 7/ 99 IS:
RA= 146.949 DEC= -7.824 DIST= 5.350 AU
BATSE-ULYSSES DISTANCE = 800324033. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.37 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -885.58 SECS.
CROSSING TIME AT ULYSSES IS 12468. S. OR 03:27:48 +/- 473.79 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 7/ 99 IS:
RA= 207.441 DEC= -12.545 DIST= 0.840 AU
MARS-BATSE DISTANCE = 125727496. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -193.51 SECS.
CROSSING TIME AT MARS IS 13160. S. OR 03:39:20 +/- 61.66 SECONDS

BATSE BURST TRIGGER

NO.: 7632

TIME: TJD=1364 SECONDS=13354

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=71.3 AZIMUTH=241.4 ERROR=12 DEGREES

COMMENTS:

GRB. WEAK SINGLE SPIKE, DUR. 0.6 S, STARTS AT T-0.3 S. NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7632	990705	11364	13354	3000	195	+49	.6

BATSE BURST# 7632

ULYSSES RT

8 / 7 / 99

5 / 7 / 99 11988.127 s

0.250 S INTERVALS REGROUPED BY 3

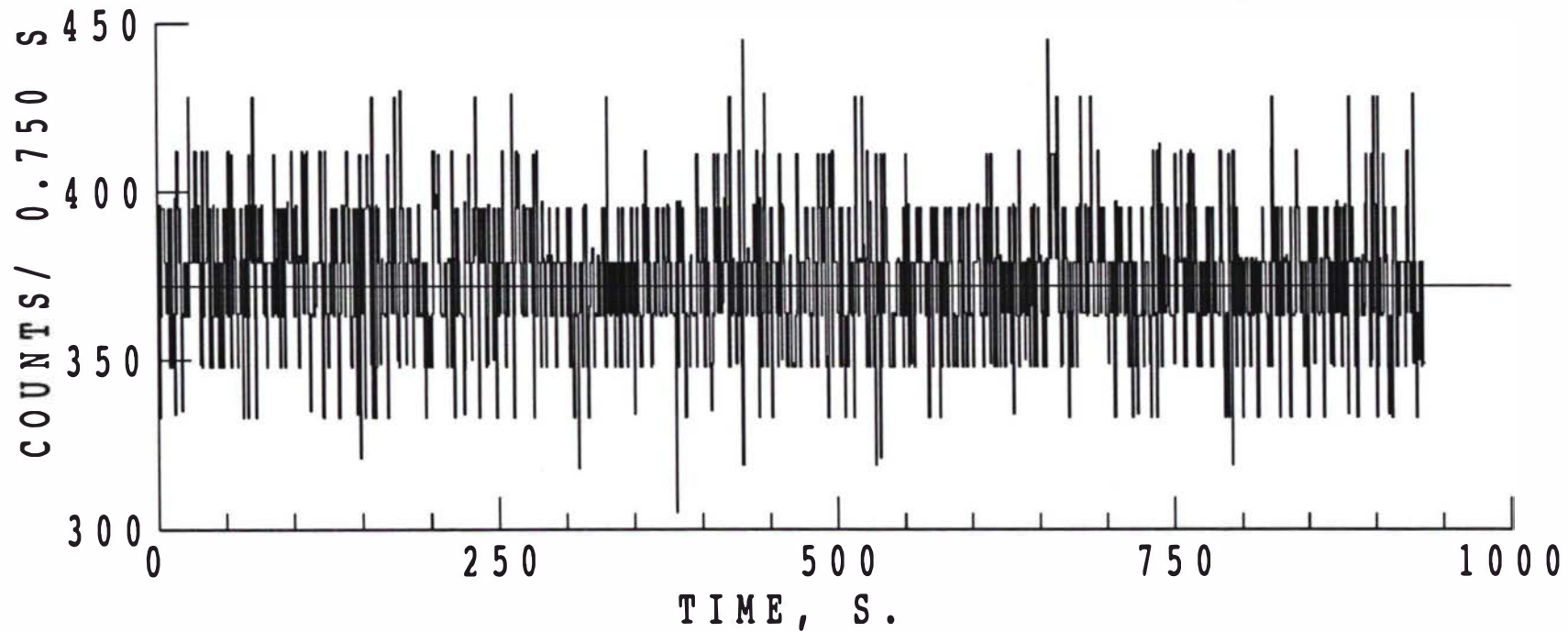
0 - 0 keV

N= 10 M= 10

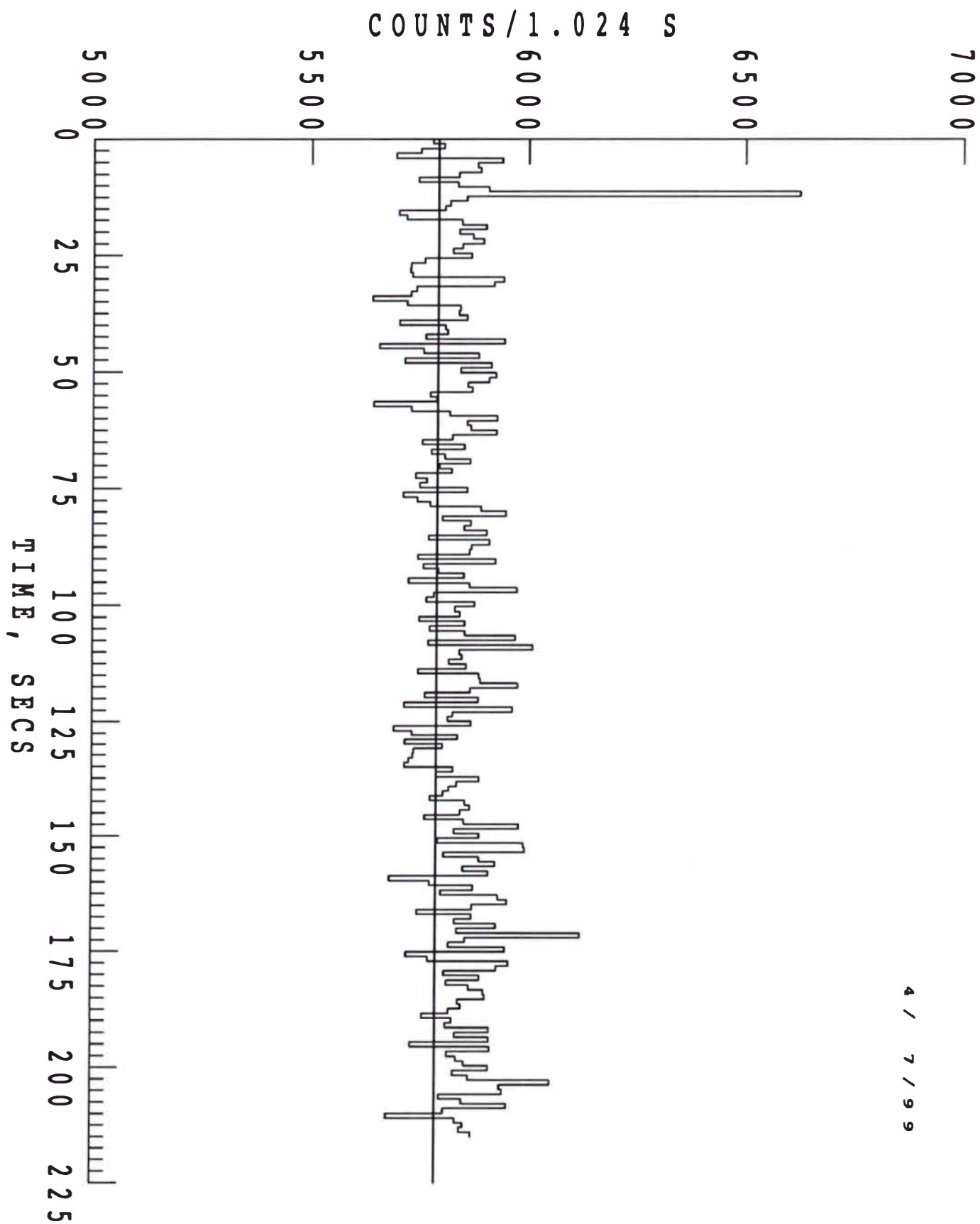
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BACODINE 7632 05/07/99 13342.457
25 - 100 keV



From SAHI@fender.msfc.nasa.gov Thu Jul 8 08:45 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 8 Jul 1999 10:50:58 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7633

BATSEARCH PROGRAM

NO

BATSE BURST # 7633
EVENT OF 1999 JUL 5 DAY OF YEAR=186
EVENT CROSSING TIME AT BATSE : 48358. S. OR 13:25:58.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 81.000 6.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 7/ 99 IS:
RA= 146.994 DEC= -7.845 DIST= 5.353 AU
BATSE-ULYSSES DISTANCE = 800854550. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1032.60 SECS.
CROSSING TIME AT ULYSSES IS 47325. S. OR 13:08:45 +/- 462.06 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 7/ 99 IS:
RA= 207.441 DEC= -12.545 DIST= 0.840 AU
MARS-BATSE DISTANCE = 125727496. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.18 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 251.35 SECS.
CROSSING TIME AT MARS IS 48609. S. OR 13:30:09 +/- 62.10 SECONDS

BATSE BURST TRIGGER

NO.: 7633

TIME: TJD=1364 SECONDS=48358

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.8 AZIMUTH=354.3 ERROR=5.2 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. 5 S, MAX. AT T. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7633	990705	11364	48358	4000	081	+06	5

BATSE BURST# 7633

ULYSSES RT

8 / 7 / 99

5 / 7 / 99 46872.230 s

0.500 S INTERVALS REGROUPED BY 2

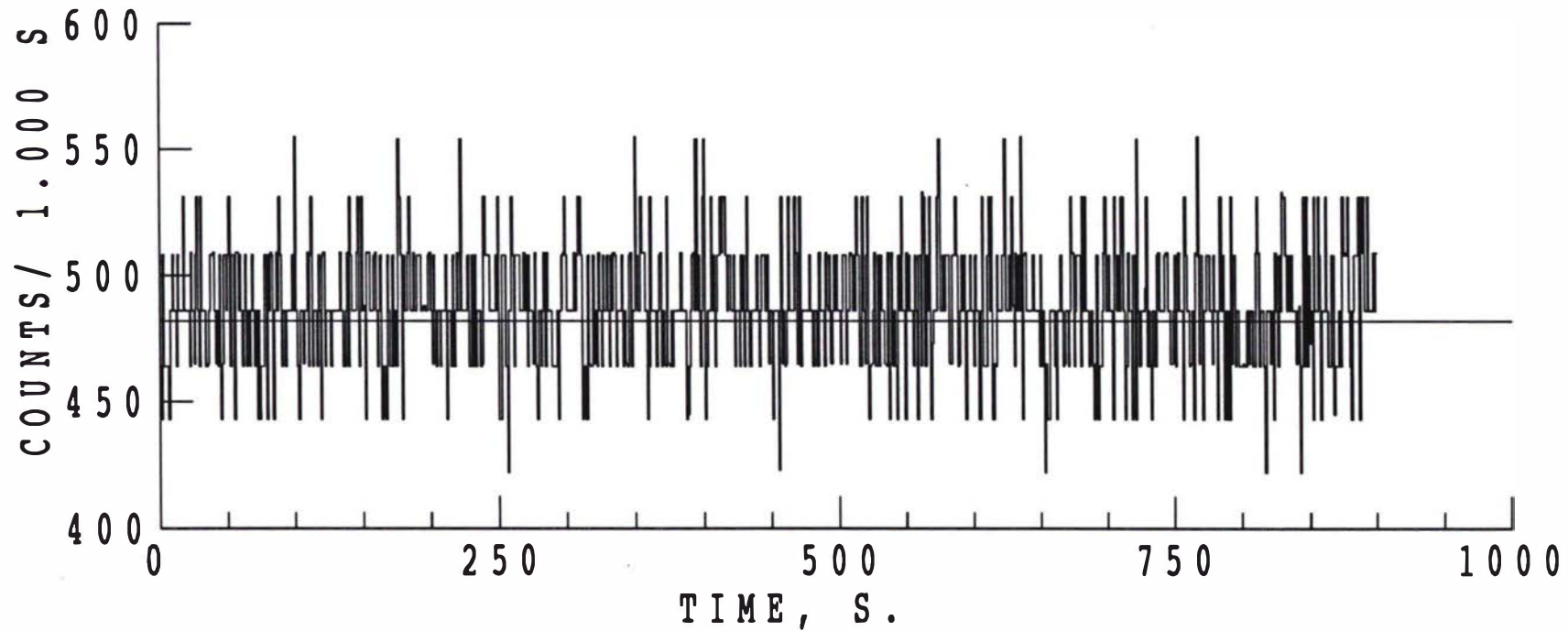
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE time corrected

Date: June 14 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For 3 Spacecraft events

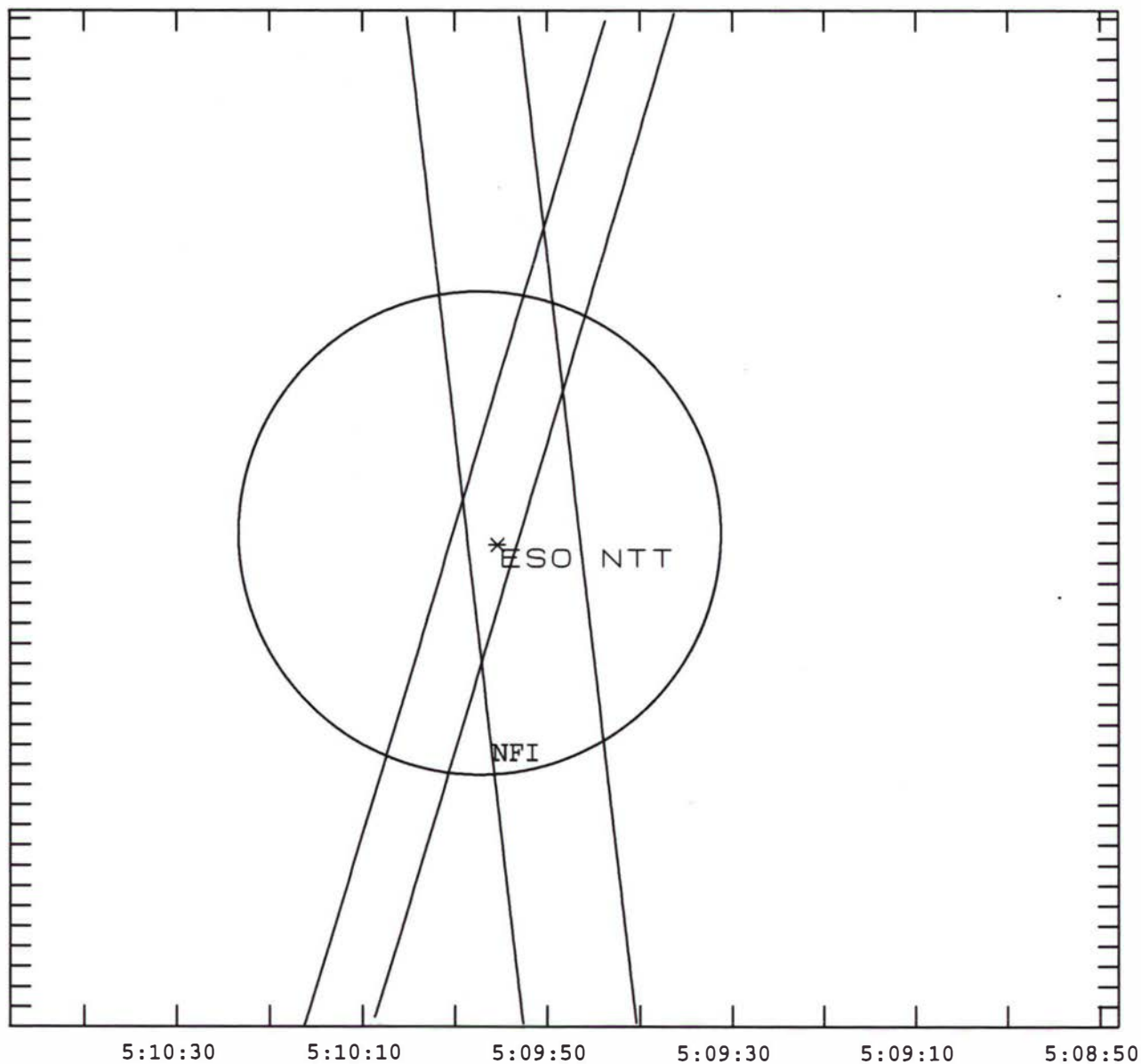
- ☐ Konus N/S anisotropy used to distinguish between positions?
- ☐ SAX anisotropy used to distinguish between positions?
- ☐ SAX Earth-blocking used to distinguish between positions?
- ☐ $\Sigma 3\Delta t$'s calculated? *156 ms*

3. For 4 Spacecraft Events

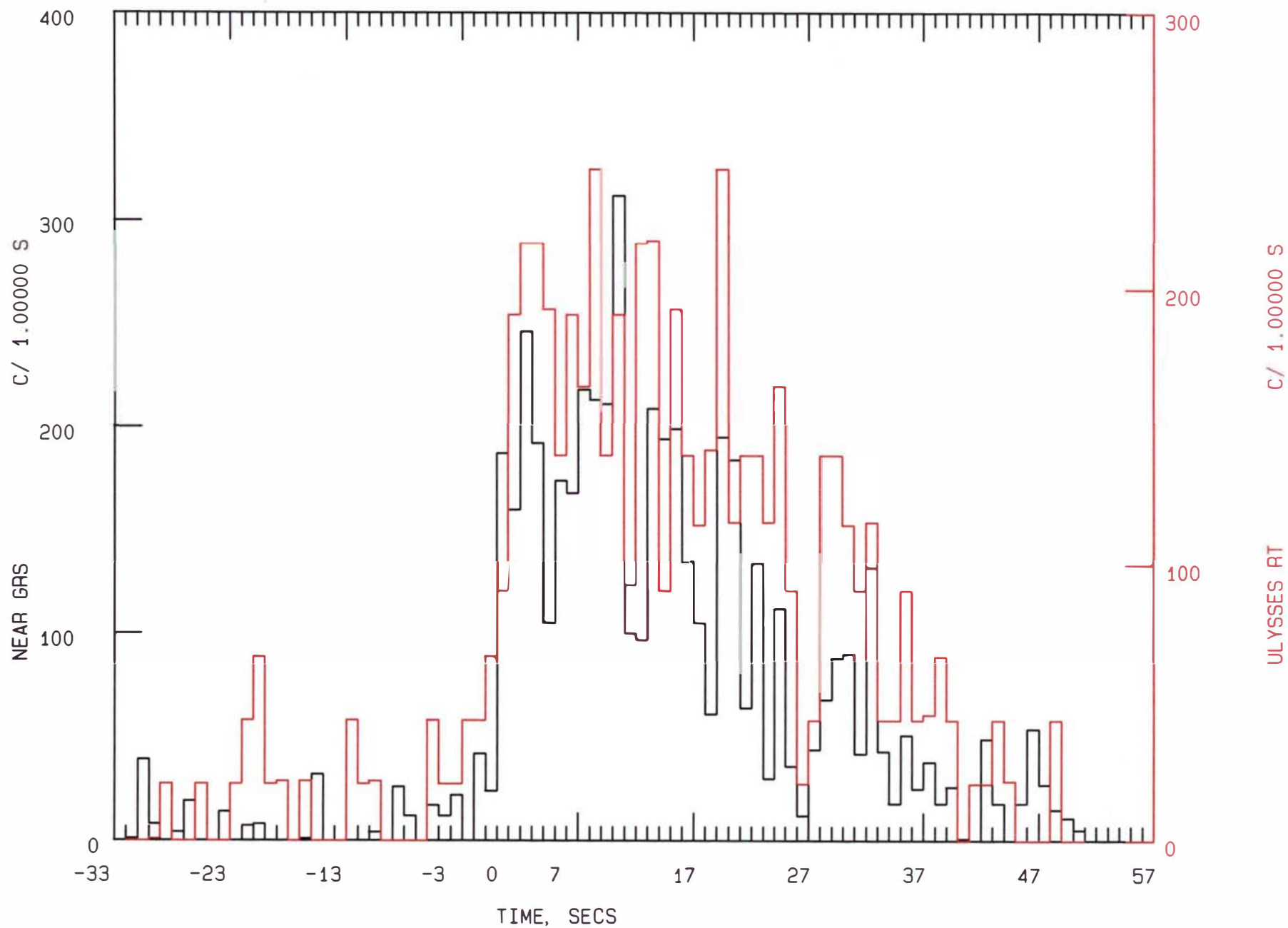
- ☐ BMAPSUM executed to get chisquare for alternate positions?
- ☒ ACCESS database updated?

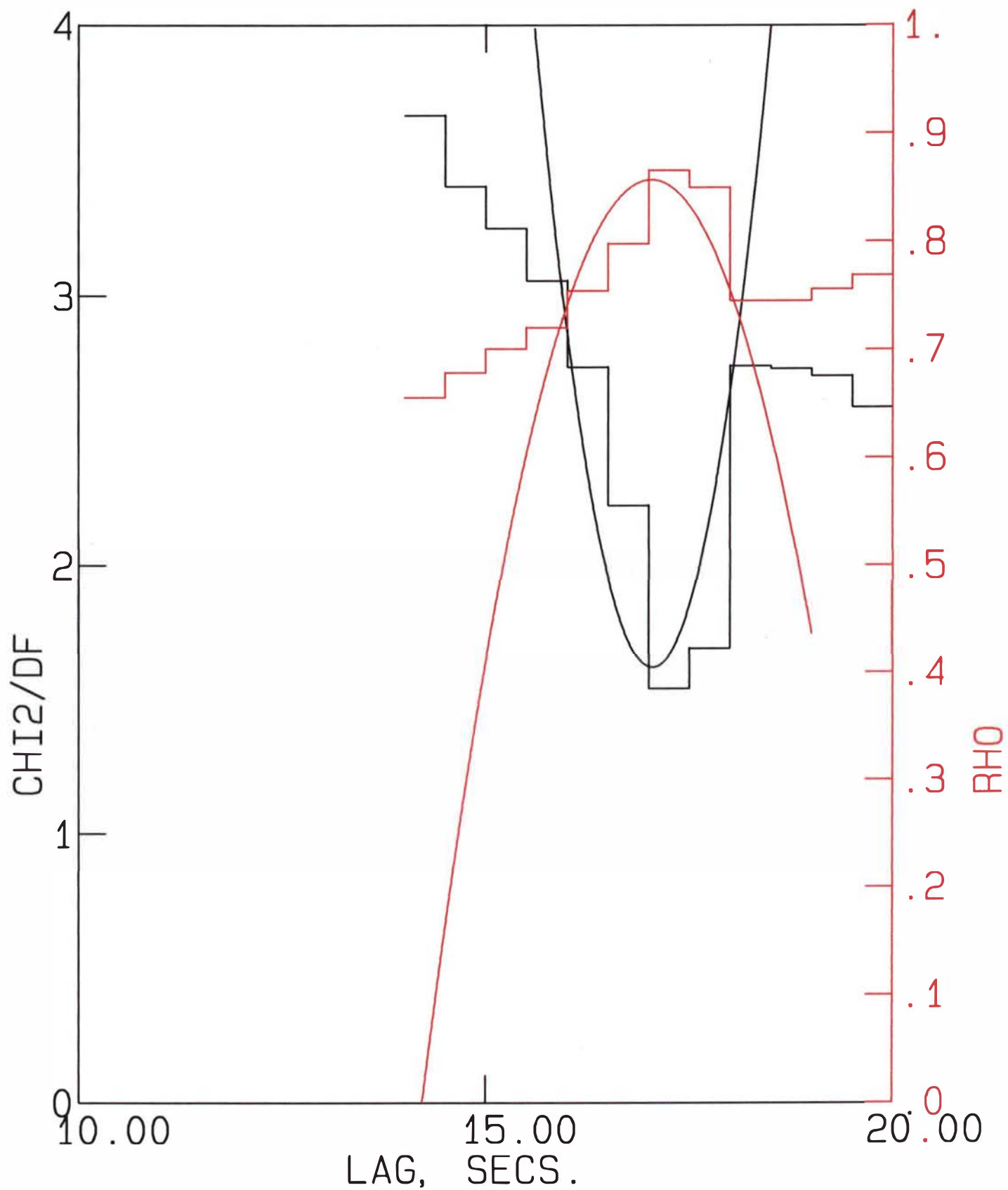
DECLINATION

-72°04'00"
-72°04'40"
-72°05'20"
-72°06'00"
-72°06'40"
-72°07'20"
-72°08'00"
-72°08'40"
-72°09'20"
-72°10'00"
-72°10'40"
-72°11'20"
-72°12'00"



RIGHT ASCENSION





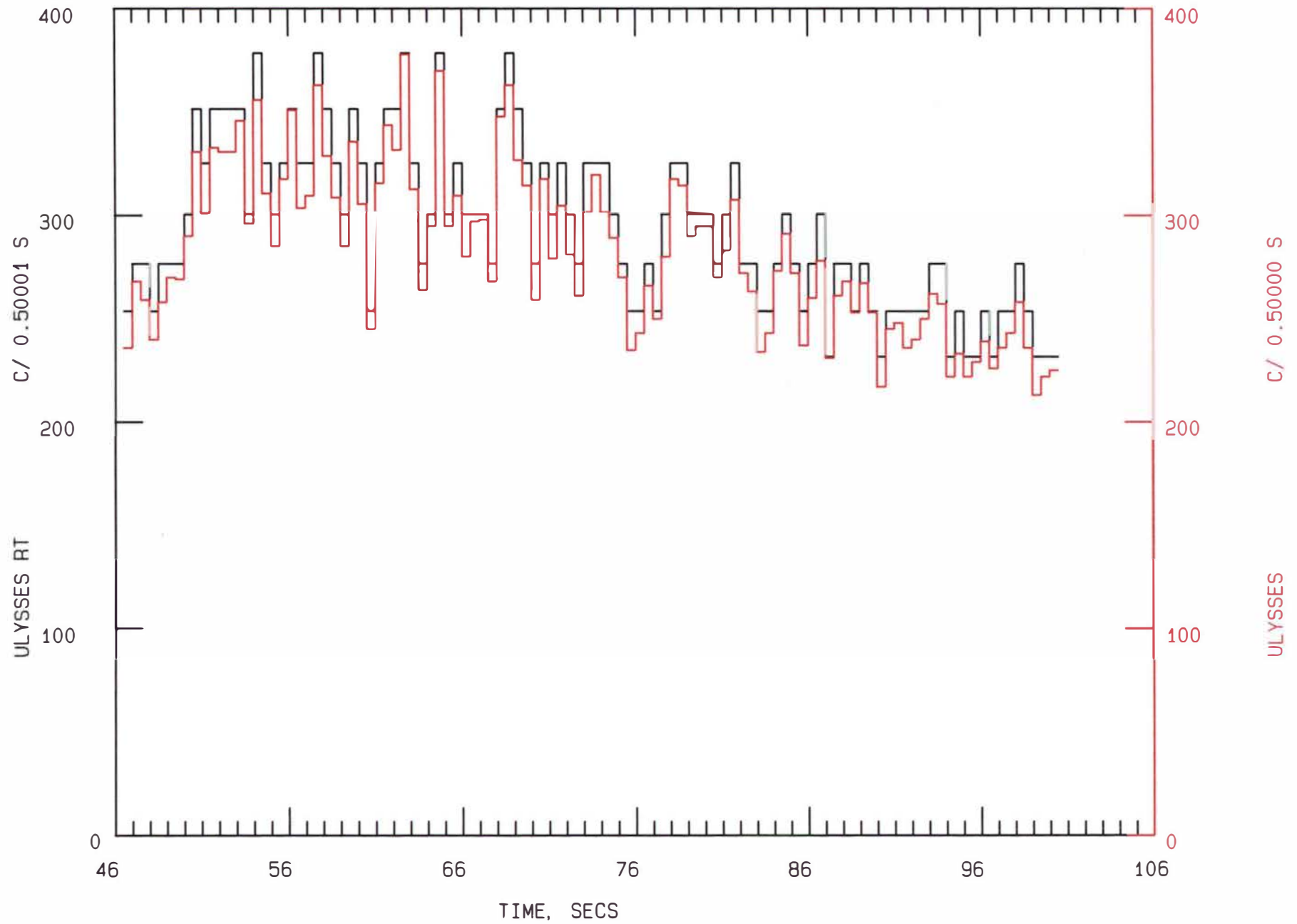
ULYSSES RT-ULYSSES

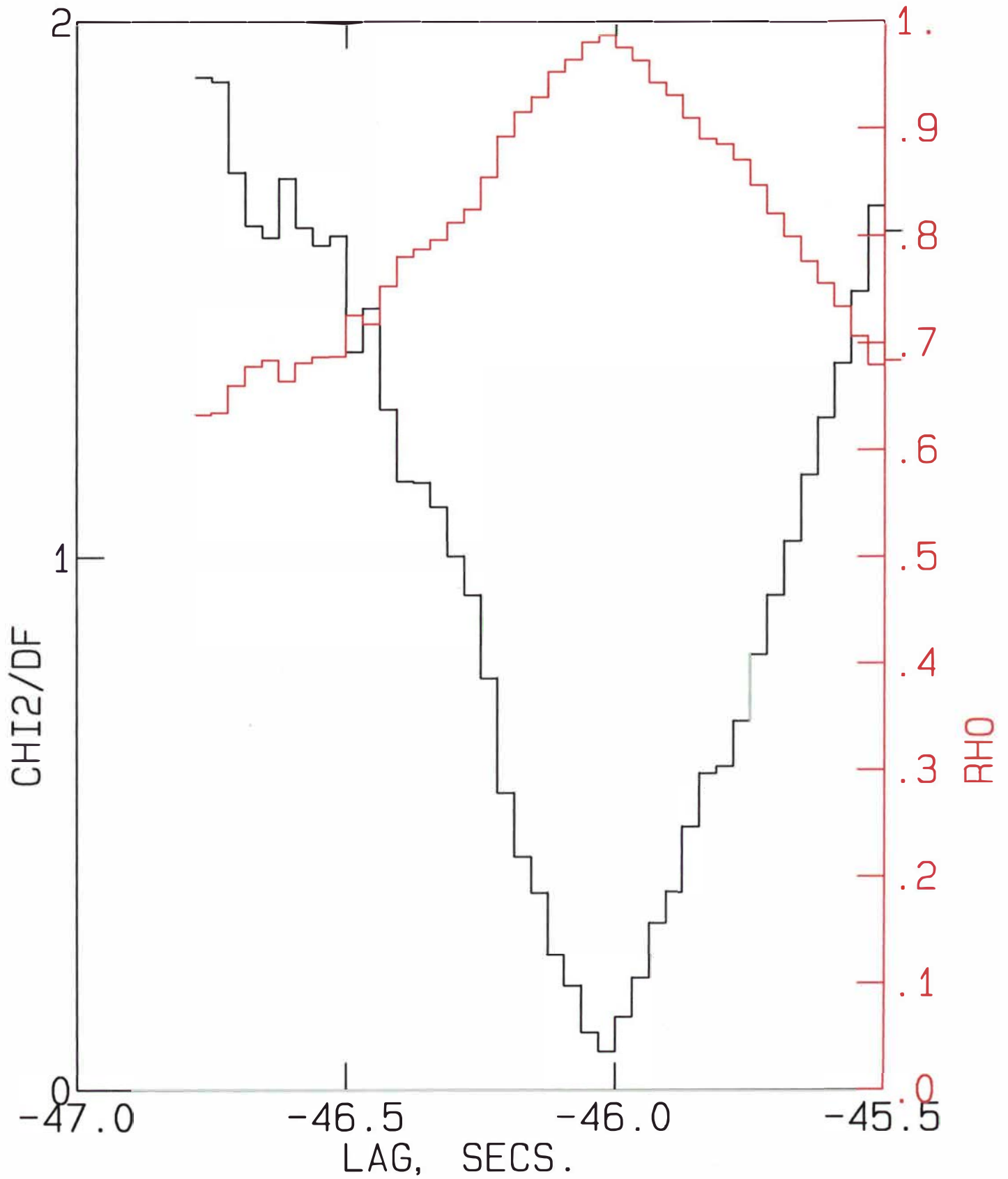
CORRELATION

5/ 7/99

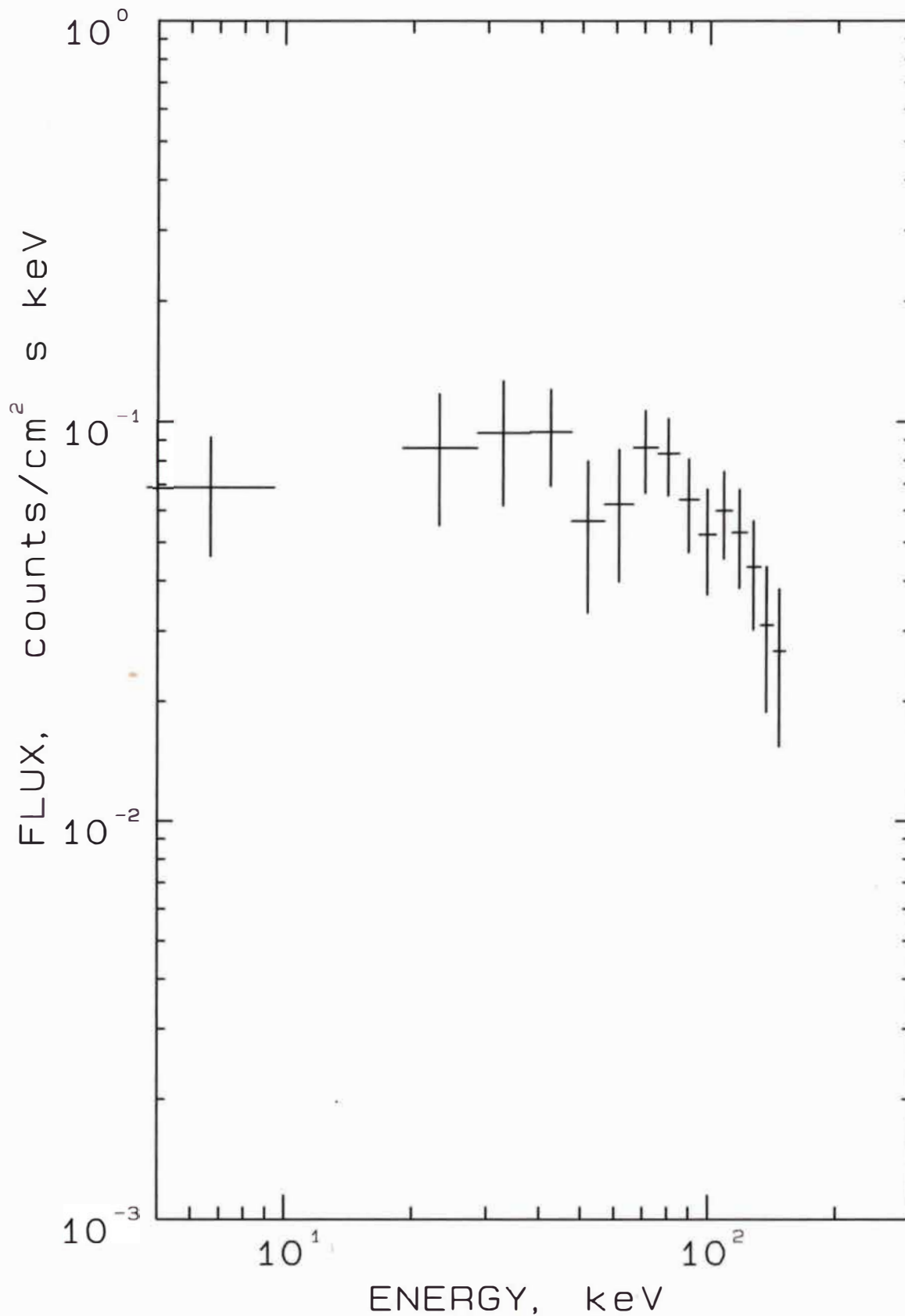
57006.332

14/ 6/ 2





SPECTRUM INTEGRATED OVER 8.1 SECONDS, INTERVALS 2 TO 10



ULYSSES 05/07/99 57059.739 BURST SPECTRAL COUNT RATES

4- 18 keV

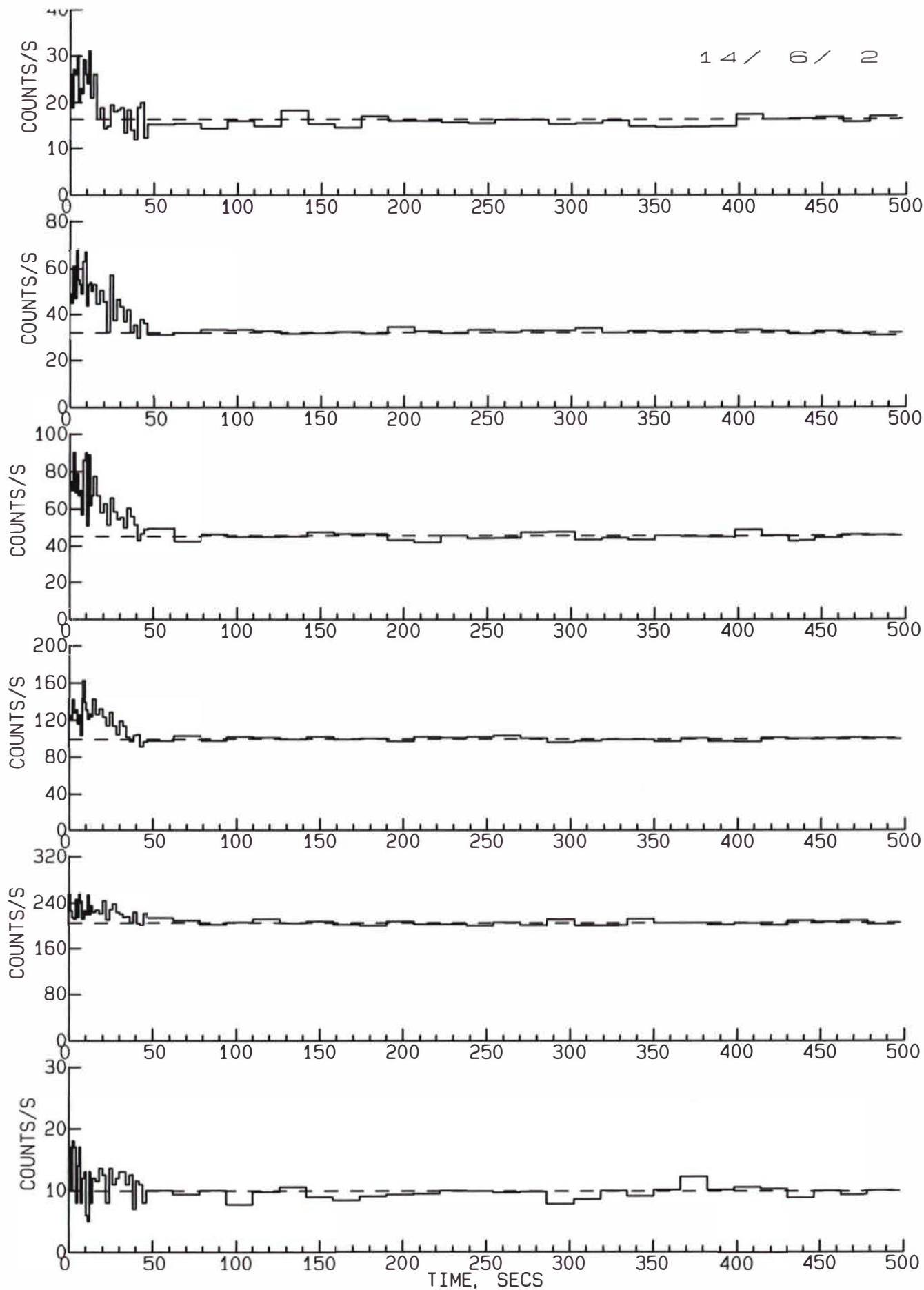
18- 47 keV

47- 75 keV

75-103 keV

103-132 keV

132-150 keV

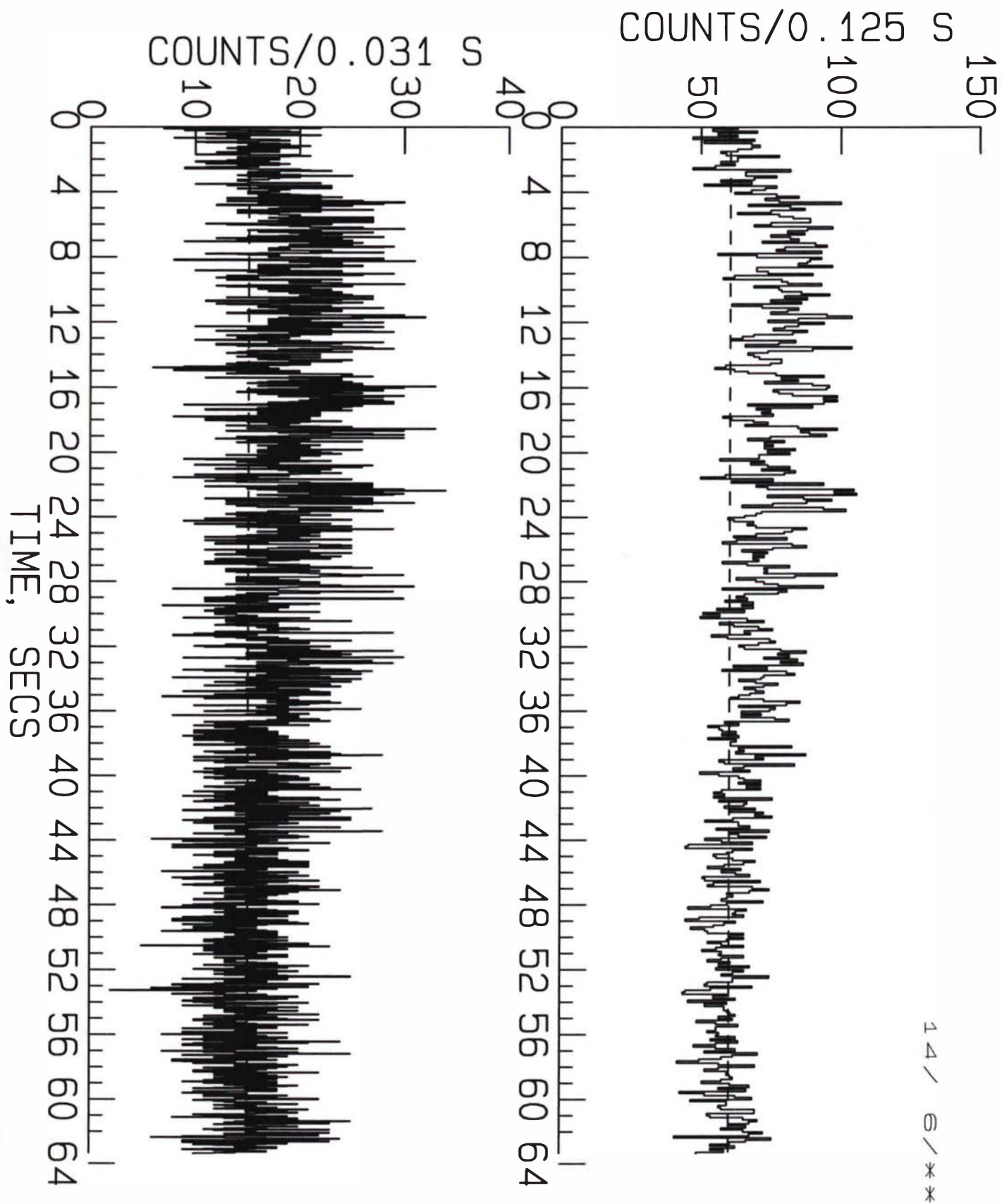


ULYSSES

05/07/99

Ttrig=57059.748

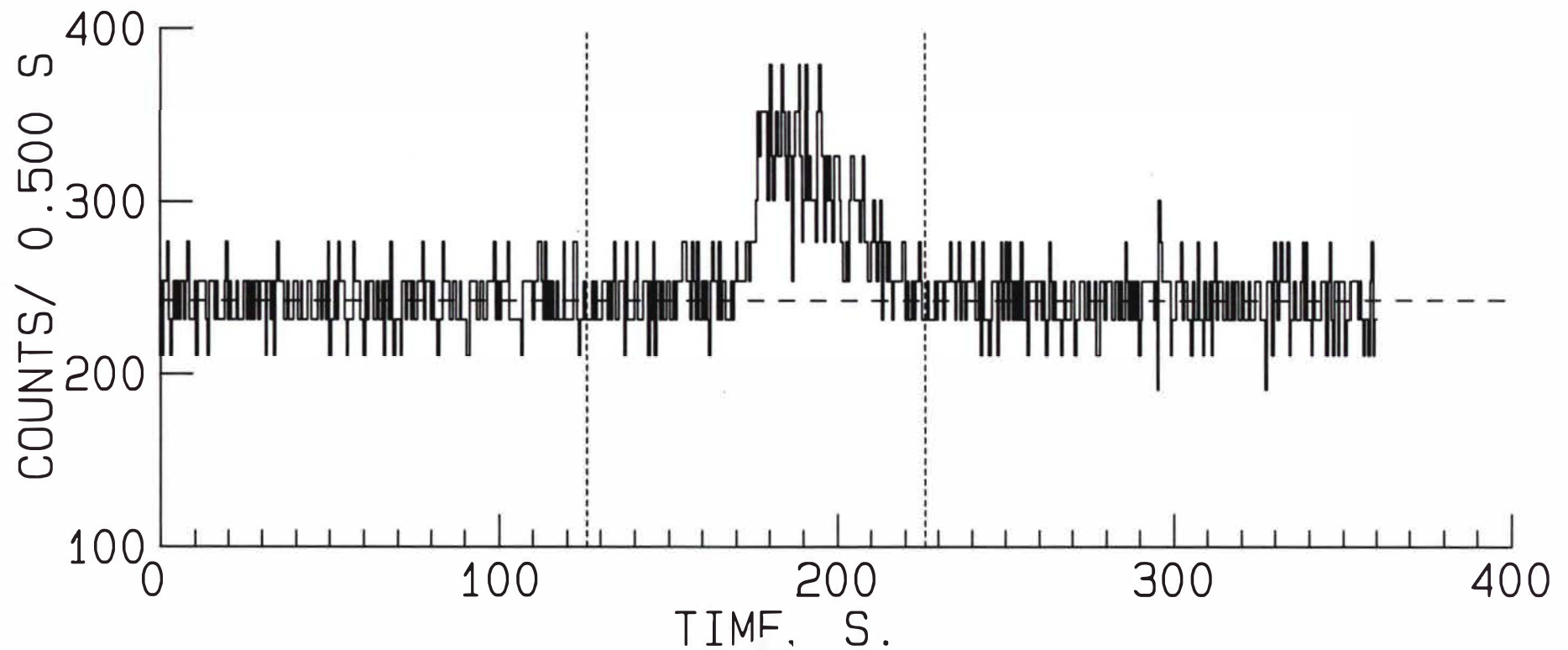
22- 151 keV

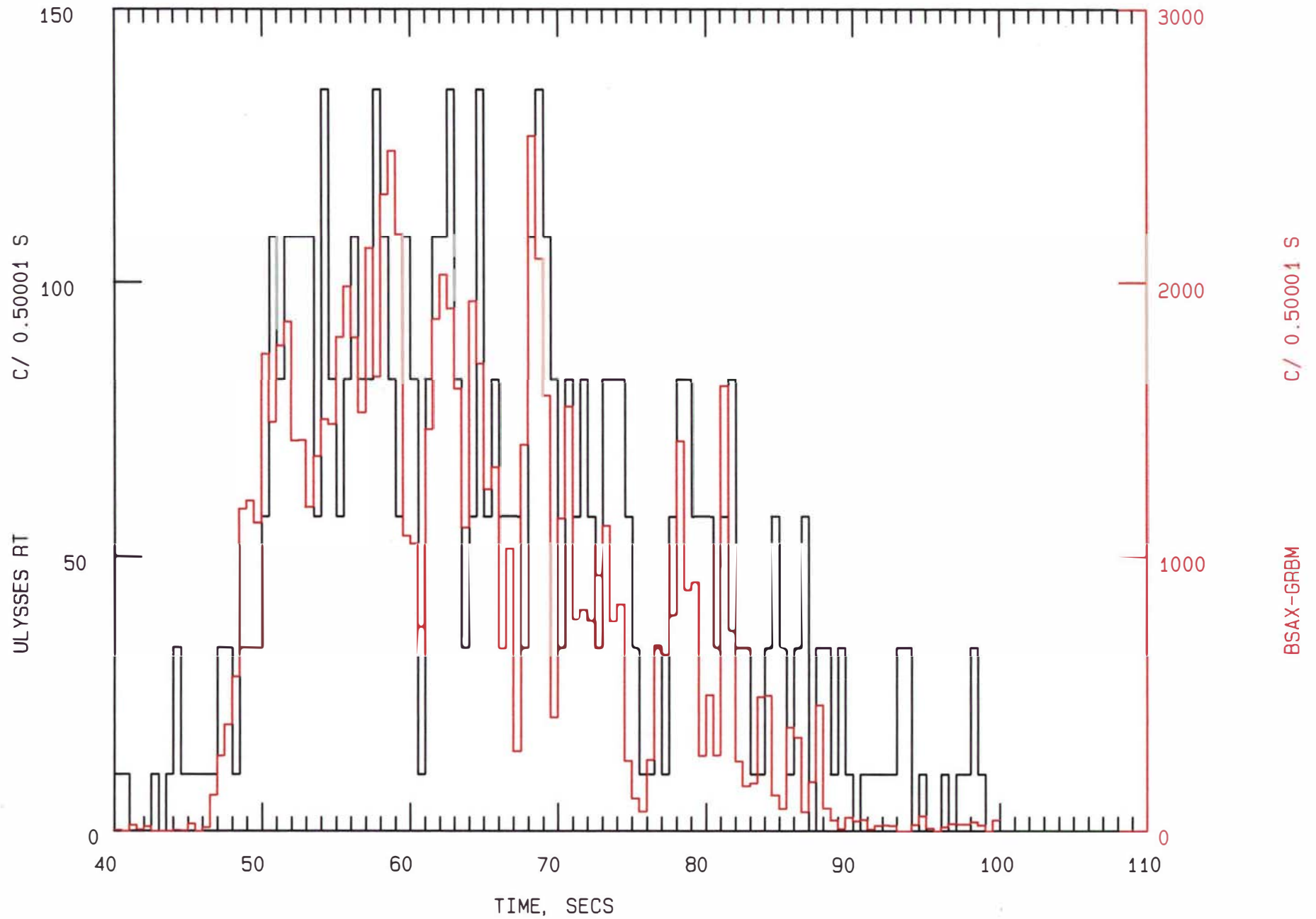


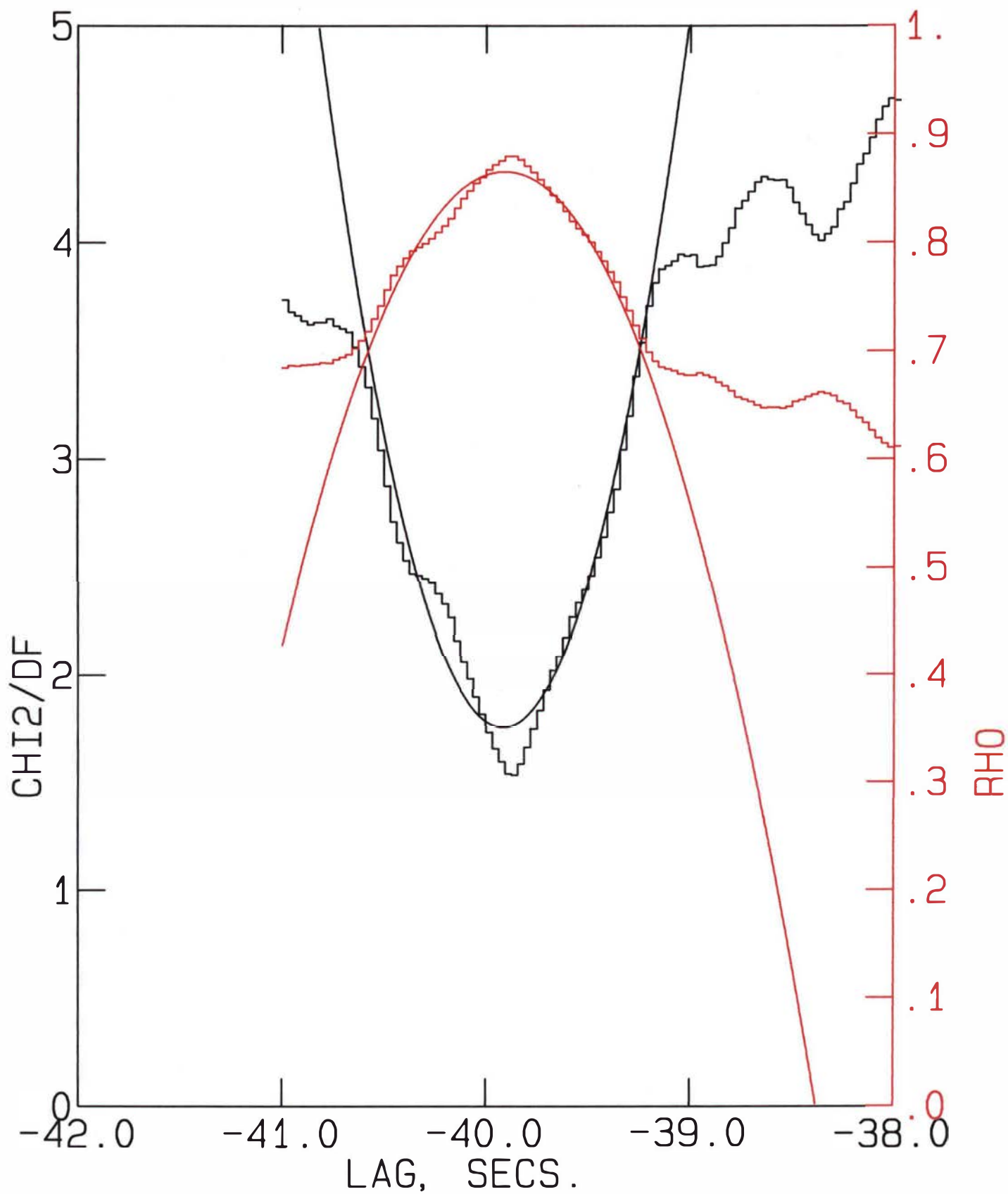
ULYSSES RT
5/ 7/99 56880.332 s
22- 151 keV

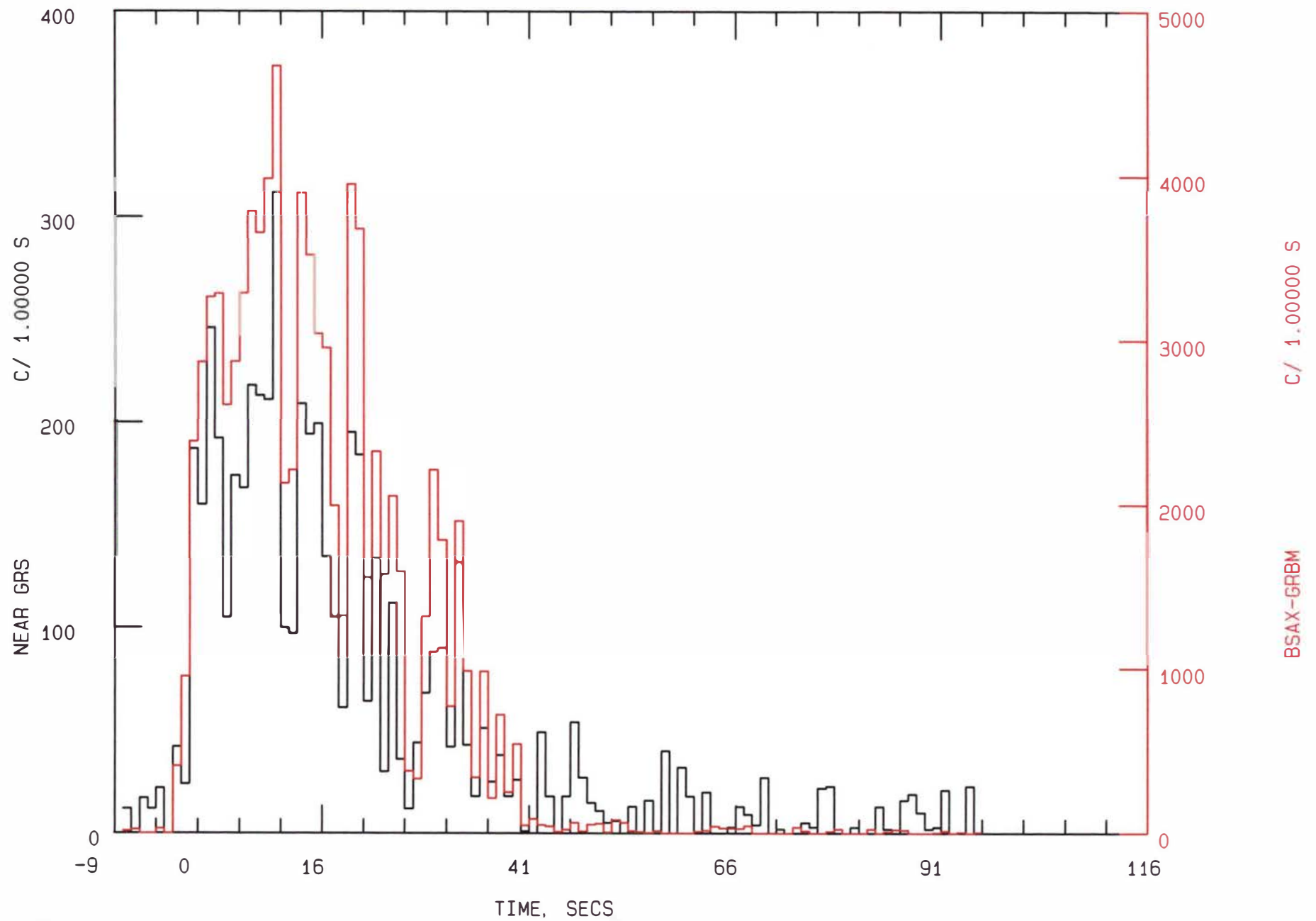
14 / 6 / 2

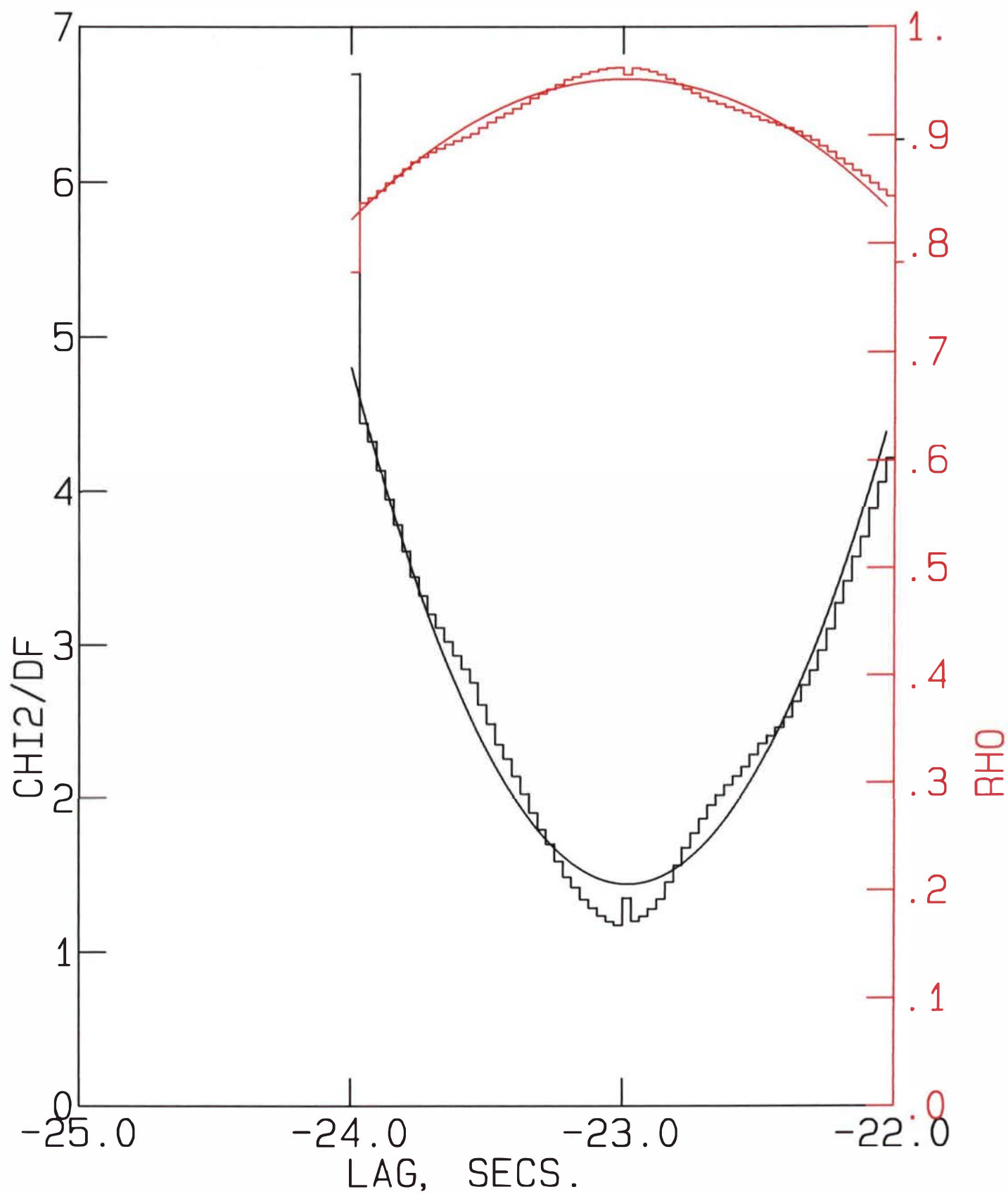
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS









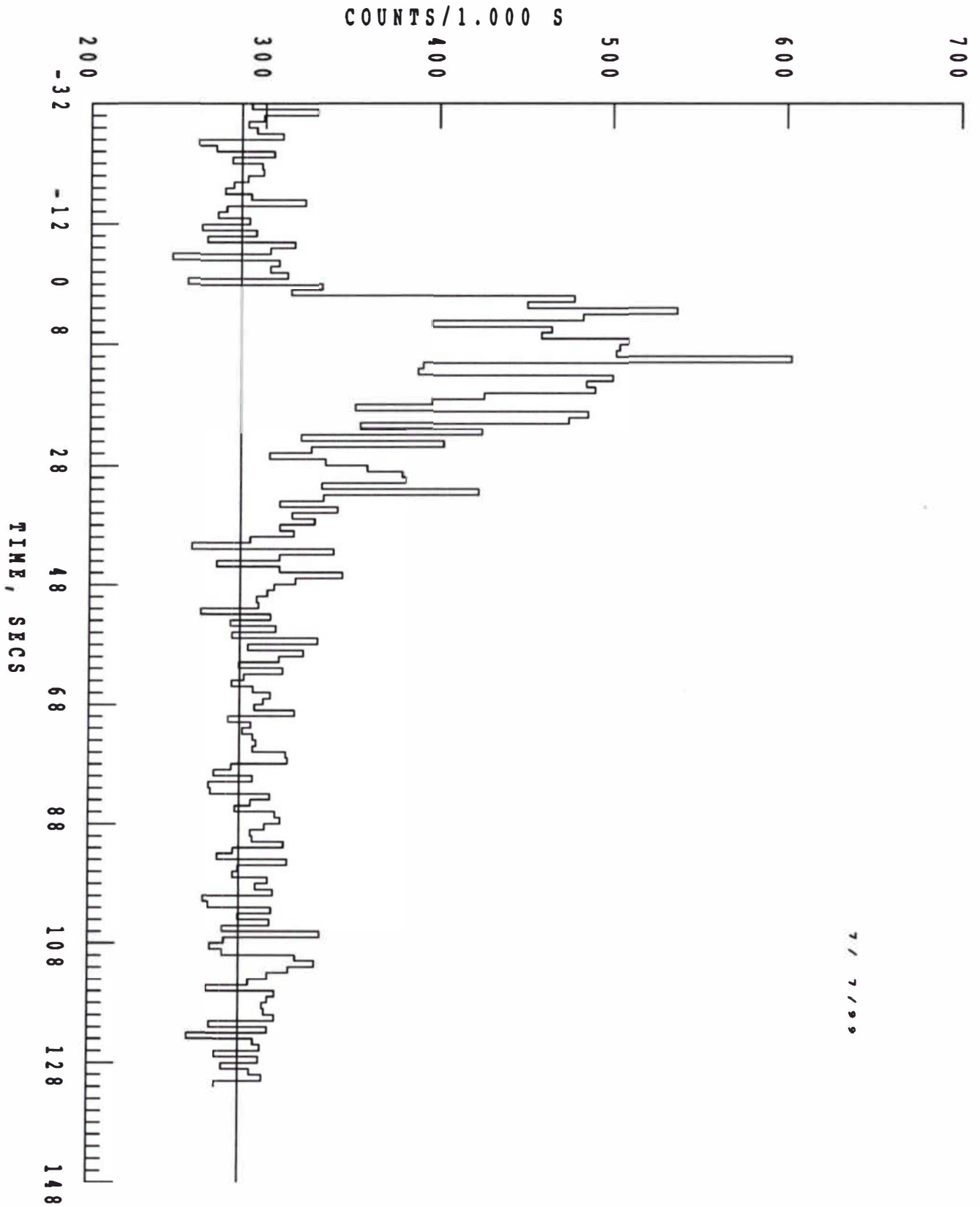


NEAR

05/07/99

57886.554

100-1000 keV



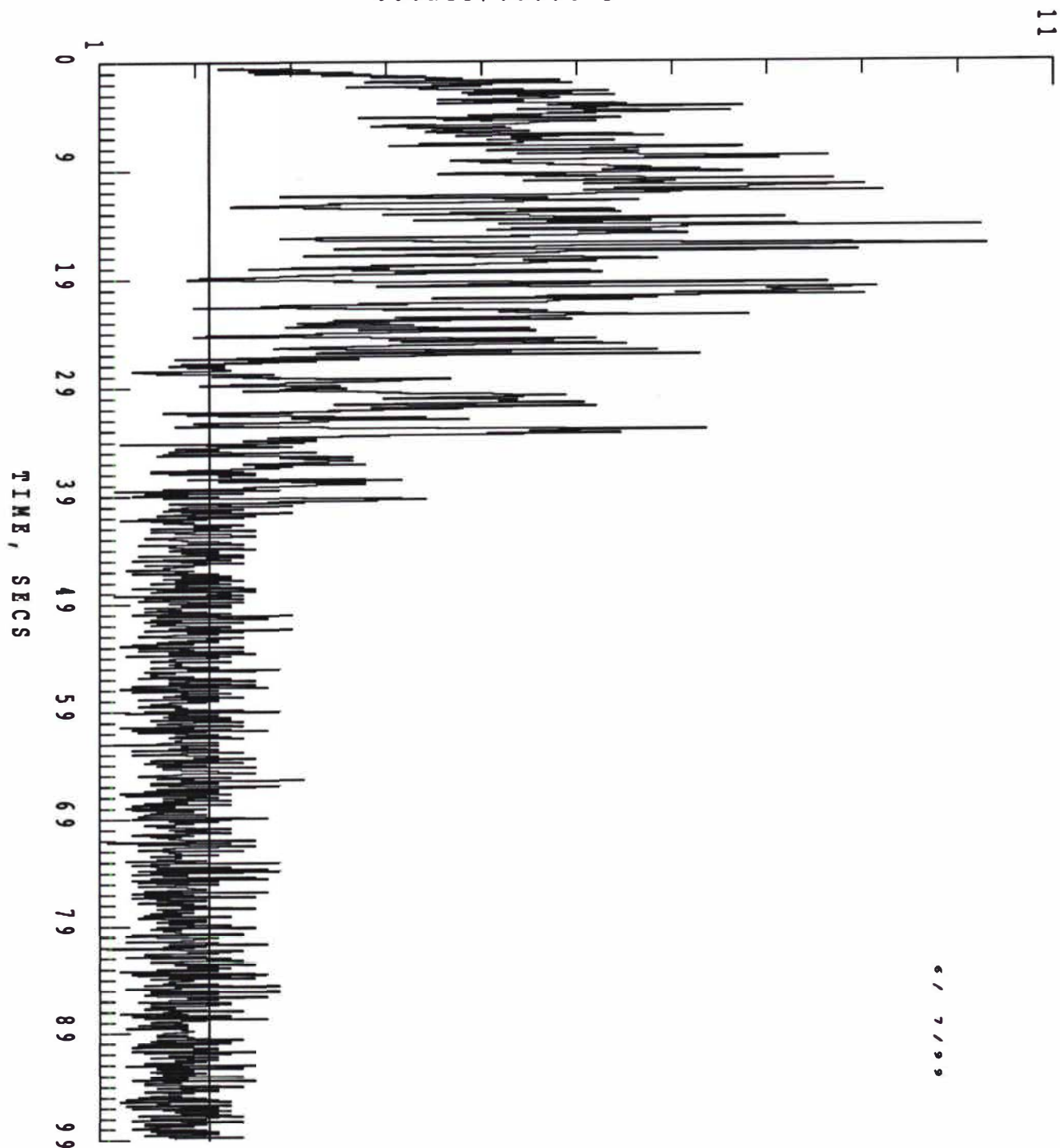
KONUS

05/07/99

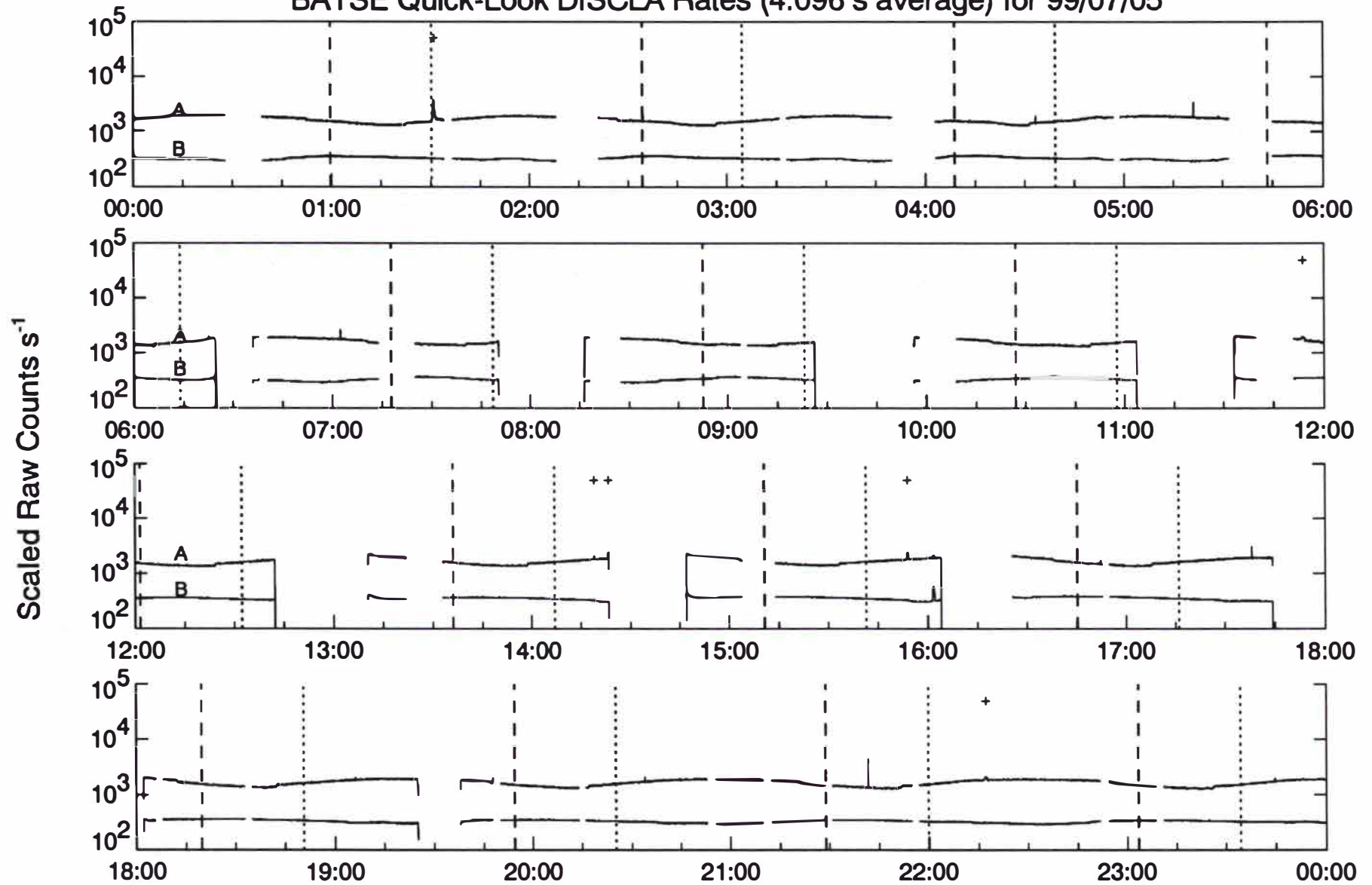
57686.864

50- 200 keV

COUNTS/0.064 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/05

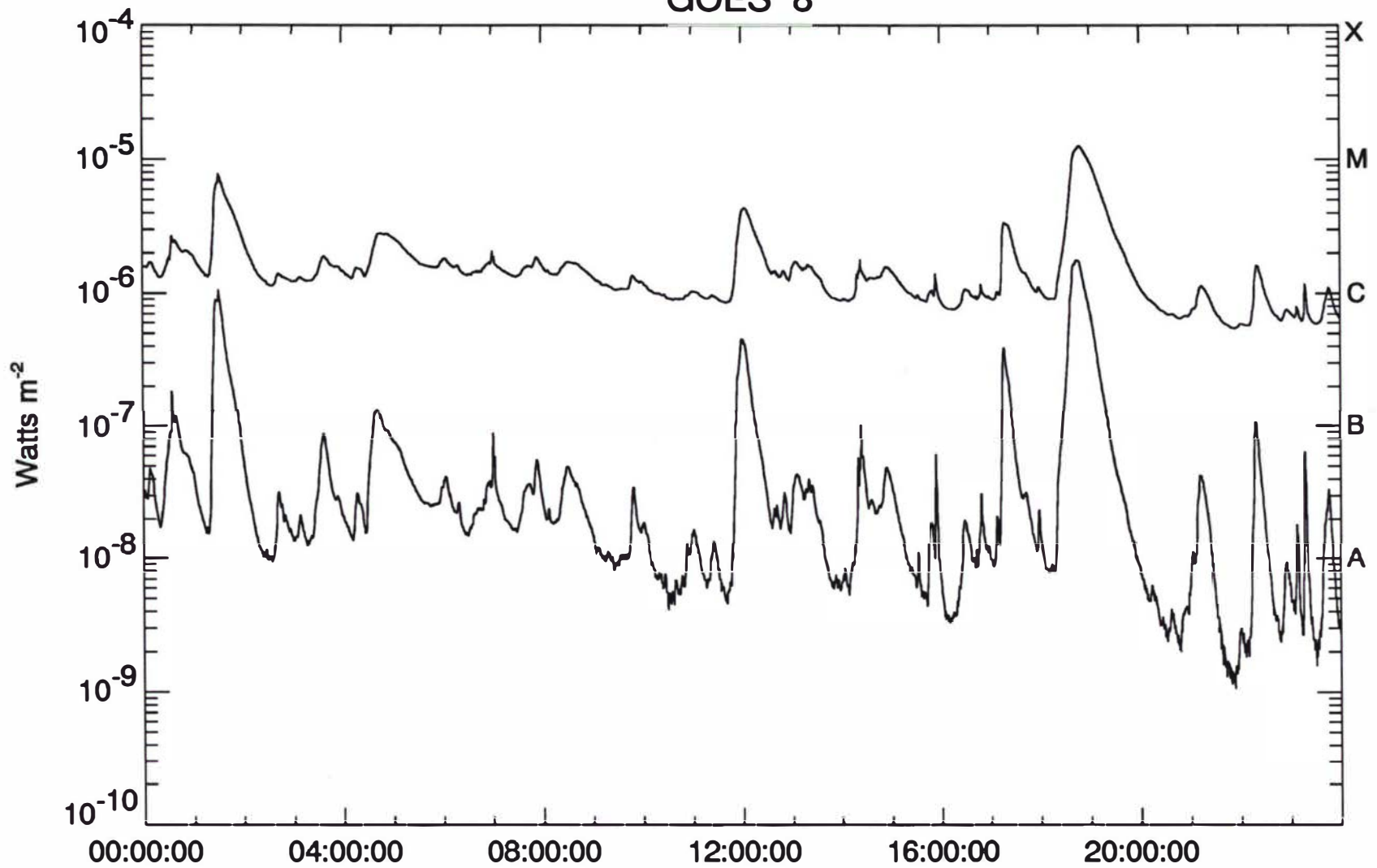


Current Time: 99/07/09, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

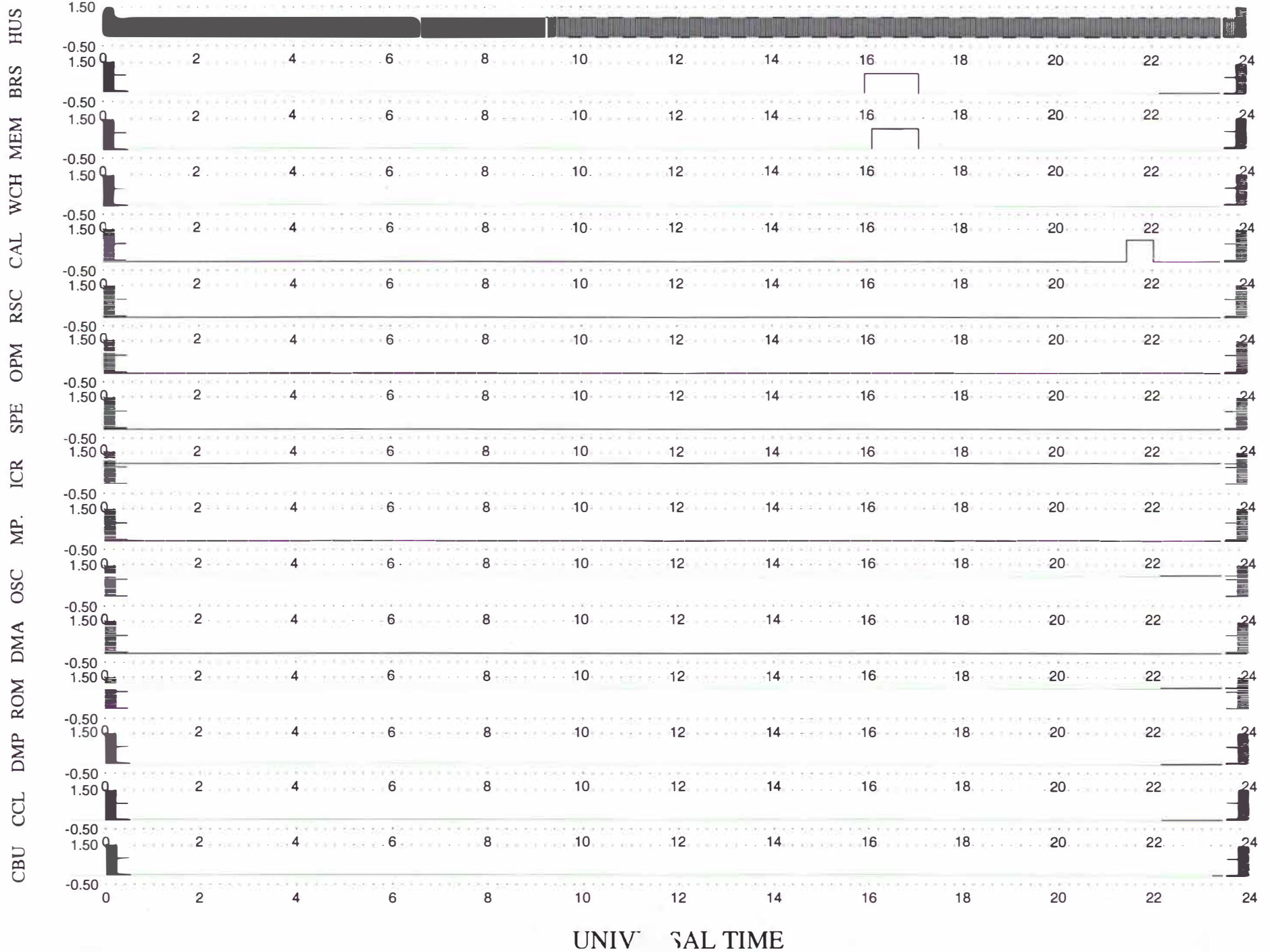


Data Start: 99/07/05, 0000:00

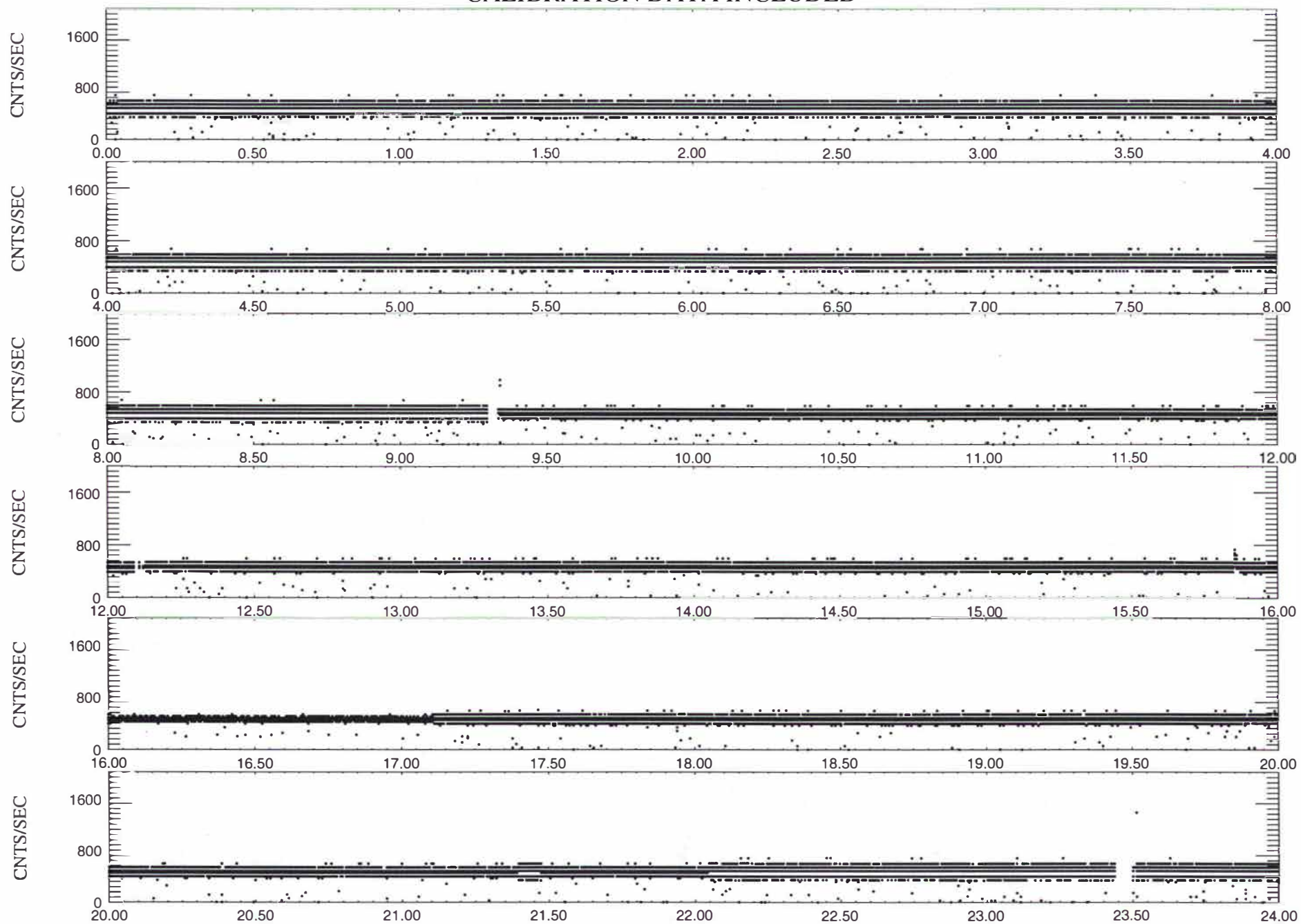
Plot created: 99/07/09, 1011

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

BURST NUMBER 3

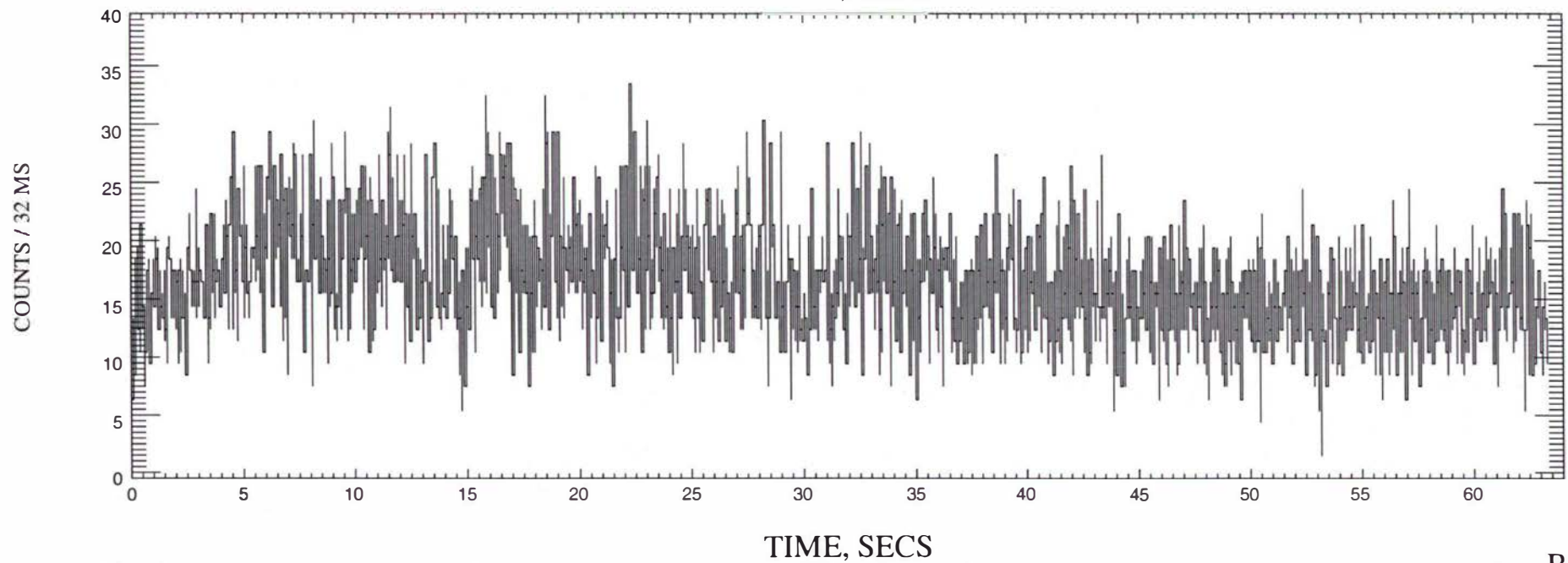
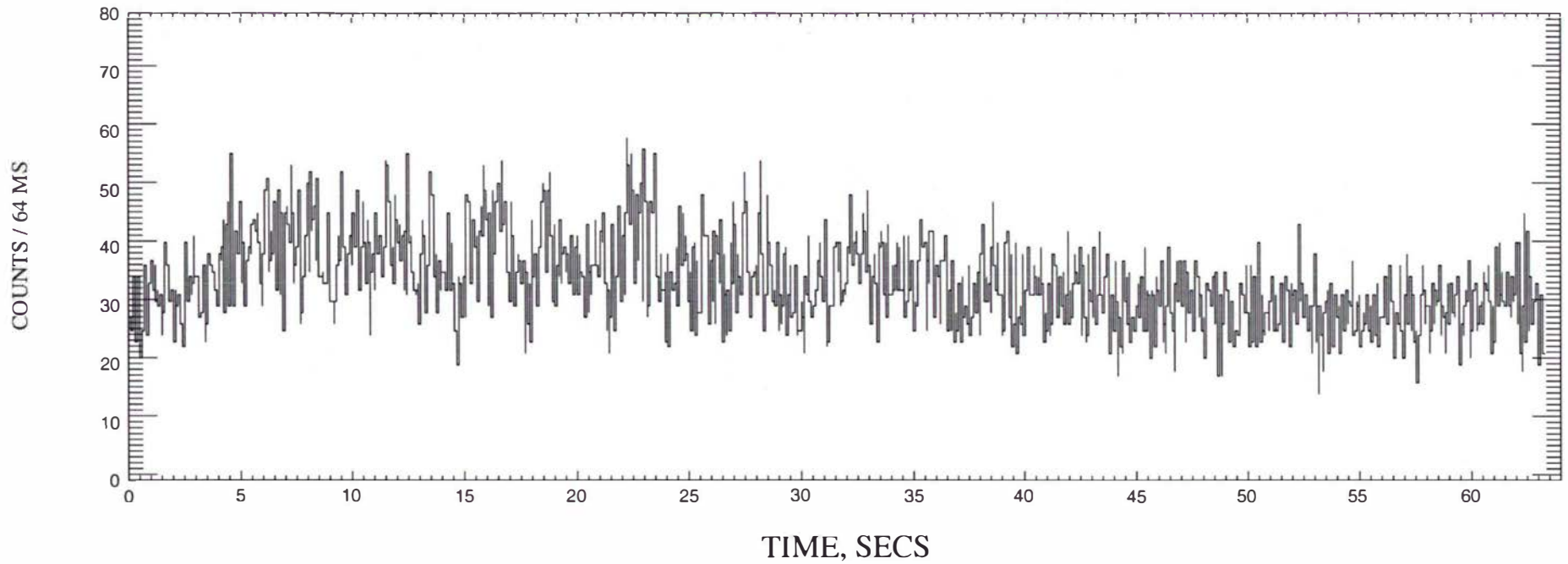


CALIBRATION DATA INCLUDED

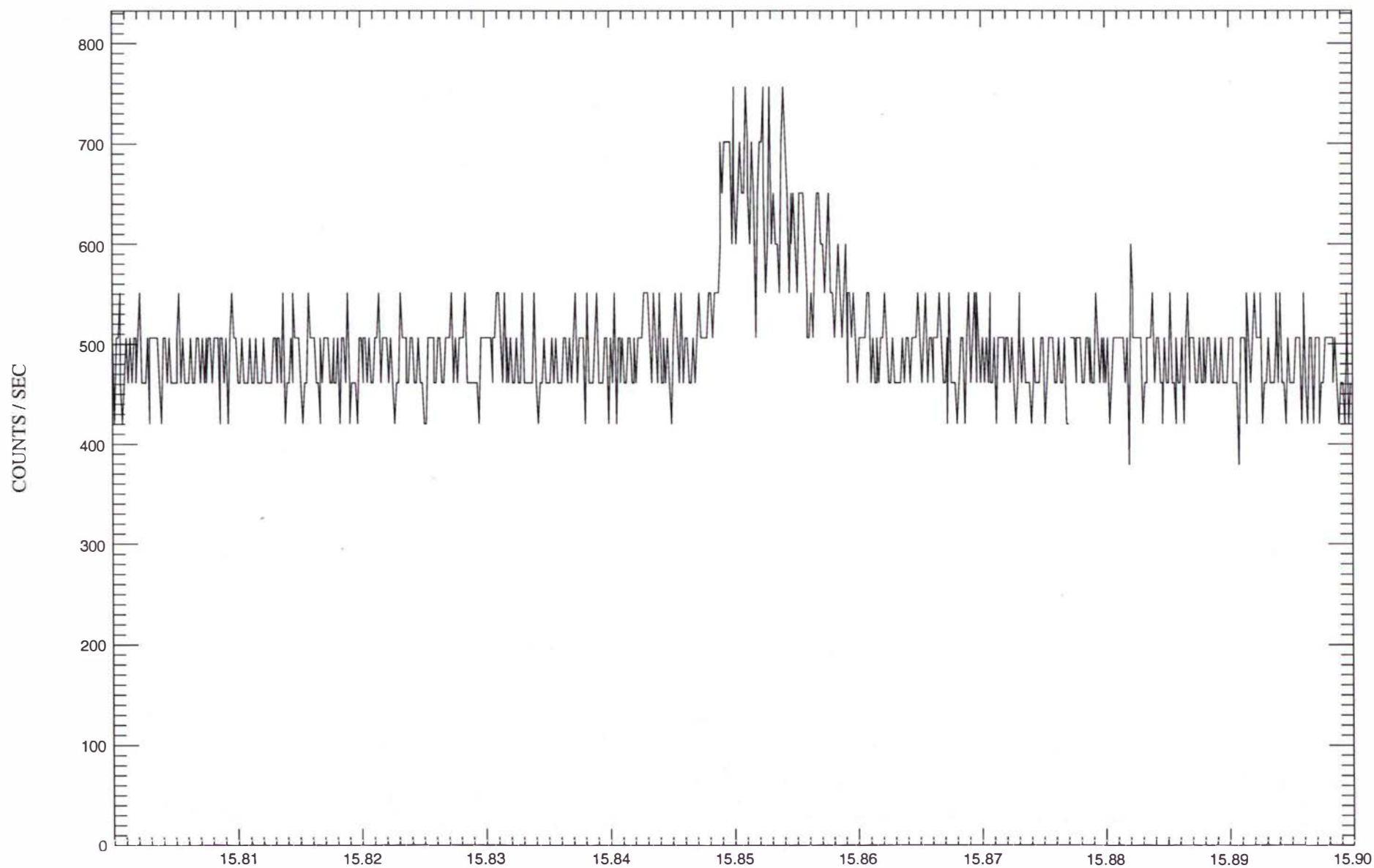


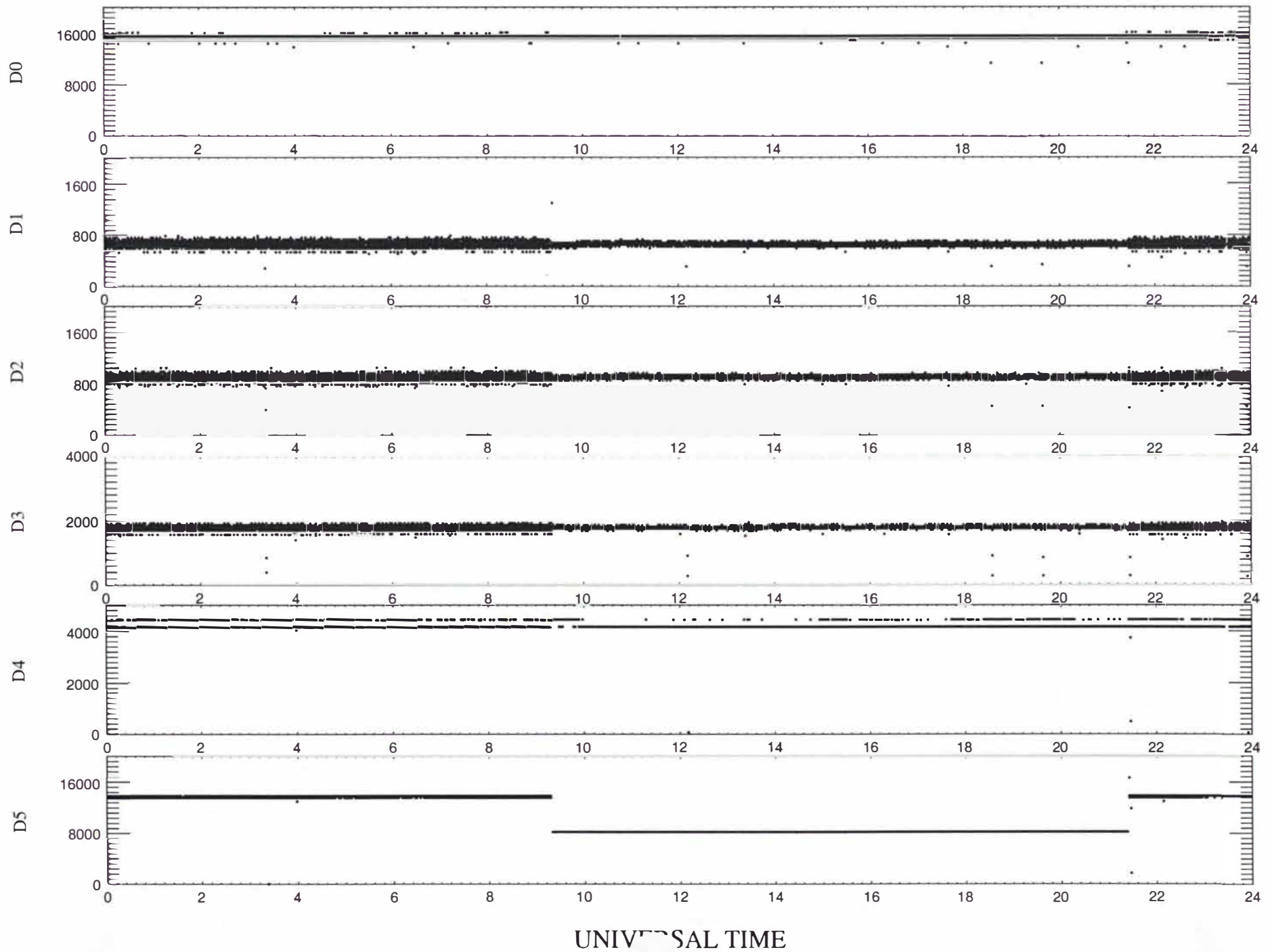
UNIVERSAL TIME

Burst Counter 3 at UT=15.849927389357 h=57059.739 s 15:50:59.739



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Jul 13 11:05 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 13:10:50 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7634

BATSEARCH PROGRAM

BATSE BURST # 7634
EVENT OF 1999 JUL 6 DAY OF YEAR=187
EVENT CROSSING TIME AT BATSE : 52043. S. OR 14:27:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 315.000 -15.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 7/ 99 IS:
RA= 147.113 DEC= -7.898 DIST= 5.362 AU
BATSE-ULYSSES DISTANCE = 802211196. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2408.02 SECS.
CROSSING TIME AT ULYSSES IS 54451. S. OR 15:07:31 +/- 289.17 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 7/ 99 IS:
RA= 207.754 DEC= -12.681 DIST= 0.846 AU
MARS-BATSE DISTANCE = 126632080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 94.01 SECS.
CROSSING TIME AT MARS IS 52137. S. OR 14:28:57 +/- 72.92 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7634	990706	11365	52043	2200	315	-15	3

BATSE BURST TRIGGER

NO.: 7634

TIME: TJD=1365 SECONDS=52043

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=72.2 AZIMUTH=184.2 ERROR=8.3 DEGREES

COMMENTS:

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

BATSE BURST# 7634

ULYSSES RT

13 / 7 / 99

6 / 7 / 99 54144.180 s

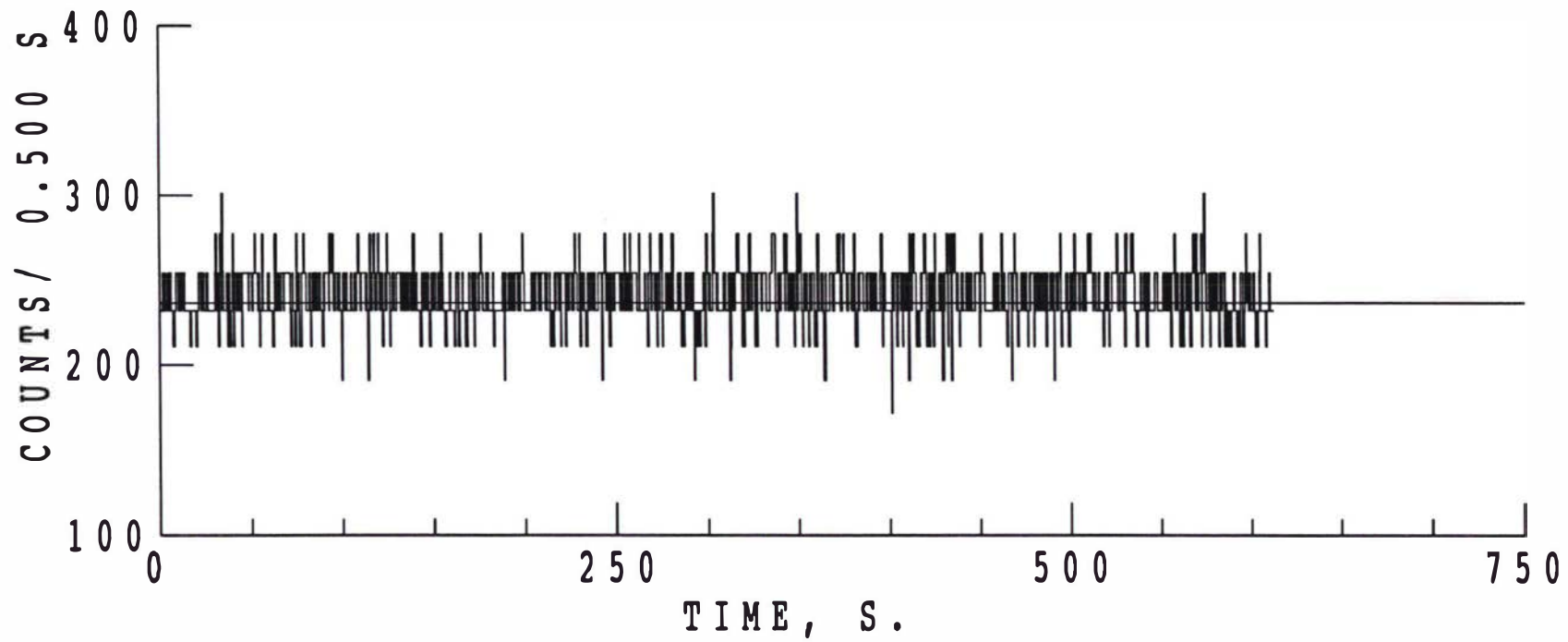
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Jul 13 11:16 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 13:21:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7635

BATSEARCH PROGRAM

BATSE BURST # 7635
EVENT OF 1999 JUL 6 DAY OF YEAR=187
EVENT CROSSING TIME AT BATSE : 73893. S. OR 20:31:33.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 279.000 -54.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 7/ 99 IS:
RA= 147.141 DEC= -7.911 DIST= 5.365 AU
BATSE-ULYSSES DISTANCE = 802534129. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 741.89 SECS.
CROSSING TIME AT ULYSSES IS 74635. S. OR 20:43:54 +/- 507.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 7/ 99 IS:
RA= 207.754 DEC= -12.681 DIST= 0.846 AU
MARS-BATSE DISTANCE = 126632080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -152.89 SECS.
CROSSING TIME AT MARS IS 73740. S. OR 20:29:00 +/- 66.04 SECONDS

BATSE BURST TRIGGER

NO.: 7635

TIME: TJD=1365 SECONDS=73893

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.4 AZIMUTH=152.8 ERROR=2.3 DEGREES

COMMENTS:

GRB. MULTIPLE PULSE, DUR. 130 S, STARTS AT T-43 S, MAX. AT T+17 S. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7635	990706	11365	73893	4500	279	-54	130

BATSE BURST# 7635

ULYSSES RT

13 / 7 / 99

6 / 7 / 99 74124.383 s

0.500 S INTERVALS REGROUPED BY 2

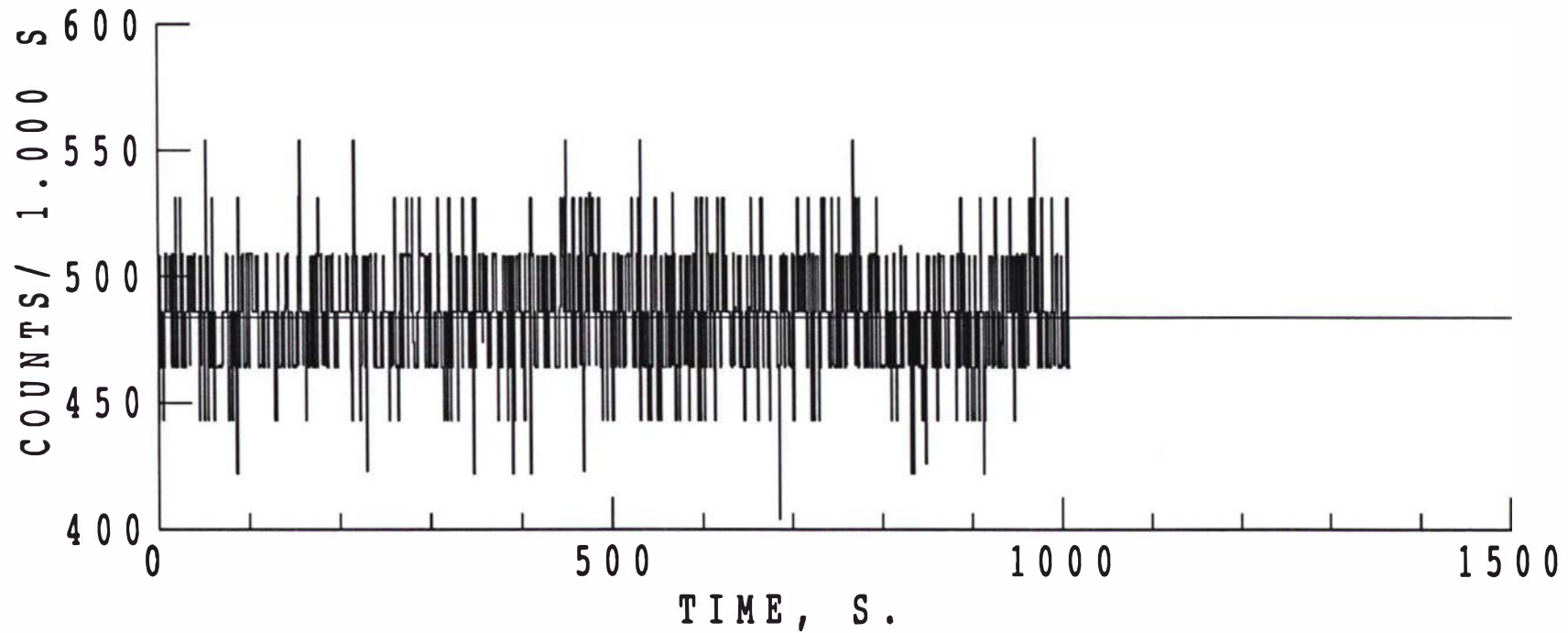
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

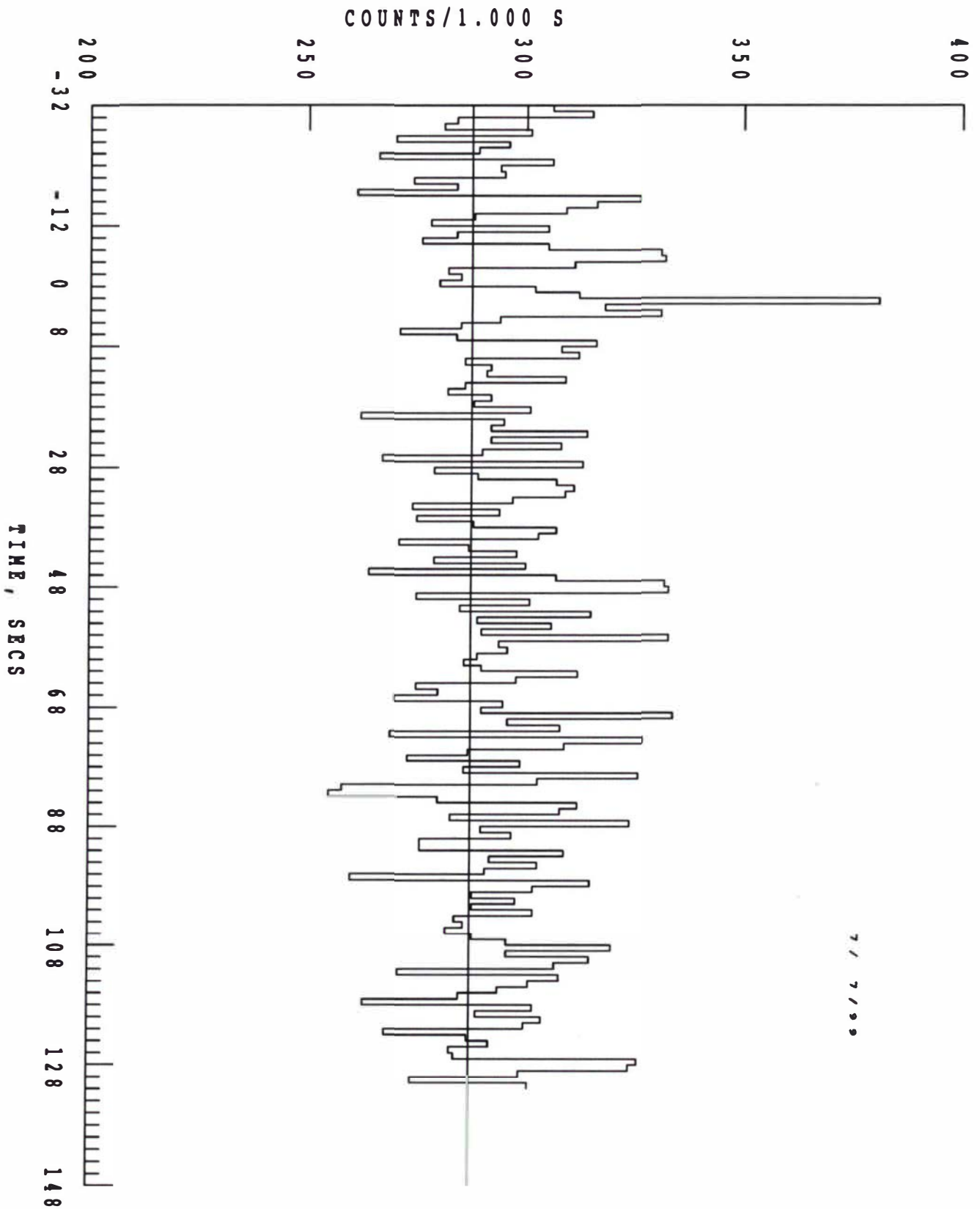


NEAR

06/07/99

85875.519

100-1000 keV



KNEAR GRS 19990706 85875

ULYSSES RT

7 / 7 / 99

6 / 7 / 99 83196.227 s

0.250 S INTERVALS REGROUPED BY 14

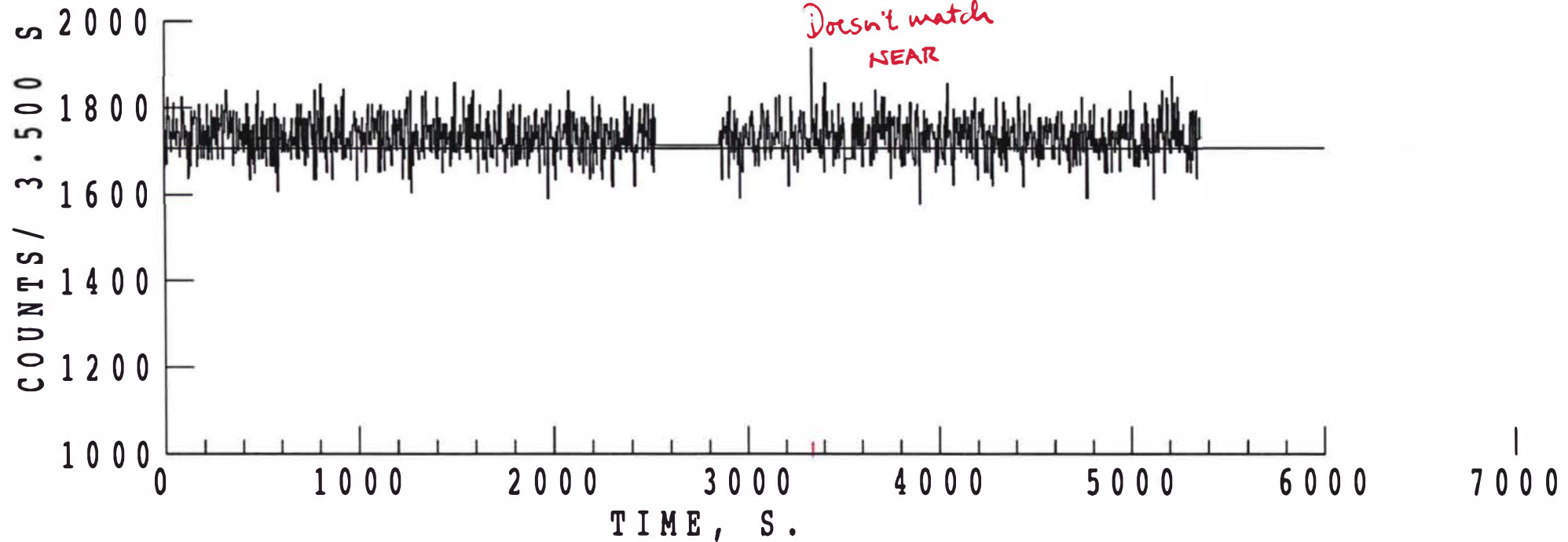
0 - 0 keV

N= 10 M= 10

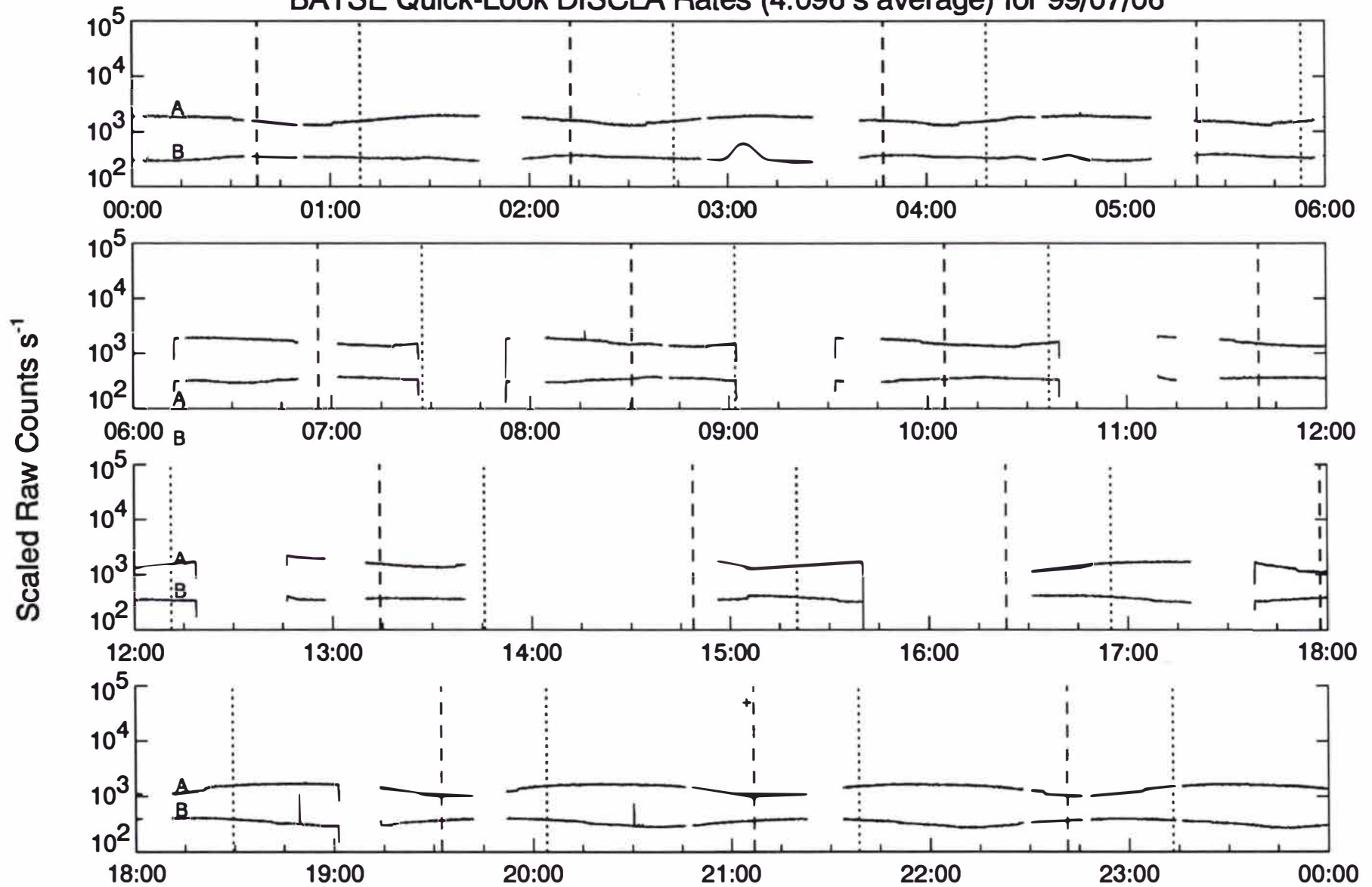
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/06



Current Time: 99/07/10, 1012 EDT

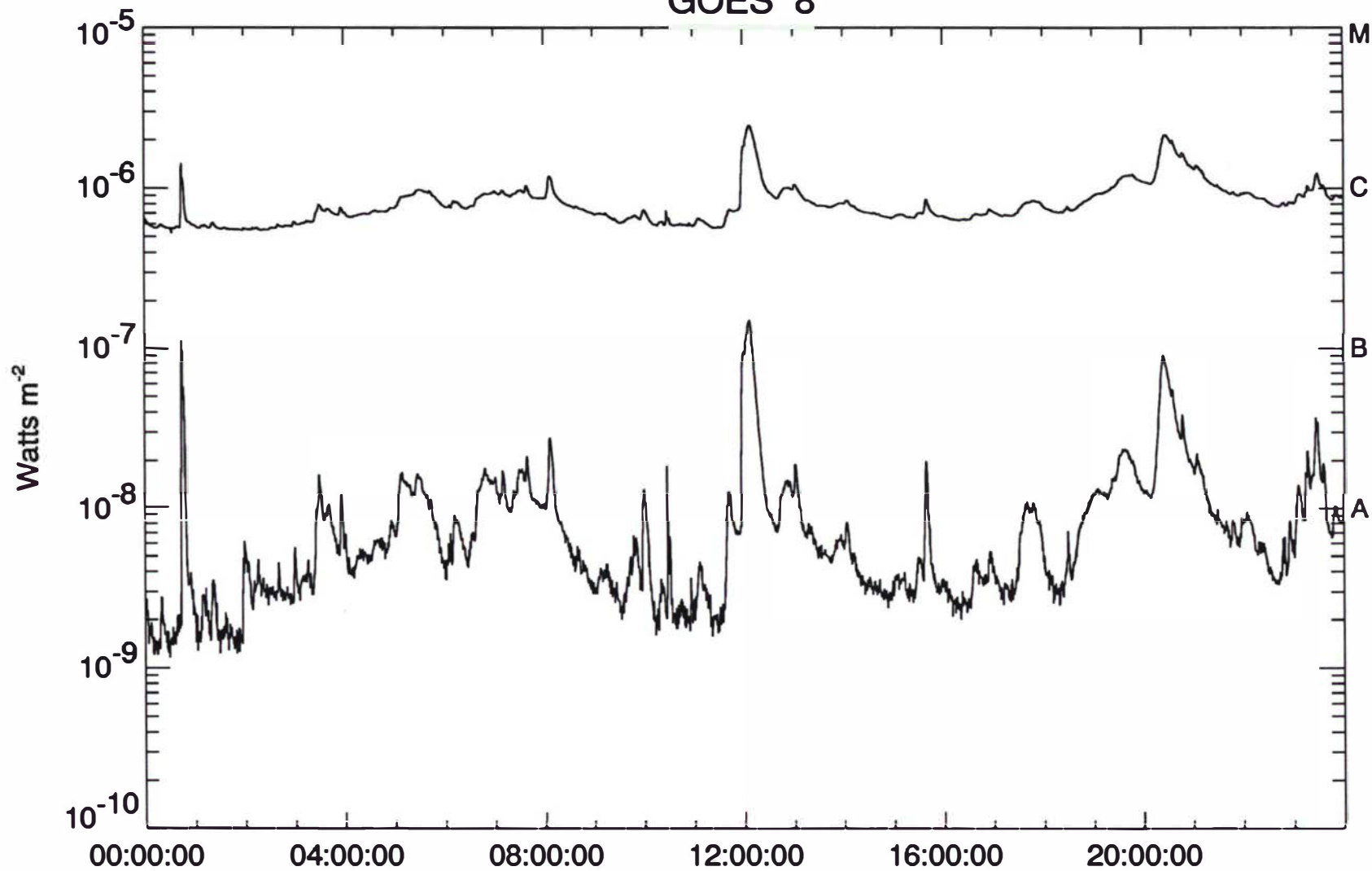
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

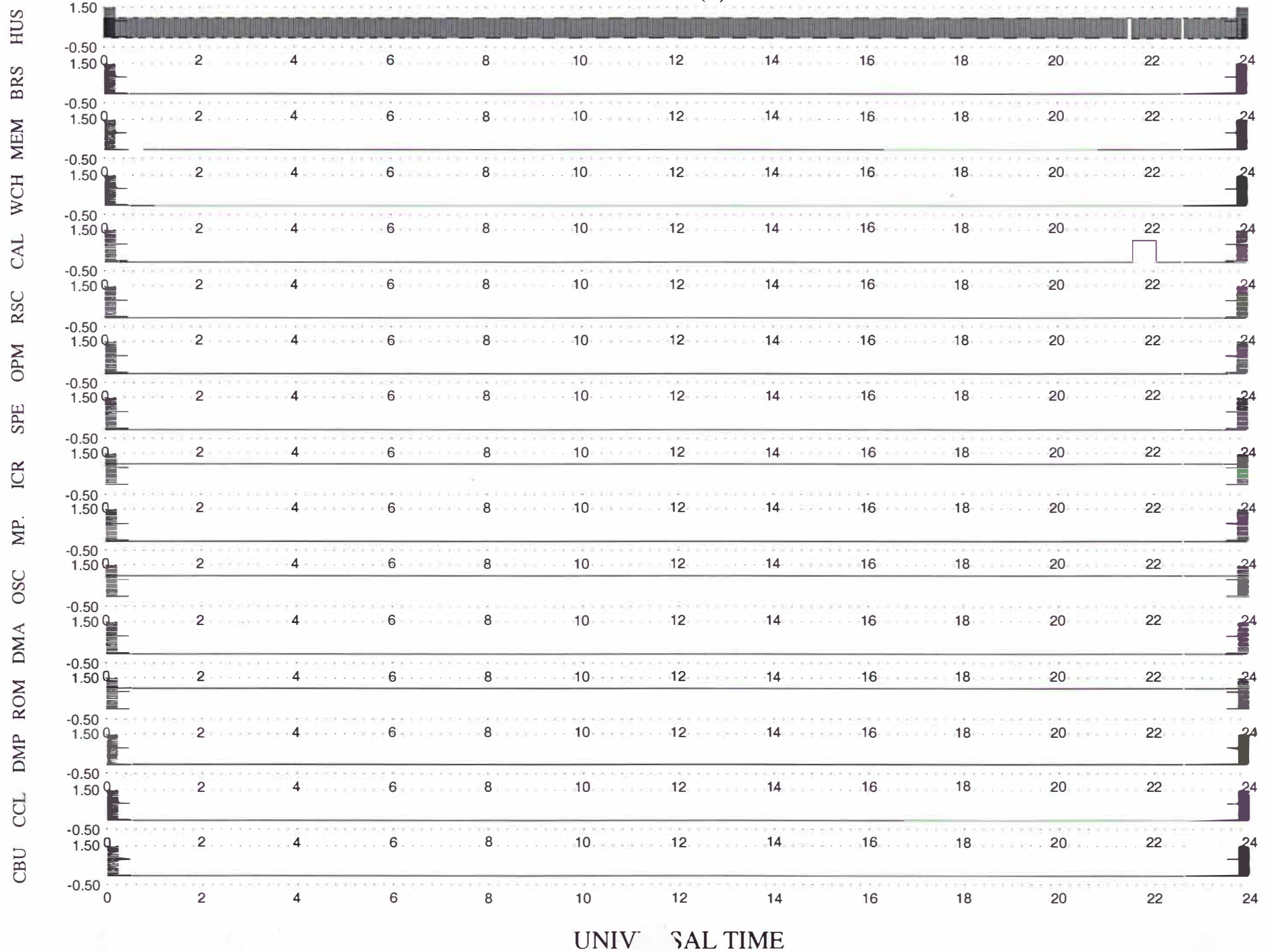


Data Start: 99/07/06, 0000:00

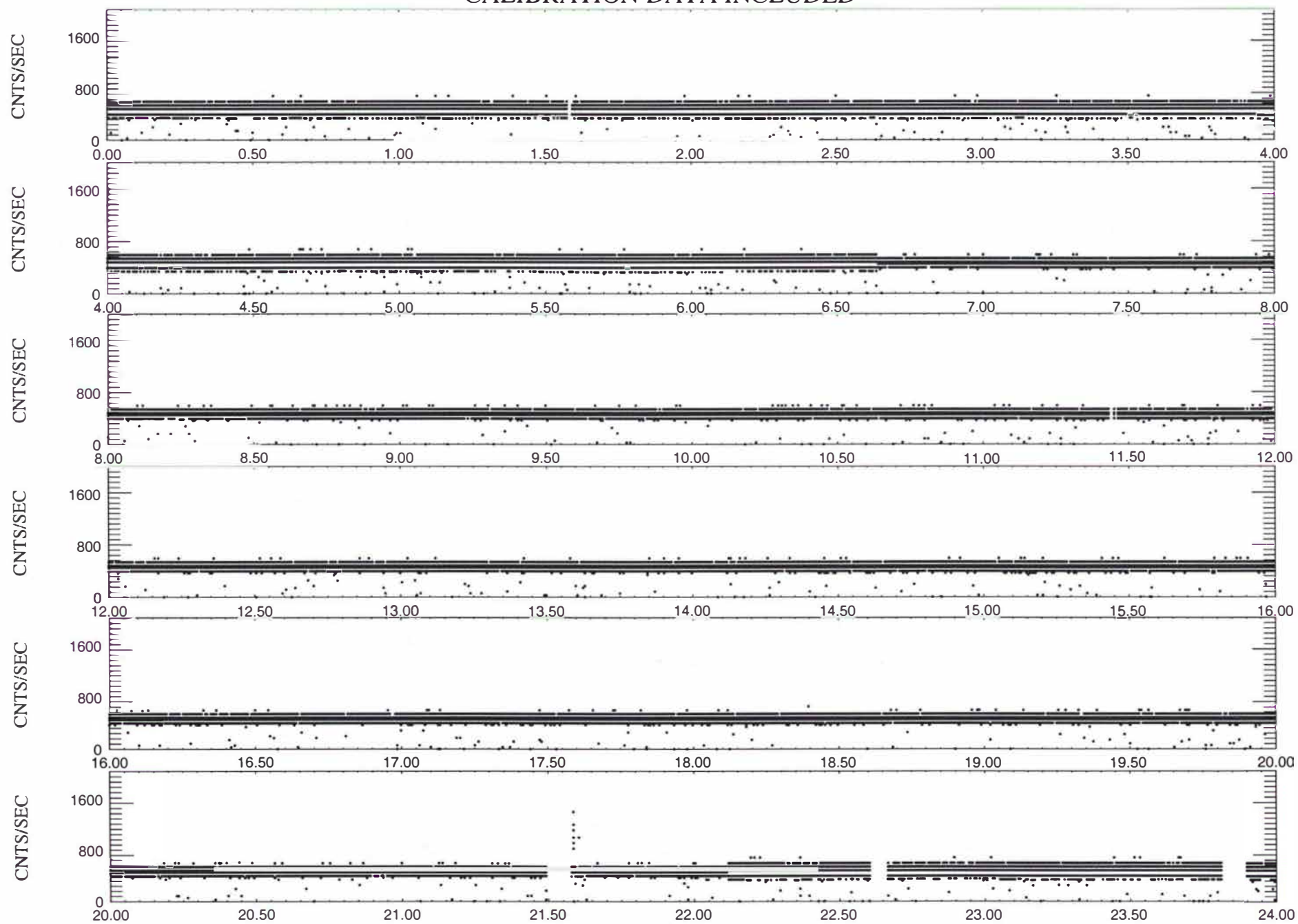
Plot created: 99/07/10, 1011

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

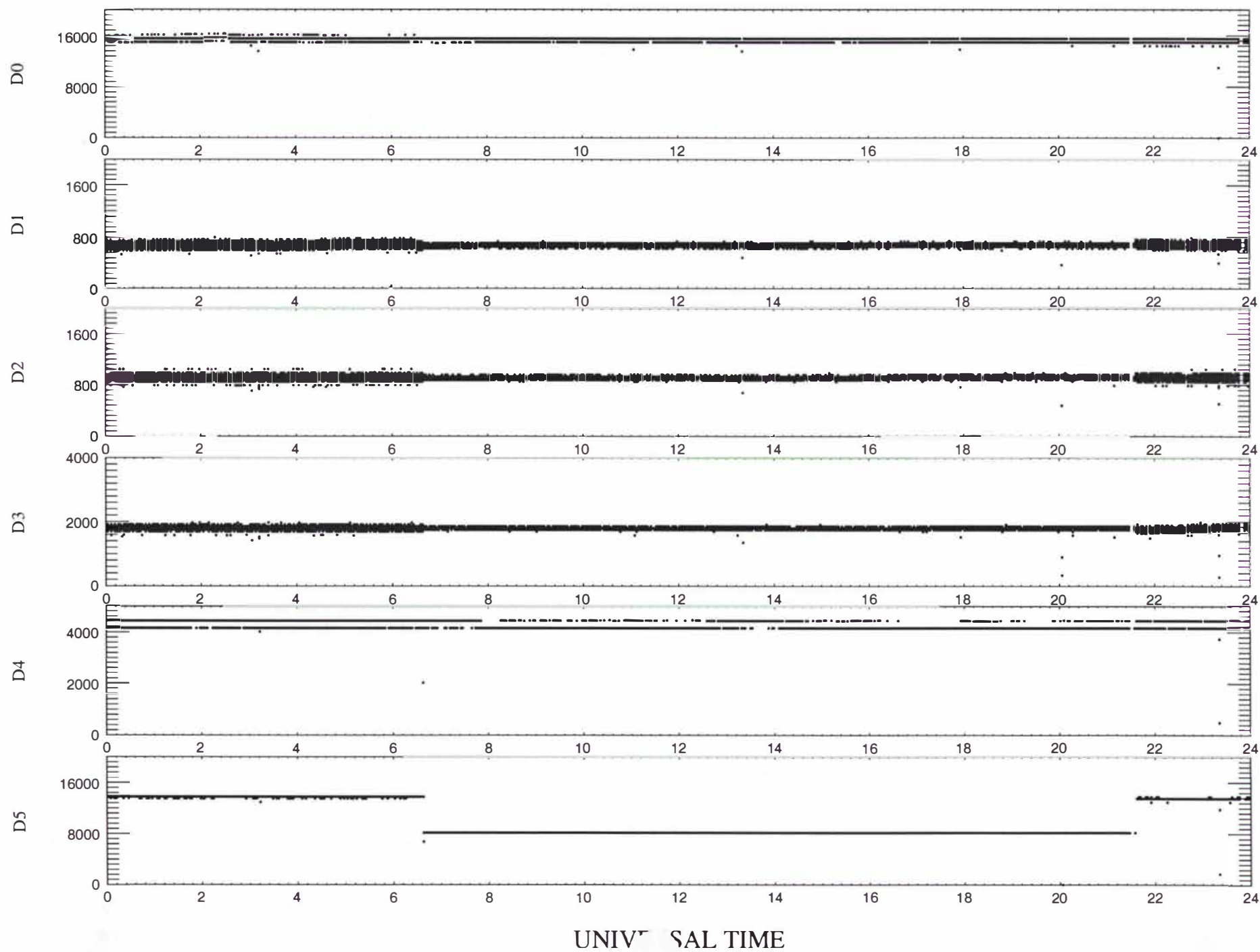
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From khurley@sunspot.ssl.berkeley.edu Tue Jul 13 13:11 PDT 1999
Date: Tue, 13 Jul 1999 13:24:41 -0700
From: khurley@ssl.berkeley.edu (Kevin Hurley)
>: henze@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: BATSE 7636

Dear Bill,

I have two conflicting messages for this burst, for two different times and two different event types:

BATSE BURST TRIGGER

NO.: 7636

TIME: TJD=1366 SECONDS=52178

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=123.5 AZIMUTH=180.8 ERROR=8.541 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 6 S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE BURST TRIGGER

>: 7636

TIME: TJD=1366 SECONDS=22643

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=121.1 AZIMUTH=359.5 ERROR=1.58 DEGREES

COMMENTS:

GOES C1.2, OPTICAL SF. COMPLEX, DUR. APPROX. 220 S, STARTS AT APPROX. T-10 S, MAX AT APPROX. T+185 S. VISIBLE ABOVE 100 KEV. CYG X-1 RISE AT APPROX. T-200 S.

Kevin

From HENZE@fender.msfc.nasa.gov Wed Jul 21 10:55 PDT 1999
Date: Wed, 21 Jul 1999 13:00:20 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: RE: BATSE 7636

As you are probably already aware, the first message for #7636 was in error. The second message, indicating that #7636 was a solar flare at TJD/SoD = 11366/22643, is the correct one.
Bill

From PETERSON@fender.msfc.nasa.gov Thu Jul 8 11:52 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Thu, 8 Jul 1999 13:57:27 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7637

BATSEARCH PROGRAM

No

BATSE BURST # 7637
EVENT OF 1999 JUL 7 DAY OF YEAR=188
EVENT CROSSING TIME AT BATSE : 52178. S. OR 14:29:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 328.000 25.000
BATSE PEAK COUNTING RATE: 1000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 99 IS:
RA= 147.228 DEC= -7.952 DIST= 5.371 AU
BATSE-ULYSSES DISTANCE = 803483881. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 17.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2562.15 SECS.
CROSSING TIME AT ULYSSES IS 54740. S. OR 15:12:20 +/- 225.45 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 99 IS:
RA= 208.075 DEC= -12.819 DIST= 0.853 AU
MARS-BATSE DISTANCE = 127538680. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 227.44 SECS.
CROSSING TIME AT MARS IS 52405. S. OR 14:33:25 +/- 65.87 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7637	990707	11366	52178	1000	328	+25	6

BATSE BURST TRIGGER

NO.: 7637

TIME: TJD=1366 SECONDS=52178

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=123.5 AZIMUTH=180.8 ERROR=8.541 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 6 S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE BURST# 7637

ULYSSES RT

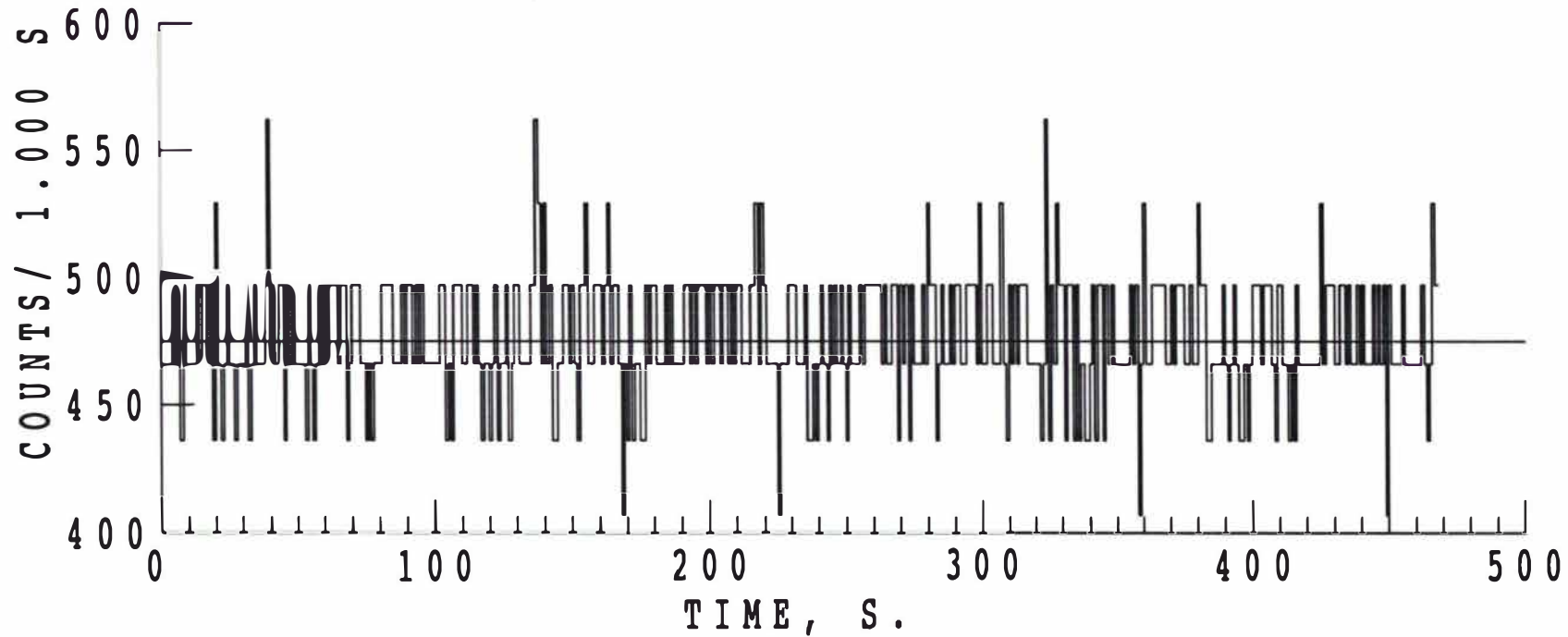
8 / 7 / 99

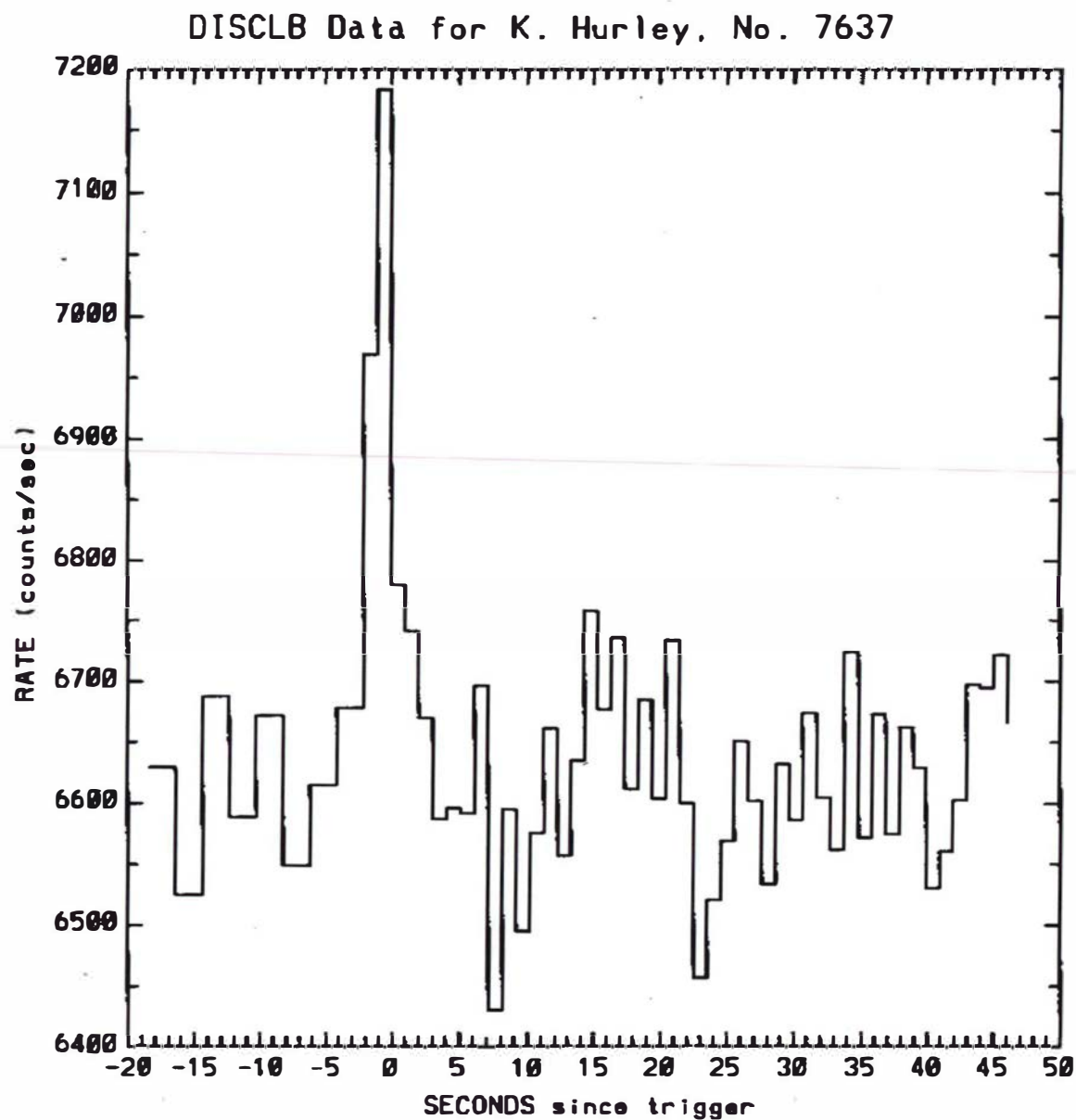
7 / 7 / 99 54504.562 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





15-JUL-1999 14:14:35

Created by MOPS 80
(Burst Display)
Version 62.26

Trigger # : 7637

Trigger Time:
11366 / 52170.681

Burst Data Type:
DISCLB

Deadtime
Corrected: N

Background Data
Type: None

Minimum Integ. Time:
1.024 second(s)

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

Discriminators:
(1 , 2)

Quality Mask:
80ISP1

BATSE time corrected 9/26

Date: June 17 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

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

☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

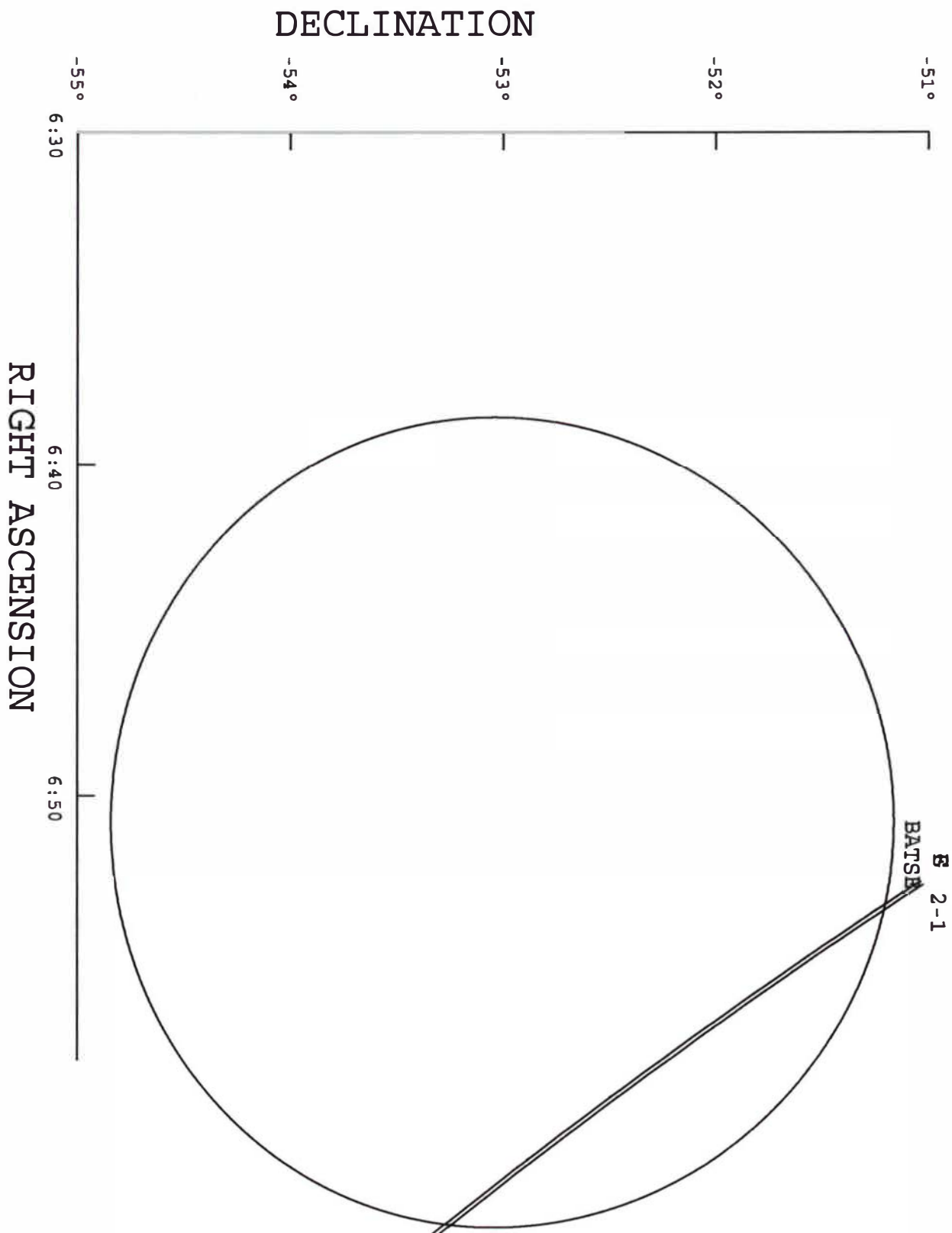
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 7, 1999 14:47

17 / 6 / 2



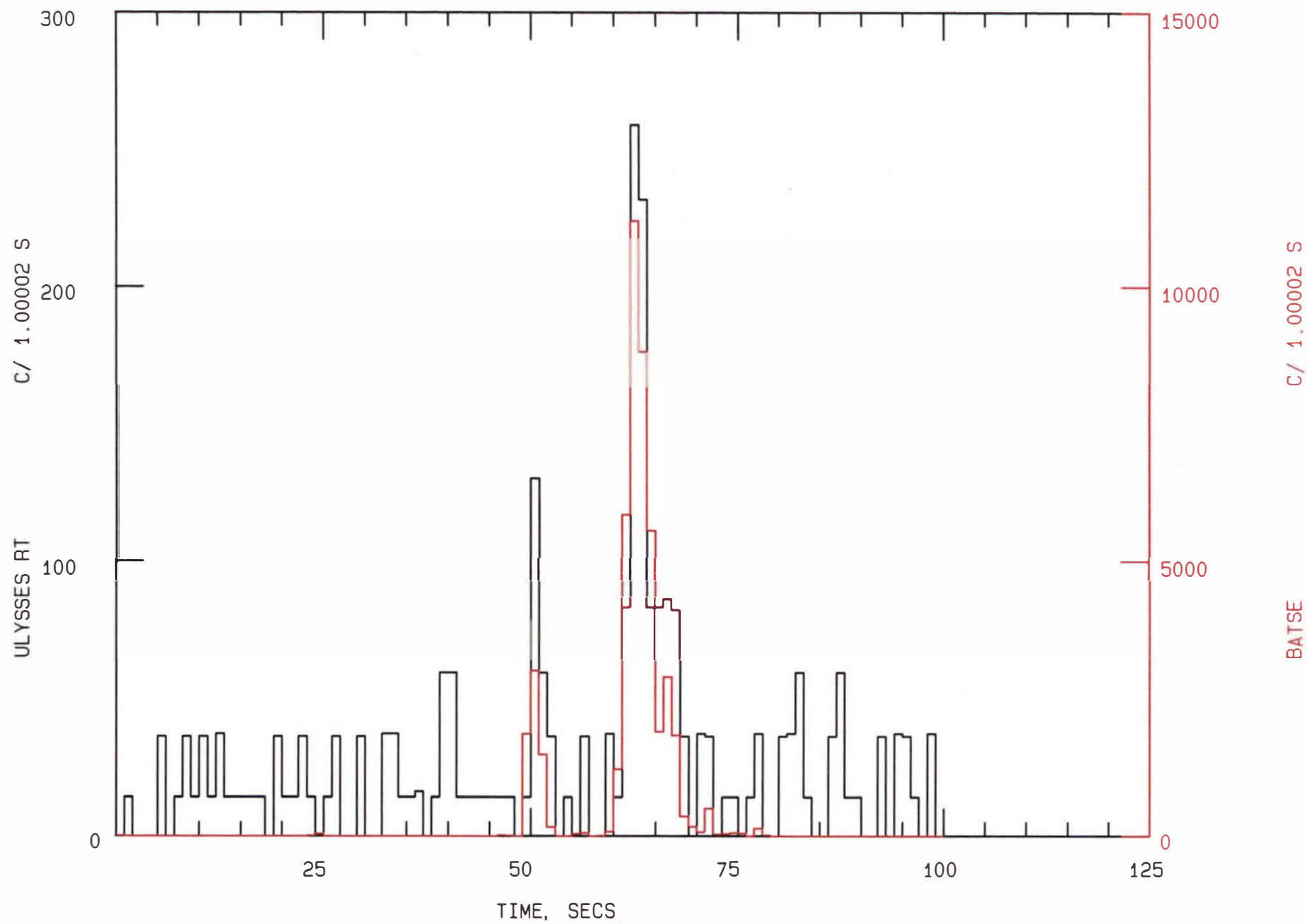
ULYSSES RT-BATSE

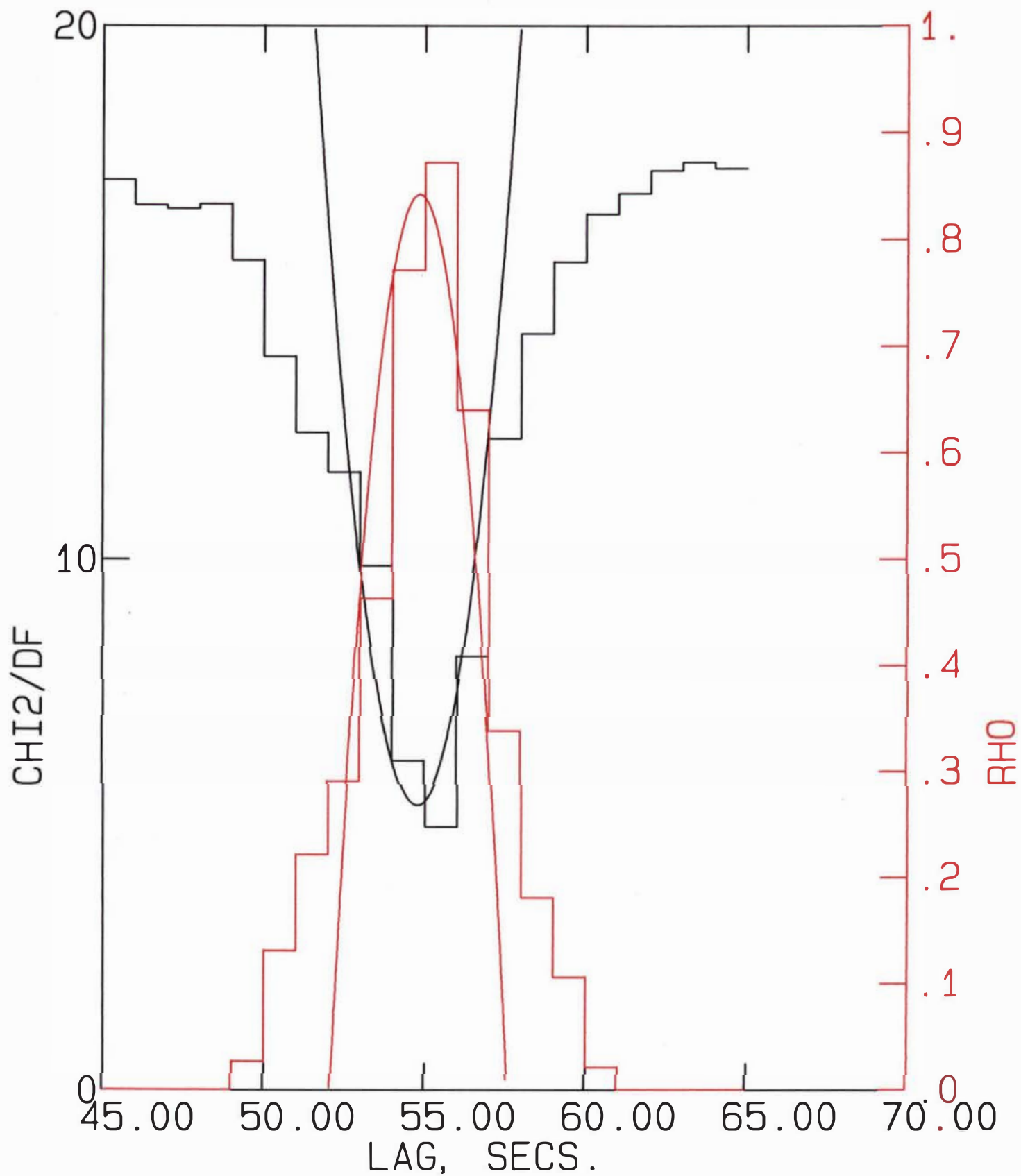
CORRELATION

7/ 7/99

53270.049

17/ 6/ 2





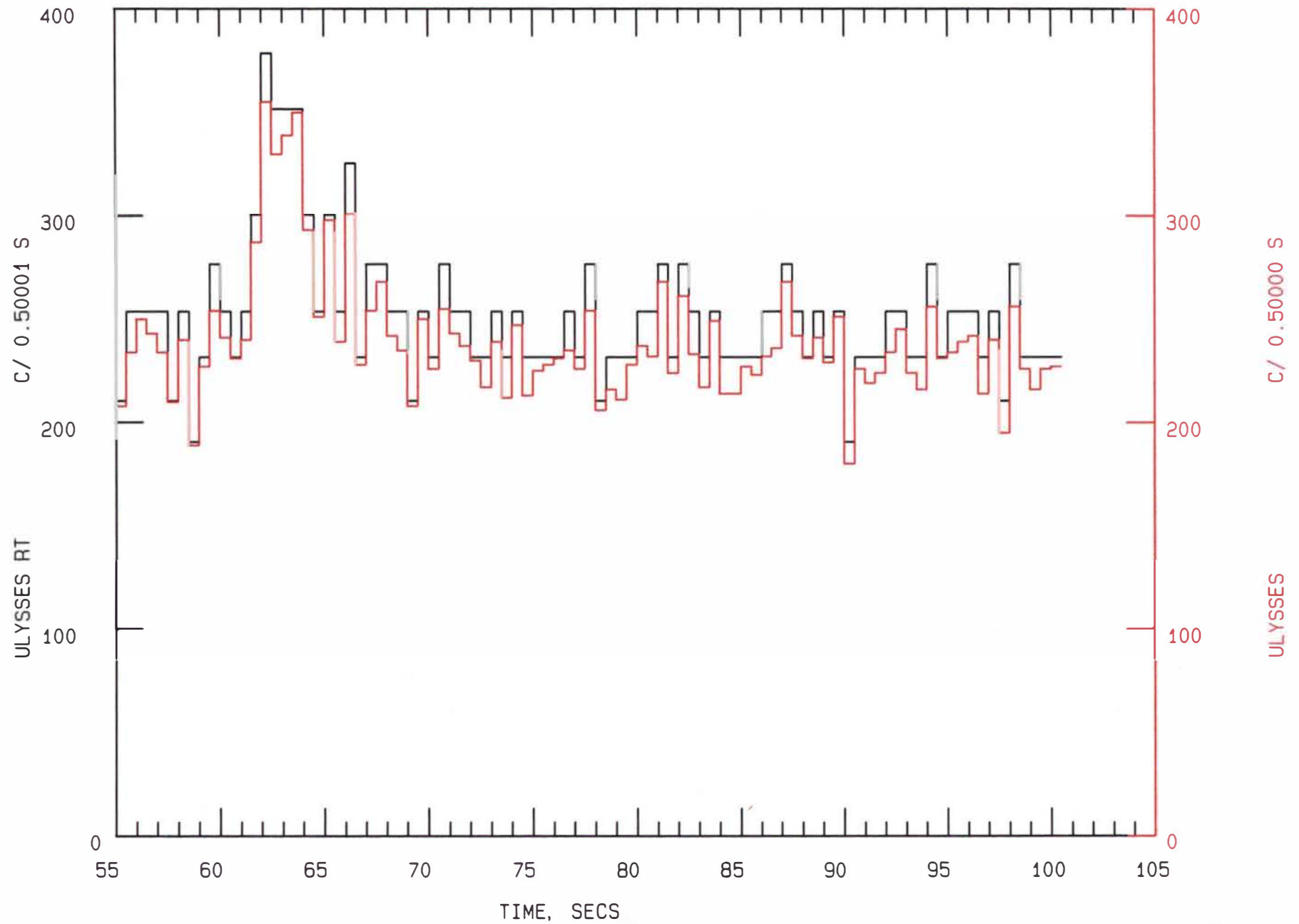
ULYSSES RT-ULYSSES

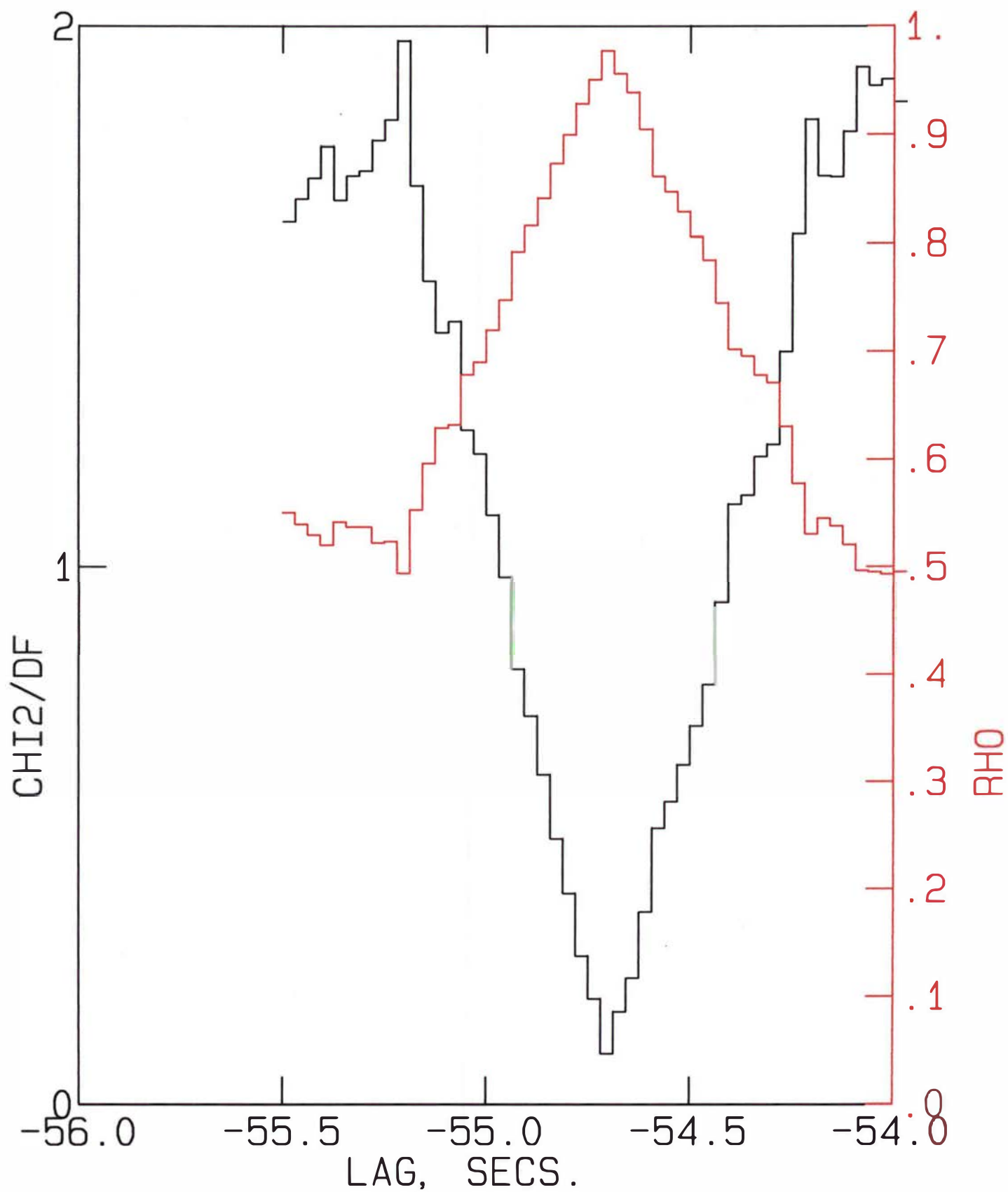
CORRELATION

7/ 7/99

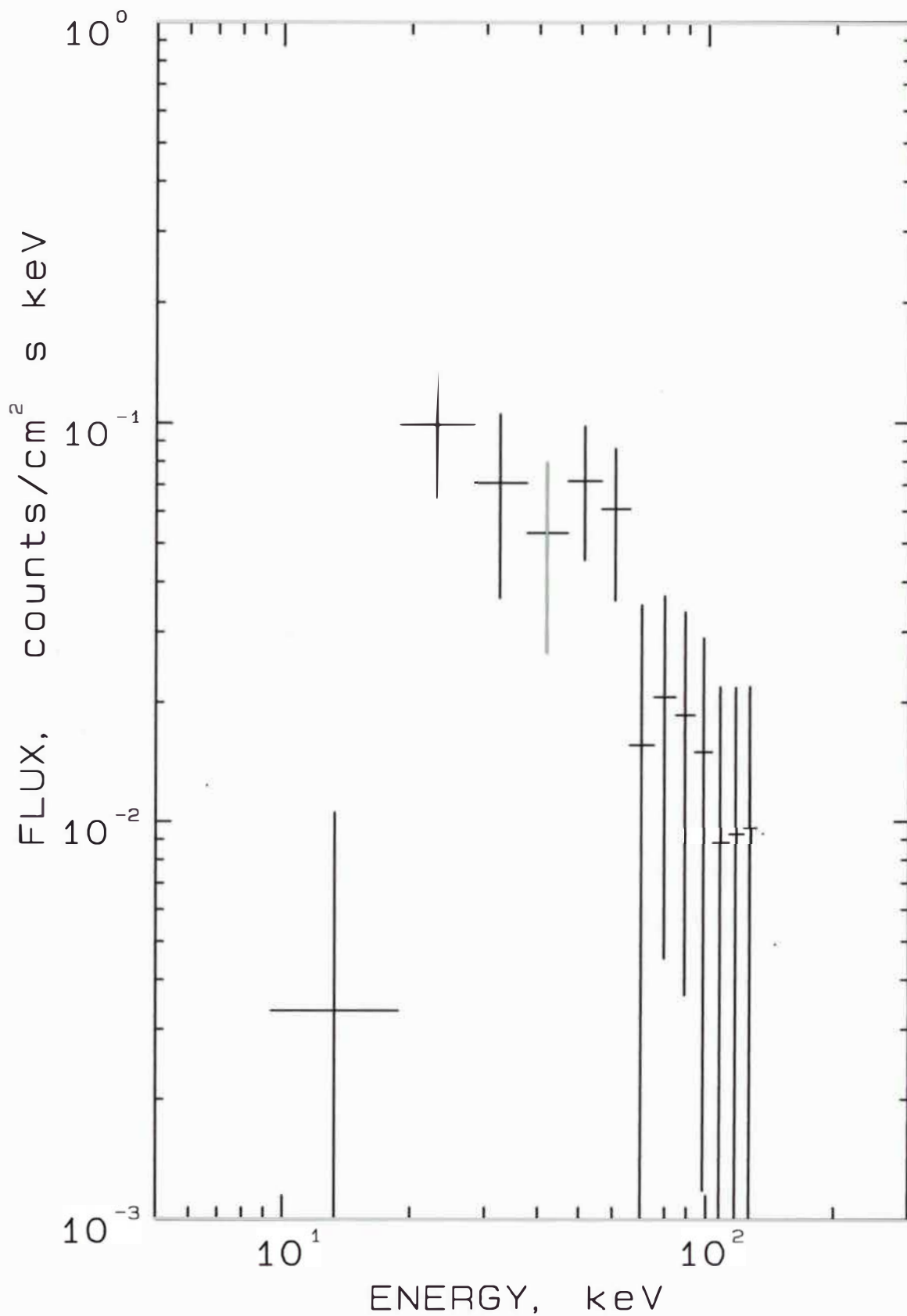
53270.049

17/ 6/ 2



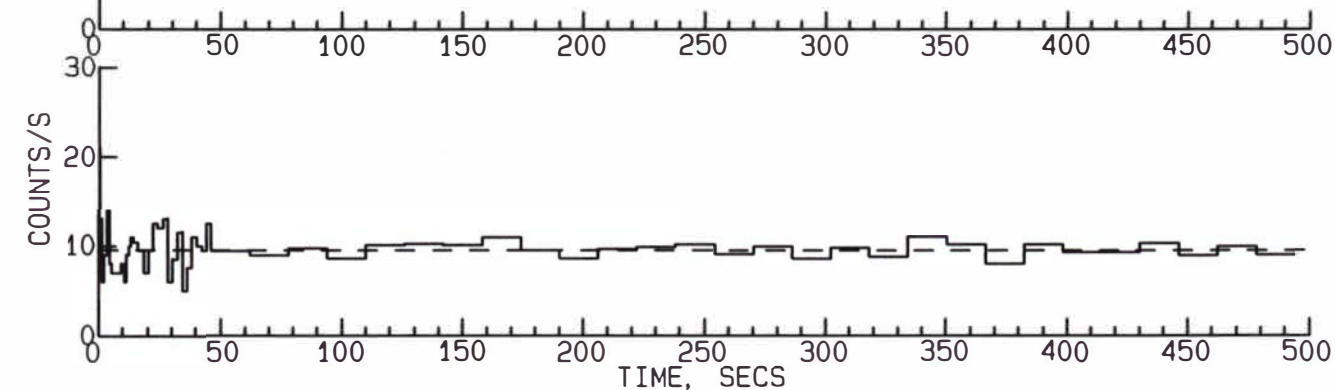


SPECTRUM INTEGRATED OVER 8.4 SECONDS, INTERVALS 2 TO 10

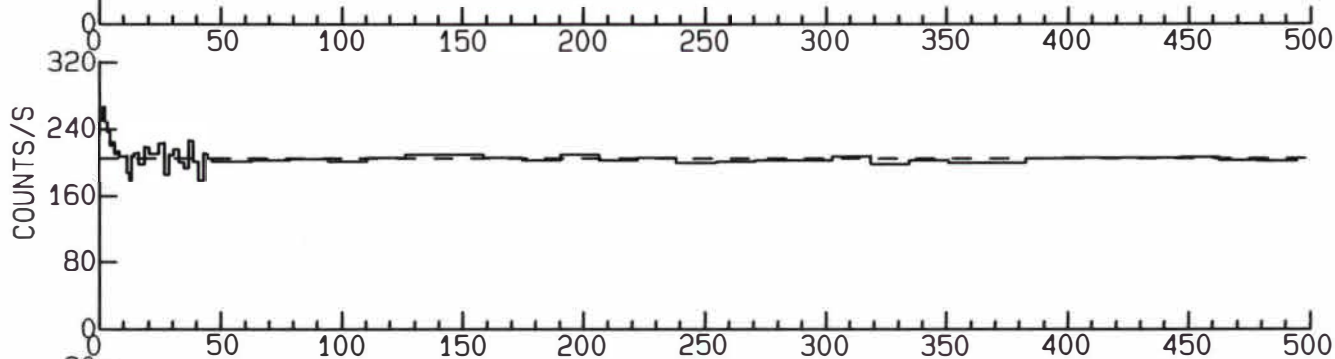


ULYSSES 07/07/99 53332.165 BURST SPECTRAL COUNT RATES

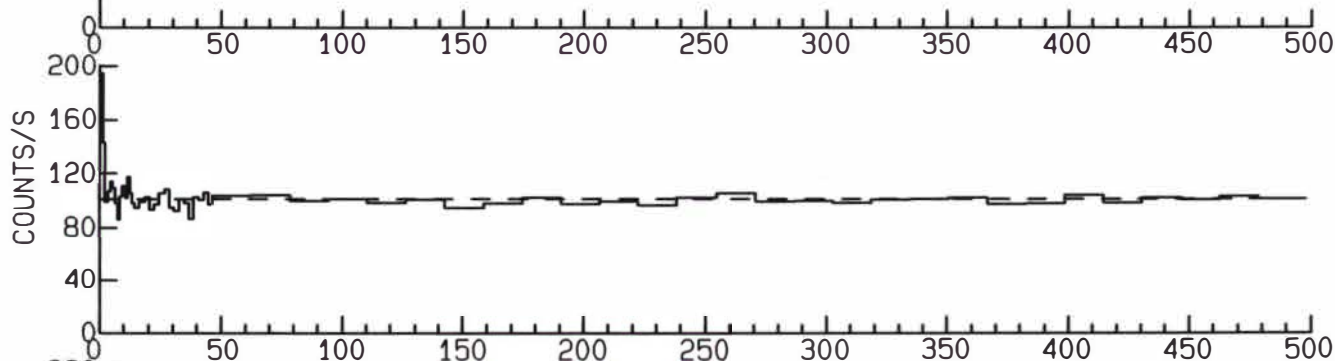
4- 18 keV



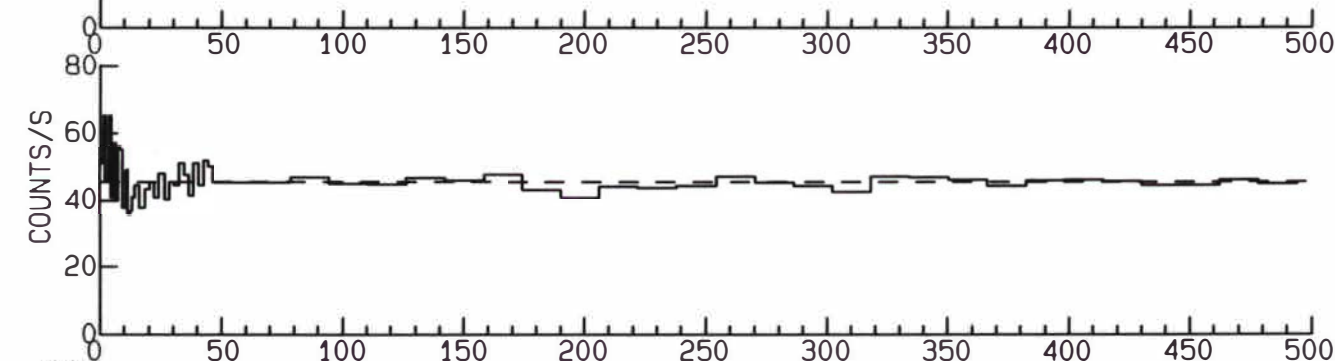
18- 46 keV



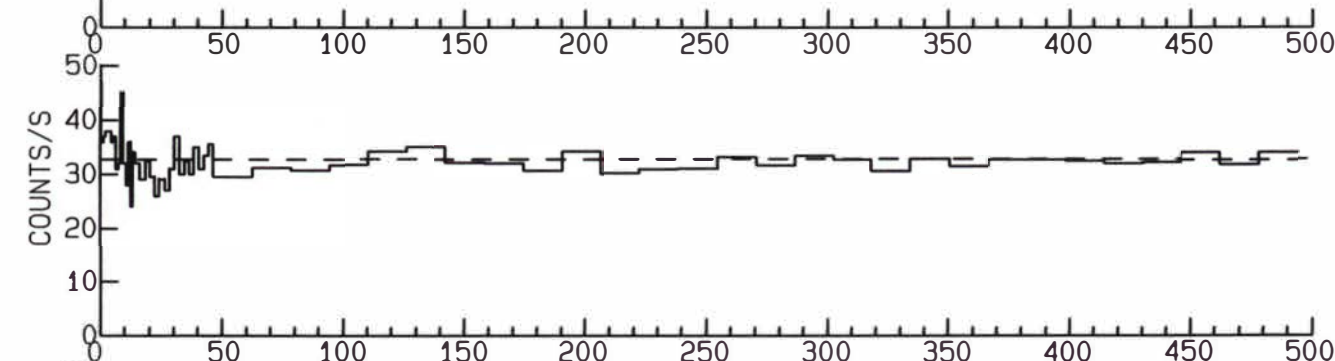
46- 74 keV



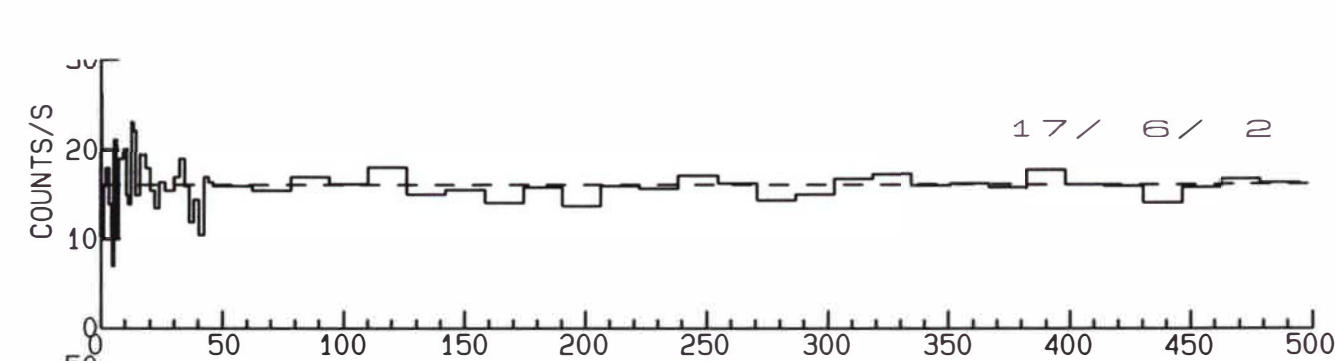
74-102 keV



102-130 keV



130-149 keV



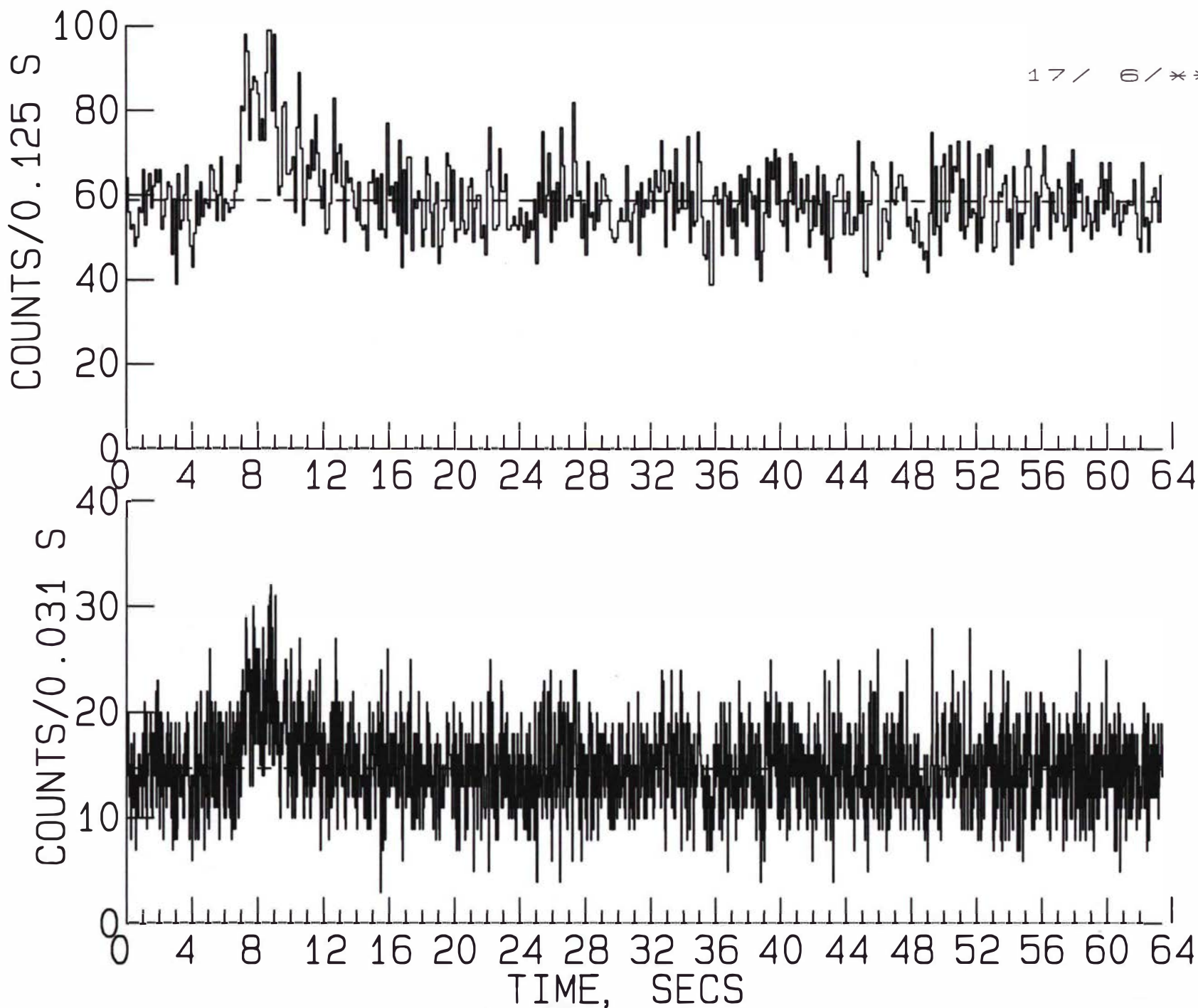
17 / 6 / 2

ULYSSES

07/07/99

Ttrig=53332.173

22- 150 keV



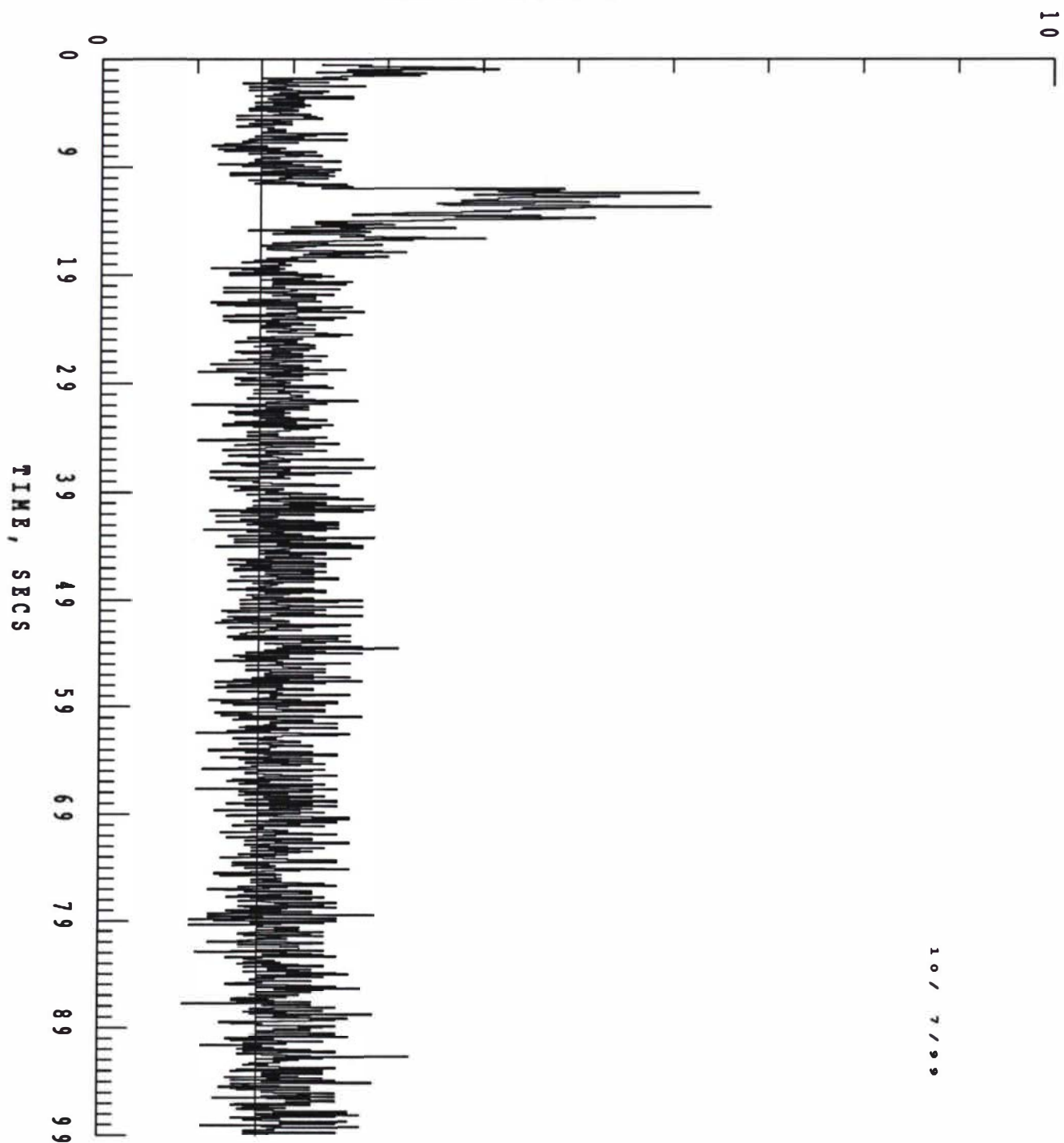
KONUS

07/07/99

54800.154

50 - 200 keV

COUNTS/0.064 S



10 / 7 / 99

KONUS1 19990707 54800

ULYSSES RT

10 / 7 / 99

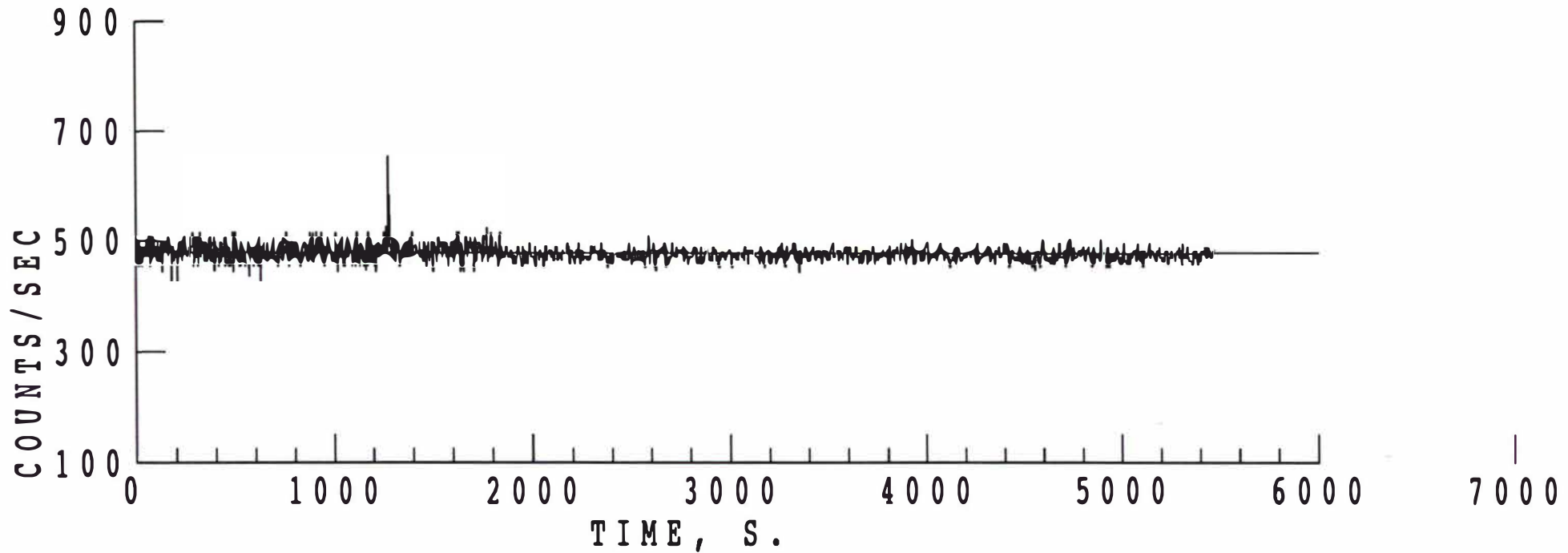
7 / 7 / 99 52056.035 s

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 Thu Jul 8 11:53 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Thu, 8 Jul 1999 13:58:43 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7638

BATSEARCH PROGRAM

BATSE BURST # 7638
EVENT OF 1999 JUL 7 DAY OF YEAR=188
EVENT CROSSING TIME AT BATSE : 70757. S. OR 19:39:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 72.000 22.000
BATSE PEAK COUNTING RATE: 8000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 99 IS:
RA= 147.253 DEC= -7.963 DIST= 5.373 AU
BATSE-ULYSSES DISTANCE = 803754668. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -487.52 SECS.
CROSSING TIME AT ULYSSES IS 70269. S. OR 19:31:09 +/- 500.31 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 99 IS:
RA= 208.075 DEC= -12.819 DIST= 0.853 AU
MARS-BATSE DISTANCE = 127538680. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 42.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 312.38 SECS.
CROSSING TIME AT MARS IS 71069. S. OR 19:44:29 +/- 54.88 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7638	990707	11366	70757	8000	072	+22	30

BATSE BURST TRIGGER

NO.: 7638

TIME: TJD=1366 SECONDS=70575

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=138.7 AZIMUTH=33.4 ERROR=1.546 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX 30 S, MAX AT APPROX. T+1.5 S.
VISIBLE ABOVE 300 KEV. CRAB RISE AT APPROX. T-320 S. POSSIBLE SUCCESSOR AT
APPROX. T+60 S.

Date: Mar 6 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

- ☒ BATSE >100 keV data used for NEAR correlation?

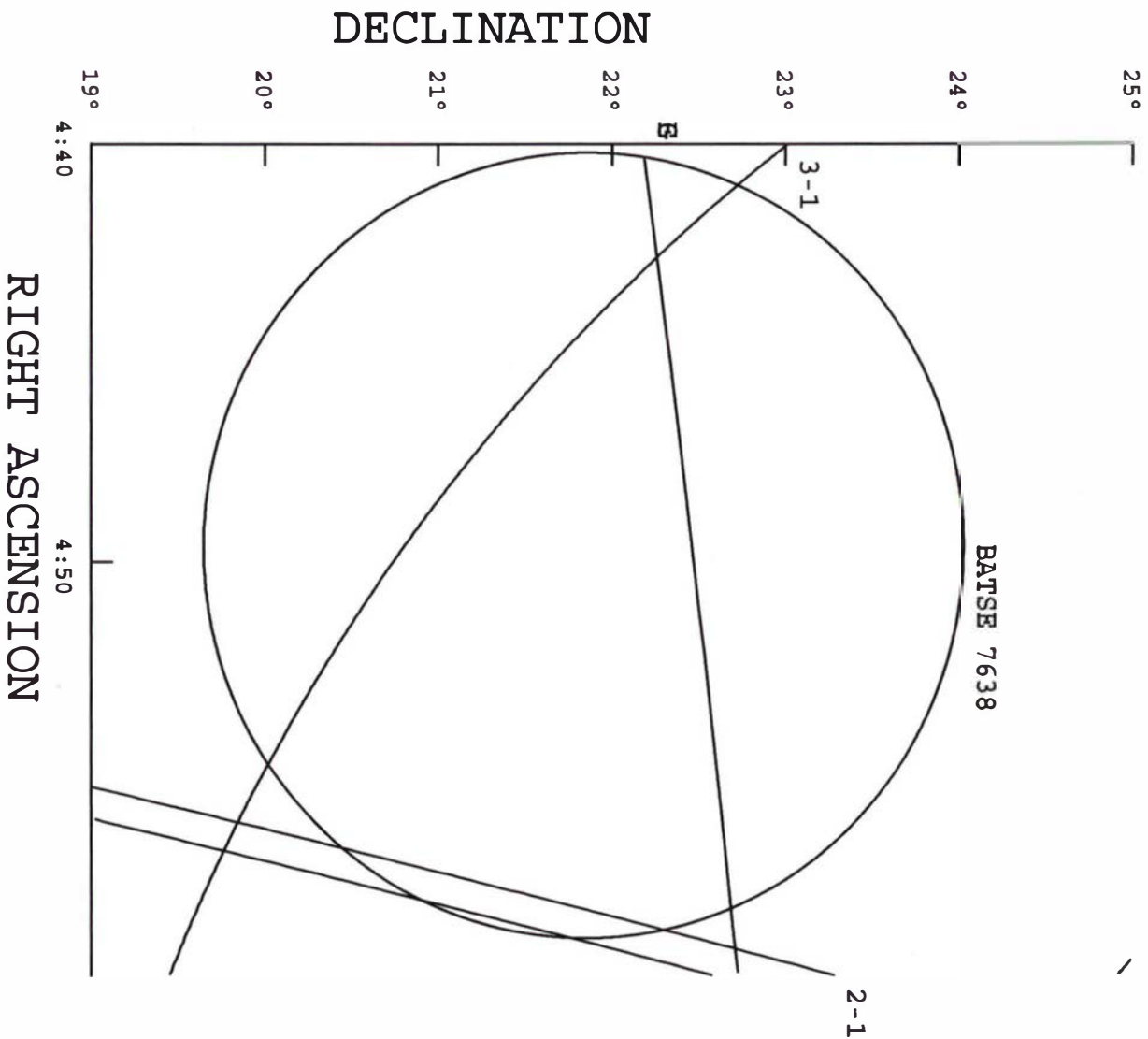
*Looks like NEAR data were sent, Rec'd Mar 15
but lost. Waiting for replacement*

- ☒ ACCESS database updated?

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

EVENT OF JUL 7, 1999 19:39

15 / 3 / 0



BATSE

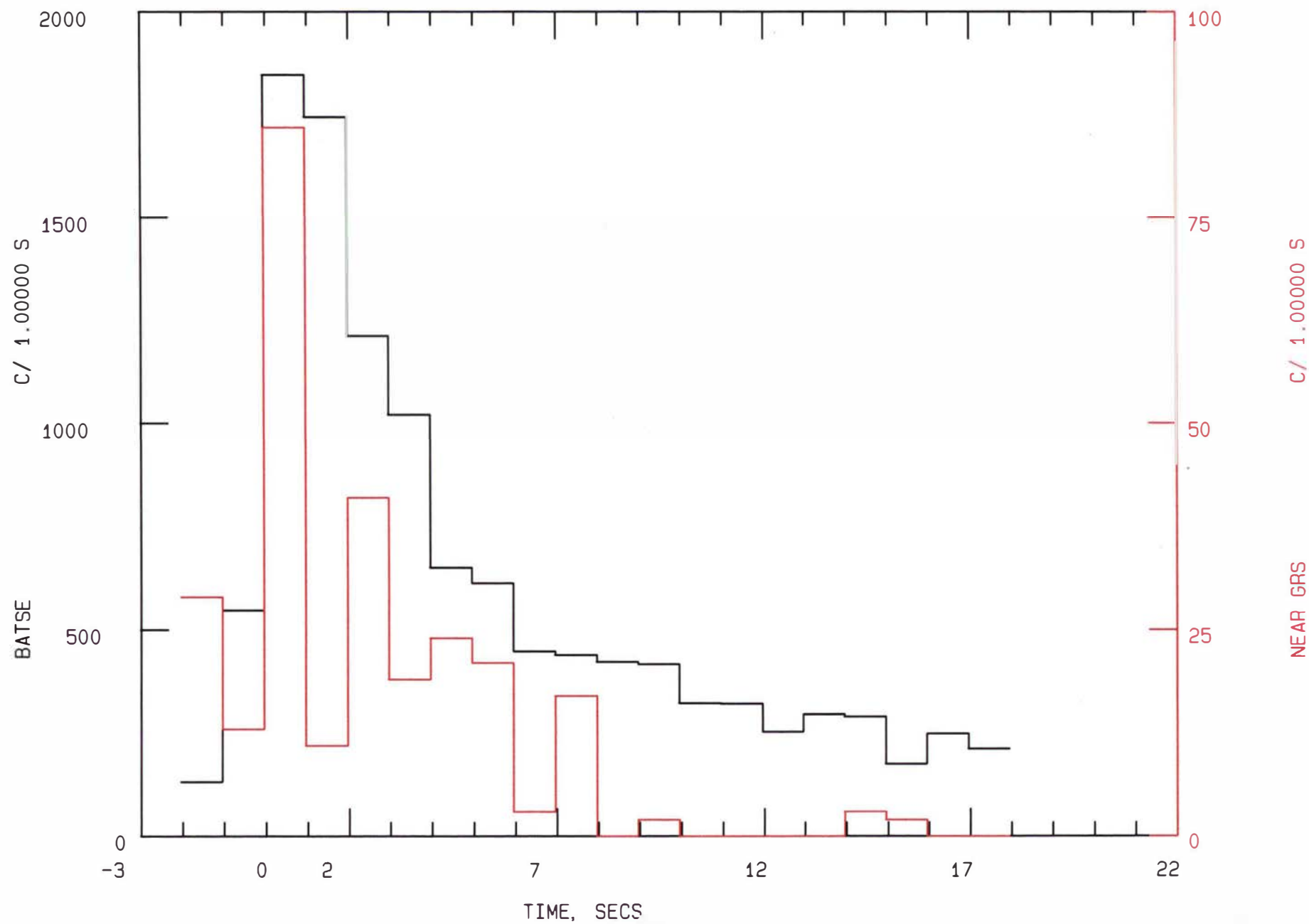
-NEAR GRS

CORRELATION

07/07/99

70757.625

15/ 3/ 0



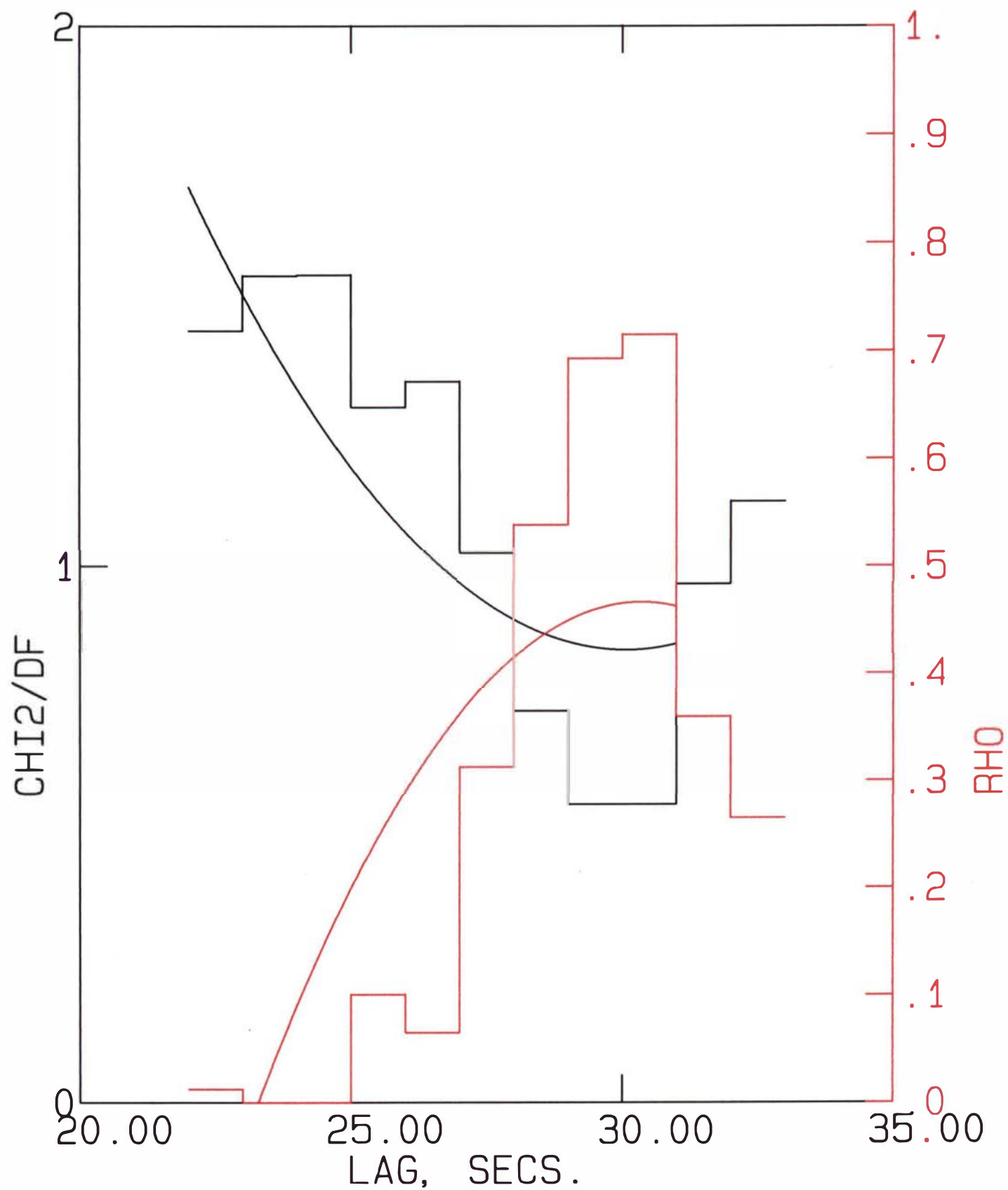
BATSE

-NEAR GRS

CORRELATION

07/07/99

70757.625

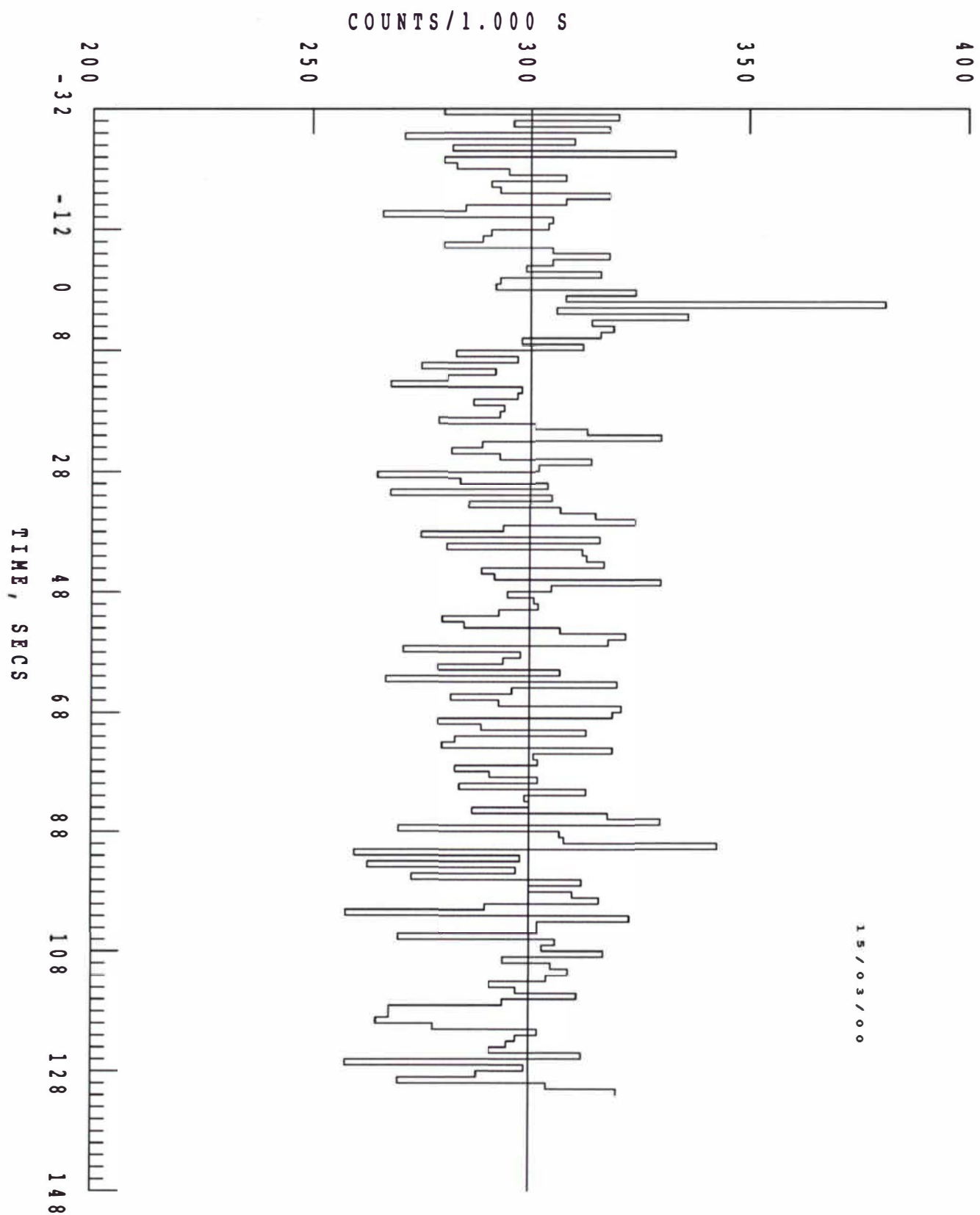


NEAR

07/07/99

69721.497

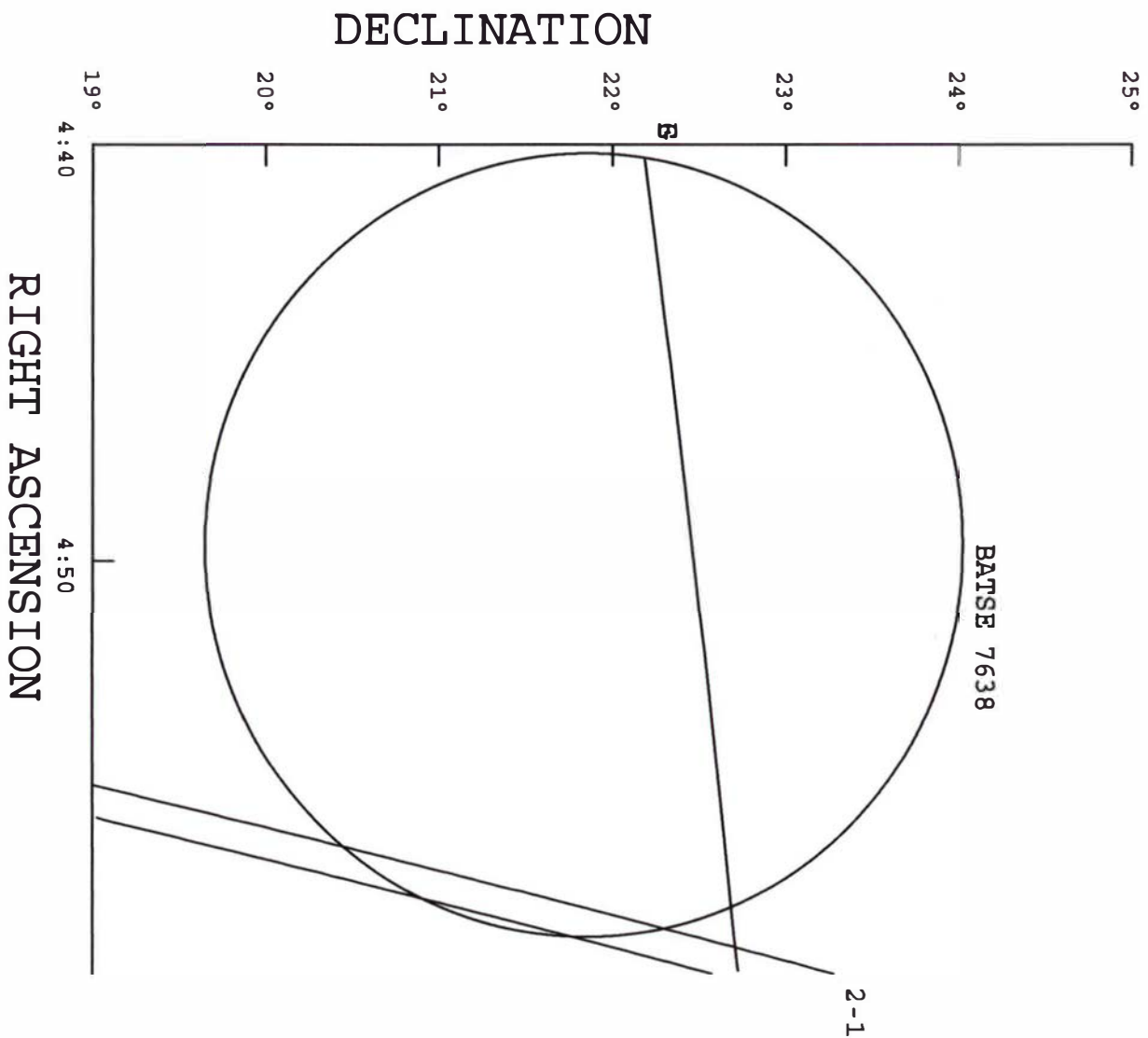
100-1000 keV



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

EVENT OF JUL 7, 1999 19:39

6 / 3 / 0



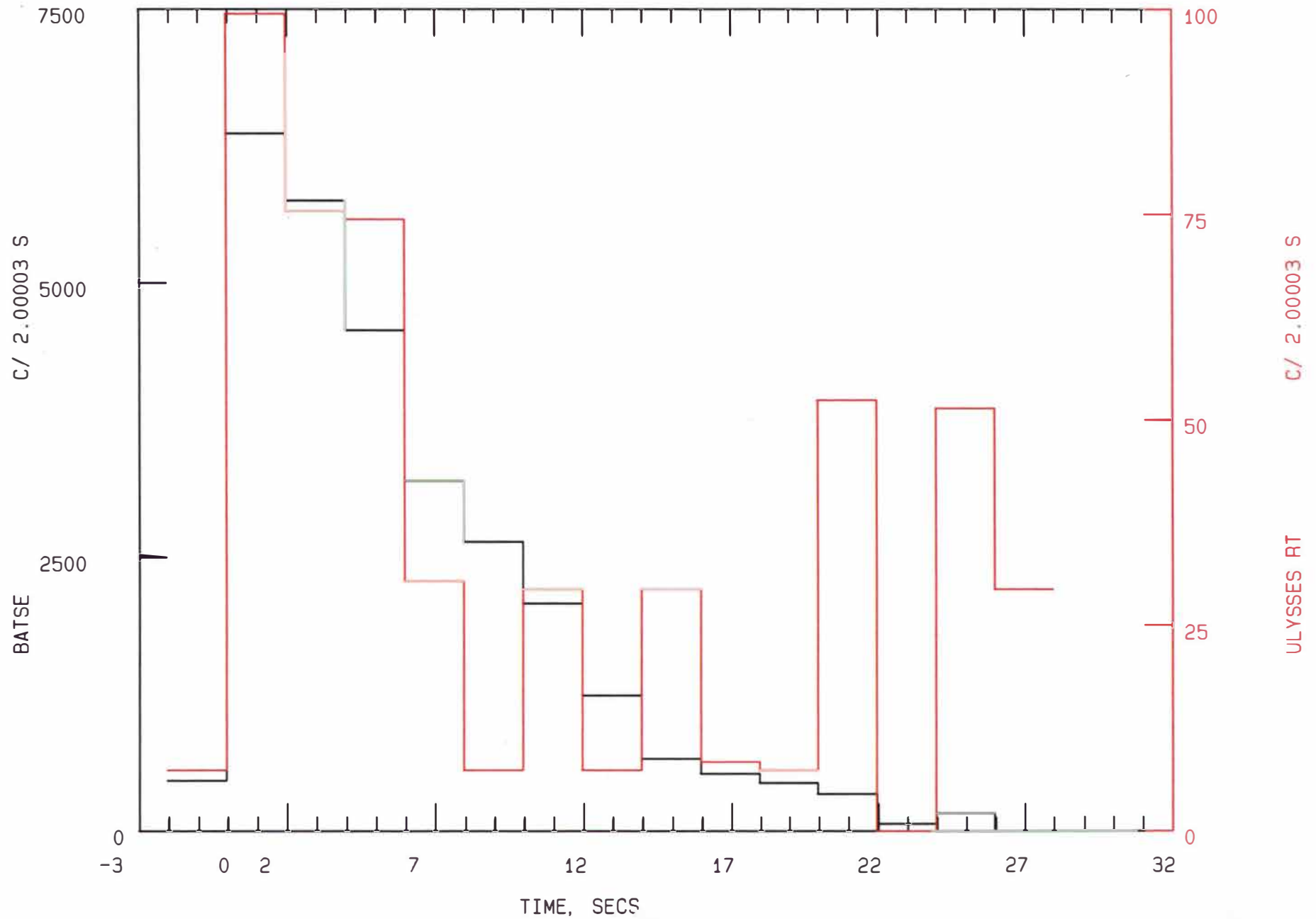
BATSE

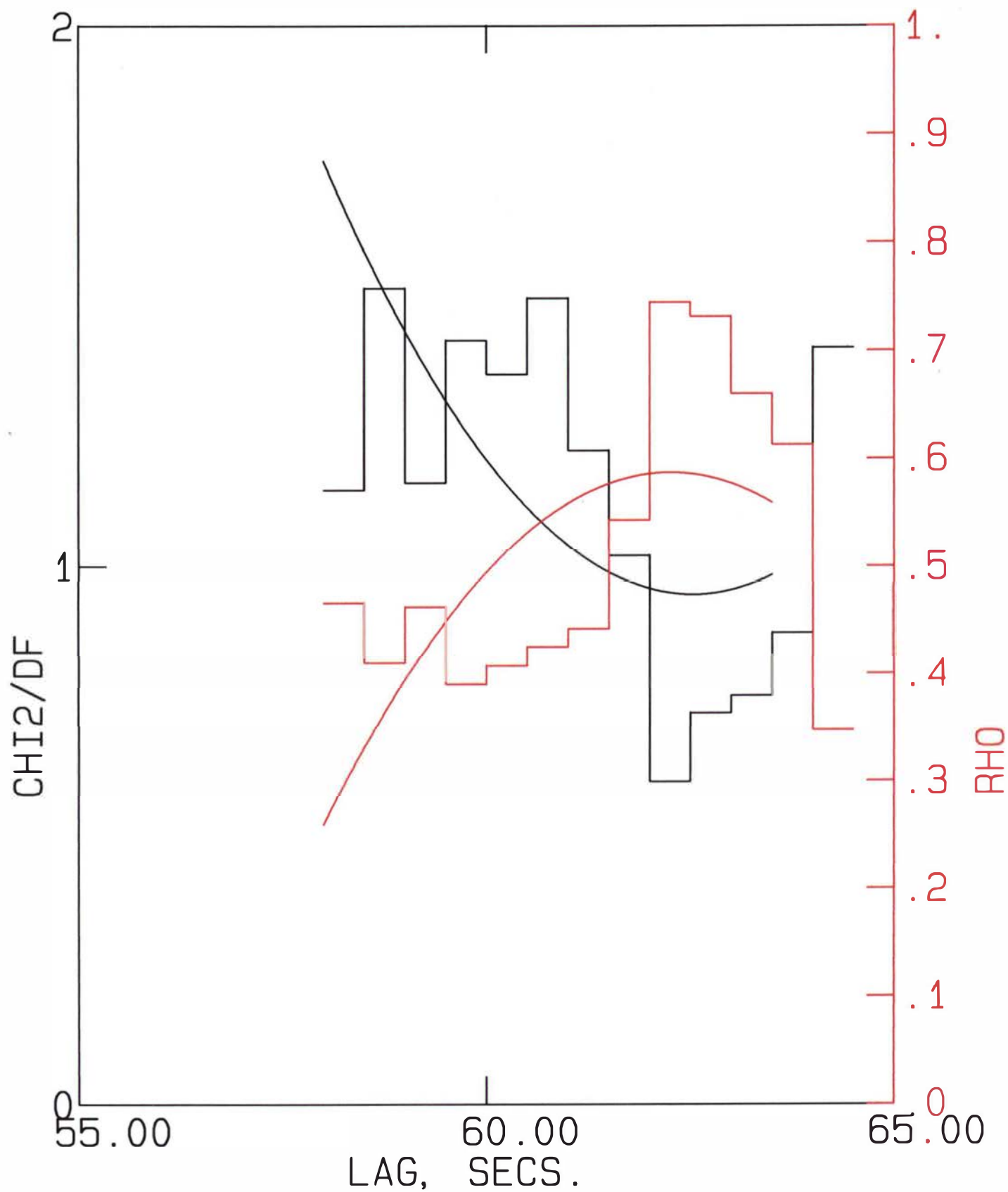
-ULYSSES RT CORRELATION

7/ 7/99

70757.625

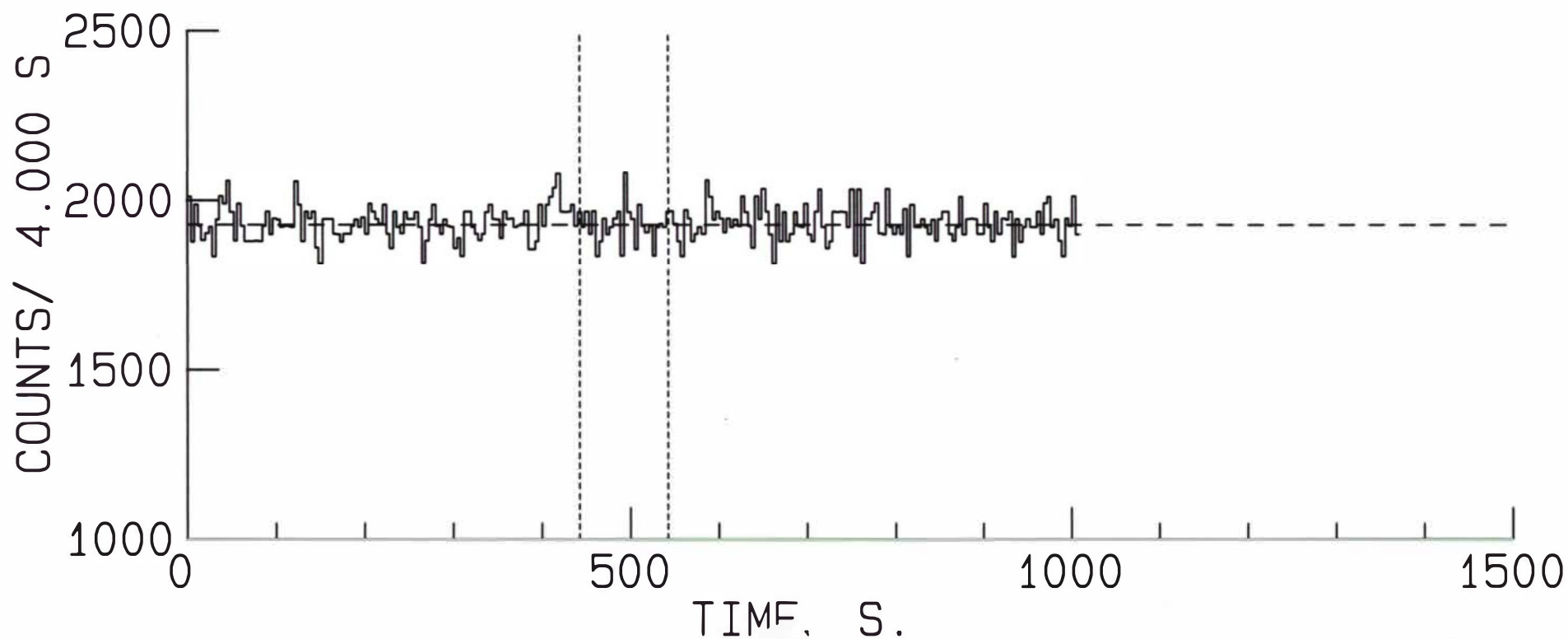
6/ 3/ 0





ULYSSES RT
7/ 7/99 69768.213 s
0.500 S INTERVALS REGROUPED BY 8
22- 150 keV

6 / 3 / 0



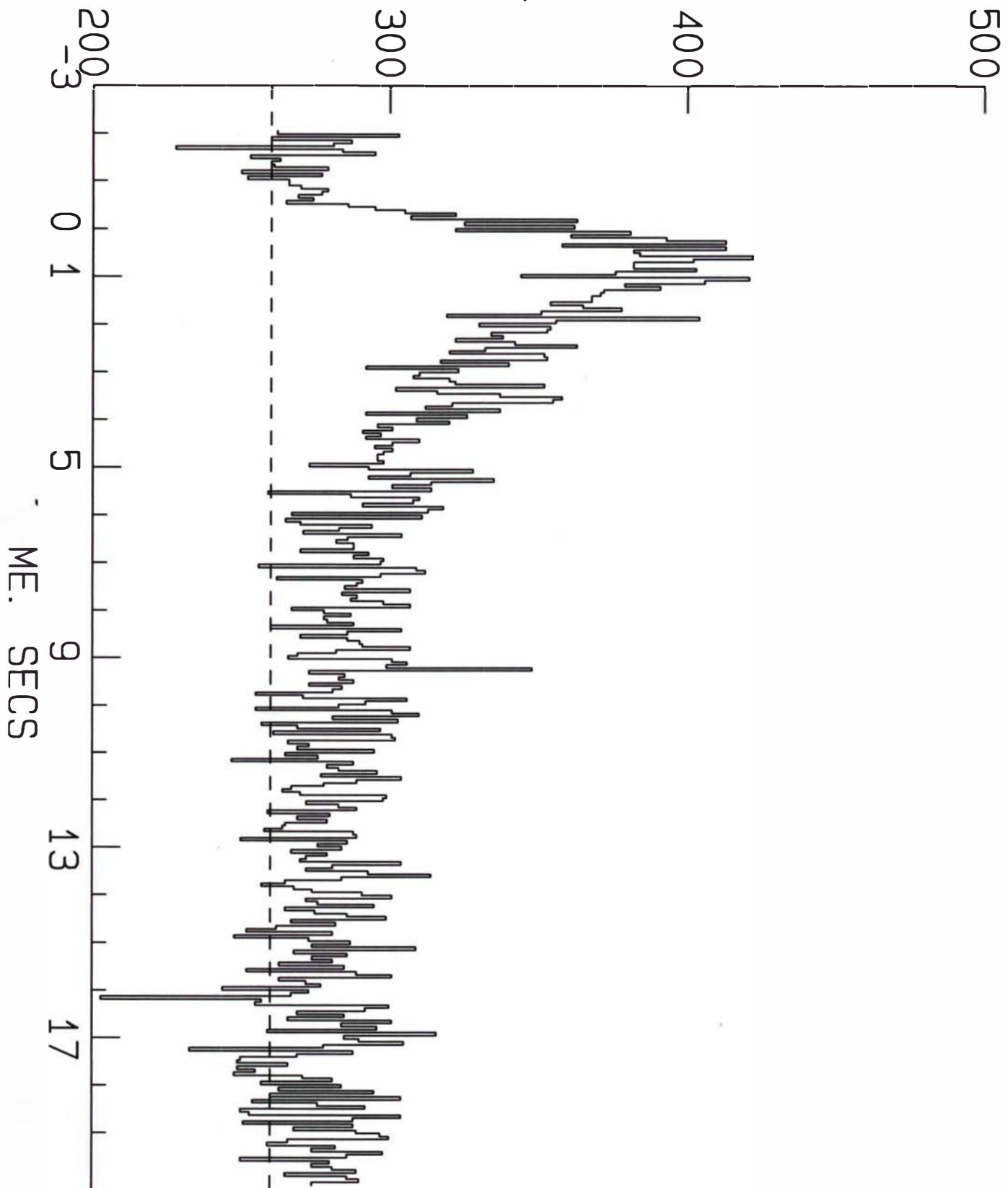
BATSE

07/07/99

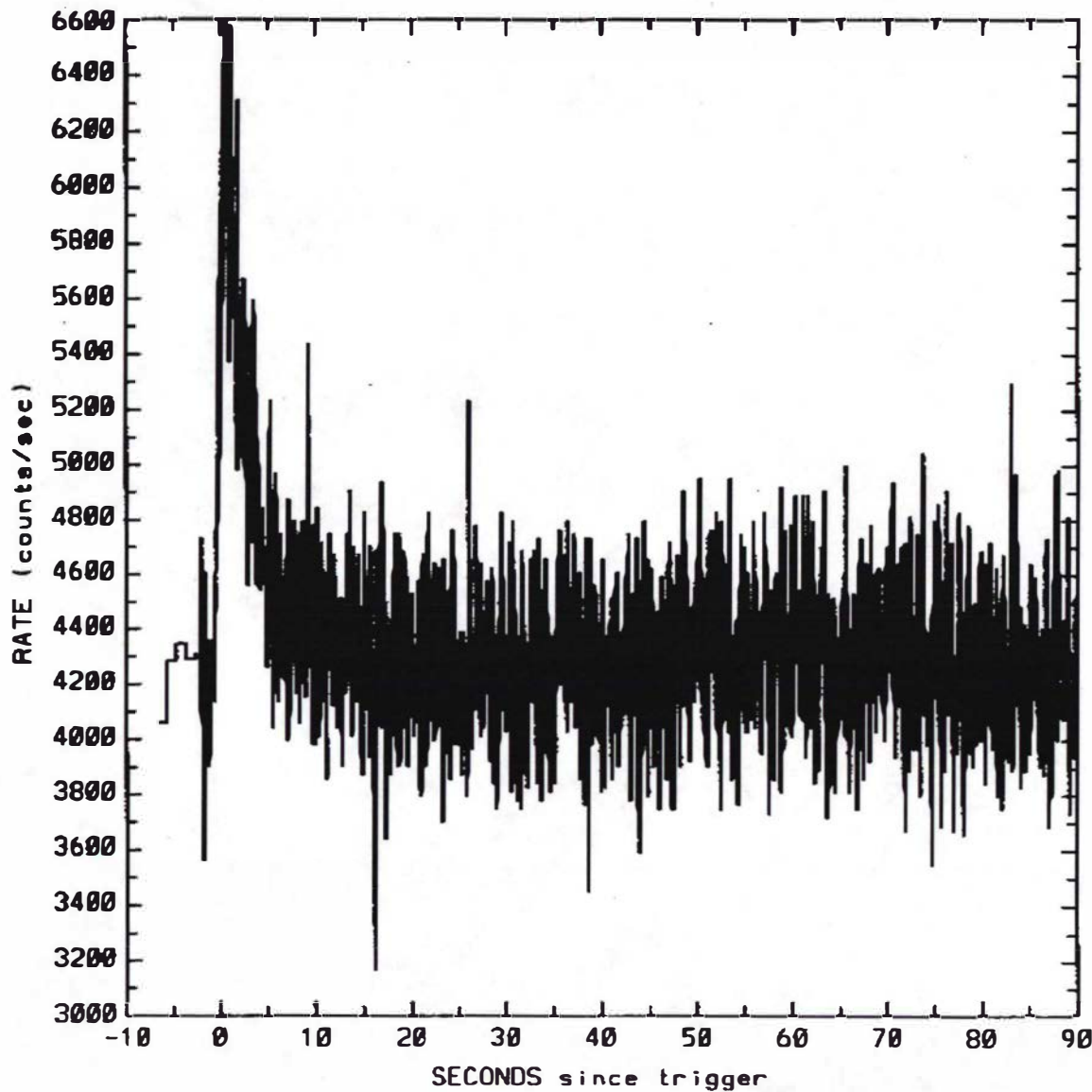
70757.625

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7638



24-FEB-2000 12:47:53

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

Trigger # : 7638

Trigger Time:
11366 / 70757.625

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors {7..0}:
----3-1-

Discriminators:
1 3 : 4 1

Quality Mask:
BDISP1

KNEAR GRS 19990707 69721

ULYSSES RT

12 / 7 / 99

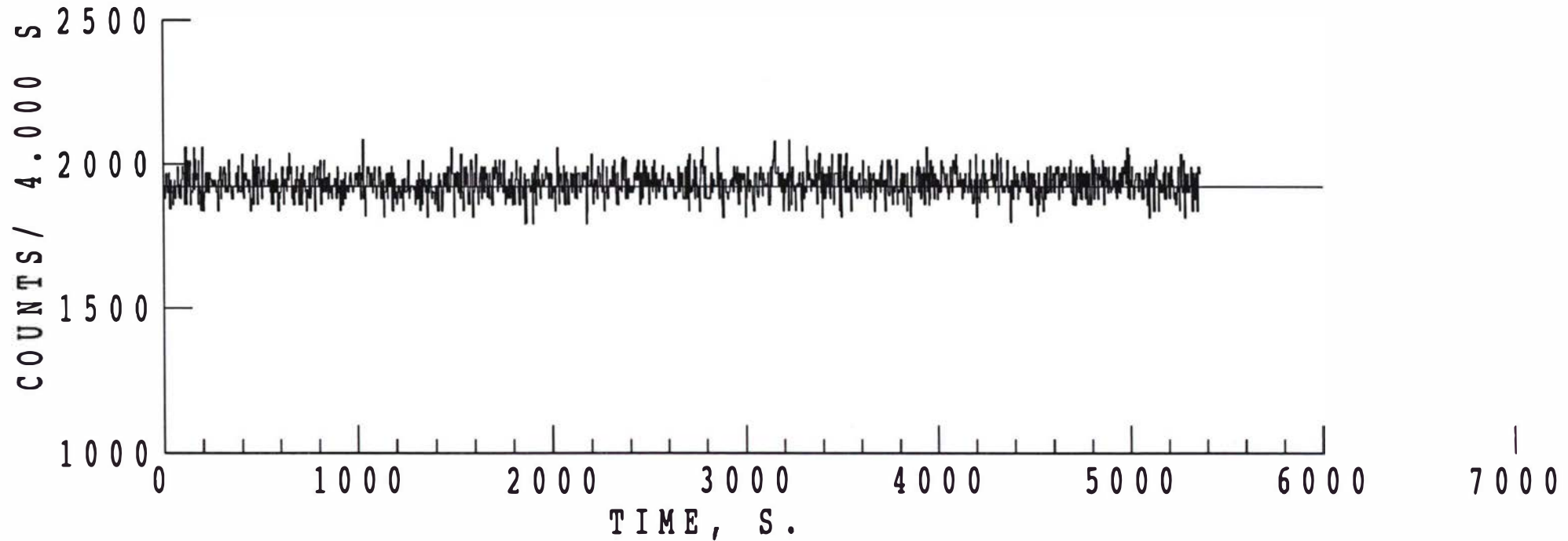
7 / 7 / 99 67032.188 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



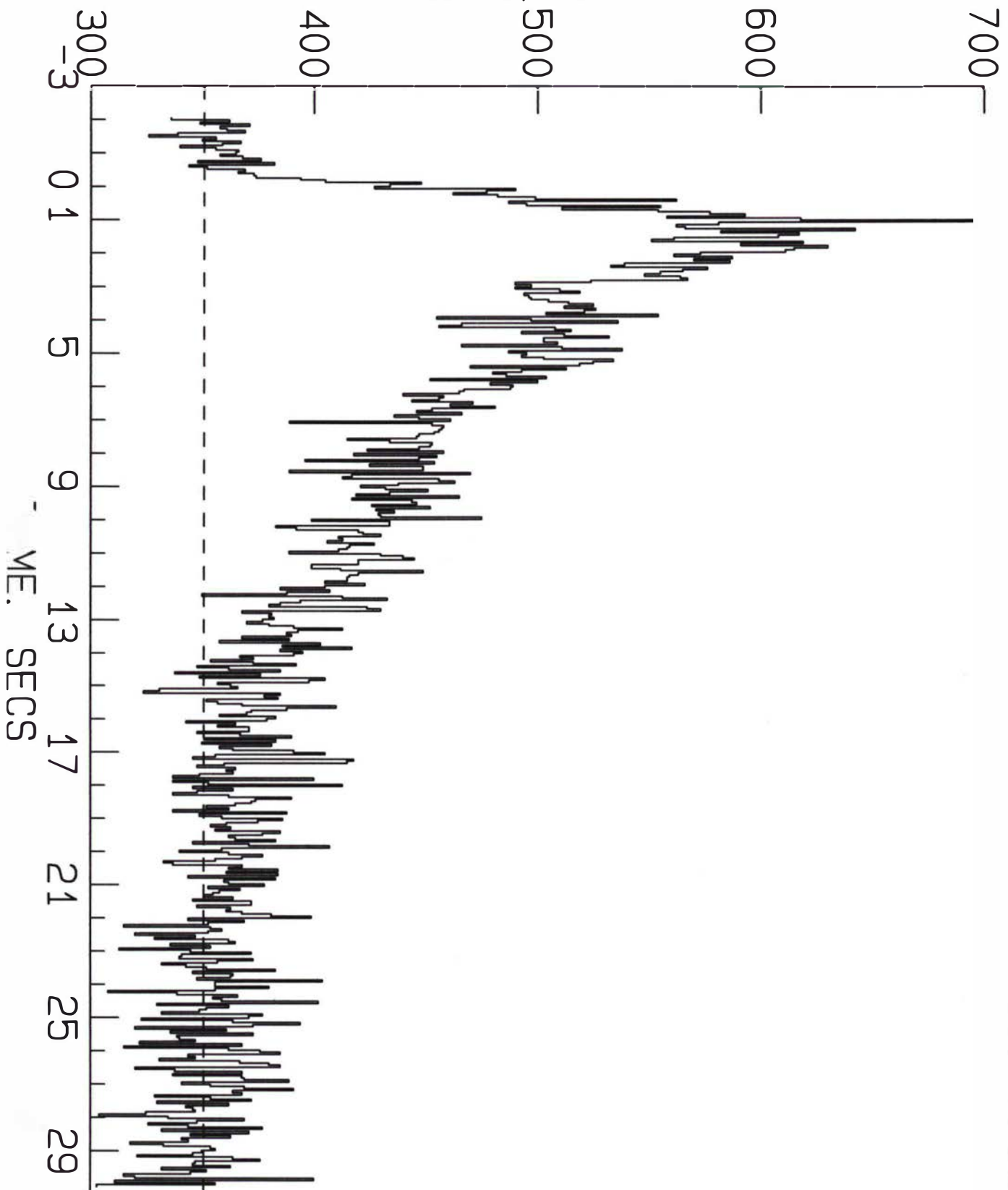
BATSE

07/07/99

70757.625

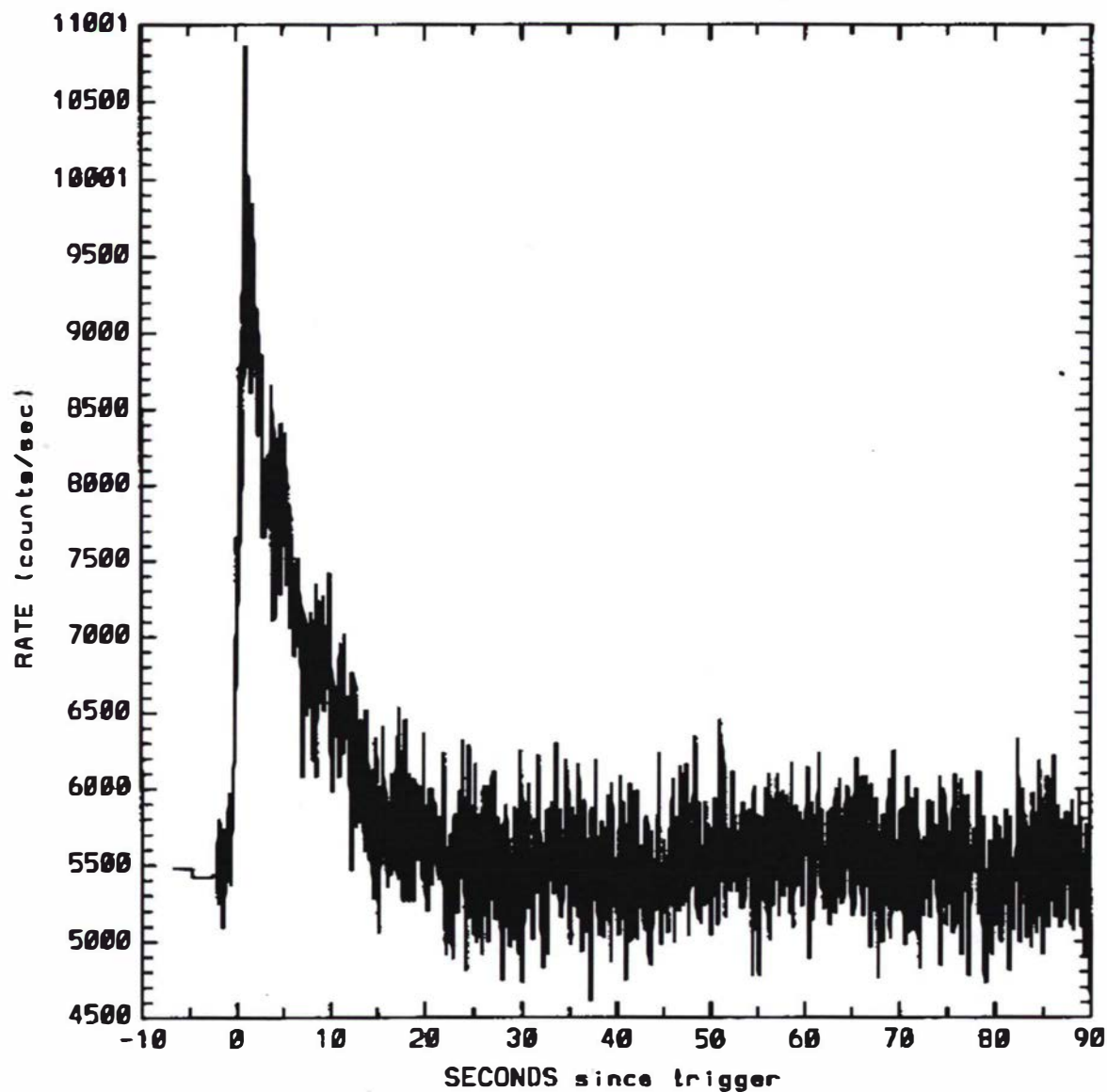
25- 100 keV

COUNTS/0.064 S



16 / 7/99

DISCSC Data for K. Hurley, No. 7638



15-JUL-1999 14:15:39

Created by MDPS 80
(Burst Display)
Version 12.26

Trigger = . 7638

Trigger Time:
11366 / 78757.625

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

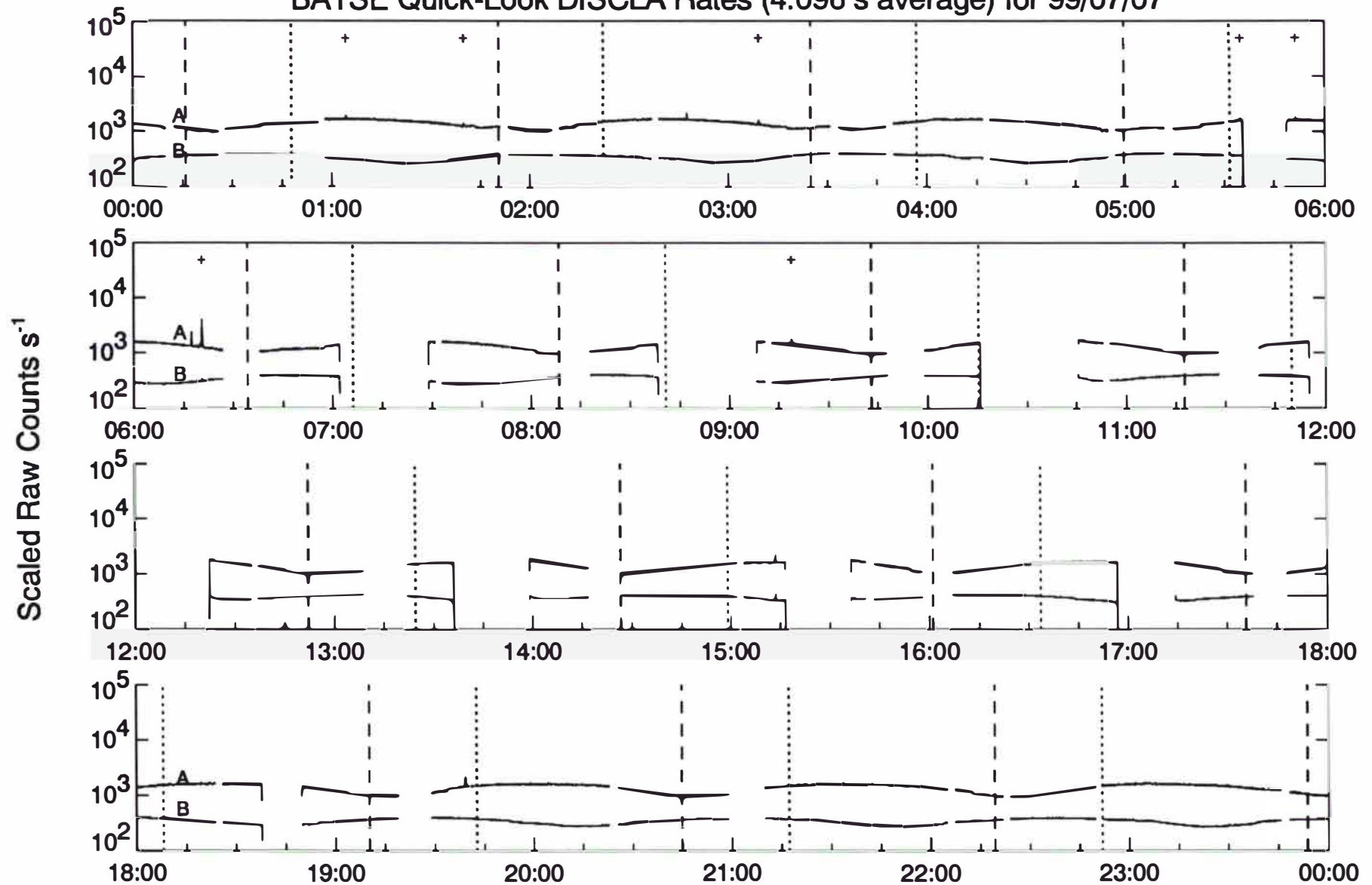
Minimum Integ. Time:
0.064 seconds

Detectors [7..8].
----3-1-

Discriminators:
(1..2)

Quality Mask:
80ISP1

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



Current Time: 99/07/11, 1012 EDT

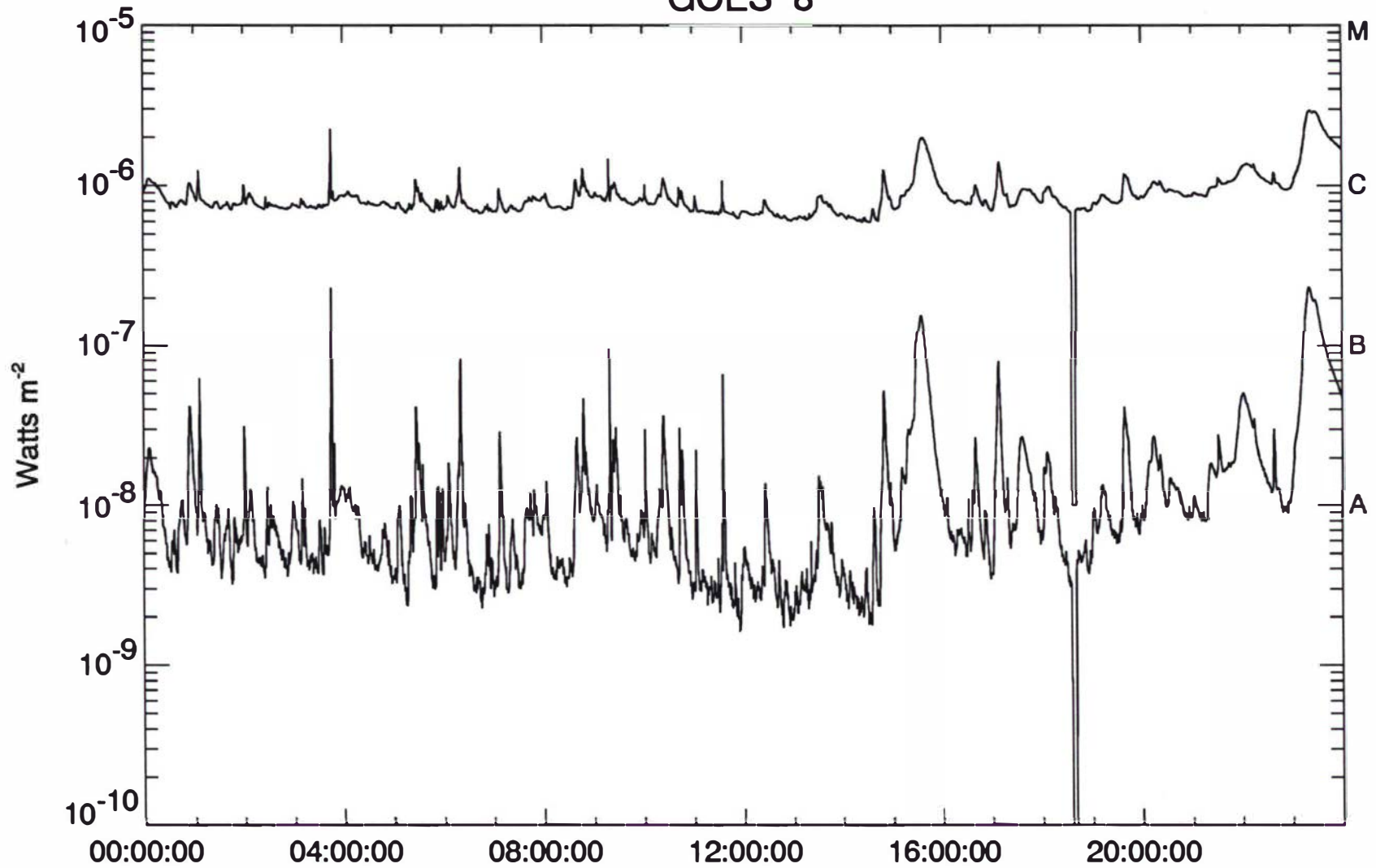
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

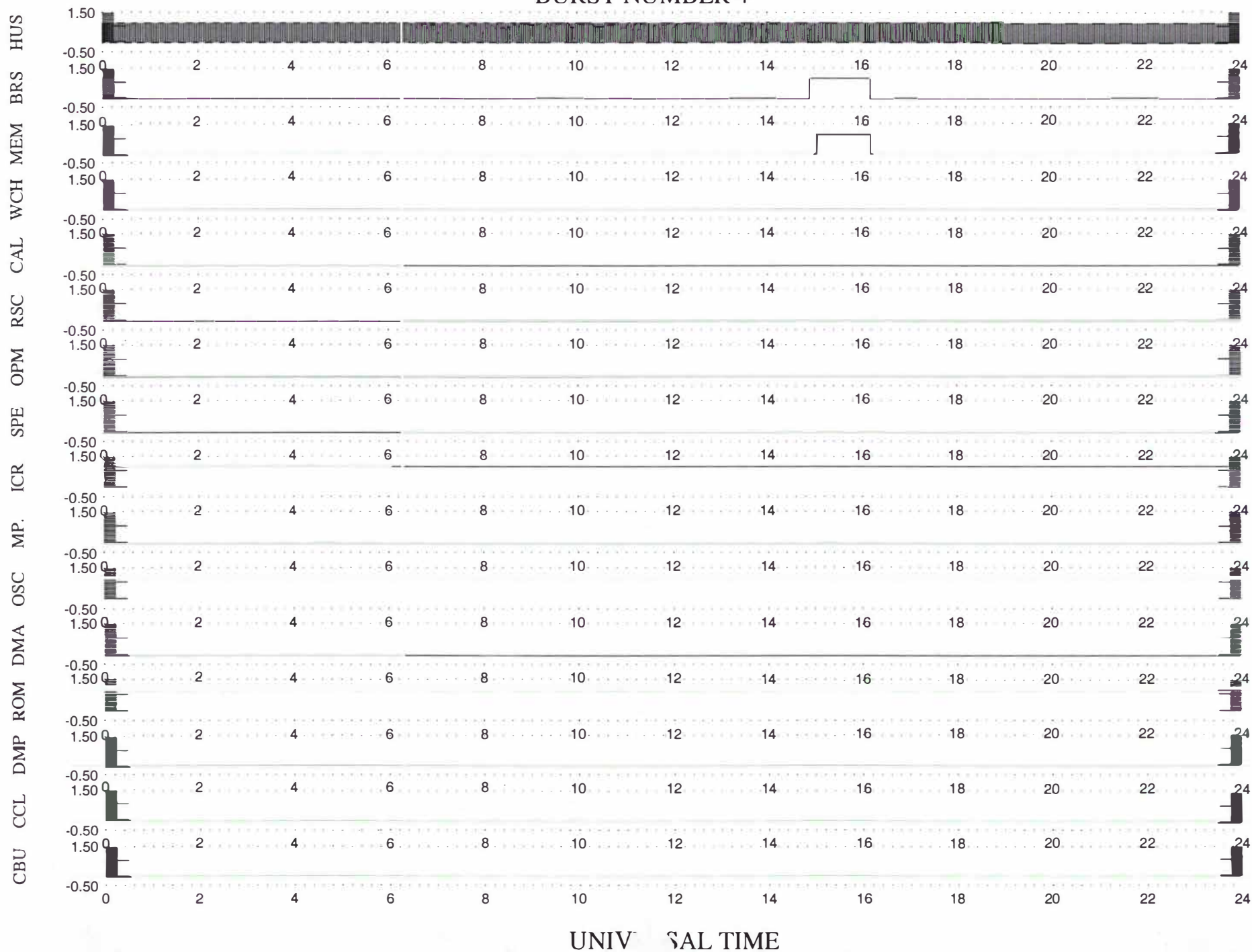


Data Start: 99/07/07, 0000:00

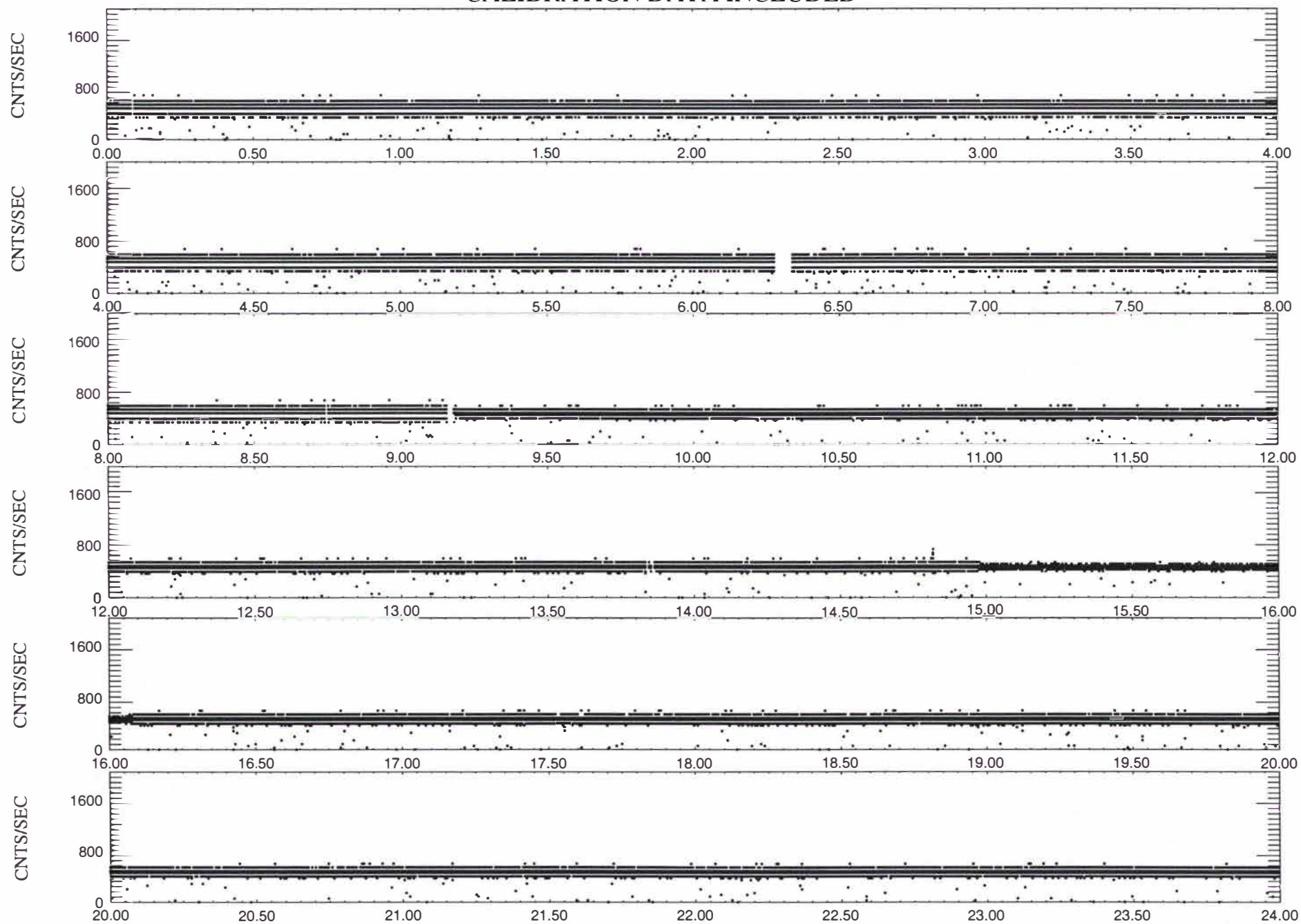
Plot created: 99/07/11, 1011

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

BURST NUMBER 4

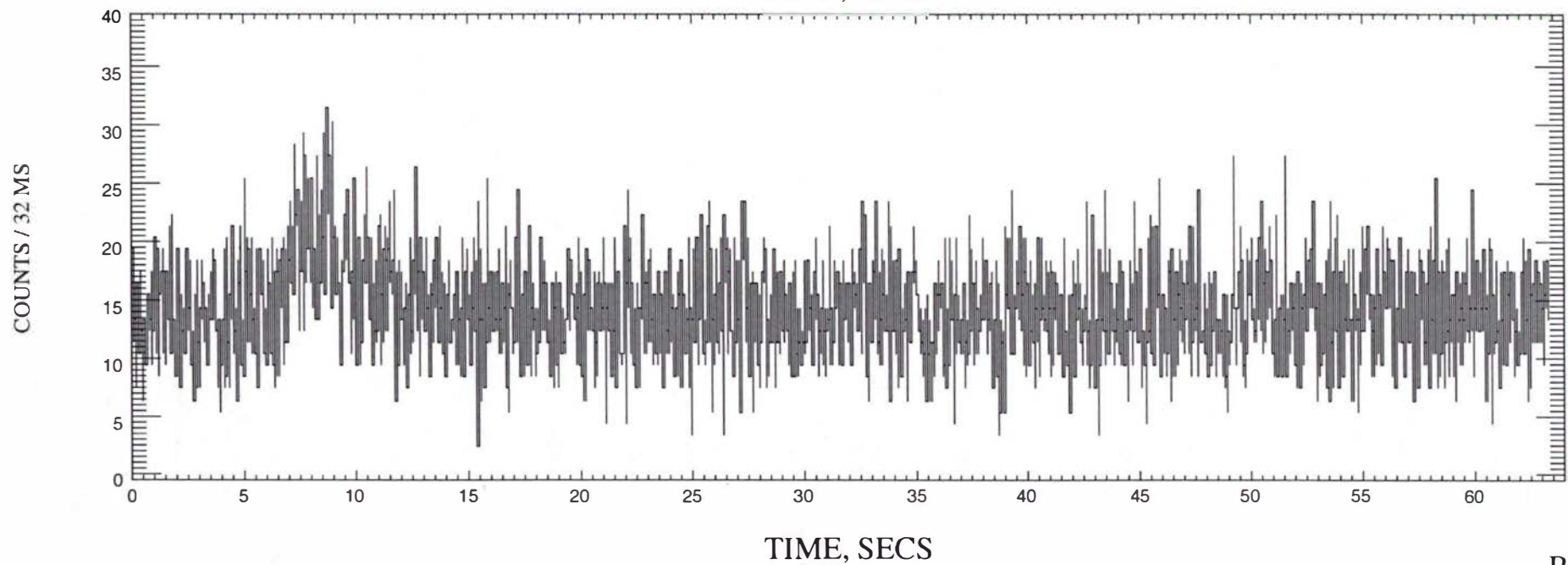
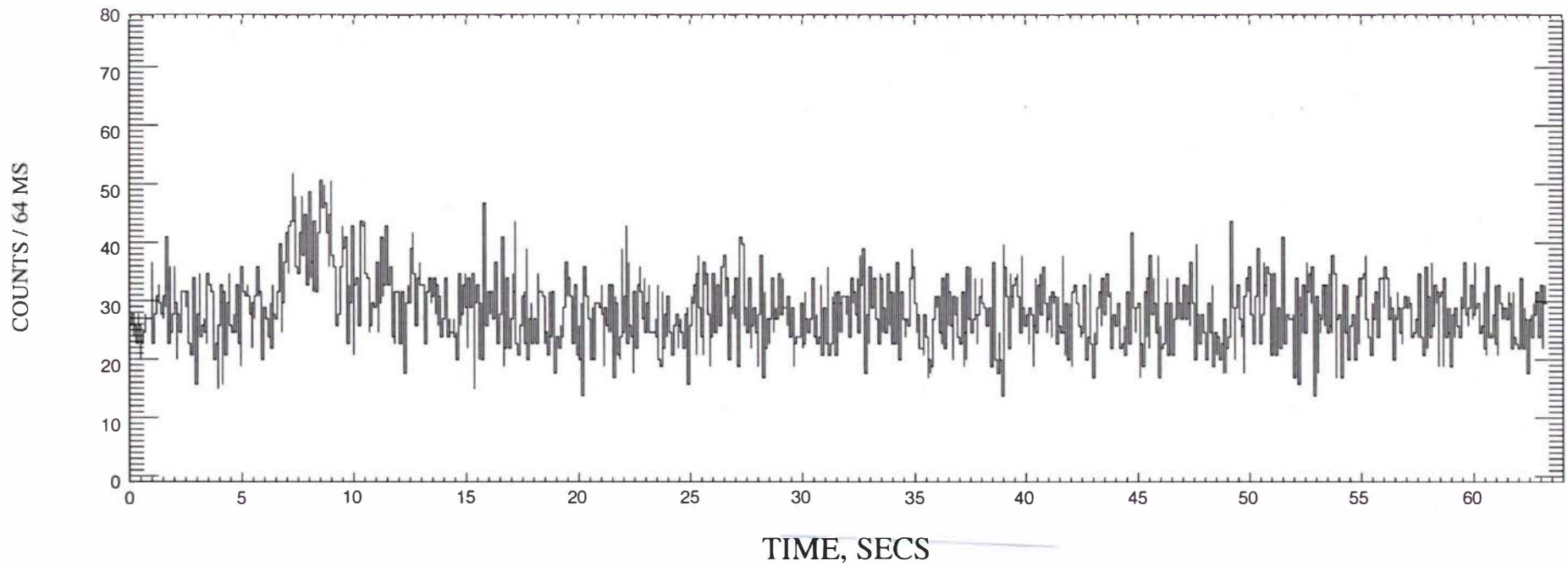


CALIBRATION DATA INCLUDED

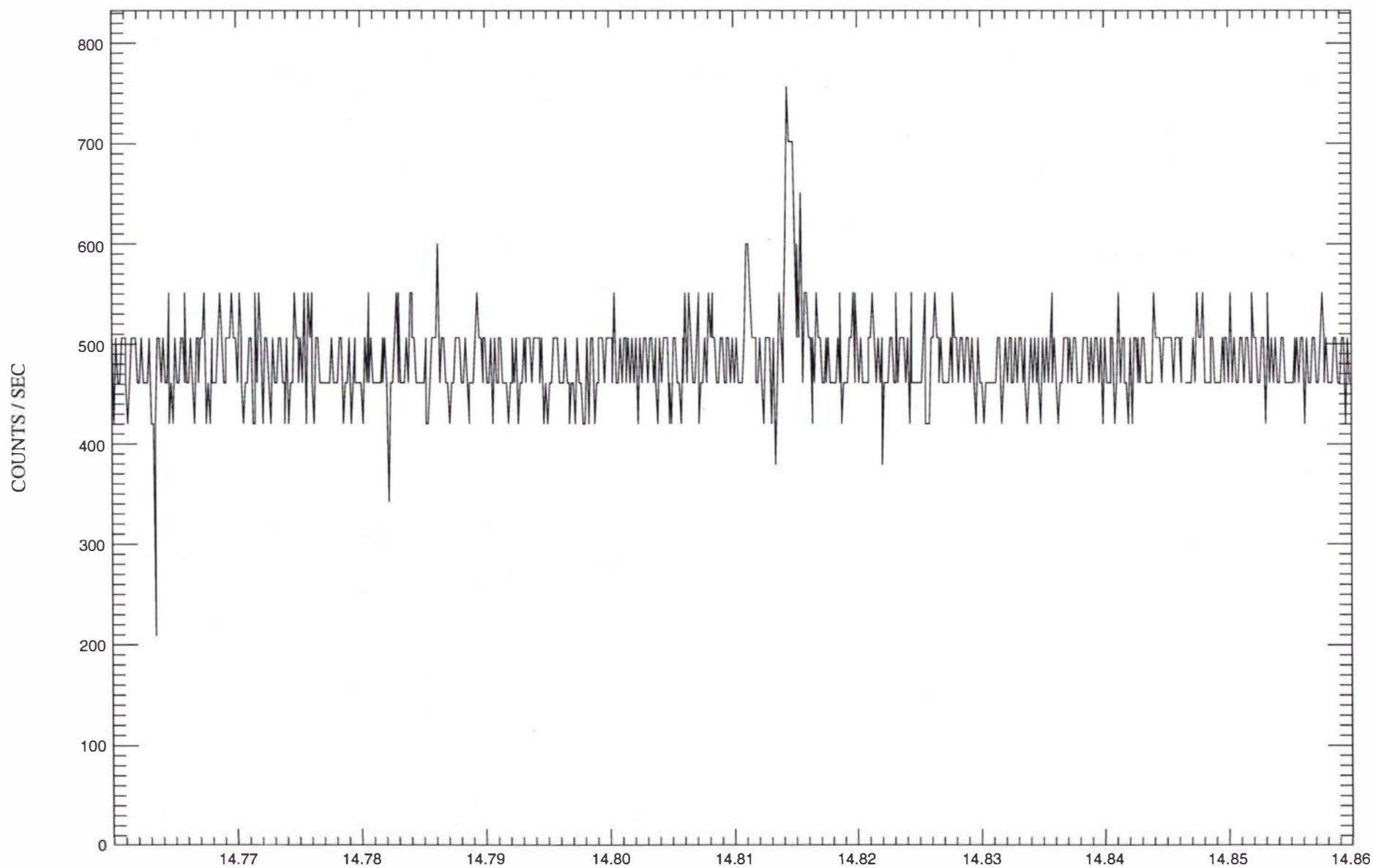


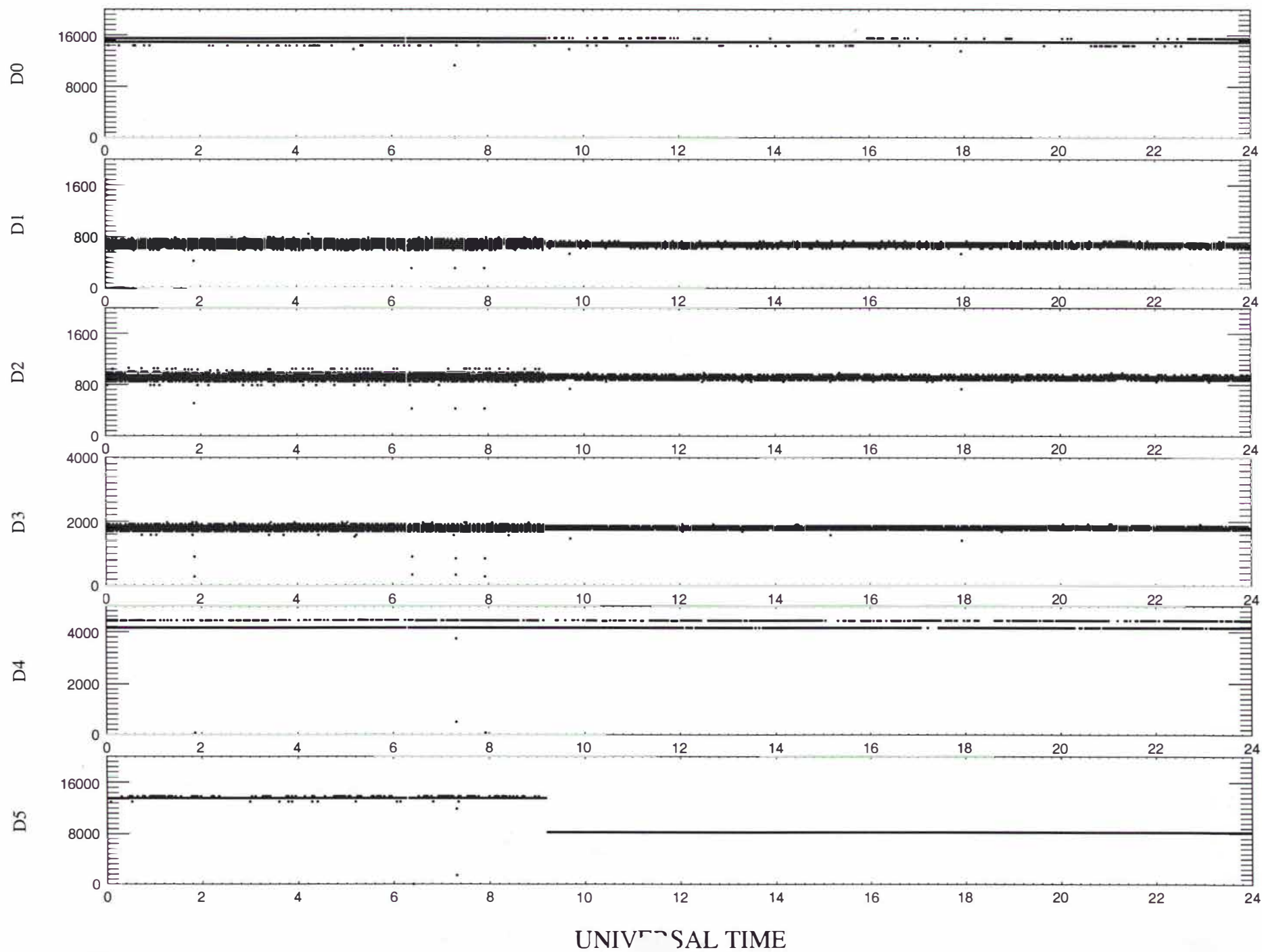
UNIVERSAL TIME

Burst Counter 4 at UT=14.814490258959 h=53332.165 s 14:48:52.165



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Jul 13 11:22 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 13:28:17 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7639

BATSEARCH PROGRAM

BATSE BURST # 7639
EVENT OF 1999 JUL 8 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 74031. S. OR 20:33:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 270.000 -42.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 7/ 99 IS:
RA= 147.374 DEC= -8.019 DIST= 5.381 AU
BATSE-ULYSSES DISTANCE = 805043118. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 814.74 SECS.
CROSSING TIME AT ULYSSES IS 74846. S. OR 20:47:25 +/- 506.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 7/ 99 IS:
RA= 208.404 DEC= -12.959 DIST= 0.859 AU
MARS-BATSE DISTANCE = 128447120. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -211.89 SECS.
CROSSING TIME AT MARS IS 73819. S. OR 20:30:19 +/- 61.43 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7639	990708	11367	74031	4500	270	-42	.07

BATSE BURST TRIGGER

NO.: 7639

TIME: TJD=1367 SECONDS=74031

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.7 AZIMUTH=173.9 ERROR=15 DEGREES

COMMENTS:

GRB. SINGLE SPIKE, DUR. 0.07 S. NOT VISIBLE ABOVE 300 KEV.

BATSE BURST# 7639

ULYSSES RT

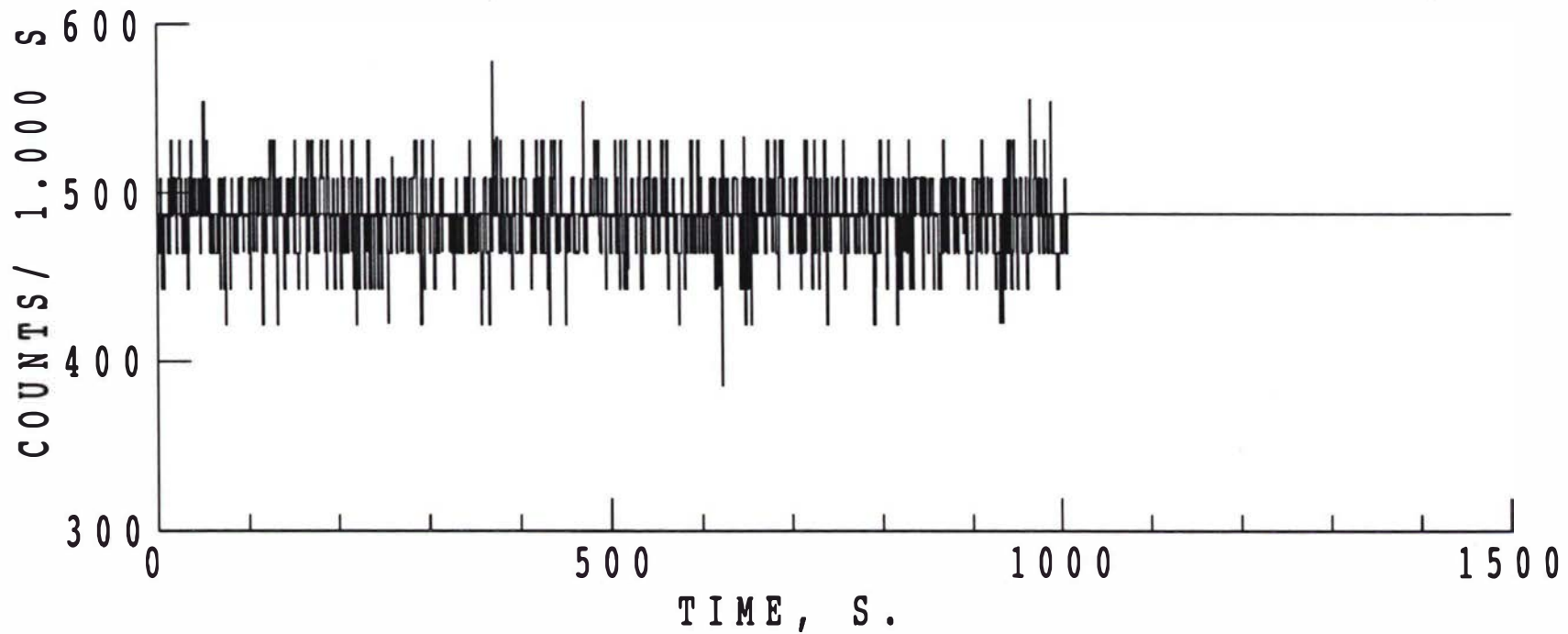
13 / 7 / 99

8 / 7 / 99 74340.133 s

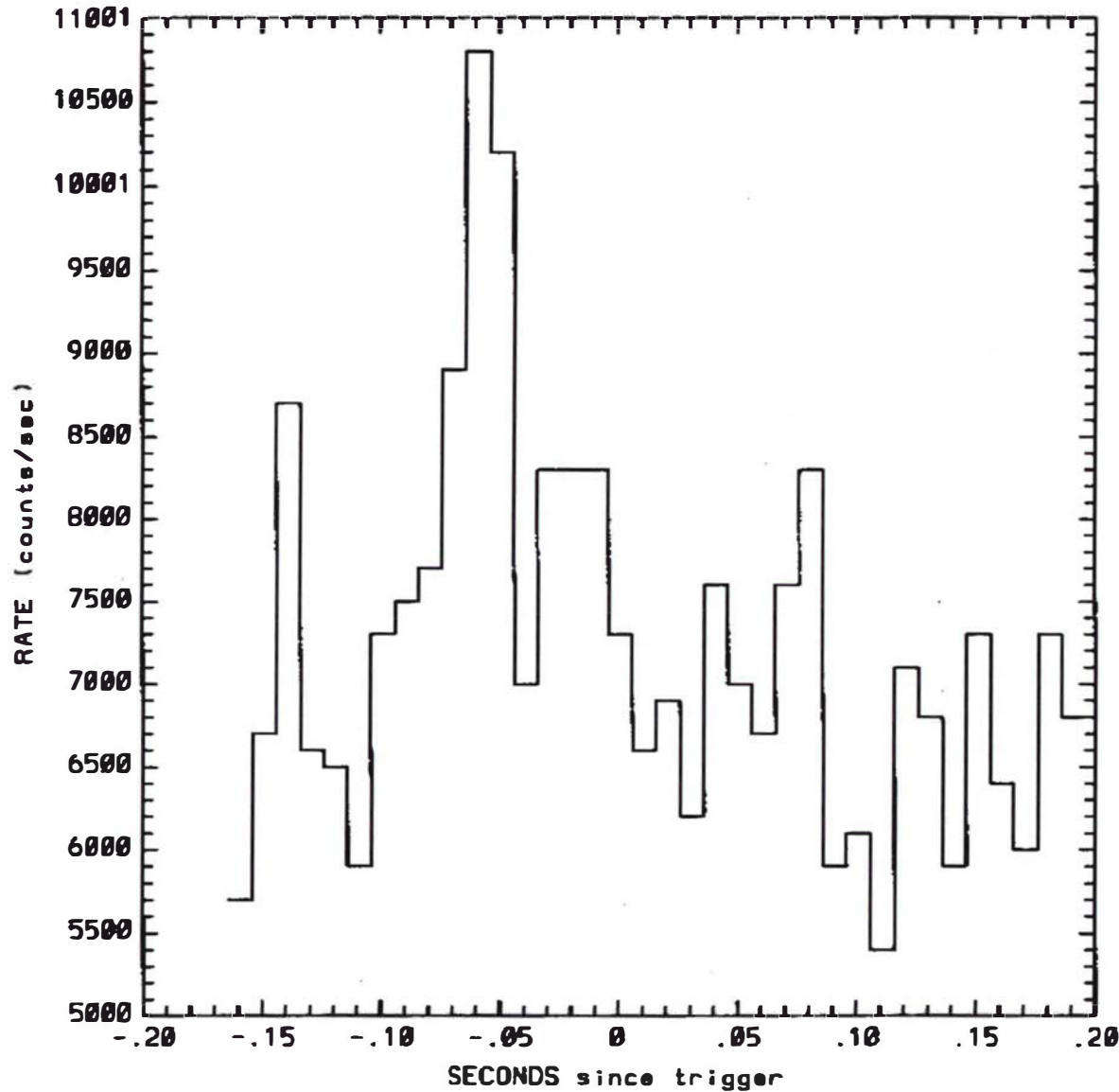
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



TTE Data for K. Hurley, No. 7639



15-JUL-1999 14.24.33

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # : 7639

Trigger Time:
11367 / 74831.225

Burst Data Type:
TTE

Multiple Events
Ignored: 30

Deadtime
Corrected: N

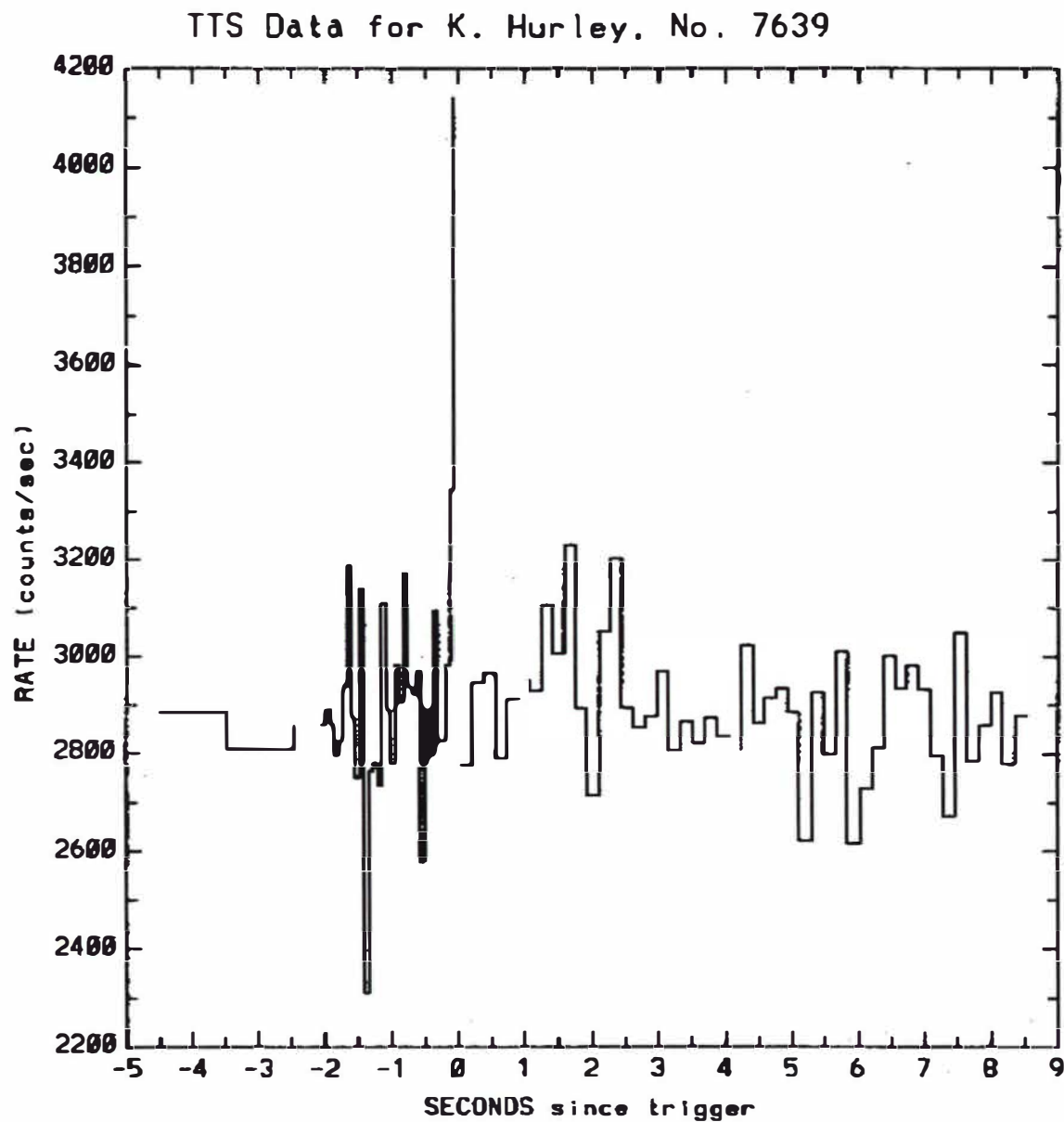
Background Data
Type: DISCLA

Minimum Integ. Time:
0.010000 seconds

Detectors [7..8]:
-6-4----

Discriminators:
{ 1 . 2 }

Quality Mask:
B01SP1



15-JUL-1999 14:26:29

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

Trigger # : 7639

Trigger Time:
11367 / 74831.225

Burst Data Type:
TTS

Time Corrected: Y

Maximum Time Error:
8.81491 seconds

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Bin Count: 8

Detectors [7..8]:
-6-4----

Discriminators:
(2 , 2)

Quality Mask:
80ISP1

From SAHI@fender.msfc.nasa.gov Tue Jul 13 11:25 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 13:30:21 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7640

BATSEARCH PROGRAM

BATSE BURST # 7640
EVENT OF 1999 JUL 8 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 83509. S. OR 23:11:49.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 178.000 58.000
BATSE PEAK COUNTING RATE: 9000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 7/ 99 IS:
RA= 147.387 DEC= -8.025 DIST= 5.382 AU
BATSE-ULYSSES DISTANCE = 805180723. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -894.91 SECS.
CROSSING TIME AT ULYSSES IS 82614. S. OR 22:56:54 +/- 476.06 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 7/ 99 IS:
RA= 208.404 DEC= -12.959 DIST= 0.859 AU
MARS-BATSE DISTANCE = 128447120. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -109.35 SECS.
CROSSING TIME AT MARS IS 83400. S. OR 23:09:59 +/- 70.26 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7640	990708	11367	83509	9000	178	+58	10

BATSE BURST TRIGGER

NO.: 7640

TIME: TJD=1367 SECONDS=83509

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.0 AZIMUTH=292.3 ERROR=3.3 DEGREES

COMMENTS:

GRB. MULTIPLE PULSES, DUR. 10 S, STARTS AT T-4 S, MAX. AT T+4.5. NOT VISIBLE
ABOVE 300 KEV.

BATSE BURST# 7640

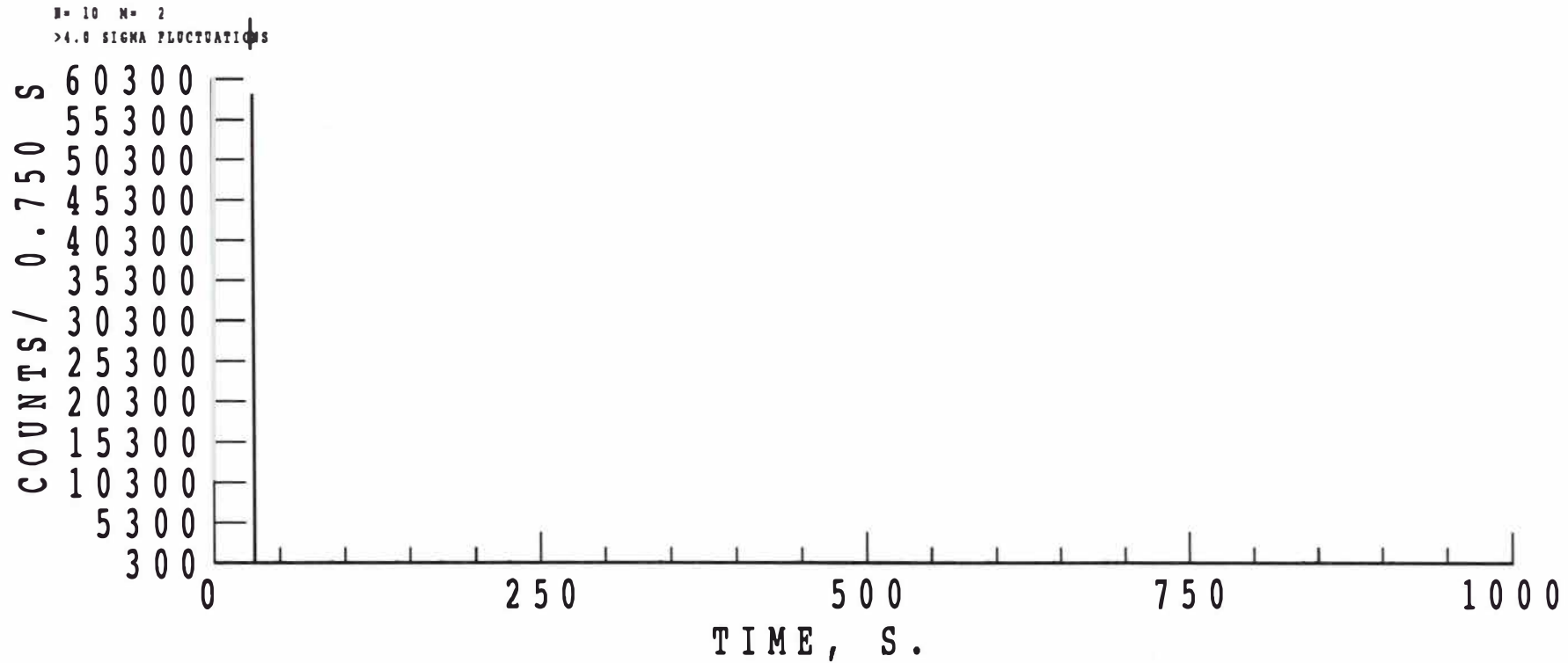
ULYSSES RT

13 / 7 / 99

8 / 7 / 99 82152.219 s

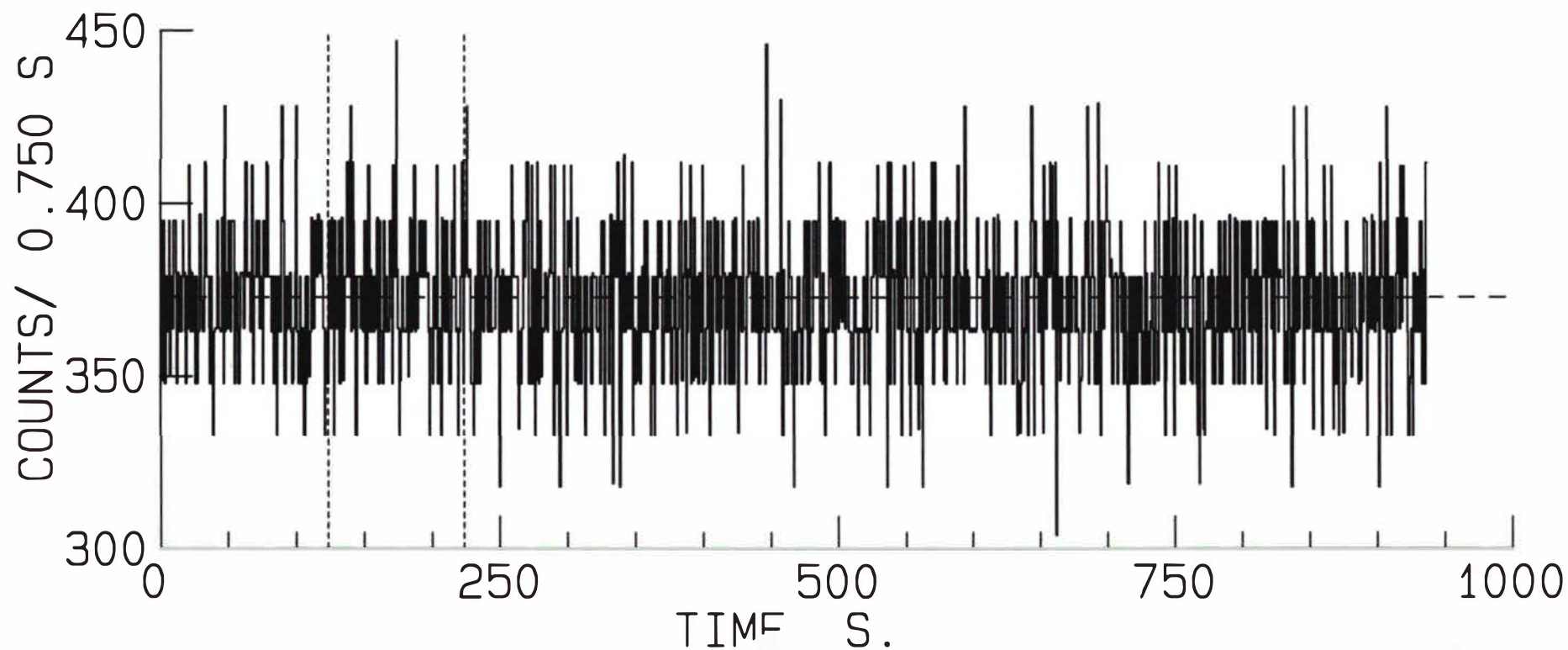
0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV



ULYSSES RT
8/ 7/99 82152.218 s
0.250 S INTERVALS REGROUPED BY 3
22- 150 keV

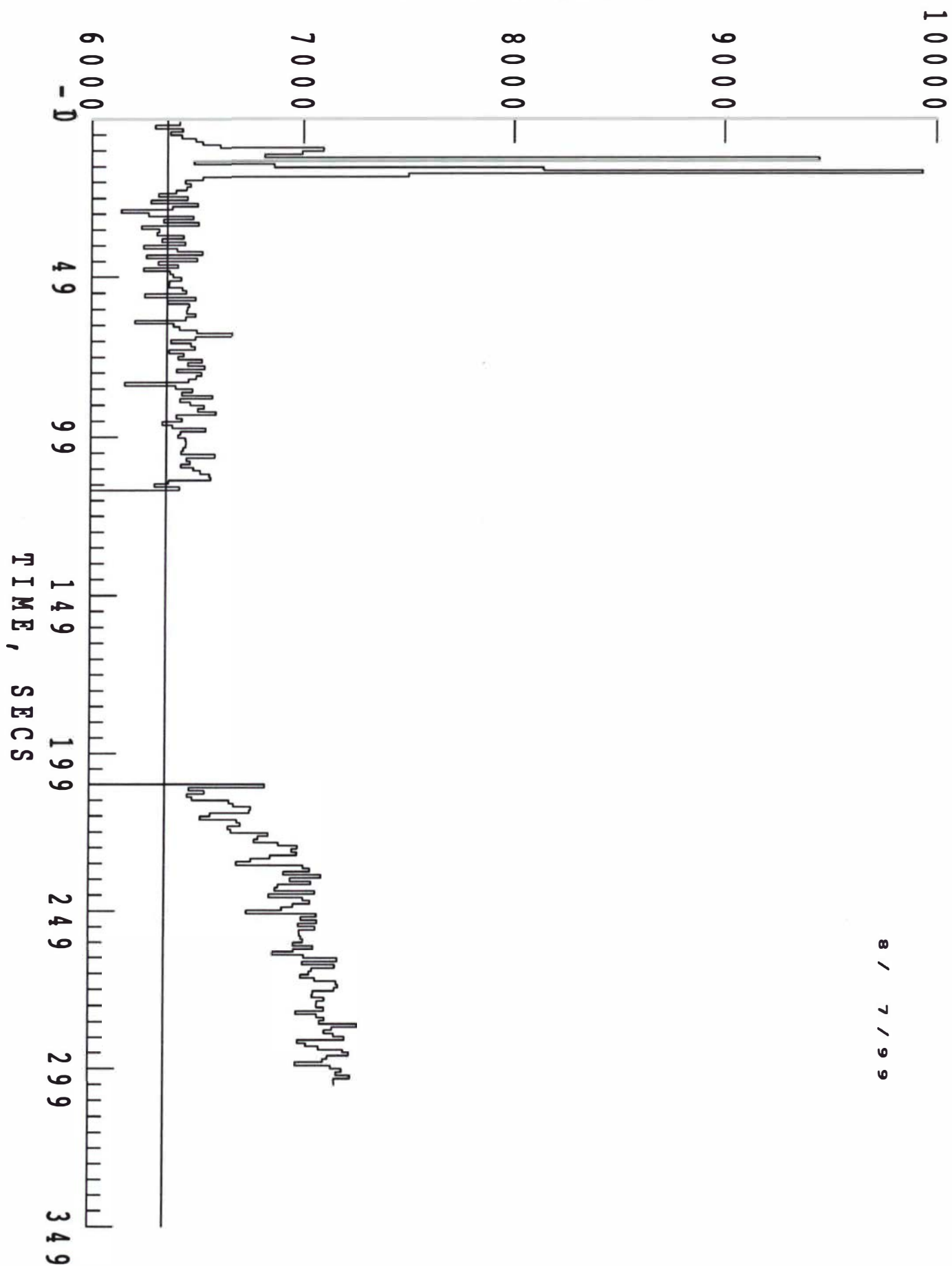
14/ 7/99



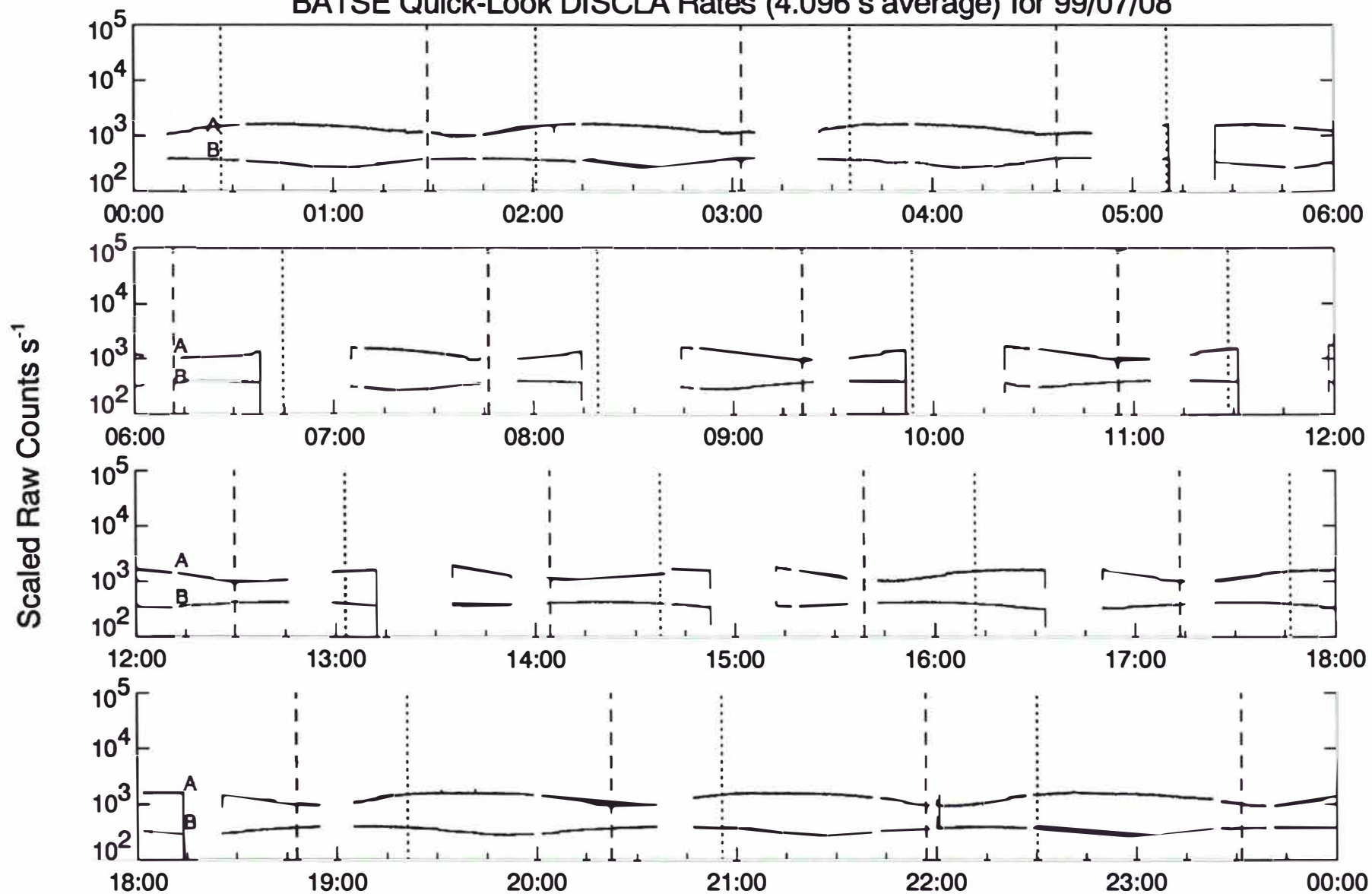
BACODINE 7640 08/07/99 83497.721

25- 100 keV

COUNTS/1.024 S



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

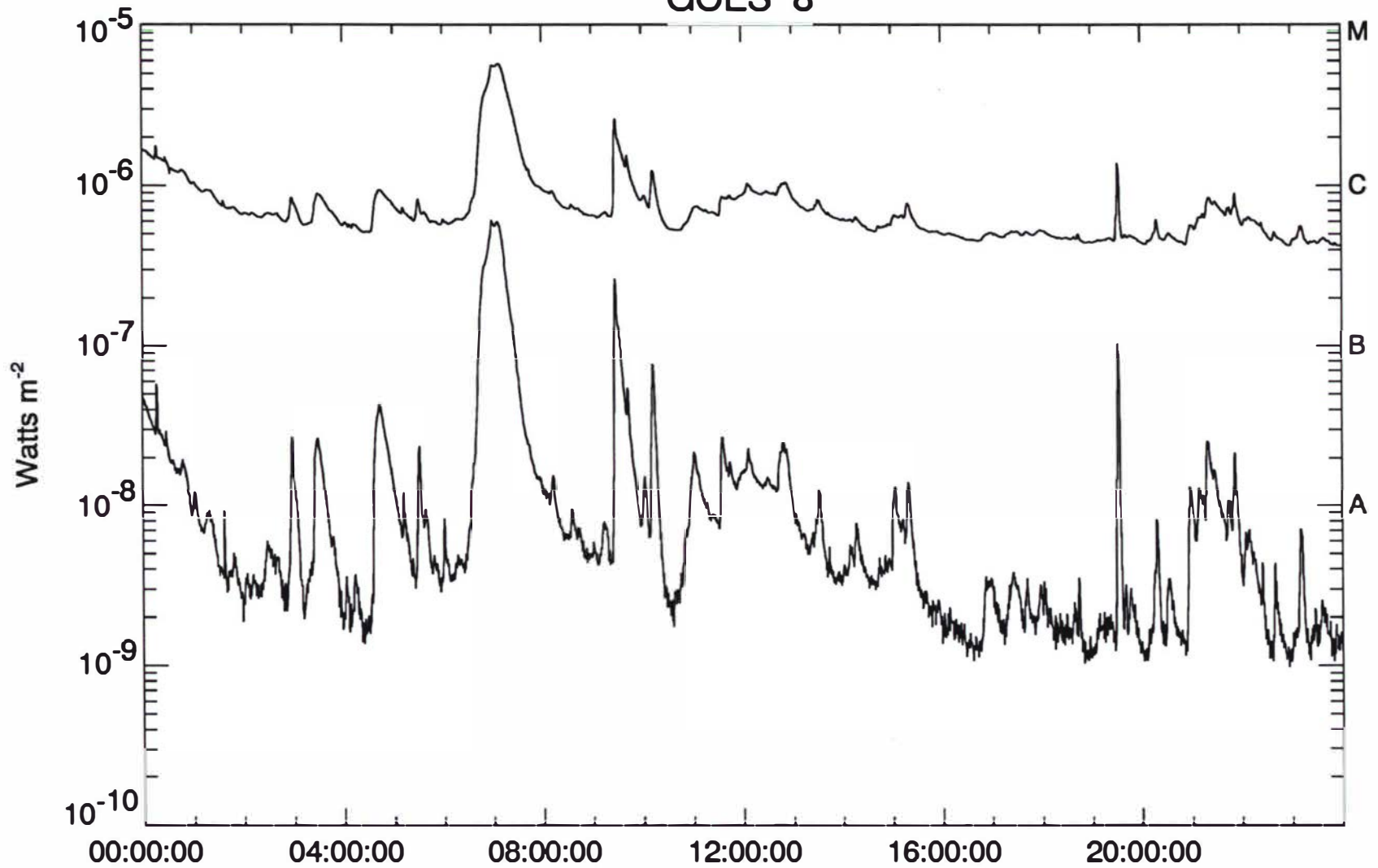


Current Time: 99/07/12, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



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

Plot created: 99/07/12, 1011

Channel 1 (1.0 - 8.0 Angstroms)

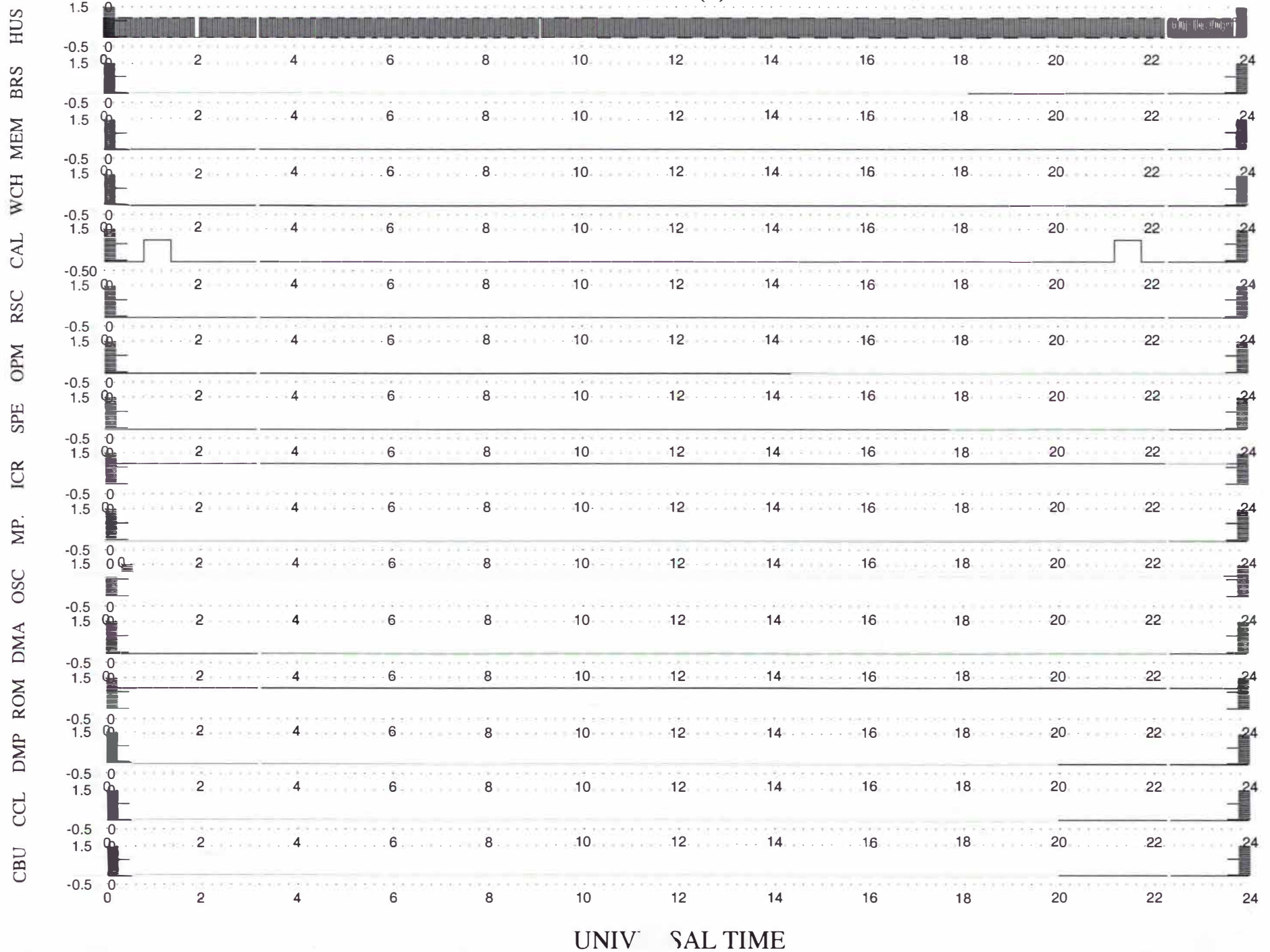
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

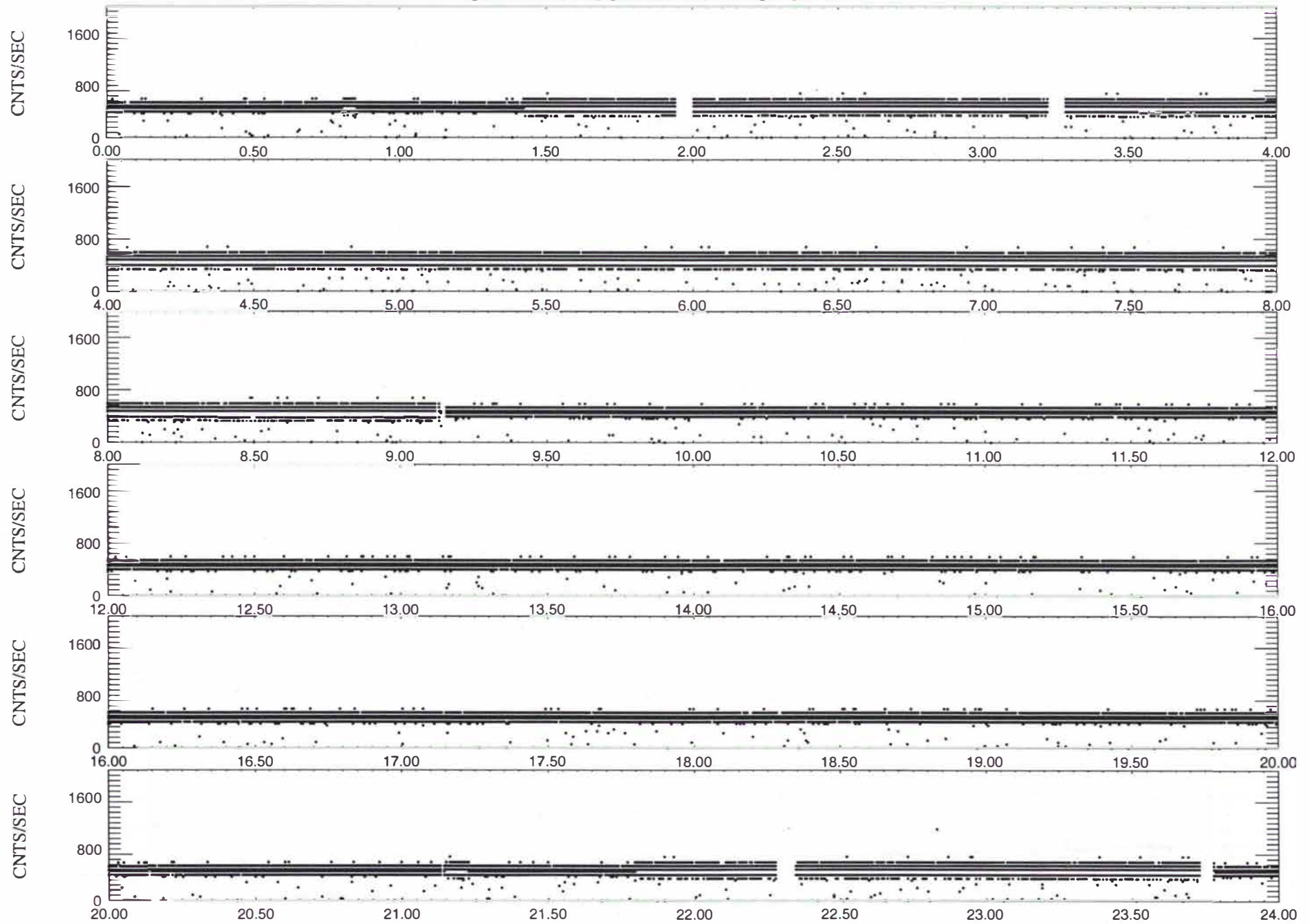
Background not subtracted

Sample average = 10

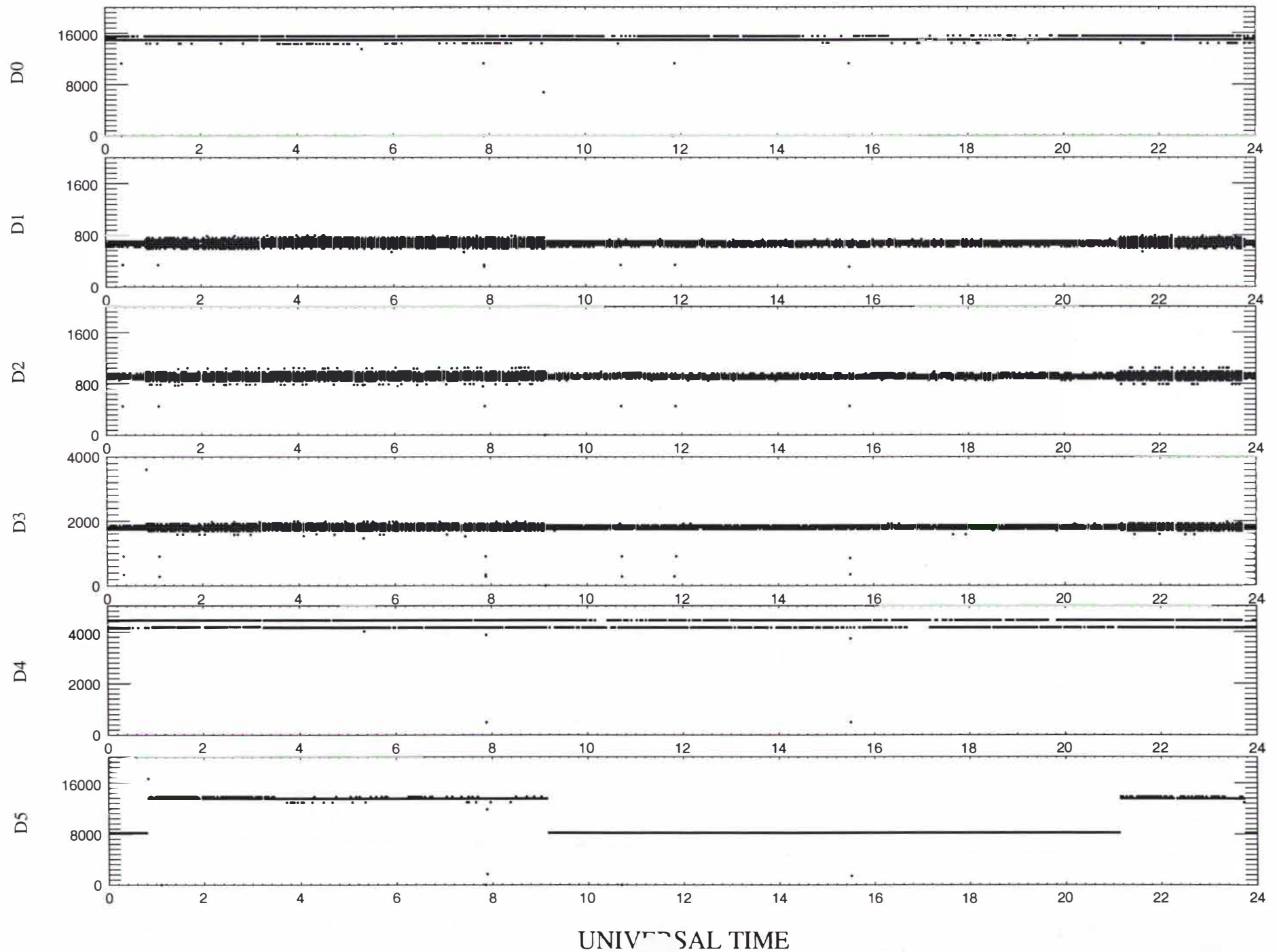
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Tue Jul 13 11:59 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 14:04:26 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7641

BATSEARCH PROGRAM

BATSE BURST # 7641
EVENT OF 1999 JUL 9 DAY OF YEAR=190
EVENT CROSSING TIME AT BATSE : 42516. S. OR 11:48:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 117.000 6.000
BATSE PEAK COUNTING RATE: 8000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 7/ 99 IS:
RA= 147.449 DEC= -8.054 DIST= 5.386 AU
BATSE-ULYSSES DISTANCE = 805816102. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=146.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2242.40 SECS.
CROSSING TIME AT ULYSSES IS 40274. S. OR 11:11:13 +/- 273.25 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 7/ 99 IS:
RA= 208.741 DEC= -13.101 DIST= 0.865 AU
MARS-BATSE DISTANCE = 129357232. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 22.92 SECS.
CROSSING TIME AT MARS IS 42539. S. OR 11:48:58 +/- 75.16 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7641	990709	11368	42516	8000	117	+06	12

BATSE BURST TRIGGER

NO.: 7641

TIME: TJD=1368 SECONDS=42516

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.4 AZIMUTH=4.5 ERROR=1.5 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 12 S, MAX. AT T+2 S. NOT VISIBLE ABOVE 300 KEV.

BATSE BURST# 7641

ULYSSES RT

21 / 01 / 00

09 / 07 / 99 39996.164 s

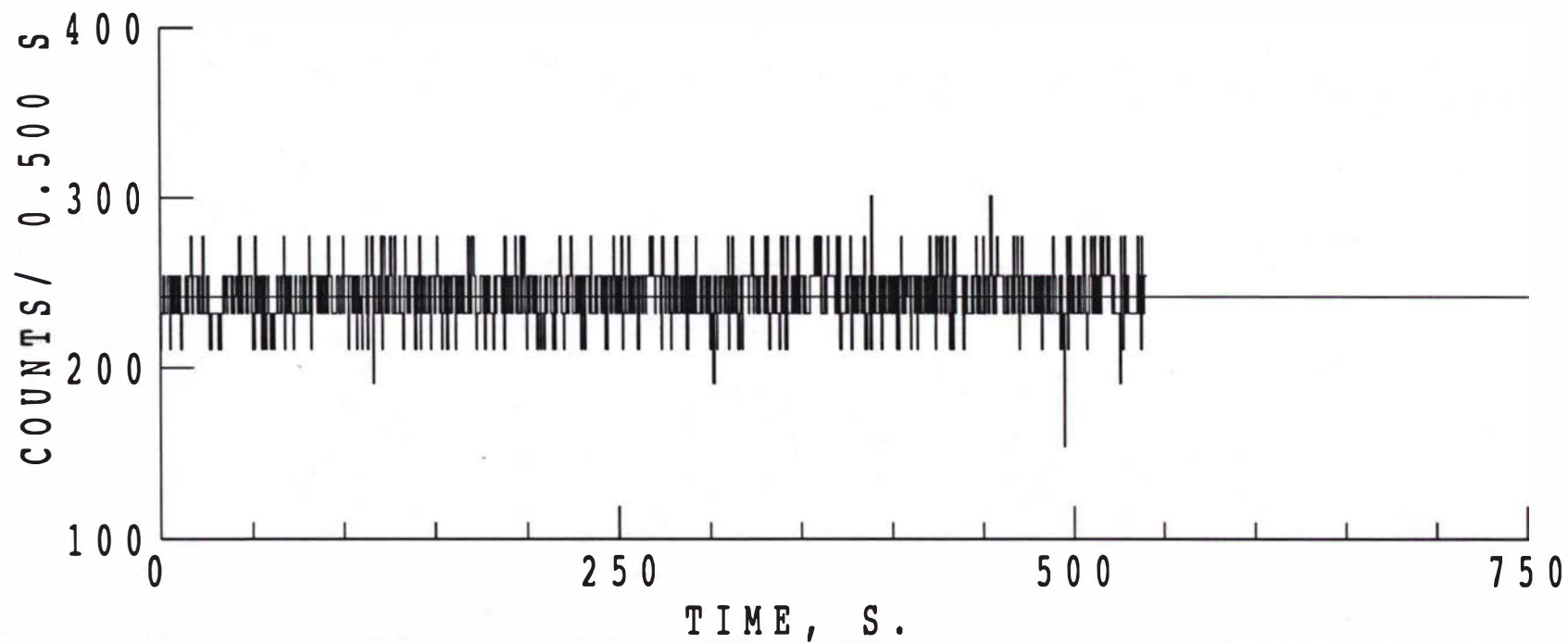
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Jul 13 12:00 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 14:06:13 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7642

BATSEARCH PROGRAM

NO

BATSE BURST # 7642
EVENT OF 1999 JUL 9 DAY OF YEAR=190
EVENT CROSSING TIME AT BATSE : 57388. S. OR 15:56:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 299.000 45.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 7/ 99 IS:
RA= 147.469 DEC= -8.064 DIST= 5.388 AU
BATSE-ULYSSES DISTANCE = 806025399. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.39 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1921.41 SECS.
CROSSING TIME AT ULYSSES IS 59309. S. OR 16:28:29 +/- 405.69 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 7/ 99 IS:
RA= 208.741 DEC= -13.101 DIST= 0.865 AU
MARS-BATSE DISTANCE = 129357232. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 70.50 SECS.
CROSSING TIME AT MARS IS 57459. S. OR 15:57:38 +/- 74.98 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7642	990709	11368	57388	3500	299	+45	100

BATSE BURST TRIGGER

NO.: 7642

TIME: TJD=1368 SECONDS=57388

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

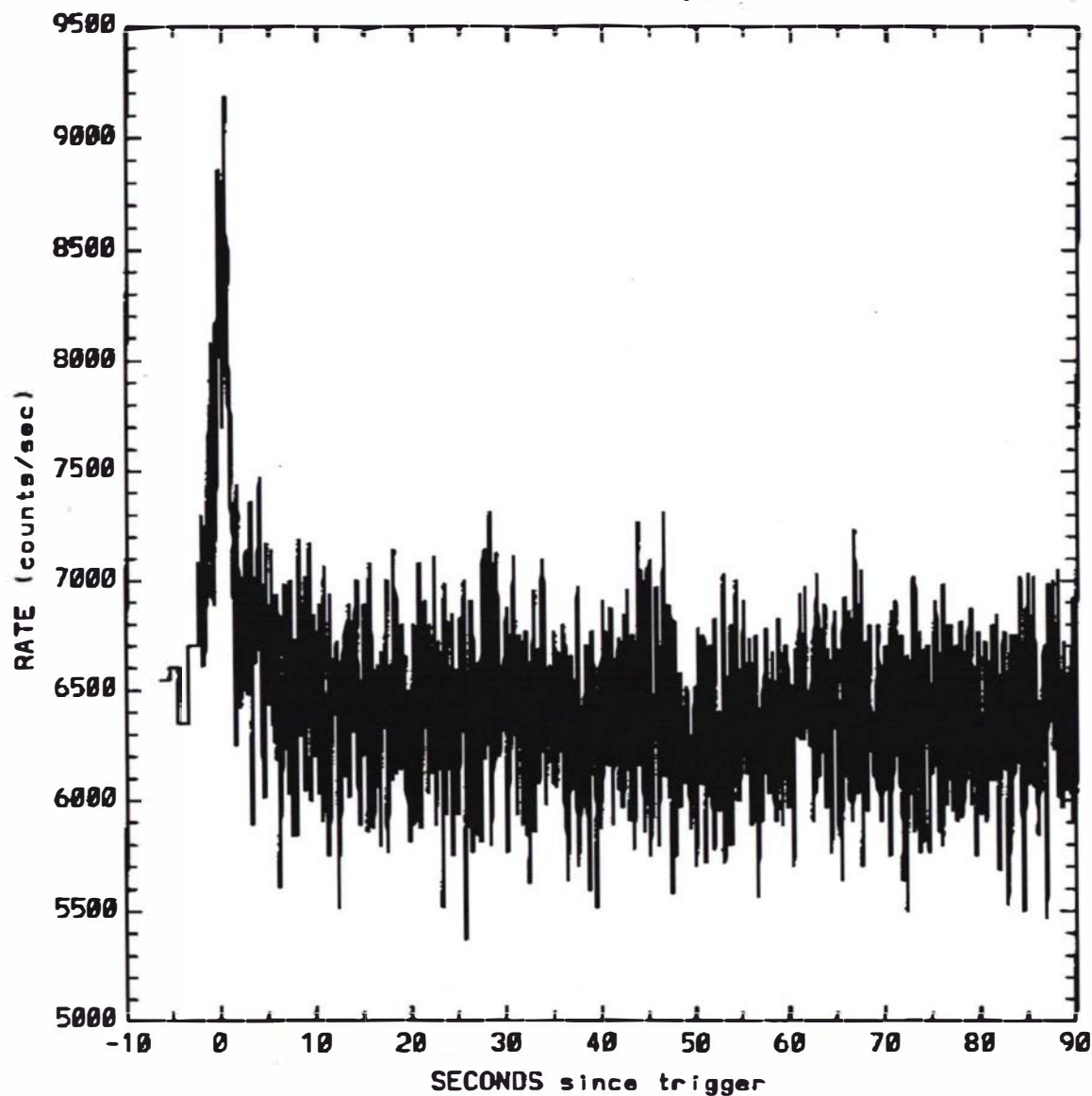
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=120.1 AZIMUTH=216.9 ERROR=3 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, DUR. 100 S, STARTS AT T-96 S. NOT VISIBLE ABOVE 300 KEV.

DISCSC Data for K. Hurley, No. 7642



15-JUL-1999 14:28.09

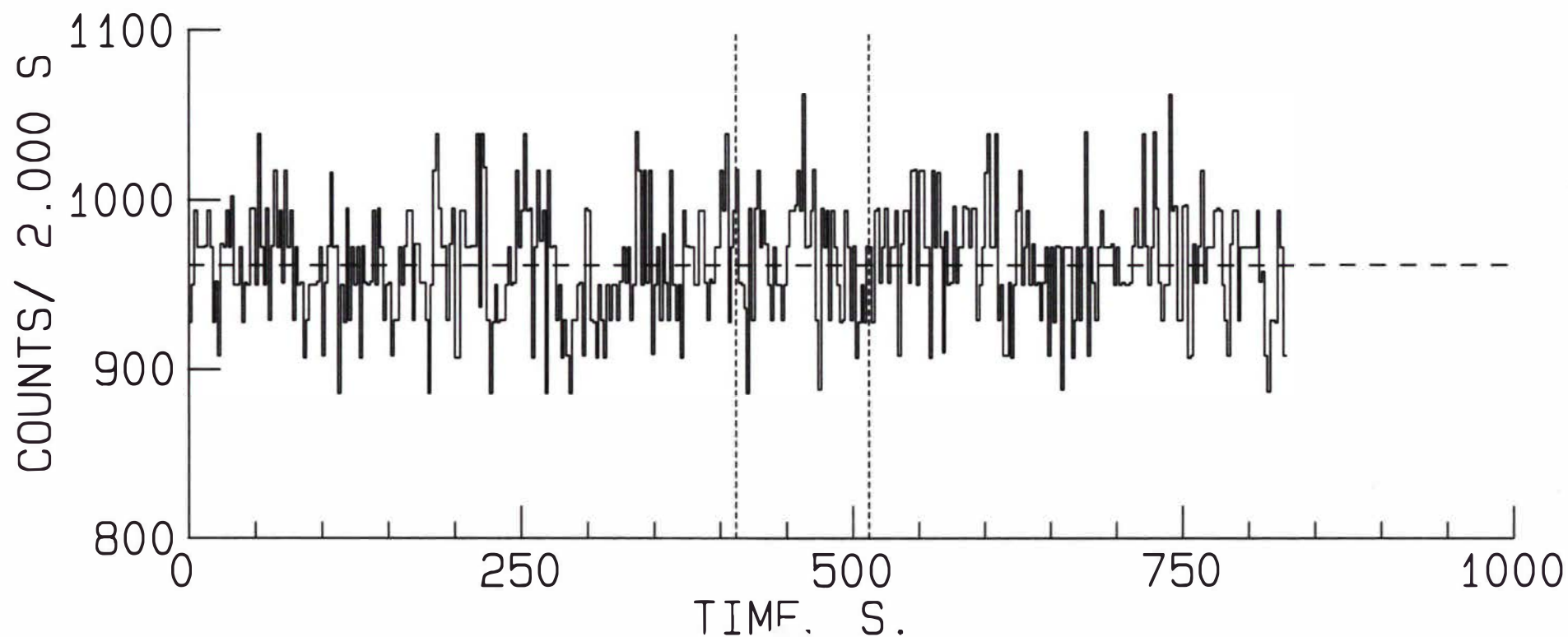
Created by MDPS 80
(Burst Display)
Version 12.26

Trigger # . 7642

Trigger Time:
11368 / 57388.825Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors [7..8],
7-5-----Discriminators:
(1 , 2)Quality Mask:
BDSP1

ULYSSES RT
9/ 7/99 58896.356 s
0.500 S INTERVALS REGROUPED BY 4
22- 150 keV

16/ 7/99



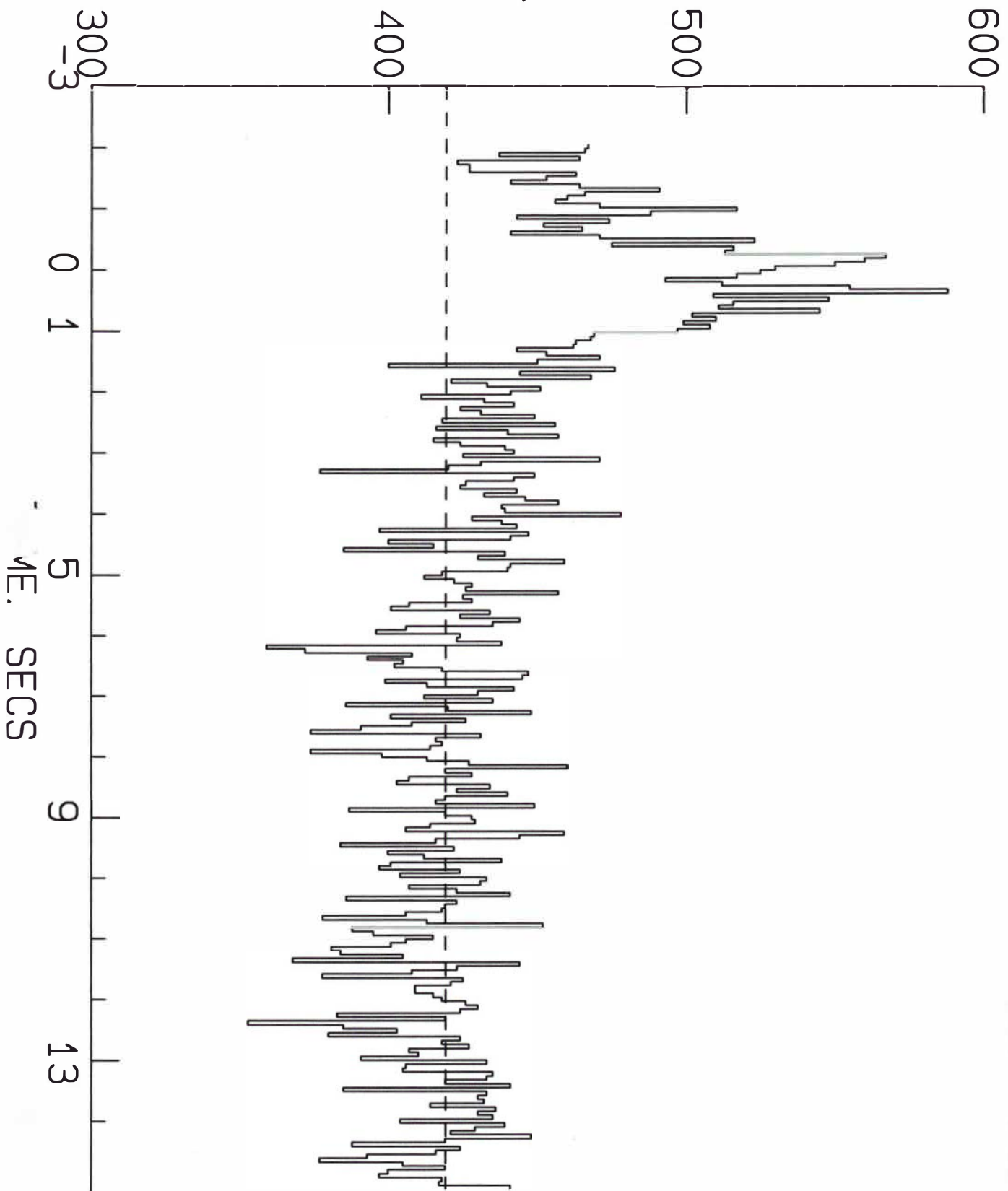
BATSE

09/07/99

57388.025

25- 100 keV

COUNTS/0.064 S



From PETERSON@fender.msfc.nasa.gov Tue Jul 13 13:50 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Tue, 13 Jul 1999 15:55:11 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7643

TIME: TJD=1368 SECONDS=81498

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

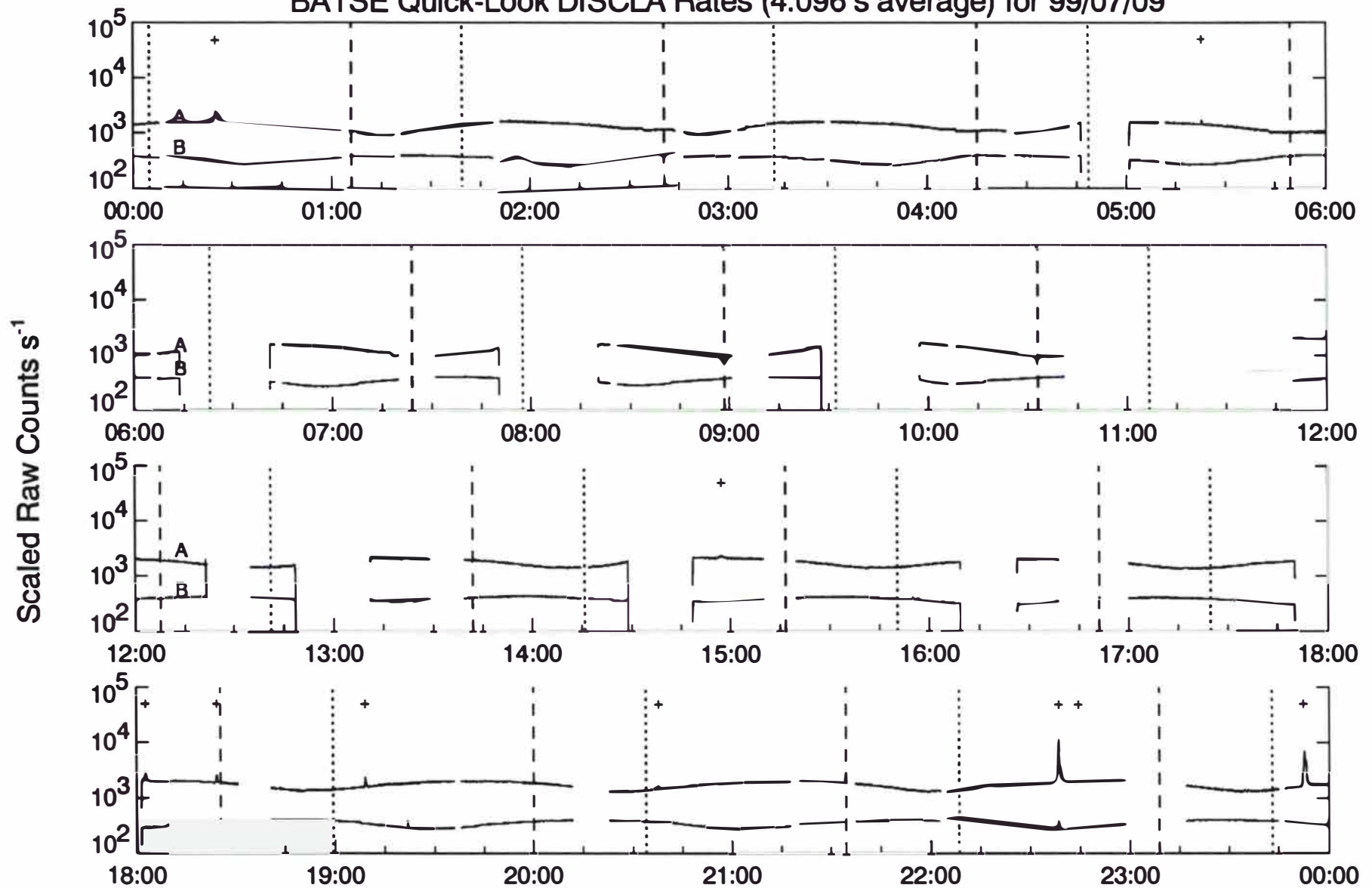
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=118 AZIMUTH=356 ERROR=0.397 DEGREES

COMMENTS:

GOES C6.9, OPTICAL SF. DOUBLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 470 S,
STARTS AT APPROX. T-20 S, MAX AT T+14S. WEAKLY VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/09

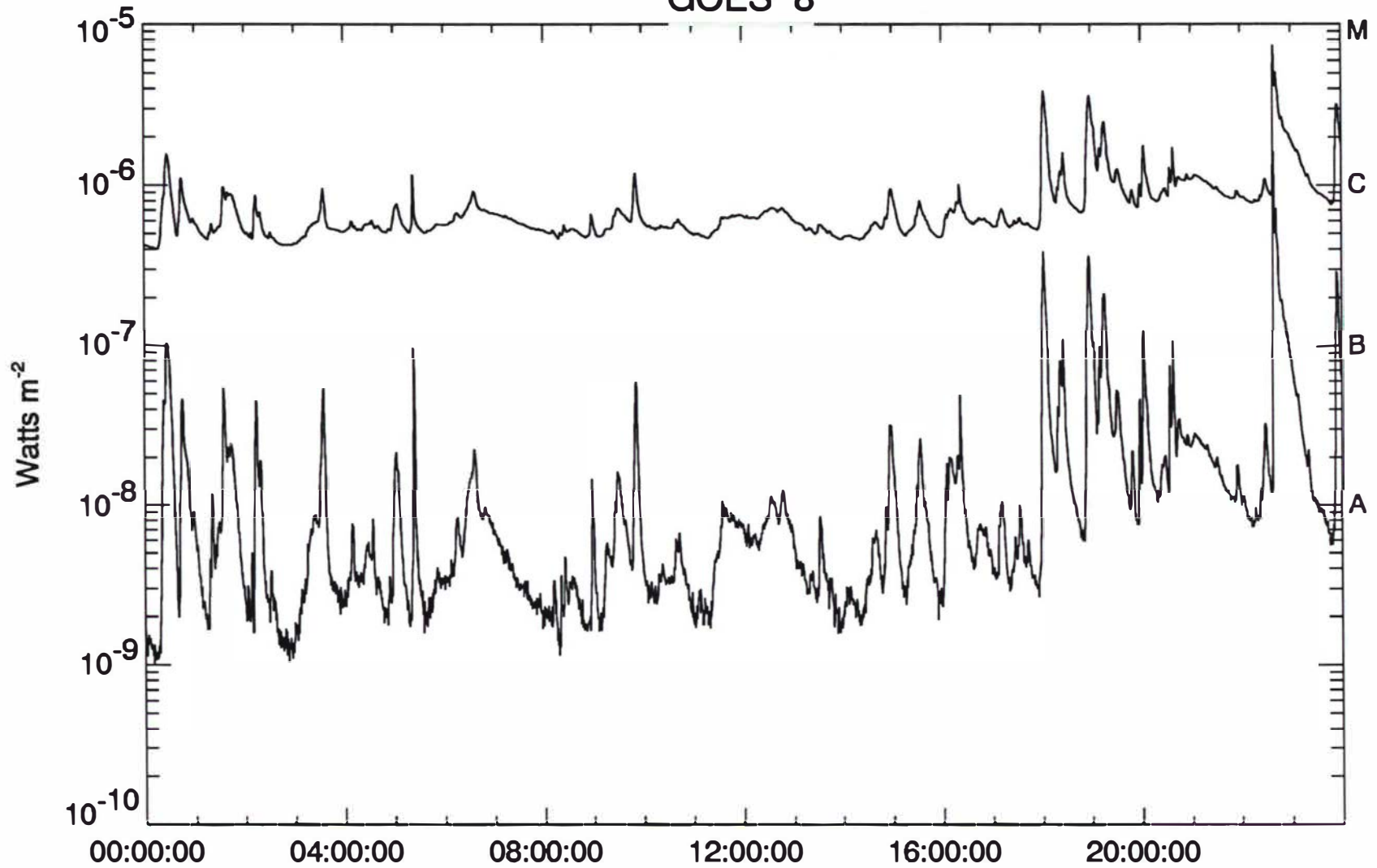


Current Time: 99/07/13, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/09, 0000:00

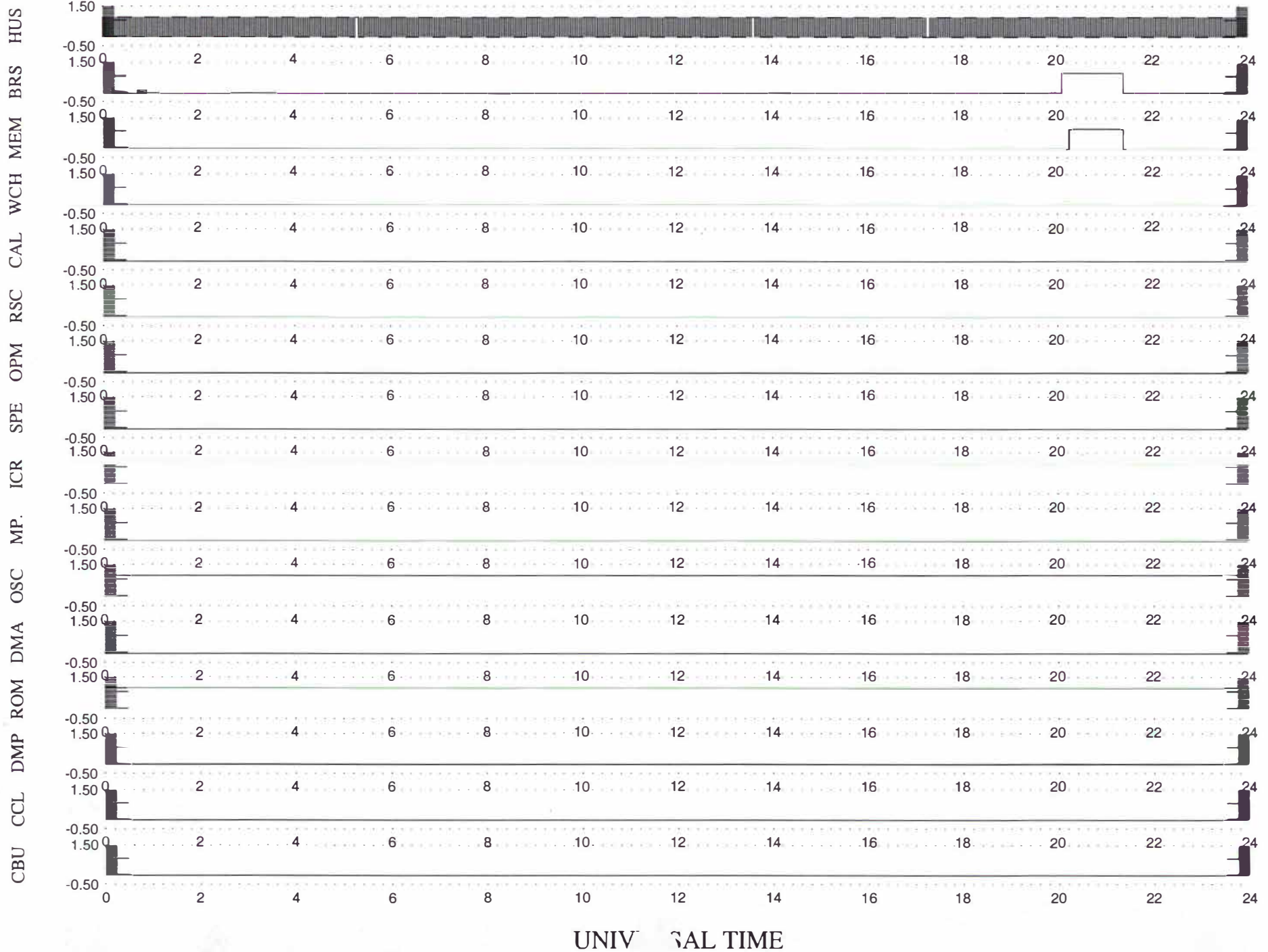
Plot created: 99/07/13, 1011

Channel

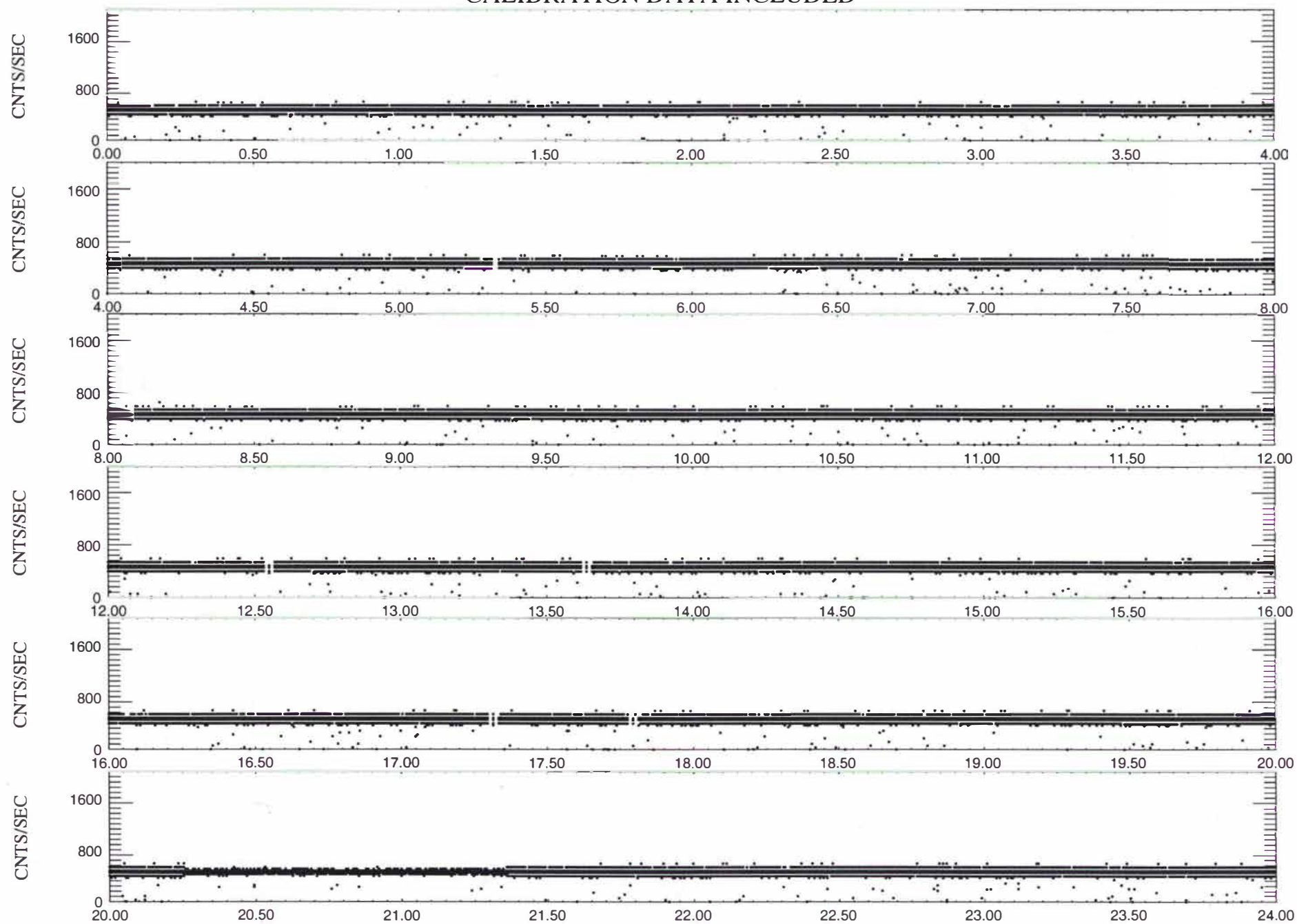
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 5

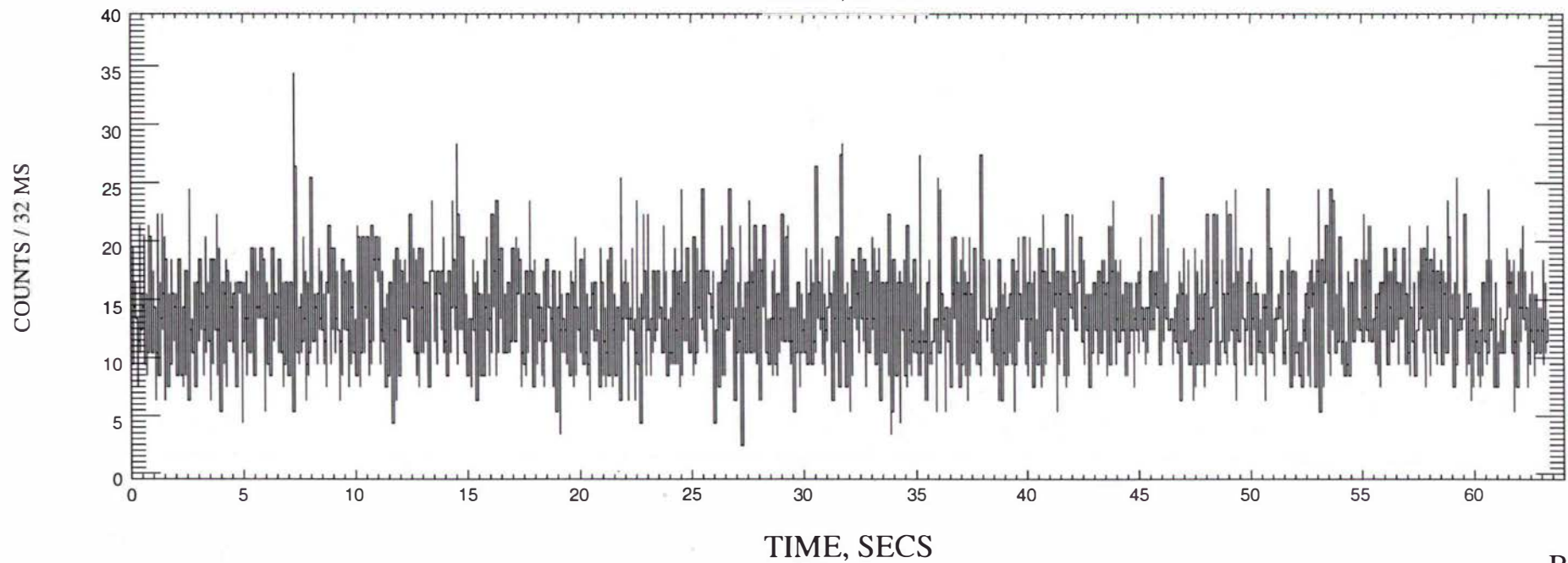
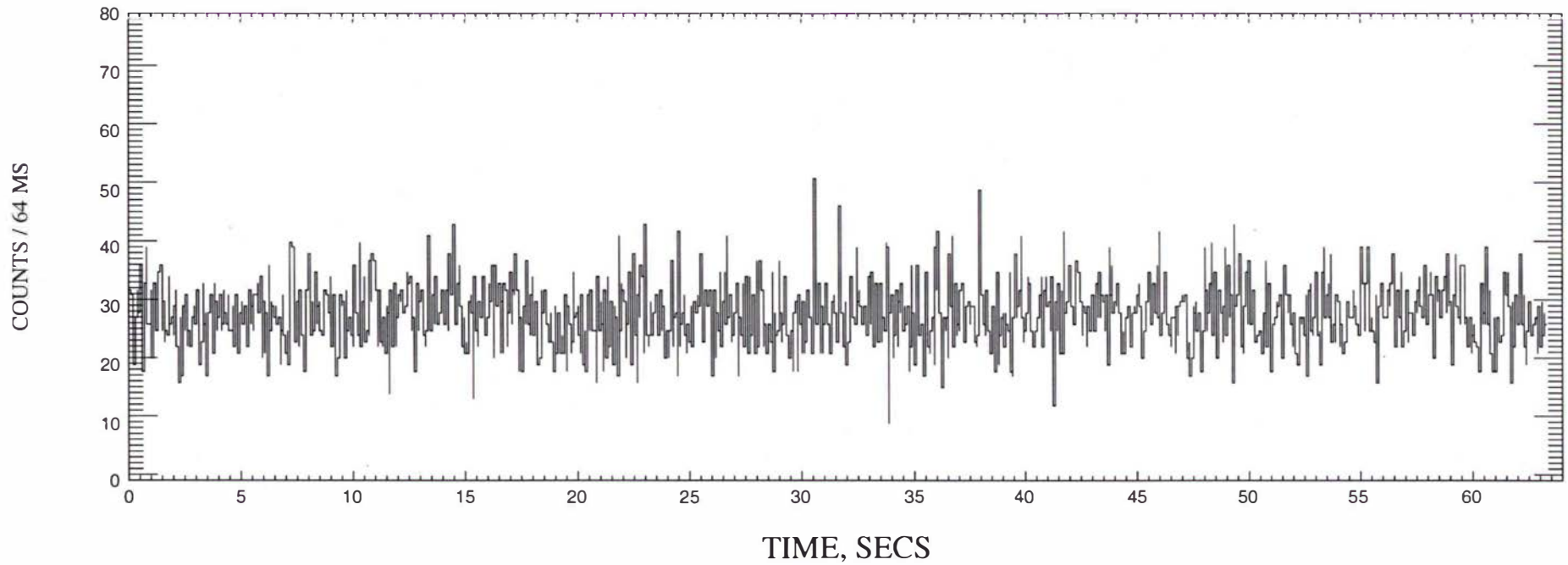


CALIBRATION DATA INCLUDED

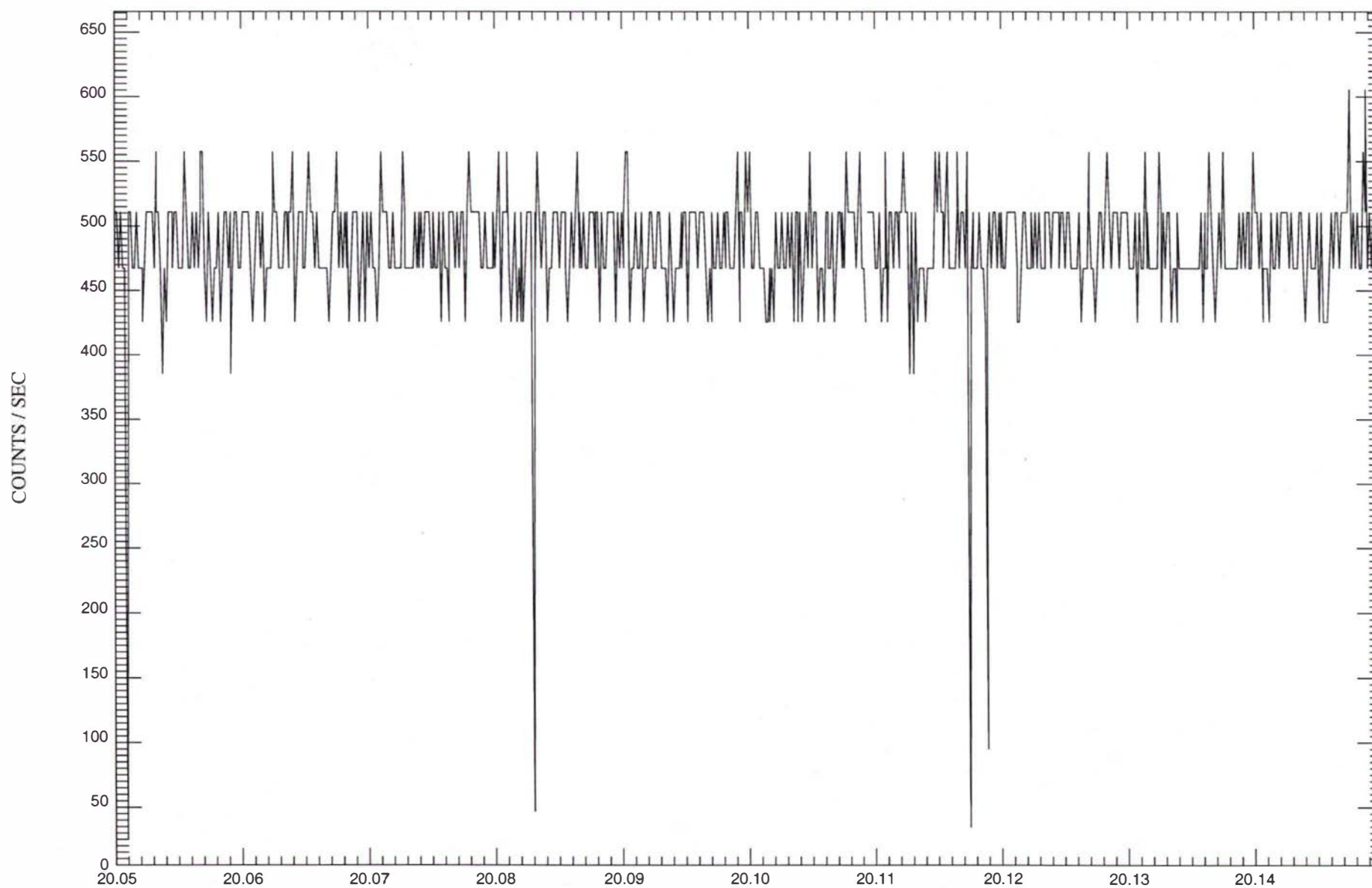


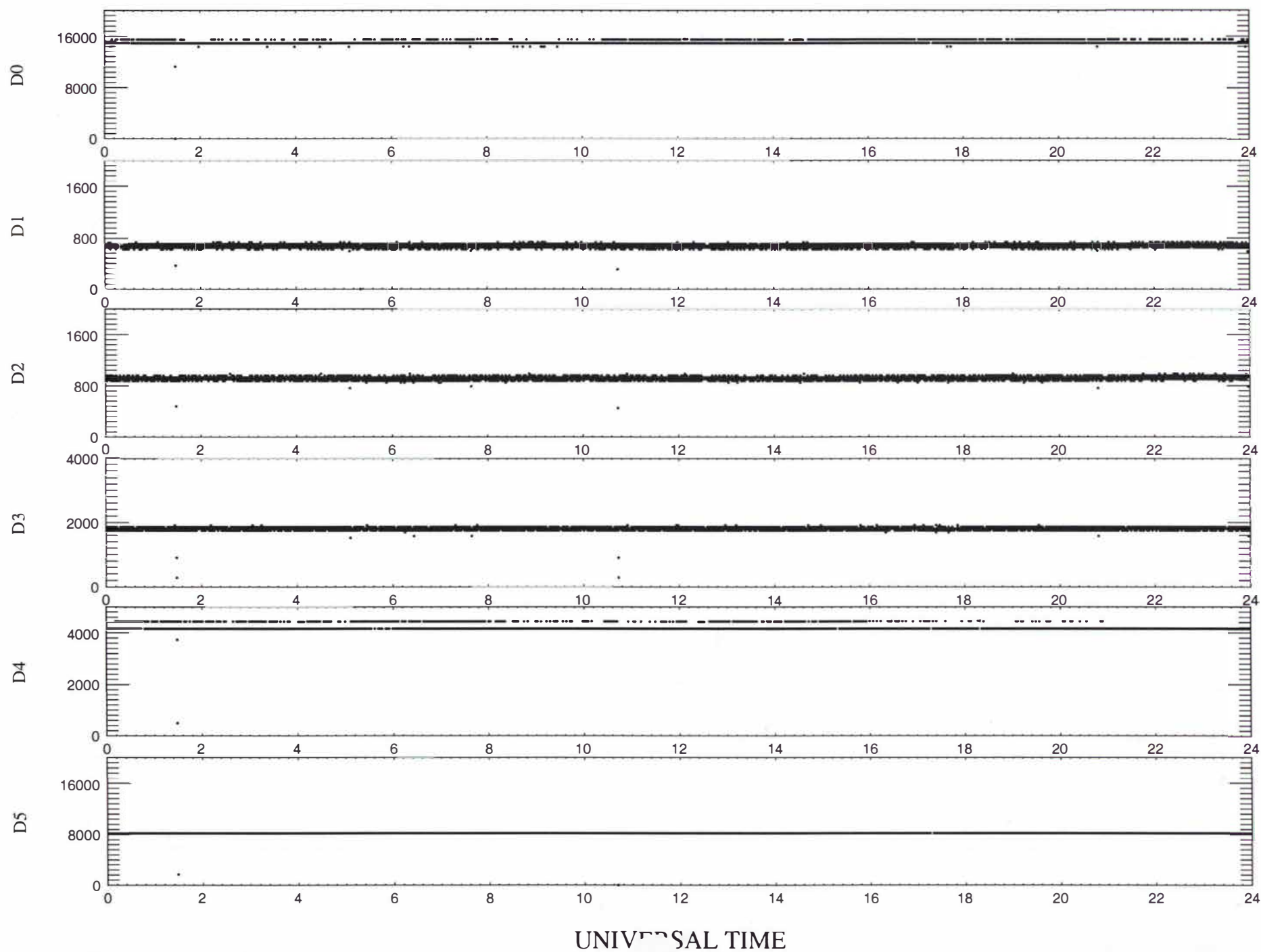
UNIVERSAL TIME

Burst Counter 5 at UT=20.098190324571 h=72353.485 s 20:05:53.485



CALIBRATION DATA INCLUDED





Date: Jan 30 2013

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

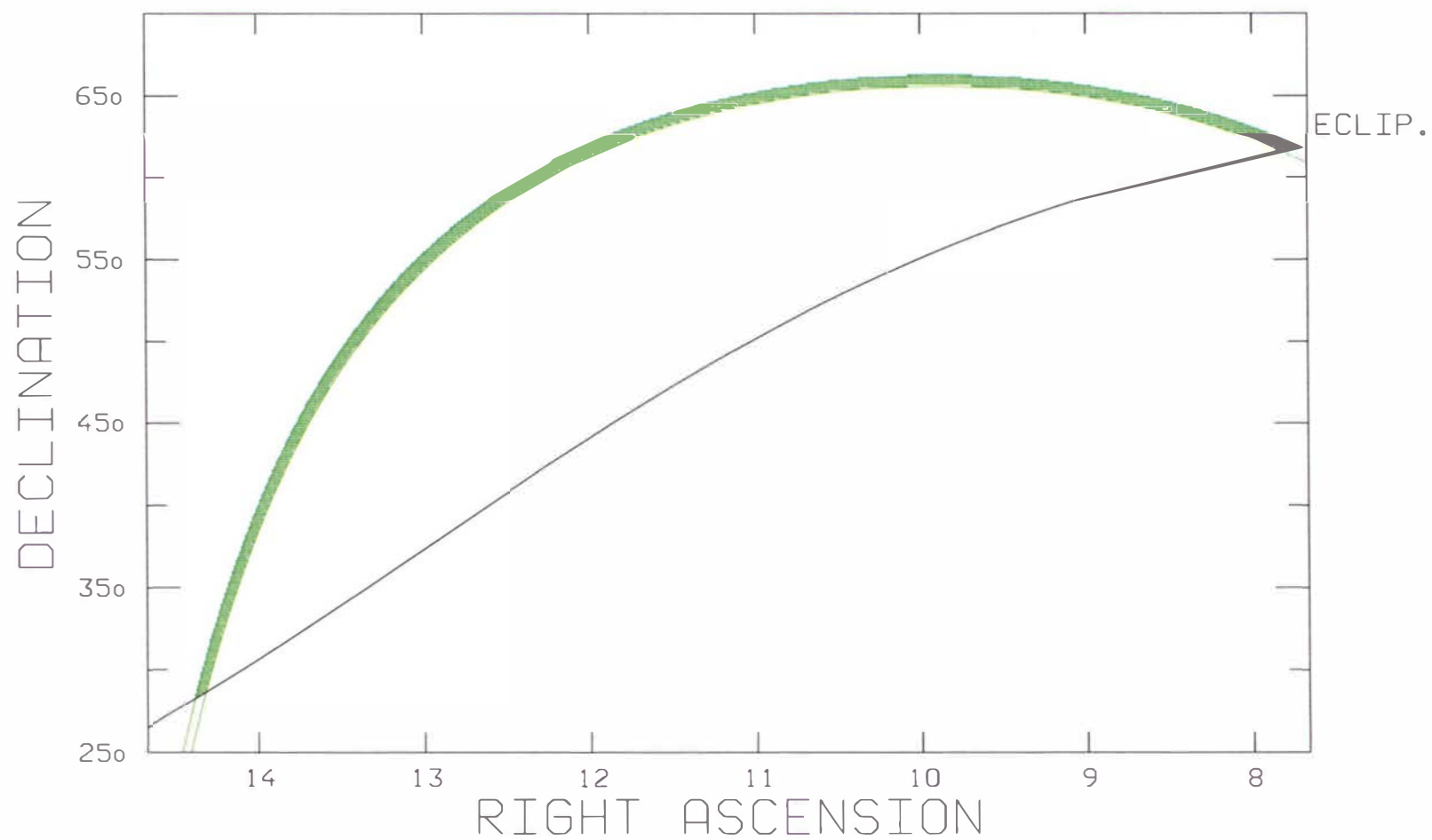
- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

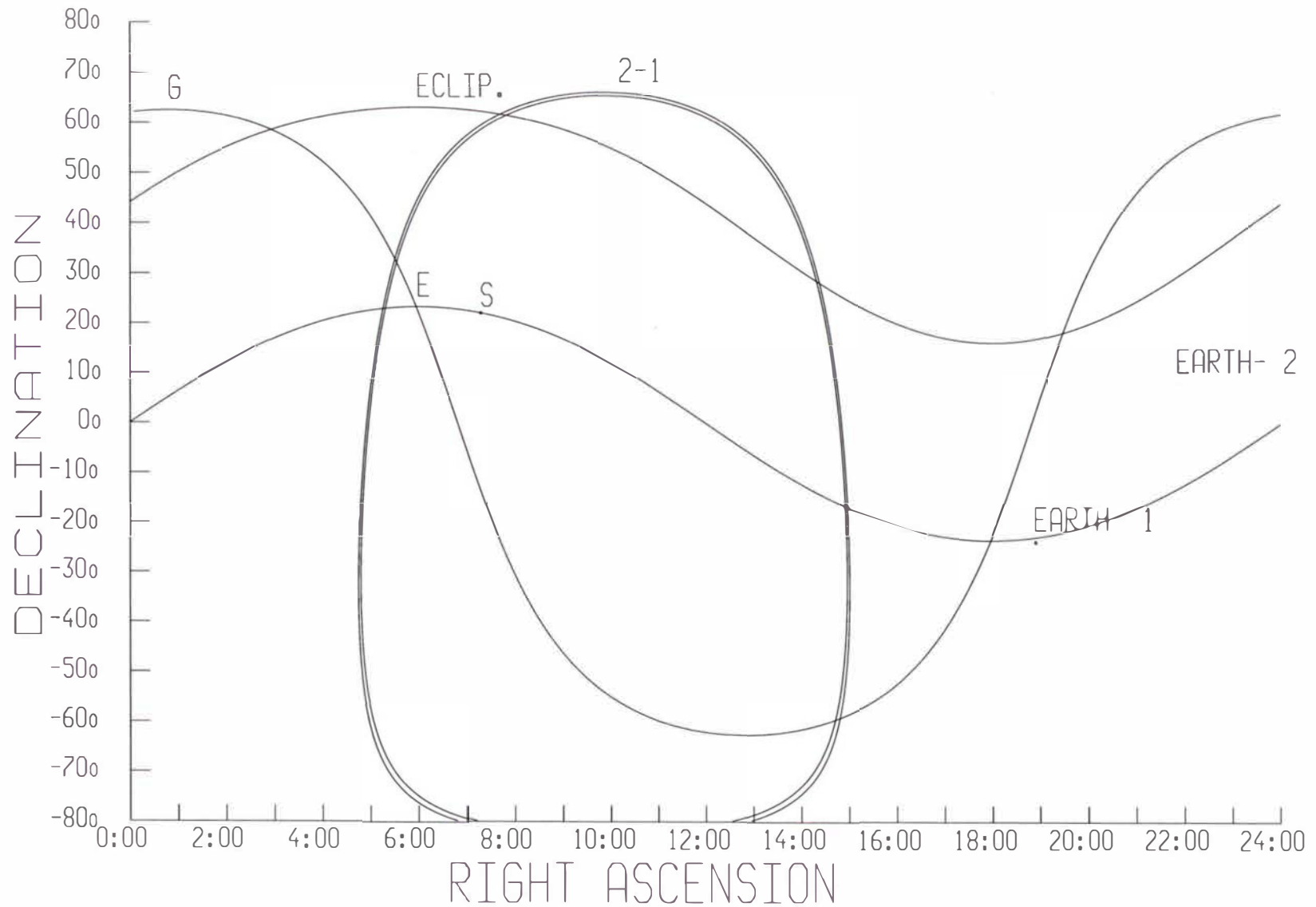
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

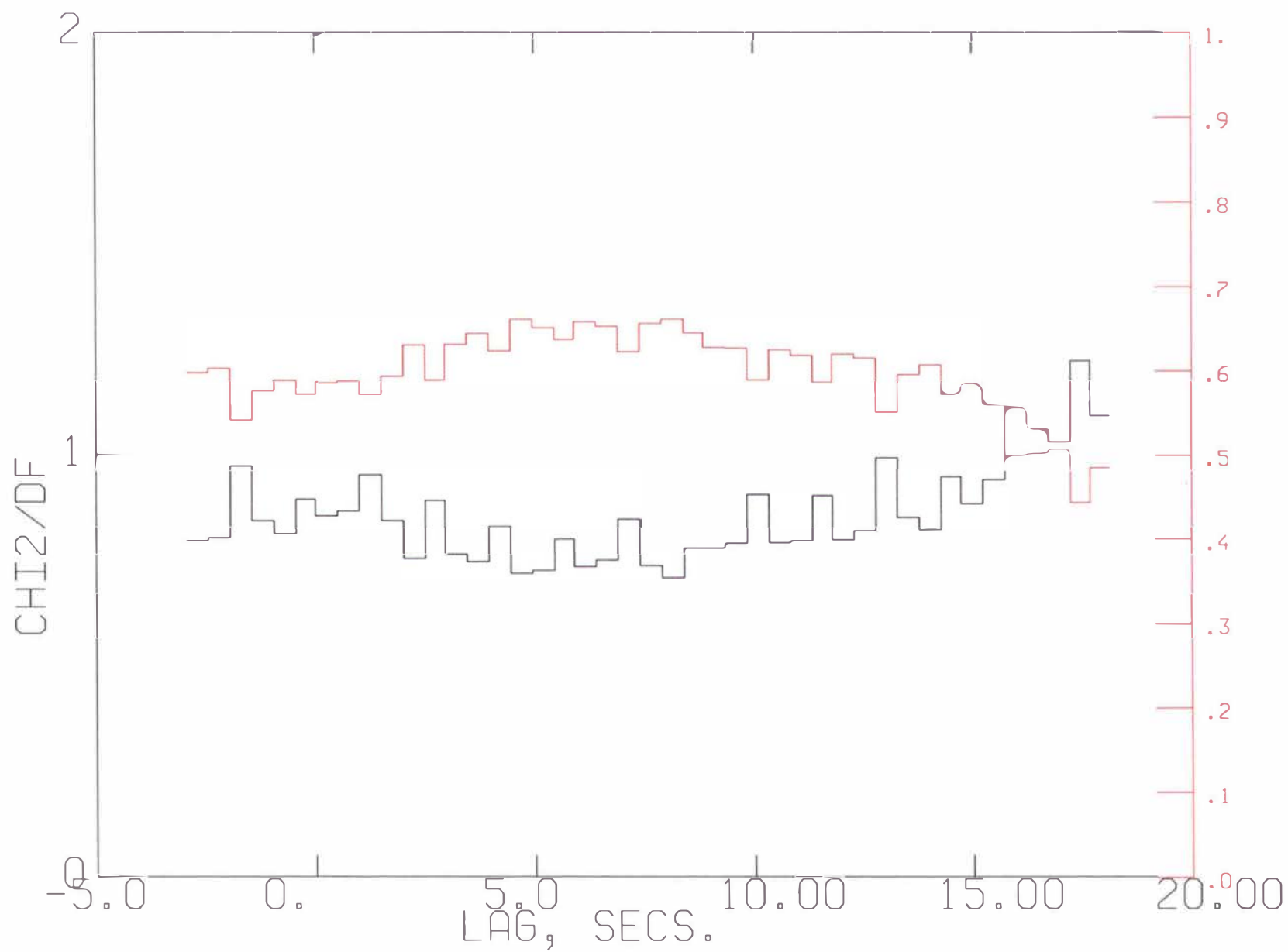


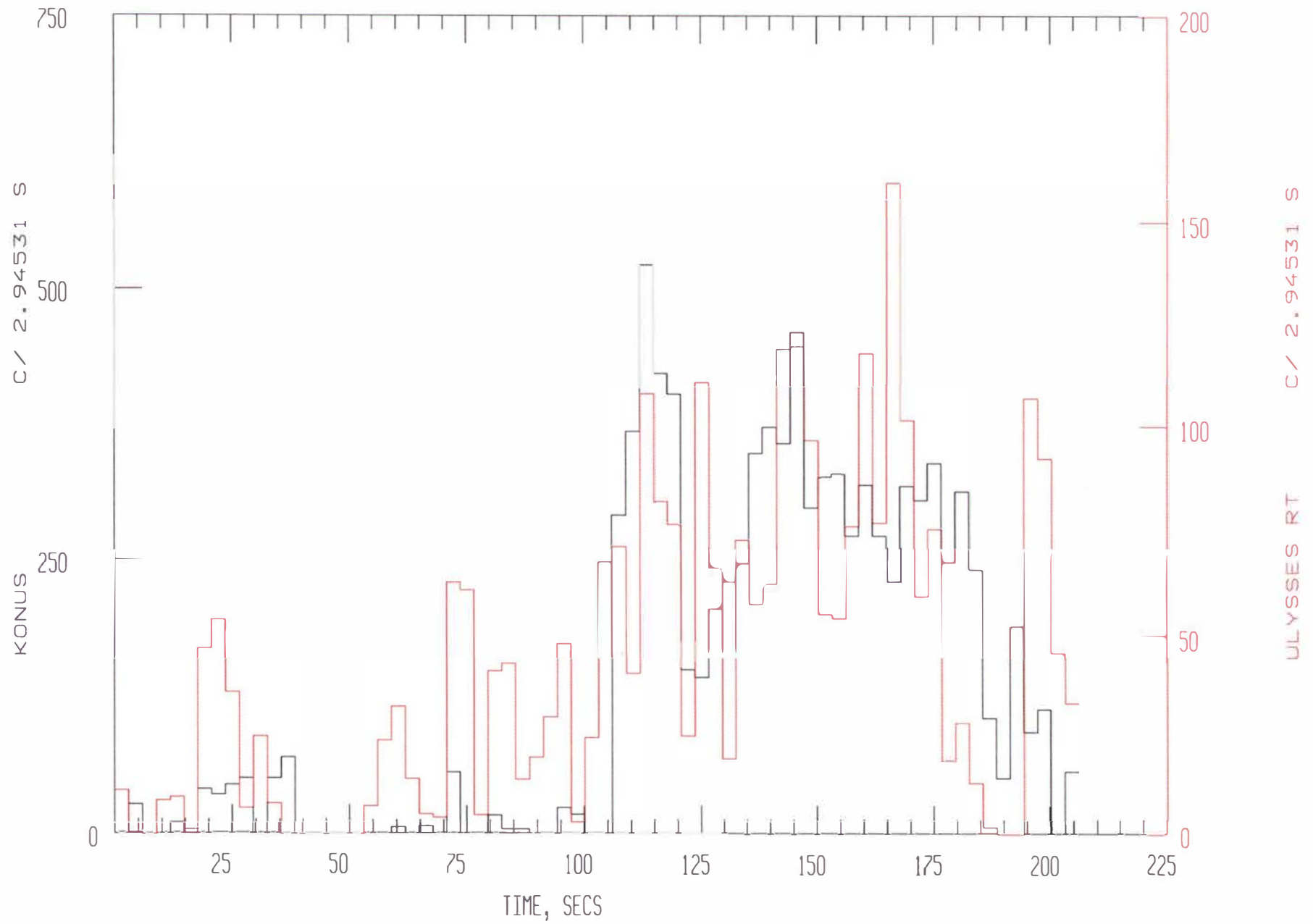
EVENT OF JUL 10, 1999 12:35

30/01/2013

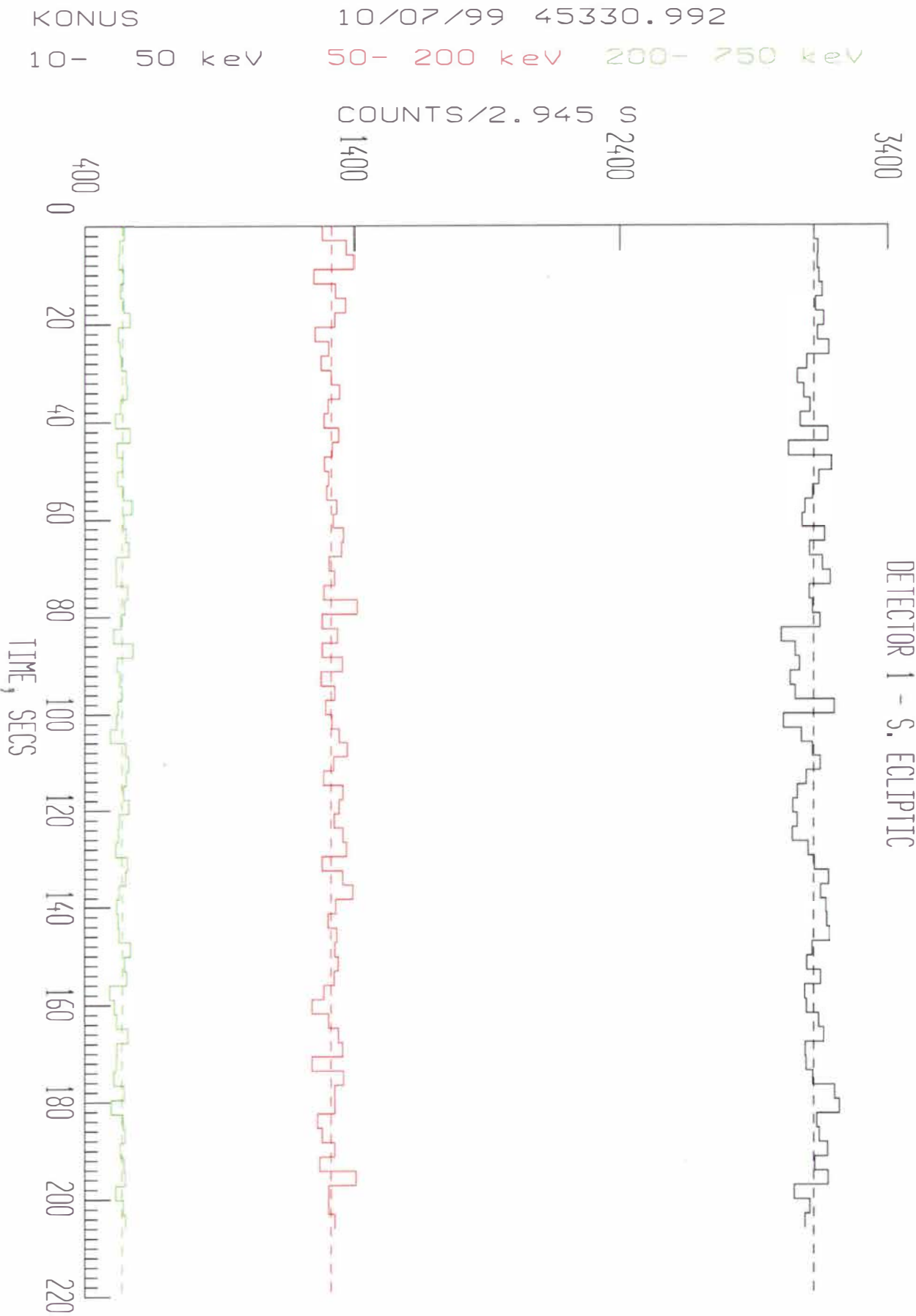
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS 2 ULYSSES





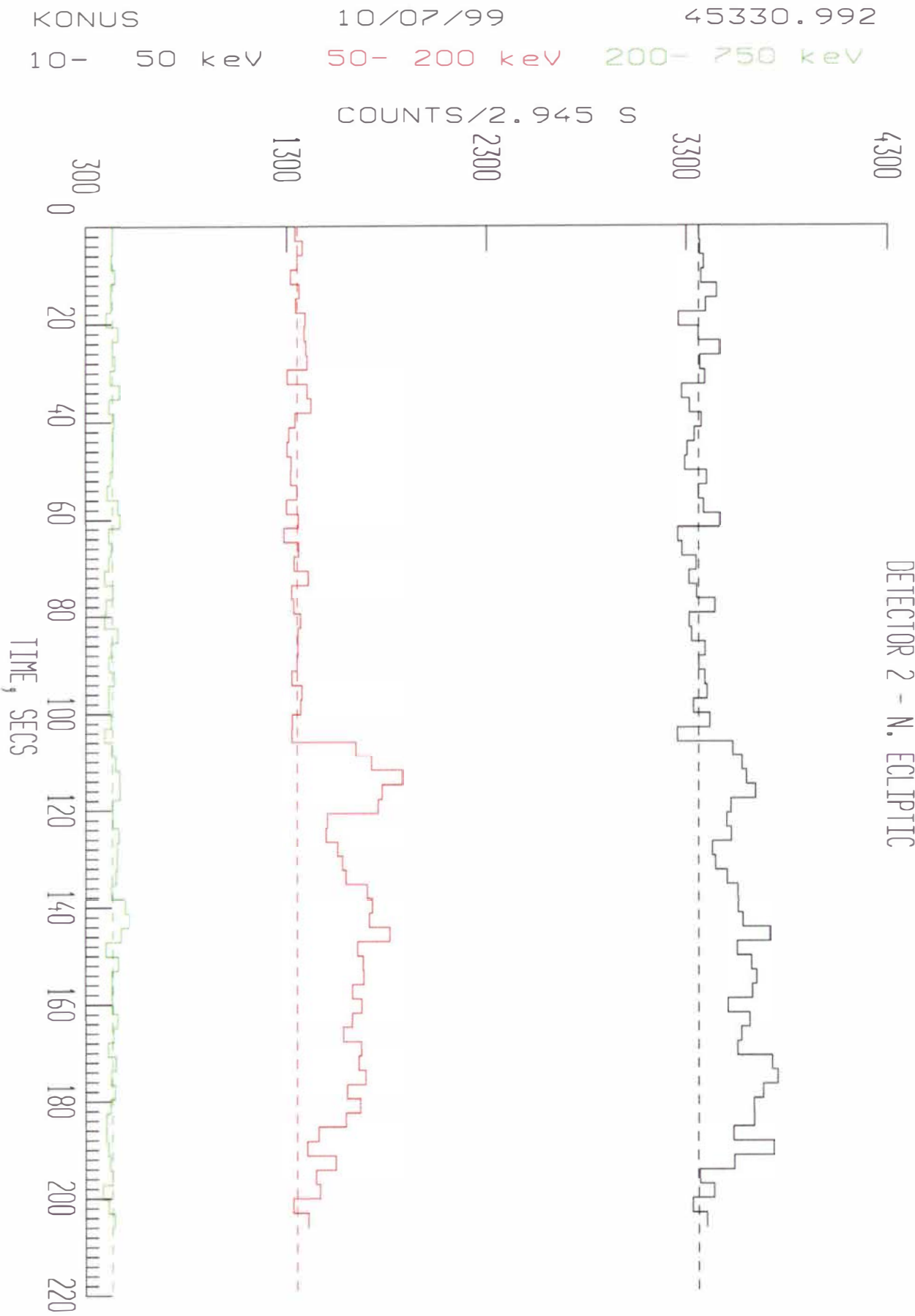


DETECTOR 1 - S. ECLIPSE



30/01/2013

DETECTOR 2 - N. ECLIPTEIC



KONUS

ULYSSES RT

21 / 01 / 00

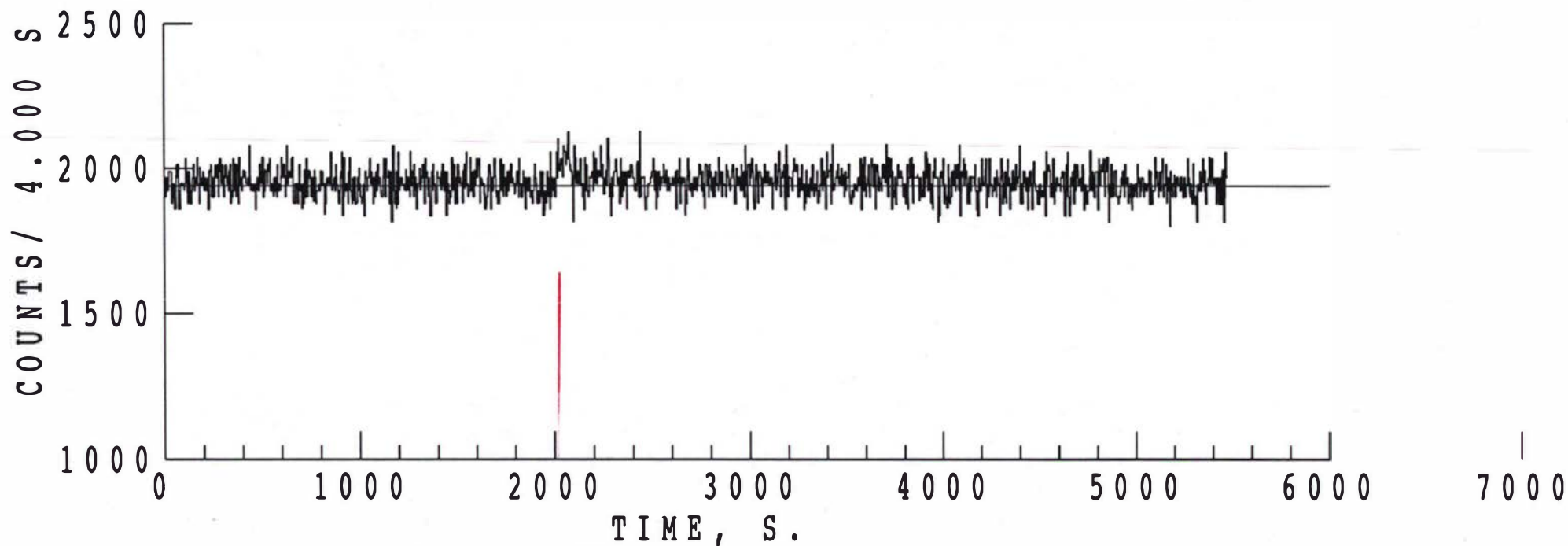
10/07/99 42696.066 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Tue Jul 13 13:53 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Tue, 13 Jul 1999 15:58:05 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7644

TIME: TJD=1369 SECONDS=69530

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

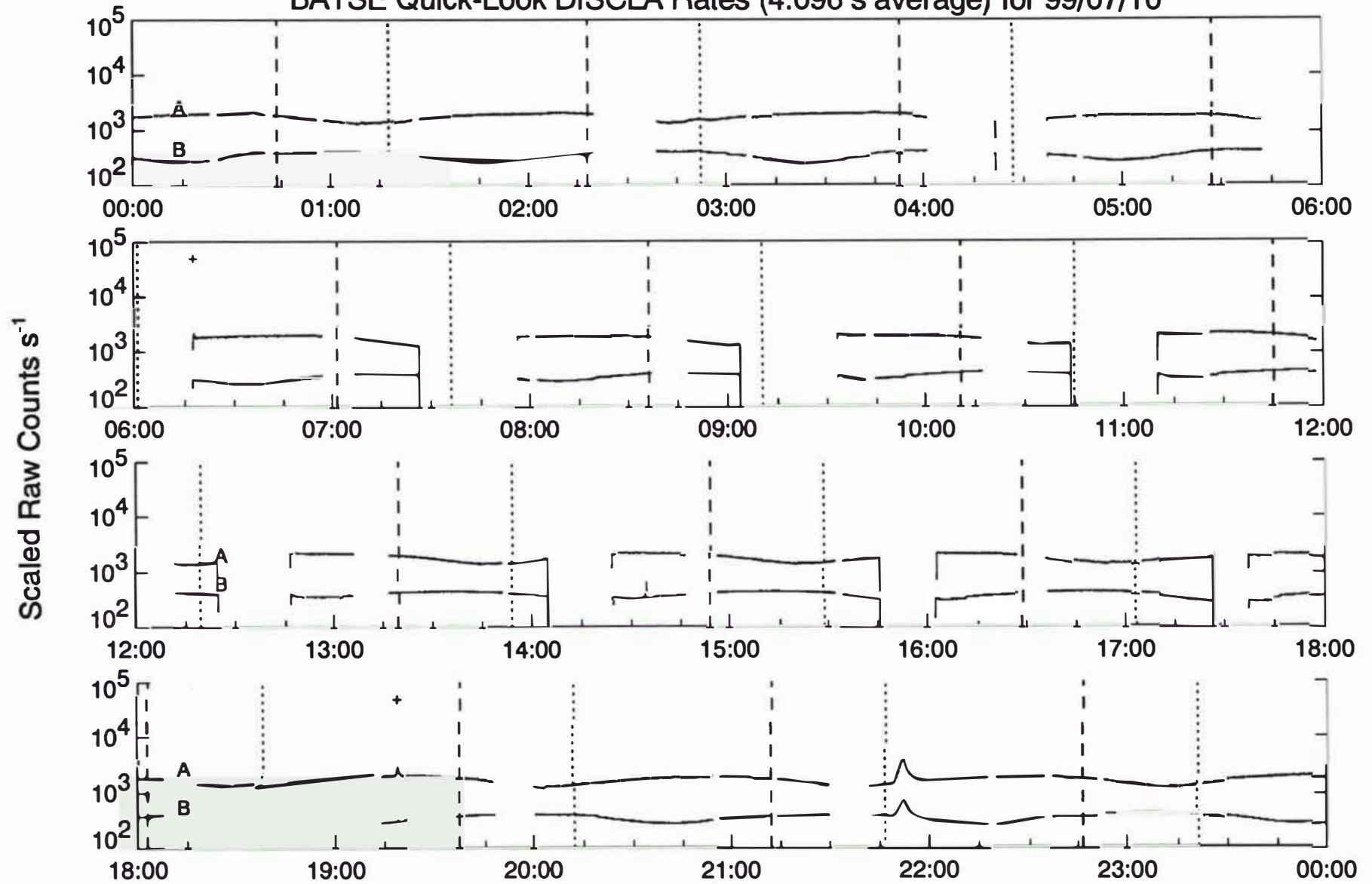
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.2 AZIMUTH=356.5 ERROR=1.328 DEGREES

COMMENTS:

GOES C1.5, NO OPTICAL. SINGLE PULSE, DUR. APPROX. 90 S, MAX AT APPROX T+8 S.
VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/10

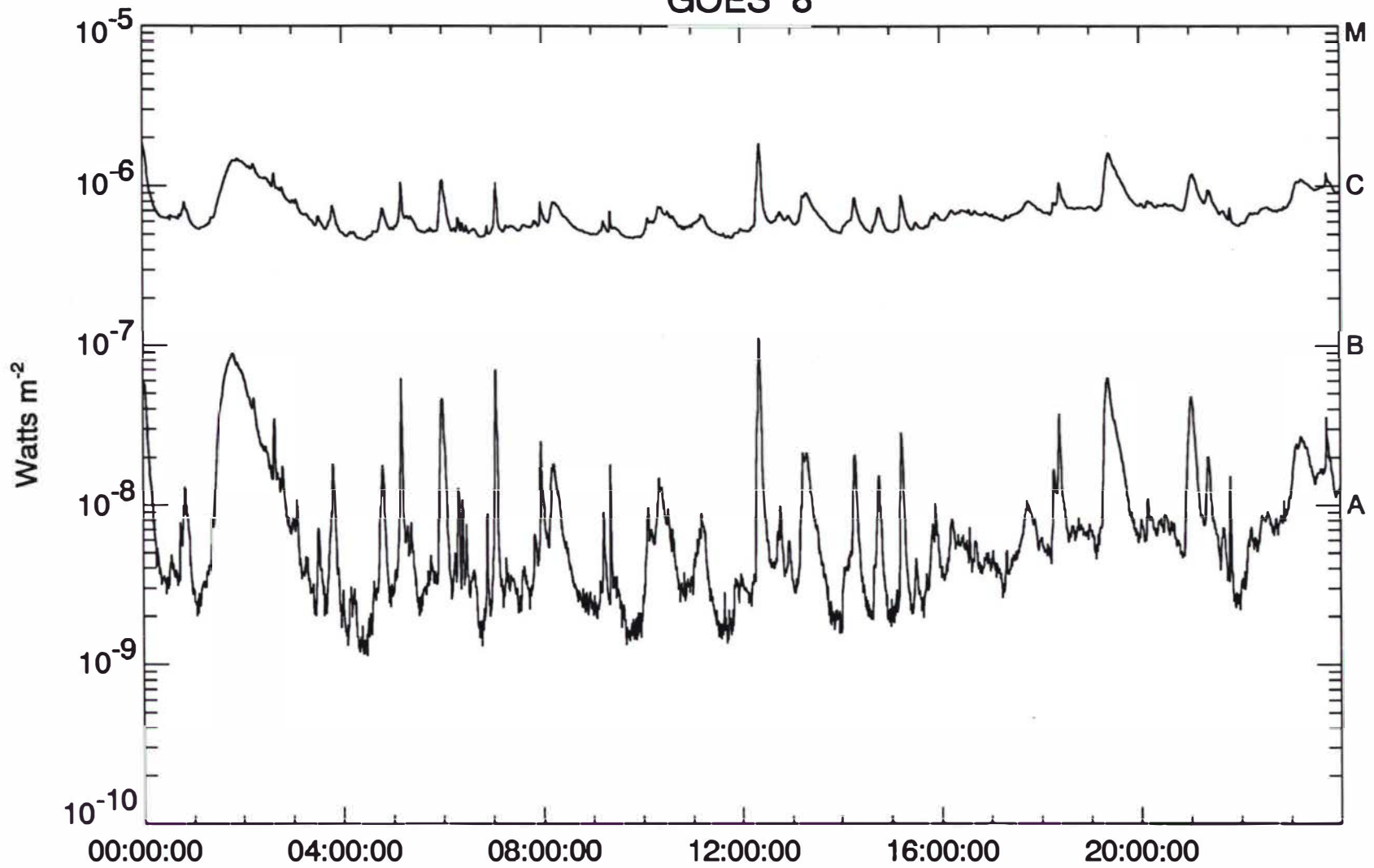


Current Time: 99/07/14, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/10, 0000:00

Plot created: 99/07/14, 1012

Channel

1 (1.0 - 8.0 Angstroms)

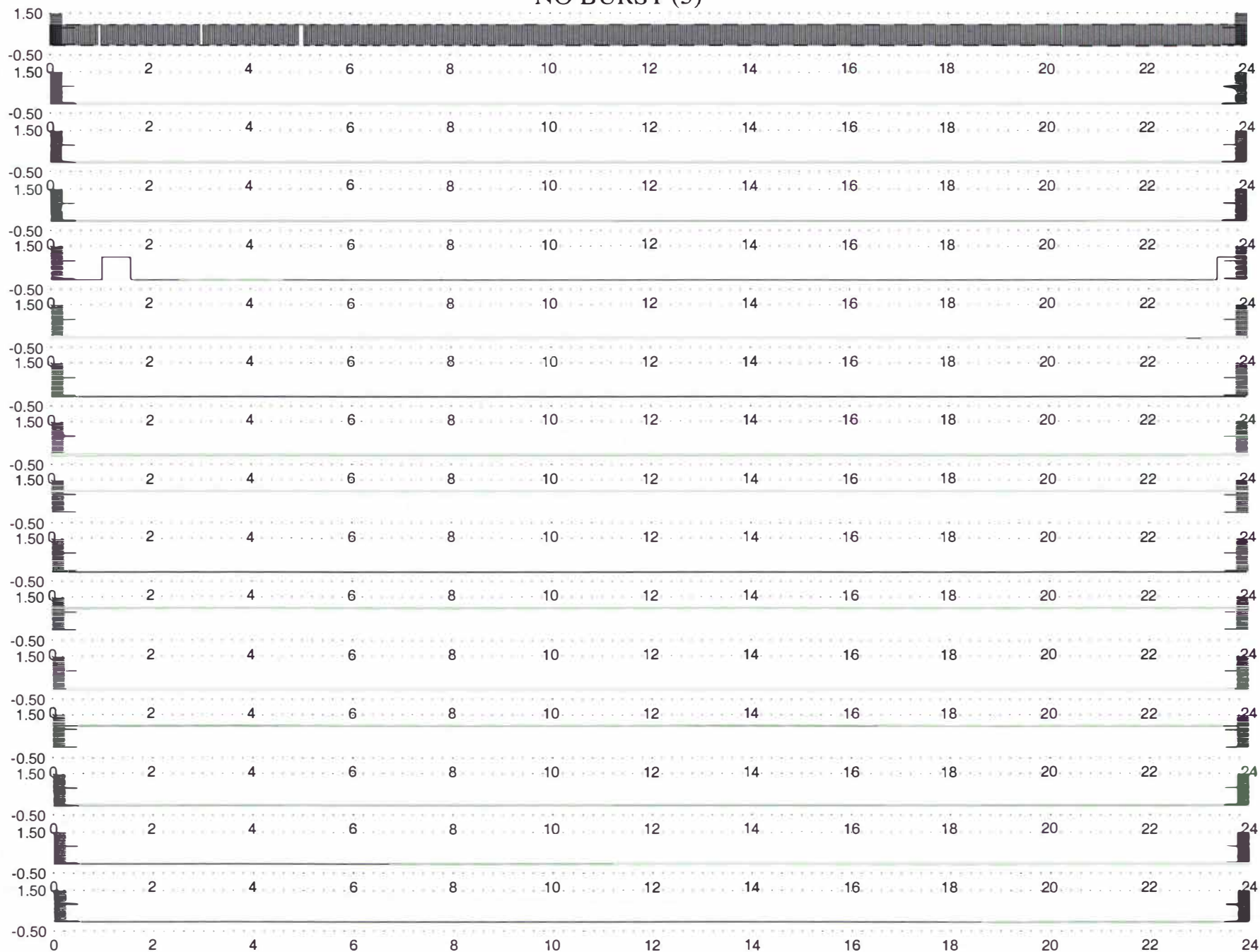
Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

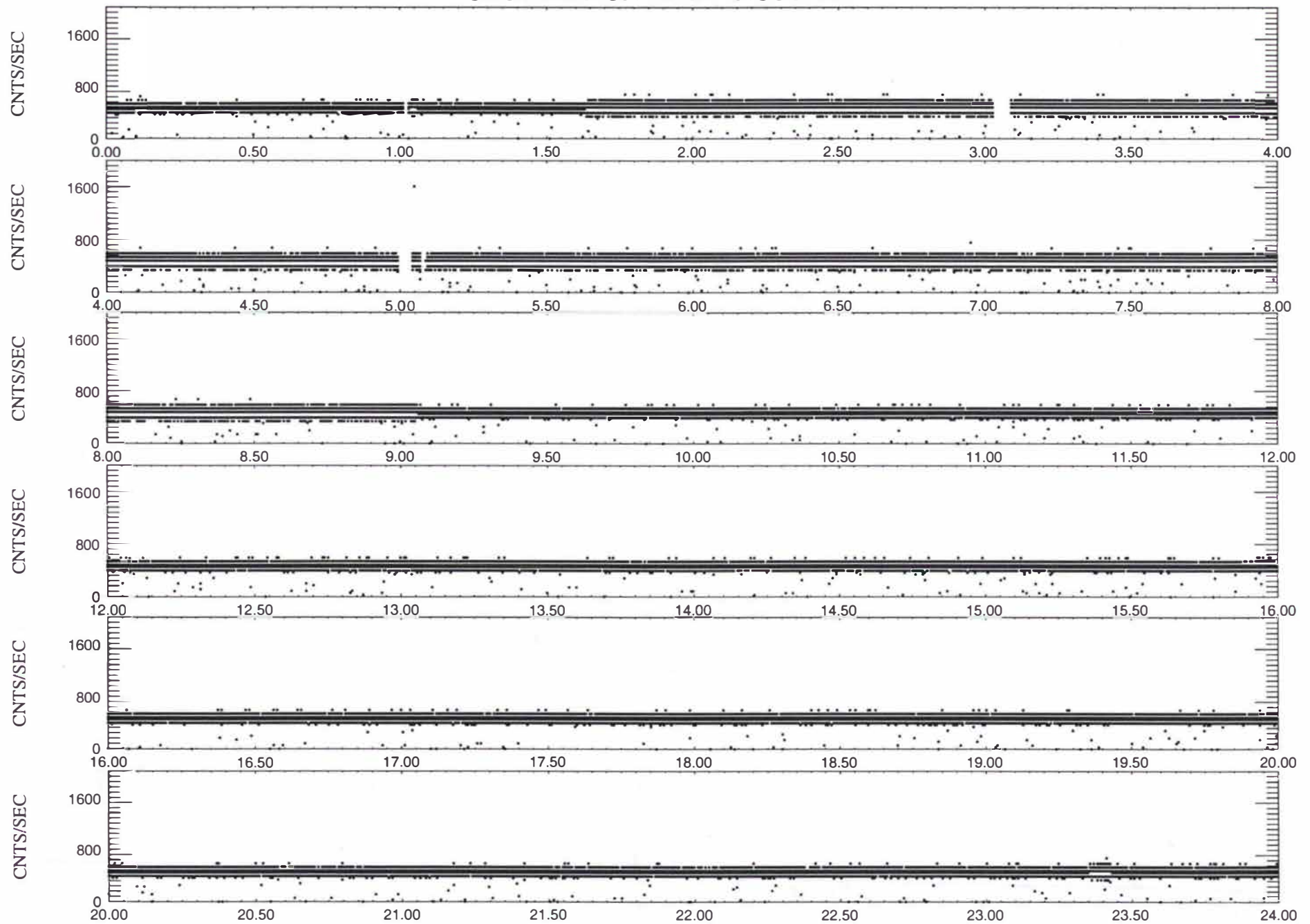
Sample average = 10

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

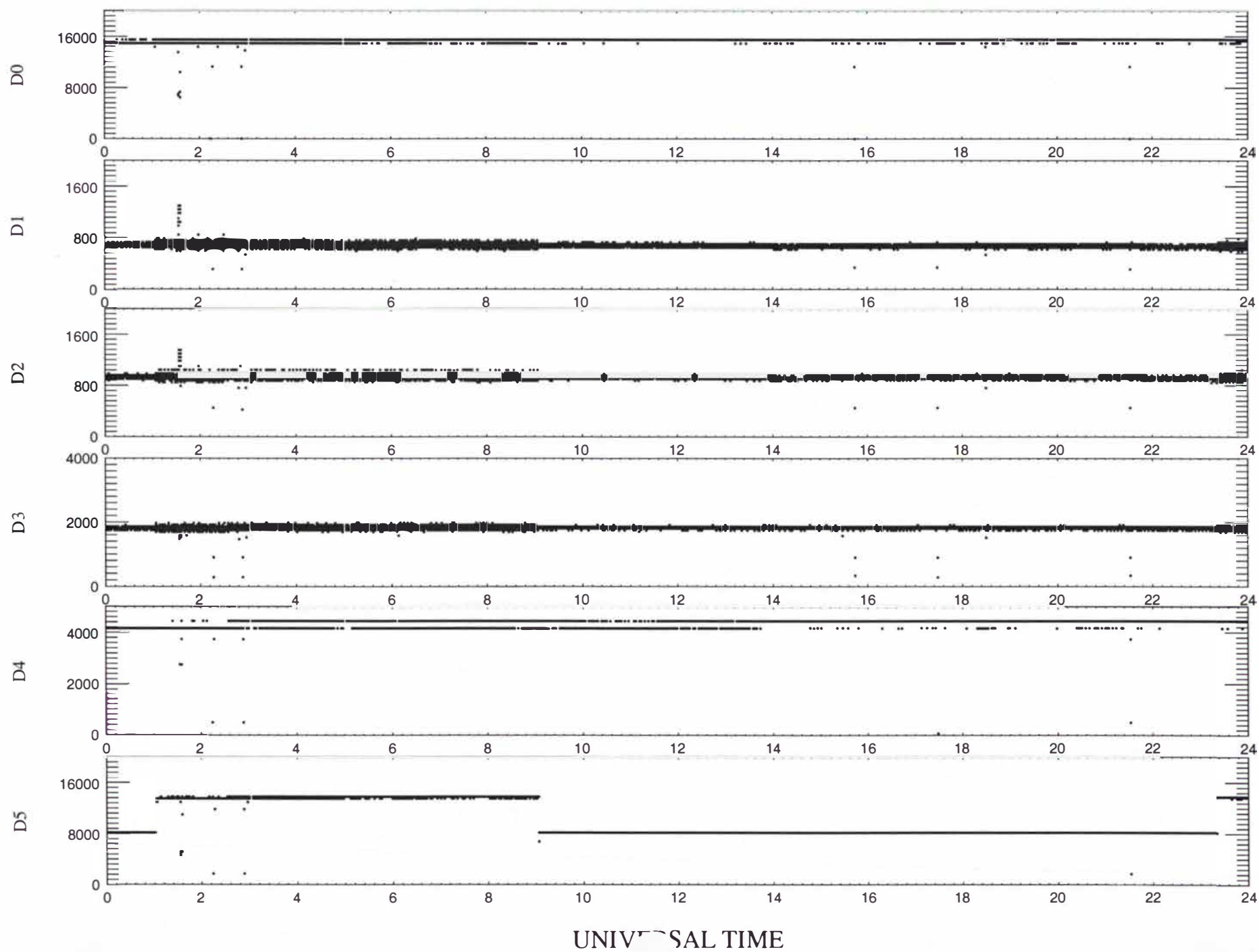


UNIV SAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



SAX GRBM

HUS DATA

ULYSSES RT

19 / 07 / 05

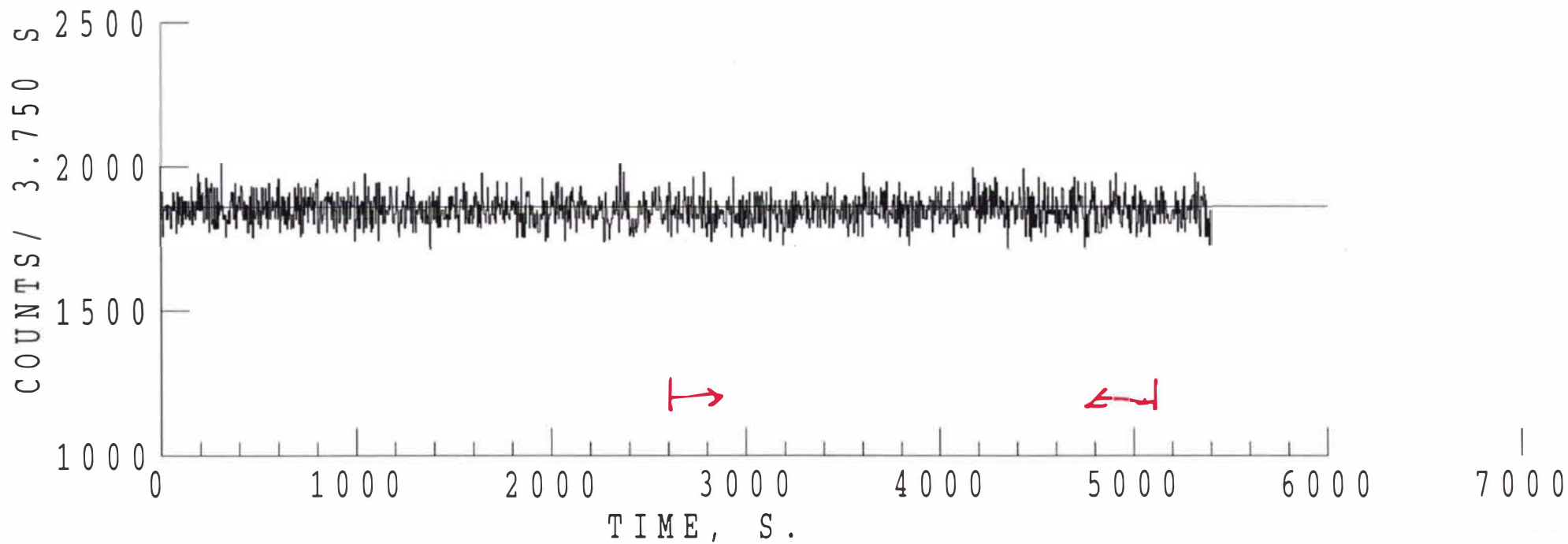
11 / 07 / 99 23760.008 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Tue Jul 13 14:00 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 13 Jul 1999 16:05:56 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7645

BATSEARCH PROGRAM

BATSE BURST # 7645
EVENT OF 1999 JUL 11 DAY OF YEAR=192
EVENT CROSSING TIME AT BATSE : 78593. S. OR 21:49:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 66.000 29.000
BATSE PEAK COUNTING RATE: 2300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 7/ 99 IS:
RA= 147.740 DEC= -8.193 DIST= 5.406 AU
BATSE-ULYSSES DISTANCE = 808671422. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -149.13 SECS.
CROSSING TIME AT ULYSSES IS 78444. S. OR 21:47:23 +/- 515.34 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 7/ 99 IS:
RA= 209.437 DEC= -13.390 DIST= 0.877 AU
MARS-BATSE DISTANCE = 131181736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 348.17 SECS.
CROSSING TIME AT MARS IS 78941. S. OR 21:55:41 +/- 51.30 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7645	990711	11370	78593	2300	066	+29	480

BATSE BURST TRIGGER

NO.: 7645

TIME: TJD=1370 SECONDS=78593

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=148.1 AZIMUTH=33.8 ERROR=3.824 DEGREES

COMMENTS:

GRB. MULTIPLE PULSES, DUR. APPROX. 480 S, STARTS AT APPROX T-110 S. NOT VISIBLE ABOVE 300 KEV.

BATSE BURST# 7645

ULYSSES RT

13 / 7 / 99

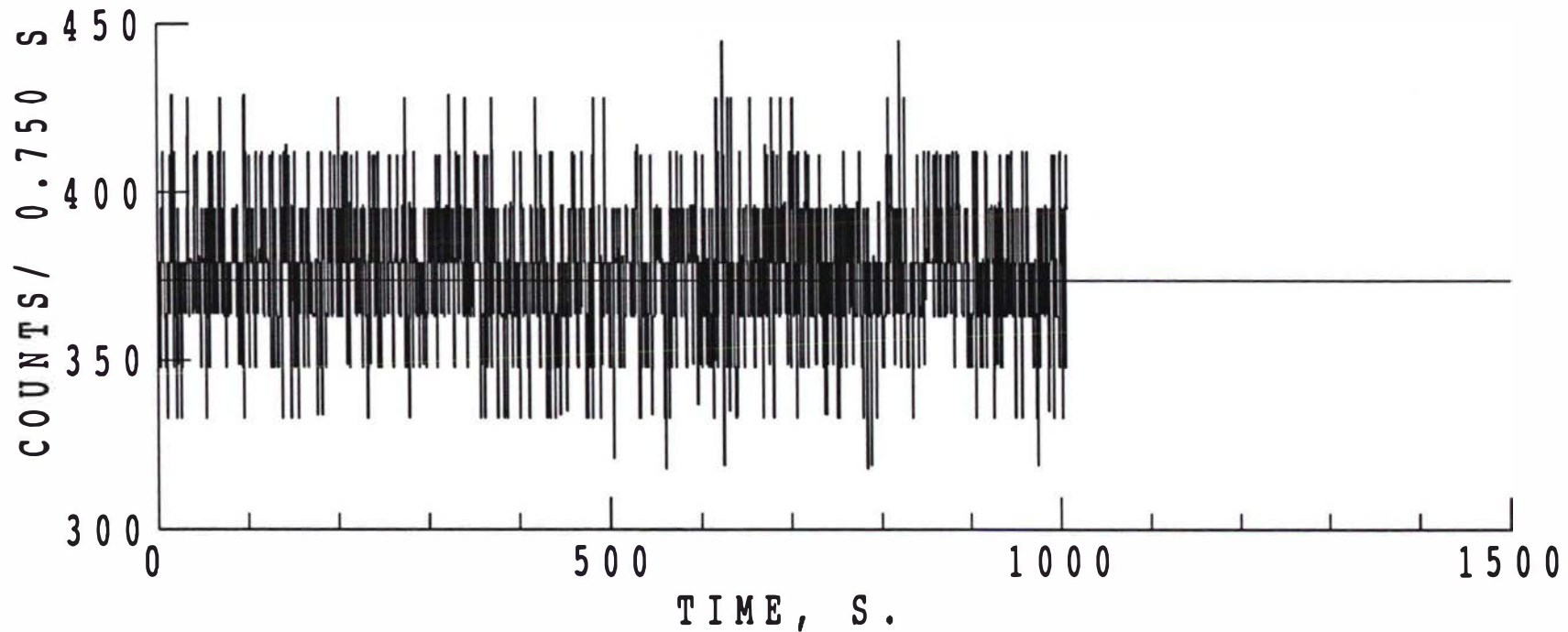
11 / 7 / 99 77940.055 s

0.250 S INTERVALS REGROUPED BY 3

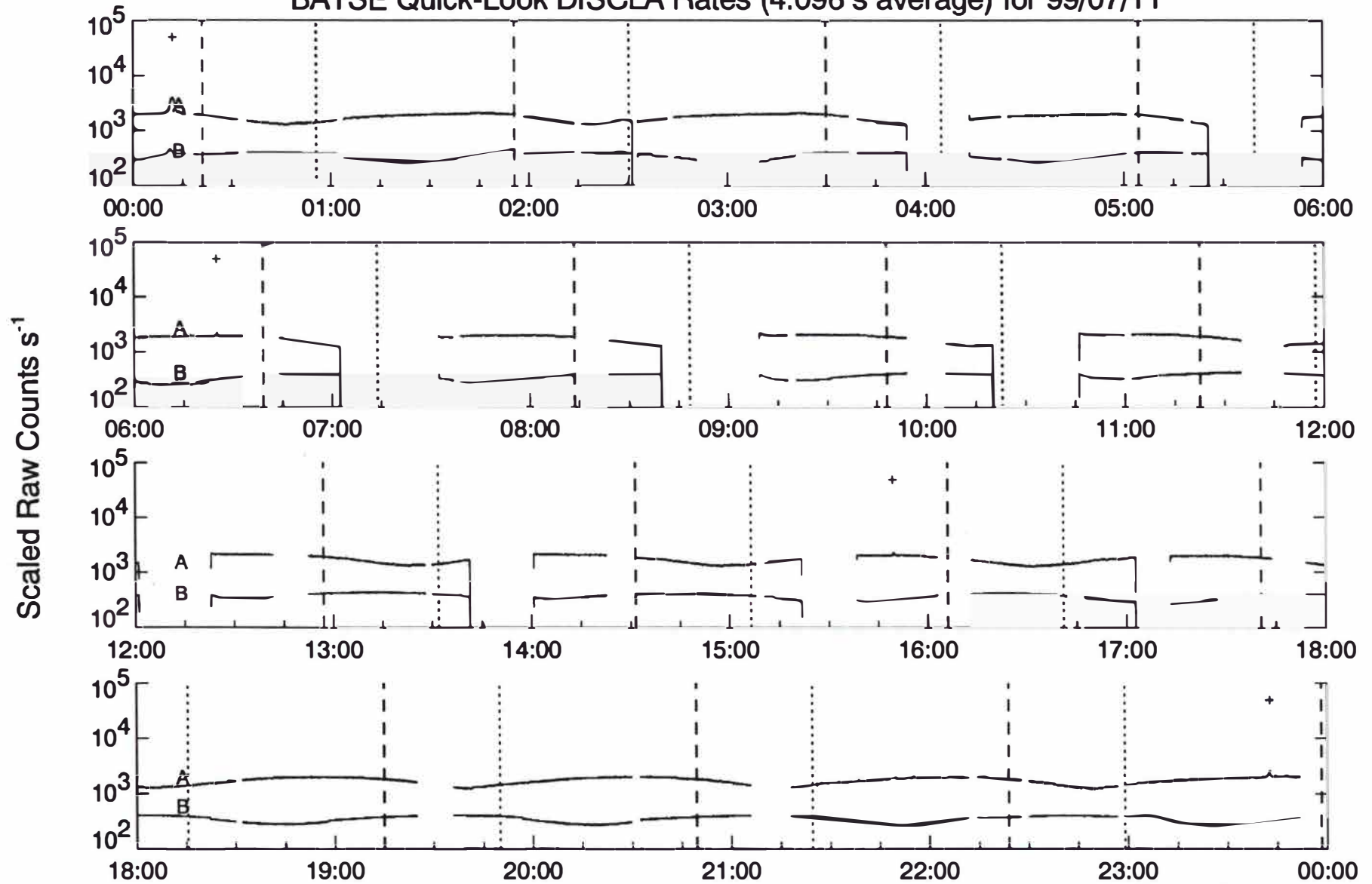
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

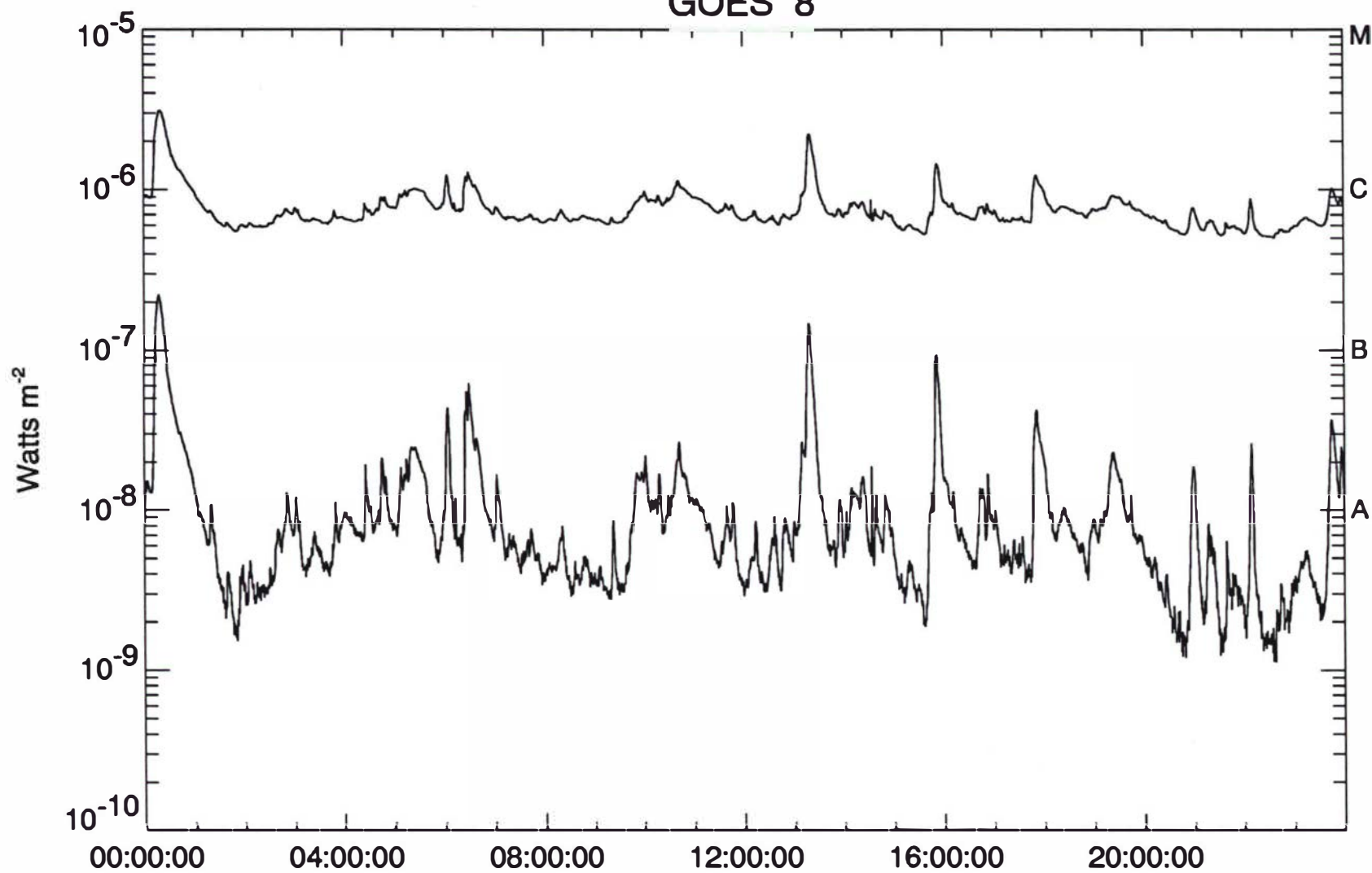
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/11



GOES 8

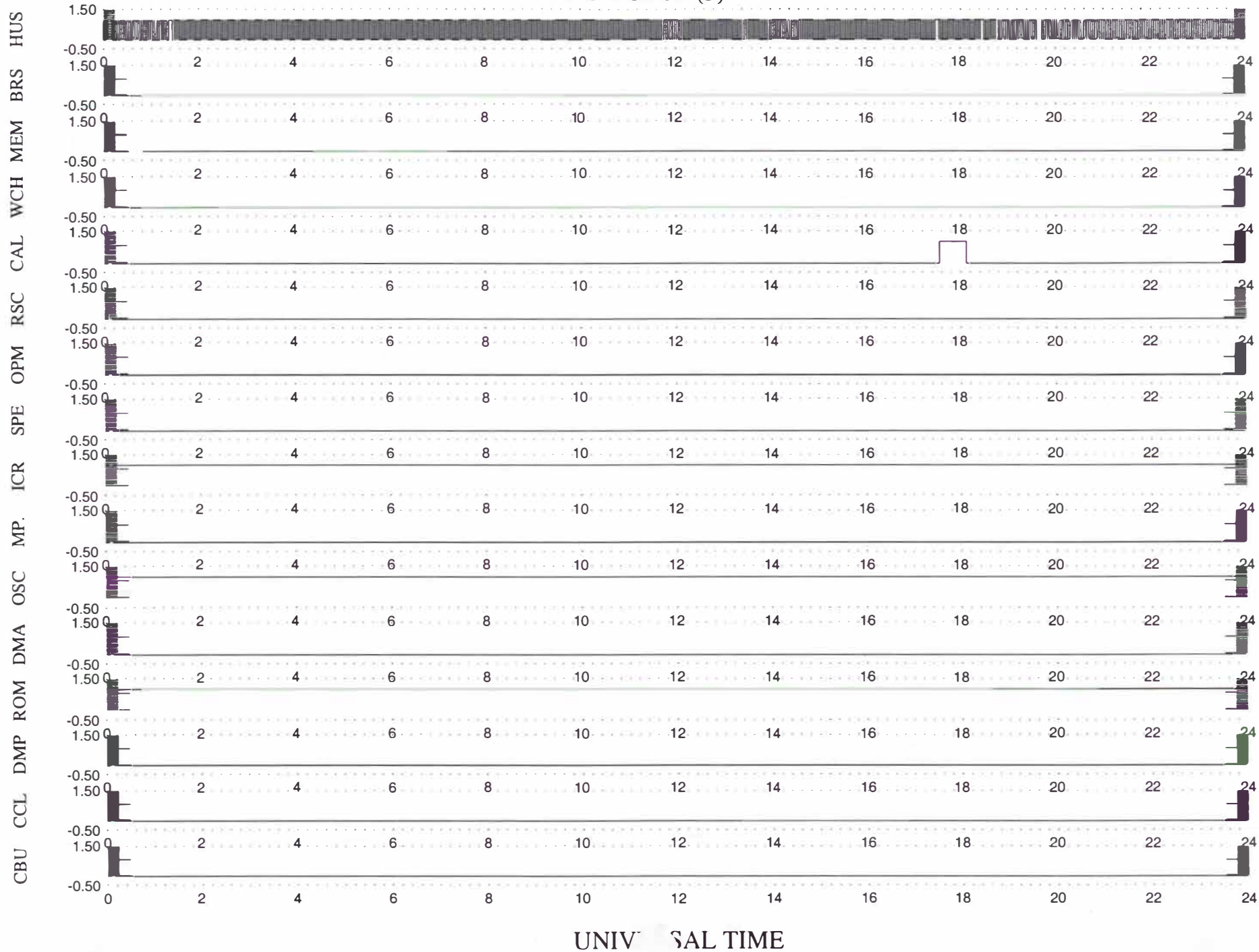


Data Start: 99/07/11, 0000:00

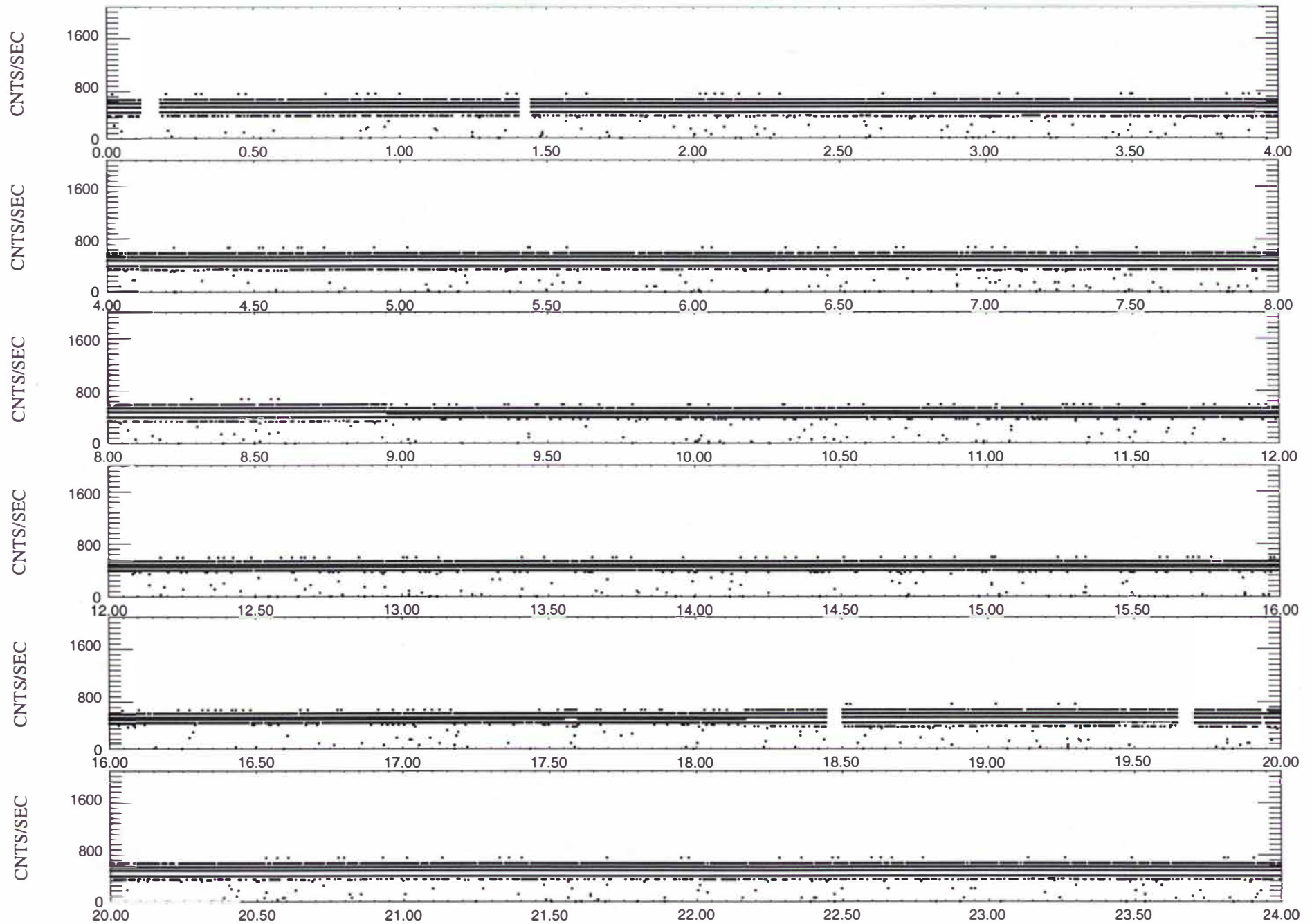
Plot created: 99/07/15, 1011

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

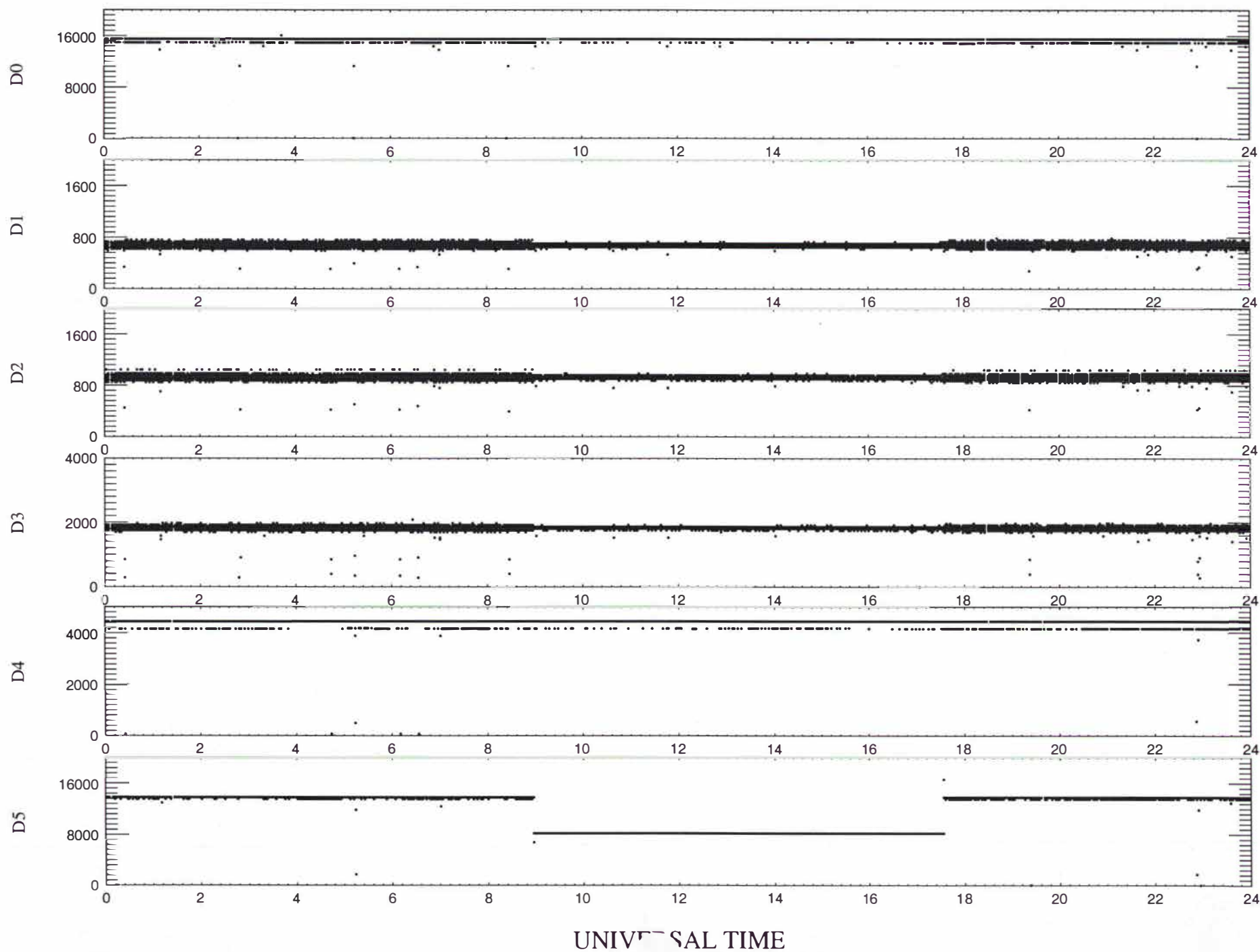
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From GOGUSE@fender.msfc.nasa.gov Sun Jul 18 13:23 PDT 1999

From: GOGUSE@fender.msfc.nasa.gov

Date: Sun, 18 Jul 1999 15:29:04 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7646

TIME: TJD=1371 SECONDS= 2336

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=117.7 AZIMUTH=350.6 ERROR= 0.8 DEGREES

COMMENTS:

GOES B9.9, NO OPTICAL, DUR. APPROX 21 SEC.

NOT VISIBLE ABOVE 100 KEV

From GOGUSE@fender.msfc.nasa.gov Sun Jul 18 14:08 PDT 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Sun, 18 Jul 1999 16:14:08 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7647

BATSEARCH PROGRAM

BATSE BURST # 7647
EVENT OF 1999 JUL 12 DAY OF YEAR=193
EVENT CROSSING TIME AT BATSE : 27919. S. OR 07:45:19.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 127.000 9.000
BATSE PEAK COUNTING RATE: 148000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 7/ 99 IS:
RA= 147.791 DEC= -8.217 DIST= 5.409 AU
BATSE-ULYSSES DISTANCE = 809143444. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=153.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2406.26 SECS.
CROSSING TIME AT ULYSSES IS 25513. S. OR 07:05:12 +/- 225.71 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 7/ 99 IS:
RA= 209.797 DEC= -13.537 DIST= 0.883 AU
MARS-BATSE DISTANCE = 132095752. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 94.81 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -36.92 SECS.
CROSSING TIME AT MARS IS 27882. S. OR 07:44:42 +/- 75.67 SECONDS

NO.: 7647

TIME: TJD=1371 SECONDS=27919

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 95.9 AZIMUTH=355.3 ERROR= 3.6 DEGREES

COMMENTS:

GRB, VERY INTENSE WITH STRUCTURES, STARTS AT T-0.1 SEC., DUR. APP. 0.9 SEC
VISIBLE ABOVE 300 KEV.
FOLLOWED BY WEAKER BURSTS BETWEEN T+9 SEC. AND T+41 SEC. WHICH ARE NOT
VISIBLE ABOVE 300 KEV.

148000 c/s RA 127 Dec +09 Dur. .9s

Date: 21 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

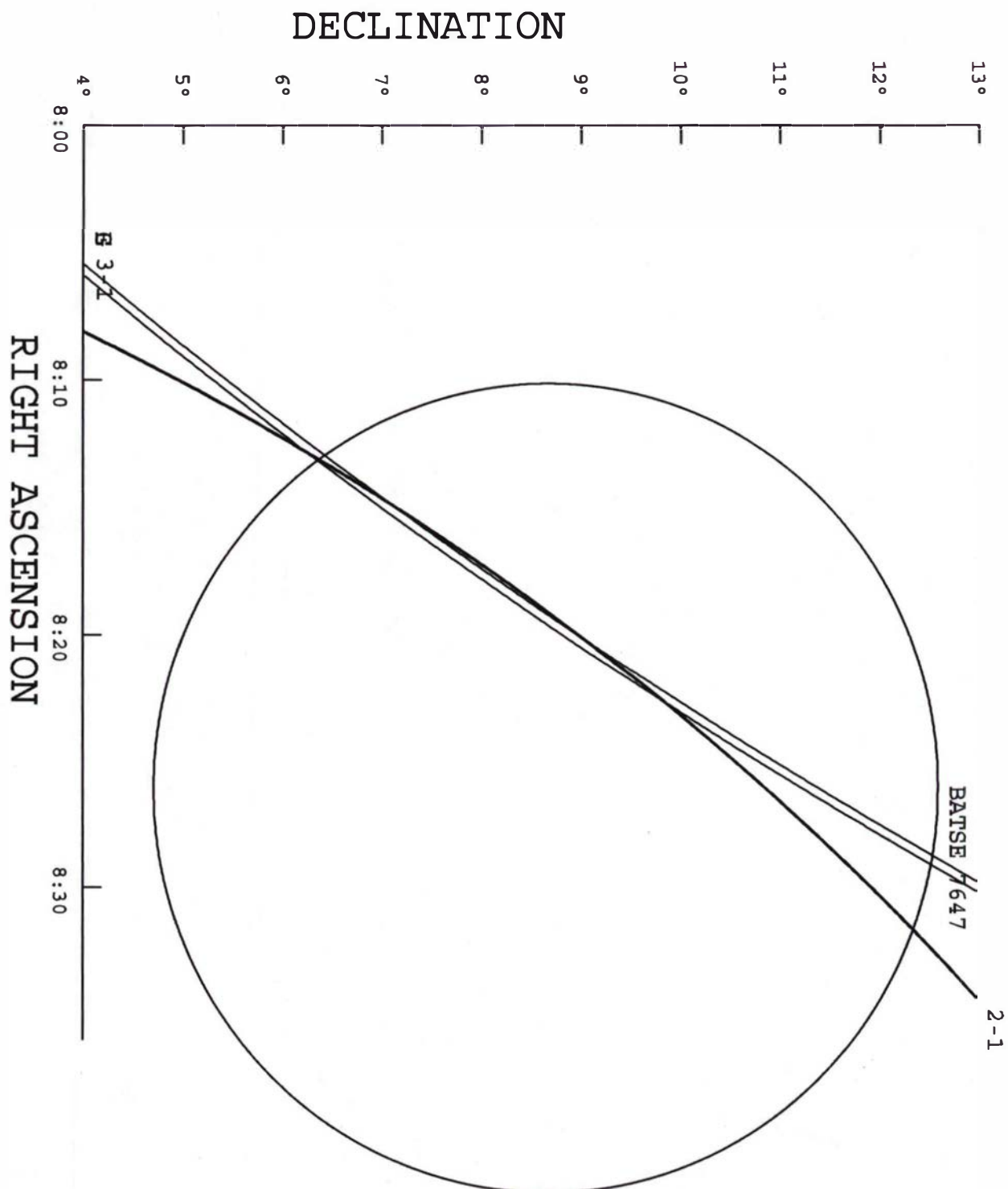
3. NEAR Data

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

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

EVENT OF JUL 12, 1999 7:45

21 / 2 / 0



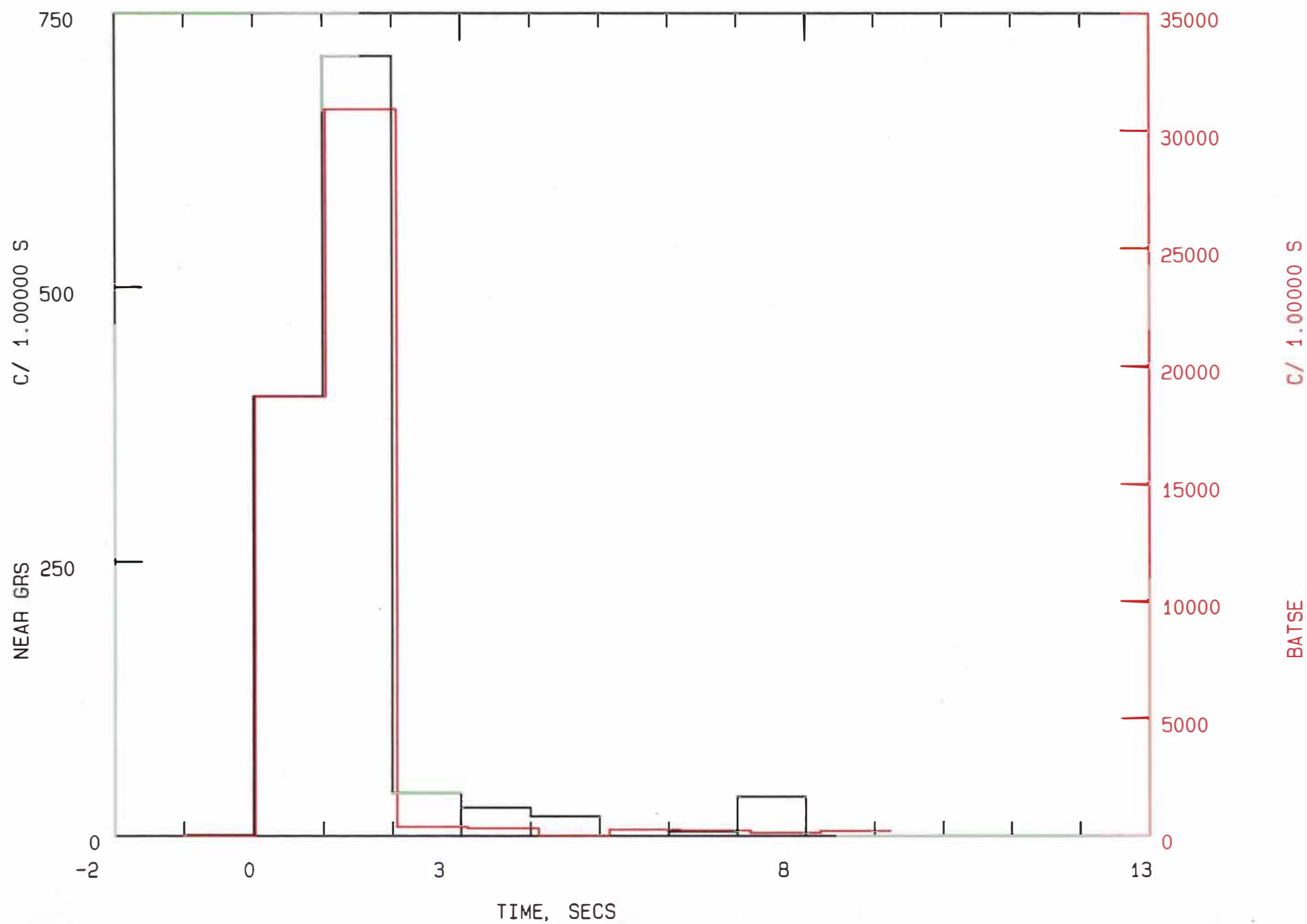
NEAR GRS -BATSE

CORRELATION

12/07/99

27166.378

21/ 2/ 0

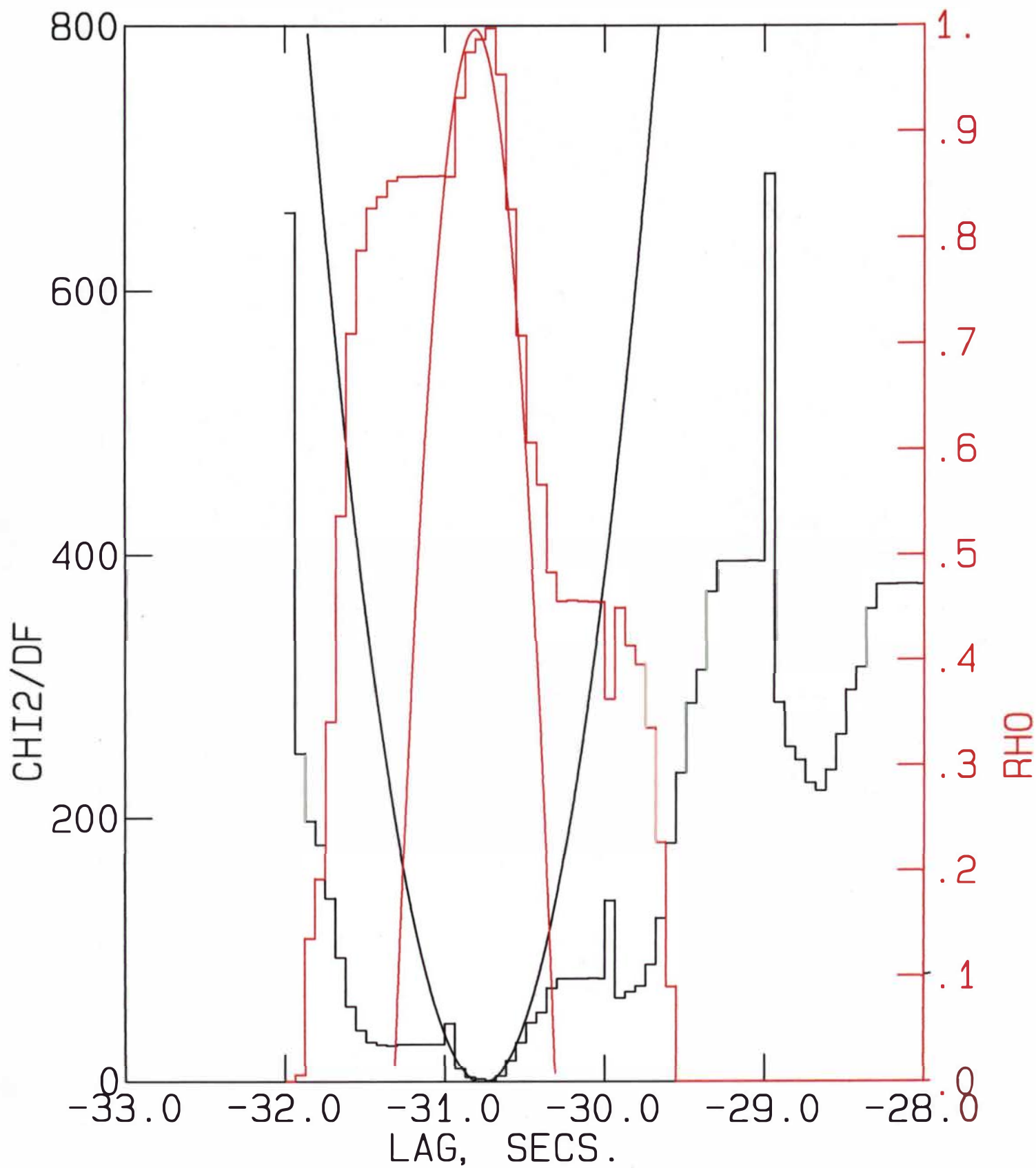


NEAR GRS -BATSE

CORRELATION

12/07/99

27166.378



BATSE

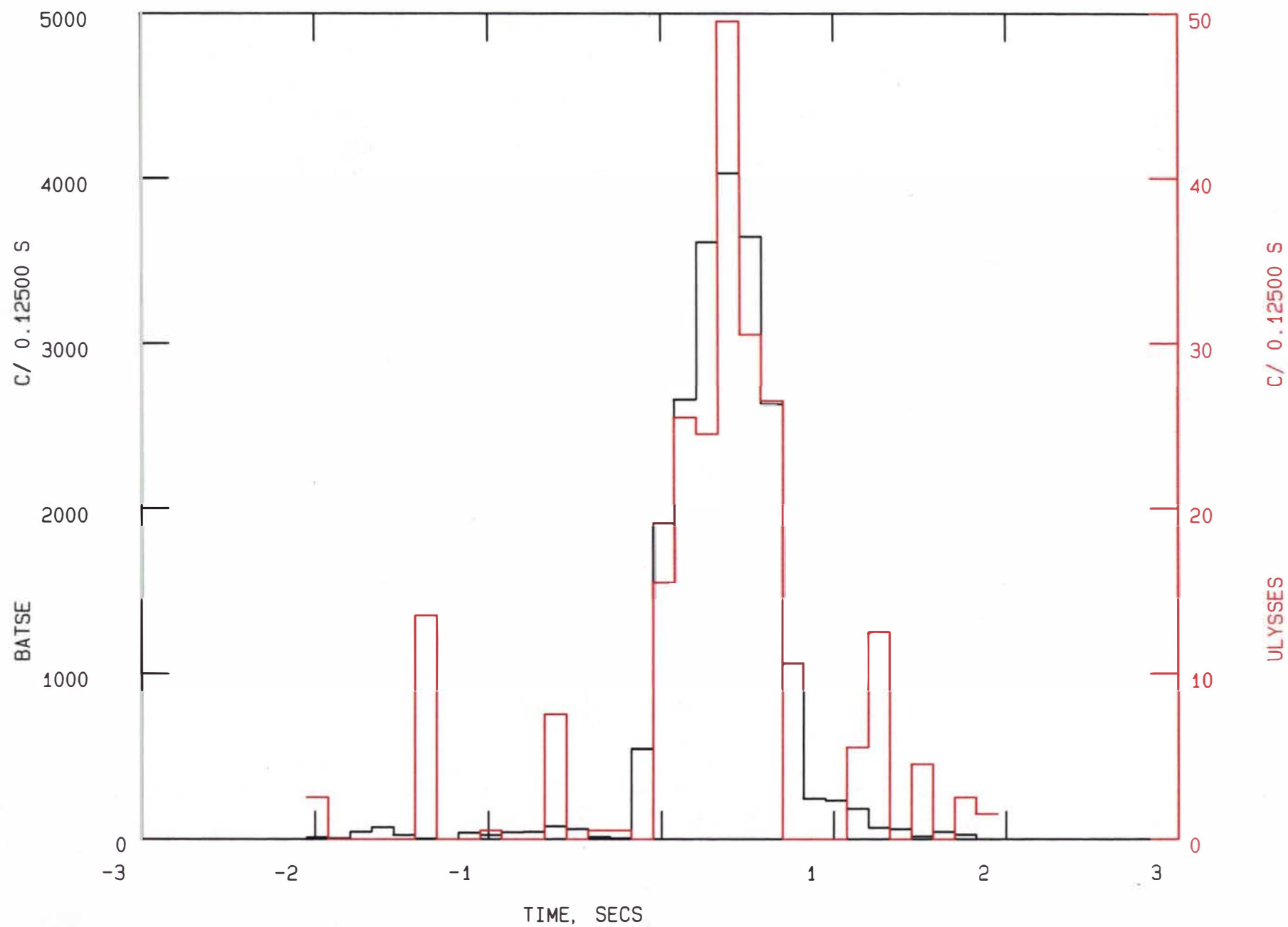
-ULYSSES

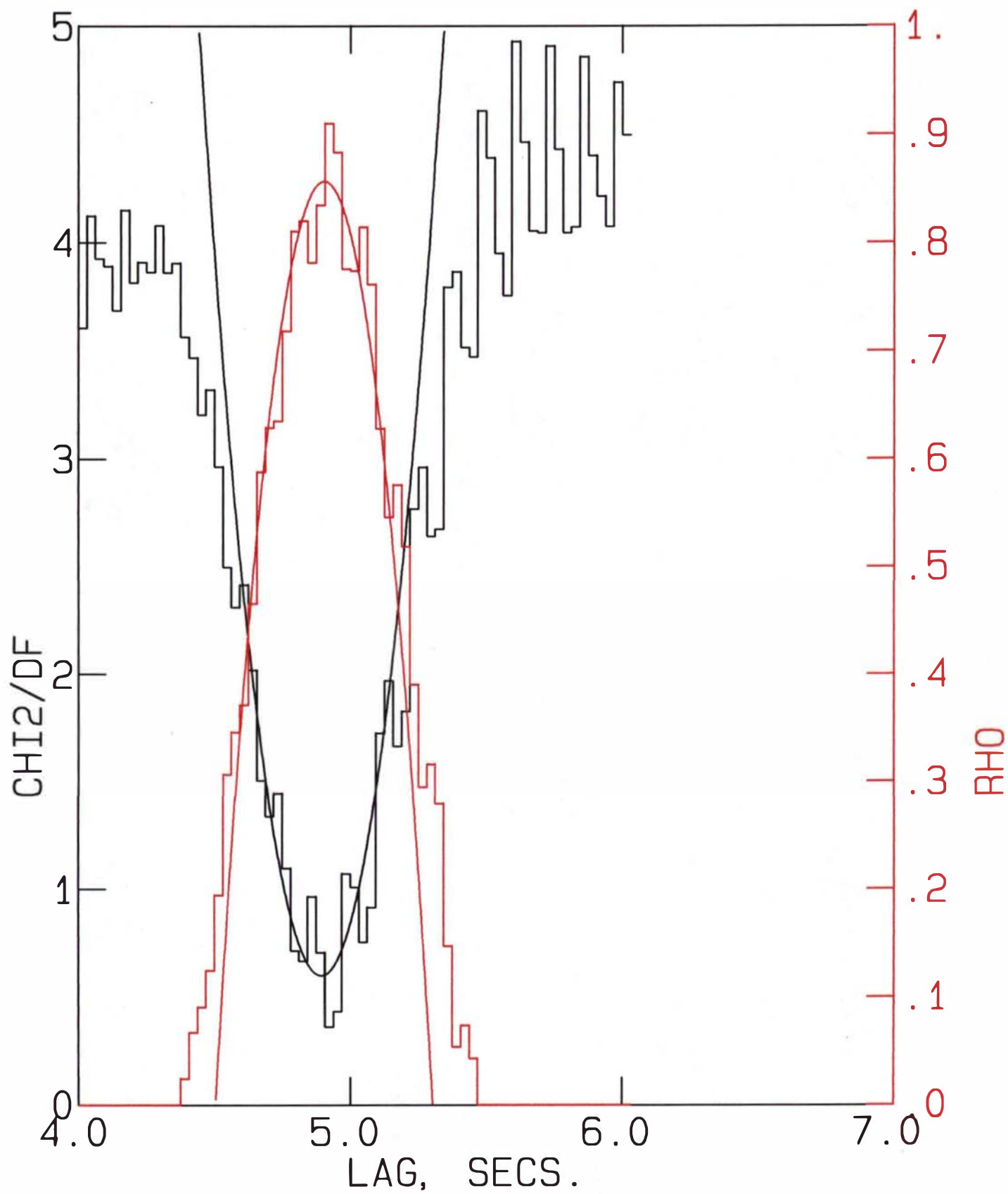
CORRELATION

12/ 7/99

27919.417

21/ 2/ 0





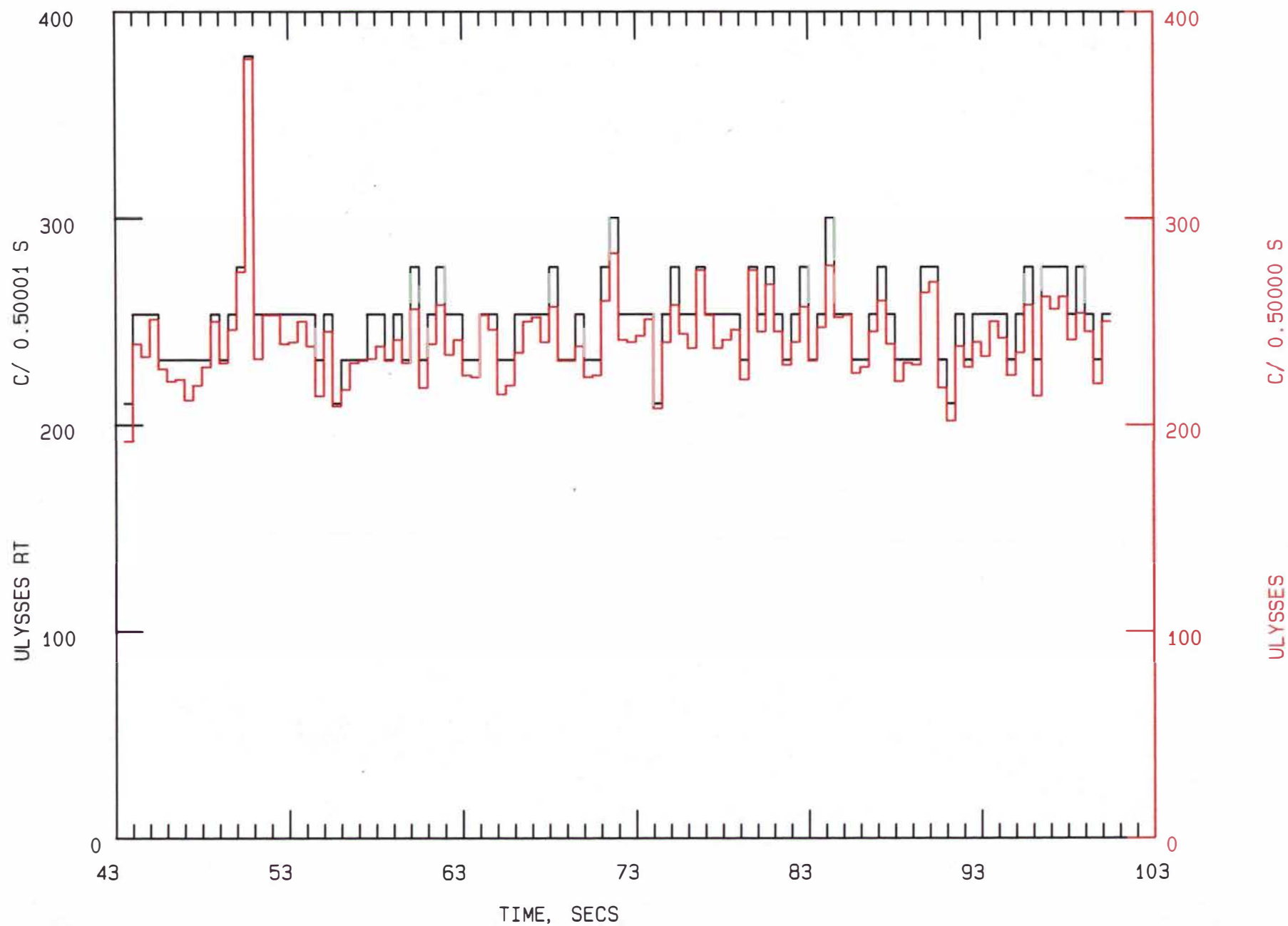
ULYSSES RT-ULYSSES

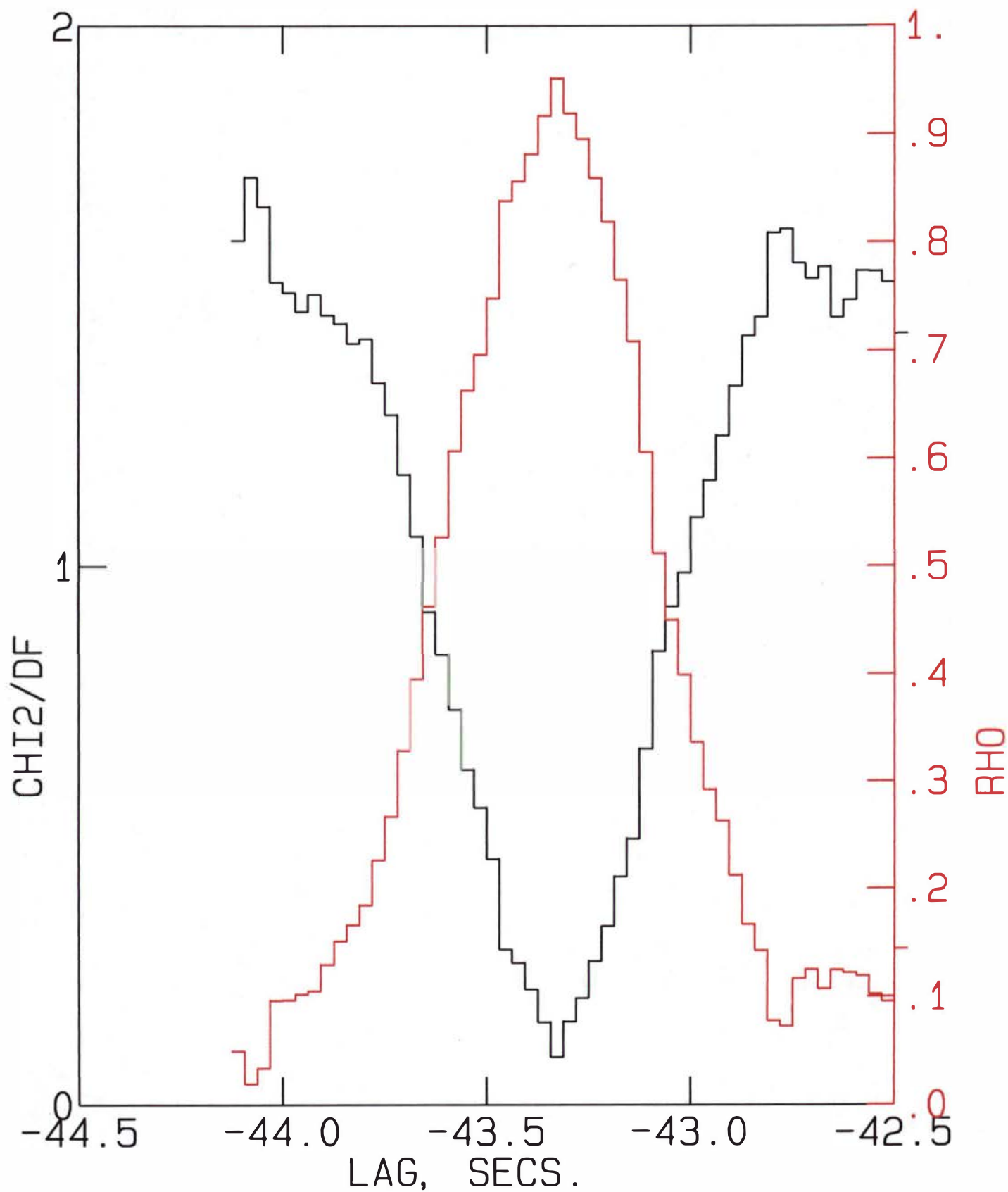
CORRELATION

12/ 7/99

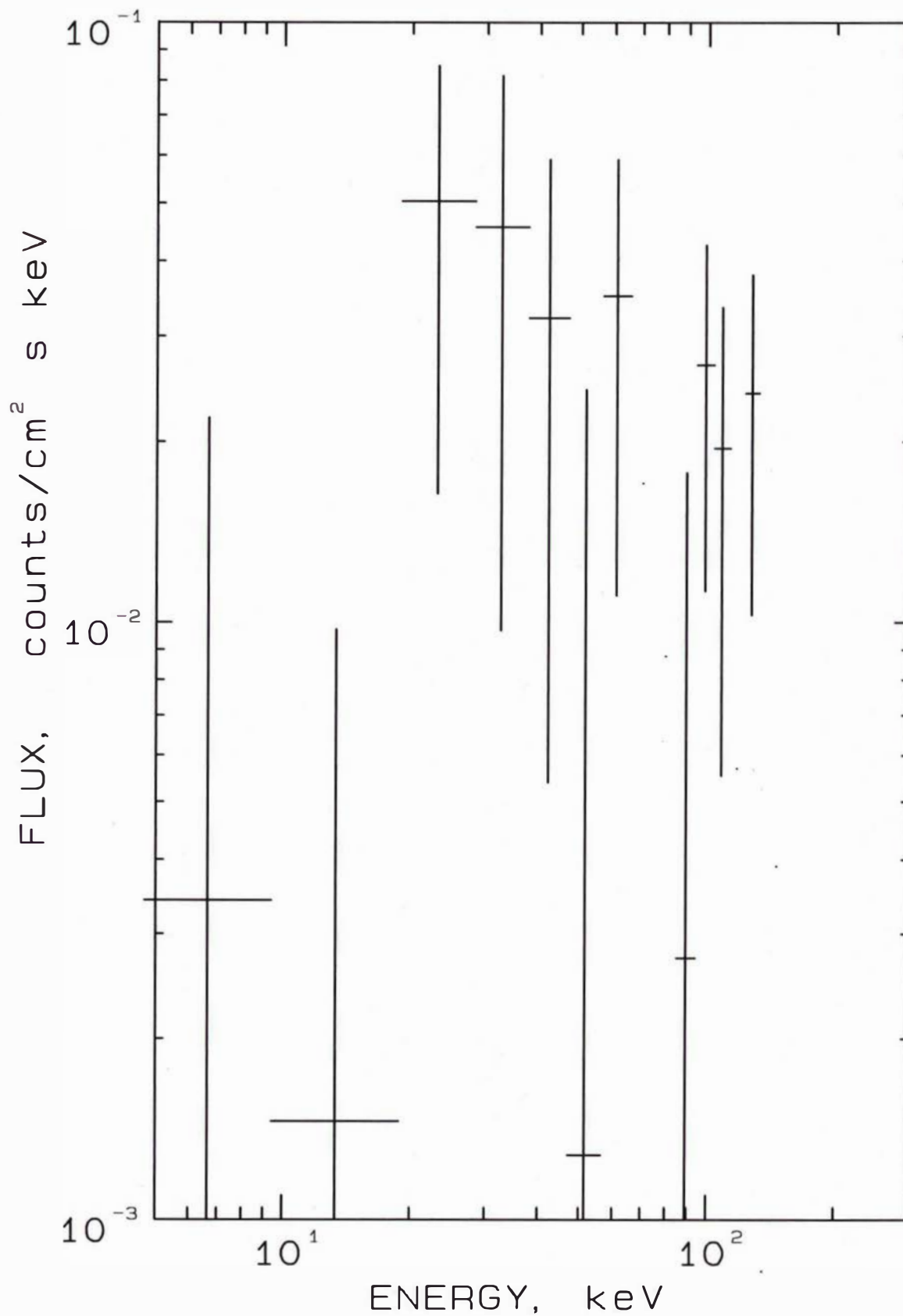
25511.152

21/ 2/ 0



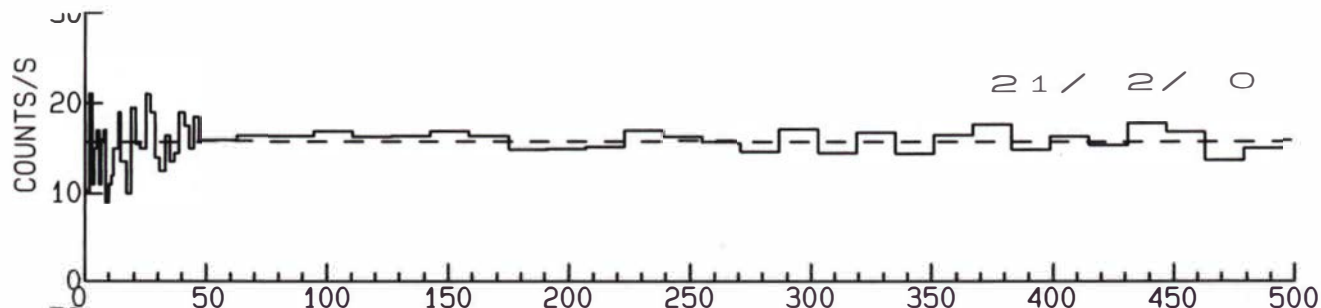


SPECTRUM INTEGRATED OVER 3.8 SECONDS, INTERVALS 2 TO 5

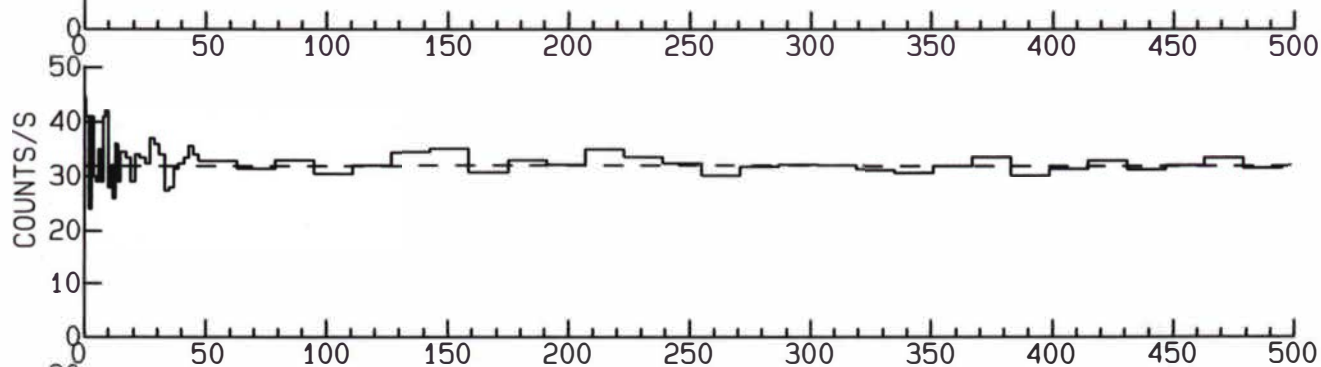


ULYSSES 12/07/99 25561.880 BURST SPECTRAL COUNT RATES

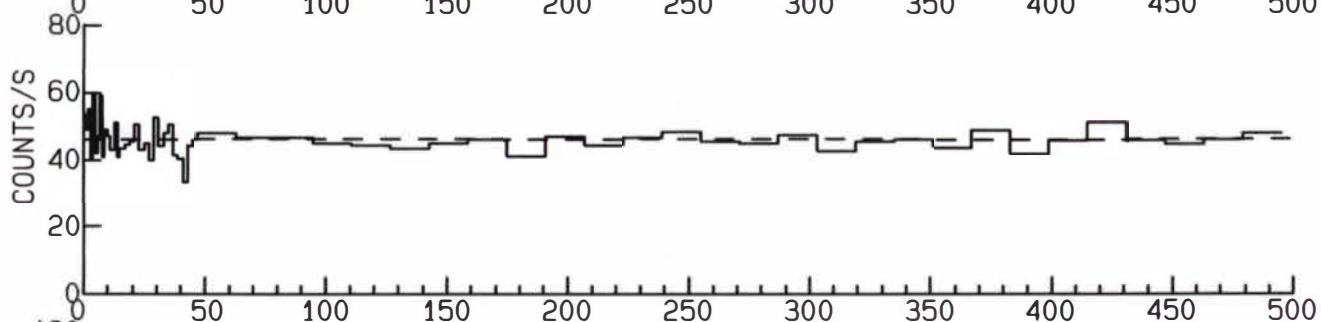
131-150 keV



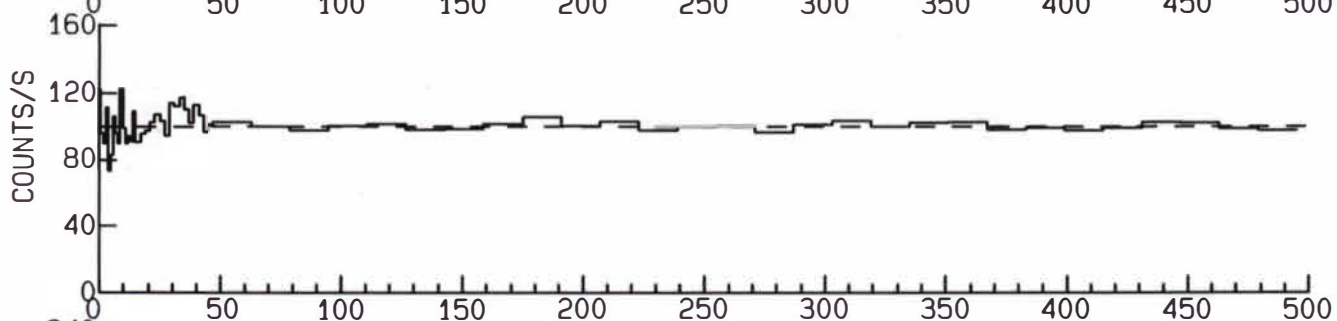
103-131 keV



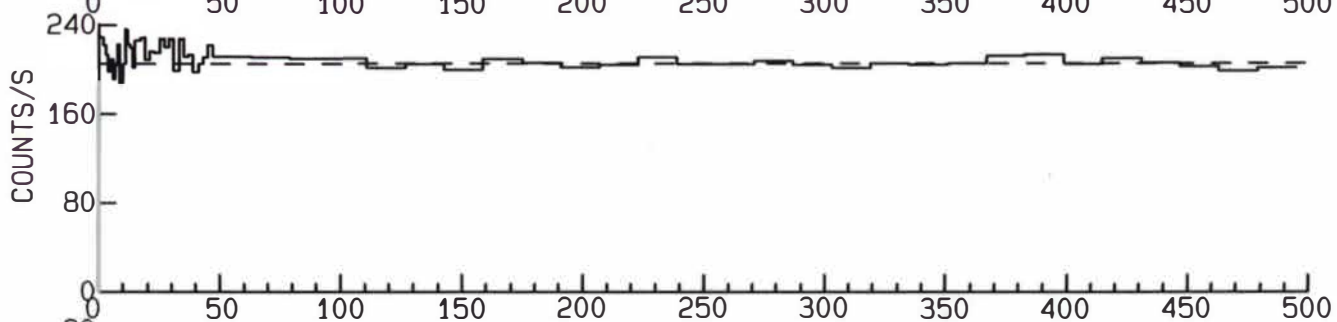
75-103 keV



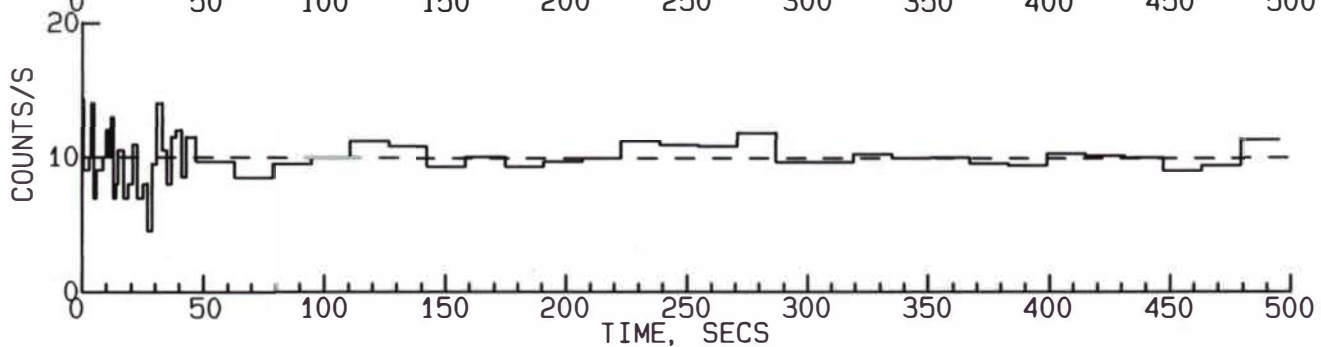
47-75 keV



18-47 keV



4-18 keV

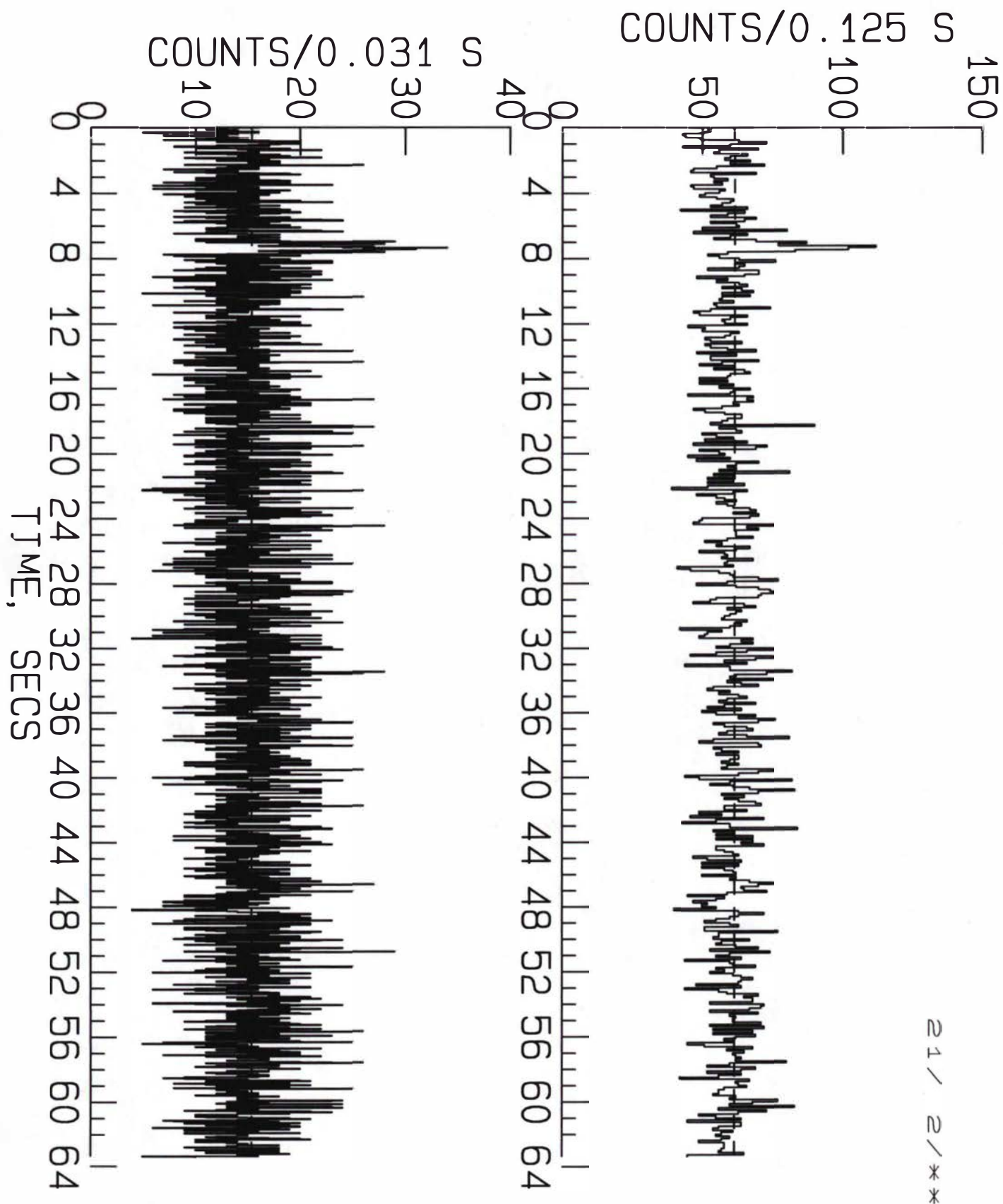


ULYSSES

12/07/99

Ttrig=25561.895

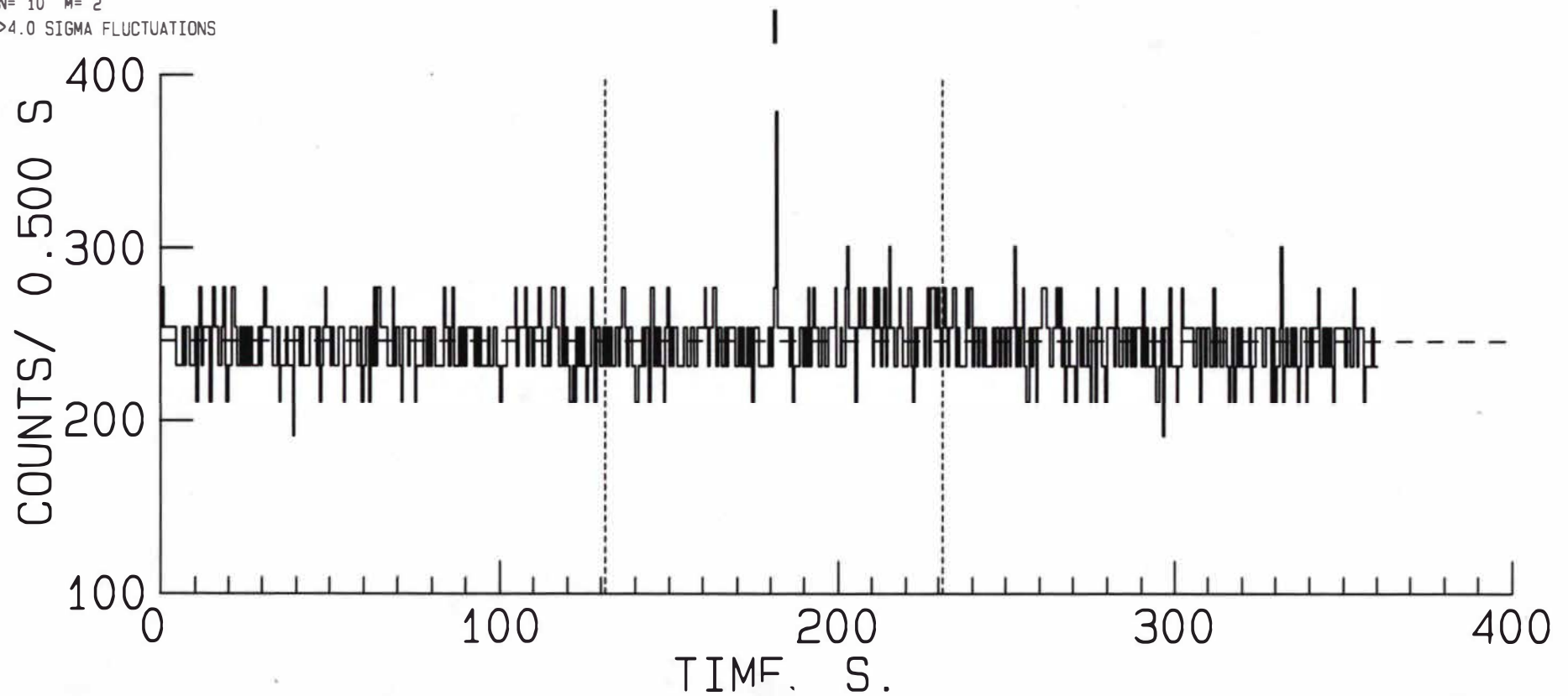
22- 150 keV



ULYSSES RT
12/ 7/99 25380.145 s
22- 150 keV

21 / 2 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES

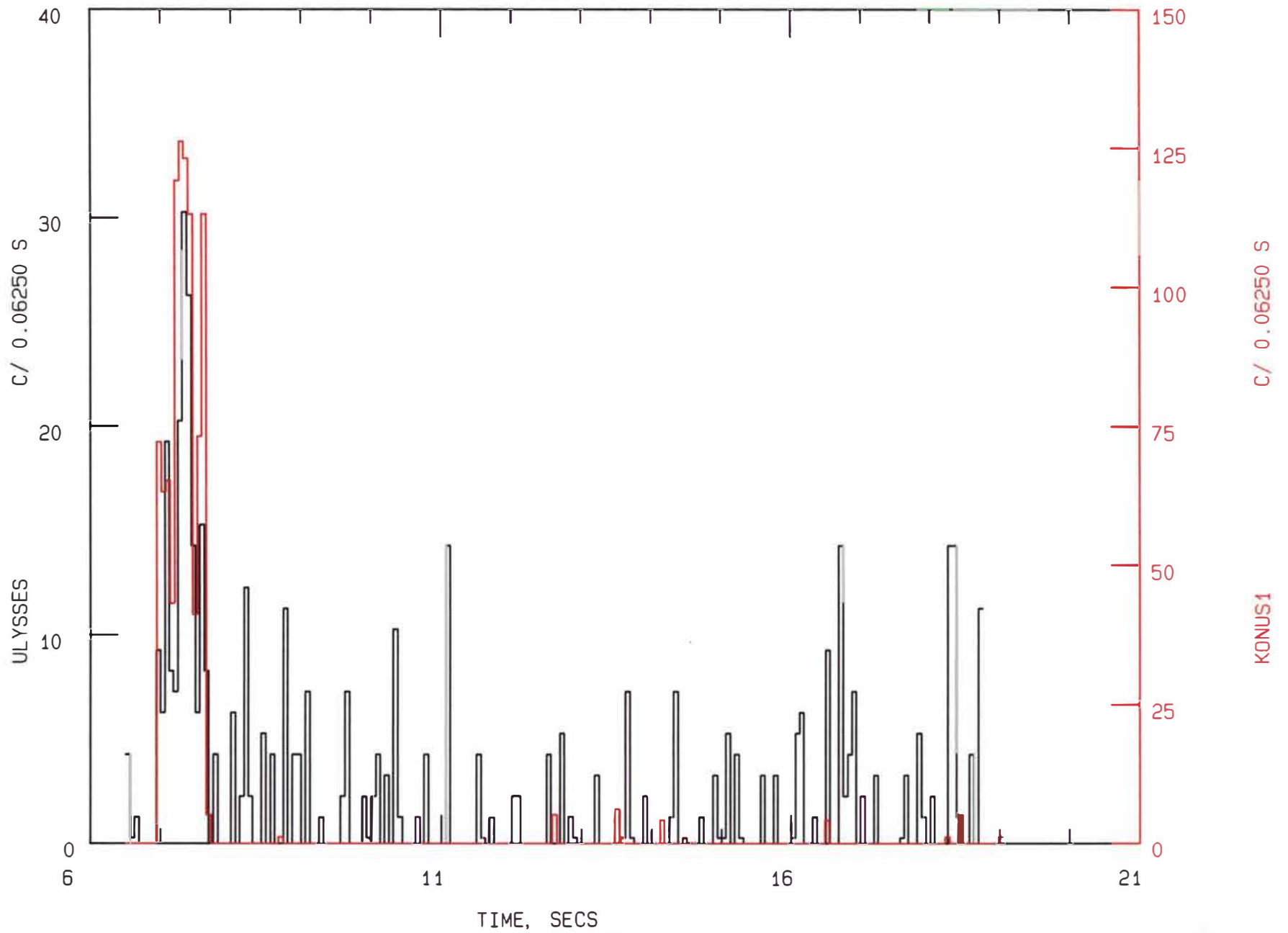
-KONUS1

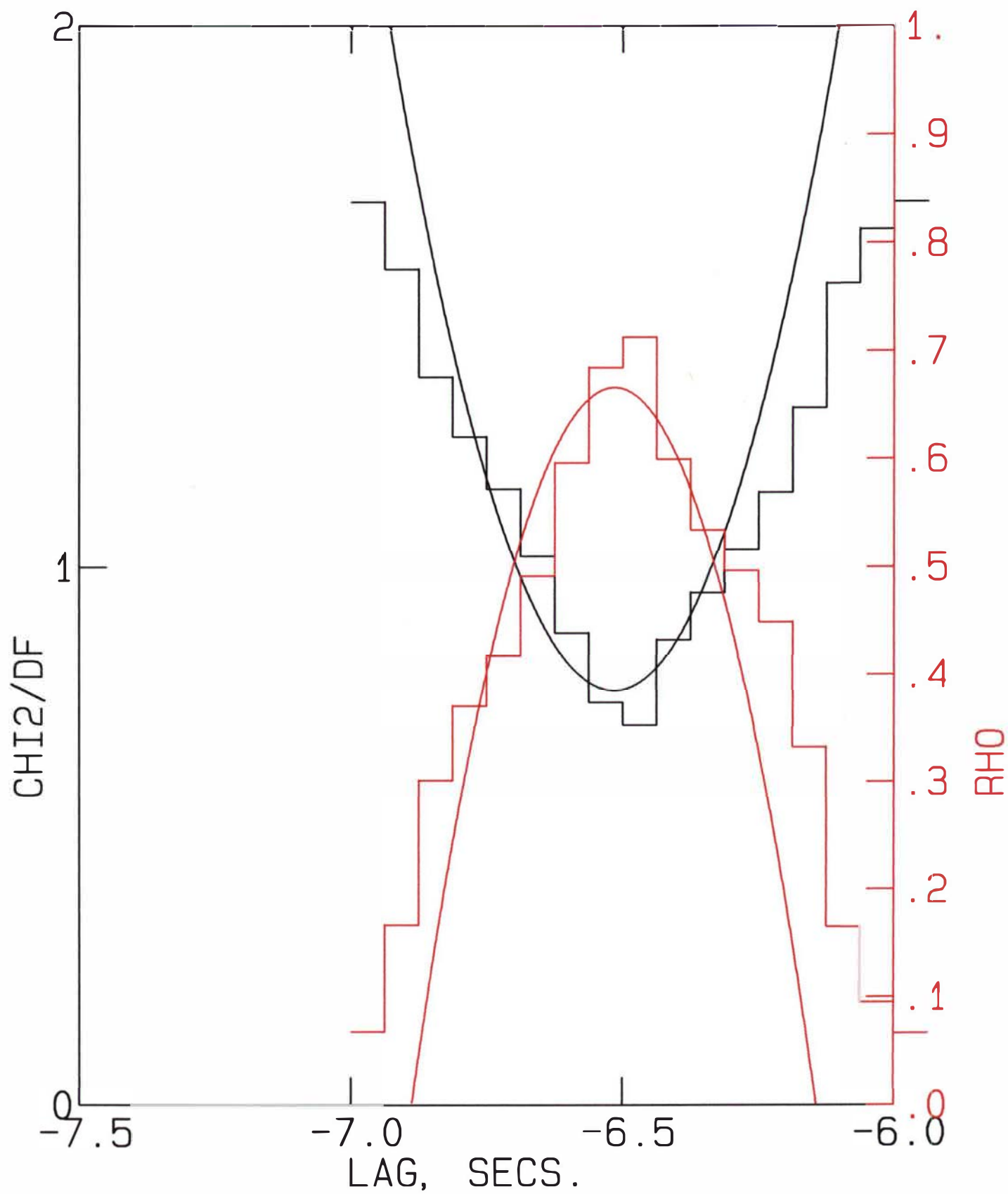
CORRELATION

12/07/99

25561.894

13/ 7/99





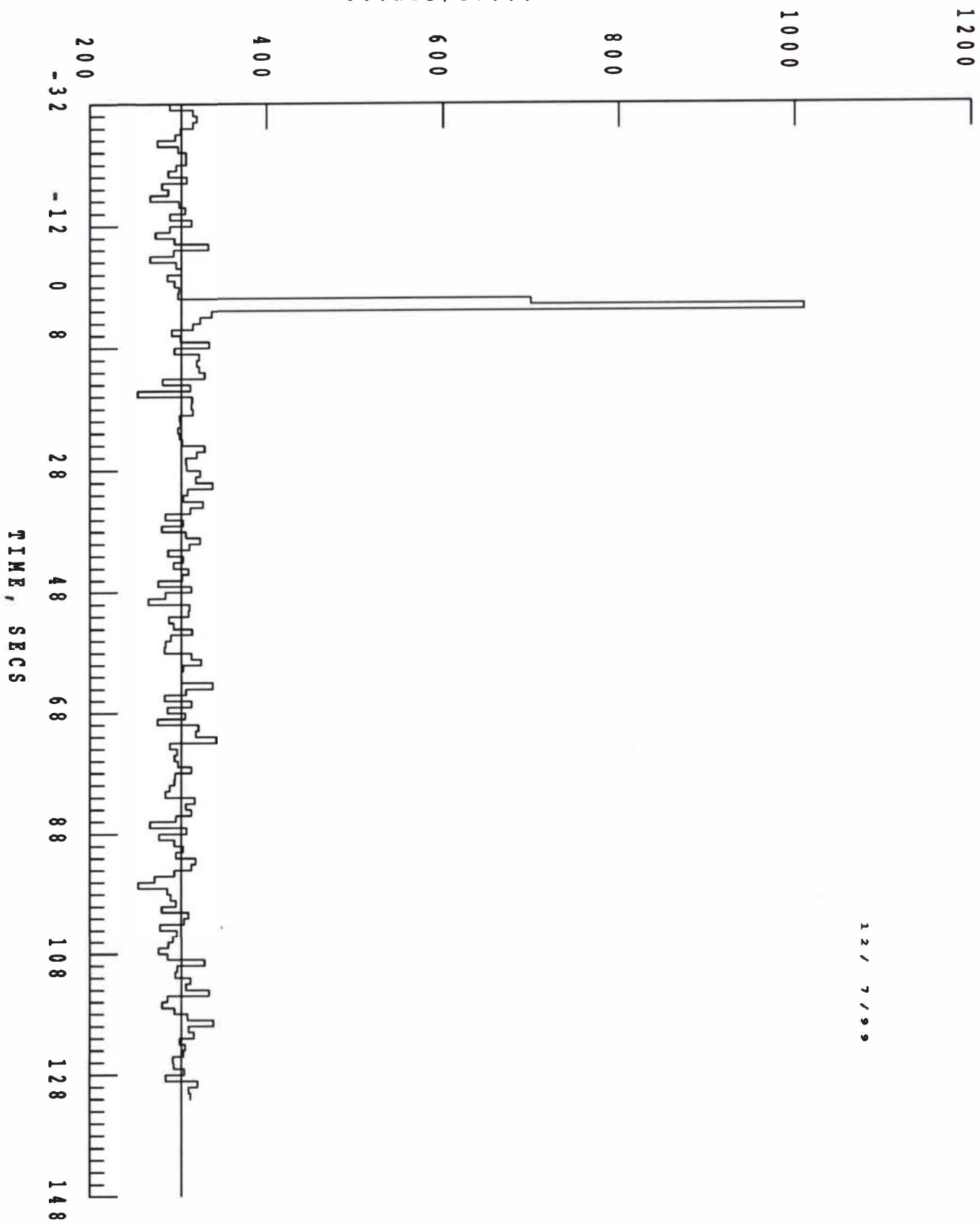
NEAR

12/07/99

27166.378

100-1000 keV

COUNTS/1.000 S



12 / 7 / 99

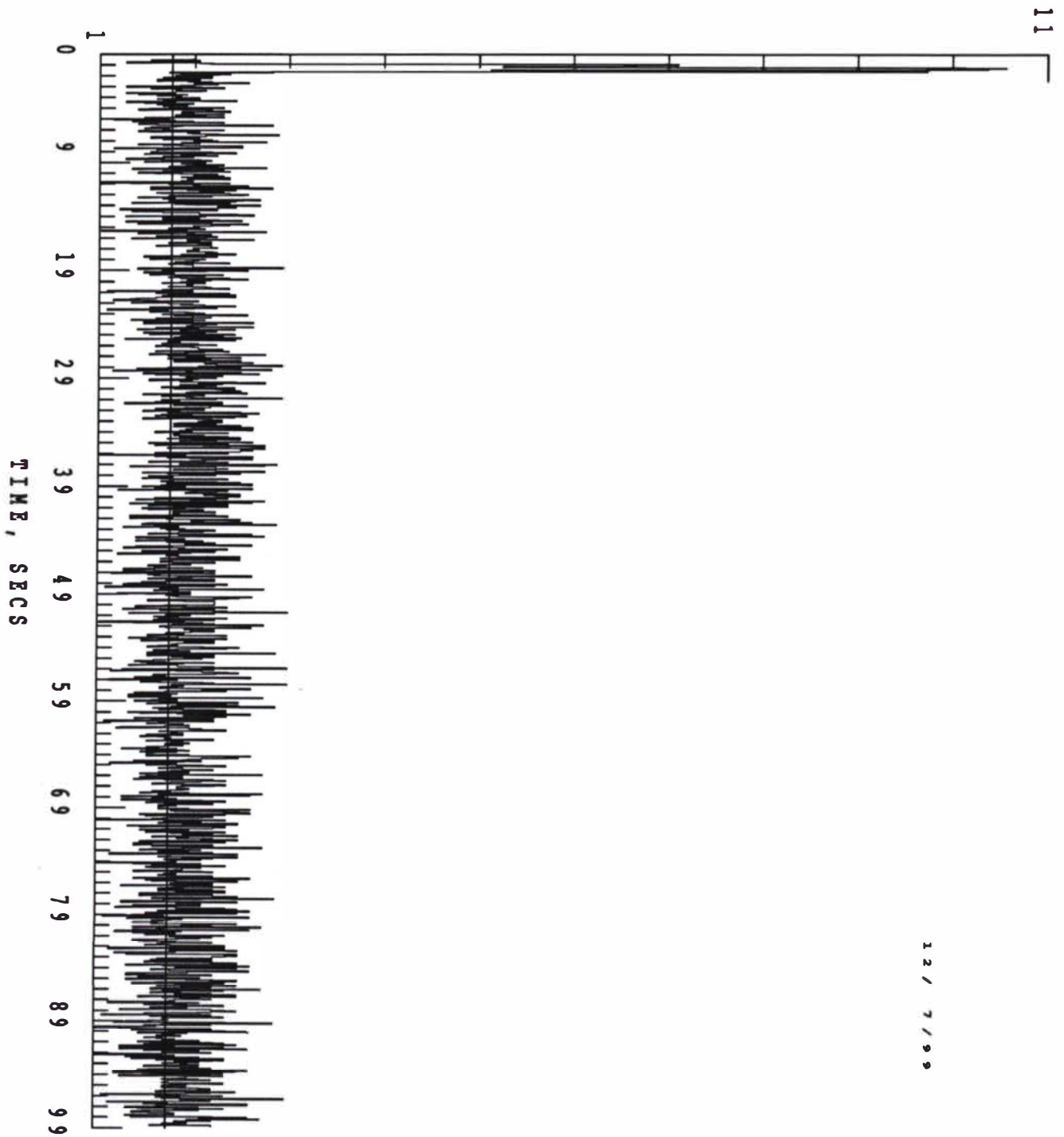
KONUS

12/07/99

27915.510

50 - 200 keV

COUNTS/0.064 S



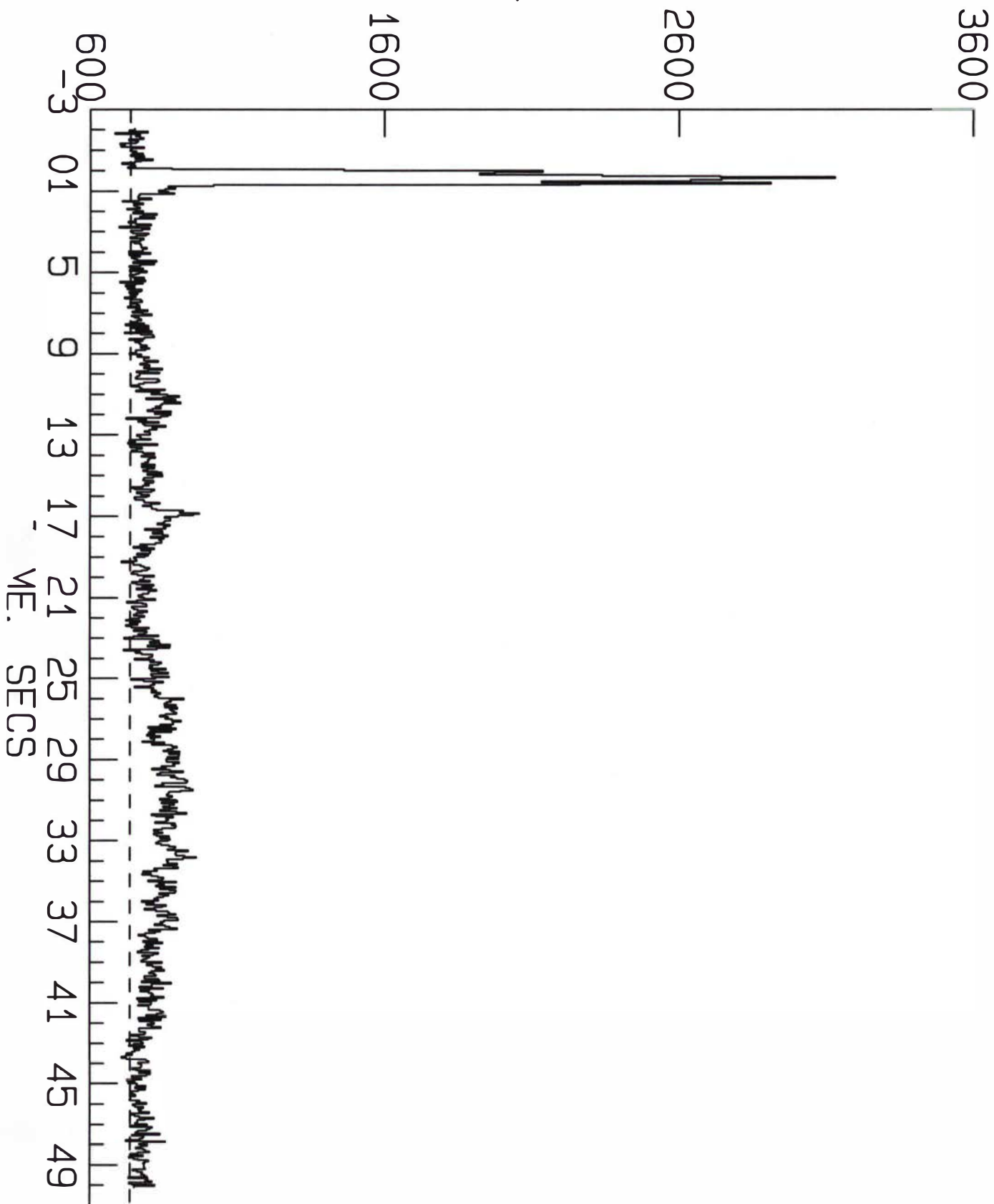
BATSE

12/07/99

27919.417

25- 100 keV

COUNTS/0.064 S



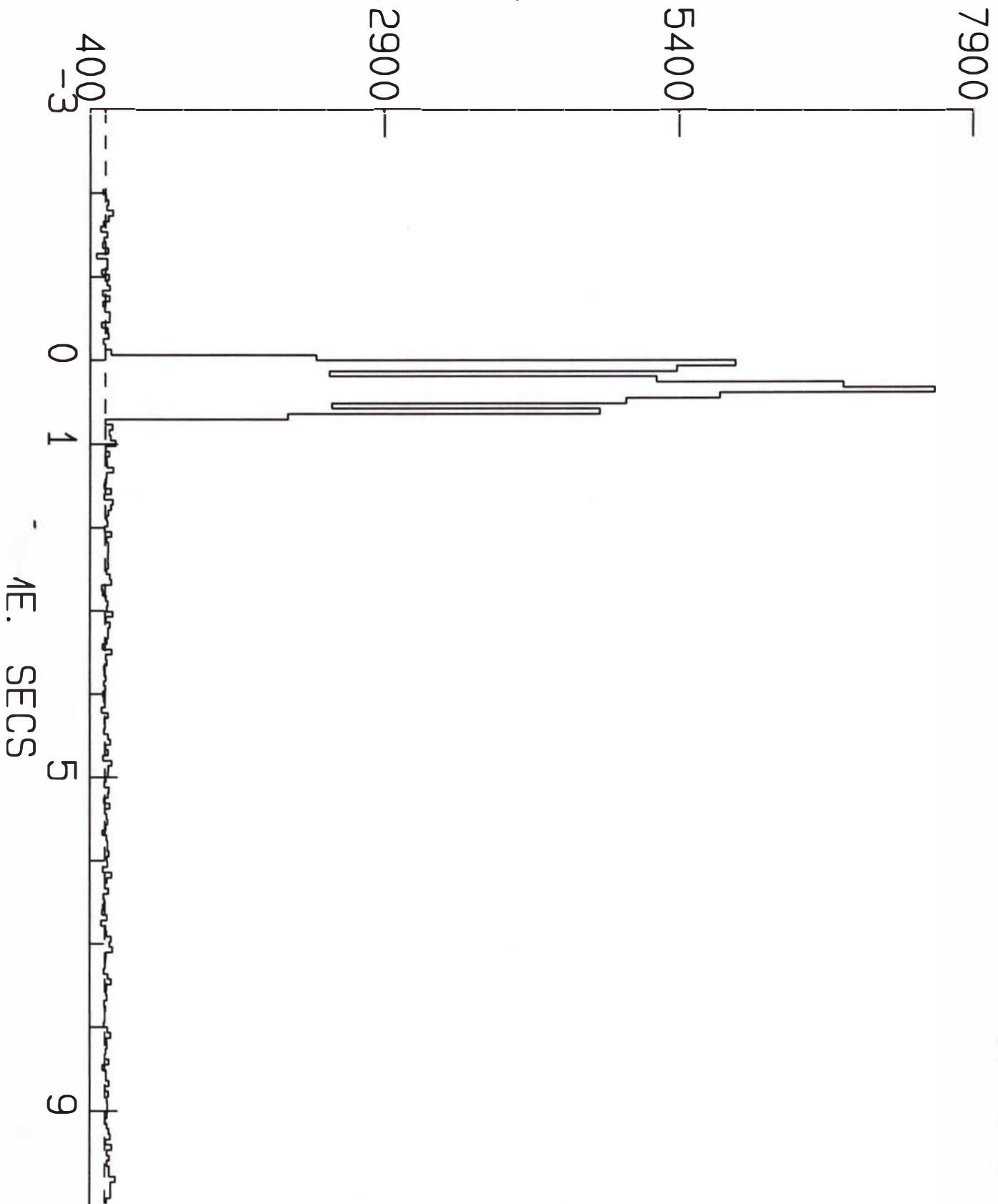
BATSE

12/07/99

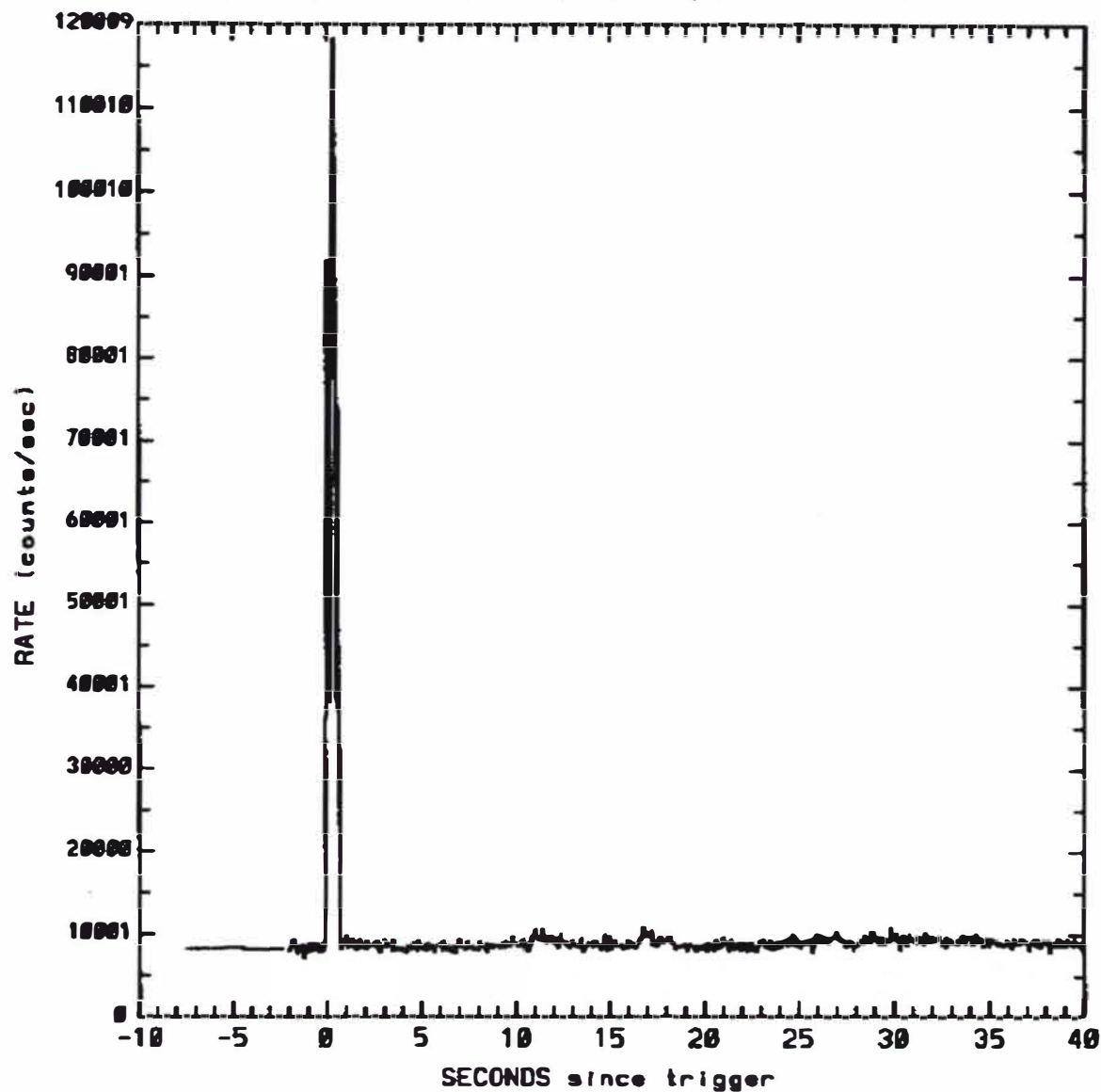
27919.417

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7647



6-AUG-1999 09:10.43

Created by MDPS BD
(Burst Display)
Version 12.20

Trigger # : 7647

Trigger Time:
11371 / 27919.417

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

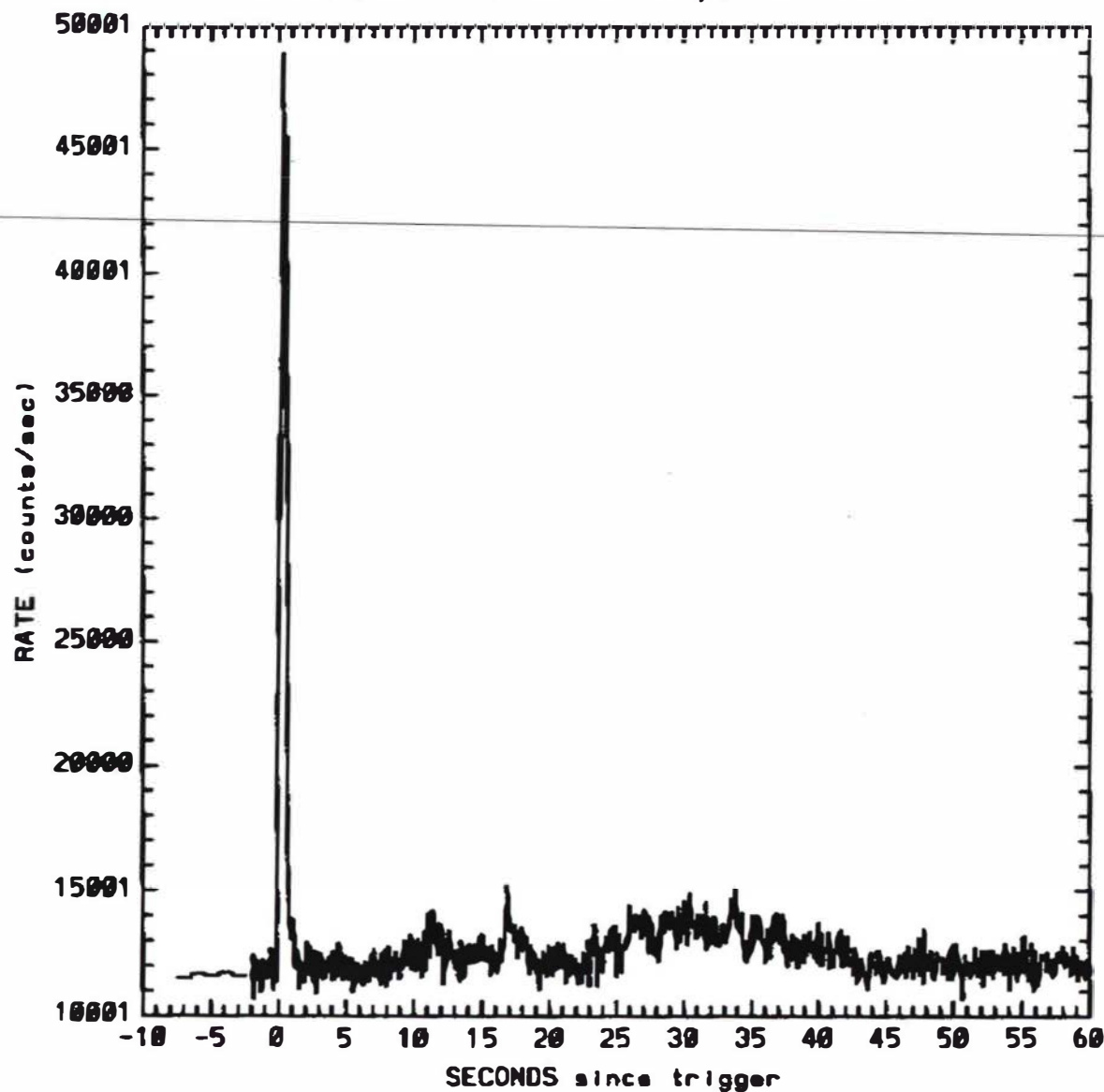
Minimum Integ. Time:
0.064 seconds

Detectors [7..8]:
---3210

Discriminators:
[3 : 4]

Quality Mask:
BDISP1

DISCSC Data for K. Hurley, No. 7647



29-JUL-1999 18:37:51

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

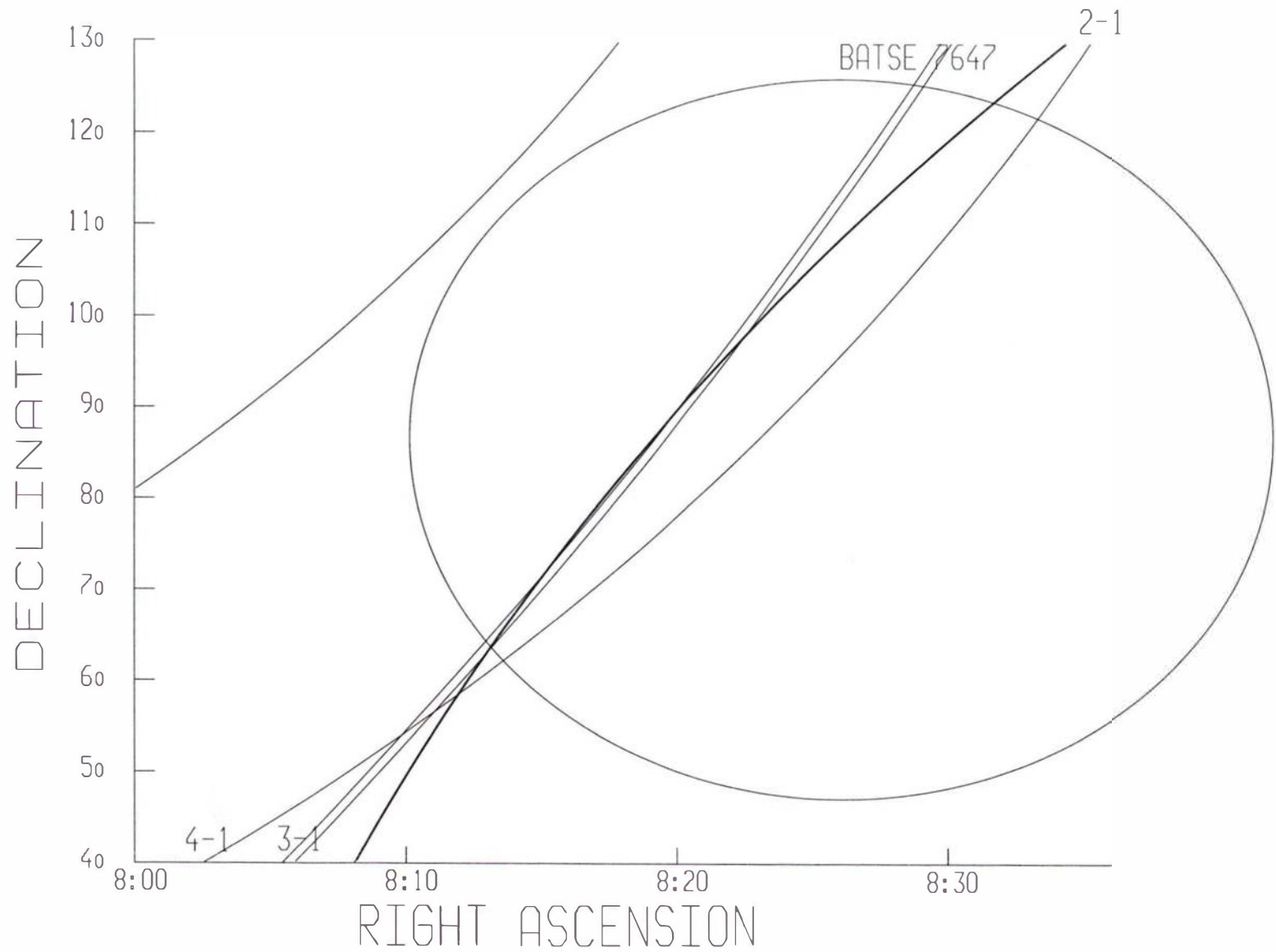
Trigger # : 7647

Trigger Time:
11371 / 27919.417Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PRED + DISCLA
Minimum Integ. Time:
0.004 second(s)Detectors [7..8].
---3210Discriminators:
(1 : 2)Quality Mask:
BDISP1

EVENT OF JUL 12, 1999 7:45

07/05/2015

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 4 KONUS1



Date: Apr. 15 '08

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☐ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

☒ ACCESS and MBL4 databases updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

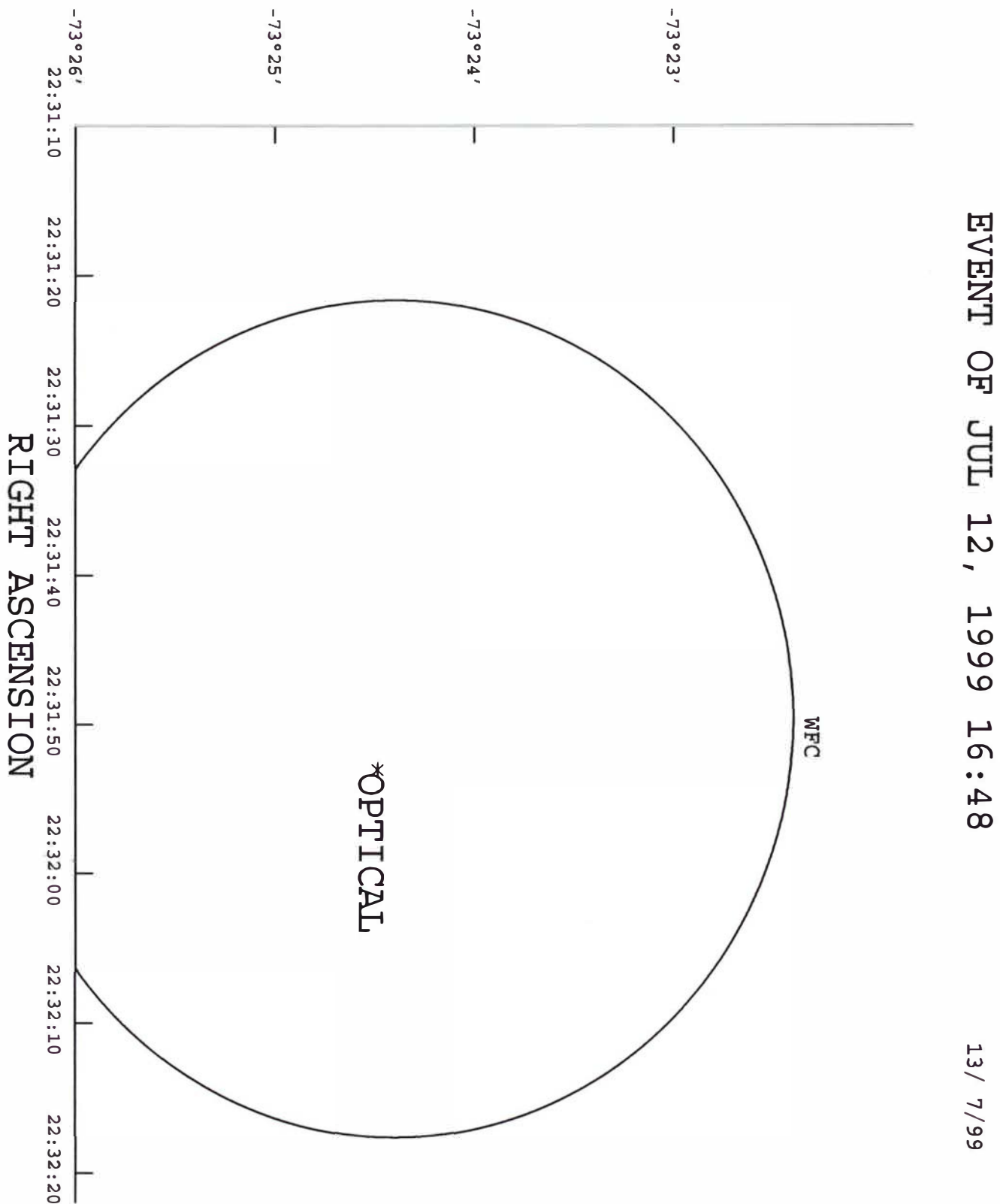
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 SAX

DECLINATION



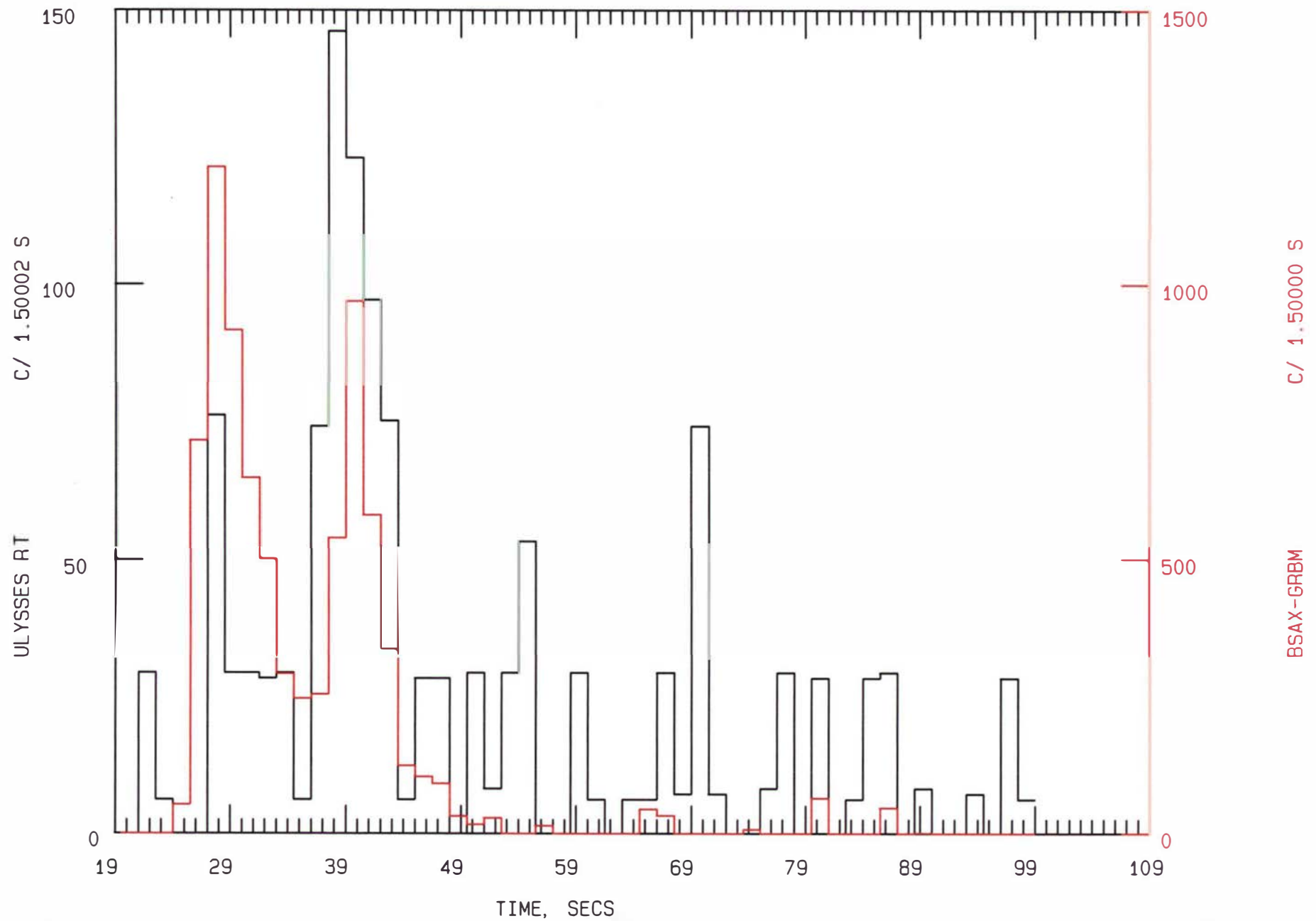
This is the larger X²

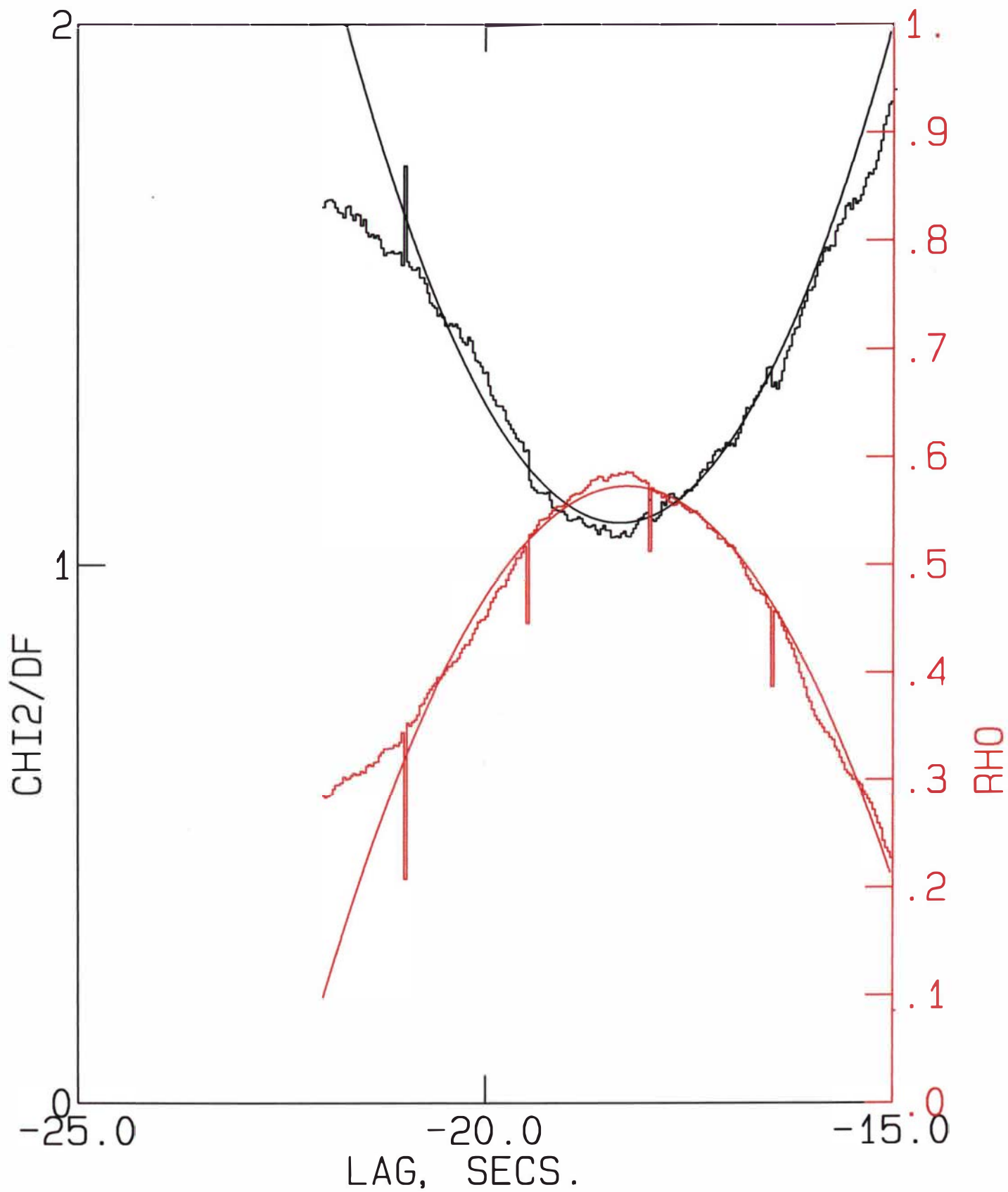
ULYSSES RT-BSAX-GRBM CORRELATION

12/ 7/99

60529.007

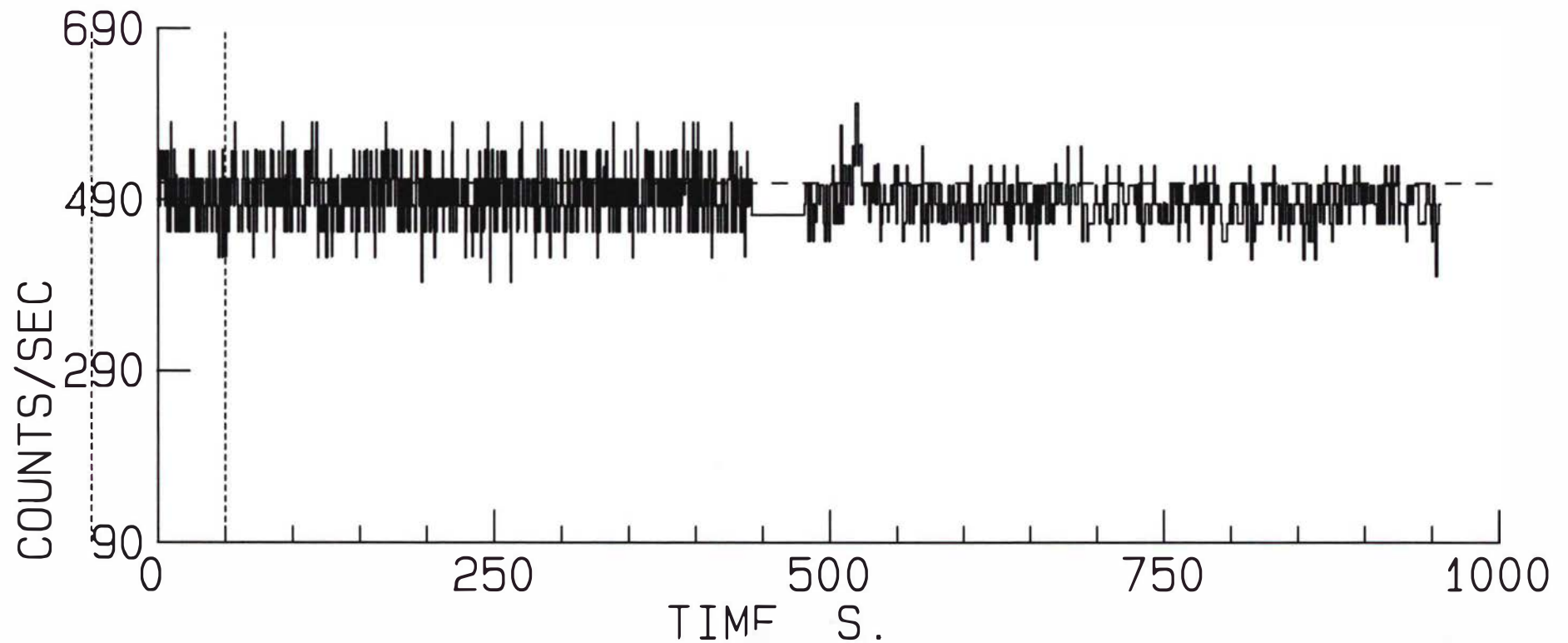
13/ 7/99





ULYSSES RT
12/ 7/99 60048.001 s
INTERVALS REGROUPED BY 2
22- 150 keV

13/ 7/99



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

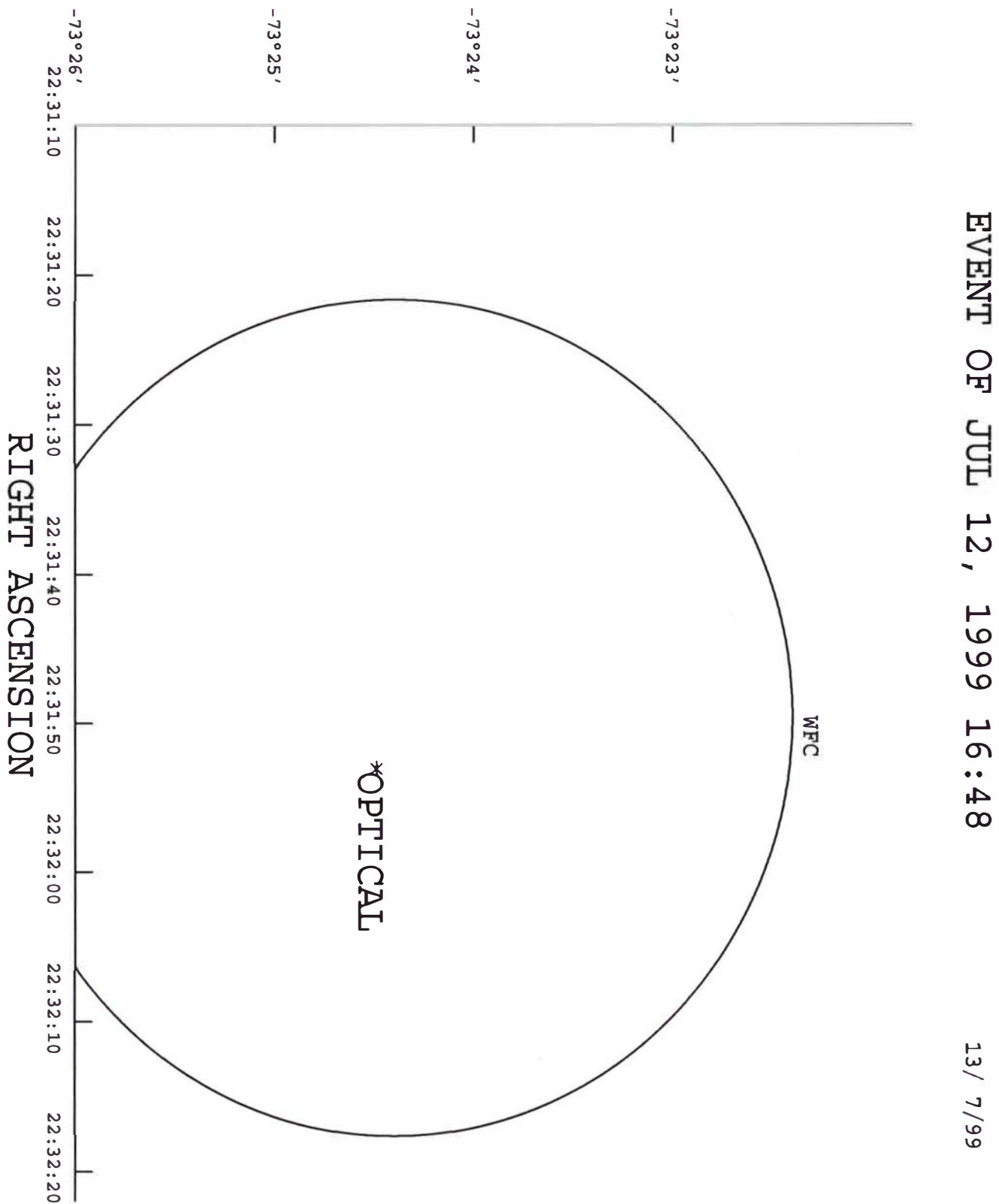
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 SAX

DECLINATION



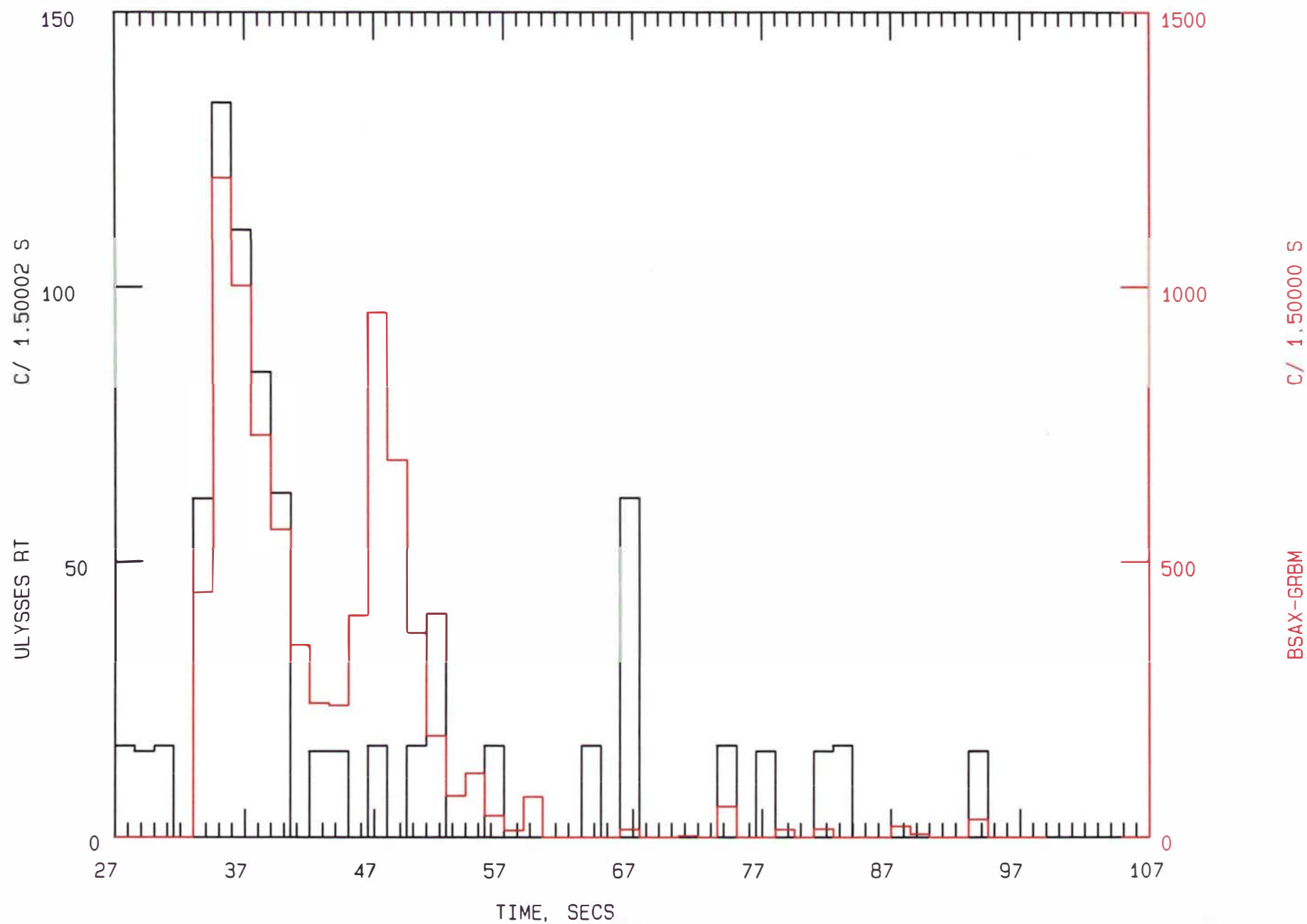
This is the smaller χ^2

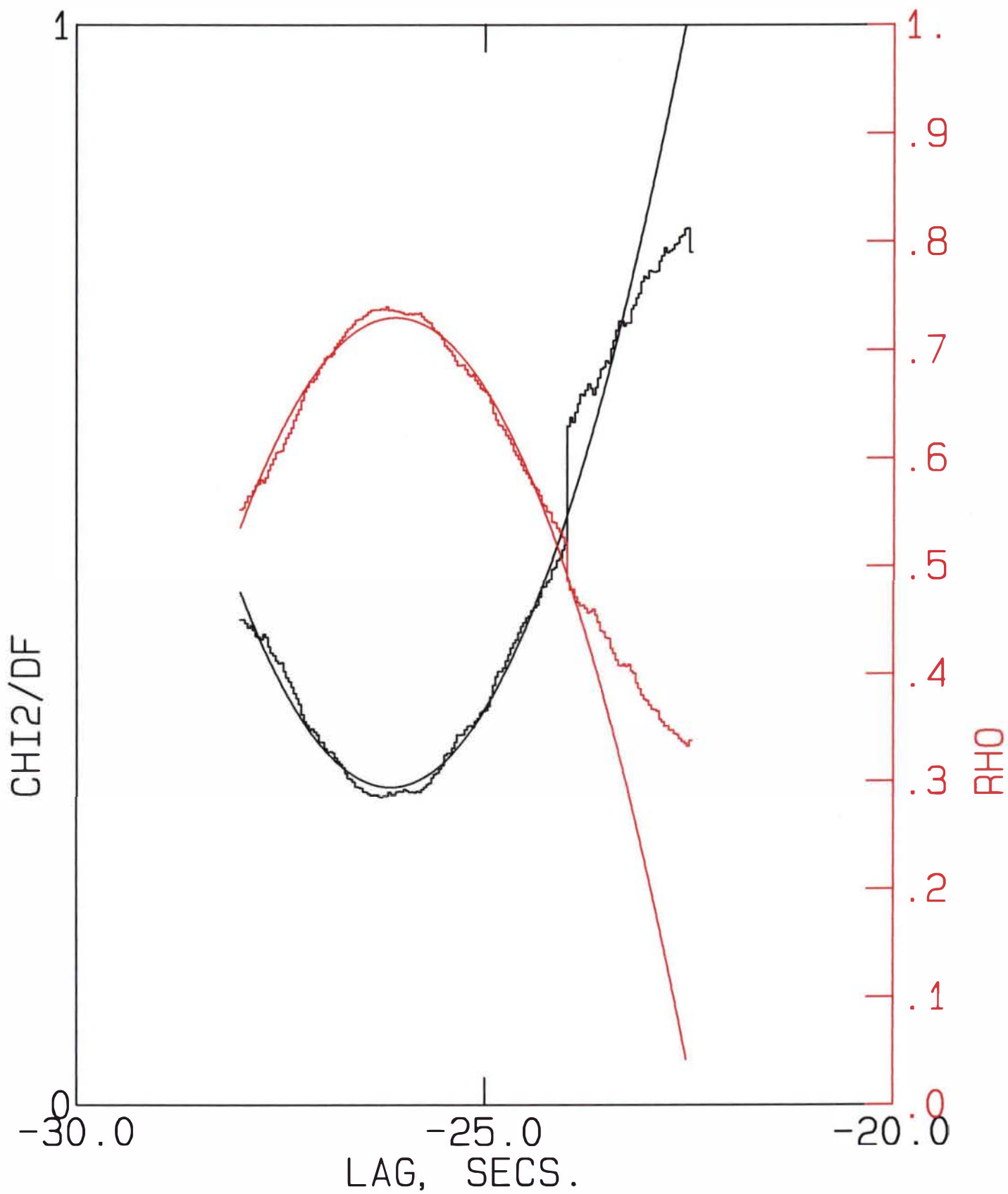
ULYSSES RT-BSAX-GRBM CORRELATION

12/ 7/99

60532.007

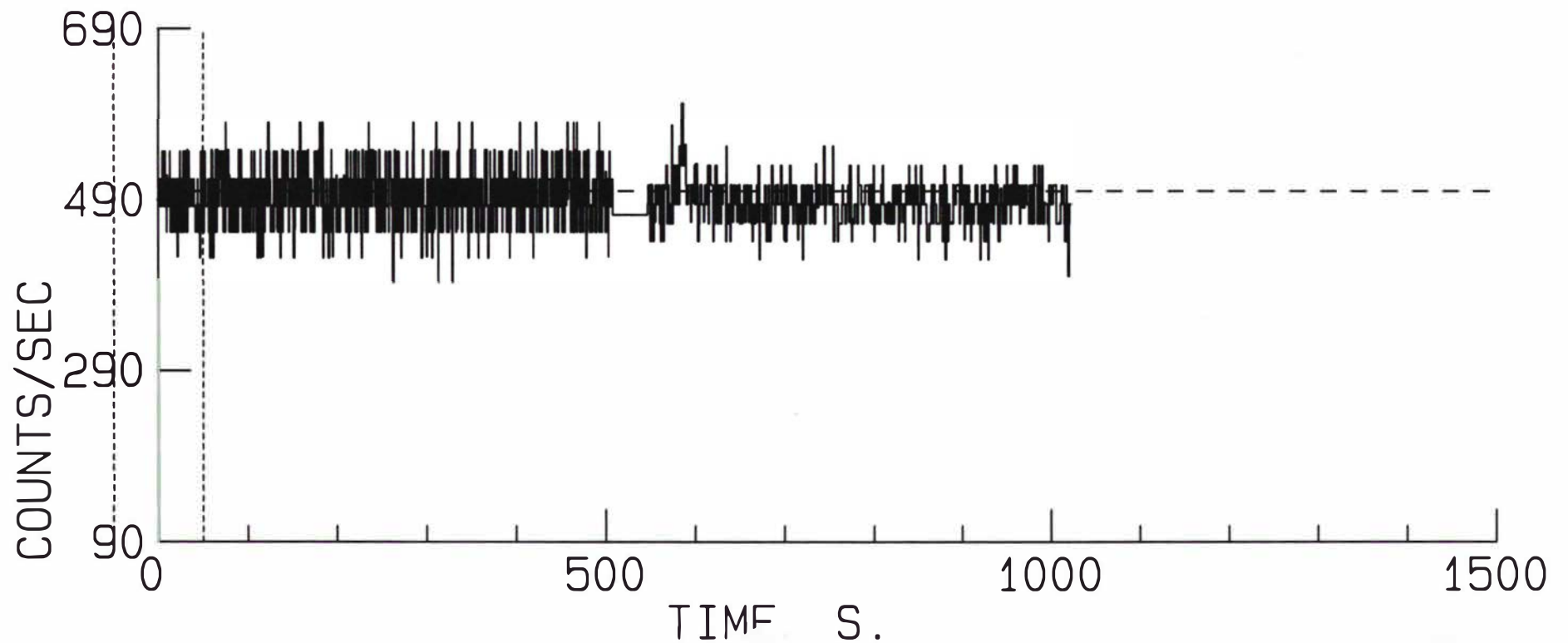
13/ 7/99





ULYSSES RT
12/ 7/99 59982.001 s
INTERVALS REGROUPED BY 2
22- 150 keV

13/ 7/99



H U S D A T A

1 2 / 7 / 9 9

U L Y S S E S R T

1 2 / 7 / 9 9 5 9 9 8 2 . 0 0 0 s

I N T E R V A L S R E G R O U P E D B Y 2

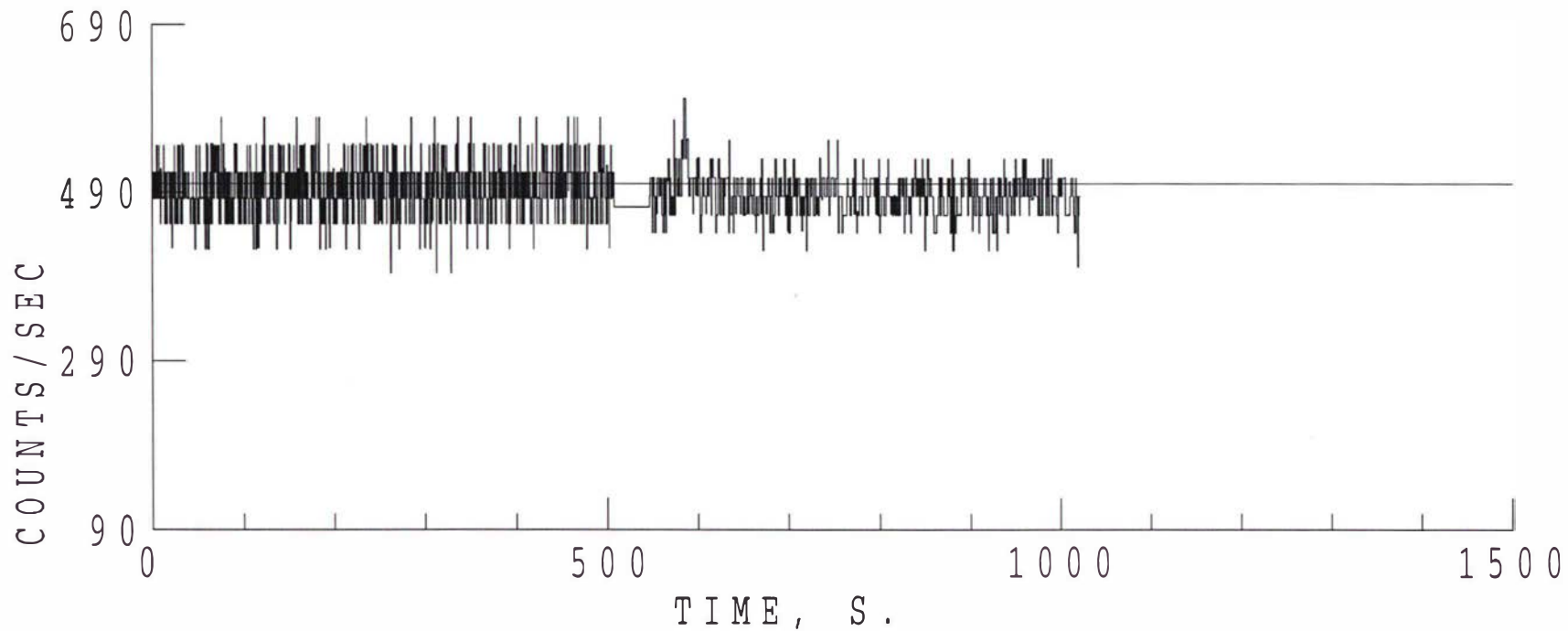
0 - 0 k e V

W = 10 M = 10
> 4.0 SIGMA FLUCTUATIONS

W = 10 M = 2
> 4.0 SIGMA FLUCTUATIONS

1770x.25=
4425

16.68



From WOODSP@fender.msfc.nasa.gov Thu Jul 15 09:29 PDT 1999
From: WOODSP@fender.msfc.nasa.gov
Date: Thu, 15 Jul 1999 11:34:25 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7648

BATSEARCH PROGRAM

BATSE BURST # 7648
EVENT OF 1999 JUL 12 DAY OF YEAR=193
EVENT CROSSING TIME AT BATSE : 68116. S. OR 18:55:16.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 281.000 12.000
BATSE PEAK COUNTING RATE: 5800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 7/ 99 IS:
RA= 147.848 DEC= -8.245 DIST= 5.412 AU
BATSE-ULYSSES DISTANCE = 809669539. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 46.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1868.64 SECS.
CROSSING TIME AT ULYSSES IS 69985. S. OR 19:26:24 +/- 416.92 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 7/ 99 IS:
RA= 209.797 DEC= -13.537 DIST= 0.883 AU
MARS-BATSE DISTANCE = 132095752. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 113.57 SECS.
CROSSING TIME AT MARS IS 68002. S. OR 18:53:22 +/- 72.19 SECONDS

BATSE BURST TRIGGER

NO.: 7648

TIME: TJD=1371 SECONDS=68116

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.0 AZIMUTH=207.7 ERROR=1.2 DEGREES

COMMENTS:

GRB LASTING ABOUT 40 SEC. SINGLE FRED-LIKE PULSE WITH NO
VISIBLE SUBSTRUCTURE. VISIBLE ABOVE 300 KEV. PHOSPHORESCENT
SPIKE AT T+51.6 SEC.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7648	990712	11371	68116	5800	281	+12	40

Date: Mar 10 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ ~~Jim~~ Jim Schmidling's stat file correction applied?
- ☒ ~~Final~~ Final ephemeris used?
- ☒ ~~Final~~ Final, CDROM data used?
- ☒ ~~Is~~ 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~~ BATSE ephemeris for T_0 ?
- ☒ ~~Error~~ 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~~ Final, correct time used? (Files postmarked vwX@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☒ ~~BATSE~~ BATSE >100 keV data used for NEAR correlation?
- ☒ ~~ACCESS~~ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 BATSE

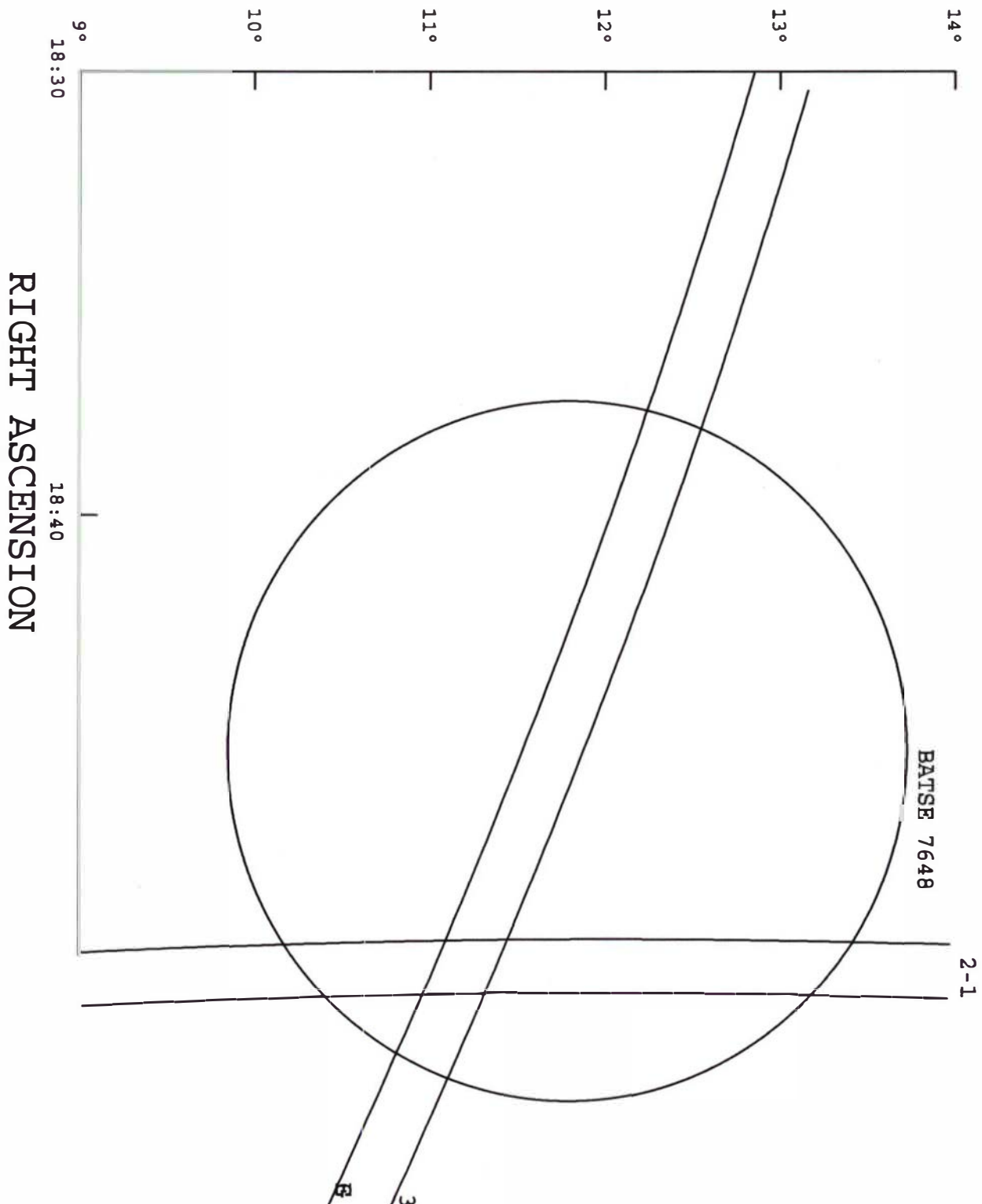
2 ULYSSES

3 NEAR

DECLINATION

EVENT OF JUL 12, 1999 18:55

10/ 3/ 0



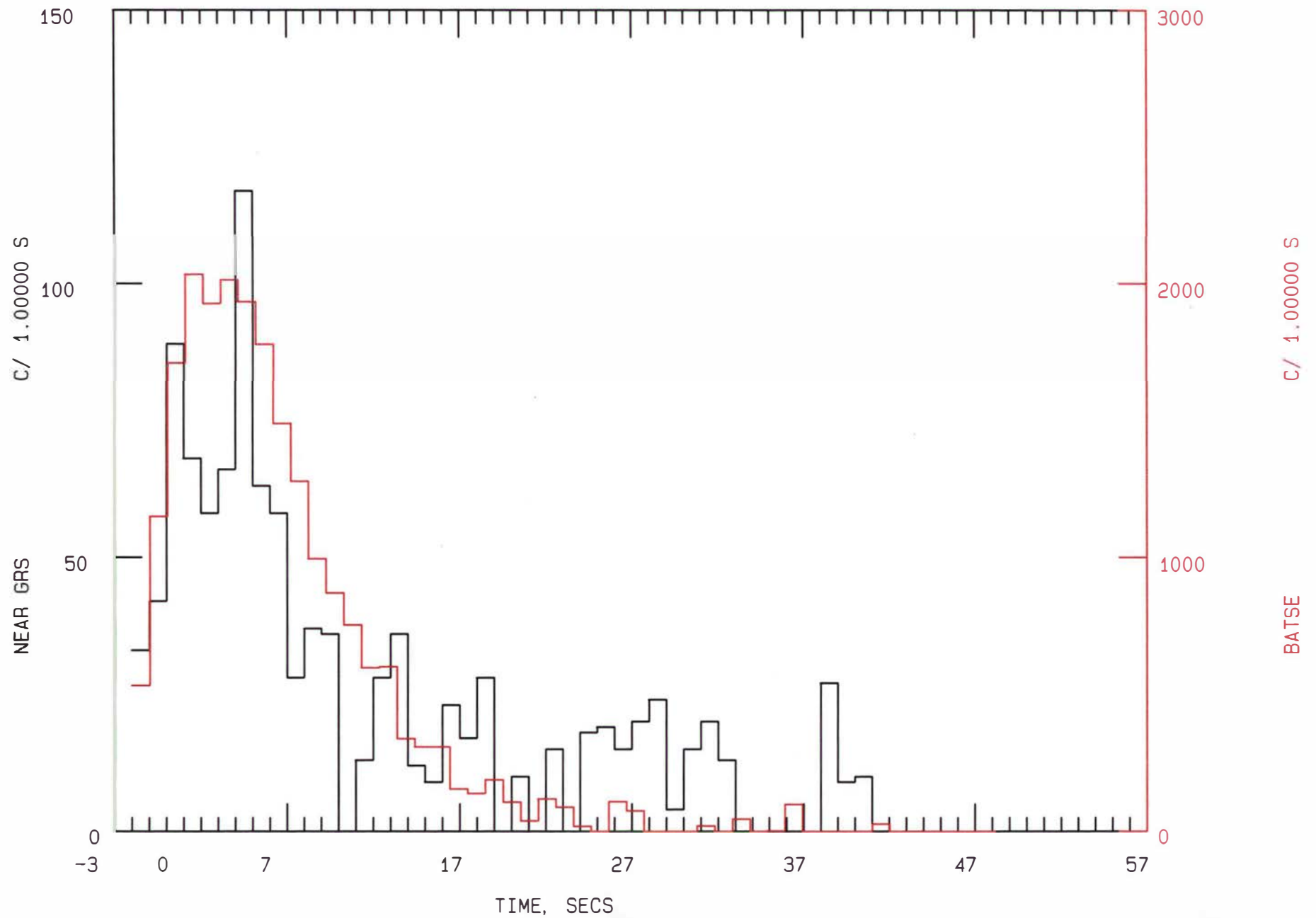
NEAR GRS -BATSE

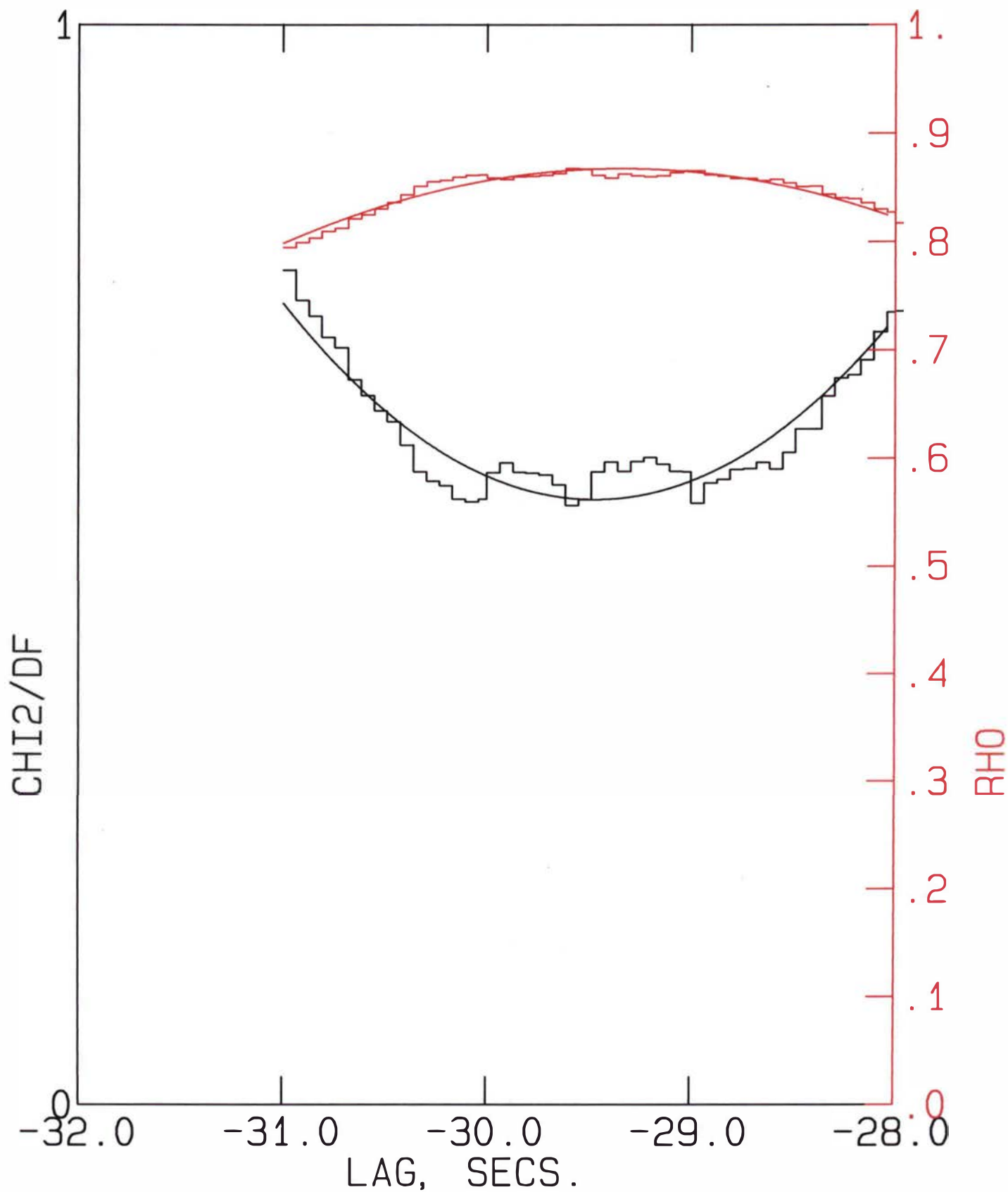
CORRELATION

12/07/99

68864.366

10/ 3/ 0





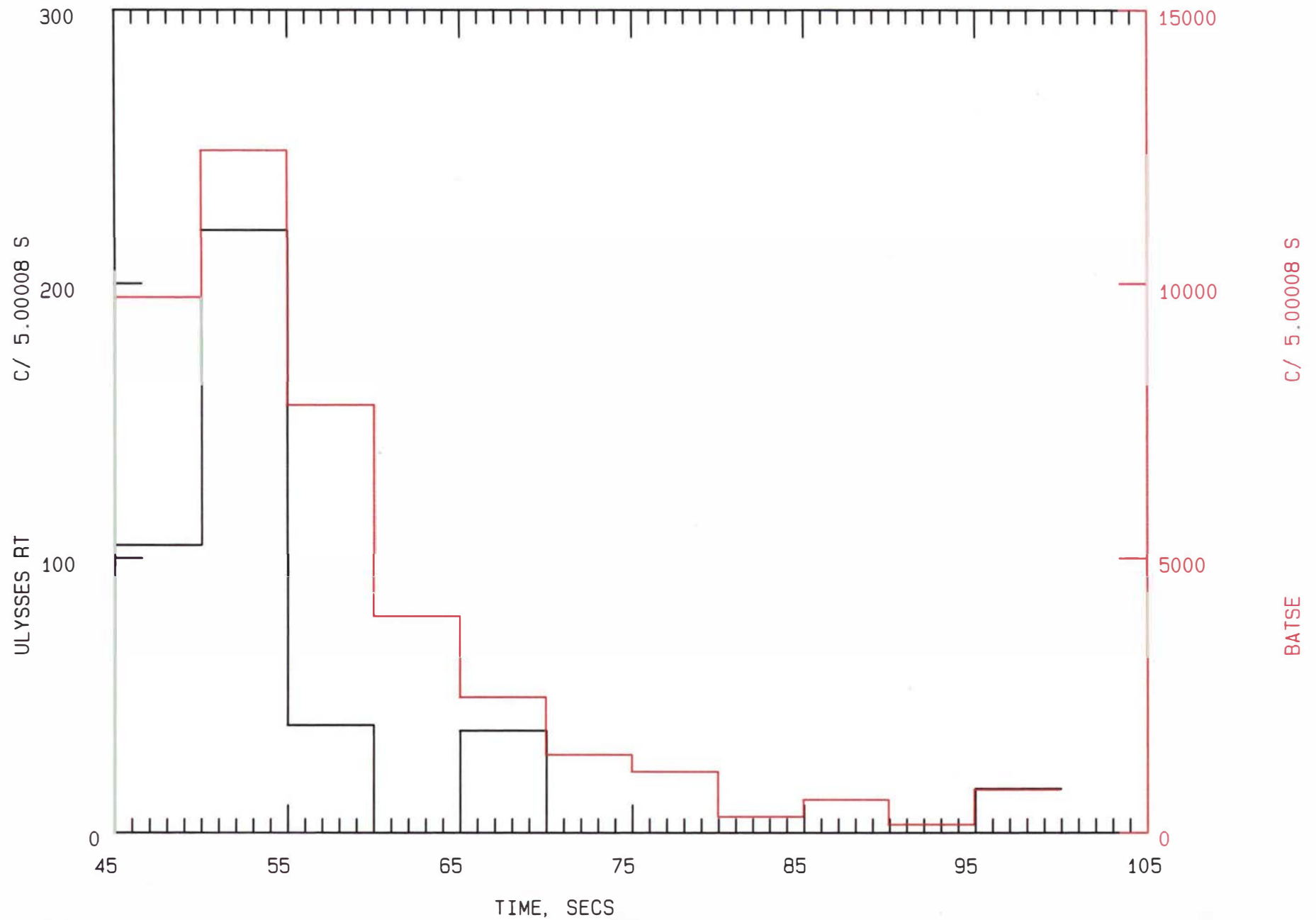
ULYSSES RT-BATSE

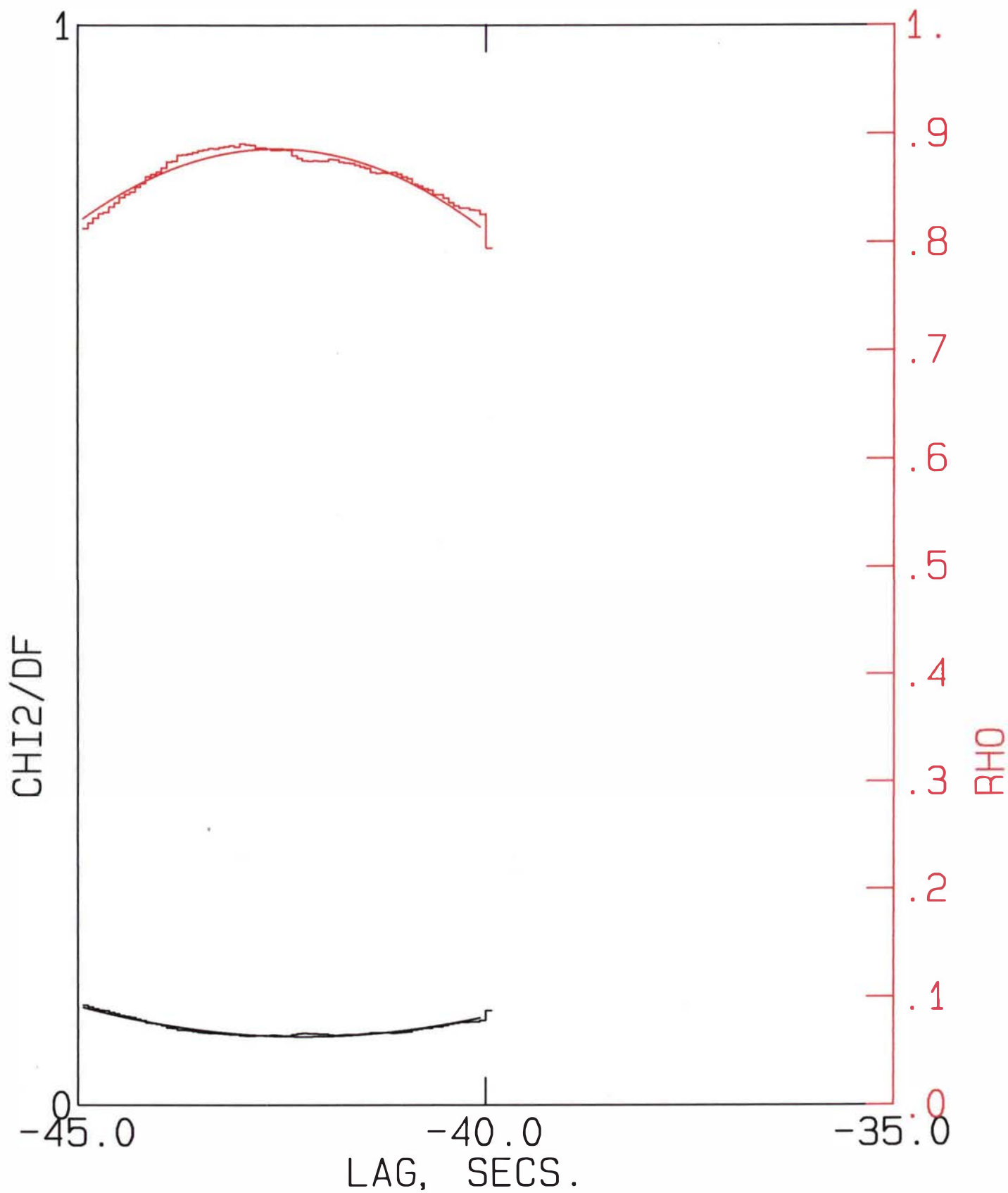
CORRELATION

12/ 7/99

69974.100

10/ 3/ 0





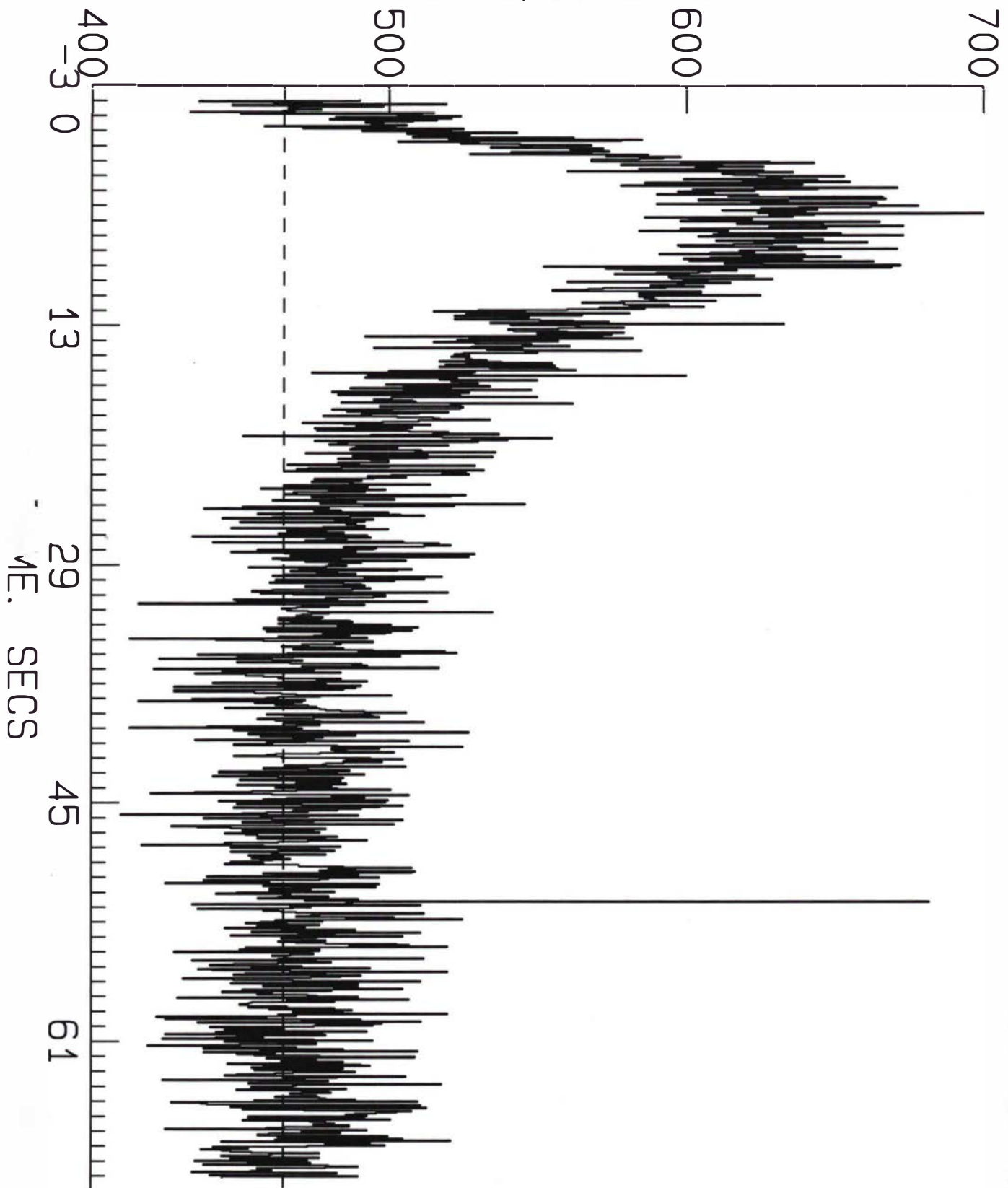
BATSE

12/07/99

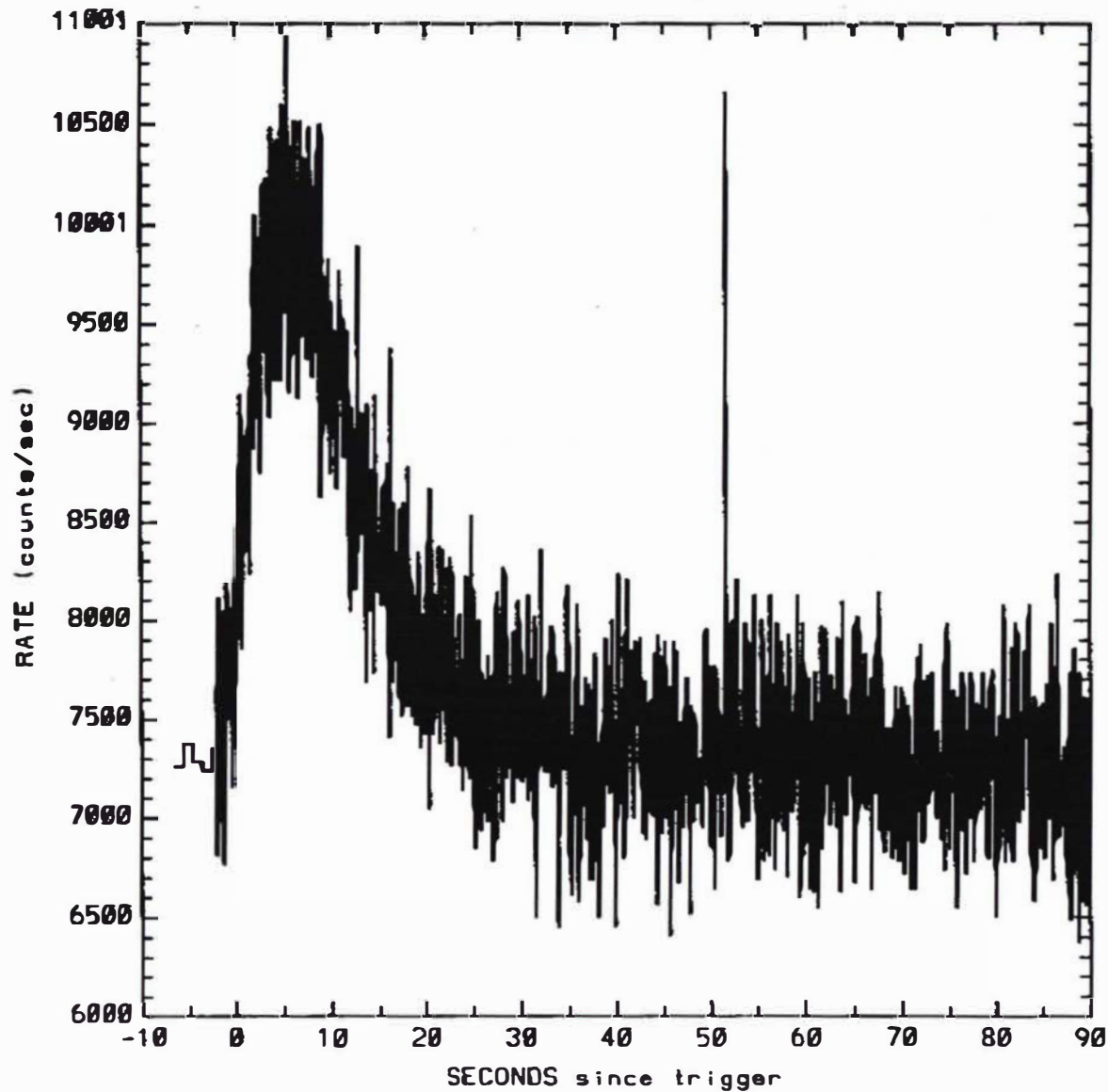
68116.729

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7648



8-MAR-2000 12:43:10

Created by NOPS 80
(Burst Display)
Version 12.26

Trigger # . 7648

Trigger Time:
11371 / 68116.729

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.864 second(s)

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

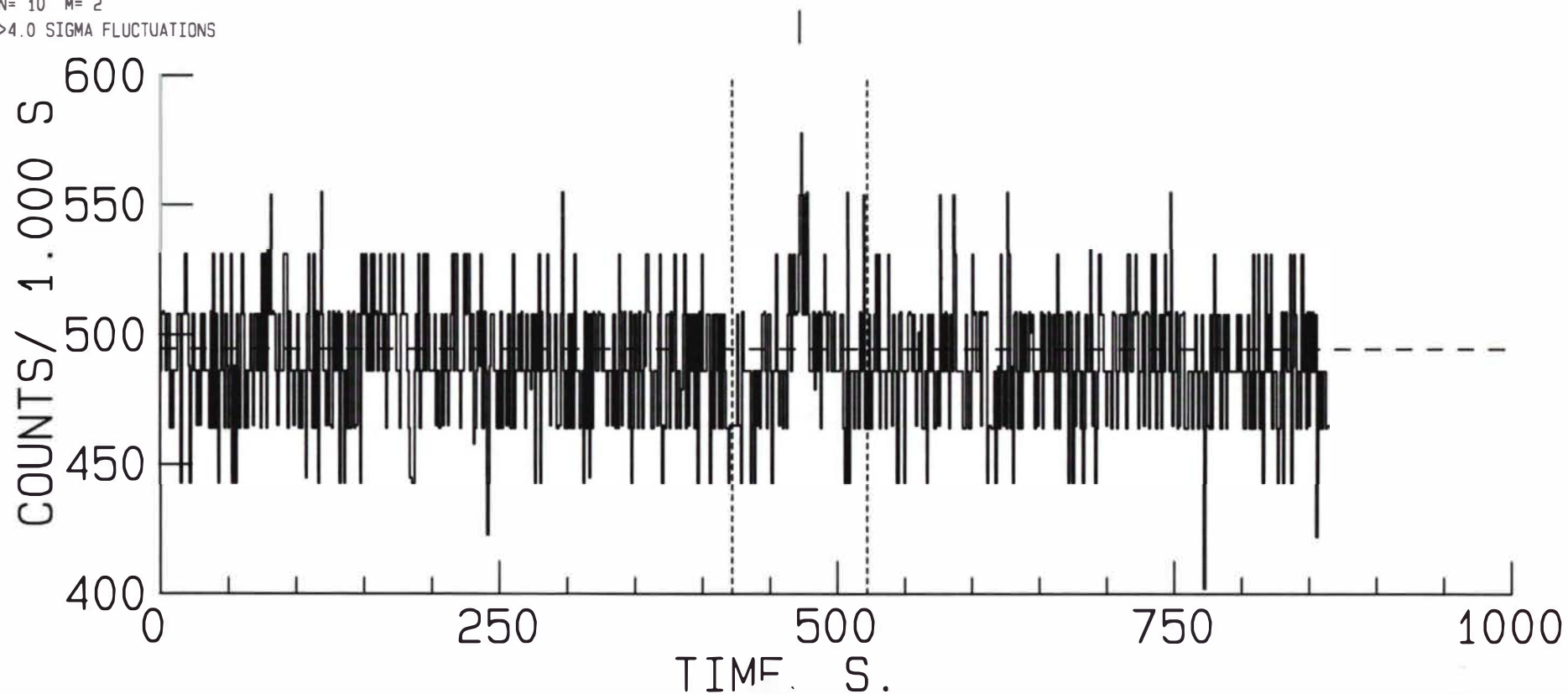
Discriminators:
11 . 21

Quality Mask:
BDISP1

ULYSSES RT
12/ 7/99 69552.095 s
0.500 S INTERVALS REGROUPED BY 2
22- 150 keV

6 / 3 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



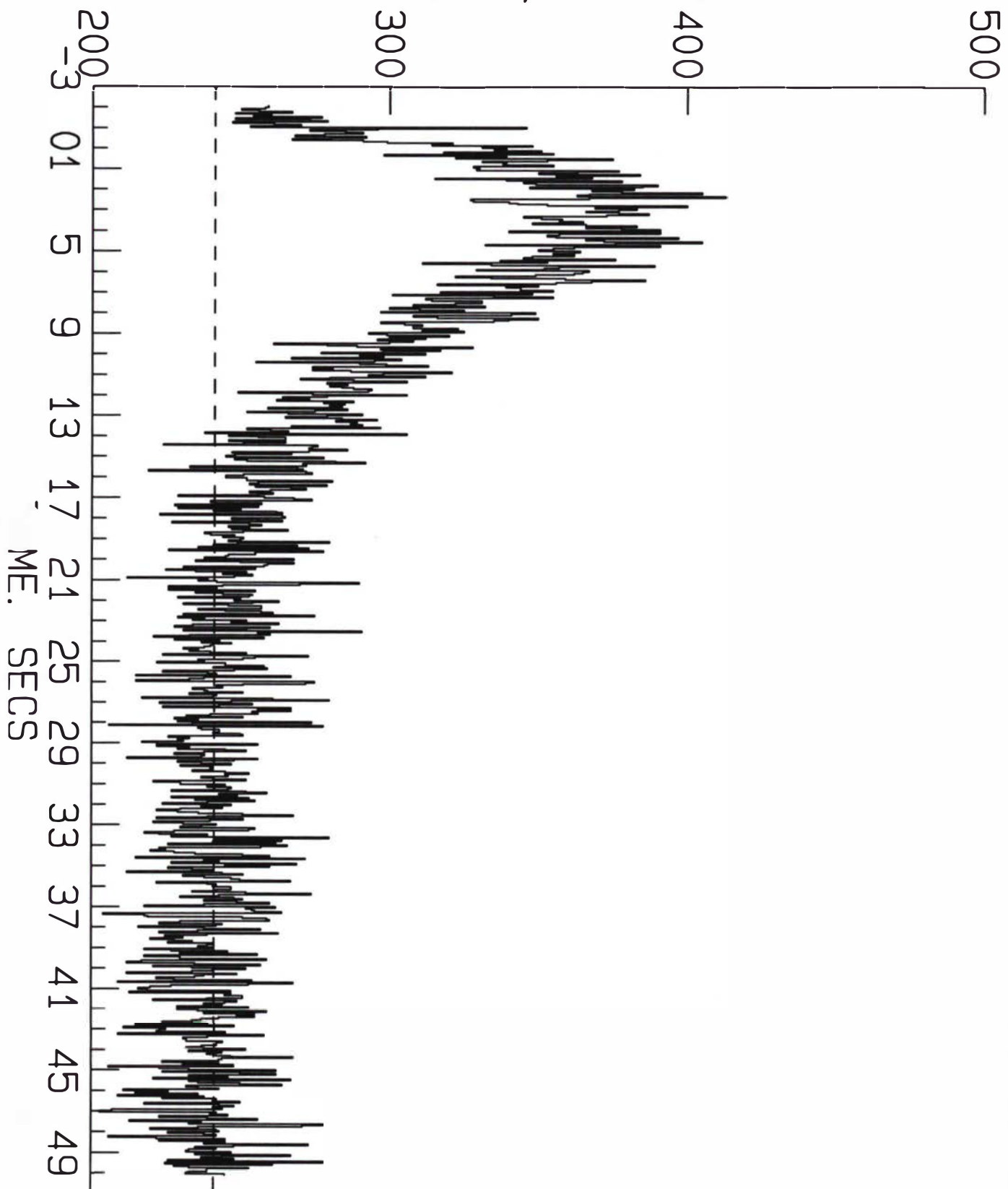
BATSE

12/07/99

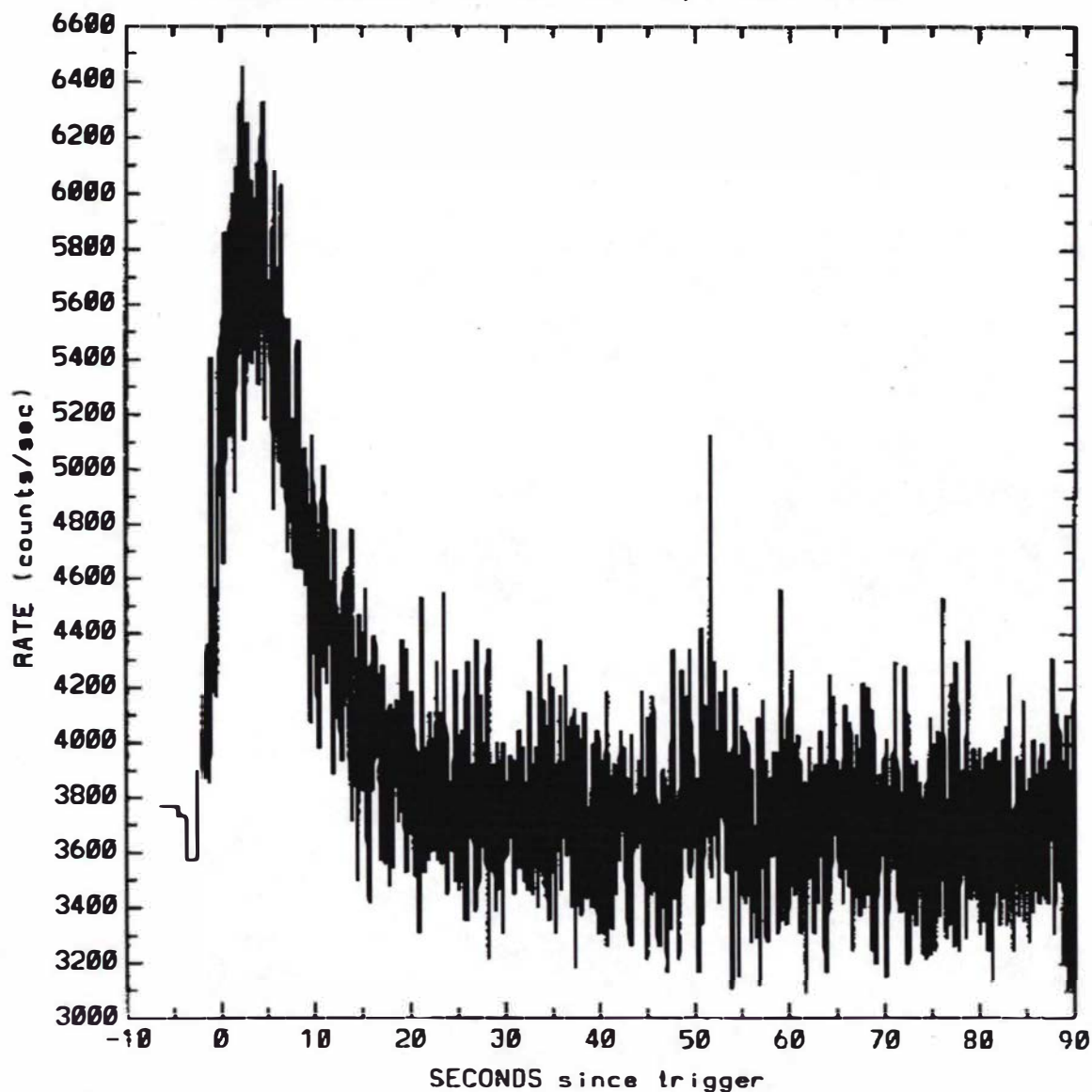
68116.729

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7648



24-FEB-2000 12:49:15

Created by MDPS BD
(Burst Display)
Version 12.26

Trigger # . 7648

Trigger Time:
11371 / 68116.729

Burst Data Type:
DISCSC

Deadtime
Corrected. N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)

Detectors (7..0):
76-----

Discriminators:
13 . 41

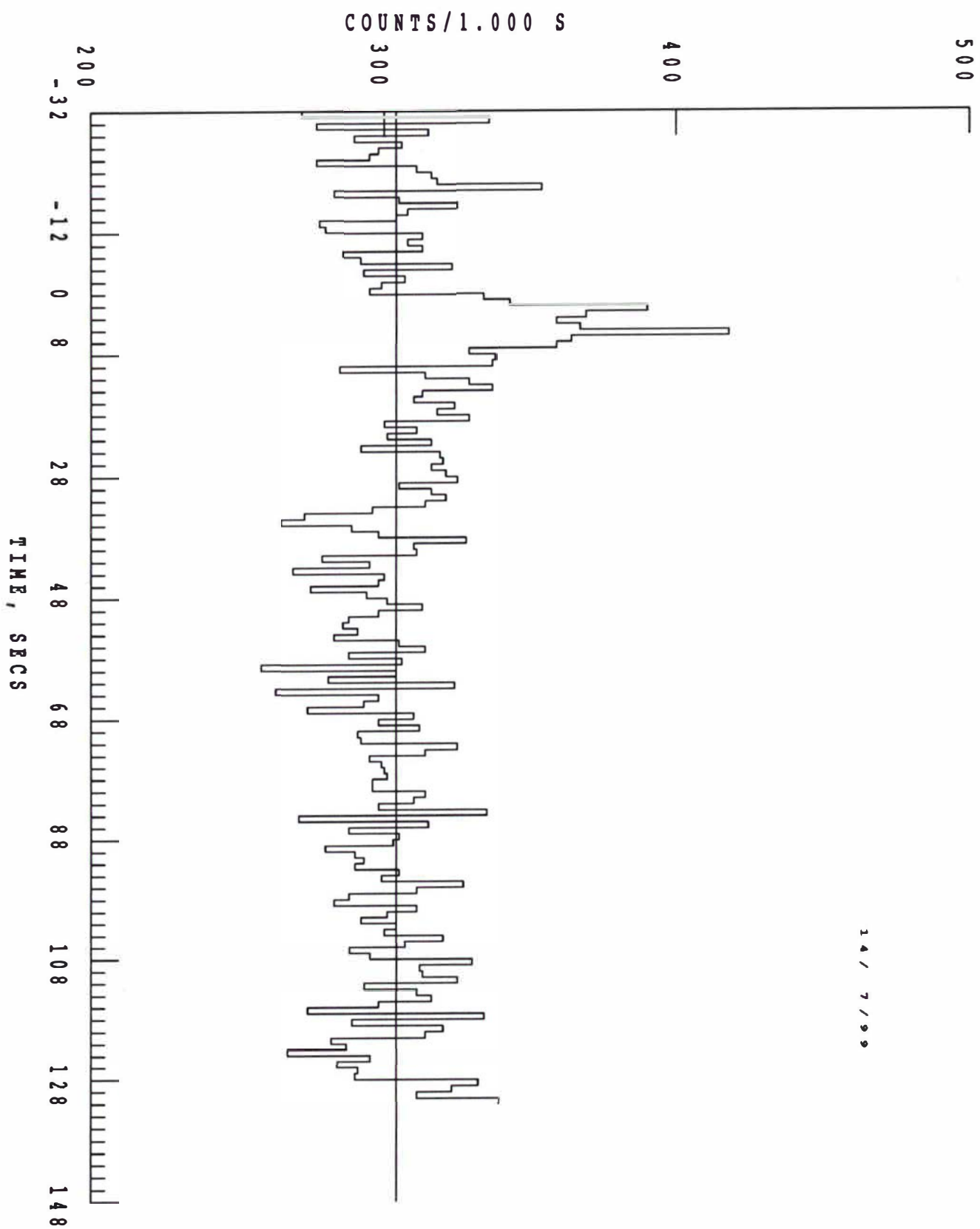
Quality Mask:
BDISPI

NEAR

12/07/99

68864.366

100-1000 keV

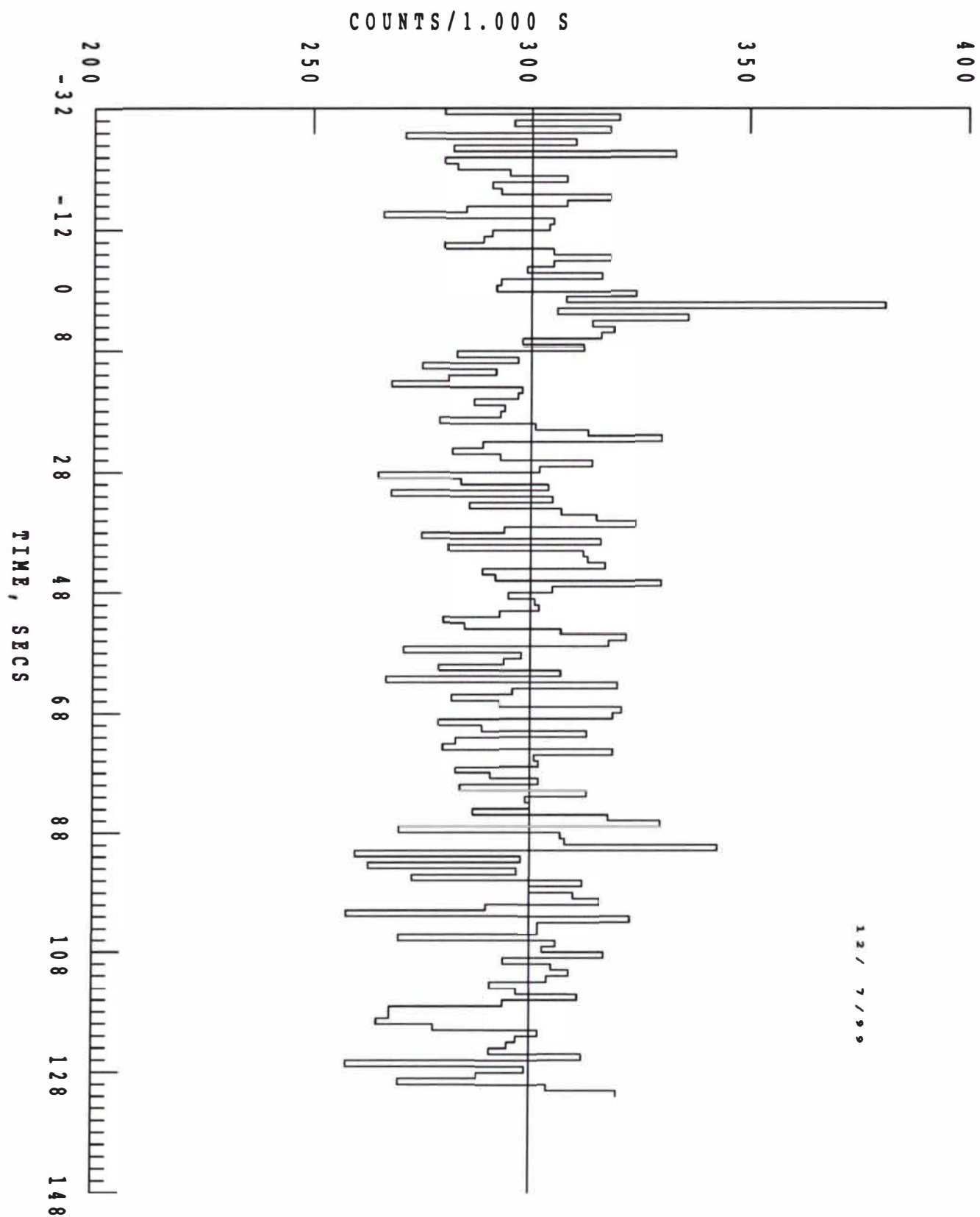


NEAR

07/07/99

69721.497

100-1000 keV



From WOODSP@fender.msfc.nasa.gov Thu Jul 15 09:27 PDT 1999

From: WOODSP@fender.msfc.nasa.gov

Date: Thu, 15 Jul 1999 11:32:25 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7649

TIME: TJD=1371 SECONDS=84743

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

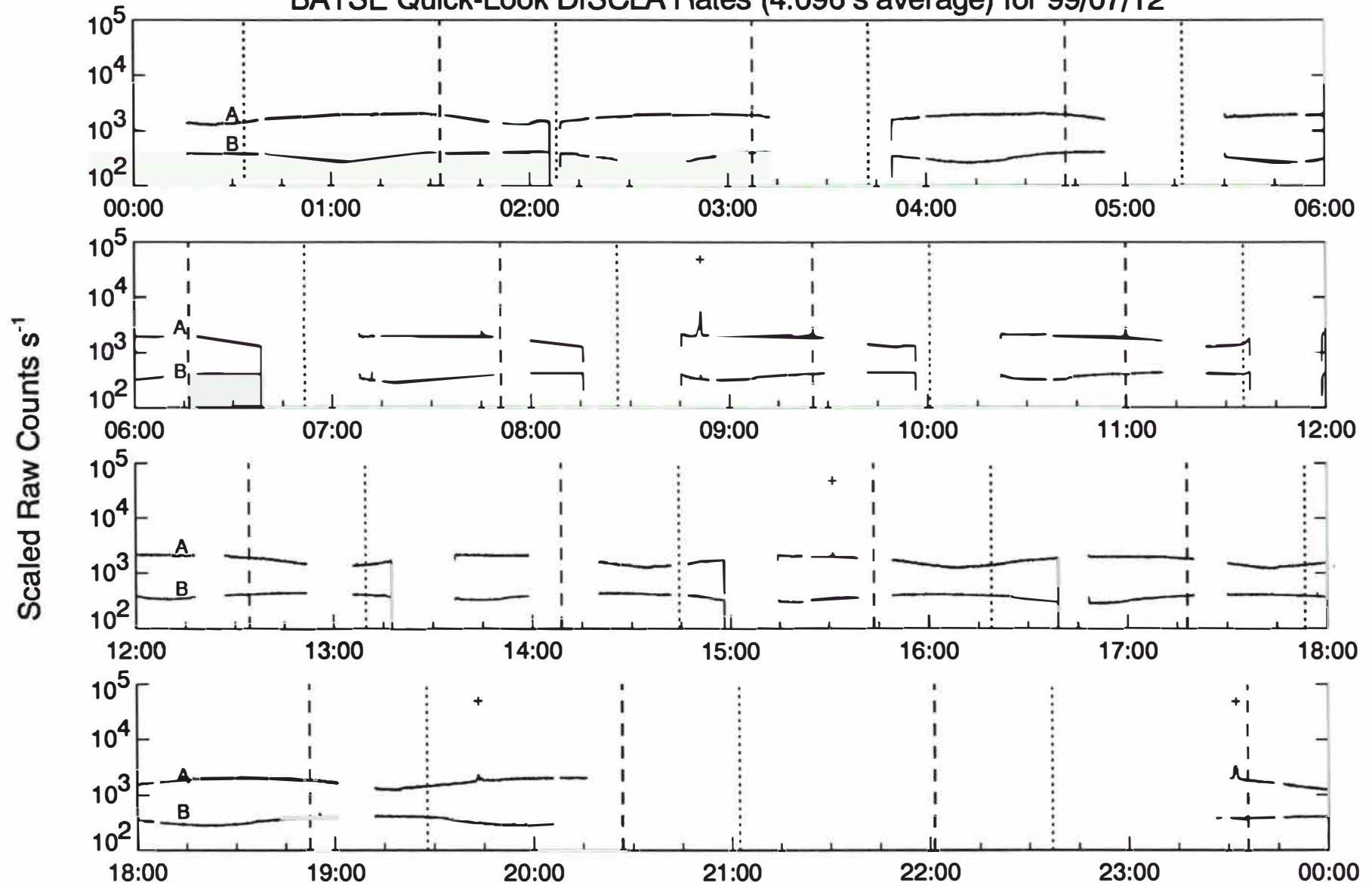
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.6 AZIMUTH=36.6 ERROR=17 DEGREES

COMMENTS:

SOLAR FLARE. C2.1 NO OPTICAL.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/12

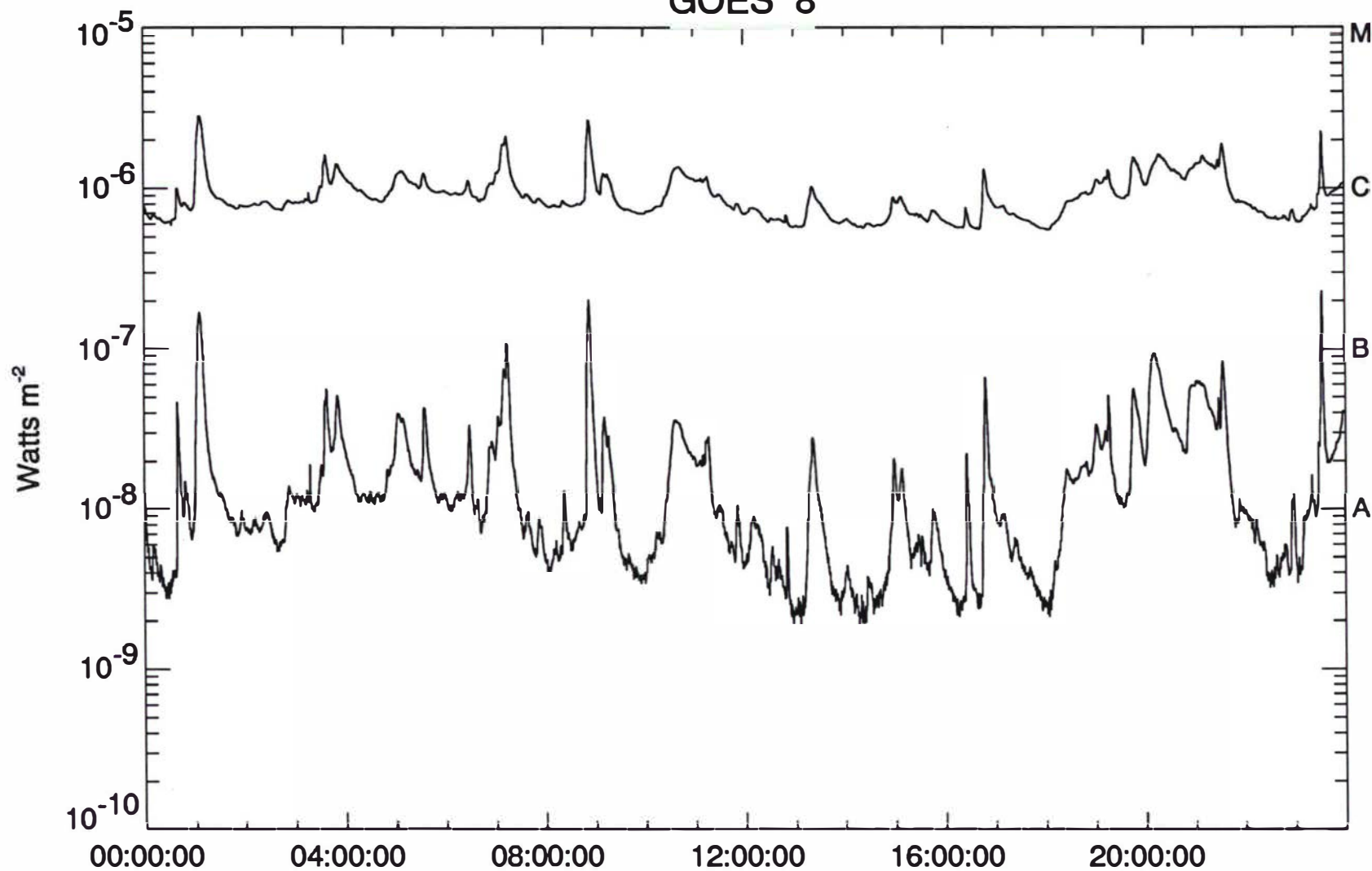


Current Time: 99/07/16, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/12, 0000:00

Plot created: 99/07/16, 1011

Channel

1 (1.0 - 8.0 Angstroms)

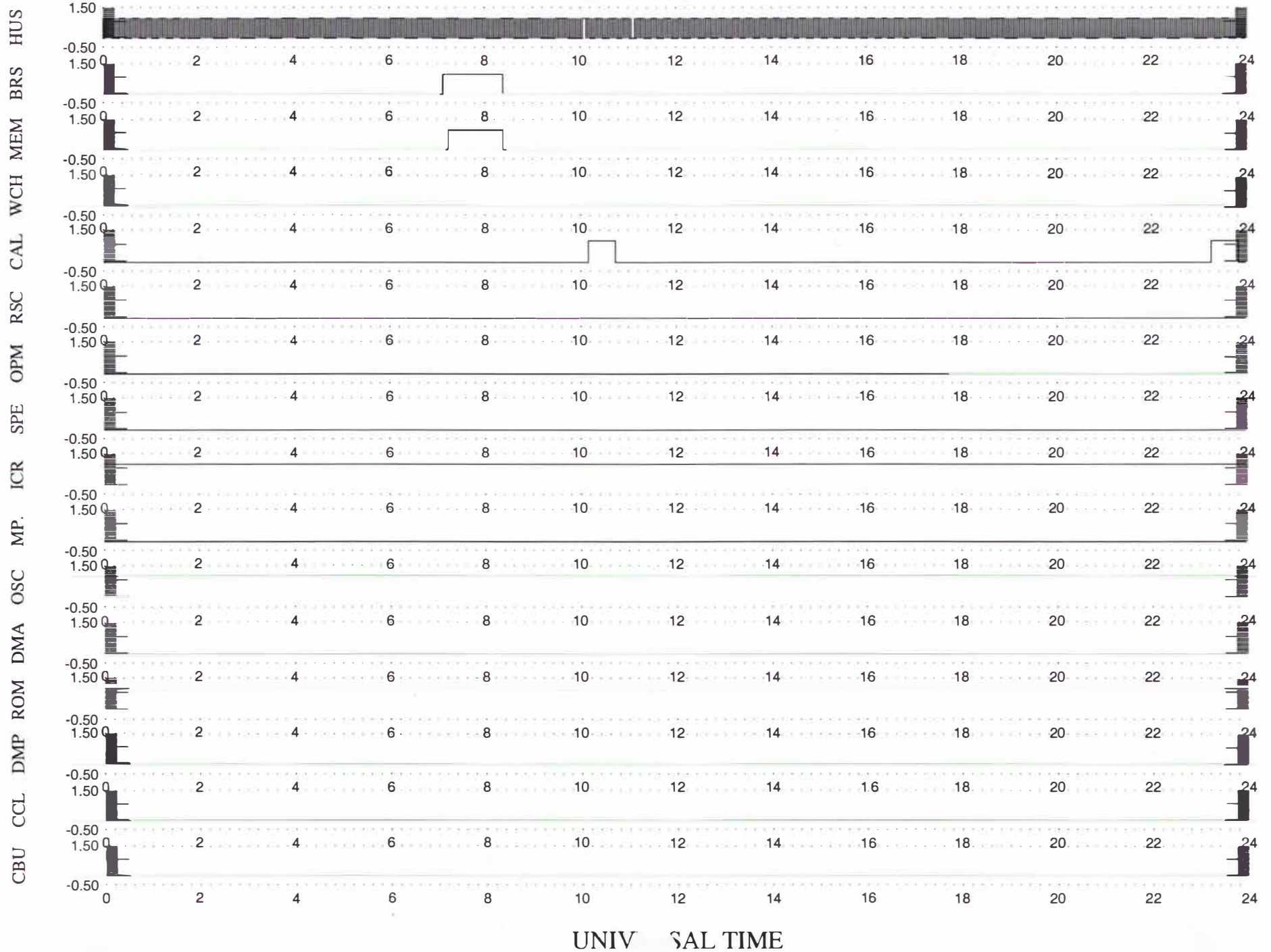
Background not subtracted

2 (0.5 - 4.0 Angstroms)

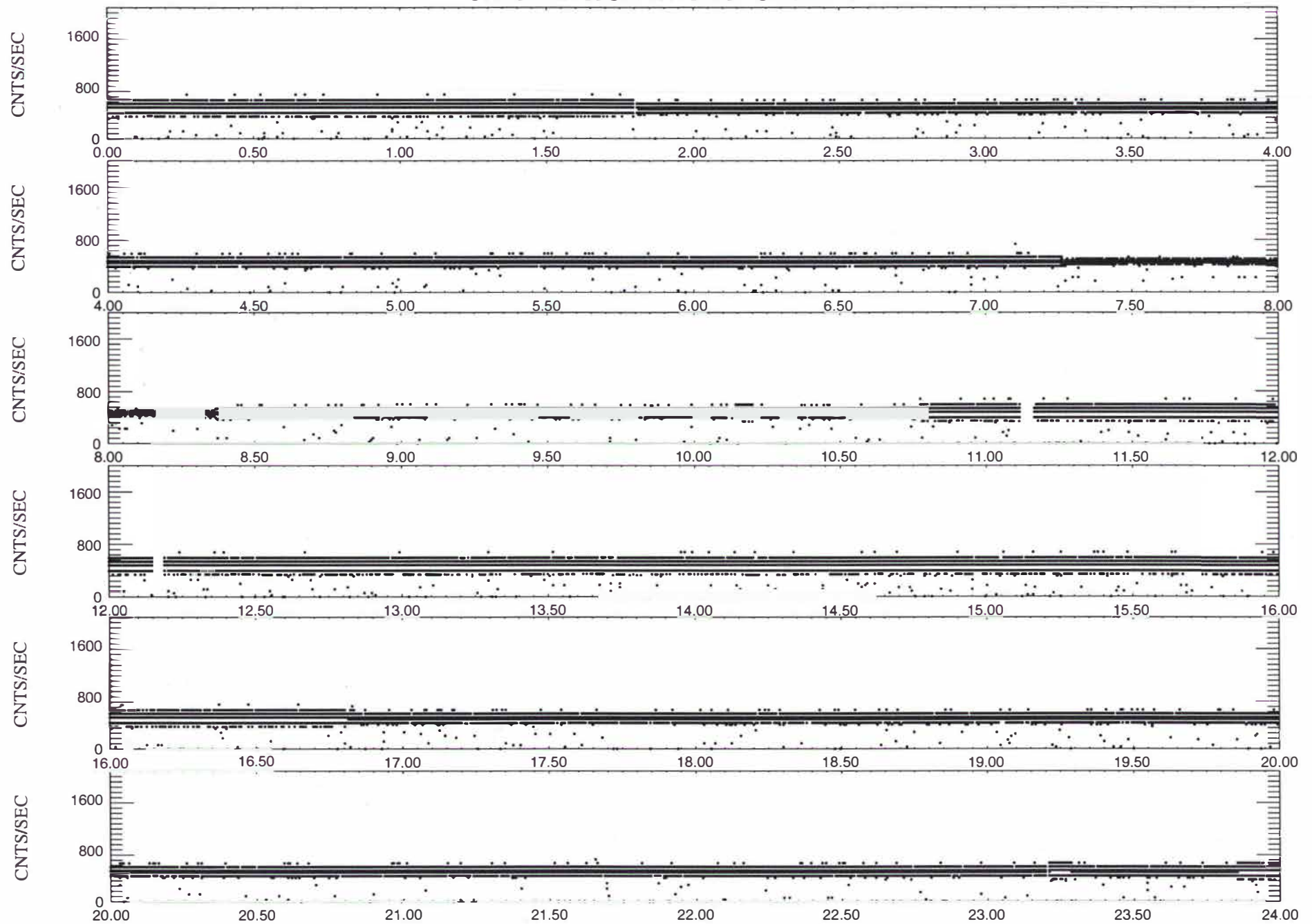
Background not subtracted

Sample average = 10

BURST NUMBER 6

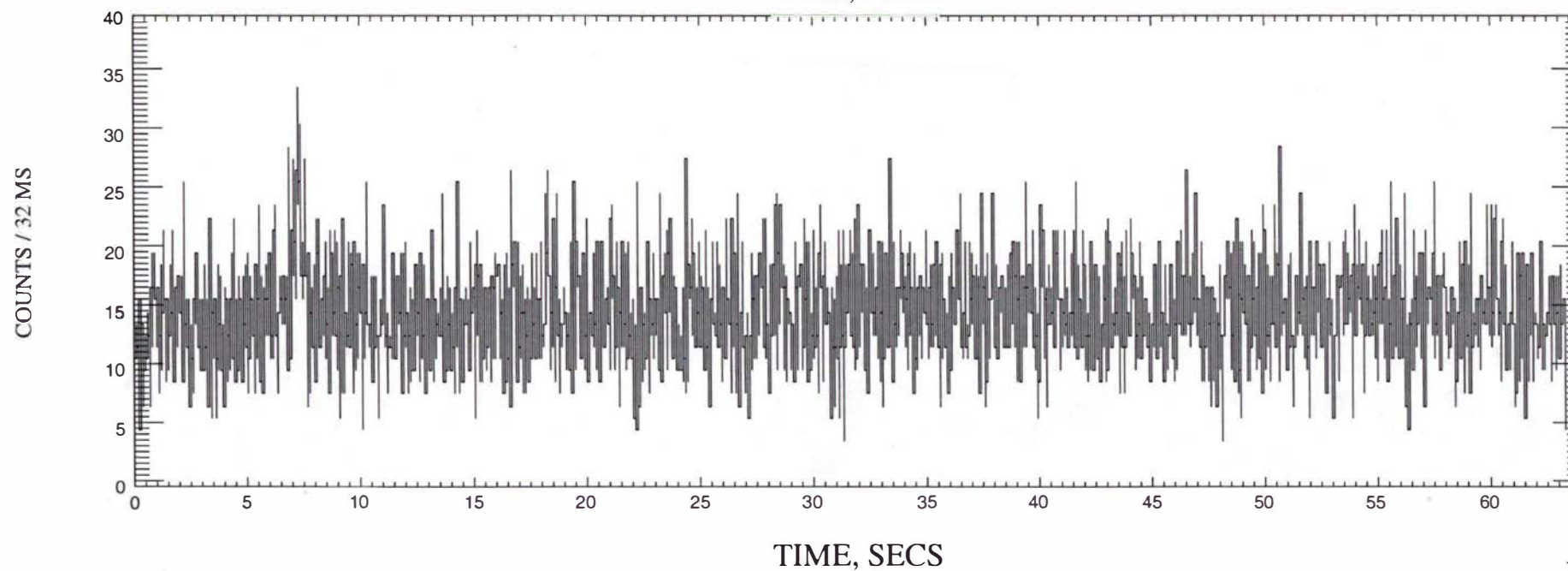
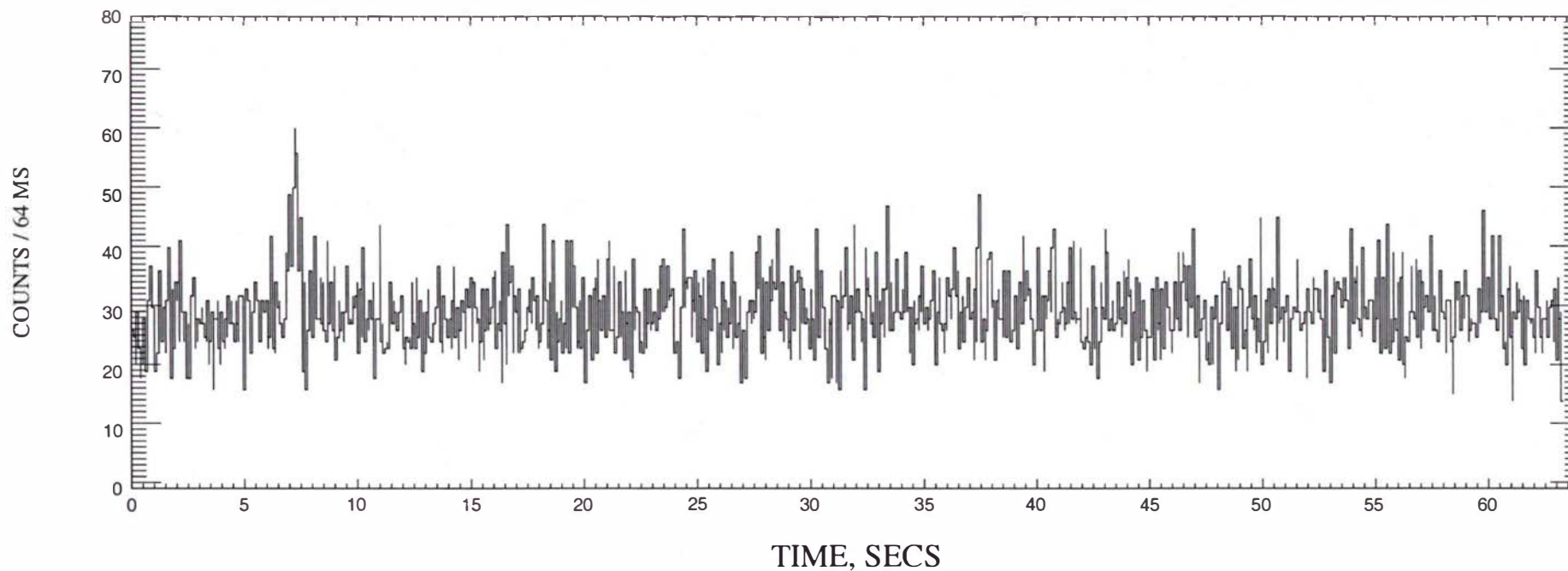


CALIBRATION DATA INCLUDED

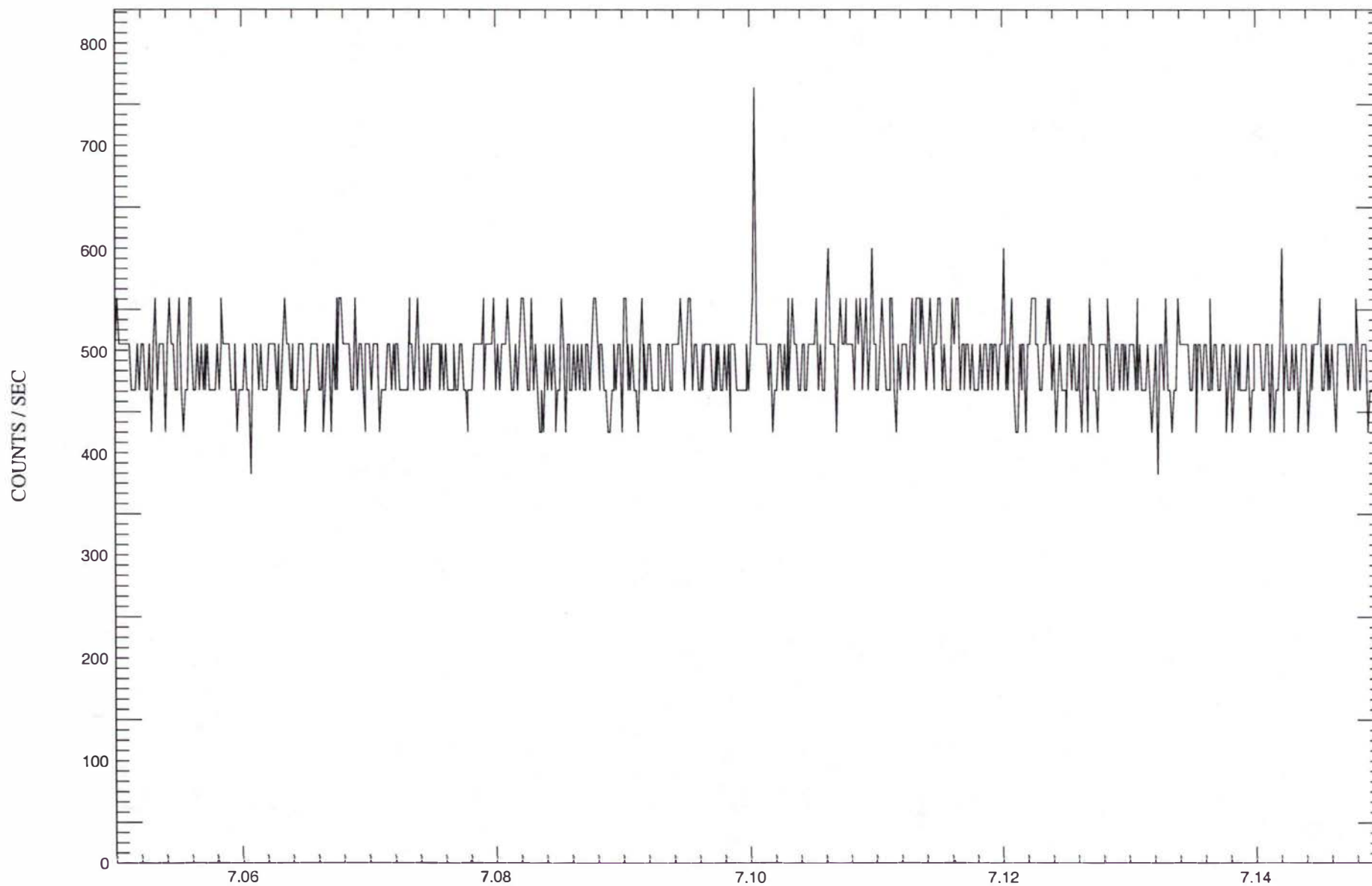


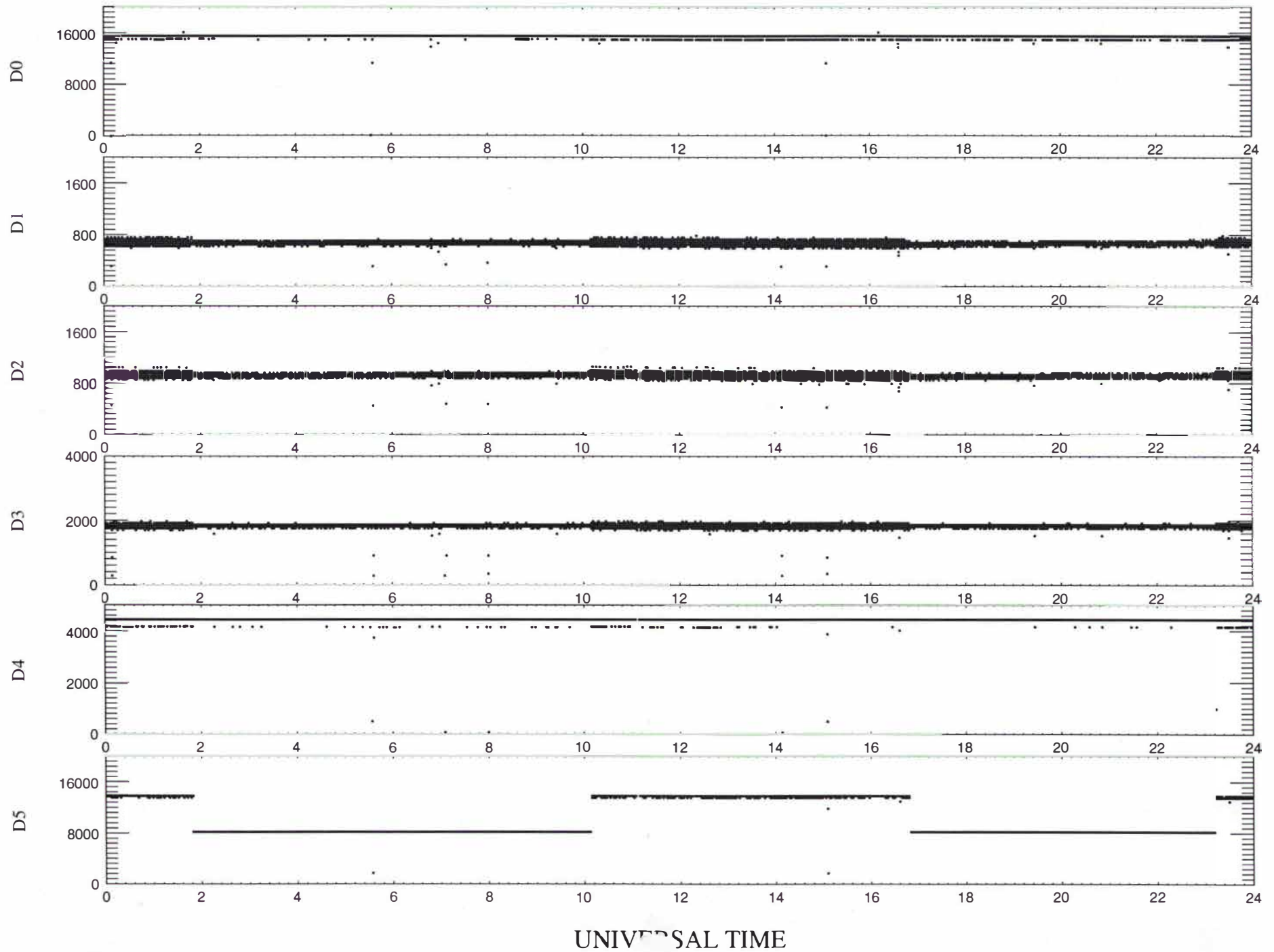
UNIVERSAL TIME

Burst Counter 6 at UT= 7.100522325304 h=25561.880 s 07:06:01.880



CALIBRATION DATA INCLUDED



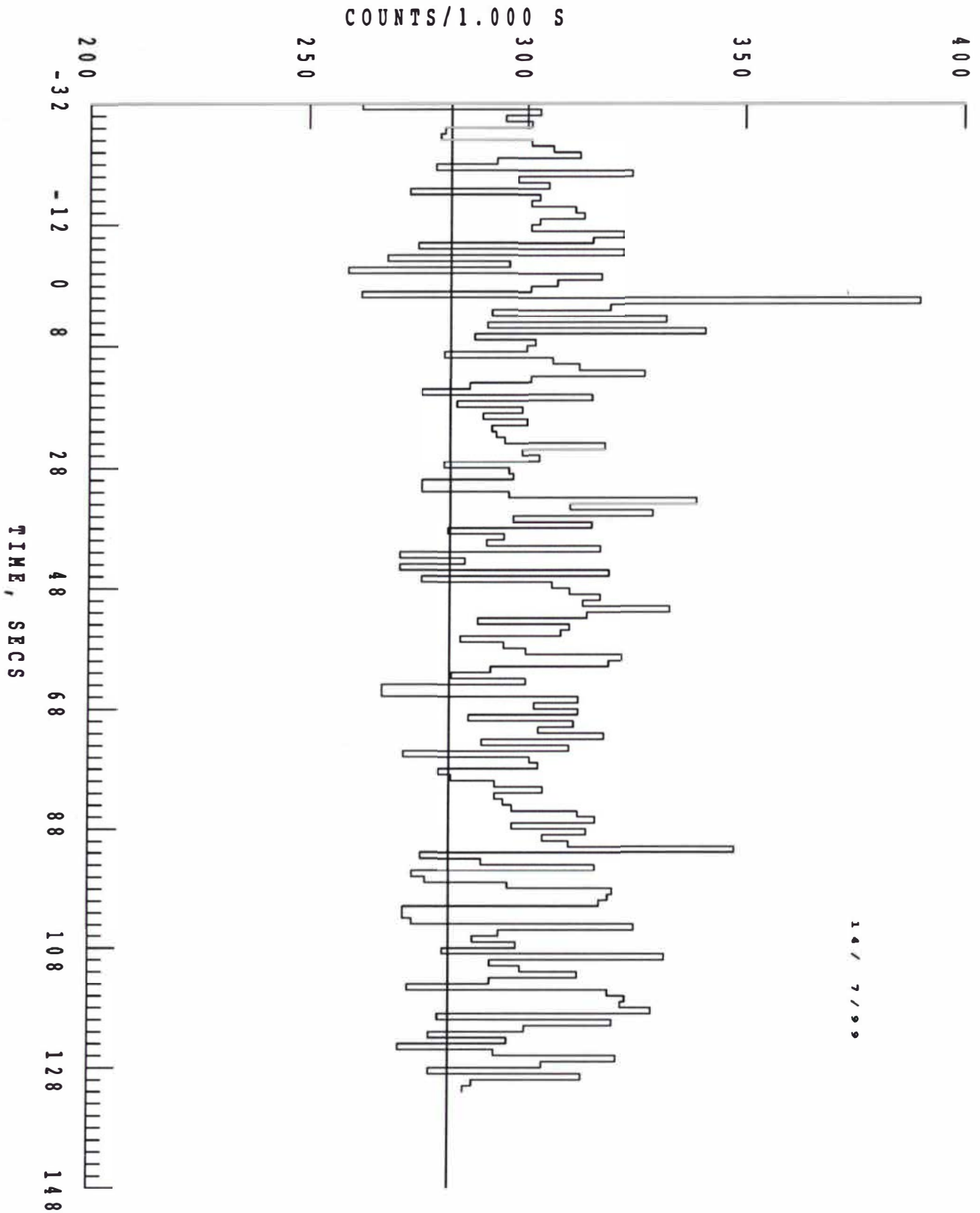


NEAR

13/07/99

240.360

100-1000 keV



KNEAR GRS 19990713 00240

ULYSSES RT

14 / 7 / 99

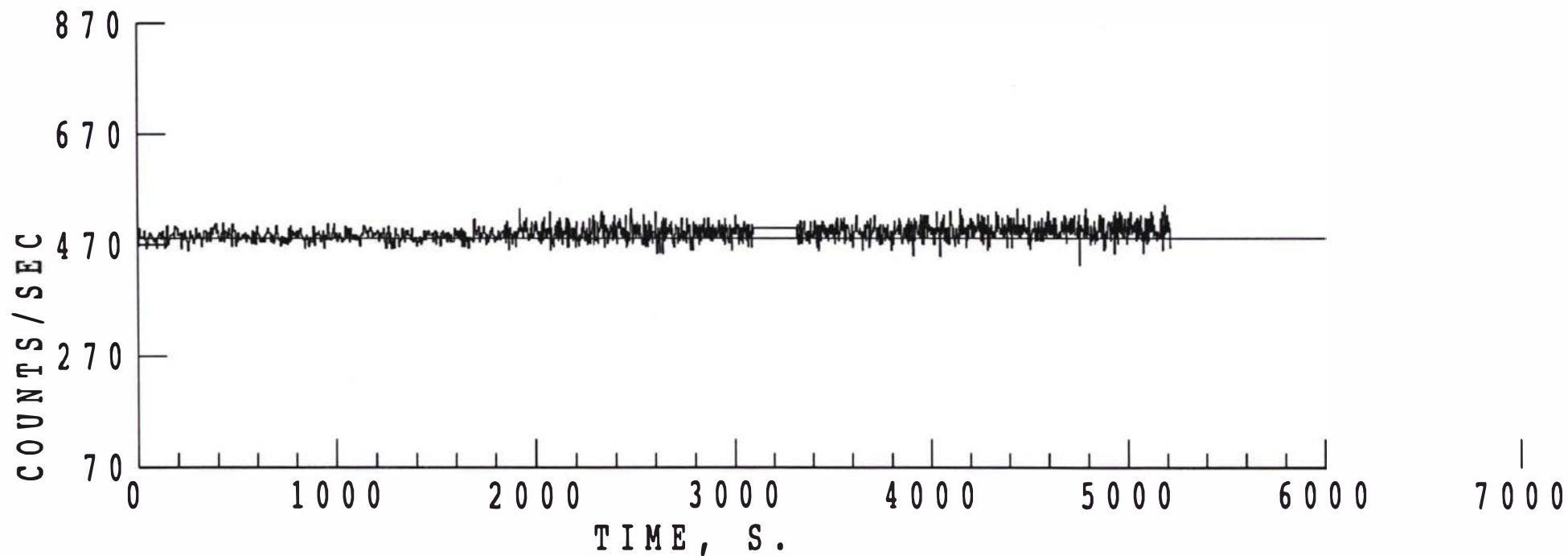
12 / 7 / 99 84024.242 s

INTERVALS REGROUPED BY 11

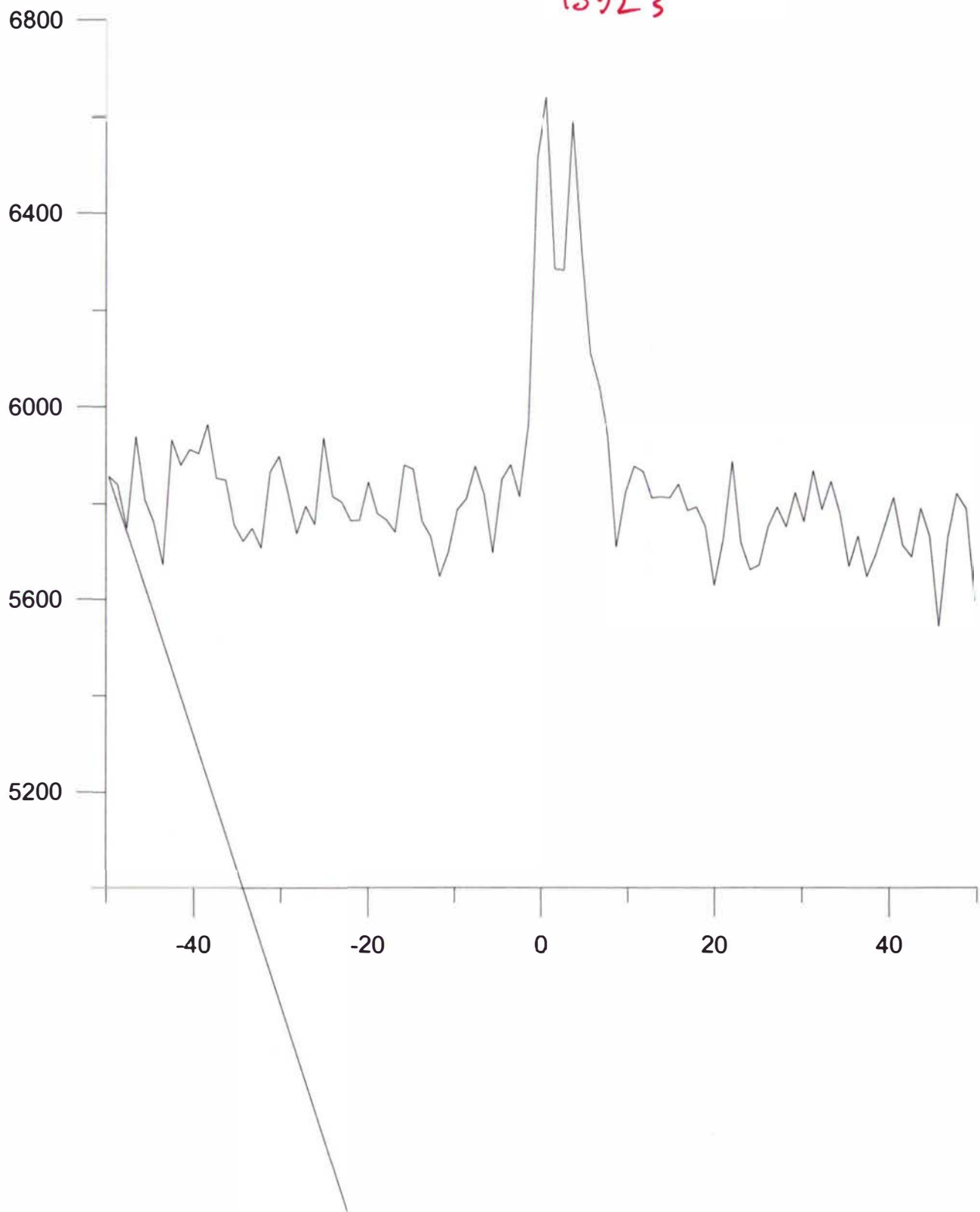
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE
STERN UNTRIG
1392 s



From SURASAK@fender.msfc.nasa.gov Fri Jul 16 14:25 PDT 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Fri, 16 Jul 1999 16:31:02 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7650

BATSEARCH PROGRAM

BATSE BURST # 7650
EVENT OF 1999 JUL 13 DAY OF YEAR=194
EVENT CROSSING TIME AT BATSE : 13016. S. OR 03:36:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 319.000 -53.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 99 IS:
RA= 147.893 DEC= -8.267 DIST= 5.415 AU
BATSE-ULYSSES DISTANCE = 810075006. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1279.65 SECS.
CROSSING TIME AT ULYSSES IS 14296. S. OR 03:58:15 +/- 482.62 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 99 IS:
RA= 210.164 DEC= -13.686 DIST= 0.889 AU
MARS-BATSE DISTANCE = 133010688. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -0.08 SECS.
CROSSING TIME AT MARS IS 13016. S. OR 03:36:55 +/- 77.03 SECONDS

BATSE BURST TRIGGER

NO.: 7650

TIME: TJD=1372 SECONDS=13016

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=57.6 AZIMUTH=135.1 ERROR=2.37 DEGREES

COMMENTS:
GRB. SINGLE PULSE. FRED. DURATION ABOUT 80 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7650	990713	11372	13016	3500	319	-53	80

BATSE BURST# 7650

ULYSSES RT

16 / 7 / 99

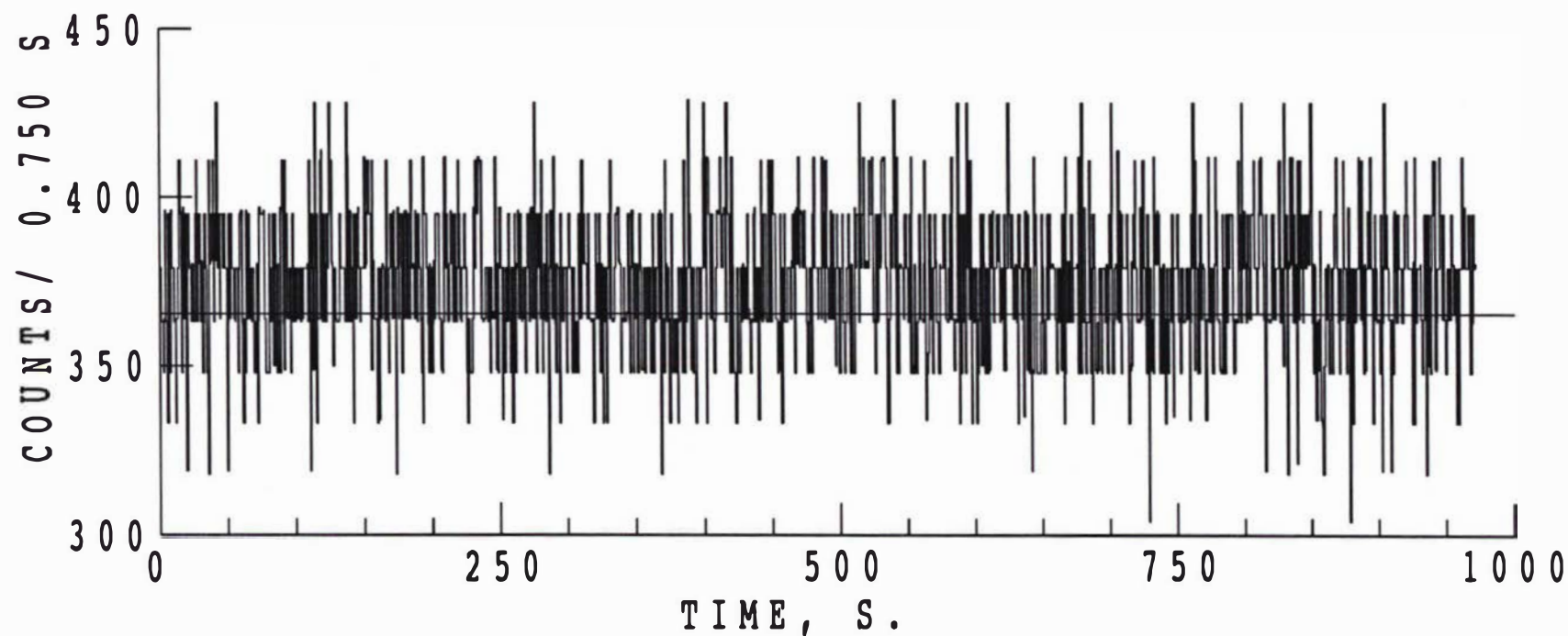
13 / 7 / 99 13824.159 s

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

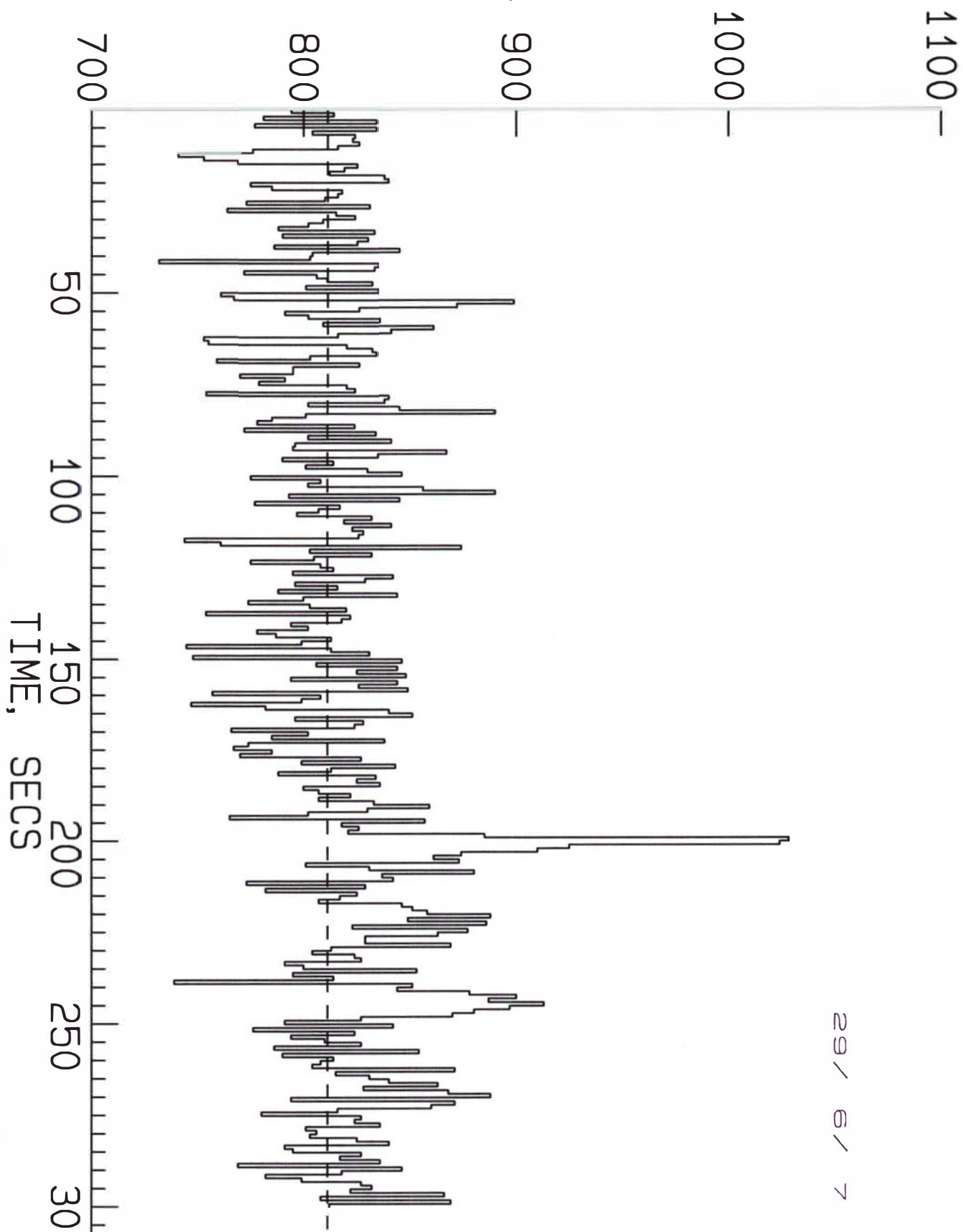


SAX GRBM

13/07/99 35081.602

40- 700 keV

COUNTS/1.000 S



SAX 628M

HUS DATA

ULYSSES RT

19 / 07 / 05

13 / 07 / 99 32580.096 s

0.500 S INTERVALS REGROUPED BY 8

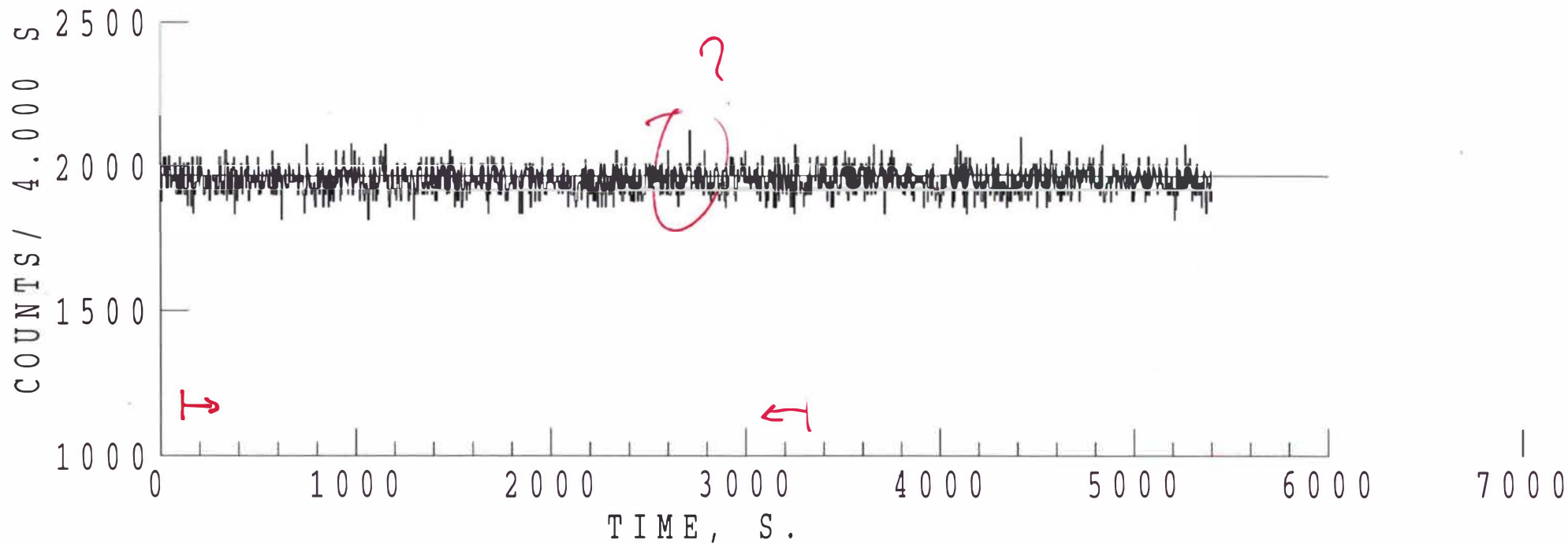
0 - 0 keV

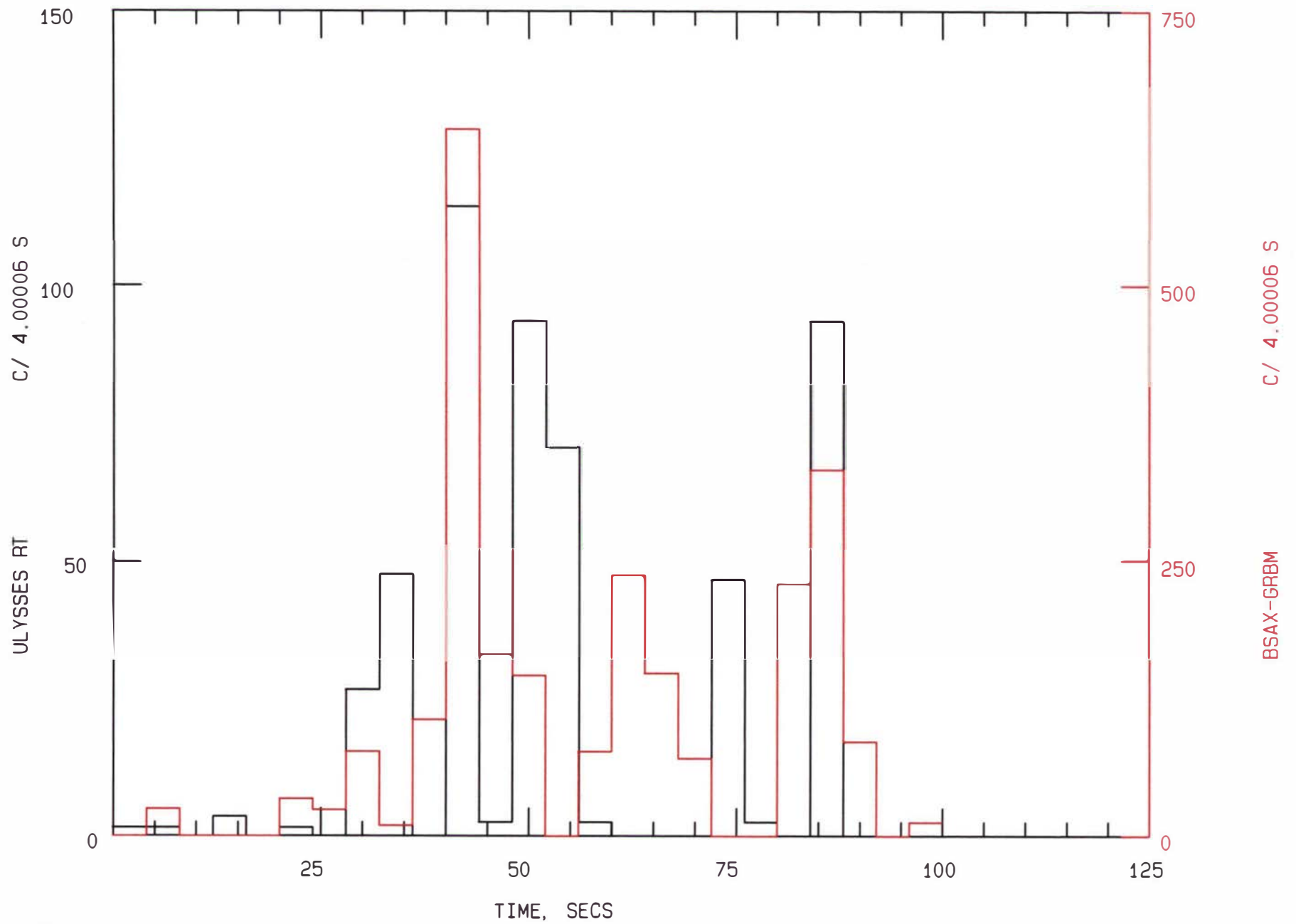
N= 10 M= 10

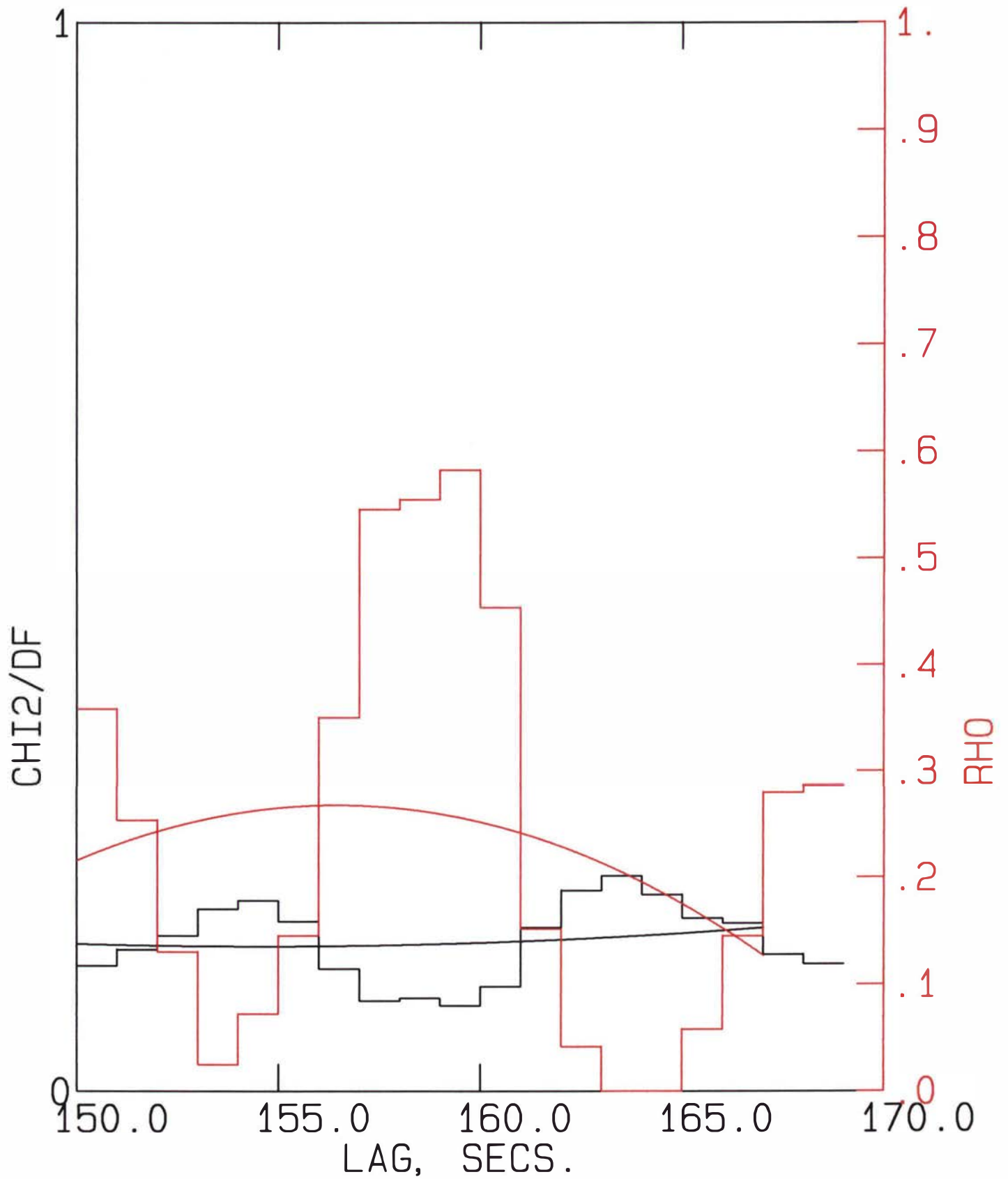
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS







From SURASAK@fender.msfc.nasa.gov Fri Jul 16 14:28 PDT 1999
From: SURASAK@fender.msfc.nasa.gov
Date: Fri, 16 Jul 1999 16:34:01 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7651

BATSEARCH PROGRAM

BATSE BURST # 7651
EVENT OF 1999 JUL 13 DAY OF YEAR=194
EVENT CROSSING TIME AT BATSE : 77898. S. OR 21:38:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 310.000 -27.000
BATSE PEAK COUNTING RATE: 18200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 99 IS:
RA= 147.986 DEC= -8.312 DIST= 5.420 AU
BATSE-ULYSSES DISTANCE = 810905344. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 39.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2090.70 SECS.
CROSSING TIME AT ULYSSES IS 79989. S. OR 22:13:08 +/- 379.71 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 99 IS:
RA= 210.164 DEC= -13.686 DIST= 0.889 AU
MARS-BATSE DISTANCE = 133010688. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 17.96 SECS.
CROSSING TIME AT MARS IS 77916. S. OR 21:38:35 +/- 77.24 SECONDS

BATSE BURST TRIGGER

NO.: 7651

TIME: TJD=1372 SECONDS=77898

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=71.7 AZIMUTH=164.8 ERROR=0.768 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DURATION ABOUT 60 S.
START AT ABOUT T-15S. PEAK AT ABOUT T+28S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7651	990713	11372	77898	18200	310	-27	60

Date: 21/2/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data N/A

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

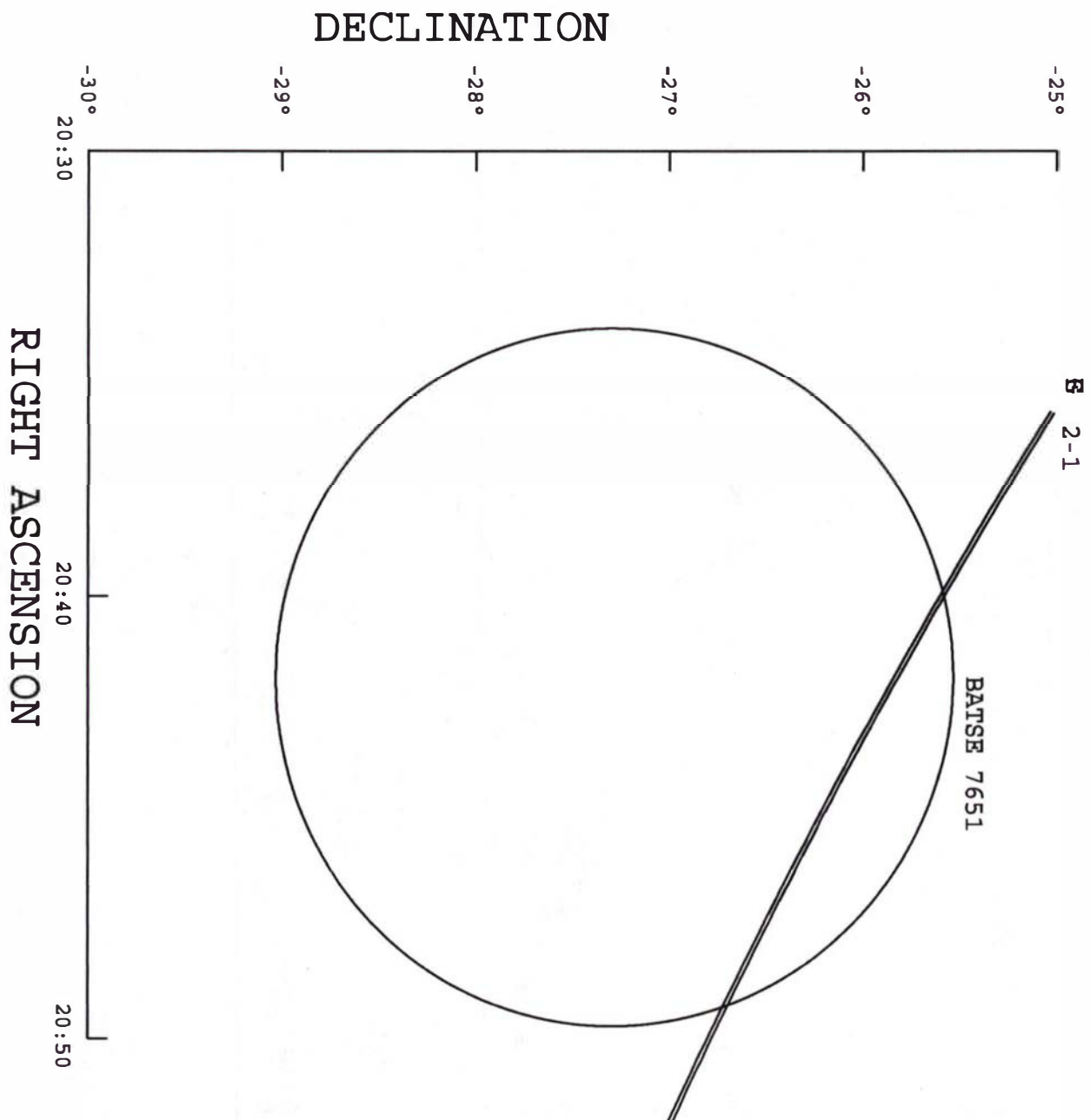
G=GALACTIC EQUATOR

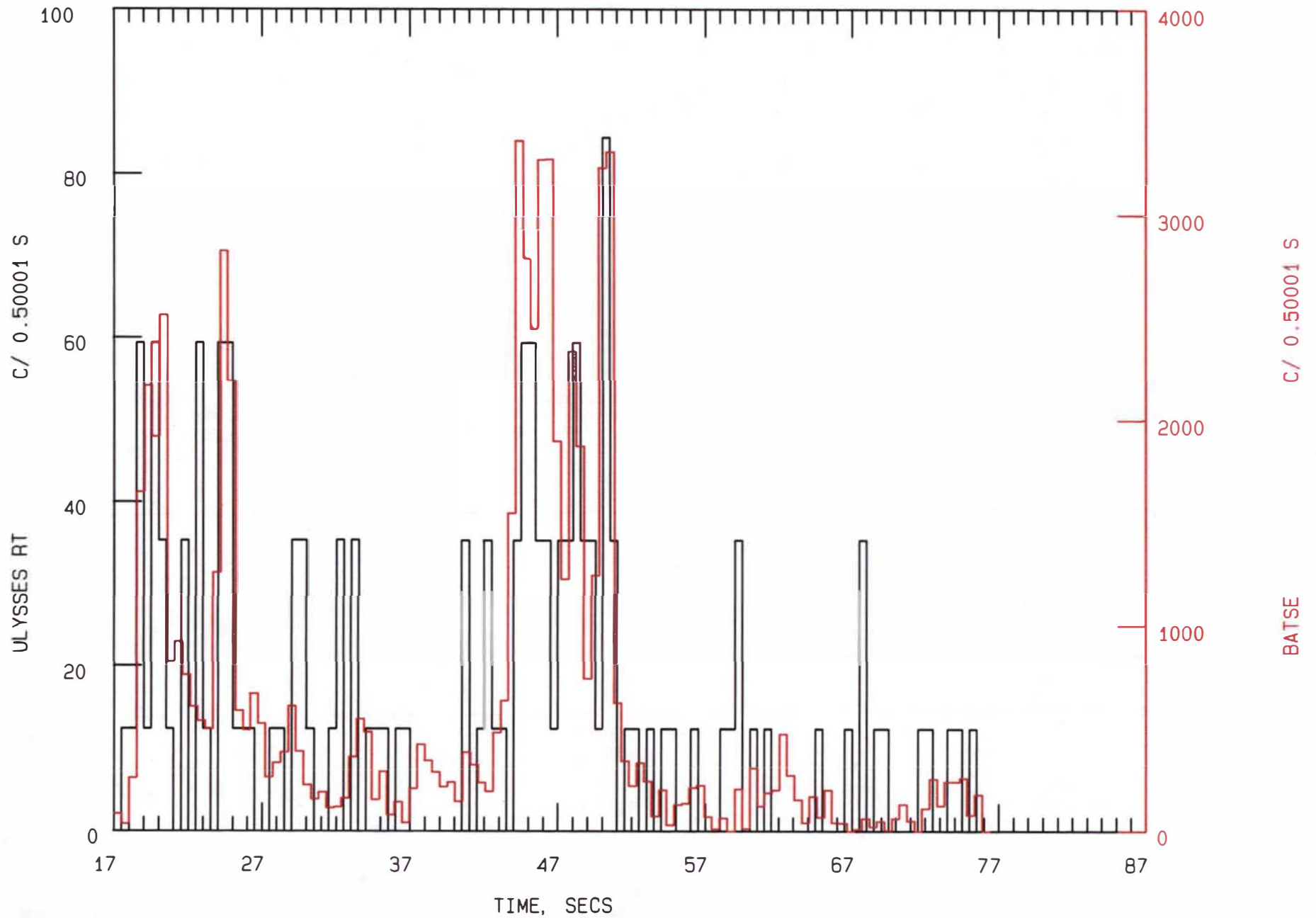
1 BATSE

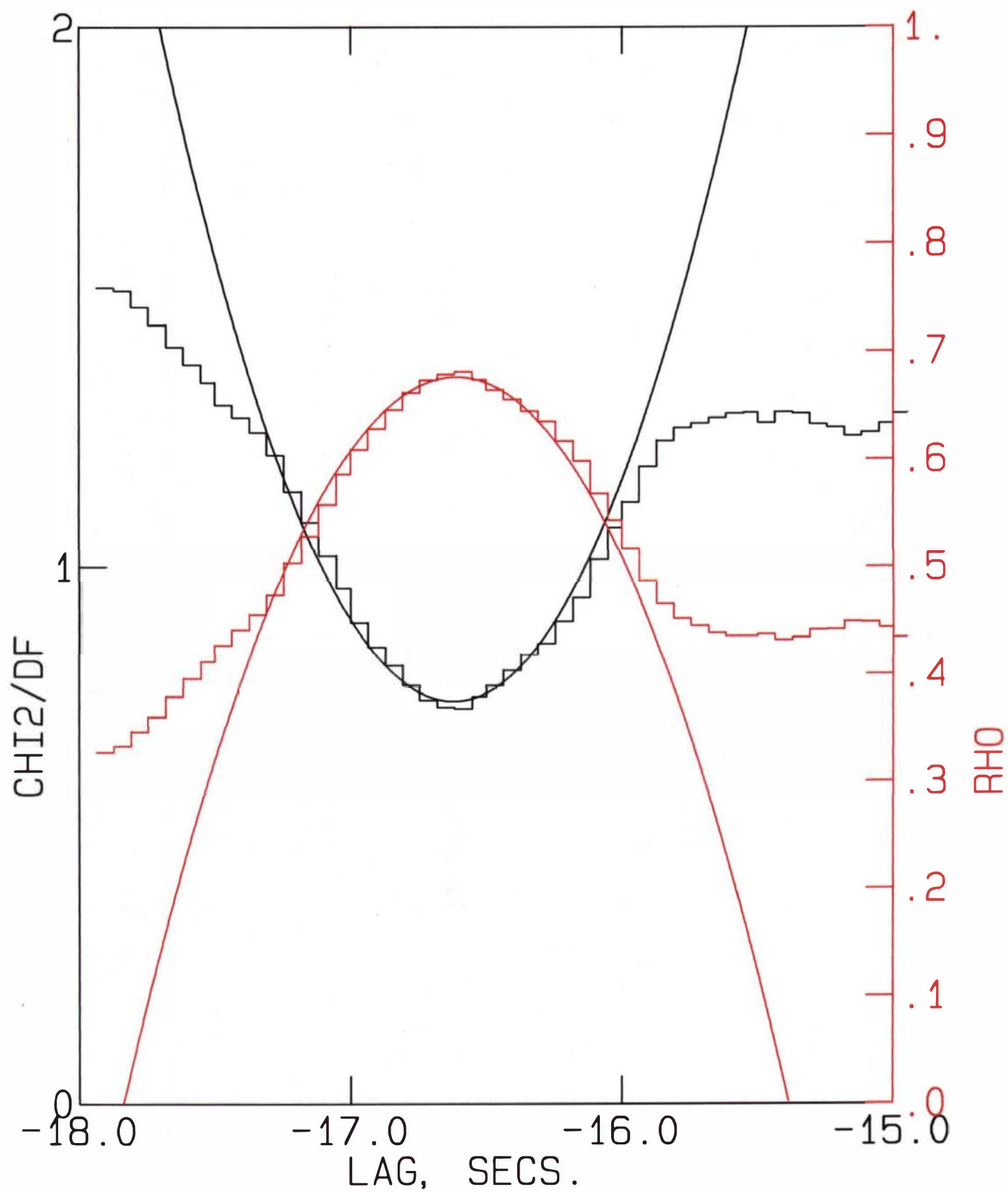
2 ULYSSES

EVENT OF JUL 13, 1999 21:38

21 / 2 / 0

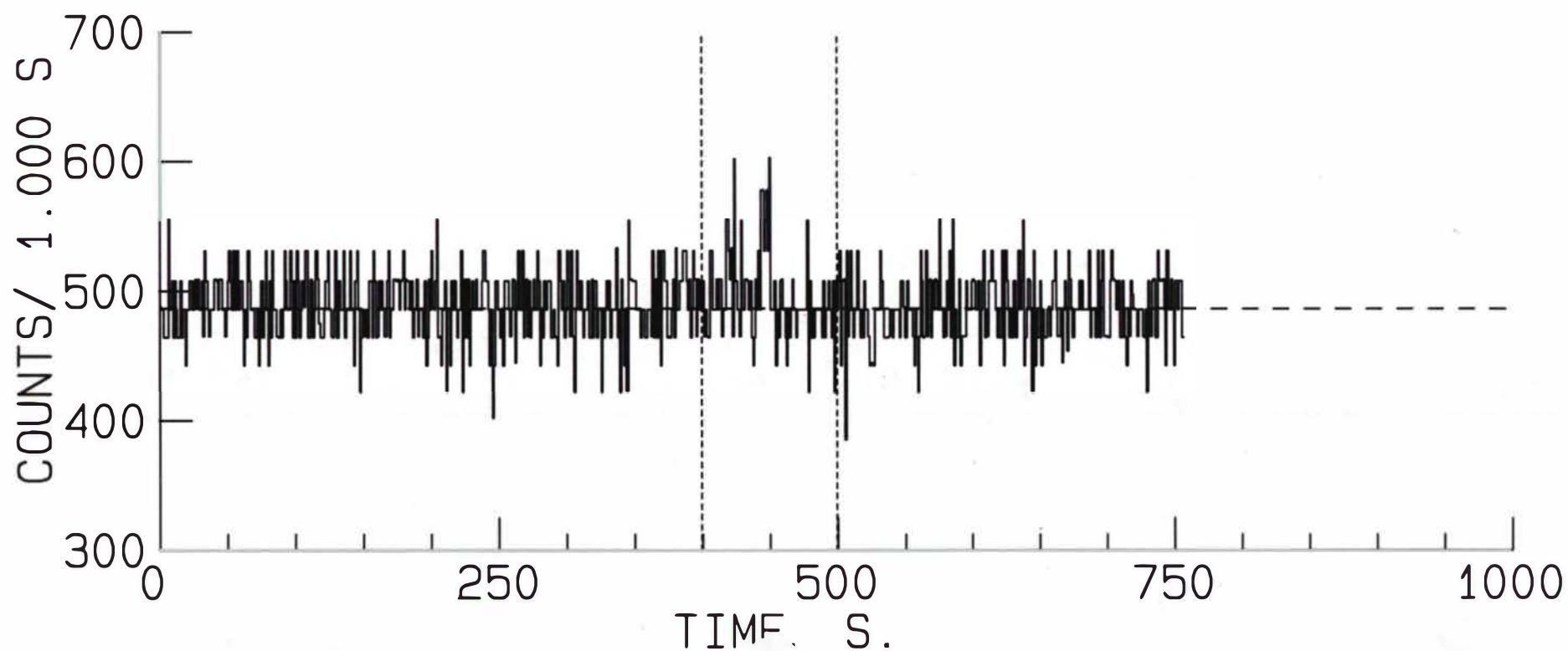






ULYSSES RT
13/ 7/99 79596.074 s
0.500 S INTERVALS REGROUPED BY 2
22- 149 keV

21 / 2 / 0

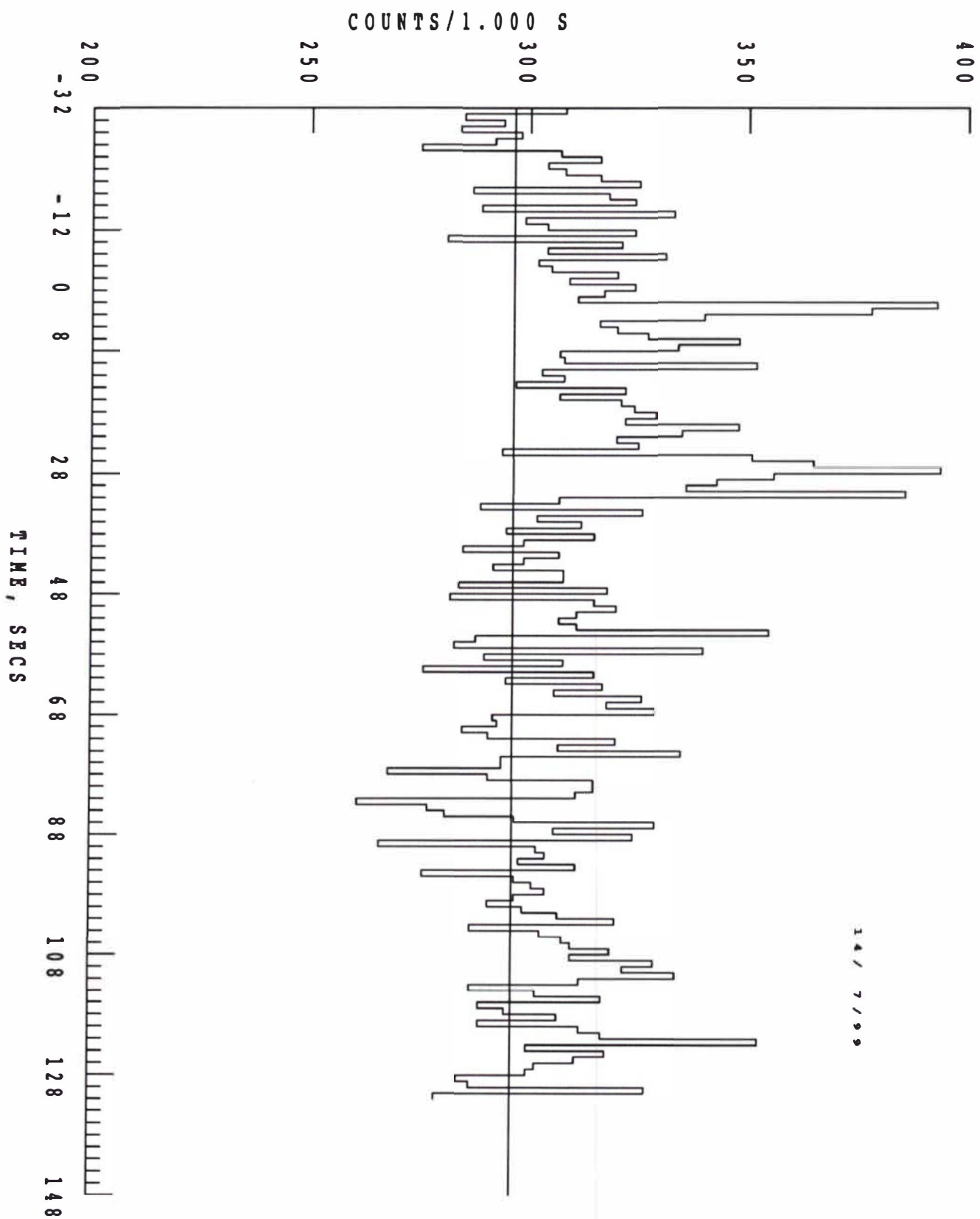


NEAR

13/07/99

78672.336

100-1000 keV



KNEAR GRS 19990713 78672

ULYSSES RT

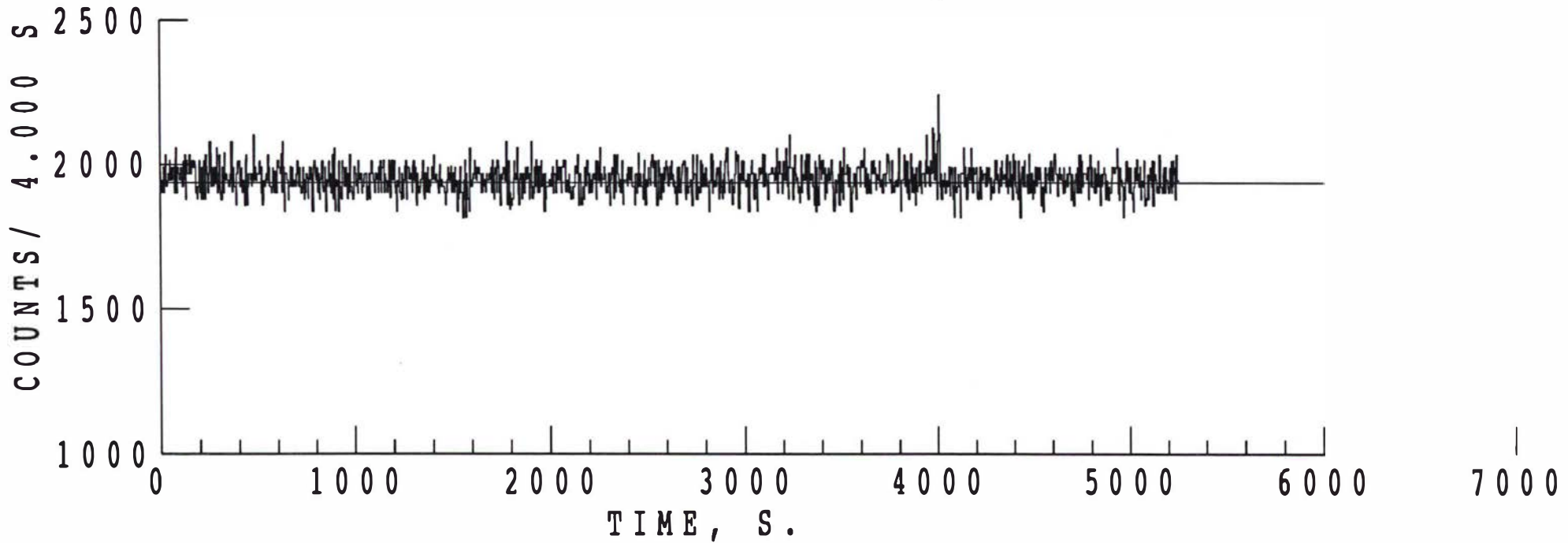
14 / 7 / 99

13 / 7 / 99 76032.039 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

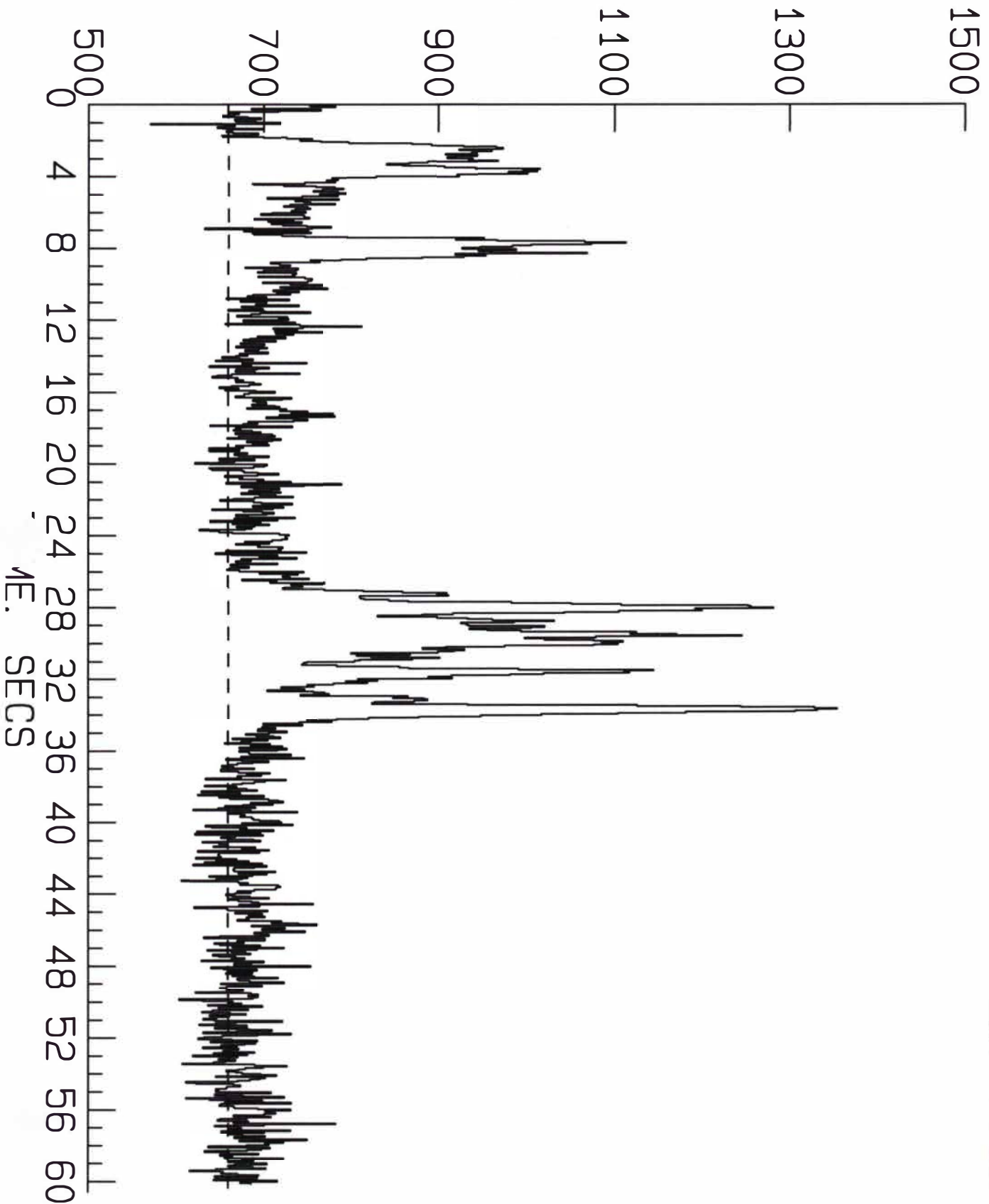
13/07/99

77898.489

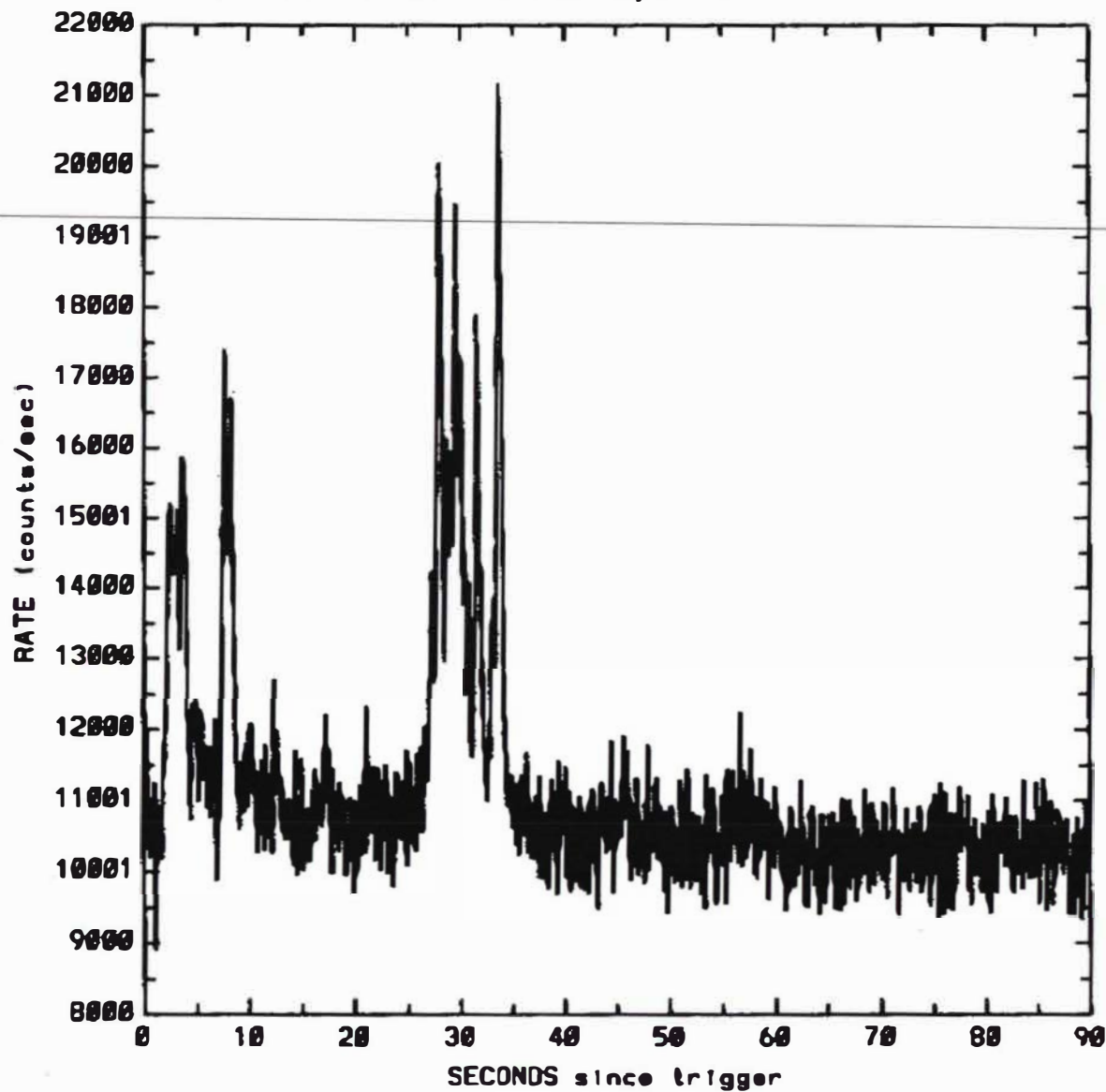
25- 100 keV

COUNTS/0.064 S

30 / 7 / 99



MER Data for K. Hurley. No. 7651



29-JUL-1999 10:48.44

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

Trigger # . 7651

Trigger Time:
11372 / 77898.489Burst Data Type:
MERDeadtime
Corrected. NBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors [7..0]:
-854----Channels:
(8 . 6)Quality Mask:
001SP1

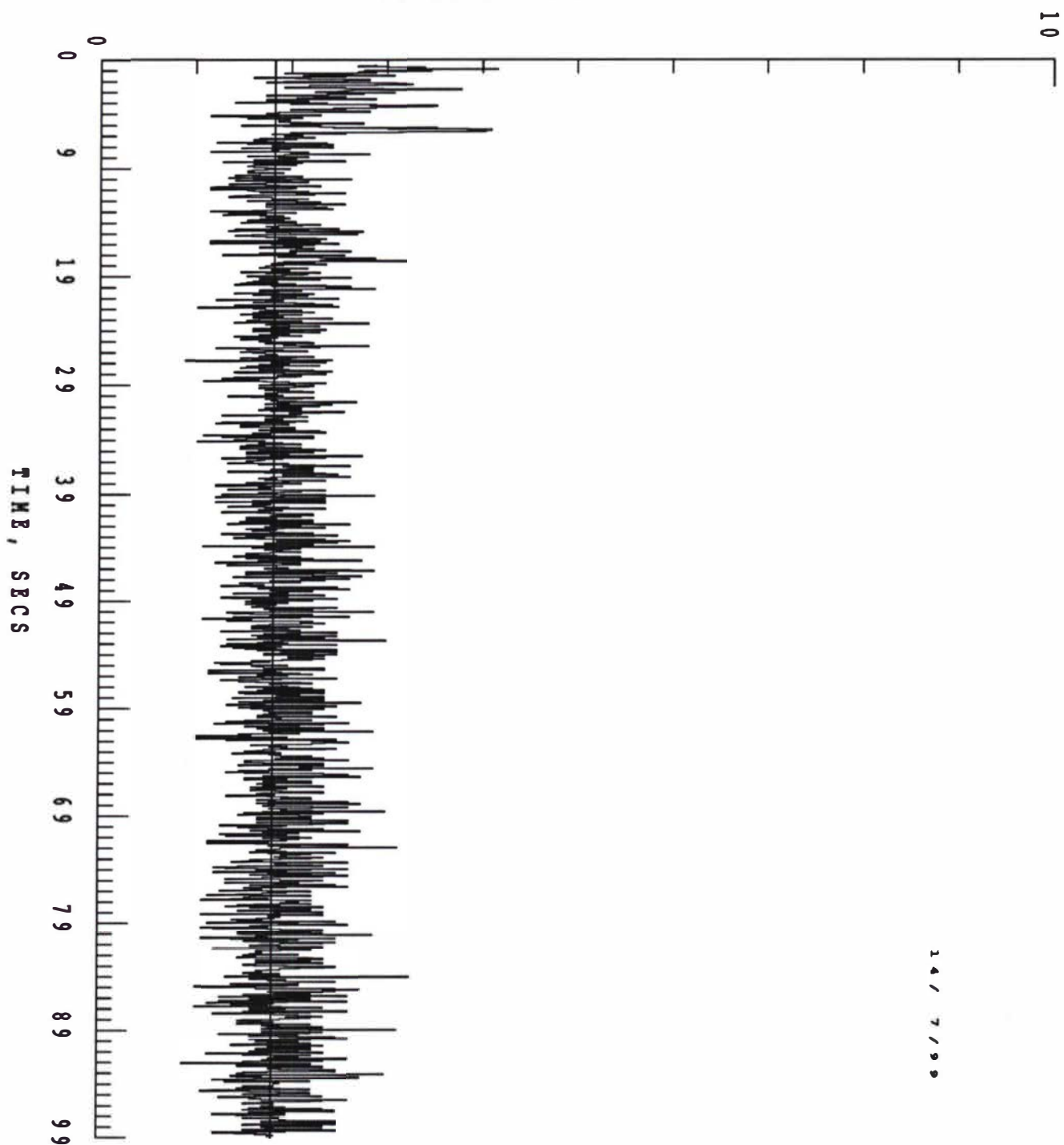
KONUS

13/07/99

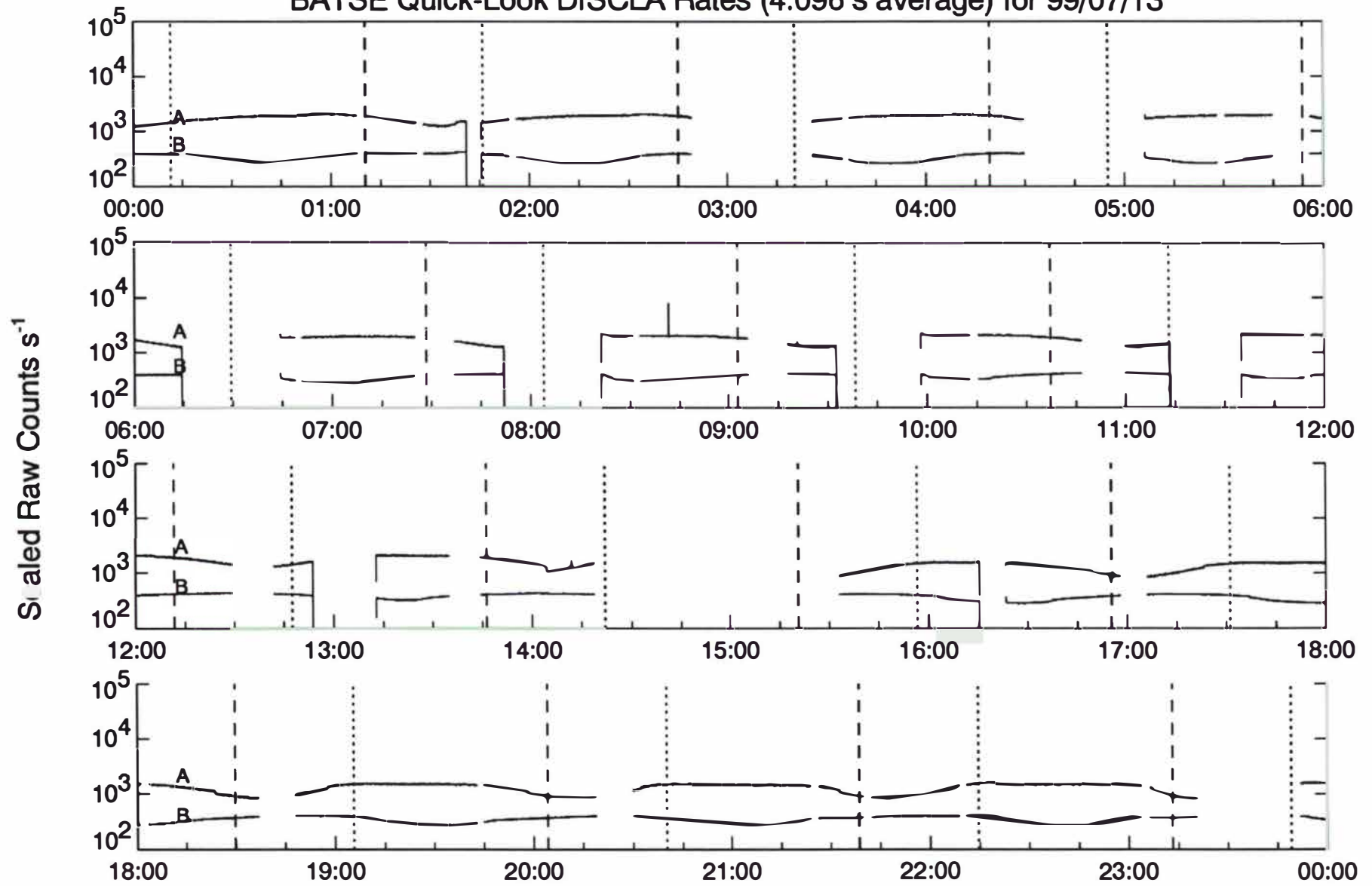
77930.587

50 - 200 keV

COUNTS/0.064 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/13

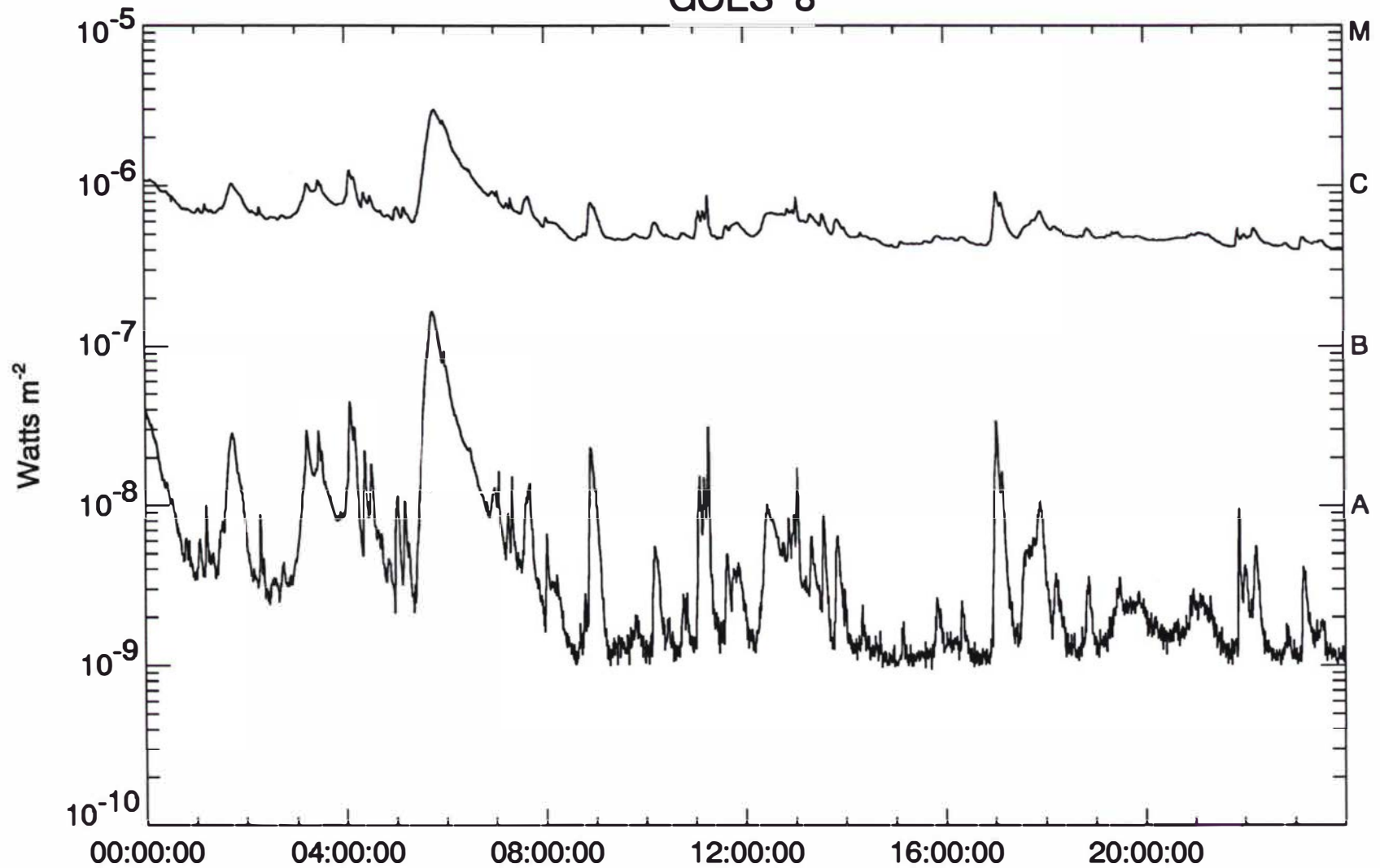


Current Time: 99/07/17, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/13, 0000:00

Plot created: 99/07/17, 1011

Channel

1

(1.0 - 8.0 Angstroms)

Background not subtracted

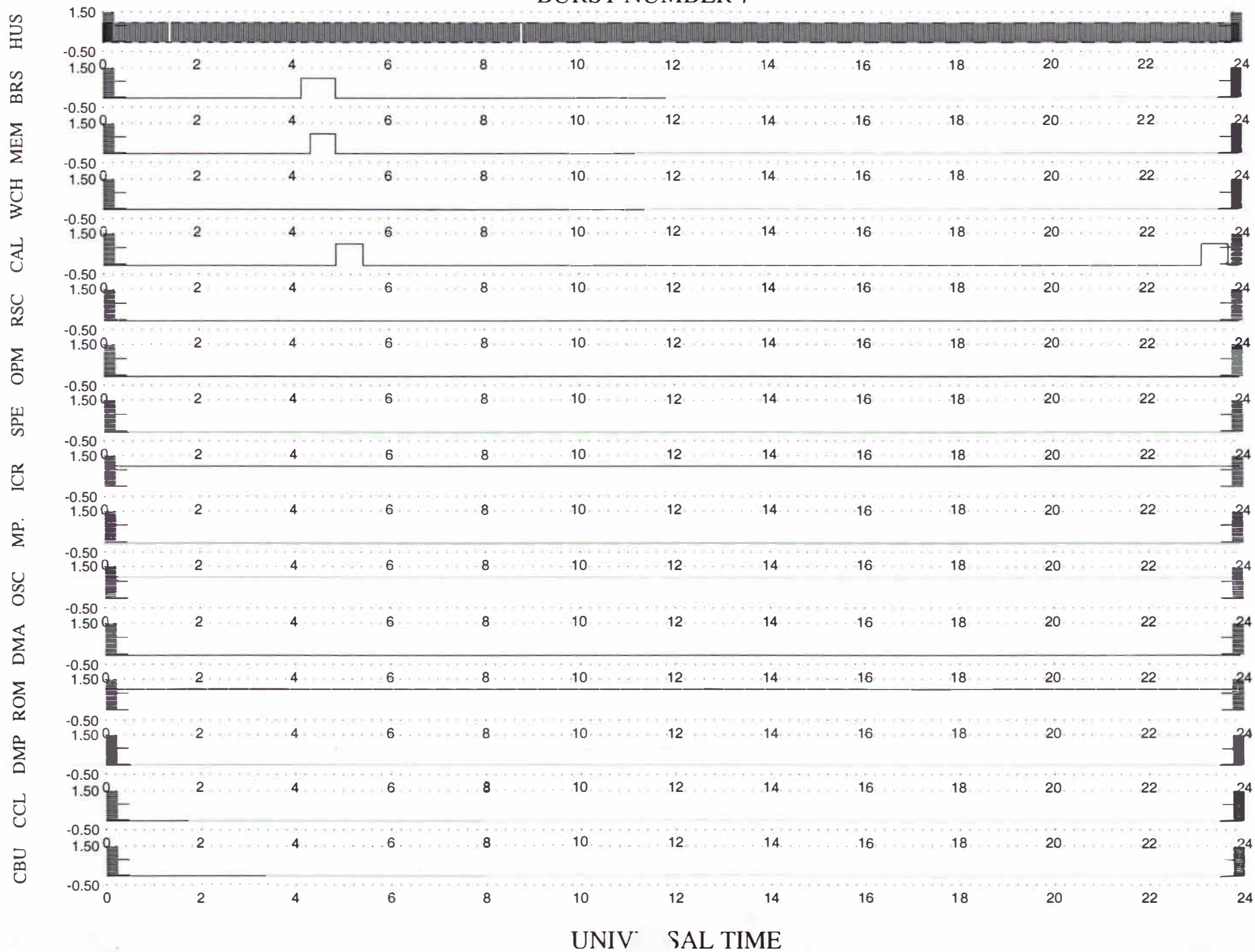
2

(0.5 - 4.0 Angstroms)

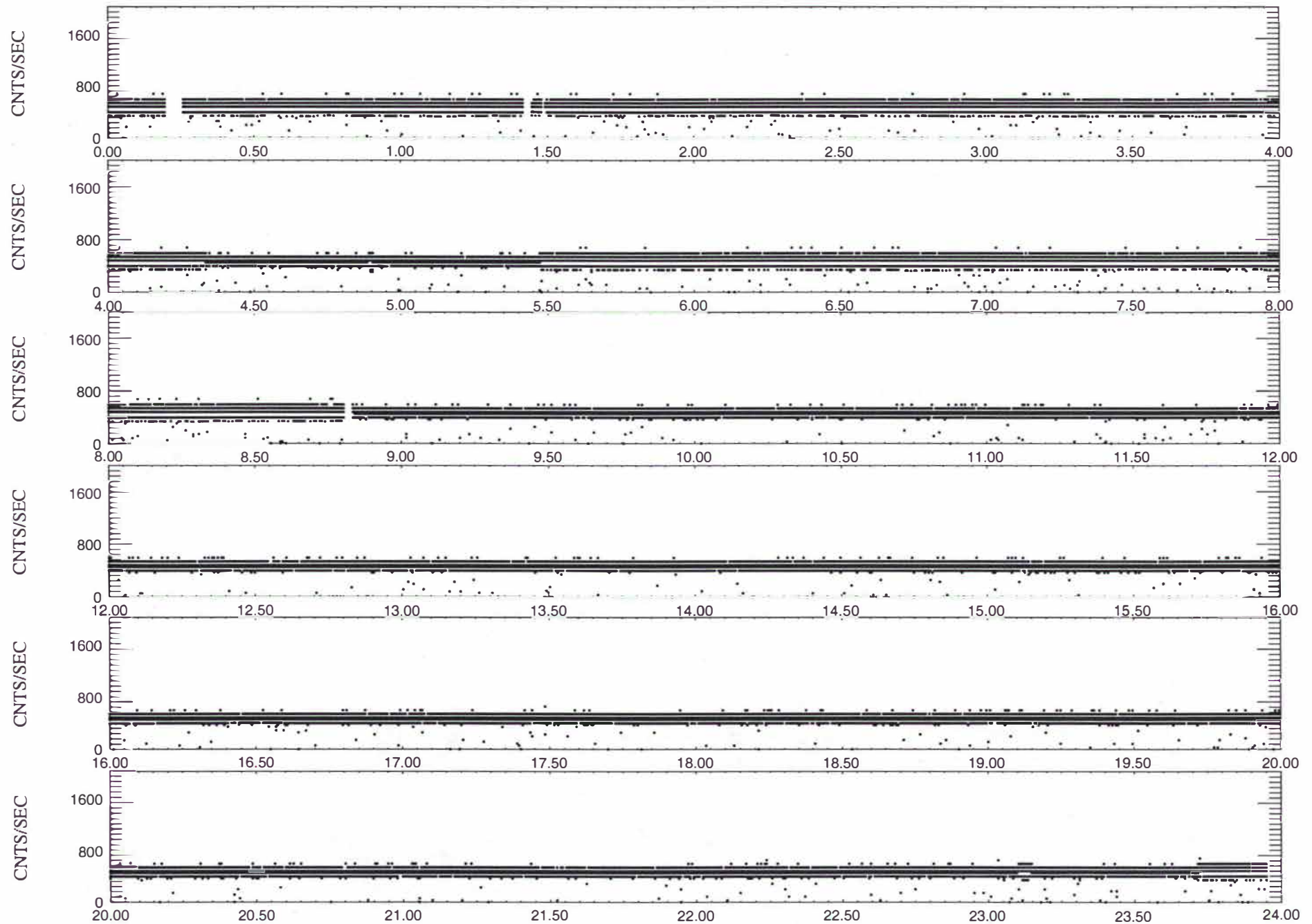
Background not subtracted

Sample average = 10

BURST NUMBER 7

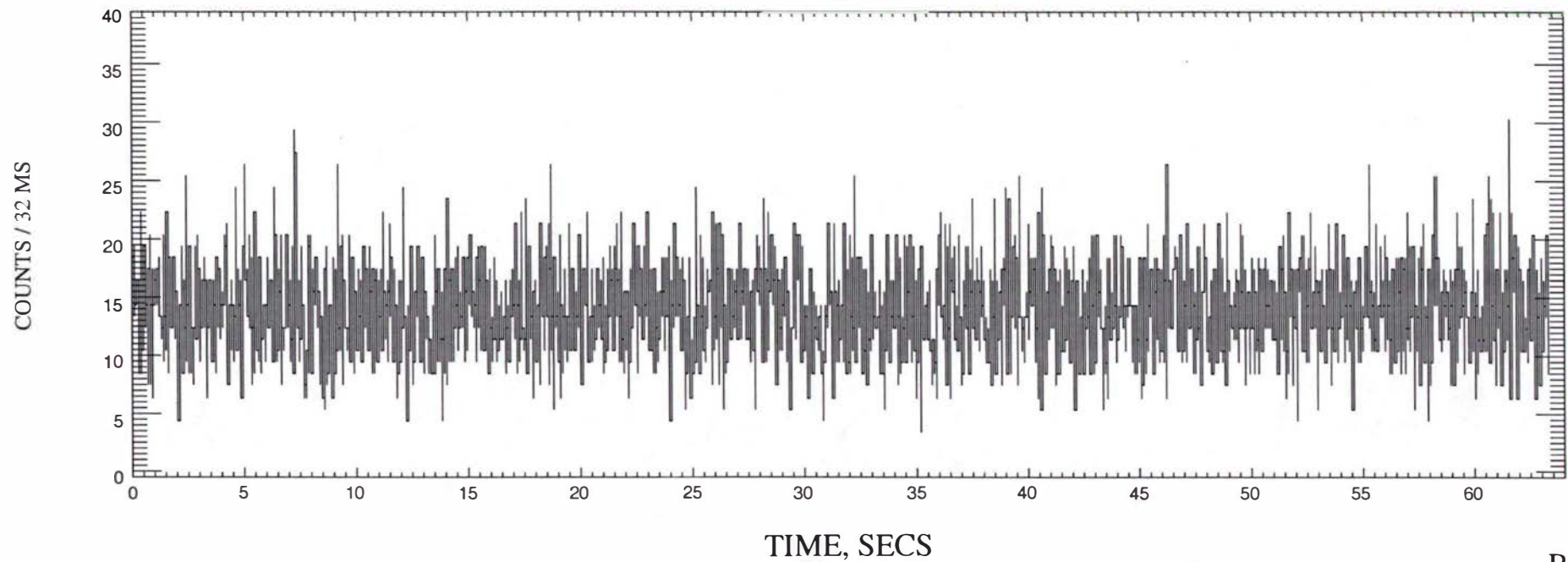
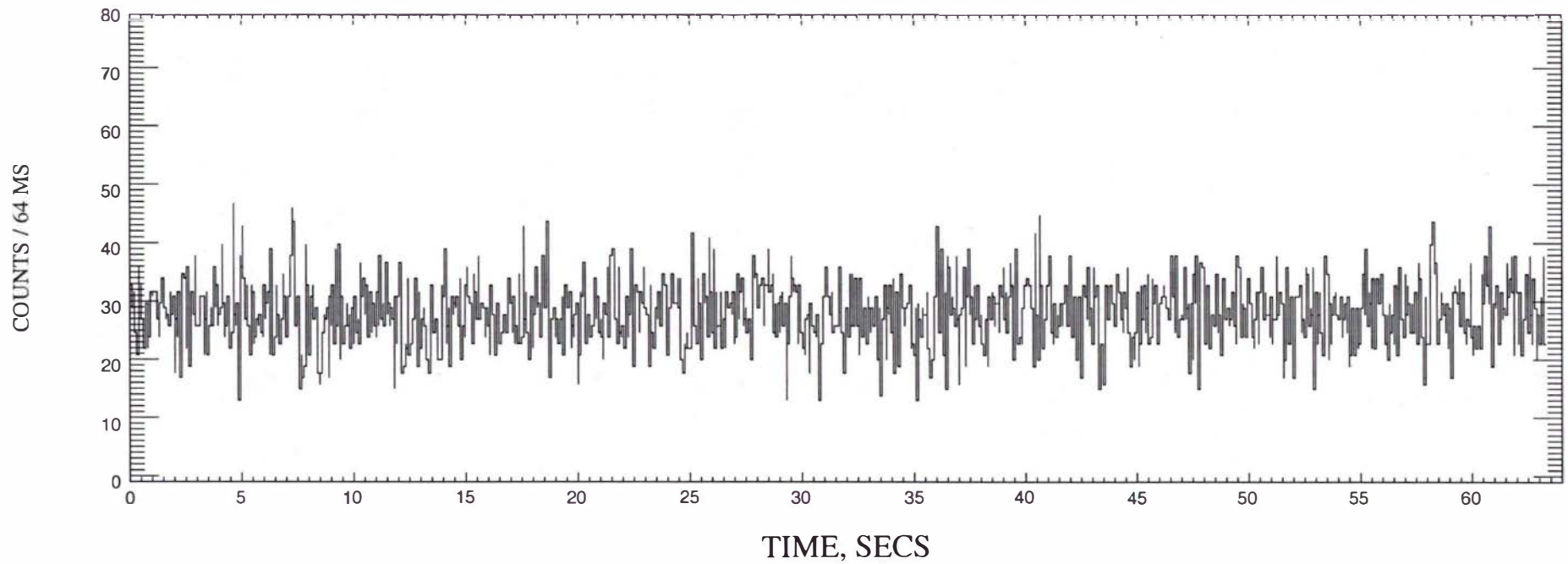


CALIBRATION DATA INCLUDED

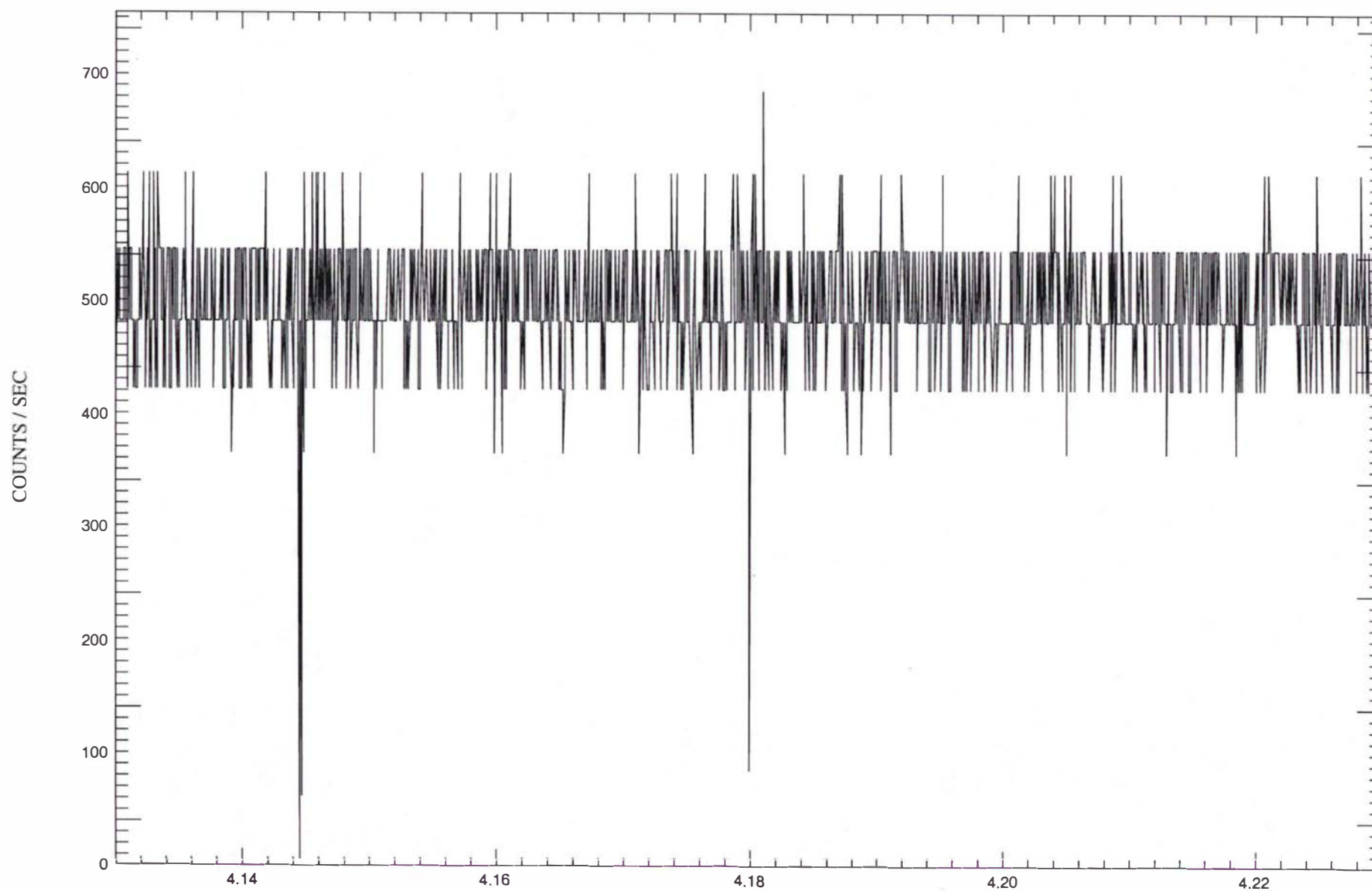


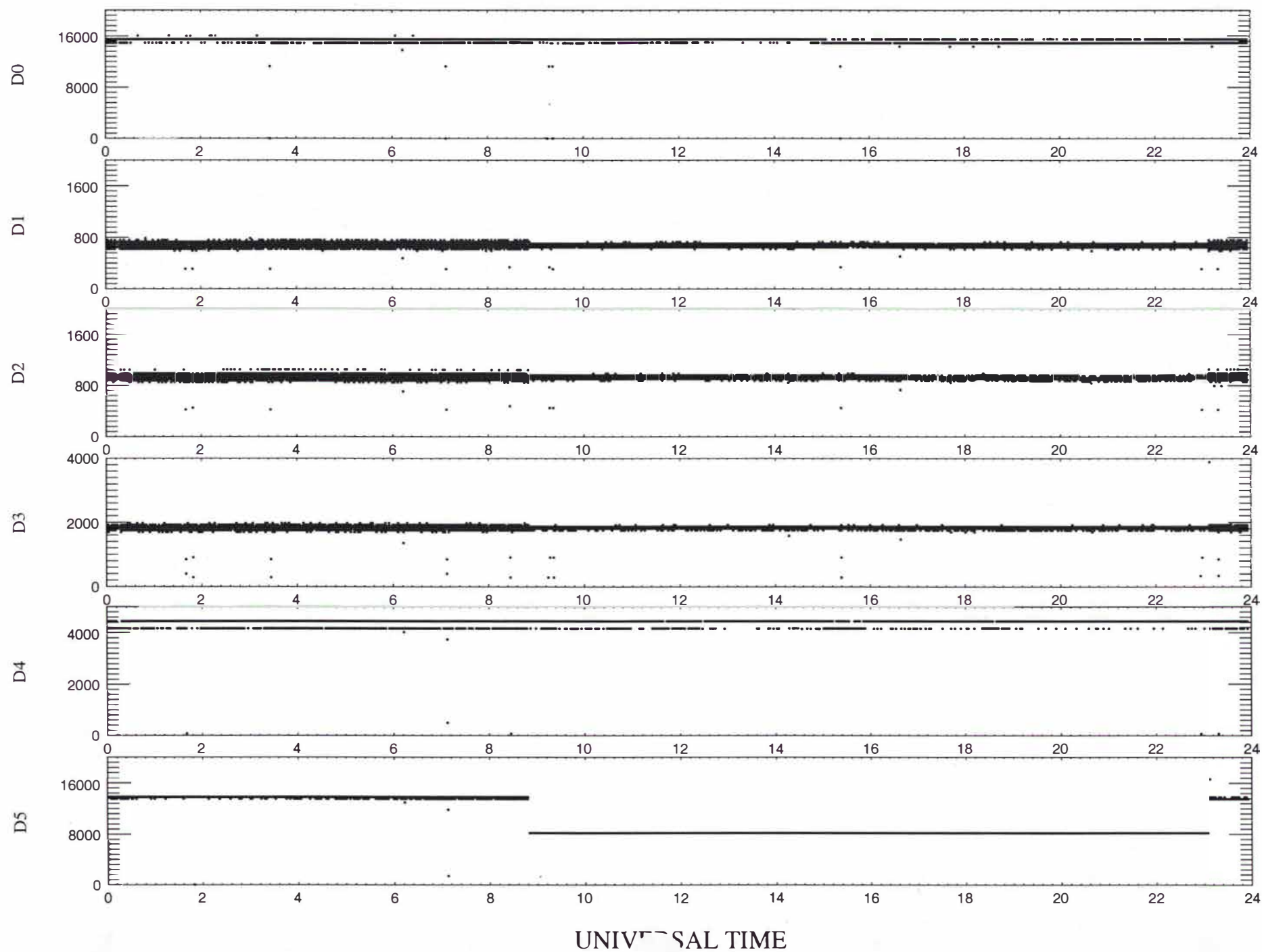
UNIVERSAL TIME

Burst Counter 7 at UT= 4.181190867954 h=15052.287 s 04:10:52.287



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Fri Jul 16 11:24 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 16 Jul 1999 13:30:05 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7652

BATSEARCH PROGRAM

BATSE BURST # 7652
EVENT OF 1999 JUL 14 DAY OF YEAR=195
EVENT CROSSING TIME AT BATSE : 65628. S. OR 18:13:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 231.000 20.000
BATSE PEAK COUNTING RATE: 14000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 7/ 99 IS:
RA= 148.093 DEC= -8.365 DIST= 5.427 AU
BATSE-ULYSSES DISTANCE = 811833267. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -176.13 SECS.
CROSSING TIME AT ULYSSES IS 65452. S. OR 18:10:51 +/- 516.48 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 7/ 99 IS:
RA= 210.539 DEC= -13.836 DIST= 0.895 AU
MARS-BATSE DISTANCE = 133926360. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -345.35 SECS.
CROSSING TIME AT MARS IS 65283. S. OR 18:08:02 +/- 43.95 SECONDS

BATSE BURST TRIGGER

NO.: 7652

TIME: TJD=1373 SECONDS=65628

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=73.3 AZIMUTH=260.4 ERROR=0.6 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 5 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7652	990714	11373	65628	14000	231	+20	5

Date: 21 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

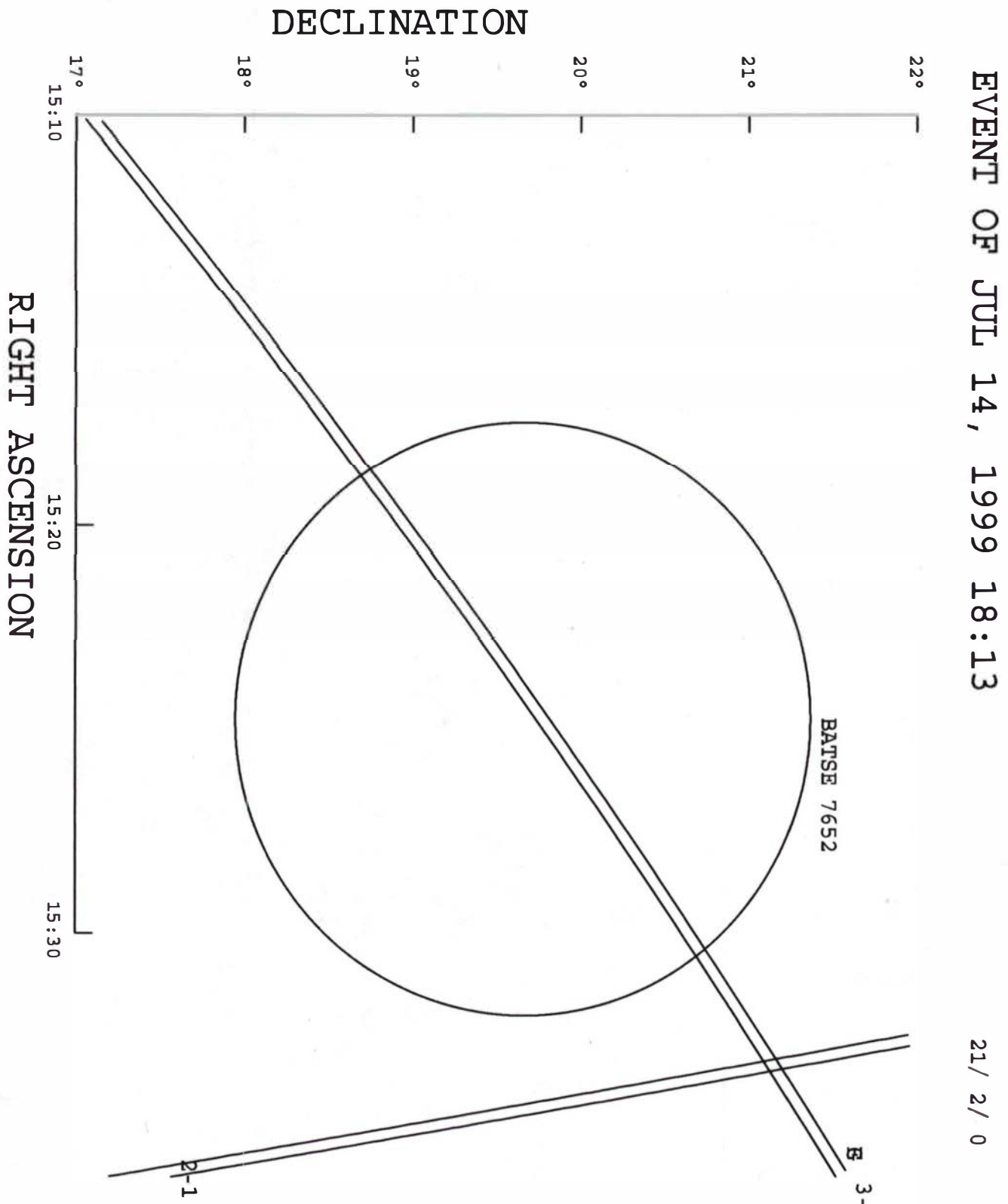
- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. NEAR Data

- ☒ Final, correct time used? (Files postmarked vwx@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?

G=GALACTIC EQUATOR

3 NBAR



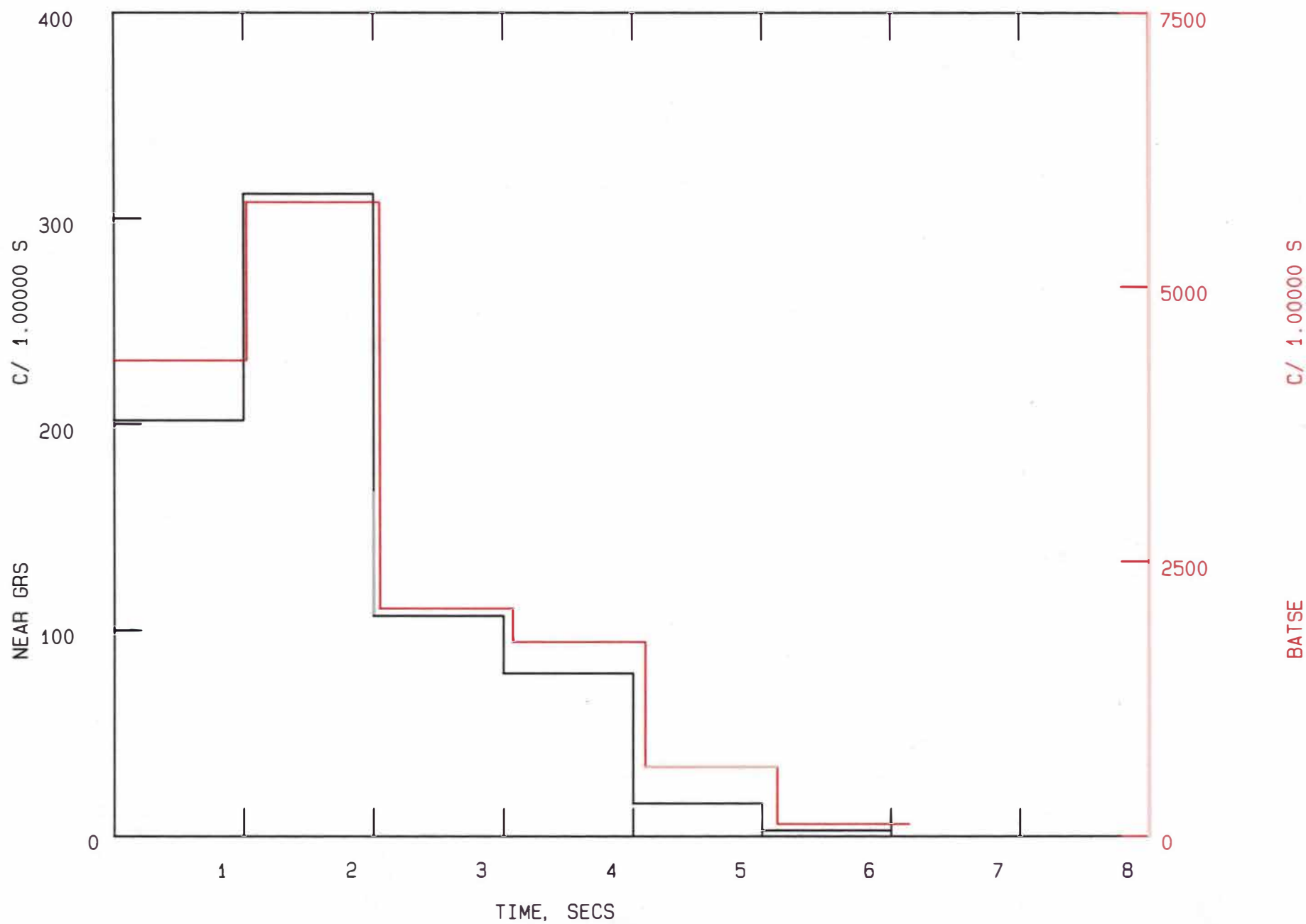
NEAR GRS -BATSE

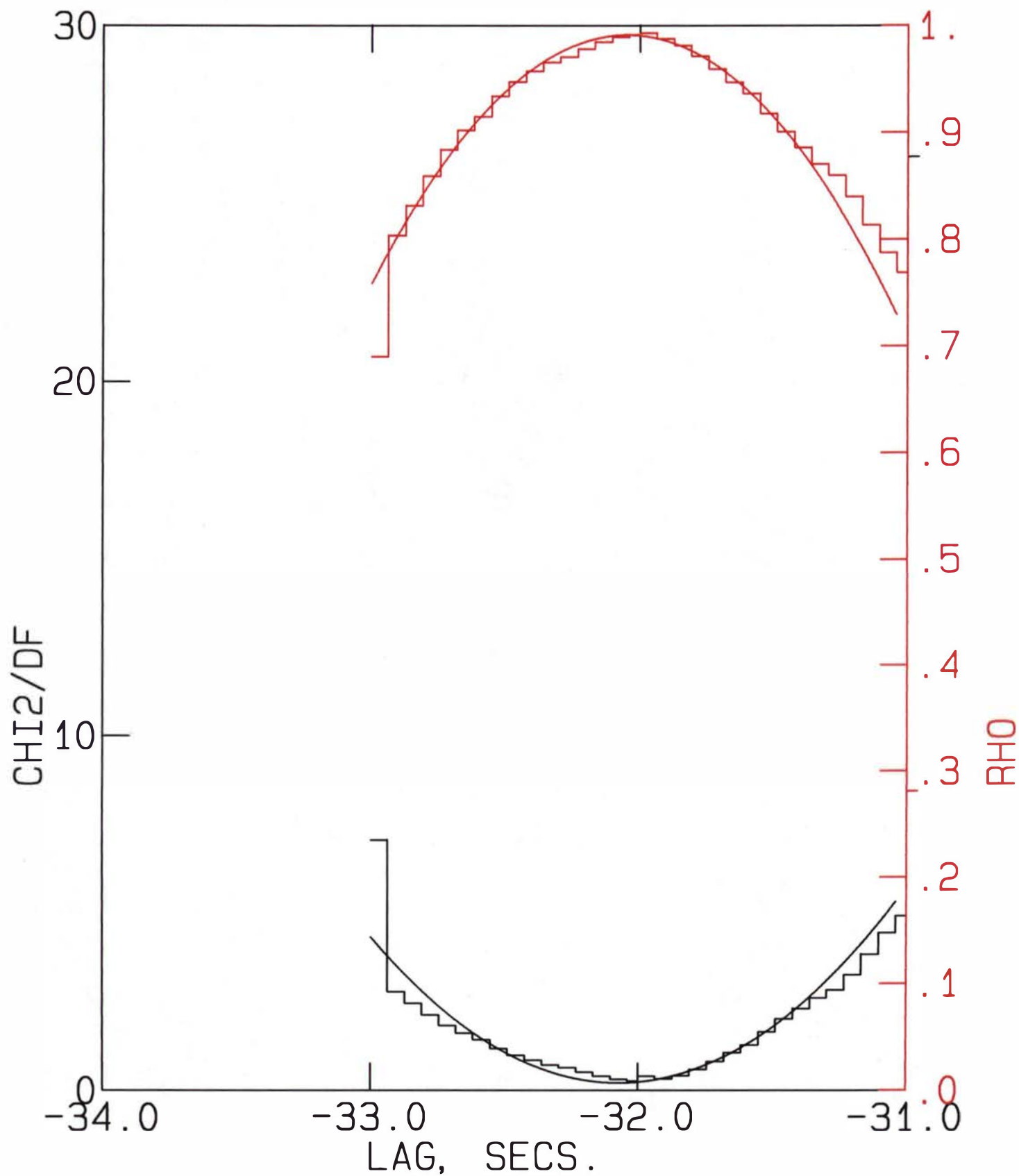
CORRELATION

14/07/99

66156.314

21/ 2/ 0





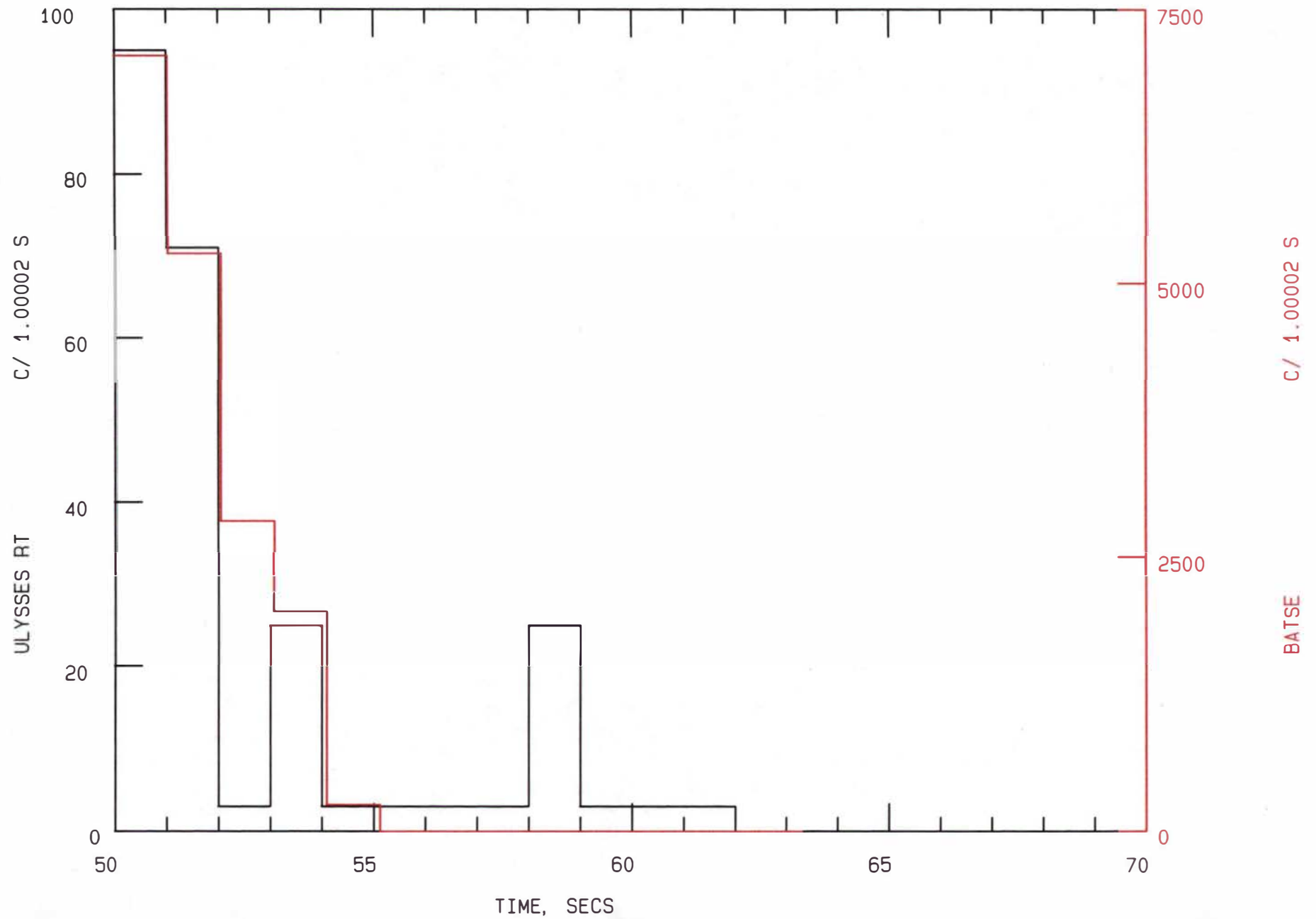
ULYSSES RT-BATSE

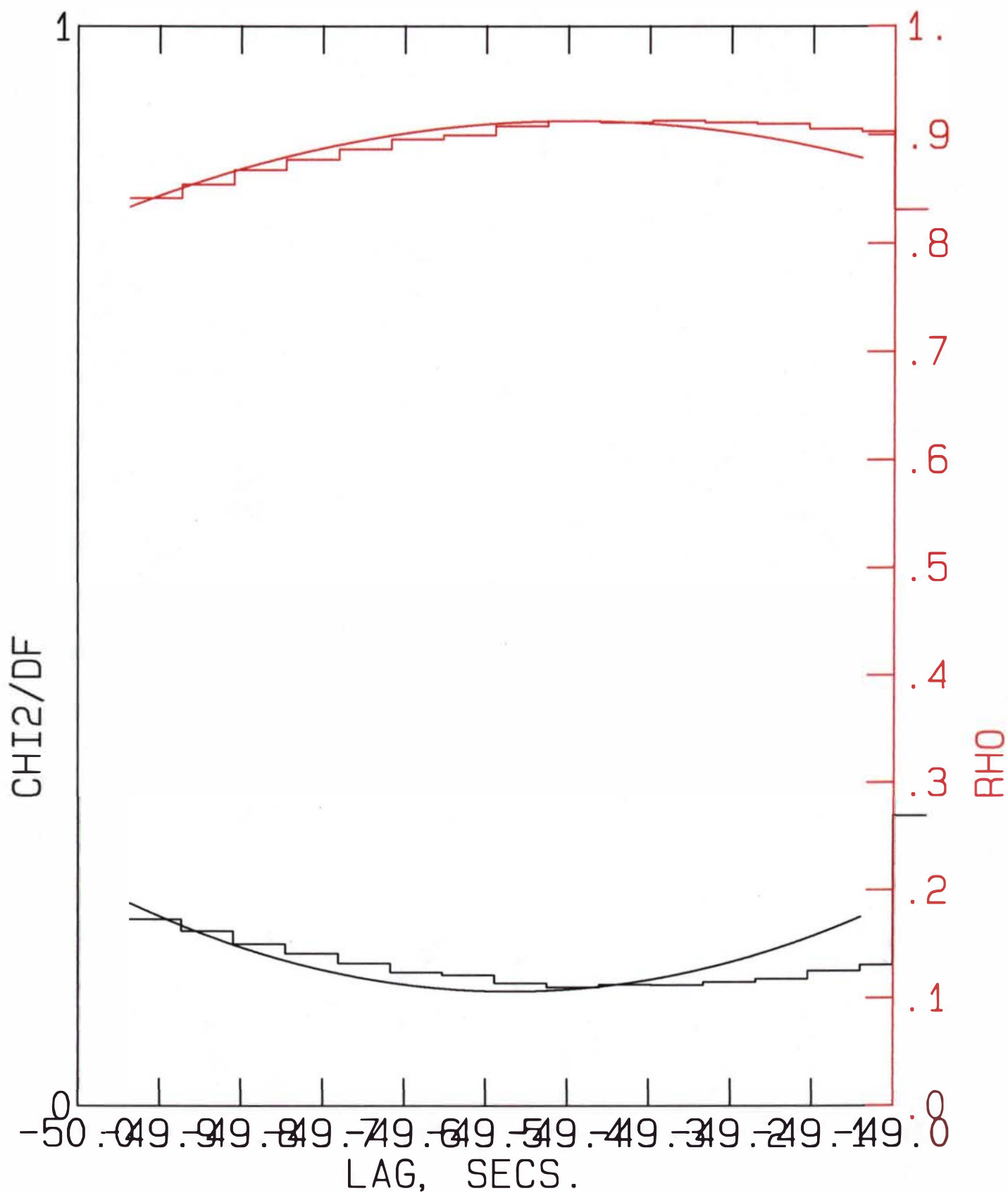
CORRELATION

14/ 7/99

65494.310

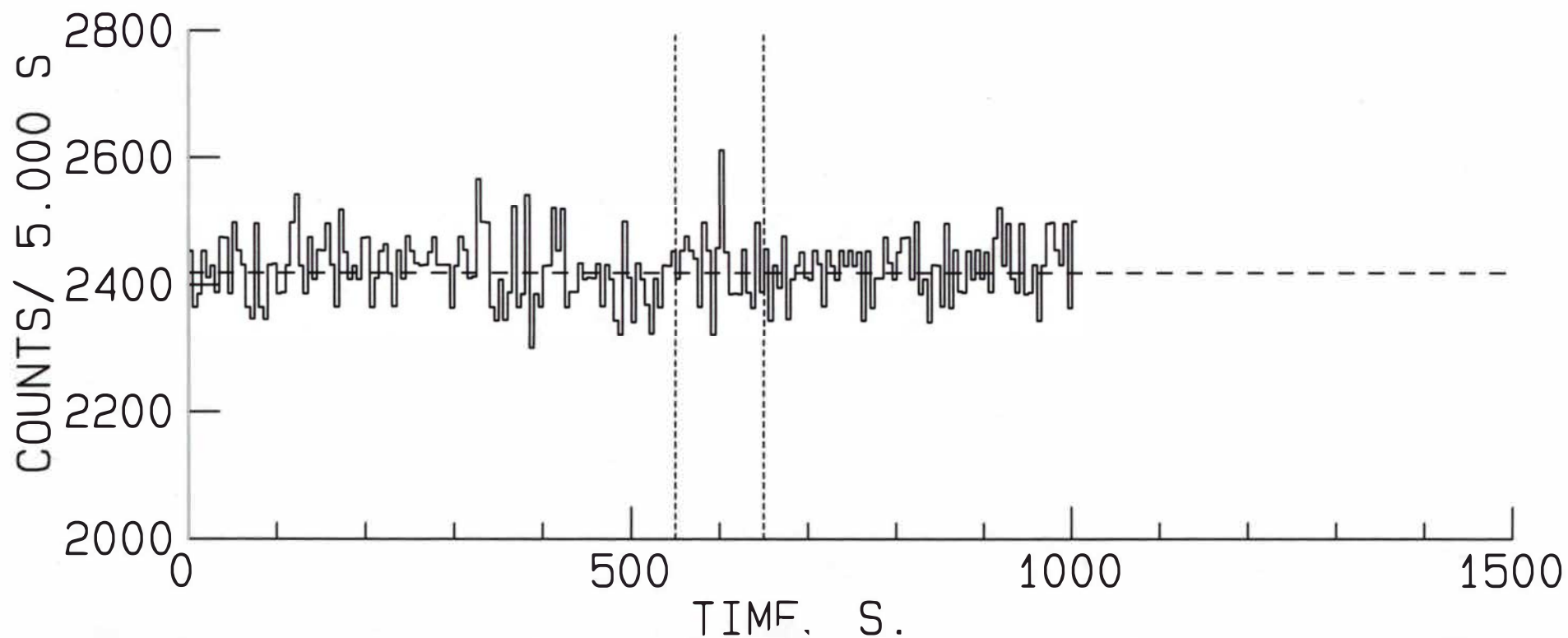
21/ 2/ 0





ULYSSES RT
14/ 7/99 64944.304 s
0.500 S INTERVALS REGROUPED BY 10
22- 150 keV

21 / 2 / 0



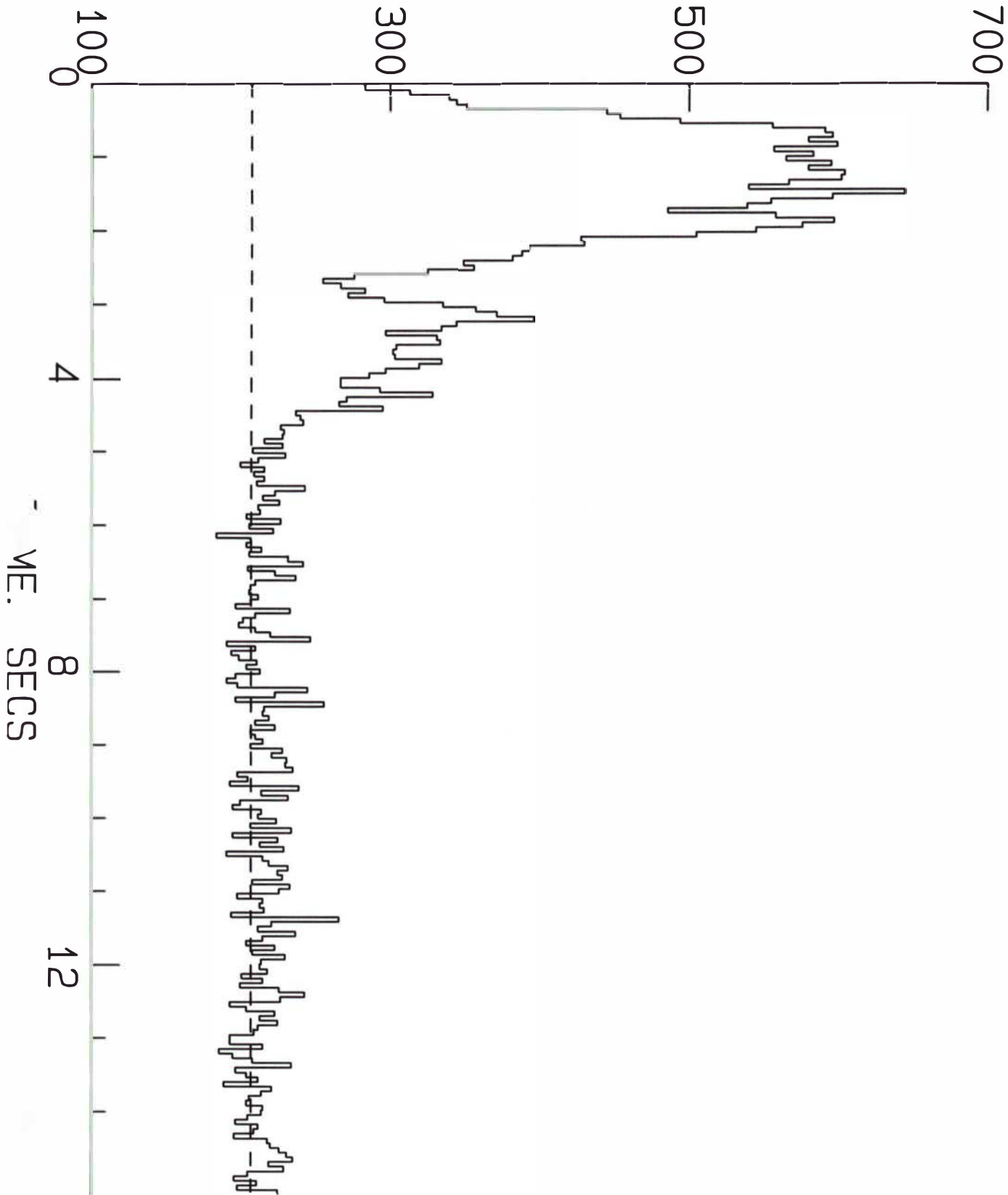
BATSE

14/07/99

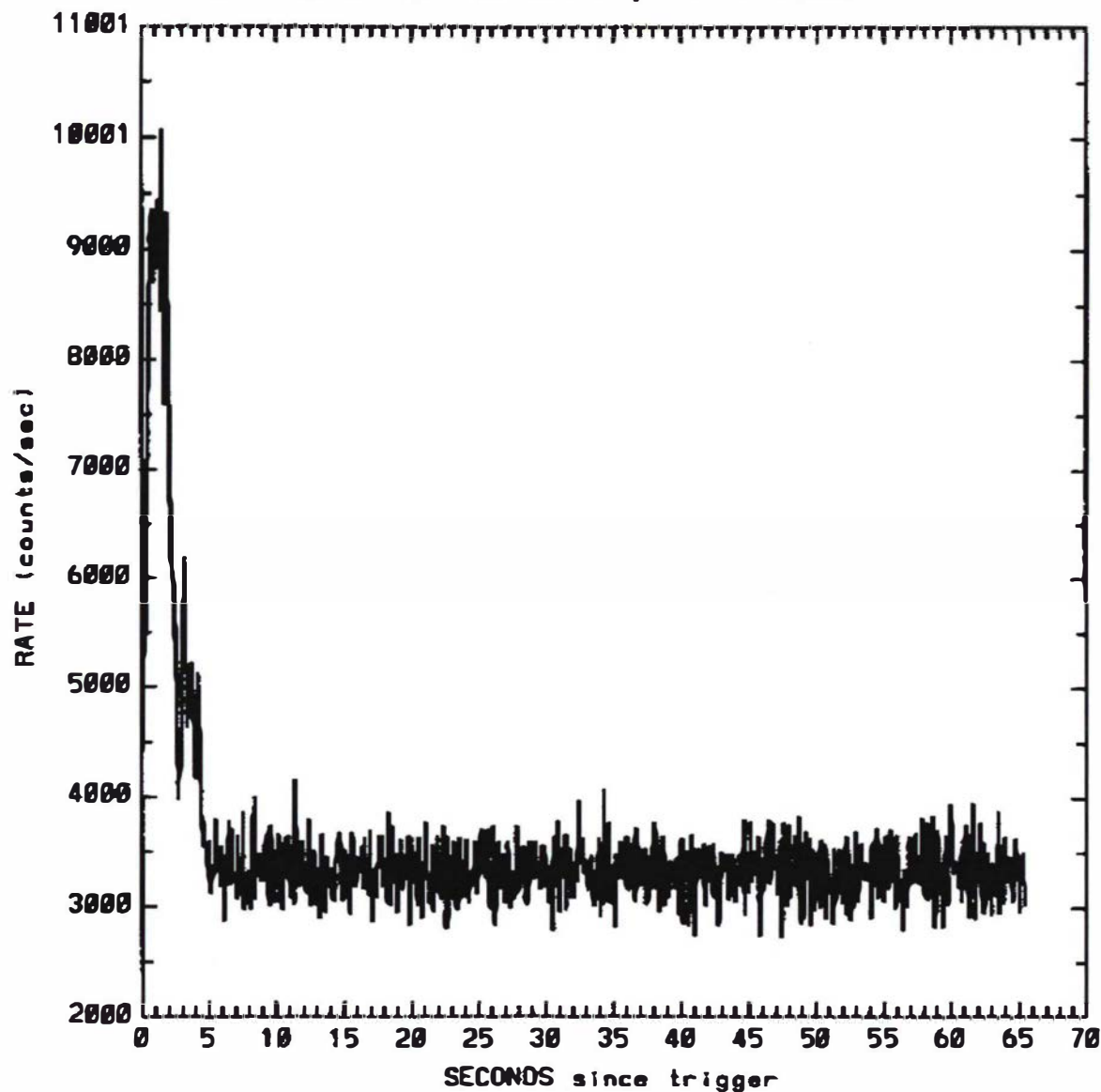
65628.217

100-1000 keV

COUNTS/0.064 S



MER Data for K. Hurley. No. 7652



6-AUG-1999 18:29:58

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger = 7652

Trigger Time:
11373 / 65628.217Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
-6--2-Channels:
[7..15]Quality Mask:
BDTSP1

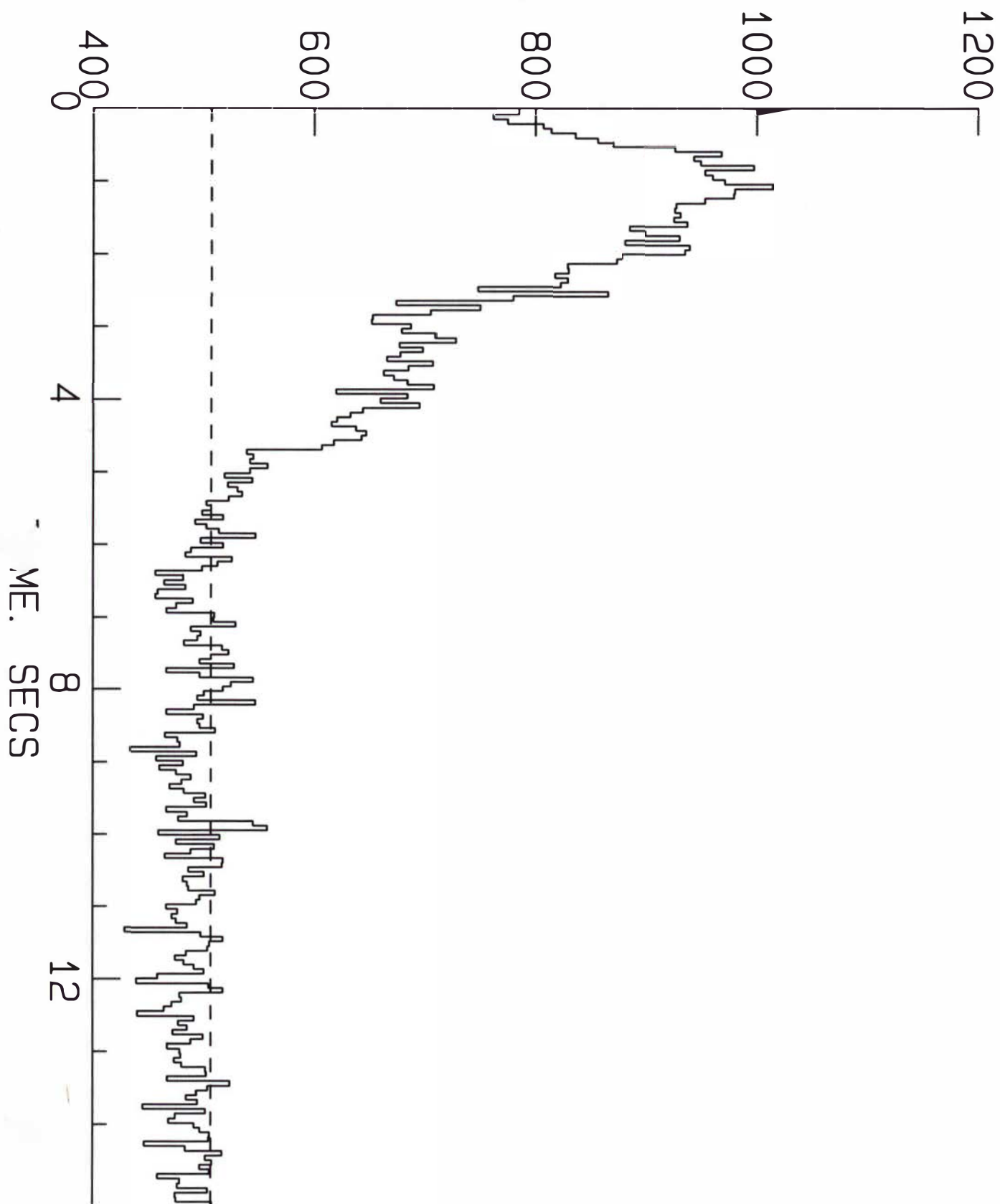
BATSE

14/07/99

65628.217

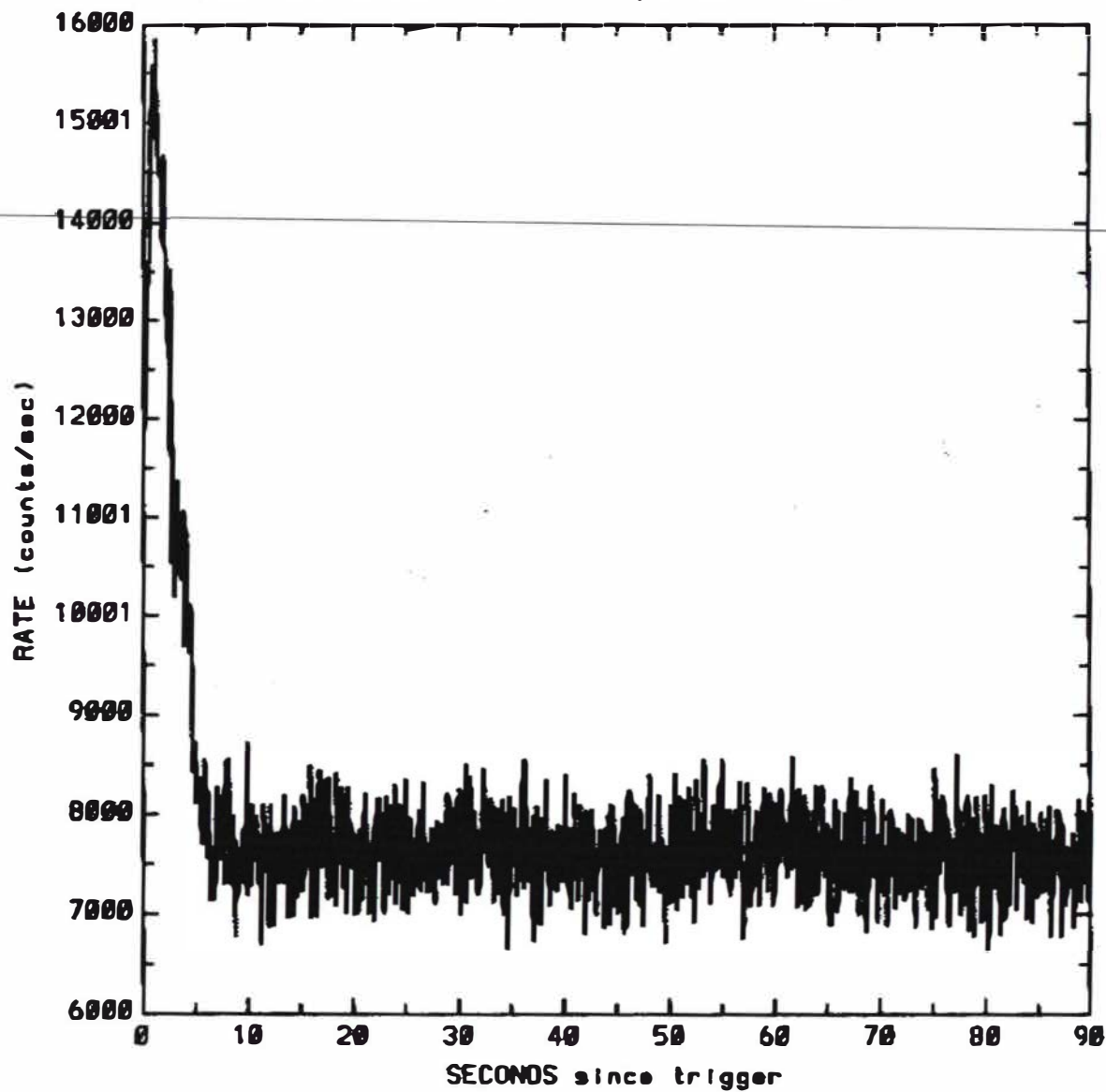
25- 100 keV

COUNTS/0.064 S



30 / 7/99

MER Data for K. Hurley, No. 7652



29-JUL-1999 18:45:28

Created by MDPS 8D
(Burst Display)
Version 12.26

Trigger # : 7652

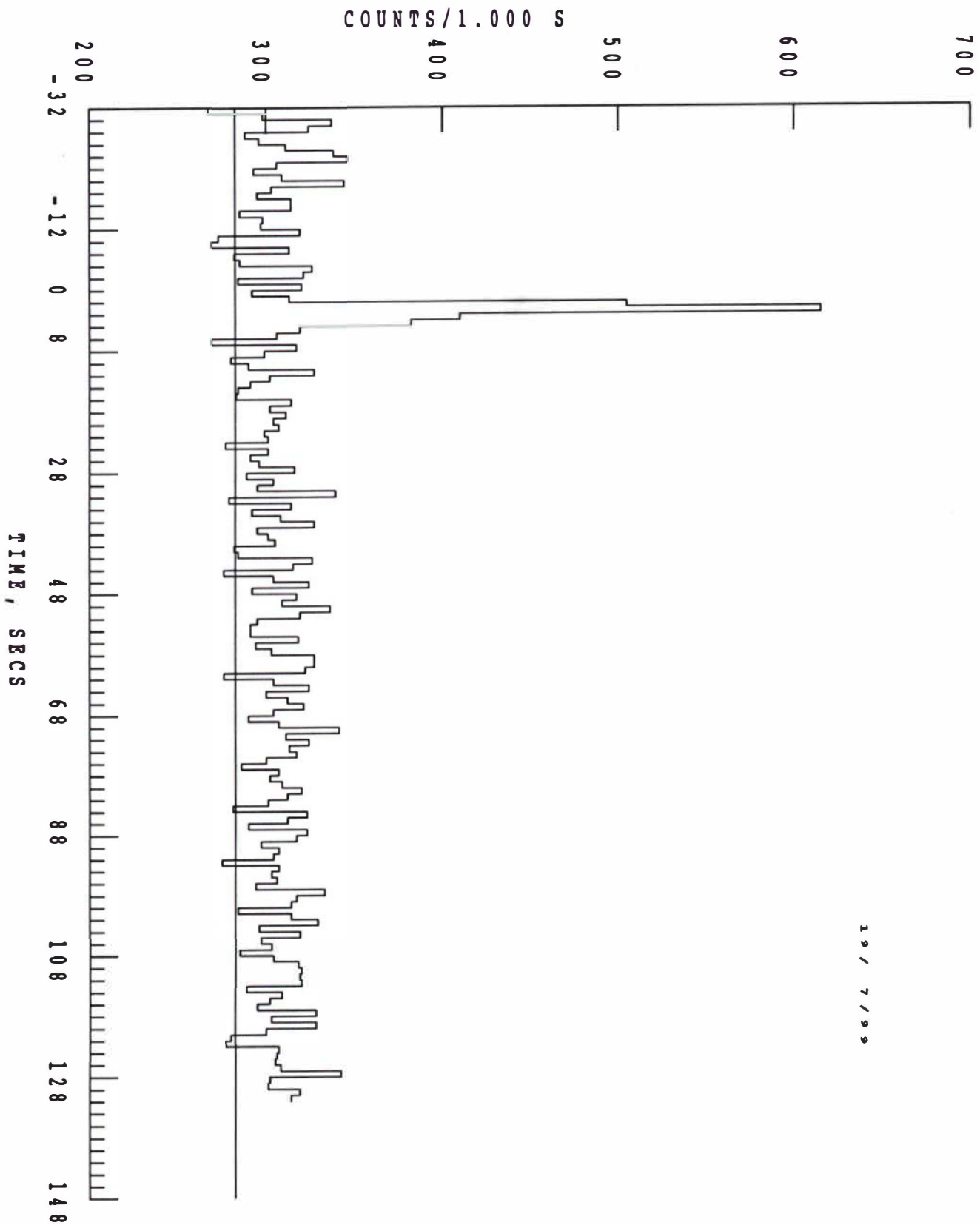
Trigger Time:
11373 / 65628.217Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors (7..8):
-6---2-Channels:
(8..6)Quality Mask:
DOTSP1

NEAR

14/07/99

66156.314

100-1000 keV



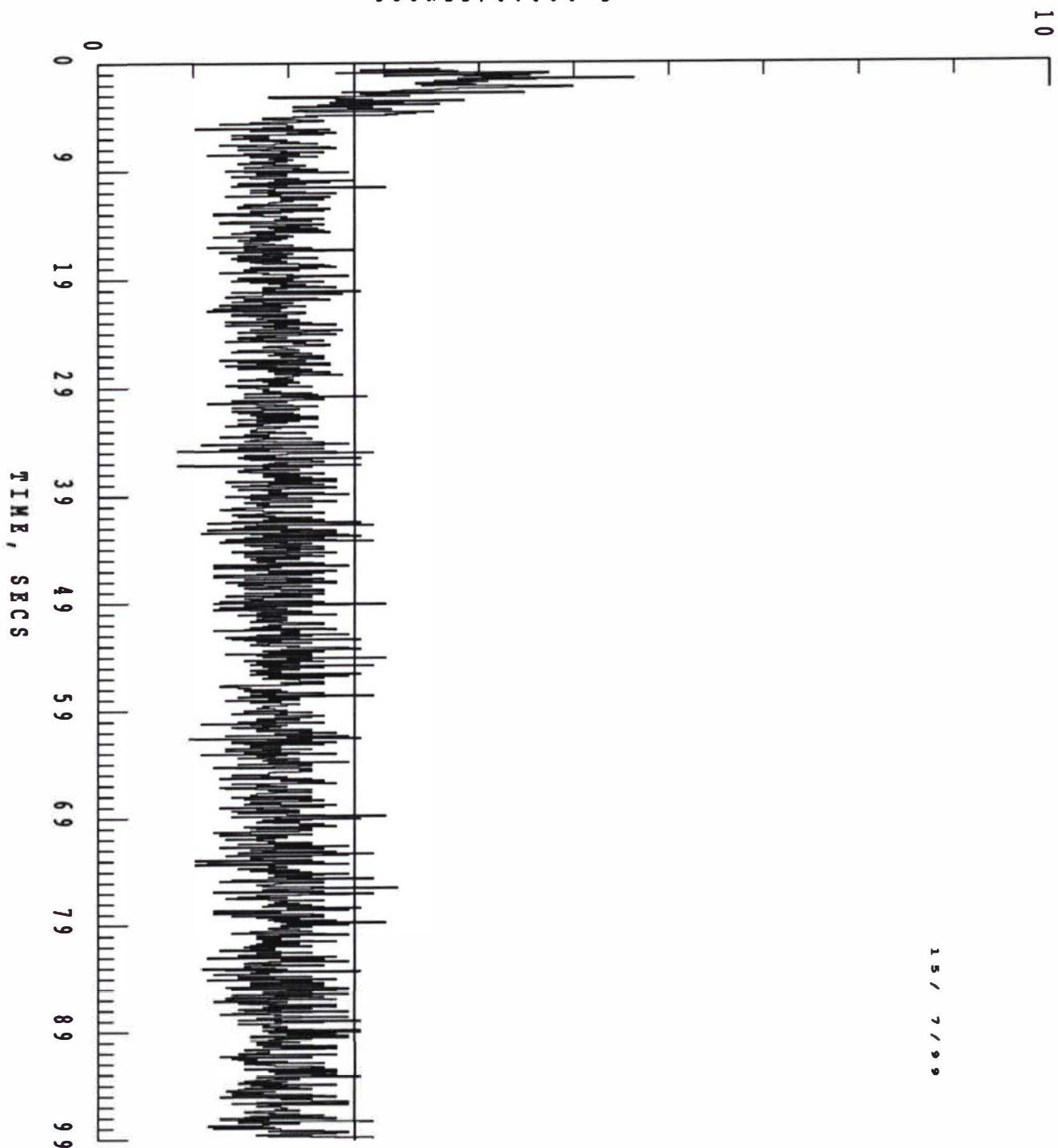
KONUS

14/07/99

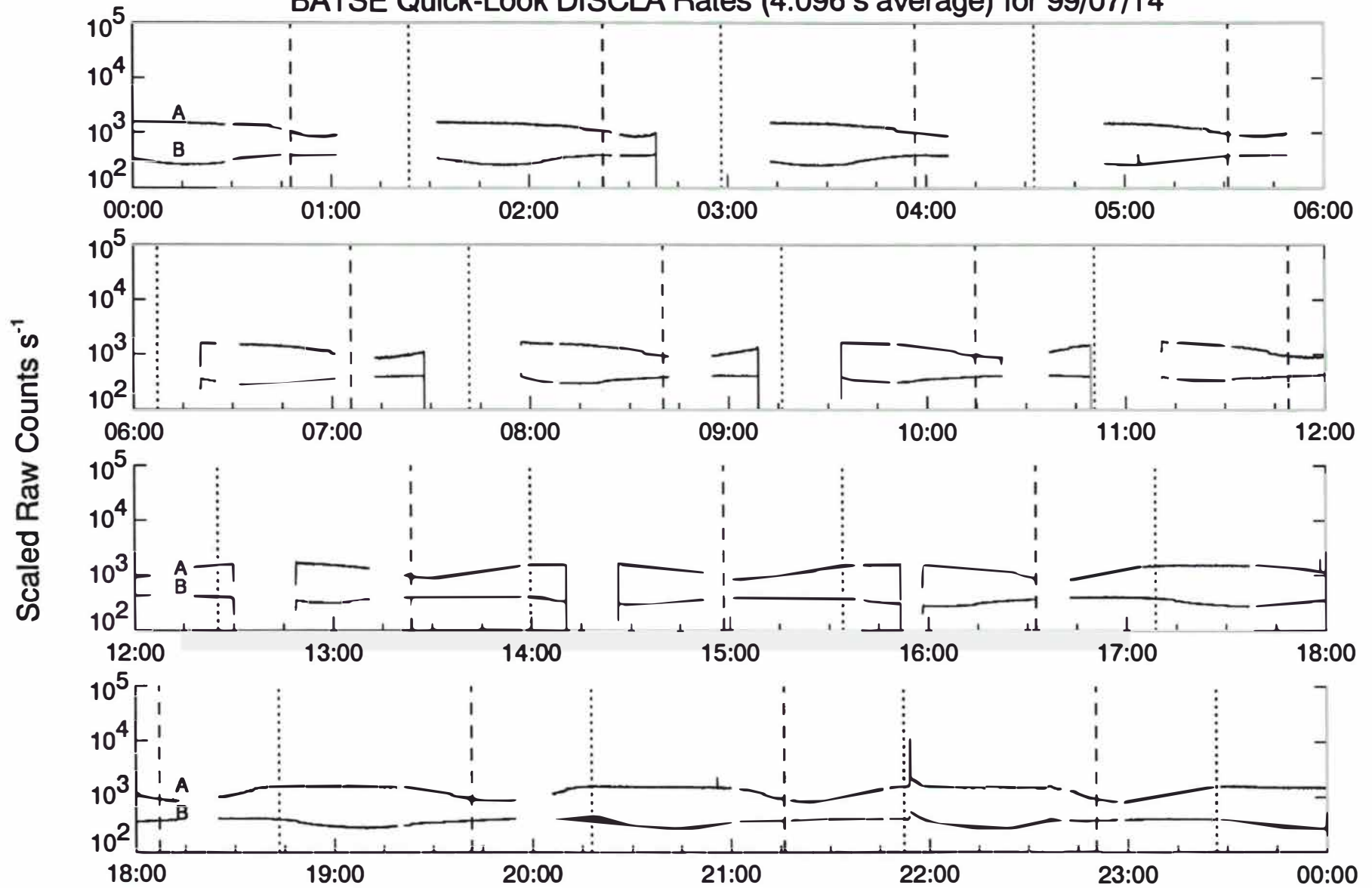
65630.259

50 - 200 keV

COUNTS/0.064 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/14

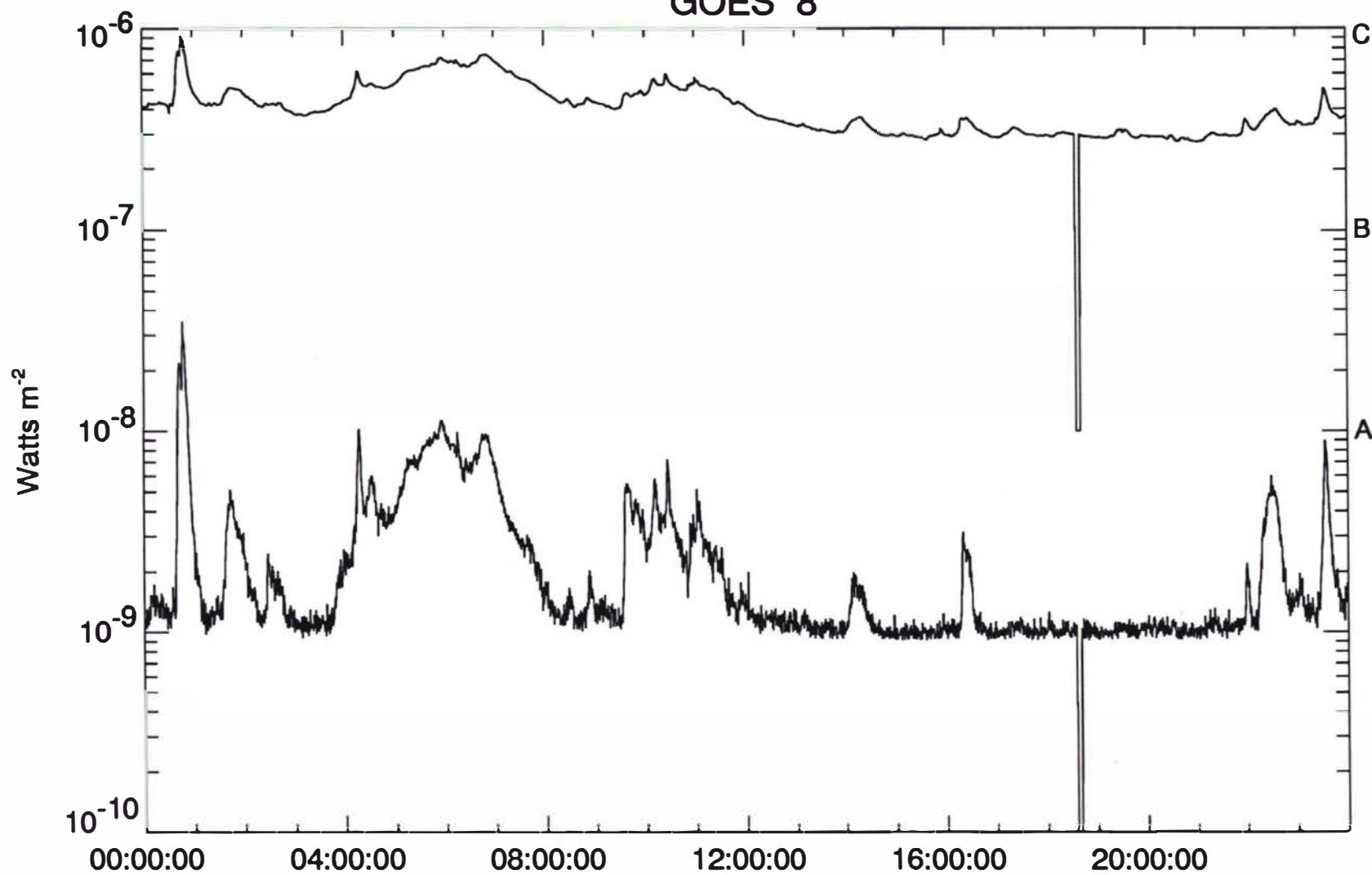


Current Time: 99/07/18, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/14, 0000:00

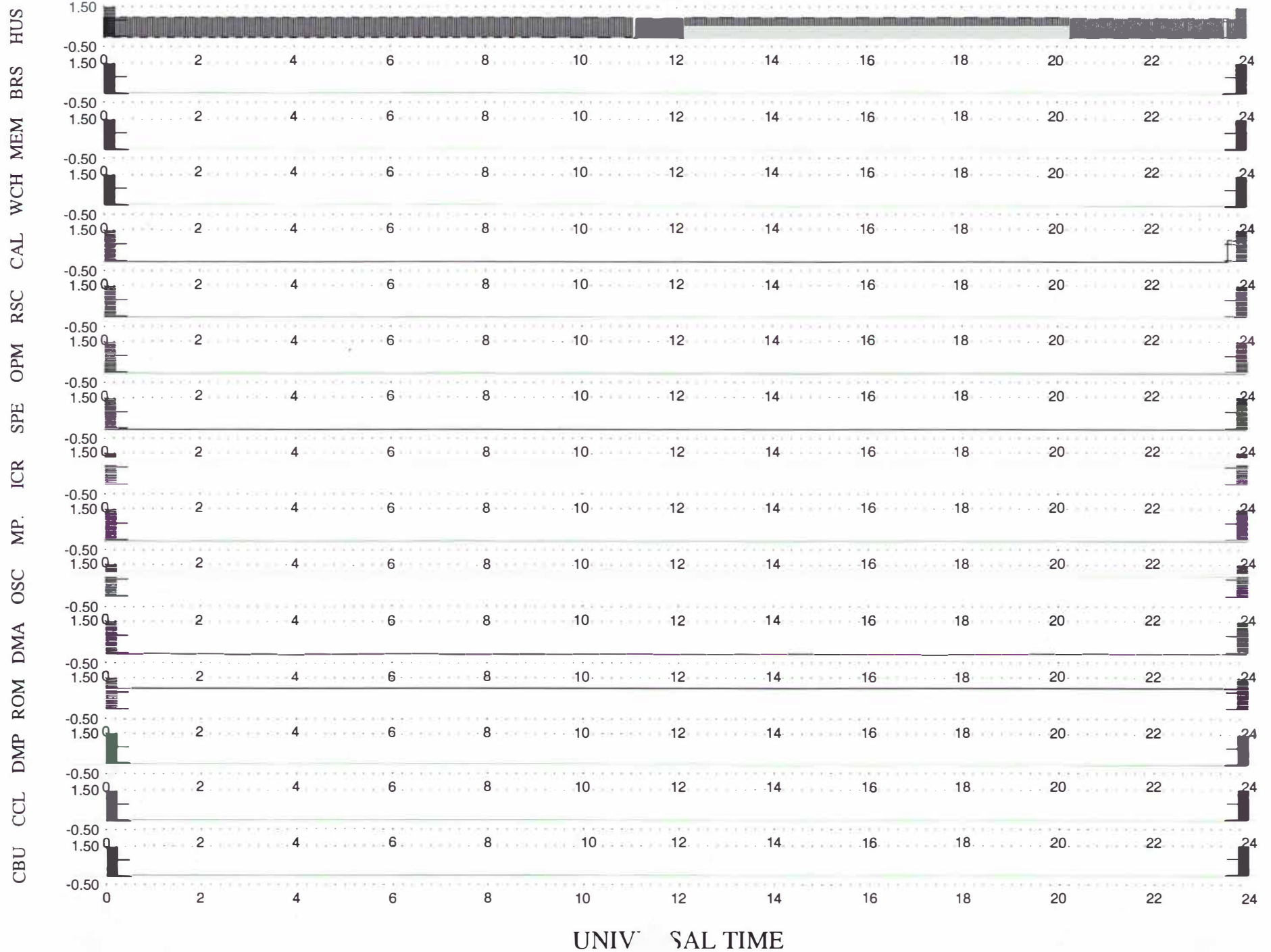
Plot created: 99/07/18, 1011

Channel

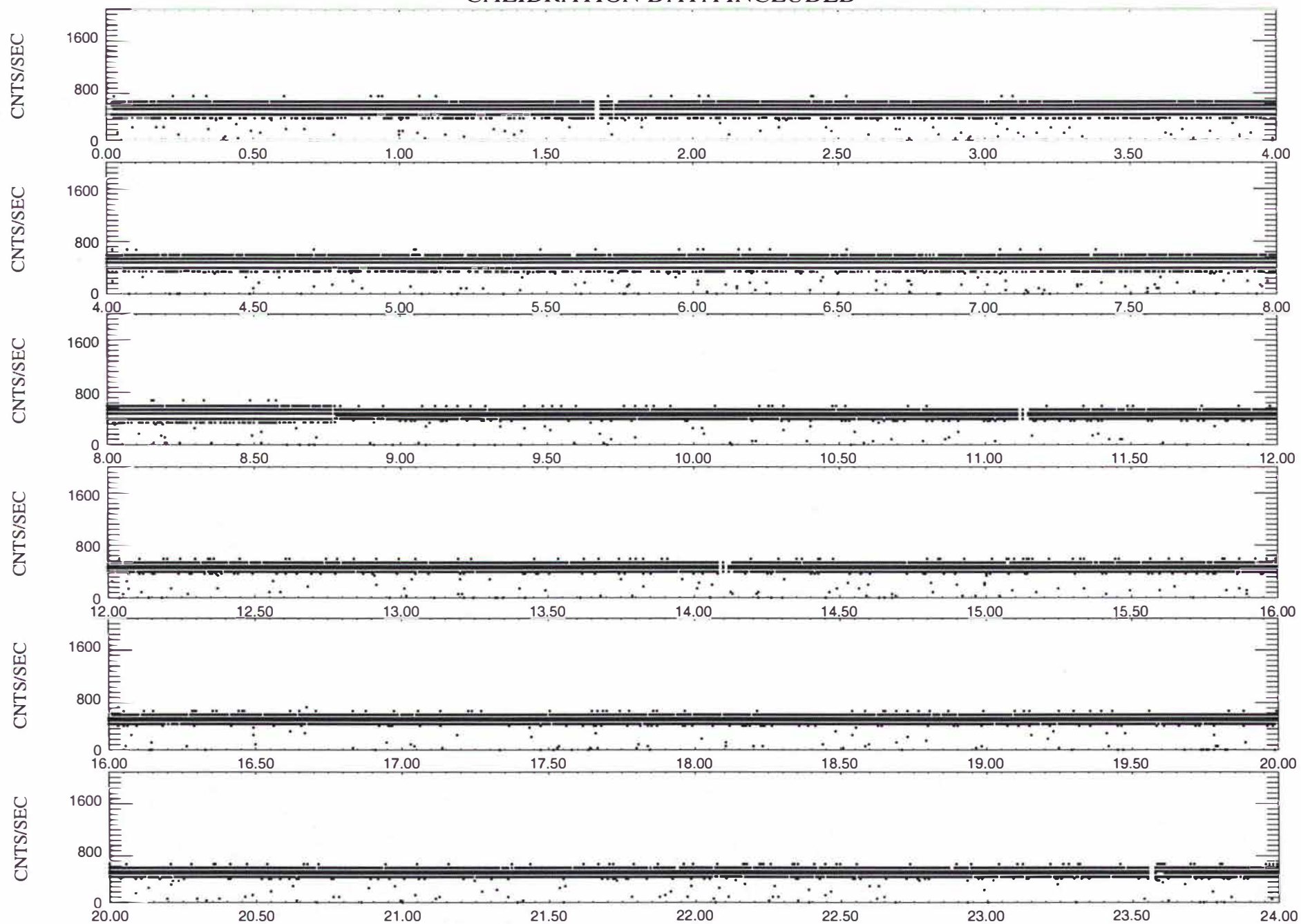
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 8

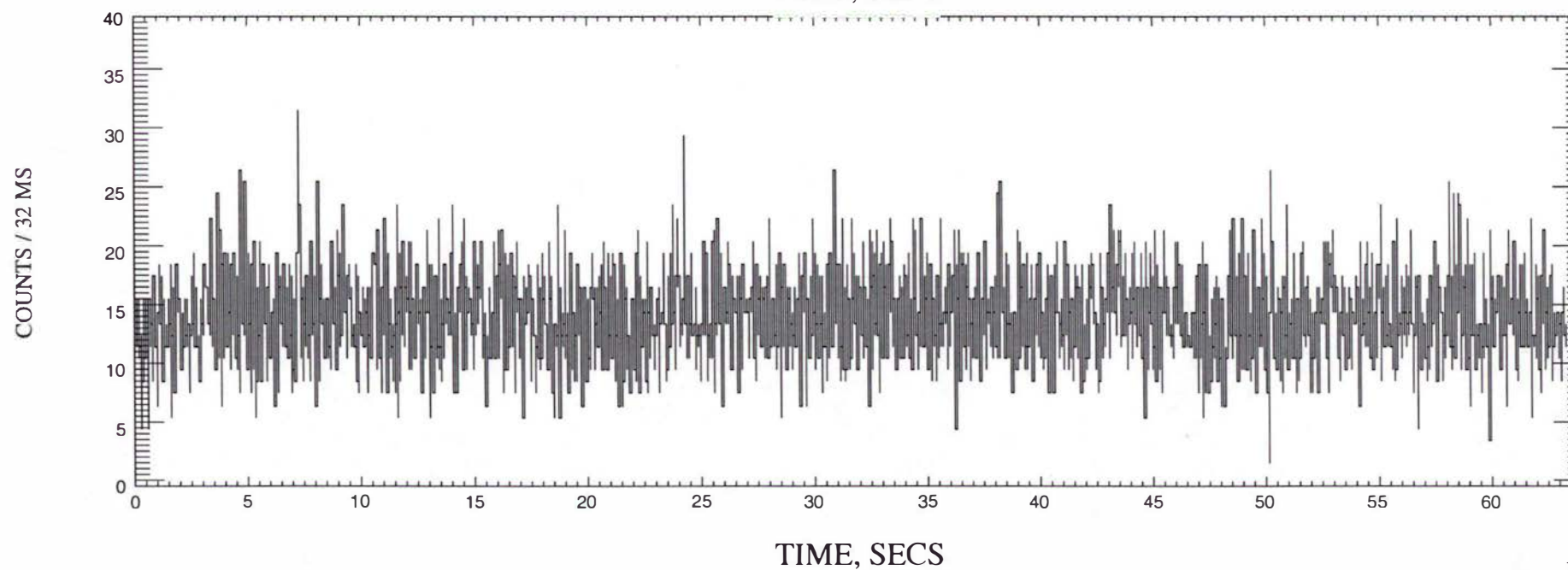
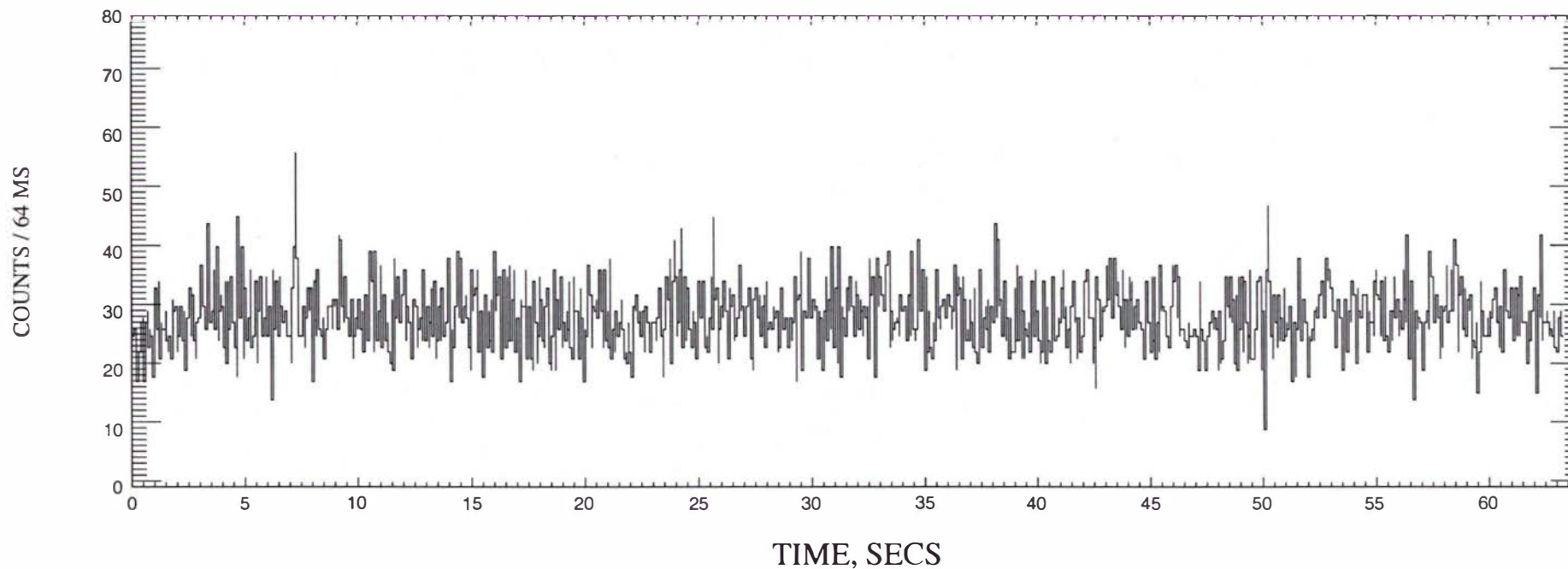


CALIBRATION DATA INCLUDED

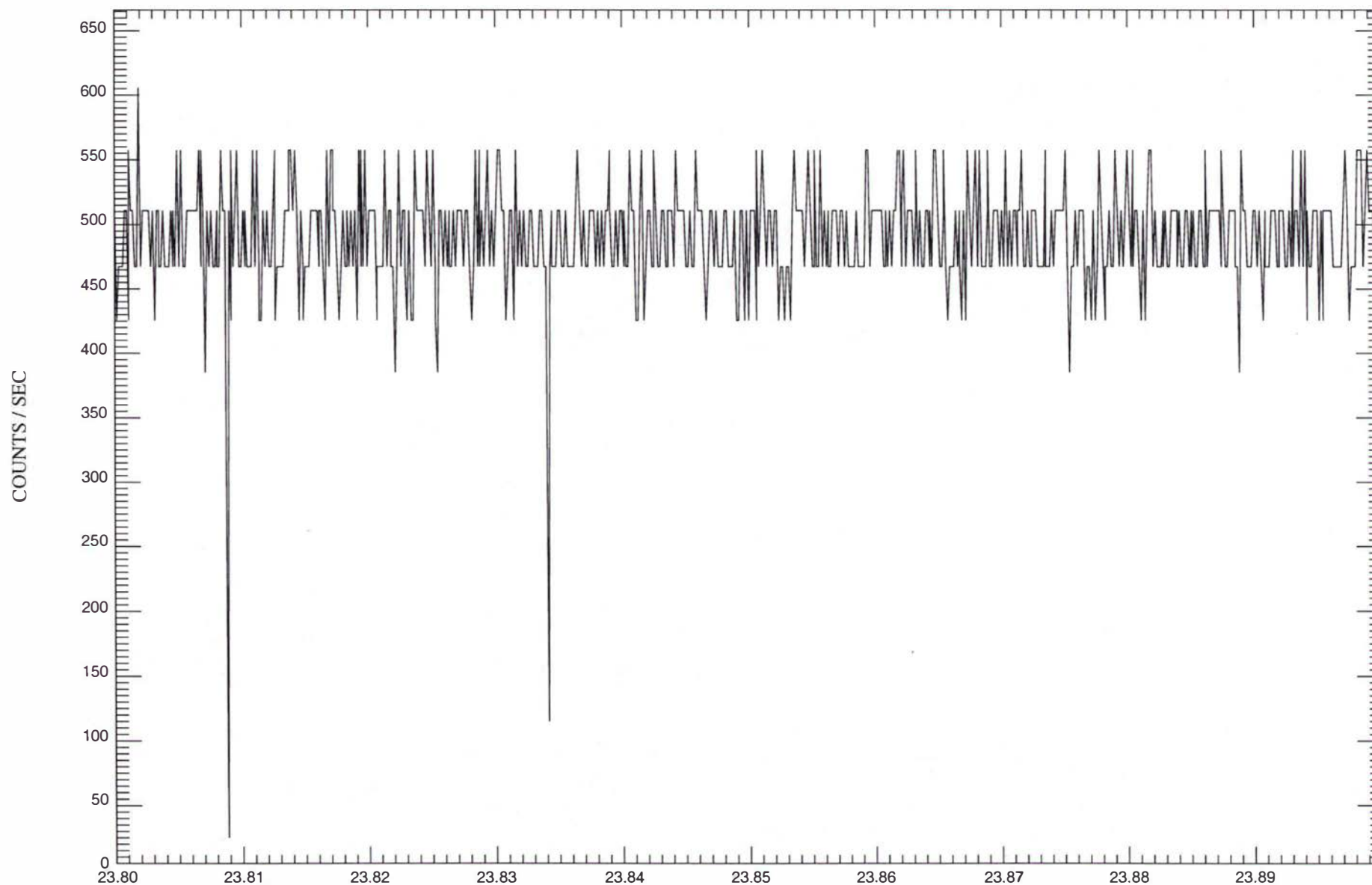


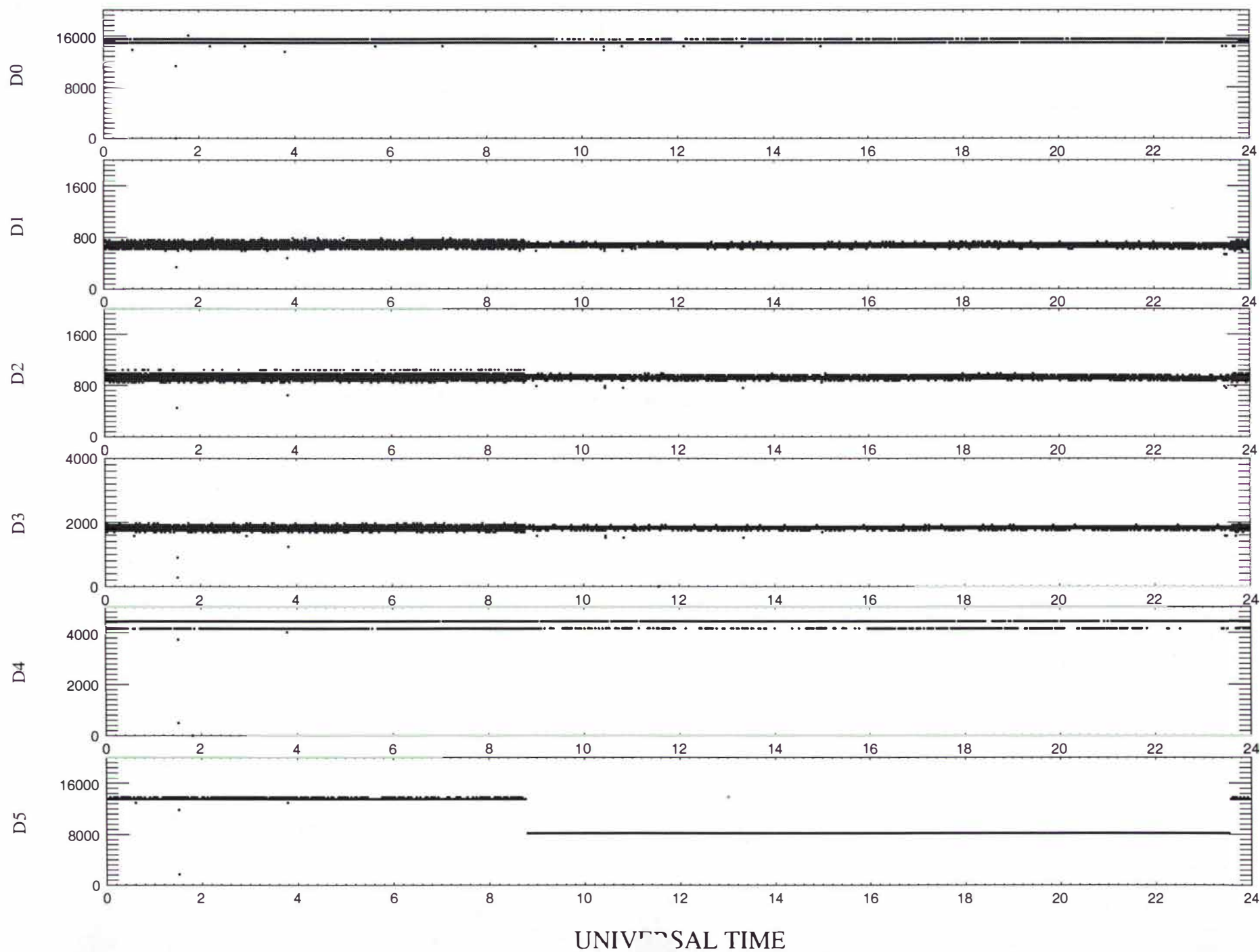
UNIVERSAL TIME

Burst Counter 8 at UT=23.854828448825 h=85877.382 s 23:51:17.382



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Wed Jul 21 06:51 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 21 Jul 1999 8:57:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7653

BATSEARCH PROGRAM

BATSE BURST # 7653
EVENT OF 1999 JUL 15 DAY OF YEAR=196
EVENT CROSSING TIME AT BATSE : 10066. S. OR 02:47:46.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 297.000 -14.000
BATSE PEAK COUNTING RATE: 1900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 7/ 99 IS:
RA= 148.138 DEC= -8.387 DIST= 5.429 AU
BATSE-ULYSSES DISTANCE = 812214338. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 38.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2130.37 SECS.
CROSSING TIME AT ULYSSES IS 12196. S. OR 03:23:16 +/- 372.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 99 IS:
RA= 210.920 DEC= -13.988 DIST= 0.901 AU
MARS-BATSE DISTANCE = 134842576. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 55.26 SECS.
CROSSING TIME AT MARS IS 10011. S. OR 02:46:50 +/- 76.66 SECONDS

BATSE BURST TRIGGER

NO.: 7653

TIME: TJD=1374 SECONDS=10066

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=74.0 AZIMUTH=184.4 ERROR=6.3 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 7 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7653	990715	11374	10066	1900	297	-14	7

BATSE BURST# 7653

ULYSSES RT

21 / 7 / 99

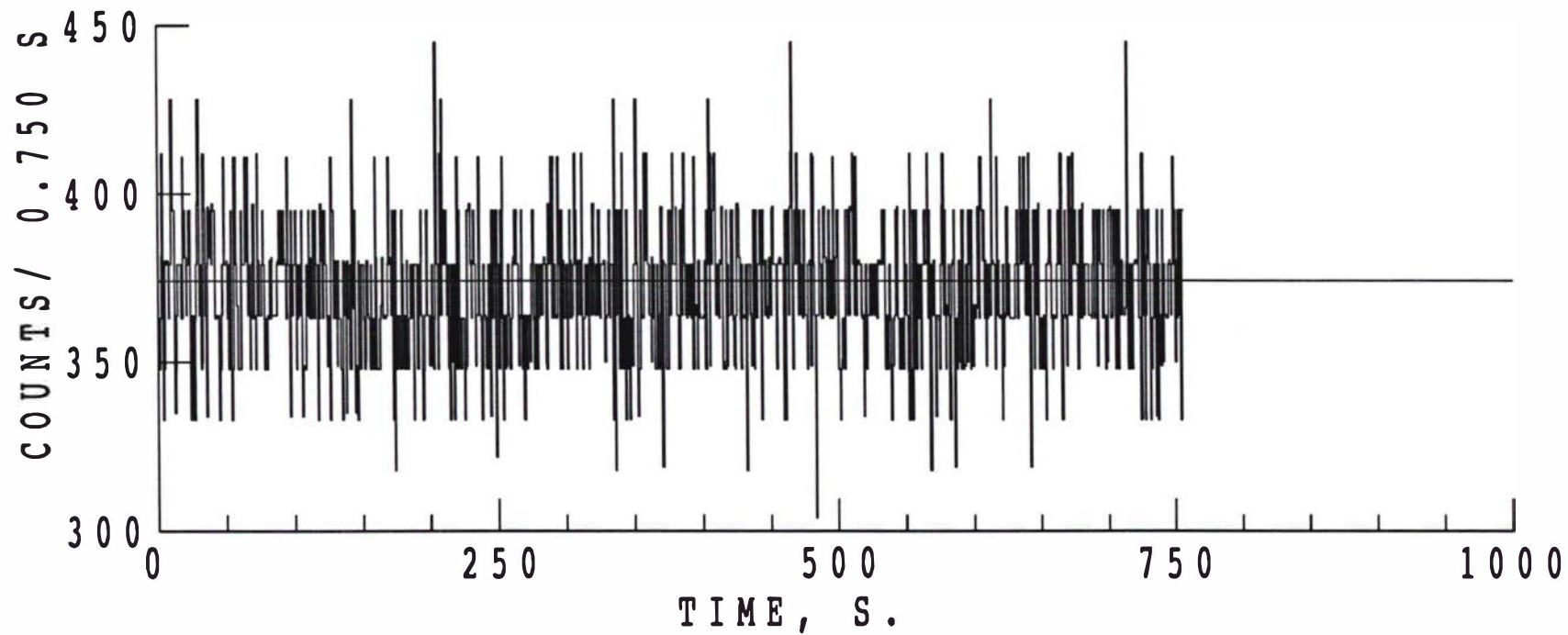
15 / 7 / 99 11808.140 s

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



KONUS

ULYSSES RT

21 / 01 / 00

15 / 07 / 99 43020.457 s

0.500 S INTERVALS REGROUPED BY 8

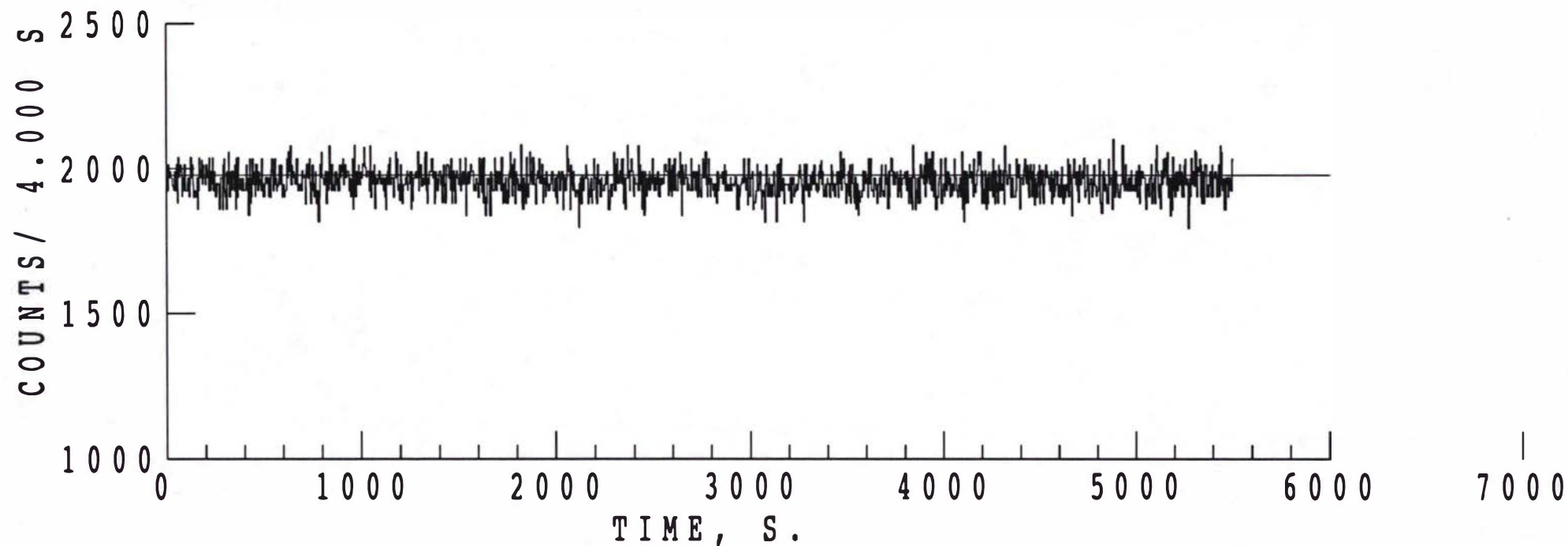
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Wed Jul 21 06:54 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 21 Jul 1999 9:00:20 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7654
Content-Length: 2508
Content-Type: text
X-Lines: 48
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7654
EVENT OF 1999 JUL 15 DAY OF YEAR=196
EVENT CROSSING TIME AT BATSE : 45786. S. OR 12:43:06.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 229.000 20.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 7/ 99 IS:
RA= 148.190 DEC= -8.413 DIST= 5.432 AU
BATSE-ULYSSES DISTANCE = 812646627. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -266.79 SECS.
CROSSING TIME AT ULYSSES IS 45519. S. OR 12:38:39 +/- 514.28 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 99 IS:
RA= 210.920 DEC= -13.988 DIST= 0.901 AU
MARS-BATSE DISTANCE = 134842576. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -352.69 SECS.
CROSSING TIME AT MARS IS 45433. S. OR 12:37:13 +/- 43.11 SECONDS

BATSE BURST TRIGGER

NO.: 7654

TIME: TJD=1374 SECONDS=45786

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

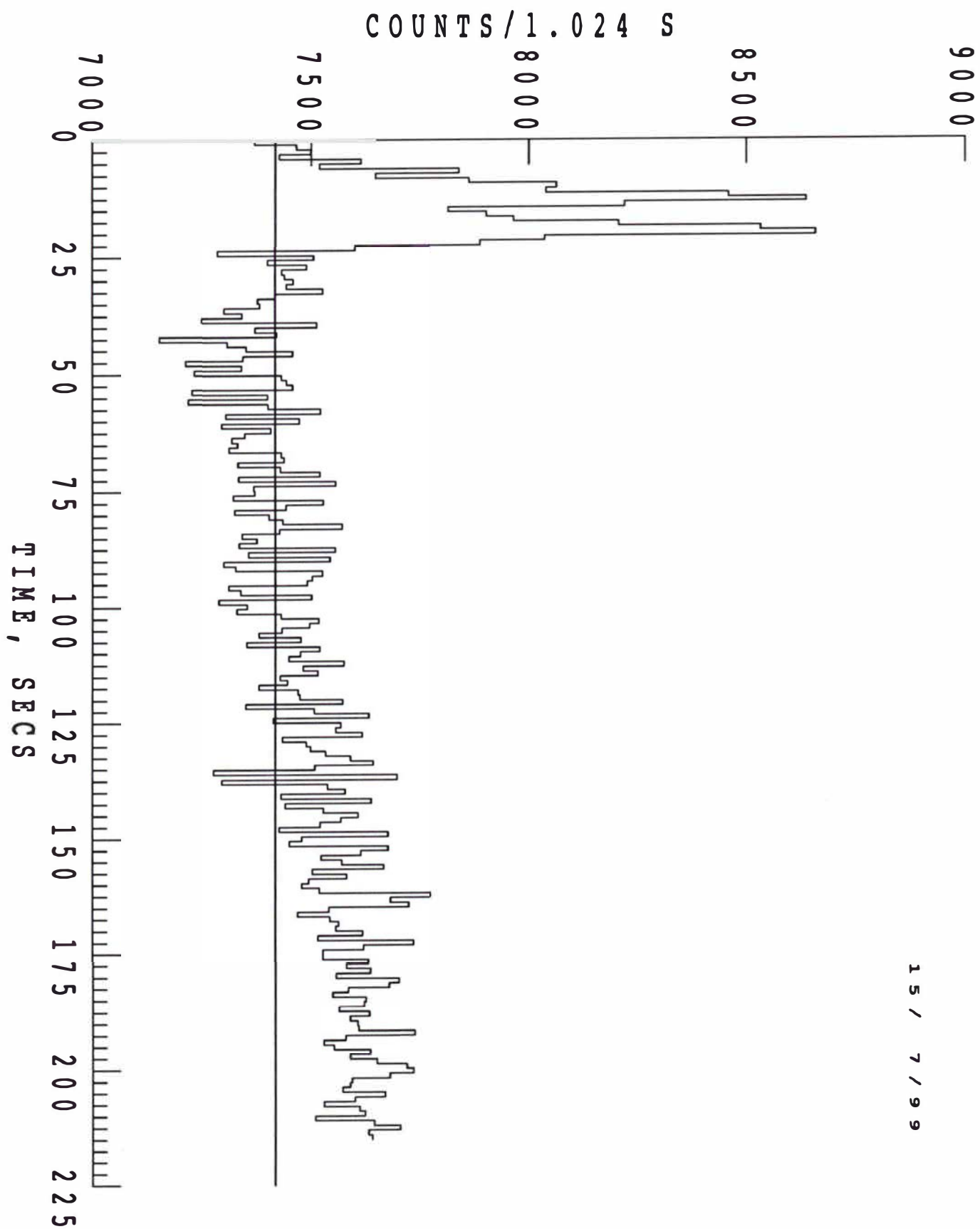
LOCATION: ZENITH=72.9 AZIMUTH=262.4 ERROR=3.1 DEGREES

COMMENTS:

GRB. COMPLEX, DUR. APPROX. 65 S, STARTS AT T-50 S, MAX. AT T. NOT VISIBLE ABOVE 300 KEV. CYGX-1 RISE AT T-60 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7654	990715	11374	45786	3500	229	+20	65

BACODINE 7654 15/07/99 45774.585
25- 100 keV



BATSE BURST# 7654

ULYSSES RT

21 / 7 / 99

15 / 7 / 99 45000.480 s

0.500 S INTERVALS REGROUPED BY 2

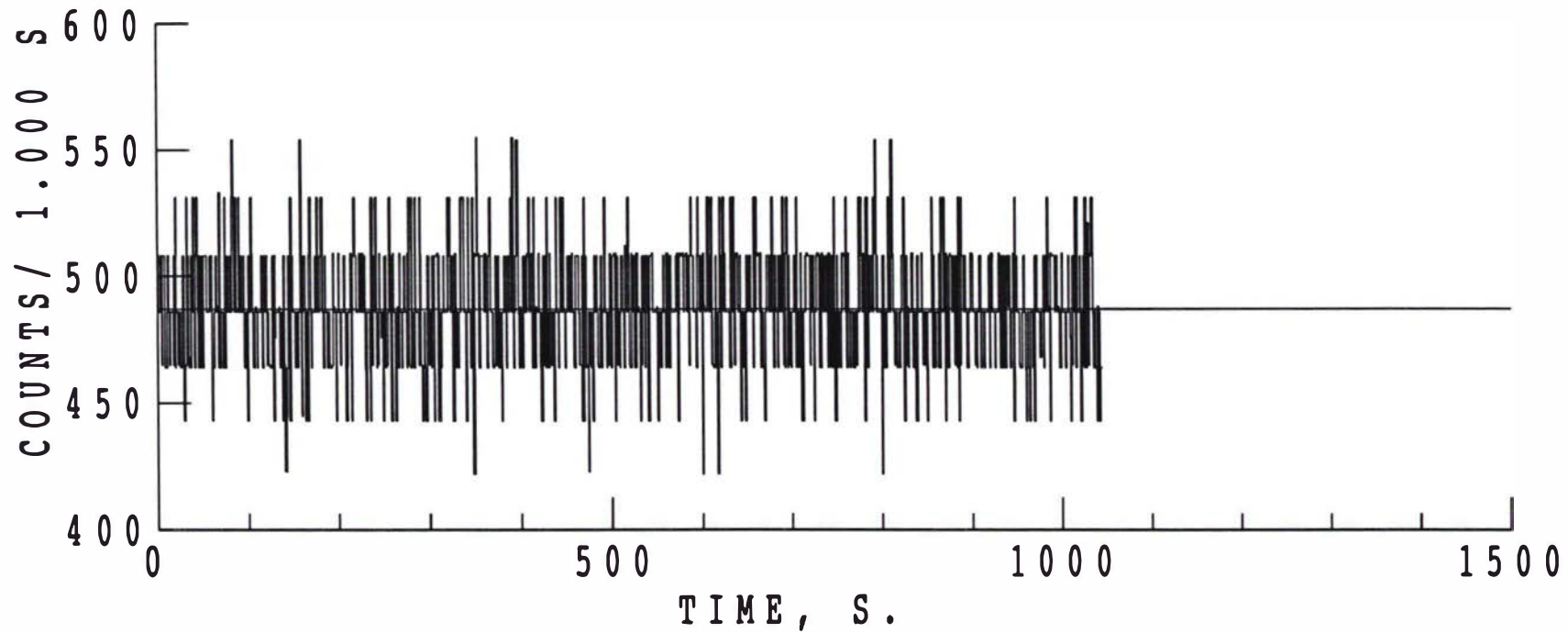
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From khurley@sunspot.ssl.berkeley.edu Thu Jul 22 10:24 PDT 1999

Date: Thu, 22 Jul 1999 10:36:58 -0700

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,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@milkyway.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, feroci@saturn.ias.rm.cnr.it,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov

Subject: GRB990715, 990718

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
JULY 15 1999 15:16*	weak, 32 ms long	2700
JULY 18 1999 00:37*	weak, 32 ms long	2700

*looks like an SGR, but which one?

Were these events detected by anyone else?

CC: ulyssesbursts alias list

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

From "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV Mon Aug 2 09:03 PDT 1999
Date: Mon, 2 Aug 1999 12:04:00 -0400
From: "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV
To: khurley@ssl.berkeley.edu
Vmsmail-To: LHEAVX::SMTP%"khurley@ssl.berkeley.edu"
x-Vmsmail-Cc: BUTTERWORTH
Subject: RE: GRB990715, 990718

Kevin,

Konus didn't see these either.

Paul.

KONUS

21 / 01 / 00

ULYSSES RT

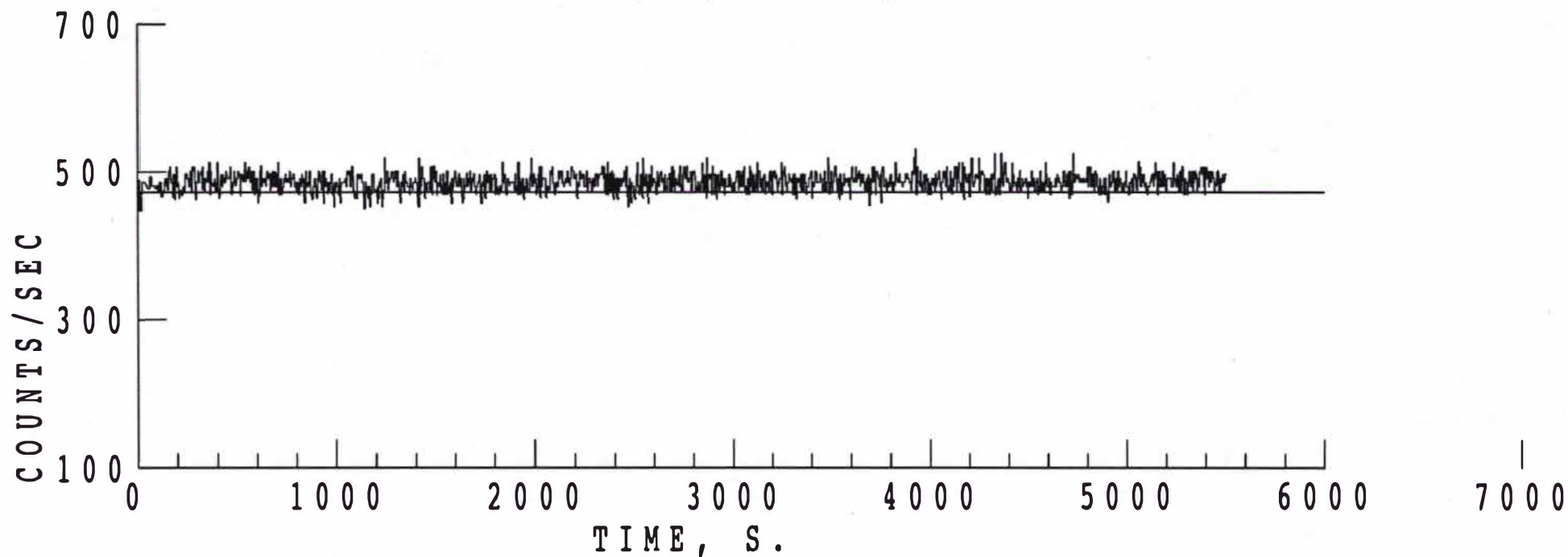
15 / 07 / 99 59400.625 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

| | | | |



From PETERSON@fender.msfc.nasa.gov Tue Jul 20 11:44 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 20 Jul 1999 13:49:39 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7655
Content-Length: 2545
Content-Type: text
X-Lines: 47
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7655
EVENT OF 1999 JUL 15 DAY OF YEAR=196
EVENT CROSSING TIME AT BATSE : 86375. S. OR 23:59:35.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 154.000 45.000
BATSE PEAK COUNTING RATE: 4100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 15/ 7/ 99 IS:
RA= 148.250 DEC= -8.443 DIST= 5.435 AU
BATSE-ULYSSES DISTANCE = 813140328. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1605.98 SECS.
CROSSING TIME AT ULYSSES IS 84769. S. OR 23:32:49 +/- 405.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 99 IS:
RA= 210.920 DEC= -13.988 DIST= 0.901 AU
MARS-BATSE DISTANCE = 134842576. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -91.56 SECS.
CROSSING TIME AT MARS IS 86283. S. OR 23:58:03 +/- 75.06 SECONDS

BATSE BURST TRIGGER

NO.: 07655

TIME: TJD=1374 SECONDS=86375

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=110 AZIMUTH=317.5 ERROR=2.33 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 35 S, RISE FASTER THAN DECAY. MARGINALLY ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7655	990715	11374	86375	4100	154	+45	35

Date: 21 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data *N/A*

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

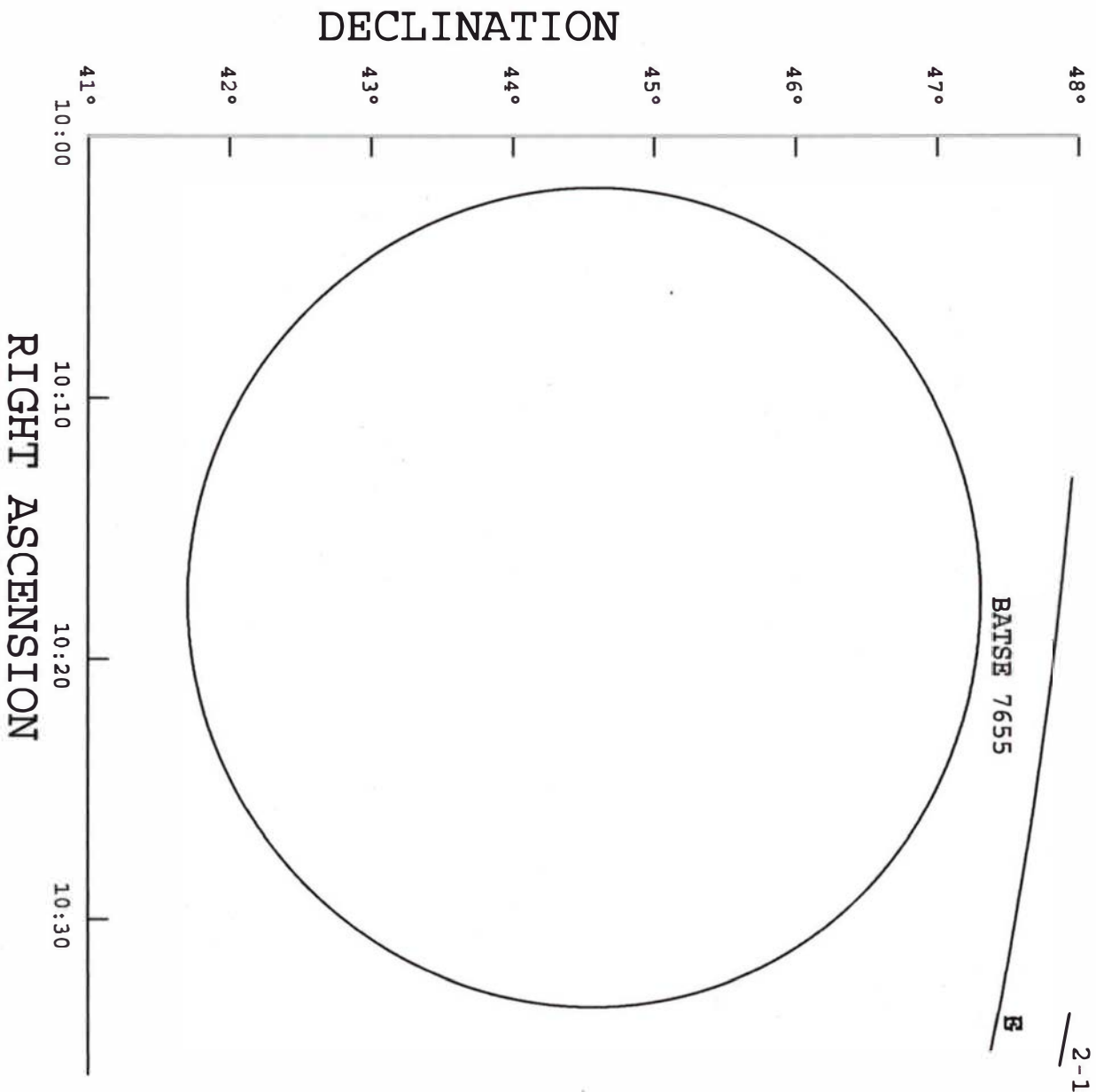
☒ BATSE >100 keV data used for NEAR correlation?

☒ ACCESS database updated?

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

EVENT OF JUL 15, 1999 23:59

21 / 2 / 0



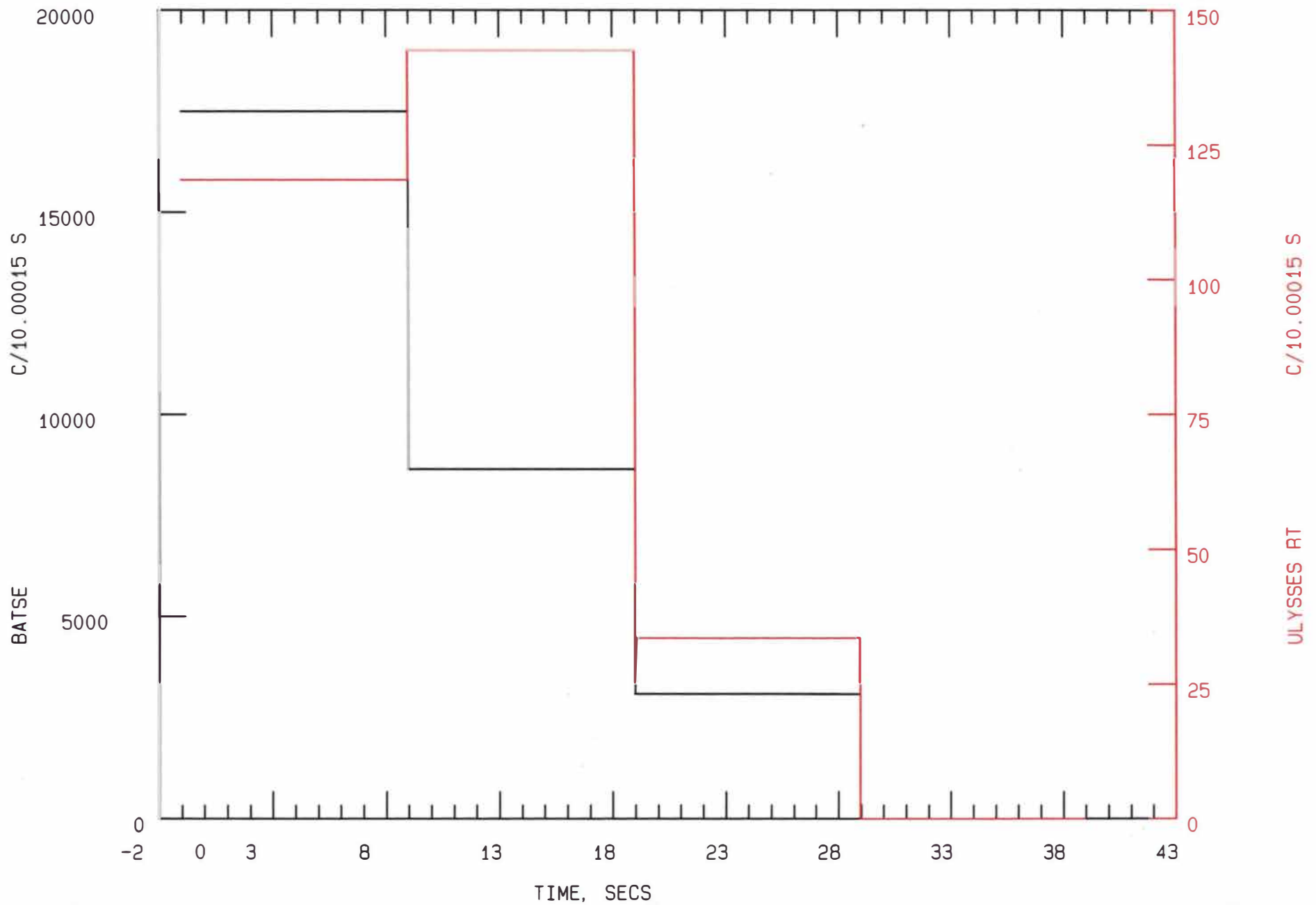
BATSE

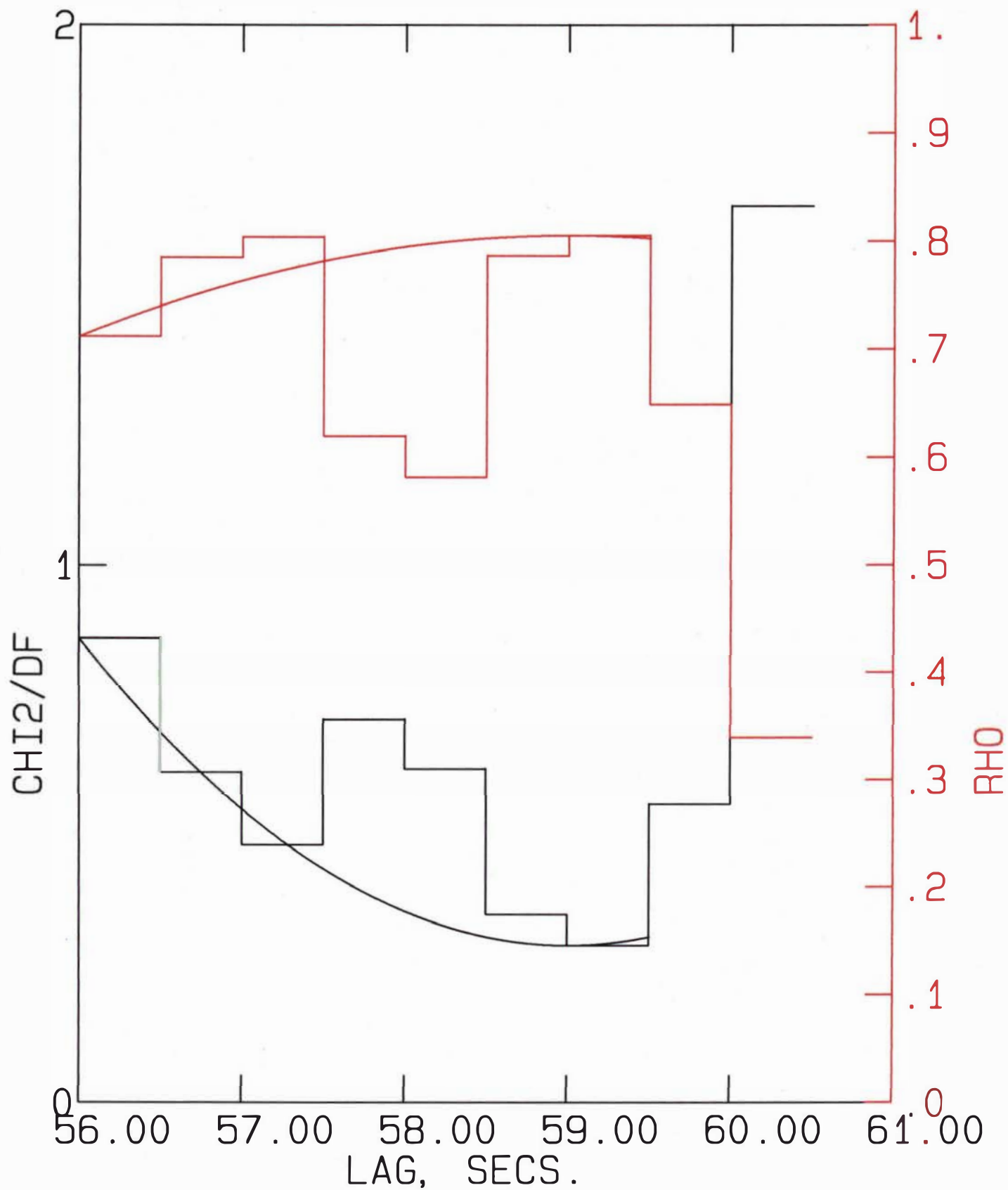
-ULYSSES RT CORRELATION

15/ 7/99

86375.161

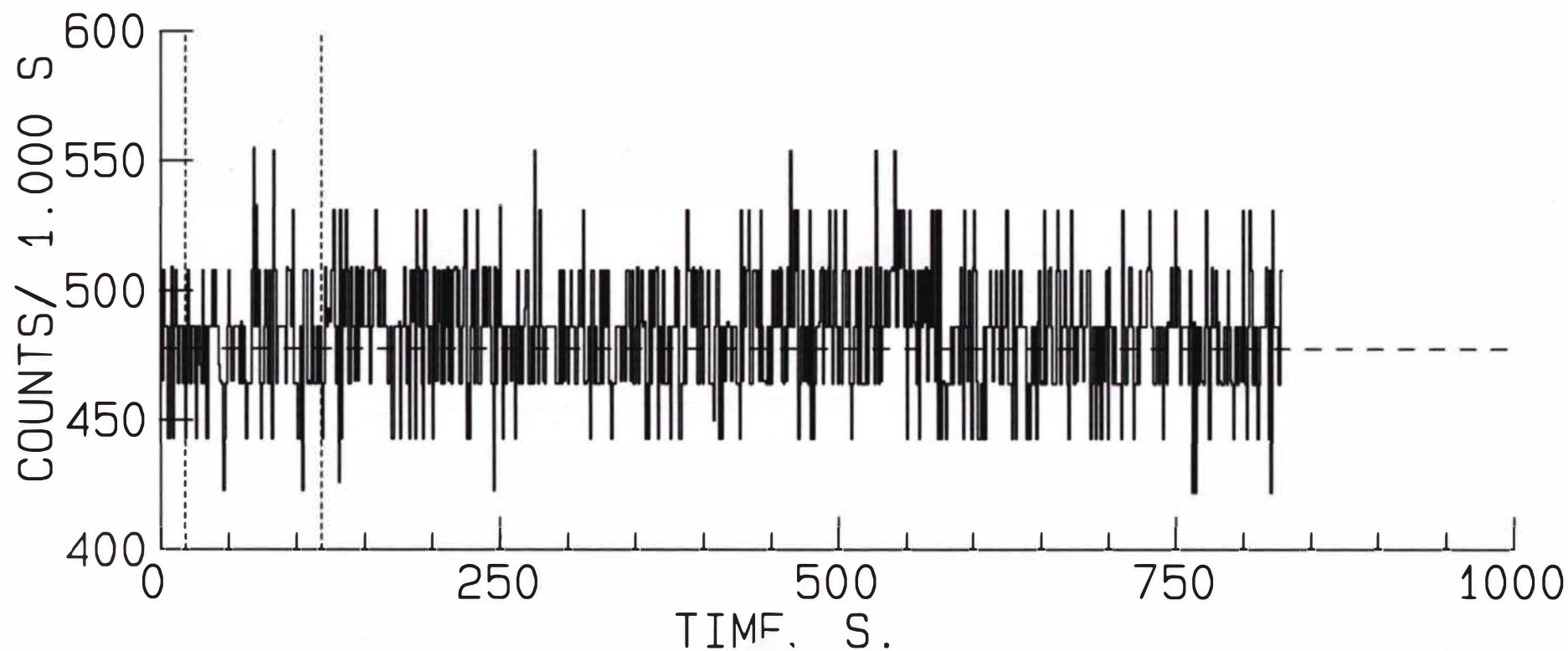
21/ 2/ 0





ULYSSES RT
15/ 7/99 84348.376 s
0.500 S INTERVALS REGROUPED BY 2
22- 150 keV

21 / 2 / 0



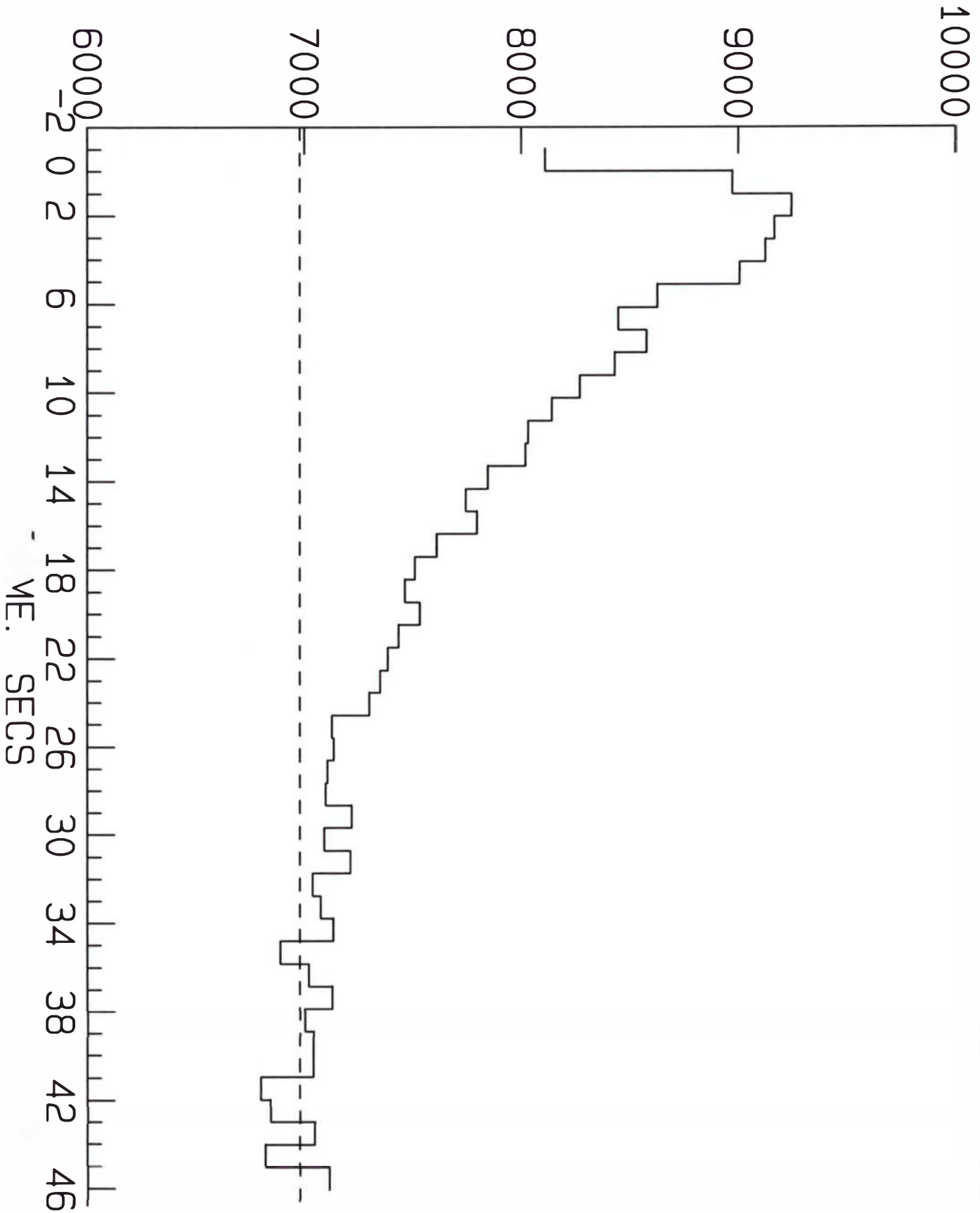
BATSE

15/07/99

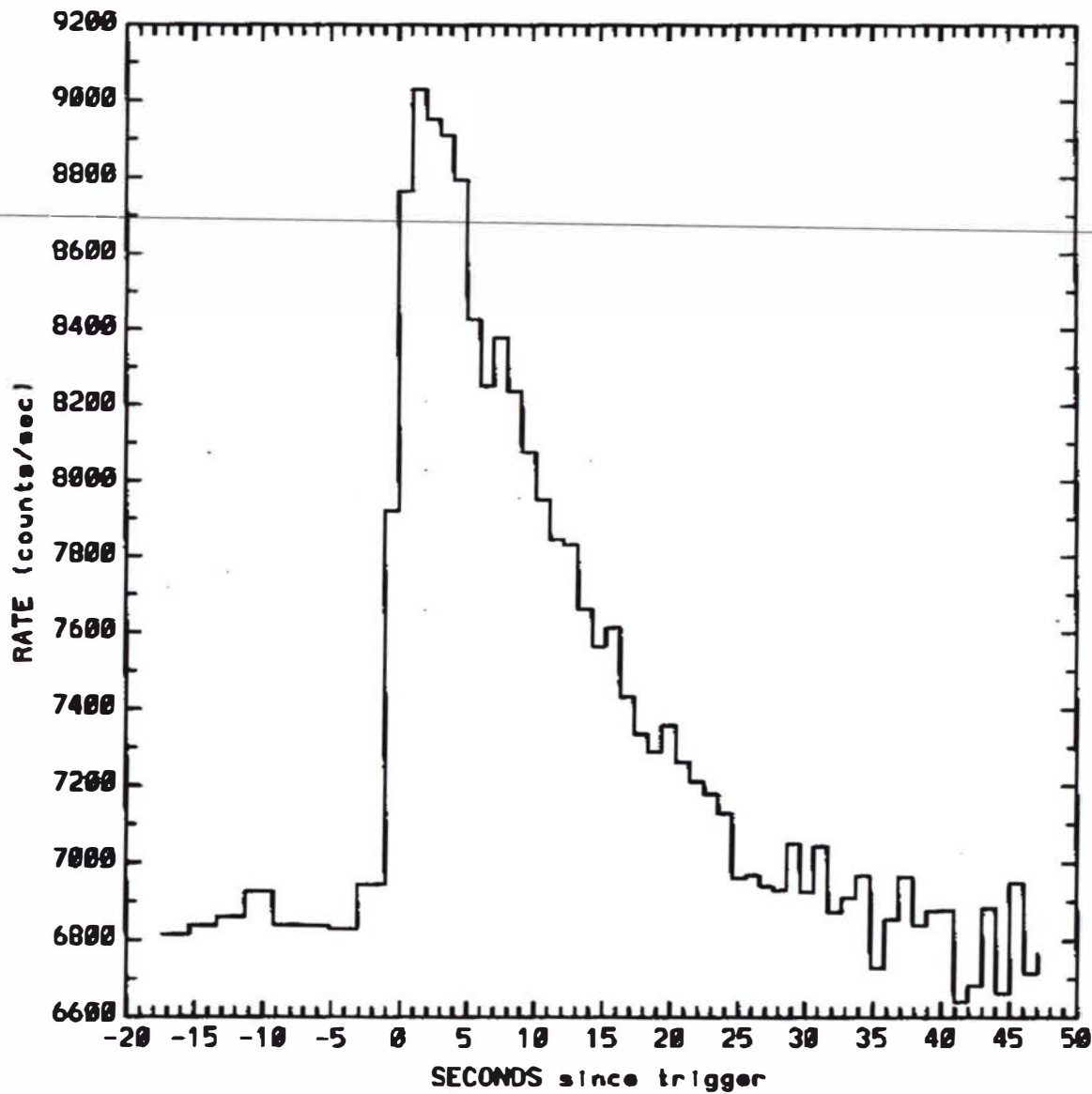
86375.161

25- 100 keV
COUNTS/1.024 S

30 / 7 / 99



DISCLB Data for K. Hurley, No. 7655



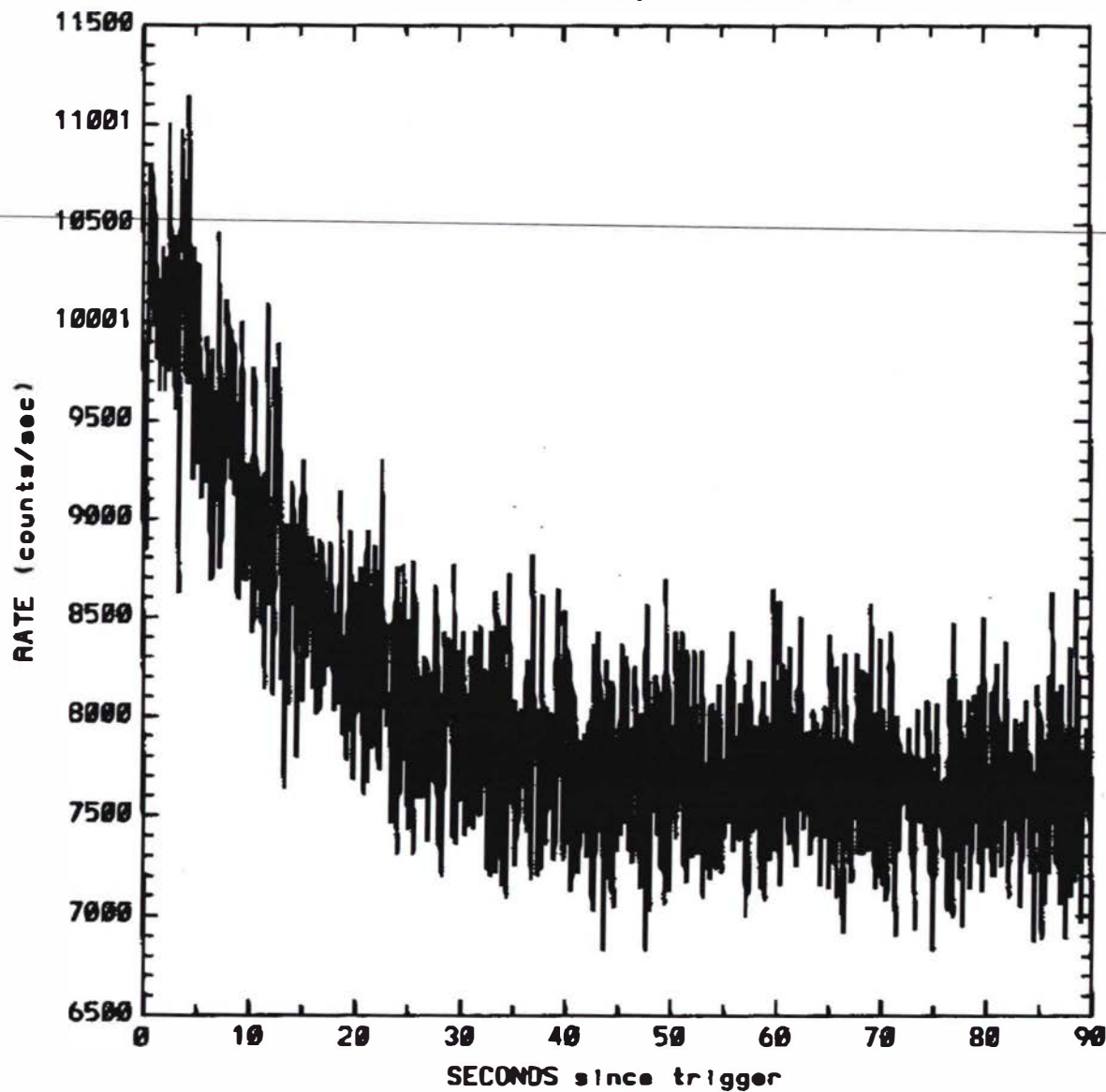
29-JUL-1999 10:47:58

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

Trigger # : 7655

Trigger Time:
11374 / 86375.161Burst Data Type:
DISCLBDeadtime
Corrected: NBackground Data
Type: NoneMinimum Integ. Time:
1.824 secondsDetectors (7..0):
---32---Discriminators:
(1..2)Quality Mask:
001SP1

MER Data for K. Hurley, No. 7655



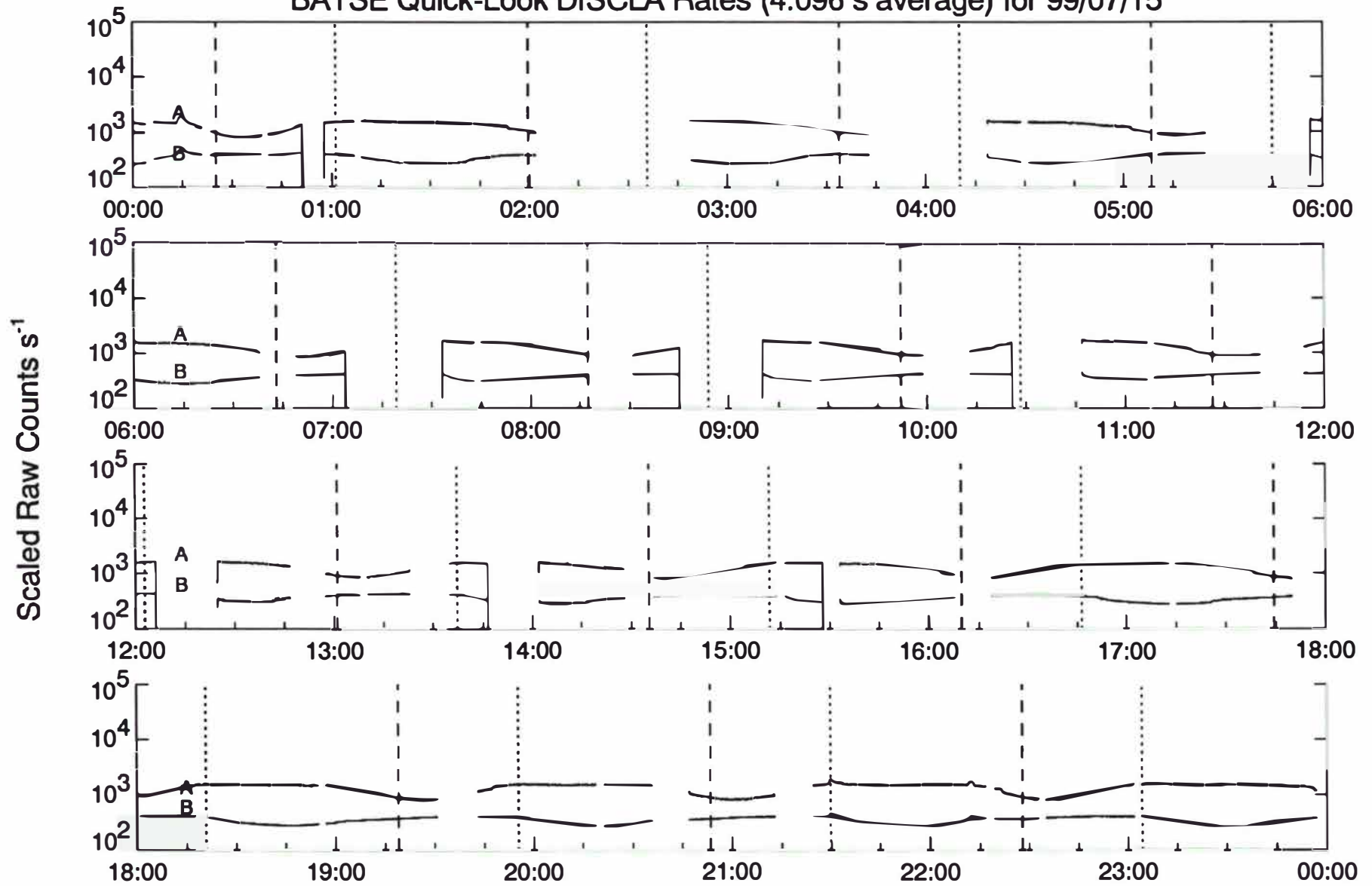
29-JUL-1999 10:47.11

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7655

Trigger Time:
11374 / 86375.161Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
---32---Channels:
(8 - 6)Quality Mask:
BOTSP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/15

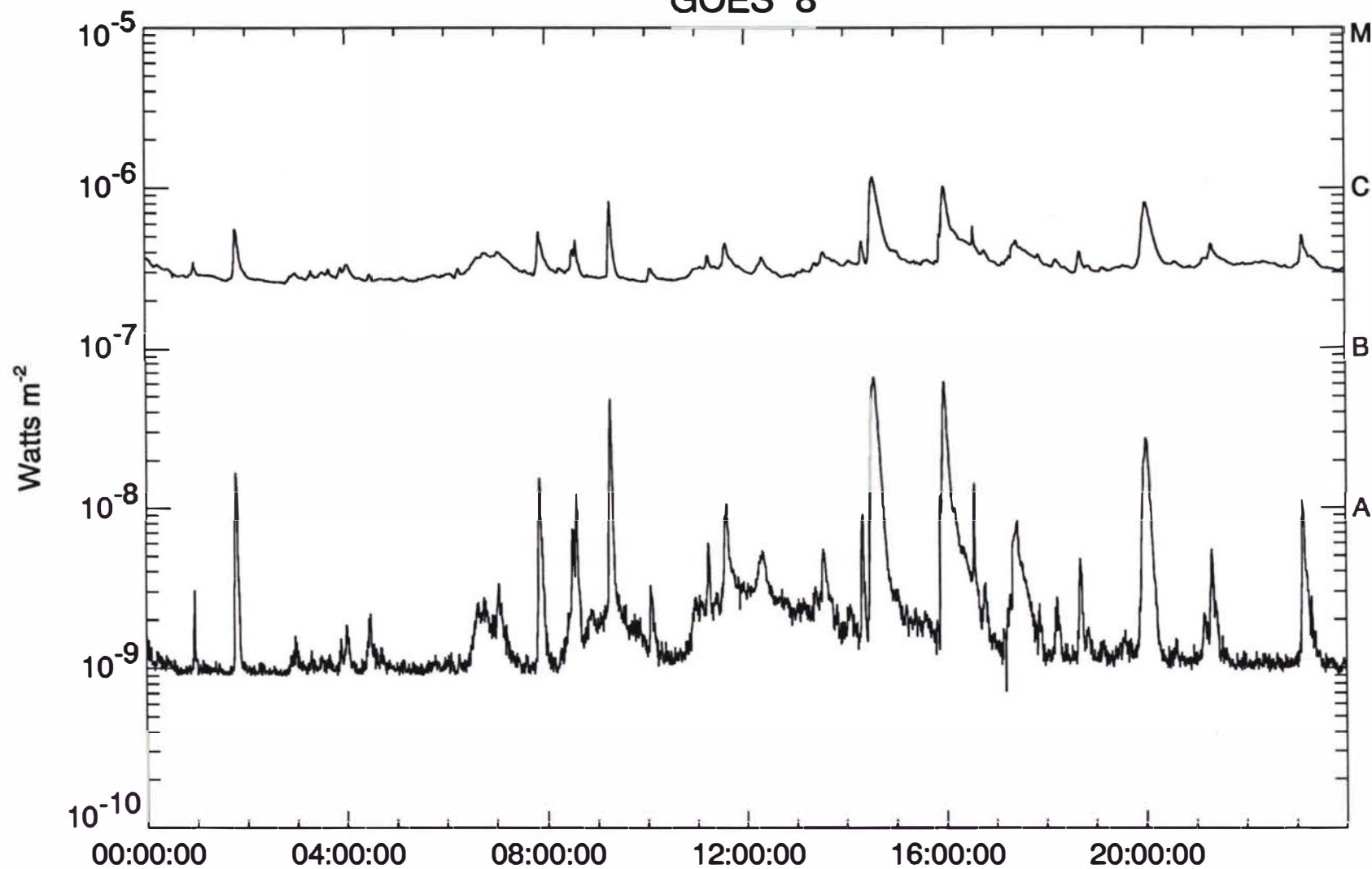


Current Time: 99/07/19, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/15, 0000:00

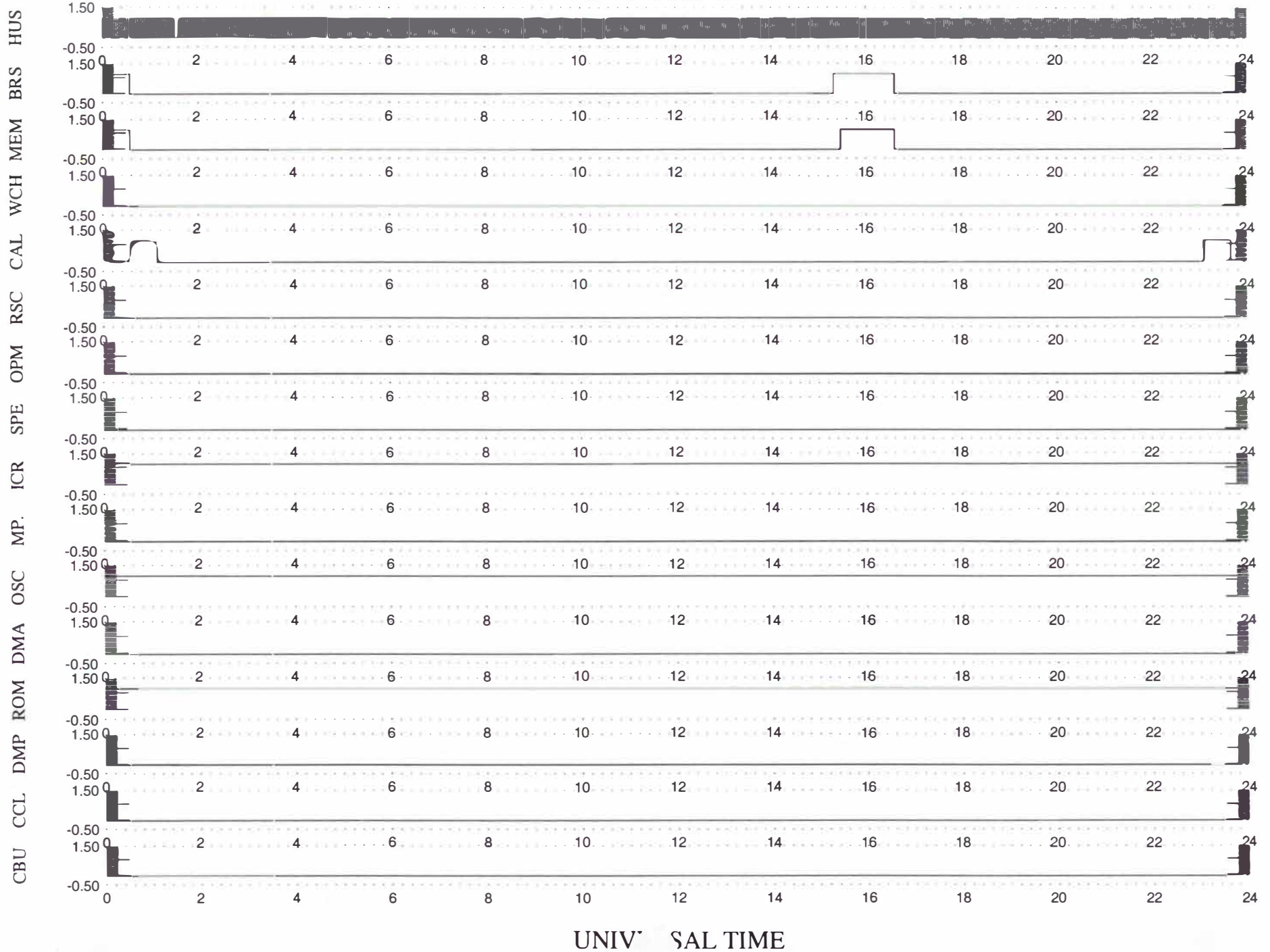
Plot created: 99/07/19, 1011

Channel

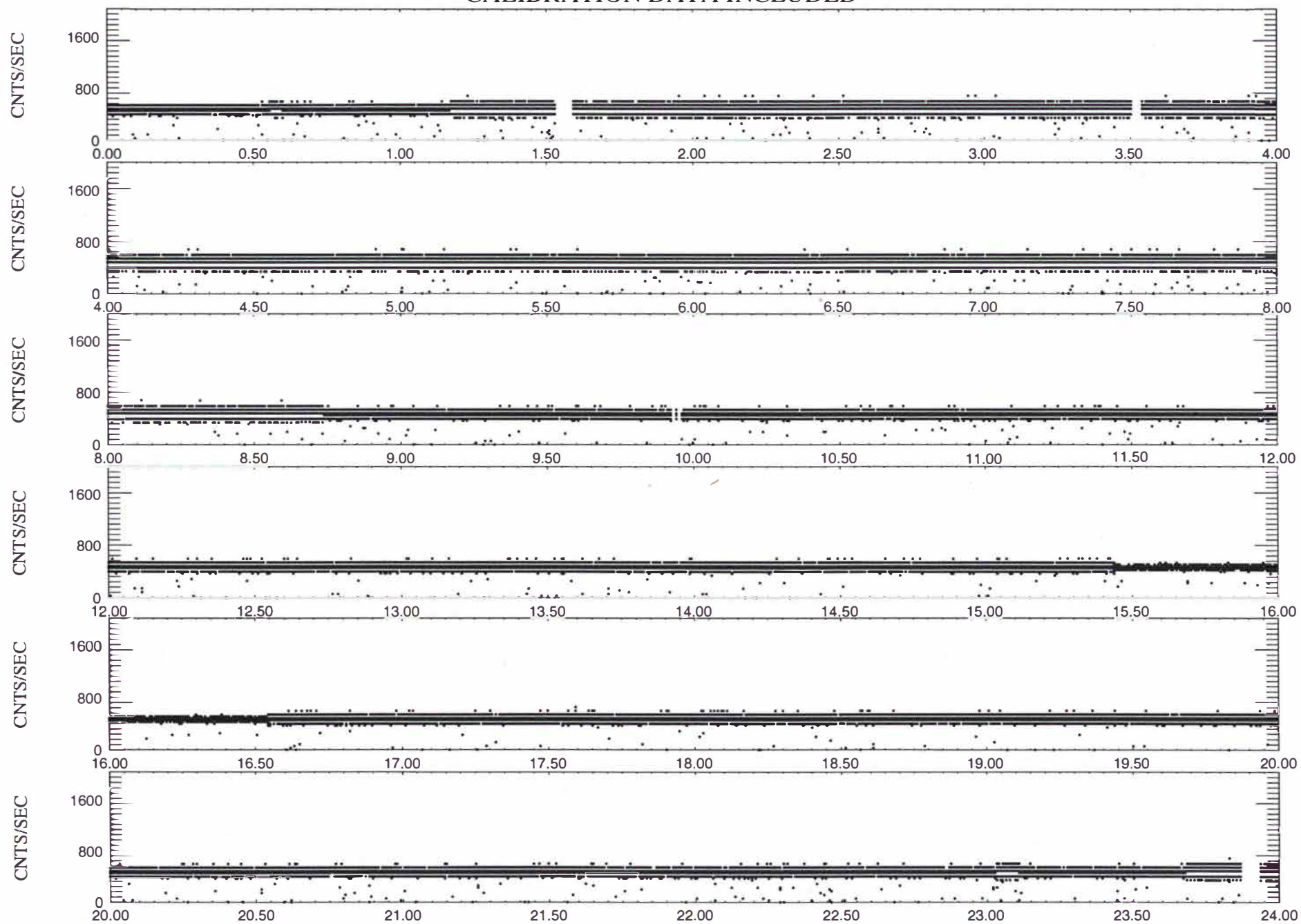
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 9

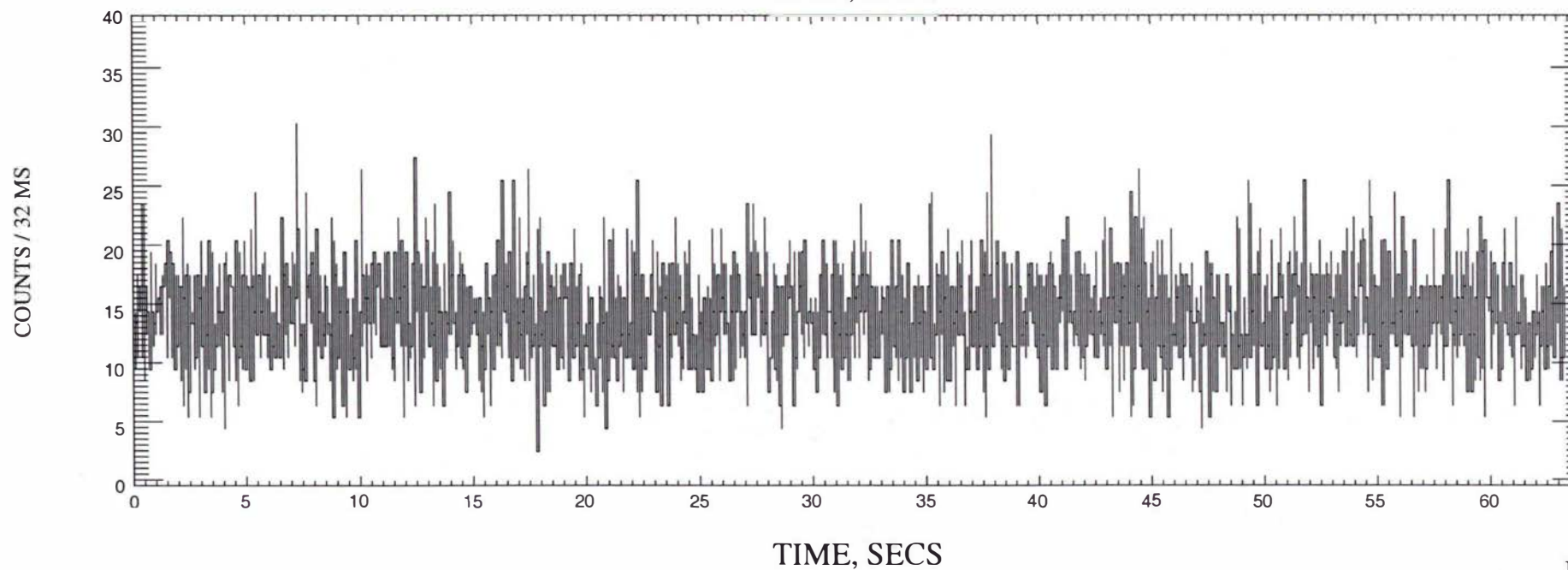
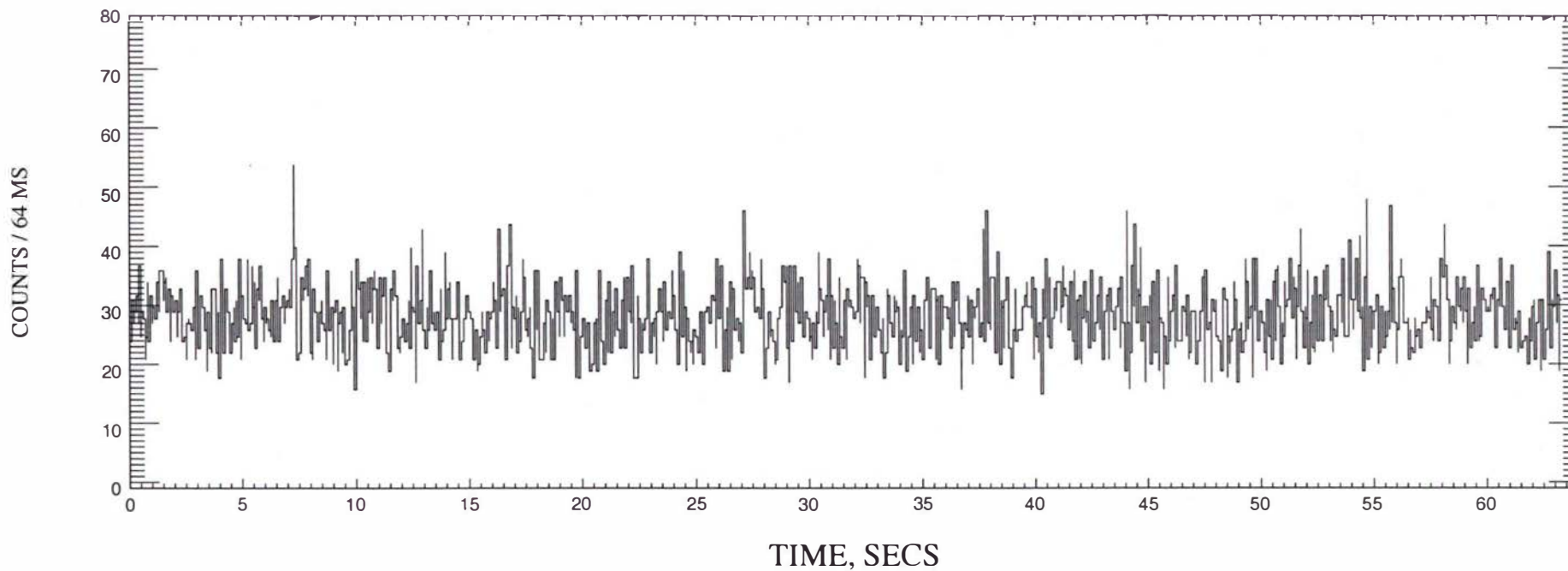


CALIBRATION DATA INCLUDED

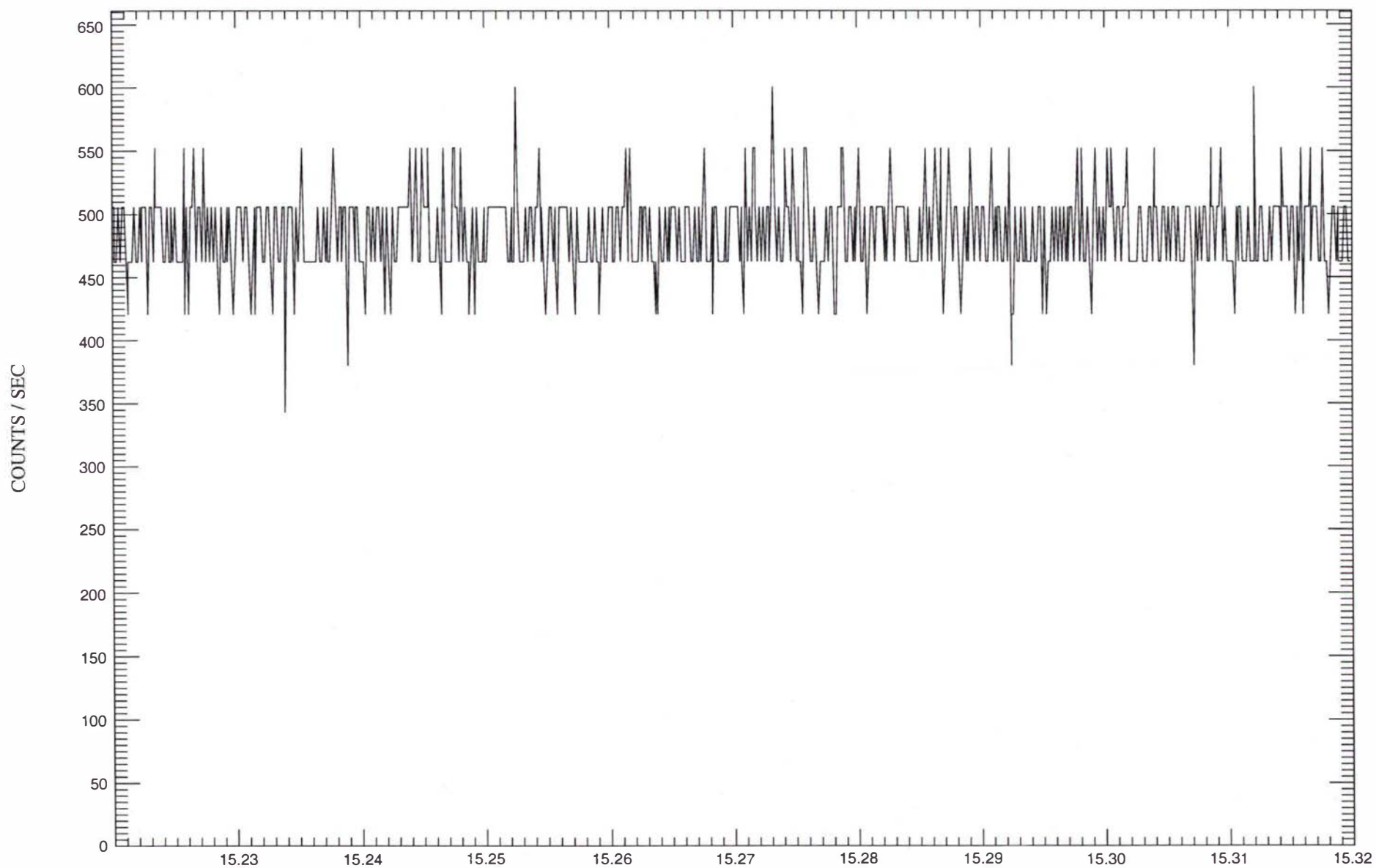


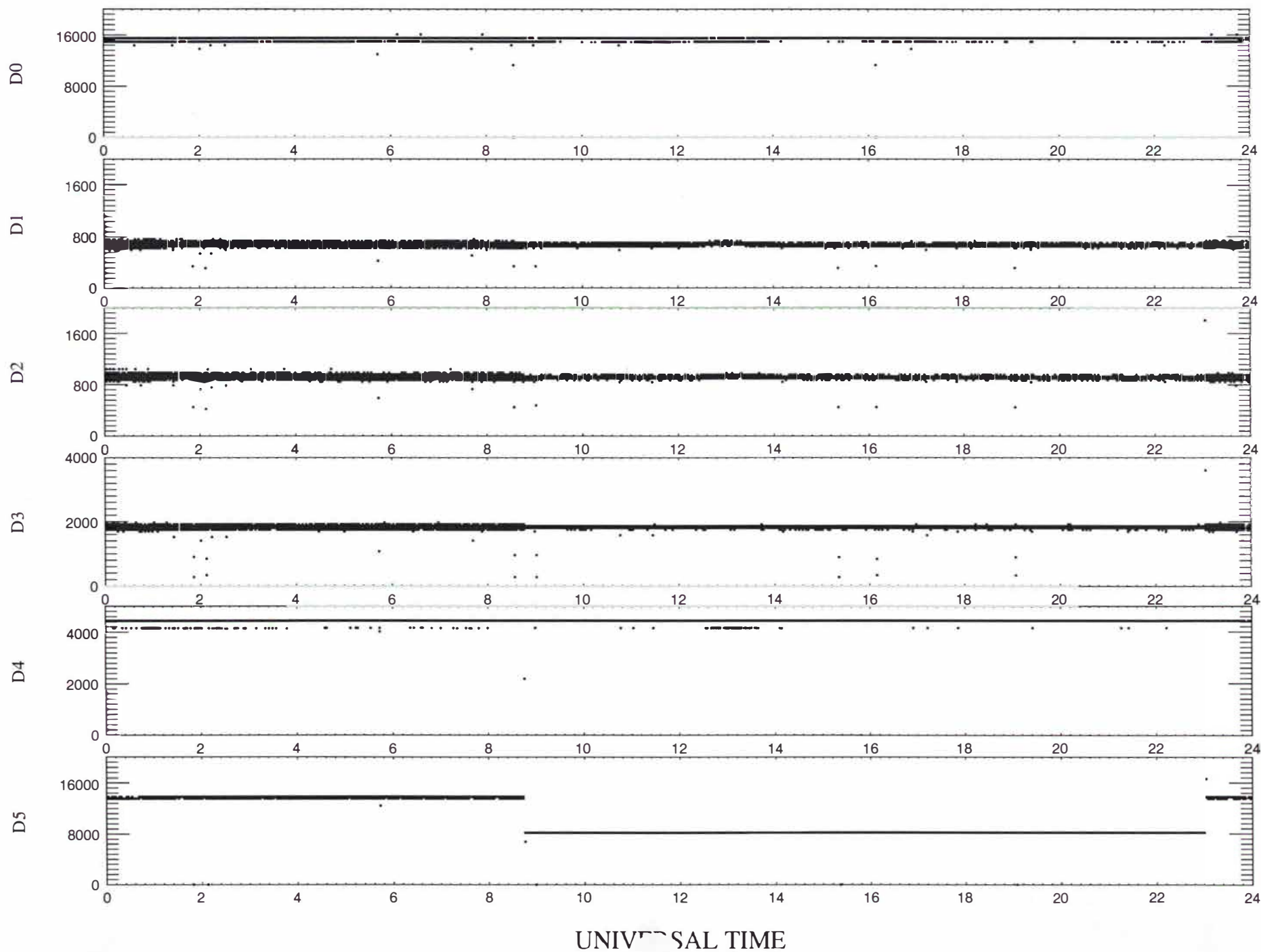
UNIVERSAL TIME

Burst Counter 9 at UT=15.273456314935 h=54984.443 s 15:16:24.443



CALIBRATION DATA INCLUDED





From PETERSON@fender.msfc.nasa.gov Wed Jul 28 13:36 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 28 Jul 1999 15:42:32 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7656

BATSEARCH PROGRAM

BATSE BURST # 7656
EVENT OF 1999 JUL 16 DAY OF YEAR=197
EVENT CROSSING TIME AT BATSE : 14401. S. OR 04:00:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 283.000 -54.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 7/ 99 IS:
RA= 148.271 DEC= -8.454 DIST= 5.437 AU
BATSE-ULYSSES DISTANCE = 813311111. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 787.36 SECS.
CROSSING TIME AT ULYSSES IS 15188. S. OR 04:13:08 +/- 512.69 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 7/ 99 IS:
RA= 211.309 DEC= -14.142 DIST= 0.907 AU
MARS-BATSE DISTANCE = 135759152. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -170.59 SECS.
CROSSING TIME AT MARS IS 14230. S. OR 03:57:10 +/- 70.24 SECONDS

BATSE BURST TRIGGER

NO.: 7656

TIME: TJD=1375 SECONDS=14401

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=39.2 AZIMUTH=156.4 ERROR=4.822 DEGREES

COMMENTS:

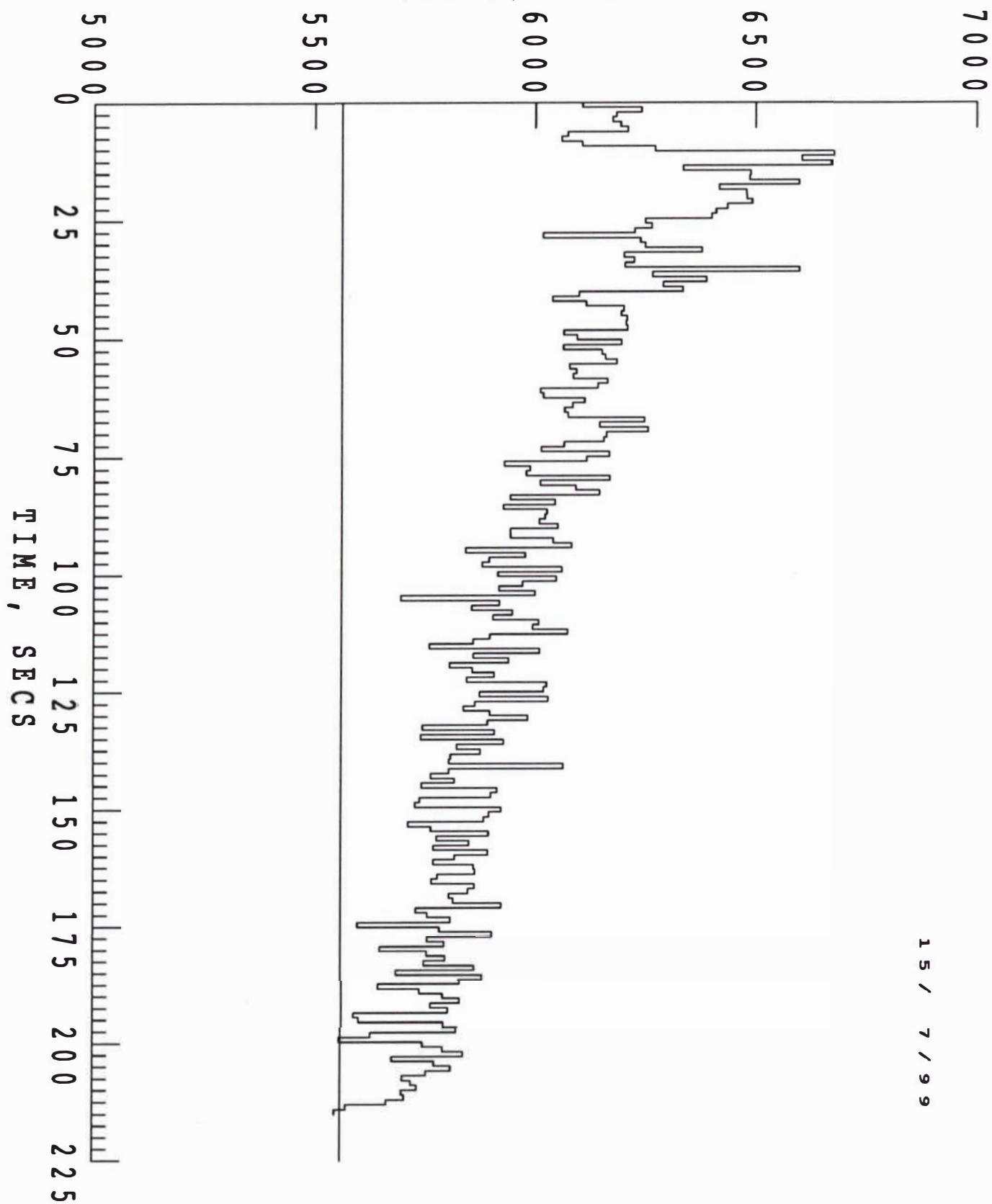
GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 15 S. VISIBLE ABOVE 300 KEV.
PULSE IN DET. 4 AT APPROX. T+24 S, PROBABLY NOT PART OF THE BURST.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7656	990716	11375	14401	6000	283	-54	15

BACODINE 7656 16/07/99 14390.009

25 - 100 keV

COUNTS/1.024 S



BATSE BURST# 7656

ULYSSES RT

28 / 7 / 99

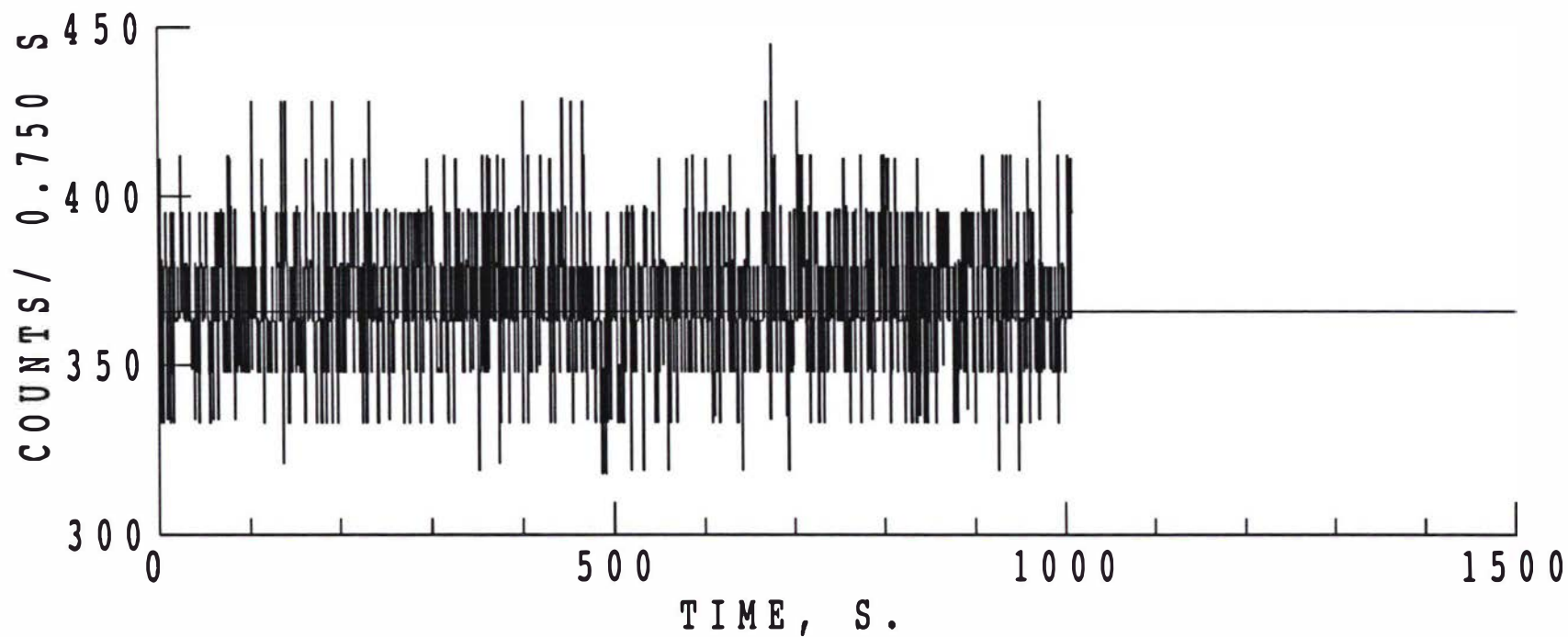
16 / 7 / 99 14688.047 s

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 PETERSON@fender.msfc.nasa.gov Tue Jul 20 11:46 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 20 Jul 1999 13:51:35 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7657
Content-Length: 2559
Content-Type: text
X-Lines: 48
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7657
EVENT OF 1999 JUL 16 DAY OF YEAR=197
EVENT CROSSING TIME AT BATSE : 23341. S. OR 06:29:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 337.000 -45.000
BATSE PEAK COUNTING RATE: 9400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 7/ 99 IS:
RA= 148.285 DEC= -8.461 DIST= 5.437 AU
BATSE-ULYSSES DISTANCE = 813416401. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 54.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1593.51 SECS.
CROSSING TIME AT ULYSSES IS 24935. S. OR 06:55:34 +/- 455.46 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 7/ 99 IS:
RA= 211.309 DEC= -14.142 DIST= 0.907 AU
MARS-BATSE DISTANCE = 135759152. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 102.92 SECS.
CROSSING TIME AT MARS IS 23444. S. OR 06:30:43 +/- 78.13 SECONDS

BATSE BURST TRIGGER

NO.: 7657

TIME: TJD=1375 SECONDS=23341

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=71.0 AZIMUTH=135.7 ERROR=1.077 DEGREES

COMMENTS:

GRB. MULTIPLE PULSES, DUR. APPROX. 60 S, STARTS AT APPROX. T-2 S, MAX AT
APPROX. T+42 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7657	990716	11375	23341	9400	337	-45	60

Date: 21 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

N/A

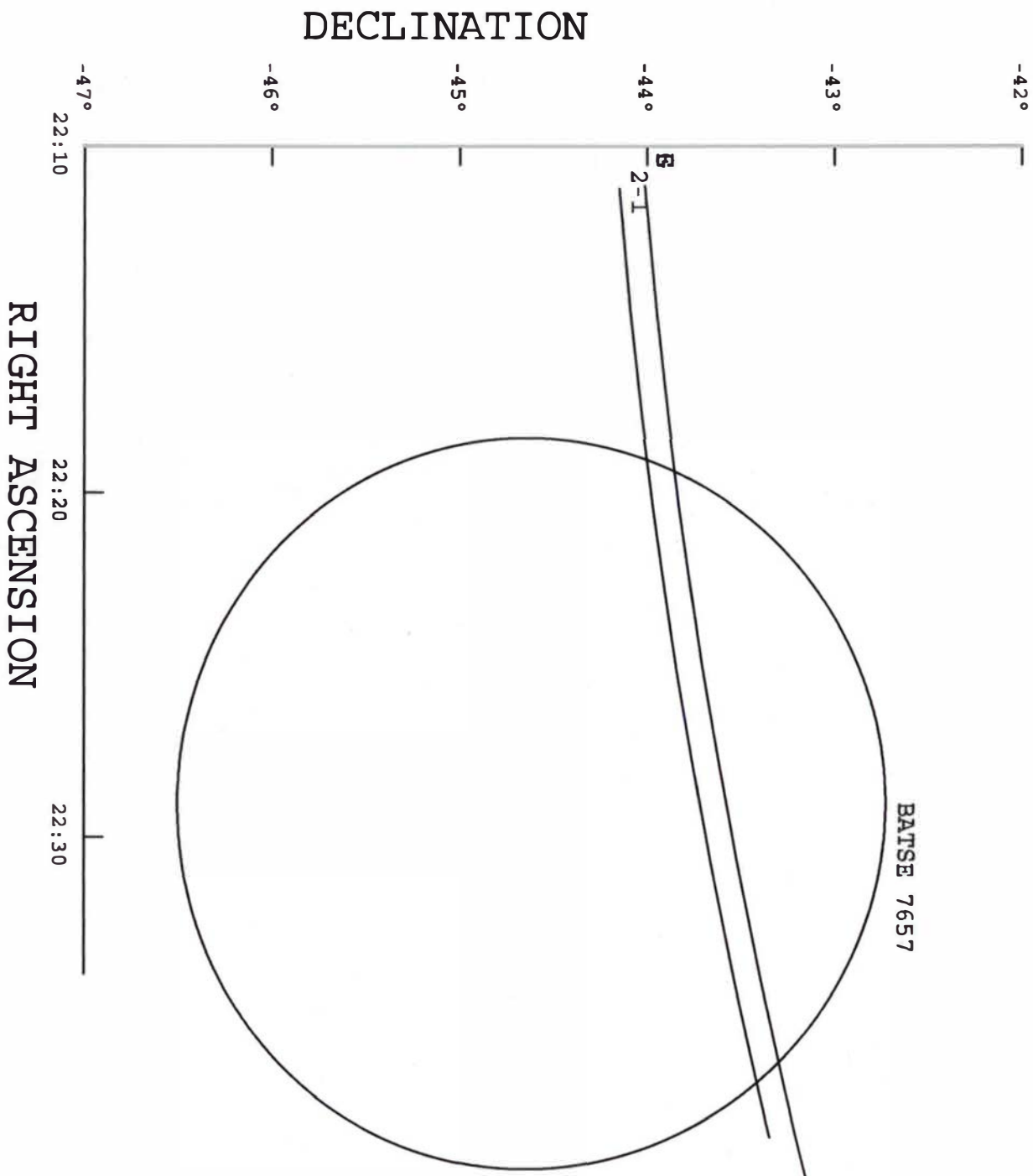
- ☐ Final, correct time used? (Files postmarked vwx@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

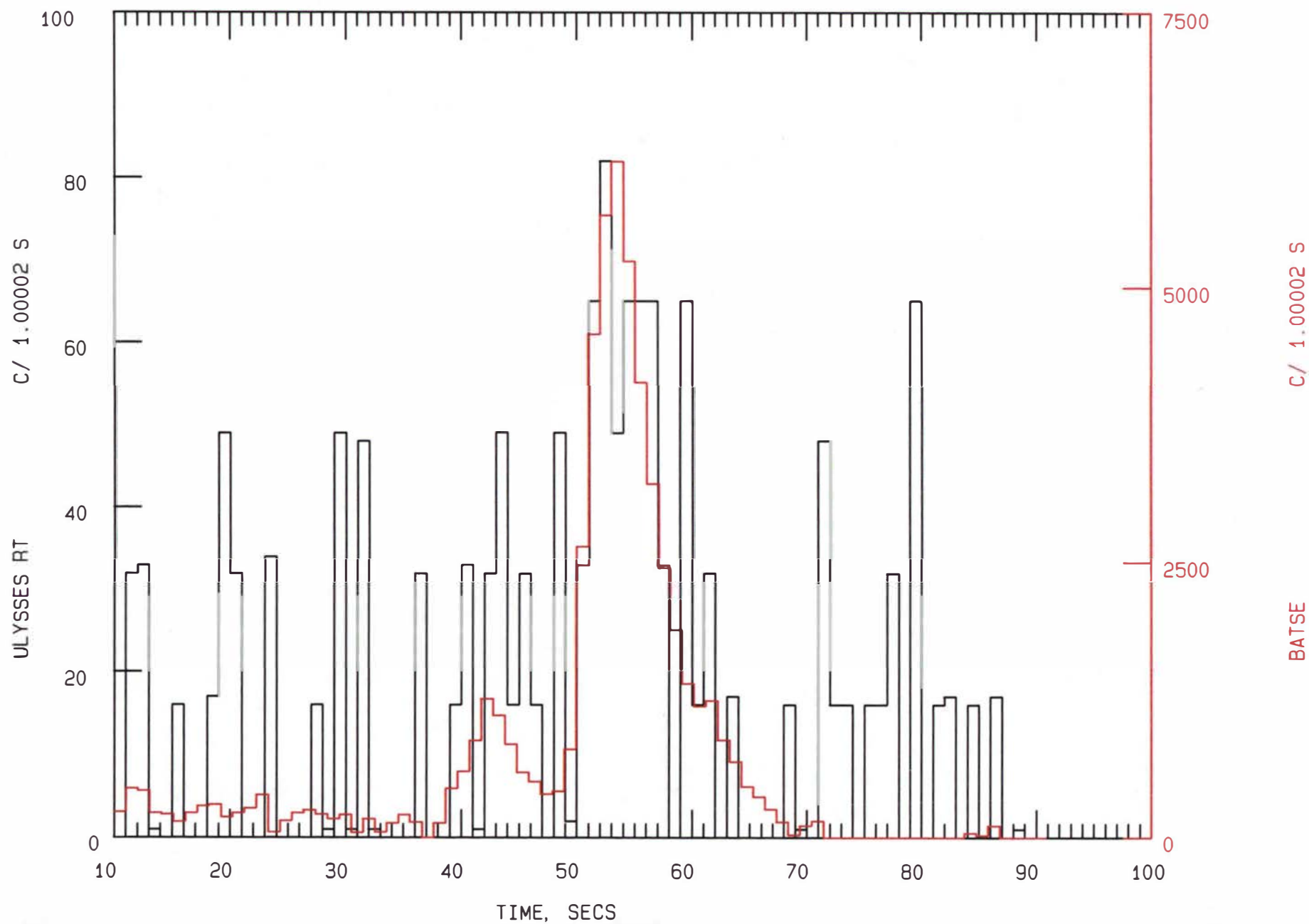
- ☒ ACCESS database updated?

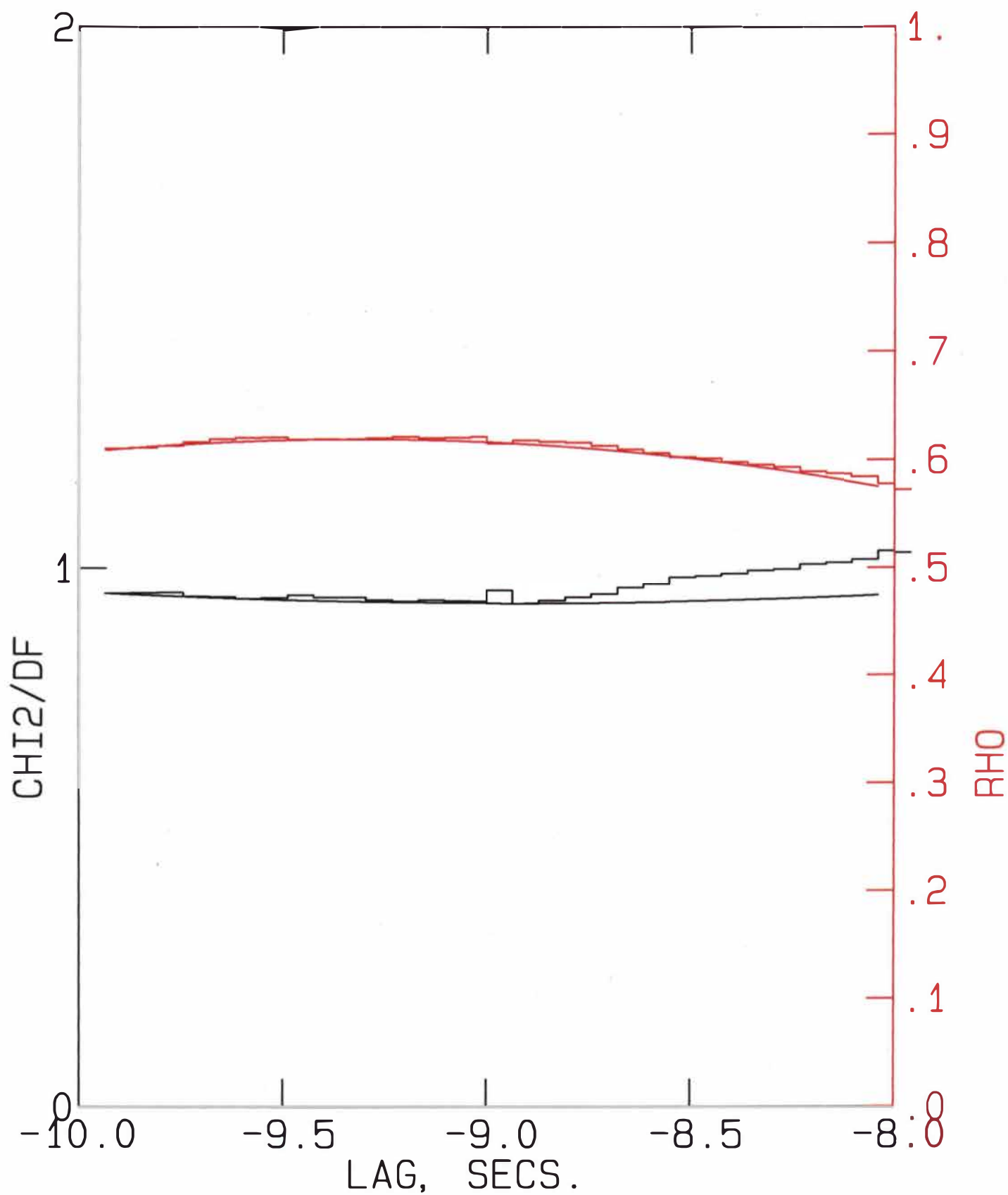
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 BATSE 2 ULYSSES

EVENT OF JUL 16, 1999 6:28

21 / 2 / 0

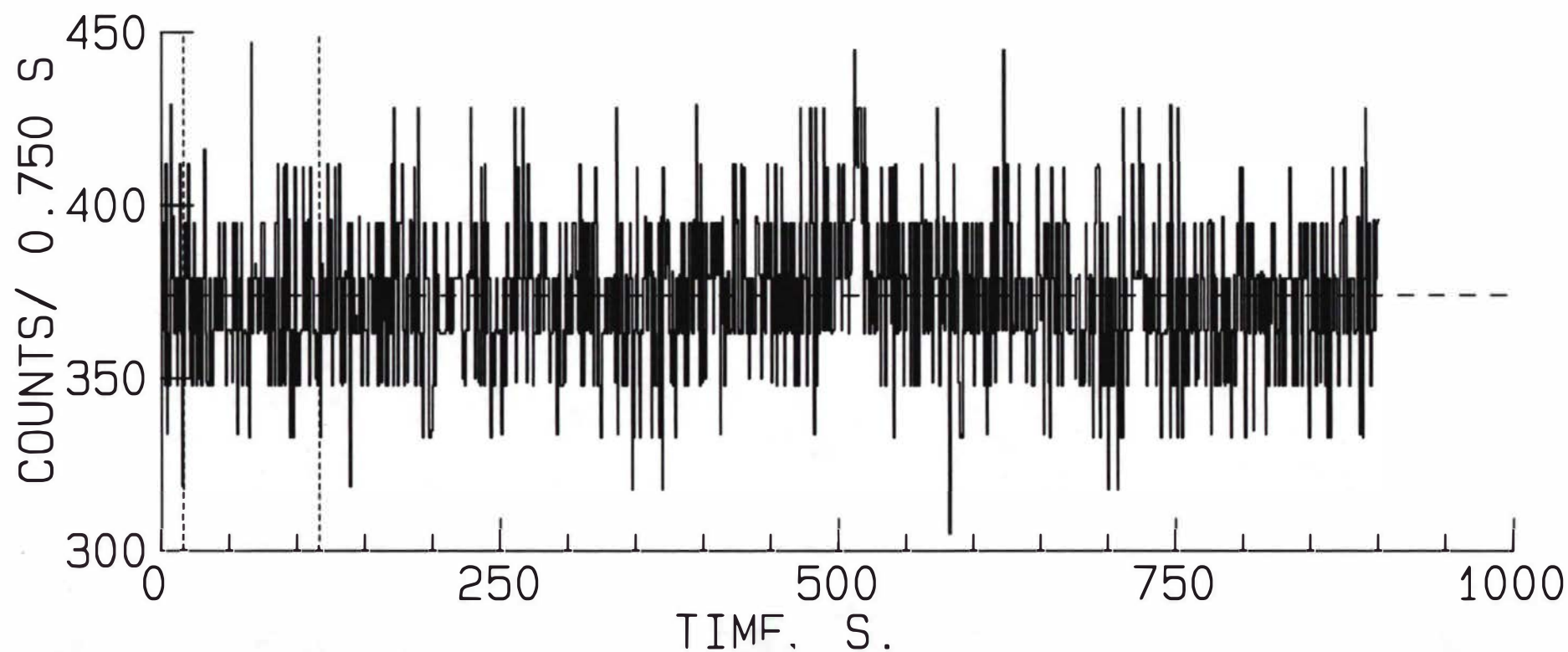






ULYSSES RT
16/ 7/99 24480.146 s
0.250 S INTERVALS REGROUPED BY 3
22- 150 keV

21 / 2 / 0



BATSE

16/07/99

23314.169

25- 100 keV

COUNTS/0.064 S

900

700

500

300

-3 0

13

29

ME.

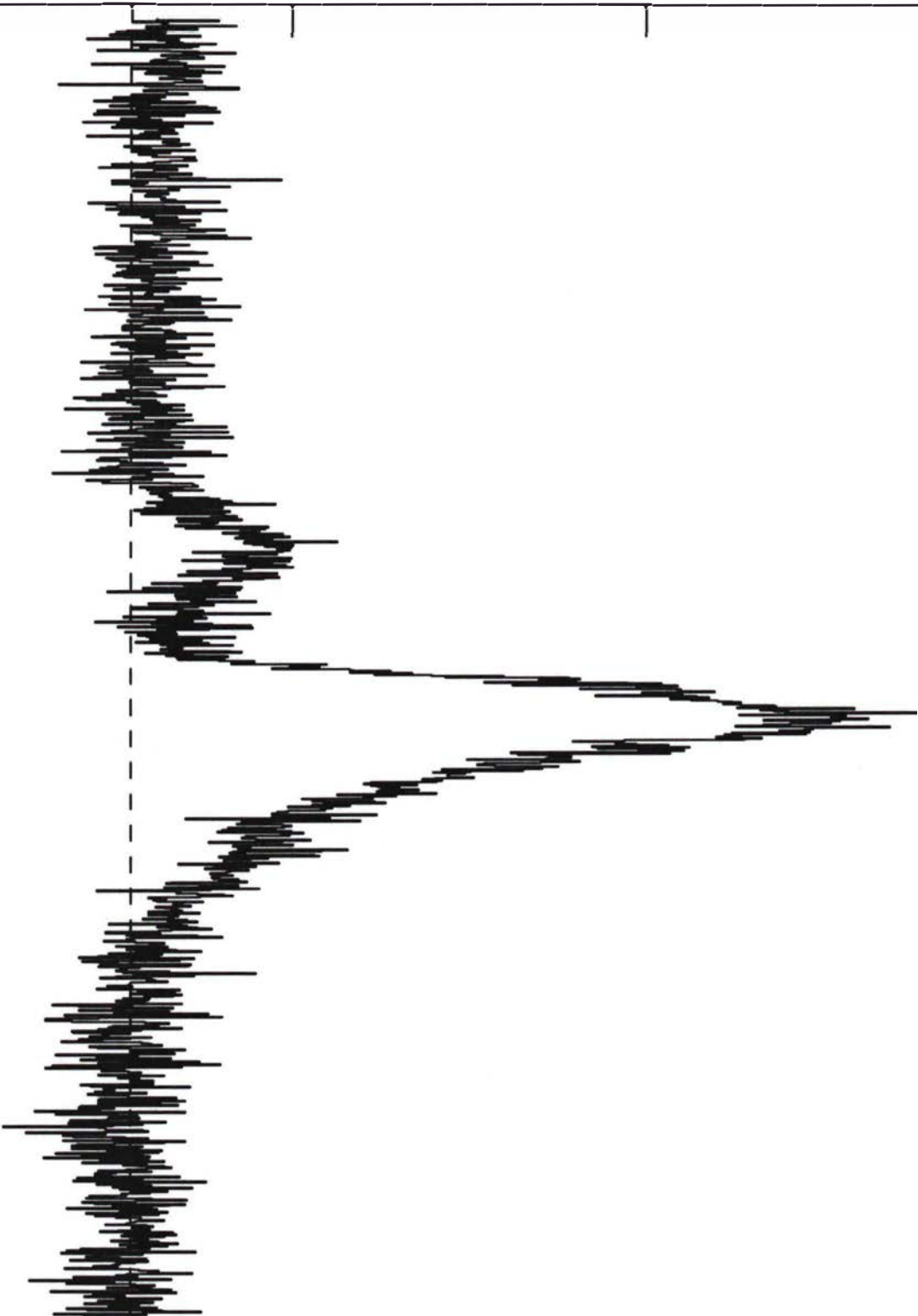
SECS

45

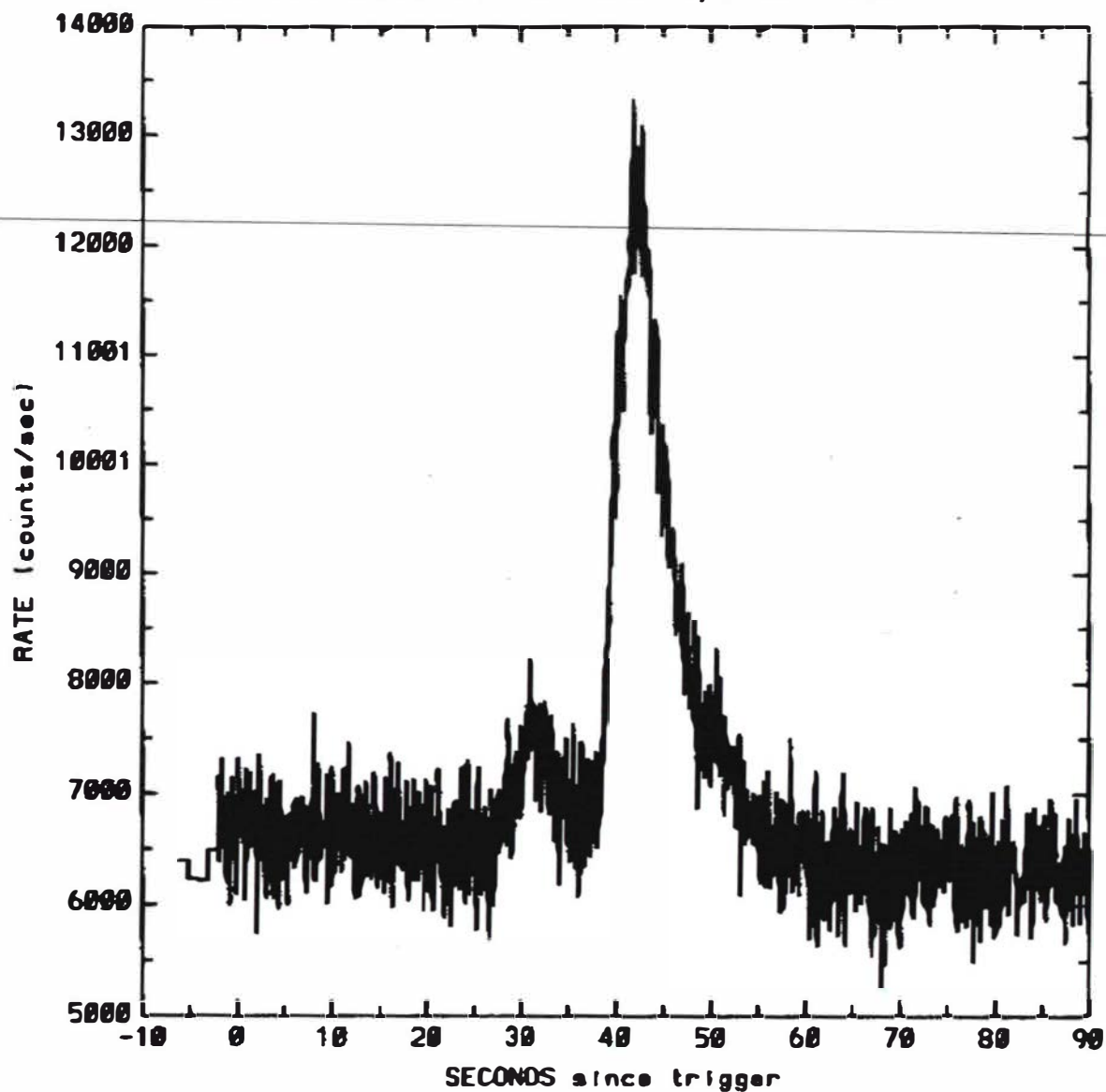
61

77

30 / 7 / 99



DISCSC Data for K. Hurley, No. 7657



29-JUL-1999 10:49:09

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7657

Trigger Time:
11375 / 23314.169Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.004 secondsDetectors (7..0):
--54--Discriminators:
(1, 2)Quality Mask:
BOTSP1

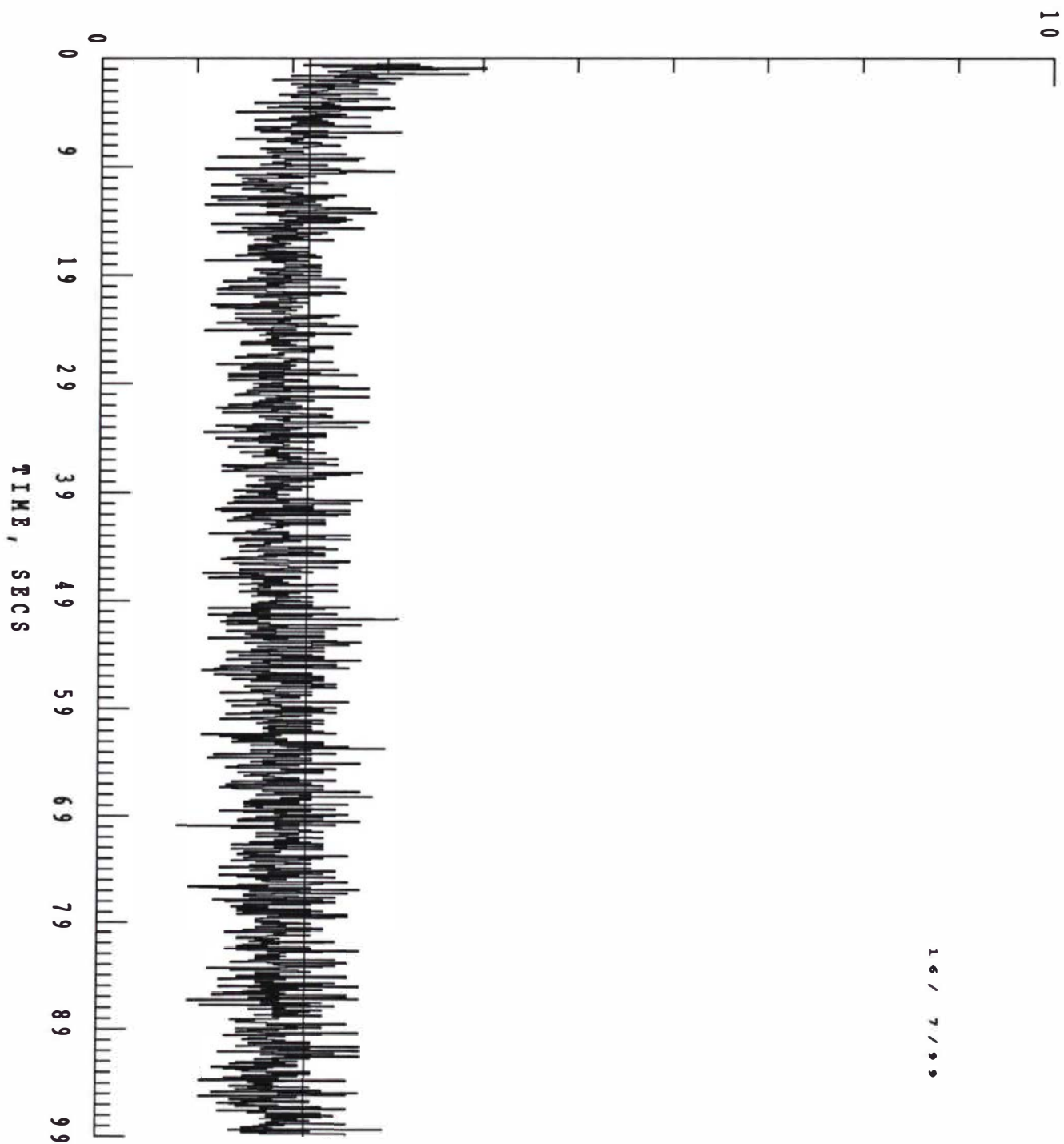
KONUS

16/07/99

23359.676

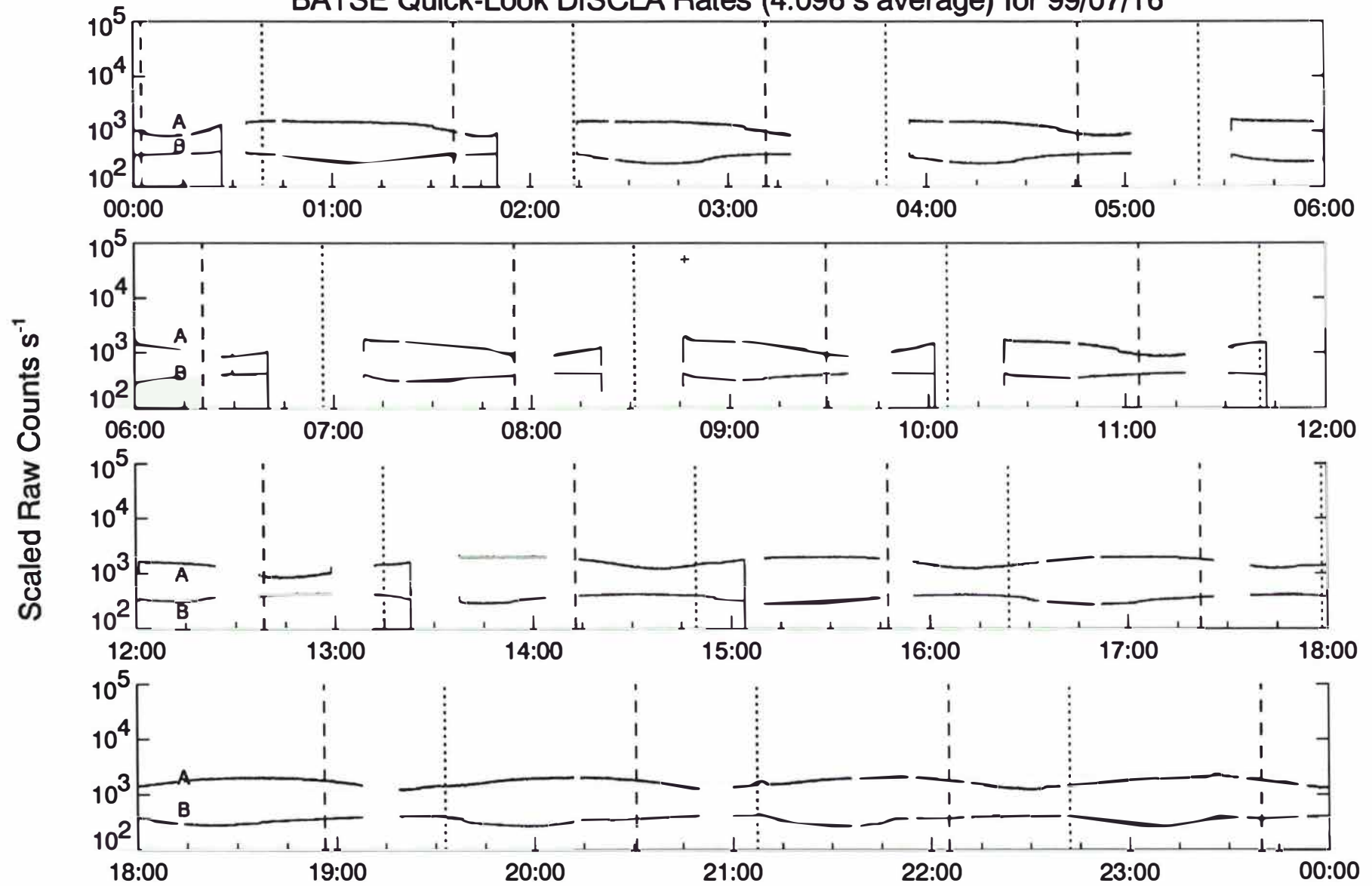
50 - 200 keV

COUNTS/0.064 S



16 / 7 / 99

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/16

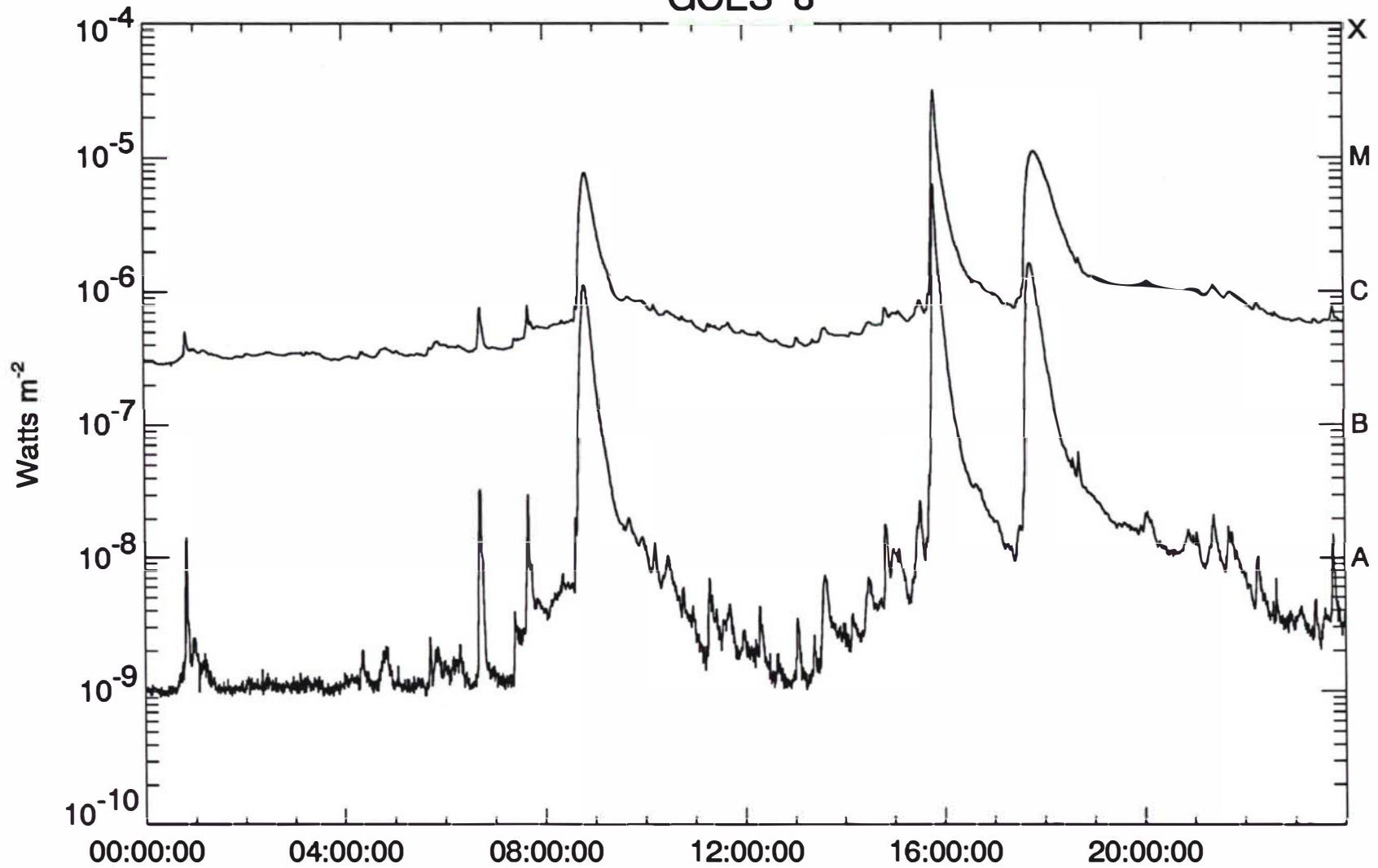


Current Time: 99/07/20, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/16, 0000:00

Plot created: 99/07/20, 1012

Channel

1 (1.0 - 8.0 Angstroms)

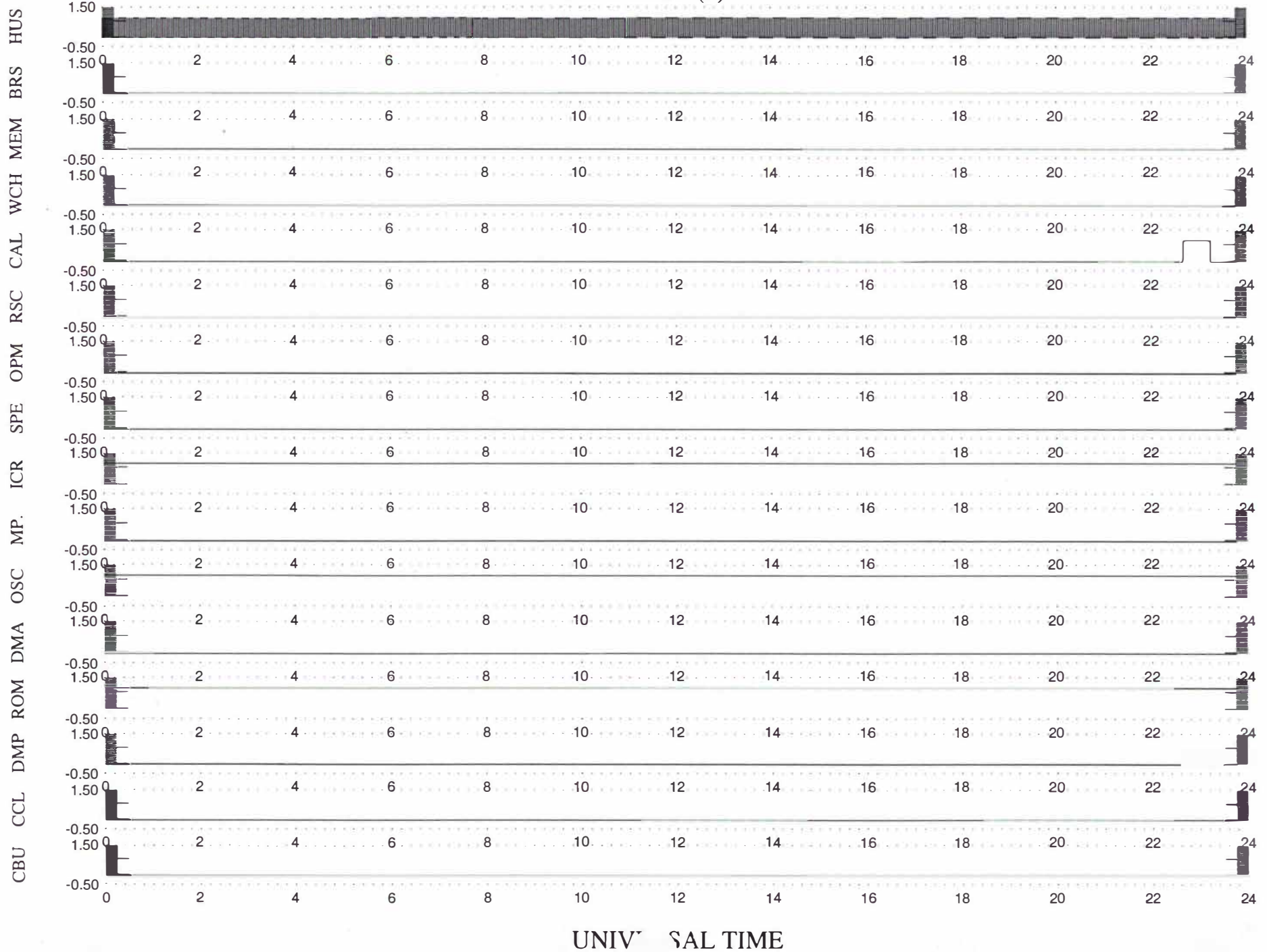
Background not subtracted

2 (0.5 - 4.0 Angstroms)

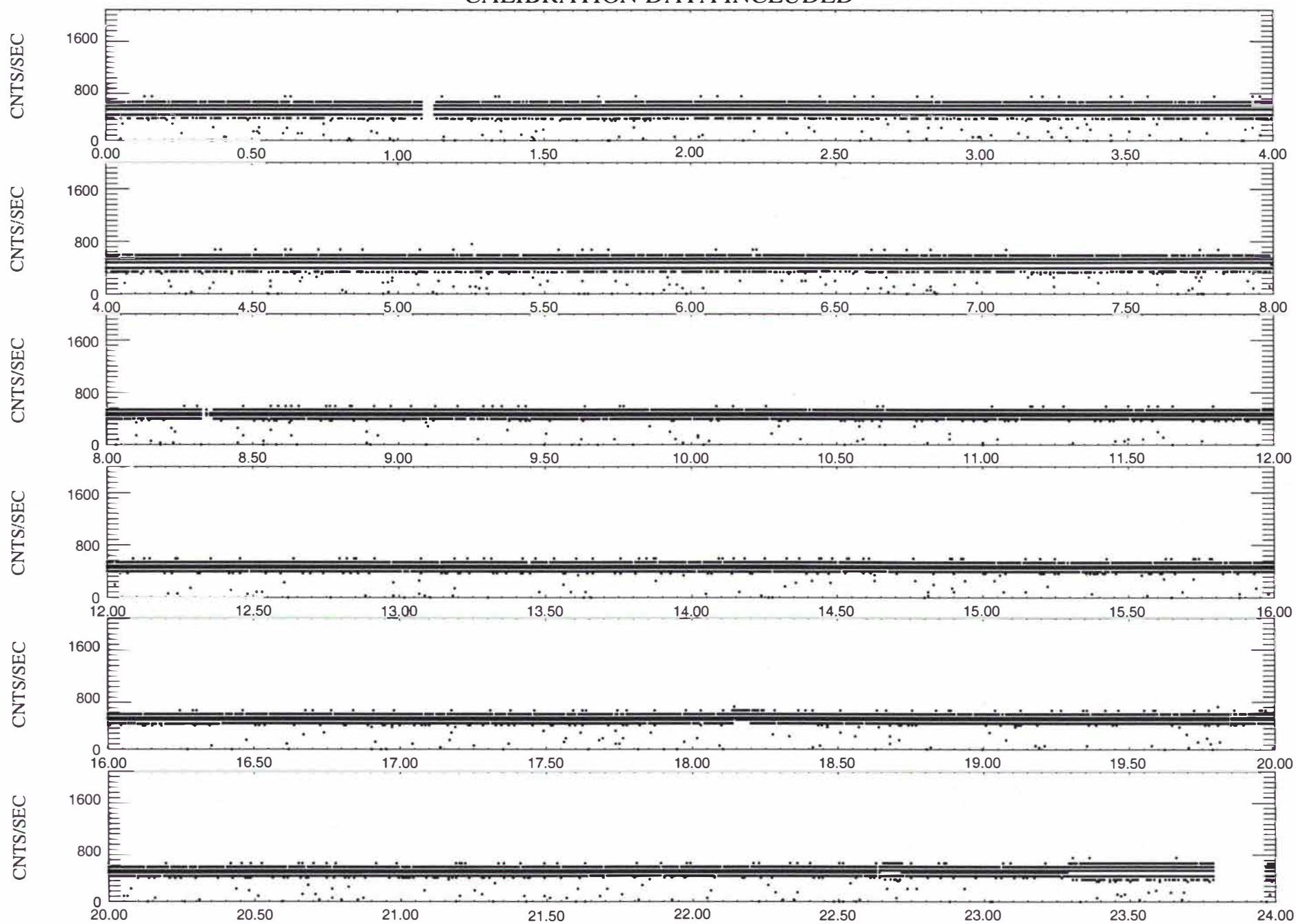
Background not subtracted

Sample average = 10

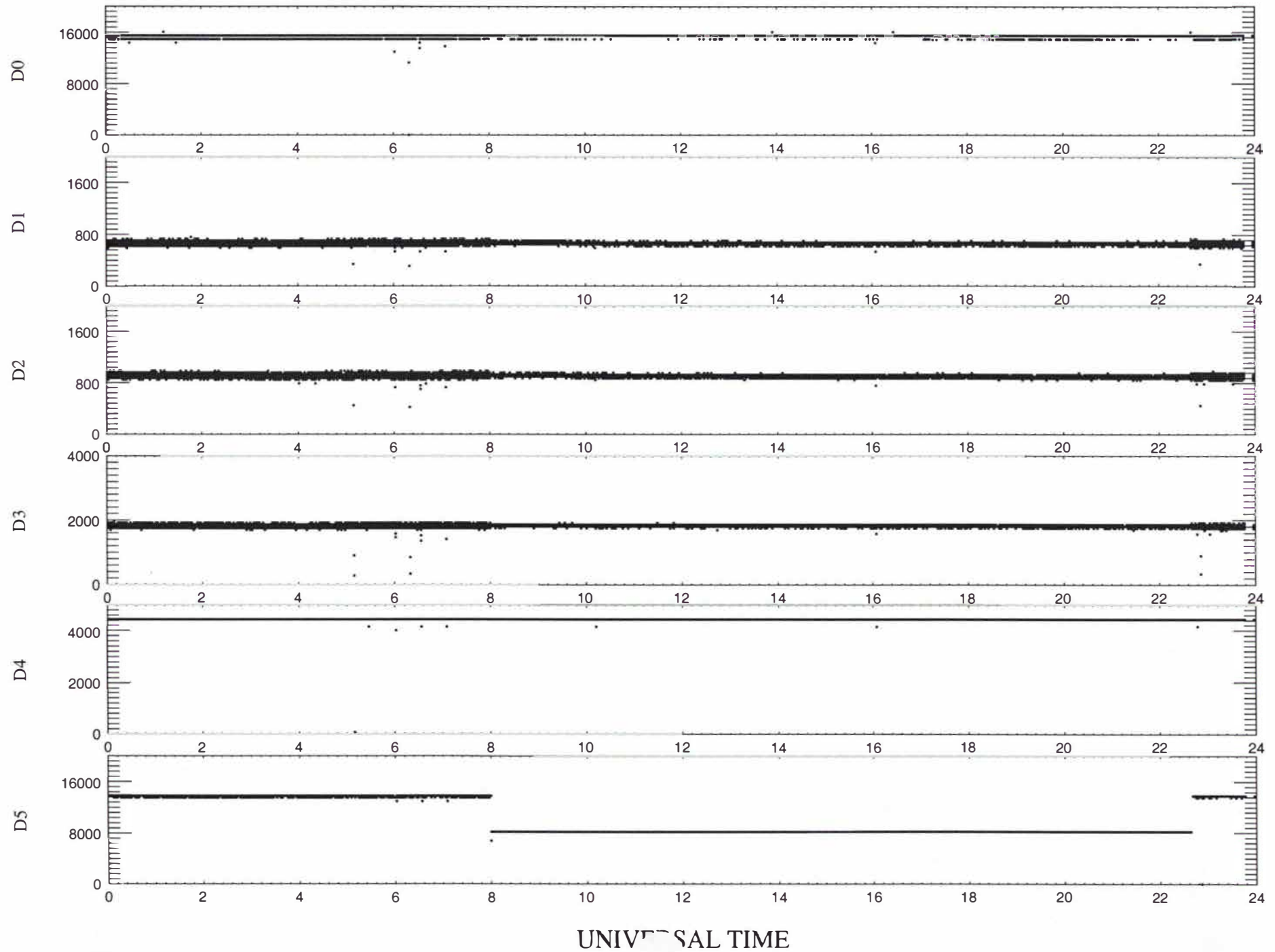
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



KONUS

ULYSSES RT

21 / 01 / 00

17/07/99 59184.371 s

0.500 S INTERVALS REGROUPED BY 8

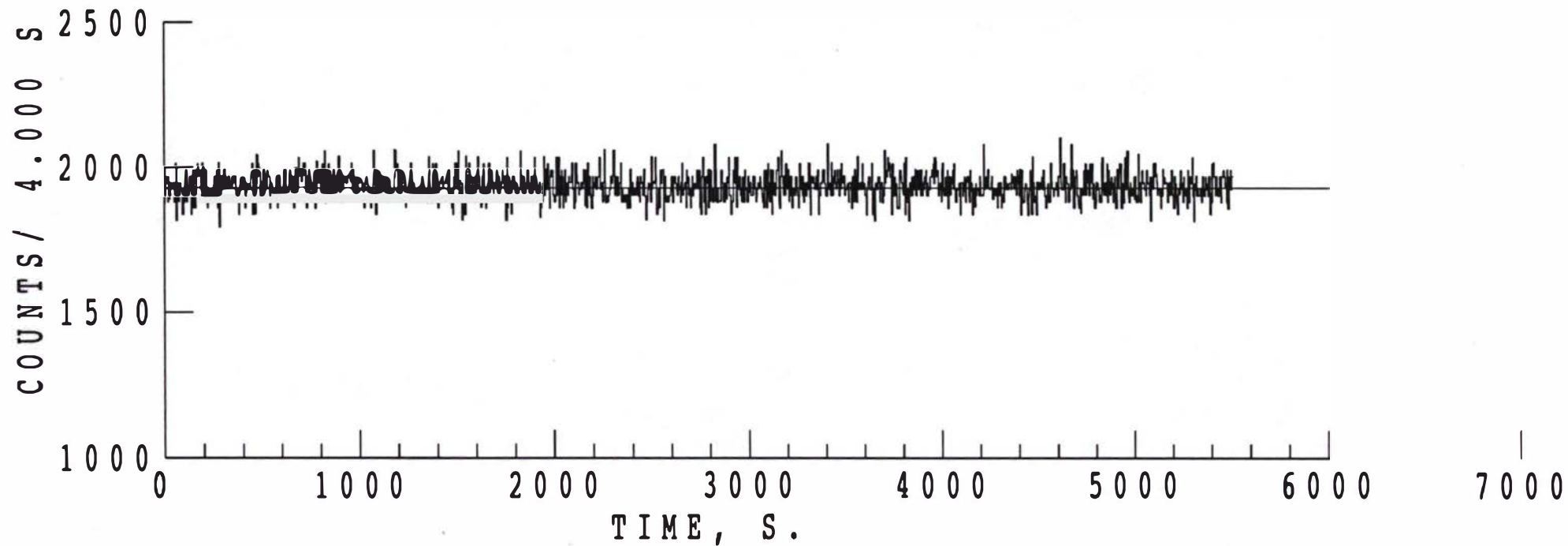
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Jul 20 08:42 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 20 Jul 1999 10:46:49 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7658

TIME: TJD=1376 SECONDS=59043

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

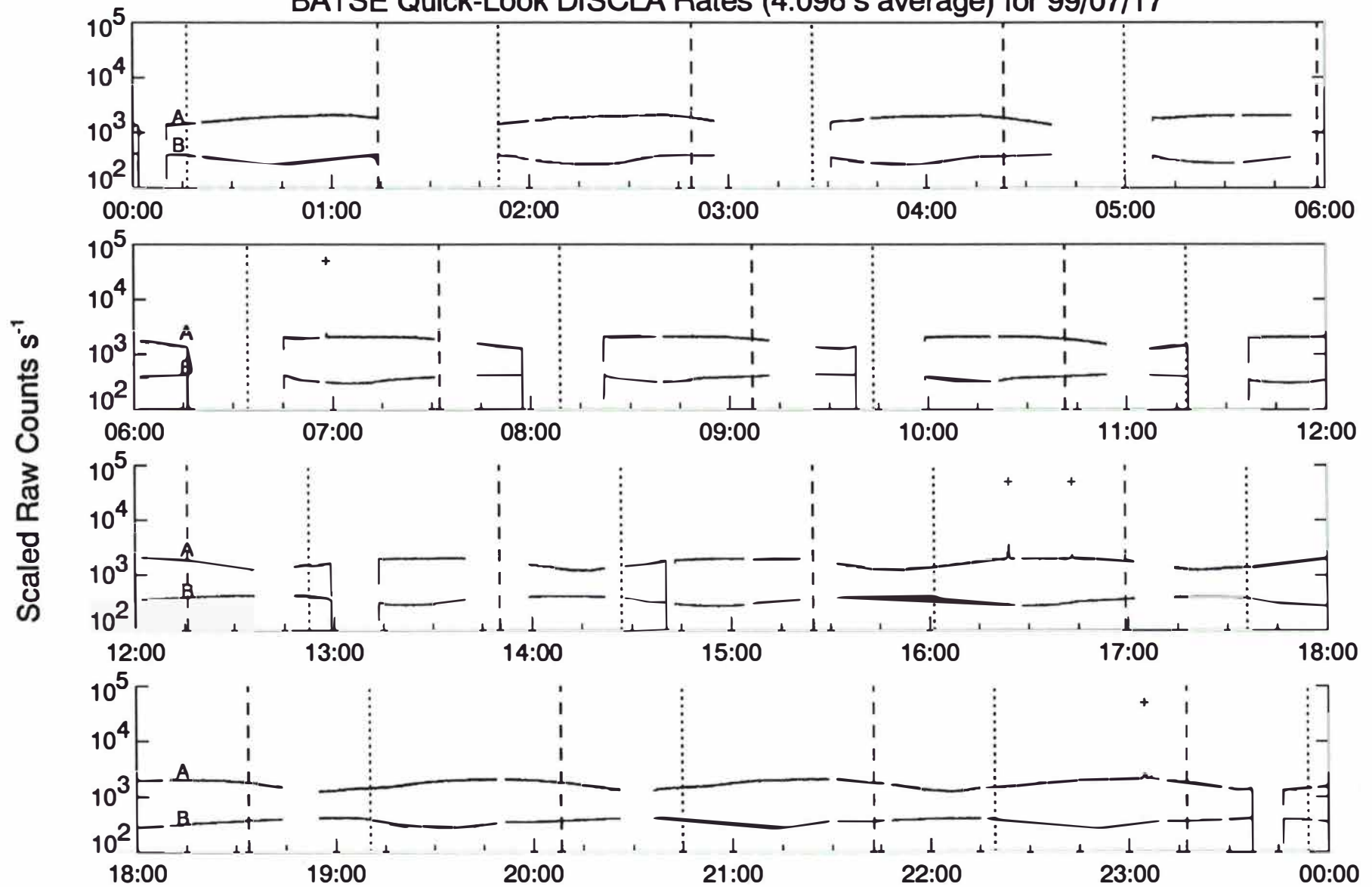
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=112.5 AZIMUTH=355.7 ERROR=1 DEGREES

COMMENTS:

SOLAR FLARE. GOES C3.4, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 37 S,
STARTS AT T-25 S, MAX. AT T. MARGINALLY VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/17

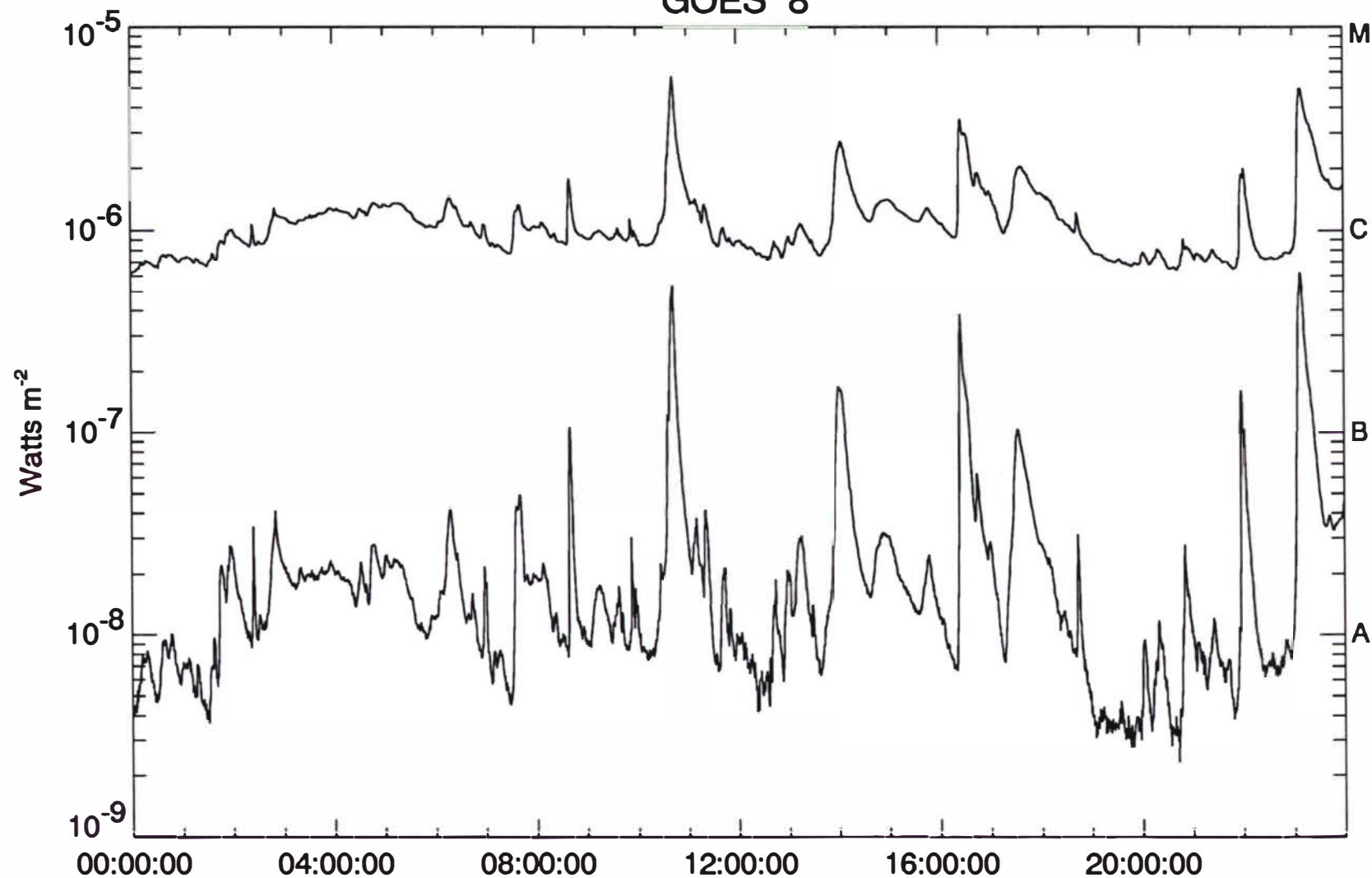


Current Time: 99/07/21, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/17, 0000:00

Plot created: 99/07/21, 1011

Channel

1 (1.0 - 8.0 Angstroms)

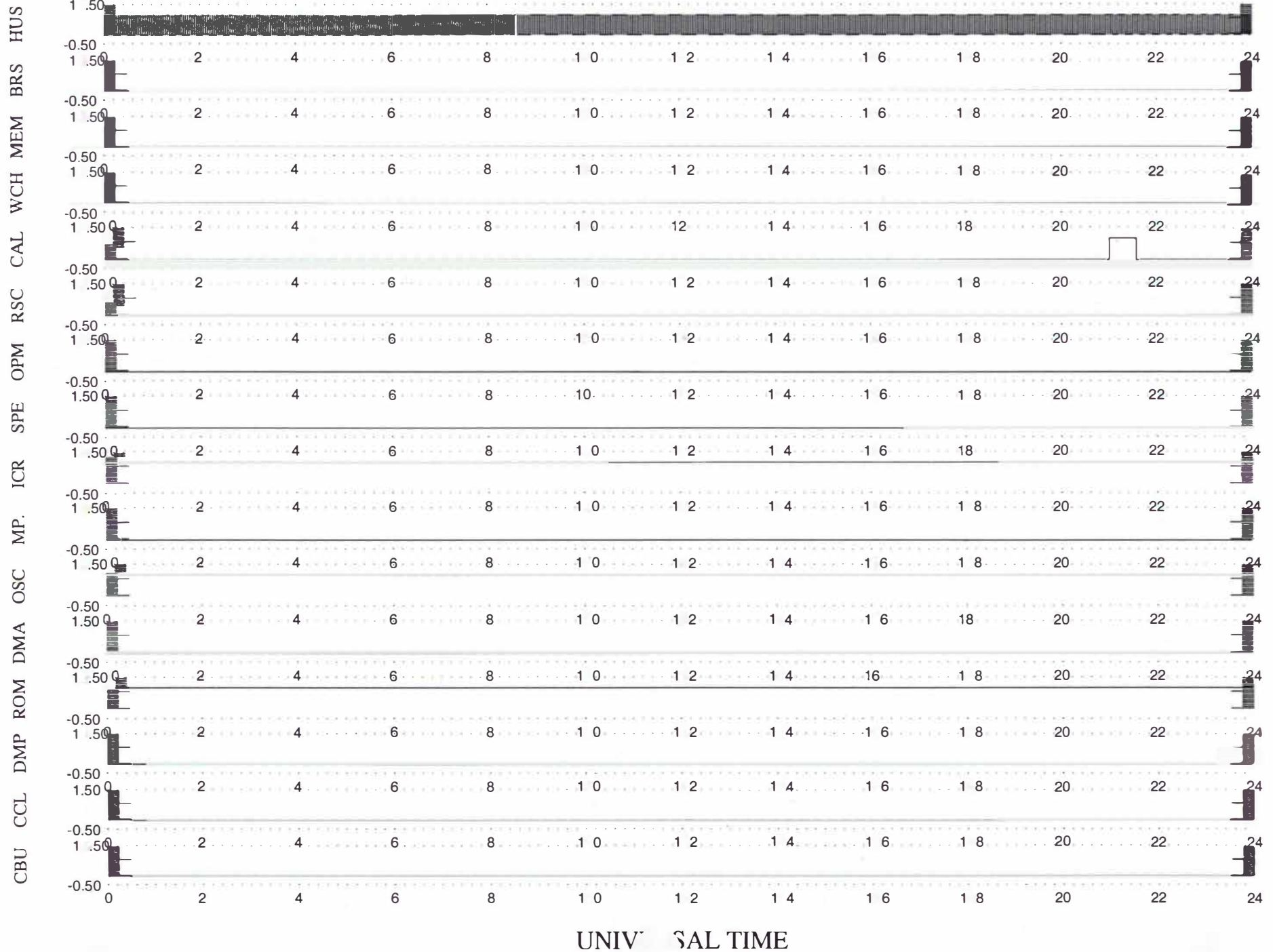
Background not subtracted

2 (0.5 - 4.0 Angstroms)

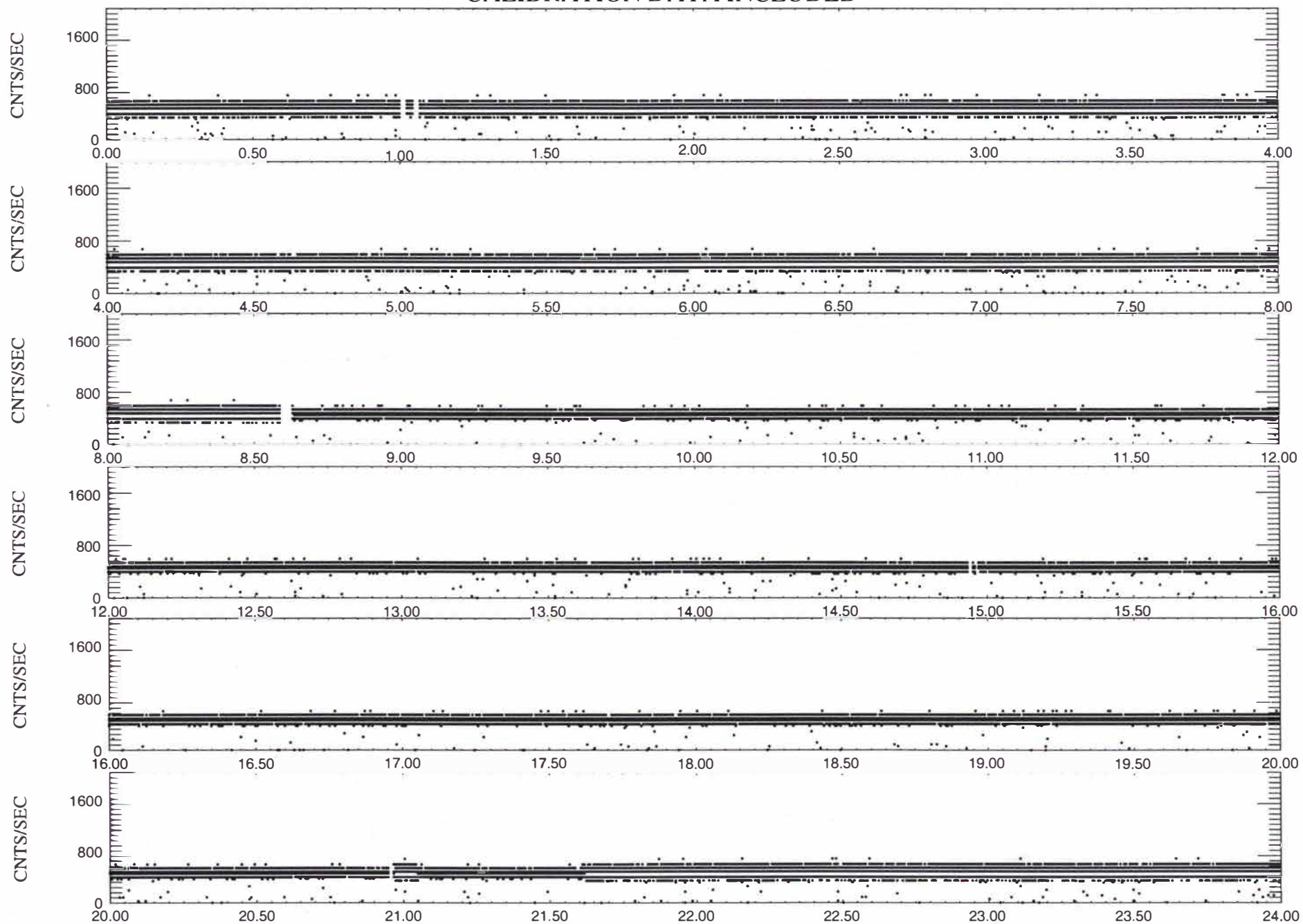
Background not subtracted

Sample average = 10

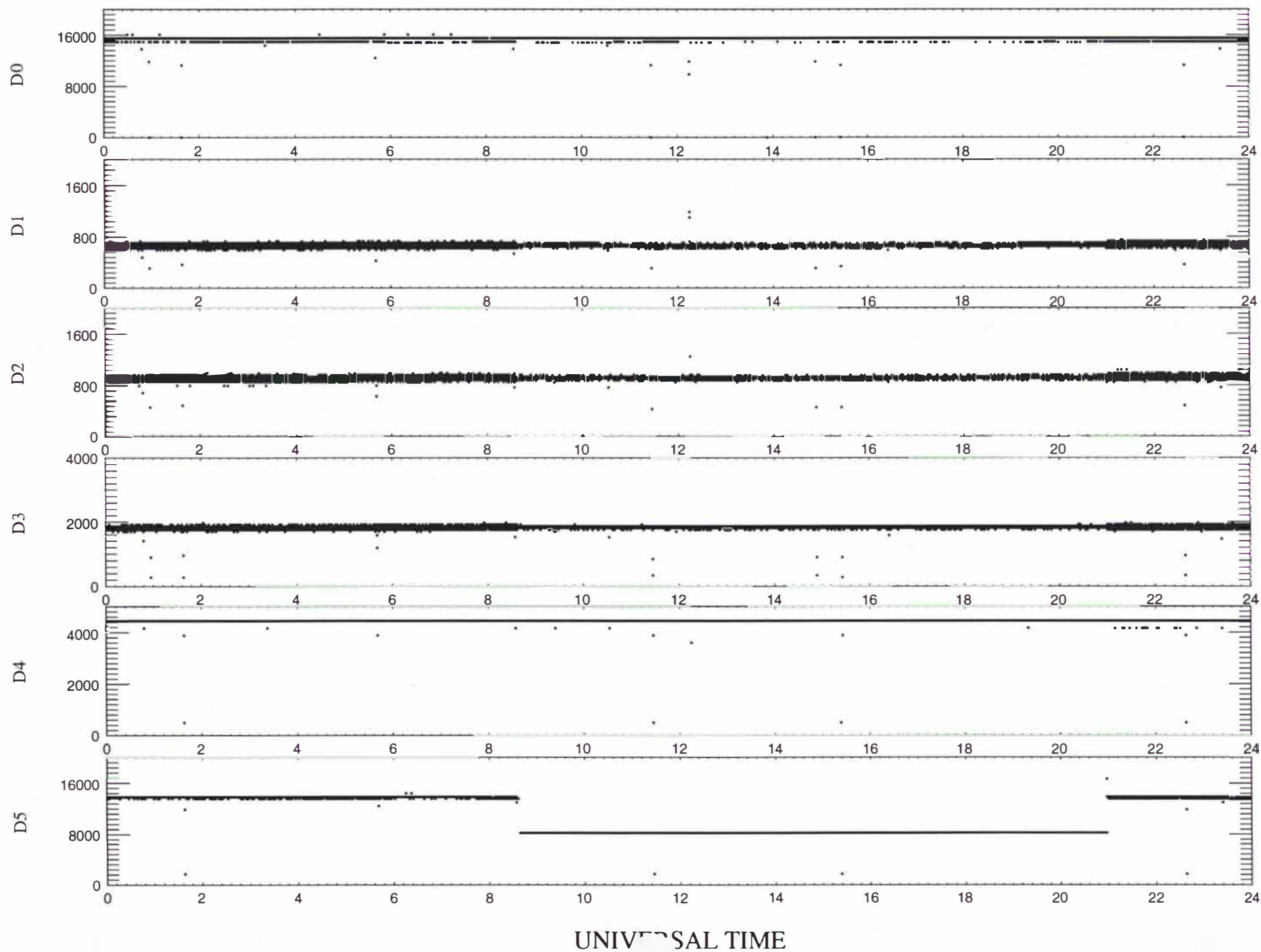
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV Mon Aug 2 09:03 PDT 1999
Date: Mon, 2 Aug 1999 12:04:00 -0400
From: "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV
To: khurley@ssl.berkeley.edu
Vmsmail-To: LHEAVX::SMTP%"khurley@ssl.berkeley.edu"
^Vmsmail-Cc: BUTTERWORTH
Subject: RE: GRB990715, 990718

Kevin,

Konus didn't see these either.

Paul.

From khurley@sunspot.ssl.berkeley.edu Thu Jul 22 10:24 PDT 1999

Date: Thu, 22 Jul 1999 10:36:58 -0700

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,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@milkyway.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, feroci@saturn.ias.rm.cnr.it,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov

Subject: GRB990715, 990718

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
JULY 15 1999 15:16*	weak, 32 ms long	2700
JULY 18 1999 00:37*	weak, 32 ms long	2700

*looks like an SGR, but which one?

Were these events detected by anyone else?

CC: ulyssesbursts alias list

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

From SAHI@fender.msfc.nasa.gov Tue Jul 20 08:46 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 20 Jul 1999 10:51:03 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7659

TIME: TJD=1377 SECONDS=203

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=110.3 AZIMUTH=357.7 ERROR=1.6 DEGREES

COMMENTS:

SOLAR FLARE. GOES. C4.3, NO OPTICAL. SINGLE PULSE, DUR. 25 S. STARTS AT T-5 S,
MAX. AT T+2 S. VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Wed Jul 21 06:56 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 21 Jul 1999 9:02:09 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7660

BATSEARCH PROGRAM

BATSE BURST # 7660
EVENT OF 1999 JUL 18 DAY OF YEAR=199
EVENT CROSSING TIME AT BATSE : 43611. S. OR 12:06:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 287.000 1.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 7/ 99 IS:
RA= 148.574 DEC= -8.607 DIST= 5.452 AU
BATSE-ULYSSES DISTANCE = 815643261. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 42.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2019.24 SECS.
CROSSING TIME AT ULYSSES IS 45630. S. OR 12:40:30 +/- 397.24 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 7/ 99 IS:
RA= 212.108 DEC= -14.453 DIST= 0.920 AU
MARS-BATSE DISTANCE = 137592704. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -113.82 SECS.
CROSSING TIME AT MARS IS 43497. S. OR 12:04:57 +/- 75.46 SECONDS
BATSE BURST TRIGGER

NO.: 7660

TIME: TJD=1377 SECONDS=43611

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.0 AZIMUTH=201.5 ERROR=0.86 DEGREES

COMMENTS:

GRB. COMPLEX, DUR. 180 S, STARTS AT T-25 S, MAX. AT ~T+45 S. PRECURSOR AT
T-340 S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7660	990718	11377	43611	4000	287	+01	180

Date: 14 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

N/A

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

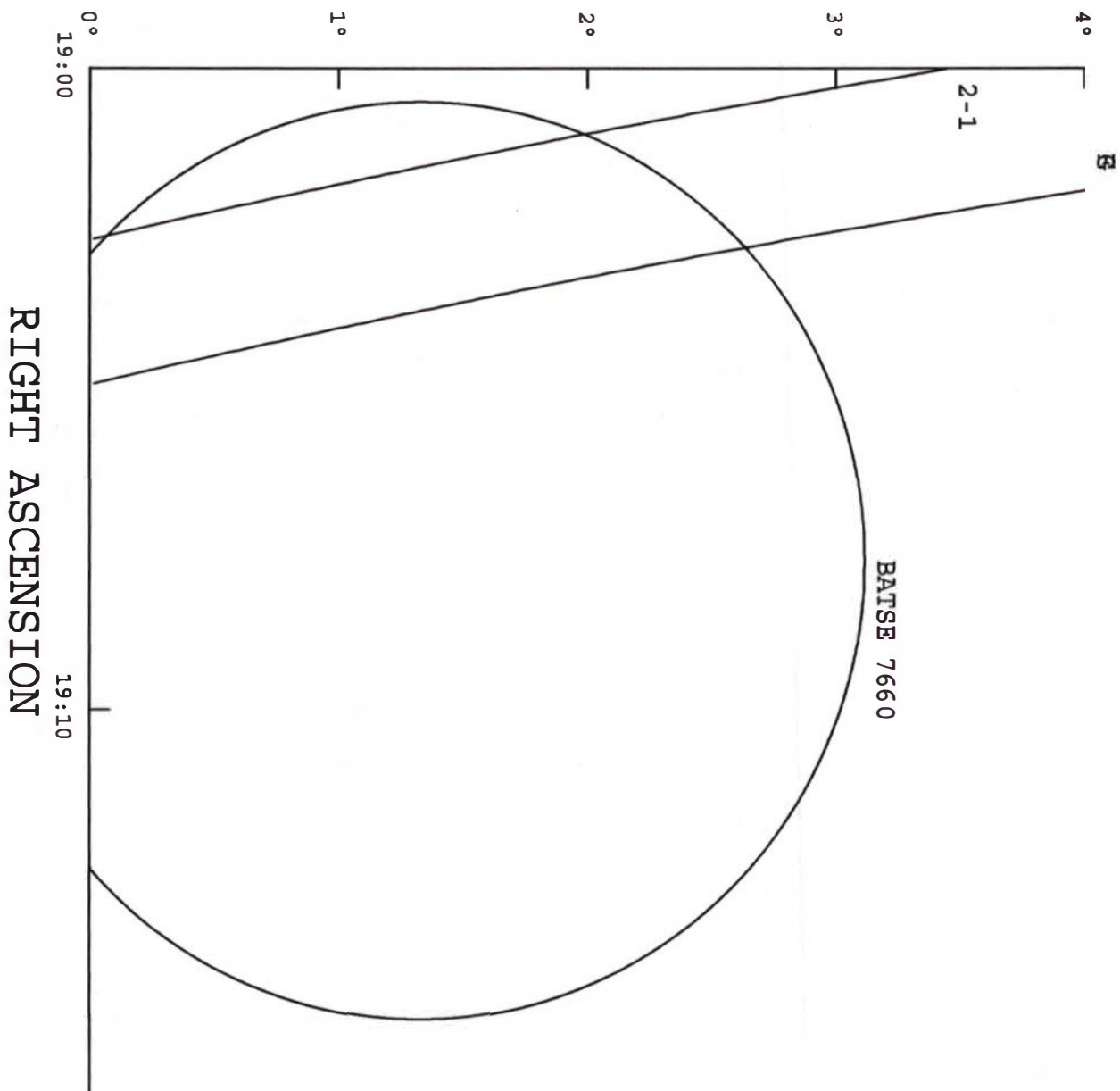
E=ECLIPTIC

G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

DECLINATION



EVENT OF JUL 18, 1999 12:06

21 / 2 / 0

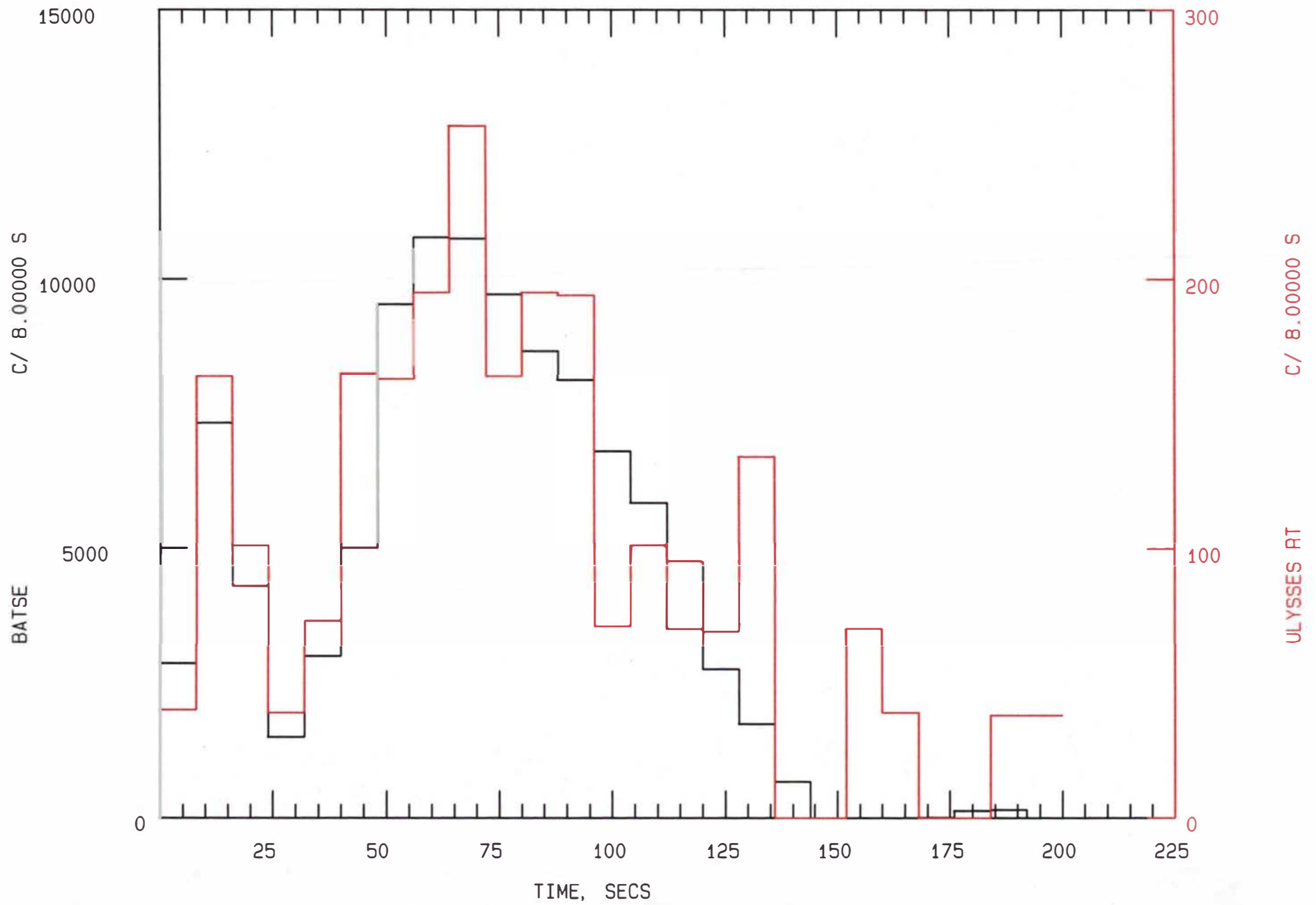
BATSE

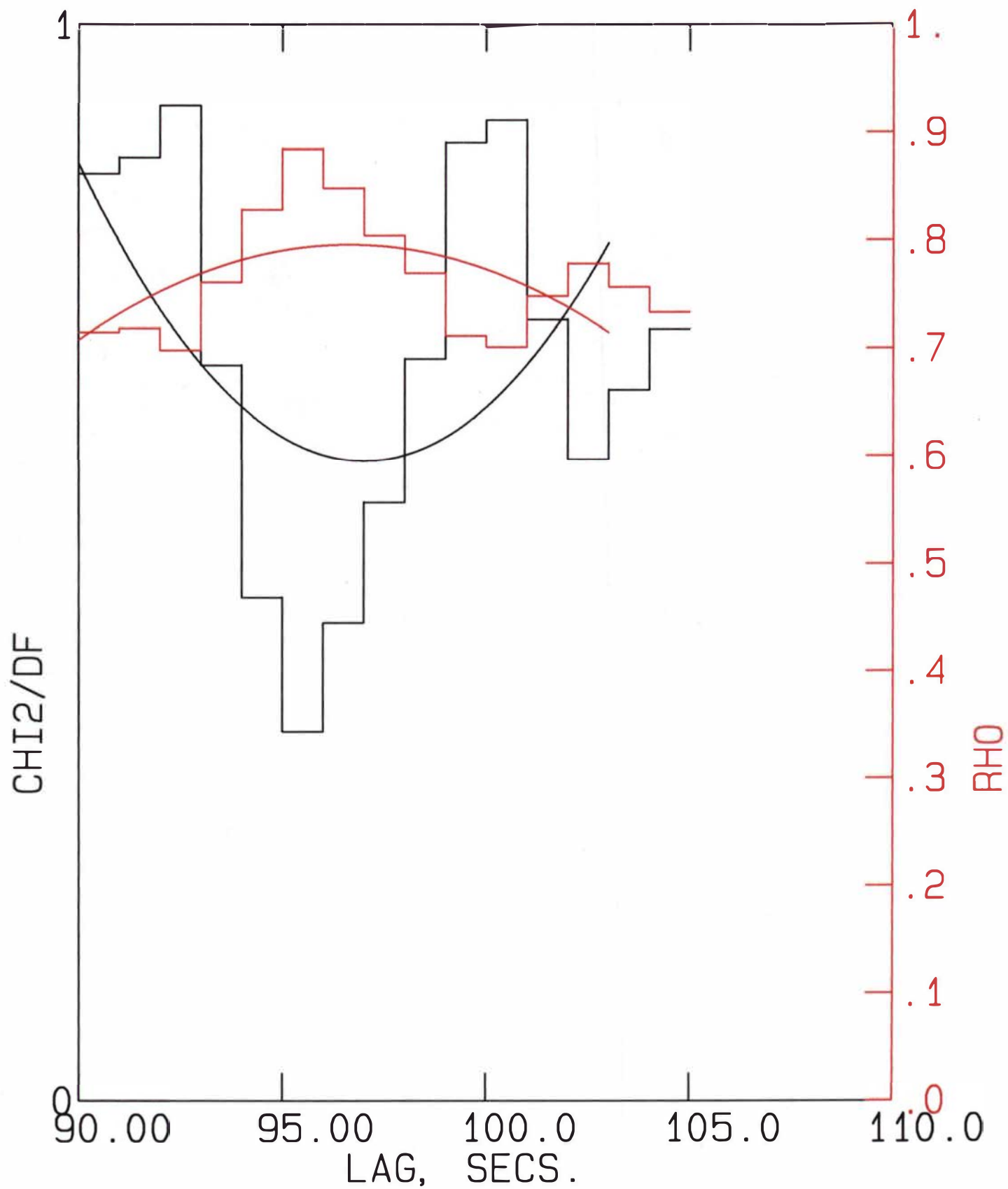
-ULYSSES RT CORRELATION

18/ 7/99

43600.633

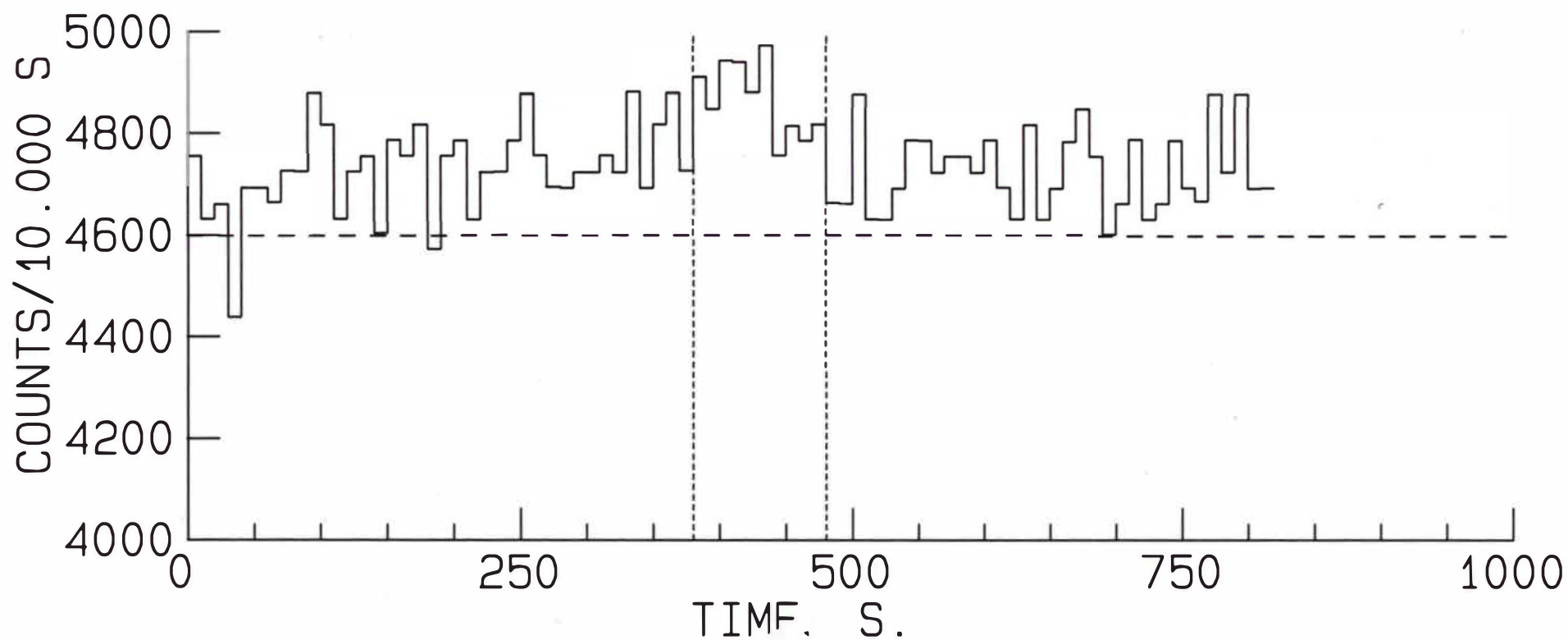
21/ 2/ 0





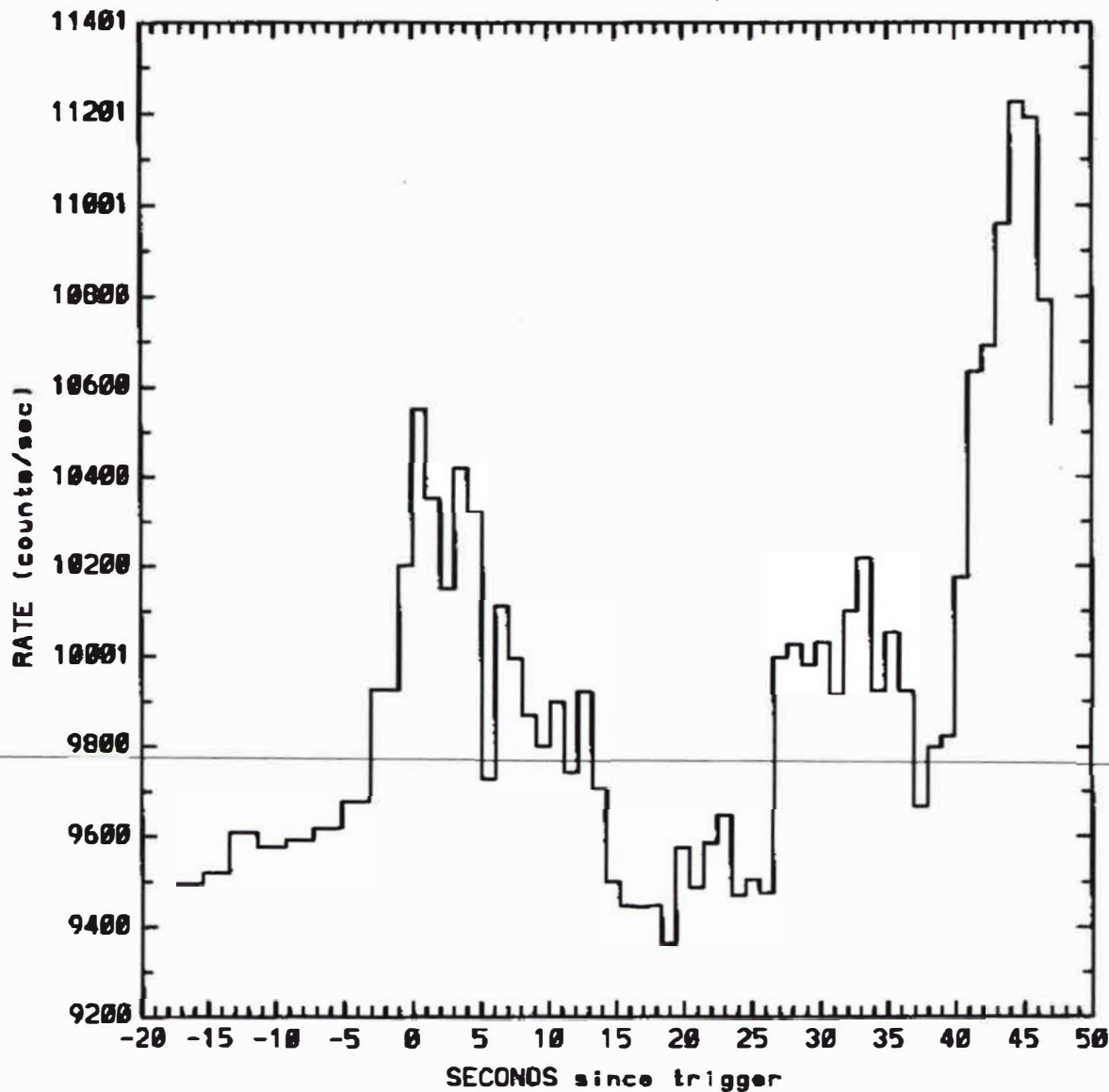
ULYSSES RT
18/ 7/99 45216.105 s
1.000 S INTERVALS REGROUPED BY 10
22- 151 keV

21 / 2 / 0



BACODME data are best,
because they cover a longer
period

DISCLB Data for K. Hurley, No. 7660



29-JUL-1999 15:52:38

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # : 7660

Trigger Time:
11377 / 43611.897

Burst Data Type:
DISCLB

Deadtime
Corrected: N

Background Data
Type: None

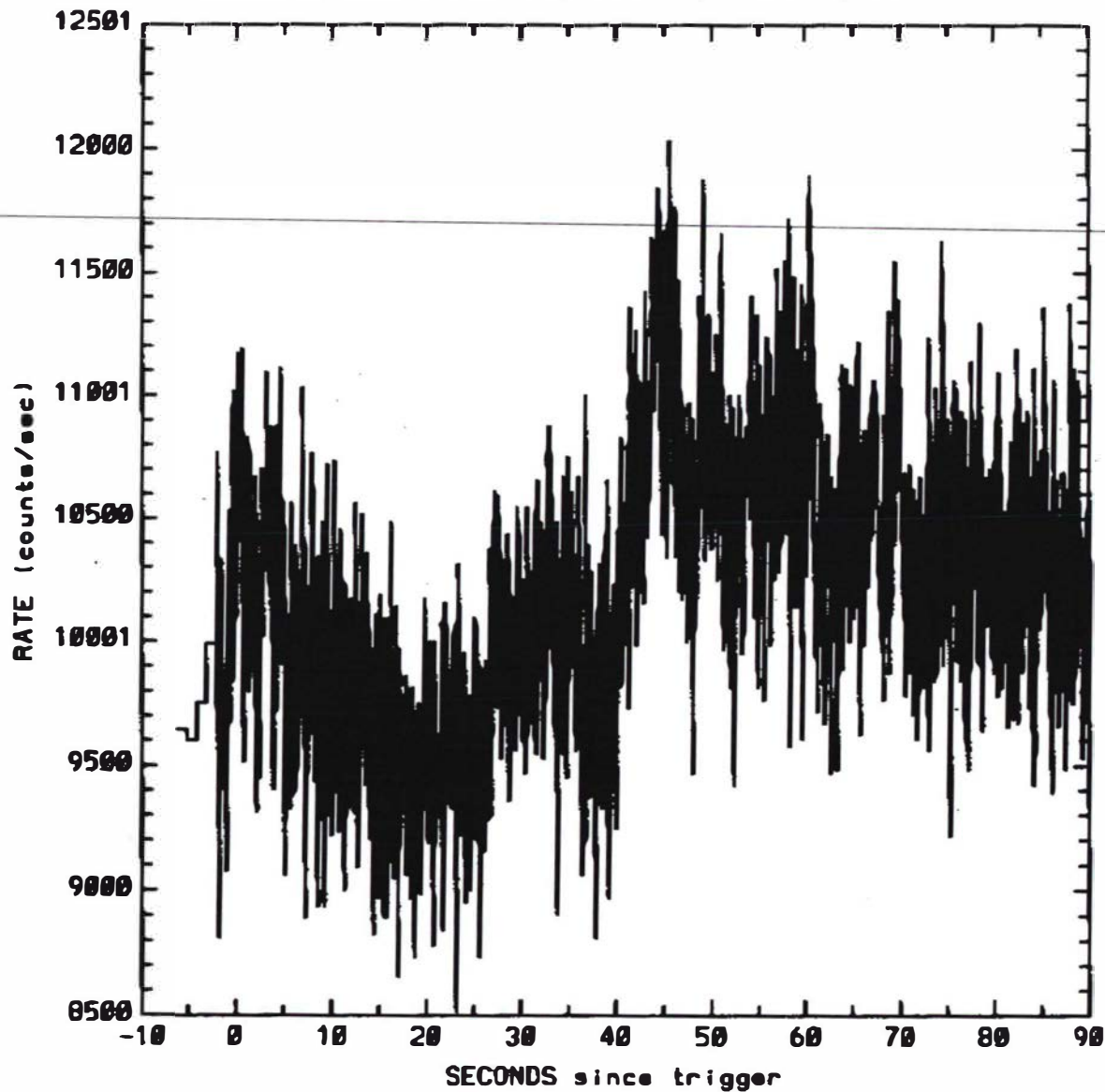
Minimum Integ. Time:
1.024 seconds

Detectors (7..0):
-6-4--1-

Discriminators:
(1..2)

Quality Mask:
BDISP1

DISCSC Data for K. Hurley, No. 7660



29-JUL-1999 10:50:31

Created by MOPS 80
(Burst Display)
Version 12.26

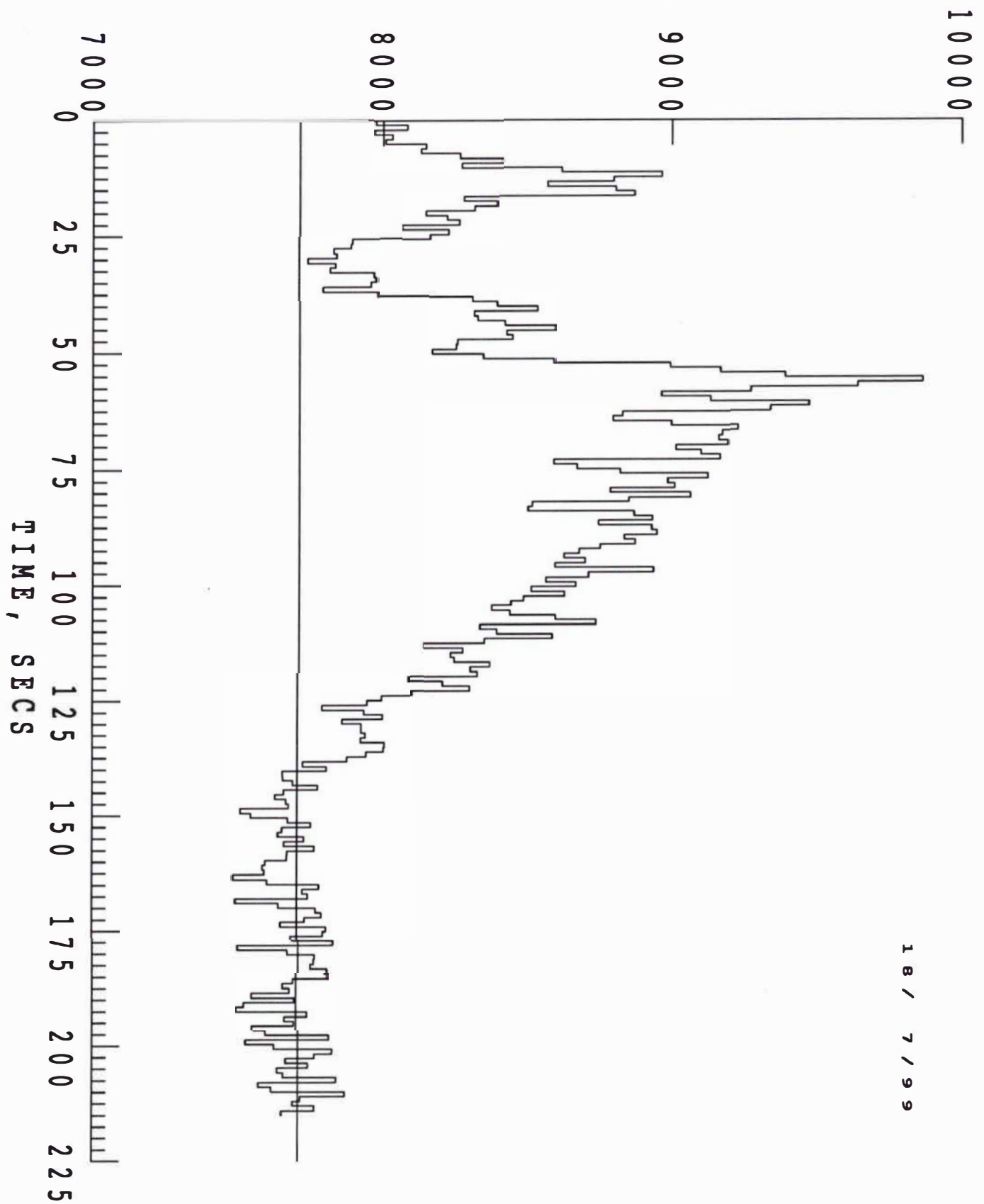
Trigger = . 7660

Trigger Time:
11377 / 43611.897Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PRED + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..0]:
-0-4--1-Discriminators:
[1 . 2]Quality Mask:
00ISP1

BACODINE 7660 18/07/99 43600.633

25- 100 keV

COUNTS/1.024 S



18 / 7 / 99

From SAHI@fender.msfc.nasa.gov Tue Jul 20 08:55 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 20 Jul 1999 11:00:40 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7661

TIME: TJD=1377 SECONDS=64256

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

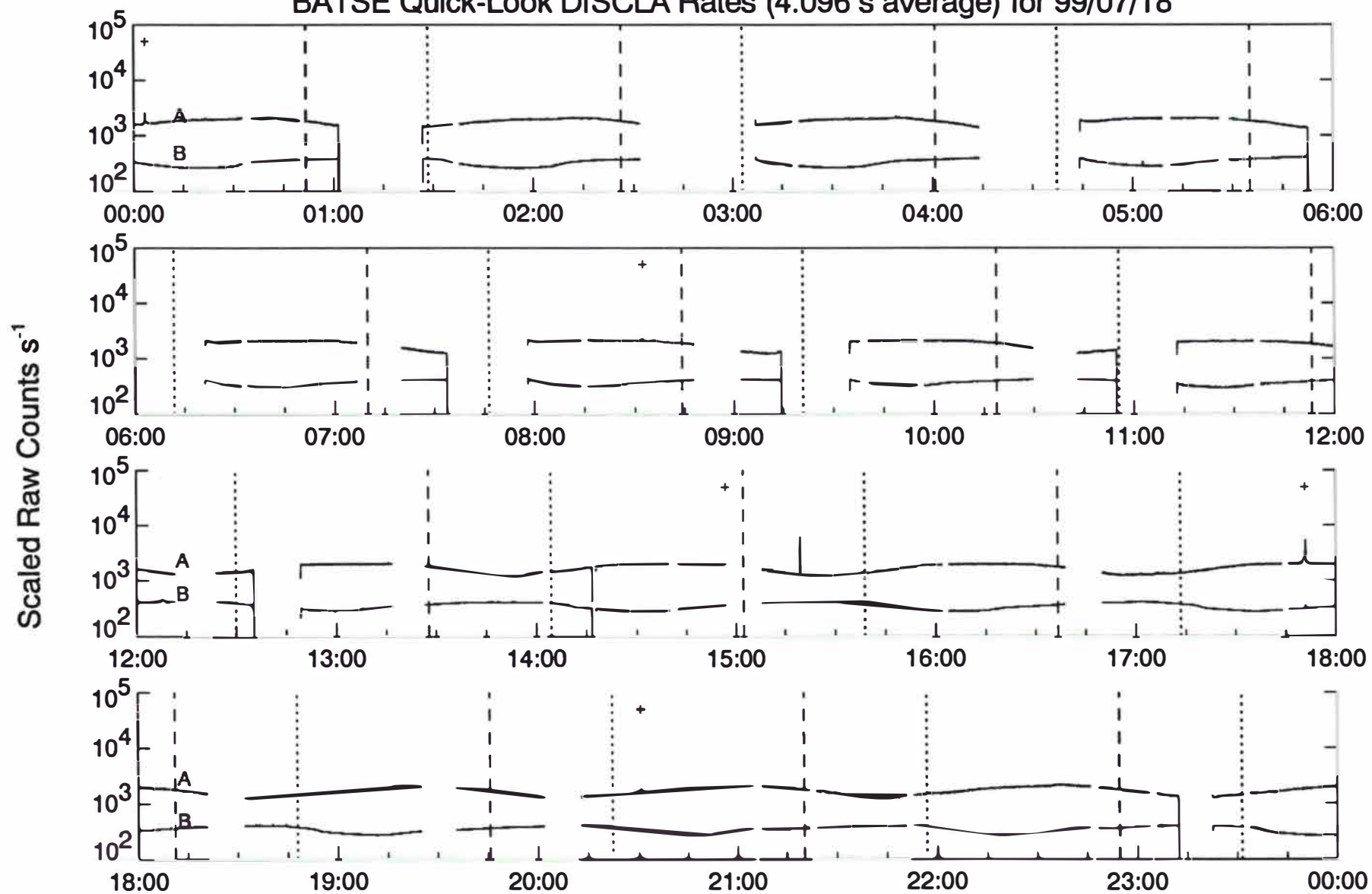
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=111.2 AZIMUTH=354.6 ERROR=0.7 DEGREES

COMMENTS:

SOLAR FLARE. GOES C3.4, OPTICAL SF. SINGLE PULSE, DUR. 60 S, STARTS AT T-40 S.
NOT VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/18

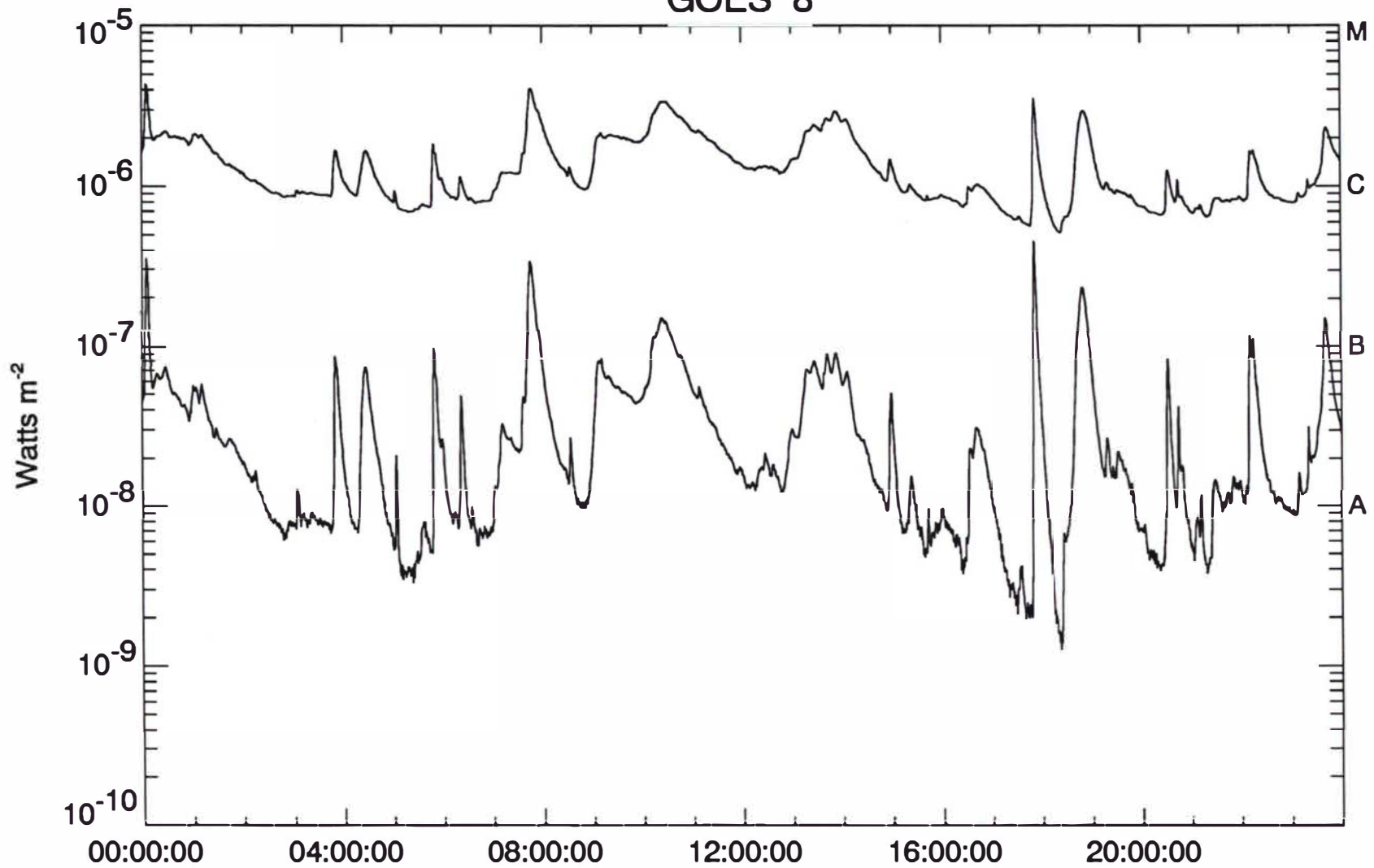


Current Time: 99/07/22, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/18, 0000:00

Plot created: 99/07/22, 1011

Channel

1 (1.0 - 8.0 Angstroms)

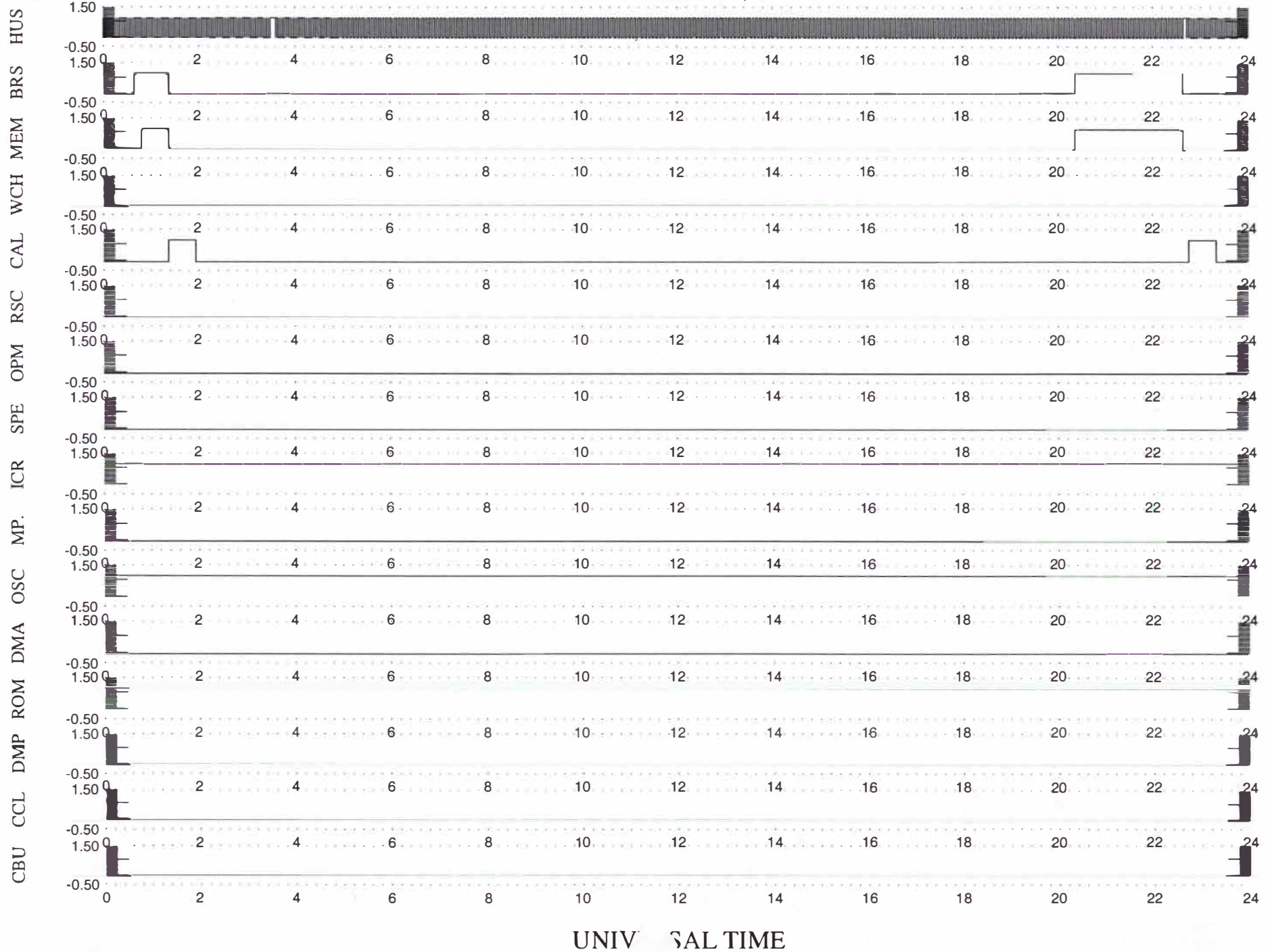
Background not subtracted

2 (0.5 - 4.0 Angstroms)

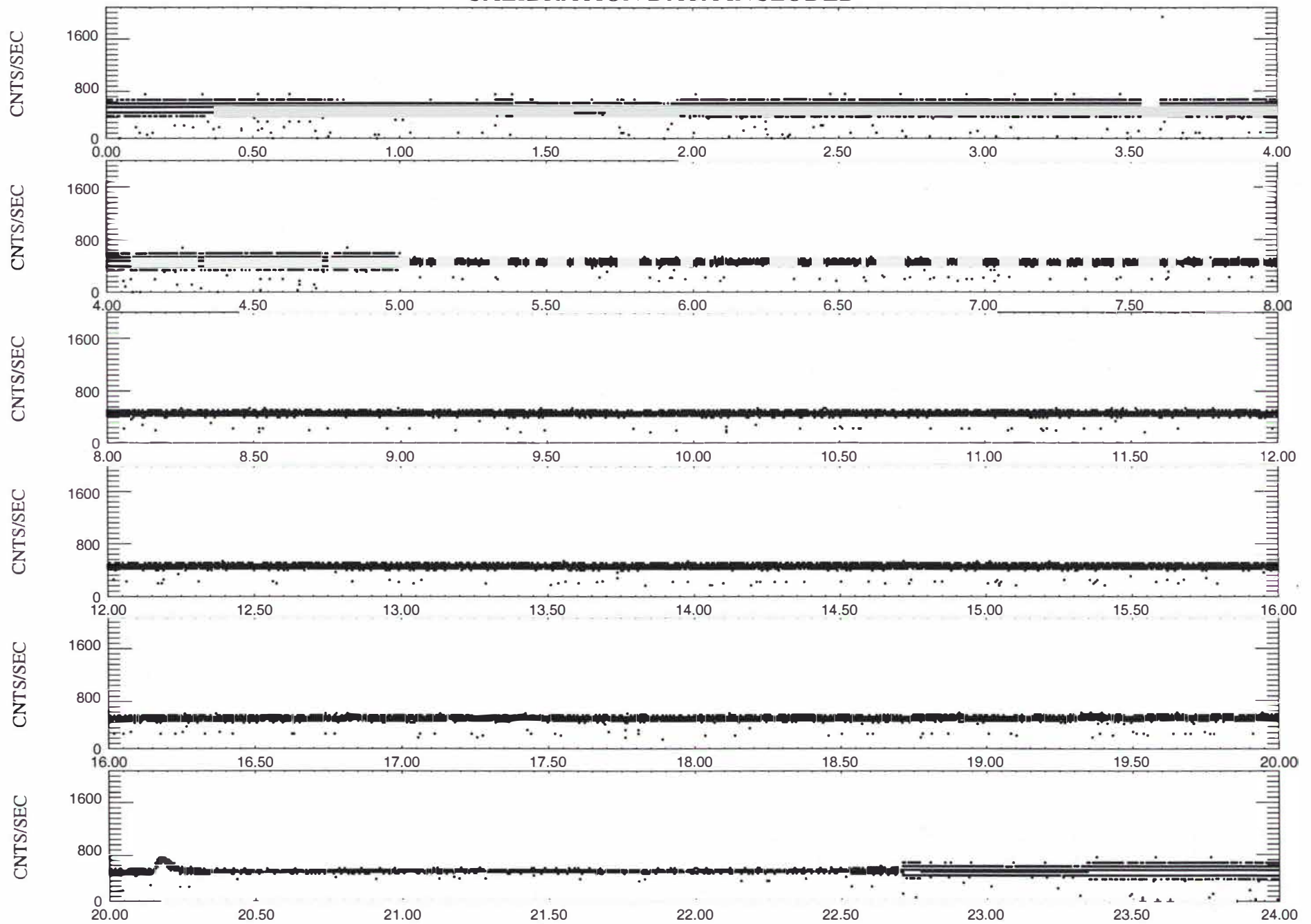
Background not subtracted

Sample average = 10

BURST NUMBER 10, 11

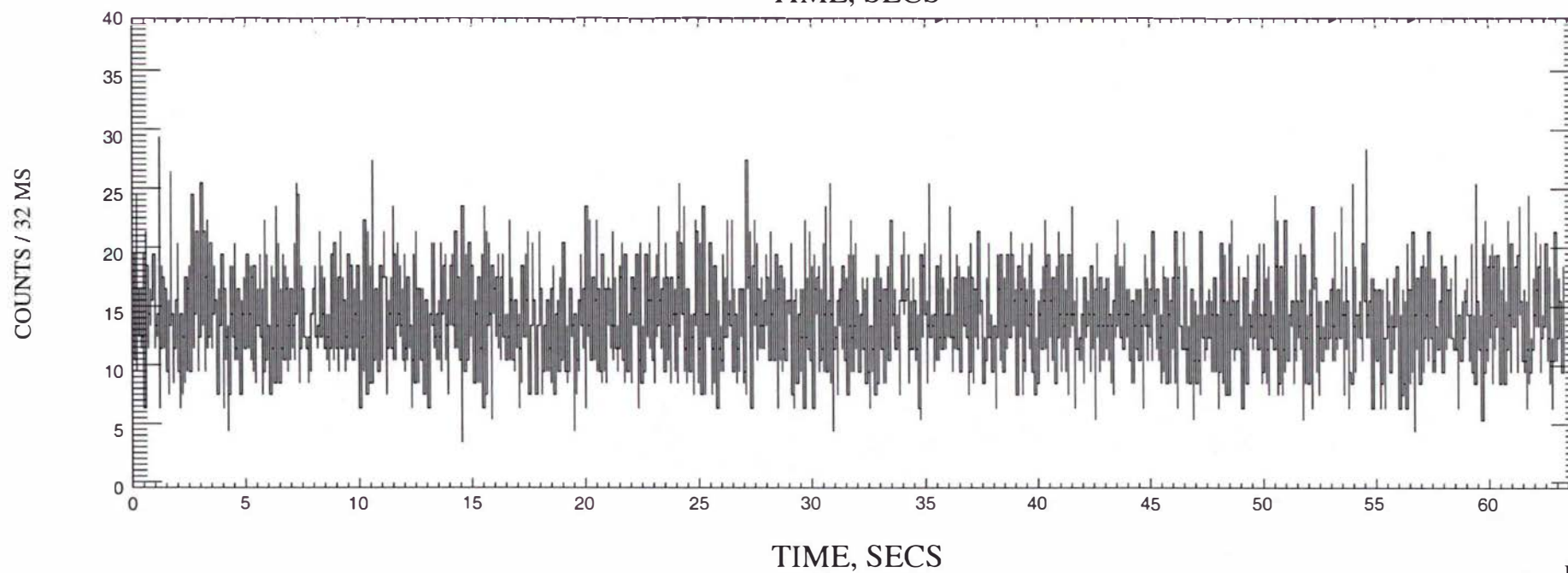
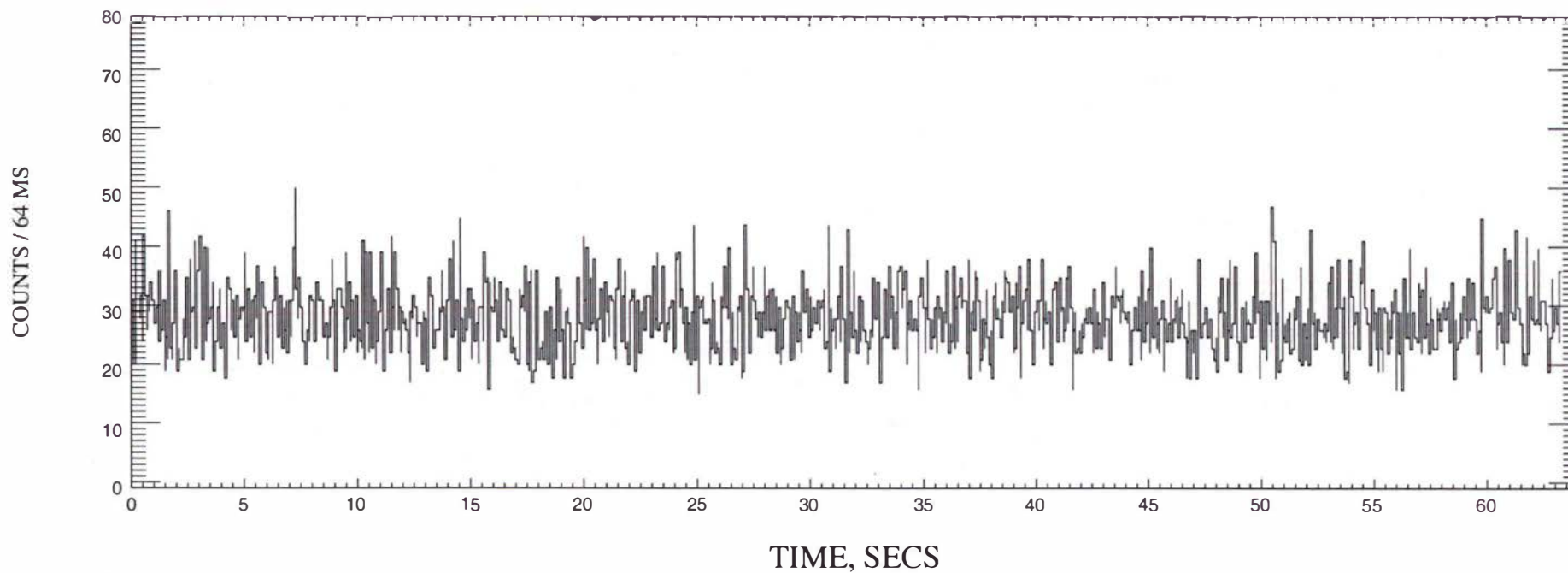


CALIBRATION DATA INCLUDED

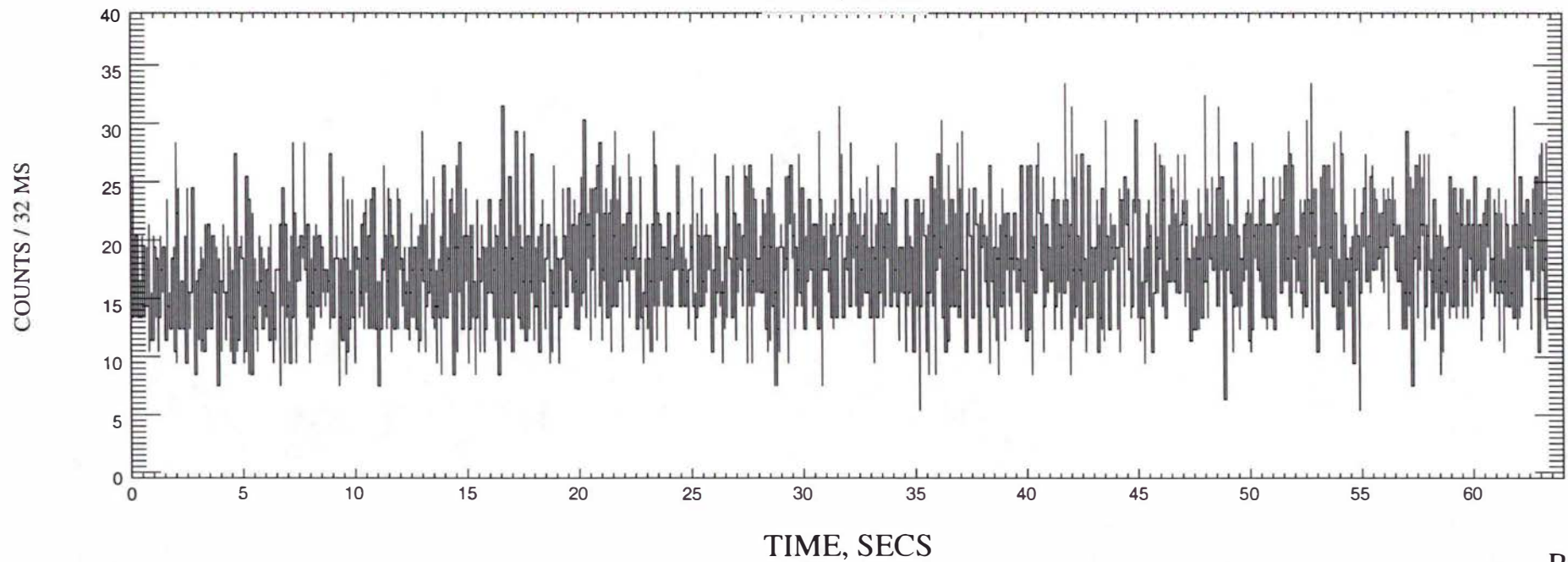
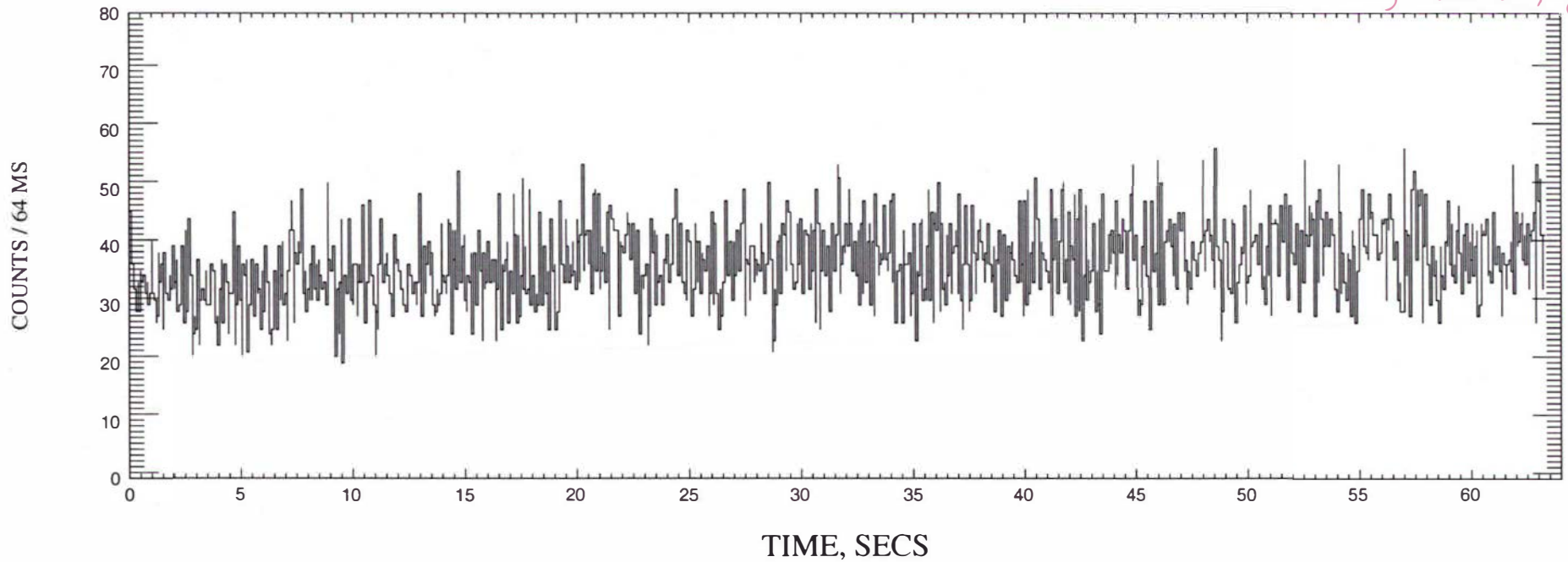


UNIV SAL TIME

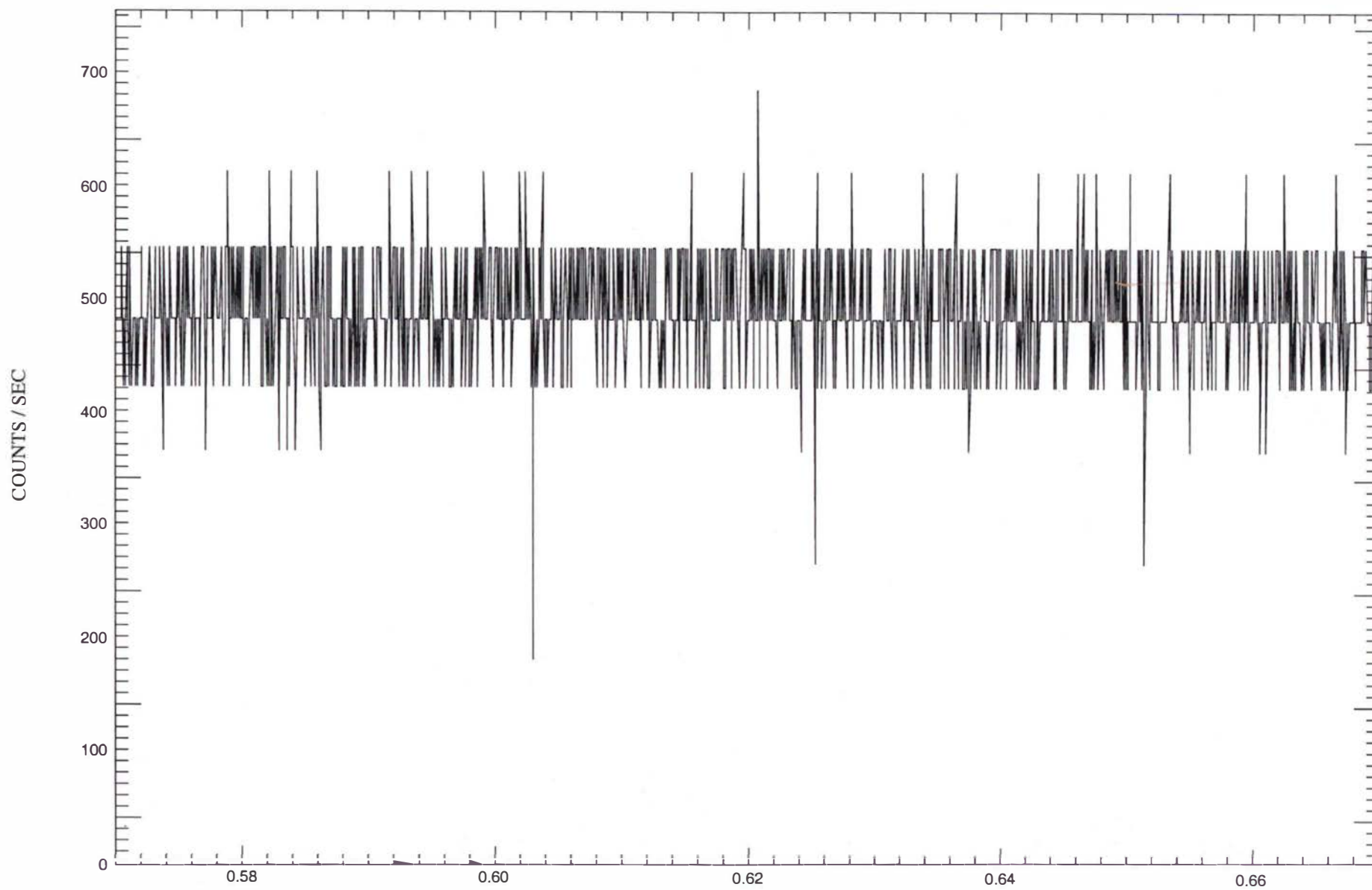
Burst Counter 10 at UT= 0.620846951803 h= 2235.049 s 00:37:15.049



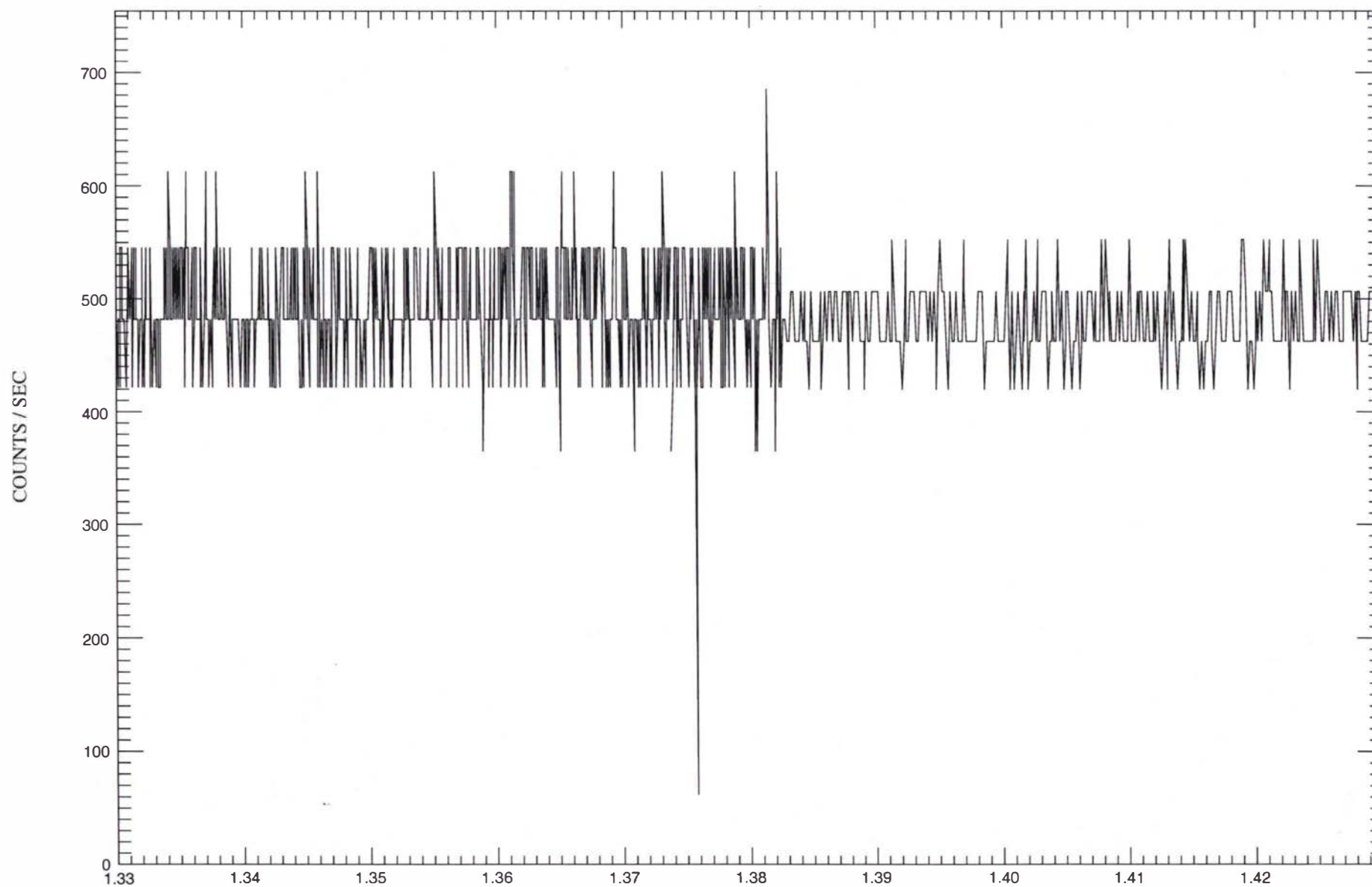
Burst Counter 11 at UT= 1.381268662347 h= 4972.567 s 01:22:52.567

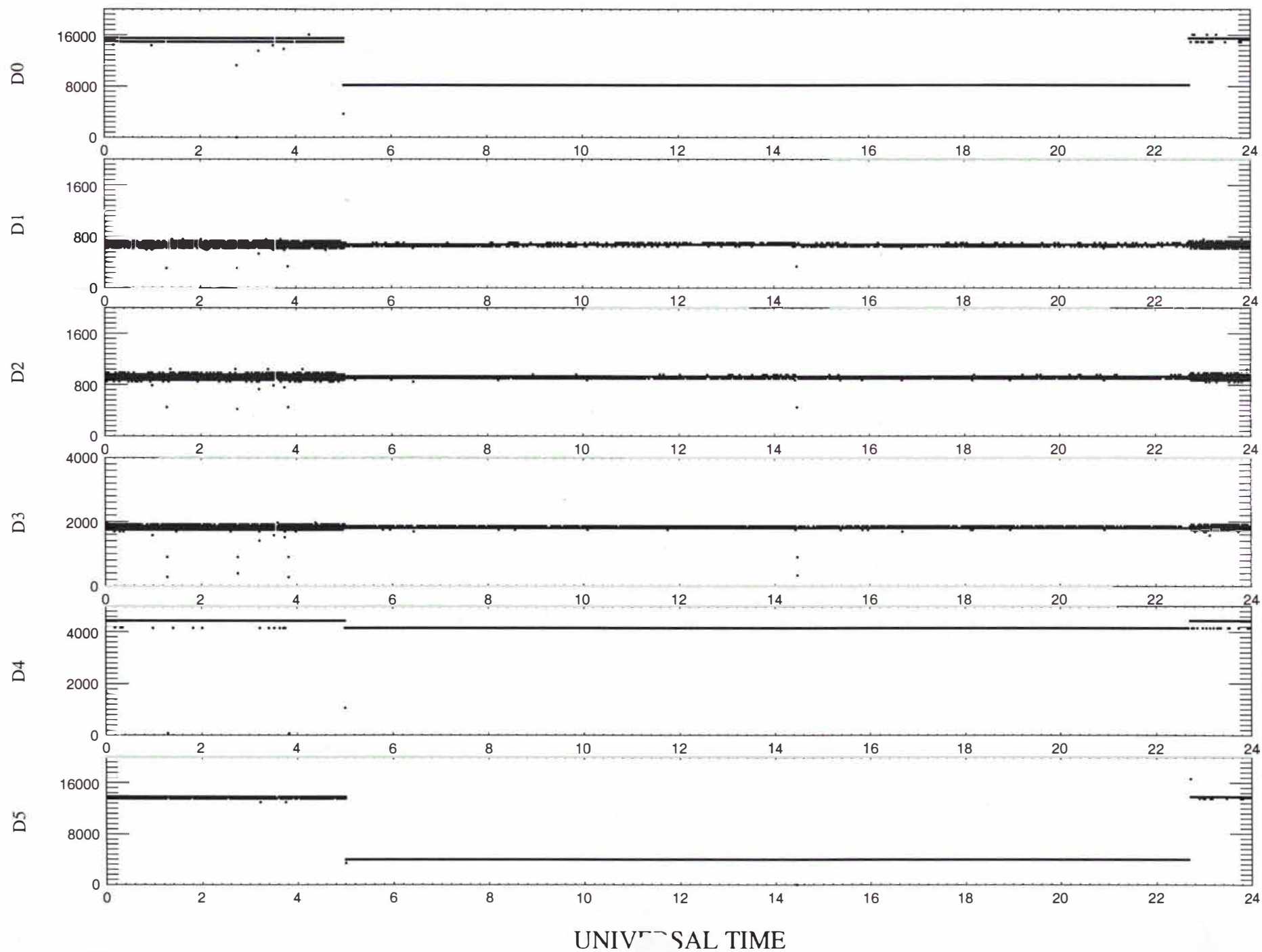
*Time appears to be
wrong - see 1st page*

CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From PETERSON@fender.msfc.nasa.gov Tue Jul 20 11:49 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 20 Jul 1999 13:54:41 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7662
Content-Length: 2559
Content-Type: text
X-Lines: 48
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7662
EVENT OF 1999 JUL 19 DAY OF YEAR=200
EVENT CROSSING TIME AT BATSE : 51123. S. OR 14:12:03.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 225.000 11.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 7/ 99 IS:
RA= 148.716 DEC= -8.680 DIST= 5.459 AU
BATSE-ULYSSES DISTANCE = 816673336. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -548.34 SECS.
CROSSING TIME AT ULYSSES IS 50575. S. OR 14:02:54 +/- 504.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 7/ 99 IS:
RA= 212.518 DEC= -14.610 DIST= 0.926 AU
MARS-BATSE DISTANCE = 138509360. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=151.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -406.25 SECS.
CROSSING TIME AT MARS IS 50717. S. OR 14:05:16 +/- 32.03 SECONDS

BATSE BURST TRIGGER

NO.: 7662

TIME: TJD=1378 SECONDS=51123

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=63.7 AZIMUTH=265.9 ERROR=10.97 DEGREES

COMMENTS:

GRB. DOUBLE SPIKE, DUR. APPROX. 4 S, MAX AT APPROX. T-0.1 S, AND APPROX.
T+3.5 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7662	990719	11378	51123	3000	225	+11	4

BATSE BURST# 7662

ULYSSES RT

20 / 7 / 99

19 / 7 / 99 50076.031 s

0.500 S INTERVALS REGROUPED BY 2

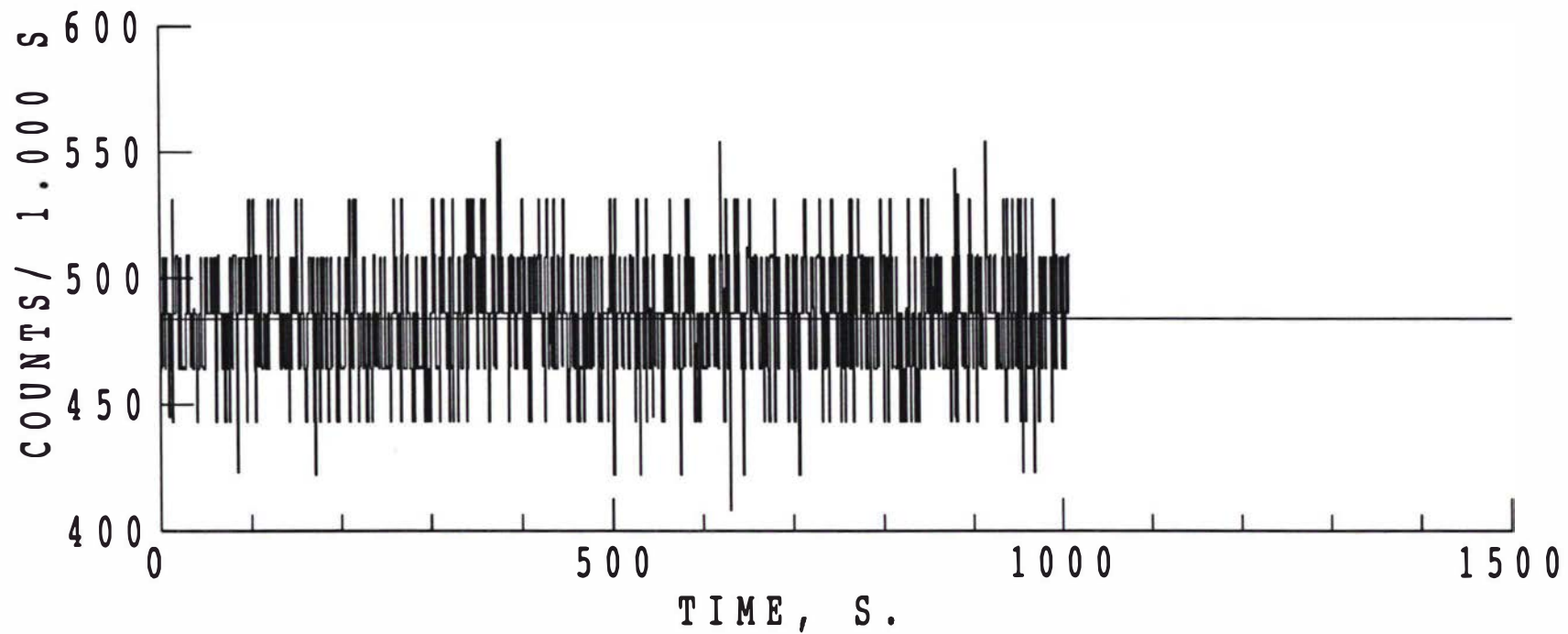
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Jan 2 '08

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data *N/A*

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

3. NEAR Data

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

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

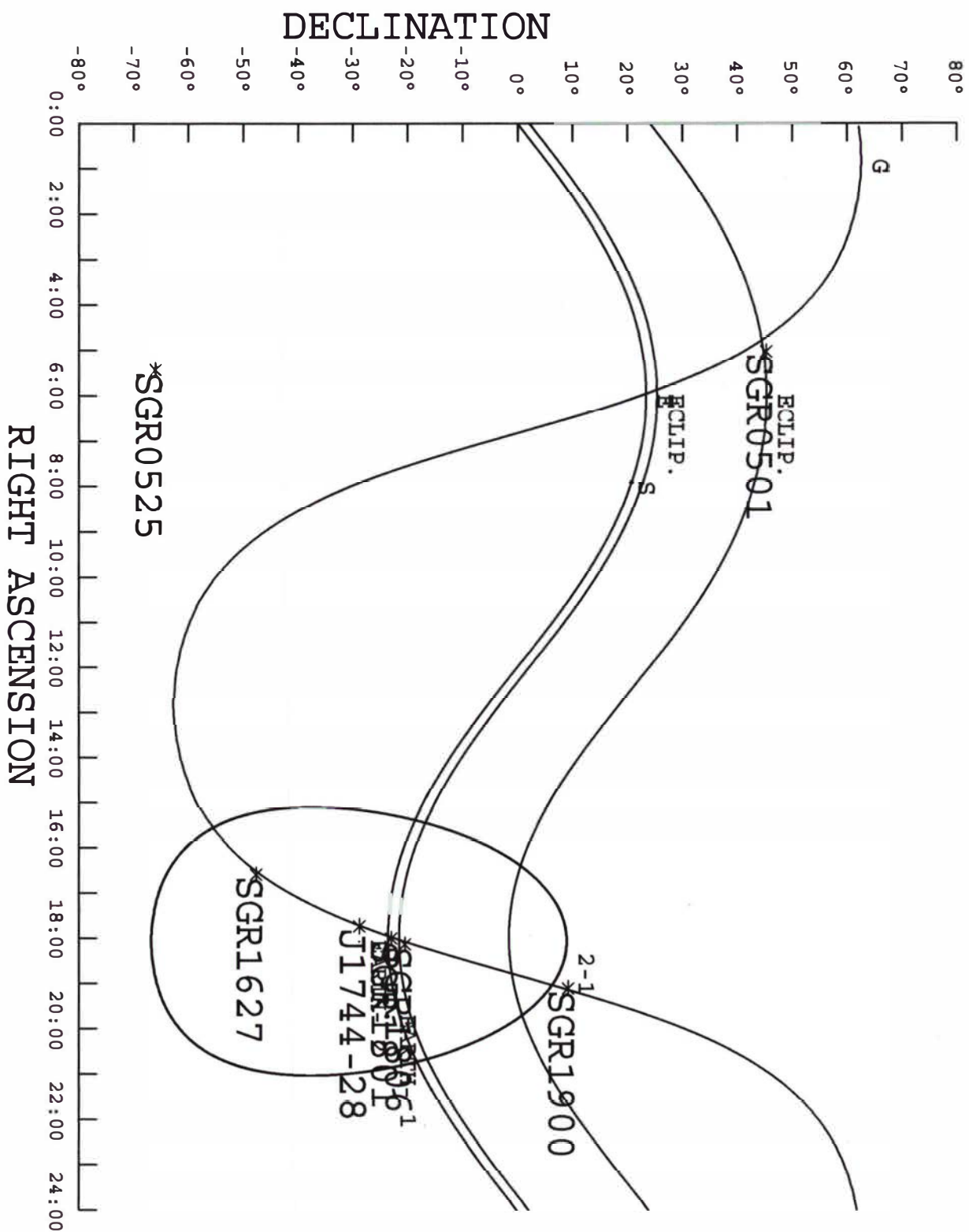
G=GALACTIC EQUATOR

1 KONUS2

2 NEAR

EVENT OF JUL 19, 1999 16:58

2 / 1 / 9



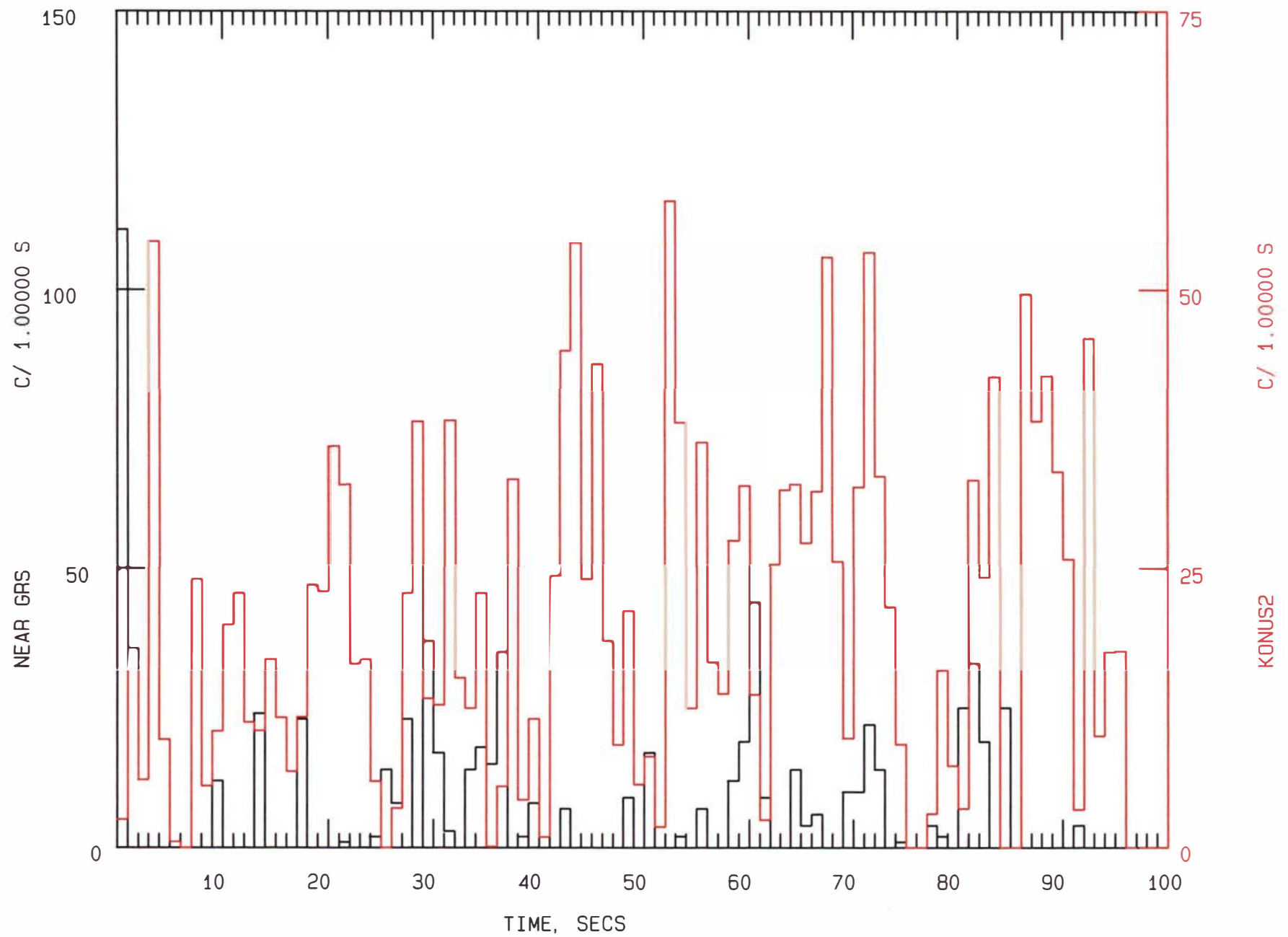
NEAR GRS -KONUS2

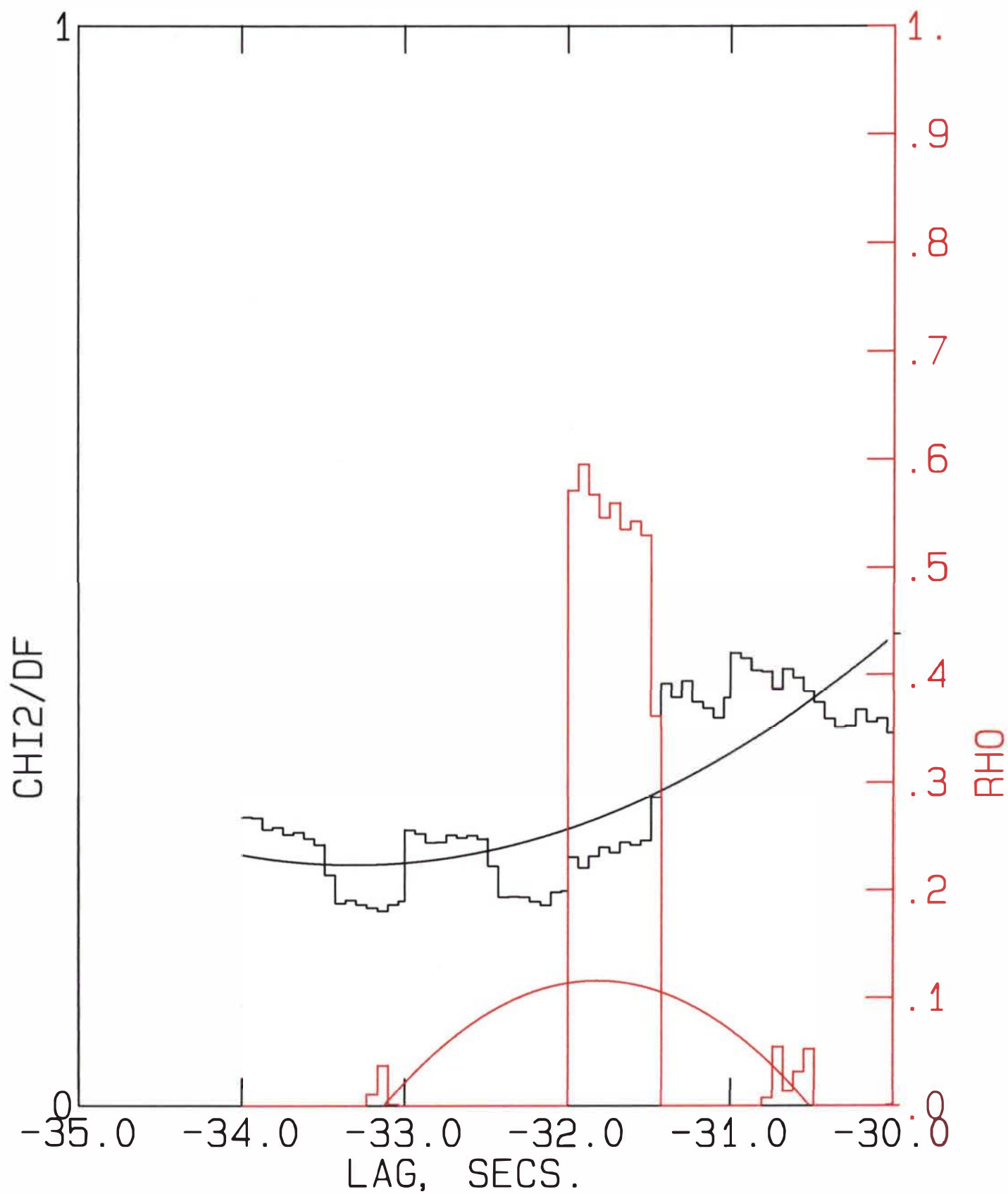
CORRELATION

19/07/99

61940.153

2/ 1/ 9





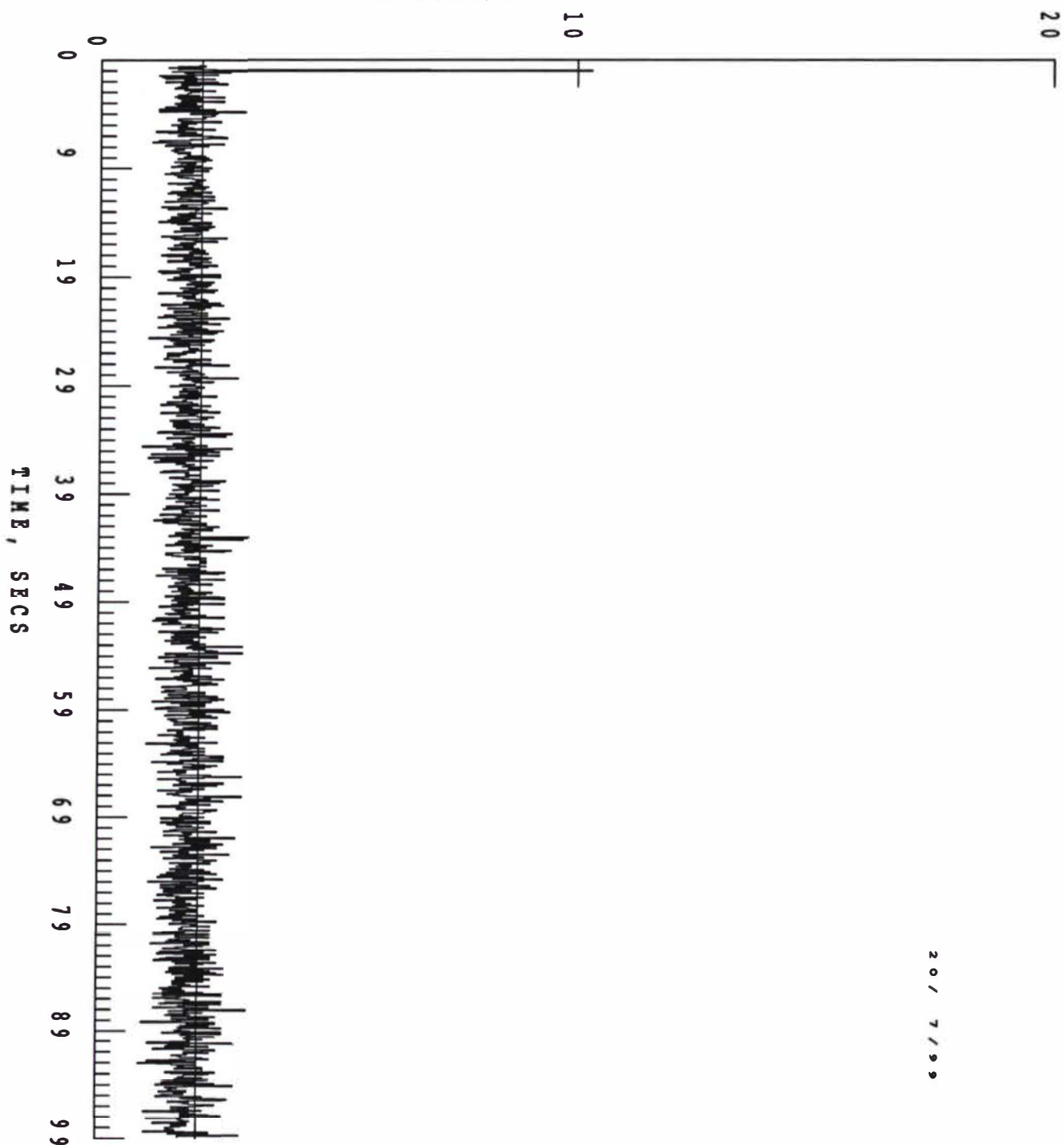
KONUS

19/07/99

61135.420

50 - 200 keV

COUNTS/0.064 S

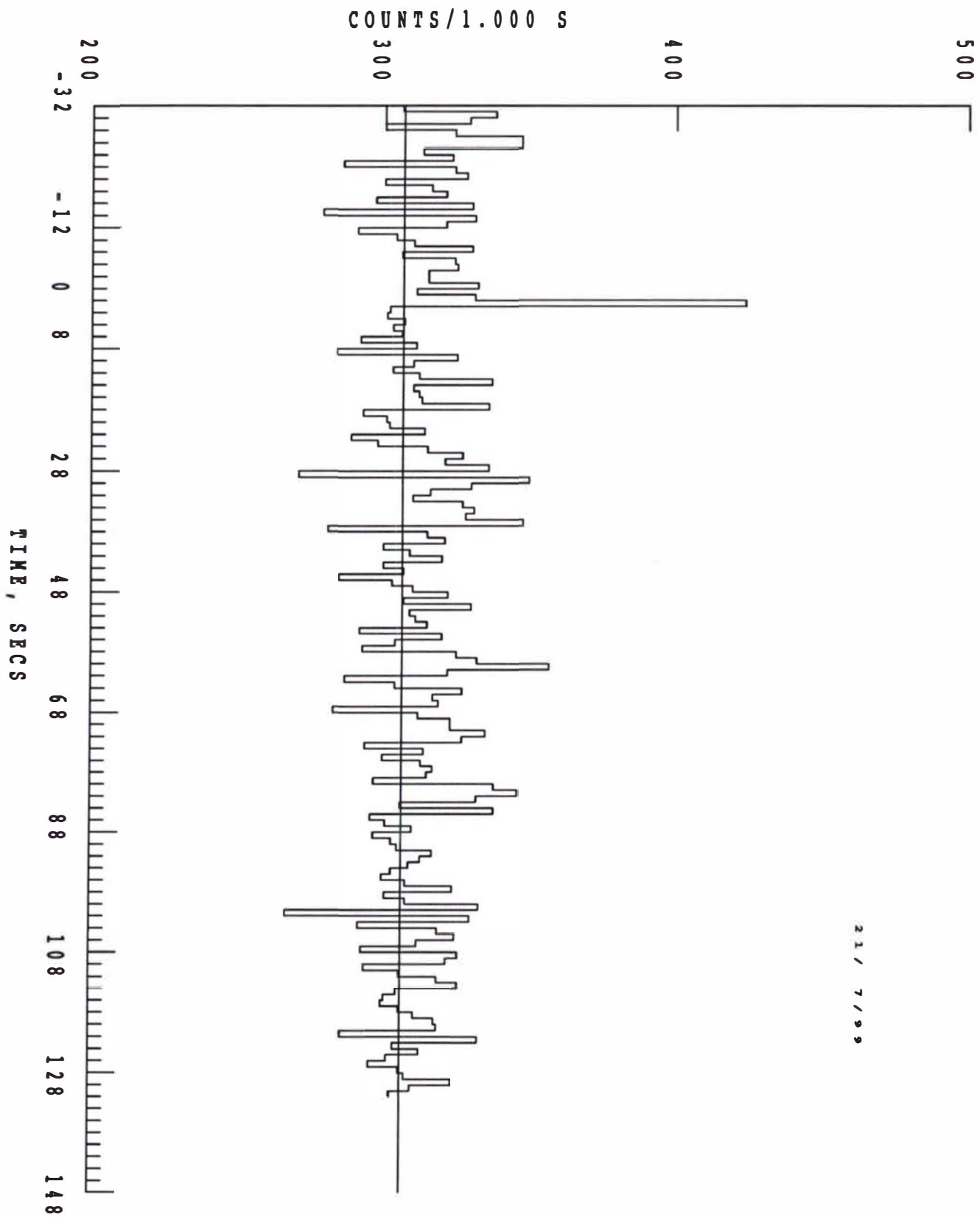


NEAR

19/07/99

61940.153

100-1000 keV



KONUS2 19990719 61135

ULYSSES RT

20 / 7 / 99

19 / 7 / 99 58356.121 s

0.500 S INTERVALS REGROUPED BY 8

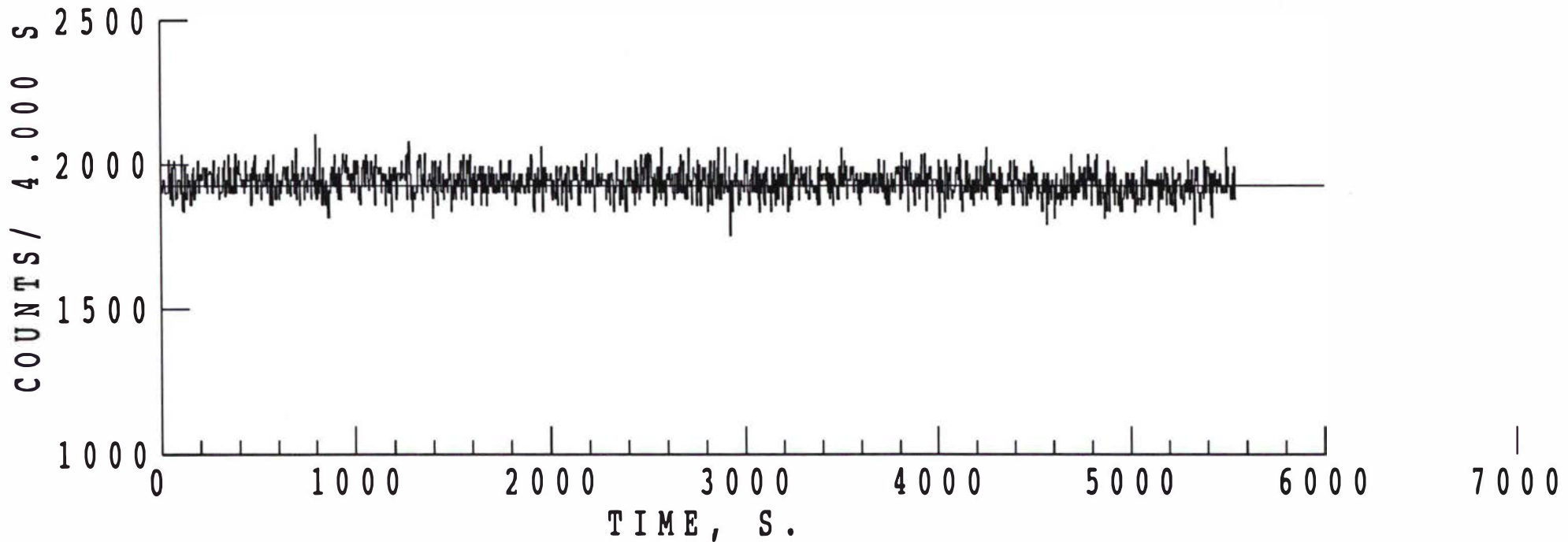
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

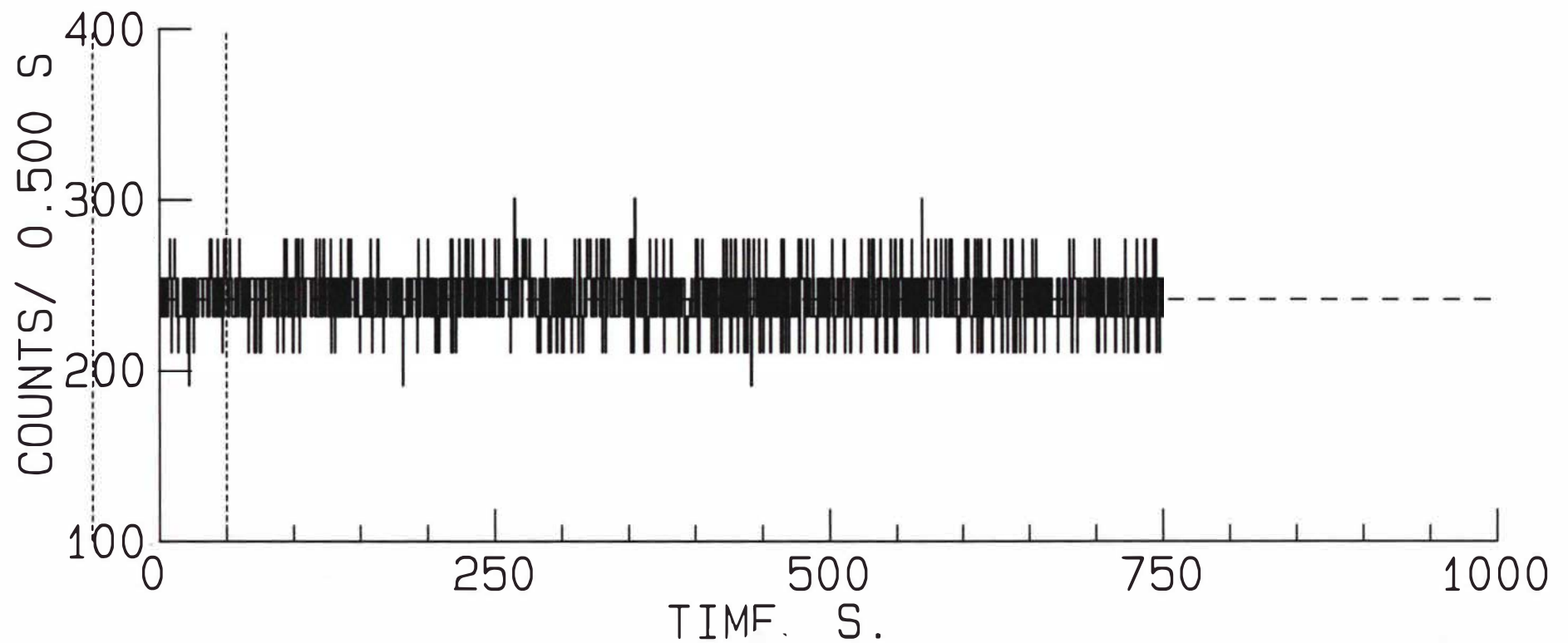
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



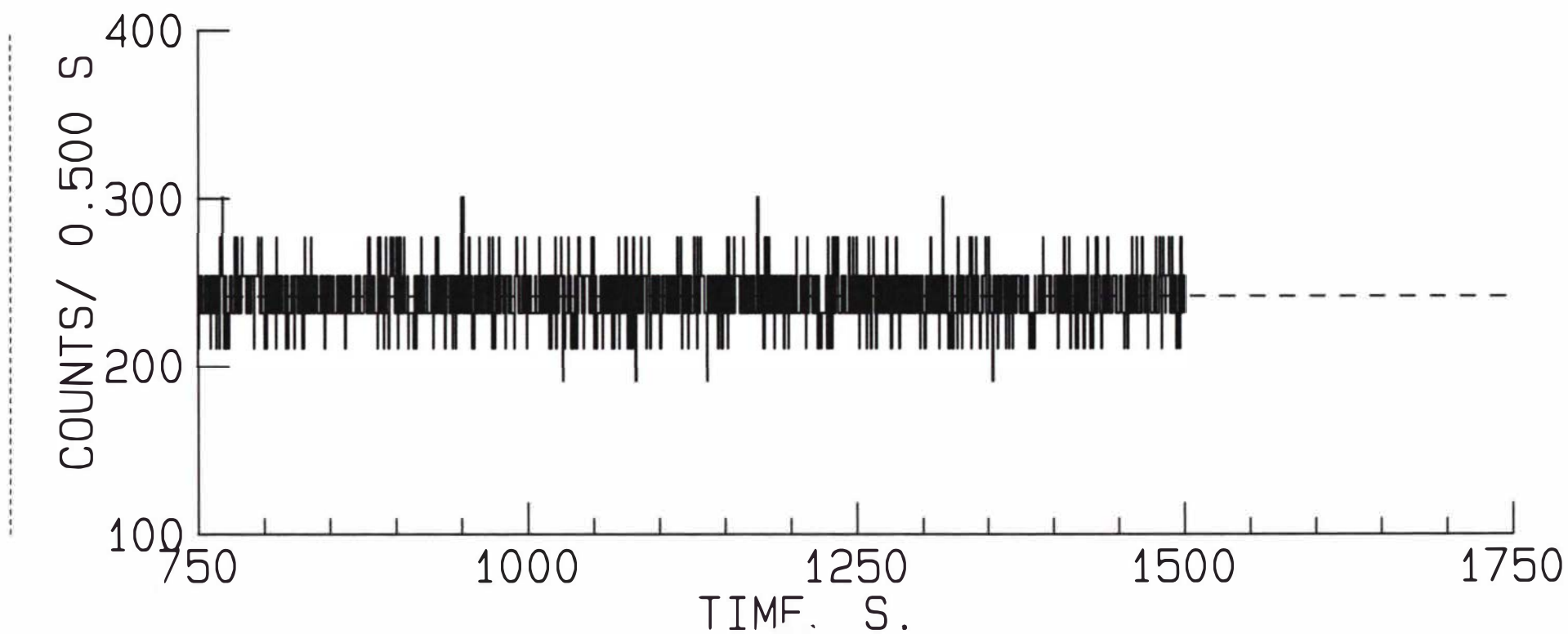
ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99



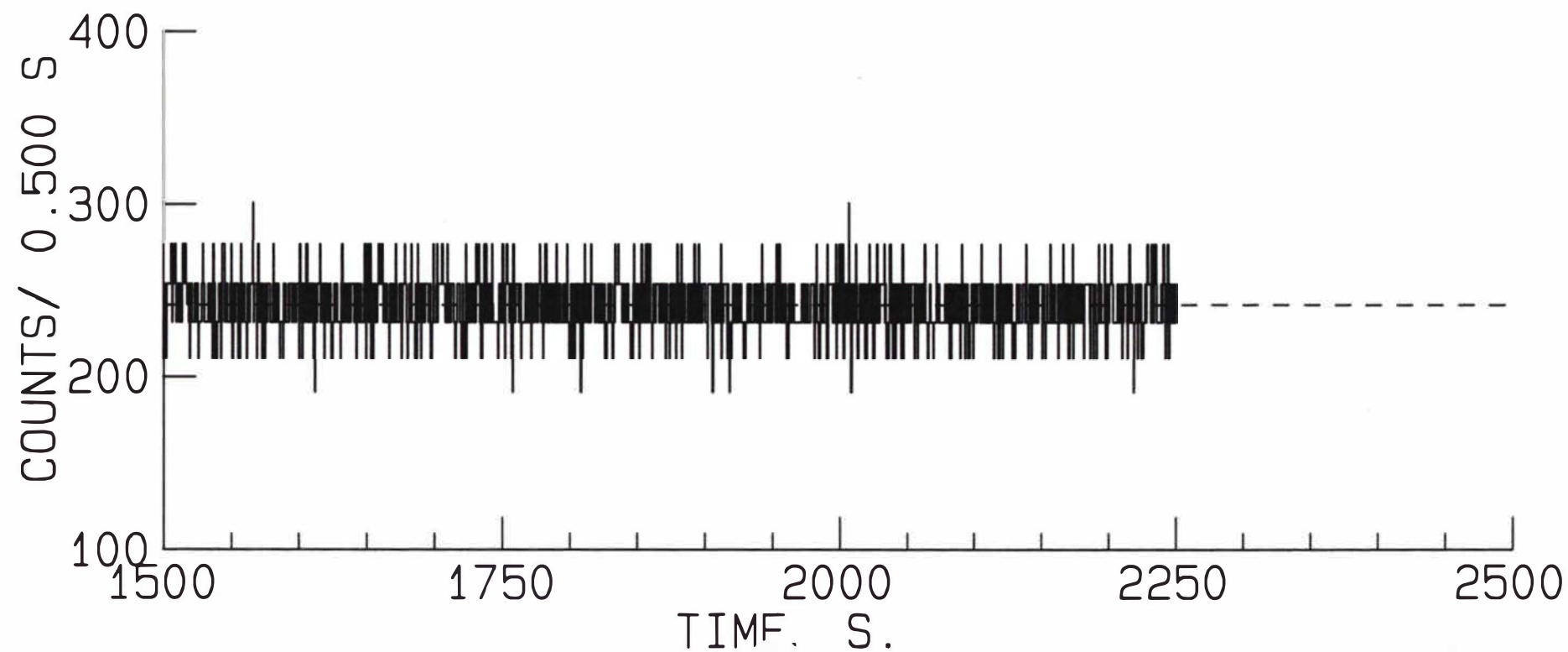
ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99



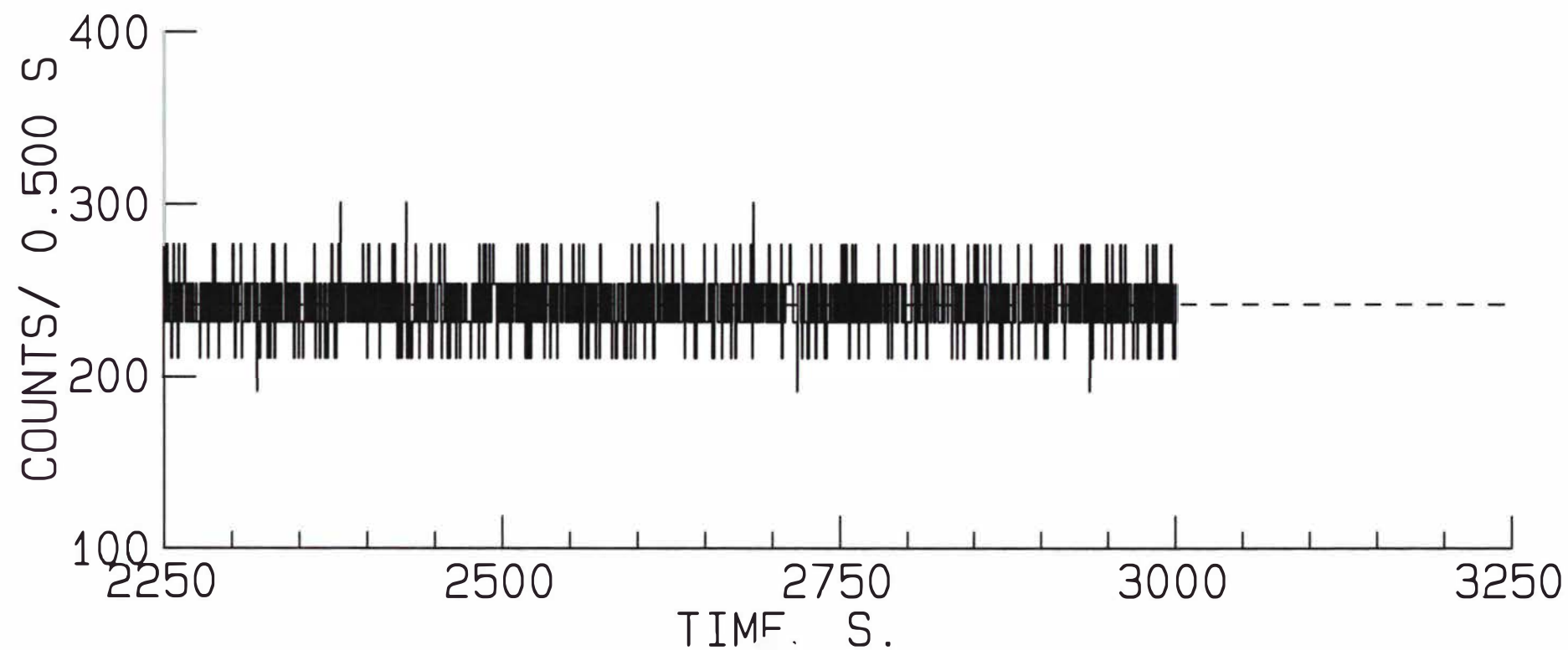
ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99



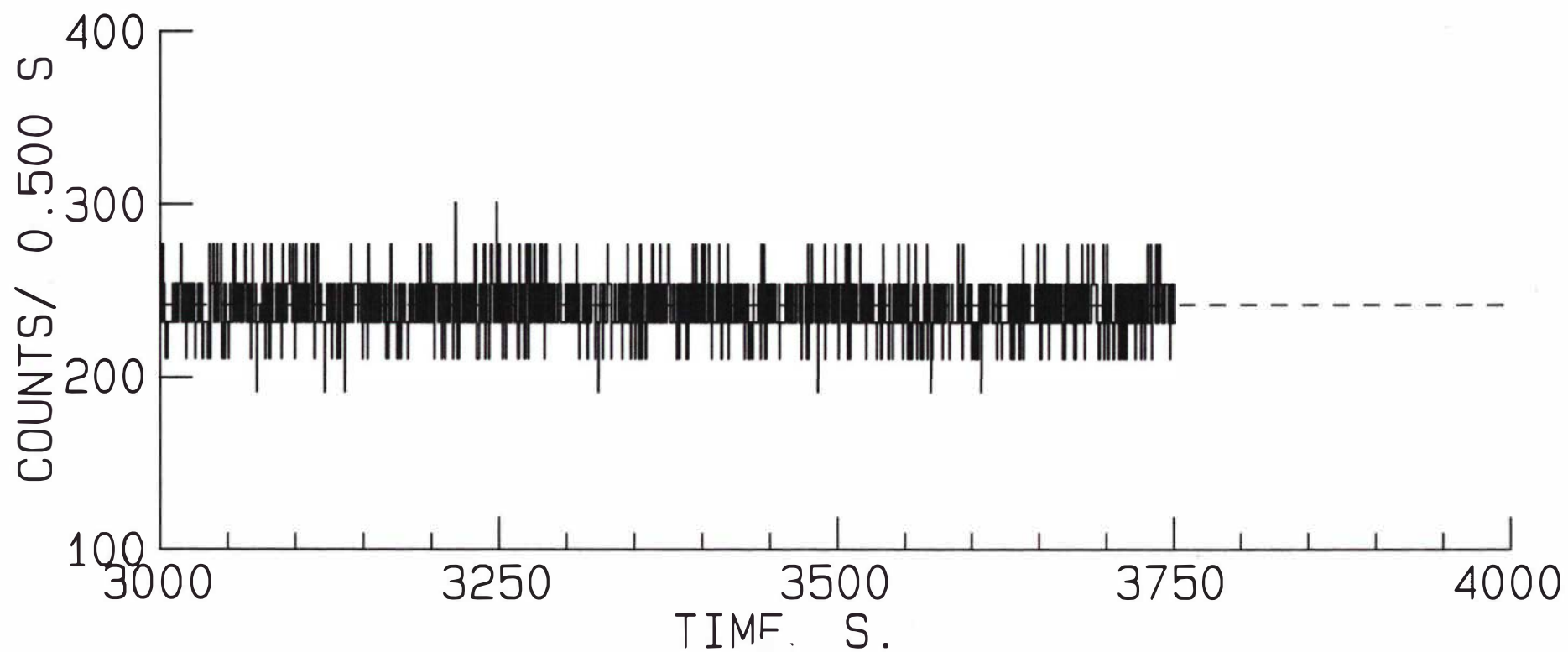
ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99



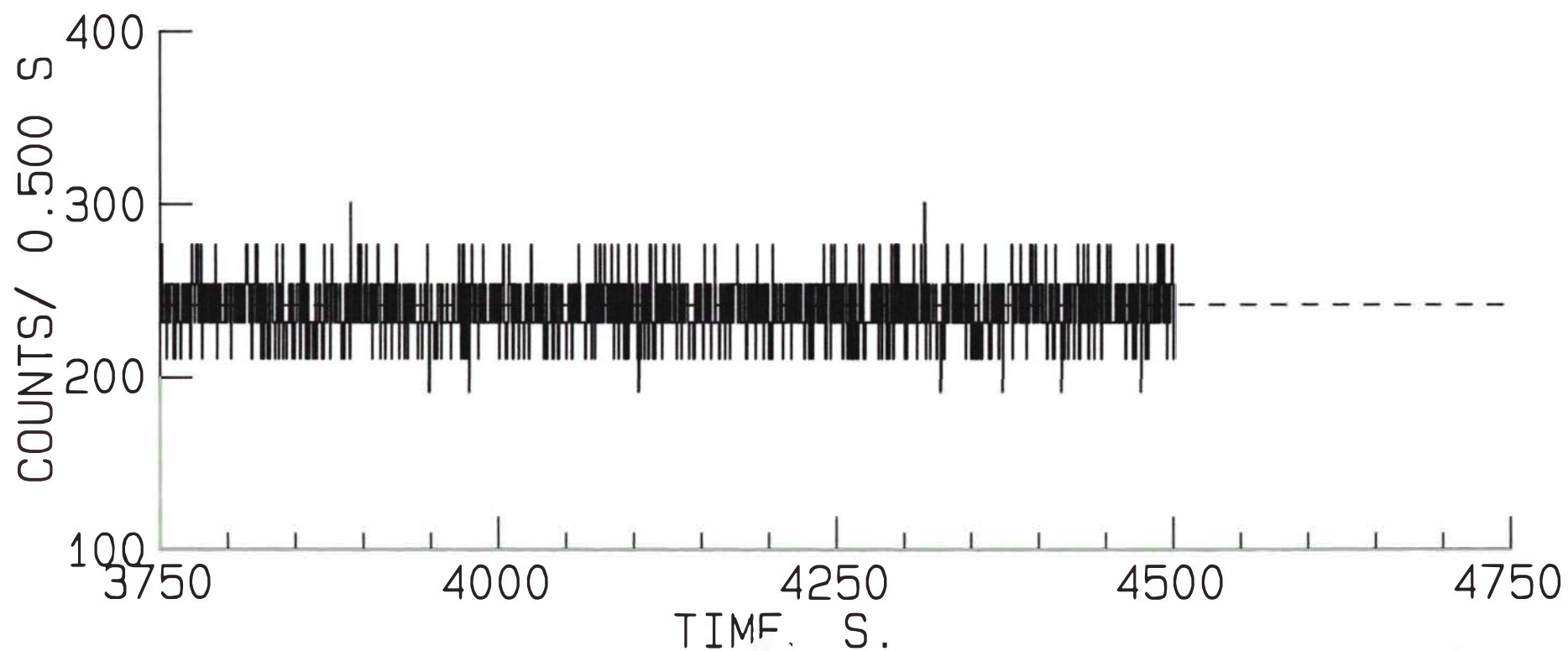
ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99



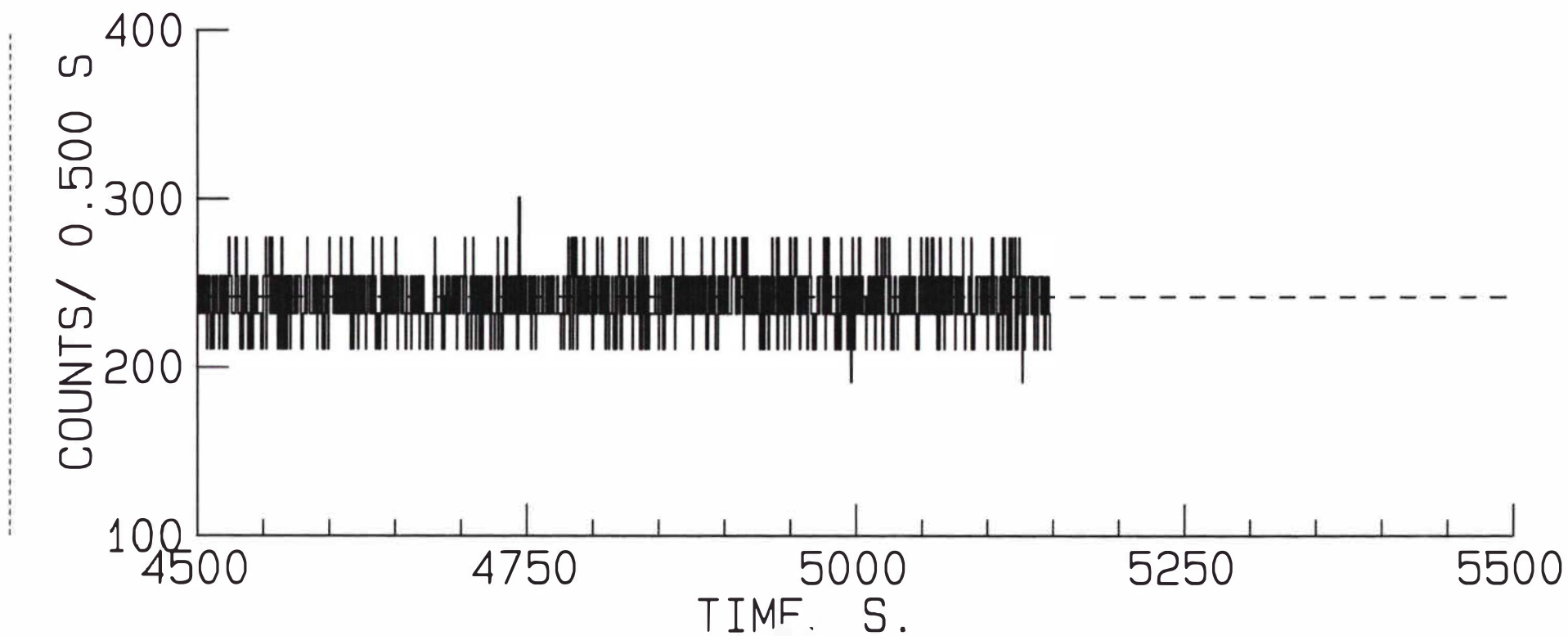
ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99

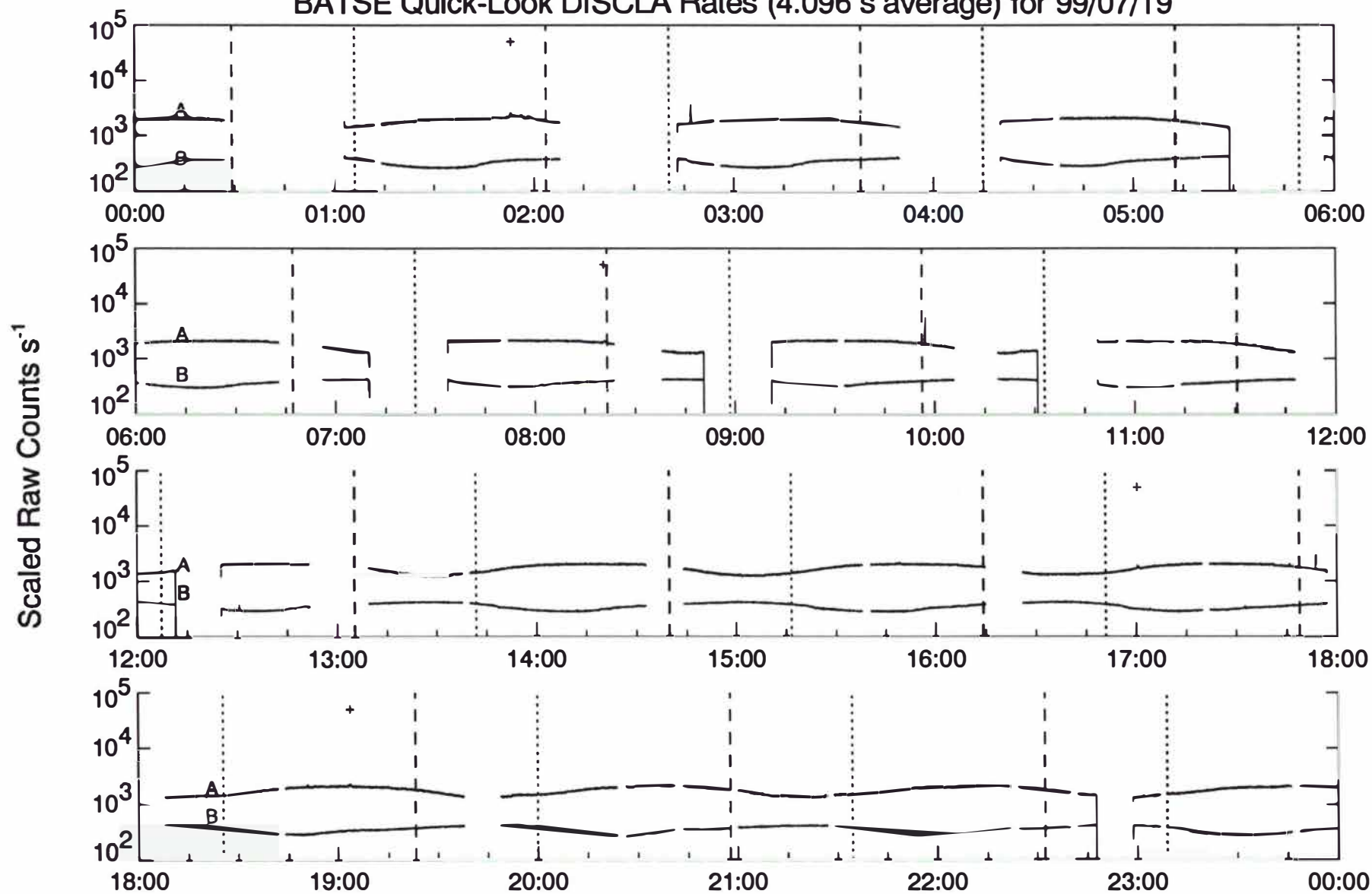


ULYSSES RT
19/ 7/99 59364.128 s
22- 150 keV

22/ 7/99



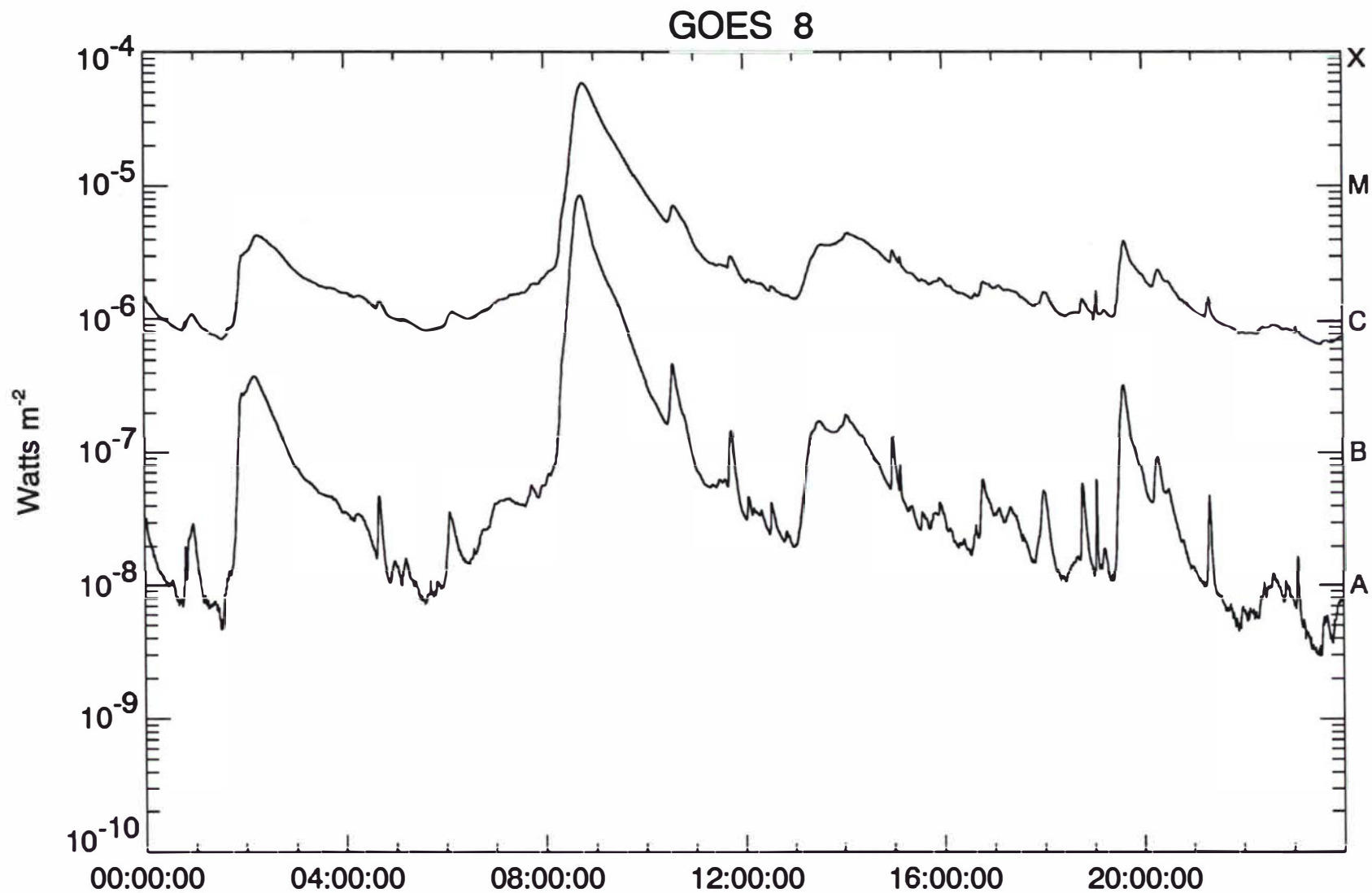
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/19



Current Time: 99/07/23, 1012 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 99/07/19, 0000:00

Plot created: 99/07/23, 1011

Channel

1 (1.0 - 8.0 Angstroms)

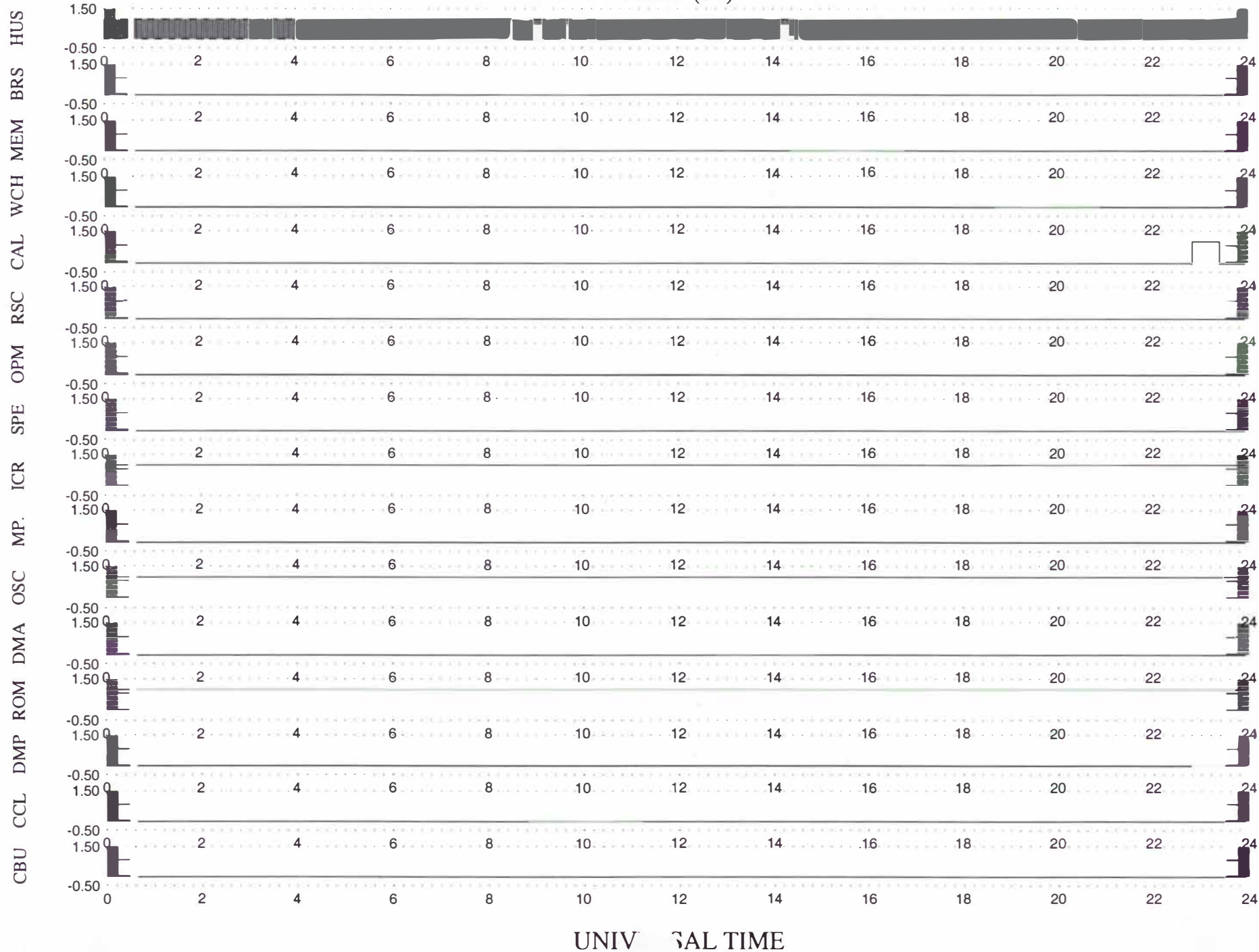
Background not subtracted

2 (0.5 - 4.0 Angstroms)

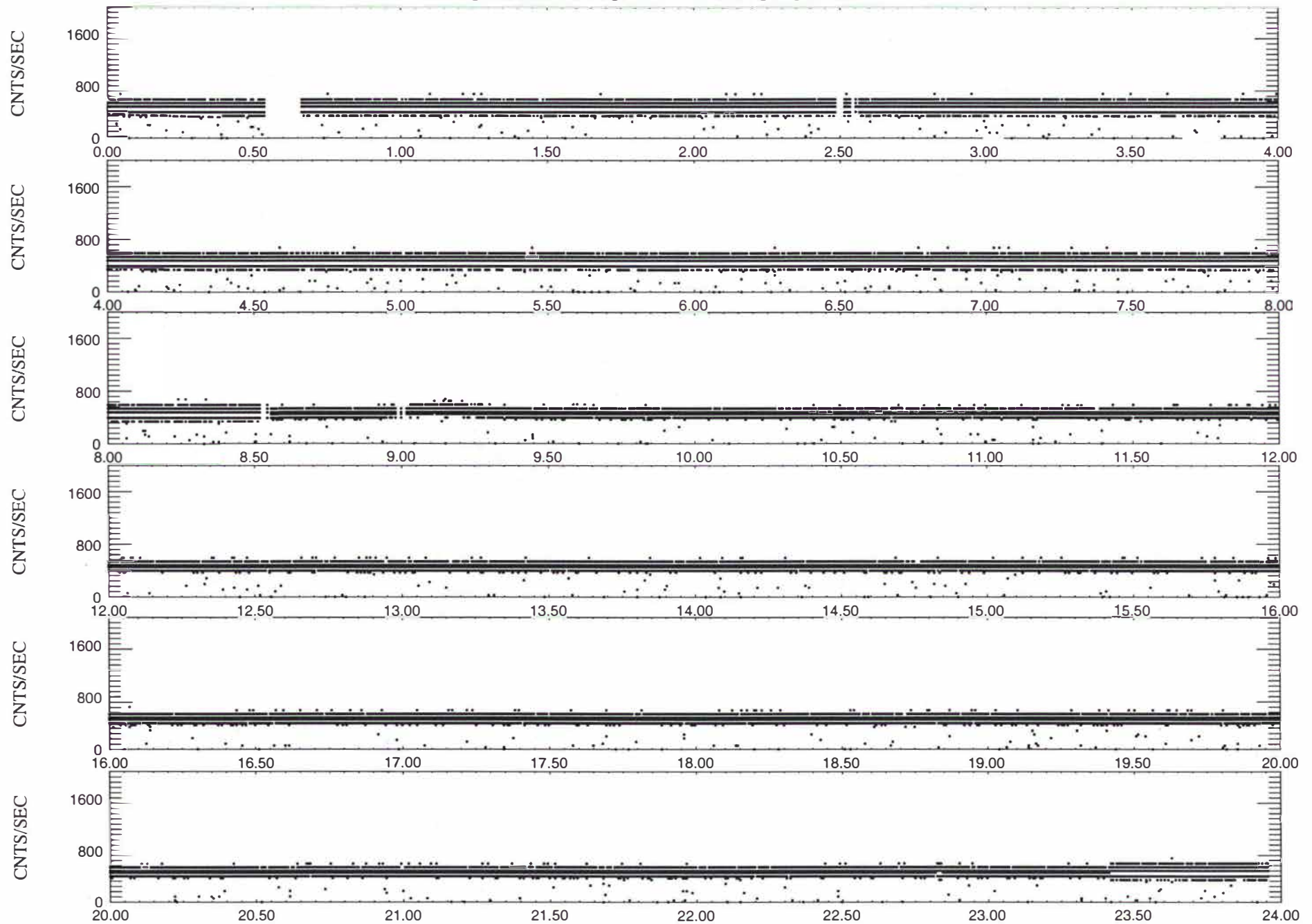
Background not subtracted

Sample average = 10

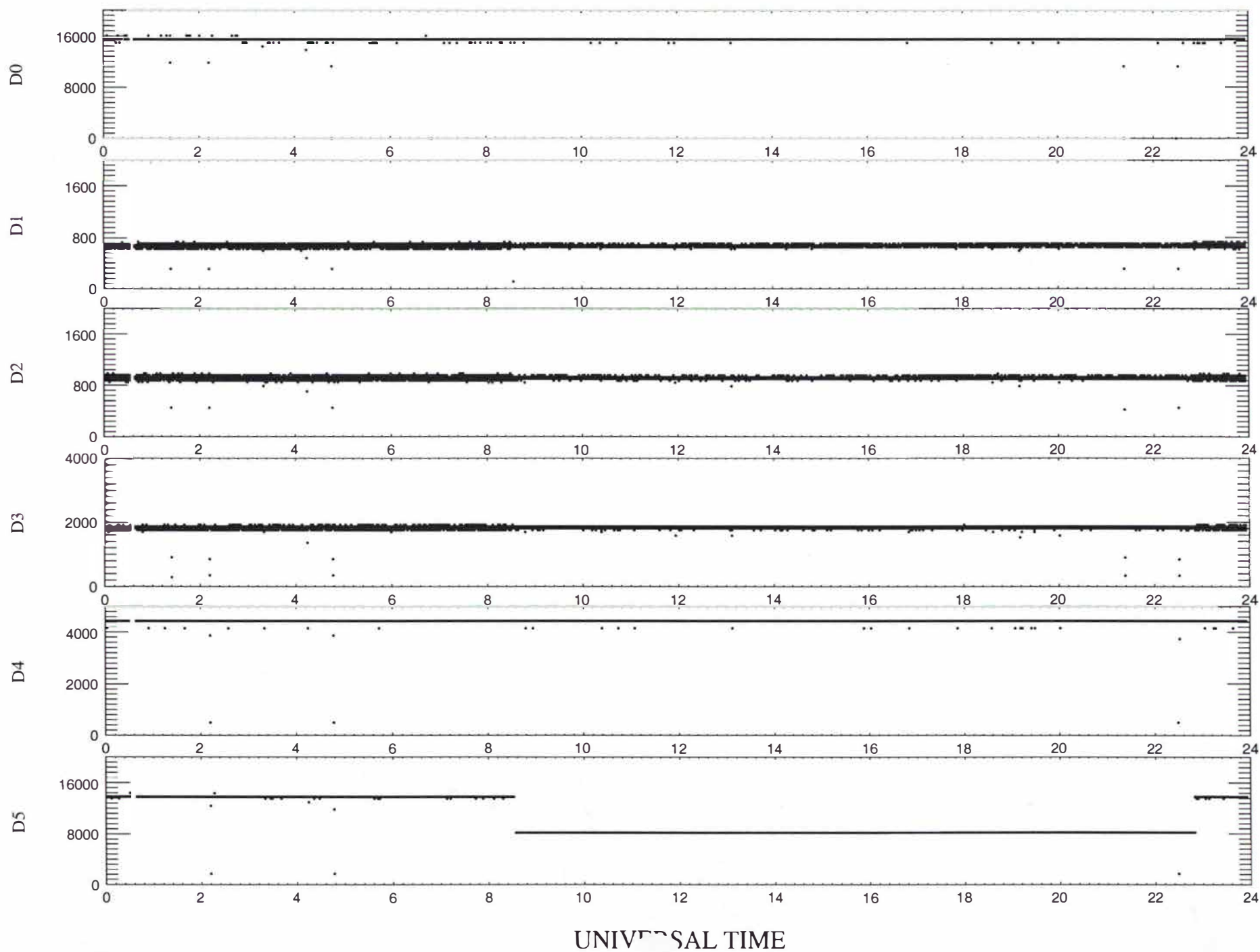
NO BURST (11)



CALIBRATION DATA INCLUDED



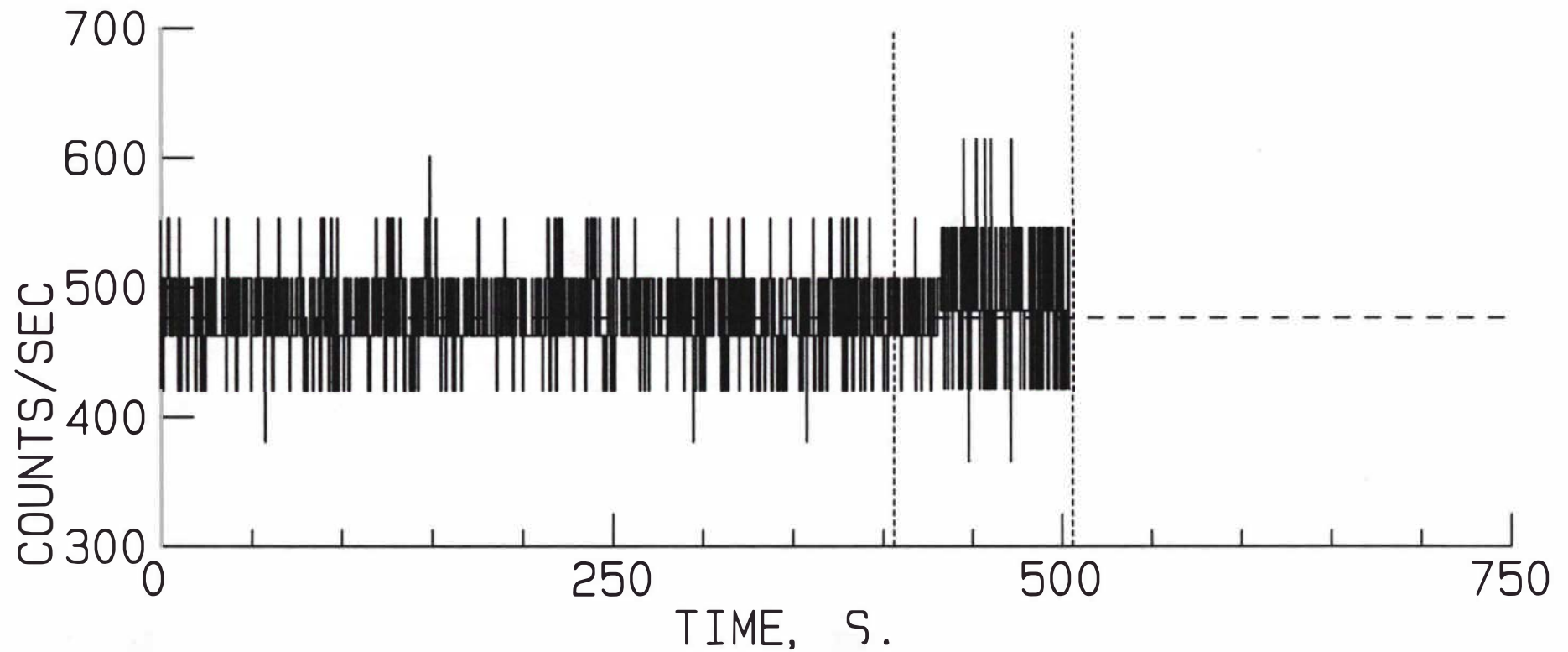
UNIVERSAL TIME



ULYSSES RT
19/ 7/99 83844.375 s
22- 151 keV

28/ 9/ 5

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX GRBM

HUS DATA

19 / 07 / 05

ULYSSES RT

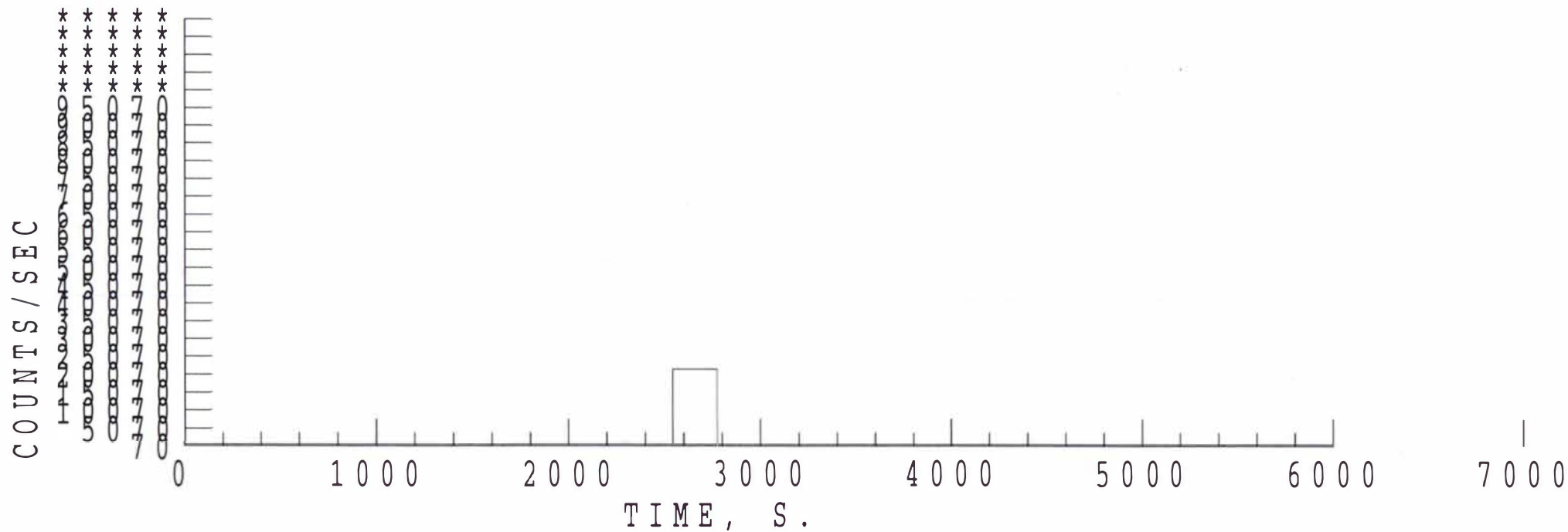
19 / 07 / 99 83700.375 s

INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Jun 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

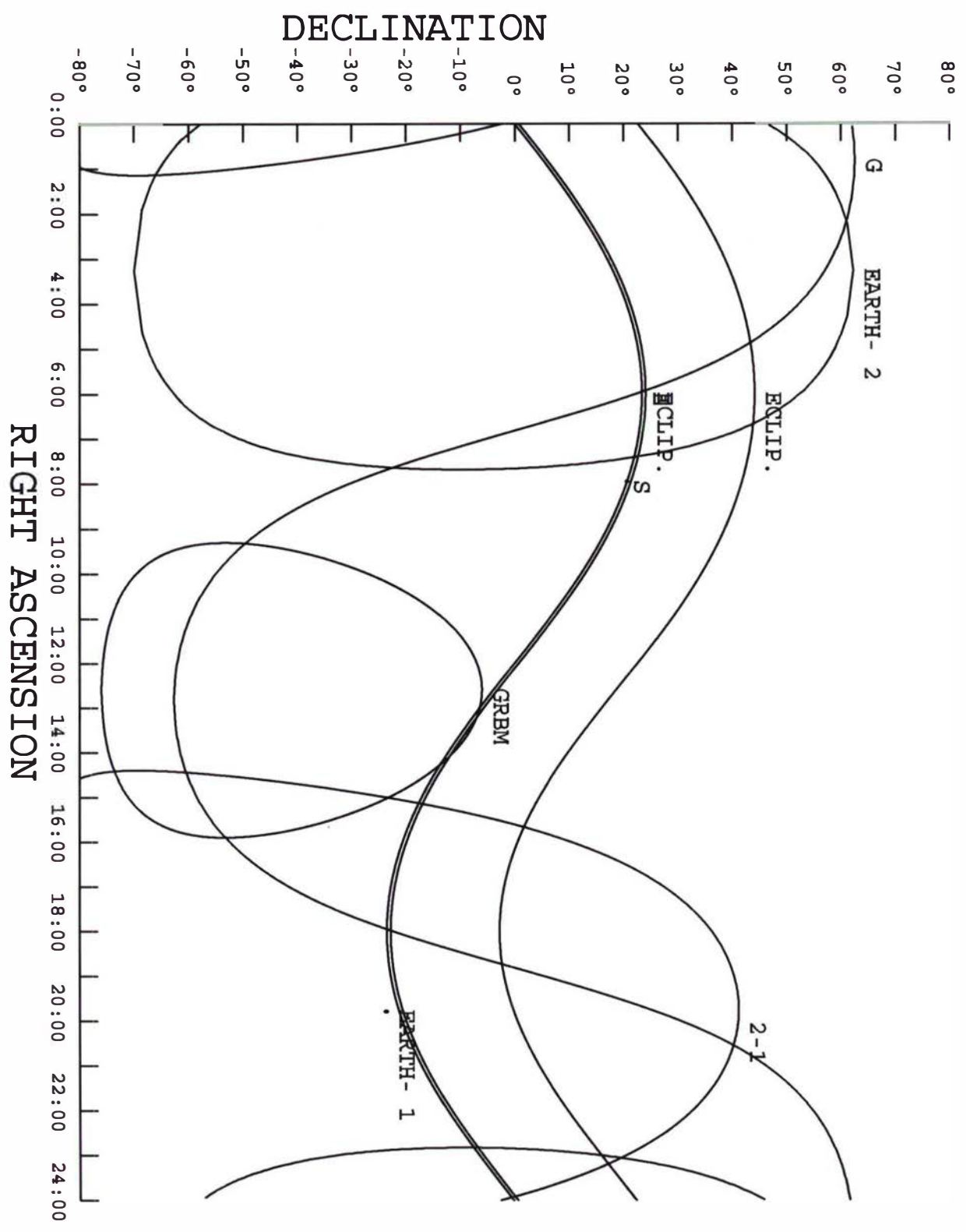
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

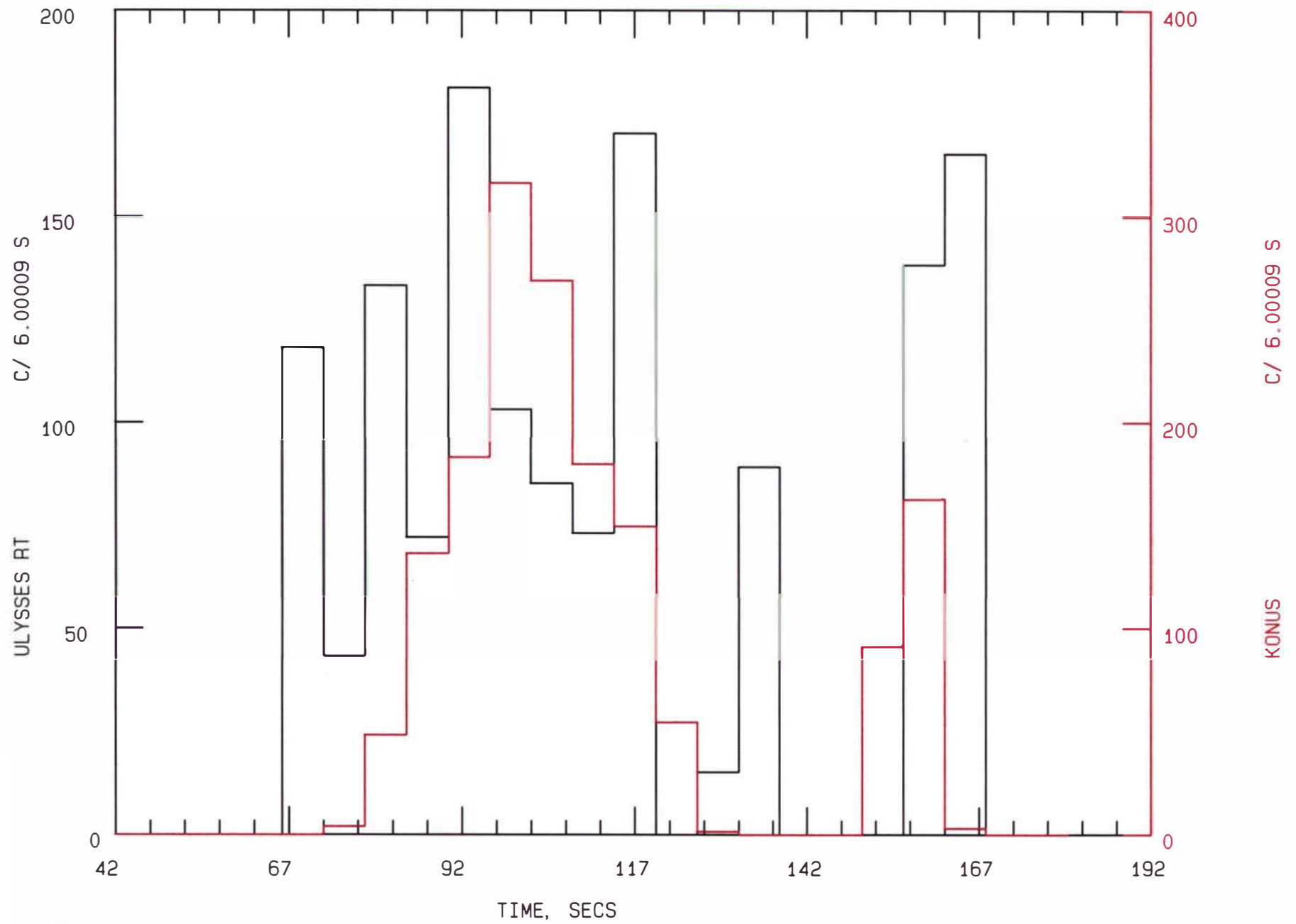
-
- ☒ ACCESS and MBL4 databases updated?

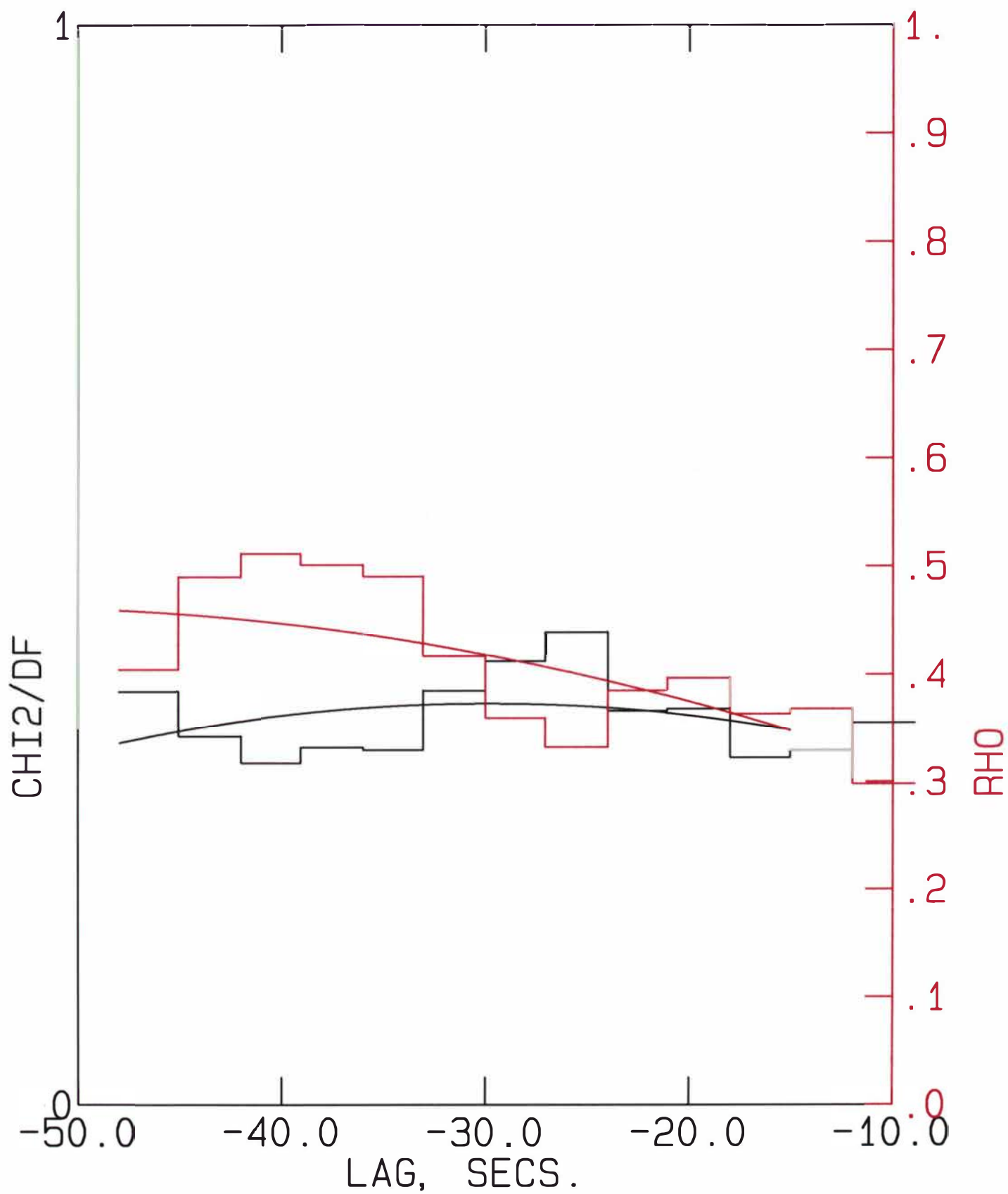
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 KONUS 2 SAX

EVENT OF JUL 20, 1999 8:28

29 / 6 / 7

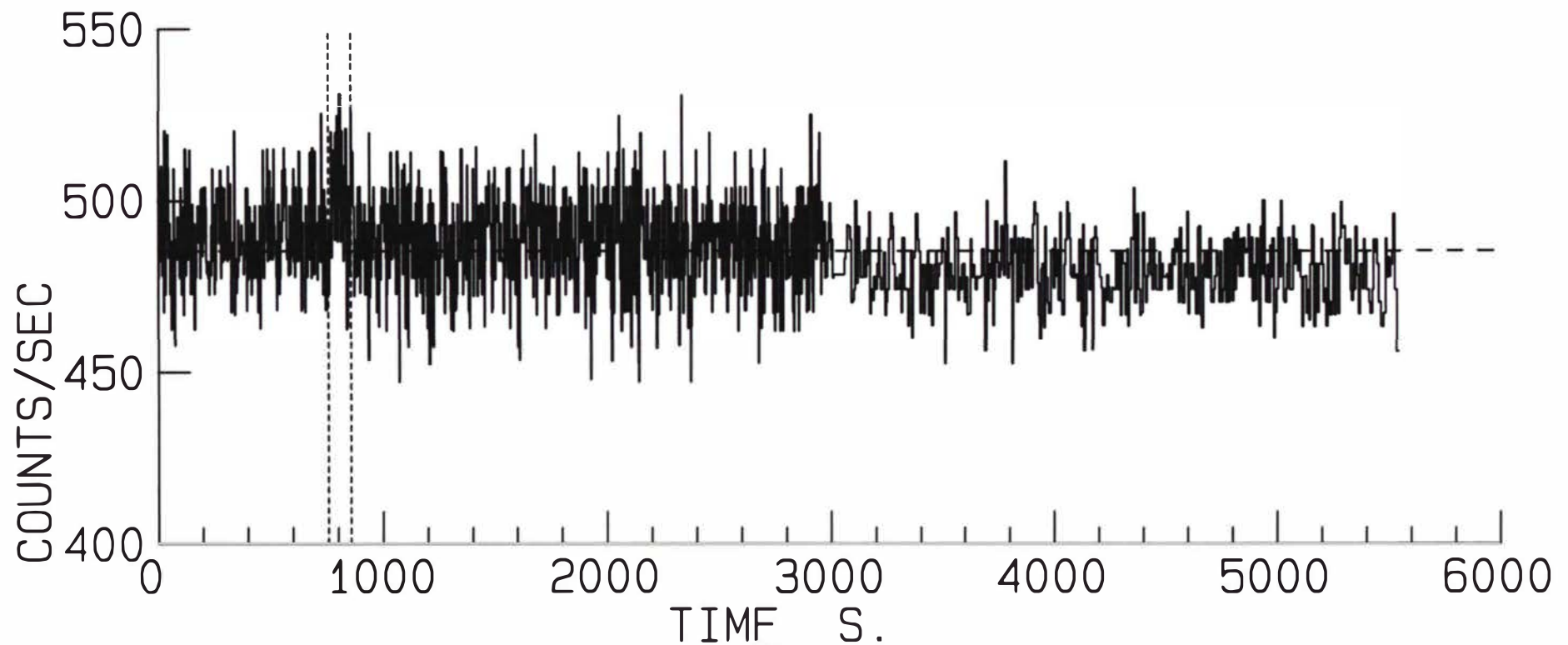






ULYSSES RT
20/ 7/99 27792.186 s
INTERVALS REGROUPED BY 12
22- 151 keV

29 / 6 / 7



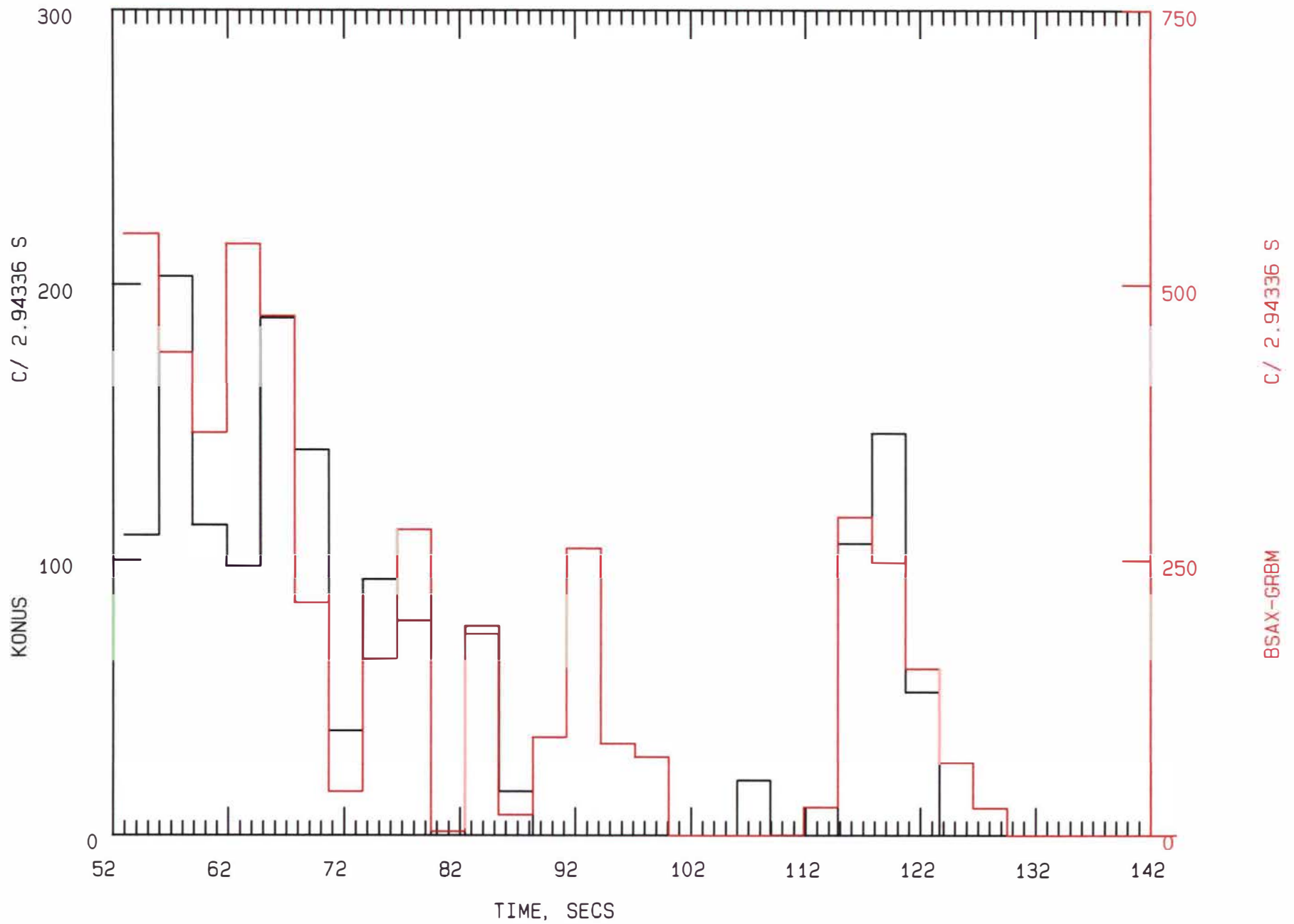
KONUS

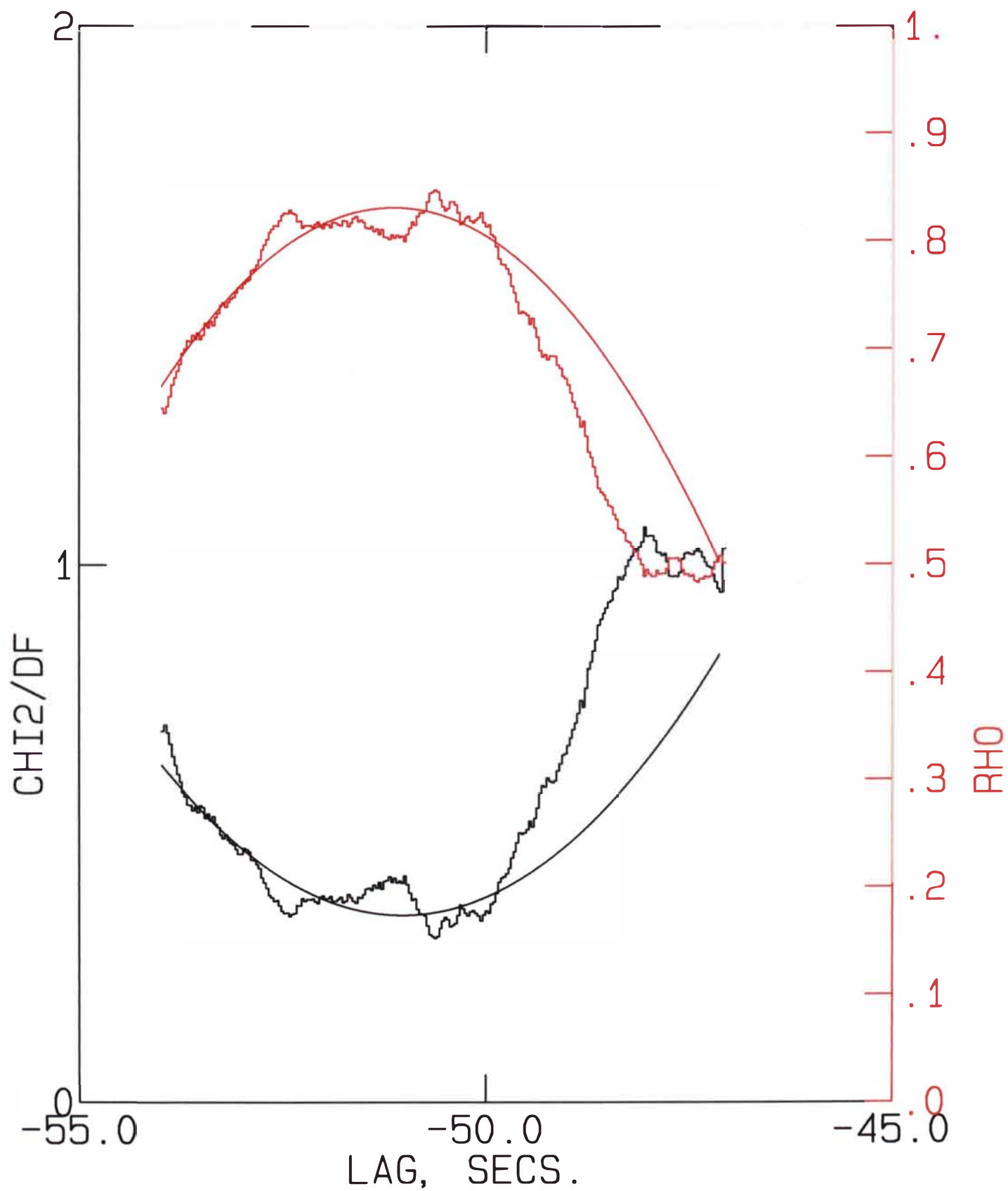
-BSAX-GRBM CORRELATION

20/07/99

30524.793

29/ 6/ 7



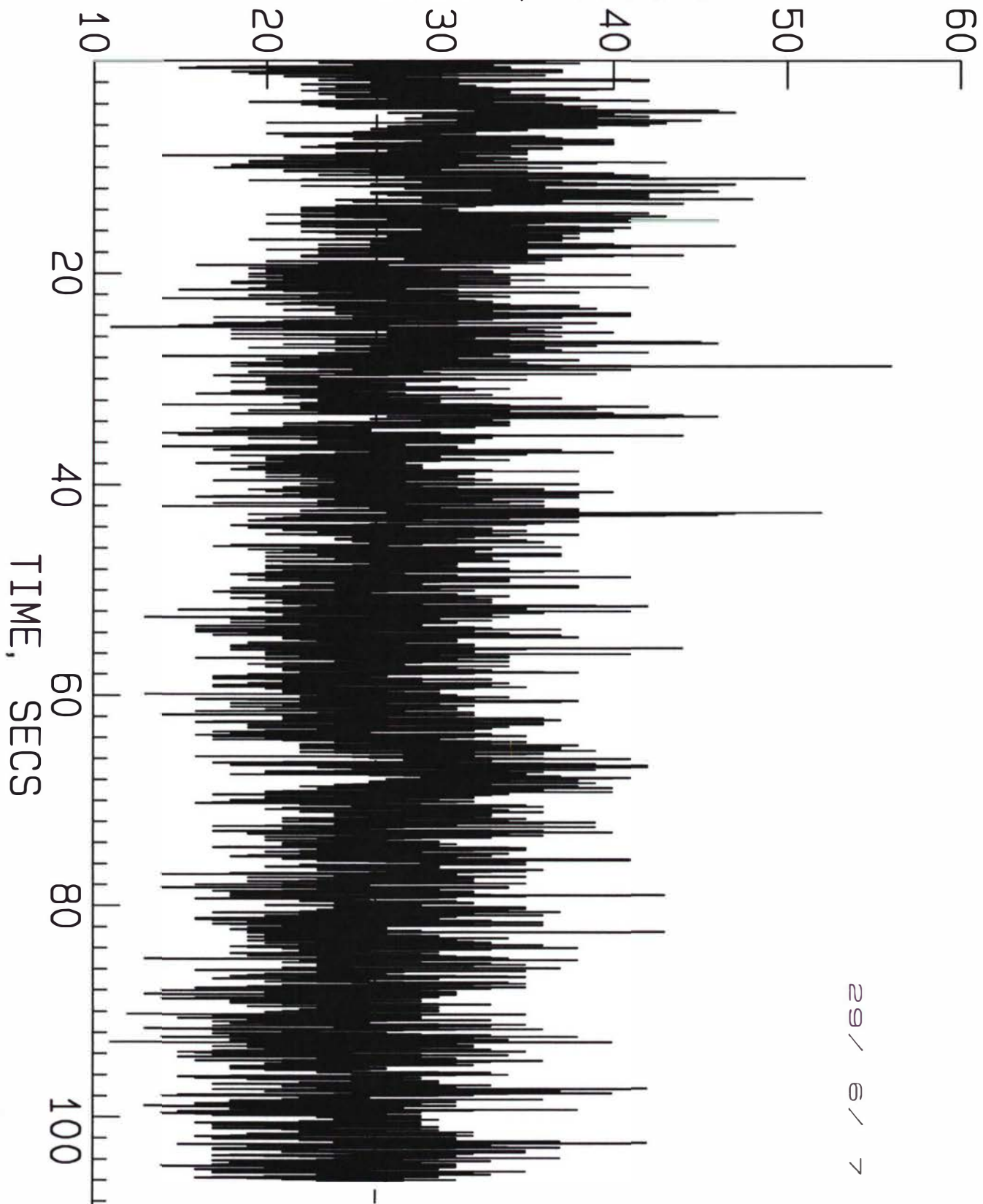


SAX GRBM

20/07/99 30576.788

40- 700 keV

COUNTS/0.031 S



29 / 6 / 7

KONUS

20/07/99 30524.793

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.943 S

3400

DETECTOR 1 - S. ECLIPIC



1400



400

20

40

60

80

100

120

140

TIME, SECS

KONUS

20/07/99 30524.793

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.943 S

4300-

DETECTOR 2 - N. ECLIPHTIC

28/06/07

3300

2300

1300

300

20

40

60

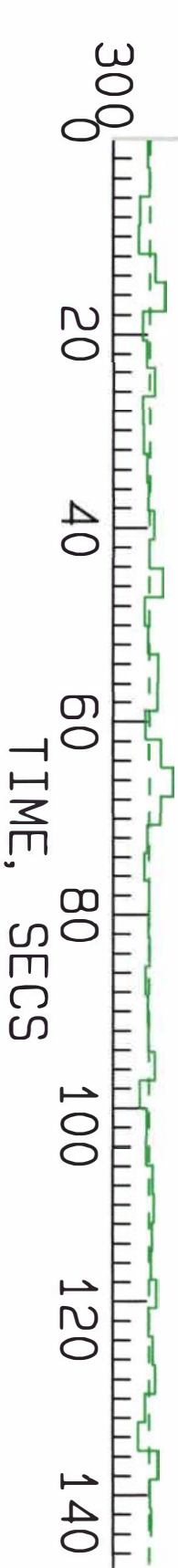
80

100

120

140

TIME, SECS



KONUS

21 / 01 / 00

ULYSSES RT

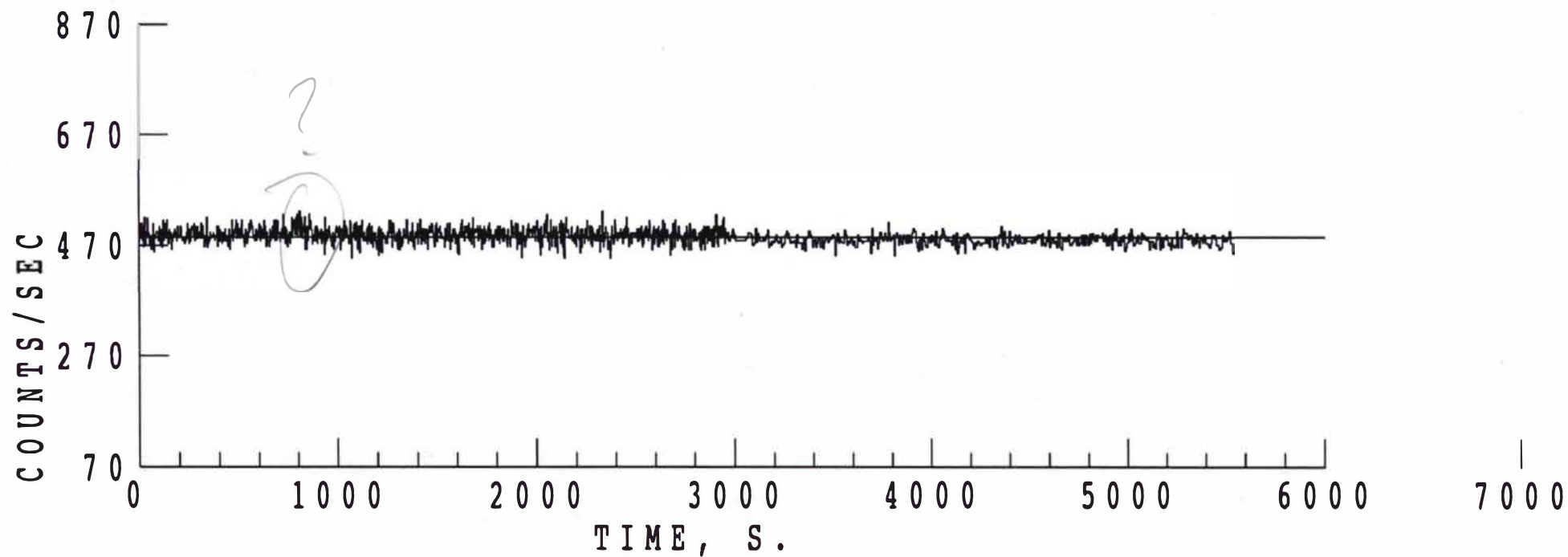
20/07/99 27792.186 s

INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GRBM 19990720 56566

ULYSSES RT

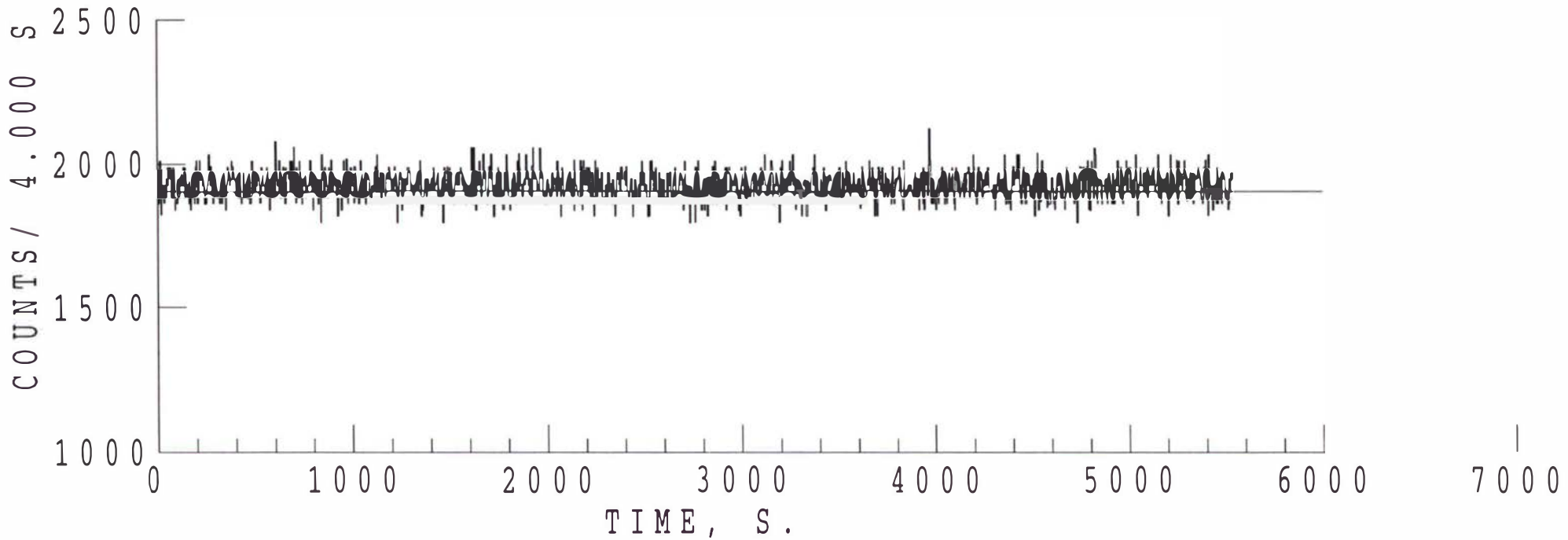
26 / 08 / 09

20/07/99 53784.449 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 K= 2
>4.0 SIGMA FLUCTUATIONS

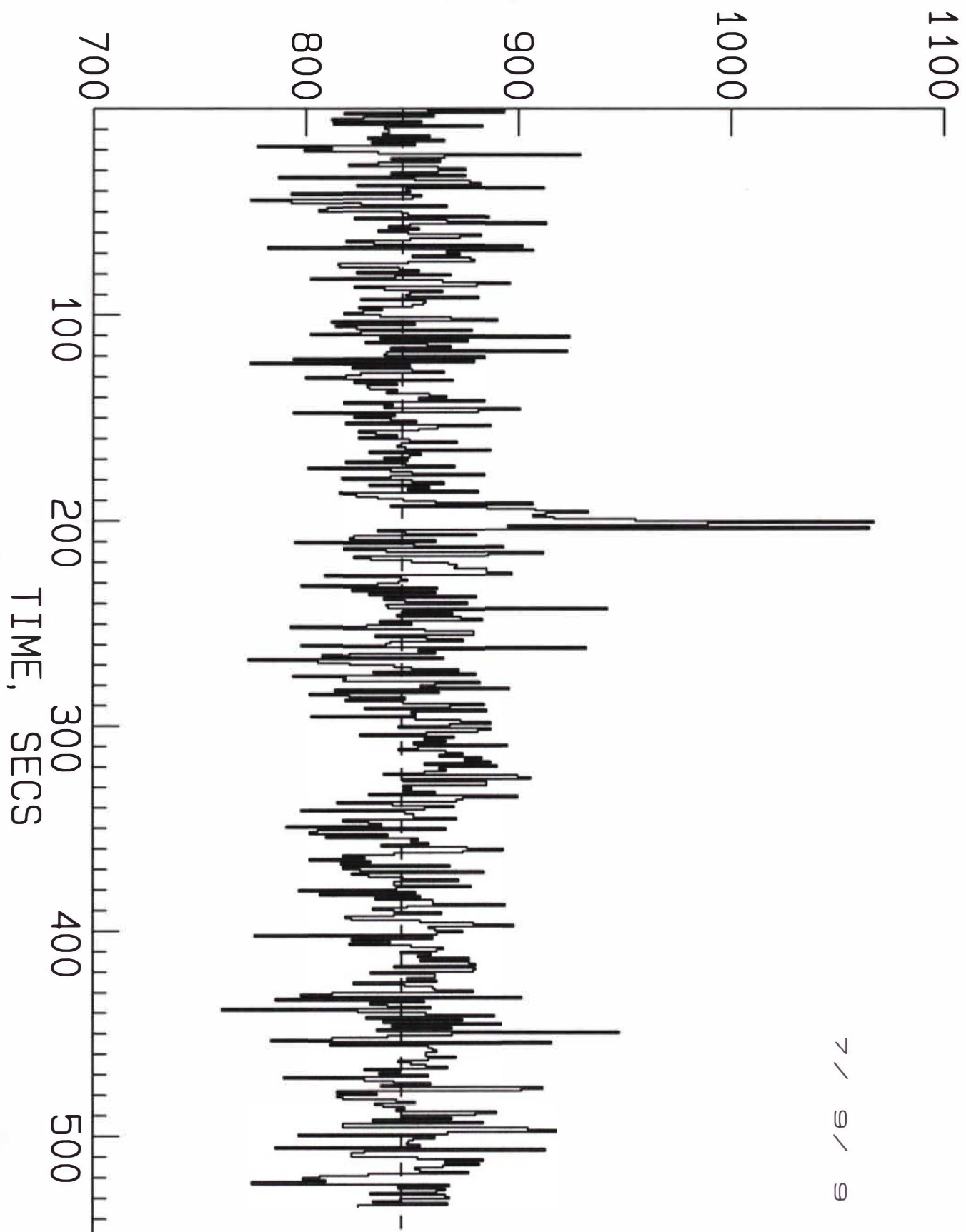


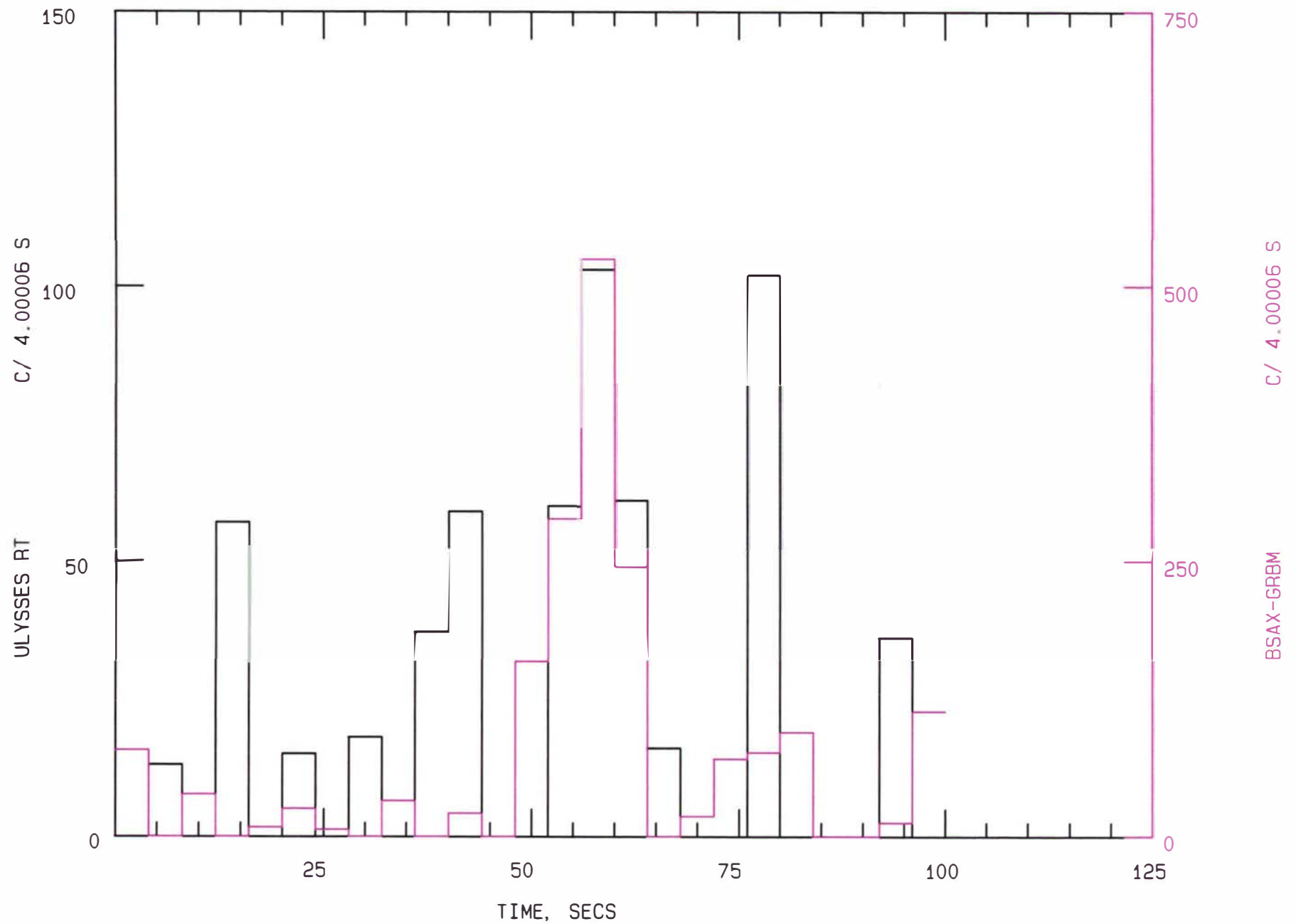
SAX GRBM

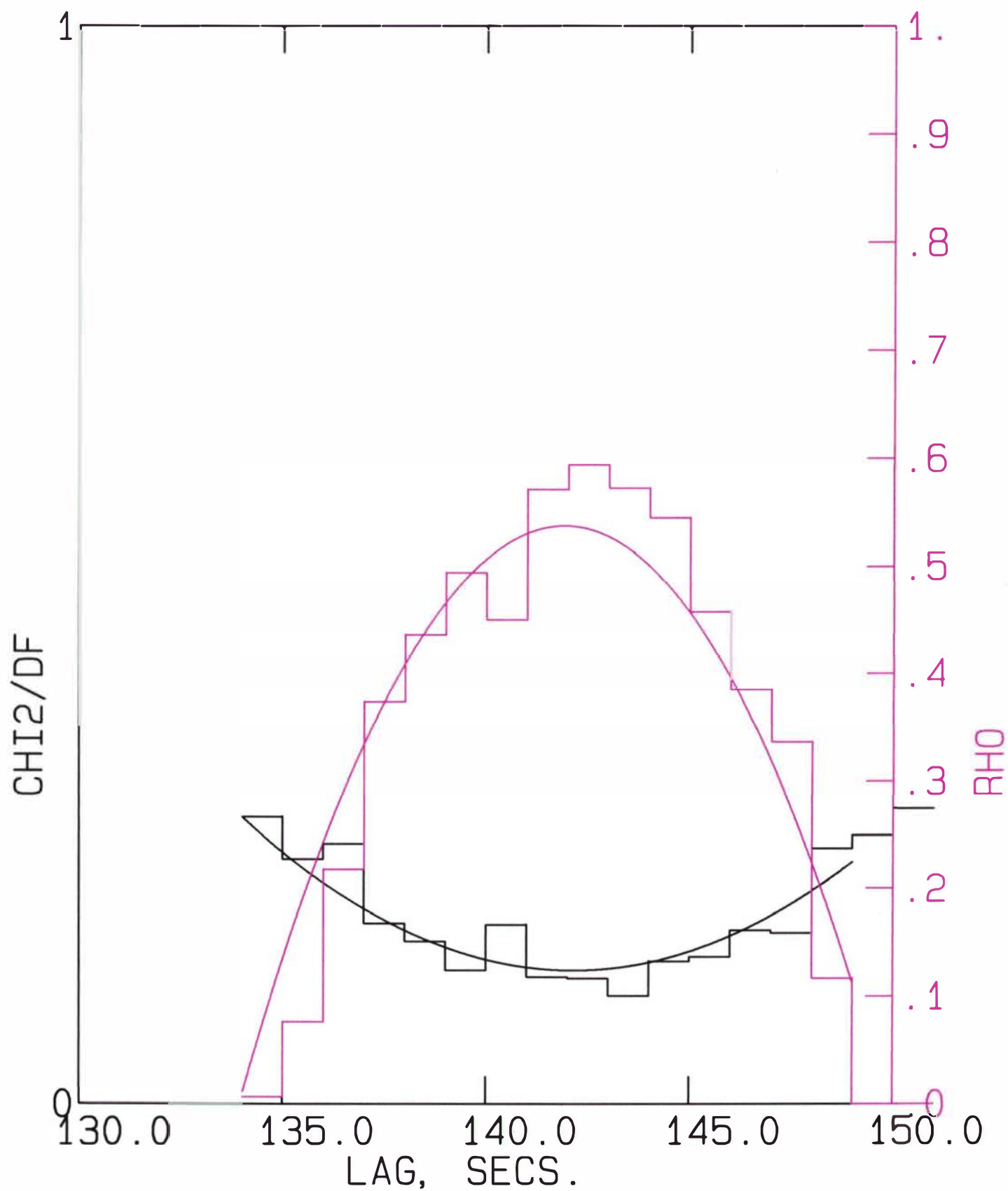
20/07/99 56366.375

40- 700 keV

COUNTS/1.000 S







From HENZE@fender.msfc.nasa.gov Wed Jul 21 10:40 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Wed, 21 Jul 1999 12:46:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7663
Content-Length: 2557
Content-Type: text
X-Lines: 47
Status: RO

No - too weak

BATSEARCH PROGRAM

BATSE BURST # 7663
EVENT OF 1999 JUL 20 DAY OF YEAR=201
EVENT CROSSING TIME AT BATSE : 75940. S. OR 21:05:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 12.000 -33.000
BATSE PEAK COUNTING RATE: 22500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 7/ 99 IS:
RA= 148.886 DEC= -8.769 DIST= 5.467 AU
BATSE-ULYSSES DISTANCE = 817853642. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1424.14 SECS.
CROSSING TIME AT ULYSSES IS 77364. S. OR 21:29:24 +/- 475.60 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 7/ 99 IS:
RA= 212.935 DEC= -14.768 DIST= 0.932 AU
MARS-BATSE DISTANCE = 139425728. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 287.69 SECS.
CROSSING TIME AT MARS IS 76228. S. OR 21:10:27 +/- 67.81 SECONDS
BATSE BURST TRIGGER

NO.: 7663

TIME: TJD=1379 SECONDS=75940

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 91.0 AZIMUTH=119.6 ERROR= 1.6 DEGREES

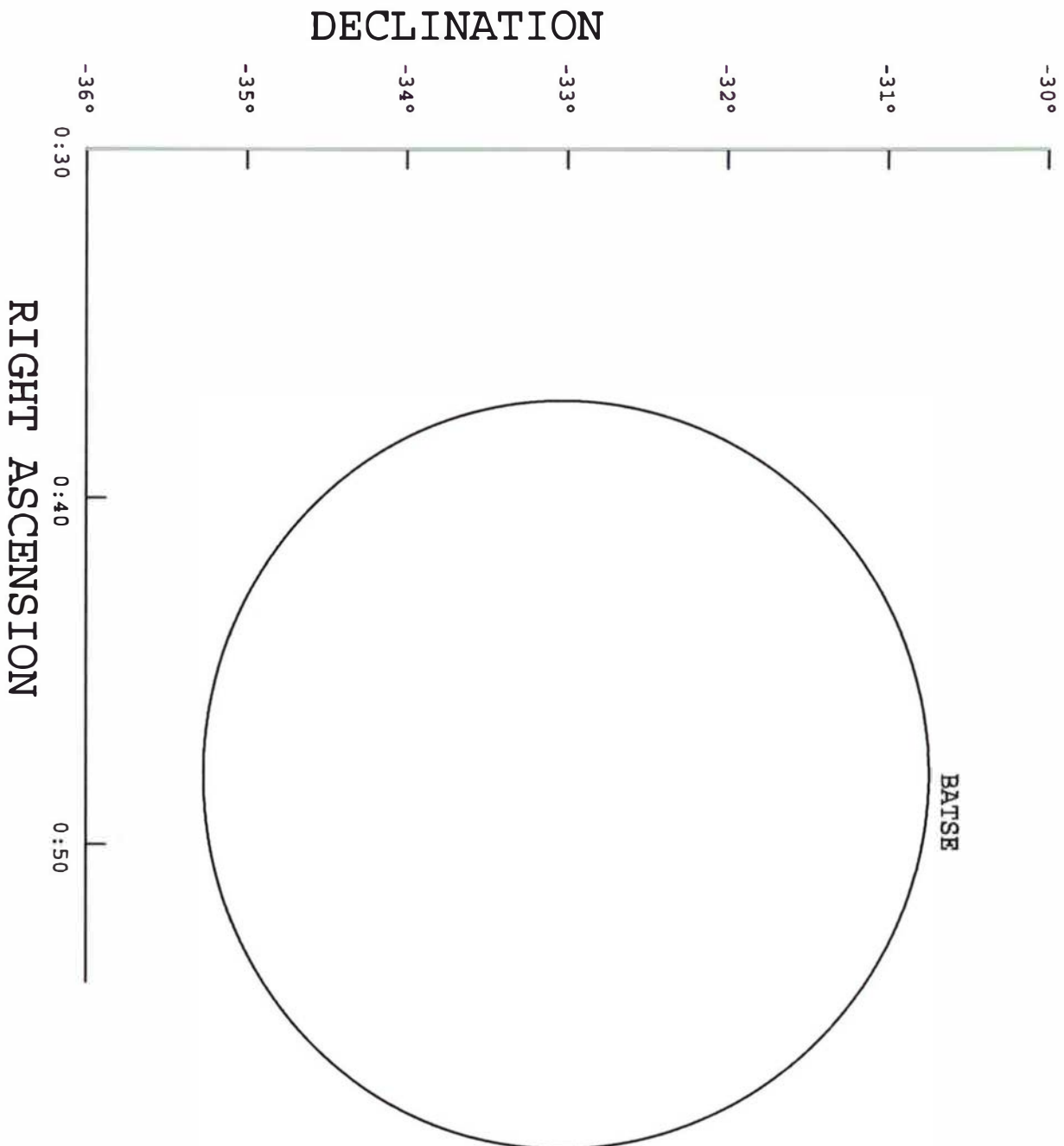
COMMENTS:
SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 1.4 S, MAX AT APPROX. T+0.12 S.
MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7663	990720	11379	75940	22500	012	-33	1.4

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 BATSE

EVENT OF JUL 20, 1999 21:23

30 / 7/99



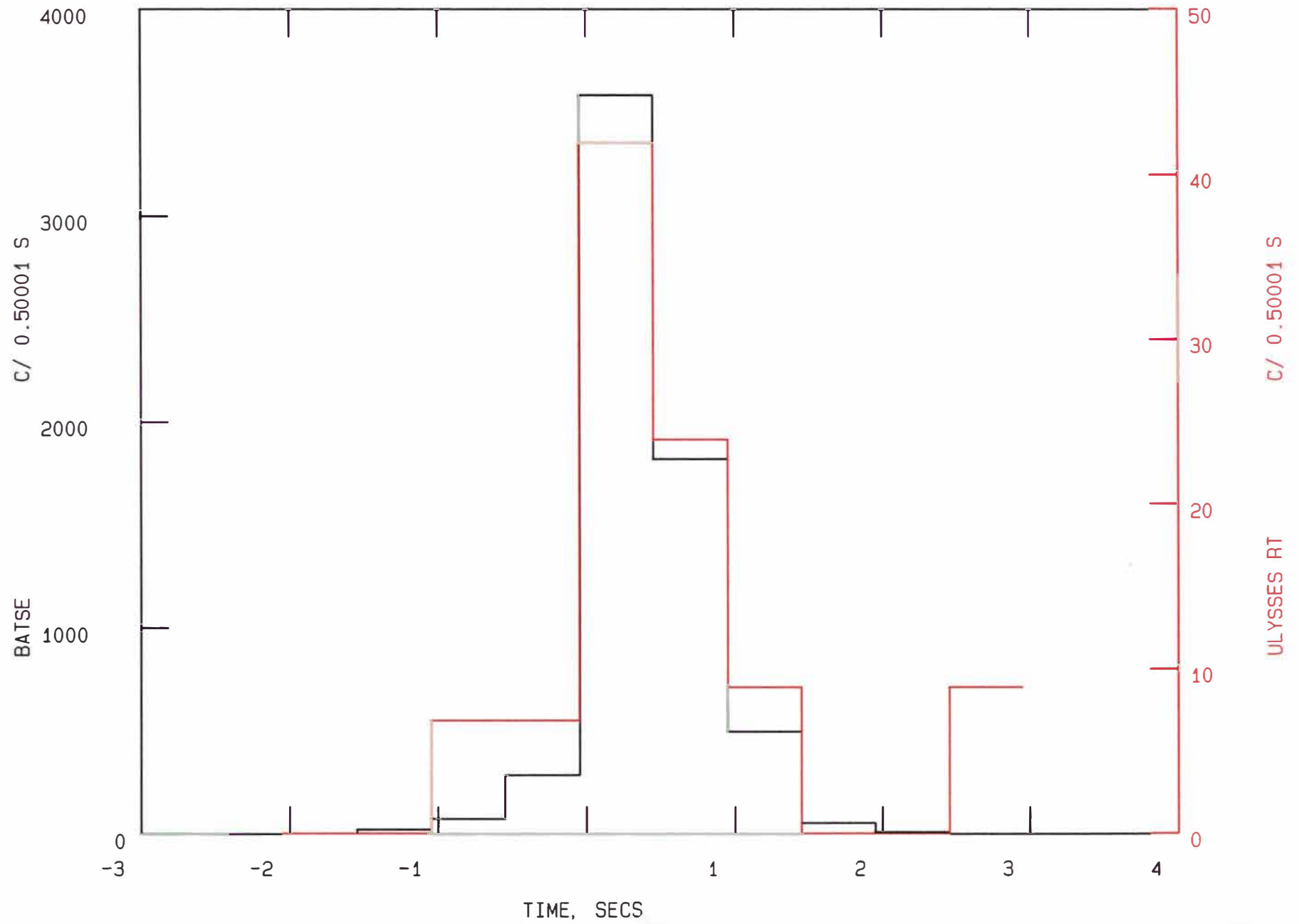
BATSE

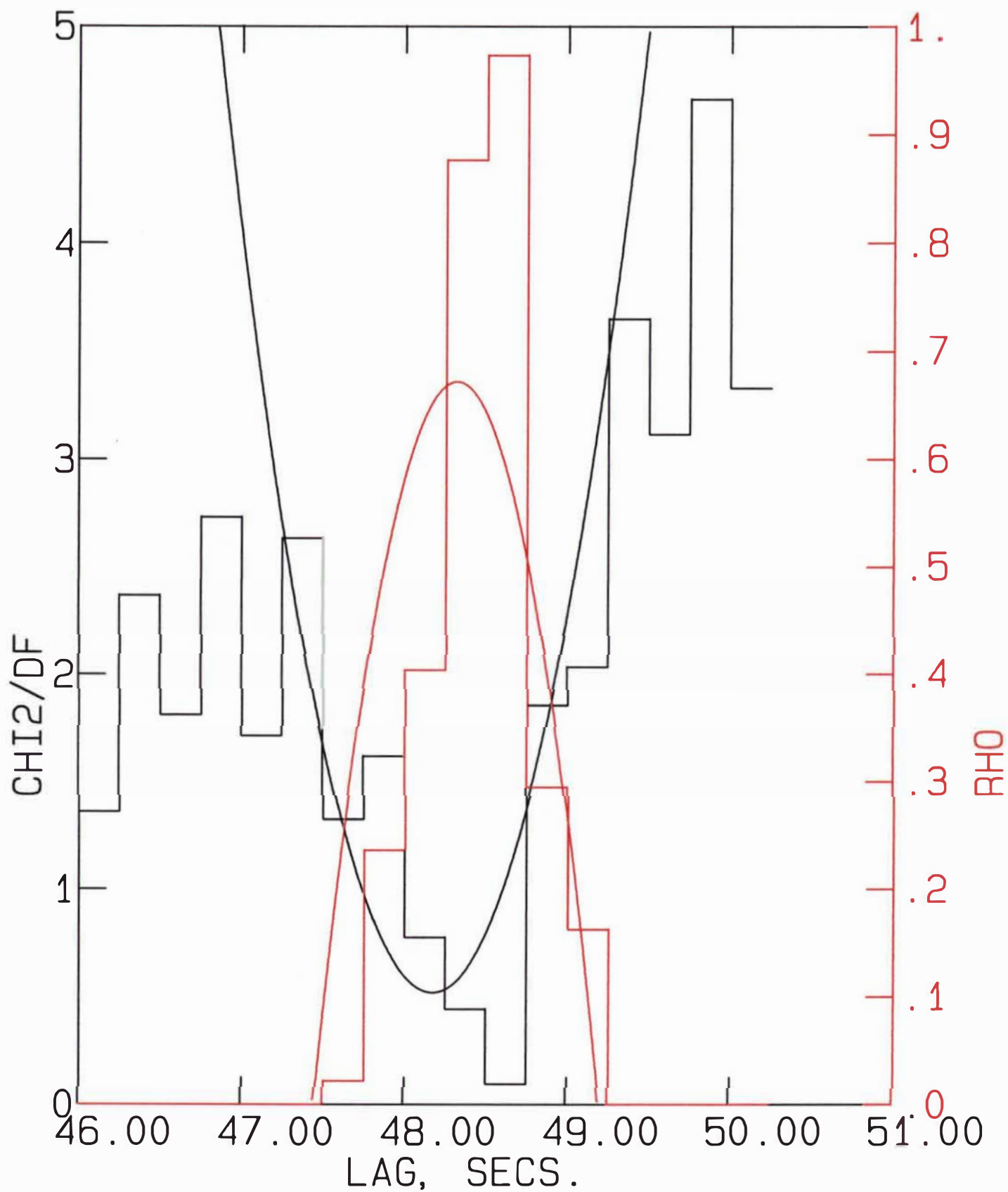
-ULYSSES RT CORRELATION

20/ 7/99

75940.345

30/ 7/99





BATSE BURST# 7663

ULYSSES RT

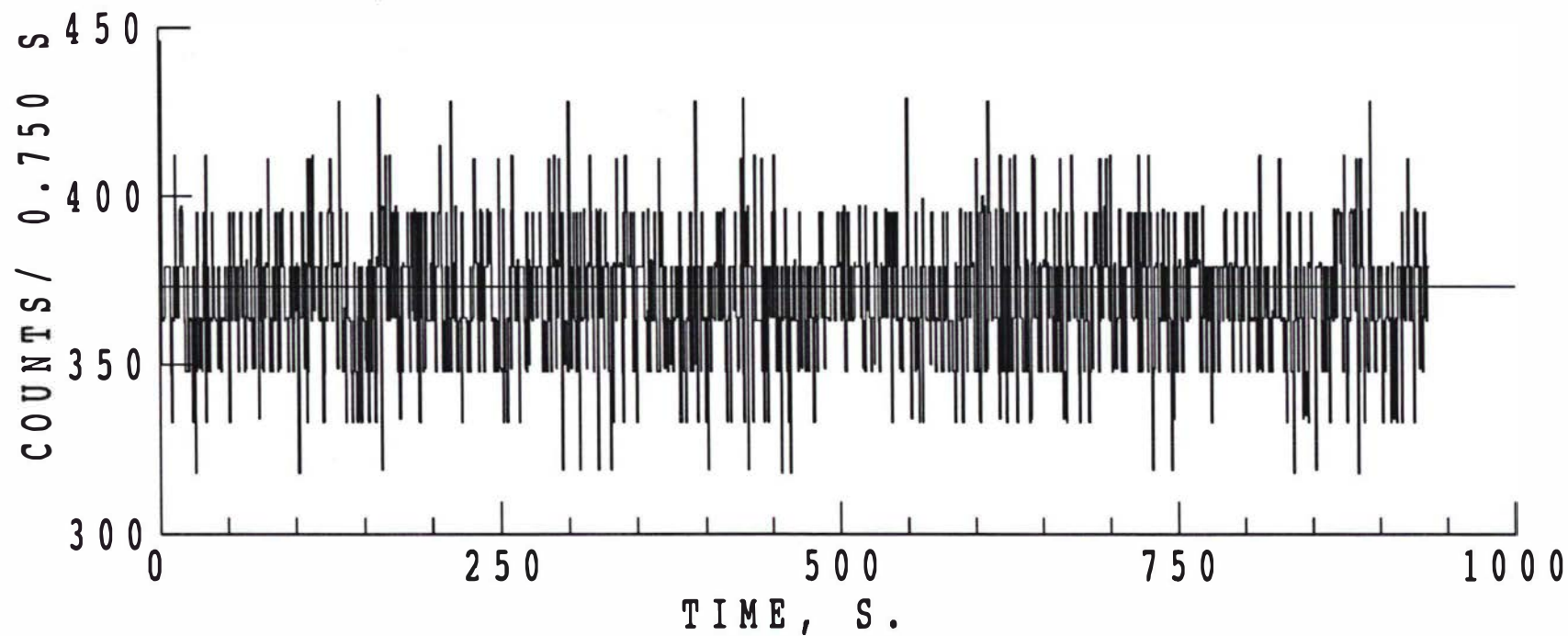
21 / 7 / 99

20 / 7 / 99 76896.188 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

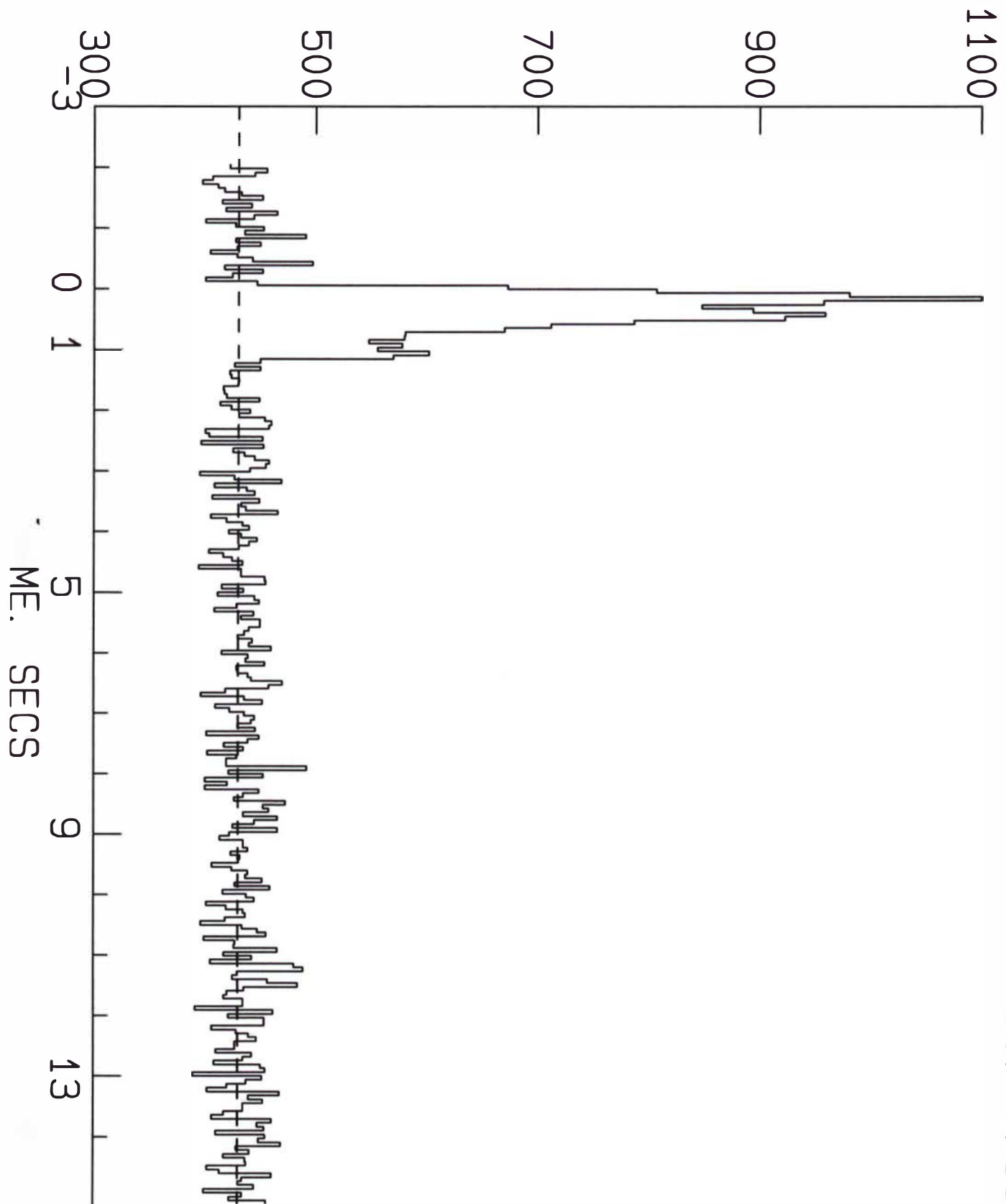
20/07/99

75940.345

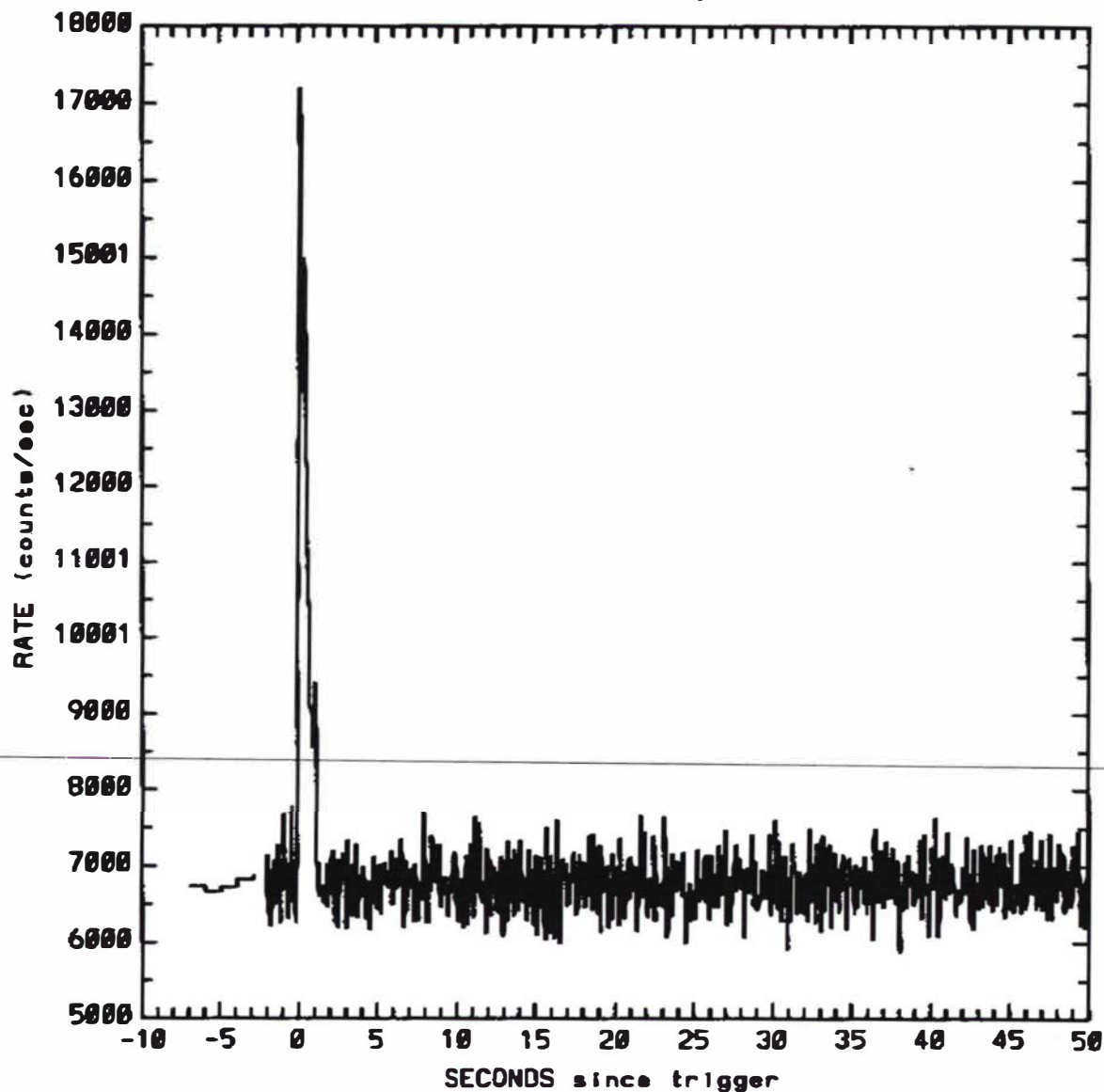
25- 100 keV

COUNTS/0.064 S

30 / 7 / 99



DISCSC Data for K. Hurley, No. 7663



29-JUL-1999 18:54:32

Created by HQPS BD
(Burst Display)
Version 12.26

Trigger # : 7663

Trigger Time:
11379 / 75949.345

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors [7..8].
--54----

Discriminators:
(1 , 2)

Quality Mask:
BDISP1

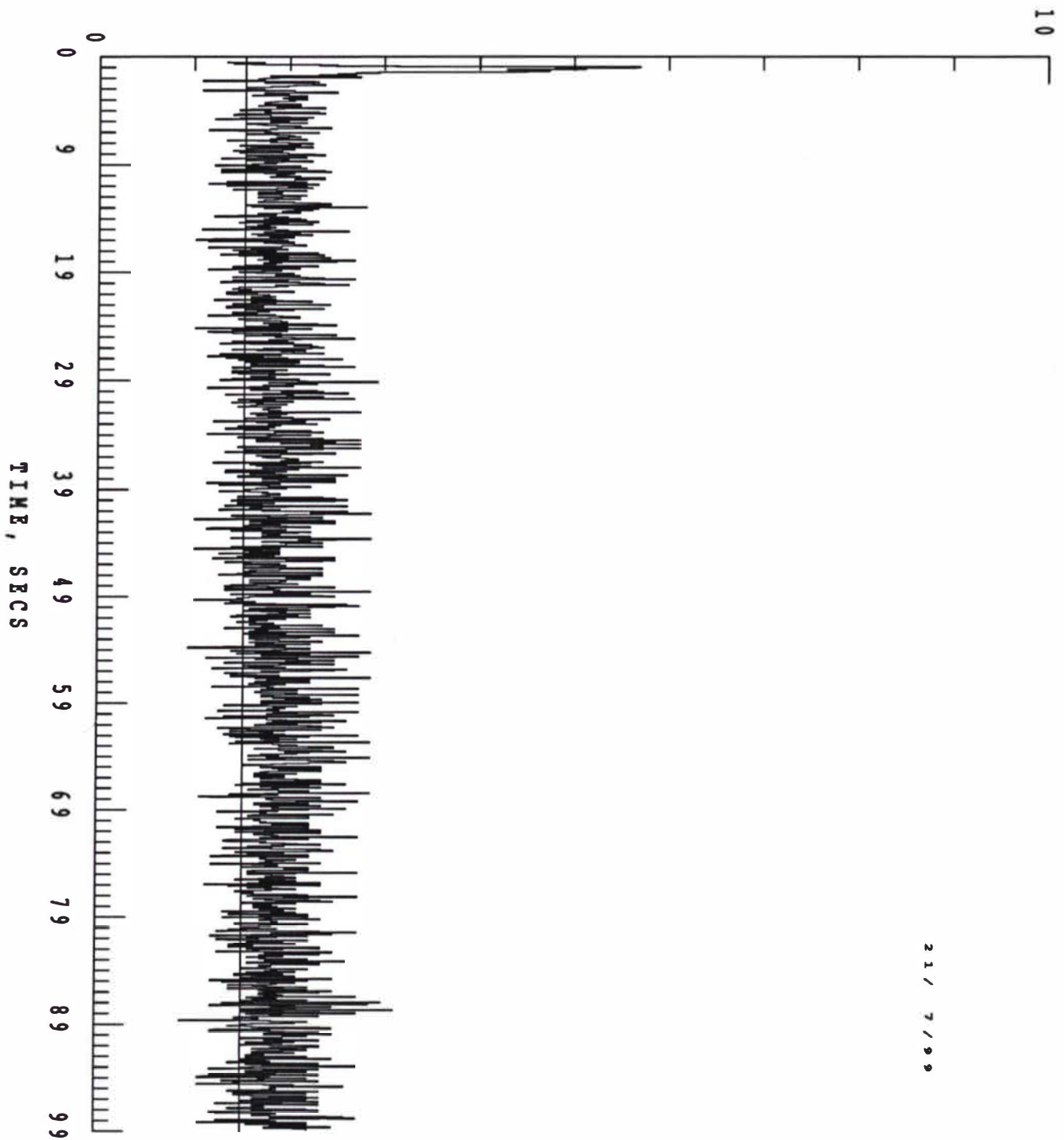
KONUS

20/07/99

75941.940

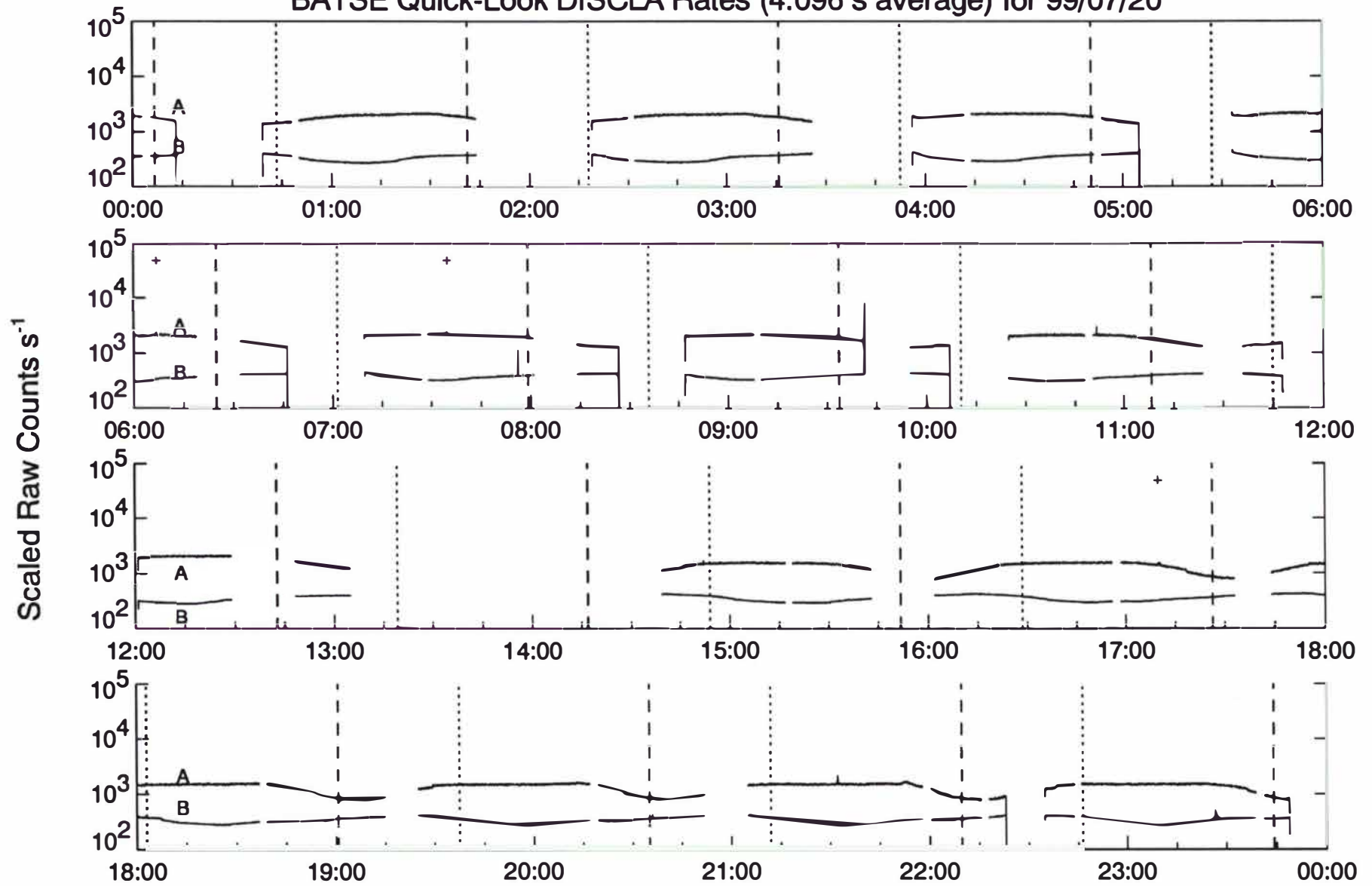
50 - 200 keV

COUNTS/0.064 S



21 / 7 / 99

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/20

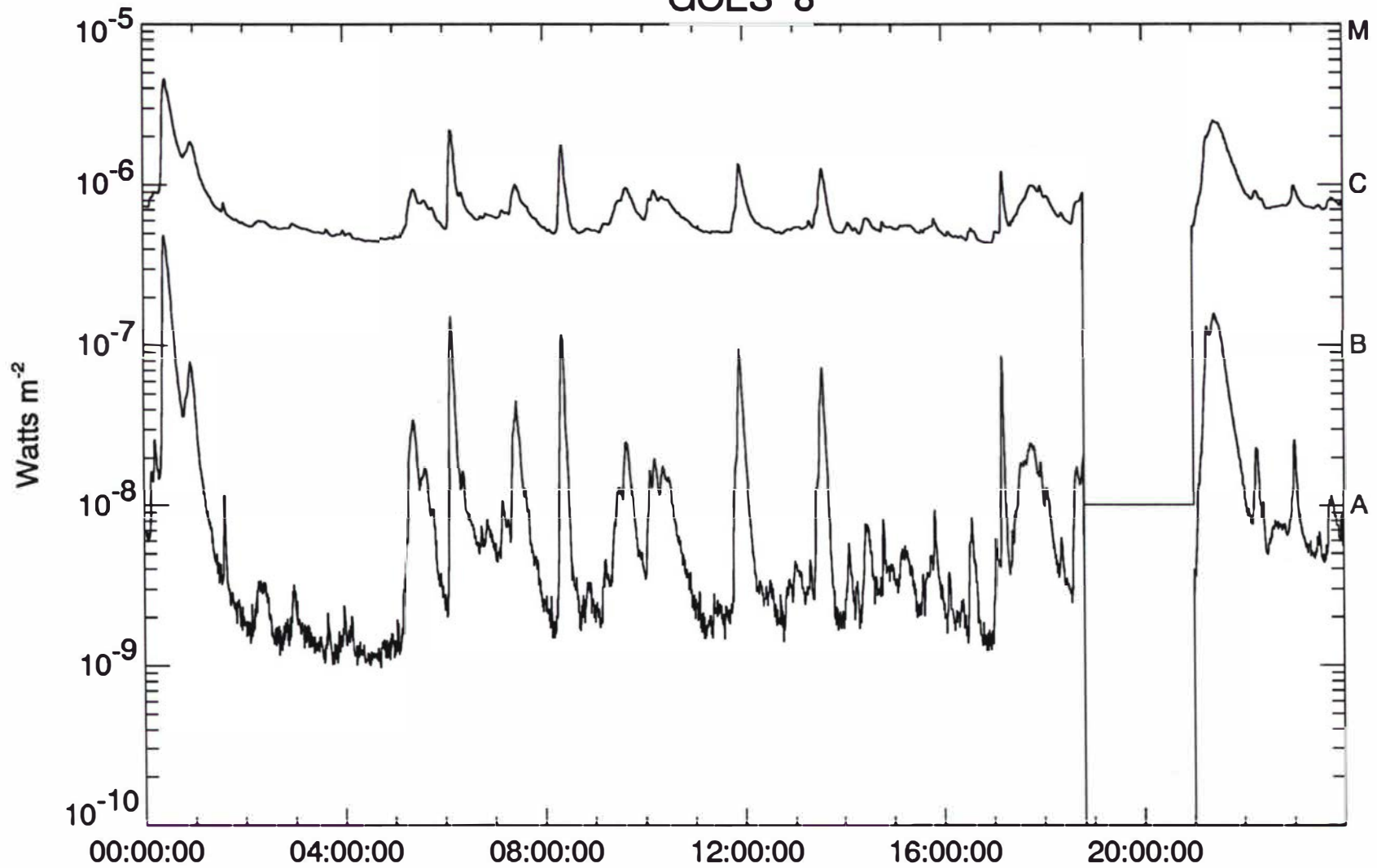


Current Time: 99/07/24, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/20, 0000:00

Plot created: 99/07/24, 1011

Channel

1 (1.0 - 8.0 Angstroms)

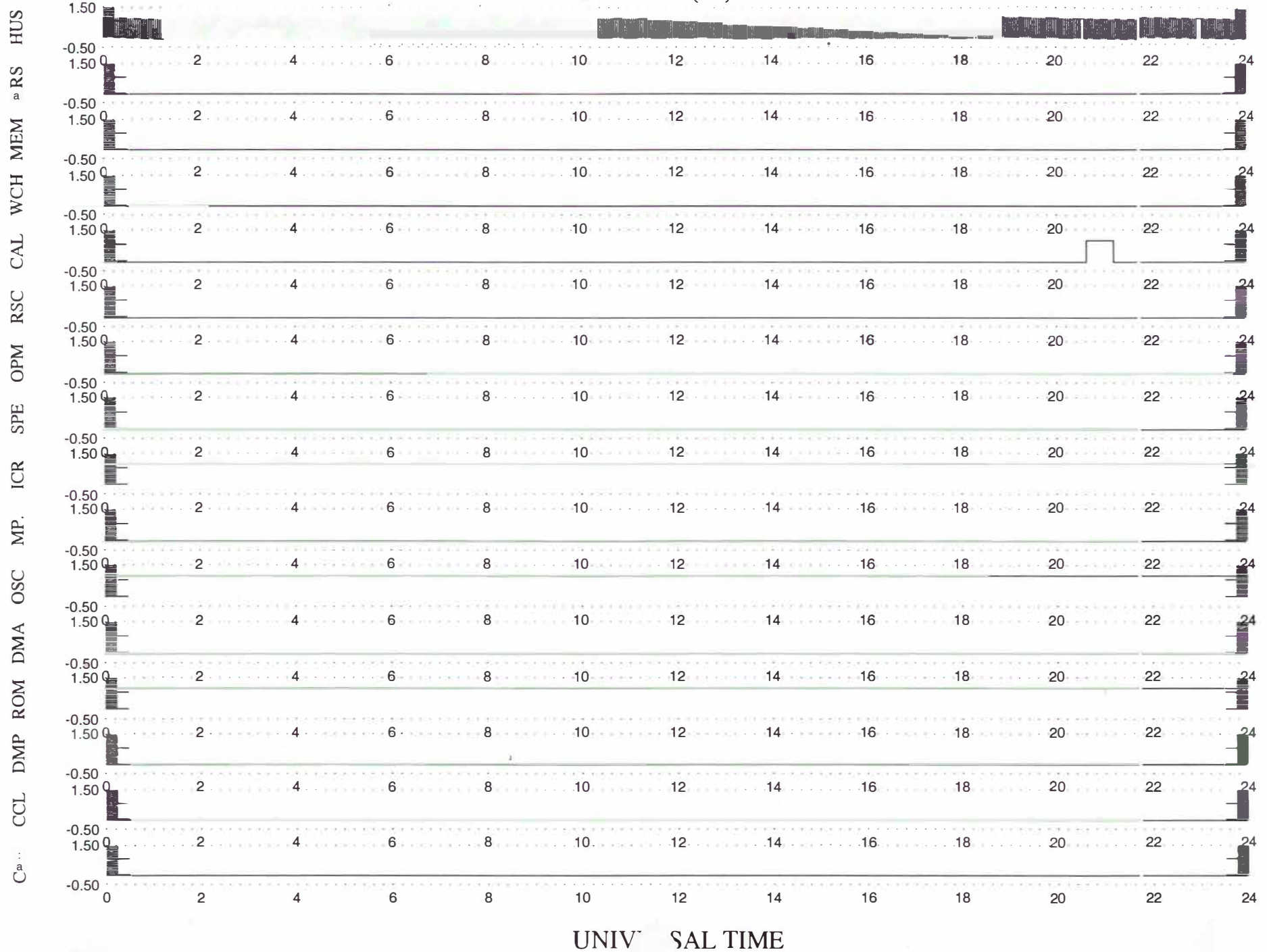
Background not subtracted

2 (0.5 - 4.0 Angstroms)

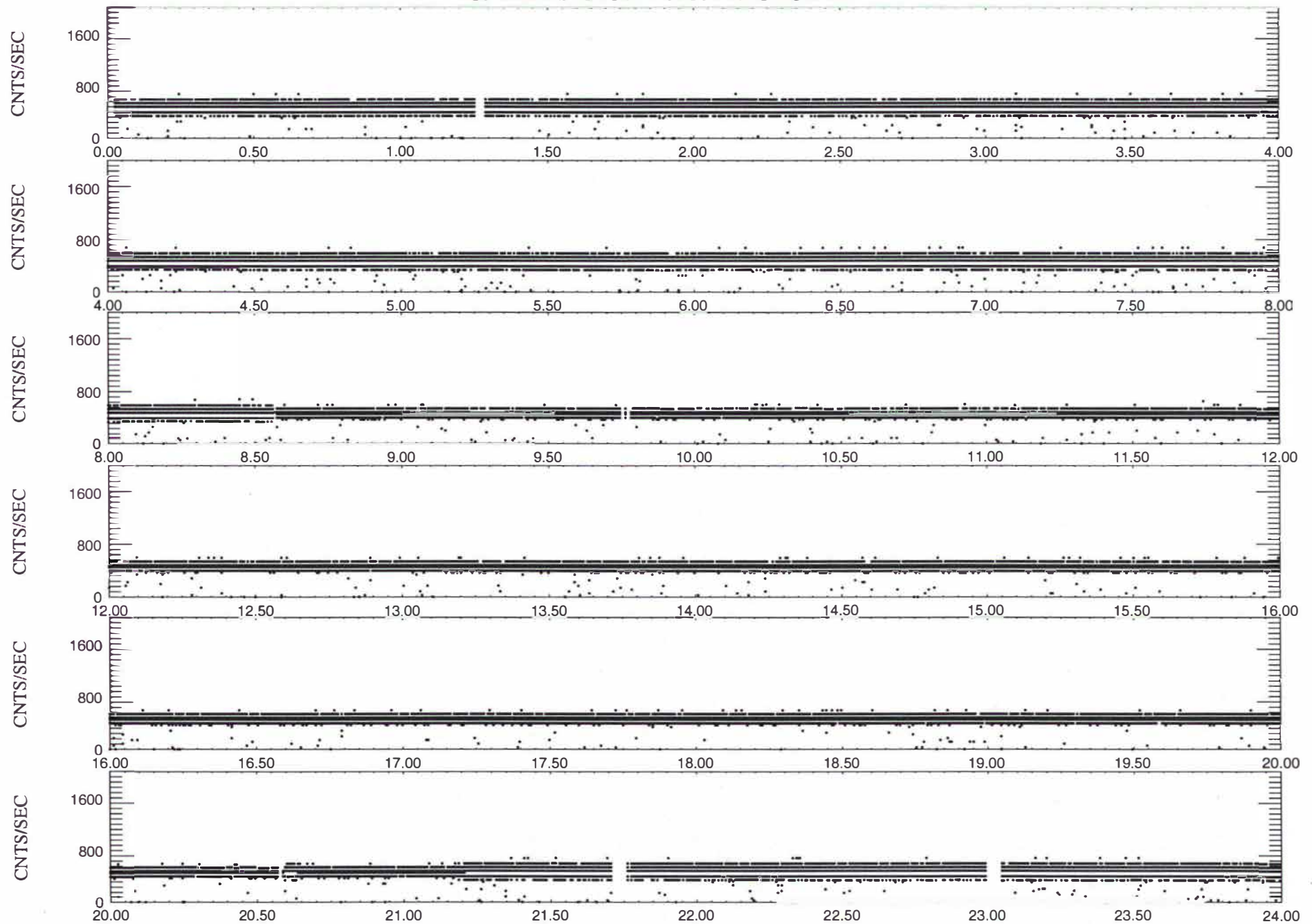
Background not subtracted

Sample average = 10

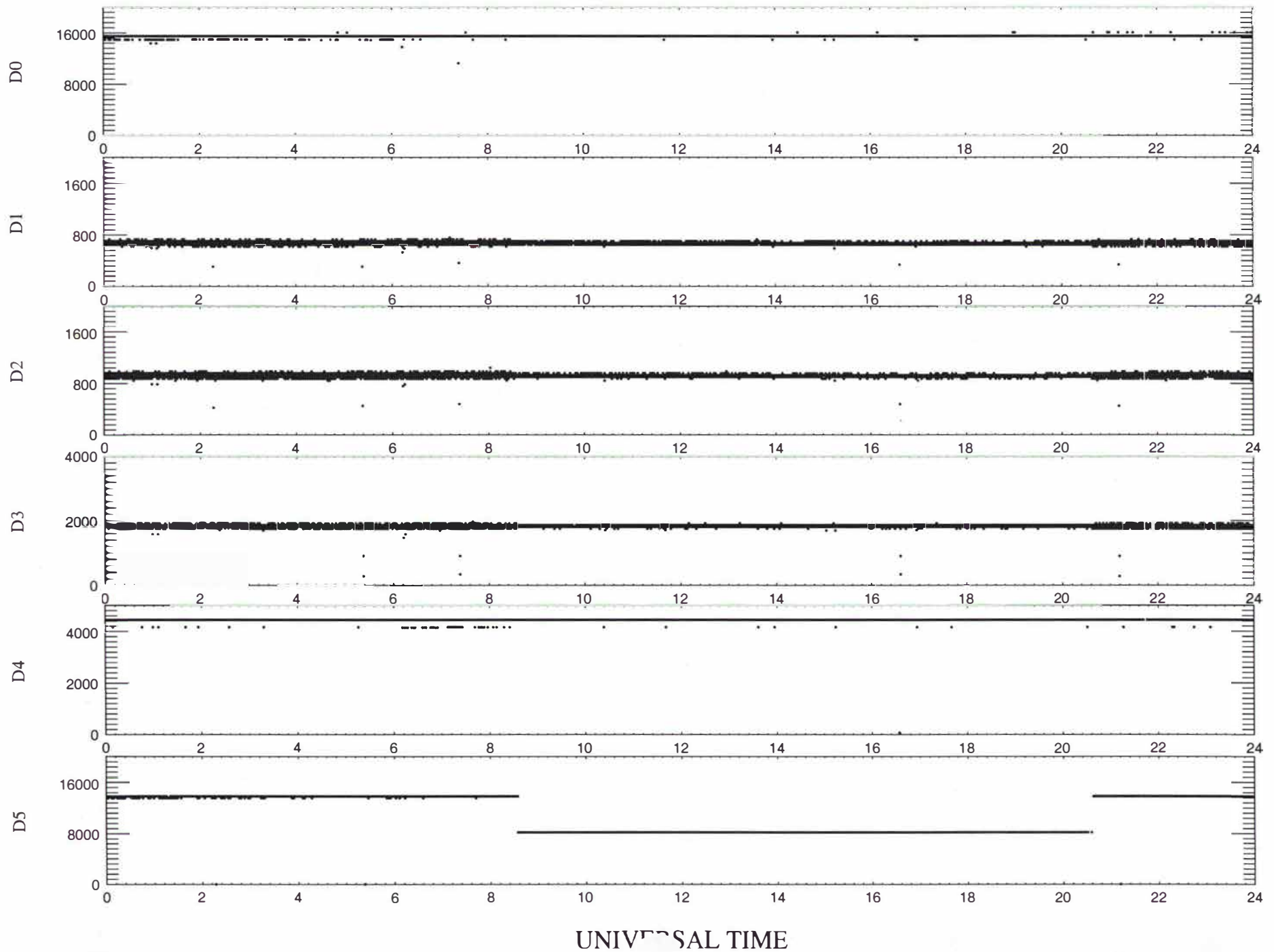
NO BURST (11)



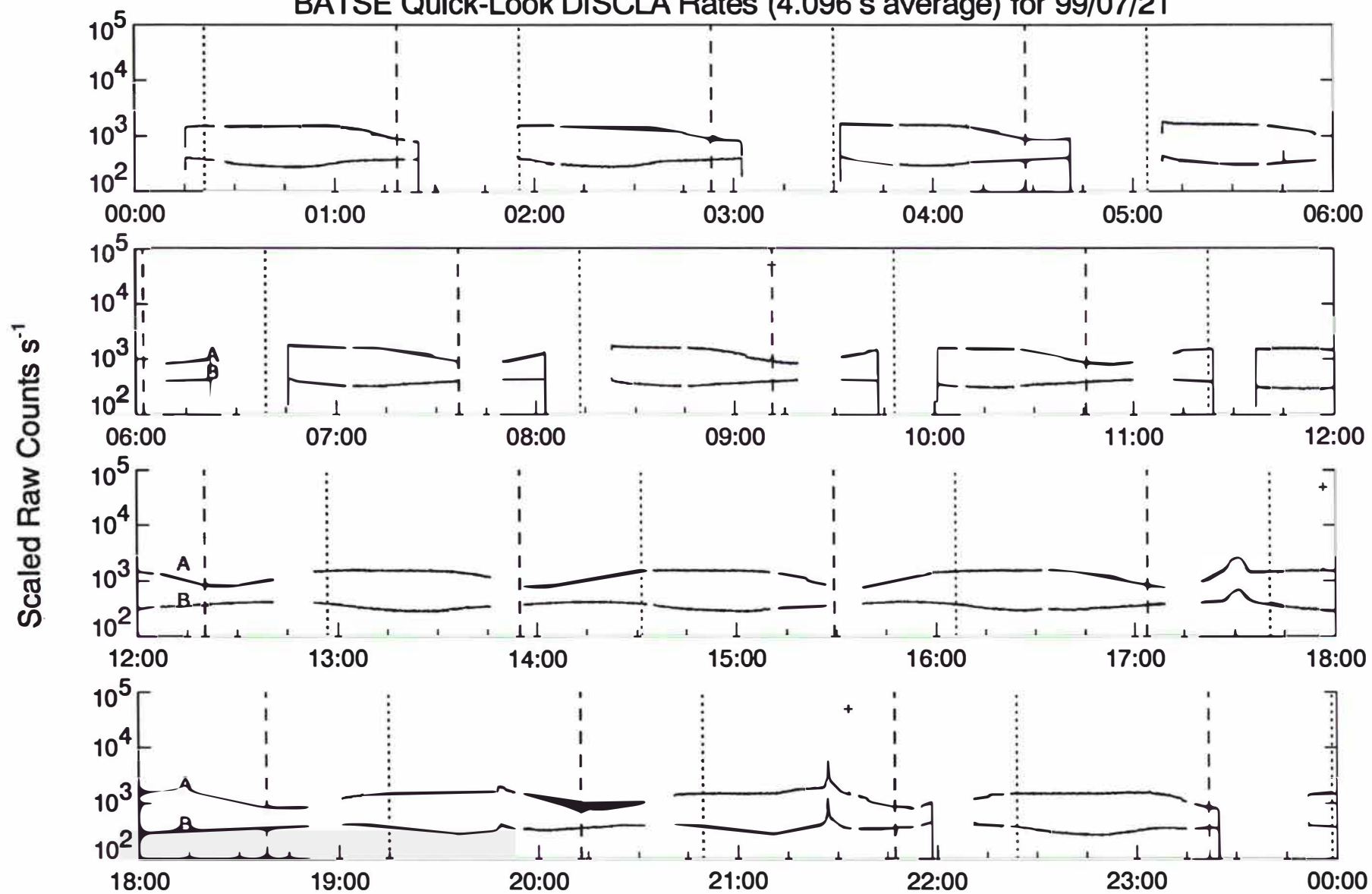
CALIBRATION DATA INCLUDED



UNIVERSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/21

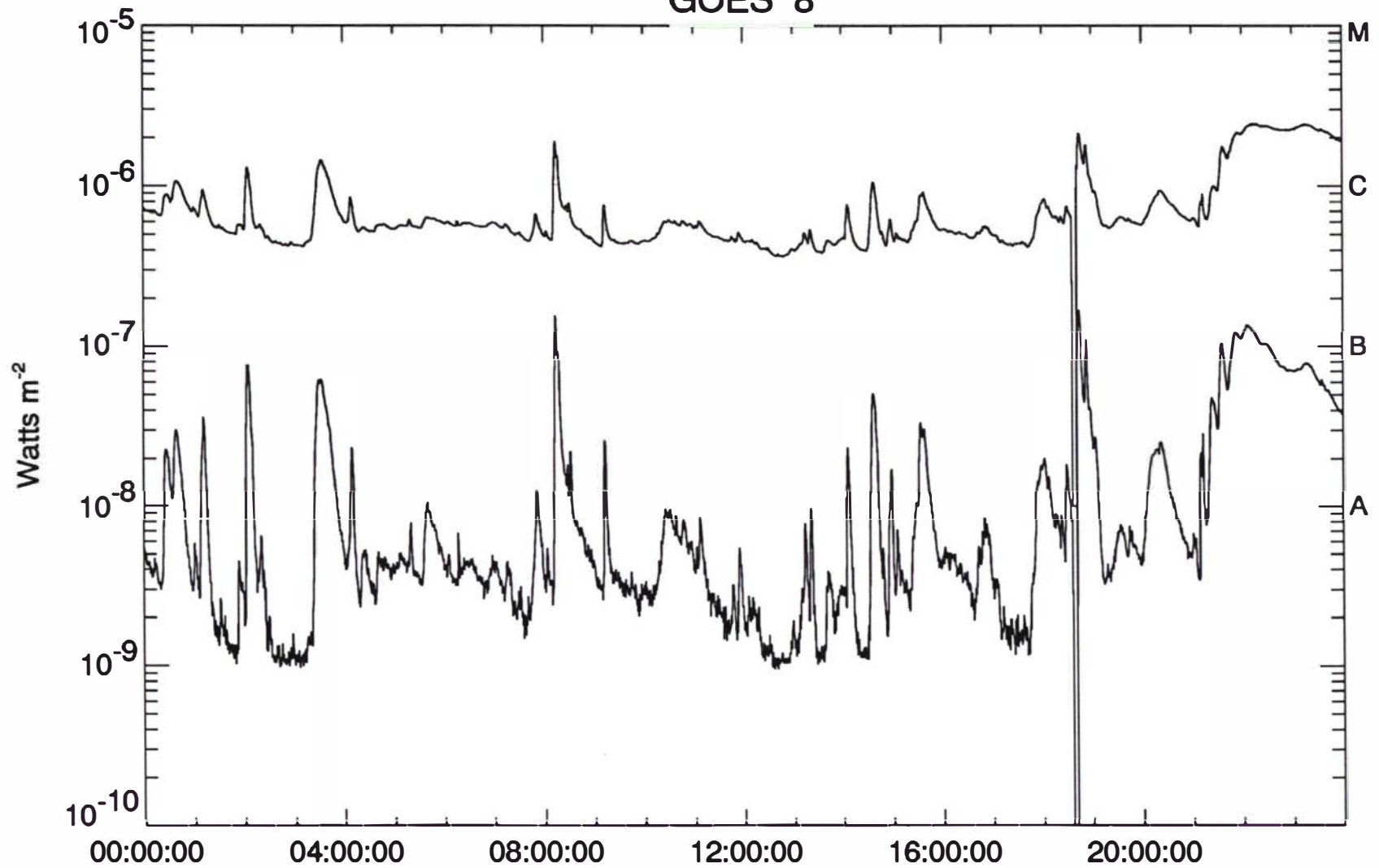


Current Time: 99/07/25, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/21, 0000:00

Plot created: 99/07/25, 1011

Channel

1 (1.0 - 8.0 Angstroms)

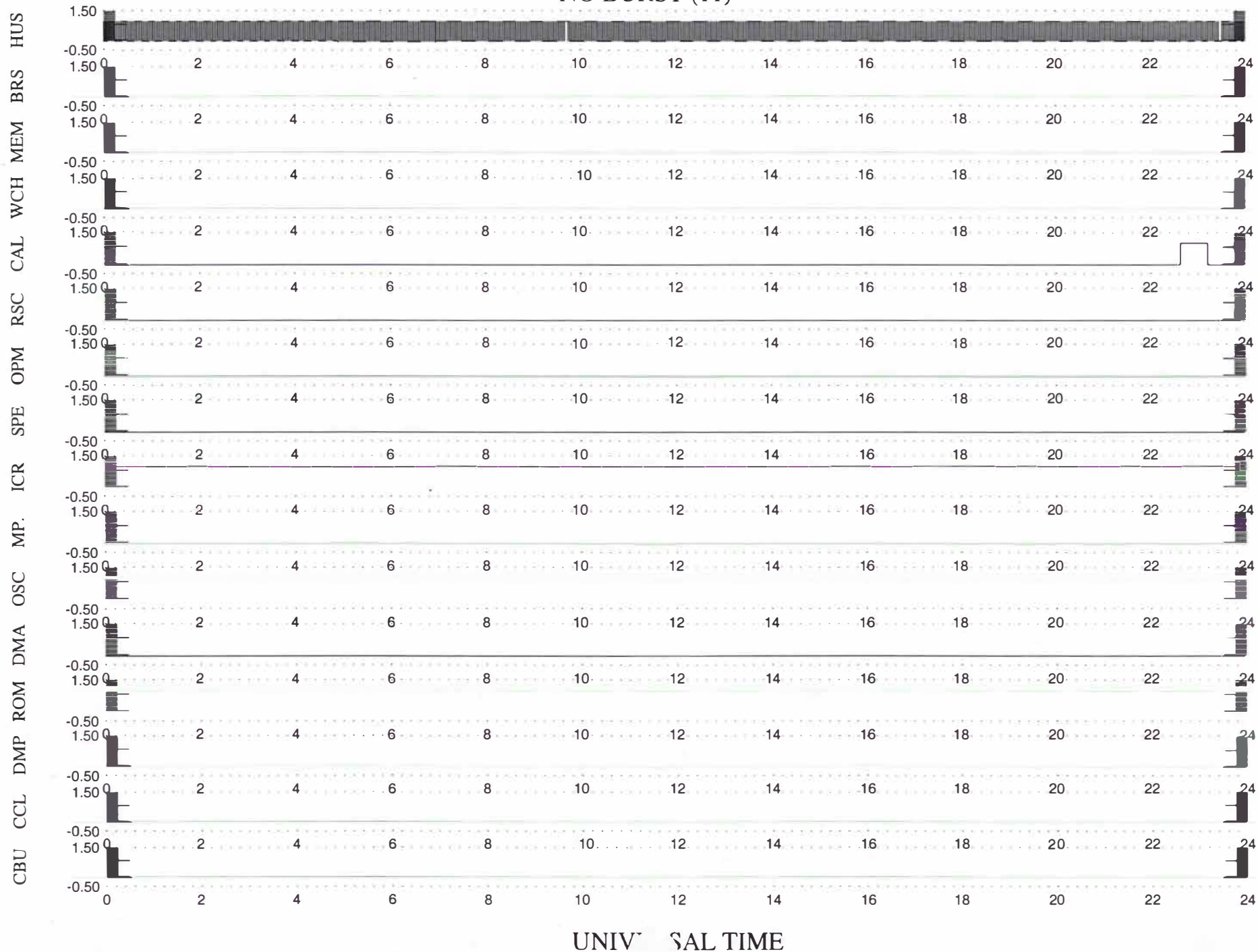
Background not subtracted

2 (0.5 - 4.0 Angstroms)

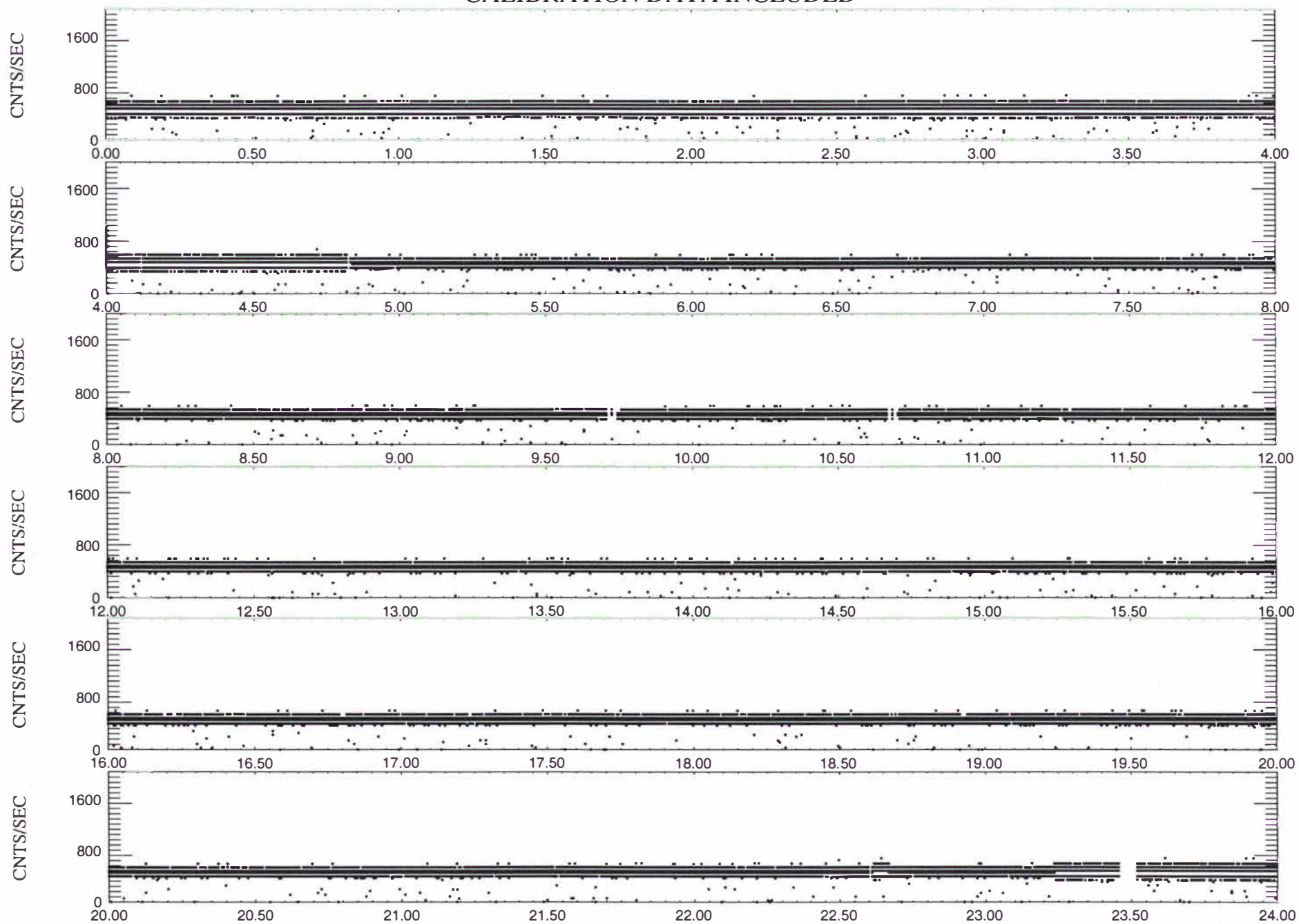
Background not subtracted

Sample average = 10

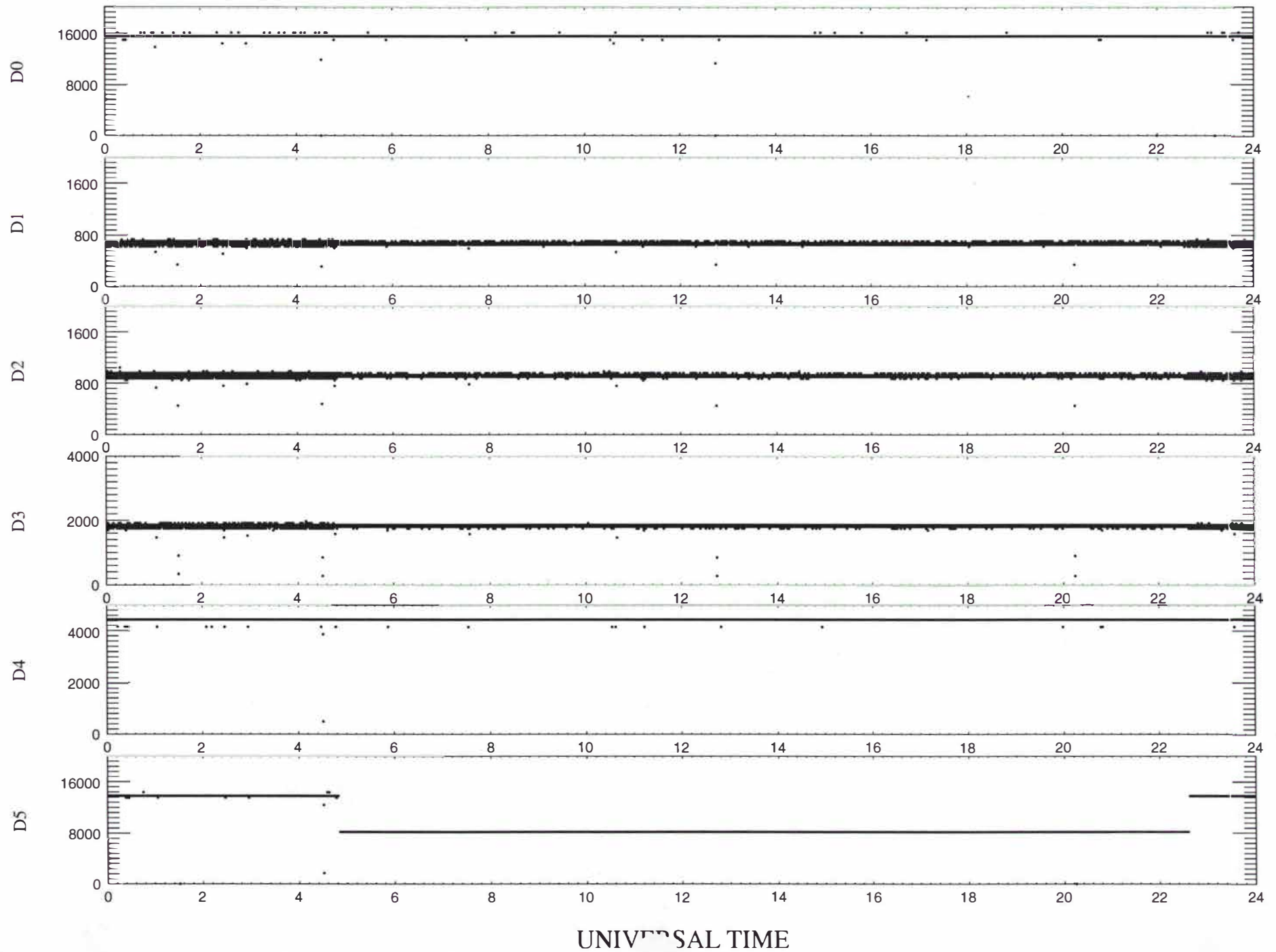
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Mon Jul 26 13:52 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Mon, 26 Jul 1999 15:58:12 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7664

July 22

TIME: TJD=1381 SECONDS=3171

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=108.4 AZIMUTH=357.4 ERROR=0.8 DEGREES

COMMENTS:

SOLAR FLARE. NO GOES, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX.
50 S, STARTS AT T-17 S. NOT VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Tue Jul 27 13:15 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 27 Jul 1999 15:21:20 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7665

BATSEARCH PROGRAM

BATSE BURST # 7665
EVENT OF 1999 JUL 22 DAY OF YEAR=203
EVENT CROSSING TIME AT BATSE : 26598. S. OR 07:23:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 213.000 36.000
BATSE PEAK COUNTING RATE: 6500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 7/ 99 IS:
RA= 149.077 DEC= -8.870 DIST= 5.475 AU
BATSE-ULYSSES DISTANCE = 819103429. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -712.41 SECS.
CROSSING TIME AT ULYSSES IS 25886. S. OR 07:11:25 +/- 497.13 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 7/ 99 IS:
RA= 213.787 DEC= -15.088 DIST= 0.944 AU
MARS-BATSE DISTANCE = 141257168. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -295.92 SECS.
CROSSING TIME AT MARS IS 26302. S. OR 07:18:22 +/- 59.16 SECONDS

BATSE BURST TRIGGER

NO.: 7665

TIME: TJD=1381 SECONDS=26598

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=88.8 AZIMUTH=281.7 ERROR=0.4 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 60 S, MAX. AT T+14 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7665	990722	11381	26598	6500	213	+36	60

Date: Mar 6 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data N/A

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

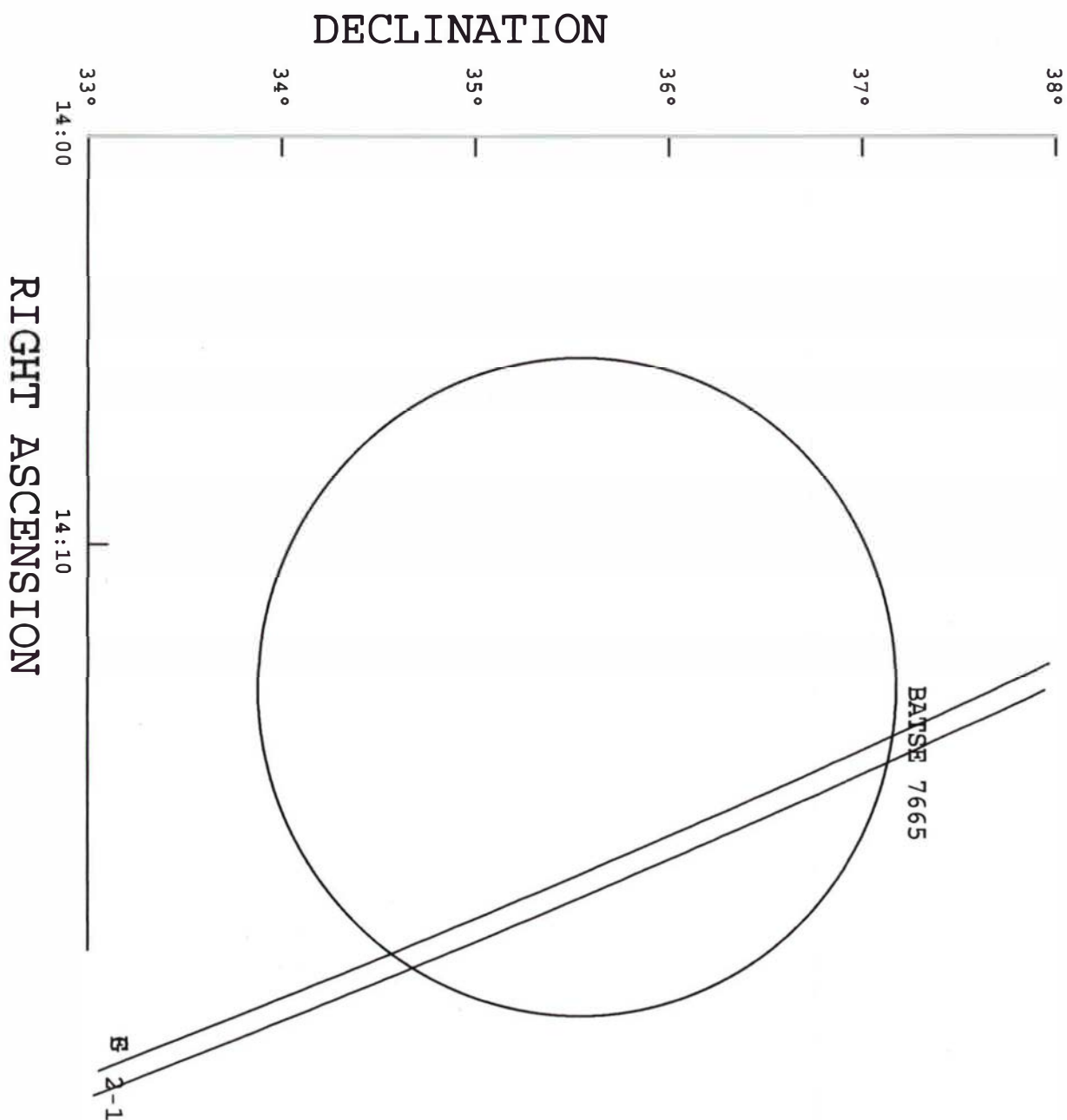
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF JUL 22, 1999 7:23

6 / 3 / 0



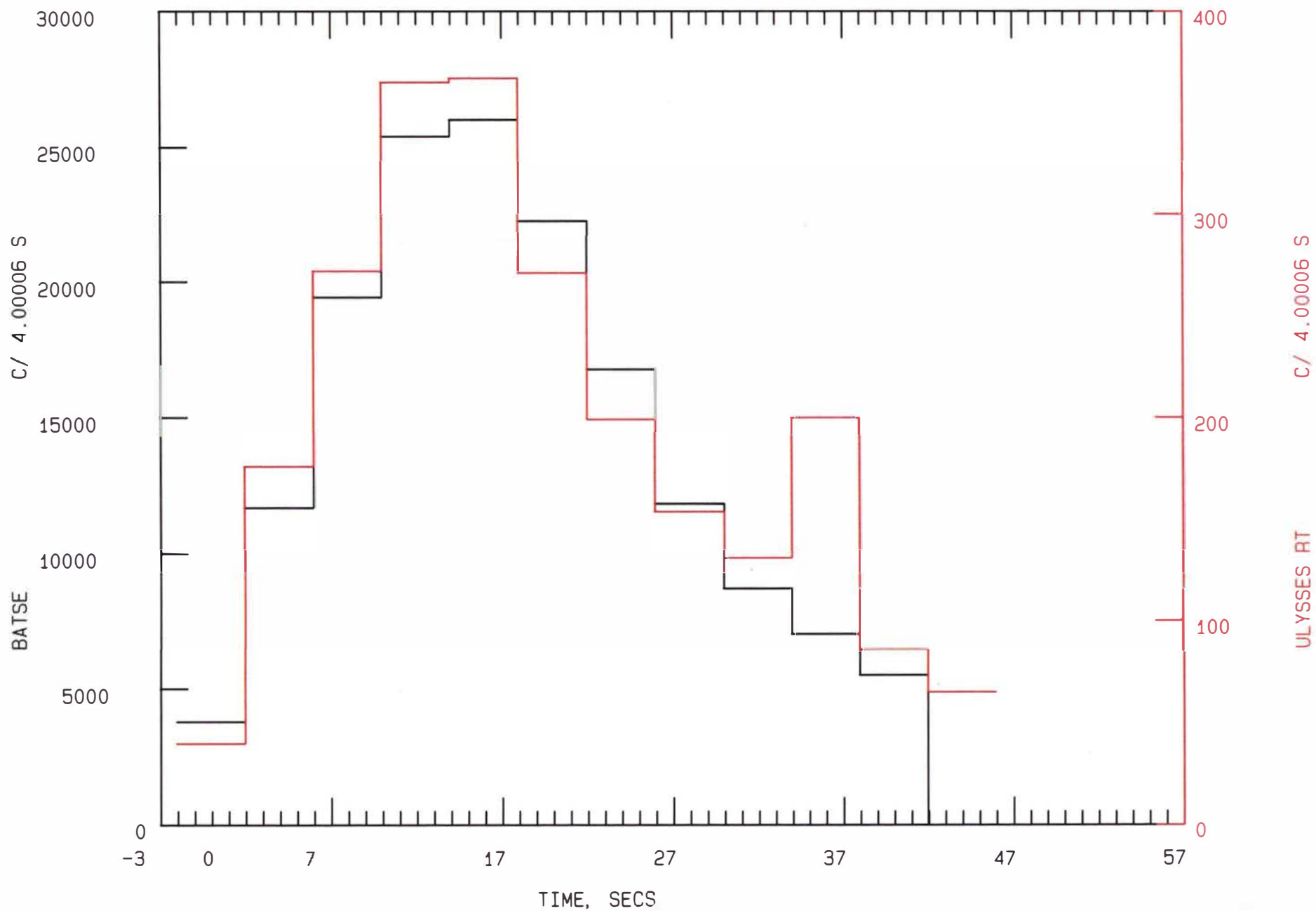
BATSE

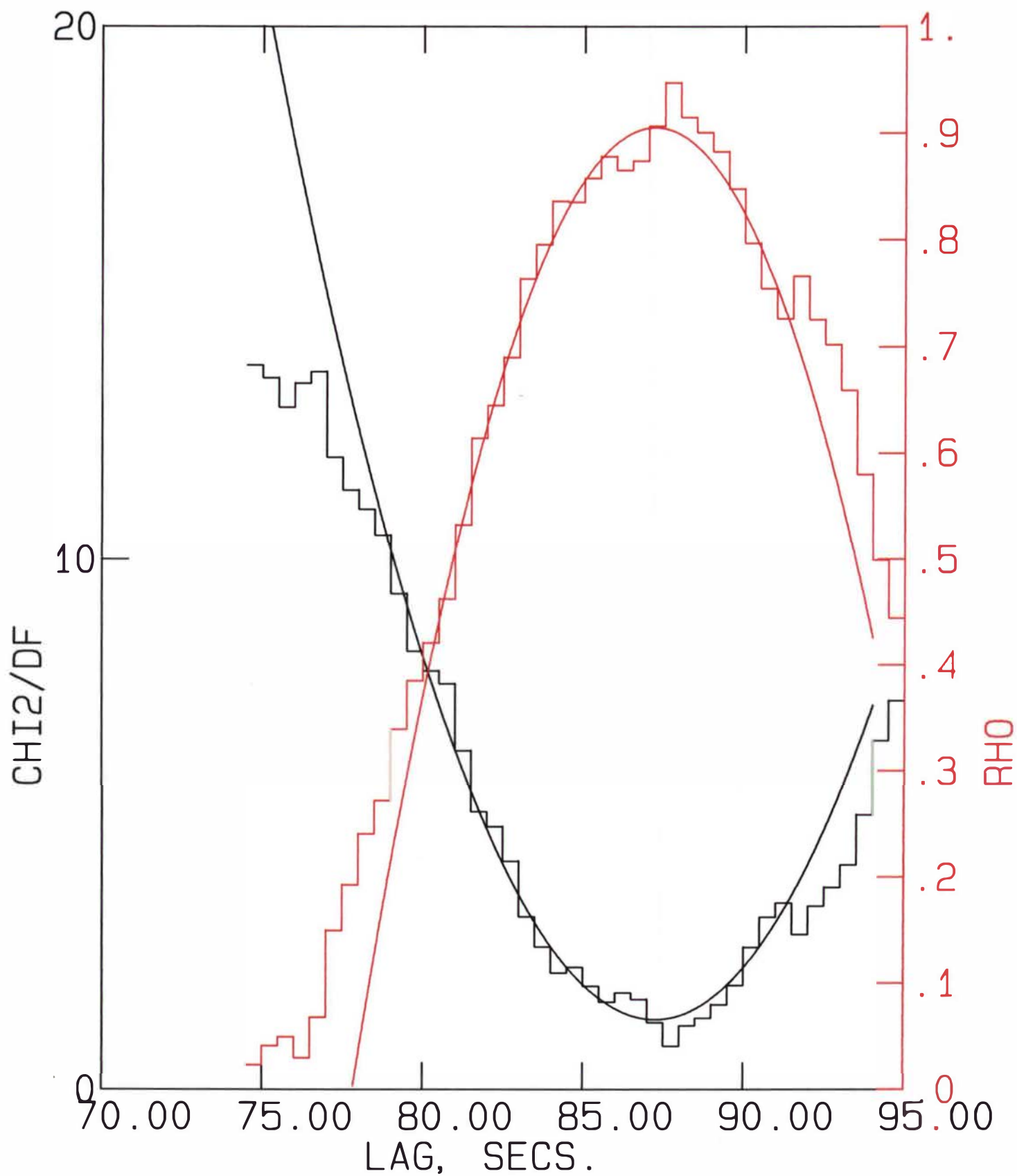
-ULYSSES RT CORRELATION

22/07/99

26598.137

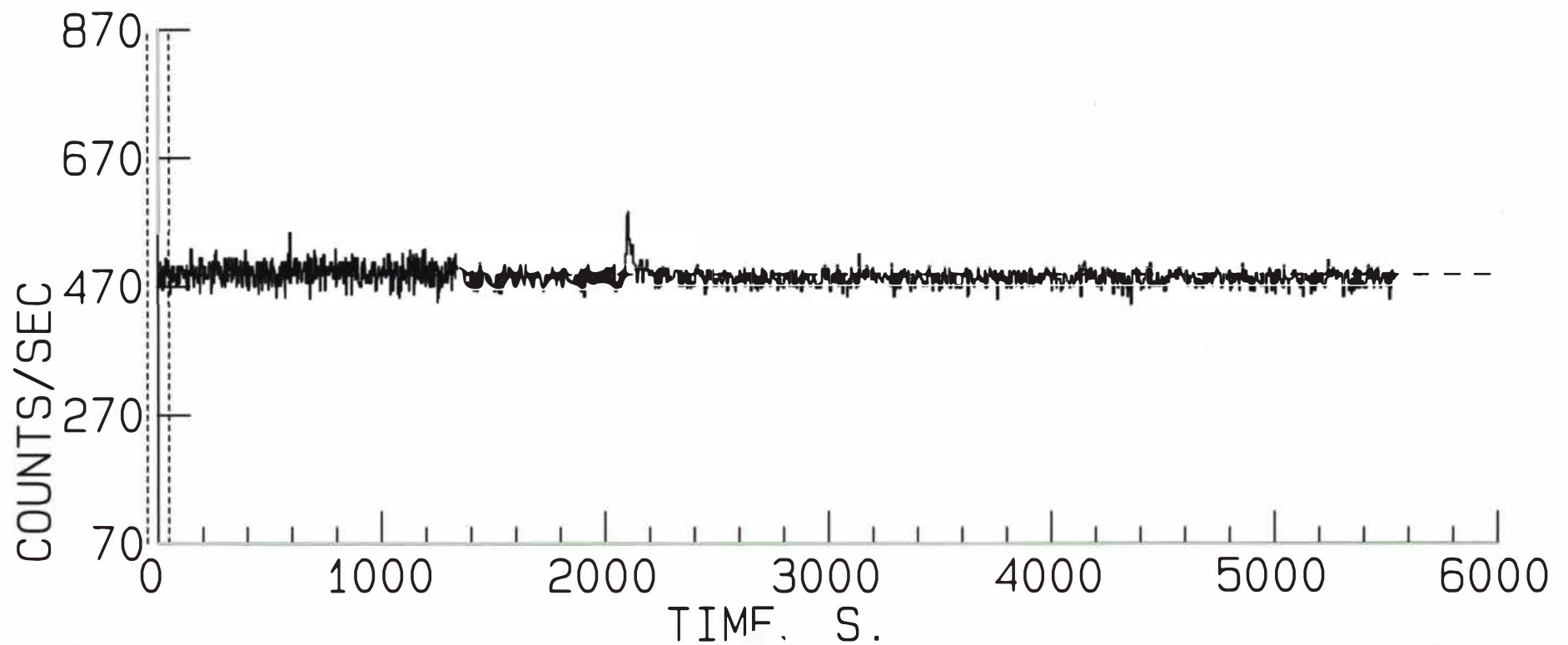
6/ 3/ 0





ULYSSES RT
22/ 7/99 23832.150 s
INTERVALS REGROUPED BY 10
22- 151 keV

6 / 3 / 0

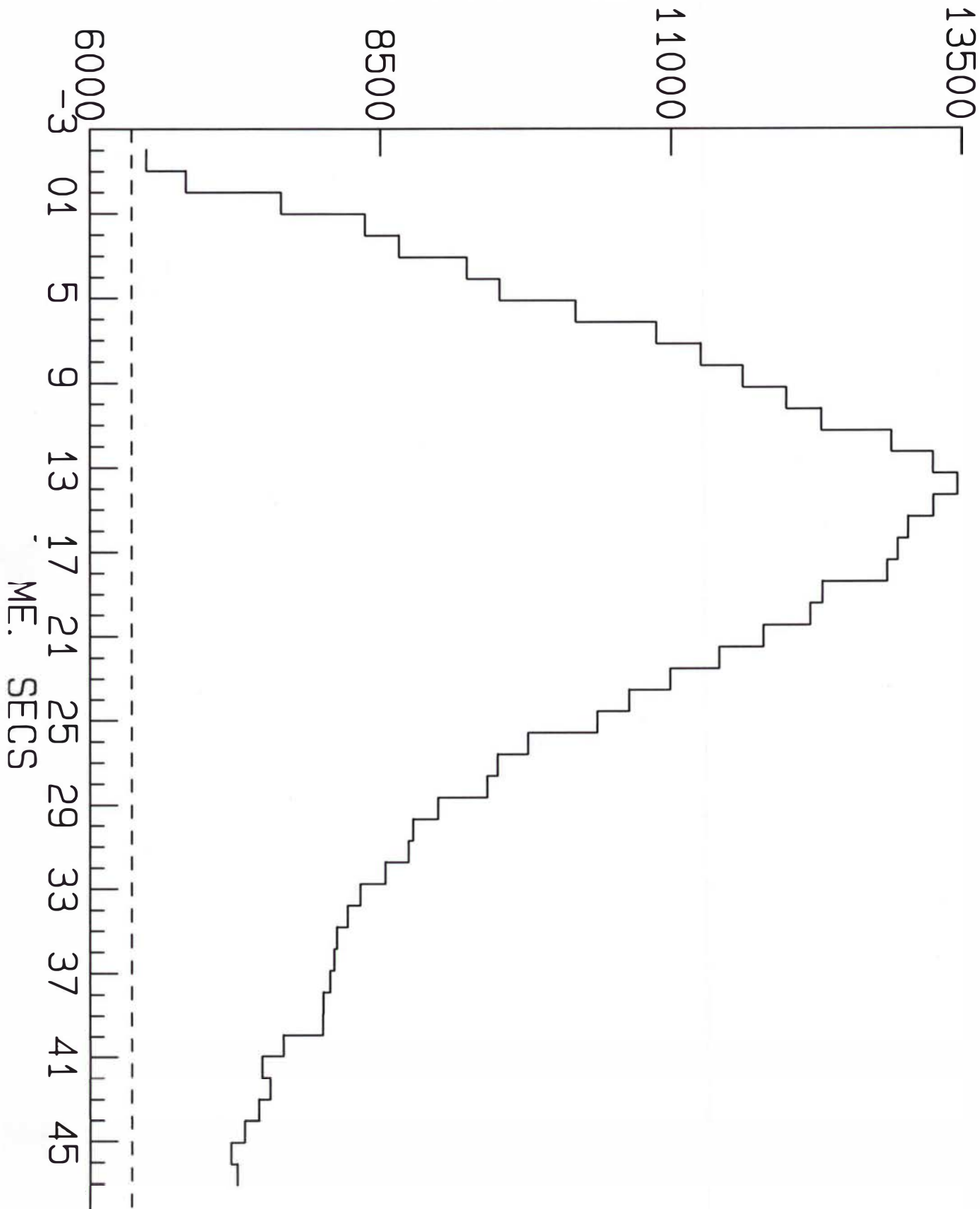


BATSE

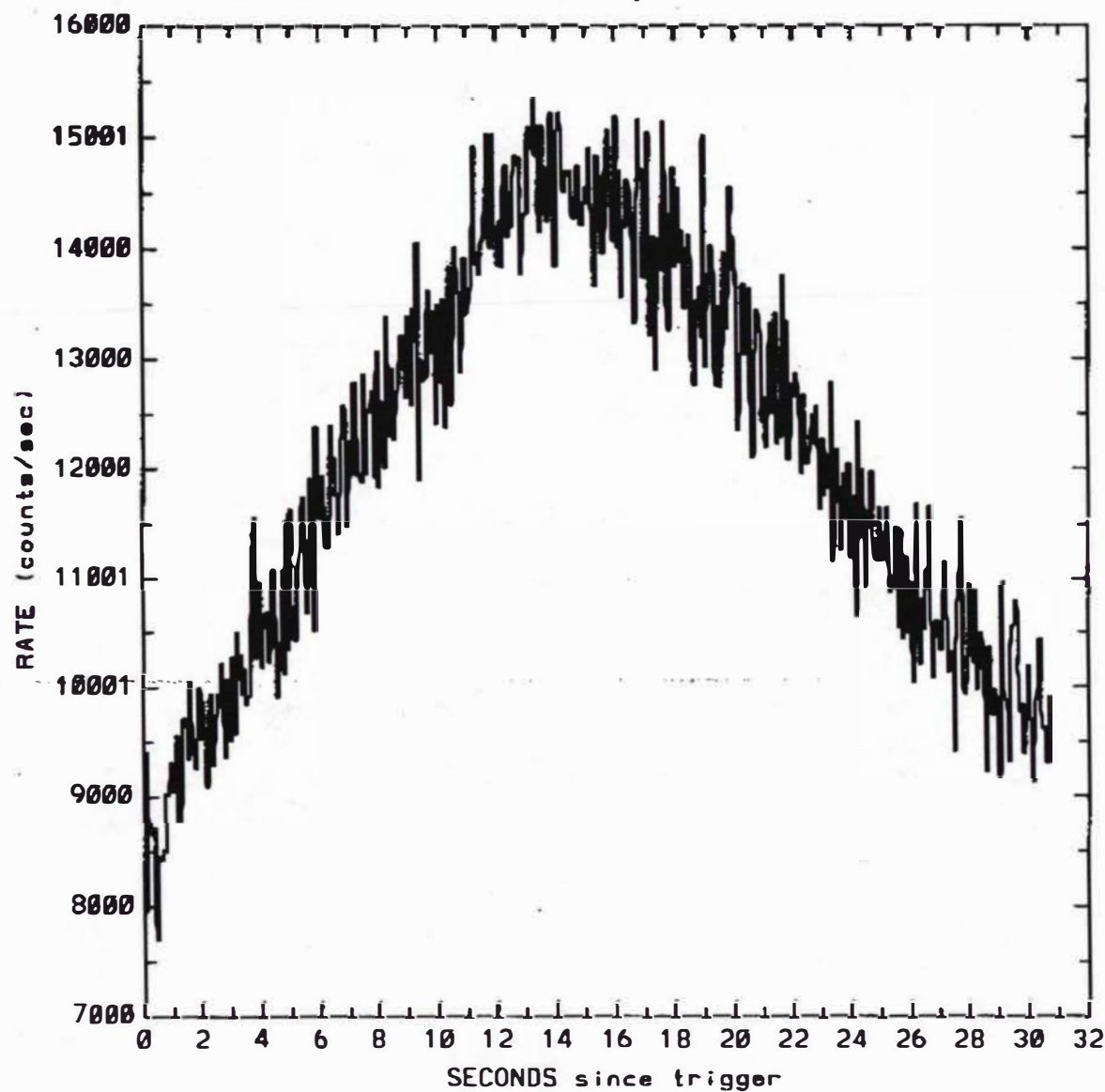
22/07/99

26598.137

25- 100 keV
COUNTS/1.024 S



MER Data for K. Hurley, No. 7665



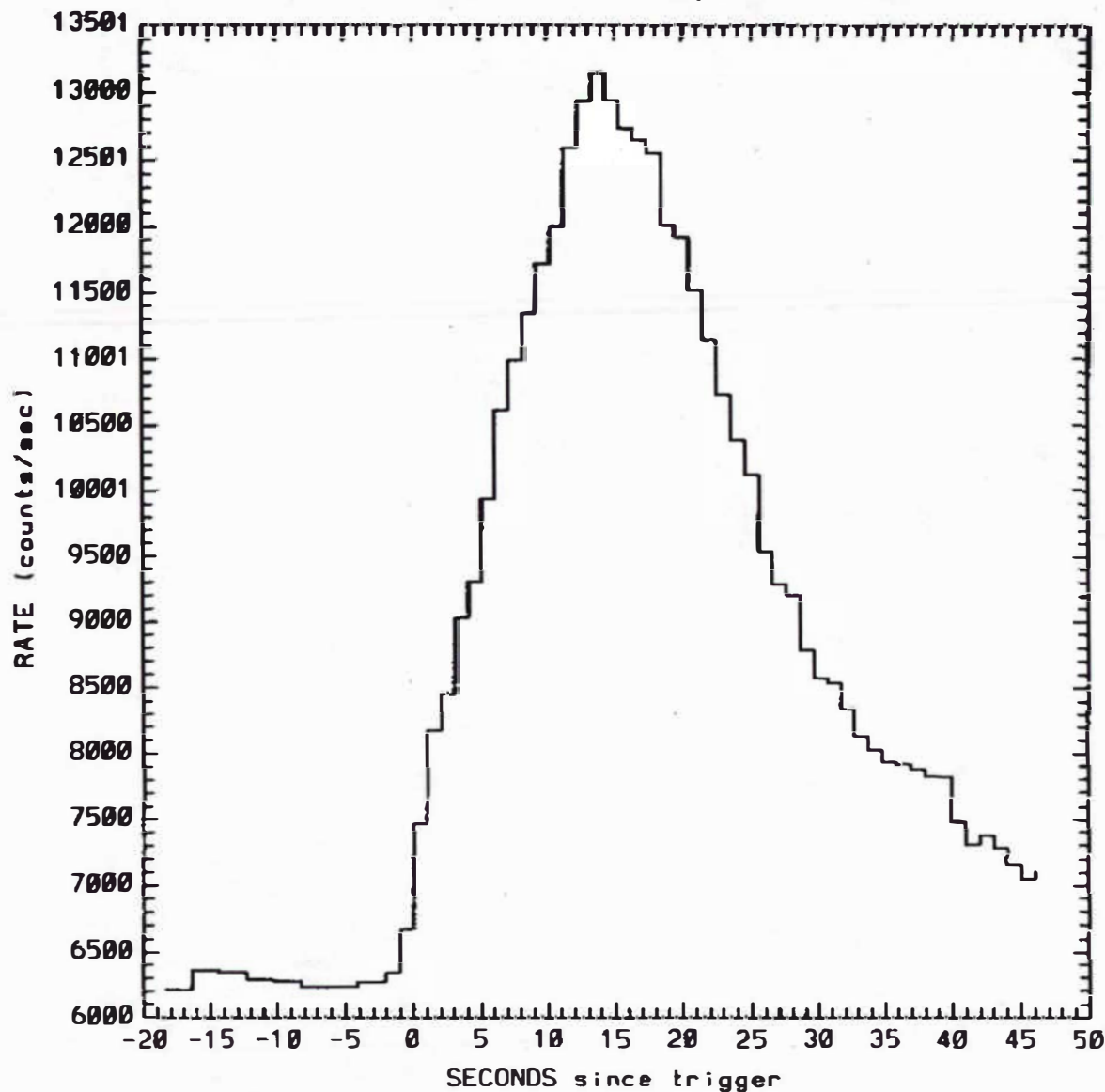
24-FEB-2000 12:51:55

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7665

Trigger Time:
11381 / 26598.137Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 seconds)Detectors [7..8],
----32--Channels:
10.61Quality Mask:
BDTSP1

DISCLB Data for K. Hurley, No. 7665



24-FEB-2000 12:52:42

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

Trigger # : 7665

Trigger Time:
11381 / 26598.137

Burst Data Type:
DISCLB

Deadtime
Corrected: N

Background Data
Type: None

Minimum Integ. Time:
1.824 seconds

Detectors (7..8),
----32--

Discriminators:
(1..2)

Quality Mask:
BDISP1

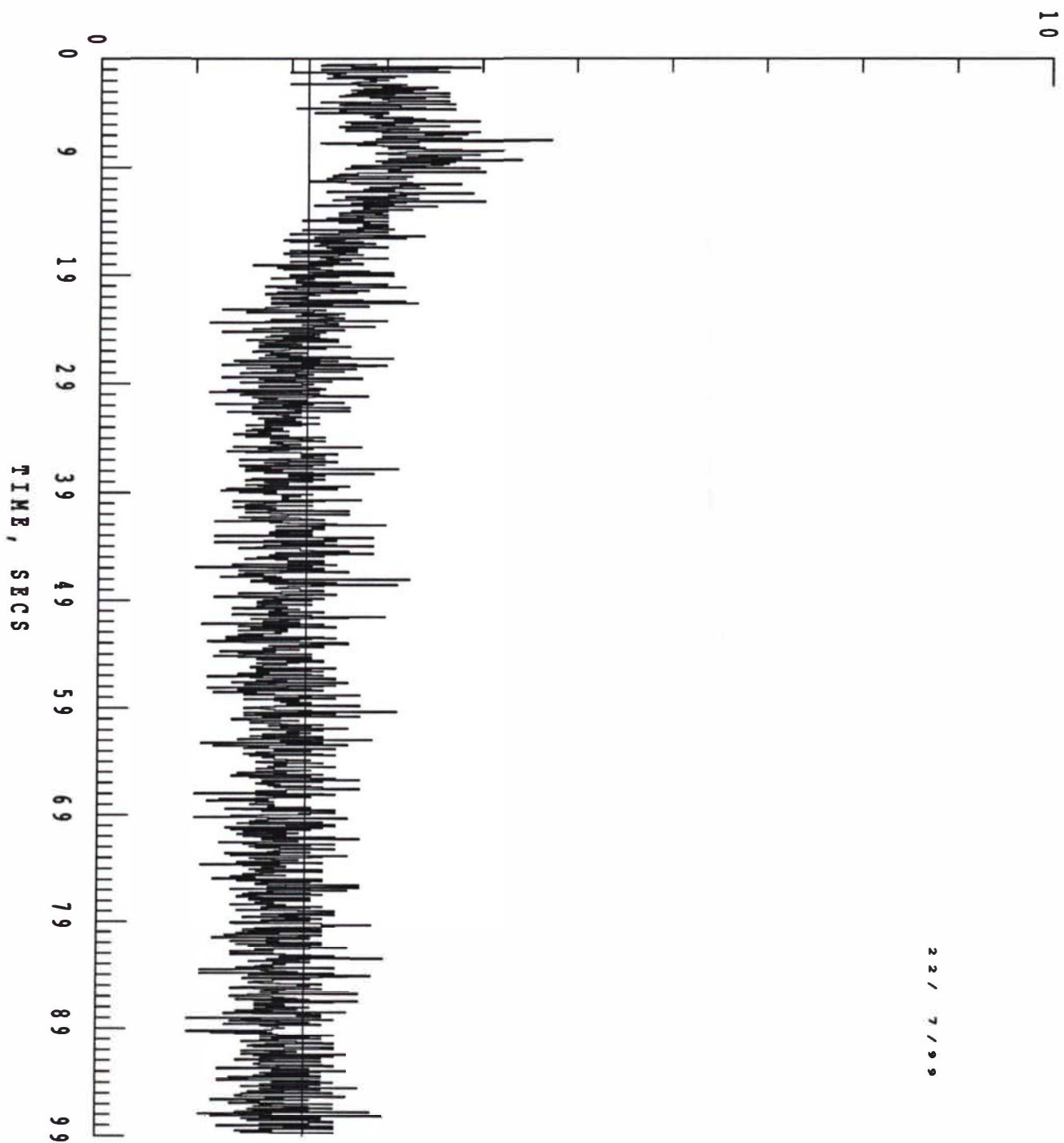
KONUS

22/07/99

26604.186

50 - 200 keV

COUNTS/0.064 S



22 / 7 / 99

From HENZE@fender.msfc.nasa.gov Mon Jul 26 13:43 PDT 1999
Date: Mon, 26 Jul 1999 15:46:15 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7666

TIME: TJD=1381 SECONDS=75449 20:57:49

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=108.0 AZIMUTH=356.6 ERROR= 0.4 DEGREES

COMMENTS:

GOES C7.1, NO OPTICAL IDENT. COMPLEX, DUR. APPROX. 280 S, STARTS AT APPROX.
T-140 S, MAX AT APPROX. T+6 S. NOT VISIBLE ABOVE 100 KEV.
PRECURSOR AT APPROX. T-240 S.

From HENZE@fender.msfc.nasa.gov Mon Jul 26 14:18 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 26 Jul 1999 16:14:39 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7667

BATSEARCH PROGRAM

BATSE BURST # 7667
EVENT OF 1999 JUL 22 DAY OF YEAR=203
EVENT CROSSING TIME AT BATSE : 76845. S. OR 21:20:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 150.000 -54.000
BATSE PEAK COUNTING RATE: 5400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 7/ 99 IS:
RA= 149.156 DEC= -8.912 DIST= 5.479 AU
BATSE-ULYSSES DISTANCE = 819598136. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=134.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1930.00 SECS.
CROSSING TIME AT ULYSSES IS 74915. S. OR 20:48:34 +/- 356.86 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 7/ 99 IS:
RA= 213.787 DEC= -15.088 DIST= 0.944 AU
MARS-BATSE DISTANCE = 141257168. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -217.34 SECS.
CROSSING TIME AT MARS IS 76628. S. OR 21:17:07 +/- 69.28 SECONDS

BATSE BURST TRIGGER

NO.: 7667

TIME: TJD=1381 SECONDS=76845

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 37.3 AZIMUTH= 39.2 ERROR= 2.1 DEGREES

COMMENTS:

MULTIPEAKED. MAIN EPISODE DUR. APPROX. 50 S, STARTS AT APPROX. T-12 S, MAX AT APPROX. T+28 S. MARGINALLY VISIBLE ABOVE 300 KEV. WEAK SUCCESSOR PULSE AT APPROX. T+80 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7667	990722	11381	76845	5400	150	-54	50

Date: Feb 16 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data N/A

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

☒ ACCESS database updated?

*Annulus passes for from BATSE
error circle - MB will have
to check*

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

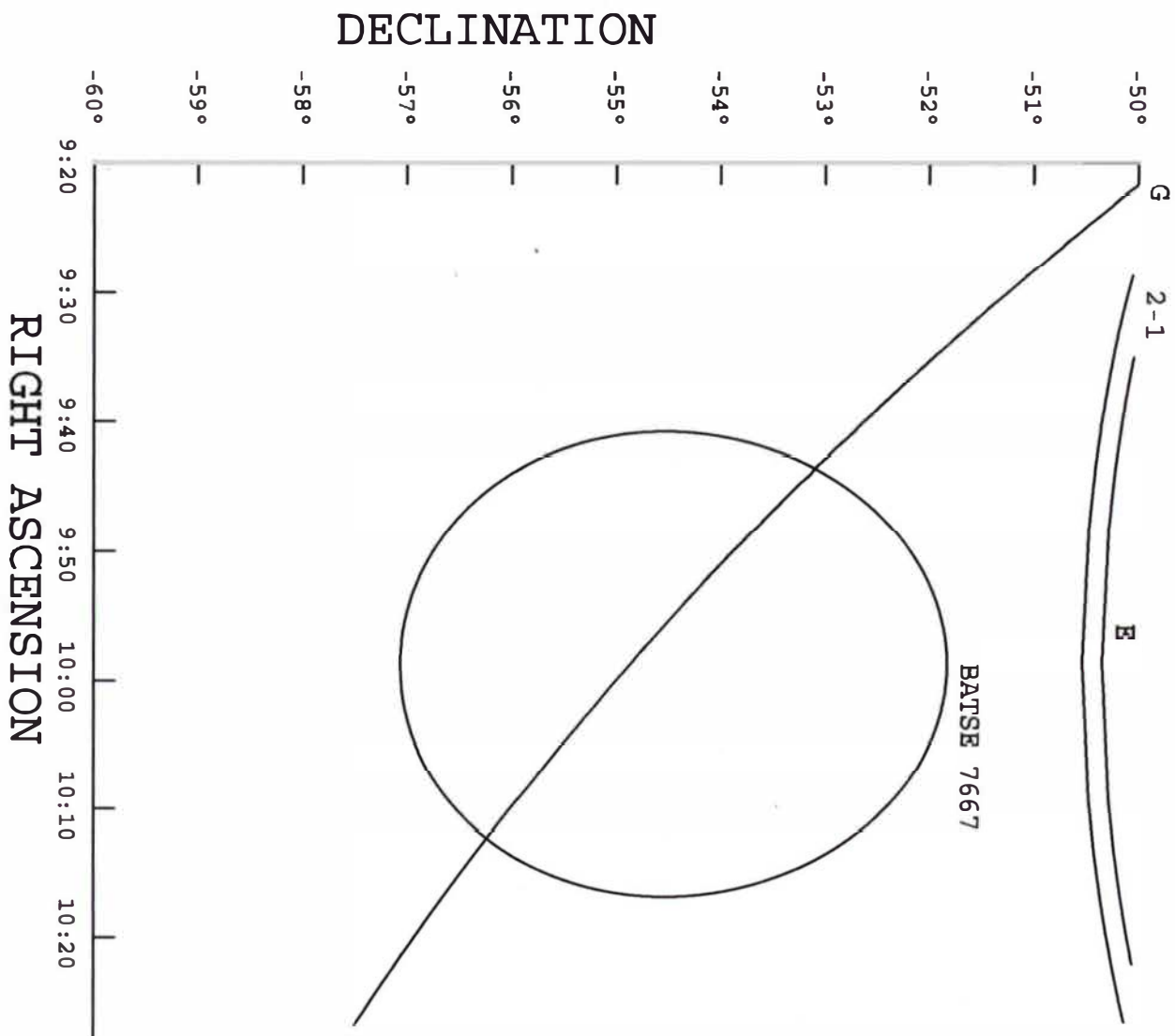
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF JUL 22, 1999 21:20

6 / 3 / 0



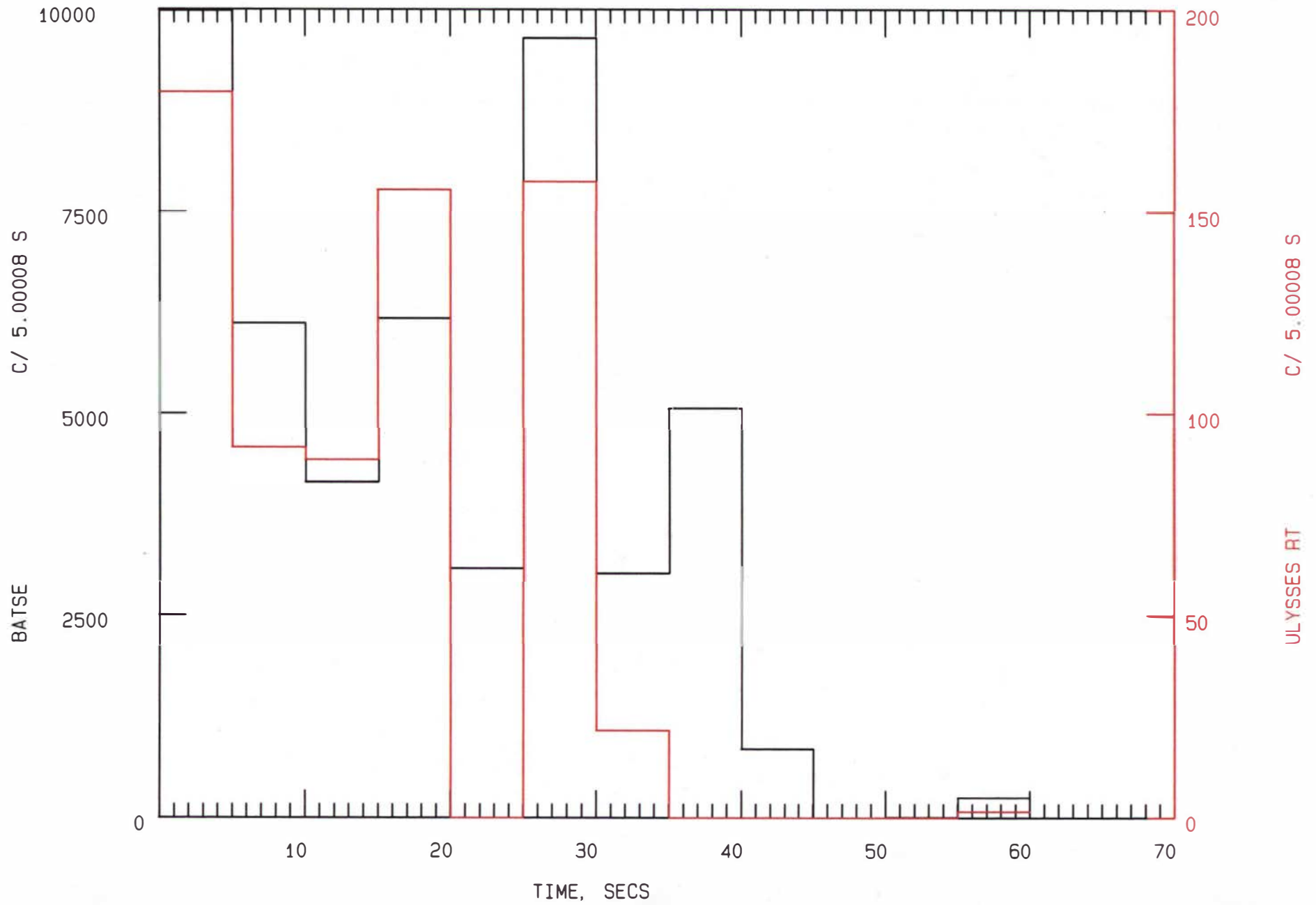
BATSE

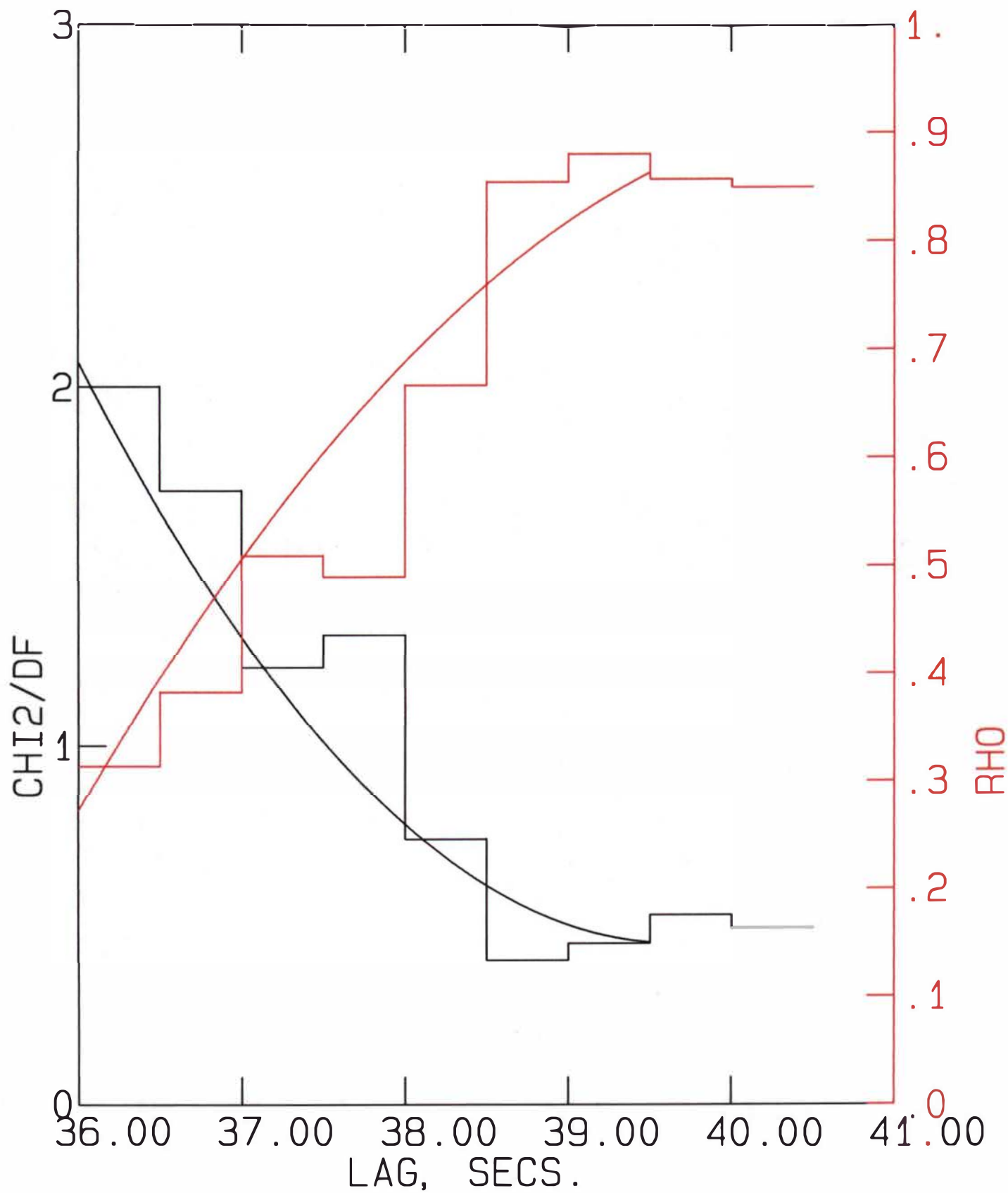
-ULYSSES RT CORRELATION

22/07/99

76845.113

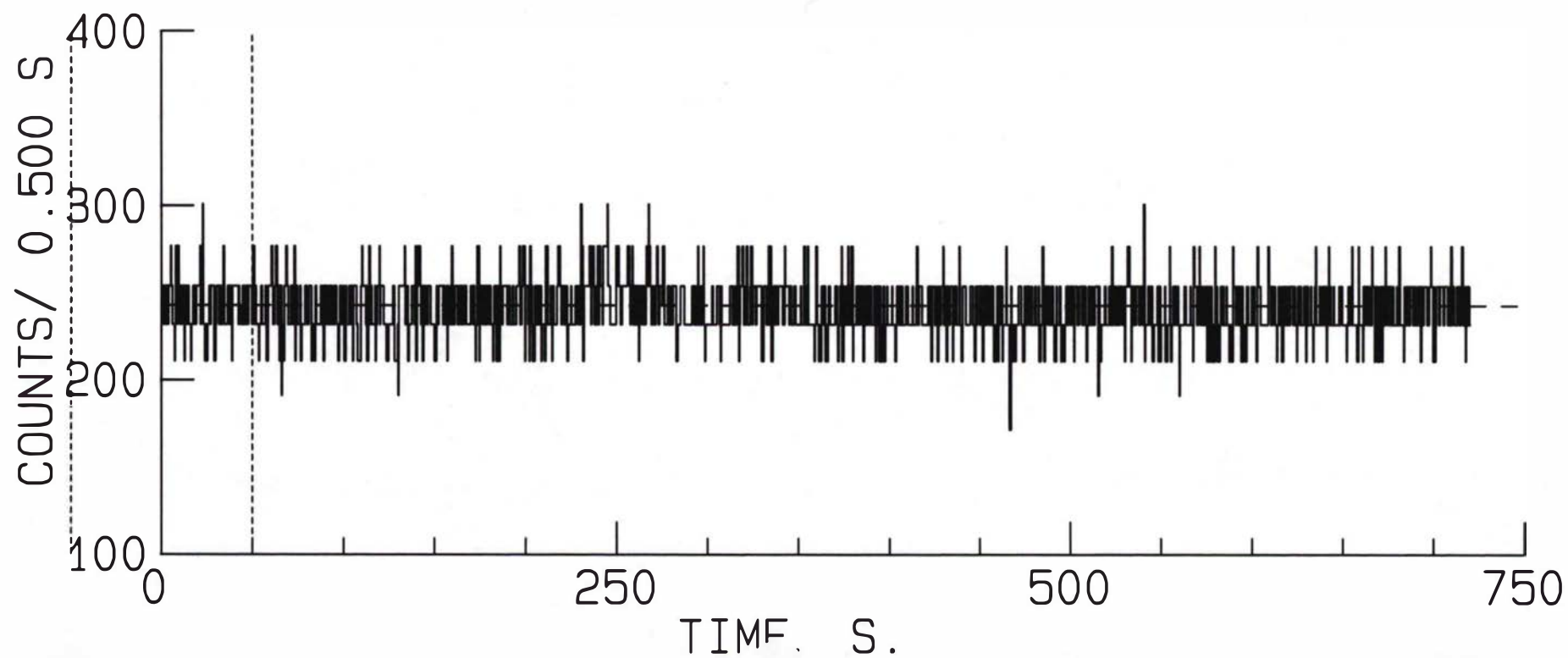
16/ 2/ 0





ULYSSES RT
22/ 7/99 74556.412 s
22- 151 keV

16 / 2 / 0



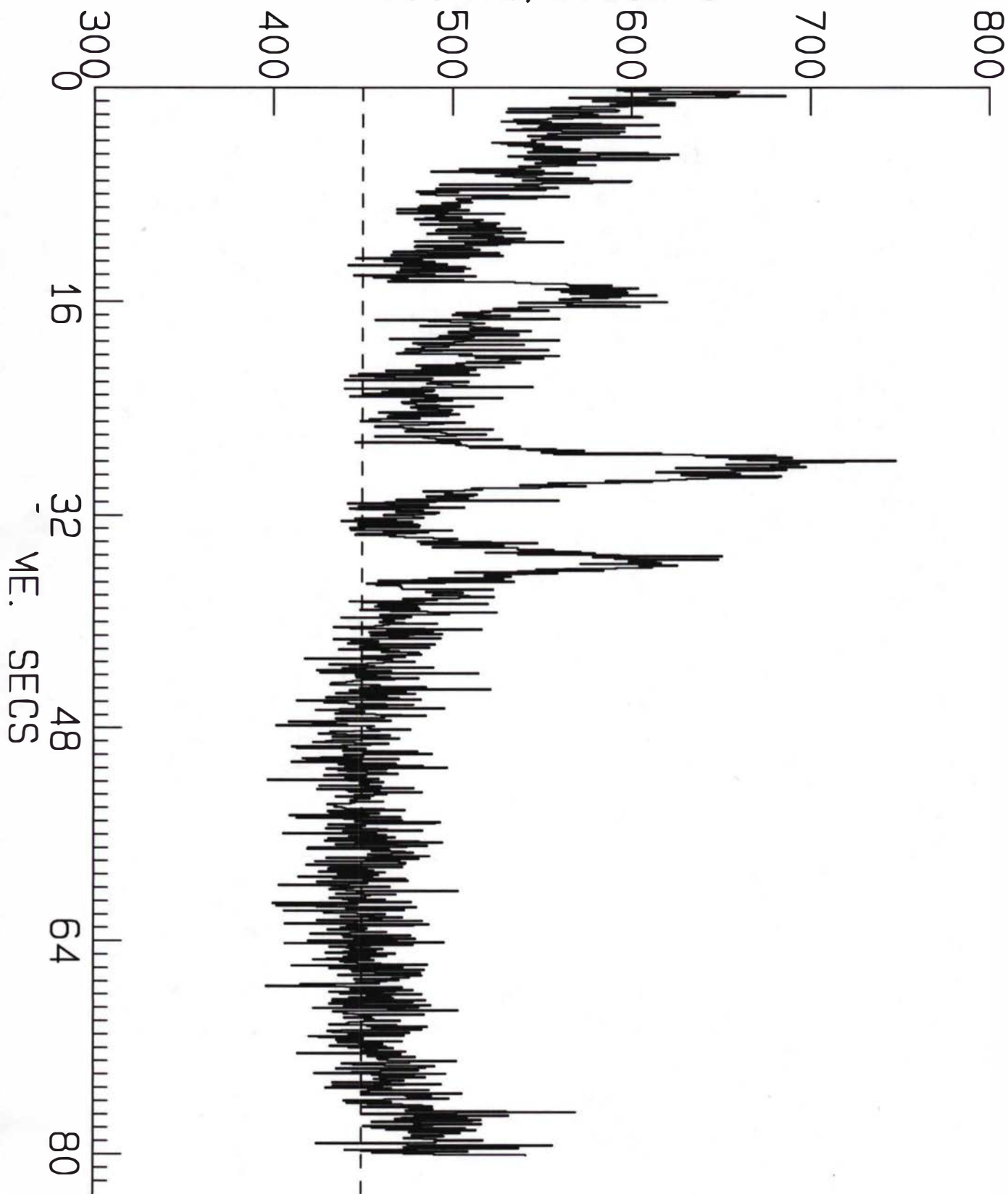
BATSE

22/07/99

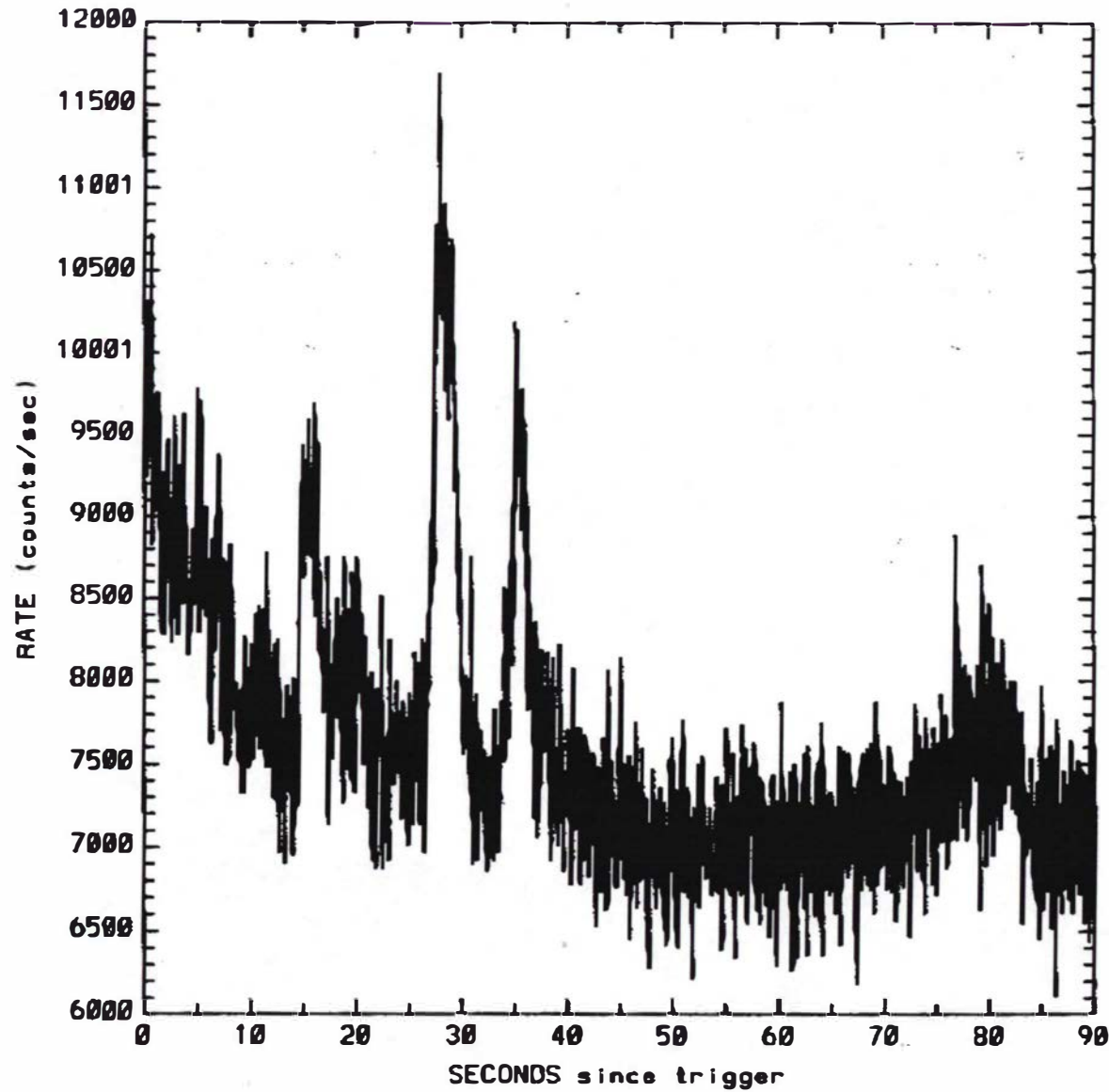
76845.113

25- 100 keV

COUNTS/0.064 S



MER Data for K. Hurley, No. 7667



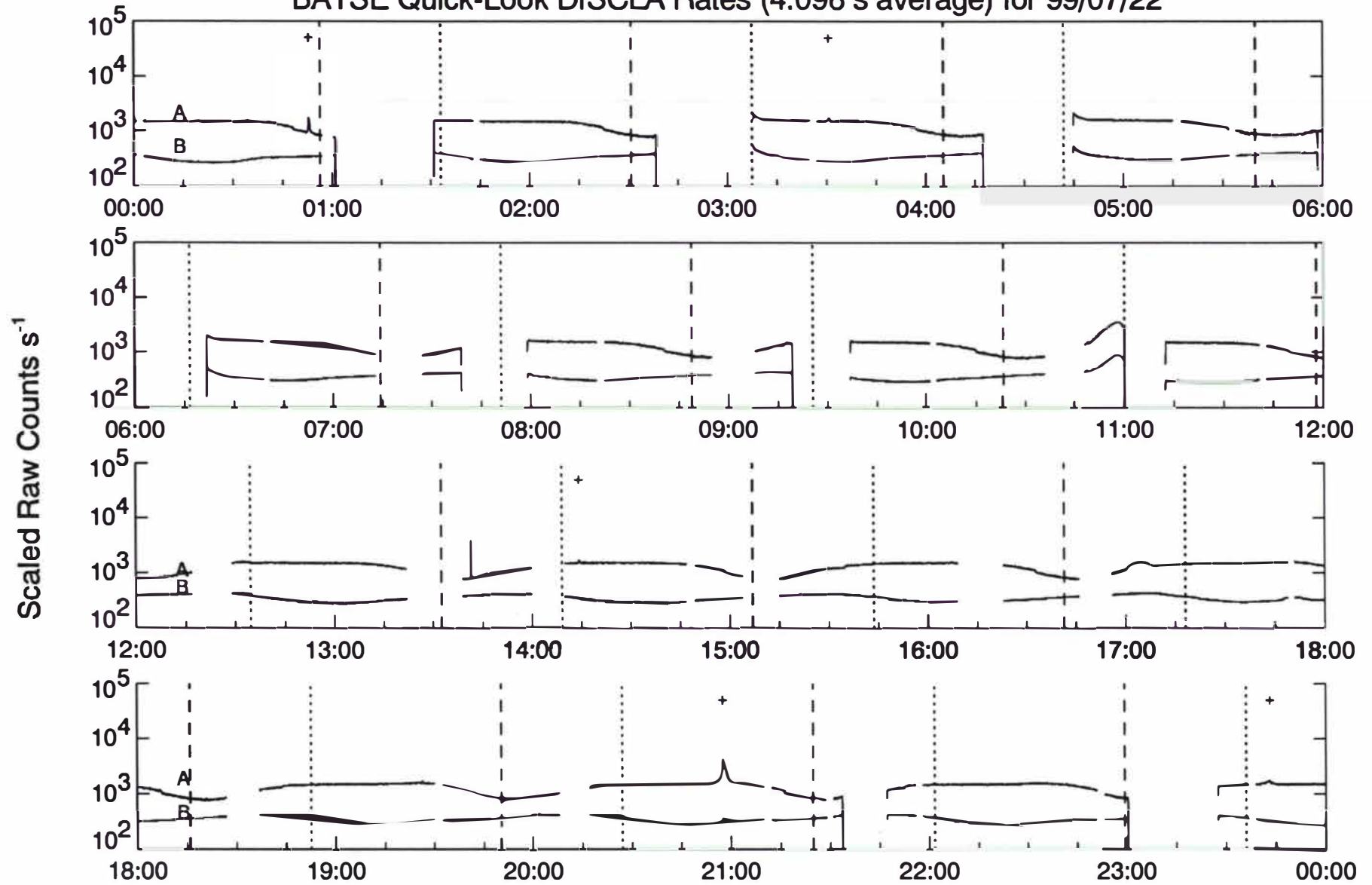
3-FEB-2000 16:29:52

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

Trigger # : 7667

Trigger Time:
11381 / 76845.113Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors (7..0).
-----2-0Channels:
(0.61)Quality Mask:
BDISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/22

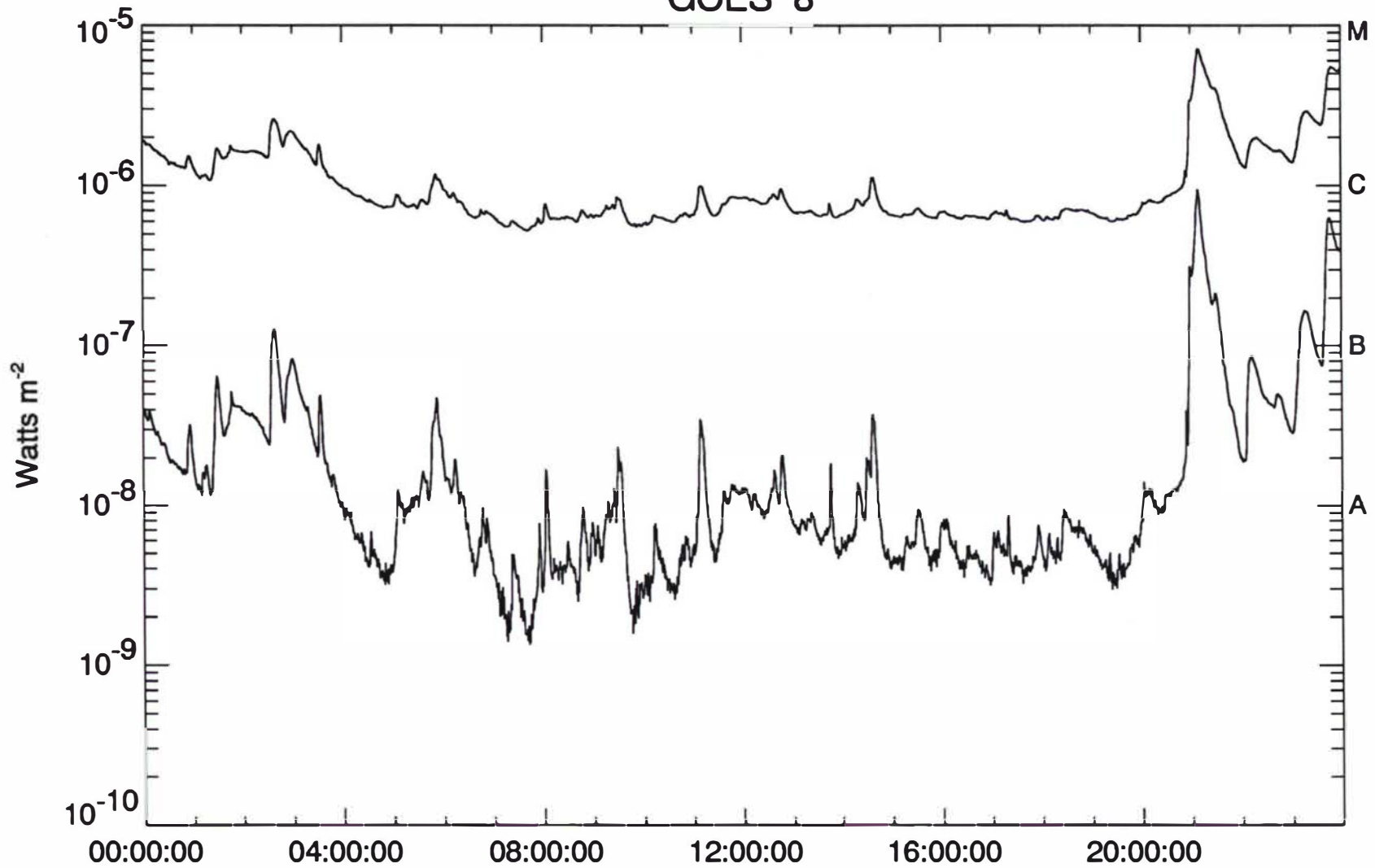


Current Time: 99/07/26, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



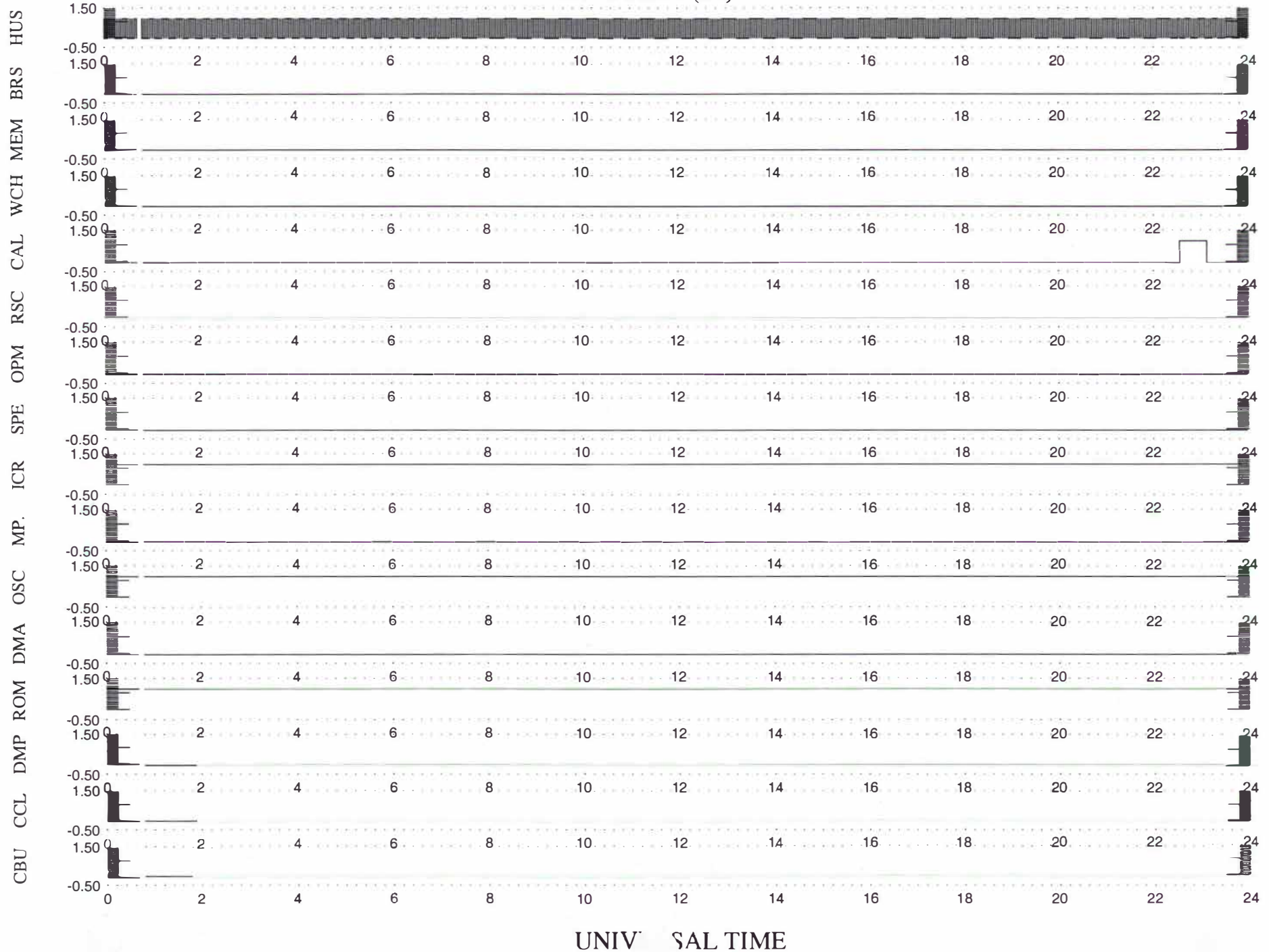
Data Start: 99/07/22, 0000:00

Plot created: 99/07/26, 1011

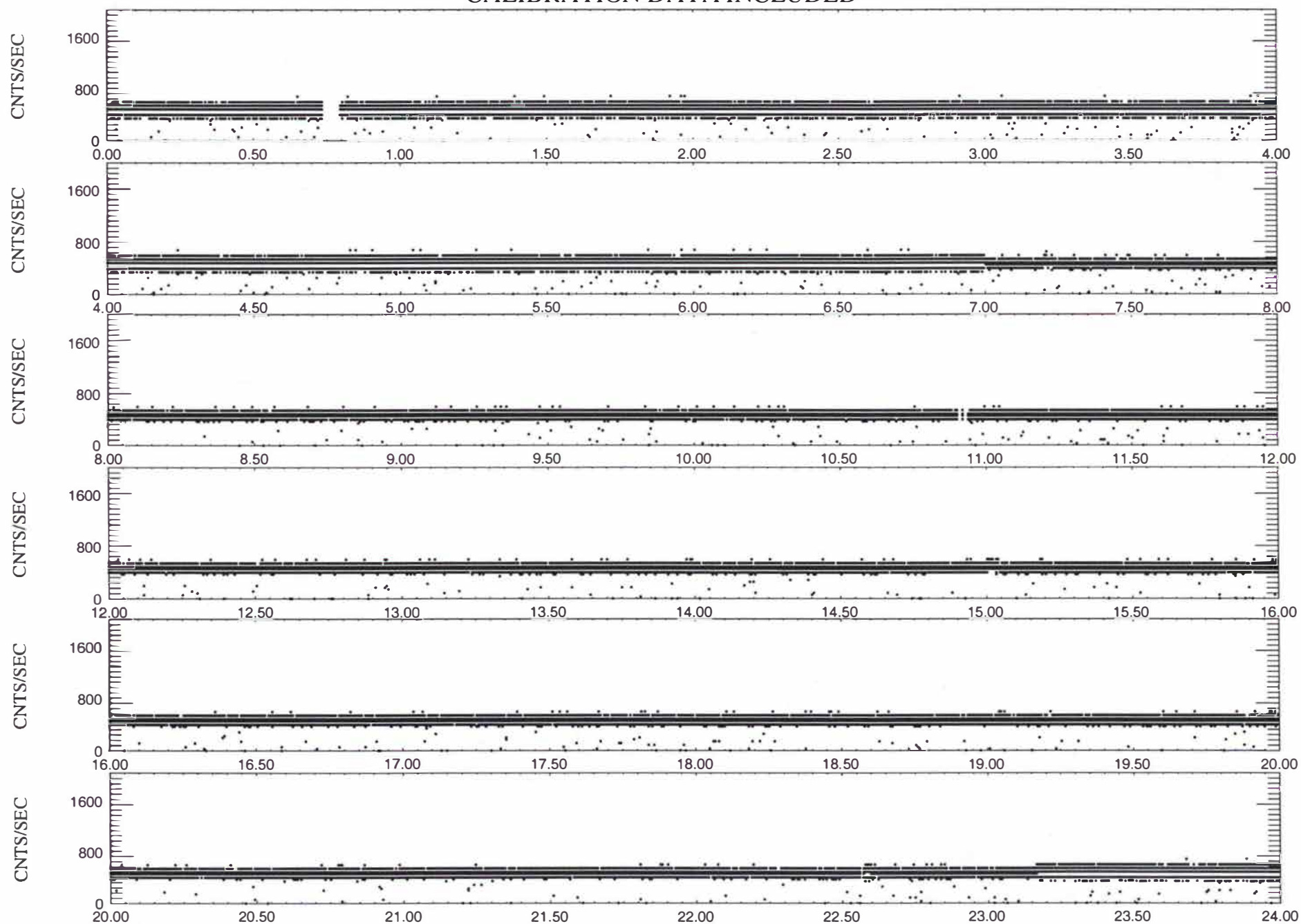
Channel 1 (1.0 - 8.0 Angstroms)
Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

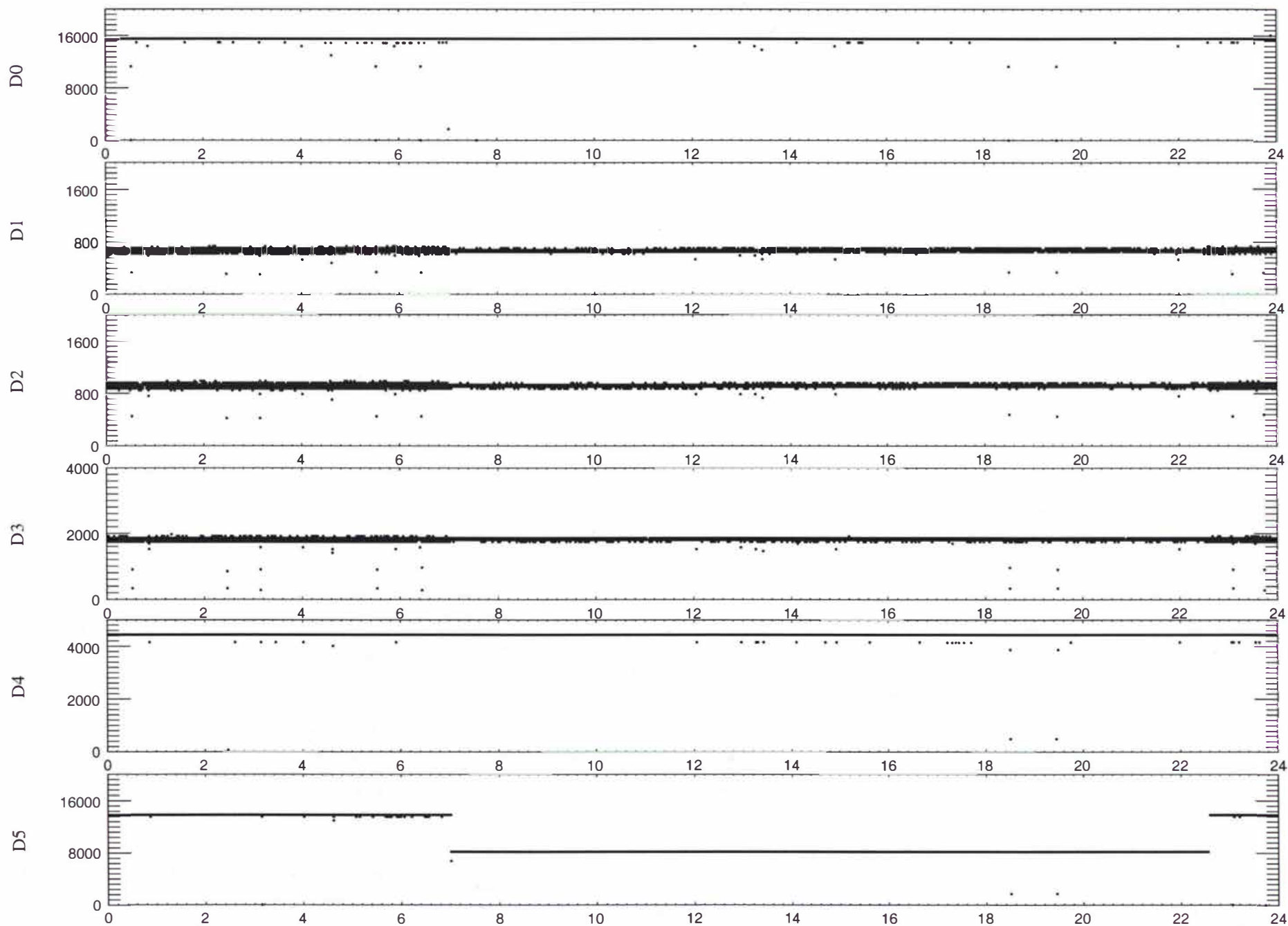
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV Mon Aug 2 09:02 PDT 1999
Date: Mon, 2 Aug 1999 12:02:39 -0400
From: "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV
To: khurley@ssl.berkeley.edu
Vmsmail-To: LHEAVX::SMTP%"khurley@ssl.berkeley.edu"
^Vmsmail-Cc: BUTTERWORTH
Subject: RE: GRB990723, 990724

Kevin,

I'm out the door in a couple of minutes, so I won't use my usual format here...

Konus didn't see the first of these and was off during the second.

Paul.

From khurley@sunspot.ssl.berkeley.edu Tue Jul 27 08:54 PDT 1999

Date: Tue, 27 Jul 1999 09:07:11 -0700

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

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

Subject: GRB990723, 990724

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
JULY 23 1999 09:54*	weak, 64 ms long	2740
JULY 24 1999 21:50	moderate, 5 s long	2740

*looks like an SGR, but which one?

Were these events detected by anyone else?

CC: ulyssesbursts alias list

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

From SAHI@fender.msfc.nasa.gov Mon Jul 26 14:55 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Mon, 26 Jul 1999 17:00:13 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7668

TIME: TJD=1382 SECONDS=41531

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.8 AZIMUTH=358.1 ERROR=0.8 DEGREES

COMMENTS:

SOLAR FLARE. NO GOES, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 11 S.
VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Mon Jul 26 15:32 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Mon, 26 Jul 1999 17:31:19 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7669

TIME: TJD=1382 SECONDS=57382

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

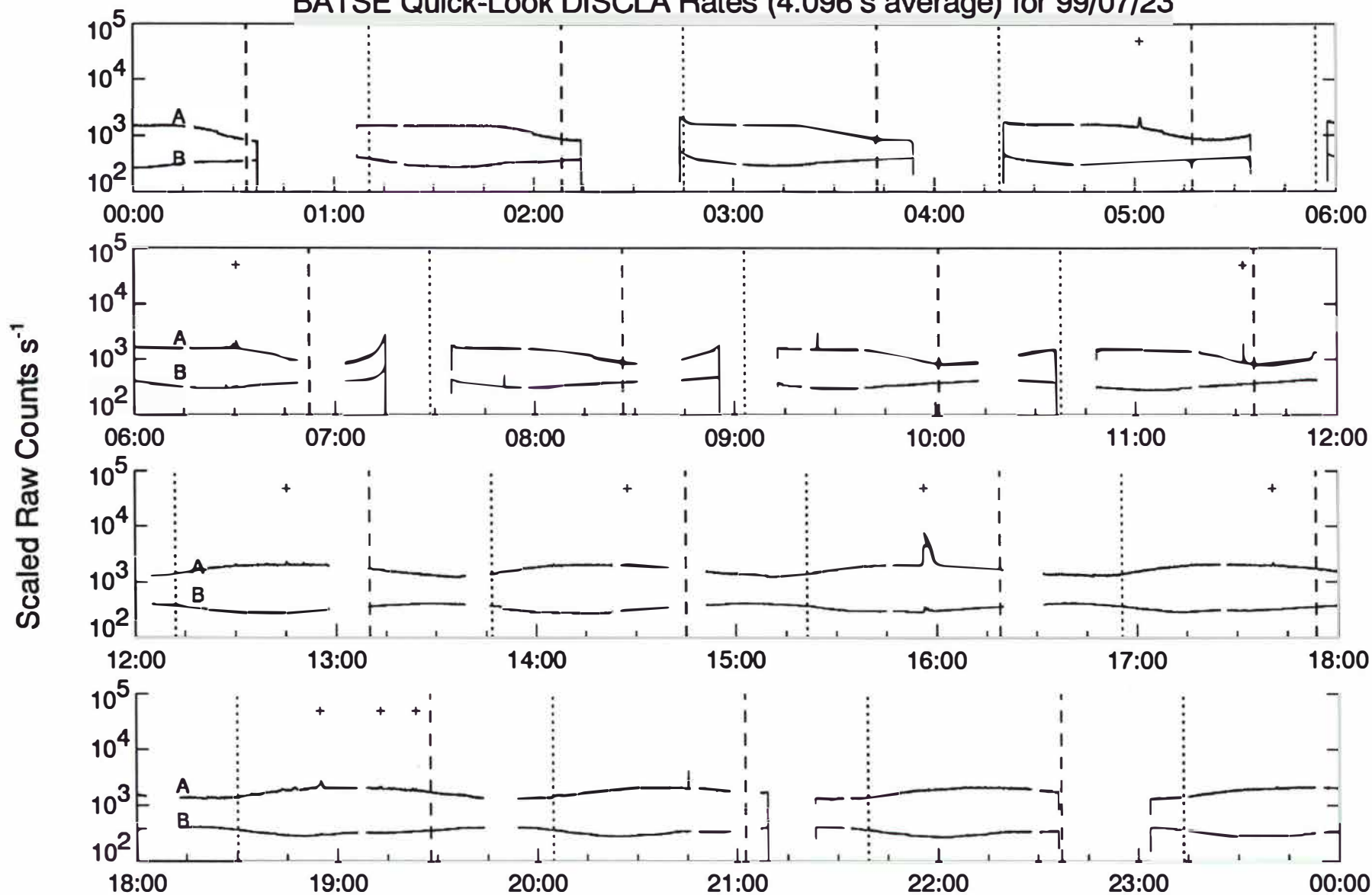
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.1 AZIMUTH=355.2 ERROR=0.2 DEGREES

COMMENTS:

SOLAR FLARE. GOES. M1.0, NO OPTICAL ID. COMPLEX, DUR. 210 S, STARTS AT T-30 S,
MAX. AT T-8 S. NOT VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/23

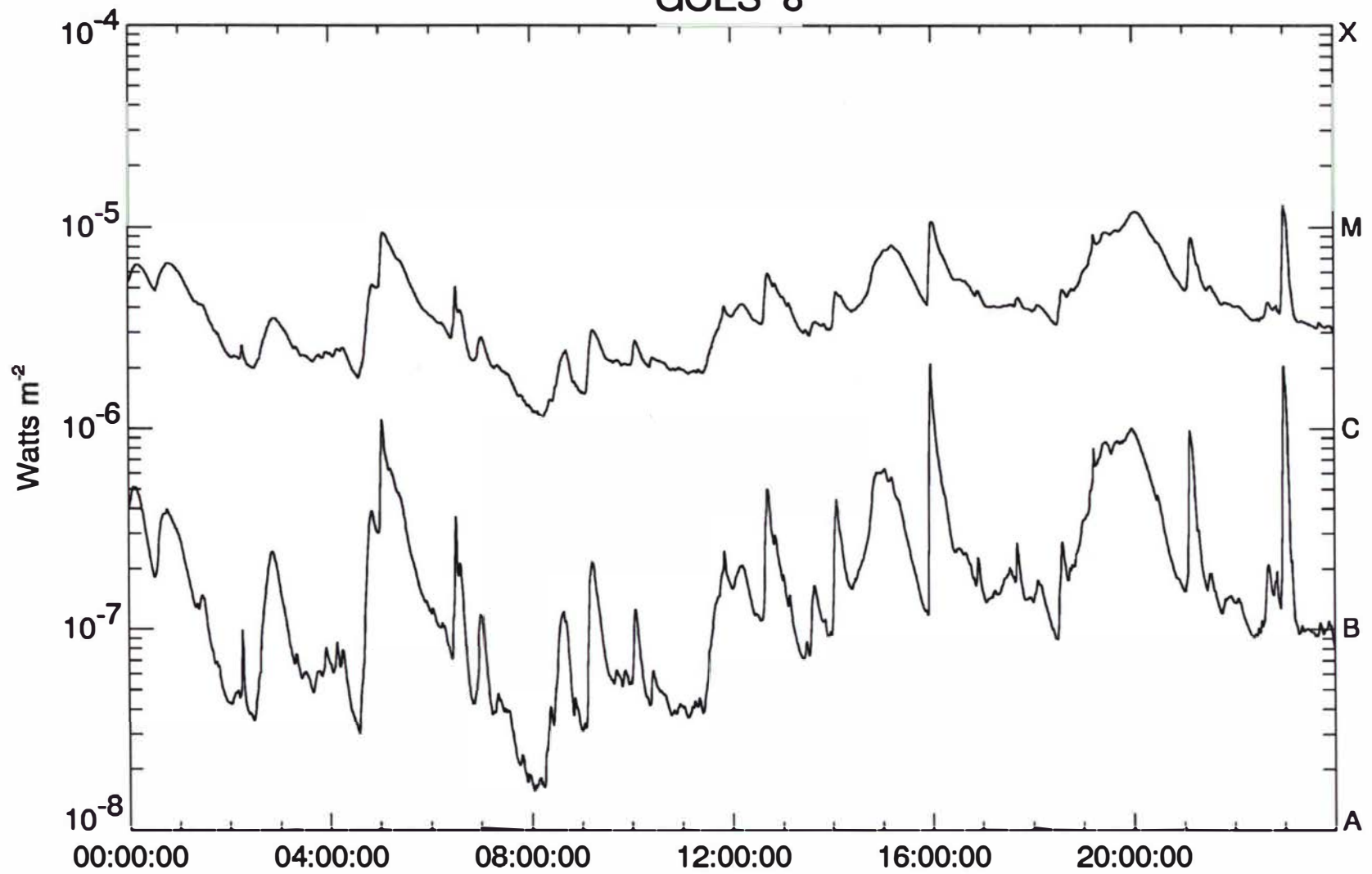


Current Time: 99/07/27, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



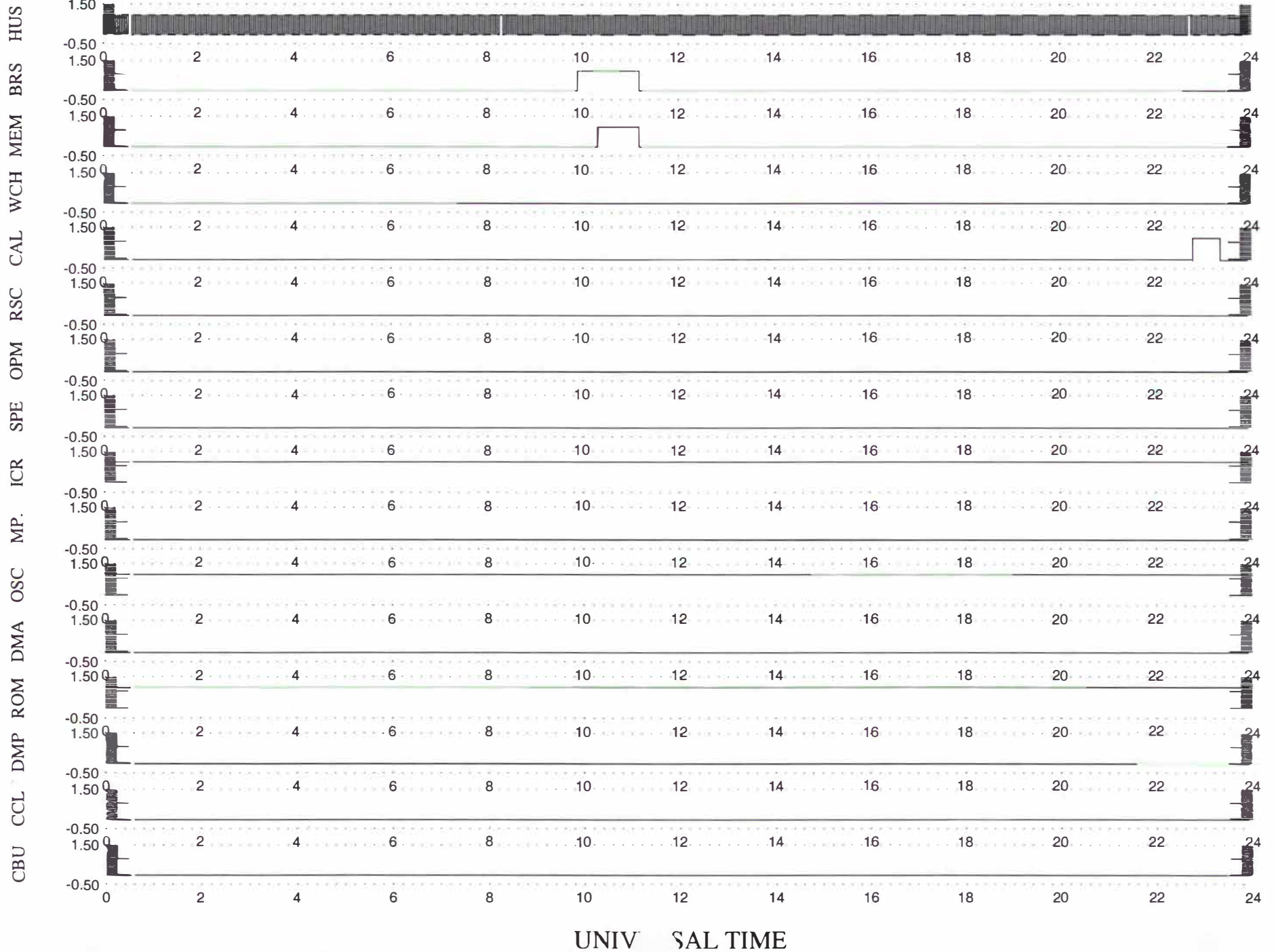
Data Start: 99/07/23, 0000:00

Plot created: 99/07/27, 1011

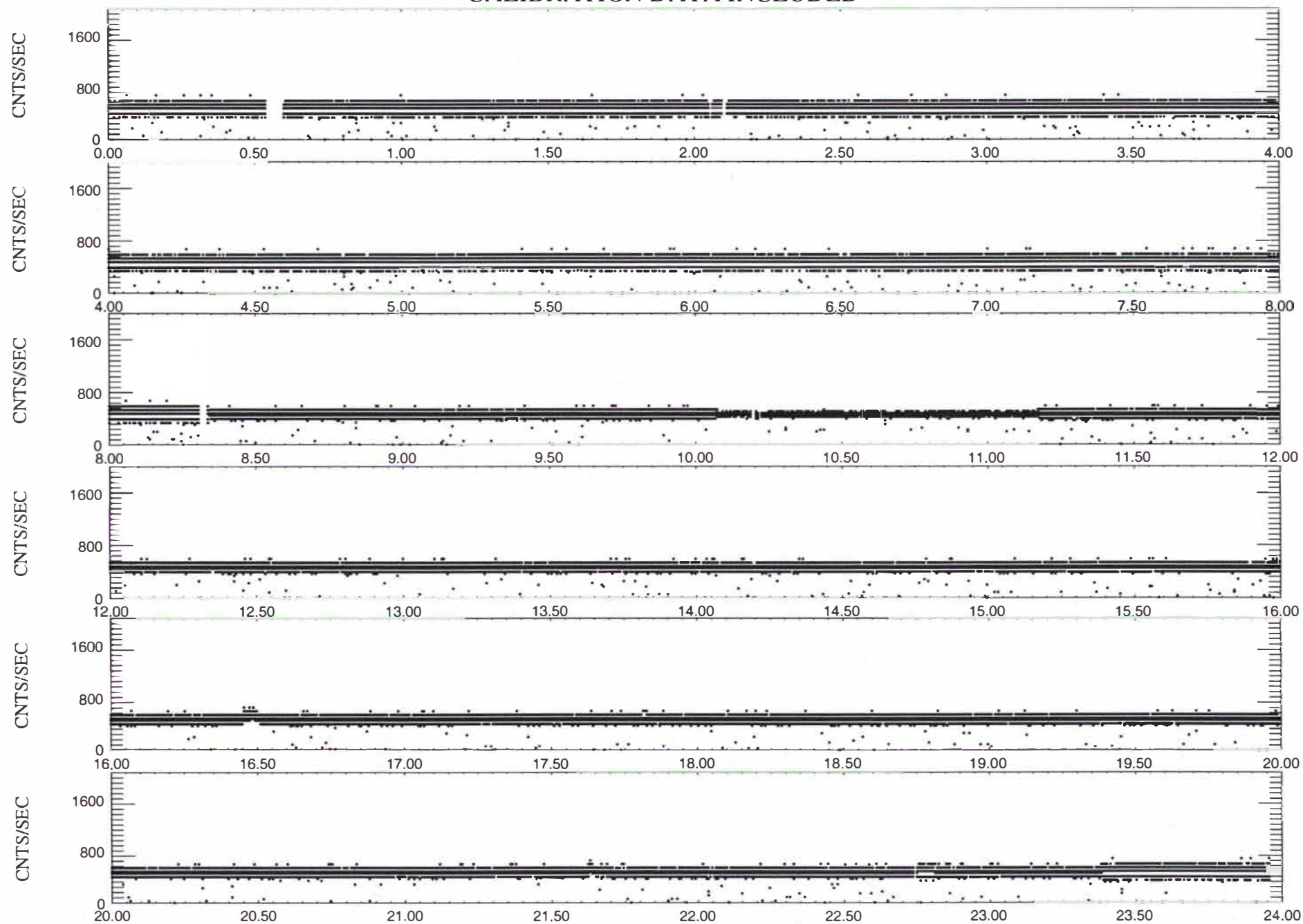
Channel 1 (1.0 - 8.0 Angstroms)
Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 12

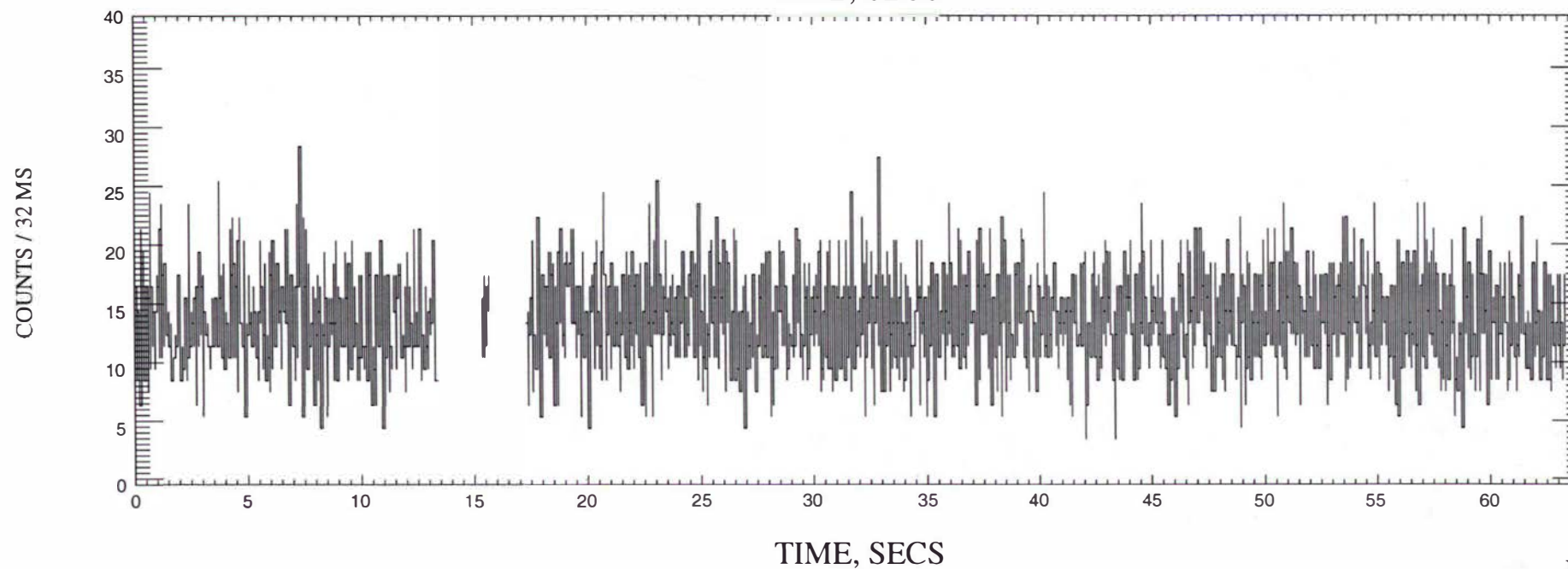
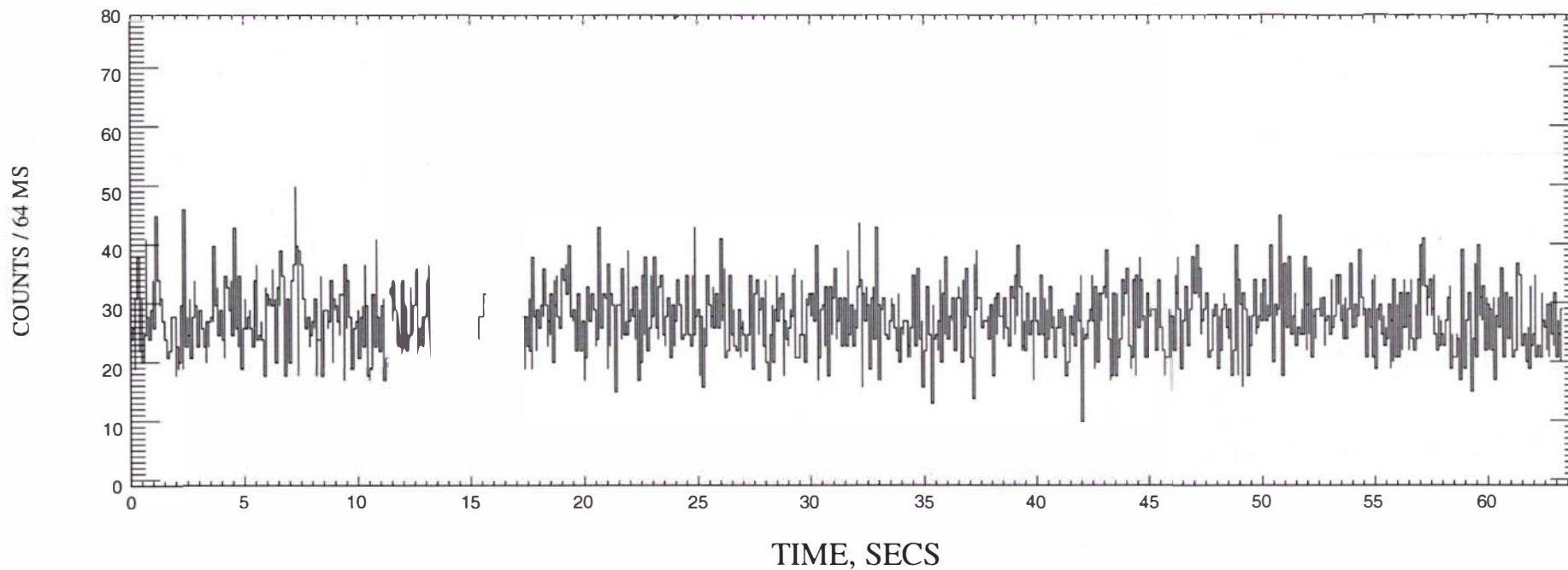


CALIBRATION DATA INCLUDED

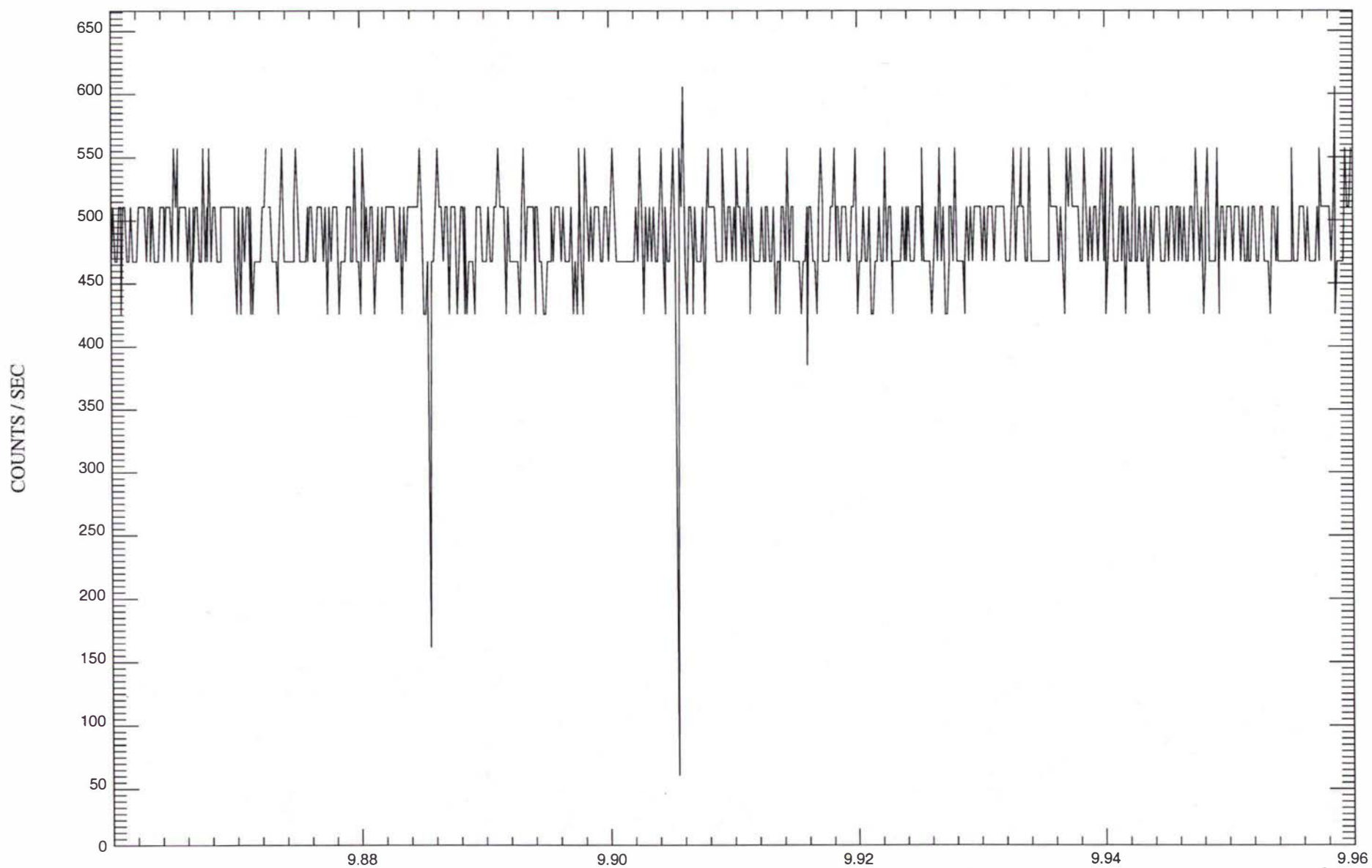


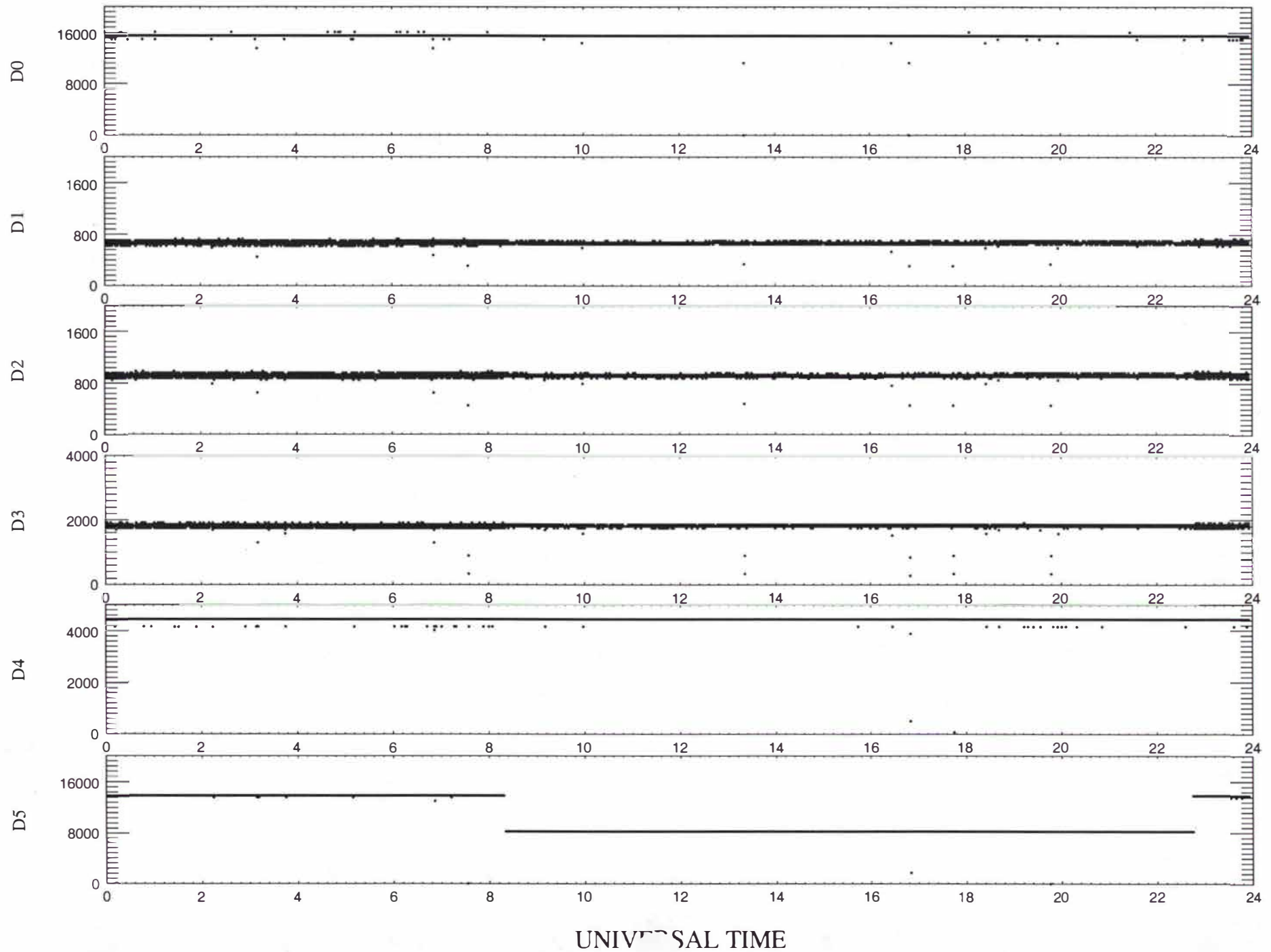
UNIVERSAL TIME

Burst Counter 12 at UT= 9.906113217672 h=35662.008 s 09:54:22.008



CALIBRATION DATA INCLUDED





From PETERSON@fender.msfc.nasa.gov Wed Jul 28 12:23 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 28 Jul 1999 14:28:13 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7670

TIME: TJD=1383 SECONDS= 5407

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.6 AZIMUTH=0.3 ERROR=2.724 DEGREES

COMMENTS:

SOLAR FLARE, NO GOES, NO OPTICAL. SINGLE PULSE, DUR. APPROX. 10 S, STARTS AT
APPROX T-3 S. NOT VISIBLE ABOVE 300 KEV. CRAB OCCULTATION SET AT APPROX
T-400 S. OVERWRITTEN DURING TTS, BUT STTE IS COMPLETE.

From PETERSON@fender.msfc.nasa.gov Wed Jul 28 12:43 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Wed, 28 Jul 1999 14:49:42 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7671

BATSEARCH PROGRAM

BATSE BURST # 7671
EVENT OF 1999 JUL 24 DAY OF YEAR=205
EVENT CROSSING TIME AT BATSE : 11732. S. OR 03:15:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 218.000 22.000
BATSE PEAK COUNTING RATE: 12900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 7/ 99 IS:
RA= 149.326 DEC= -9.003 DIST= 5.485 AU
BATSE-ULYSSES DISTANCE = 820620435. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -751.14 SECS.
CROSSING TIME AT ULYSSES IS 10981. S. OR 03:03:00 +/- 495.59 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 7/ 99 IS:
RA= 214.666 DEC= -15.412 DIST= 0.956 AU
MARS-BATSE DISTANCE = 143086176. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -378.38 SECS.
CROSSING TIME AT MARS IS 11354. S. OR 03:09:13 +/- 44.76 SECONDS

BATSE BURST TRIGGER

NO.: 7671

TIME: TJD=1383 SECONDS=11732

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=75.7 AZIMUTH=277.9 ERROR=4.841 DEGREES

COMMENTS:

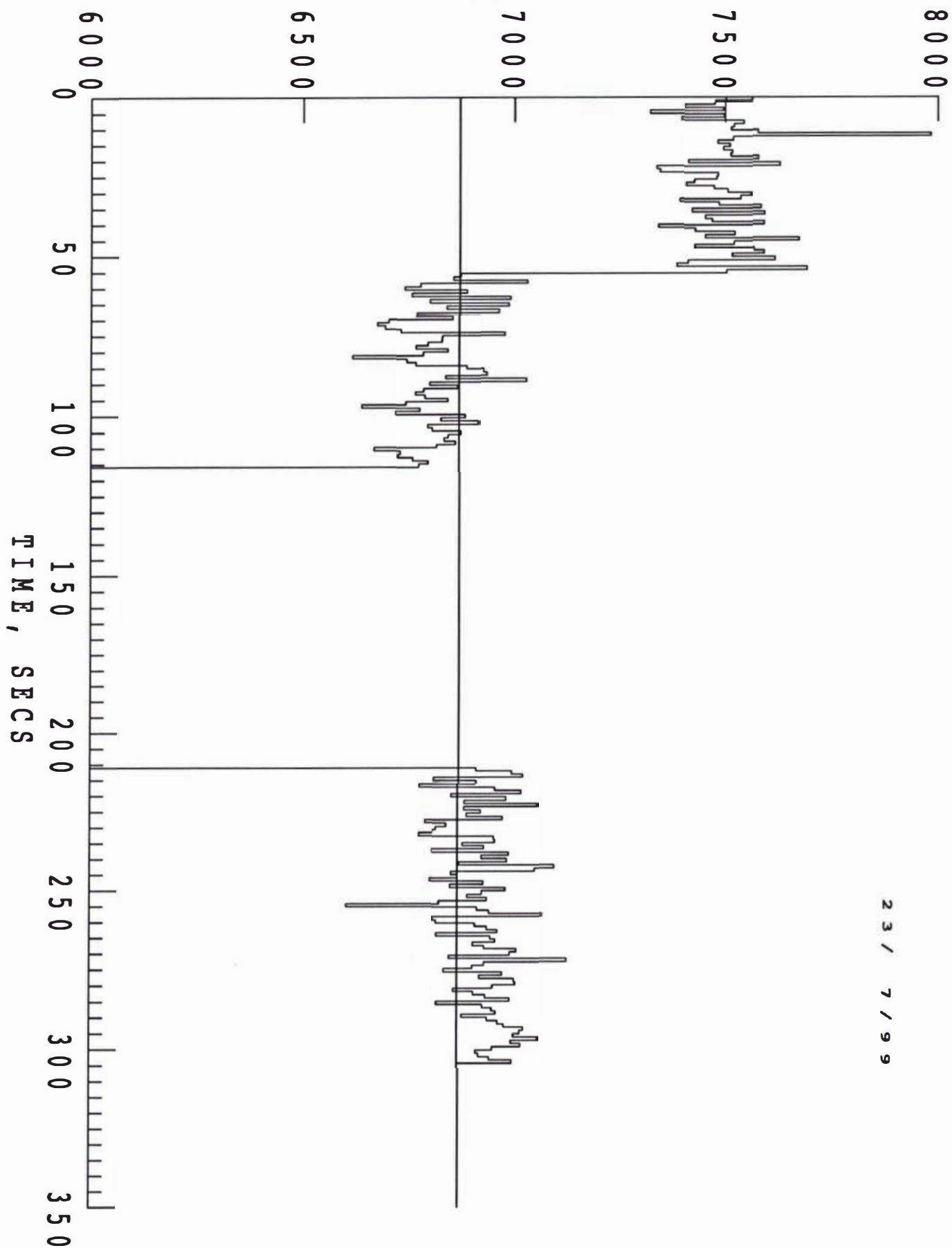
GRB. DOUBLE PULSE, PRECURSOR AT APPROX T-0.9 S, TRIGGER PULSE, DUR APPROX 0.07S,
MAX AT APPROX T-0.04 S. NOT VISIBLE ABOVE 300KEV. OVERWROTE PRECEDING TRIGGER
STTE BELONG TO #7670.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7671	990724	11383	11732	12900	218	+22	.07

BACODINE 7671 24/07/99 11721.465

25 - 100 keV

COUNTS/1.024 S



BATSE BURST# 7671

ULYSSES RT

28 / 7 / 99

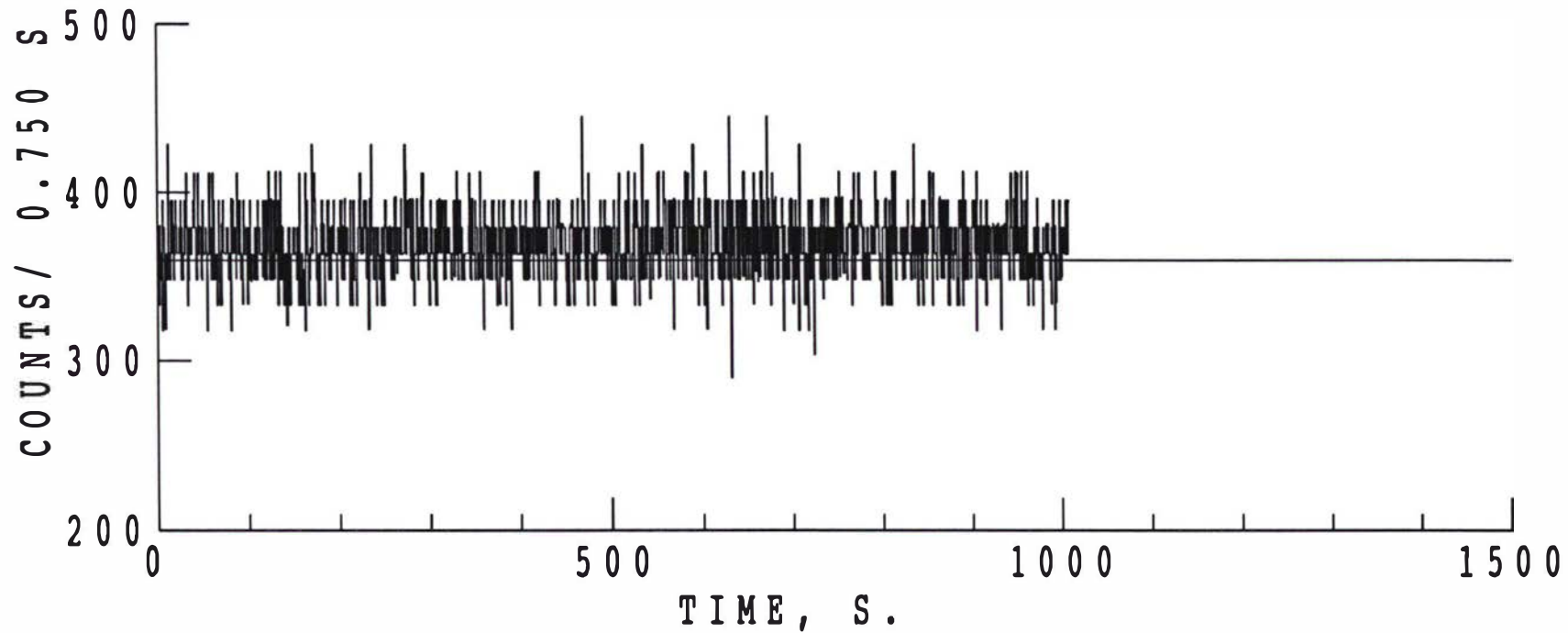
24 / 7 / 99 10476.017 s

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 PETERSON@fender.msfc.nasa.gov Thu Jul 29 09:39 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Thu, 29 Jul 1999 11:45:07 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7672

TIME: TJD=1383 SECONDS=28320

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.6 AZIMUTH=355.7 ERROR=0.159 DEGREES

COMMENTS:

GOES M3.3, OPTICAL SF. MULTIPLE PULSES WITH SUBSTRUCTURE, TOT. DUR. APPROX.
800 S, STARTS AT APPROX. T-140 S, MAX AT APPROX. T+560 S. NOT VISIBLE ABOVE
100 KEV. CRAB SET AT APPROX. T+160 S.

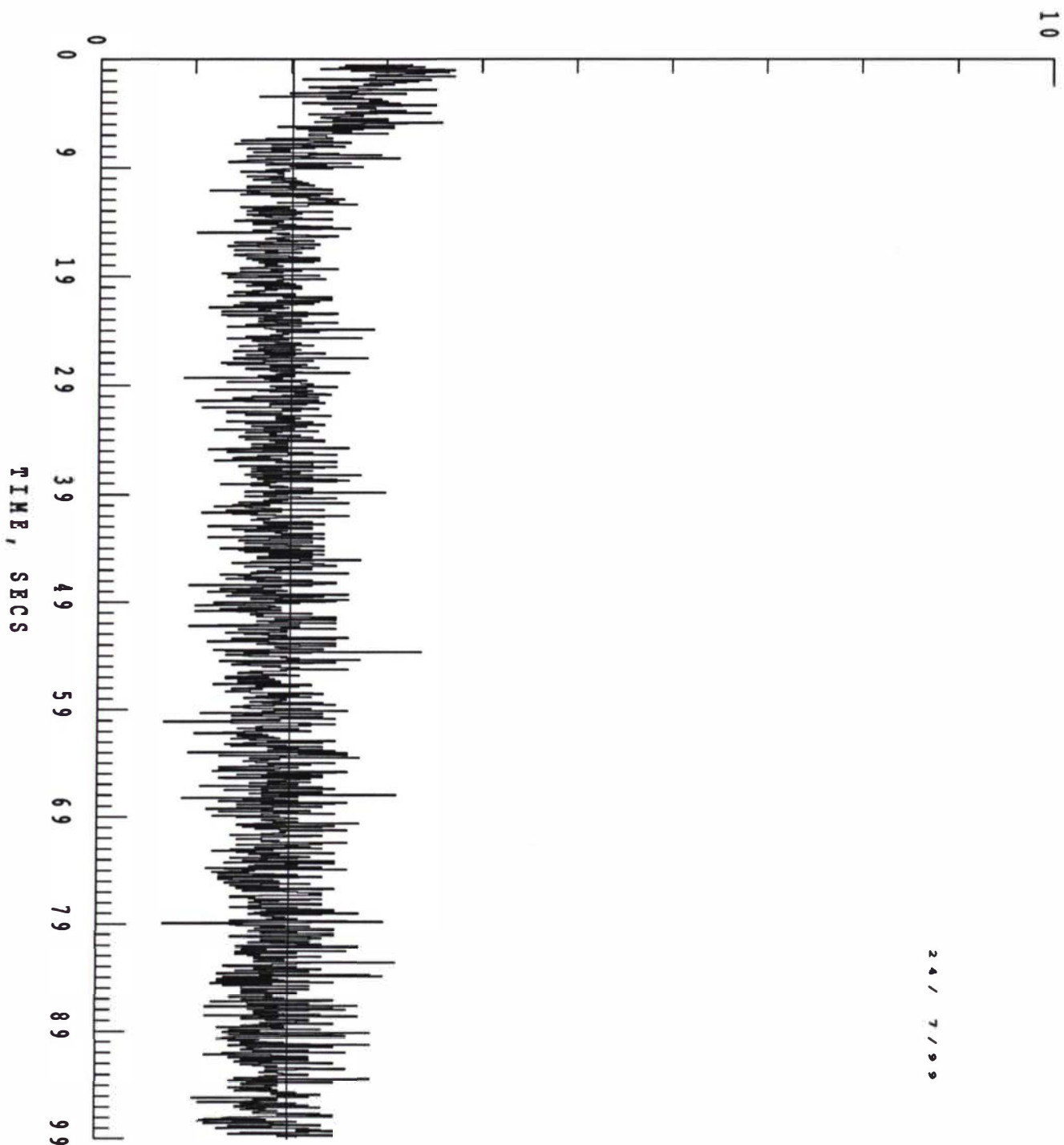
KONUS

24/07/99

40890.295

50 - 200 keV

COUNTS/0.064 S



24 / 7 / 99

KONUS2 19990724 40890

ULYSSES RT

26 / 7 / 99

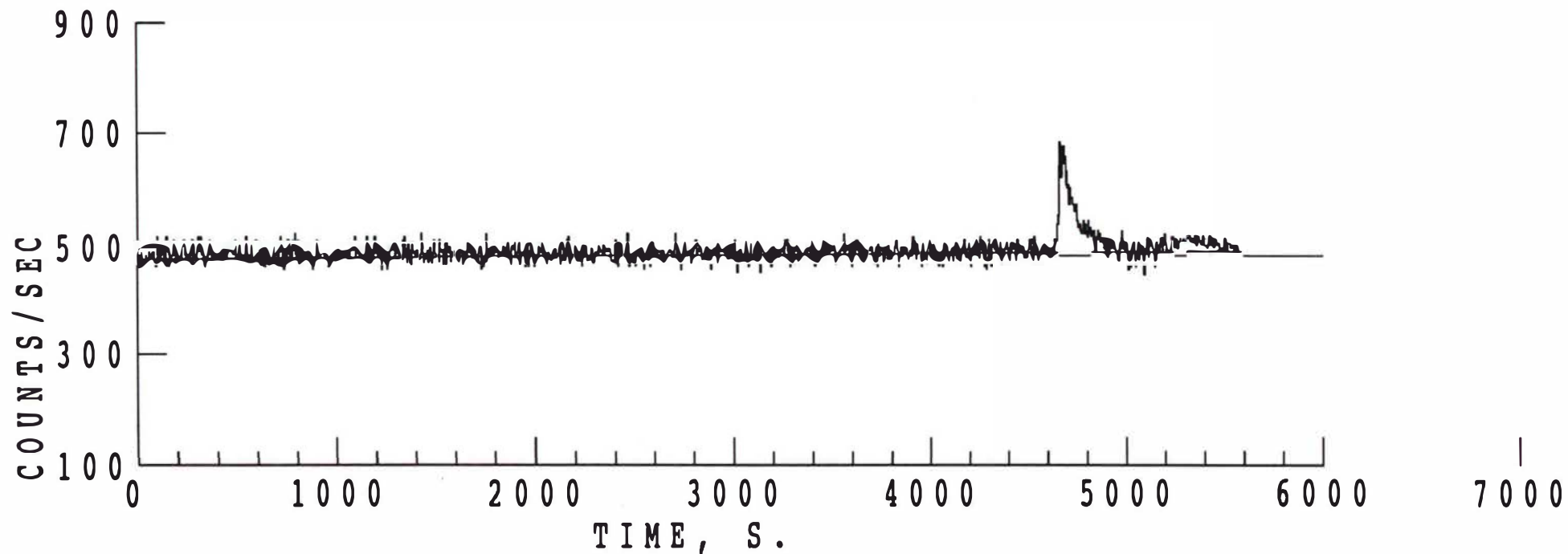
24 / 7 / 99 38088.297 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Wed Jul 28 12:26 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Wed, 28 Jul 1999 14:32:10 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7673

TIME: TJD=1383 SECONDS=43421

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.1 AZIMUTH=359.1 ERROR=3.520 DEGREES

COMMENTS:

SOLAR FLARE, NO GOES, NO OPTICAL. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX.
13 S, STARTS AT APPROX. T-3 S, MAX AT APPROX. T+7 S. PROBABLY WEAKLY VISIBLE
ABOVE 100 KEV.

From "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV Mon Aug 2 09:02 PDT 1999
Date: Mon, 2 Aug 1999 12:02:39 -0400
From: "TGRS3::BUTTERWORTH"@LHEAVX.GSFC.NASA.GOV
To: khurley@ssl.berkeley.edu
Vmsmail-To: LHEAVX::SMTP%"khurley@ssl.berkeley.edu"
^--Vmsmail-Cc: BUTTERWORTH
Subject: RE: GRB990723, 990724

Kevin,

I'm out the door in a couple of minutes, so I won't use my usual format here...

Konus didn't see the first of these and was off during the second.

Paul.

From khurley@sunspot.ssl.berkeley.edu Tue Jul 27 08:54 PDT 1999

Date: Tue, 27 Jul 1999 09:07:11 -0700

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,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@milkyway.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, feroci@saturn.ias.rm.cnr.it,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
woods@eagles.msfc.nasa.gov, kraken@origin.gsfc.nasa.gov

Subject: GRB990723, 990724

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

ULYSSES DATE & TIME	COMMENTS	ULYSSES DISTANCE FROM EARTH, LIGHT-S
JULY 23 1999 09:54*	weak, 64 ms long	2740
JULY 24 1999 21:50	moderate, 5 s long	2740

*looks like an SGR, but which one?

Were these events detected by anyone else?

CC: ulyssesbursts alias list

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

From sinha@isac.ernet.in Fri Aug 11 06:11 PDT 2000
From: sinha@isac.ernet.in
Date: Fri, 11 Aug 2000 15:24:30 +0530 (IST)
--Sender: sinha@sx08
,: Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
subject: Confirmation for SROSS C-2 GRB events (probably SGRs)
MIME-Version: 1.0

Dear Prof. Hurley,

We have now obtained good estimates of some parameters of our GRB data. Below I am listing the derived parameters for few short events.

DATE	EVENT TIME (UT SEC)	T90 (SEC)	HARDNESS RATIO (100-1024keV)/ (20-100 keV)	FLUENCE ERGS CM-2
22.02.97	86007.392	0.142	1.02+-0.21	7.91.10-6
21.05.97	49988.655	0.335	0.53+-0.13	1.47.10-5
<u>24.07.99</u>	77354.837	1.152	0.44+-0.07	4.03.10-5
07.04.00	37496.548	0.759	0.05+-0.01	1.05.10-5

(A) The event times given in UT may be off by as much as 200 ms.

(B) The true T90 for the first event would be somewhat larger than the quoted value.

) Since we do not know the source direction, the fluence value is not corrected for the sec (theta) factor.

Will it be possible for you to kindly go through your archive and let us know whether ULYSSES or any other IPN spacecrafts detected these events and particularly do any of these match with any known SGR ? The reason I thought they may be related to SGRs is their very short durations (often two or three short sub-bursts within the main profile) and their soft spectra (small values of H_R). None of these four events match with any of BATSE events (according to Dr. Peter Woods- post. doc working with Dr. Kouveliotou).

If some match is found I would like to send our high time resolution data to you and jointly carry out further work with you, if something more can be done.

Thanking you.

With warm regards.

SRIKANTA SINHA

Date: Jan 31 2013

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

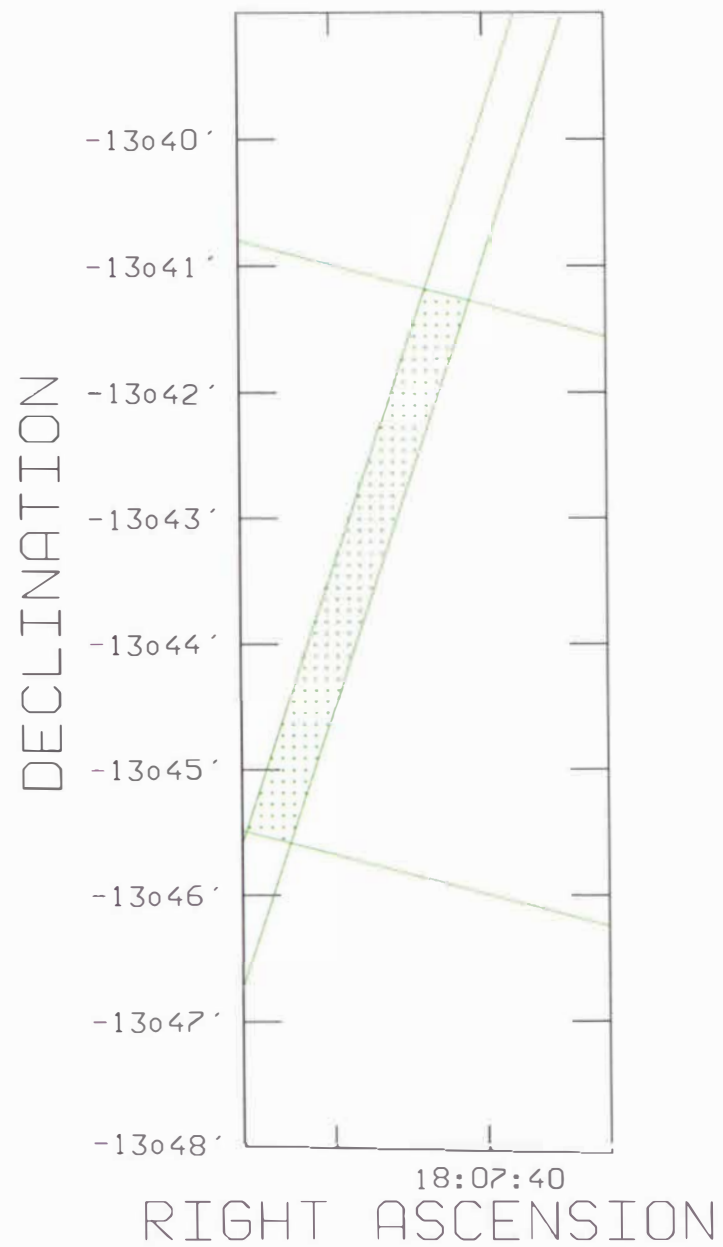
- ☒ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

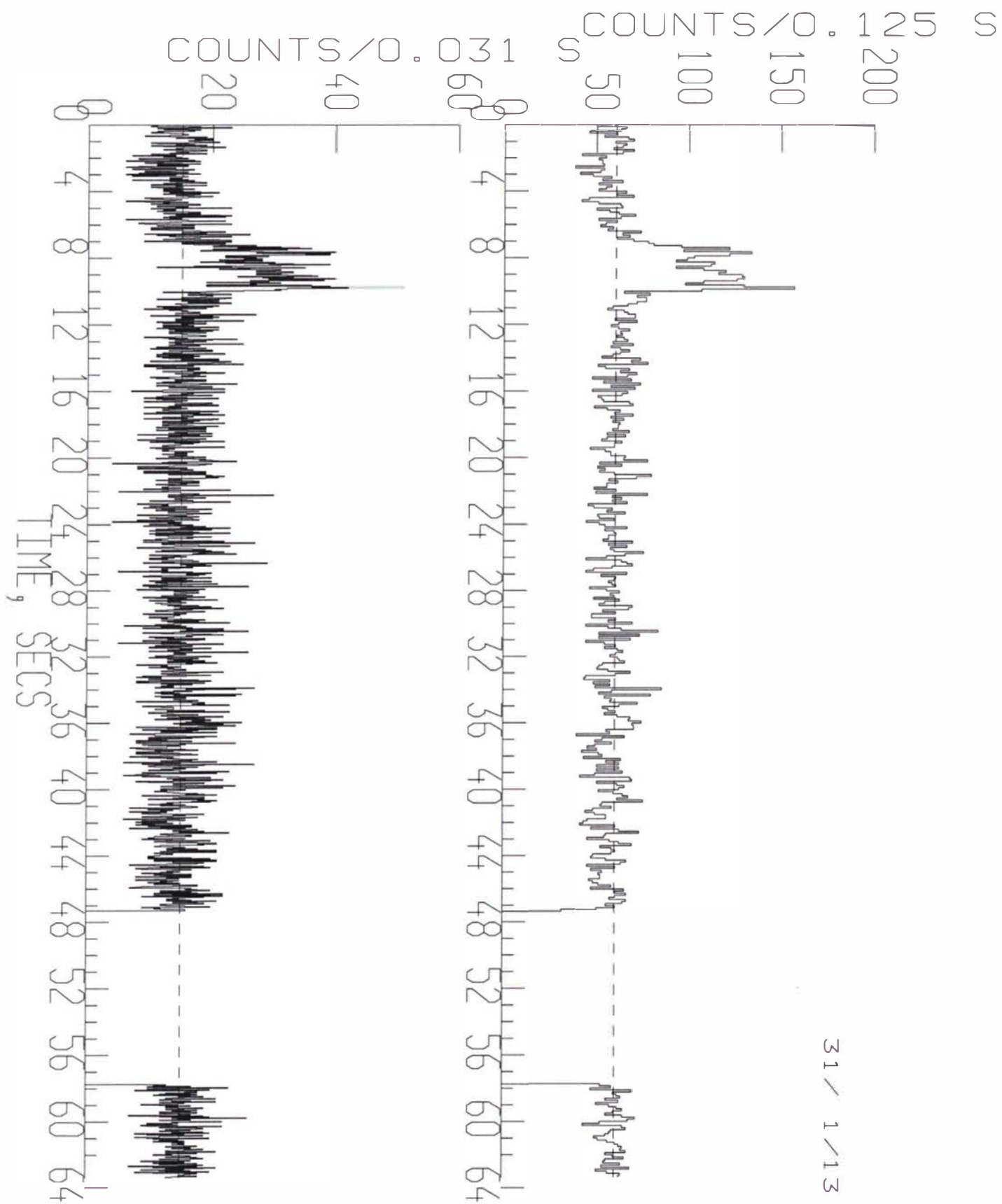
5. For 3 Spacecraft events

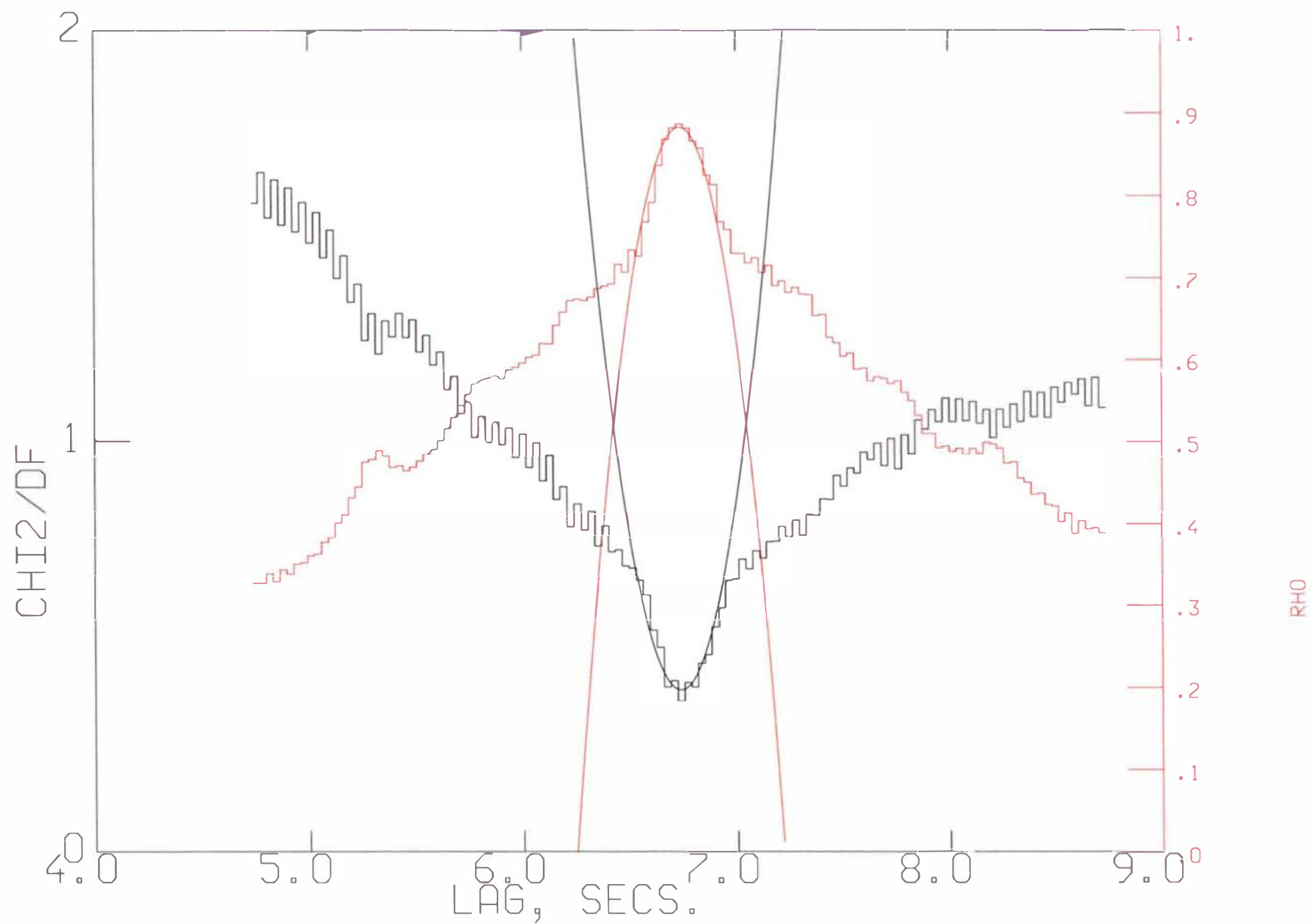
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

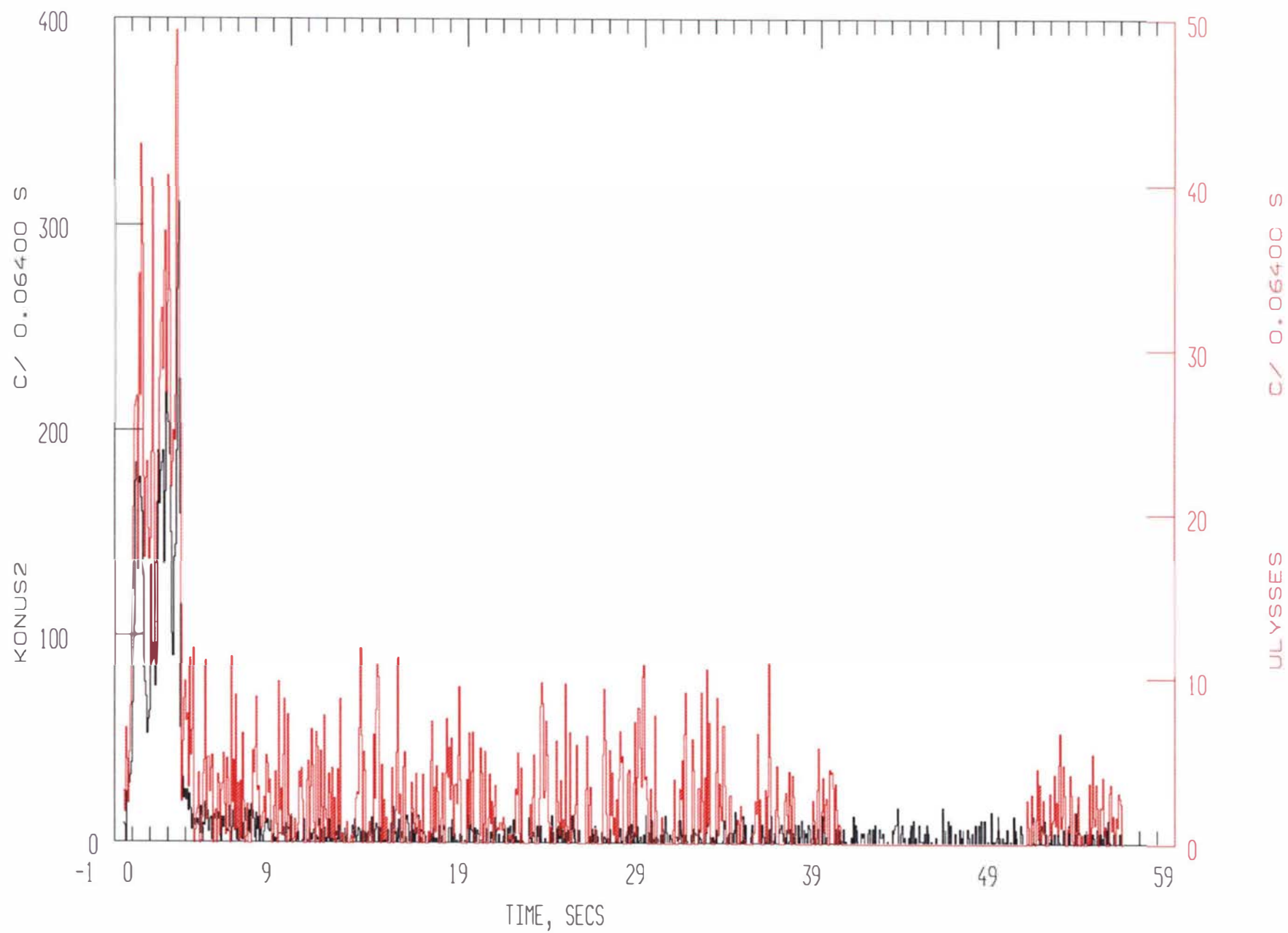


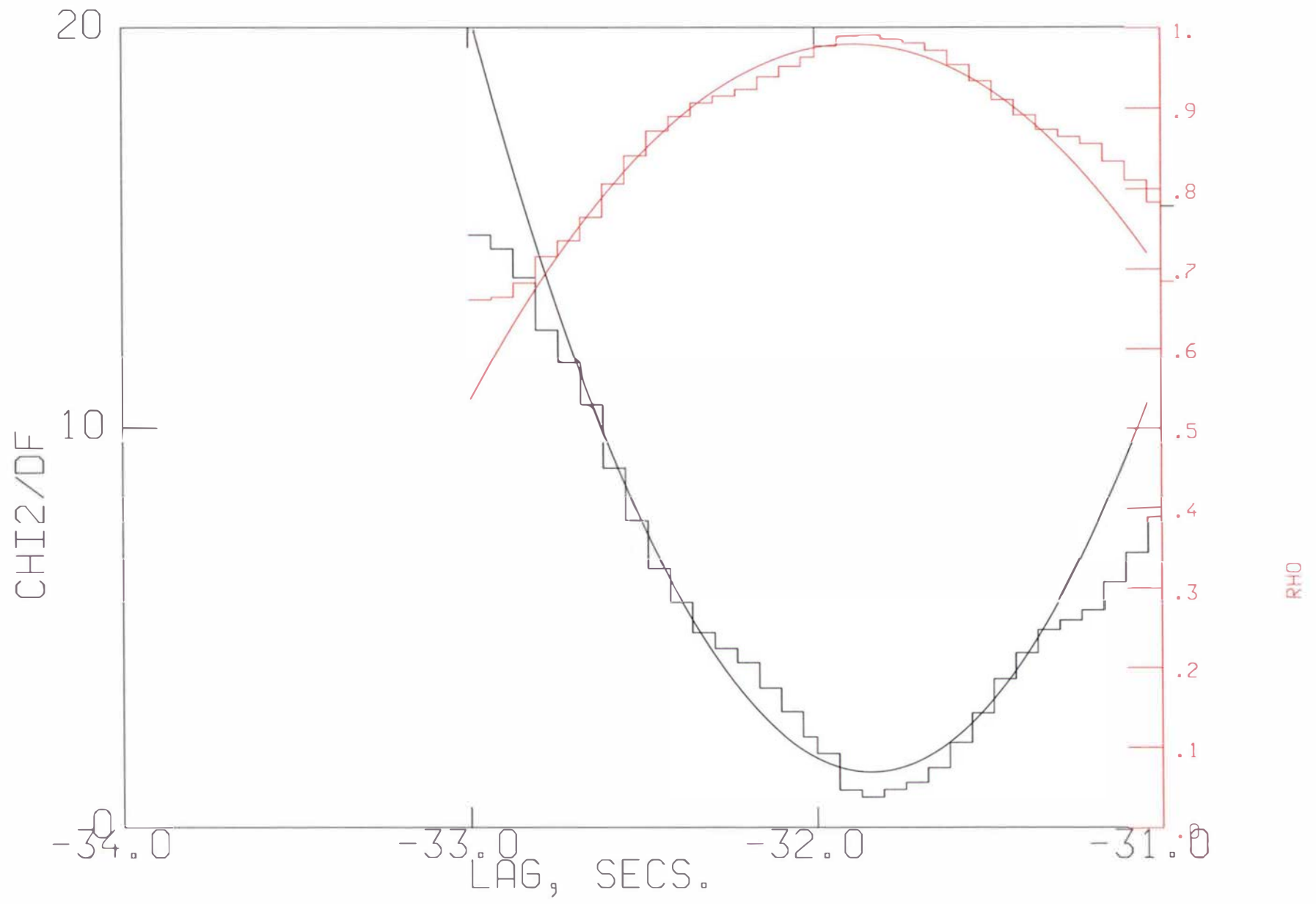
ULYSSES 24/07/99 Ttrig=78643.313

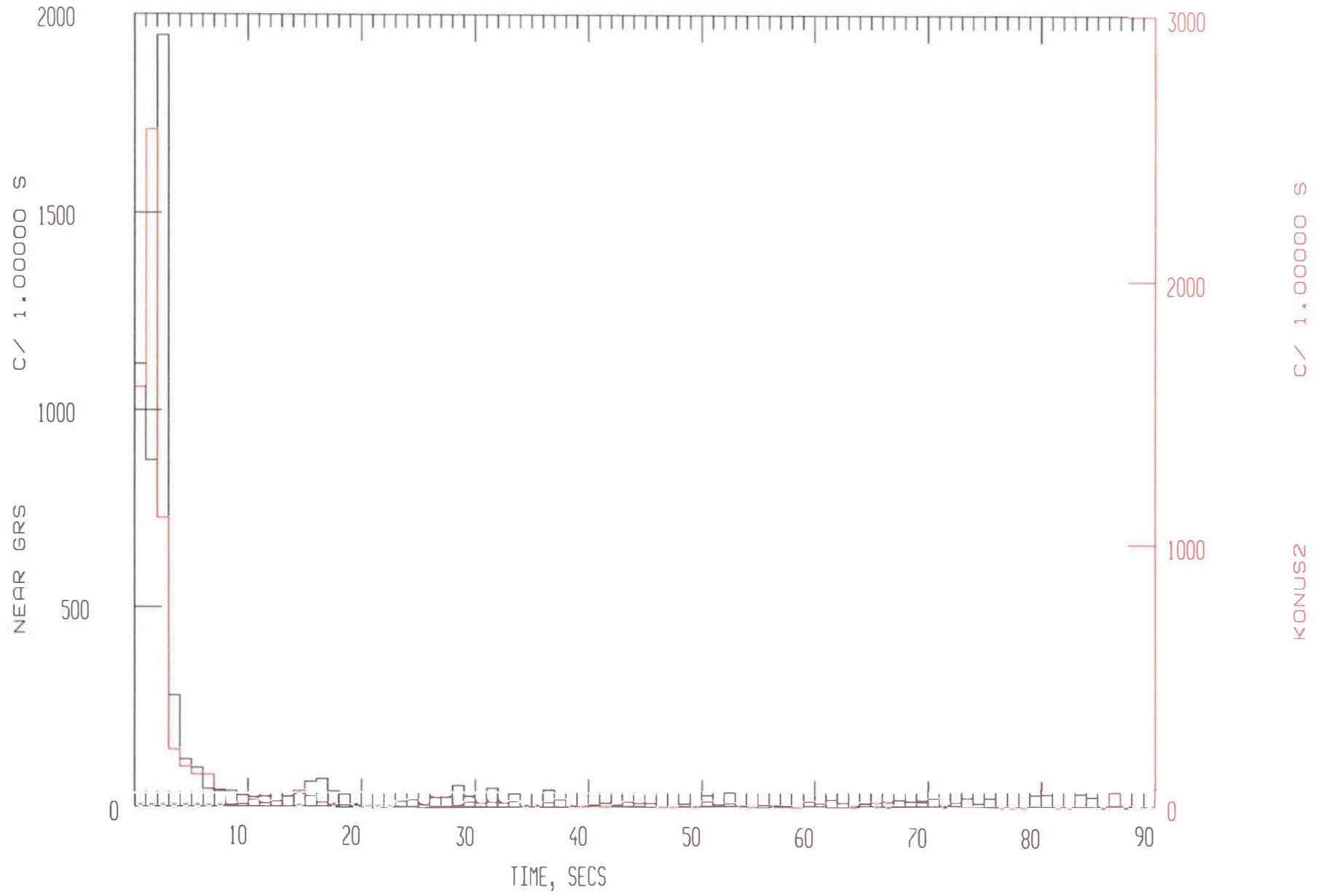
22- 152 keV







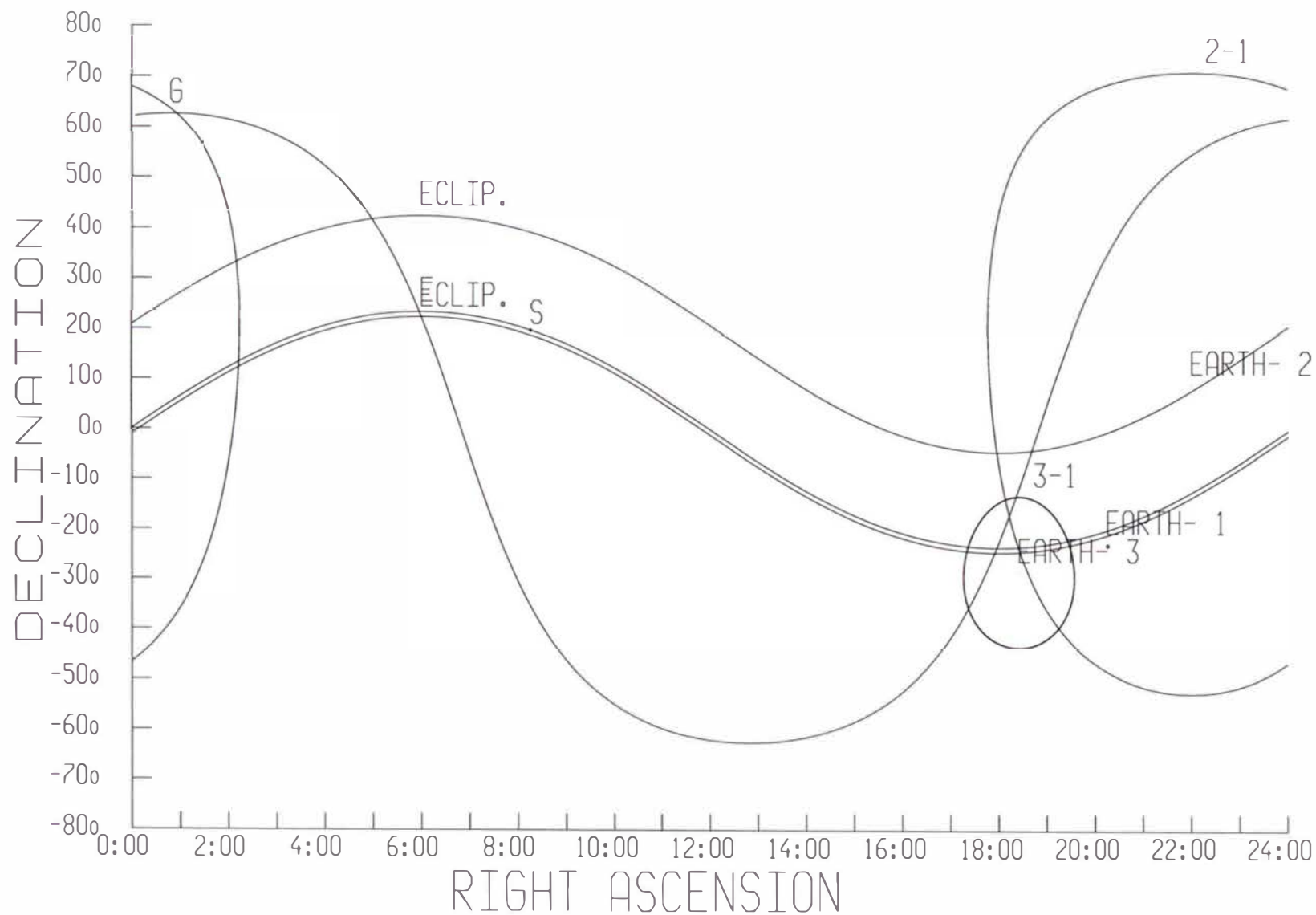




EVENT OF JUL 24, 1999 21:29

31/01/2013

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



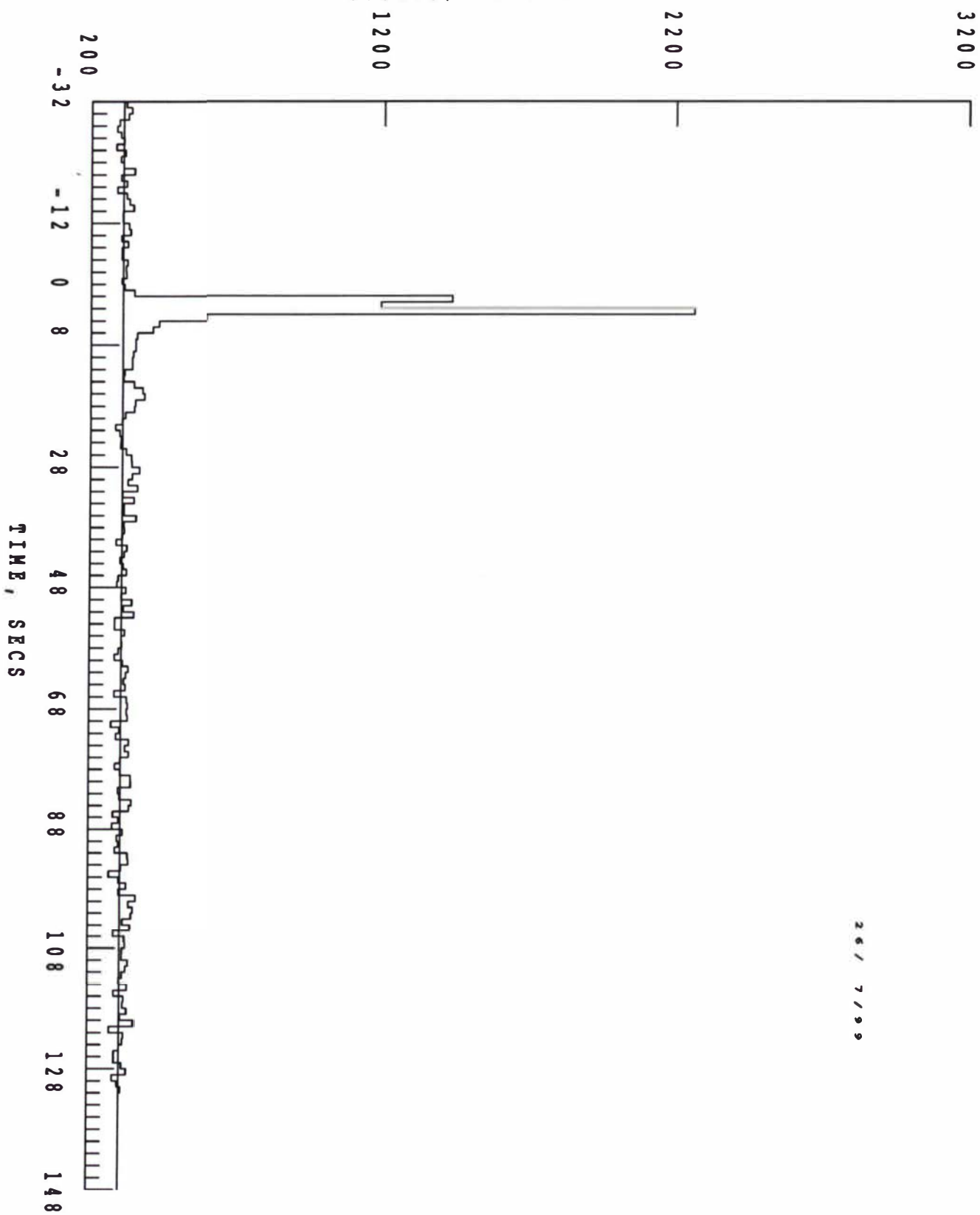
NEAR

24/07/99

78334.008

100-1000 keV

COUNTS/1.000 S



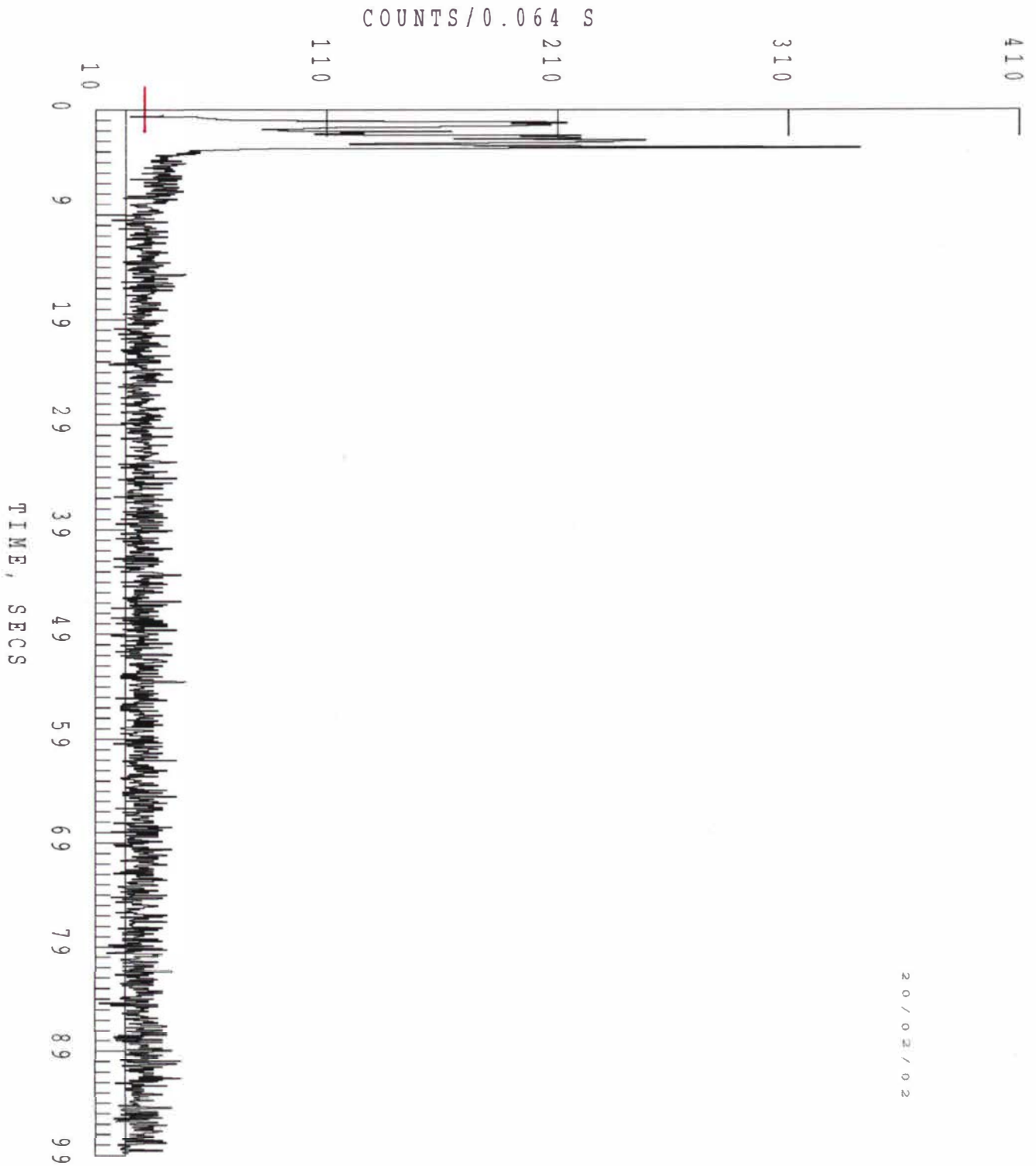
24 / 7 / 99

KONUS2

24/07/99

77358.900

50 - 200 keV



KONUS2 19990724 77358

ULYSSES RT

20 / 02 / 02

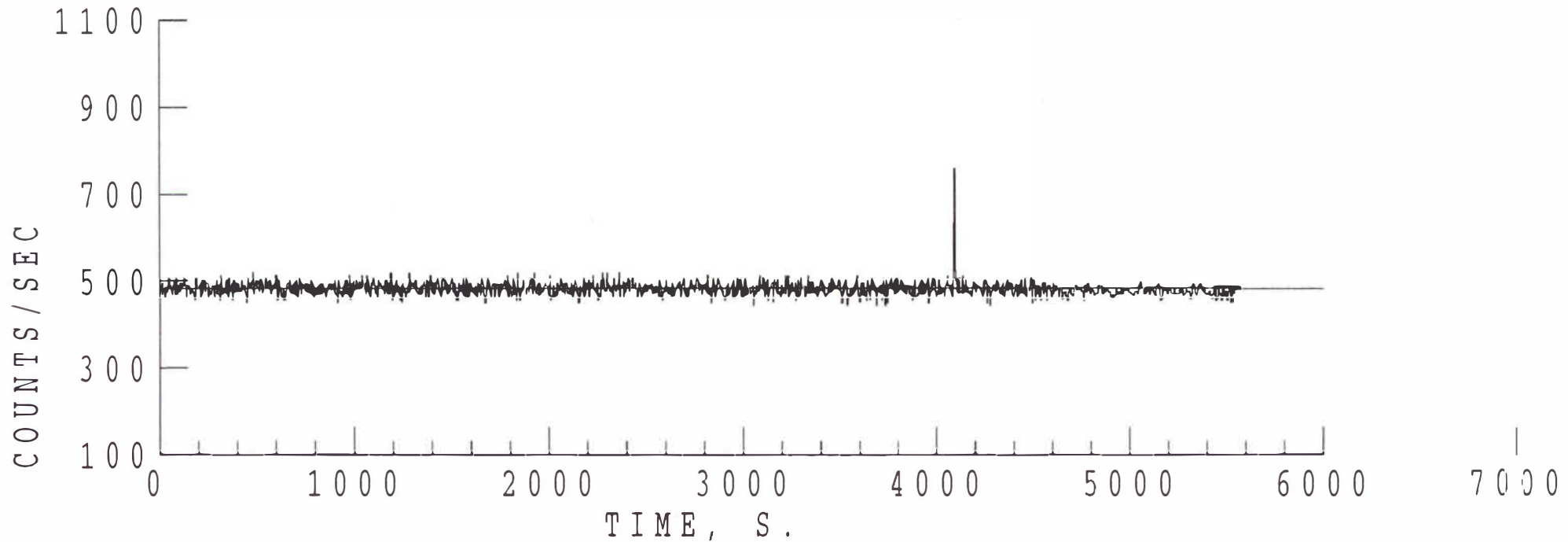
24 / 07 / 99 74556.172 s

INTERVALS REGROUPED BY 7

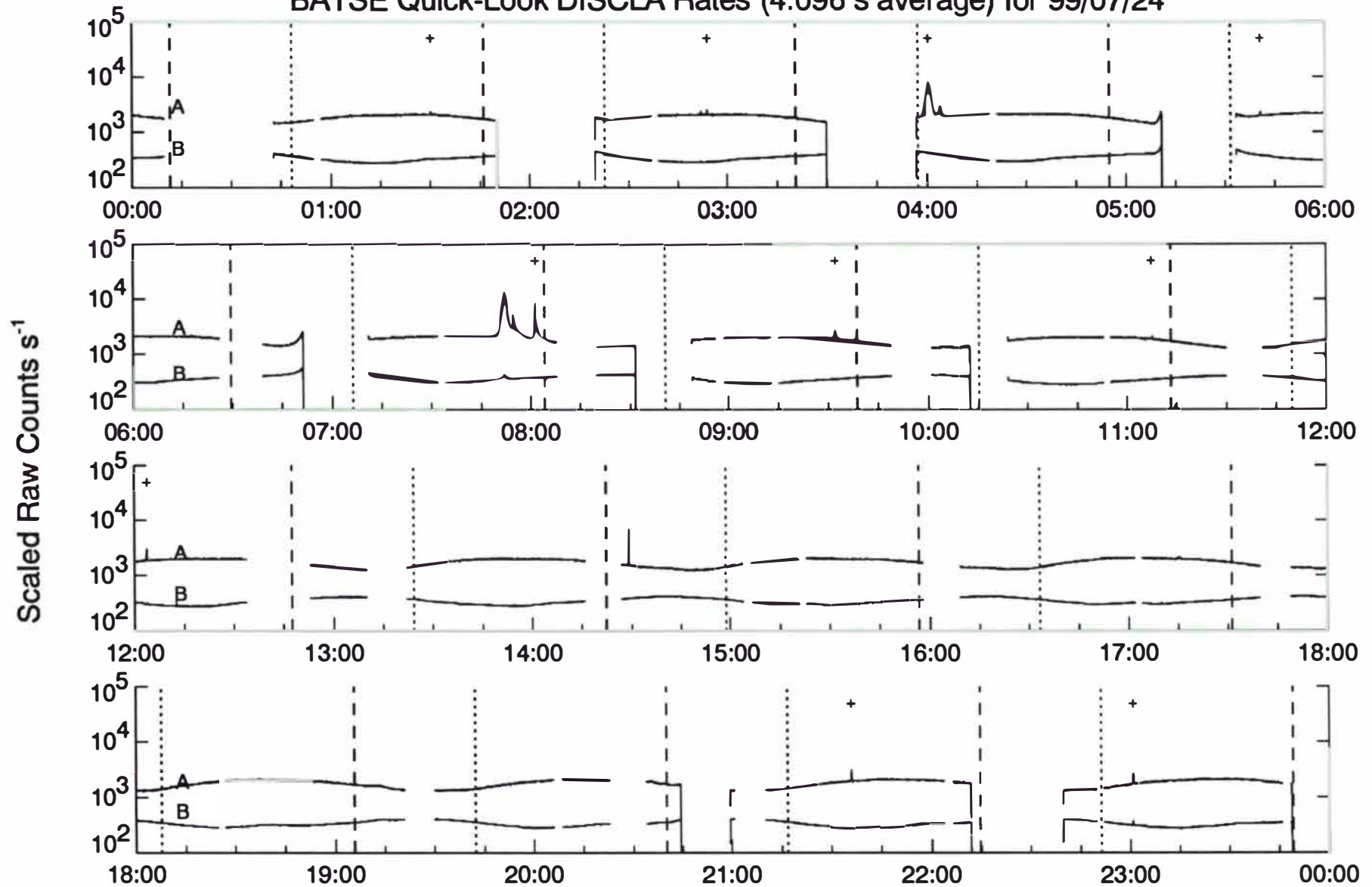
0 - 0 keV

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 99/07/24



Current Time: 99/07/28, 1012 EDT

A: Channel 0 Most Sunward LAD

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

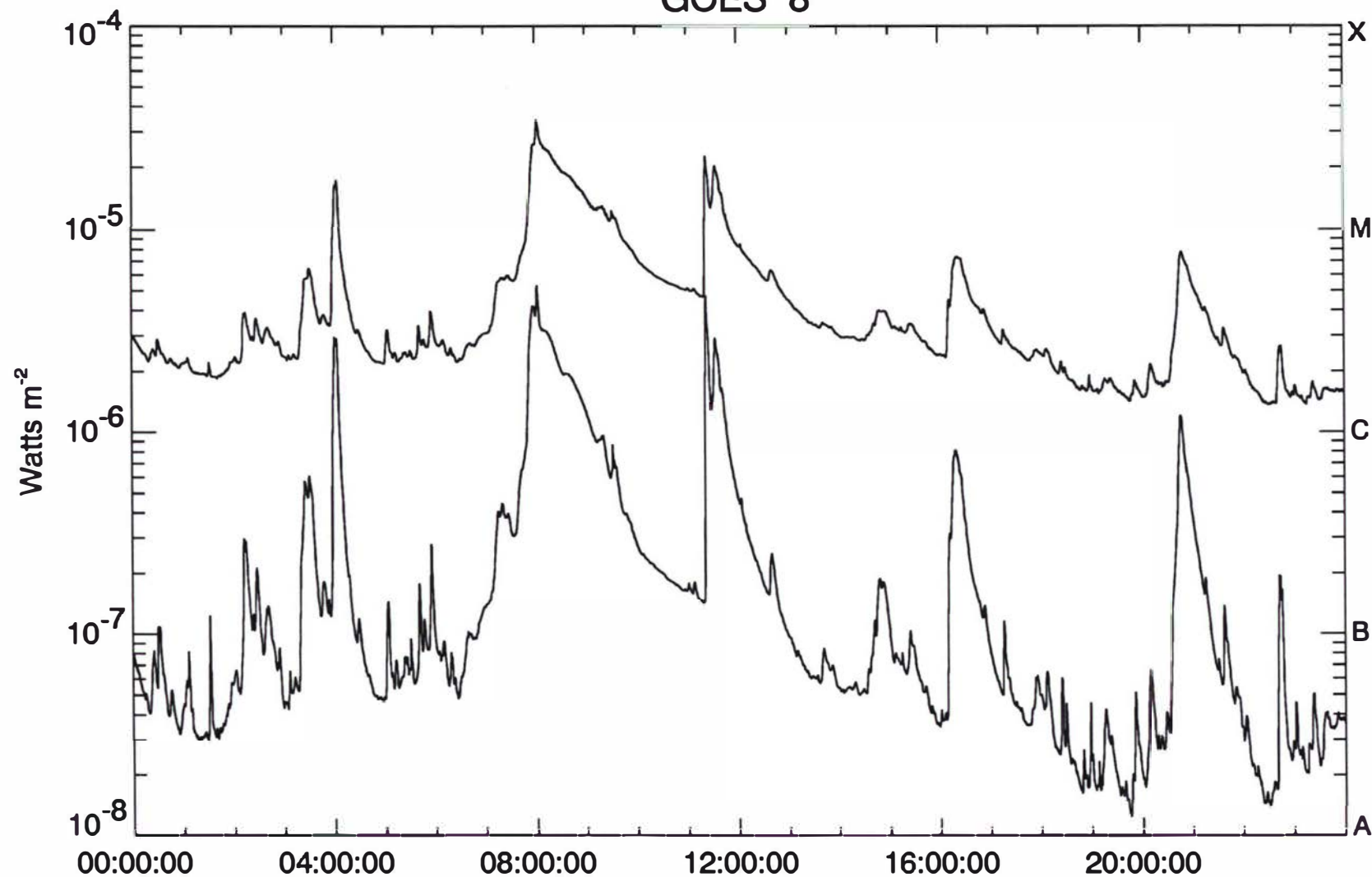
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



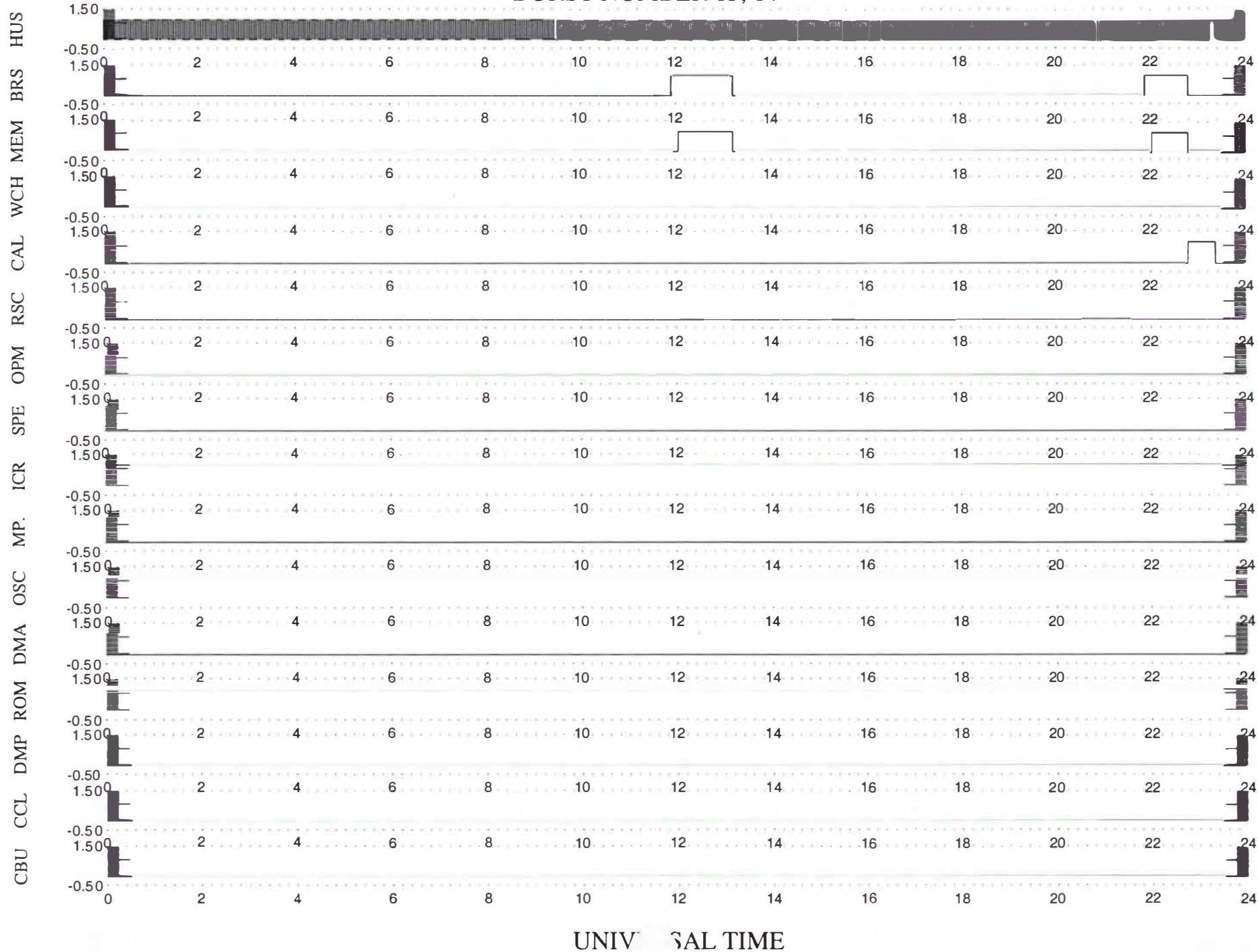
Data Start: 99/07/24, 0000:00

Plot created: 99/07/28, 1011

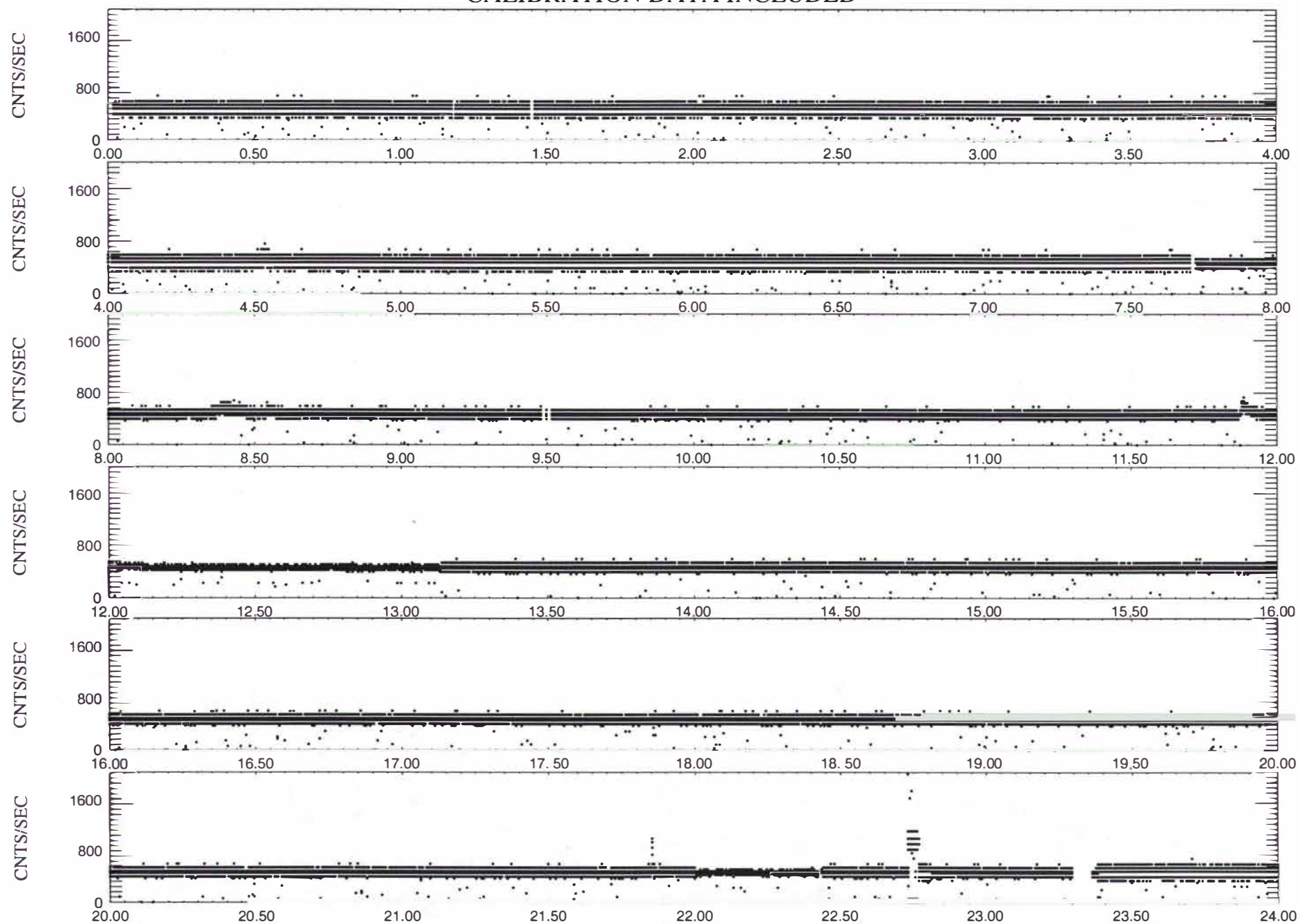
Channel 1 (1.0 - 8.0 Angstroms)
Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 13, 14

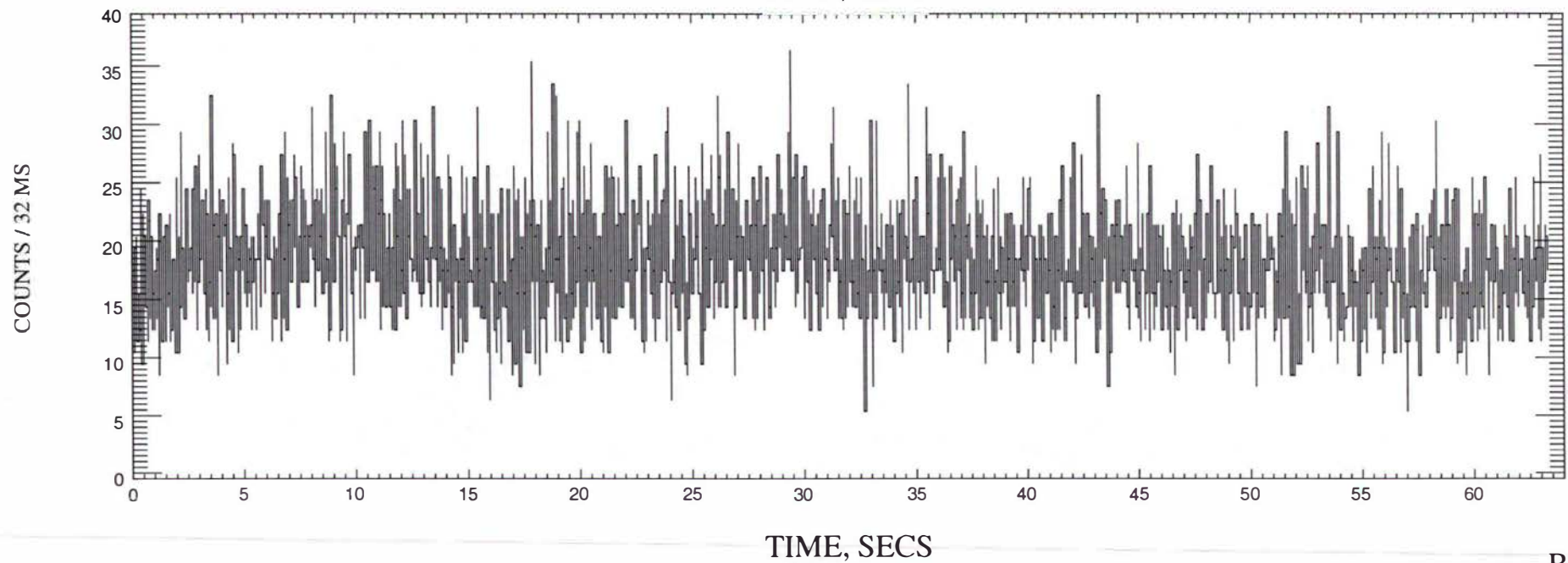
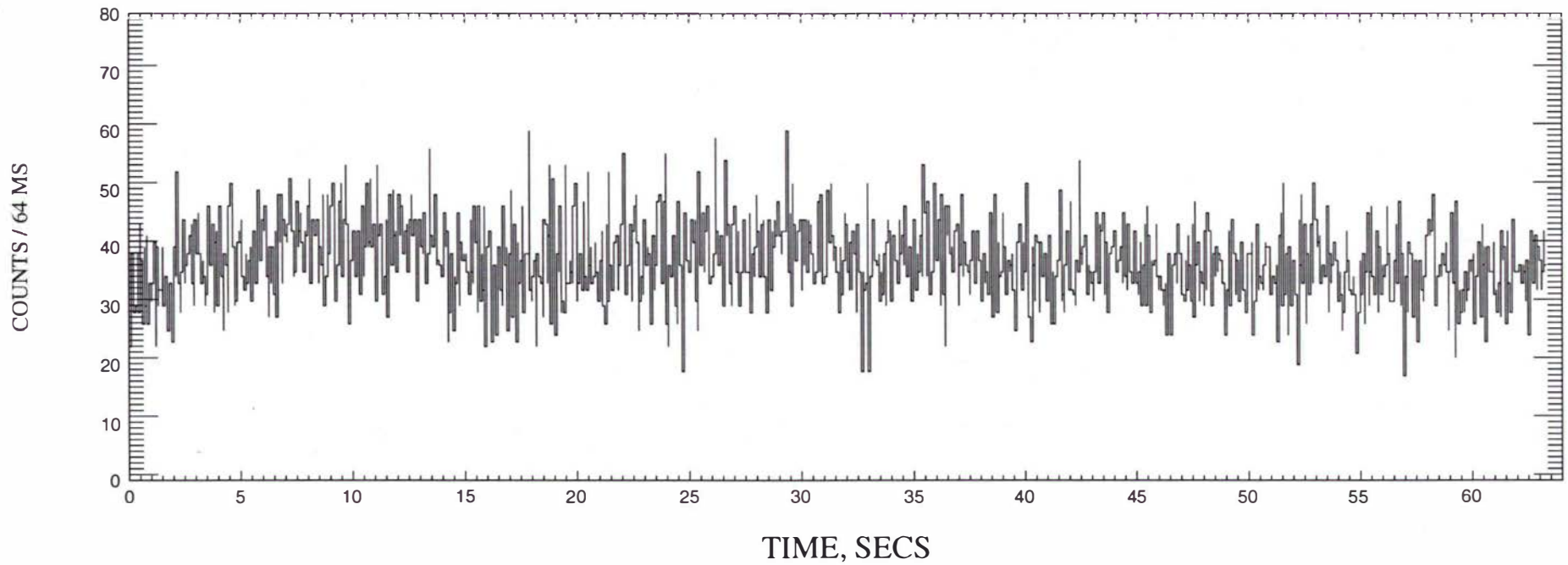


CALIBRATION DATA INCLUDED

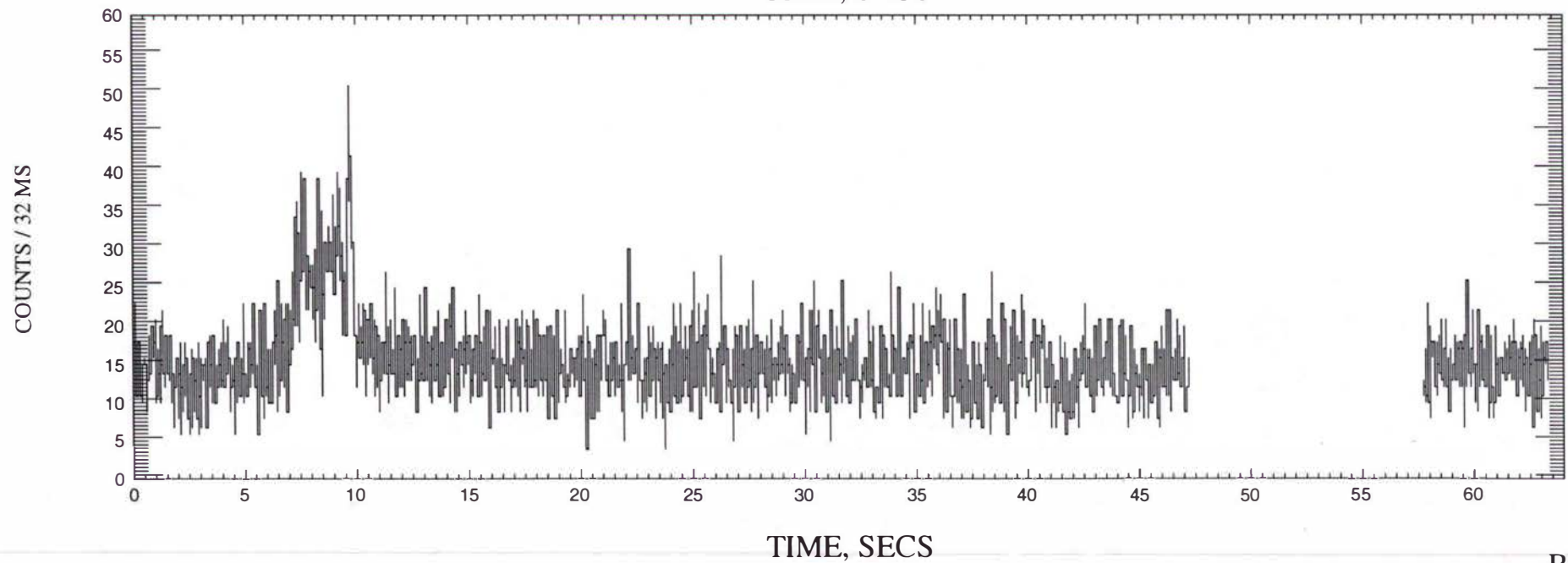
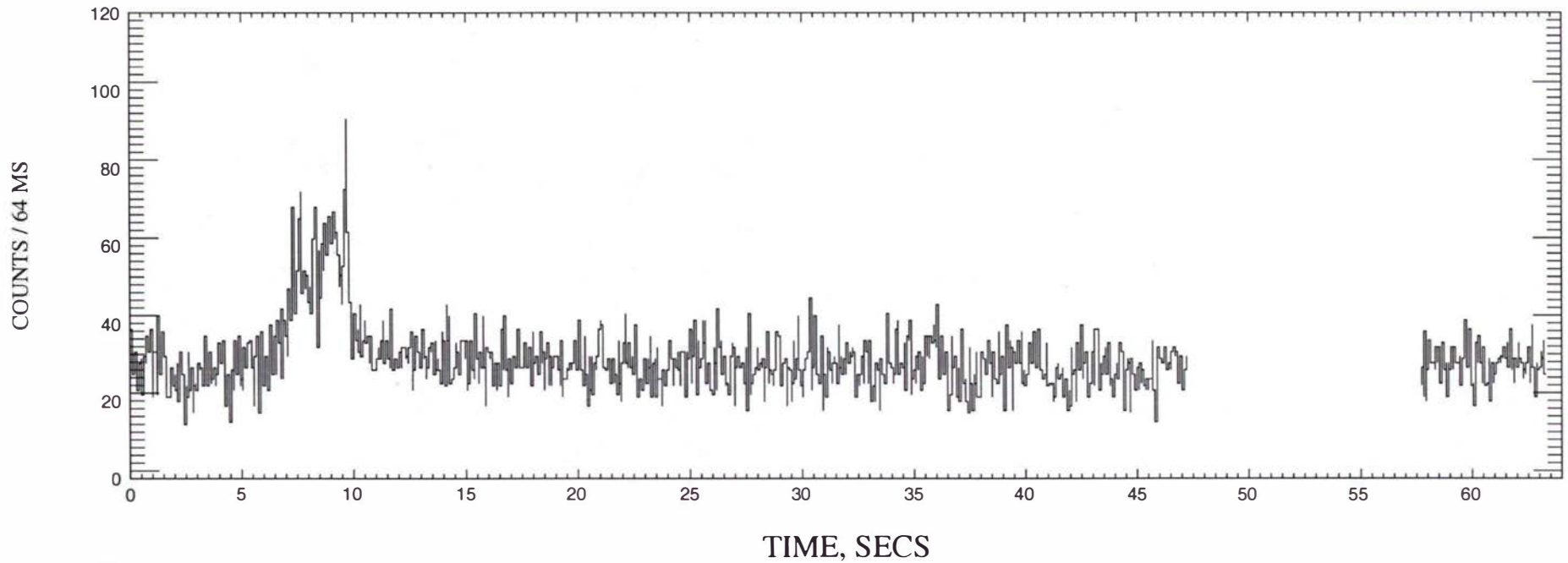


UNIVERSAL TIME

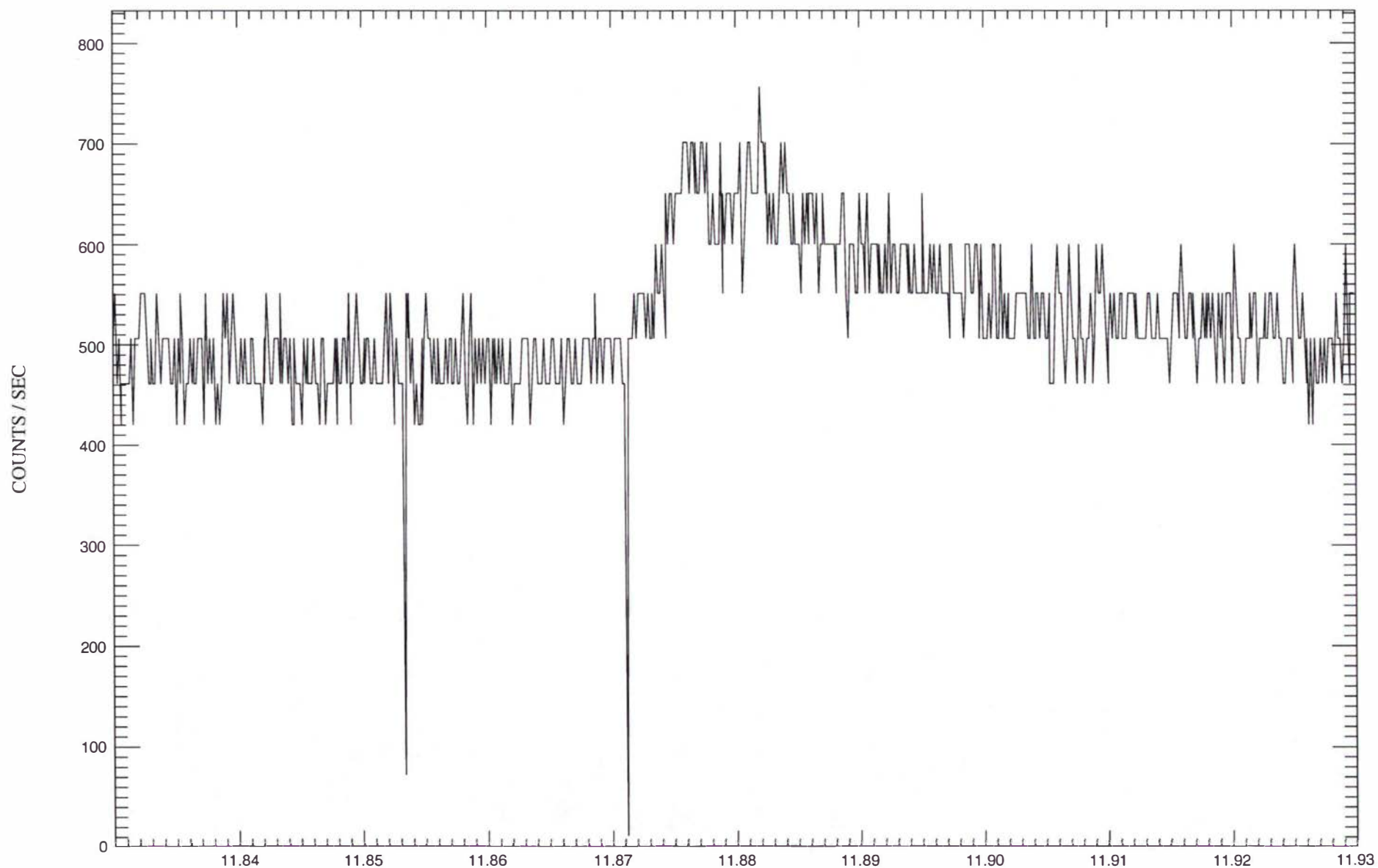
Burst Counter 13 at UT=11.876031485664 h=42753.713 s 11:52:33.713



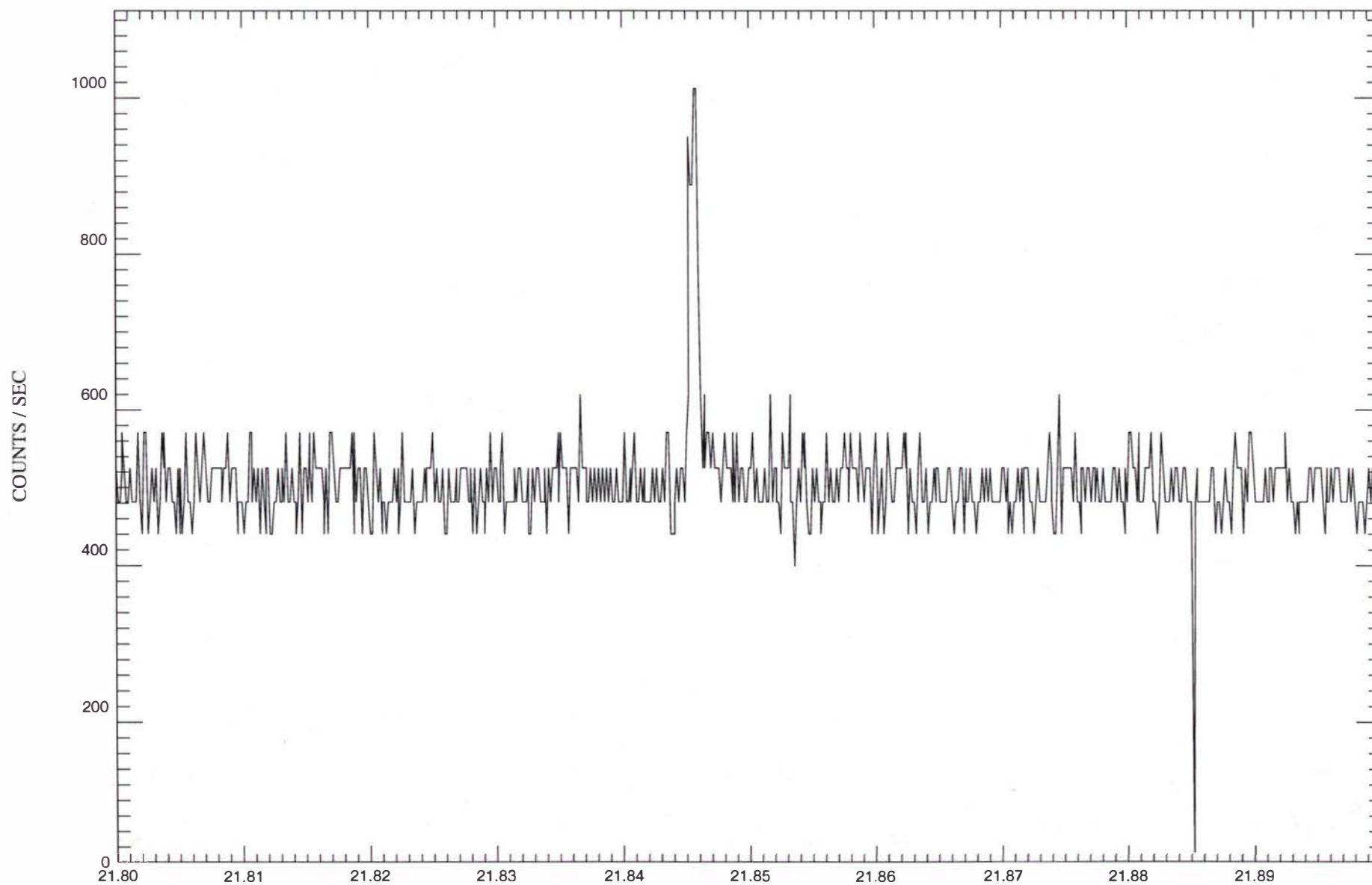
Burst Counter 14 at UT=21.845364252726 h=78643.311 s 21:50:43.311

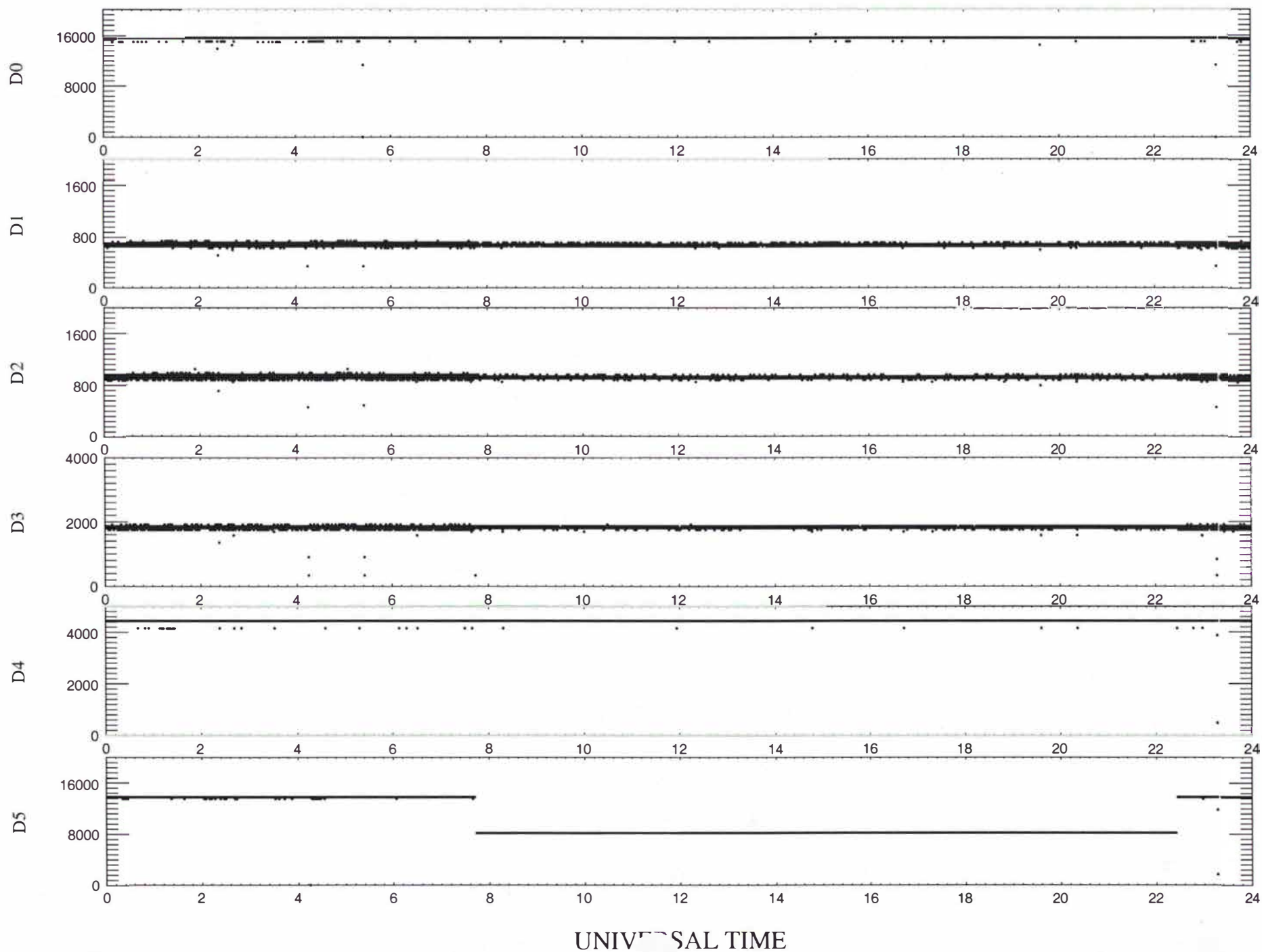


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Tue Jul 27 13:42 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Tue, 27 Jul 1999 15:48:19 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7674

BATSEARCH PROGRAM

BATSE BURST # 7674
EVENT OF 1999 JUL 25 DAY OF YEAR=206
EVENT CROSSING TIME AT BATSE : 13662. S. OR 03:47:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 13.000 33.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 7/ 99 IS:
RA= 149.466 DEC= -9.079 DIST= 5.491 AU
BATSE-ULYSSES DISTANCE = 821423452. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 46.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1880.53 SECS.
CROSSING TIME AT ULYSSES IS 15543. S. OR 04:19:02 +/- 424.53 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 7/ 99 IS:
RA= 215.115 DEC= -15.575 DIST= 0.963 AU
MARS-BATSE DISTANCE = 143999568. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 26.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 429.74 SECS.
CROSSING TIME AT MARS IS 14092. S. OR 03:54:51 +/- 43.78 SECONDS

BATSE BURST TRIGGER

NO.: 7674

TIME: TJD=1384 SECONDS=13662

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=153.9 AZIMUTH=147.5 ERROR= 8.0 DEGREES

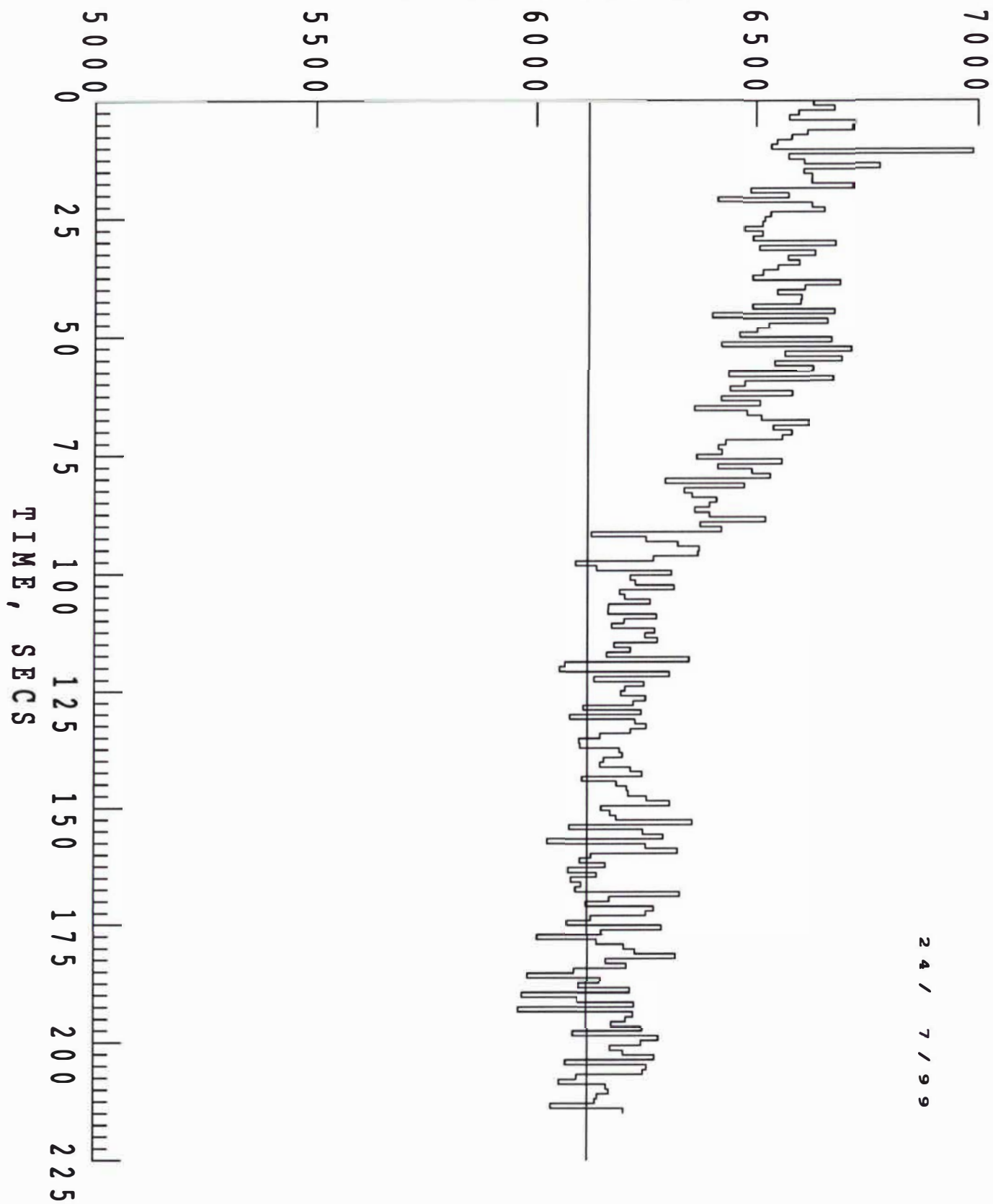
COMMENTS:

SINGLE PULSE, DUR. APPROX. 0.8 S, STARTS AT APPROX. T-0.5 S.
PROBABLY NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7674	990725	11384	13662	3500	013	+33	.8

BACODINE 7674 25/07/99 13651.705
25- 100 keV

COUNTS/1.024 S



BATSE BURST# 7674

ULYSSES RT

27 / 7 / 99

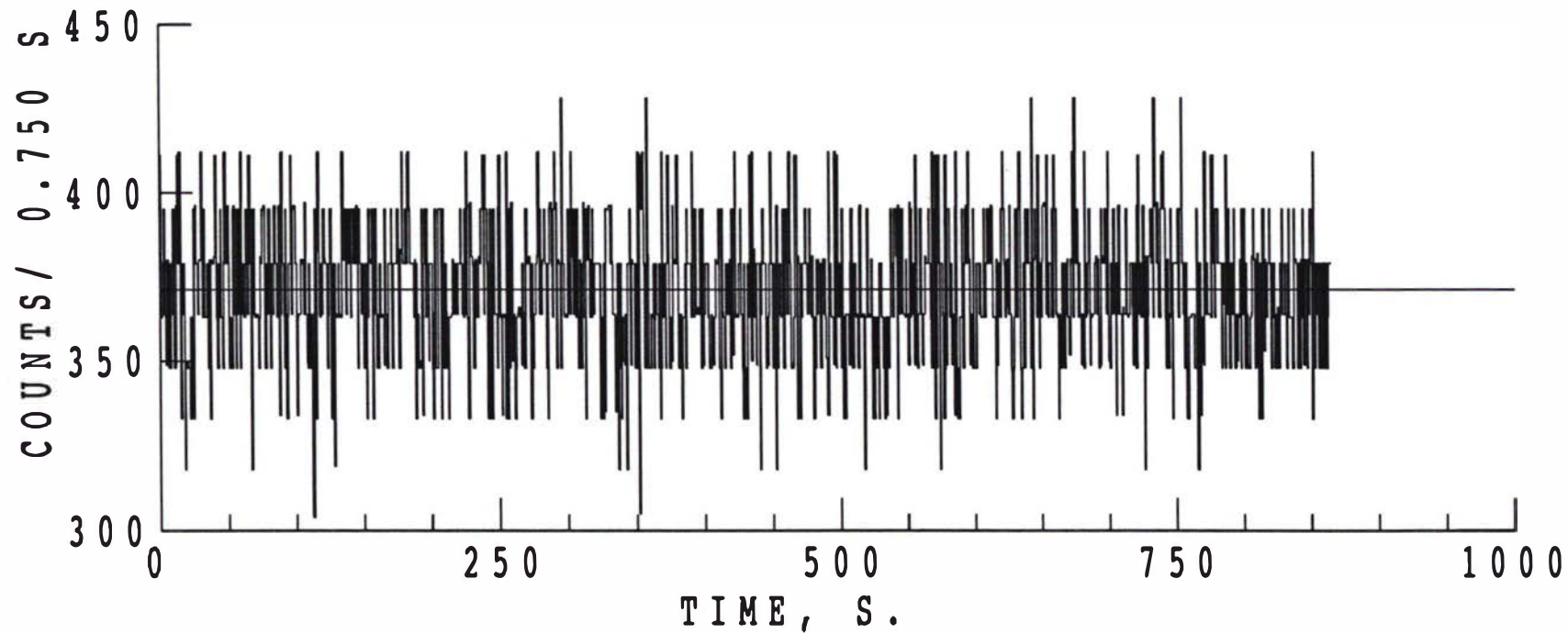
25 / 7 / 99 15120.190 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Tue Jul 27 13:16 PDT 1999
Date: Tue, 27 Jul 1999 15:21:53 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7675

TIME: TJD=1384 SECONDS=47472

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.4 AZIMUTH=356.9 ERROR= 0.1 DEGREES

COMMENTS:

GOES M2.4, OPTICAL SF SOLAR FLARE. COMPLEX, DUR. APPROX. 1400 S, MAX AT
APPROX. T+140 S, STARTS AT APPROX. T-150 S. VISIBLE ABOVE 300 KEV.

KONUS2 19990725 47608

ULYSSES RT

26 / 7 / 99

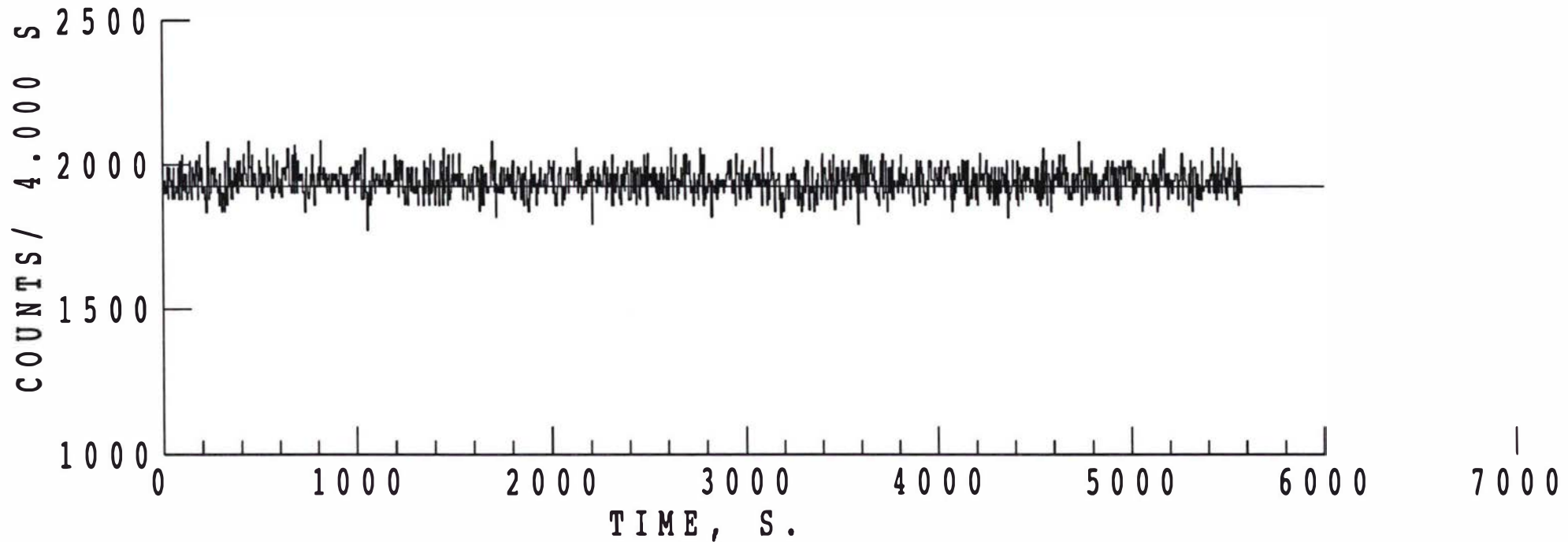
25 / 7 / 99 44820.238 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



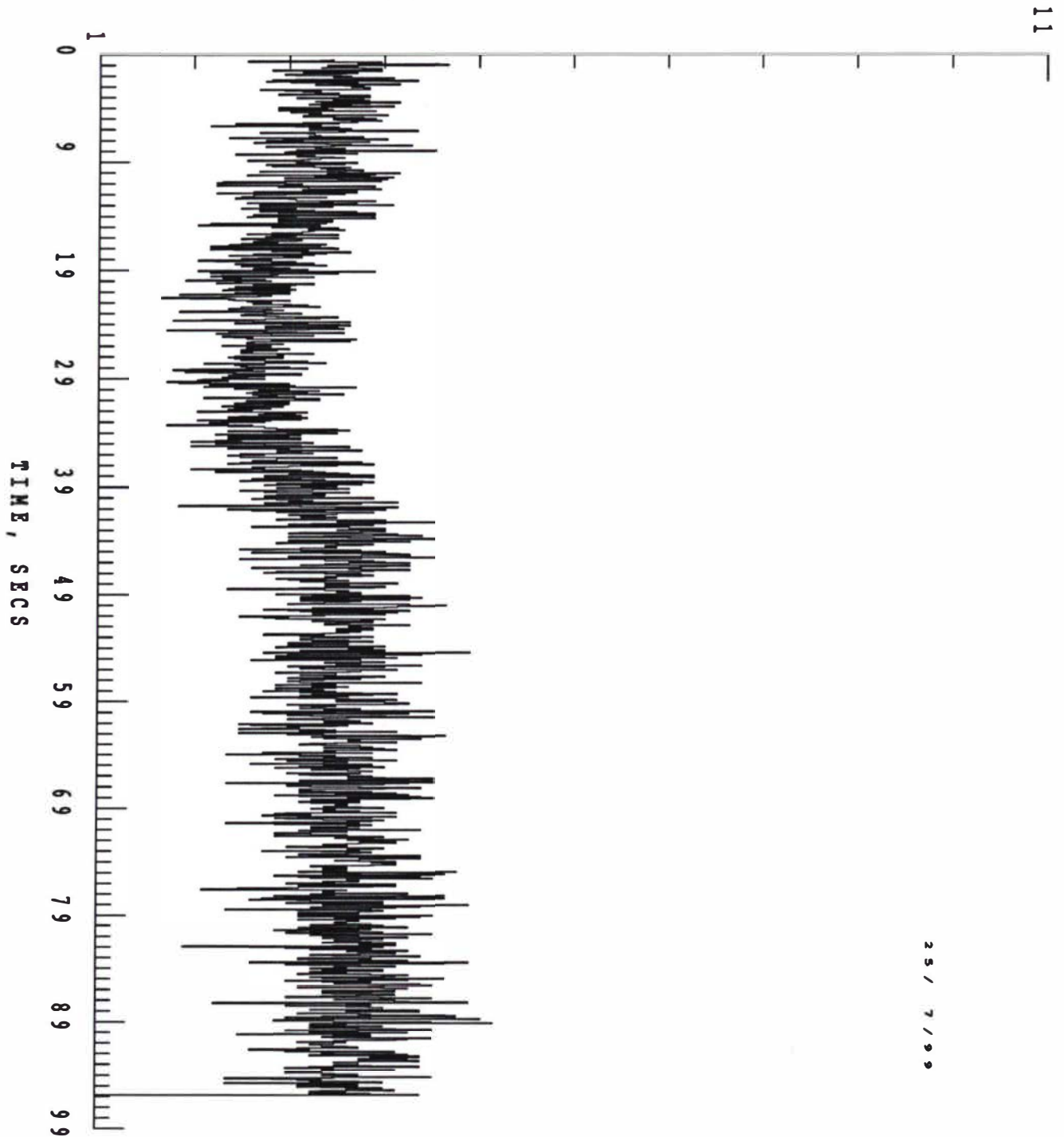
KONUS

25/07/99

47608.201

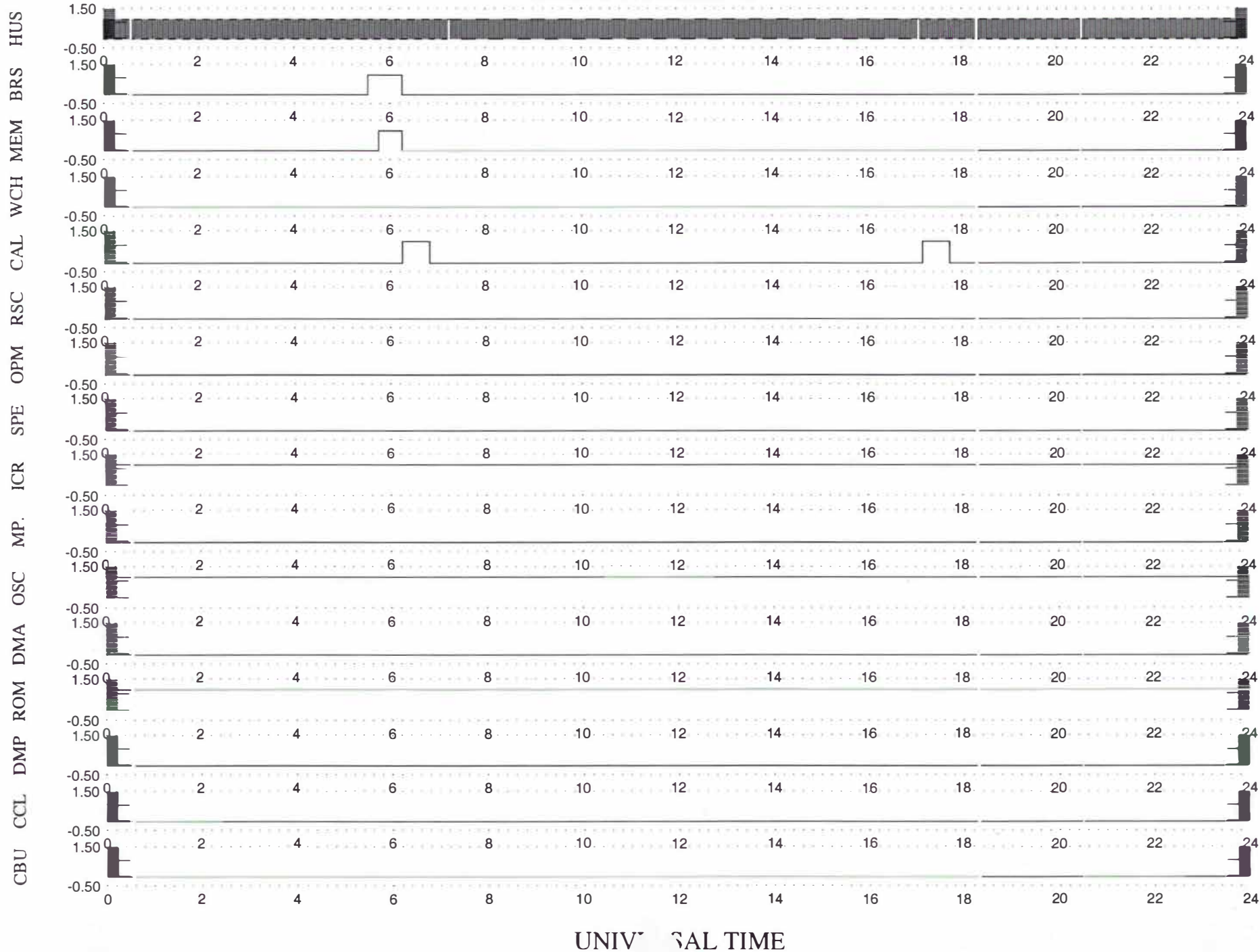
50 - 200 keV

COUNTS/0.064 S

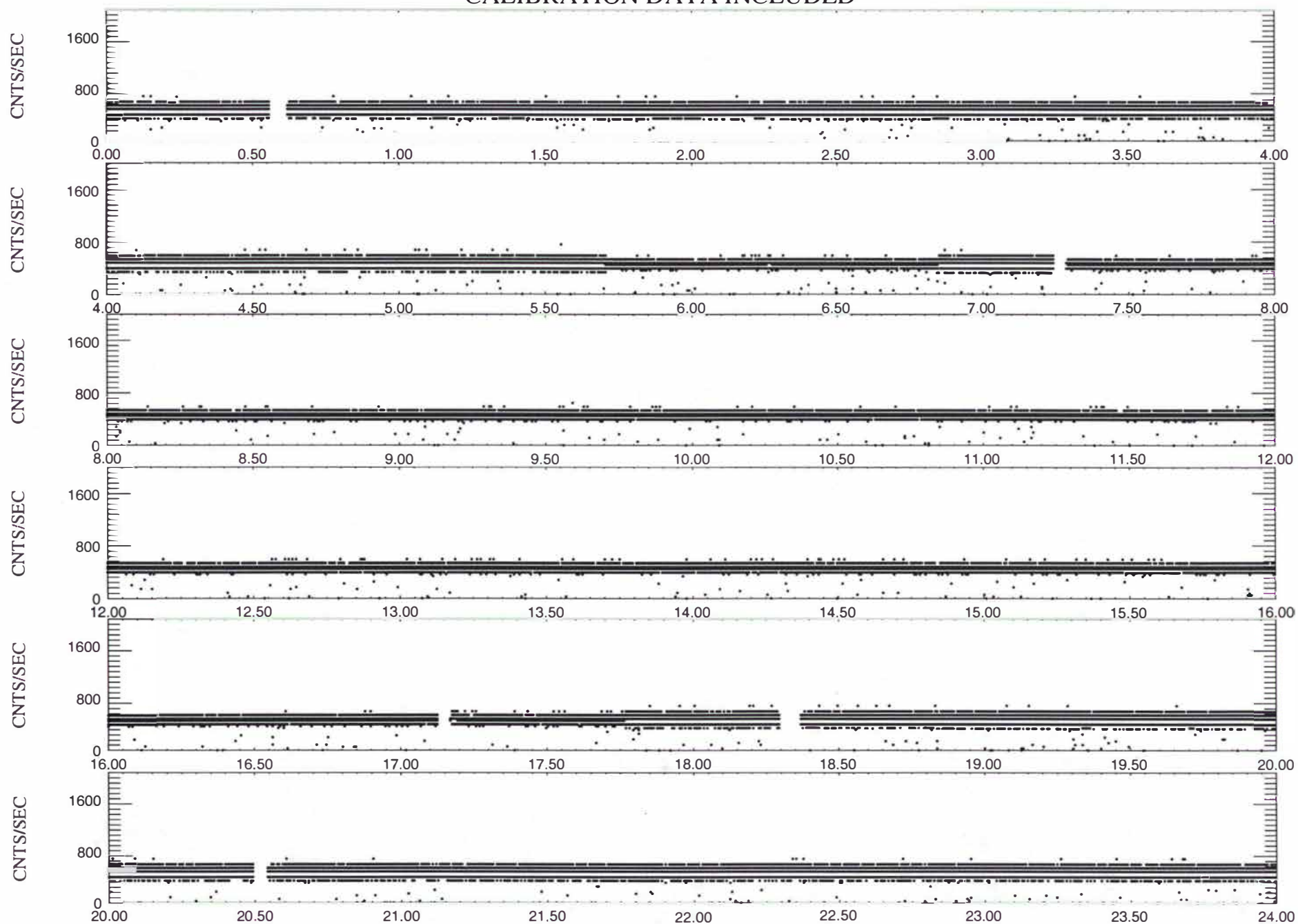


25 / 7 / 99

BURST NUMBER 15

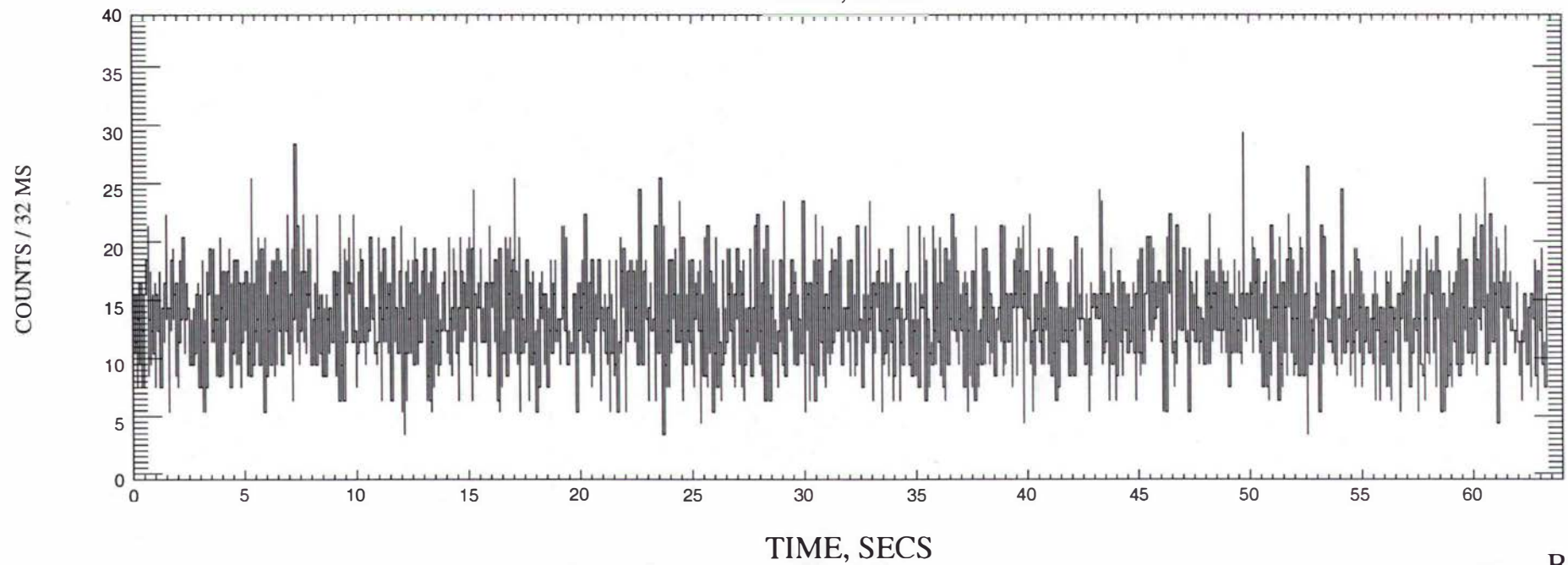
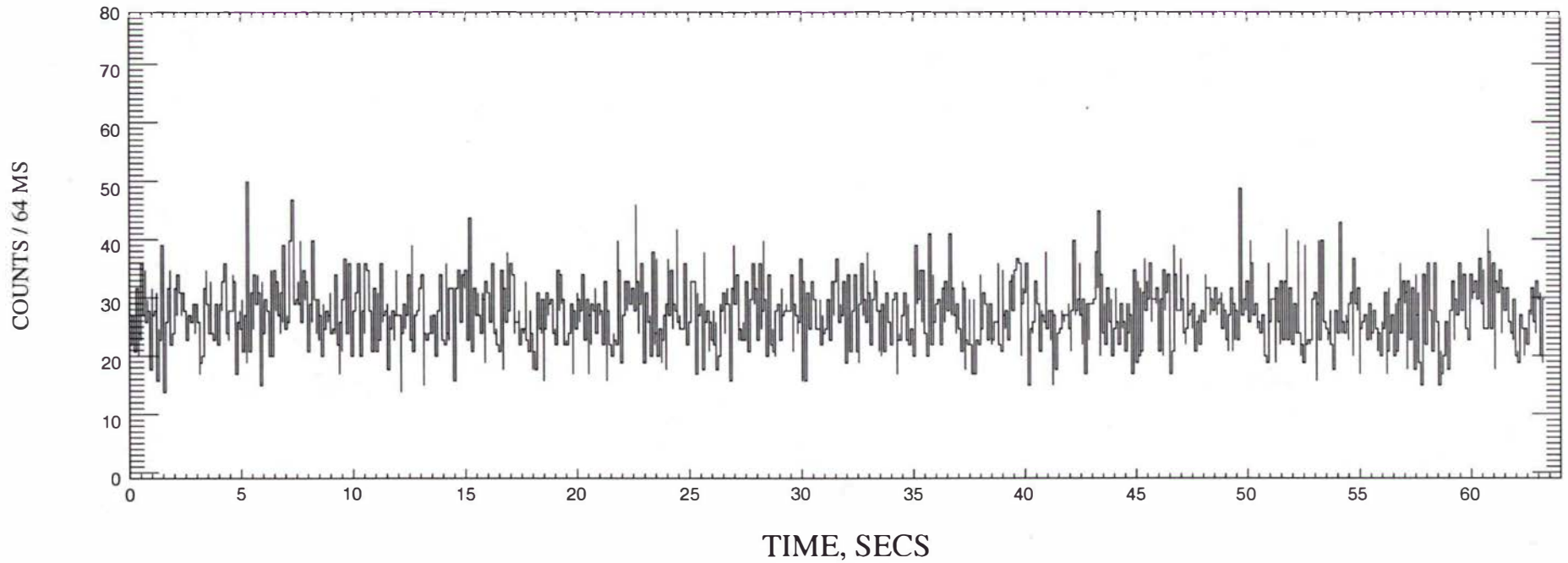


CALIBRATION DATA INCLUDED

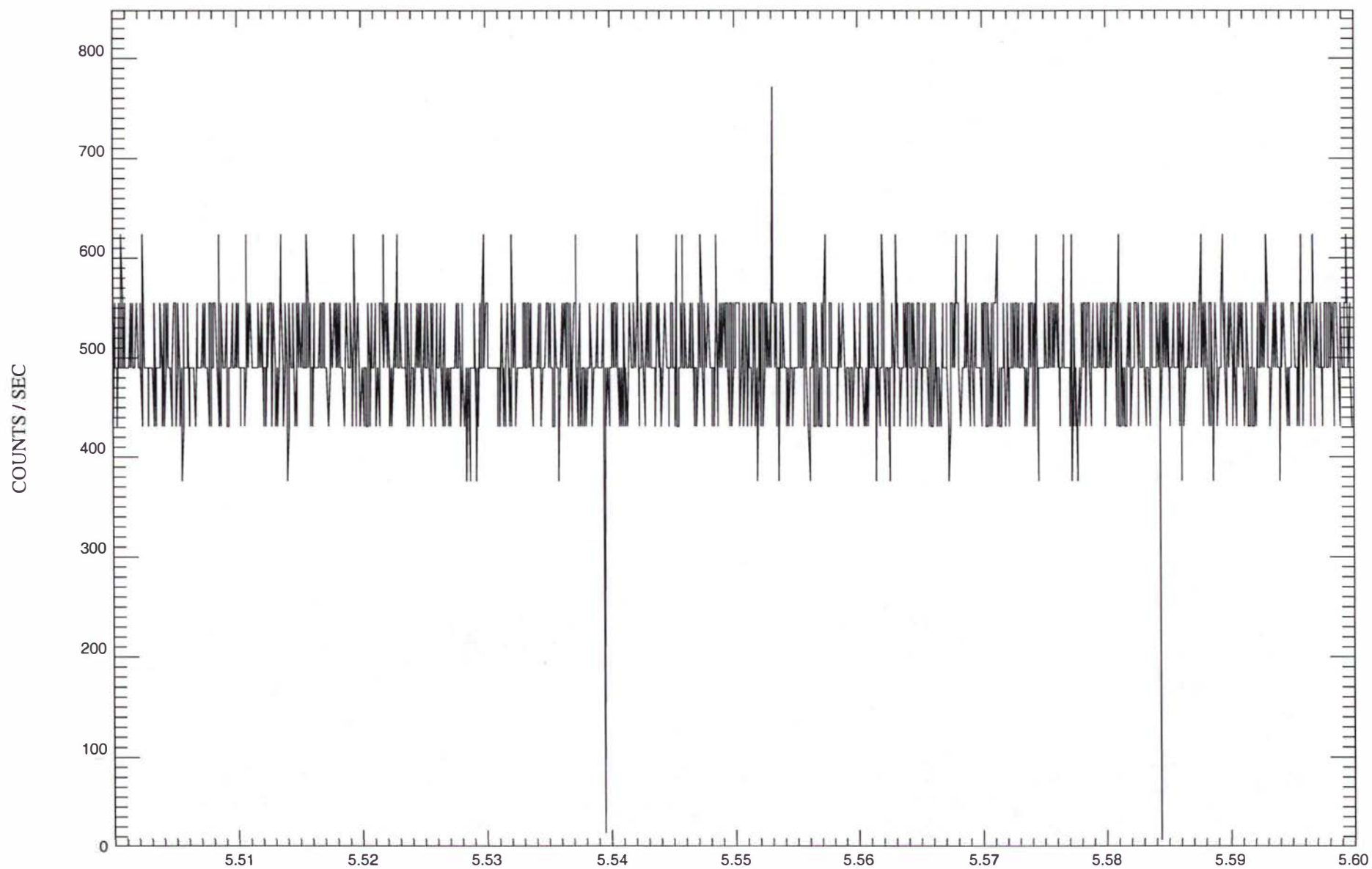


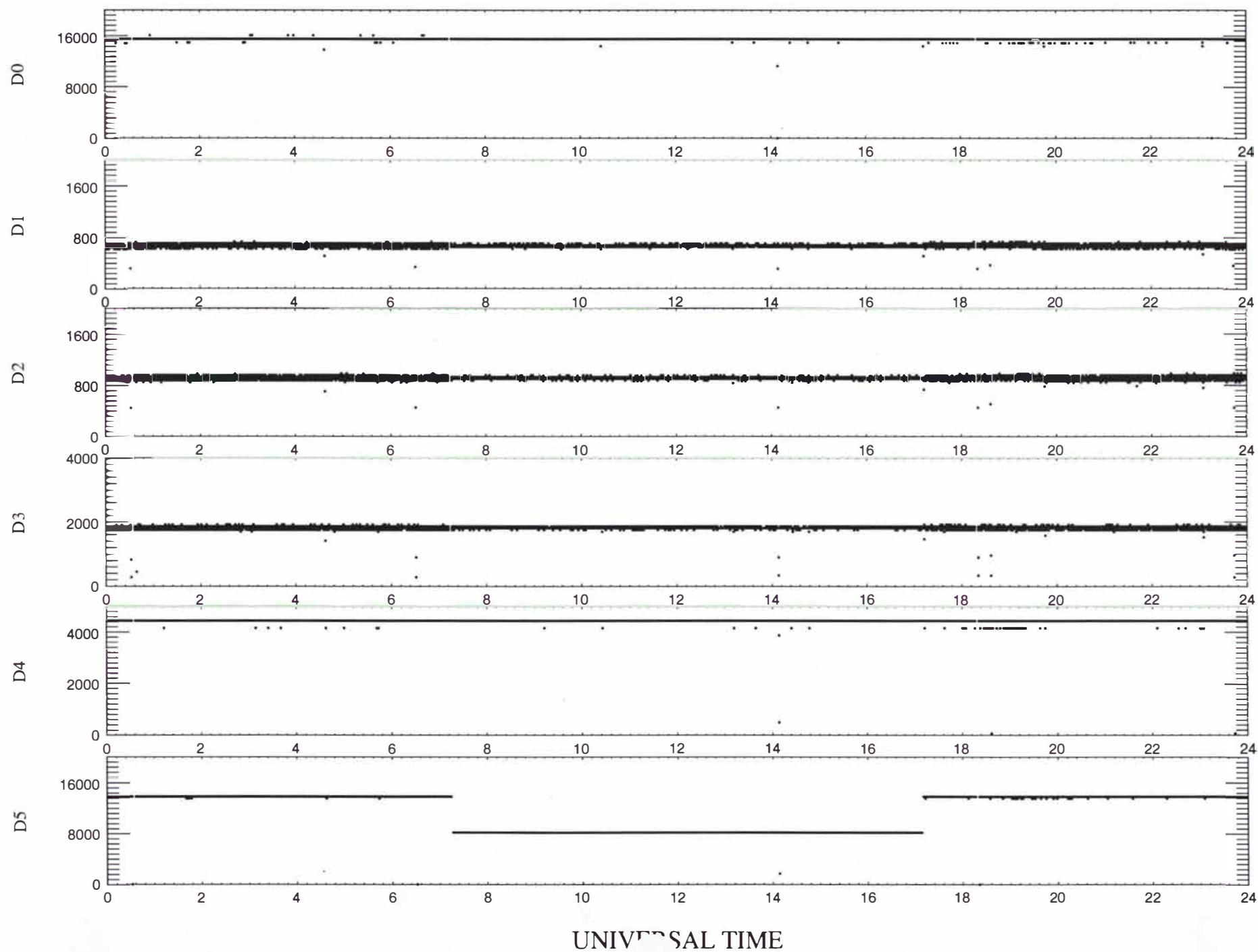
UNIVERSAL TIME

Burst Counter 15 at UT= 5.553153932359 h=19991.354 s 05:33:11.354



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Wed Jul 28 14:08 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Wed, 28 Jul 1999 16:13:27 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7676

TIME: TJD=1385 SECONDS=404

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=107.9 AZIMUTH=355.9 ERROR=0.9 DEGREES

COMMENTS:

SOLAR FLARE. NO GOES, OPTICAL SF. SINGLE PULSE, DUR. APPROX. 100 S, STARTS AT
T-45 S. NOT VISIBLE ABOVE 100 KEV.

Date: June 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events **N/A**

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

-
- ☒ ACCESS and MBL4 databases updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

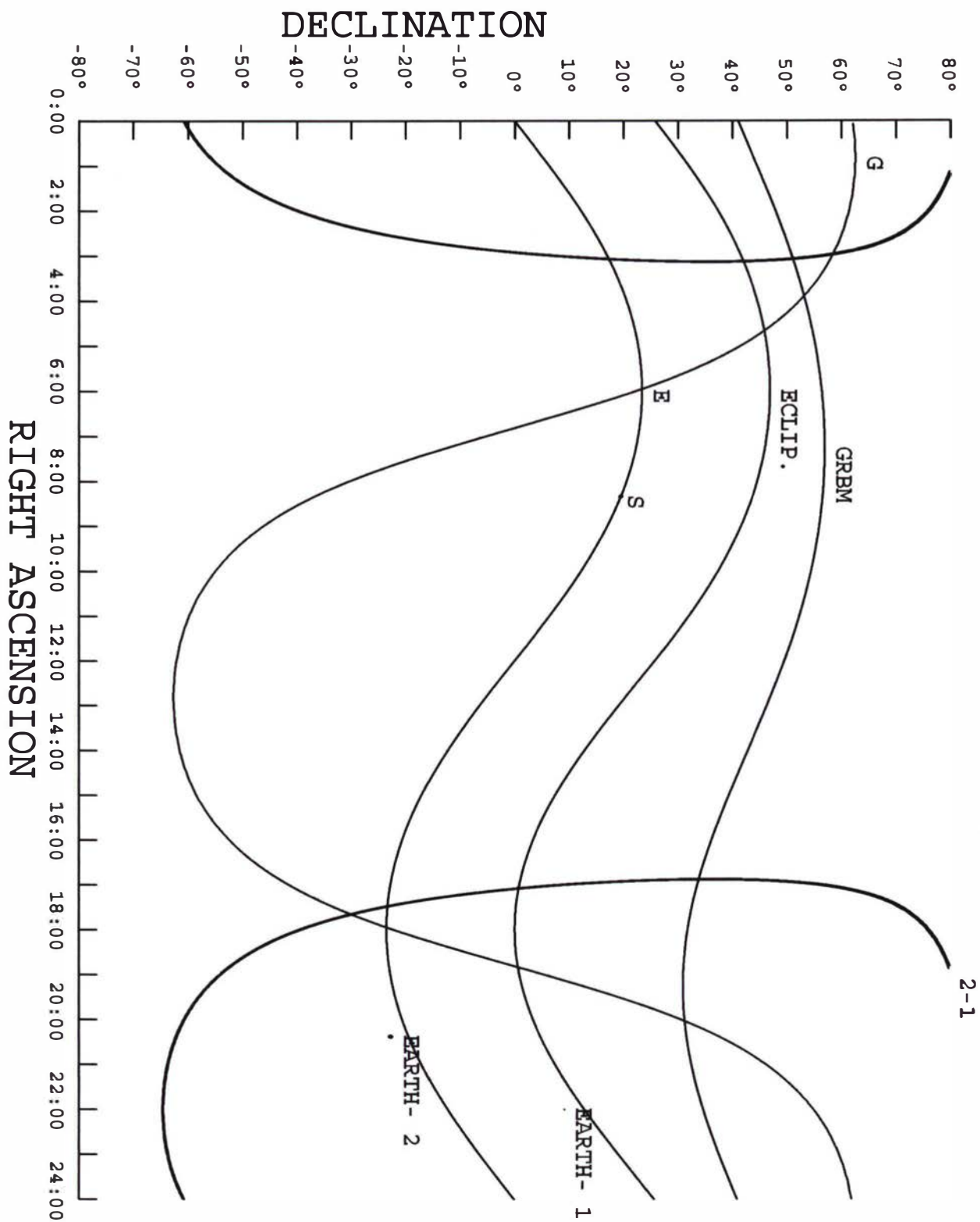
G=GALACTIC EQUATOR

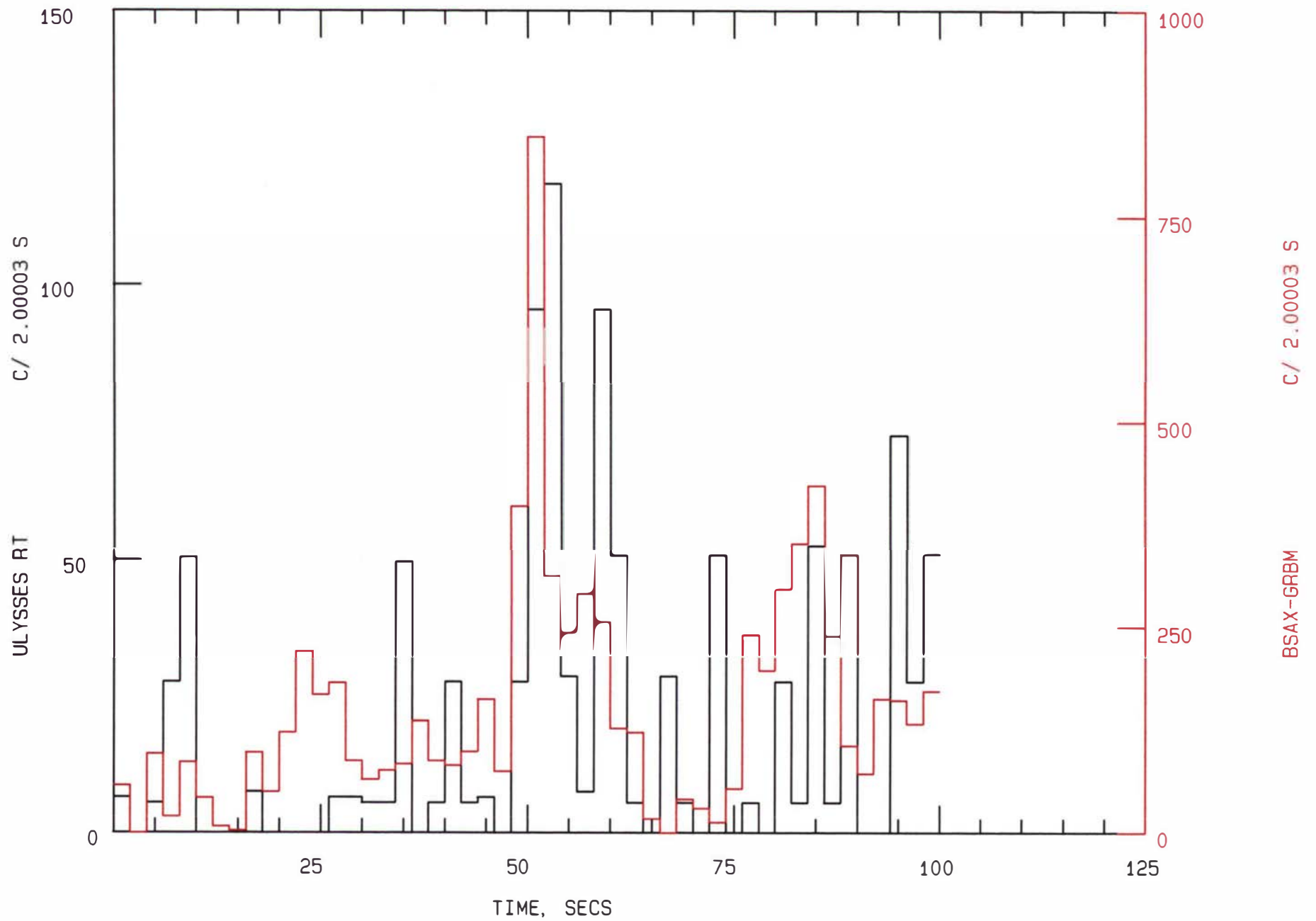
1 ULYSSES

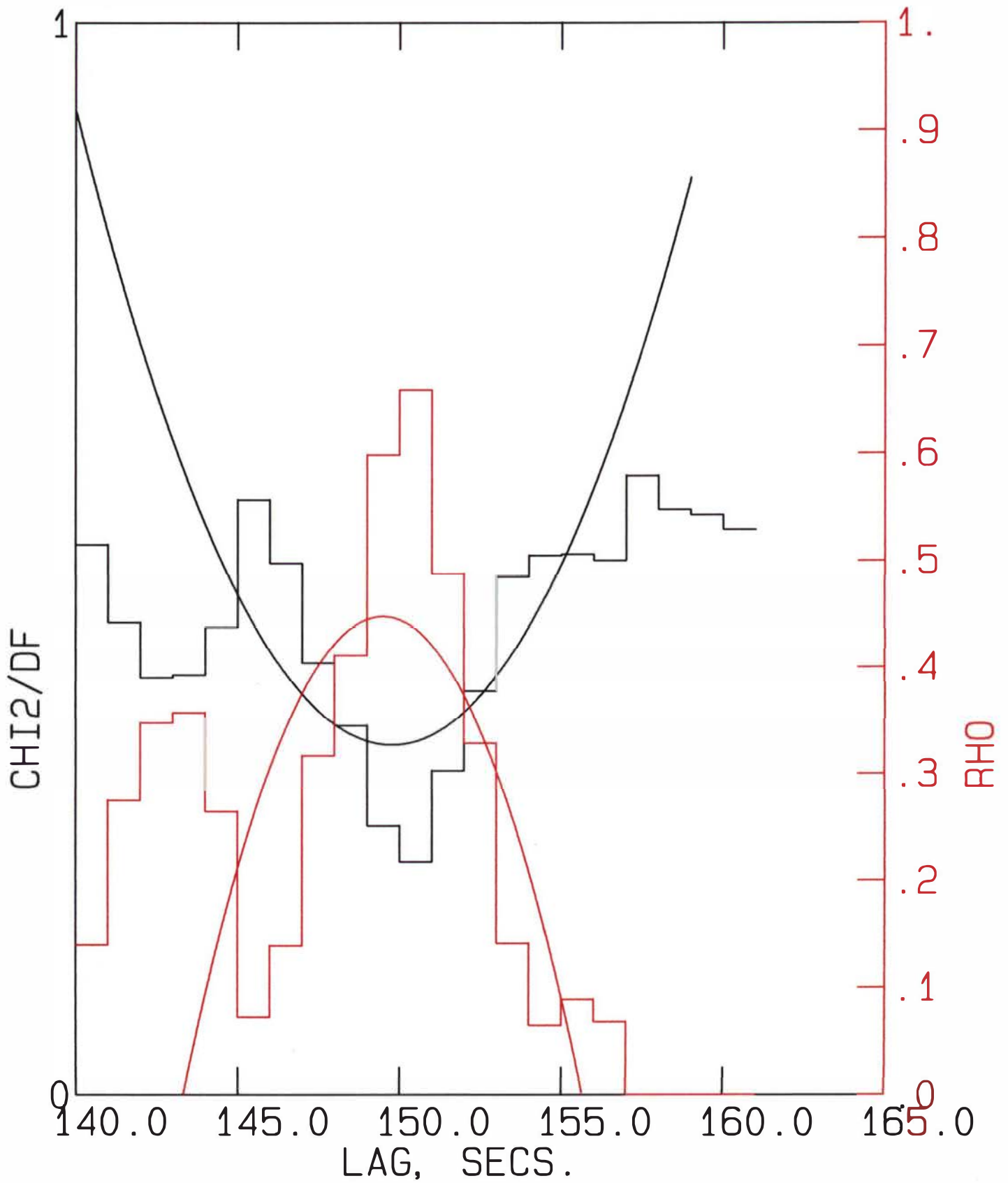
2 KONUS

EVENT OF JUL 26, 1999 3:11

29/ 6/ 7







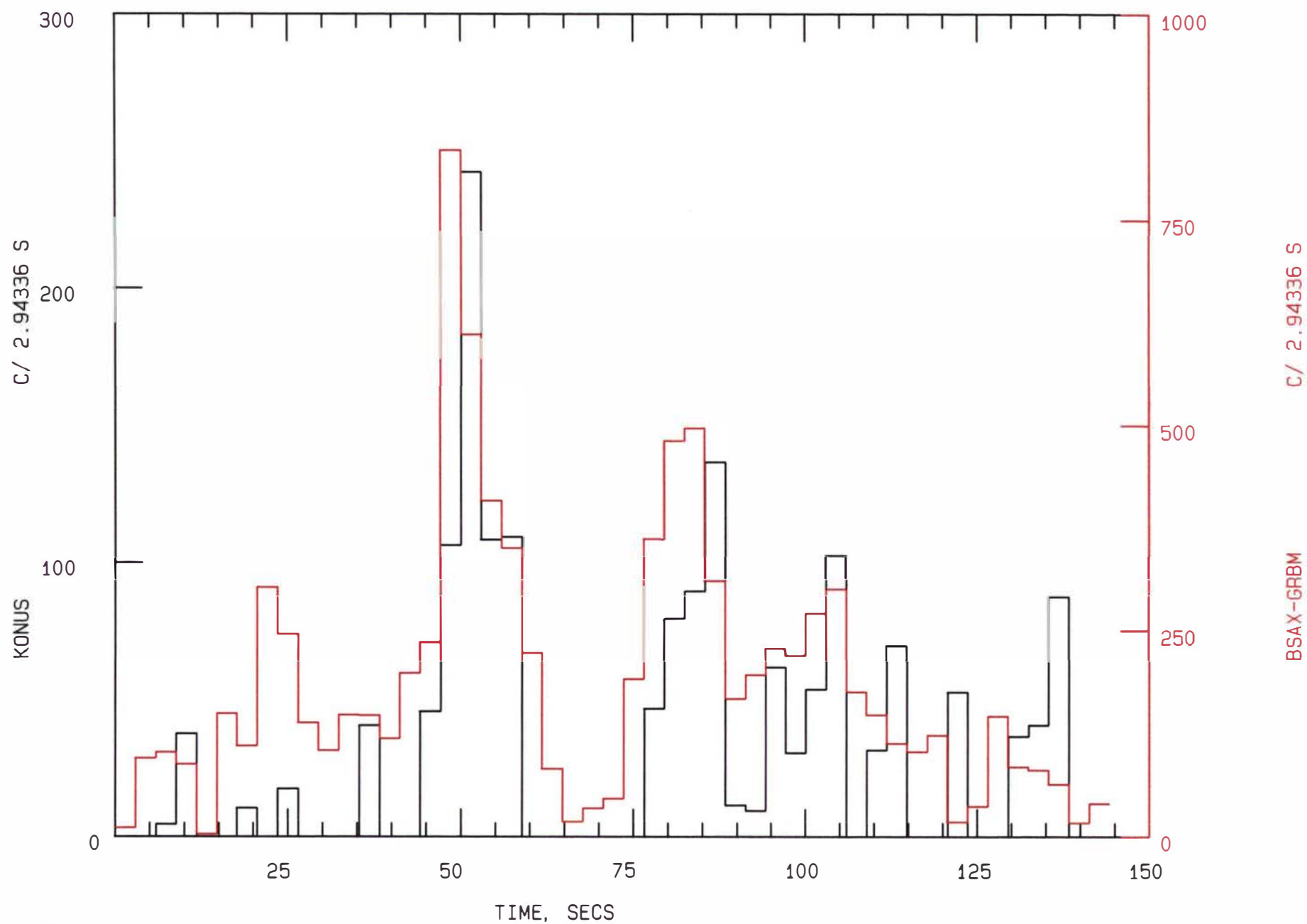
KONUS

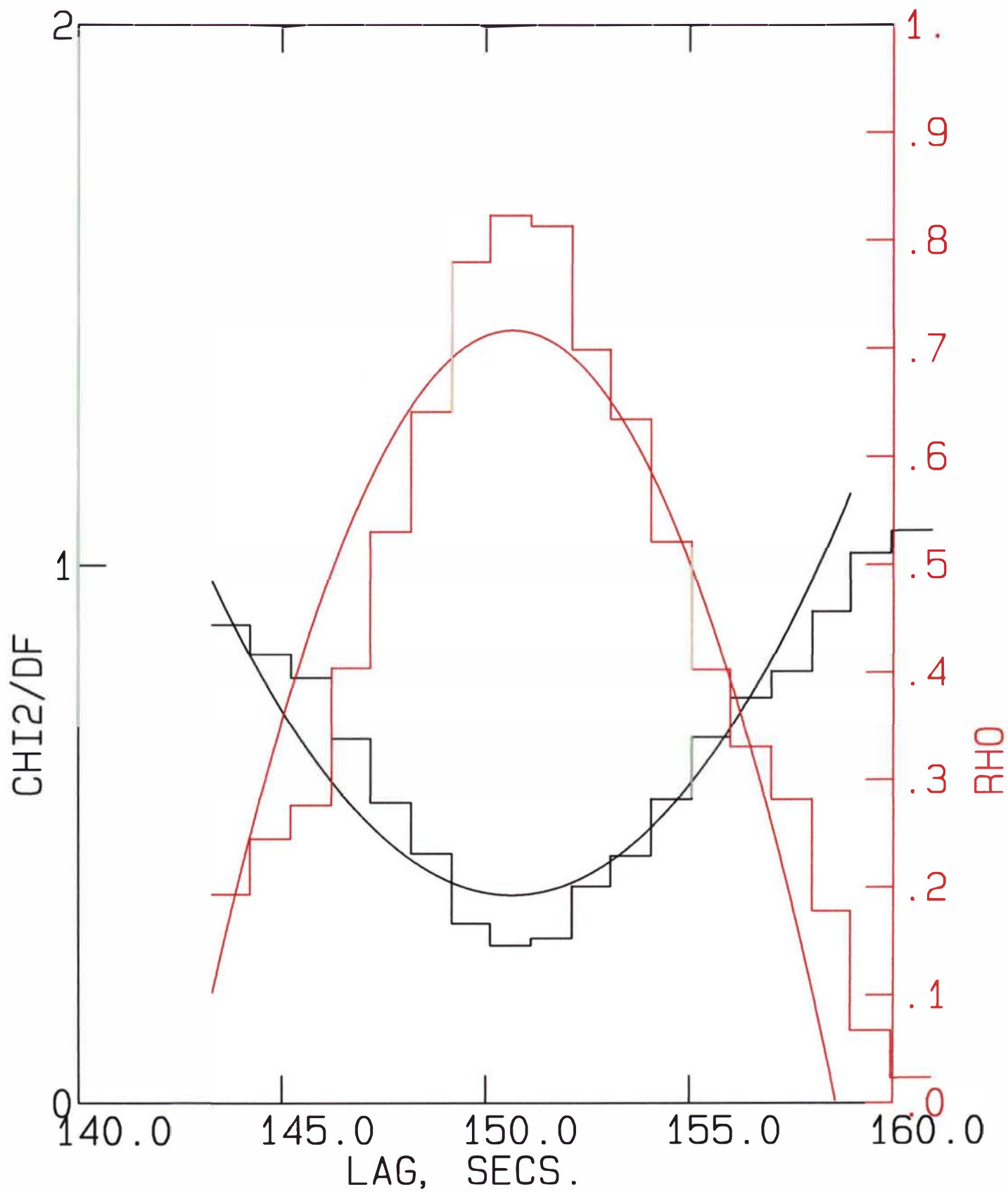
-BSAX-GRBM CORRELATION

26/07/99

10723.542

29/ 6/ 7





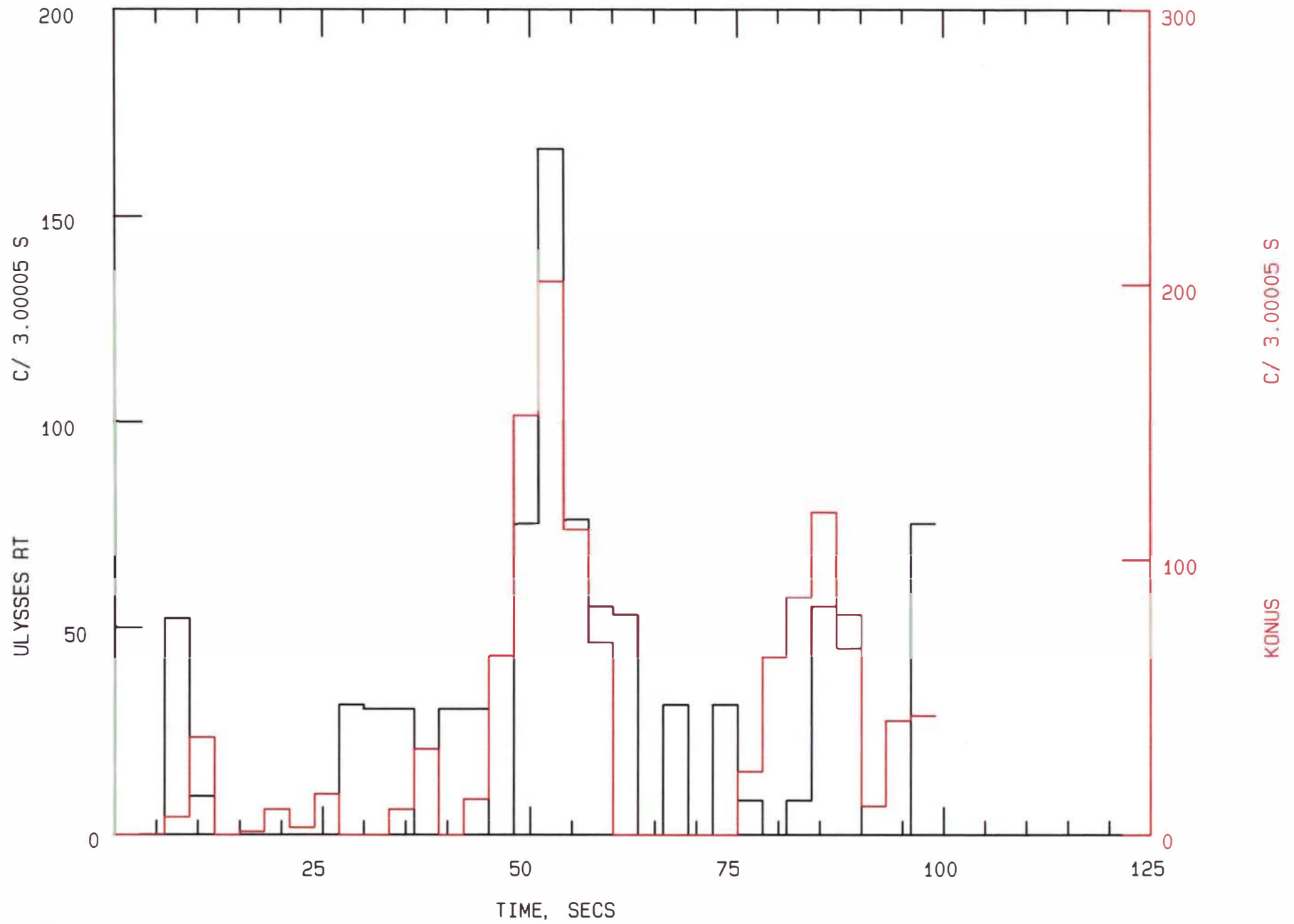
ULYSSES RT-KONUS

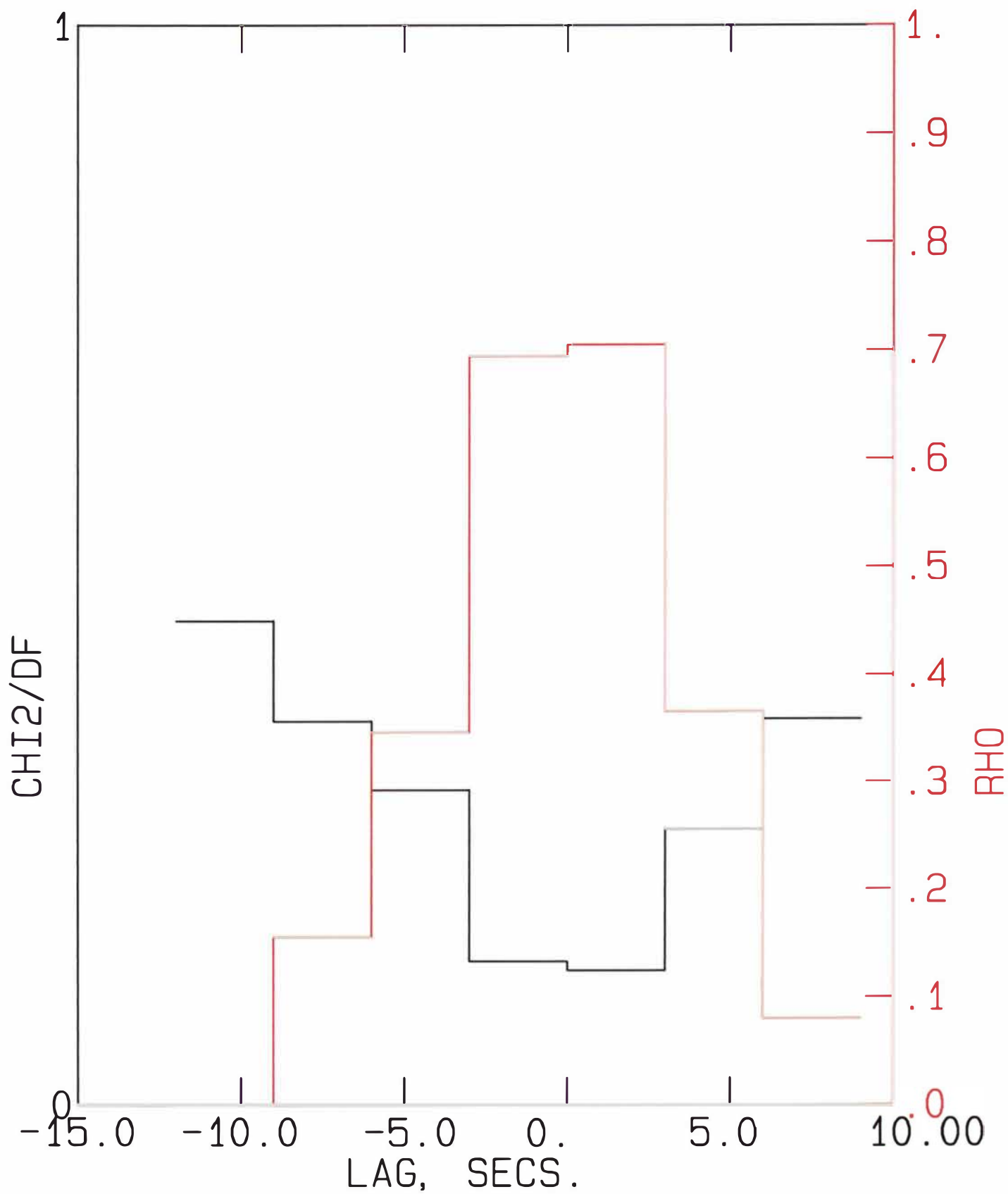
CORRELATION

26/ 7/99

11482.264

29/ 6/ 7





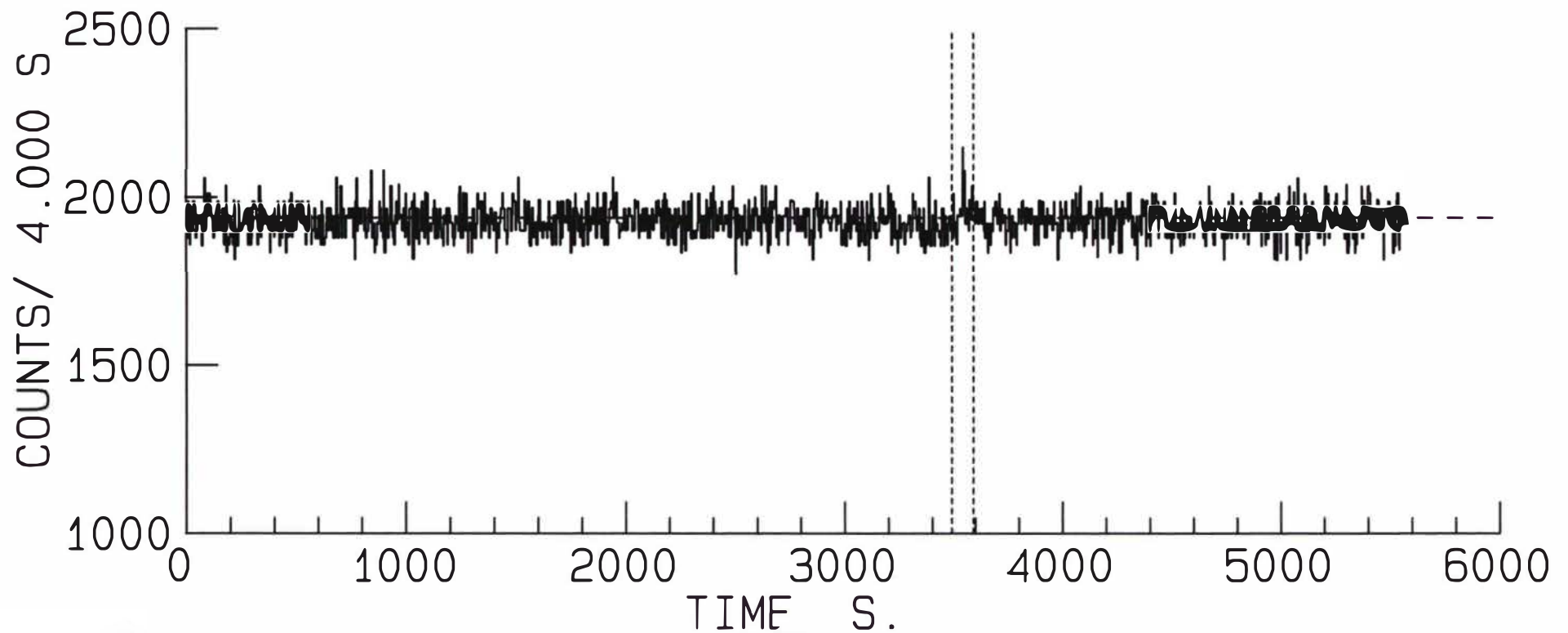
ULYSSES RT

29 / 6 / 7

26 / 7 / 99 7992.240 s

0.500 S INTERVALS REGROUPED BY 8

22- 150 keV

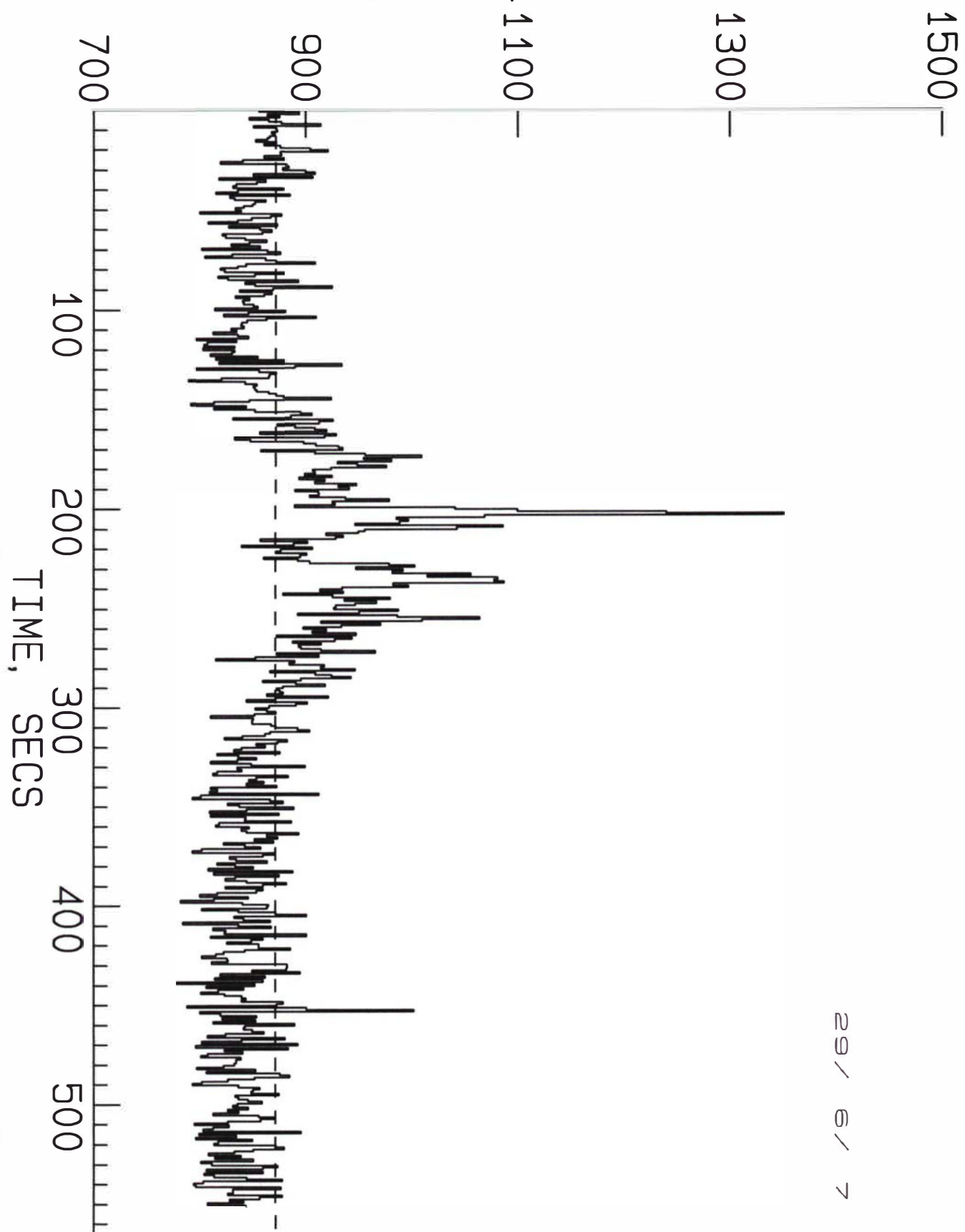


SAX GRBM

26/07/99 10573.202

40- 700 keV

COUNTS/1.000 S



KONUS

26/07/99 10723.542

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.943 S

3400

DETECTOR 1 - S. ECLIPIC



2400

1400

400

20

40

60

80

100

120

140

TIME, SECS

KONUS 26/07/99 10723.542
10- 50 keV 50- 200 keV 200- 750 keV

COUNTS/2.943 S

4300

DETECTOR 2 - N. ECLIPTIC

28/06/07

3300

2300

1300

300

20

40

60

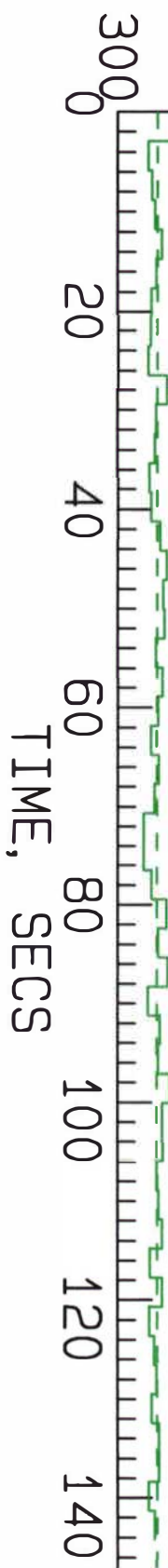
80

100

120

140

TIME, SECS



KONUS

ULYSSES RT

21 / 01 / 00

26 / 07 / 99 7992.240 s

0.500 S INTERVALS REGROUPED BY 8

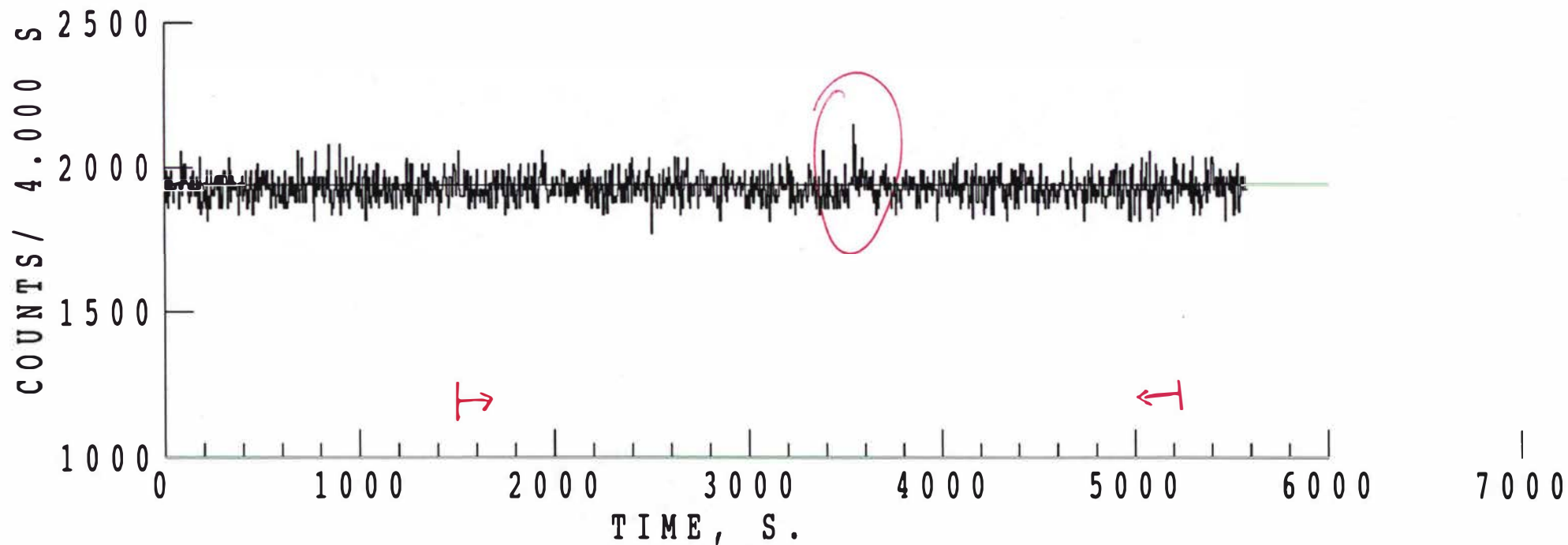
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Wed Jul 28 14:13 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 28 Jul 1999 16:18:46 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7677

BATSEARCH PROGRAM

BATSE BURST # 7677
EVENT OF 1999 JUL 26 DAY OF YEAR=207
EVENT CROSSING TIME AT BATSE : 33520. S. OR 09:18:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 4.000 -15.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 7/ 99 IS:
RA= 149.636 DEC= -9.172 DIST= 5.497 AU
BATSE-ULYSSES DISTANCE = 822349235. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2046.04 SECS.
CROSSING TIME AT ULYSSES IS 35566. S. OR 09:52:46 +/- 398.28 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 7/ 99 IS:
RA= 215.569 DEC= -15.739 DIST= 0.969 AU
MARS-BATSE DISTANCE = 144912160. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 43.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 348.96 SECS.
CROSSING TIME AT MARS IS 33869. S. OR 09:24:28 +/- 63.37 SECONDS

BATSE BURST TRIGGER

NO.: 7677

TIME: TJD=1385 SECONDS=33520

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.7 AZIMUTH=131.8 ERROR=3.4 DEGREES

COMMENTS:

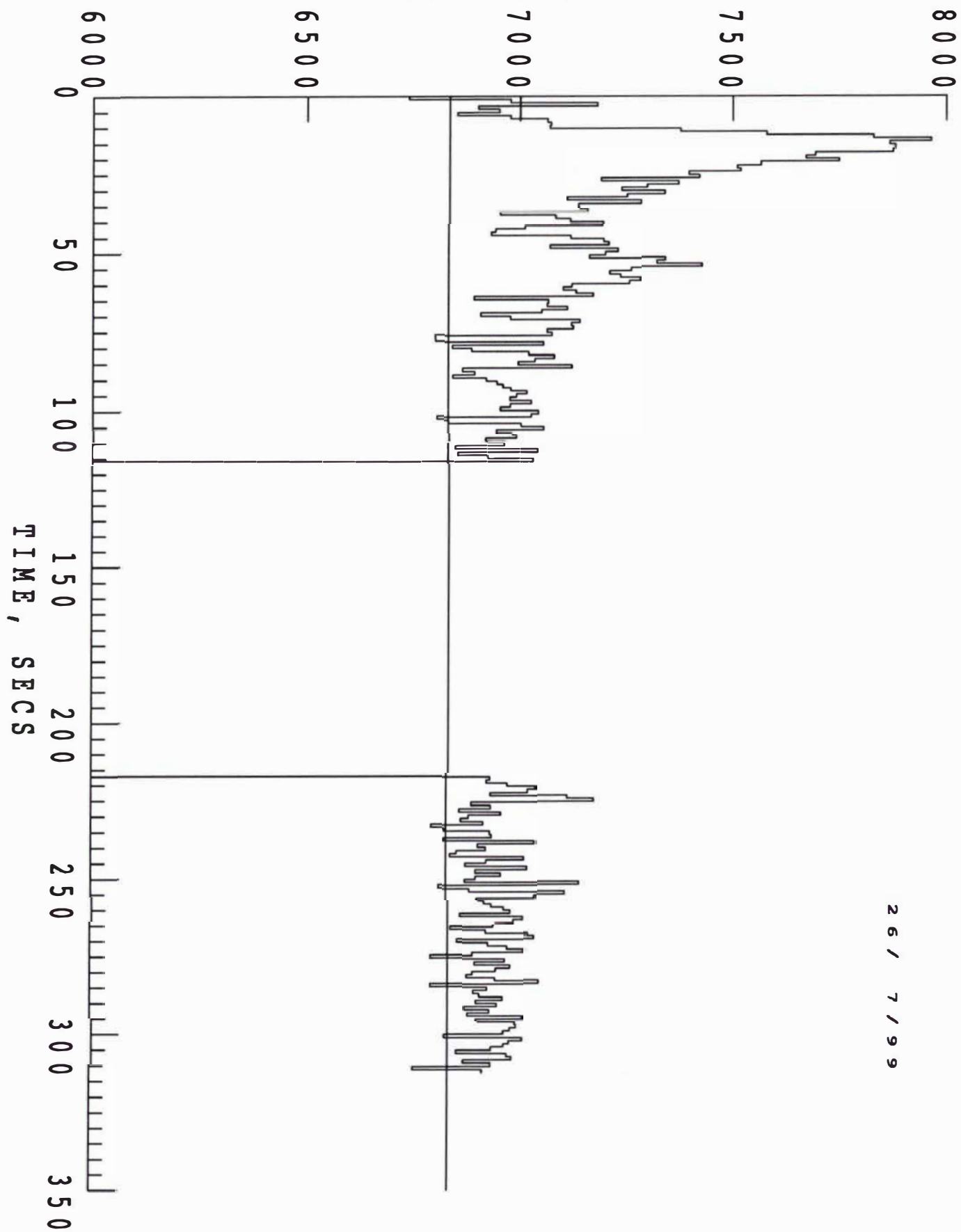
GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 60 S, STARTS AT T-8 S. NOT
VISIBLE ABOVE 300 KEV. CRAB RISE AT T+100 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7677	990726	11385	33520	2500	004	-15	60

BACODINE 7677 26/07/99 33508.089

25 - 100 keV

COUNTS/1.024 S



26 / 7 / 99

BATSE BURST# 7667

ULYSSES RT

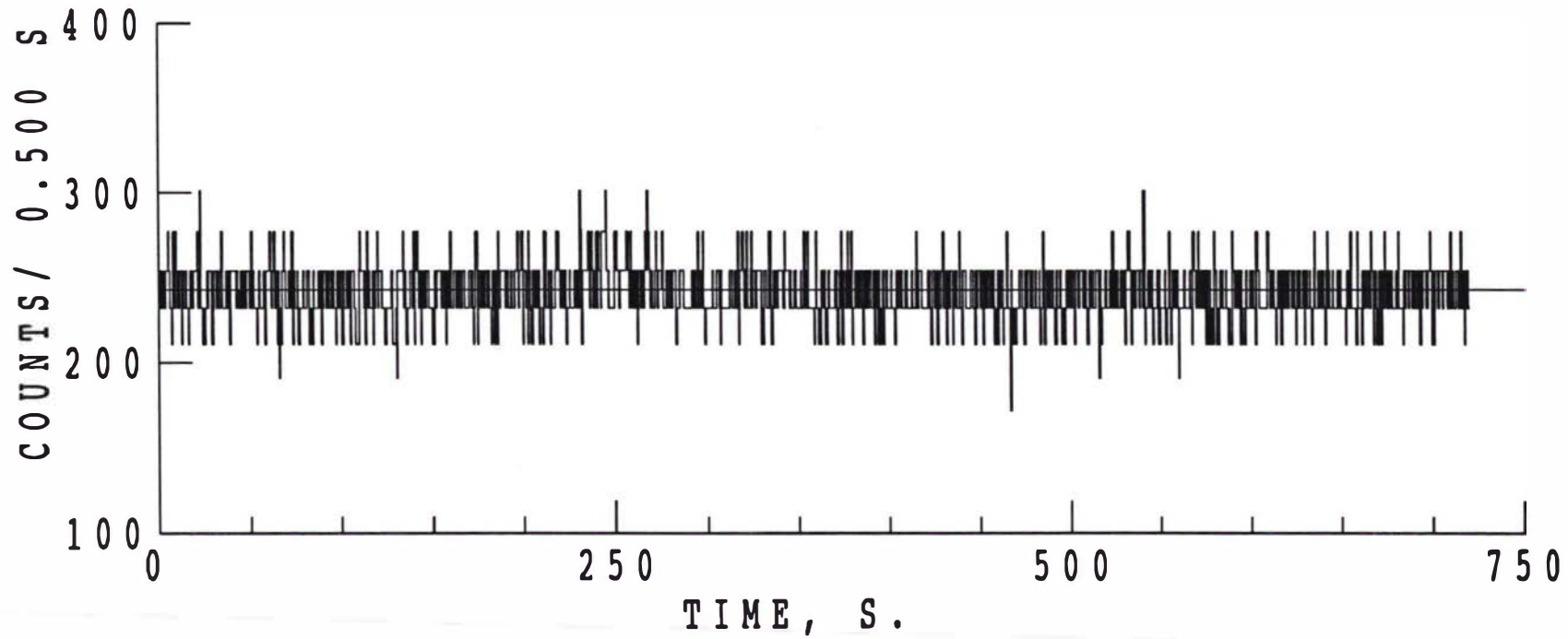
26 / 7 / 99

22 / 7 / 99 74556.406 s

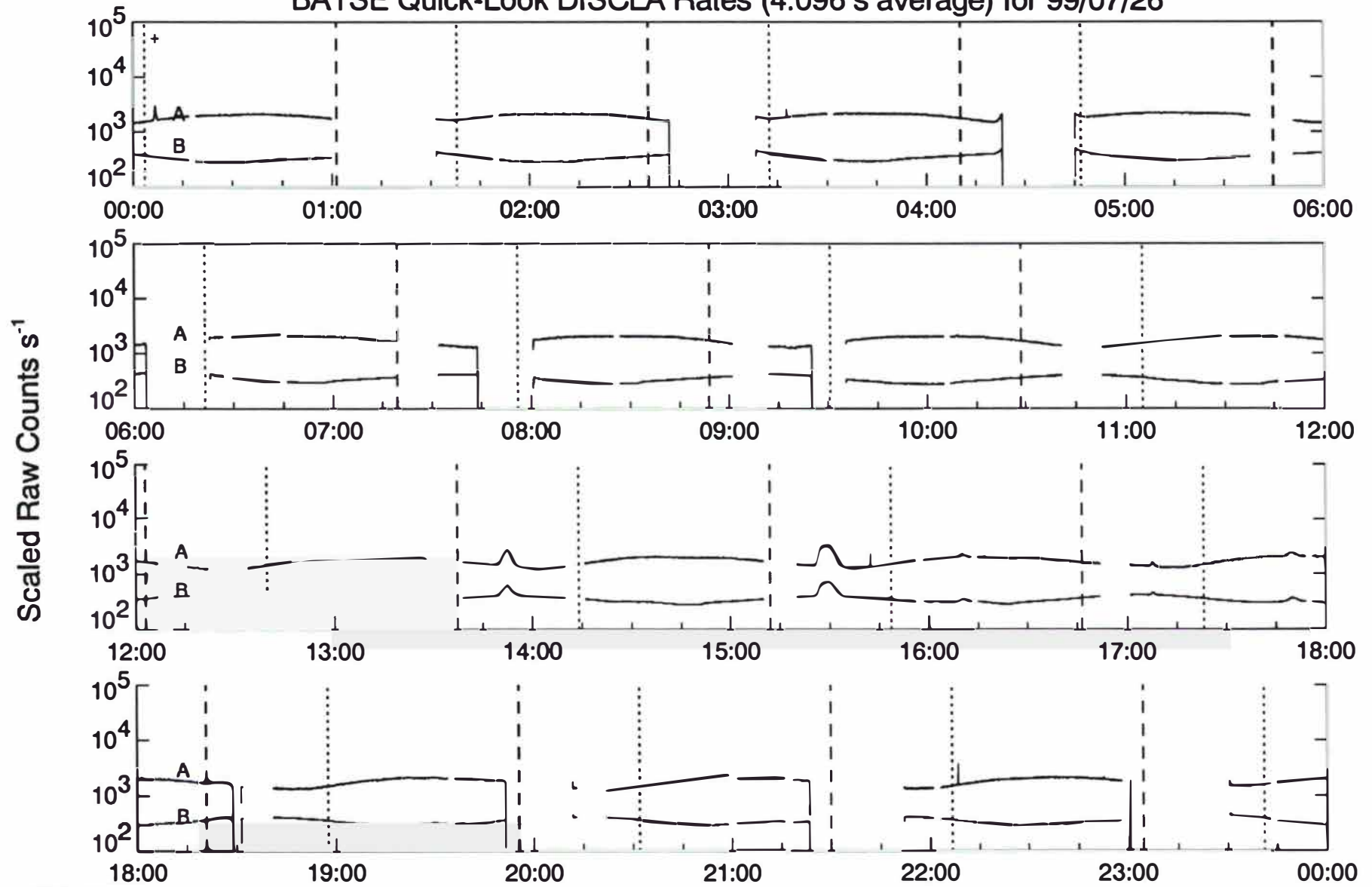
0 - 0 keV

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 99/07/26

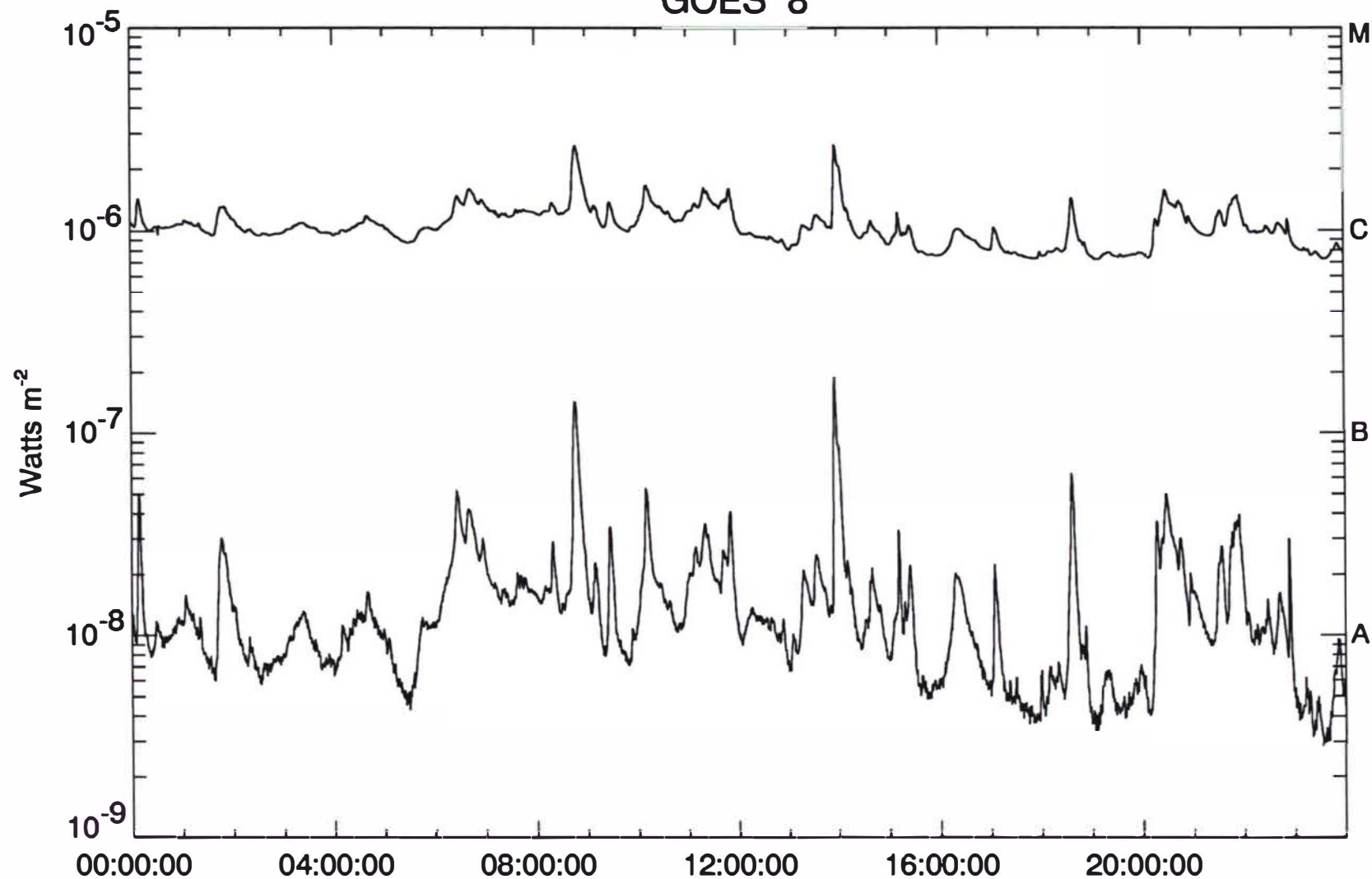


Current Time: 99/07/30, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/26, 0000:00

Plot created: 99/07/30, 1011

Channel

1 (1.0 - 8.0 Angstroms)

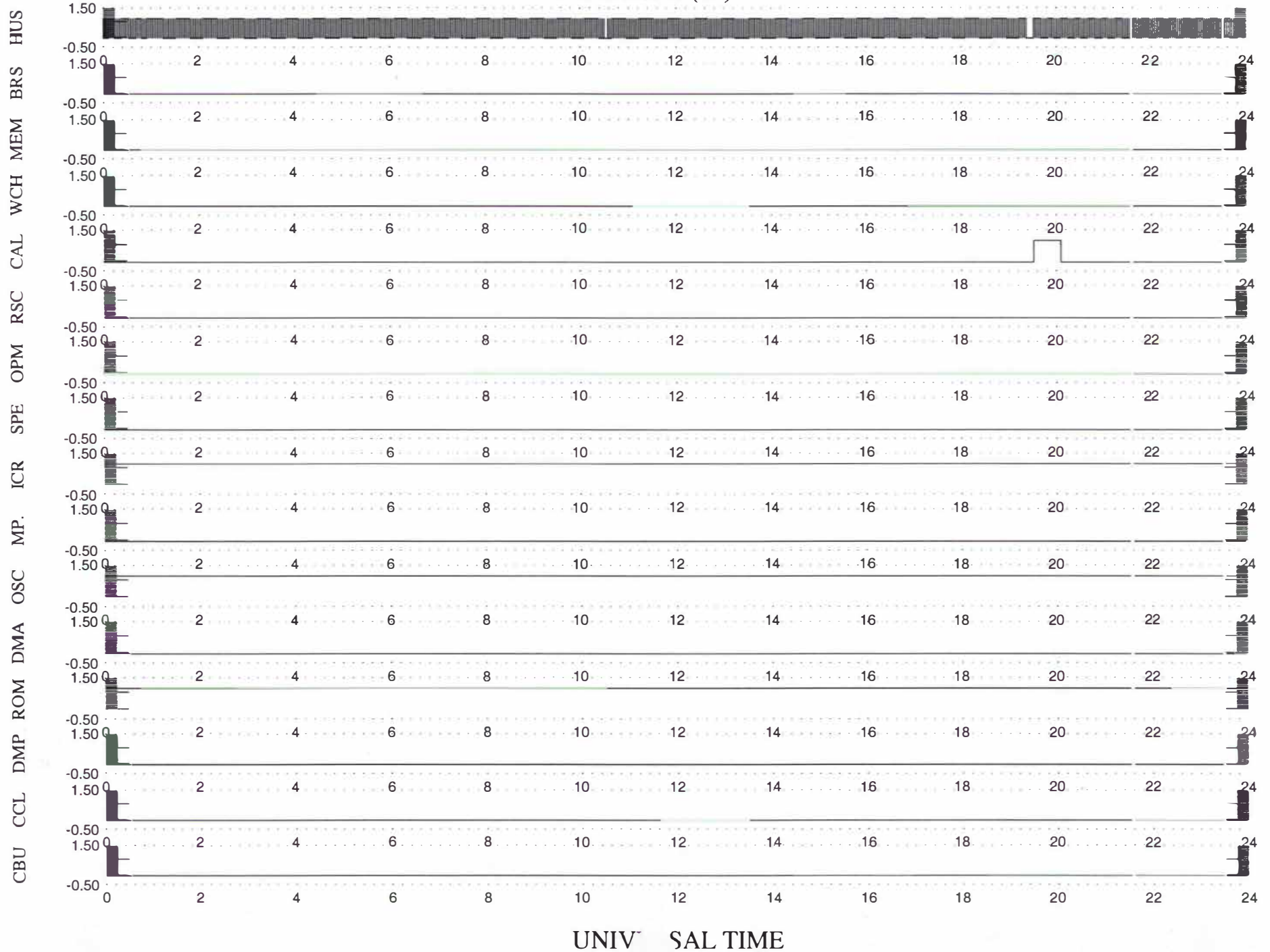
Background not subtracted

2 (0.5 - 4.0 Angstroms)

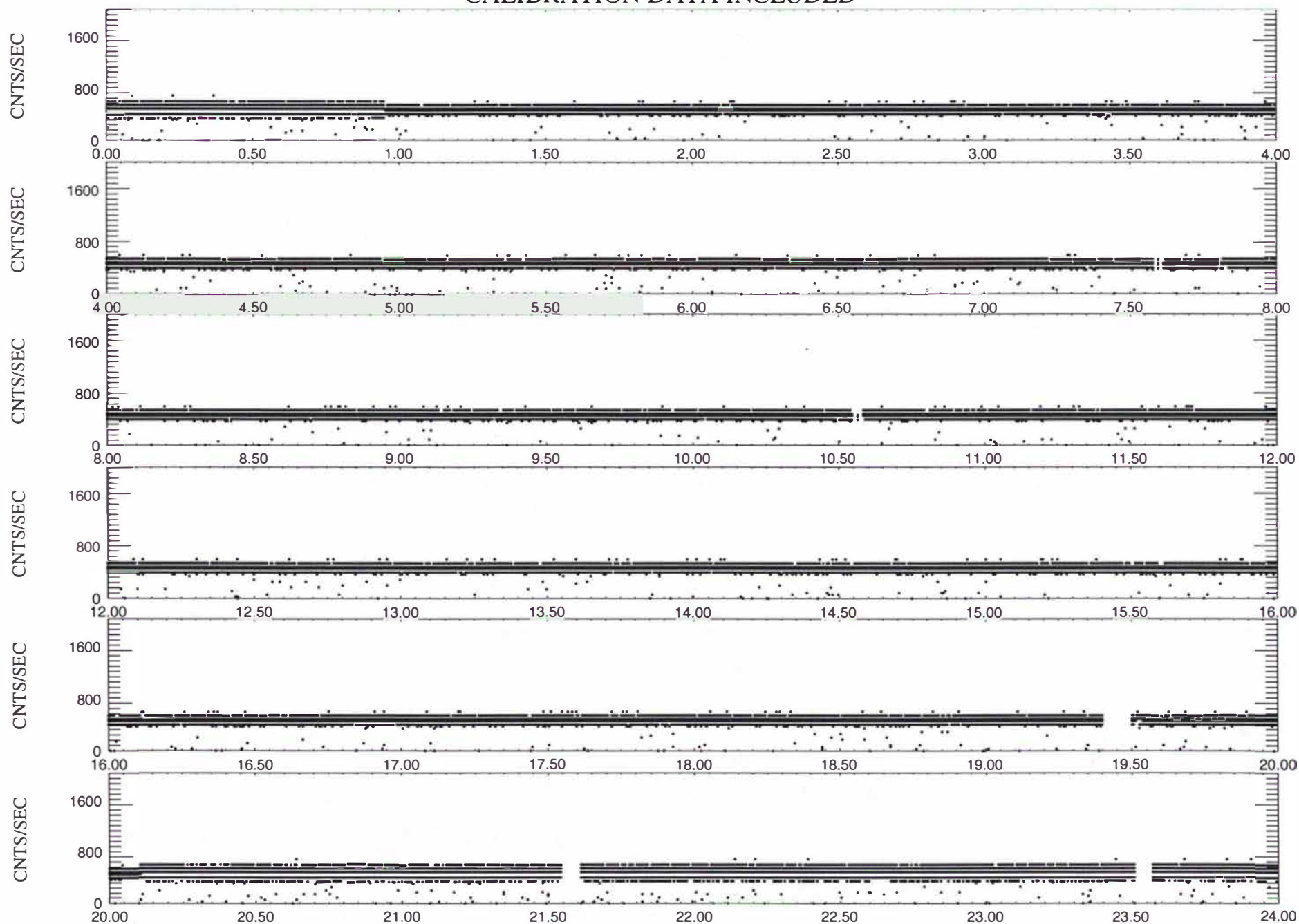
Background not subtracted

Sample average = 10

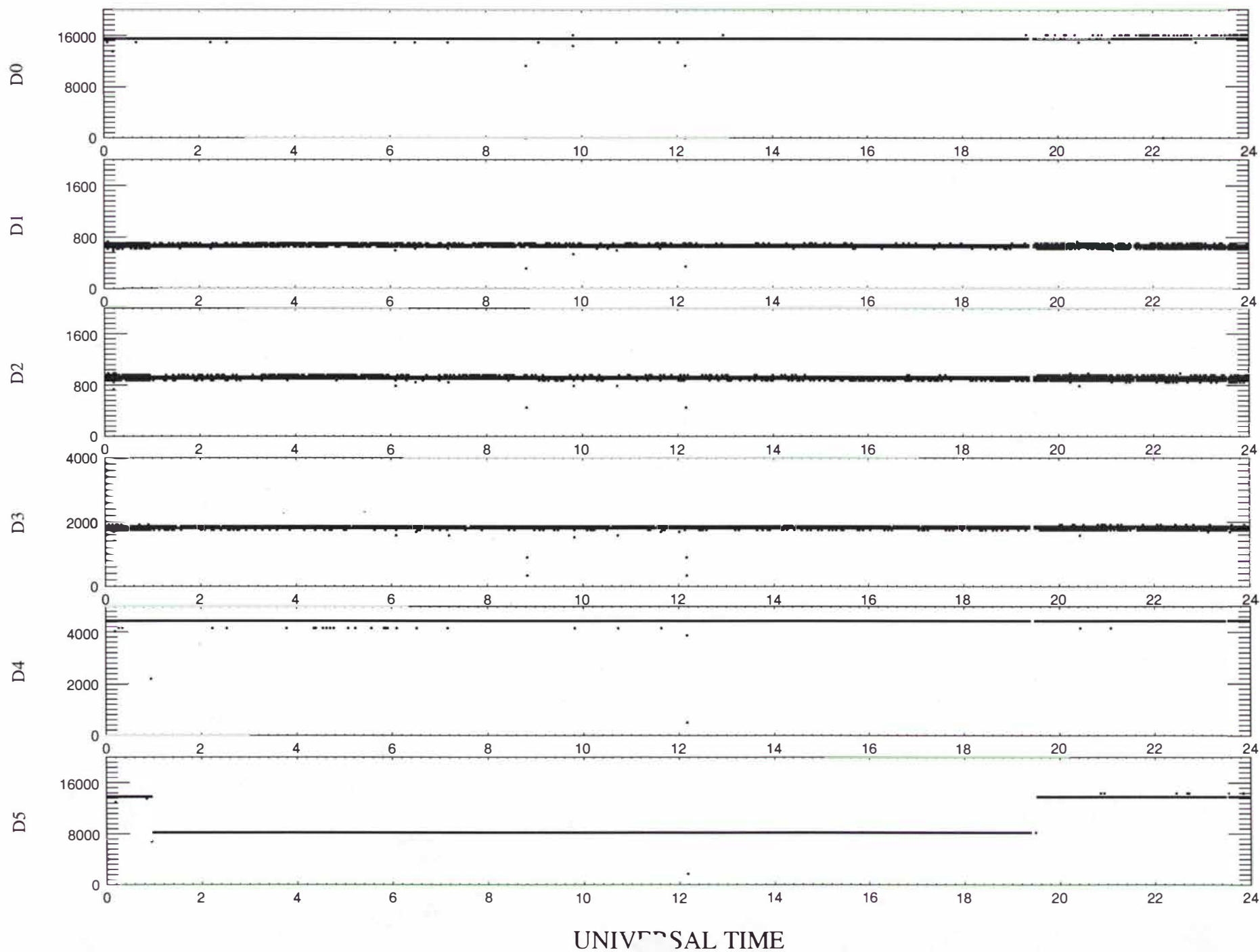
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME

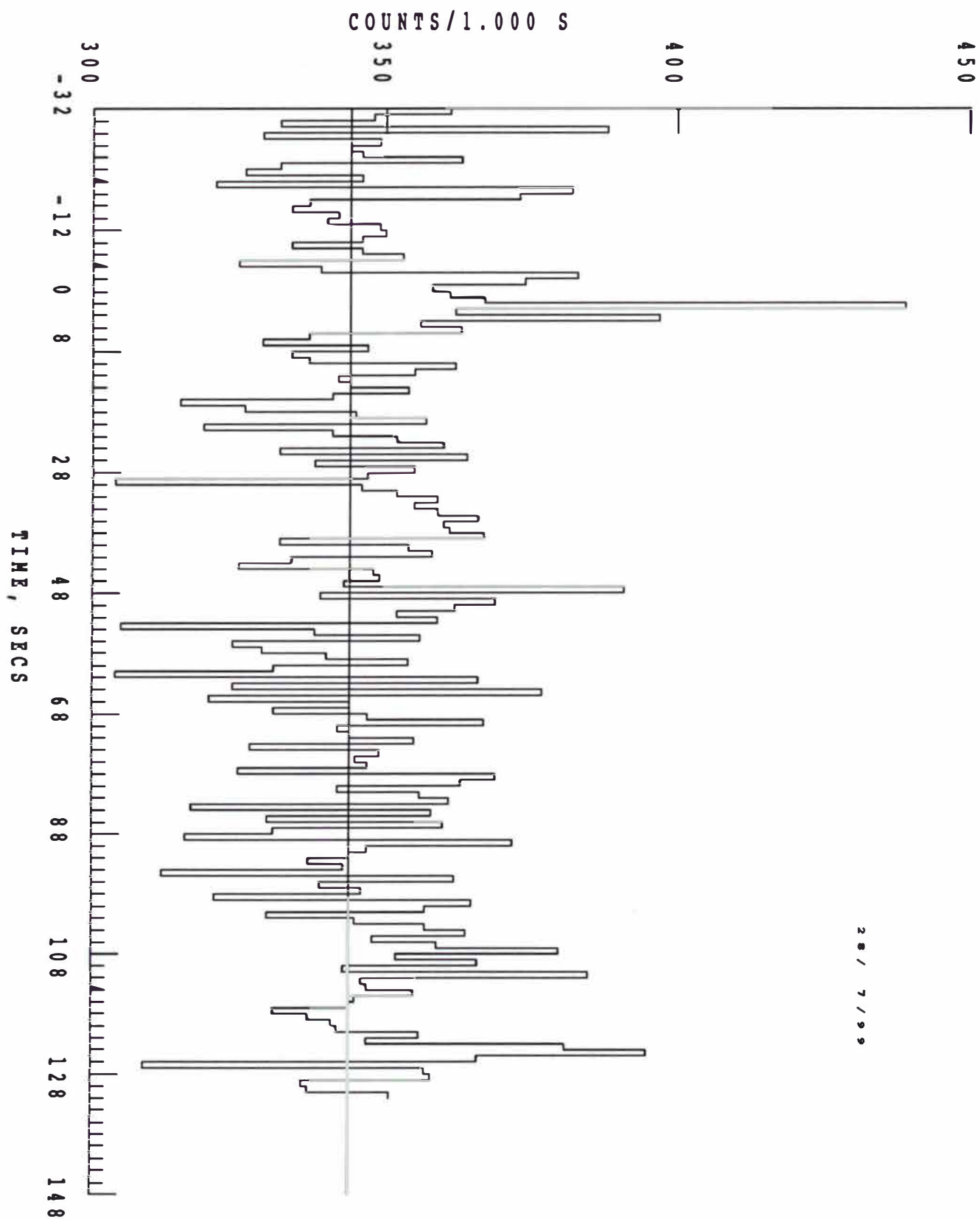


NEAR

27/07/99

23137.942

100-1000 keV



KNEAR GRS 19990727 23137

ULYSSES RT

28 / 7 / 99

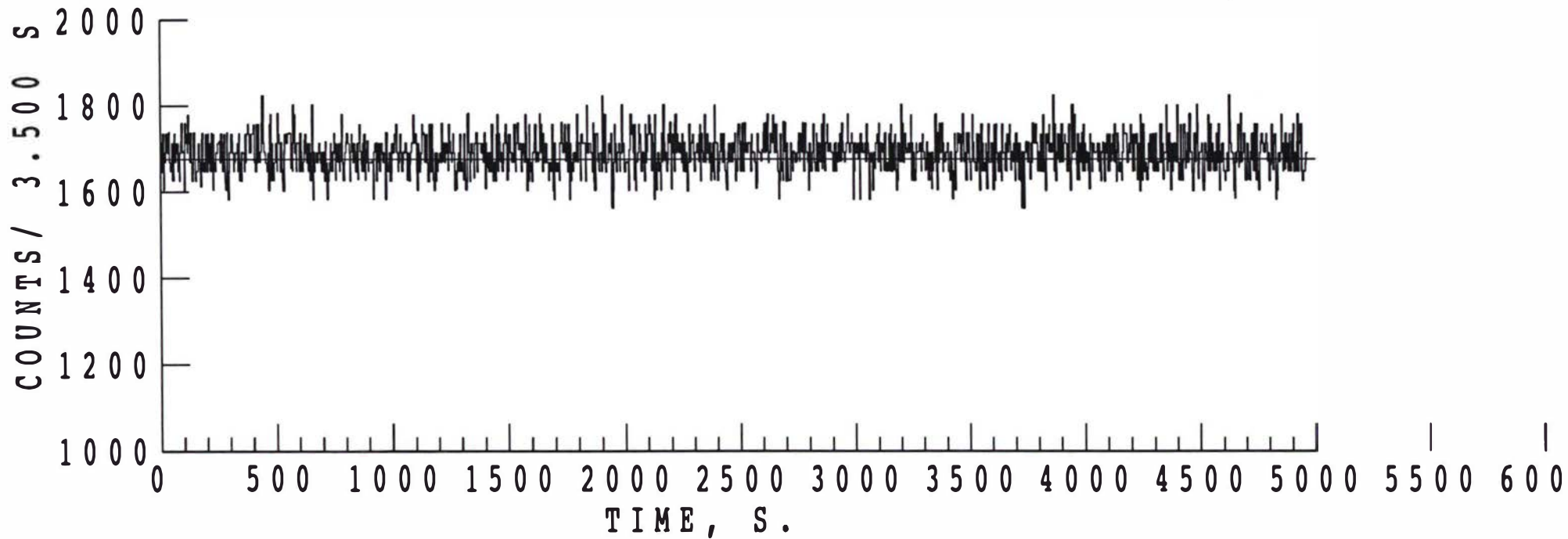
27 / 7 / 99 20664.248 s

0.500 S INTERVALS REGROUPED BY 7

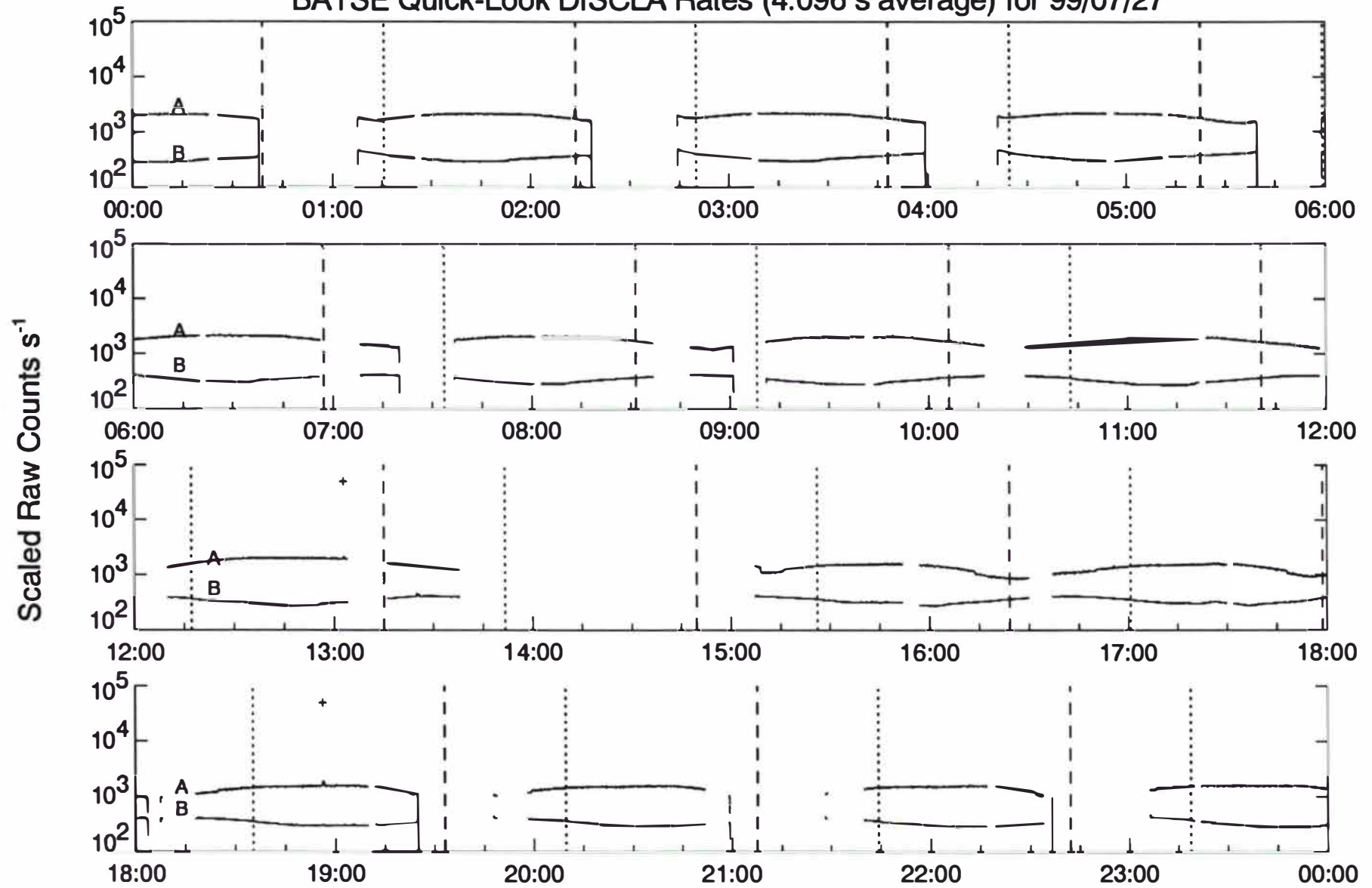
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/27



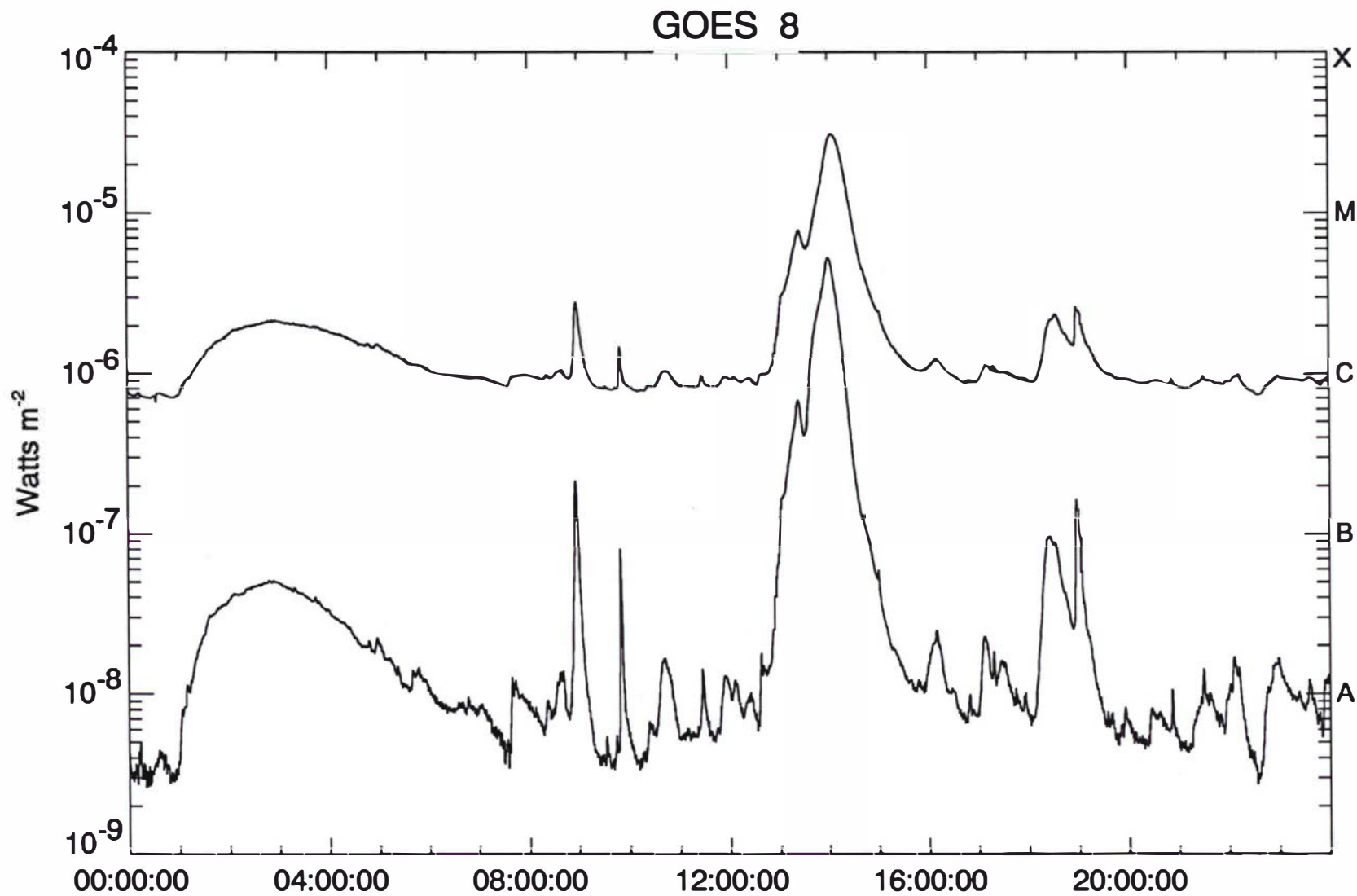
Current Time: 99/07/31, 1011 EDT

A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 99/07/27, 0000:00

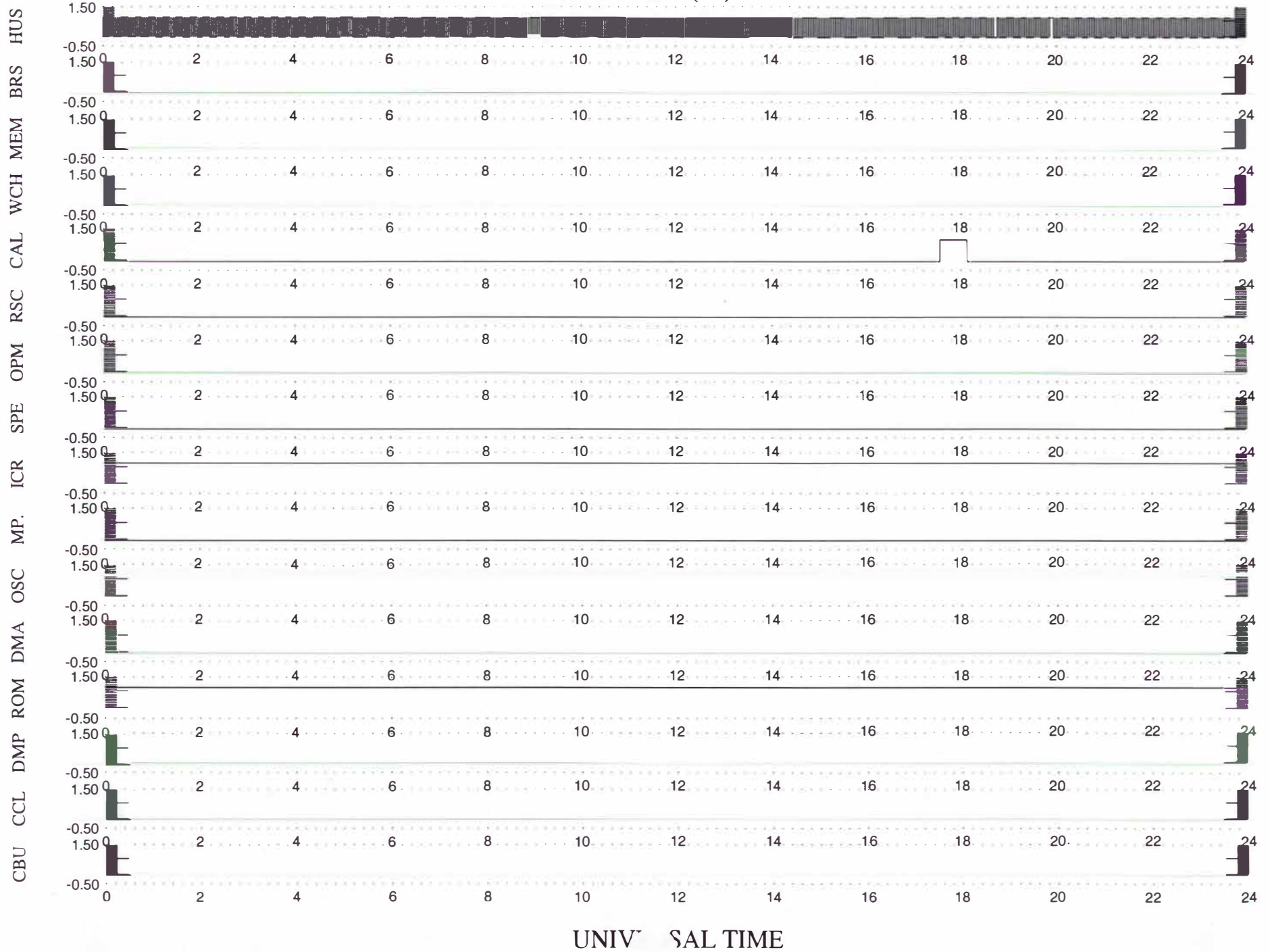
Plot created: 99/07/31, 1011

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

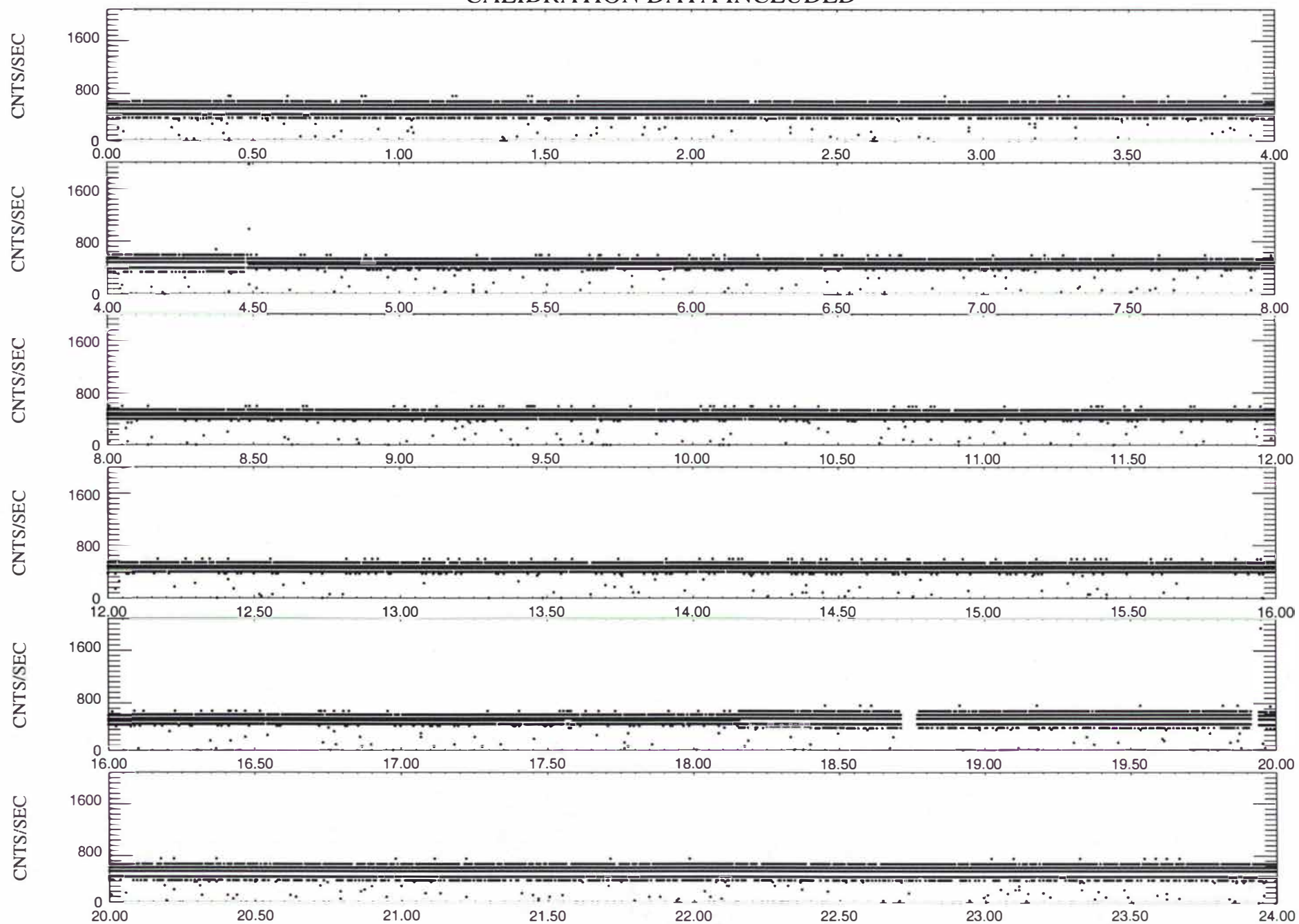
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

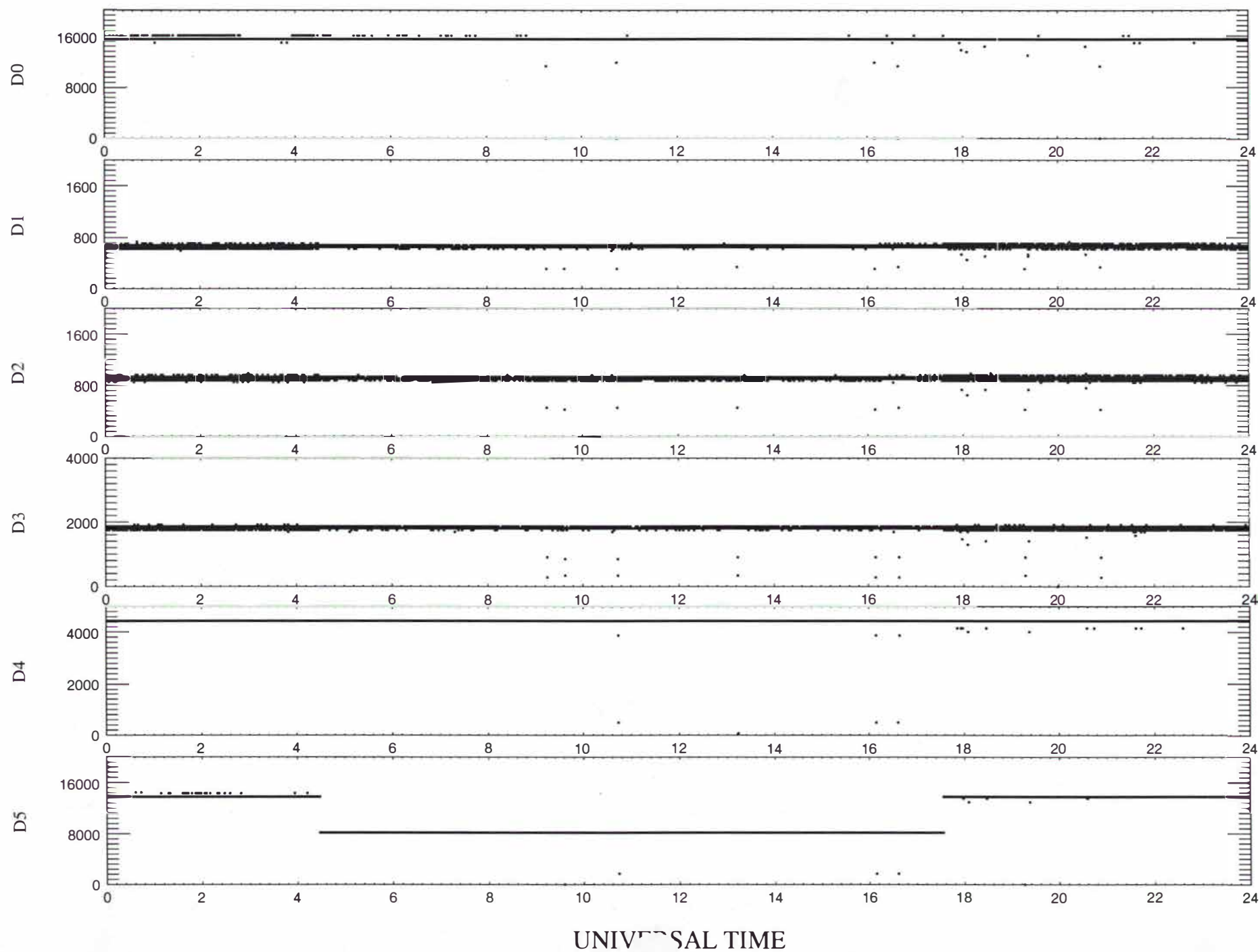
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



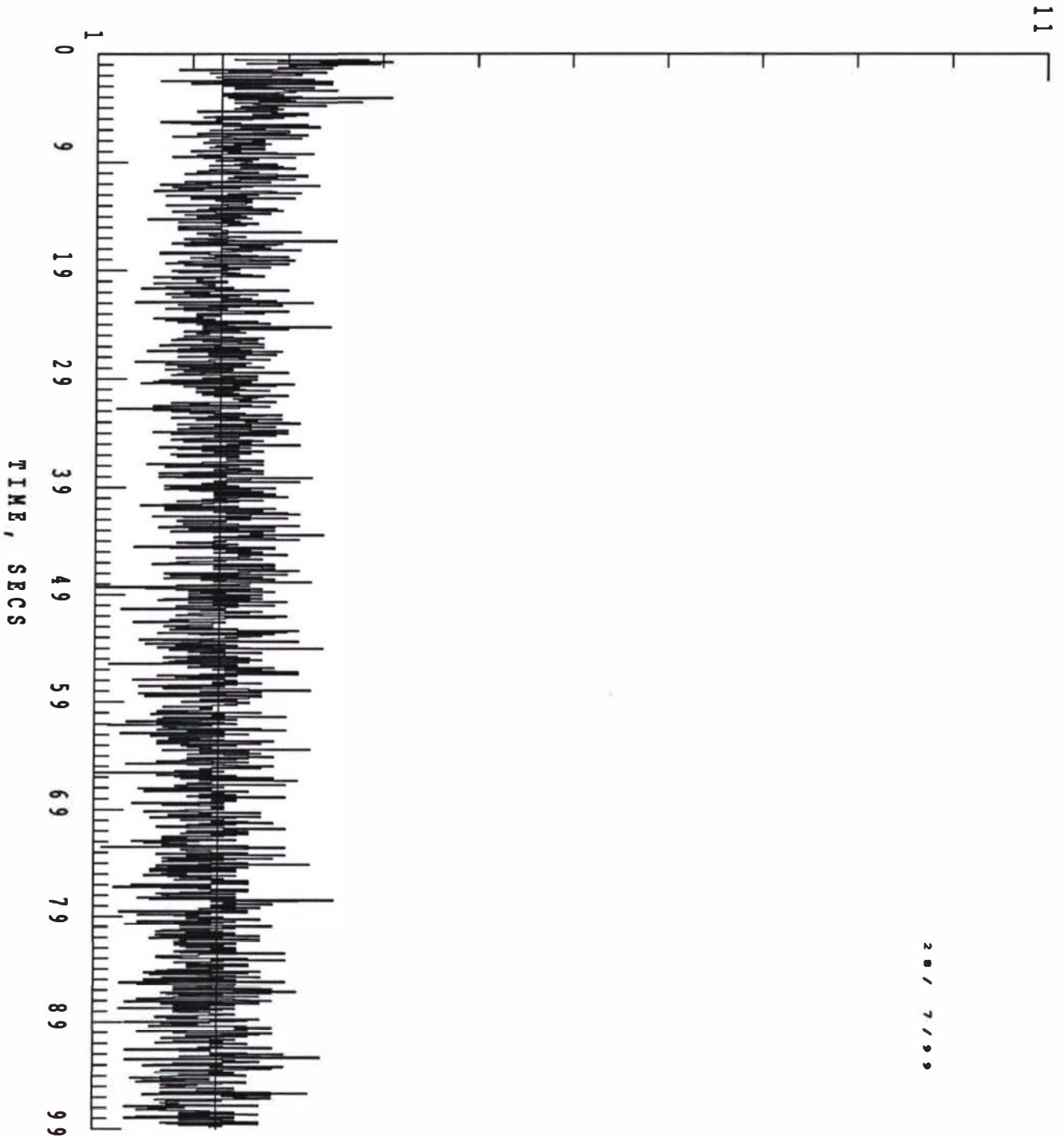
KONUS

28/07/99

6910.860

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990728 06910

ULYSSES RT

28 / 7 / 99

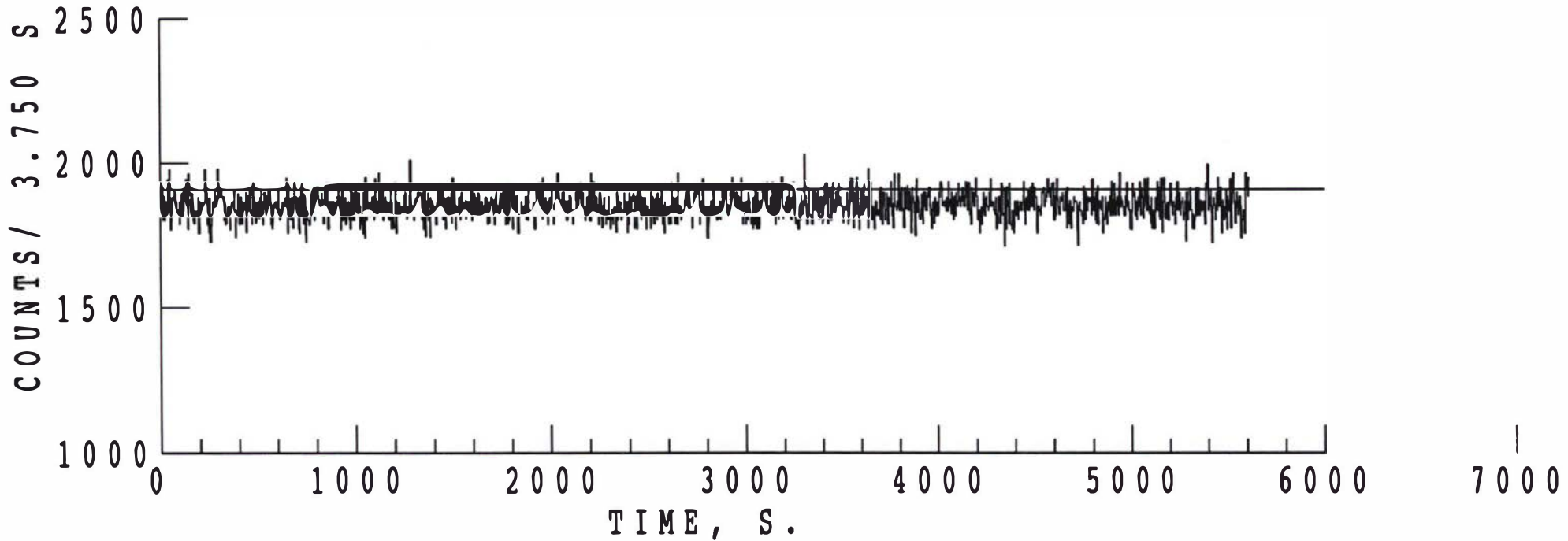
28 / 7 / 99 4104.207 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



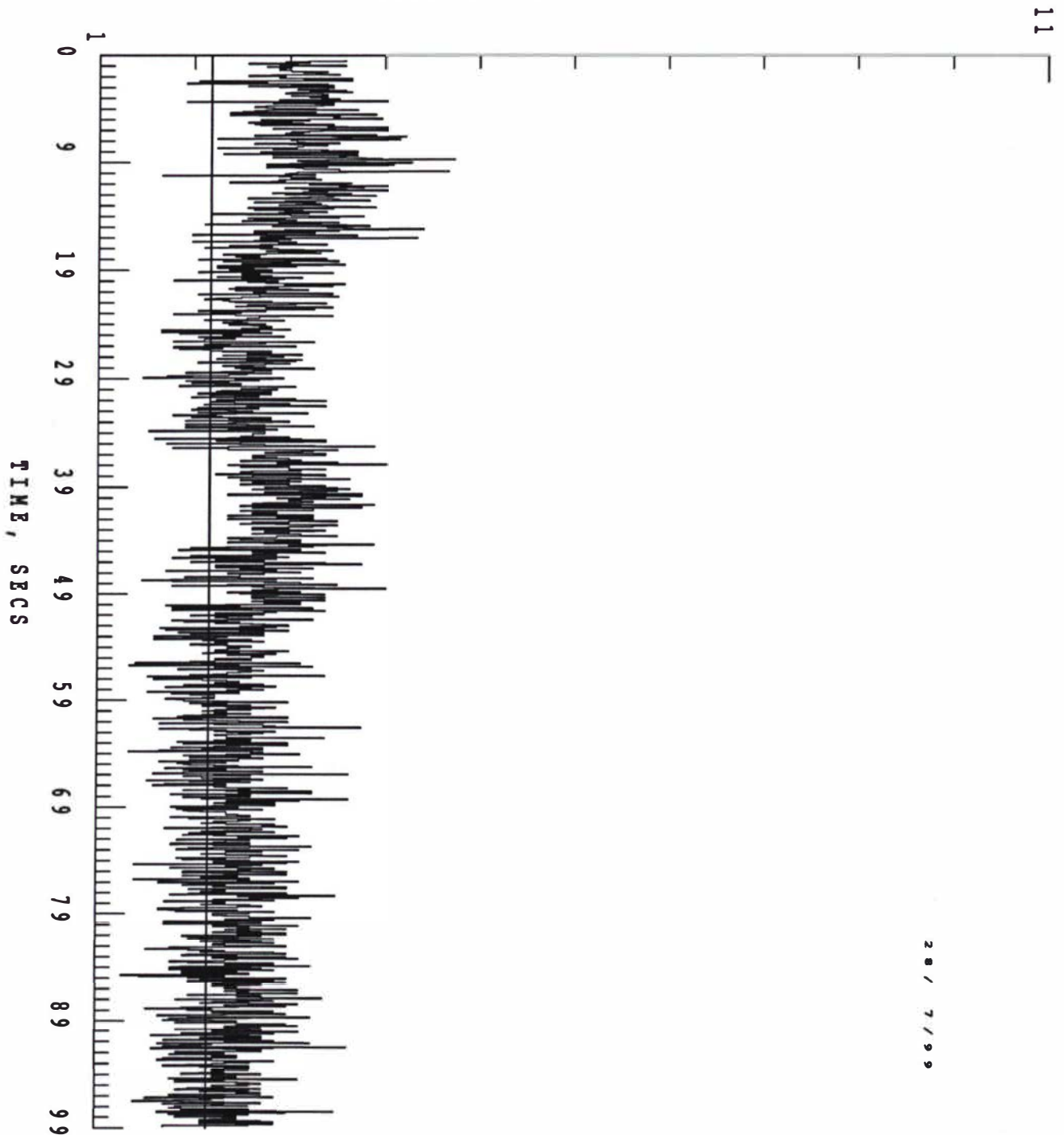
KONUS

28/07/99

29558.586

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990728 29558

ULYSSES RT

29 / 7 / 99

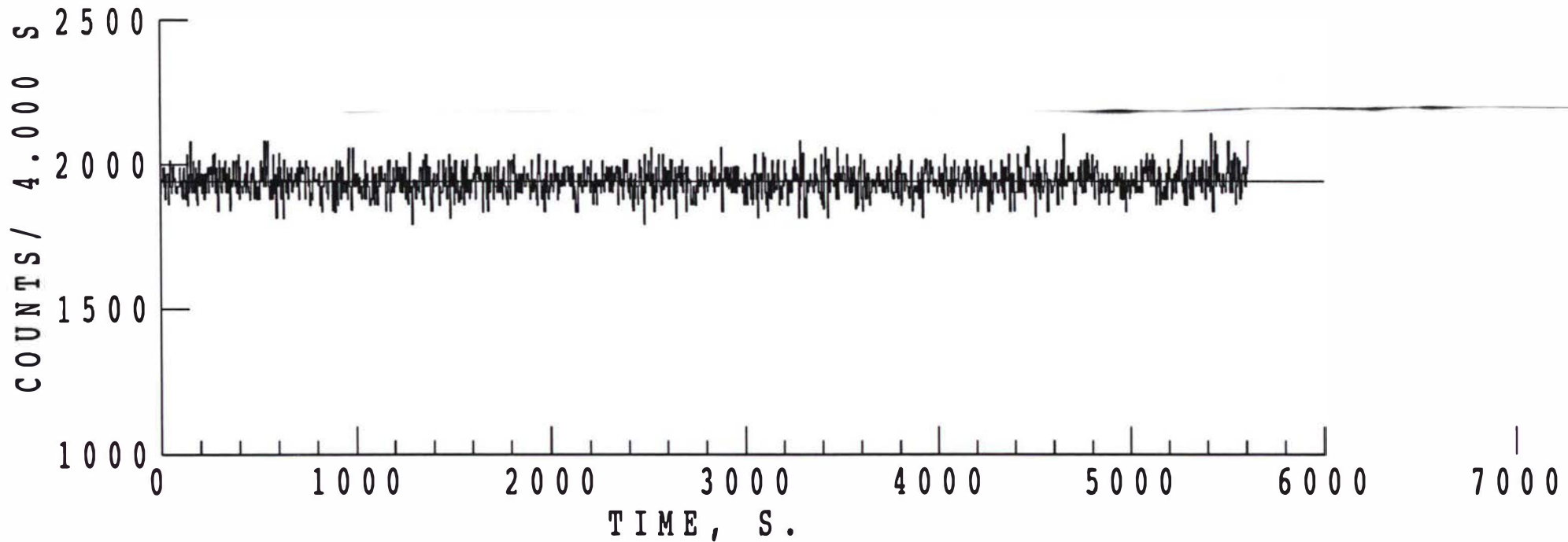
28 / 7 / 99 26748.188 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Thu Jul 29 09:50 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Thu, 29 Jul 1999 11:56:31 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7678

BATSEARCH PROGRAM

BATSE BURST # 7678
EVENT OF 1999 JUL 28 DAY OF YEAR=209
EVENT CROSSING TIME AT BATSE : 39824. S. OR 11:03:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 210.000 -57.000
BATSE PEAK COUNTING RATE: 57000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 7/ 99 IS:
RA= 149.925 DEC= -9.332 DIST= 5.507 AU
BATSE-ULYSSES DISTANCE = 823804395. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1110.45 SECS.
CROSSING TIME AT ULYSSES IS 38714. S. OR 10:45:13 +/- 469.53 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 7/ 99 IS:
RA= 216.497 DEC= -16.068 DIST= 0.981 AU
MARS-BATSE DISTANCE = 146734768. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -368.13 SECS.
CROSSING TIME AT MARS IS 39456. S. OR 10:57:35 +/- 50.41 SECONDS

BATSE BURST TRIGGER

NO.: 7678

TIME: TJD=1387 SECONDS=39824

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=5.7 AZIMUTH=334.1 ERROR=0.363 DEGREES

COMMENTS:

GRB. STRONG SINGLE PULSE WITH SPIKEY SUBSTRUCTURE, DUR. APPROX. 130 S, STARTS AT APPROX. T-2 S, MAX AT APPROX. T+40 S. VISIBLE ABOVE 300 KEV. CRAB SET AT APPROX. T+230 S. CYG X-1 RISE AT APPROX. T-210 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7678	990728	11387	39824	57000	210	-57	130

Date: 21 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

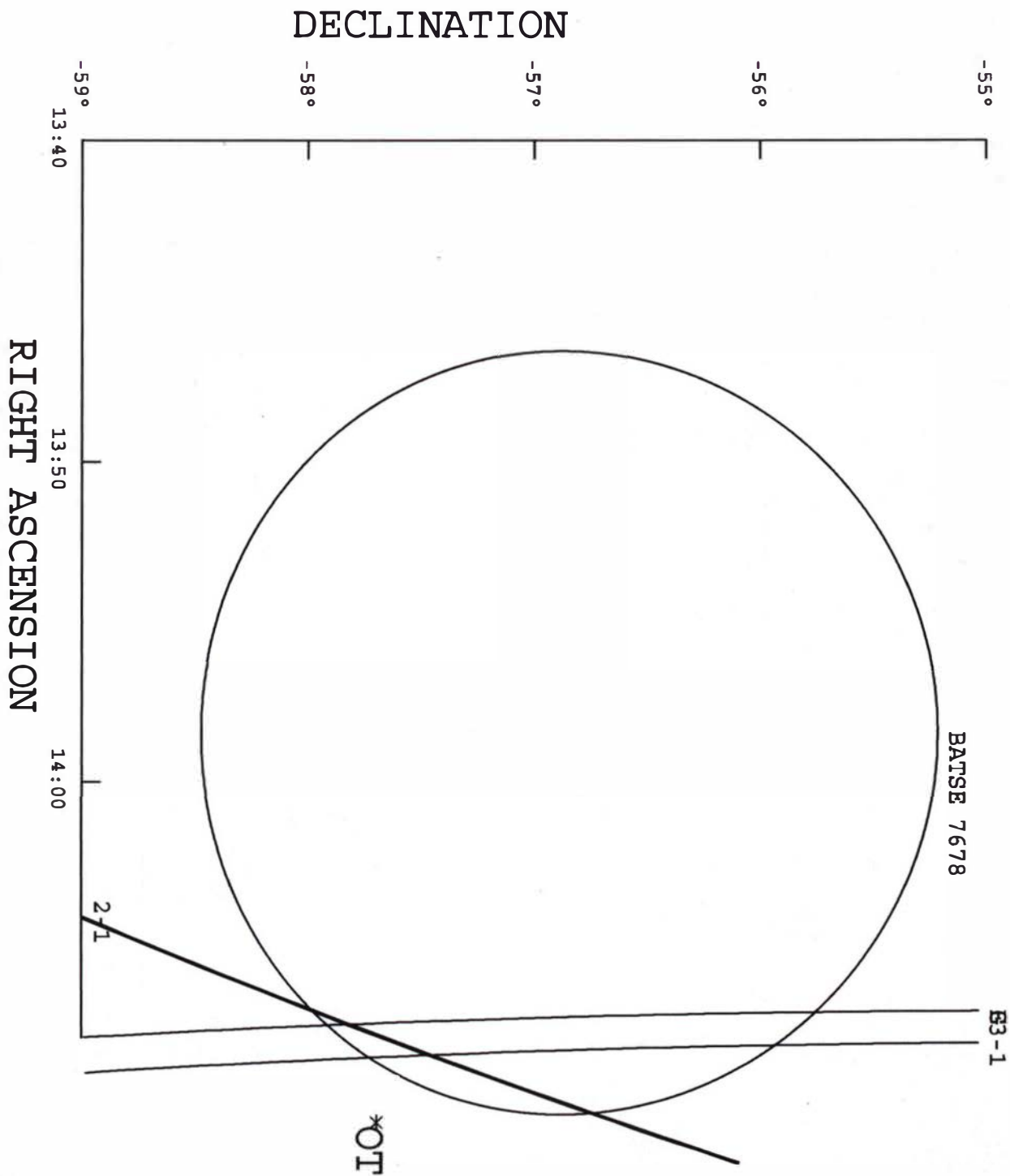
1 BATSE

2 ULYSSES

3 NEAR

EVENT OF JUL 28, 1999 11:03

21/ 2/ 0



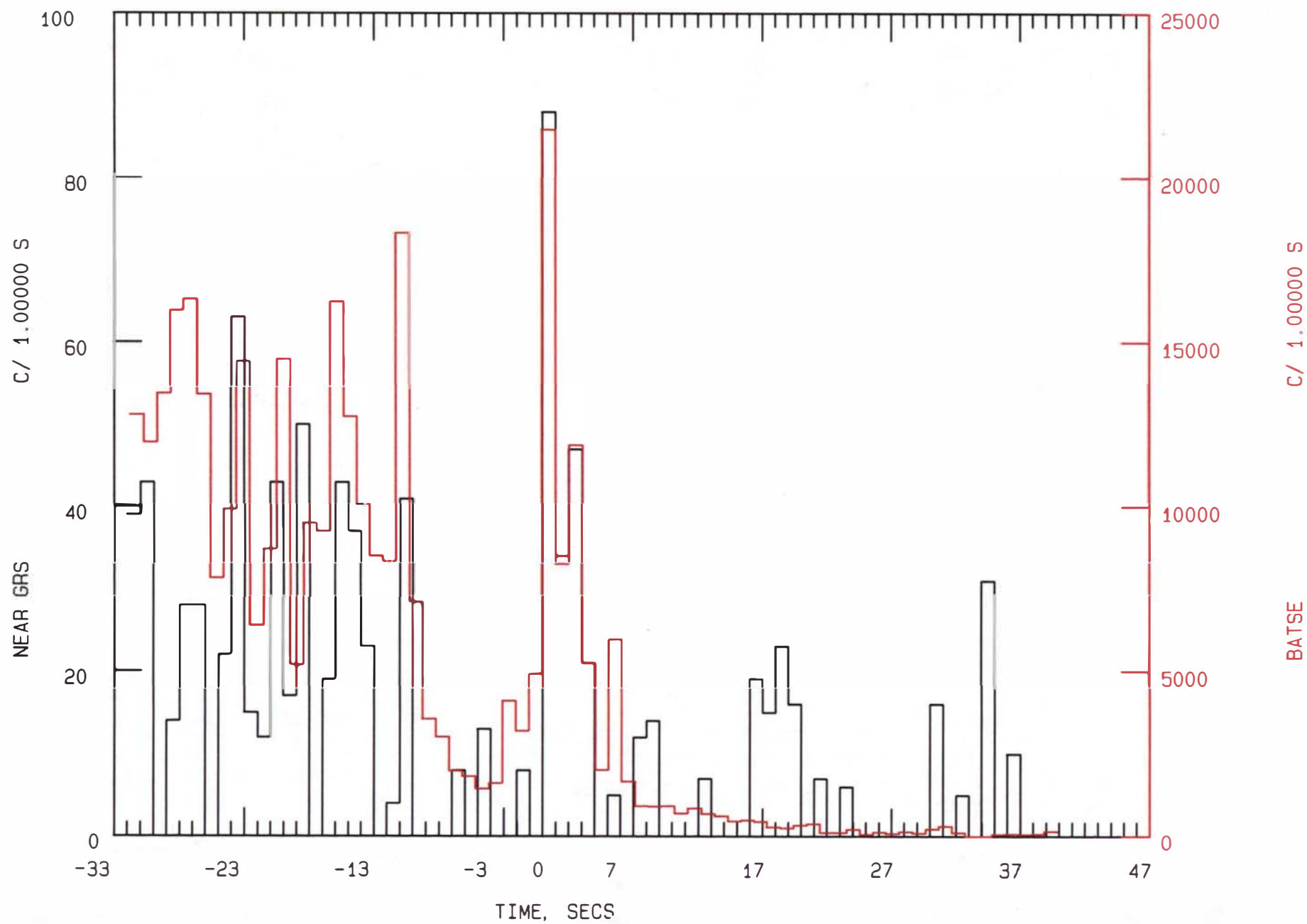
NEAR GRS -BATSE

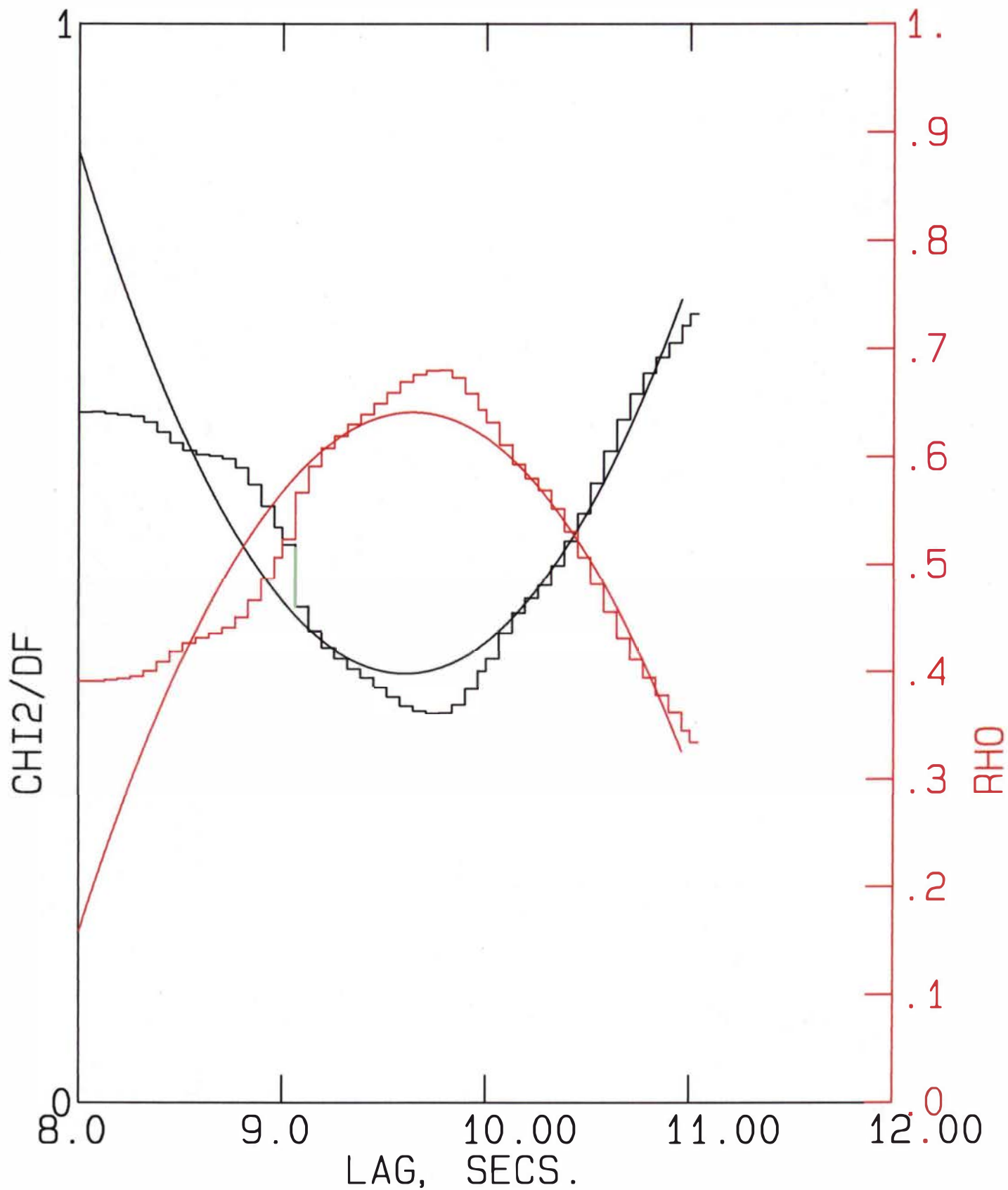
CORRELATION

28/07/99

40442.909

21/ 2/ 0





BATSE

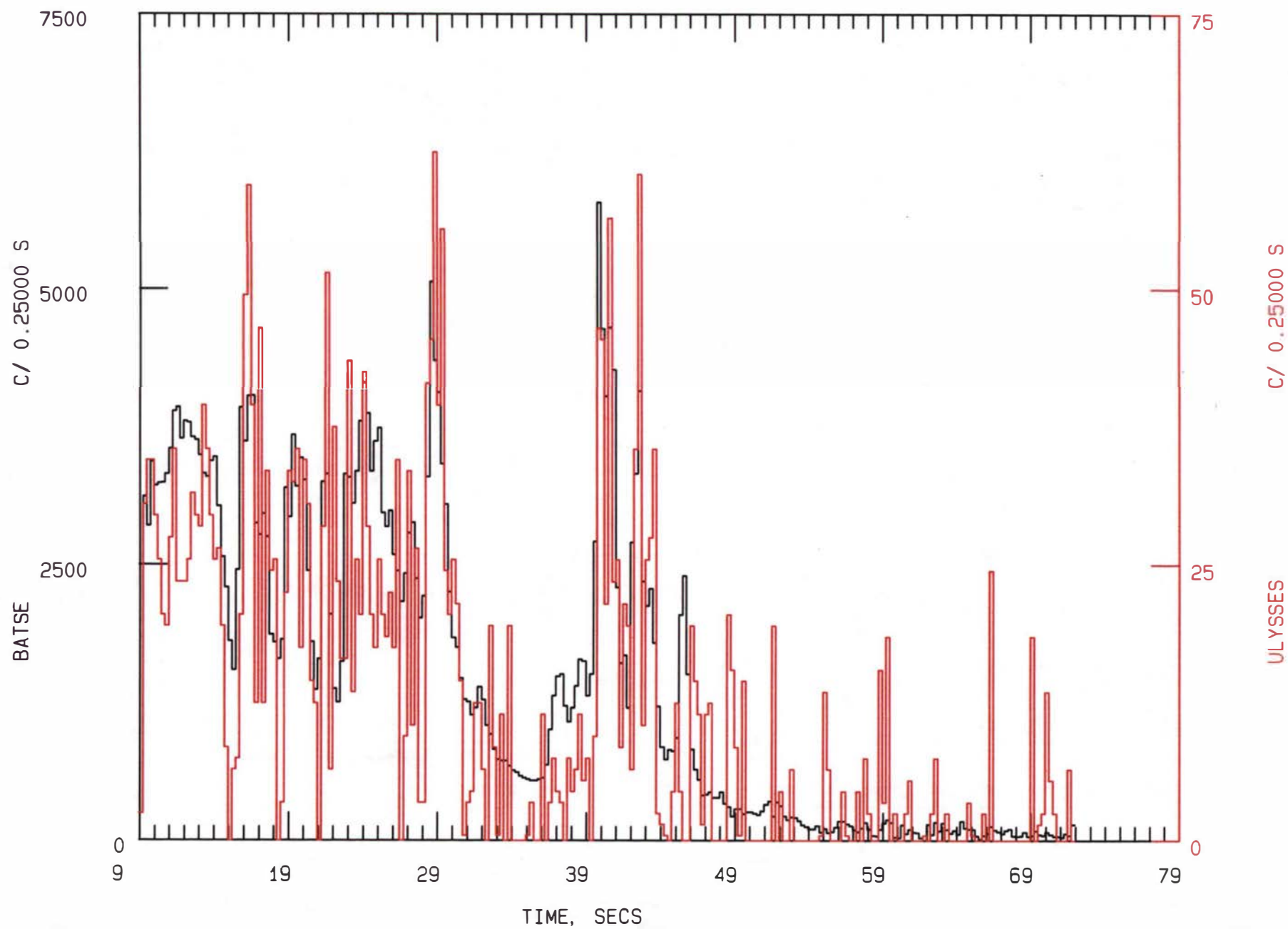
-ULYSSES

CORRELATION

28/ 7/99

39824.889

21/ 2/ 0



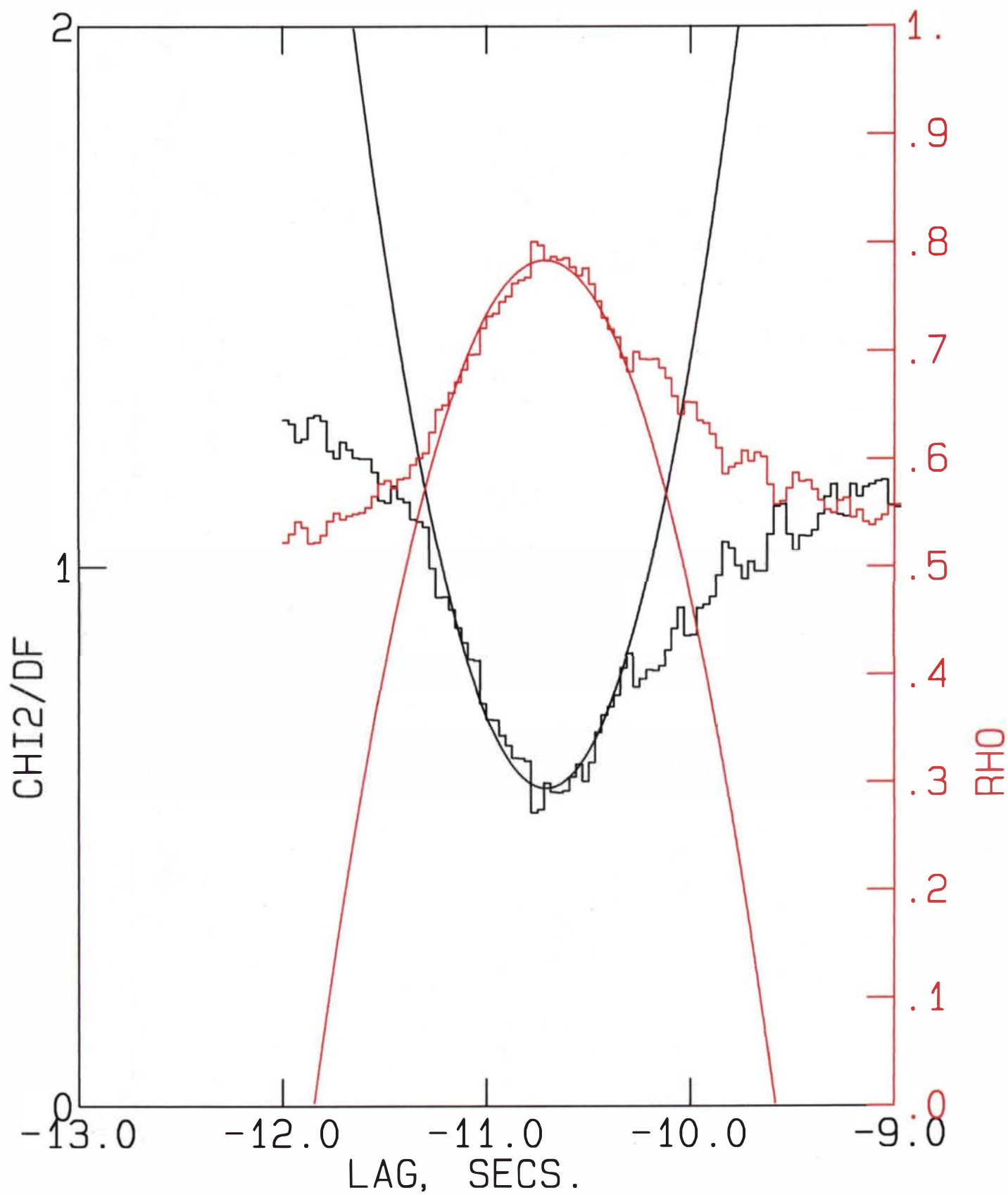
BATSE

-ULYSSES

CORRELATION

28/ 7/99

39824.889



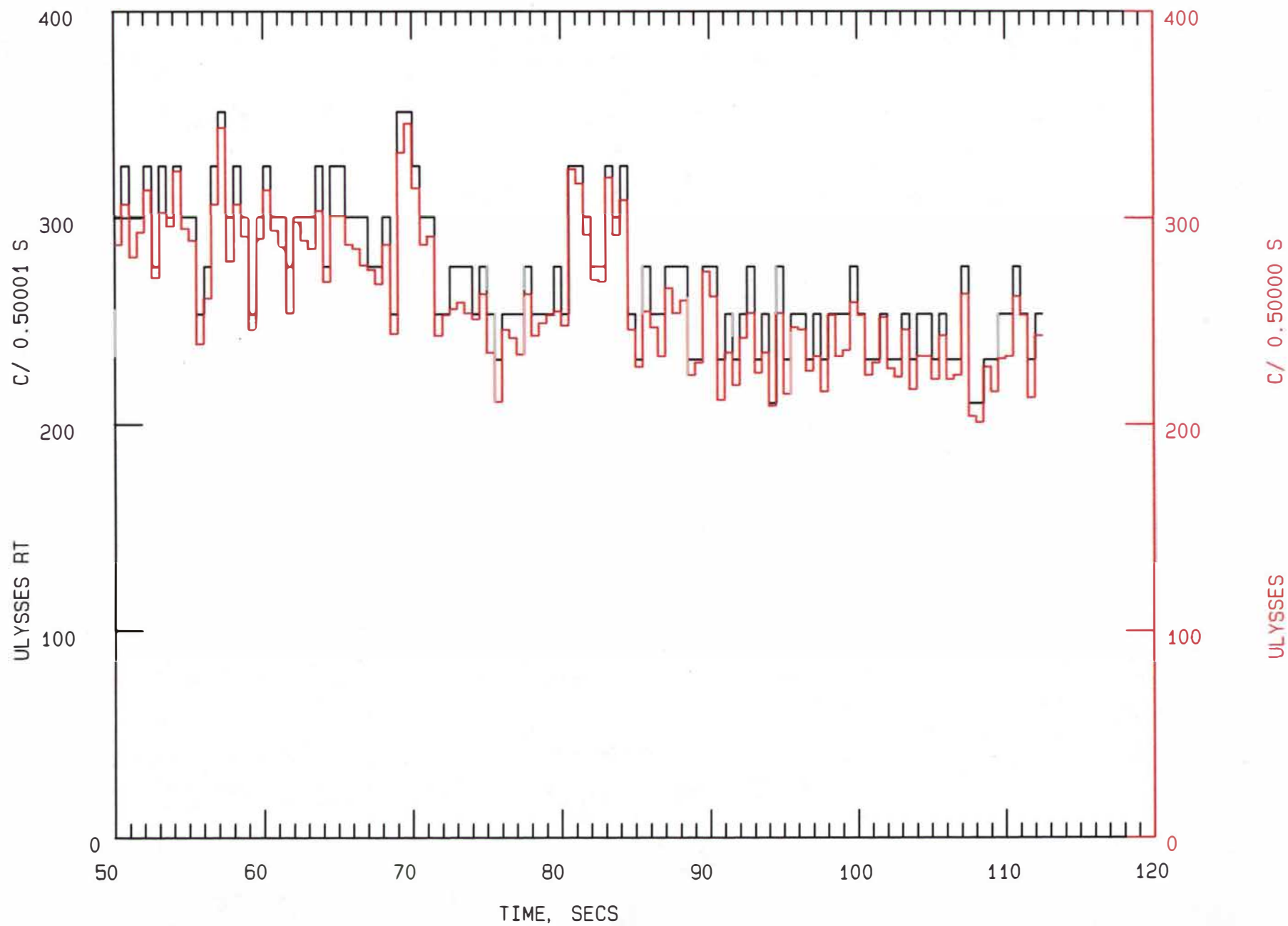
ULYSSES RT-ULYSSES

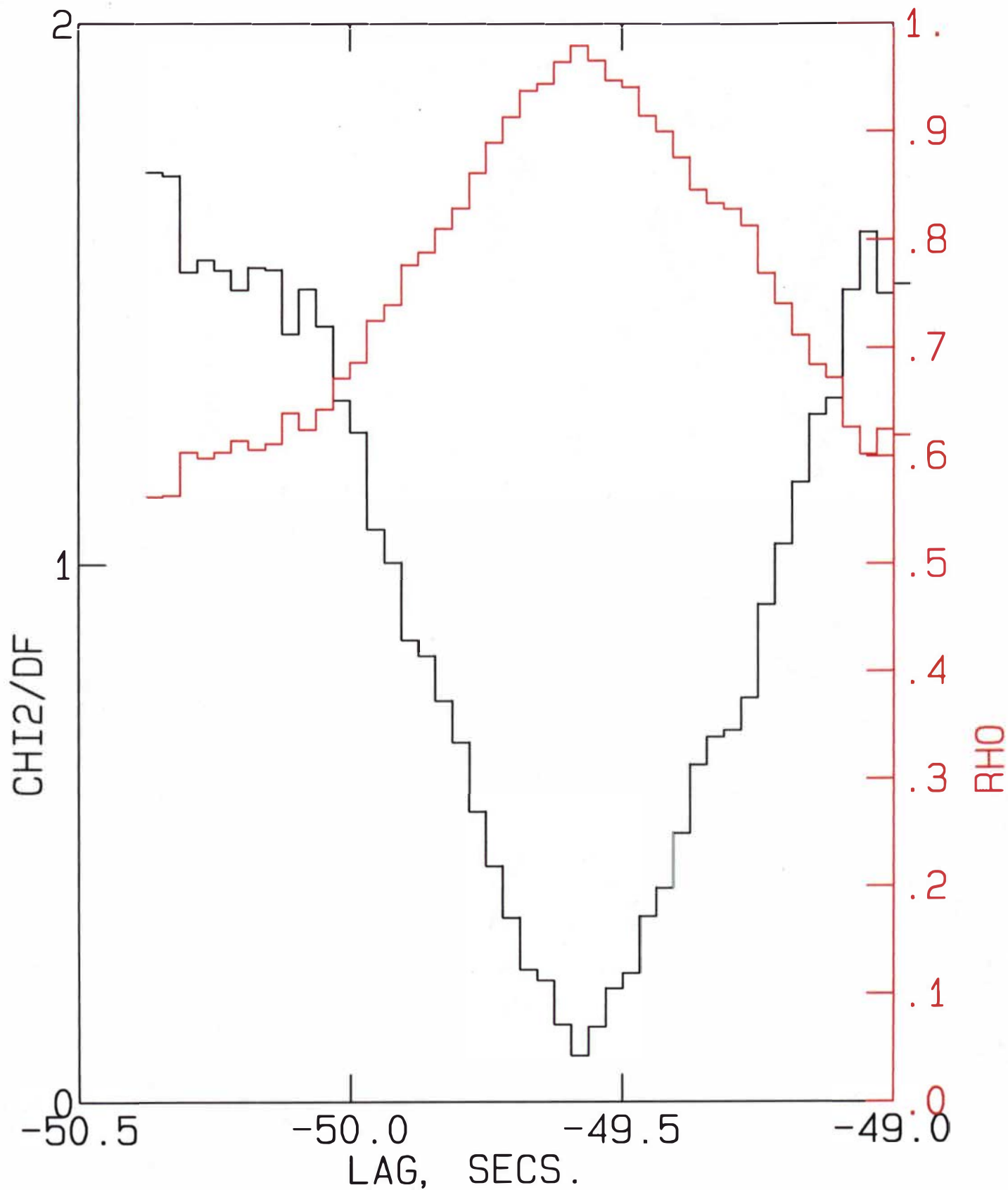
CORRELATION

28/ 7/99

38712.290

21/ 2/ 0

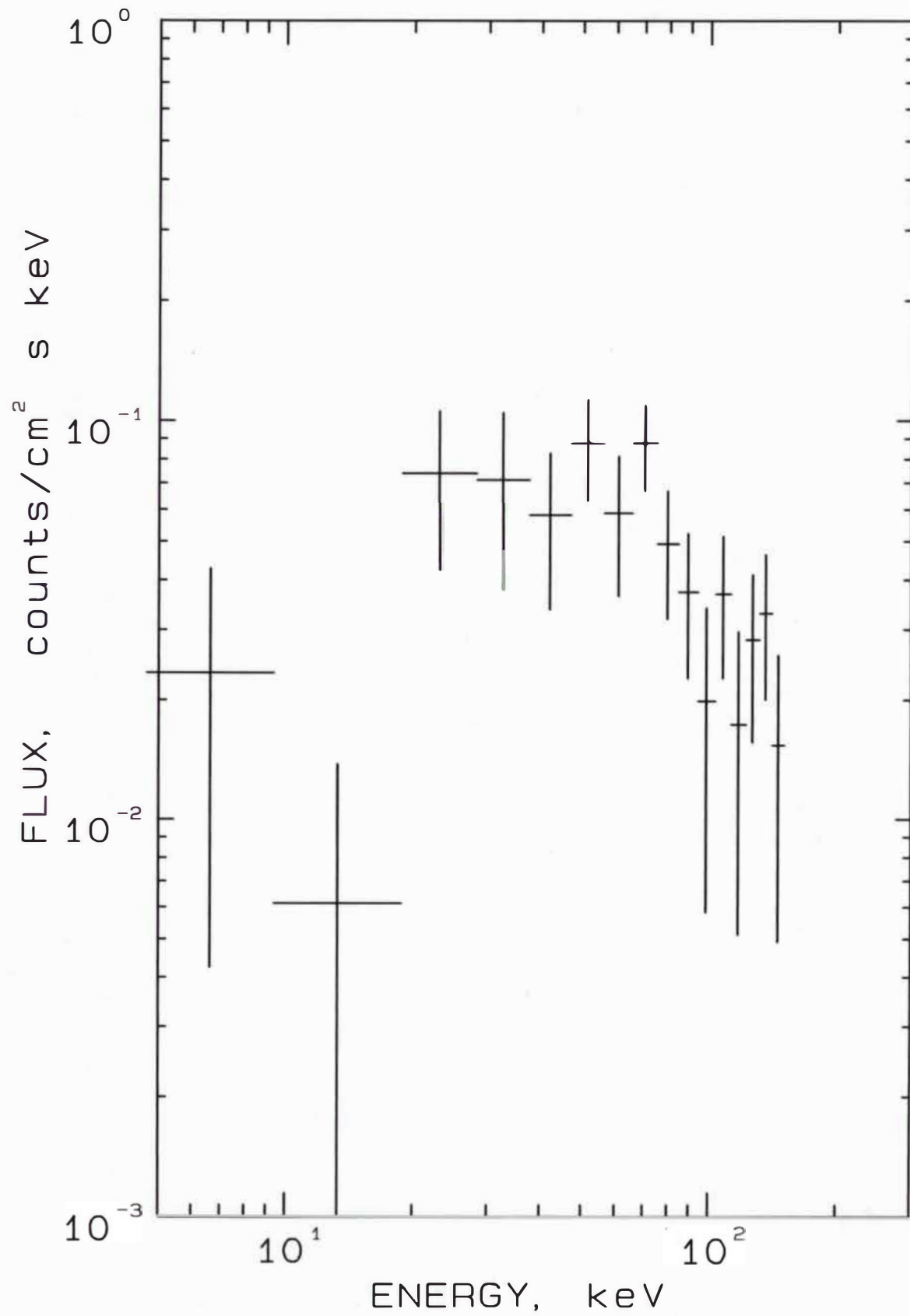




ULYSSES 28/07/99 38769.298

21/ 2/ 0

SPECTRUM INTEGRATED OVER 8.5 SECONDS, INTERVALS 2 TO 10



ULYSSES 28/07/99 38769.298 BURST SPECTRAL COUNT RATES

4- 18 keV

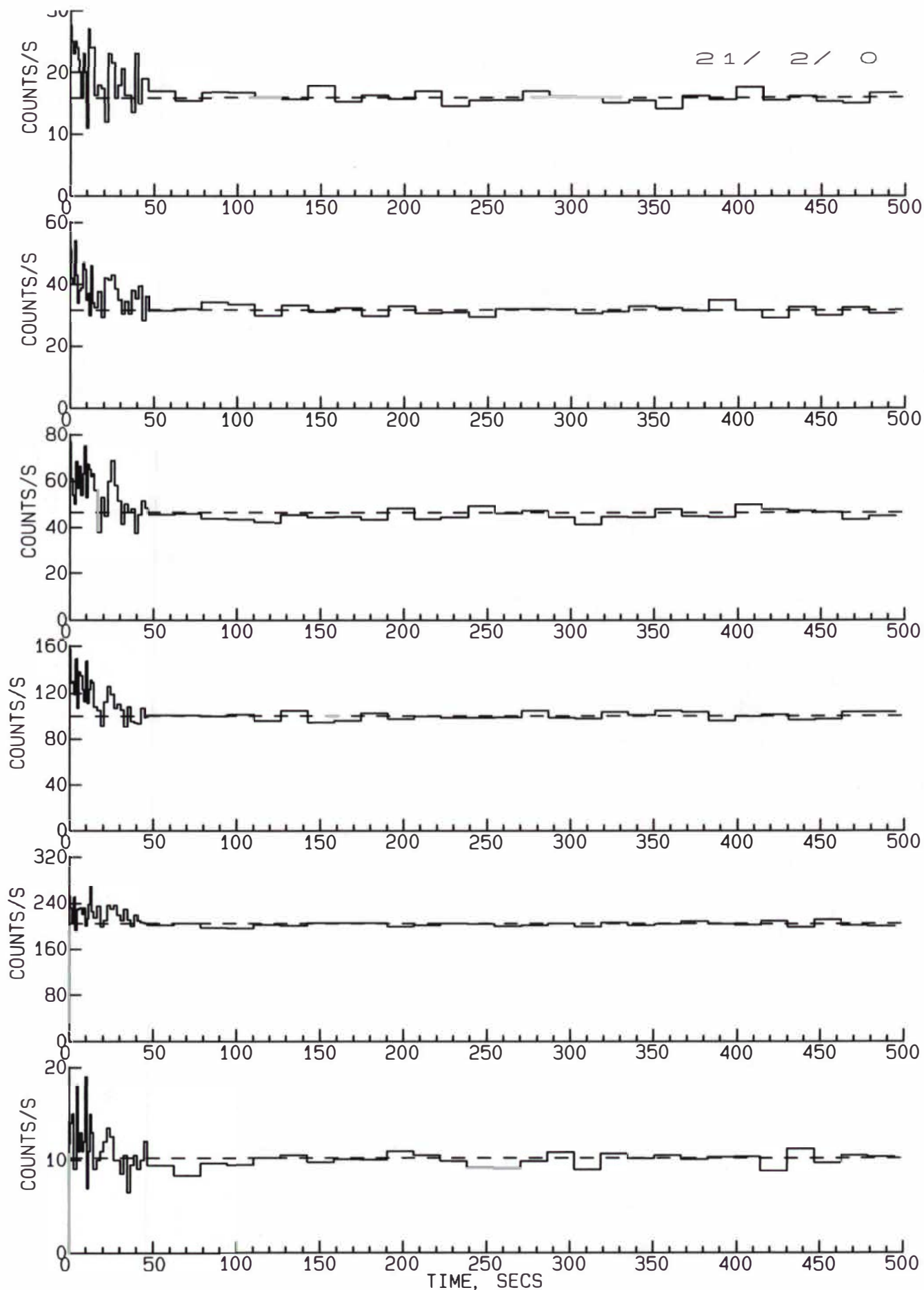
18- 46 keV

46- 75 keV

75-103 keV

103-131 keV

131-150 keV

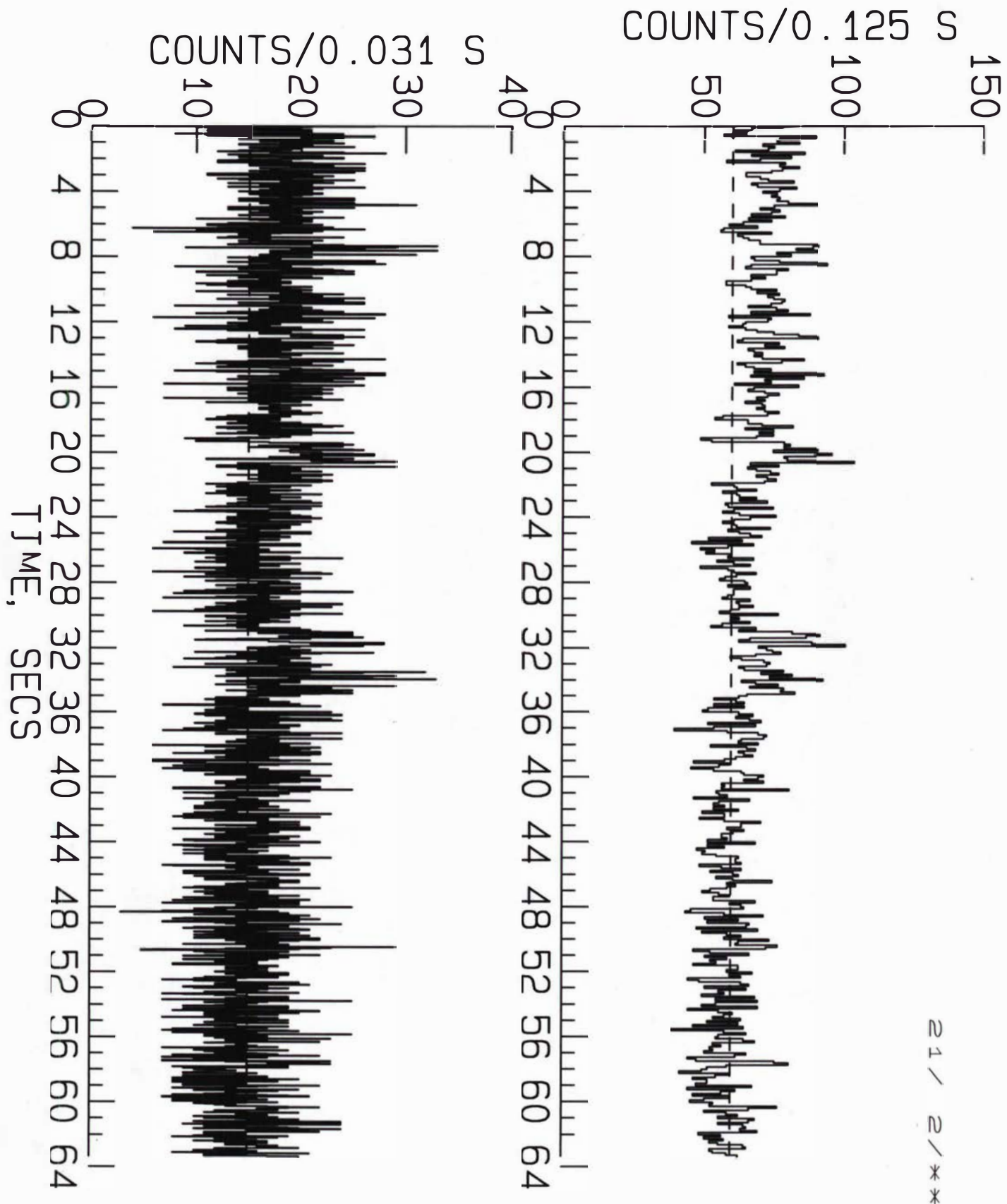


ULYSSES

28/07/99

Ttrig=38769.292

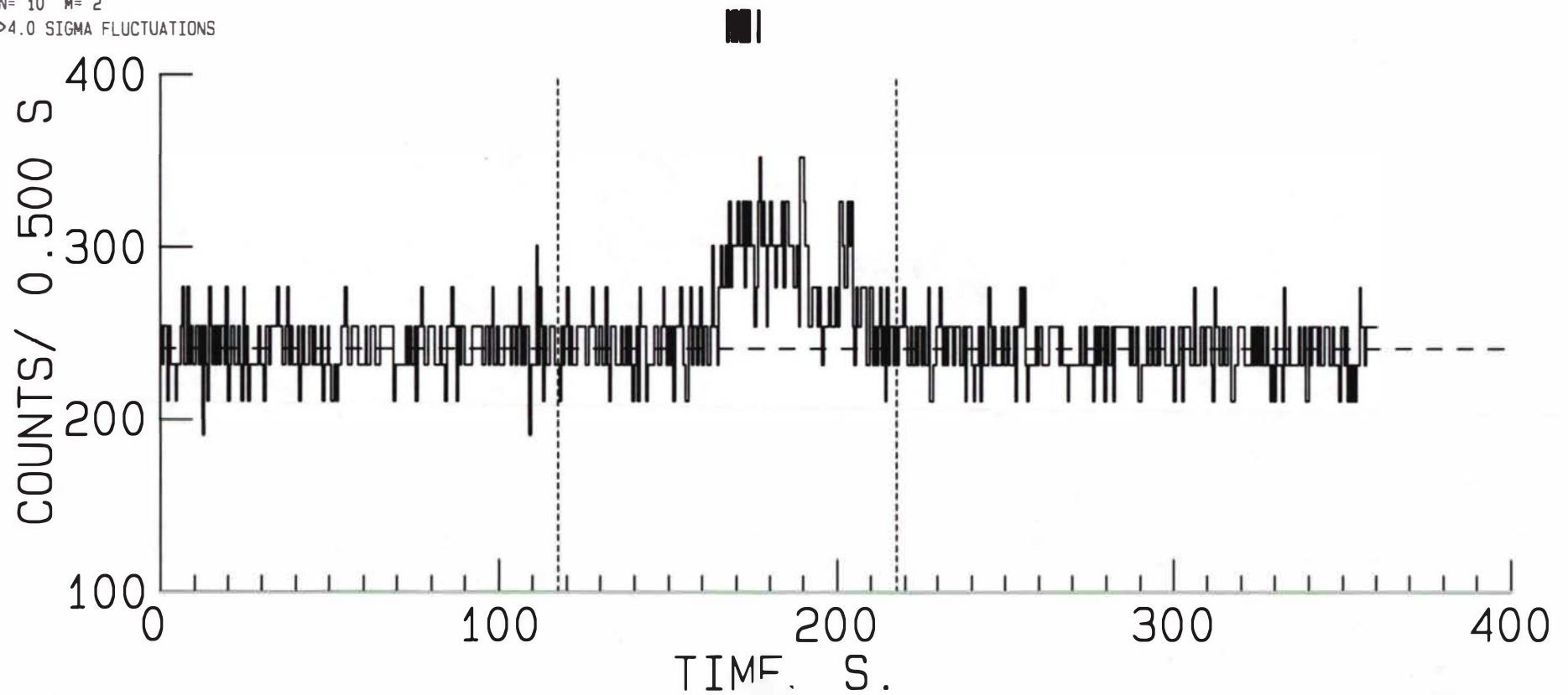
22- 150 keV



ULYSSES RT
28/ 7/99 38592.305 s
22- 150 keV

21 / 2 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



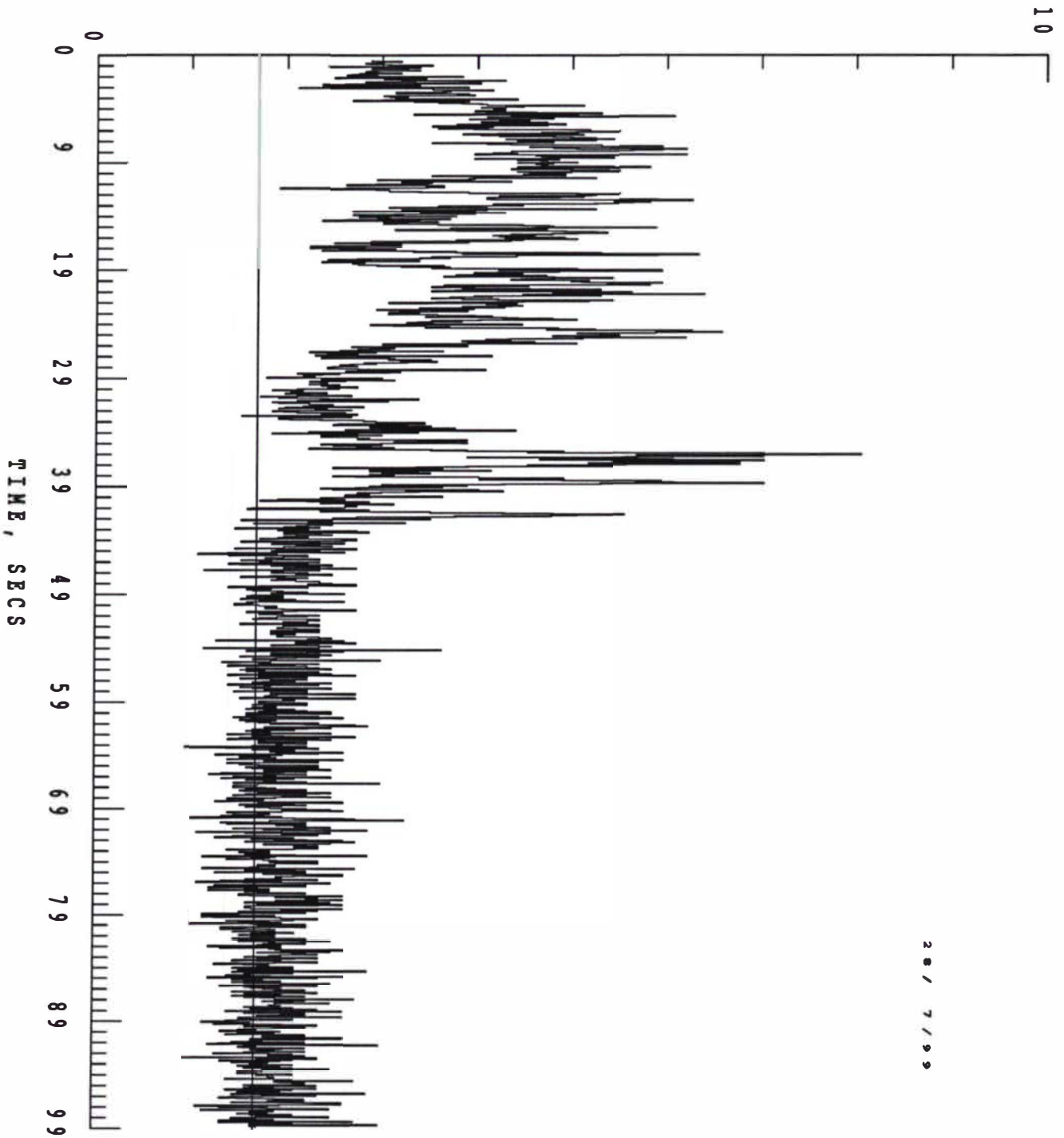
KONUS

28/07/99

39829.636

50 - 200 keV

COUNTS/0.064 S



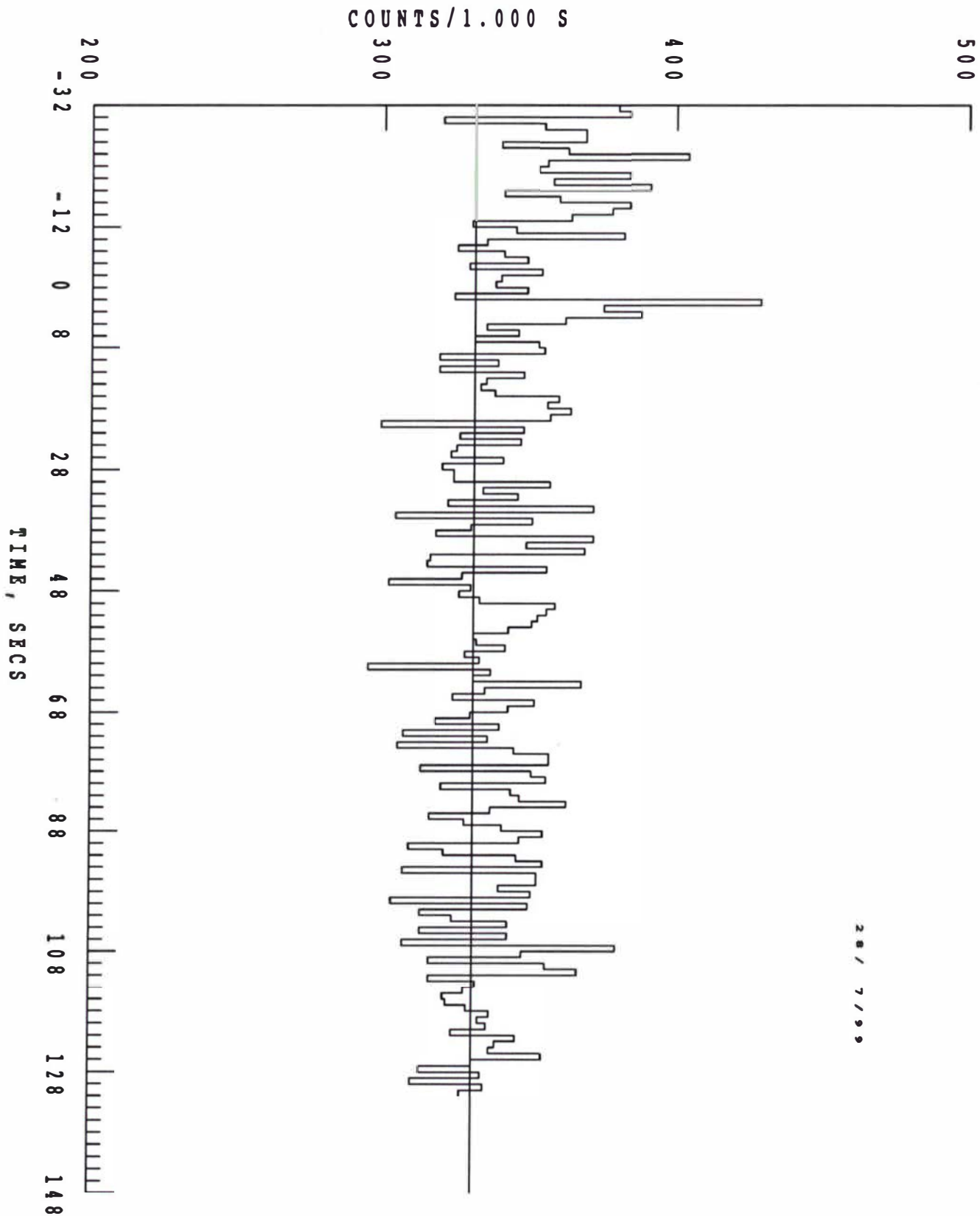
28 / 7 / 99

NEAR

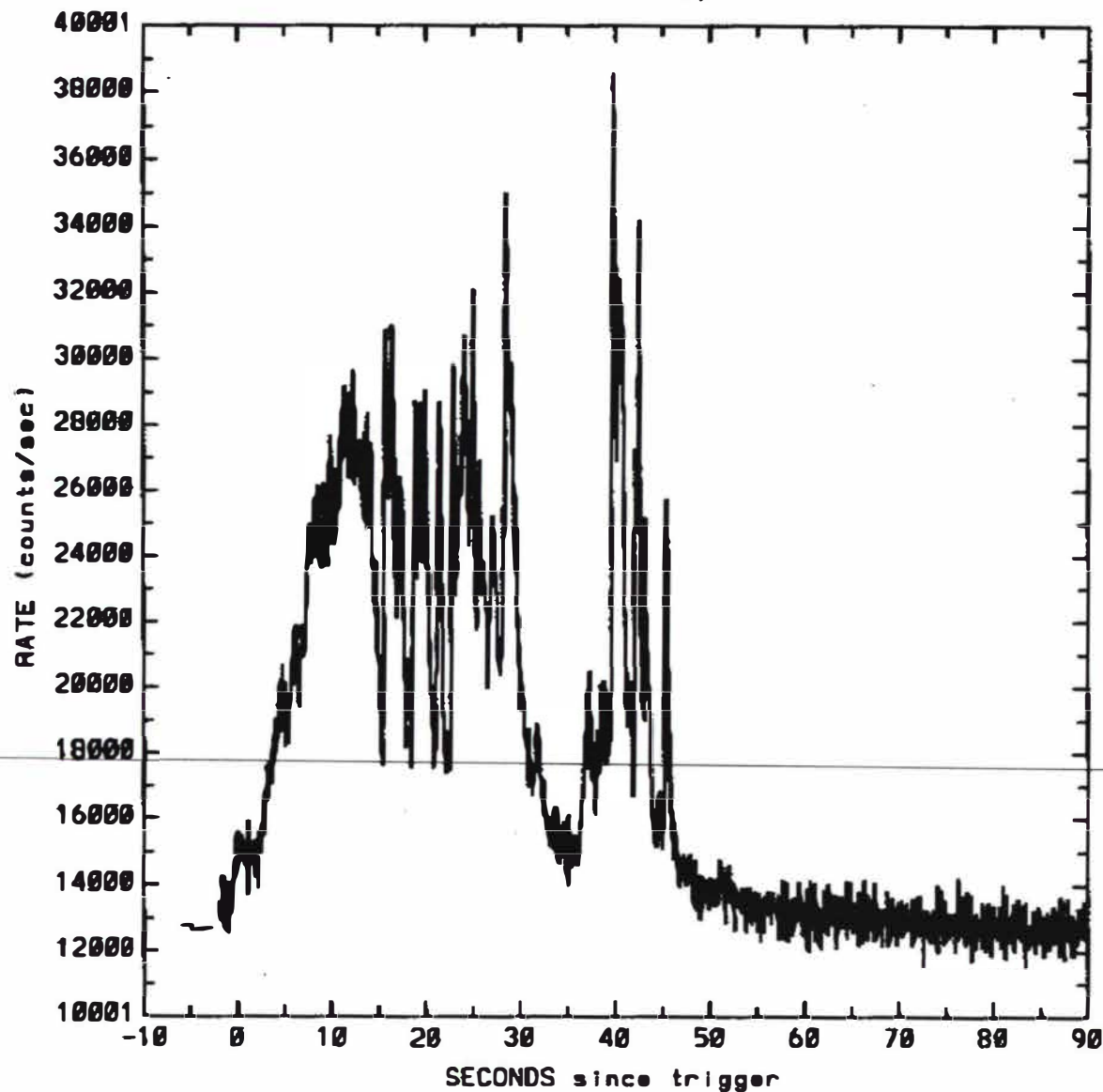
28/07/99

40442.909

100-1000 keV



DISCSC Data for K. Hurley, No. 7678



29-JUL-1999 18:14:26

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 7678

Trigger Time:
11387 / 39824.889

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors [7..8]:
-6-4-2-8

Discriminators:
(1 , 2)

Quality Mask:
BOISP1

BATSE

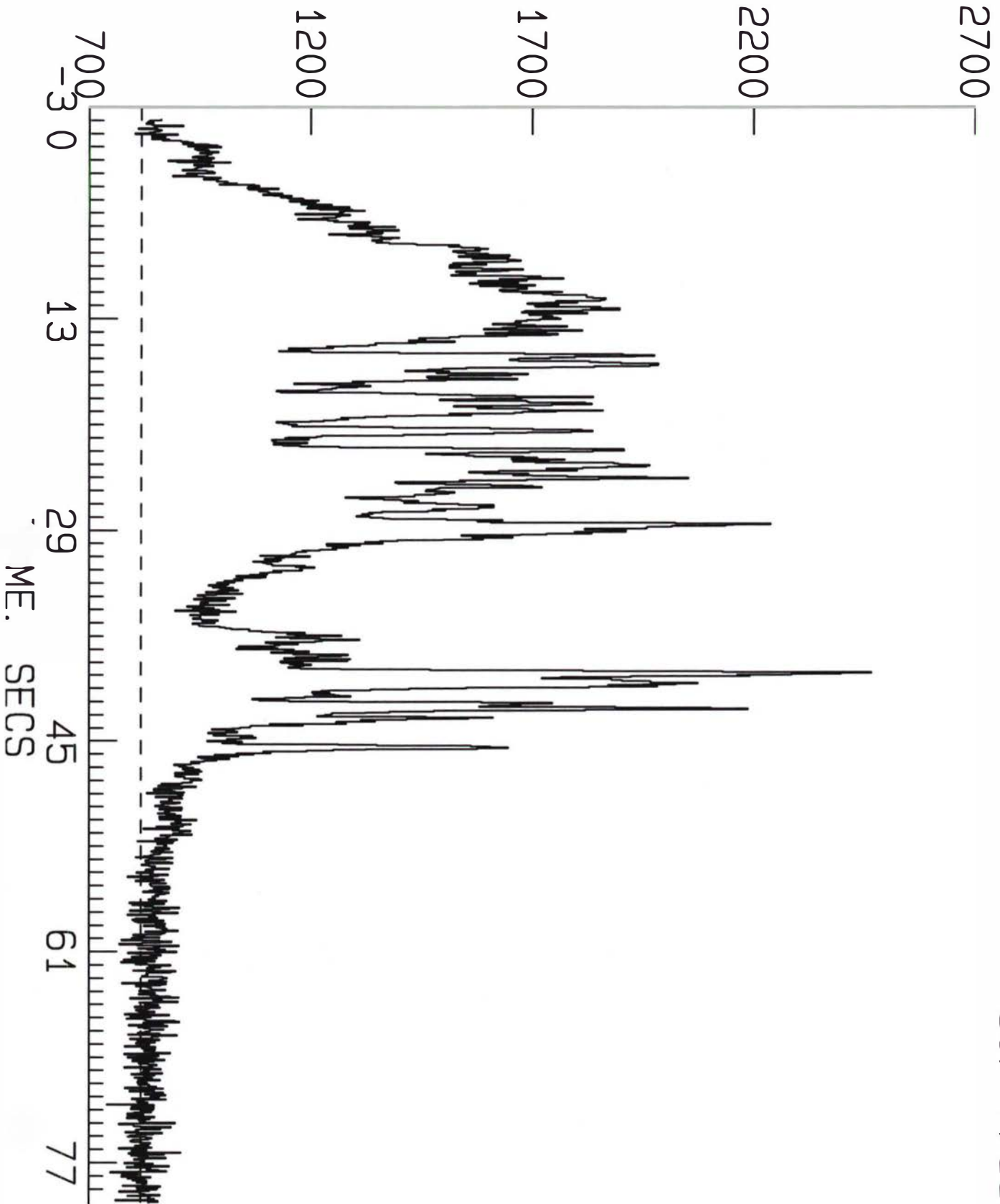
28/07/99

39824.889

25- 100 keV

COUNTS/0.064 S

30 / 7 / 99



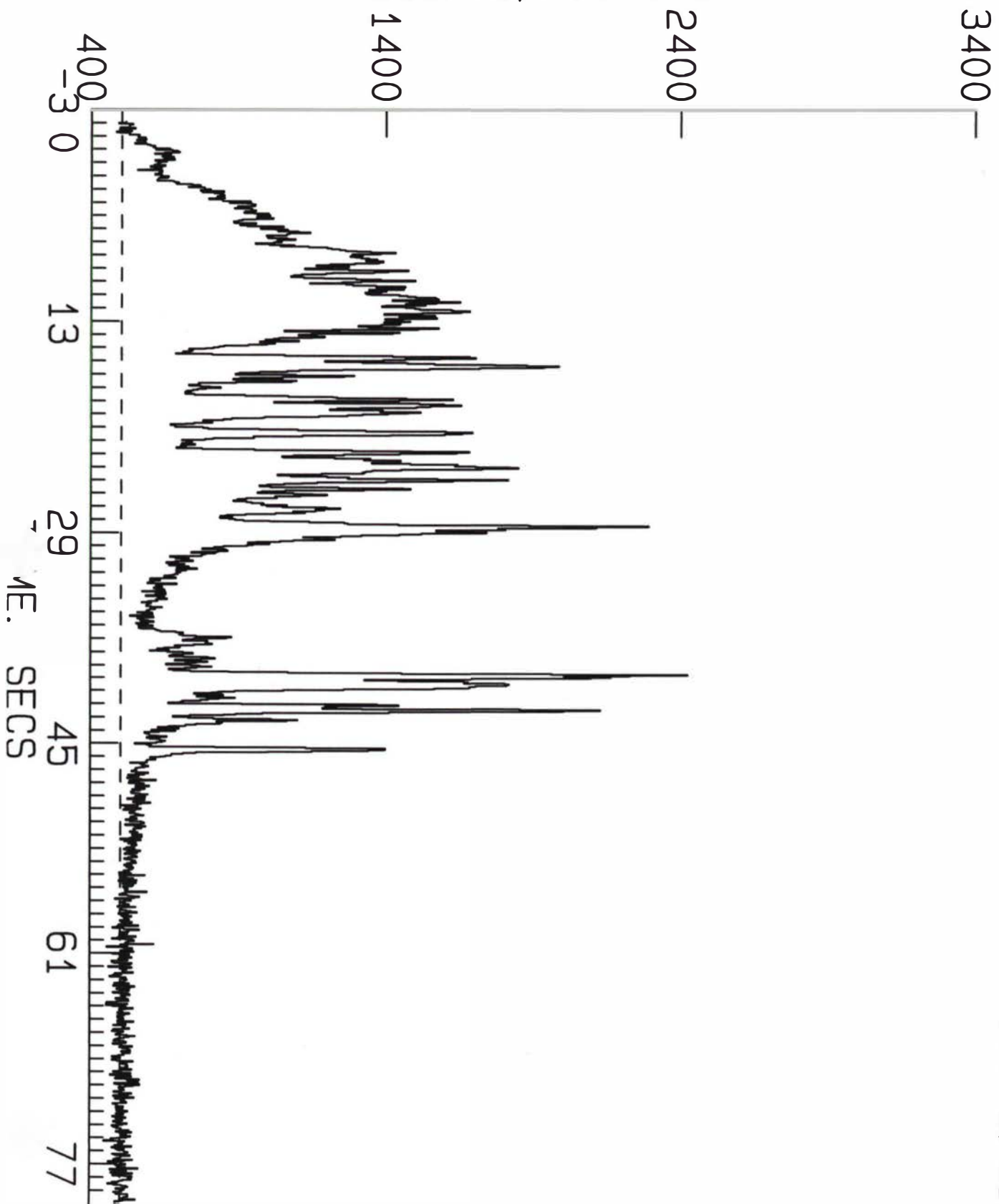
BATSE

28/07/99

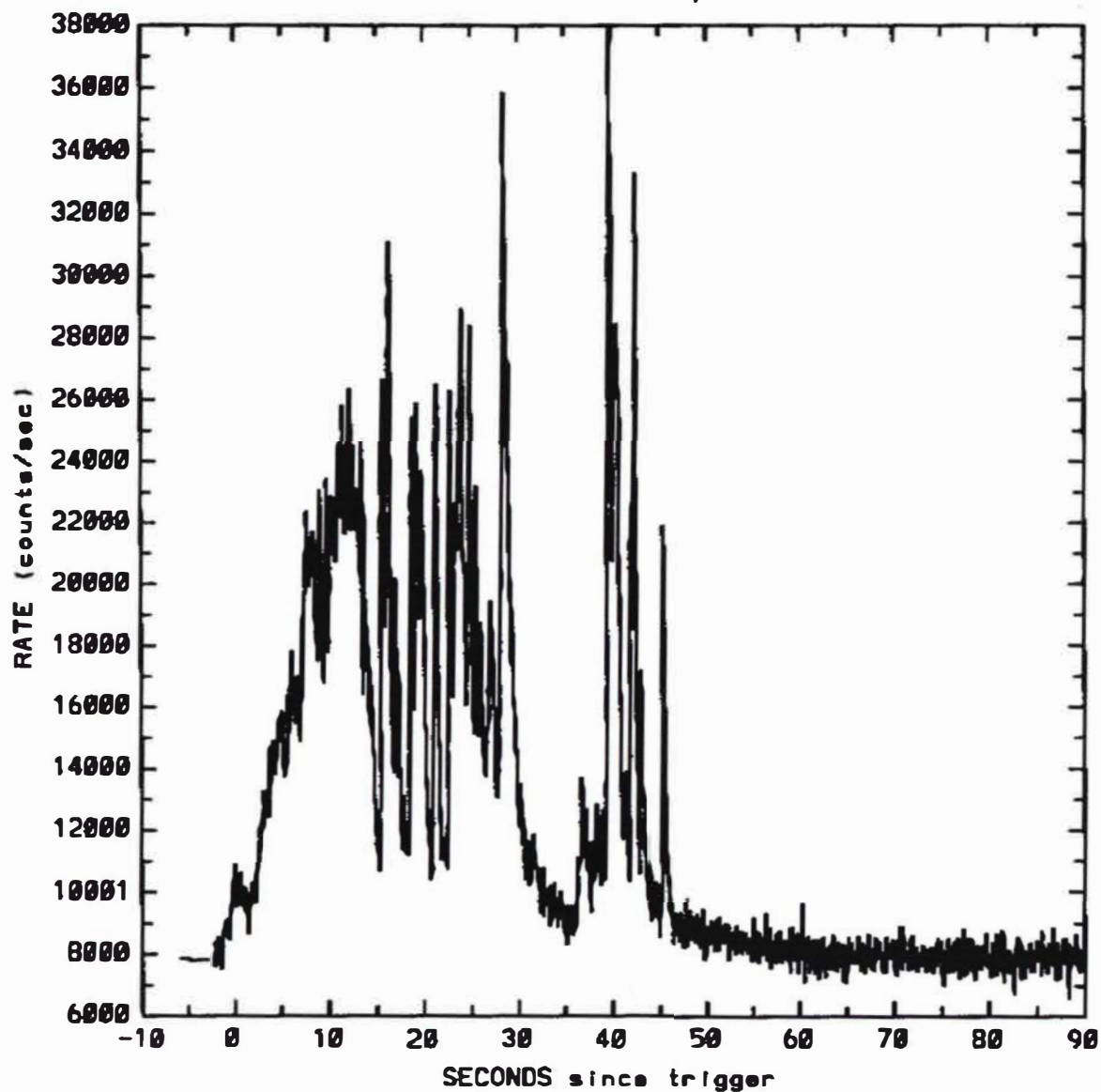
39824.889

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7678



6-AUG-1999 09:28:04

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 7678

Trigger Time:
11387 / 39824.889

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

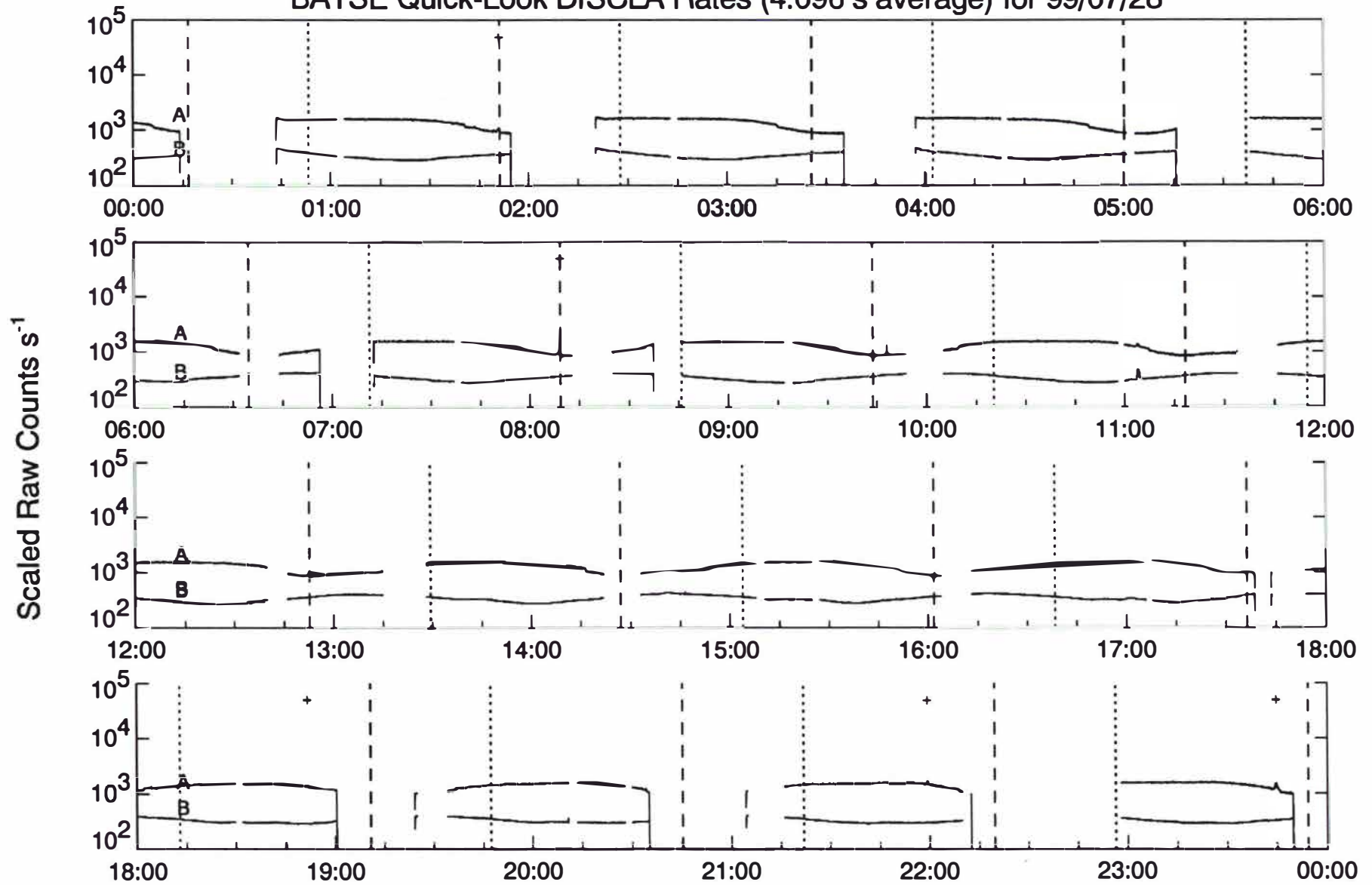
Minimum Integ. Time:
0.064 second(s)

Detectors [7..0]:
-6-4-2-8

Discriminators:
1 3 . 4 1

Quality Mask:
BDISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/28



Current Time: 99/08/01, 1012 EDT

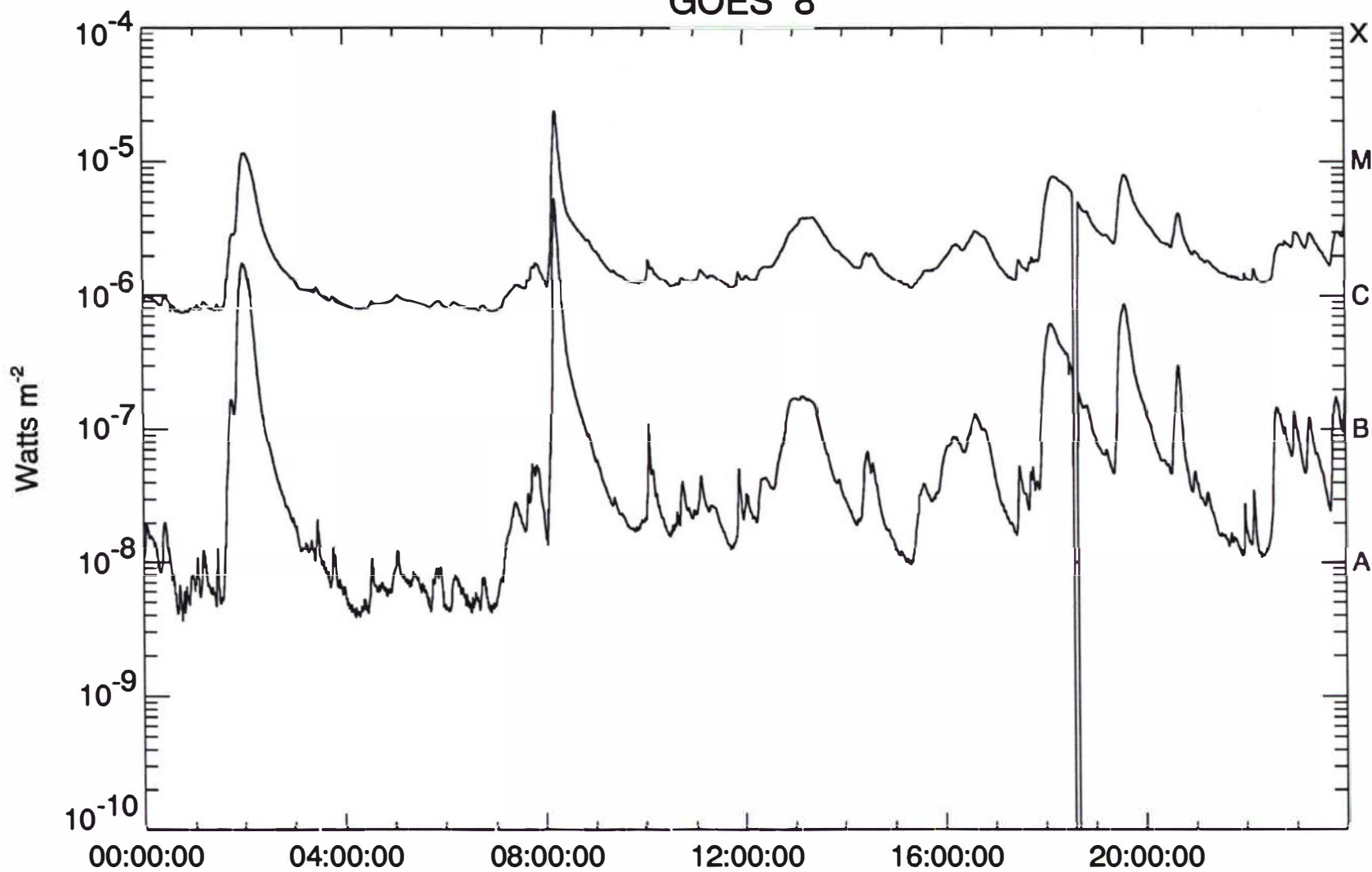
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/07/28, 0000:00

Plot created: 99/08/01, 1011

Channel

1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

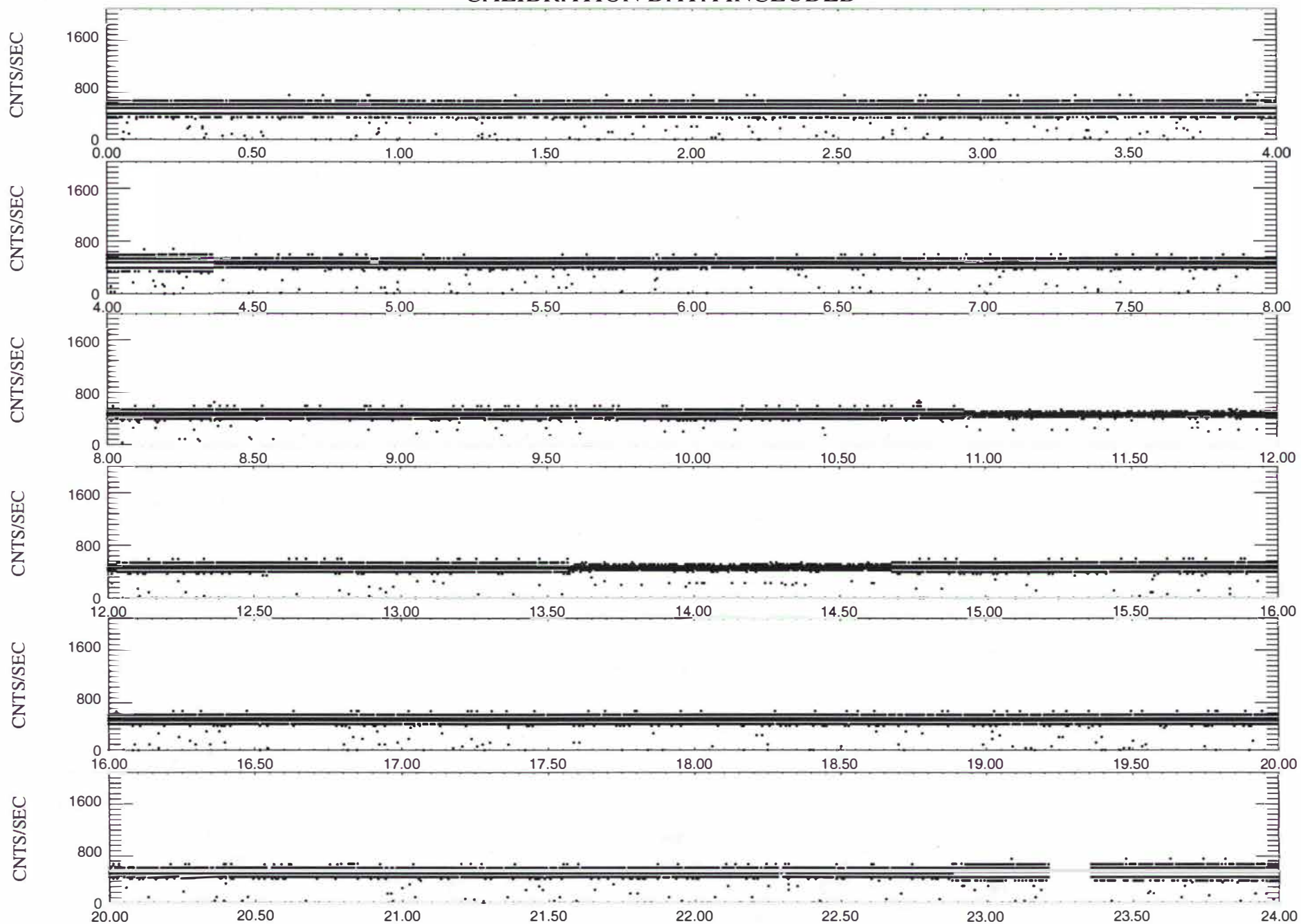
Background not subtracted

Sample average = 10

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

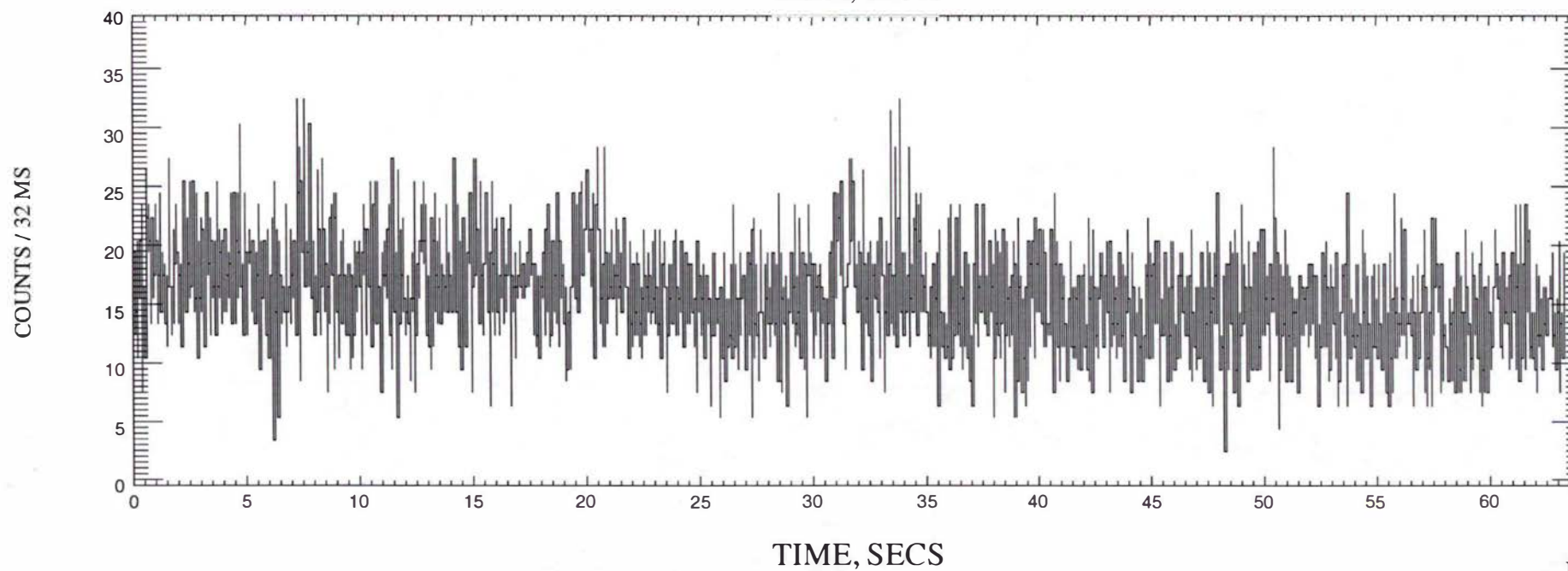
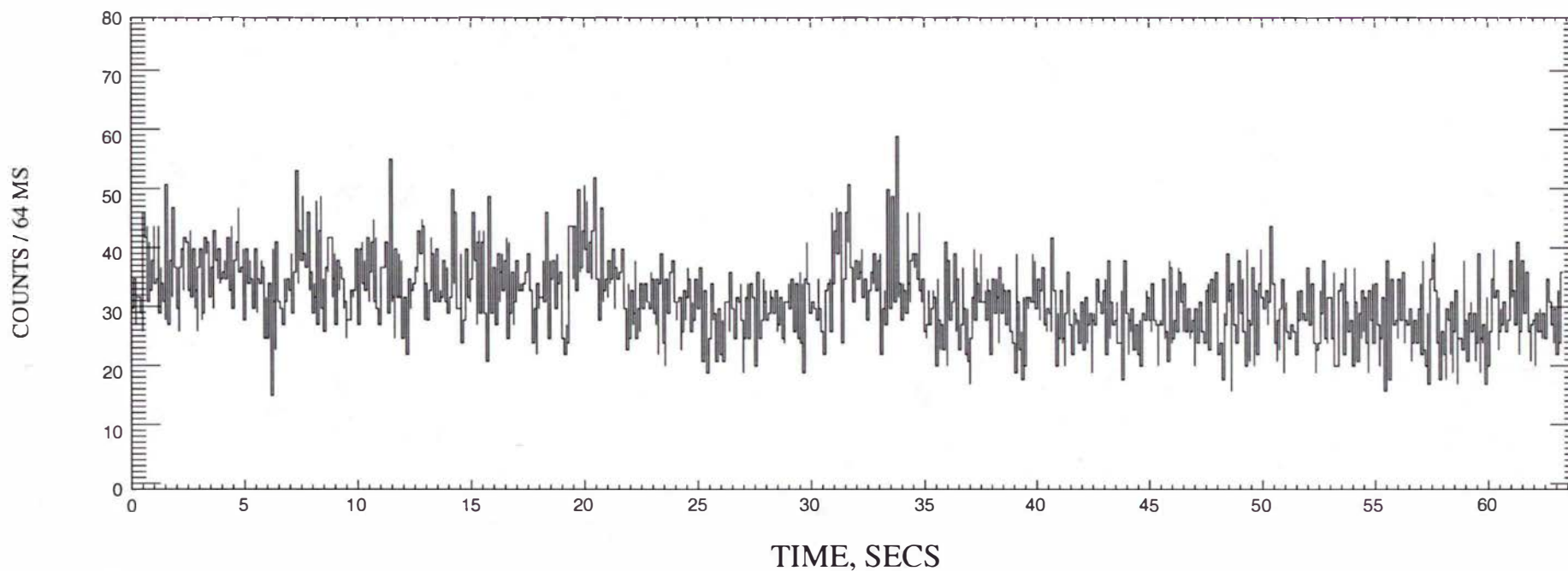


CALIBRATION DATA INCLUDED

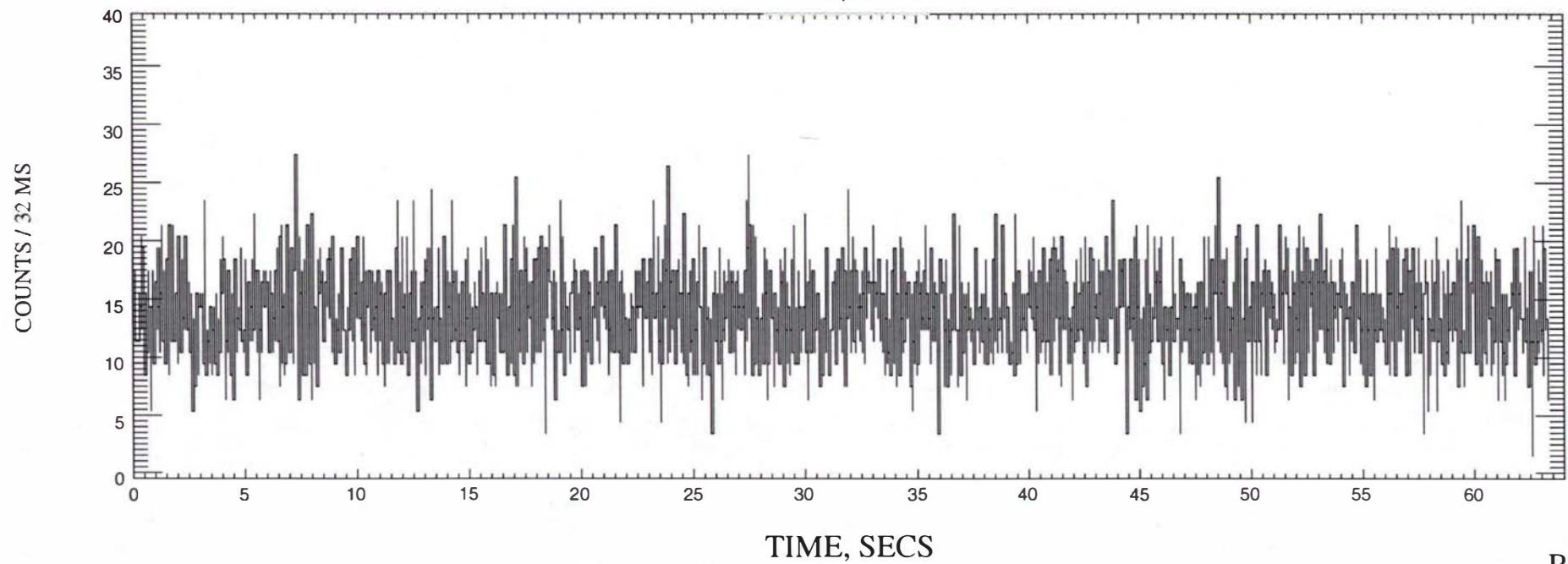
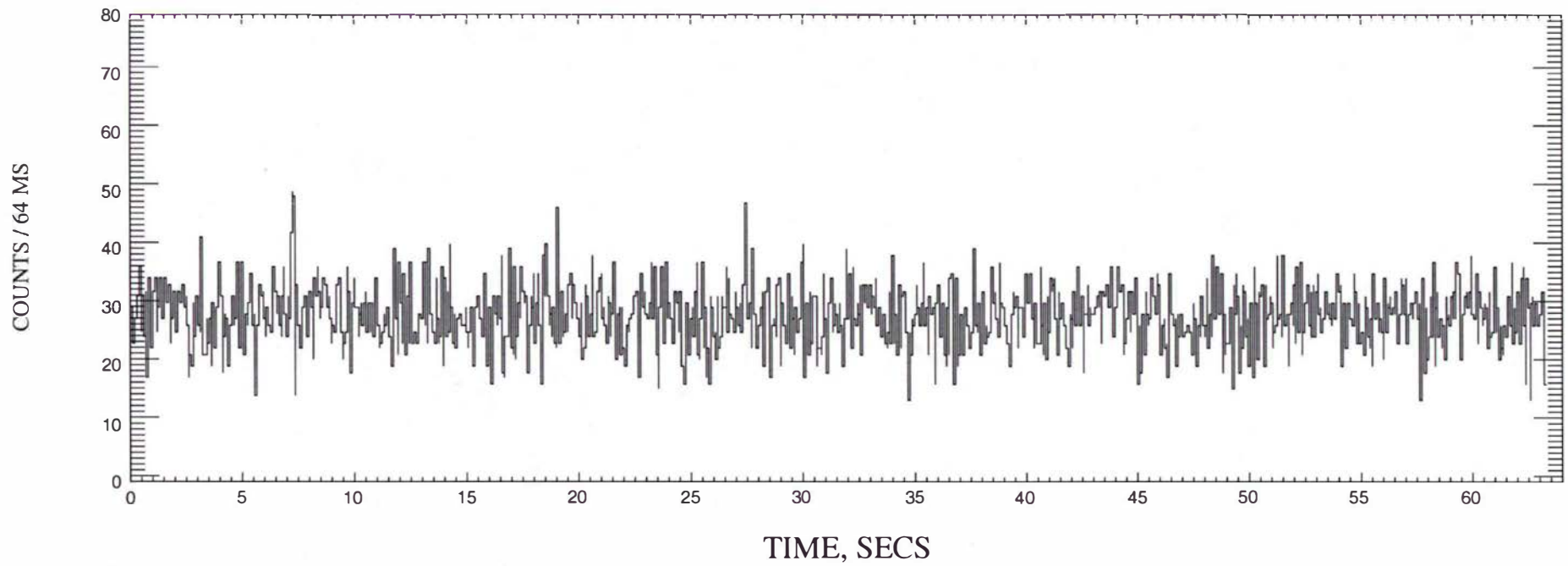


UNIVRSAL TIME

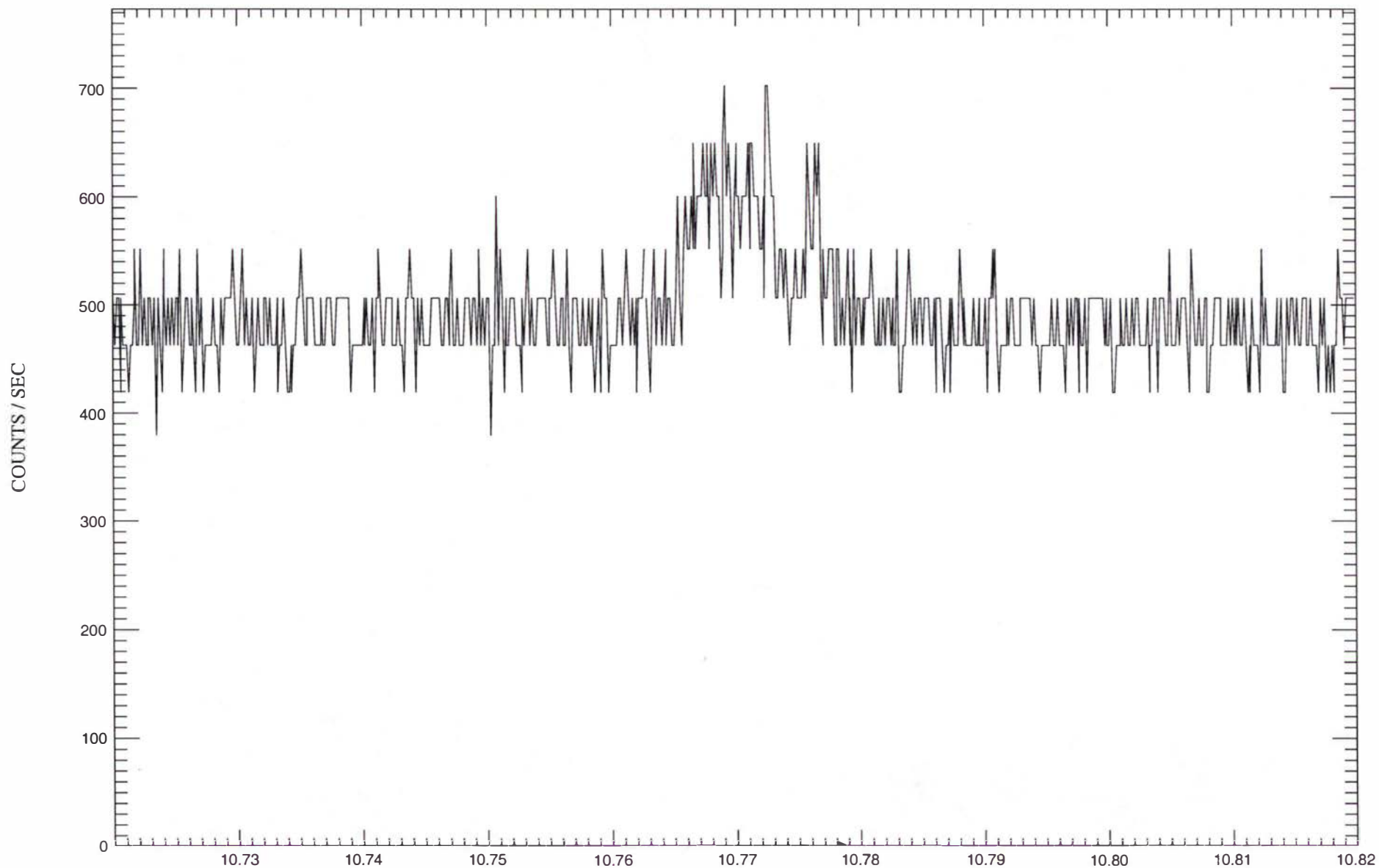
Burst Counter 0 at UT=10.769249356588 h=38769.298 s 10:46:09.298



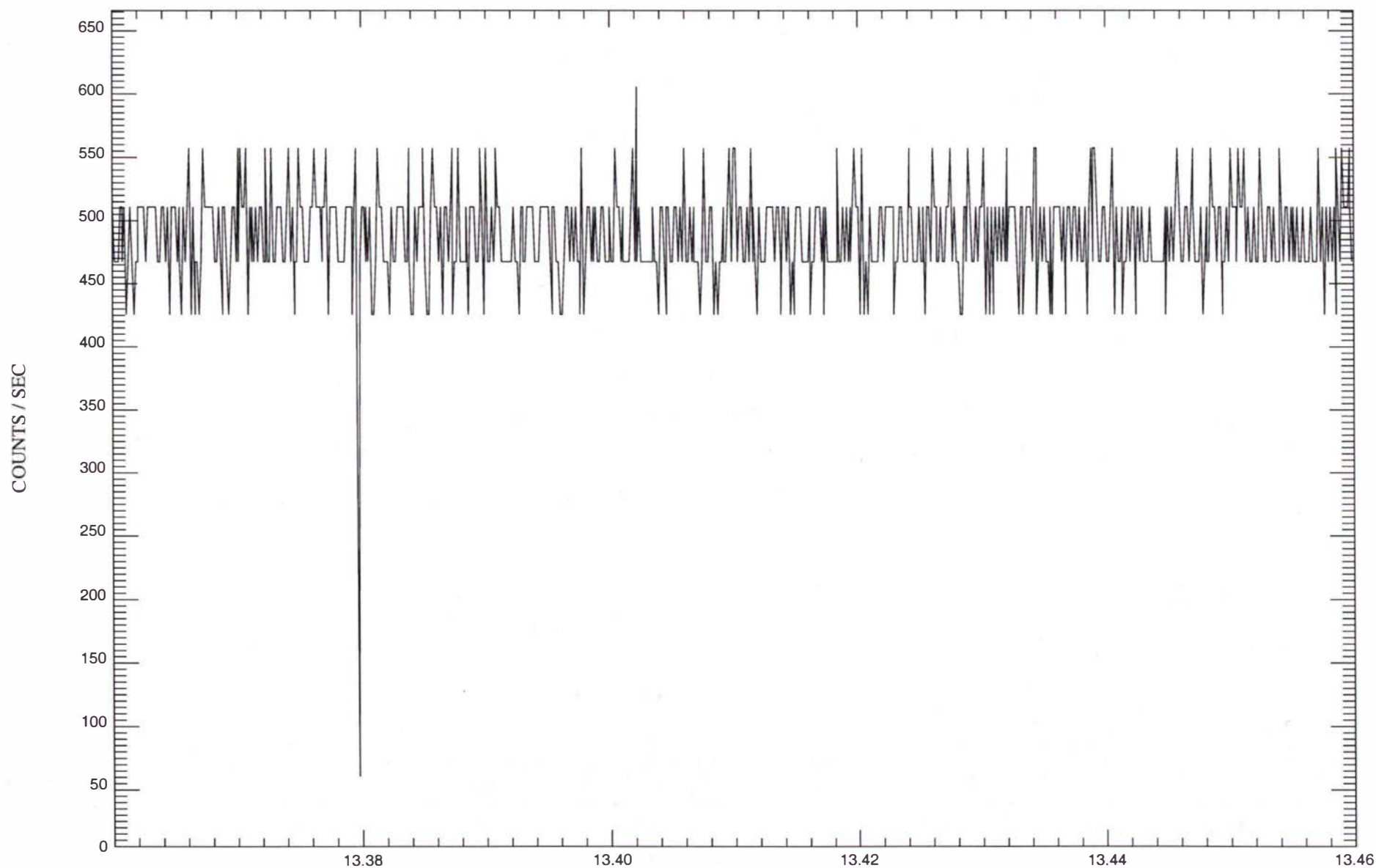
Burst Counter 1 at UT=13.409797604879 h=48275.271 s 13:24:35.271

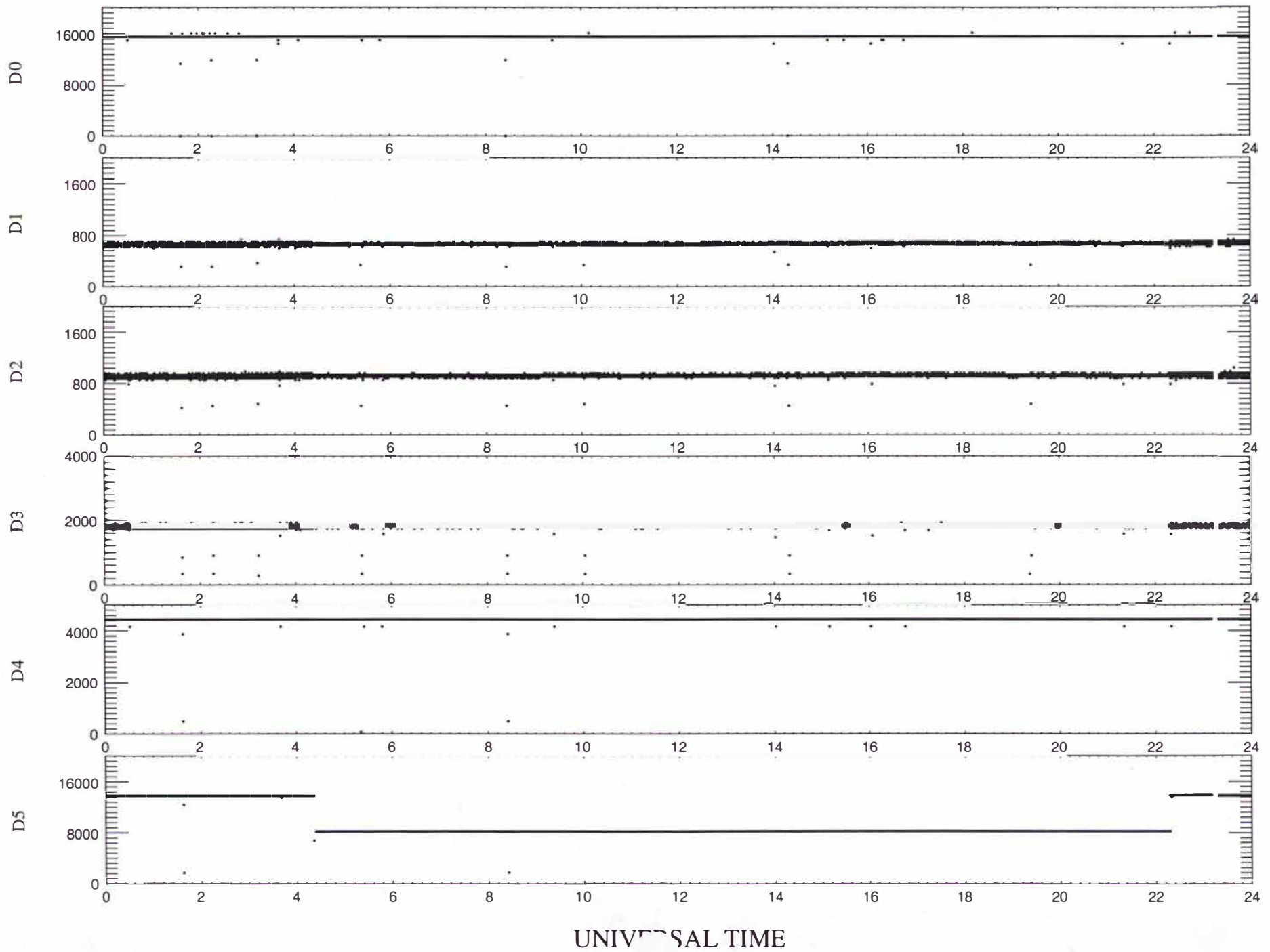


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



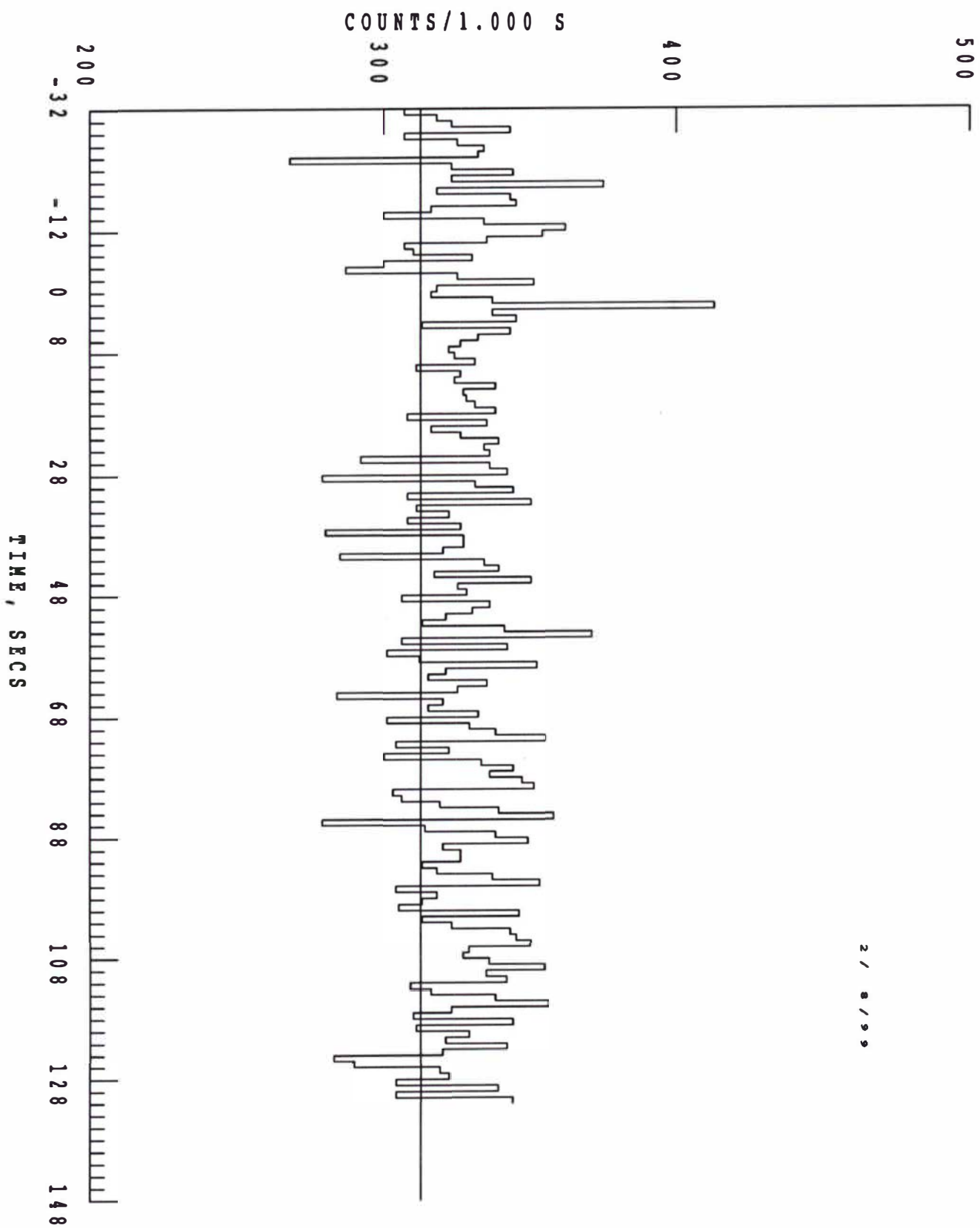


NEAR

29/07/99

19129.888

100-1000 keV



KNEAR GRS 19990729 19129

ULYSSES RT

2 / 8 / 99

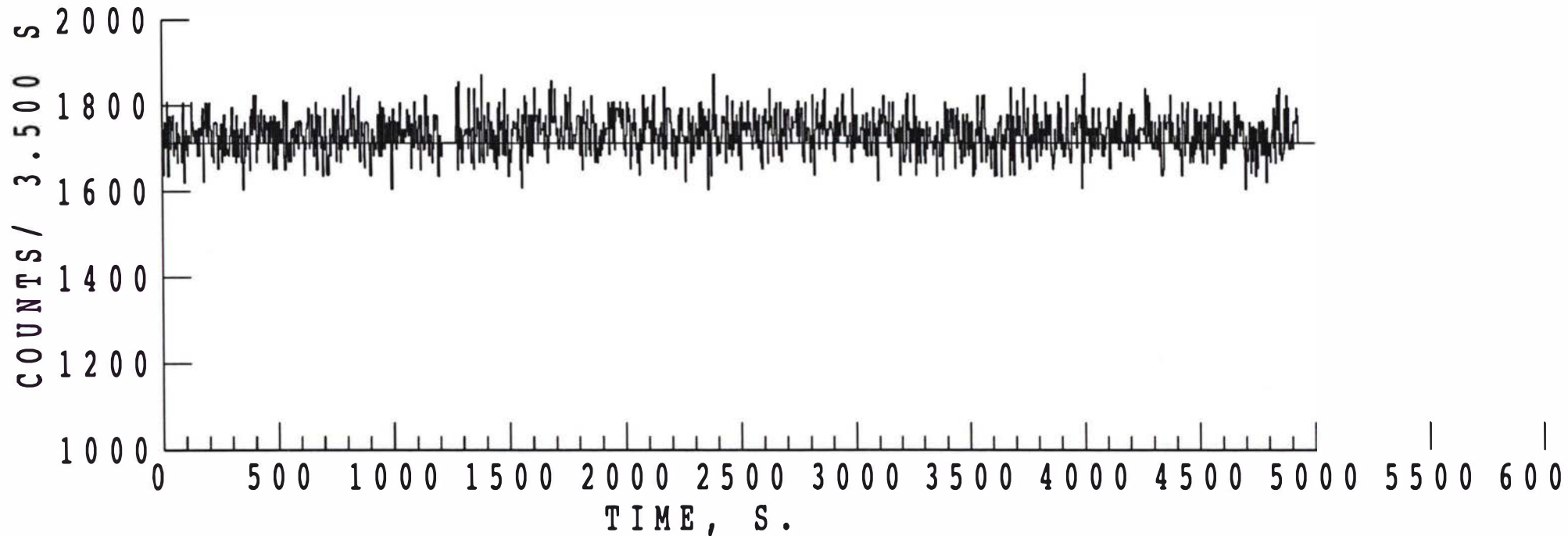
29 / 7 / 99 16668.213 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Mon Aug 2 12:38 PDT 1999
Date: Mon, 2 Aug 1999 14:42:19 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@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.: 7679

TIME: TJD=1388 ^{29th} SECONDS=36544

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.0 AZIMUTH=357.9 ERROR= 0.9 DEGREES

COMMENTS:

GOES C2.5, OPTICAL SF SOLAR FLARE. SINGLE PULSE WITH SUBSTRUCTURE, DUR.
APPROX. 20 S. NOT VISIBLE ABOVE 100 KEV.

From HENZE@fender.msfc.nasa.gov Mon Aug 2 12:44 PDT 1999
Date: Mon, 2 Aug 1999 14:48:15 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7680

TIME: TJD=1388 SECONDS=70433

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

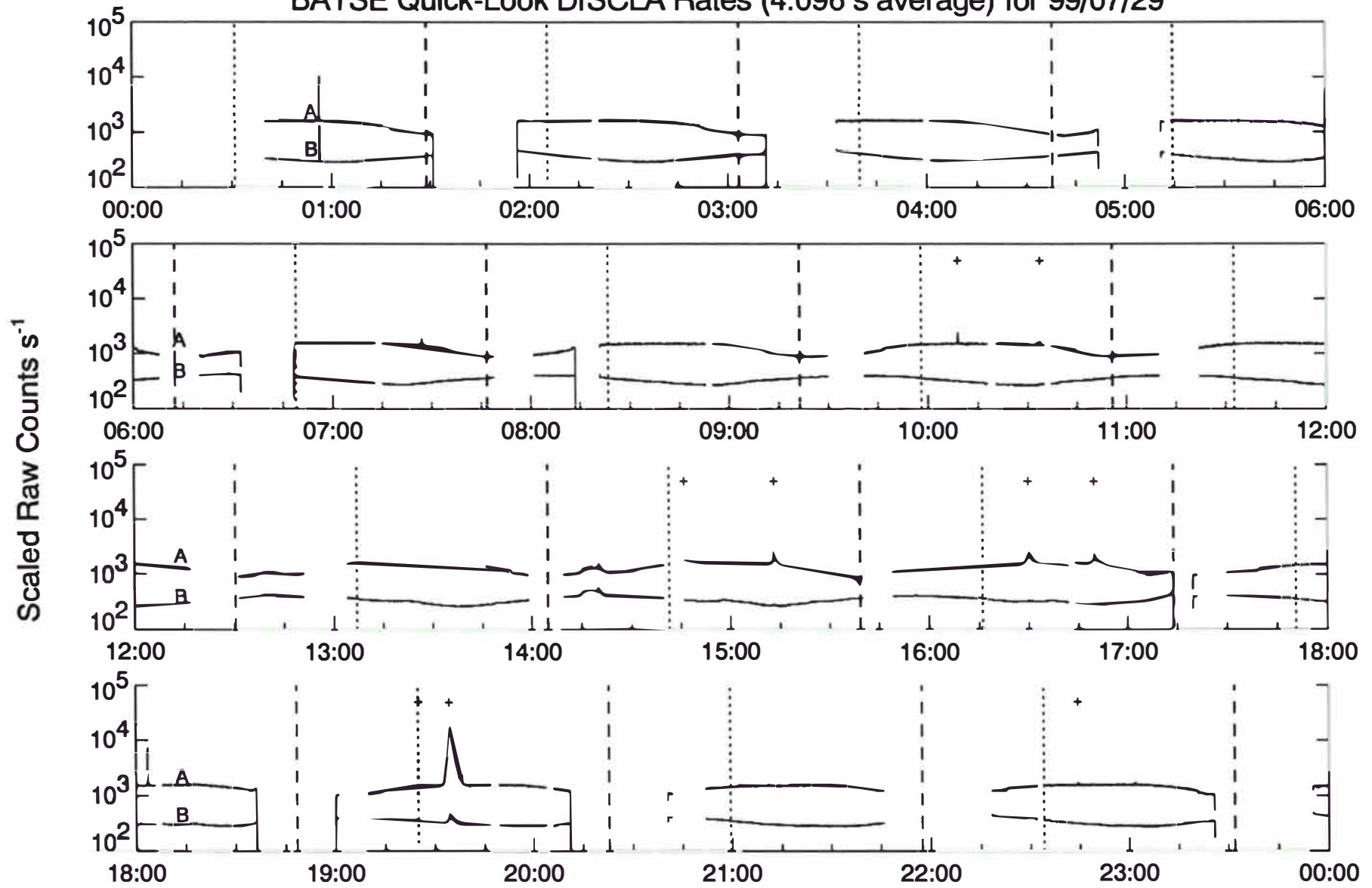
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=108.0 AZIMUTH= 2.9 ERROR= 0.3 DEGREES

COMMENTS:

GOES M5.1, OPTICAL 1N SOLAR FLARE. SINGLE EPISODE WITH STRUCTURE, DUR.
APPROX. 350 S, STARTS AT APPROX. T-70 S, MAX AT APPROX. T+31 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/29

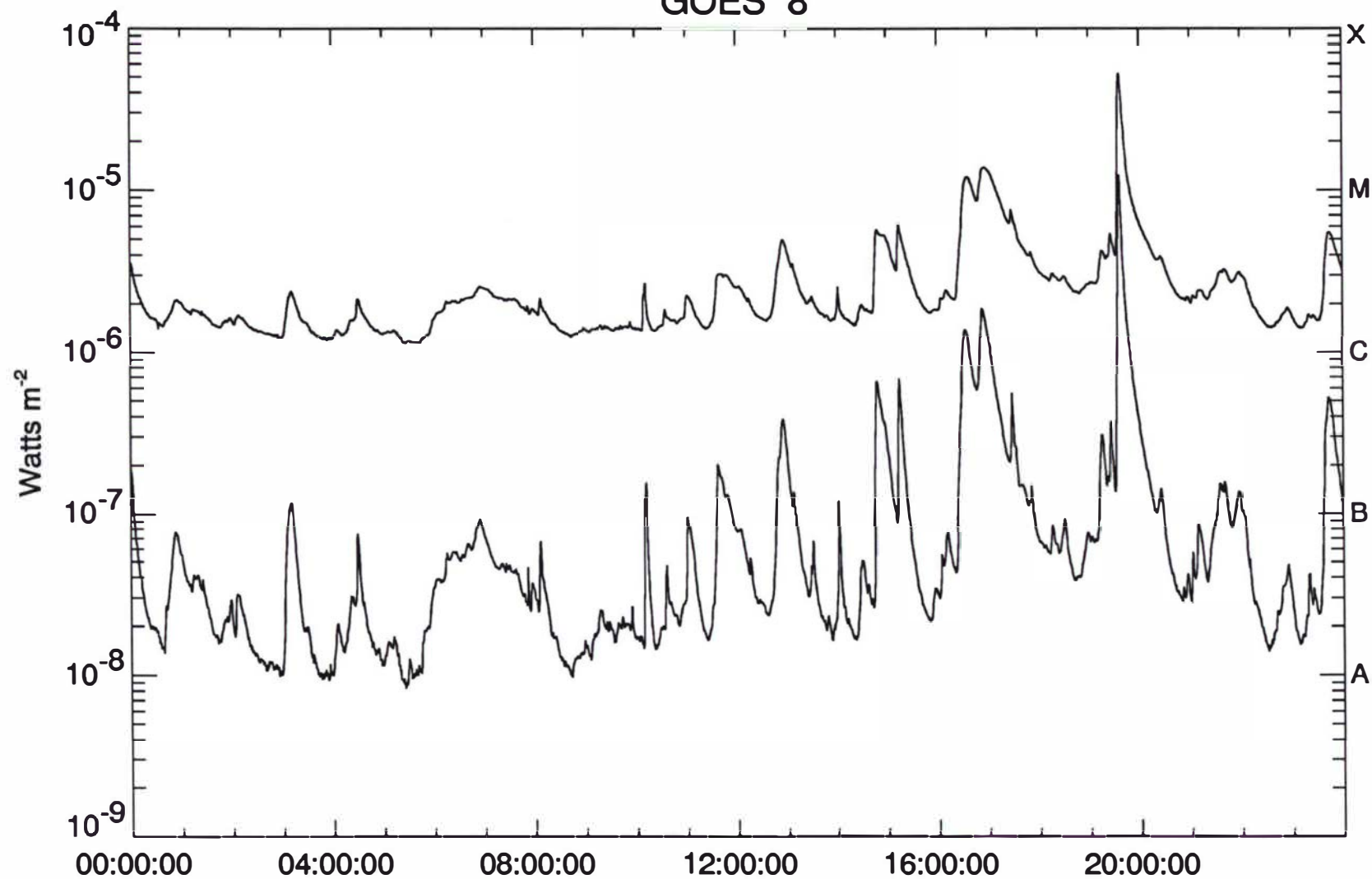


Current Time: 99/08/02, 1011 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

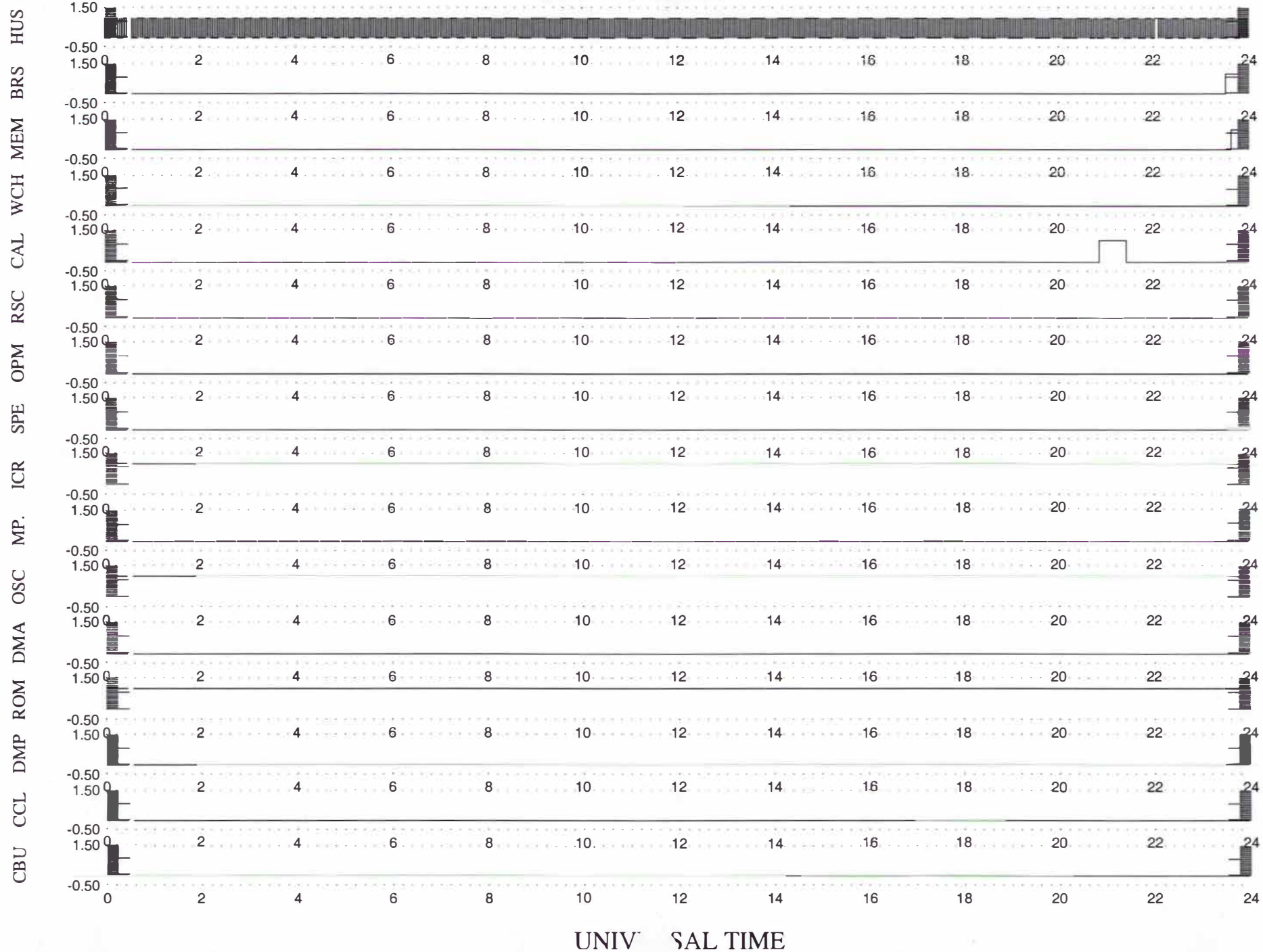


Data Start: 99/07/29, 0000:00

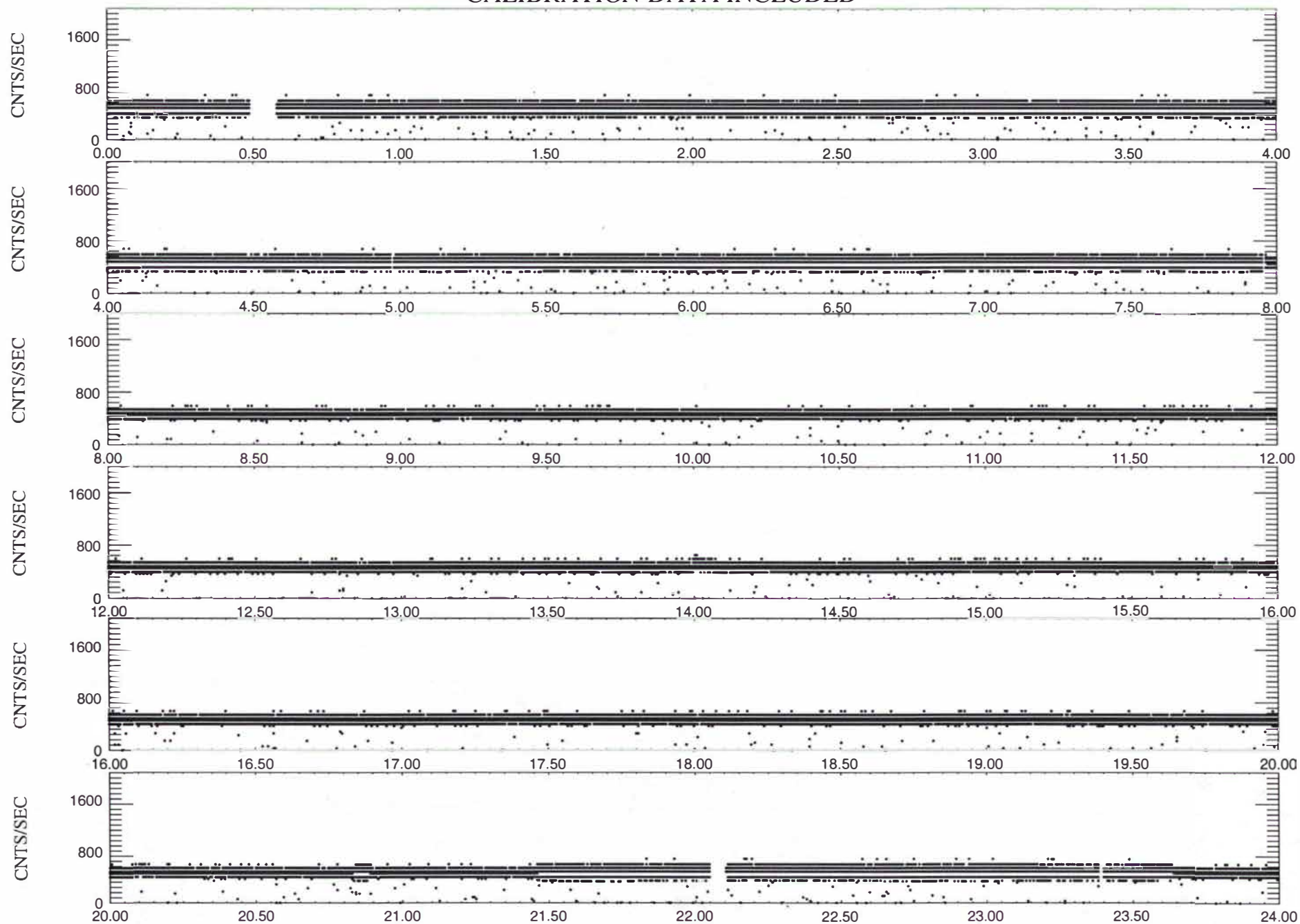
Plot created: 99/08/02, 1011

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

BURST NUMBER 2

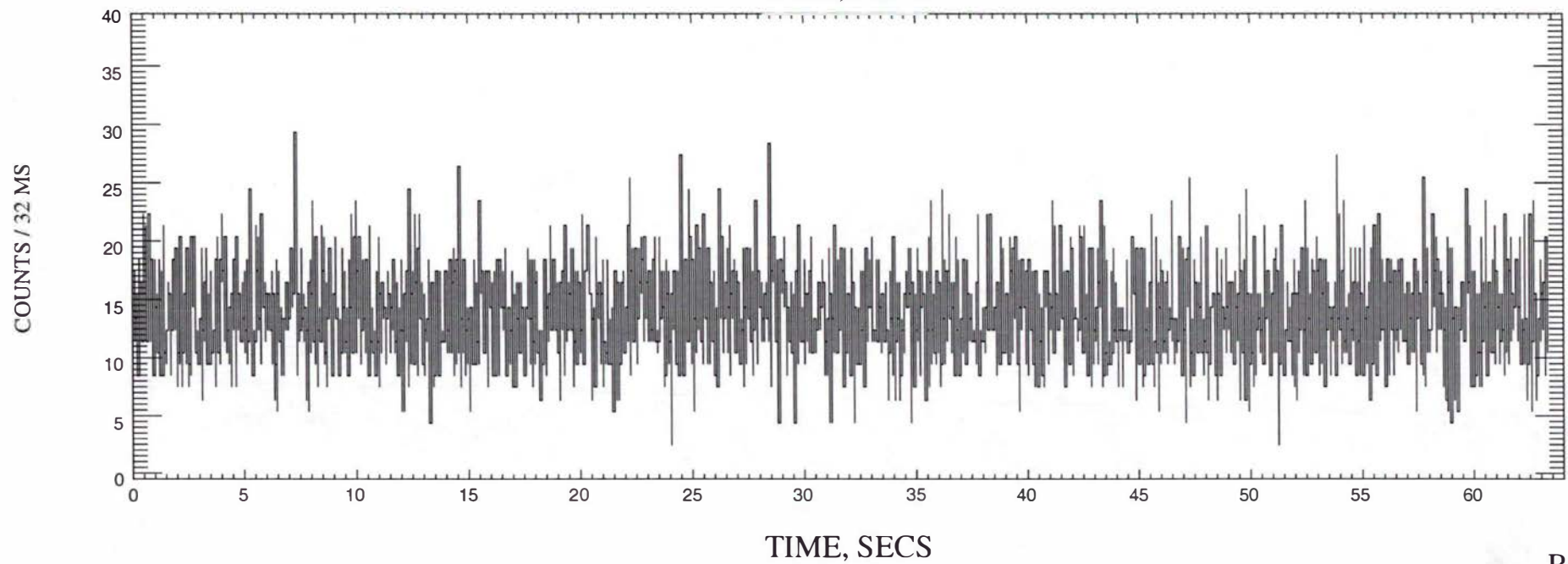
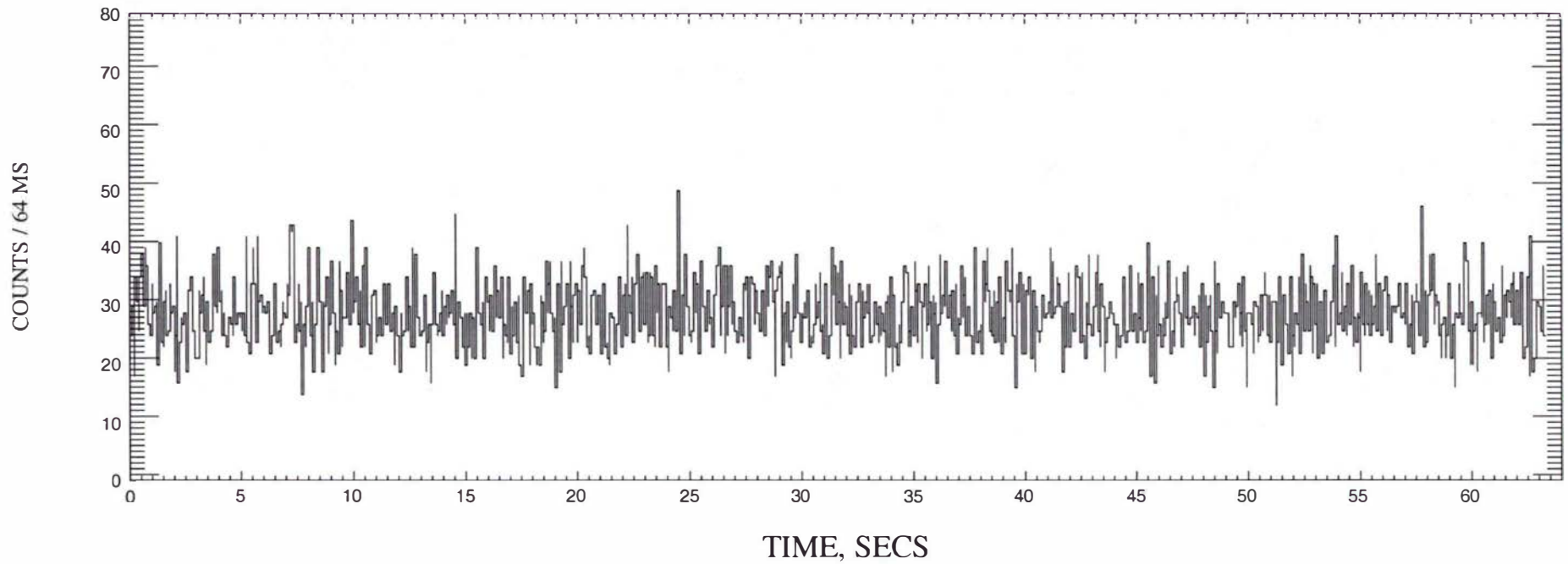


CALIBRATION DATA INCLUDED

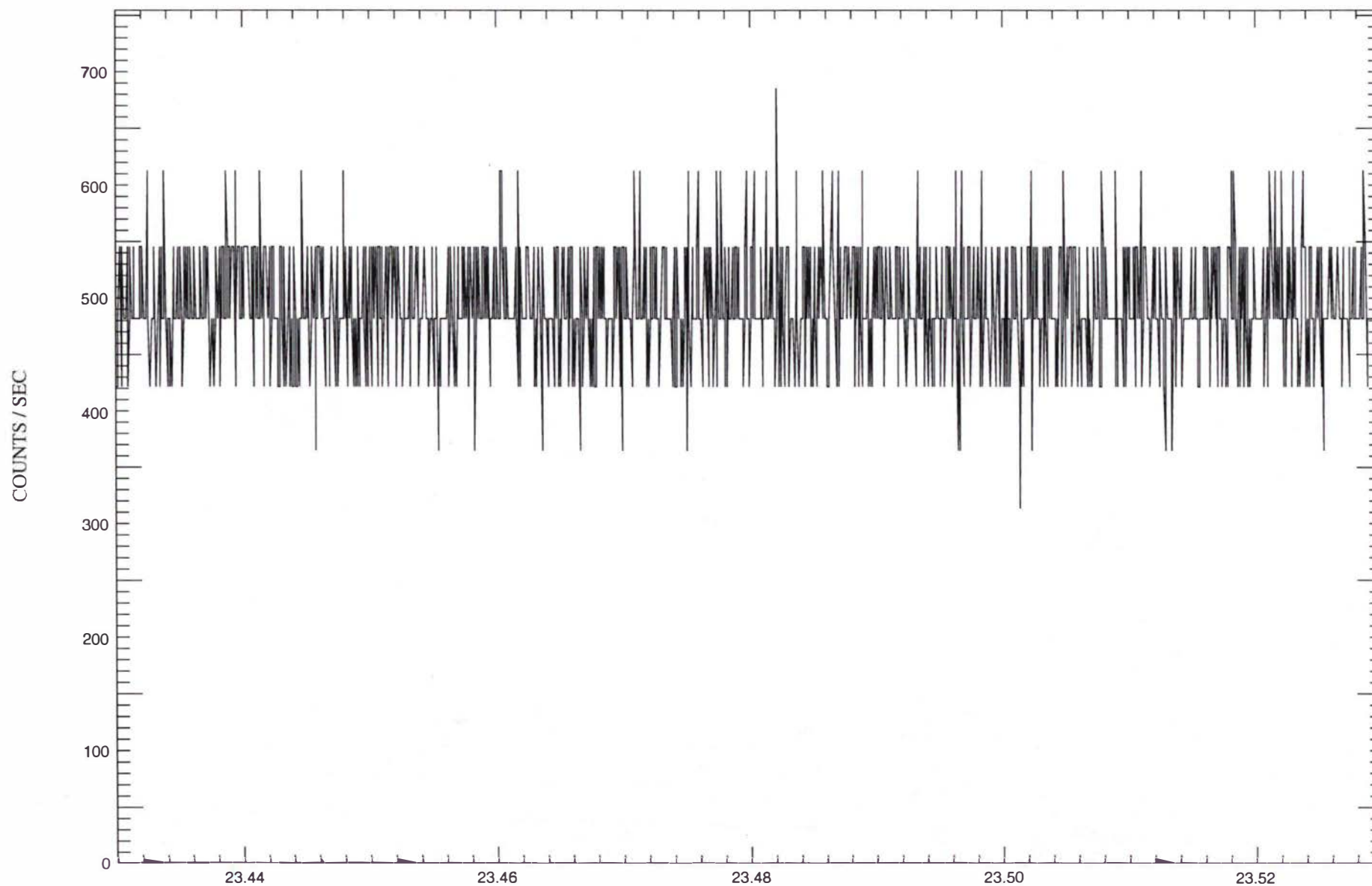


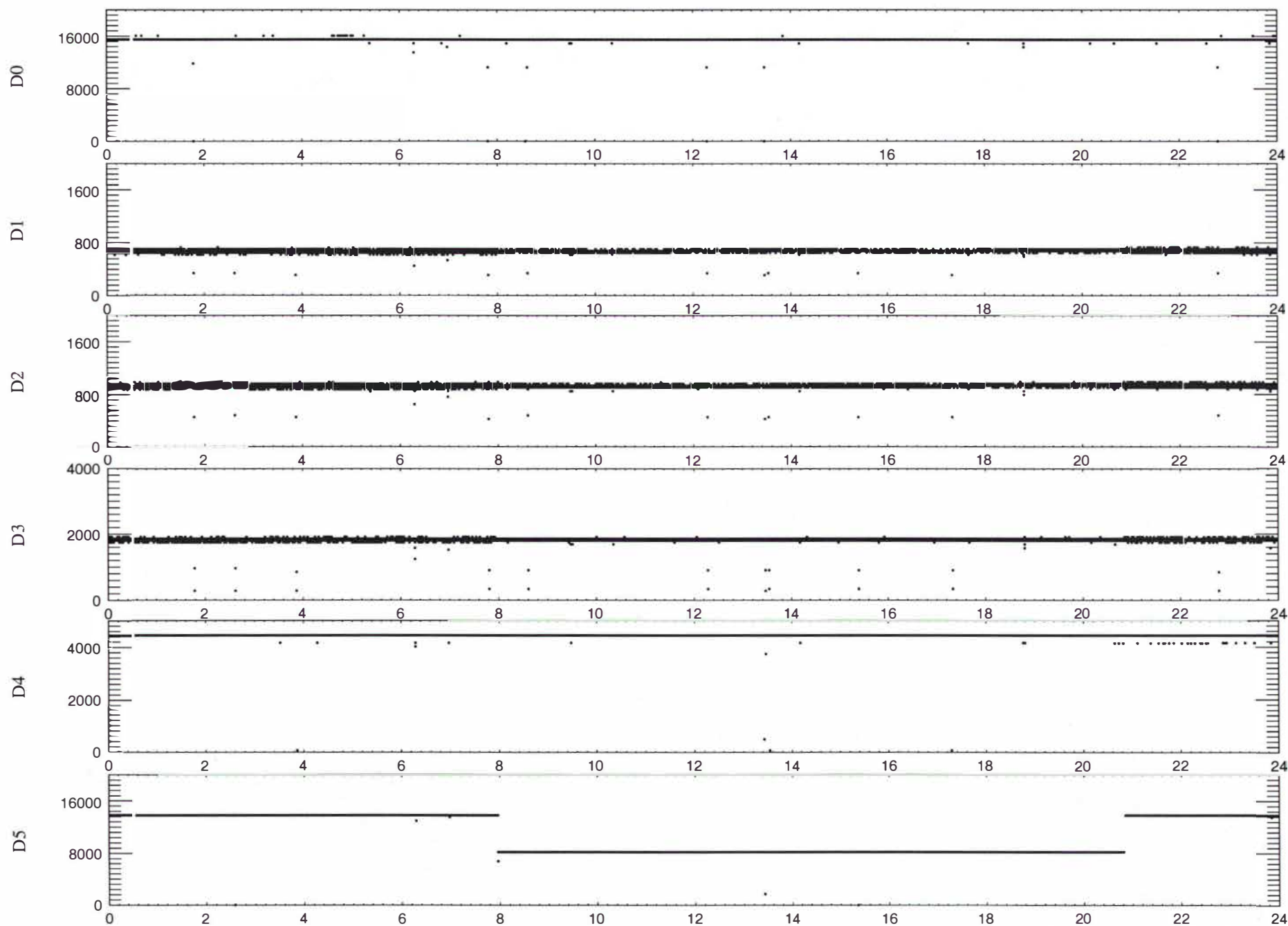
UNIVERSAL TIME

Burst Counter 2 at UT=23.482330864800 h=84536.391 s 23:28:56.391



CALIBRATION DATA INCLUDED





UNIVERSAL TIME

From SAHI@fender.msfc.nasa.gov Fri Aug 6 07:24 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Fri, 6 Aug 1999 9:29:02 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@ests2.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.: 7681

TIME: TJD=1389 ^{June 30} SECONDS=43676

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.2 AZIMUTH=355.4 ERROR=0.99 DEGREES

COMMENTS:

SOLAR FLARE. GOES C3.0, OPTICLA SF. SINGLE PULSE, DUR. APPROX. 15 S, STARTS
AT T-8. NOT VISIBLE ABOVE 100 KEV. SUNSET AT T+7 S.

From SAHI@fender.msfc.nasa.gov Fri Aug 6 07:42 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 6 Aug 1999 9:48:04 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7682

TIME: TJD=1389 SECONDS=57875

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.6 AZIMUTH=357.6 ERROR=0.13 DEGREES

COMMENTS:

SOLAR FLARE. GOES C6.1, OPTICAL 1N. COMPLEX, DUR. 150 S, STARTS AT T-90 S,
MAX. AT ~T+18 S. NOT VISIBLE ABOVE 300 KEV.

From SAHI@fender.msfc.nasa.gov Fri Aug 6 08:56 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 6 Aug 1999 11:02:28 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7683

BATSEARCH PROGRAM

BATSE BURST # 7683
EVENT OF 1999 JUL 30 DAY OF YEAR=211
EVENT CROSSING TIME AT BATSE : 68353. S. OR 18:59:13.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 141.000 75.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 7/ 99 IS:
RA= 150.255 DEC= -9.519 DIST= 5.517 AU
BATSE-ULYSSES DISTANCE = 825291655. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -253.79 SECS.
CROSSING TIME AT ULYSSES IS 68099. S. OR 18:54:59 +/- 522.05 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 7/ 99 IS:
RA= 217.448 DEC= -16.398 DIST= 0.993 AU
MARS-BATSE DISTANCE = 148553776. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 106.30 SECS.
CROSSING TIME AT MARS IS 68459. S. OR 19:00:59 +/- 85.64 SECONDS

BATSE BURST TRIGGER

NO.: 7683

TIME: TJD=1389 SECONDS=68353

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=144.1 AZIMUTH=306.3 ERROR=5.4 DEGREES

COMMENTS:

GRB. COMPLEX, DUR. APPROX. 130 S. NOT VISIBLE ABOVE 300 KEV. OVERWRITTEN DURING
TTS, (DOUBLE OVERWRITE) SO STTE IS INCLUDED IN #7684 AND #7685.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7683	990730	11389	68353	2500	141	+75	130

BATSE BURST# 7683

ULYSSES RT

21 / 01 / 00

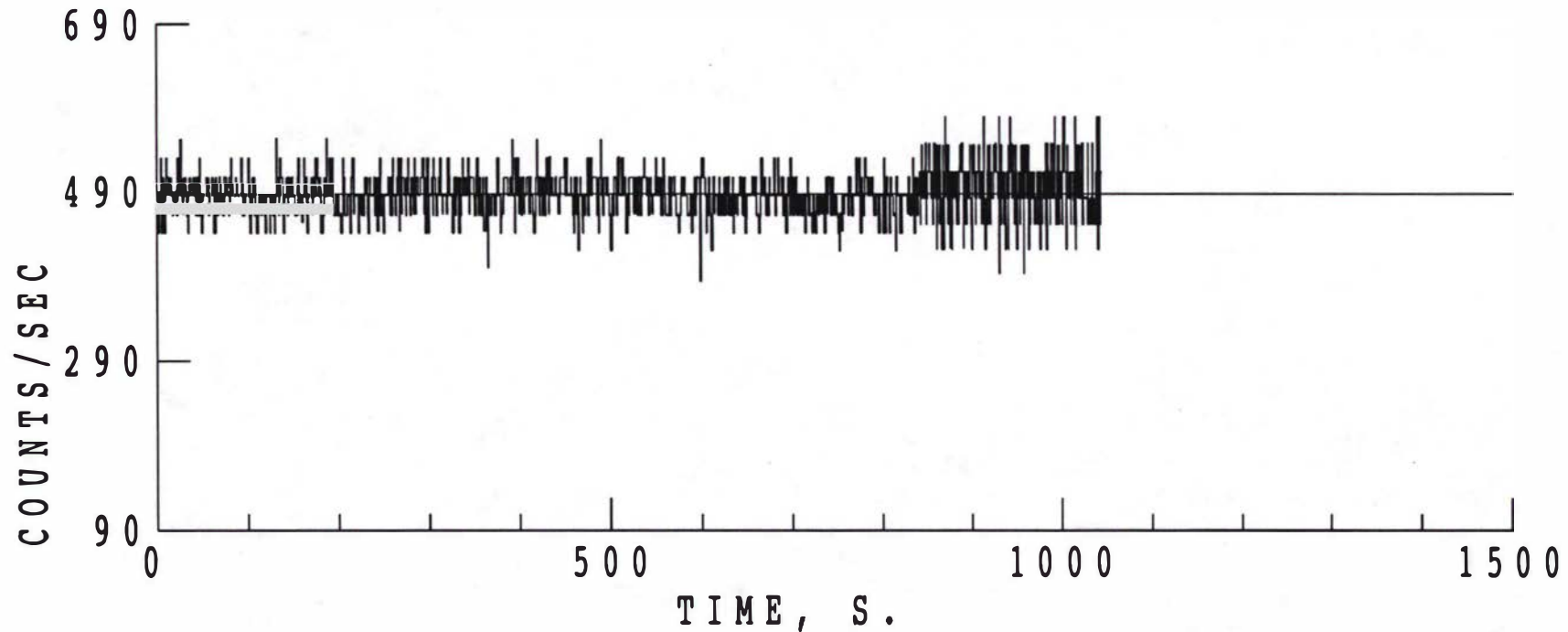
30/07/99 67572.352 s

INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Tue Aug 3 09:55 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 3 Aug 1999 12:01:42 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7684

BATSEARCH PROGRAM

BATSE BURST # 7684
EVENT OF 1999 JUL 30 DAY OF YEAR=211
EVENT CROSSING TIME AT BATSE : 74603. S. OR 20:43:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 53.000 -10.000
BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 7/ 99 IS:
RA= 150.266 DEC= -9.525 DIST= 5.517 AU
BATSE-ULYSSES DISTANCE = 825335954. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 259.05 SECS.
CROSSING TIME AT ULYSSES IS 74862. S. OR 20:47:42 +/- 529.78 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 7/ 99 IS:
RA= 217.448 DEC= -16.398 DIST= 0.993 AU
MARS-BATSE DISTANCE = 148553776. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 30.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 426.71 SECS.
CROSSING TIME AT MARS IS 75030. S. OR 20:50:29 +/- 50.22 SECONDS

BATSE BURST TRIGGER

NO.: 7684

TIME: TJD=1389 SECONDS=74603

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=108.2 AZIMUTH=84.9 ERROR=2.818 DEGREES

COMMENTS:

GRB. MULTI-PEAKED, DUR APPROX 100 S. VISIBLE ABOVE 300 KEV. OVERWROTE DURING
TTS, STTE AND TTS BELONG TO TRIG #7683. OVERWRITTEN DURING TTS, SO STTE IS LOST
FOR THIS TRIGGER.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7684	990730	11389	74603	3900	053	-10	100

BATSE BURST# 7684

ULYSSES RT

3 / 8 / 99

30 / 7 / 99 74340.180 s

0.250 S INTERVALS REGROUPED BY 3

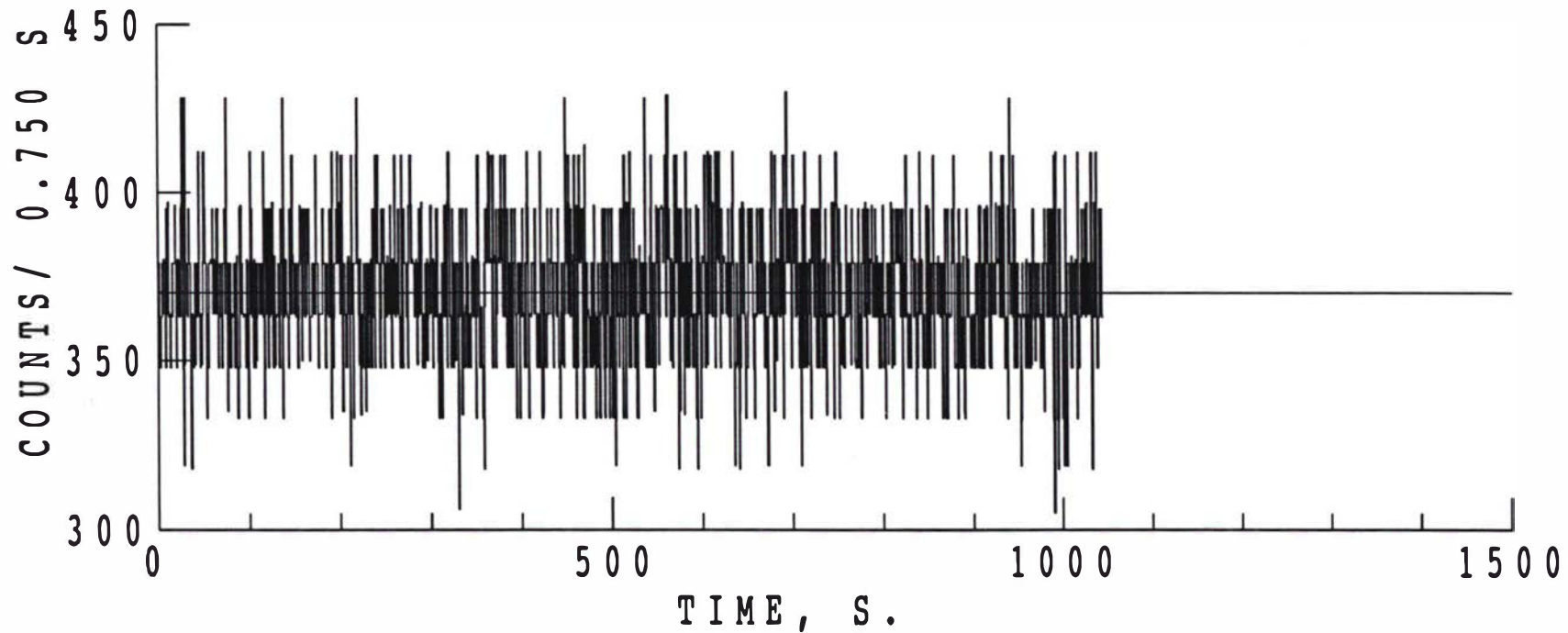
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Tue Aug 3 08:56 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Tue, 3 Aug 1999 11:02:26 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7685

30th

TIME: TJD=1389 SECONDS=82688

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.3 AZIMUTH=356.2 ERROR=0.386 DEGREES

COMMENTS:

SOLAR FLARE, NO GOES, NO OPTICAL. SINGLE PULSE WITH SUBSTRUCTURE, DUR APPROX 8 S, STARTS AT APPROX T-2 S, MAT AT APPROX T+2 S. VISIBLE ABOVE 300 KEV. CRAB SET AT APPROX T S. CYG X-1 RISE AT APPROX T-140 S. OVERWROTE PREVIOUS TRIGGER DURING TTS, TTS AND STTE DATA BELONG TO TRIGGER #7683.

KONUS

30/07/99

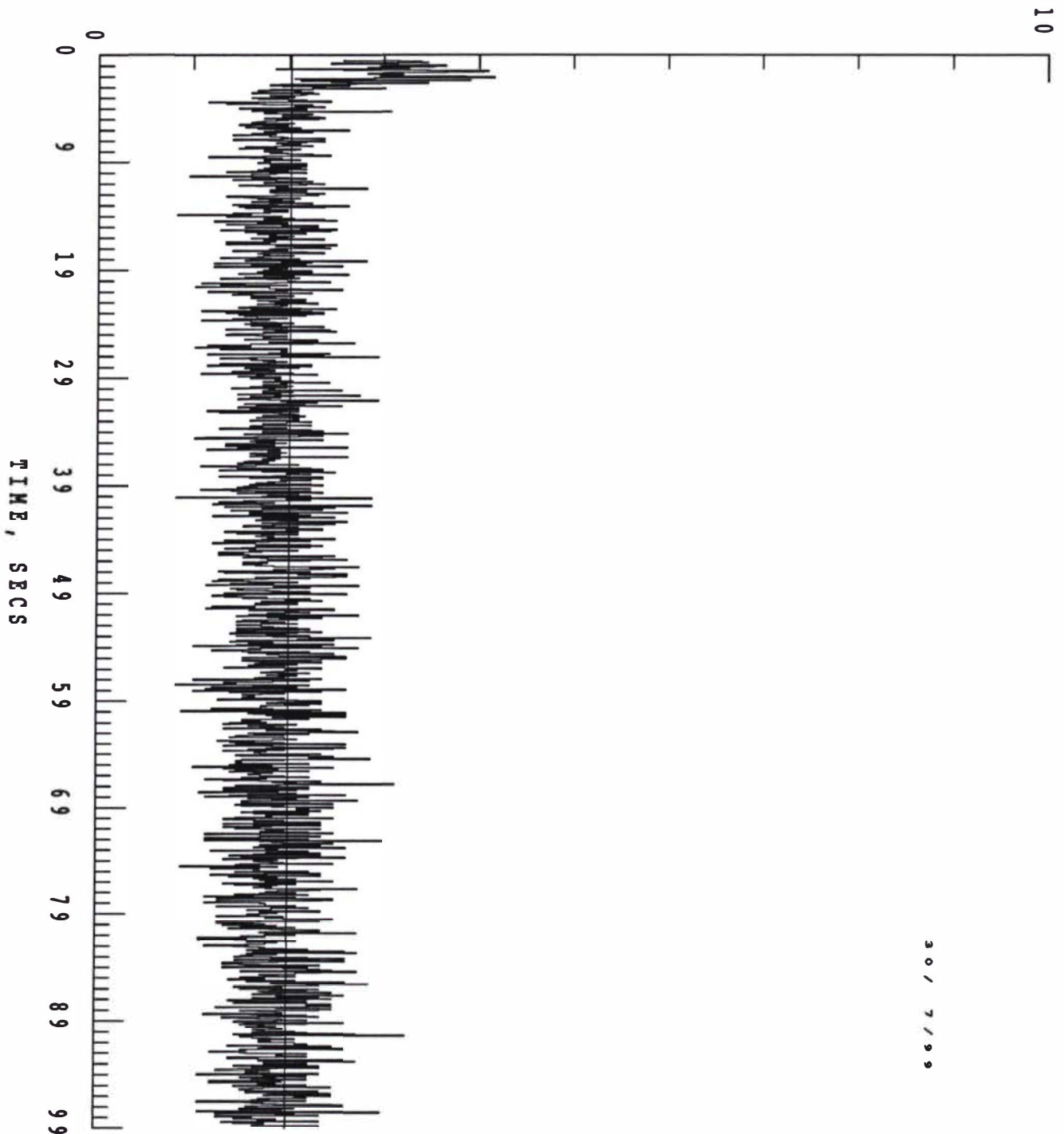
82686.365

50 - 200 keV

Solar?

BATSE 7685

COUNTS/0.064 S



30 / 7 / 99

KONUS2 19990730 82686

ULYSSES RT

2 / 8 / 99

30 / 7 / 99 79884.234 s

0.250 S INTERVALS REGROUPED BY 15

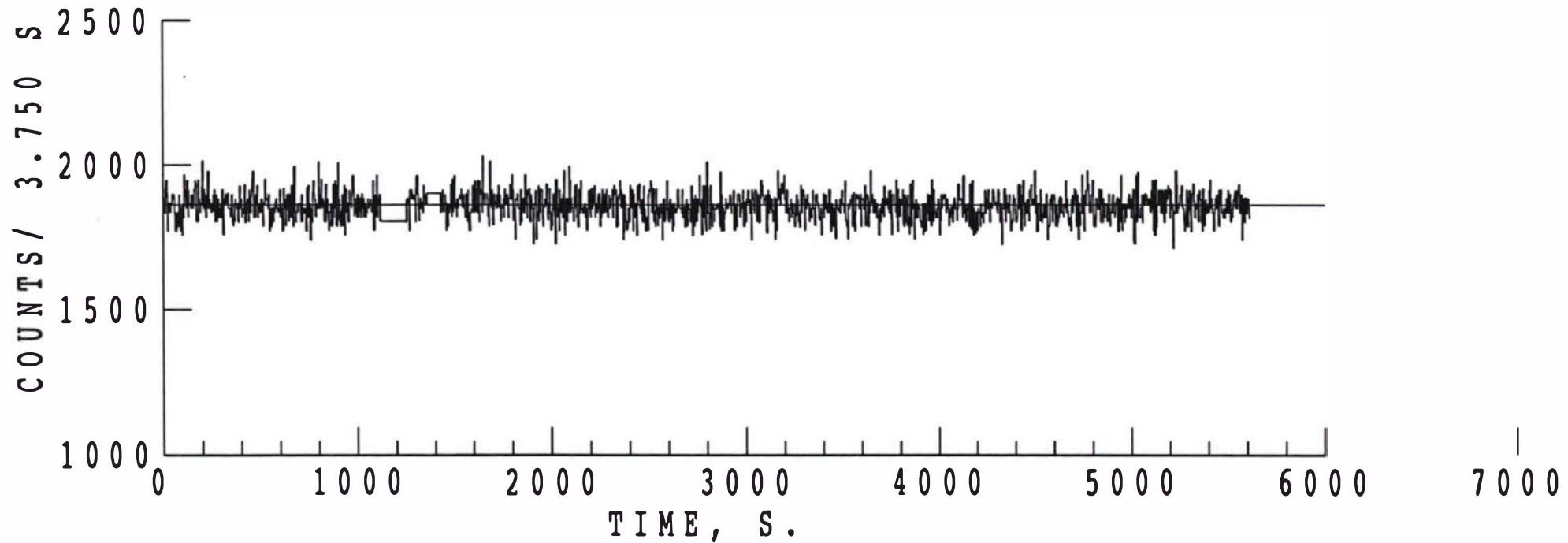
0 - 0 keV

N= 10 M= 10

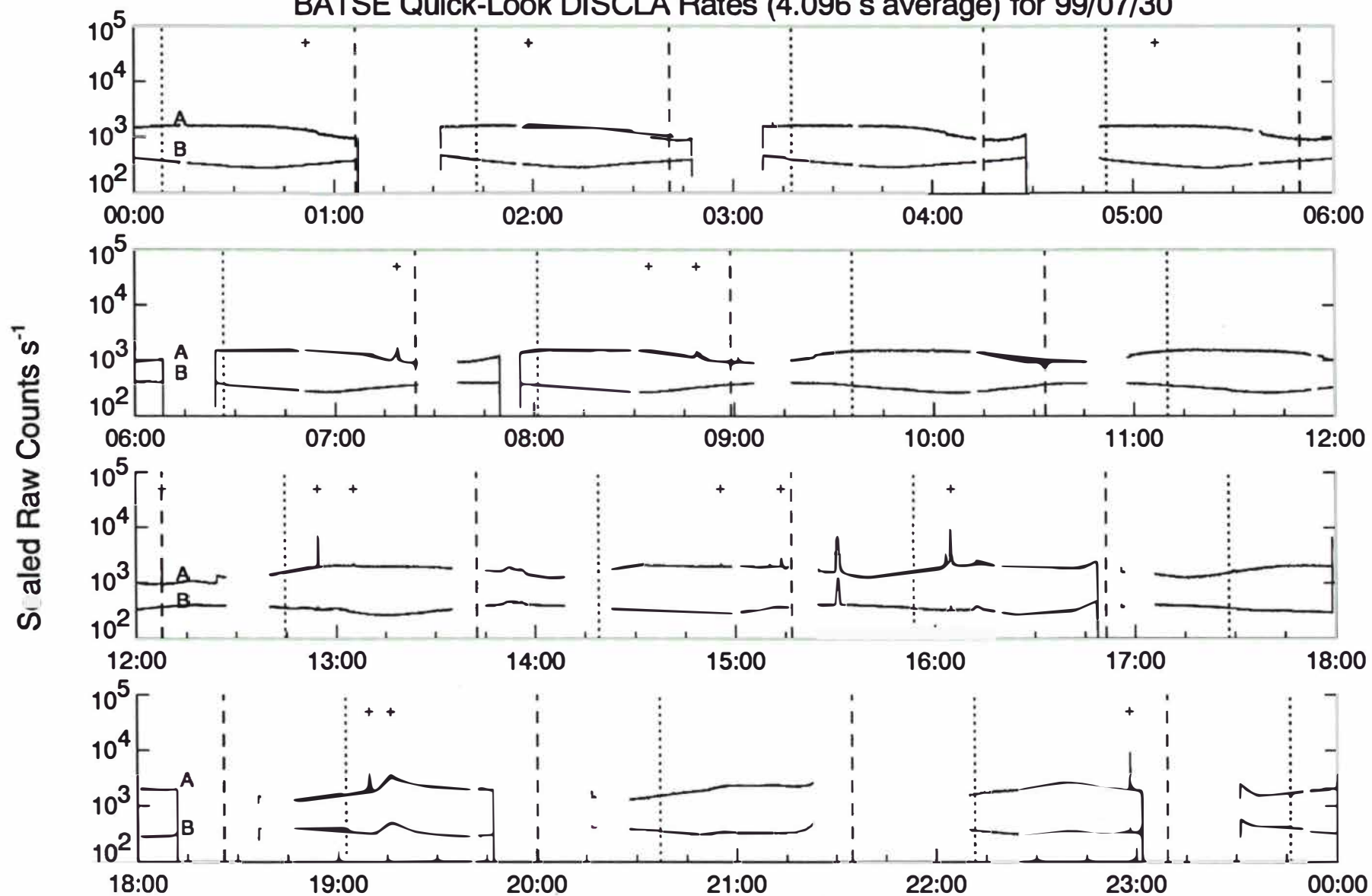
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/30

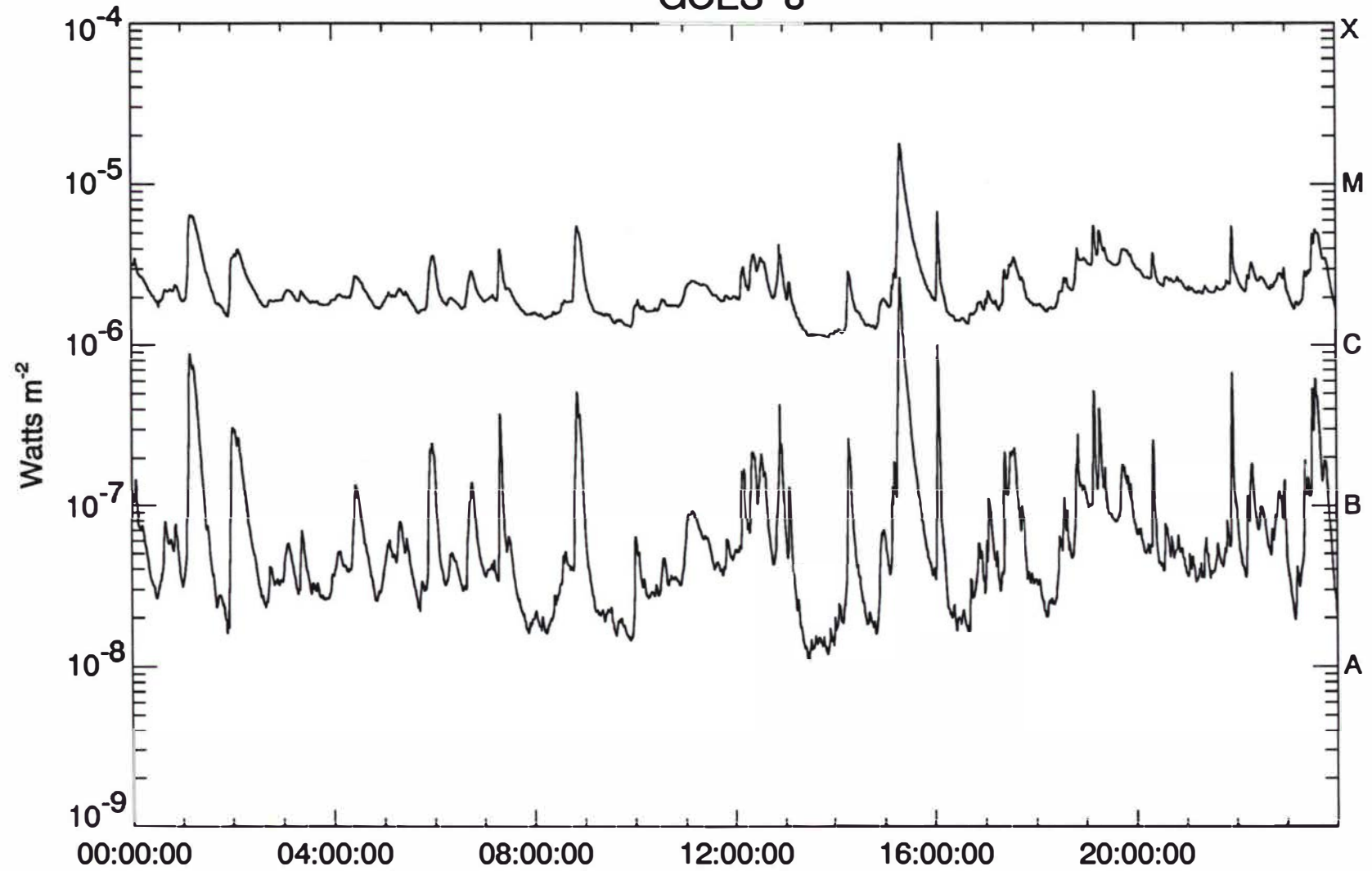


Current Time: 99/08/03, 1011 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/30, 0000:00

Plot created: 99/08/03, 1011

Channel

1 (1.0 - 8.0 Angstroms)

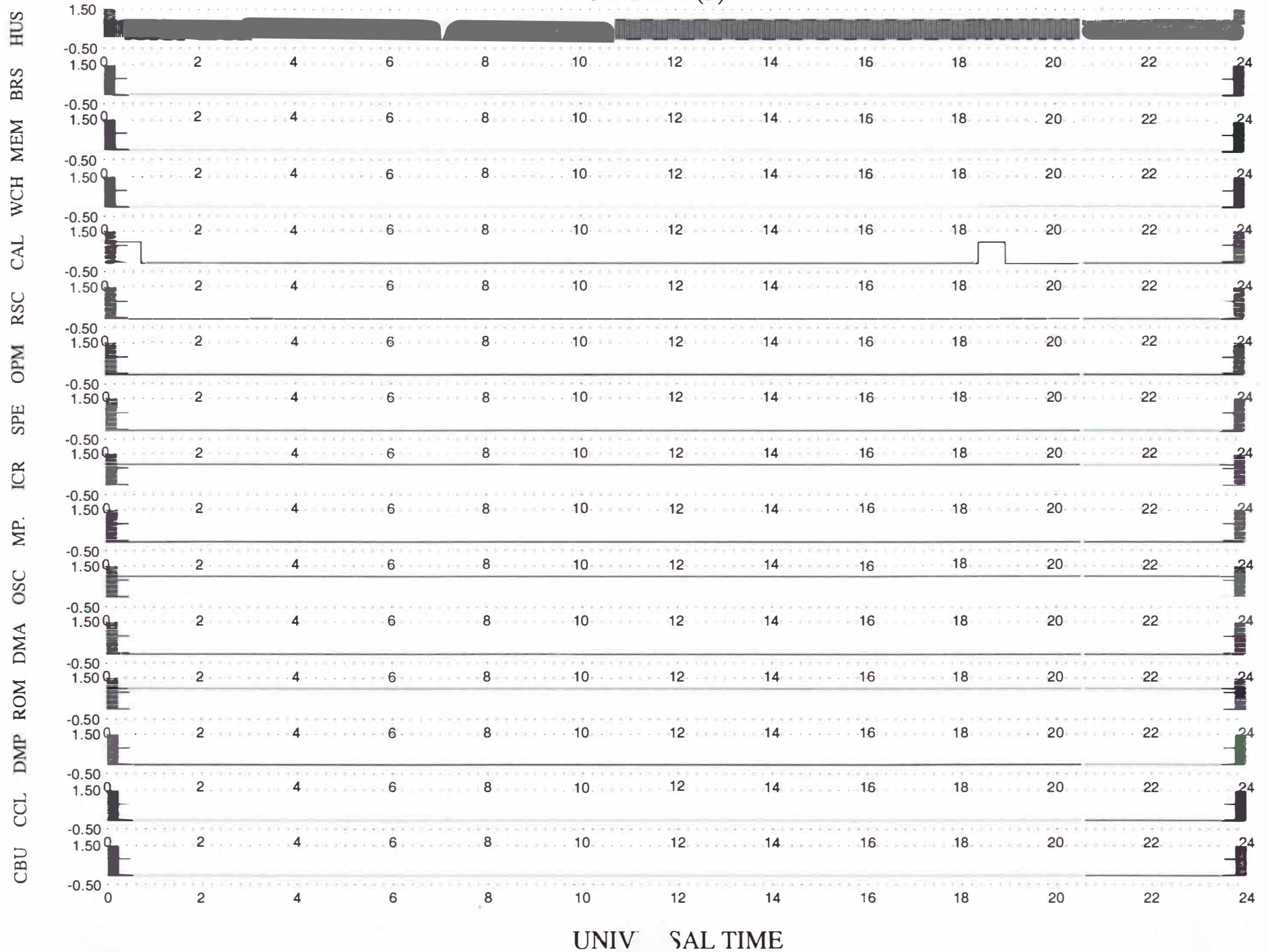
Background not subtracted

2 (0.5 - 4.0 Angstroms)

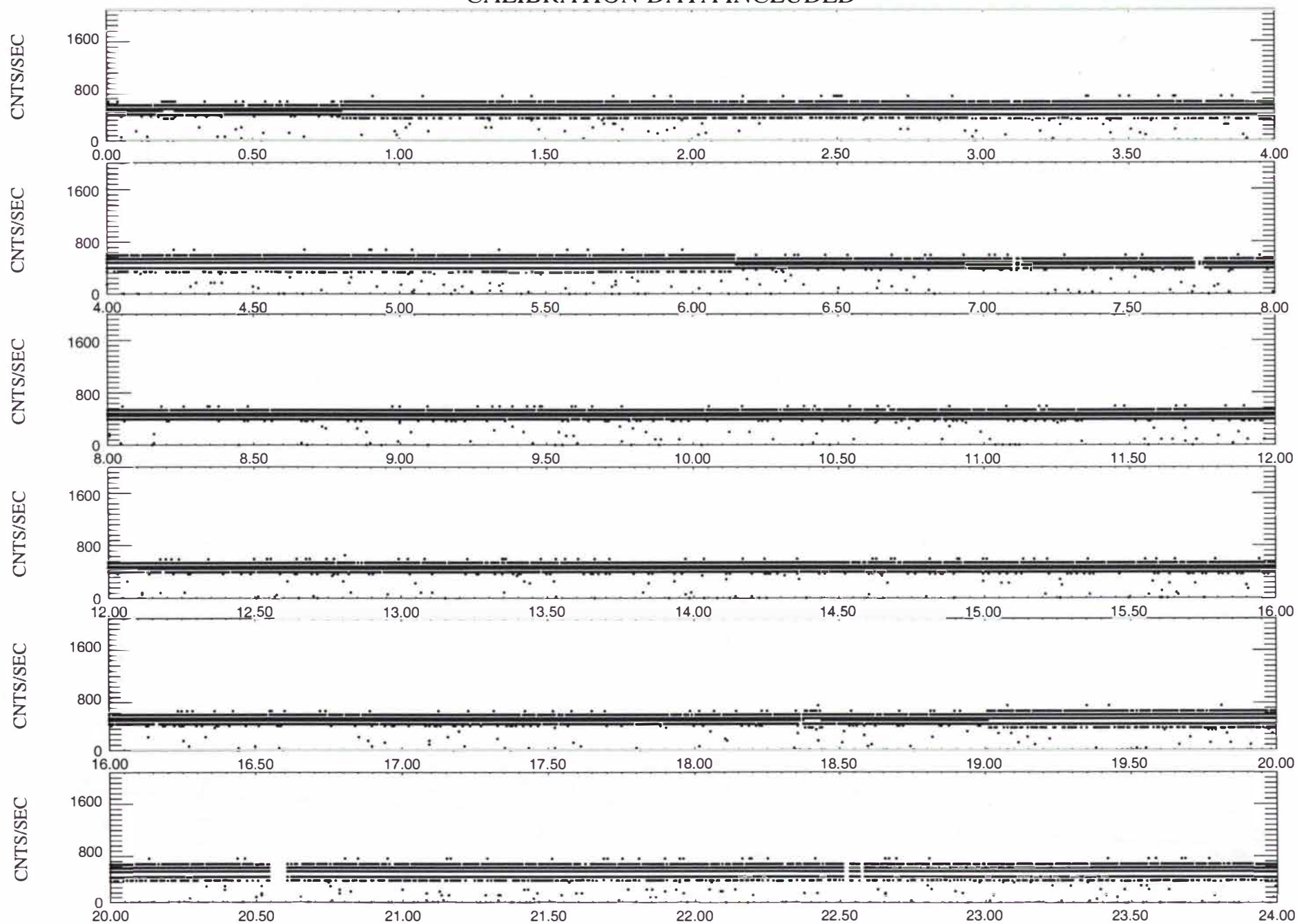
Background not subtracted

Sample average = 10

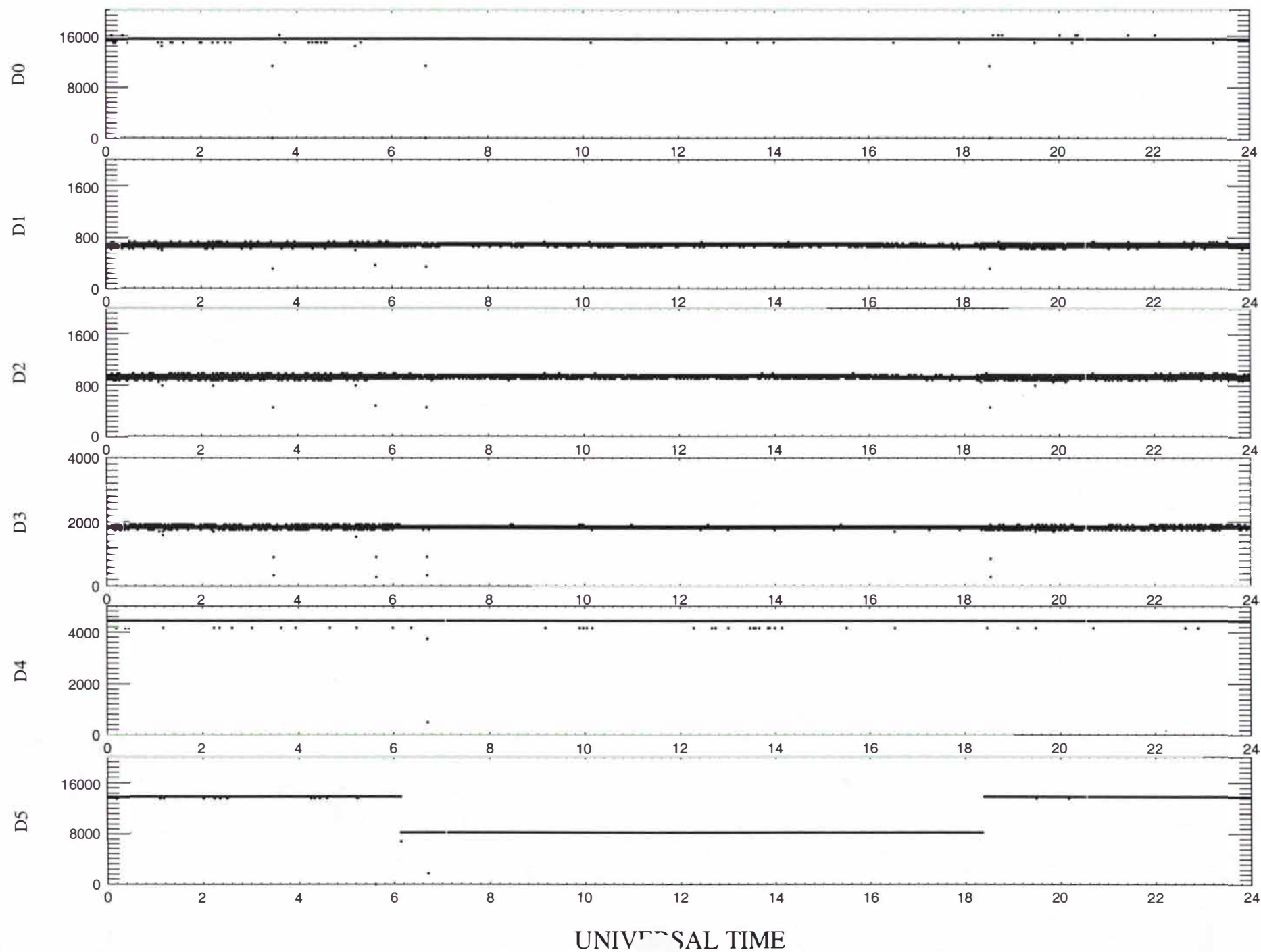
NO BURST (2)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



SAX GRBM

HUS DATA

ULYSSES RT

19 / 07 / 05

31 / 07 / 99 43992.488 s

0.500 S INTERVALS REGROUPED BY 8

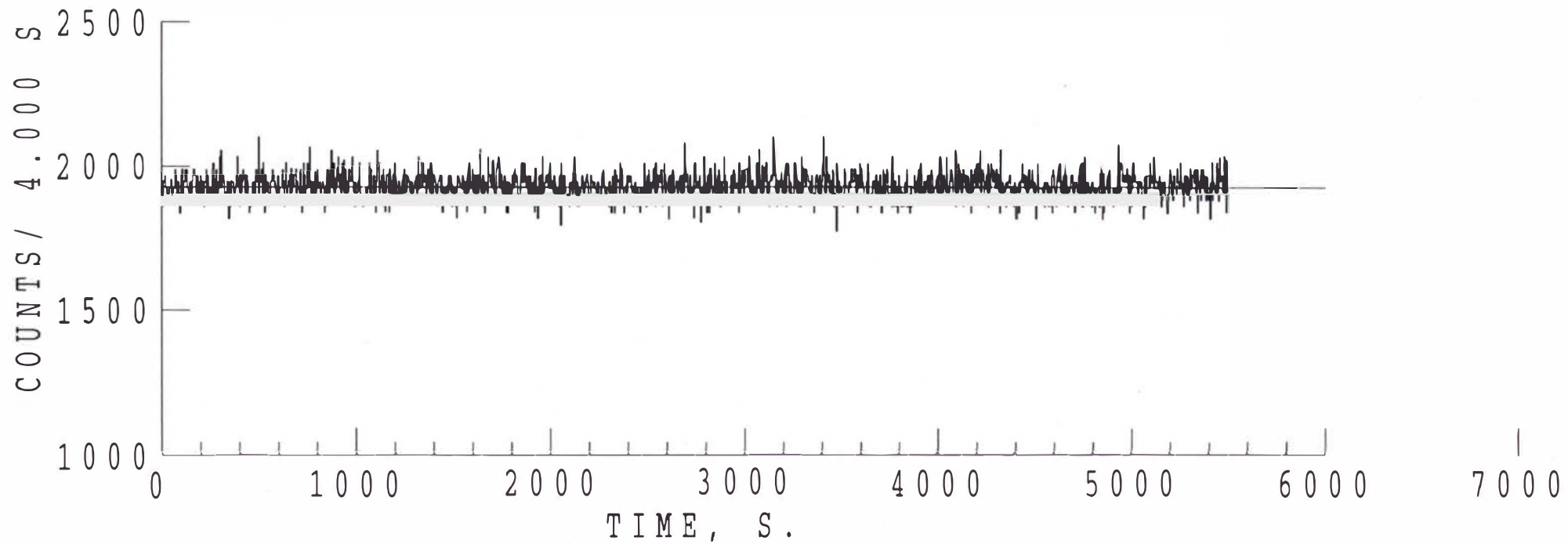
0 - 0 keV

N= 10 M= 10

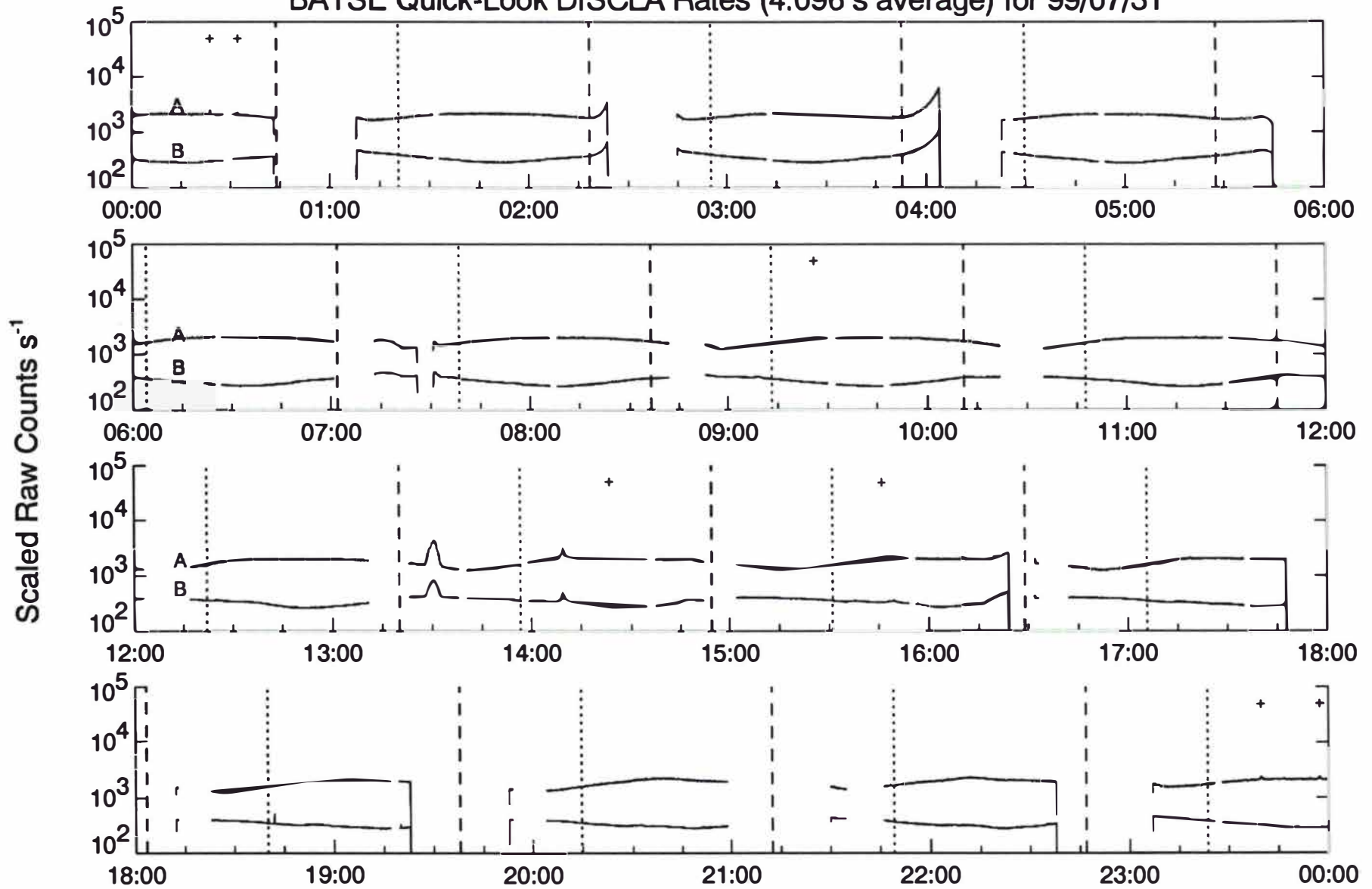
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/07/31

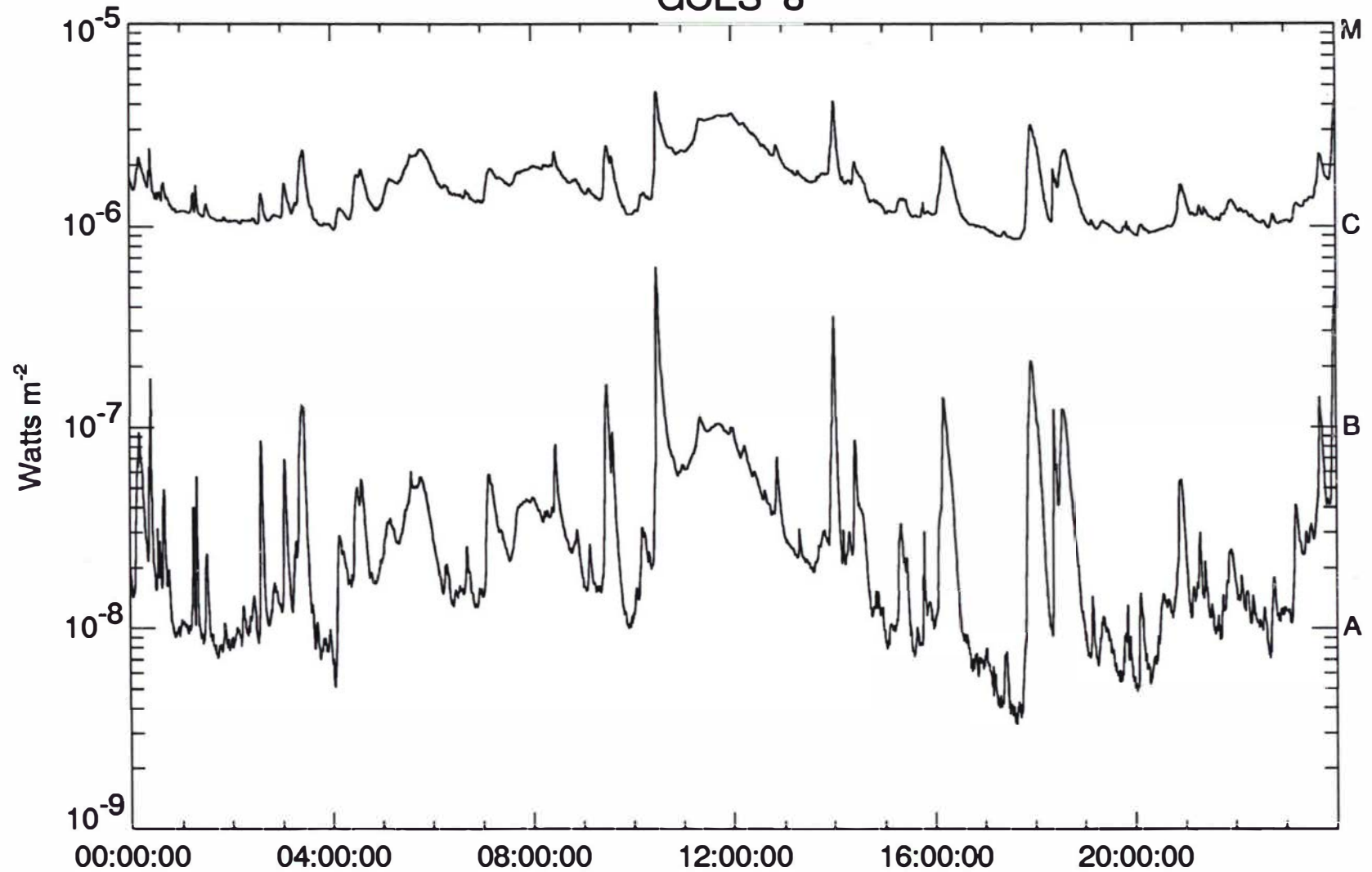


Current Time: 99/08/04, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/07/31, 0000:00

Plot created: 99/08/04, 1011

Channel

1 {1.0 - 8.0 Angstroms}

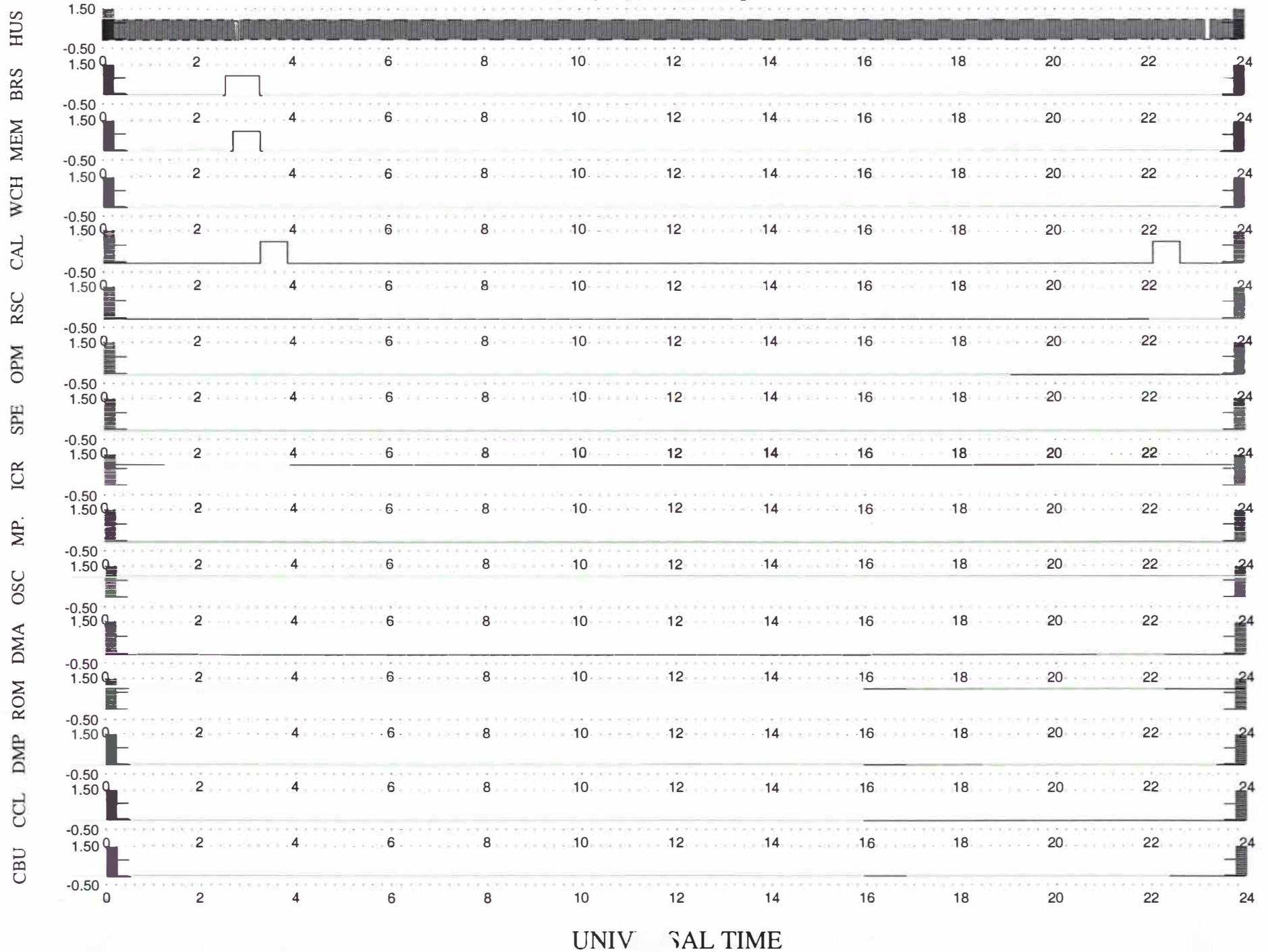
Background not subtracted

2 {0.5 - 4.0 Angstroms}

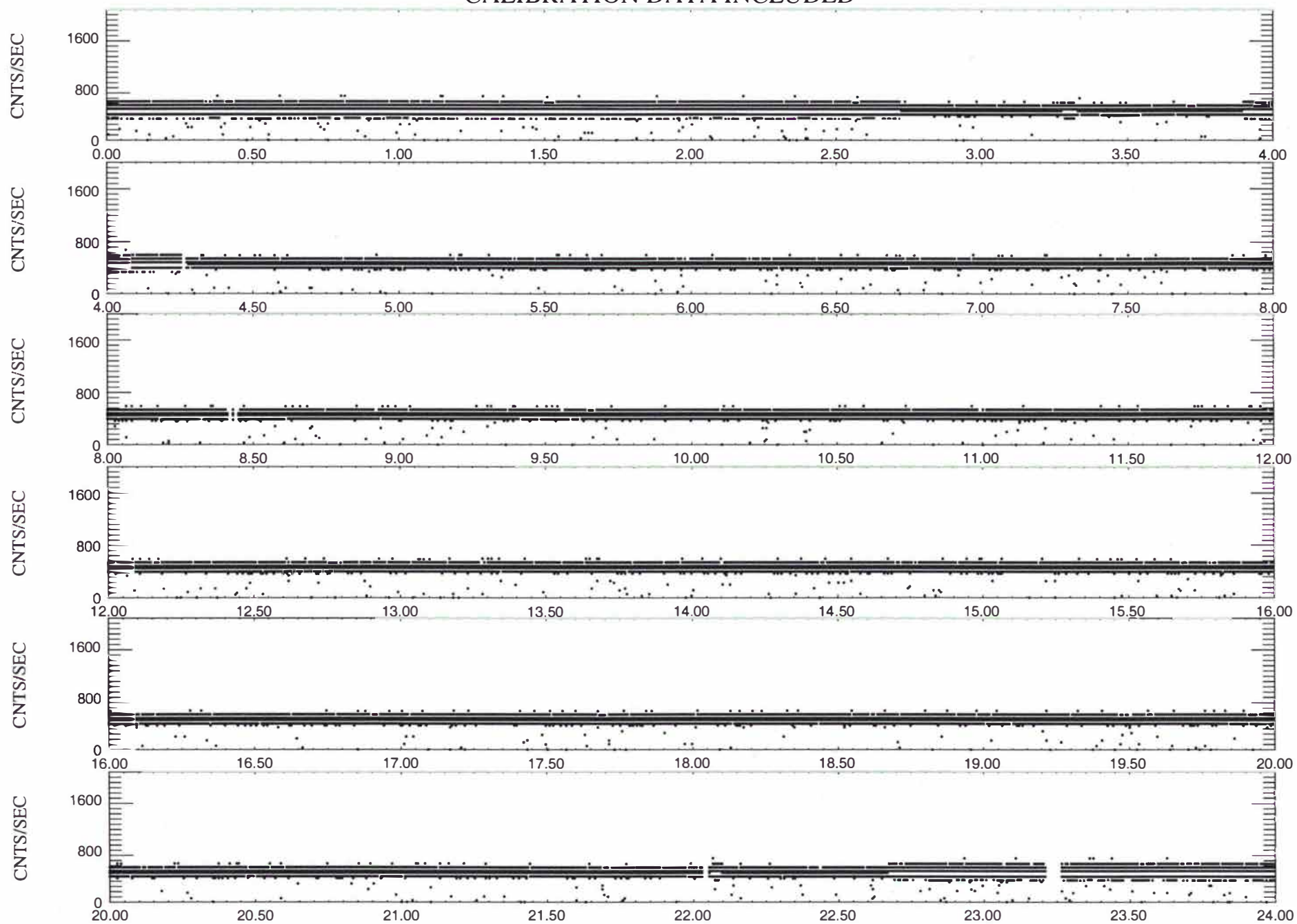
Background not subtracted

Sample average = 10

BURST NUMBER 3

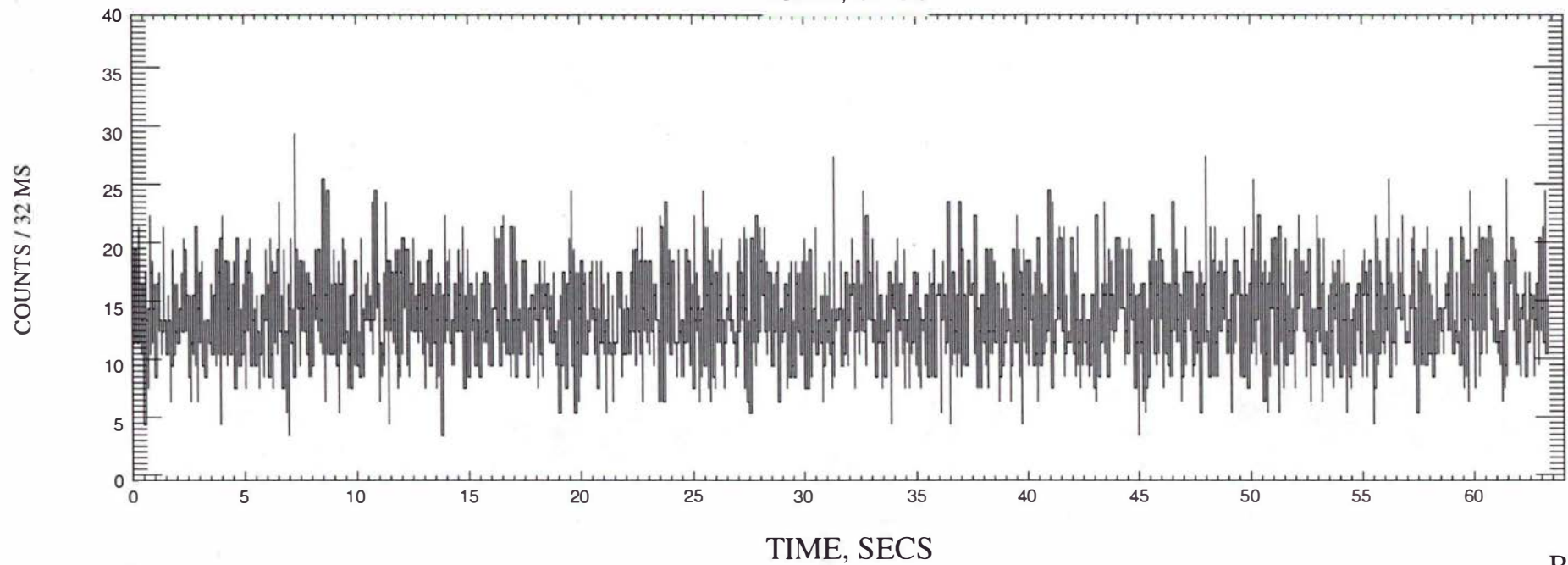
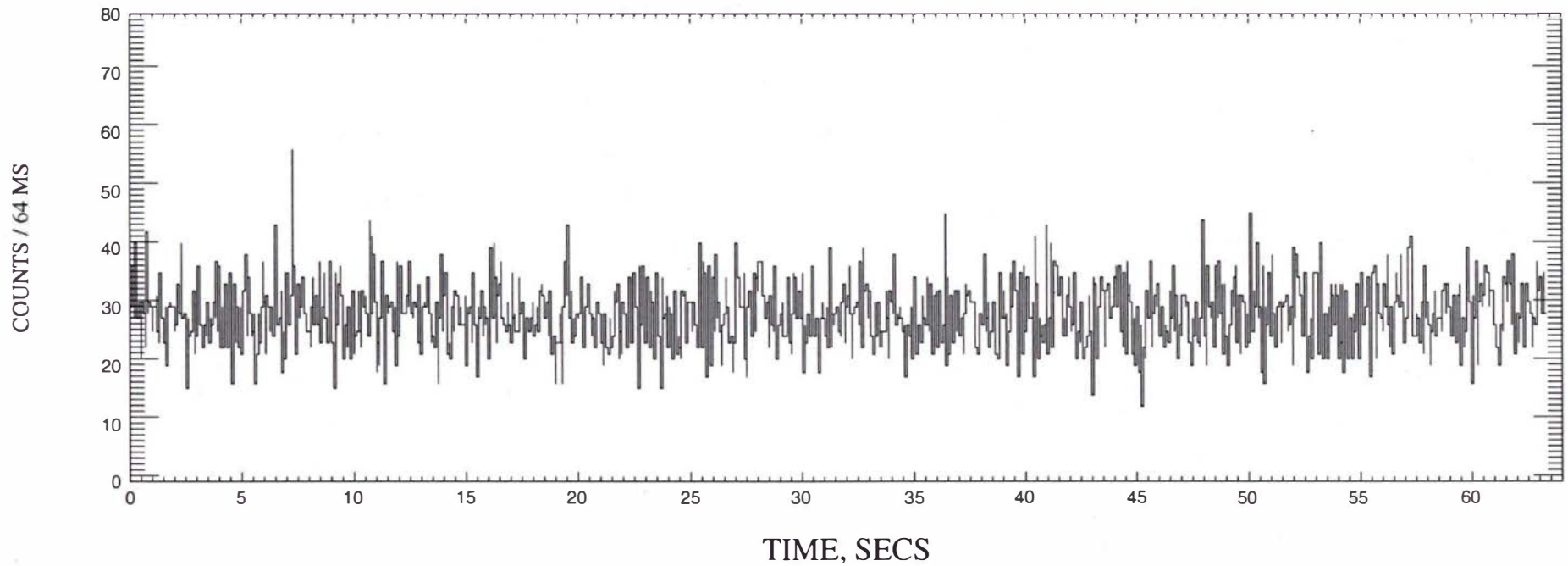


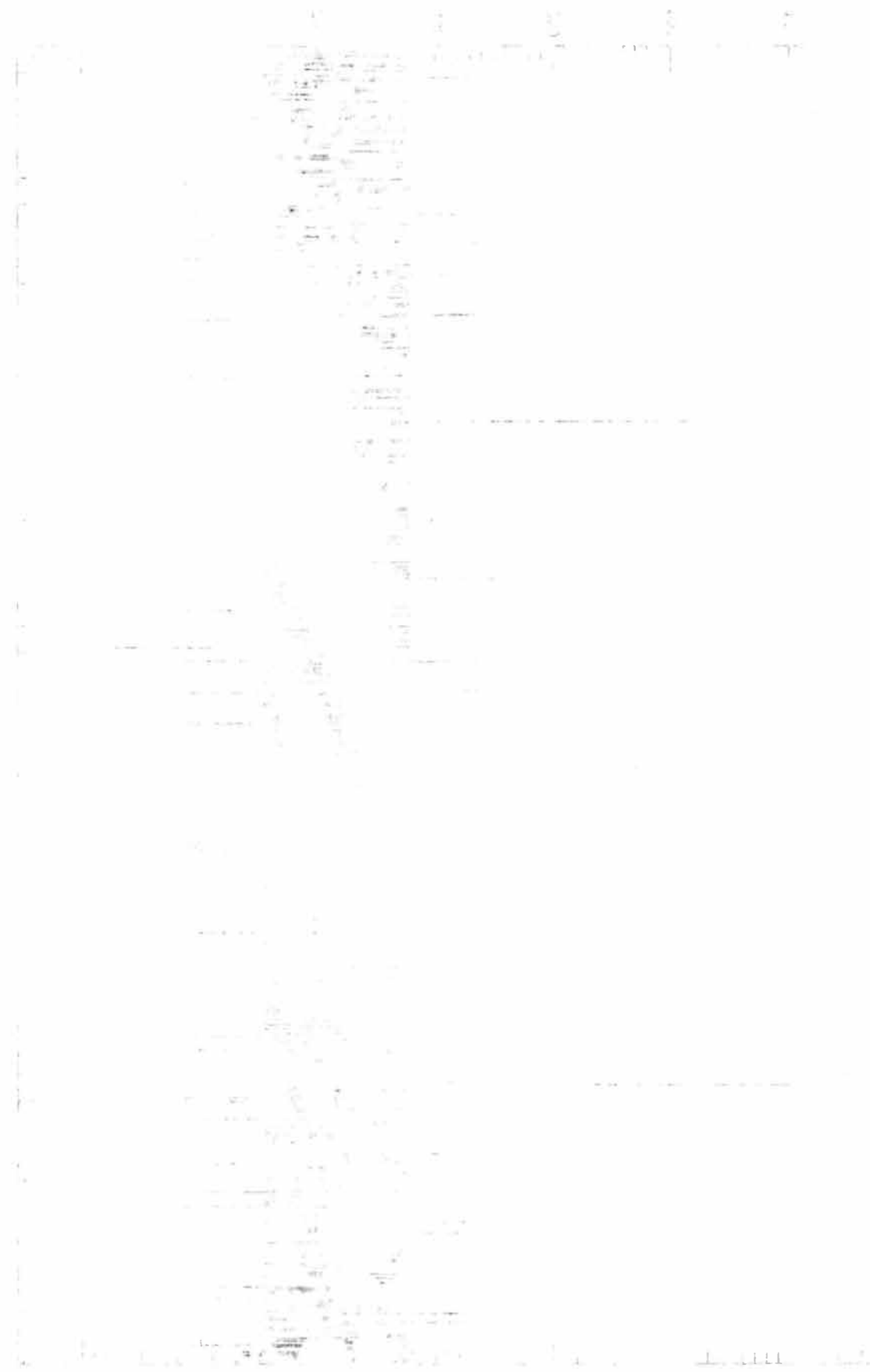
CALIBRATION DATA INCLUDED



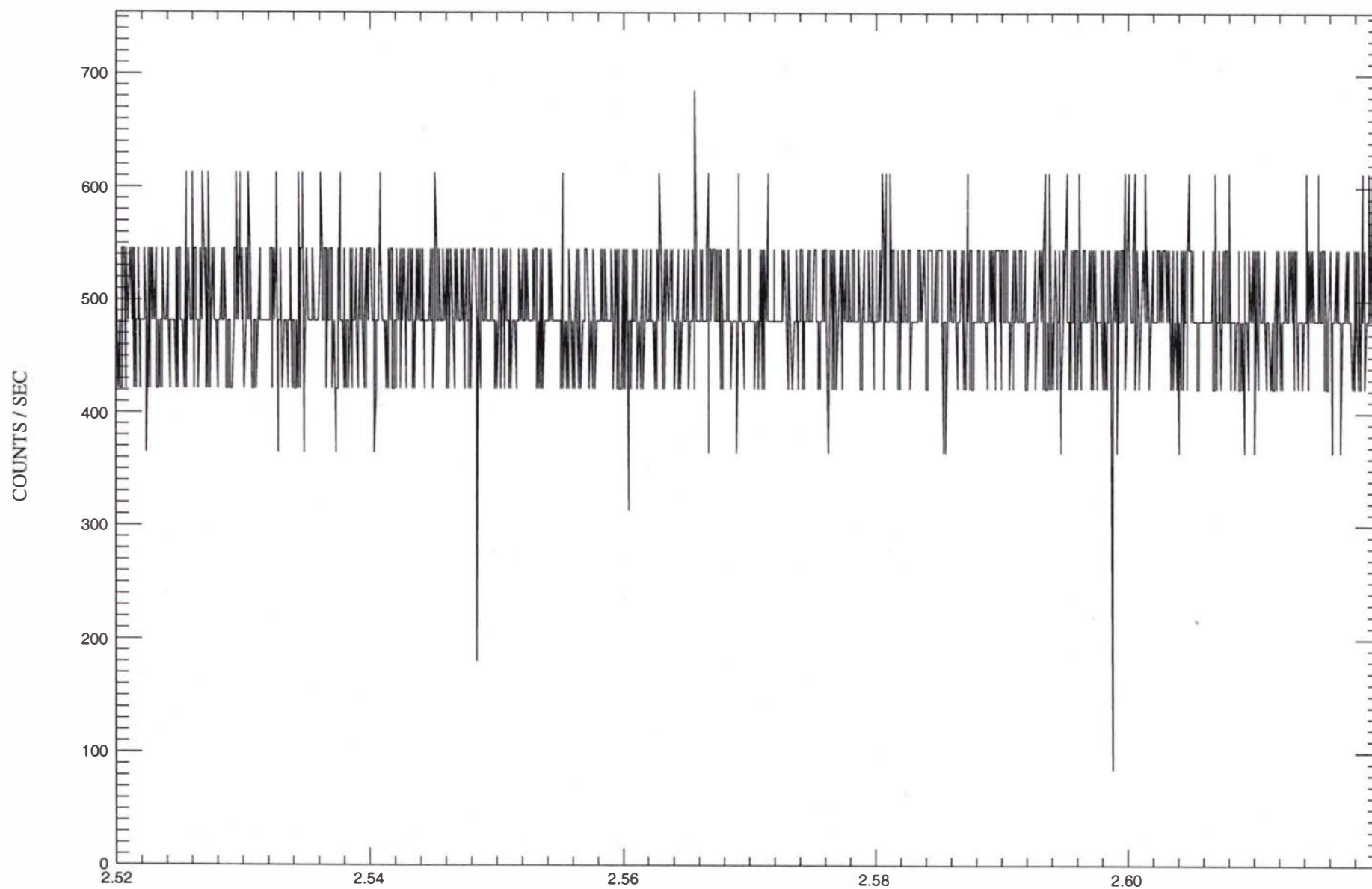
UNIVERSAL TIME

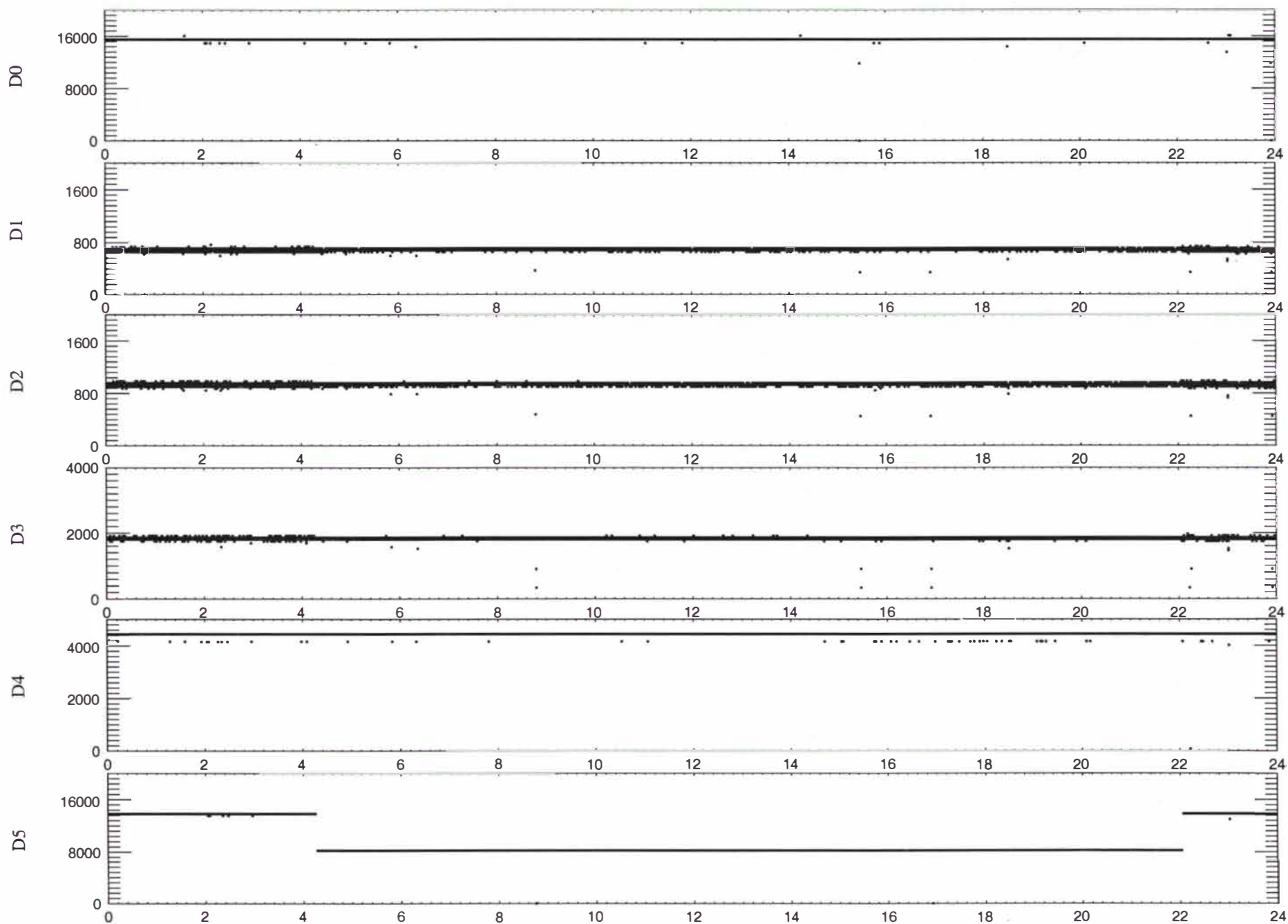
Burst Counter 3 at UT= 2.565835054186 h= 9237.006 s 02:33:57.006





CALIBRATION DATA INCLUDED





UNIVERSAL TIME