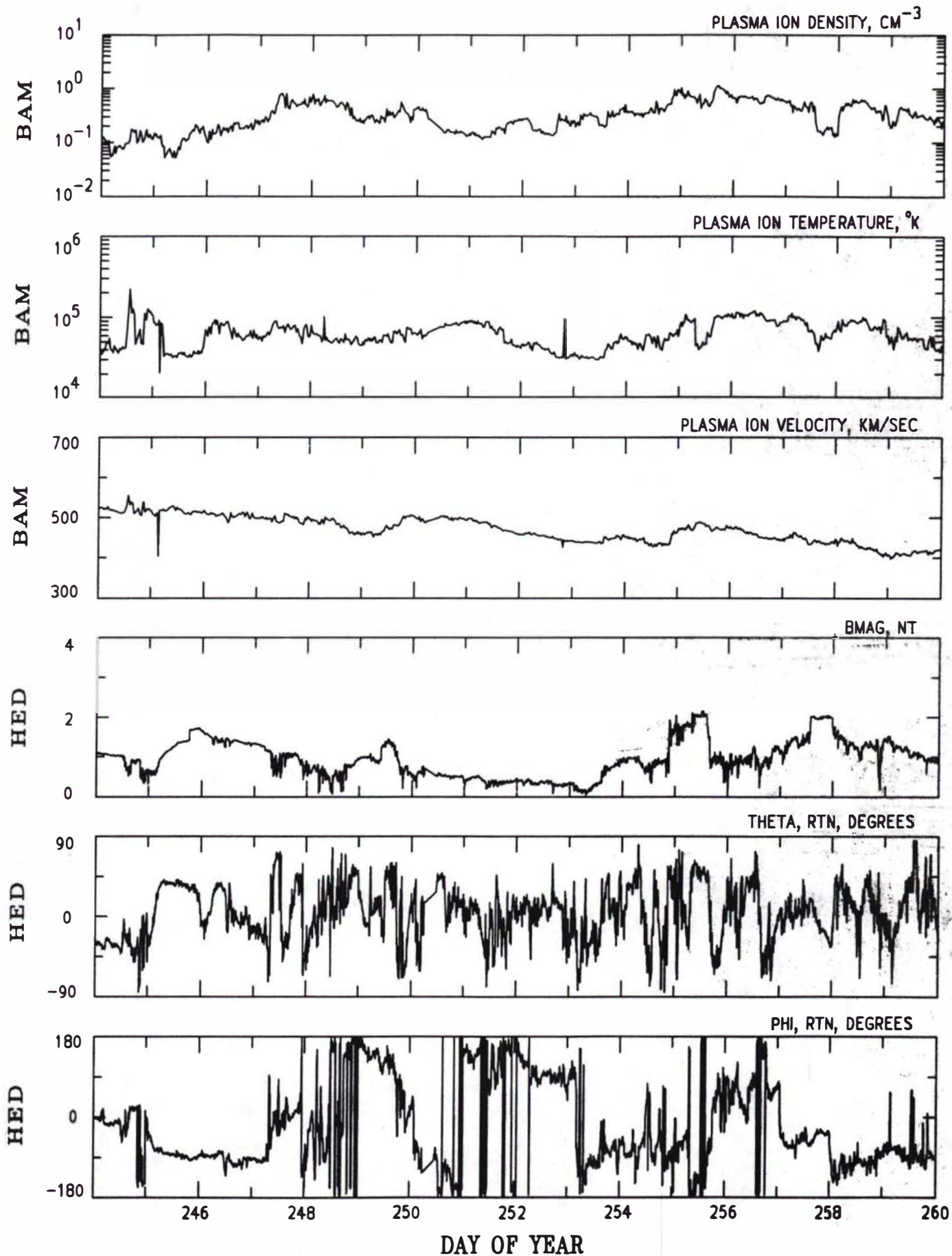


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 244 SEP 1 00:00:00.000 - 99 260 SEP 17 00:00:00.000



115.17 2007.11.20

10.0 10.0

10.0 10.0

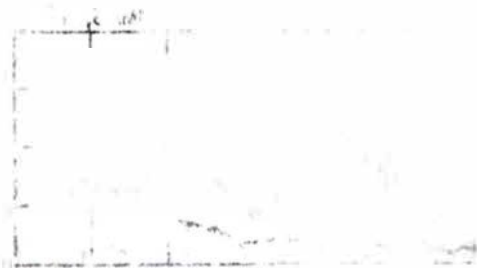
10.0 10.0

10.0 10.0

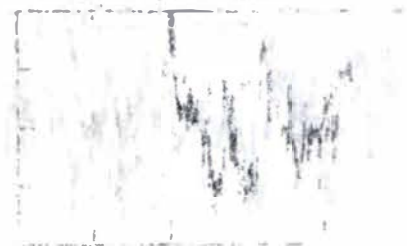
10.0 10.0



10.0 10.0



10.0 10.0

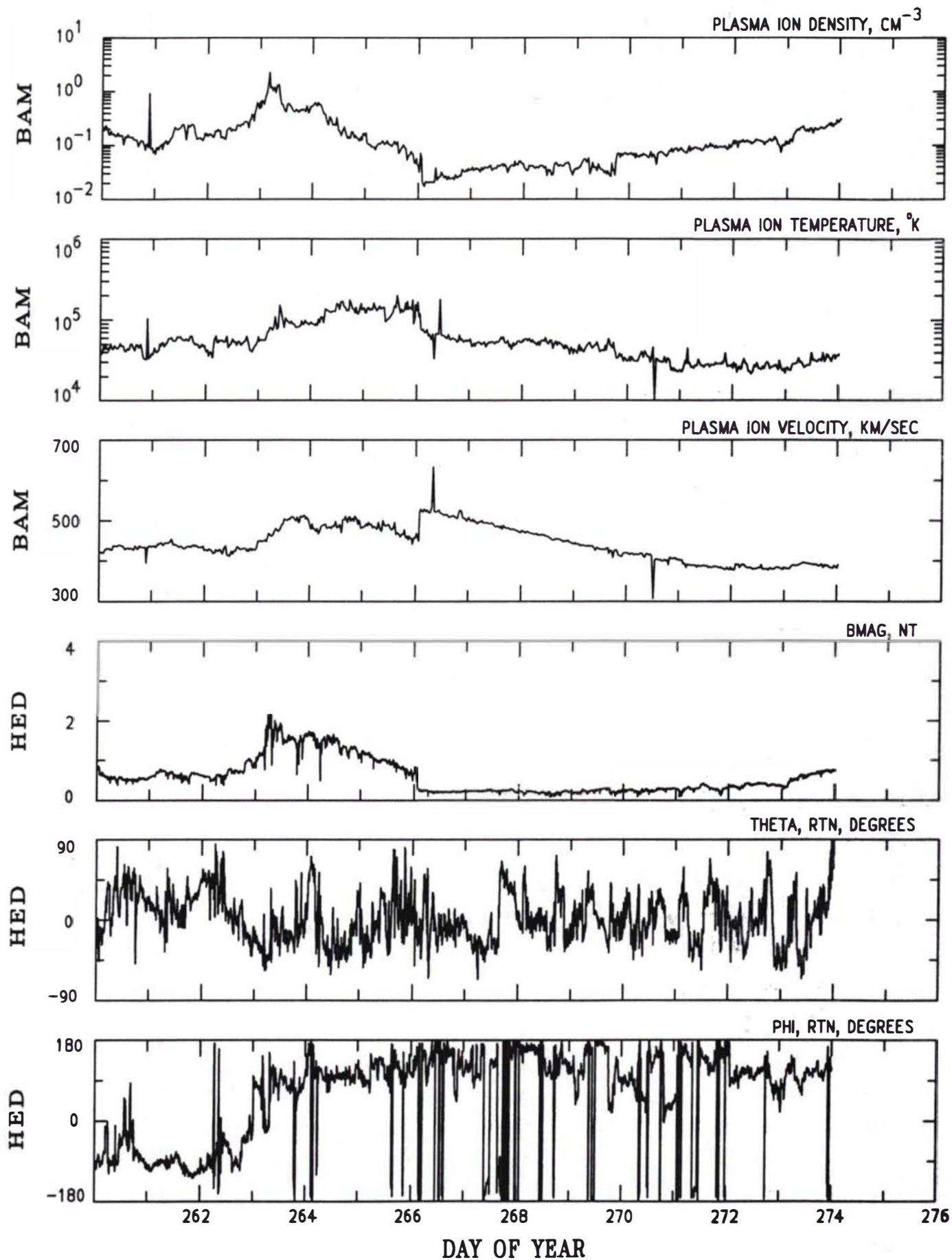


10.0 10.0



ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 260 SEP 17 00:00:00.000 - 99 276 OCT 3 00:00:00.000

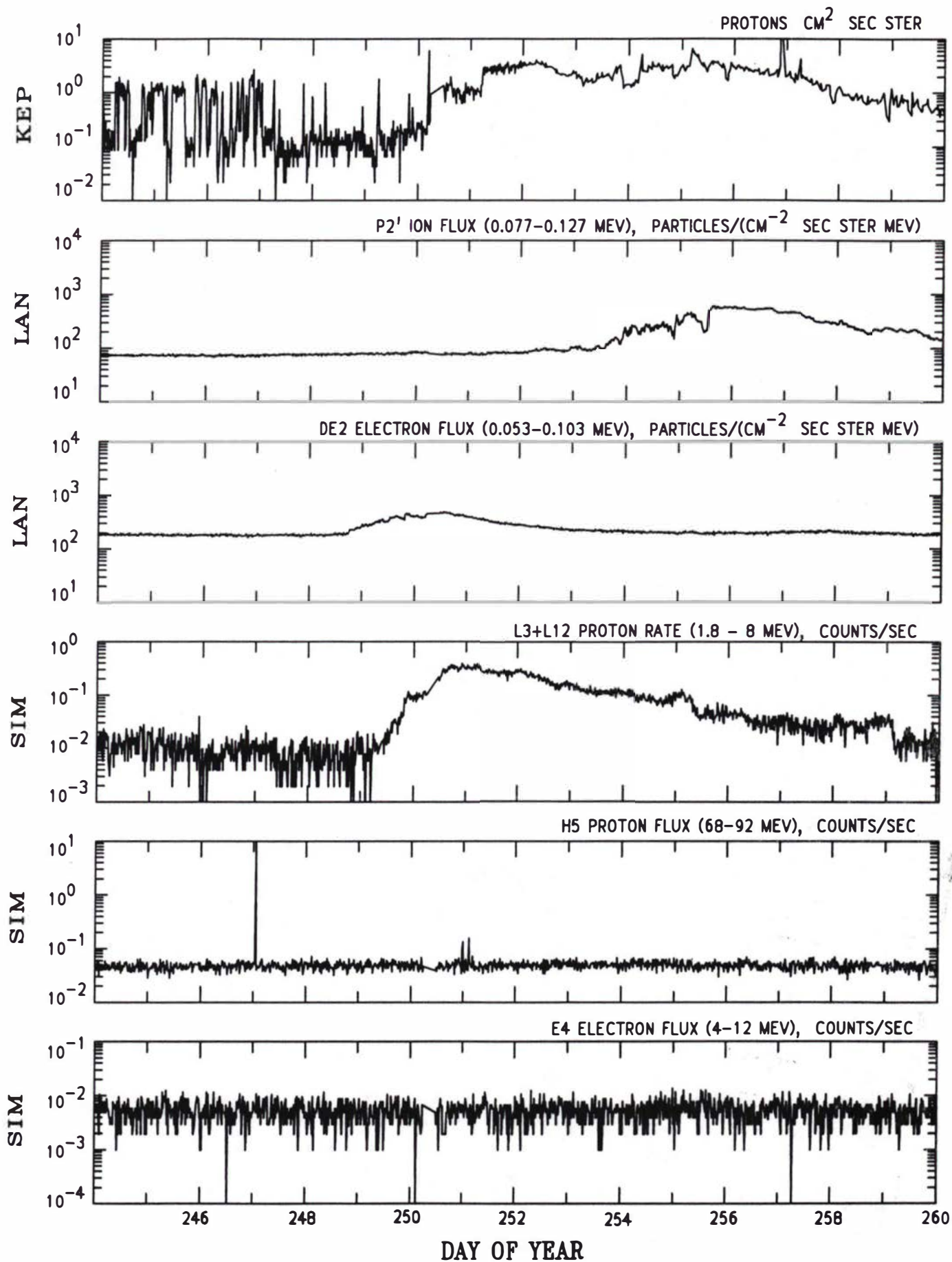


1954-1955

100-443886-100

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

99 244 SEP 1 00:00:00.000 - 99 260 SEP 17 00:00:00.000



100

100

100

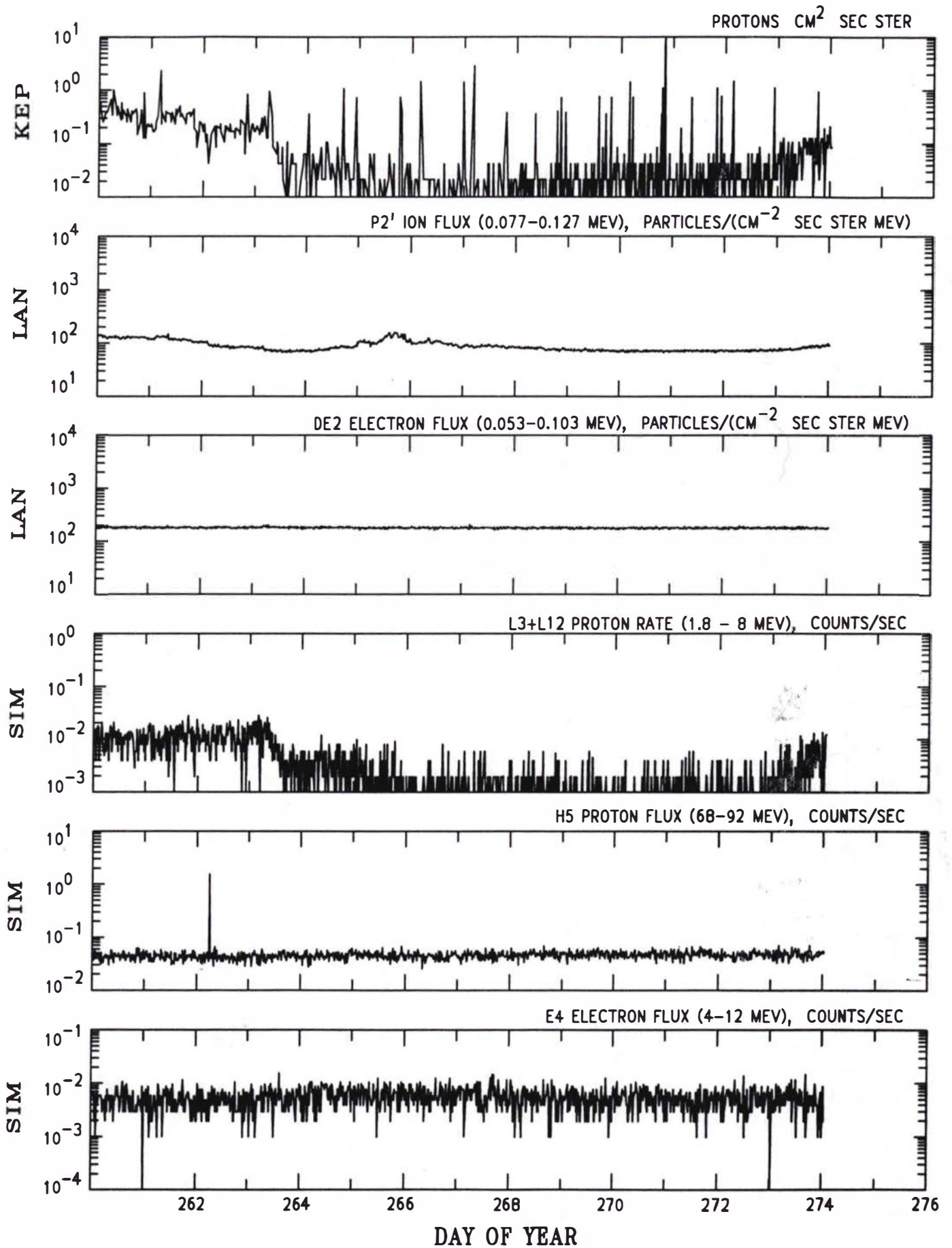
100

100

100

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

99 260 SEP 17 00:00:00.000 - 99 276 OCT 3 00:00:00.000

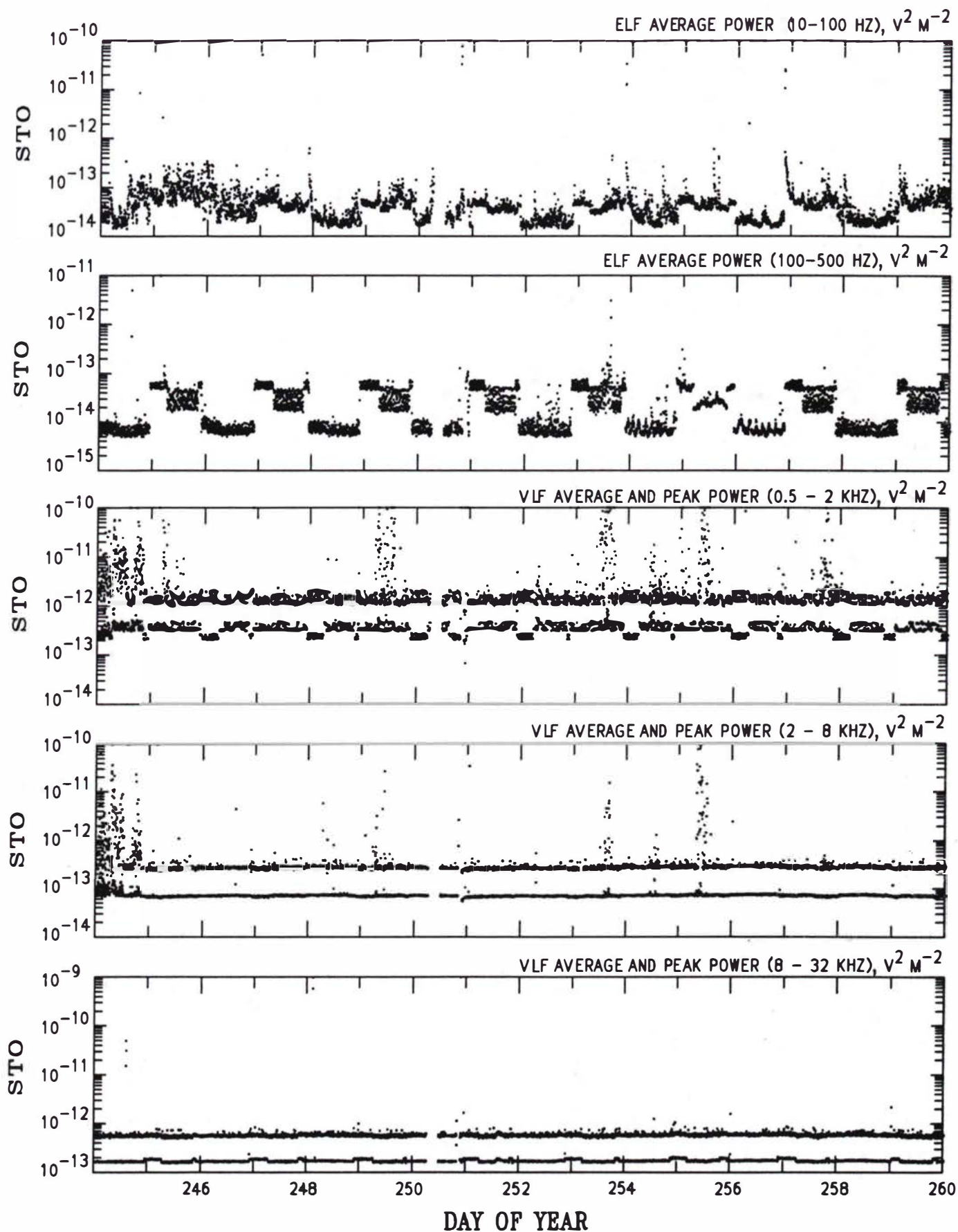


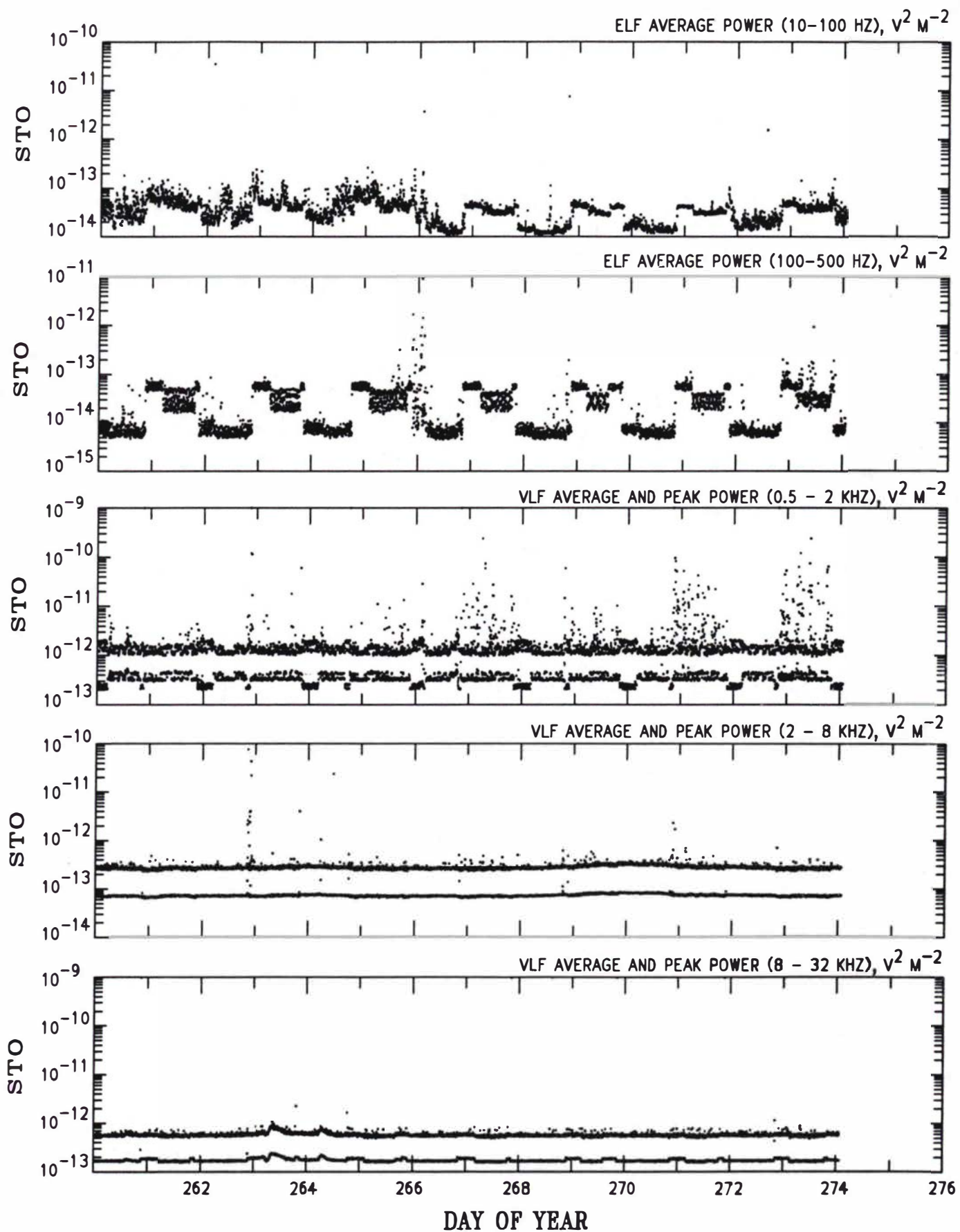
ULYSSES CDR - PLASMA WAVE

99 244 SEP 1 00:00:00.000 - 99 260 SEP 17 00:00:00.000



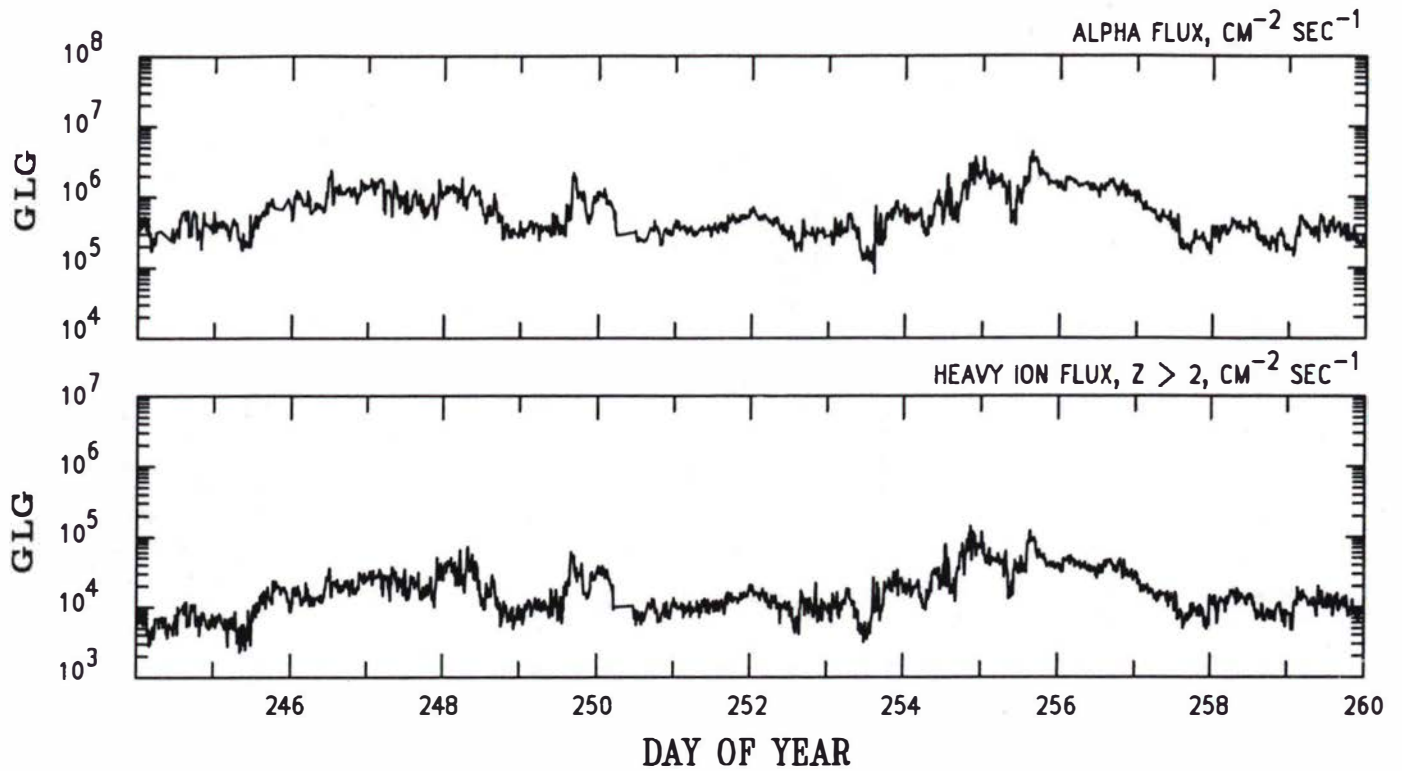
ULYSSES CDR - PLASMA WAVE

99 260 SEP 17 00:00:00.000 - 99 276 OCT 3 00:00:00.000



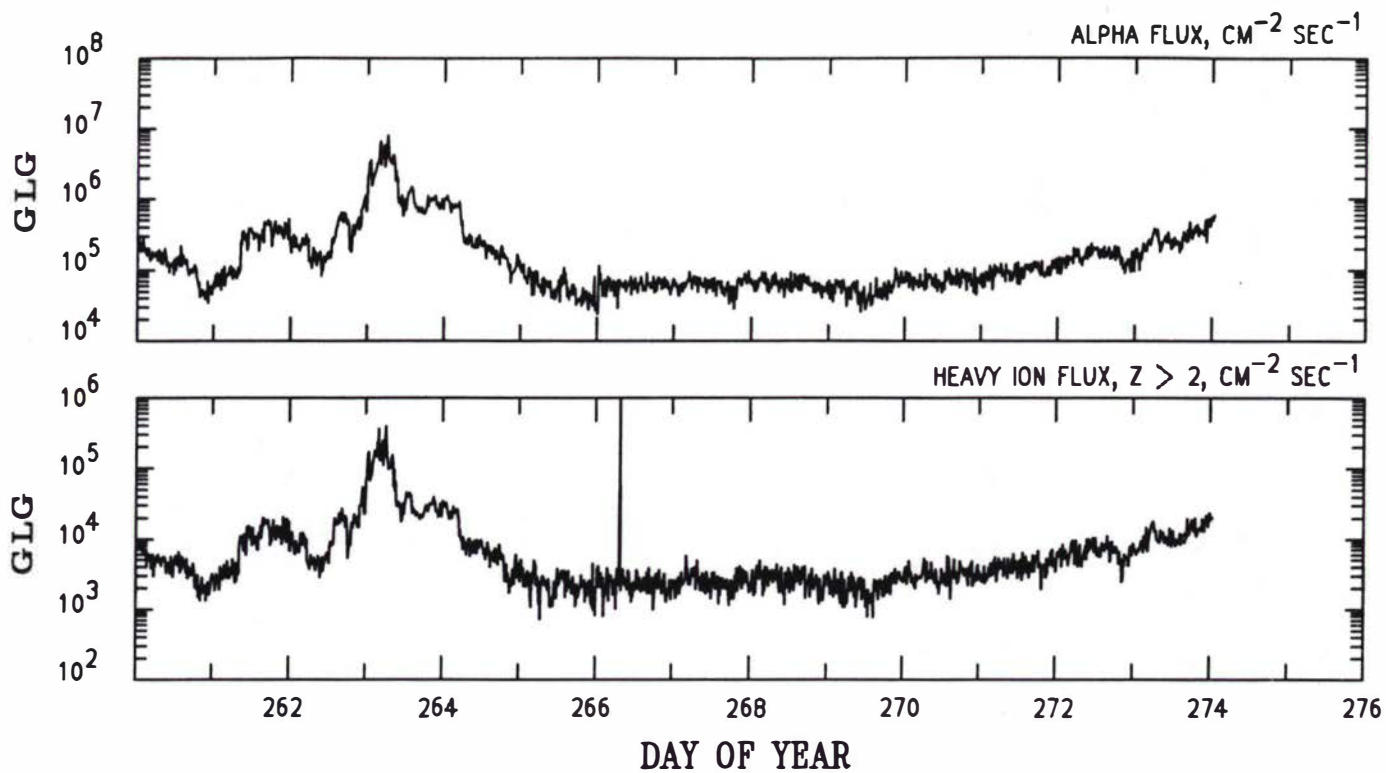
ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 244 SEP 1 00:00:00.000 - 99 260 SEP 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 260 SEP 17 00:00:00.000 - 99 276 OCT 3 00:00:00.000



From PETERSON@fender.msfc.nasa.gov Thu Sep 2 09:51 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Thu, 2 Sep 1999 11:58:37 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7748

BATSEARCH PROGRAM

BATSE BURST # 7748
EVENT OF 1999 SEP 1 DAY OF YEAR=244
EVENT CROSSING TIME AT BATSE : 13951. S. OR 03:52:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 66.000 -39.000
BATSE PEAK COUNTING RATE: 2800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 9/ 99 IS:
RA= 155.183 DEC= -12.759 DIST= 5.535 AU
BATSE-ULYSSES DISTANCE = 828007158. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -413.71 SECS.
CROSSING TIME AT ULYSSES IS 13537. S. OR 03:45:37 +/- 517.82 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 9/ 99 IS:
RA= 236.231 DEC= -21.654 DIST= 1.188 AU
MARS-BATSE DISTANCE = 177773632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 284.40 SECS.
CROSSING TIME AT MARS IS 14235. S. OR 03:57:15 +/- 94.66 SECONDS

BATSE BURST TRIGGER

NO.: 7748

TIME: TJD=1422 SECONDS=13951

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=139 AZIMUTH=220.9 ERROR=3.808 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR APPROX 10S, STARTS AT T-4S. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7748	990901	11422	13951	2800	066	-39	10

BATSE BURST# 7748

ULYSSES RT

2 / 9 / 99

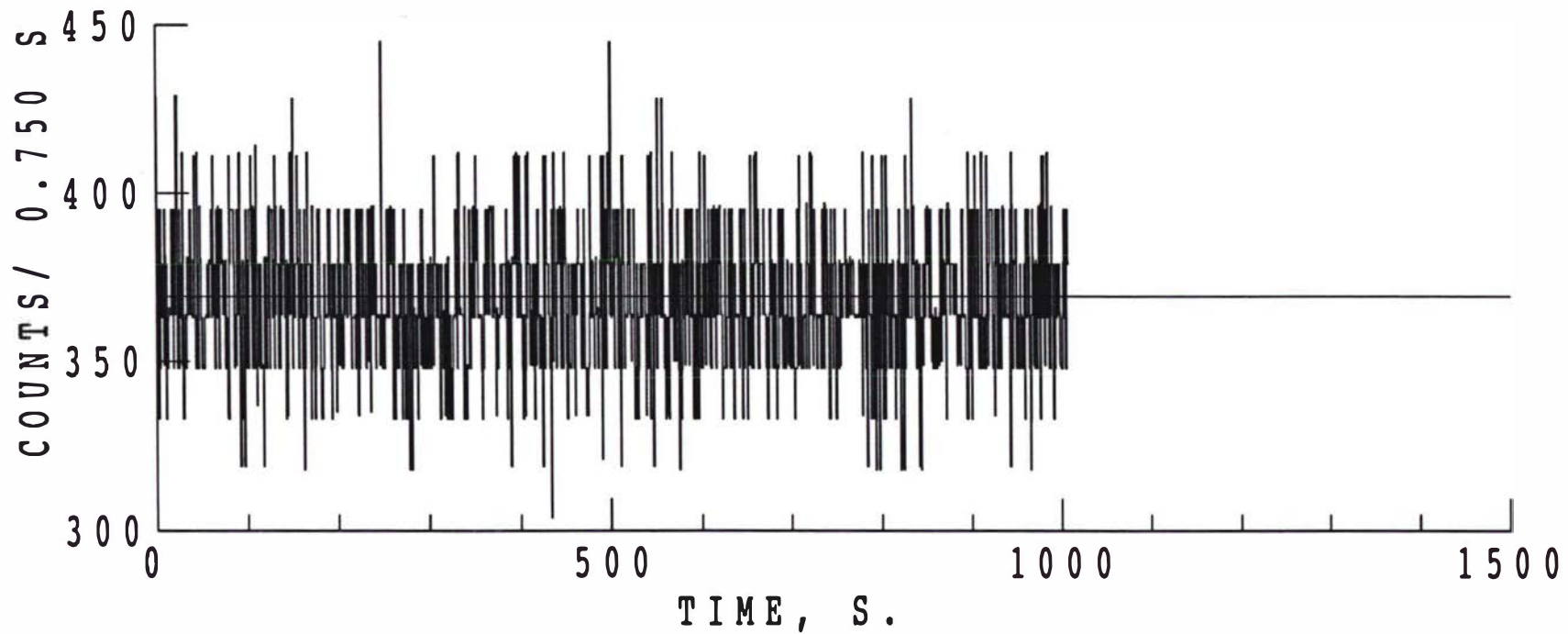
1 / 9 / 99 13032.174 s

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





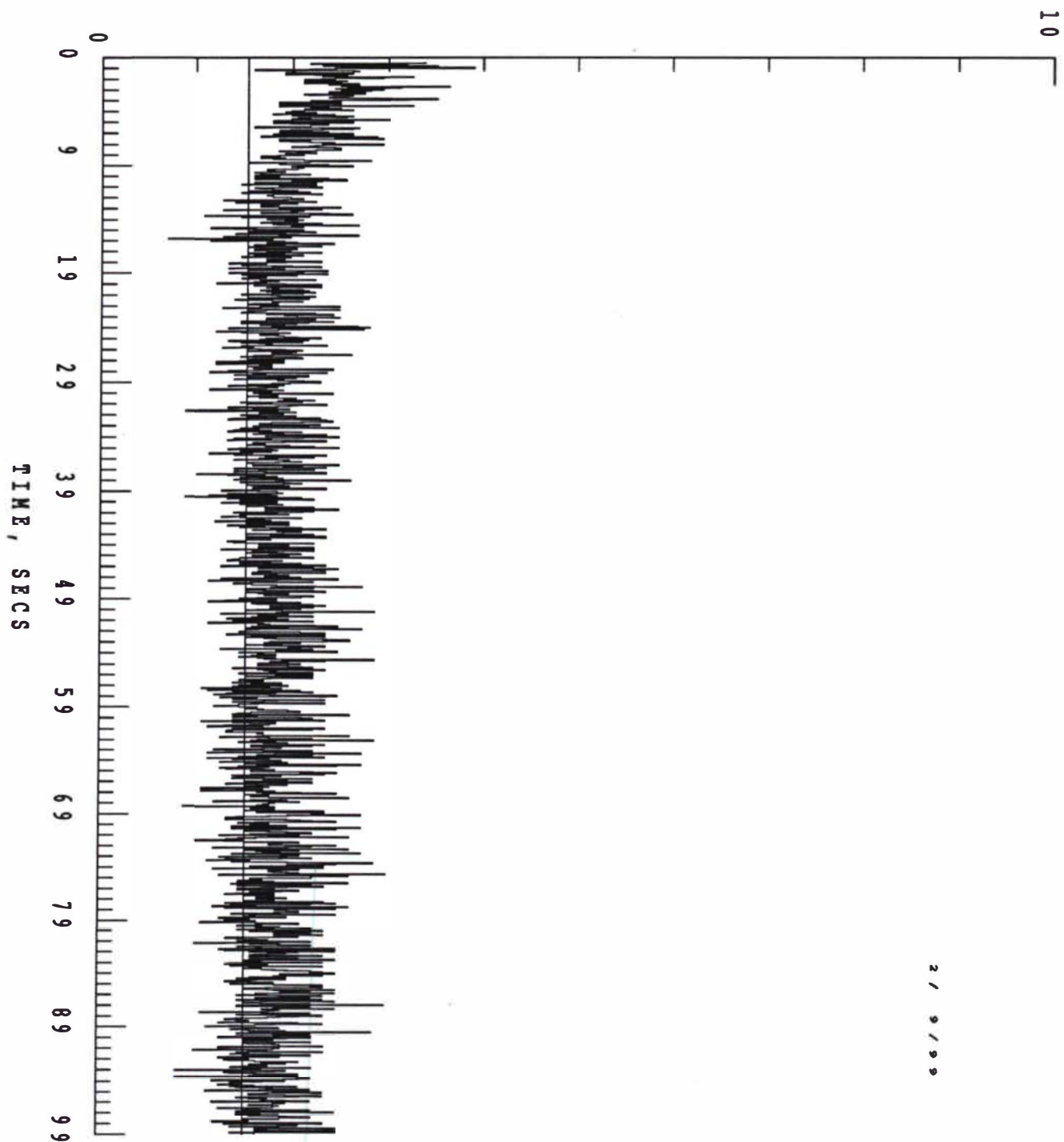
KONUS

01/09/99

68187.713

50 - 200 keV

COUNTS/0.064 S



2 / 9 / 99

KONUS1 19990901 68187

ULYSSES RT

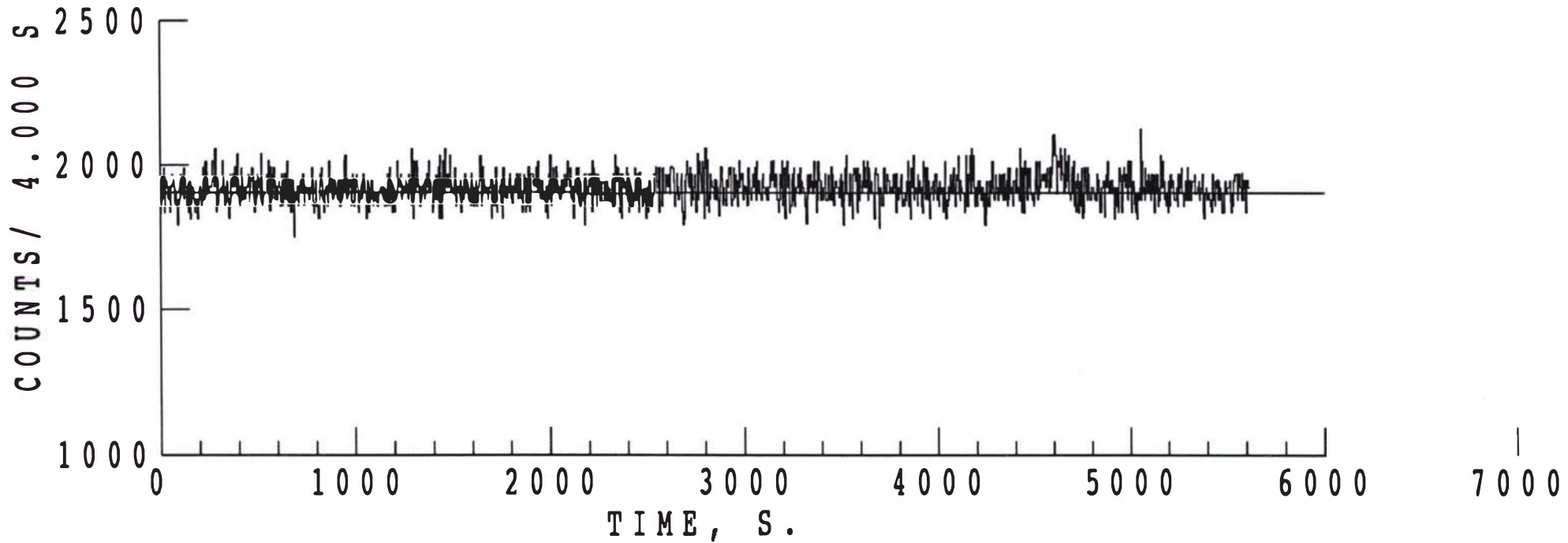
2 / 9 / 99

1 / 9 / 99 65376.203 s

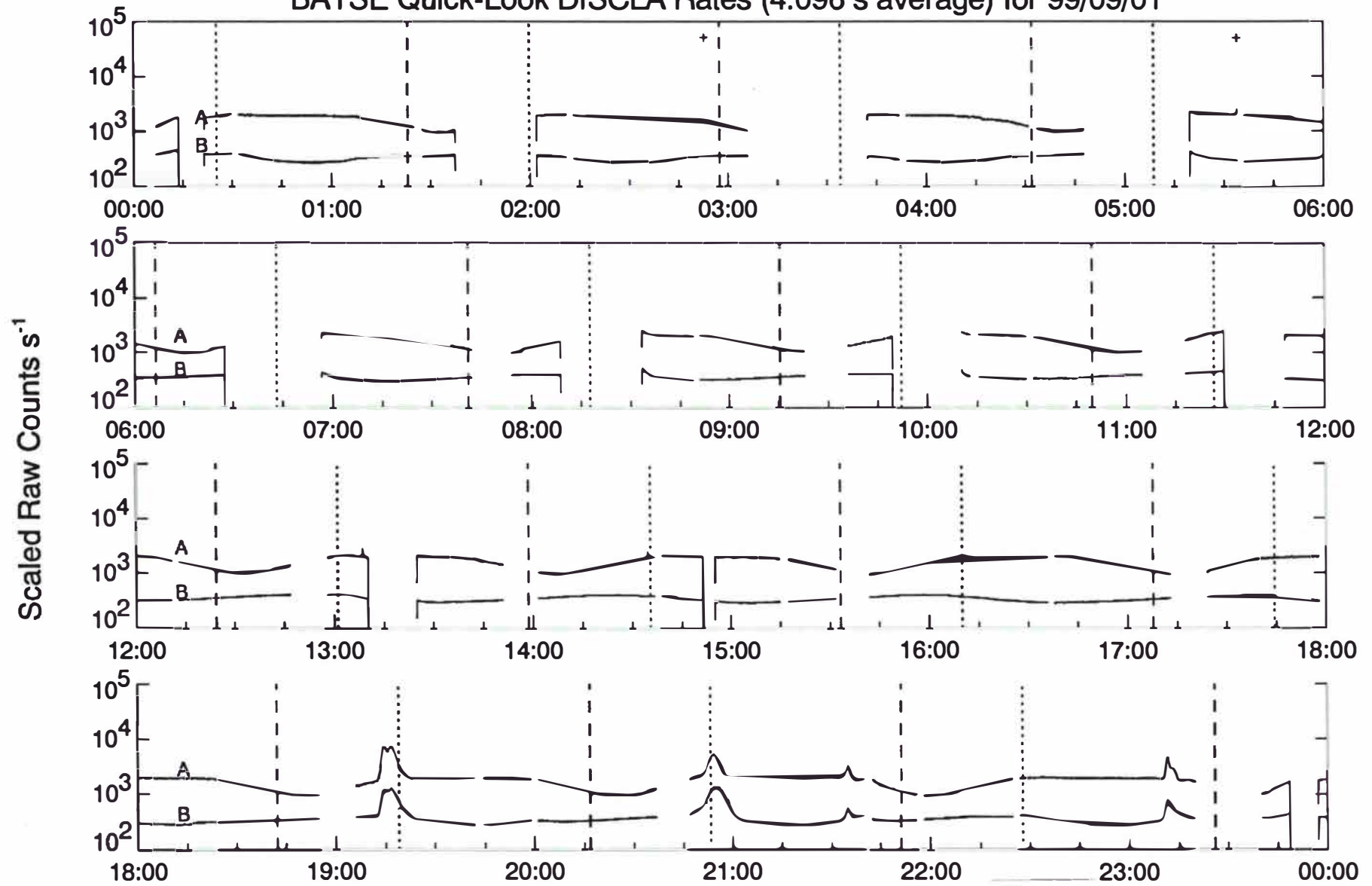
0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/01

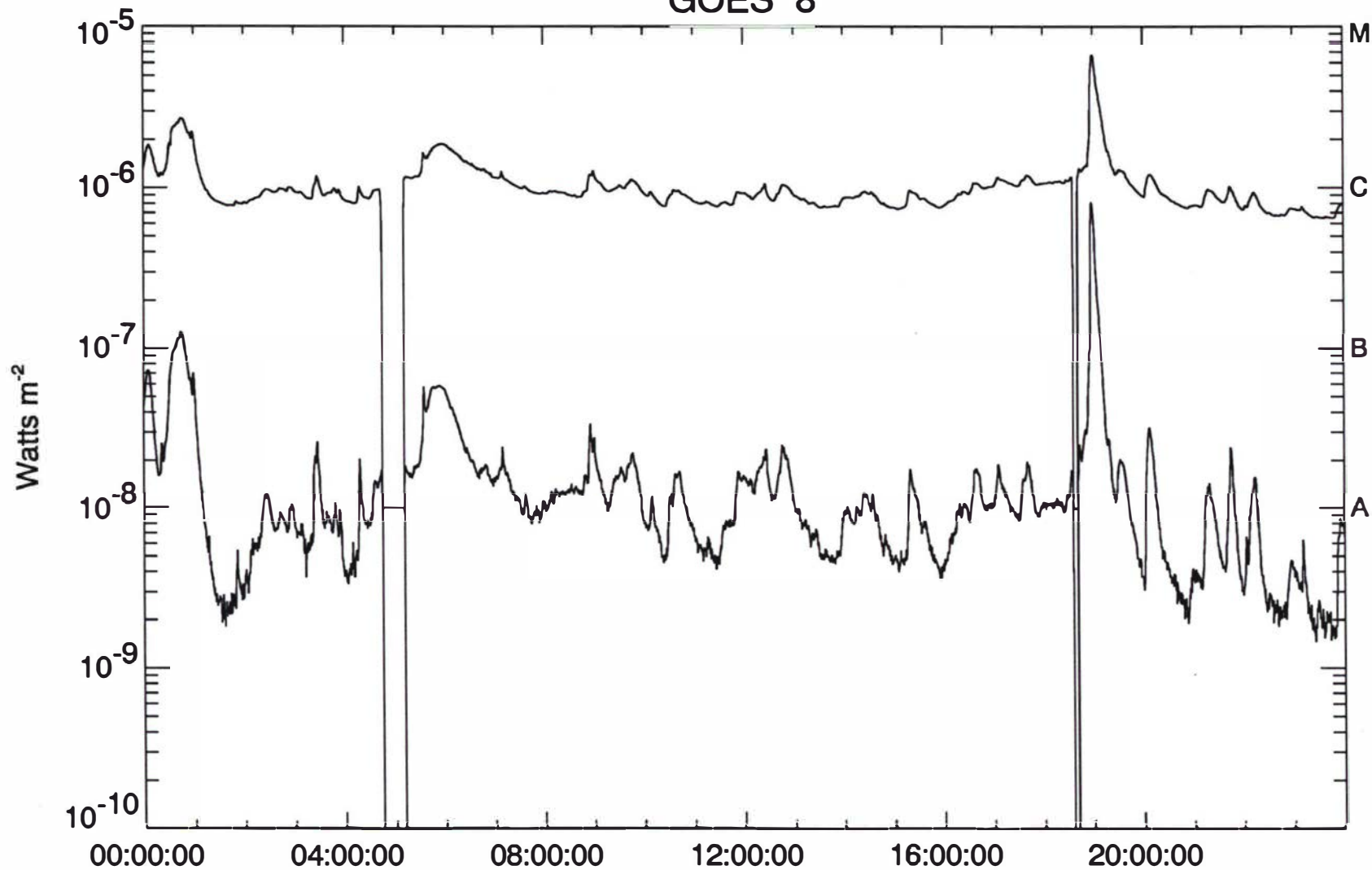


Current Time: 99/09/05, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/01, 0000:00

Plot created: 99/09/05, 1005

Channel

1 (1.0 - 8.0 Angstroms)

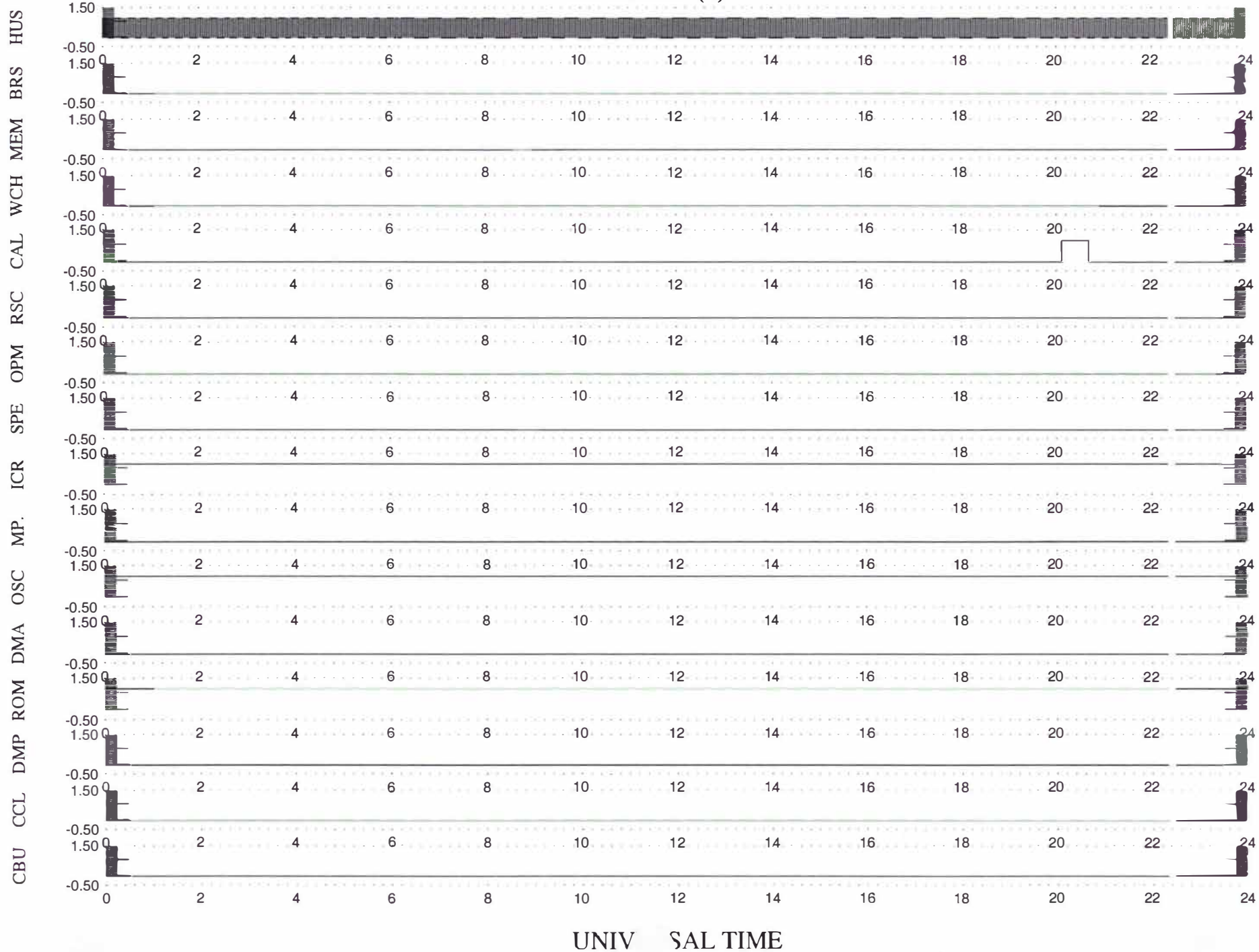
Background not subtracted

2 (0.5 - 4.0 Angstroms)

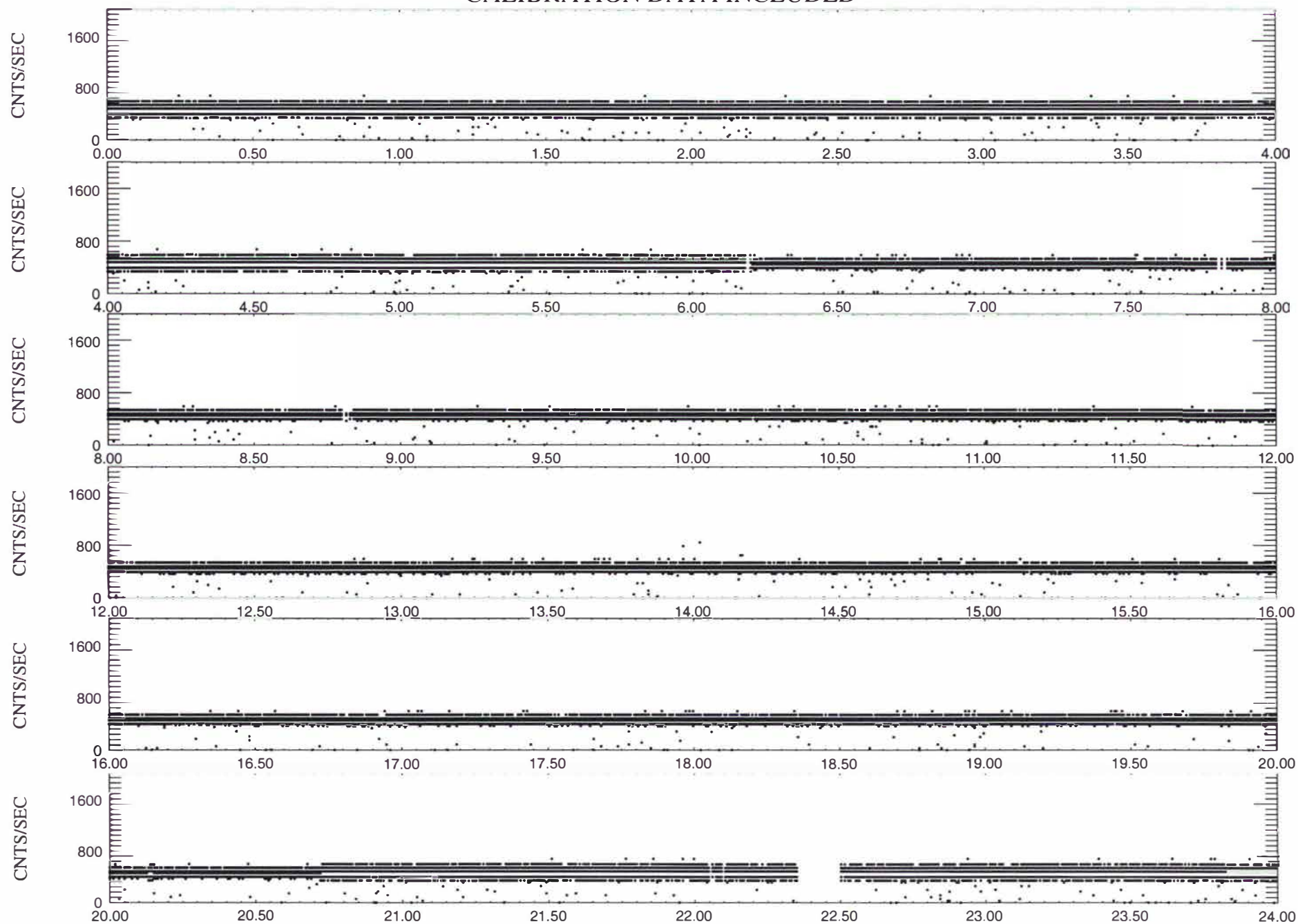
Background not subtracted

Sample average = 10

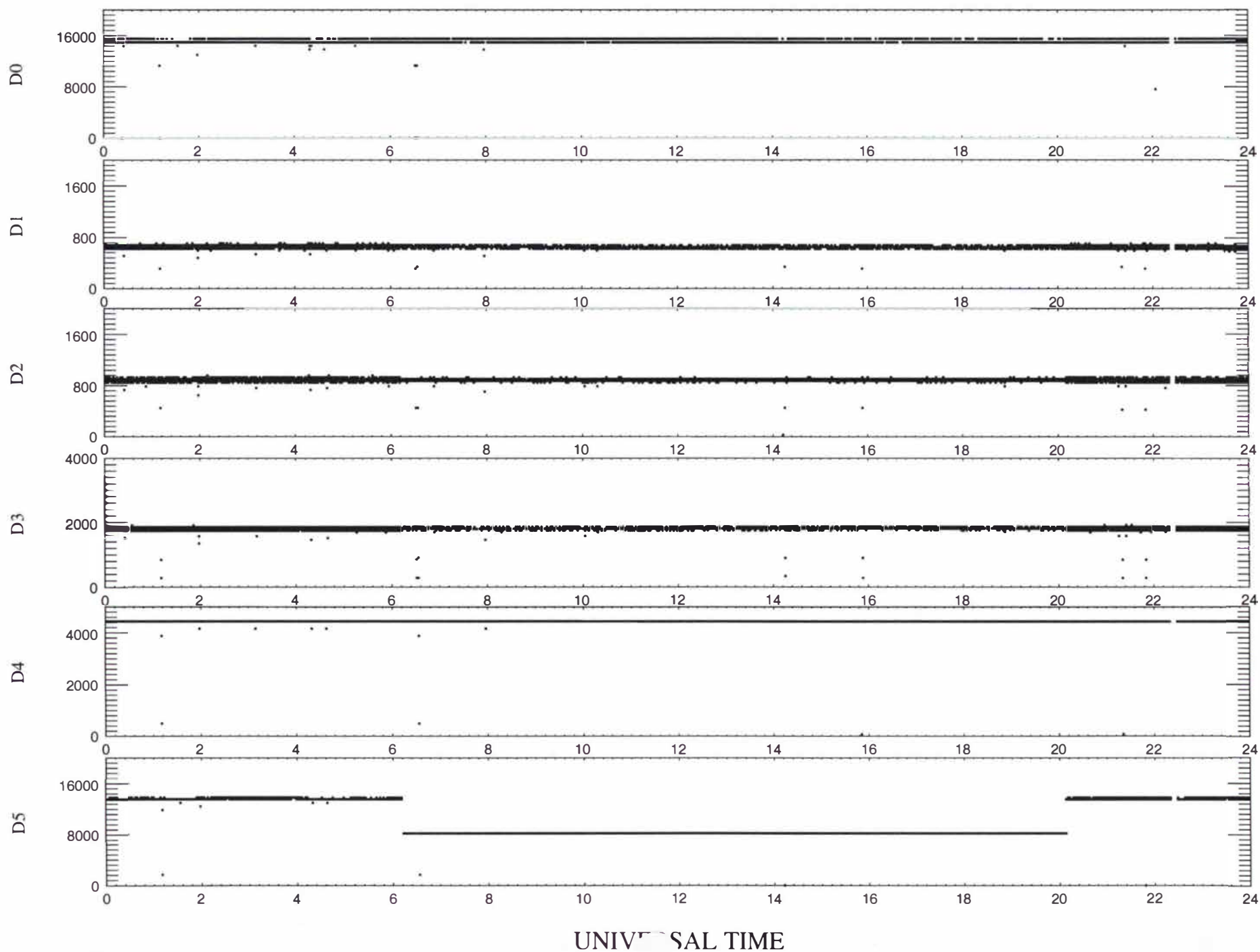
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From HENZE@fender.msfc.nasa.gov Fri Sep 3 13:25 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Fri, 3 Sep 1999 15:32:58 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7749

BATSEARCH PROGRAM

BATSE BURST # 7749
EVENT OF 1999 SEP 2 DAY OF YEAR=245
EVENT CROSSING TIME AT BATSE : 13318. S. OR 03:41:58.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 58.000 63.000
BATSE PEAK COUNTING RATE: 1800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 9/ 99 IS:
RA= 155.340 DEC= -12.878 DIST= 5.532 AU
BATSE-ULYSSES DISTANCE = 827548261. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 704.23 SECS.
CROSSING TIME AT ULYSSES IS 14022. S. OR 03:53:42 +/- 524.09 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 9/ 99 IS:
RA= 236.881 DEC= -21.794 DIST= 1.194 AU
MARS-BATSE DISTANCE = 178630208. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.21 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 448.23 SECS.
CROSSING TIME AT MARS IS 13766. S. OR 03:49:26 +/- 74.97 SECONDS

BATSE BURST TRIGGER

NO.: 7749

TIME: TJD=1423 SECONDS=13318

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 55.7 AZIMUTH= 28.6 ERROR= 15.5 DEGREES

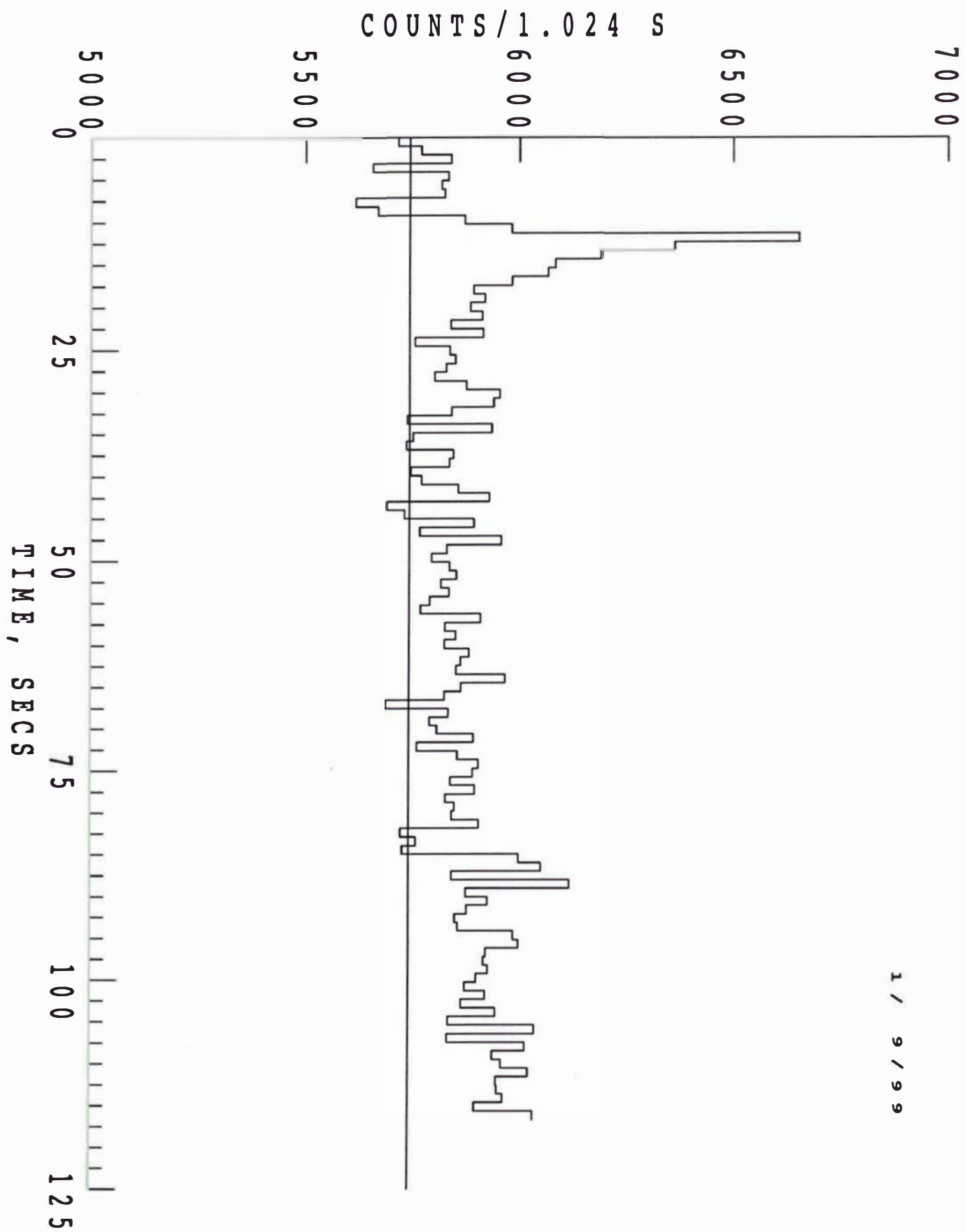
COMMENTS:

SINGLE PULSE, DUR. APPROX. 5 S. WEAKLY VISIBLE ABOVE 100 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7749	990902	11423	13318	1800	058	+63	5

BACODINE 7749 02/09/99 13306.617

25 - 100 keV



BATSE BURST# 7749

ULYSSES RT

3 / 9 / 99

2 / 9 / 99 13500.056 s

0.250 S INTERVALS REGROUPED BY 3

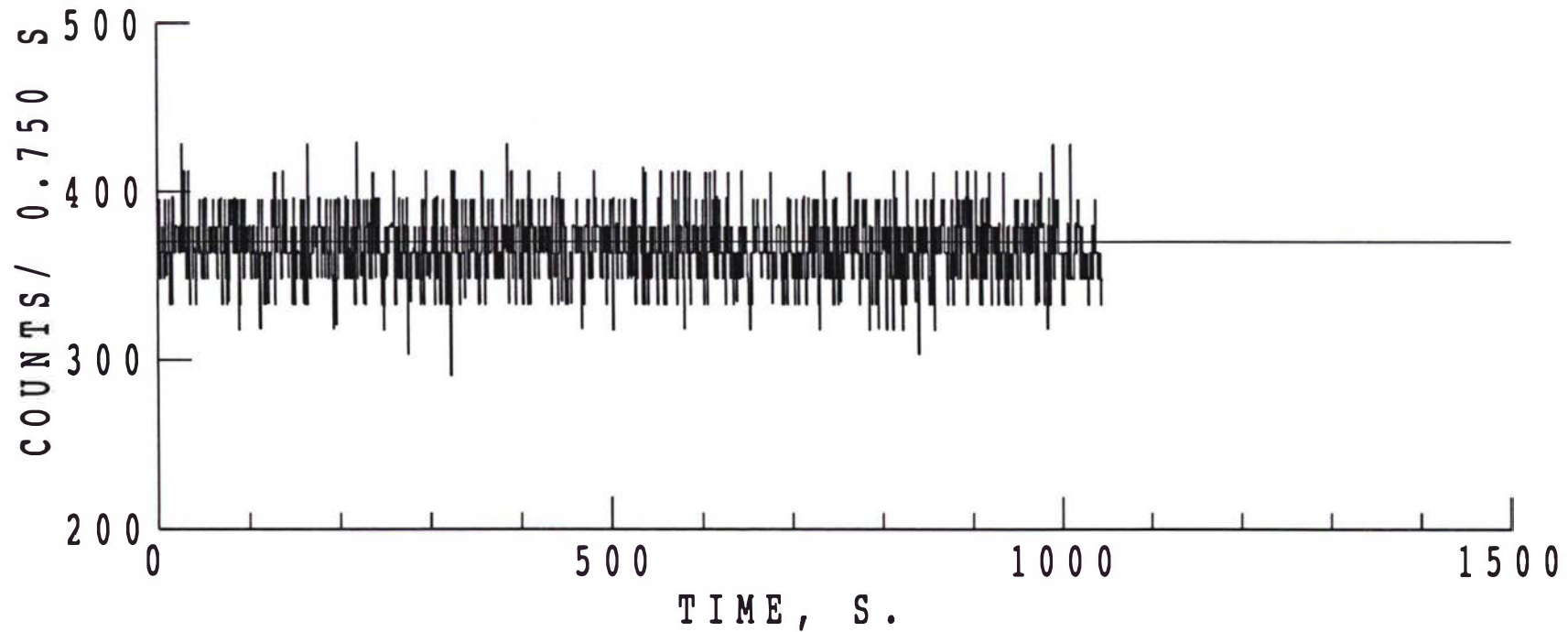
0 - 0 keV

N= 10 M= 10

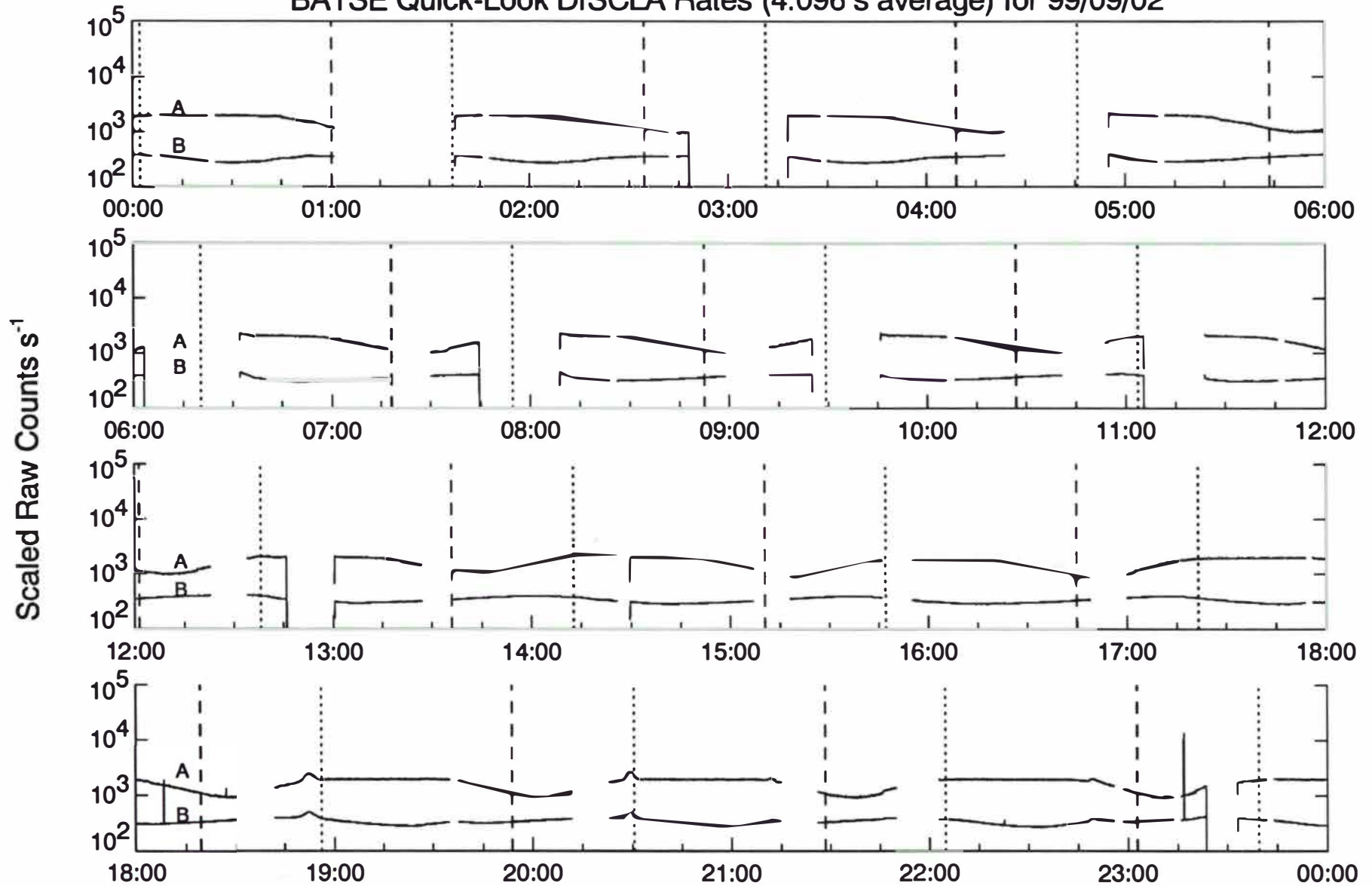
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/02



Current Time: 99/09/06, 1015 EDT

A: Channel 0 Most Sunward LAD

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

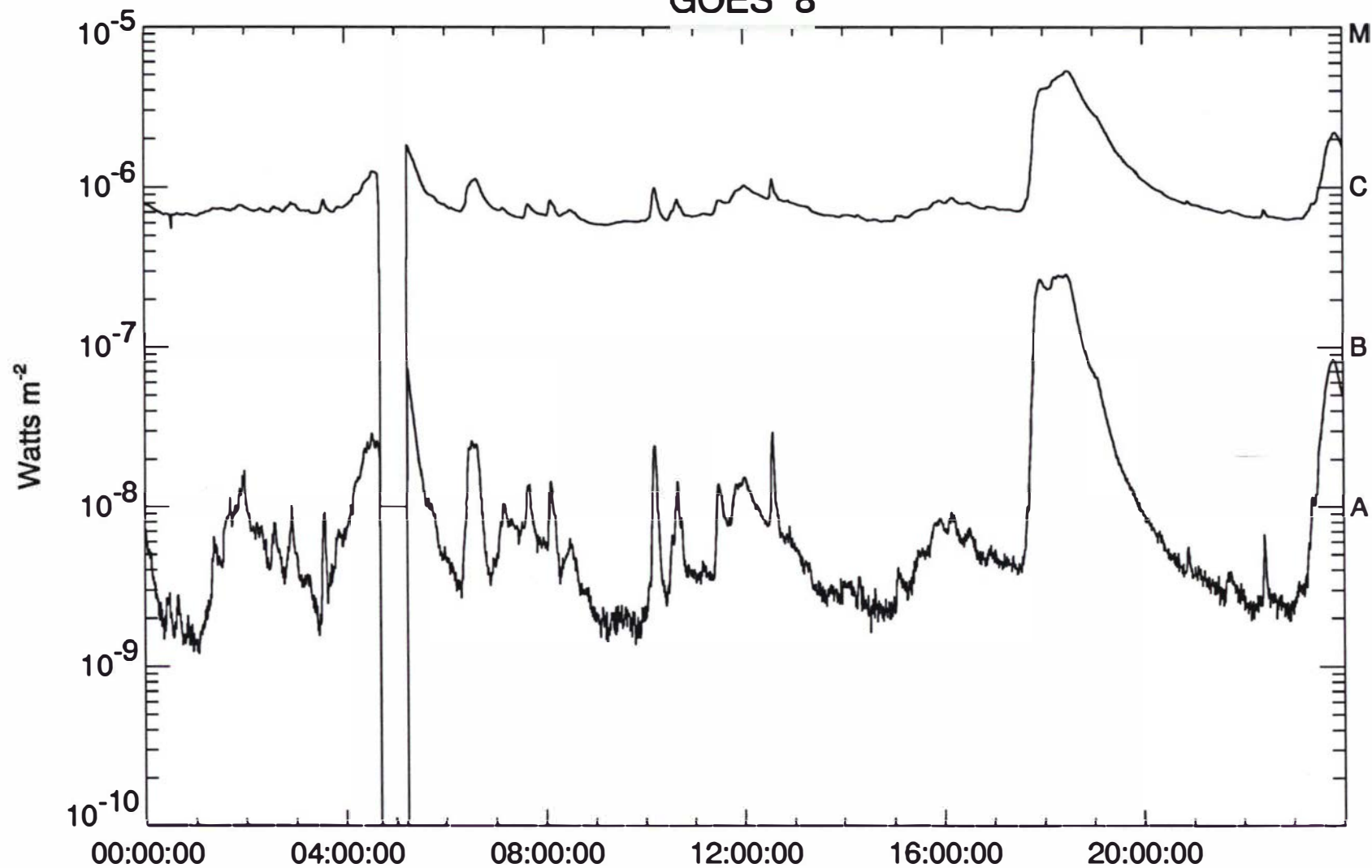
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8

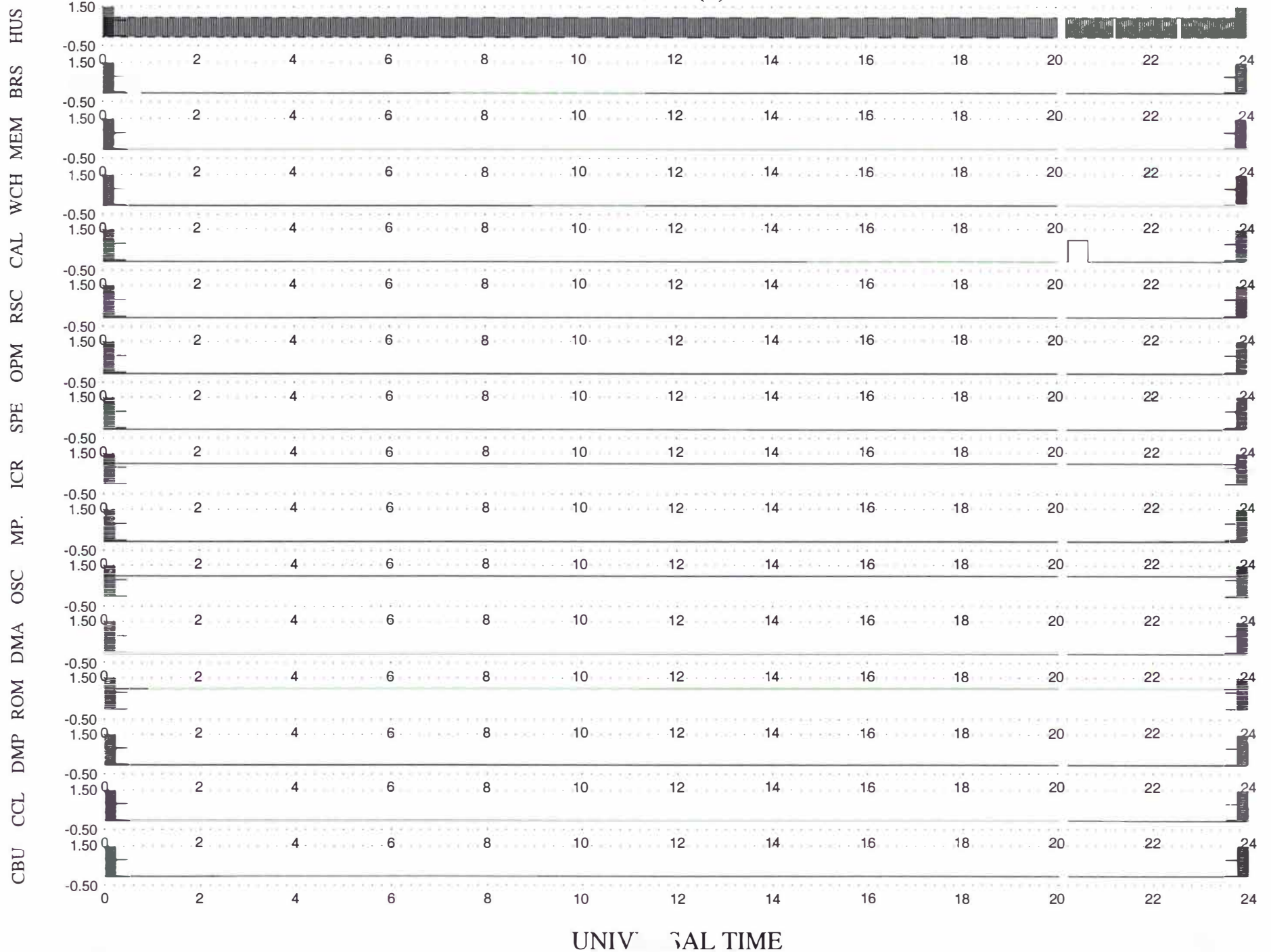


Data Start: 99/09/02, 0000:00

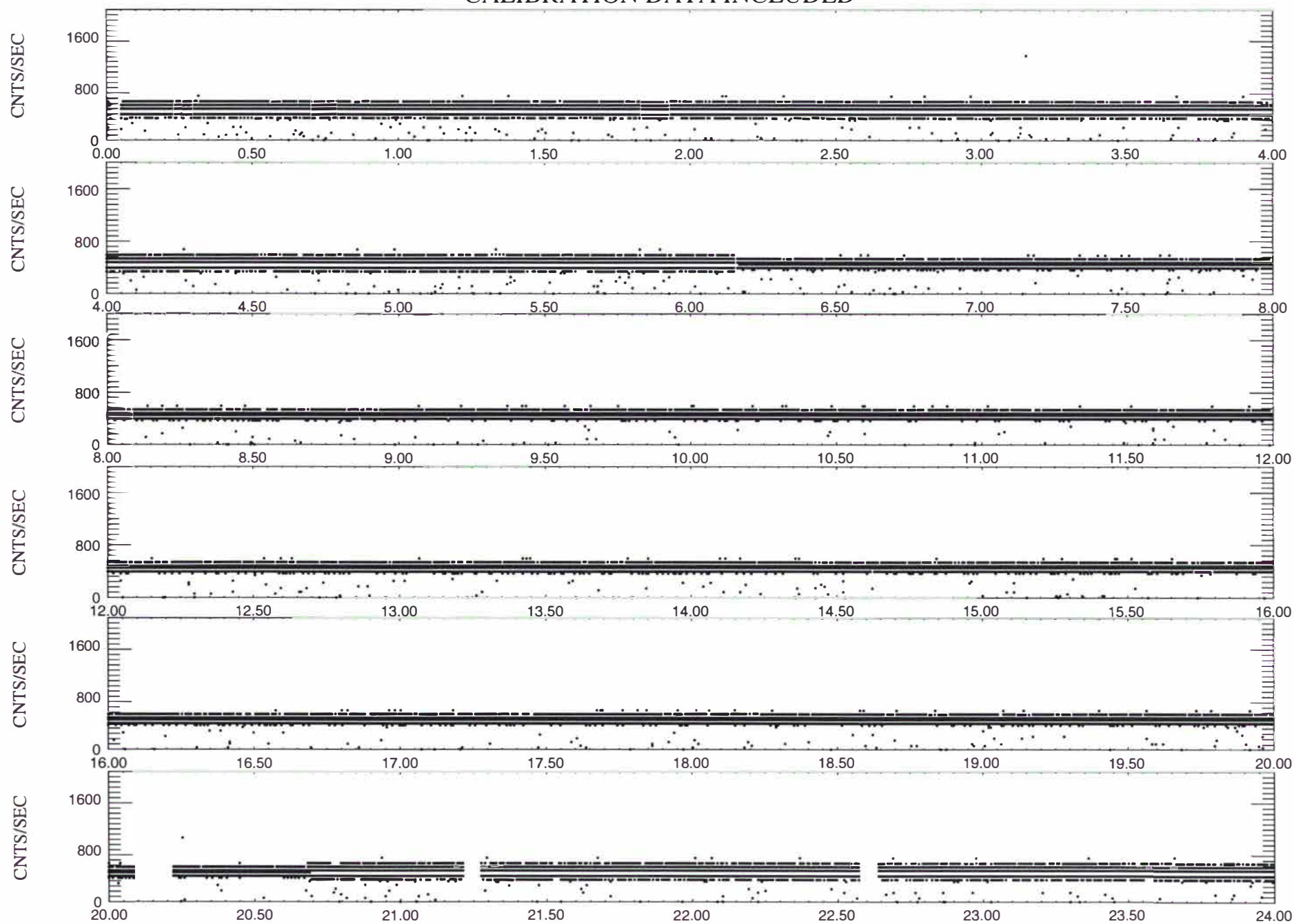
Plot created: 99/09/06, 1015

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

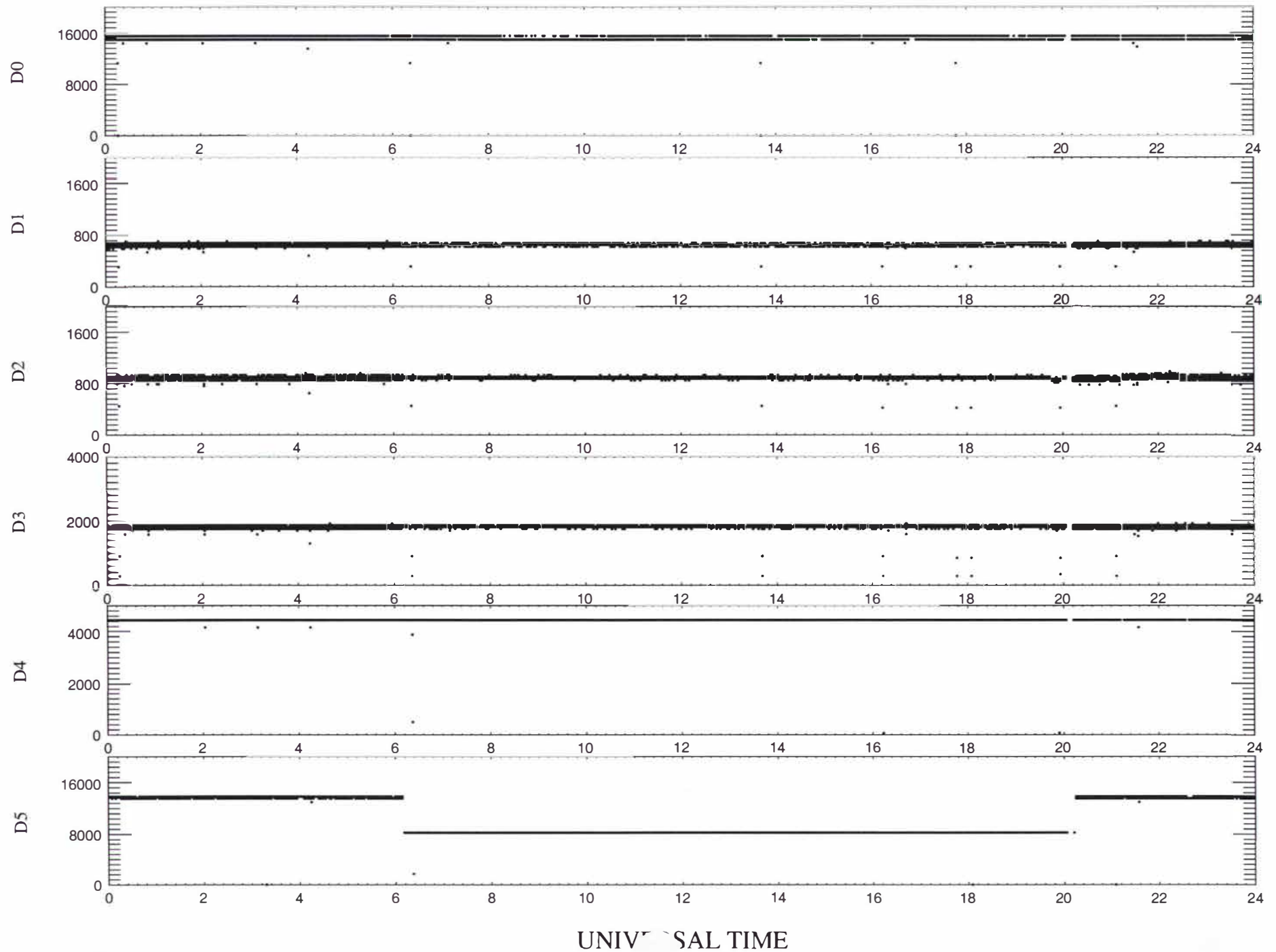
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Date: _____

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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

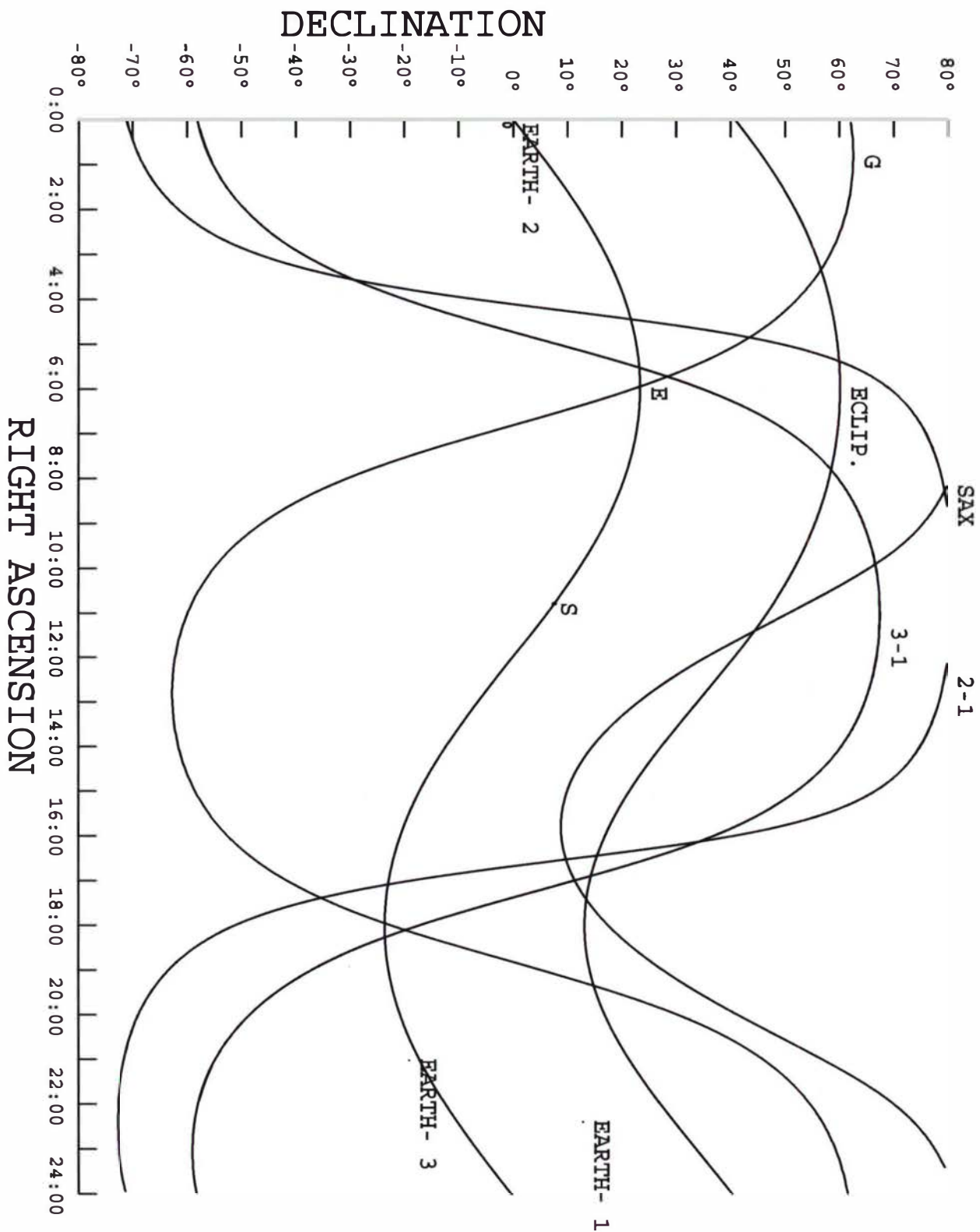
1 ULYSSES

2 KONUS2

3 NEAR

EVENT OF SEP 3, 1999 5:45

16/11/ 9



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

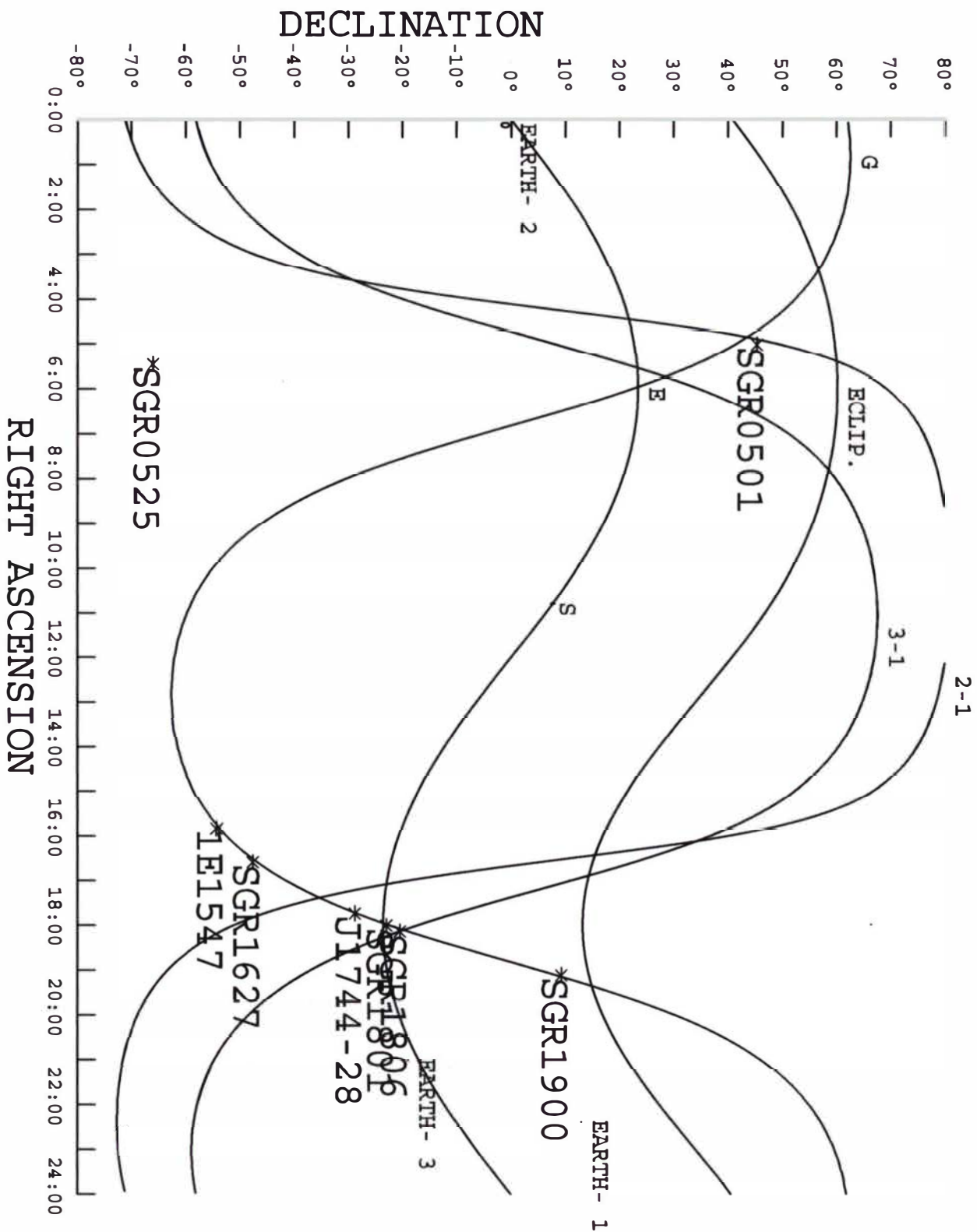
1 ULYSSES

2 KONUS2

3 NEAR

EVENT OF SEP 3, 1999 5:45

16/11/ 9



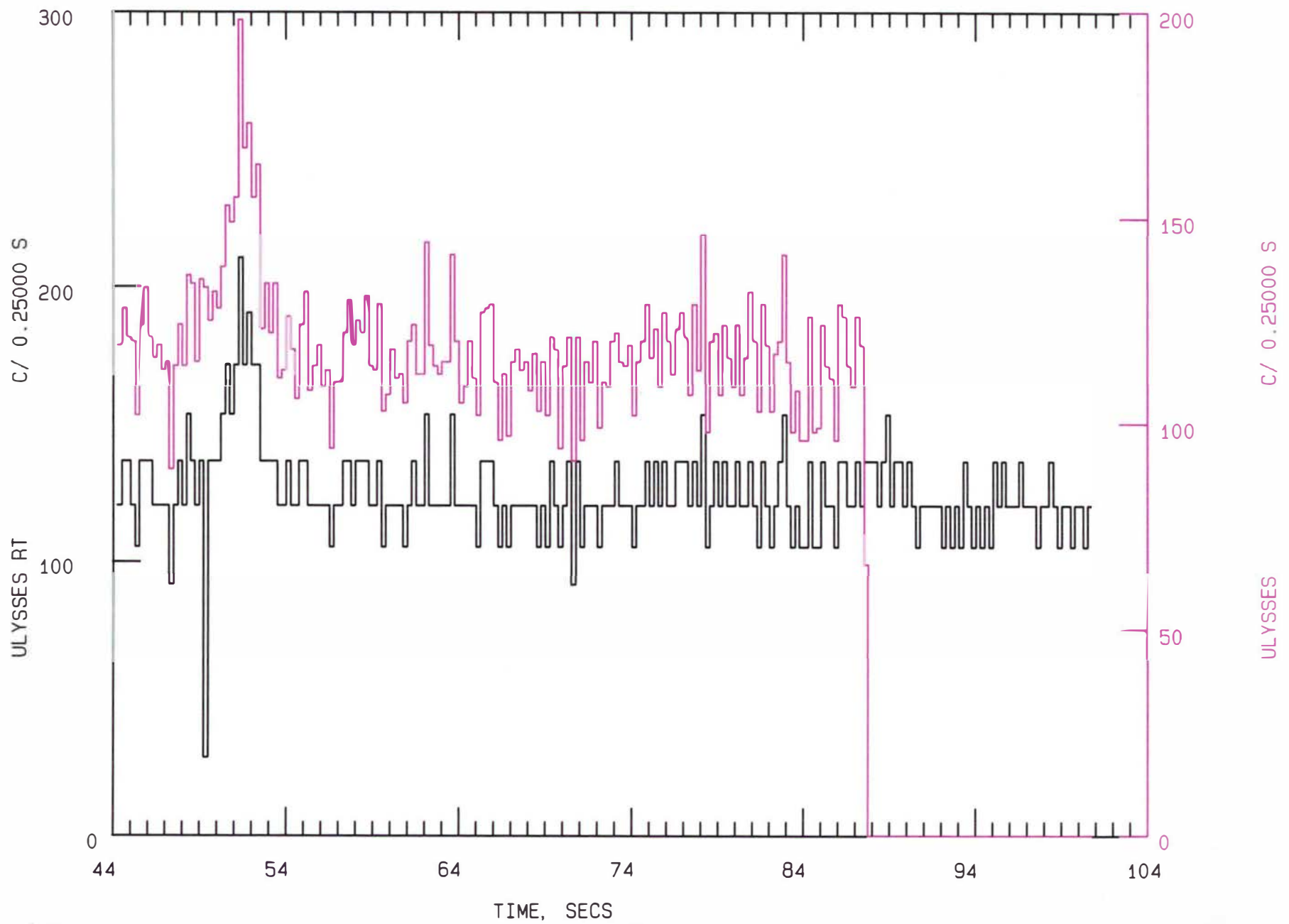
ULYSSES RT-ULYSSES

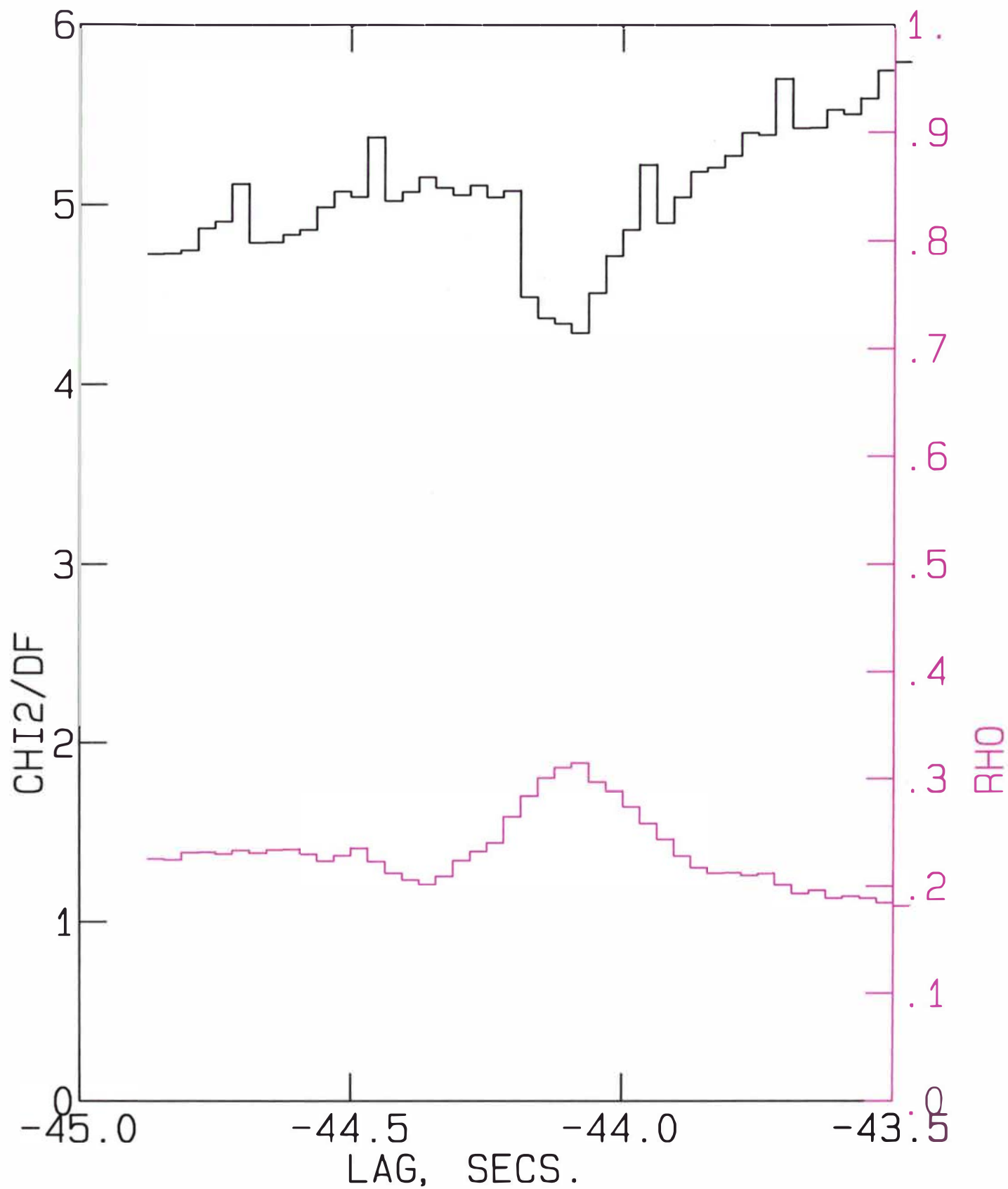
CORRELATION

3/ 9/99

20679.014

16/11/ 9



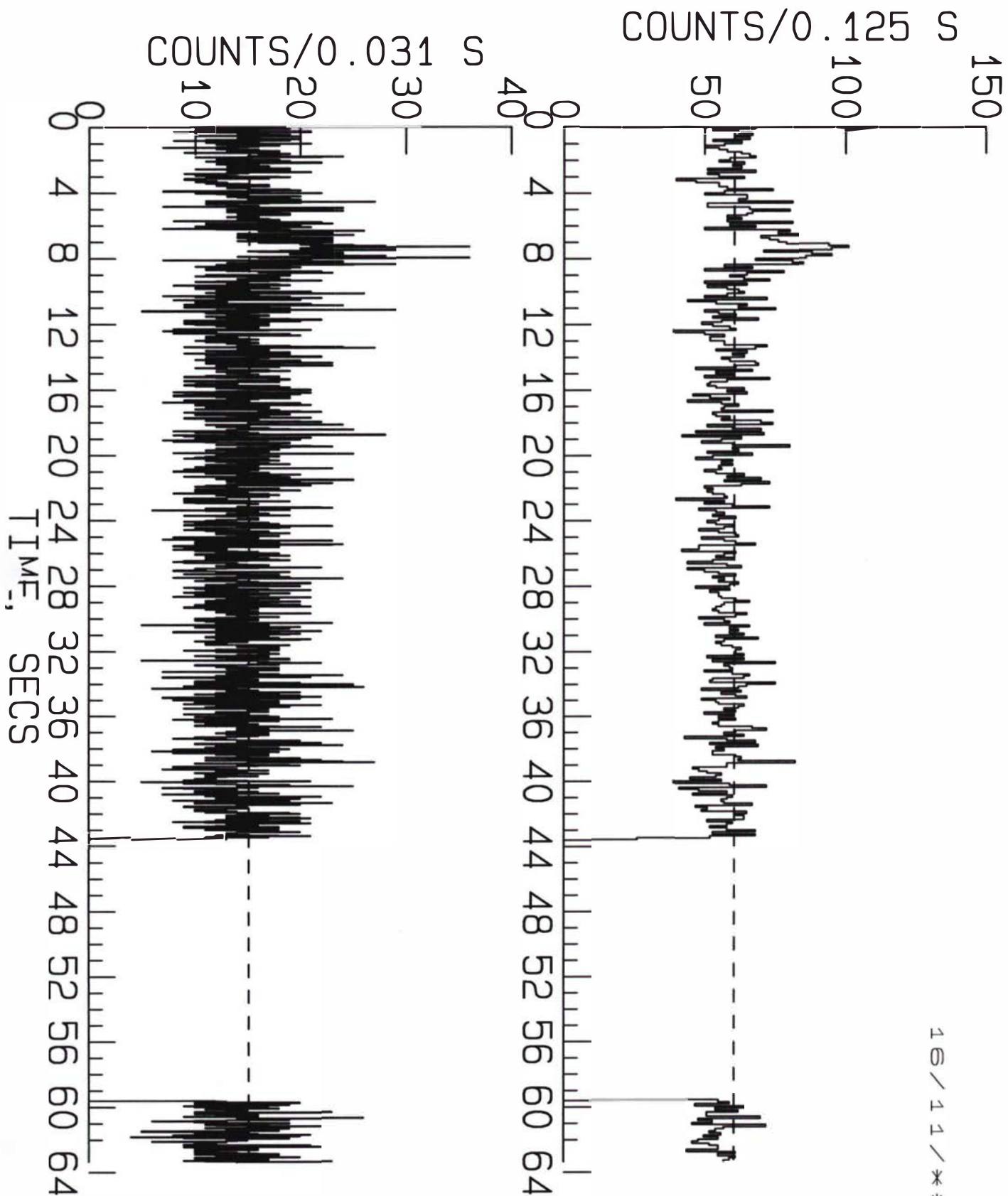


ULYSSES

03/09/99

Ttrig=20730.509

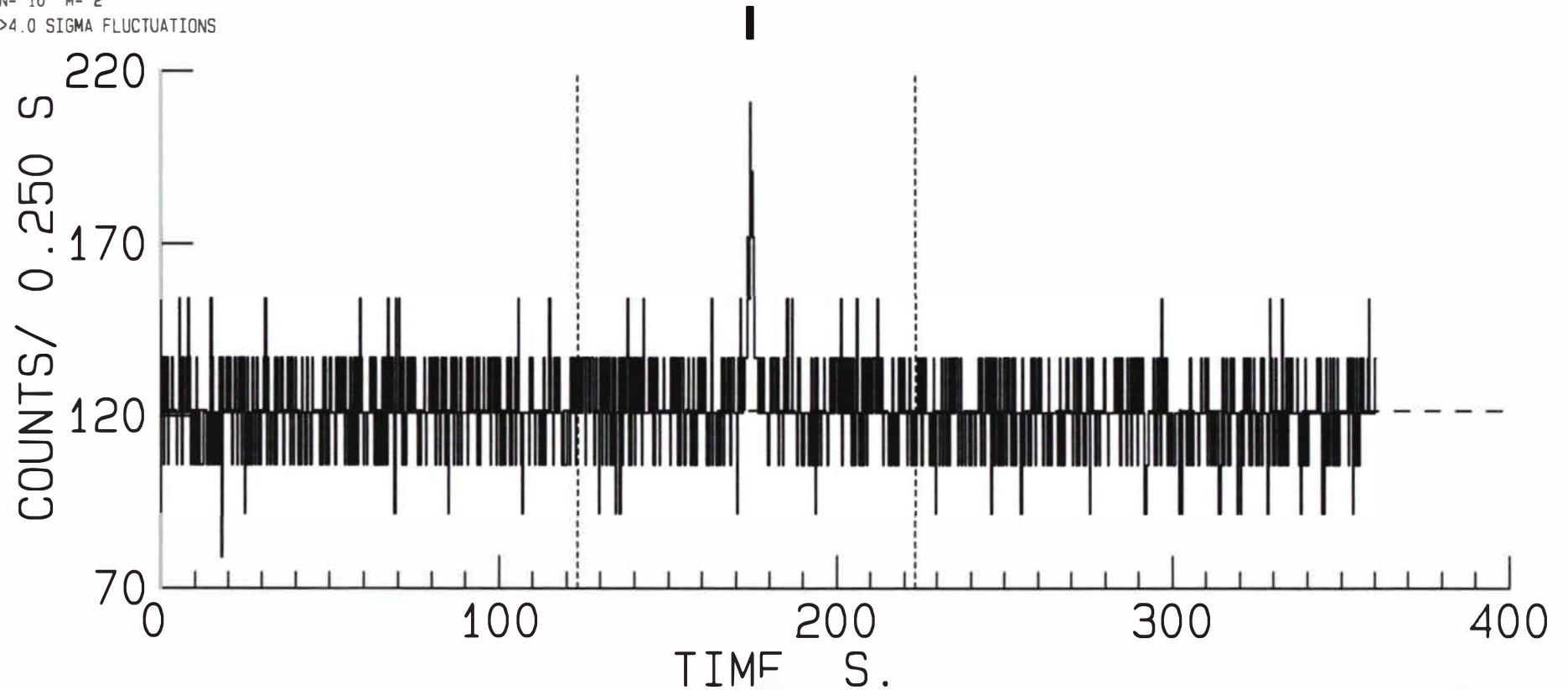
22- 150 keV

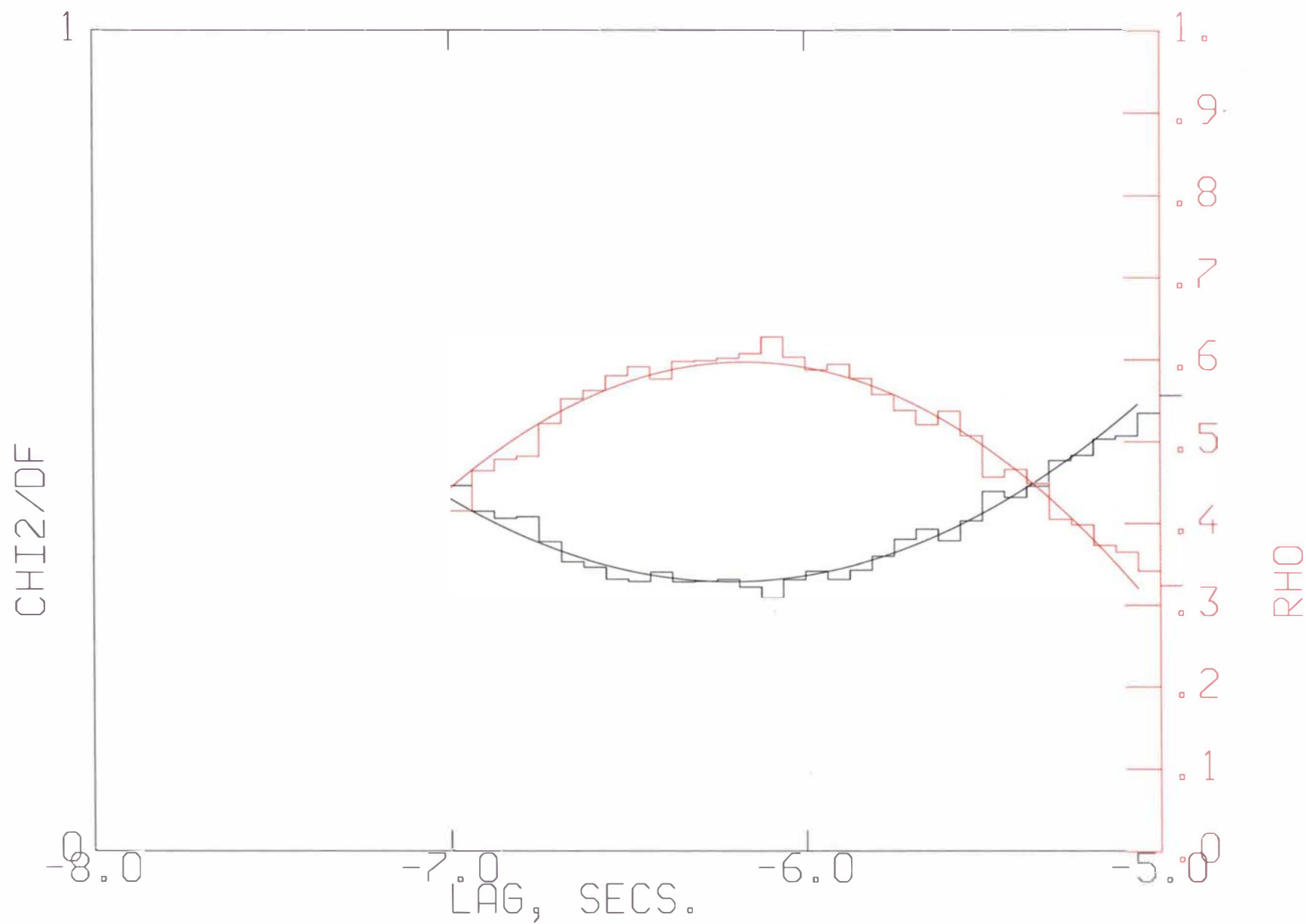


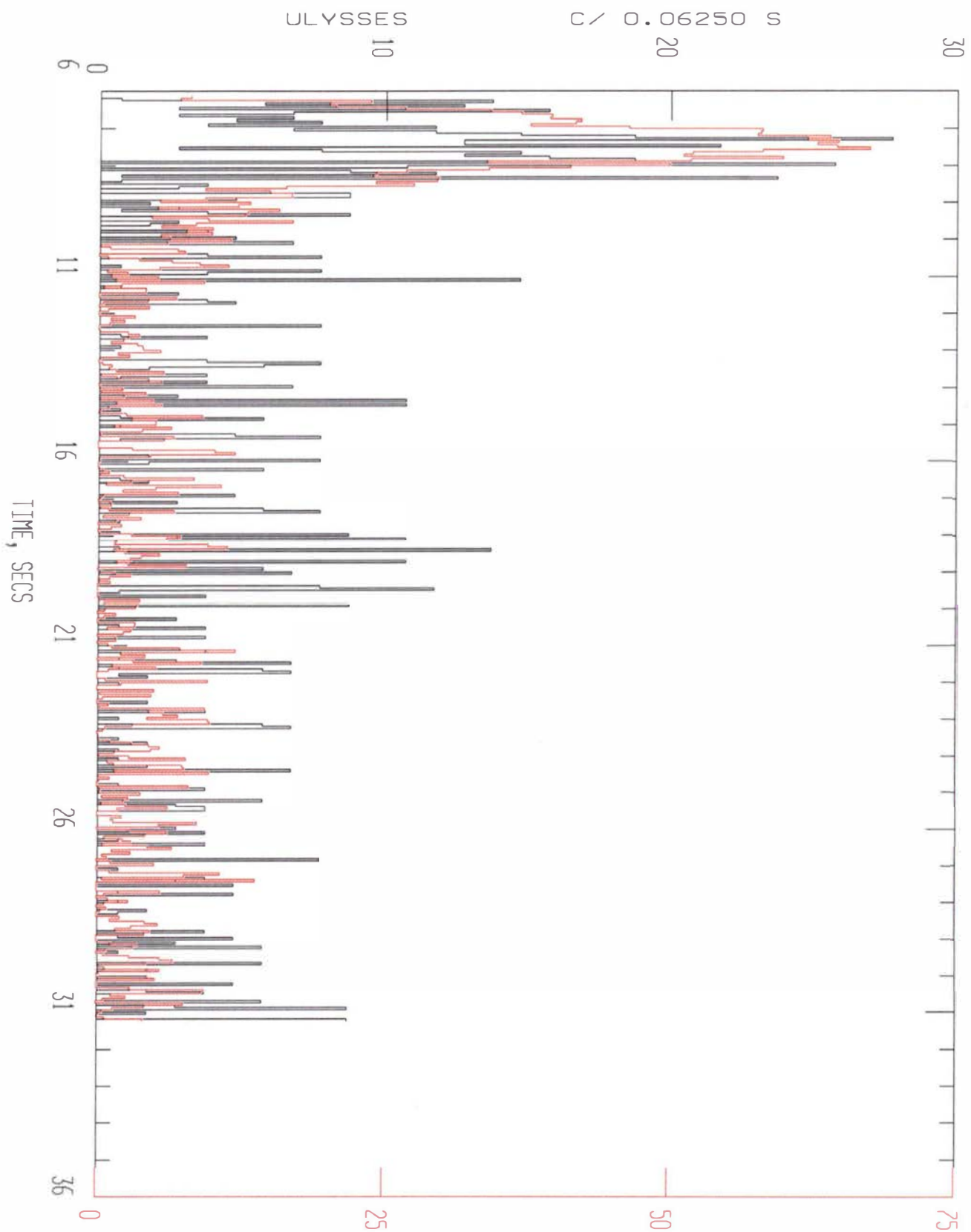
ULYSSES RT
3/ 9/99 20556.000 s
22- 150 keV

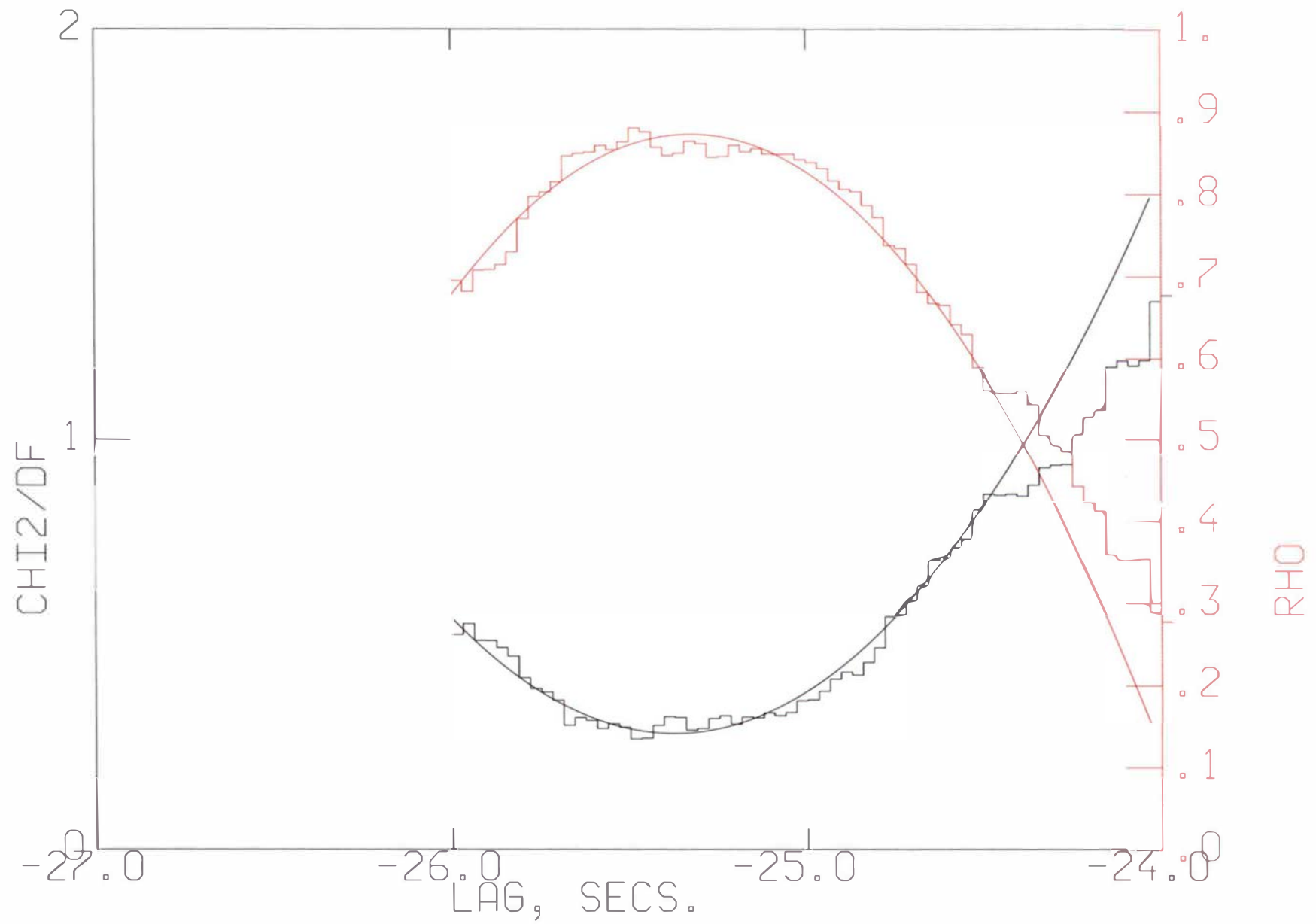
16/11/9

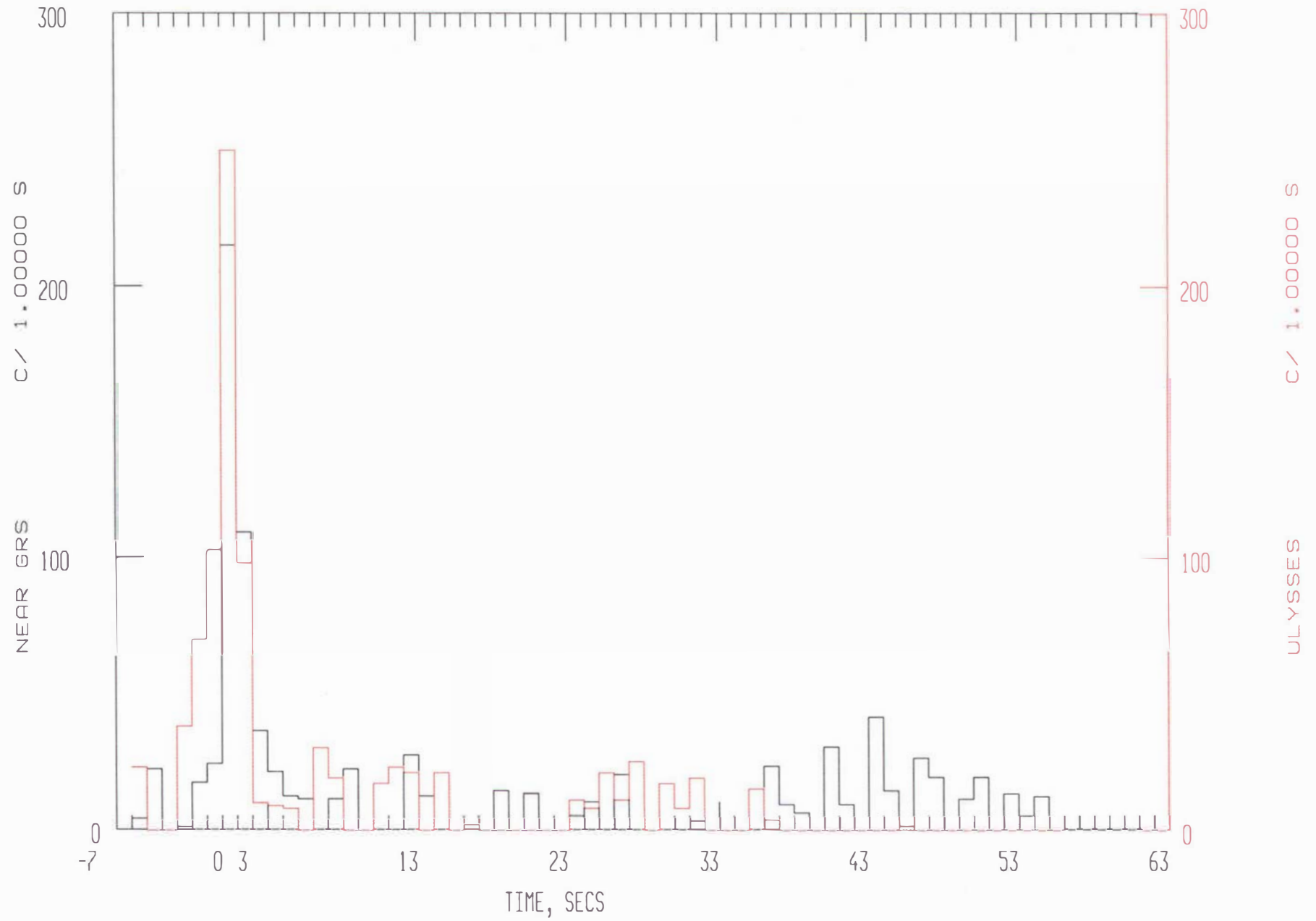
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS









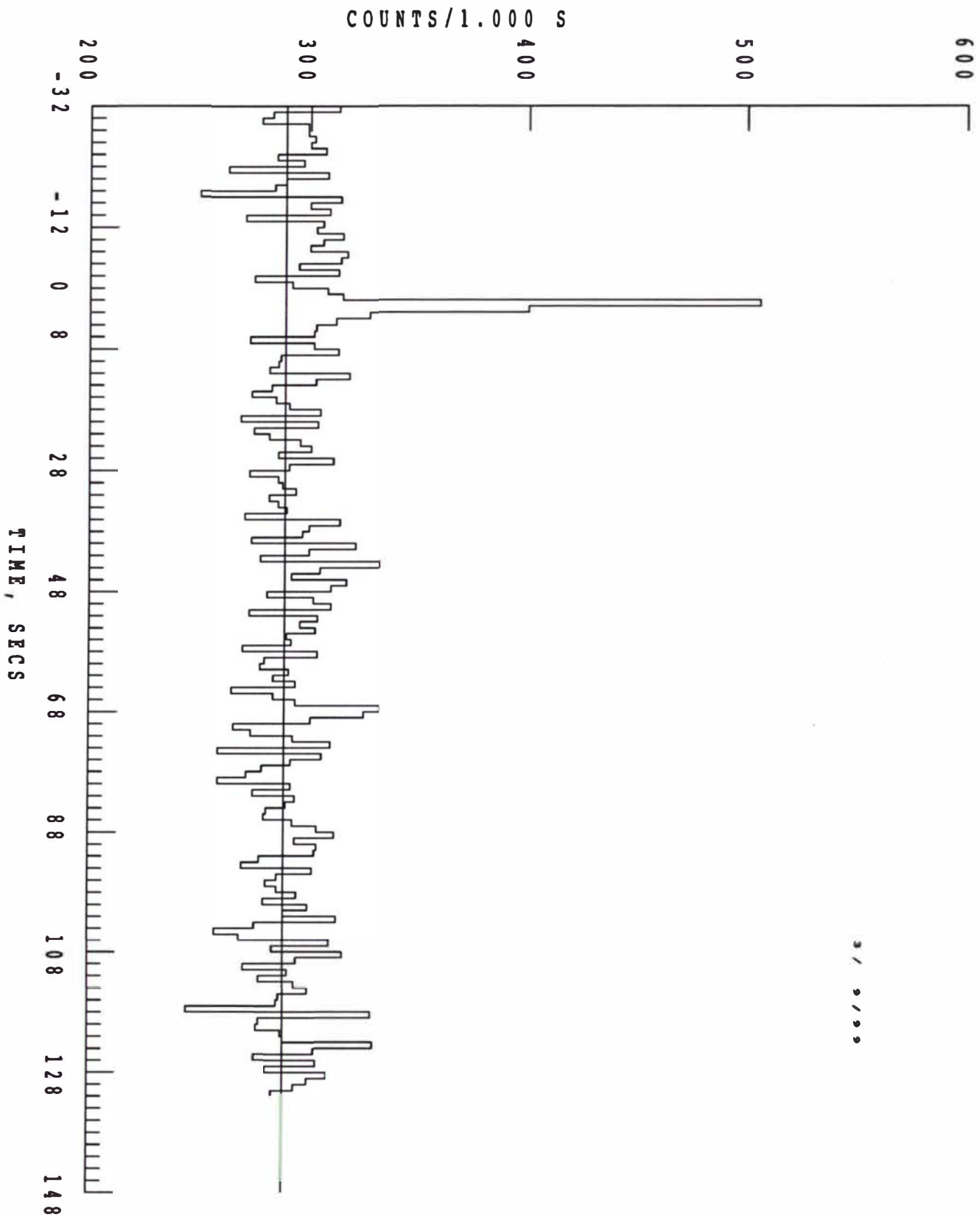


NEAR

03/09/99

20569.646

100-1000 keV



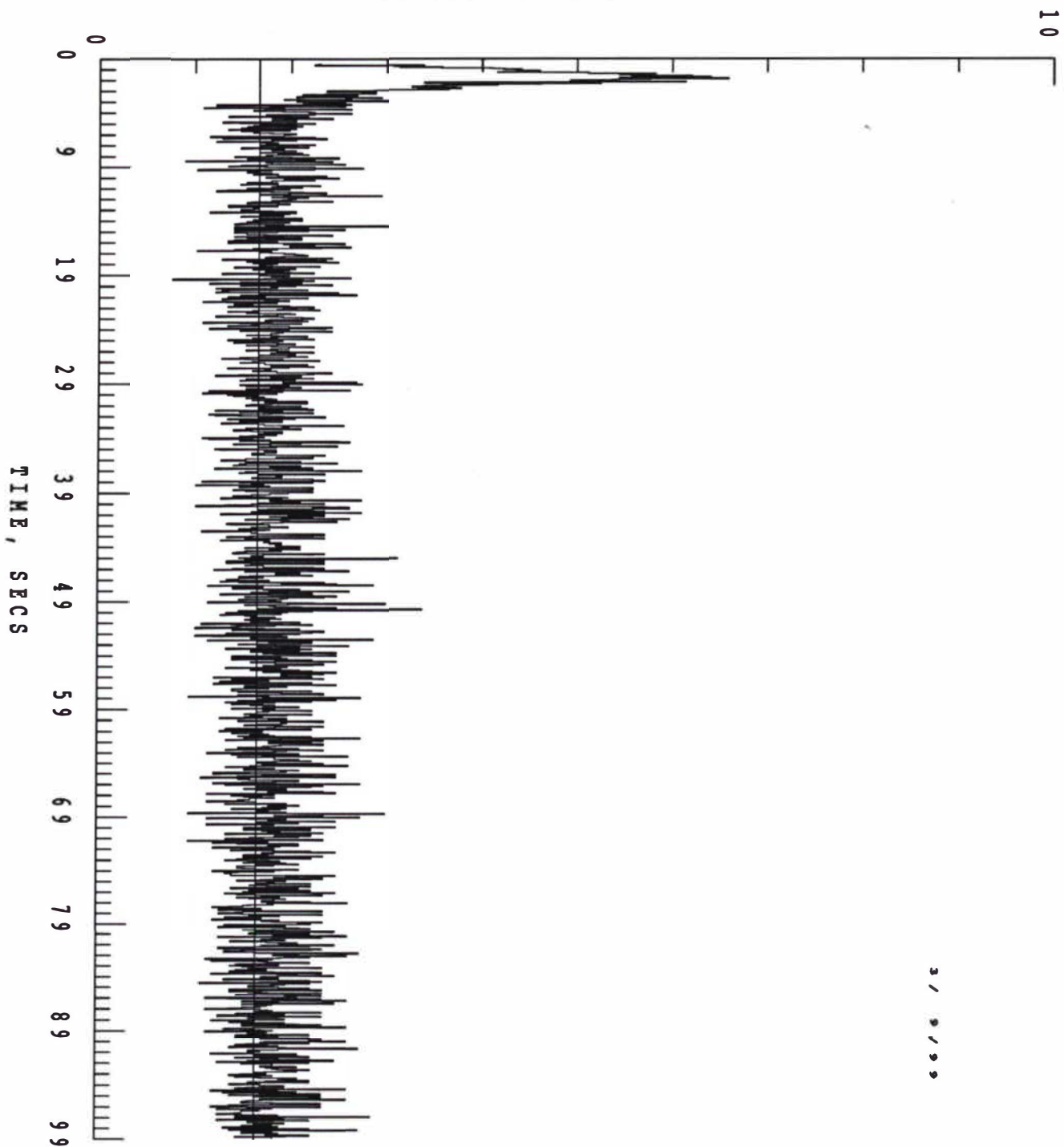
KONUS

03/09/99

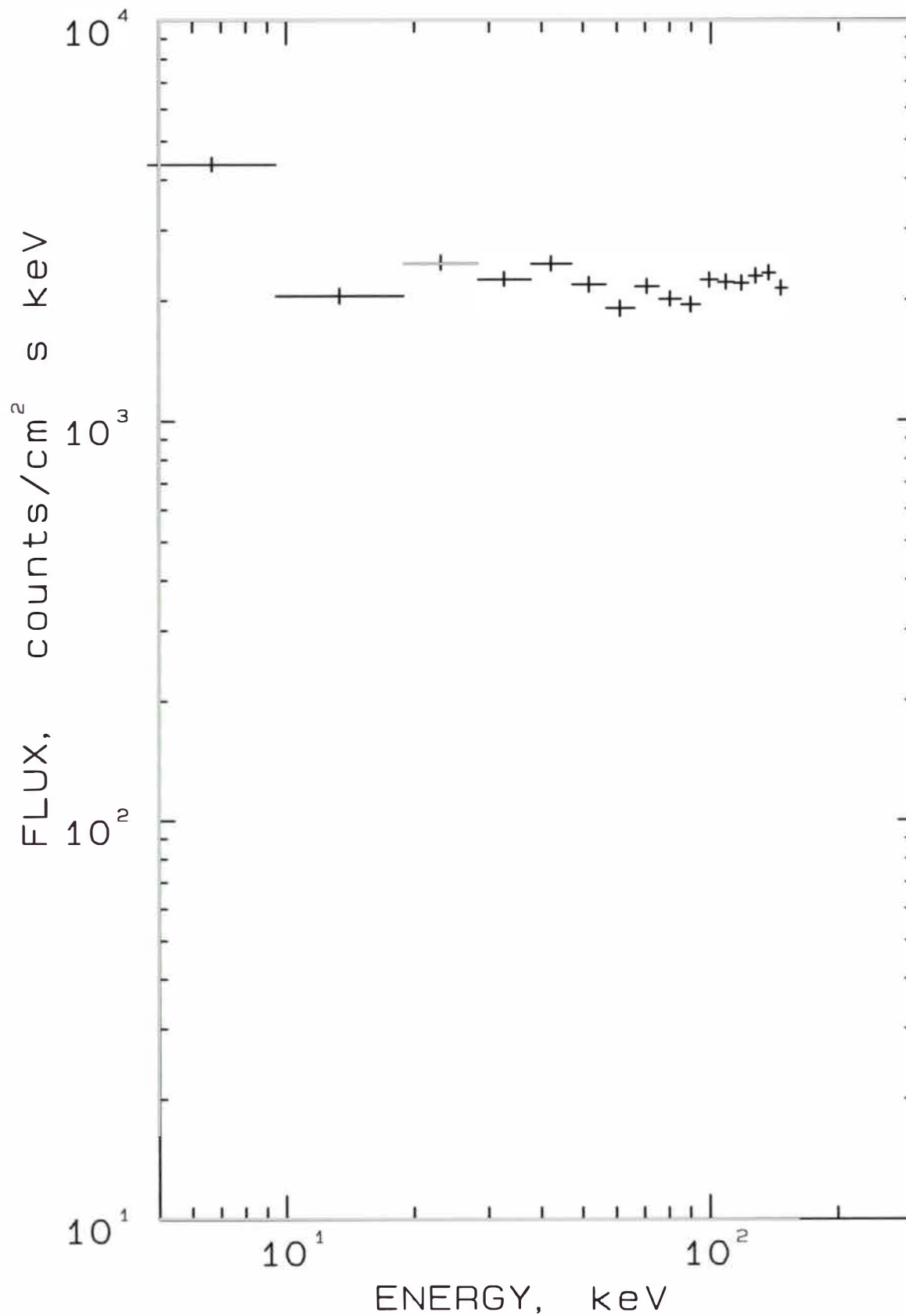
20530.245

50 - 200 keV

COUNTS/0.064 S

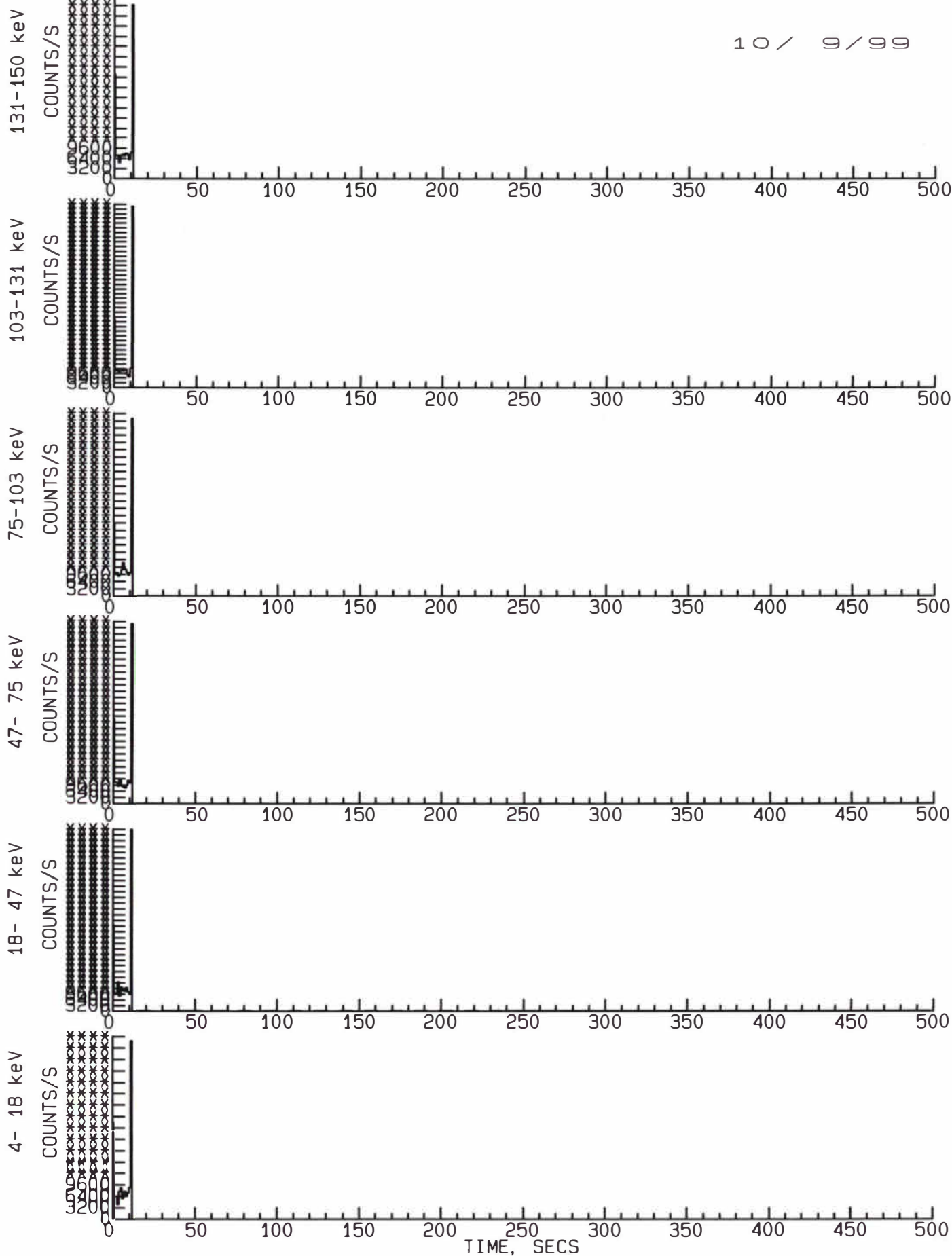


SPECTRUM INTEGRATED OVER 10.5 SECONDS, INTERVALS 2 TO 12



ULYSSES 03/09/99 20730.494 BURST SPECTRAL COUNT RATES

10 / 9 / 99



From GOGUSE@fender.msfc.nasa.gov Wed Sep 8 08:40 PDT 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Wed, 8 Sep 1999 10:41:02 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7750

BATSEARCH PROGRAM

BATSE BURST # 7750
EVENT OF 1999 SEP 3 DAY OF YEAR=246
EVENT CROSSING TIME AT BATSE : 69295. S. OR 19:14:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 345.000 74.000
BATSE PEAK COUNTING RATE: 11600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 9/ 99 IS:
RA= 155.599 DEC= -13.076 DIST= 5.526 AU
BATSE-ULYSSES DISTANCE = 826716497. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1330.19 SECS.
CROSSING TIME AT ULYSSES IS 70625. S. OR 19:37:05 +/- 489.59 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 9/ 99 IS:
RA= 237.537 DEC= -21.931 DIST= 1.200 AU
MARS-BATSE DISTANCE = 179485280. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 64.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 260.89 SECS.
CROSSING TIME AT MARS IS 69556. S. OR 19:19:15 +/- 97.52 SECONDS

BATSE BURST TRIGGER

NO.: 7750

TIME: TJD=1424 SECONDS=69295

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 28.9 AZIMUTH=293.9 ERROR= 2.1 DEGREES

COMMENTS:

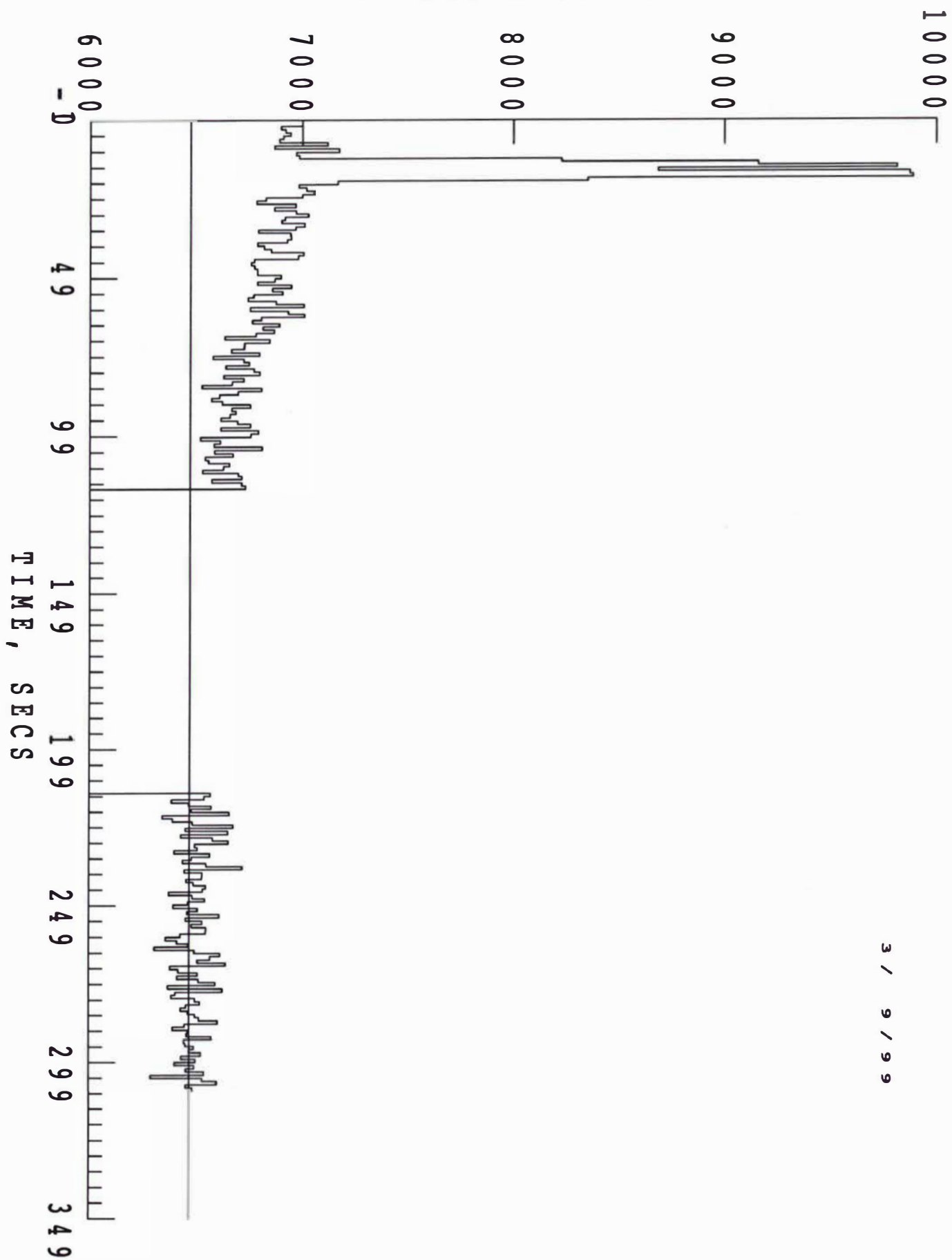
GRB, MULTI PEAKED WITH STRUCTURE, PEAKS AT T+4 SEC.
DURATION APPROX. 7 SEC., NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7750	990903	11424	69295	11600	345	+74	7

BACODINE 7750 03/09/99 69283.577

25 - 100 keV

COUNTS/1.024 S



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

Dear Kevin,

We have managed to cover a significant fraction of a few LOCBURST GRB localizations with the 0.3-m BOOTES-1 telescope beginning 30-min after both GRB 990802 (BATSE trigger 7688) and GRB 990905 (trigger 7753) ., and beginning 4-hr after GRB 990903 (trigger 7752) and GRB 990902³ (trigger 7750).

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

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

Best regards,

Alberto
9 Sep 99

BATSE BURST# 7750

ULYSSES RT

8 / 9 / 99

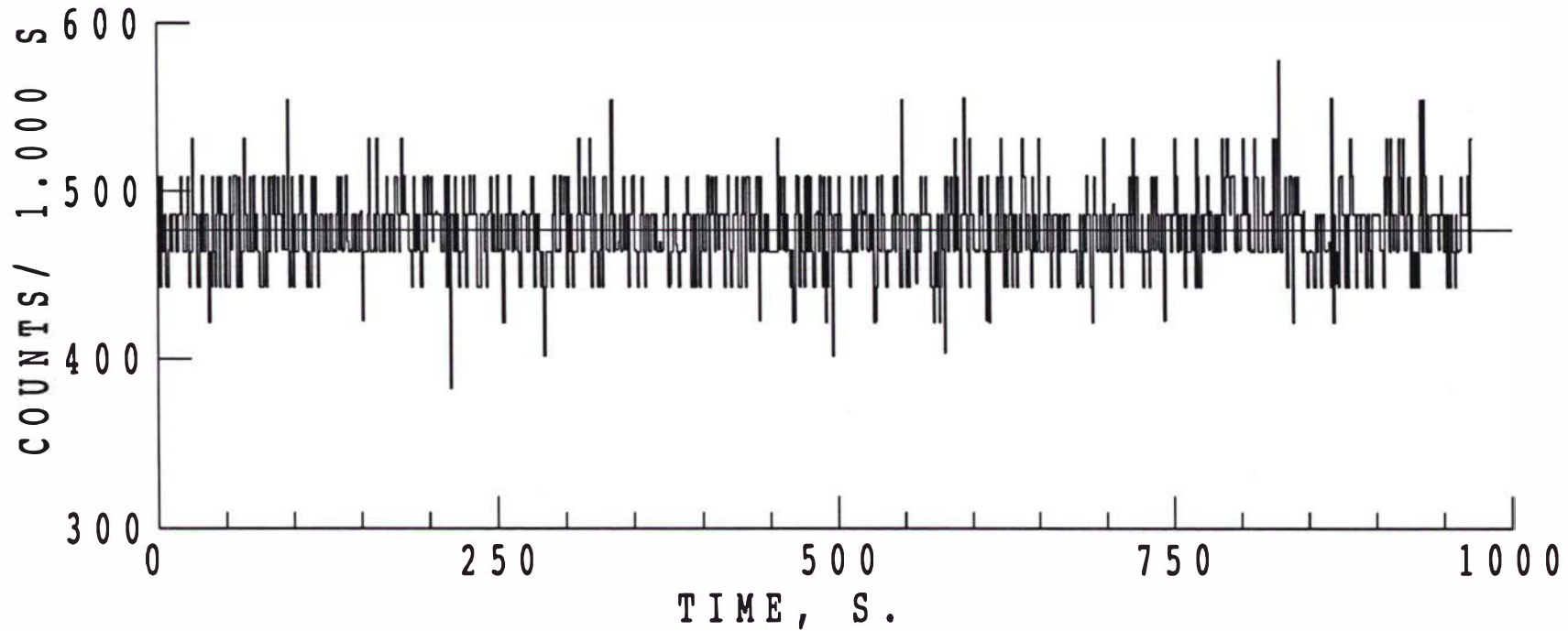
3 / 9 / 99 70128.492 s

0.500 S INTERVALS REGROUPED BY 2

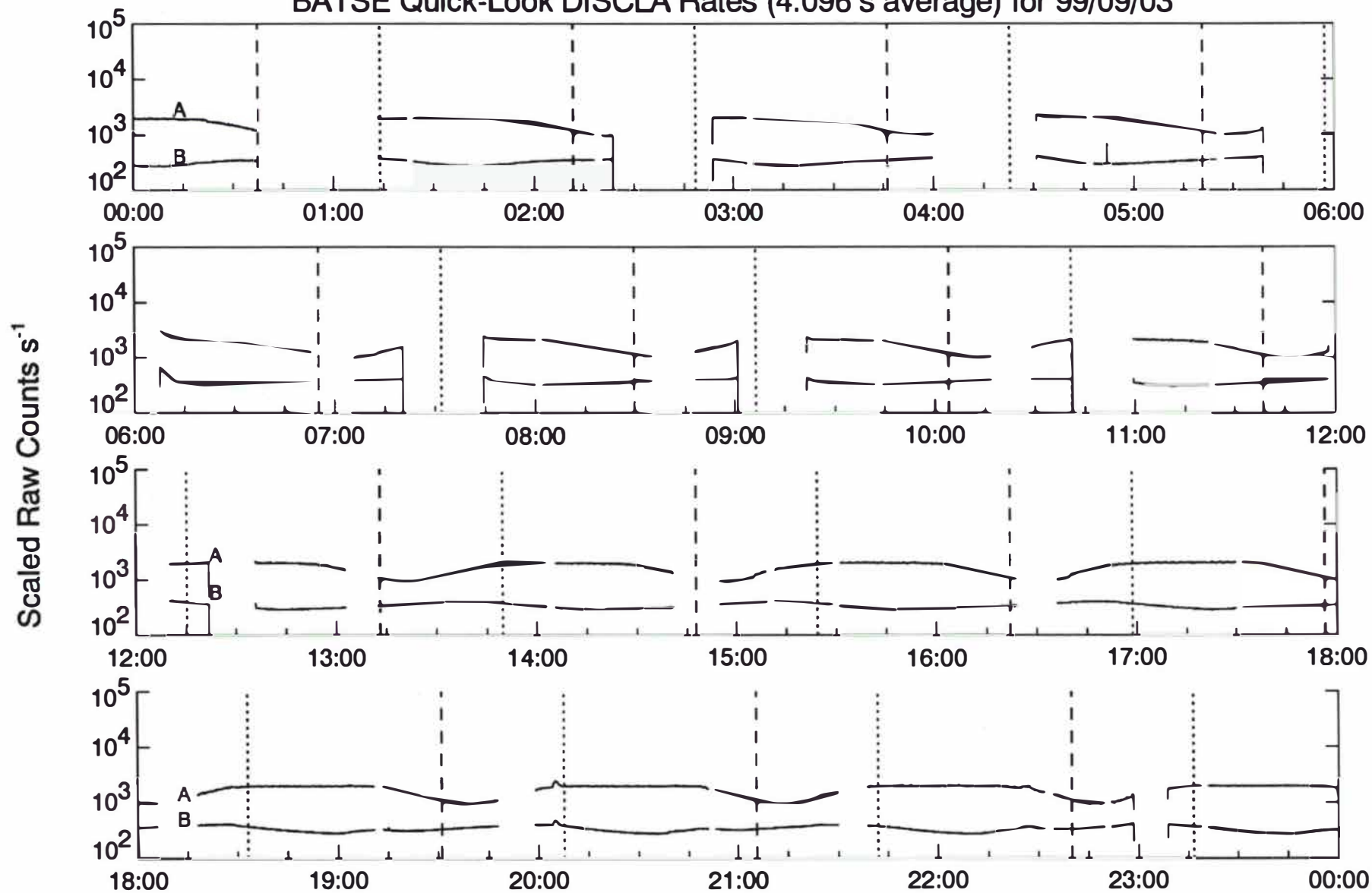
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/03

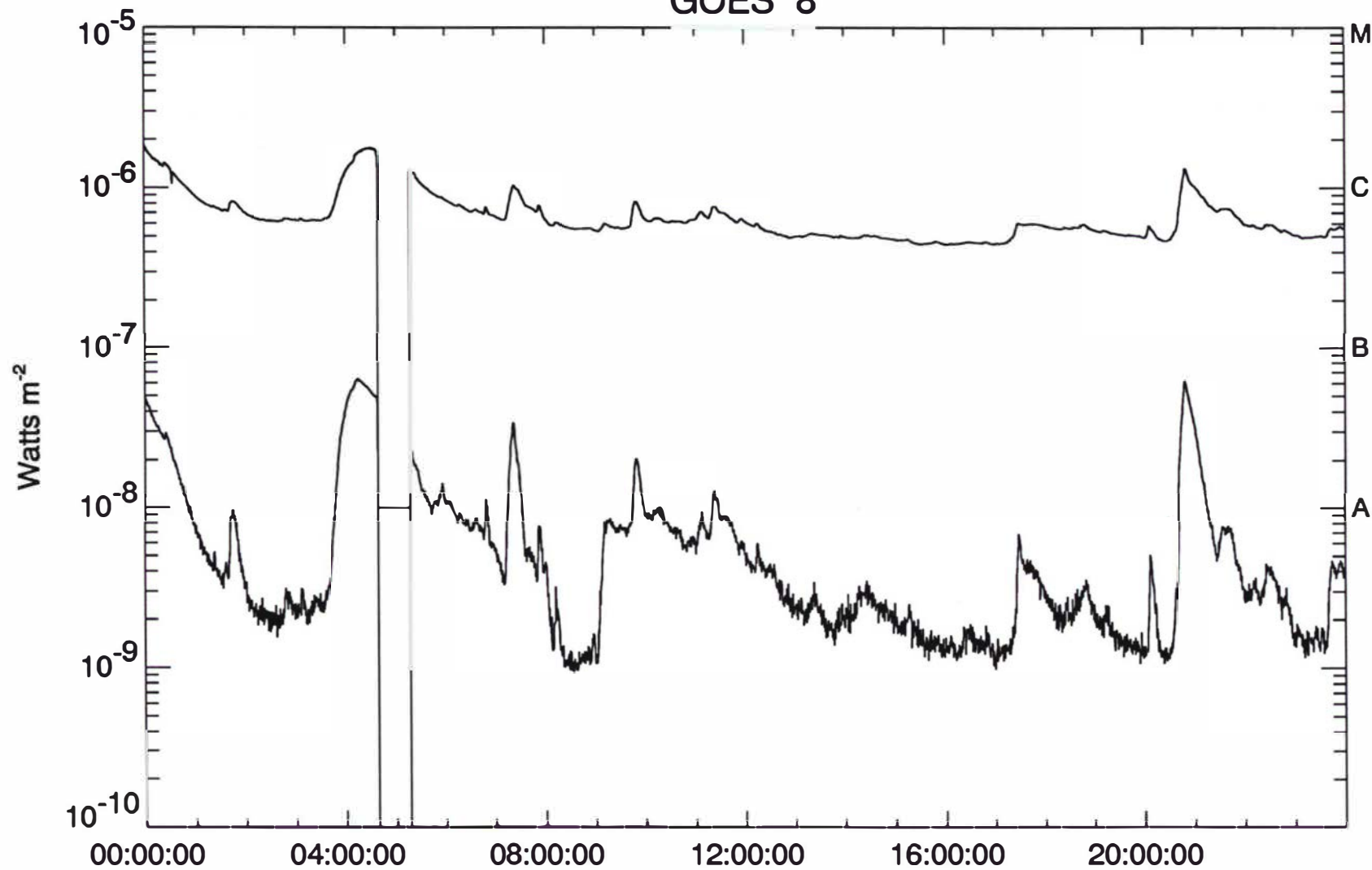


Current Time: 99/09/07, 1005 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/03, 0000:00

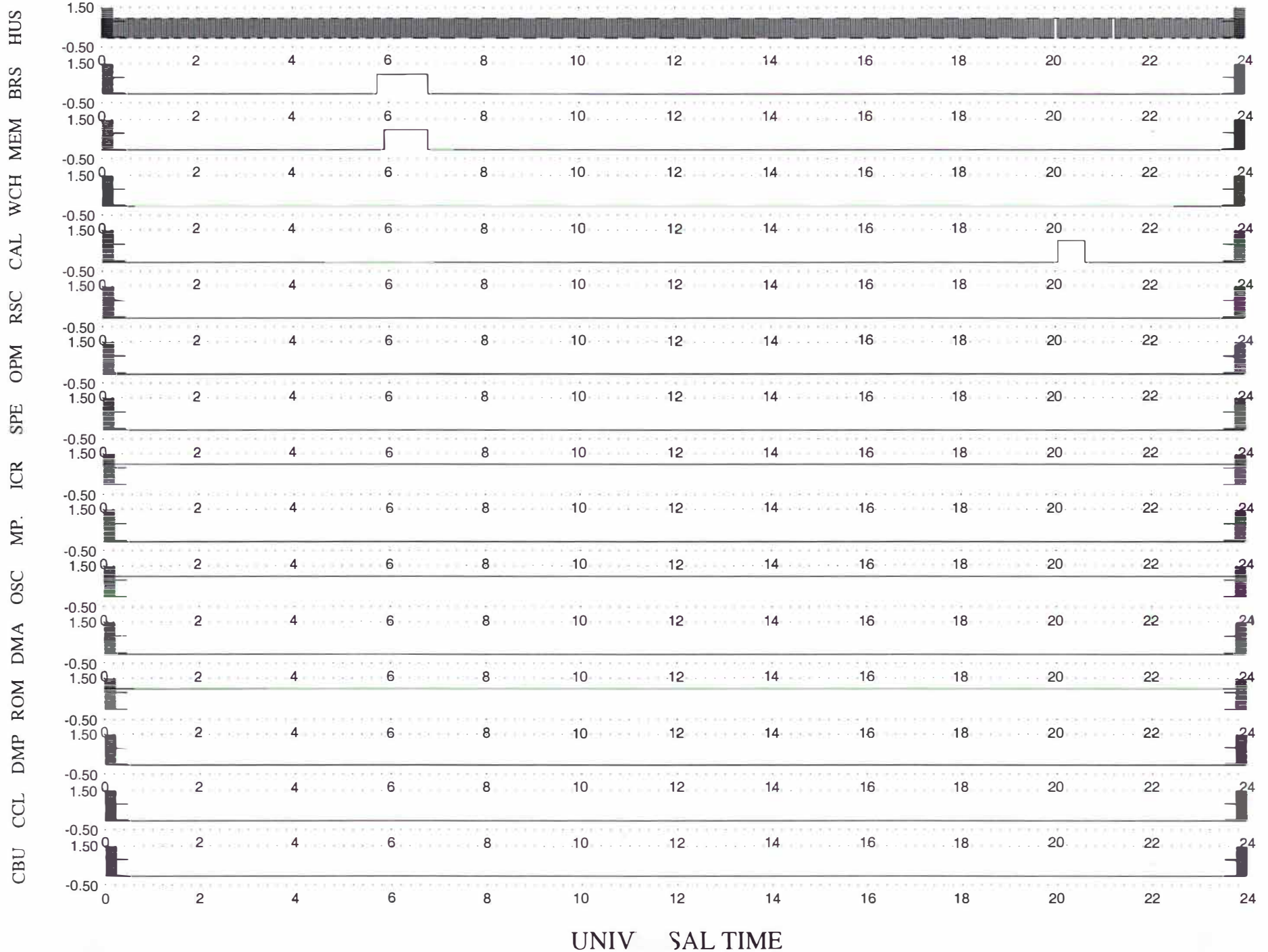
Plot created: 99/09/07, 1005

Channel

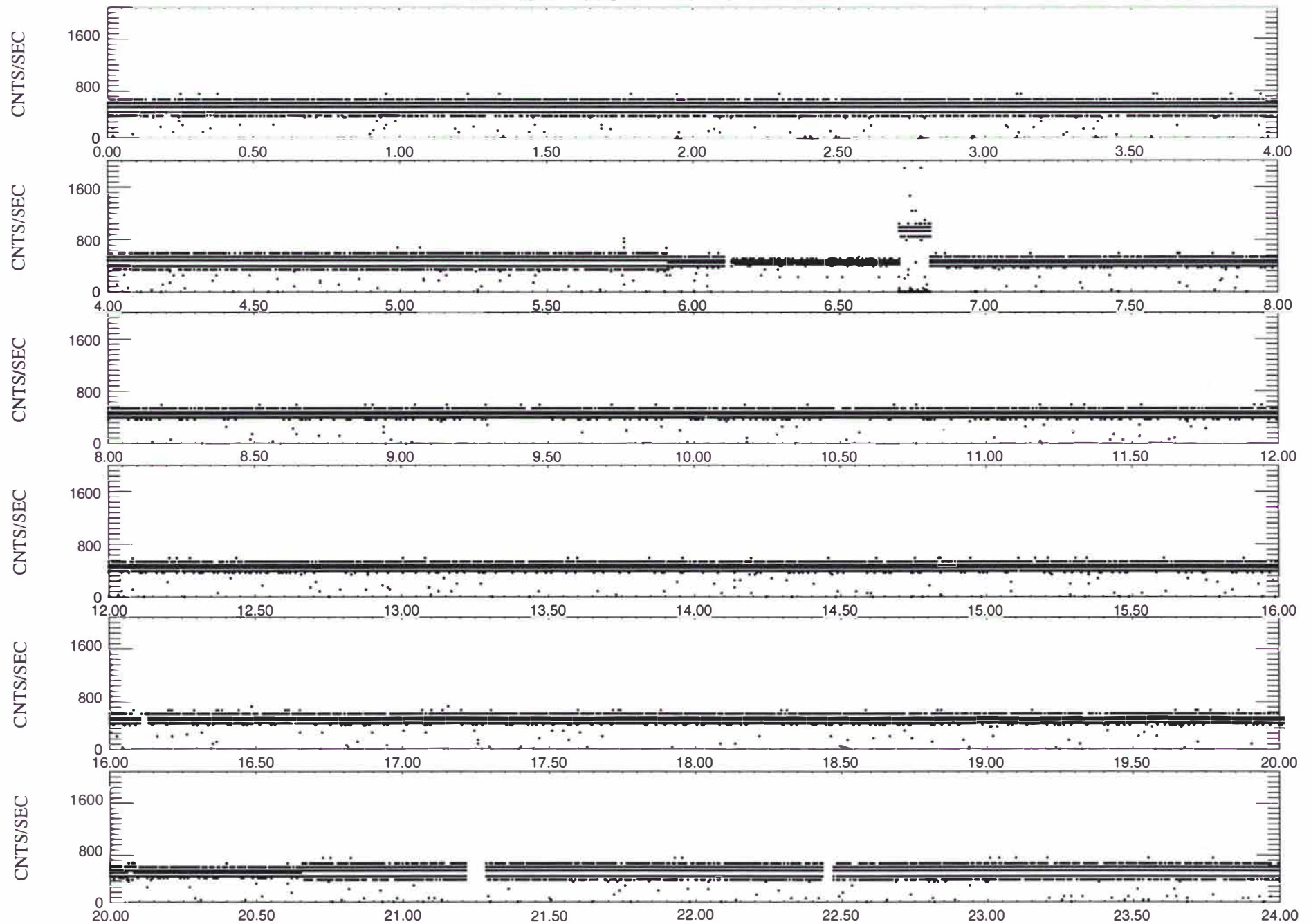
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 7

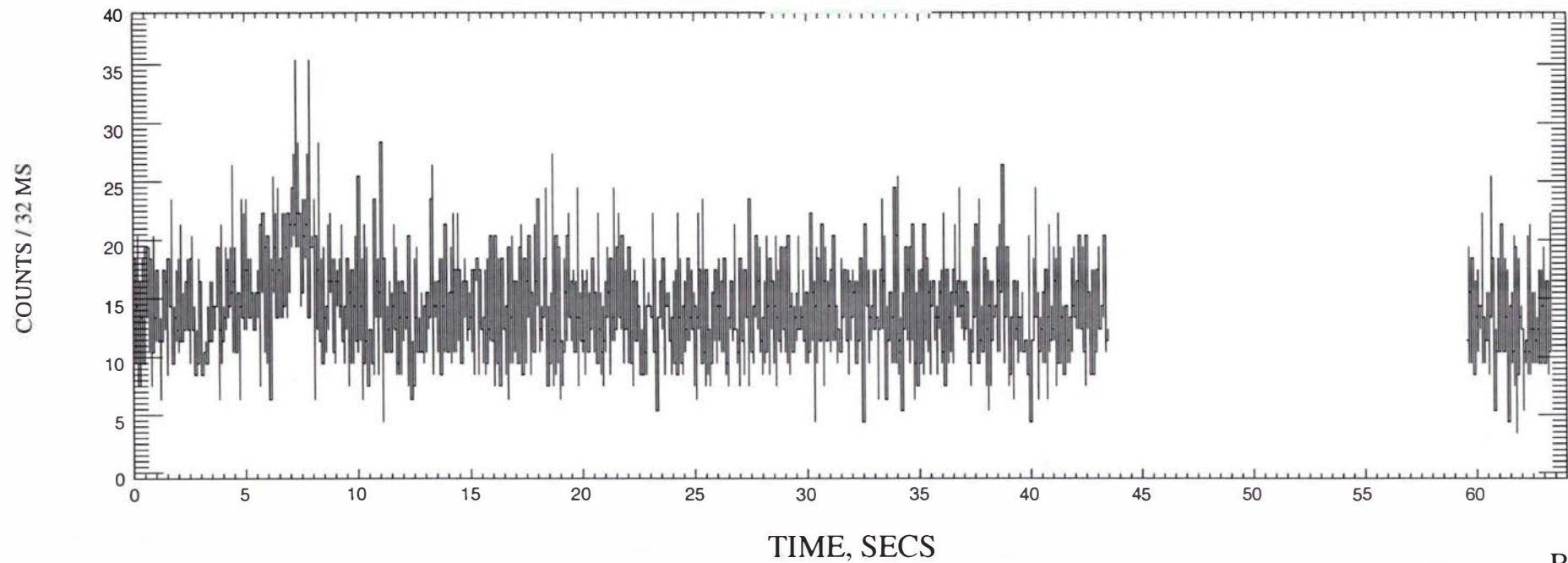
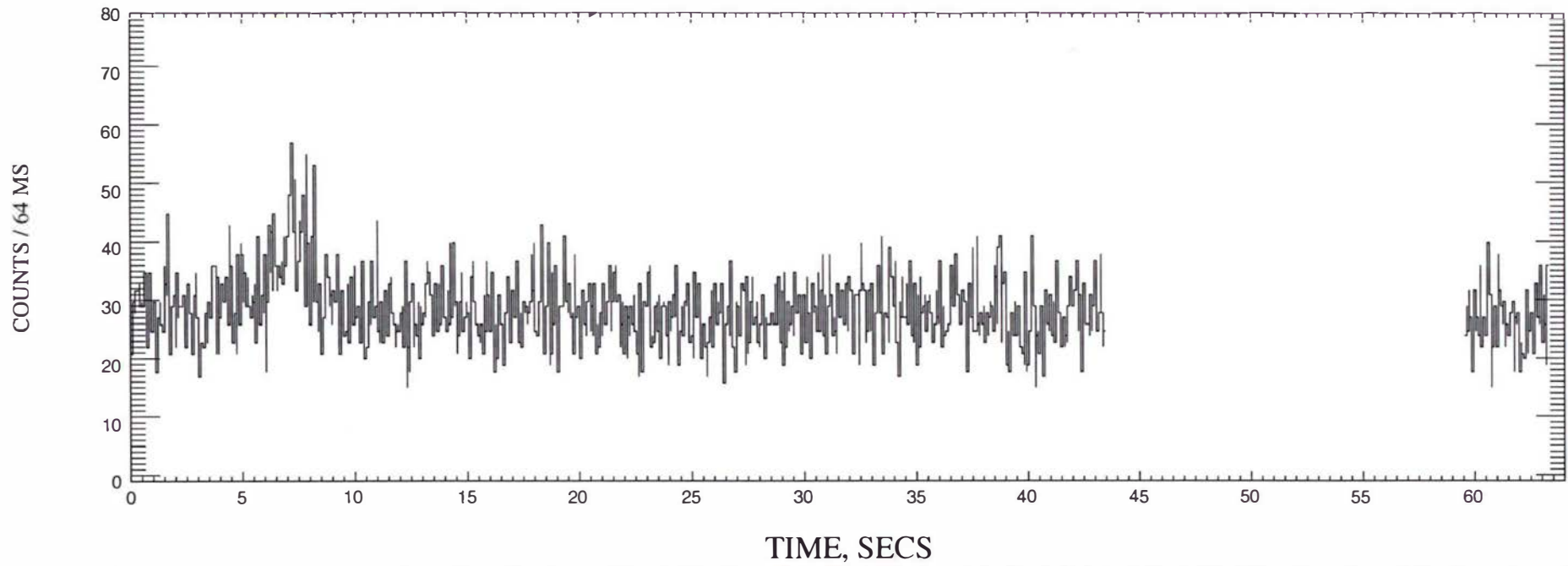


CALIBRATION DATA INCLUDED

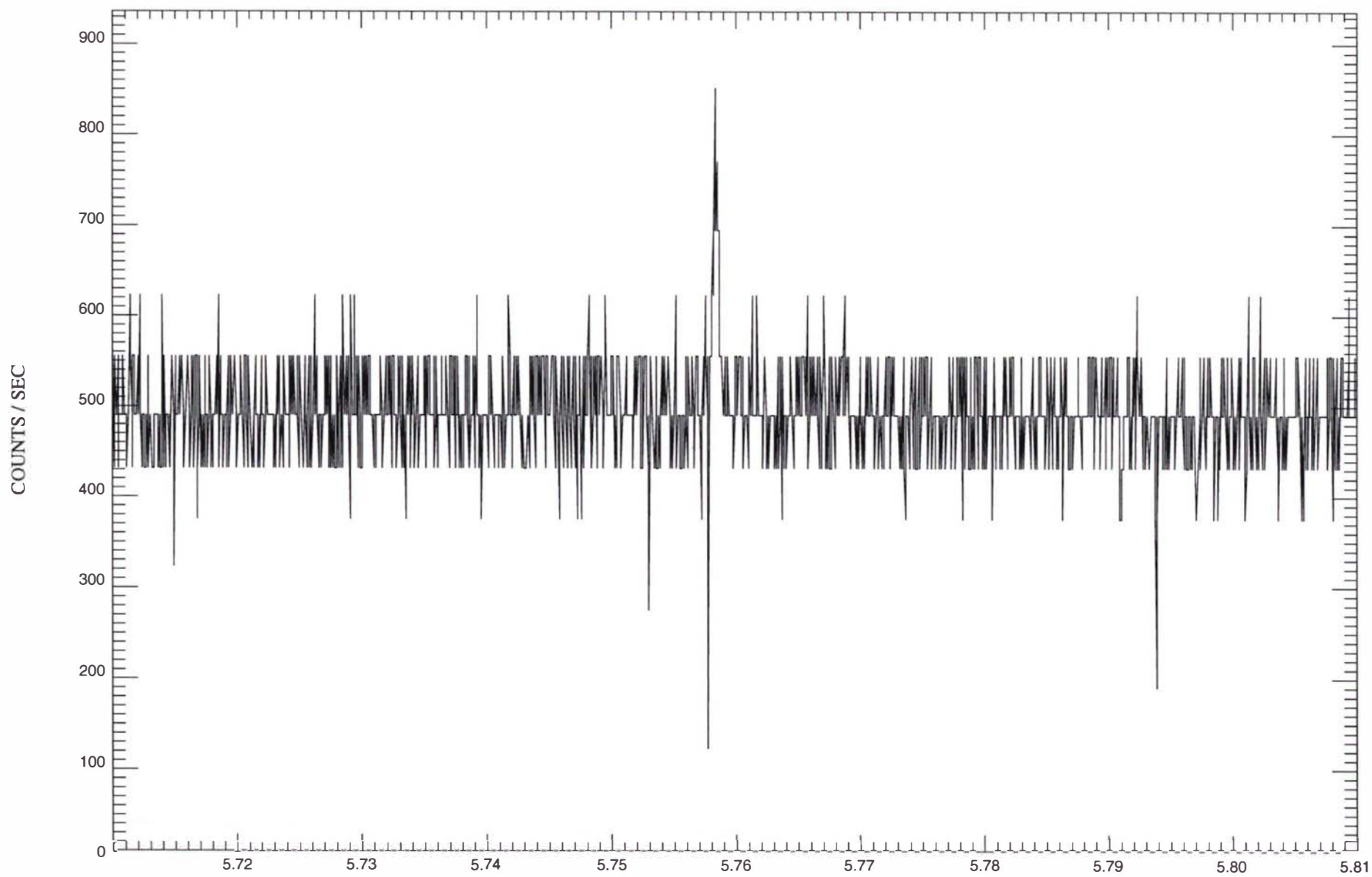


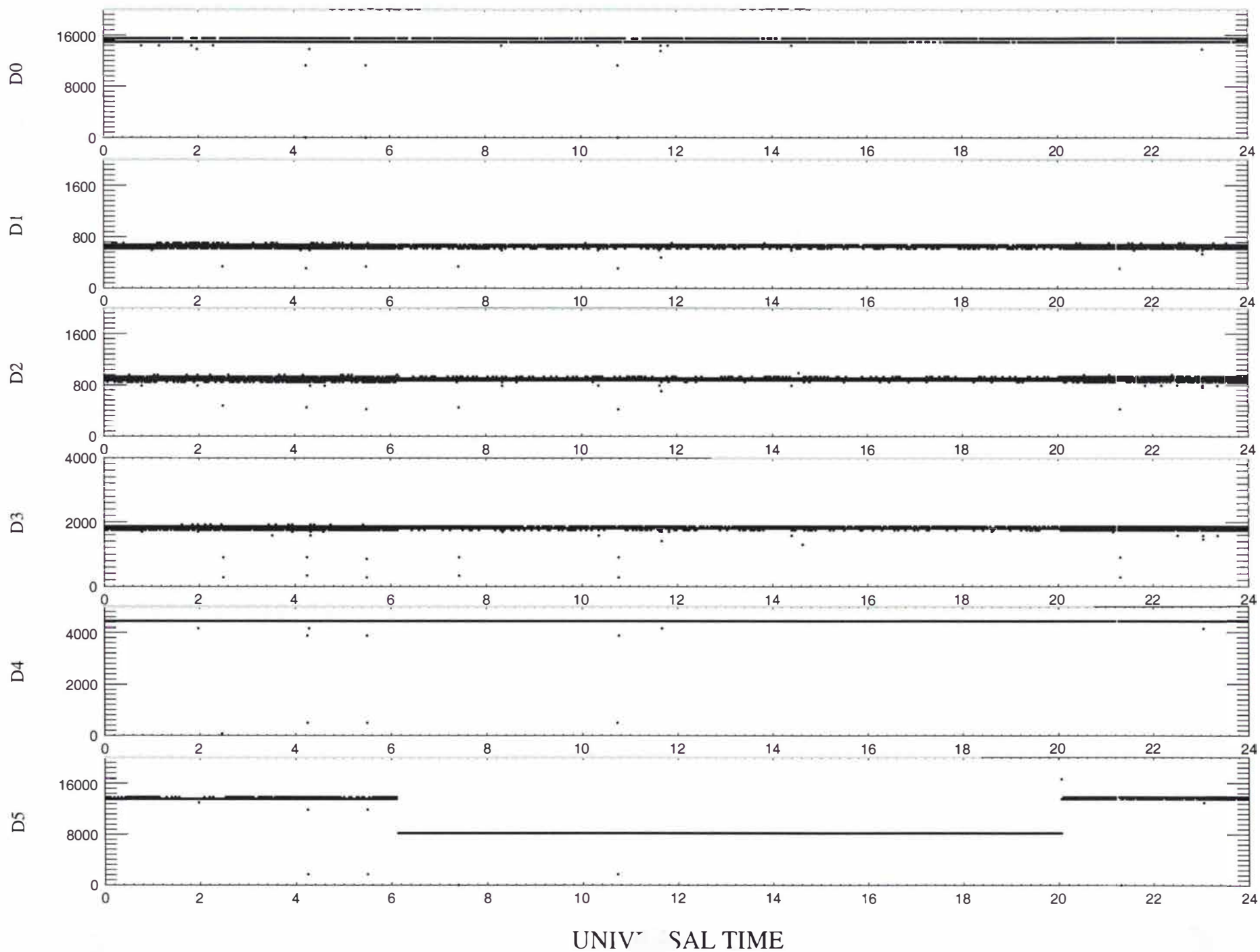
UNIV SAL TIME

Burst Counter 7 at UT= 5.758470425076 h=20730.494 s 05:45:30.494



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Sep 7 14:23 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 7 Sep 1999 16:31:10 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7751

BATSEARCH PROGRAM

BATSE BURST # 7751
EVENT OF 1999 SEP 4 DAY OF YEAR=247
EVENT CROSSING TIME AT BATSE : 52823. S. OR 14:40:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 226.000 -59.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 9/ 99 IS:
RA= 155.727 DEC= -13.175 DIST= 5.523 AU
BATSE-ULYSSES DISTANCE = 826274149. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1004.97 SECS.
CROSSING TIME AT ULYSSES IS 51818. S. OR 14:23:38 +/- 480.31 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 9/ 99 IS:
RA= 238.196 DEC= -22.067 DIST= 1.205 AU
MARS-BATSE DISTANCE = 180338832. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -474.36 SECS.
CROSSING TIME AT MARS IS 52349. S. OR 14:32:28 +/- 57.02 SECONDS

BATSE BURST TRIGGER

NO.: 7751

TIME: TJD=1425 SECONDS=52823

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=126.3 AZIMUTH=98.7 ERROR=10.8 DEGREES

COMMENTS:
GRB. SINGLE PULSE, DUR. 1.5 S. NOT VISIBLE ABOVE 300 KEV. OVERWRITTEN DURING
MER, SO STTE ALSO WRITTEN OUT AS # 7752.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7751	990904	11425	52823	3500	226	-59	1.5

BATSE BURST# 7751

ULYSSES RT

7 / 9 / 99

4 / 9 / 99 51336.188 s

0.500 S INTERVALS REGROUPED BY 2

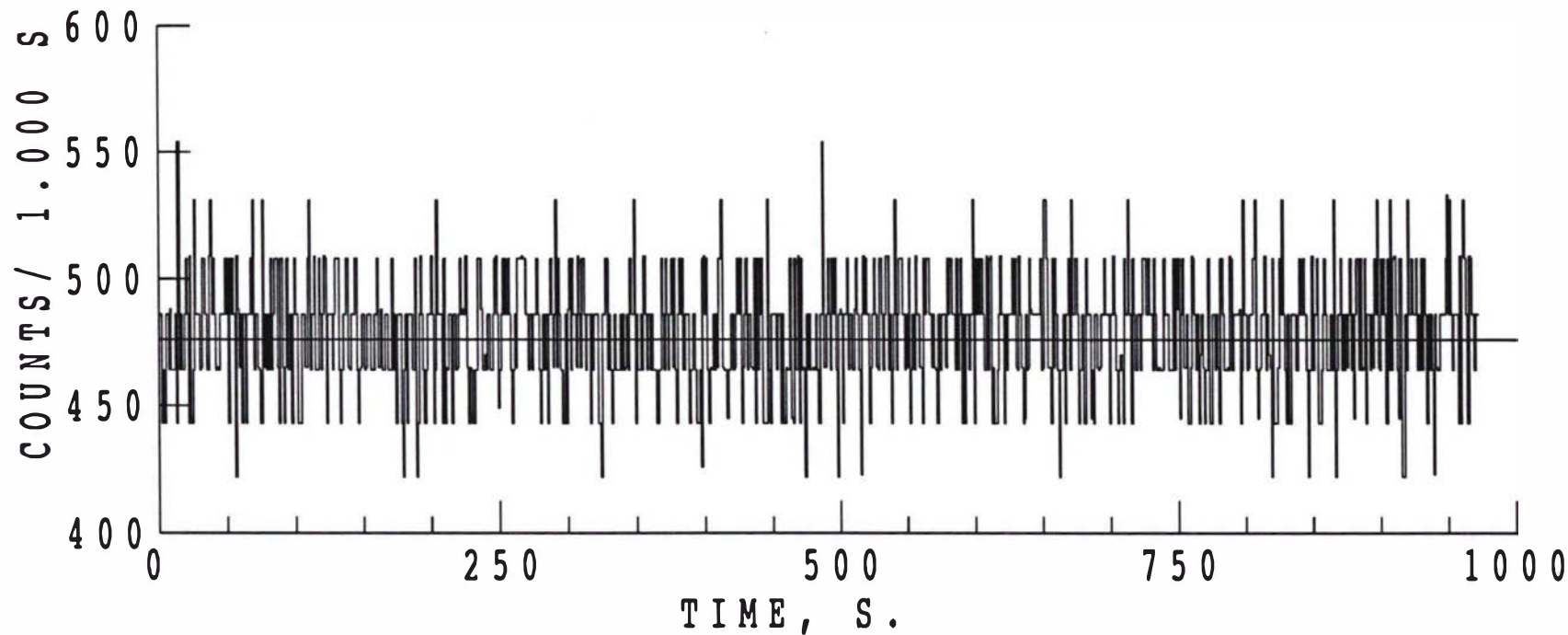
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Sep 7 14:39 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 7 Sep 1999 16:47:09 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7752

BATSEARCH PROGRAM

BATSE BURST # 7752
EVENT OF 1999 SEP 4 DAY OF YEAR=247
EVENT CROSSING TIME AT BATSE : 57458. S. OR 15:57:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 302.000 -28.000
BATSE PEAK COUNTING RATE: 9000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 9/ 99 IS:
RA= 155.735 DEC= -13.181 DIST= 5.523 AU
BATSE-ULYSSES DISTANCE = 826244831. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1675.34 SECS.
CROSSING TIME AT ULYSSES IS 59133. S. OR 16:25:33 +/- 455.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 9/ 99 IS:
RA= 238.196 DEC= -22.067 DIST= 1.205 AU
MARS-BATSE DISTANCE = 180338832. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 323.39 SECS.
CROSSING TIME AT MARS IS 57135. S. OR 15:52:14 +/- 83.15 SECONDS

BATSE BURST TRIGGER

NO.: 7752

TIME: TJD=1425 SECONDS=57458

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=78.5 AZIMUTH=135.4 ERROR=1.96 DEGREES

COMMENTS:

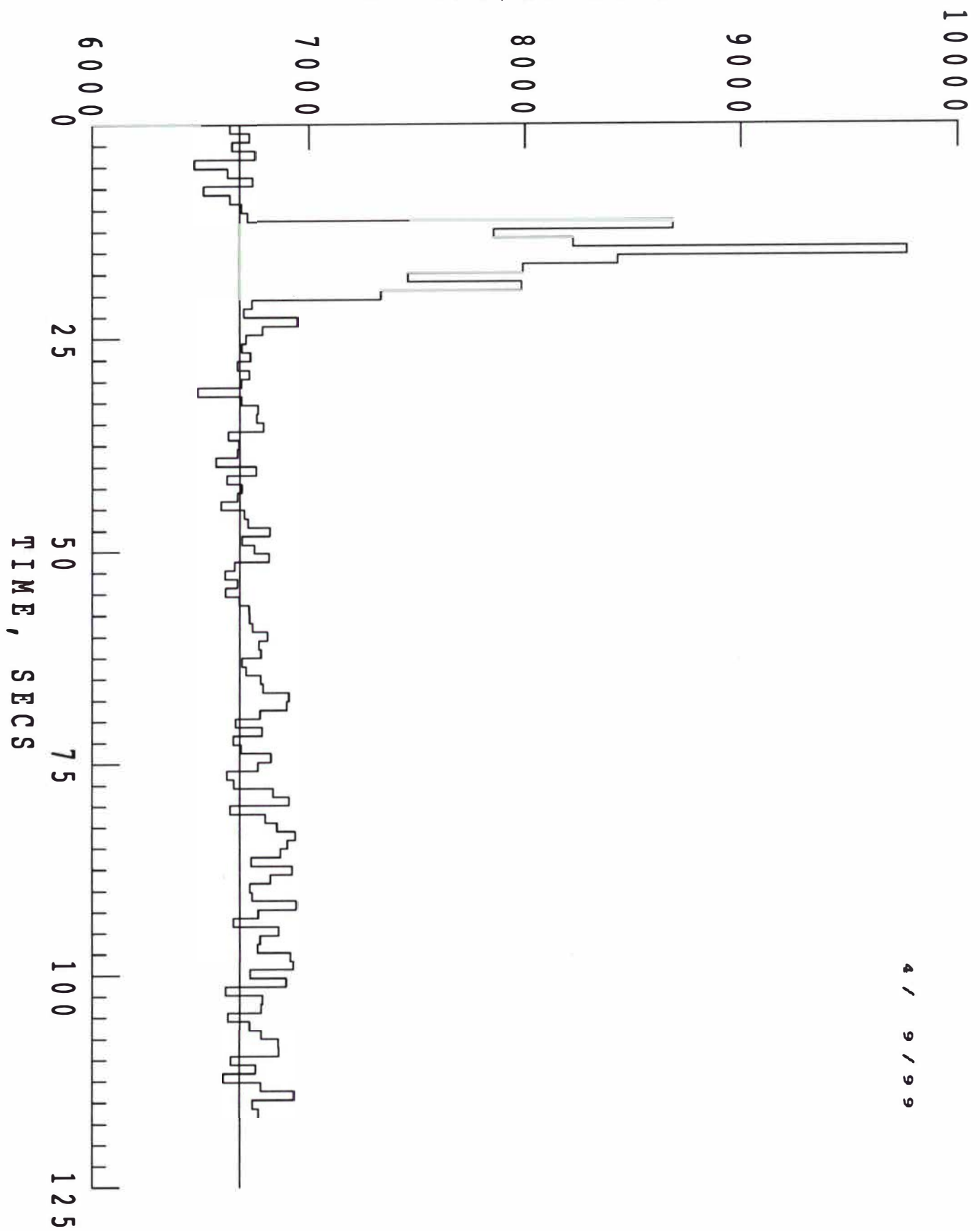
GRB. MULTIPLE PULSES, DUR. 8.5 S, MAX. AT T+3.7 S. VISIBLE ABOVE 300 KEV.
OVERWROTE PREVIOUS TRIGGER DURING MER, SO STTE BELONGS TO # 7751.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7752	990904	11425	57458	9000	302	-28	8.5

BACODINE 7752 04/09/99 57447.161

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 7752

ULYSSES RT

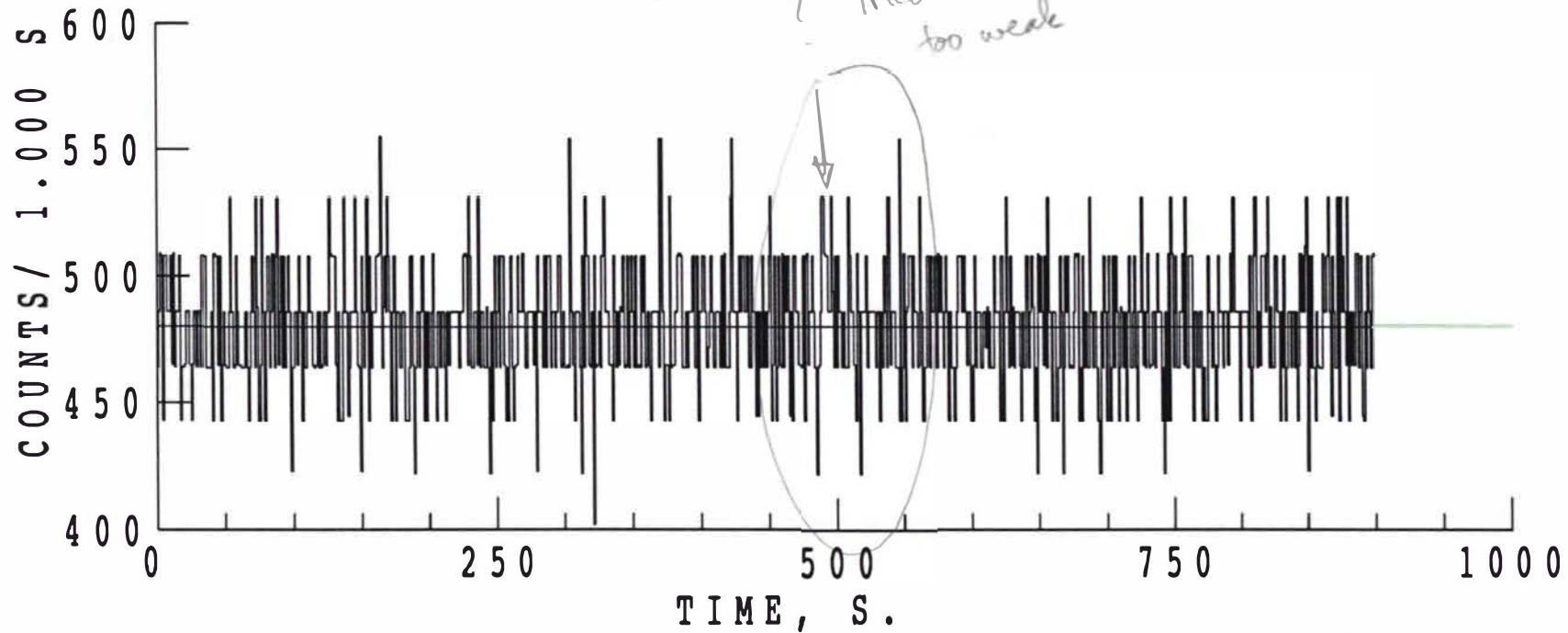
7 / 9 / 99

4 / 9 / 99 58680.262 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

16 / 03 / 00

ULYSSES RT

04 / 09 / 99 69048.367 s

INTERVALS REGROUPED BY 9

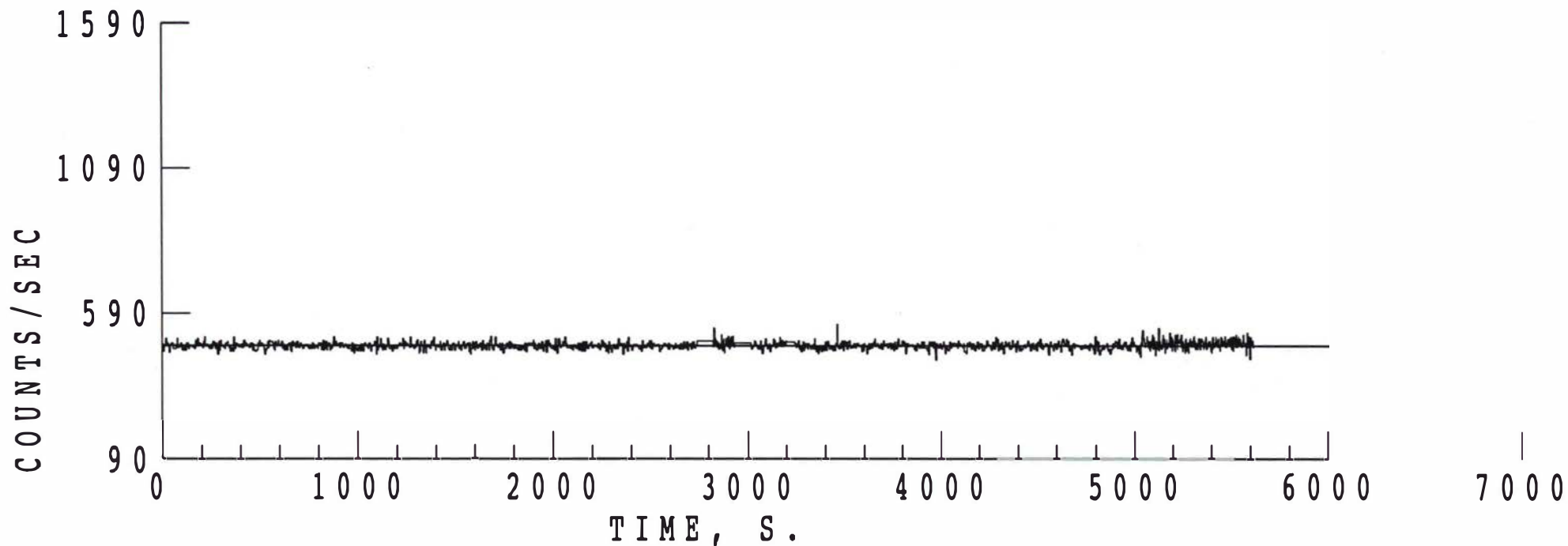
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

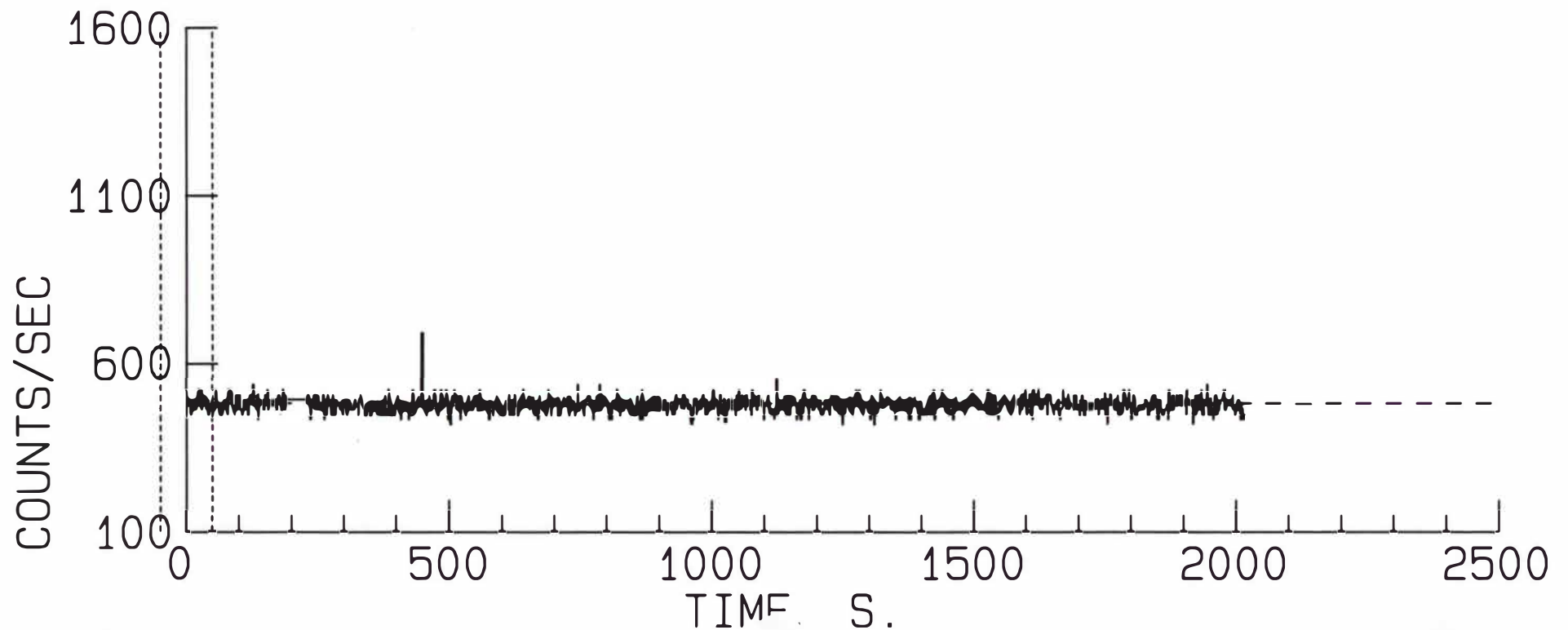
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

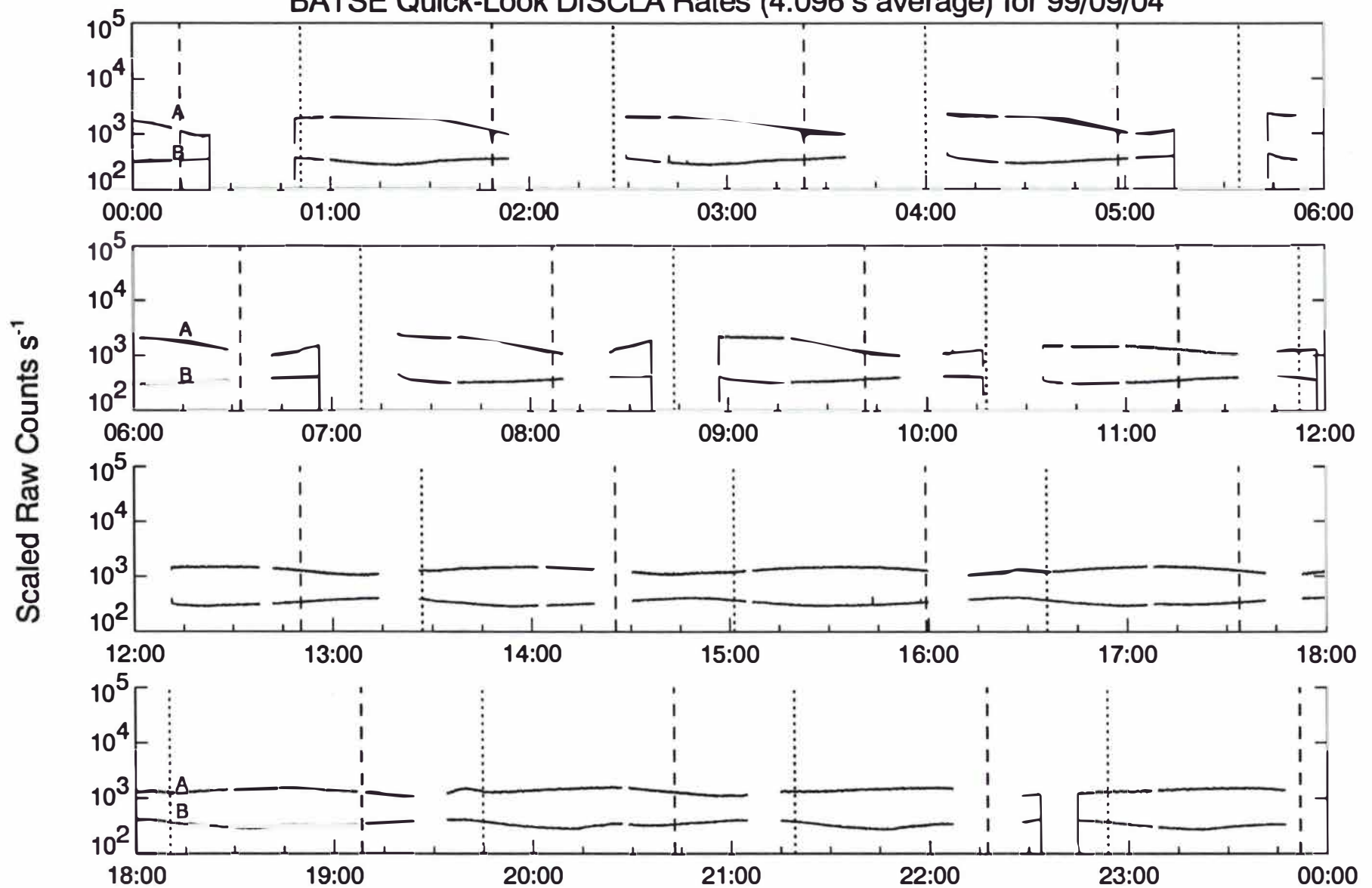


ULYSSES RT
4/ 9/99 72060.397 s
INTERVALS REGROUPED BY 3
22- 152 keV

17 / 3 / 0



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/04



Current Time: 99/09/08, 1005 EDT

A: Channel 0 Most Sunward LAD

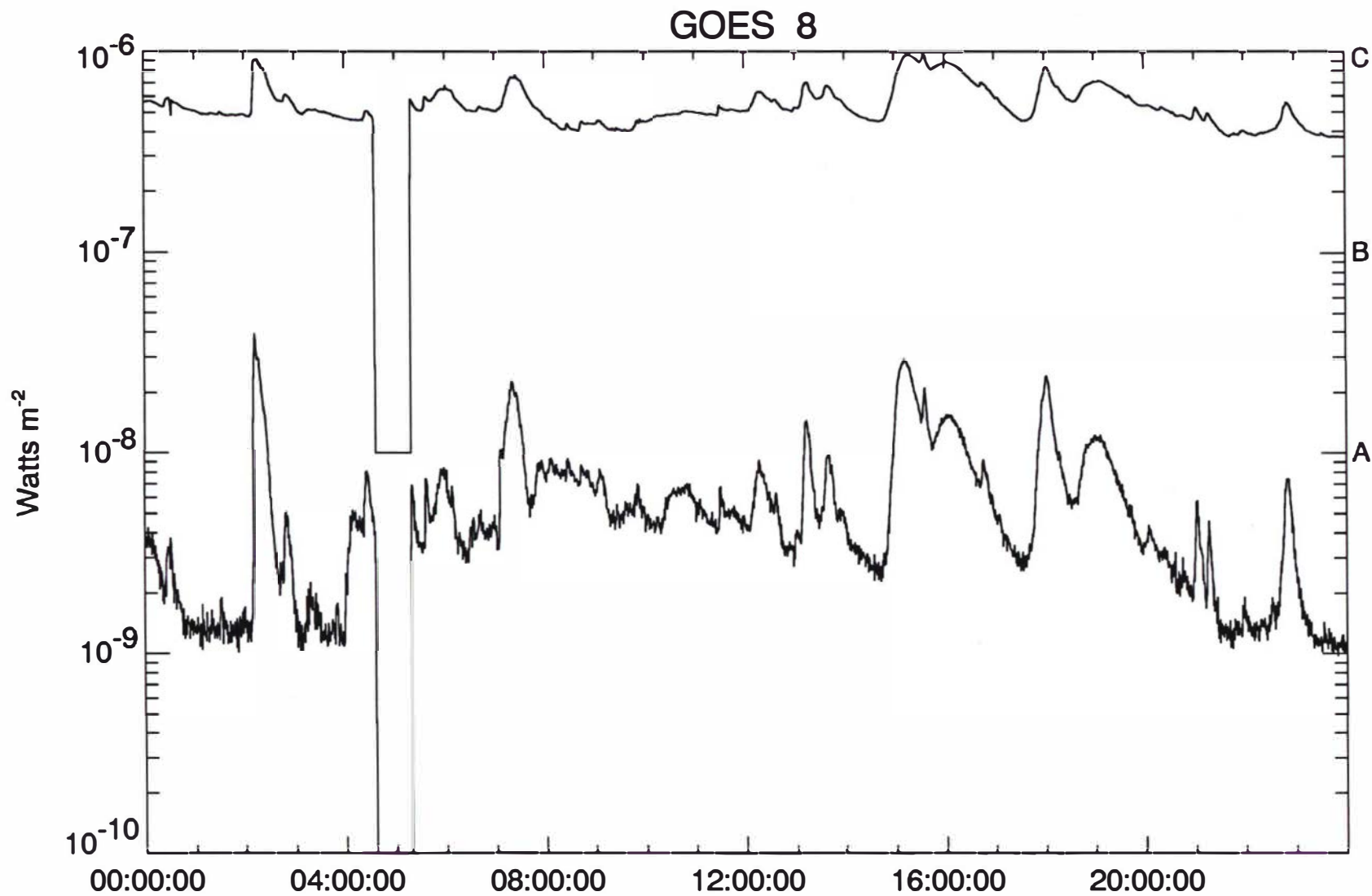
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare



Data Start: 99/09/04, 0000:00

Plot created: 99/09/08, 1005

Channel

1 (1.0 - 8.0 Angstroms)

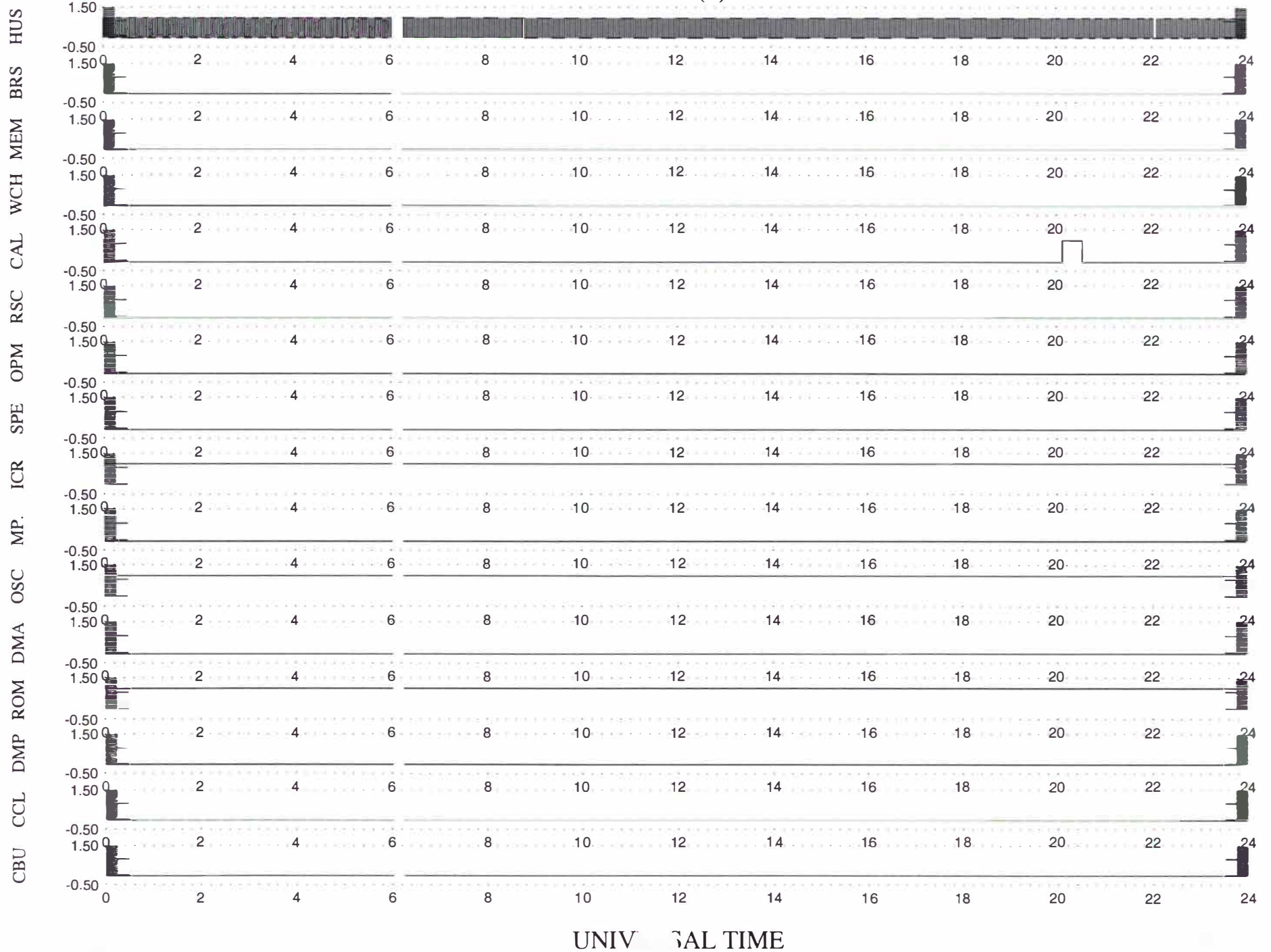
Background not subtracted

2 (0.5 - 4.0 Angstroms)

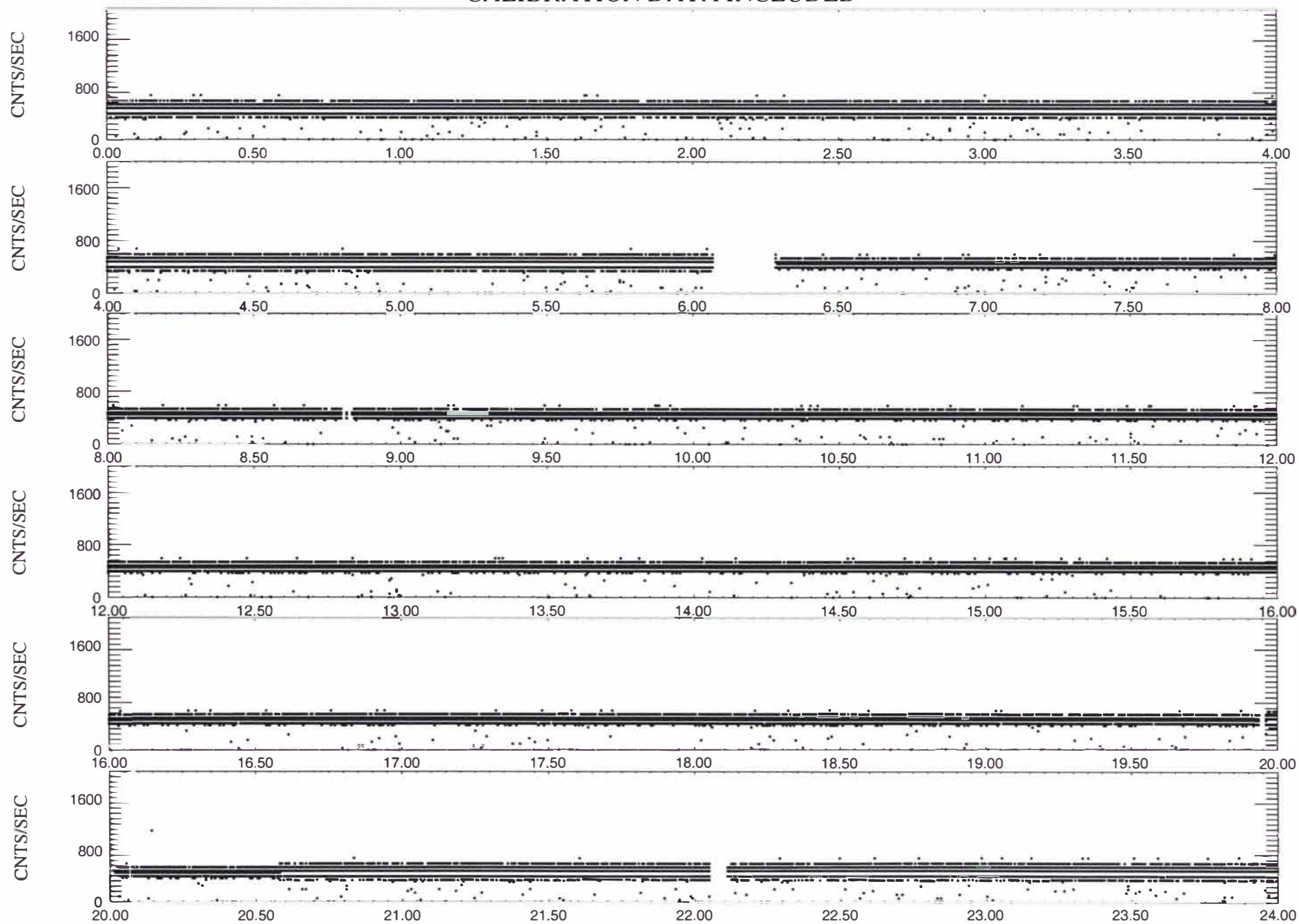
Background not subtracted

Sample average = 10

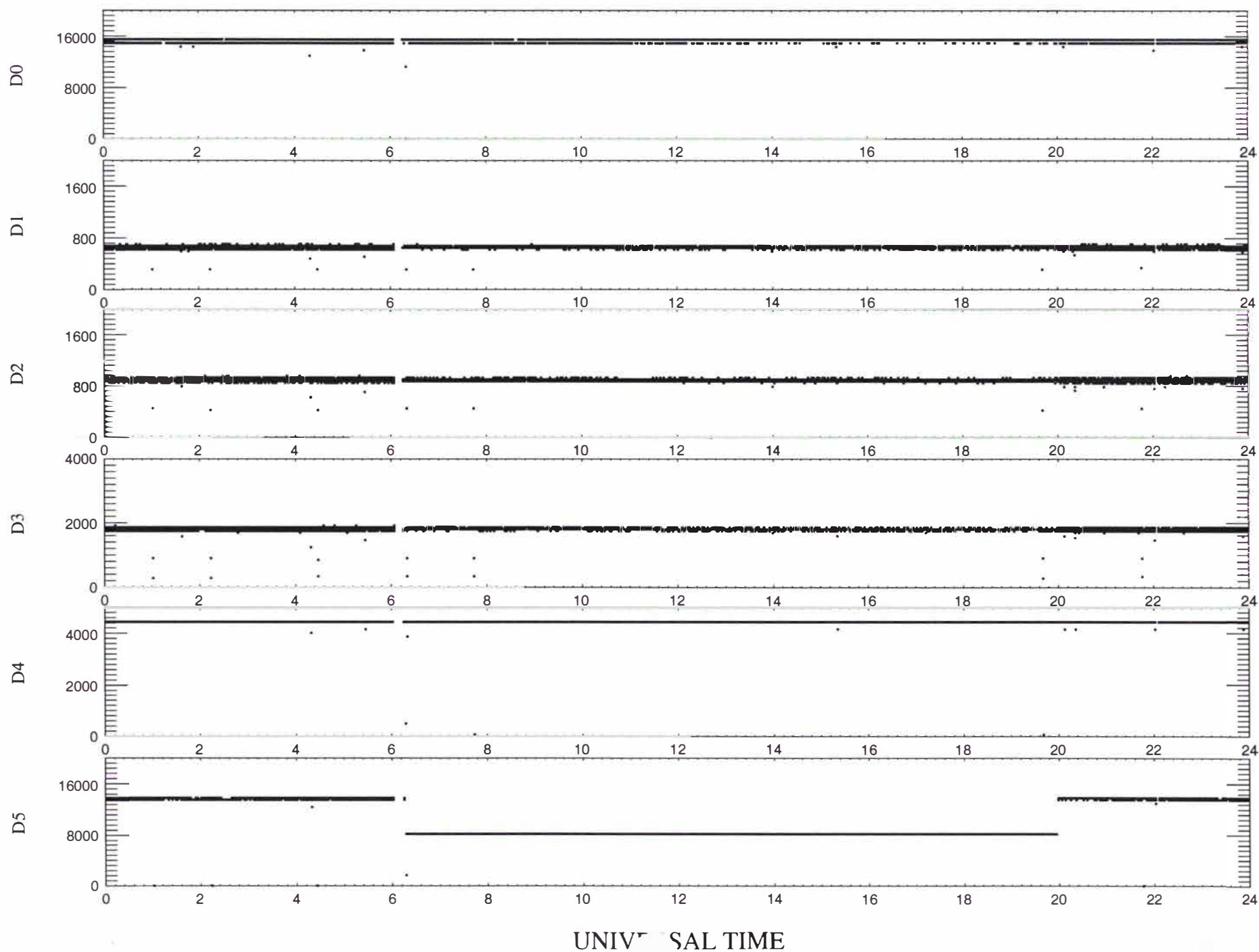
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



KONUS

ULYSSES RT

16 / 03 / 00

05 / 09 / 99 41292.457 s

0.500 S INTERVALS REGROUPED BY 8

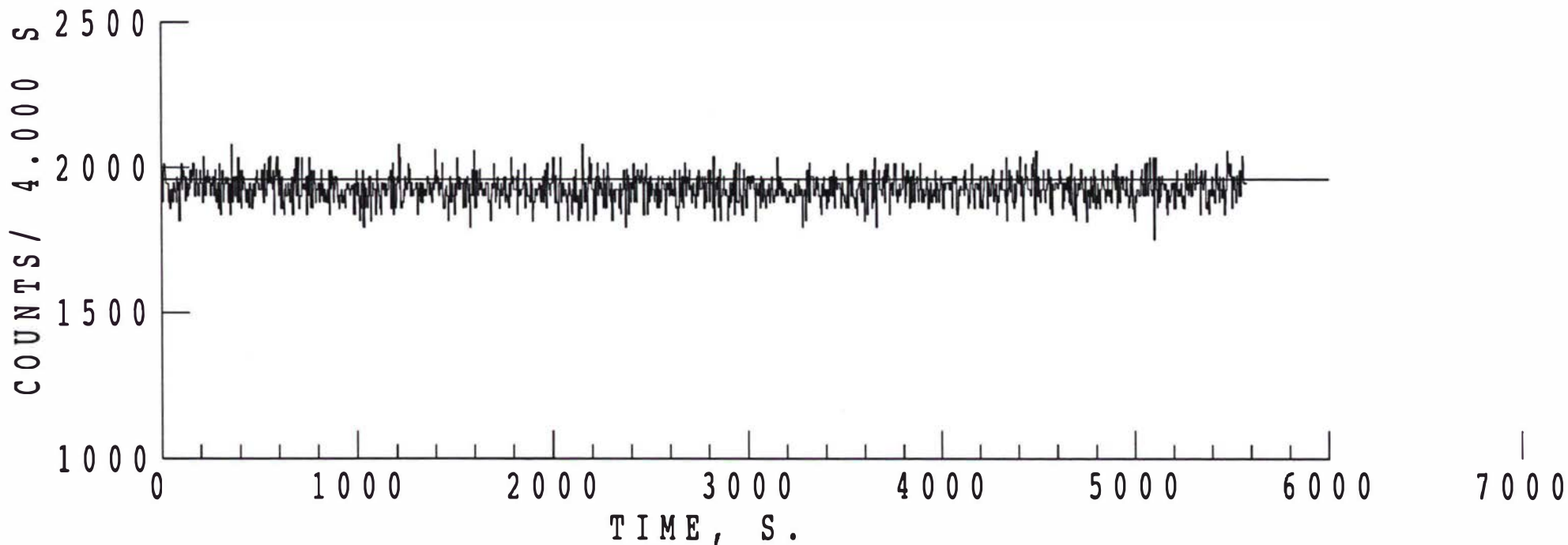
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Wed Sep 8 10:34 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Wed, 8 Sep 1999 12:27:08 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7753

BATSEARCH PROGRAM

Very marginal detection

BATSE BURST # 7753
EVENT OF 1999 SEP 5 DAY OF YEAR=248
EVENT CROSSING TIME AT BATSE : 81535. S. OR 22:38:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 95.000 46.000
BATSE PEAK COUNTING RATE: 7000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 9/ 99 IS:
RA= 155.936 DEC= -13.338 DIST= 5.518 AU
BATSE-ULYSSES DISTANCE = 825504732. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -447.20 SECS.
CROSSING TIME AT ULYSSES IS 81088. S. OR 22:31:27 +/- 514.93 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 9/ 99 IS:
RA= 238.860 DEC= -22.201 DIST= 1.211 AU
MARS-BATSE DISTANCE = 181190864. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 478.20 SECS.
CROSSING TIME AT MARS IS 82013. S. OR 22:46:53 +/- 71.43 SECONDS

BATSE BURST TRIGGER

NO.: 7753

TIME: TJD=1426 SECONDS=81535

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.2 AZIMUTH=297.6 ERROR=2.3 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH STRUCTURE. DURATION APPROX. = 2.2 SEC.
VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7753	990905	11426	81535	7000	095	+46	2.2

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

Dear Kevin,

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

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

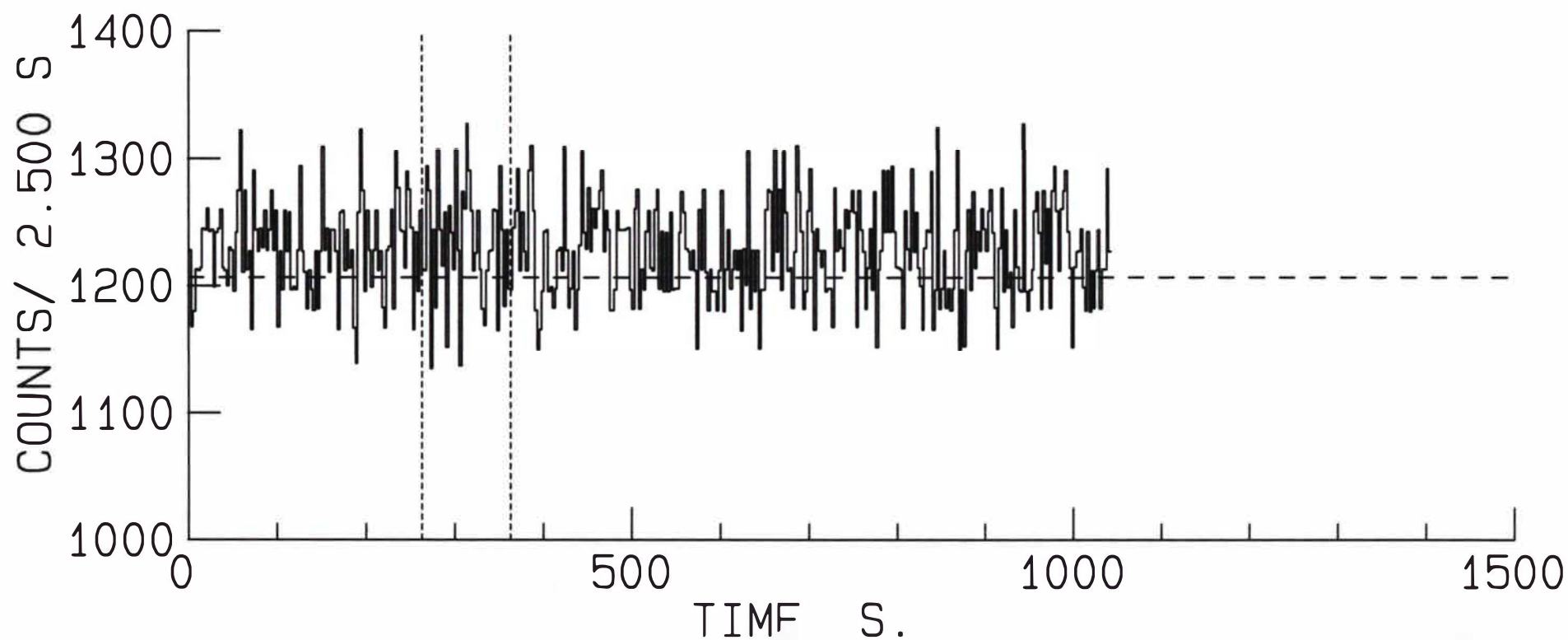
Of course, you are invited to be co-author of the corresponding paper if any OT will be detected.

Best regards,

Alberto
9 Sep 99

ULYSSES RT
5/ 9/99 80568.108 s
0.250 S INTERVALS REGROUPED BY 10
22- 151 keV

24 / 9 / 99



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

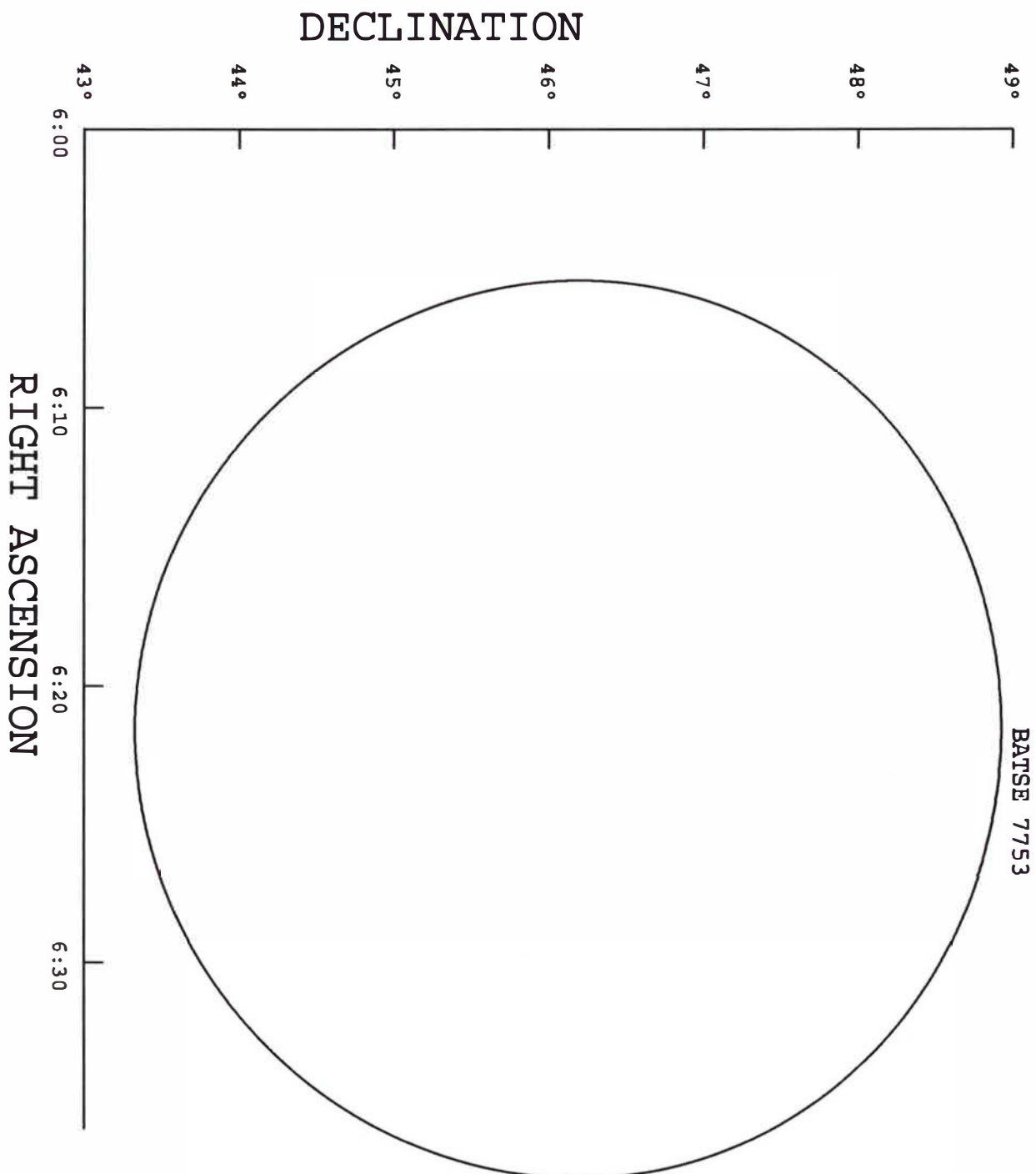
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF SEP 5, 1999 22:38

24/ 9/99



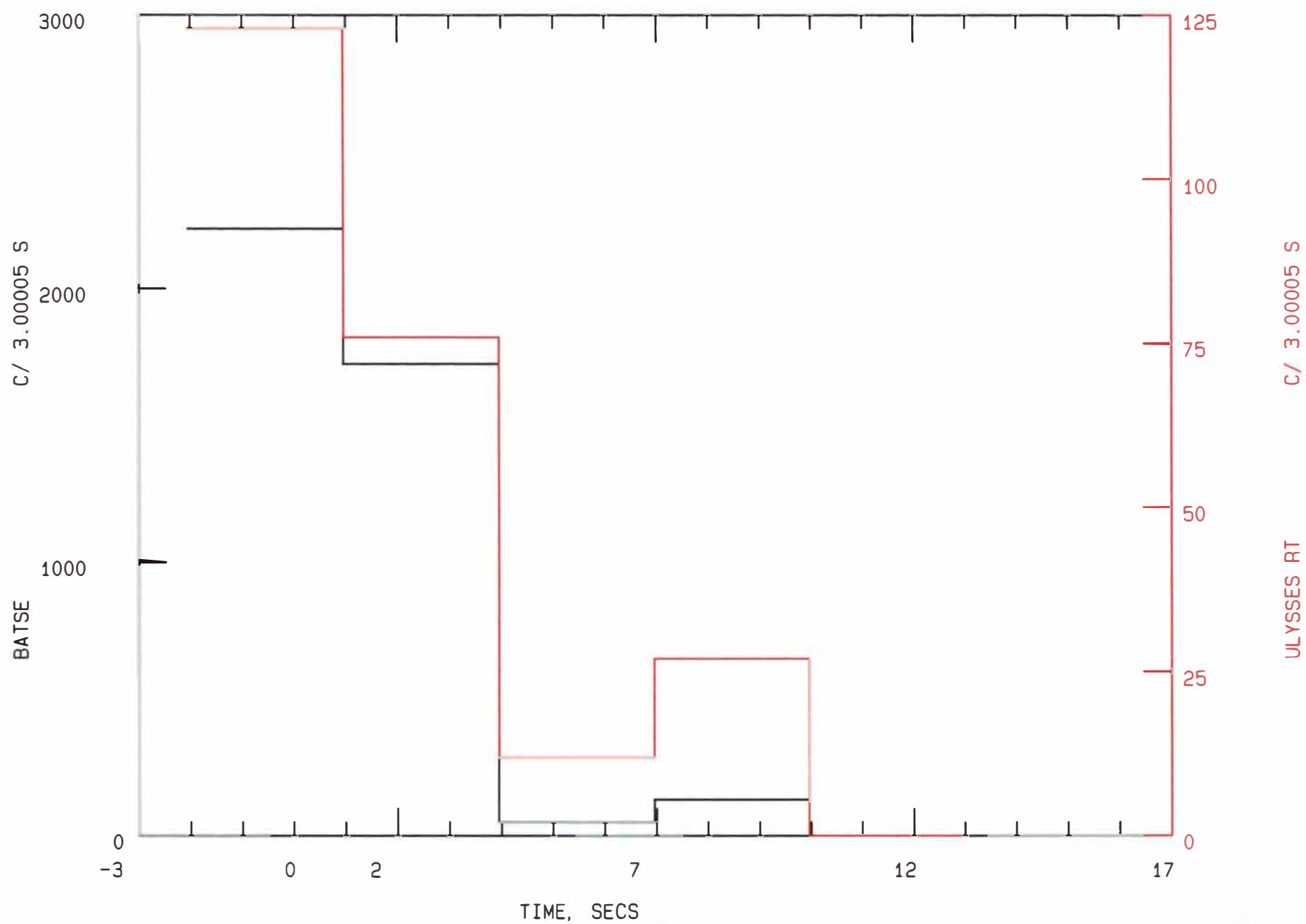
BATSE

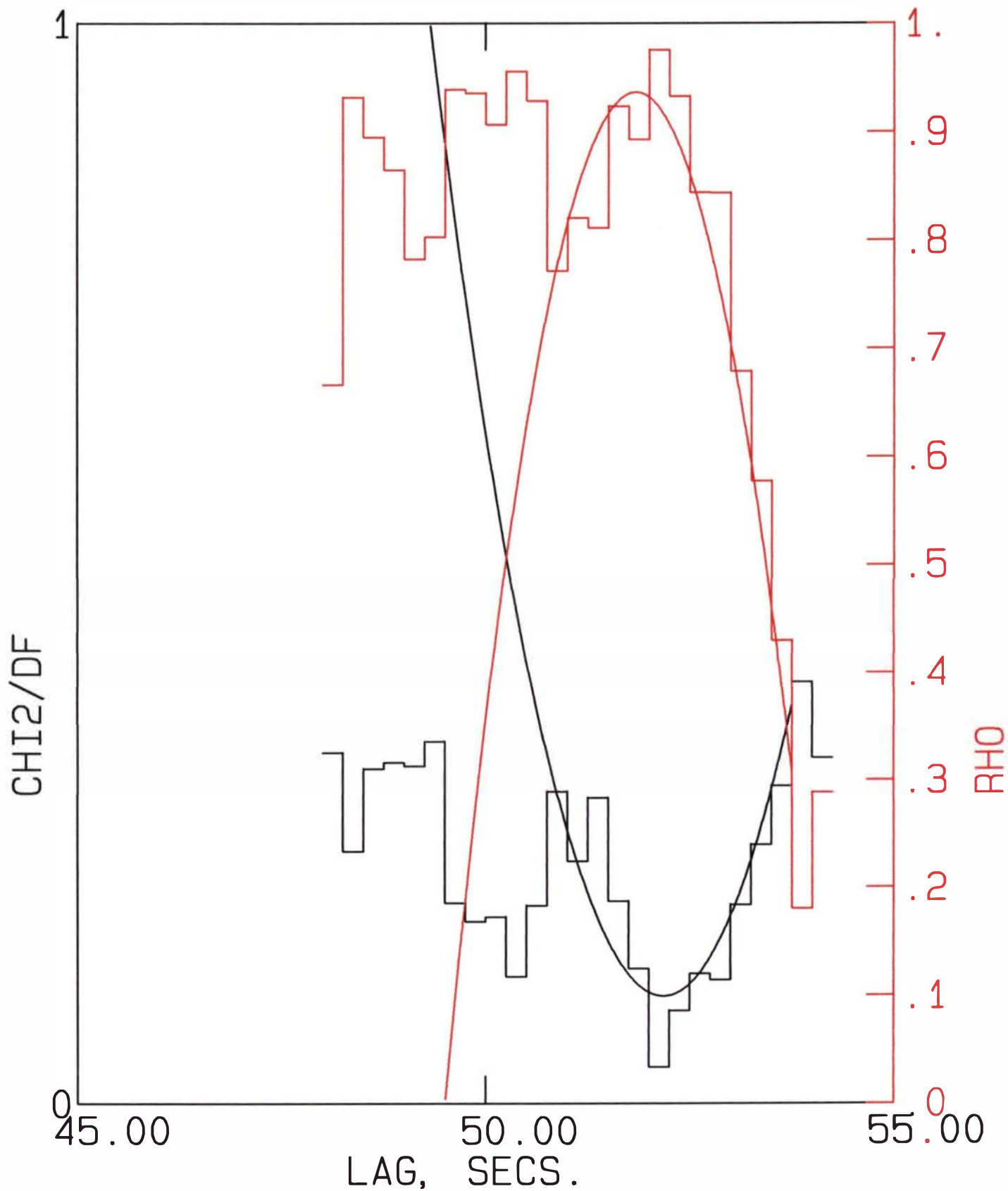
-ULYSSES RT CORRELATION

5/ 9/99

81535.737

24/ 9/99





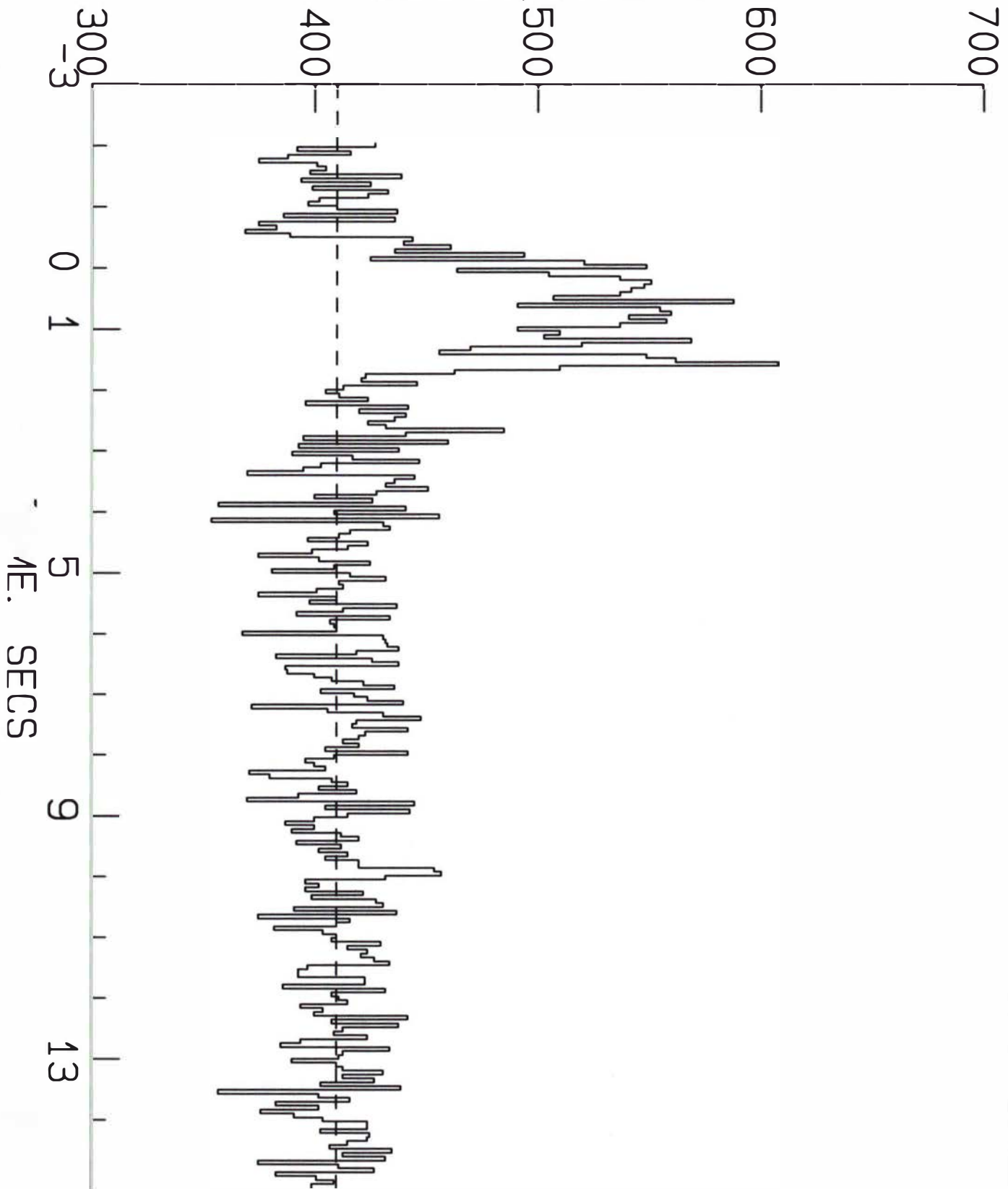
BATSE

05/09/99

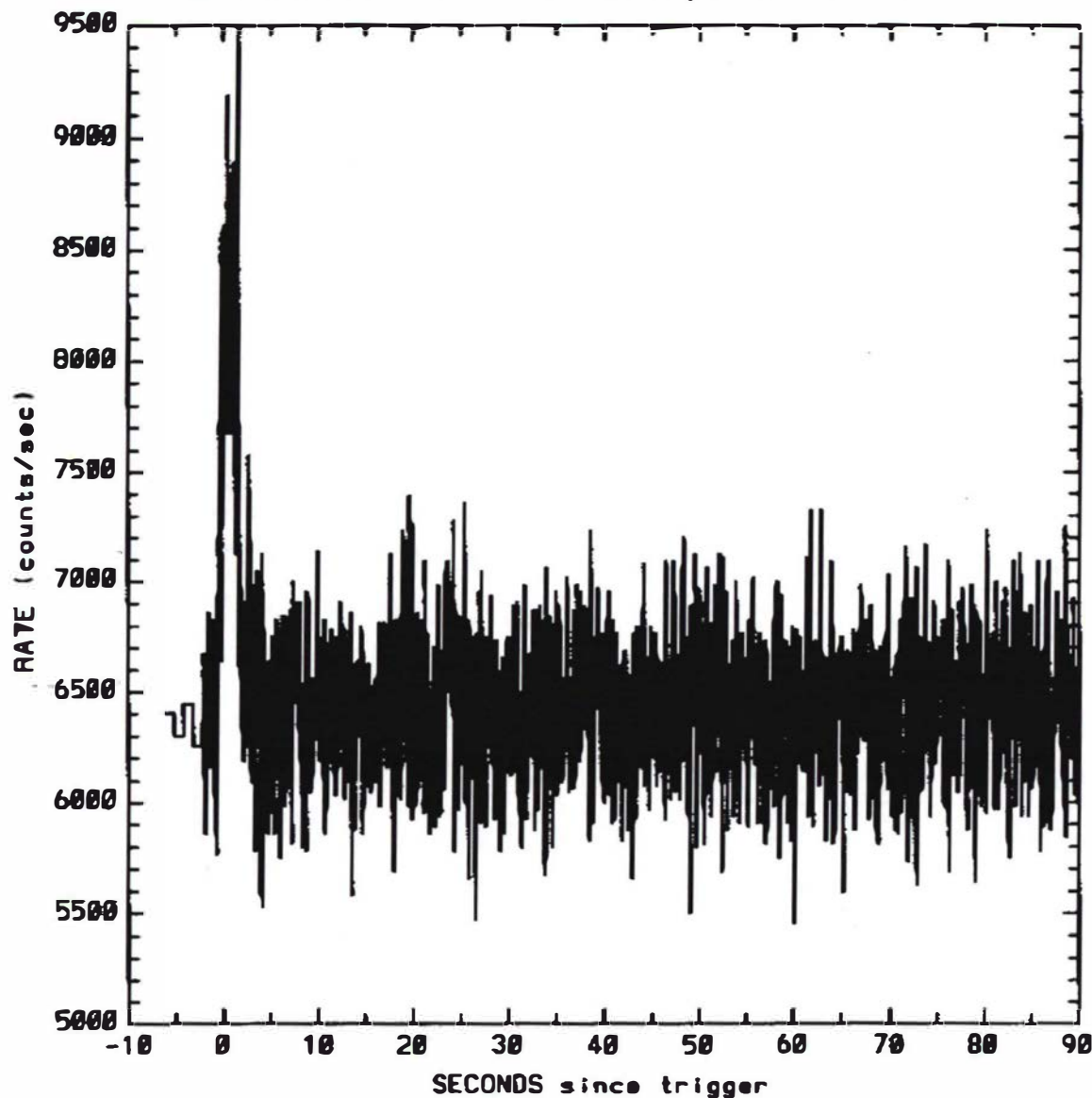
81535.737

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7753



28-SEP-1999 14:32:31

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # . 7753

Trigger Time:
11426 / 81535.737

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

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

Discriminators:
(1 . 2)

Quality Mask:
BDISP1

BATSE BURST# 7753

ULYSSES RT

8 / 9 / 99

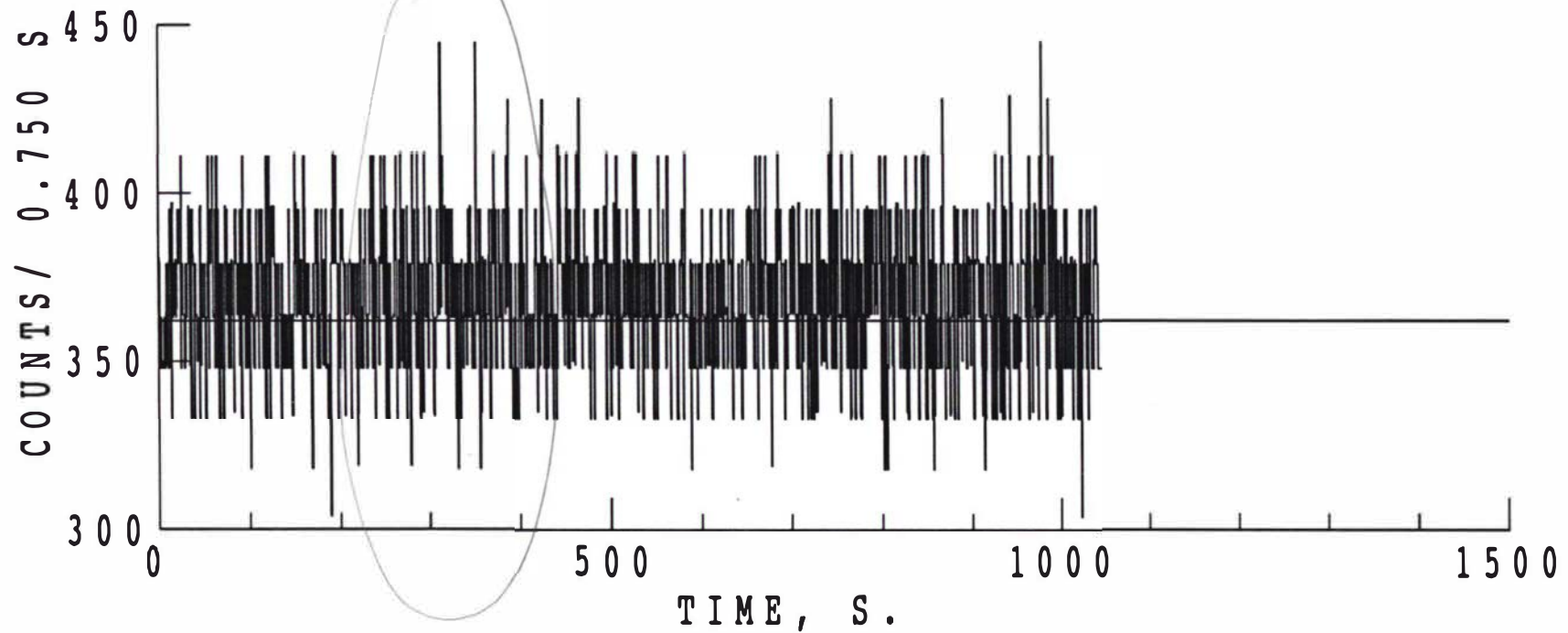
5 / 9 / 99 80568.109 s

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

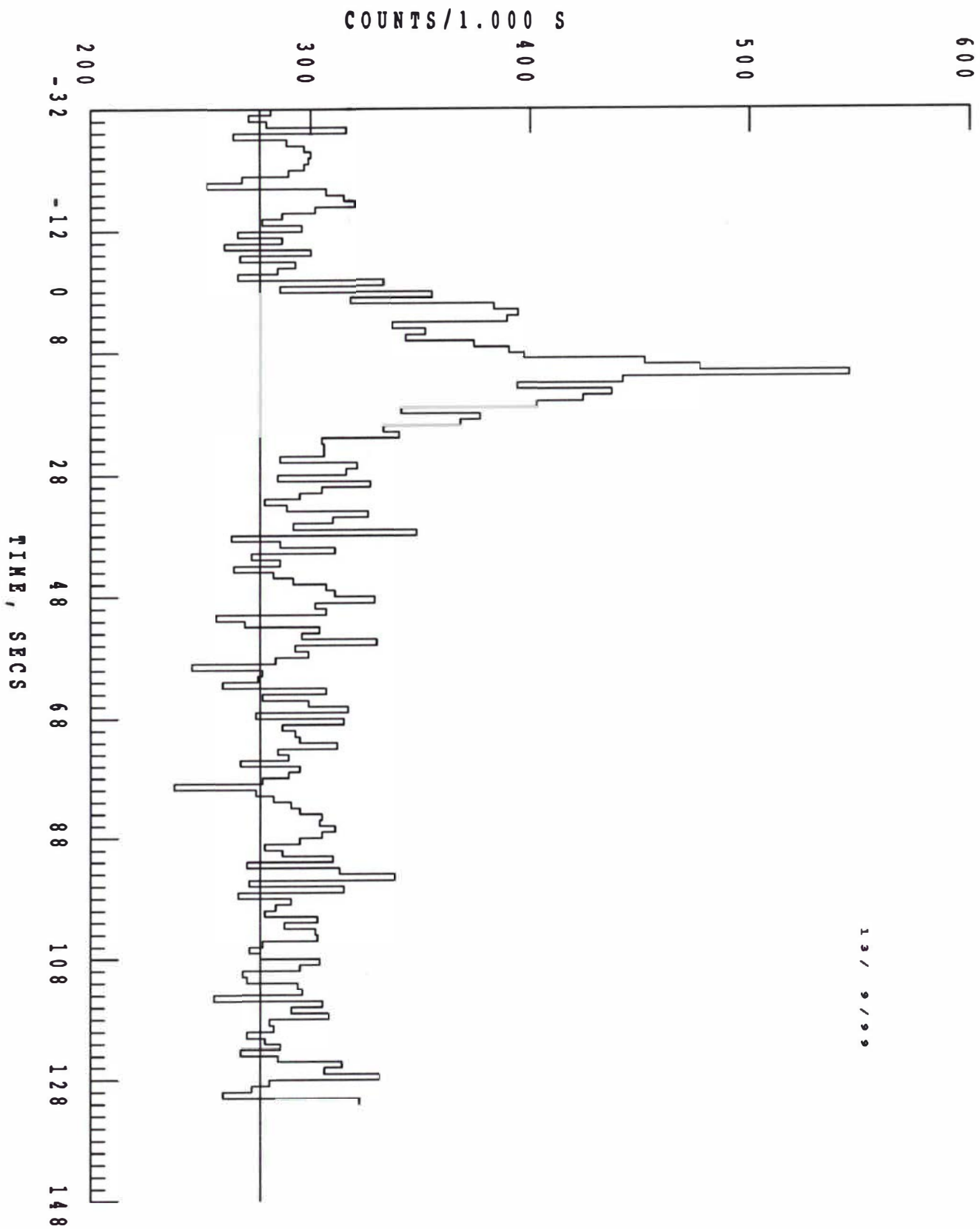


NEAR

05/09/99

85261.551

100-1000 keV



KNEAR GRS 19990905 85261

ULYSSES RT

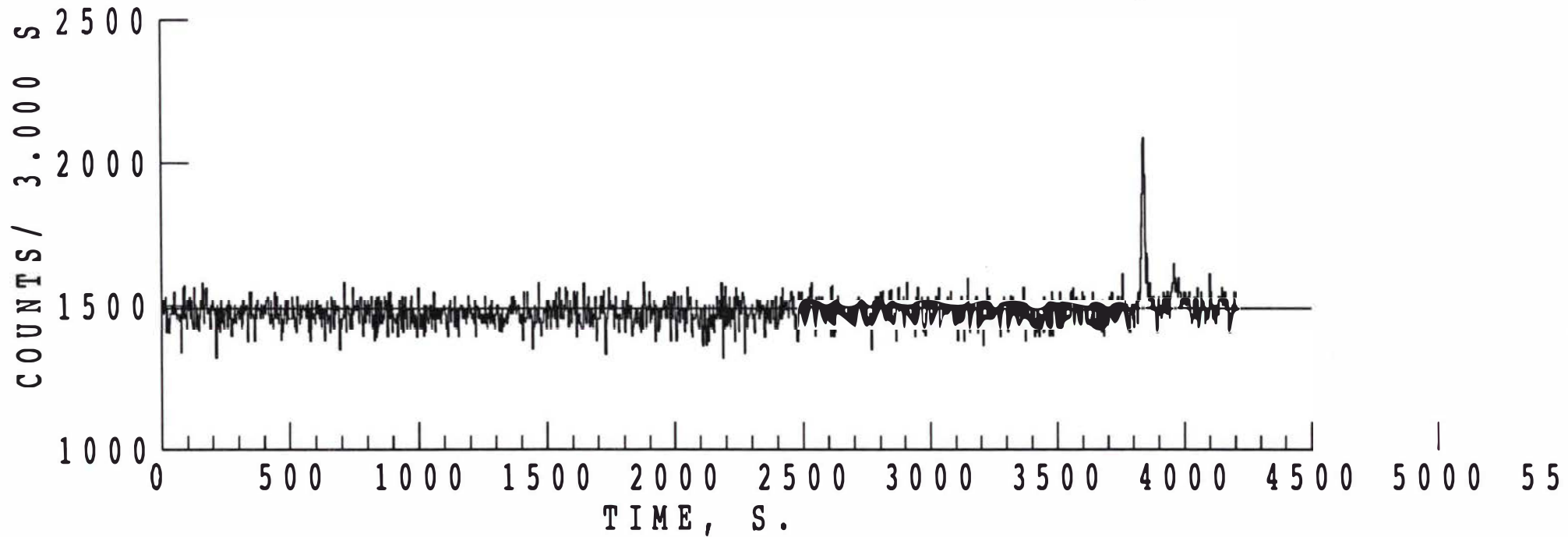
13 / 9 / 99

5 / 9 / 99 83160.133 s

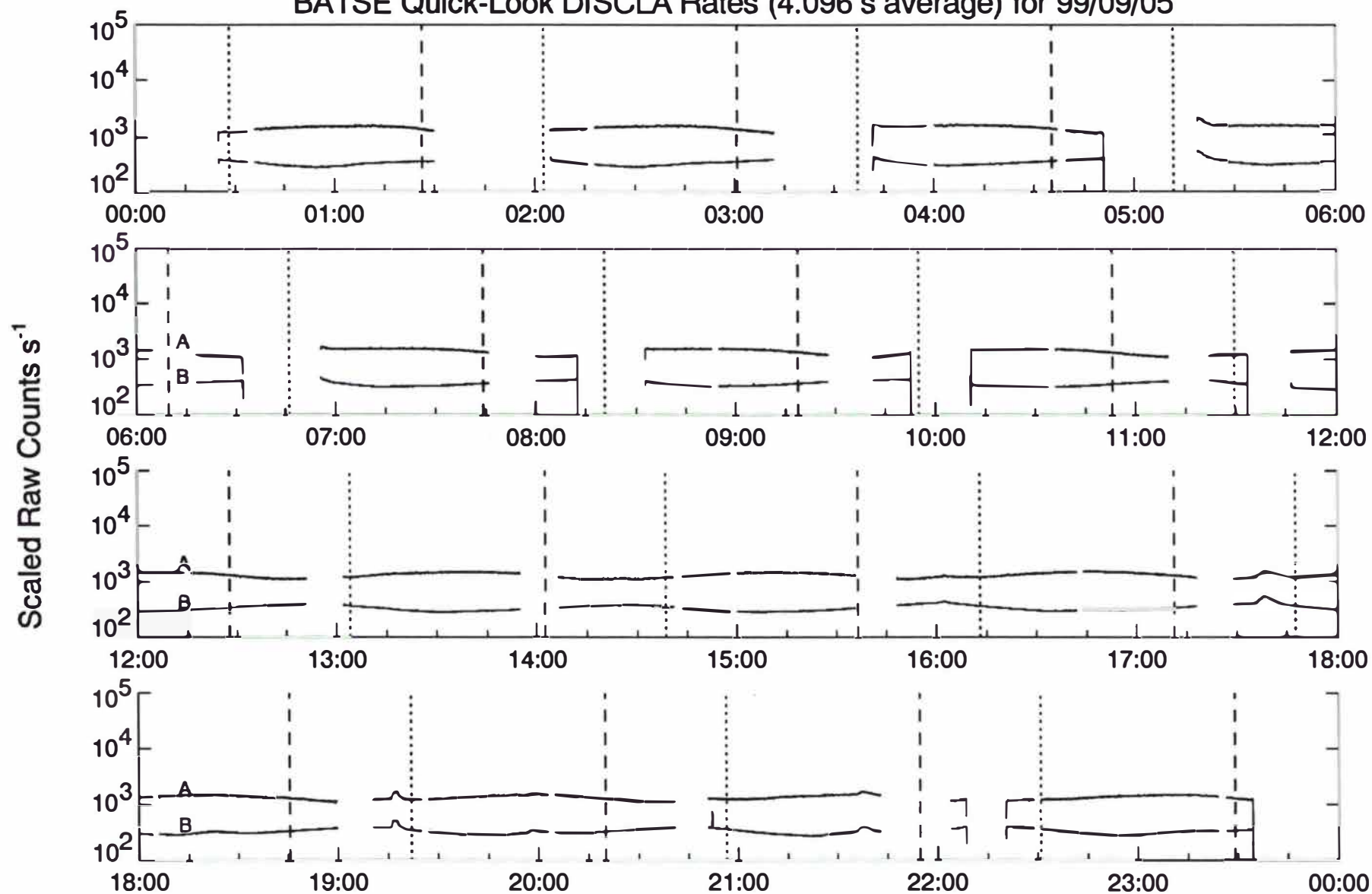
0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/05



Current Time: 99/09/09, 1005 EDT

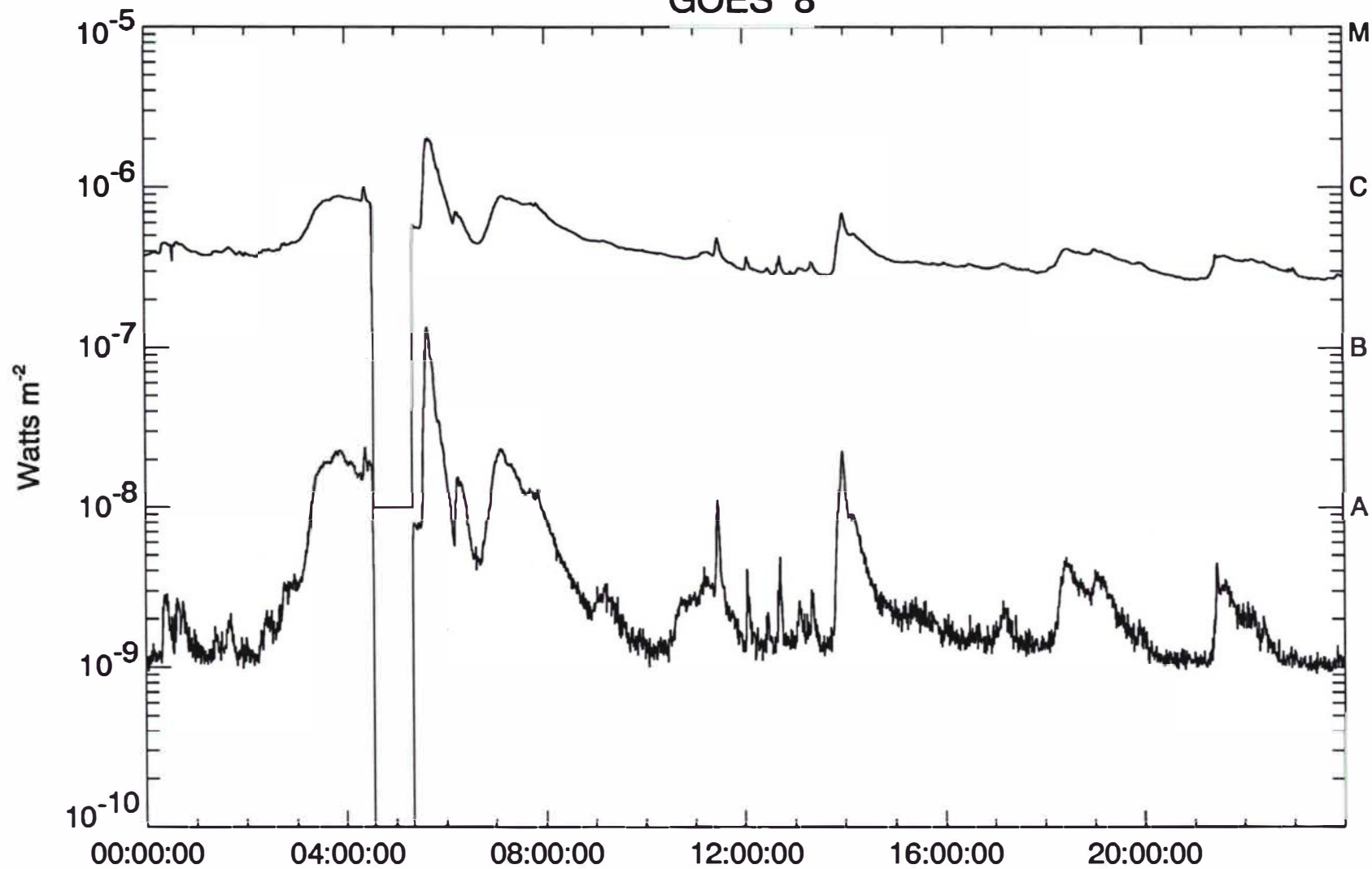
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/05, 0000:00

Plot created: 99/09/09, 1005

Channel

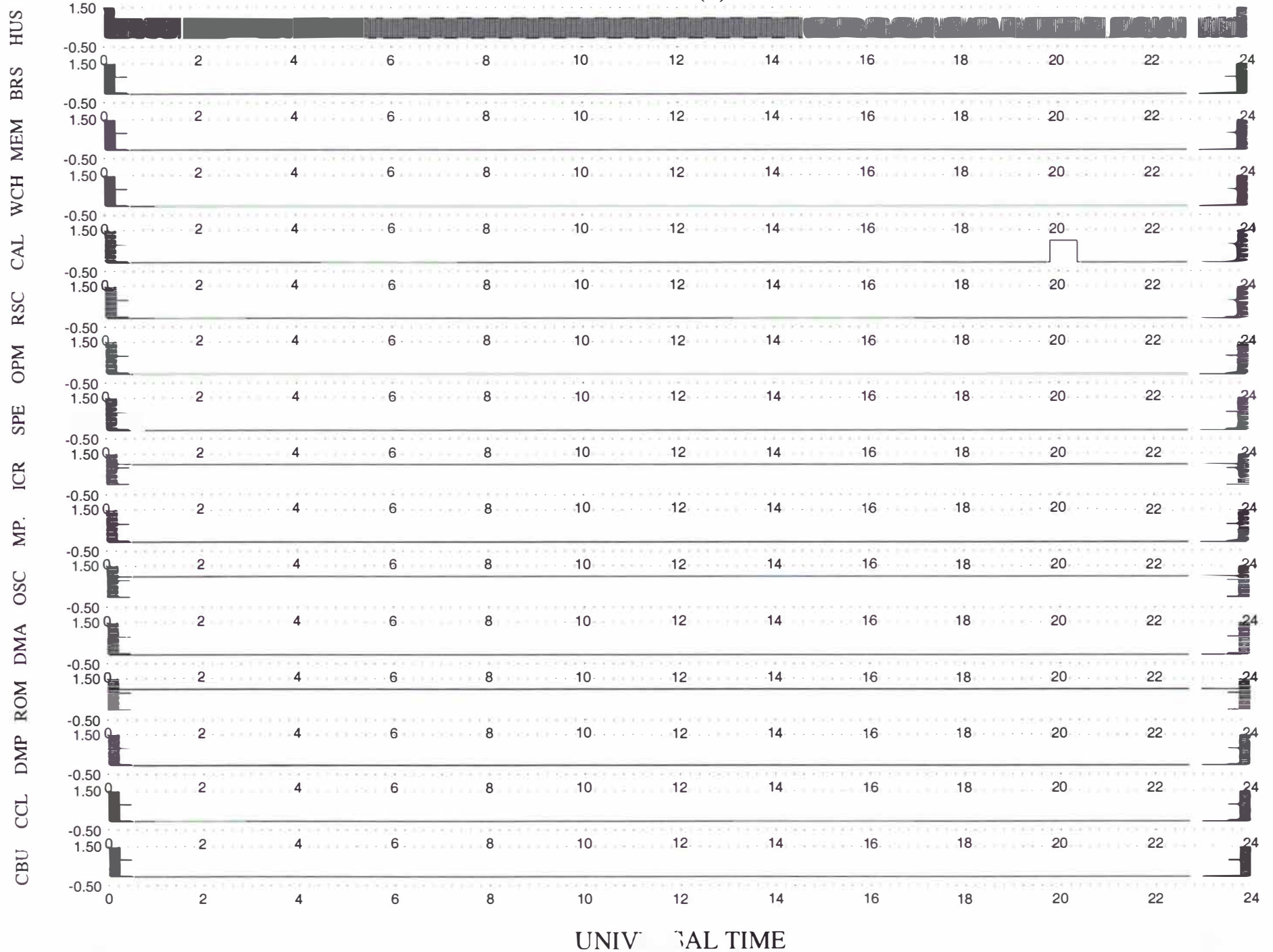
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted

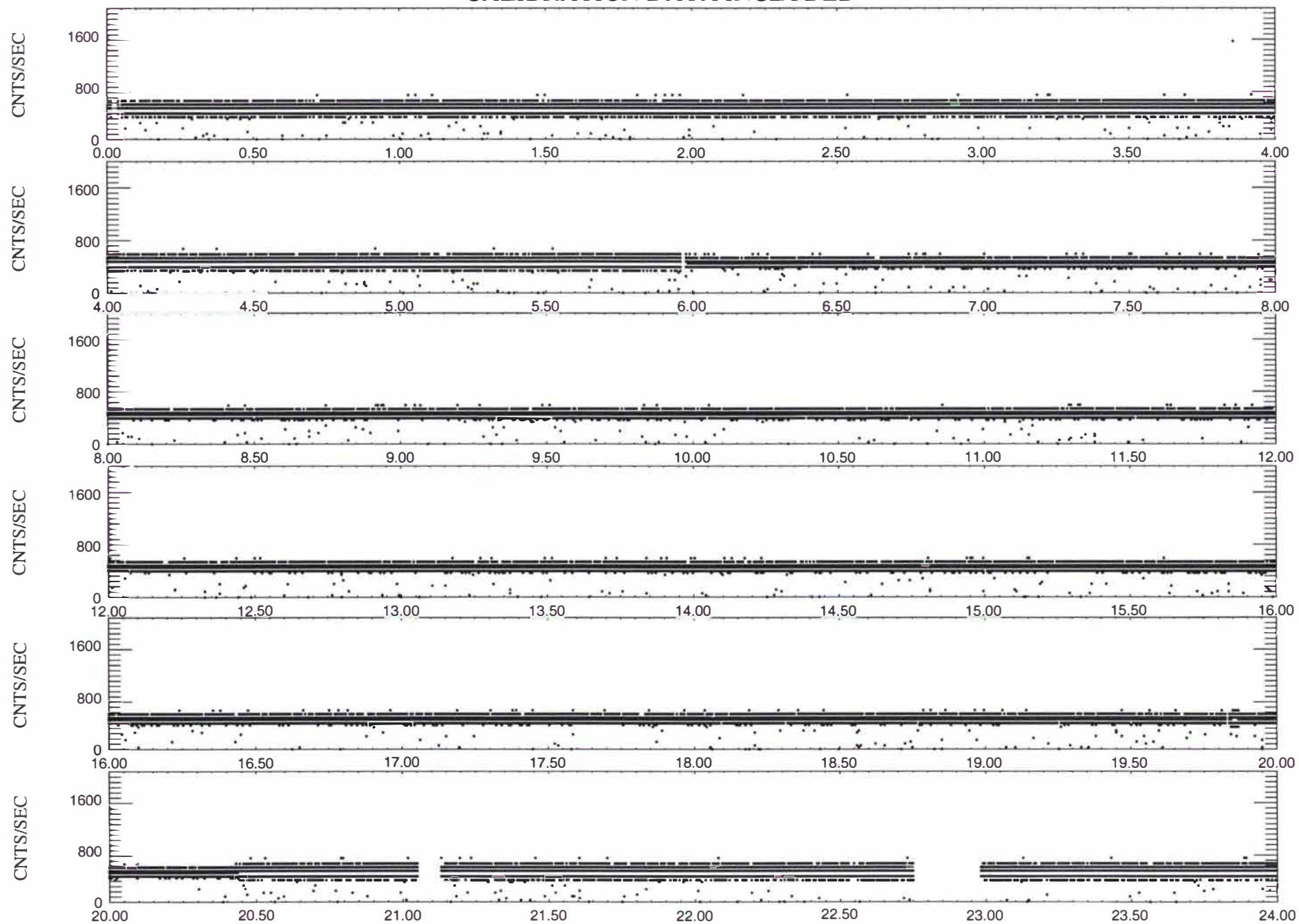
Background not subtracted

Sample average = 10

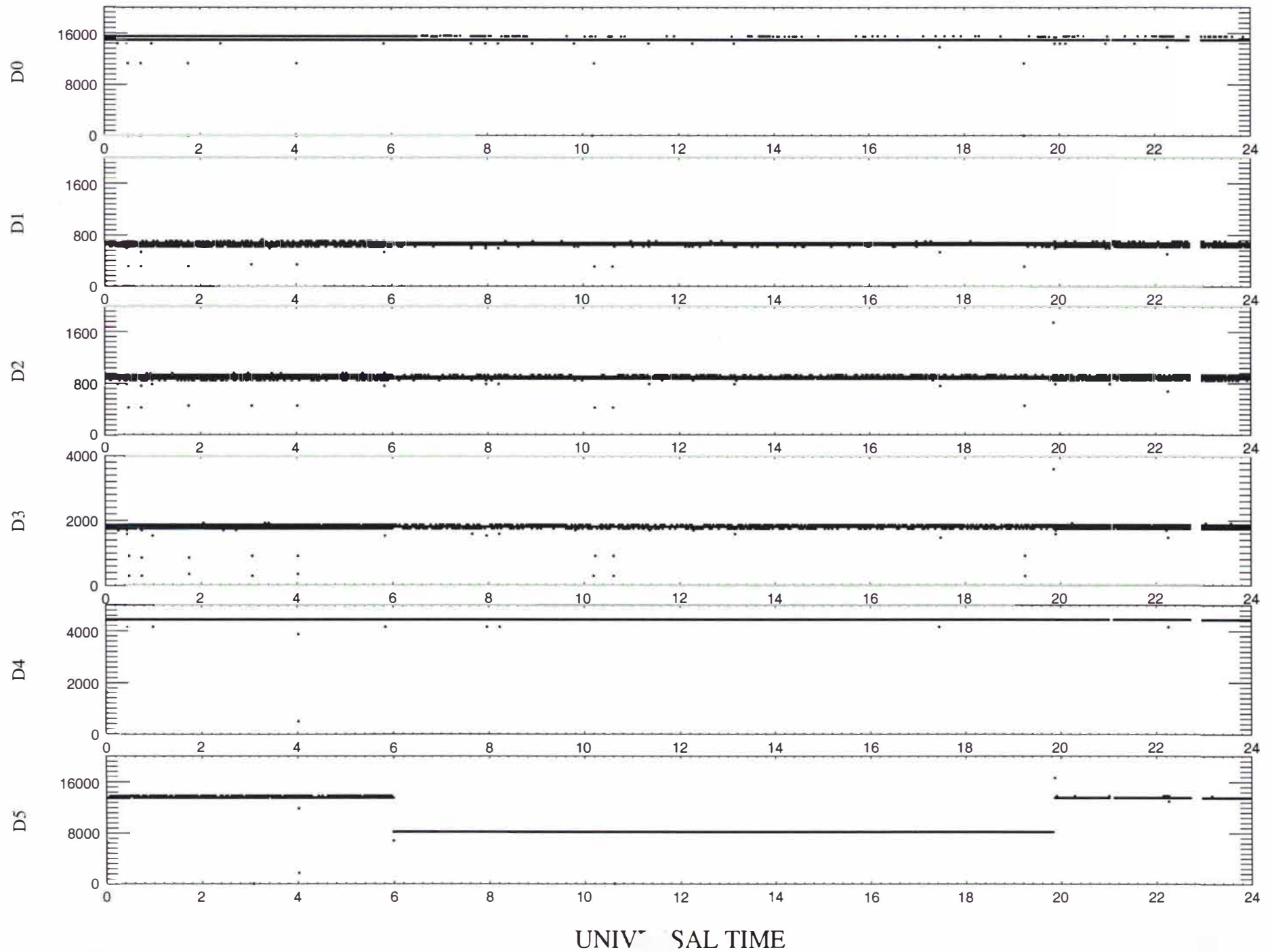
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIV* SAL TIME



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

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

From: BUTTERWORTH@tgrs3.gsfc.nasa.gov

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

CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov

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

Hi Everyone,

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

Paul.

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

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

From HENZE@fender.msfc.nasa.gov Thu Sep 9 15:33 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Thu, 9 Sep 1999 17:28:03 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7754

BATSEARCH PROGRAM

BATSE BURST # 7754
EVENT OF 1999 SEP 6 DAY OF YEAR=249
EVENT CROSSING TIME AT BATSE : 64180. S. OR 17:49:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 58.000 1.000
BATSE PEAK COUNTING RATE: 11000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 9/ 99 IS:
RA= 156.061 DEC= -13.437 DIST= 5.515 AU
BATSE-ULYSSES DISTANCE = 825009240. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 386.46 SECS.
CROSSING TIME AT ULYSSES IS 64566. S. OR 17:56:06 +/- 528.91 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 9/ 99 IS:
RA= 239.528 DEC= -22.332 DIST= 1.217 AU
MARS-BATSE DISTANCE = 182041376. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 21.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 565.42 SECS.
CROSSING TIME AT MARS IS 64745. S. OR 17:59:05 +/- 47.03 SECONDS

BATSE BURST TRIGGER

NO.: 7754

TIME: TJD=1427 SECONDS=64180

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

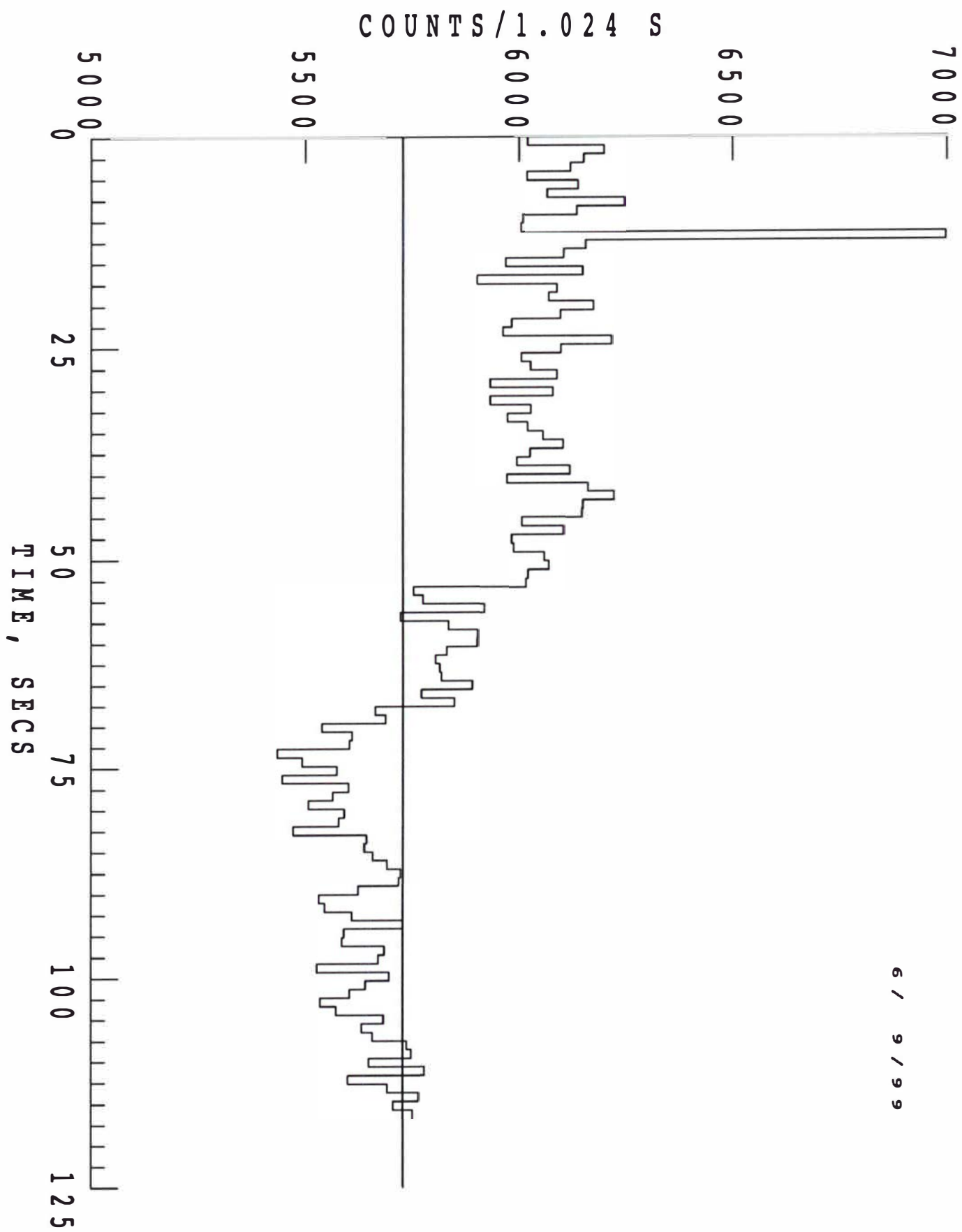
LOCATION: ZENITH=104.4 AZIMUTH=247.5 ERROR= 4.7 DEGREES

COMMENTS:

SINGLE PULSE, DUR. APPROX. 0.25 S, STARTS AT APPROX. T-0.1 S, MAX AT APPROX. T-0.065 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7754	990906	11427	64180	11000	058	+01	.25

BACODINE 7754 06/09/99 64168.697
25- 100 keV



BATSE BURST# 7754

ULYSSES RT

9 / 9 / 99

6 / 9 / 99 64044.062 s

0.500 S INTERVALS REGROUPED BY 2

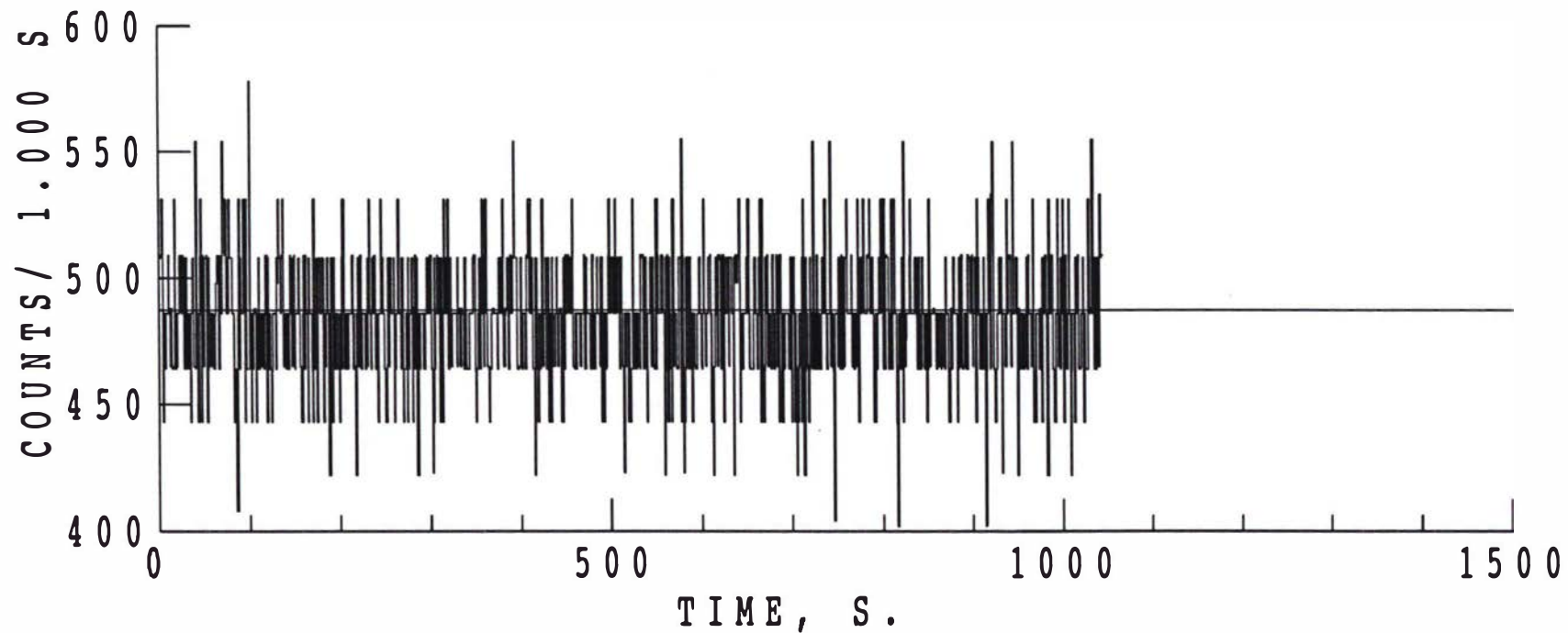
0 - 0 keV

N= 10 M= 10

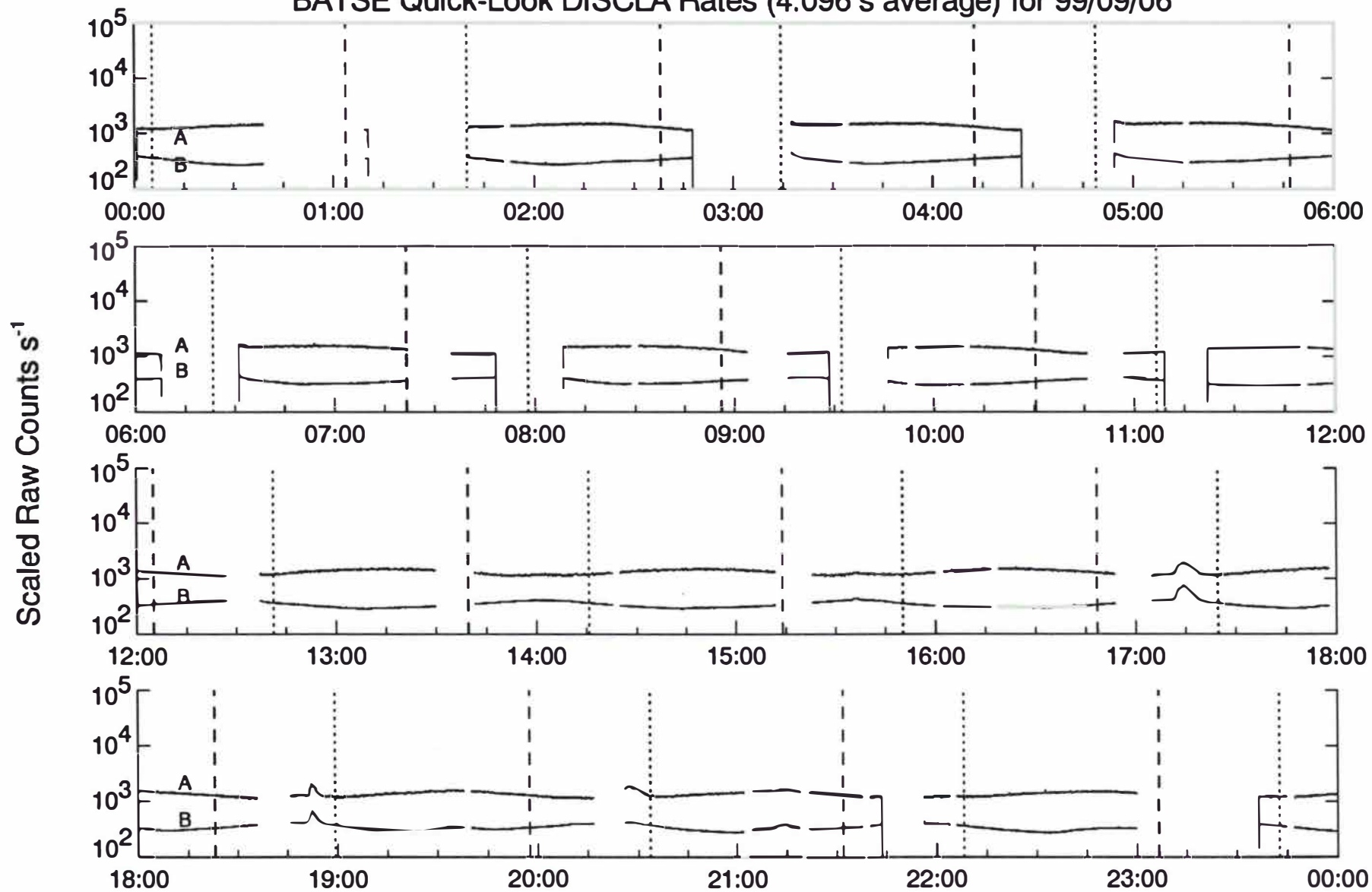
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/06

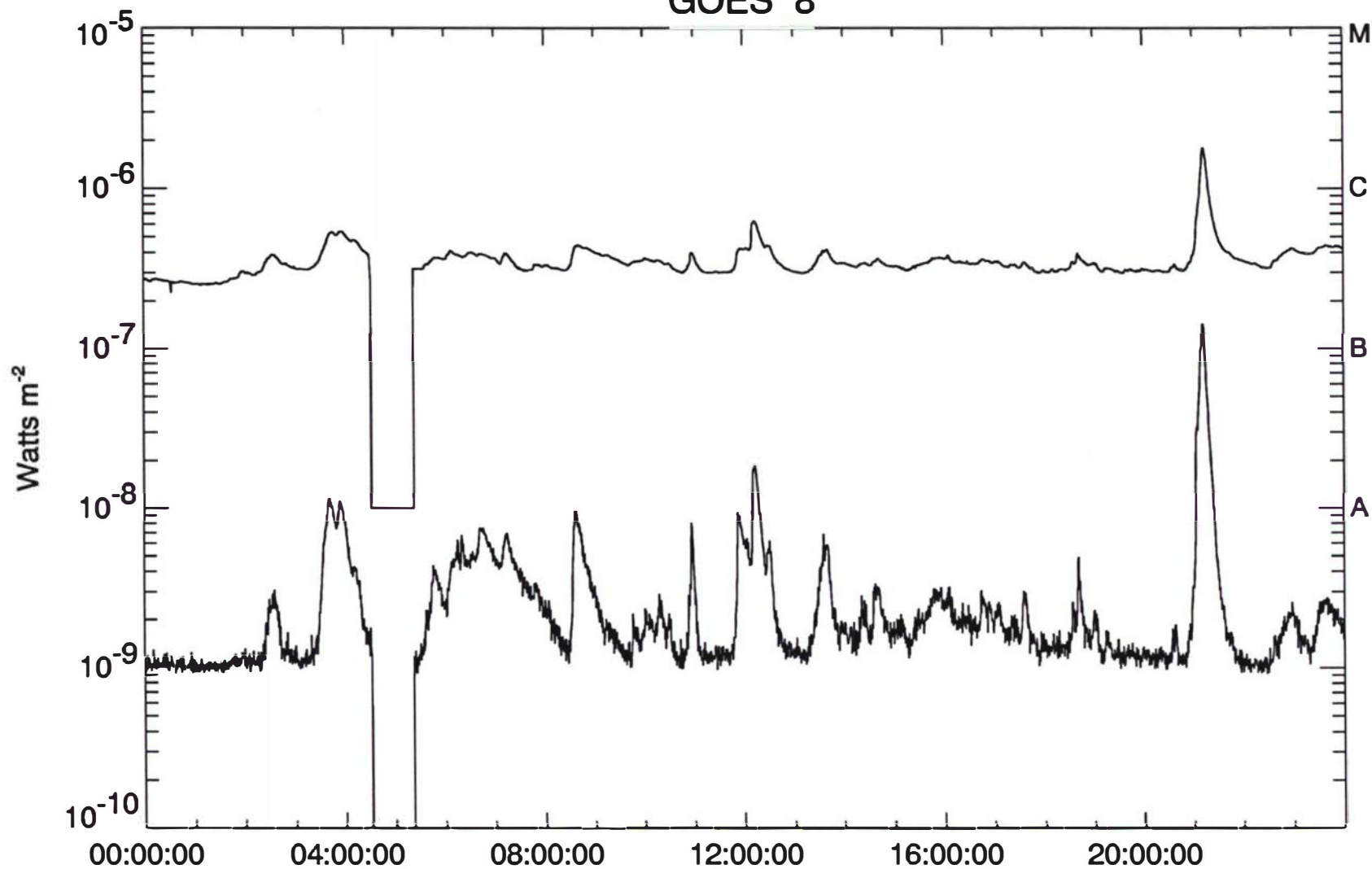


Current Time: 99/09/10, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/06, 0000:00

Plot created: 99/09/10, 1004

Channel

1 (1.0 - 8.0 Angstroms)

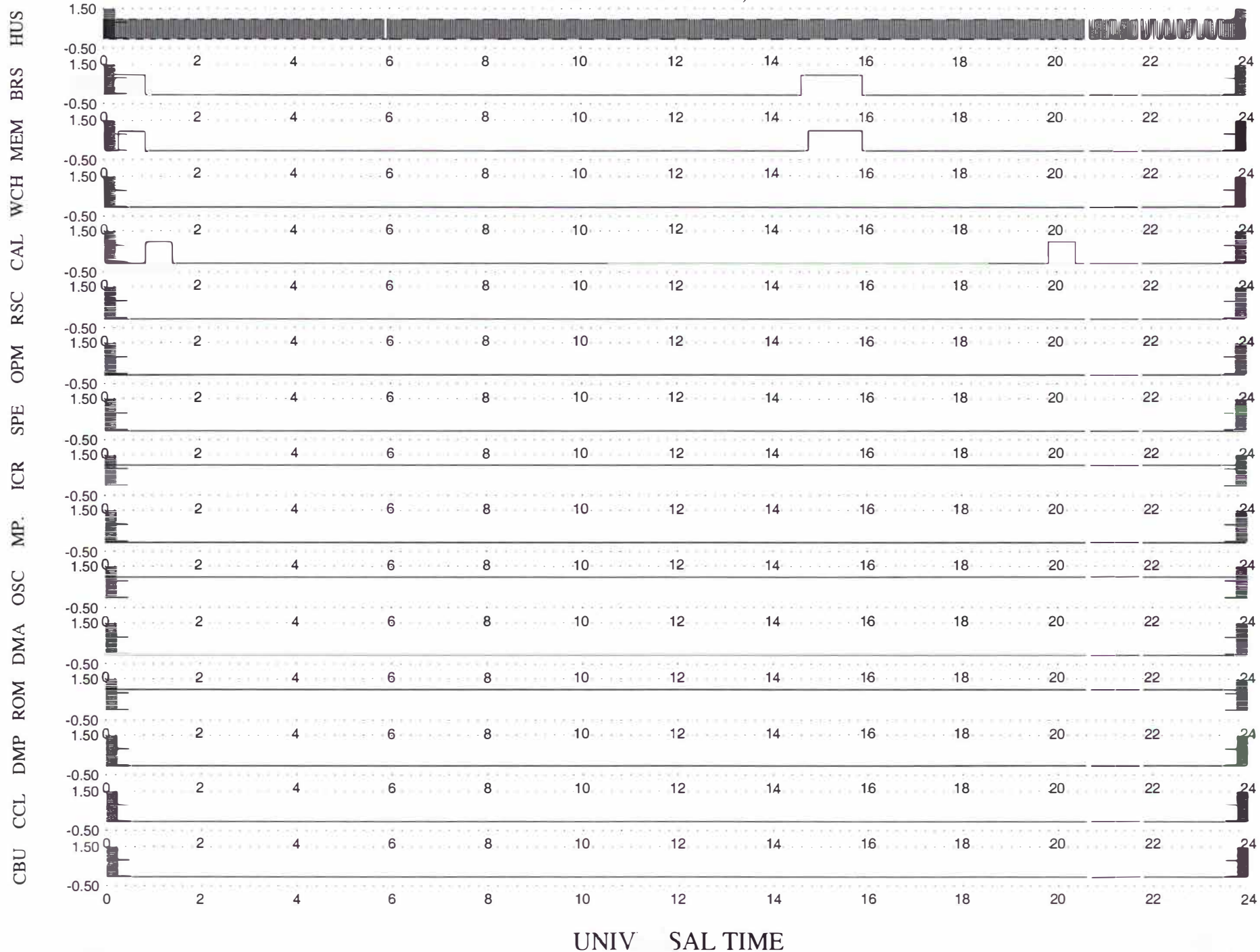
Background not subtracted

2 (0.5 - 4.0 Angstroms)

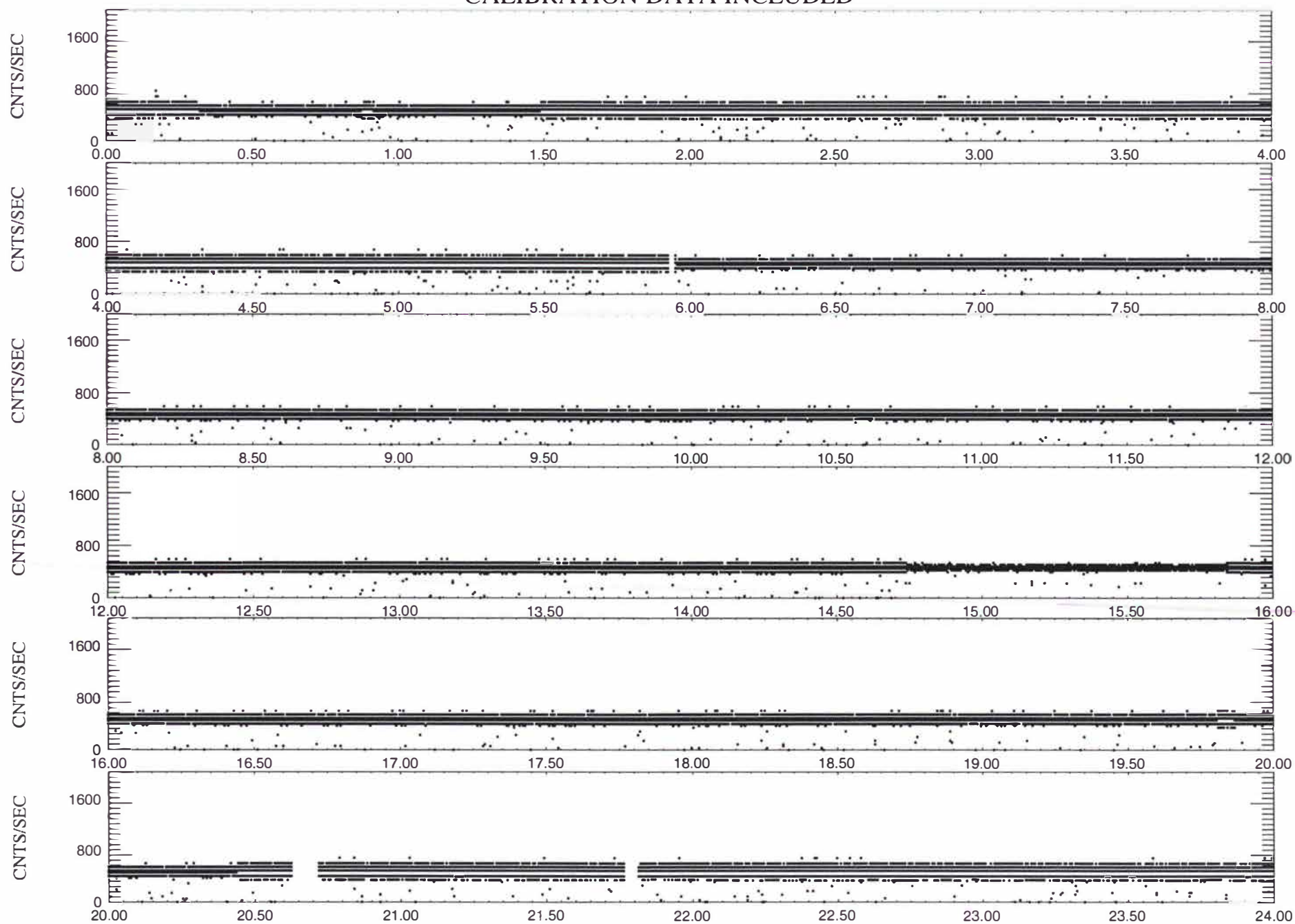
Background not subtracted

Sample average = 10

BURST NUMBER 8, 9

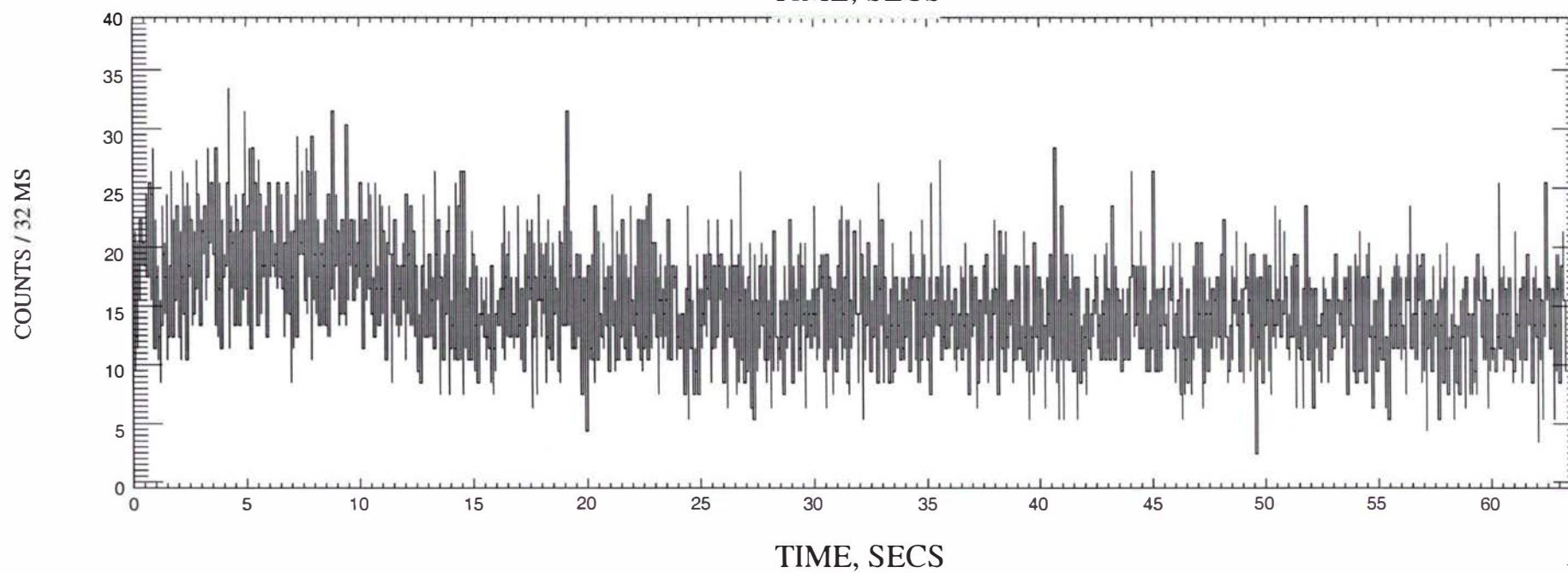
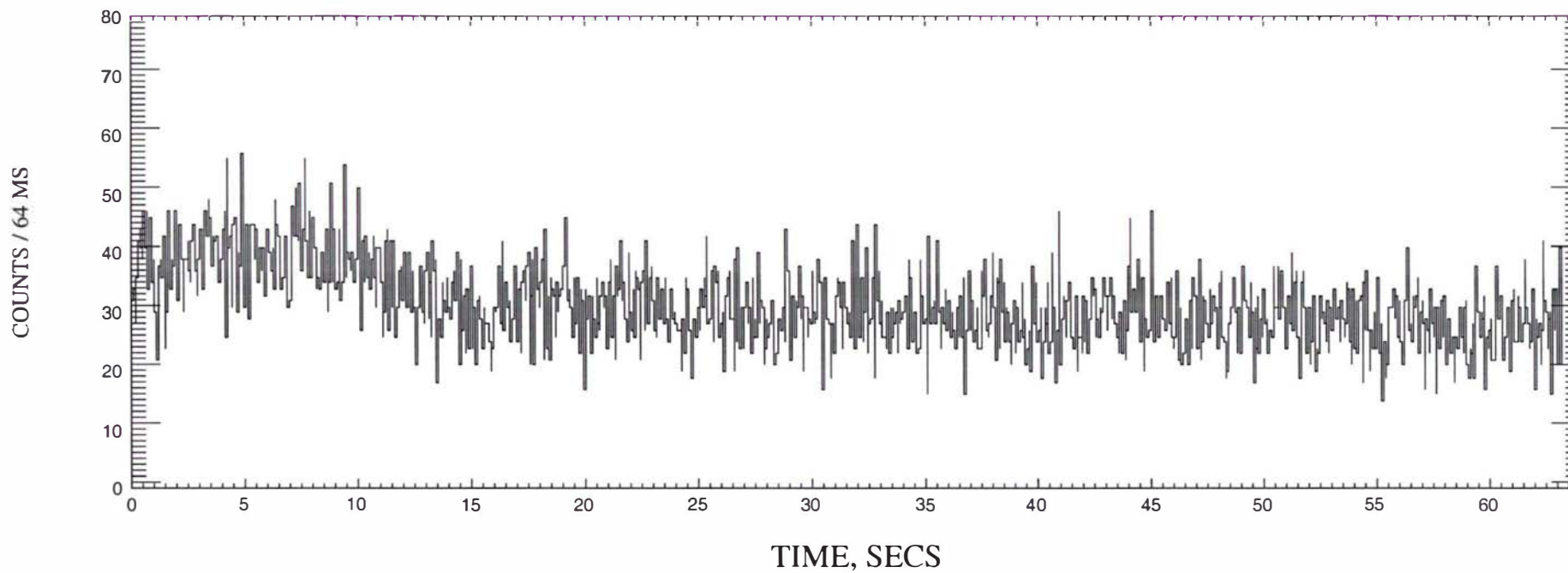


CALIBRATION DATA INCLUDED

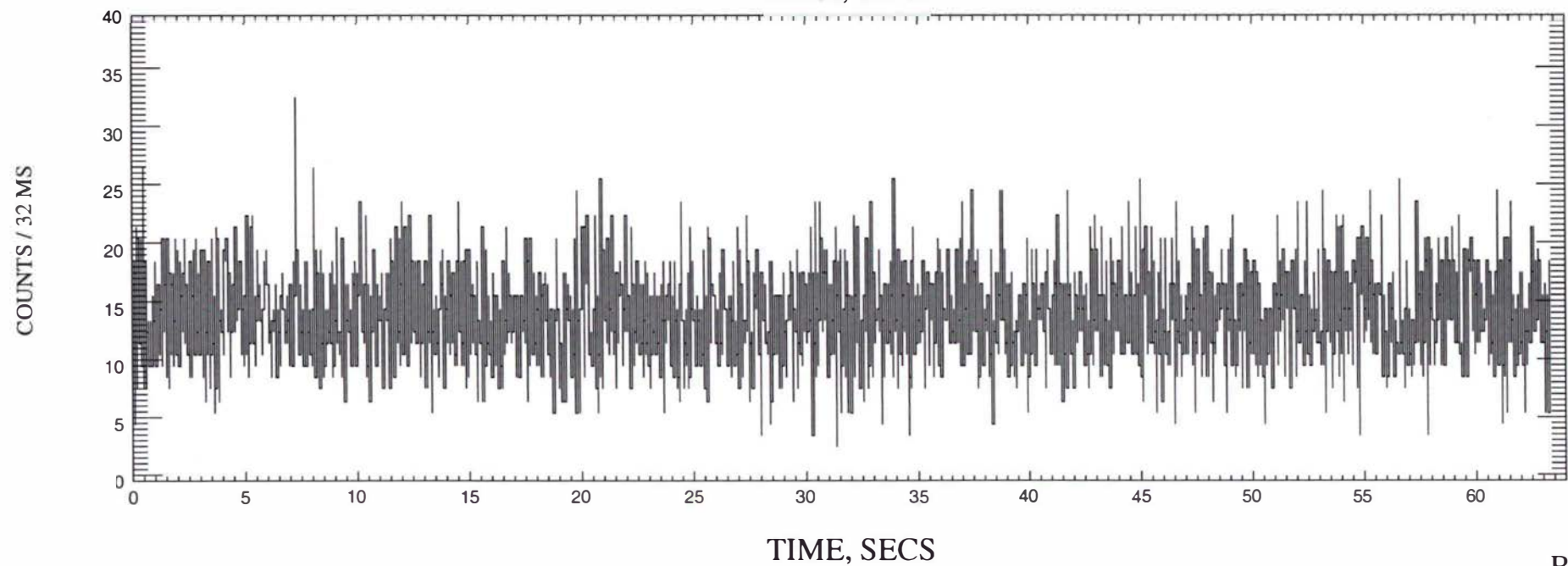
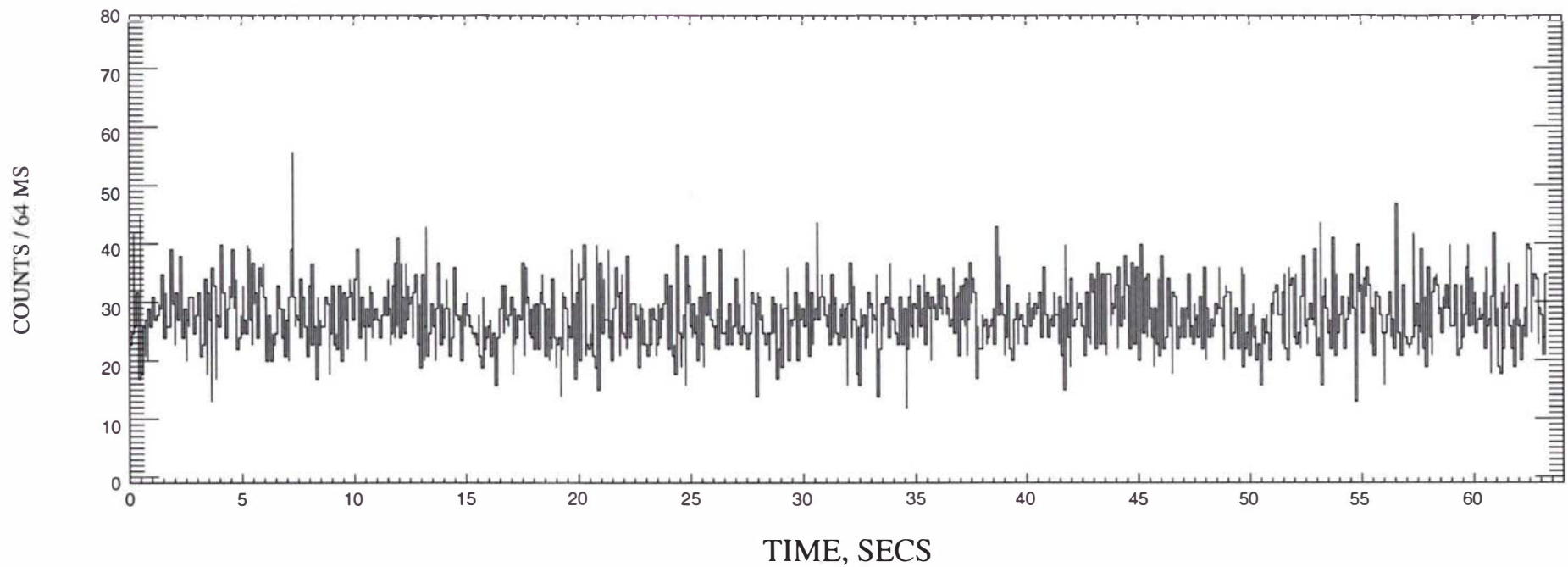


UNIV SAL TIME

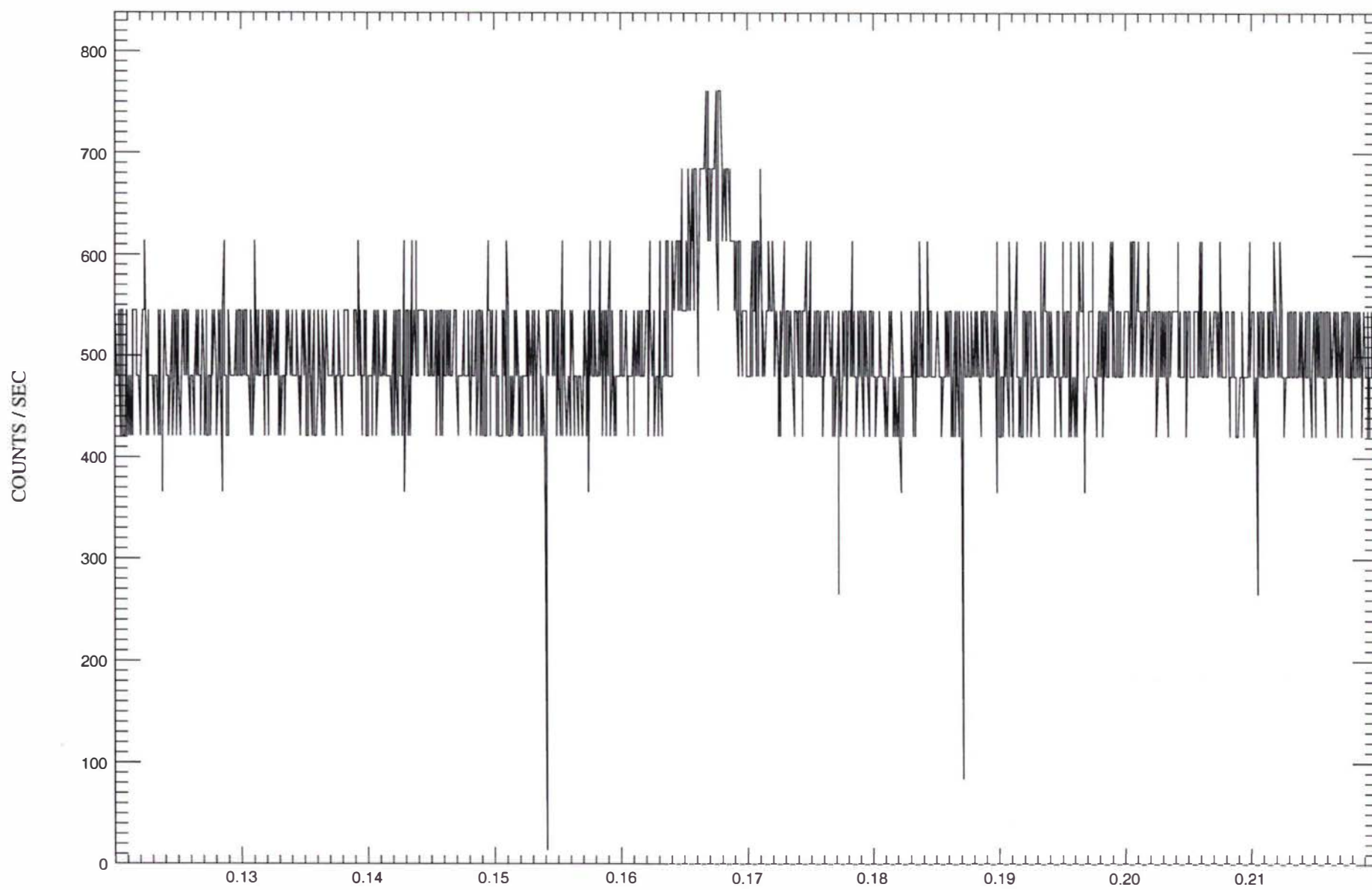
Burst Counter 8 at UT= 0.167893265618 h= 604.416 s 00:10:04.416



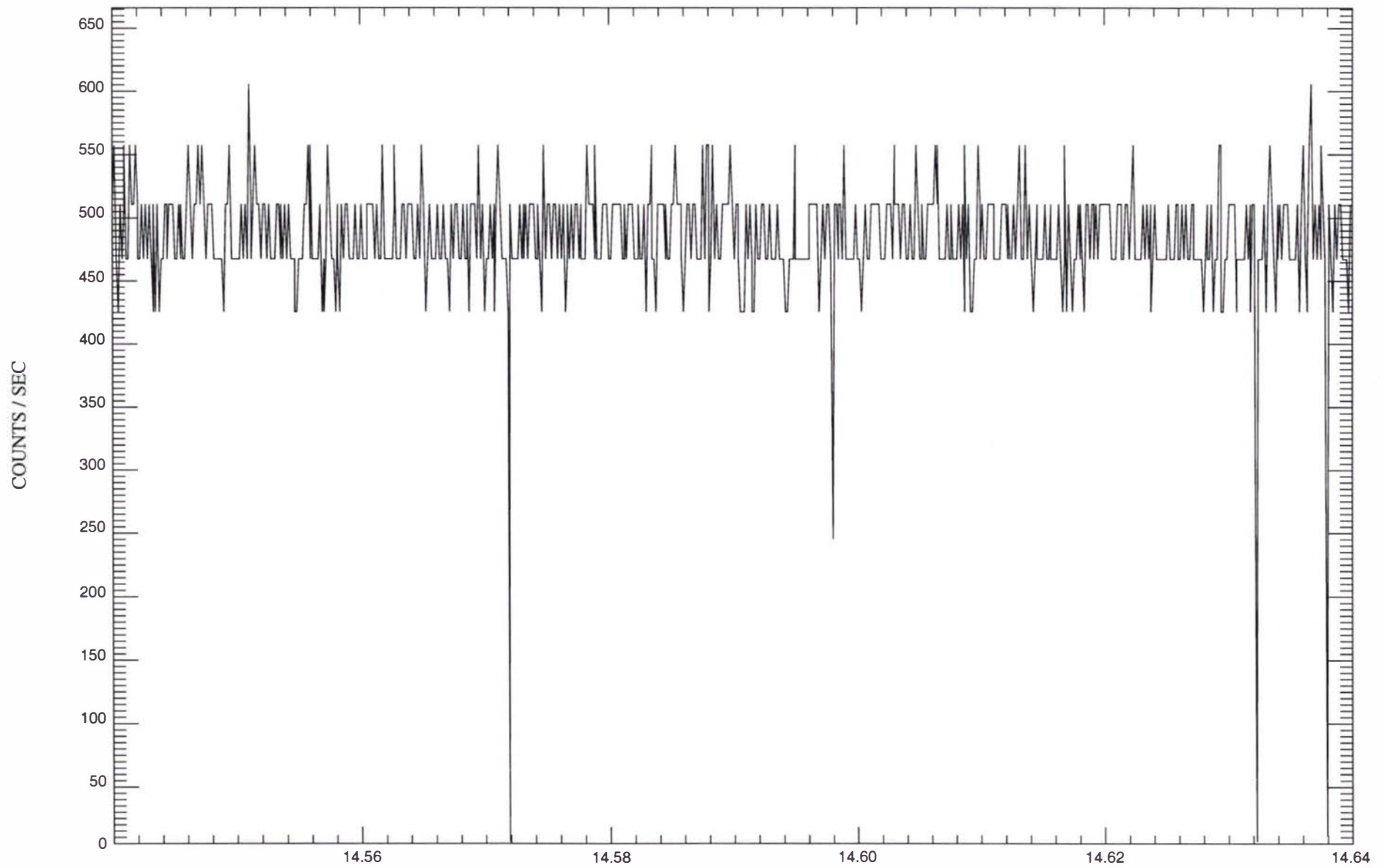
Burst Counter 9 at UT=14.588524636163 h=52518.689 s 14:35:18.689

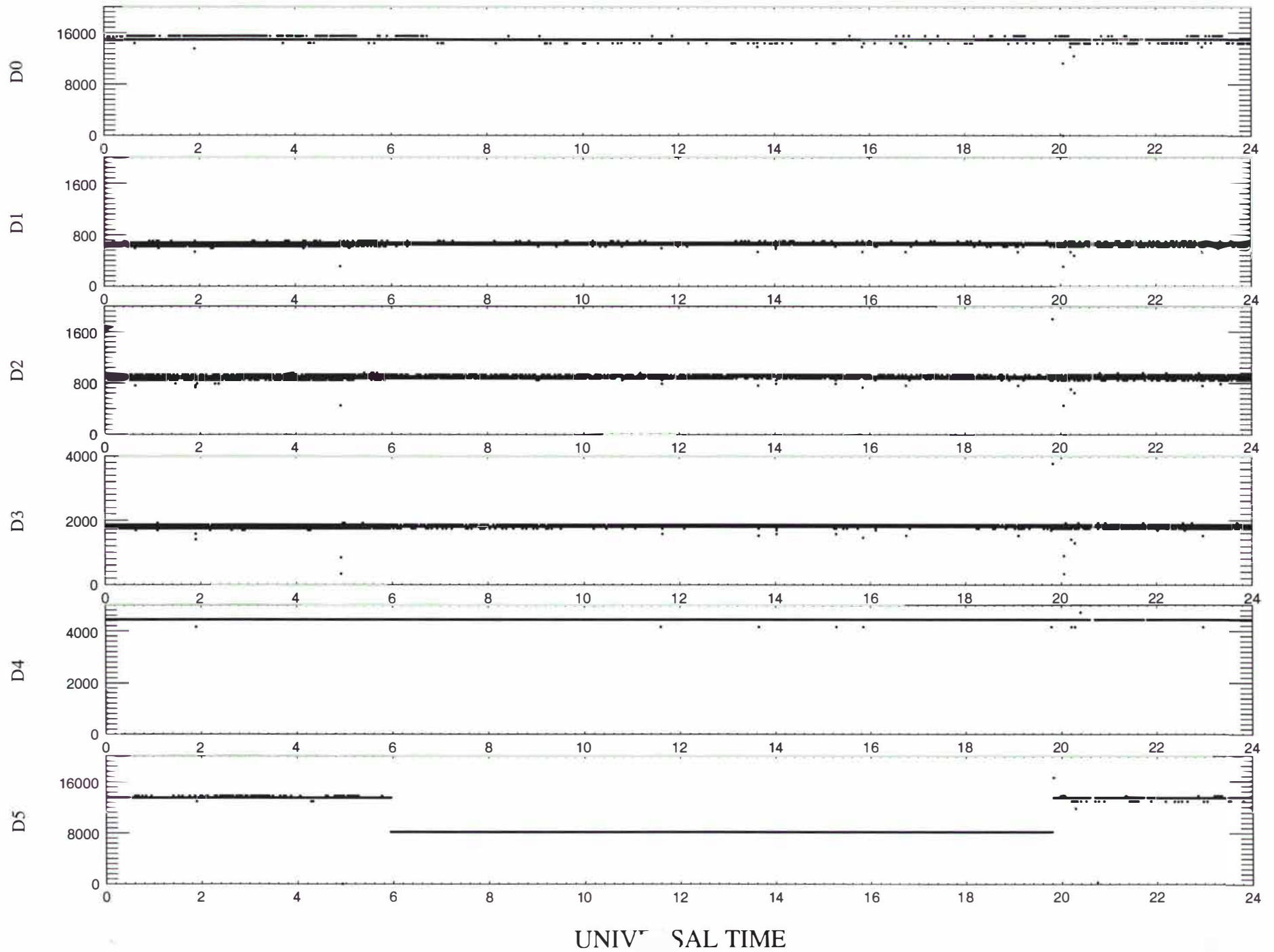


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





KONUS

ULYSSES RT

1 6 / 0 3 / 0 0

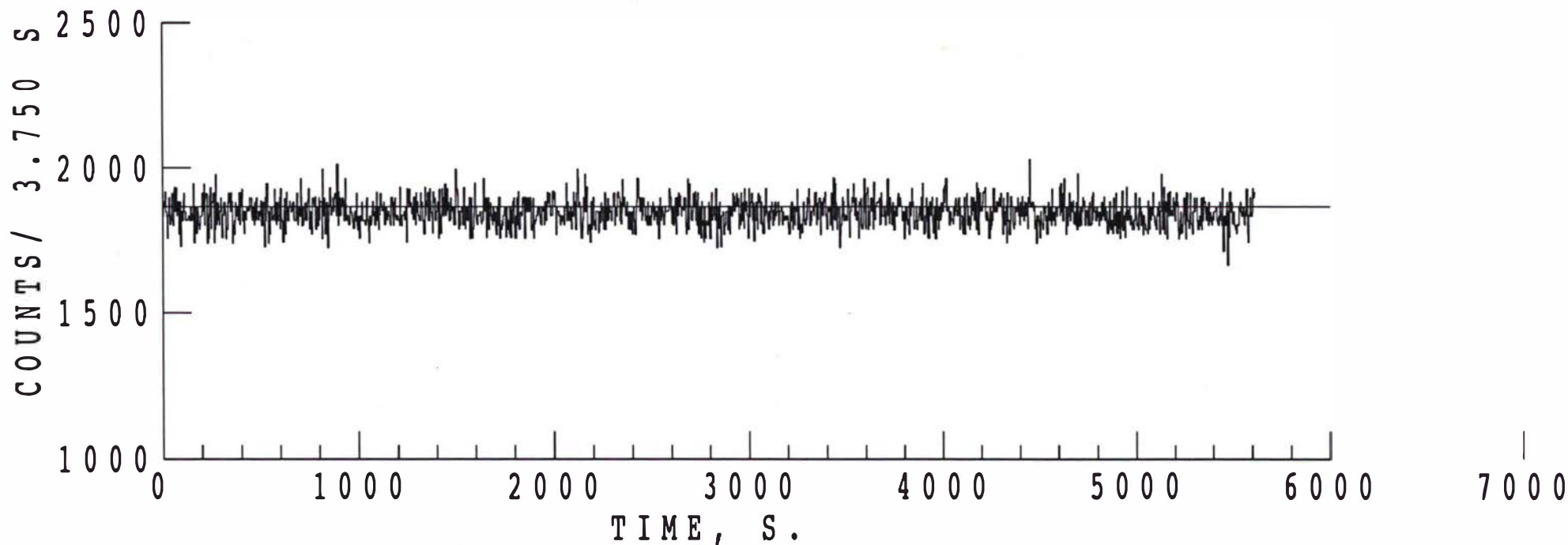
07/09/99 5544.098 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Thu Sep 9 15:33 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Thu, 9 Sep 1999 17:26:13 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7755

BATSEARCH PROGRAM

BATSE BURST # 7755
EVENT OF 1999 SEP 7 DAY OF YEAR=250
EVENT CROSSING TIME AT BATSE : 63311. S. OR 17:35:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 113.000 -70.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 9/ 99 IS:
RA= 156.218 DEC= -13.561 DIST= 5.510 AU
BATSE-ULYSSES DISTANCE = 824369081. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1272.14 SECS.
CROSSING TIME AT ULYSSES IS 62039. S. OR 17:13:58 +/- 453.93 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 9/ 99 IS:
RA= 240.200 DEC= -22.462 DIST= 1.223 AU
MARS-BATSE DISTANCE = 182890336. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -102.45 SECS.
CROSSING TIME AT MARS IS 63209. S. OR 17:33:28 +/- 102.86 SECONDS

BATSE BURST TRIGGER

NO.: 7755

TIME: TJD=1428 SECONDS=63311

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=160.4 AZIMUTH=146.9 ERROR= 1.4 DEGREES

COMMENTS:

MULTIPLE PULSES, DUR. PROB. APPROX. 105 S, STARTS AT APPROX. T-5 S, MAX AT
APPROX. T+3 S. WEAKLY VISIBLE ABOVE 300 KEV. TRIGGERED IN DATA GAP.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7755	990907	11428	63311	4000	113	-70	105

Date: Mar 24 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

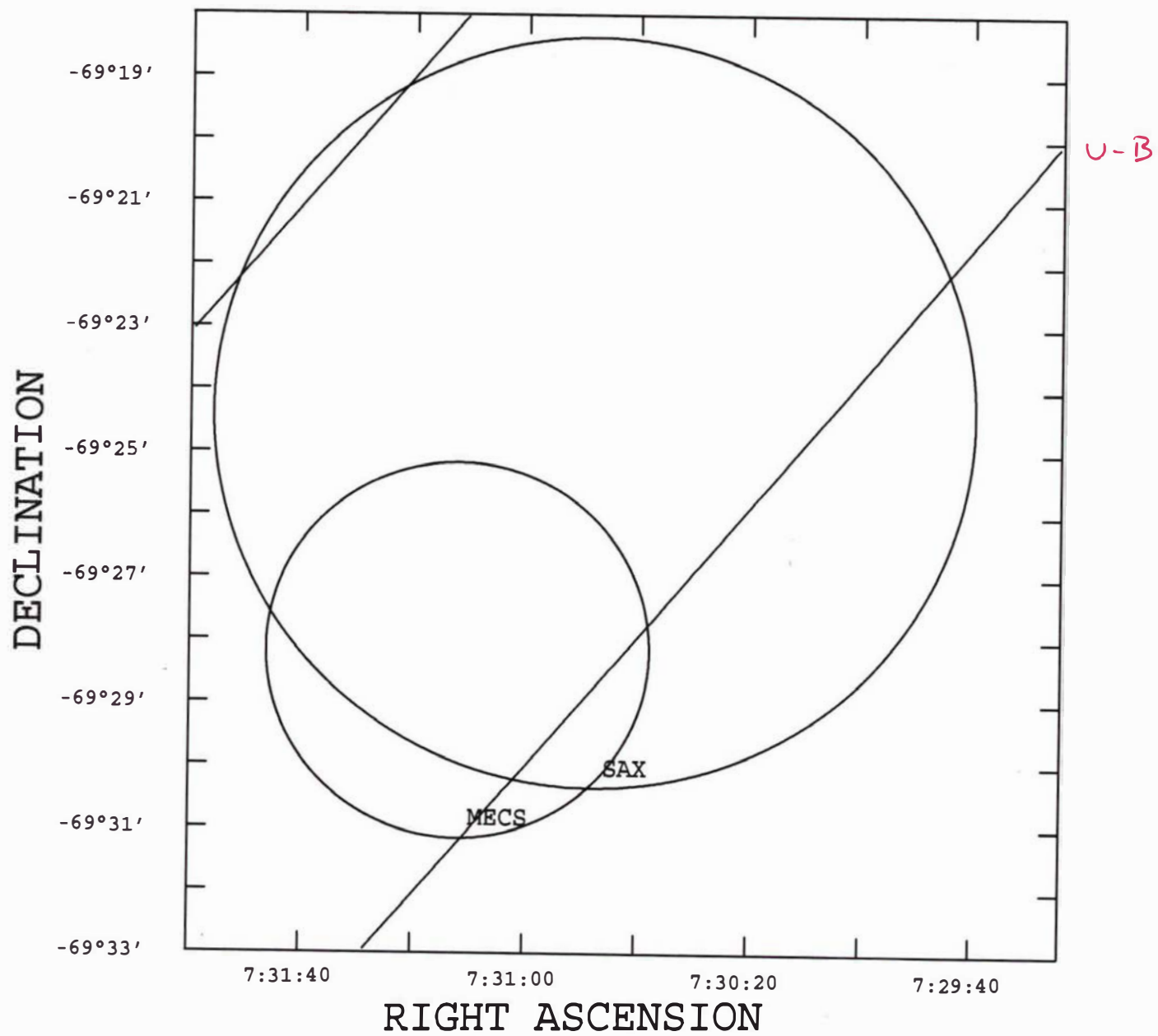
2. BATSE Data

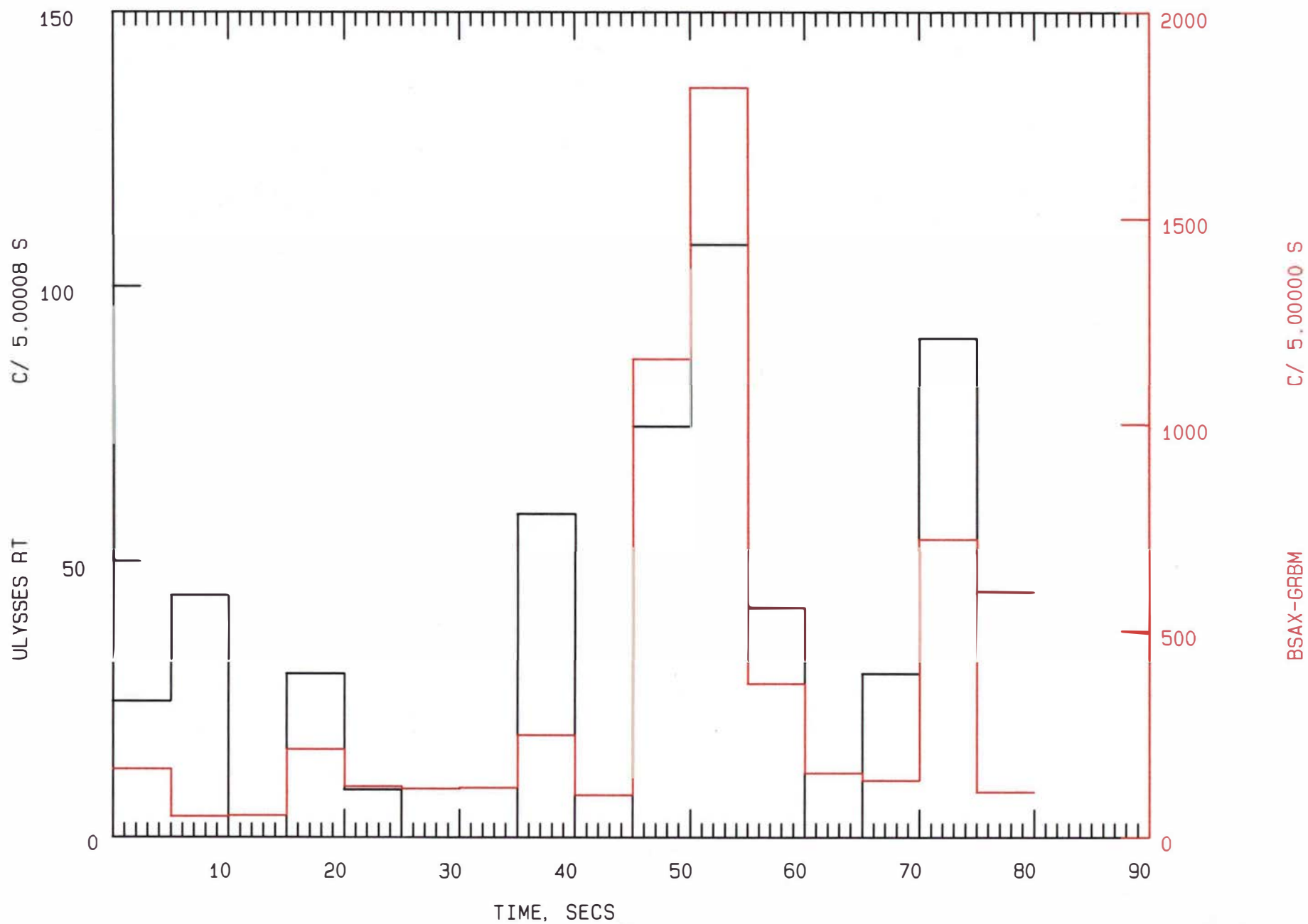
- ☒ BATSE ephemeris for T_0 ?
- ☒ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

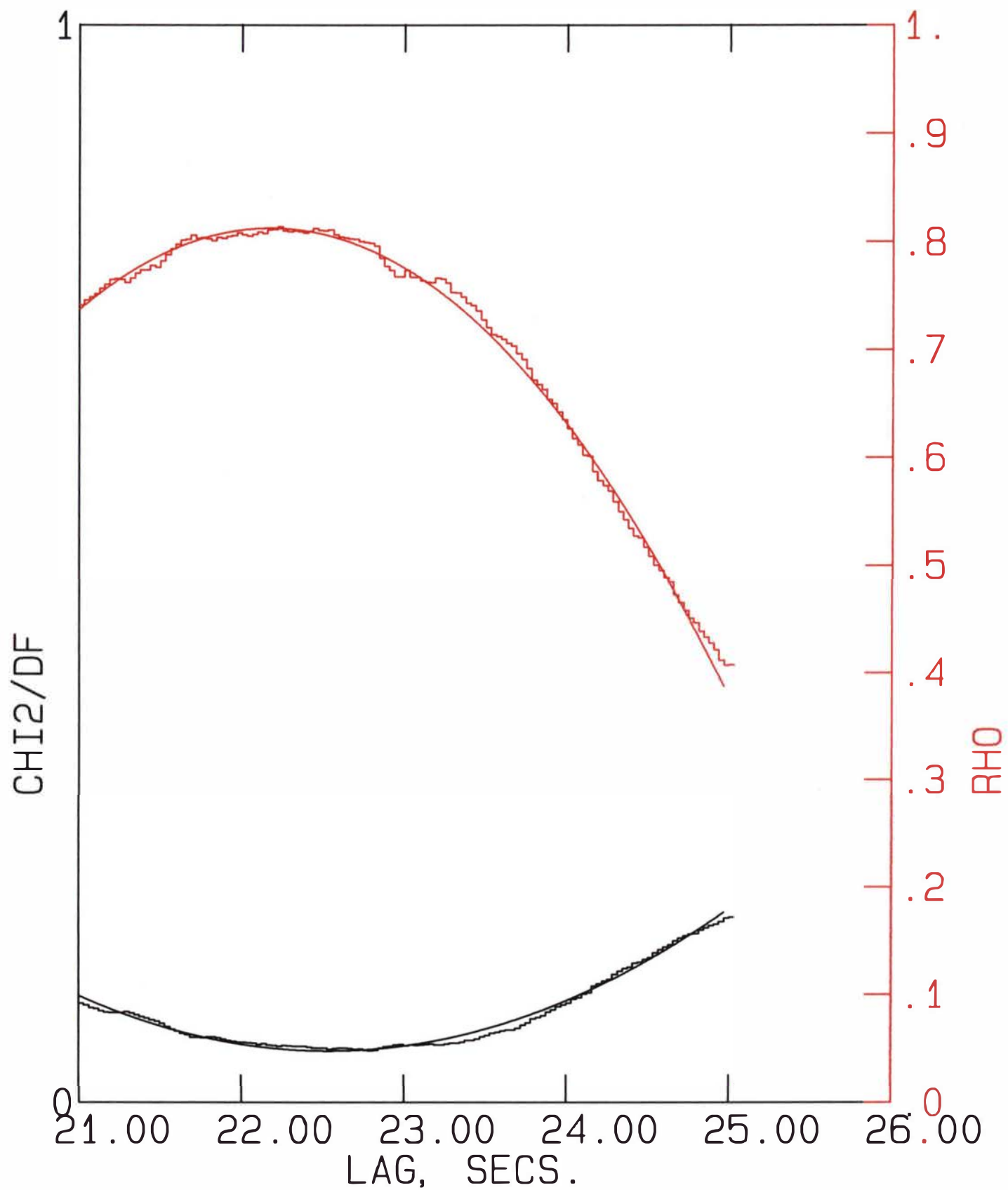
3. NEAR Data

- ☐ 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?

- ☒ ACCESS database updated?







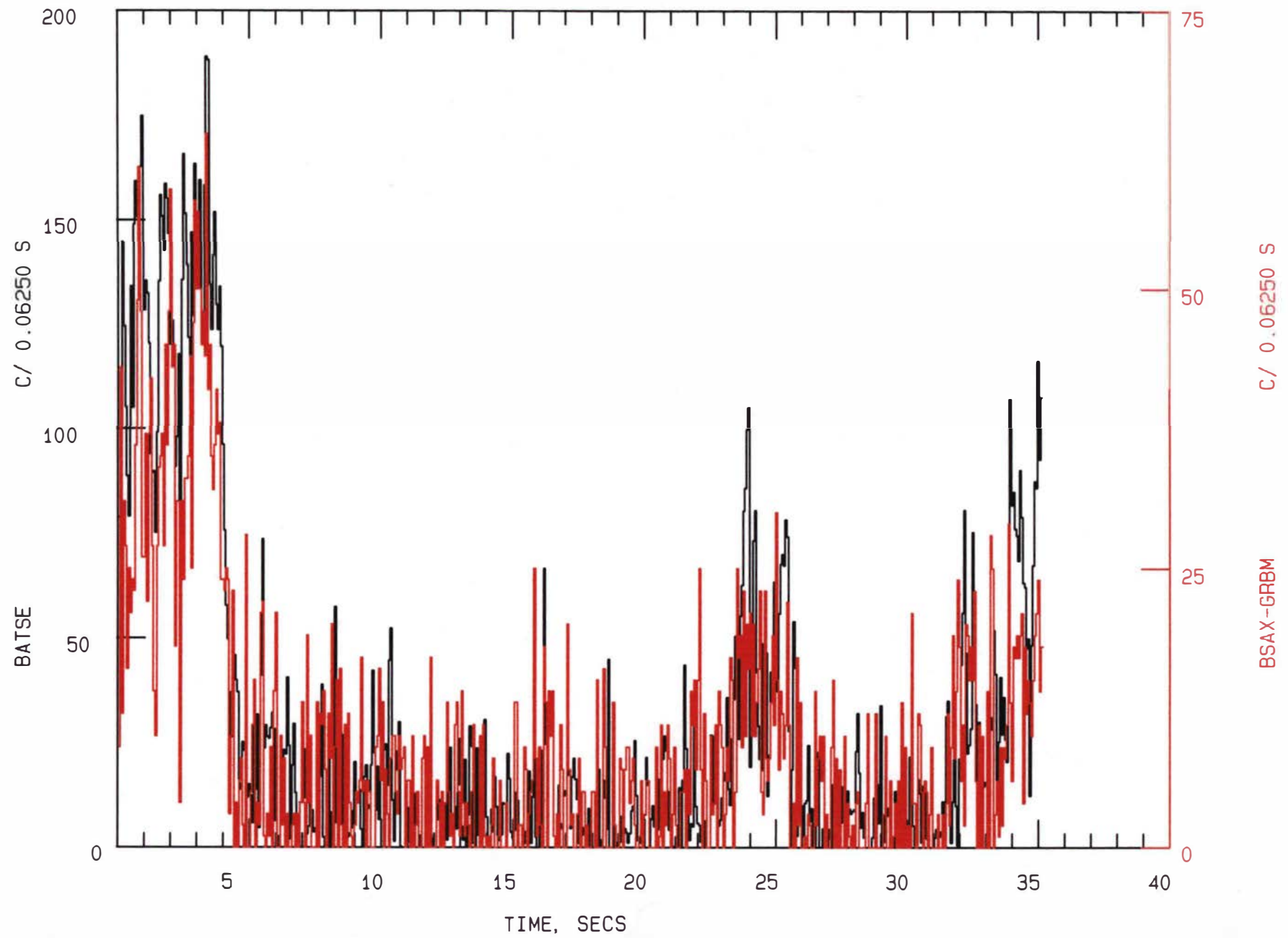
BATSE

-BSAX-GRBM CORRELATION

07/09/99

63311.865

21/ 6/ 0

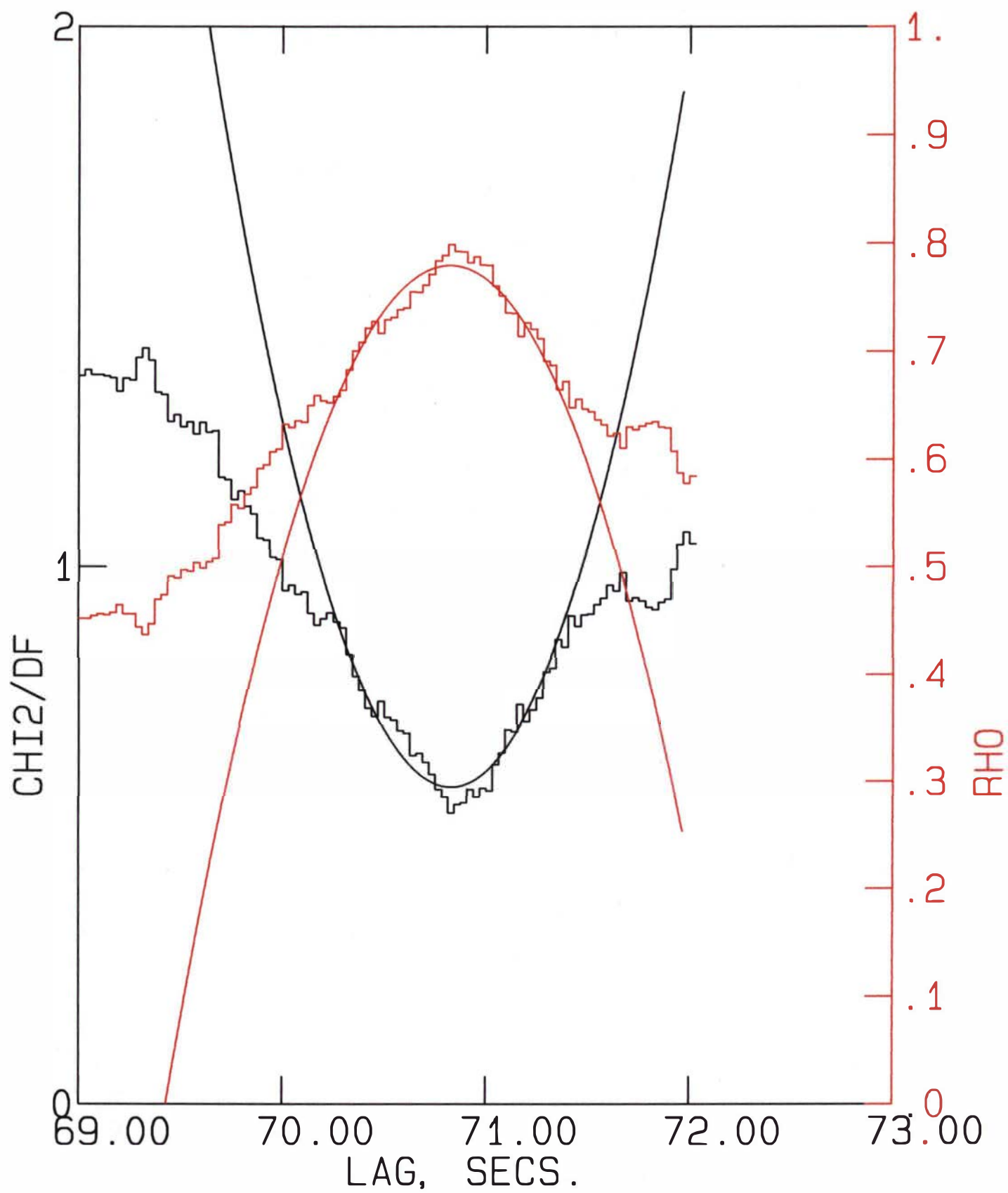


BATSE

-BSAX-GRBM CORRELATION

07/09/99

63311.865



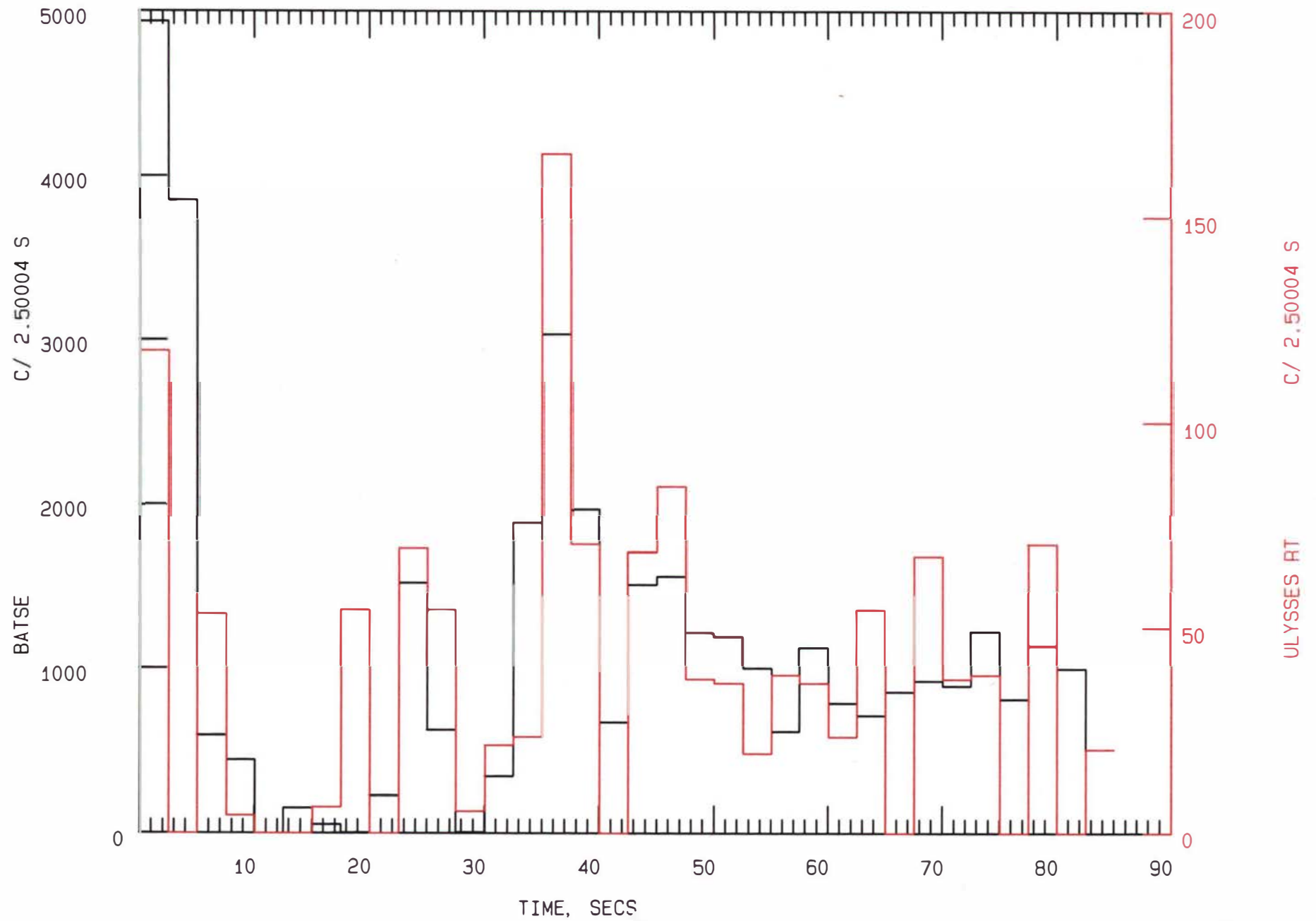
BATSE

-ULYSSES RT CORRELATION

07/09/99

63311.865

24/ 3/ 0

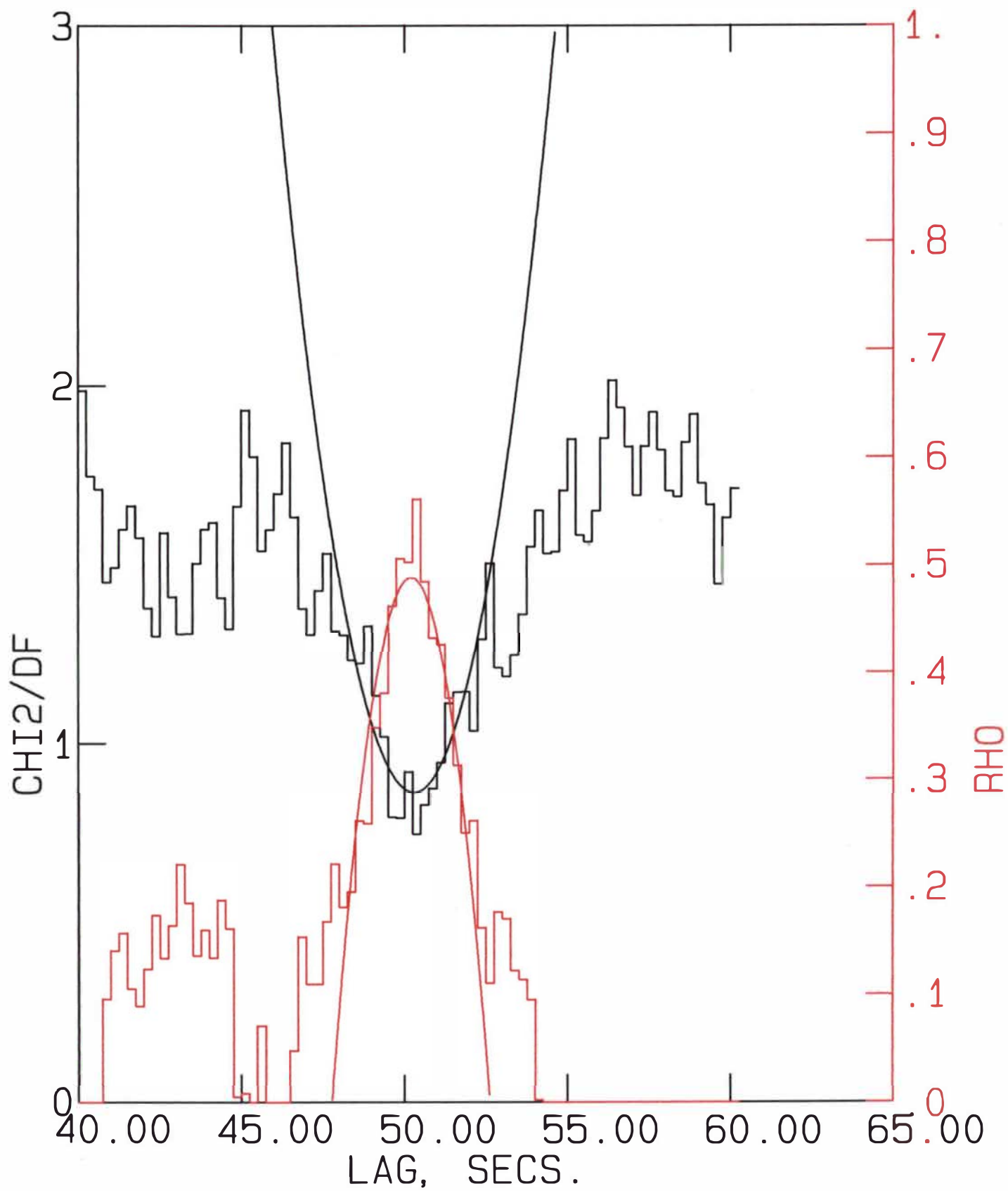


BATSE

-ULYSSES RT CORRELATION

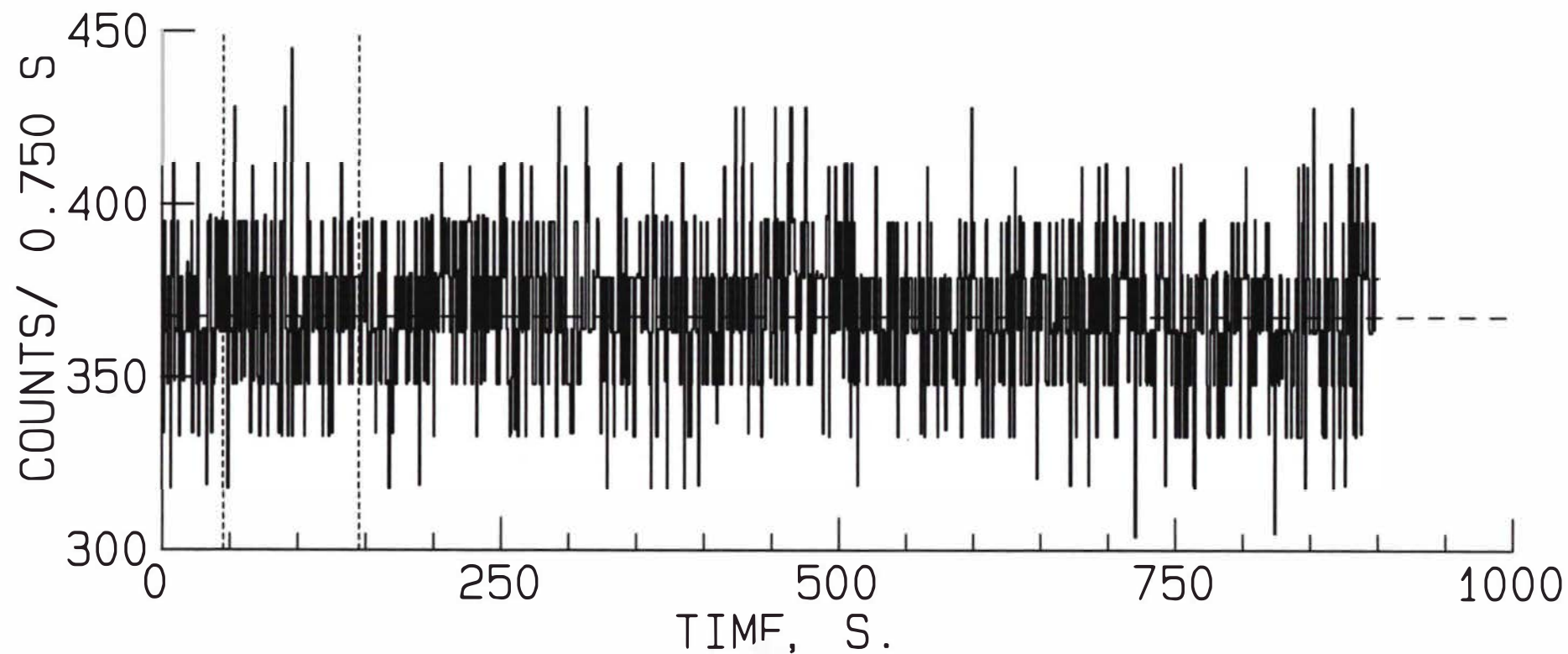
07/09/99

63311.865

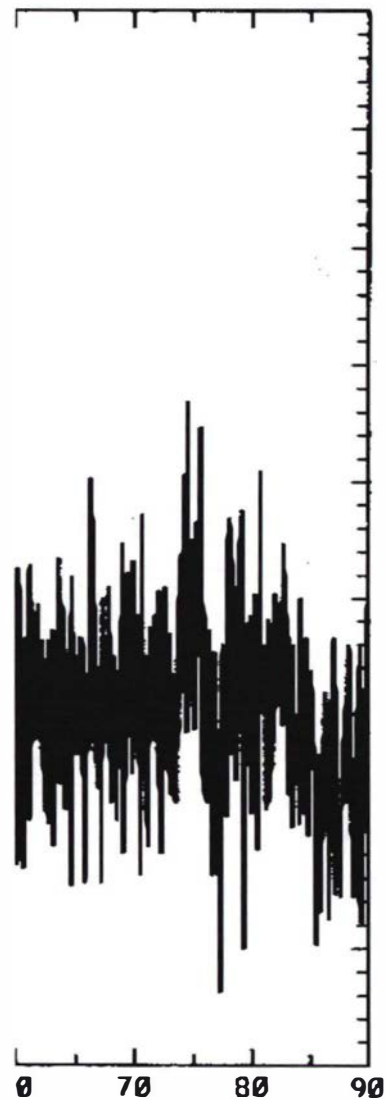


ULYSSES RT
7/ 9/99 61596.165 s
0.250 S INTERVALS REGROUPED BY 3
22- 150 keV

24/ 3/ 0



7755



24-MAR-2000 09:02.47

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

Trigger # . 7755

Trigger Time.
11428 / 63311.865

Burst Data Type.
NER

Deadtime
Corrected: N

Background Data
Type: CONT

Minimum Integ. Time.
0.064 seconds

Detectors [7..8].
--5432--

Channels.
1 0 . 6 1

Quality Mask.
BDISP1

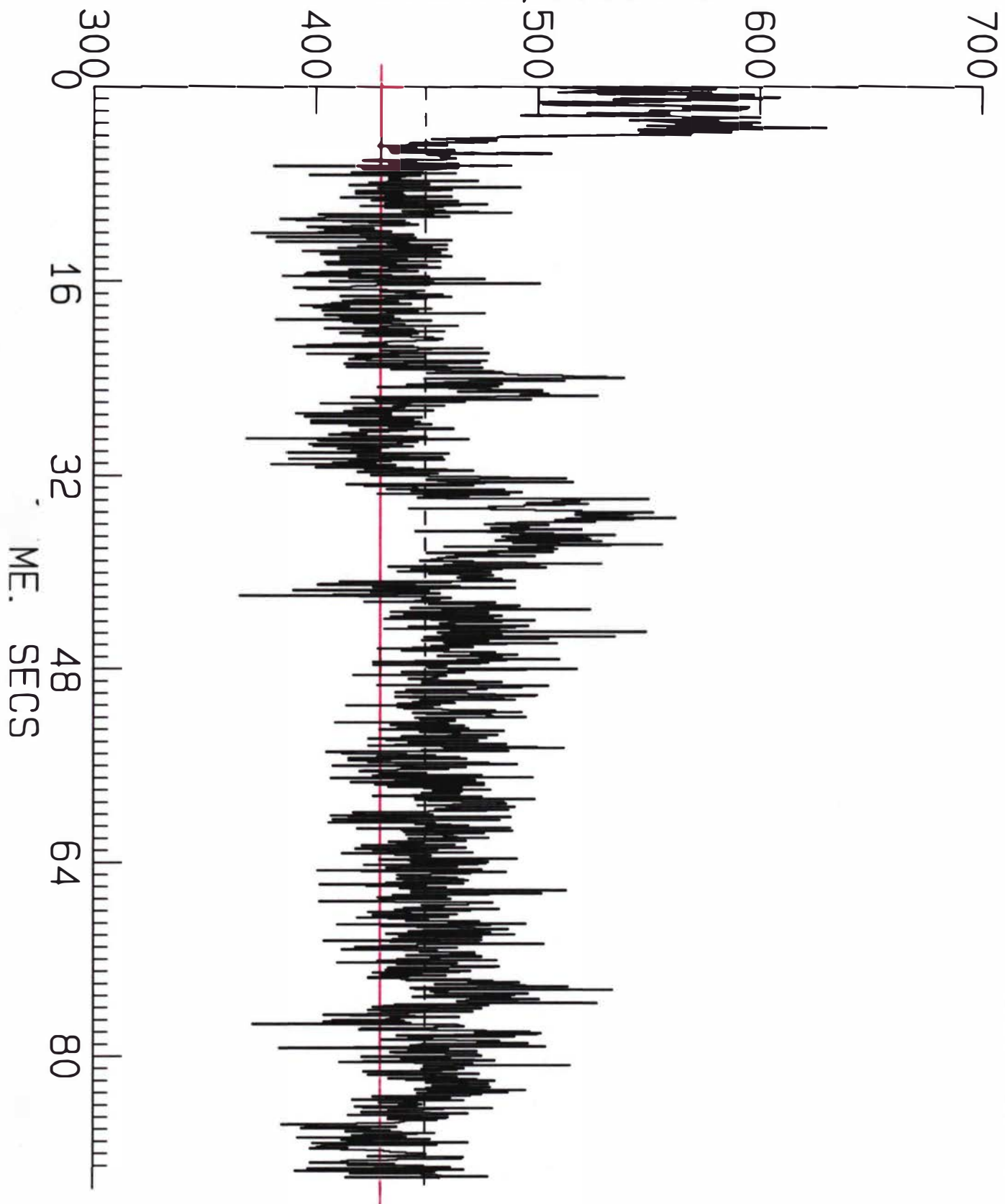
BATSE

07/09/99

63311.865

25- 100 keV

COUNTS/0.064 S



KONUS

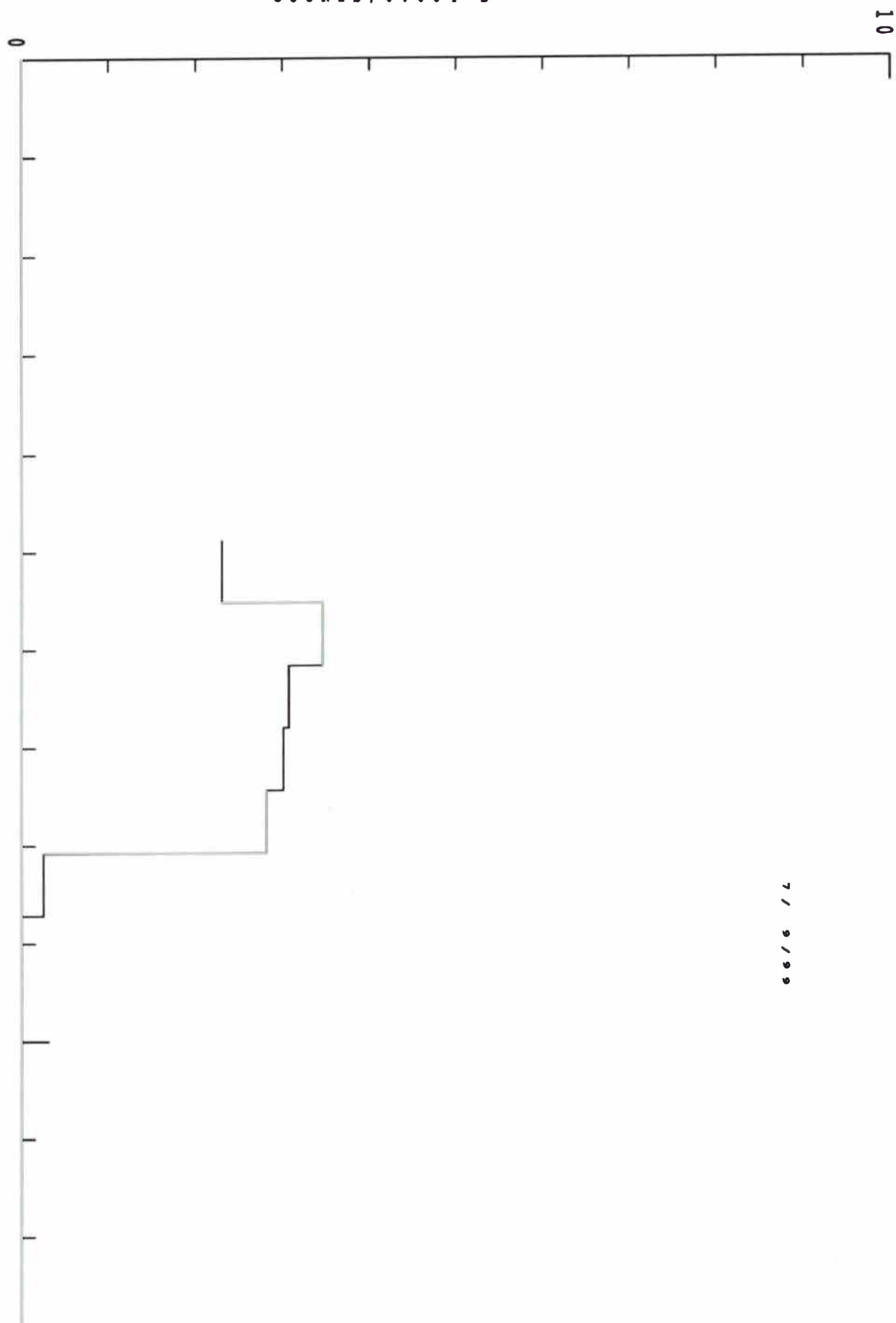
07/09/99

63315.298

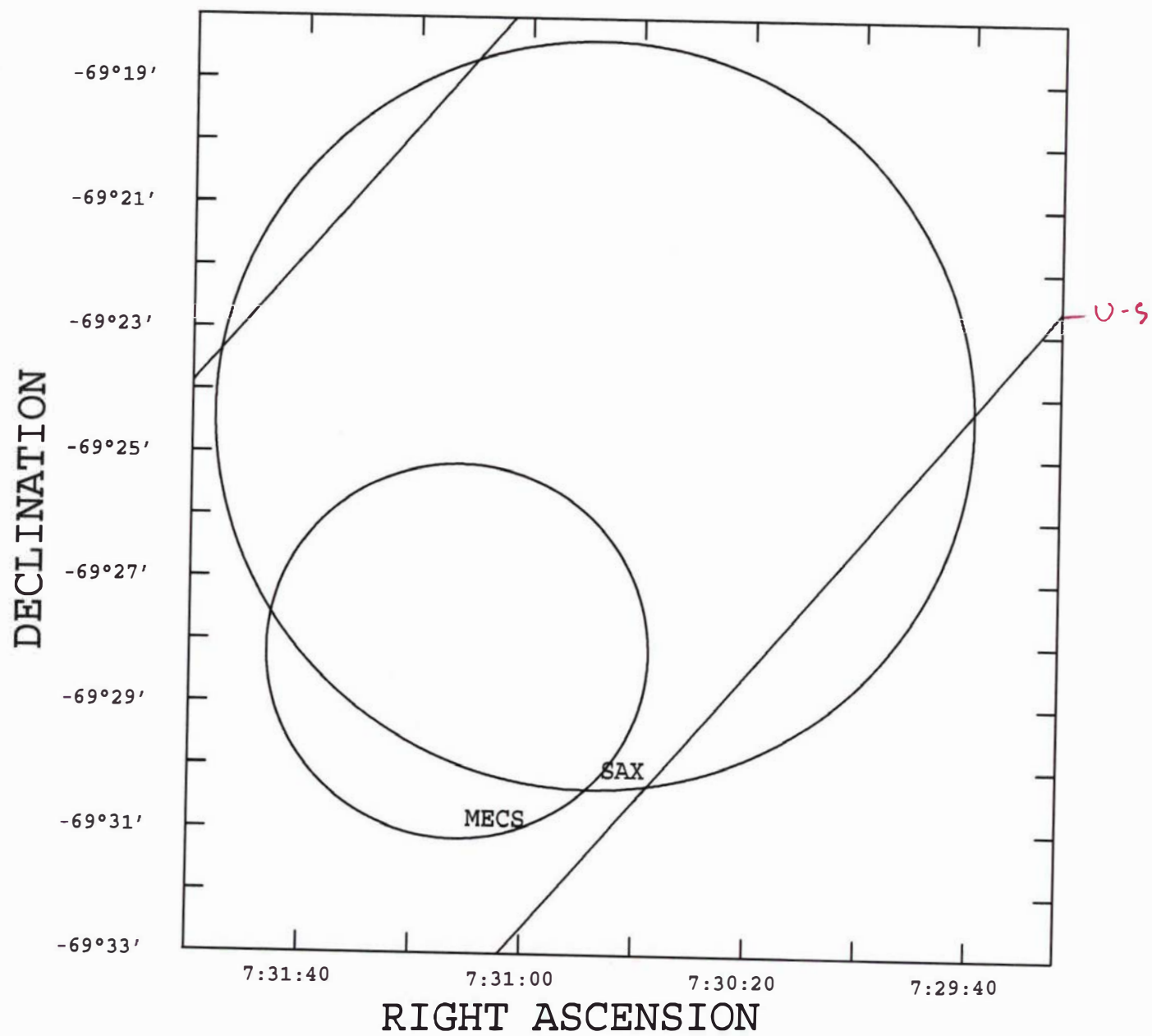
50 - 200 keV

COUNTS/0.064 S

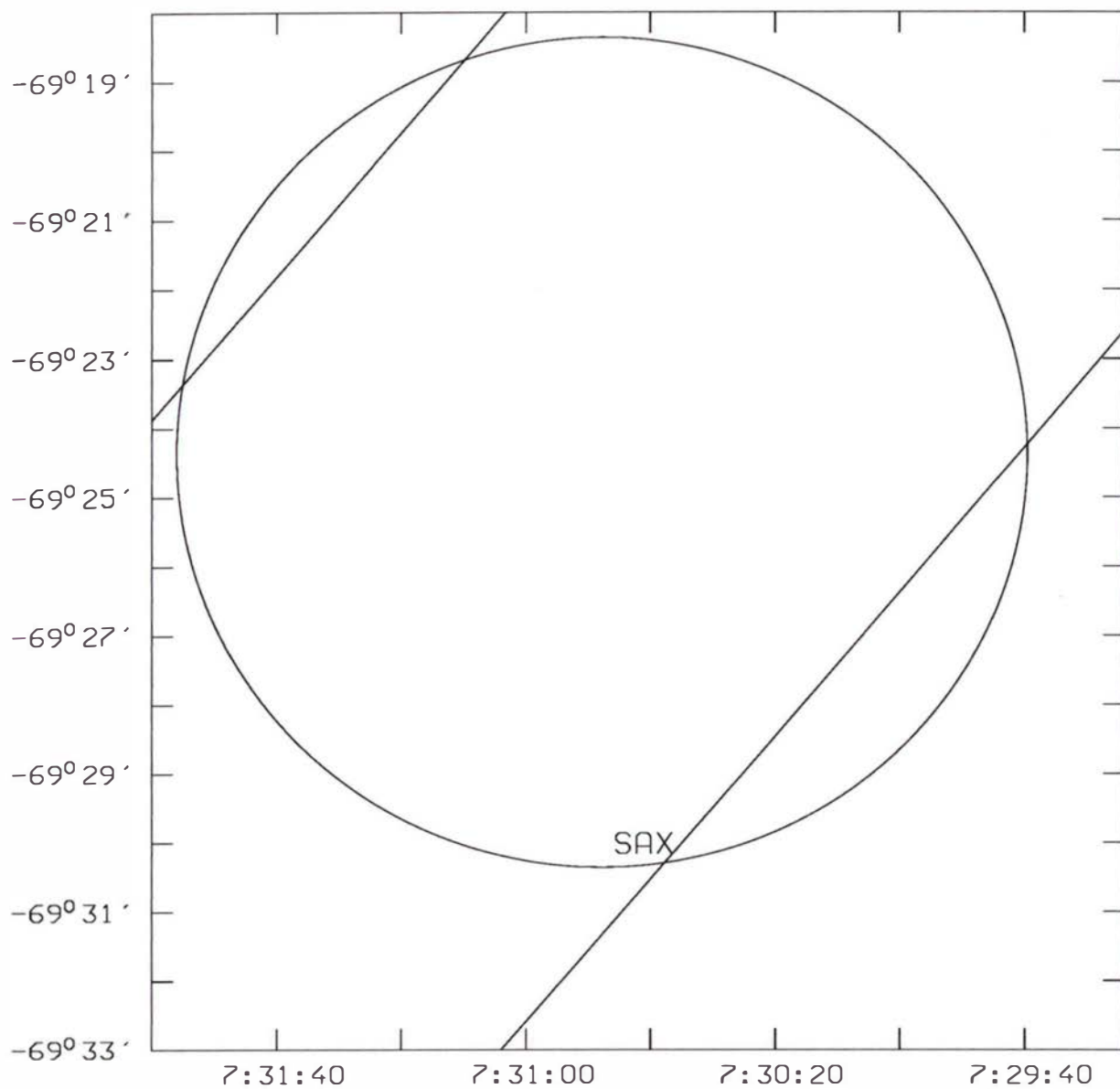
TIME, SECS



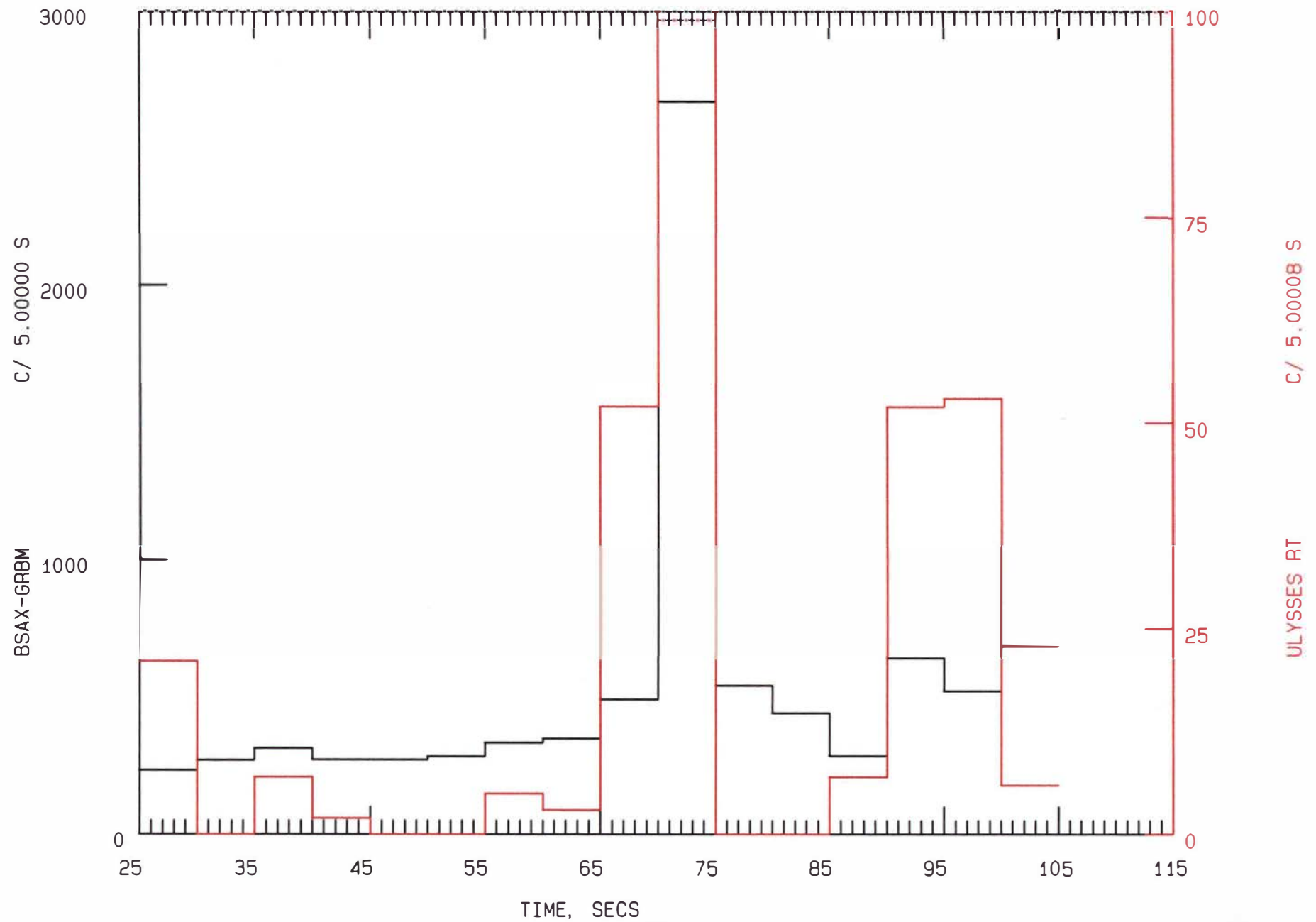
7 / 9 / 99

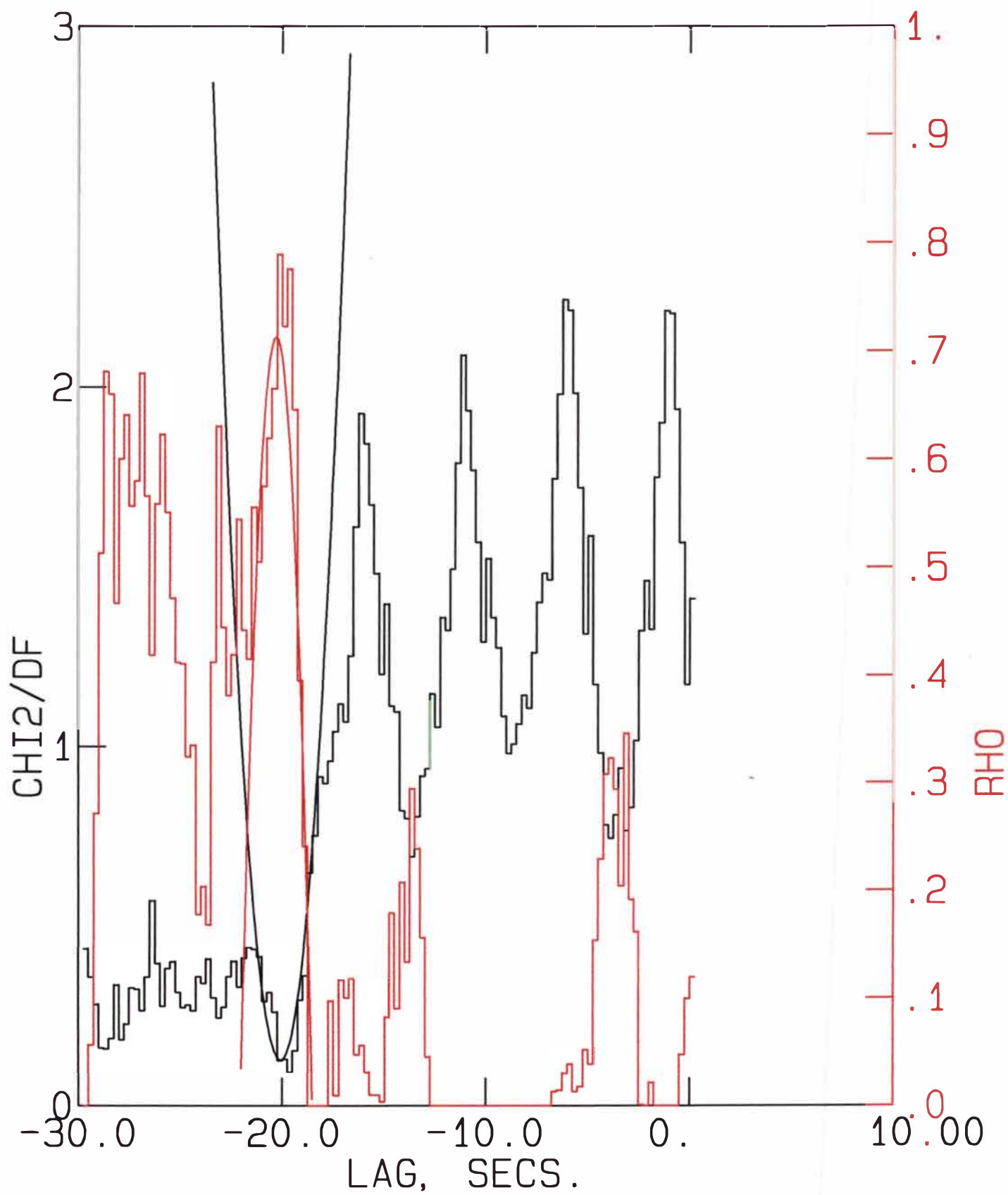


DECLINATION



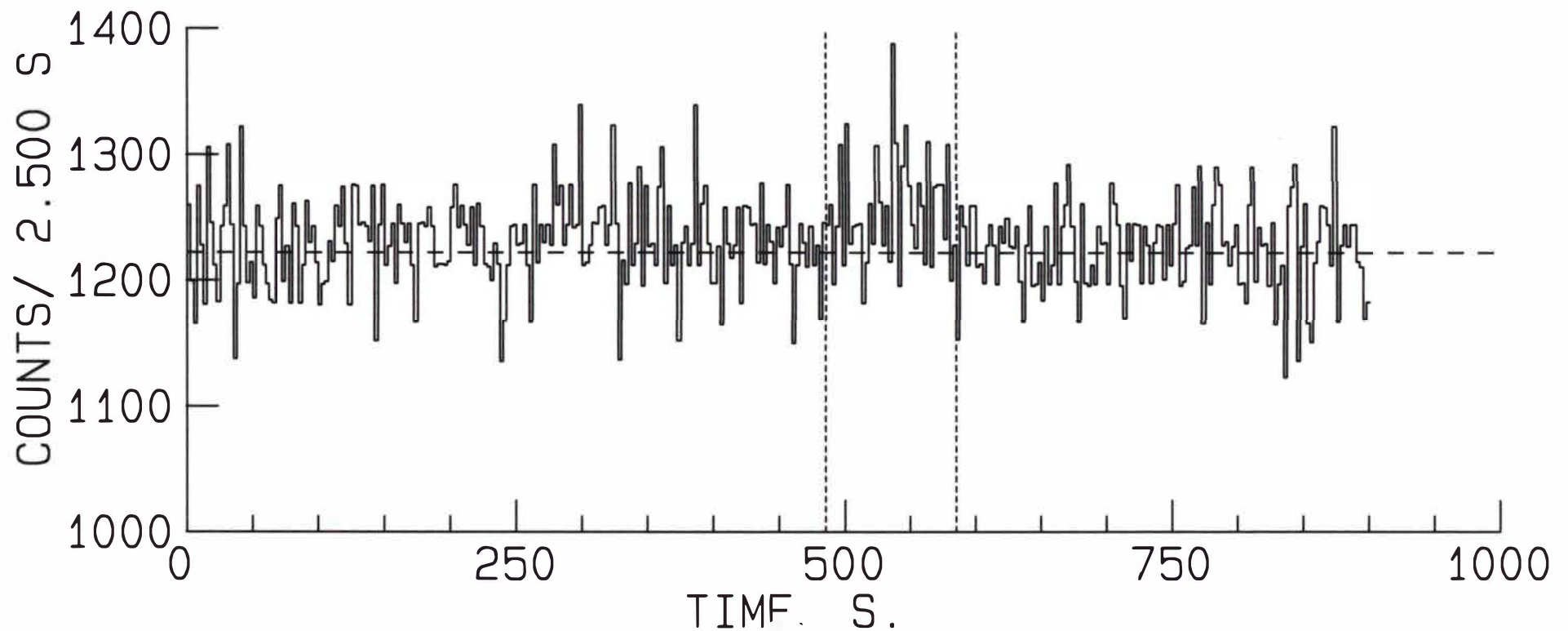
RIGHT ASCENSION





ULYSSES RT
7/ 9/99 61524.165 s
0.250 S INTERVALS REGROUPED BY 10
22- 151 keV

9/ 9/99



JANA TAB1 19990907 77012

ULYSSES RT

05/08/05

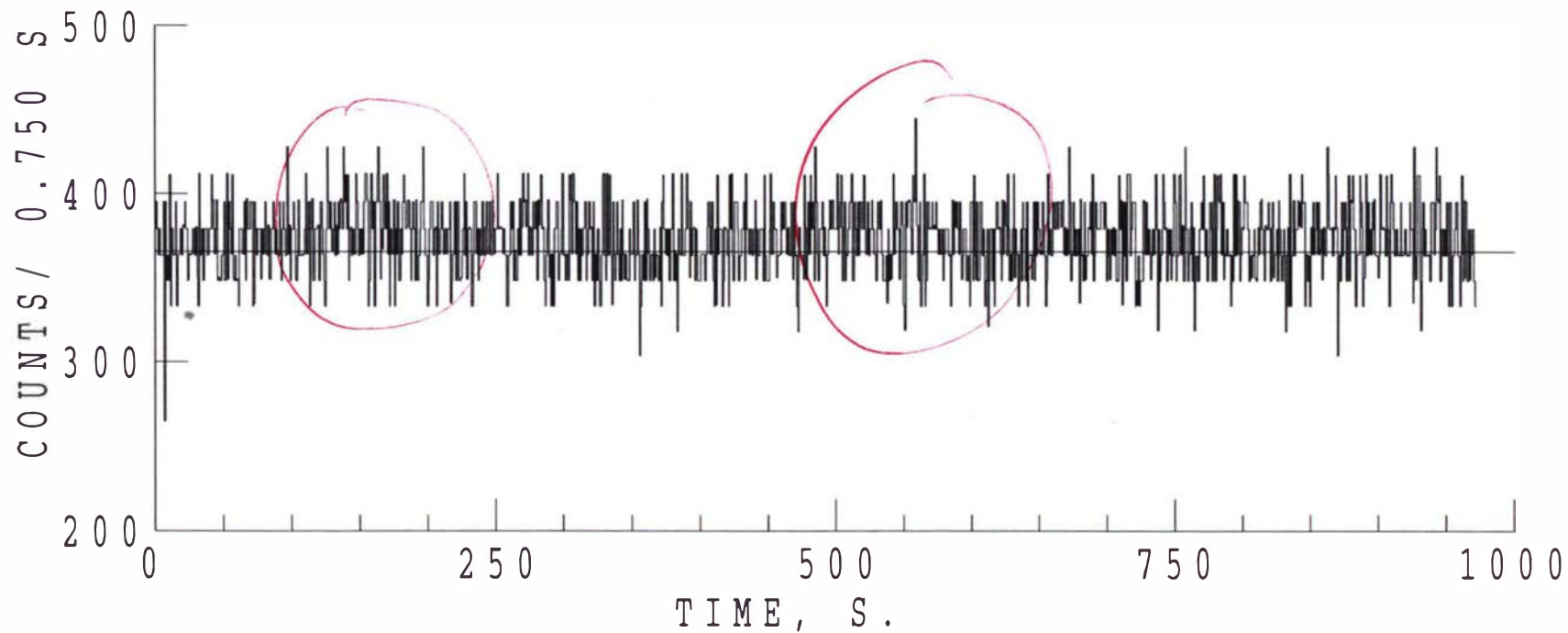
07/09/99 76536.062 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

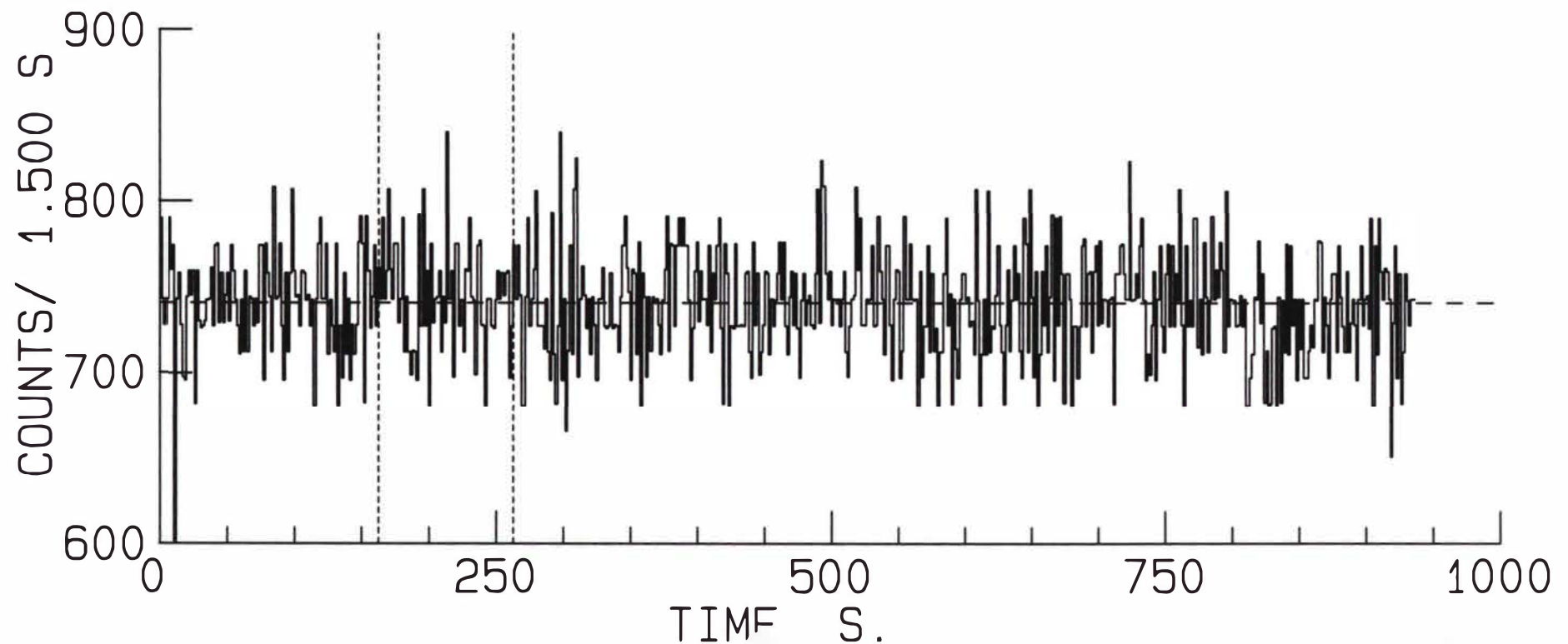
W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

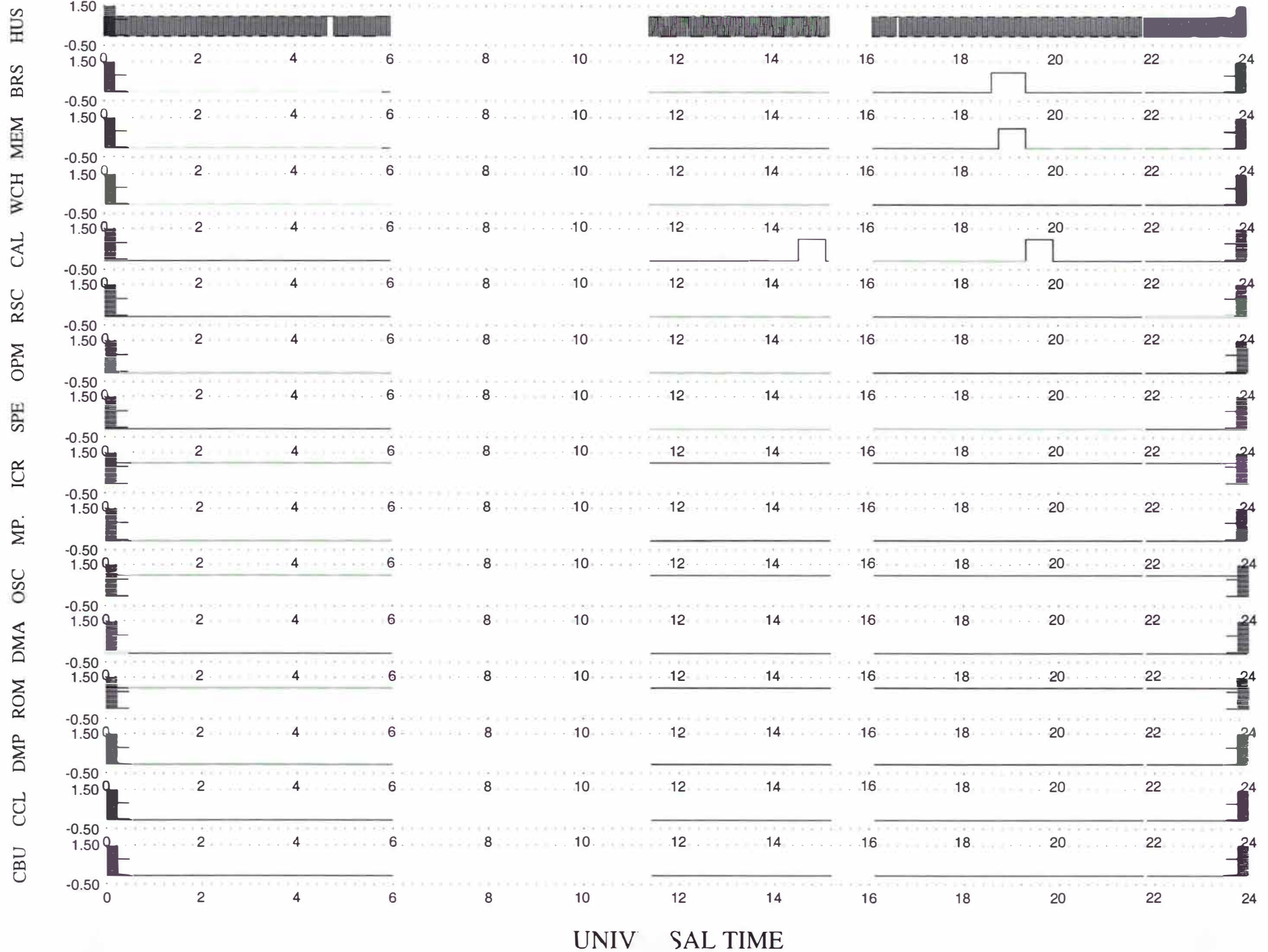


ULYSSES RT *No - too weak*
7/ 9/99 85968.162 s
0.250 S INTERVALS REGROUPED BY 6
22- 151 keV

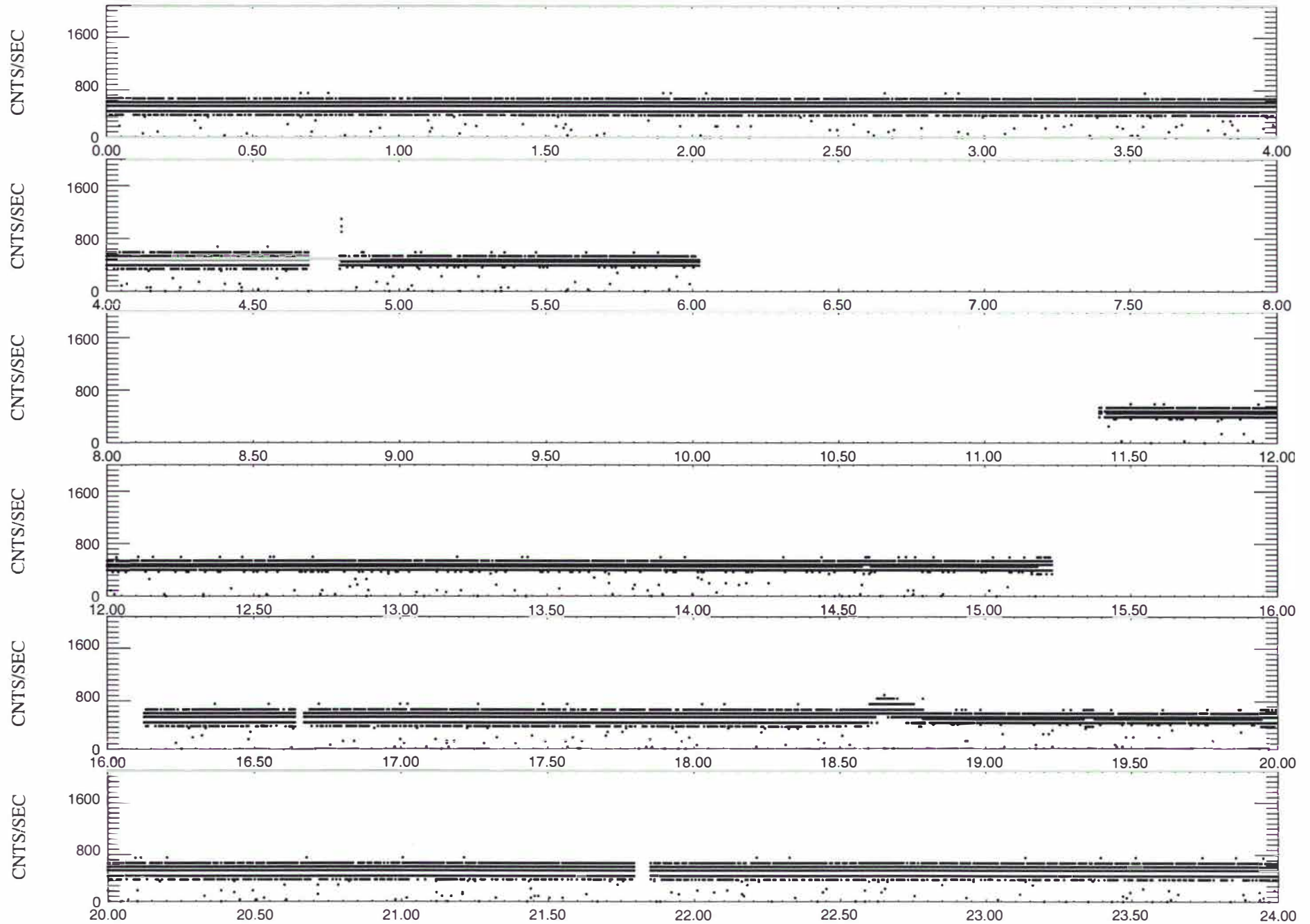
11 / 9/99



BURST NUMBER 10

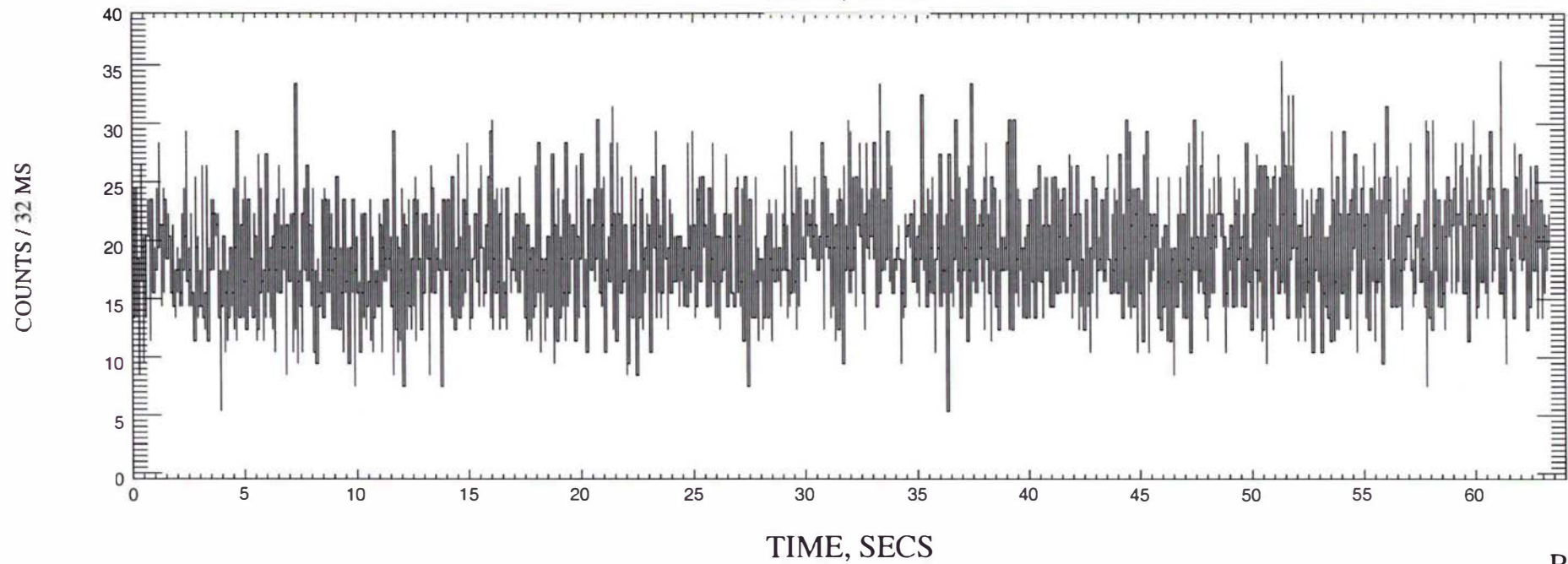
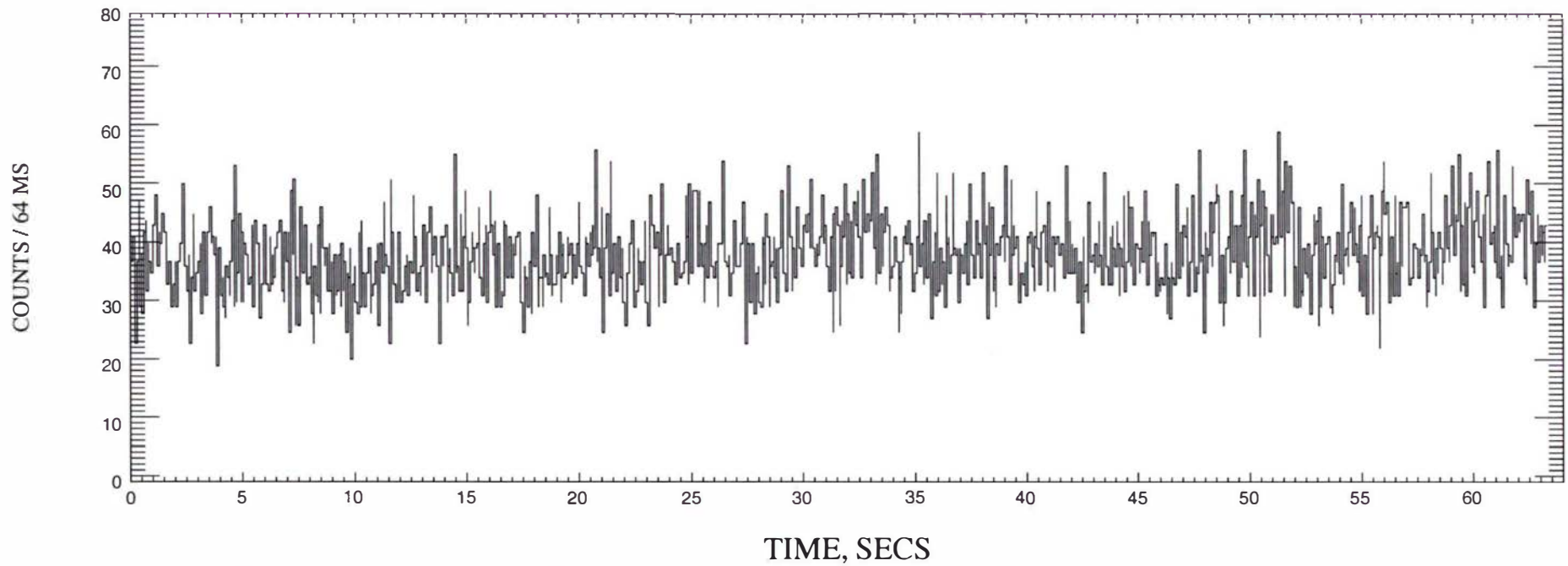


CALIBRATION DATA INCLUDED

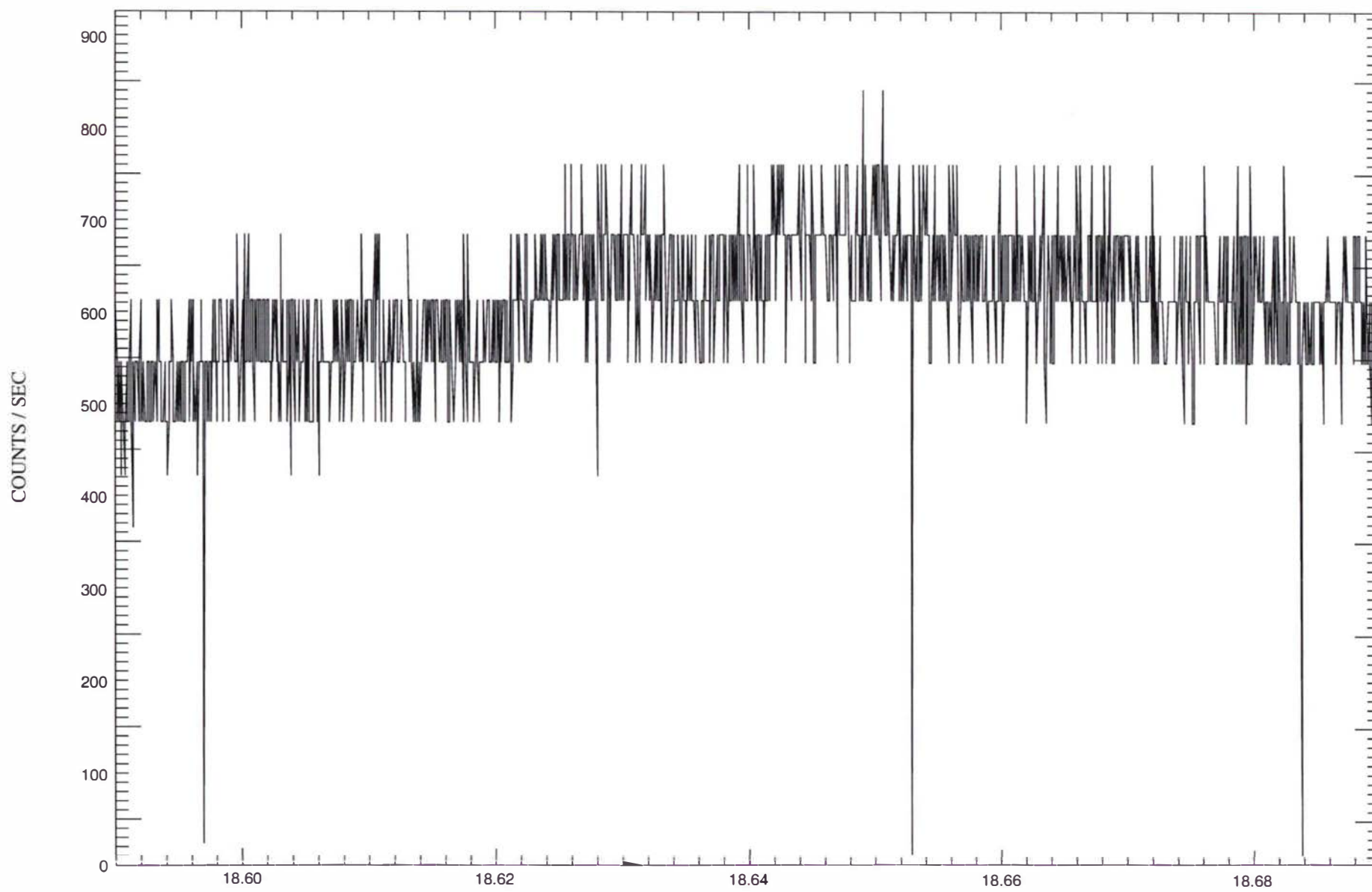


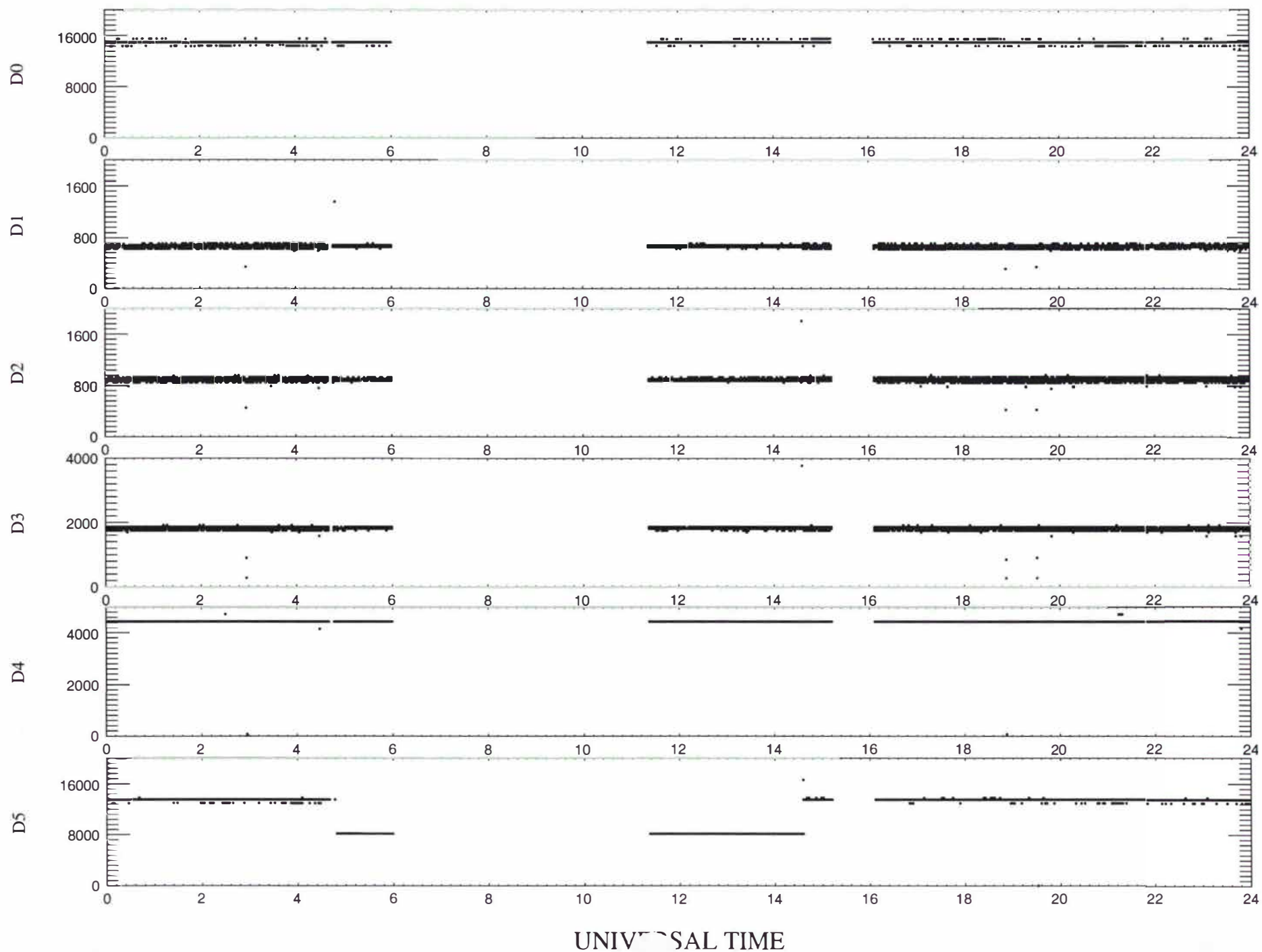
UNIV. TIME

Burst Counter 10 at UT=18.635579689874 h=67088.087 s 18:38:08.087



CALIBRATION DATA INCLUDED



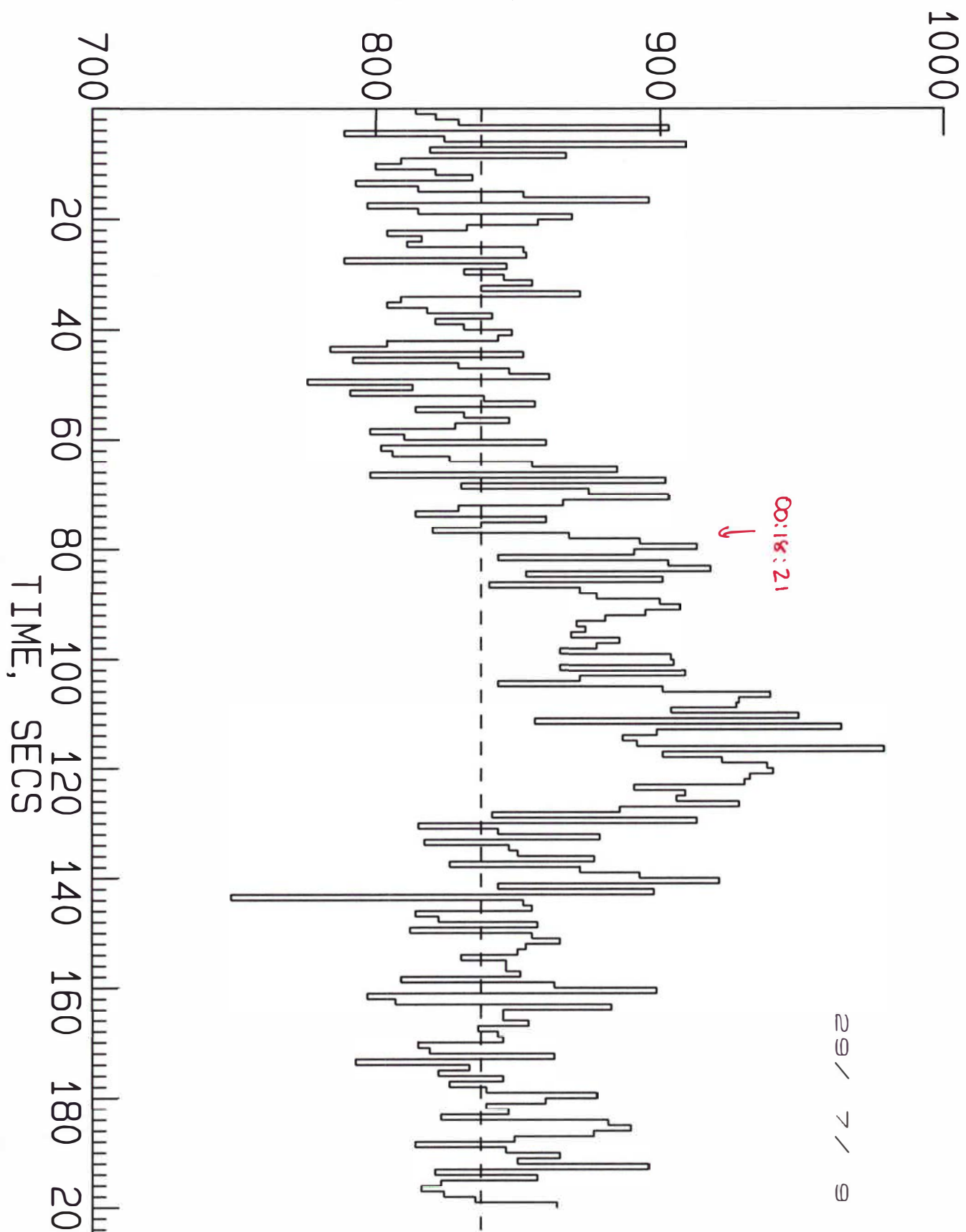


SAX GRBM

08/09/99 1021.955

40- 700 keV

COUNTS/1.000 S



SAX (burst on the 8th)

01 / 06 / 00

ULYSSES RT

07/09/99 85896.156 s

0.250 S INTERVALS REGROUPED BY 3

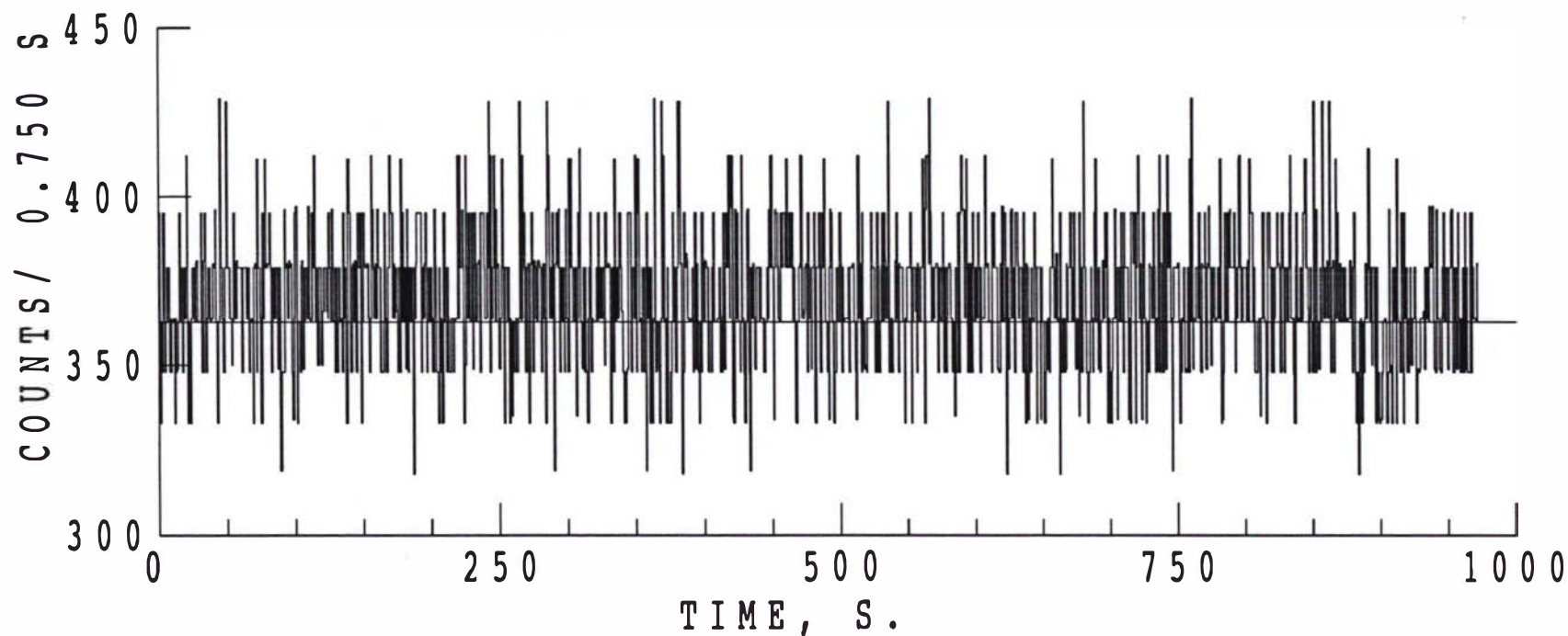
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SURASAK@joplin.msfc.nasa.gov Fri Sep 10 12:43 PDT 1999

From: SURASAK@joplin.msfc.nasa.gov

Date: Fri, 10 Sep 1999 14:50:17 -0500

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@joplin.msfc.nasa.gov, HORACK@joplin.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7756

TIME: TJD=1429 SECONDS=21310

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=110.3 AZIMUTH=358.8 ERROR=0.29 DEGREES

COMMENTS:

SOLAR FLARE. GOES C1.0, NO OPTICAL. DOUBLE PULSE. DURATION ABOUT 140S.
START AT ABOUT T-100S. NOT VISIBLE ABOVE 300 KEV.

From SURASAK@joplin.msfc.nasa.gov Fri Sep 10 12:47 PDT 1999

From: SURASAK@joplin.msfc.nasa.gov

Date: Fri, 10 Sep 1999 14:54:12 -0500

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@joplin.msfc.nasa.gov, HORACK@joplin.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7757

TIME: TJD=1429 SECONDS=44010

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=111.2 AZIMUTH=3.1 ERROR=0.23 DEGREES

COMMENTS:

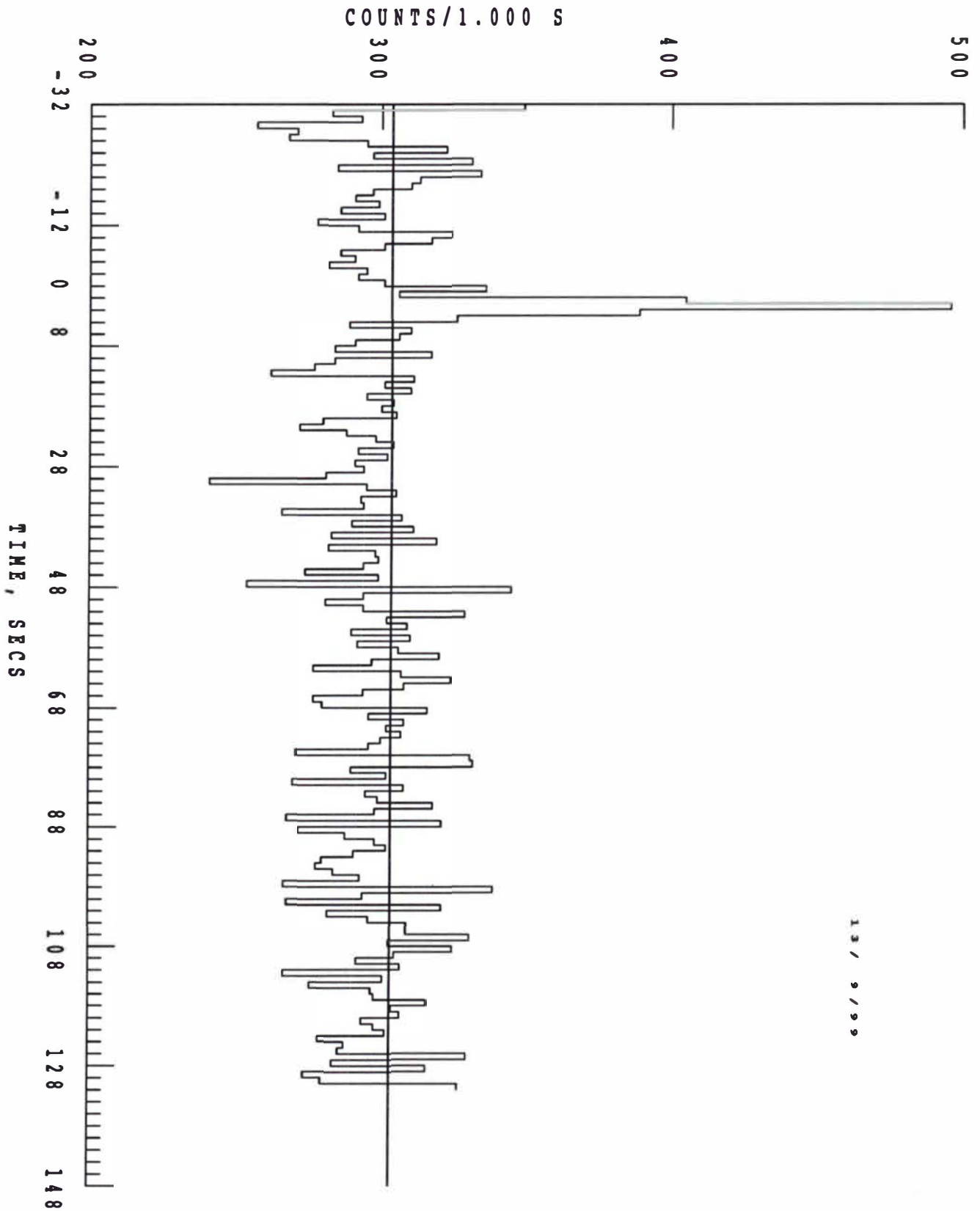
SOLAR FLARE. GOES M1.4, OPTICAL 1B. SINGLE STRONG PULSE WITH A VERY LONG
TAIL. TOTAL DURATION ABOUT 1200 S. VISIBLE ABOVE 300 KEV.

NEAR

08/09/99

52885.461

100-1000 keV



KNEAR GRS 19990908 52885

ULYSSES RT

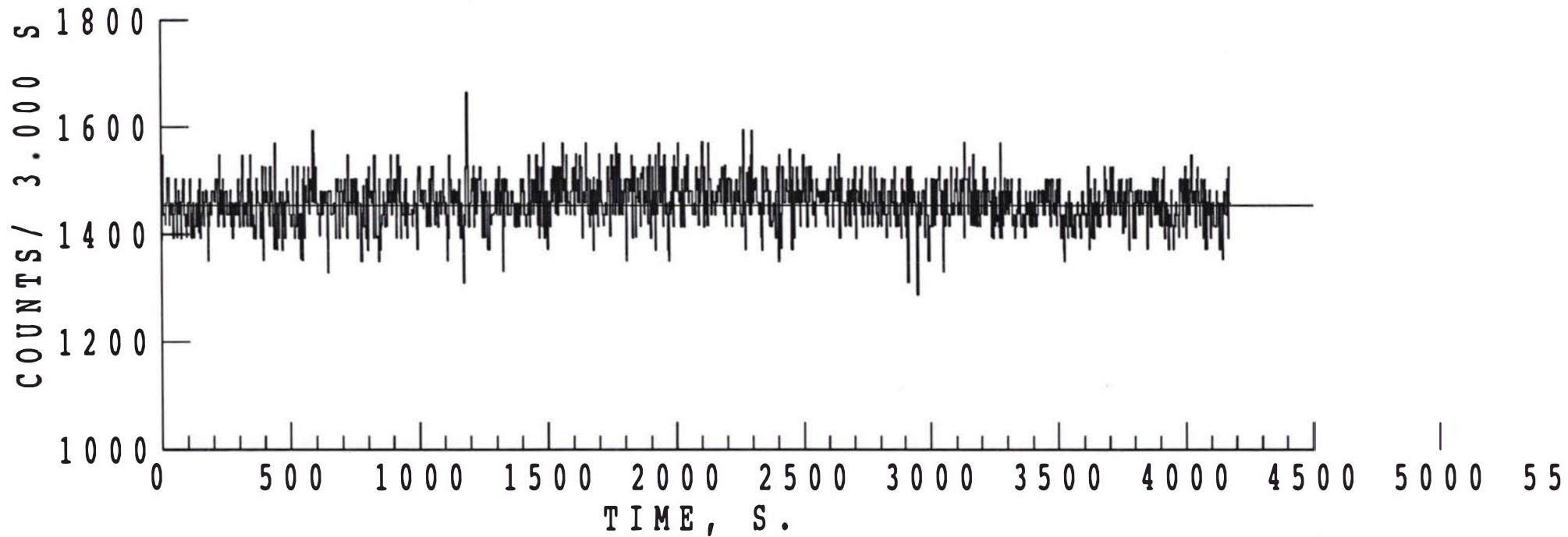
13 / 9 / 99

8 / 9 / 99 50796.176 s

0.500 S INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Thu Sep 9 14:44 PDT 1999
Date: Thu, 9 Sep 1999 16:50:24 -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.: 7758

TIME: TJD=1429 SECONDS=59512

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT, OVER AUSTRALIA.

From HENZE@fender.msfc.nasa.gov Thu Sep 9 14:45 PDT 1999
Date: Thu, 9 Sep 1999 16:52:09 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7759

TIME: TJD=1429 SECONDS=73154

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT, WEST OF NORTH AMERICA.

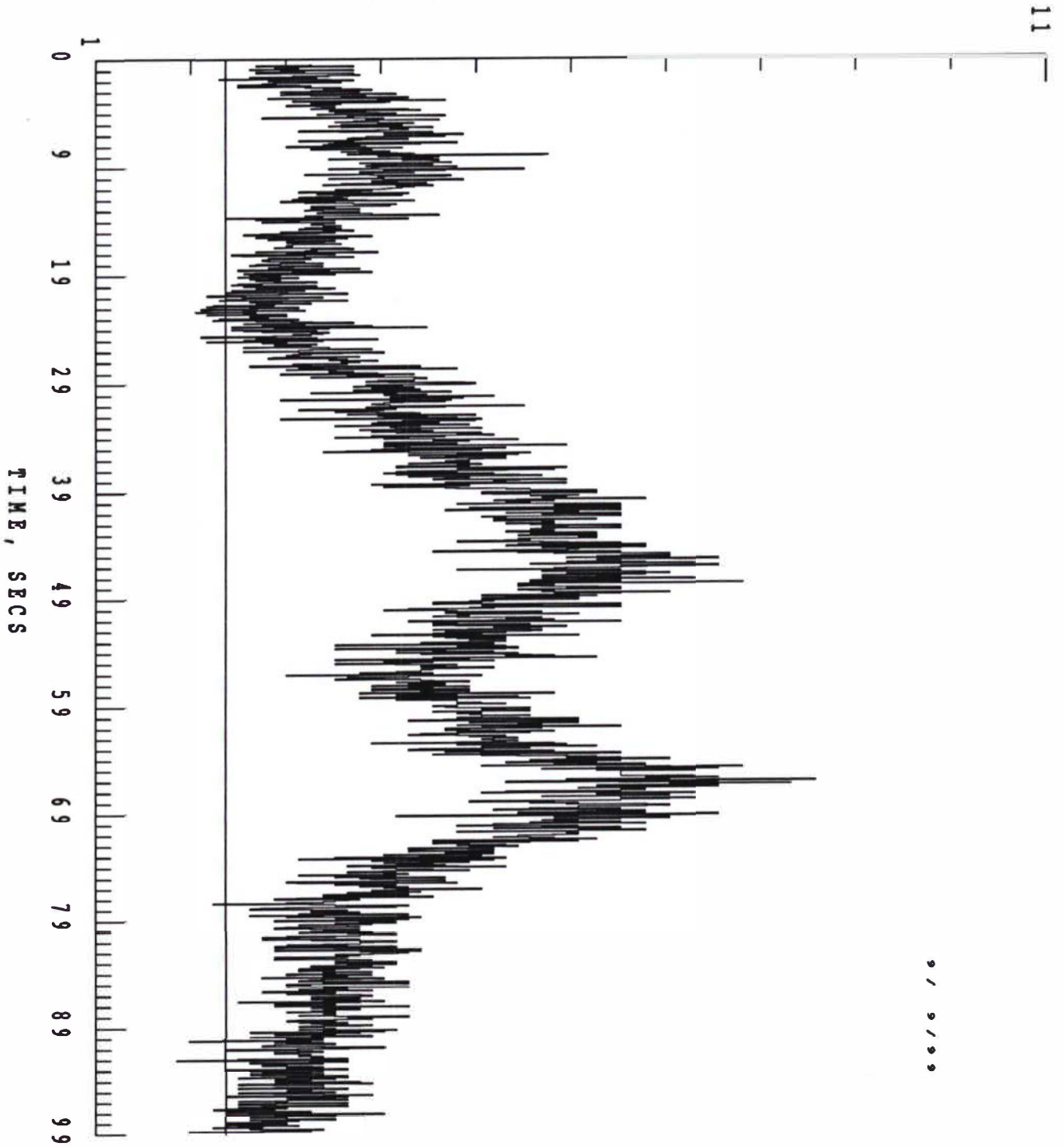
KONUS

08/09/99

44035.527

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990908 44035

ULYSSES RT

9 / 9 / 99

8 / 9 / 99 41220.086 s

0.500 S INTERVALS REGROUPED BY 8

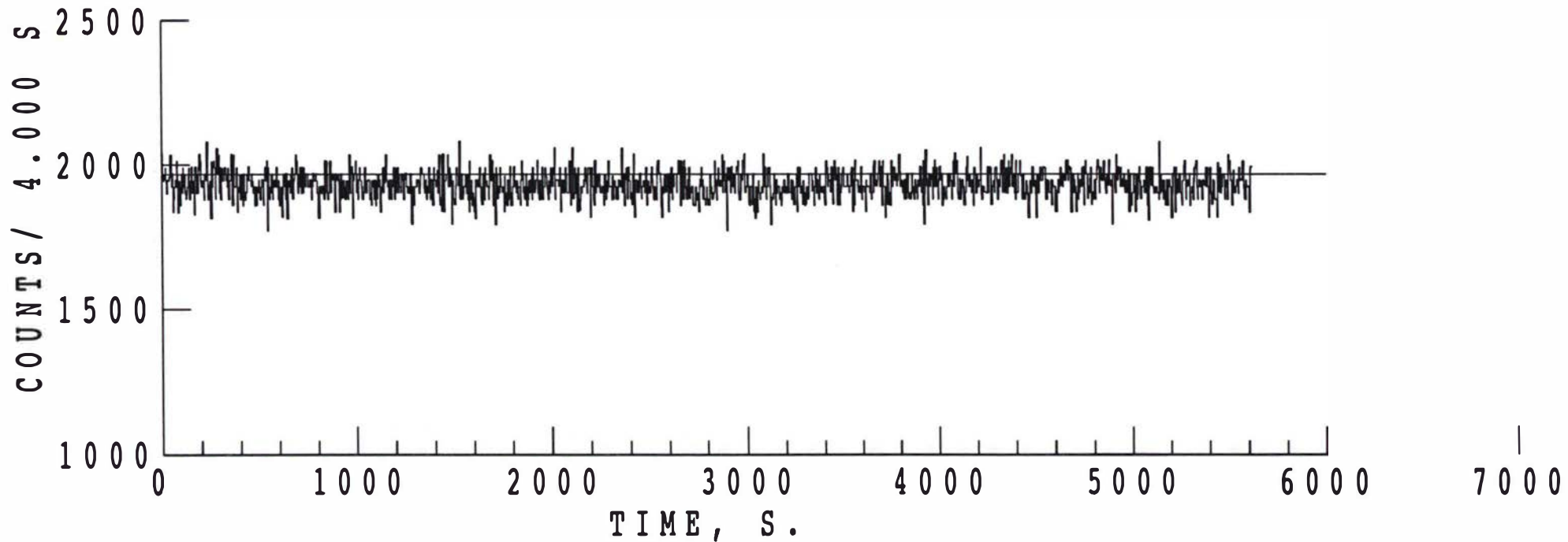
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



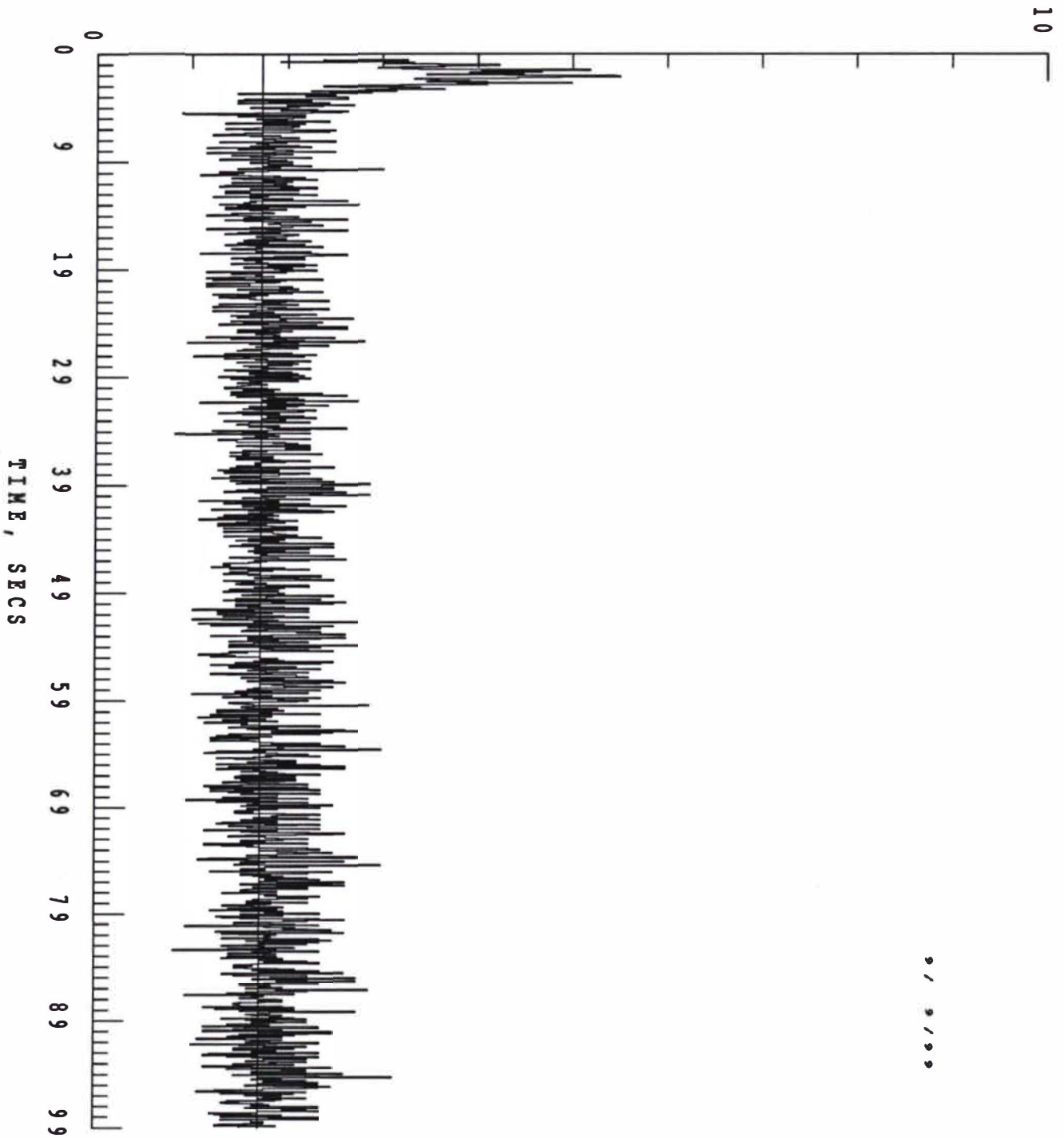
KONUS

08/09/99

53444.533

50- 200 keV

COUNTS/0.064 S



9 / 9 / 9 9

KONUS2 19990908 53444

ULYSSES RT

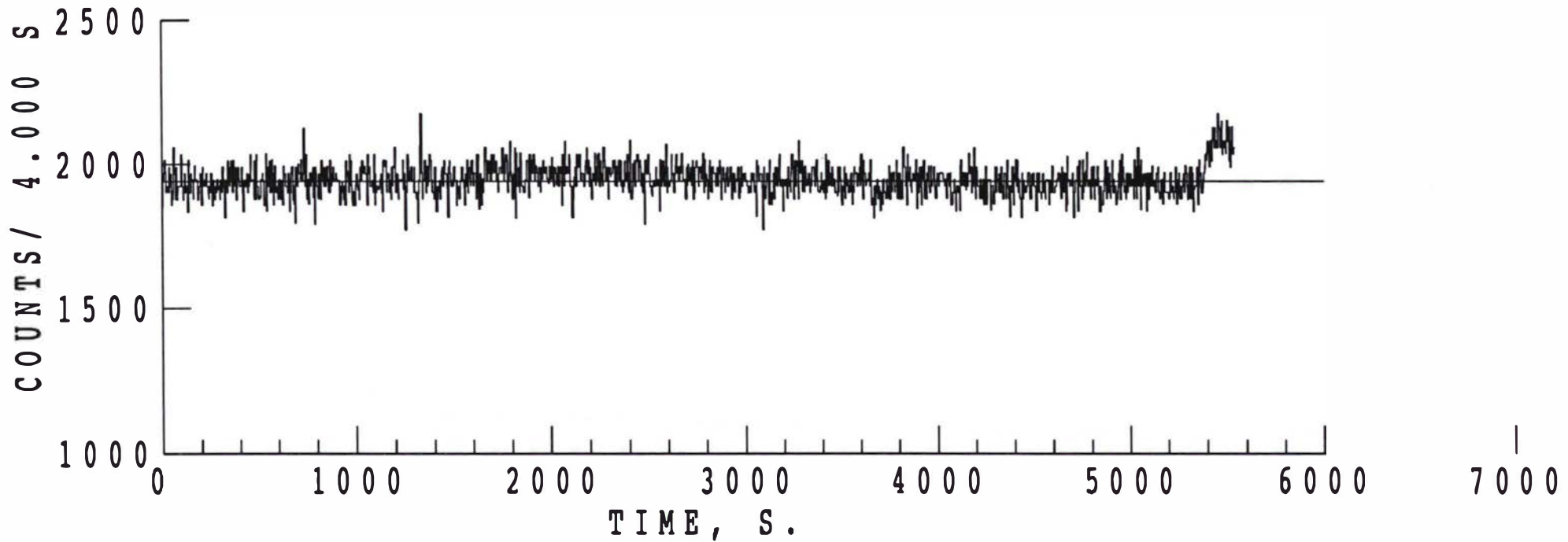
9 / 9 / 99

8 / 9 / 99 50652.176 s

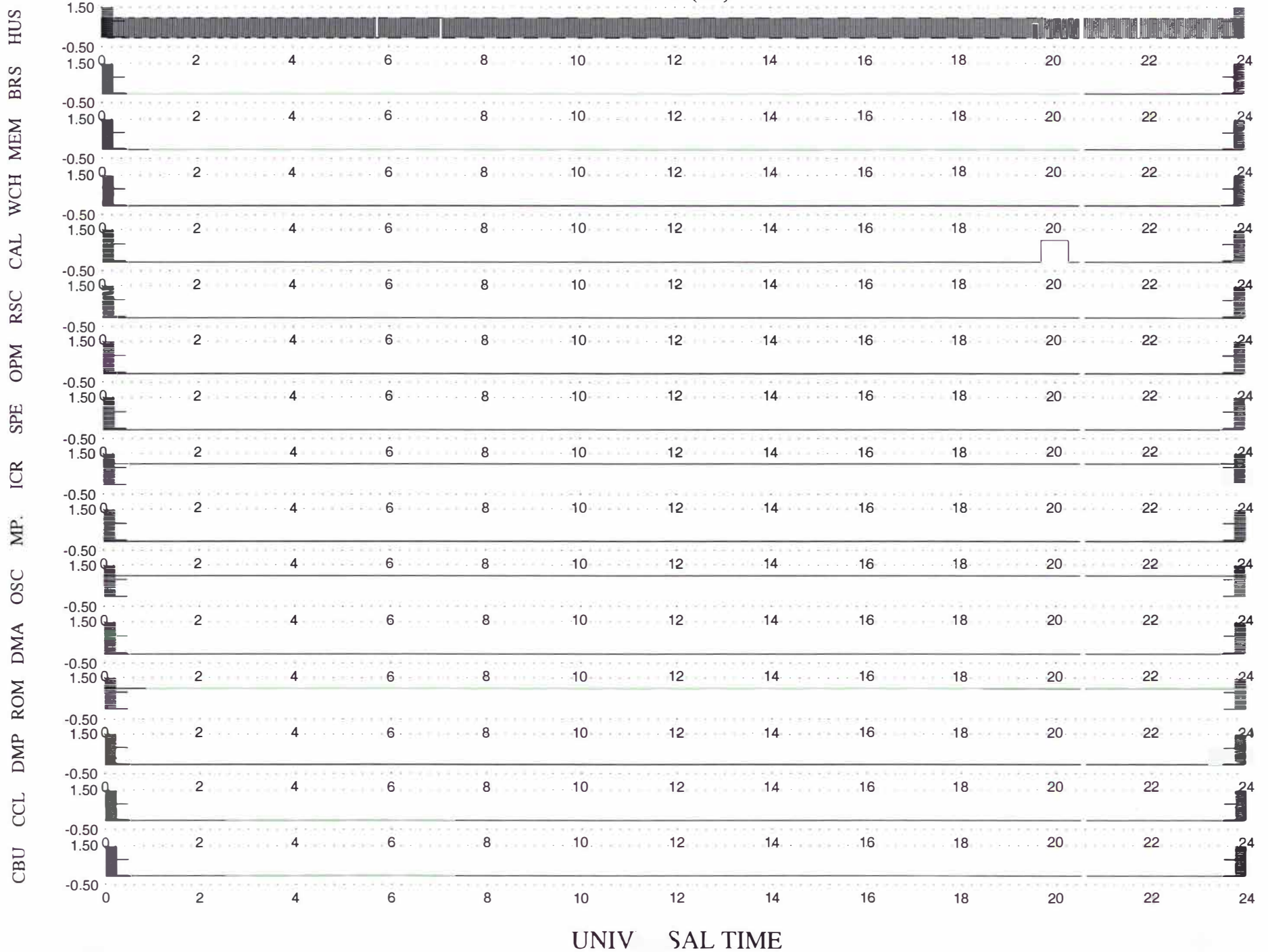
0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

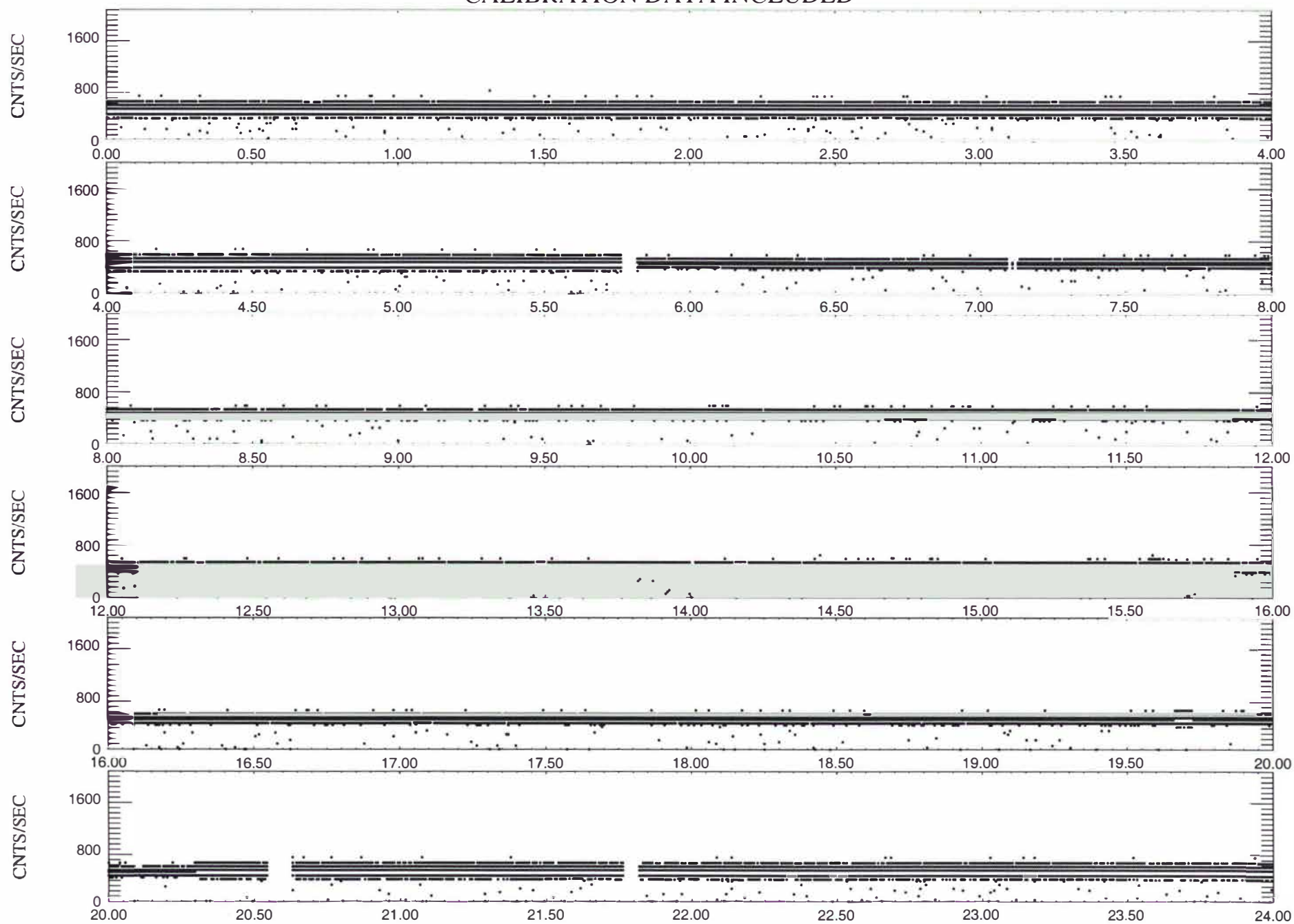
W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



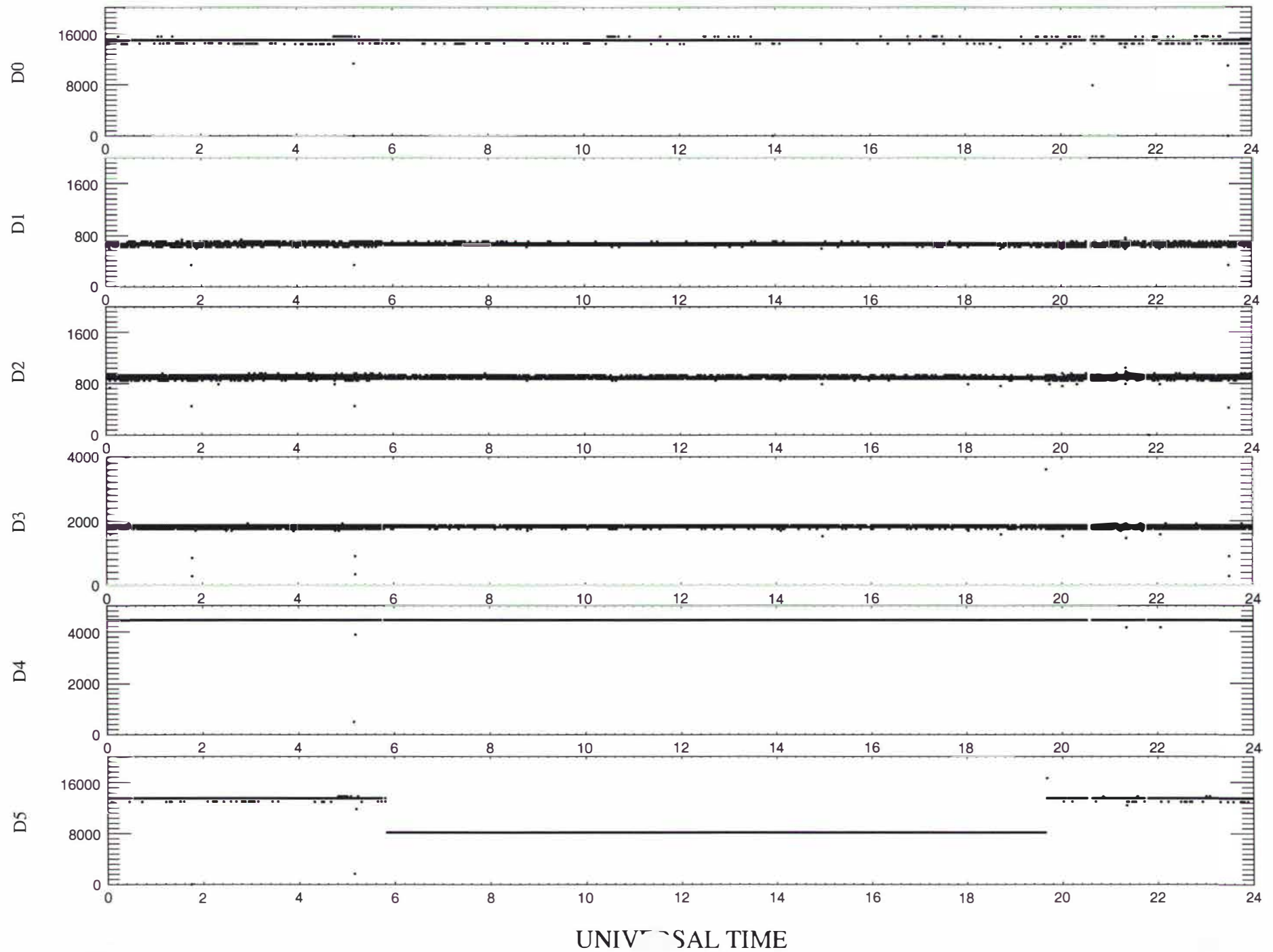
NO BURST (10)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



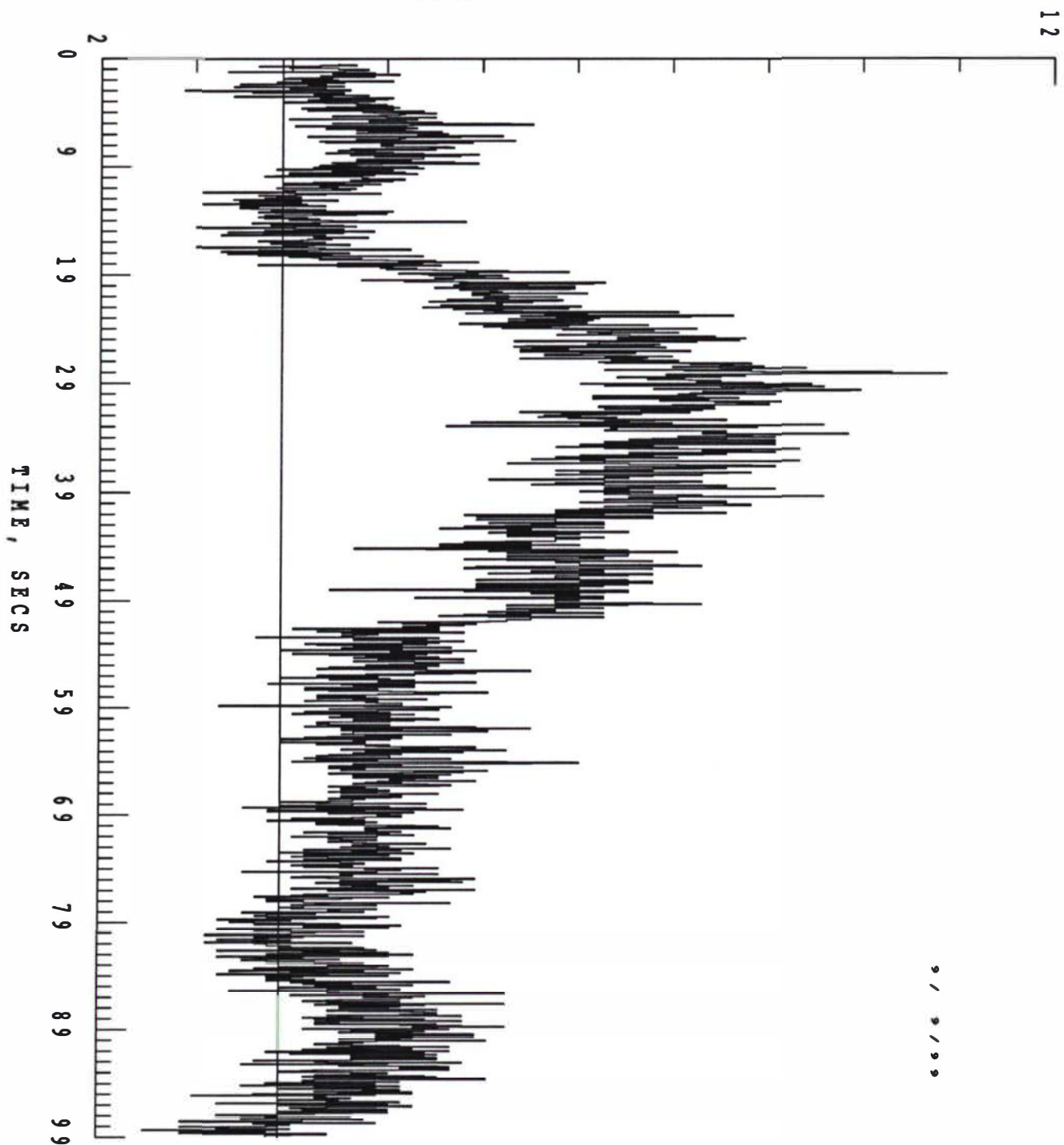
KONUS

09/09/99

713.478

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990909 00713

ULYSSES RT

9 / 9 / 99

8 / 9 / 99 84312.023 s

0.250 S INTERVALS REGROUPED BY 15

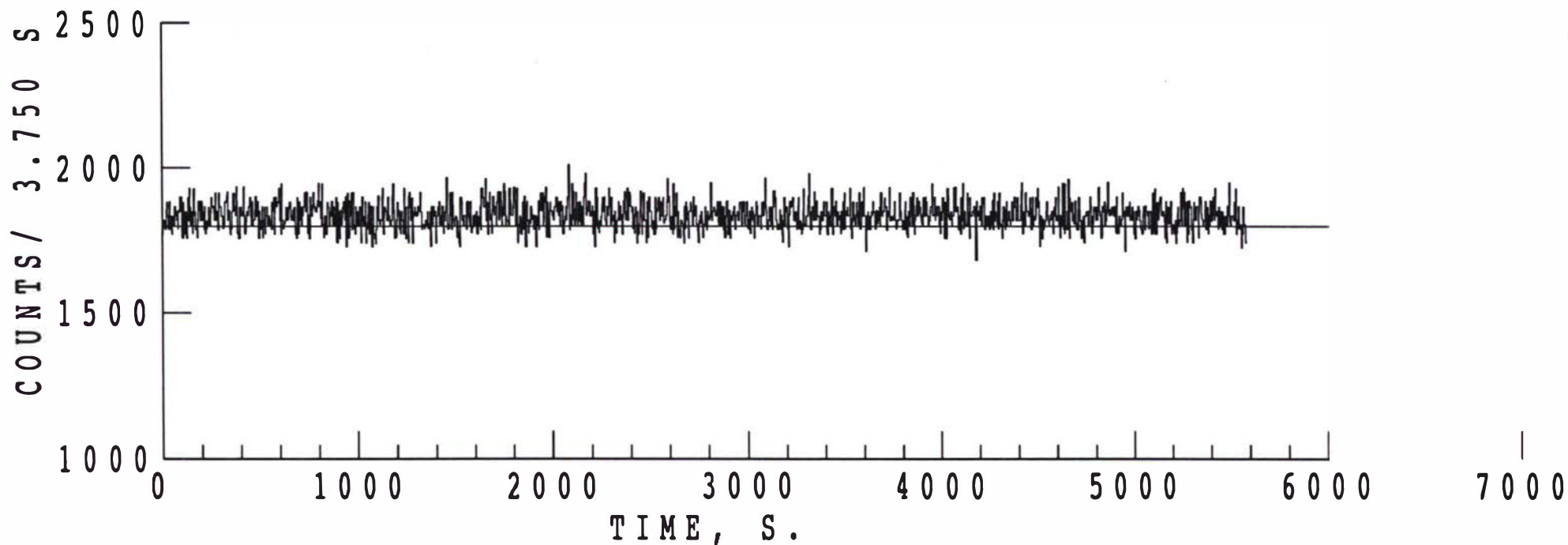
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



KONUS

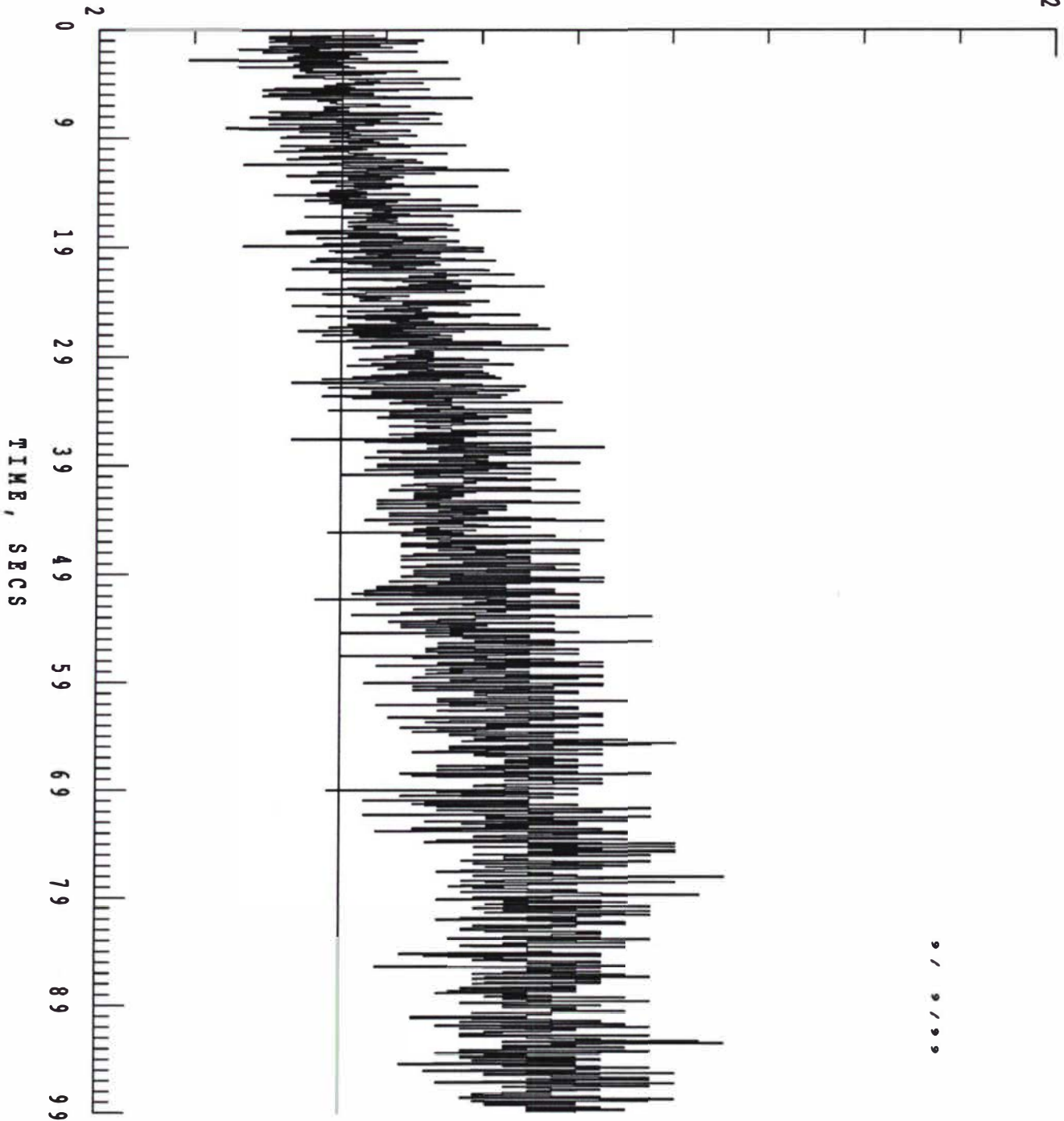
09/09/99

10814.517

50 - 200 keV

COUNTS/0.064 S

12



KONUS2 19990909 10814

ULYSSES RT

9 / 9 / 99

9 / 9 / 99 8028.122 s

0.250 S INTERVALS REGROUPED BY 15

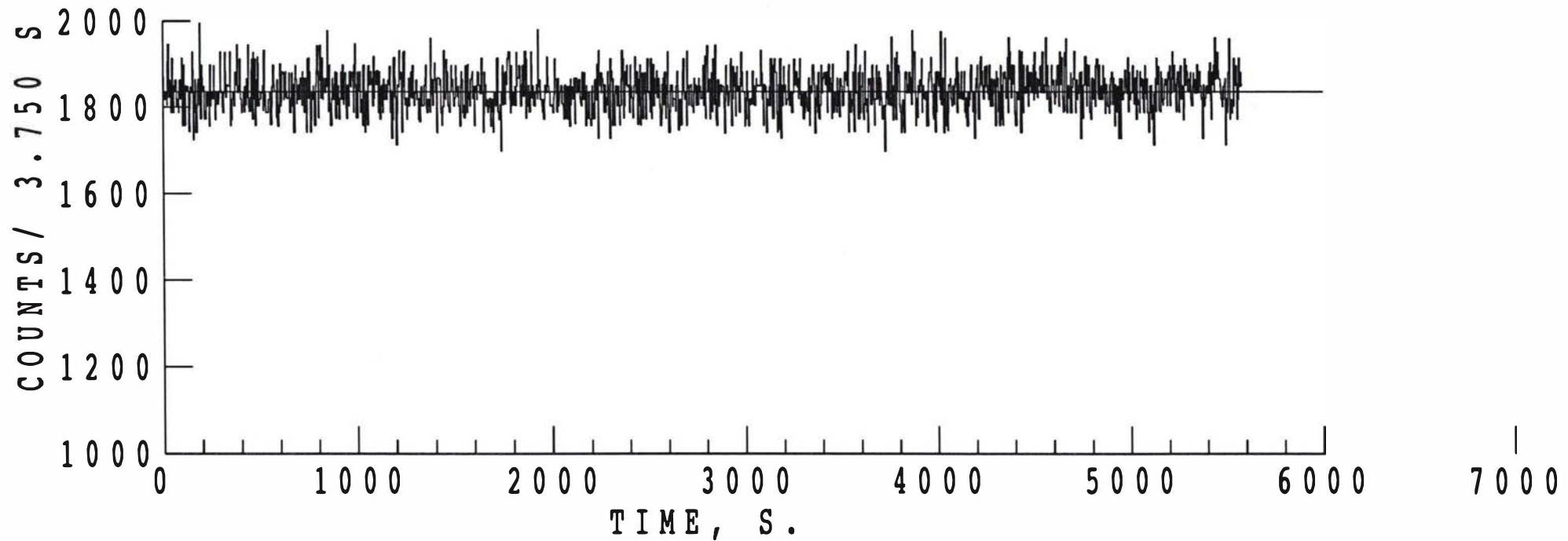
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



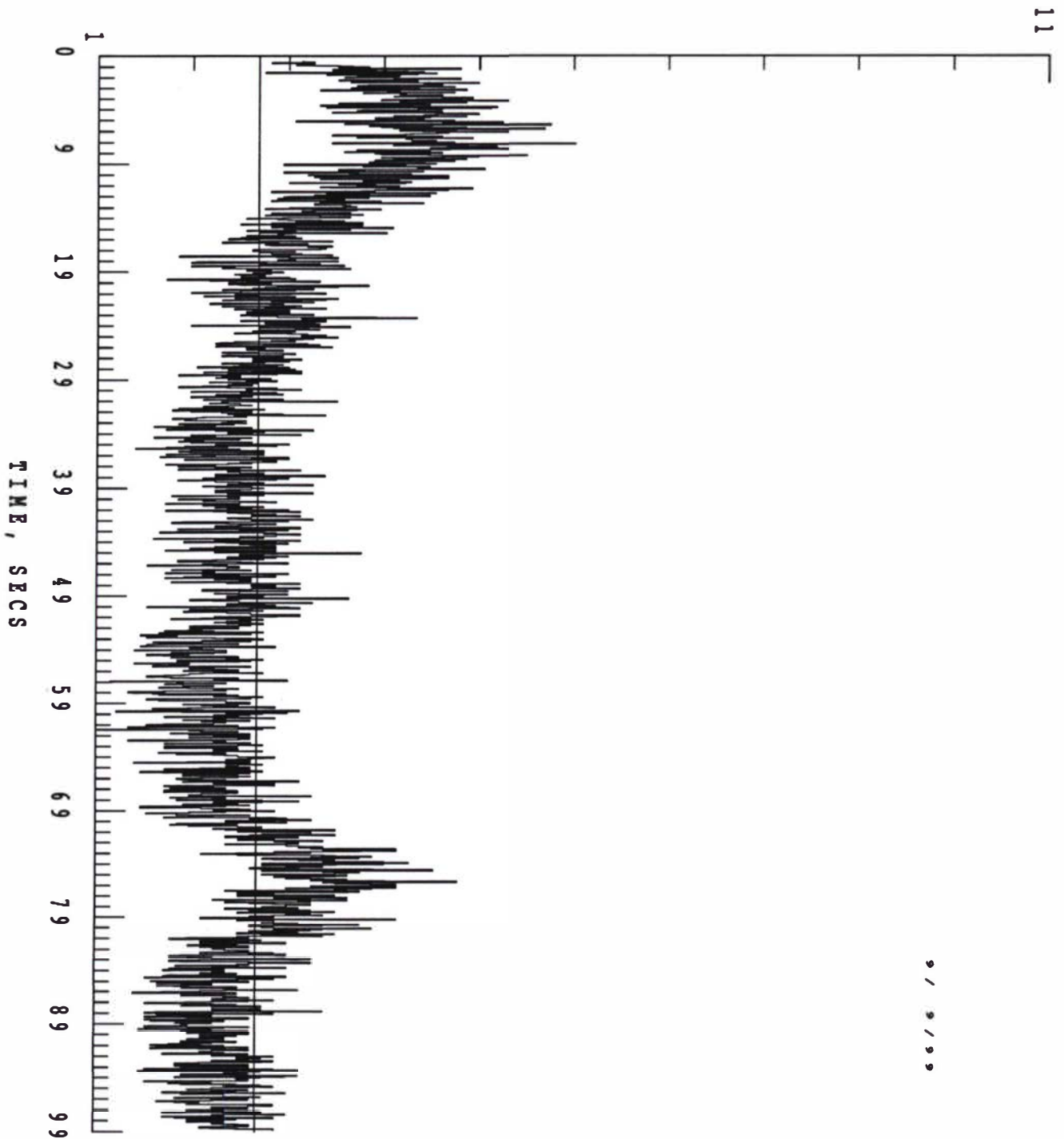
KONUS

09/09/99

25416.180

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990909 25416

ULYSSES RT

22 / 02 / 00

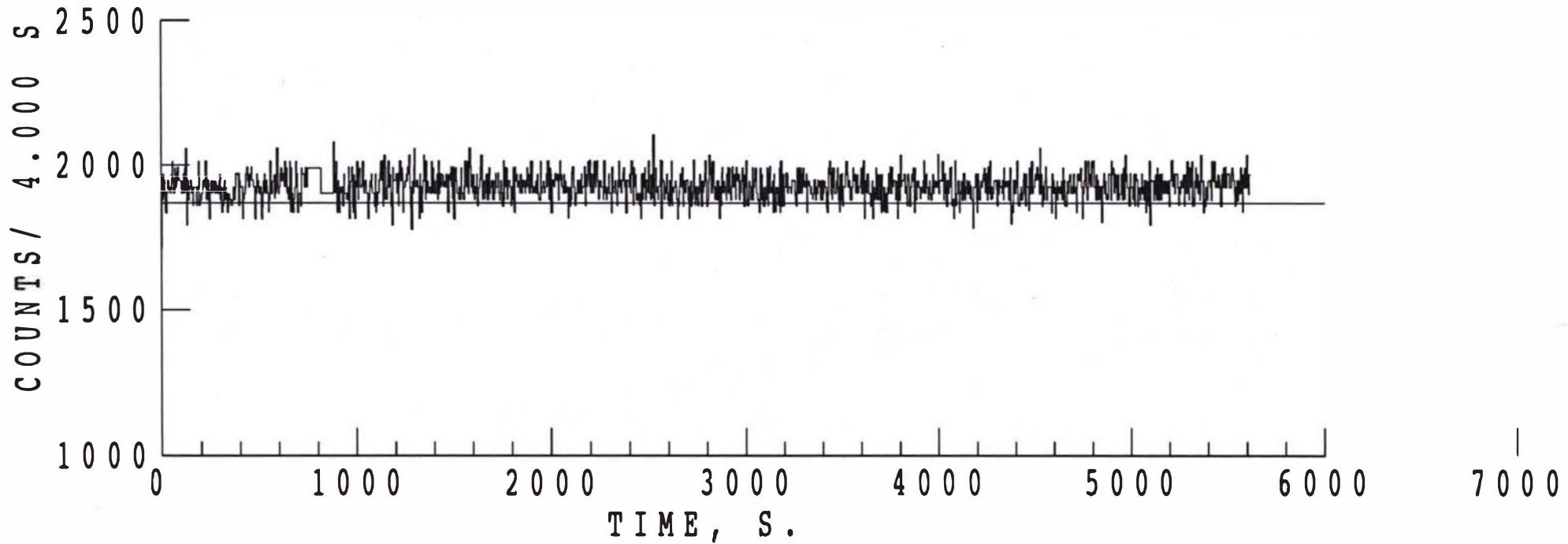
09/09/99 22608.268 s

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 Sep 17 14:26 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 17 Sep 1999 16:19:30 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7760

BATSEARCH PROGRAM

BATSE BURST # 7760
EVENT OF 1999 SEP 9 DAY OF YEAR=252
EVENT CROSSING TIME AT BATSE : 28274. S. OR 07:51:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 29.000 -30.000
BATSE PEAK COUNTING RATE: 32000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 9/ 99 IS:
RA= 156.468 DEC= -13.762 DIST= 5.503 AU
BATSE-ULYSSES DISTANCE = 823272593. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1078.55 SECS.
CROSSING TIME AT ULYSSES IS 29353. S. OR 08:09:12 +/- 504.84 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 9/ 99 IS:
RA= 241.557 DEC= -22.714 DIST= 1.234 AU
MARS-BATSE DISTANCE = 184583504. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 295.70 SECS.
CROSSING TIME AT MARS IS 28570. S. OR 07:56:09 +/- 98.25 SECONDS

BATSE BURST TRIGGER

NO.: 7760

TIME: TJD=1430 SECONDS=28274

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.6 AZIMUTH=203.8 ERROR=6.5 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. 55 S, STARTS AT T-5 S, MAX. AT T+26 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7760	990909	11430	28274	32000	029	-30	55

Date: Mar 21 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

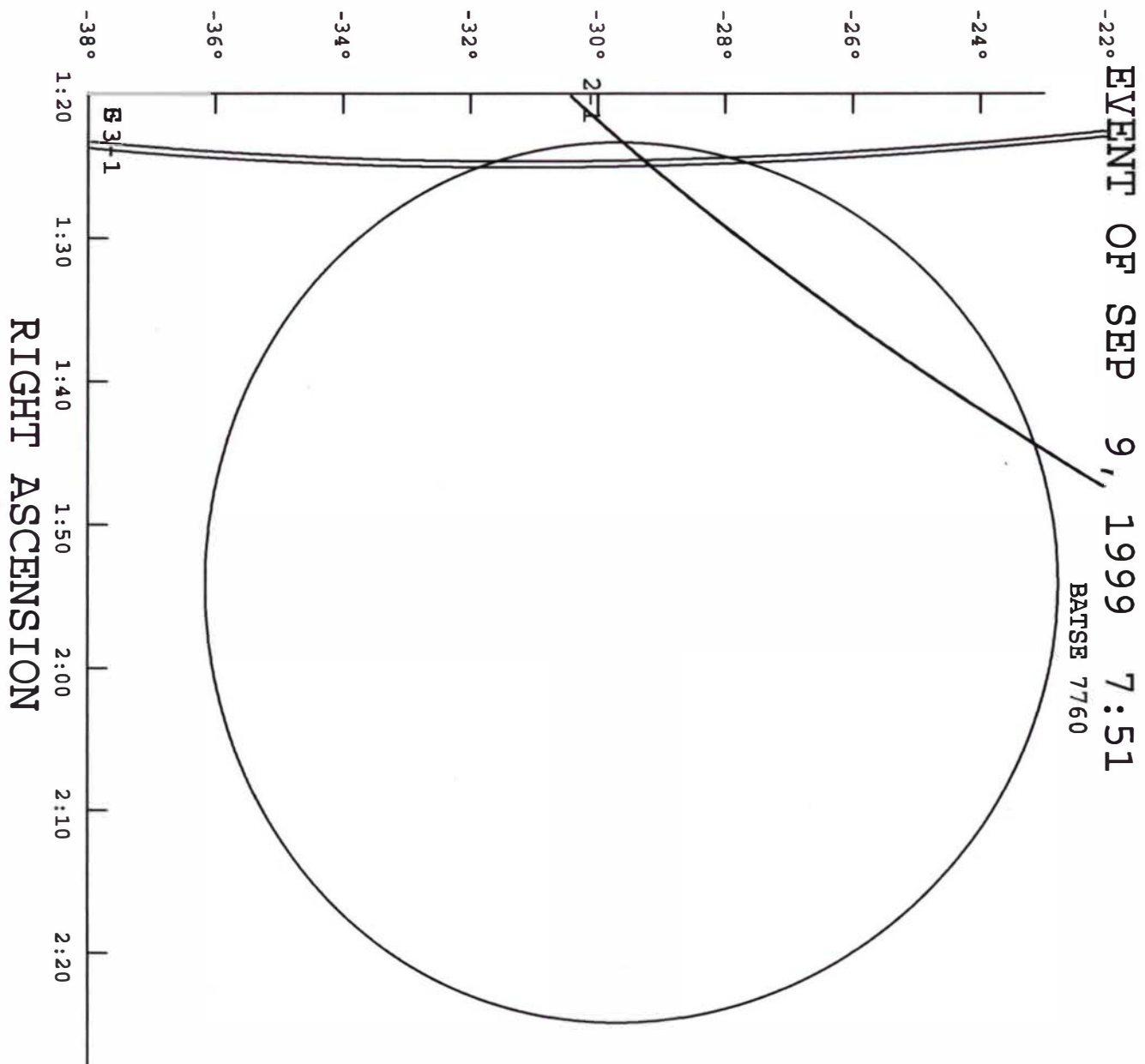
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

3 NEAR

DECLINATION



21 / 3 / 0

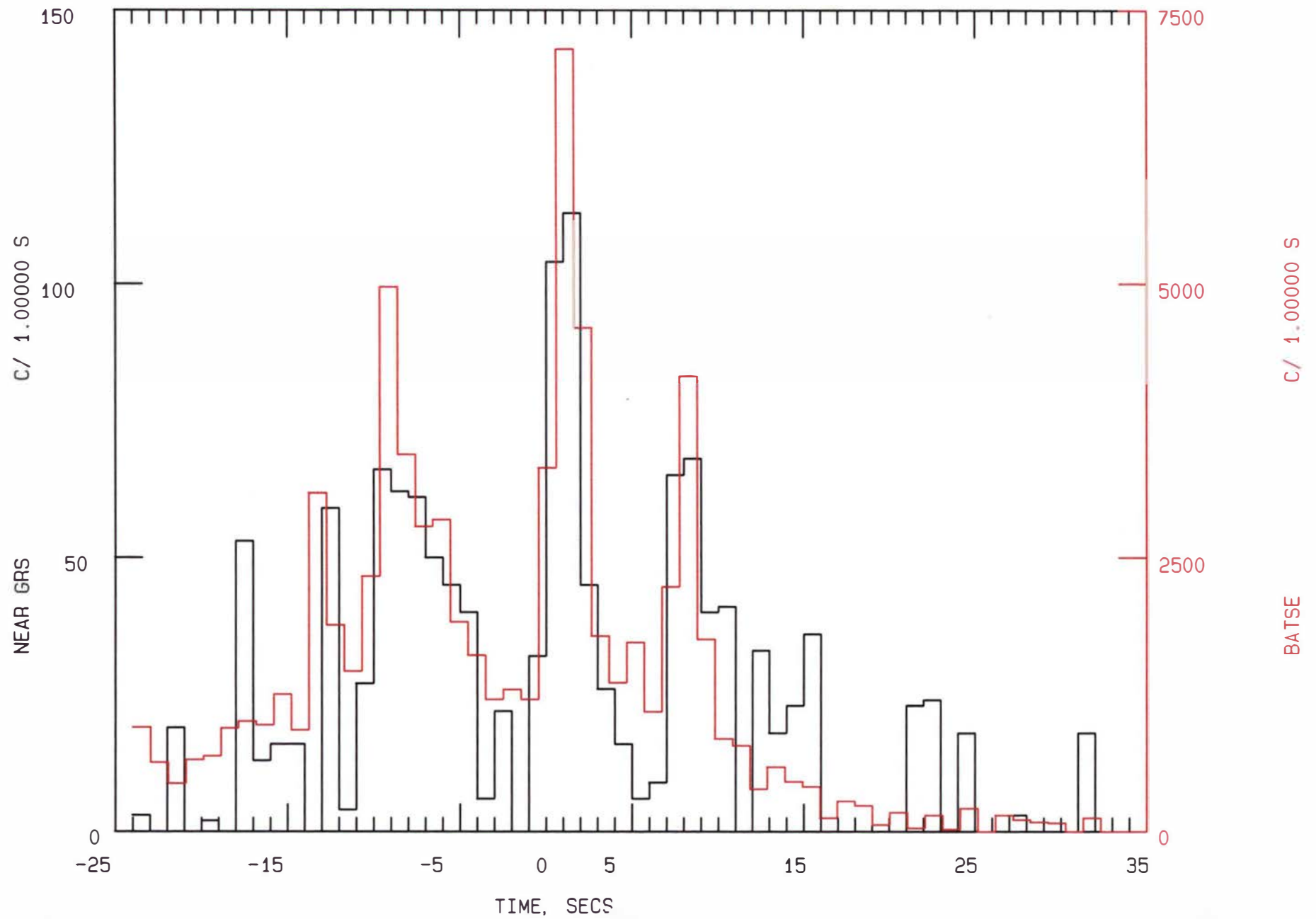
NEAR GRS -BATSE

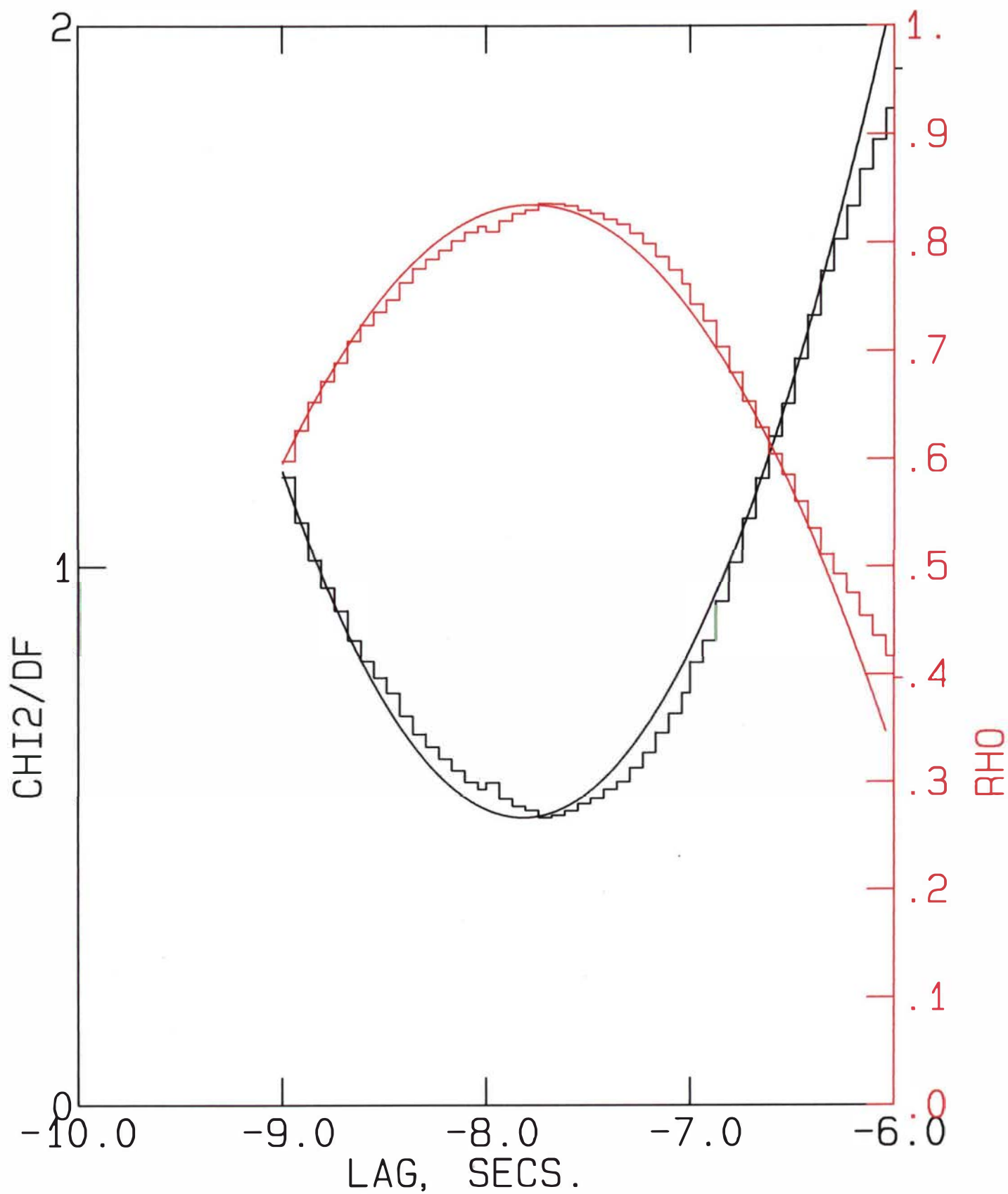
CORRELATION

09/09/99

28828.436

21/ 3/ 0





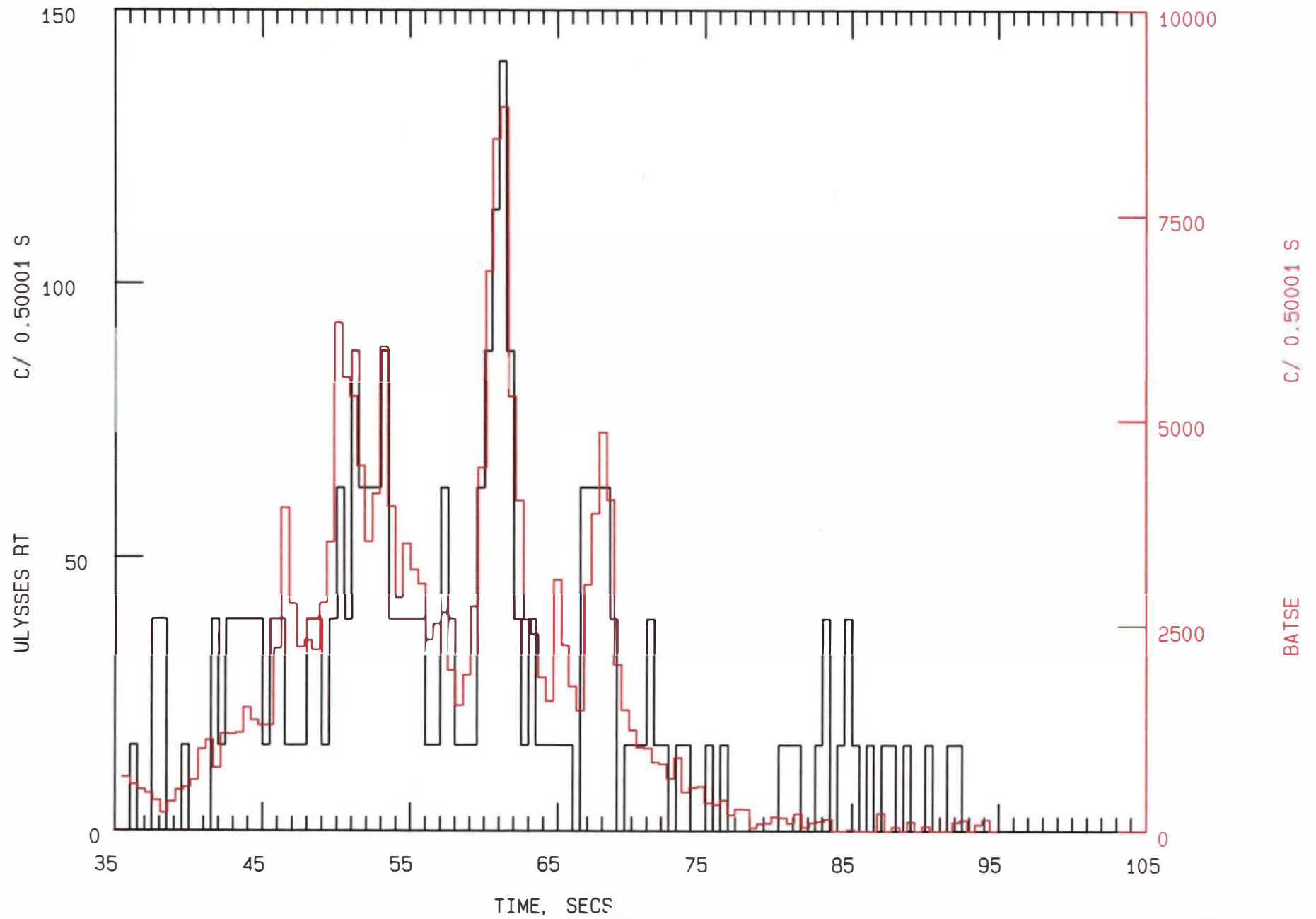
ULYSSES RT-BATSE

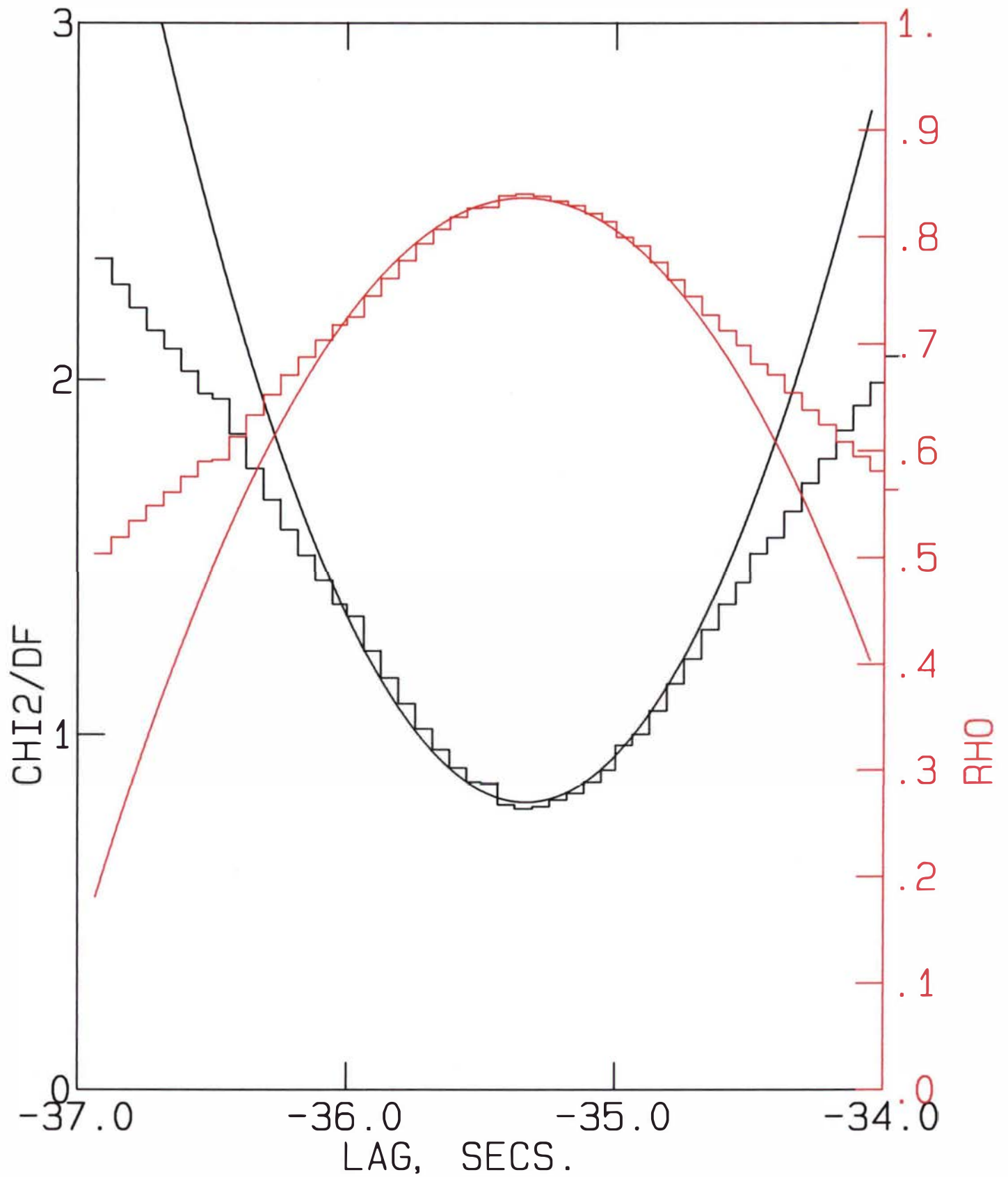
CORRELATION

9/ 9/99

29584.363

21/ 3/ 0

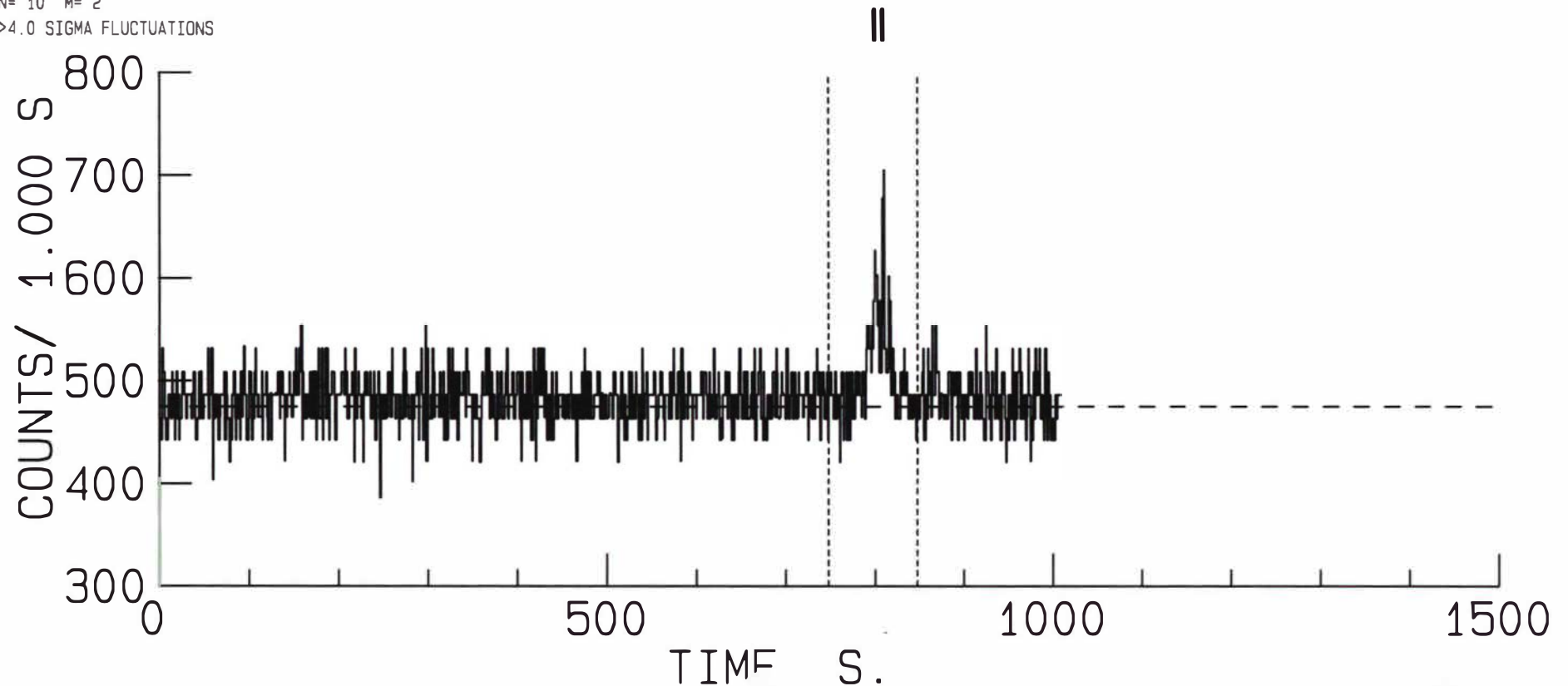




ULYSSES RT
9/ 9/99 28836.331 s
0.500 S INTERVALS REGROUPED BY 2
22- 151 keV

21 / 3 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

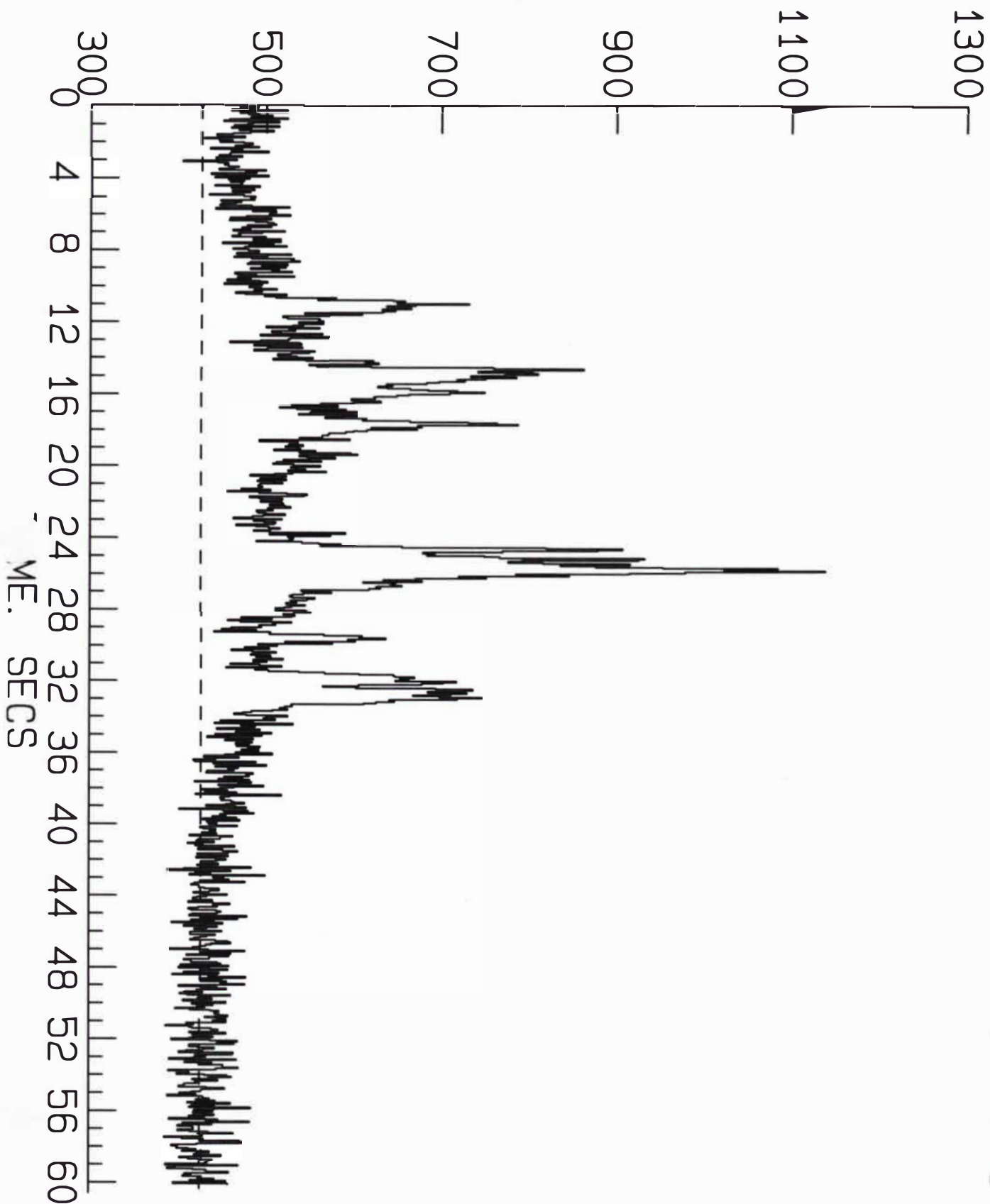
09/09/99

28274.425

100-1000 keV

COUNTS/0.064 S

30 / 9/99



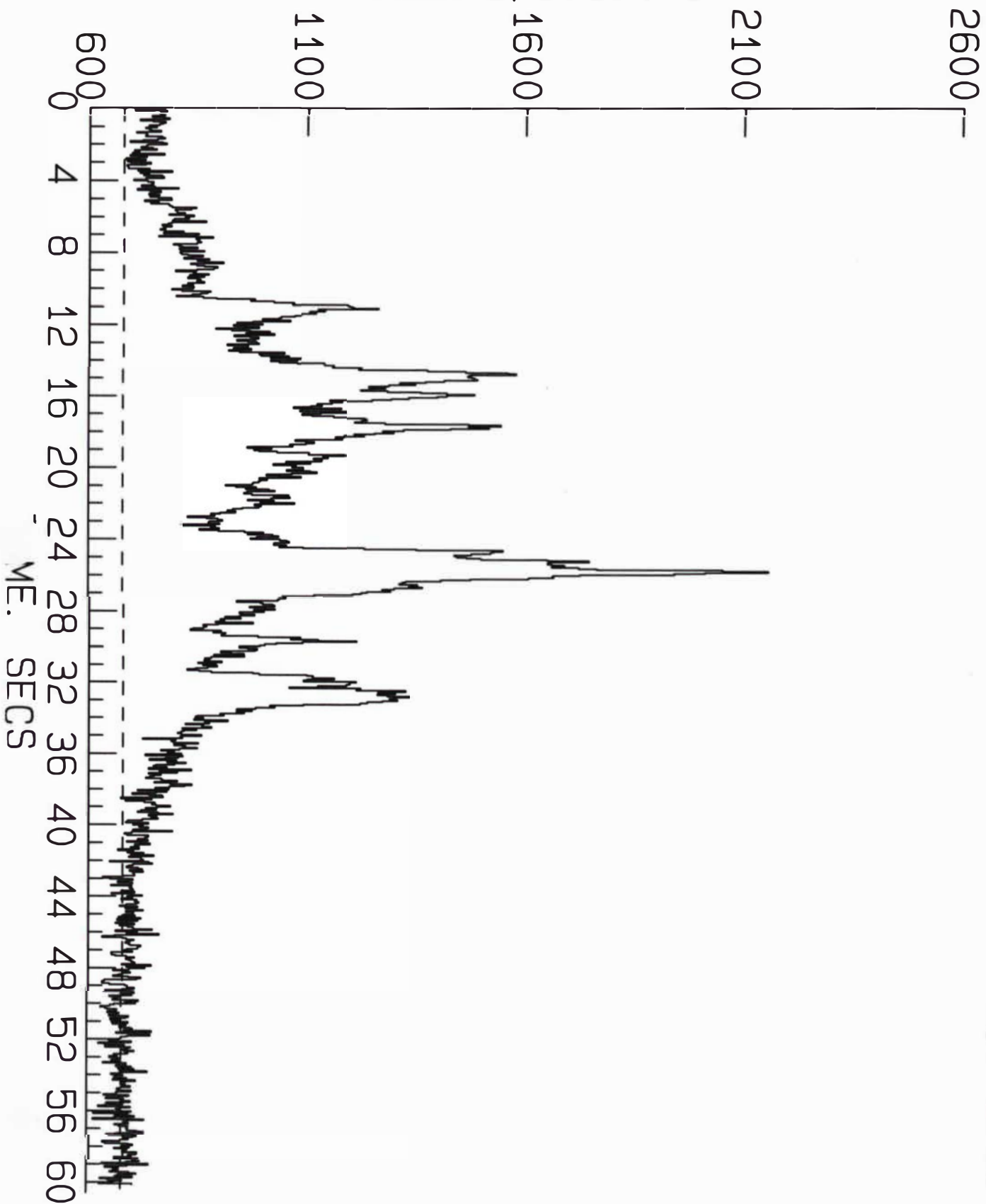
BATSE

09/09/99

28274.425

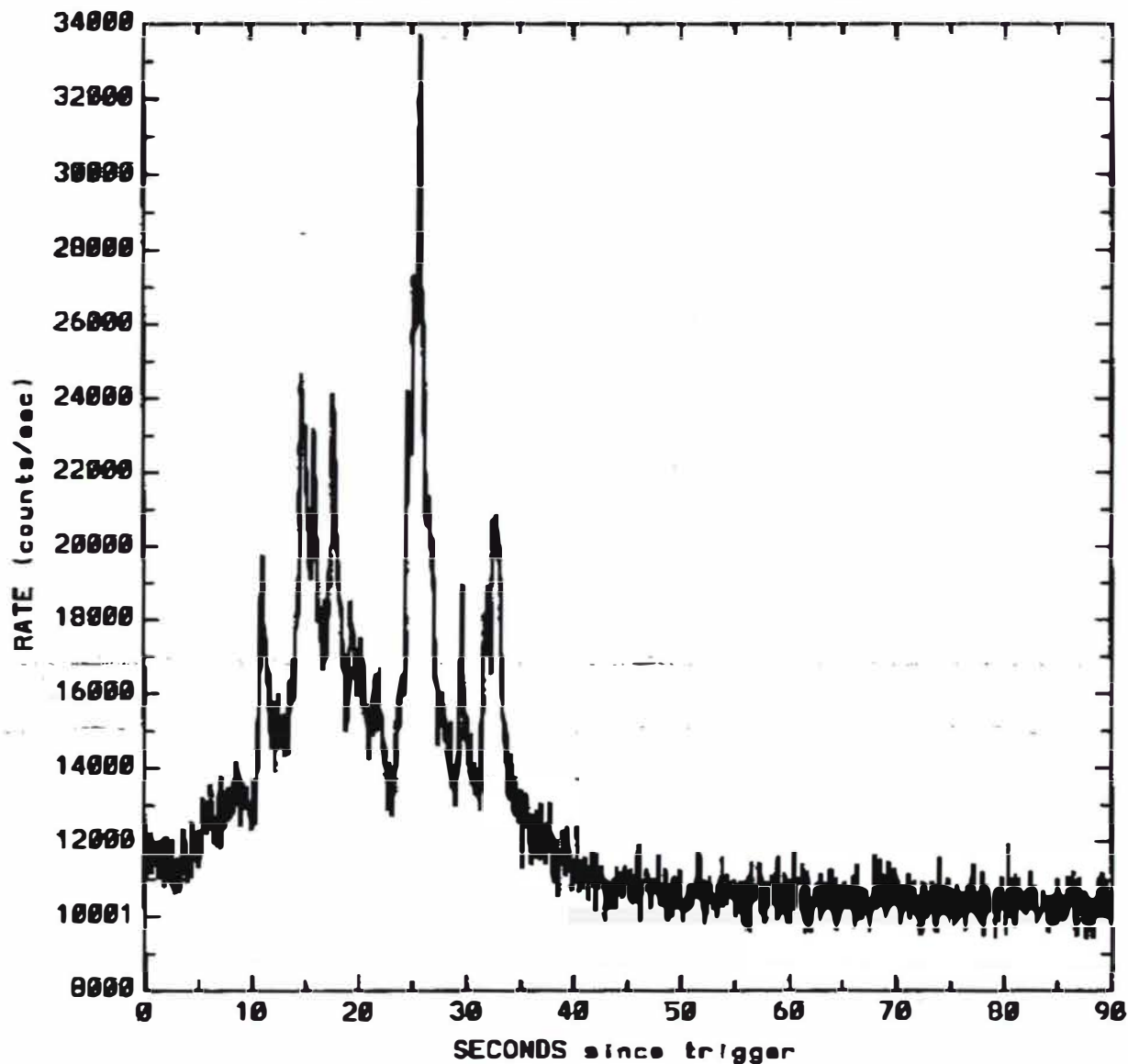
25- 100 keV

COUNTS/0.064 S



30 / 9/99

MER Data for K. Hurley. No. 7760



20-SEP-1999 14.29.39

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 7760

Trigger Time:
11430 / 28274.425

Burst Data Type:
MER

Deadtime
Corrected: N

Background Data
Type: CONT

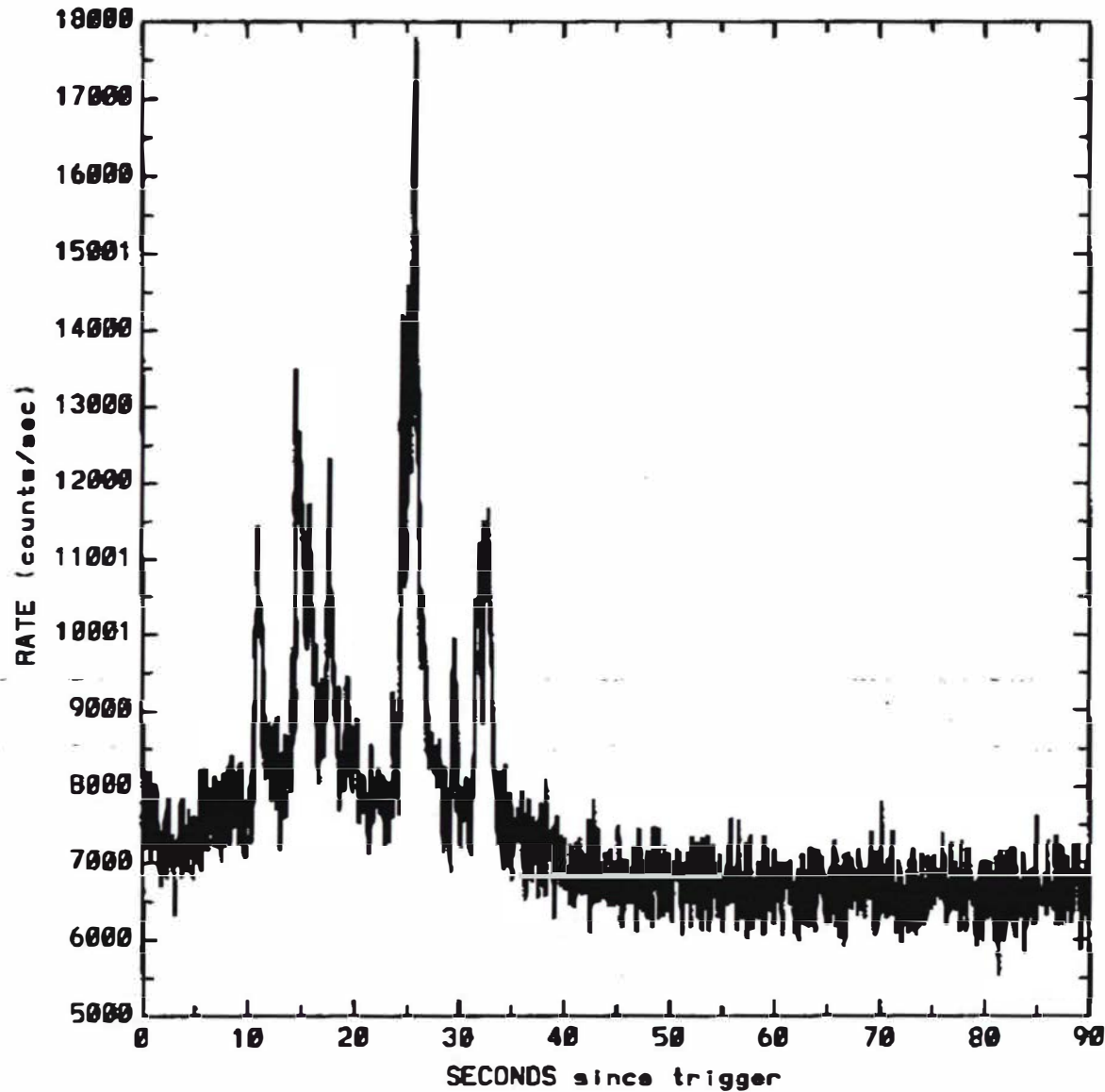
Minimum Integ. Time:
0.064 seconds

Detectors (7..8):
765----

Channels:
(8..6)

Quality Mask:
B01SP1

MER Data for K. Hurley, No. 7760



20-SEP-1999 14:30.49

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # . 7760

Trigger Time:
11438 / 20274.425

Burst Data Type:
MER

Deadtime
Corrected: N

Background Data
Type: CONT

Minimum Integ. Time:
0.064 seconds)

Detectors [7..0].
765----

Channels:
(7.15)

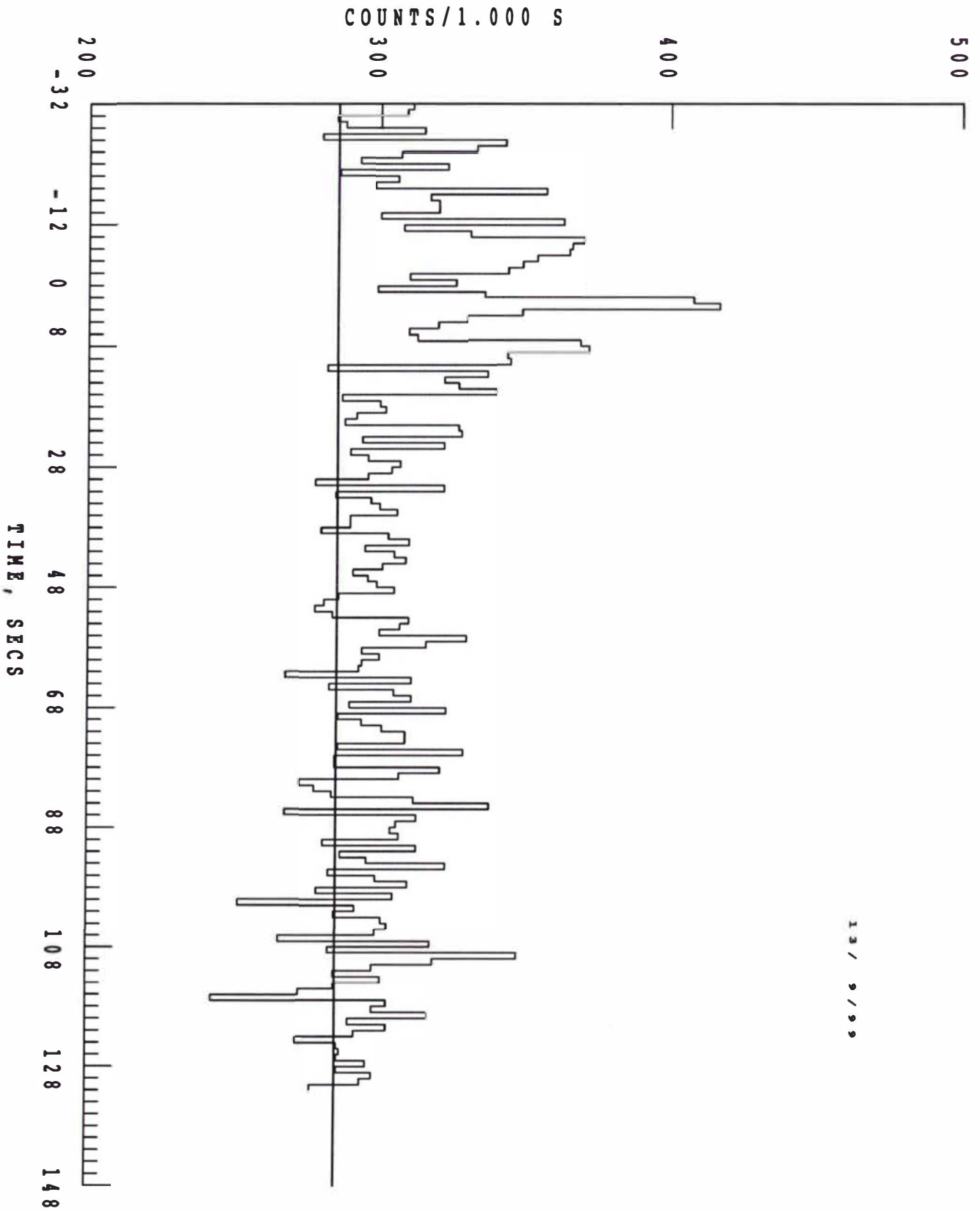
Quality Mask:
BDISP1

NEAR

09/09/99

28828.436

100-1000 keV



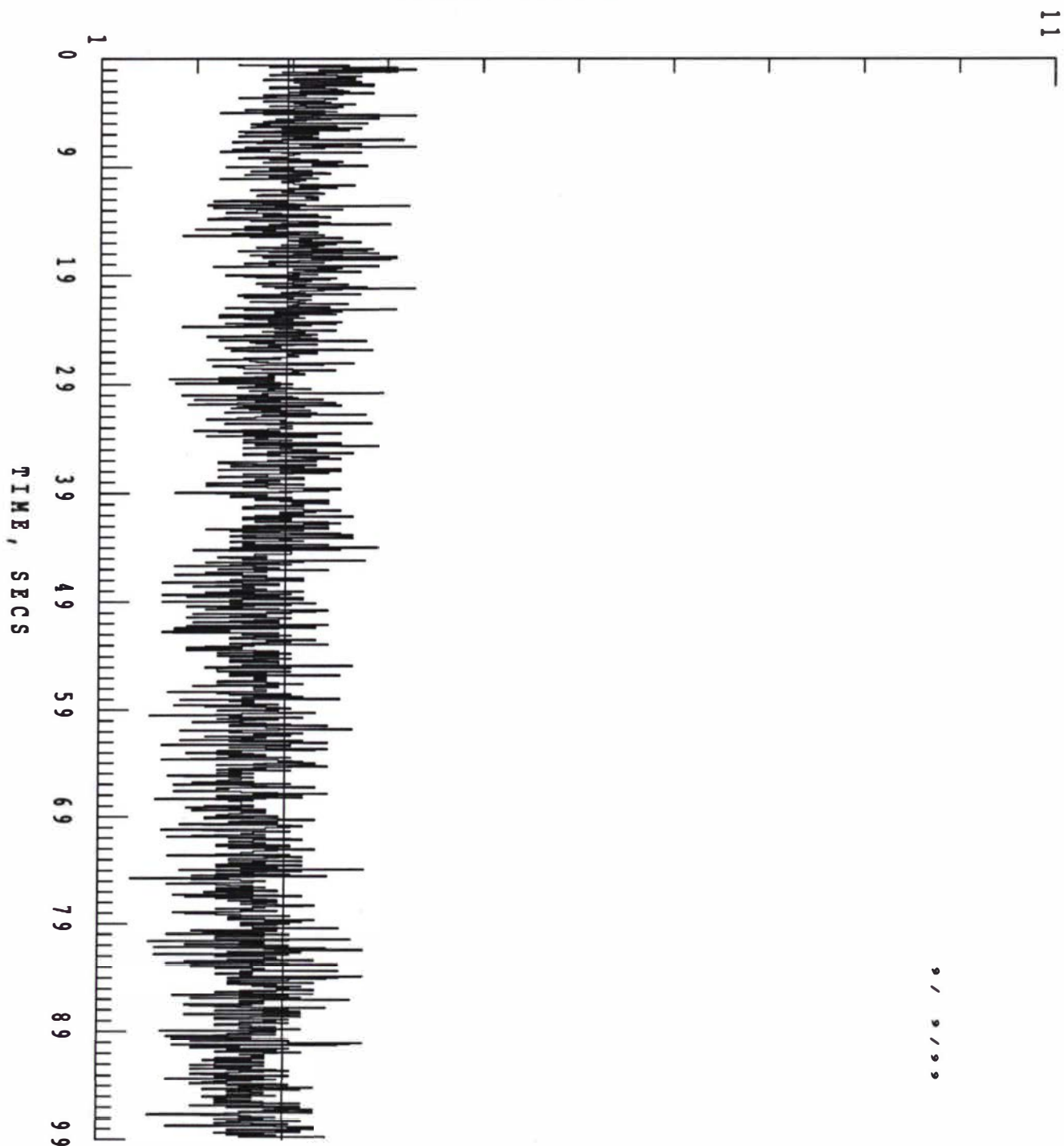
KONUS

09/09/99

33594.366

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990909 33594

ULYSSES RT

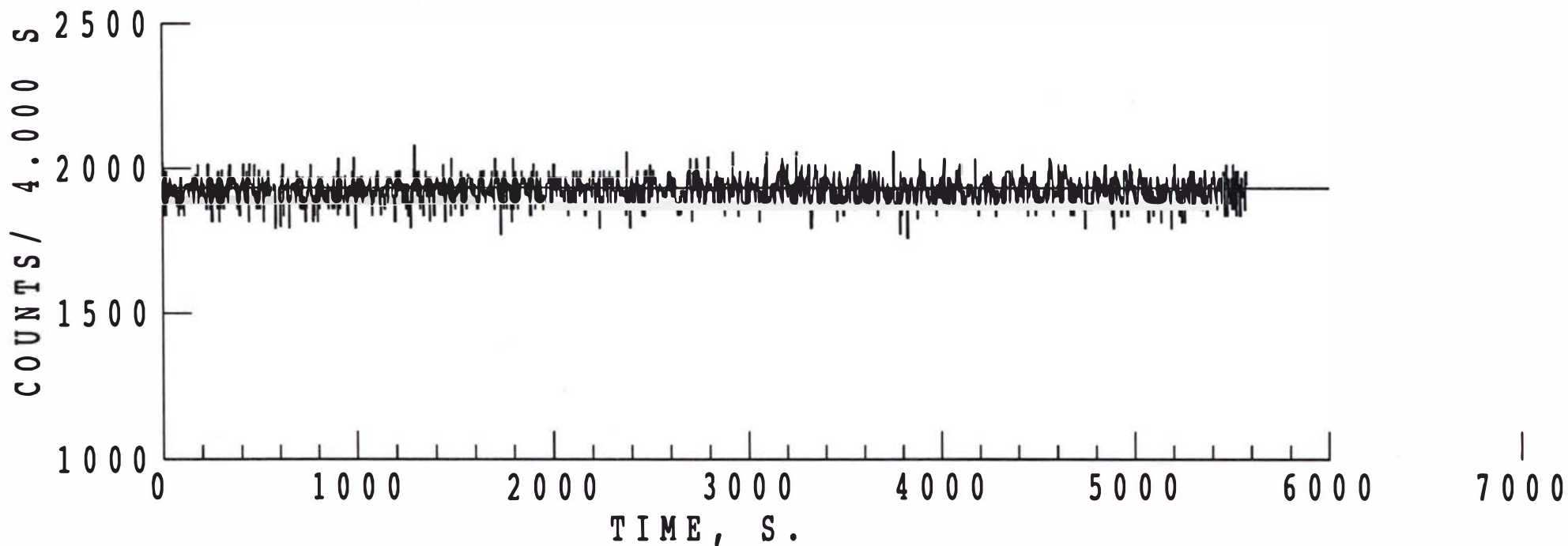
13 / 9 / 99

9 / 9 / 99 30816.352 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



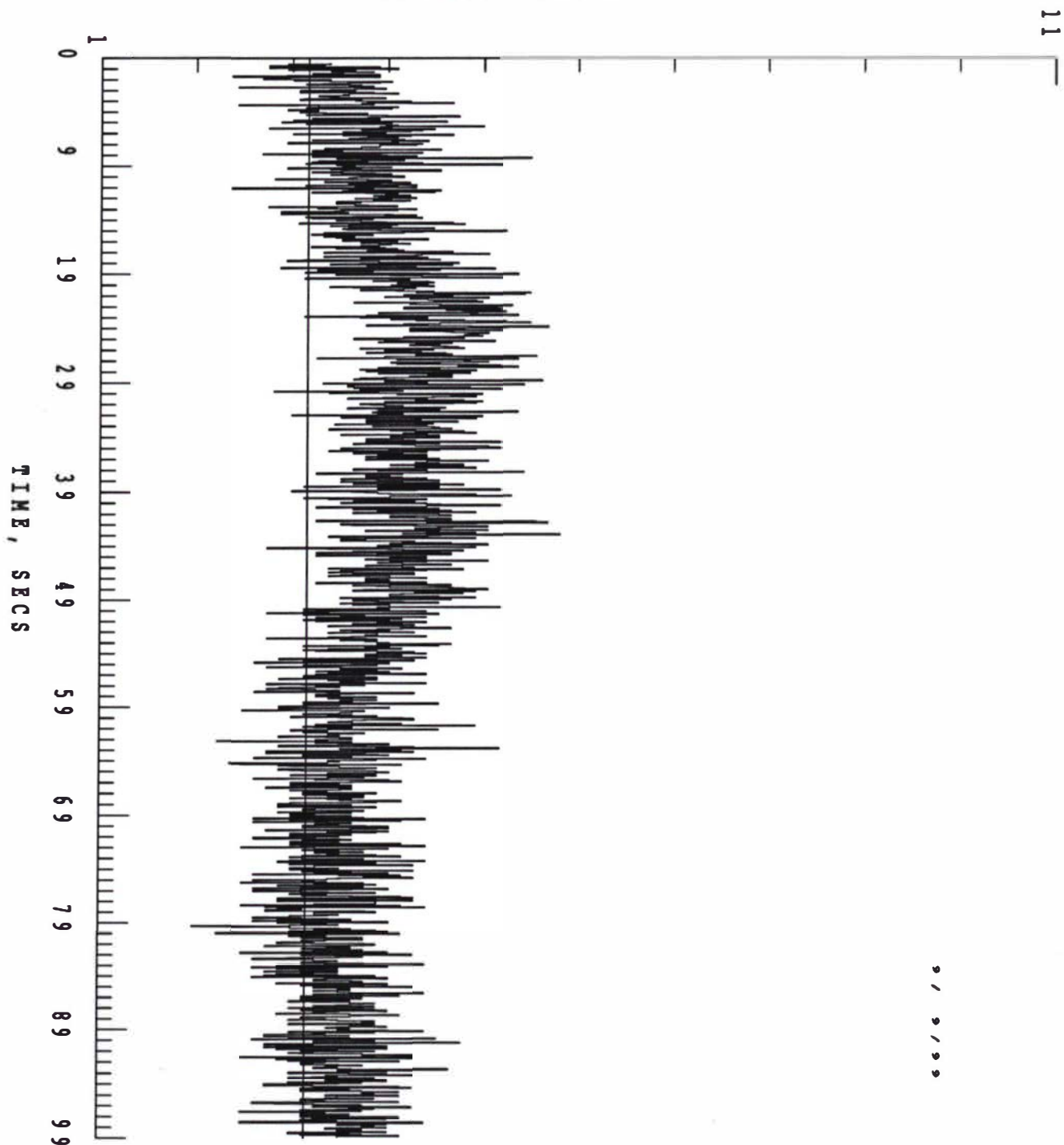
KONUS

09/09/99

58885.505

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990909 58885

ULYSSES RT

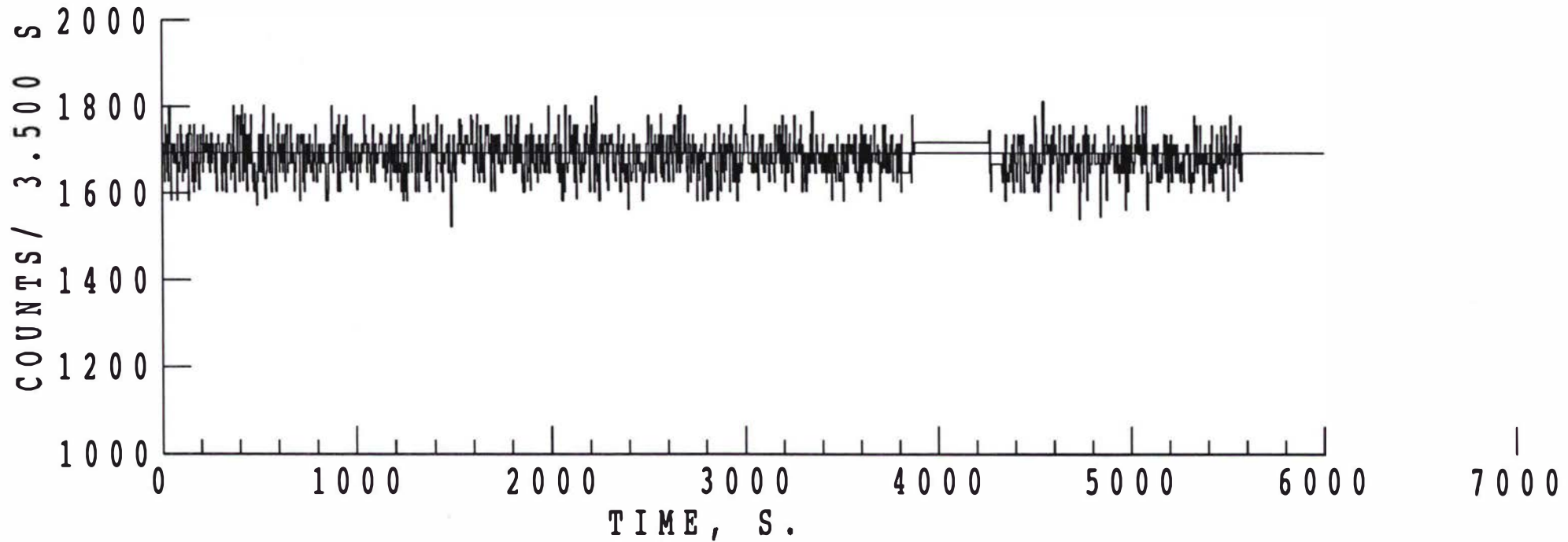
13 / 9 / 99

9 / 9 / 99 56088.109 s

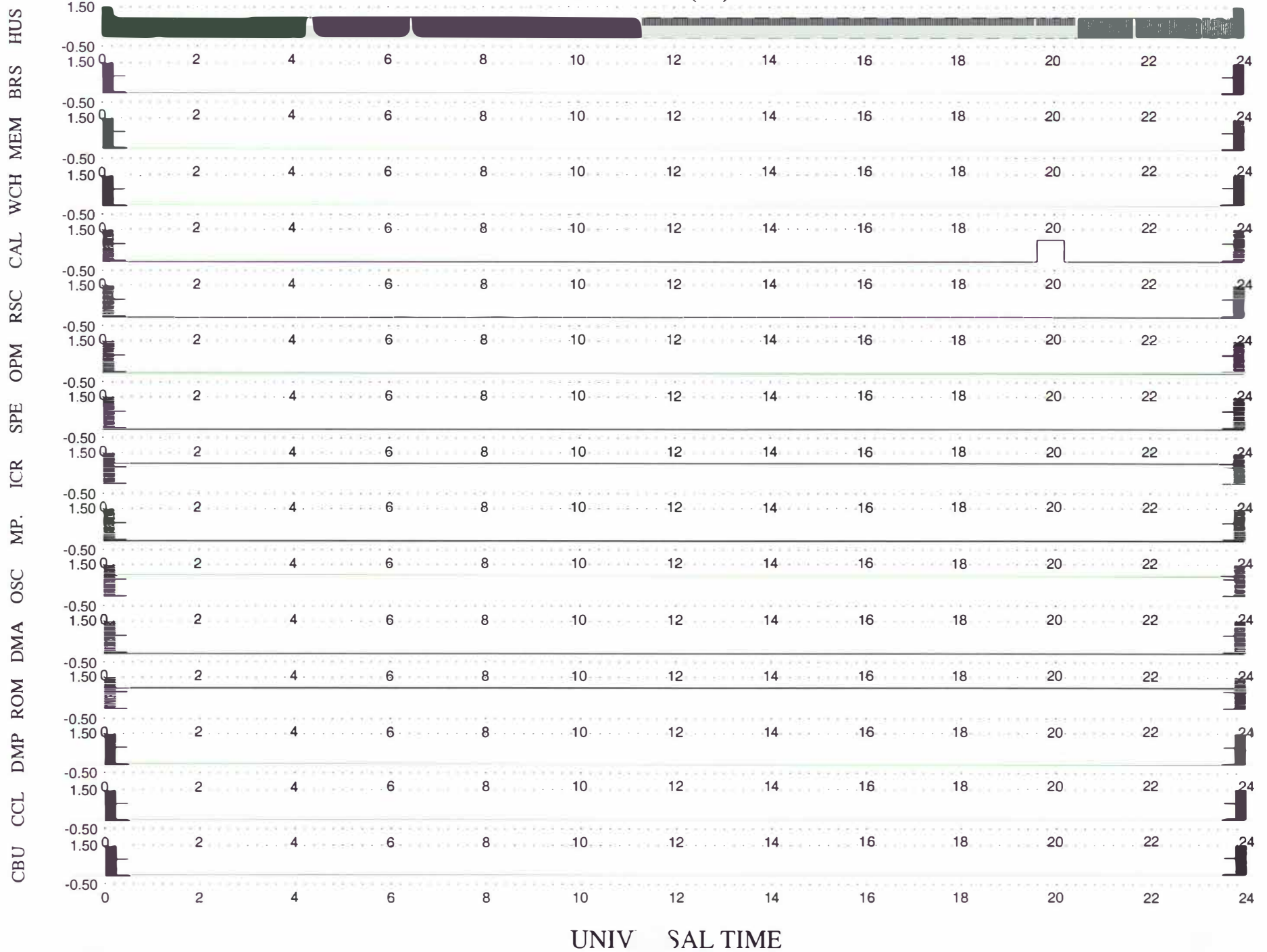
0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

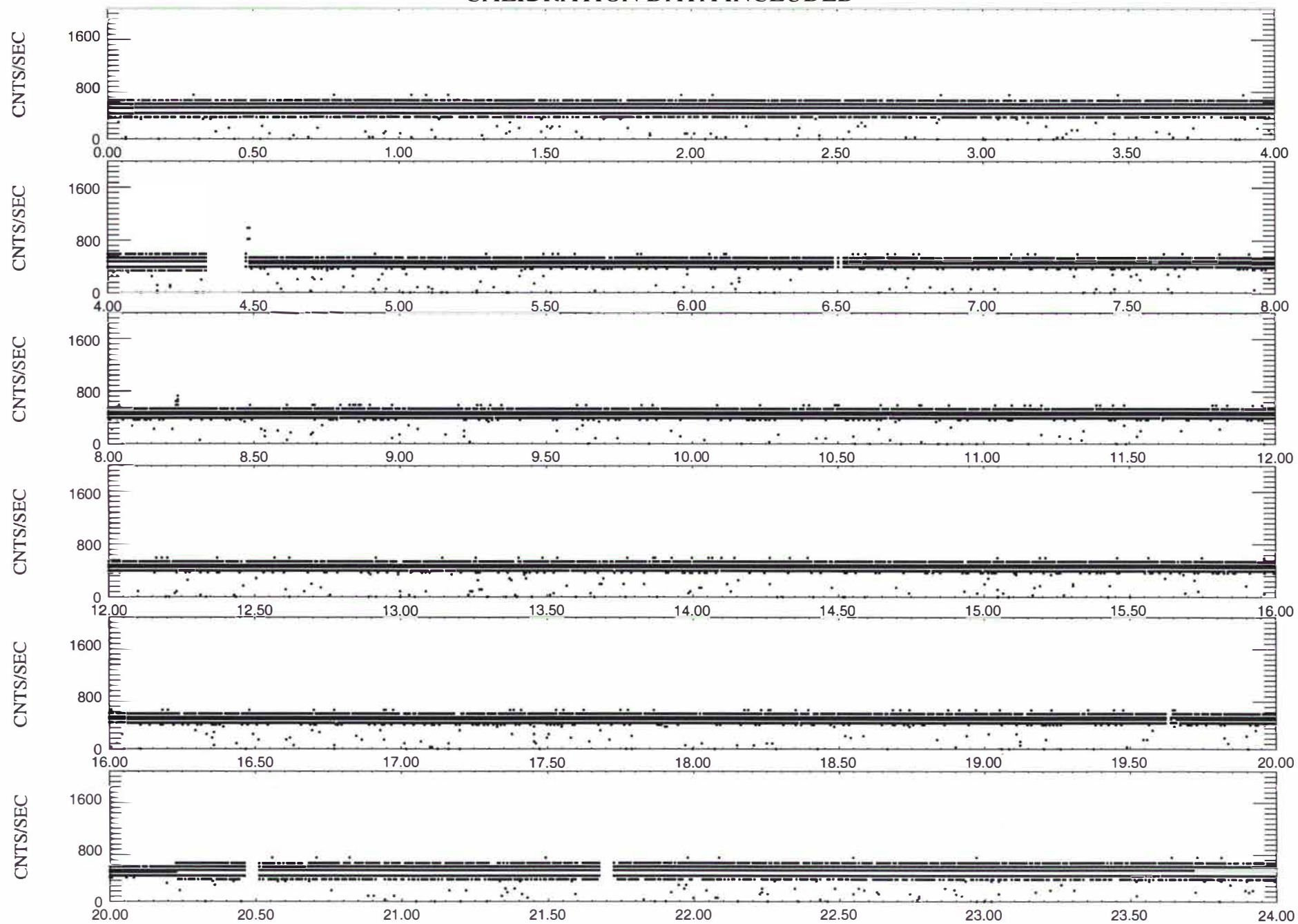
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



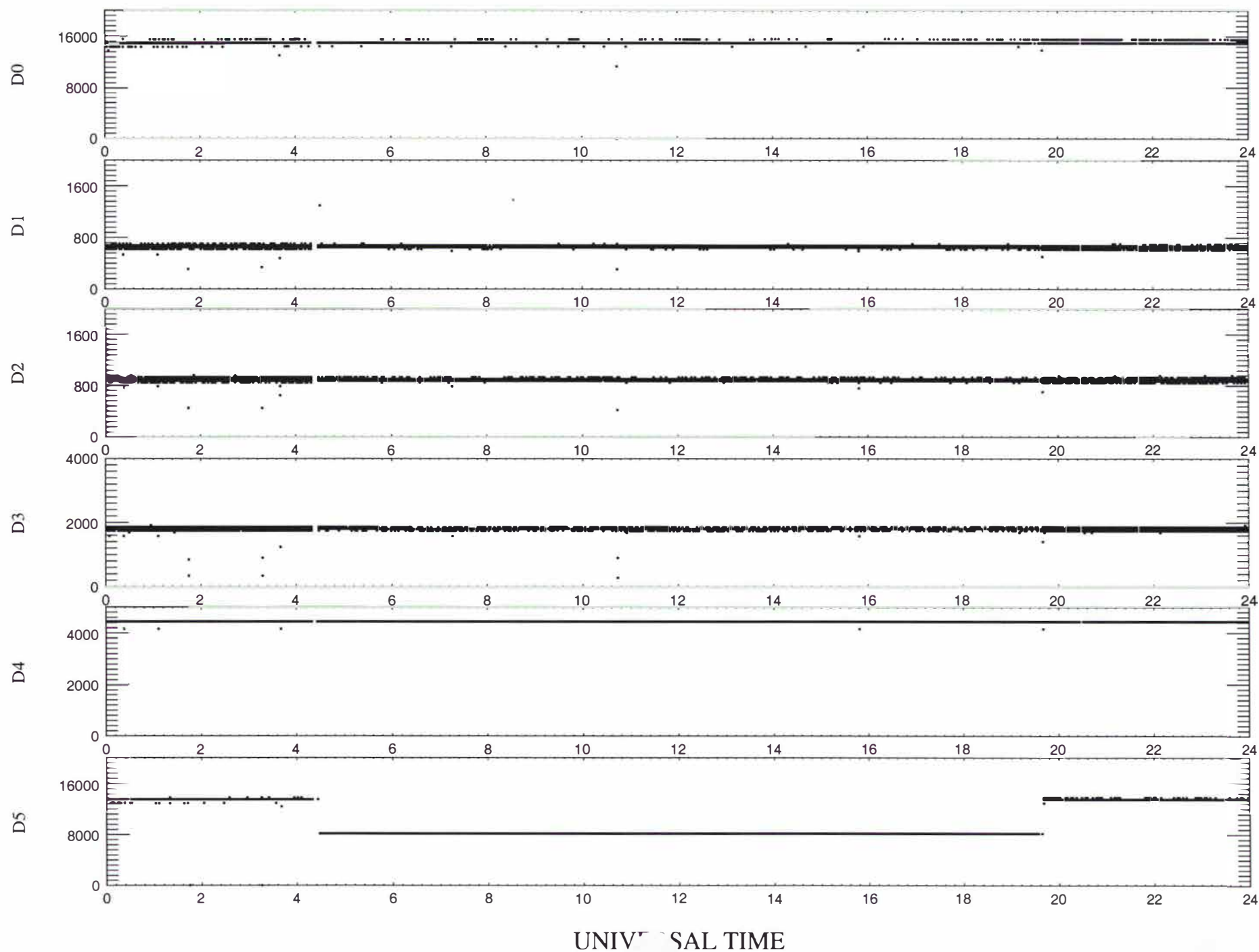
NO BURST (10)



CALIBRATION DATA INCLUDED



UNIVRSAL TIME



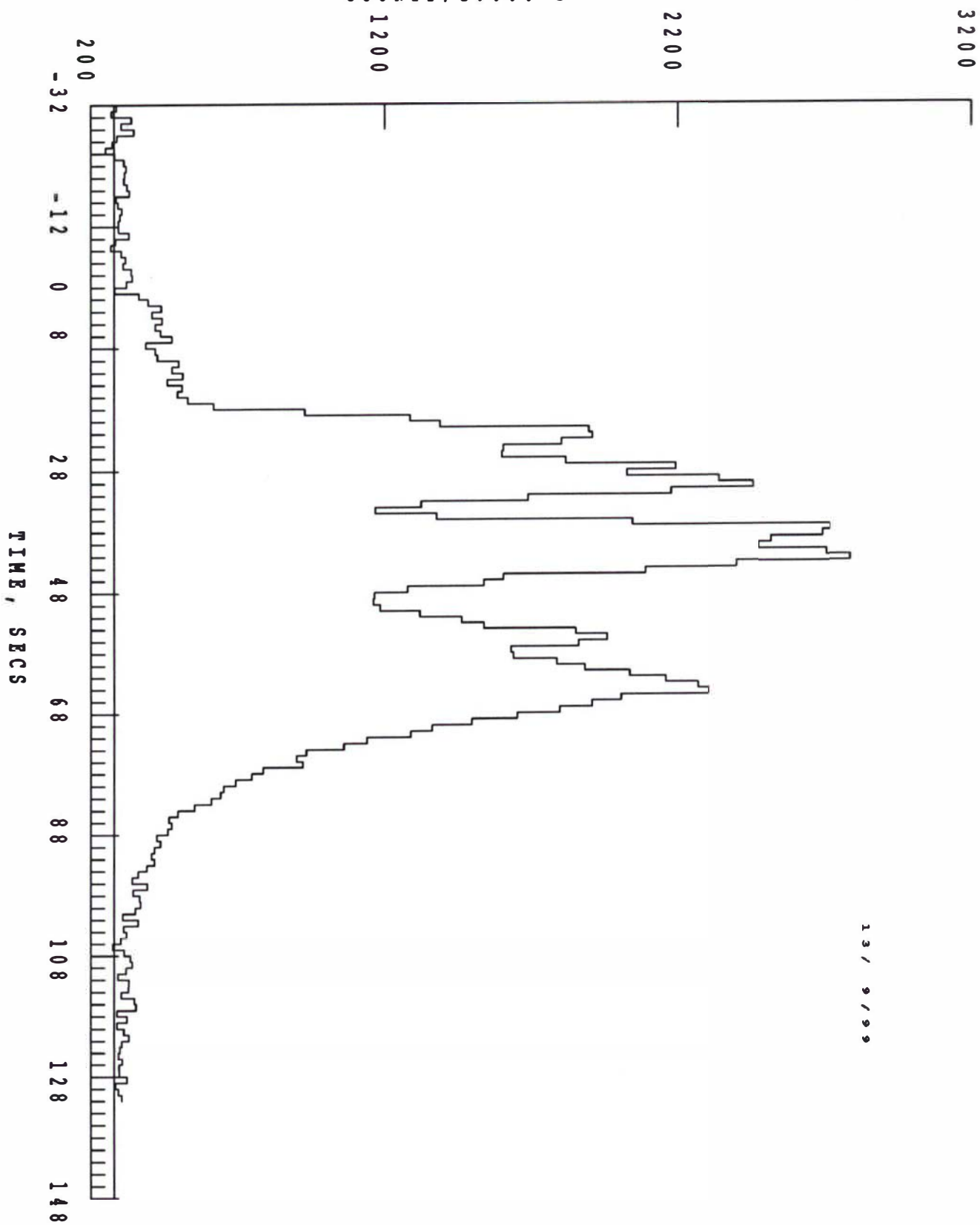
NEAR

10/09/99

26763.402

100-1000 keV

COUNTS/1.000 S



KNEAR GRS 19990910 26763

ULYSSES RT

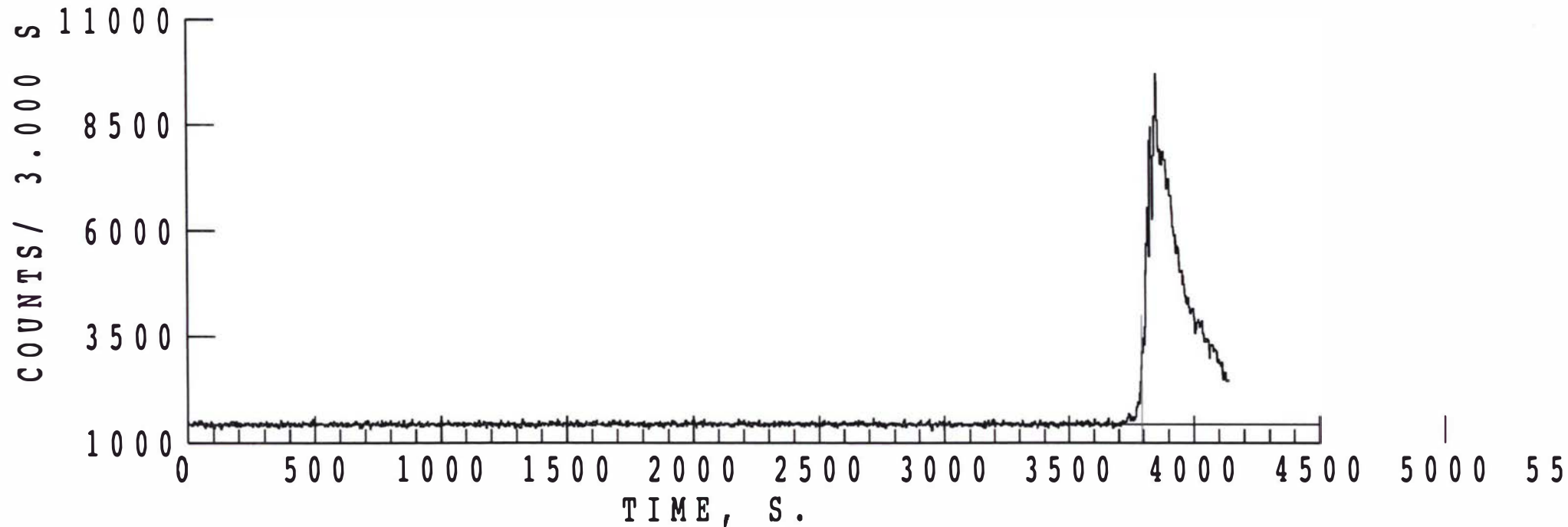
13 / 9 / 99

10 / 9 / 99 24696.164 s

0.500 S INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Mon Sep 13 11:14 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Mon, 13 Sep 1999 13:21:46 -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.: 7761

TIME: TJD=1431 SECONDS=70270

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

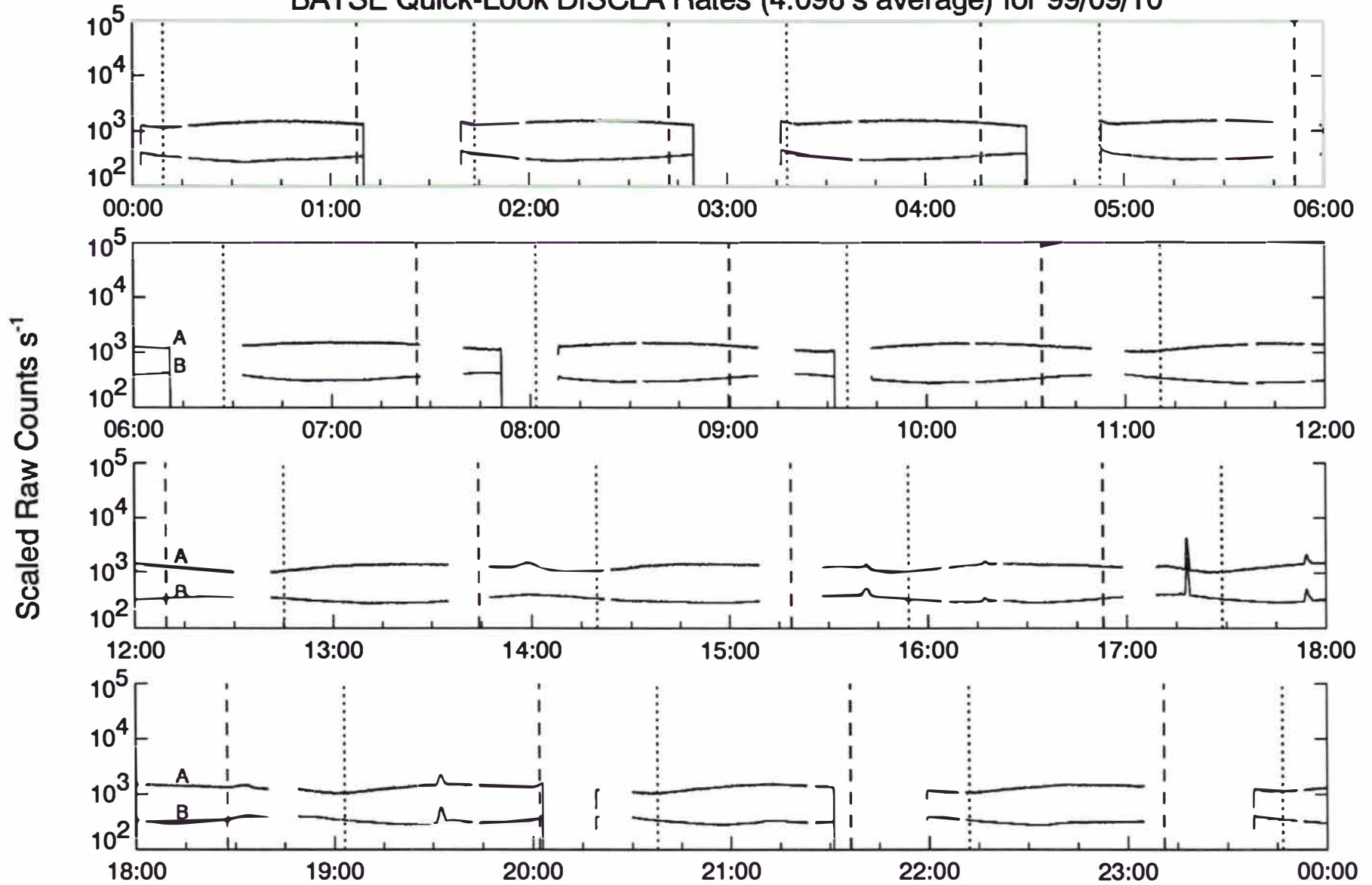
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

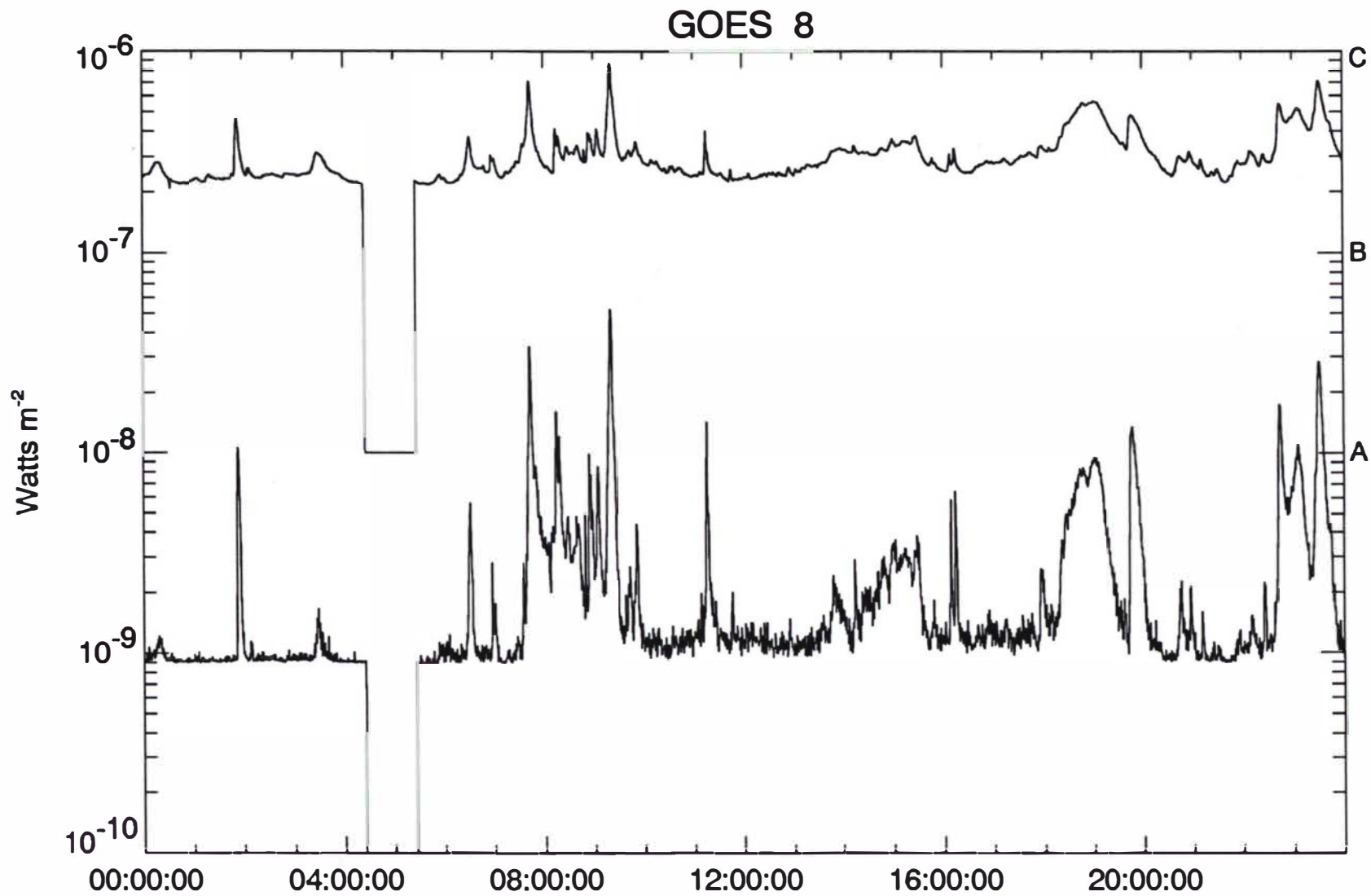
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/10



Current Time: 99/09/14, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 99/09/10, 0000:00

Plot created: 99/09/14, 1004

Channel

1 (1.0 - 8.0 Angstroms)

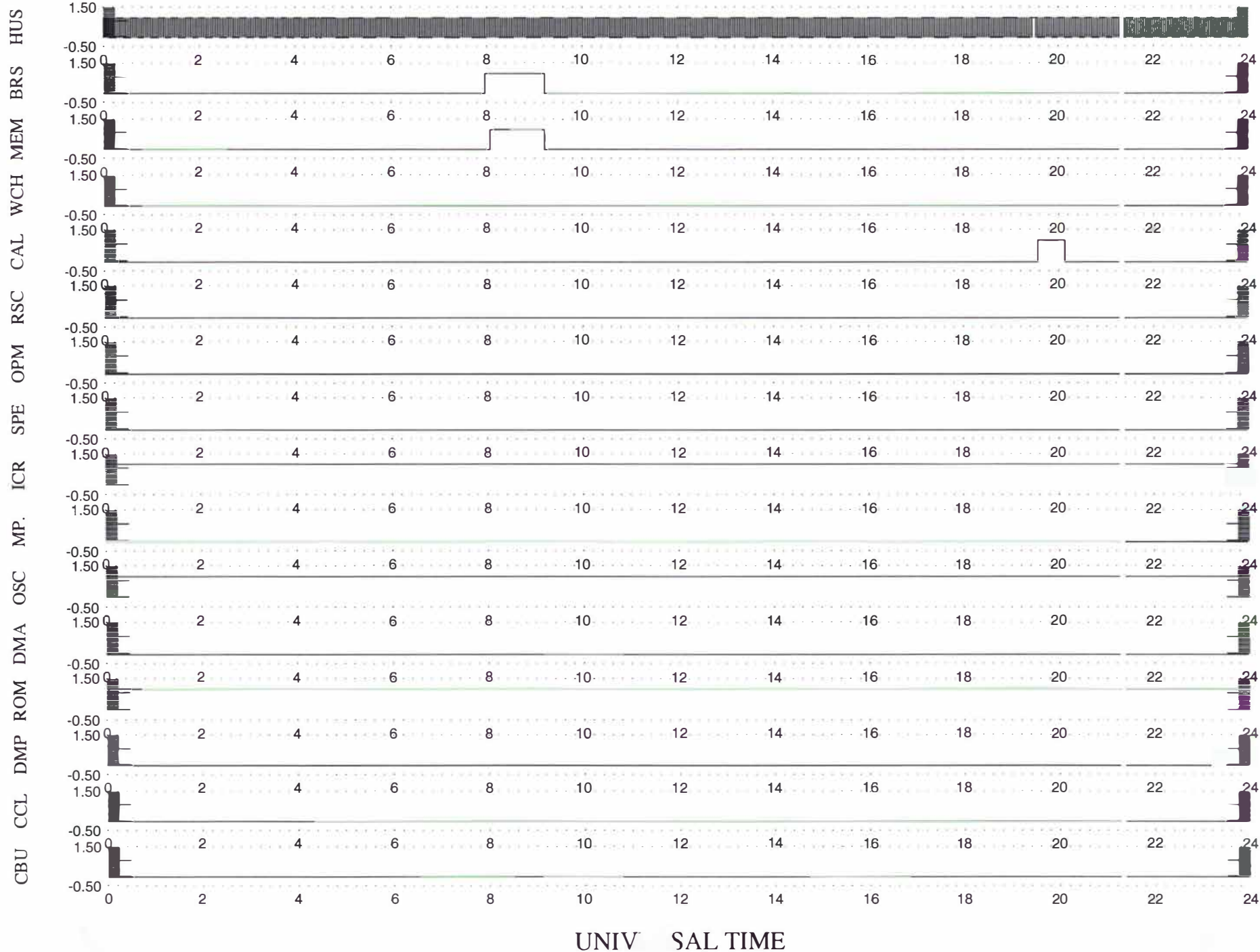
Background not subtracted

2 (0.5 - 4.0 Angstroms)

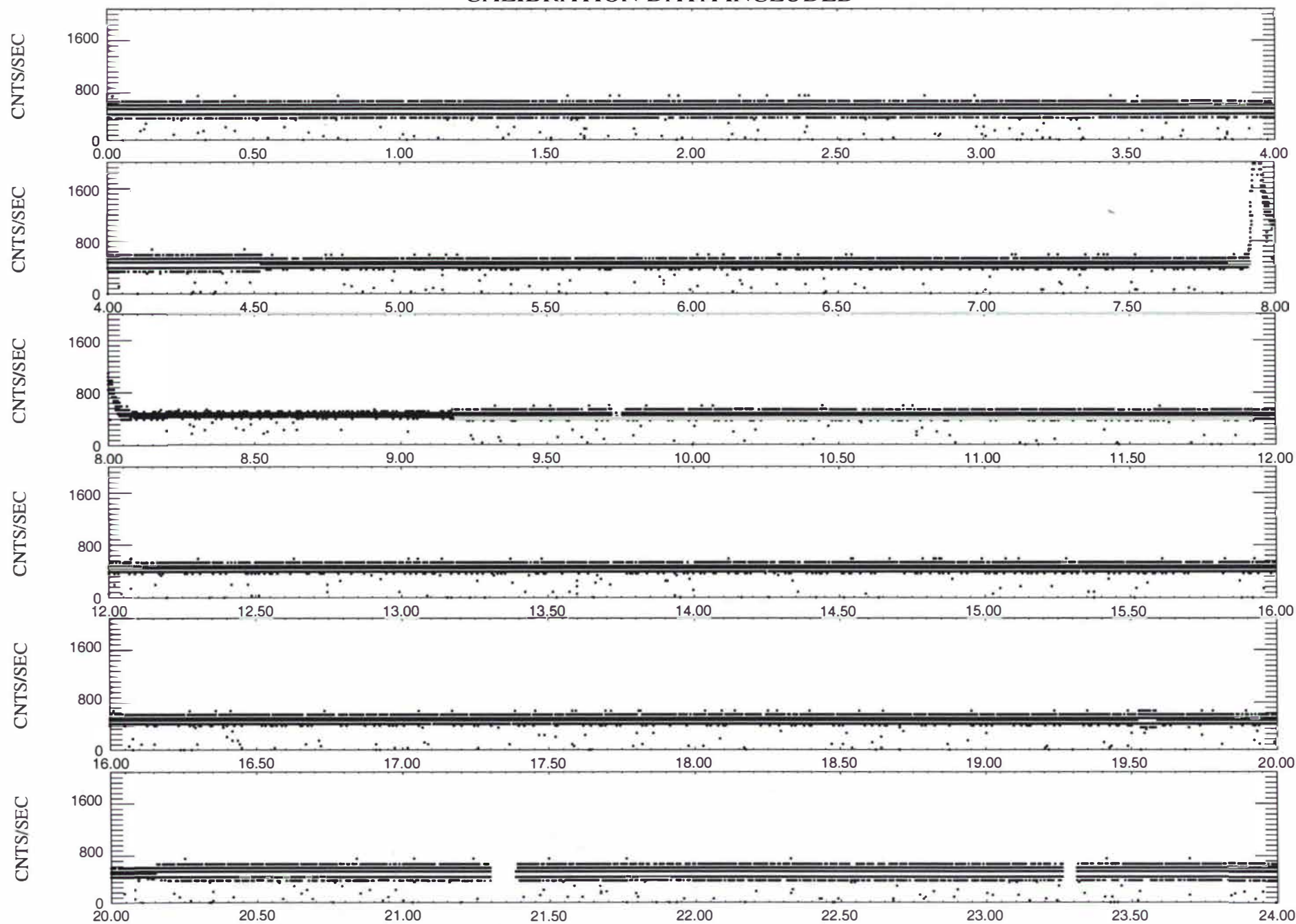
Background not subtracted

Sample average = 10

BURST NUMBER 11

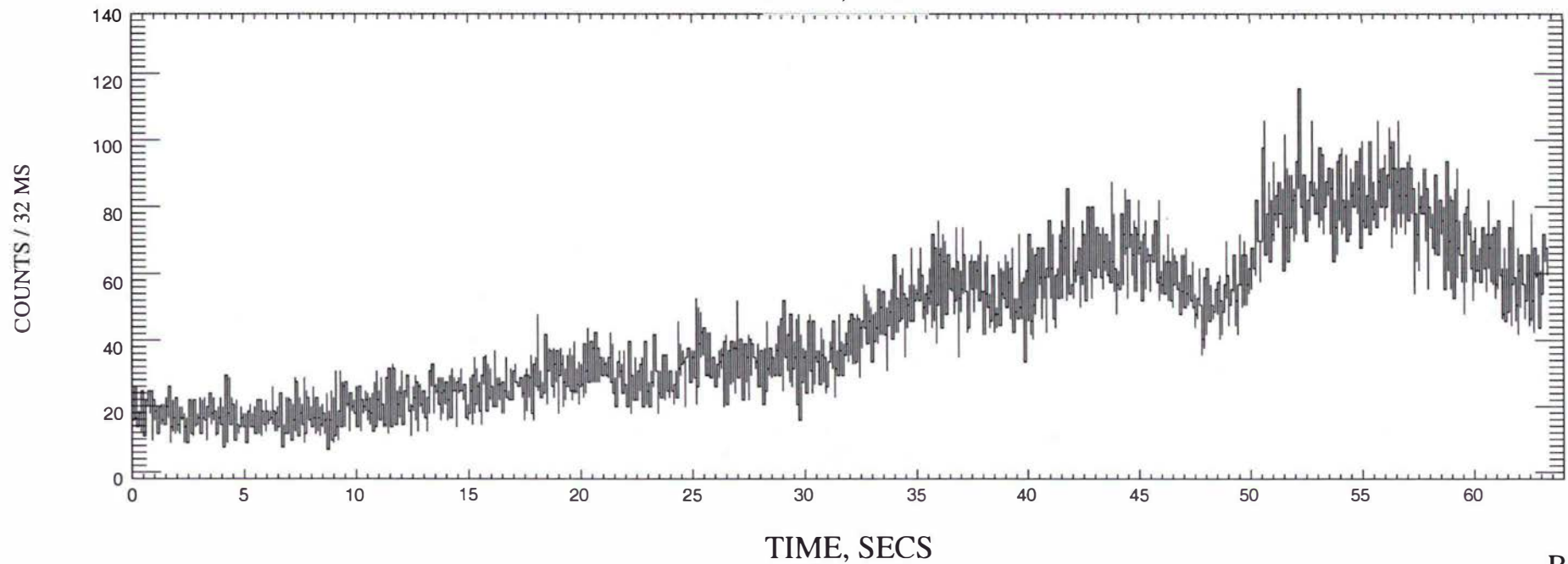
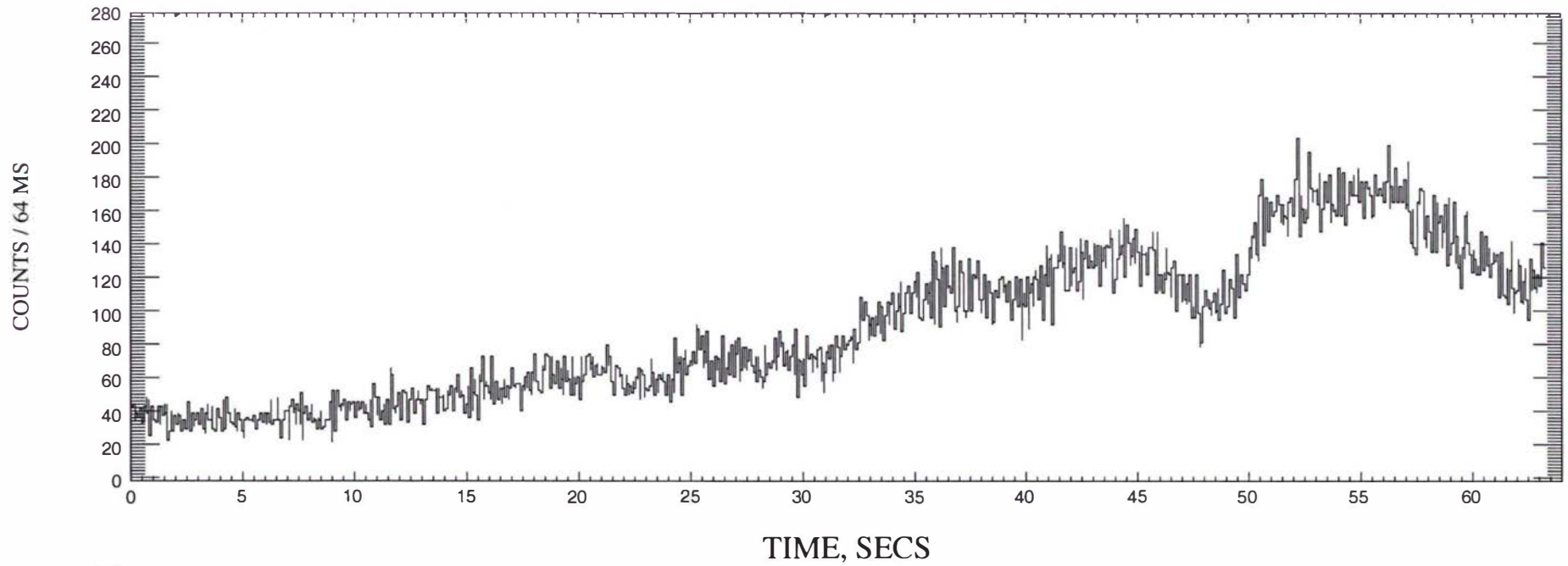


CALIBRATION DATA INCLUDED

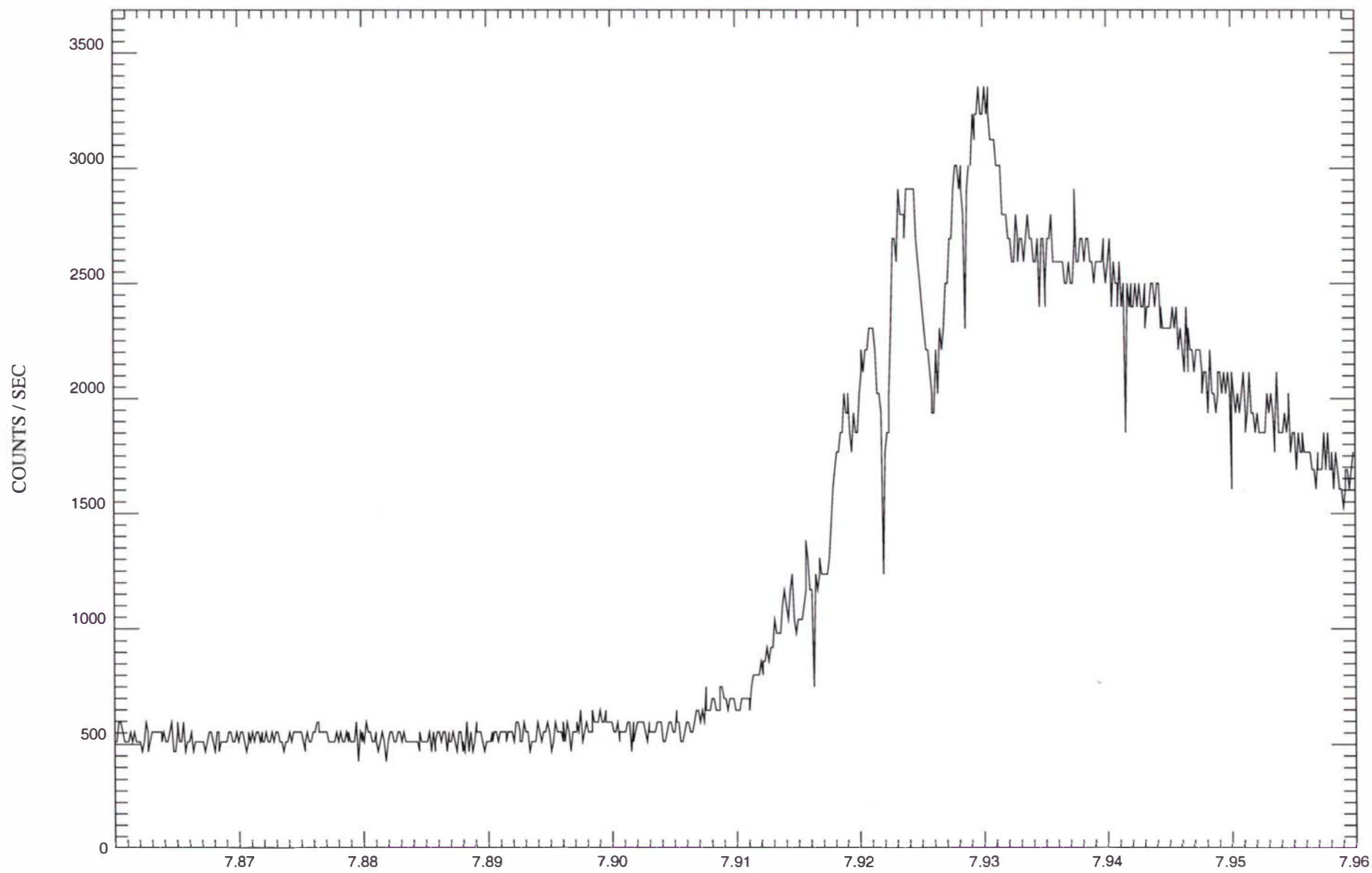


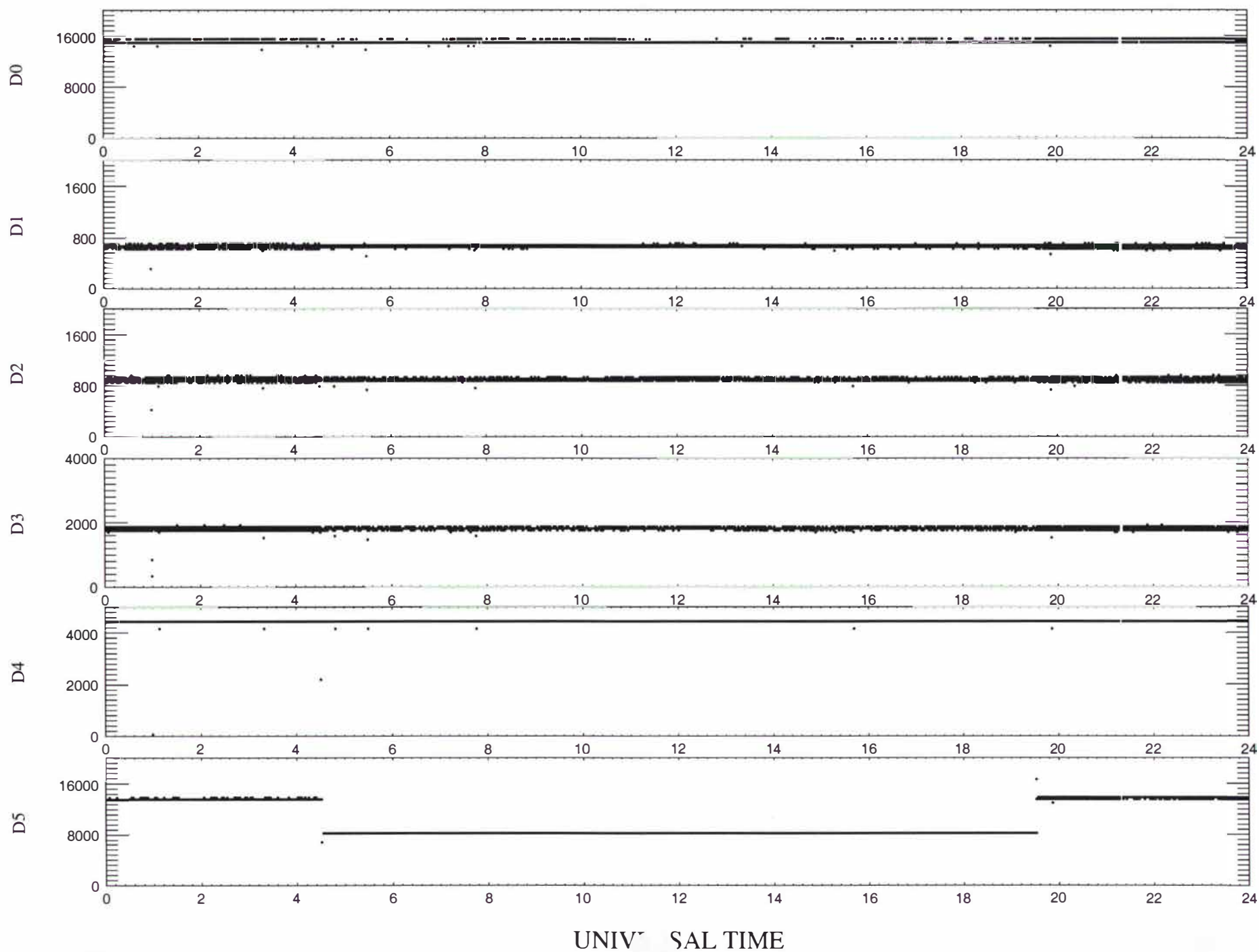
UNIVERSAL TIME

Burst Counter 11 at UT= 7.910852567885 h=28479.069 s 07:54:39.069



CALIBRATION DATA INCLUDED



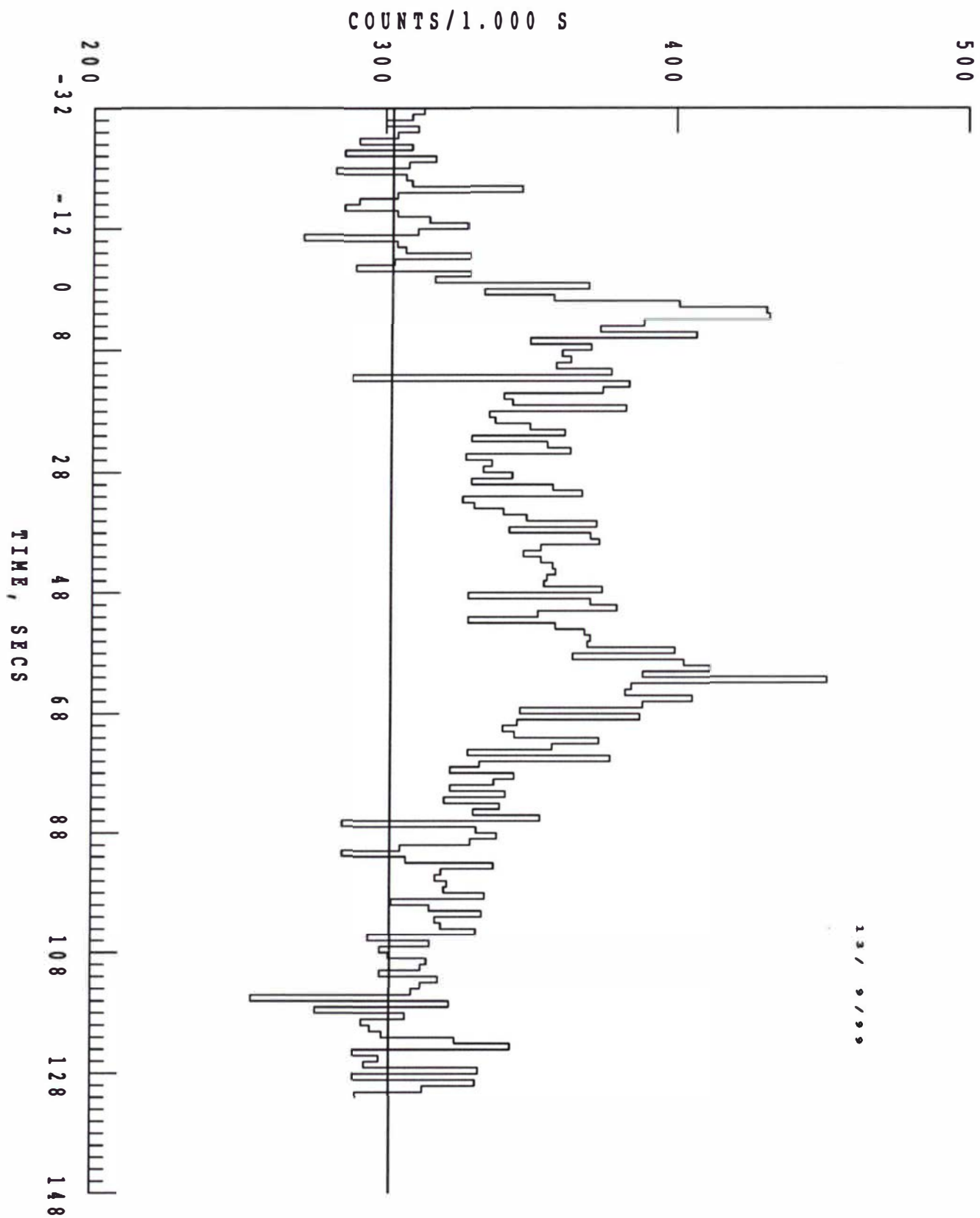


NEAR

11/09/99

77089.348

100-1000 keV



KNEAR GRS 19990911 77089

ULYSSES RT

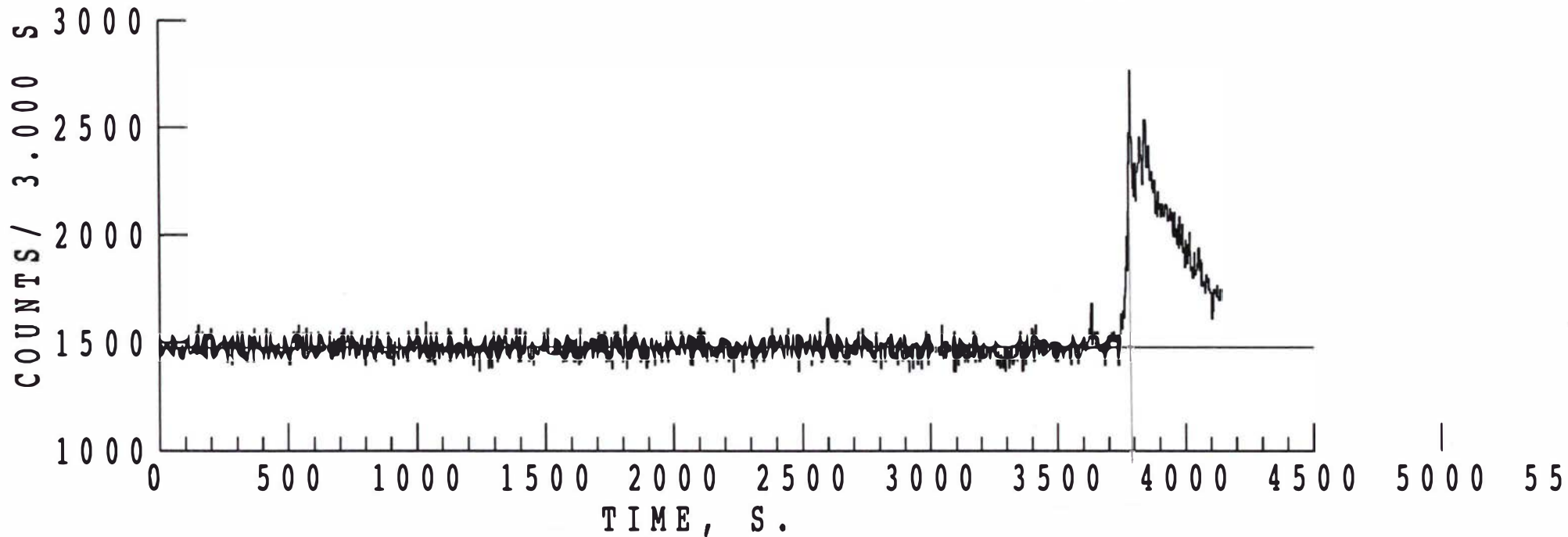
13 / 9 / 99

11 / 9 / 99 75024.047 s

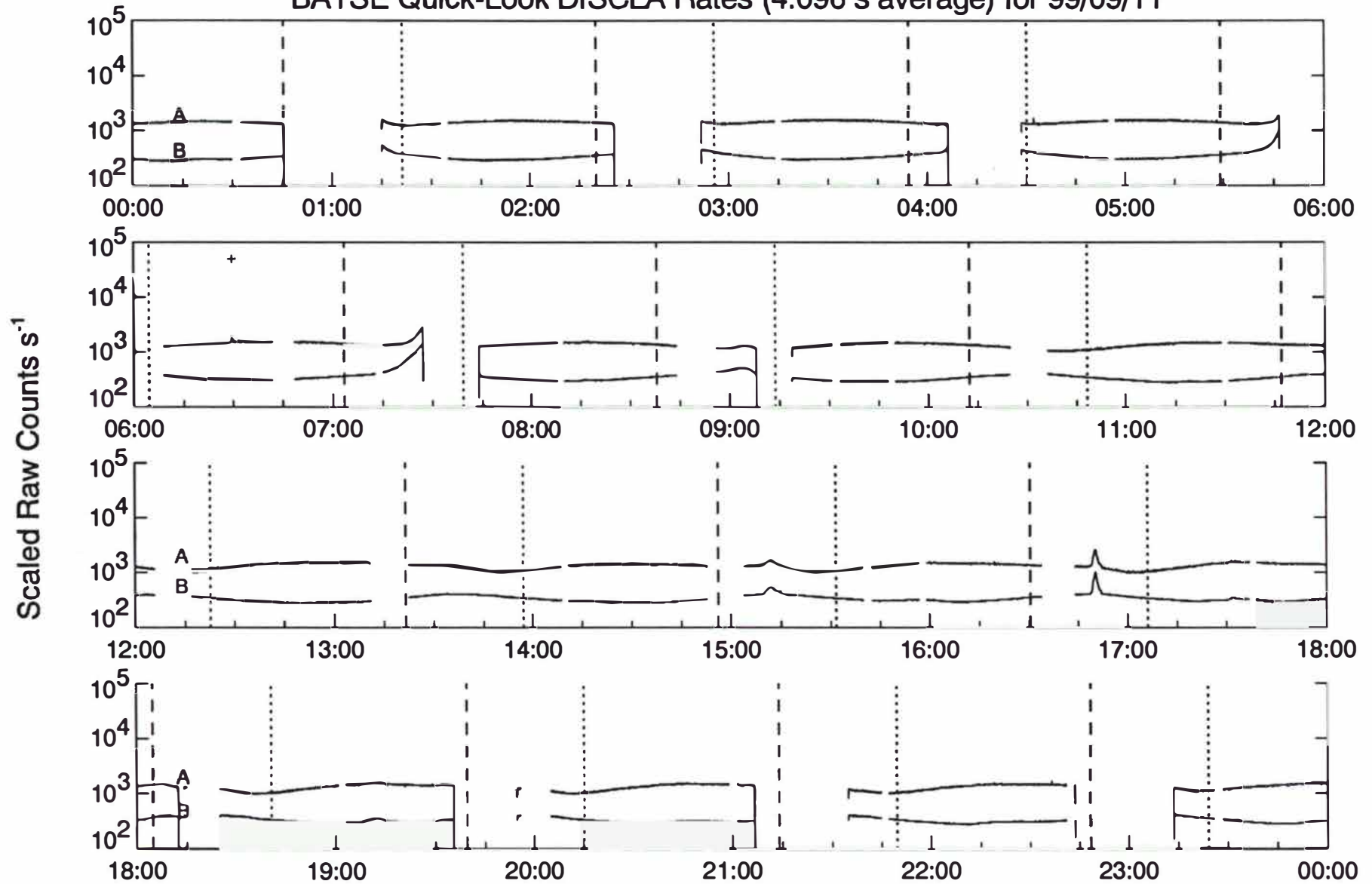
0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/11



Current Time: 99/09/15, 1005 EDT

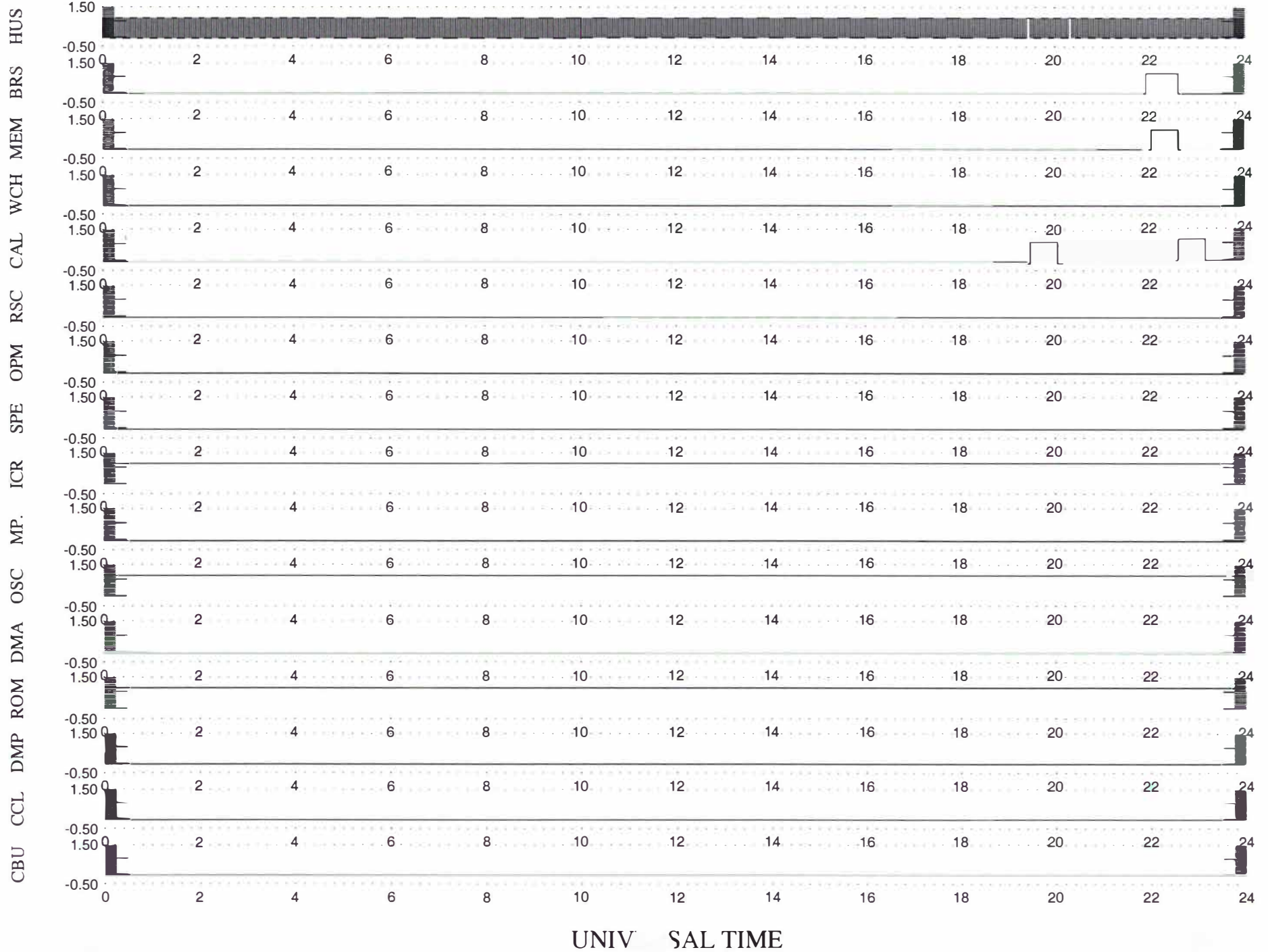
A: Channel 0 Most Sunward LAD

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

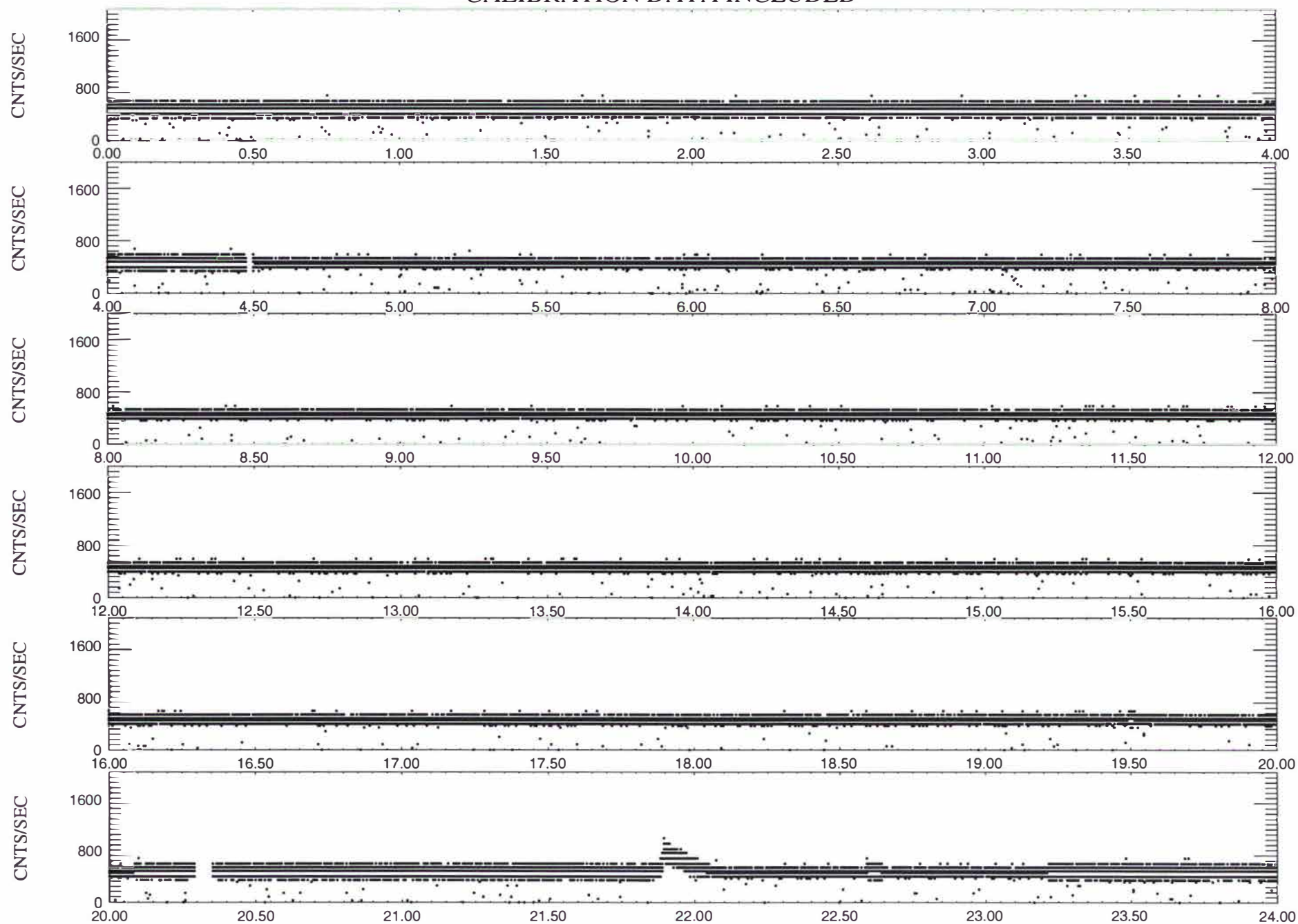
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

BURST NUMBER 12

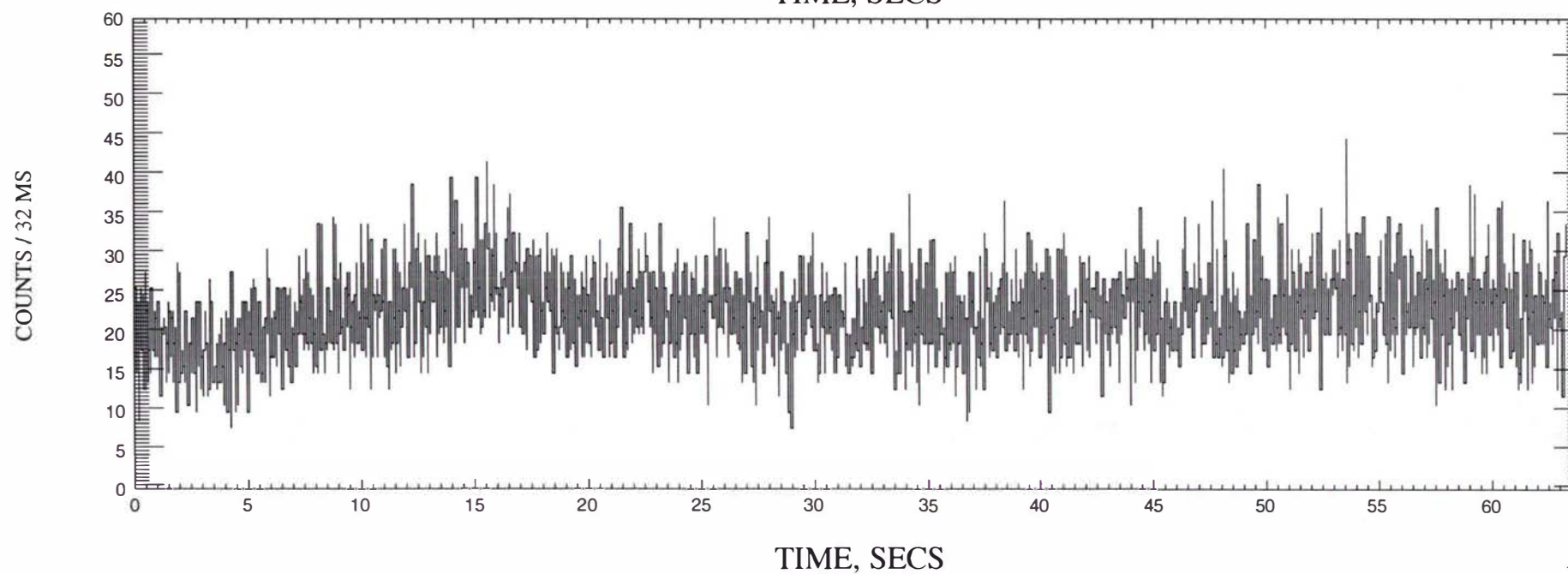
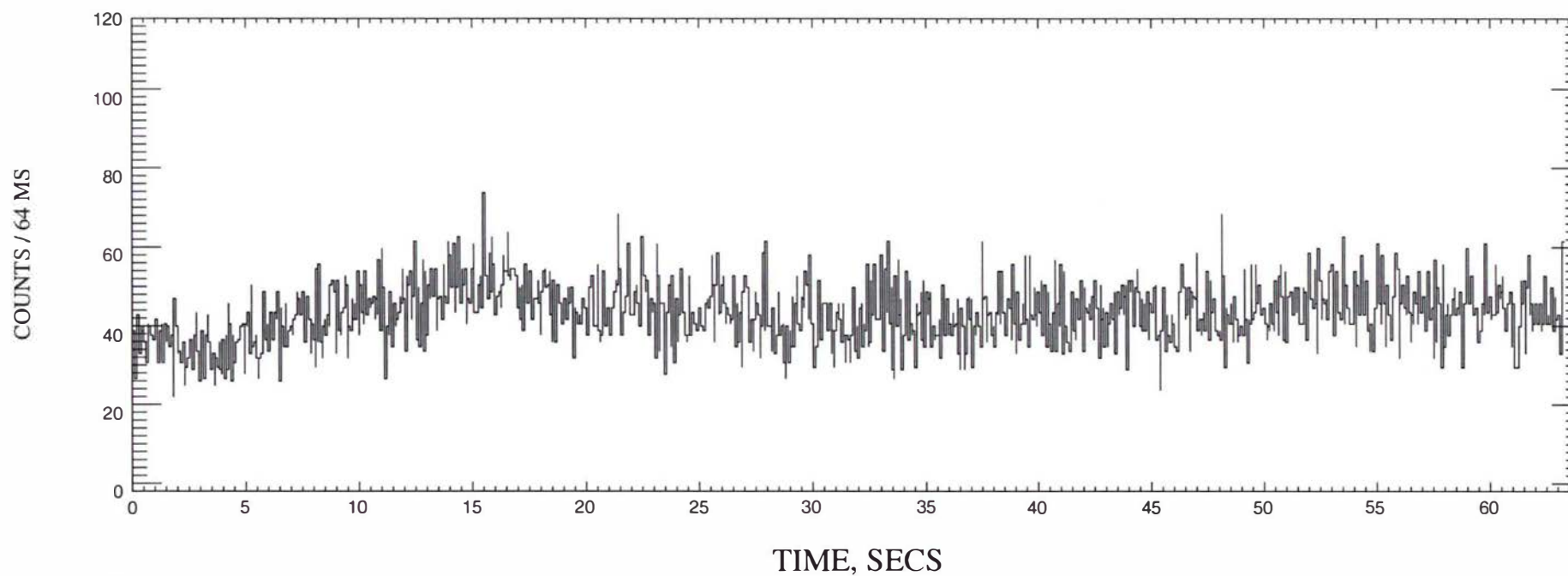


CALIBRATION DATA INCLUDED

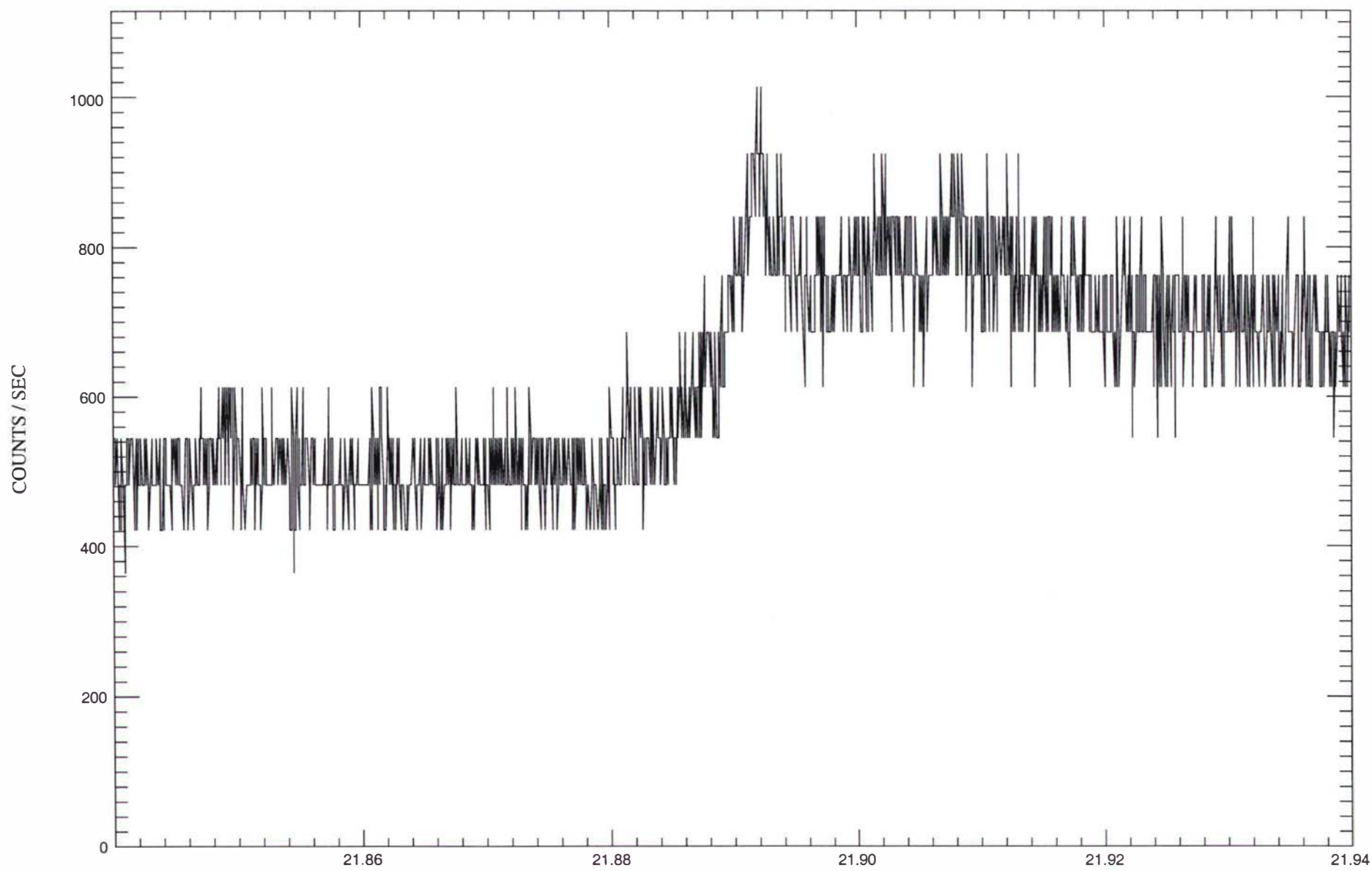


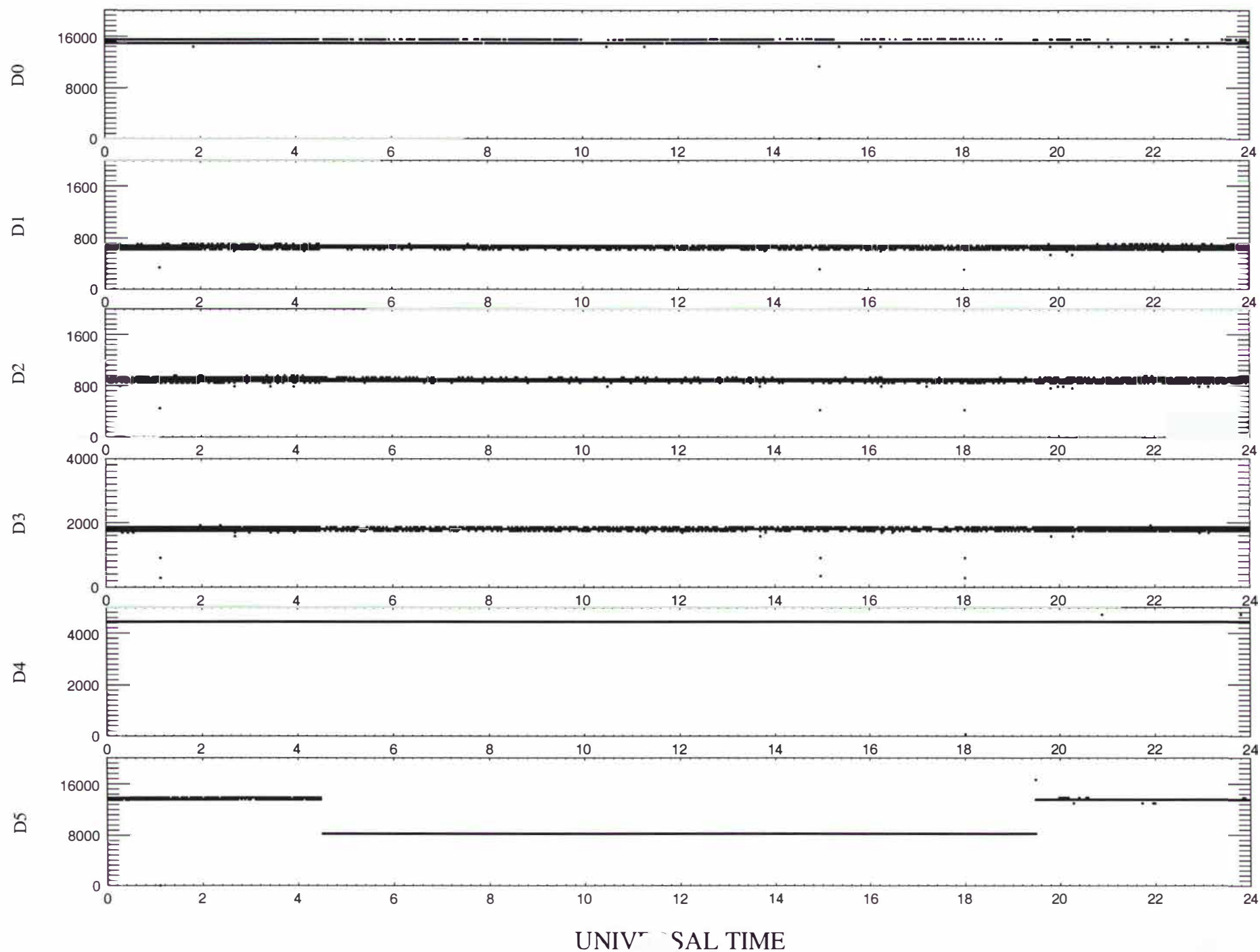
UNIV SAL TIME

Burst Counter 12 at UT=21.889816508823 h=78803.339 s 21:53:23.339



CALIBRATION DATA INCLUDED



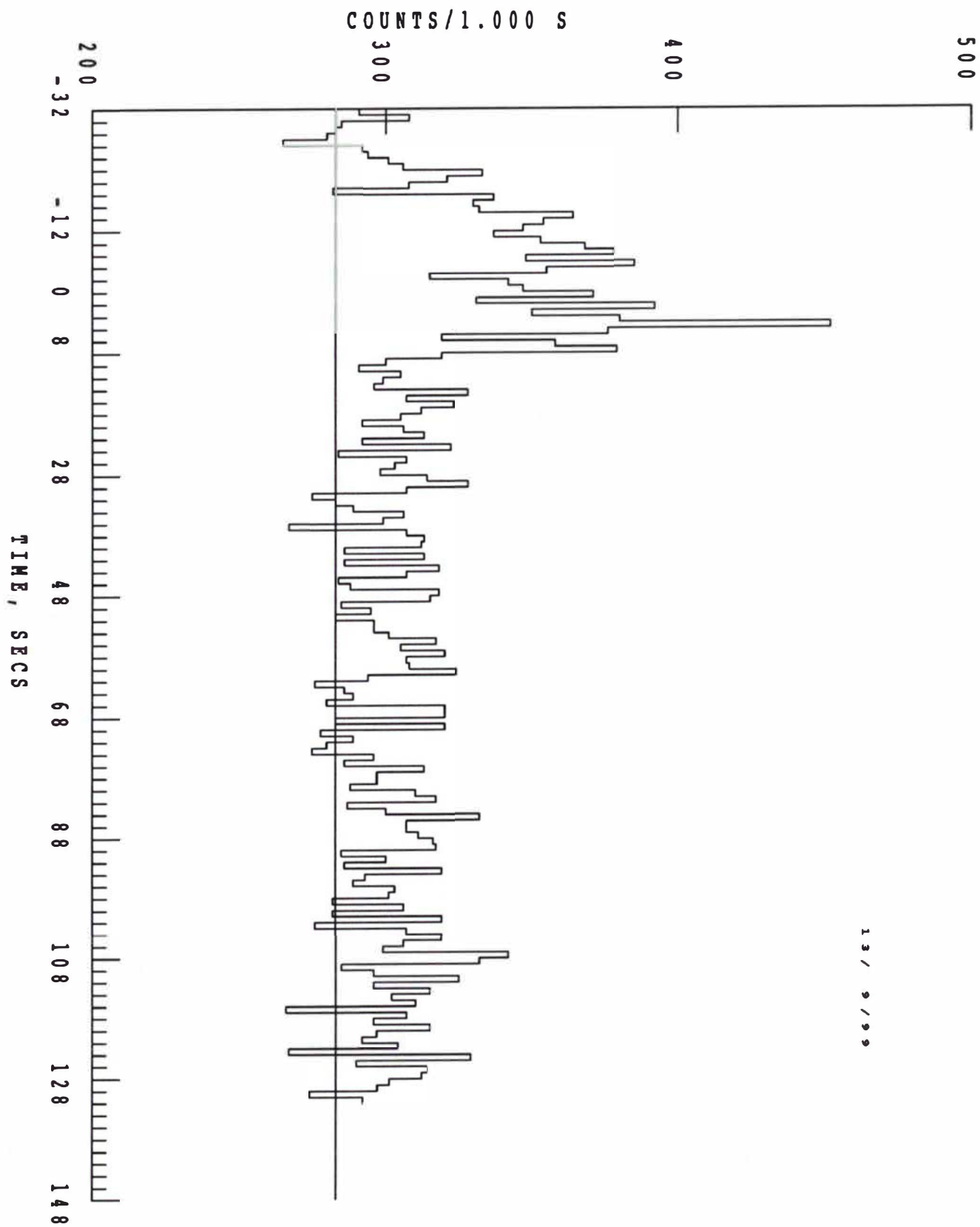


NEAR

12/09/99

19068.337

100-1000 keV



KNEAR GRS 19990912 19068

ULYSSES RT

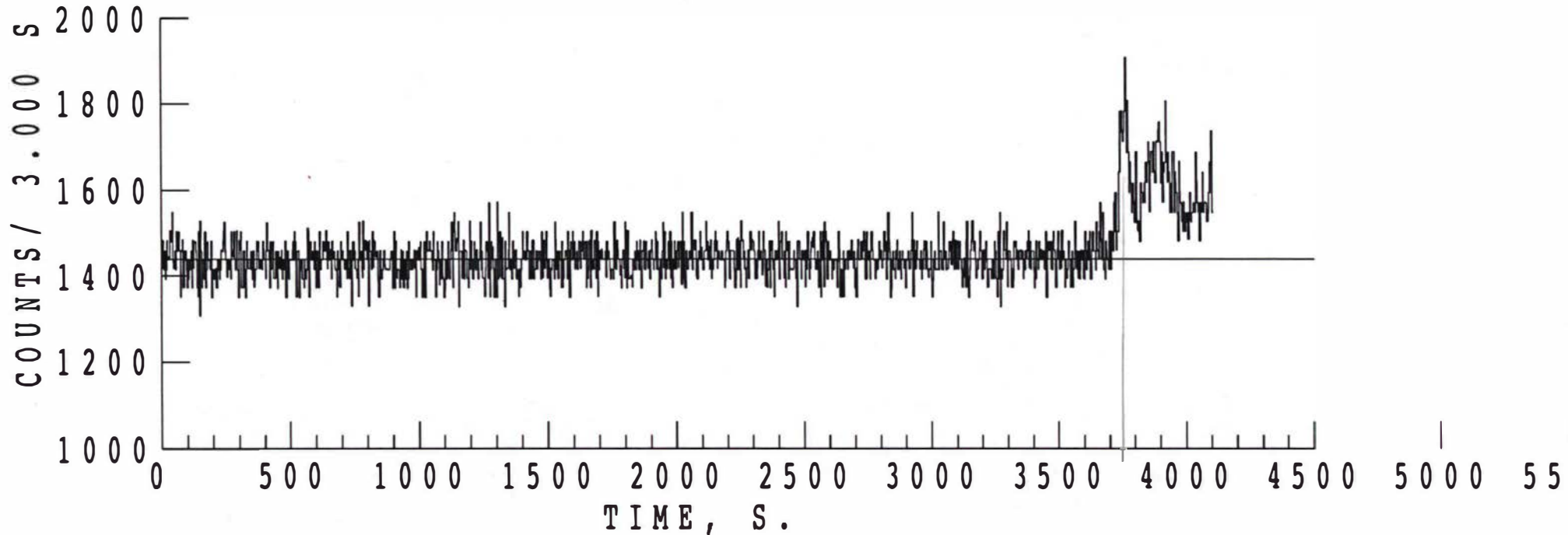
22/02/00

12/09/99 17028.336 s

0.500 S INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Mon Sep 20 12:40 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 20 Sep 1999 14:45:44 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
>: SAHI@fender.msfc.nasa.gov
Subject: BATSE Burst 7762

BATSEARCH PROGRAM

BATSE BURST # 7762
EVENT OF 1999 SEP 12 DAY OF YEAR=255
EVENT CROSSING TIME AT BATSE : 84444. S. OR 23:27:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 85.000 -18.000
BATSE PEAK COUNTING RATE: 0 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 9/1999 IS:
RA= 156.877 DEC= -14.097 DIST= 5.490 AU
BATSE-ULYSSES DISTANCE = 821250292. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -992.19 SECS.
CROSSING TIME AT ULYSSES IS 83452. S. OR 23:10:51 +/- 478.24 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 9/1999 IS:
RA= 69.376 DEC= 19.751 DIST= 0.783 AU
MARS-BATSE DISTANCE = 117144440. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -296.03 SECS.
CROSSING TIME AT MARS IS 84148. S. OR 23:22:27 +/- 39.79 SECONDS

BATSE BURST TRIGGER

NO.: 7762

TIME: TJD=1433 SECONDS=84444

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=135.6 AZIMUTH=259.6 ERROR=2.0 DEGREES

COMMENTS:

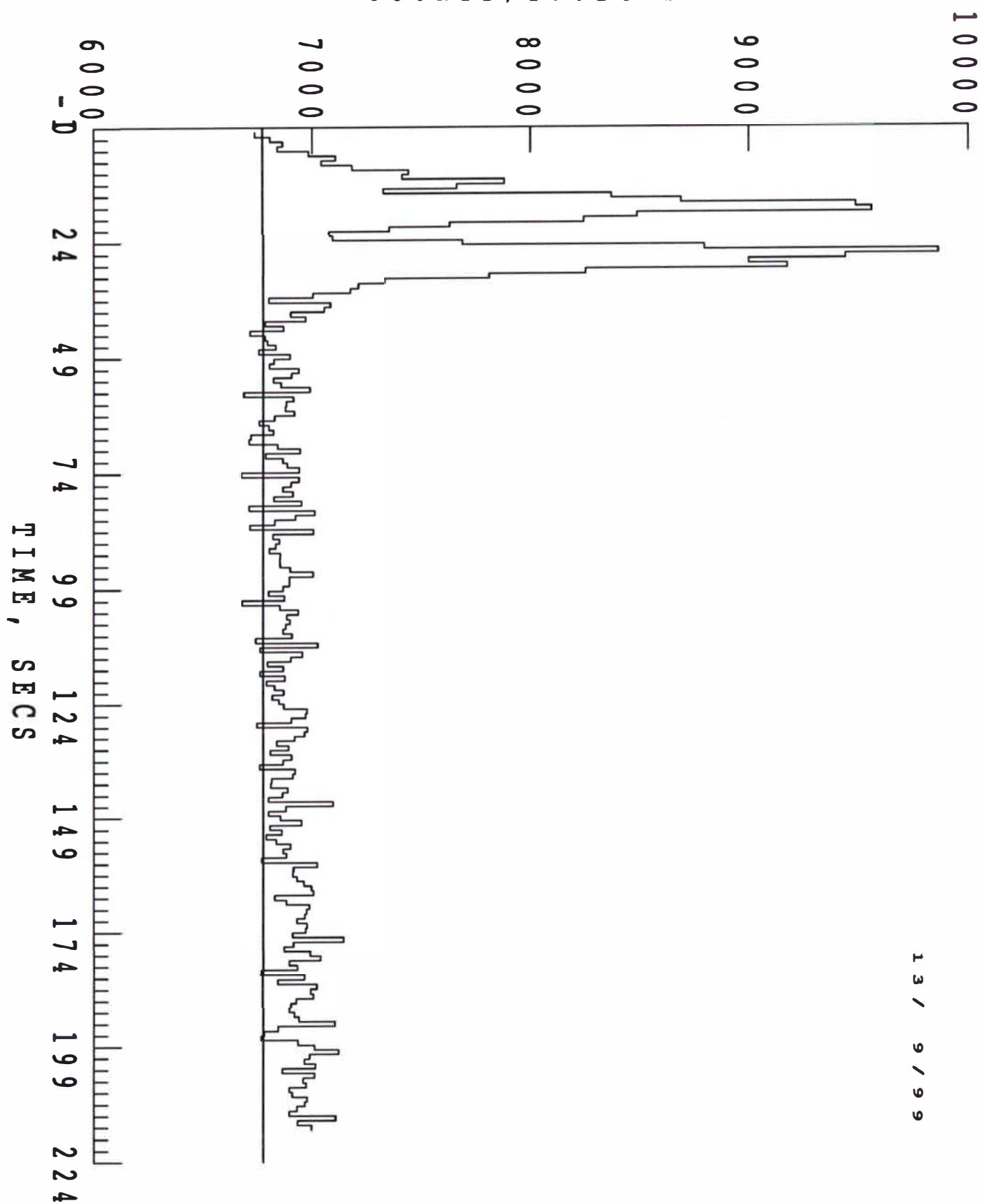
GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR.35 S, STARTS AT T-8 S, MAX. AT T+5 S.
MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7762	990912	11433	84444	6000	085	-18	35

BACODINE 7762 12/09/99 84433.657

25- 100 keV

COUNTS/1.024 S



13 / 9 / 99

BATSE BURST# 7762

ULYSSES RT

14 / 9 / 99

12 / 9 / 99 82980.008 s

0.250 S INTERVALS REGROUPED BY 3

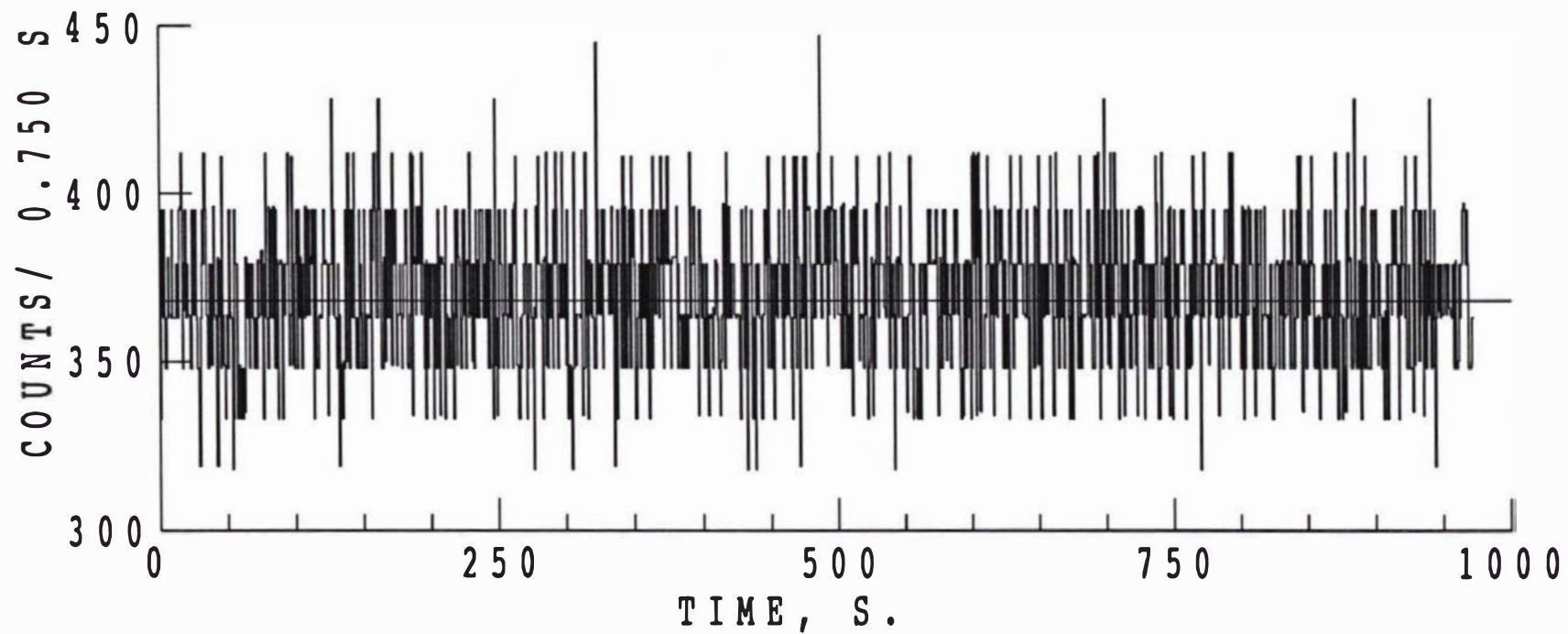
0 - 0 keV

N= 10 M= 10

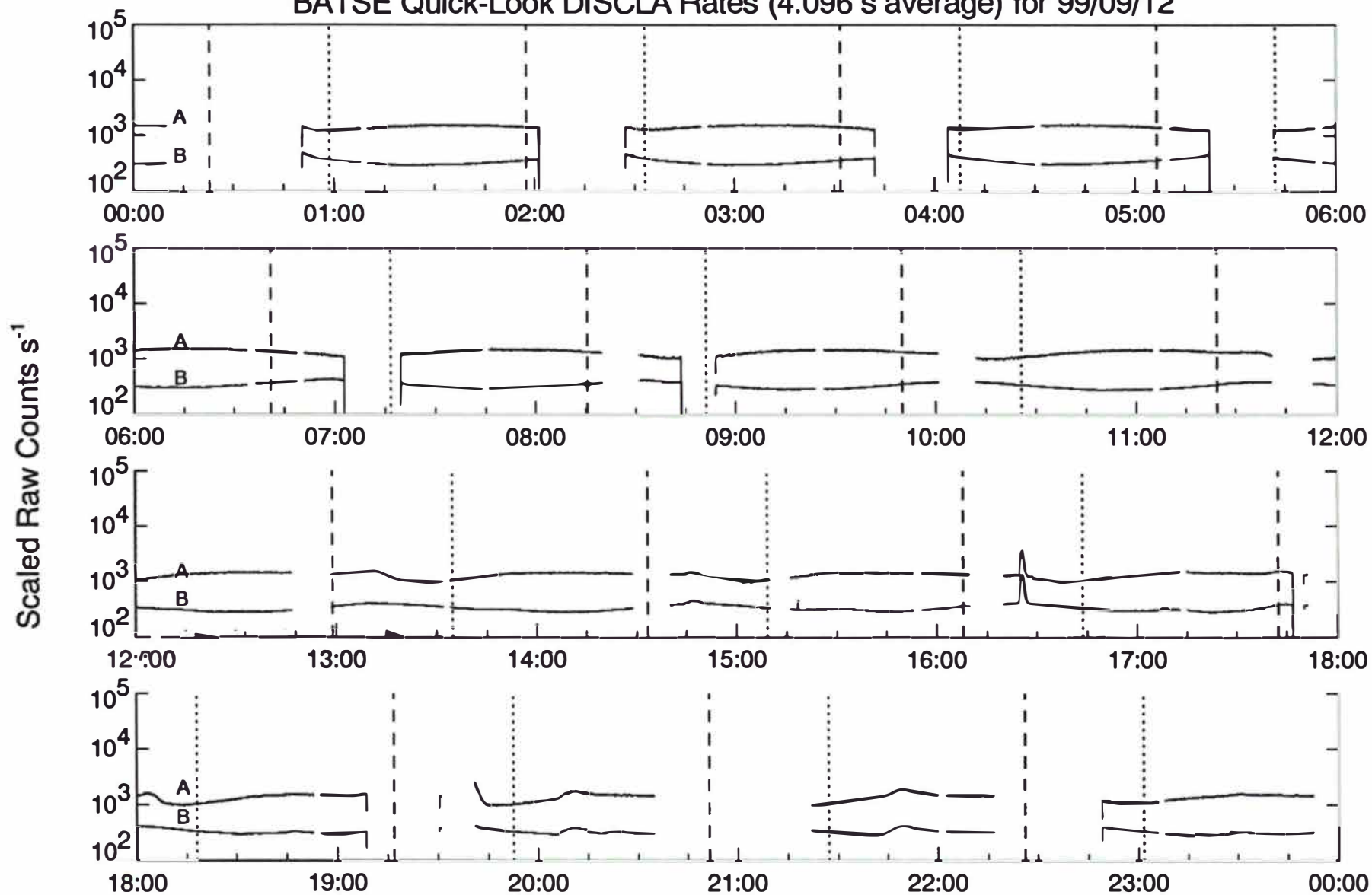
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/12



Current Time: 99/09/16, 1005 EDT

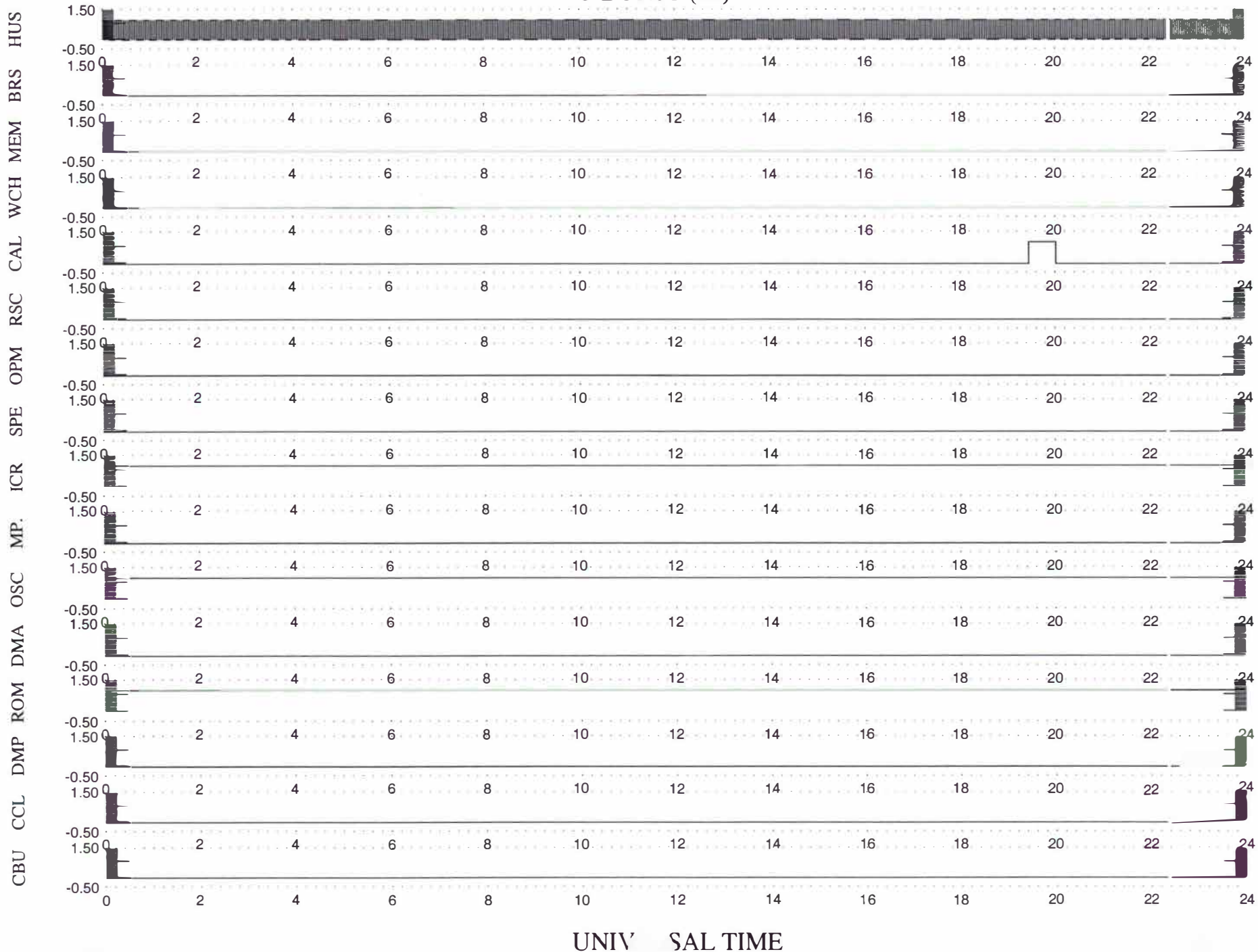
A: Channel 0 Most Sunward LAD

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

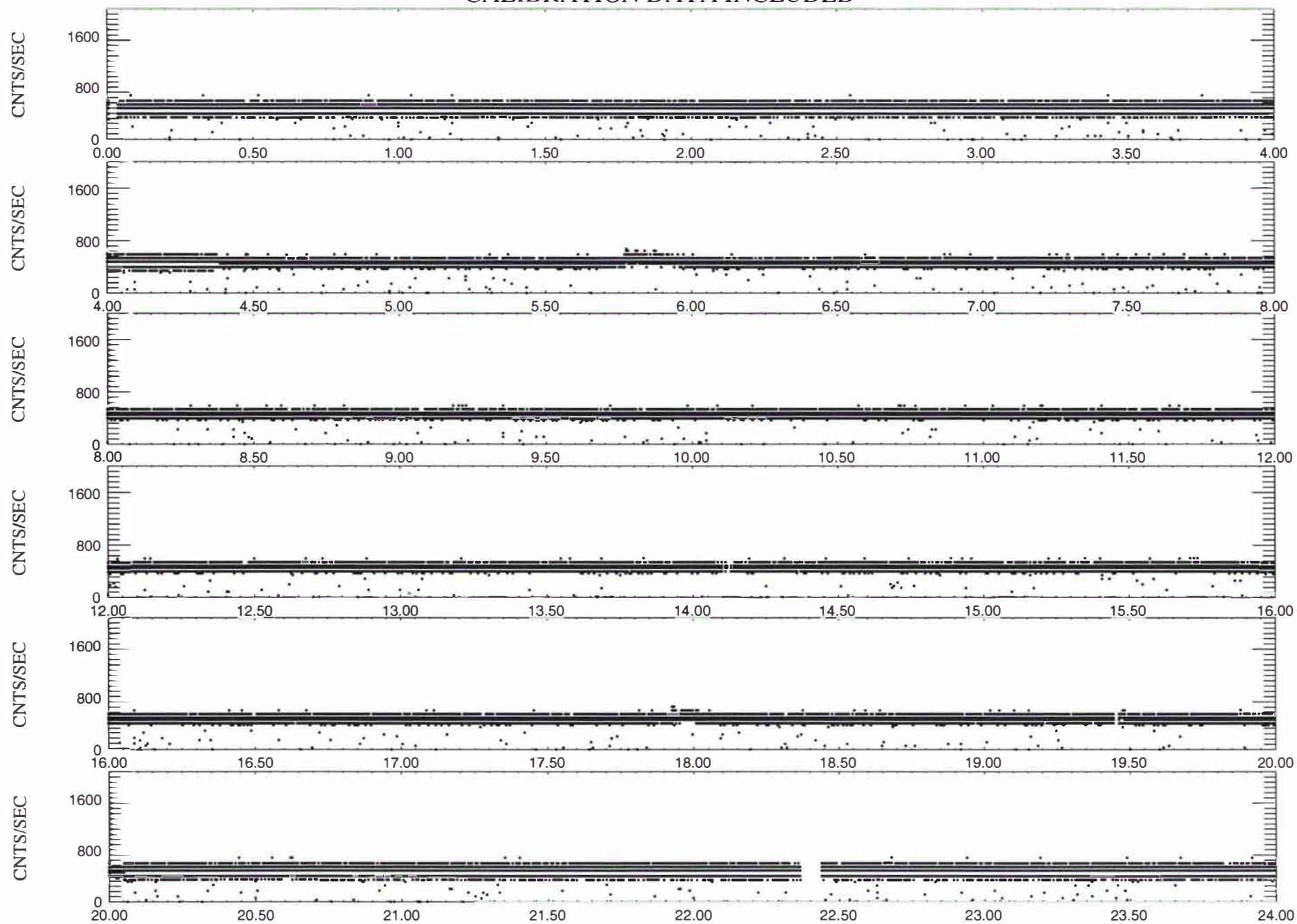
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

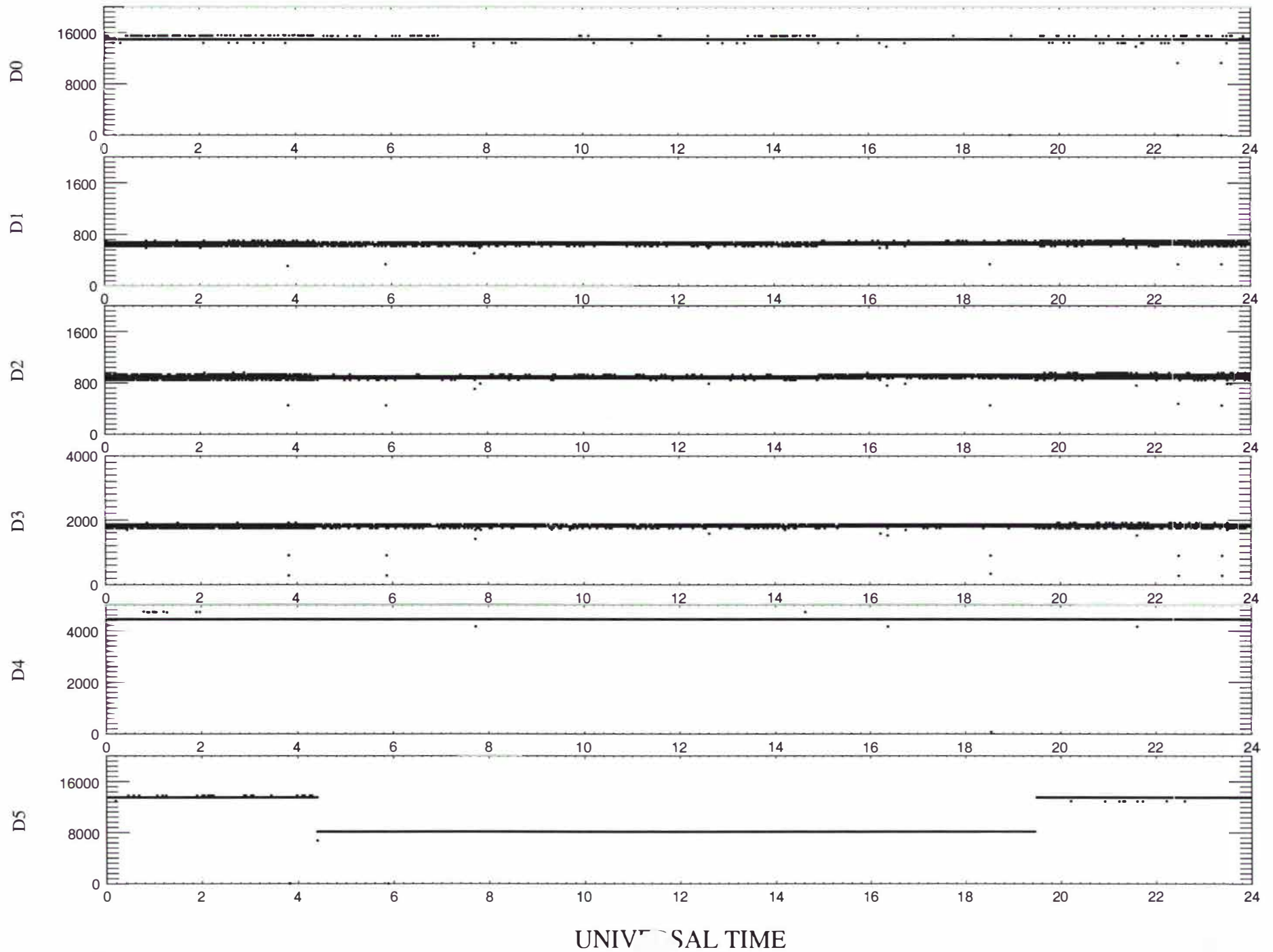
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Date: Jul 3 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data - *corrupted - use T₀*

- ☐ 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 KONUS2

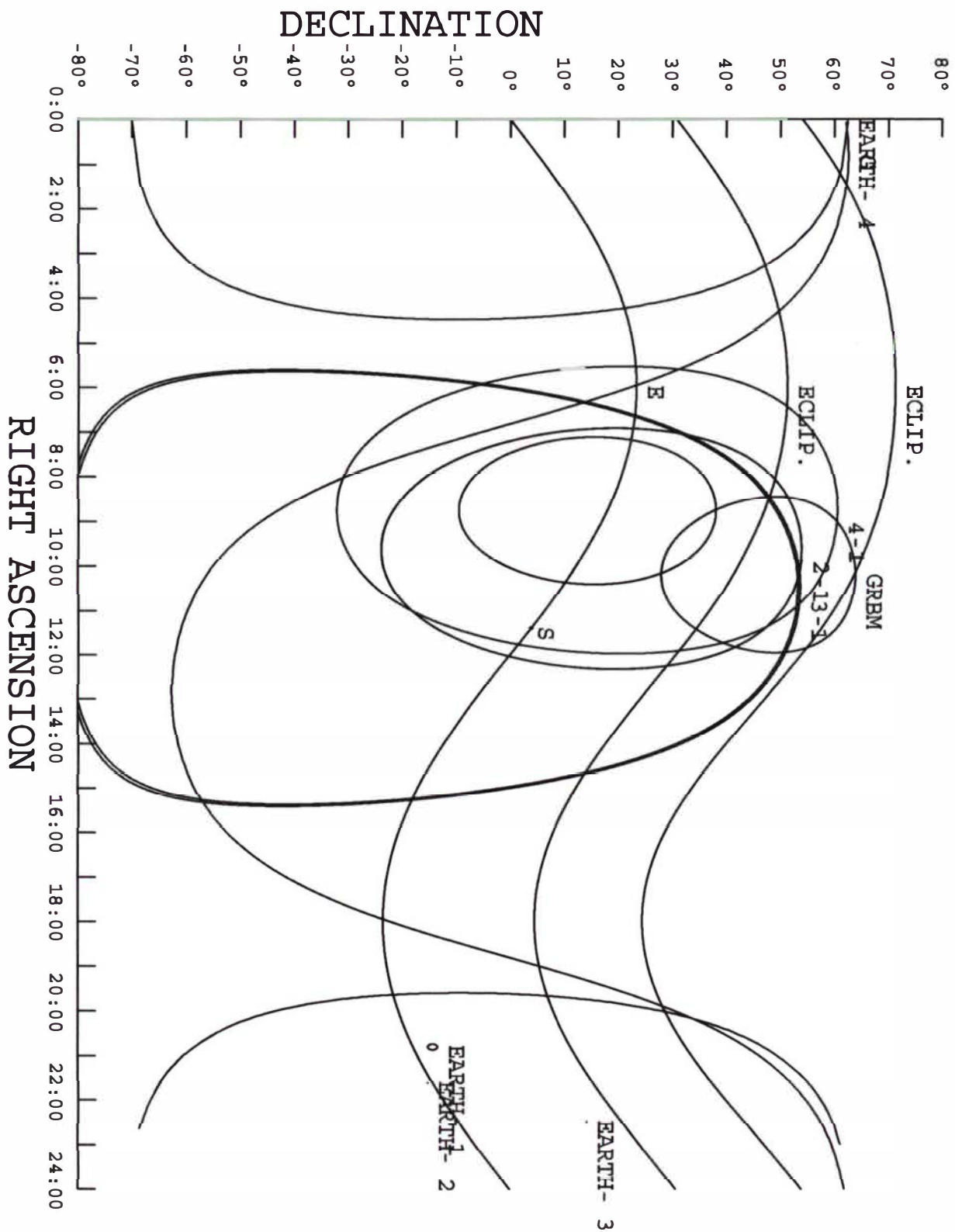
2 NEAR

3 ULYSSES

4 SAX

EVENT OF SEP 13, 1999 6:51

3 / 7 / 7



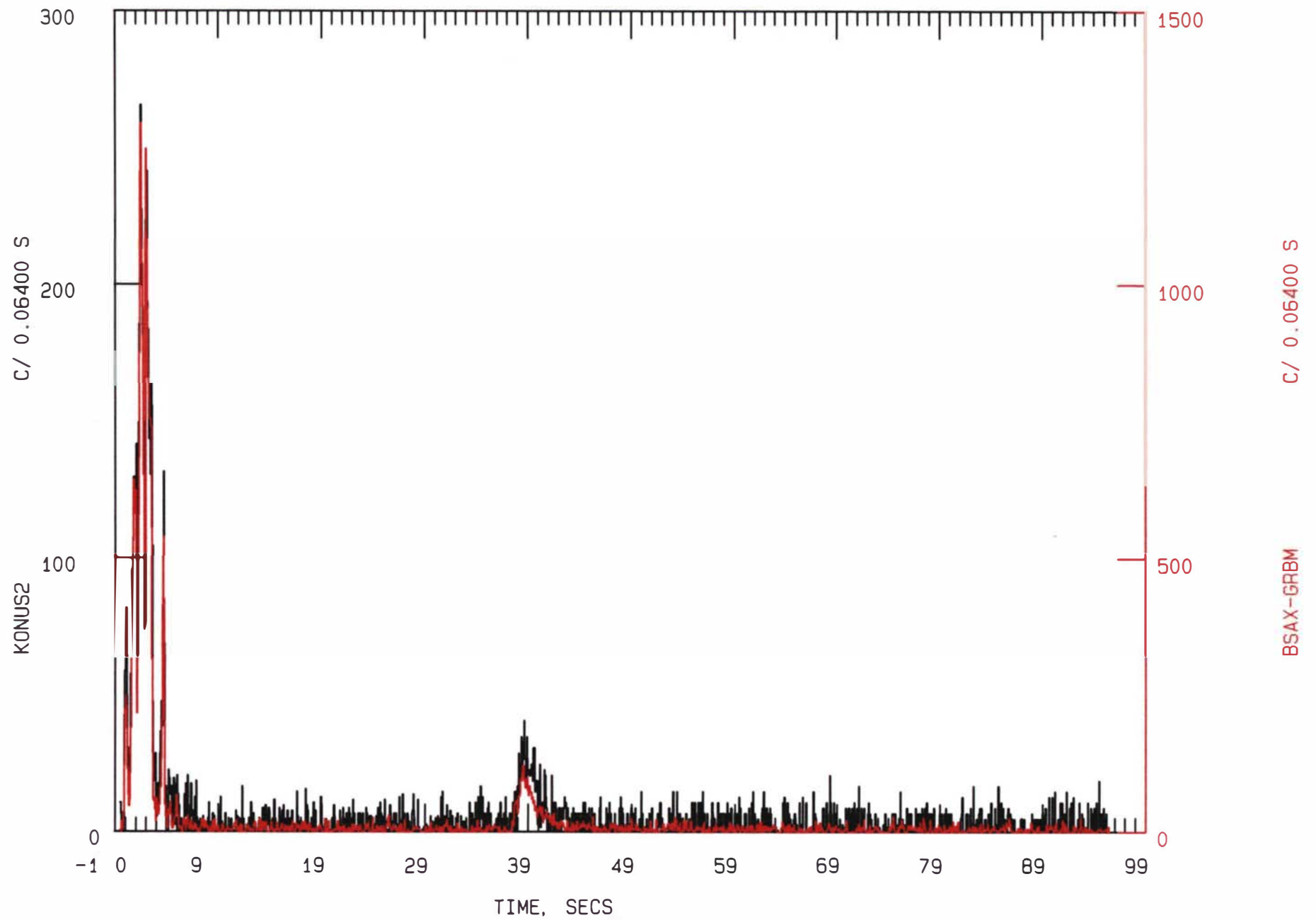
KONUS2

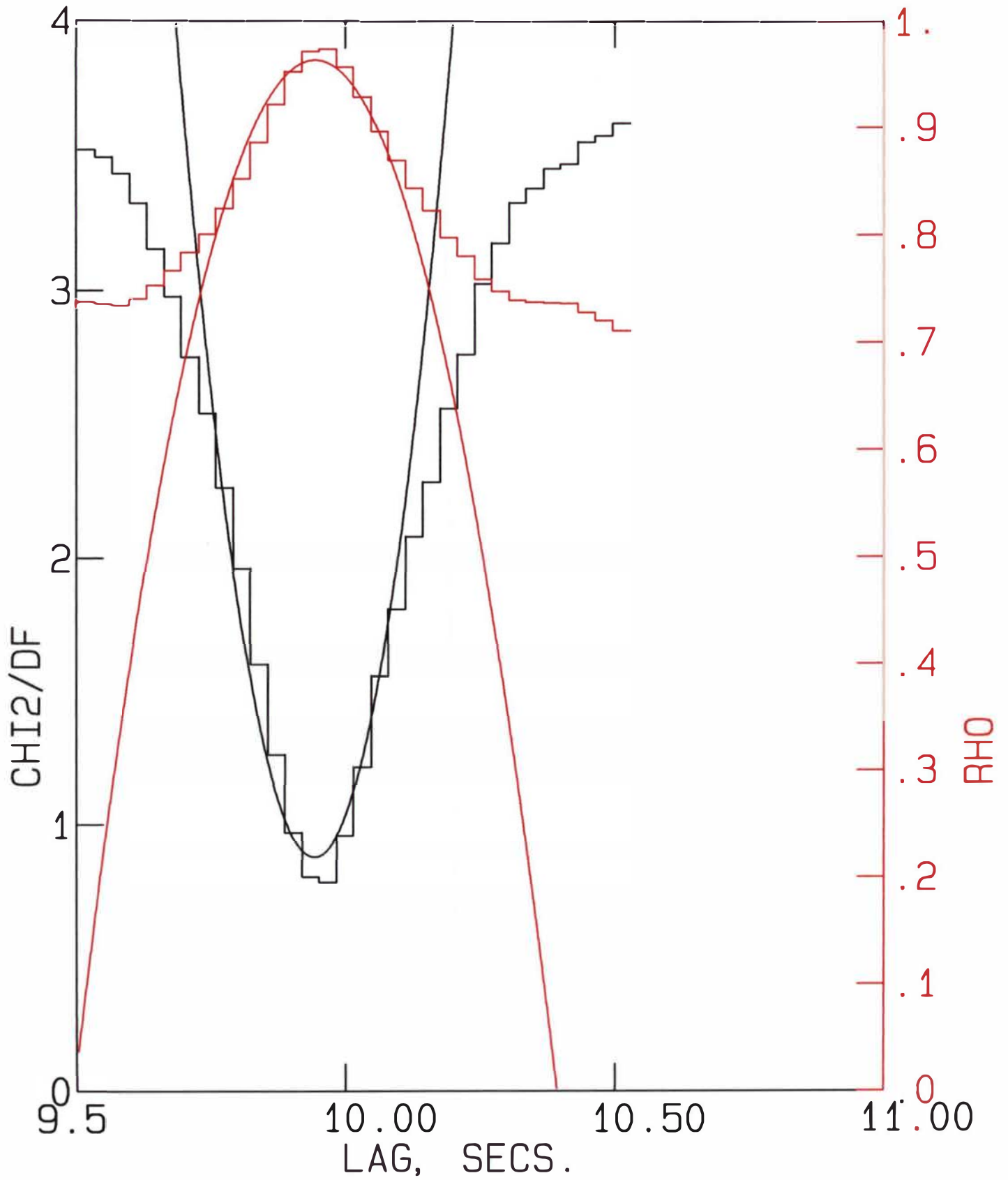
-BSAX-GRBM CORRELATION

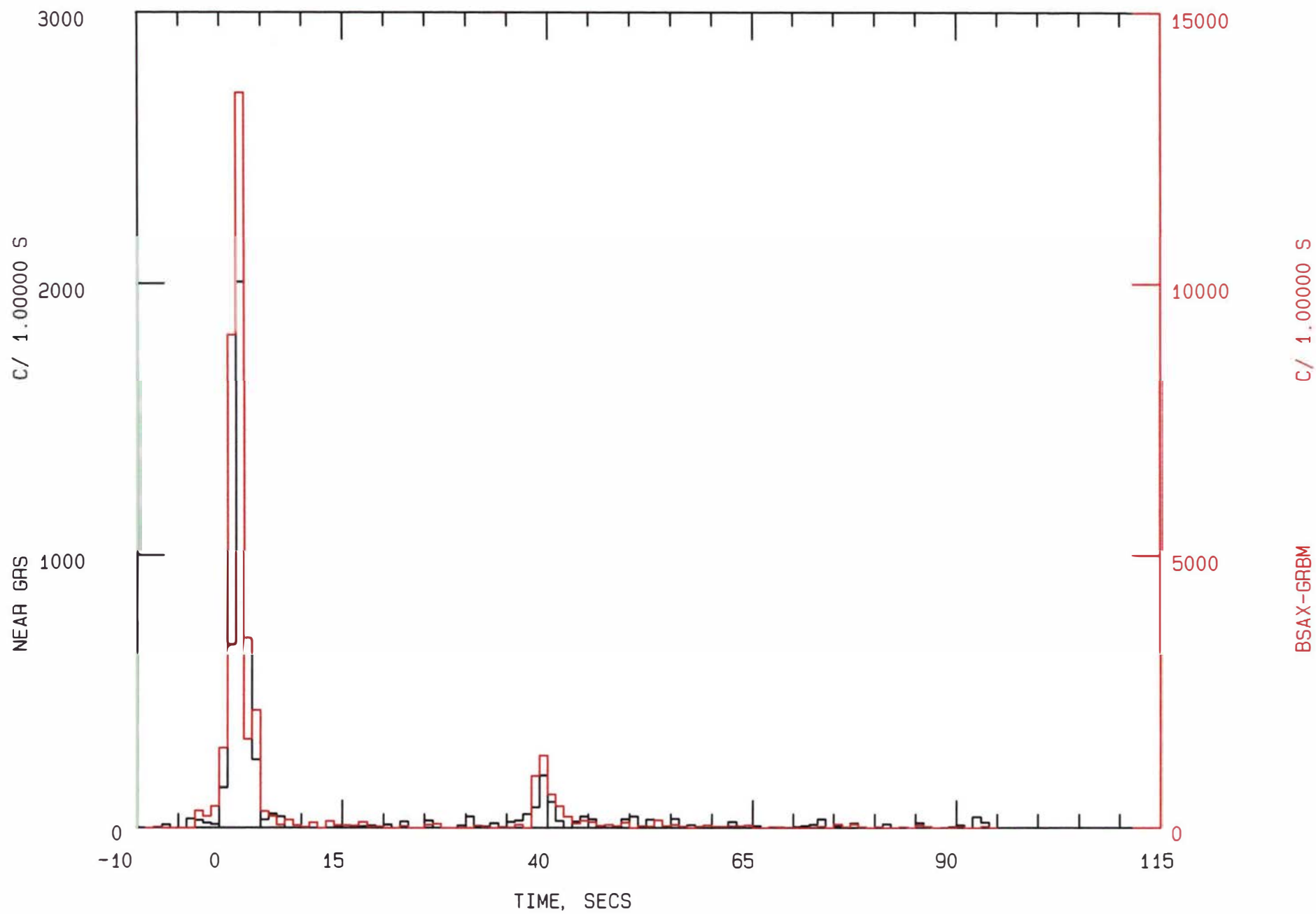
13/09/99

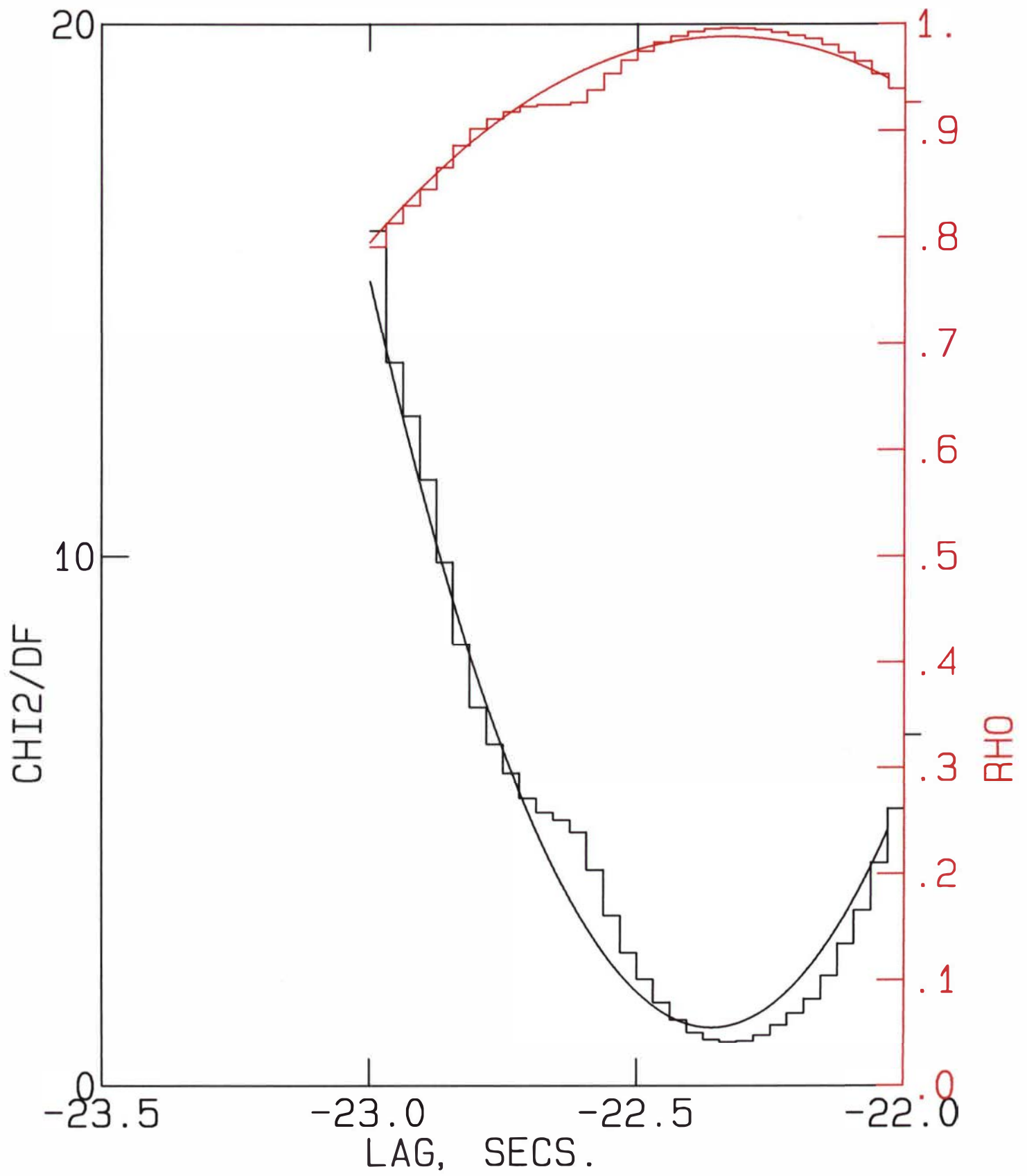
24717.970

3/ 7/ 7









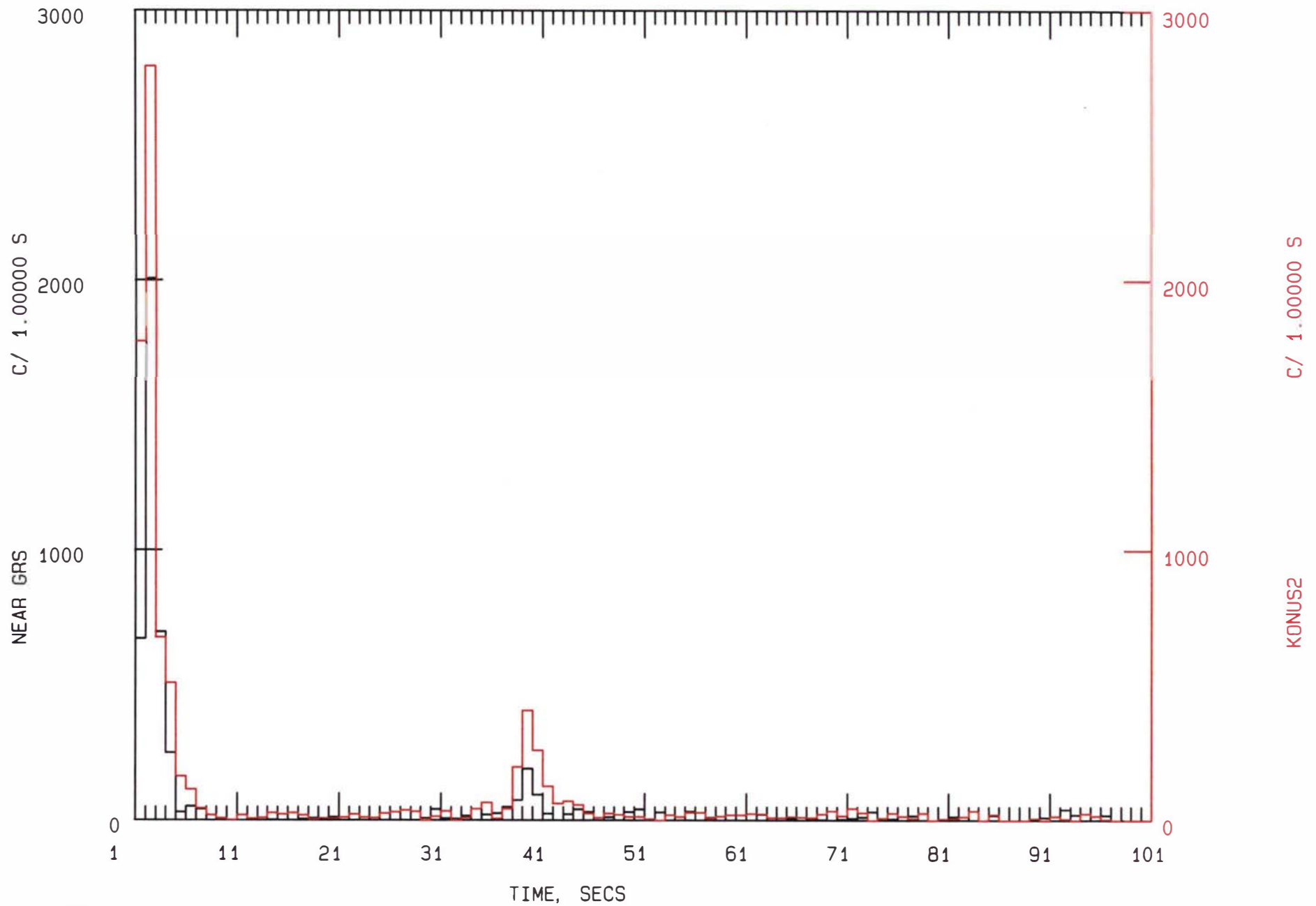
NEAR GRS -KONUS2

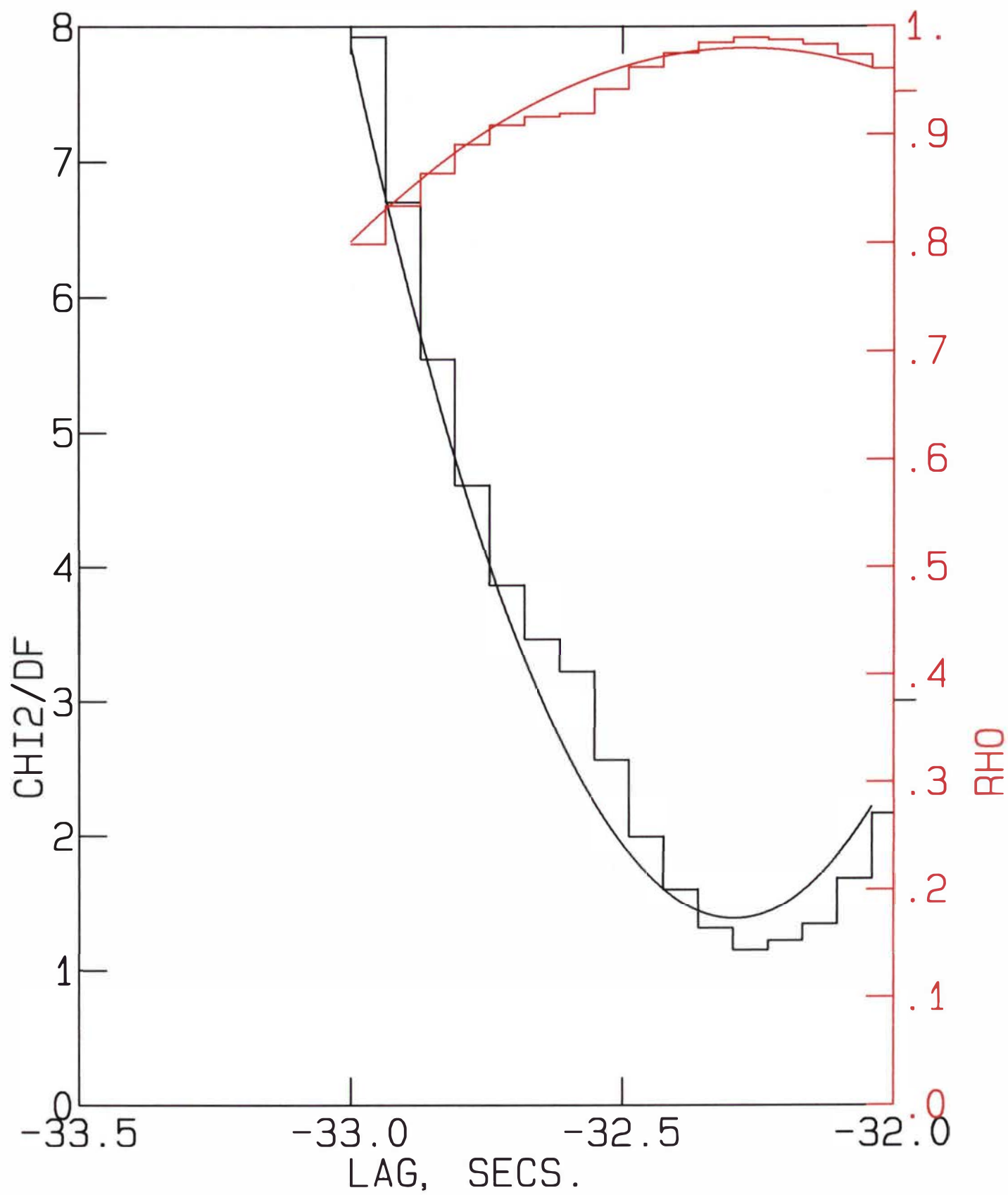
CORRELATION

13/09/99

23976.300

3/ 7/ 7

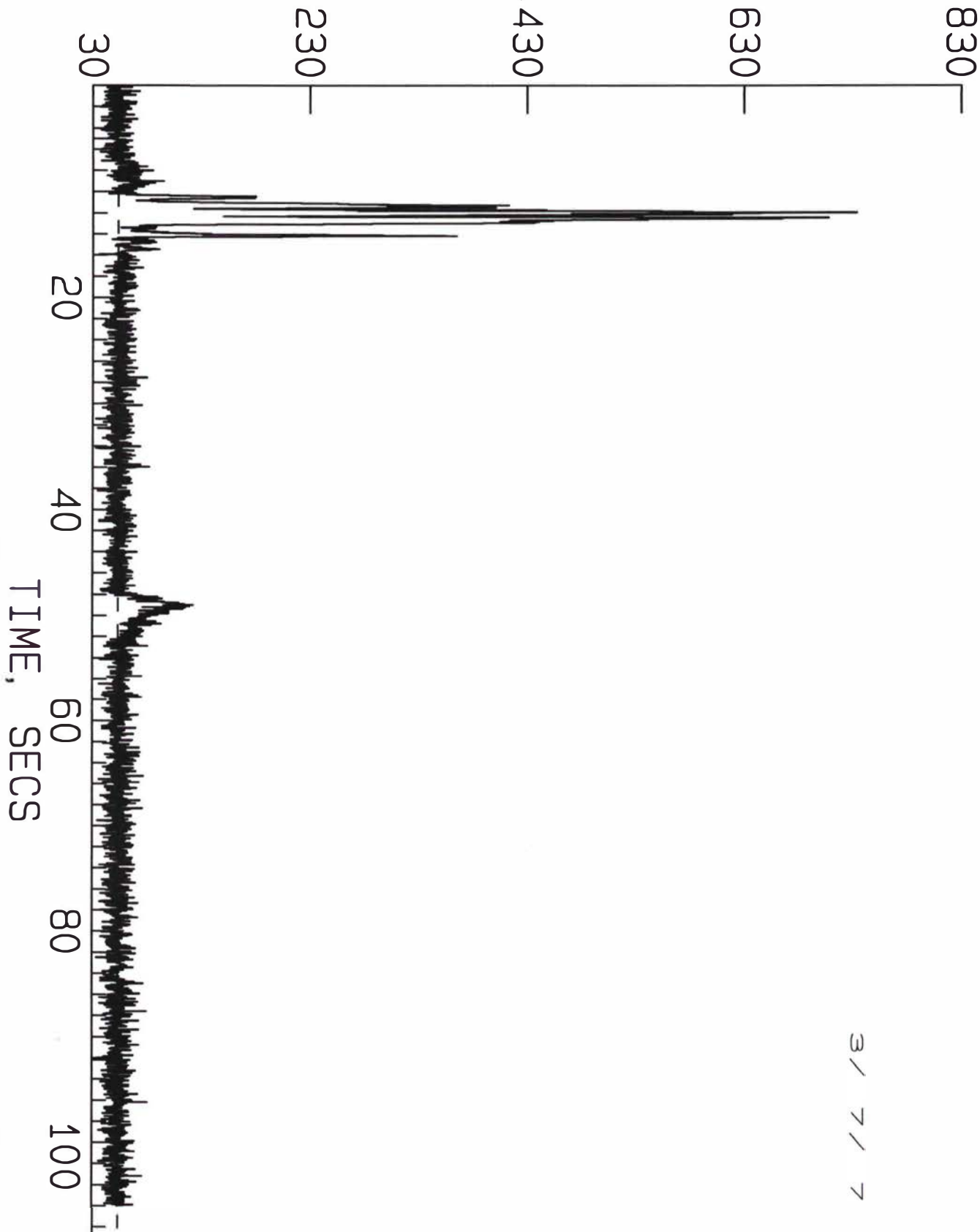




SAX GRBM

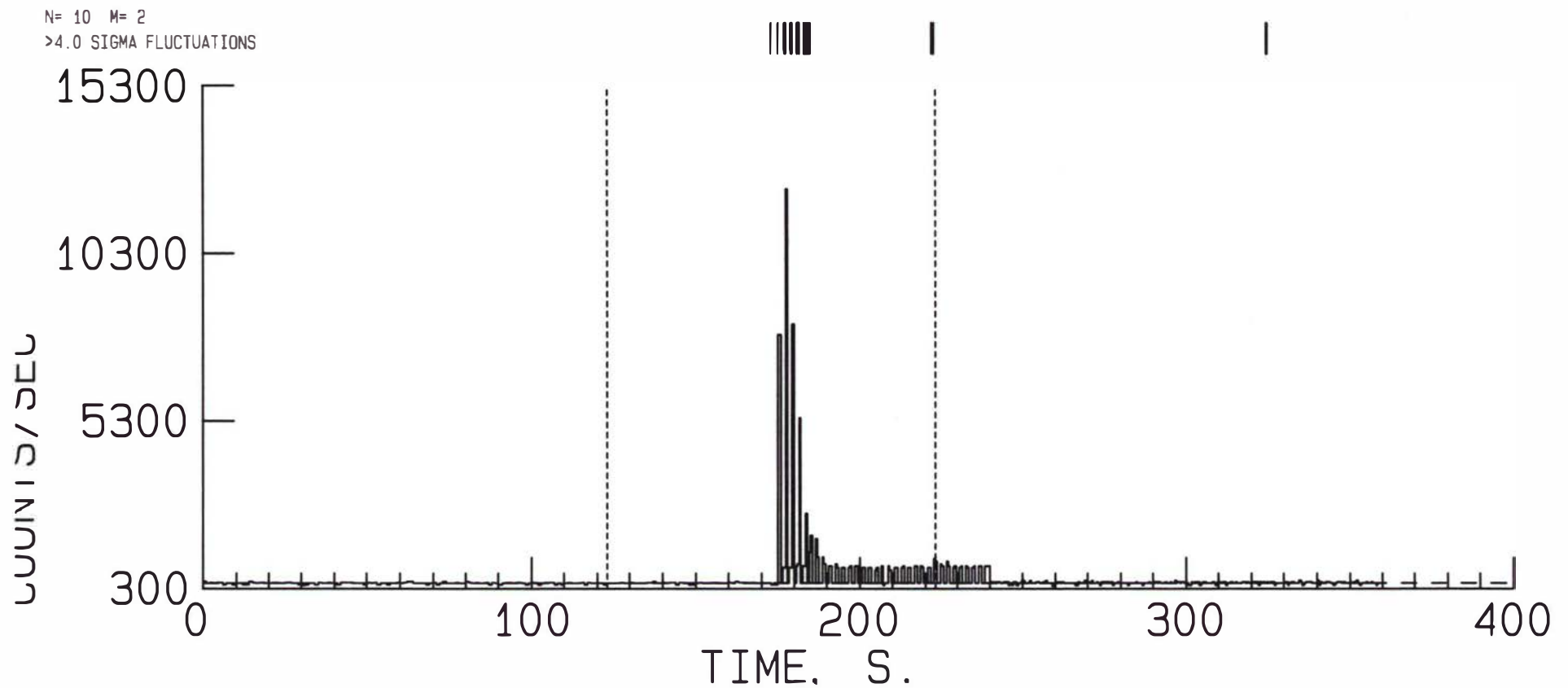
13/09/99 24708.565
40- 700 keV

COUNTS/0.031 S



ULYSSES RT
13/ 9/99 23508.777 s
22- 150 keV

3 / 7 / 7



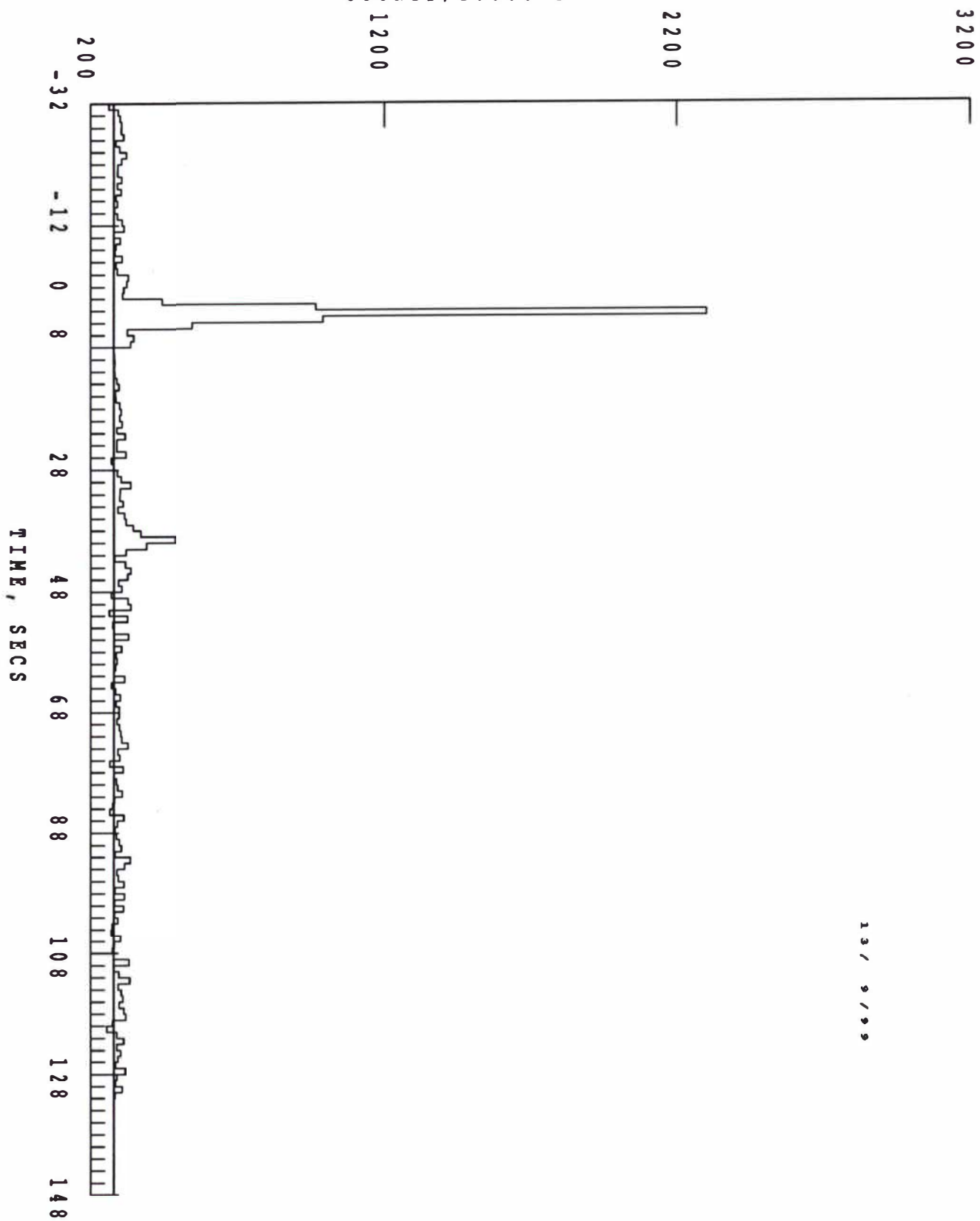
NEAR

13/09/99

23976.300

100-1000 keV

COUNTS/1.000 S

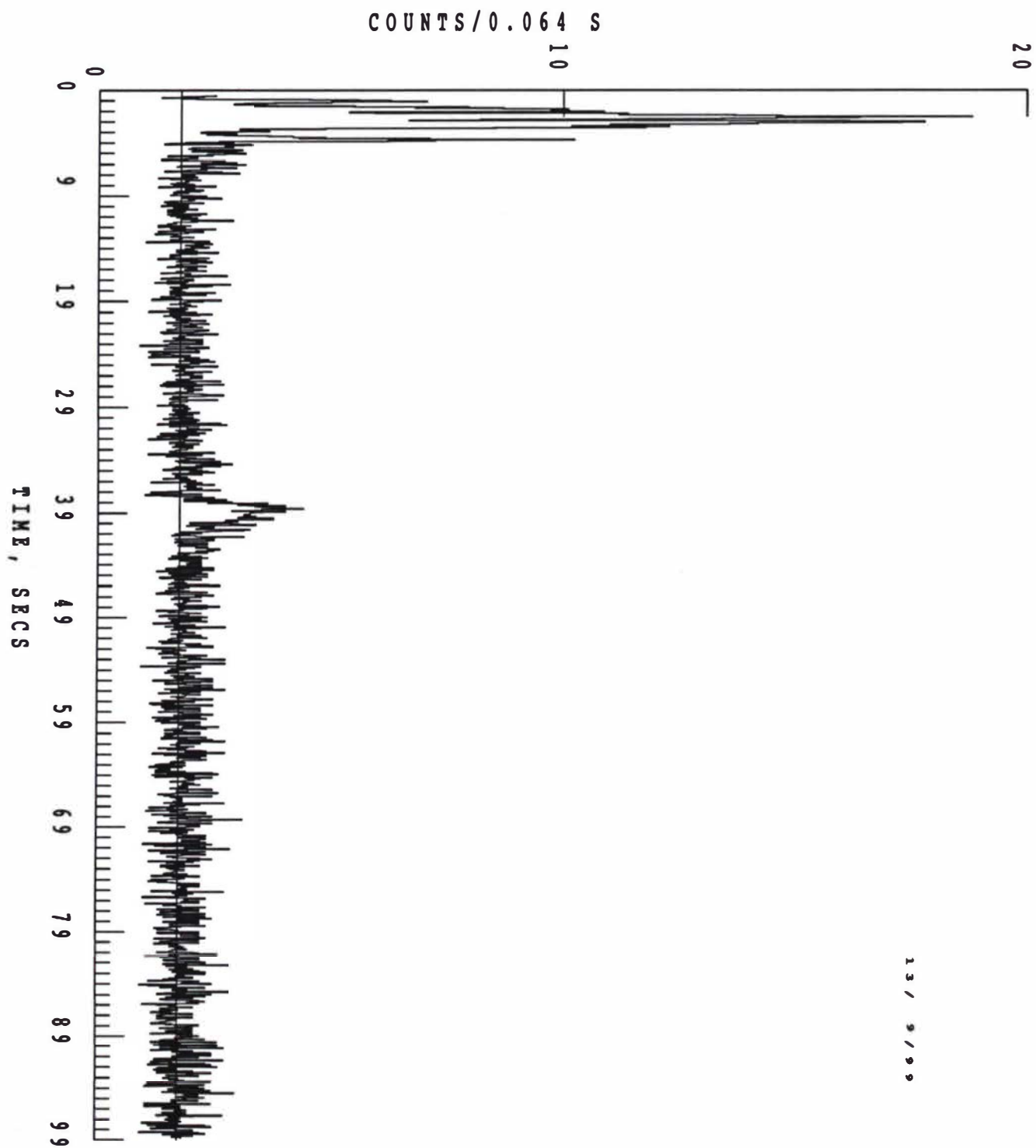


KONUS

13/09/99

24717.970

50 - 200 keV



From RICHARDSON@fender.msfc.nasa.gov Tue Sep 14 09:25 PDT 1999

From: RICHARDSON@fender.msfc.nasa.gov

Date: Tue, 14 Sep 1999 11:27:39 -0500 (CDT)

\: 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.: 7763

TIME: TJD=1434 SECONDS=25767

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=111.9 AZIMUTH=6.9 ERROR=0.9 DEGREES

COMMENTS:

SOLAR FLARE, GOES C2.5, NO OPTICAL.

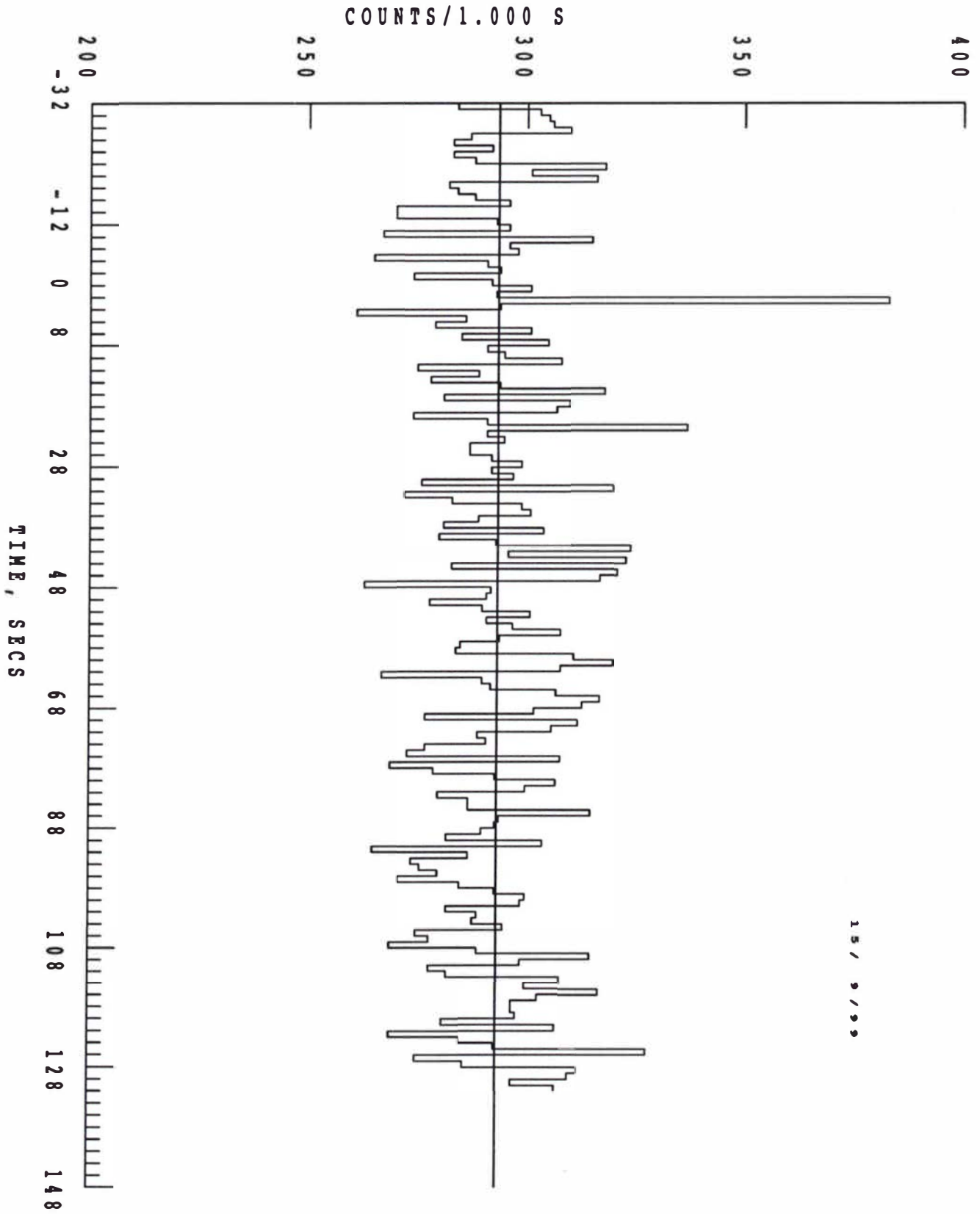
SINGLE PULSE WITH STRUCTURE. DURATION APPROX. = 60 SEC. EVENT BEGINS
AT APPROX. T-10 SEC. NOT VISIBLE ABOVE 100KEV.

NEAR

13/09/99

54067.288

100-1000 keV



KNEAR GRS 19990913 54067

ULYSSES RT

15 / 9 / 99

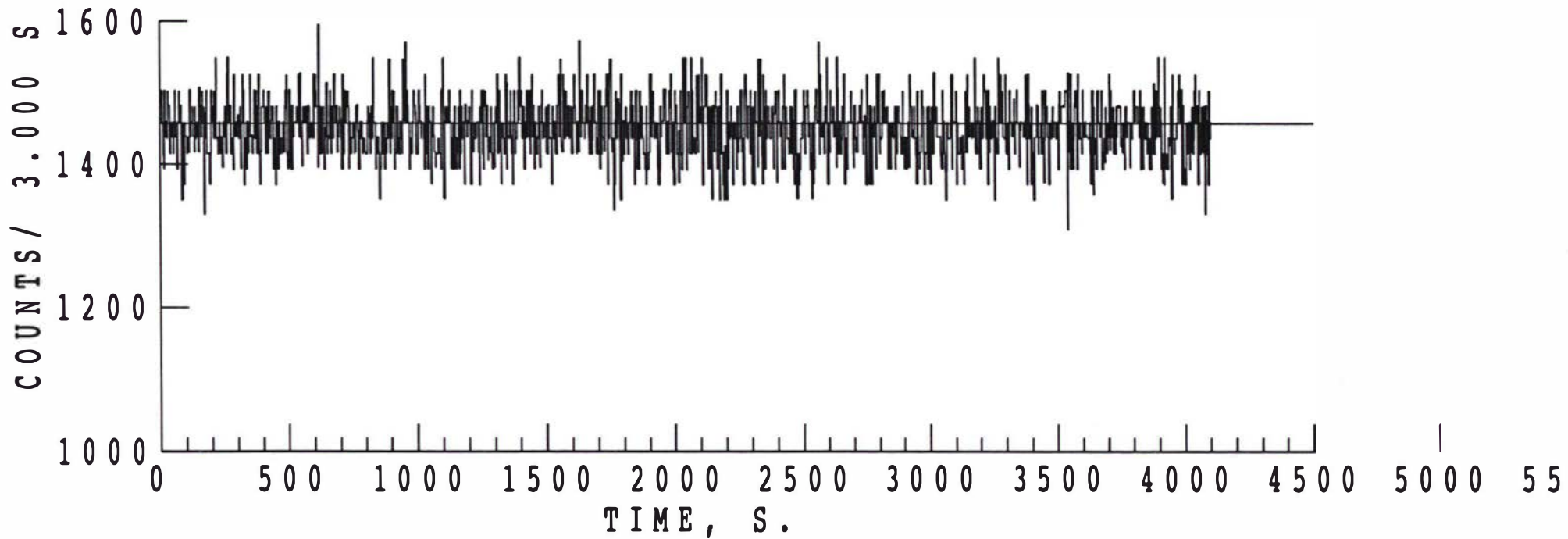
13 / 9 / 99 52020.062 s

0.500 S INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

16 / 03 / 00

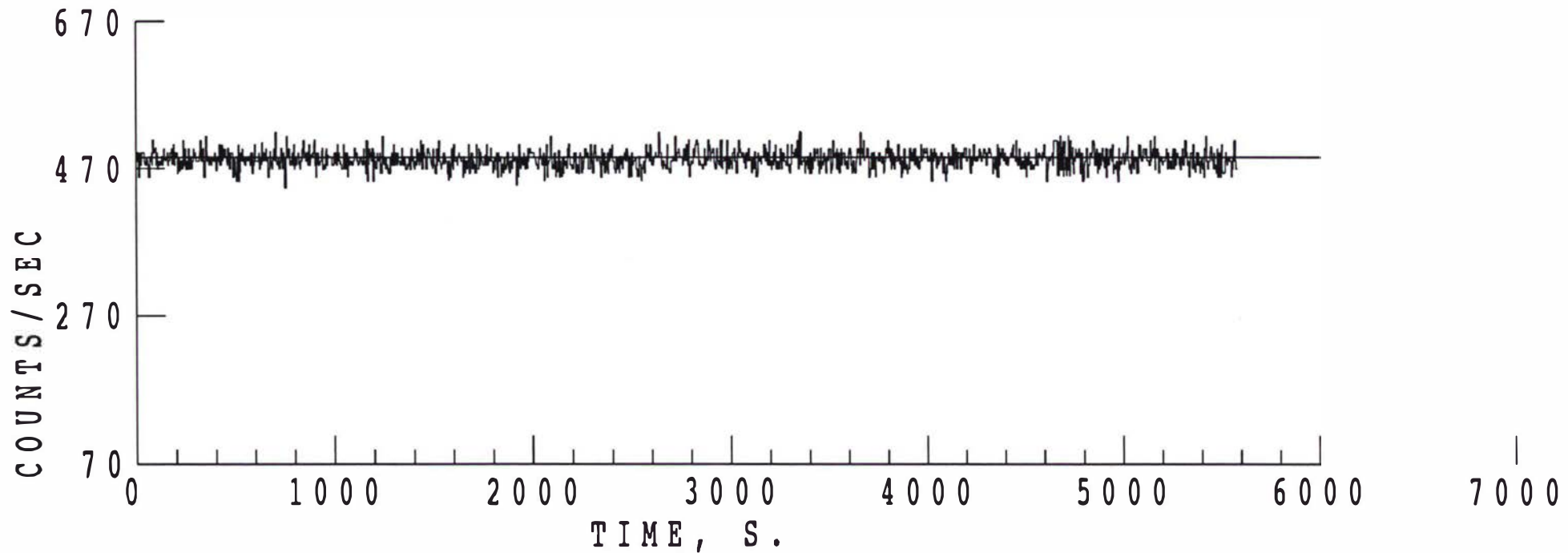
13 / 09 / 99 64980.199 s

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 Sat Sep 18 09:06 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Sat, 18 Sep 1999 11:07:42 -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.: 7765

TIME: TJD=1436 SECONDS=75904

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=91.2 AZIMUTH=355.9 ERROR=1.45 DEGREES

COMMENTS:

SOLAR FLARE. GOES. C1.5, OPTICAL SF. SINGLE PULSE WITH STRUCTURE, DUR. 24 S,
STARTS AT T-4 S, MAX. AT T+1 S. NOT VISIBLE ABOVE 300 KEV.

From Bryan.Mcmillan@jpl.nasa.gov Tue Sep 7 14:05 PDT 1999
X-Sender: bmcmilli@pop.jpl.nasa.gov
Date: Tue, 07 Sep 1999 14:11:32 -0700
To: Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
From: Bryan McMillan <Bryan.Mcmillan@jpl.nasa.gov>
Subject: Datation Test
Cc: Ulysses FCT-PI Interface <ulssci@jpl.nasa.gov>
Mime-Version: 1.0

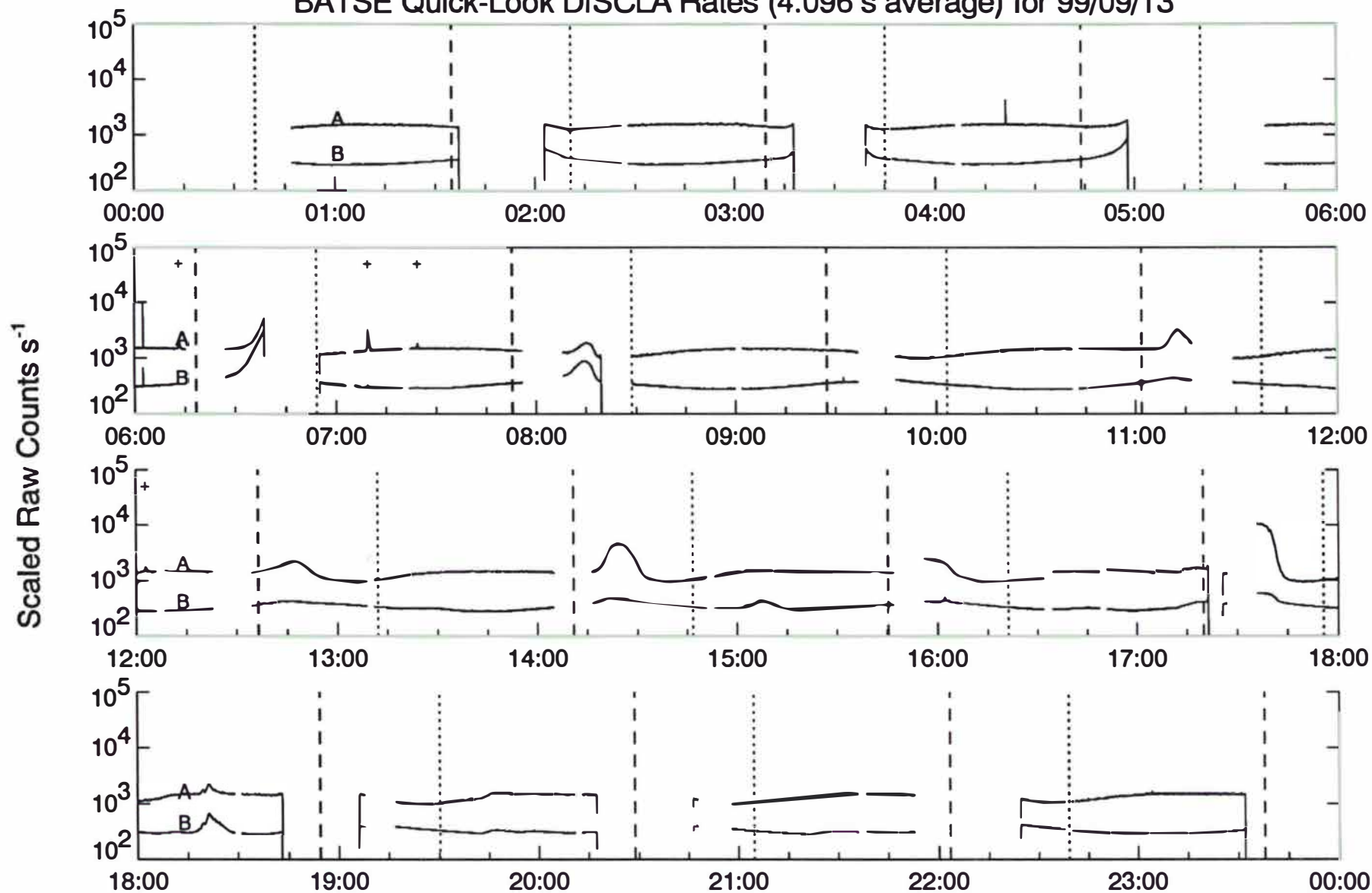
Please be advised that we will be performing a datation
test on day 256 beginning at 00:05 ground time.
Regards

Bryan McMillan

Ulysses Spacecraft Analyst

Sep 13

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/13

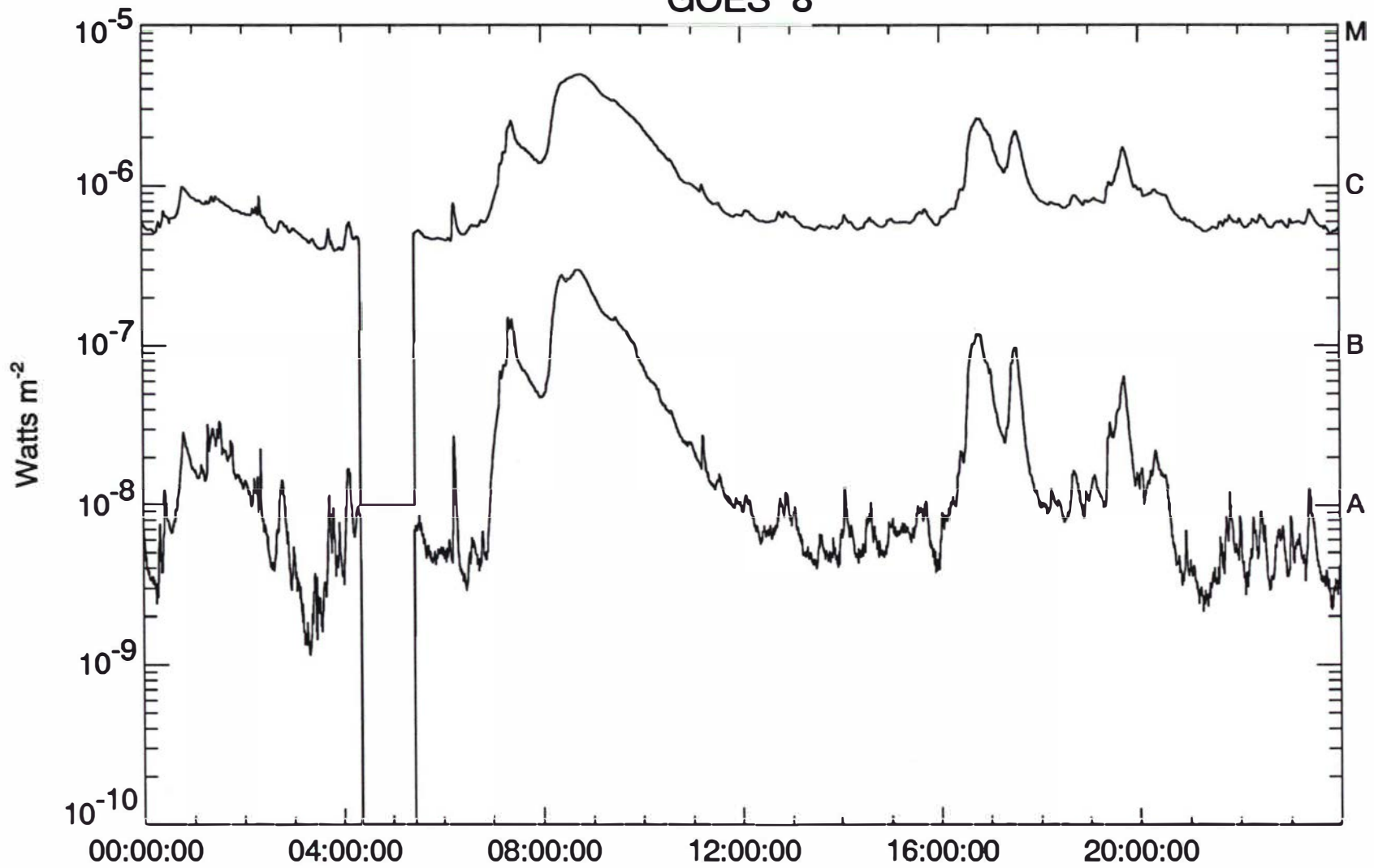


Current Time: 99/09/17, 1005 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/13, 0000:00

Plot created: 99/09/17, 1004

Channel 1 (1.0 - 8.0 Angstroms)

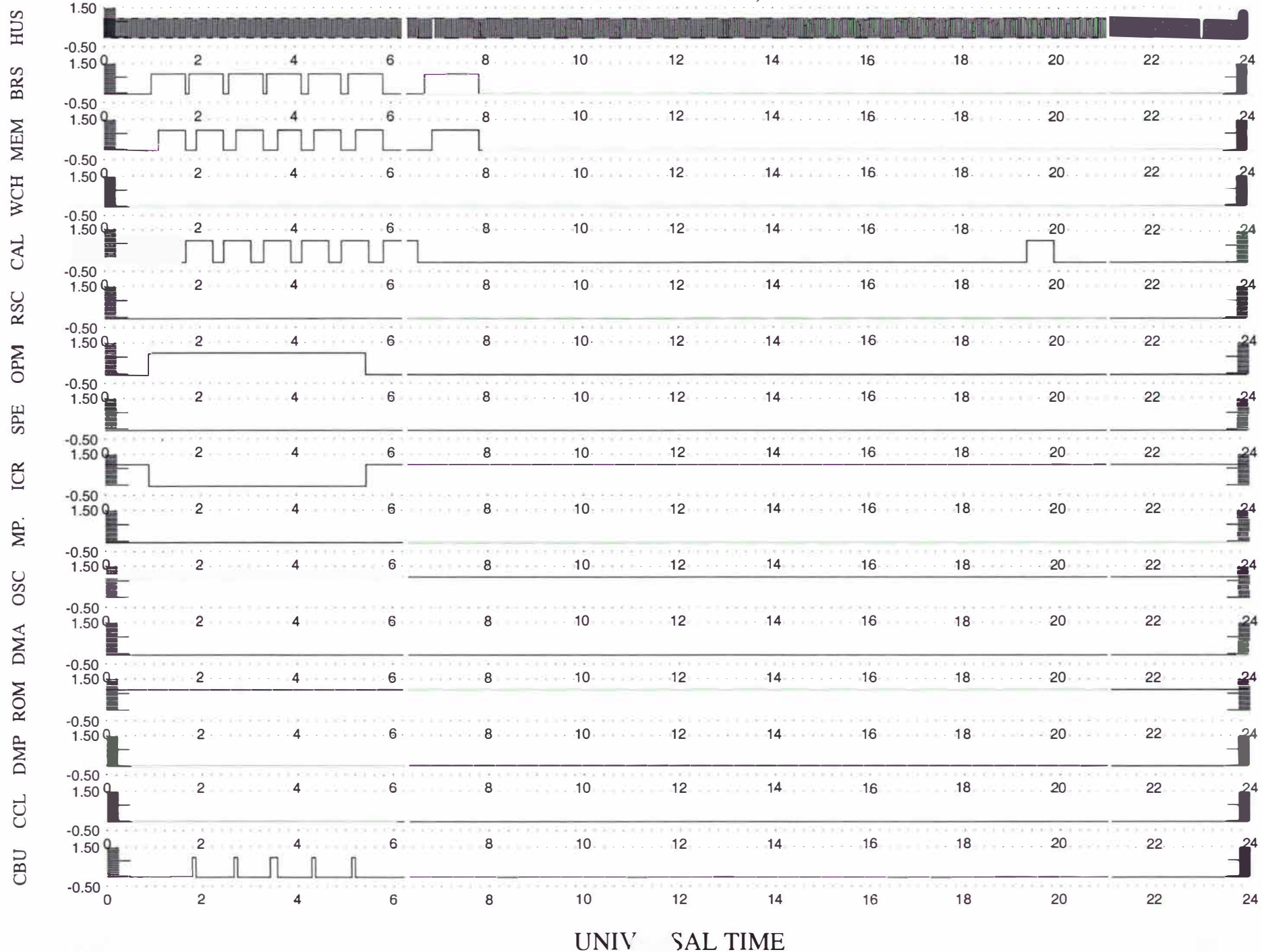
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

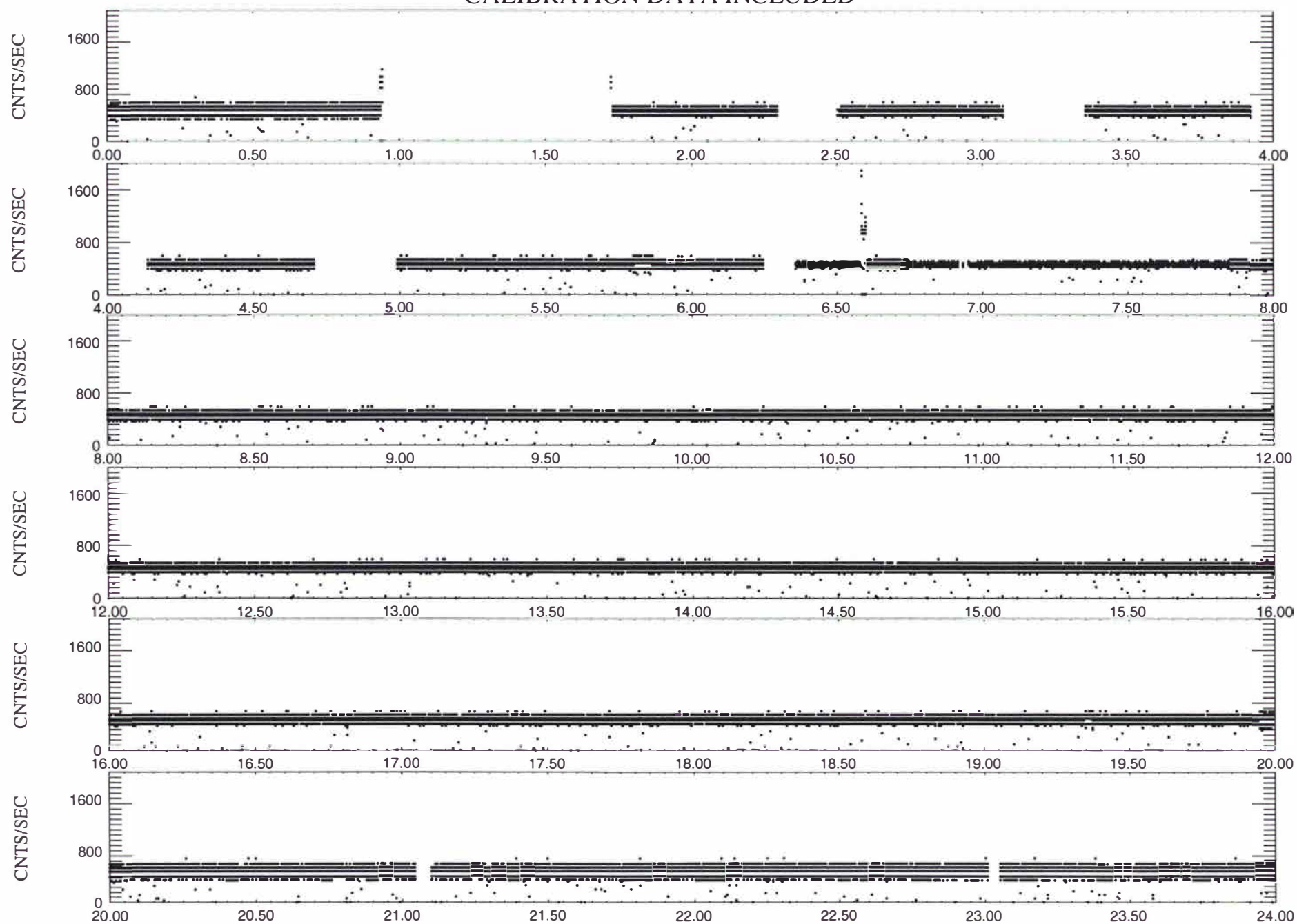
Background not subtracted

Sample average = 10

BURST NUMBER 13 - 15, 0 - 3

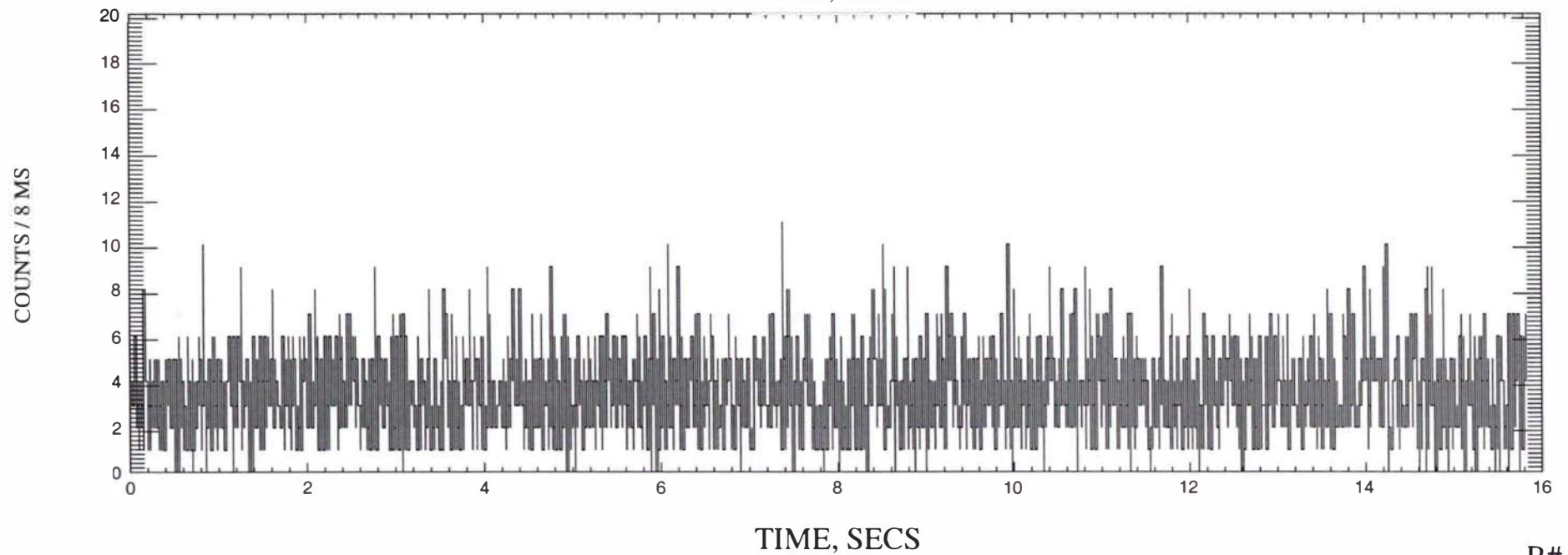
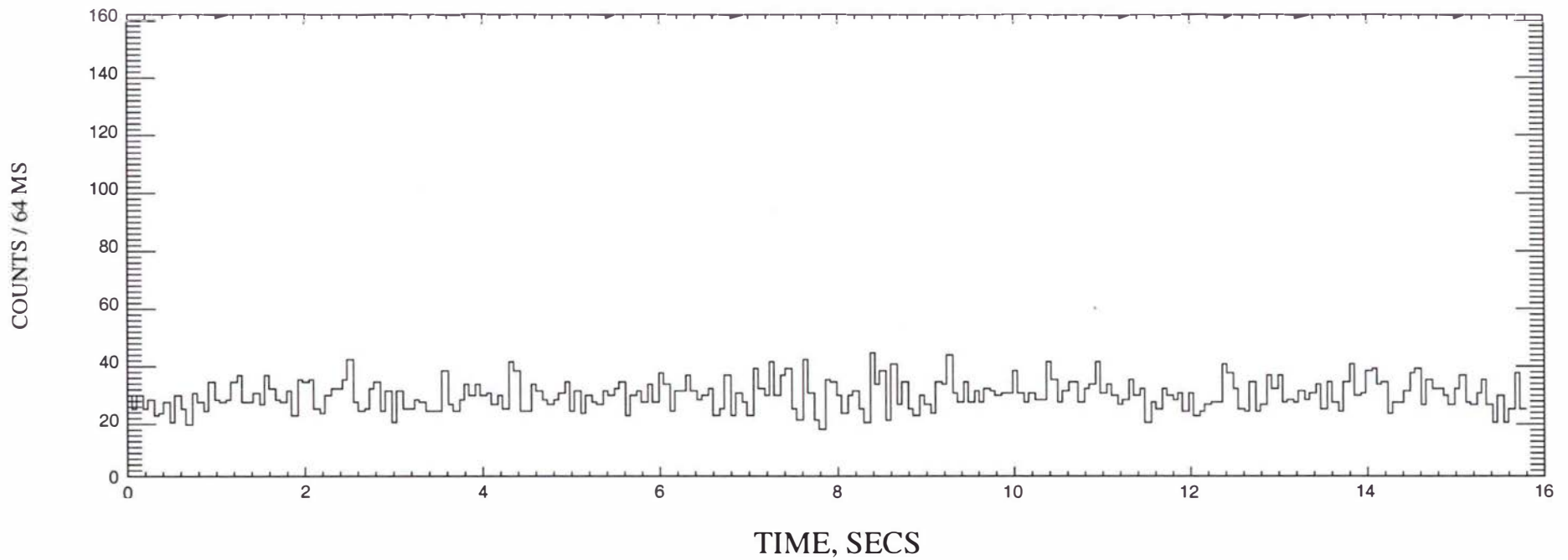


CALIBRATION DATA INCLUDED

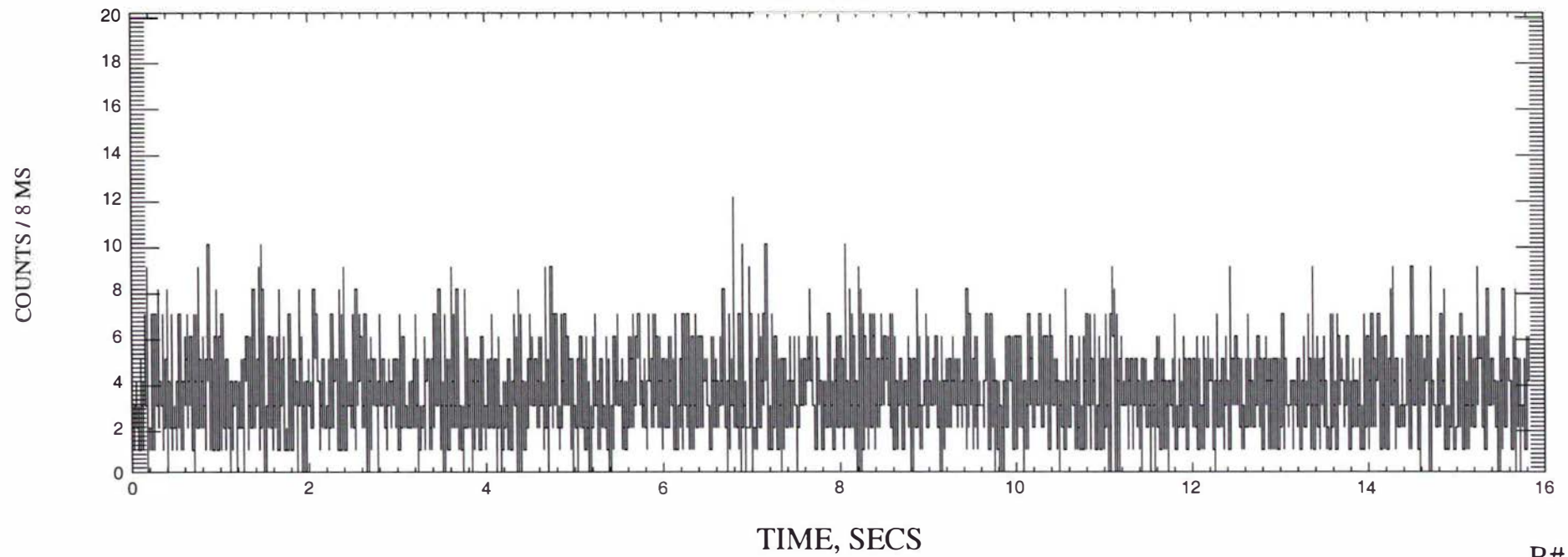
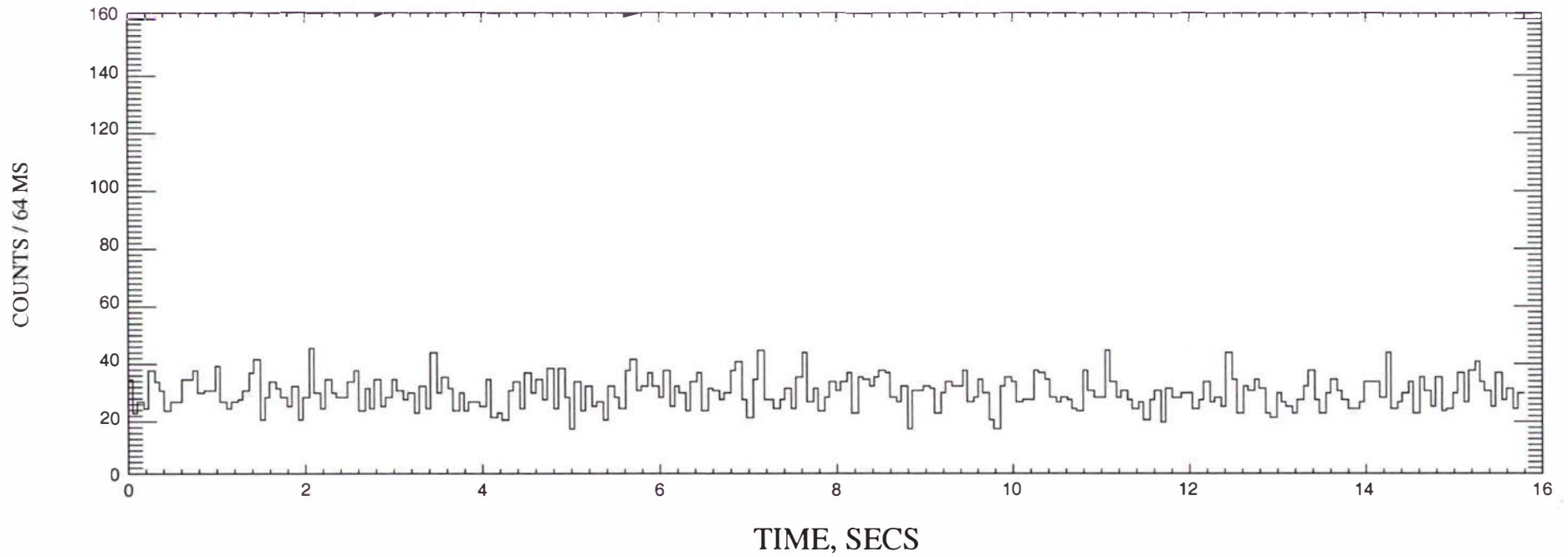


UNIVERSAL TIME

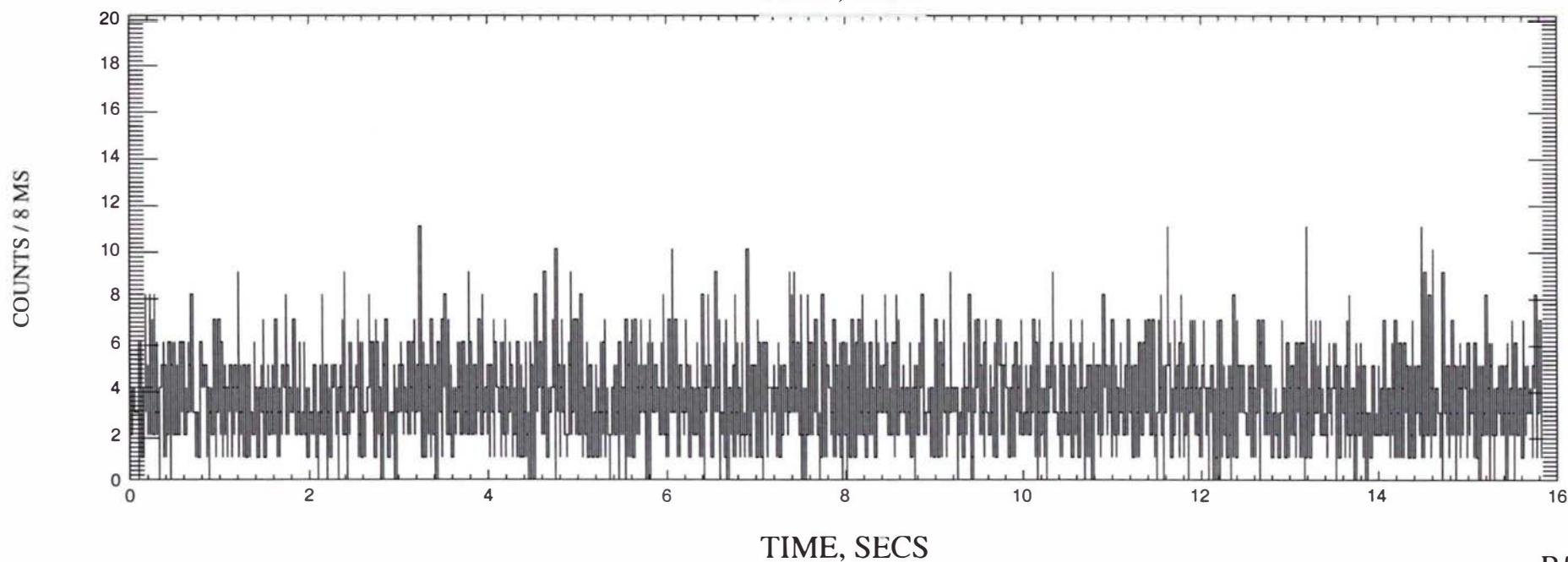
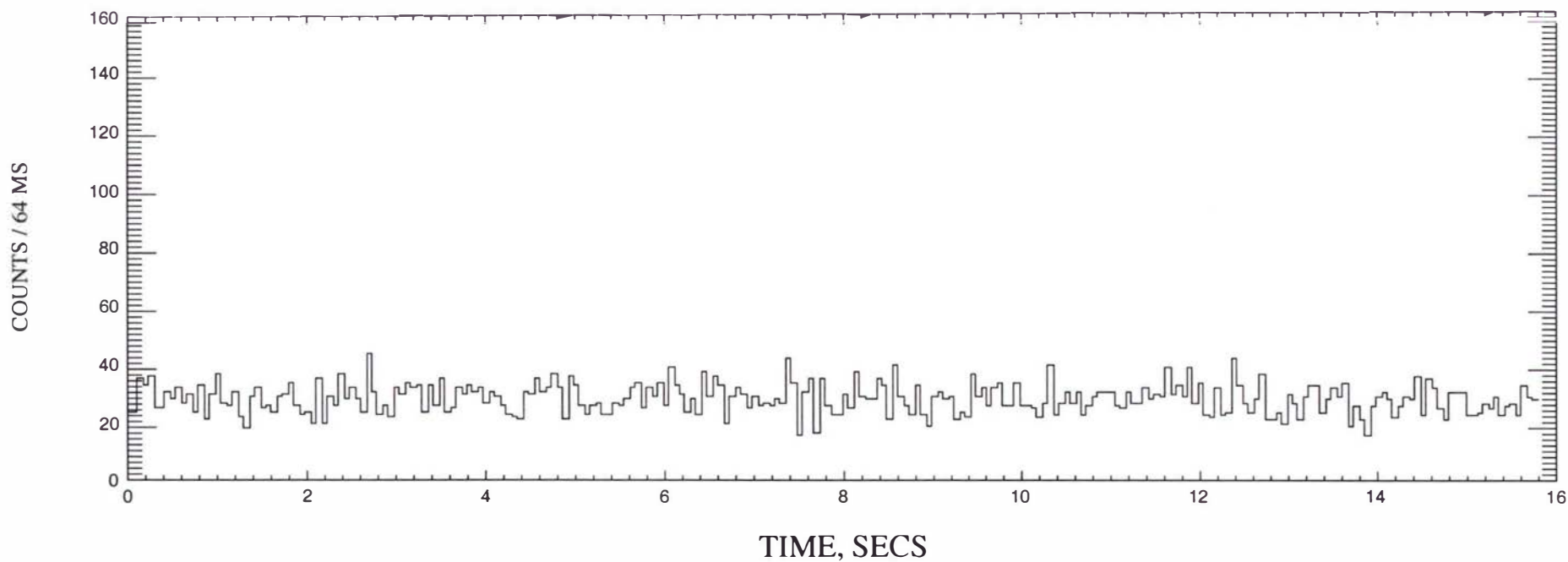
Burst Counter 13 at UT= 0.960639695062 h= 3458.303 s 00:57:38.303



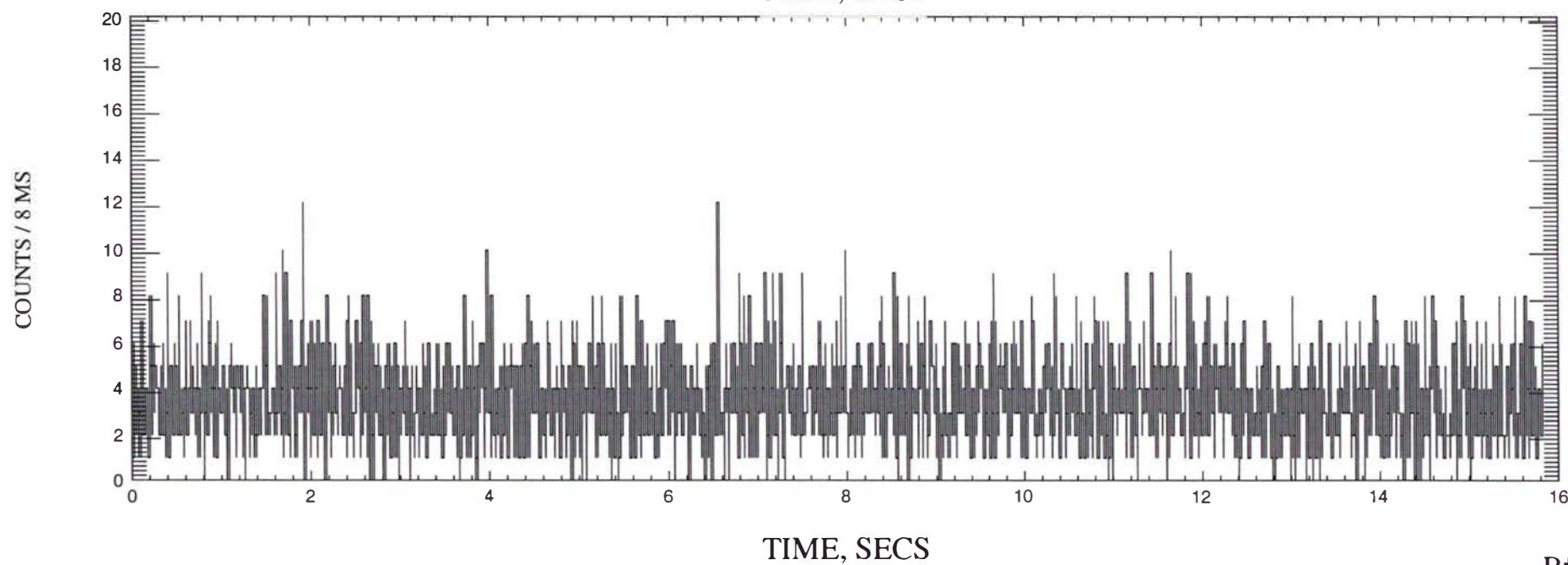
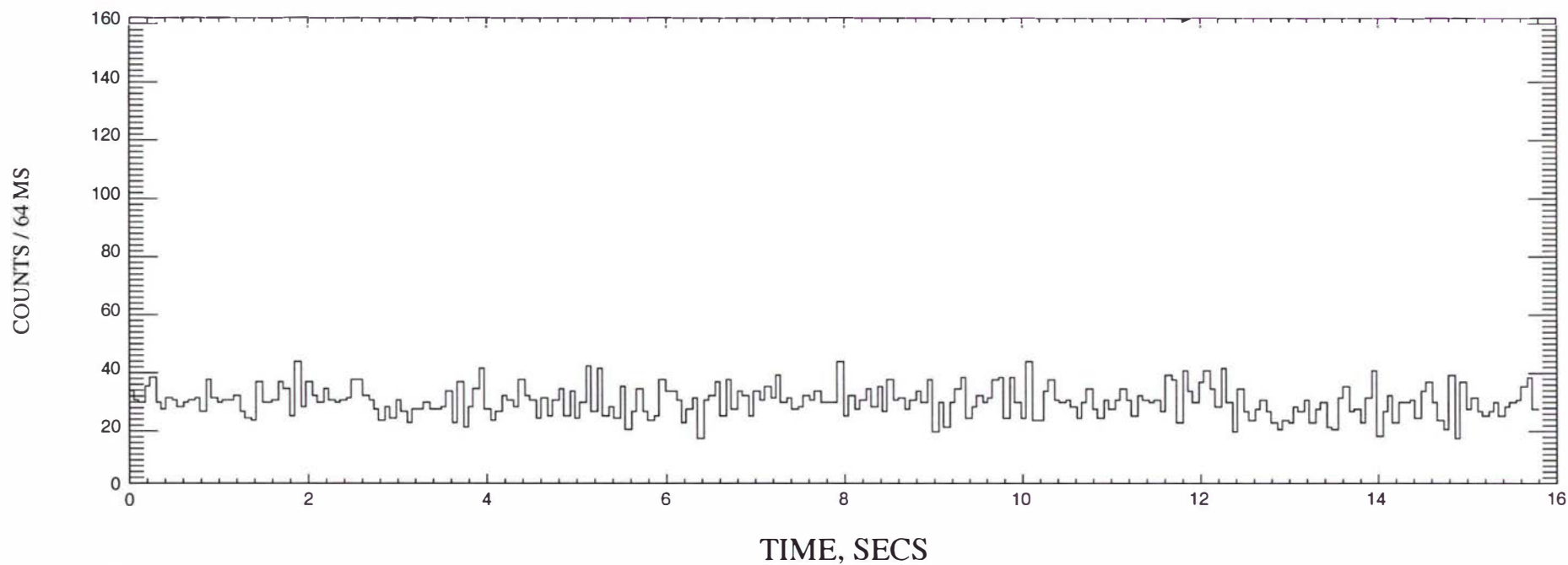
Burst Counter 14 at UT= 1.765211414761 h= 6354.761 s 01:45:54.761



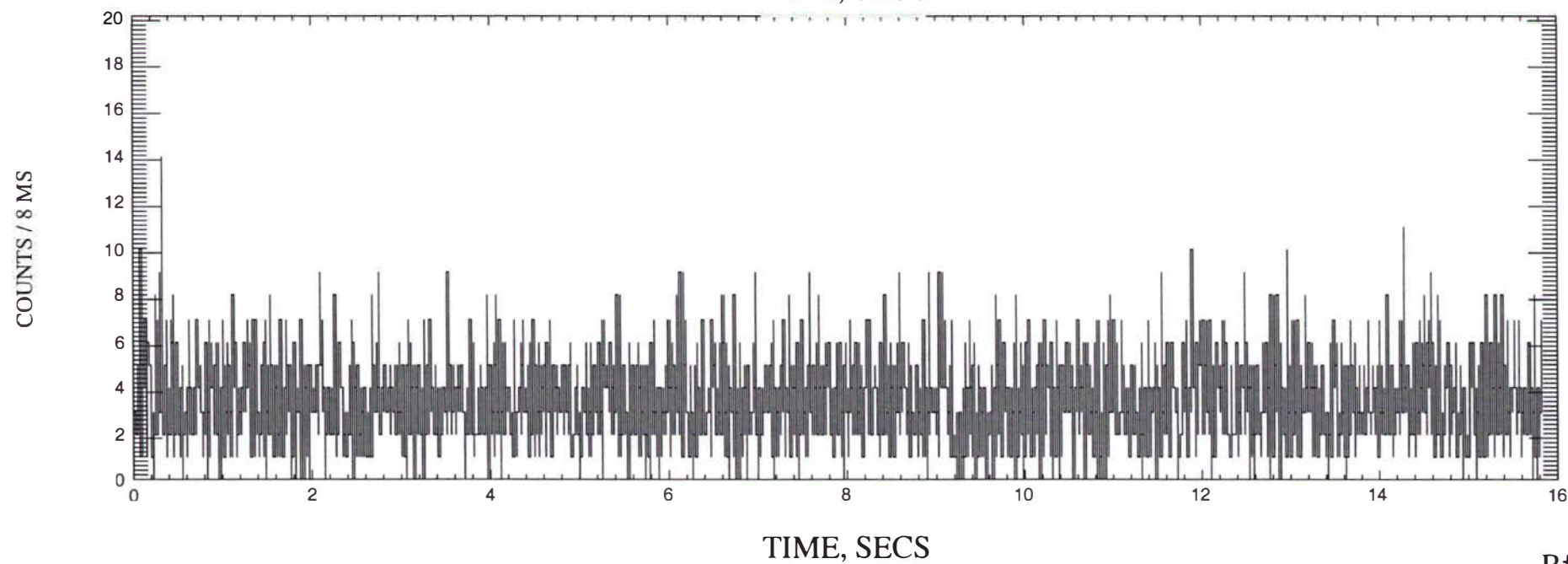
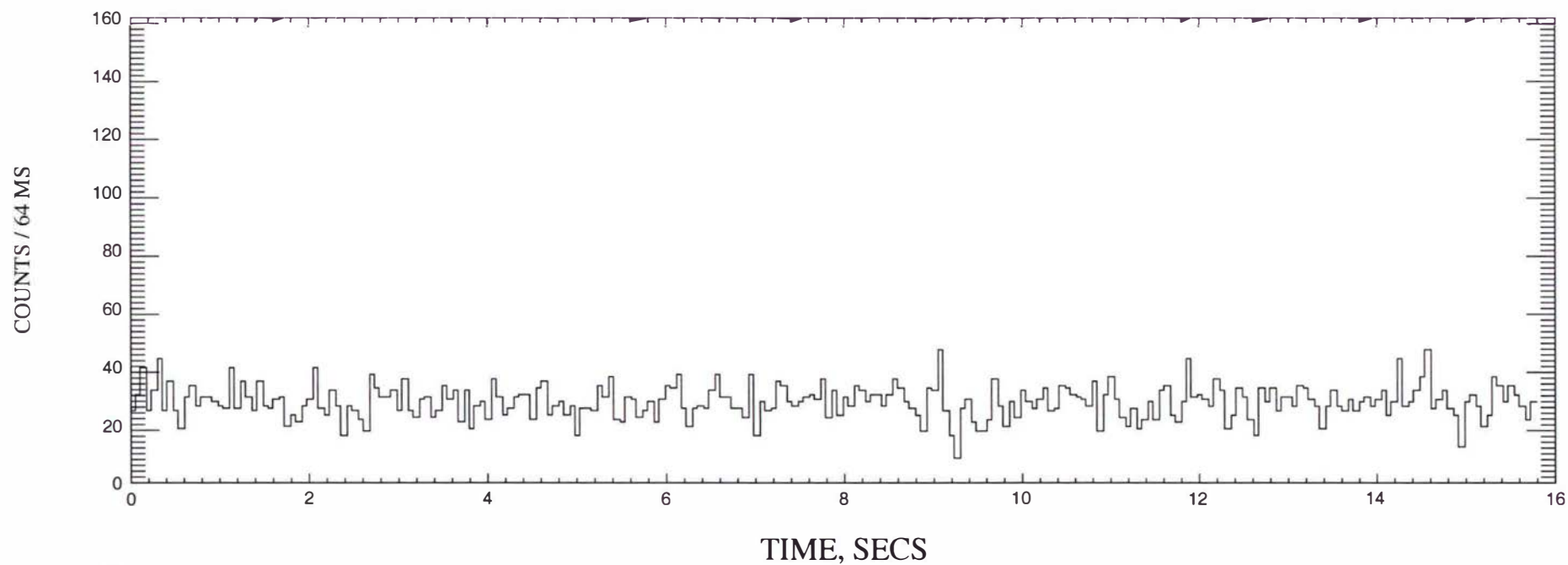
Burst Counter 15 at UT= 2.598518668281 h= 9354.667 s 02:35:54.667



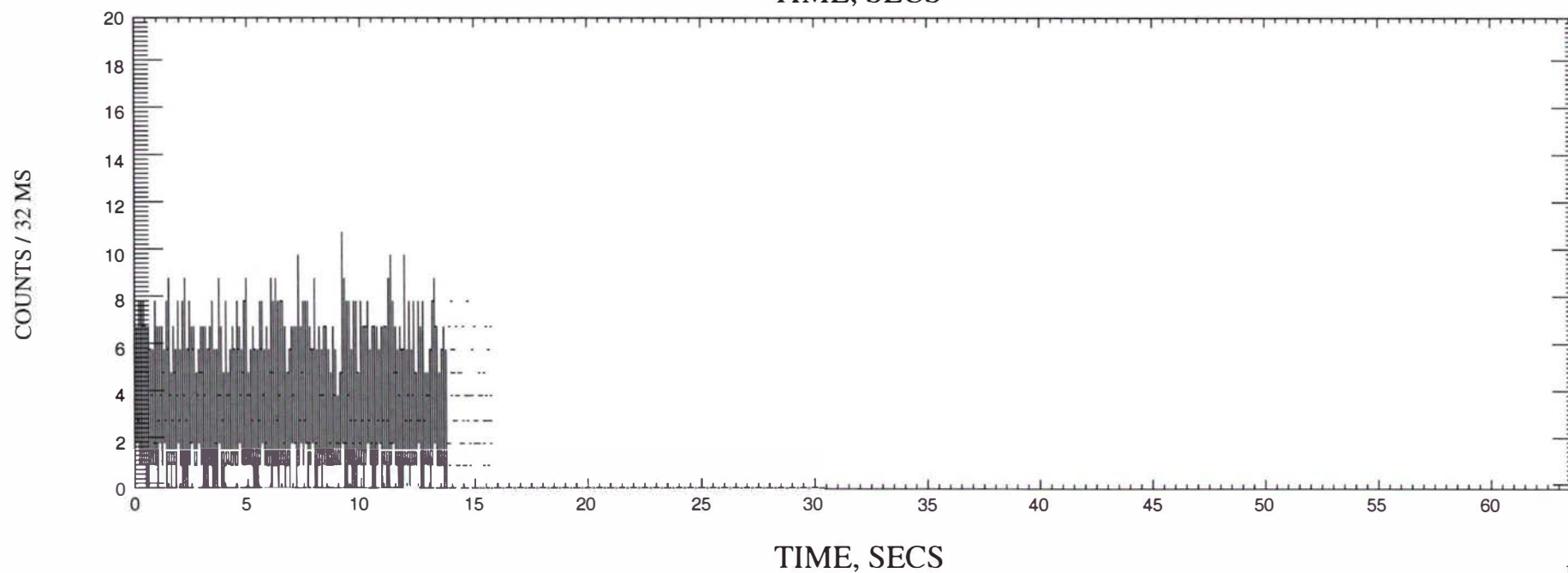
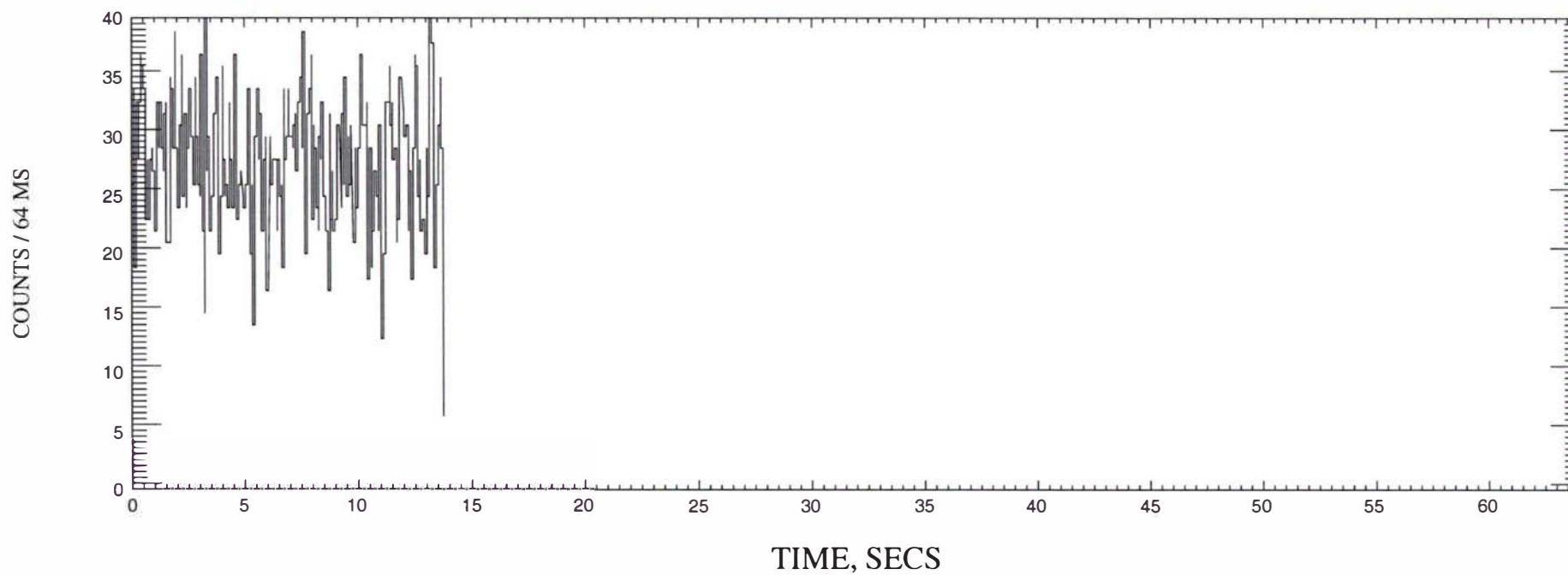
Burst Counter 0 at UT= 3.431825197008 h=12354.571 s 03:25:54.571



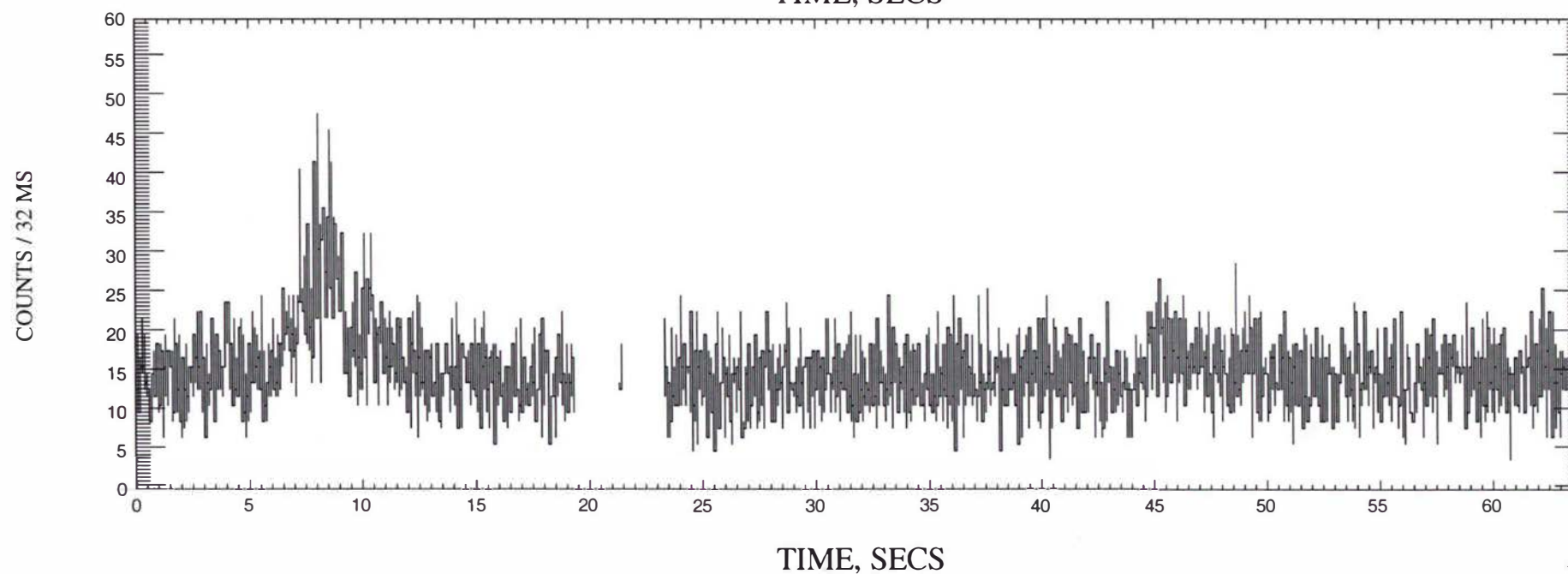
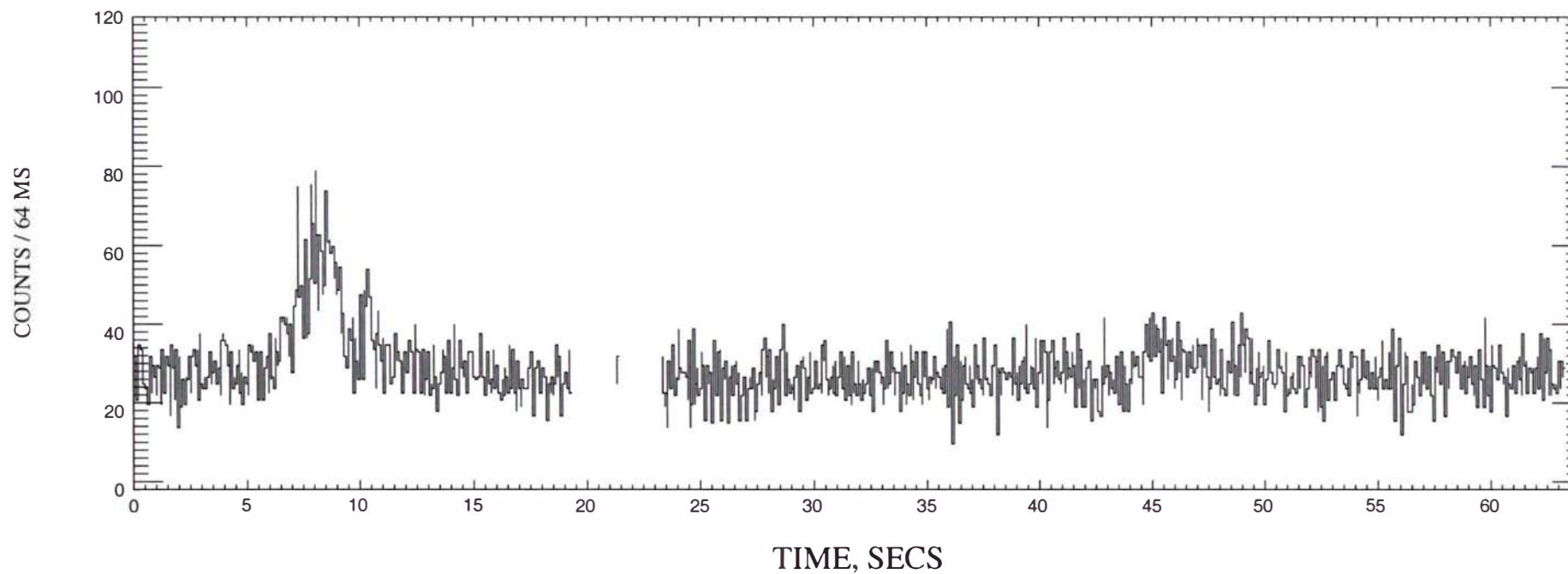
Burst Counter 1 at UT= 4.265132450528 h=15354.477 s 04:15:54.477

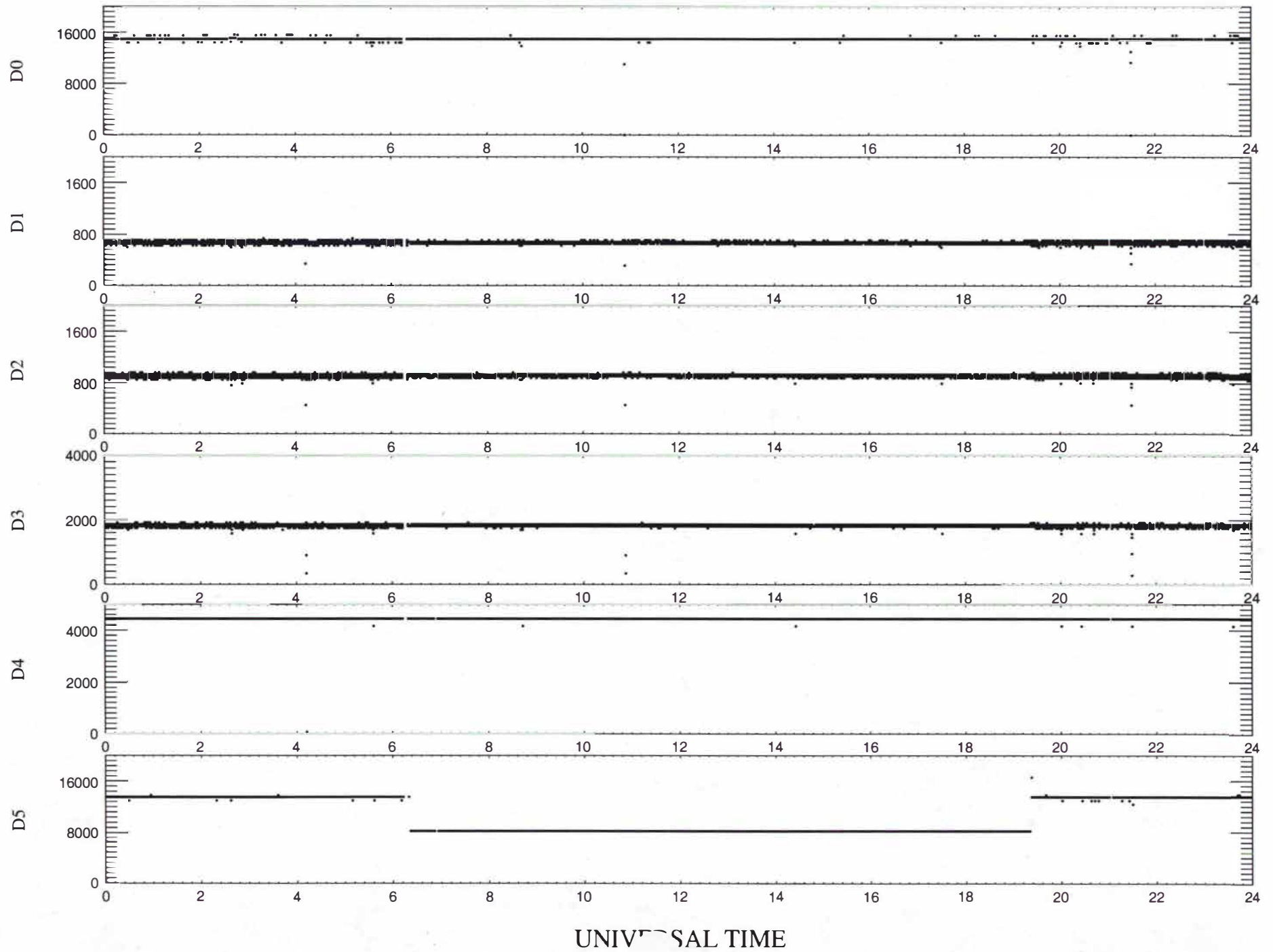


Burst Counter 2 at UT= 5.098439699809 h=18354.383 s 05:05:54.383



Burst Counter 3 at UT= 6.581594289144 h=23693.739 s 06:34:53.739





From SAHI@fender.msfc.nasa.gov Sat Sep 18 09:31 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Sat, 18 Sep 1999 11:18:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7764

BATSEARCH PROGRAM

BATSE BURST # 7764
EVENT OF 1999 SEP 14 DAY OF YEAR=257
EVENT CROSSING TIME AT BATSE : 53534. S. OR 14:52:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 44.000 38.000
BATSE PEAK COUNTING RATE: 8000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 9/ 99 IS:
RA= 157.297 DEC= -14.451 DIST= 5.475 AU
BATSE-ULYSSES DISTANCE = 819032379. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1244.25 SECS.
CROSSING TIME AT ULYSSES IS 54778. S. OR 15:12:58 +/- 491.17 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 9/ 99 IS:
RA= 245.022 DEC= -23.303 DIST= 1.262 AU
MARS-BATSE DISTANCE = 188787360. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 23.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 578.79 SECS.
CROSSING TIME AT MARS IS 54113. S. OR 15:01:52 +/- 51.87 SECONDS

BATSE BURST TRIGGER

NO.: 7764

TIME: TJD=1435 SECONDS=53534

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

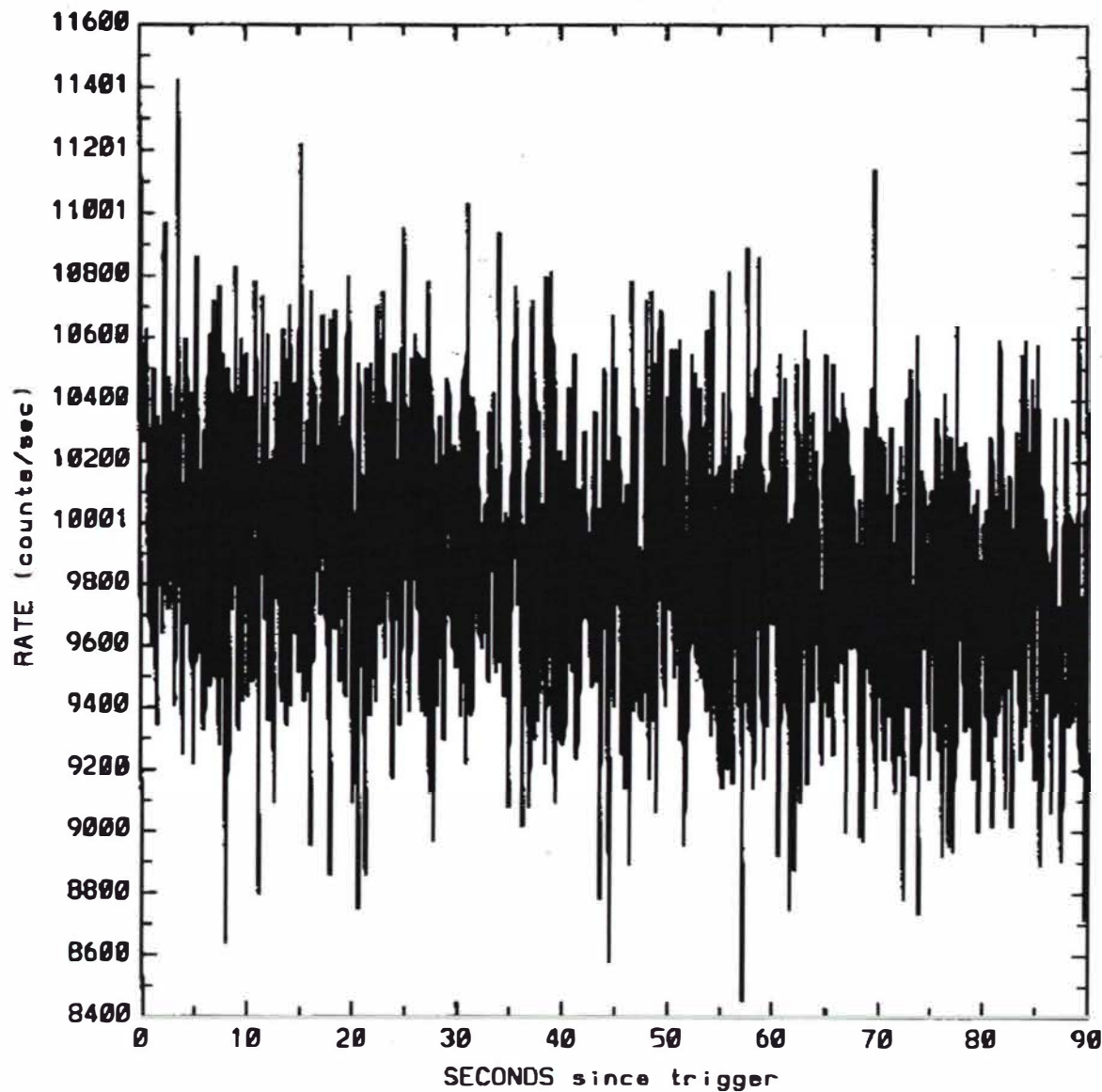
LOCATION: ZENITH=35.4 AZIMUTH=141.4 ERROR=6.35 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH STRUCTURE, DUR. ABOUT 0.15 S, STARTS AT T-0.1 S. WEAKLY
VISIBLE ABOVE 300 KEV. NOT VISIBLE BELOW 50 KEV. BAD DSELB(0,1) IN TTS, MER AND
SHERB DATA,

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7764	990914	11435	53534	8000	044	+38	.15

MER Data for K. Hurley, No. 7764



24-MAR-2000 09:06.45

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # : 7764

Trigger Time:
11435 / 53534.137

Burst Data Type:
'MER'

Deadtime
Corrected: N

Background Data
Type: CONT

Minimum Integ. Time:
0.064 seconds

Detectors (7..0),
-----10

Channels:
(0..6)

Quality Mask:
BDISP1

BATSE BURST# 7764

ULYSSES RT

18 / 9 / 99

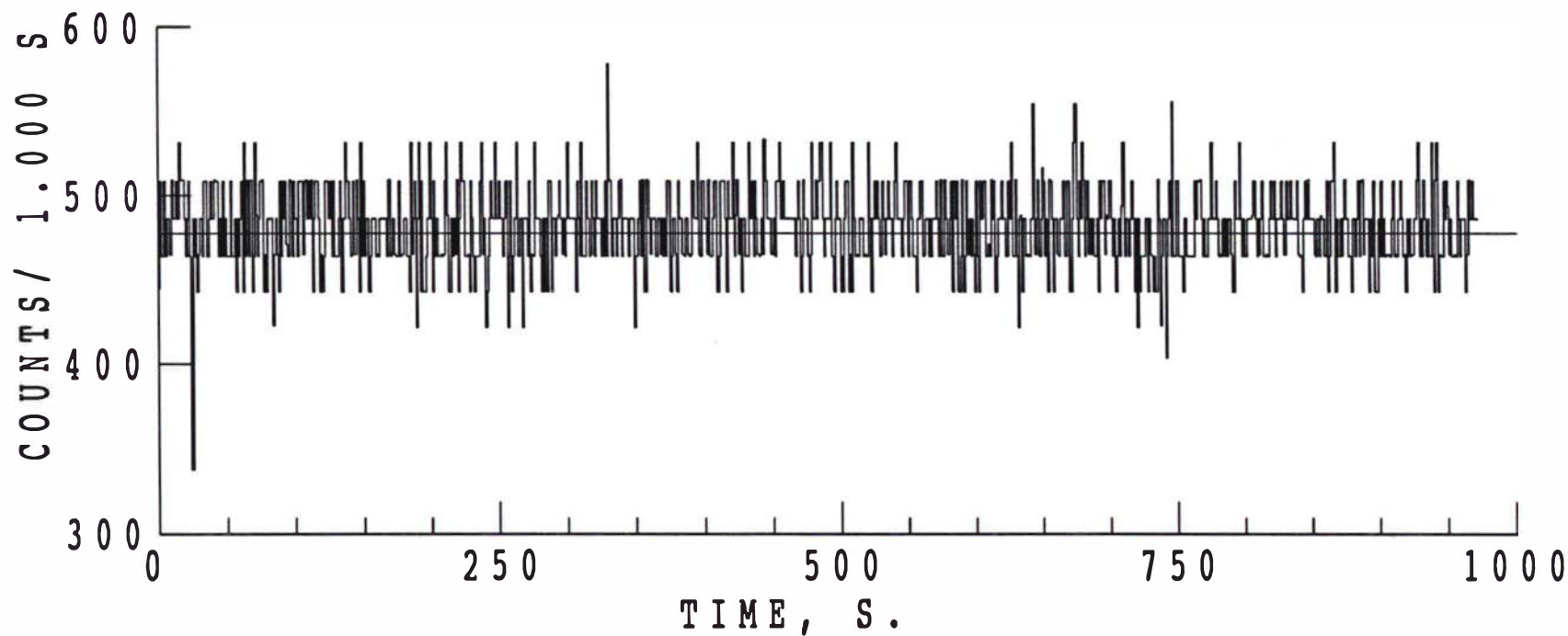
14 / 9 / 99 54288.465 s

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



KONUS

ULYSSES RT

16 / 03 / 00

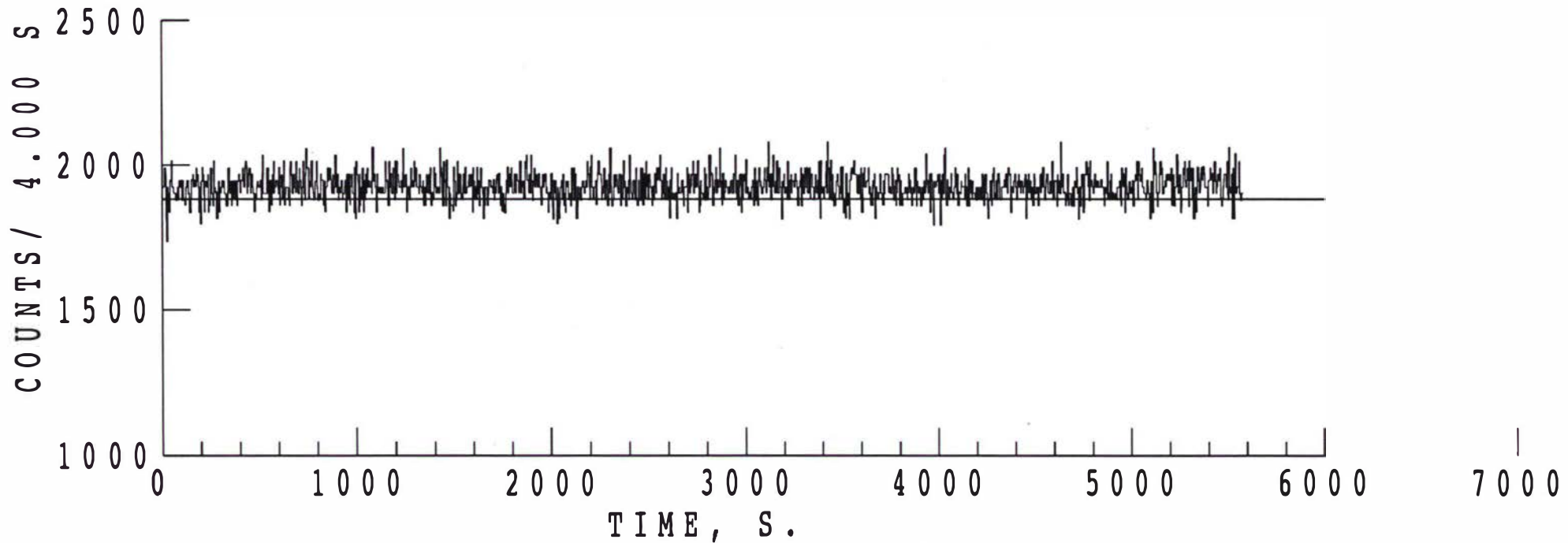
14 / 09 / 99 53532.457 s

0.500 S INTERVALS REGROUPED BY 8

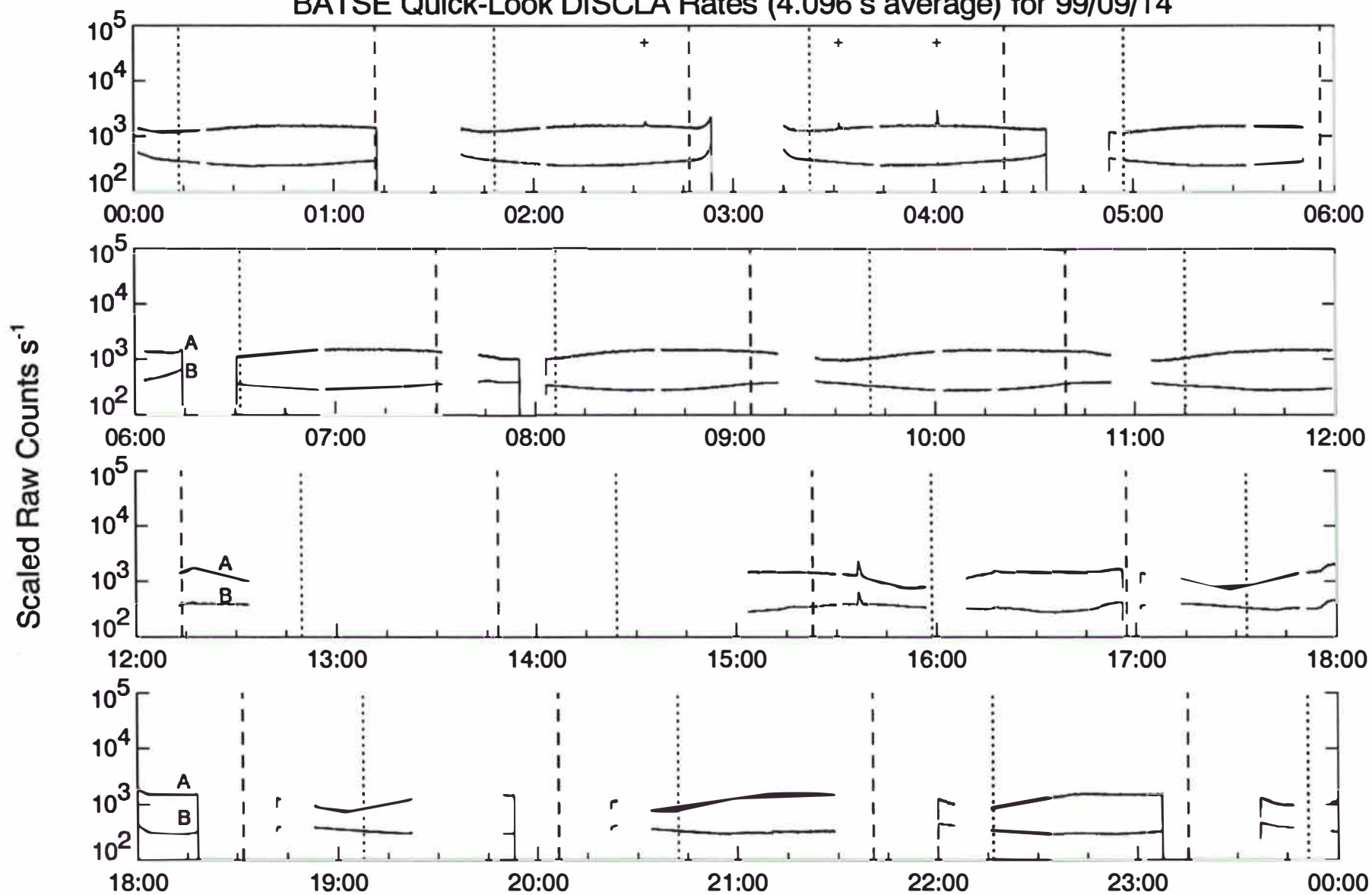
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/14

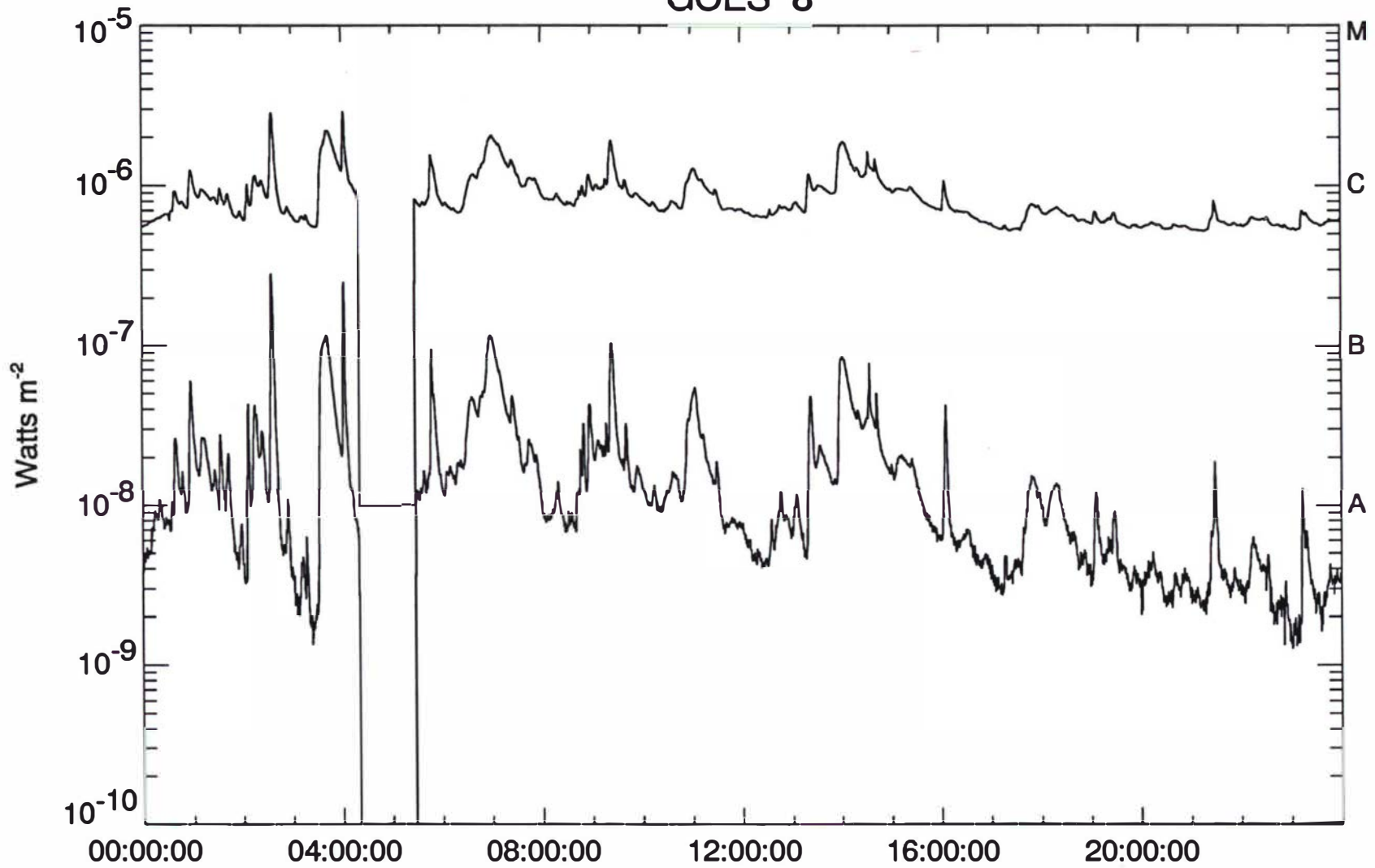


Current Time: 99/09/18, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/14, 0000:00

Plot created: 99/09/18, 1008

Channel

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

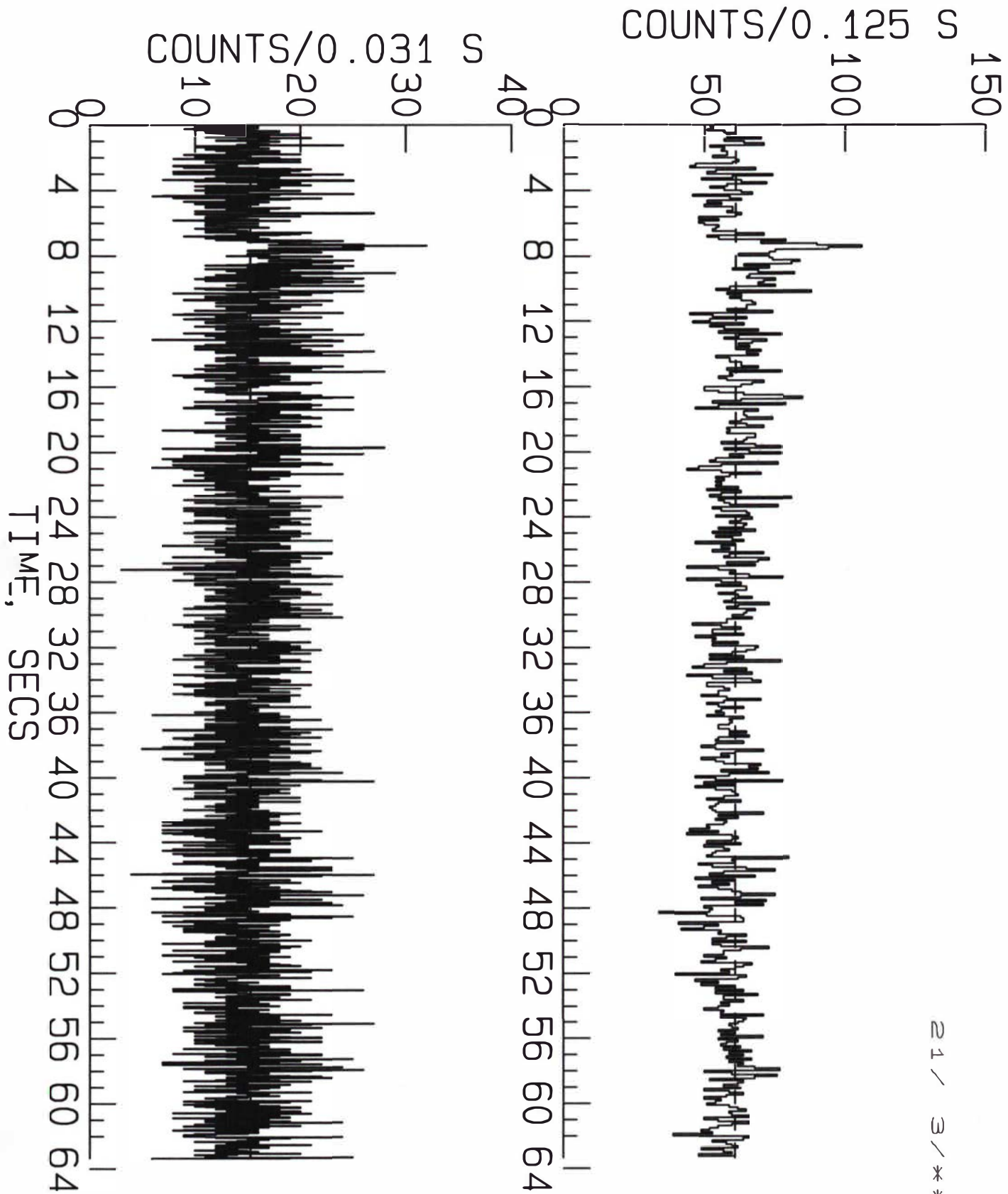
Background not subtracted
Background not subtracted
Sample average = 10

ULYSSES

15/09/99

Ttrig=83895.555

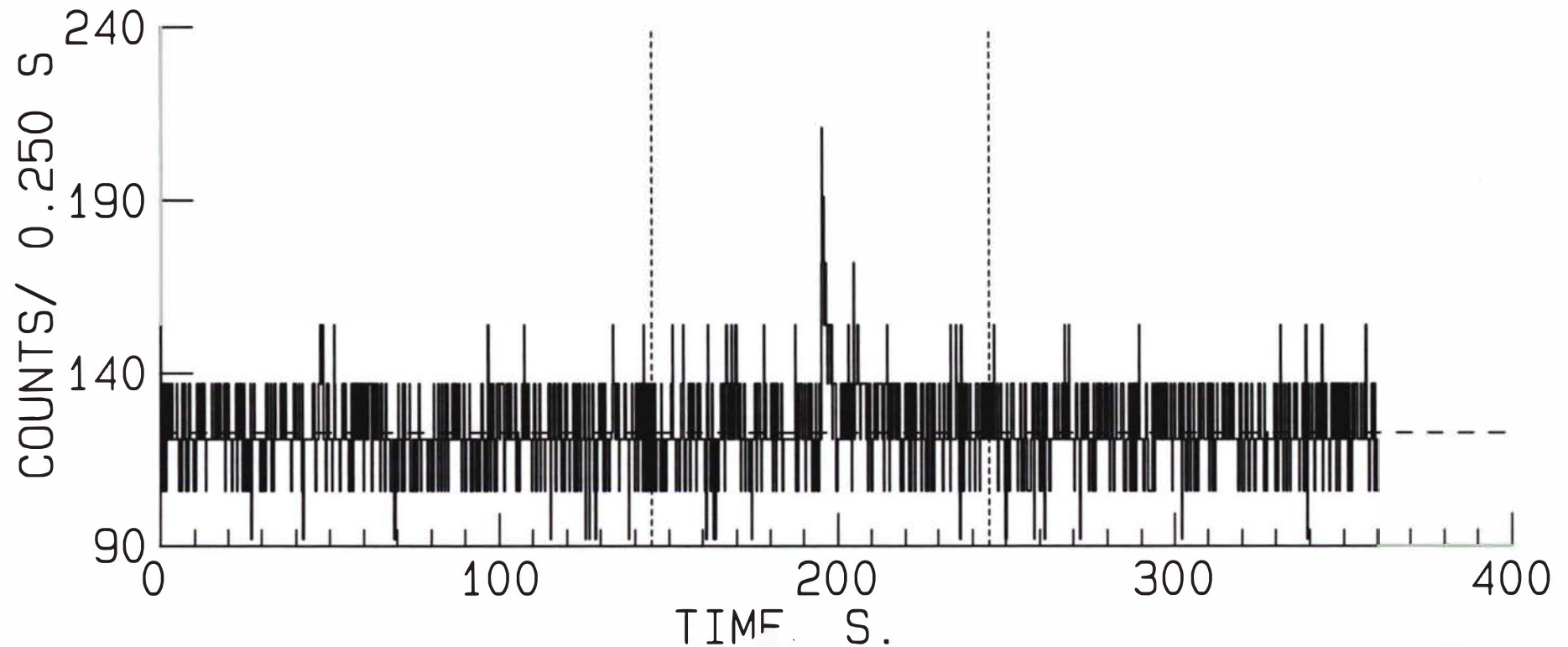
22- 152 keV



ULYSSES RT
15/ 9/99 83700.137 s
22- 152 keV

21 / 3 / 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

15/09/99

83722.553

100-1000 keV

COUNTS/0.064 S

3400

2400

1400

400

-30

13

29

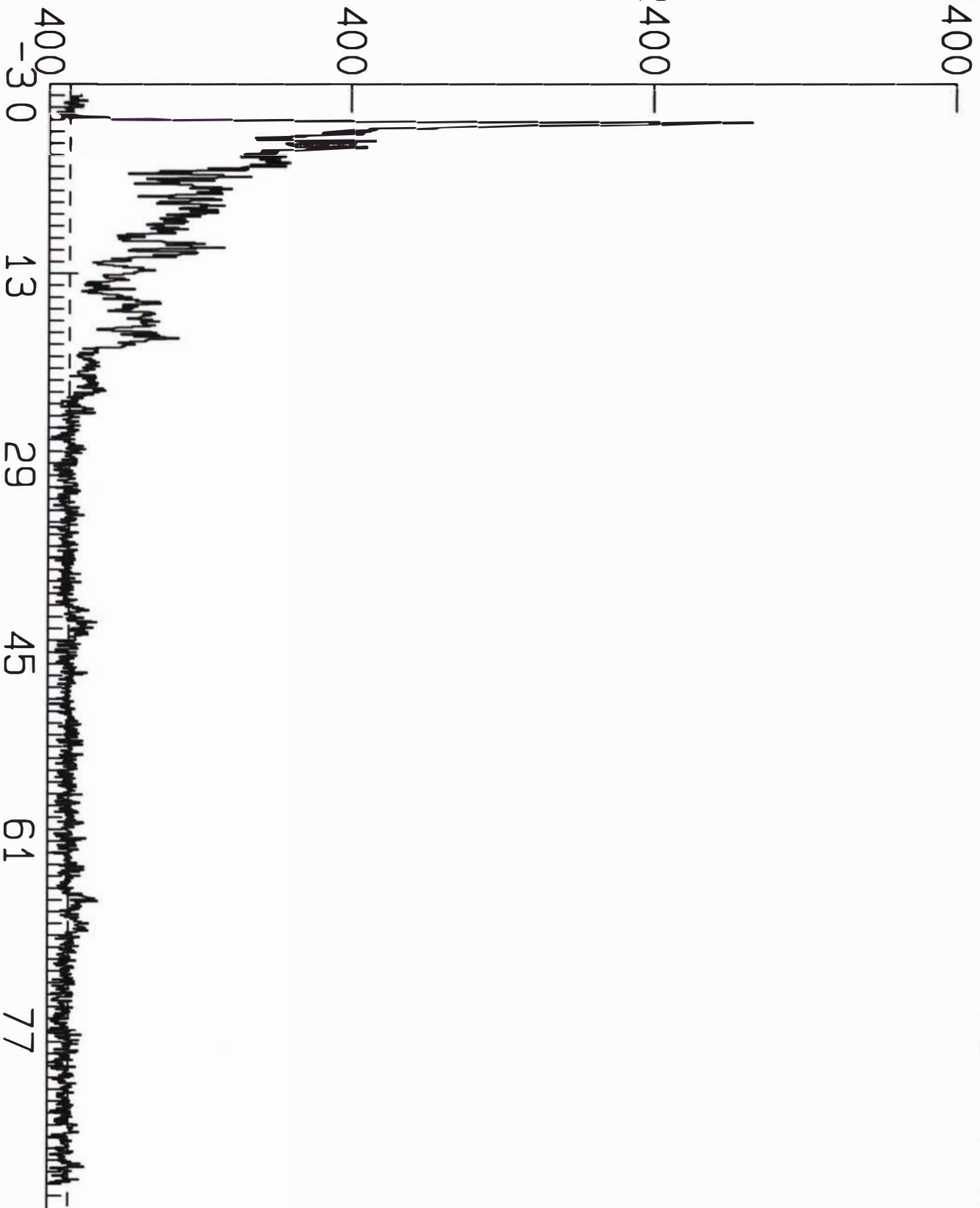
ME. SECS

45

61

77

30 / 9 / 99



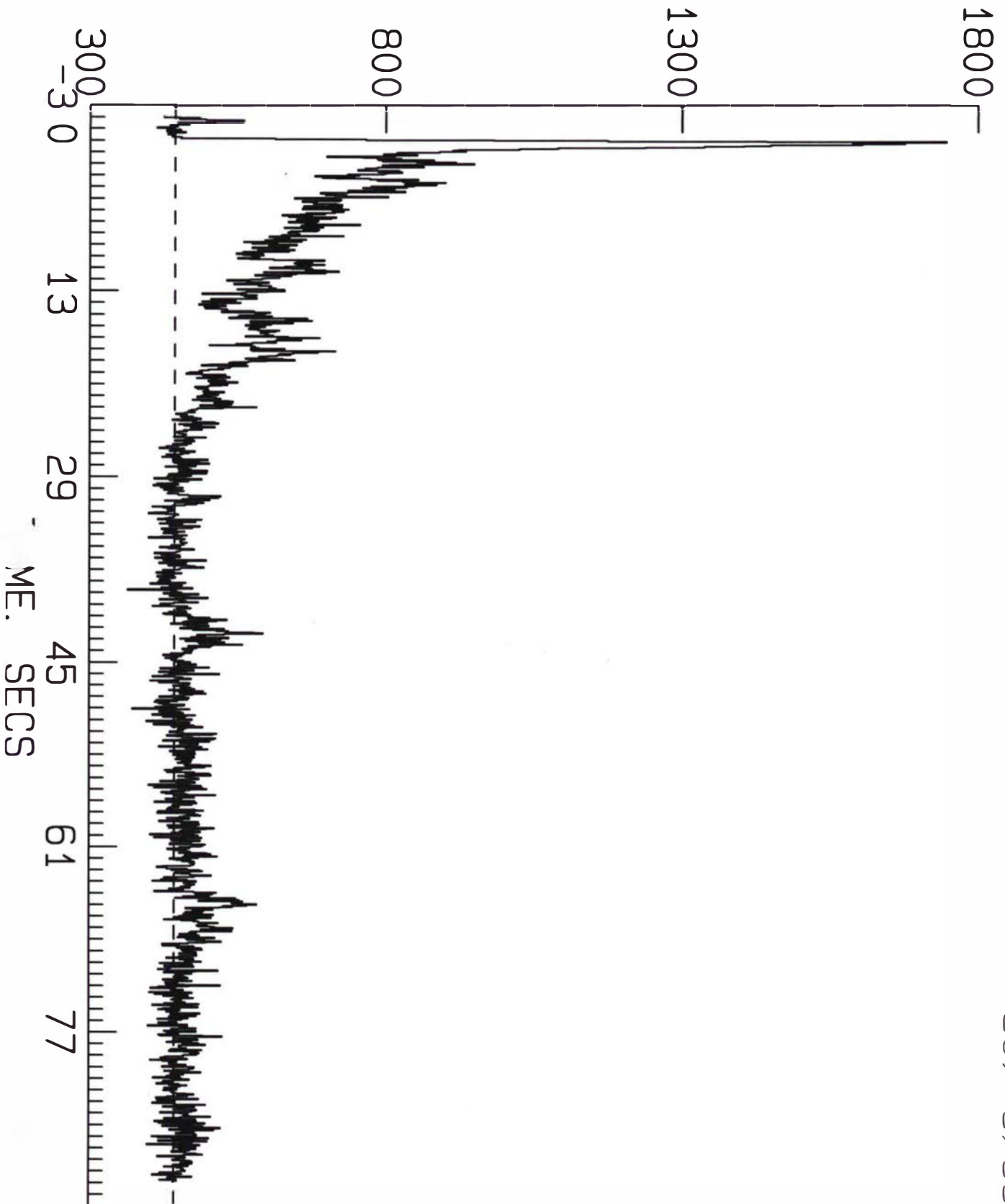
BATSE

15/09/99

83722.553

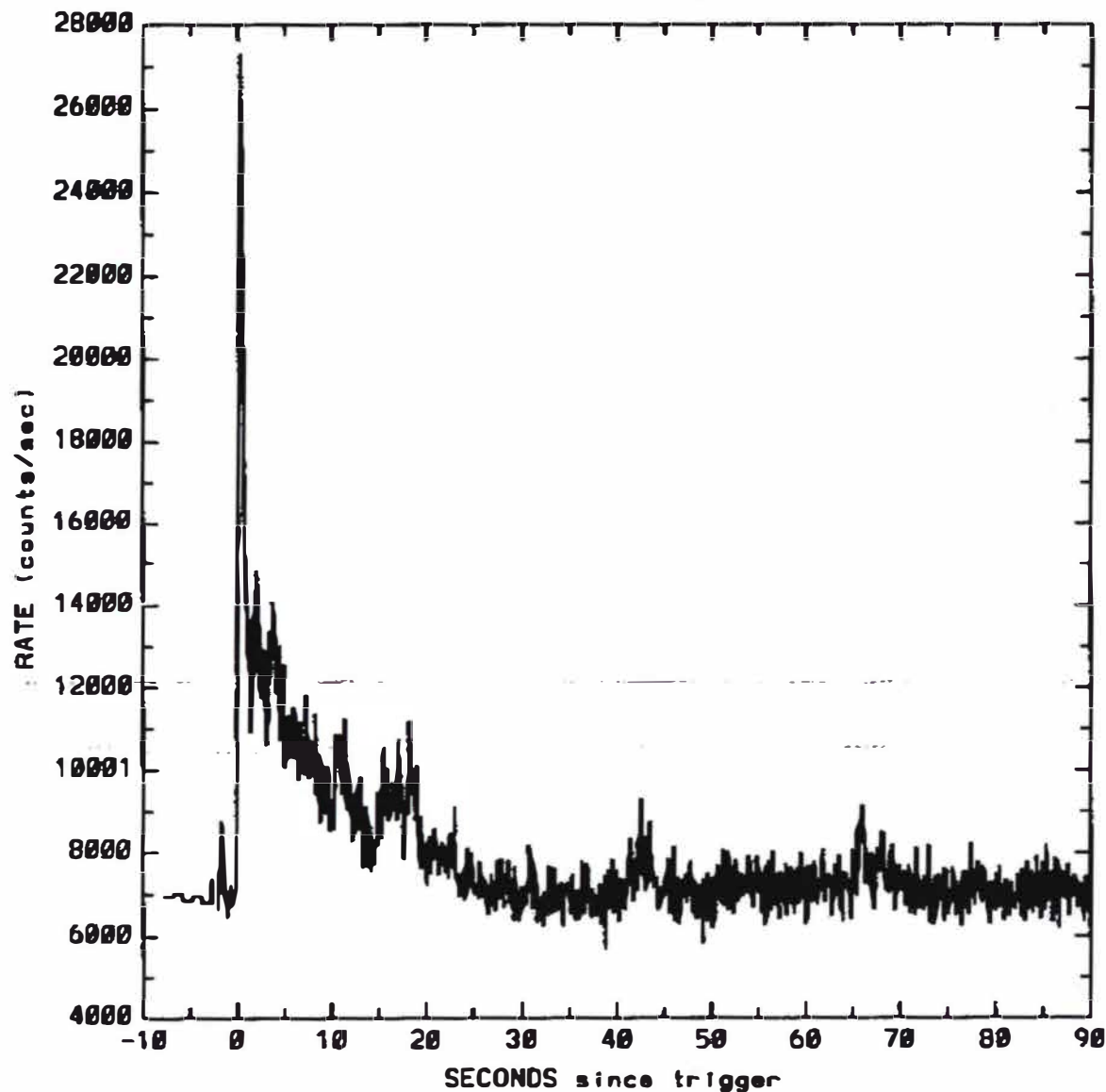
25- 100 keV

COUNTS/0.064 S



30 / 9 / 99

DISCSC Data for K. Hurley. No. 7766



28-SEP-1999 14:28:57

Created by NOPS 80
(Burst Display)
Version 12.26

Trigger # : 7766

Trigger Time:
11436 / 63722.953

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

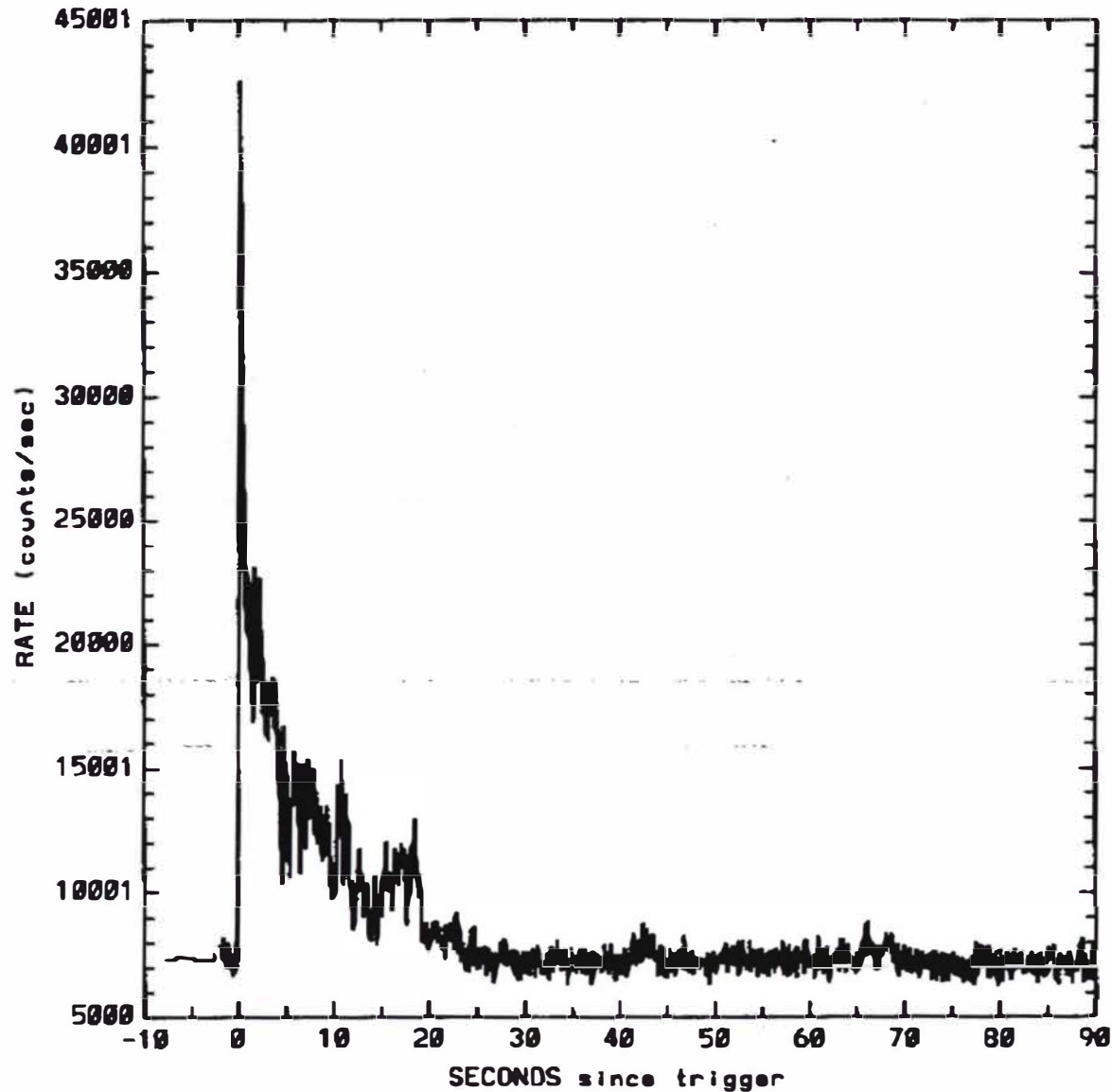
Minimum Integ. Time:
0.064 seconds

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

Discriminators:
(1..2)

Quality Mask:
B0ISP1

DISCSC Data for K. Hurley, No. 7766



20-SEP-1999 14.21.45

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

Trigger # : 7766

Trigger Time:
11436 / 63722.953

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

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

Discriminators:
(3 , 4)

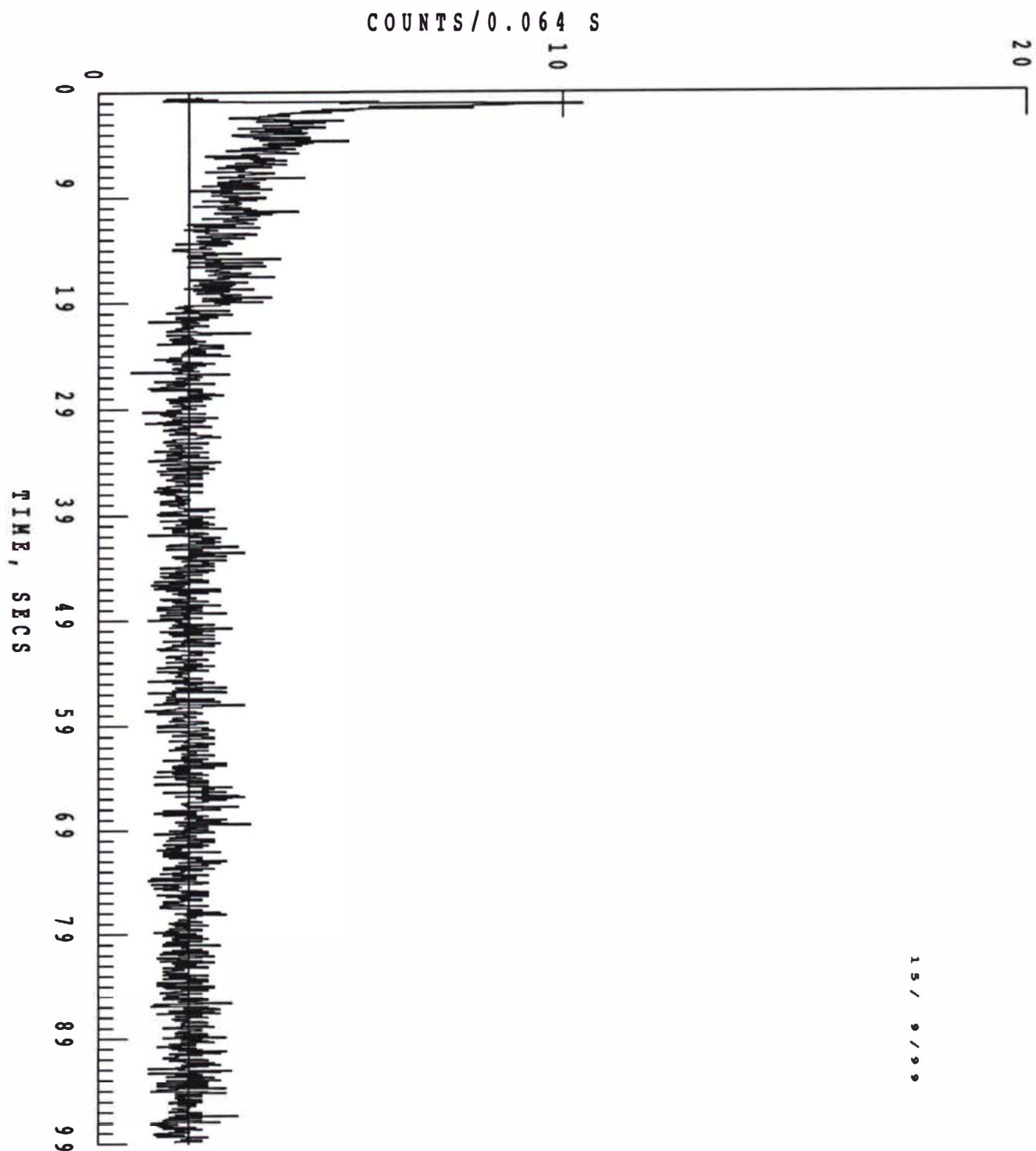
Quality Mask:
80ISP1

KONUS

15/09/99

83721.958

50- 200 keV



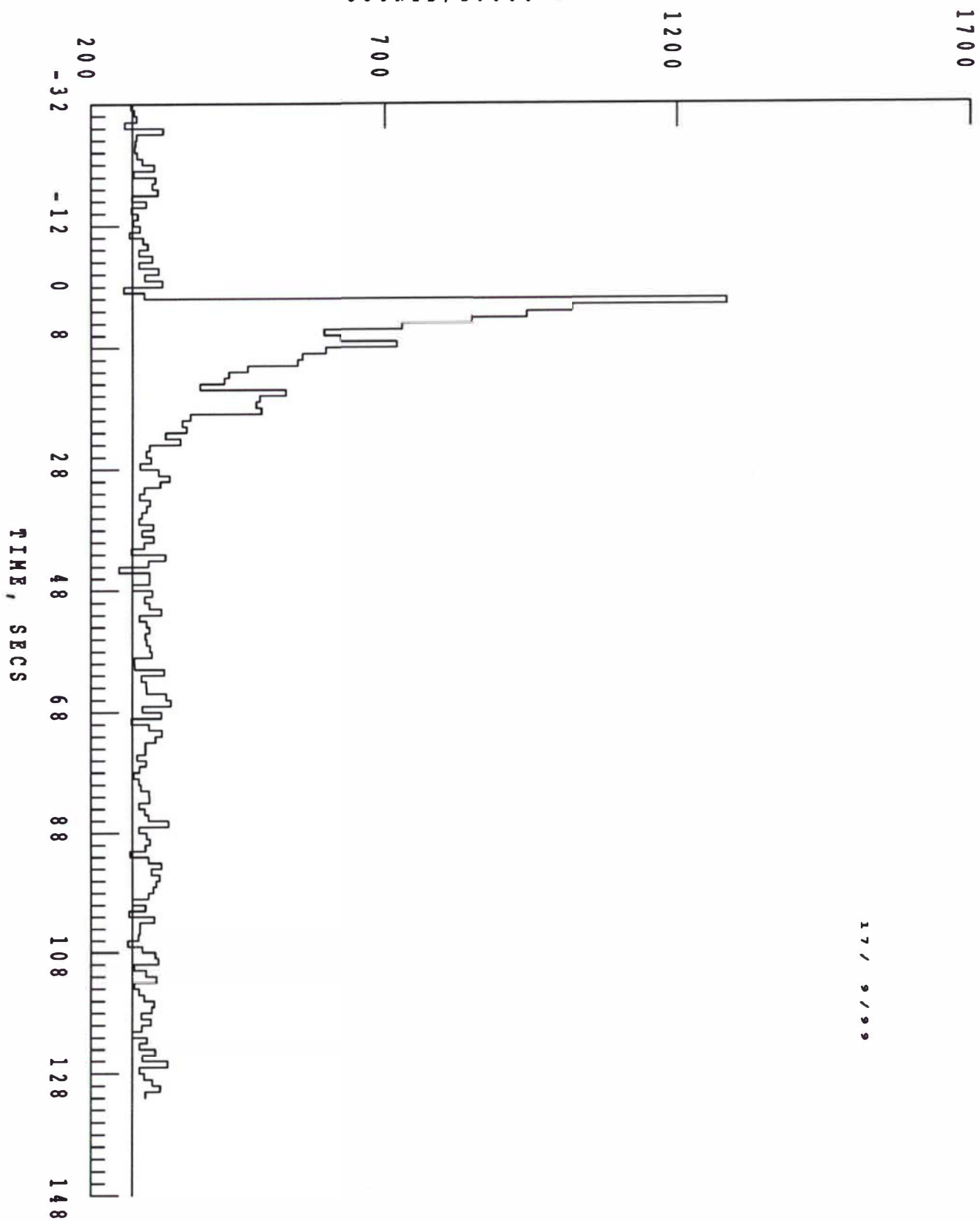
NEAR

15/09/99

83291.167

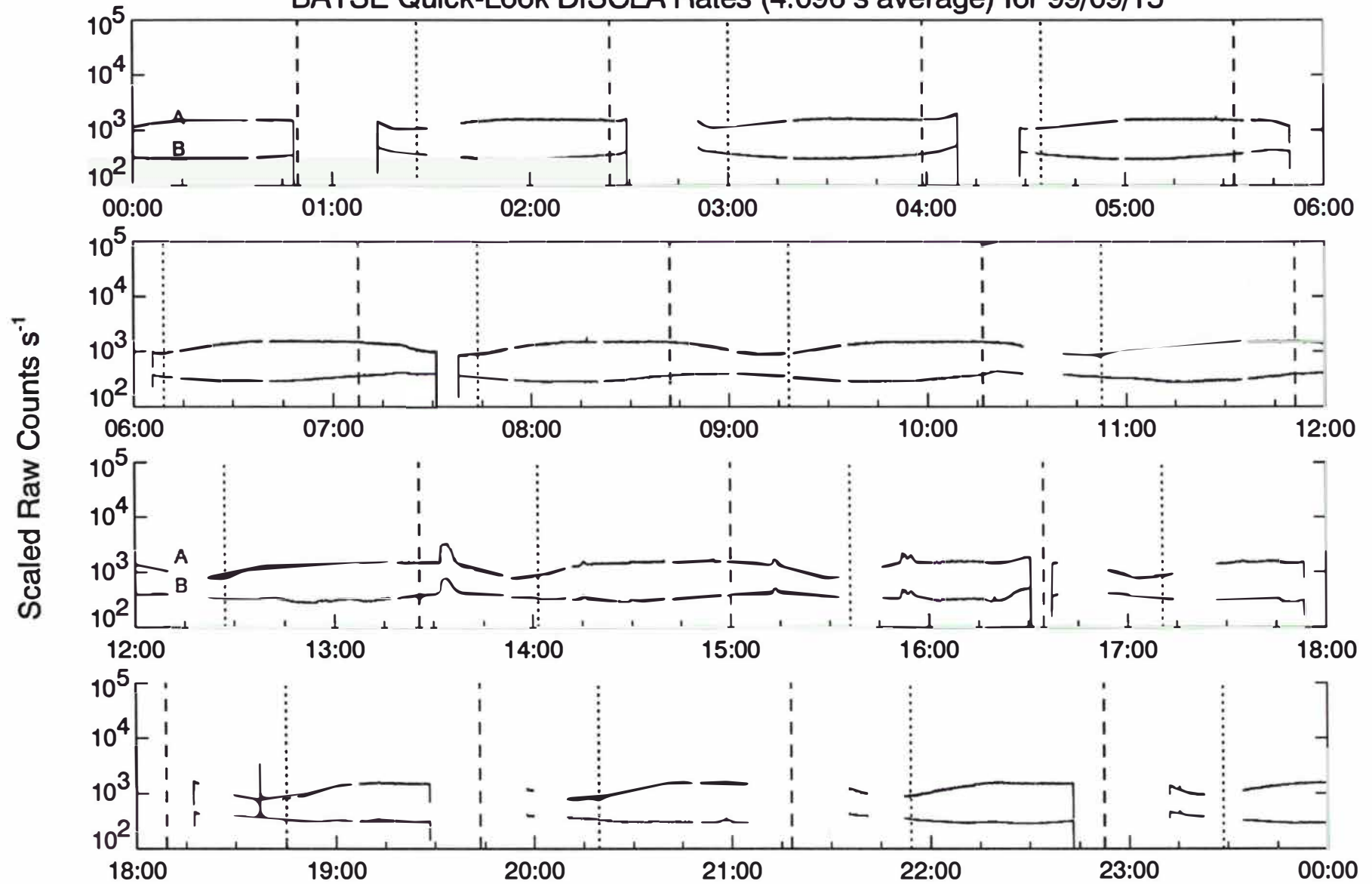
100-1000 keV

COUNTS/1.000 S



17 / 9 / 99

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/15

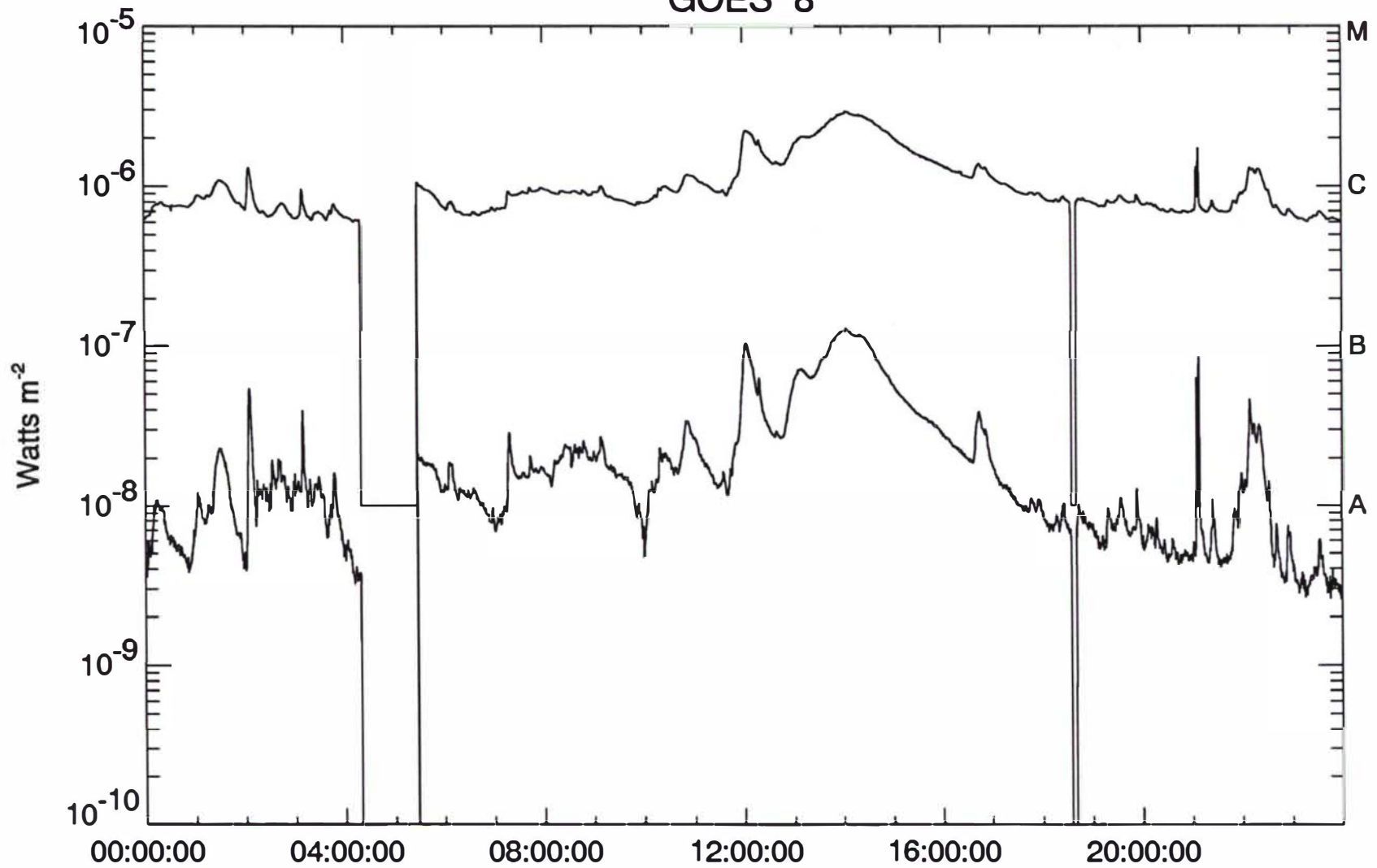


Current Time: 99/09/19, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/15, 0000:00

Plot created: 99/09/19, 1008

Channel

1 (1.0 - 8.0 Angstroms)

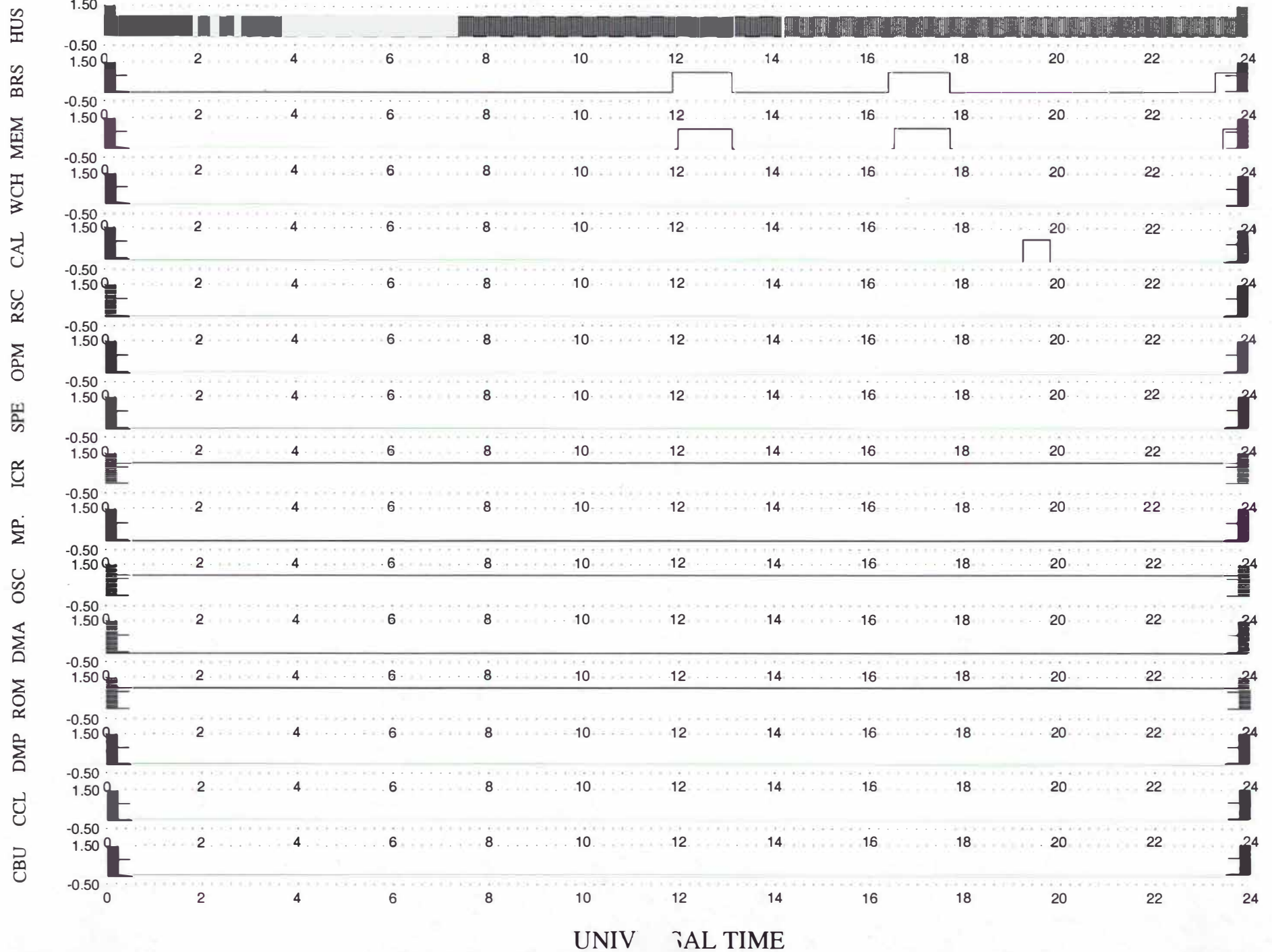
Background not subtracted

2 (0.5 - 4.0 Angstroms)

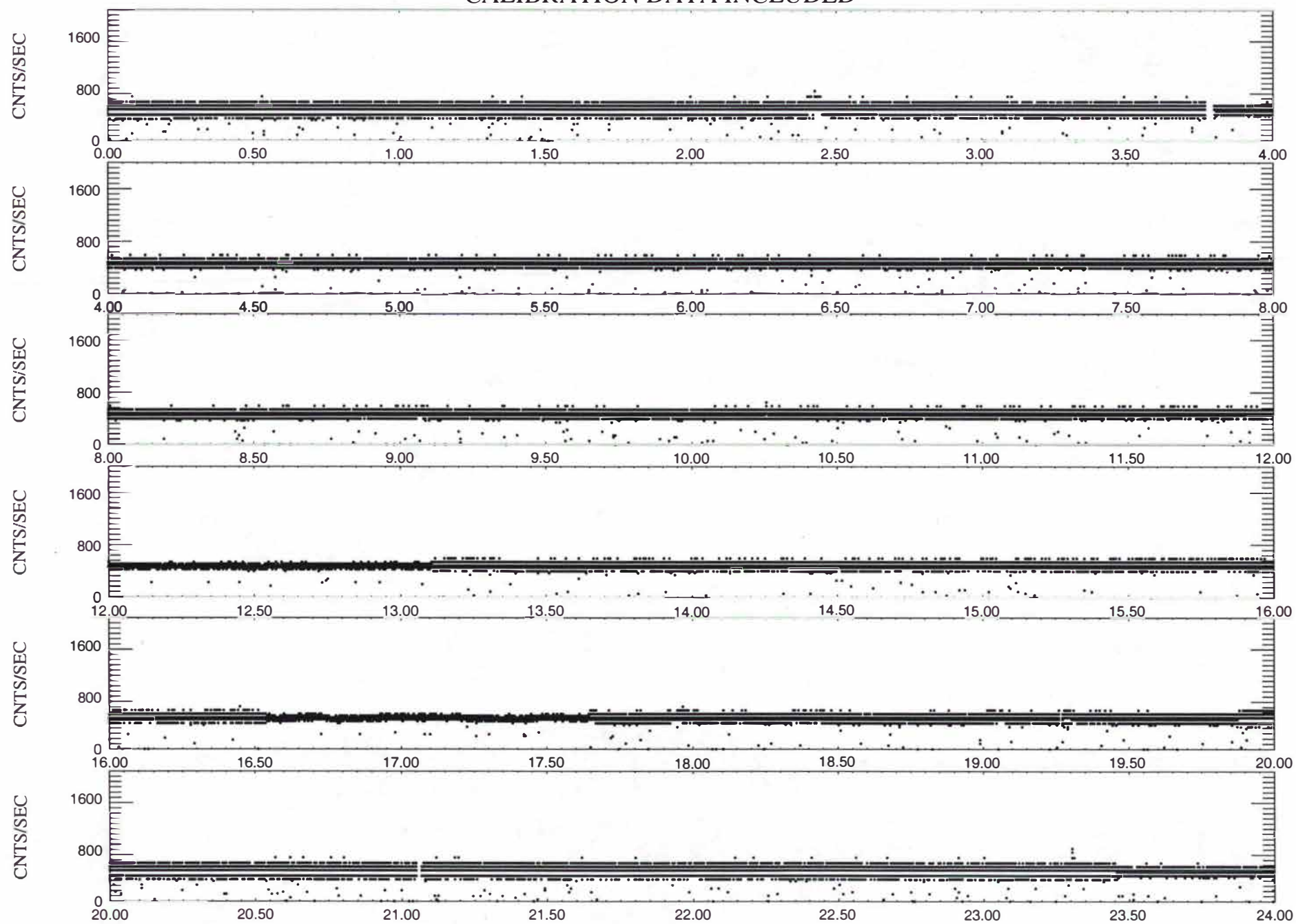
Background not subtracted

Sample average = 10

BURST NUMBER 4 - 6

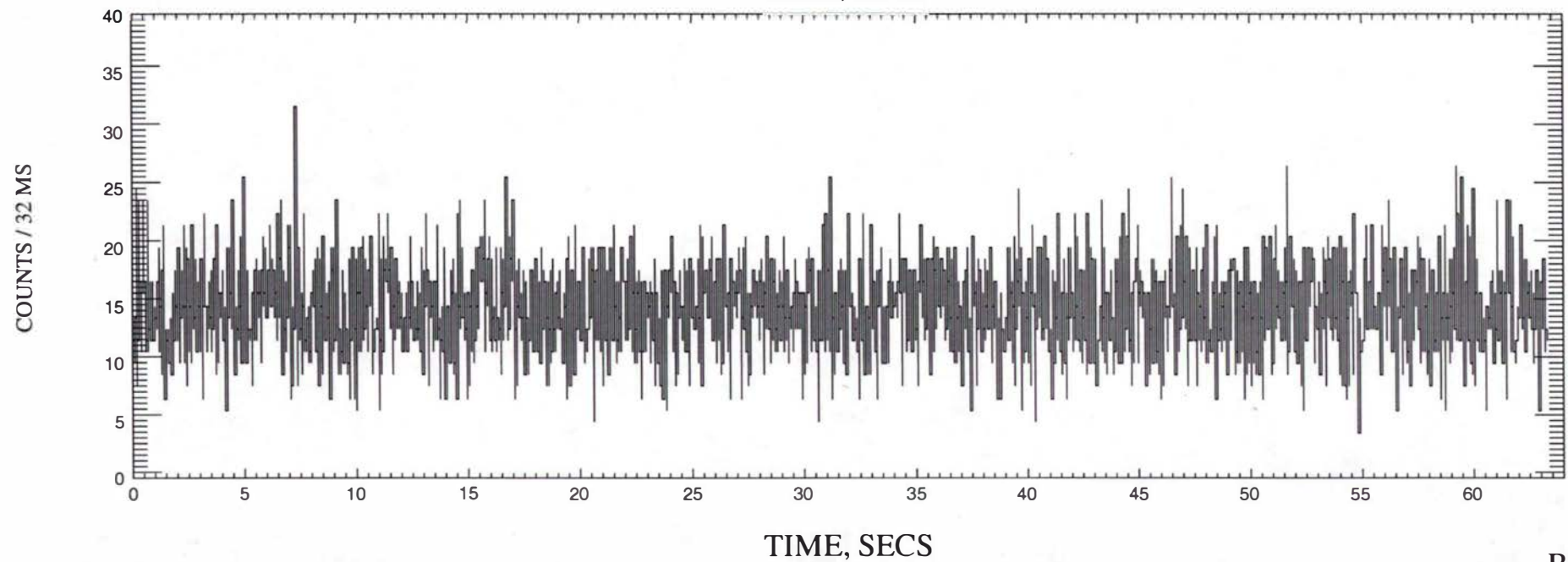
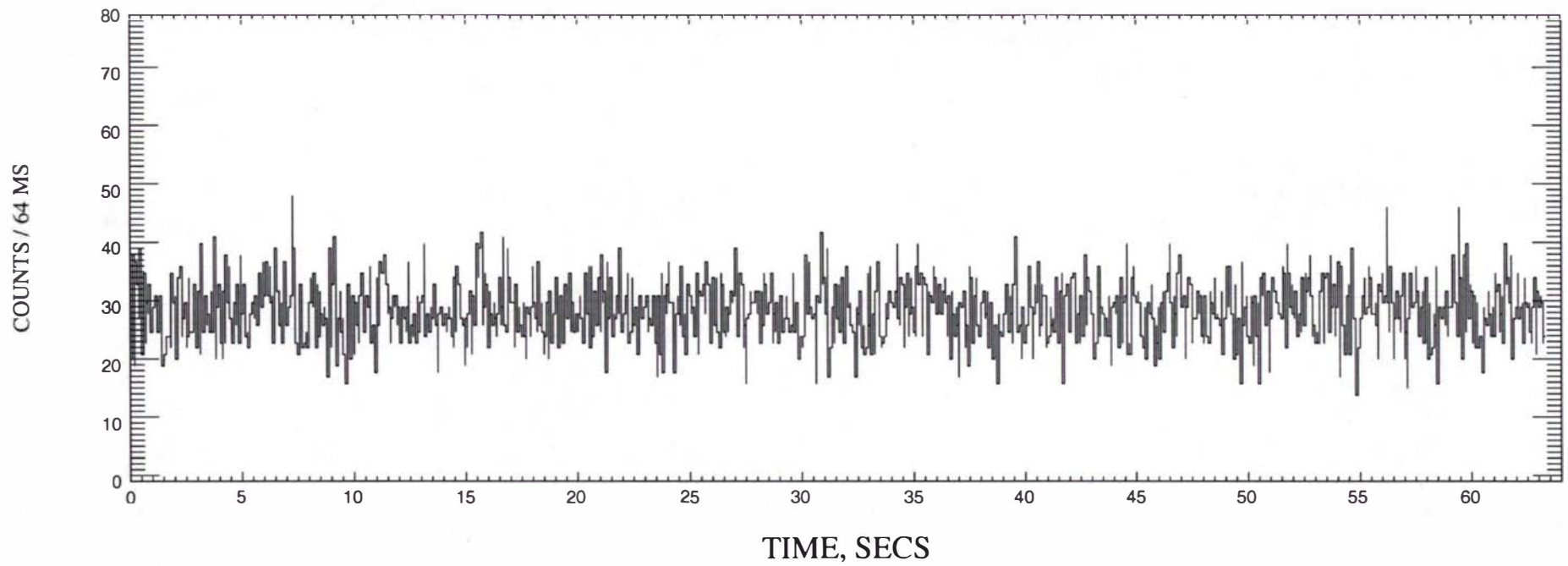


CALIBRATION DATA INCLUDED

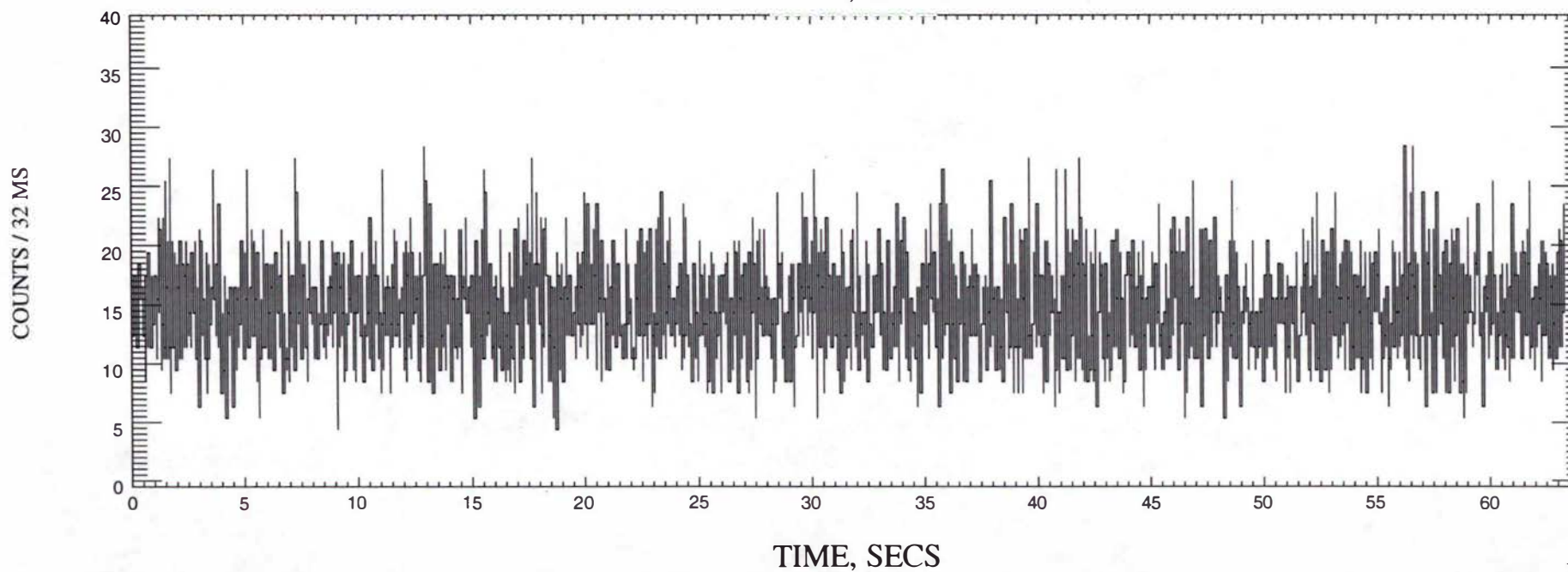
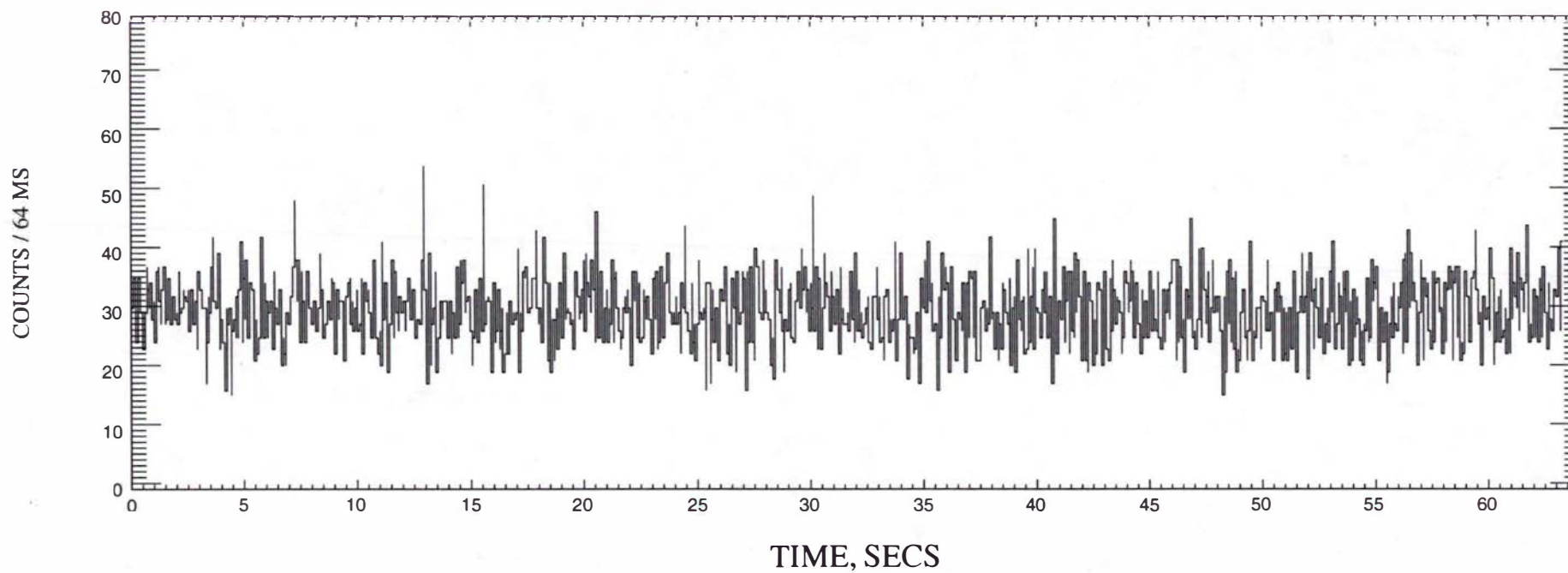


UNIVSAL TIME

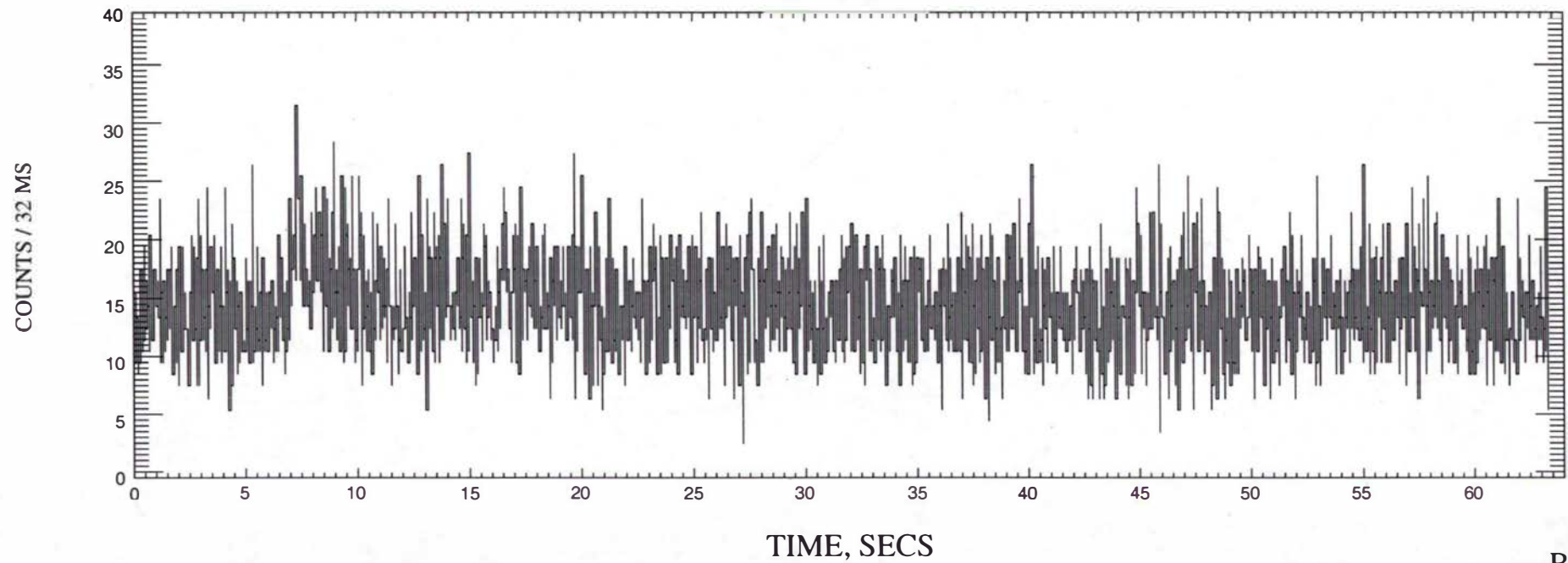
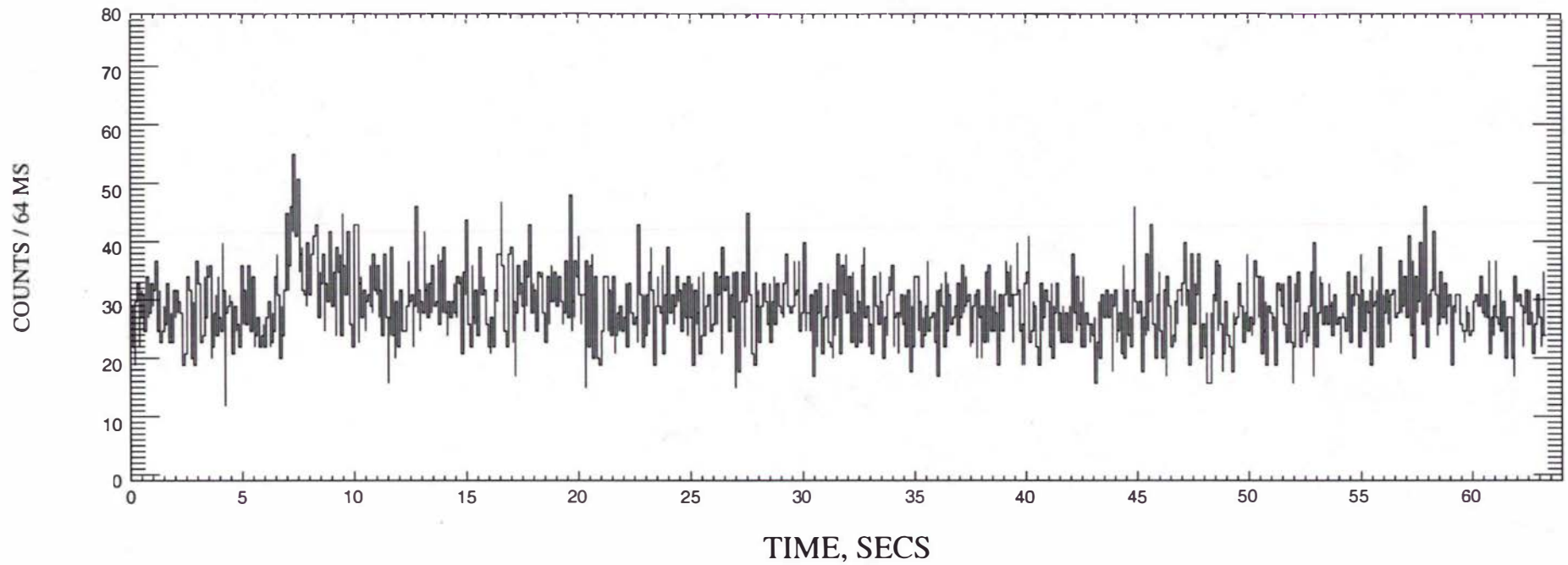
Burst Counter 4 at UT=11.849190864563 h=42657.087 s 11:50:57.087



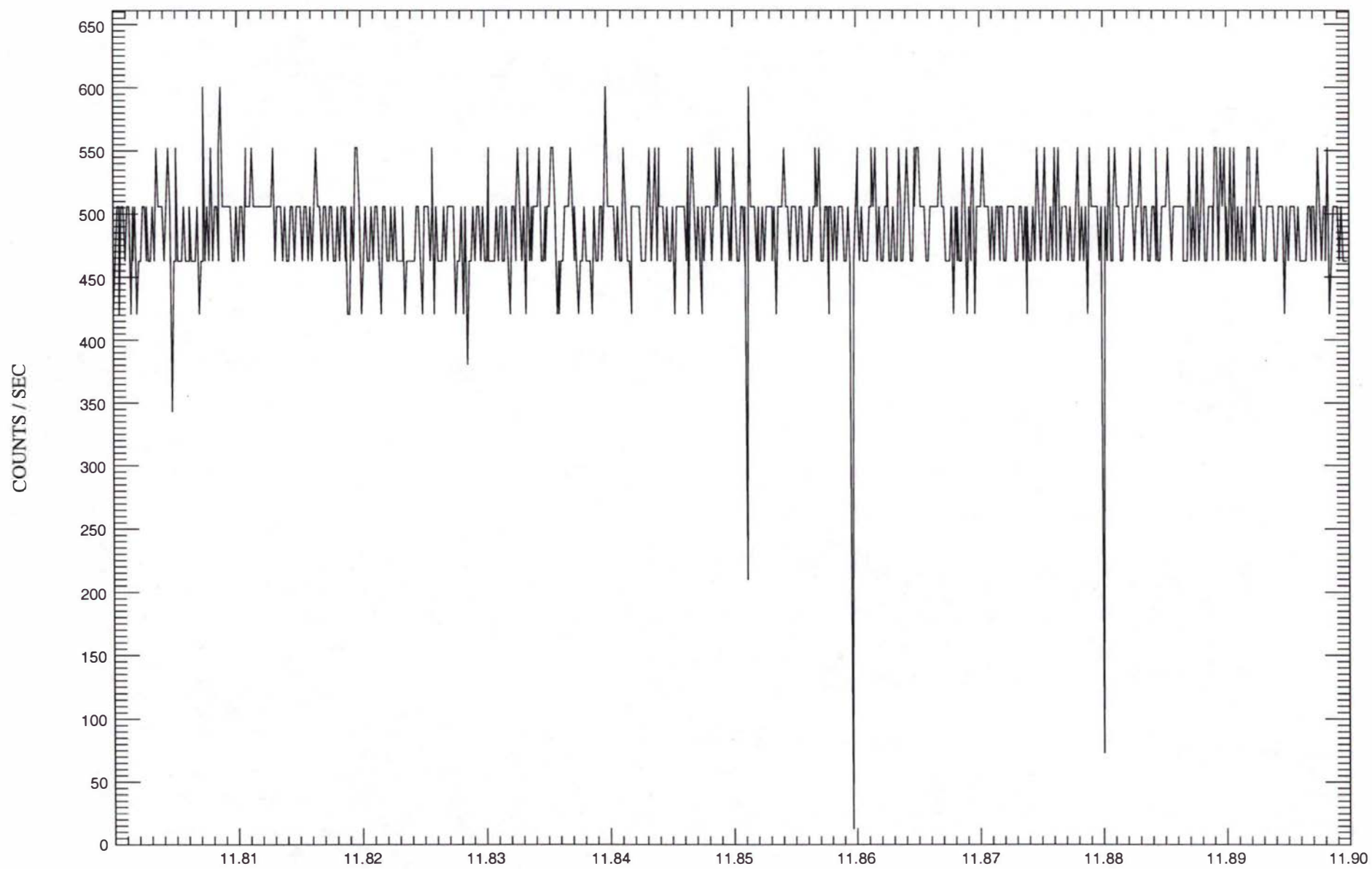
Burst Counter 5 at UT=16.384549441867 h=58984.378 s 16:23:04.378



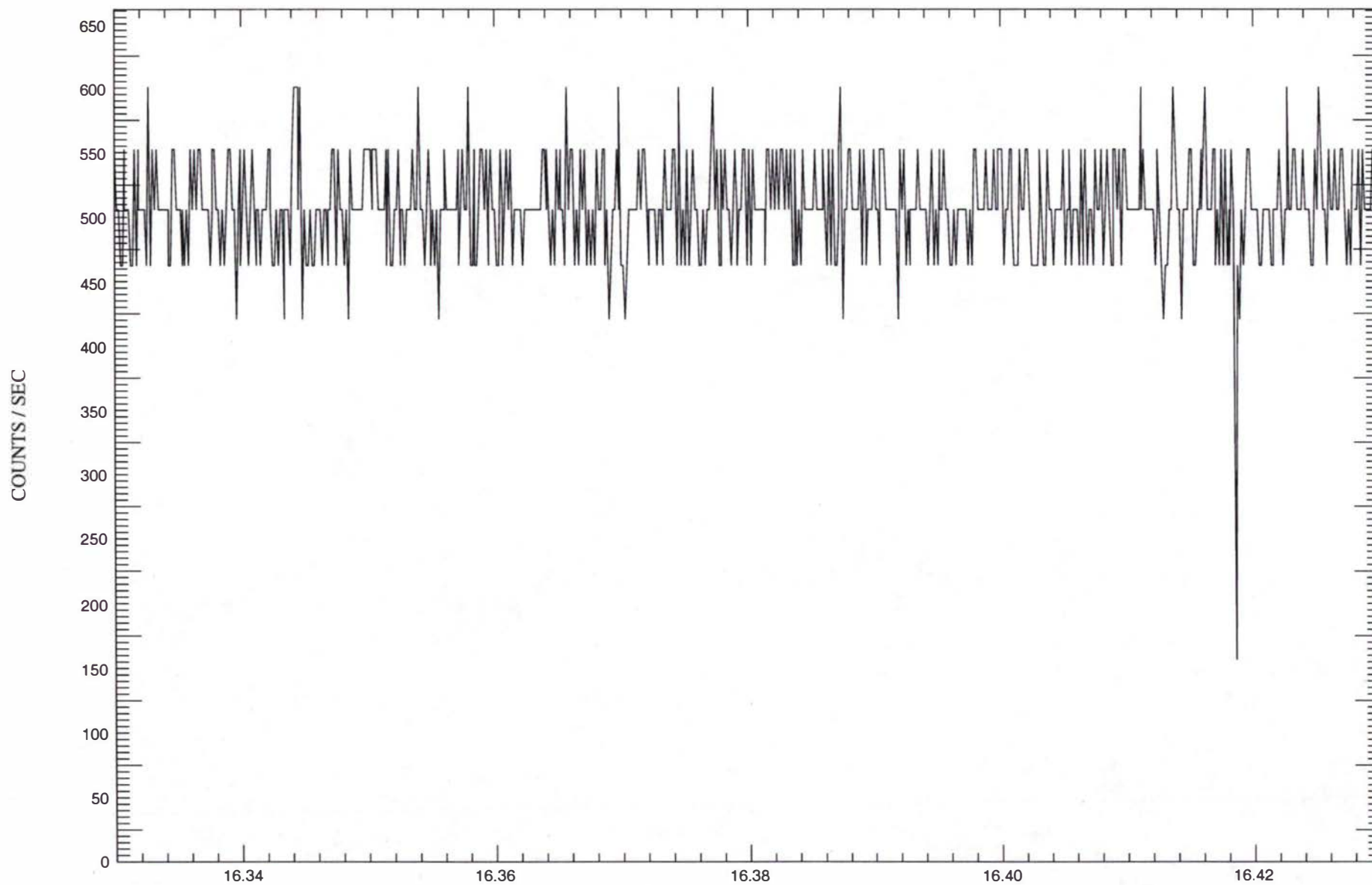
Burst Counter 6 at UT=23.304307683309 h=83895.508 s 23:18:15.508



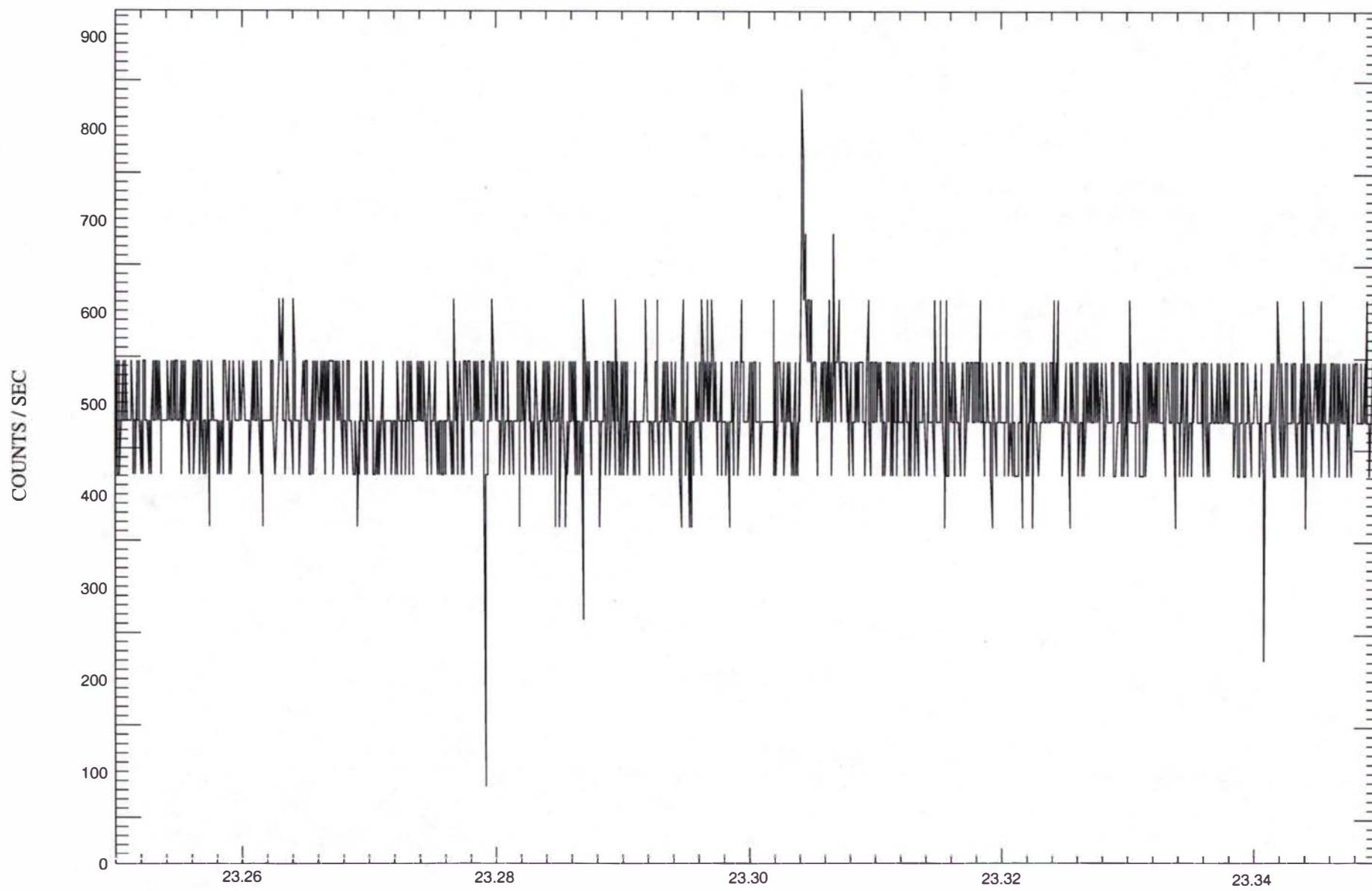
CALIBRATION DATA INCLUDED

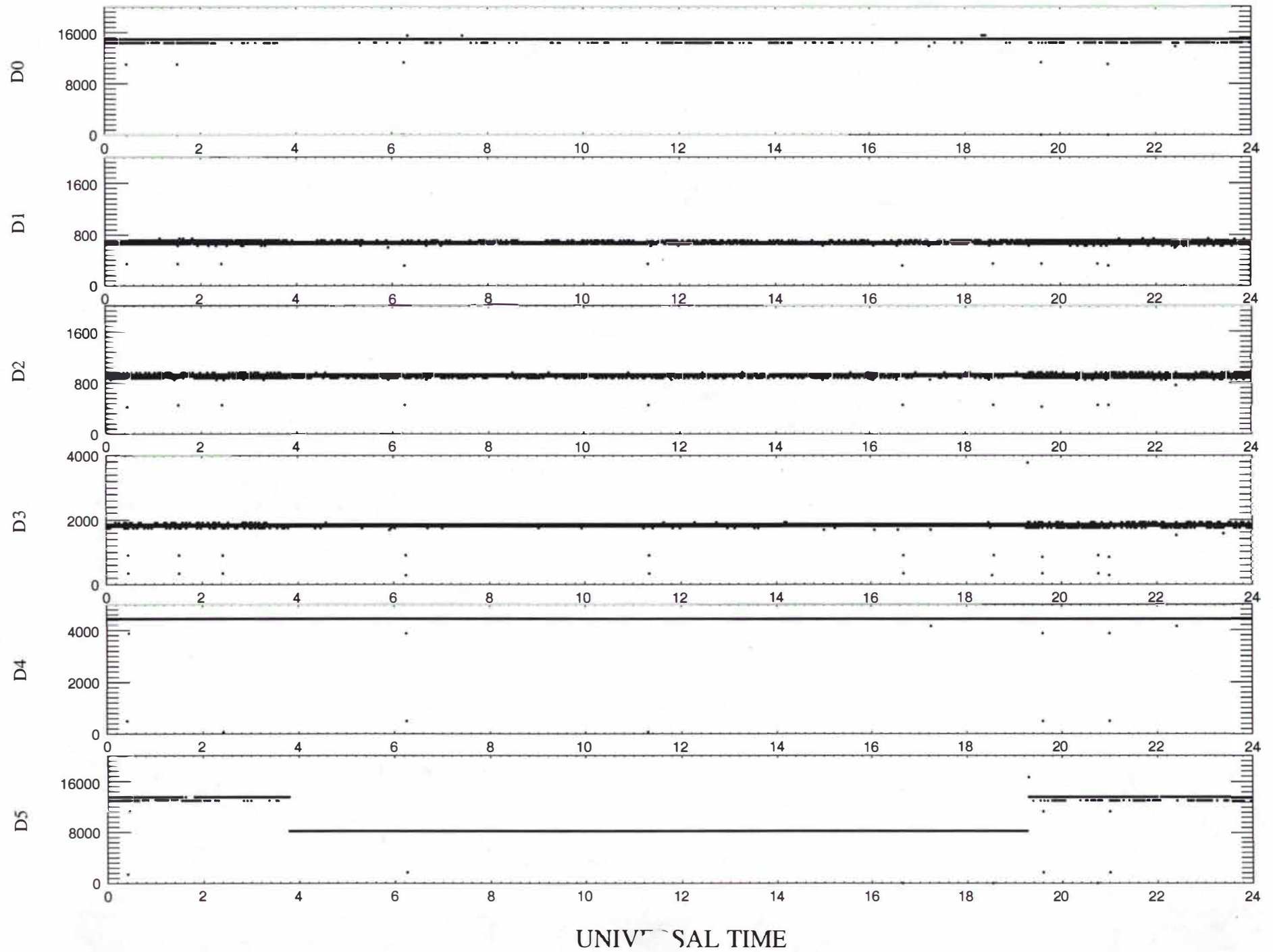


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Fri Sep 17 08:21 PDT 1999
Date: Fri, 17 Sep 1999 10:27:42 -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.: 7767

TIME: TJD=1437 SECONDS=44129

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

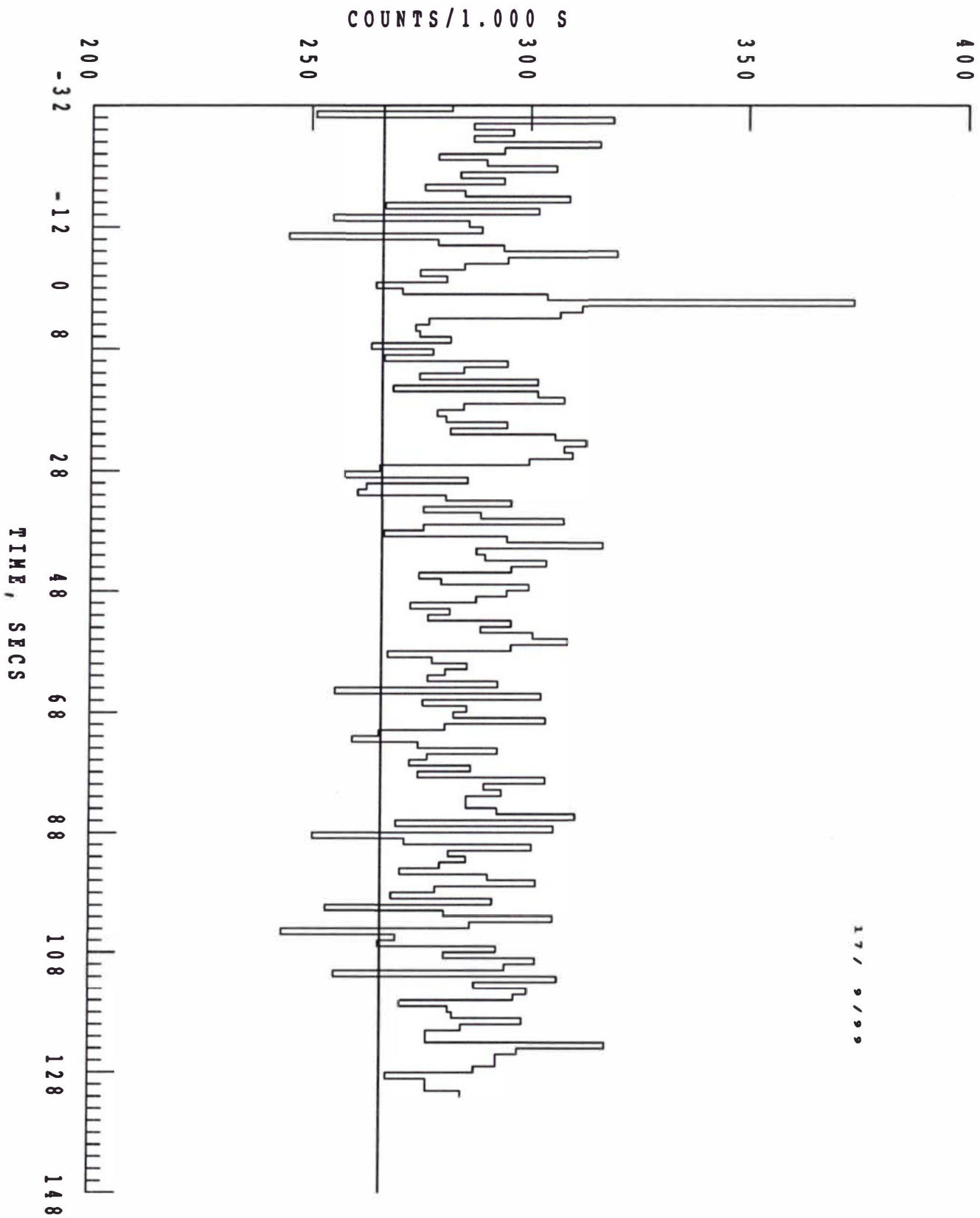
PARTICLE EVENT AT DISTANCE, OVER CARIBBEAN.

NEAR

16/09/99

80980.130

100-1000 keV



KNEAR GRS 19990916 80980

ULYSSES RT

17 / 9 / 99

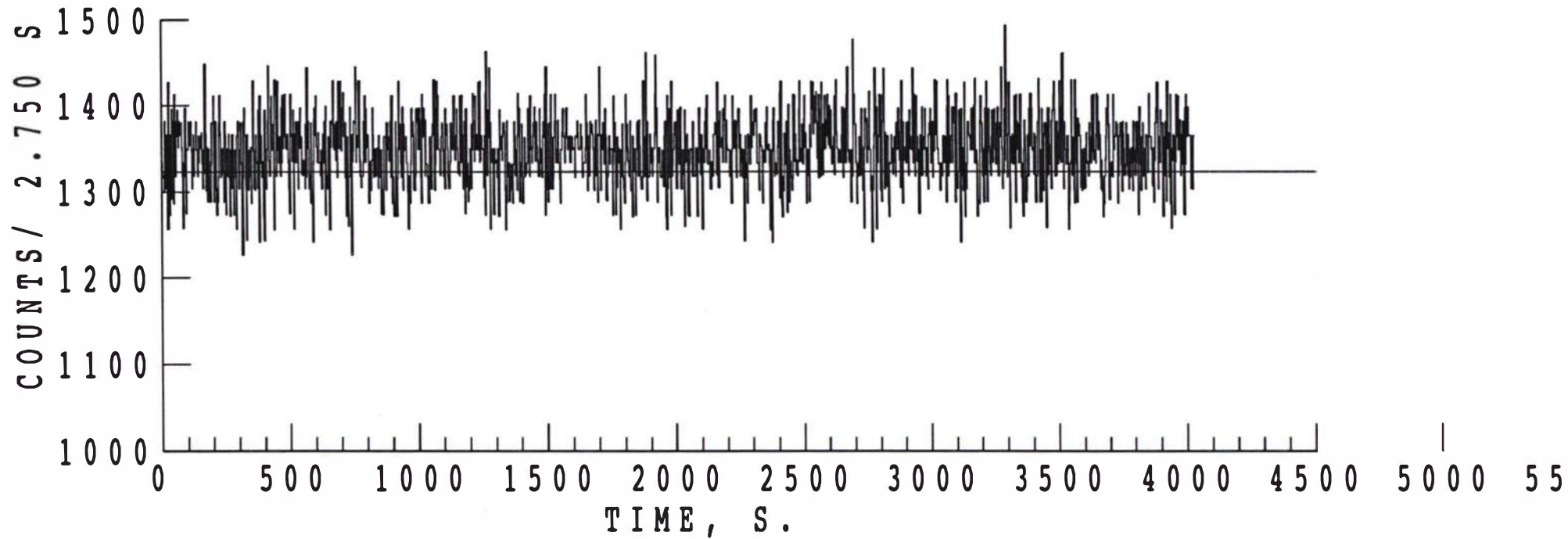
16 / 9 / 99 78948.219 s

0.250 S INTERVALS REGROUPED BY 11

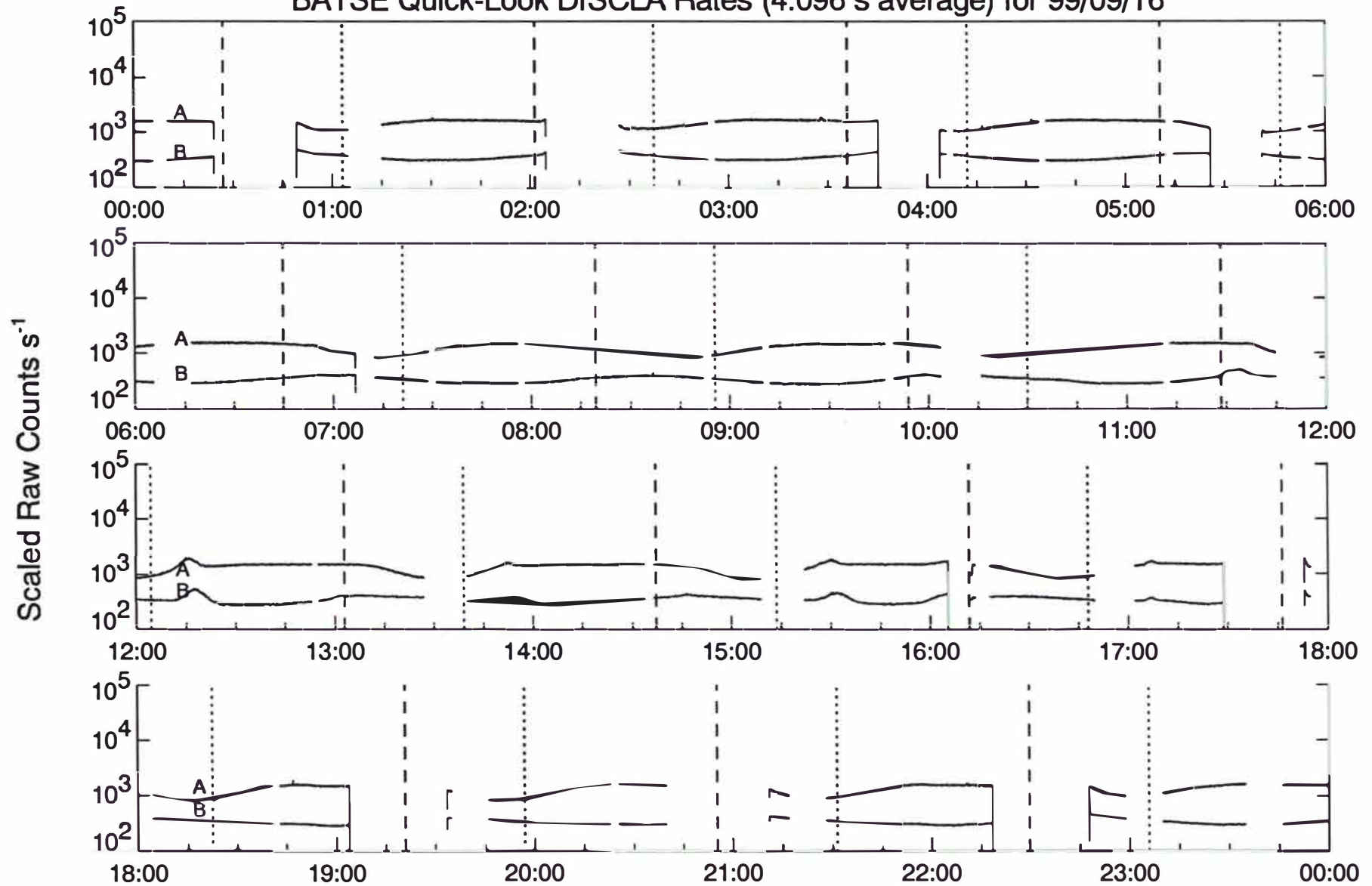
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/16

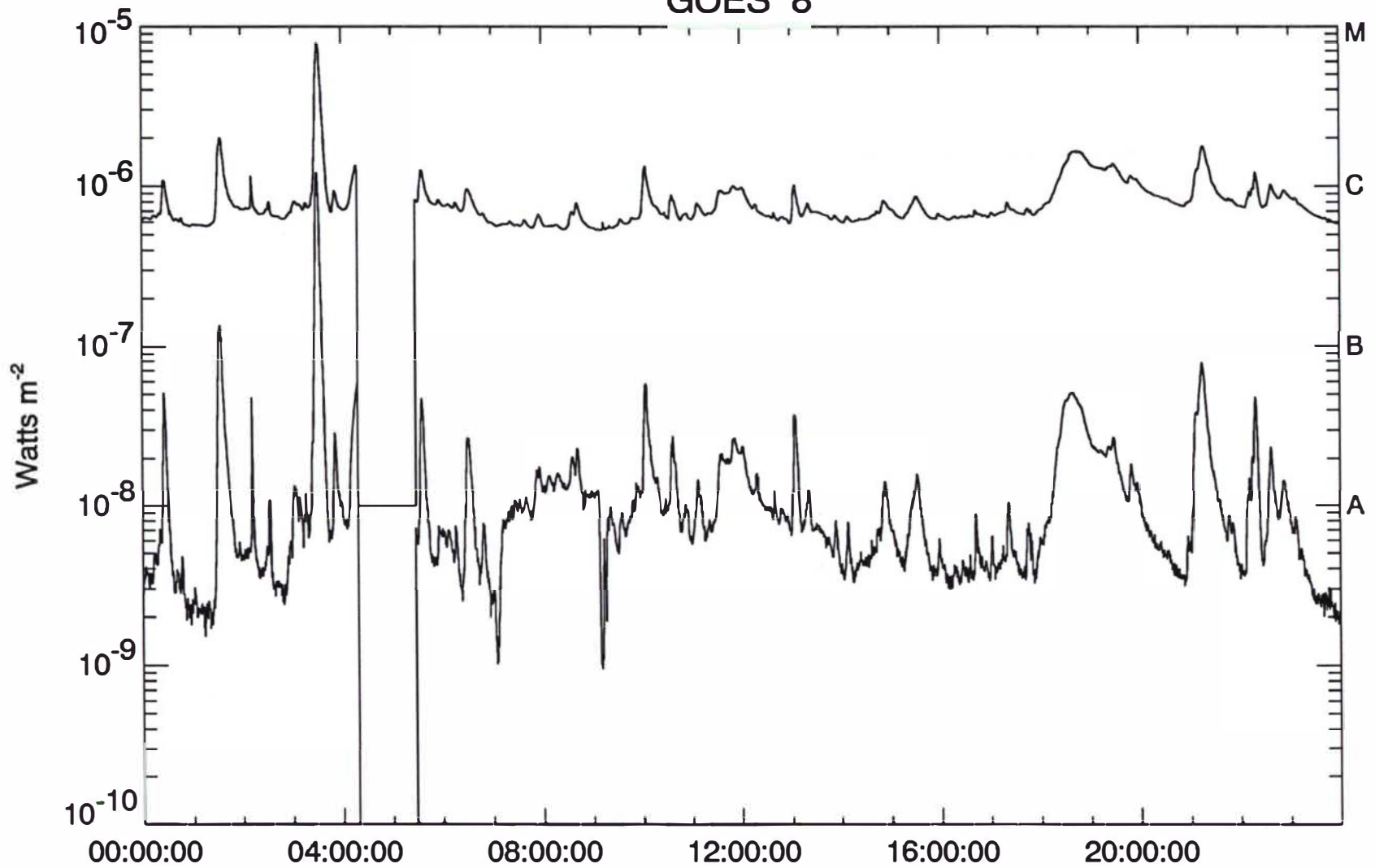


Current Time: 99/09/20, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/16, 0000:00

Plot created: 99/09/20, 1008

Channel

1 (1.0 - 8.0 Angstroms)

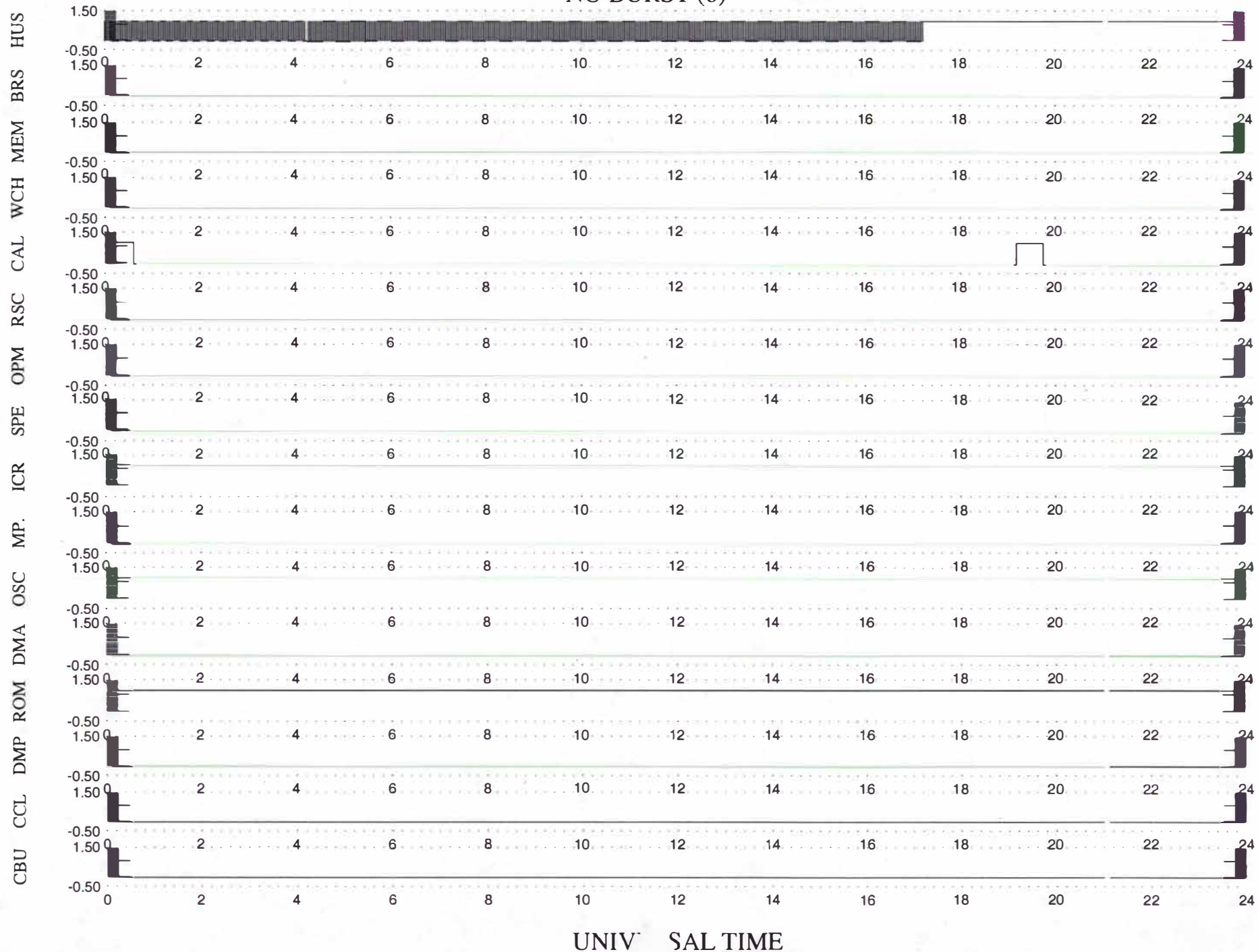
Background not subtracted

2 (0.5 - 4.0 Angstroms)

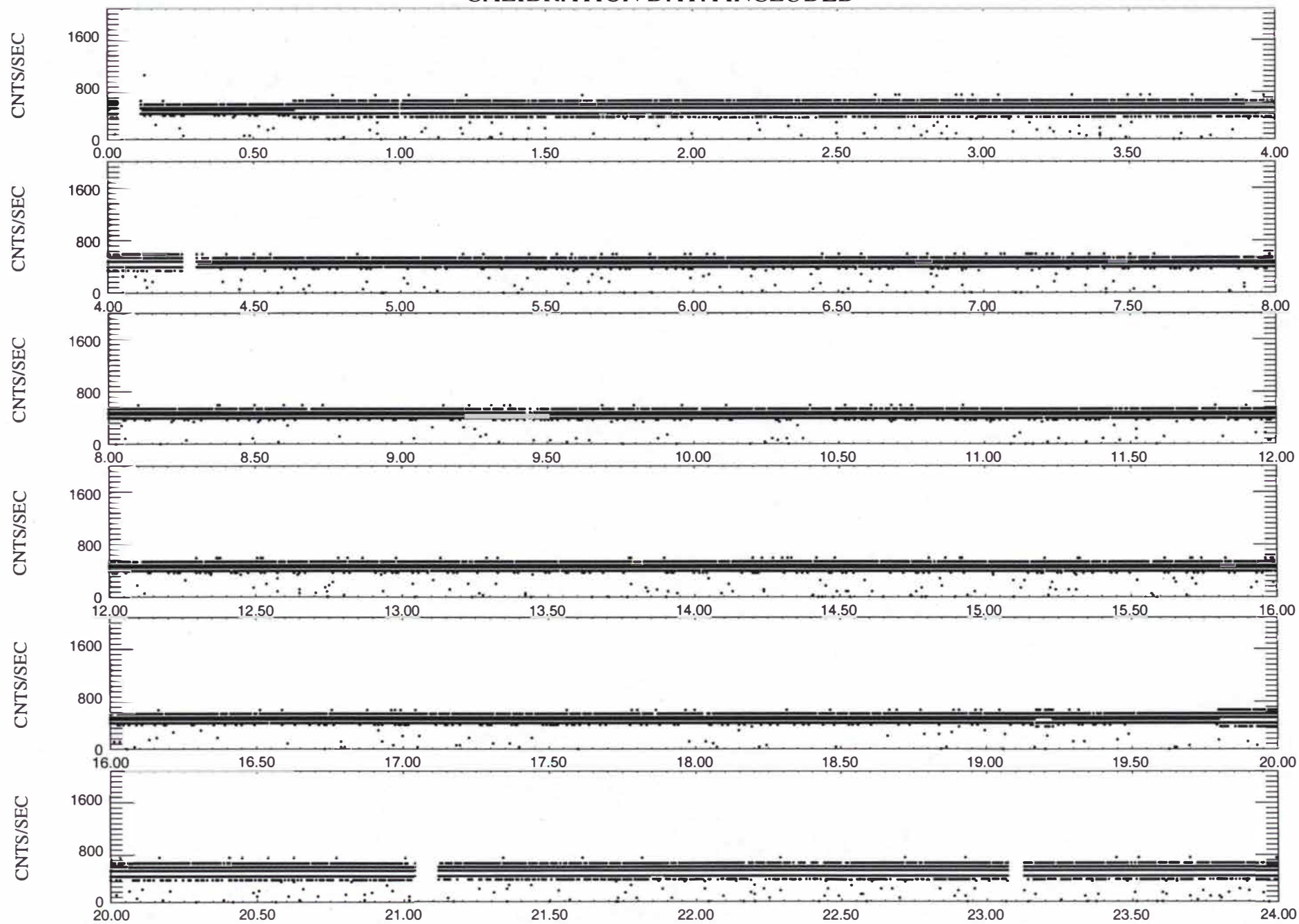
Background not subtracted

Sample average = 10

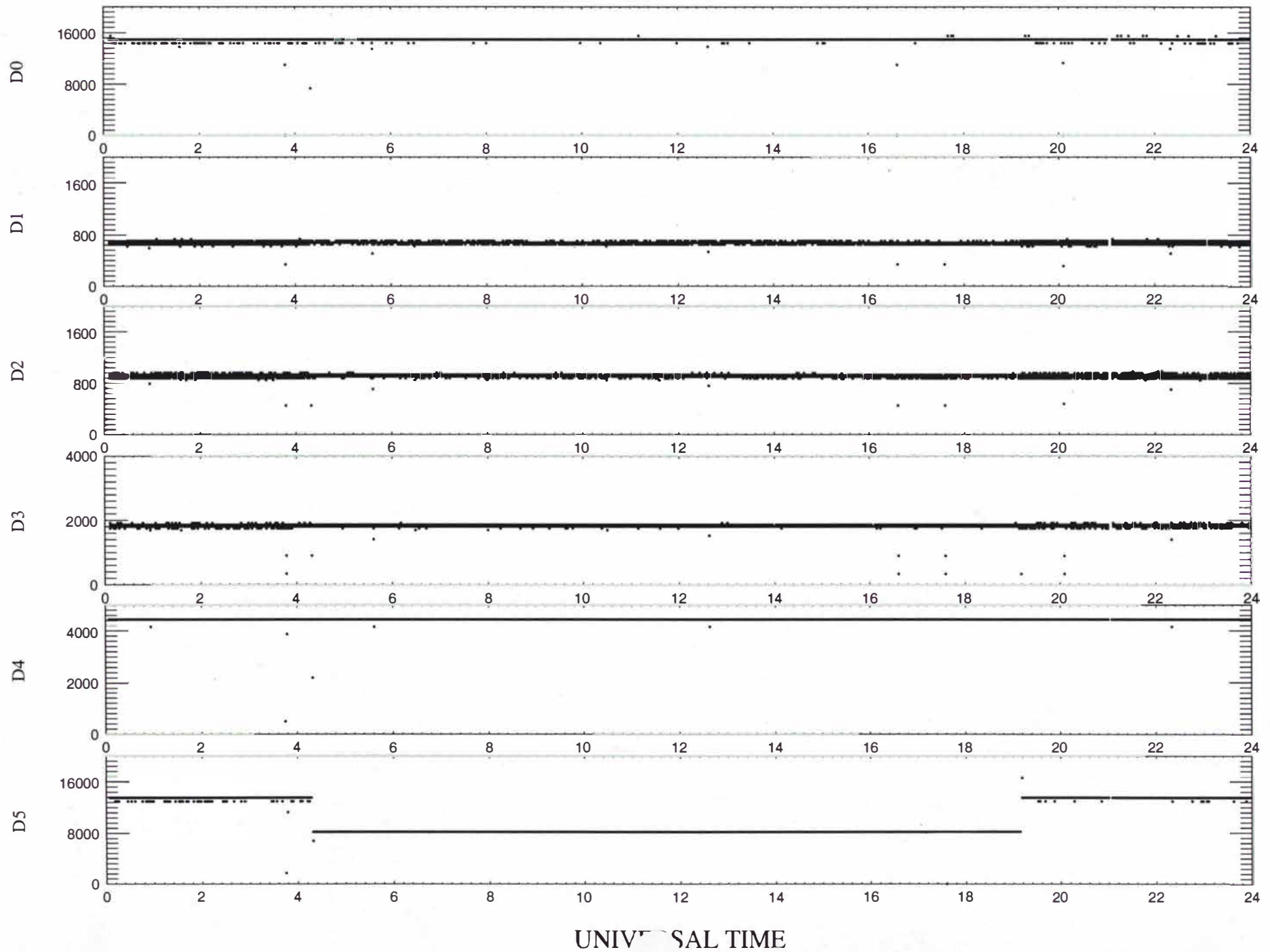
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Tue Sep 21 13:24 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 21 Sep 1999 15:26:38 -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.: 7768

TIME: TJD=1438 SECONDS=04296

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=92.0 AZIMUTH=357.9 ERROR=0.12 DEGREES

COMMENTS:

SOLAR FLARE. GOES M2.1, OPTICAL SF. DOUBLE PULSE, DUR. 550 S, MAX. AT 440 S.
NOT VISIBLE ABOVE 100 KEV. CRAB SET AT T+205 S.

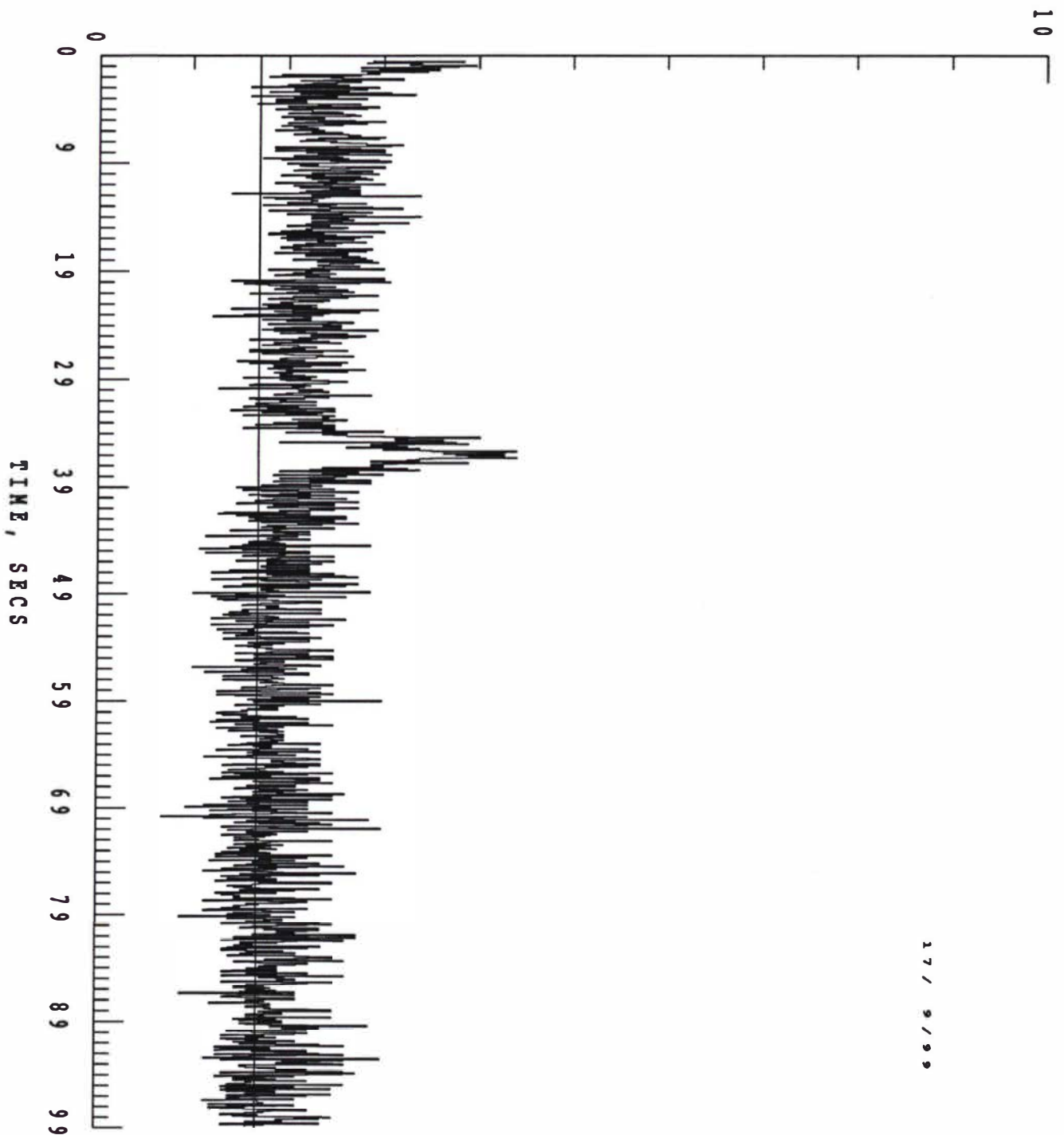
KONUS

17/09/99

4699.213

50 - 200 keV

COUNTS/0.064 S



17 / 9 / 99

KONUS2 19990917 04699

ULYSSES RT

17 / 9 / 99

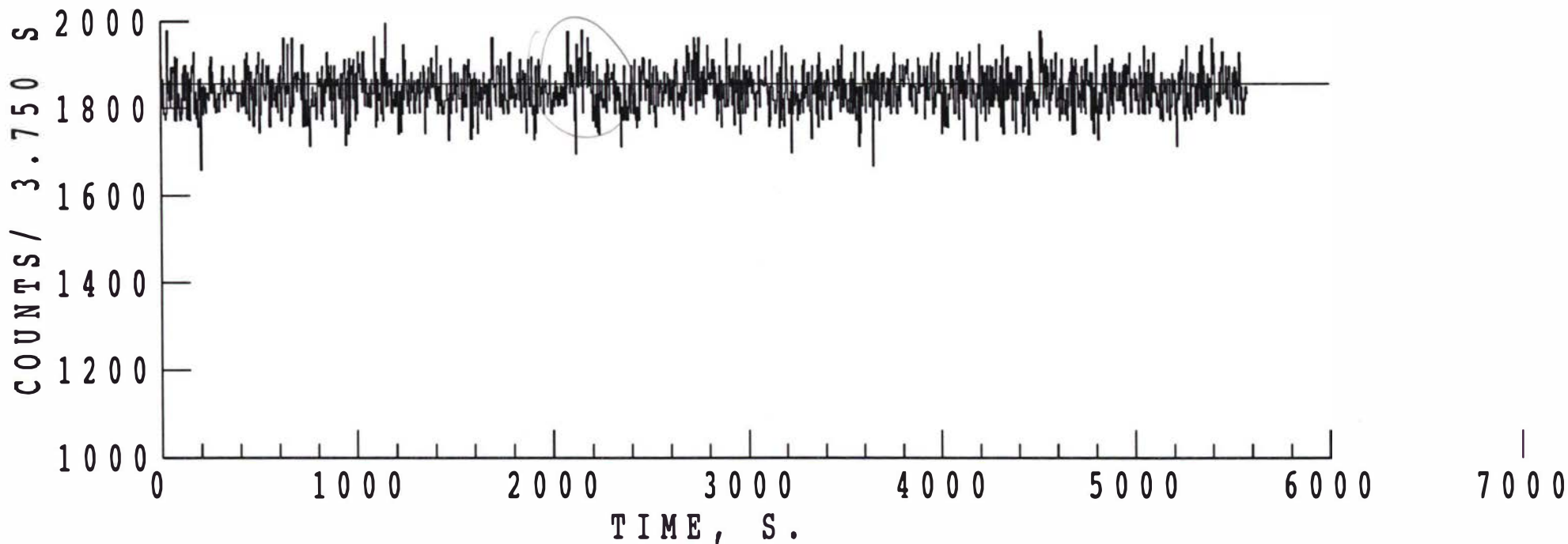
17 / 9 / 99 1908.058 s

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



Date: Jul 03 '07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

2. For 3 or More Spacecraft events

- ☒ $\Sigma 3\Delta t$'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

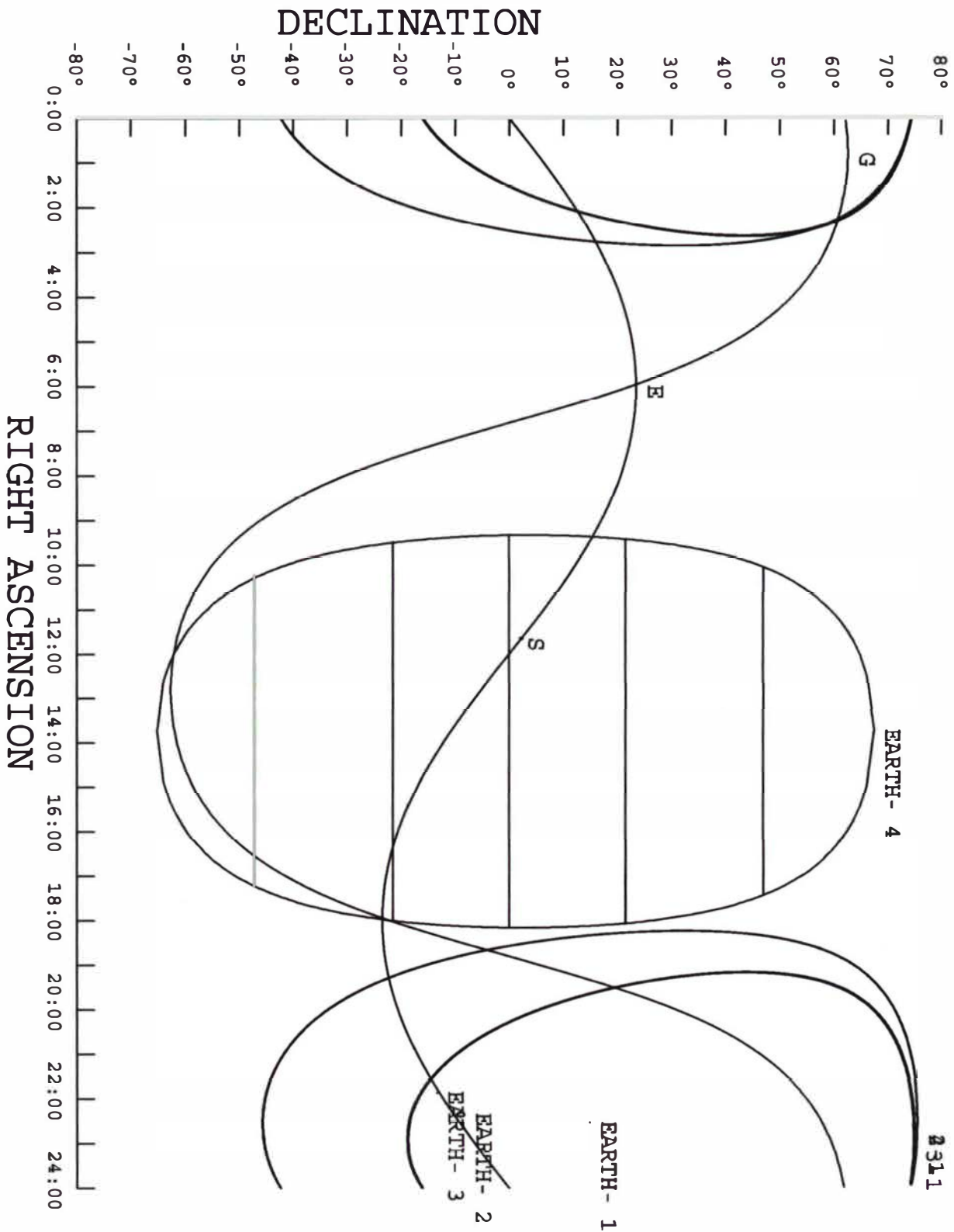
2 KONUS2

3 NEAR

4 SAX

EVENT OF SEP 17, 1999 14:39

3 / 7 / 7



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

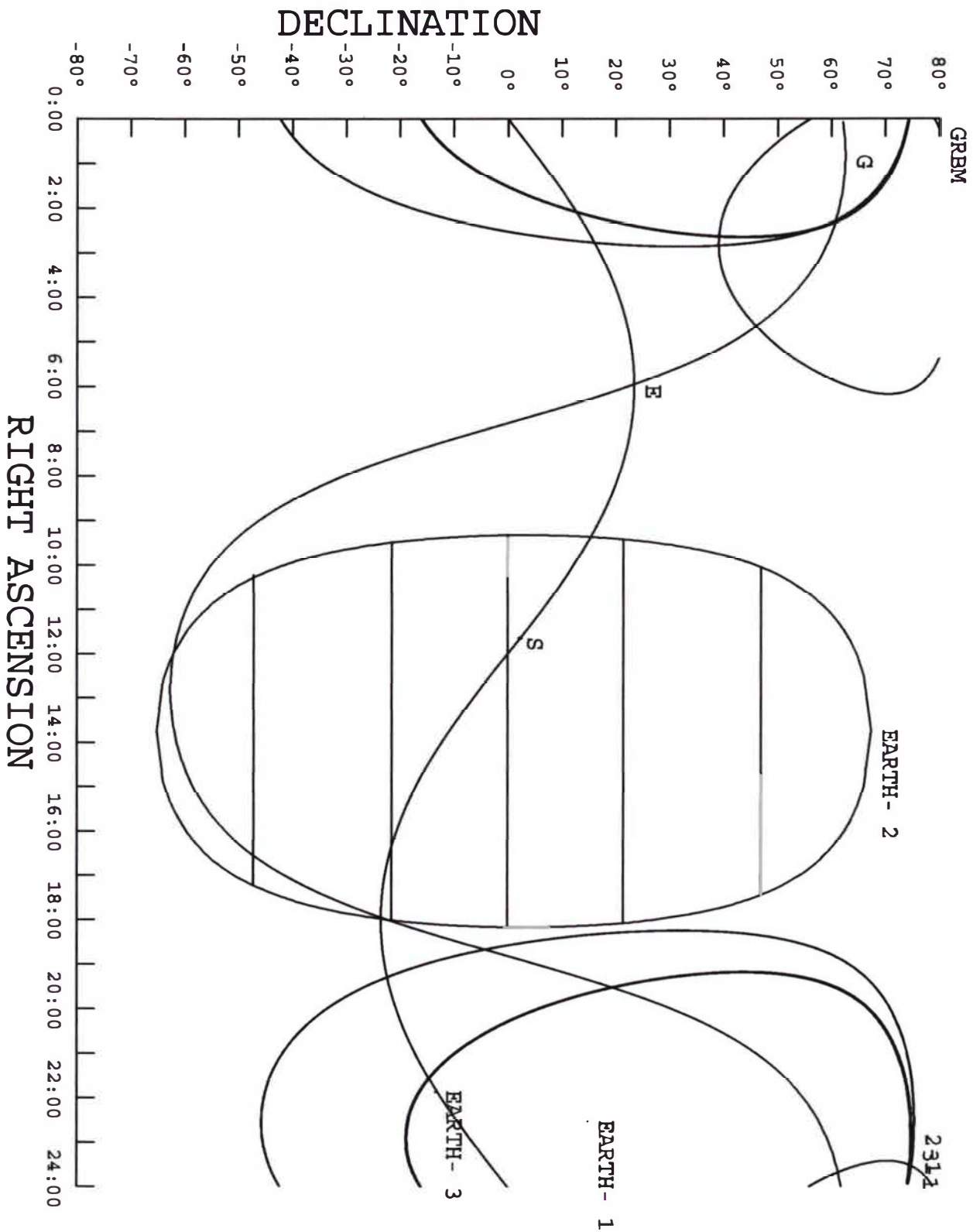
1 ULYSSES

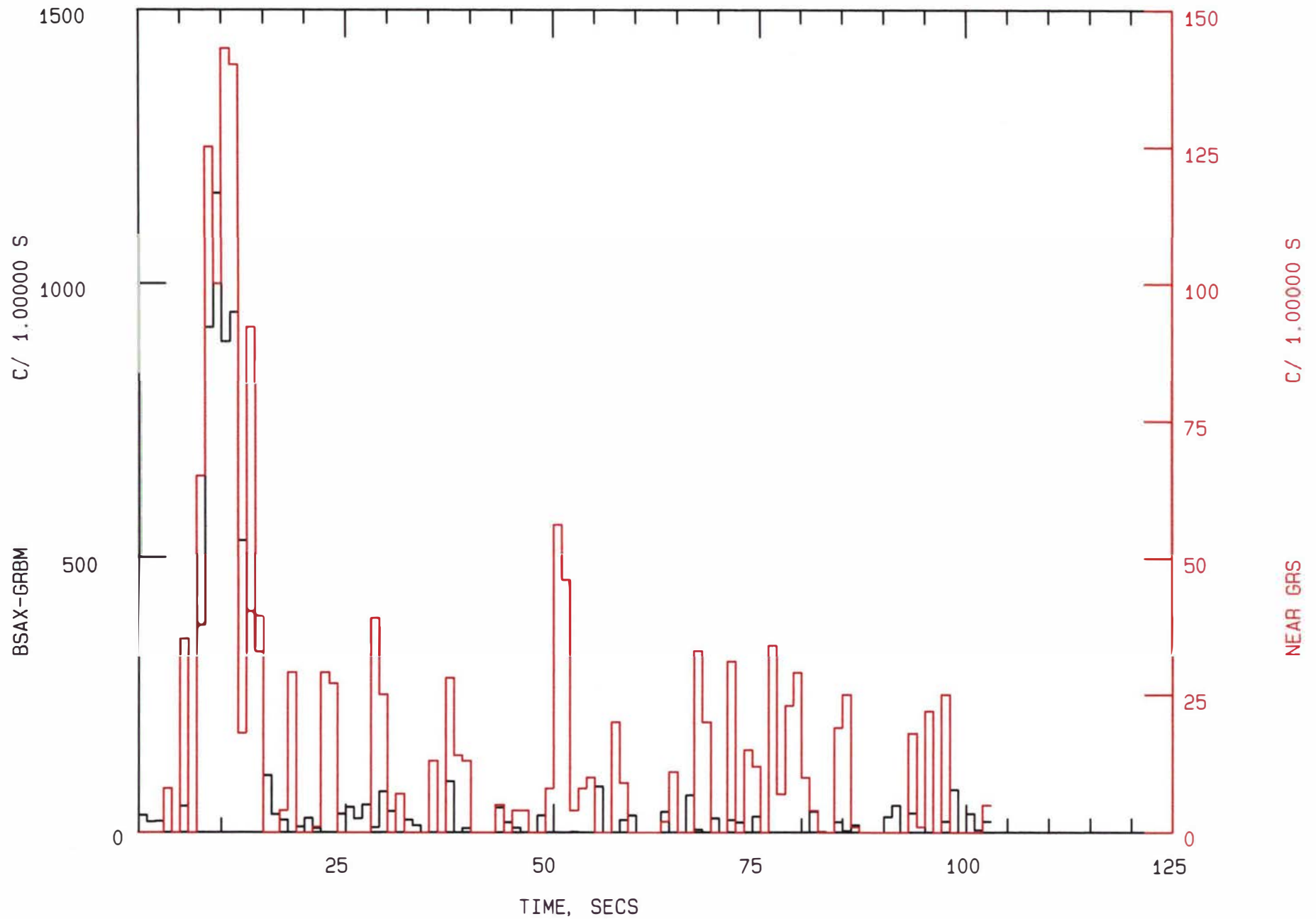
2 SAX

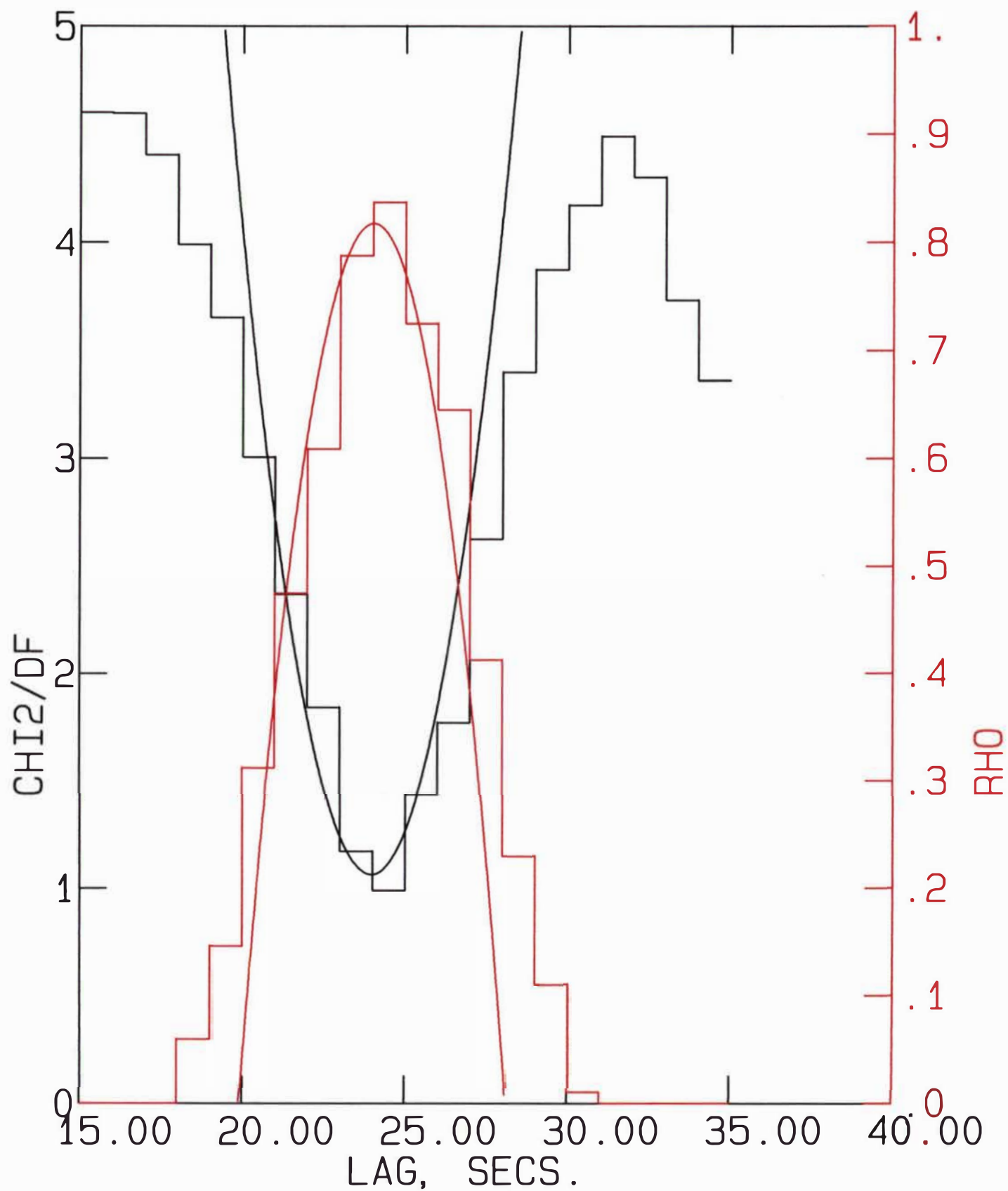
3 NEAR

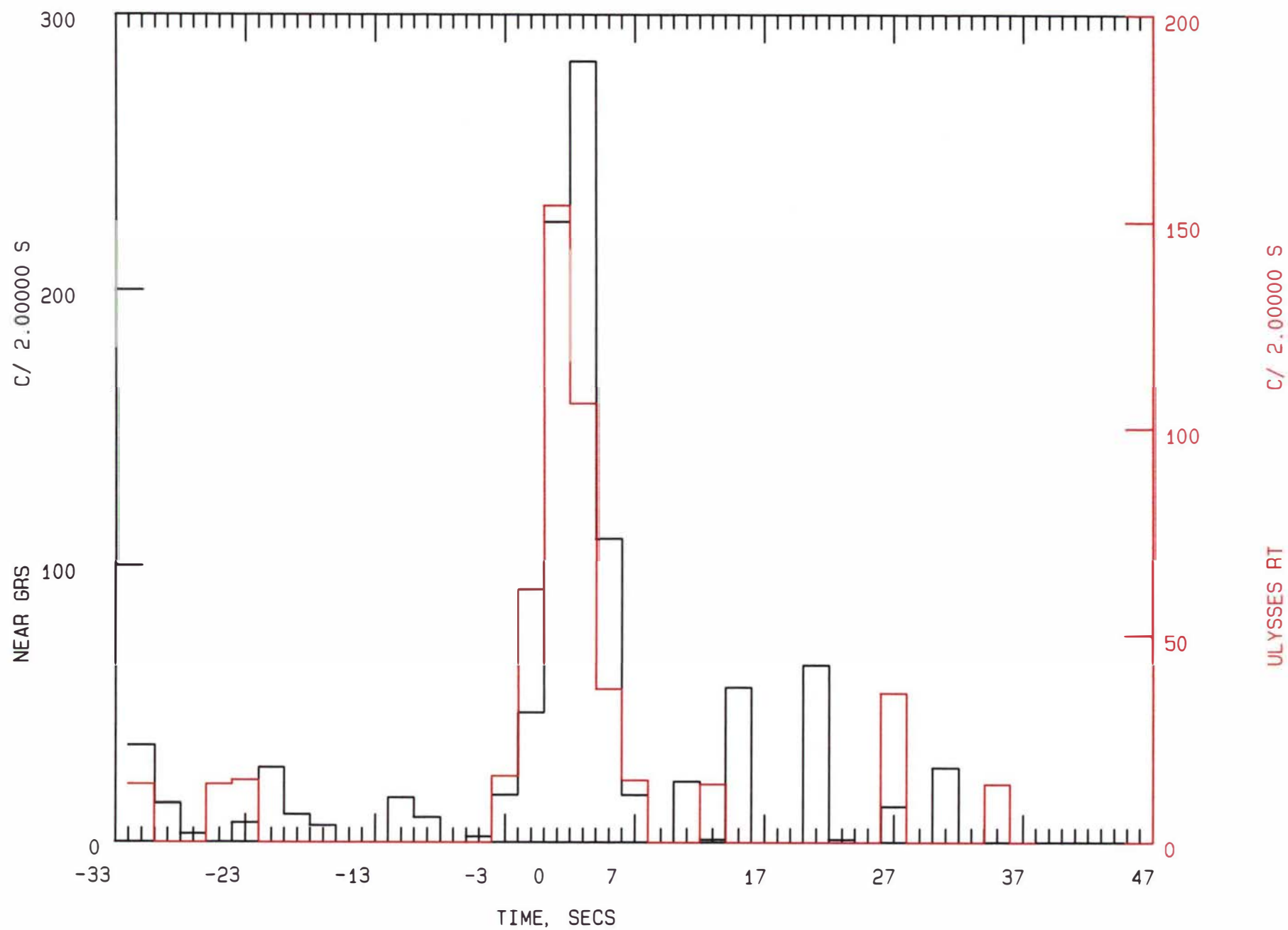
EVENT OF SEP 17, 1999 14:39

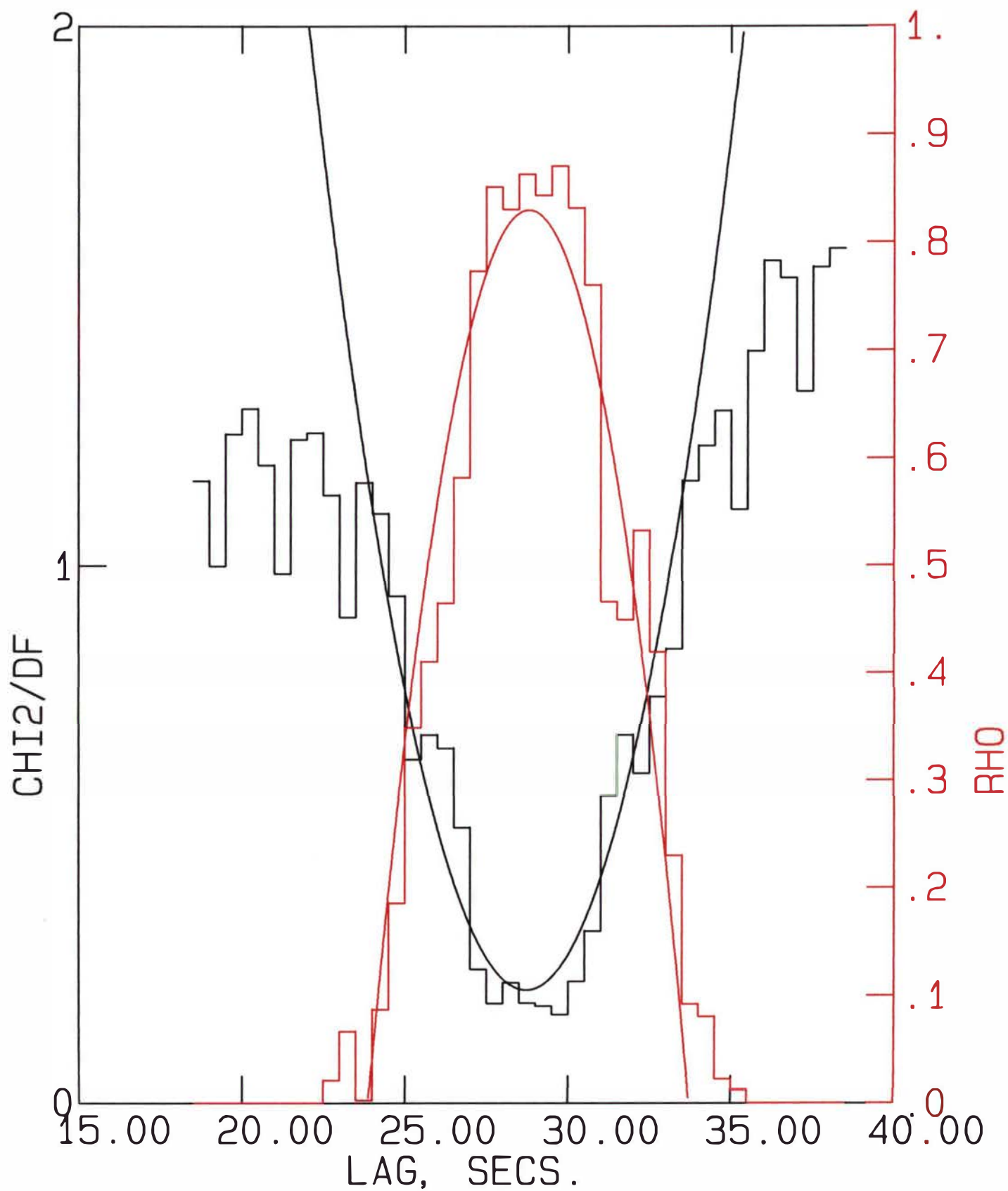
3 / 7 / 7

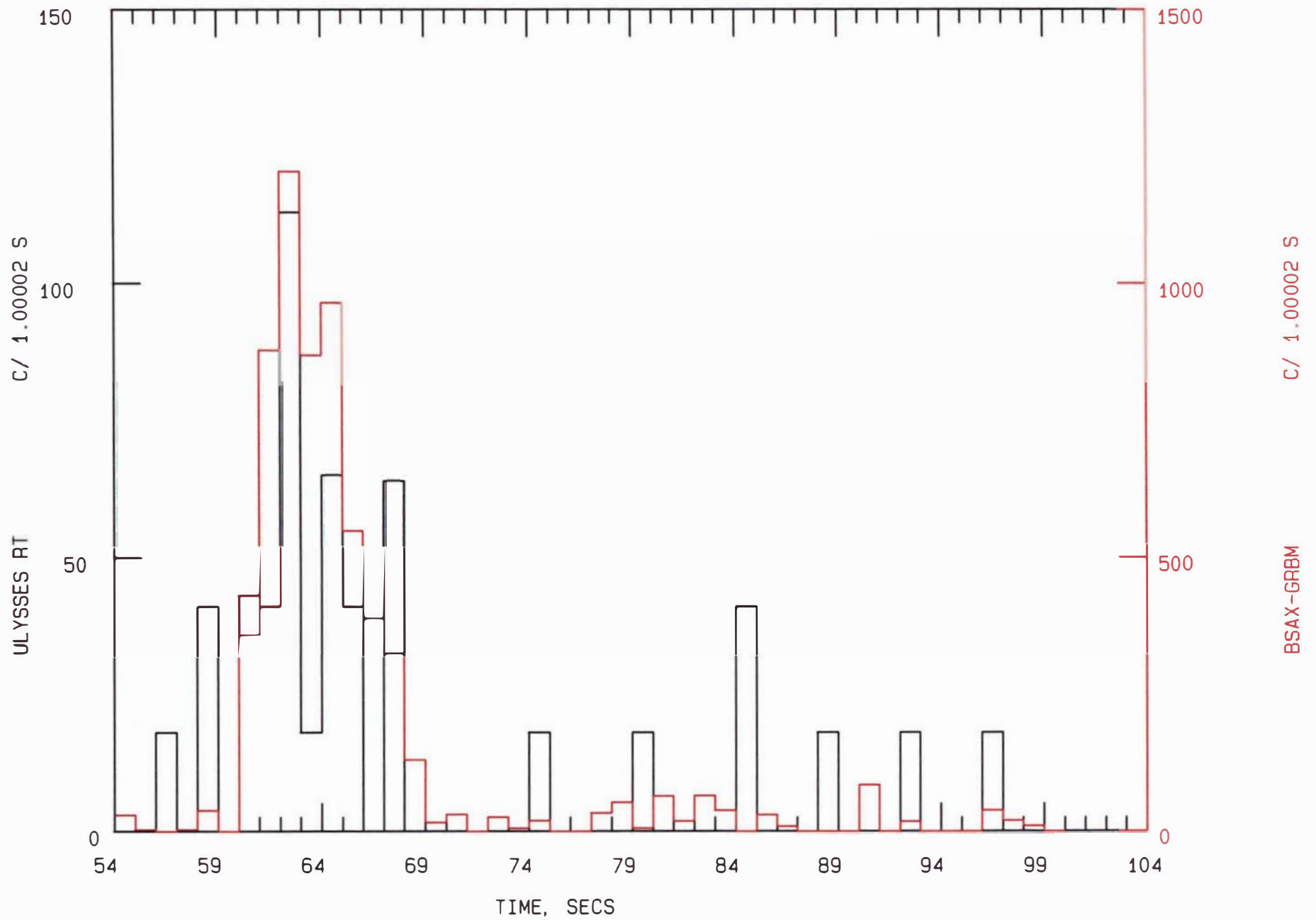


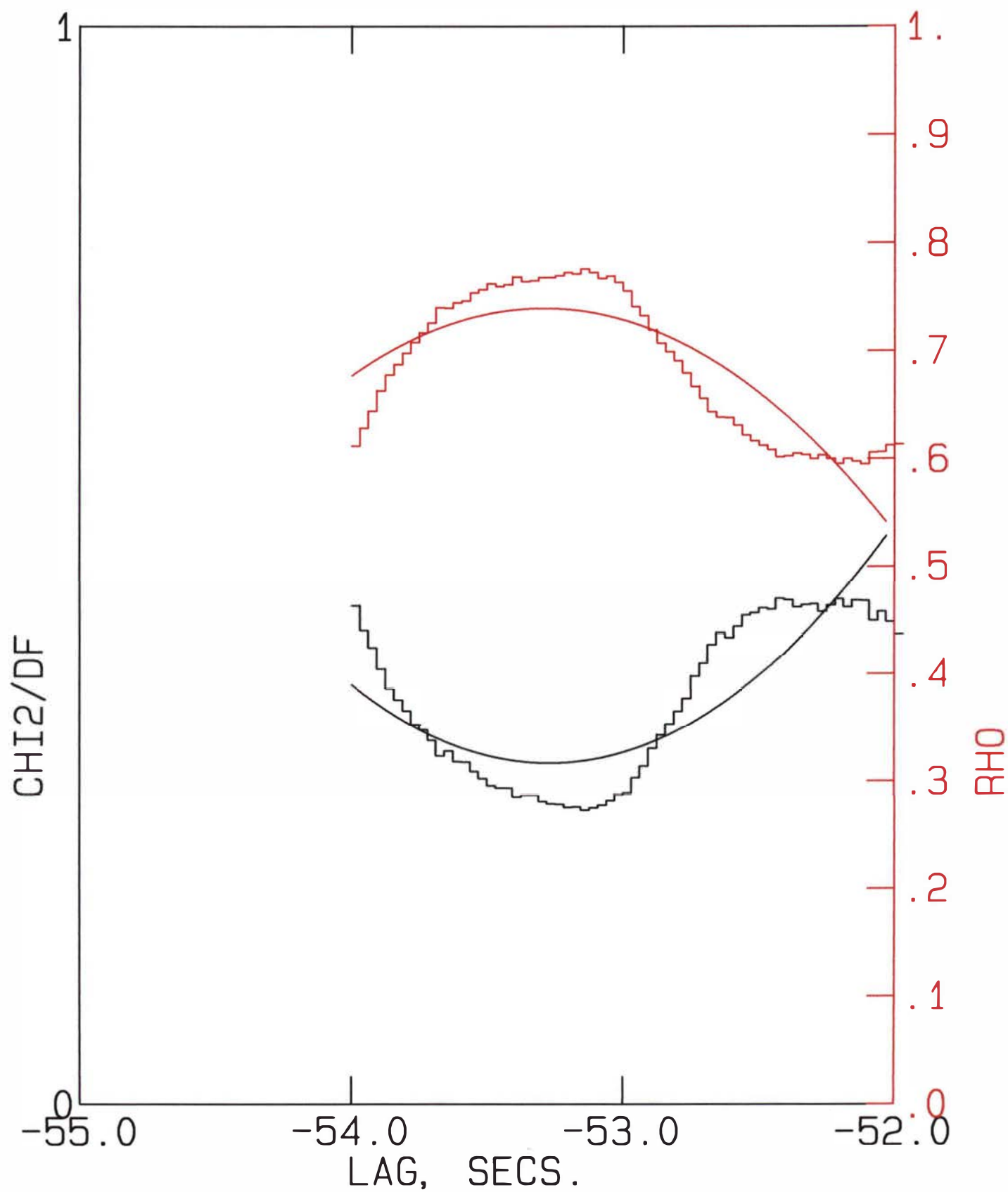












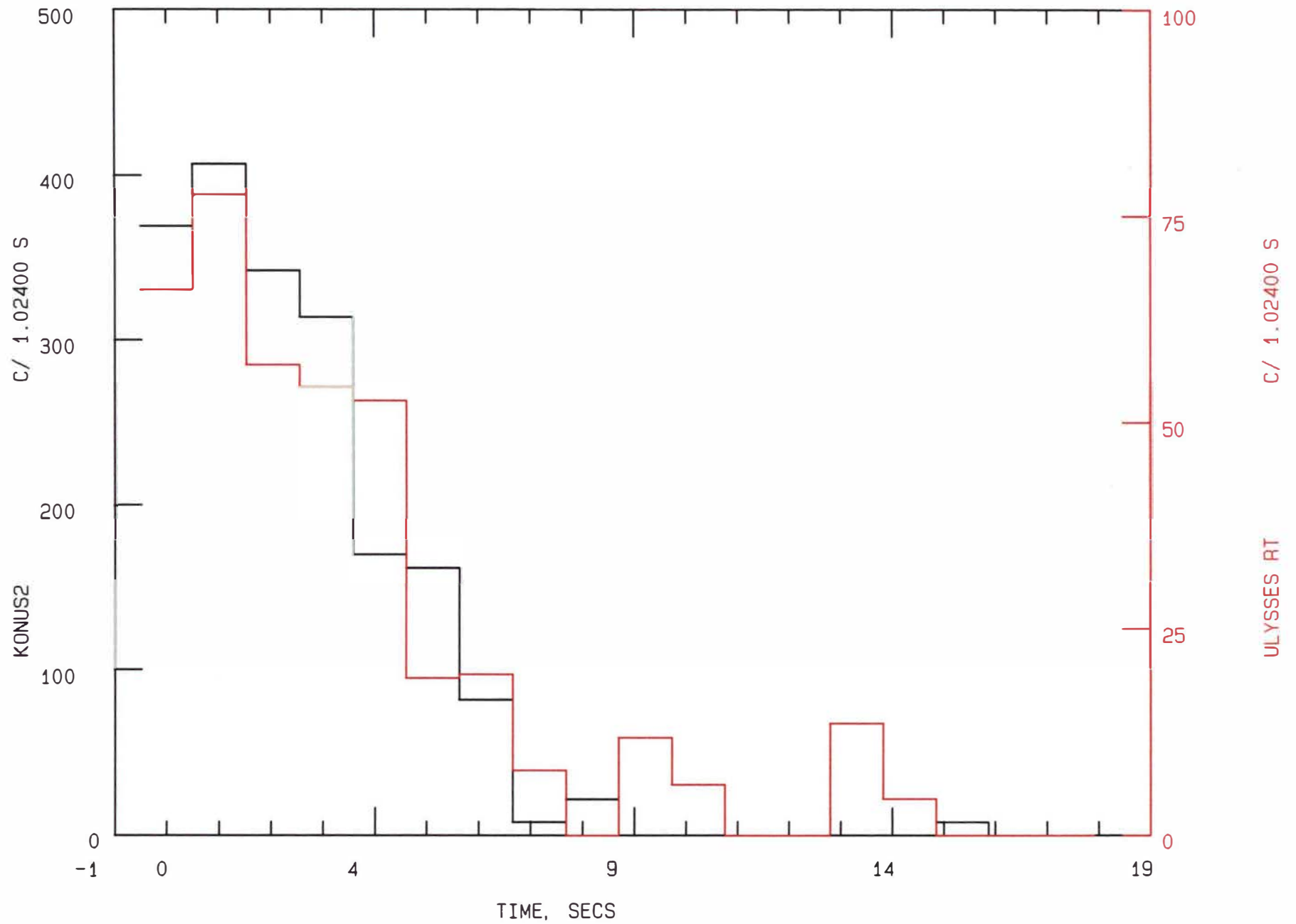
KONUS2

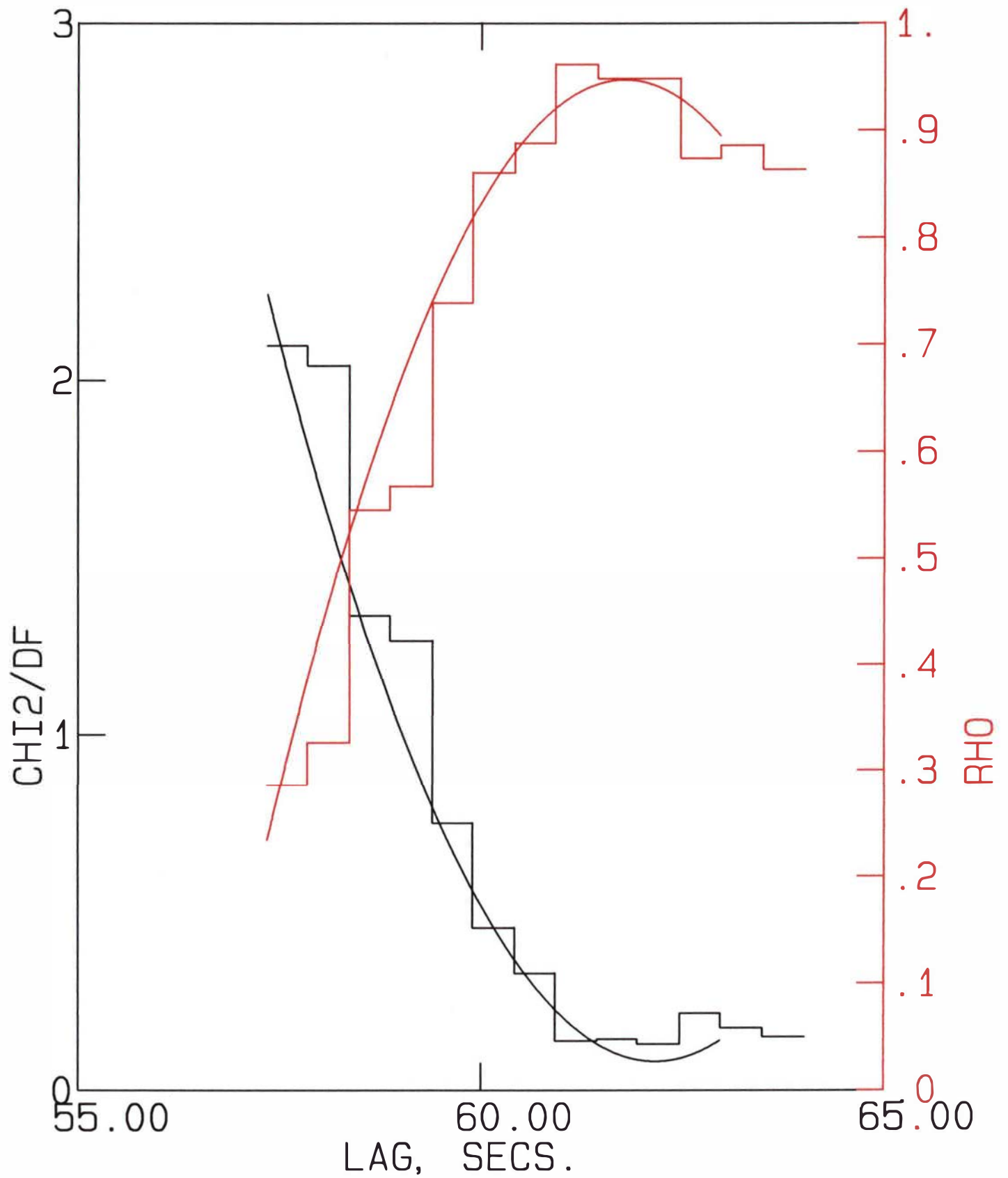
-ULYSSES RT CORRELATION

17/09/99

51490.434

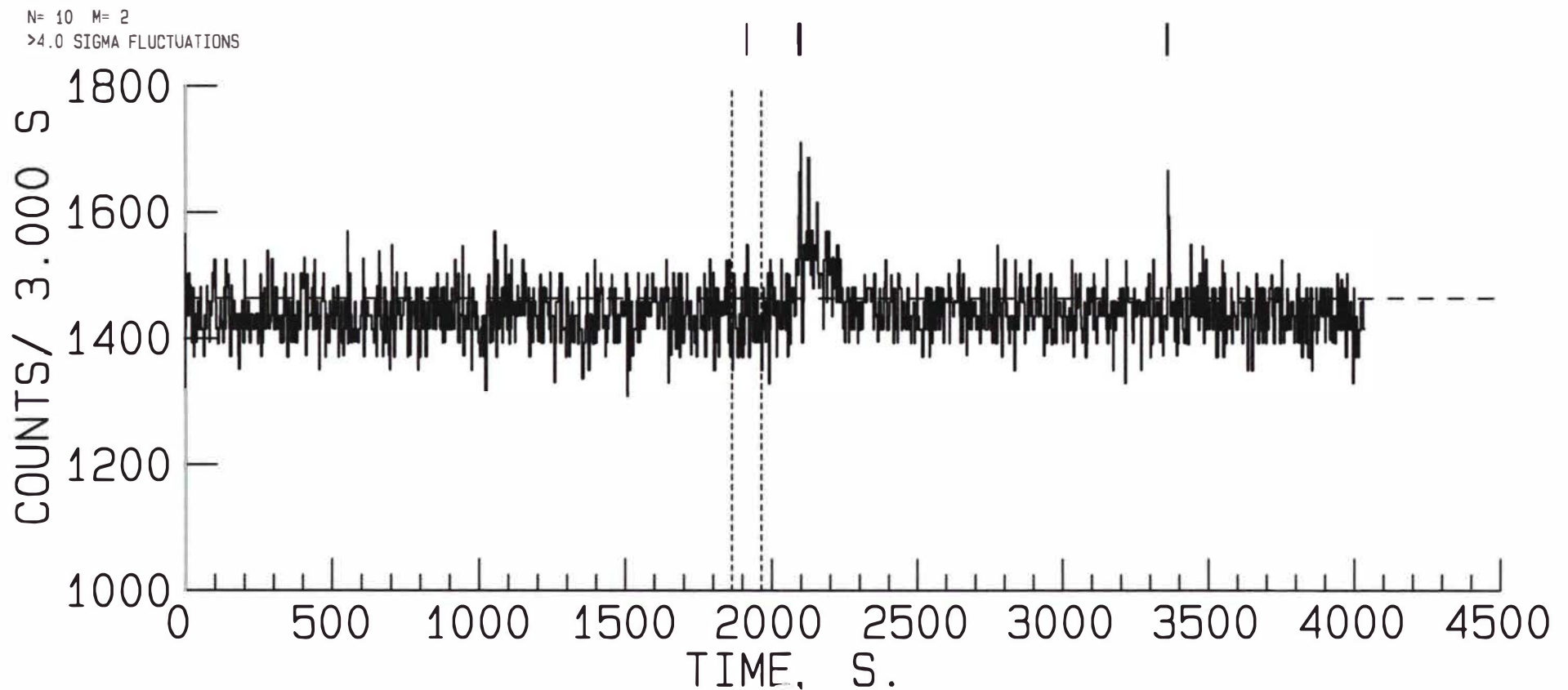
3/ 7/ 7

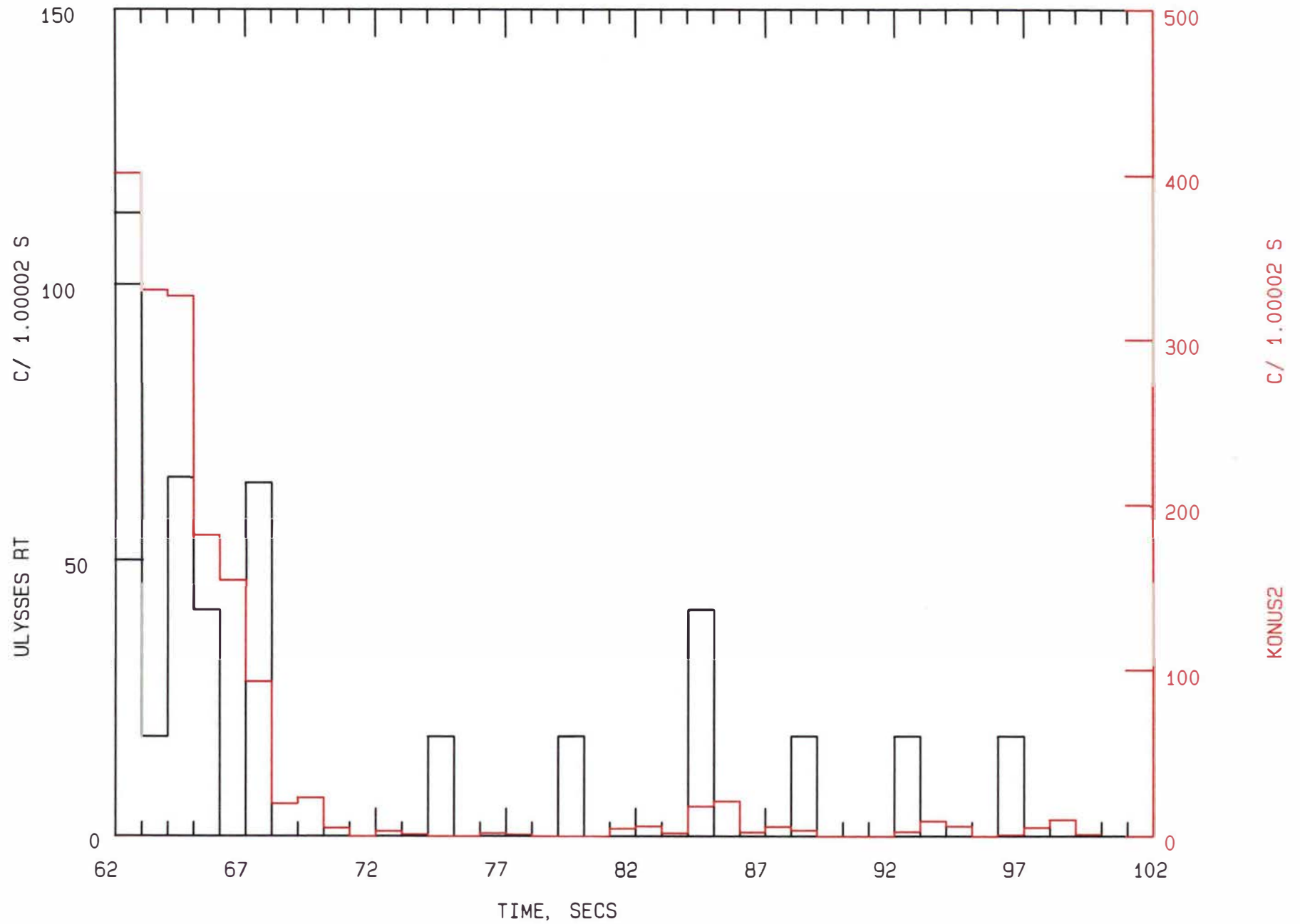


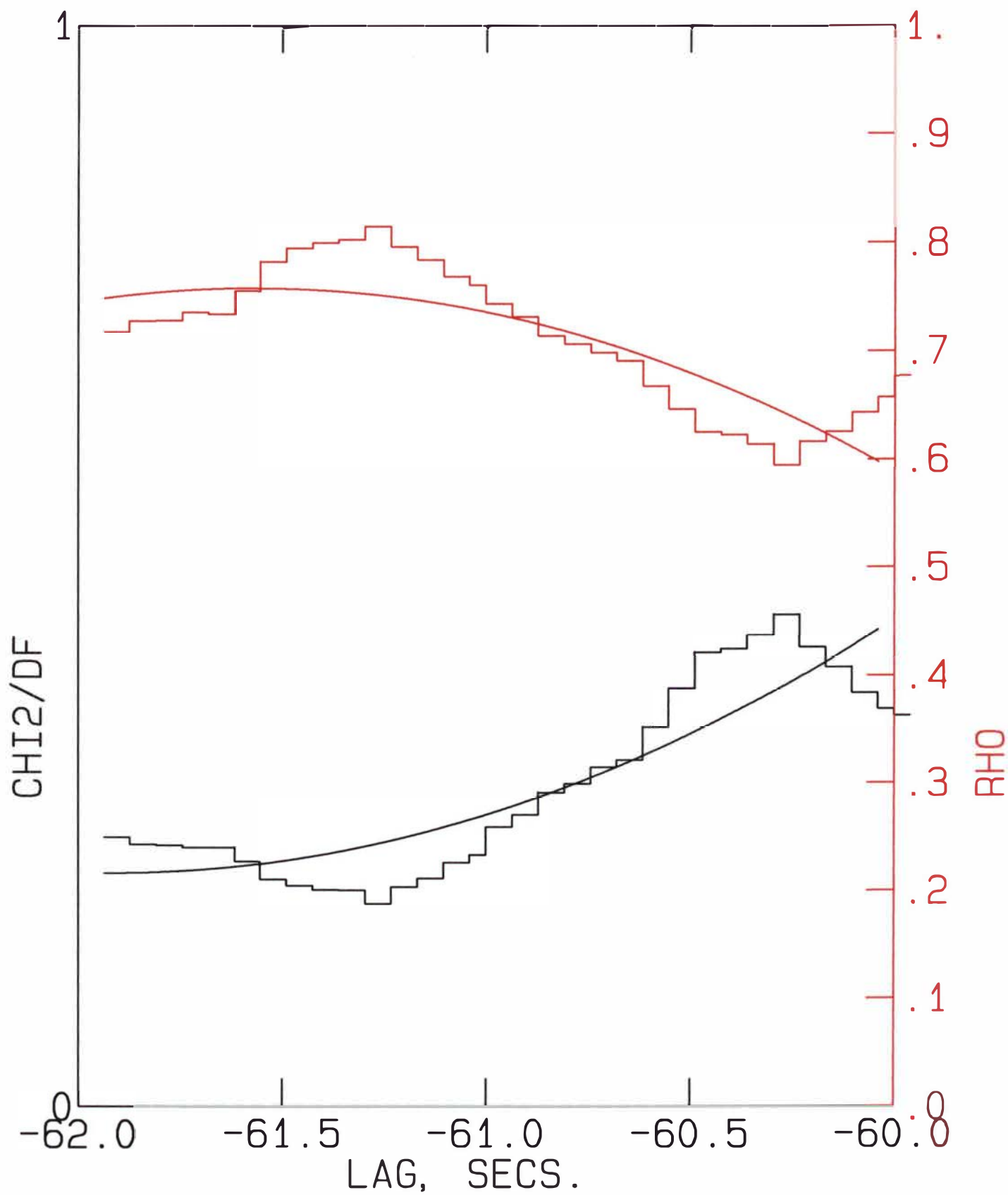


ULYSSES RT
17/ 9/99 49464.086 s
0.500 S INTERVALS REGROUPED BY 6
22- 150 keV

3 / 7 / 7







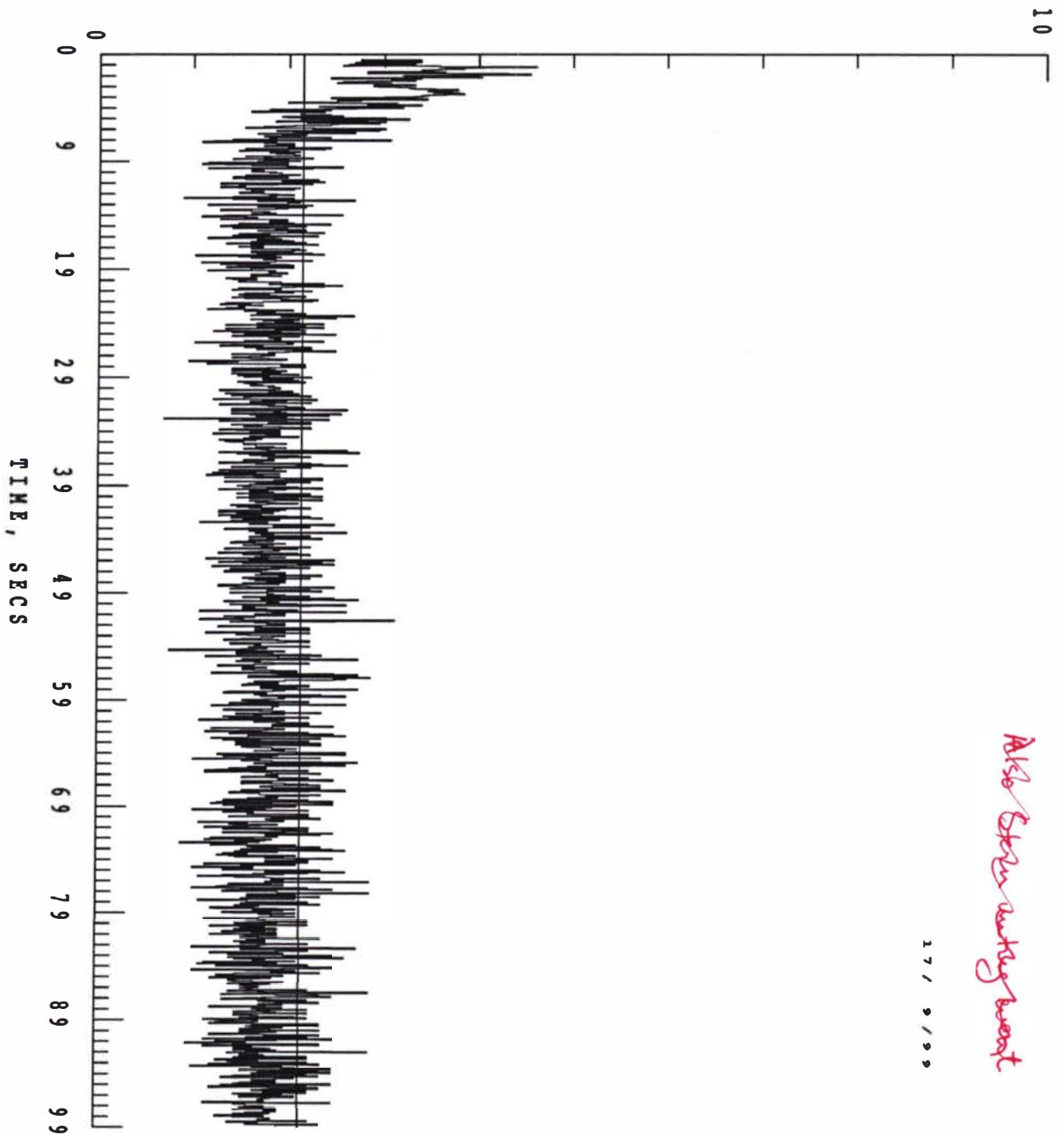
KONUS

17/09/99

51490.434

50 - 200 keV

COUNTS/0.064 S



Also 80 keV anti-g event

17 / 9 / 99

C

NEAR

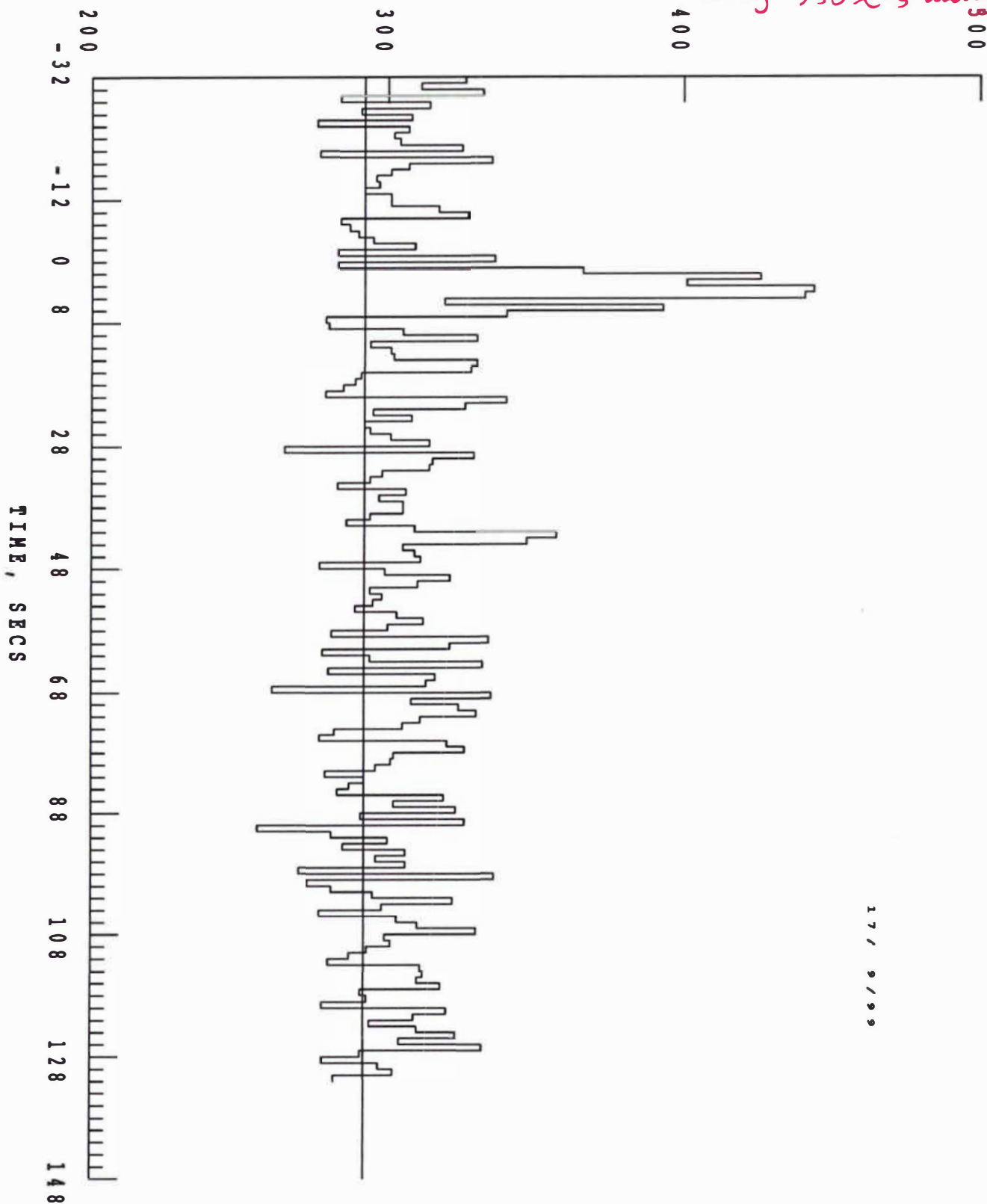
17/09/99

51486.106

100-1000 keV

*This is 1007 s before
BATSE, but NEAR was
only 950 l-s away*

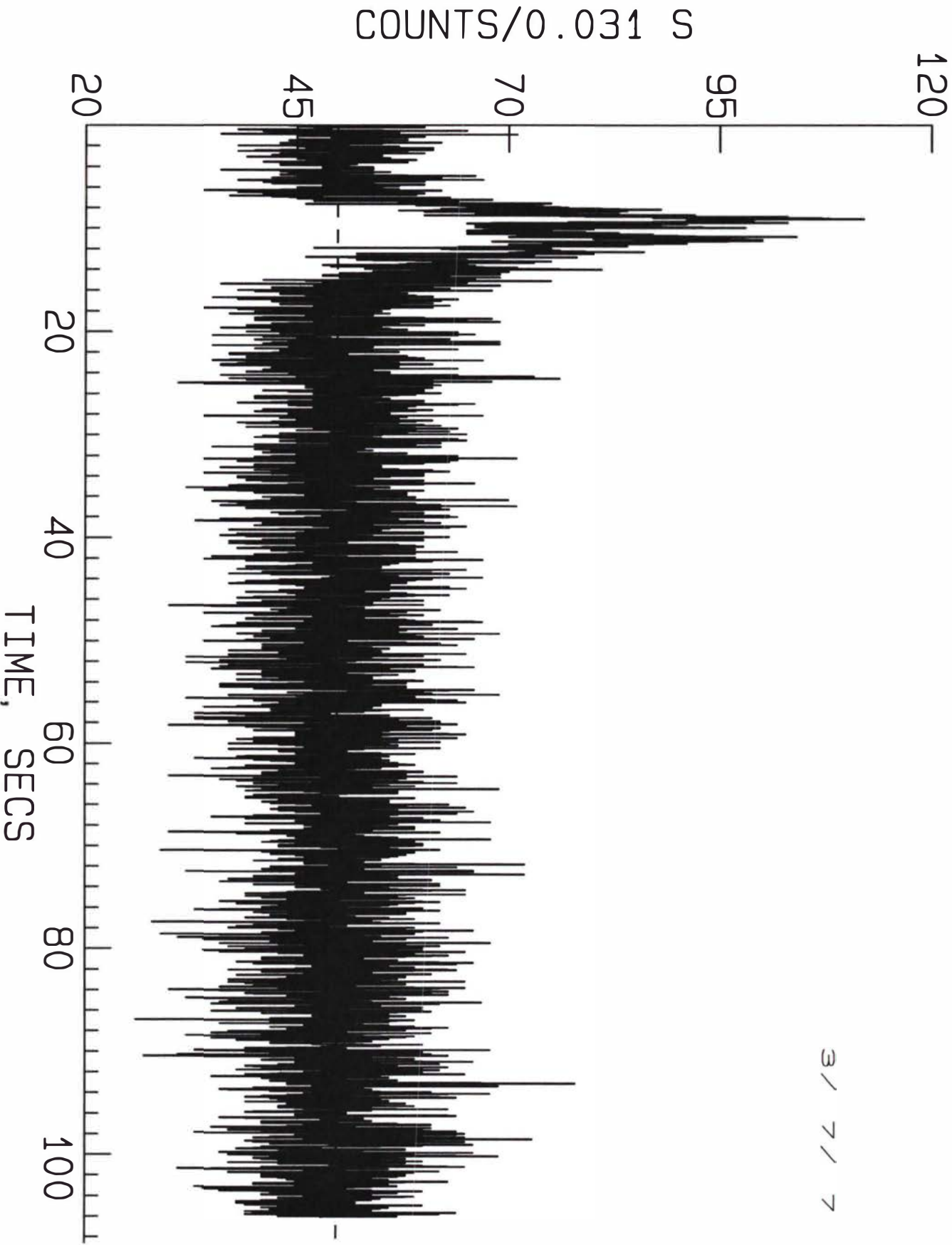
COUNTS/1.000 S



17 / 9 / 99

SAX GRBM

17/09/99 51481.765
40- 700 keV



GRBM 19990917 52562

ULYSSES RT

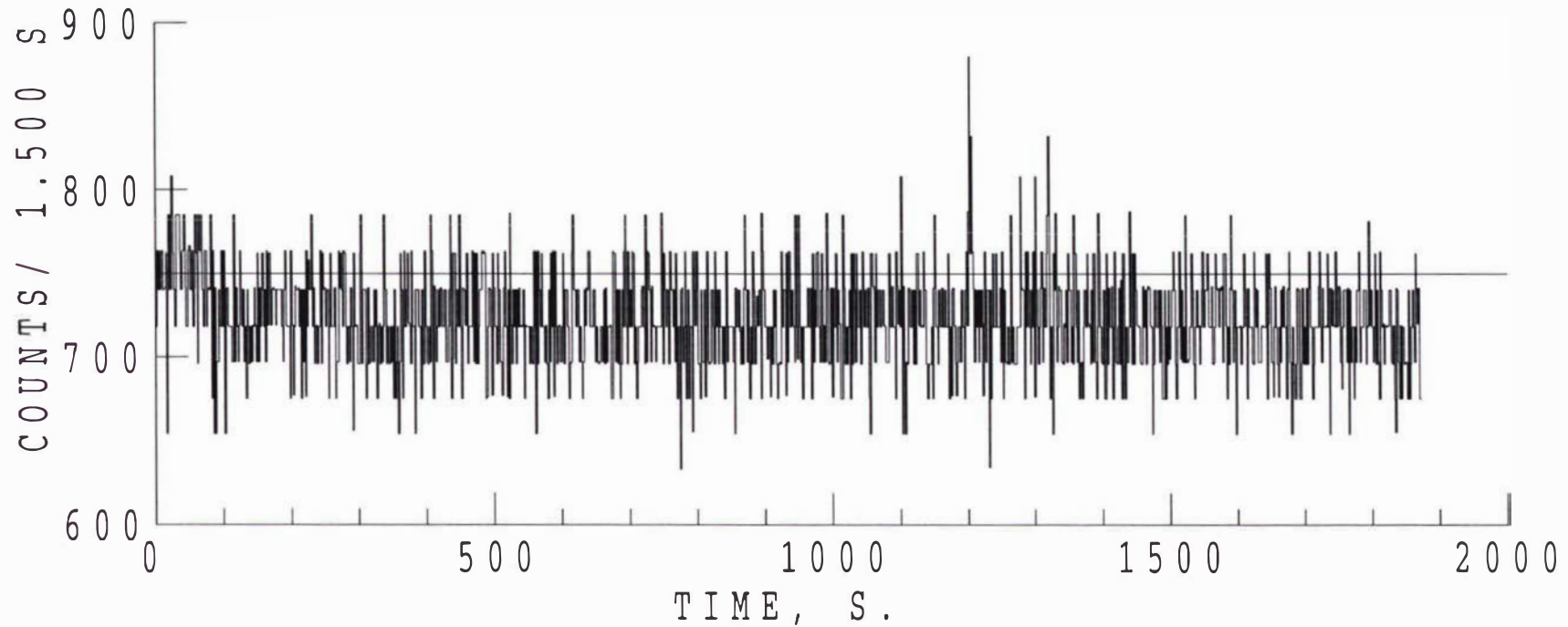
03/07/07

17/09/99 51624.105 s

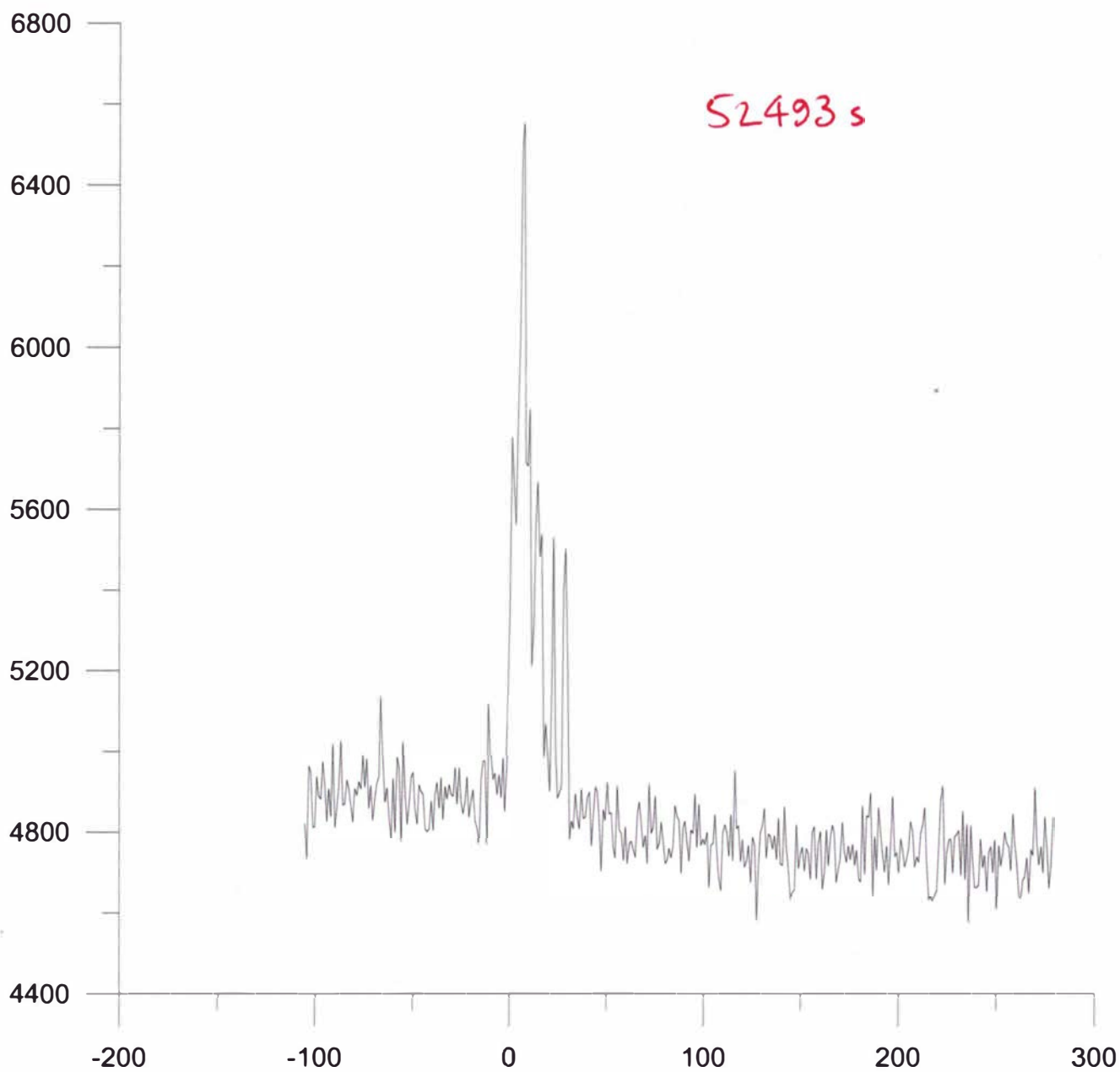
0.500 S INTERVALS REGROUPED BY 3

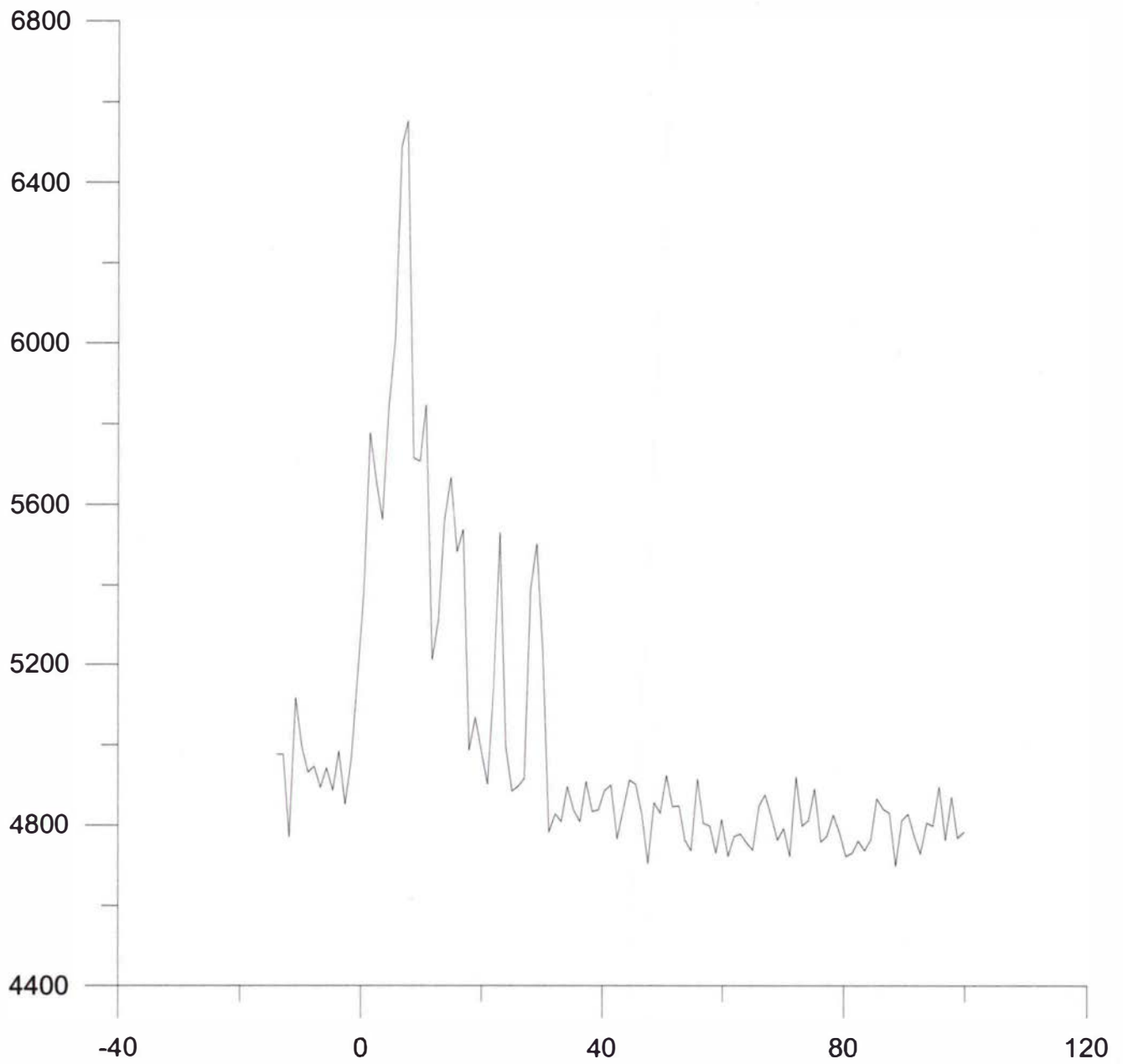
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Stern untrig





From SAHI@fender.msfc.nasa.gov Tue Sep 21 15:01 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 21 Sep 1999 16:26:15 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7769

BATSEARCH PROGRAM

BATSE BURST # 7769
EVENT OF 1999 SEP 17 DAY OF YEAR=260
EVENT CROSSING TIME AT BATSE : 72747. S. OR 20:12:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 325.000 17.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 9/ 99 IS:
RA= 157.796 DEC= -14.885 DIST= 5.455 AU
BATSE-ULYSSES DISTANCE = 816009637. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 12.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2657.58 SECS.
CROSSING TIME AT ULYSSES IS 75405. S. OR 20:56:44 +/- 192.50 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 9/ 99 IS:
RA= 247.147 DEC= -23.624 DIST= 1.279 AU
MARS-BATSE DISTANCE = 191288848. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.85 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -42.88 SECS.
CROSSING TIME AT MARS IS 72704. S. OR 20:11:44 +/- 109.88 SECONDS

BATSE BURST TRIGGER

NO.: 7769

TIME: TJD=1438 SECONDS=72747

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7769	990917	11438	72747	6000	325	+17	170

BATSE BURST# 7769

ULYSSES RT

21 / 9 / 99

17 / 9 / 99 75204.094 s

0.250 S INTERVALS REGROUPED BY 2

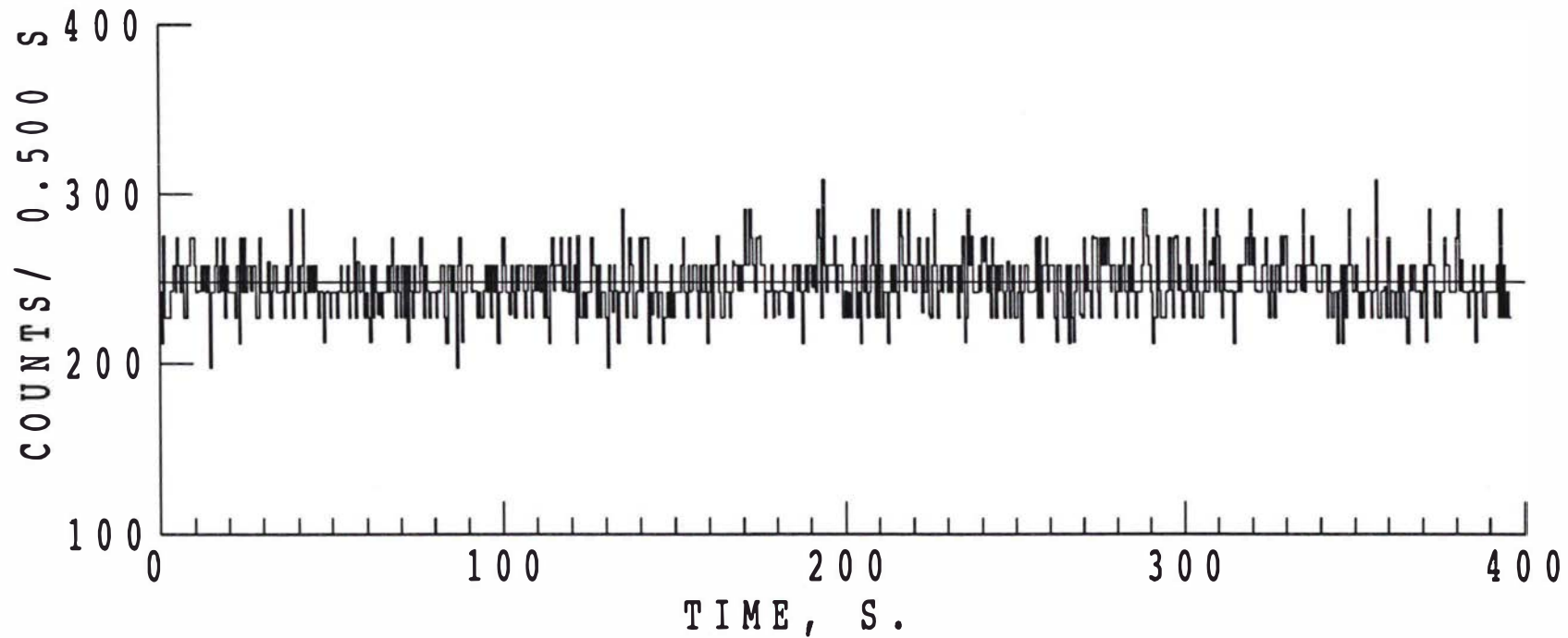
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



ULYSSES RT

21 / 9 / 99

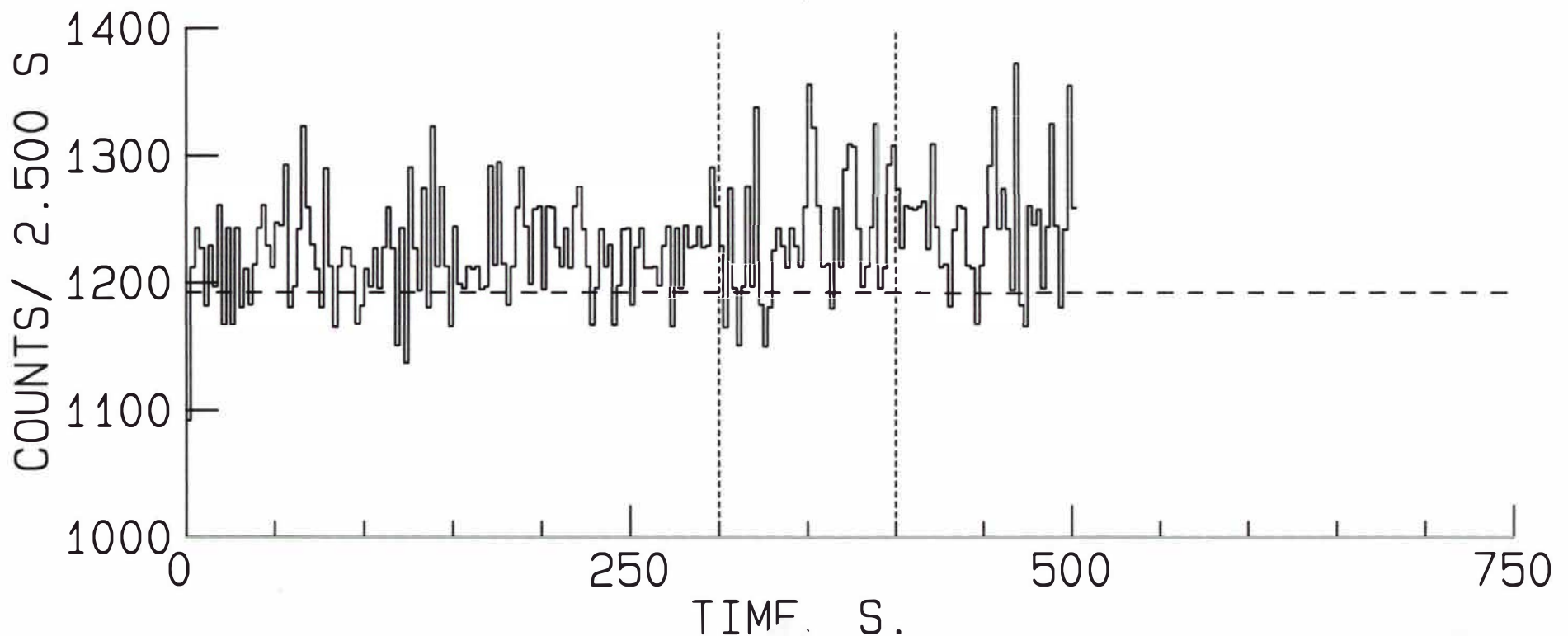
17 / 9 / 99 75024.094 s

0.250 S INTERVALS REGROUPED BY 10

22- 151 keV

Too weak to triangulate

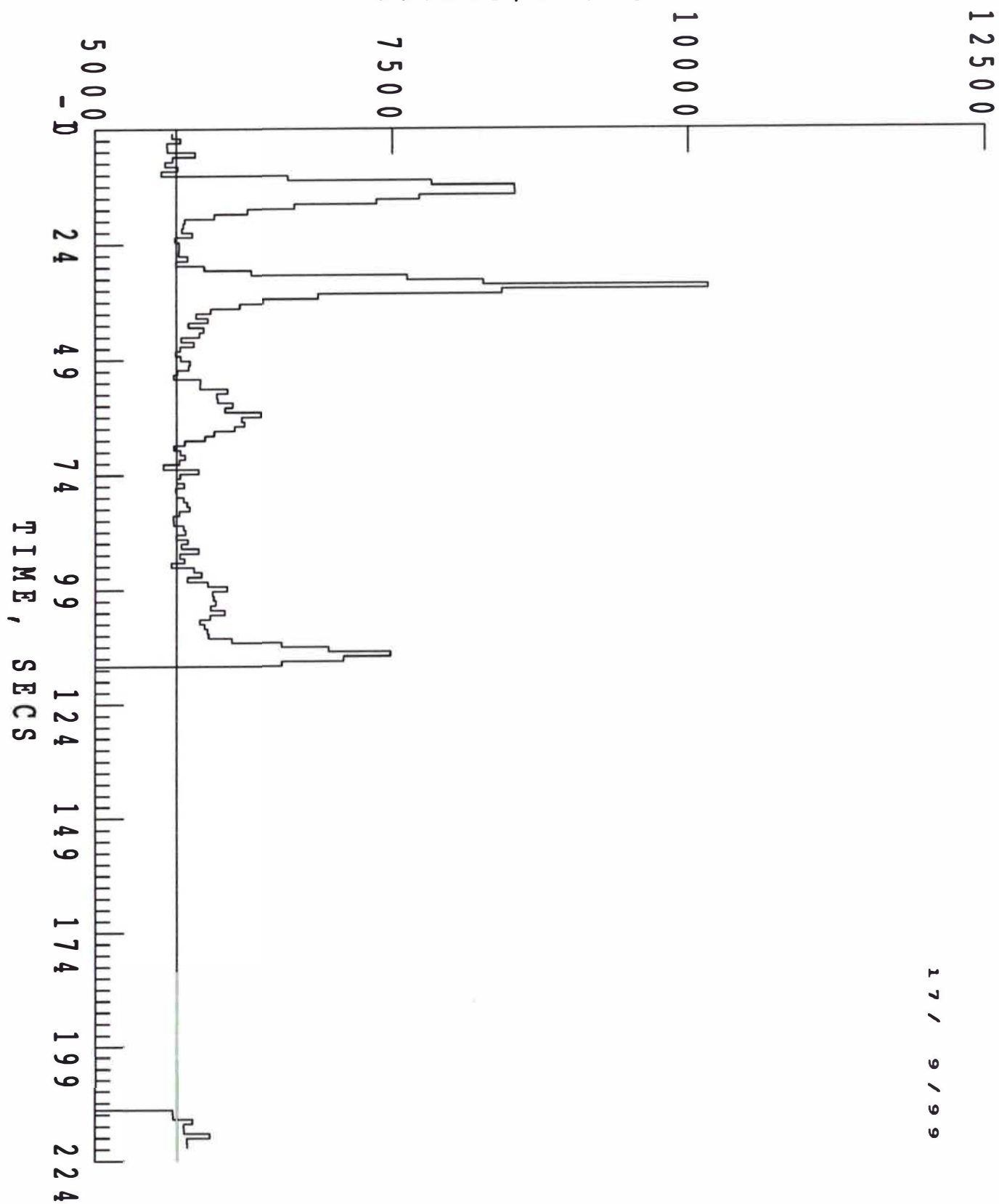
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 7769 17/09/99 72736.505

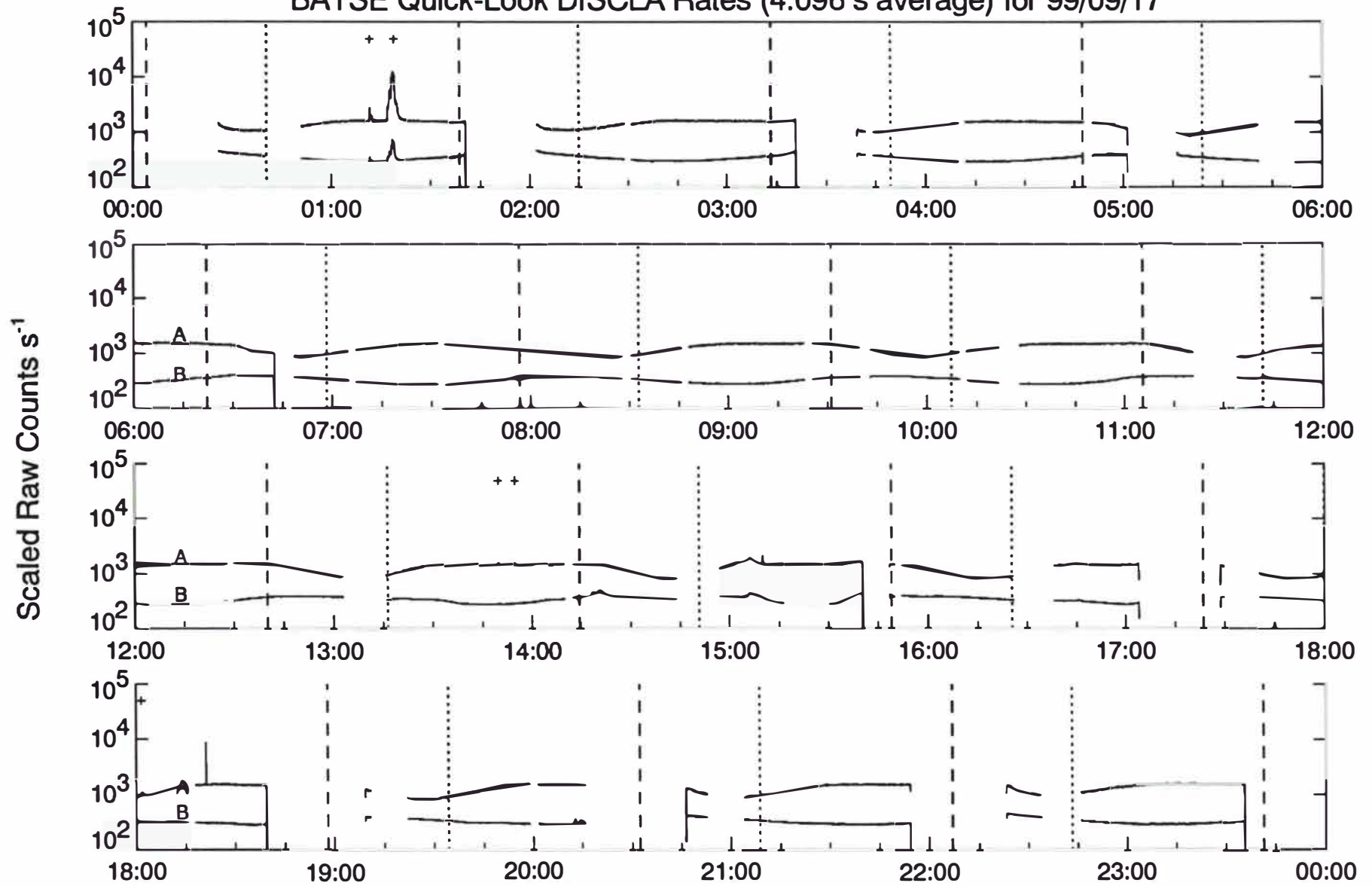
25- 100 keV

COUNTS/1.024 S



17 / 9 / 99

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/17



Current Time: 99/09/21, 1008 EDT

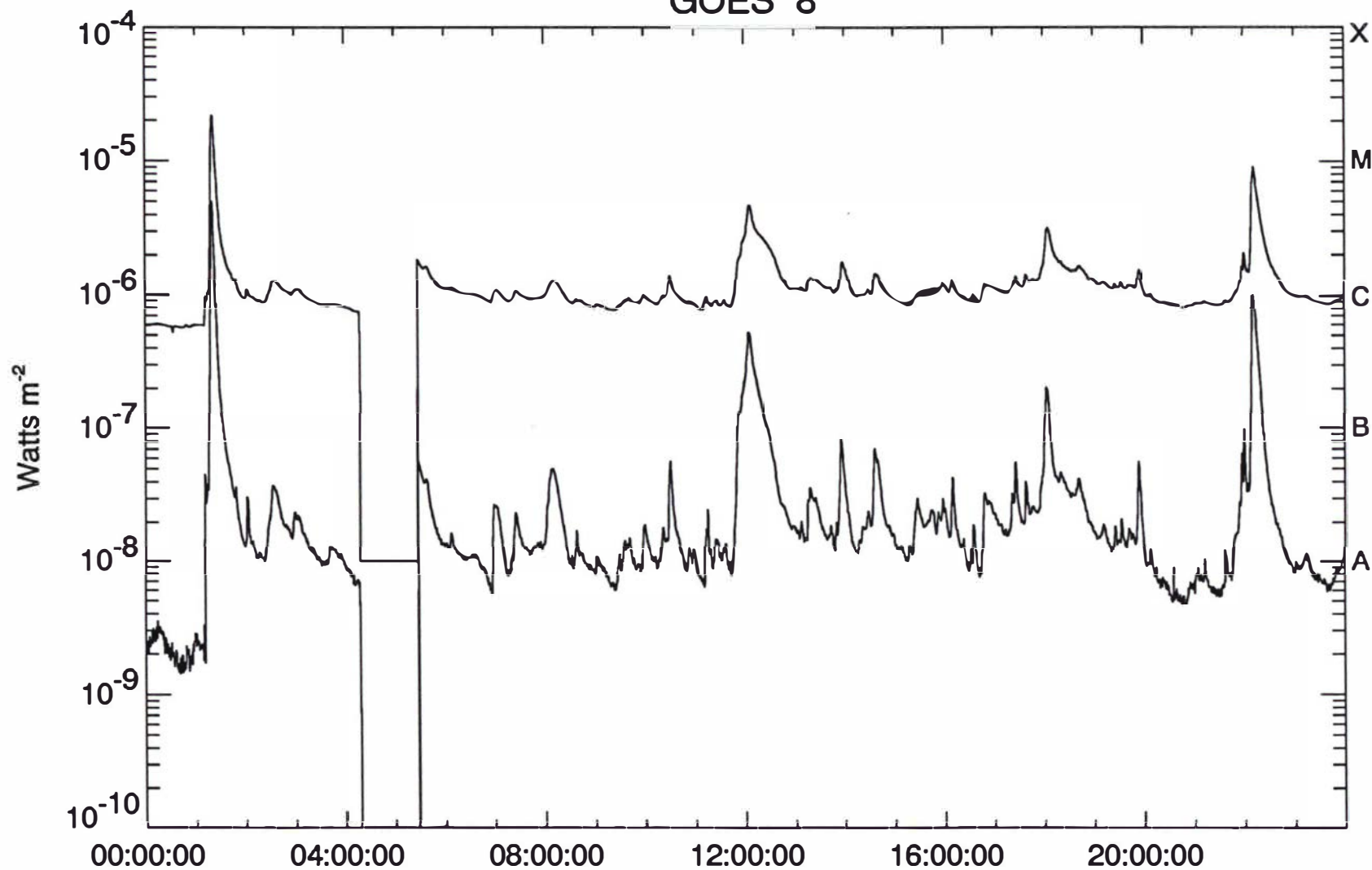
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/17, 0000:00

Plot created: 99/09/21, 1008

Channel

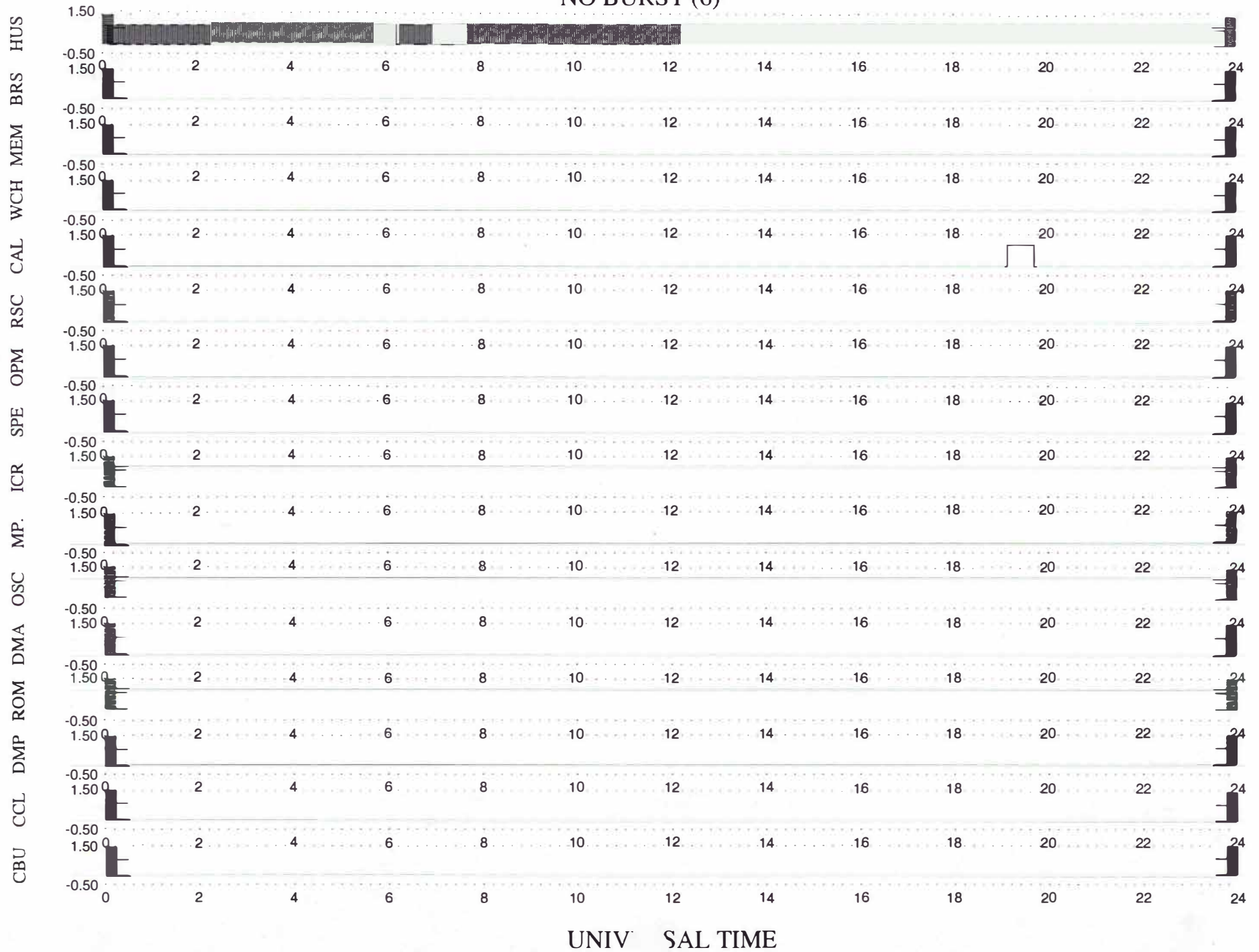
1 (1.0 - 8.0 Angstroms)

Background not subtracted

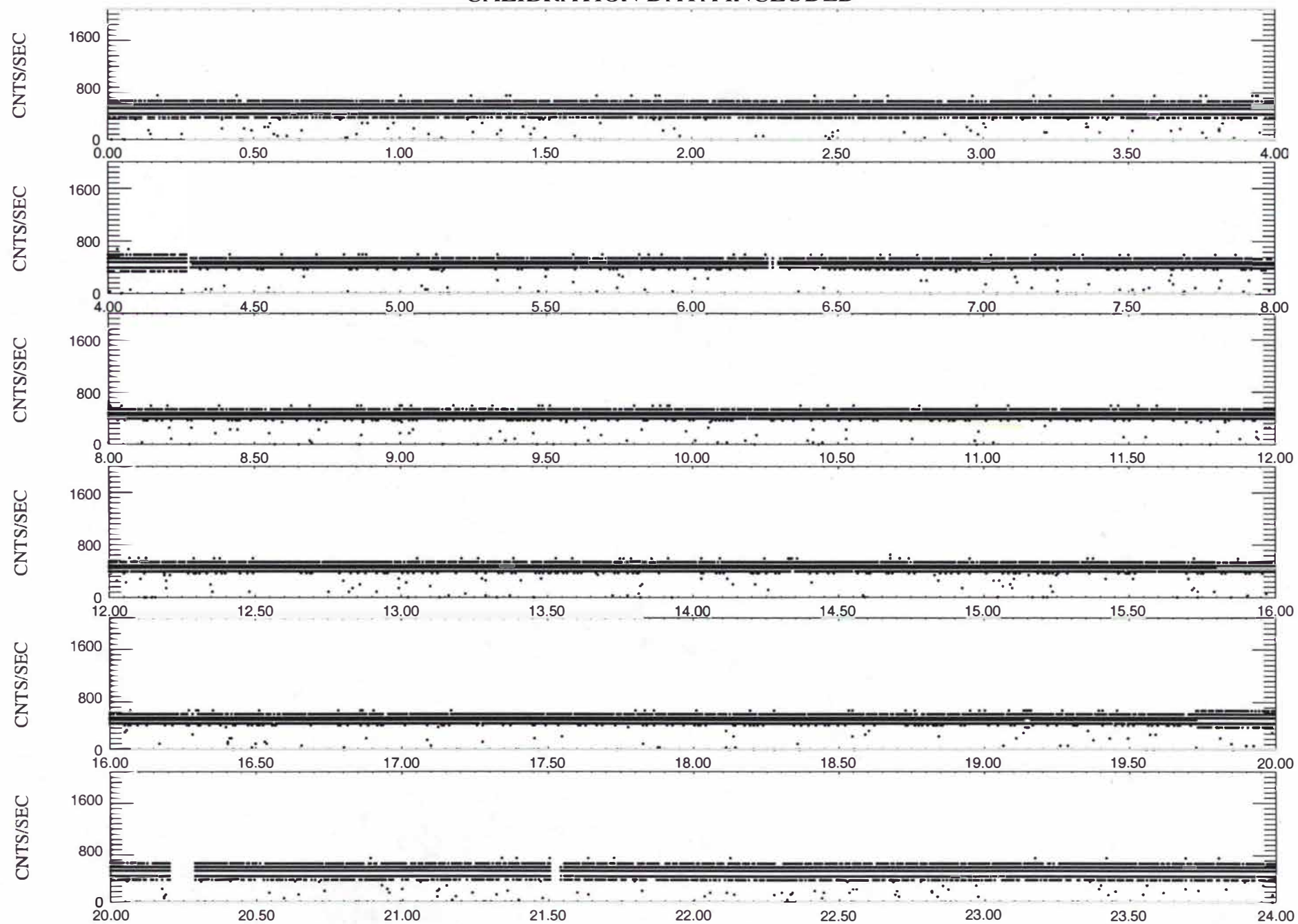
2 (0.5 - 4.0 Angstroms)

Background not subtracted

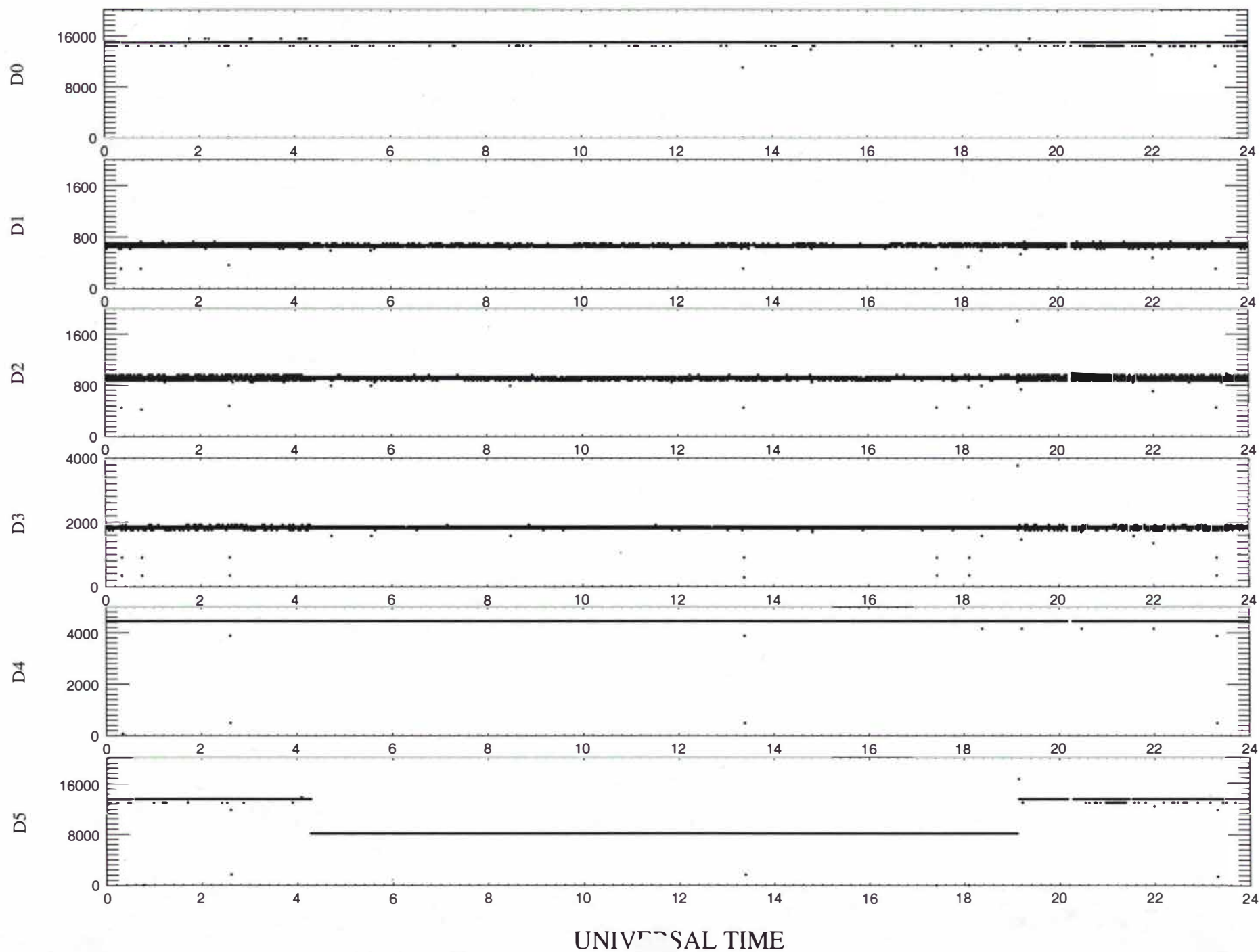
Sample average = 10



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Sep 20 11:25 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 20 Sep 1999 13:11:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7770

BATSEARCH PROGRAM

BATSE BURST # 7770
EVENT OF 1999 SEP 18 DAY OF YEAR=261
EVENT CROSSING TIME AT BATSE : 19994. S. OR 05:33:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 262.000 2.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 9/ 99 IS:
RA= 157.857 DEC= -14.939 DIST= 5.452 AU
BATSE-ULYSSES DISTANCE = 815620220. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 666.39 SECS.
CROSSING TIME AT ULYSSES IS 20660. S. OR 05:44:20 +/- 518.07 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 9/ 99 IS:
RA= 247.863 DEC= -23.726 DIST= 1.284 AU
MARS-BATSE DISTANCE = 192119200. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=150.83 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -559.56 SECS.
CROSSING TIME AT MARS IS 19434. S. OR 05:23:54 +/- 45.73 SECONDS

BATSE BURST TRIGGER

NO.: 7770

TIME: TJD=1439 SECONDS=19994

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=156.1 AZIMUTH=90.4 ERROR=1.5 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH STRUCTURE. DURATION APPROX. = 6.5 SEC.
SLIGHTLY VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7770	990918	11439	19994	10000	262	+02	6.5

Date: Mar 21 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

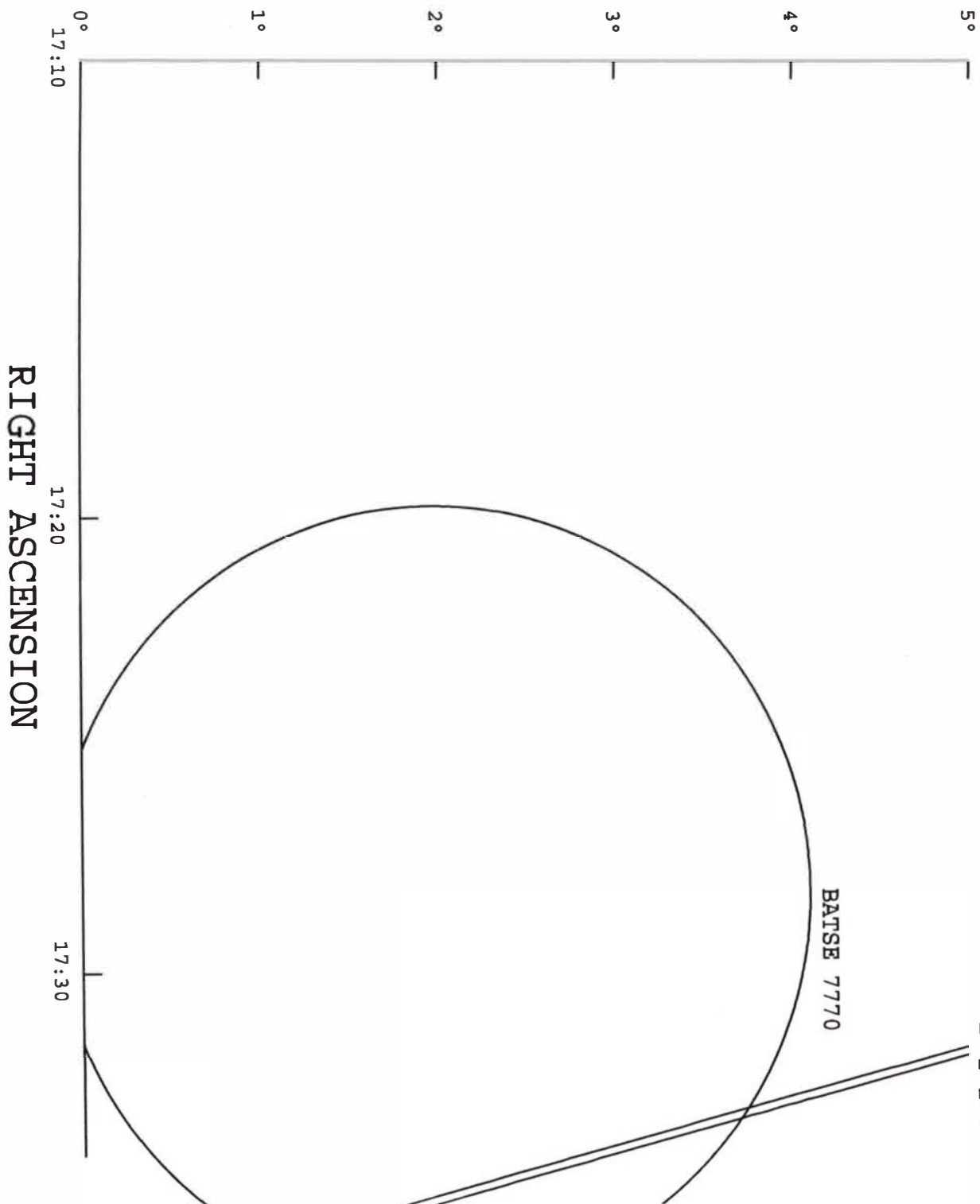
2 ULYSSES

DECLINATION

EVENT OF SEP 18, 1999 5:33

21/ 3/ 0

E 2-1



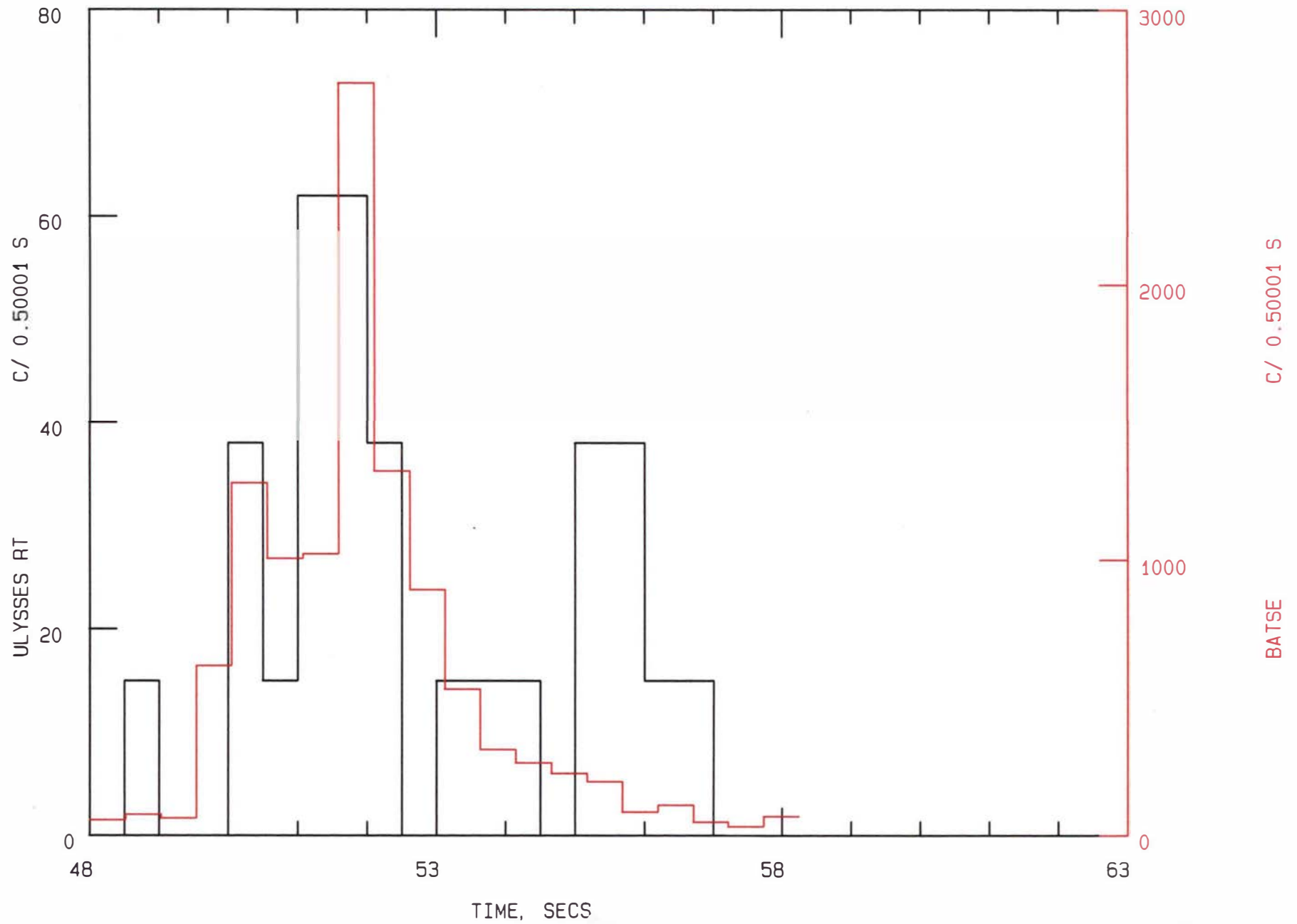
ULYSSES RT-BATSE

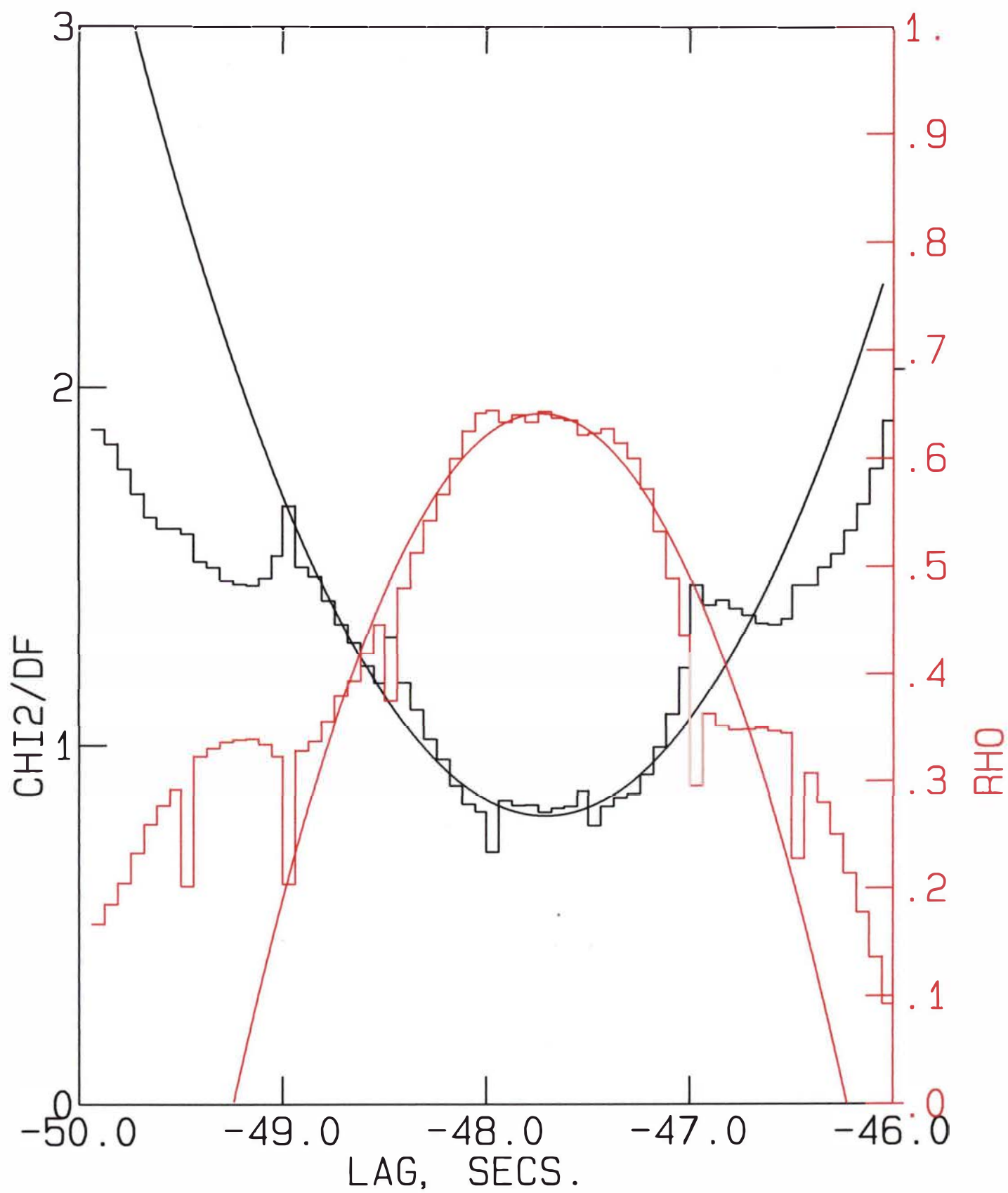
CORRELATION

18/ 9/99

20669.164

21/ 3/ 0

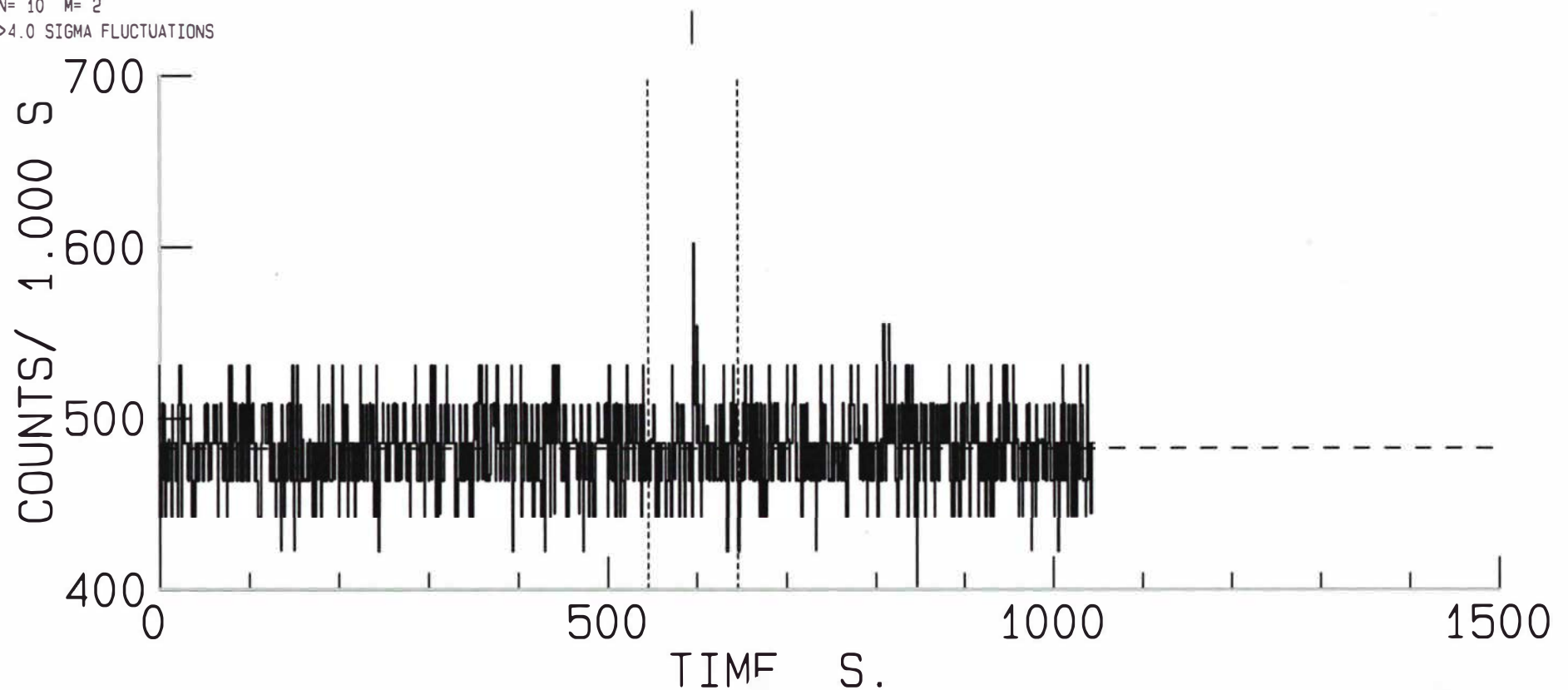




ULYSSES RT
18/ 9/99 20124.165 s
0.500 S INTERVALS REGROUPED BY 2
22- 151 keV

21/ 3/ 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



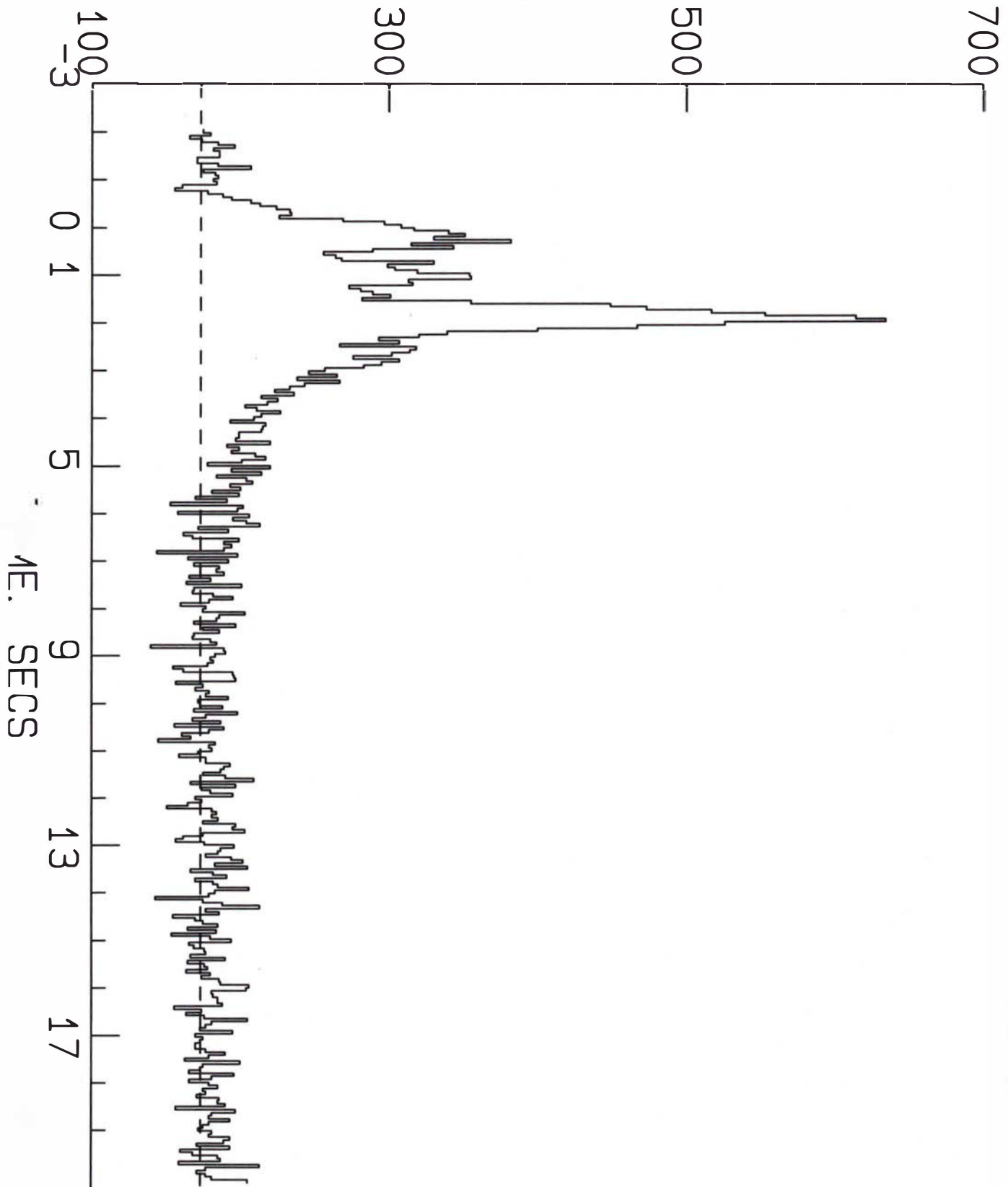
BATSE

18/09/99

19994.873

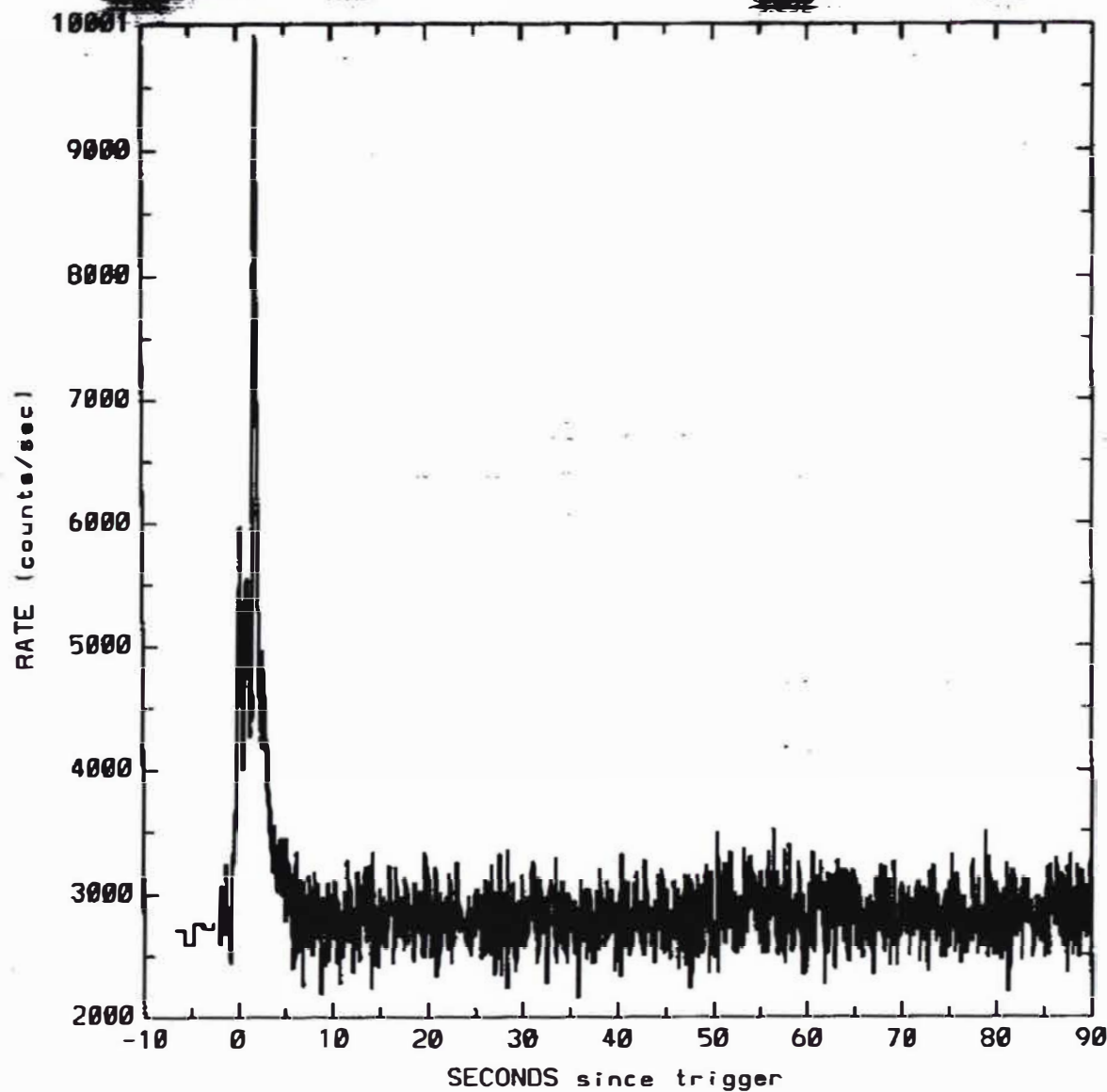
25- 100 keV

COUNTS/0.064 S



28 / 10 / 99

DISCSC Data for K. Hurley. 7770



18-OCT-1999 13:21:19

Created by NOPS 80
(Burst Display)
Version 12.26

Trigger = 7770

Trigger Time:
11439 / 19994.873

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

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

Discriminators:
(1..2)

Quality Mask:
BDISP1

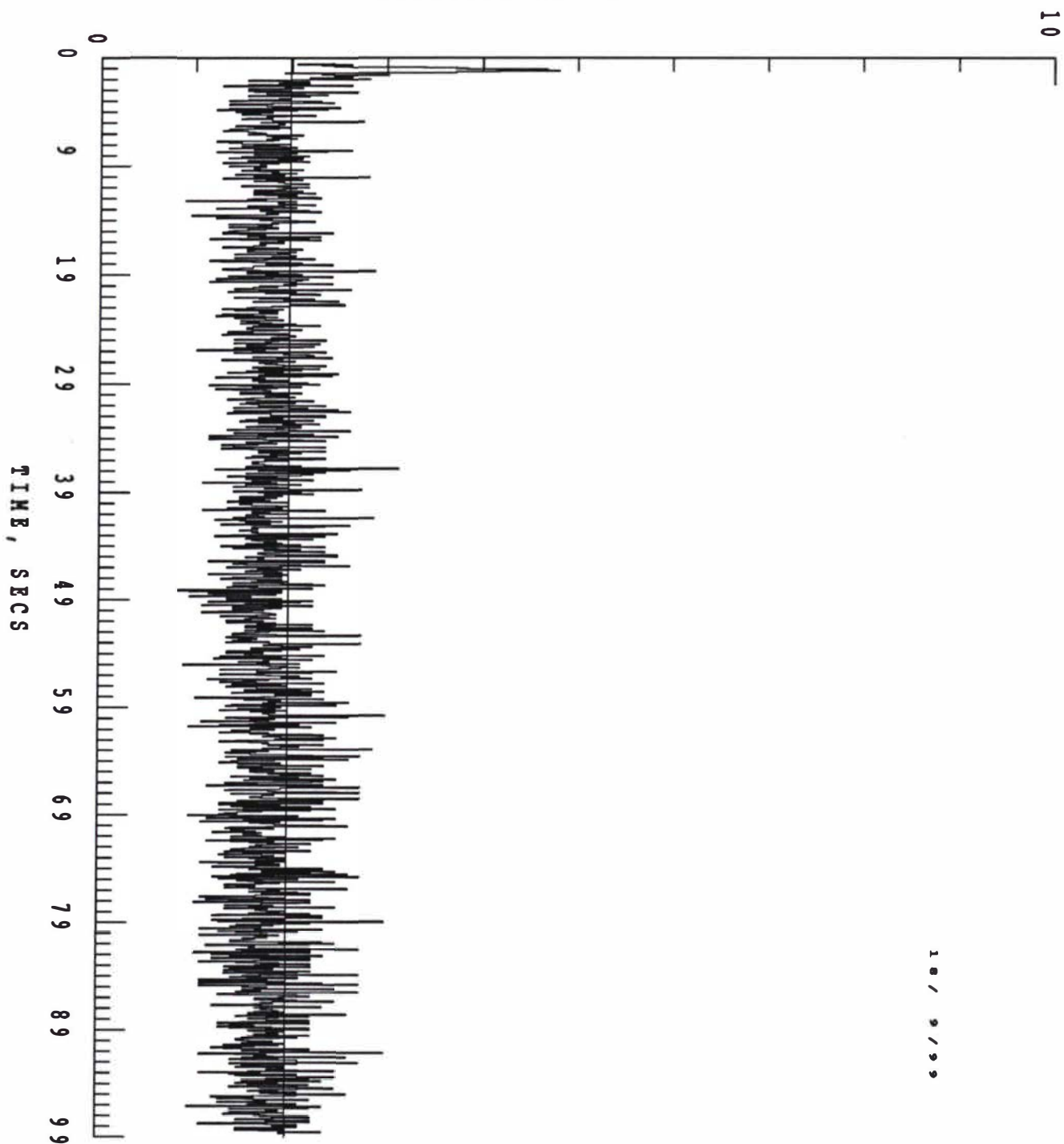
KONUS

18/09/99

19997.057

50 - 200 keV

COUNTS/0.064 S



18 / 9 / 99

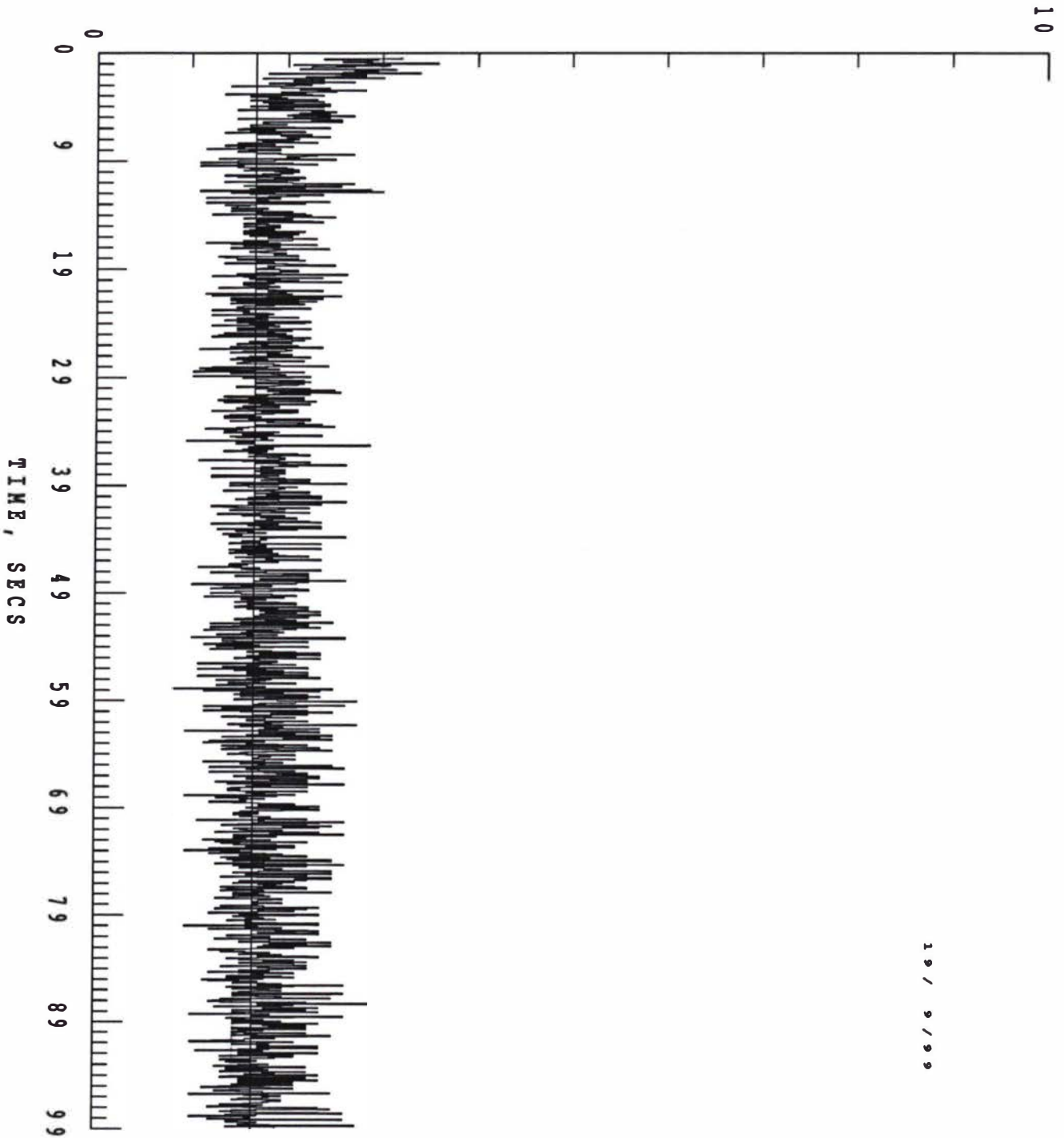
KONUS

18/09/99

66011.679

50- 200 keV

COUNTS/0.064 S

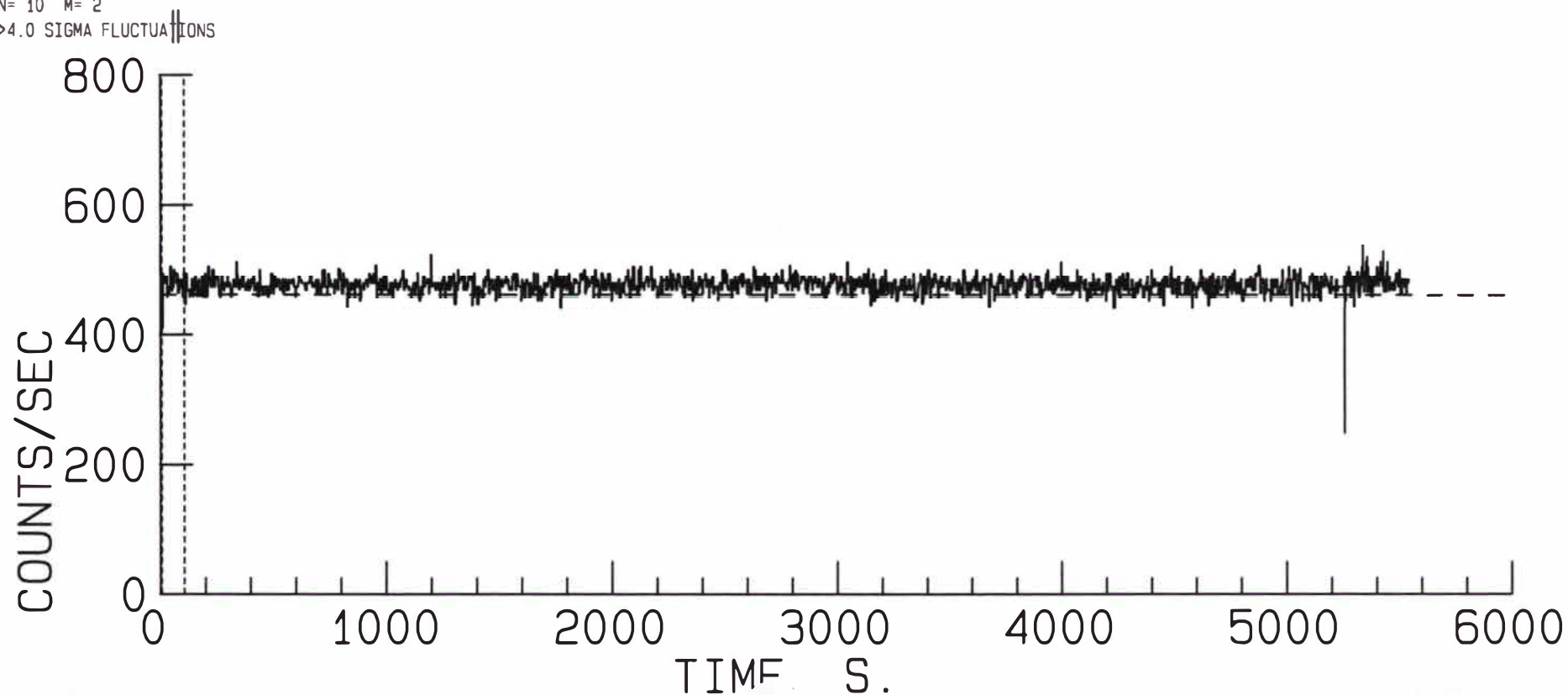


19 / 9 / 99

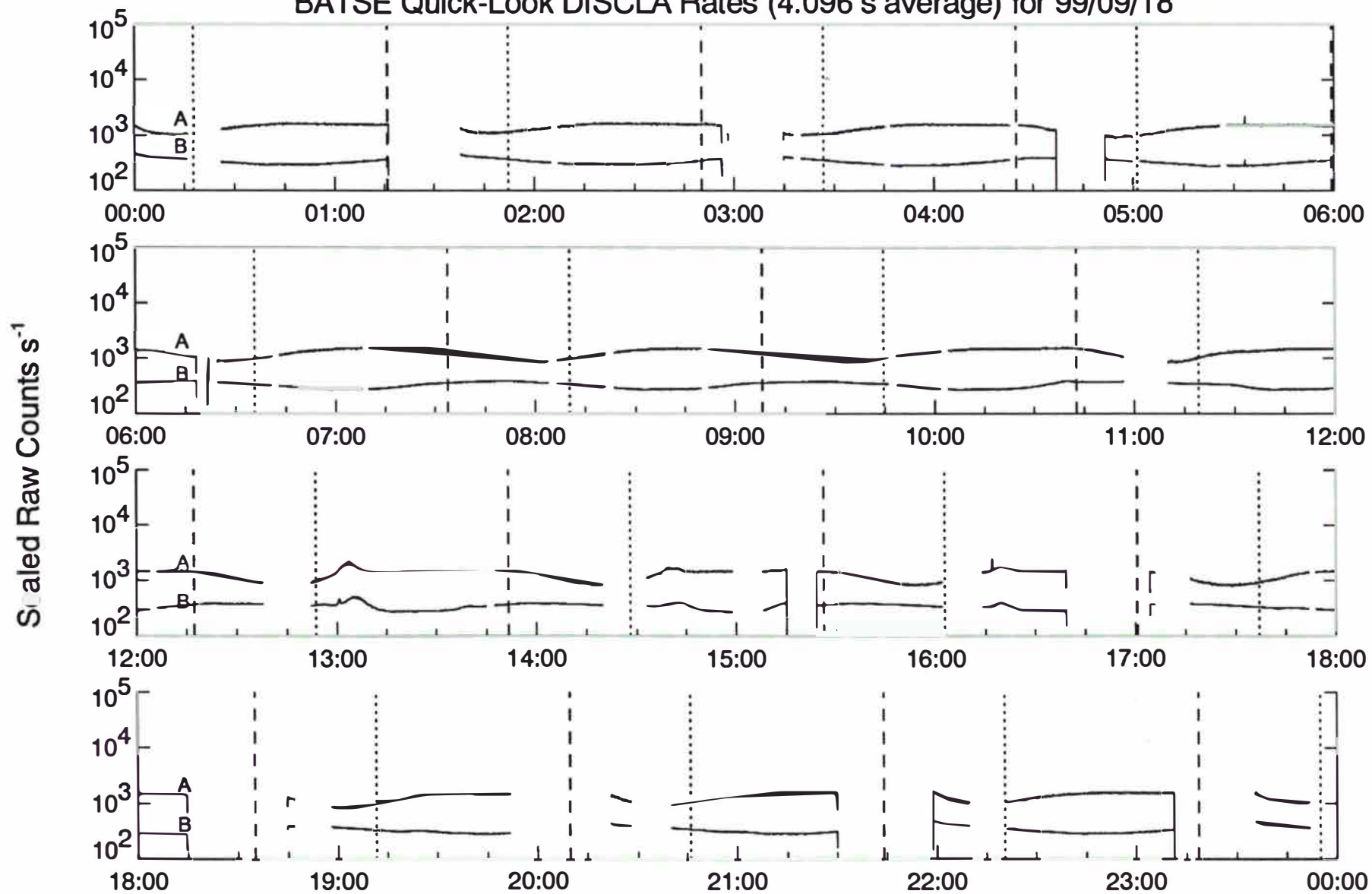
ULYSSES RT
18/ 9/99 63252.102 s
INTERVALS REGROUPED BY 8
22- 151 keV

15/ 3/ 0

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/18

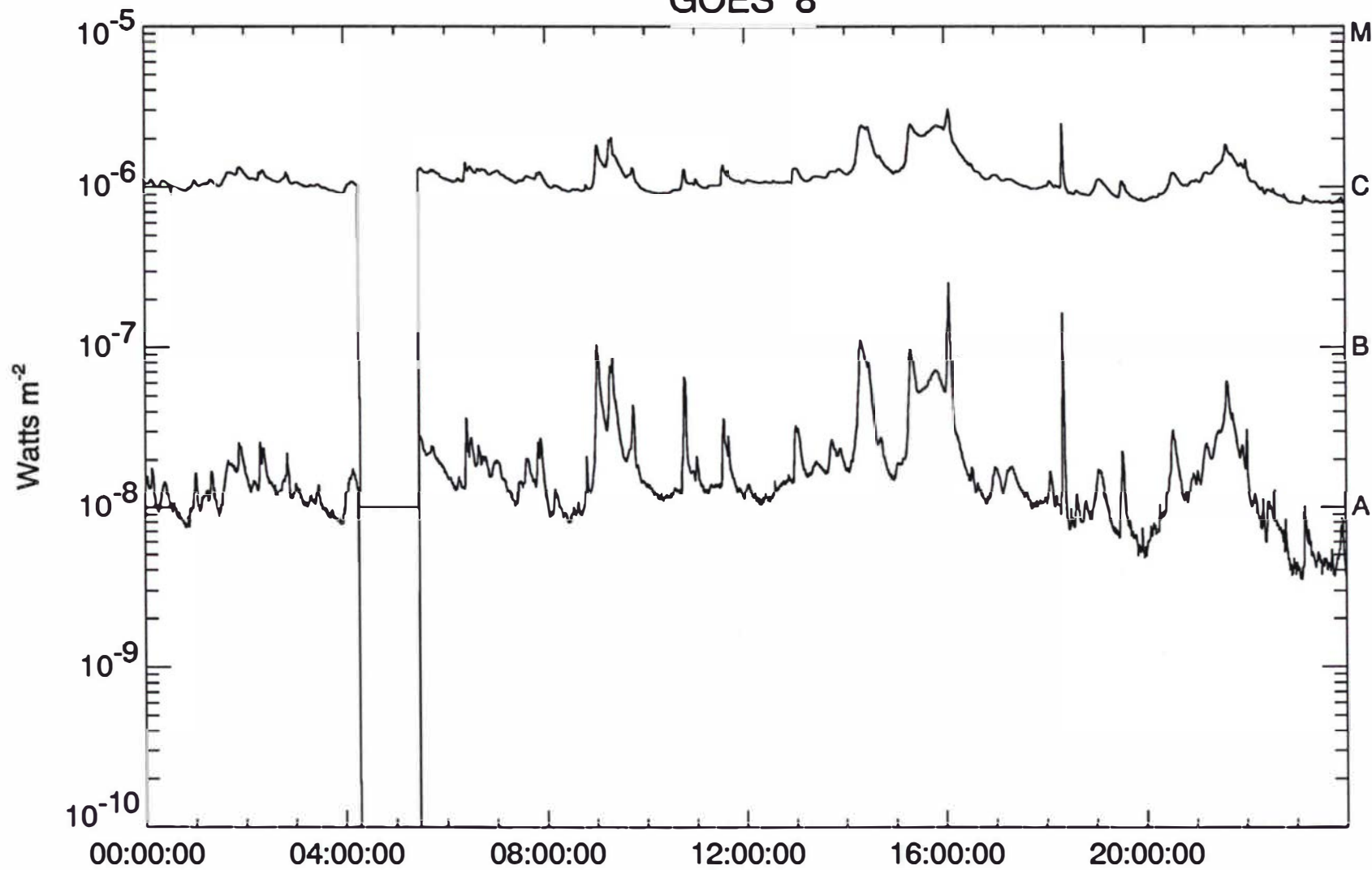


Current Time: 99/09/22, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/18, 0000:00

Plot created: 99/09/22, 1008

Channel

1 (1.0 - 8.0 Angstroms)

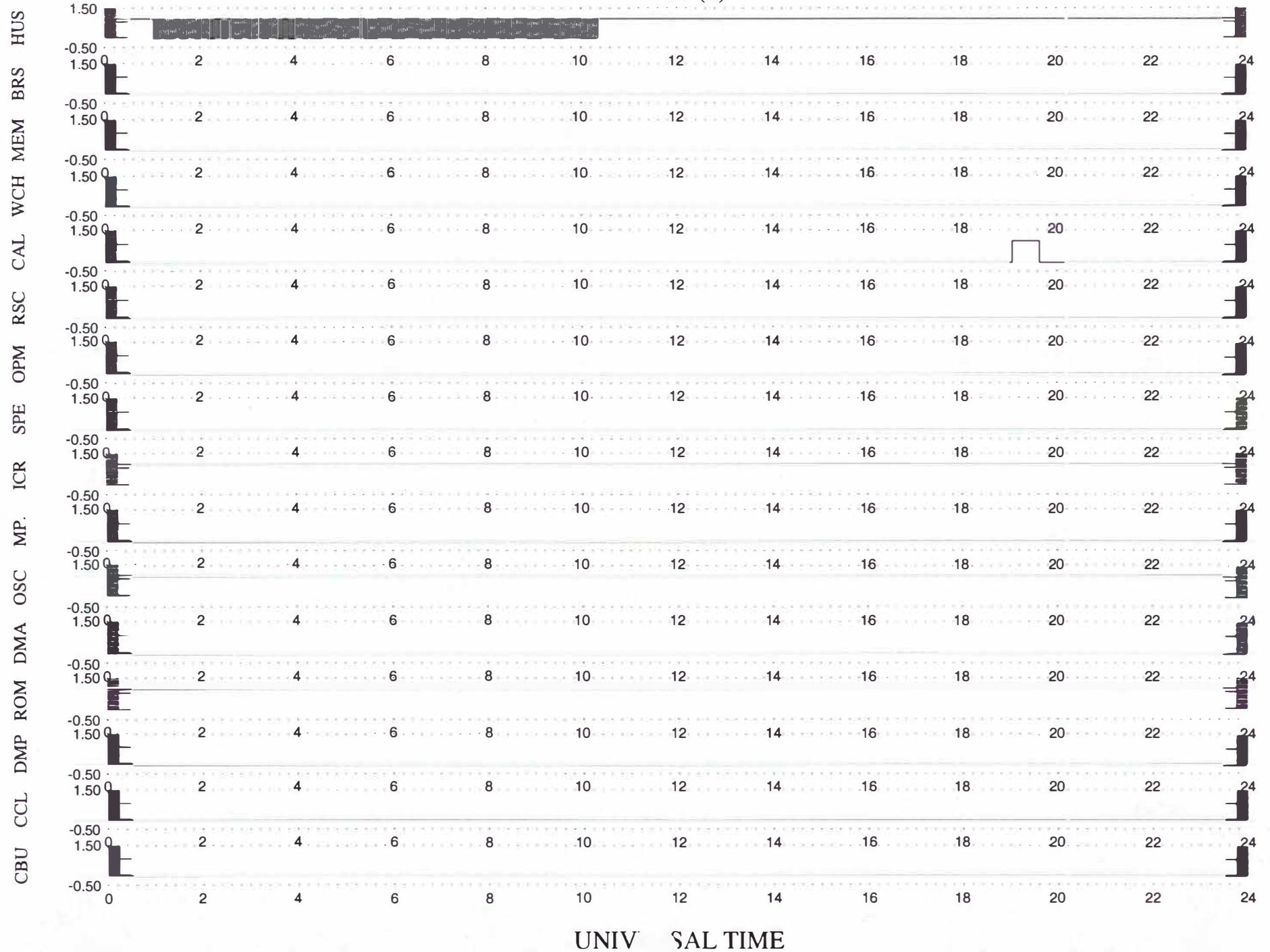
Background not subtracted

2 (0.5 - 4.0 Angstroms)

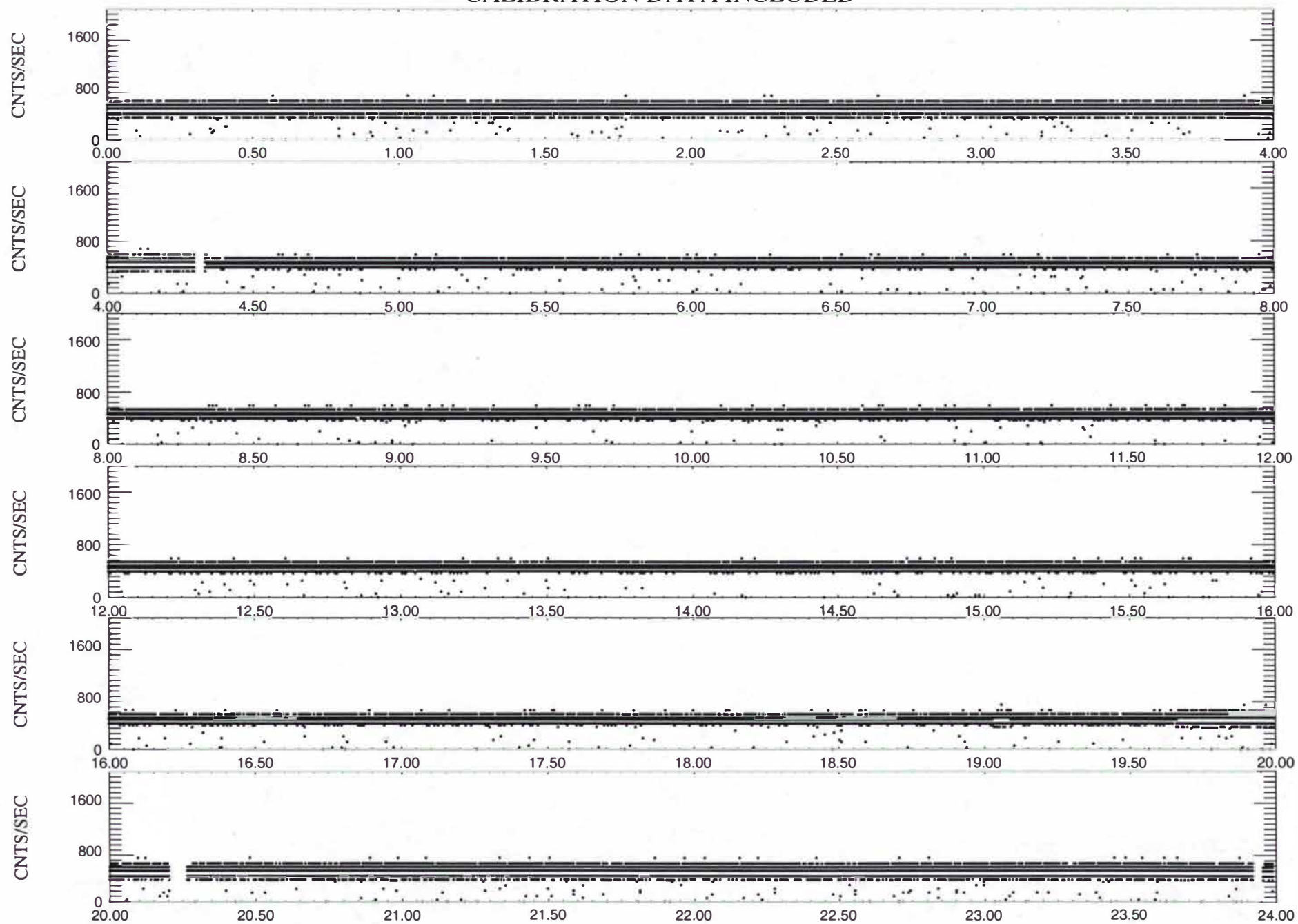
Background not subtracted

Sample average = 10

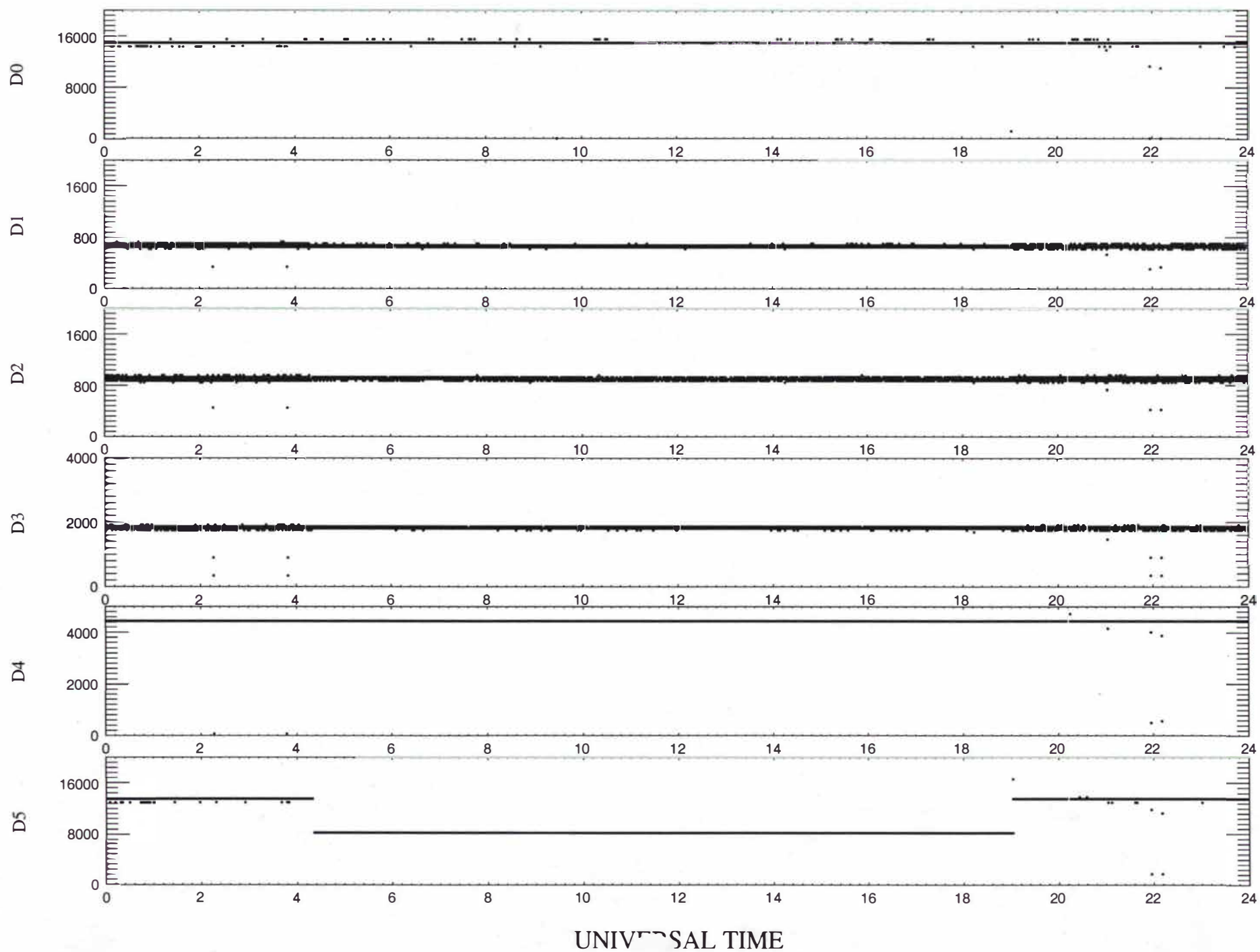
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



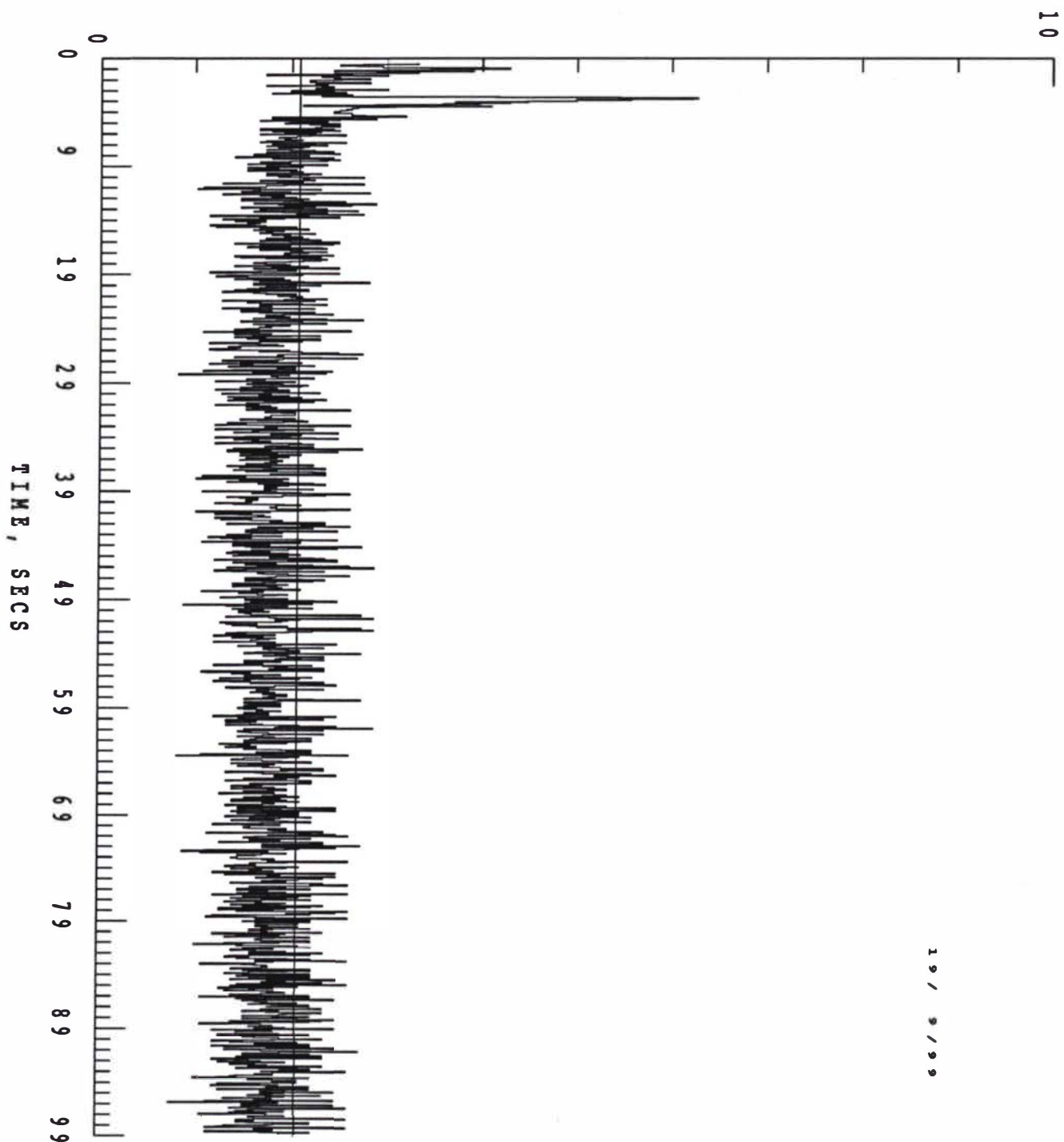
KONUS

19/09/99

38189.297

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990919 38189

ULYSSES RT

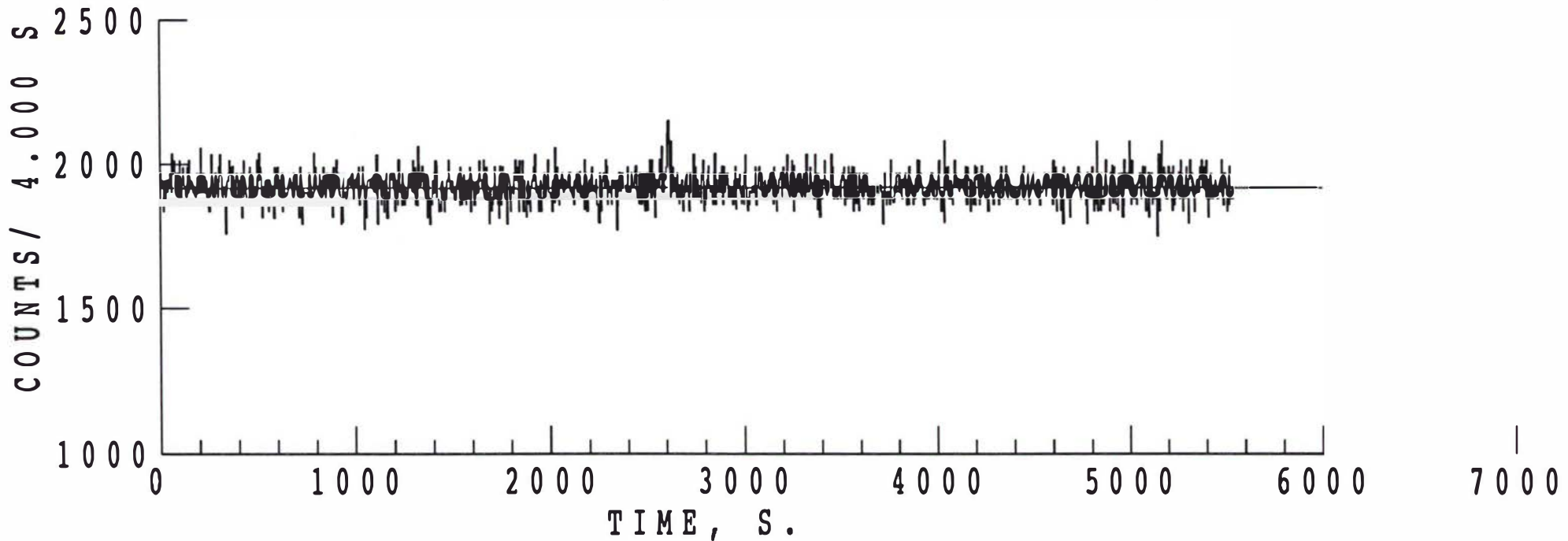
20 / 9 / 99

19 / 9 / 99 35424.191 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: Oct 15 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data *N/A*

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

3. NEAR Data

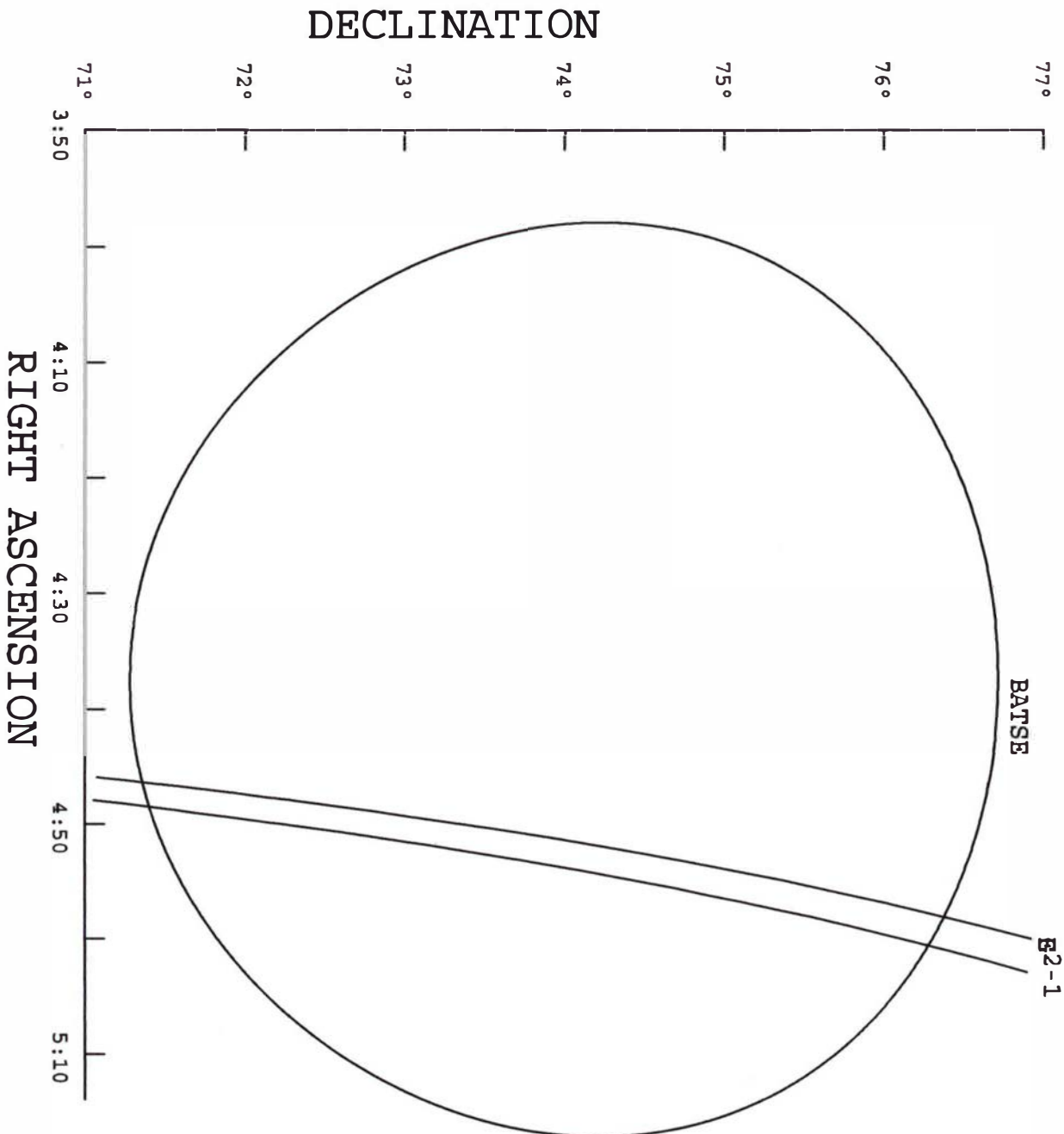
- ☒ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

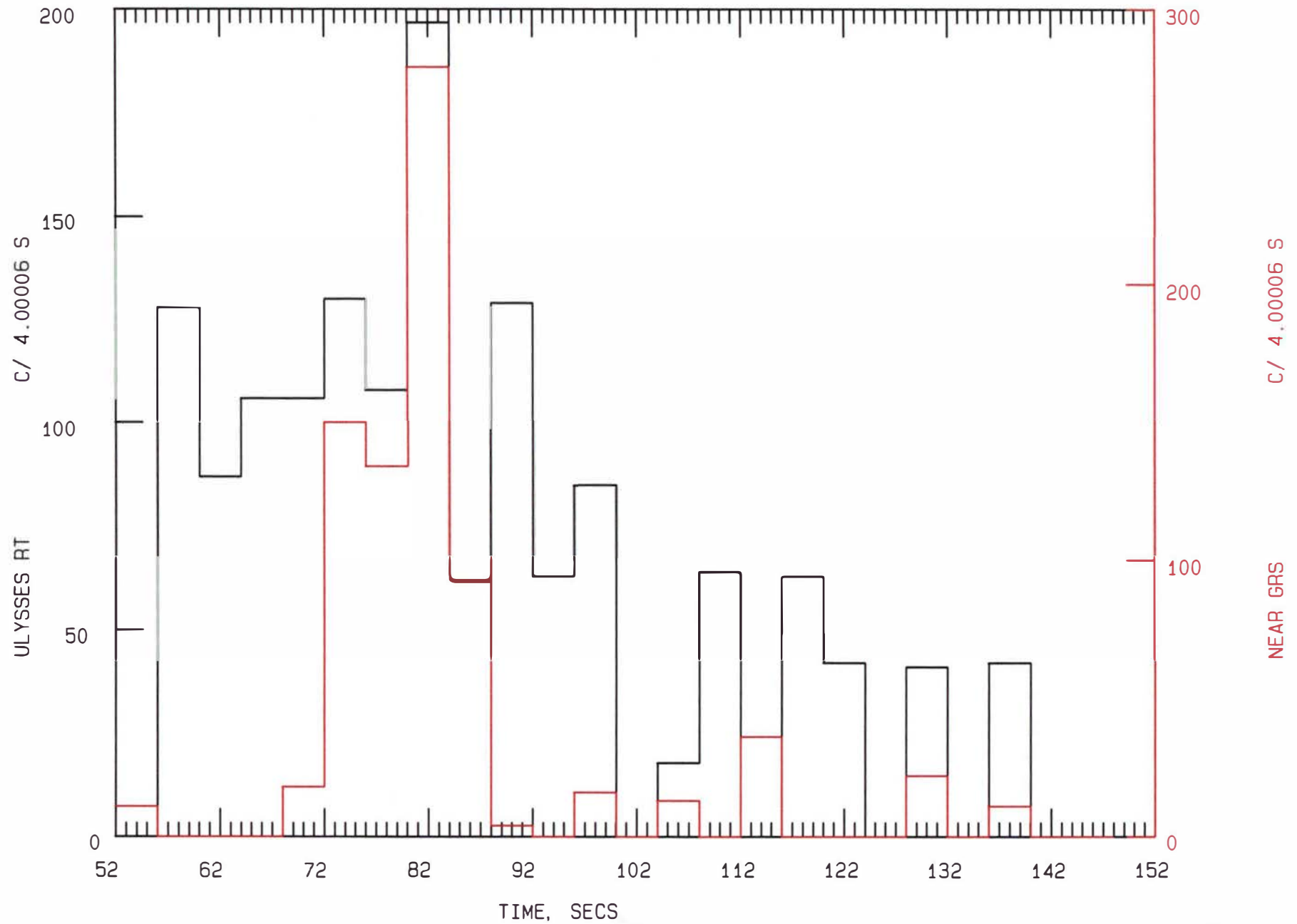
☒ ACCESS database updated?

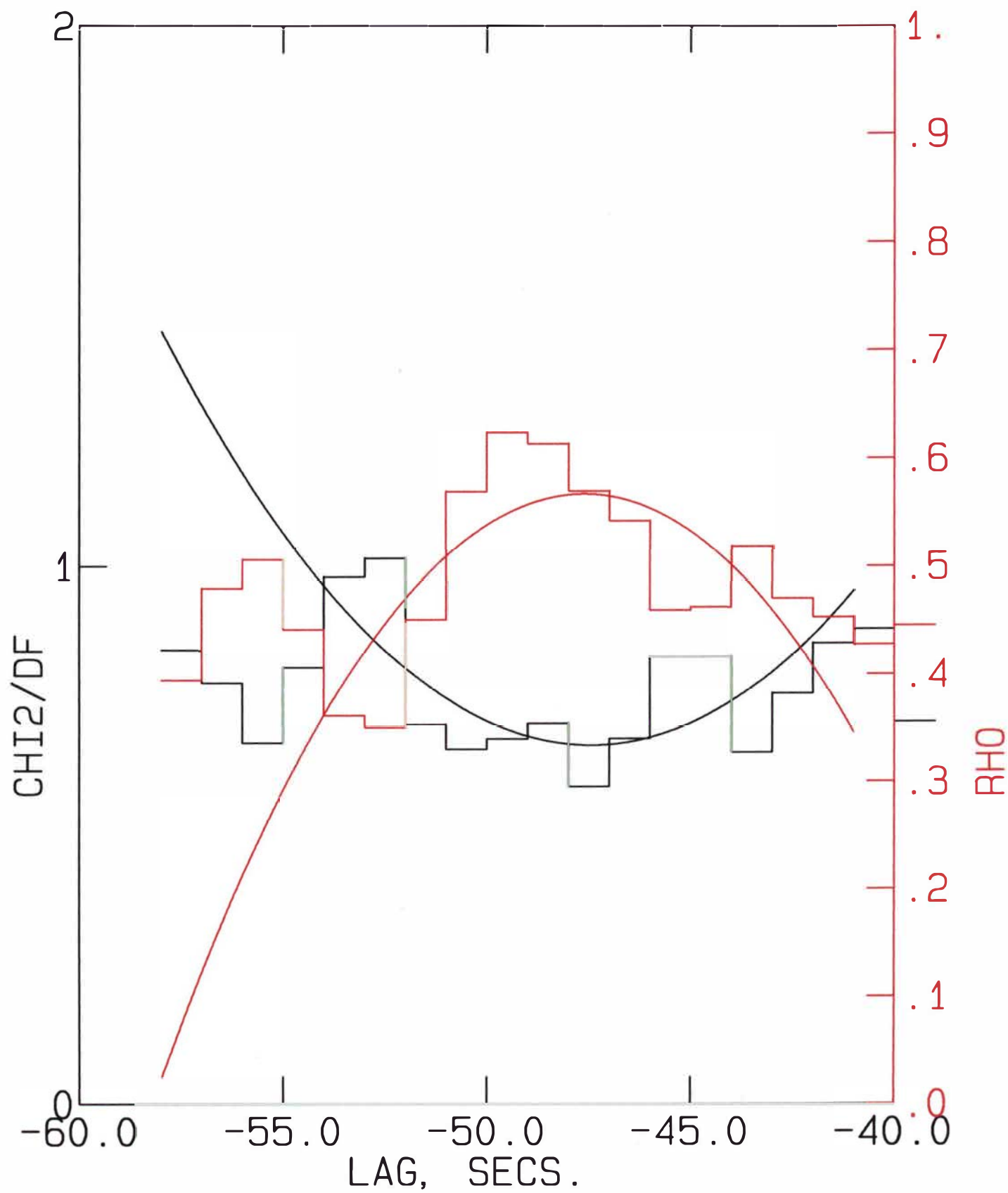
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 BATSE 2 NEAR

EVENT OF SEP 19, 1999 13:42

15/10/ 2







BATSE

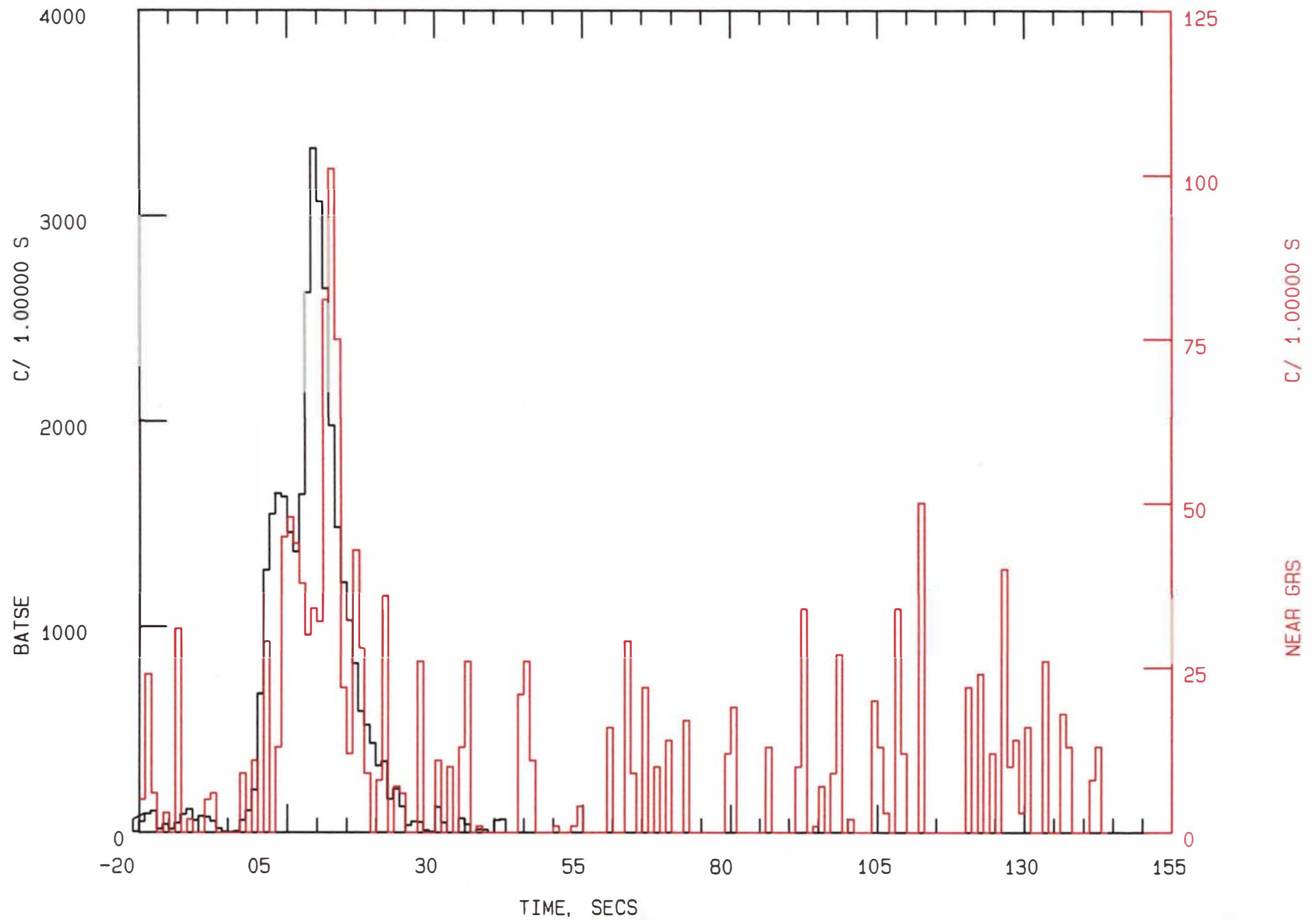
-NEAR GRS

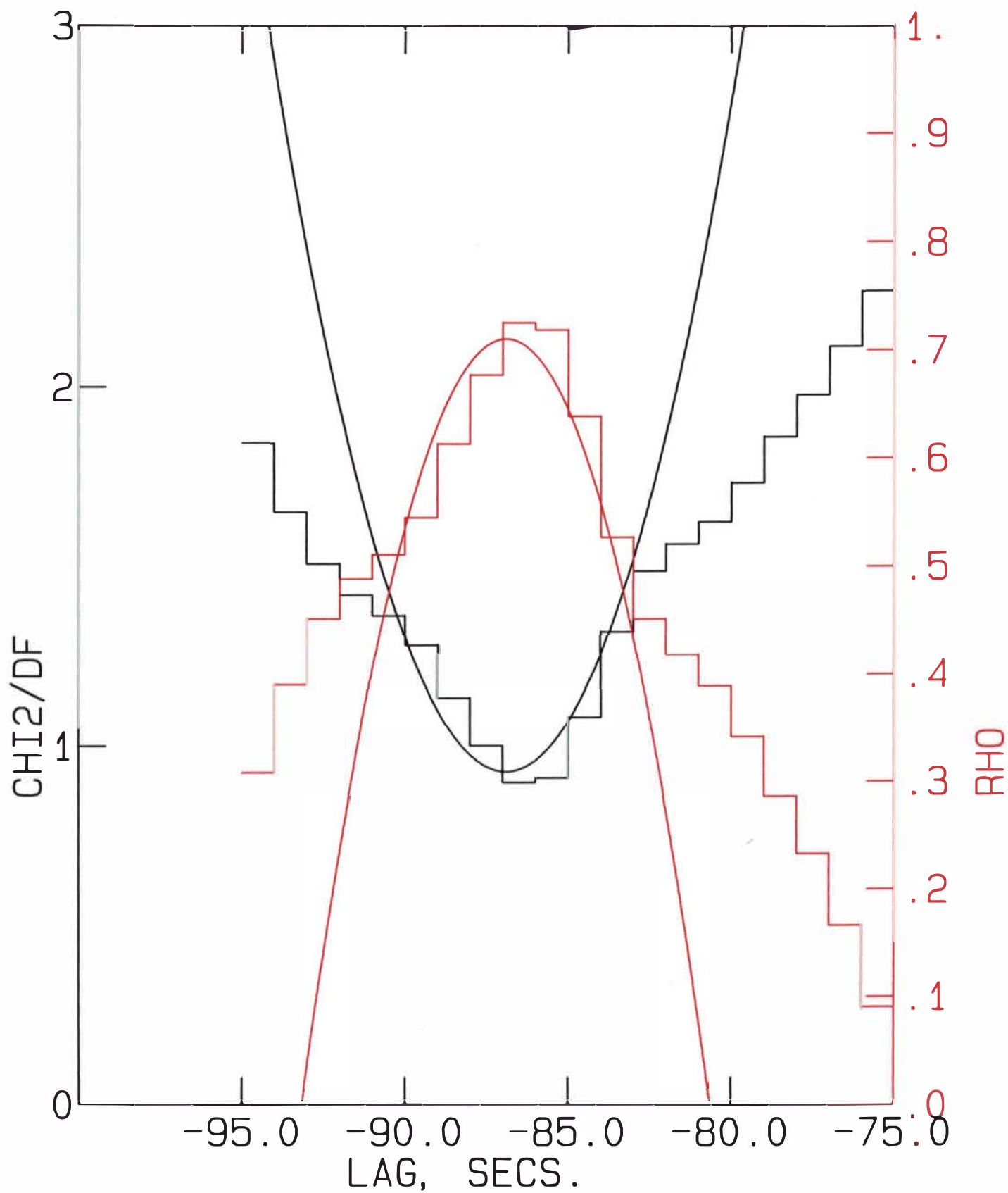
CORRELATION

19/09/99

49337.593

15/10/ 2





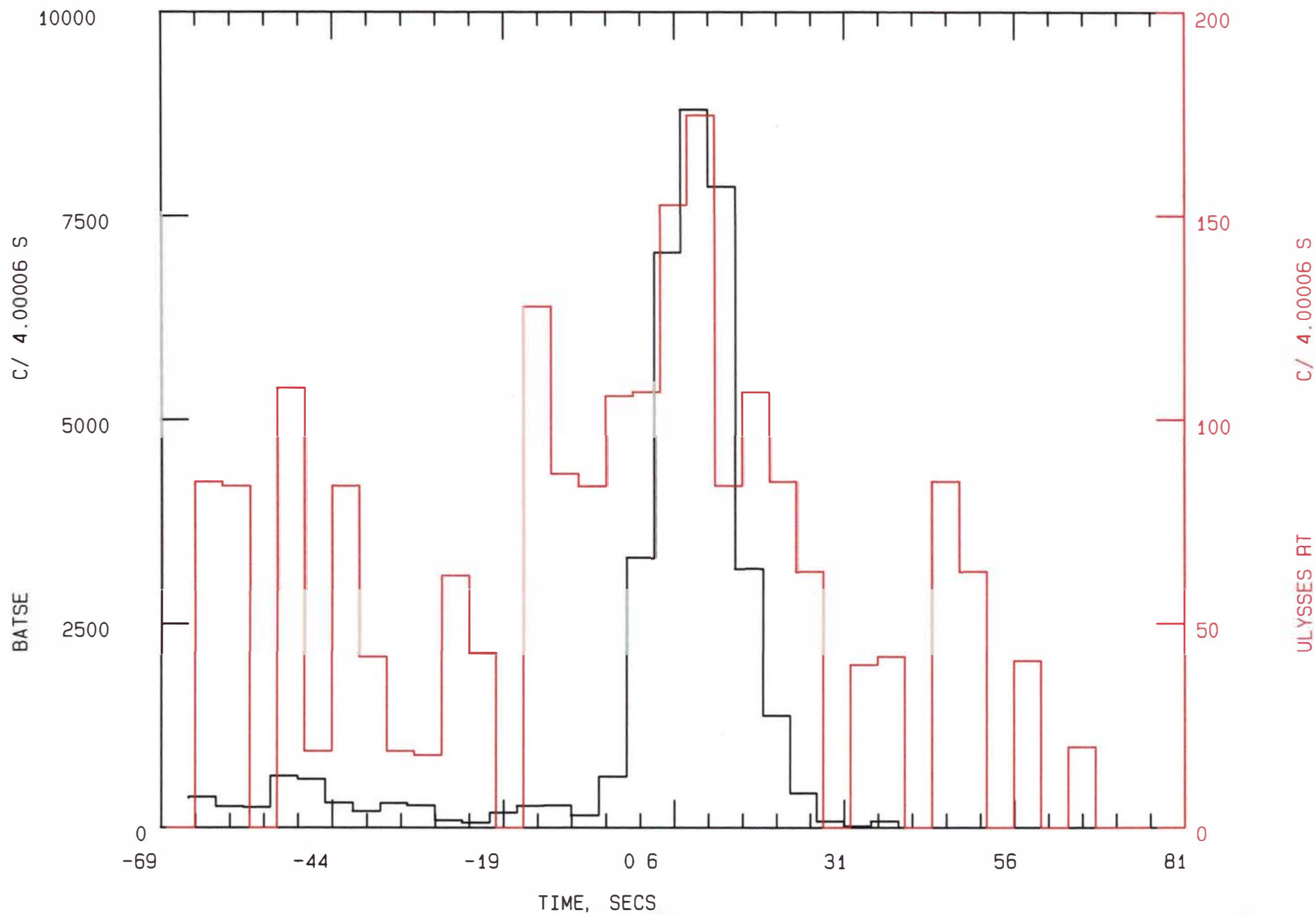
BATSE

-ULYSSES RT CORRELATION

19/09/99

49337.593

15/10/ 2

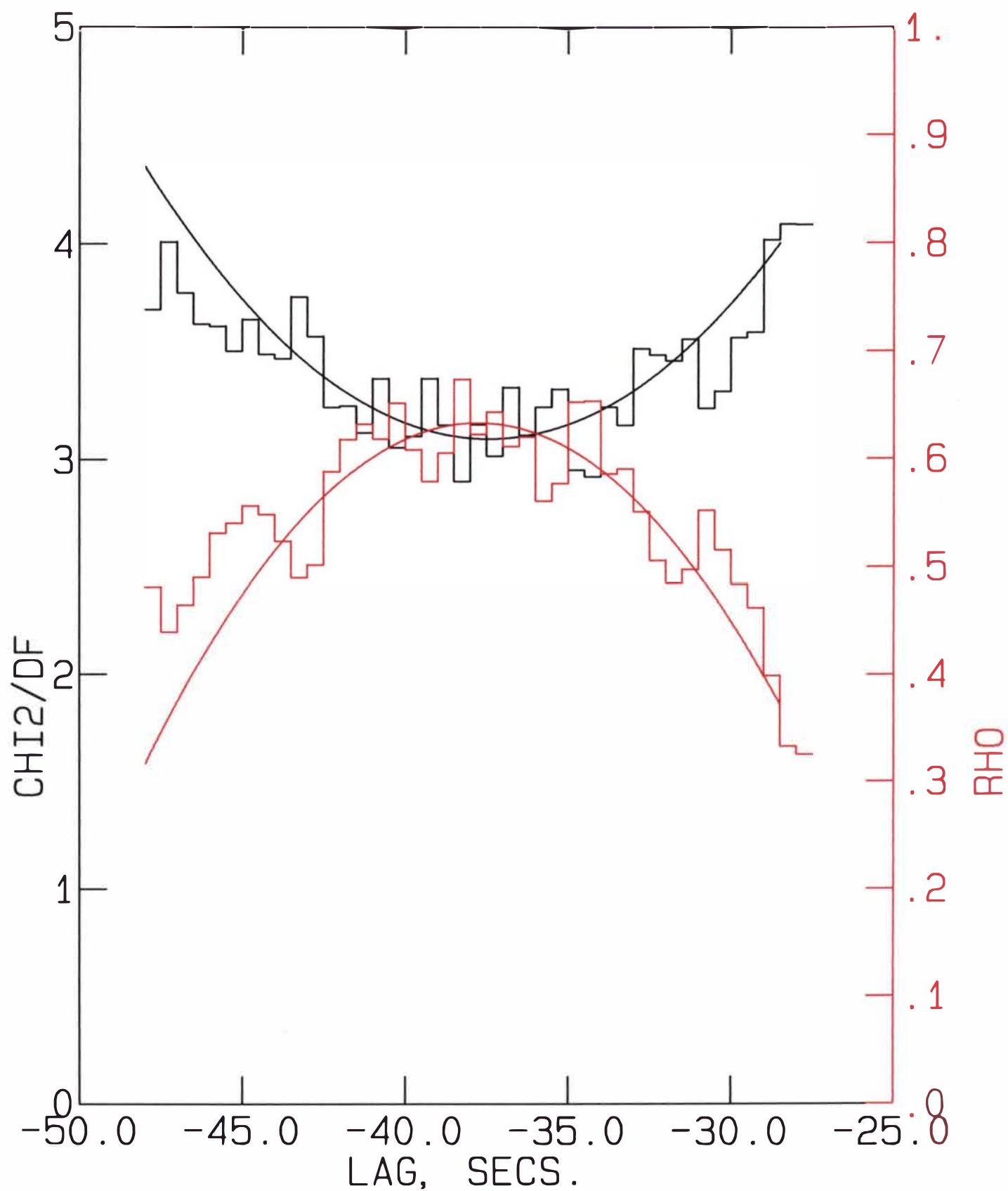


BATSE

-ULYSSES RT CORRELATION

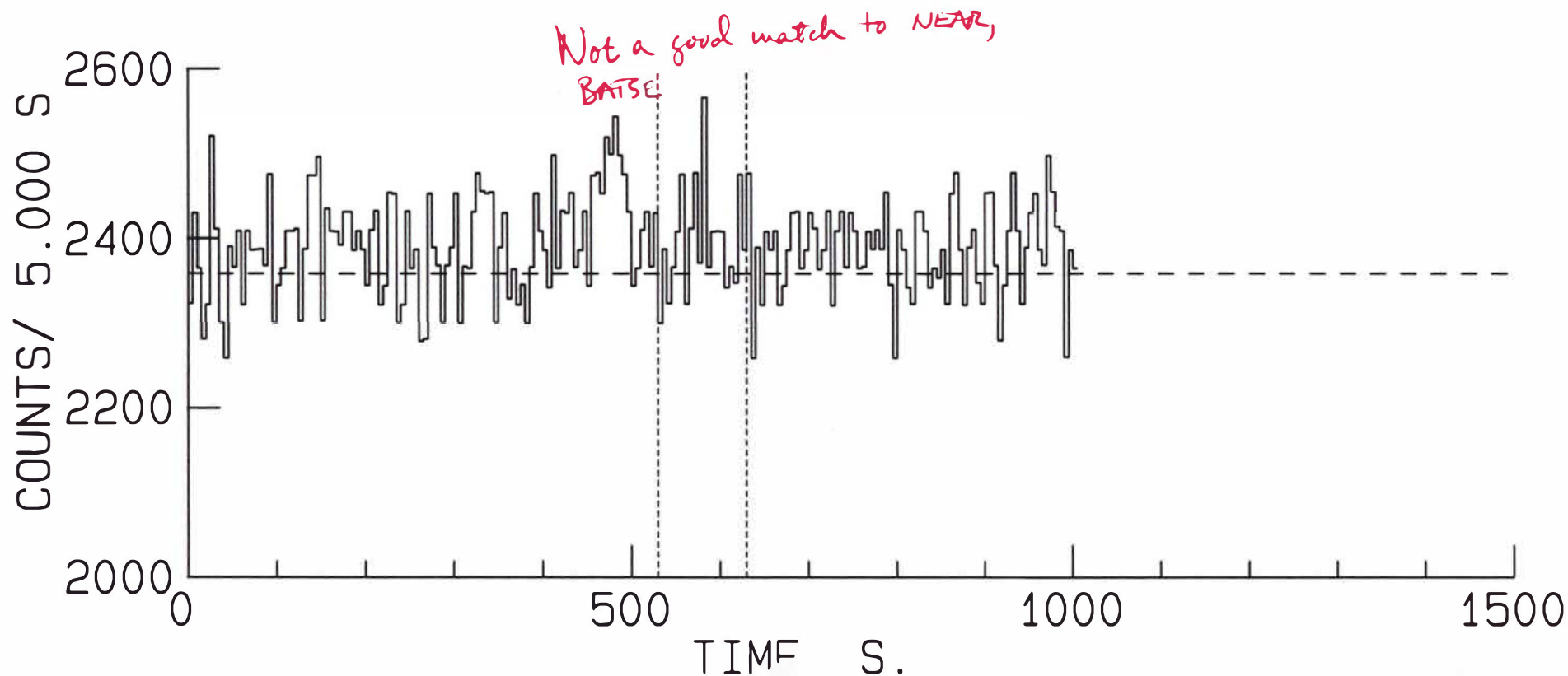
19/09/99

49337.593



ULYSSES RT
19/ 9/99 49500.340 s
0.500 S INTERVALS REGROUPED BY 10
22- 151 keV

15/10/ 2

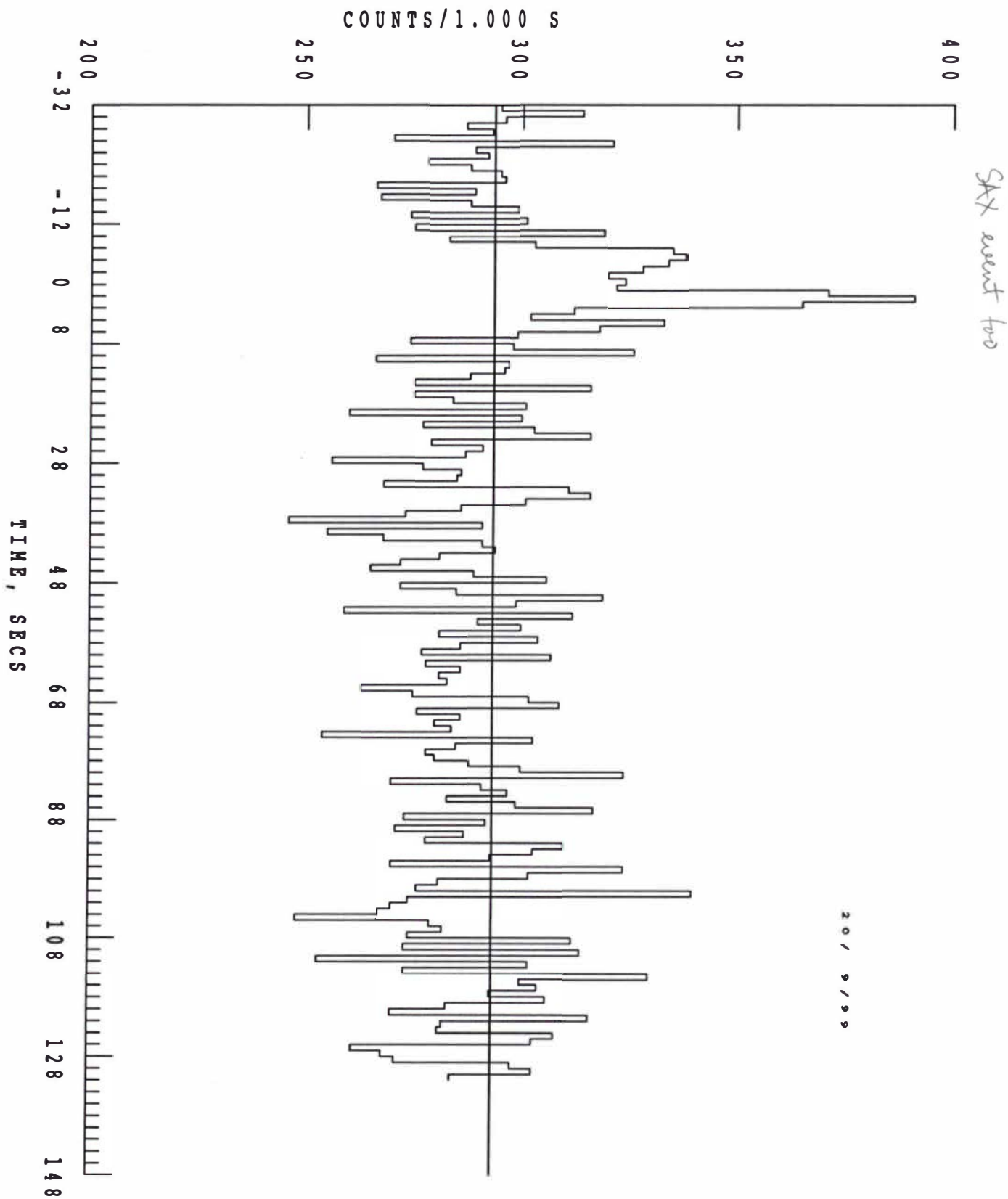


NEAR

19/09/99

49089.032

100-1000 keV



k o n u s

U L Y S S E S R T

1 7 / 0 3 / 0 0

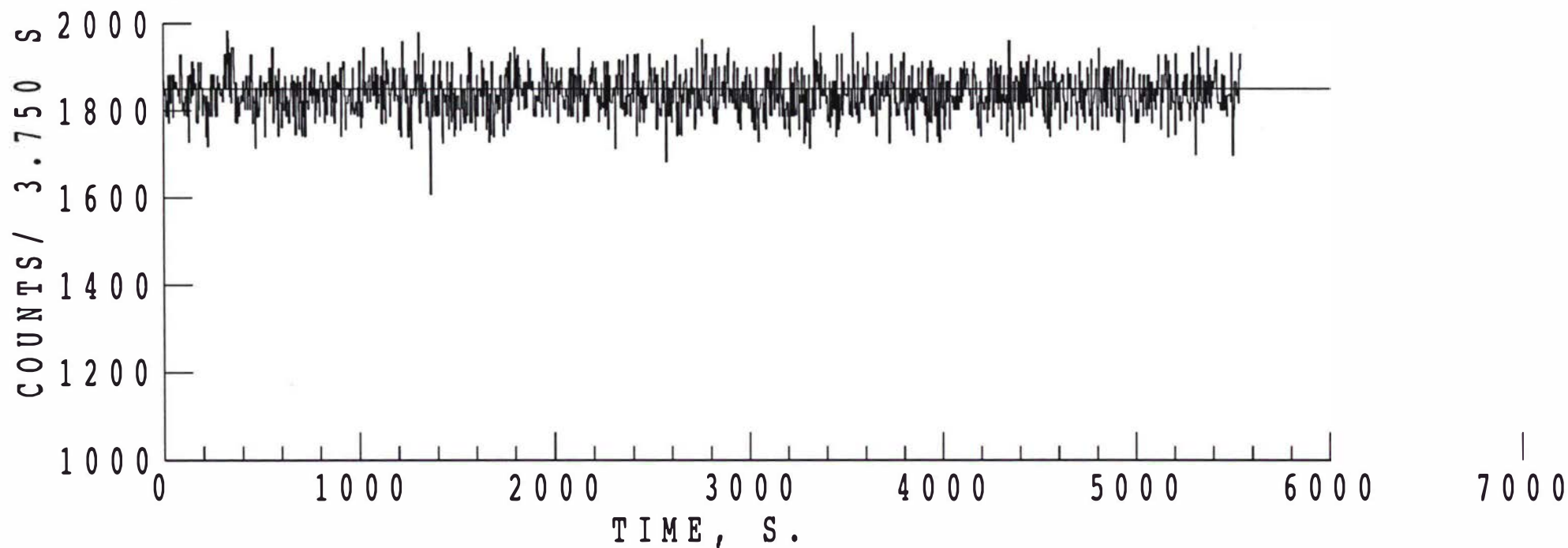
1 9 / 0 9 / 9 9 8 3 2 6 8 . 1 8 8 s

0 . 2 5 0 S I N T E R V A L S R E G R O U P E D B Y 1 5

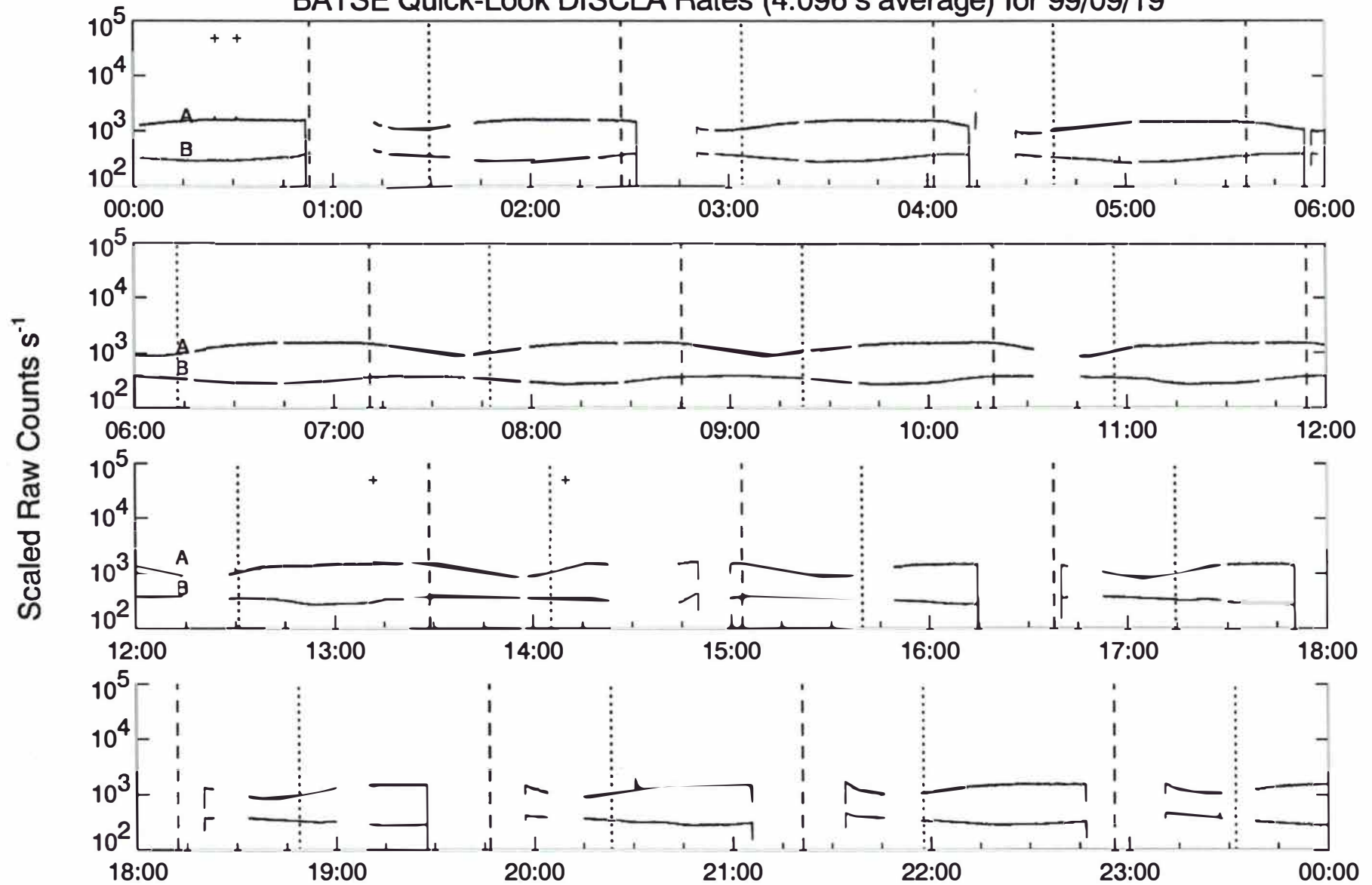
0 - 0 k e V

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 99/09/19

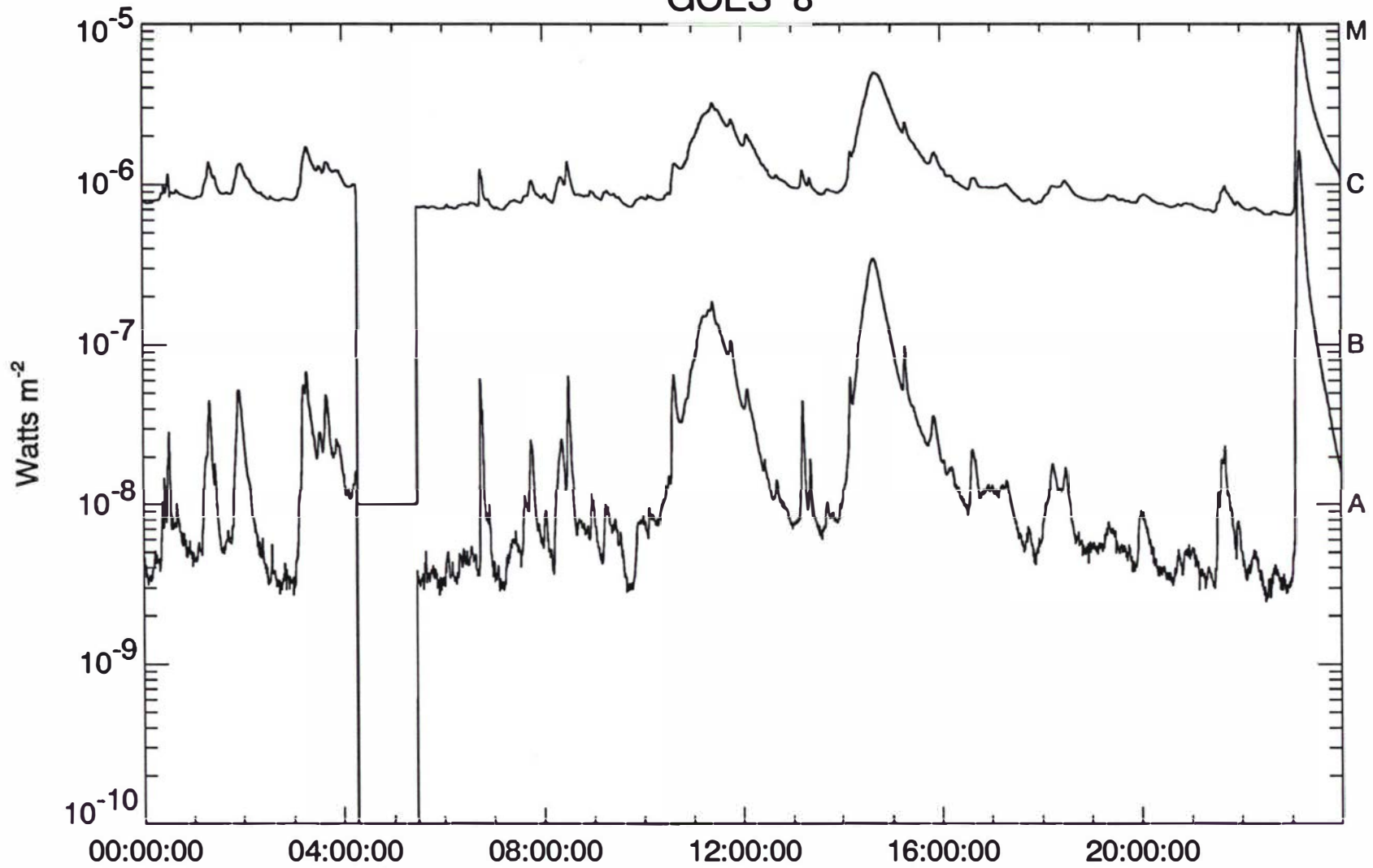


Current Time: 99/09/23, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/19, 0000:00

Plot created: 99/09/23, 1008

Channel

1 (1.0 - 8.0 Angstroms)

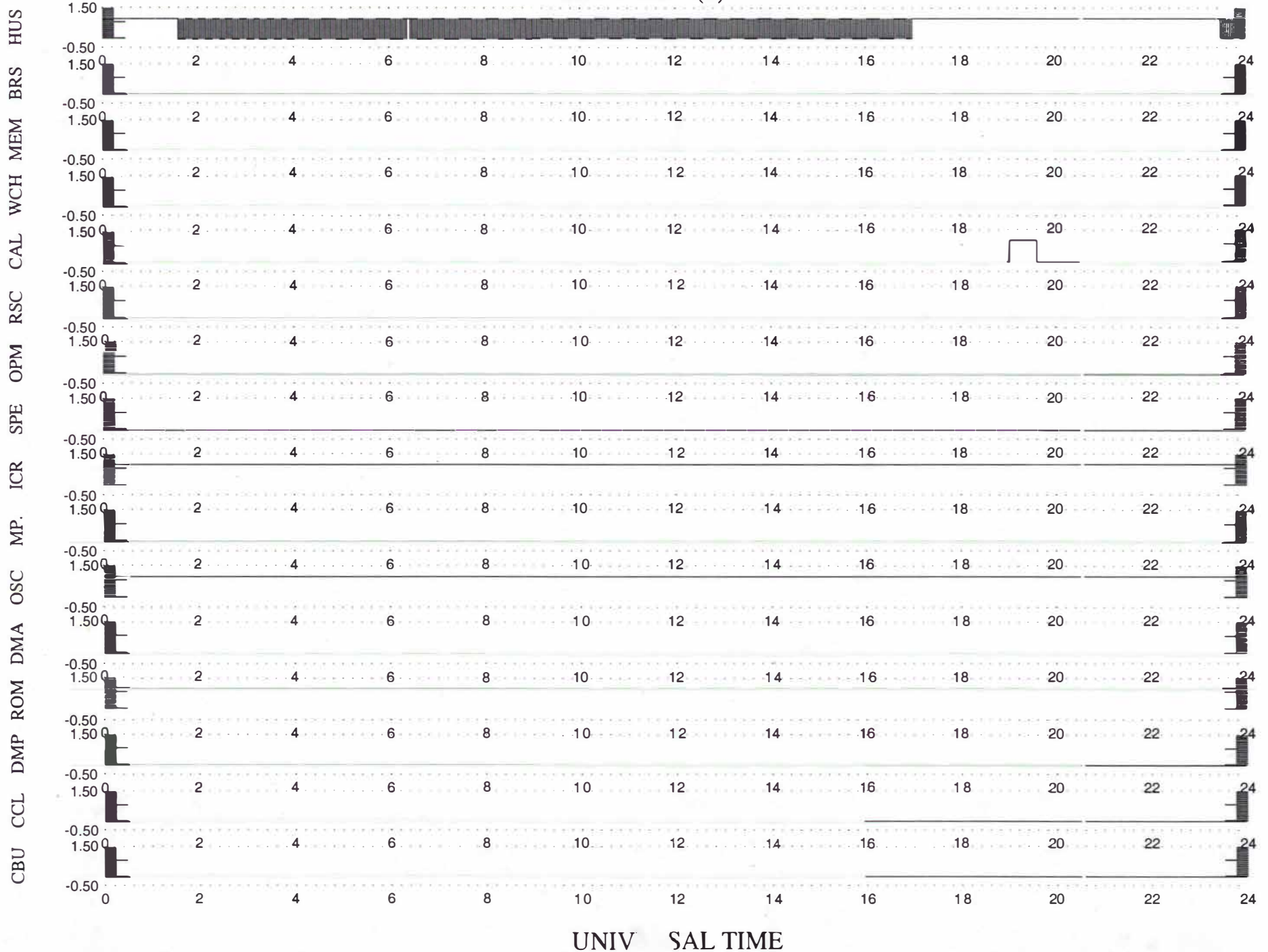
Background not subtracted

2 (0.5 - 4.0 Angstroms)

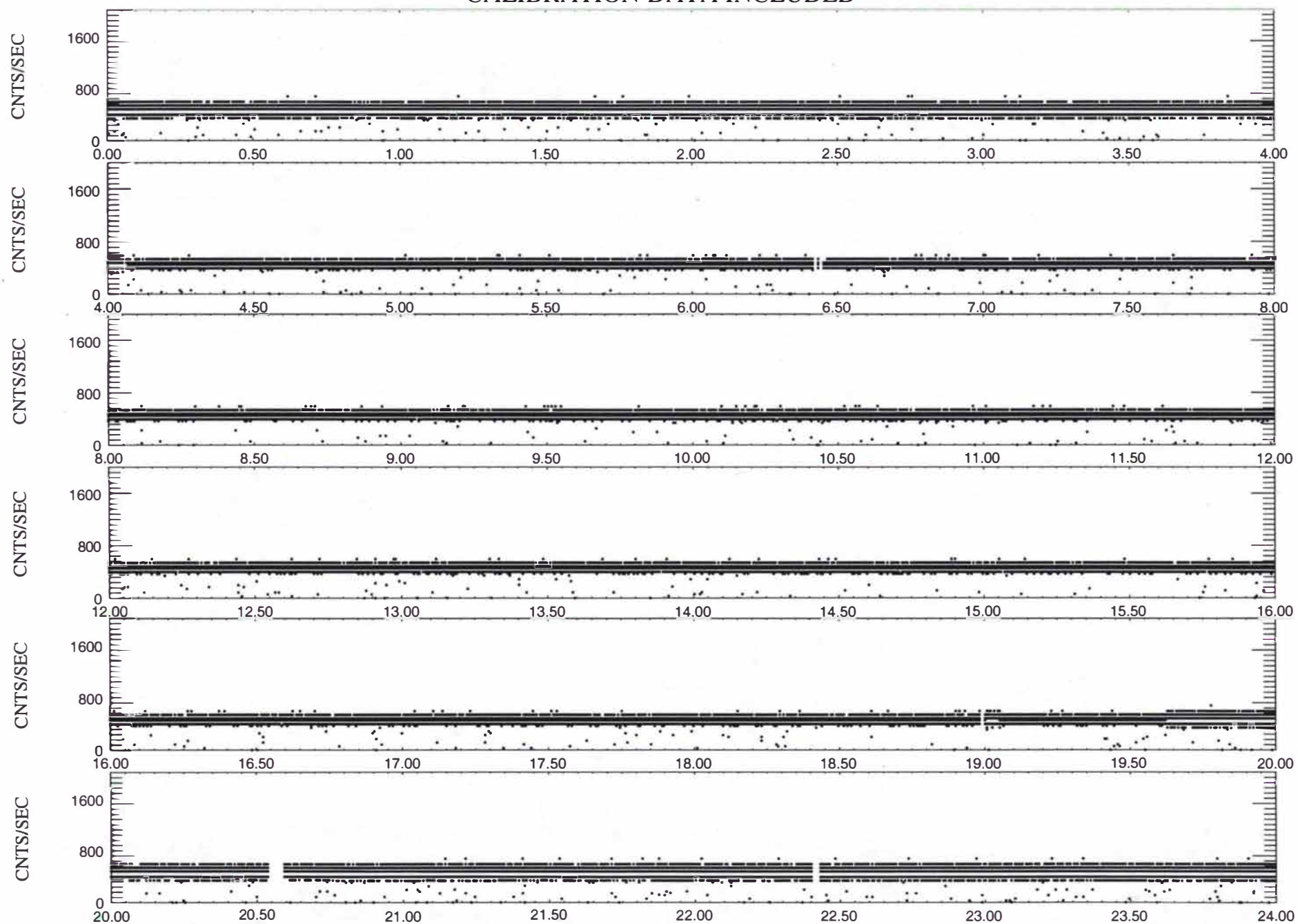
Background not subtracted

Sample average = 10

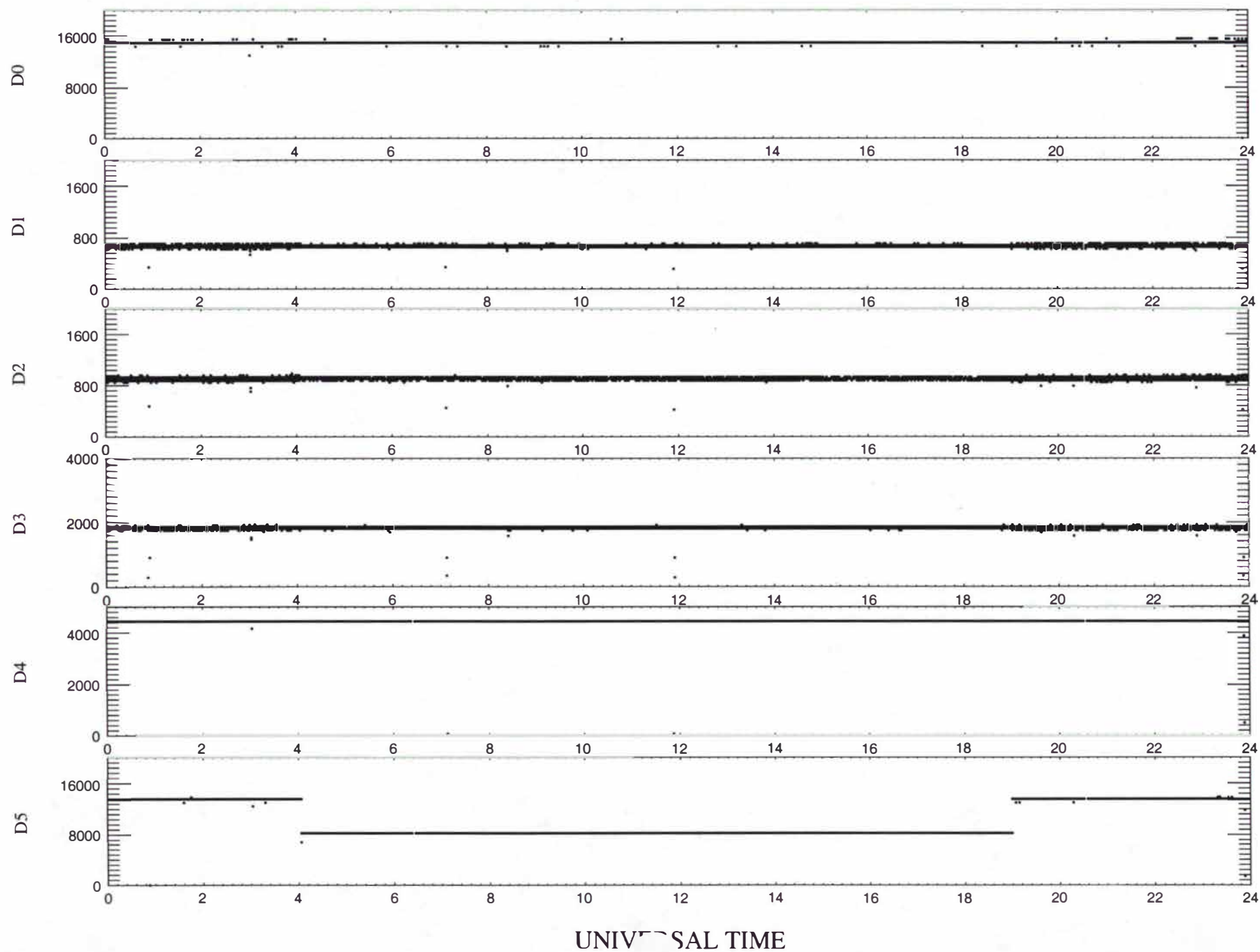
NO BURST (6)



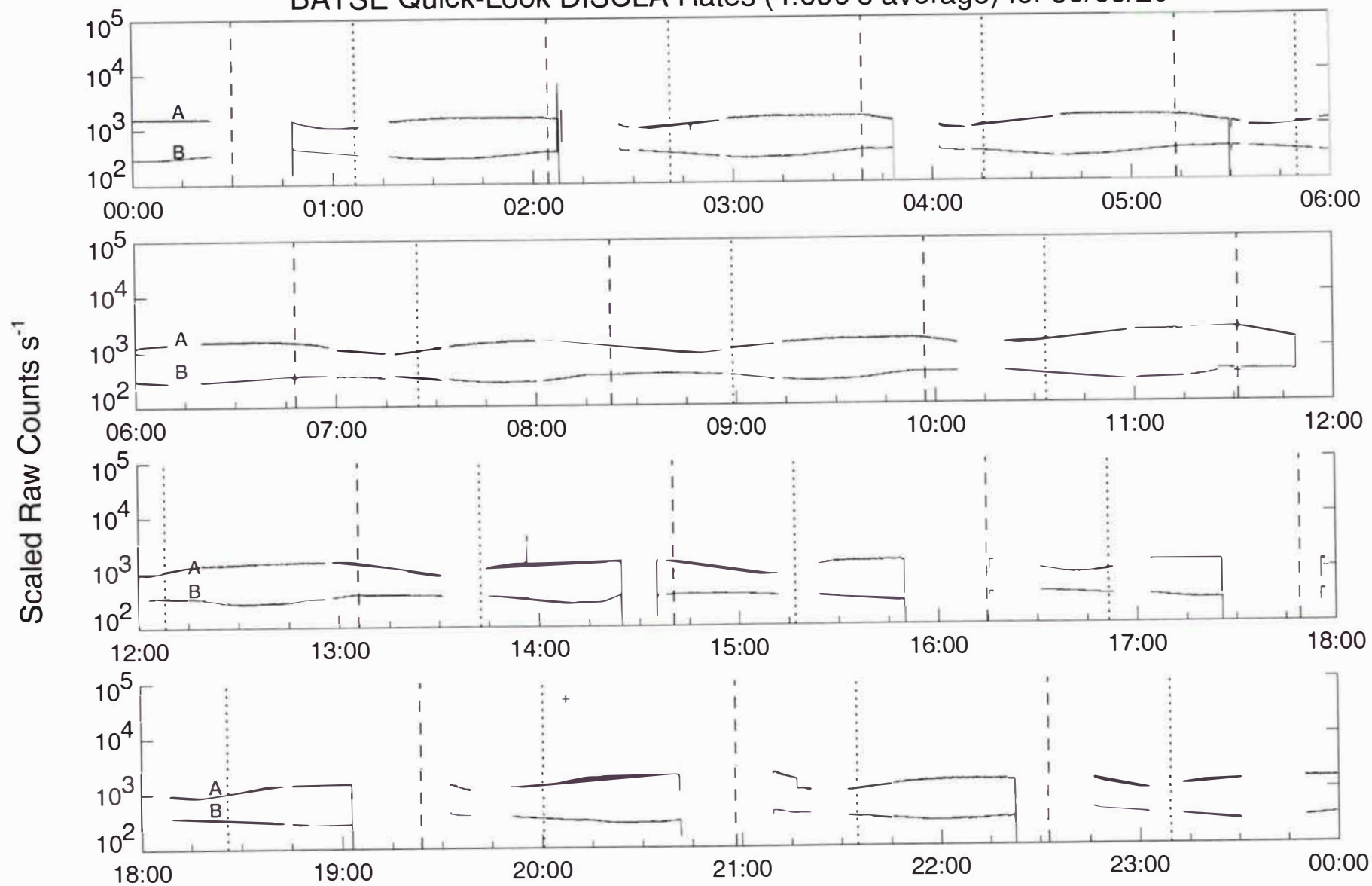
CALIBRATION DATA INCLUDED



UNIVRSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/20

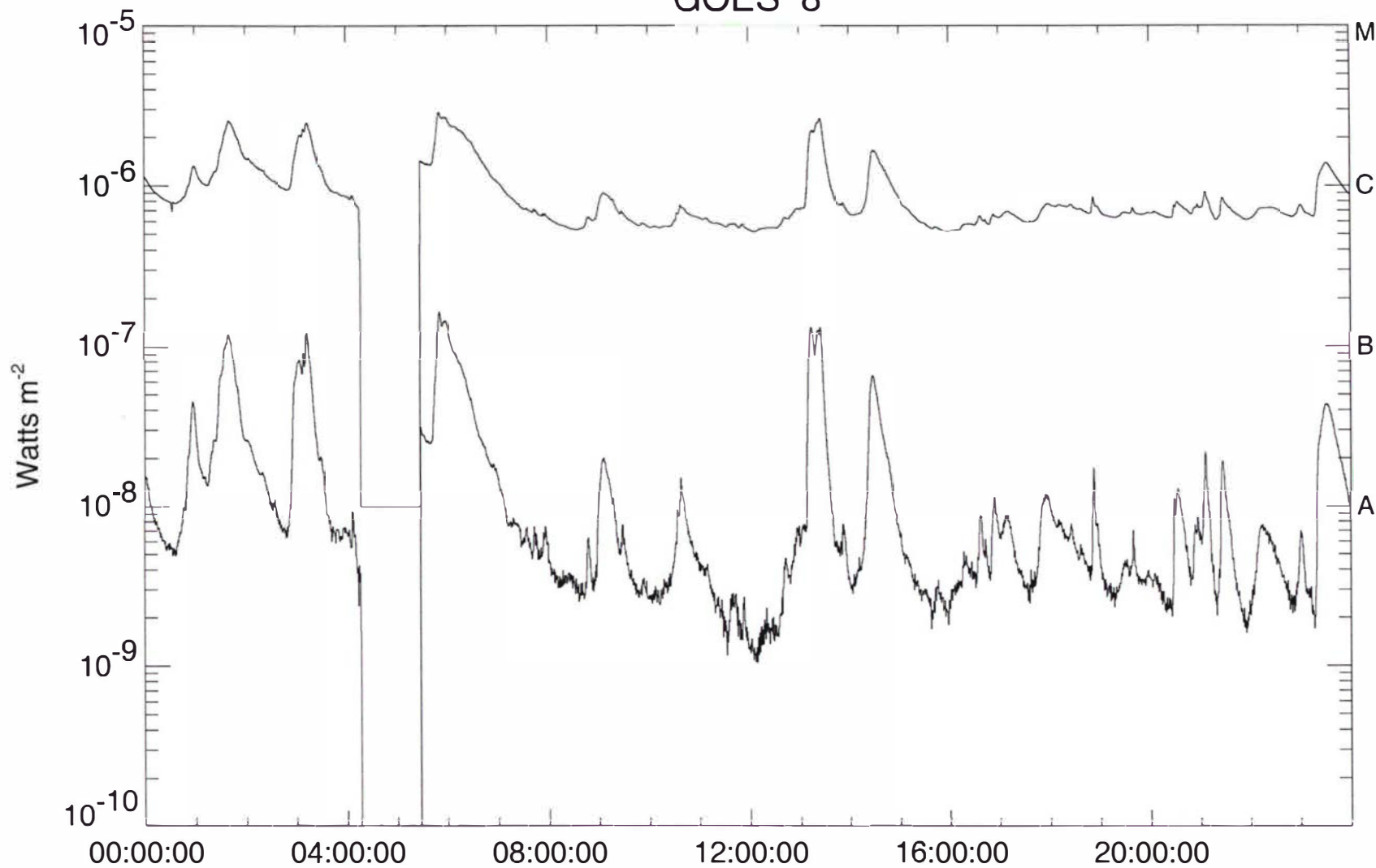


Current Time: 99/10/18, 2222 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/20, 0000:00

Plot created: 99/10/18, 2221

Channel

1 (1.0 - 8.0 Angstroms)

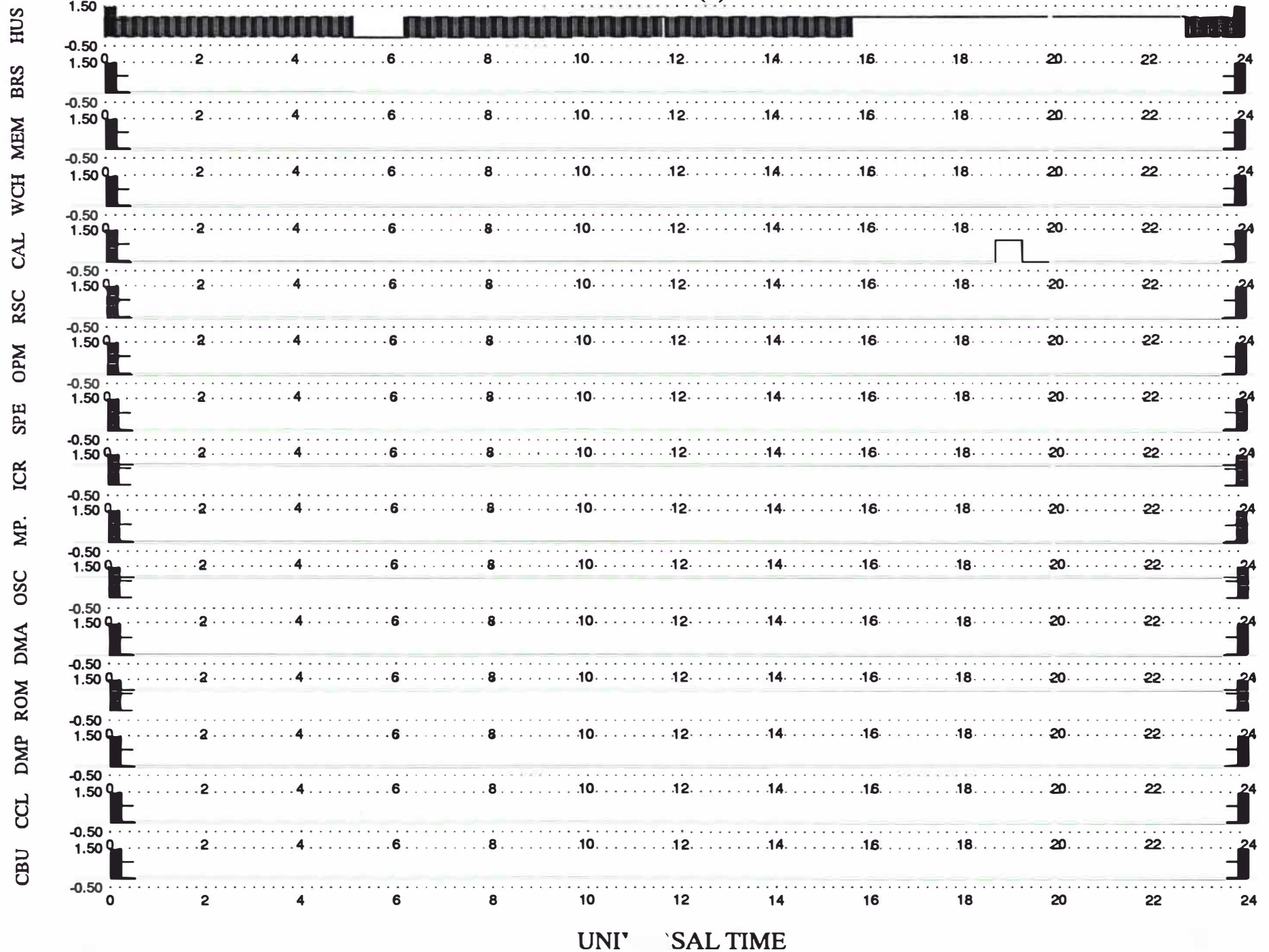
Background not subtracted

2 (0.5 - 4.0 Angstroms)

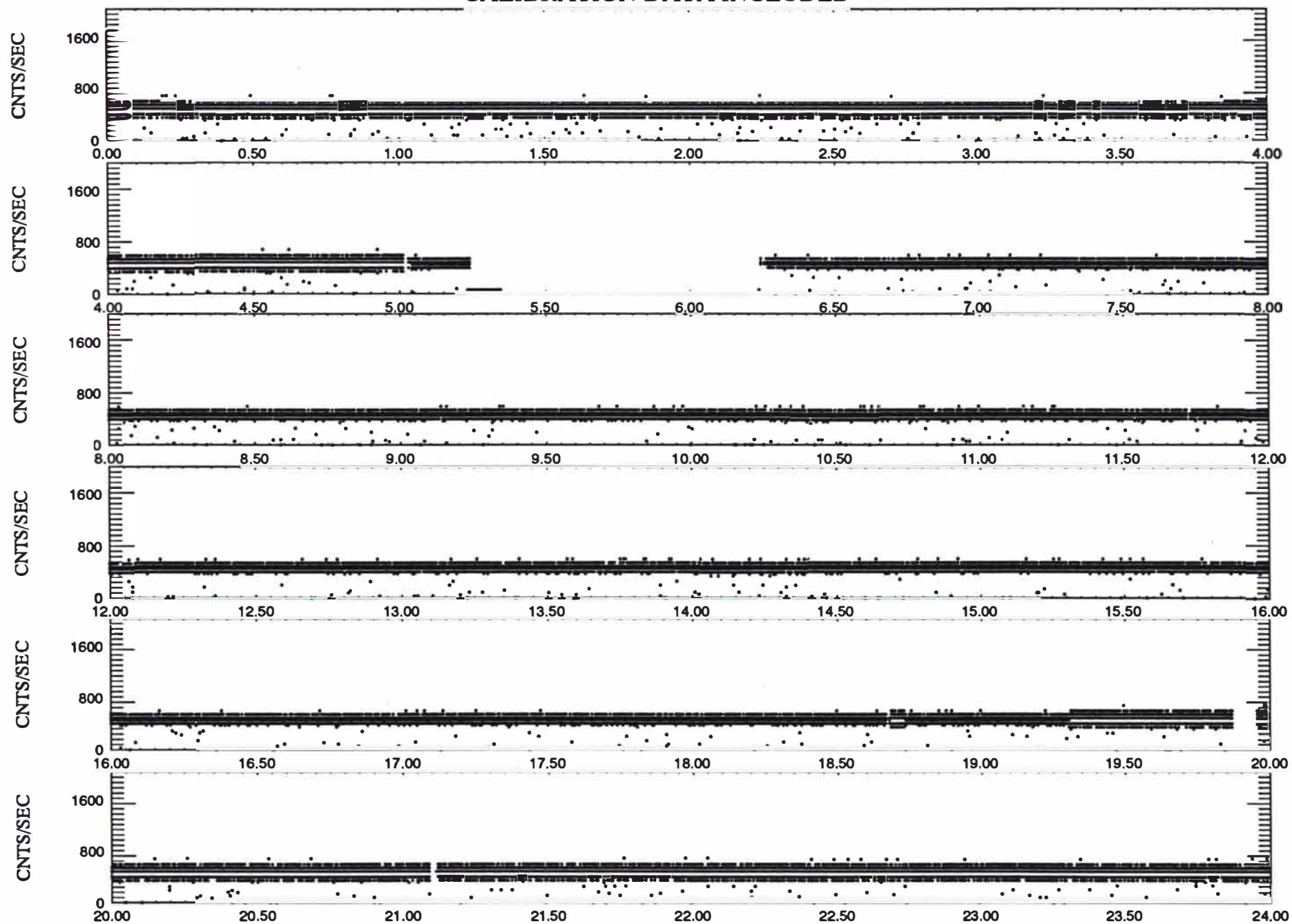
Background not subtracted

Sample average = 10

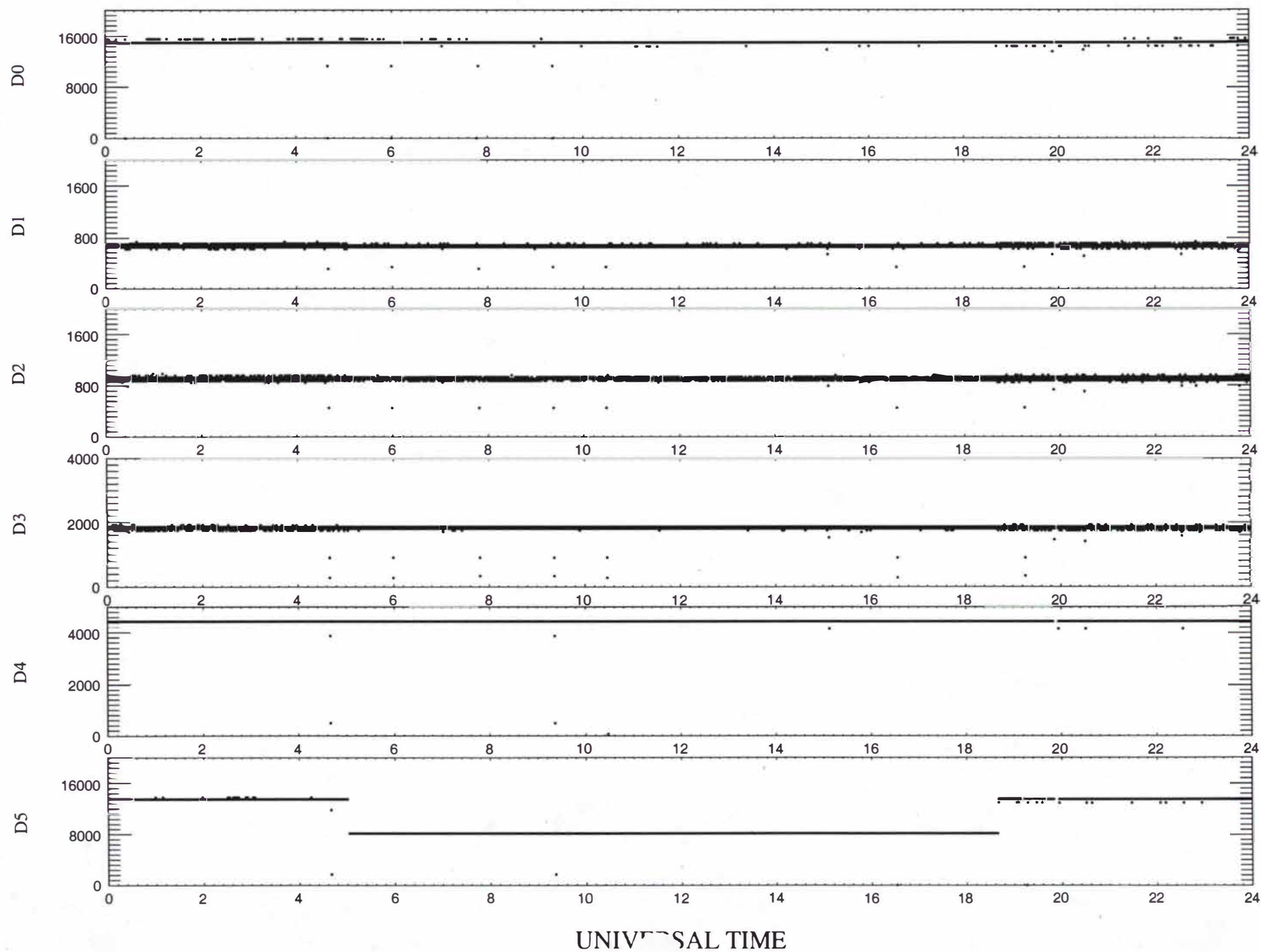
NO BURST (6)



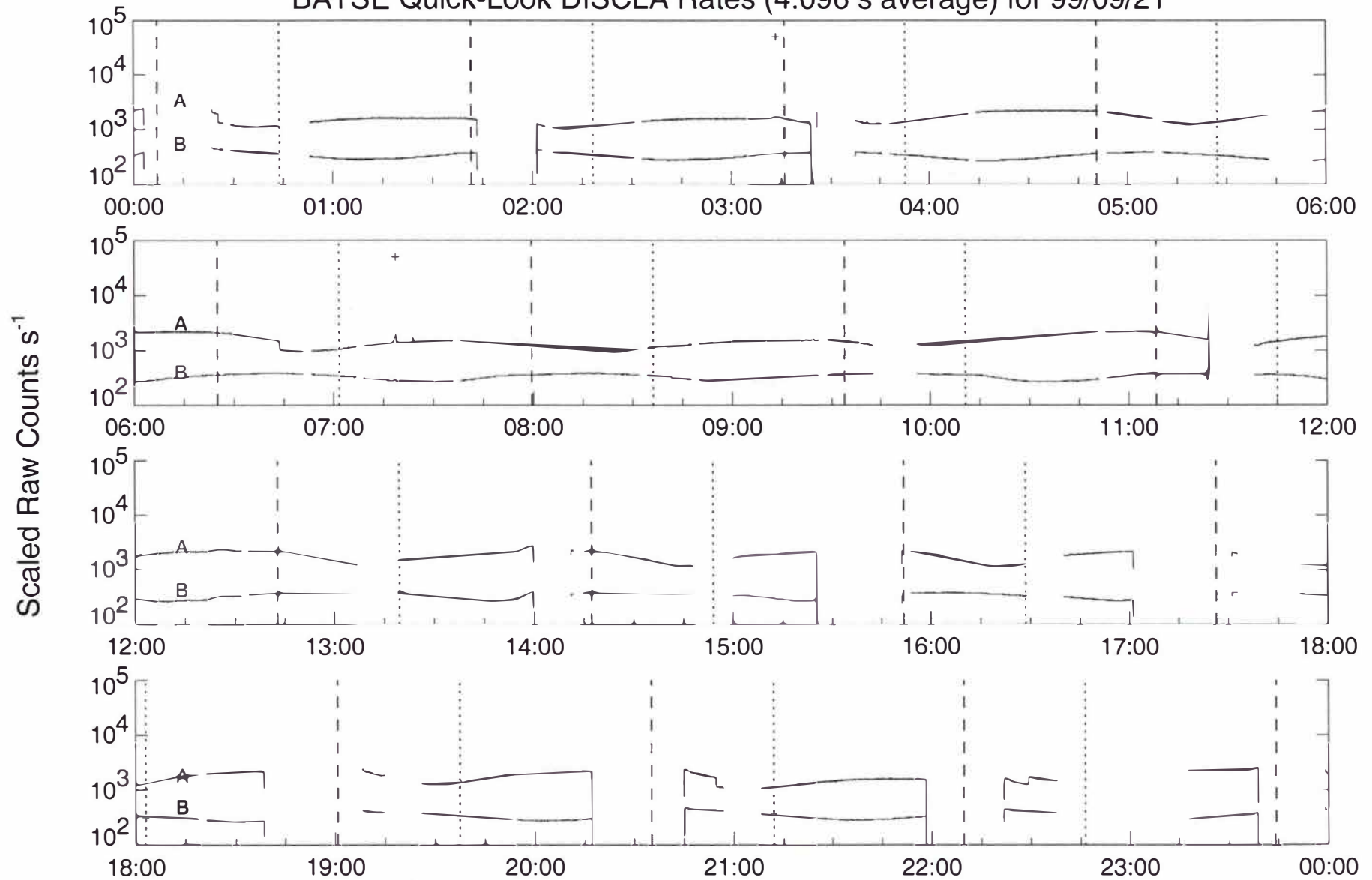
CALIBRATION DATA INCLUDED



UNIVERSAL TIME



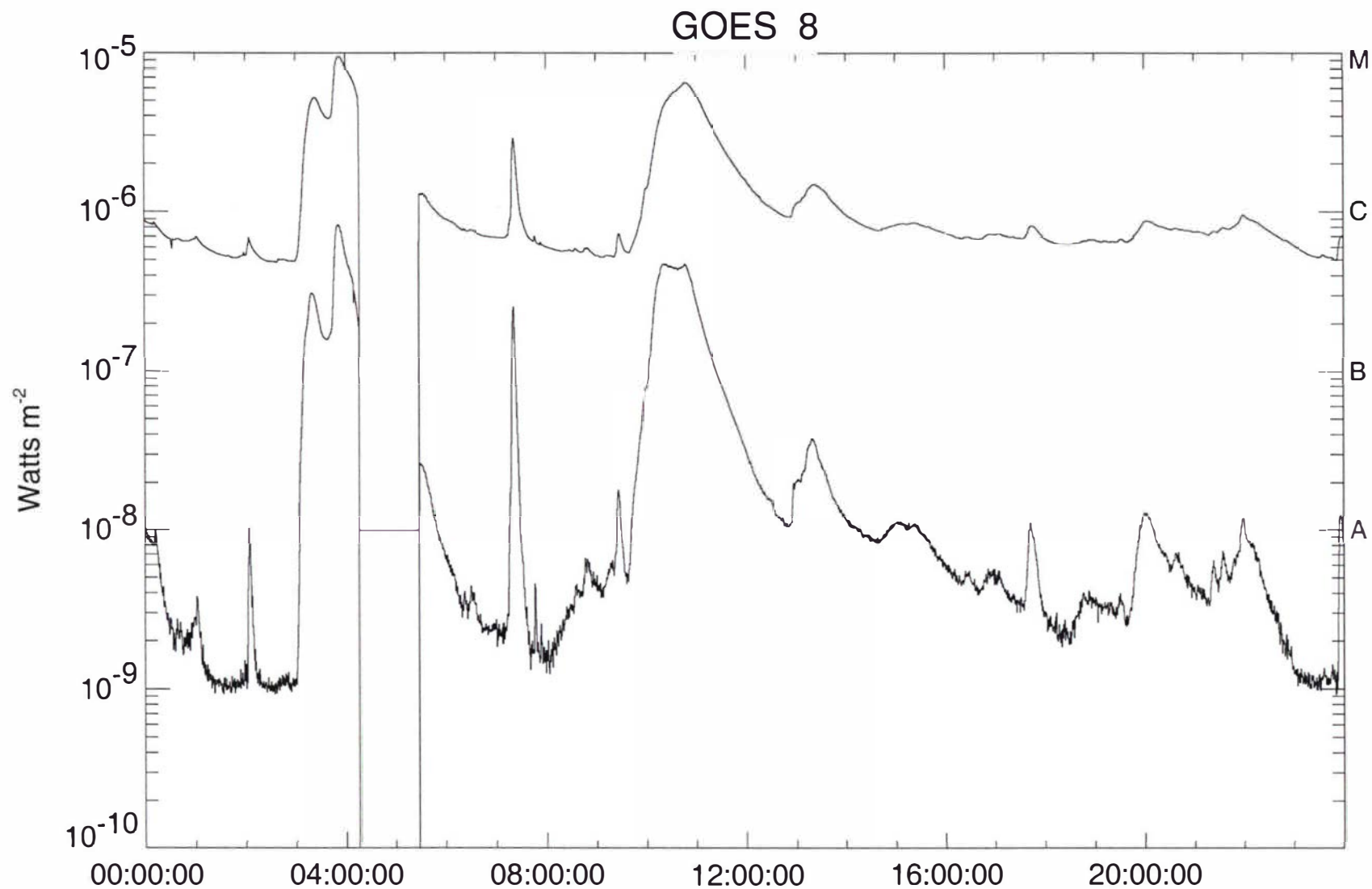
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/21



Current Time: 99/10/18, 2230 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: 99/09/21, 0000:00

Plot created: 99/10/18, 2229

Channel

1 (1.0 - 8.0 Angstroms)

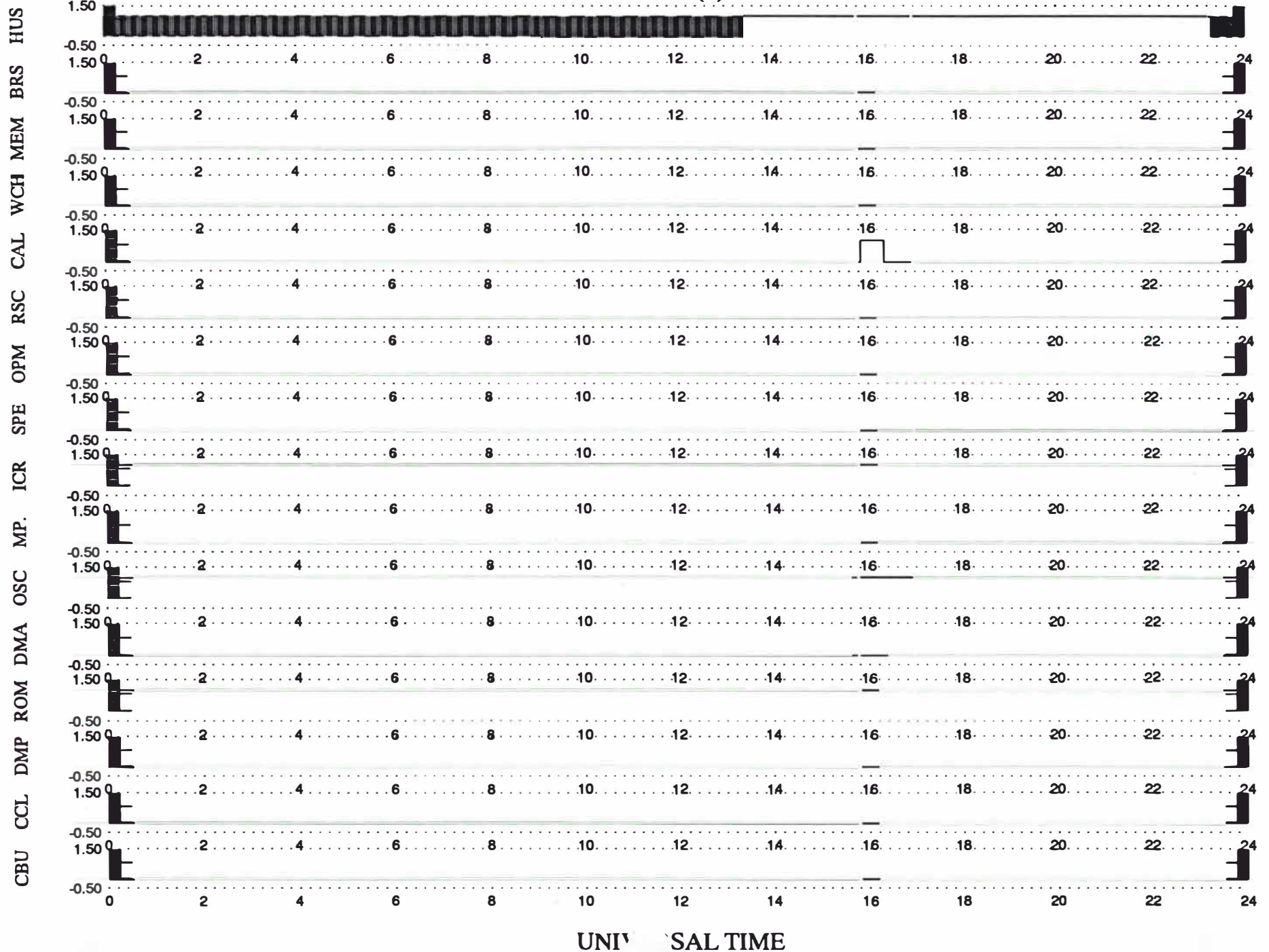
Background not subtracted

2 (0.5 - 4.0 Angstroms)

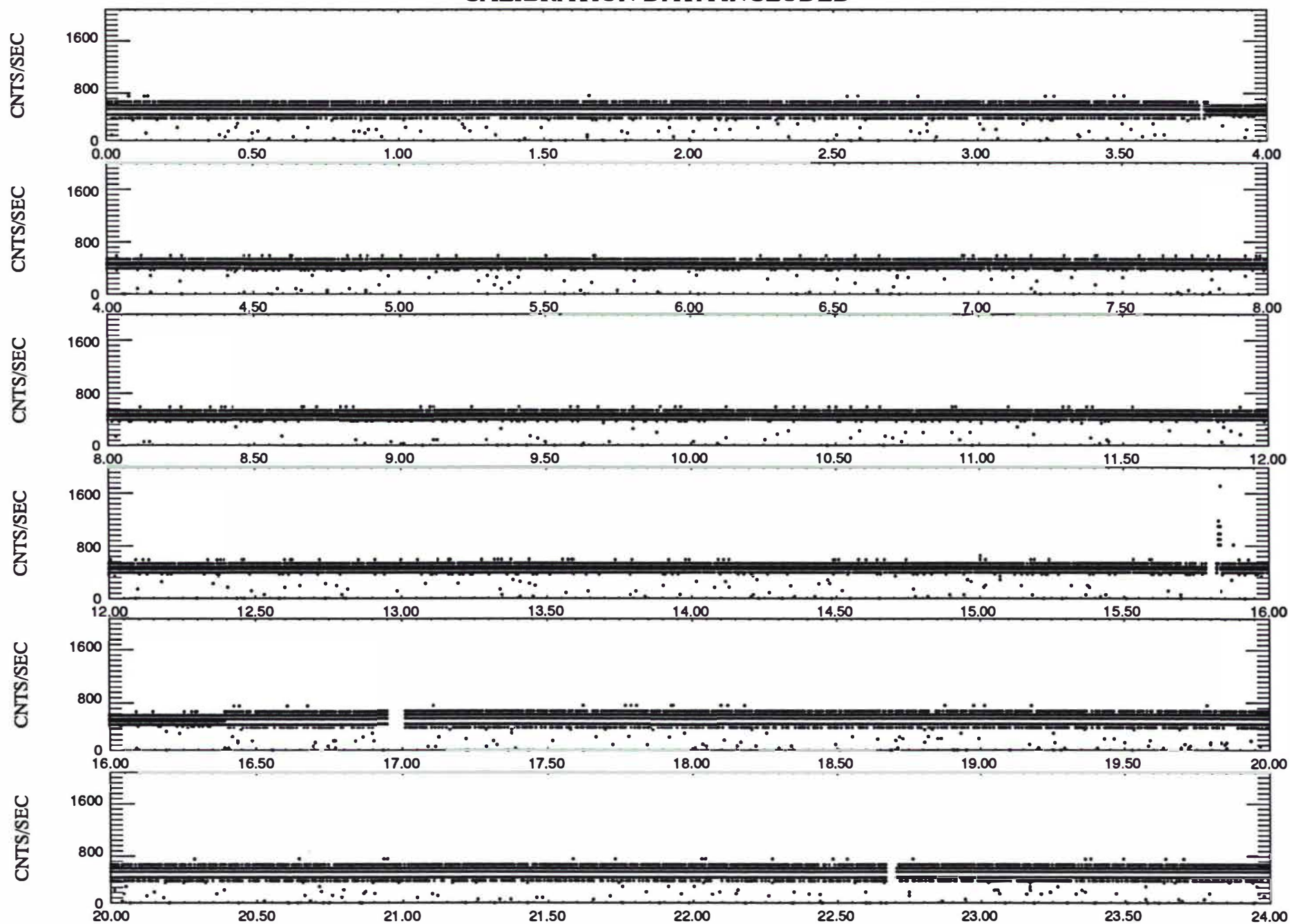
Background not subtracted

Sample average = 10

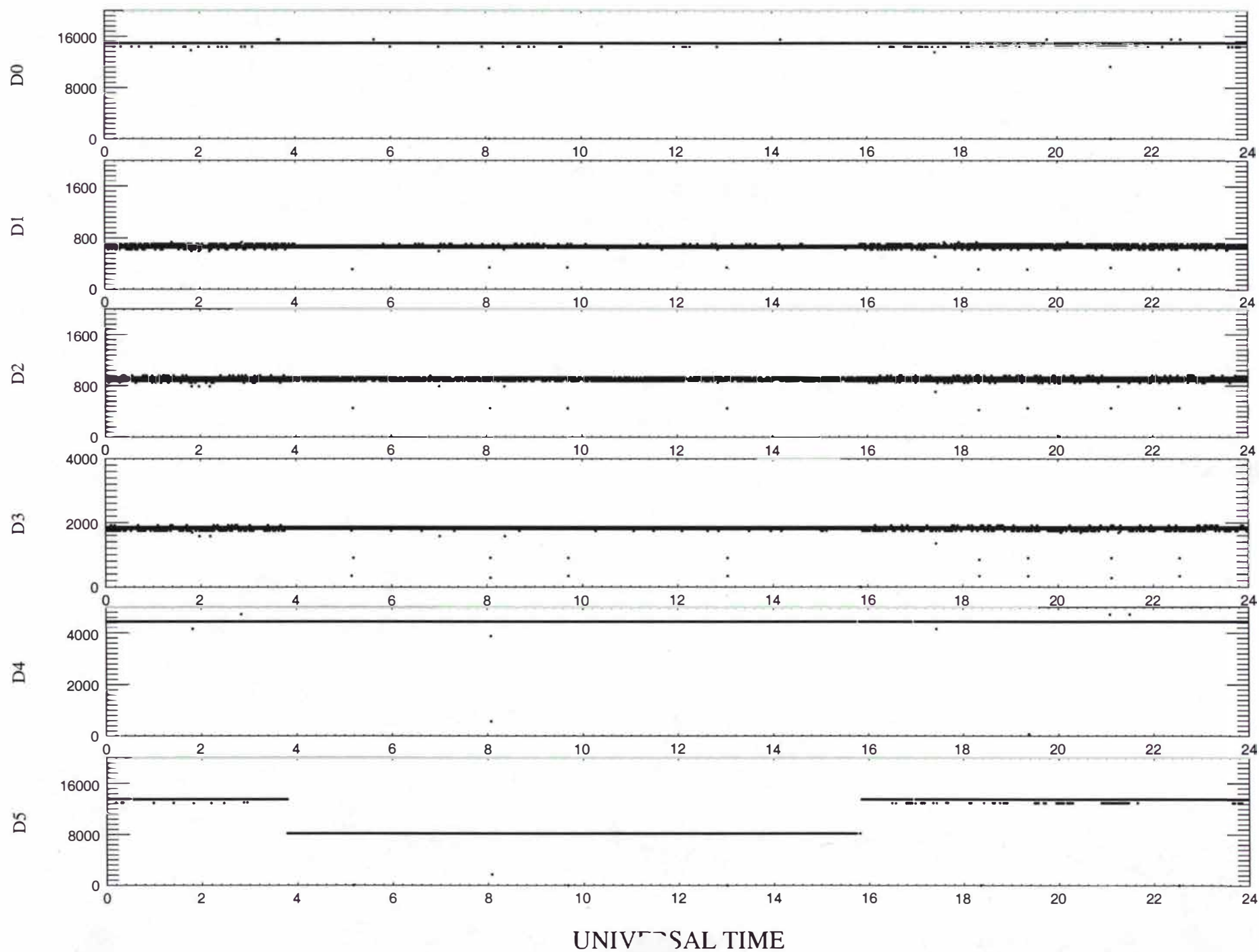
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV. SAL TIME



From HENZE@fender.msfc.nasa.gov Thu Sep 23 13:23 PDT 1999
Date: Thu, 23 Sep 1999 15:19:22 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7772

TIME: TJD=1443 SECONDS=83148

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

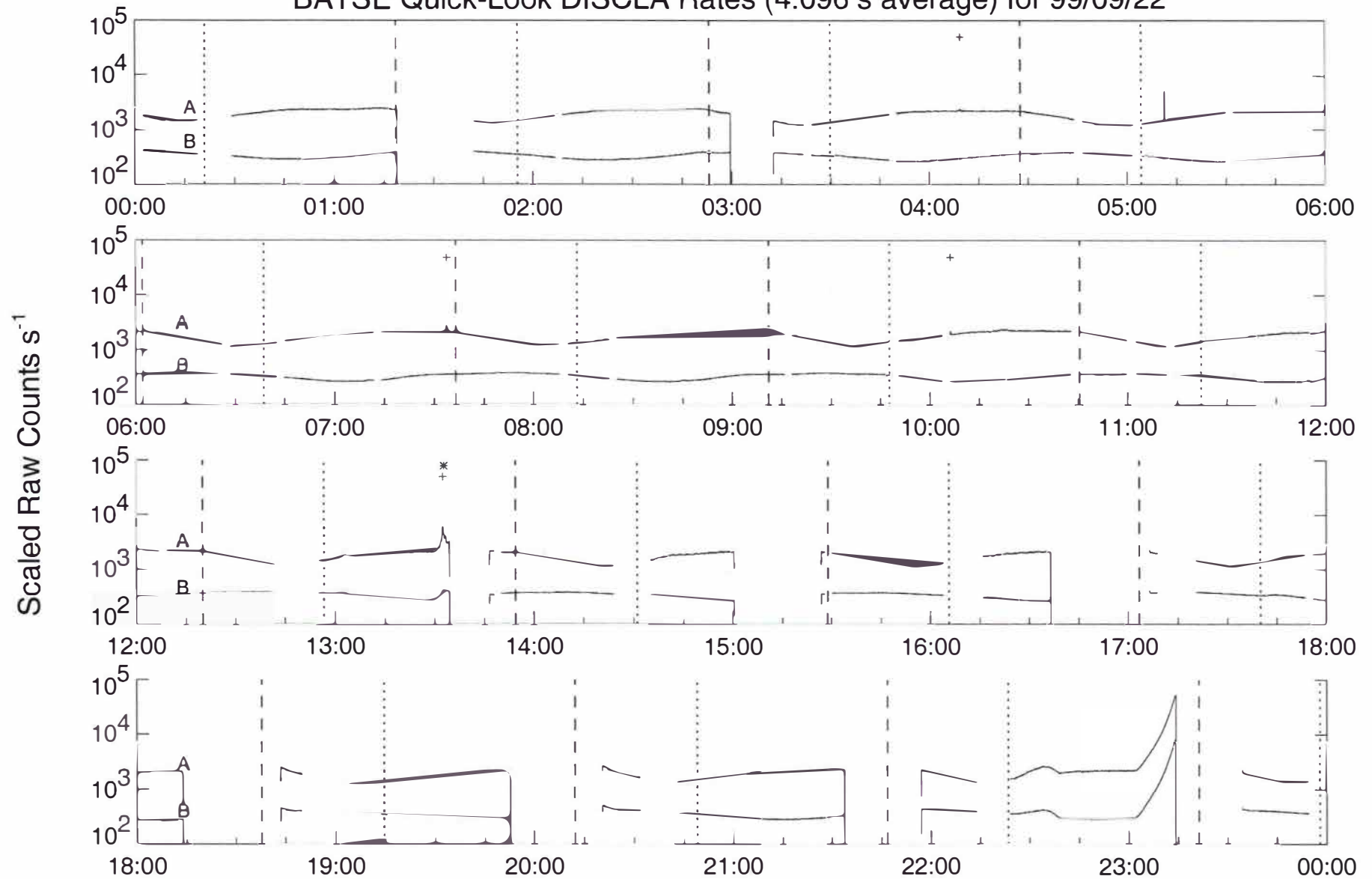
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY. HV OFF AT APPROX. T+507 S.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/22

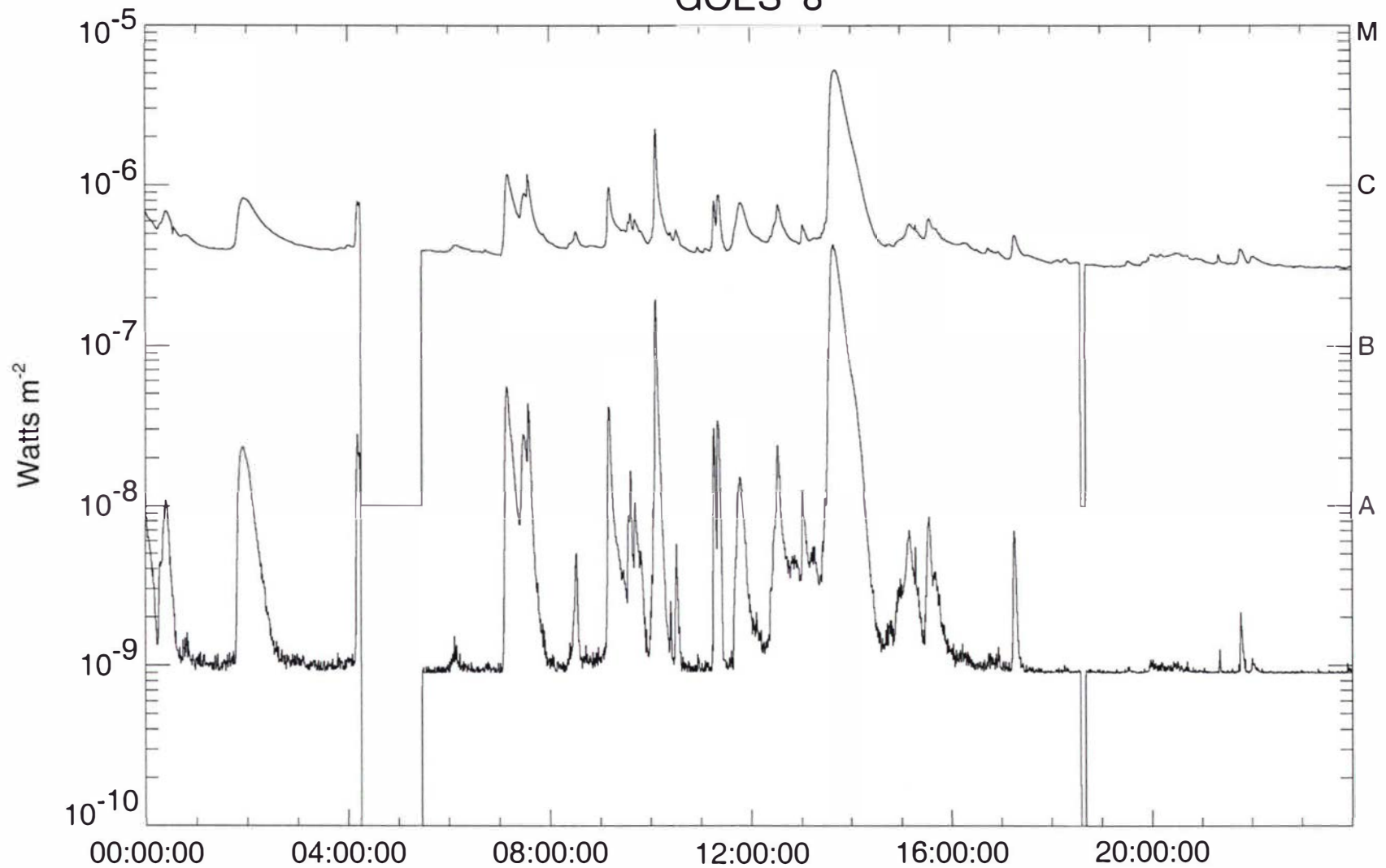


Current Time: 99/10/18, 2234 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/22, 0000:00

Plot created: 99/10/18, 2234

Channel

1 (1.0 - 8.0 Angstroms)

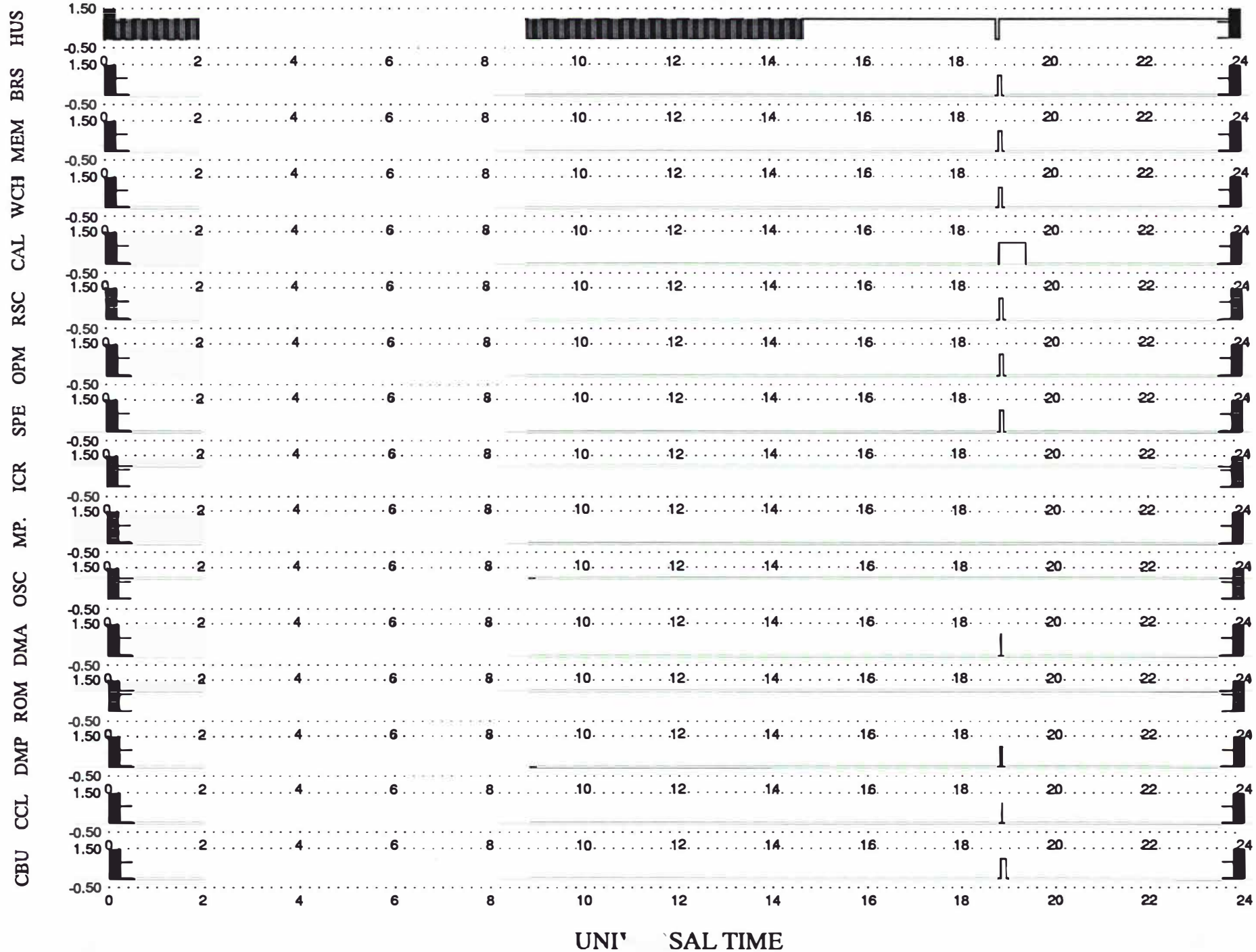
Background not subtracted

2 (0.5 - 4.0 Angstroms)

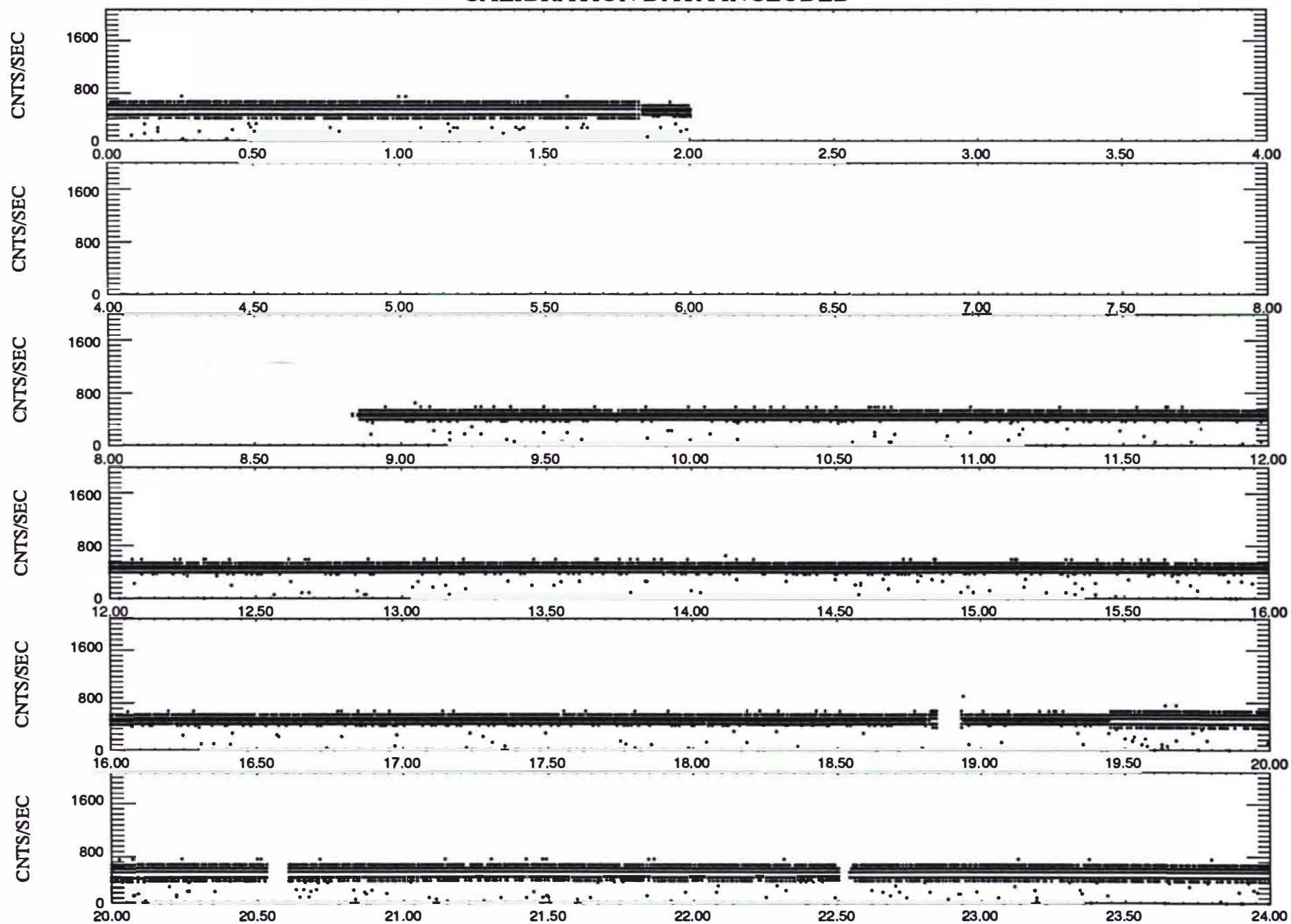
Background not subtracted

Sample average = 10

BURST NUMBER 7

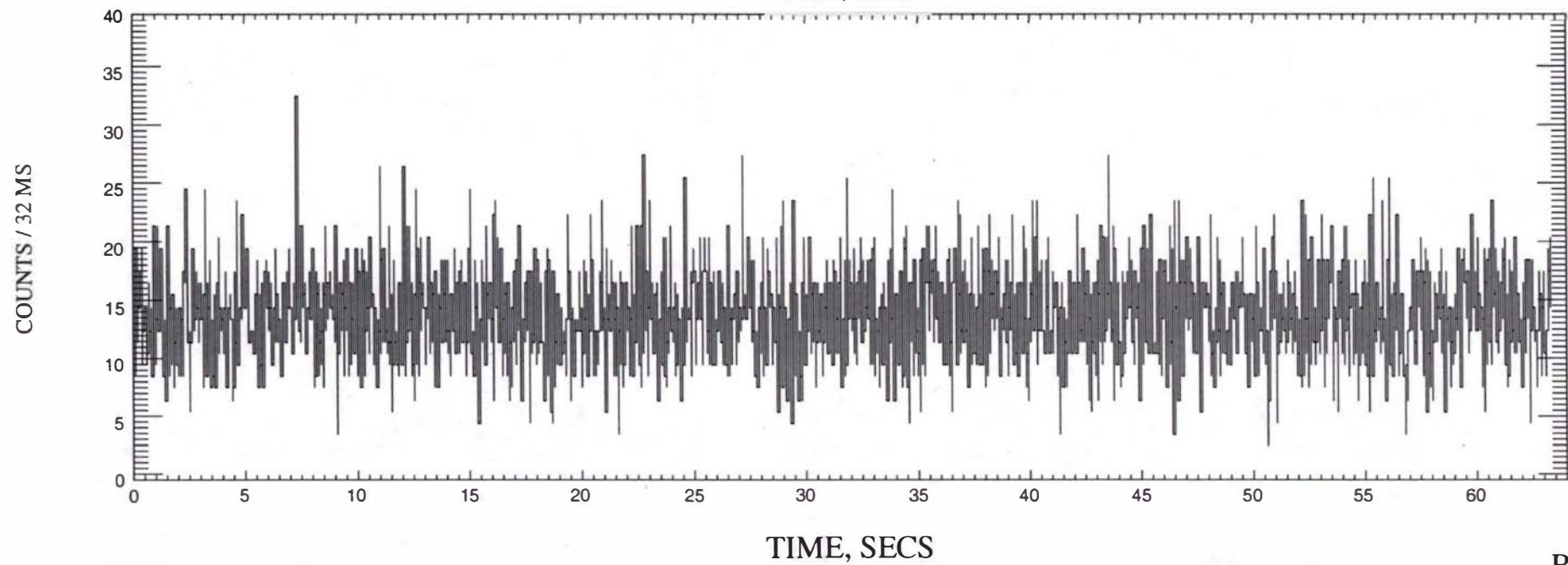
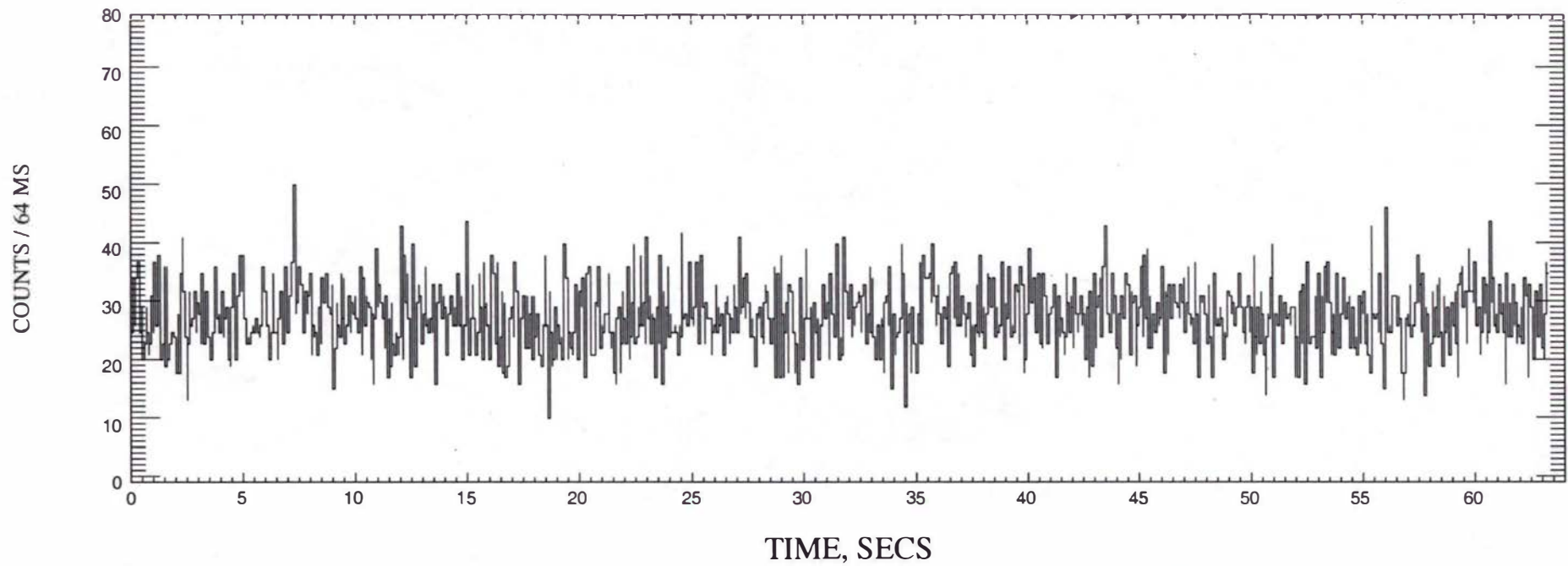


CALIBRATION DATA INCLUDED

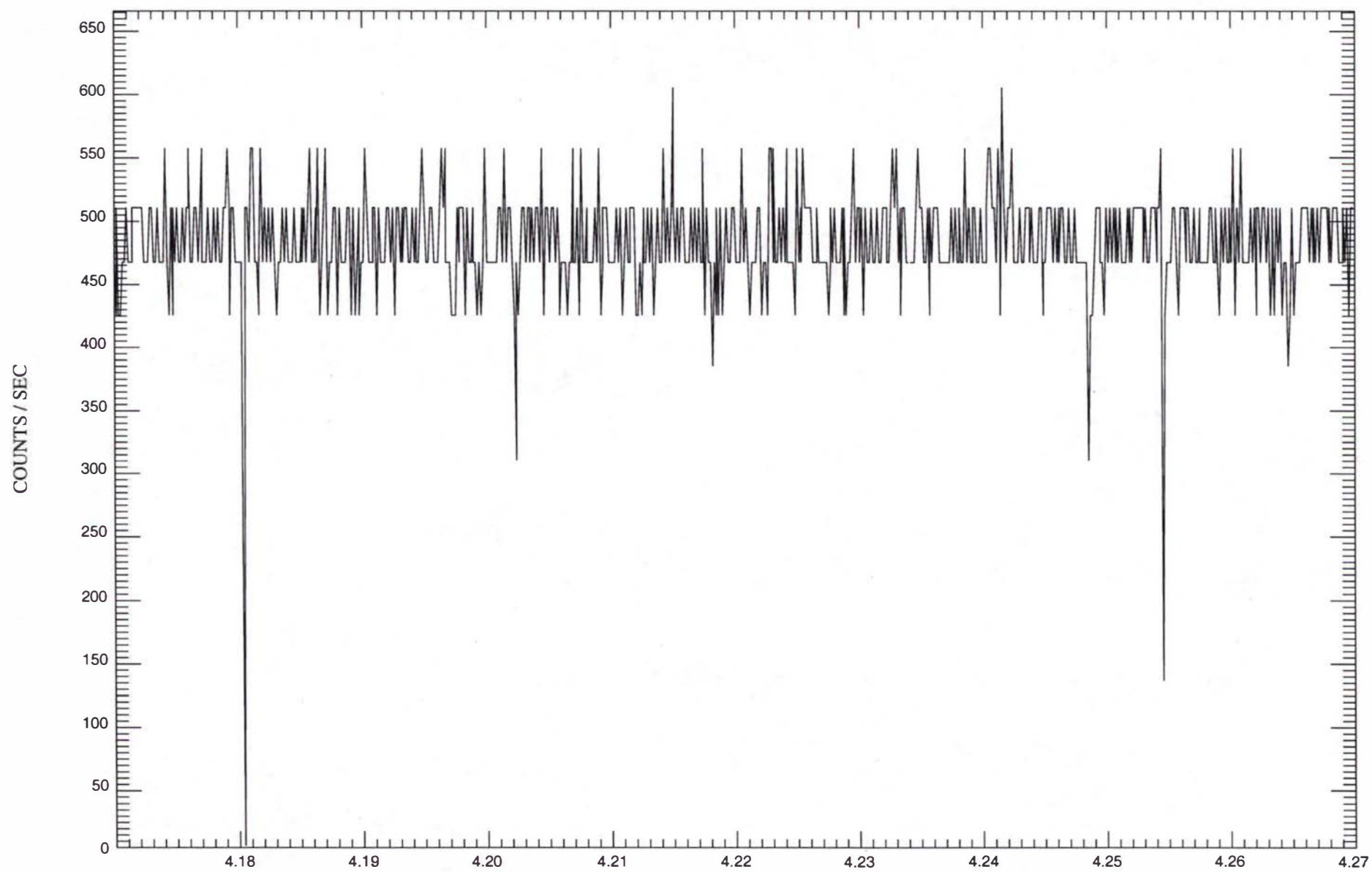


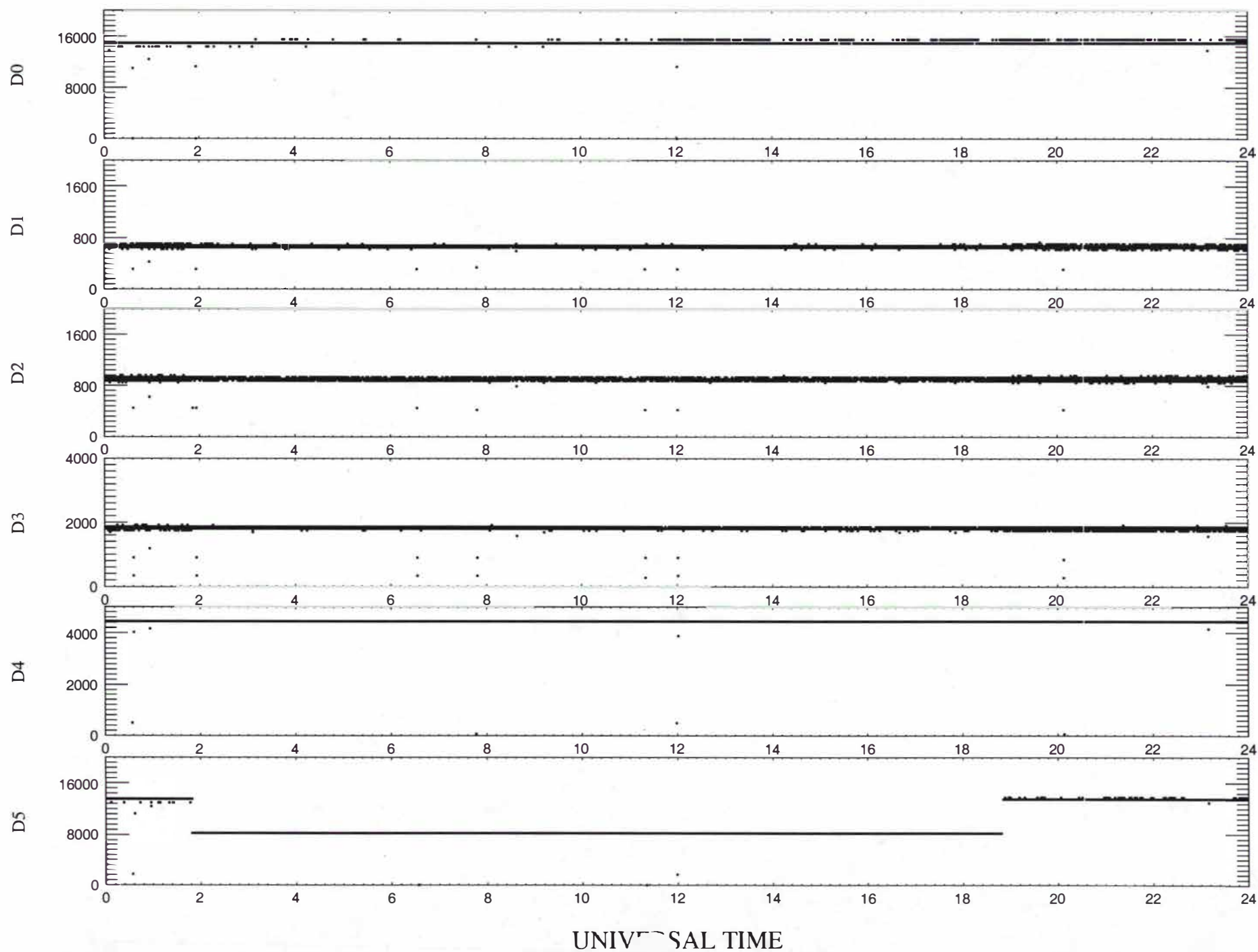
UNIVERSAL TIME

Burst Counter 7 at UT= 4.215100224813 h=15174.361 s 04:12:54.361



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Fri Sep 24 08:10 PDT 1999
Date: Fri, 24 Sep 1999 10:16:14 -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.: 7773

TIME: TJD=1444 SECONDS=08782

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY. HV OFF AT APPROX. T+534 S.

KONUS

ULYSSES RT

16 / 03 / 00

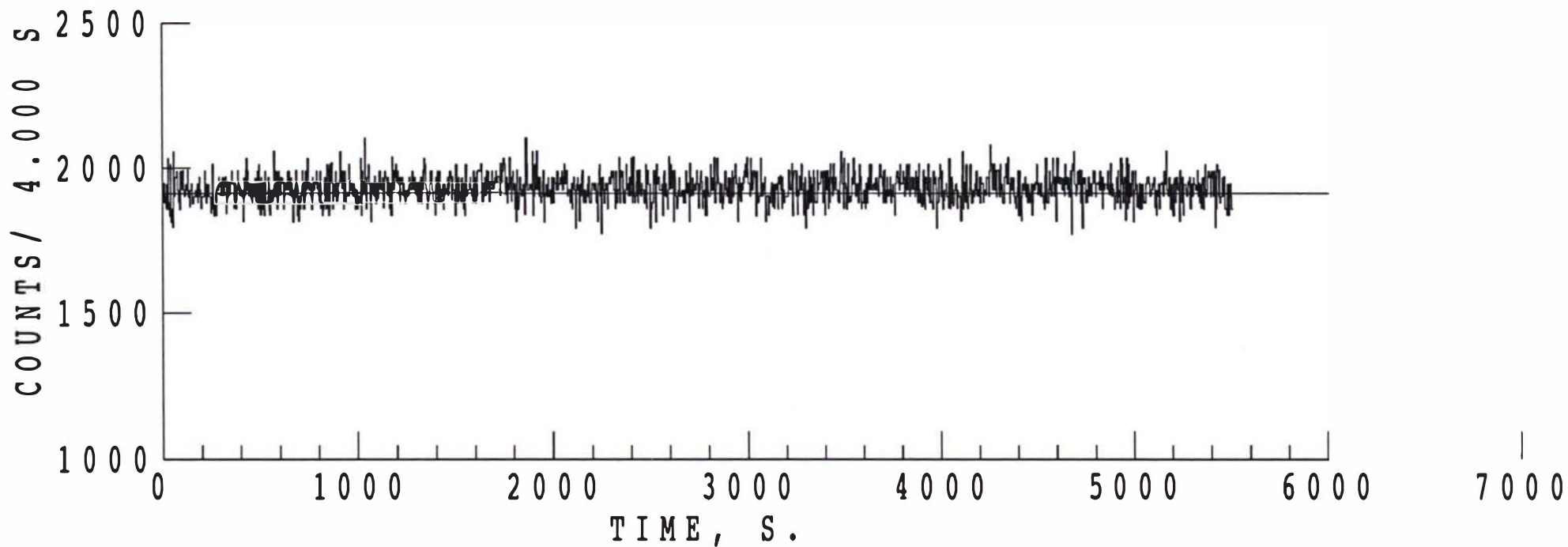
23 / 09 / 99 55800.371 s

0.500 S INTERVALS REGROUPED BY 8

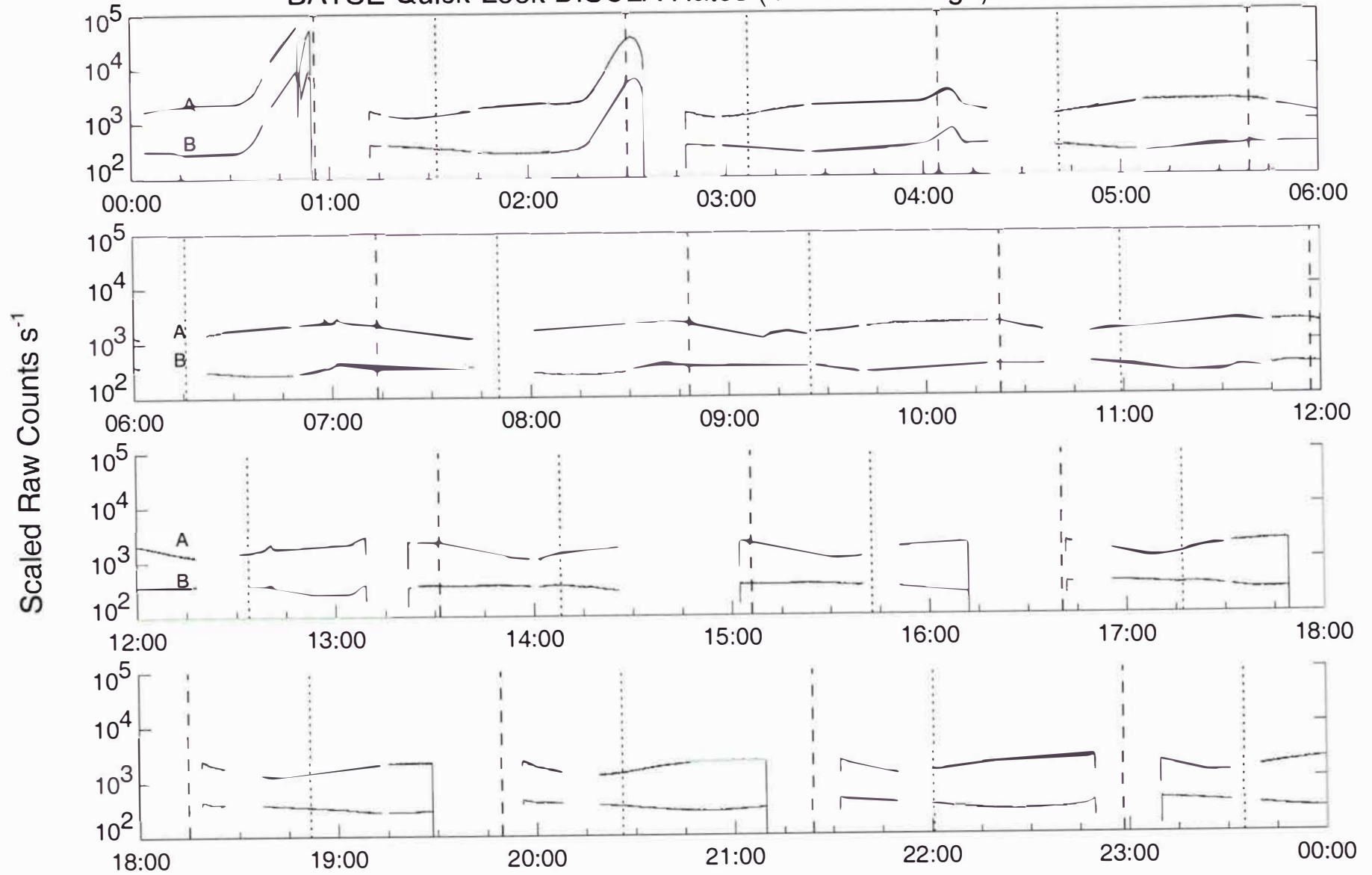
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/23

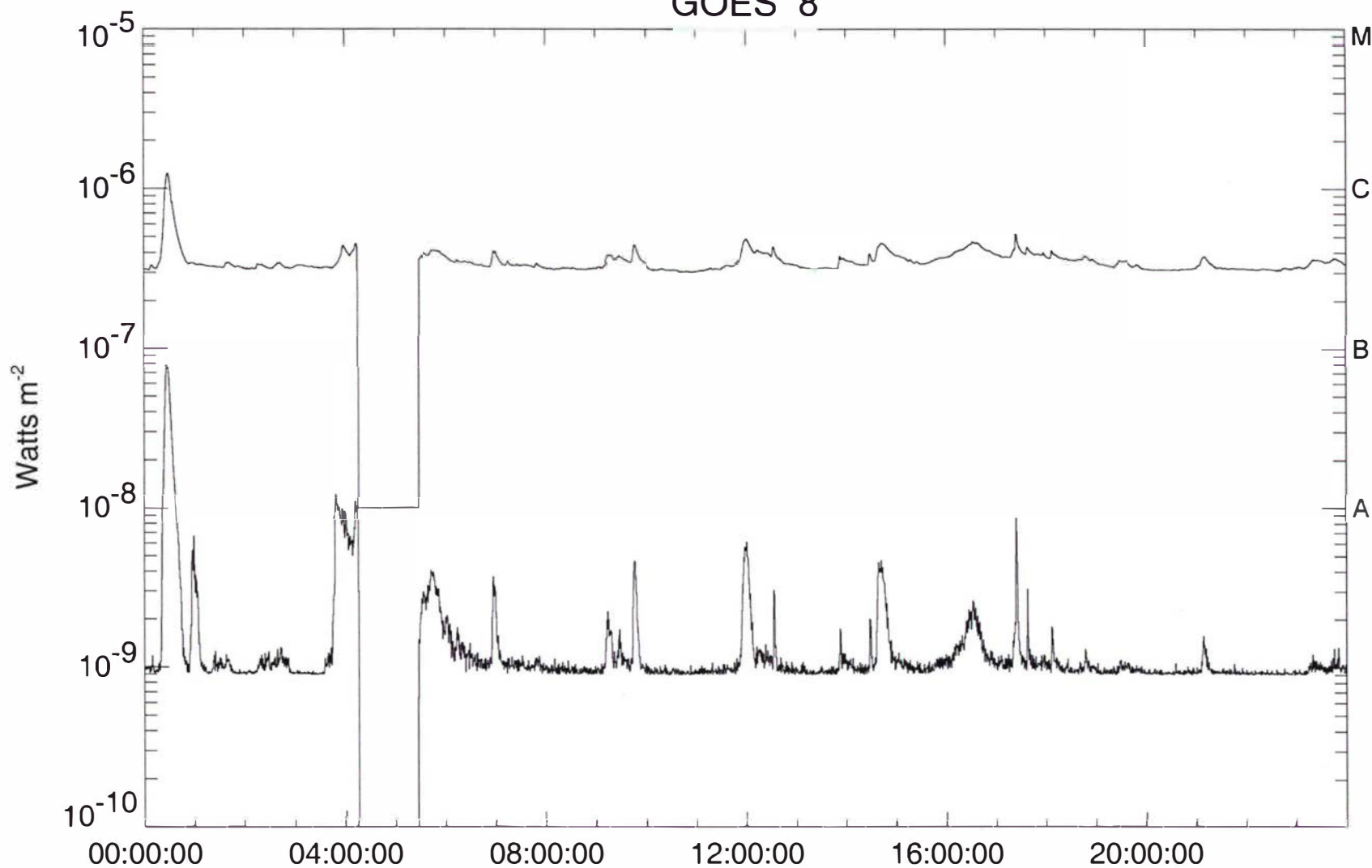


Current Time: 99/10/18, 2238 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/23, 0000:00

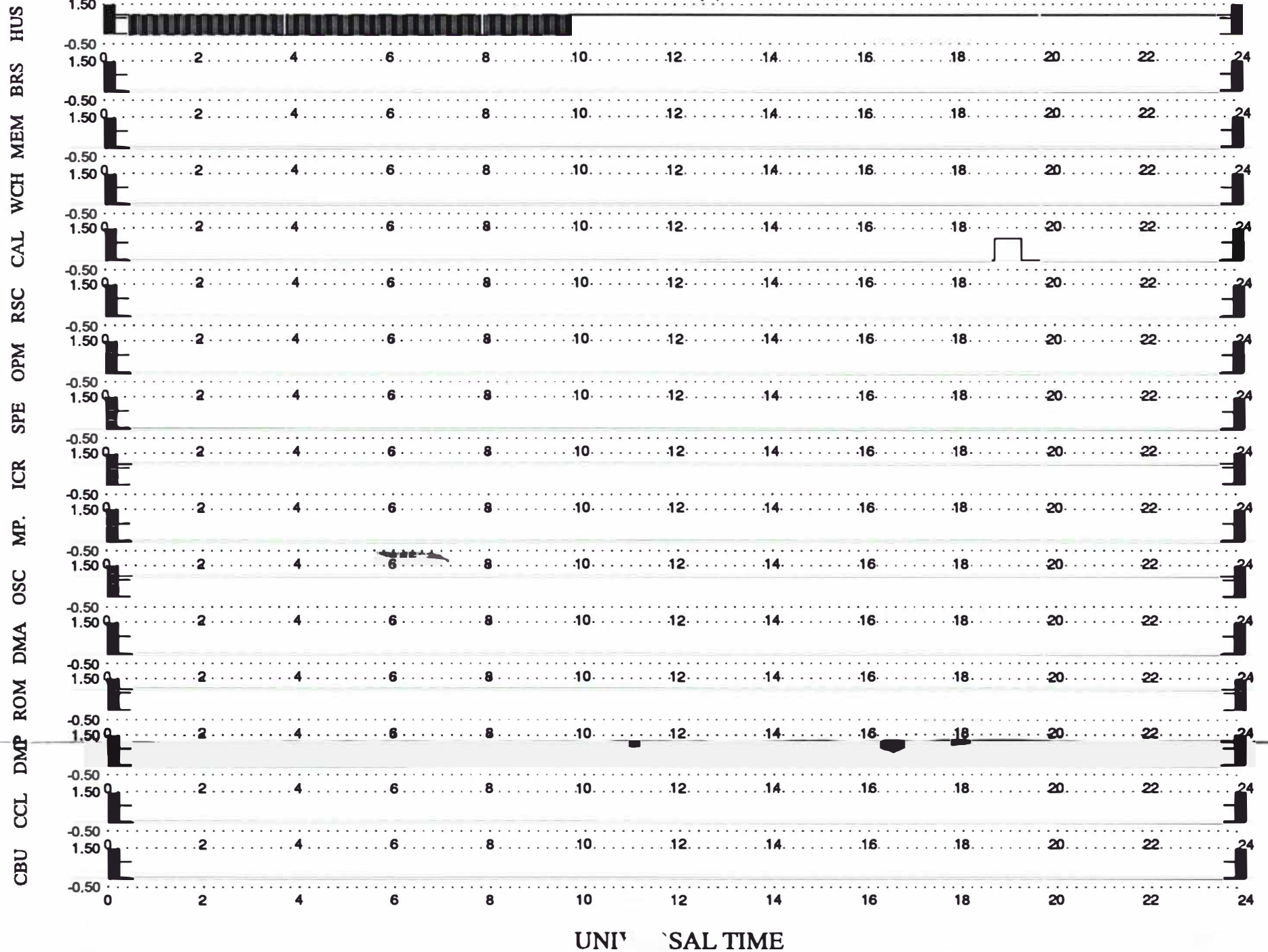
Plot created: 99/10/18, 2238

Channel

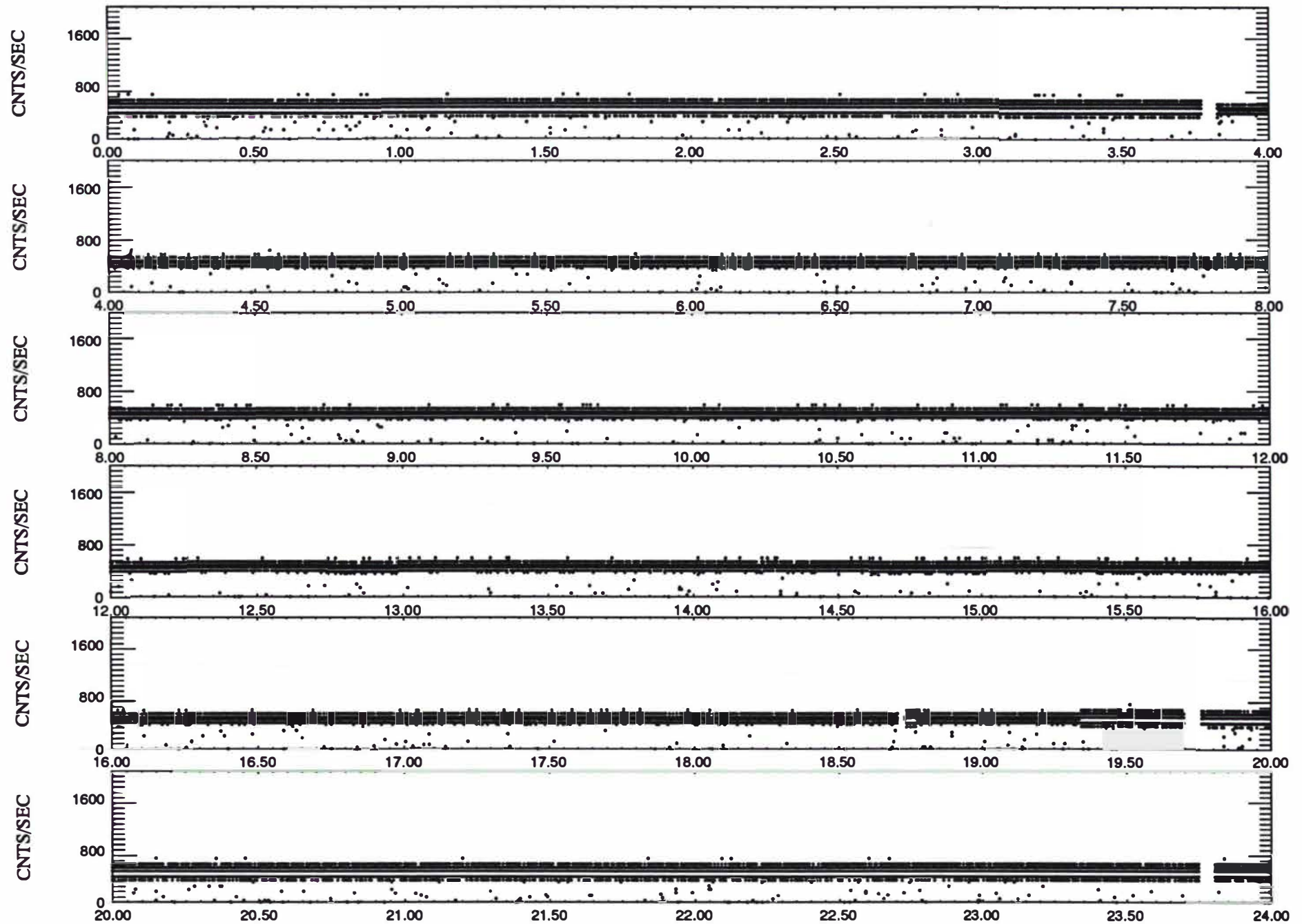
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

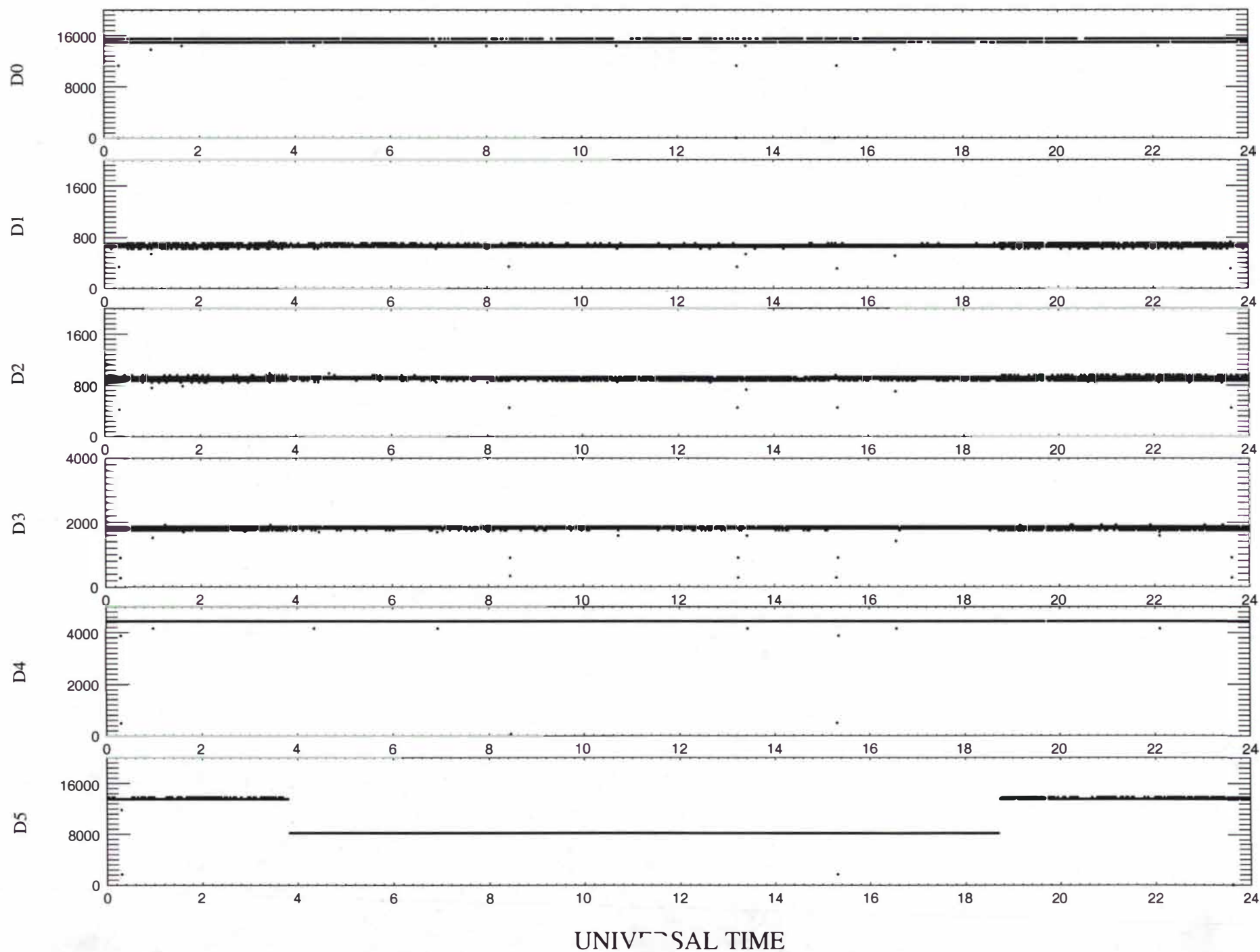
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

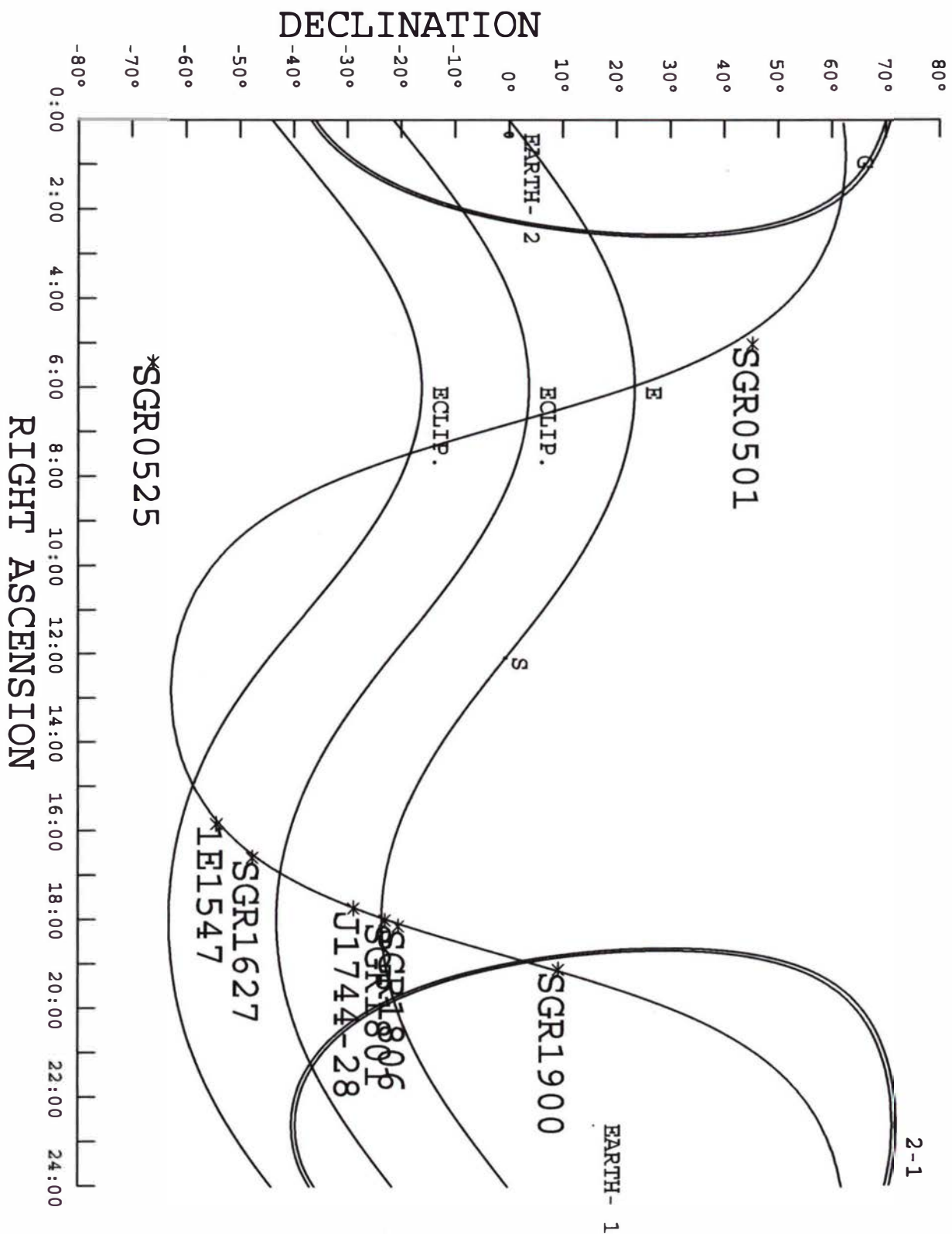
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS

EVENT OF SEP 24, 1999 21:13

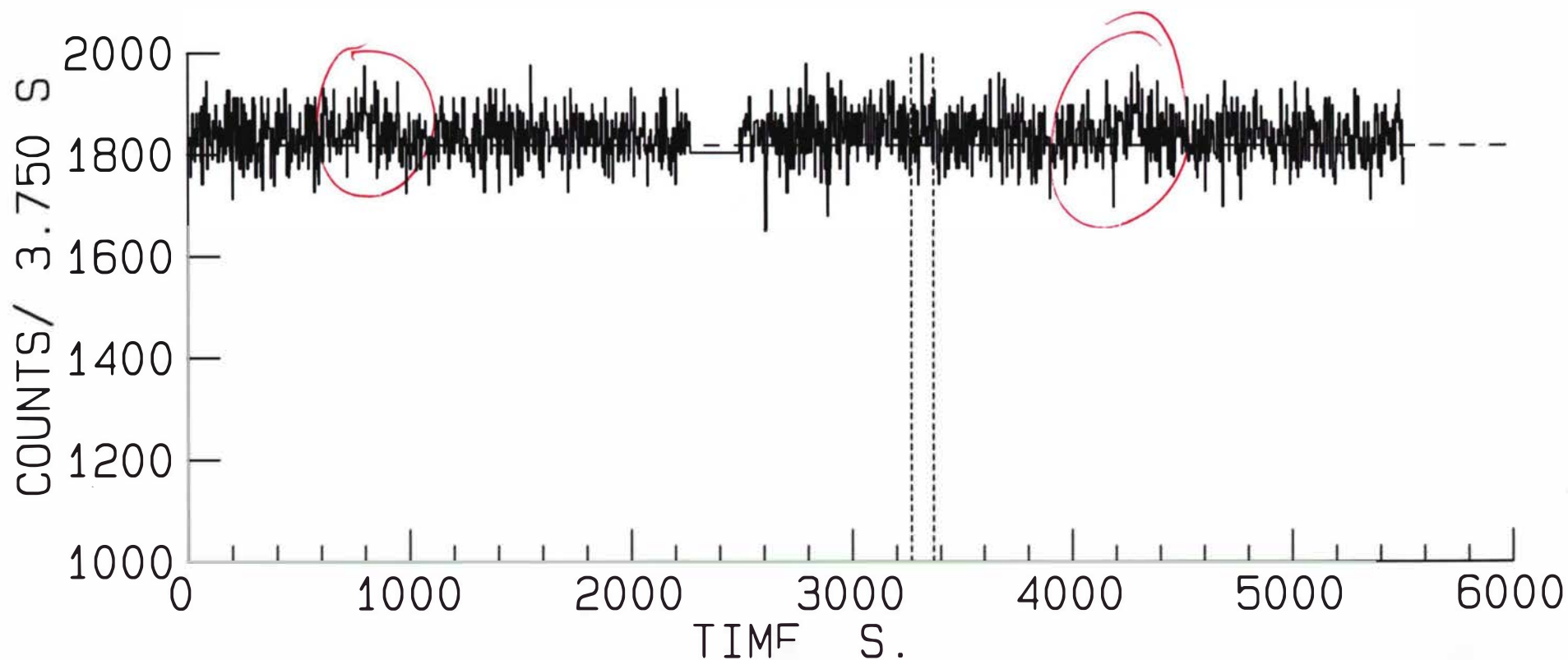
16/11/ 9



ULYSSES RT
24/ 9/99 72432.156 s
0.250 S INTERVALS REGROUPED BY 15
22- 150 keV

16/11/9

Too weak



KONUS

24/09/99 75141.023

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4300

3300

2300

1300

300

20

40

60

80

100

120

140

DETECTOR 2 - N. ECLIPHTIC

16/11/09

TIME, SECS



KONUS

24/09/99 75141.023

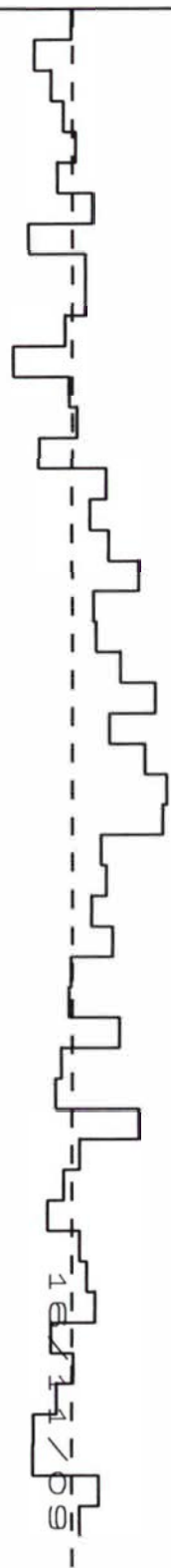
10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.945 S

3400

DETECTOR 1 - S. ECLIPTIC



1400

2400

400

20

40

60

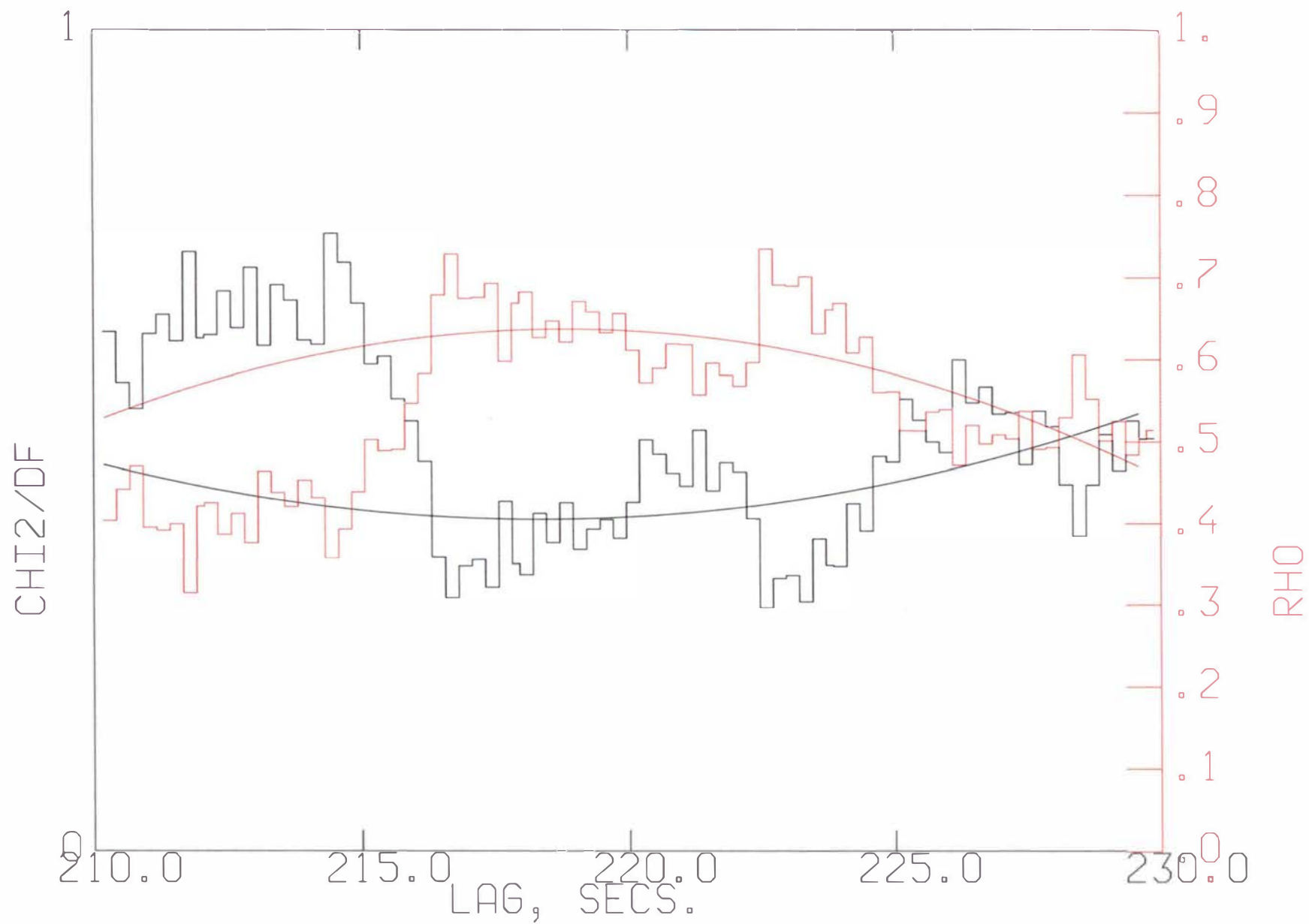
80

100

120

140

TIME, SECS



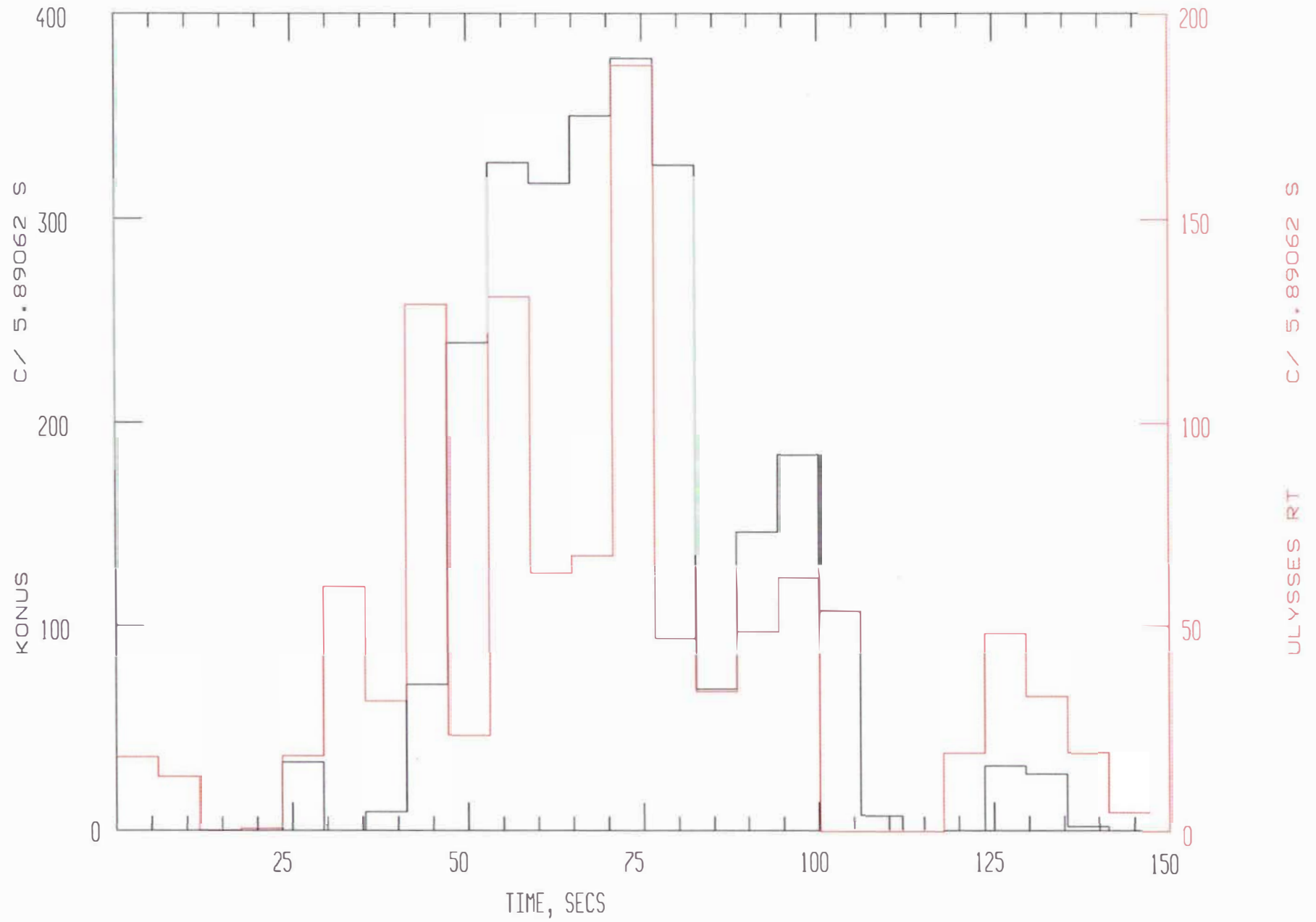
KONUS

-ULYSSES RT CORRELATION

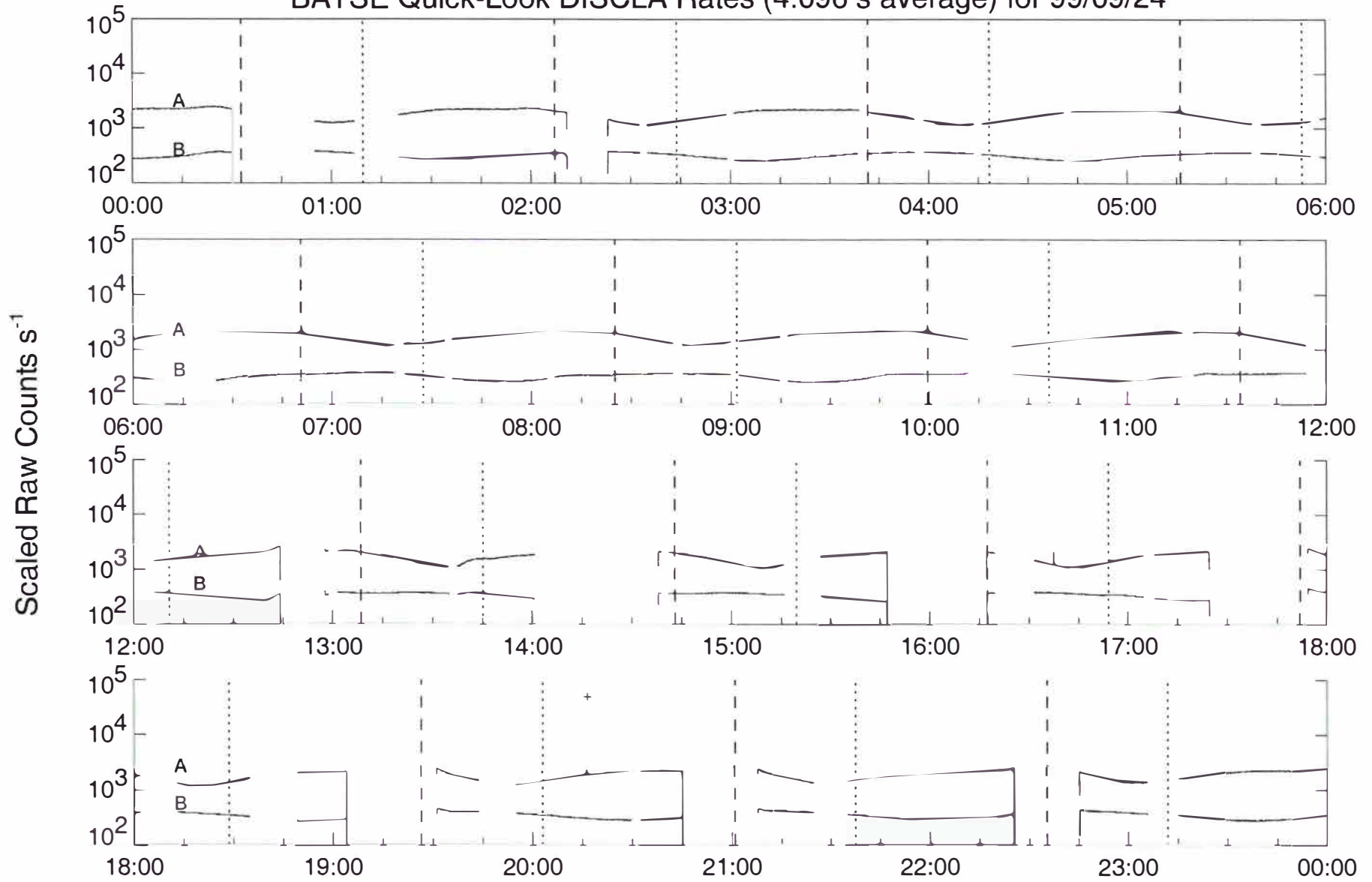
24/09/99

75141.023

16/11/9



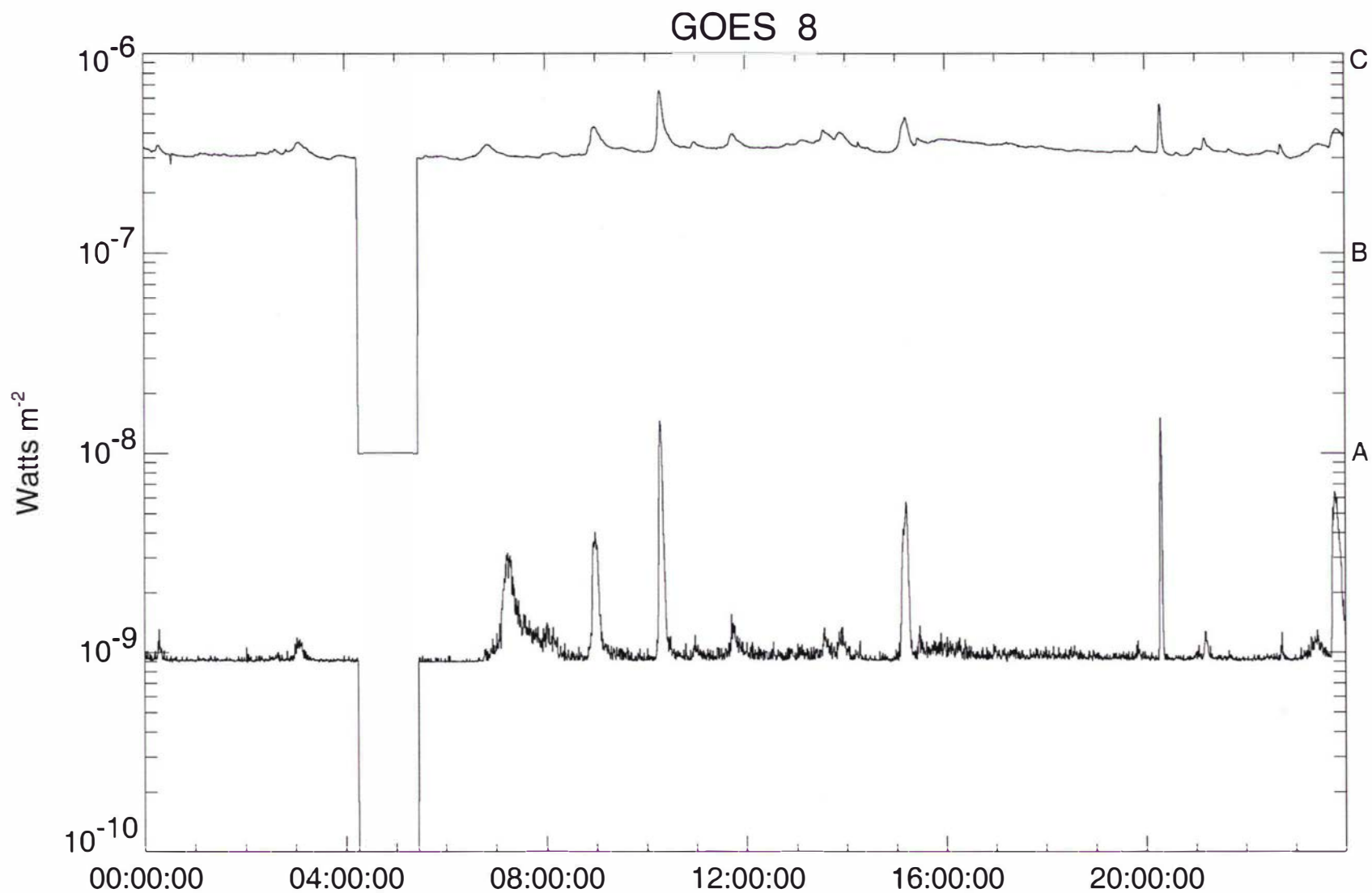
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/24



Current Time: 99/10/18, 2242 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: 99/09/24, 0000:00

Plot created: 99/10/18, 2242

Channel

1 (1.0 - 8.0 Angstroms)

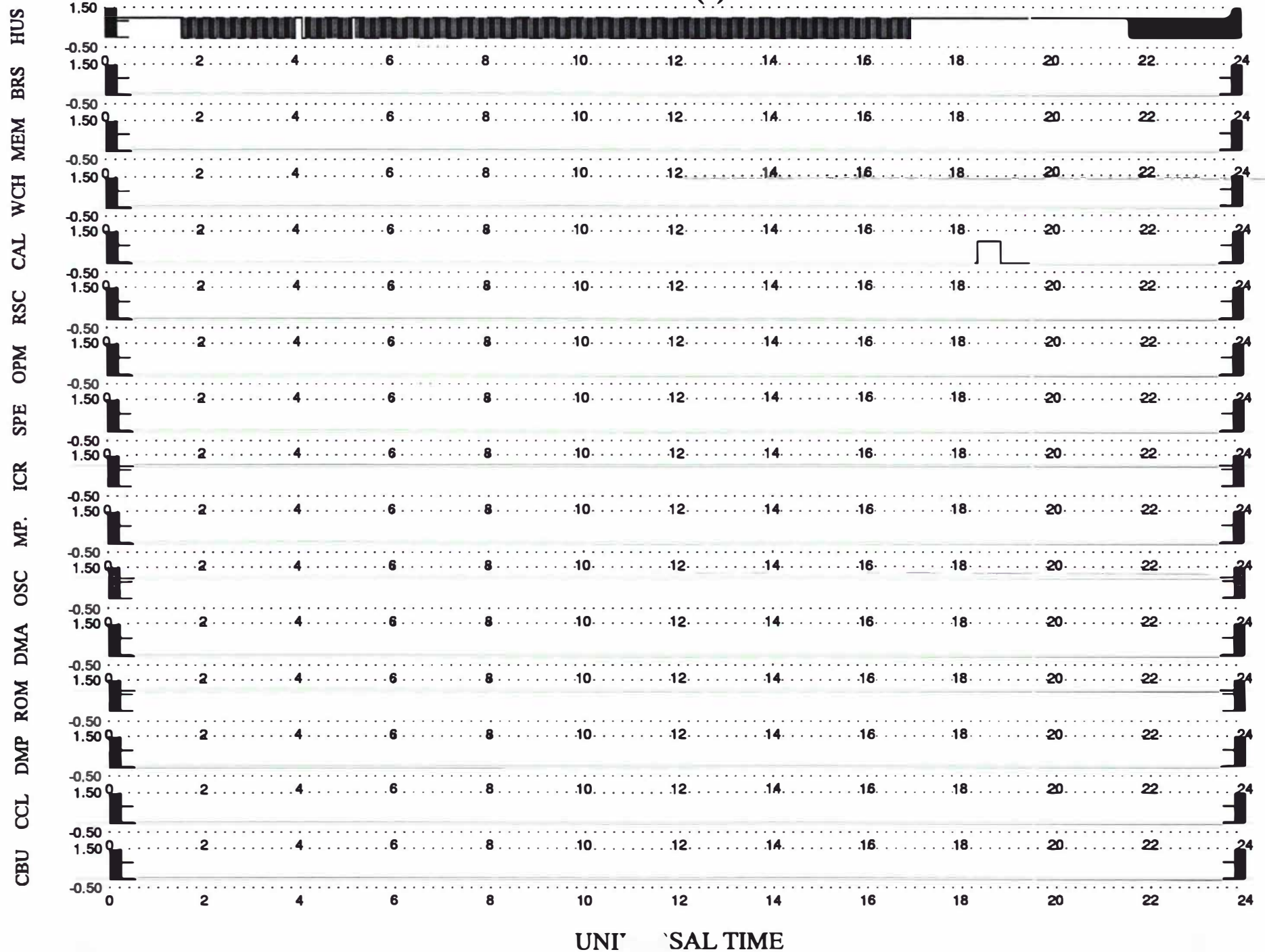
Background not subtracted

2 (0.5 - 4.0 Angstroms)

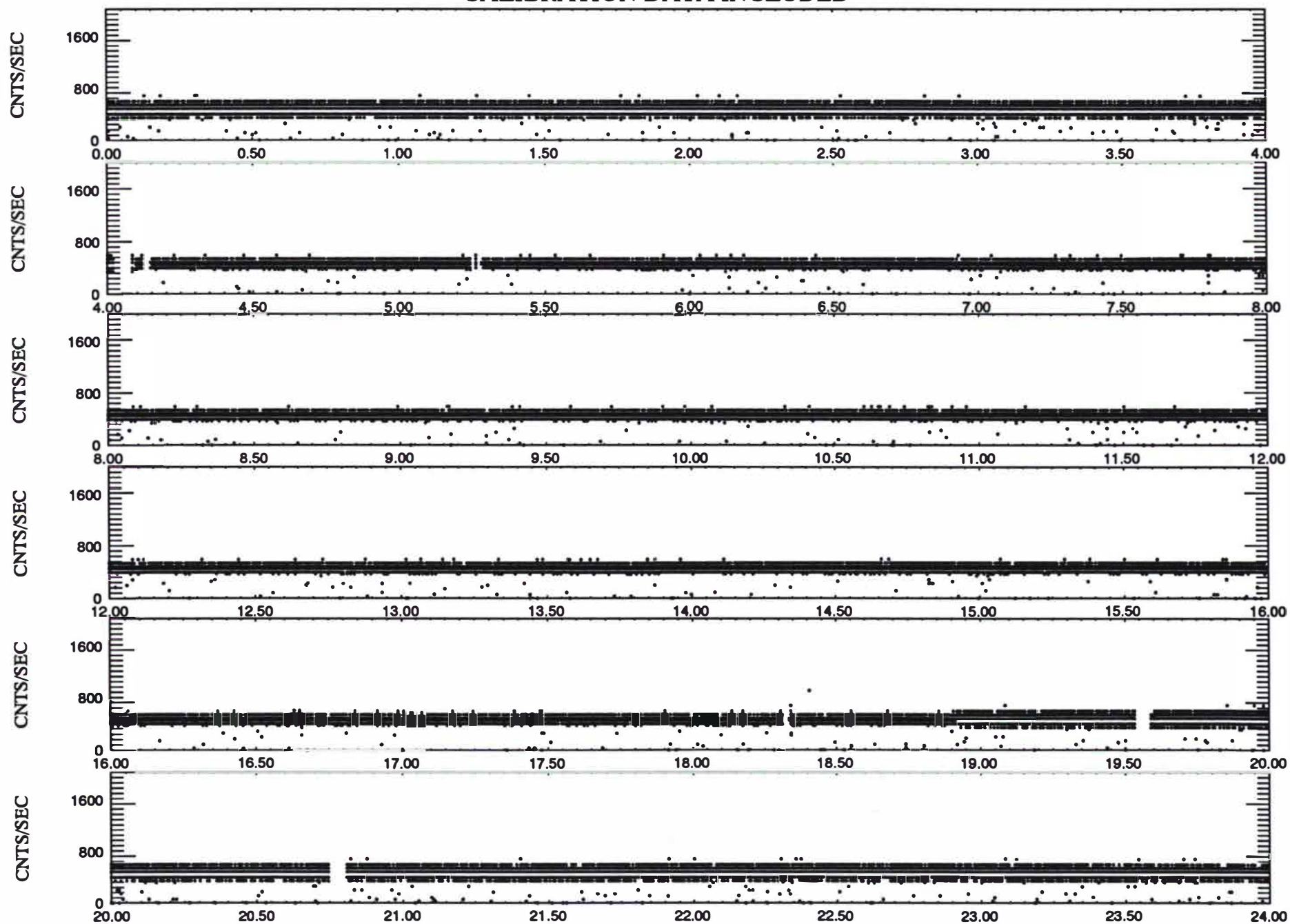
Background not subtracted

Sample average = 10

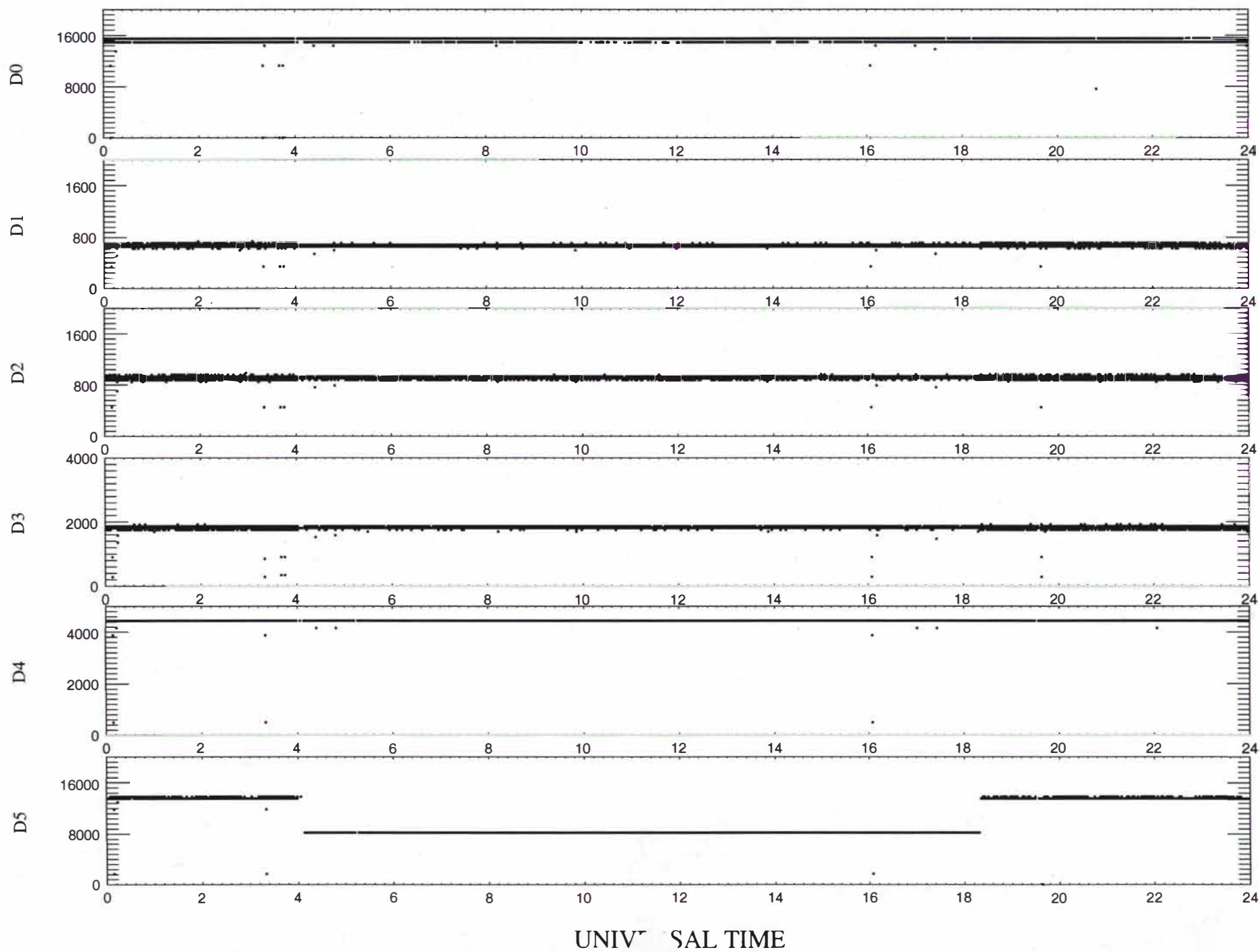
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Sep 27 09:54 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 27 Sep 1999 11:49:37 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7774

BATSEARCH PROGRAM

BATSE BURST # 7774
EVENT OF 1999 SEP 25 DAY OF YEAR=268
EVENT CROSSING TIME AT BATSE : 20493. S. OR 05:41:33.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 229.000 4.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 9/ 99 IS:
RA= 158.929 DEC= -15.925 DIST= 5.400 AU
BATSE-ULYSSES DISTANCE = 807824107. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -829.48 SECS.
CROSSING TIME AT ULYSSES IS 19664. S. OR 05:27:43 +/- 482.51 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 9/ 99 IS:
RA= 252.973 DEC= -24.353 DIST= 1.323 AU
MARS-BATSE DISTANCE = 197887296. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=143.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -529.15 SECS.
CROSSING TIME AT MARS IS 19964. S. OR 05:32:43 +/- 60.47 SECONDS

BATSE BURST TRIGGER

NO.: 7774

TIME: TJD=1446 SECONDS=20493

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=139.5 AZIMUTH=32.4 ERROR=5.0 DEGREES

COMMENTS:

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

BATSE BURST# 7774

ULYSSES RT

27 / 9 / 99

25 / 9 / 99 19188.244 s

0.500 S INTERVALS REGROUPED BY 2

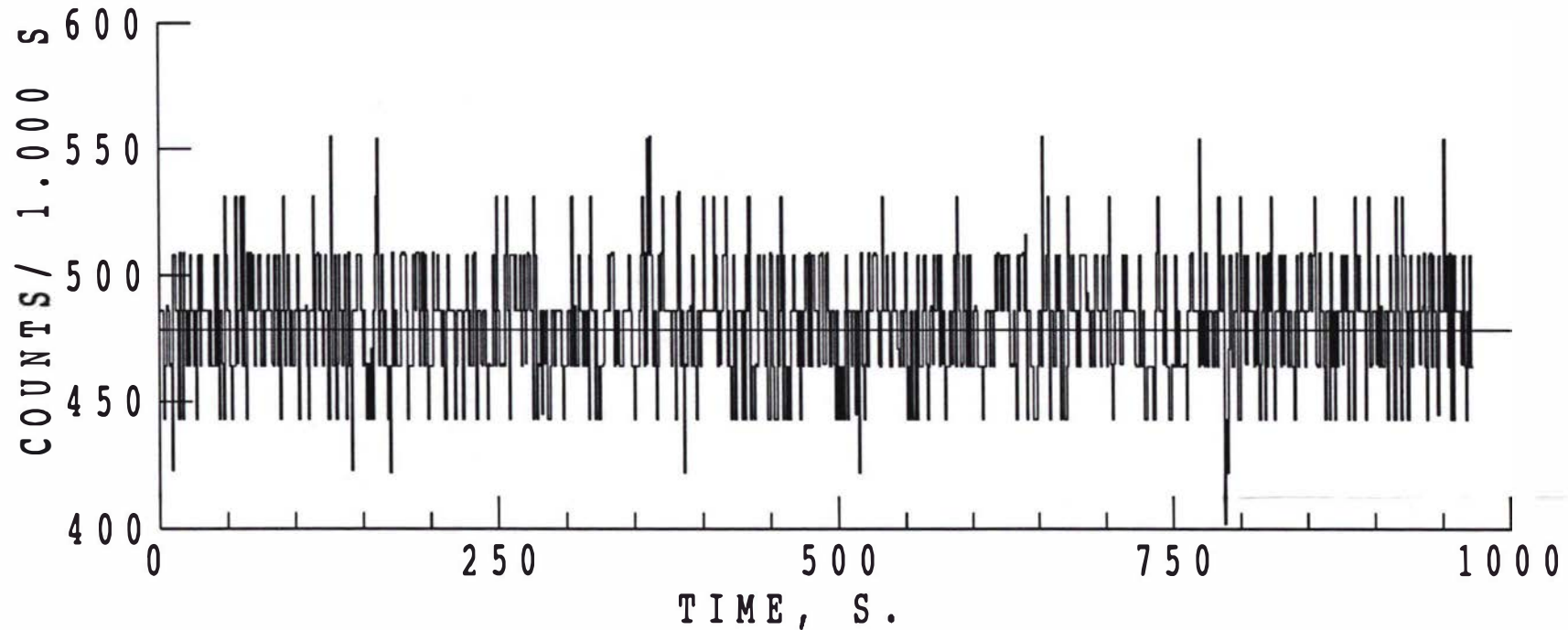
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Mon Sep 27 09:54 PDT 1999
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 27 Sep 1999 11:53:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7775

BATSEARCH PROGRAM

BATSE BURST # 7775
EVENT OF 1999 SEP 25 DAY OF YEAR=268
EVENT CROSSING TIME AT BATSE : 32283. S. OR 08:58:03.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 50.000 46.000
BATSE PEAK COUNTING RATE: 12000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 9/ 99 IS:
RA= 158.949 DEC= -15.945 DIST= 5.399 AU
BATSE-ULYSSES DISTANCE = 807656256. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1116.71 SECS.
CROSSING TIME AT ULYSSES IS 33400. S. OR 09:16:39 +/- 492.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 9/ 99 IS:
RA= 252.973 DEC= -24.353 DIST= 1.323 AU
MARS-BATSE DISTANCE = 197887296. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 28.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 580.40 SECS.
CROSSING TIME AT MARS IS 32863. S. OR 09:07:43 +/- 63.40 SECONDS

BATSE BURST TRIGGER

NO.: 7775

TIME: TJD=1446 SECONDS=32283

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=34.5 AZIMUTH=124.5 ERROR=3.0 DEGREES

COMMENTS:

GRB. SHORT SINGLE PULSE, RISE FASTER THAN DECAY.
DURATION APPROX. = 1.3 SEC. VISIBLVE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7775	990925	11446	32283	12000	050	+46	1.3

BATSE BURST# 7775

ULYSSES RT

27 / 9 / 99

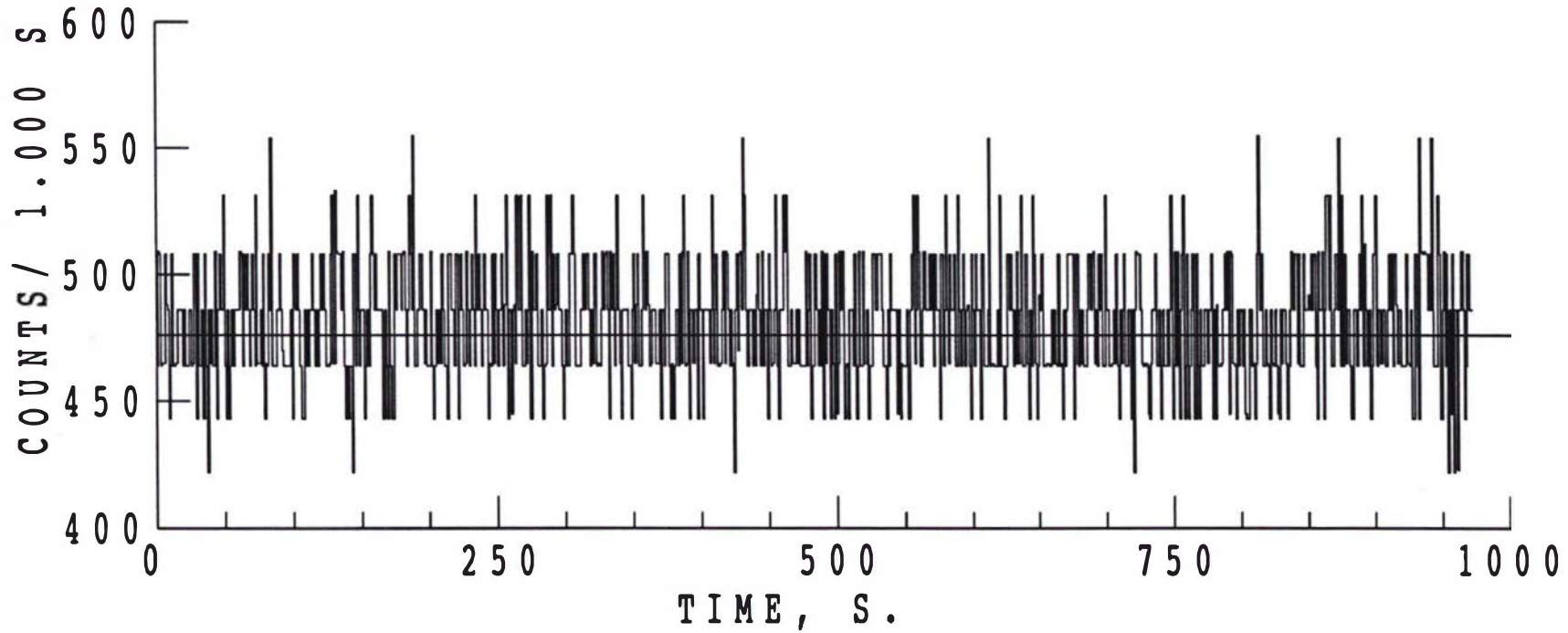
25 / 9 / 99 32904.383 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

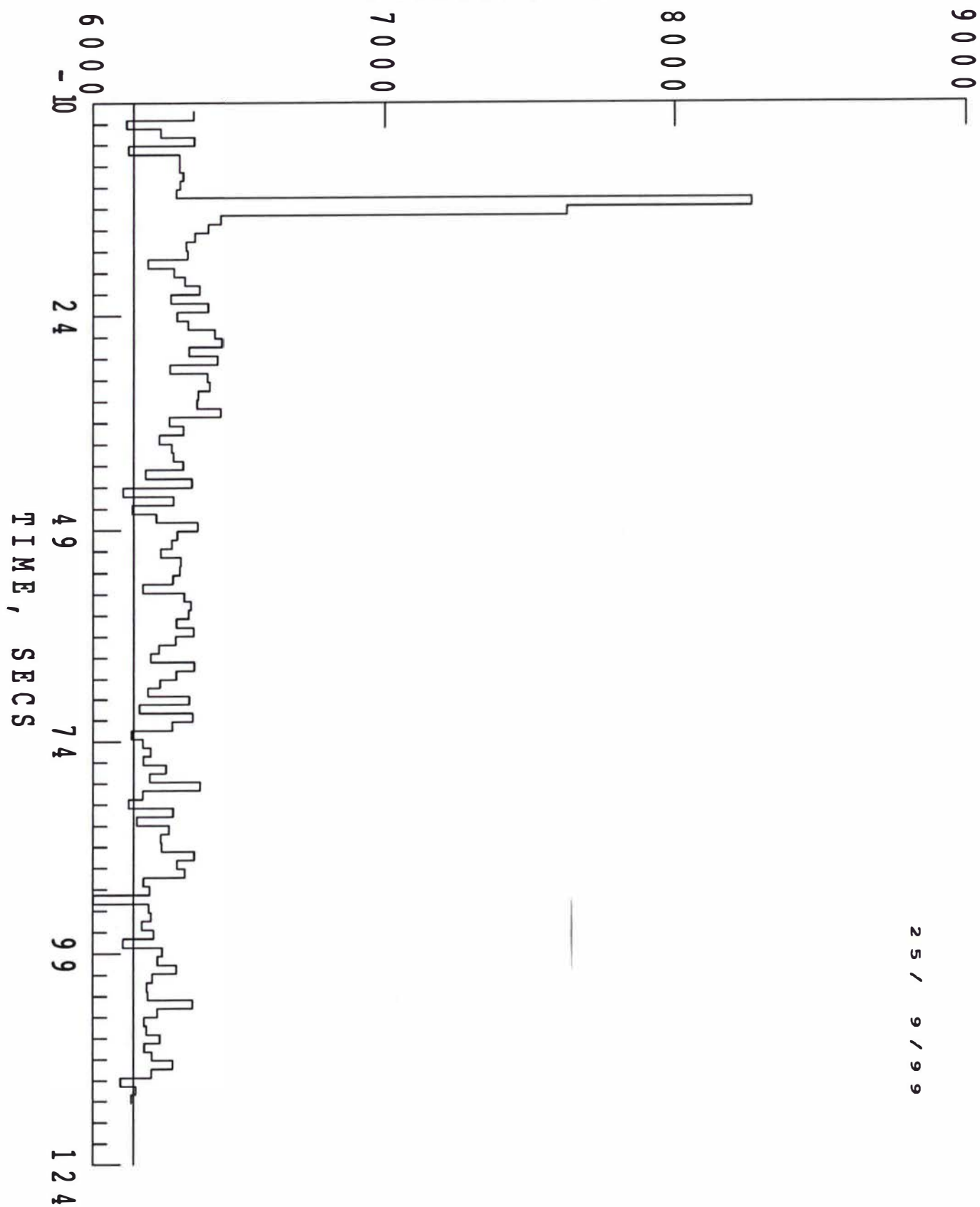
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 7775 25/09/99 32272.121

25- 100 keV

COUNTS/1.024 S



GRBM 19990925 83594

ULYSSES RT

02/07/07

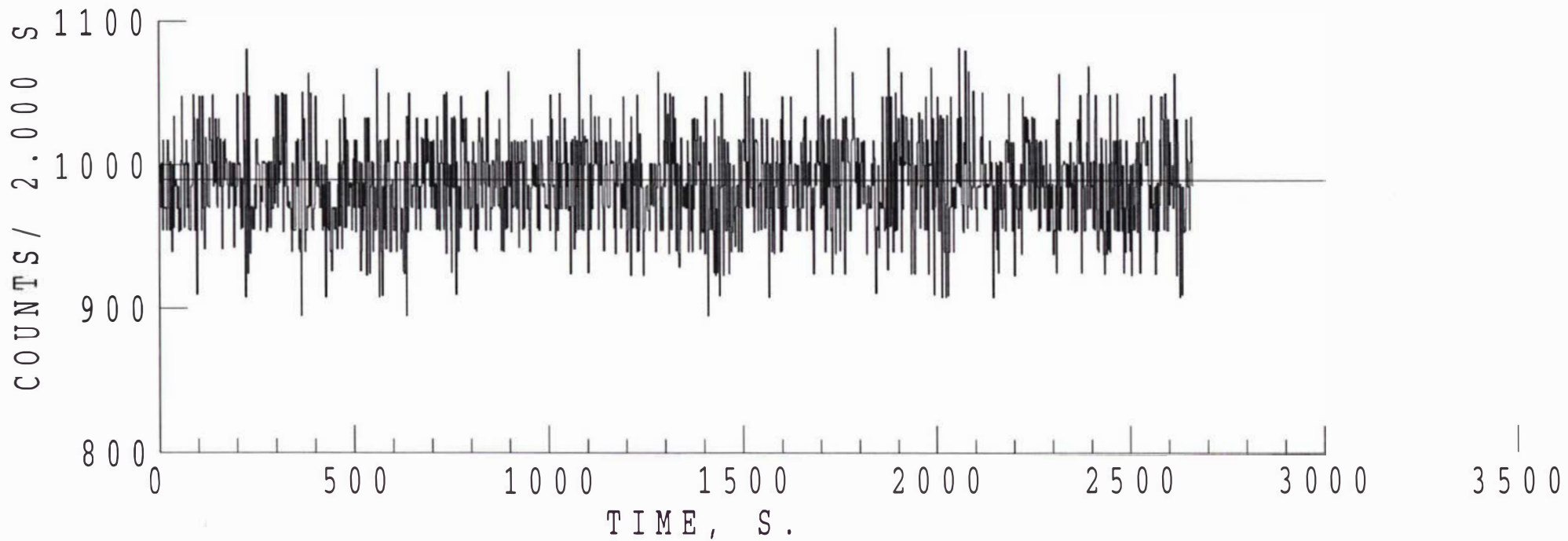
25/09/99 82260.125 s

0.250 S INTERVALS REGROUPED BY 8

0 - 0 keV

M= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

M= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Wed Sep 29 12:06 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 29 Sep 1999 13:52:56 -0500 (CDT)
: khurley@sunspot.ssl.berkeley.edu
Object: Crossing Windows for BATSE Burst 7776

BATSEARCH PROGRAM

BATSE BURST # 7776
EVENT OF 1999 SEP 25 DAY OF YEAR=268
EVENT CROSSING TIME AT BATSE : 82162. S. OR 22:49:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 343.000 11.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 9/ 99 IS:
RA= 159.036 DEC= -16.028 DIST= 5.394 AU
BATSE-ULYSSES DISTANCE = 806947187. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 6.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2675.26 SECS.
CROSSING TIME AT ULYSSES IS 84837. S. OR 23:33:57 +/- 142.18 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 9/ 99 IS:
RA= 252.973 DEC= -24.353 DIST= 1.323 AU
MARS-BATSE DISTANCE = 197887296. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 52.22 SECS.
CROSSING TIME AT MARS IS 82214. S. OR 22:50:14 +/- 115.03 SECONDS

NO.: 7776

TIME: TJD=1446 SECONDS=82162

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=92.2 AZIMUTH=163.1 ERROR=3.3 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR. APPROX. 2 S, STARTS AT T-1 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7776	990925	11446	82162	4500	343	+11	2

BATSE BURST# 7776

ULYSSES RT

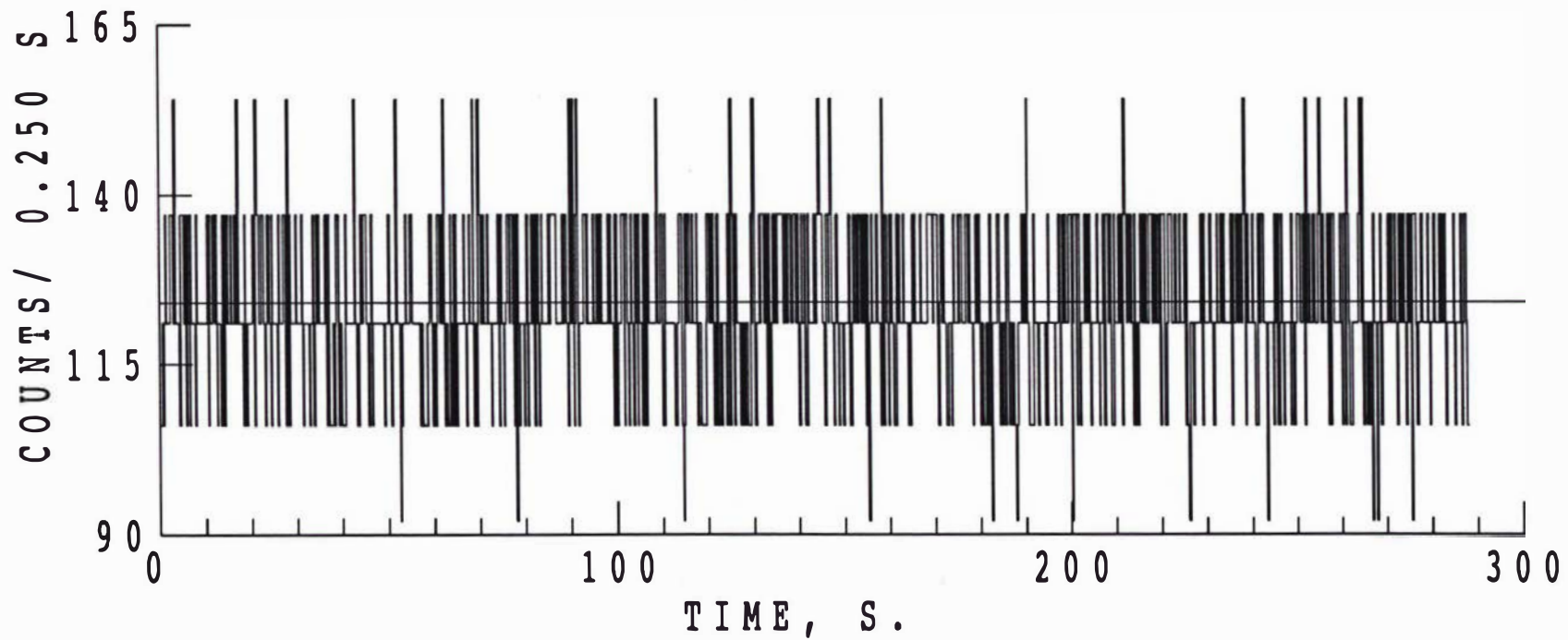
29 / 9 / 99

25 / 9 / 99 84708.156 s

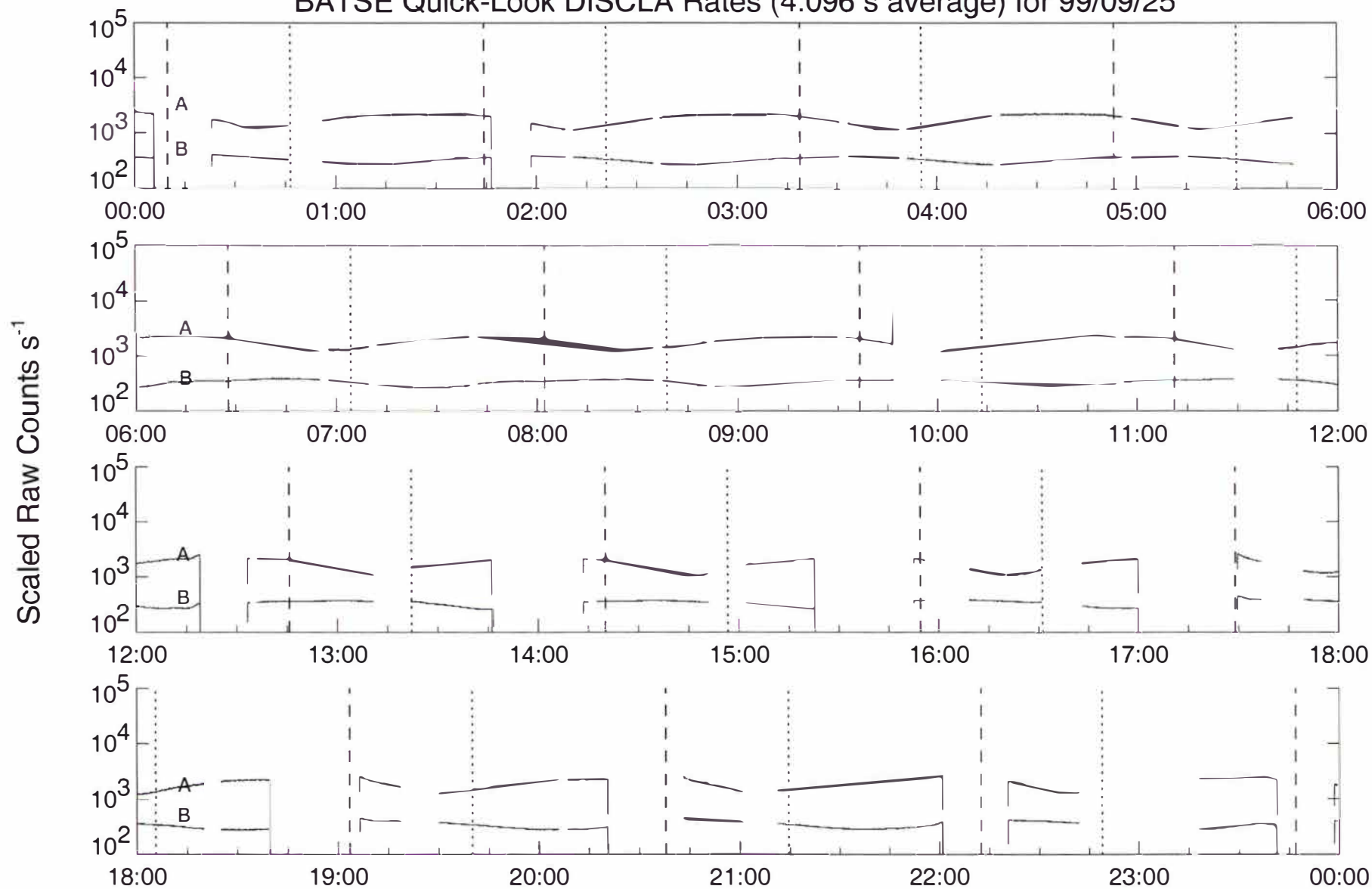
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



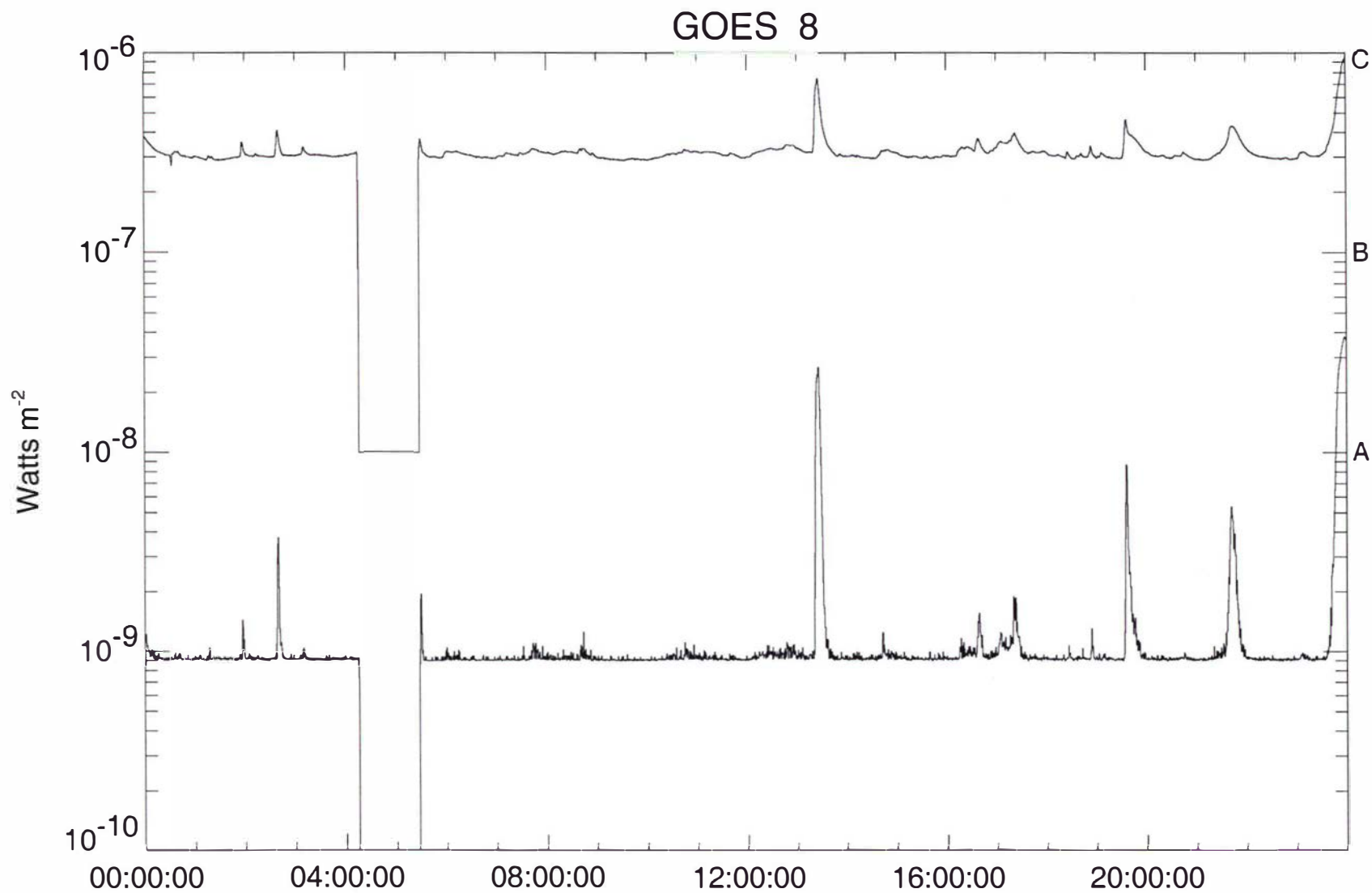
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/25



Current Time: 99/10/18, 2246 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: 99/09/25, 0000:00

Plot created: 99/10/18, 2246

Channel

1 (1.0 - 8.0 Angstroms)

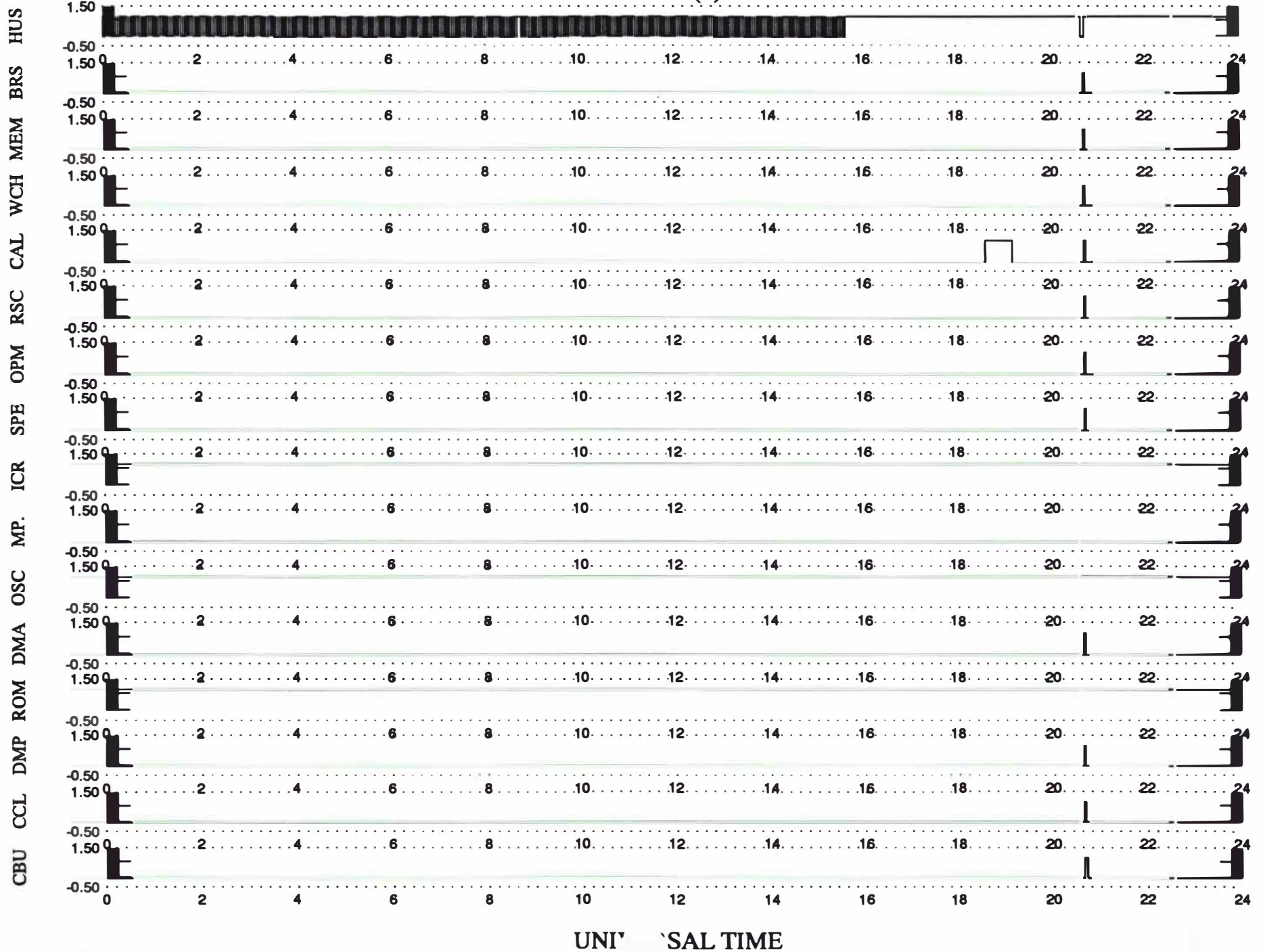
Background not subtracted

2 (0.5 - 4.0 Angstroms)

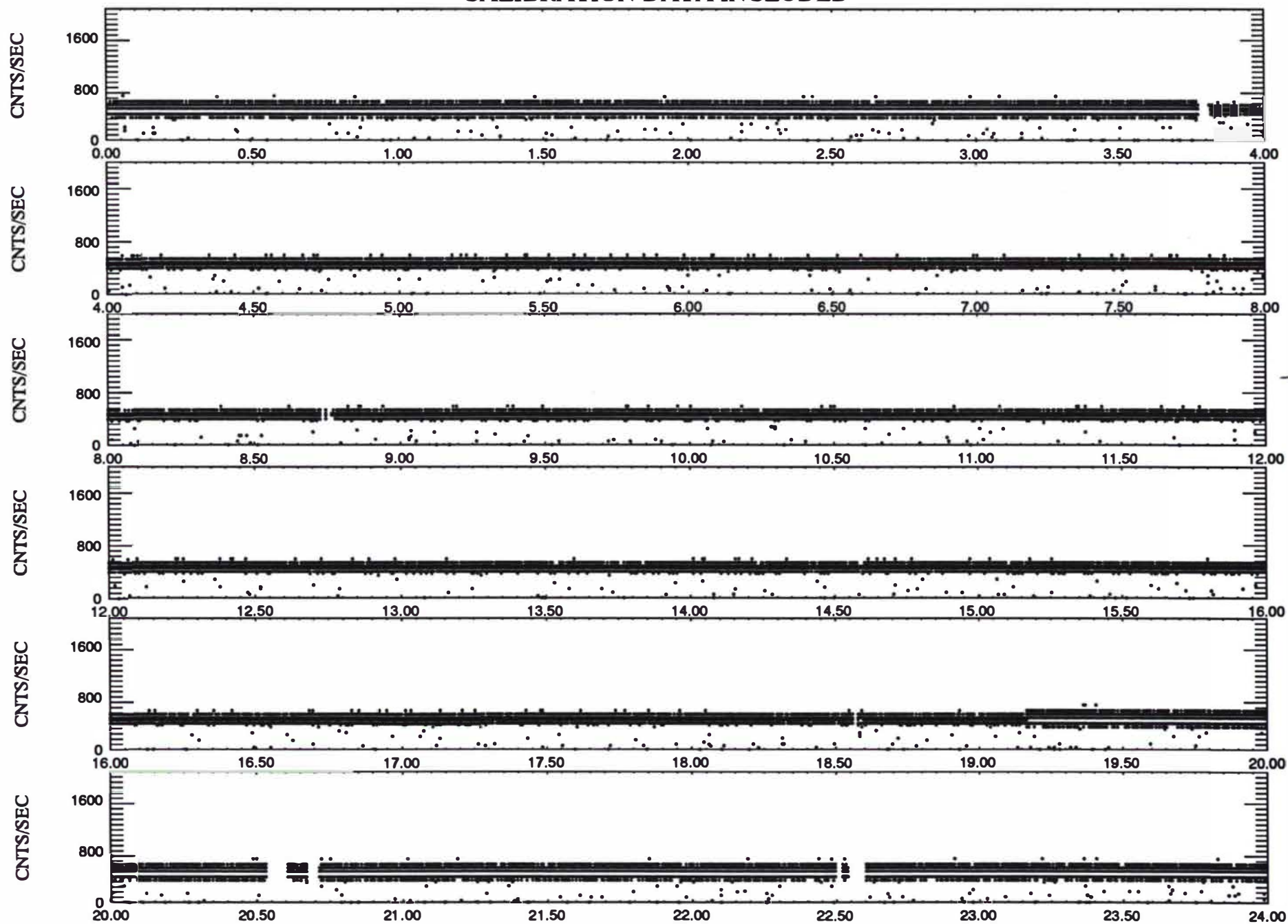
Background not subtracted

Sample average = 10

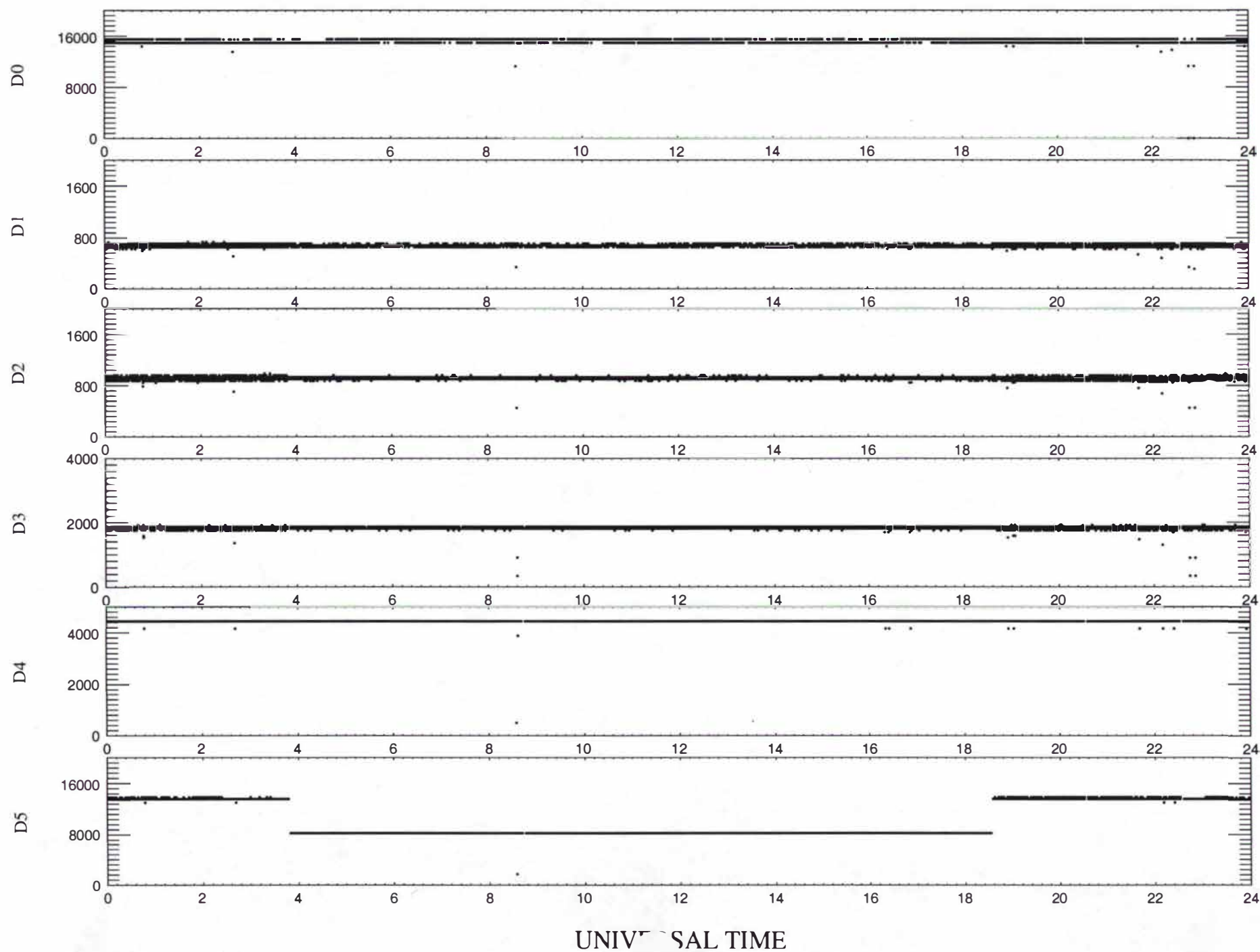
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



KONUS

ULYSSES RT

16 / 03 / 00

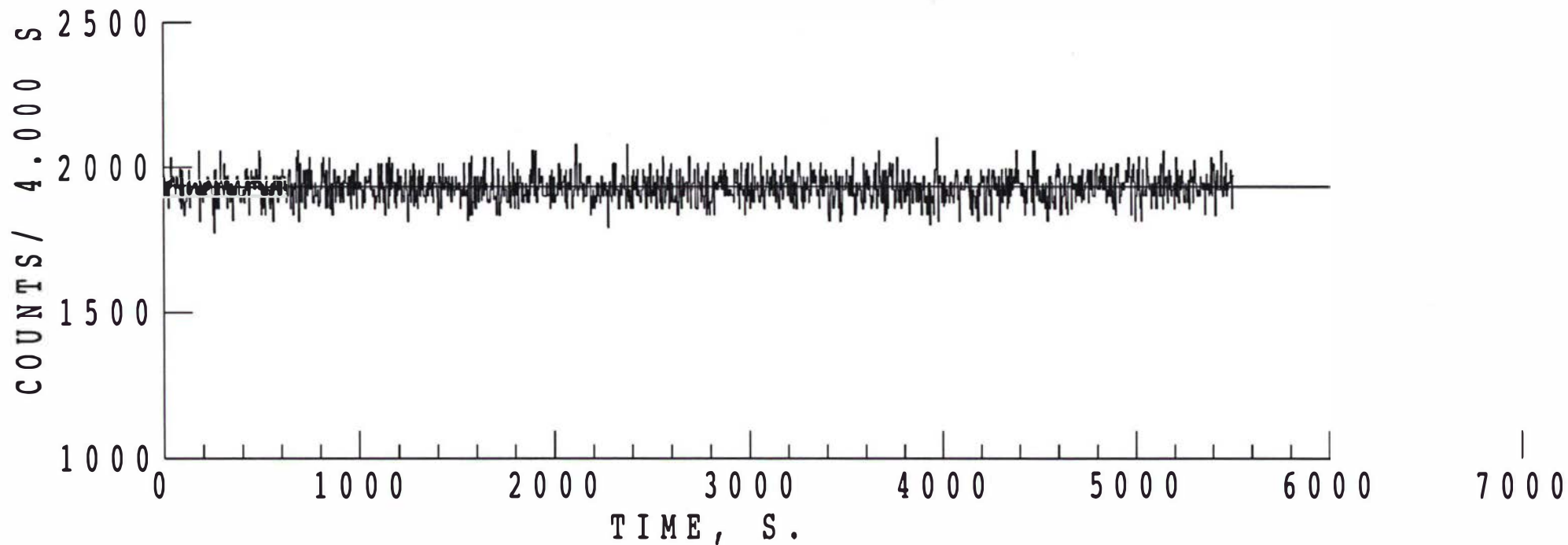
26 / 09 / 99 18504.107 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Jul 16 2003

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

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? *No*

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

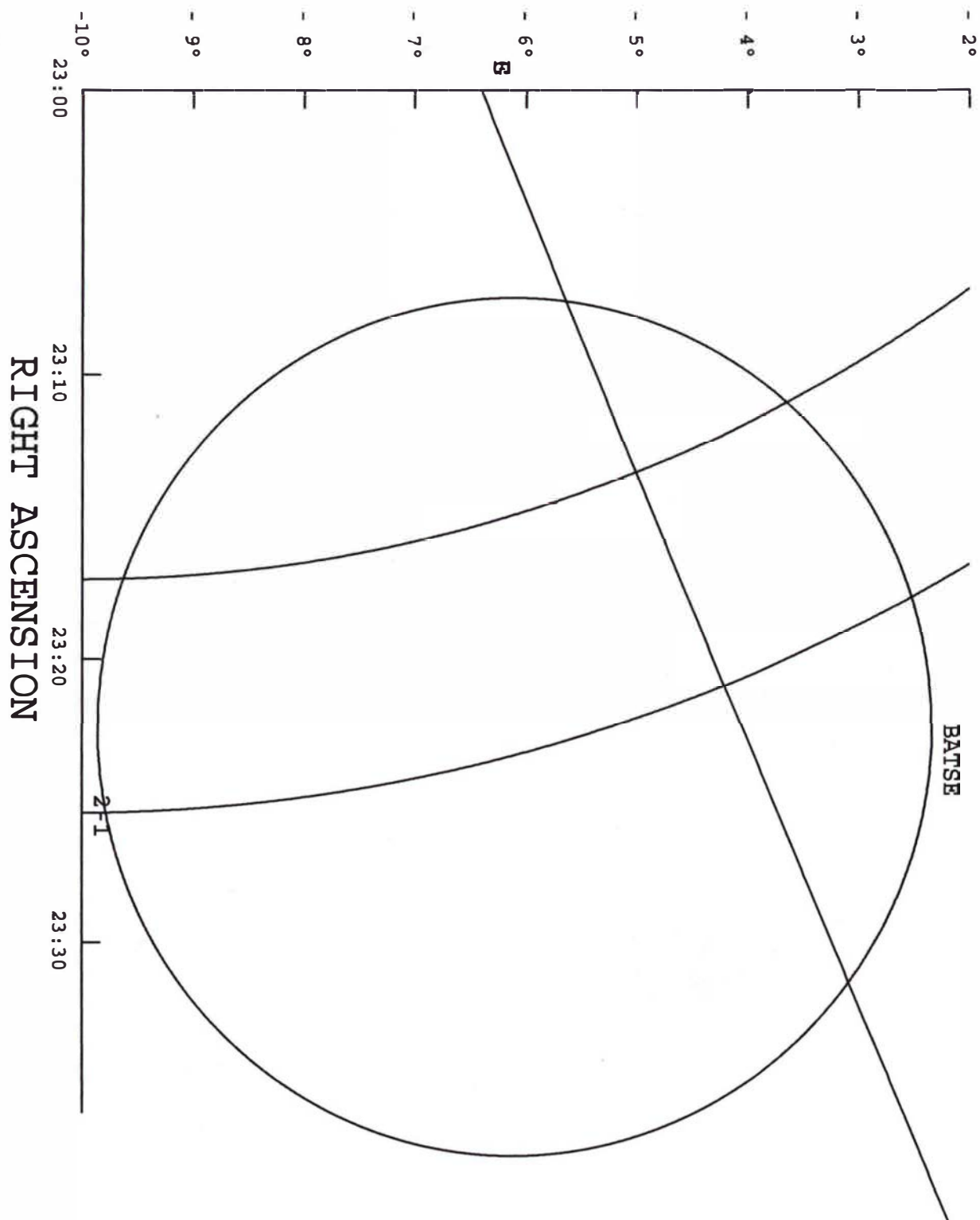
E=ECLIPTIC

G=GALACTIC EQUATOR

1 BATSE

2 NEAR

DECLINATION



EVENT OF SEP 26, 1999 9:04

16/ 7/ 3

BATSE

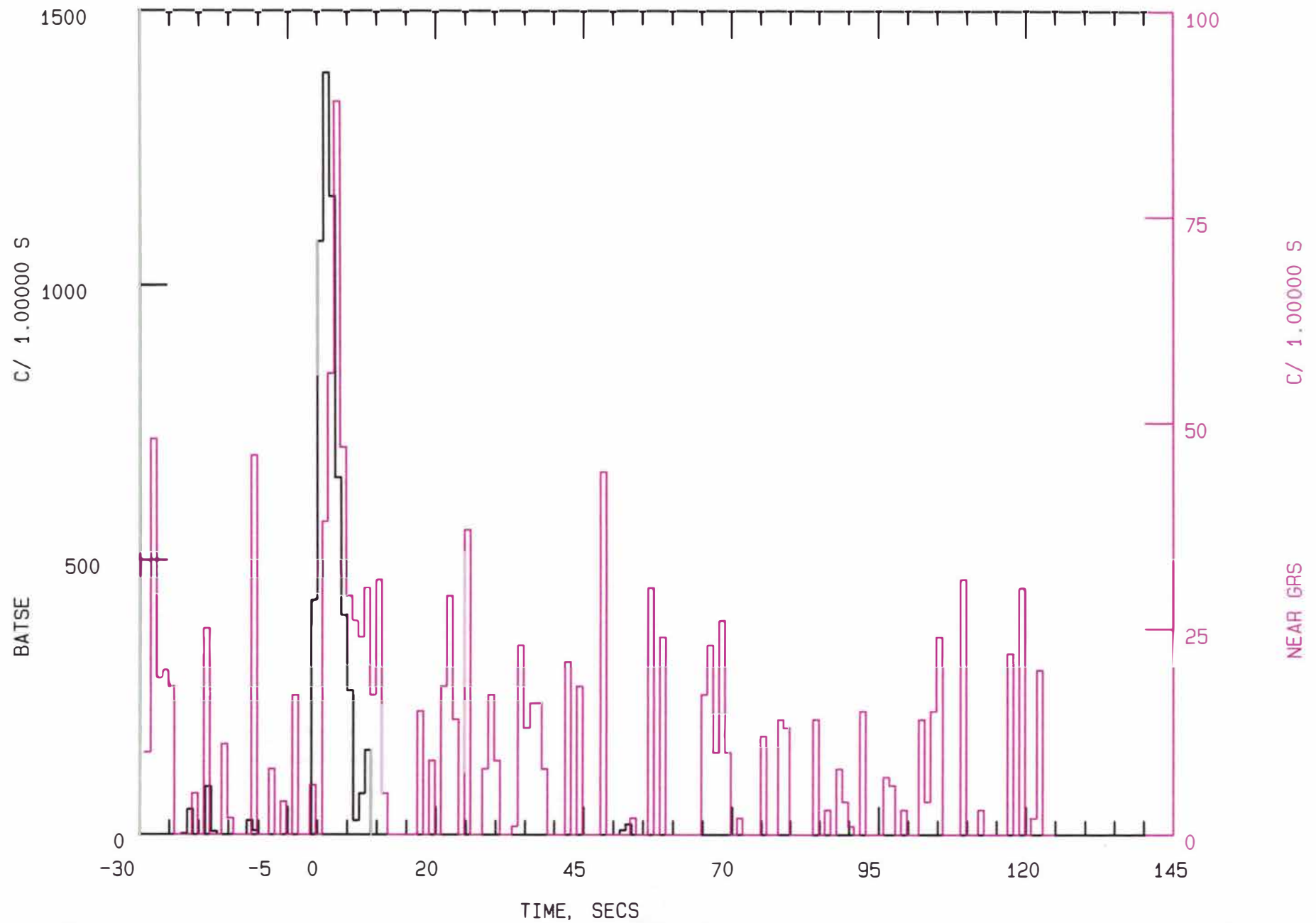
-NEAR GRS

CORRELATION

26/09/99

32652.537

16/ 7/ 3



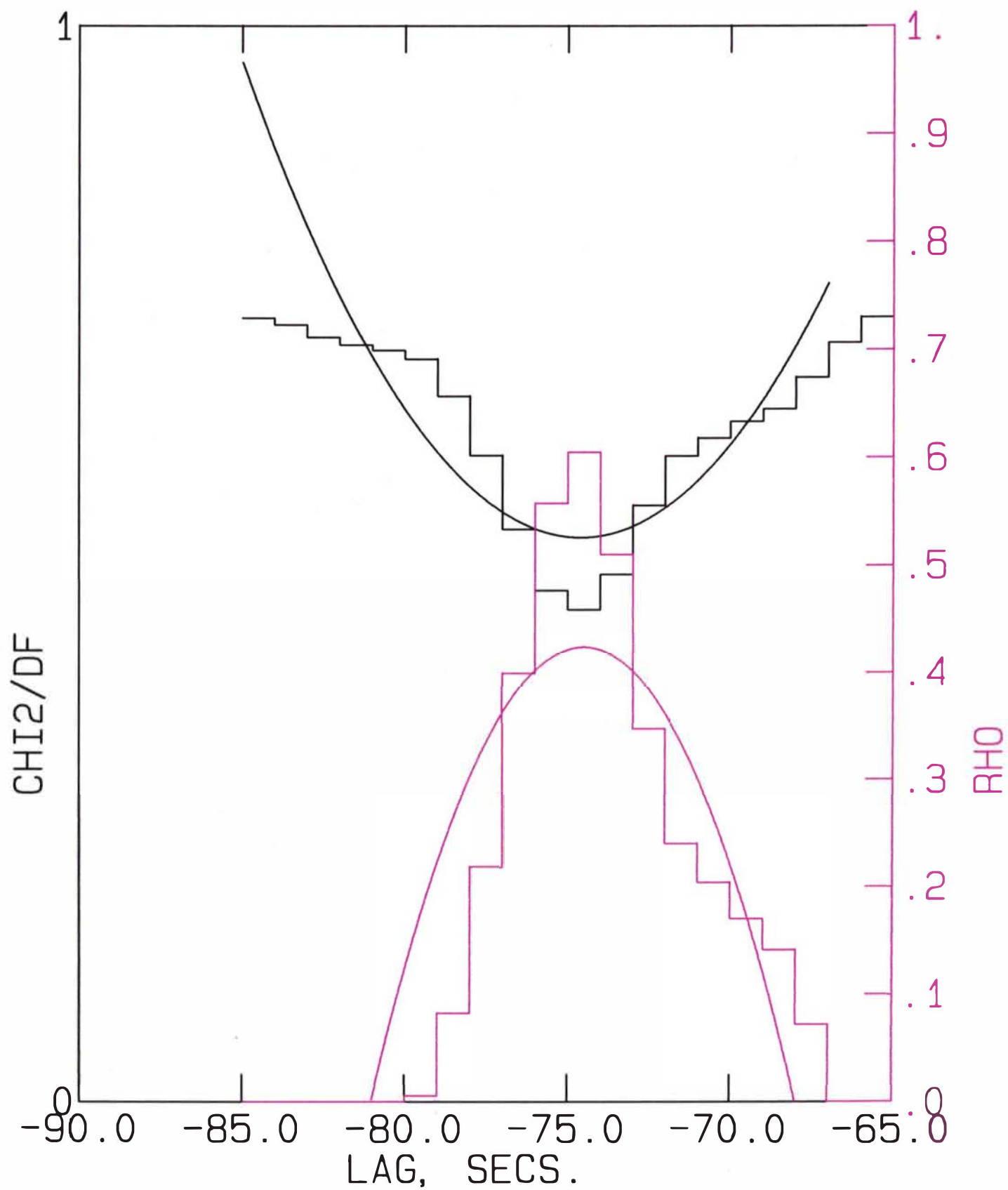
BATSE

-NEAR GRS

CORRELATION

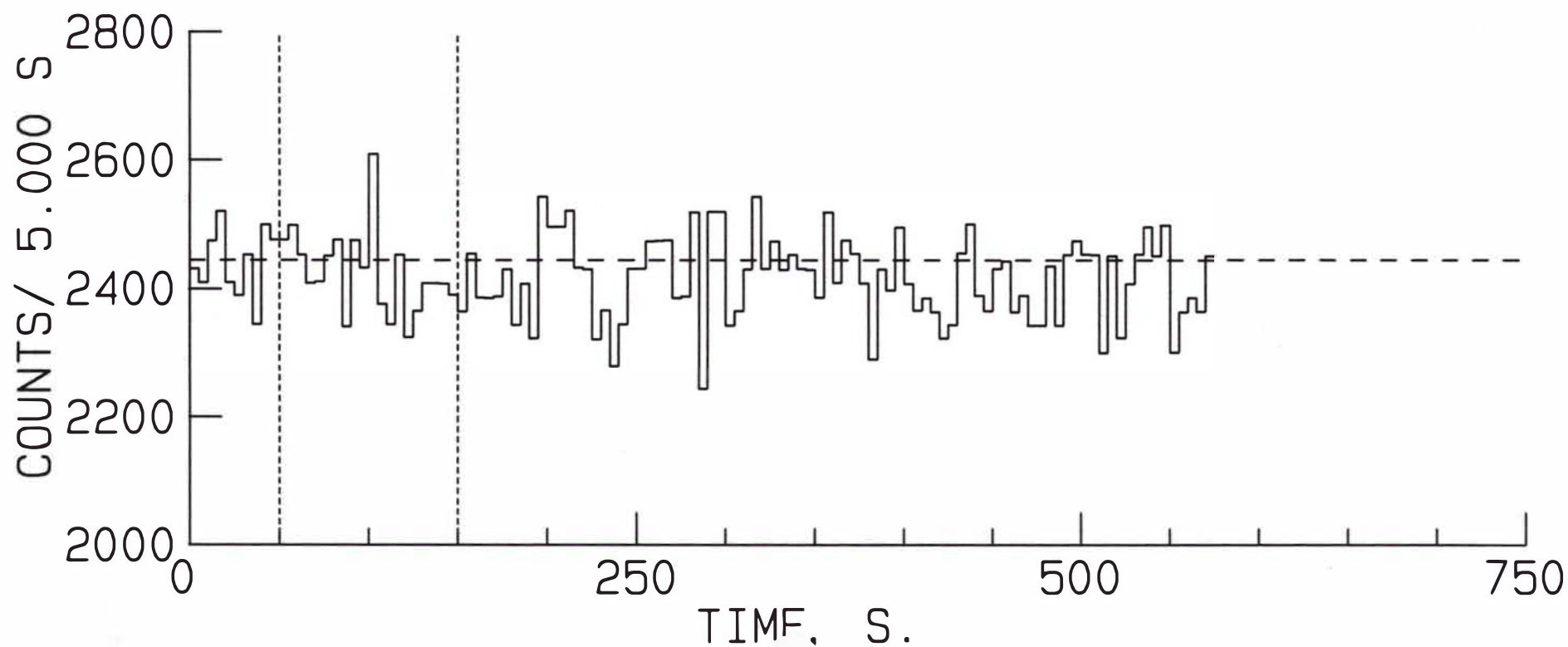
26/09/99

32652.537



ULYSSES RT
26/ 9/99 34812.273 s
0.500 S INTERVALS REGROUPED BY 10
22- 151 keV

16/ 7/ 3

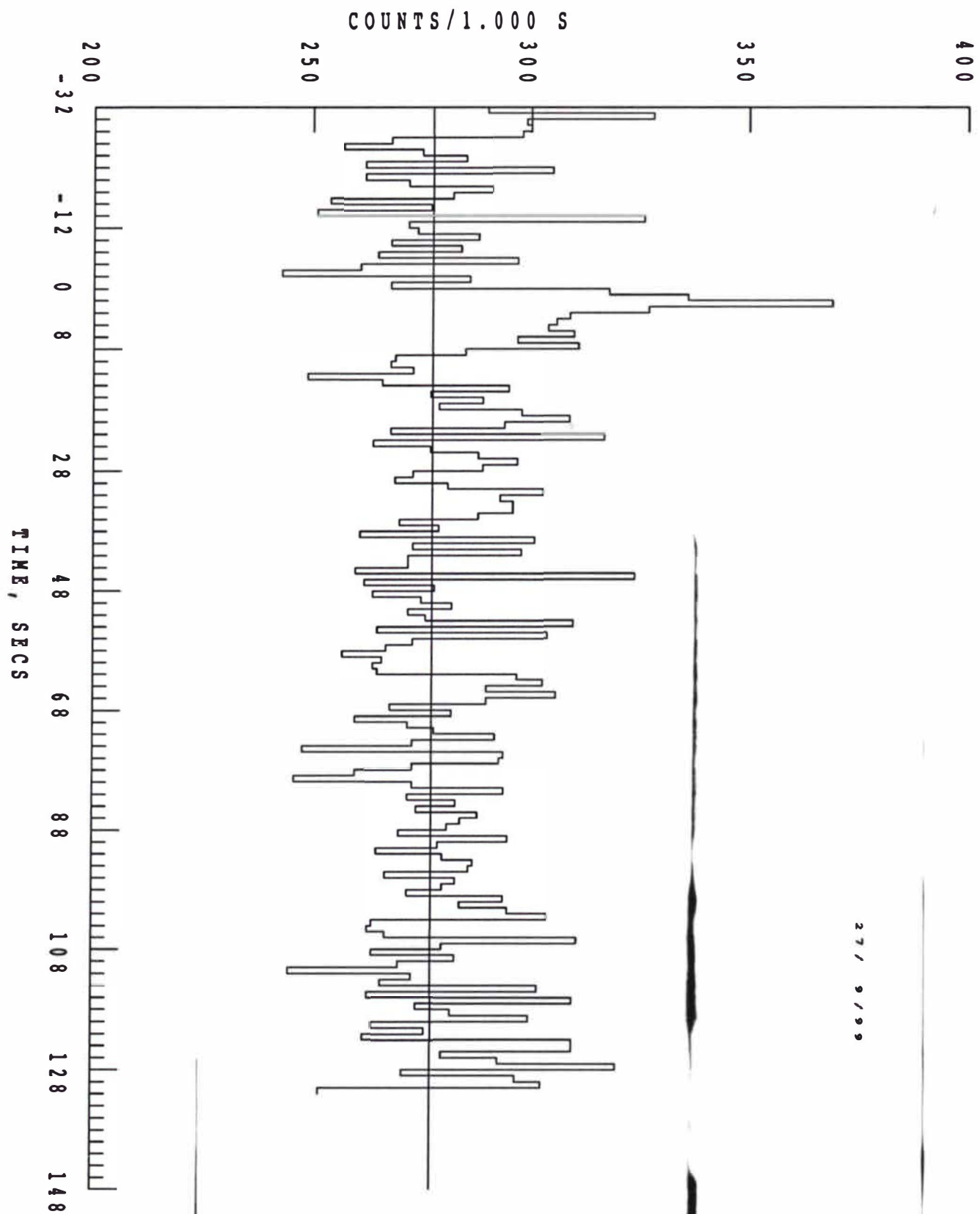


NEAR

26/09/99

33570.778

100-1000 keV



27 / 9 / 99

KNEAR GRS 19990926 33570

ULYSSES RT

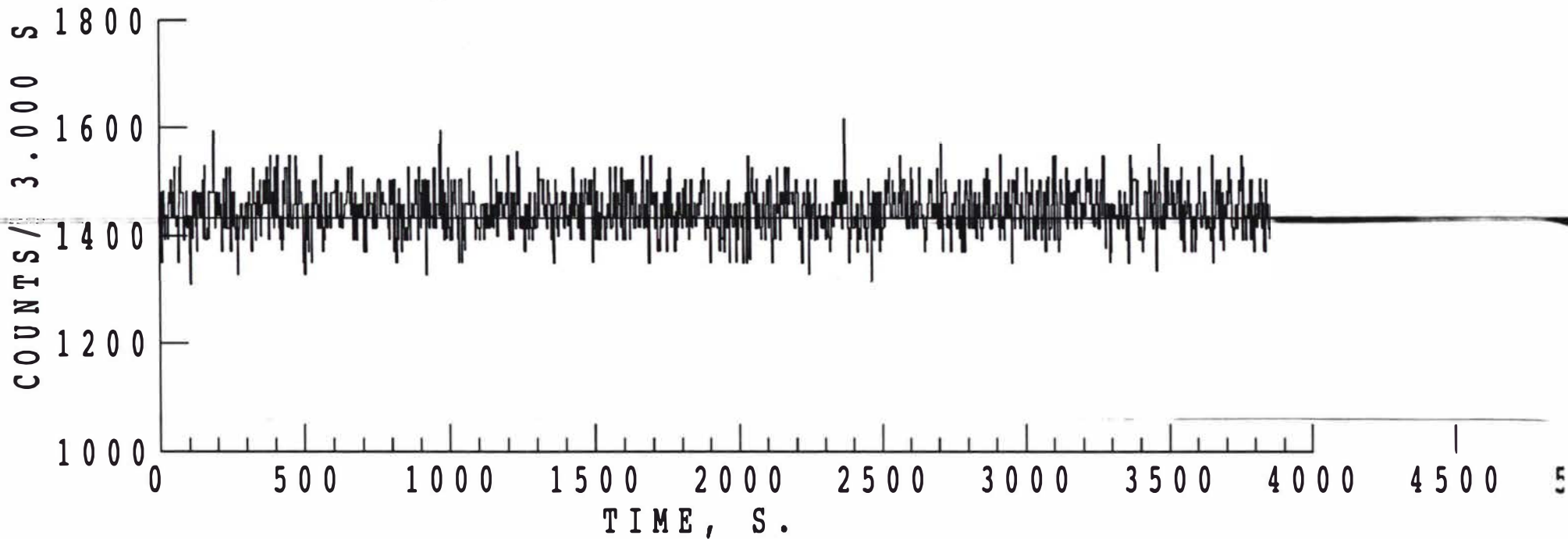
27 / 9 / 99

26 / 9 / 99 31644.244 s

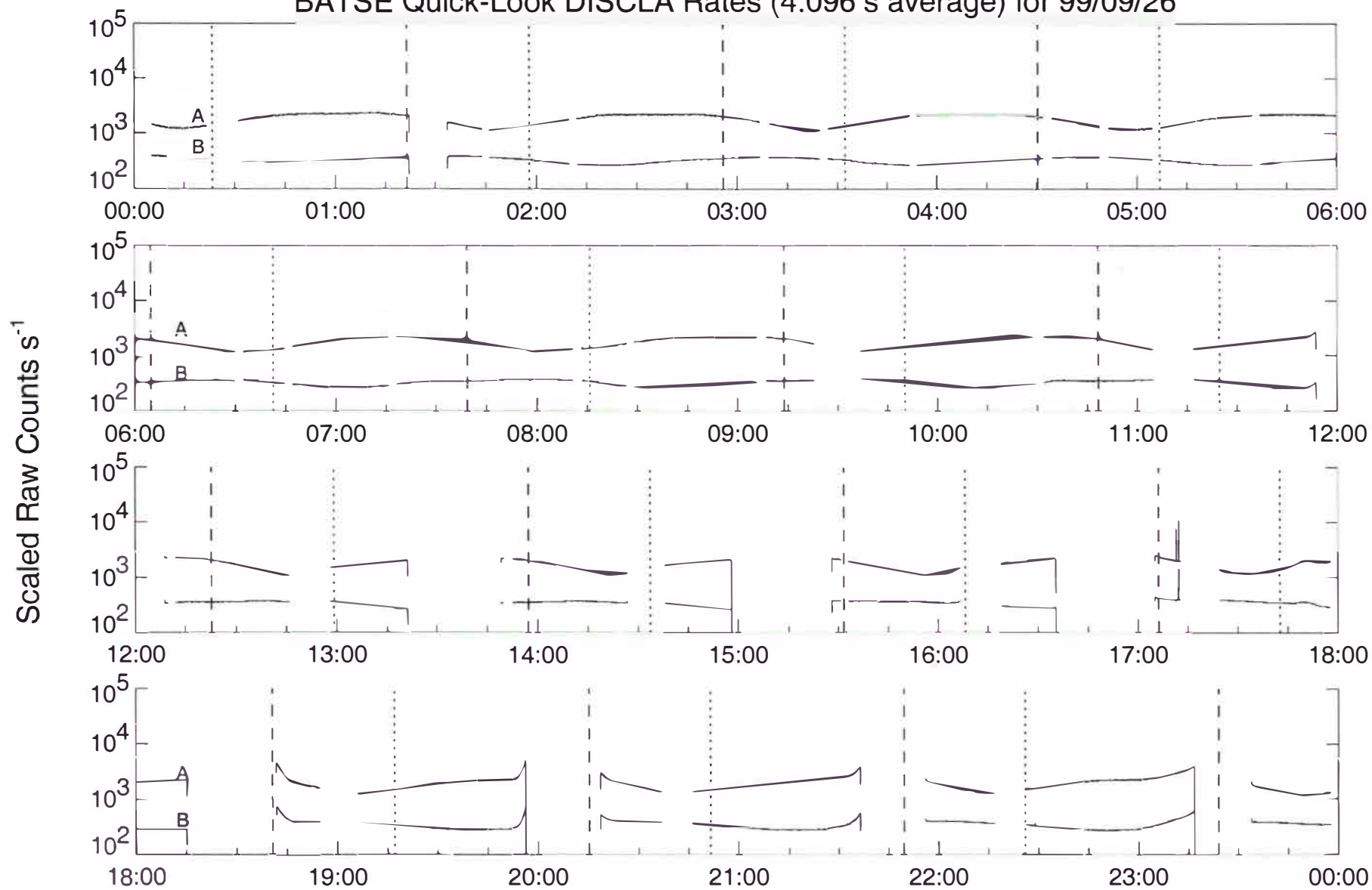
0.500 S INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/26

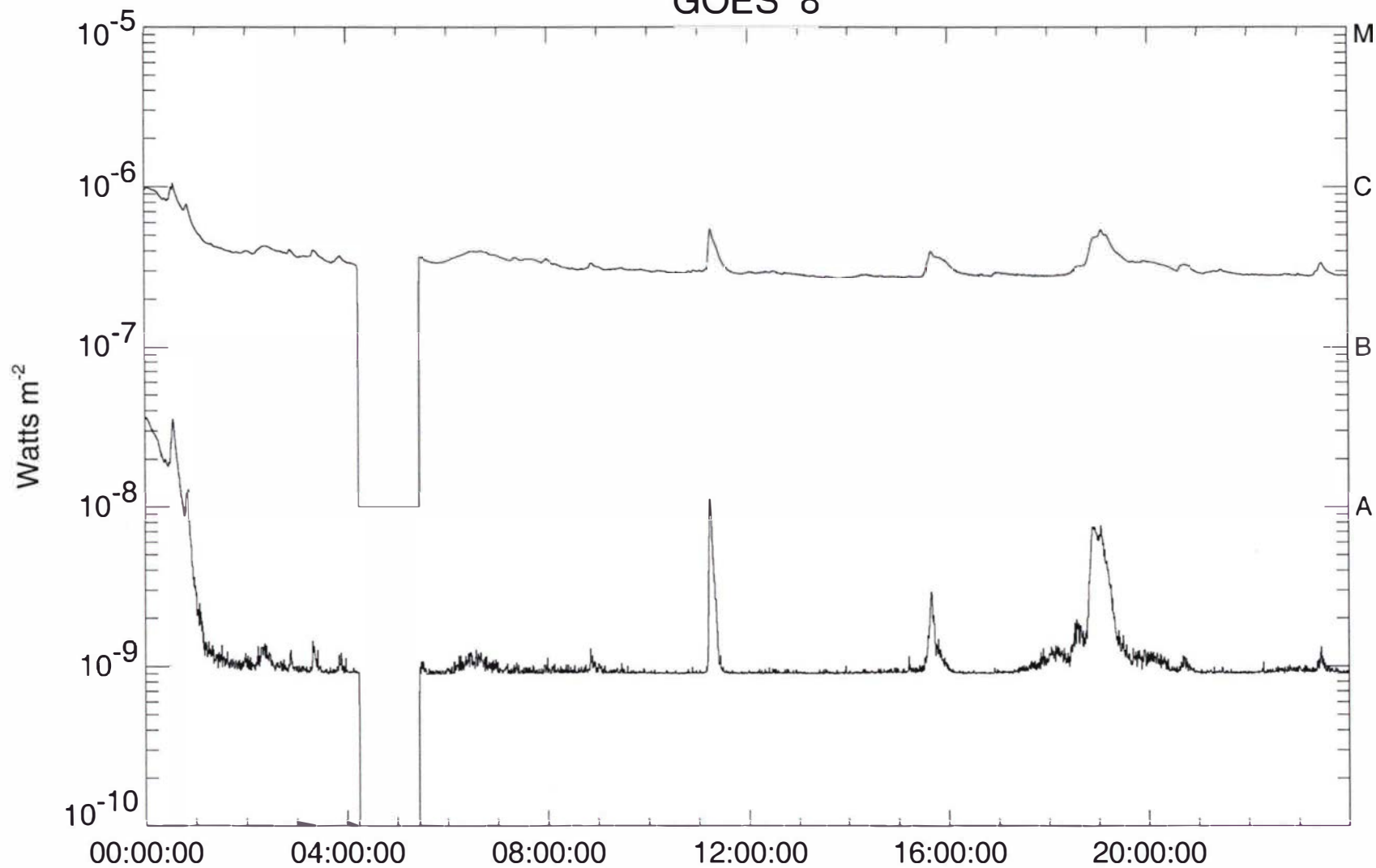


Current Time: 99/10/18, 2251 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/26, 0000:00

Plot created: 99/10/18, 2250

Channel 1 (1.0 - 8.0 Angstroms)

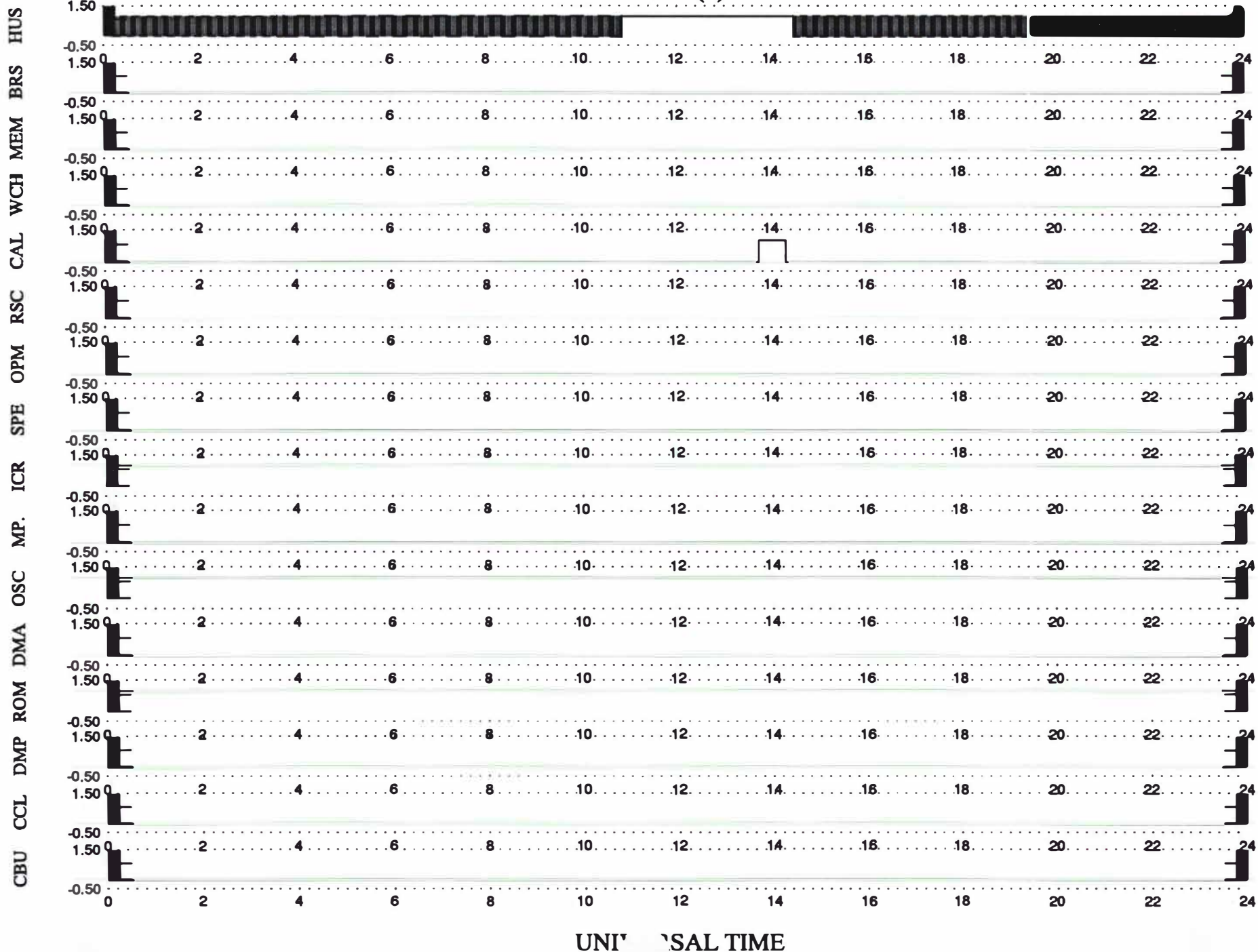
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

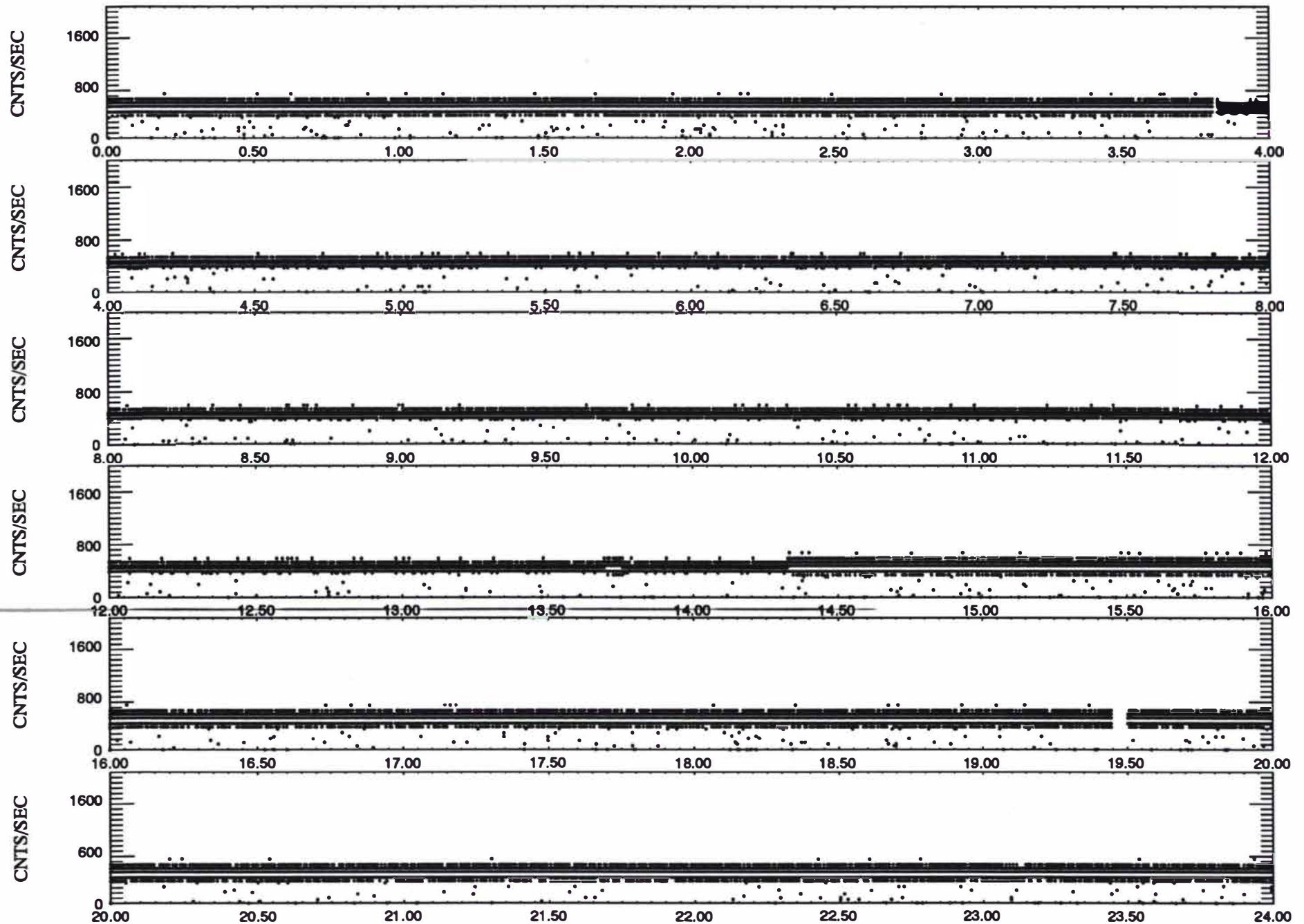
Background not subtracted

Sample average = 10

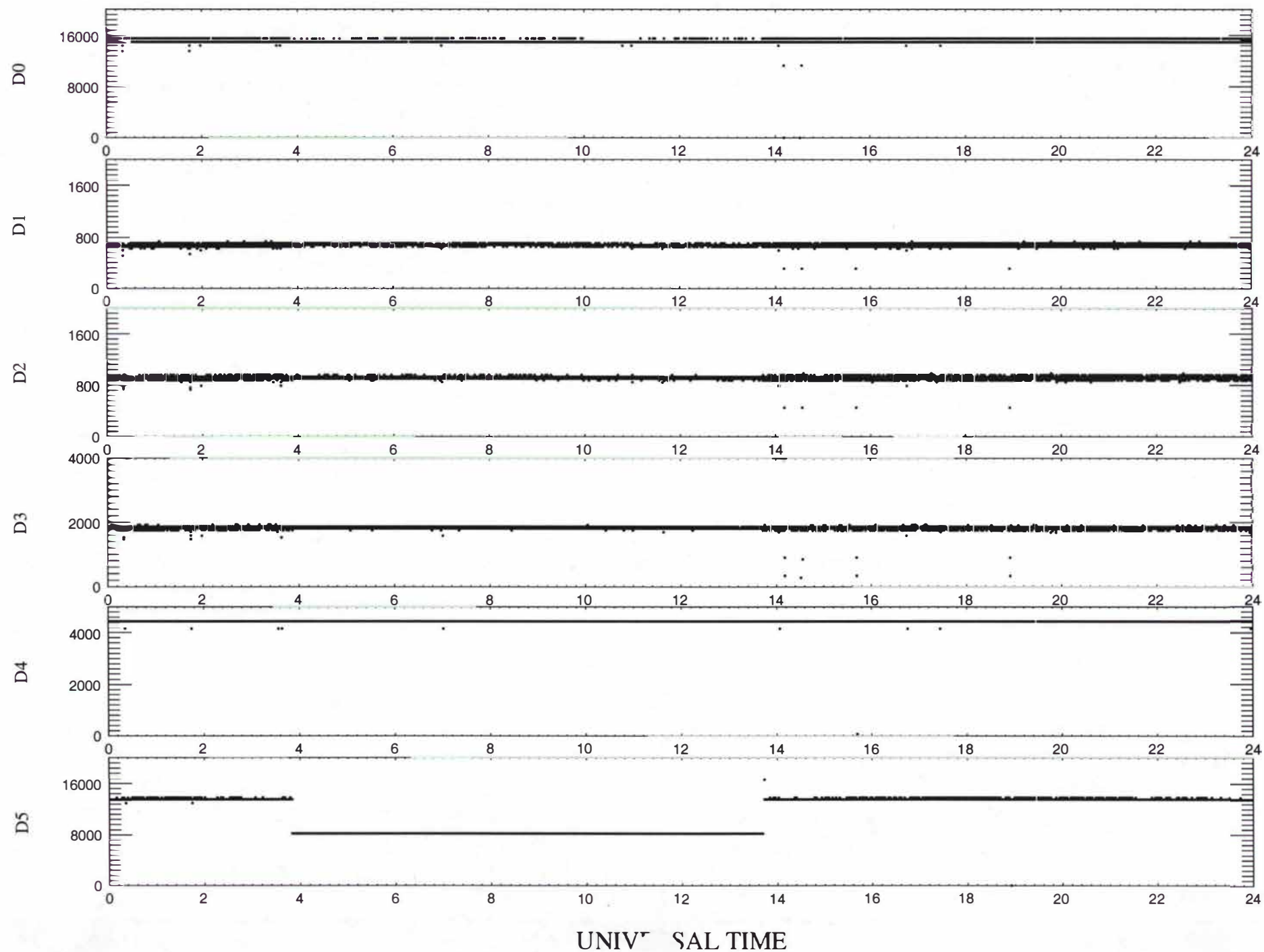
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From PETERSON@fender.msfc.nasa.gov Tue Sep 28 09:08 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Tue, 28 Sep 1999 11:14:21 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7777

TIME: TJD=1448 SECONDS=24996

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

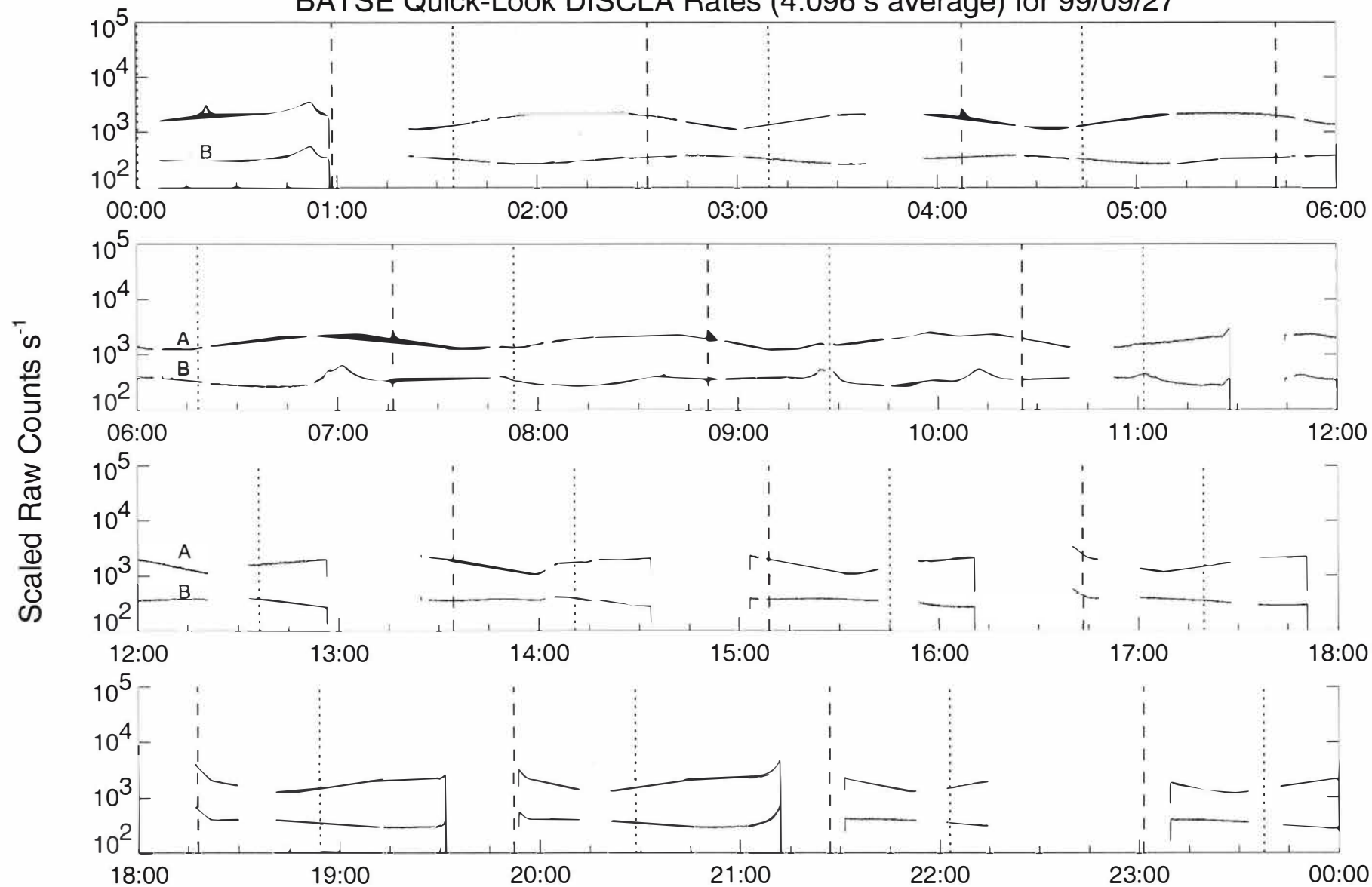
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT AT A DISTANCE, WEST OF AUSTRALIA.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/27

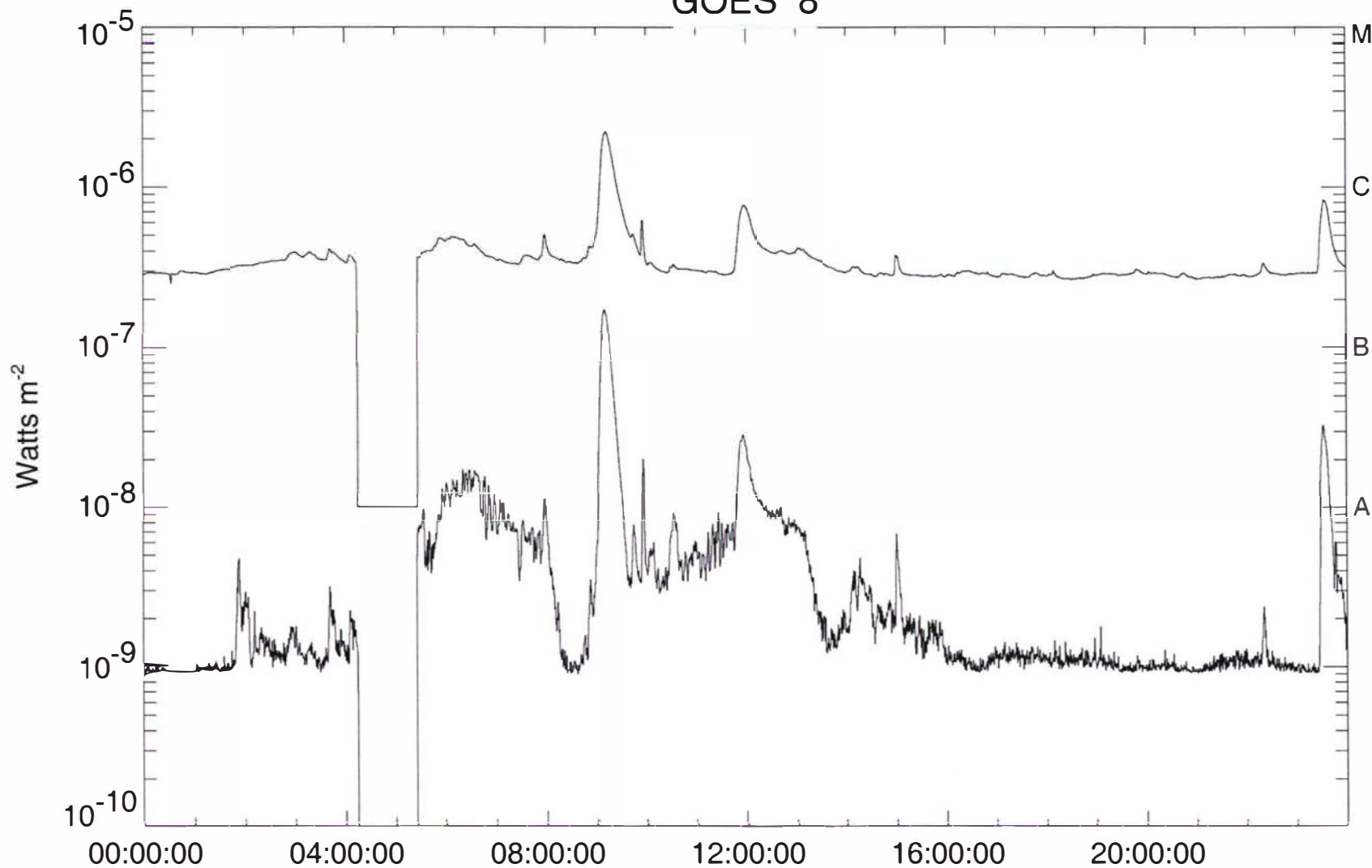


Current Time: 99/10/18, 2255 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/27, 0000:00

Plot created: 99/10/18, 2254

Channel

1 (1.0 - 8.0 Angstroms)

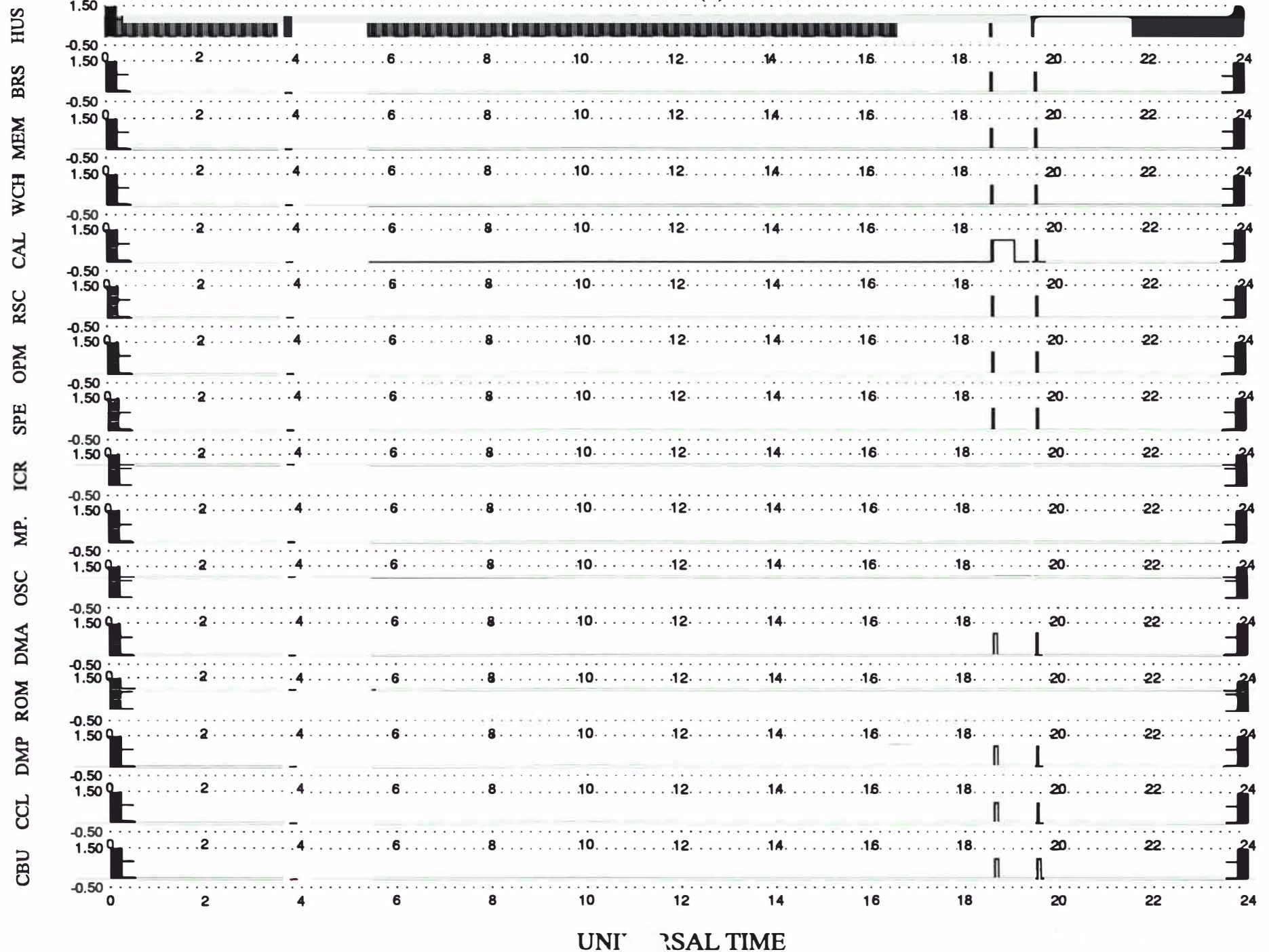
Background not subtracted

2 (0.5 - 4.0 Angstroms)

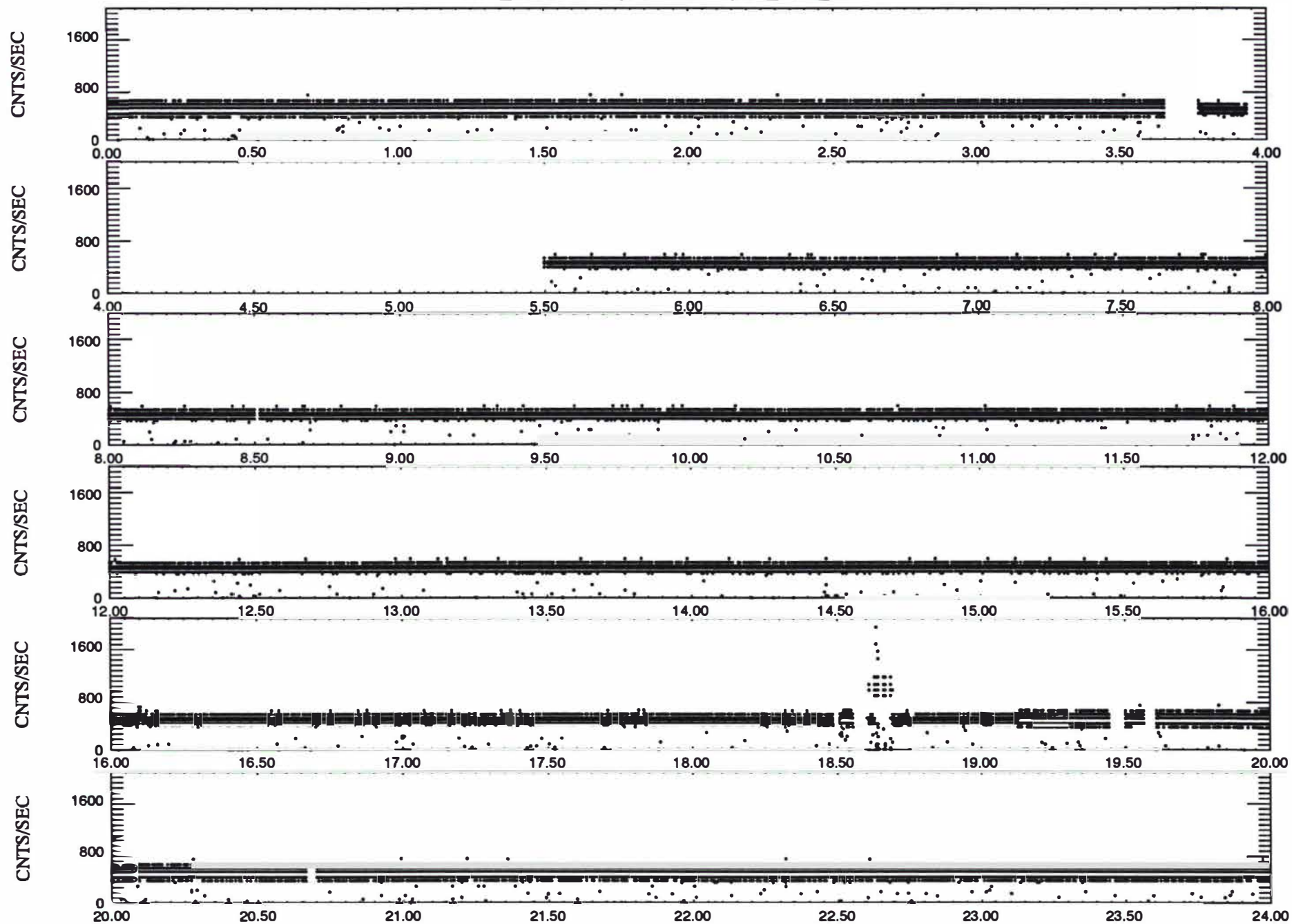
Background not subtracted

Sample average = 10

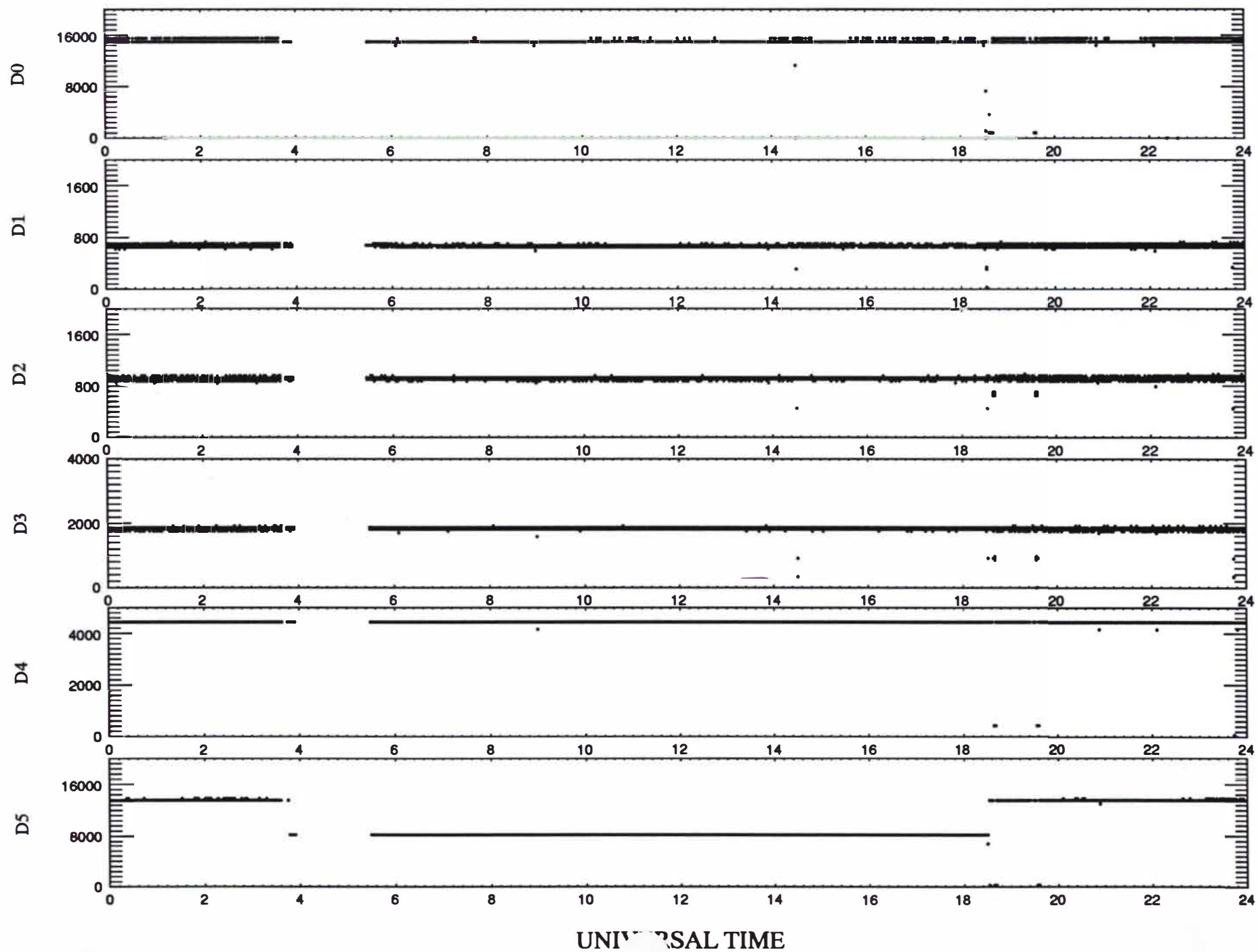
NO BURST (7)



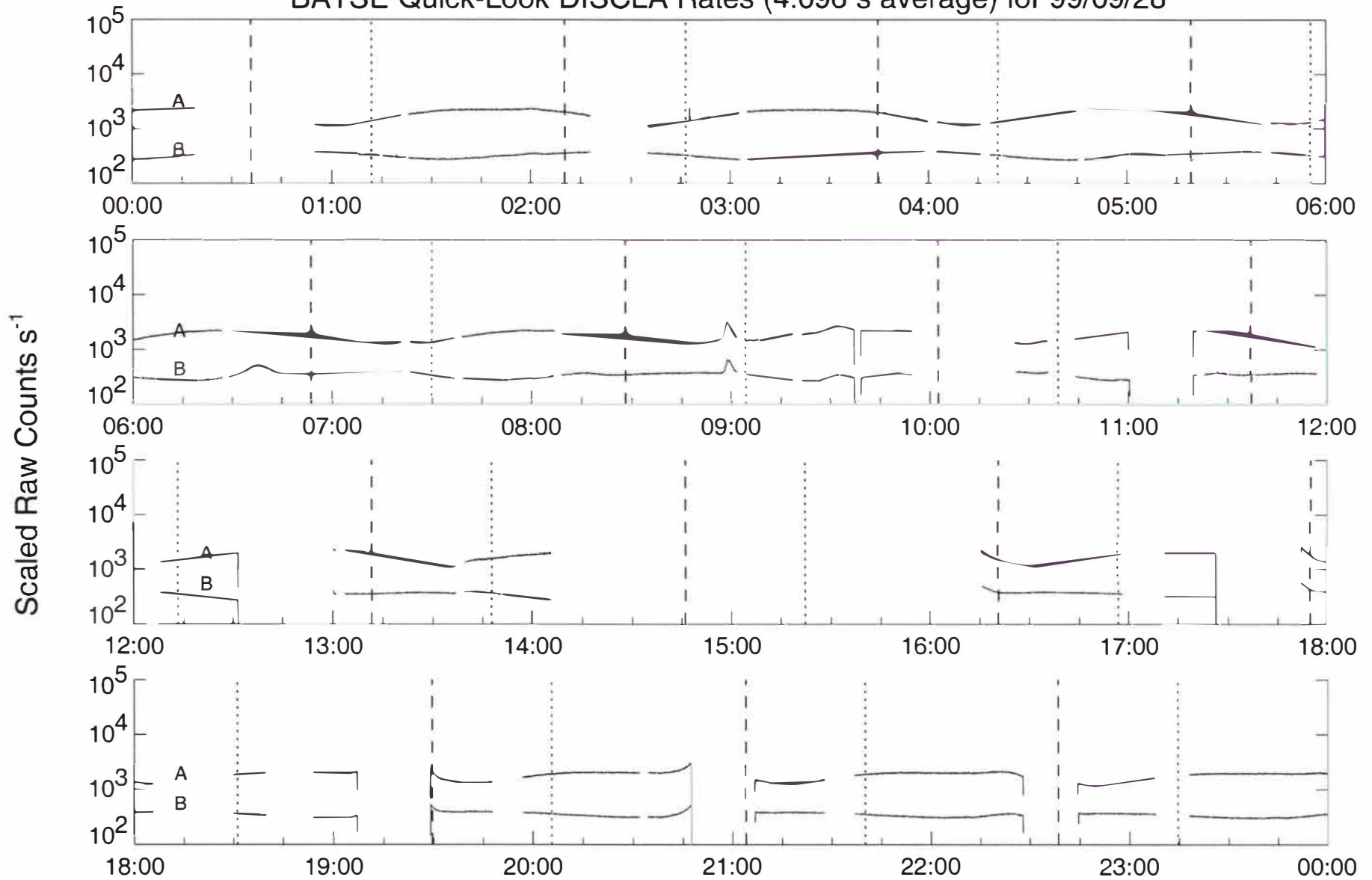
CALIBRATION DATA INCLUDED



UNIVERSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/28

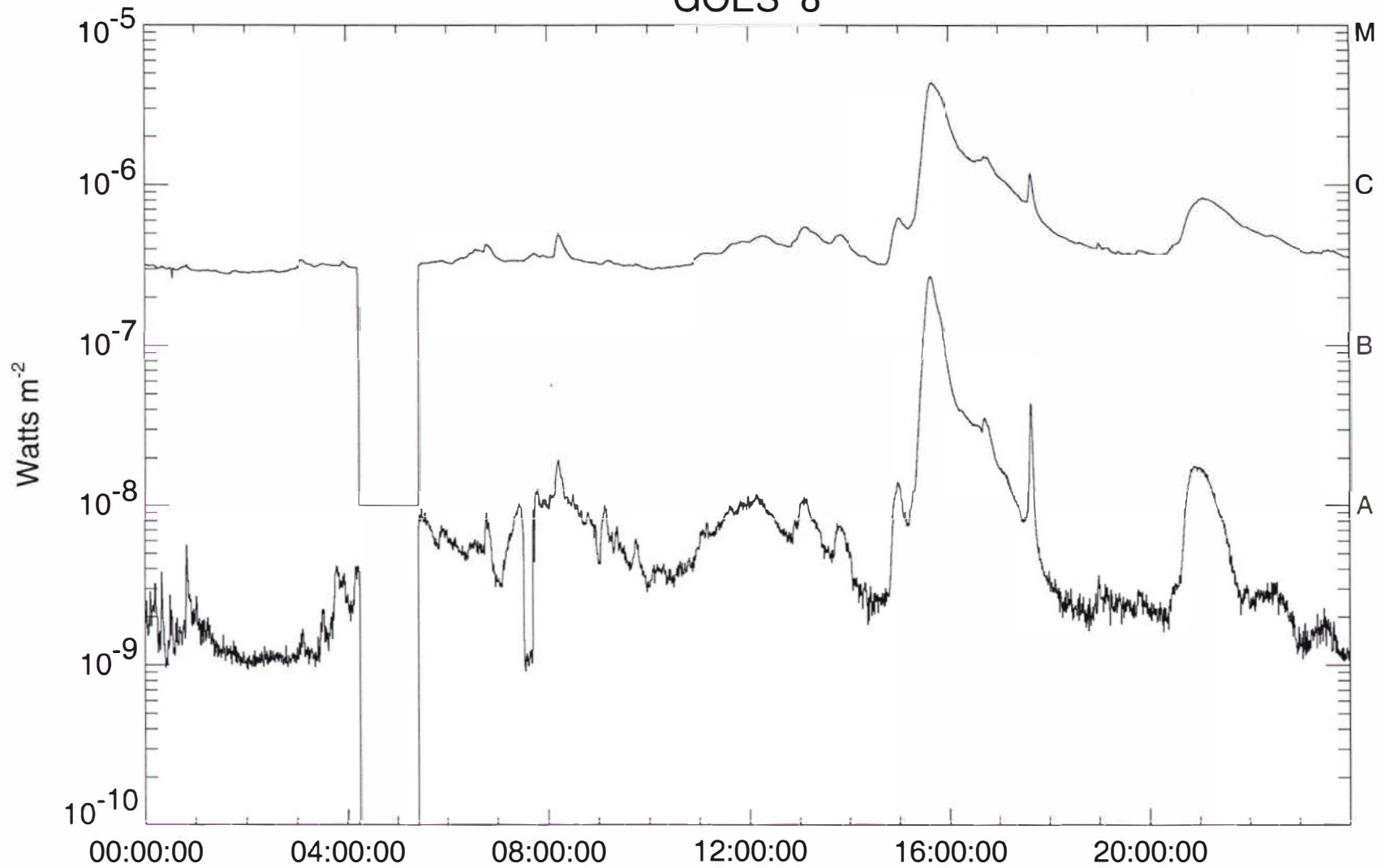


Current Time: 99/10/18, 2259 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/28, 0000:00

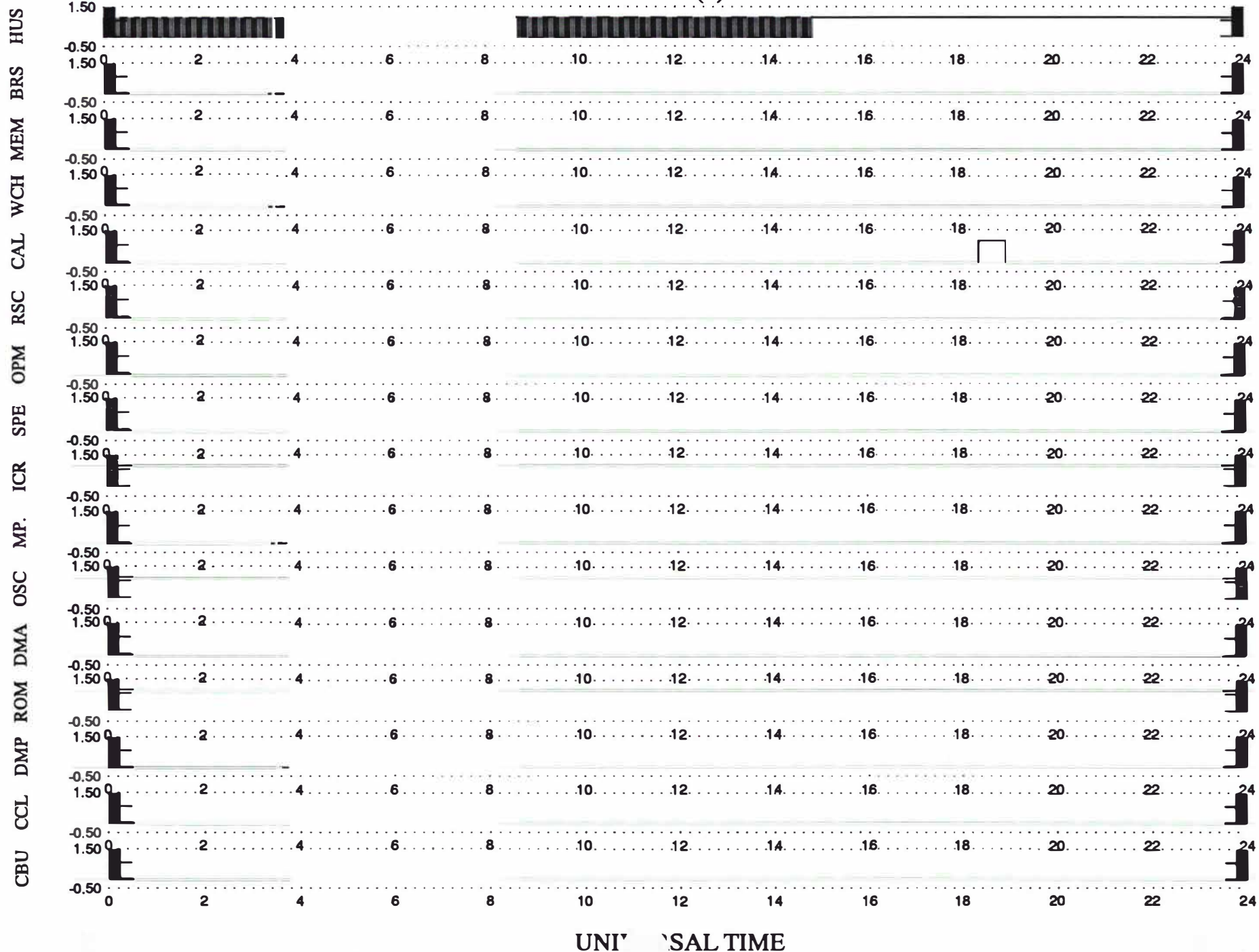
Plot created: 99/10/18, 2258

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

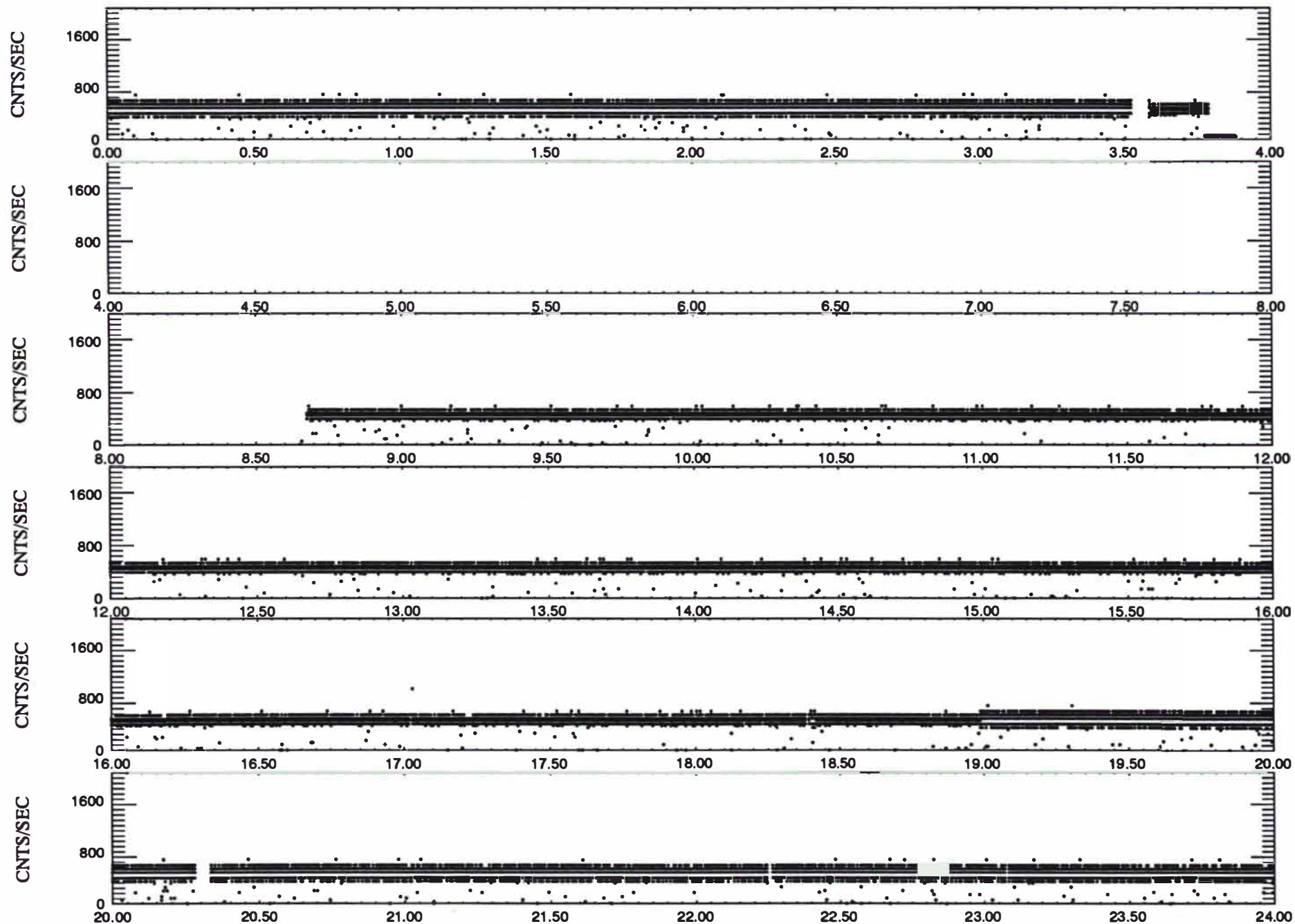
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

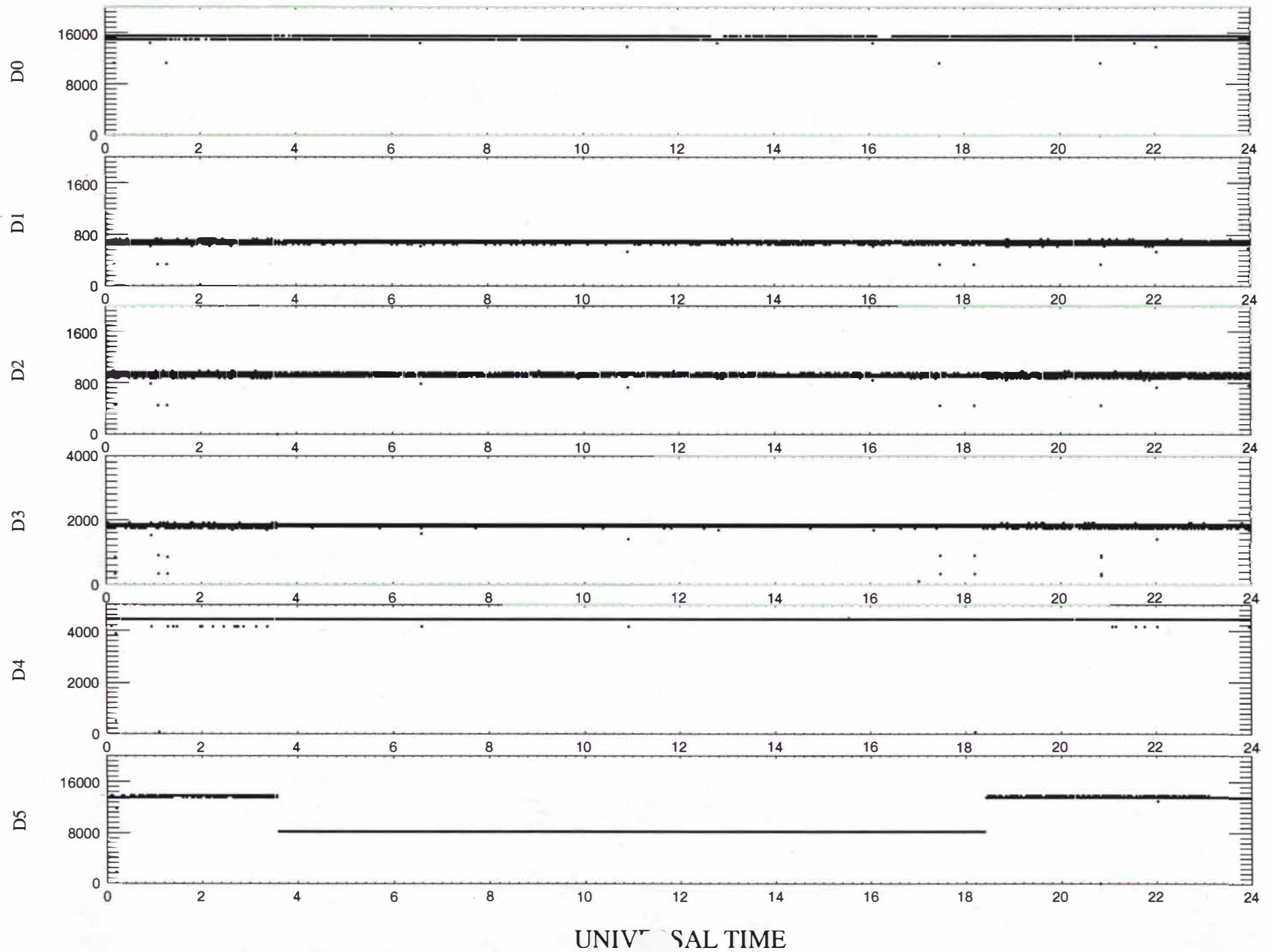
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From PETERSON@fender.msfc.nasa.gov Fri Oct 8 08:47 PDT 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Fri, 8 Oct 1999 10:48:28 -0500 (CDT)

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

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7778

TIME: TJD=1450 SECONDS=22070

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

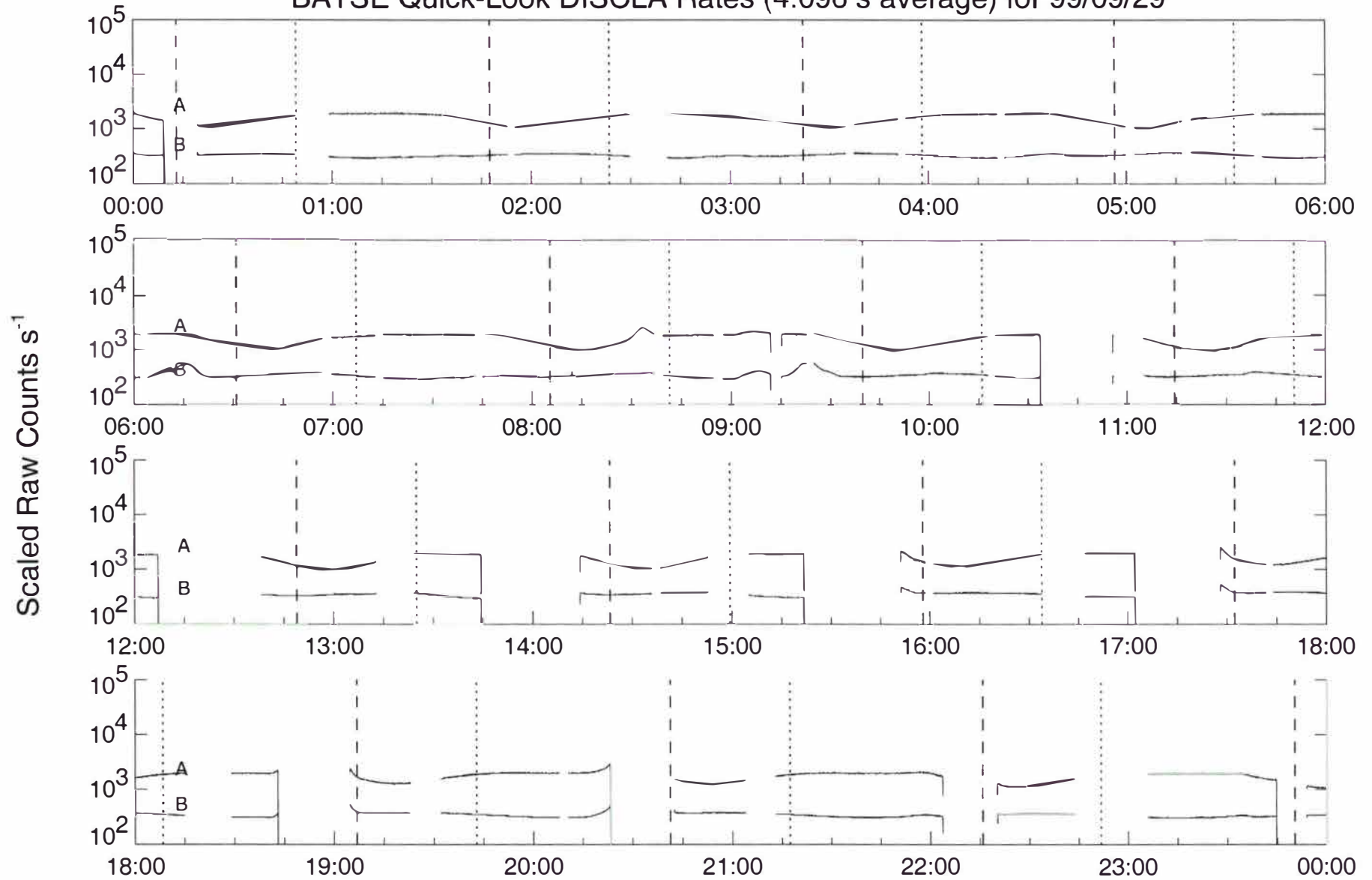
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/29

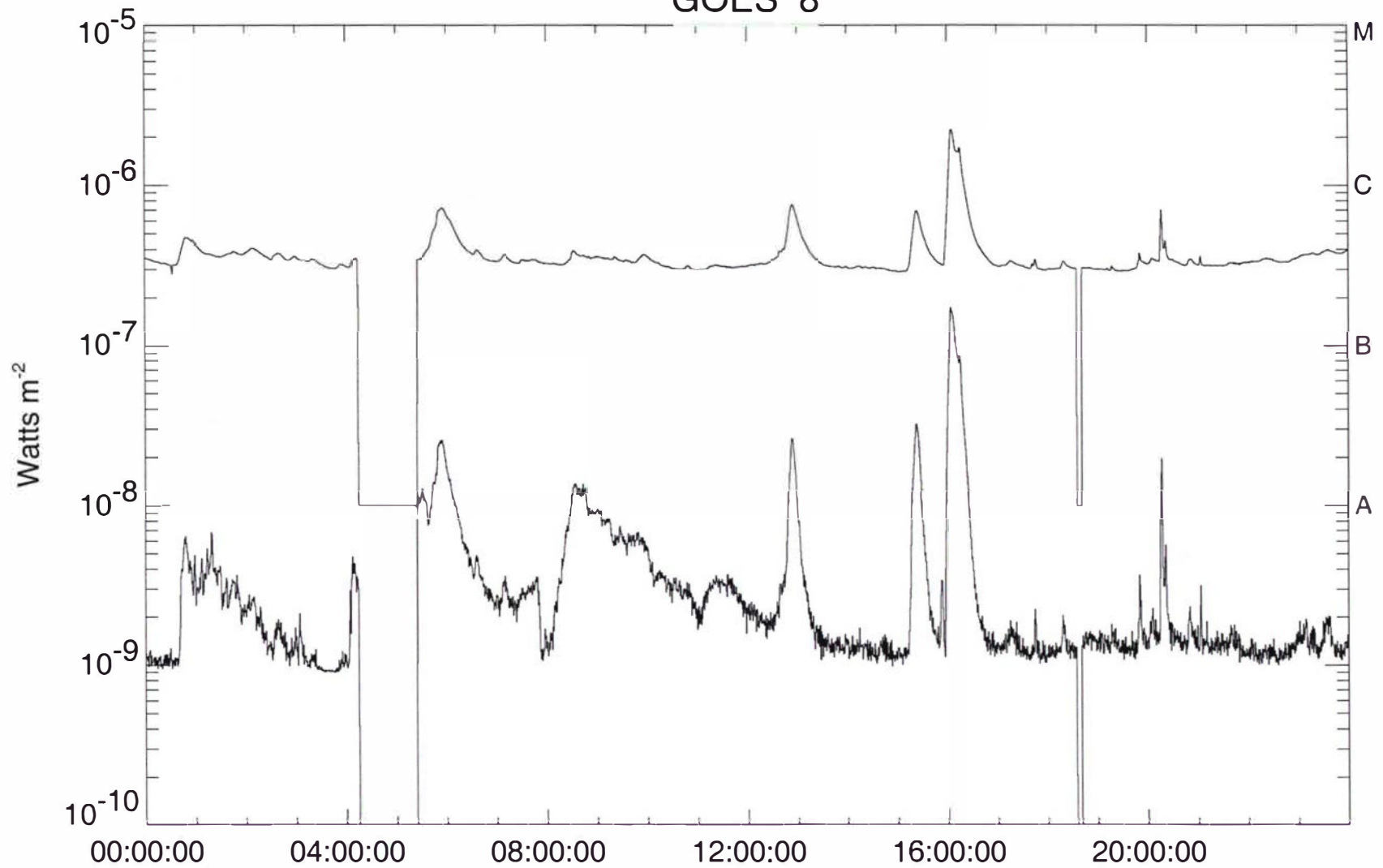


Current Time: 99/10/18, 2303 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/09/29, 0000:00

Plot created: 99/10/18, 2302

Channel

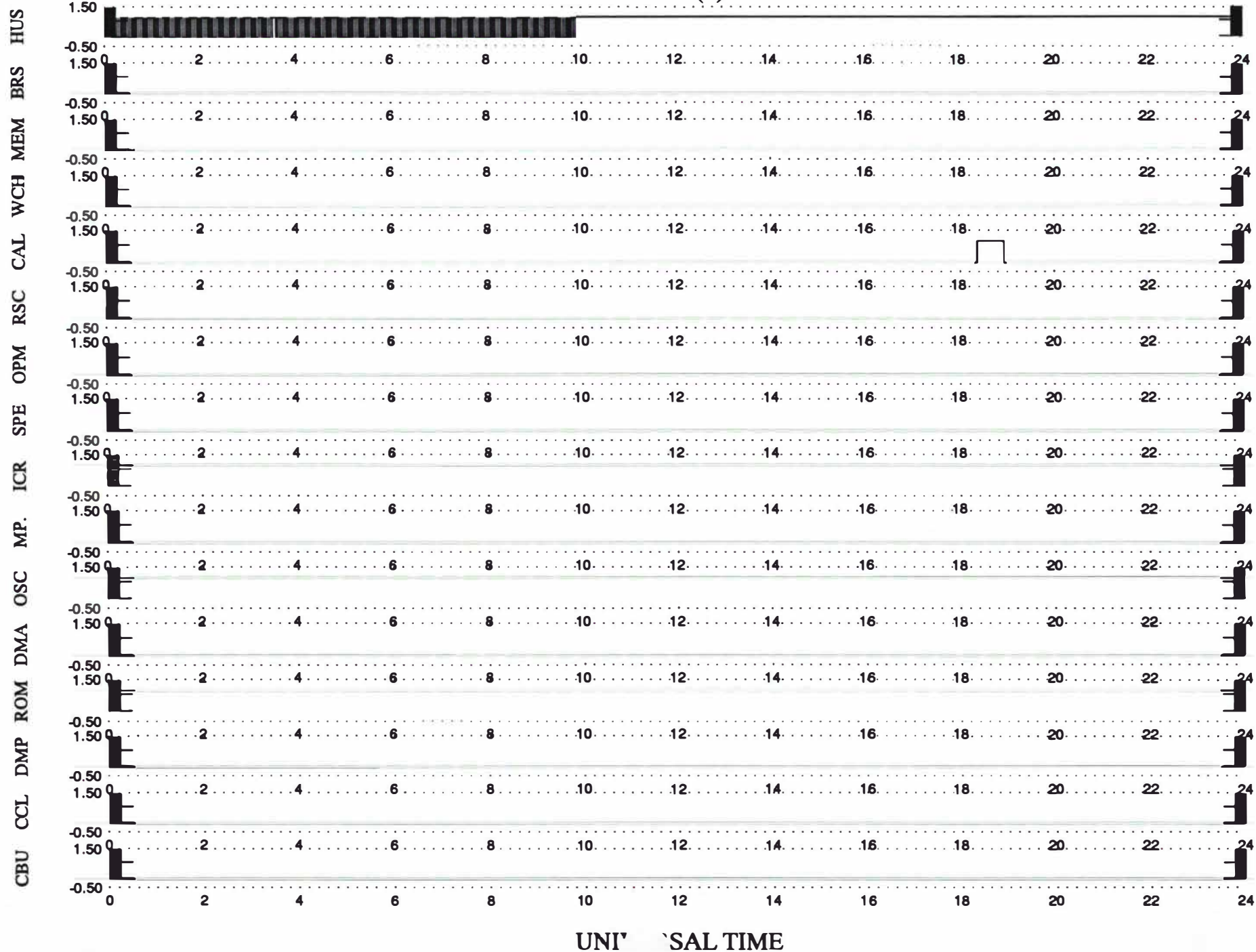
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted

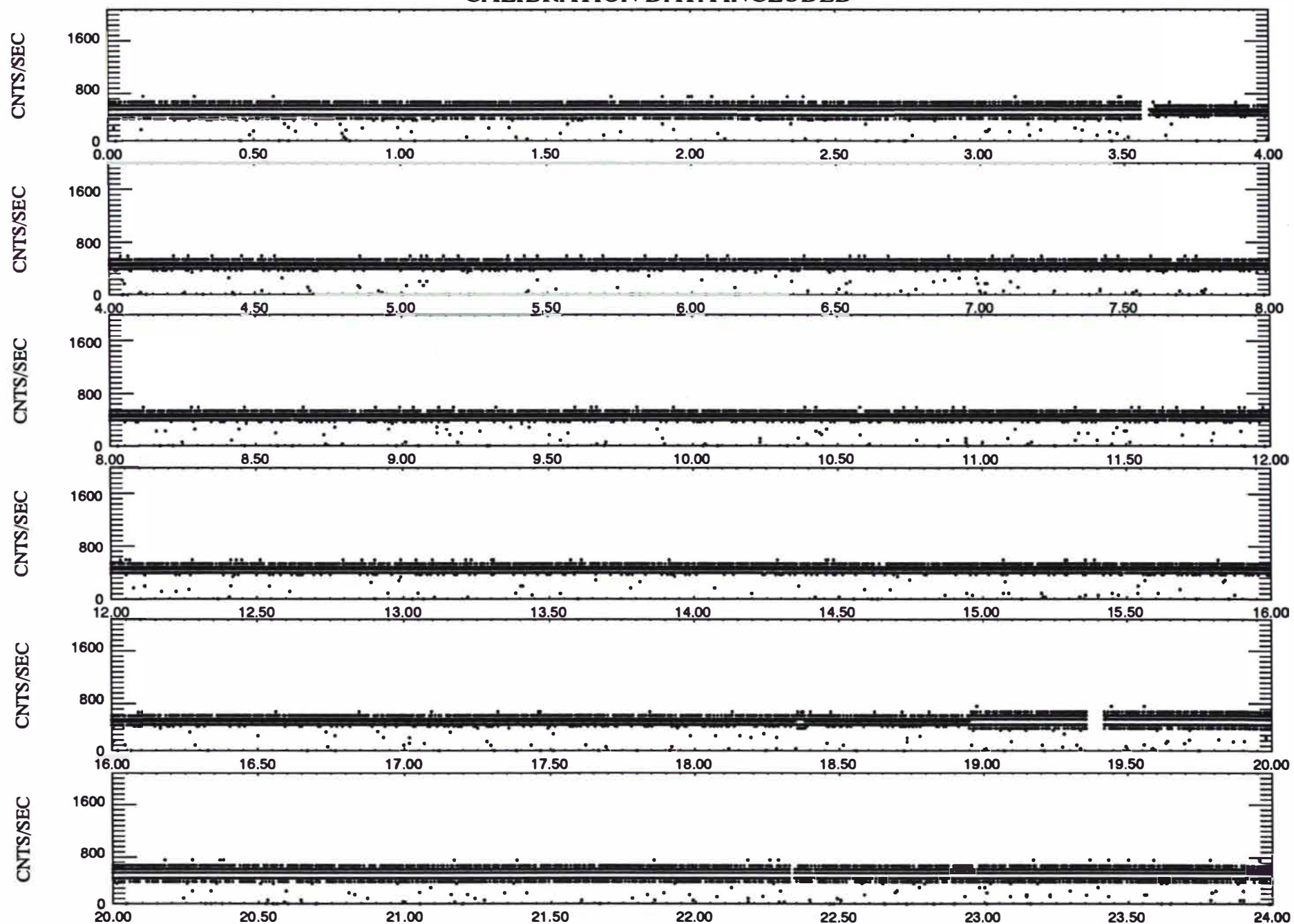
Background not subtracted

Sample average = 10

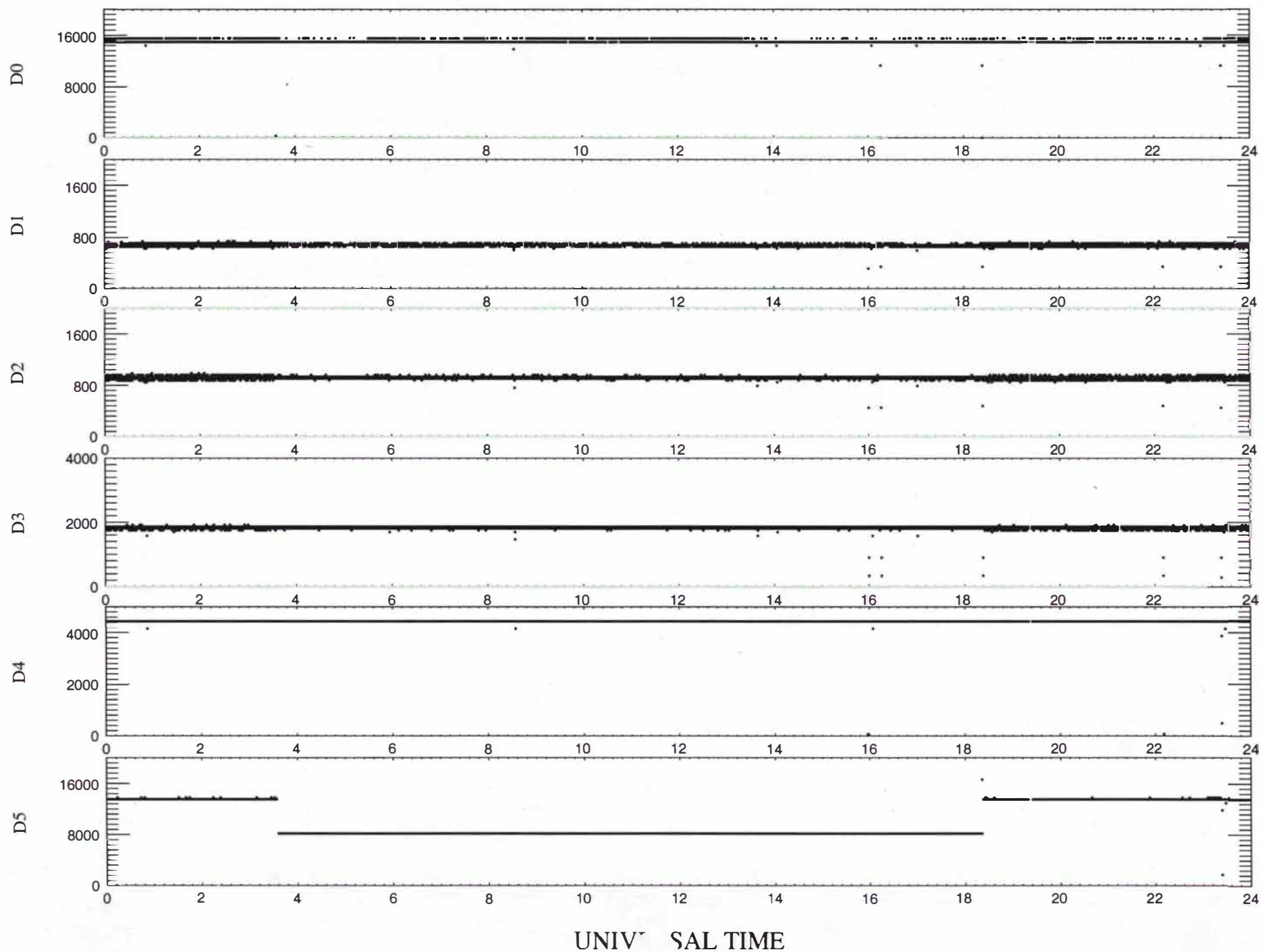
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



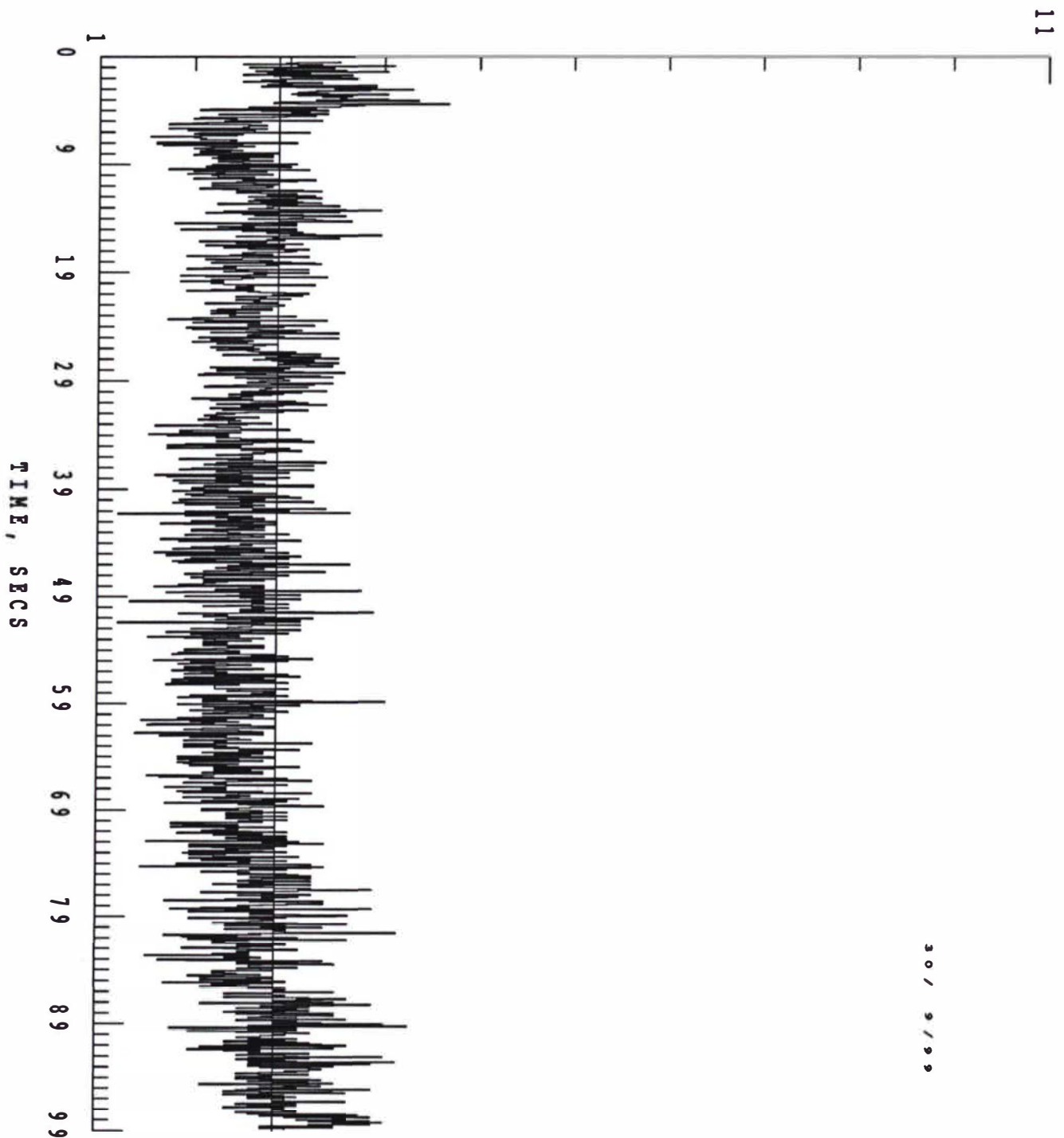
KONUS

30/09/99

9932.377

50 - 200 keV

COUNTS/0.064 S



30 / 9 / 99

KONUS2 19990930 09932

ULYSSES RT

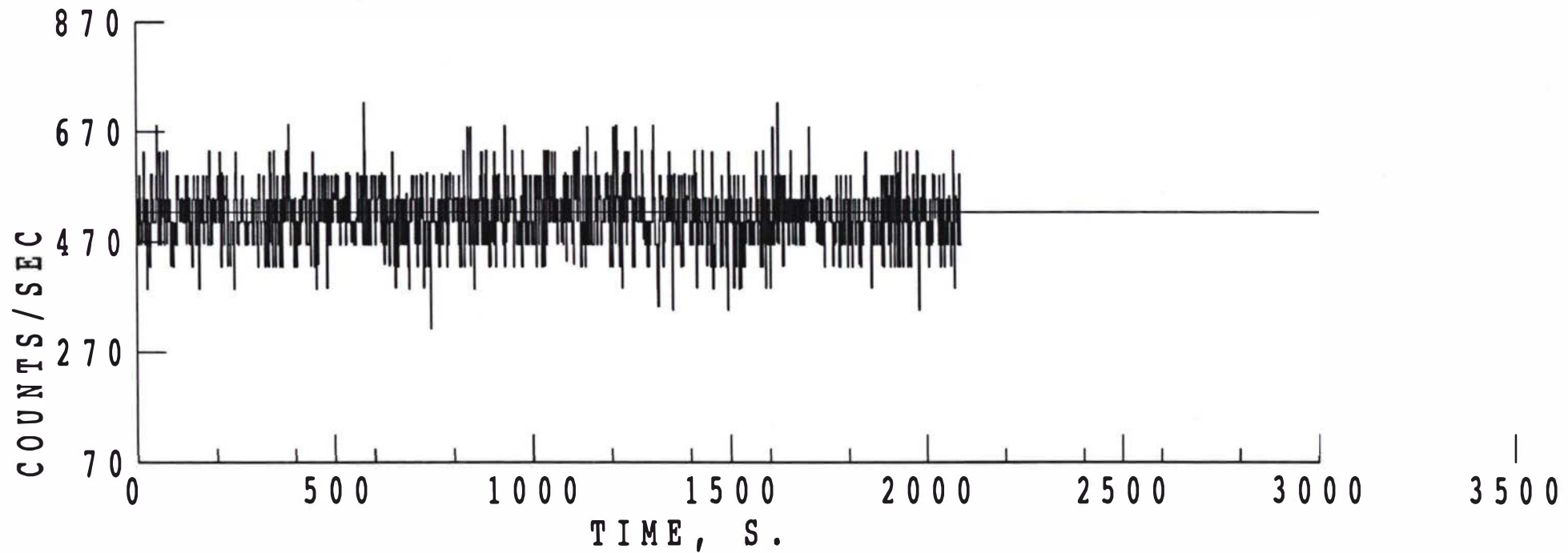
5 / 10 / 99

30 / 9 / 99 7200.230 s

INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Fri Oct 1 12:06 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Fri, 1 Oct 1999 14:07:59 -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.: 7779

TIME: TJD=1451 SECONDS=20534

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT

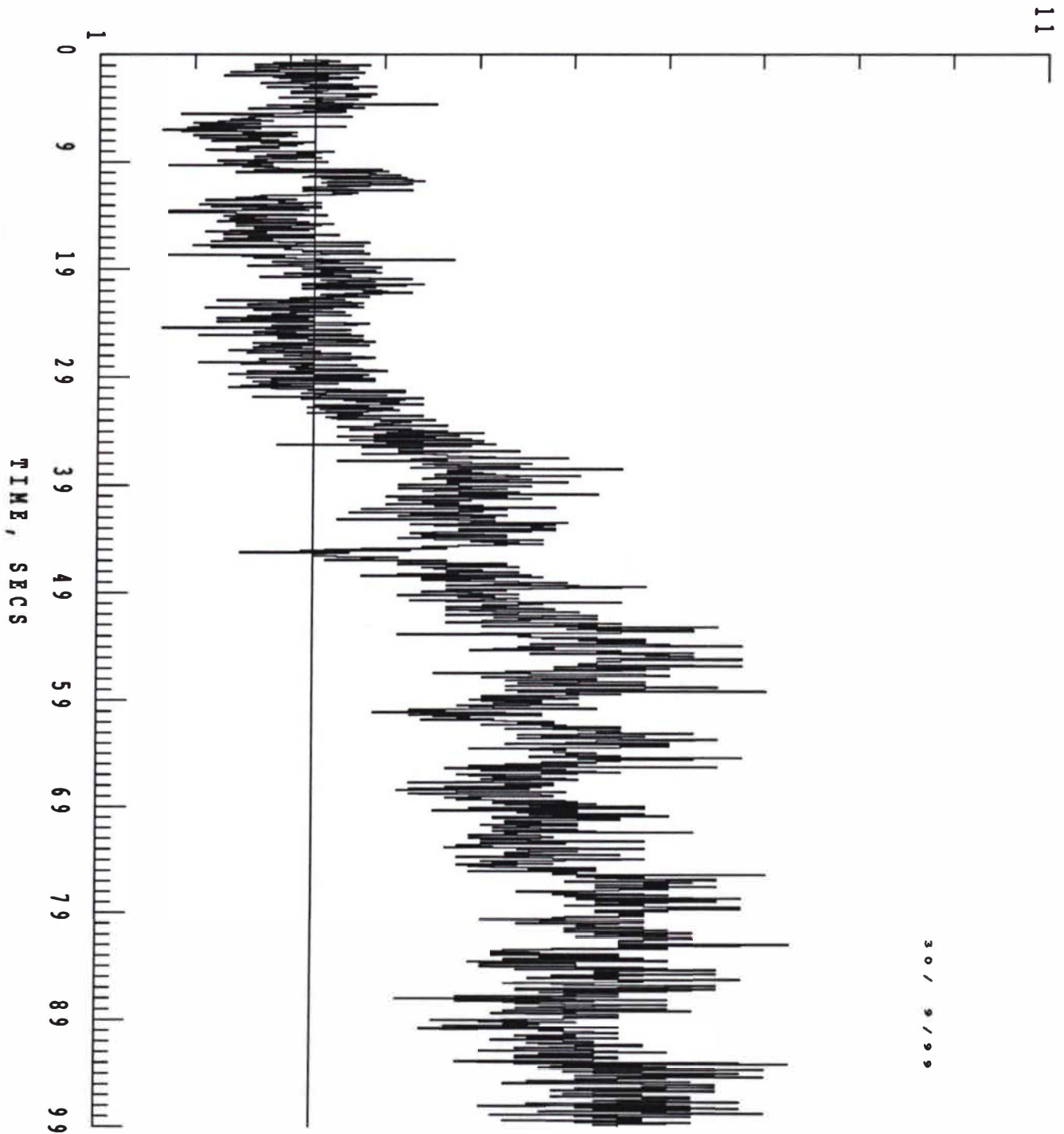
KONUS

30/09/99

37409.076

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990930 37409

ULYSSES RT

5 / 10 / 99

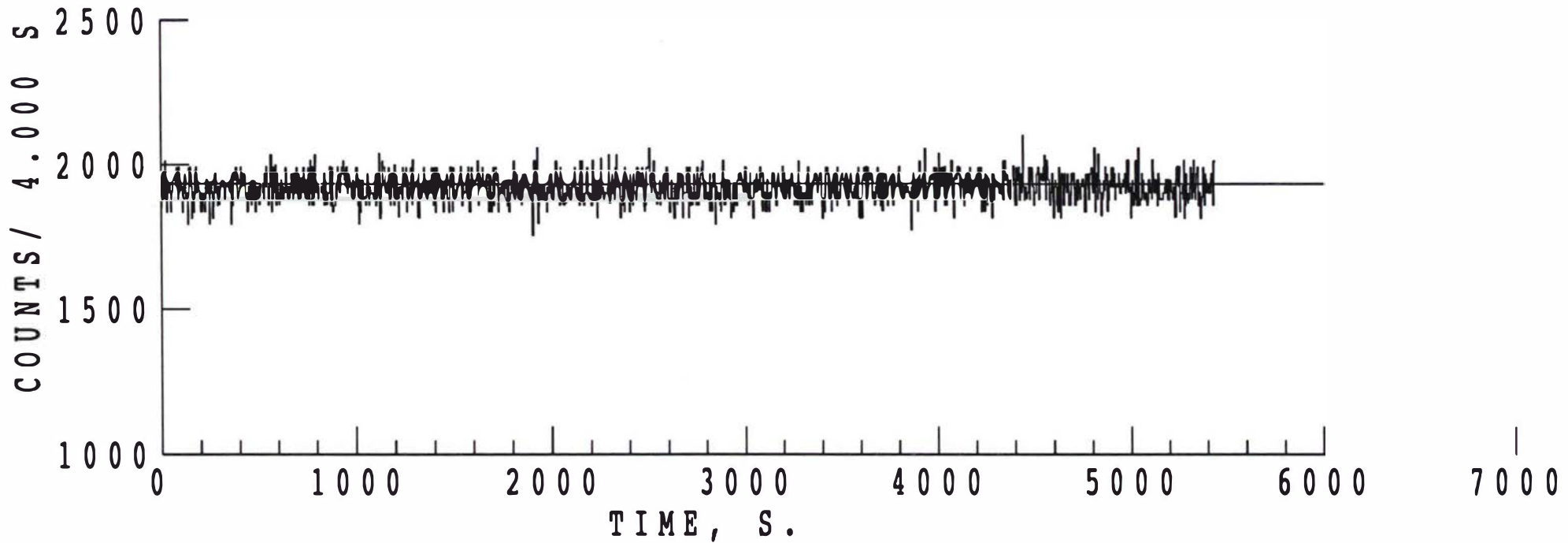
30 / 9 / 99 34704.258 s

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



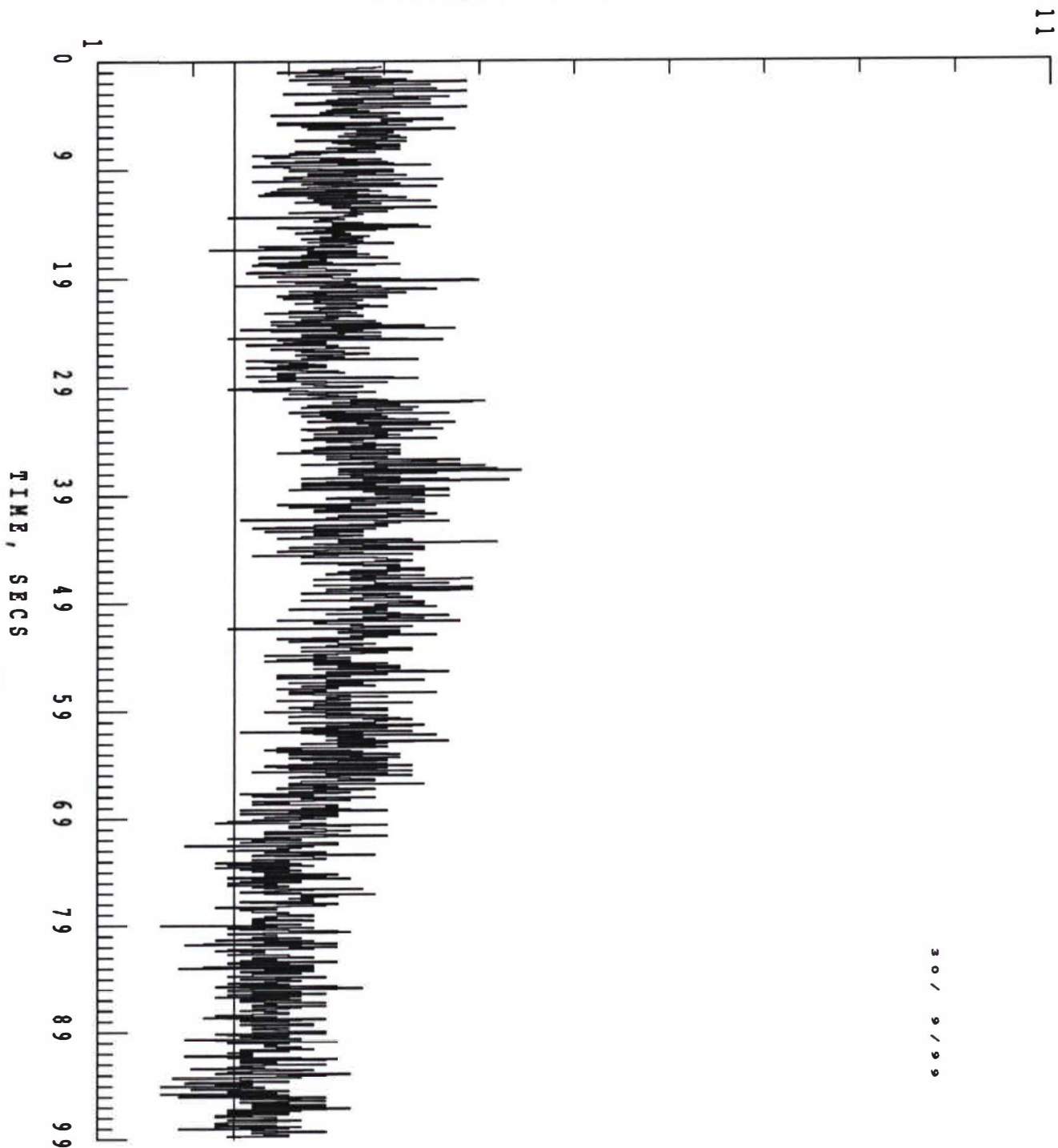
KONUS

30/09/99

41973.073

50 - 200 keV

COUNTS/0.064 S



KONUS1 19990930 41973

ULYSSES RT

5 / 10 / 99

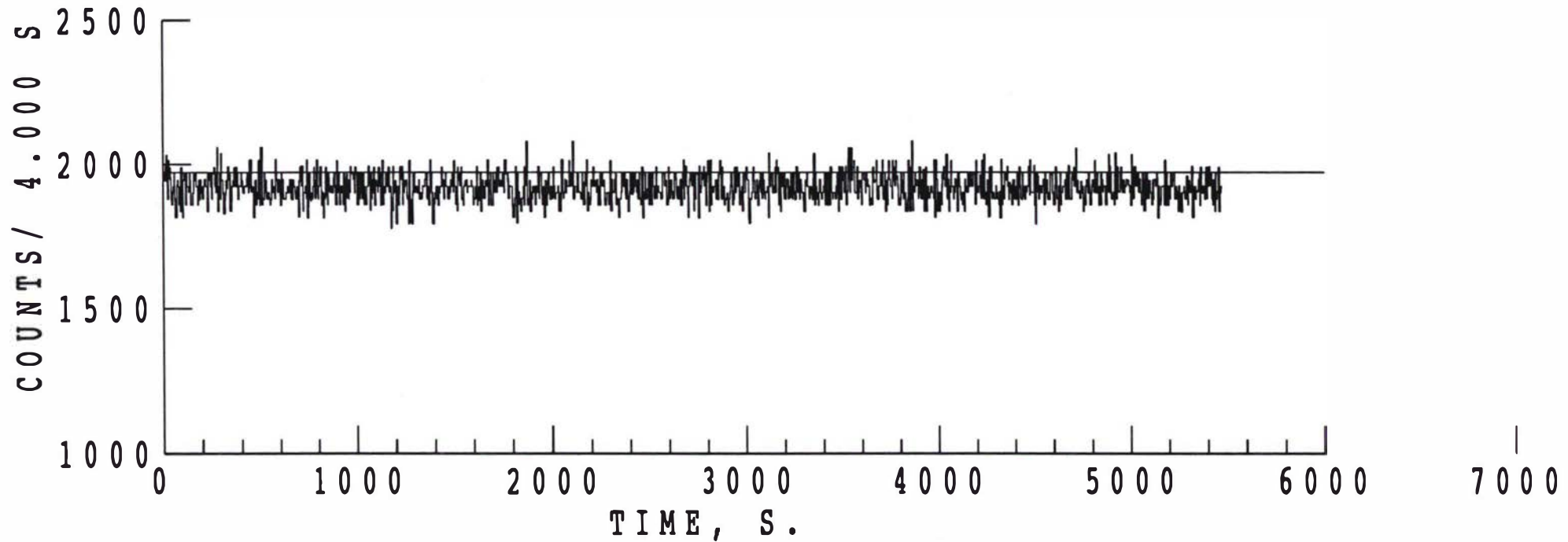
30 / 9 / 99 39240.305 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

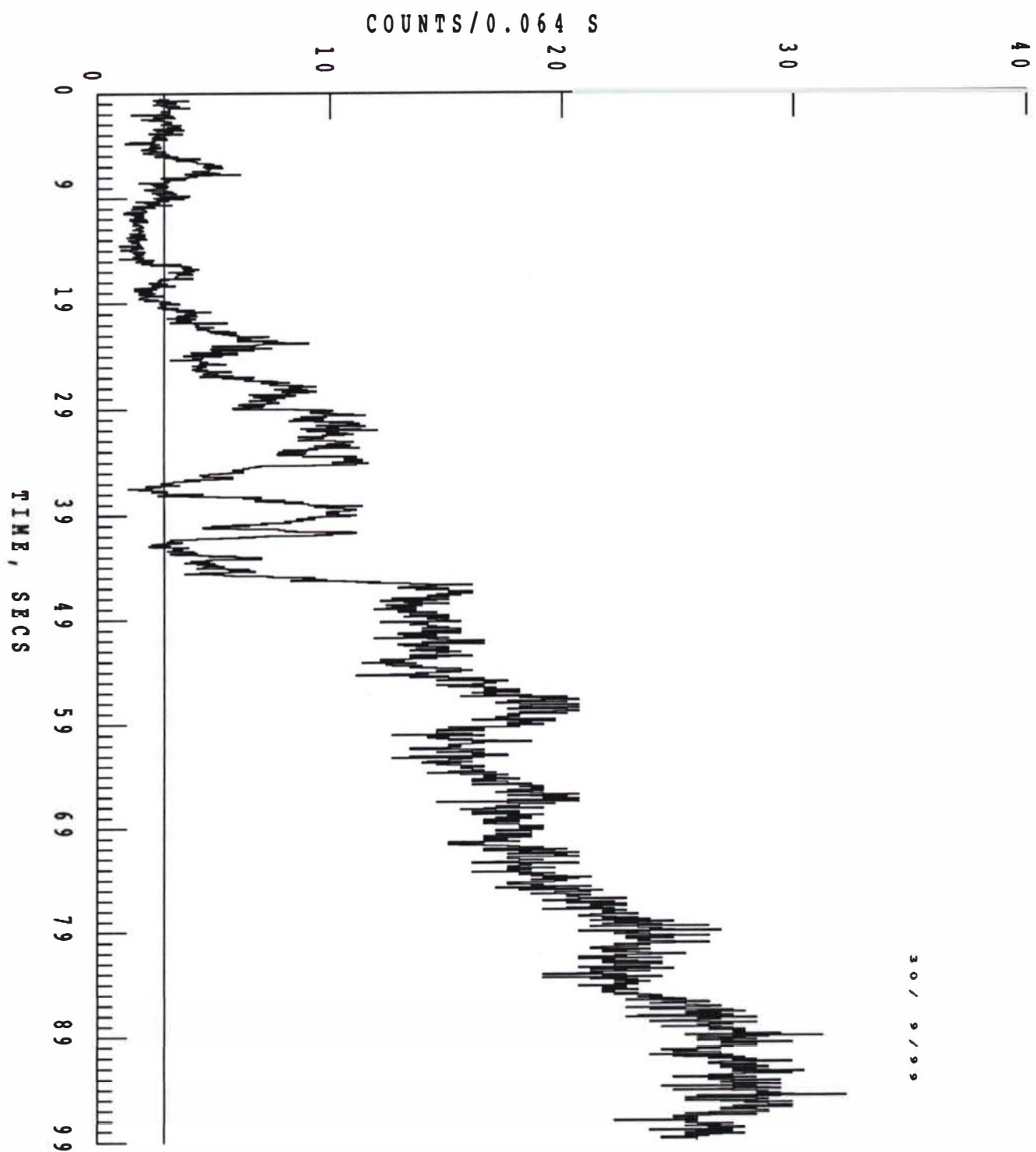


KONUS

30/09/99

53337.214

50 - 200 keV



KONUS2 19990930 53337

ULYSSES RT

5 / 10 / 99

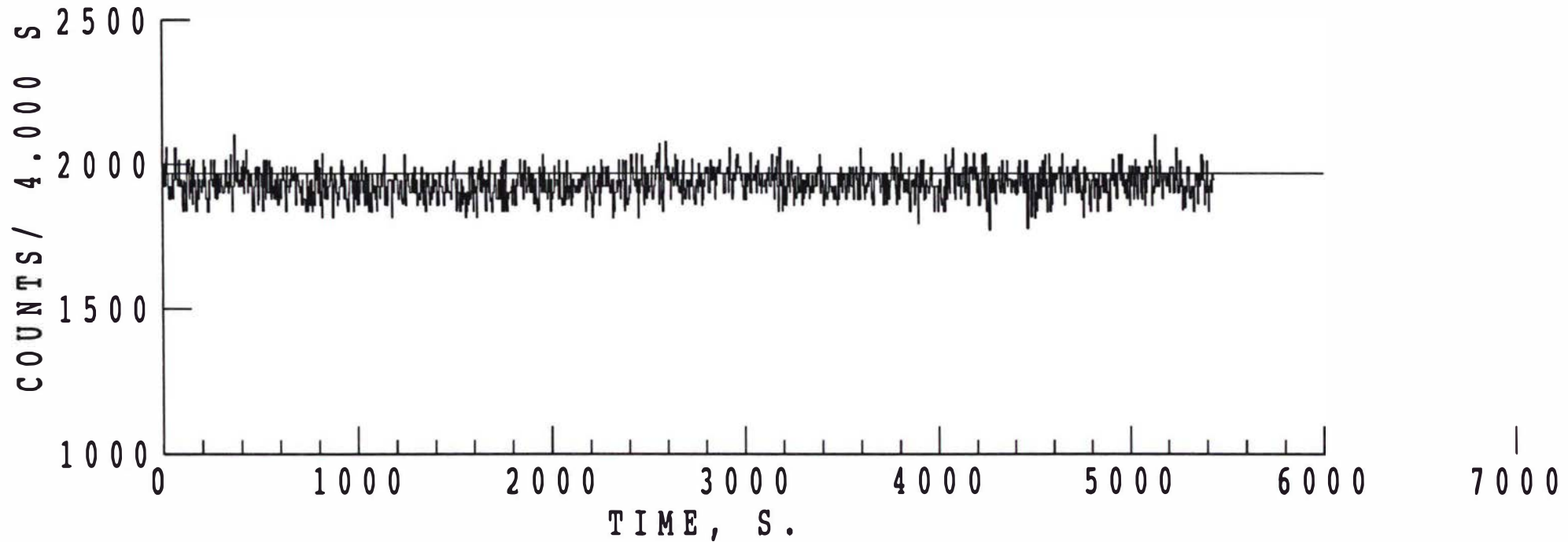
30 / 9 / 99 50616.414 s

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



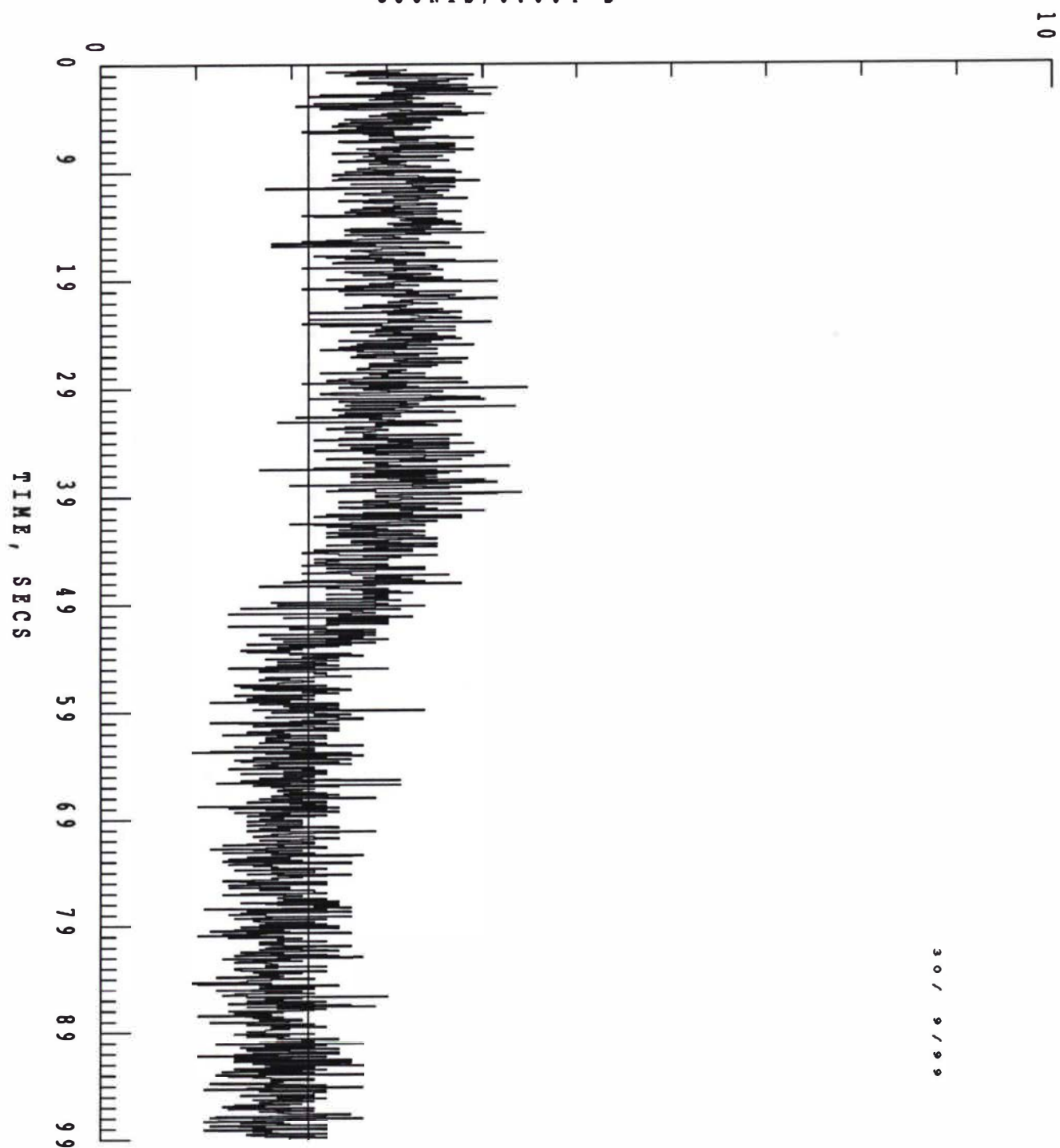
KONUS

30/09/99

58674.555

50 - 200 keV

COUNTS/0.064 S



30 / 9 / 99

KONUS2 19990930 58674

ULYSSES RT

5 / 10 / 99

30 / 9 / 99 55944.473 s

0.500 S INTERVALS REGROUPED BY 8

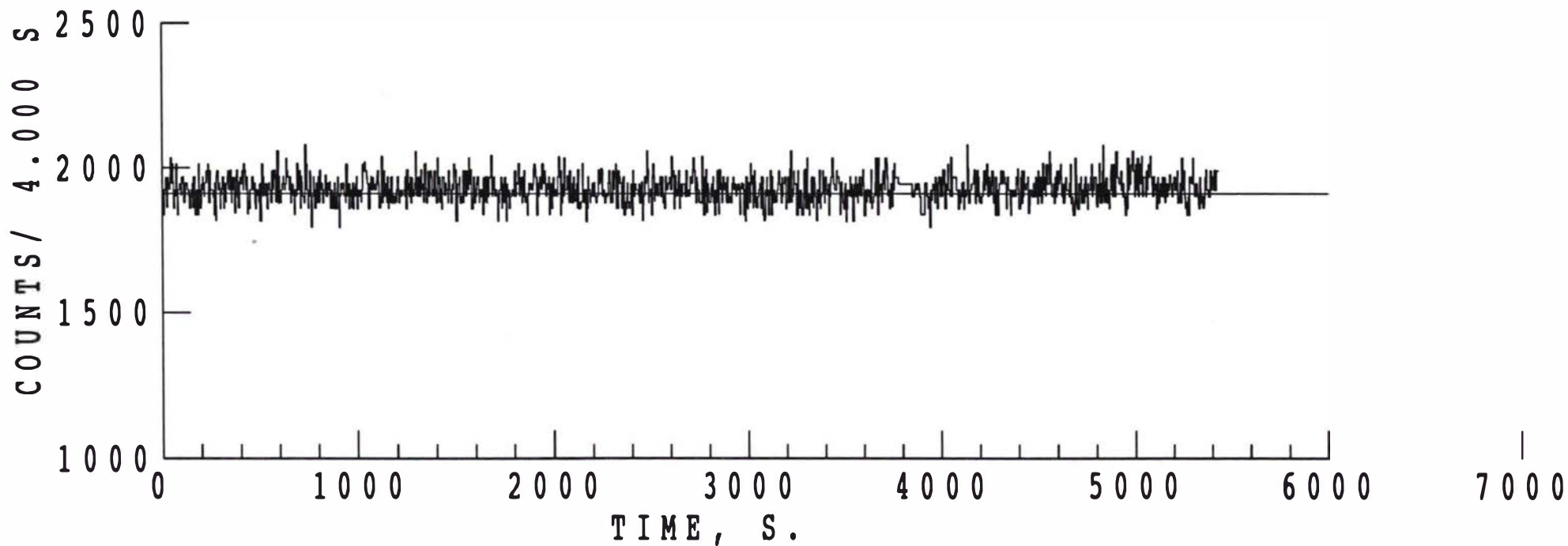
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



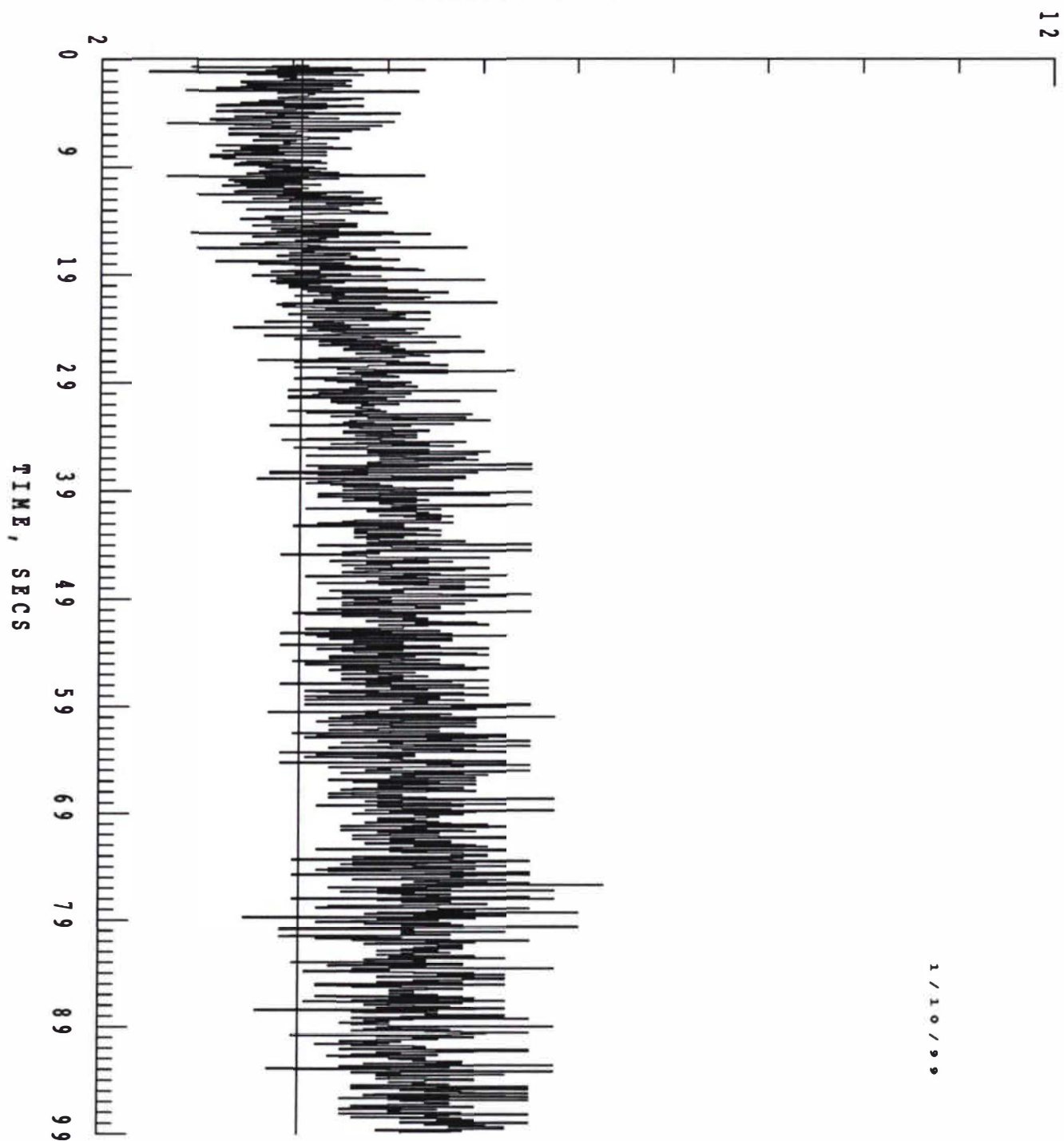
KONUS

30/09/99

63554.131

50 - 200 keV

COUNTS/0.064 S



1 / 10 / 99

KONUS1 19990930 63554

ULYSSES RT

5 / 10 / 99

30 / 9 / 99 60840.020 s

INTERVALS REGROUPED BY 8

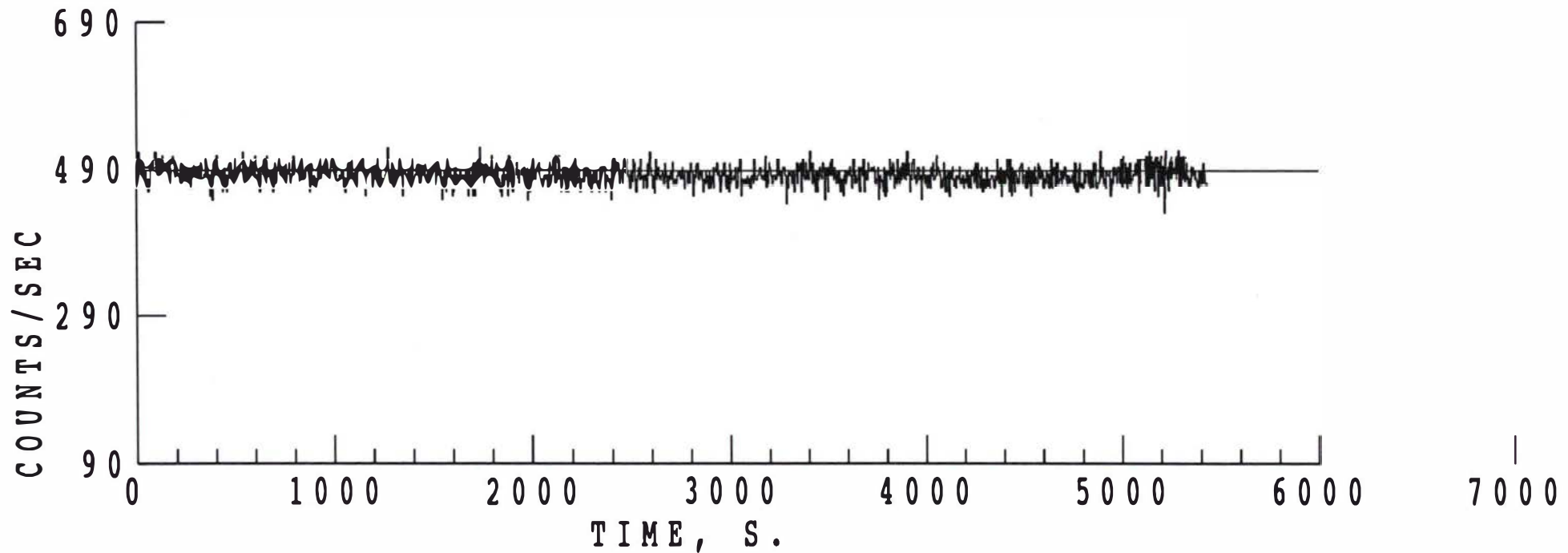
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

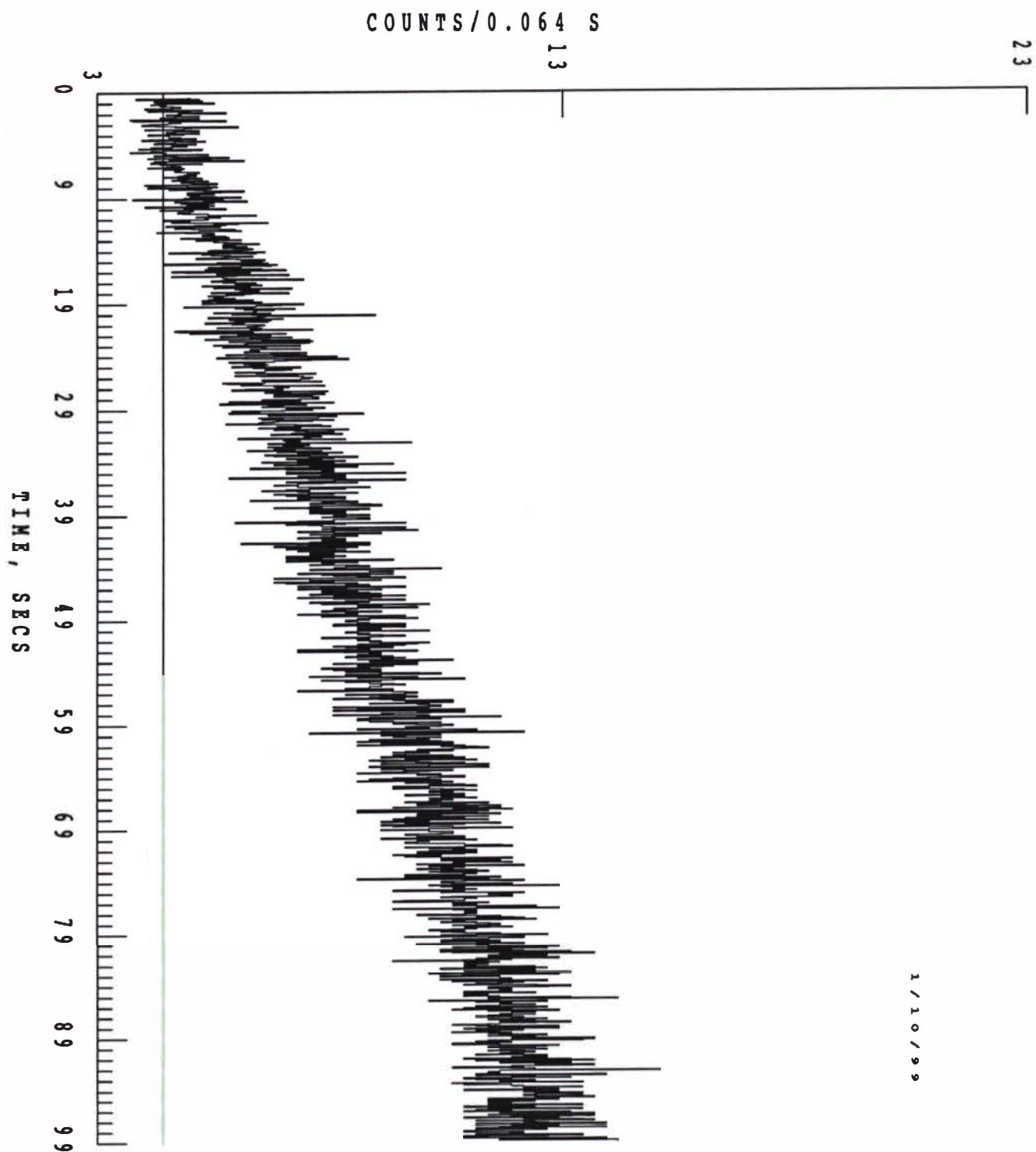


KONUS

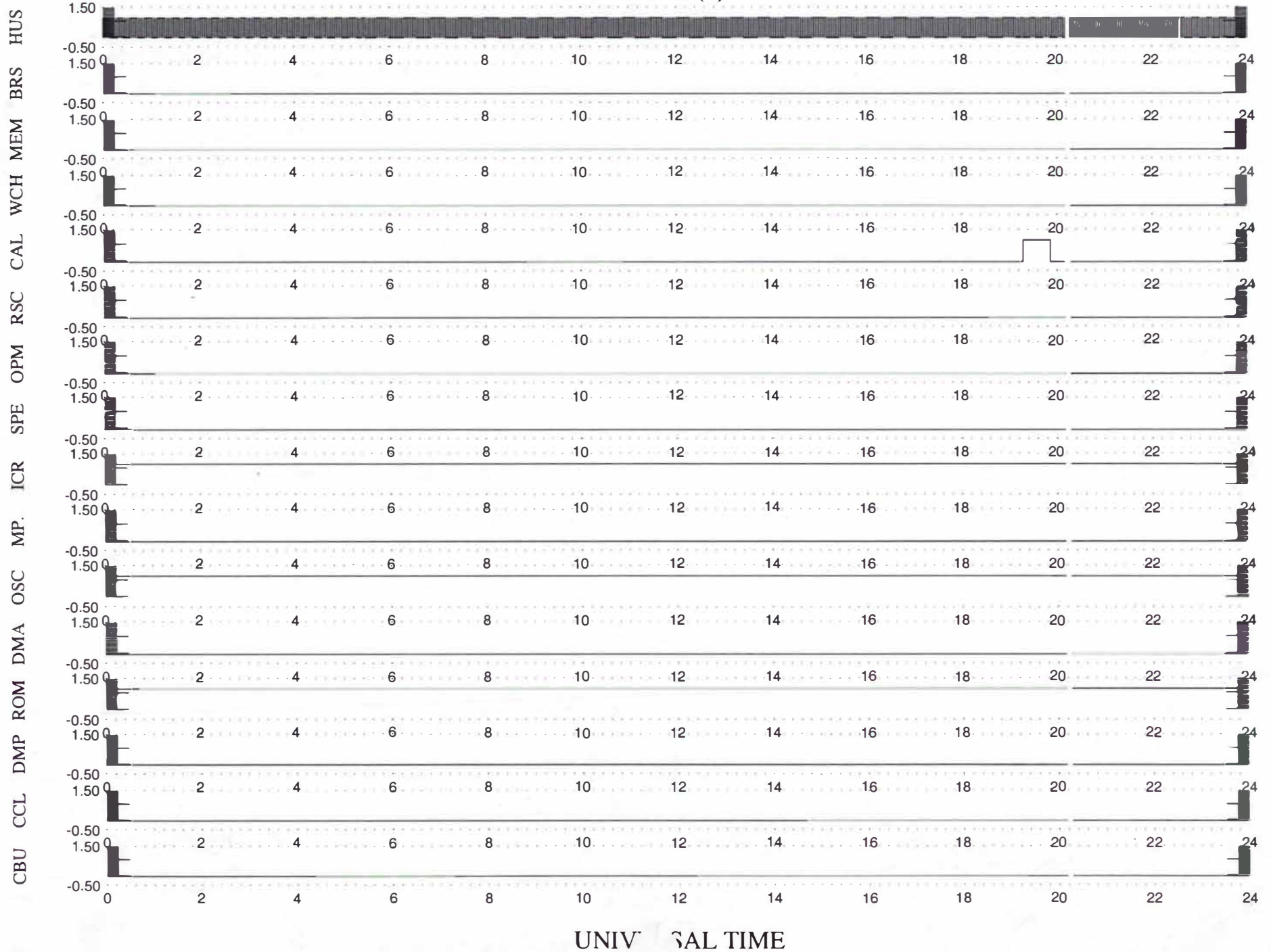
30/09/99

67709.392

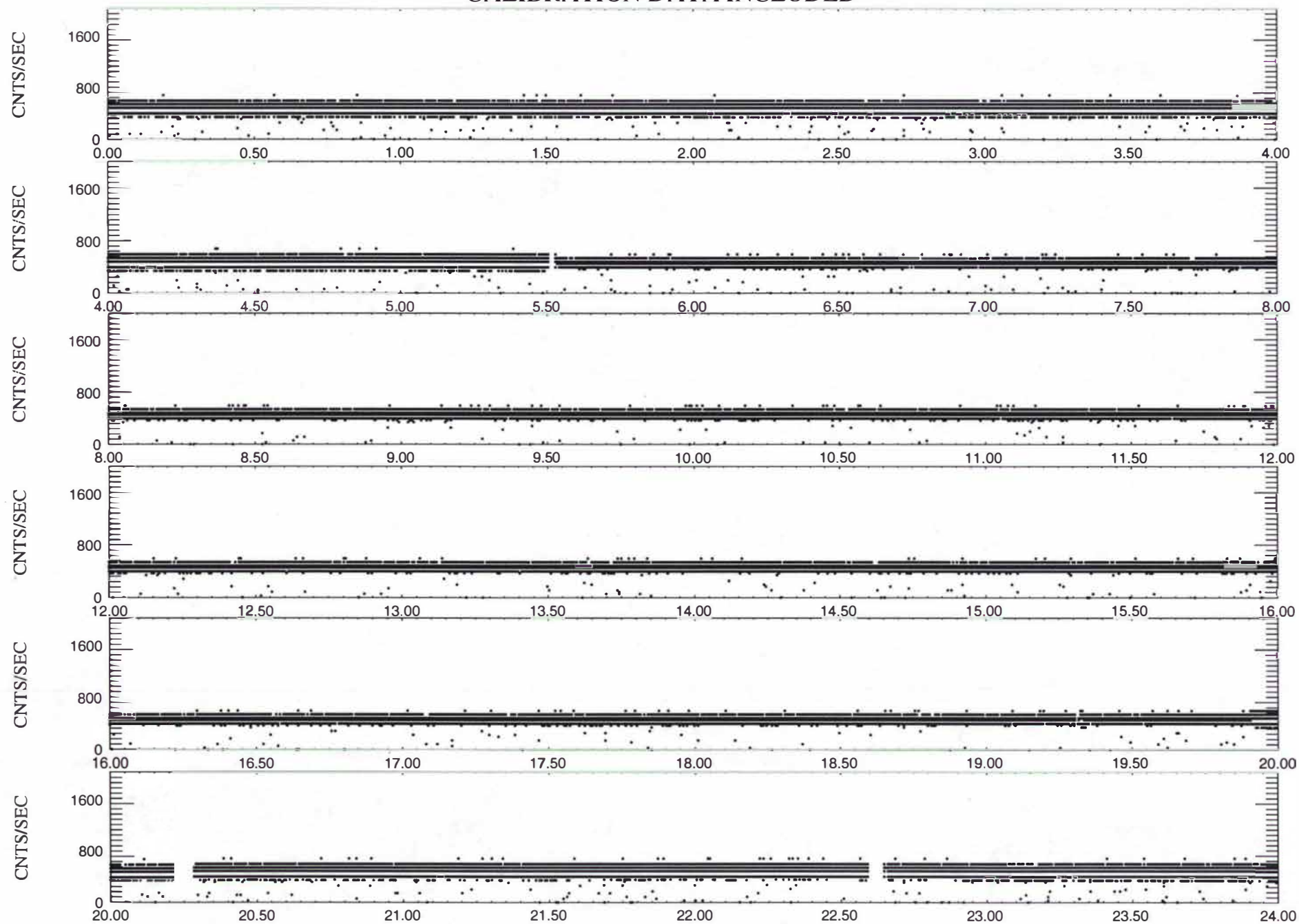
50 - 200 keV



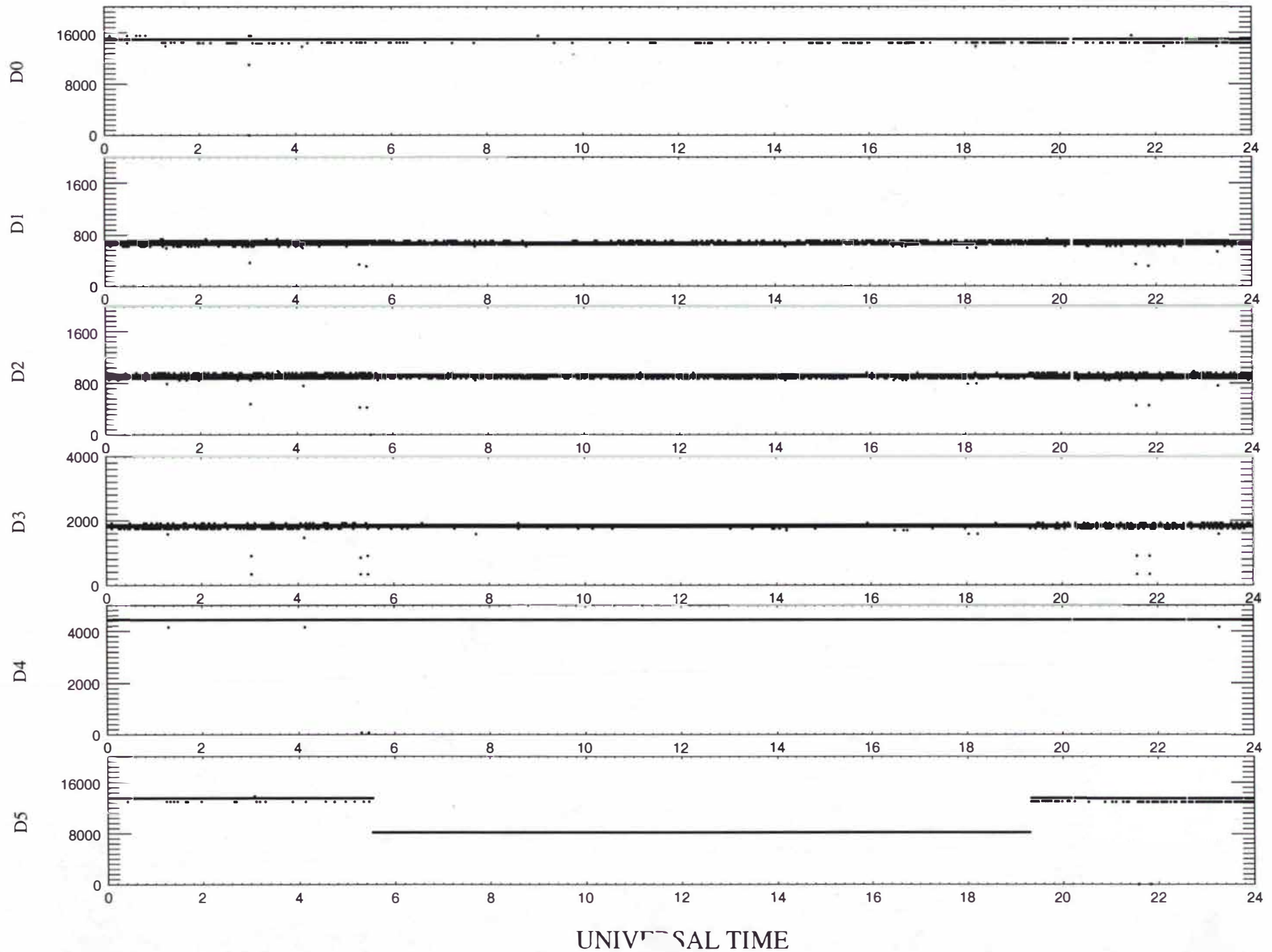
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Date: Jan 12 '10

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- ☐ 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?

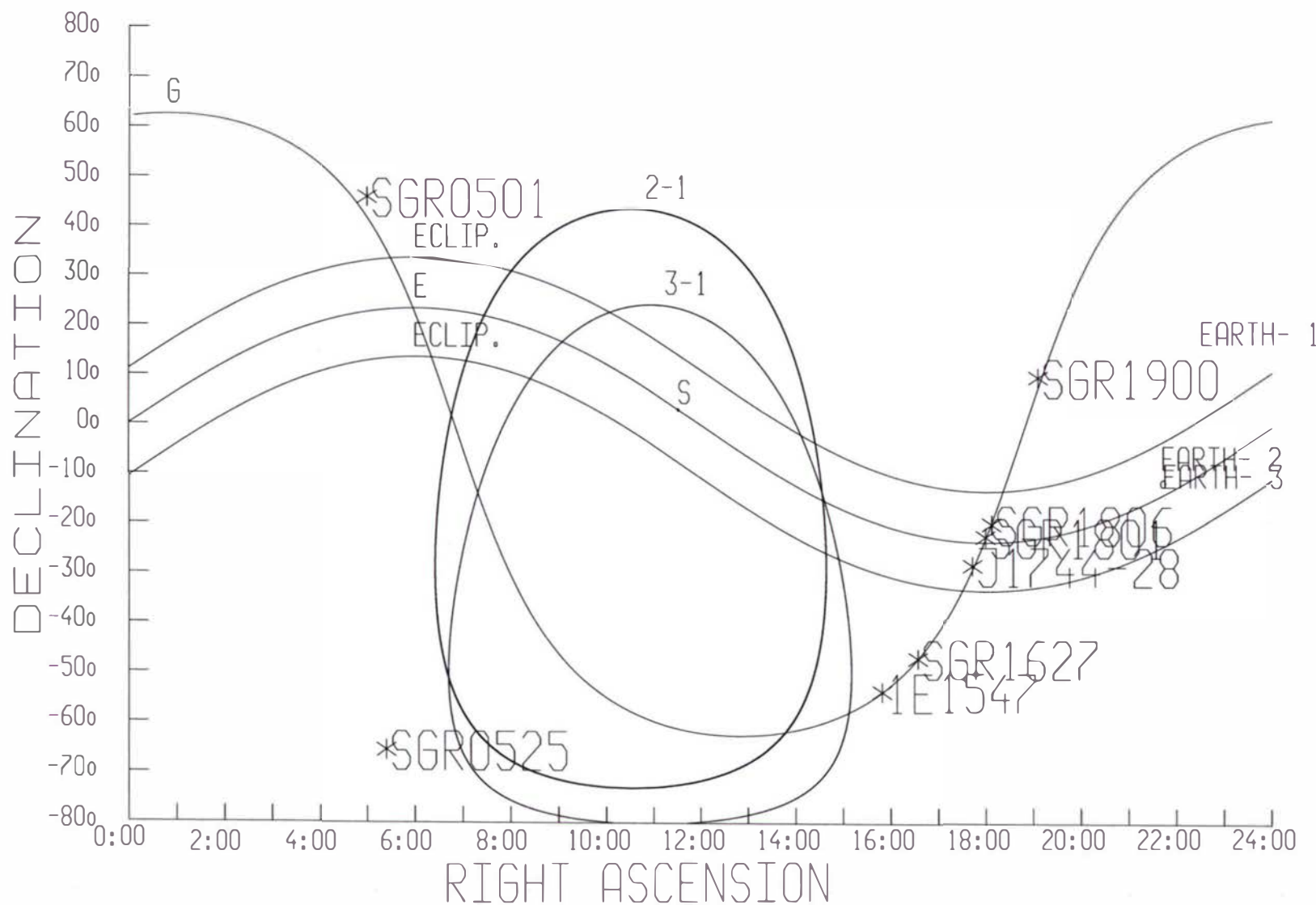
5. For 3 Spacecraft events

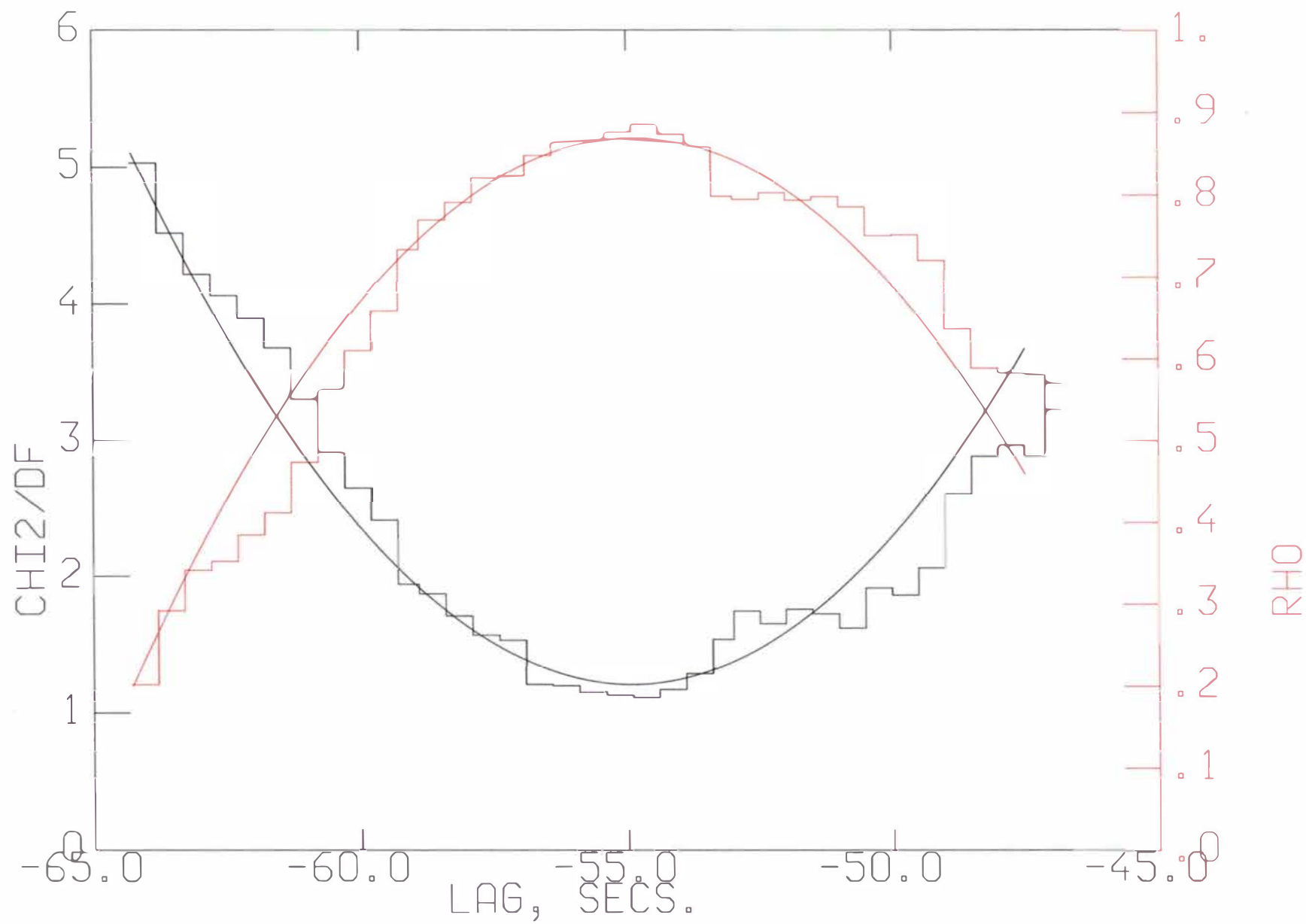
- ☒ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

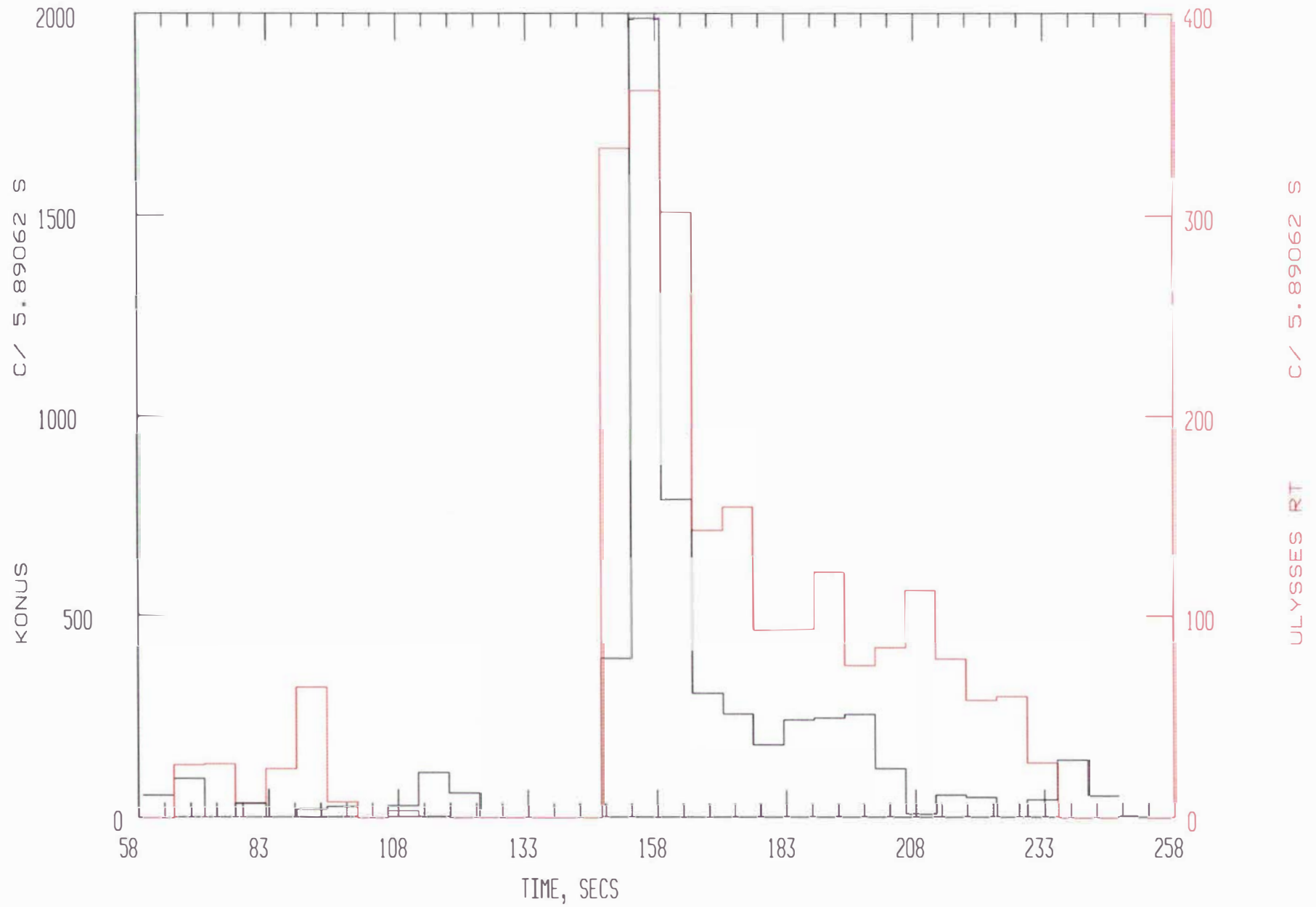
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 JULYSS 2 KONUS 3 NEAR

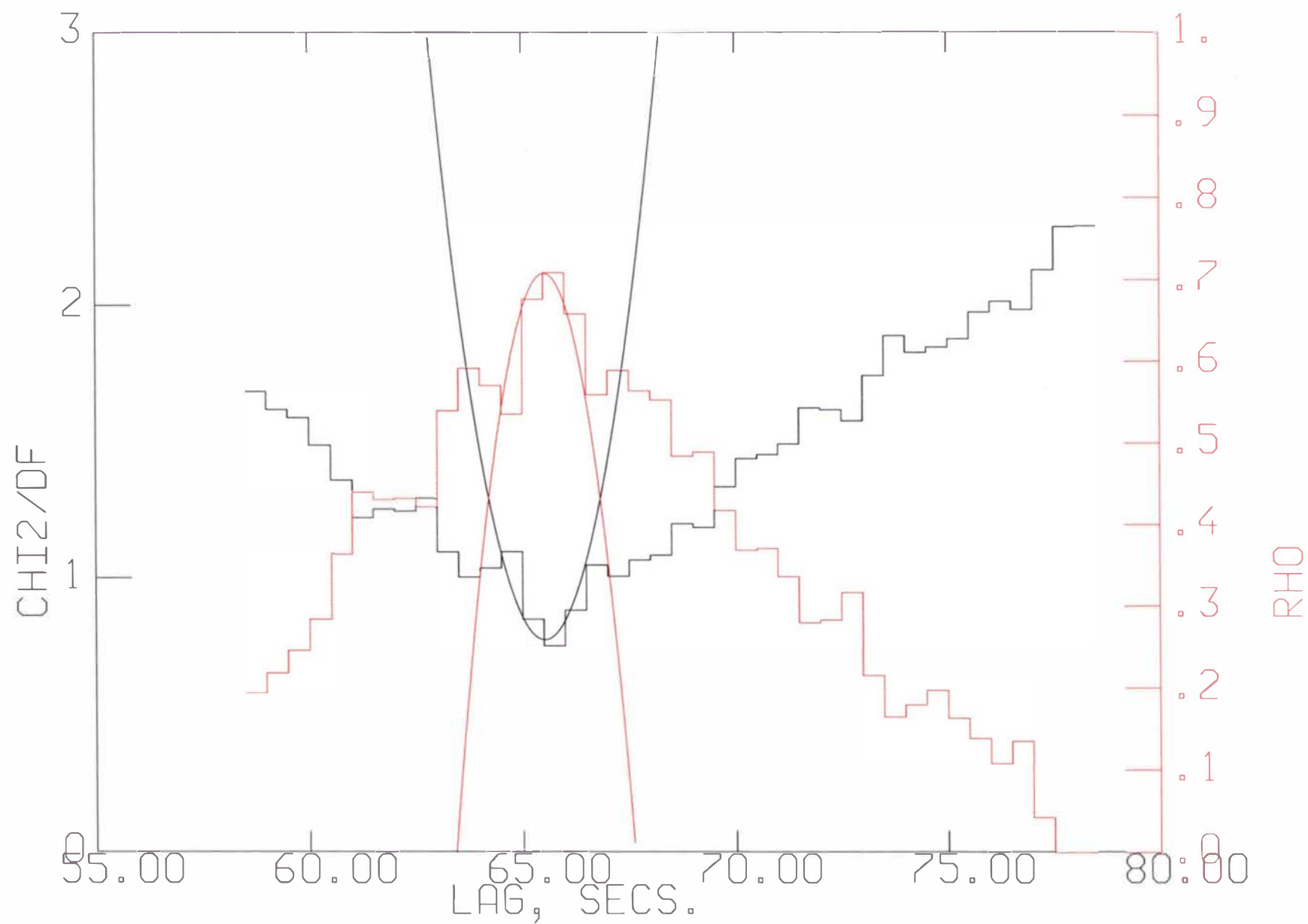
EVENT OF SEP 15, 1999 10:13

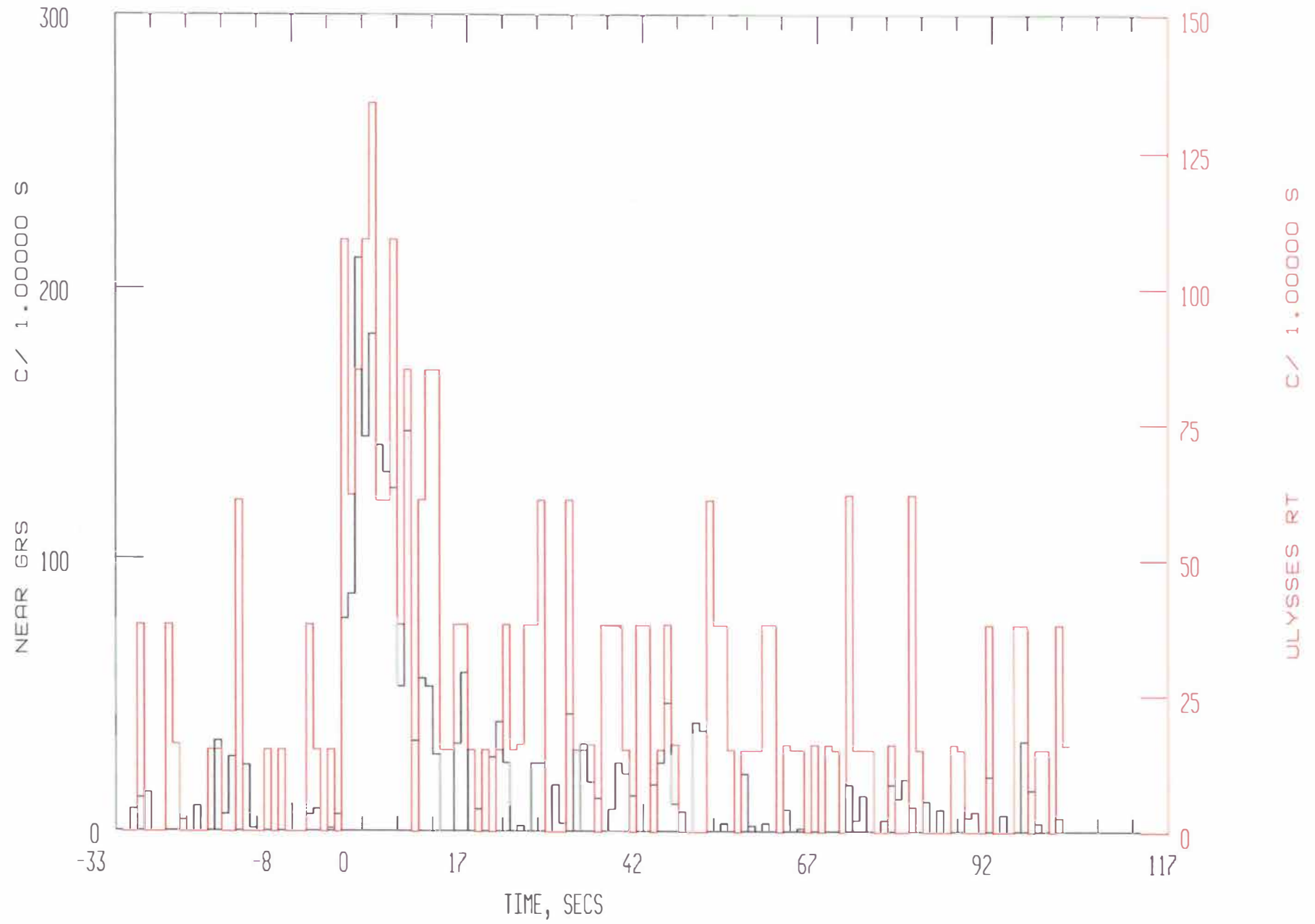
12/ 1/10

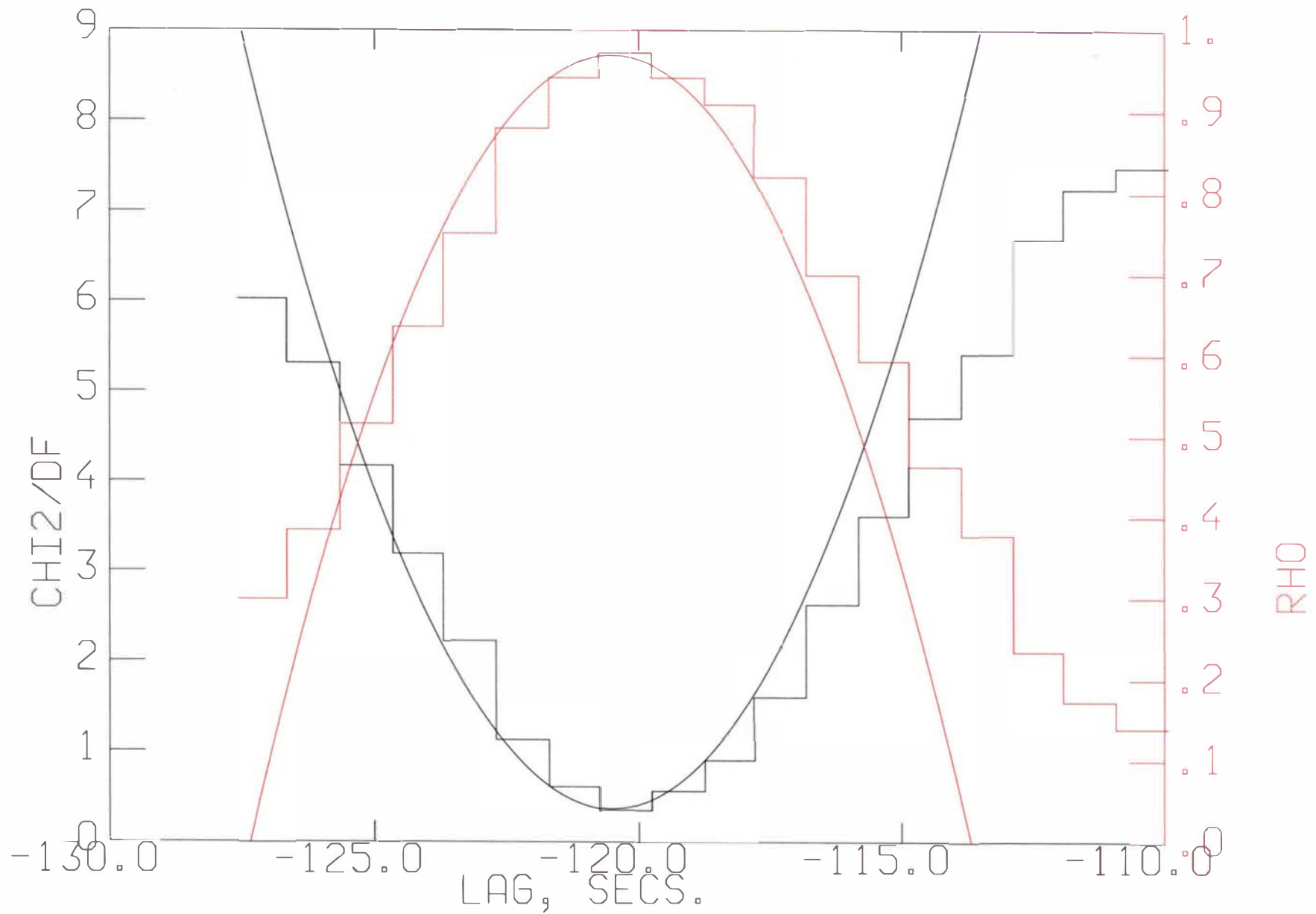












KONUS

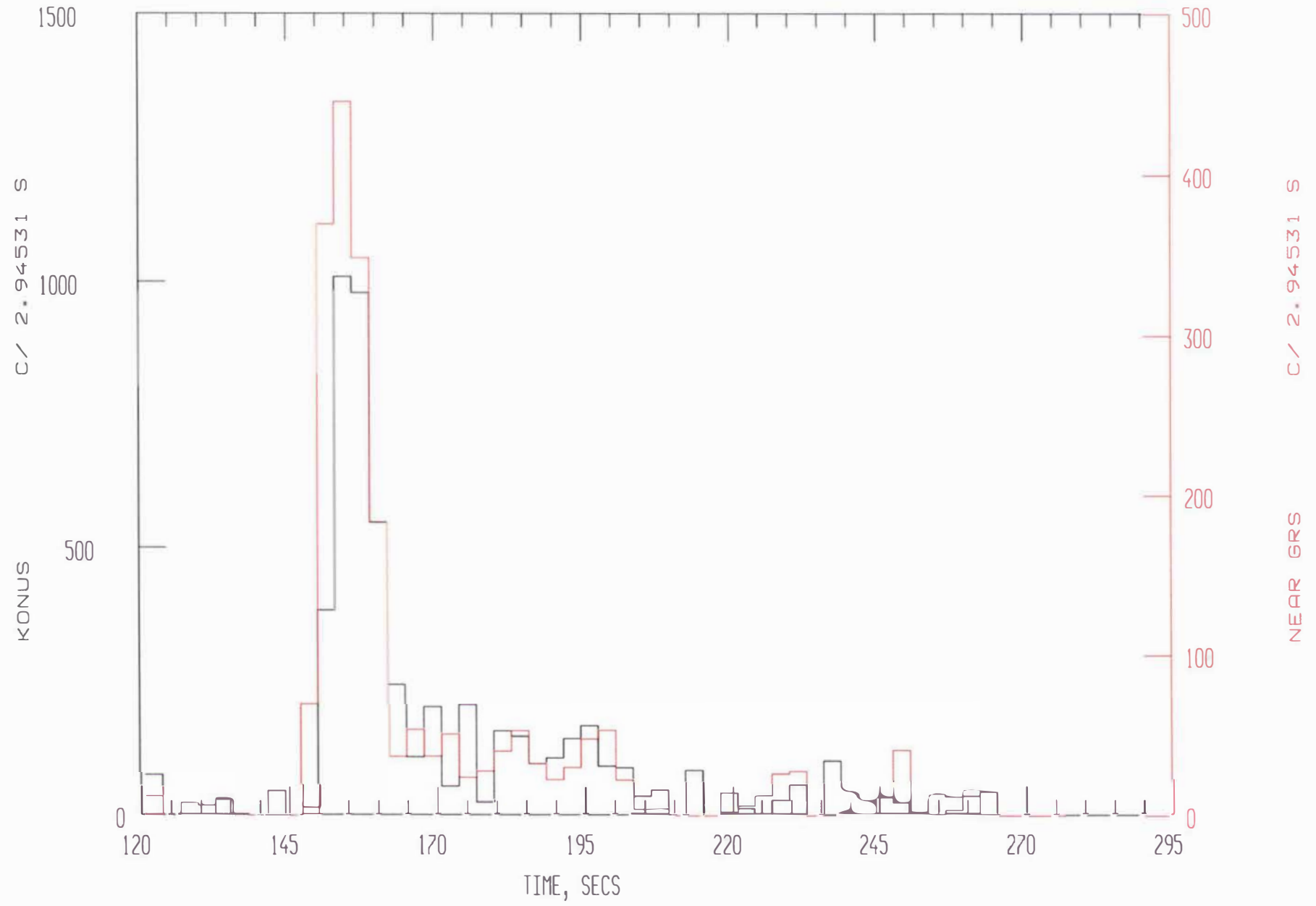
-NEAR GRS

CORRELATION

15/09/99

38186.328

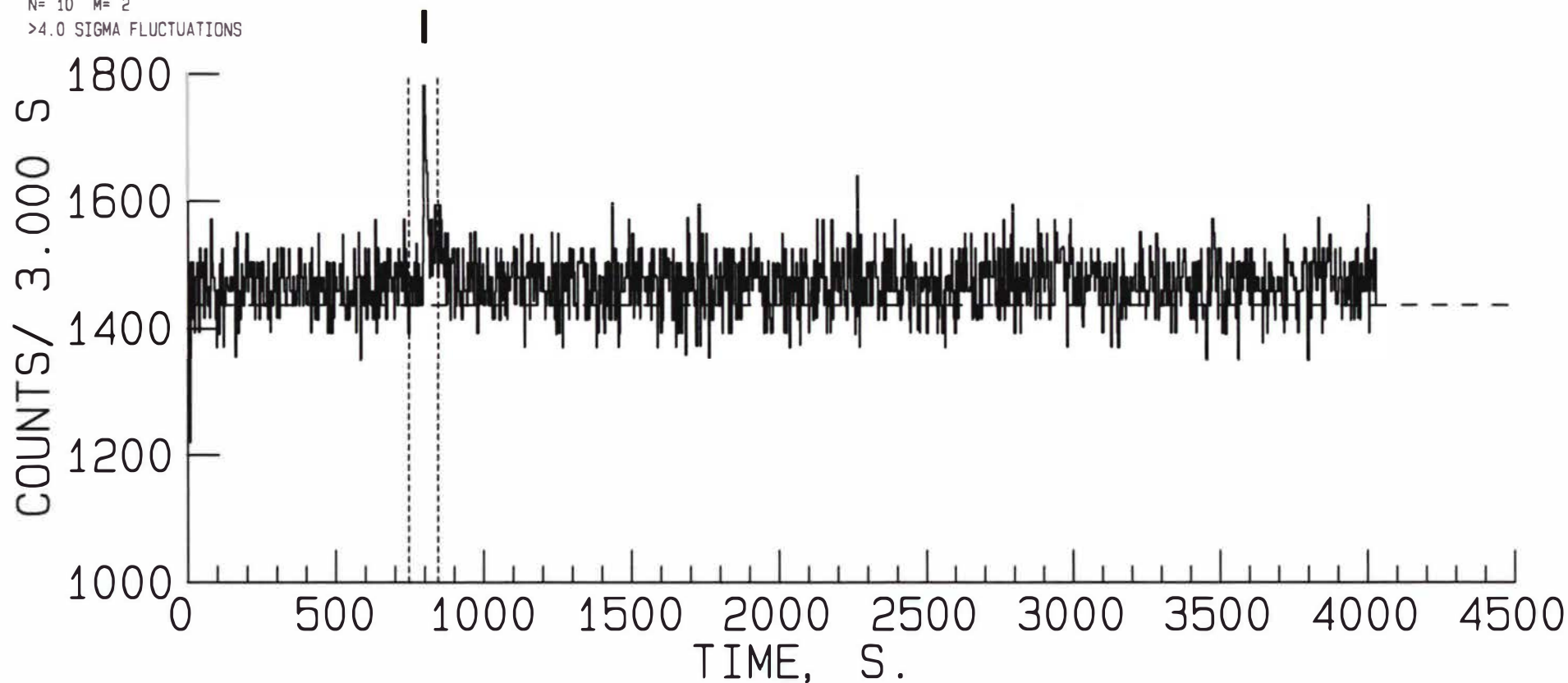
12/ 1/10



ULYSSES RT
15/ 9/99 36108.156 s
0.500 S INTERVALS REGROUPED BY 6
22- 152 keV

11 / 1 / 10

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

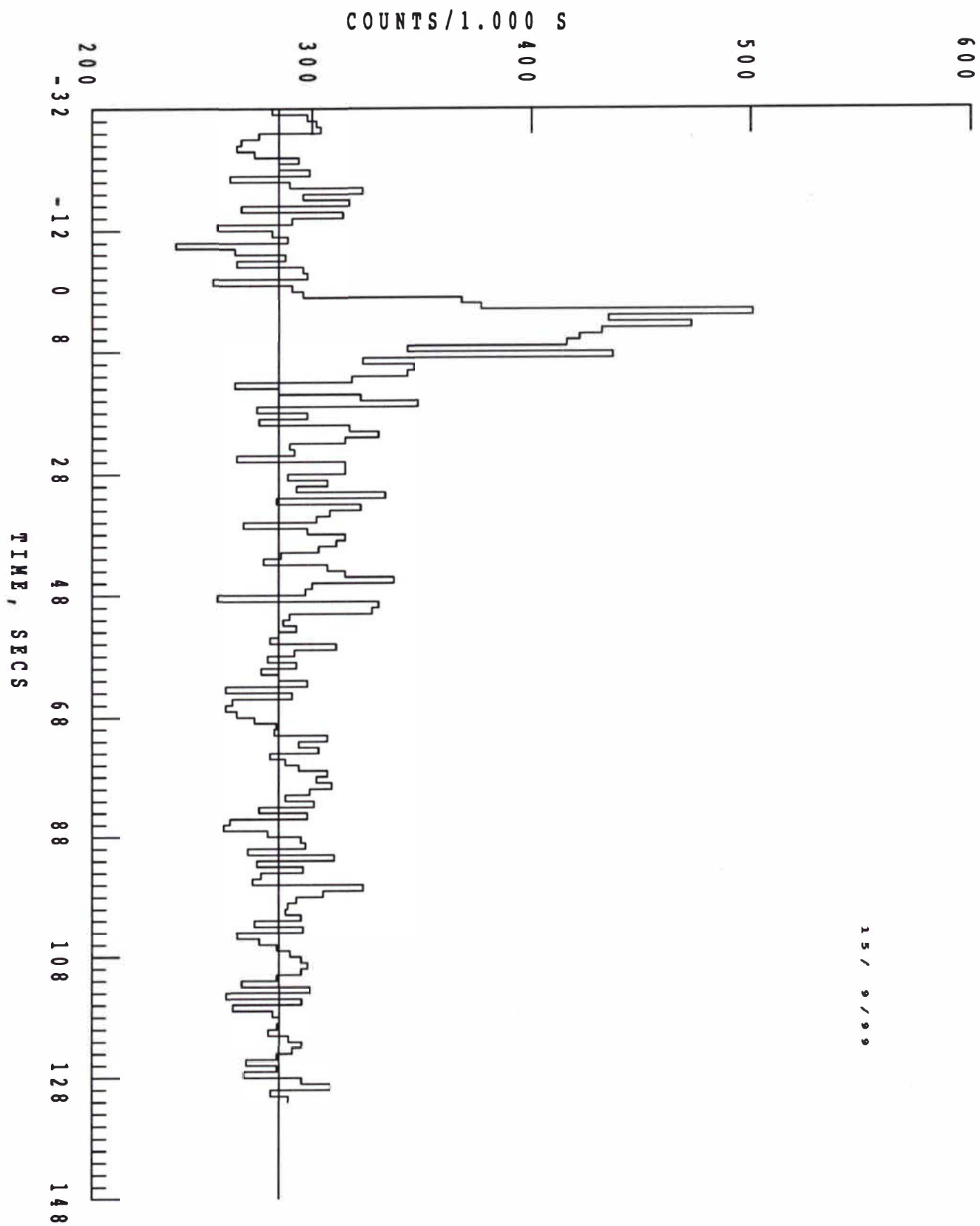


NEAR

15/09/99

38117.186

100-1000 keV



KONUS

15/09/99 38186.328

10- 50 keV

50- 200 keV

200- 750 keV

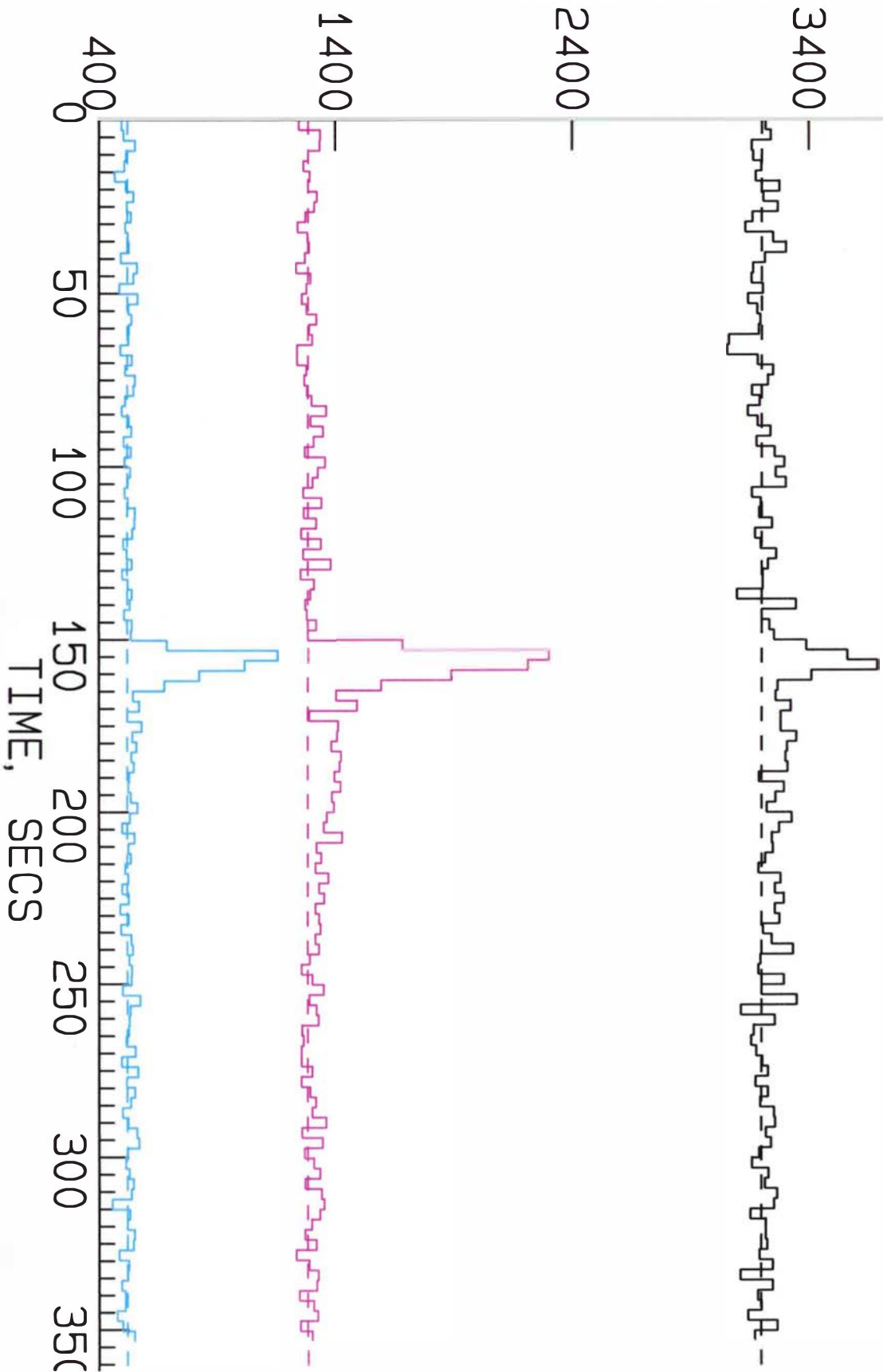
COUNTS/2.945 S

4400-

DETECTOR 1 - S. ECLIPHTIC

Apparently, only BT data available

20/11/09



KONUS

15/09/99 38186.328

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4300

DETECTOR 2 - N. ECLIPIC

3300

2300

1300

300

50

100

150

200

250

300

350

TIME, SECS

20/11/09

JANA TAB2 19990915 59572

ULYSSES RT

05/08/05

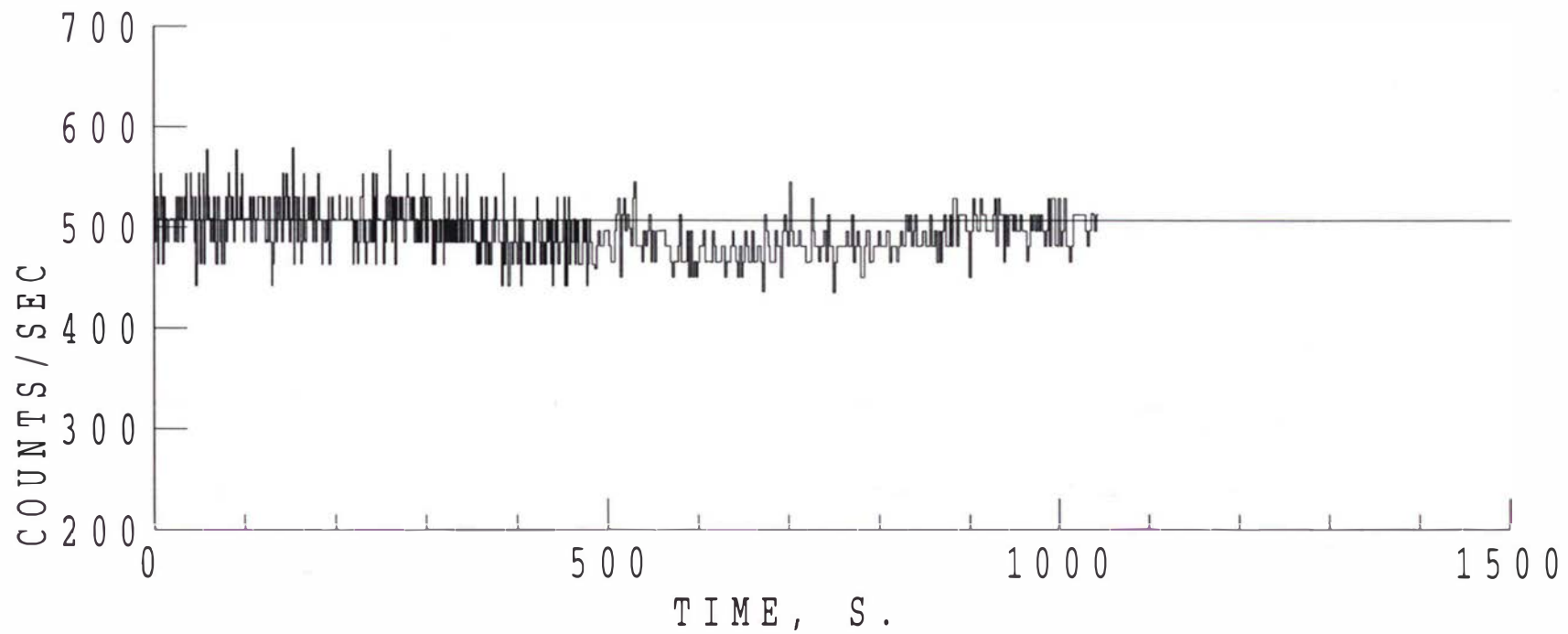
15/09/99 59040.383 s

INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Sat Sep 18 09:31 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Sat, 18 Sep 1999 11:21:38 -0500 (CDT)
>: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7766

BATSEARCH PROGRAM

BATSE BURST # 7766
EVENT OF 1999 SEP 15 DAY OF YEAR=258
EVENT CROSSING TIME AT BATSE : 83722. S. OR 23:15:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 97.000 72.000
BATSE PEAK COUNTING RATE: 55000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 9/ 99 IS:
RA= 157.506 DEC= -14.632 DIST= 5.467 AU
BATSE-ULYSSES DISTANCE = 817811555. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 253.79 SECS.
CROSSING TIME AT ULYSSES IS 83976. S. OR 23:19:35 +/- 525.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 9/ 99 IS:
RA= 245.727 DEC= -23.413 DIST= 1.268 AU
MARS-BATSE DISTANCE = 189622928. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 392.33 SECS.
CROSSING TIME AT MARS IS 84114. S. OR 23:21:54 +/- 92.09 SECONDS

BATSE BURST TRIGGER

NO.: 7766

TIME: TJD=1436 SECONDS=83722

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=50.9 AZIMUTH=79.8 ERROR=0.5 DEGREES

COMMENTS:

GRB. MULTIPLE PULSES, MAIN PULSE DUR. 25 S, RISE IS FASTER THAN FALL FOR THIS PULSE, TOTAL DUR. 105 S, STARTS AT T-1.8 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7766	990915	11436	83722	55000	097	+72	105

Date: Mar 21 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 vwx@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

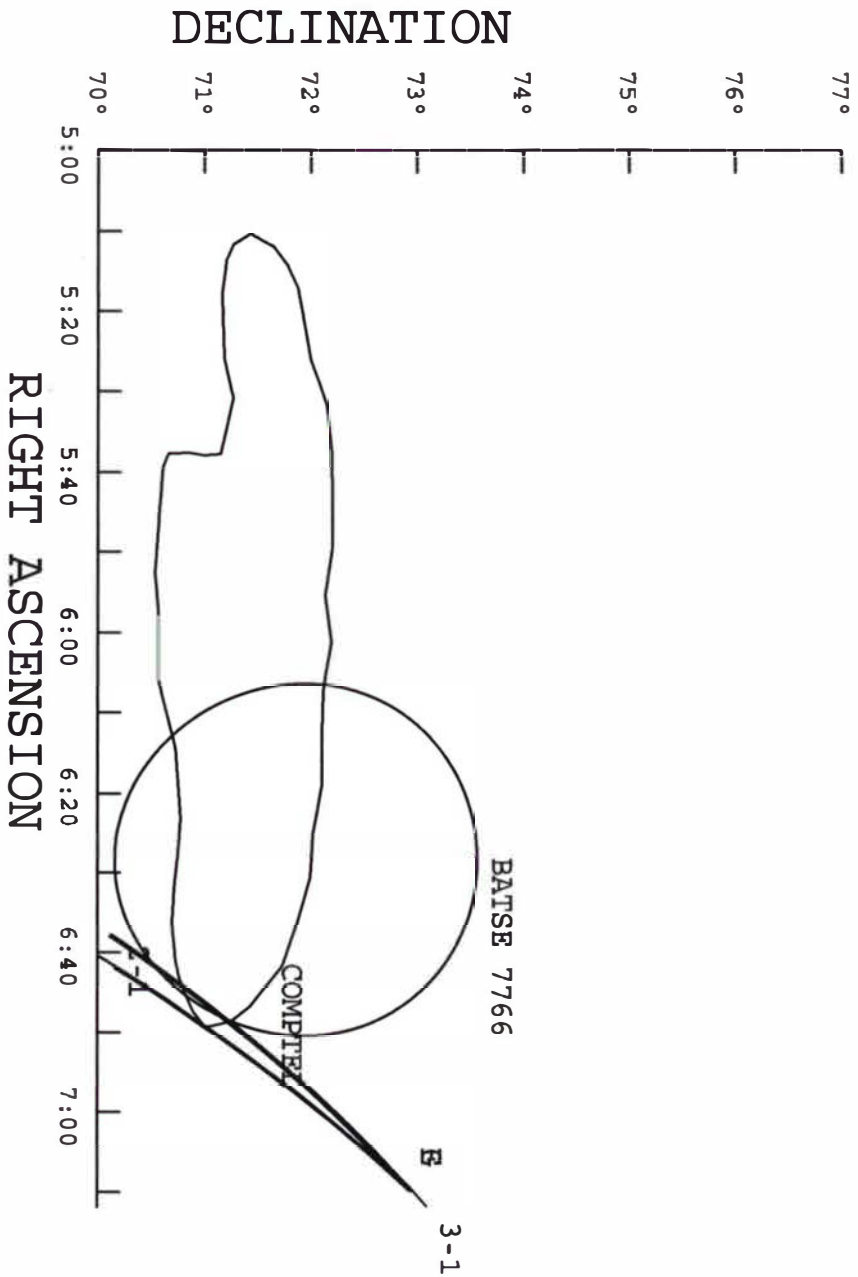
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

3 NEAR

EVENT OF SEP 15, 1999 23:15



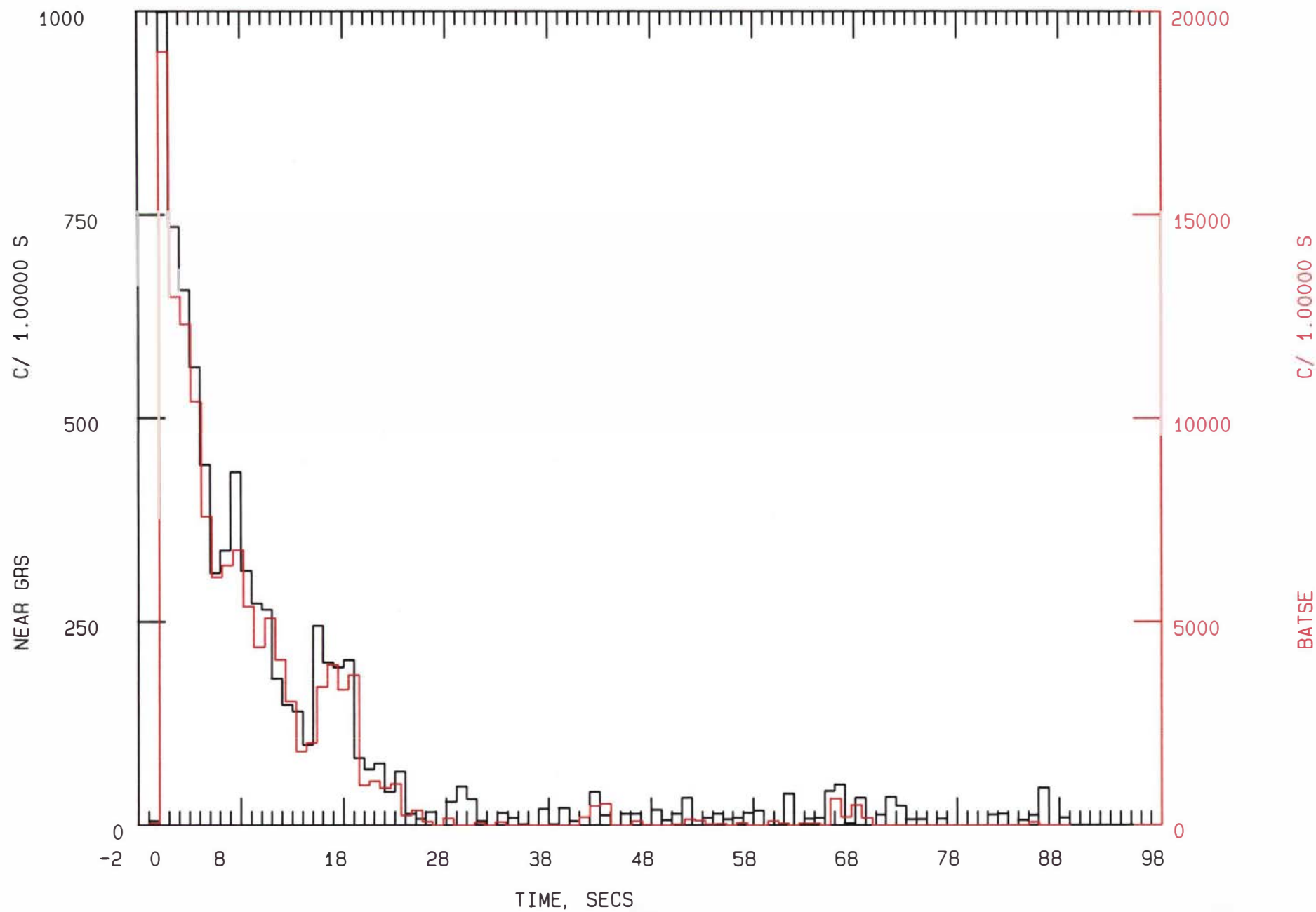
NEAR GRS -BATSE

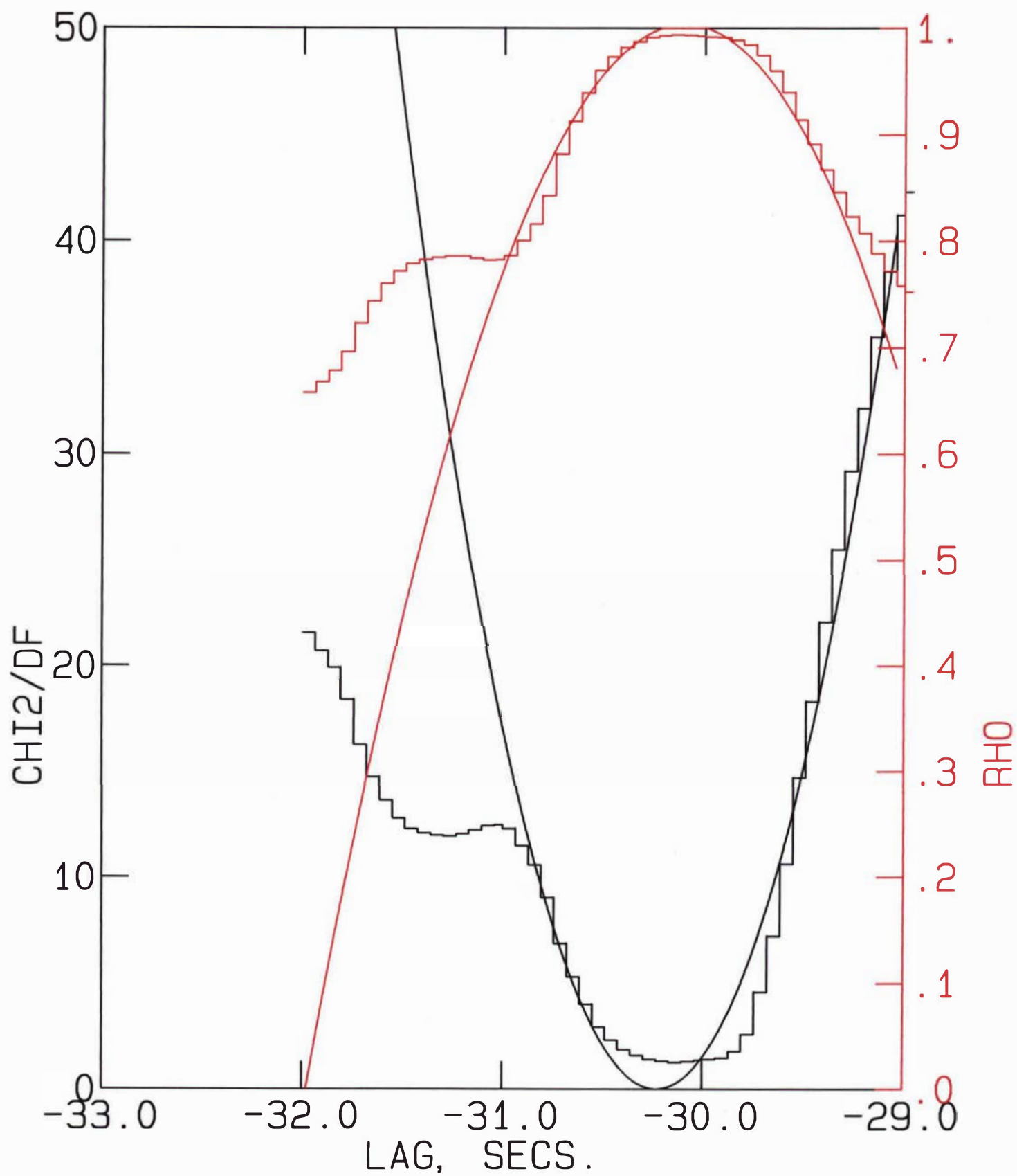
CORRELATION

15/09/99

83291.167

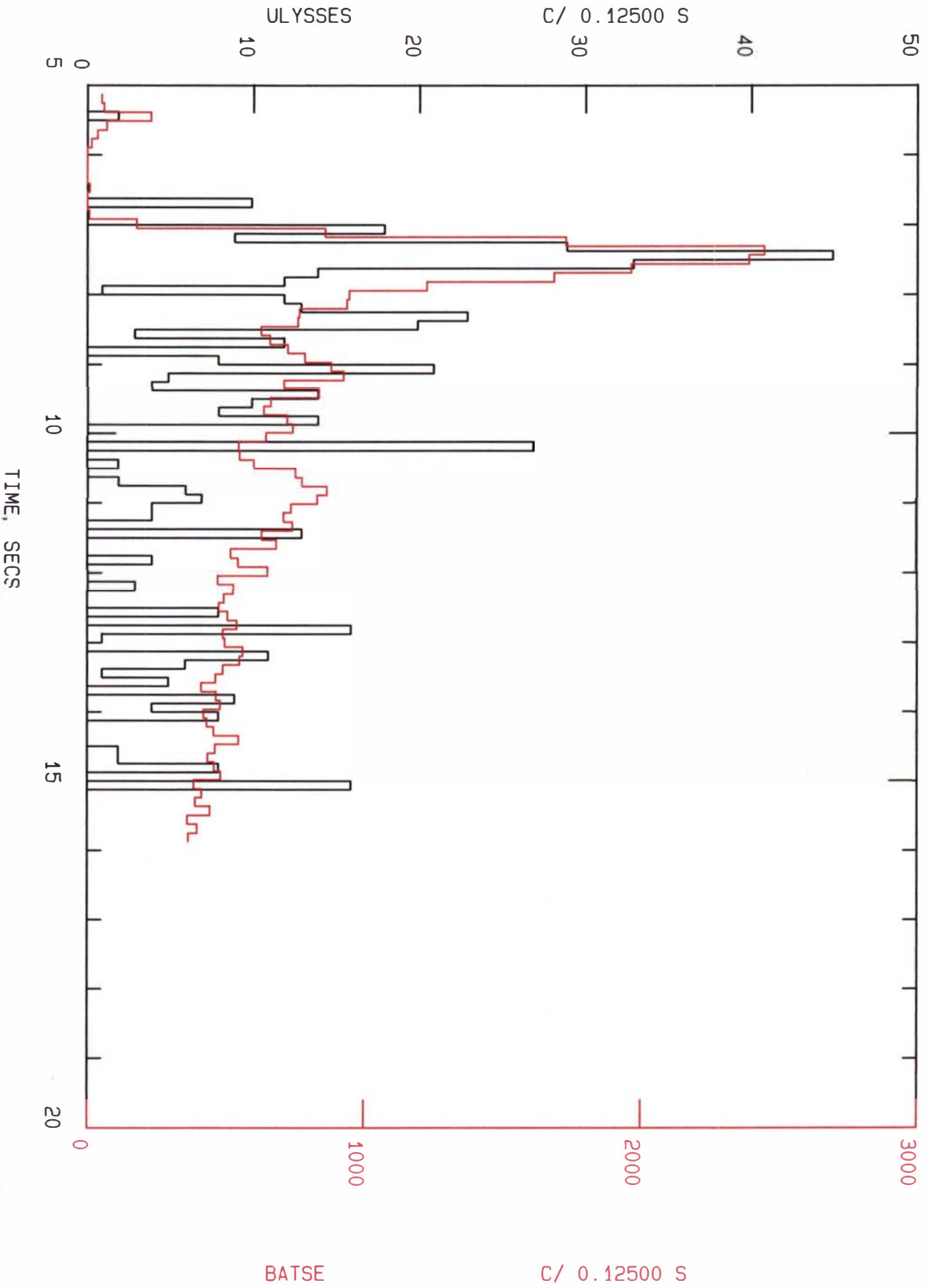
21/ 3/ 0





ULYSSES -BATSE CORRELATION 15/09/99 83895.555

21/ 3/ 0



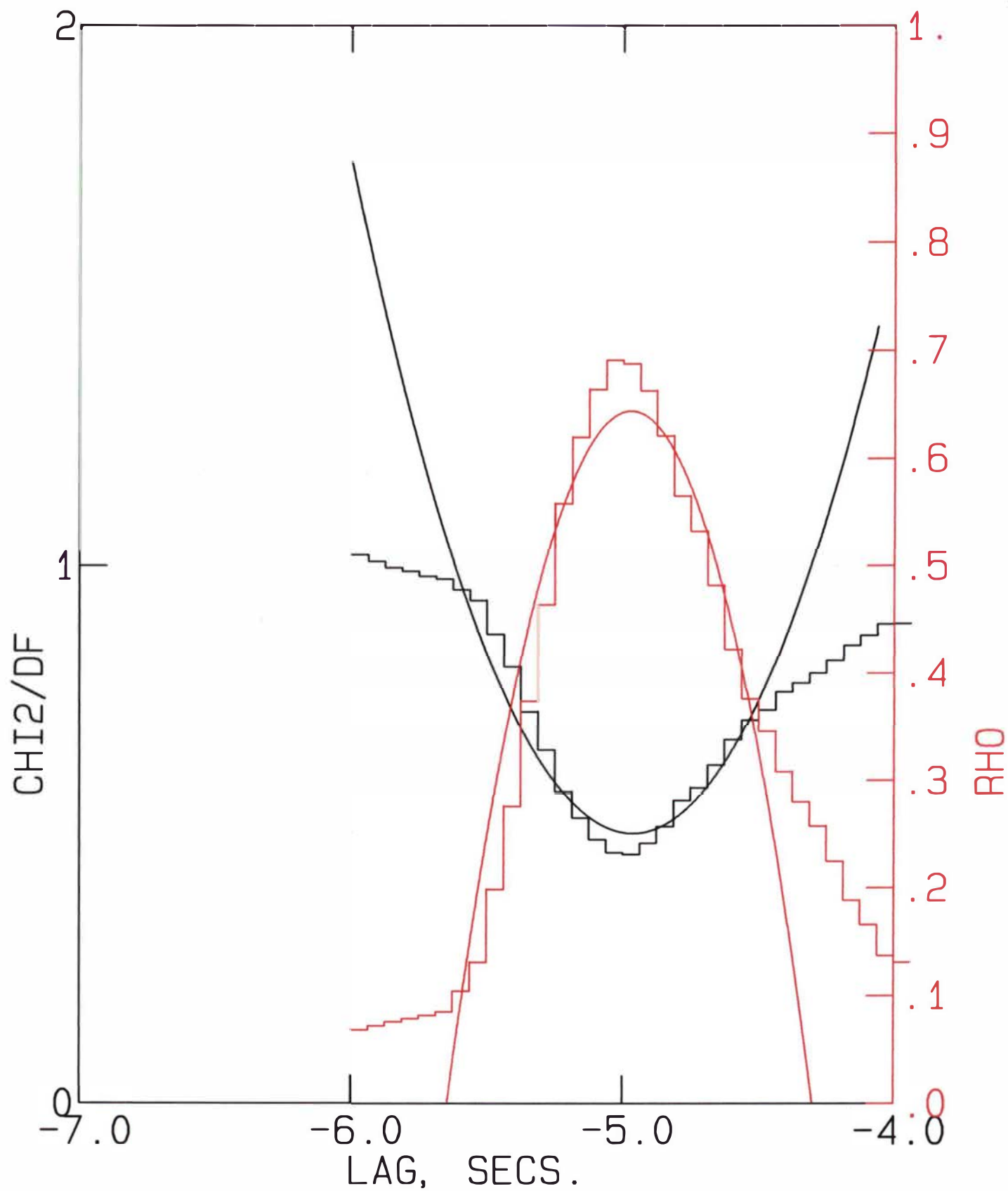
ULYSSES

-BATSE

CORRELATION

15/09/99

83895.555



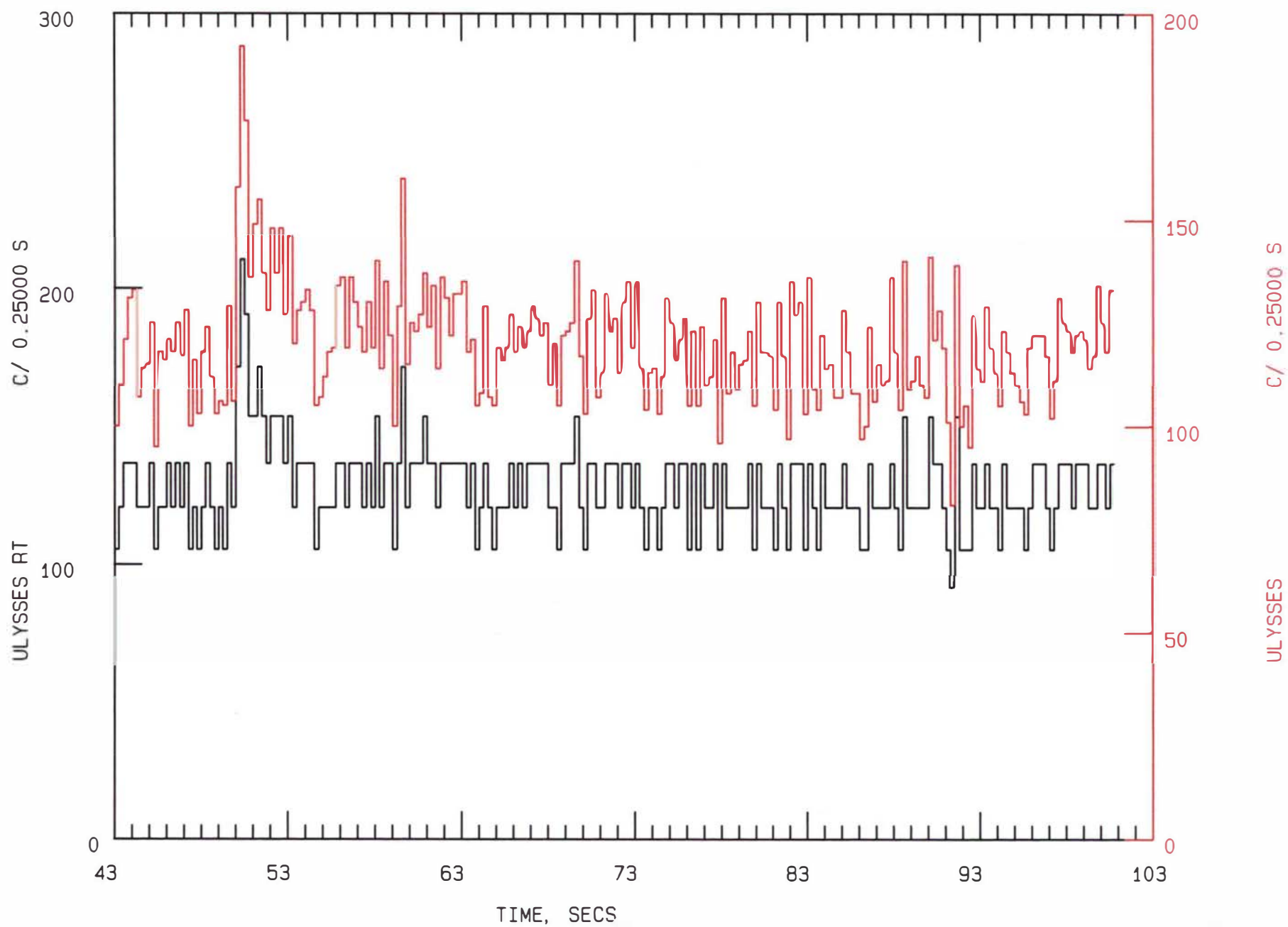
ULYSSES RT-ULYSSES

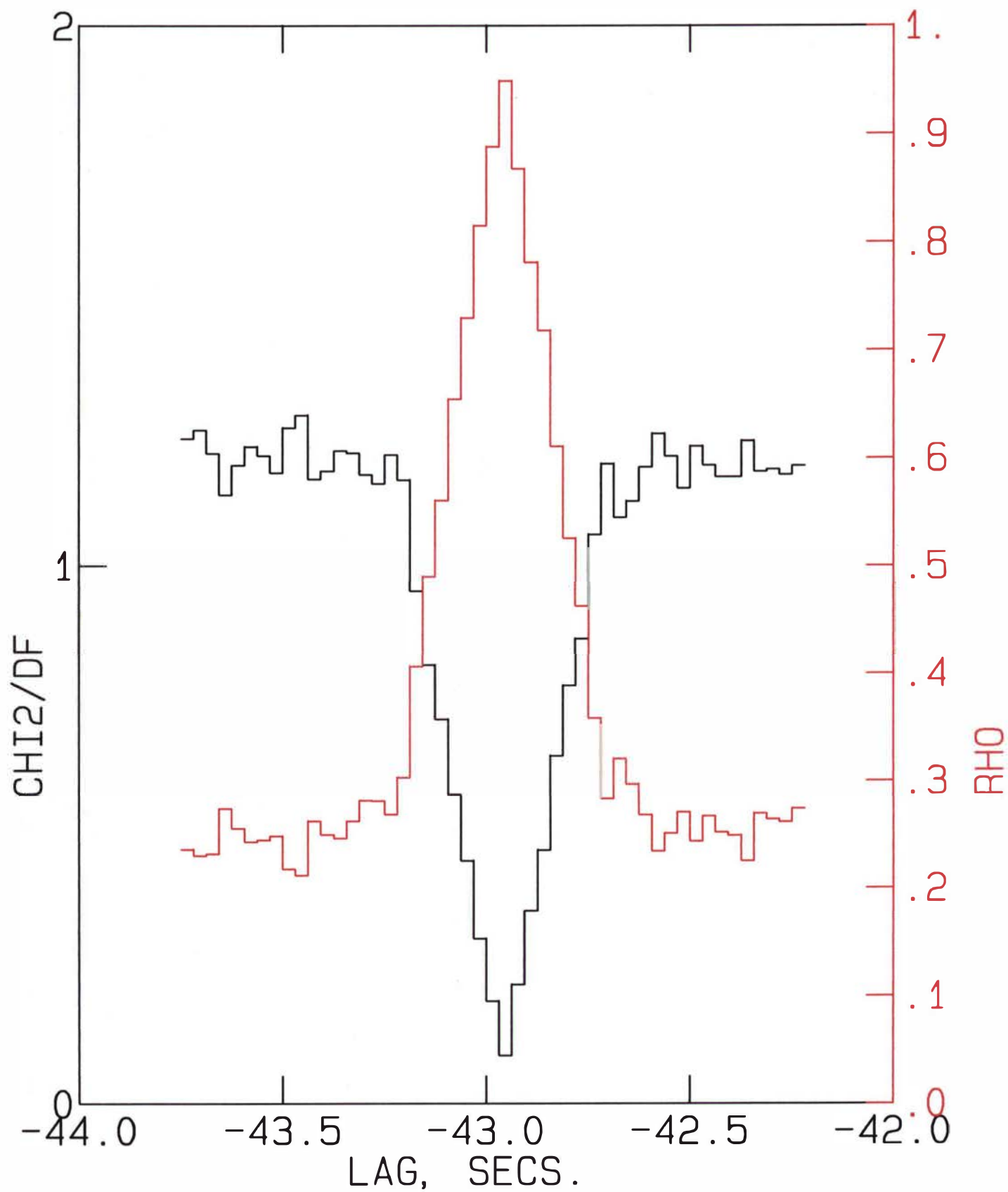
CORRELATION

15/ 9/99

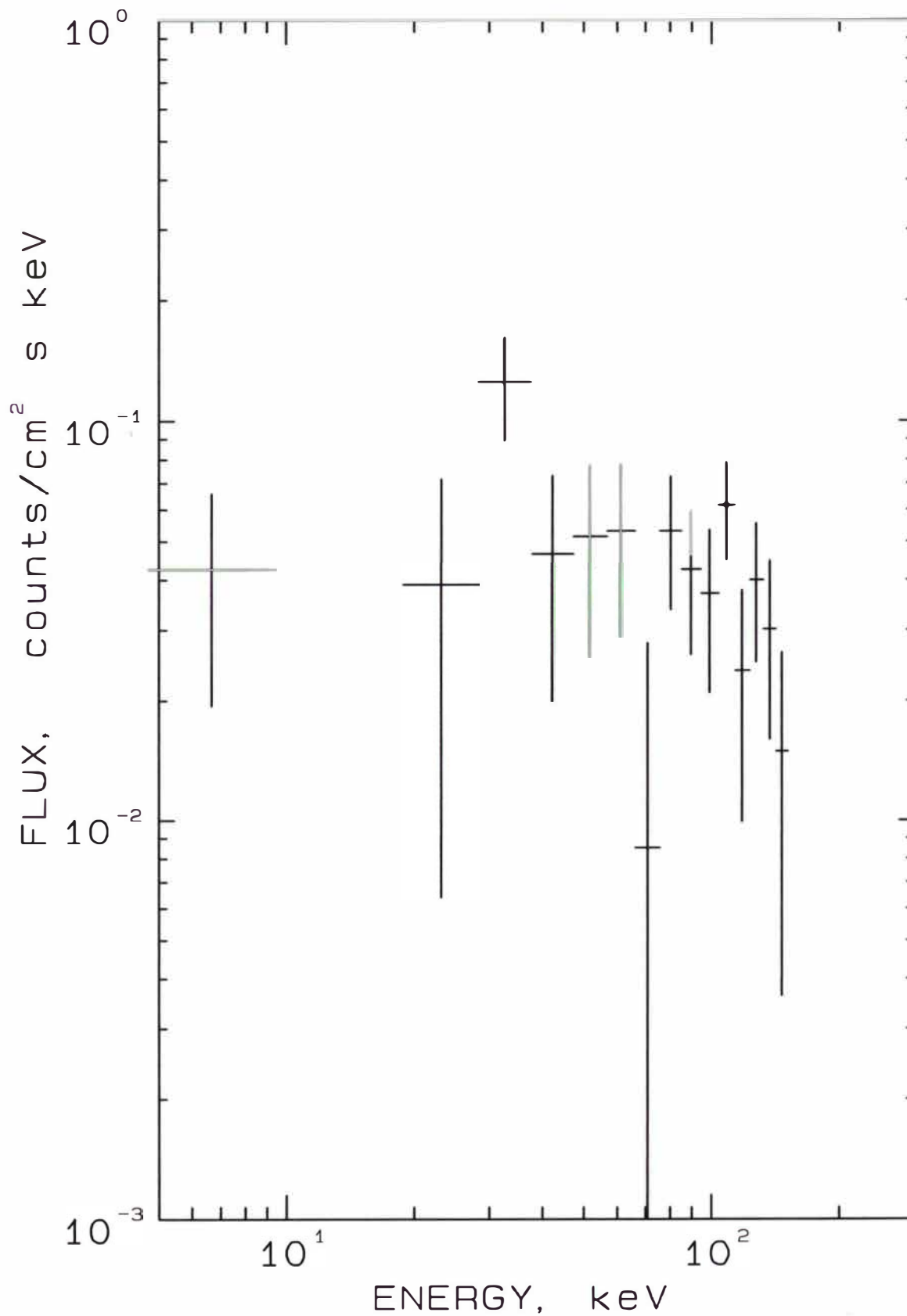
83845.180

21/ 3/ 0





SPECTRUM INTEGRATED OVER 3.6 SECONDS, INTERVALS 2 TO 5



ULYSSES 15/09/99 83895.508 BURST SPECTRAL COUNT RATES

4- 18 keV

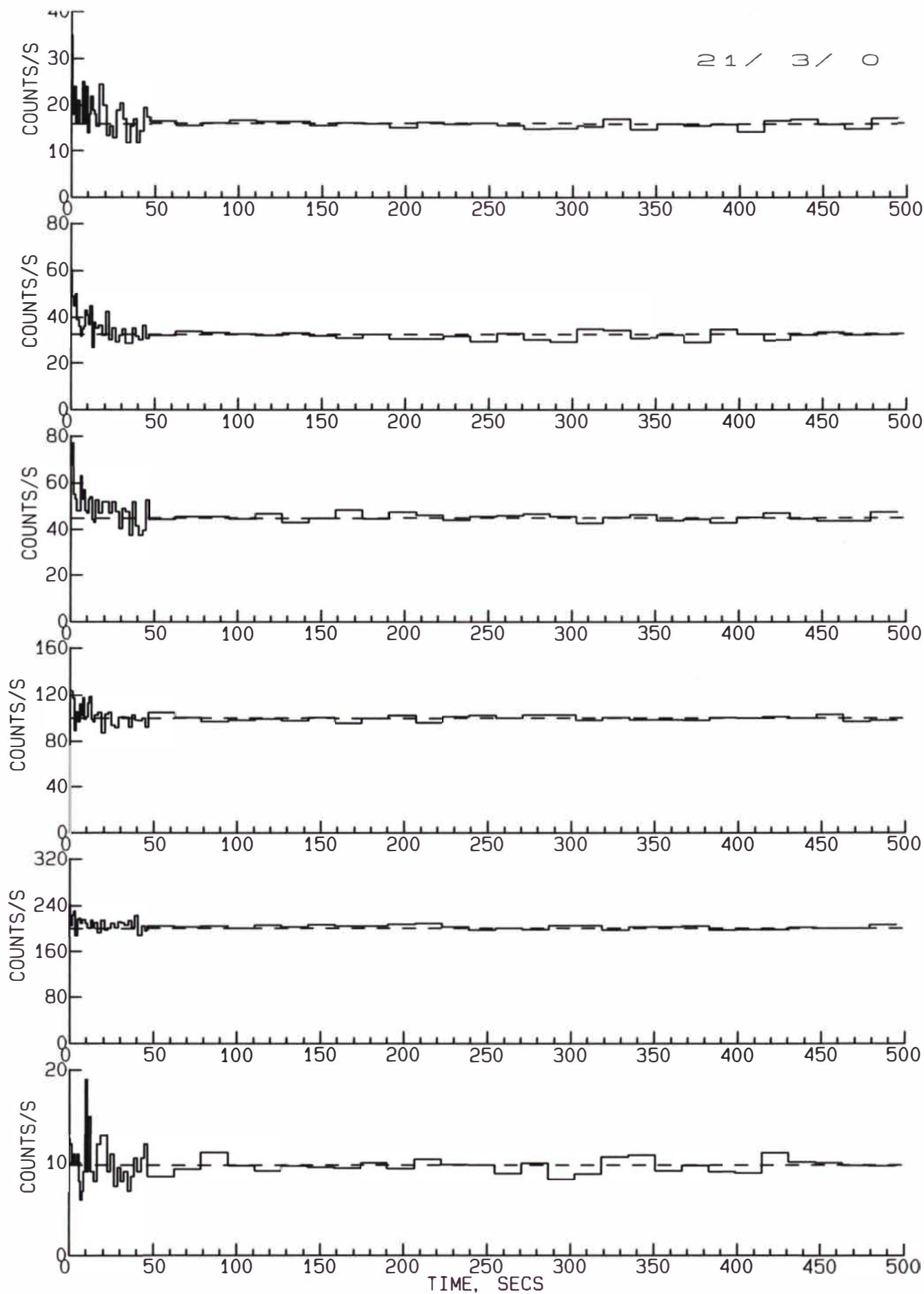
18- 47 keV

47- 75 keV

75-103 keV

103-132 keV

132-151 keV



KONUS1 19990930 67709

ULYSSES RT

5 / 10 / 99

30 / 9 / 99 64980.062 s

INTERVALS REGROUPED BY 10

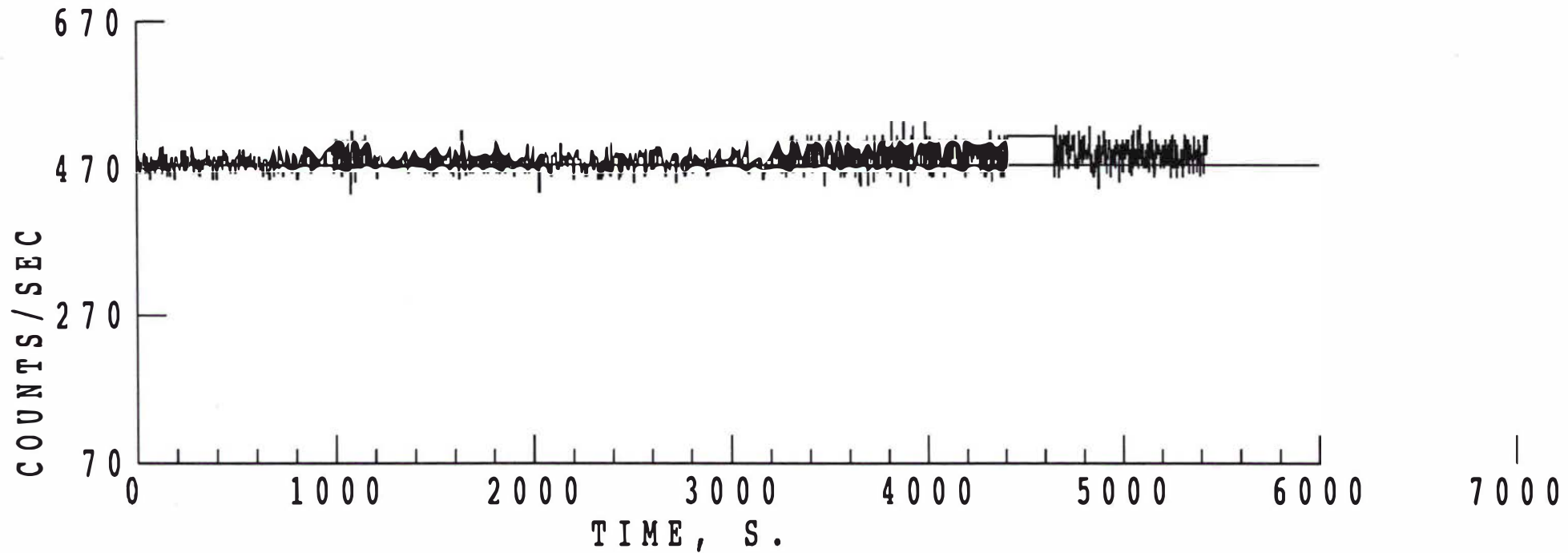
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



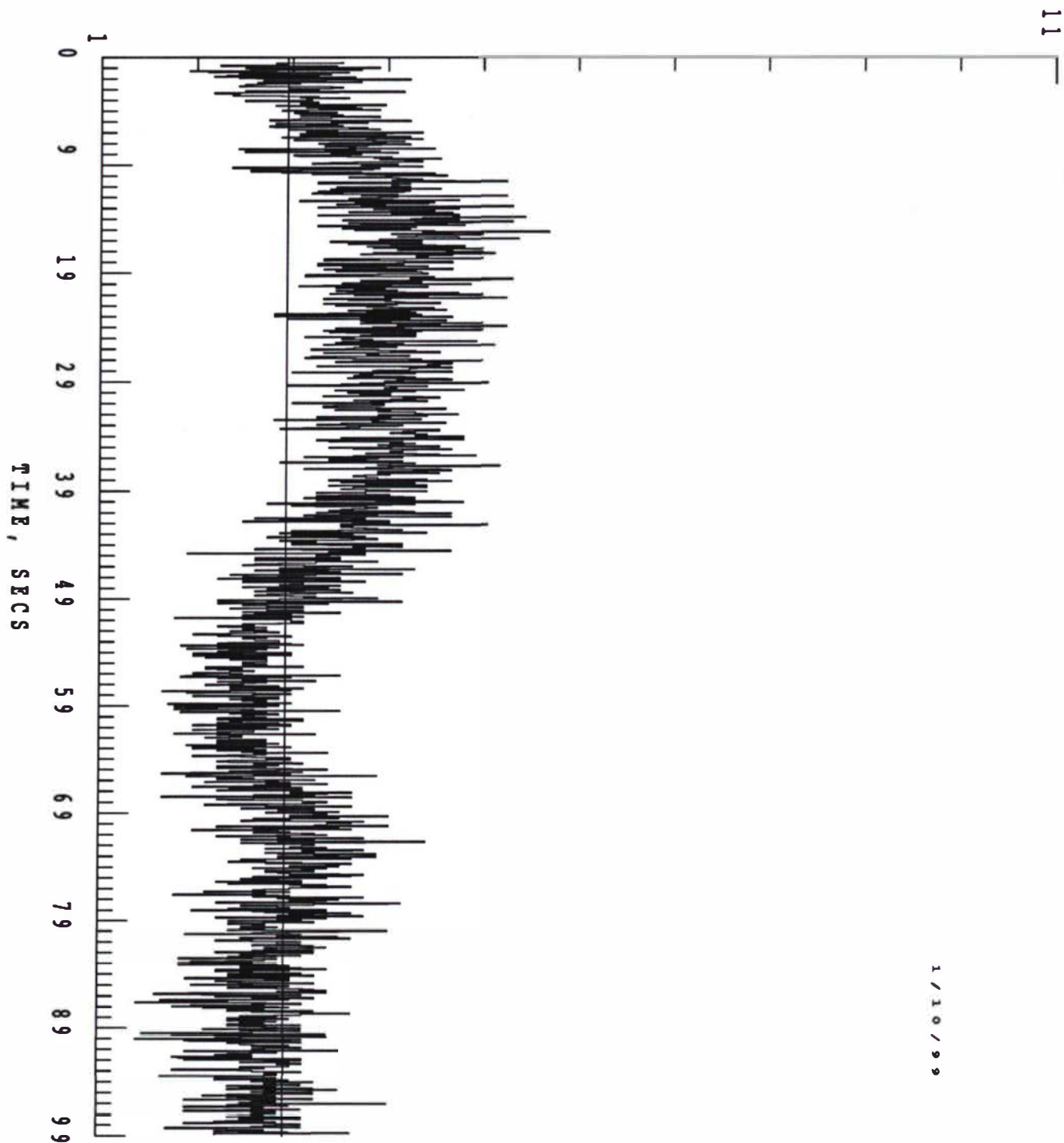
KONUS

30/09/99

73416.594

50 - 200 keV

COUNTS/0.064 S



1
2
3
4
5
6
7

KONUS2 19990930 73416

ULYSSES RT

5 / 10 / 92

30 / 9 / 99 70704.117 s

0.250 S INTERVALS REGROUPED BY 15

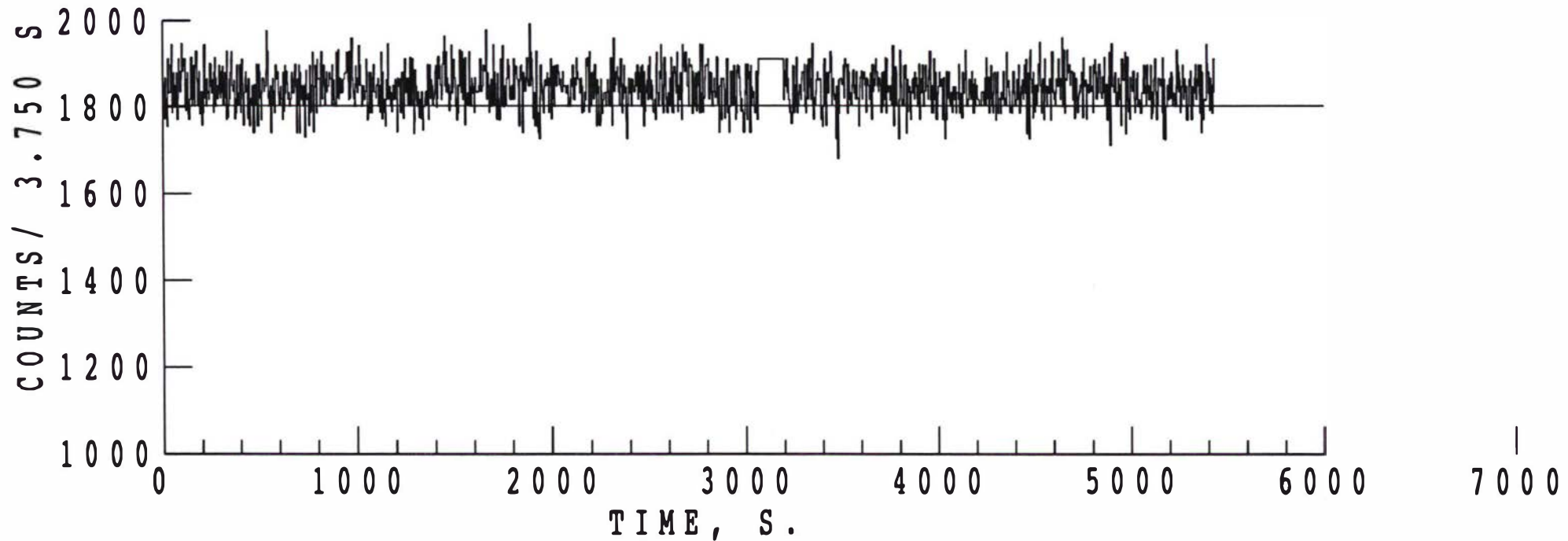
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Fri Oct 1 12:05 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 1 Oct 1999 14:06:03 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7780

BATSEARCH PROGRAM

BATSE BURST # 7780
EVENT OF 1999 SEP 30 DAY OF YEAR=273
EVENT CROSSING TIME AT BATSE : 82836. S. OR 23:00:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 12.000 -63.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 9/ 99 IS:
RA= 159.742 DEC= -16.726 DIST= 5.352 AU
BATSE-ULYSSES DISTANCE = 800725791. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 297.13 SECS.
CROSSING TIME AT ULYSSES IS 83133. S. OR 23:05:33 +/- 515.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 9/ 99 IS:
RA= 256.719 DEC= -24.704 DIST= 1.350 AU
MARS-BATSE DISTANCE = 201968352. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -132.20 SECS.
CROSSING TIME AT MARS IS 82704. S. OR 22:58:23 +/- 112.68 SECONDS

BATSE BURST TRIGGER

NO.: 7780

TIME: TJD=1451 SECONDS=82836

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

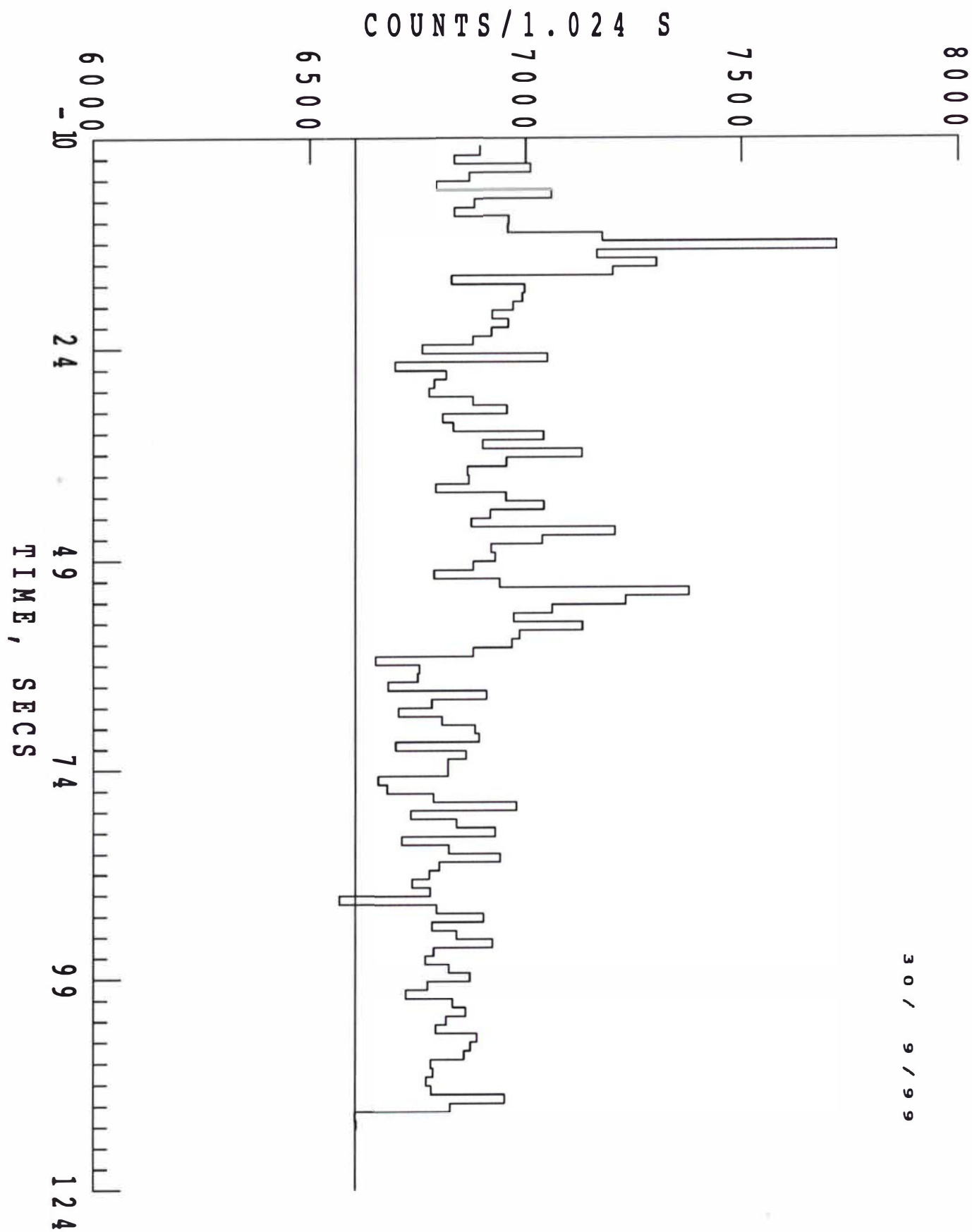
LOCATION: ZENITH=56.4 AZIMUTH=204.3 ERROR=10 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, EACH 10 S LONG, SEPARATED BY 40 S, STARTS AT T-5 S, TOTAL
DUR. 50 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7780	990930	11451	82836	2000	012	-63	50

BACODINE 7780 30/09/99 82823.929
25- 100 keV





0.

67 24

806224 1530

2000000

67

1000000

BATSE BURST# 7780

ULYSSES RT

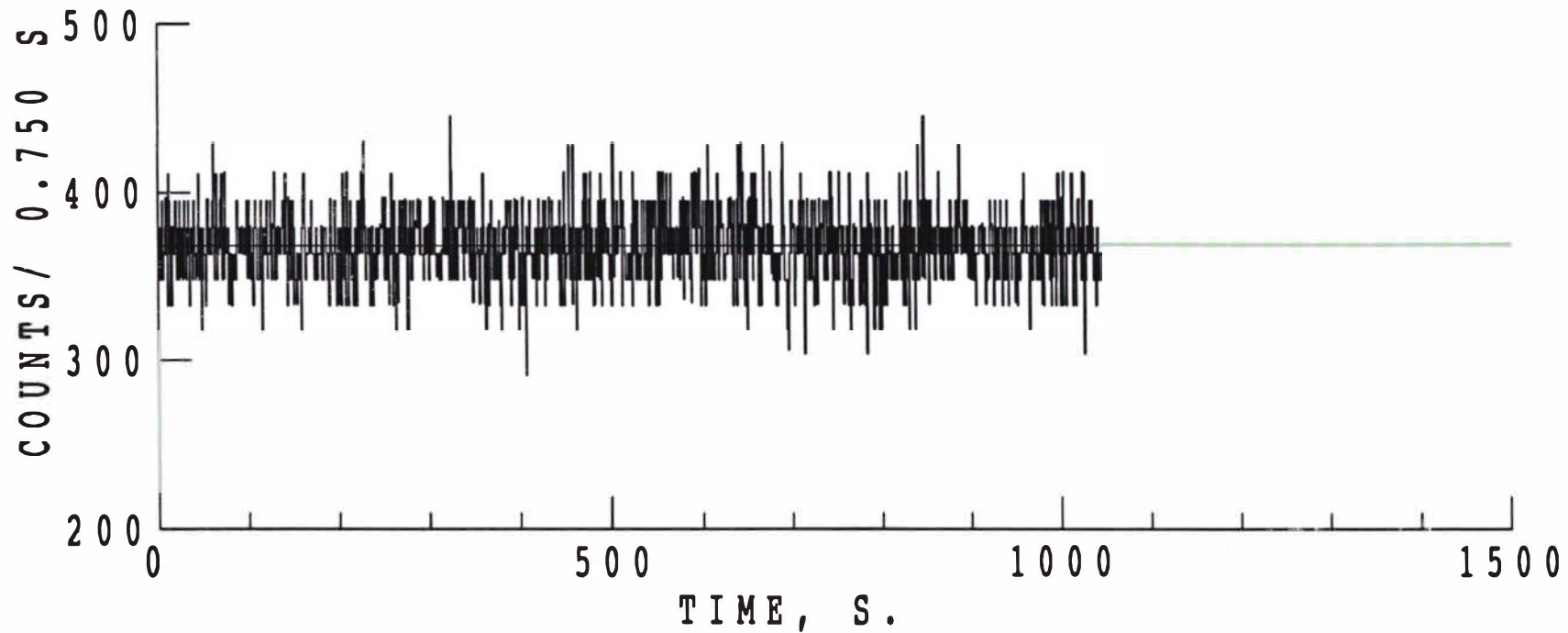
5 / 10 / 99

30 / 9 / 99 82620.242 s

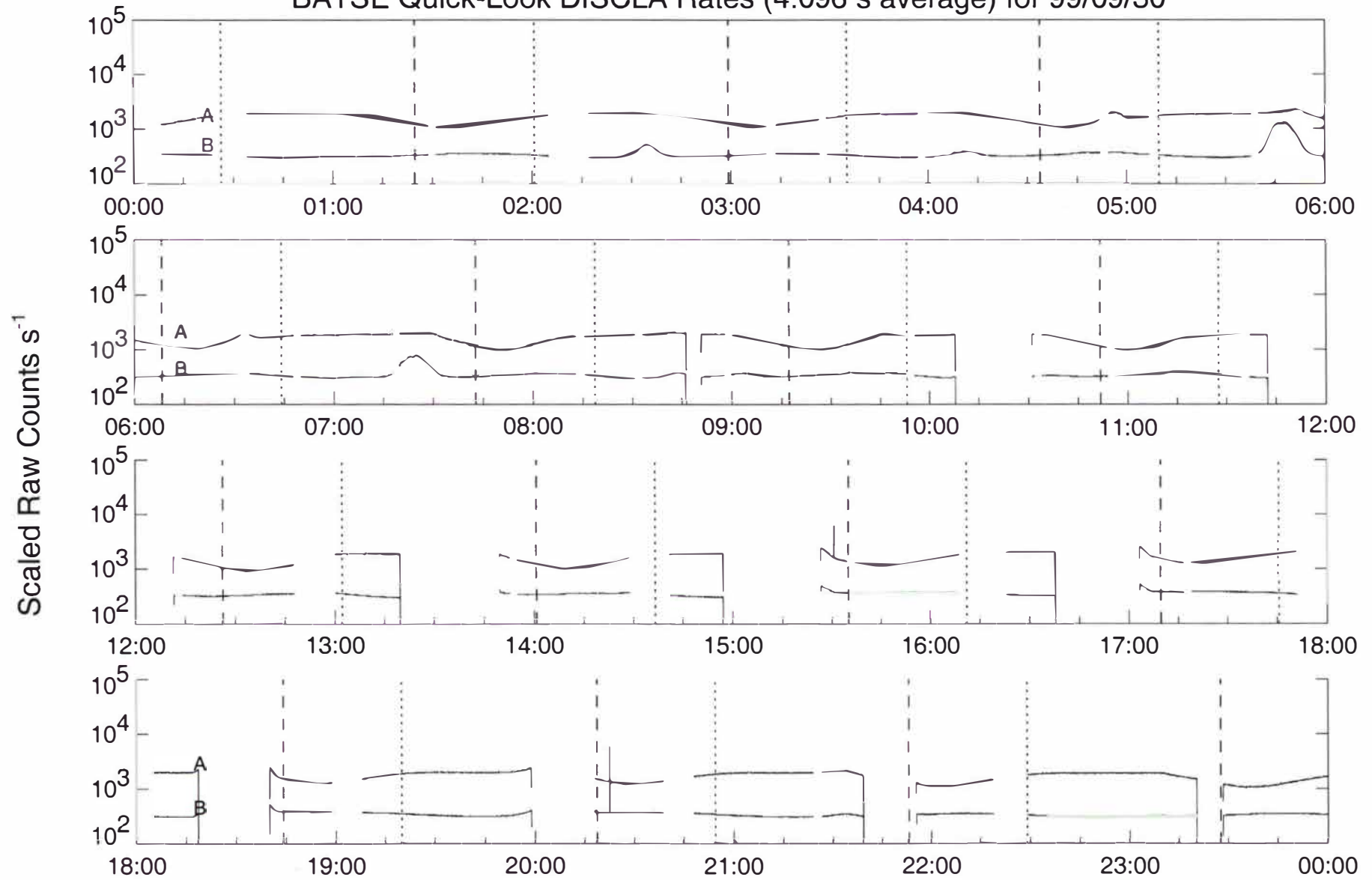
0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/09/30

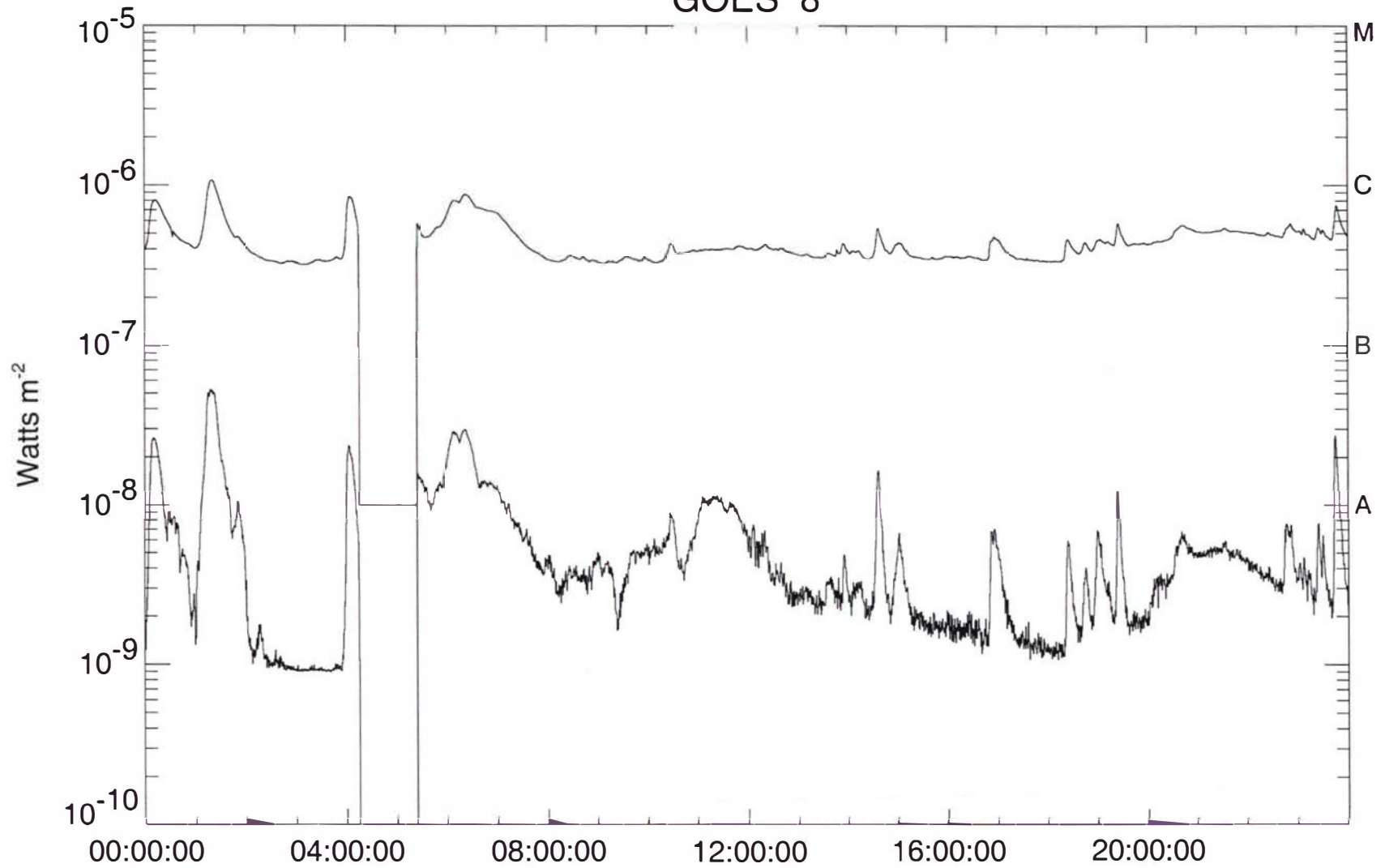


Current Time: 99/10/18, 2307 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X :05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/09/30, 0000:00

Plot created: 99/10/18, 2307

Channel

1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

Sample average = 10

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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NO BURST (7)

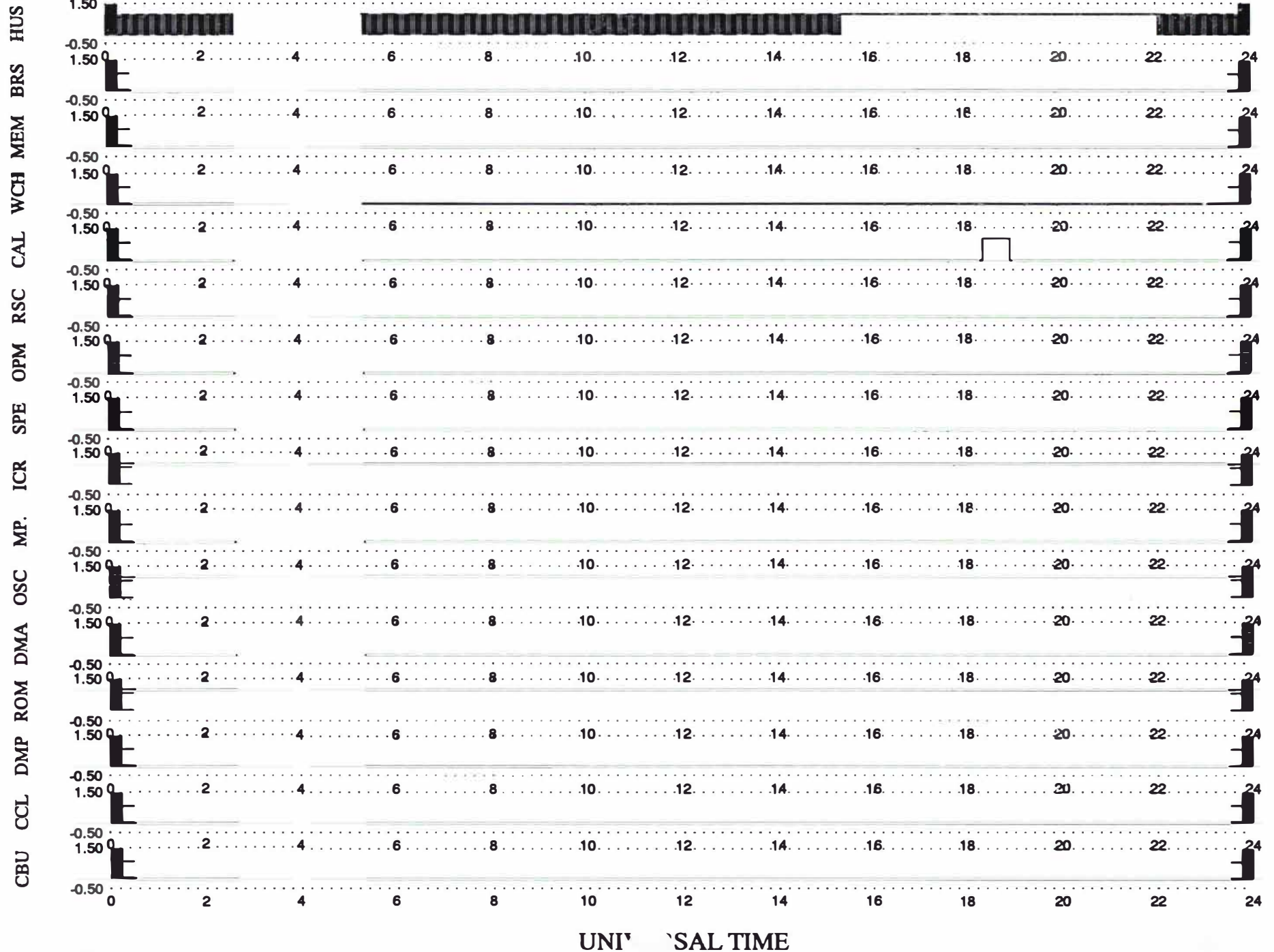


Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: a control group and an experimental group. The control group received a standard diet, while the experimental group received a diet supplemented with a specific nutrient. The subjects were then subjected to a series of tests, including a physical performance test and a cognitive test. The results of the tests were compared between the two groups.

100

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

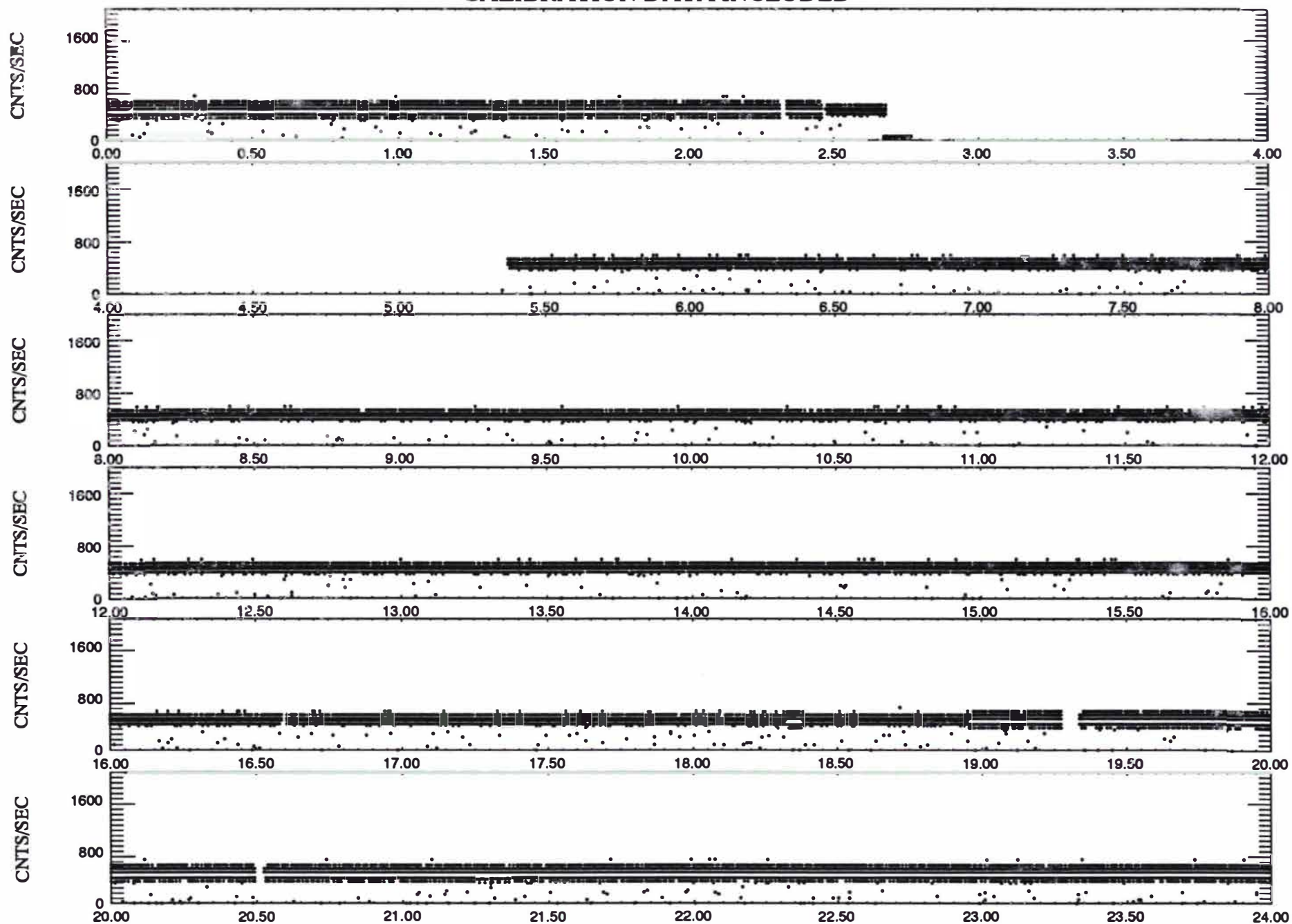
[illegible]

320

CHURCHILL, J. C.

[illegible]

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

Date	Time	Lat	Long	Wind	Sea	Weather	Temp	Humid	Barom	Direction	Speed	Remarks
1912	01	10	10	10	10	10	10	10	10	10	10	10
1912	02	10	10	10	10	10	10	10	10	10	10	10
1912	03	10	10	10	10	10	10	10	10	10	10	10
1912	04	10	10	10	10	10	10	10	10	10	10	10
1912	05	10	10	10	10	10	10	10	10	10	10	10
1912	06	10	10	10	10	10	10	10	10	10	10	10
1912	07	10	10	10	10	10	10	10	10	10	10	10
1912	08	10	10	10	10	10	10	10	10	10	10	10
1912	09	10	10	10	10	10	10	10	10	10	10	10
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1912	11	10	10	10	10	10	10	10	10	10	10	10
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1912	15	10	10	10	10	10	10	10	10	10	10	10
1912	16	10	10	10	10	10	10	10	10	10	10	10
1912	17	10	10	10	10	10	10	10	10	10	10	10
1912	18	10	10	10	10	10	10	10	10	10	10	10
1912	19	10	10	10	10	10	10	10	10	10	10	10
1912	20	10	10	10	10	10	10	10	10	10	10	10
1912	21	10	10	10	10	10	10	10	10	10	10	10
1912	22	10	10	10	10	10	10	10	10	10	10	10
1912	23	10	10	10	10	10	10	10	10	10	10	10
1912	24	10	10	10	10	10	10	10	10	10	10	10
1912	25	10	10	10	10	10	10	10	10	10	10	10
1912	26	10	10	10	10	10	10	10	10	10	10	10
1912	27	10	10	10	10	10	10	10	10	10	10	10
1912	28	10	10	10	10	10	10	10	10	10	10	10
1912	29	10	10	10	10	10	10	10	10	10	10	10
1912	30	10	10	10	10	10	10	10	10	10	10	10
1912	31	10	10	10	10	10	10	10	10	10	10	10

1912 01 10 10 10 10 10 10 10 10 10 10 10 10

