

ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

97 305 NOV 1 00:00:00.000 - 97 321 NOV 17 00:00:00.000

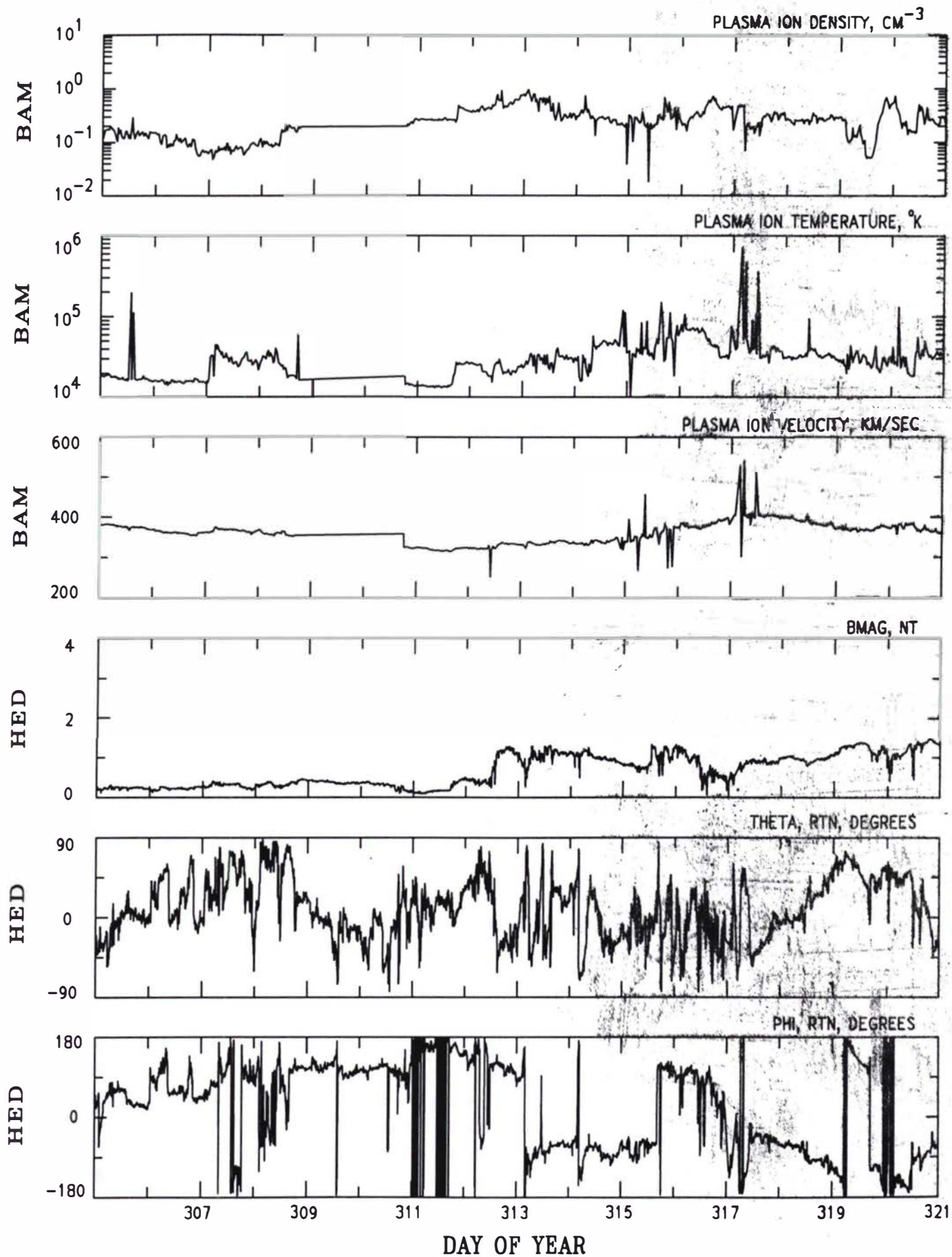
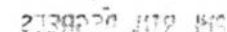
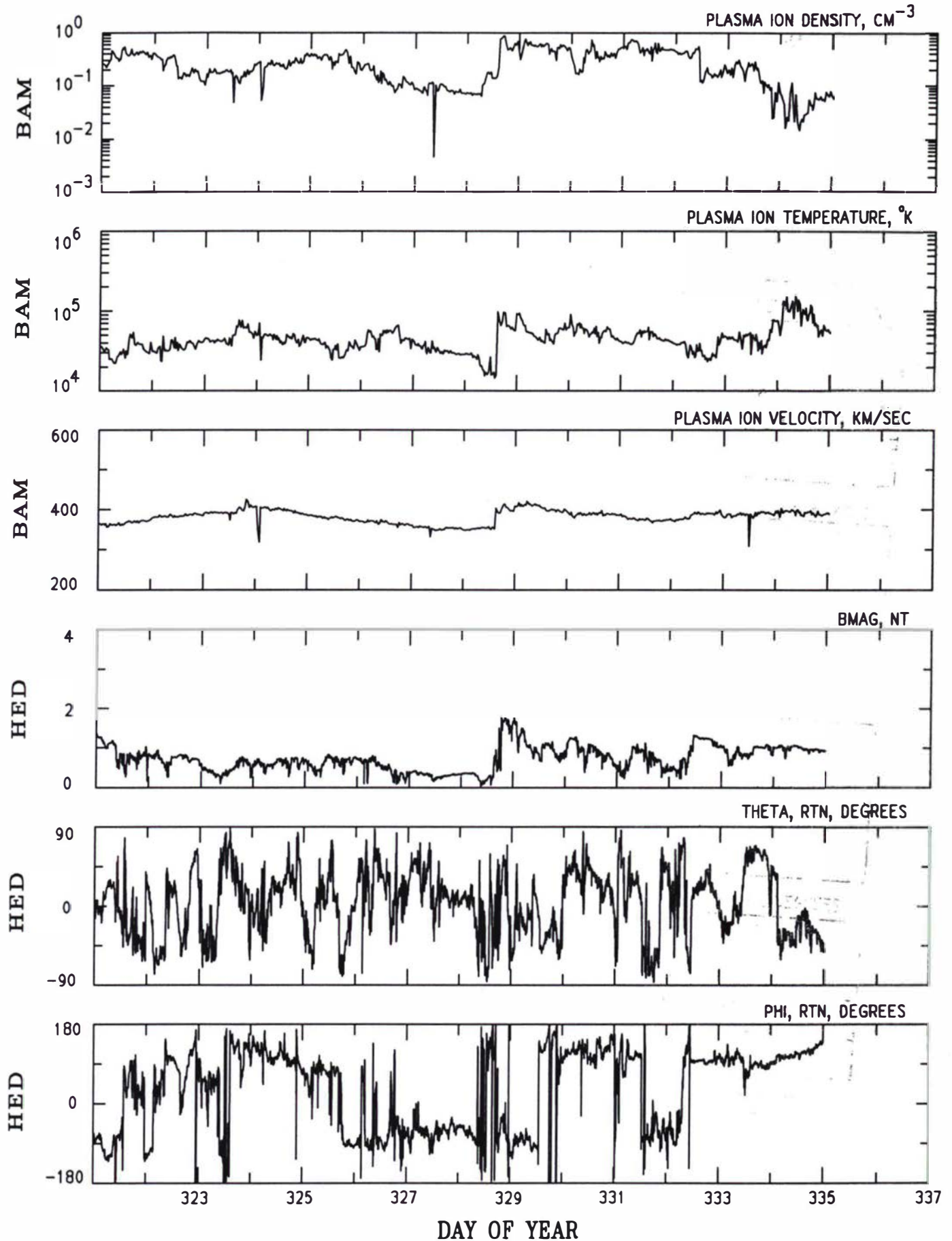


Figure 10.10

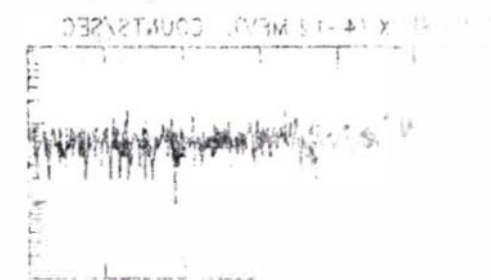
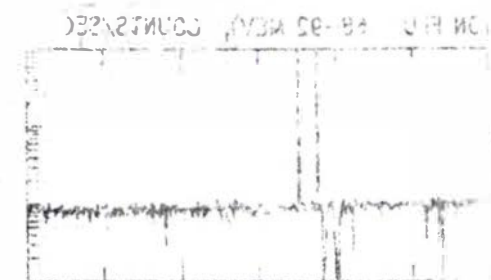
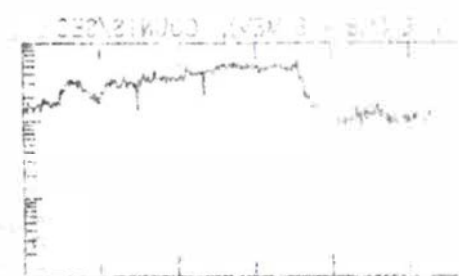
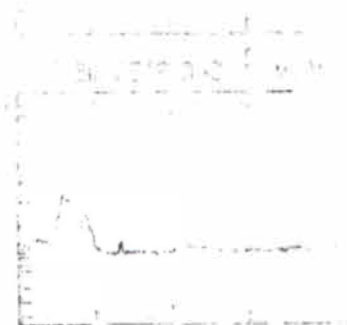


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

97 321 NOV 17 00:00:00.000 - 97 337 DEC 3 00:00:00.000

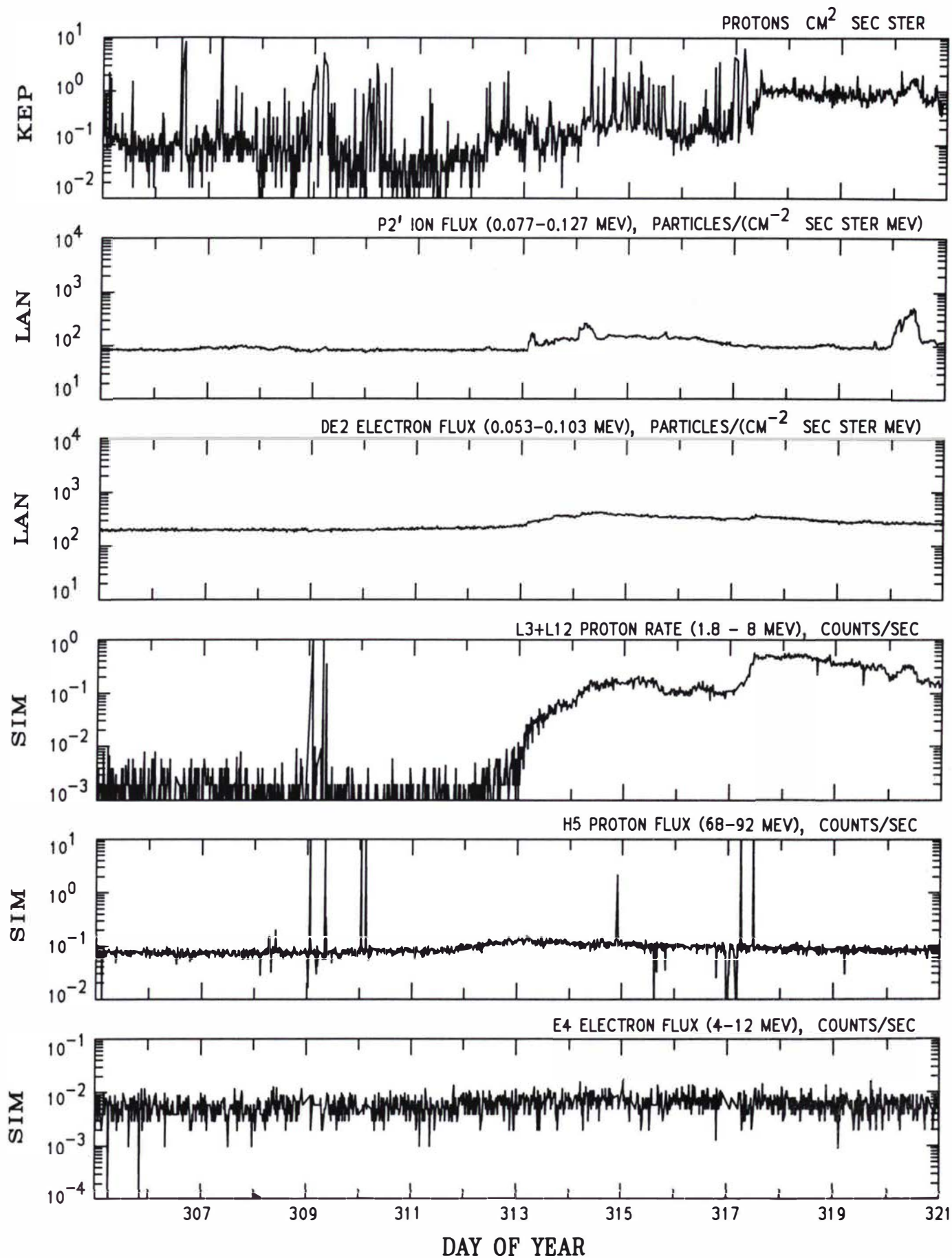


1.1.1
1.1.2
1.1.3
1.1.4
1.1.5
1.1.6
1.1.7
1.1.8
1.1.9
1.1.10
1.1.11
1.1.12
1.1.13
1.1.14
1.1.15
1.1.16
1.1.17
1.1.18
1.1.19
1.1.20
1.1.21
1.1.22
1.1.23
1.1.24
1.1.25
1.1.26
1.1.27
1.1.28
1.1.29
1.1.30
1.1.31
1.1.32
1.1.33
1.1.34
1.1.35
1.1.36
1.1.37
1.1.38
1.1.39
1.1.40
1.1.41
1.1.42
1.1.43
1.1.44
1.1.45
1.1.46
1.1.47
1.1.48
1.1.49
1.1.50
1.1.51
1.1.52
1.1.53
1.1.54
1.1.55
1.1.56
1.1.57
1.1.58
1.1.59
1.1.60
1.1.61
1.1.62
1.1.63
1.1.64
1.1.65
1.1.66
1.1.67
1.1.68
1.1.69
1.1.70
1.1.71
1.1.72
1.1.73
1.1.74
1.1.75
1.1.76
1.1.77
1.1.78
1.1.79
1.1.80
1.1.81
1.1.82
1.1.83
1.1.84
1.1.85
1.1.86
1.1.87
1.1.88
1.1.89
1.1.90
1.1.91
1.1.92
1.1.93
1.1.94
1.1.95
1.1.96
1.1.97
1.1.98
1.1.99
1.1.100



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

97 305 NOV 1 00:00:00.000 - 97 321 NOV 17 00:00:00.000

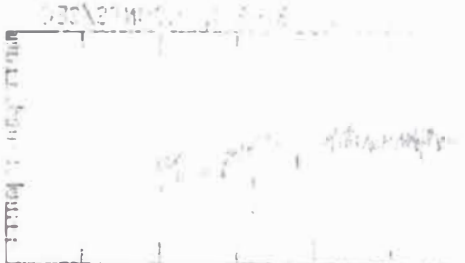


FOR 1970-1971

1970-1971

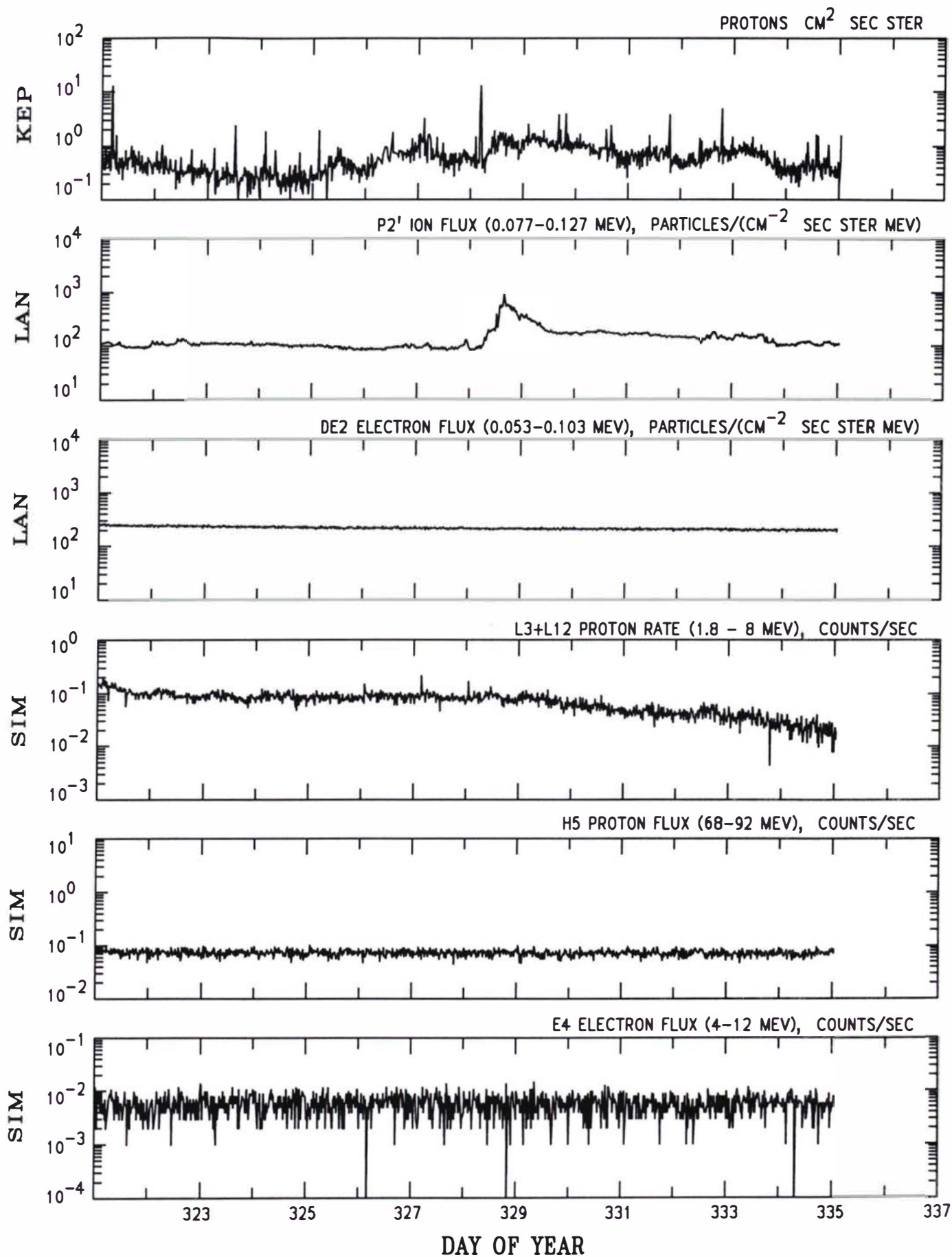
1970-1971

1970-1971



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

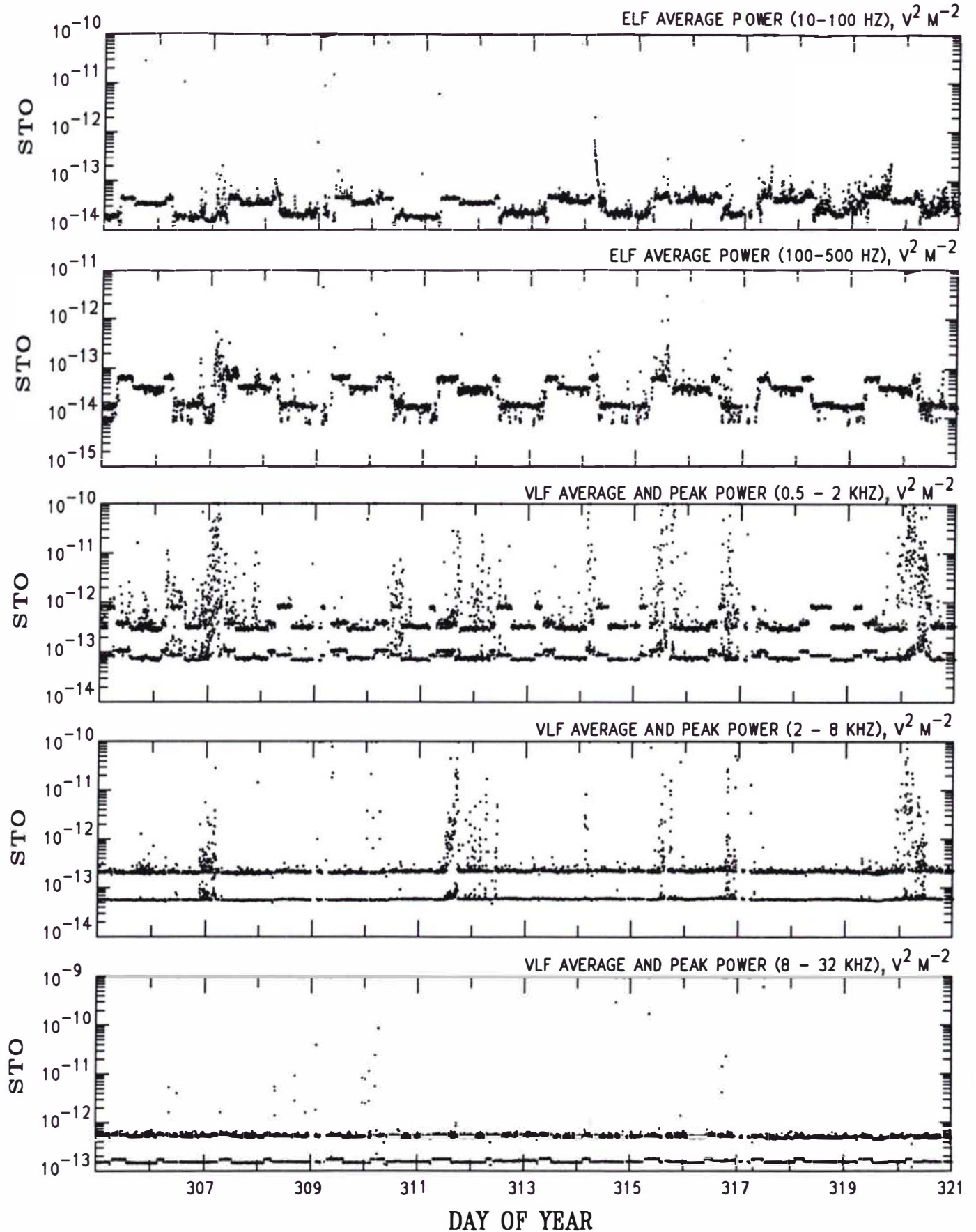
97 321 NOV 17 00:00:00.000 - 97 337 DEC 3 00:00:00.000





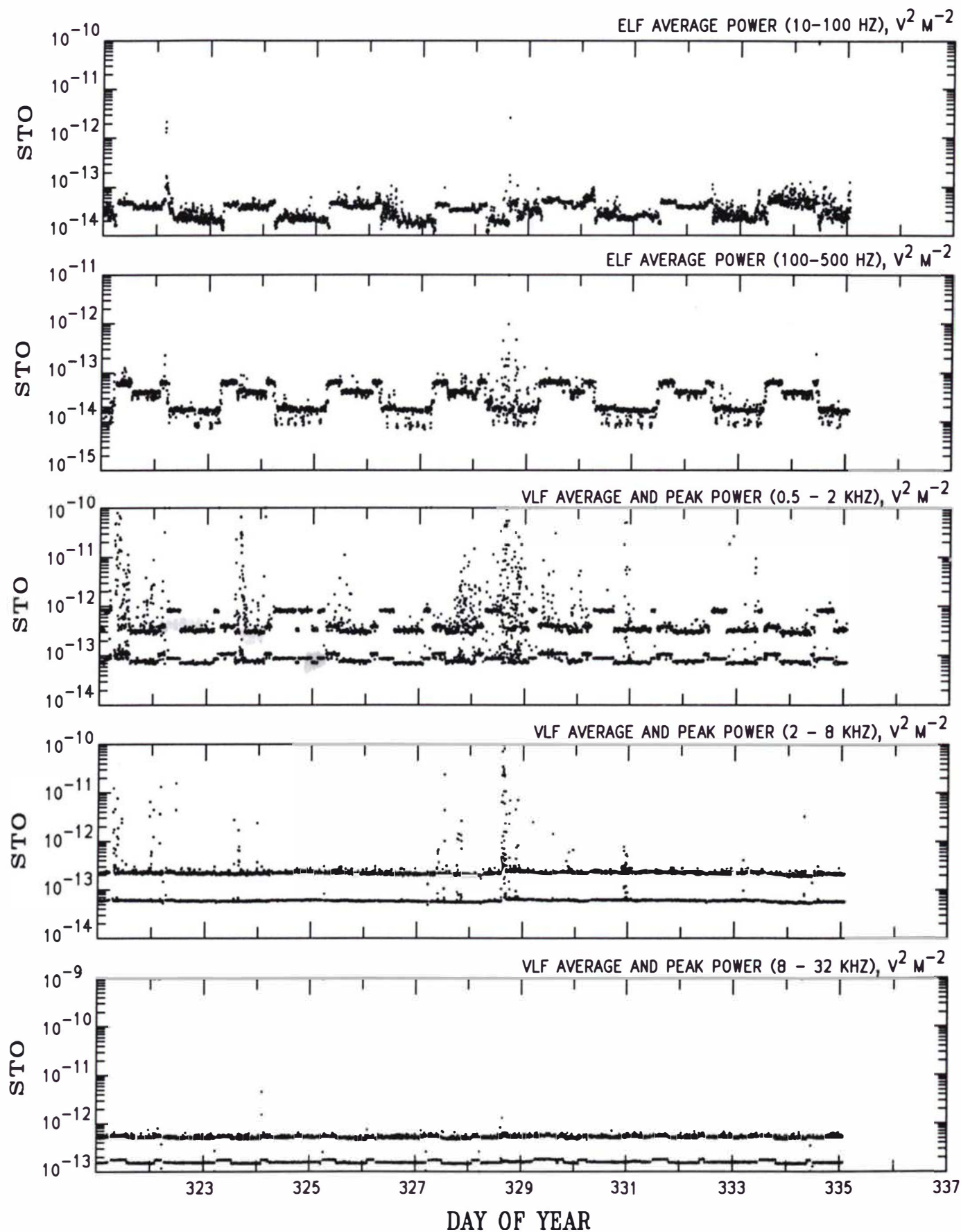
ULYSSES CDR - PLASMA WAVE

97 305 NOV 1 00:00:00.000 - 97 321 NOV 17 00:00:00.000



ULYSSES CDR - PLASMA WAVE

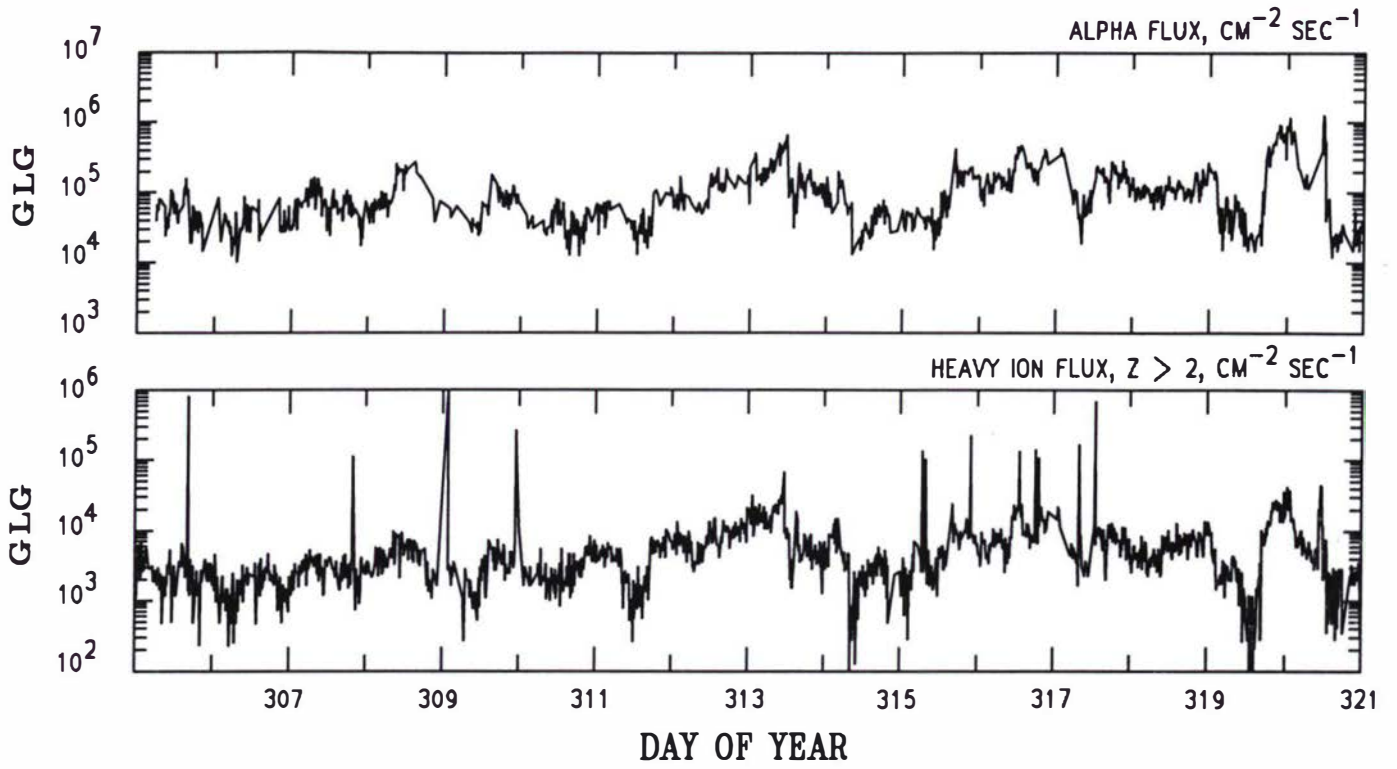
97 321 NOV 17 00:00:00.000 - 97 337 DEC 3 00:00:00.000





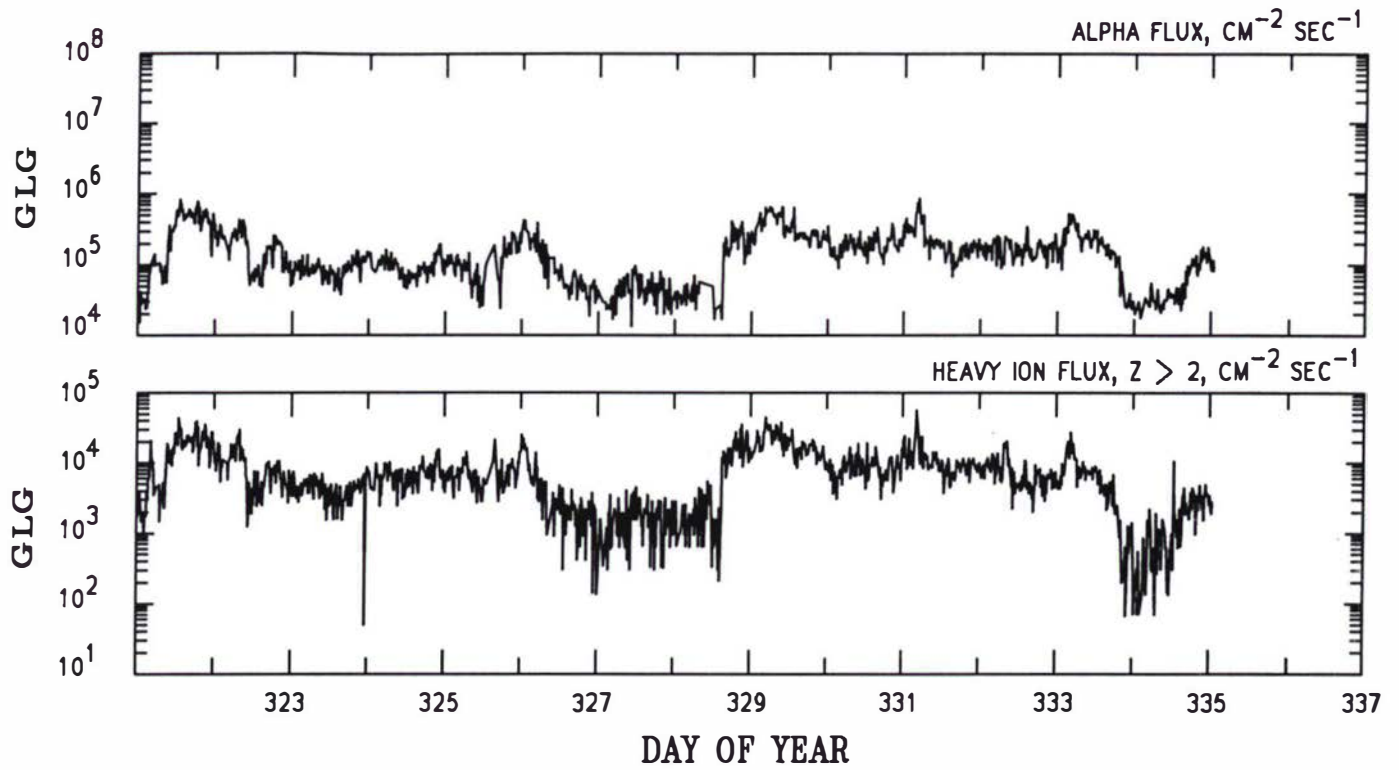
ULYSSES CDR - SOLAR WIND ION COMPOSITION

97 305 NOV 1 00:00:00.000 - 97 321 NOV 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

97 321 NOV 17 00:00:00.000 - 97 337 DEC 3 00:00:00.000



BATSE time corrected 9/26

Date: June 13 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For 3 Spacecraft events

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

3. For 4 Spacecraft Events

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

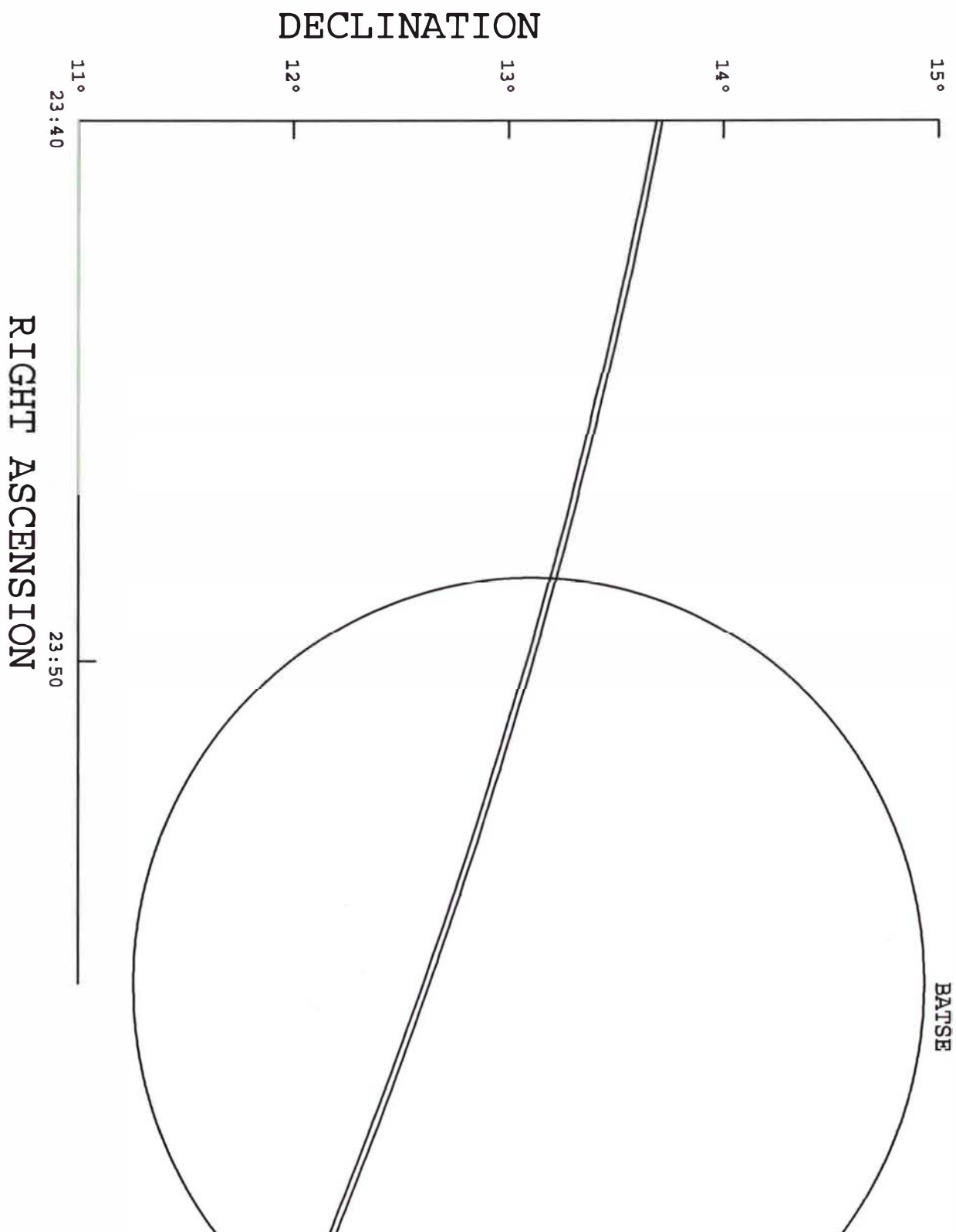
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF NOV 1, 1997 6:31

13 / 6 / 2

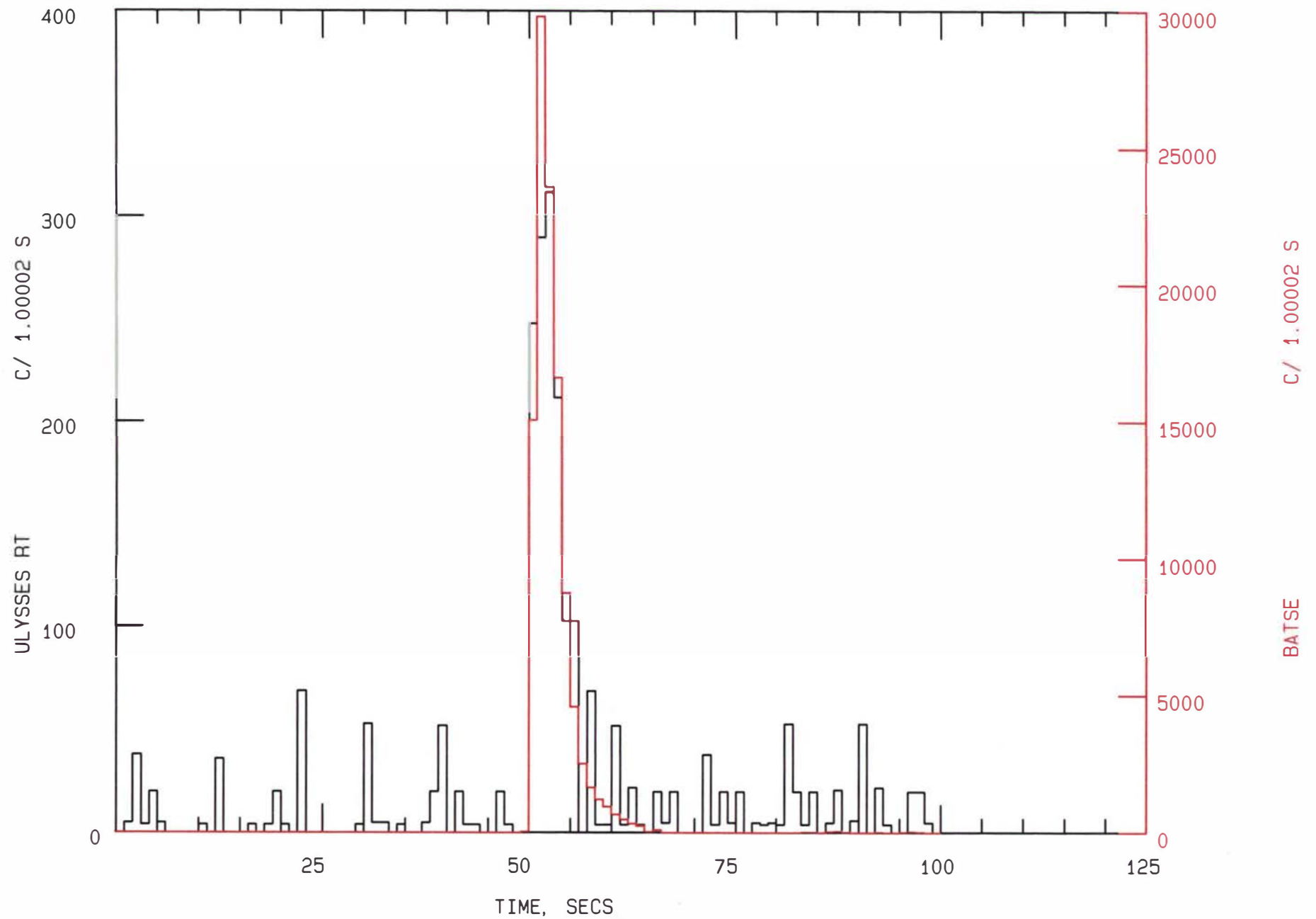


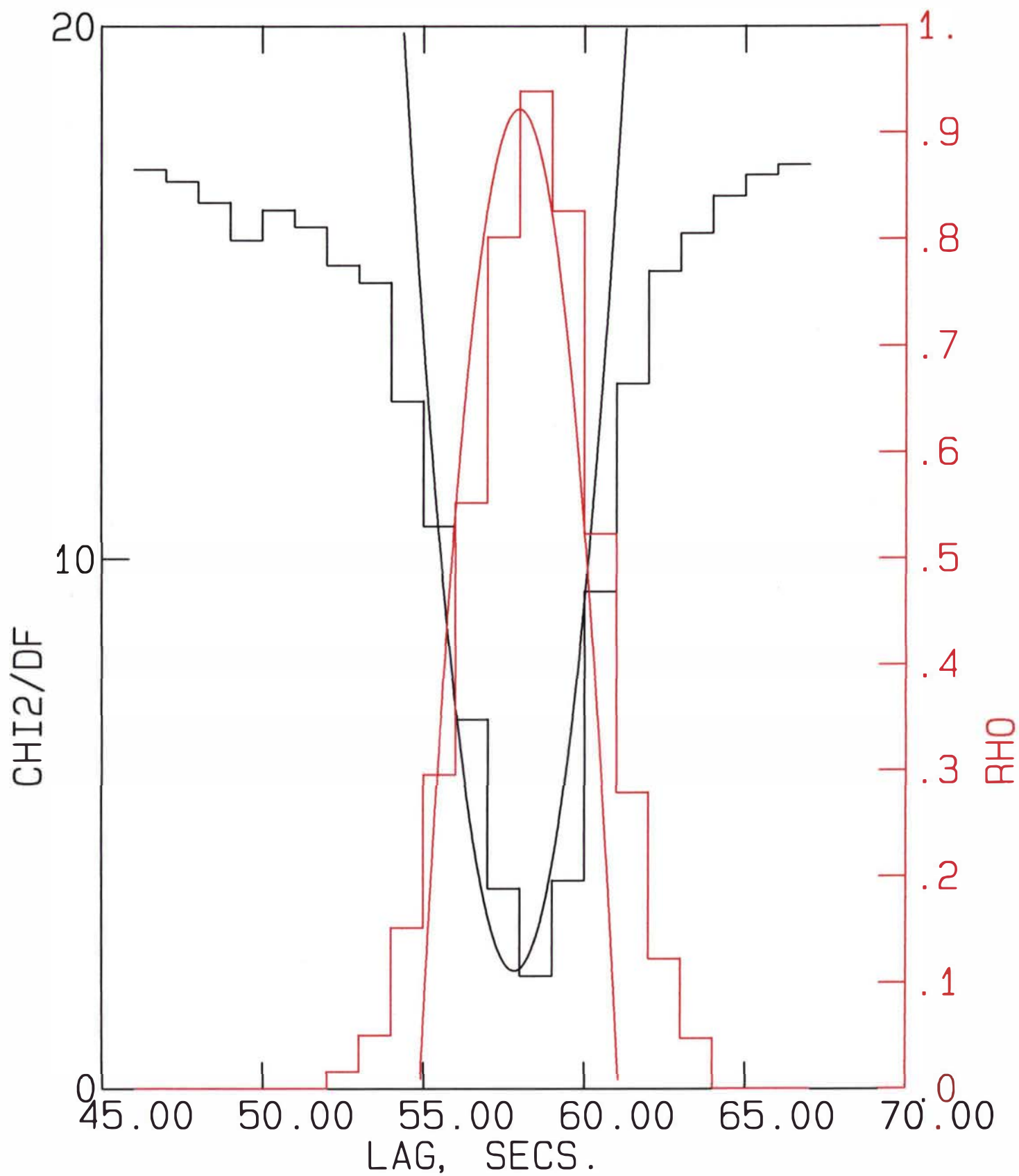
ULYSSES RT-BATSE

CORRELATION

1/11/97 26010.251

13/ 6/ 2





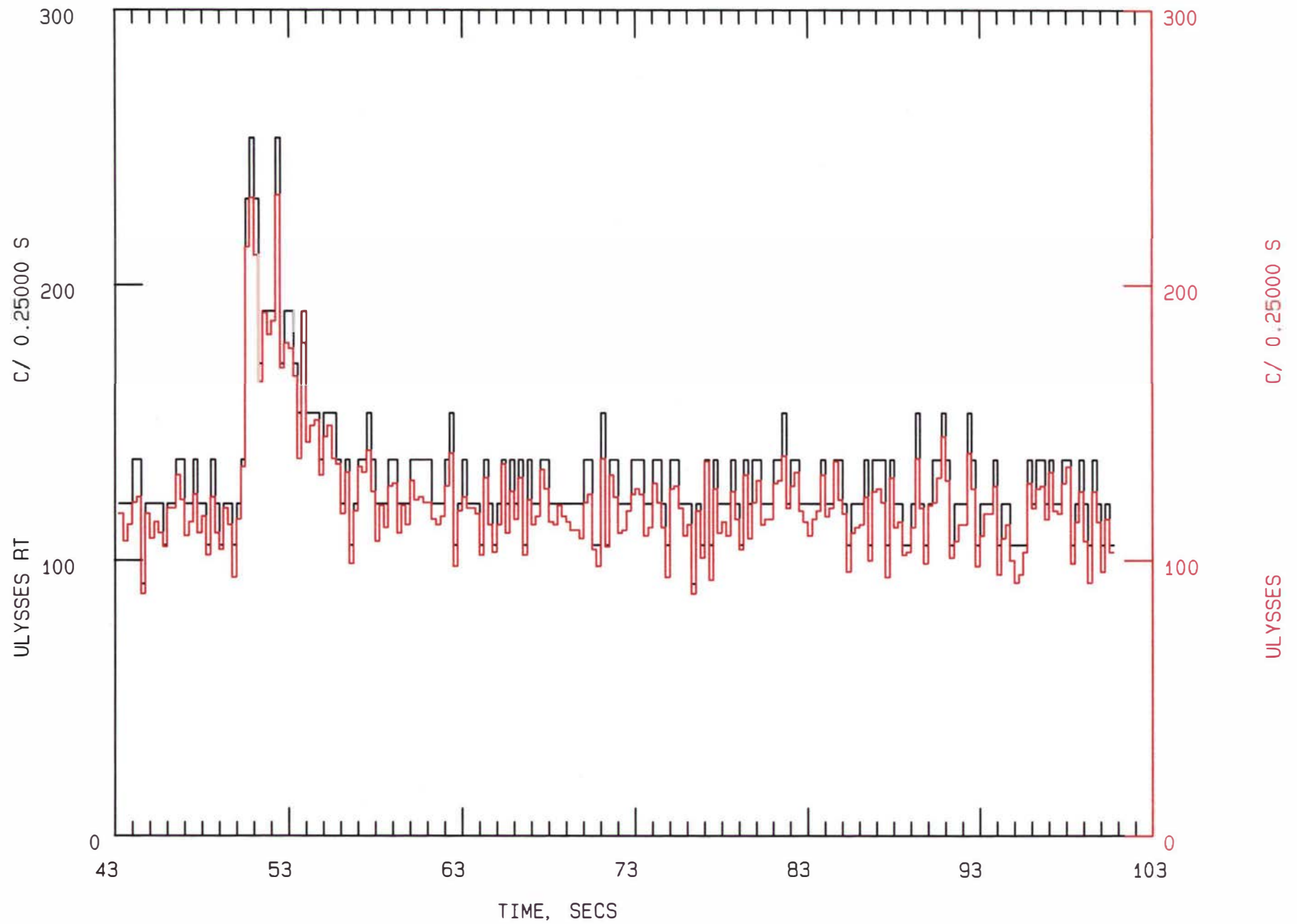
ULYSSES RT-ULYSSES

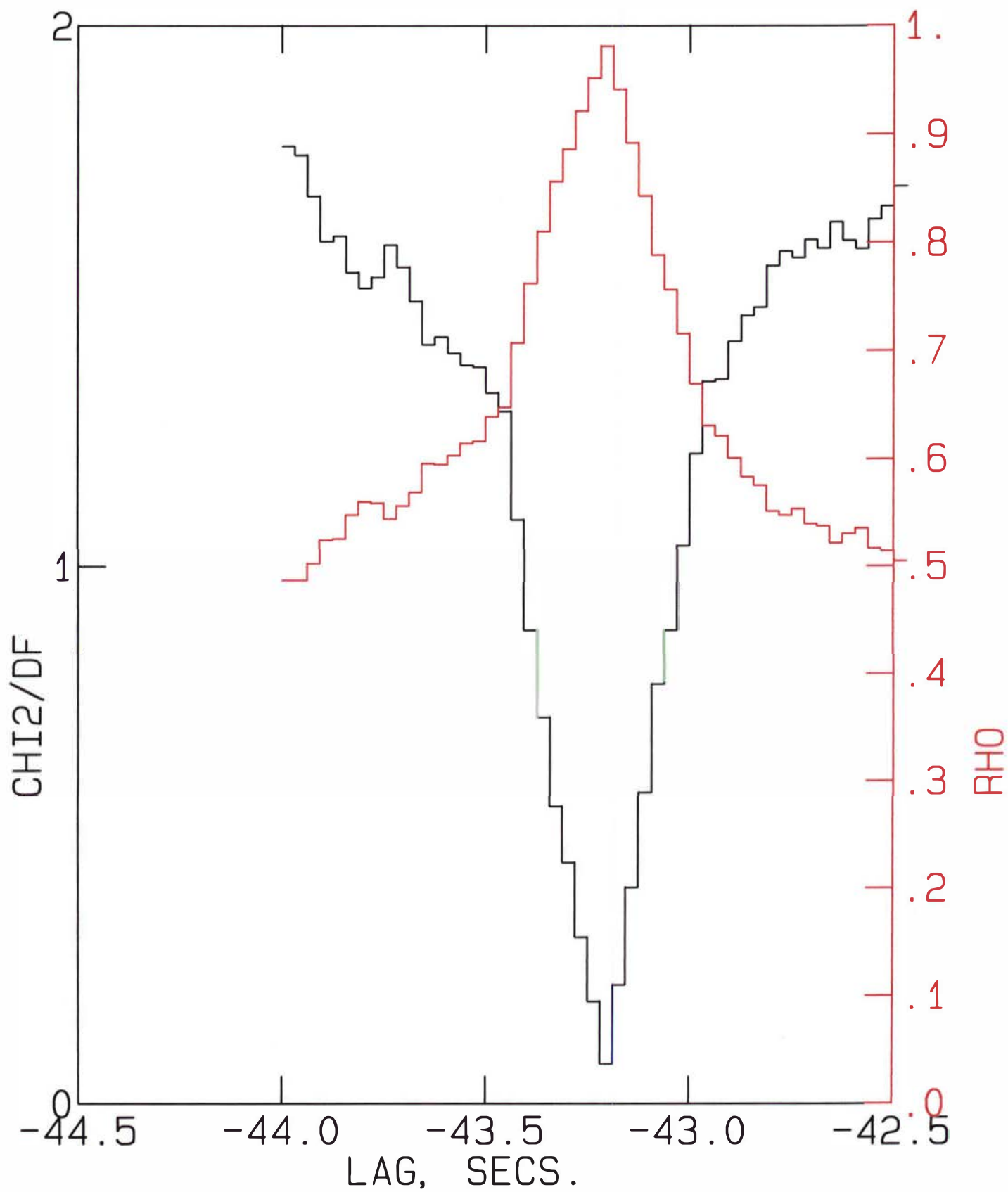
CORRELATION

1/11/97

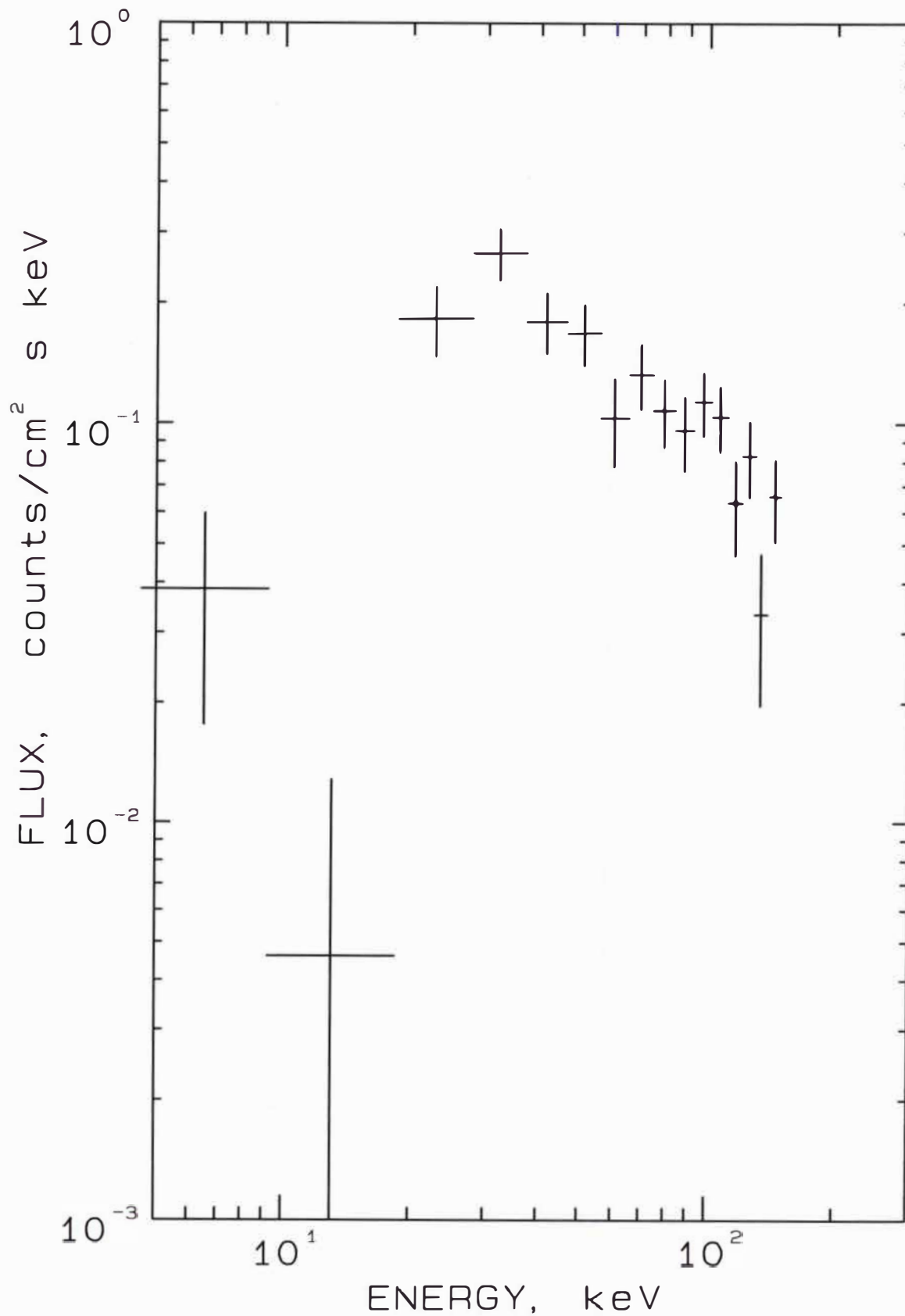
26010.251

13/ 6/ 2



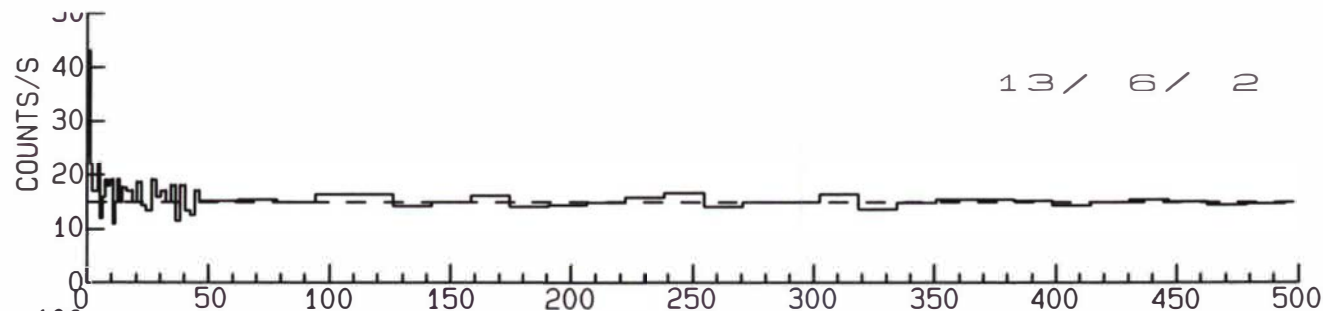


SPECTRUM INTEGRATED OVER 3.4 SECONDS, INTERVALS 2 TO 5

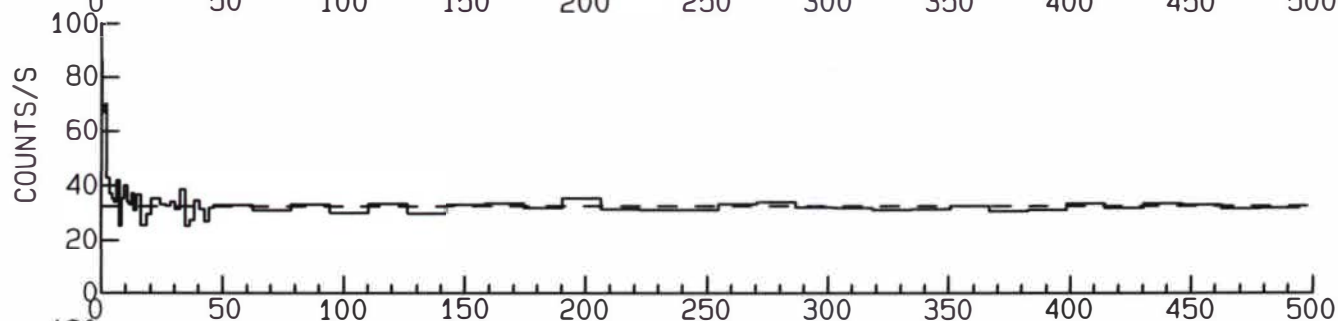


ULYSSES 01/11/97 26060.861 BURST SPECTRAL COUNT RATES

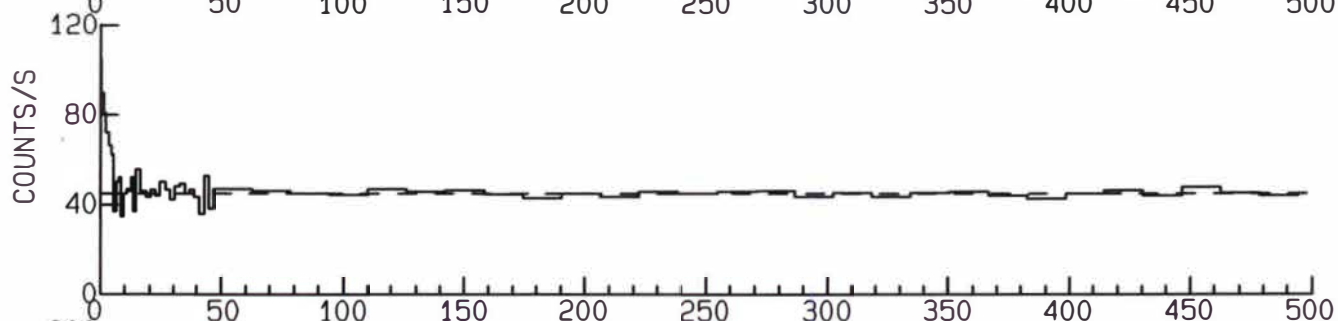
129-147 keV



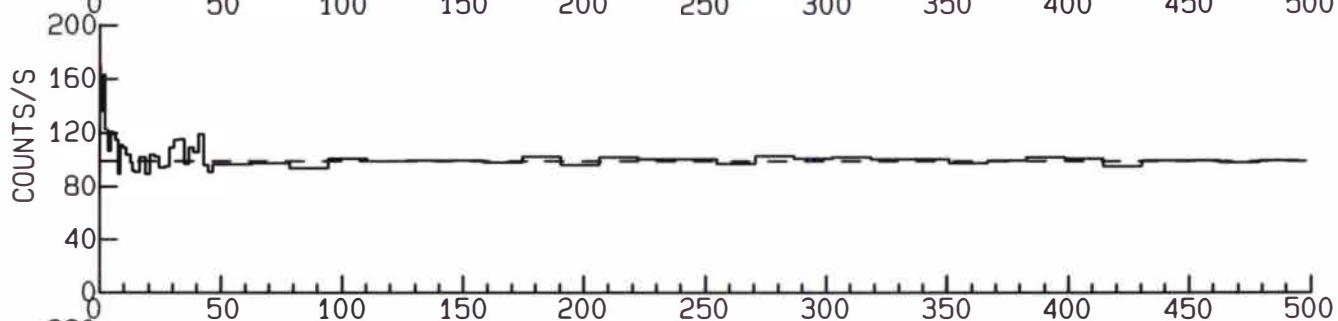
101-129 keV



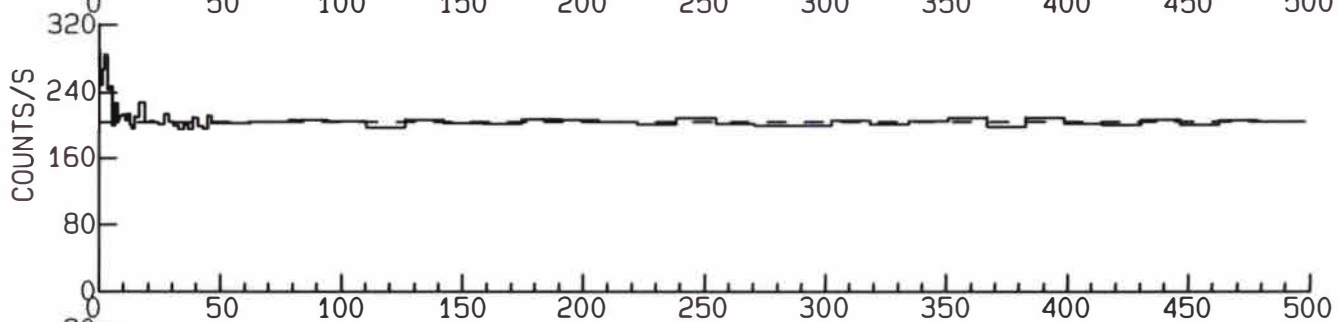
73-101 keV



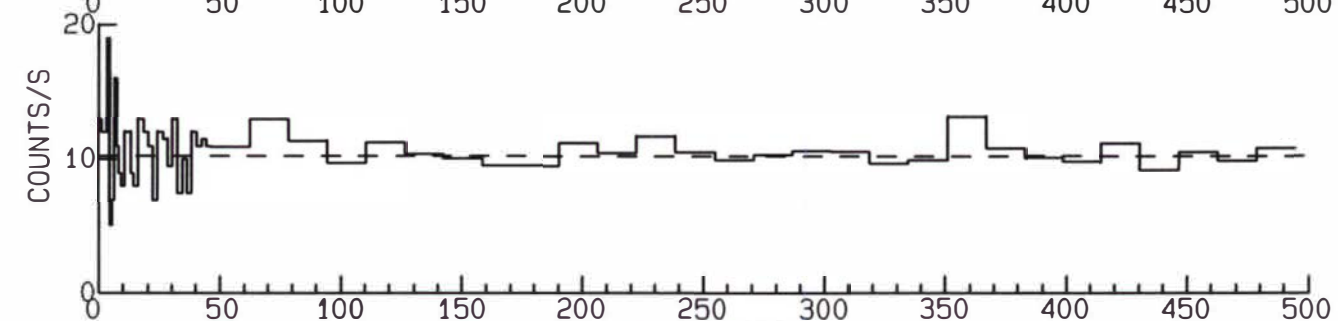
46-73 keV



18-46 keV



4-18 keV

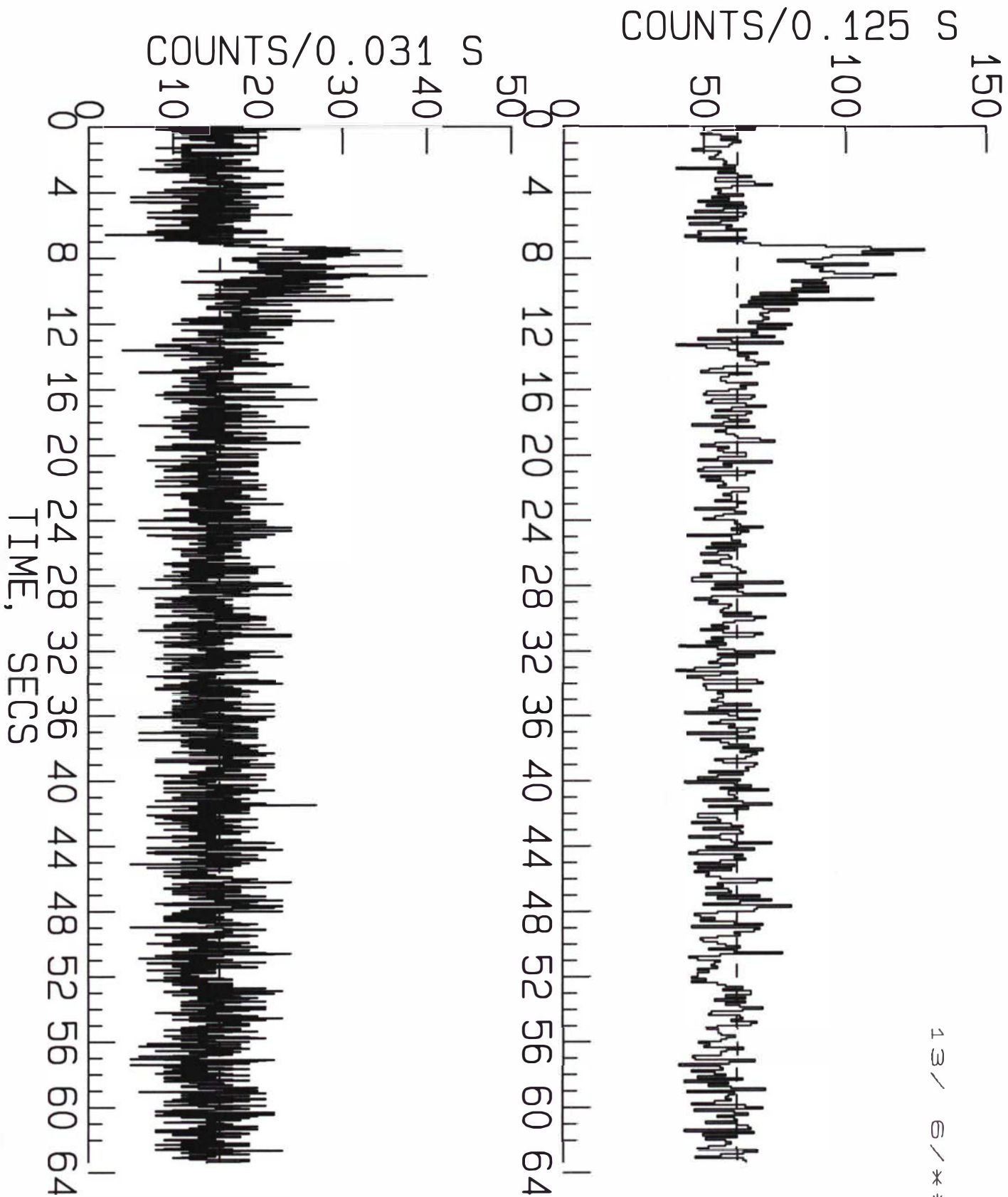


ULYSSES

01/11/97

Ttrig=26060.874

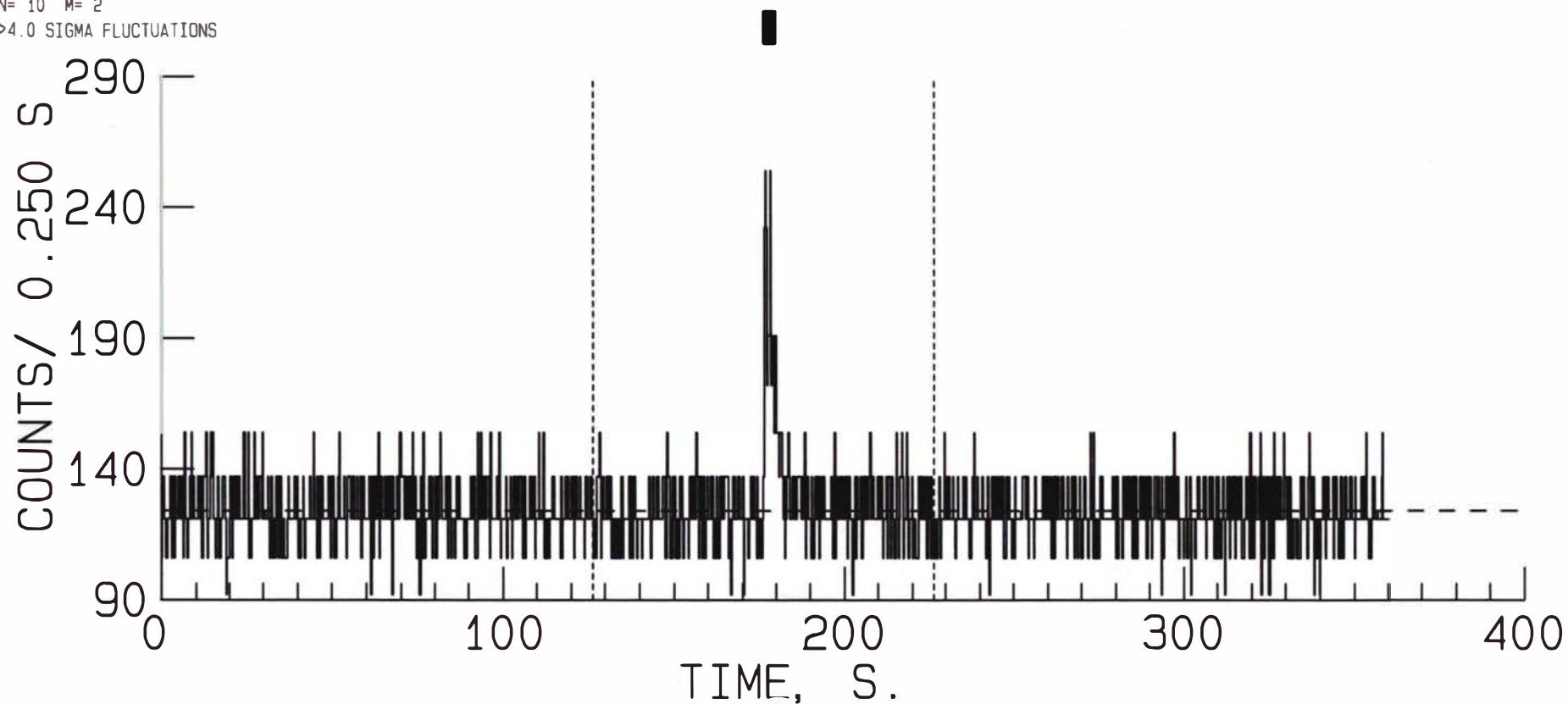
22- 148 keV



ULYSSES RT
1/11/97 25884.240 s
22- 148 keV

13 / 6 / 2

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



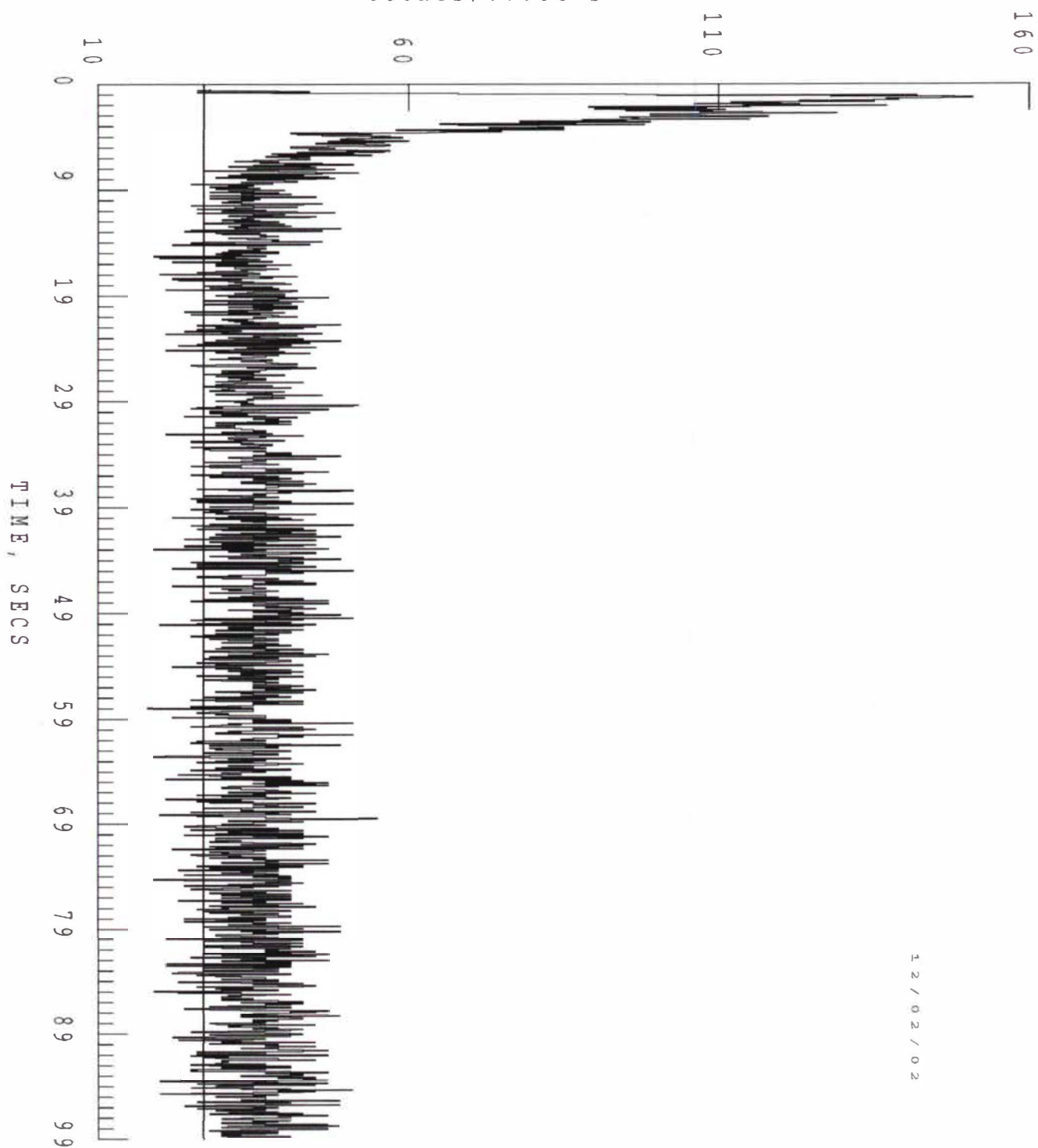
KONUS2

01/11/97

23484.526

50 - 200 keV

COUNTS/0.064 S



262 65663.9 KONUS 30S,HARD,2PKS (+UL@63120,3100LS,MOD,20S) (13NO,14NO)

970922 265 2888.4 BATSE#6392,32880/SEC
13 265 2894.4 PEAK(50/S),2910.5(110),@97DEG,ONE-SIDED,EDGE SR. DUBIOUS
14 265 2894.6 PKS(200/S),2910.6(500/S),@109,ONE-SIDED,EDGE SAA.DUBIOUS

970925 268 81795.8 BATSE#6397,9551/SEC
14 268 81798.3 PEAK (70/S,<10S) @ 42DEG (13SAA)

971009 282 68215.8 BATSE#6422,10861/S@1.8S+UL@69240,3050LS,MOD+KONUS@68215.0
14 282 68217.2 PEAK(180/S,<2S)@83 (TRIGGER PEAK 68215.64) (13NO@145)

971019 292 53754.2 KONUS,10S (+UL@51000,2950LS,MOD,10S)
14 292 53752.6 RISE,~50SEC,SOFT,NO TRIG (13 NO)

971029 302 5318.4 BATSE#6453,4717/S@35.8S (KONUS@5351.8,120S) (UL WEAK@2820)
14 302 5326.0 PKS, 44.0,66.0,NO TRIG,@102DEG (13NO@49DEG)

971101 305 23484.5 KONUS (10SEC,FRED) (UL@26040,MOD,10S@2950LS)
14 305 23483.8 PEAK (200/S,<2S) (13SR) TRIGGER PEAK 23483.0

971110 314 68141.3 KONUS,100SEC (UL@67080 @2950LS,MOD) (13 SR)
14 314 68161.3 PEAKS, 213.3, MULT PEAKS,HARD,TRIGGER PKS 68213.19,213.91

971127 331 47595.8 BATSE#6509 (139968/S)
13 331 47595.8 PKS,613.8,759.8(240),767.8(140)
14 331 47760.5 PKS(3000/S),47768.5(2000), INTENSE, NOTRIG

971201 335 9295.6 BATSE#6515 (8768/S)
14 335 9306.4 PK(SOFT)+9310.4(160)+9316.4(220)+9328.4(150),NOTRIG(13NR)

971207 341 72232.9 BATSE#6525 (7892/S@12.0)
14 341 72244.2 PK(270),268.2,284.2 (@80DEG),TRIG PK 72244.28 (13NR)

971218 352 52499.9 BATSE#6535 (9181/S@+2.3S)
13 352 52500.2 PK(70),52536.2(?) (SOFT,@38DEG) (14SAA)

971219 353 79974.5 KONUS,10S,SPIKE@+4 (UL 77580,15SEC,MOD) (13SAA,14NR)

980109 009 4345.6 BATSE#6564(1401/S)+SAX,25S(IAU6805) (13NO@74,14NA@144)

980113 013 14845.7 BATSE#6570 (9376/S,COMPLEX,DUR60S)
13 013 14869.2 PKS(50),879.2(50),883.2(50) (ONE-SIDED,@119DEG)
14 013 14848.3 PEAK(60/S,<4S), NO TRIGGER

980119 019U 5100 ULYSSES MOD(32MS) @2350LS
14 019 5375.9 PEAK (900/S,<8S,SOFT) (TRIG PEAKS 5372.9,5374.6) (13NO)

980124 024 23673.0 BATSE#6576, 16971/S @7.7S,SPIKY,MAX@+42.5,DUR100S)
13 024 23679.1 PEAK(90/S,<8S),23707.1,23717.1 (LAST 2 WEAK,ONE-SIDED)
14 024 23679.6 PEAK(300/S,<10S),707.6WEAK,715.6WEAK
14 024 23679.1 TRIGGER PKS 679.07,679.99 (.1024S); 12.8MS PEAK 23678.43

980125 025 74368.7 BATSE#6581, 34996/S,MULT PKS,MAIN PK@+40,270S
13 025 74416.4 PEAK @108DEG(220/S,<8S) (14NO@125)

J202 033U37380 ULYSSES MODERATE, 10SEC@2265LS
13 033 35713.6 PEAK(80/S),35717.6(70),<8SEC OVERALL
14 033 35712.9 PEAK(200/S),35718.9(400/S),<10SEC OVERALL, NO TRIGGER

From TERRELL@nisdp0.lanl.gov Fri Feb 27 15:11 PST 1998

From: TERRELL@nisdp0.lanl.gov

Date: Fri, 27 Feb 1998 16:11:55 -0700

To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
henze@fender.msfc.nasa.gov, filippo@botes1.tesre.bo.cnr.it,
kmarar@isac.ernet.in

X-Vmsmail-To: @MAILOUTUL.DIS

Subject: DMSP GRB: 1997(many),980109,980113,980119,980124,980125,980202,980203

From: jterrell@lanl.gov (James Terrell) 980227

To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kmarar@isac.ernet.in, kraken@rosserv.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, teegarden@lheavx.gsfc.nasa.gov,
vnp@isac.ernet.in, yosimori@rikkyo.ac.jp

Subj: DMSP GRB detections: 1997(many),980109,980113,980119,980124,980125,980202,980203

The following GRB were detected by DMSP13 or DMSP14 (or NOT detected, if indicated).

No detection can occur for bursts more than 118 degrees from spacecraft zenith,
or if in the presence of very high counting rates (SAA,SR,NR).

Data are normally in 2-sec counts, except when the DMSP14 trigger circuit is
tripped, giving 12.8ms data, usually reported here as 102.4ms counts.

Numerous other BATSE GRB were also detected, but not reported here; numerous
weak detections by Ulysses have not been checked because of low counting
rates expected at an indefinite time.

DATE	FL	DAY	TIME	NOTES	---	(ND=NO DATA,NA=NOT APPARENT & NOT ANALYZED)	-----	REPORTED
				(NO=DATA CHECKED--SHOWS NO DETECTION)	(SR=S. RADIATION BELT)			
				(NR=NORTH RADIATION BELT)	(SAA=SOUTH ATLANTIC ANOMALY)			
970111	011	35040.2	BATSE GRB#5773 (8727CTS/2S)	(SEE IAU6569,6571,6574,6598)				
	011	35040.2	BEPP0 SAX TRIG,INTENSE,50S,3 PEAKS(232.10,19.67J)	IAU6533				
13	011	35040.0	PEAKS(40/S),48.0(50/S),58.0(60/S),@24DEG,@848KM,SOFT				REP0313	
970111	011	85744.6	KONUS (HARD,SLOW RISE) +TGR (UL:NO)	(DMSP13:NO)				
970117	017	53211	TGR+SAX GRB (KONUS INOP)+UL@54420(STRONG,20S)	(13:NO)				
970124	024	44343.4	KONUS(MULT PKS)+UL@46253@2100LS,STRONG+TGR	(13SAA)				
970201	032	57250.7	BATSE GRB#5989 (53612/SEC)	+UL				
13	032	57222.1	PEAK (100/S,~30S,SOFT,BROAD)	(@111DEG) UNCONVINCING				
970218	049	50996.1	KONUS (STRONG,5SEC)	+UL@51274,2000LS (STRONG,8SEC)				
13	049	51001.0	PEAK (320/S,<6S)				REP0624	
970222	053	86006.6	KONUS (MOD.STRONG,SEV.SEC)	+UL@85873,2000LS,MOD,2S(13NO)				
970226	057	31585.9	KONUS (STRONG,SOFT PK@+39)	+UL@30547,2000LS(V.INT,40S)				
13	057	31595.8	PEAK (270/S,10SEC)	(MODERATELY STRONG)			REP0313	
970228	059	10680.8	BEPP0SAX(IAU6572)MOD.INT.,80S,4 PKS (75.46,11.75J)	IAU6578				
	059	10680.8	INT.X-RAY,RADIO(IAU6576,6577),OPTICAL(6584),MOTION(6629)	OPTICAL				
13	059	10659.1	PKS,667.1(60/S,ONE-SIDED,SOFT,@74DEG)	DOUBTFUL (+UL,WIND)				
970313	072	30096.5	KONUS(MOD.STRONG,PK@+11,40S)+UL@28380,2000LS(MOD.INT,10S)					
13	072	28355.8	PEAK (180/S,<2S,SOFT)	(NO PEAK AT 30096!)	(CONFLICT)		REP0501	

lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

Konus triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

From kraken@rosserv.gsfc.nasa.gov Tue Nov 4 15:24 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov (Unverified)
Mime-Version: 1.0
Date: Tue, 4 Nov 1997 18:25:11 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysees burst seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Here is a report on your recent Ulysees bursts not seen by BATSE,
from the TGRS perspective:

<u>Ulysees burst</u>	<u>TGRS sees?</u>	<u>TGRS characteristics</u>
10/28/97 23:04 weak 64ms long	YES (in waiting mode)	100 cts/s peak (100-300 keV) 80 cts/s peak (35-100 keV) This is a *really* little guy. Would've been dismissed as noise, but peaks in both energy ranges line up in time exactly. Occurred at 80347s
10/29/97 00:47 weak 64ms long	NO	
11/1/97 07:14 erate 10s long	N/D	Data from this date is not available. Possibly still in processing. I'll let you know if I find anything.

From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue Nov 4 12:54 PST 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 4 Nov 1997 15:48:10 -0500 (EST)
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,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus report on recent events seen by Ulysses but not by BATSE

Konus report on recent events seen by Ulysses, but not BATSE
=====

June 25 1997 12:50 Ulysses time; moderate burst, 15 s long

Konus triggered at 12:13:13.735 in the North-facing detector. There were 15 seconds of activity, hardening with time, with a sudden end. The event must have been within a few degrees of the ecliptic, because the North-facing and South-facing detectors saw very similar intensities.

October 9 1997 19:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 18:56:54.951 in the South-facing detector. There was a single peak with substructure, lasting 10 seconds, with the maximum intensity 2 seconds after the trigger.

October 10 1997 23:36 " " ; weak burst, 32 ms long

This event was not detected by Konus.

October 28 1997 23:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

October 29 1997 00:47 Ulysses time; weak burst, 64 ms long

Konus triggered at 01:29:11.805 in the North-facing detector. The event lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event

was a 10 second FRED which was initially very hard, but became gradually softer.

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczyski, marar, teegarden, terrell, yoshimori)

KONUS

ULYSSES RT

08 / 02 / 00

01 / 11 / 97 82260.367 s

0.500 S INTERVALS REGROUPED BY 8

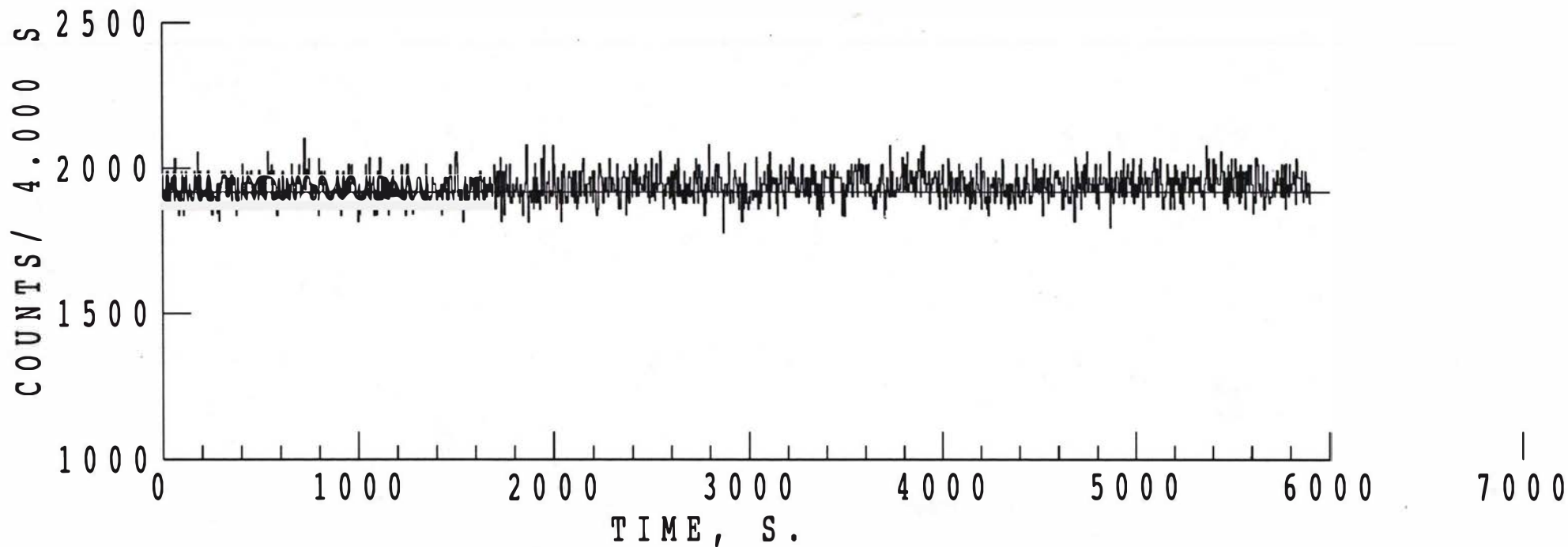
0 - 0 keV

N= 10 M= 10

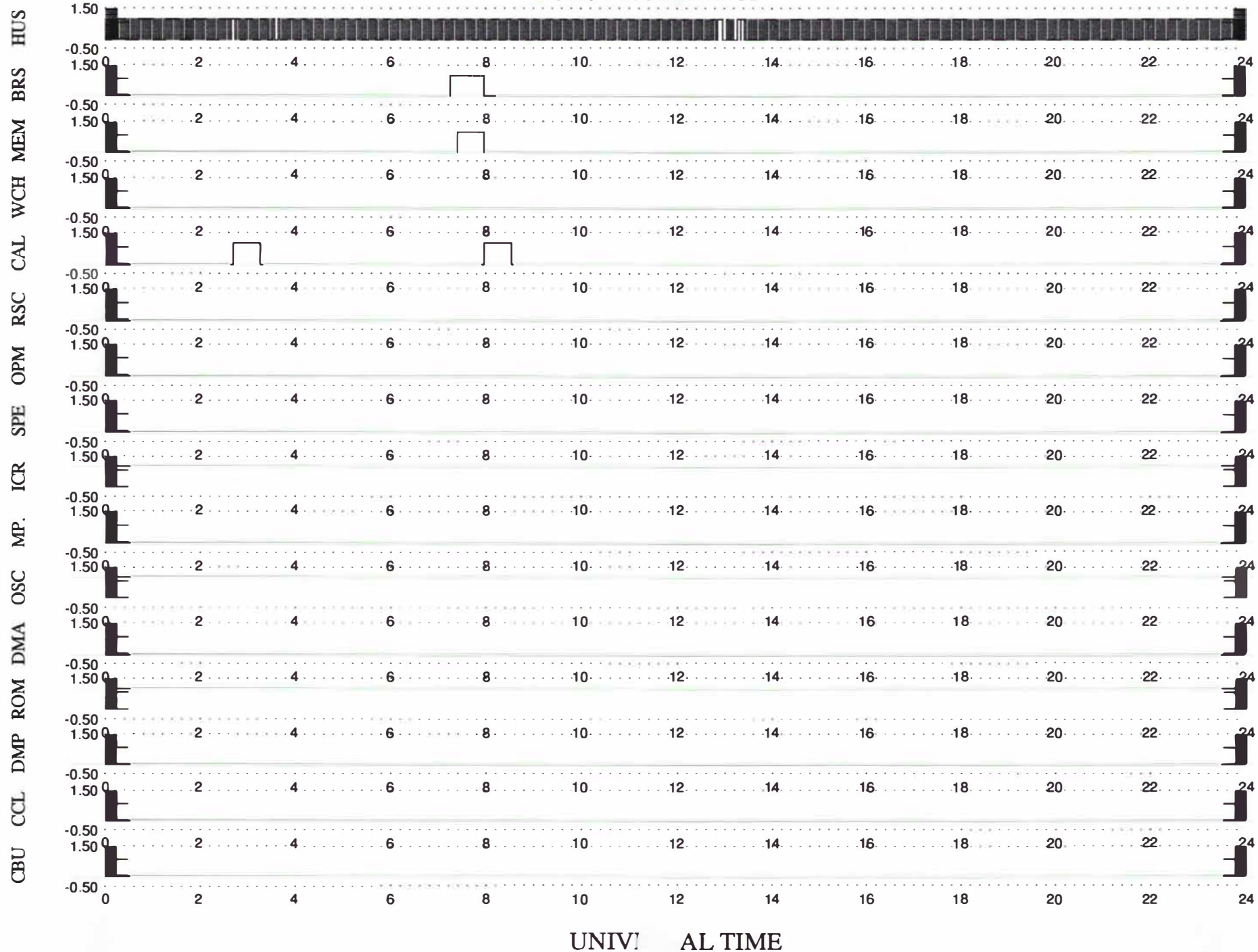
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

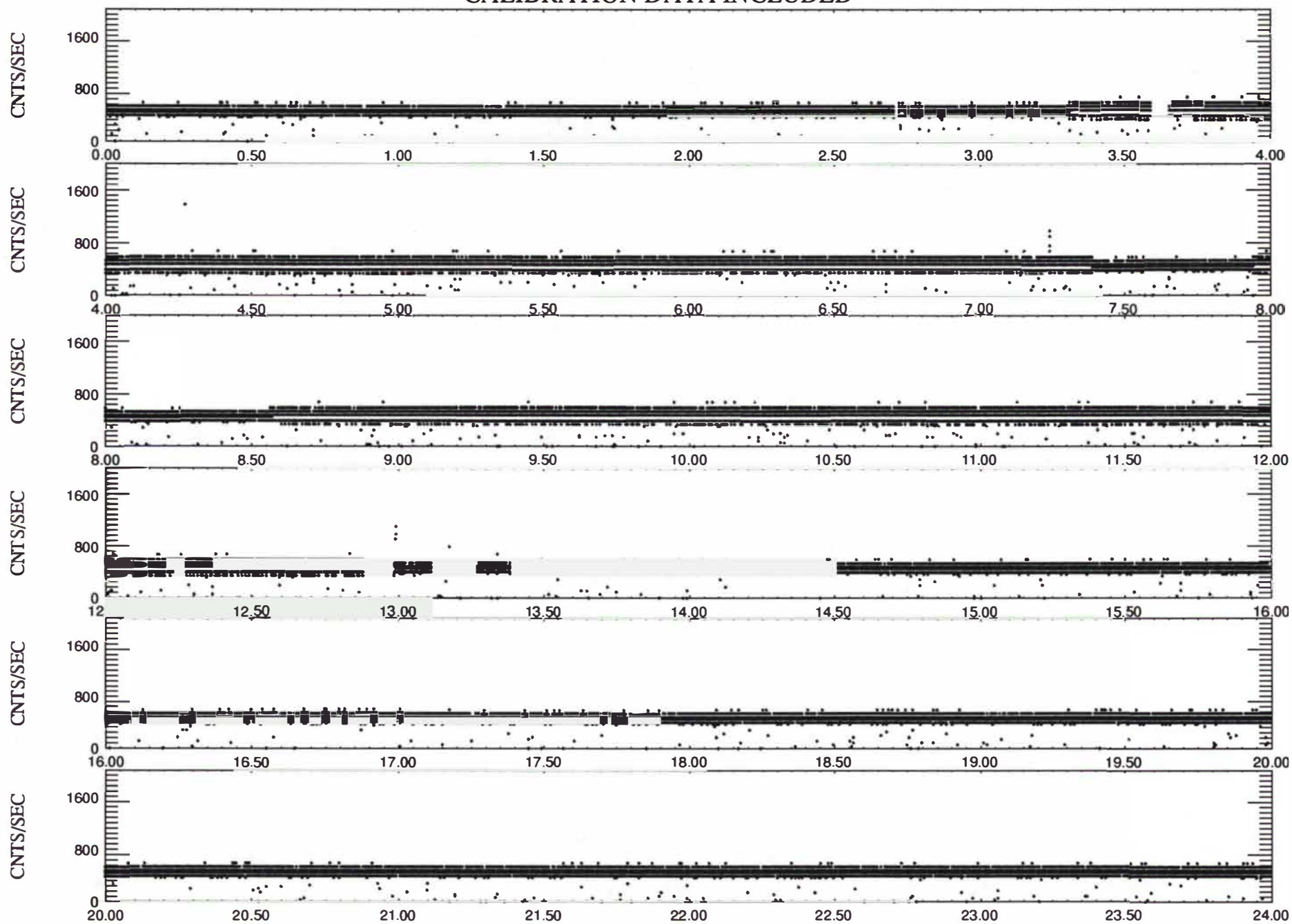
>4.0 SIGMA FLUCTUATIONS



BURST NUMBER 12

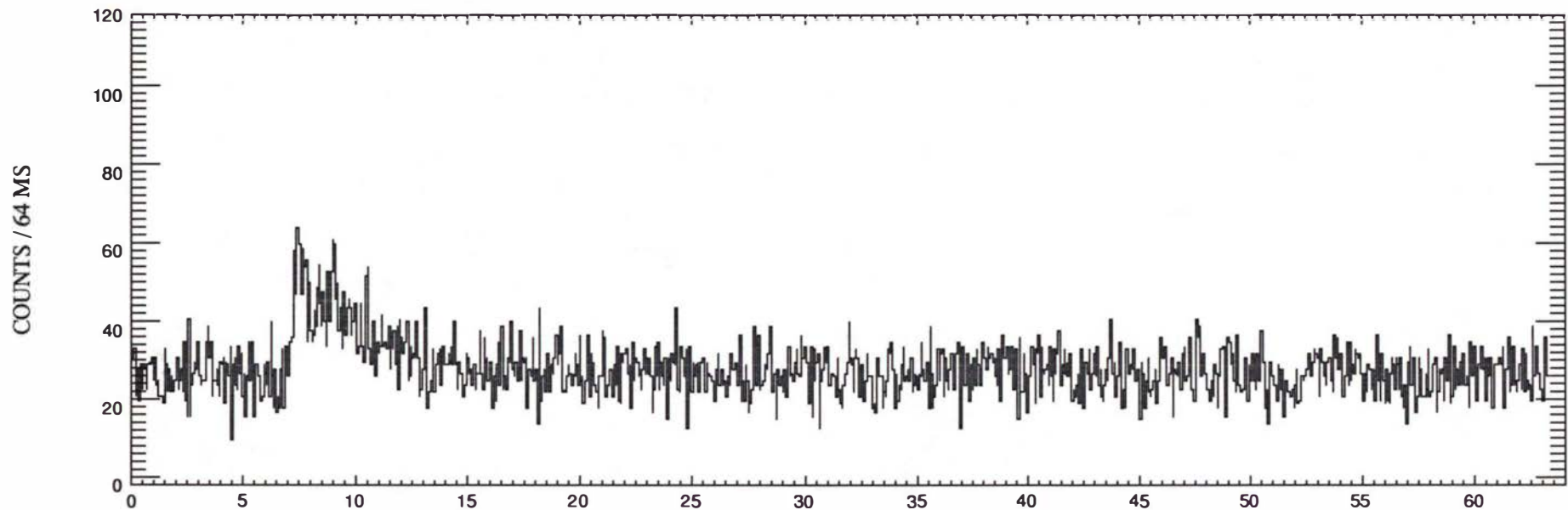


CALIBRATION DATA INCLUDED

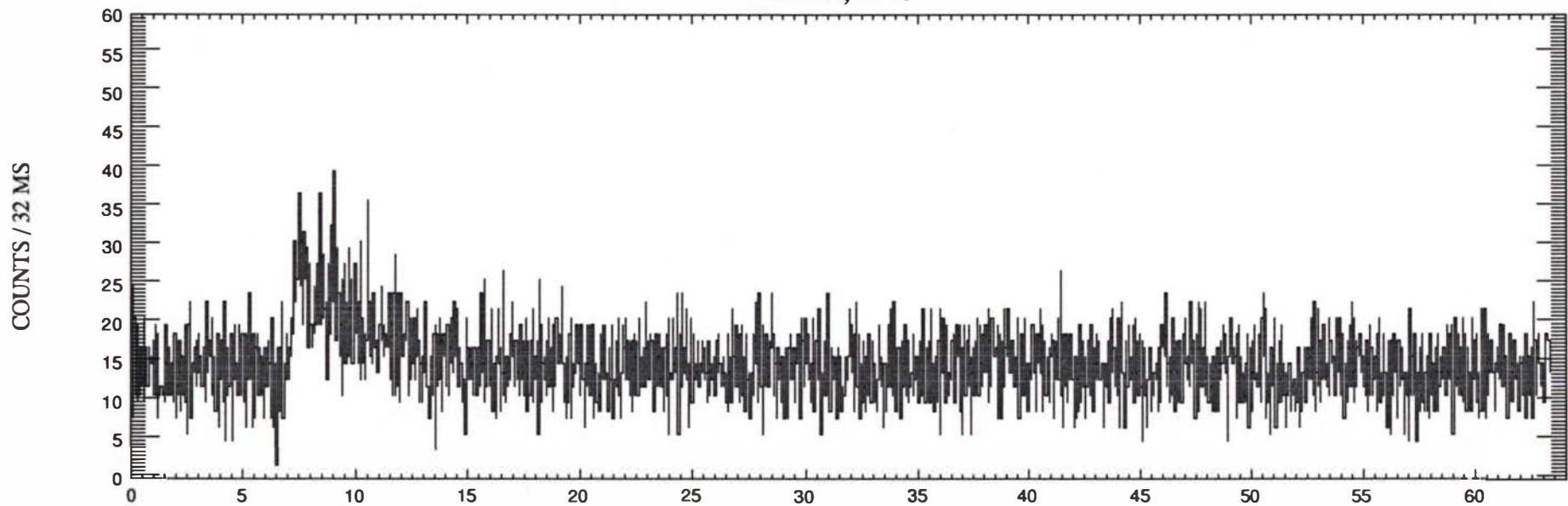


UNIV AL TIME

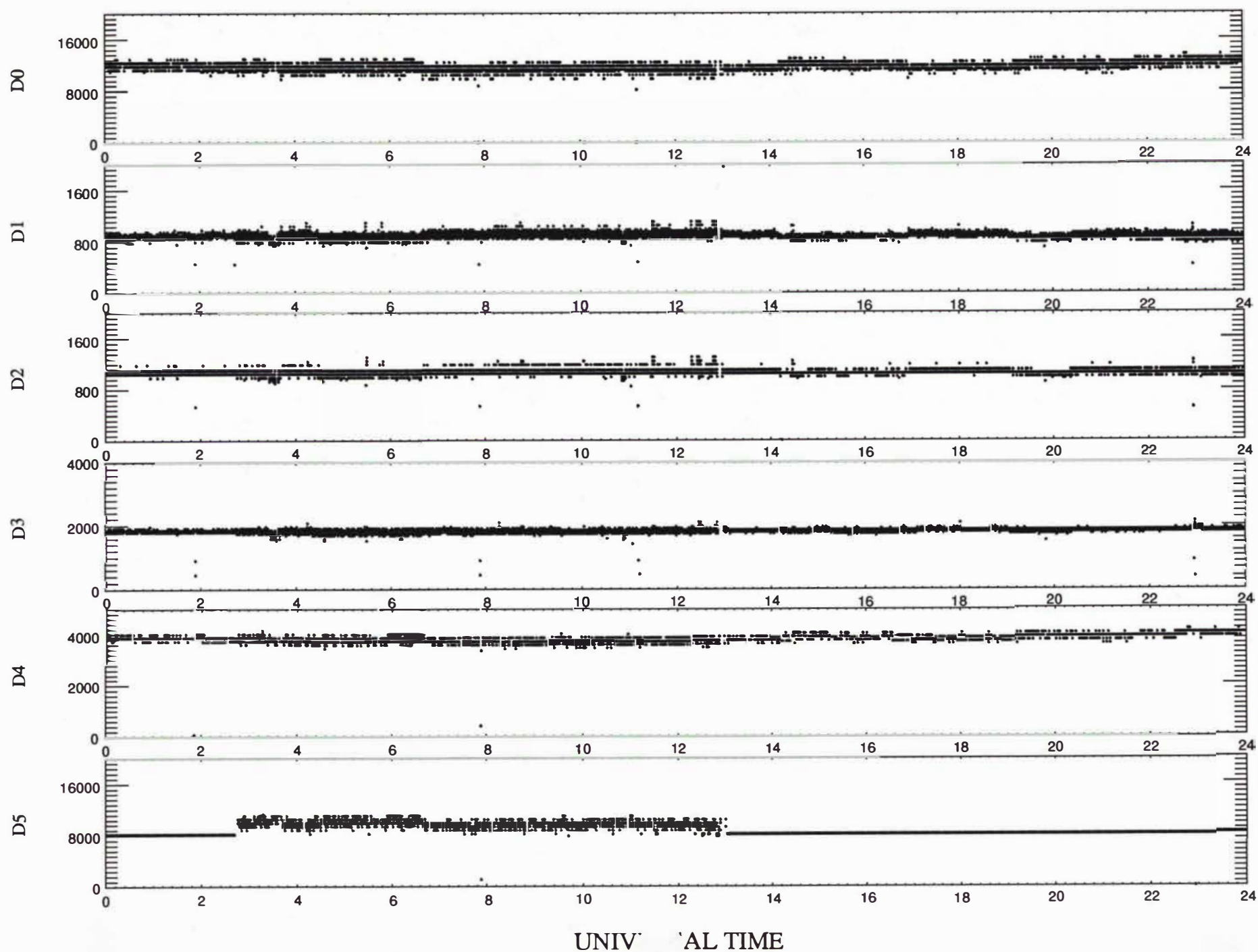
Burst Counter 12 at UT= 7.239128112793 h=26060.861 s 07:14:20.861



TIME, SECS

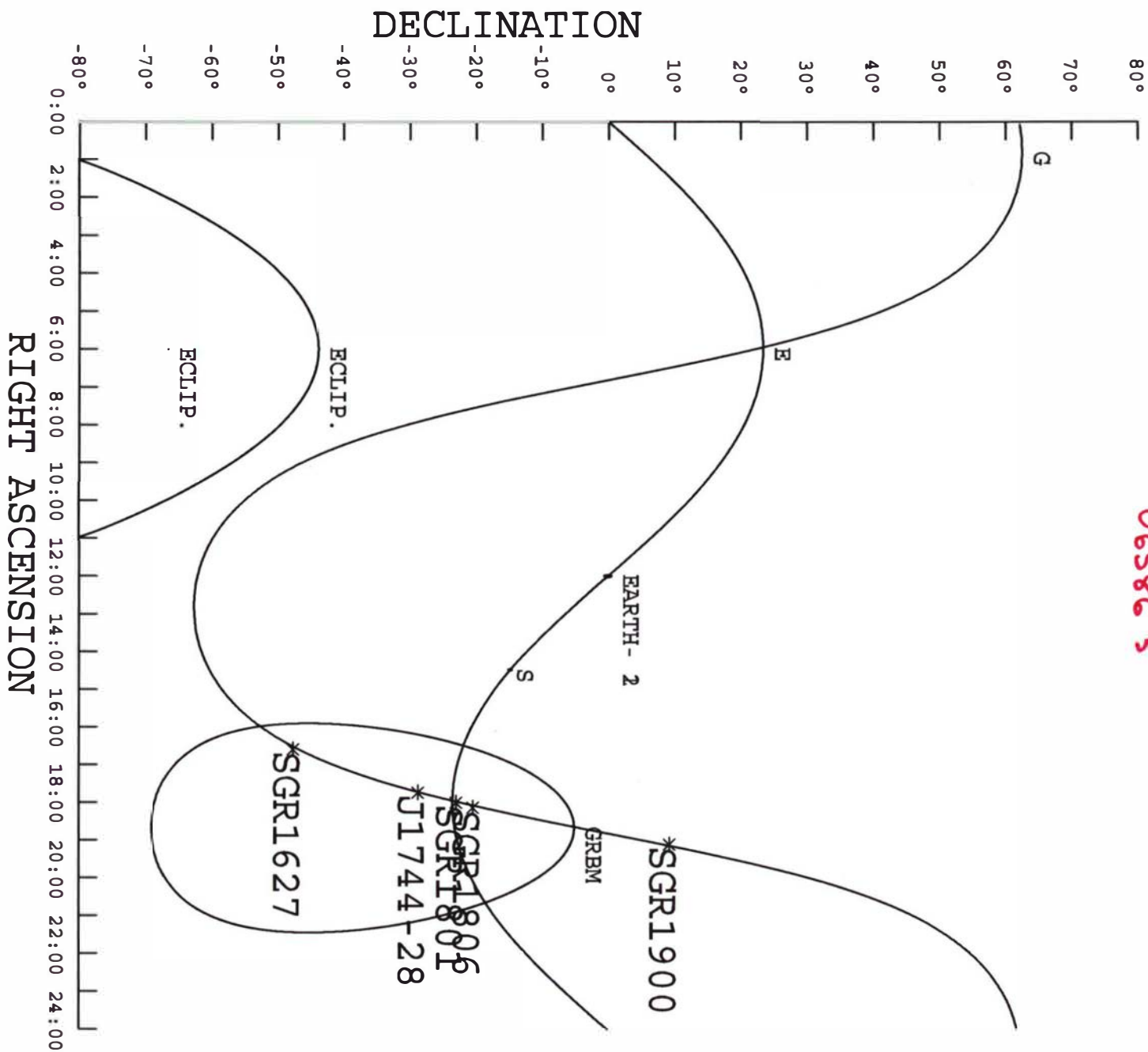


TIME, SECS



G=GALACTIC EQUATOR

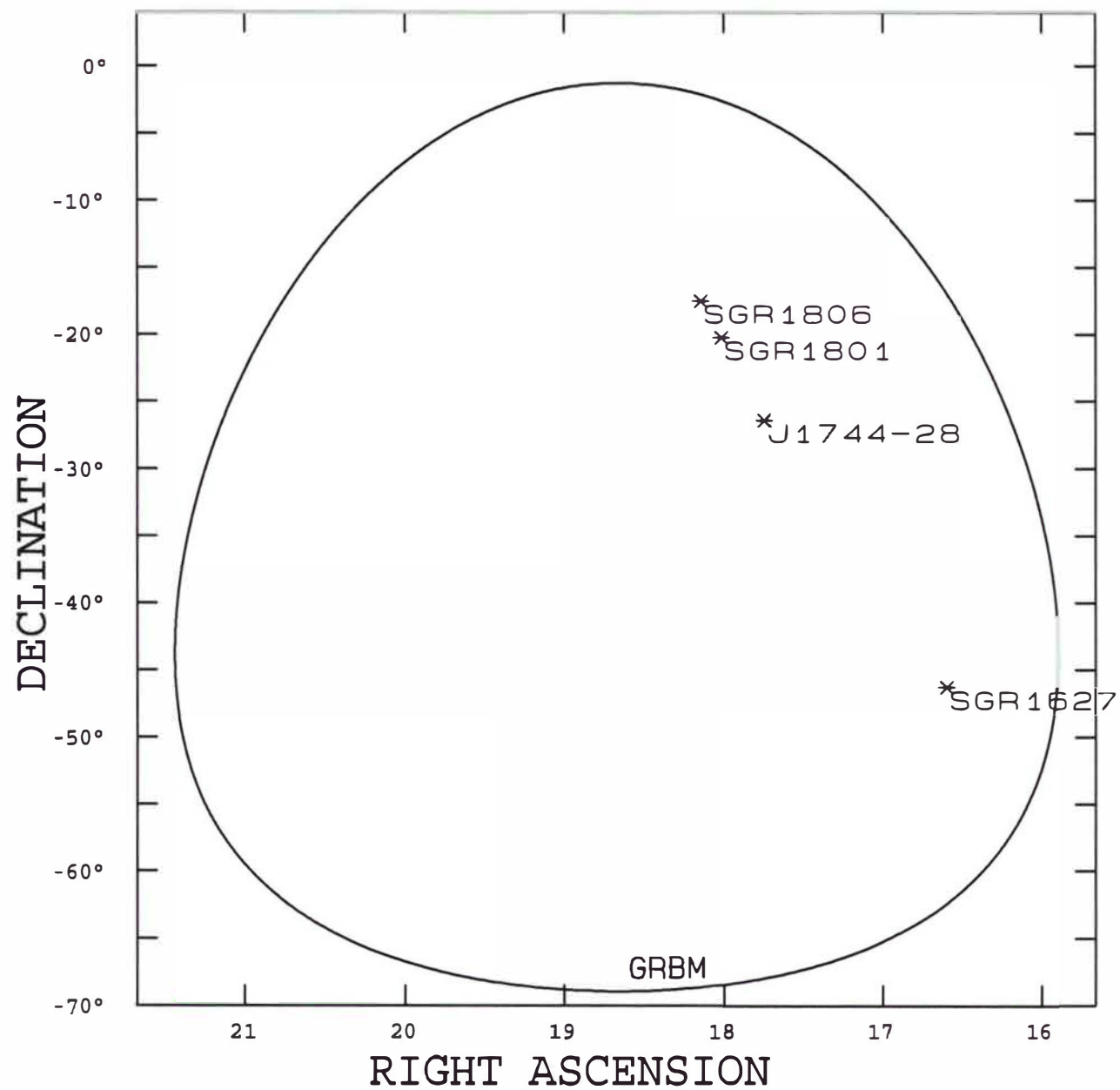
2 KONUS



065865

29/3/7

*SGR1900



KONUS

ULYSSES RT

05 / 02 / 00

02 / 11 / 97 3636.456 s

0.500 S INTERVALS REGROUPED BY 8

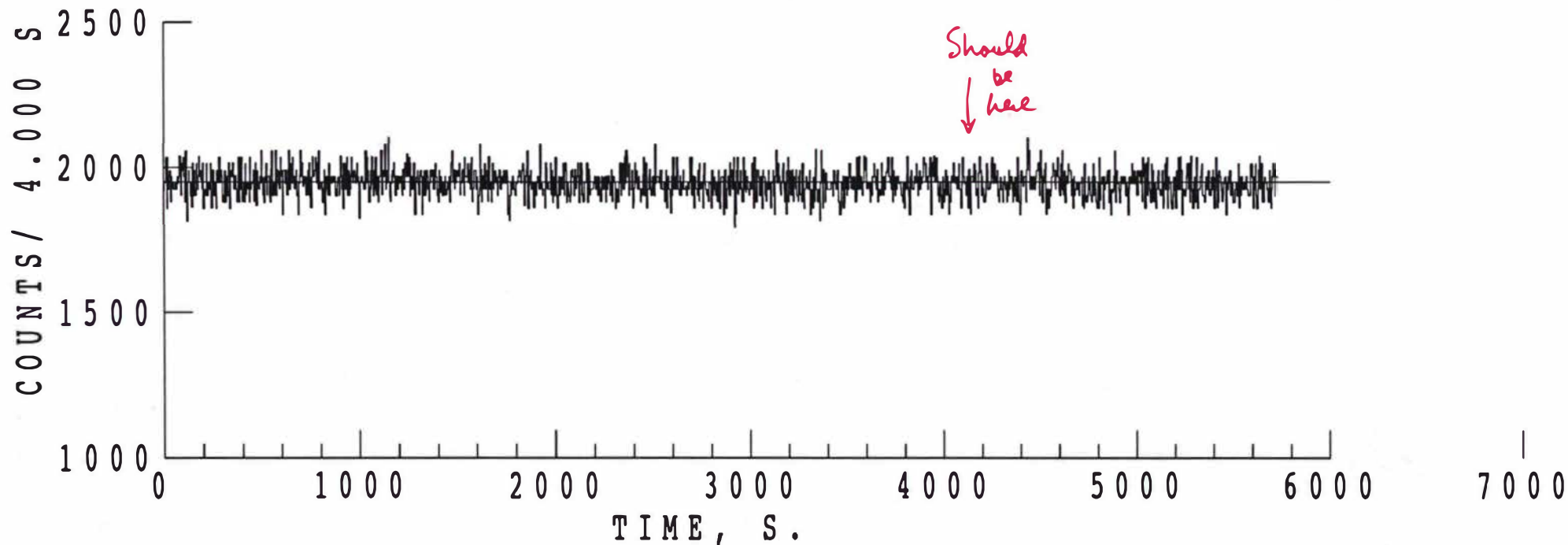
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

It was triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

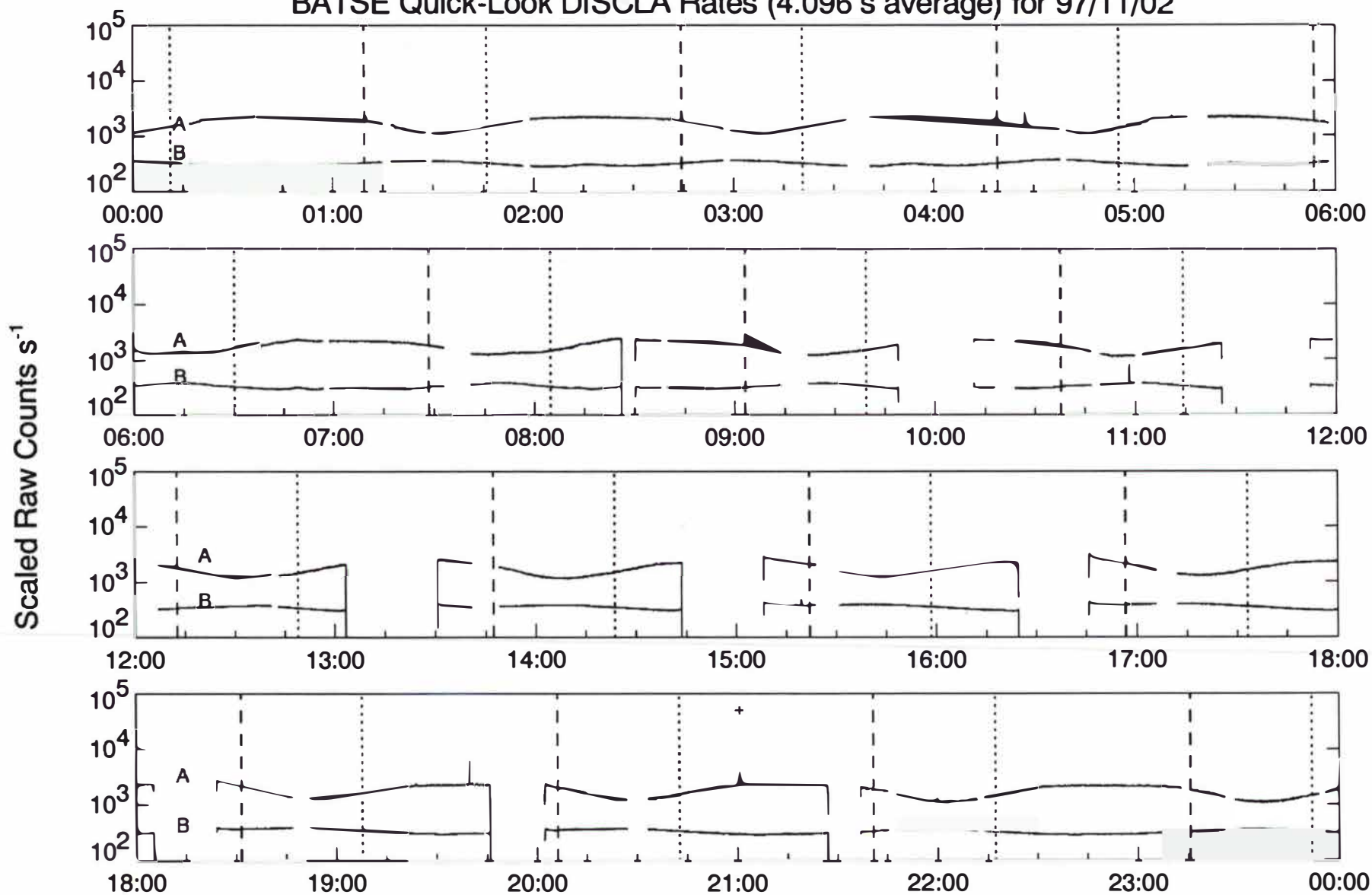
November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/02

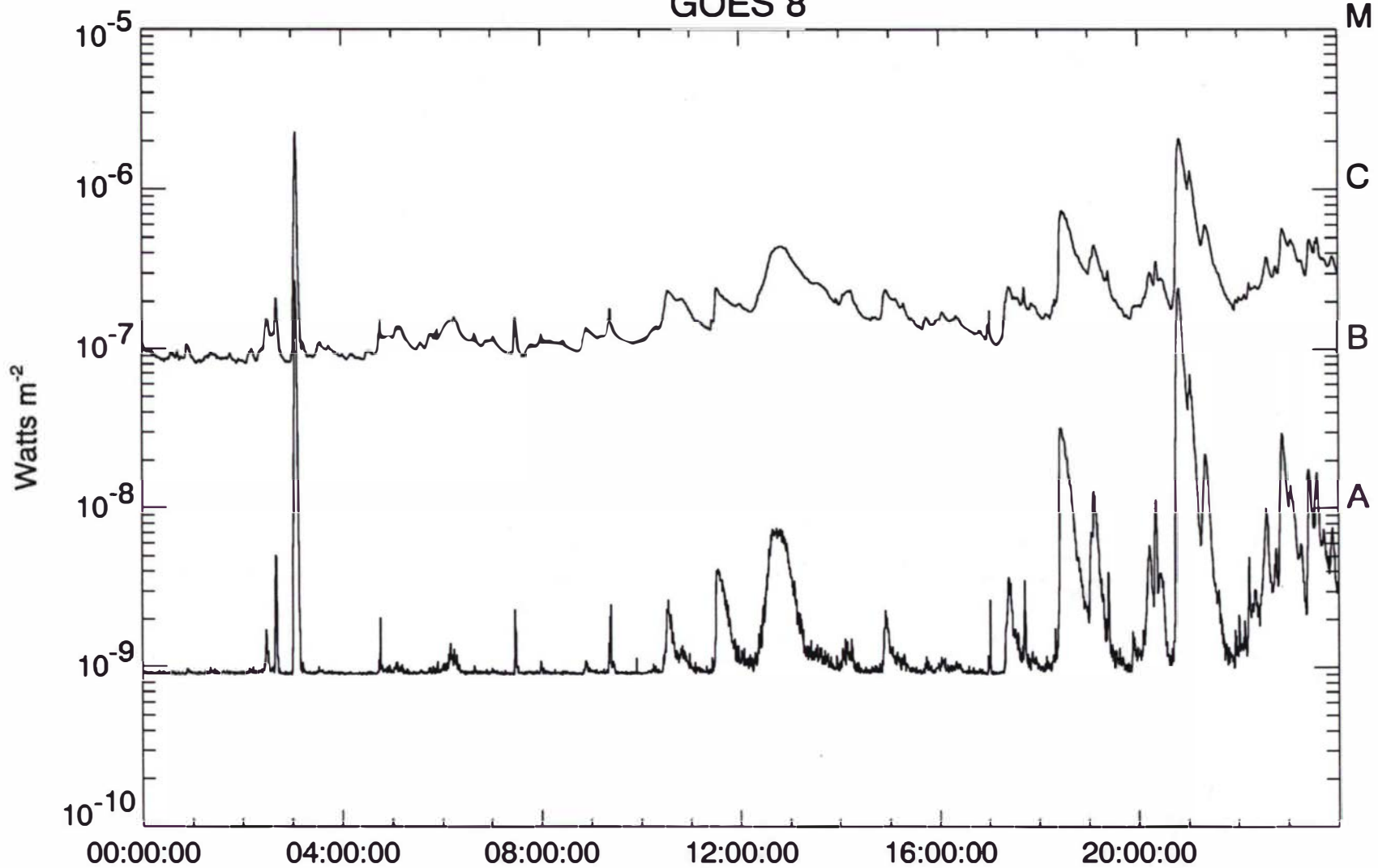


Current Time: 97/11/06, 1009 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/02, 0000:00

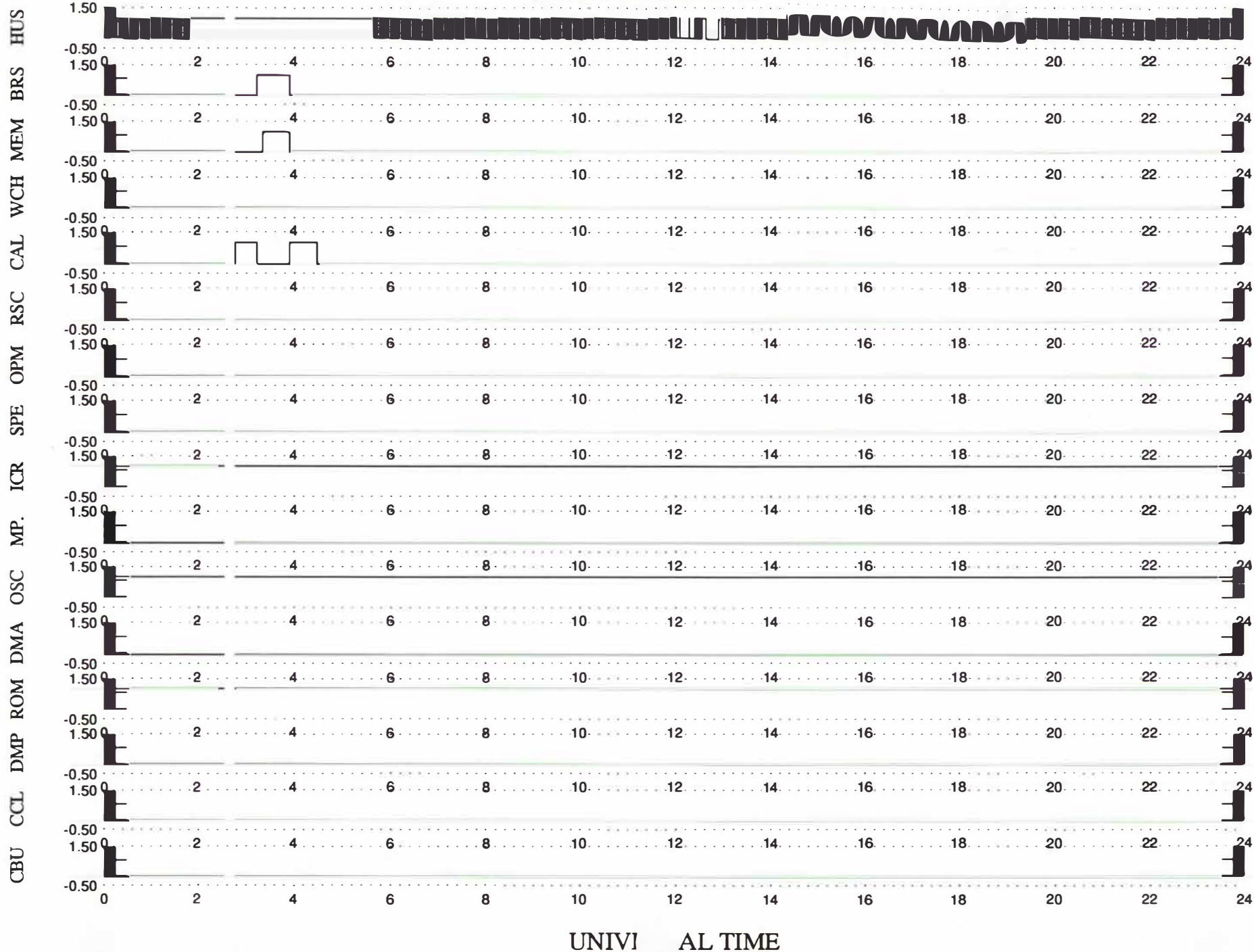
Plot created: 97/11/06, 1008

Channel

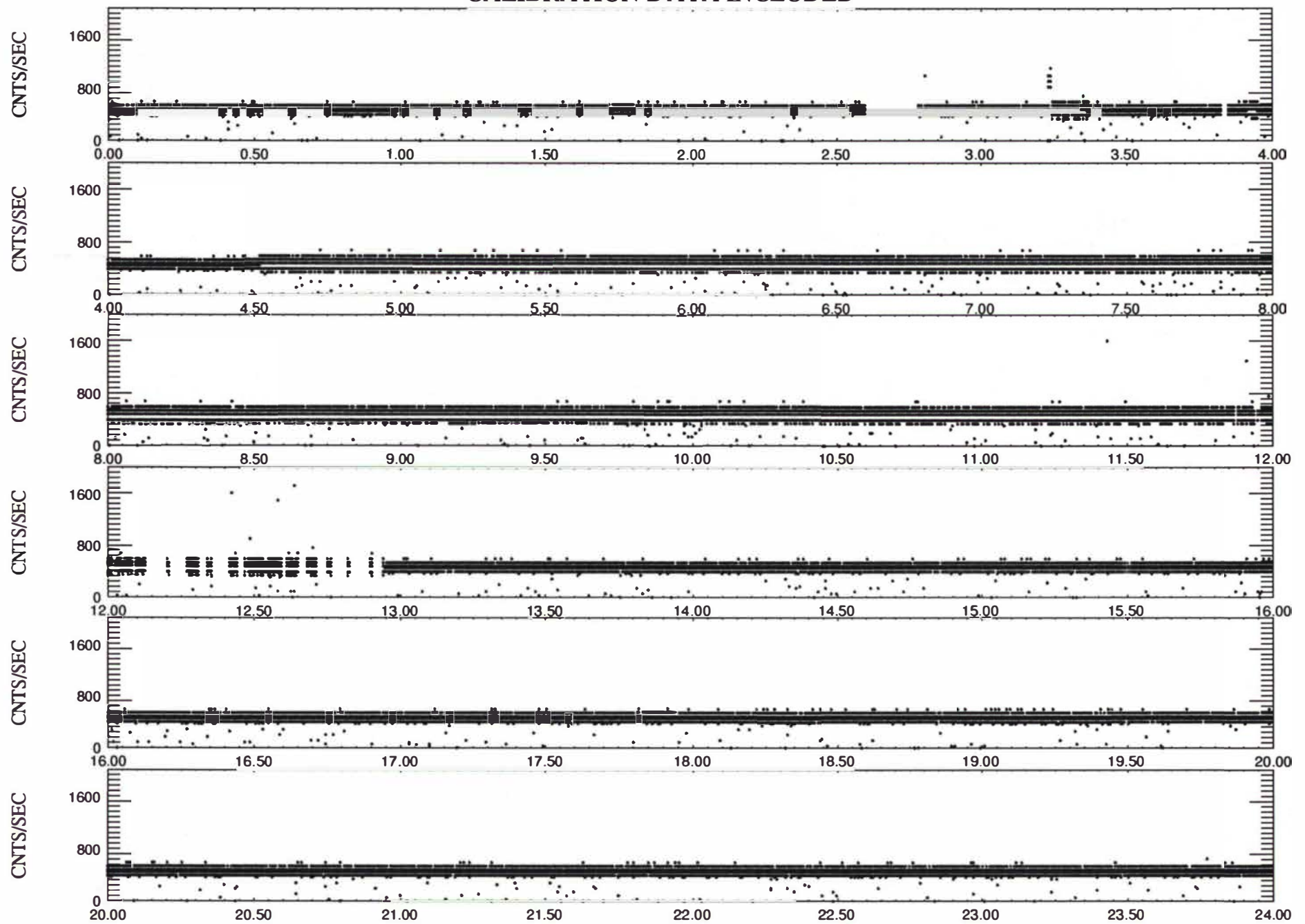
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 13

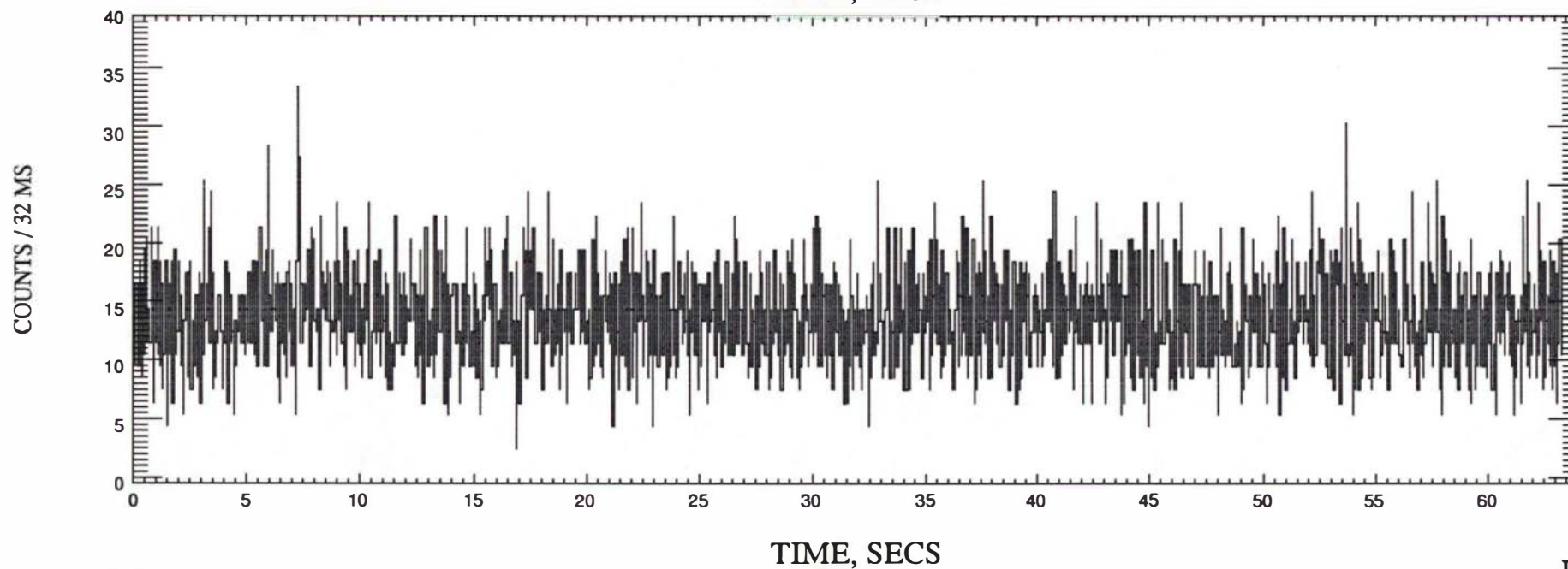
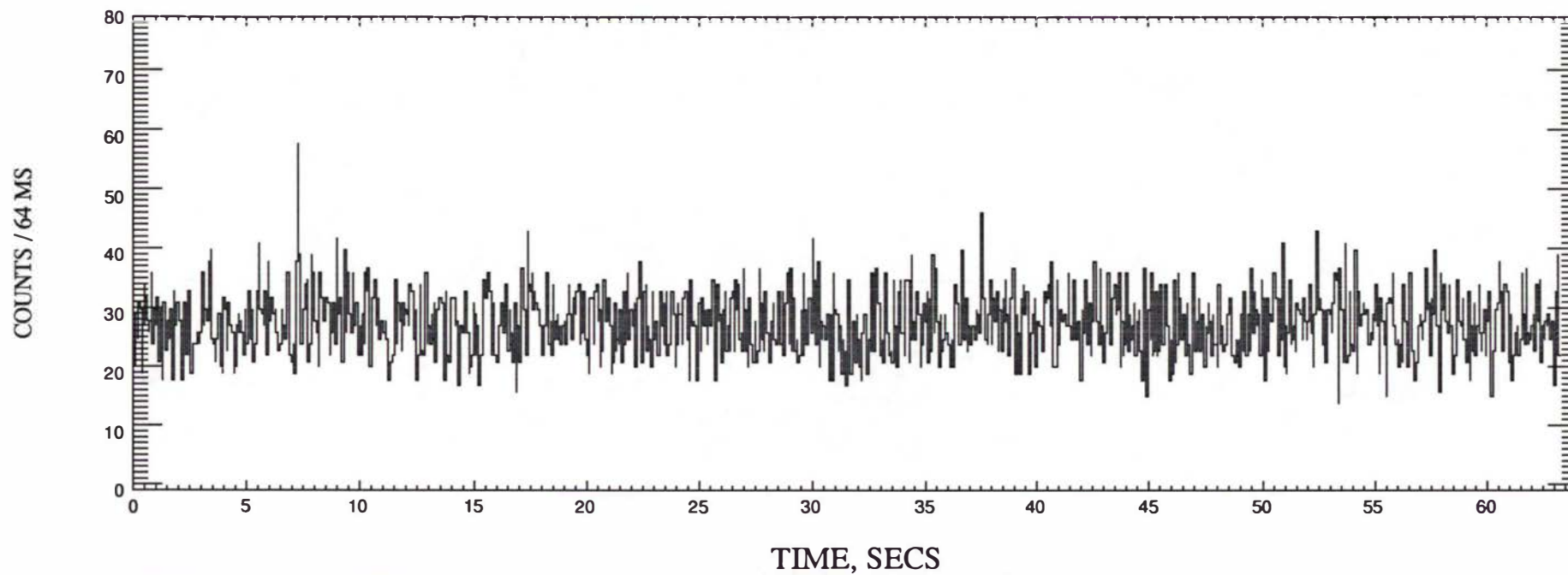


CALIBRATION DATA INCLUDED

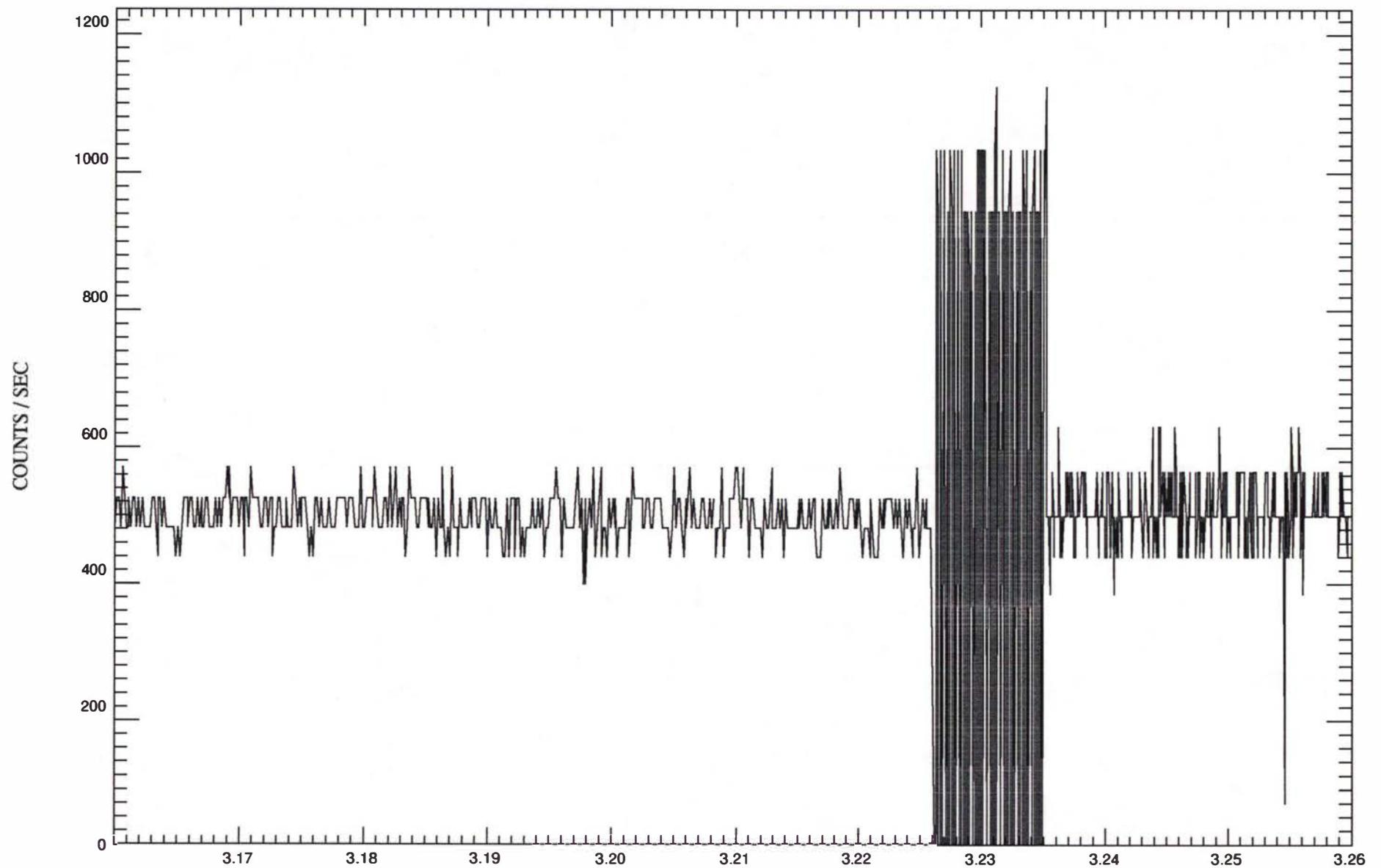


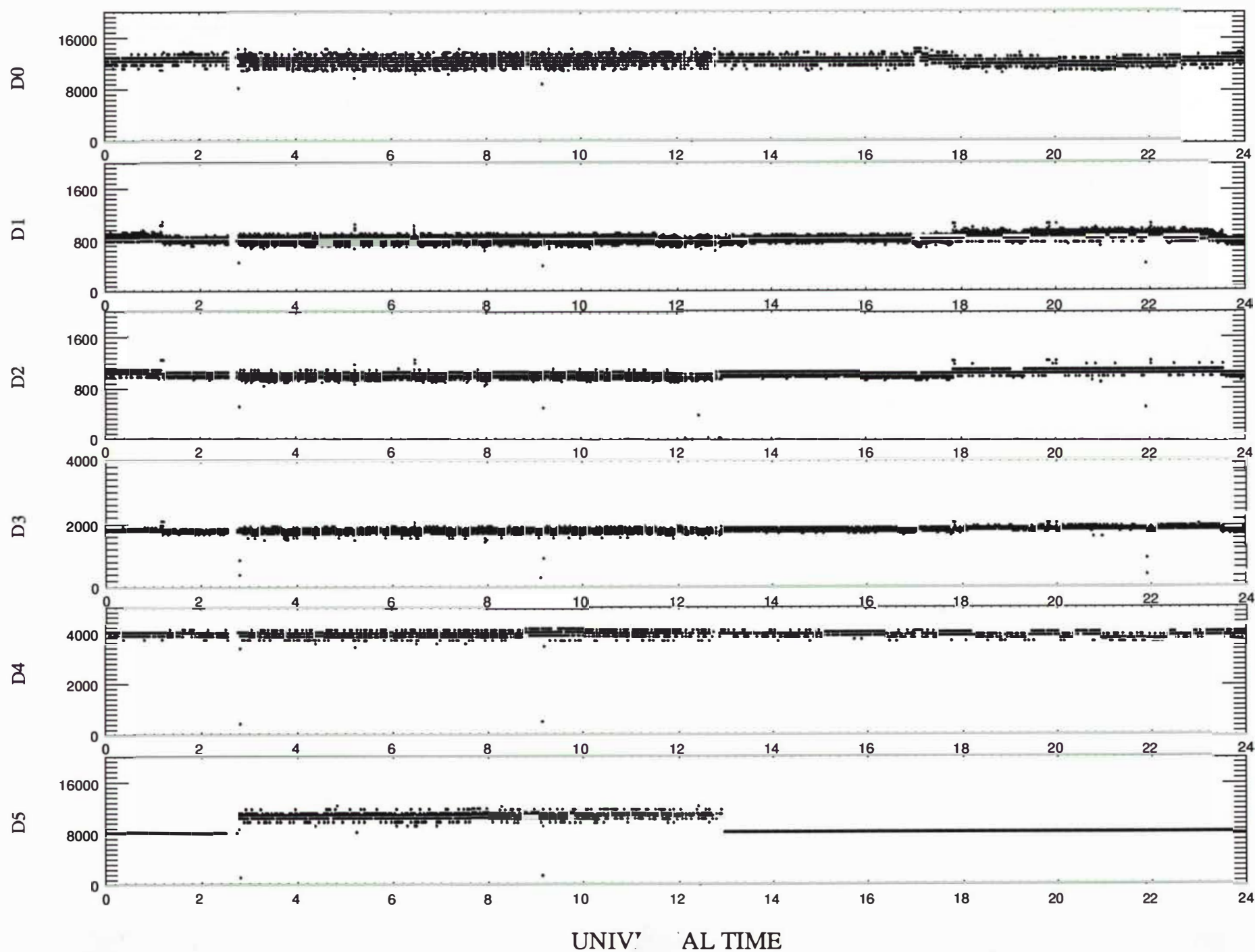
UNIV' 'AL TIME

Burst Counter 13 at UT= 3.210112287733 h=11556.404 s 03:12:36.404



CALIBRATION DATA INCLUDED





From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Nov 5 10:36:08 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Wed, 5 Nov 1997 12:11:48 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6456

TIME: TJD=0755 SECONDS=68755

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=176.6 AZIMUTH=336.3 ERROR=1.3 DEGREES

COMMENTS:

SOLAR FLARE. GOES C3.9, OPTICAL SF. SPIKEY DURATION APPROX.=85SEC.
NOT VISIBLE ABOVE 100KEV.

From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Nov 5 10:36:17 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Wed, 5 Nov 1997 12:14:47 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6457

TIME: TJD=0755 SECONDS=80388

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=177.3 AZIMUTH=353.0 ERROR=1.2 DEGREES

COMMENTS:

SOLAR FLARE. GOES C8.6, OPTICAL SN. SINGLE PULSE WIEH DURATION APPROX.=100SEC.
NOT VISIBLE ABOVE 100KEV.

From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Nov 5 10:36:23 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Wed, 5 Nov 1997 12:18:44 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6458

TIME: TJD=0755 SECONDS=82127

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL: N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=176.8 AZIMUTH=9.9 ERROR=5.6 DEGREES

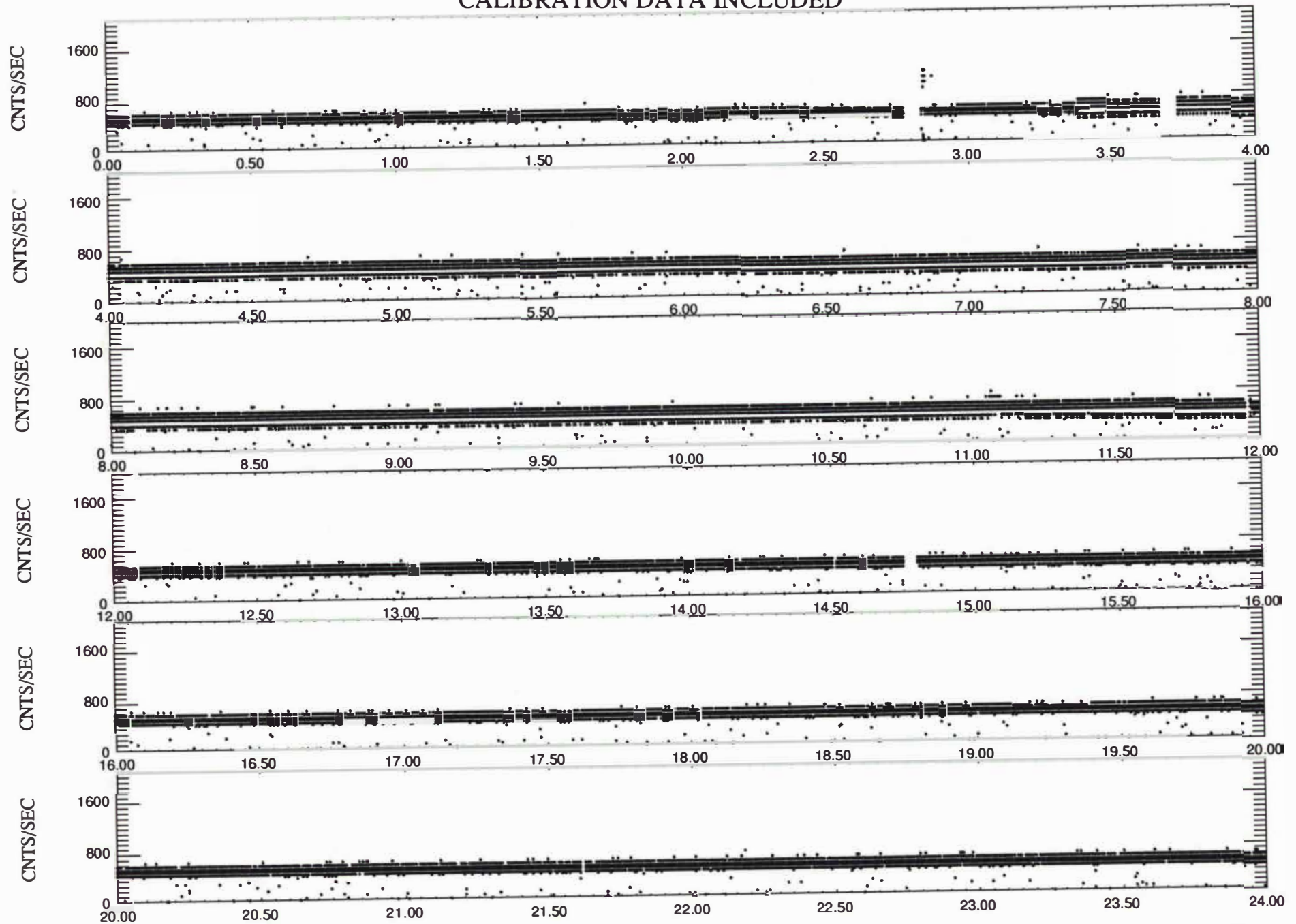
COMMENTS:

SOLAR FLARE. GOES C8.0, OPTICAL 1N. TWO PULSES WITH STRUCTURE. FIRST AT
APPROX. T-5SEC. WITH DURATION APPROX.=40SEC. SECOND AT APPROX. T+150SEC. WITH
DURATION APPROX. = 40SEC. TOTAL DURATION APPROX. = 195 SEC. SLIGHTLY VISIBLE
ABOVE 100KEV.

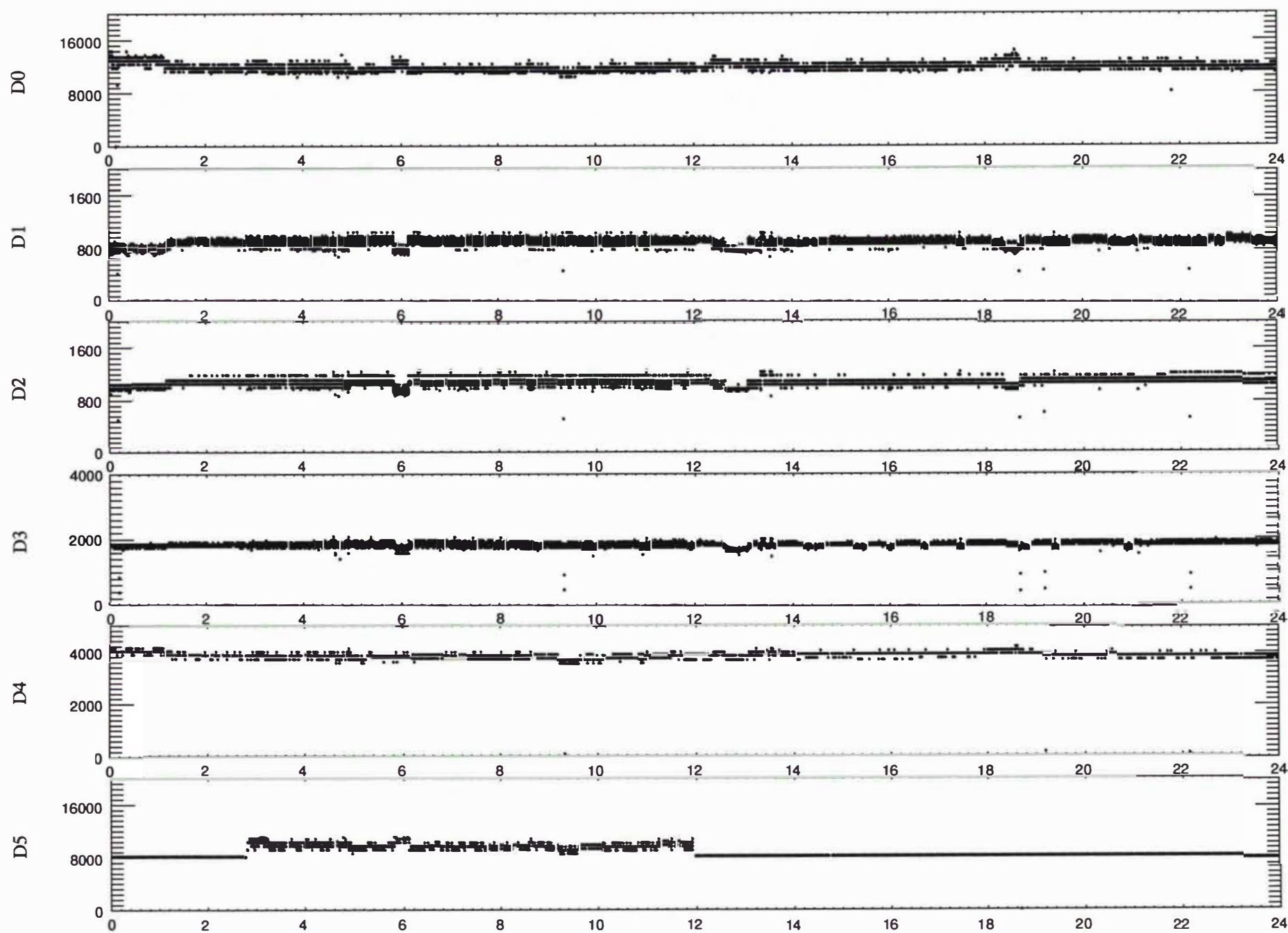
UNIV. AL TIME



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV. TIME

From SURASAK@SSLLES.MSFC.NASA.GOV Thu Nov 6 13:49:40 1997
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Thu, 6 Nov 1997 15:10:44 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6459

TIME: TJD=0756 SECONDS=21353

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=175.8 AZIMUTH=332.1 ERROR=0.1316 DEGREES

COMMENTS:

SOLAR FLARE. GOES X2.1, OPTICAL 2B. SINGLE PULSE WITH SUBSTRUCTURE.
DURATION ABOUT 300 S. VISIBLE ABOVE 300 KEV.
**correction of earlier message

From SURASAK@SSLLES.MSFC.NASA.GOV Thu Nov 6 13:55:56 1997
Date: Thu, 6 Nov 1997 15:00:32 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6460

TIME: TJD=0756 SECONDS=29845

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=175.6 AZIMUTH=345.1 ERROR=0.436 DEGREES

COMMENTS:

SOLARE FLARE. GOES C3.4, OPTICAL SF. SINGLE TRIGGER PULSE, DUR ABOUT 30 S.
WEAKLY VISIBLE ABOVE 100 KEV. ADDITIONAL COMPLEX PULSE AT ABOUT T+200 S TO
T+300 S, NOT VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Fri Nov 7 07:34:59 1997
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 7 Nov 1997 9:33:01 -0600 (CST)
To: burst@compTEL.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6461

TIME: TJD=0756 SECONDS=46467

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=175.7 AZIMUTH=352.8 ERROR=0.5 DEGREES

COMMENTS:

SOLAR FLARE, GOES C, OPTICAL SF, DUR. APPROX. 30 SECS. NOT VISIBLE ABOVE 300 KEV

From SURASAK@SSLLES.MSFC.NASA.GOV Thu Nov 6 14:18:53 1997
Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA18654; Thu, 6 Nov 1997 14:18:44 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA10920; Thu, 6 Nov 1997 14:18:15 -0800
Date: Thu, 6 Nov 1997 15:32:38 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971106153238.20215ed4@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6462
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6462
EVENT OF 1997 NOV 4 DAY OF YEAR=308
EVENT CROSSING TIME AT BATSE : 73719. S. OR 20:28:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 291.000 -39.000
BATSE PEAK COUNTING RATE: 9750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/11/ 97 IS:
RA= 169.390 DEC= 13.594 DIST= 5.781 AU
BATSE-ULYSSES DISTANCE = 864869864. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1568.90 SECS.
CROSSING TIME AT ULYSSES IS 75288. S. OR 20:54:47 +/- 494.15 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/11/ 97 IS:
RA= 265.696 DEC= -24.614 DIST= 1.934 AU
MARS-BATSE DISTANCE = 289372992. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=154.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -869.54 SECS.
CROSSING TIME AT MARS IS 72849. S. OR 20:14:09 +/- 59.55 SECONDS

BATSE BURST TRIGGER

NO.: 6462

TIME: TJD=0756 SECONDS=73719

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.8 AZIMUTH=115.7 ERROR=6.448 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DURATION ABOUT 0.17 S. VISIBLE ABOVE 300 KEV.

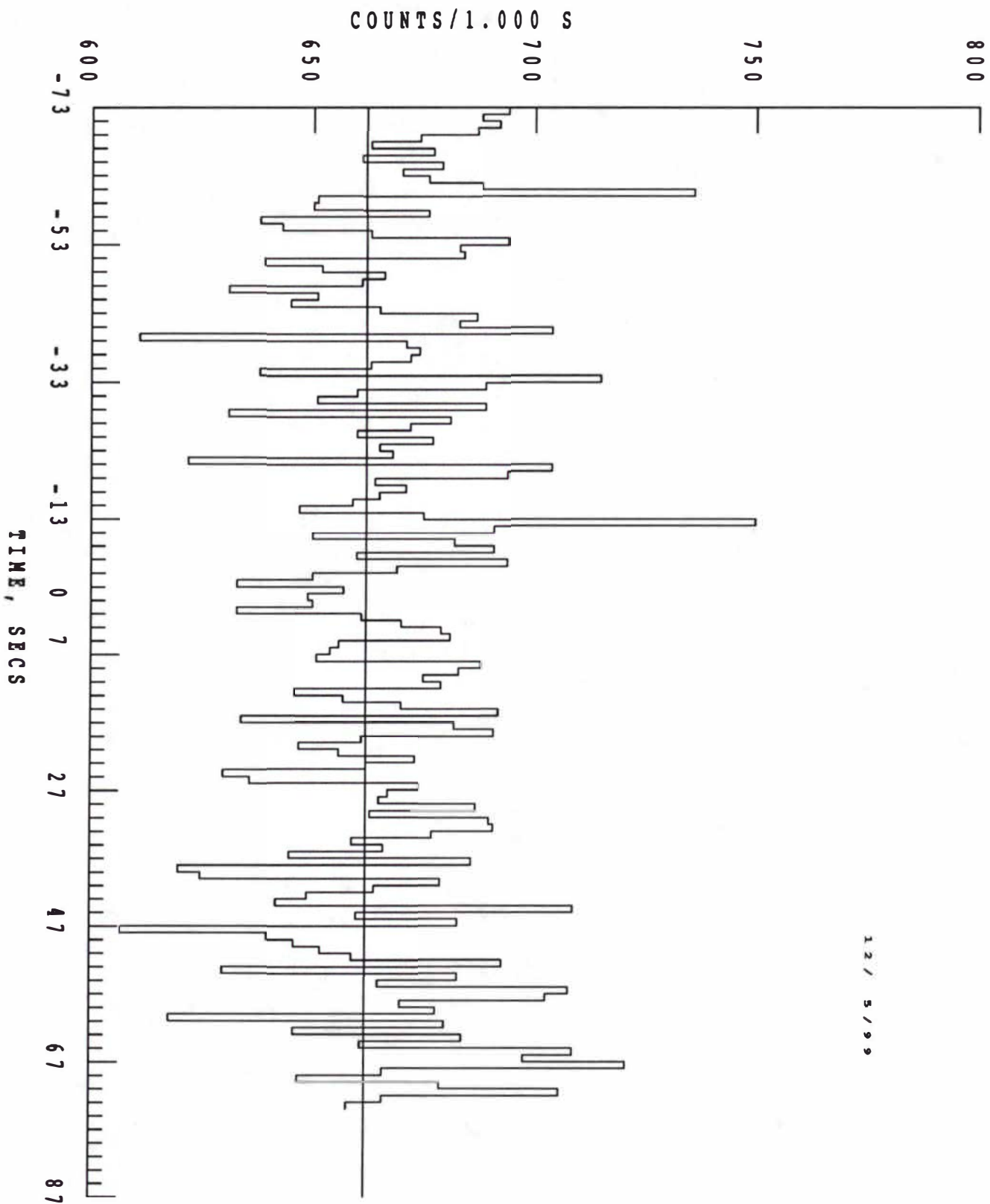
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6462	971104	10756	73719	9750	291	-39	.17

NEAR

04/11/97

73923.445

100-1000 keV



BATSE BURST# 6462

ULYSSES RT

25 / 2 / 98

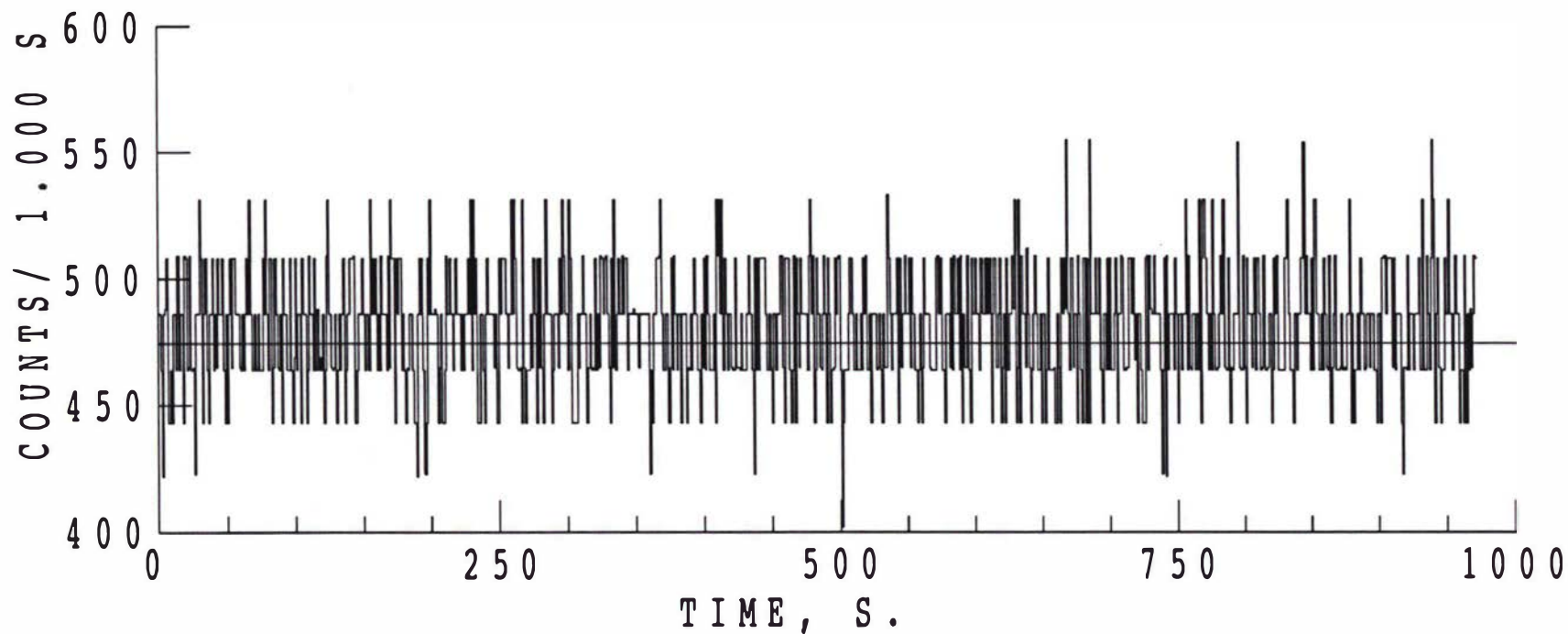
4/11/97 74808.188 s

0.500 S INTERVALS REGROUPED BY 2

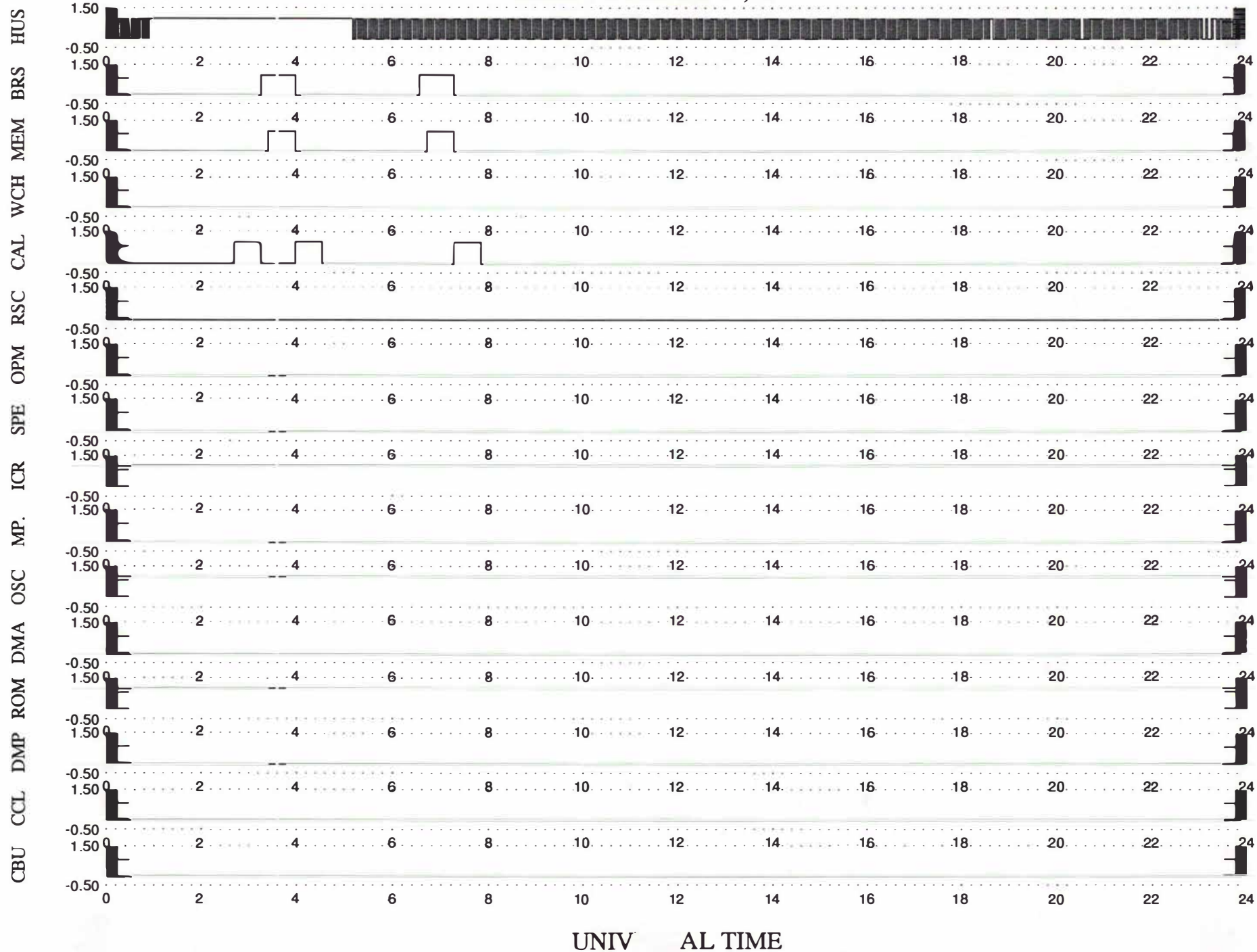
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

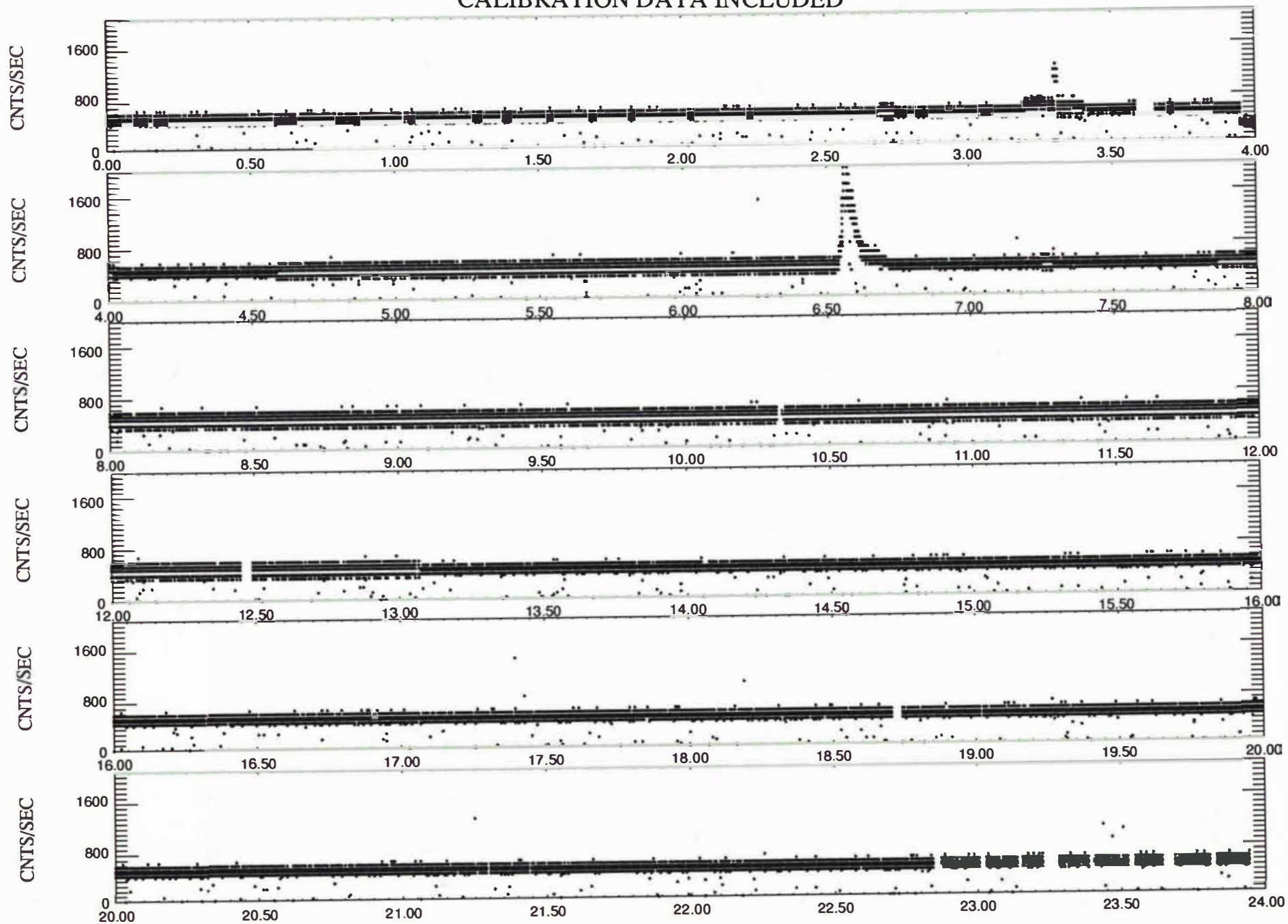
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BURST NUMBER 14, 15

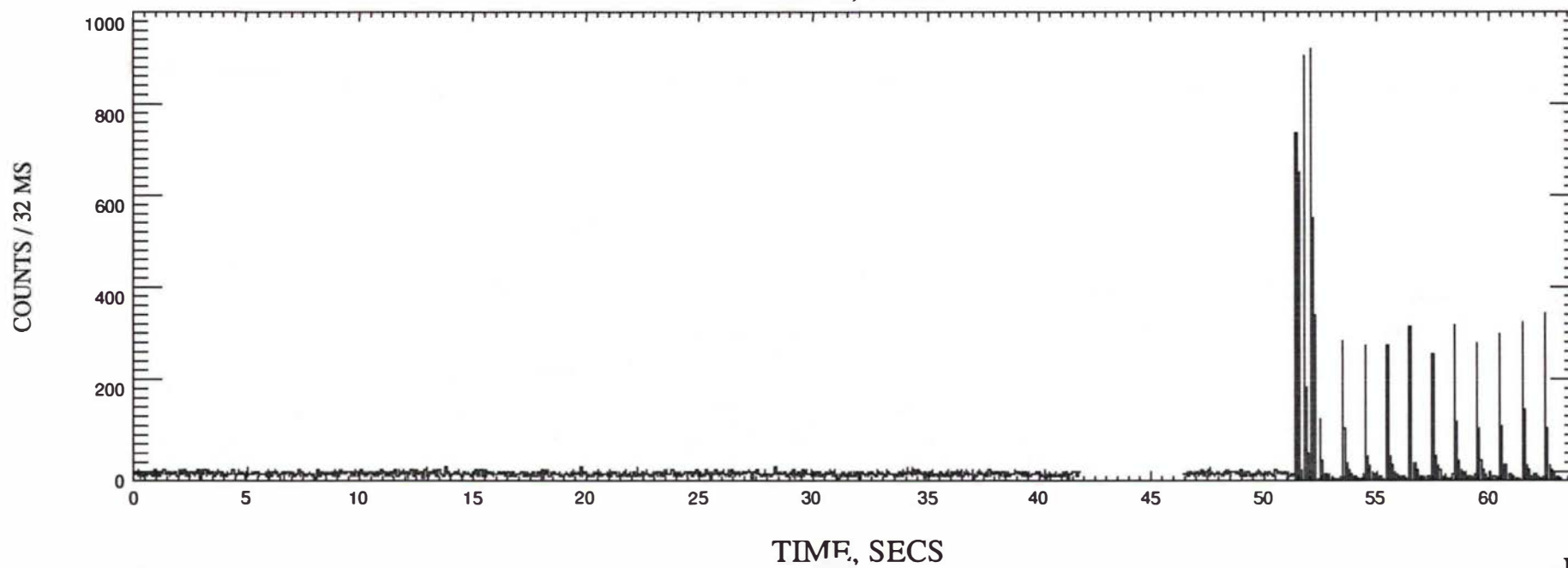
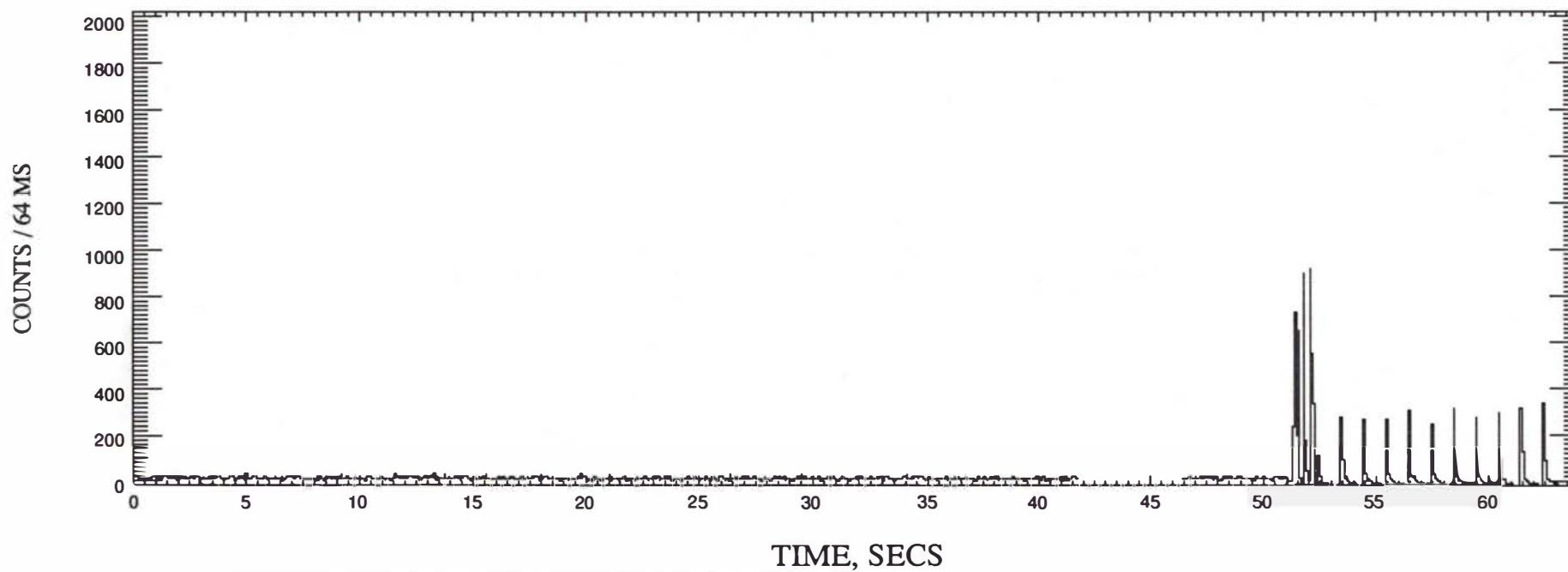


CALIBRATION DATA INCLUDED

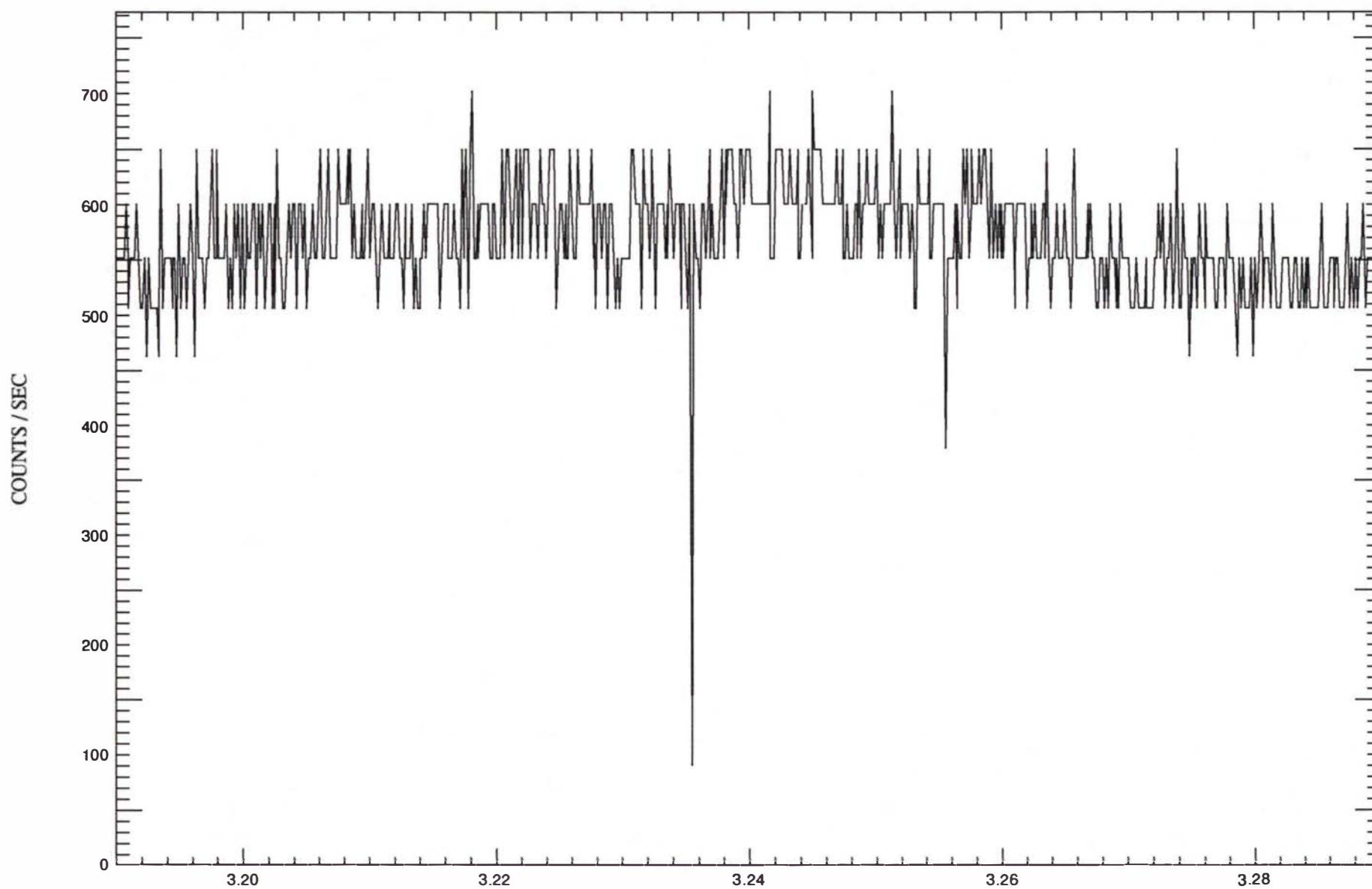


UNIV' AL TIME

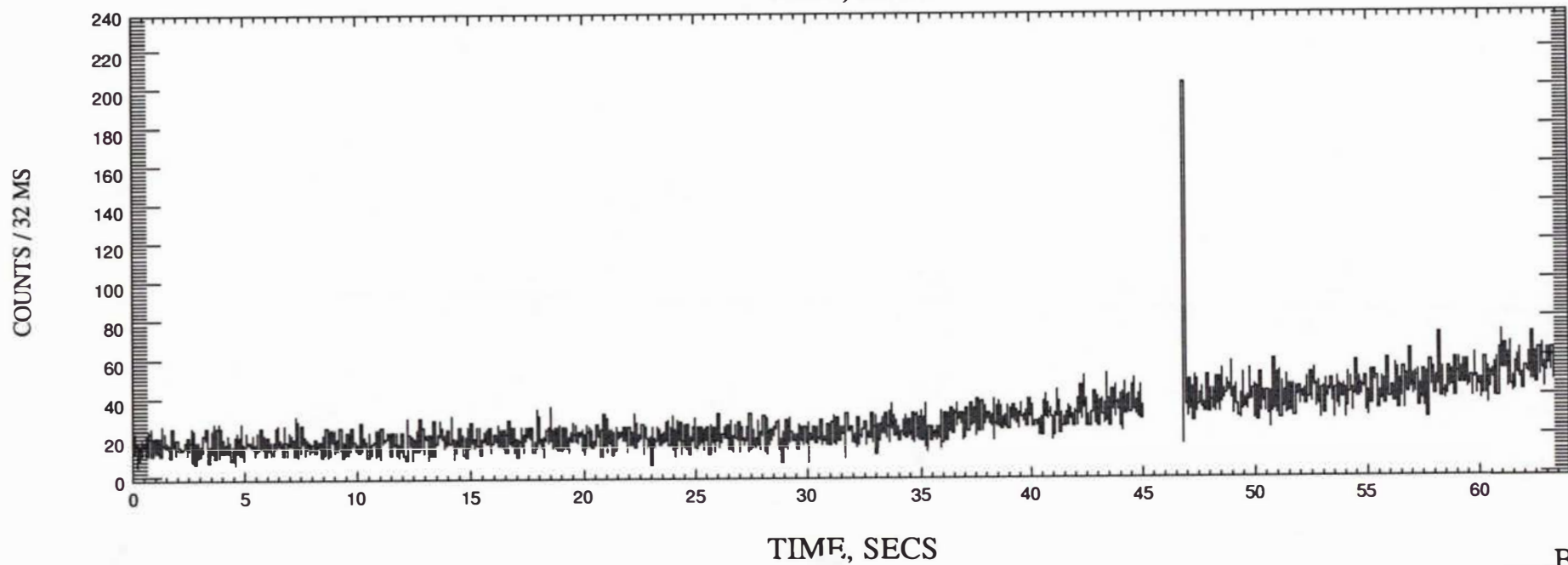
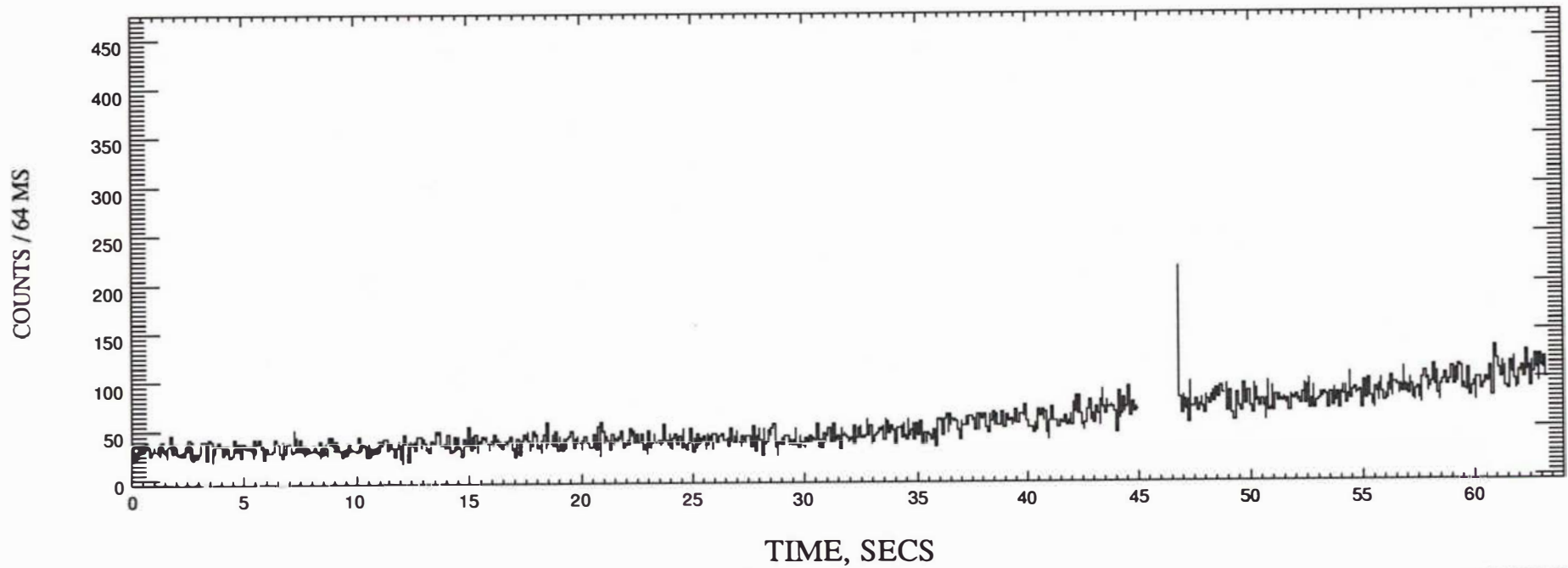
Burst Counter 14 at UT= 3.243983989292 h=11678.342 s 03:14:38.342



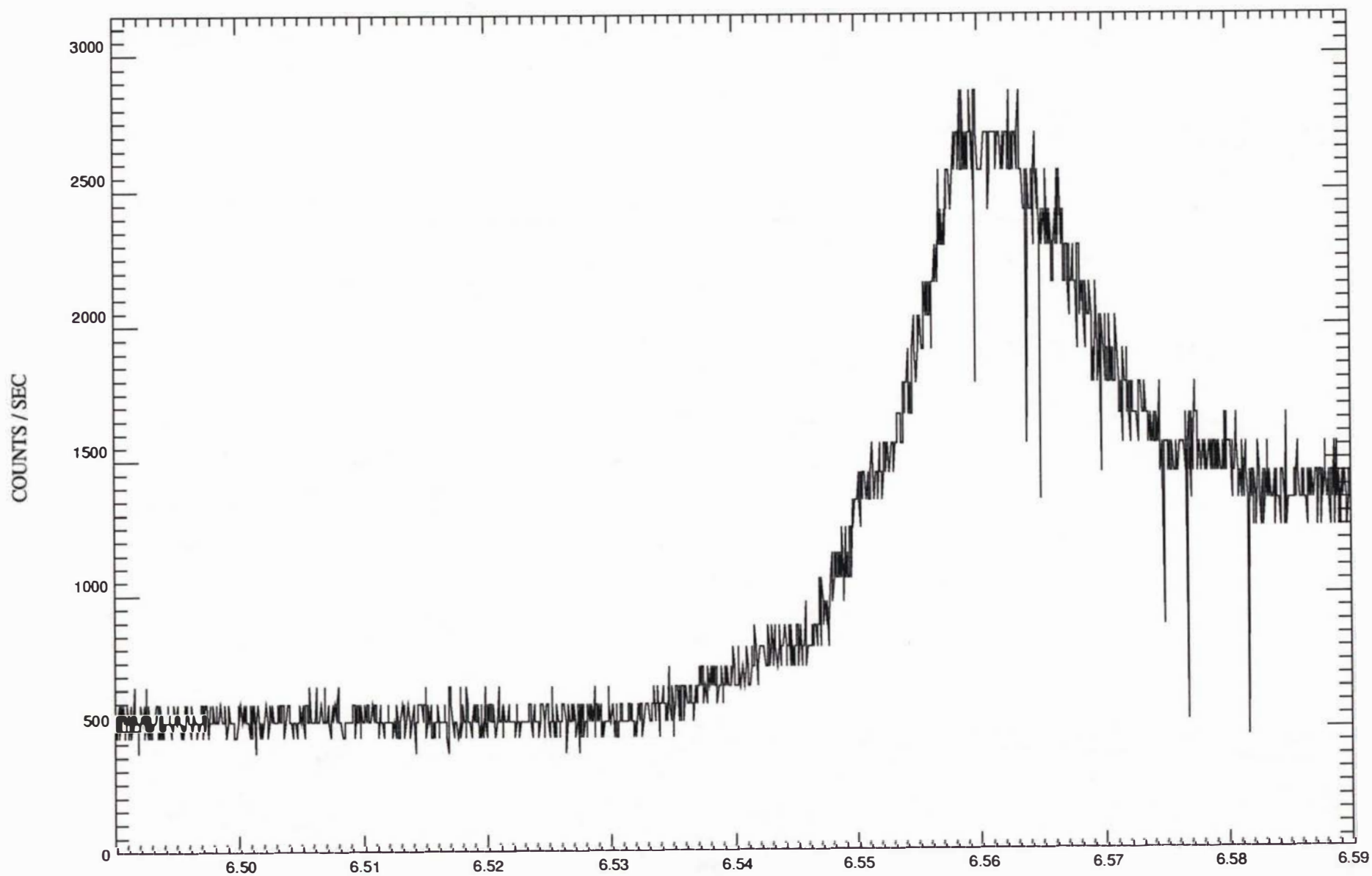
CALIBRATION DATA INCLUDED

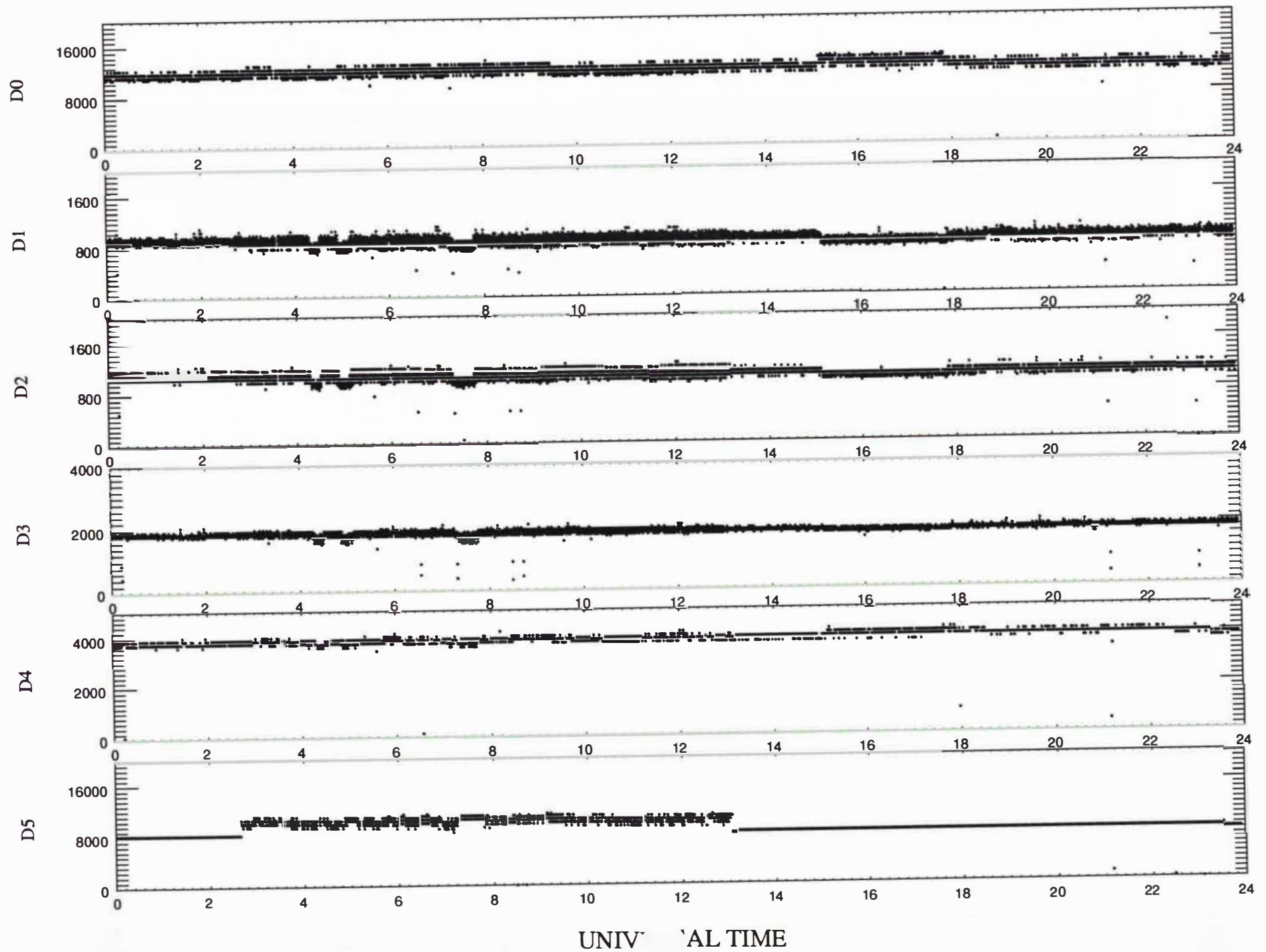


Burst Counter 15 at UT= 6.539923875597 h=23543.726 s 06:32:23.726

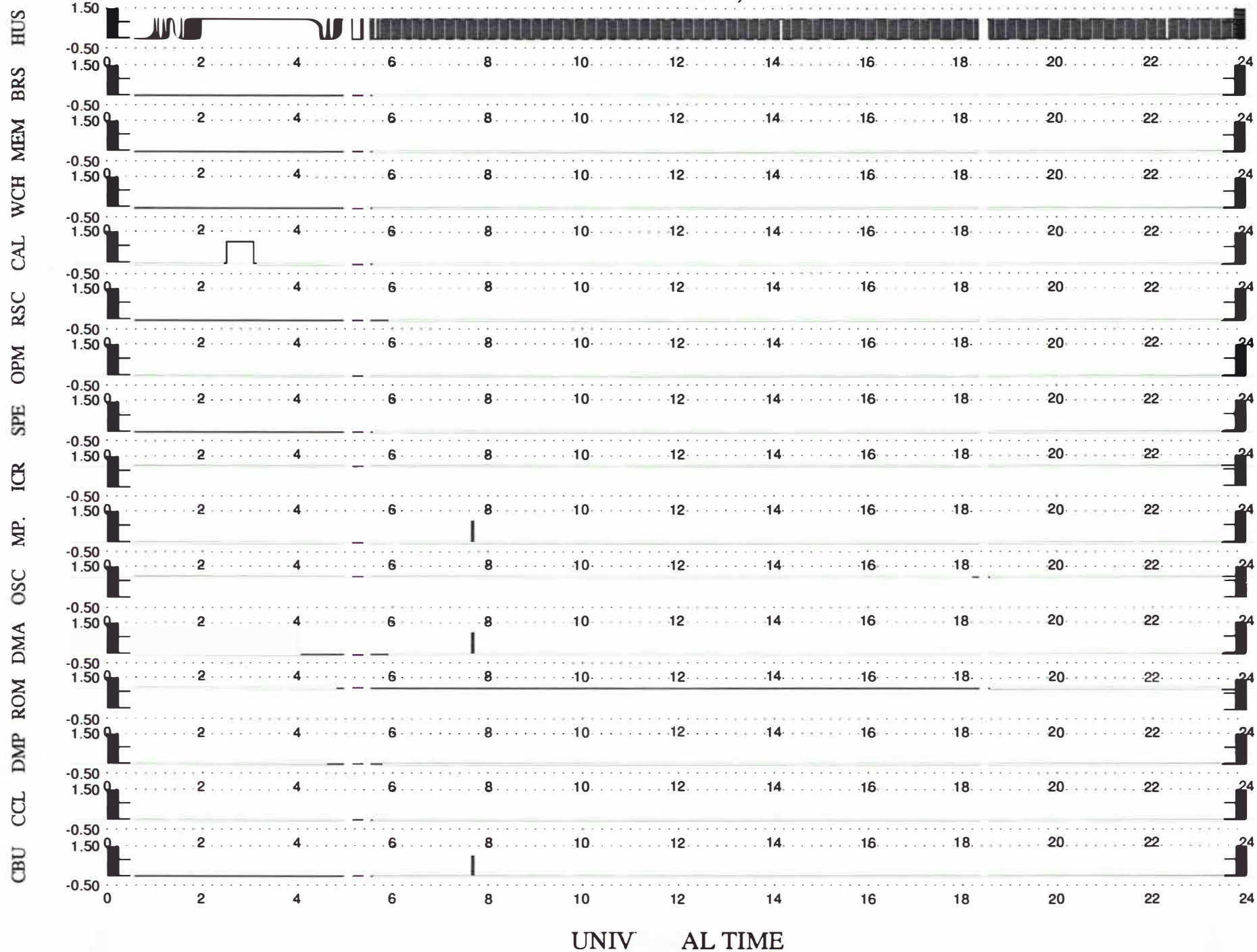


CALIBRATION DATA INCLUDED

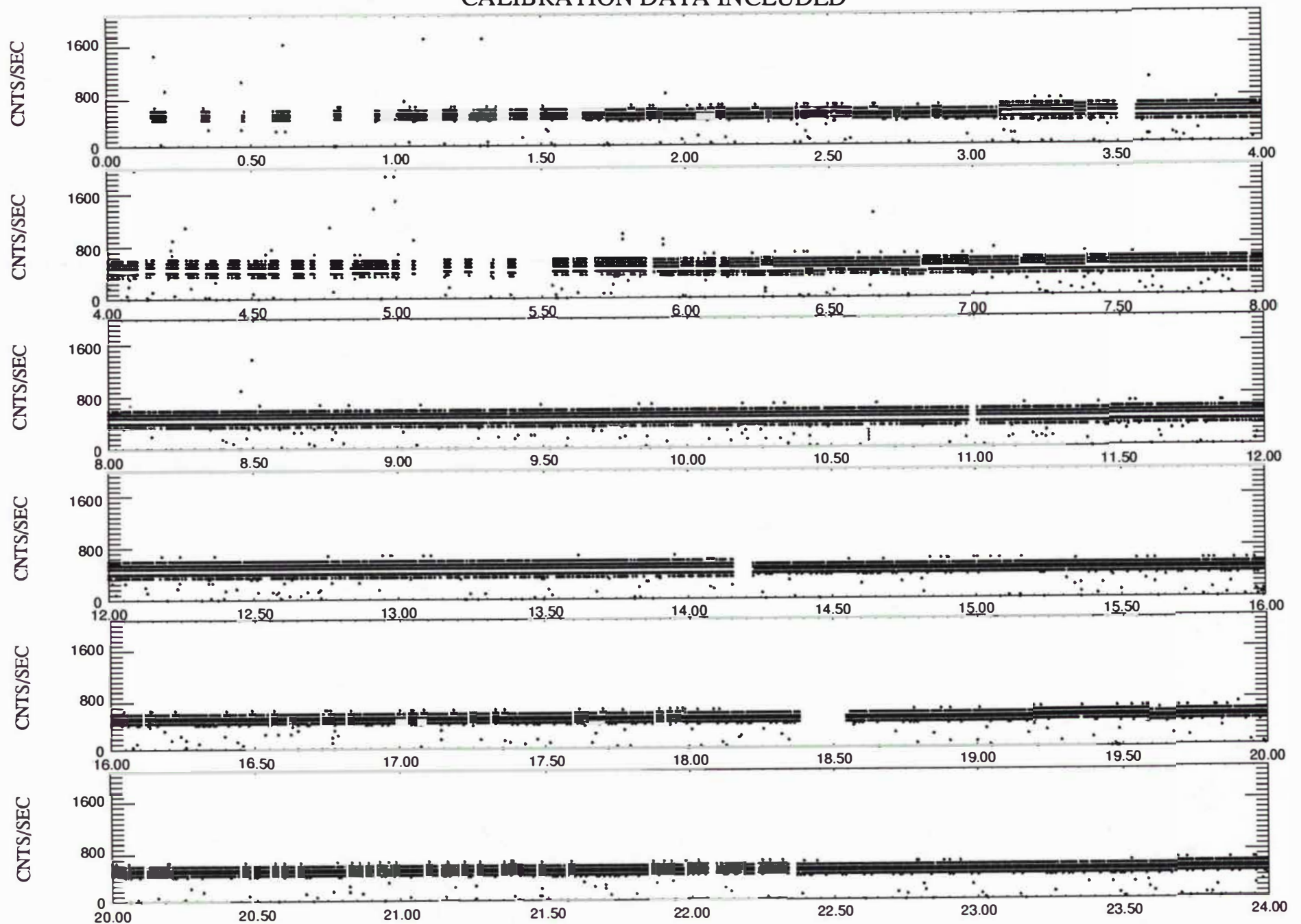




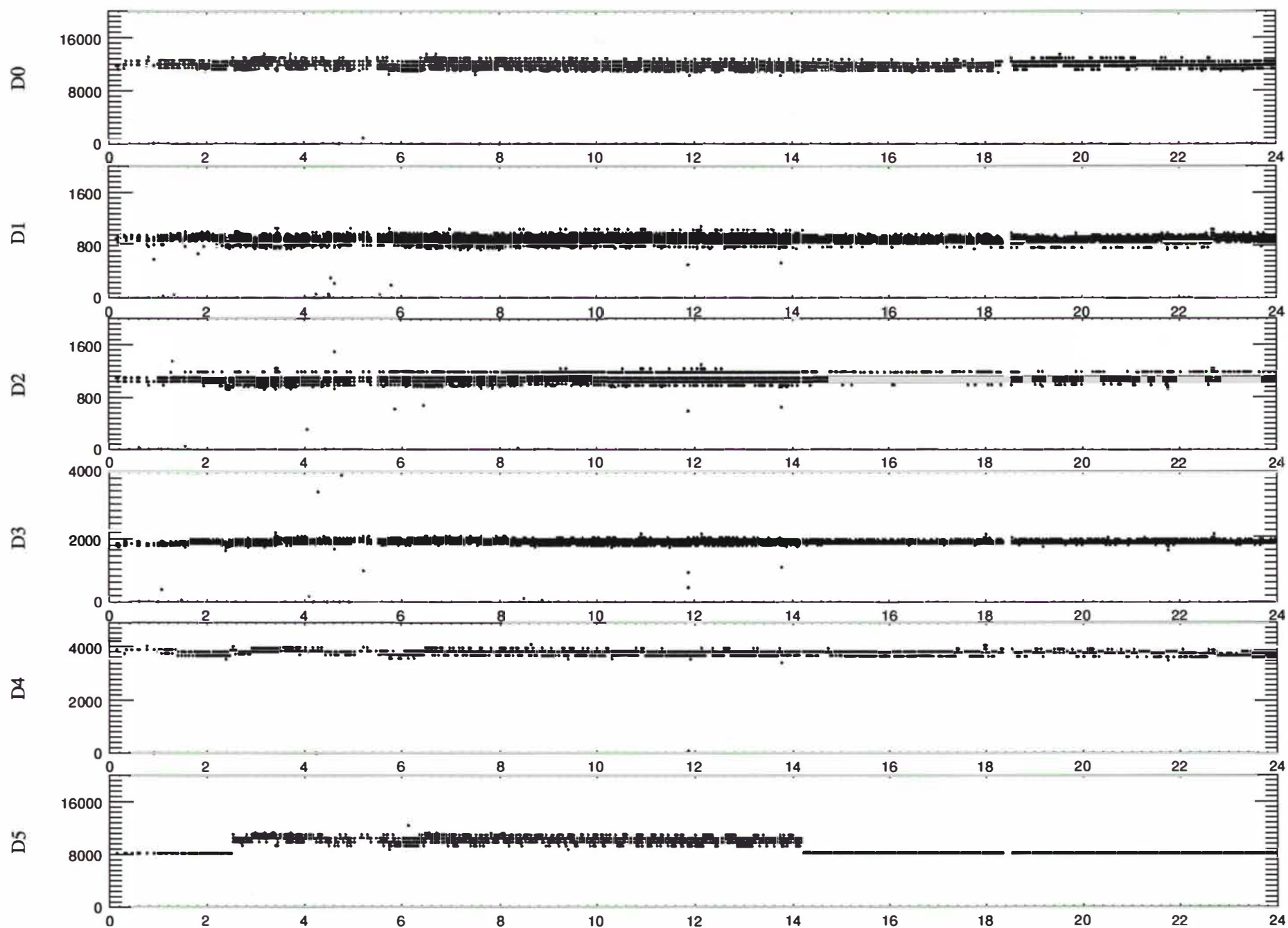
BURST NUMBER 0, 15



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV 'AL TIME

From HENZE@fender.msfc.nasa.gov Mon Nov 10 14:53:58 1997
Date: Mon, 10 Nov 1997 16:53:36 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6463

TIME: TJD=0758 SECONDS=03100

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=178.0 AZIMUTH=005.4 ERROR=000.3 DEGREES

COMMENTS:

OPTICAL SF, GOES C1 (BUT NOT IN EVENTS LIST). SINGLE PULSE, DUR. ~18 S,
STARTS AT ~T-10 S. MARGINALLY VISIBLE ABOVE 100 KEV. ADDITIONAL FLARING
EMISSION AT ~T+260 S TO ~T+370 S.

From HENZE@fender.msfc.nasa.gov Mon Nov 10 14:59:46 1997
Date: Mon, 10 Nov 1997 16:59:26 -0600 (CST)
From: Bill Henze (205-544-7616) <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, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6464

TIME: TJD=0758 SECONDS=10057

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=178.2 AZIMUTH=017.6 ERROR=000.2 DEGREES

COMMENTS:

FLARE. GOES C1.1, NO OPTICAL IDENTIFICATION. SINGLE PULSE, DUR. ~15 S,
STARTS AT ~T-4 S. WEAKLY VISIBLE ABOVE 100 KEV.

From RICHARDSON@SSLMOR.msfc.nasa.gov Tue Nov 11 11:08:00 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Tue, 11 Nov 1997 13:07:03 -0600 (CST)
To: burst@compTEL.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6465

TIME: TJD=0758 SECONDS=17694

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

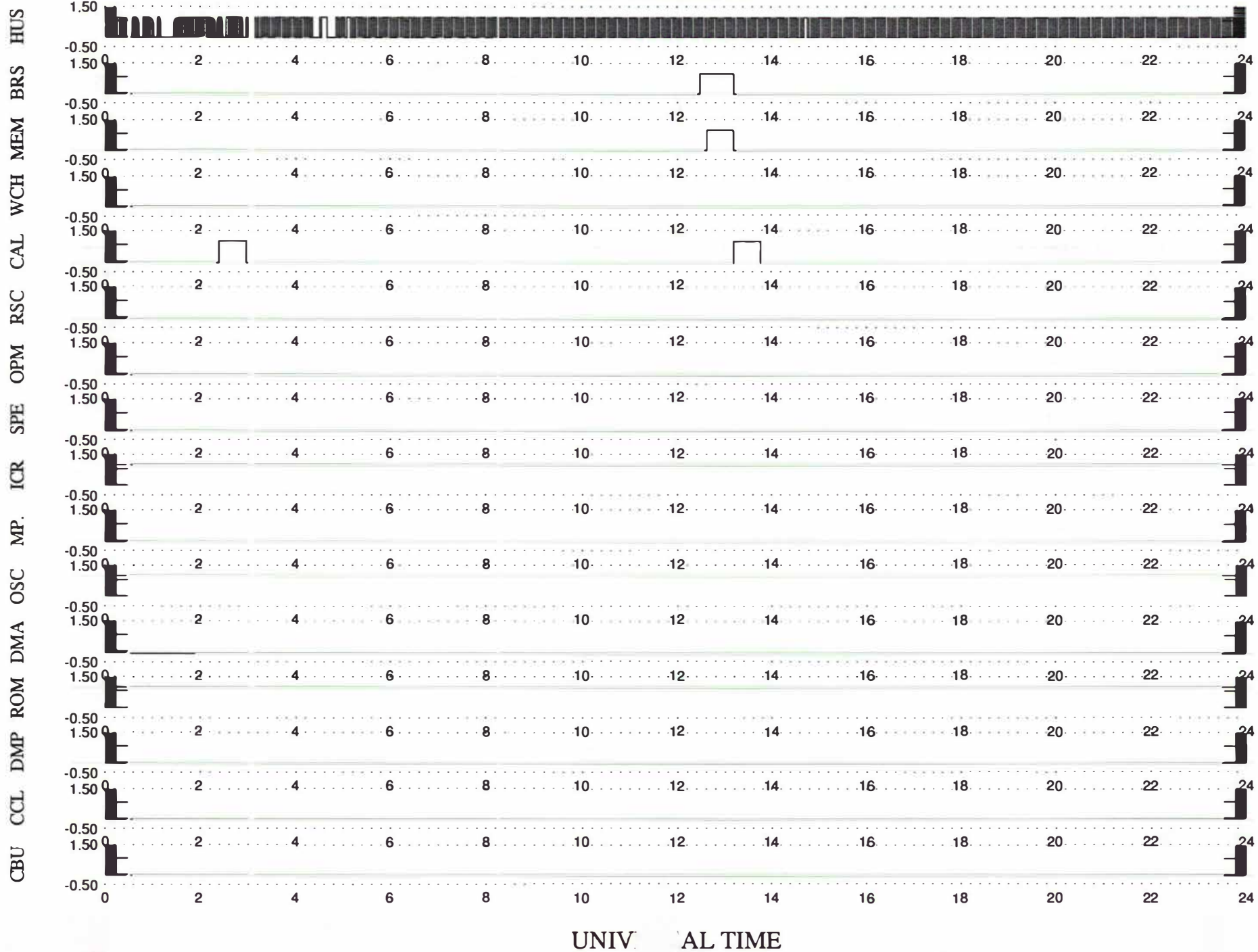
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

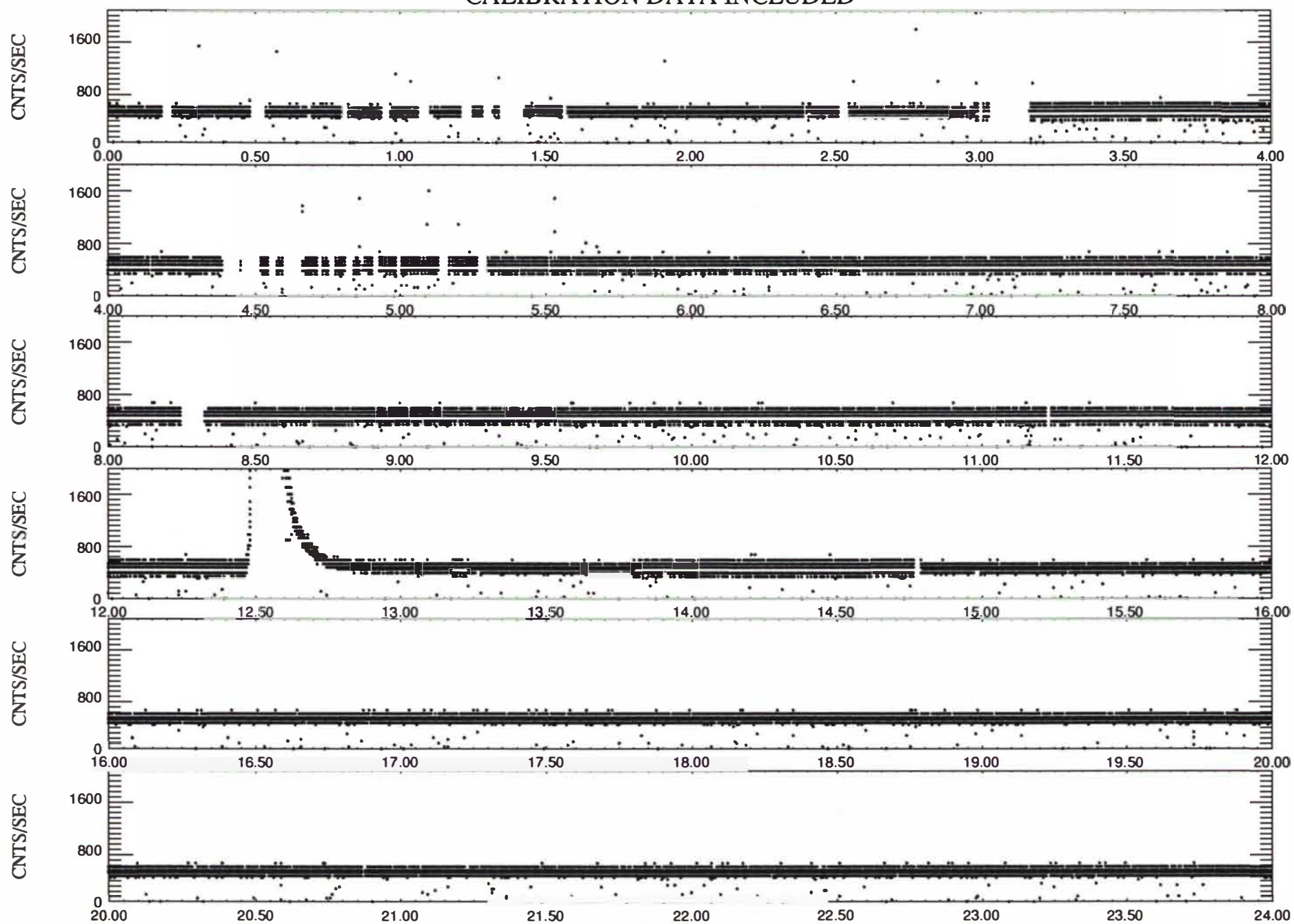
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT

BURST NUMBER 0

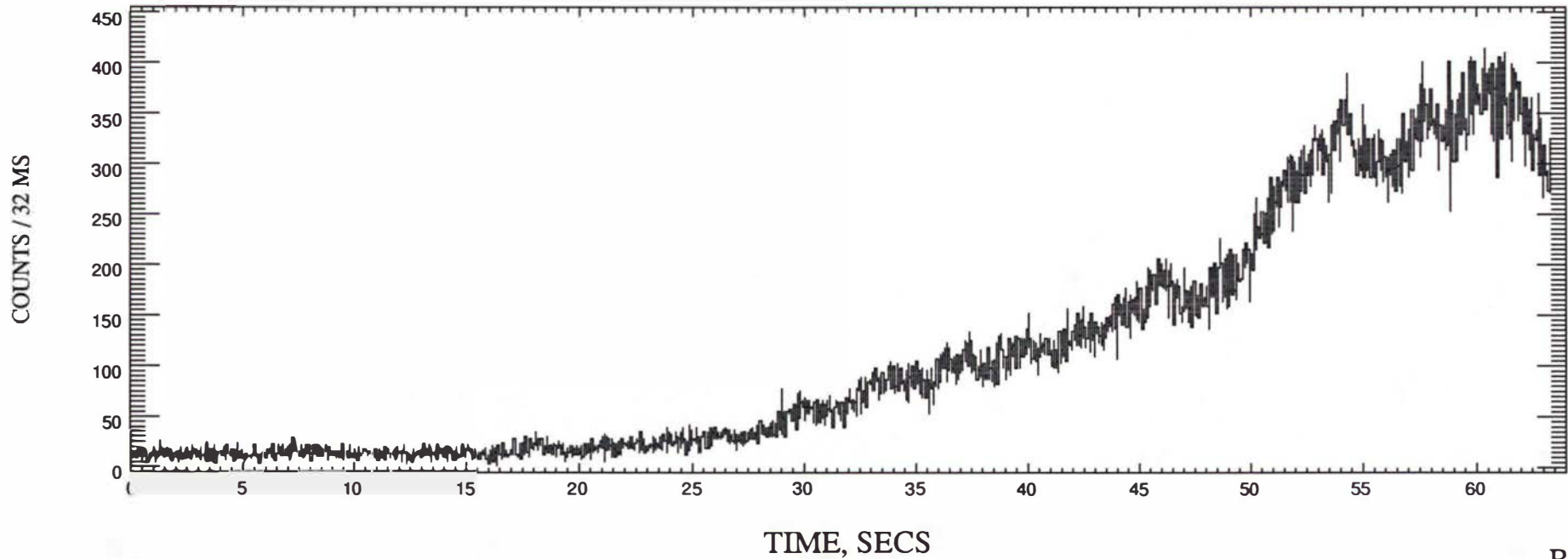
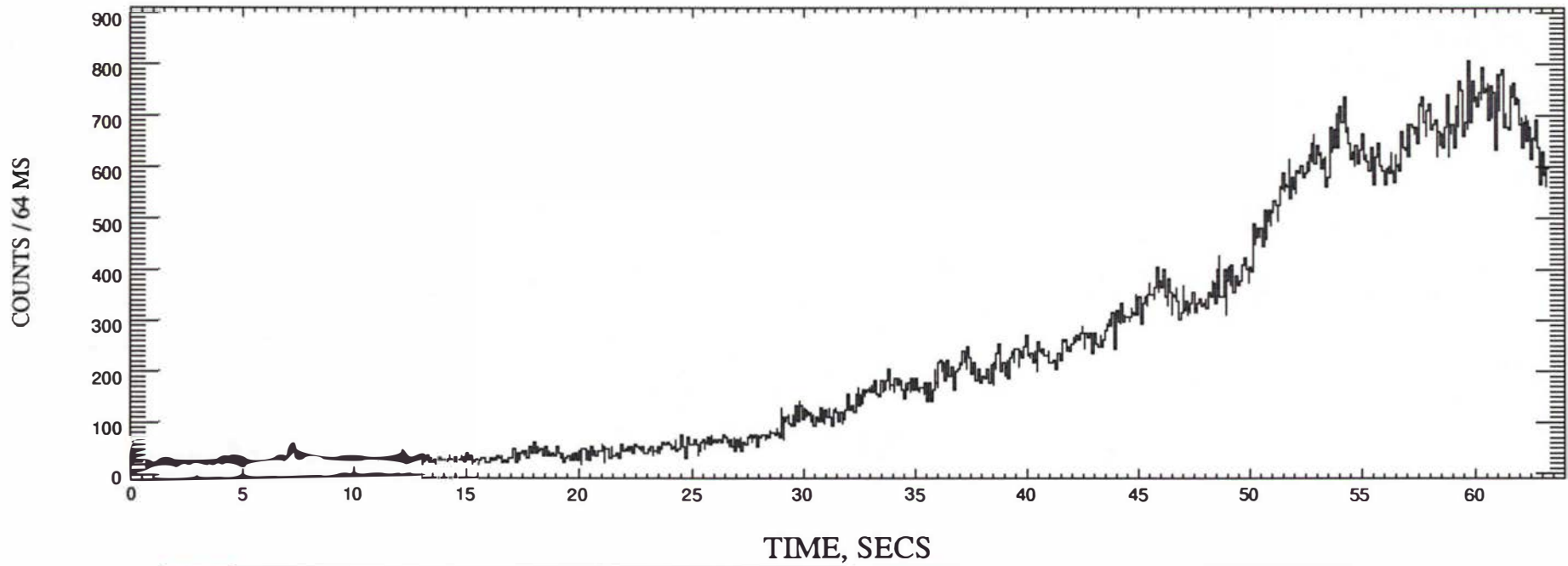


CALIBRATION DATA INCLUDED

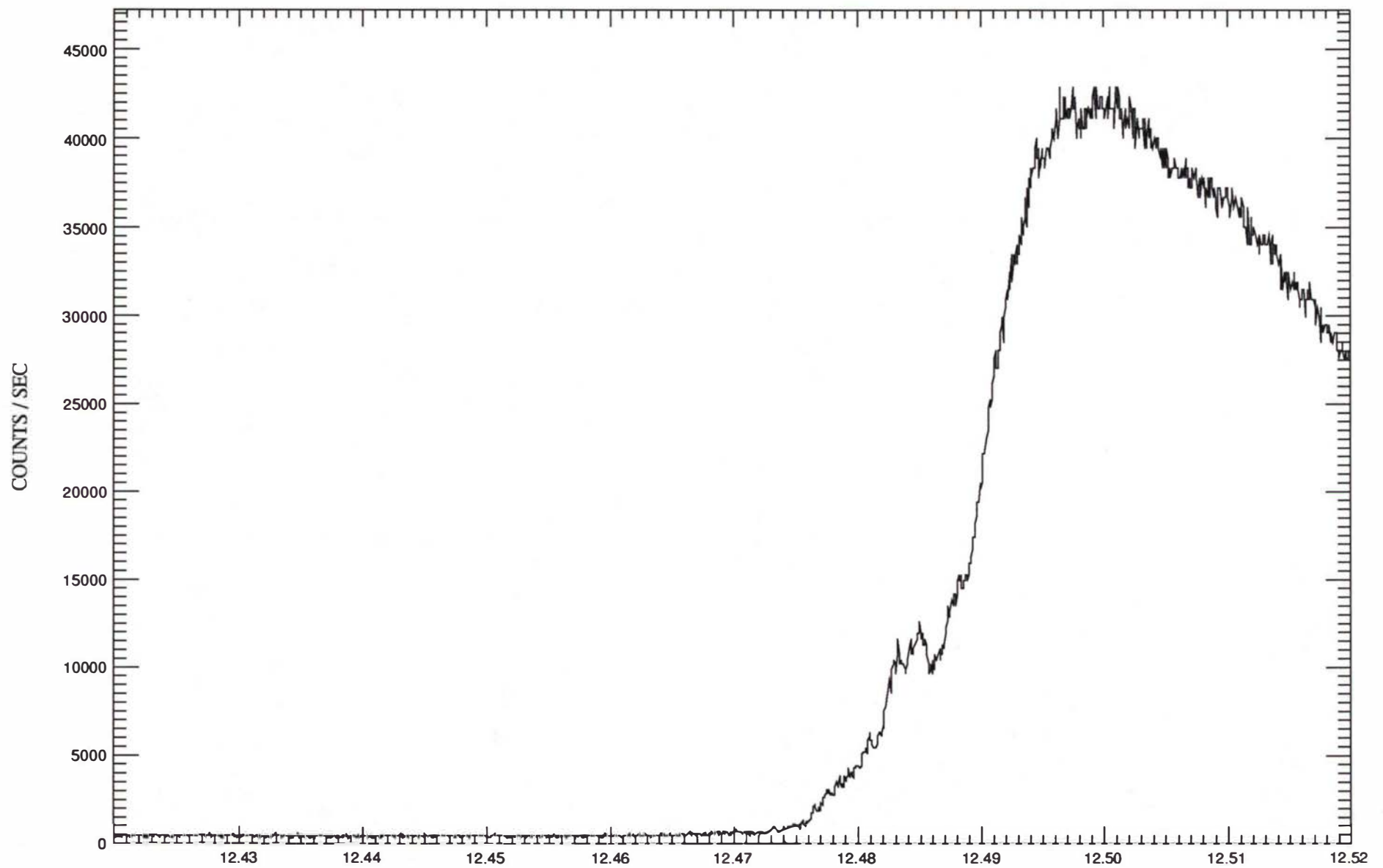


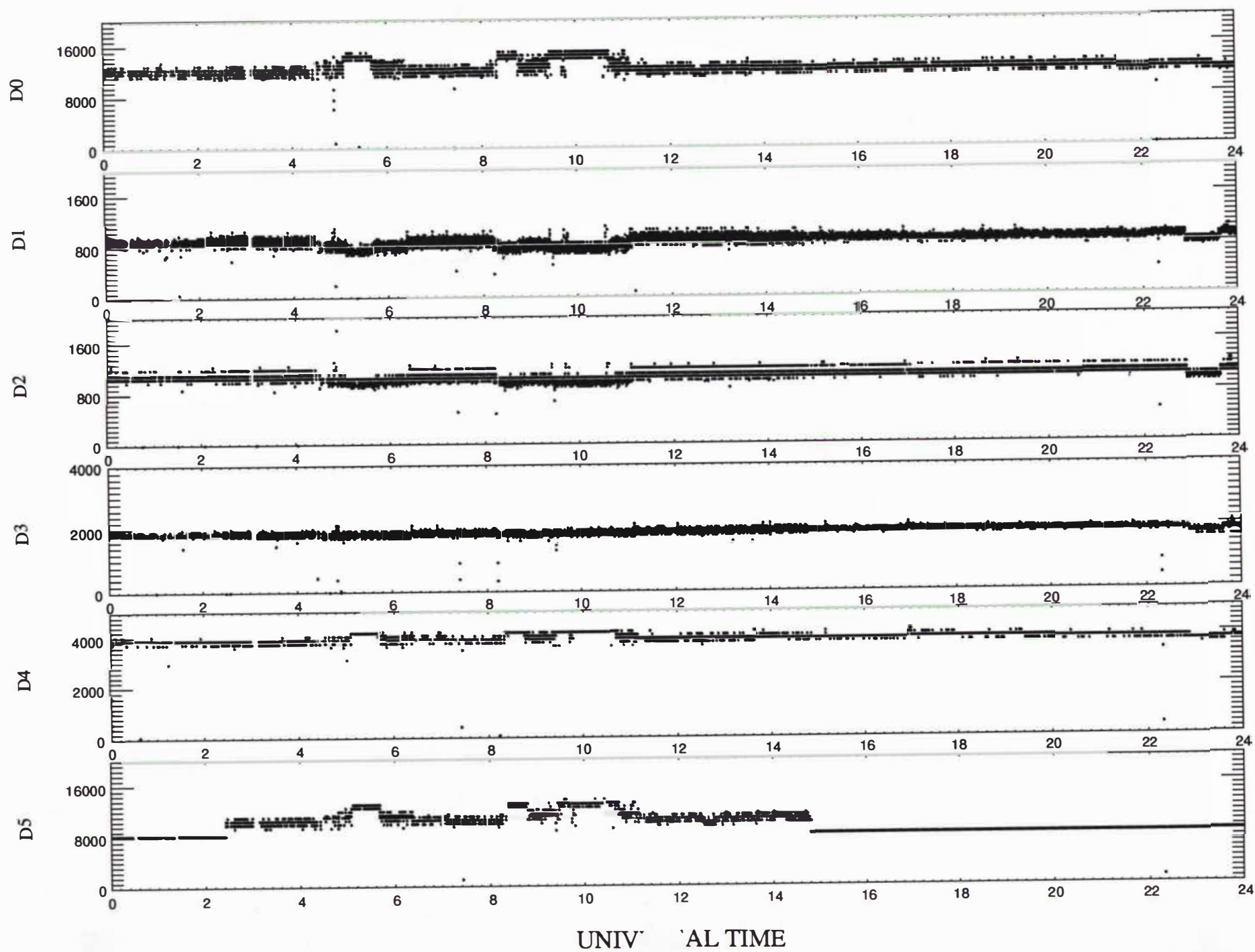
UNIV AL TIME

Burst Counter 0 at UT=12.470349578857 h=44893.258 s 12:28:13.258



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Mon Nov 10 15:13:06 1997
Date: Mon, 10 Nov 1997 17:02:24 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@lhev.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6466

TIME: TJD=0759 SECONDS=13448

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT, BEFORE AUSTRALIA.

From WOODSP@SSLMOR.msfc.nasa.gov Thu Nov 13 07:09:58 1997
From: WOODSP@SSLMOR.msfc.nasa.gov
Date: Thu, 13 Nov 1997 9:09:03 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6467

TIME: TJD=0759 SECONDS=18641

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=177.0 AZIMUTH=34.8 ERROR=0.5 DEGREES

COMMENTS:

SOLAR FLARE LASTING ~ 10 SEC. SINGLE PULSE WITH SUBSTRUCTURE.
NOT VISIBLE ABOVE 300 KEV. PARTICLE ACTIVITY BEGINS AT T + 140 SEC.

BACODINE# 6467

ULYSSES RT

7 / 1 1 / 9 7

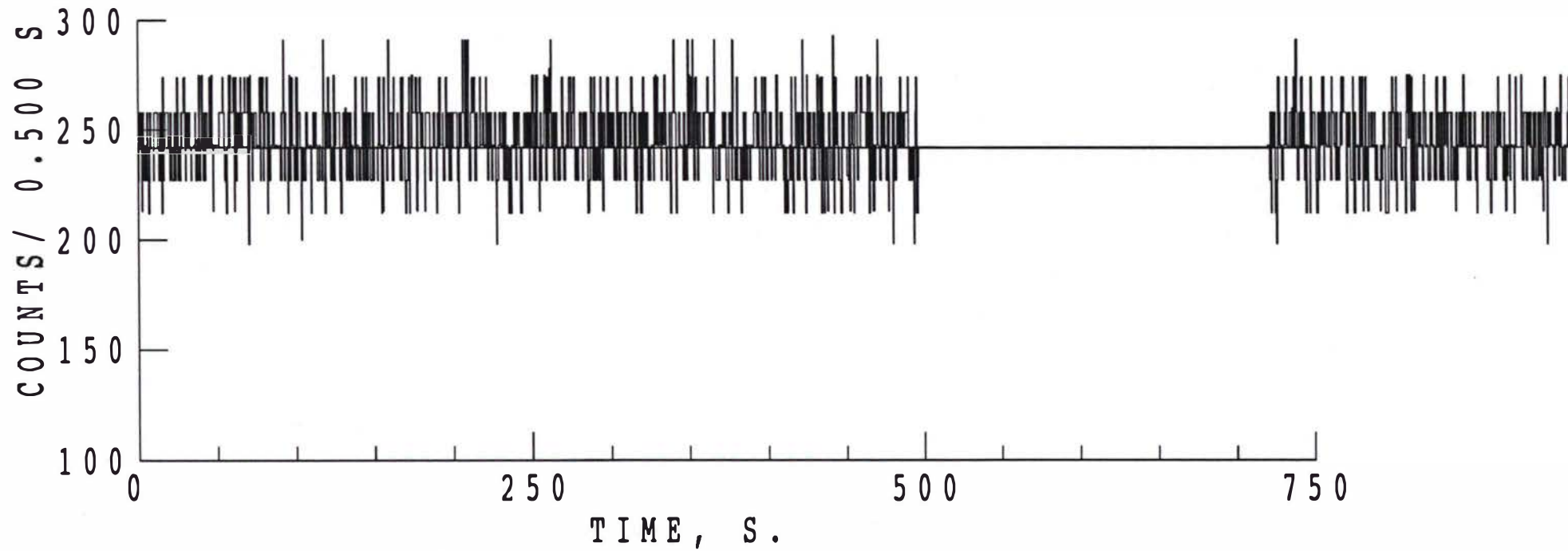
7 / 1 1 / 9 7 16884.176 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

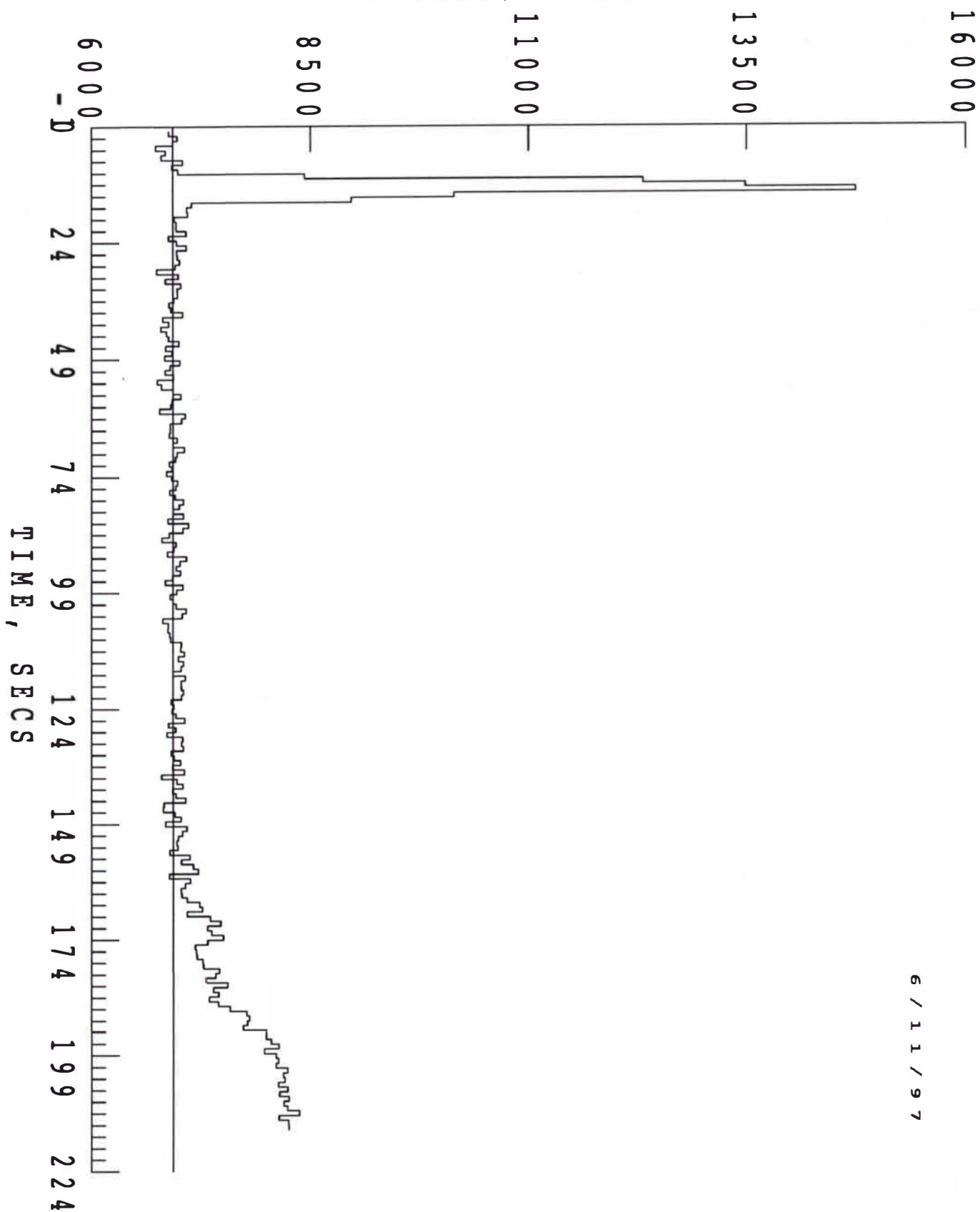
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6467 07/11/97 18630.369

25 - 100 keV

COUNTS/1.024 S



6 / 11 / 97

From HENZE@fender.msfc.nasa.gov Tue Nov 11 11:59:03 1997
Date: Tue, 11 Nov 1997 13:58:22 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6468

TIME: TJD=0759 SECONDS=61116

TYPE: SGR SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=146.7 AZIMUTH=093.5 ERROR=004.6 DEGREES

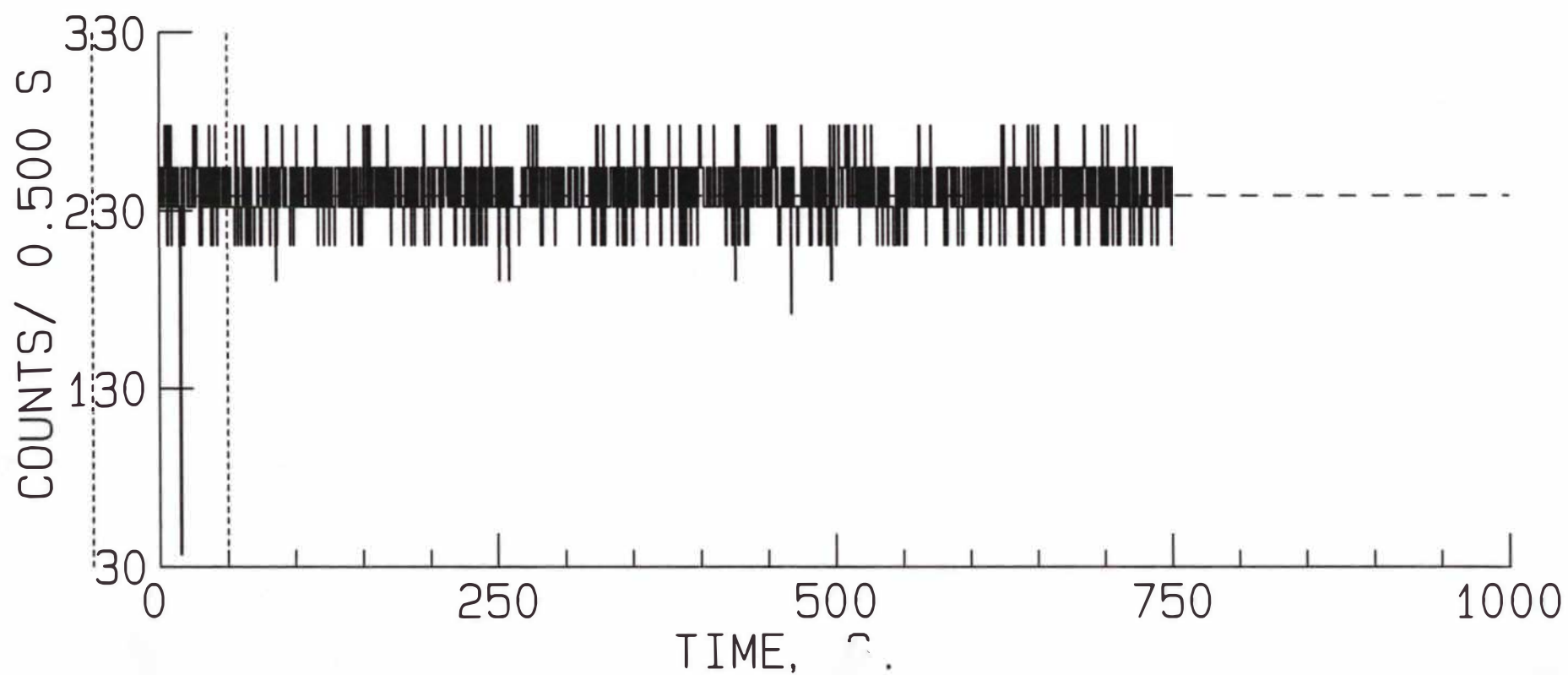
COMMENTS:

SINGLE PULSE, DUR APPROX 0.3 S. NOT VISIBLE ABOVE 100 KEV.

PROBABLE SGR. EVEN THOUGH LOCATION IS NOT EXTREMELY CLOSE TO 1806-20, THE
CHI-SQUARED CONTOURS ARE ELONGATED TOWARD 1806-20 SO THIS EVENT IS PROBABLY
FROM 1806-20.

ULYSSES RT
7/11/97 61380.424 s
22- 147 keV

21/11/97

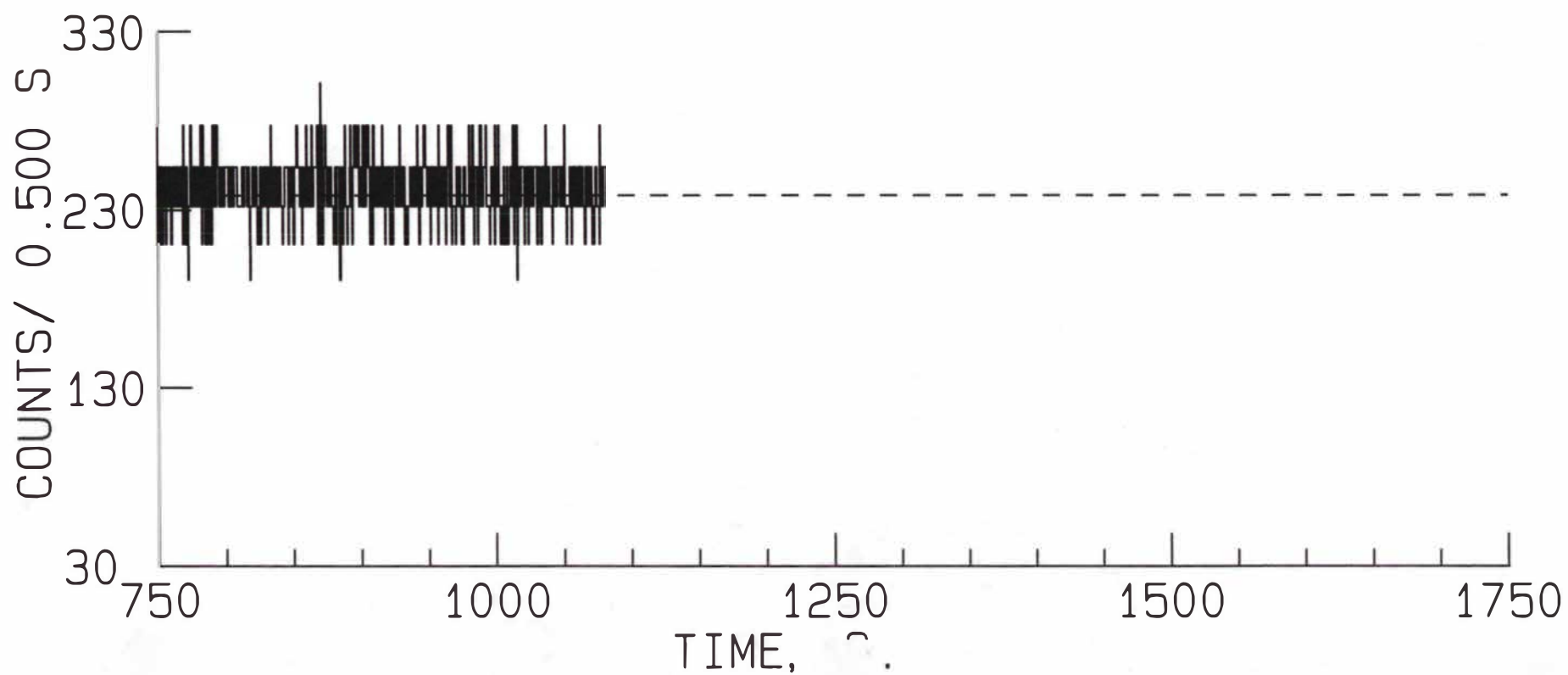


ULYSSES RT

21/11/97

7/11/97 61380.424 s

22- 147 keV



BATSE BURST# 6468

ULYSSES RT

13 / 11 / 97

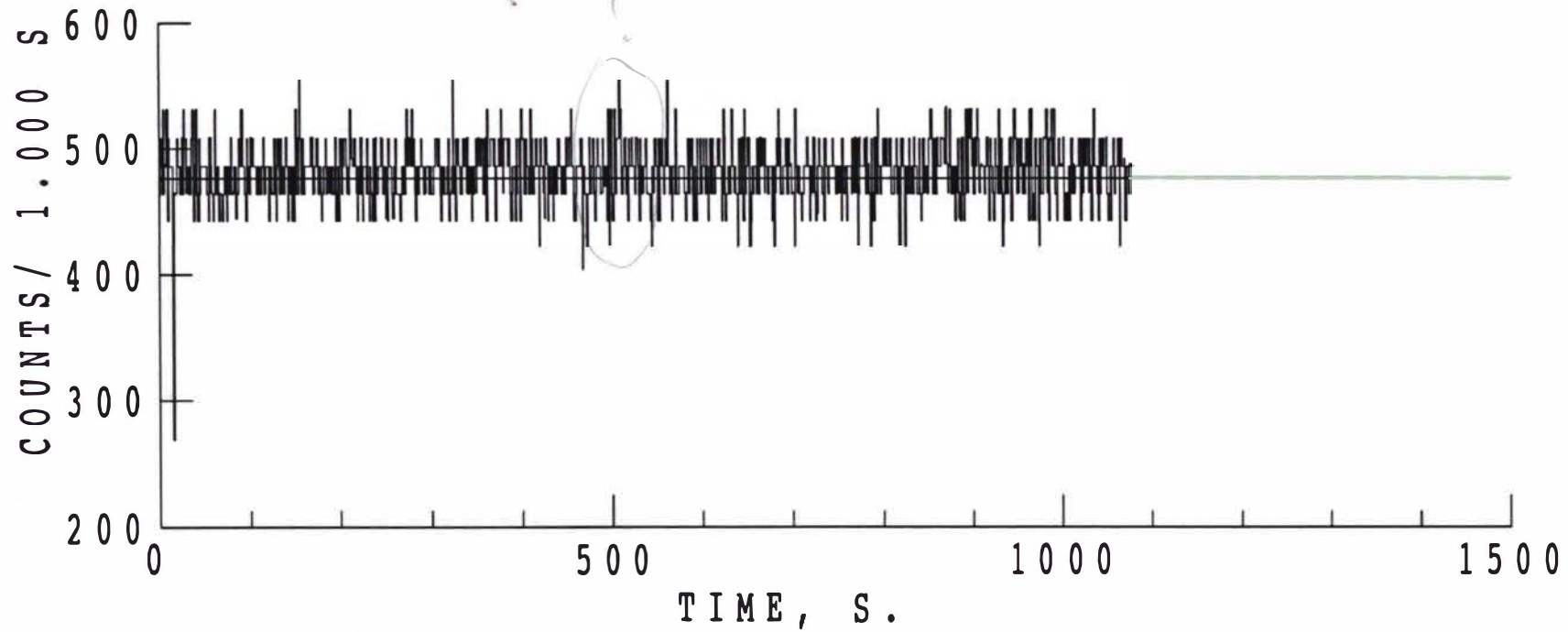
7 / 11 / 97 61380.426 s

0.500 S INTERVALS REGROUPED BY 2

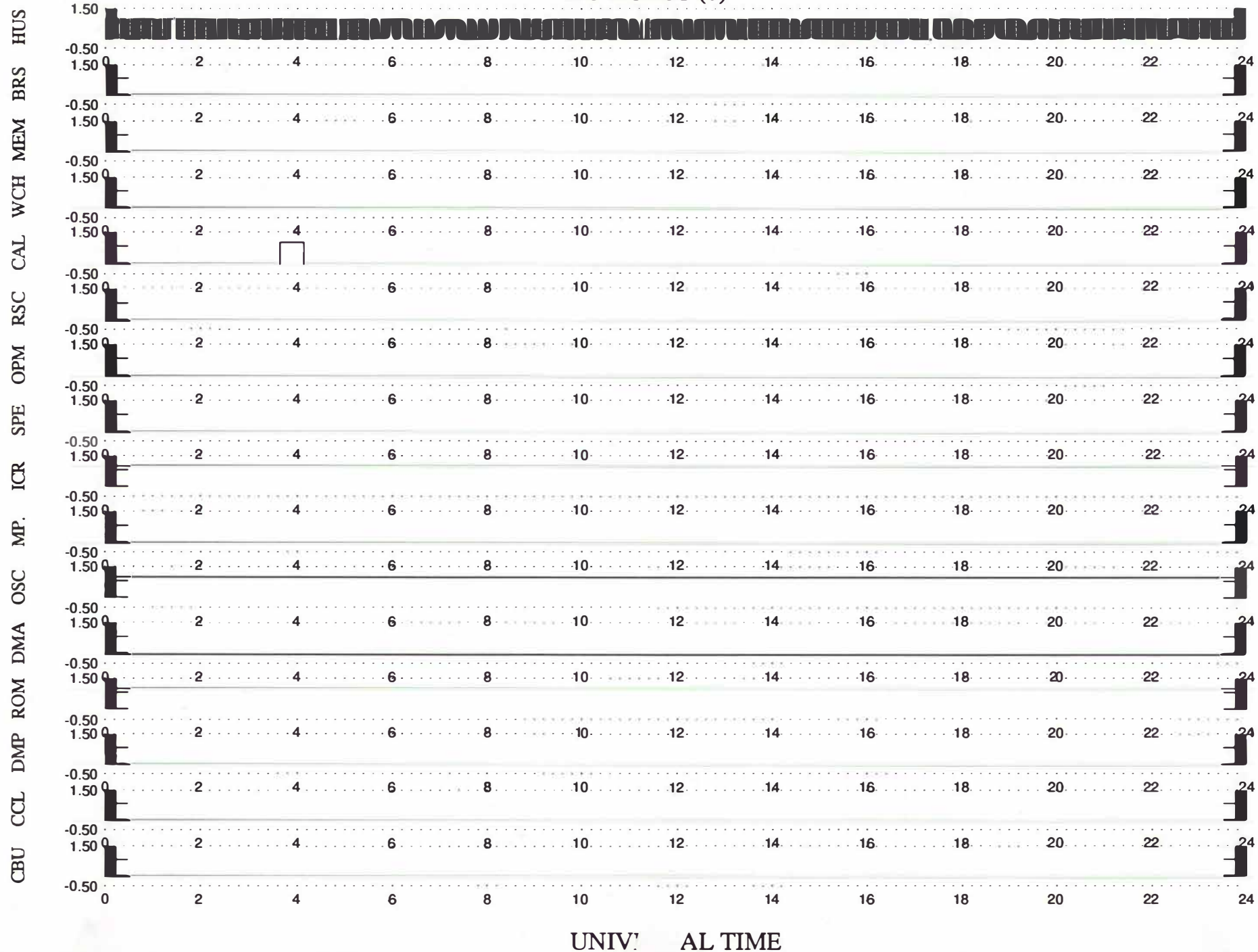
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

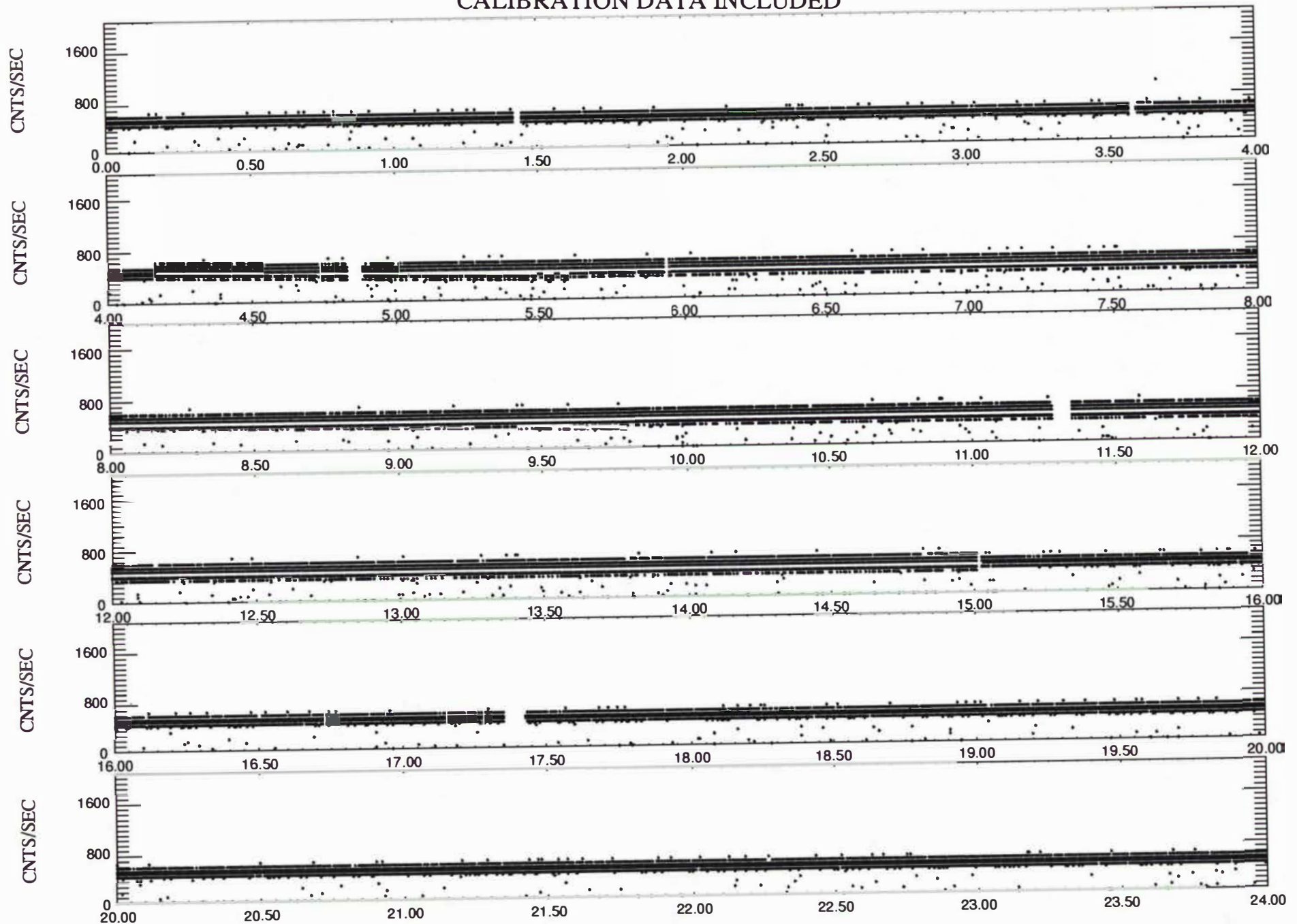
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



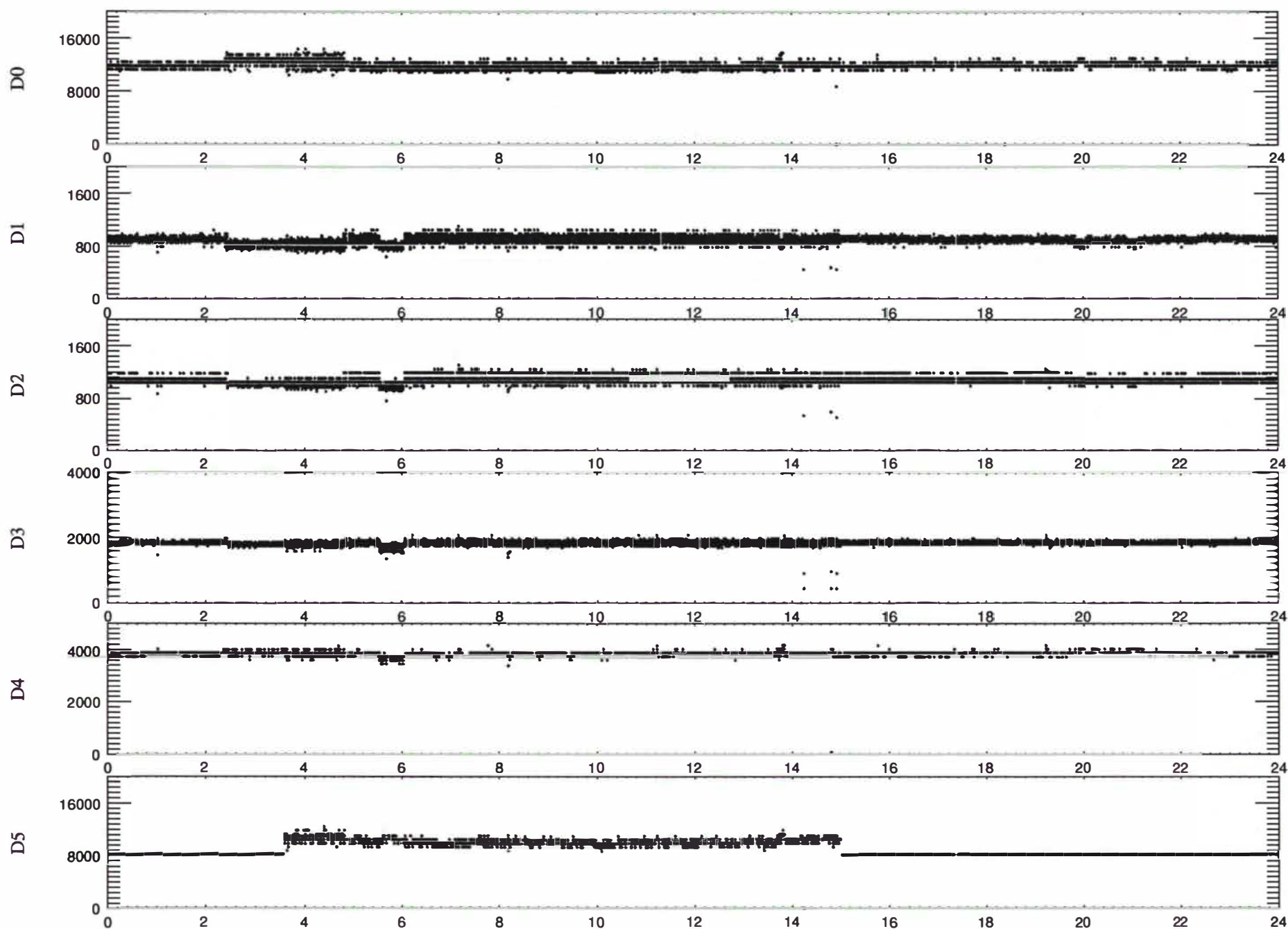
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV 'AL TIME



UNIV AL TIME

From RICHARDSON@SSLMOR.msfc.nasa.gov Tue Nov 11 05:51:15 1997
Return-Path: <RICHARDSON@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id FAA01512; Tue, 11 Nov 1997 05:51:14 -0800
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id FAA22962; Tue, 11 Nov 1997 05:51:14 -0800
Date: Tue, 11 Nov 1997 7:51:02 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971111075102.21e098df@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6469
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6469
EVENT OF 1997 NOV 8 DAY OF YEAR=312
EVENT CROSSING TIME AT BATSE : 10374. S. OR 02:52:54.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 236.000 -70.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/11/ 97 IS:
RA= 169.642 DEC= 13.401 DIST= 5.736 AU
BATSE-ULYSSES DISTANCE = 858151905. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 241.51 SECS.
CROSSING TIME AT ULYSSES IS 10616. S. OR 02:56:55 +/- 548.87 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/11/ 97 IS:
RA= 268.988 DEC= -24.678 DIST= 1.950 AU
MARS-BATSE DISTANCE = 291650432. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -635.29 SECS.
CROSSING TIME AT MARS IS 9739. S. OR 02:42:18 +/- 118.27 SECONDS

BATSE BURST TRIGGER

NO.: 6469

TIME: TJD=0760 SECONDS=10374

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL: N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=125.2 AZIMUTH=163.7 ERROR=4.9 DEGREES

COMMENTS:

GRB SHORT SPIKE. DURATION APPROX. = 0.3 SEC. NOT VISIBLE ABOVE 300KEV.

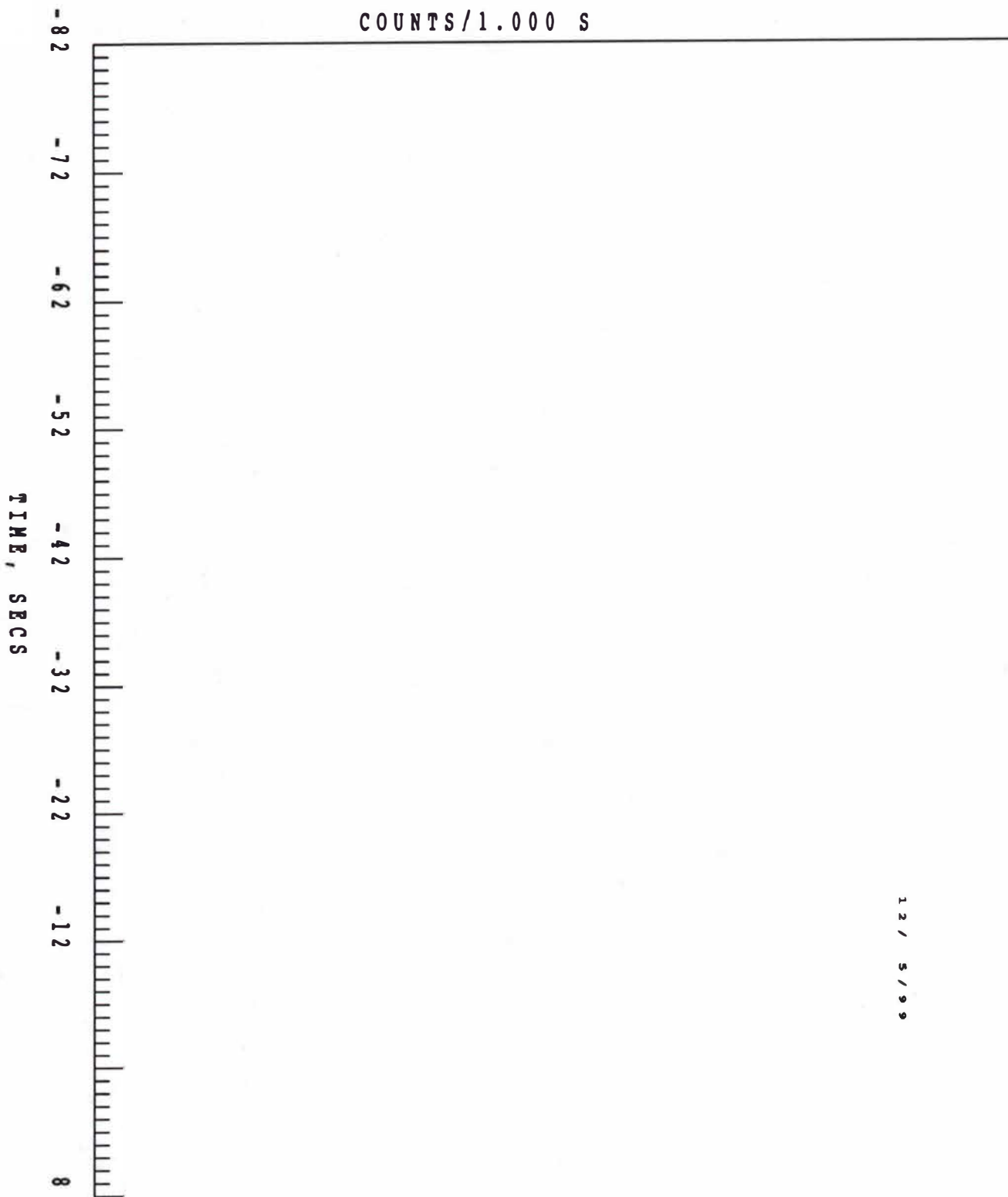
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6469	971108	10760	10374	7500	236	-70	.3

NEAR

08/11/97

10513.392

100-1000 keV



BATSE BURST# 6469

ULYSSES RT

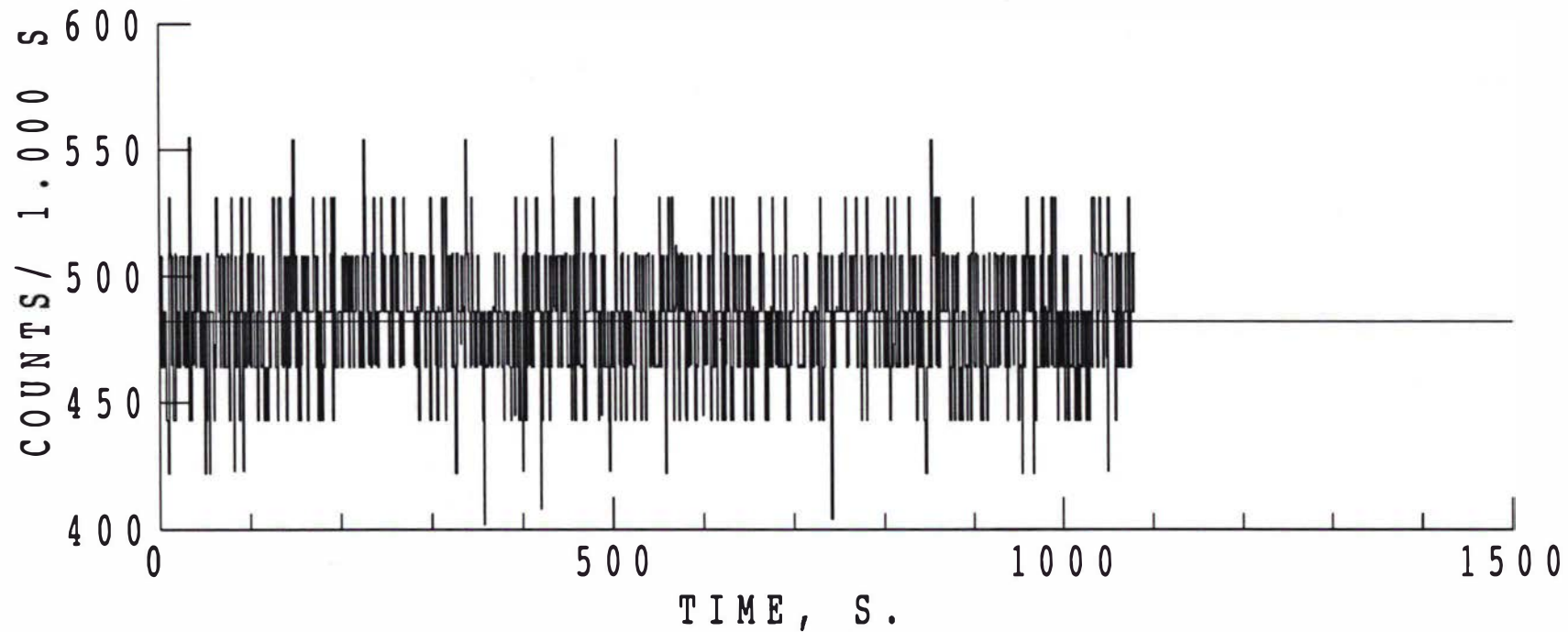
11 / 11 / 97

8 / 11 / 97 10080.312 s

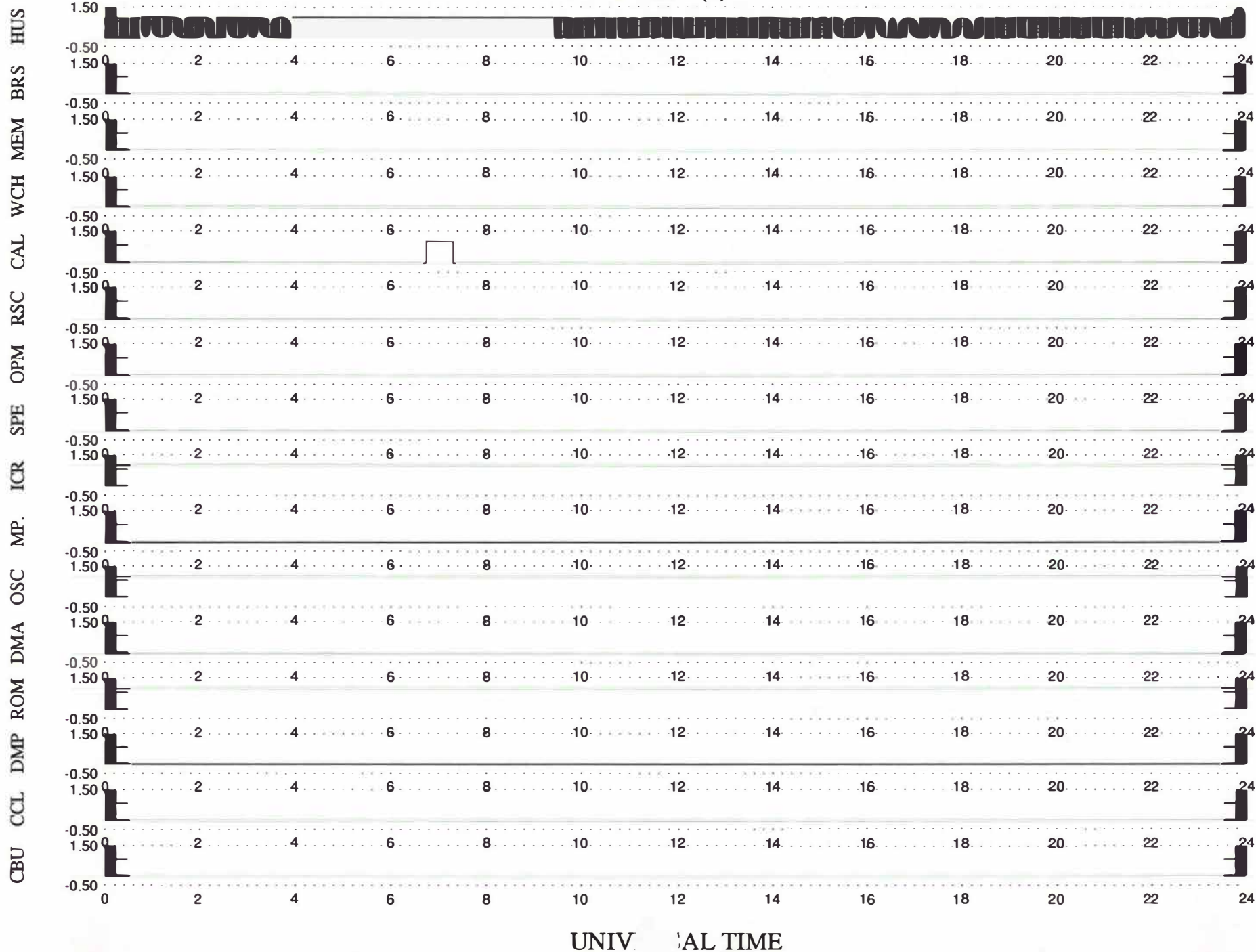
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

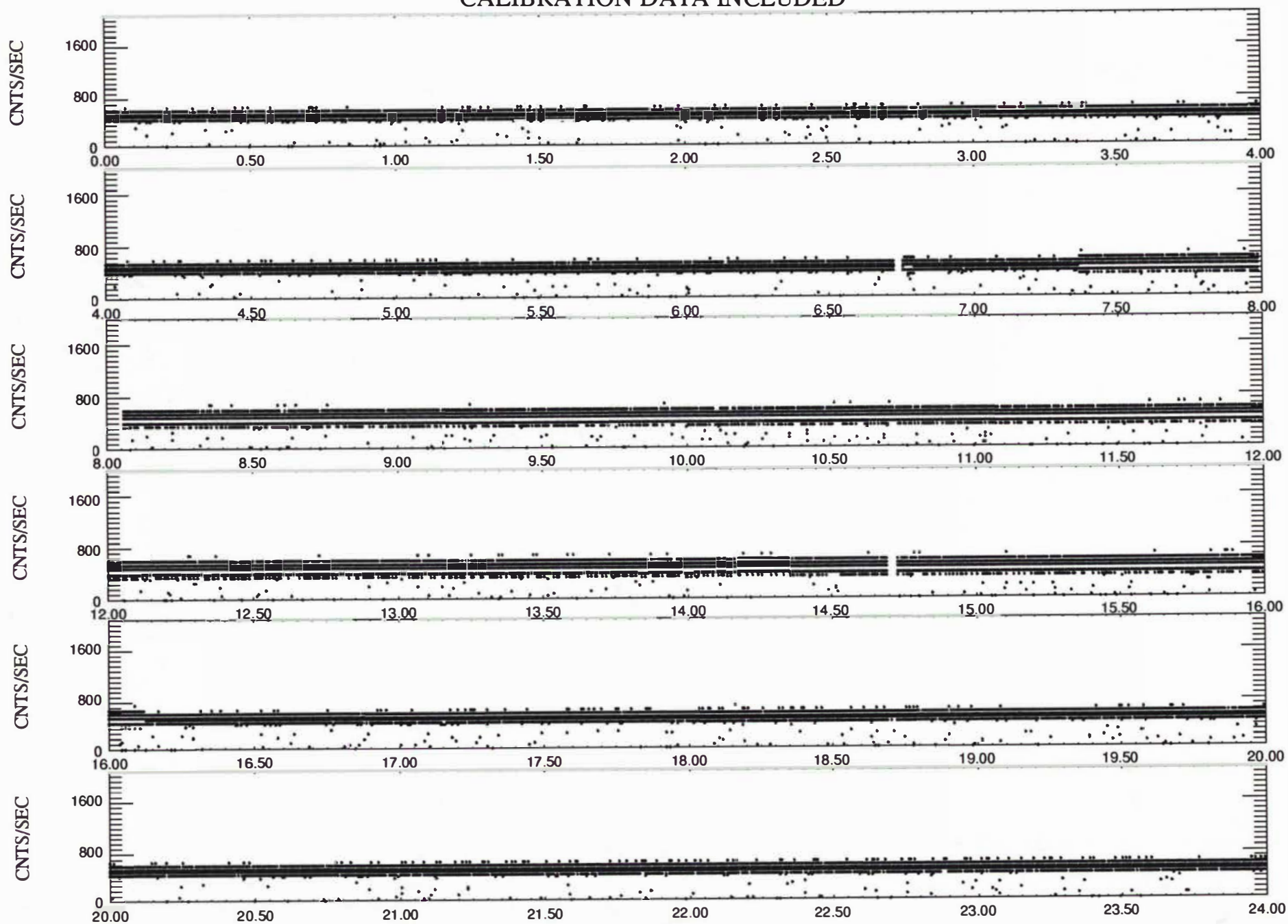
W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



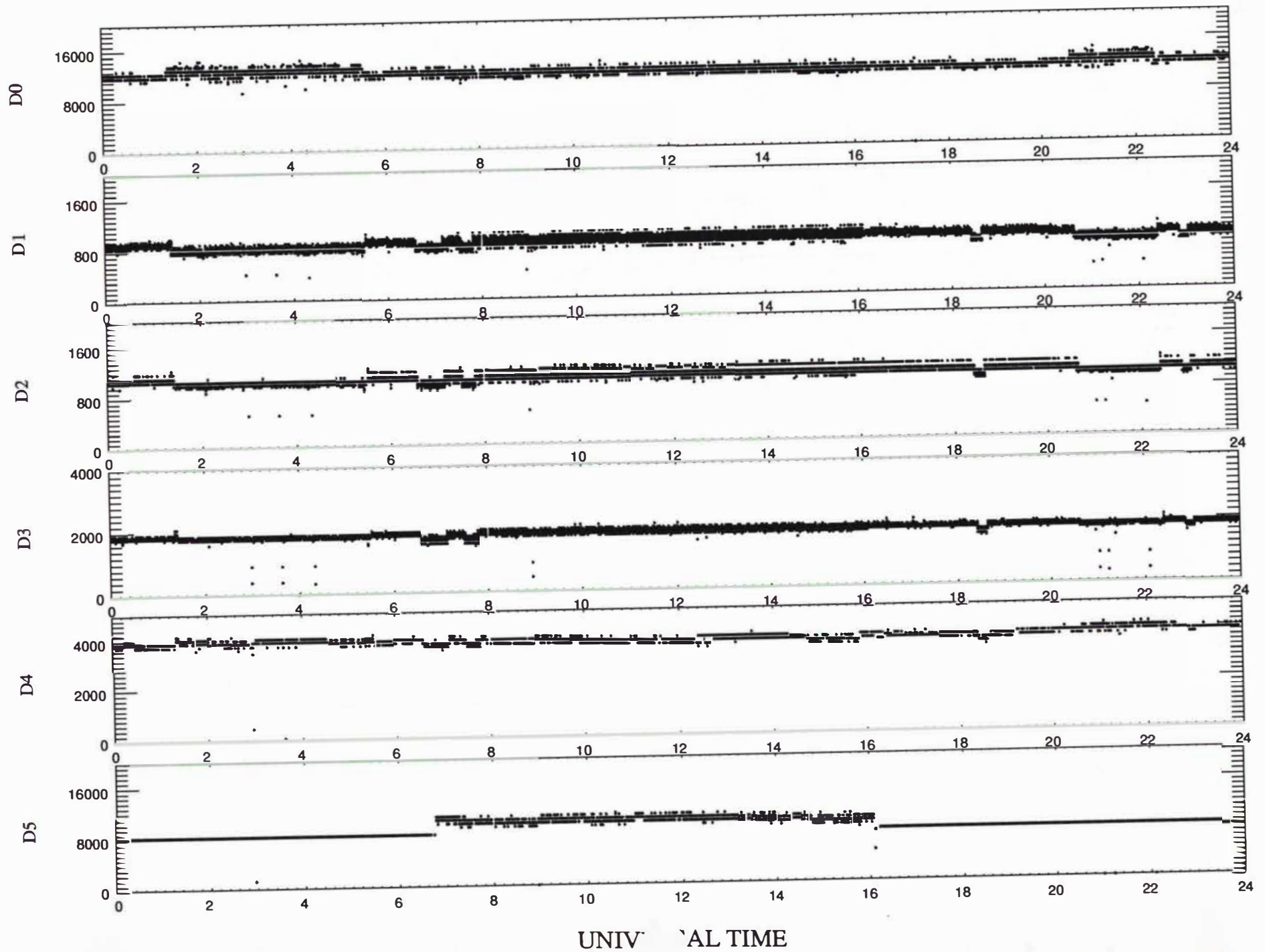
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV 'AL TIME



lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

is triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

From kraken@rosserv.gsfc.nasa.gov Fri Nov 21 07:47 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 21 Nov 1997 10:48:31 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts *NOT* seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

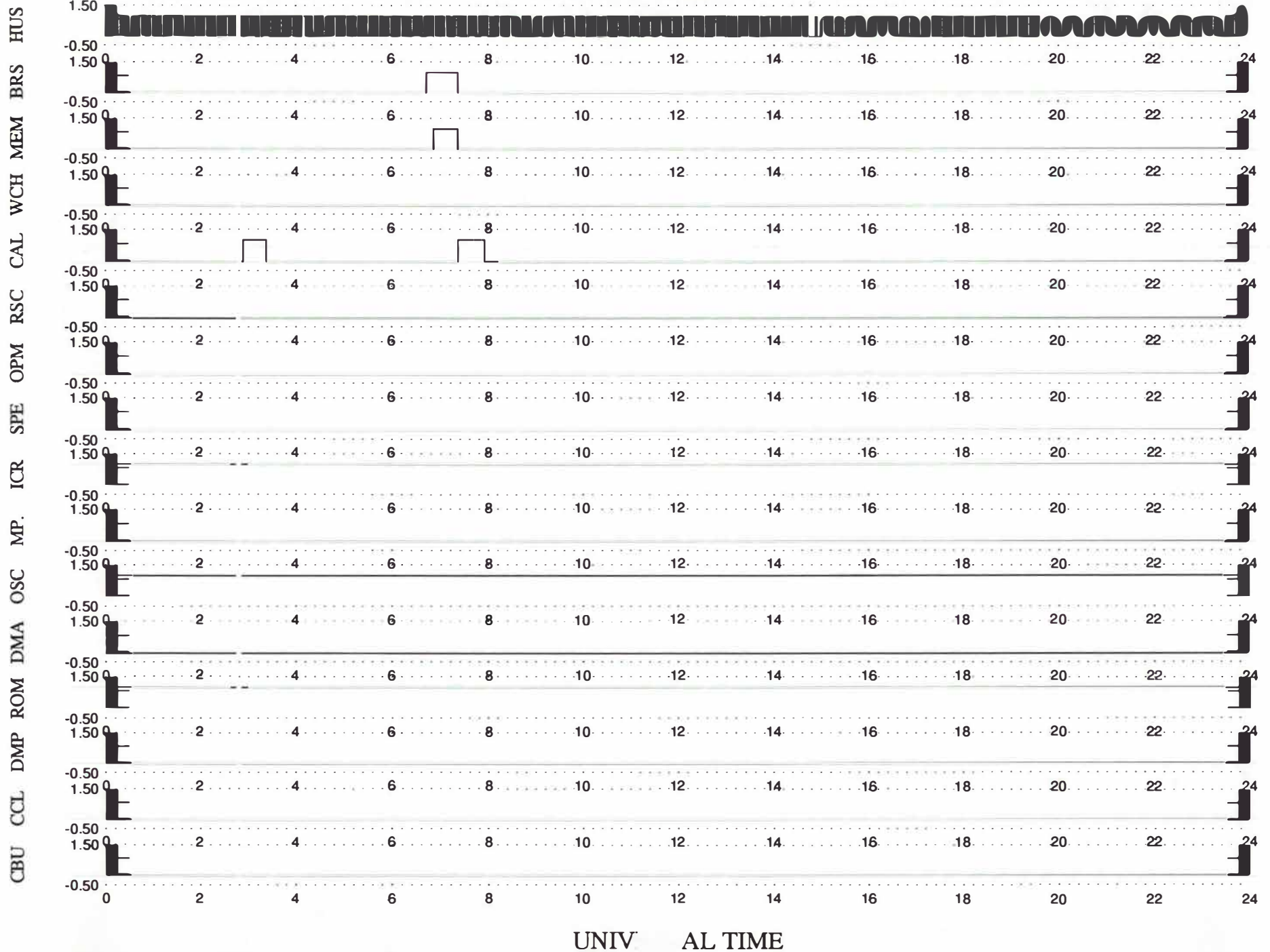
Hi Kevin,

The following bursts were not seen by TGRS, in either burst or waiting mode data.

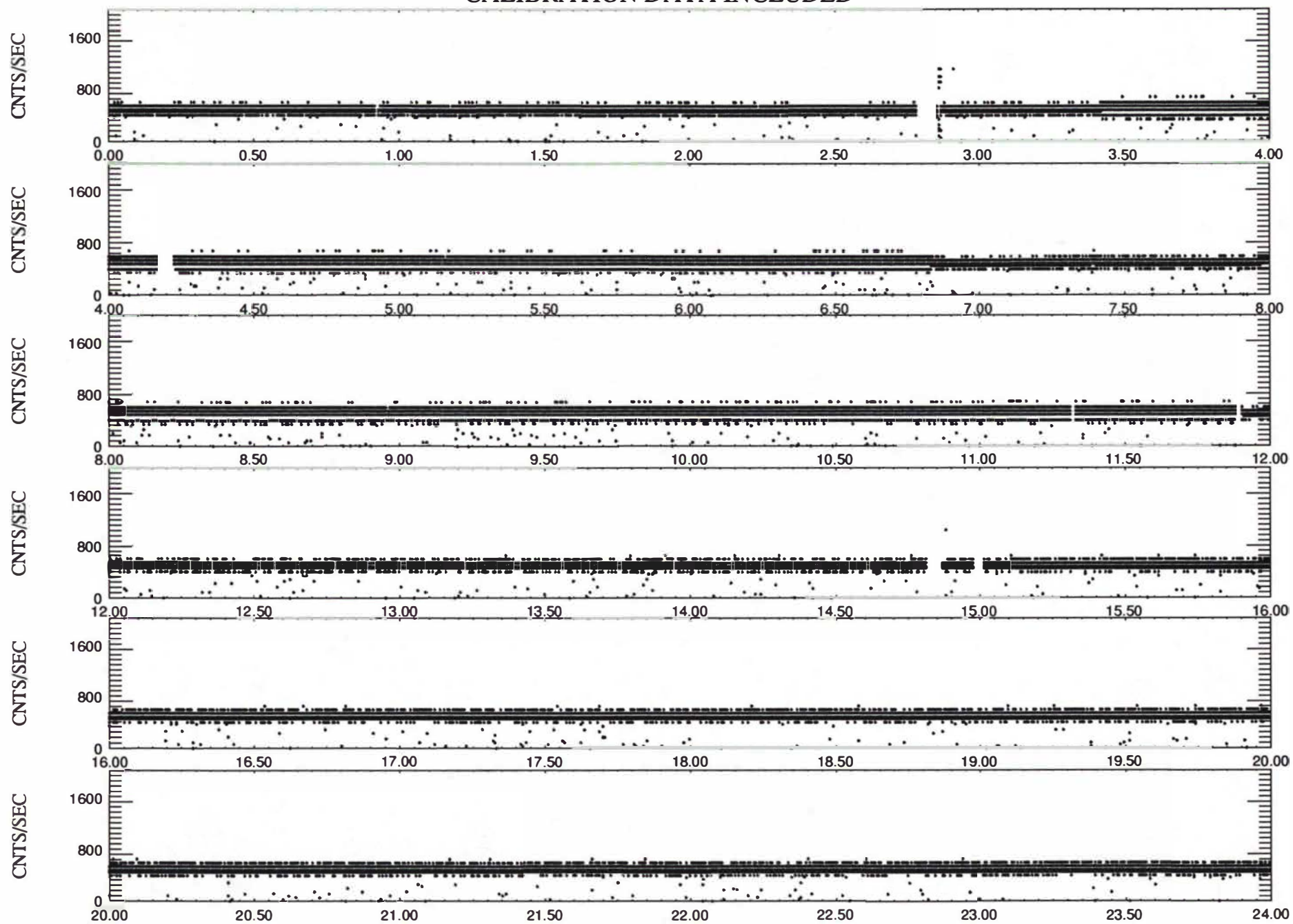
Pete

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long
November 10 1997 18:38 " " ; moderate burst, 100 s long
November 11 1997 08:04 " " ; weak burst, 64 ms long
November 12 1997 06:00 " " ; weak burst, 64 ms long
November 12 1997 13:37 " " ; weak burst, 64 ms long
November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

BURST NUMBER 1

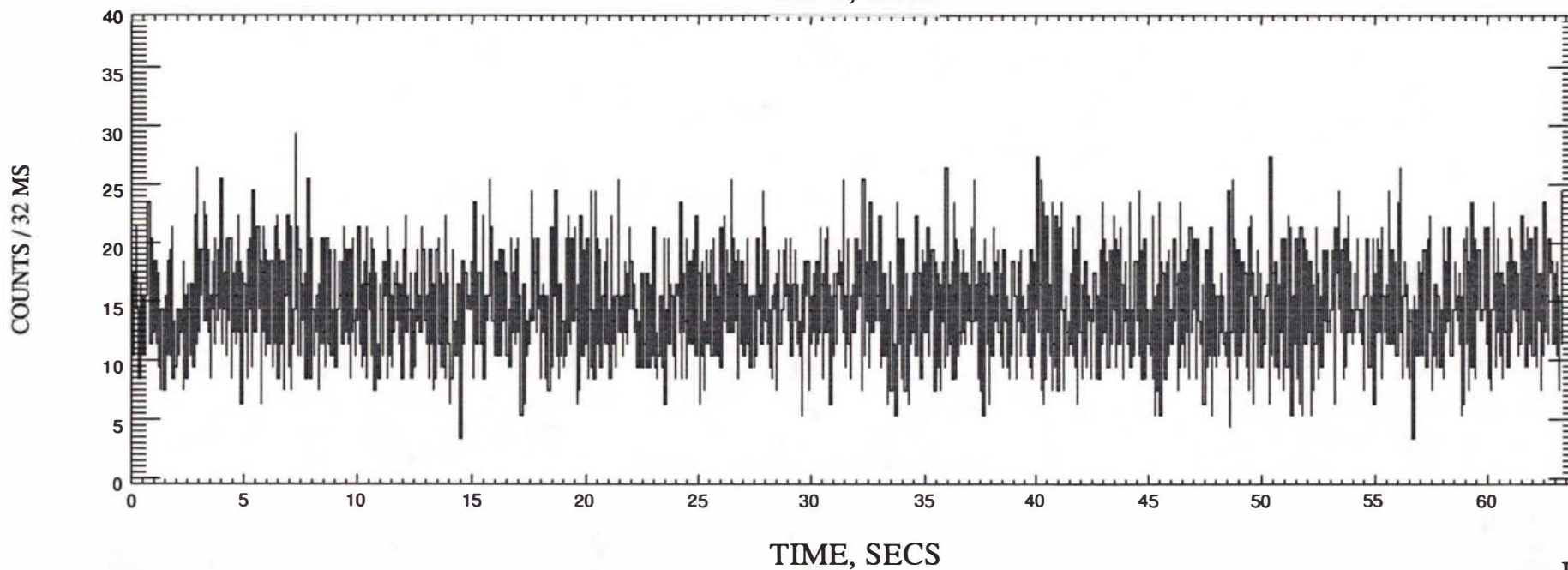
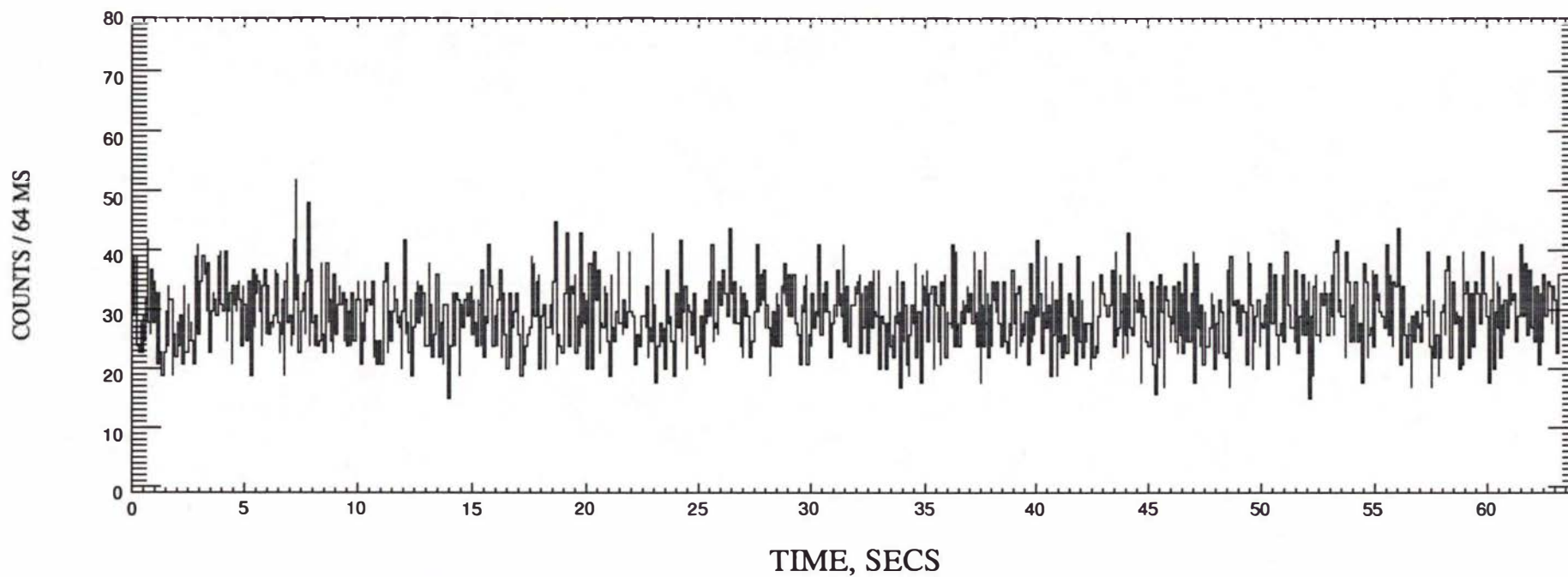


CALIBRATION DATA INCLUDED

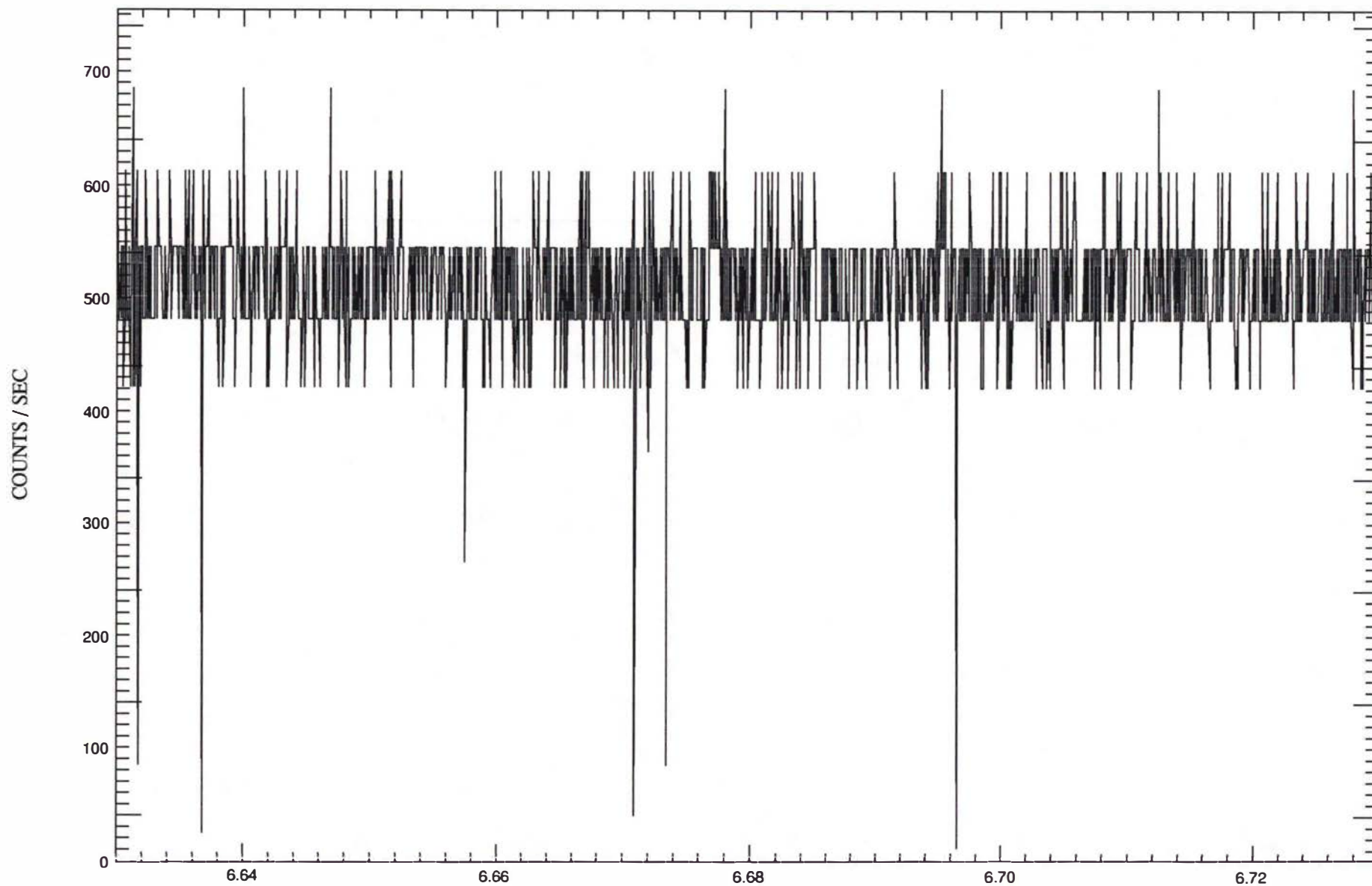


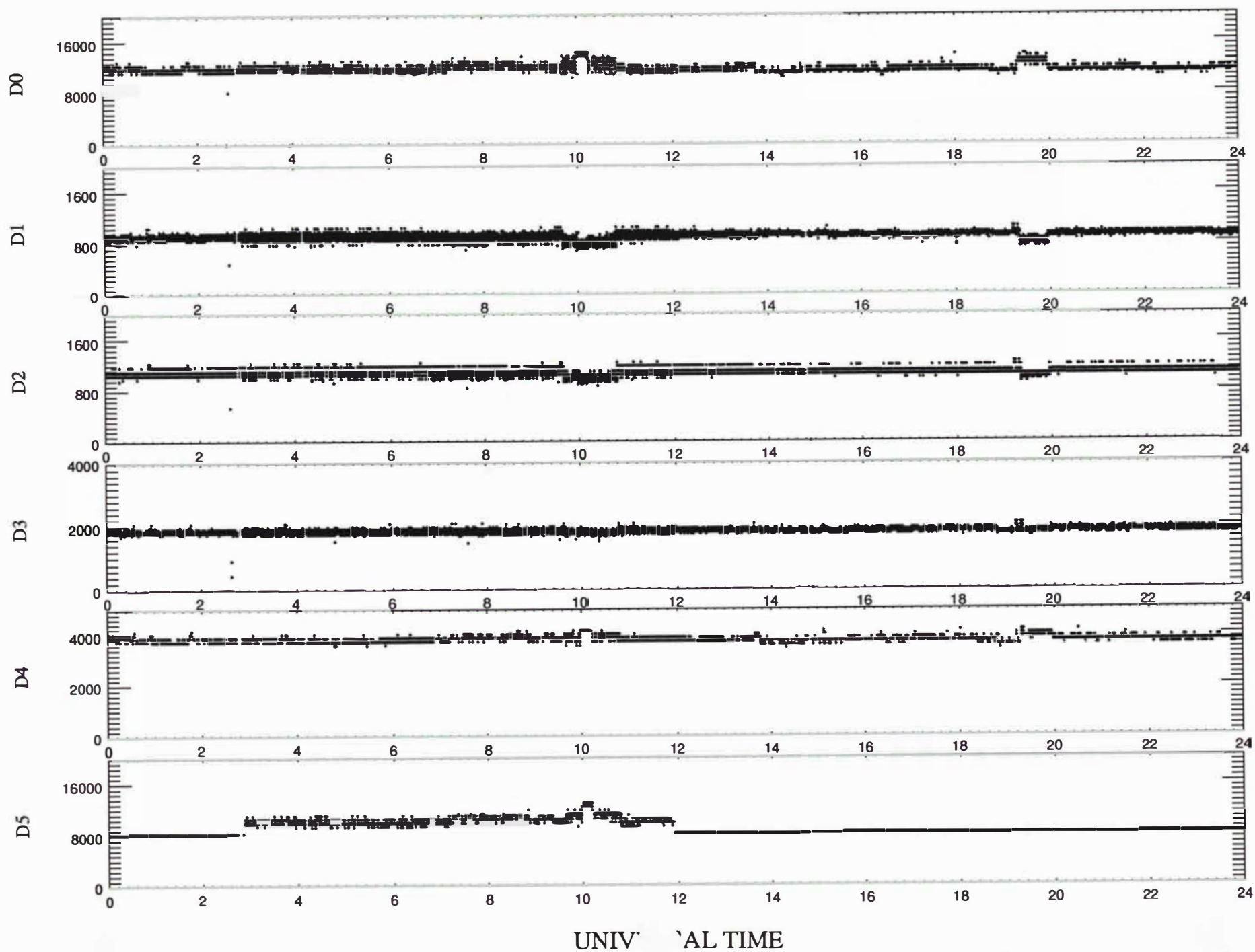
UNIV AL TIME

Burst Counter 1 at UT= 6.678105239868 h=24041.179 s 06:40:41.179



CALIBRATION DATA INCLUDED





From WOODSP@SSLMOR.msfc.nasa.gov Thu Nov 20 13:06:22 1997
From: WOODSP@SSLMOR.msfc.nasa.gov
Date: Thu, 20 Nov 1997 14:34:20 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6471

TIME: TJD=0762 SECONDS=29352

TYPE: CYG X-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=95.0 AZIMUTH=45.9 ERROR=14 DEGREES

COMMENTS:

POSSIBLE CYGNUS X-1 FLUCTUATION. SINGLE WEAK PULSE WITH A
RELATIVELY HARD SPECTRUM FOR CYGNUS. NOT VISIBLE ABOVE 300 KEV.

From WOODSP@SSLMOR.msfc.nasa.gov Thu Nov 13 07:17:04 1997
Return-Path: <WOODSP@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA28943; Thu, 13 Nov 1997 07:17:03 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA08836; Thu, 13 Nov 1997 07:16:57 -0800
Date: Thu, 13 Nov 1997 9:16:41 -0600 (CST)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971113091641.21e092ce@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6472
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6472
EVENT OF 1997 NOV 10 DAY OF YEAR=314
EVENT CROSSING TIME AT BATSE : 68006. S. OR 18:53:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 242.000 50.000
BATSE PEAK COUNTING RATE: 60000 C/S

(18:55:41 for K-W)

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/11/ 97 IS:
RA= 169.830 DEC= 13.251 DIST= 5.699 AU
BATSE-ULYSSES DISTANCE = 852499689. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1044.06 SECS.
CROSSING TIME AT ULYSSES IS 66962. S. OR 18:36:01 +/- 493.36 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/11/ 97 IS:
RA= 270.641 DEC= -24.684 DIST= 1.957 AU
MARS-BATSE DISTANCE = 292774144. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -188.16 SECS.
CROSSING TIME AT MARS IS 67818. S. OR 18:50:17 +/- 163.52 SECONDS

BATSE BURST TRIGGER

NO.: 6472

TIME: TJD=0762 SECONDS=68006

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=110.3 AZIMUTH=5.1 ERROR=0.6 DEGREES

COMMENTS:

BRIGHT GRB LASTING ABOUT 280 SEC. COMPLEX SPIKEY EVENT. HARD
SPECTRUM, VISIBLE ABOVE 300 KEV. UNRELATED BURST IN TRIGGERED
DETECTORS AT T-325 SEC.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6472	971110	10762	68006	60000	242	+50	280

Date: *Feb 8 00*

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☒ Jim Schmidling's stat file correction applied?

☒ Final ephemeris used?

Helio. corr. removed

☒ Final, CDROM data used?

☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?

☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No - bad stats*

2. BATSE Data

☒ BATSE ephemeris for T_0 ?

☒ Error circle position and radius from public catalog used?

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

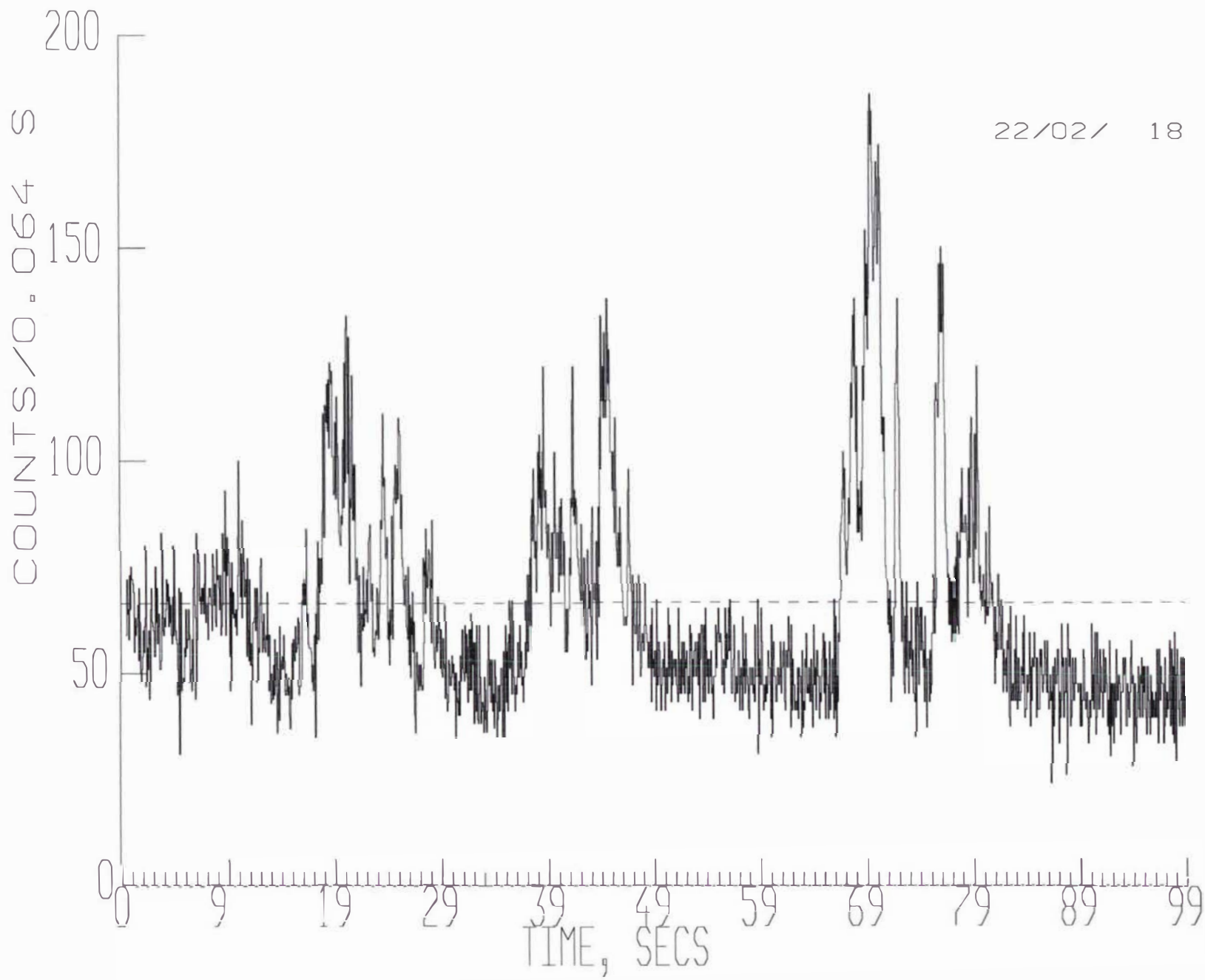
3. NEAR Data

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

☒ BATSE >100 keV data used for NEAR correlation?

☒ ACCESS database updated?

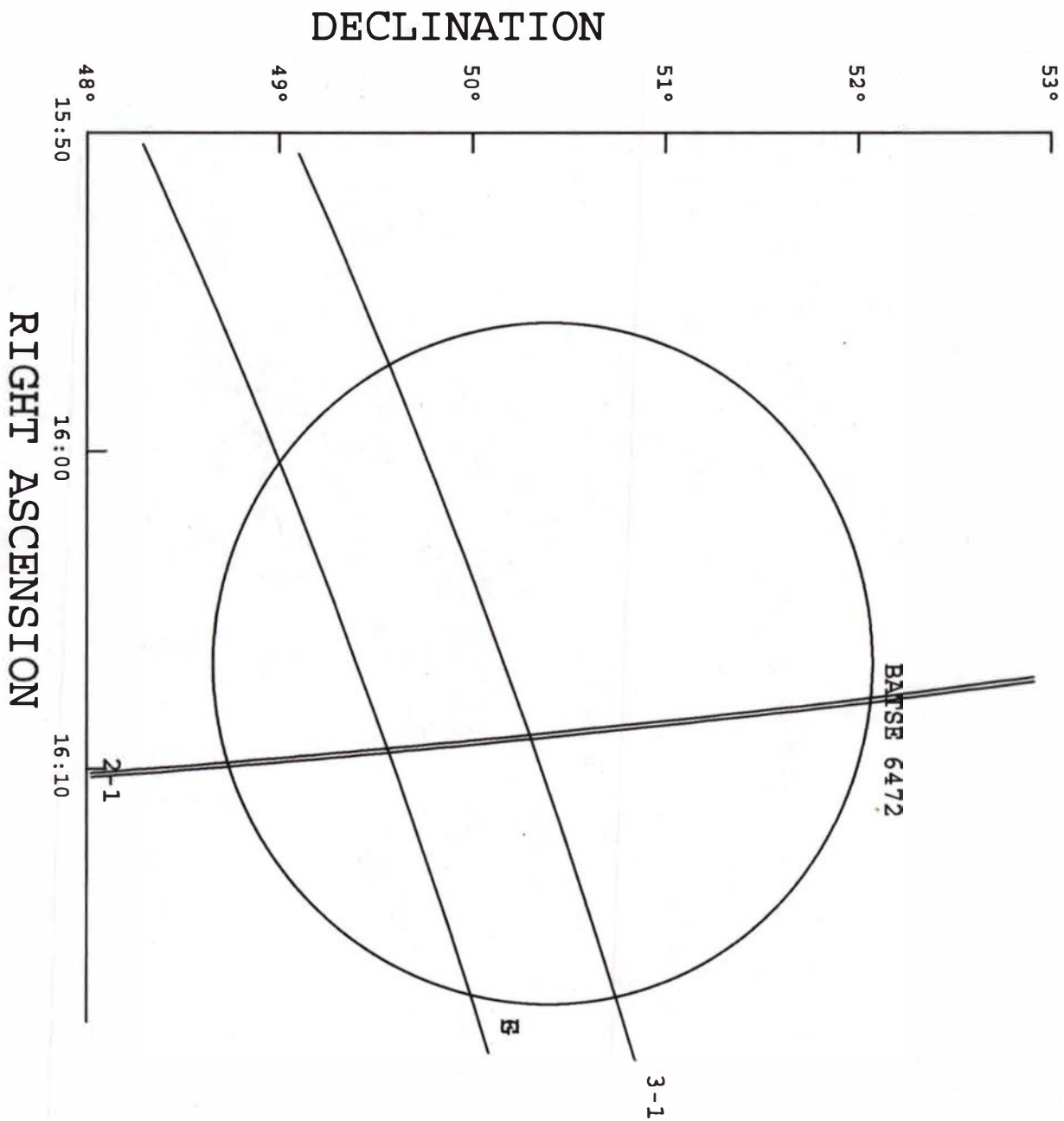
KONUS 10/11/97 68141.280 18:55:41
50- 200 keV



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

EVENT OF NOV 10, 1997 18:53

8 / 2 / 0

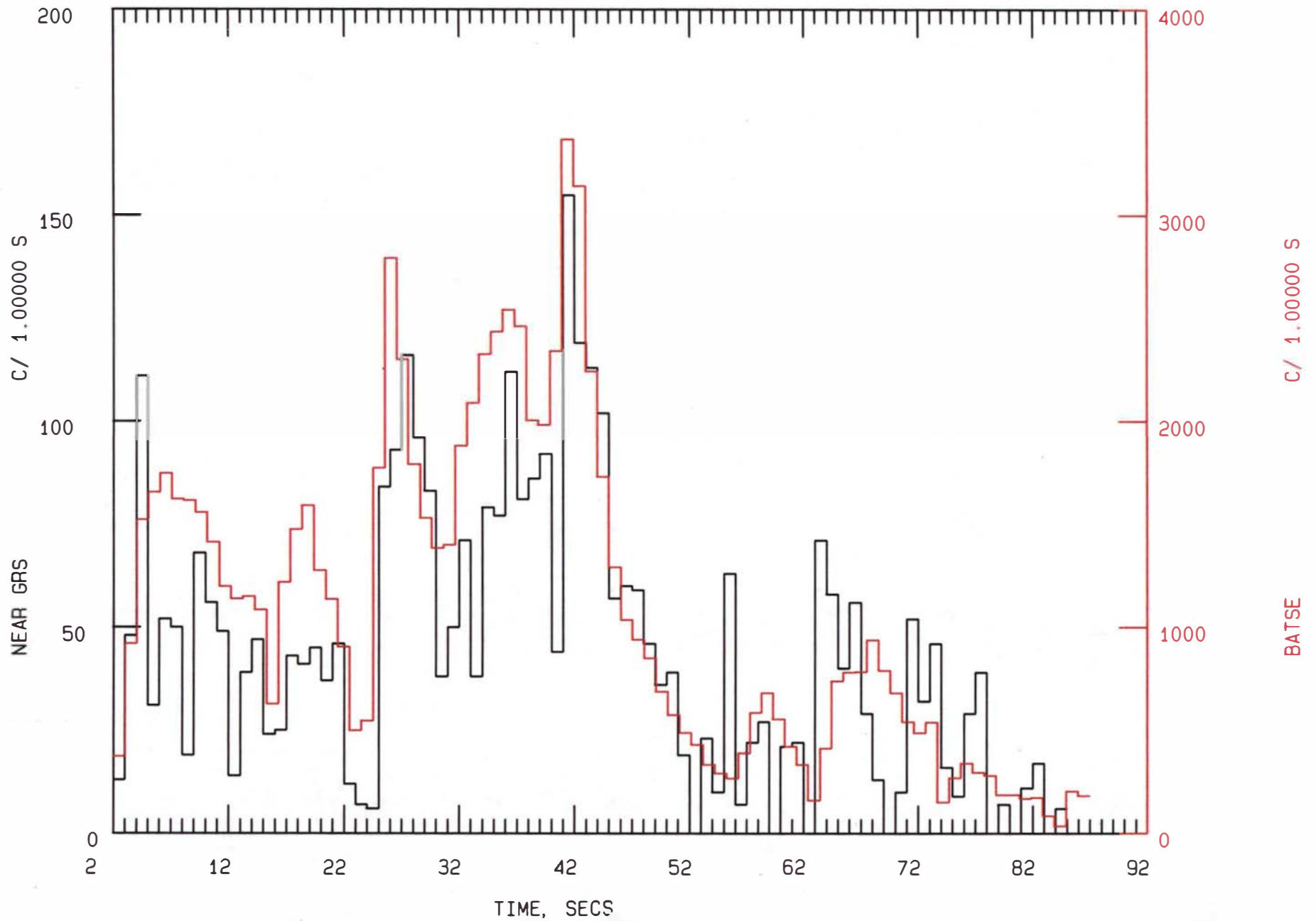


NEAR GRS -BATSE

CORRELATION

10/11/97 68061.348

8/ 2/ 0

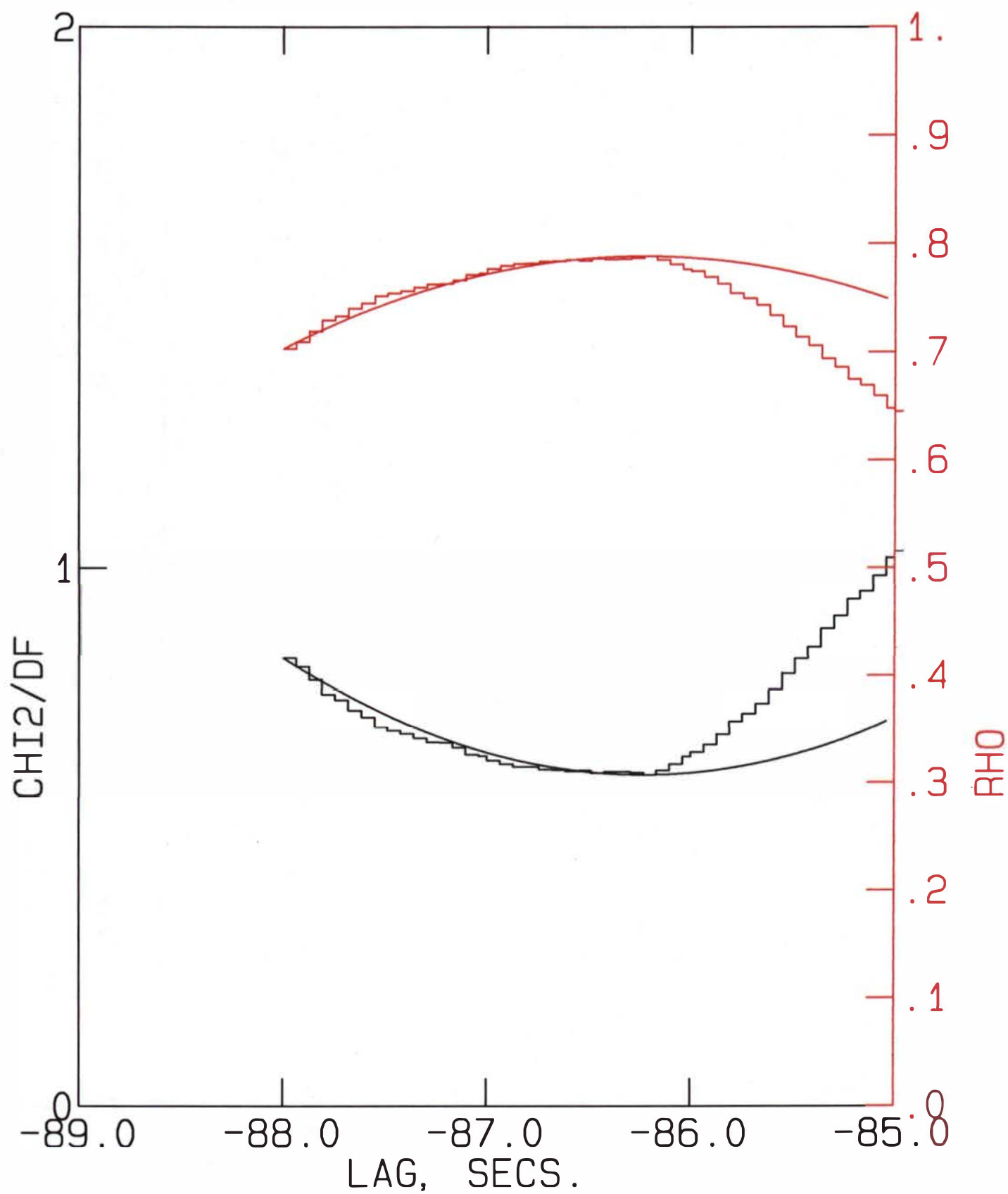


NEAR GRS -BATSE

CORRELATION

10/11/97

68061.348

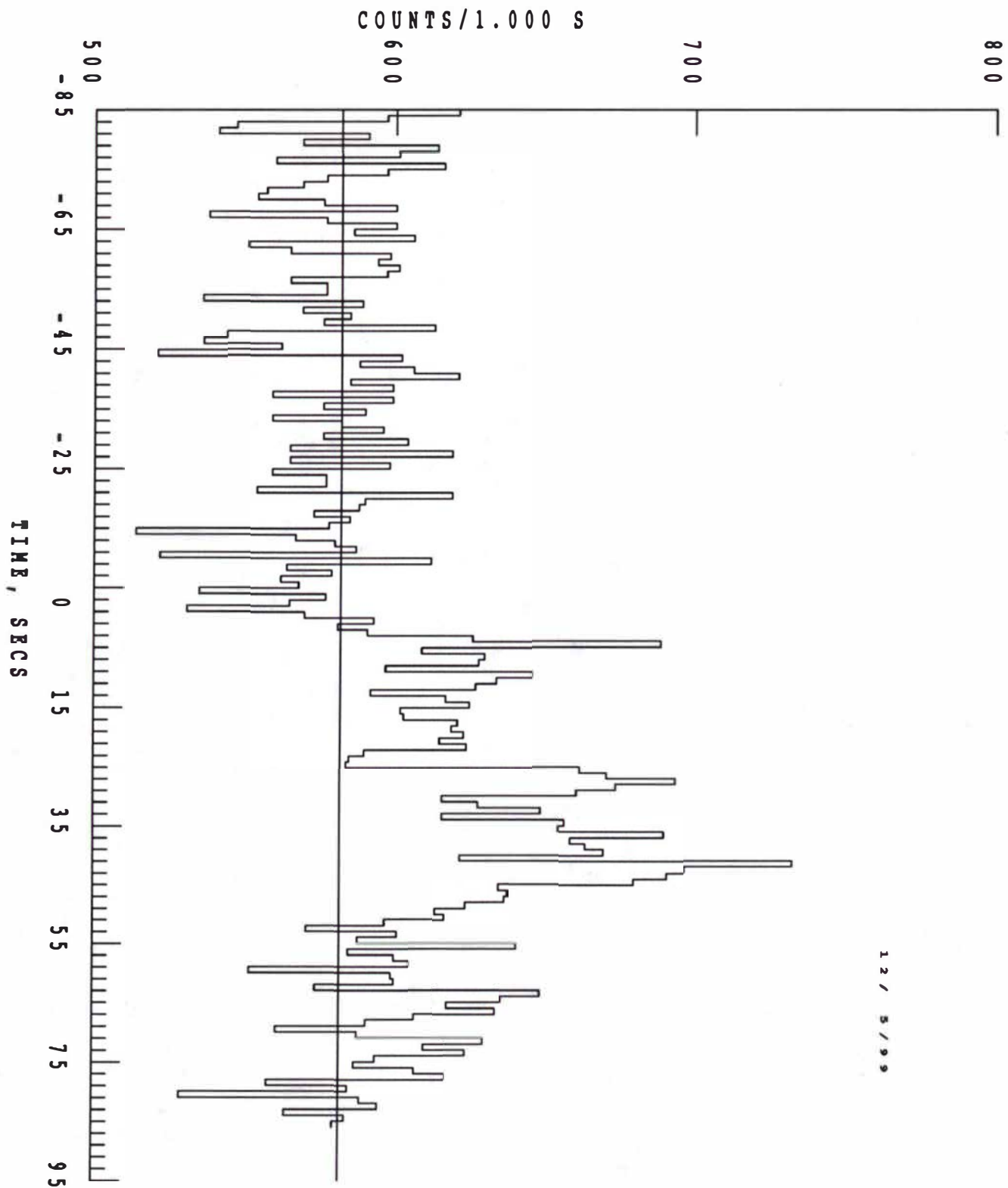


NEAR

10/11/97

68061.348

100-1000 keV



12 / 5 / 99

262 65663.9 KONUS 30S,HARD,2PKS (+UL@63120,3100LS,MOD,20S) (13NO,14NO)

970922 265 2888.4 BATSE#6392,32880/SEC

13 265 2894.4 PEAK(50/S),2910.5(110),@97DEG,ONE-SIDED,EDGE SR. DUBIOUS

14 265 2894.6 PKS(200/S),2910.6(500/S),@109,ONE-SIDED,EDGE SAA.DUBIOUS

970925 268 81795.8 BATSE#6397,9551/SEC

14 268 81798.3 PEAK (70/S,<10S) @ 42DEG (13SAA)

971009 282 68215.8 BATSE#6422,10861/S@1.8S+UL@69240,3050LS,MOD+KONUS@68215.0

14 282 68217.2 PEAK(180/S,<2S)@83 (TRIGGER PEAK 68215.64) (13NO@145)

971019 292 53754.2 KONUS,10S (+UL@51000,2950LS,MOD,10S)

14 292 53752.6 RISE,~50SEC,SOFT,NO TRIG (13 NO)

971029 302 5318.4 BATSE#6453,4717/S@35.8S (KONUS@5351.8,120S) (UL WEAK@2820)

14 302 5326.0 PKS, 44.0,66.0,NO TRIG,@102DEG (13NO@49DEG)

971101 305 23484.5 KONUS (10SEC,FRED) (UL@26040,MOD,10S@2950LS)

14 305 23483.8 PEAK (200/S,<2S) (13SR) TRIGGER PEAK 23483.0

971110 314 68141.3 KONUS,100SEC (UL@67080 @2950LS,MOD) (13 SR)

14 314 68161.3 PEAKS, 213.3, MULT PEAKS,HARD,TRIGGER PKS 68213.19,213.91

971127 331 47595.8 BATSE#6509 (139968/S)

13 331 47595.8 PKS,613.8,759.8(240),767.8(140)

14 331 47760.5 PKS(3000/S),47768.5(2000), INTENSE, NOTRIG

971201 335 9295.6 BATSE#6515 (8768/S)

14 335 9306.4 PK(SOFT)+9310.4(160)+9316.4(220)+9328.4(150),NOTRIG(13NR)

971207 341 72232.9 BATSE#6525 (7892/S@12.0)

14 341 72244.2 PK(270),268.2,284.2 (@80DEG),TRIG PK 72244.28 (13NR)

971218 352 52499.9 BATSE#6535 (9181/S@+2.3S)

13 352 52500.2 PK(70),52536.2(?) (SOFT,@38DEG) (14SAA)

971219 353 79974.5 KONUS,10S,SPIKE@+4 (UL 77580,15SEC,MOD) (13SAA,14NR)

980109 009 4345.6 BATSE#6564(1401/S)+SAX,25S(IAU6805) (13NO@74,14NA@144)

980113 013 14845.7 BATSE#6570 (9376/S,COMPLEX,DUR60S)

13 013 14869.2 PKS(50),879.2(50),883.2(50) (ONE-SIDED,@119DEG)

14 013 14848.3 PEAK(60/S,<4S), NO TRIGGER

980119 019U 5100 ULYSSES MOD(32MS) @2350LS

14 019 5375.9 PEAK (900/S,<8S,SOFT) (TRIG PEAKS 5372.9,5374.6) (13NO)

980124 024 23673.0 BATSE#6576, 16971/S @7.7S,SPIKY,MAX@+42.5,DUR100S)

13 024 23679.1 PEAK(90/S,<8S),23707.1,23717.1 (LAST 2 WEAK,ONE-SIDED)

14 024 23679.6 PEAK(300/S,<10S),707.6WEAK,715.6WEAK

14 024 23679.1 TRIGGER PKS 679.07,679.99 (.1024S); 12.8MS PEAK 23678.43

980125 025 74368.7 BATSE#6581, 34996/S,MULT PKS,MAIN PK@+40,270S

13 025 74416.4 PEAK @108DEG(220/S,<8S) (14NO@125)

J202 033U37380 ULYSSES MODERATE, 10SEC@2265LS

13 033 35713.6 PEAK(80/S),35717.6(70),<8SEC OVERALL

14 033 35712.9 PEAK(200/S),35718.9(400/S),<10SEC OVERALL, NO TRIGGER

From TERRELL@nisdp0.lanl.gov Fri Feb 27 15:11 PST 1998

From: TERRELL@nisdp0.lanl.gov

Date: Fri, 27 Feb 1998 16:11:55 -0700

To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
henze@fender.msfc.nasa.gov, filippo@botes1.tesre.bo.cnr.it,
kmarar@isac.ernet.in

X-Vmsmail-To: @MAILOUTUL.DIS

Subject: DMSP GRB: 1997(many), 980109, 980113, 980119, 980124, 980125, 980202, 980203

From: jterrell@lanl.gov (James Terrell) 980227

To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kmarar@isac.ernet.in, kraken@rosserv.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, teegarden@lheavx.gsfc.nasa.gov,
vnp@isac.ernet.in, yosimori@rikkyo.ac.jp

Subj: DMSP GRB detections: 1997(many), 980109, 980113, 980119, 980124, 980125, 980202, 980203

The following GRB were detected by DMSP13 or DMSP14 (or NOT detected, if indicated).

No detection can occur for bursts more than 118 degrees from spacecraft zenith,
or if in the presence of very high counting rates (SAA, SR, NR).

Data are normally in 2-sec counts, except when the DMSP14 trigger circuit is
tripped, giving 12.8ms data, usually reported here as 102.4ms counts.

Numerous other BATSE GRB were also detected, but not reported here; numerous
weak detections by Ulysses have not been checked because of low counting
rates expected at an indefinite time.

DATE	FL	DAY	TIME	NOTES	---	(ND=NO DATA, NA=NOT APPARENT & NOT ANALYZED) -----REPORTED
				(NO=DATA CHECKED--SHOWS NO DETECTION) (SR=S. RADIATION BELT)		
				(NR=NORTH RADIATION BELT) (SAA=SOUTH ATLANTIC ANOMALY)		
970111	011	35040.2	BATSE GRB#5773 (8727CTS/2S) (SEE IAU6569,6571,6574,6598)			
	011	35040.2	BEPP0 SAX TRIG, INTENSE, 50S, 3 PEAKS (232.10, 19.67J) IAU6533			
13	011	35040.0	PEAKS (40/S), 48.0 (50/S), 58.0 (60/S), @24DEG, @848KM, SOFT	REP0313		
970111	011	85744.6	KONUS (HARD, SLOW RISE) +TGR (UL:NO) (DMSP13:NO)			
970117	017	53211	TGR+SAX GRB (KONUS INOP)+UL@54420 (STRONG, 20S) (13:NO)			
970124	024	44343.4	KONUS (MULT PKS)+UL@46253@2100LS, STRONG+TGR (13SAA)			
970201	032	57250.7	BATSE GRB#5989 (53612/SEC) +UL			
13	032	57222.1	PEAK (100/S, ~30S, SOFT, BROAD) (@111DEG) UNCONVINCING			
970218	049	50996.1	KONUS (STRONG, 5SEC) +UL@51274, 2000LS (STRONG, 8SEC)			
13	049	51001.0	PEAK (320/S, <6S)	REP0624		
970222	053	86006.6	KONUS (MOD.STRONG, SEV.SEC) +UL@85873, 2000LS, MOD, 2S (13NO)			
970226	057	31585.9	KONUS (STRONG, SOFT PK@+39) +UL@30547, 2000LS (V.INT, 40S)			
13	057	31595.8	PEAK (270/S, 10SEC) (MODERATELY STRONG)	REP0313		
970228	059	10680.8	BEPP0SAX (IAU6572)MOD.INT., 80S, 4 PKS (75.46, 11.75J) IAU6578			
	059	10680.8	INT.X-RAY, RADIO (IAU6576, 6577), OPTICAL (6584), MOTION (6629) OPTICAL			
13	059	10659.1	PKS, 667.1 (60/S, ONE-SIDED, SOFT, @74DEG) DOUBTFUL (+UL, WIND)			
970313	072	30096.5	KONUS (MOD.STRONG, PK@+11, 40S) +UL@28380, 2000LS (MOD.INT, 10S)			
13	072	28355.8	PEAK (180/S, <2S, SOFT) (NO PEAK AT 30096!) (CONFLICT)	REP0501		

From kraken@rosserv.gsfc.nasa.gov Fri Nov 21 07:47 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 21 Nov 1997 10:48:31 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts *NOT* seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

The following bursts were not seen by TGRS, in either burst or waiting mode data.

Pete

November 9 1997 06:41	Ulysses time; weak burst, 64 ms long
November 10 1997 18:38	" ; moderate burst, 100 s long
November 11 1997 08:04	" ; weak burst, 64 ms long
November 12 1997 06:00	" ; weak burst, 64 ms long
November 12 1997 13:37	" ; weak burst, 64 ms long
November 13 1997 05:38	Ulysses time; weak burst, 100 ms long

lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

Konus triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

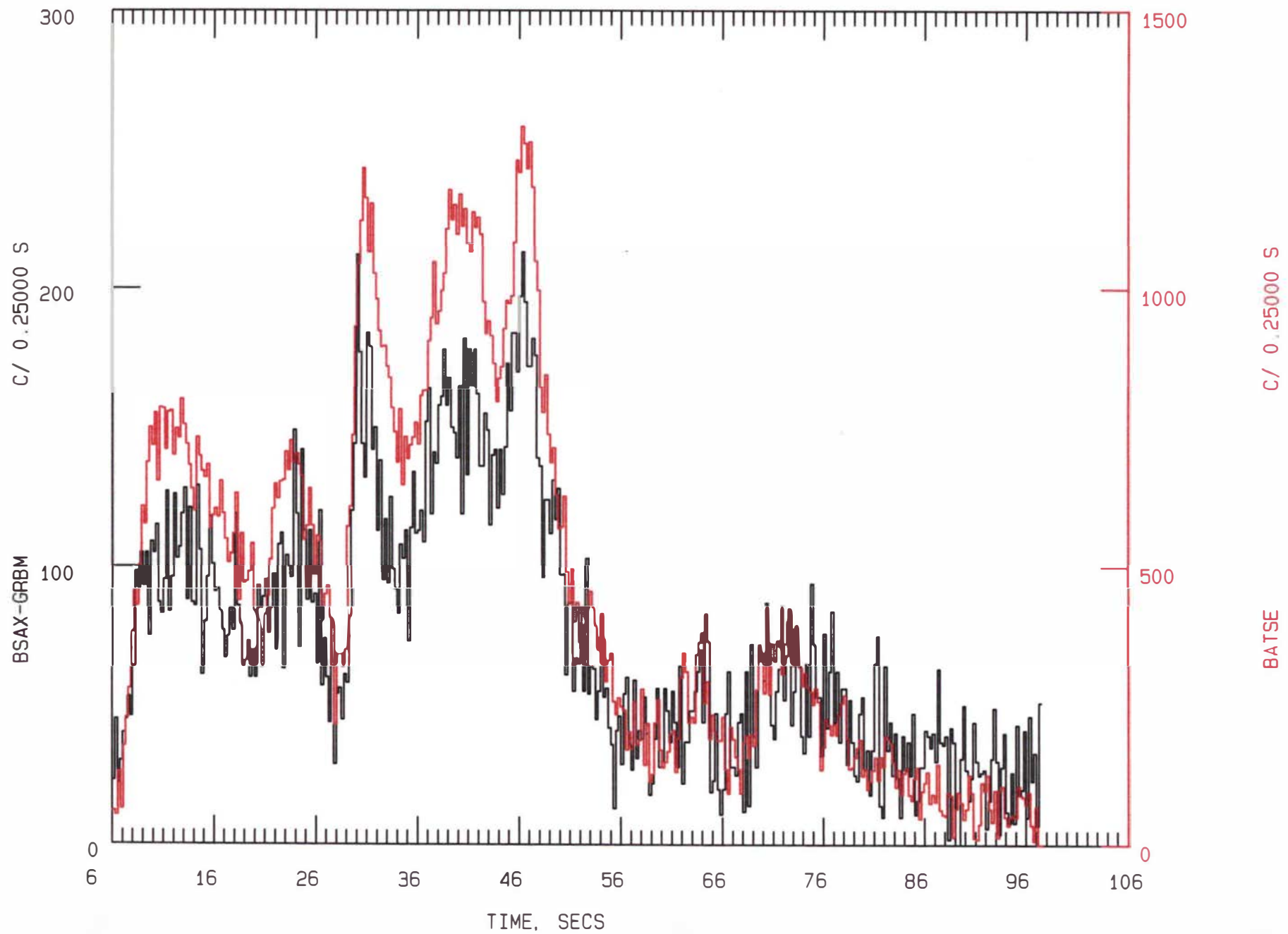
BSAX-GRBM -BATSE

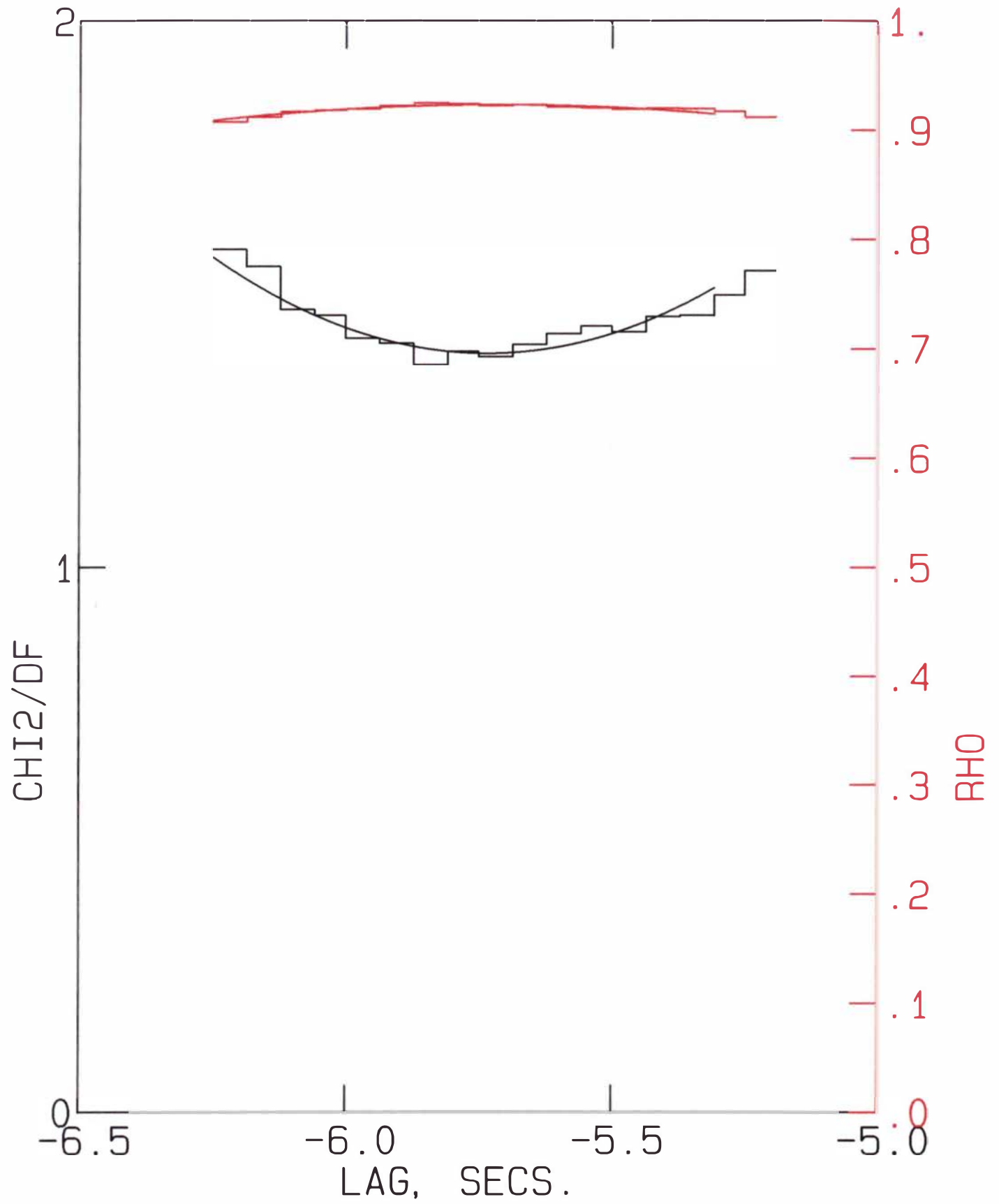
CORRELATION

10/11/97

68779.104

19/ 2/98





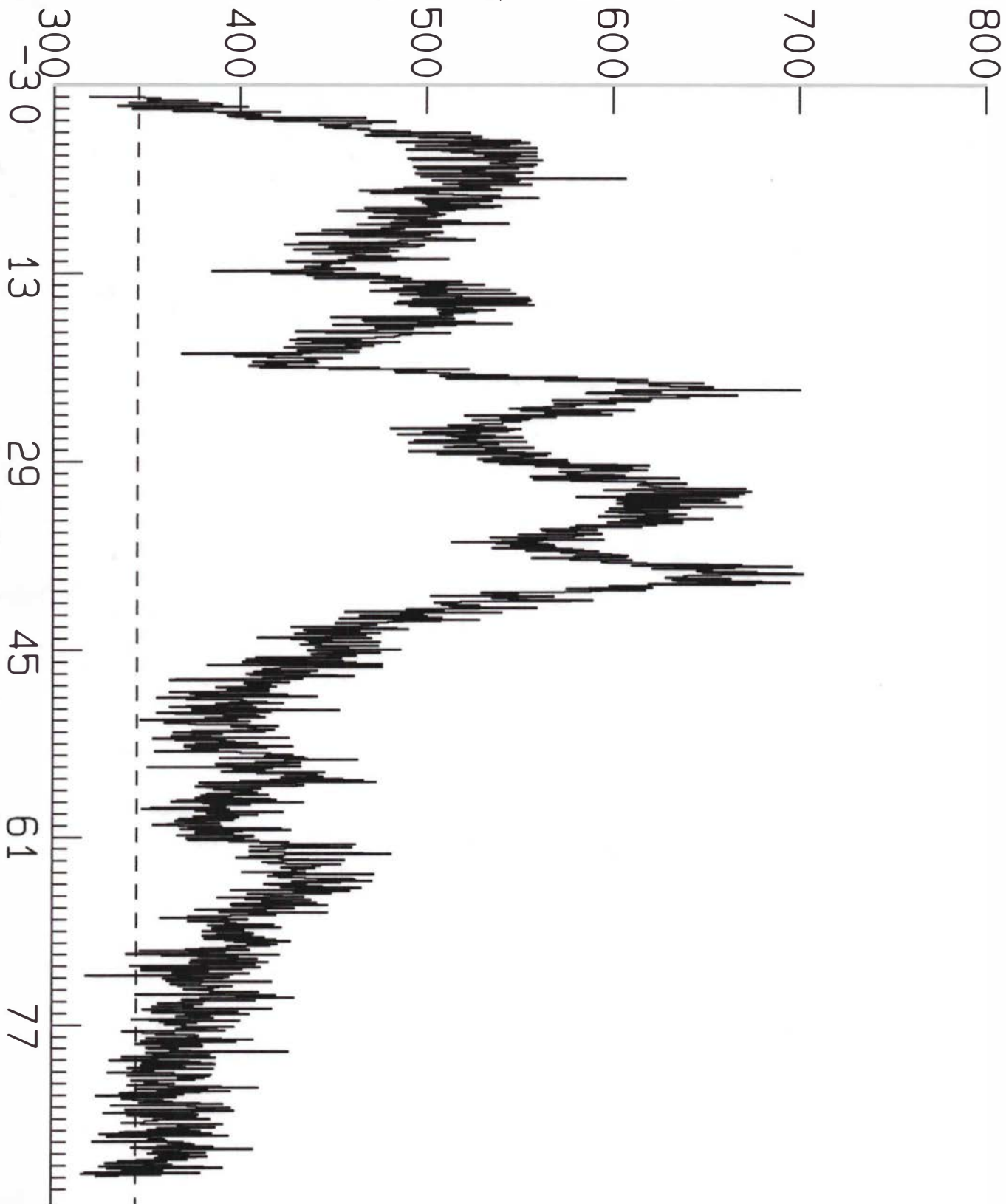
BATSE

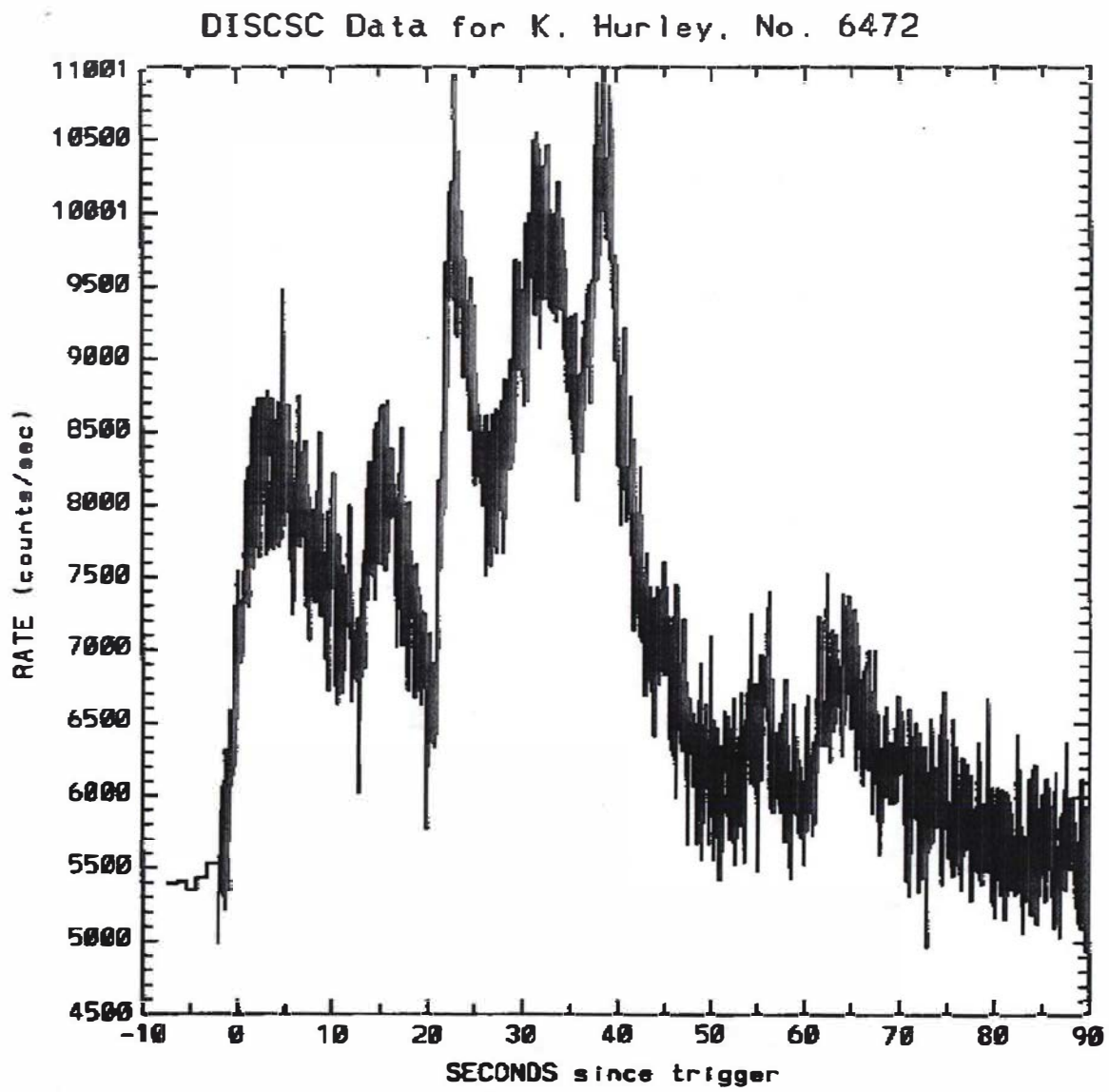
10/11/97

68006.882

25- 100 keV

COUNTS/0.064 S





19-FEB-1998 11:35:49
Created by MOPS 80
(Burst Display)
Version 12.25
Trigger # : 6472
Trigger Time:
10762 / 68086.881
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..8].
----3-1-
Discriminators.
[2 : 3]
Quality Mask.
BDISP1

Date: Apr 10 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- ☐ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? *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? *N/A*

3. PVO Data

- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS database updated? *RT data used because event is long*

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

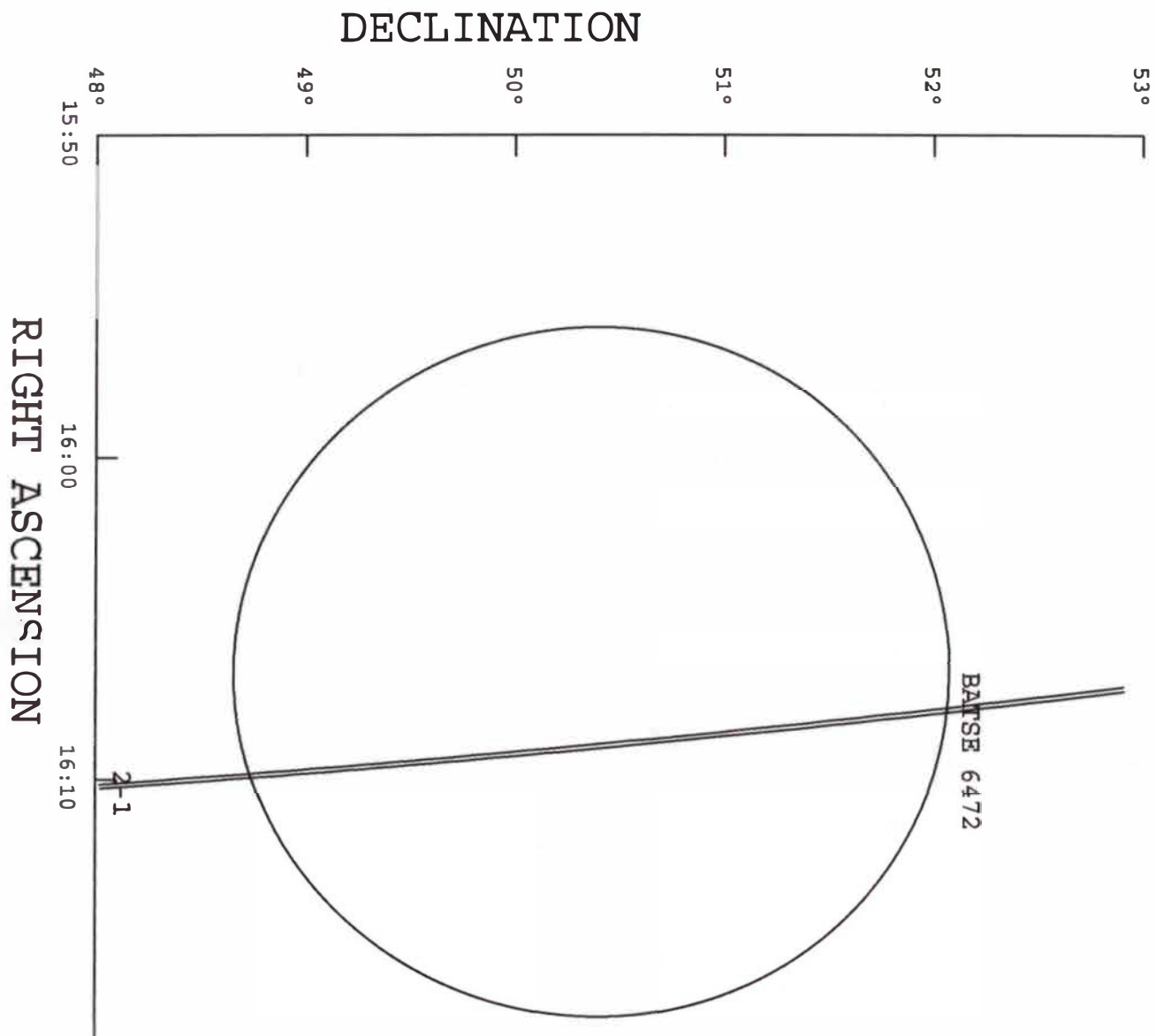
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF NOV 10, 1997 18:35

10 / 4 / 98



ULYSSES

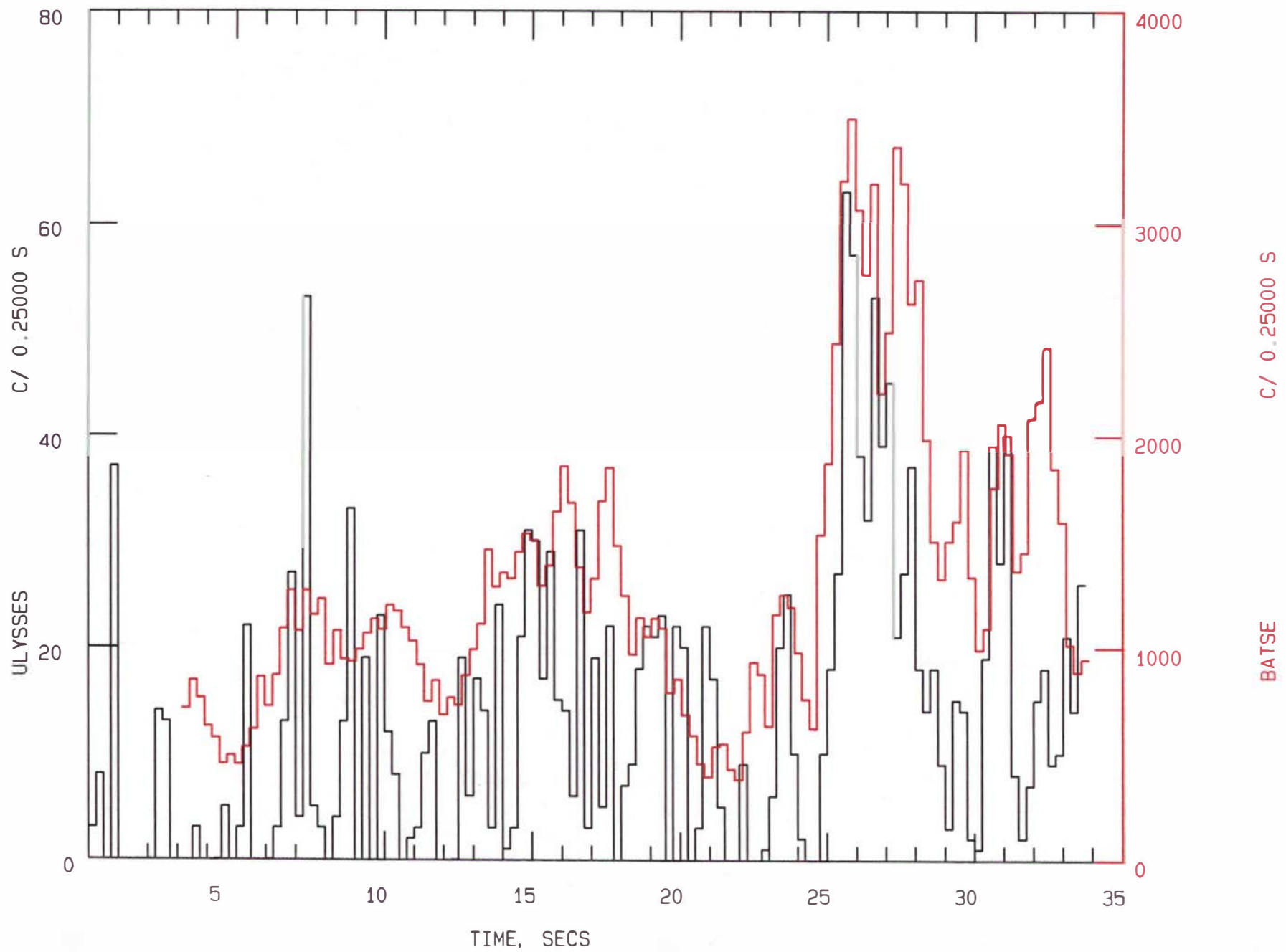
-BATSE

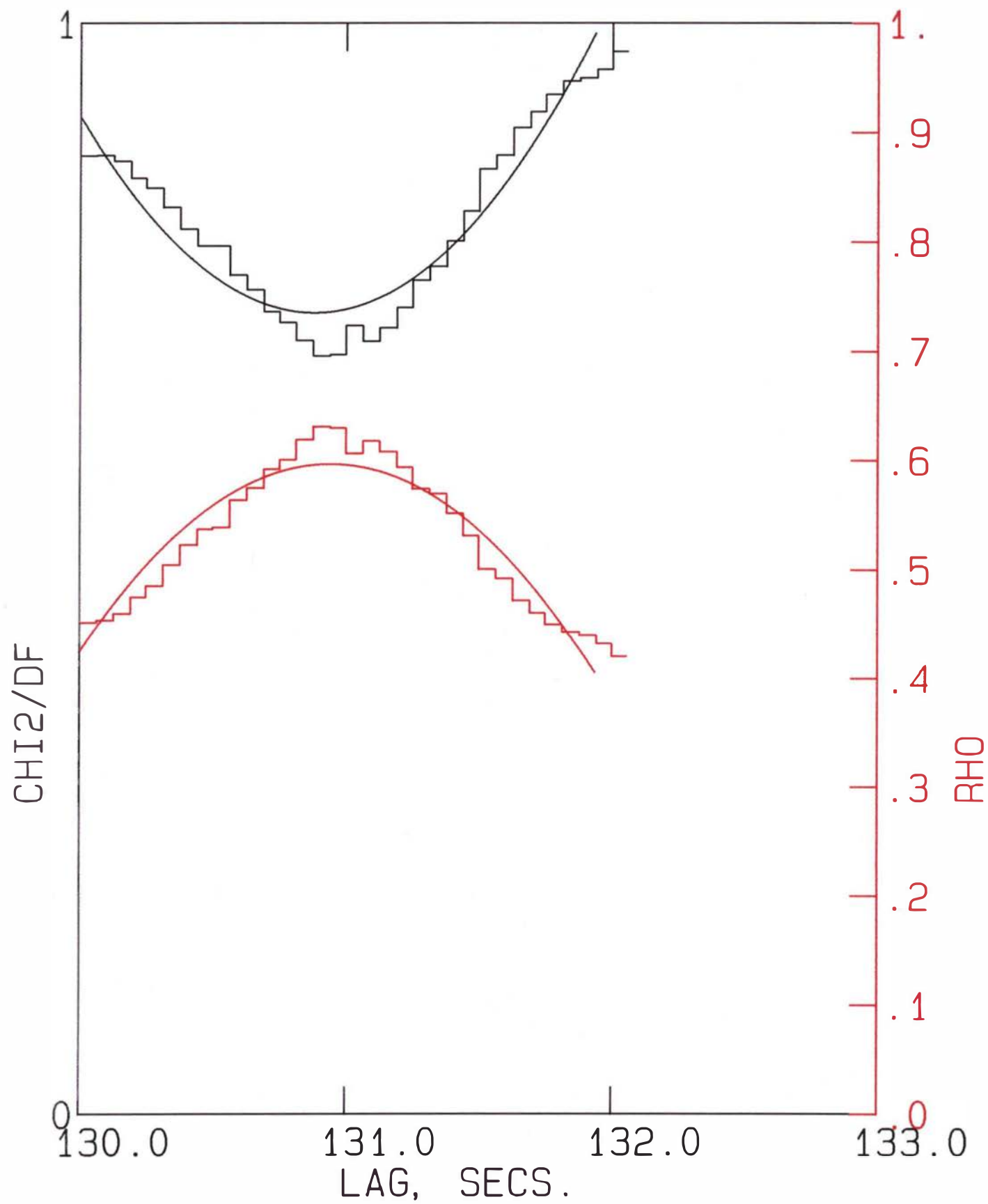
CORRELATION

10/11/97

67095.731

10/ 4/98





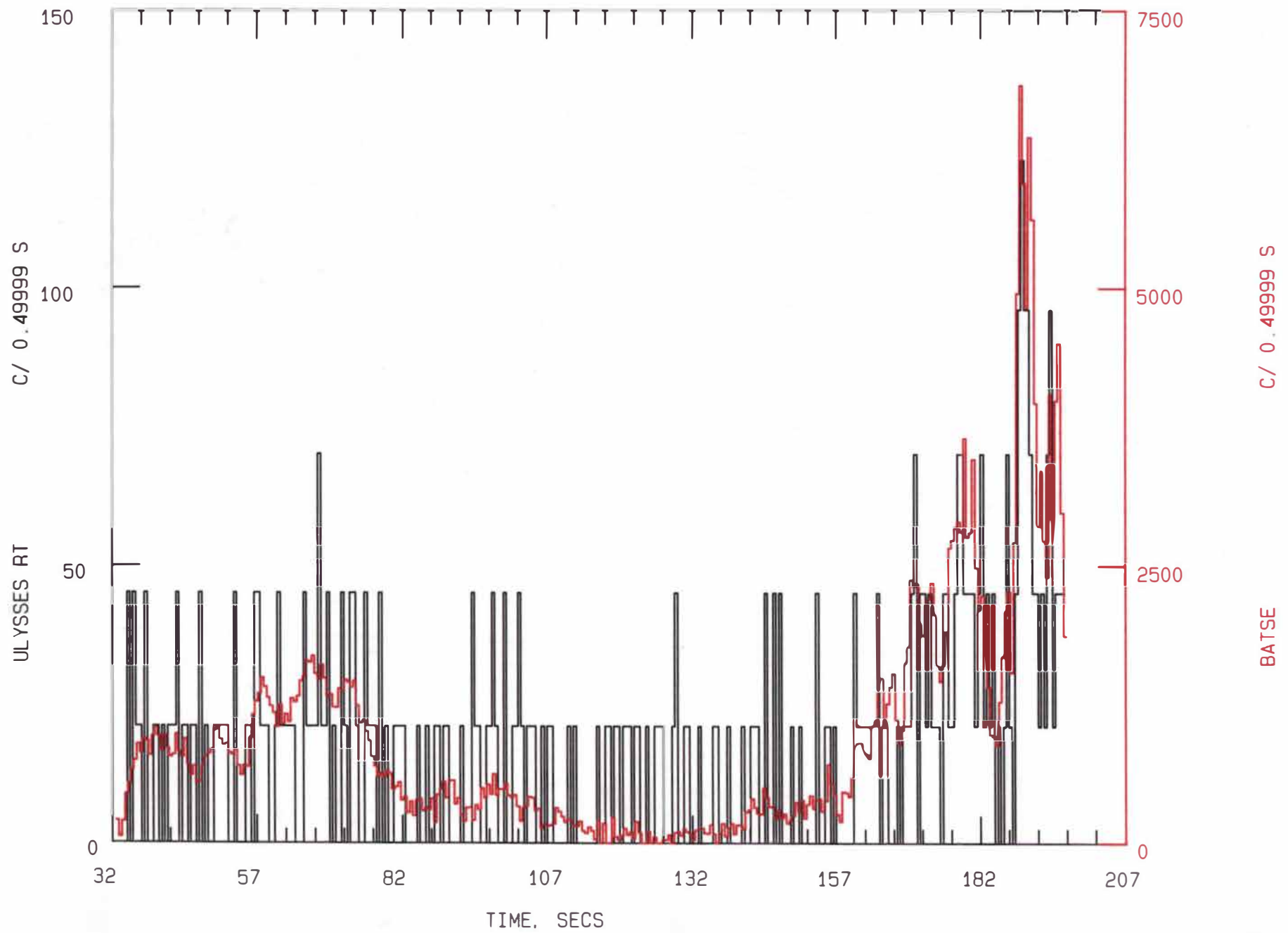
ULYSSES RT-BATSE

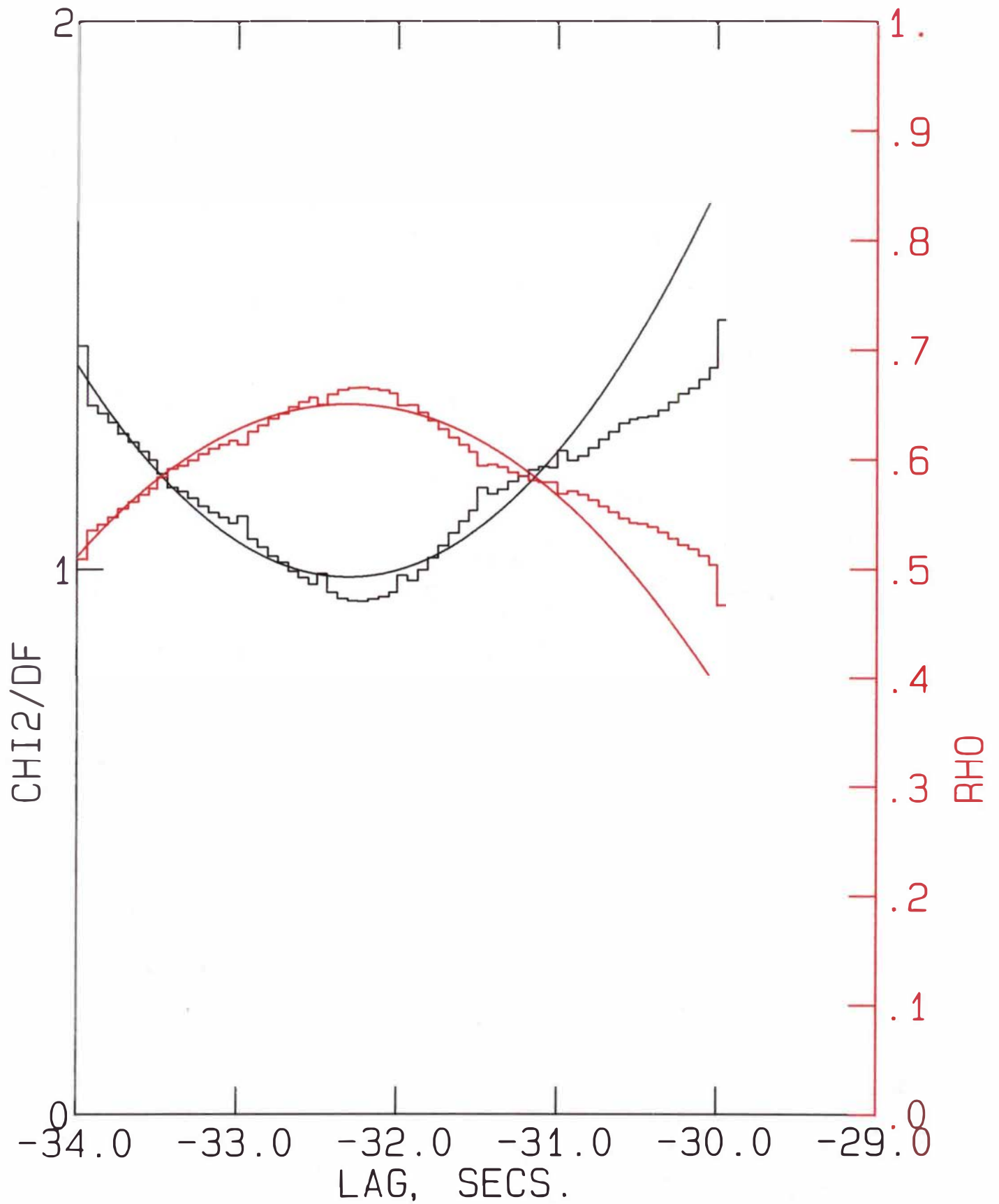
CORRELATION

10/11/97

66925.100

10/ 4/98





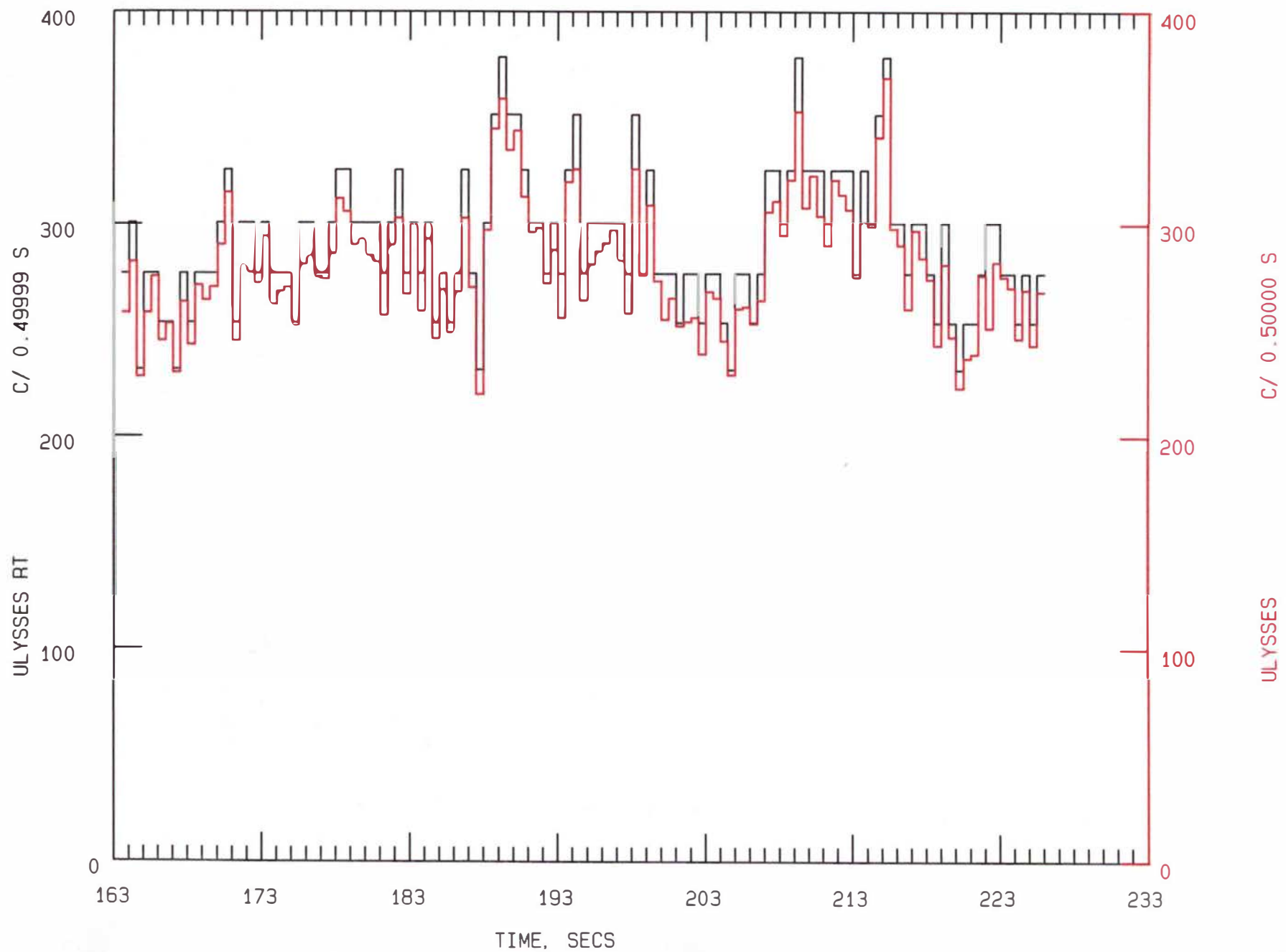
ULYSSES RT-ULYSSES

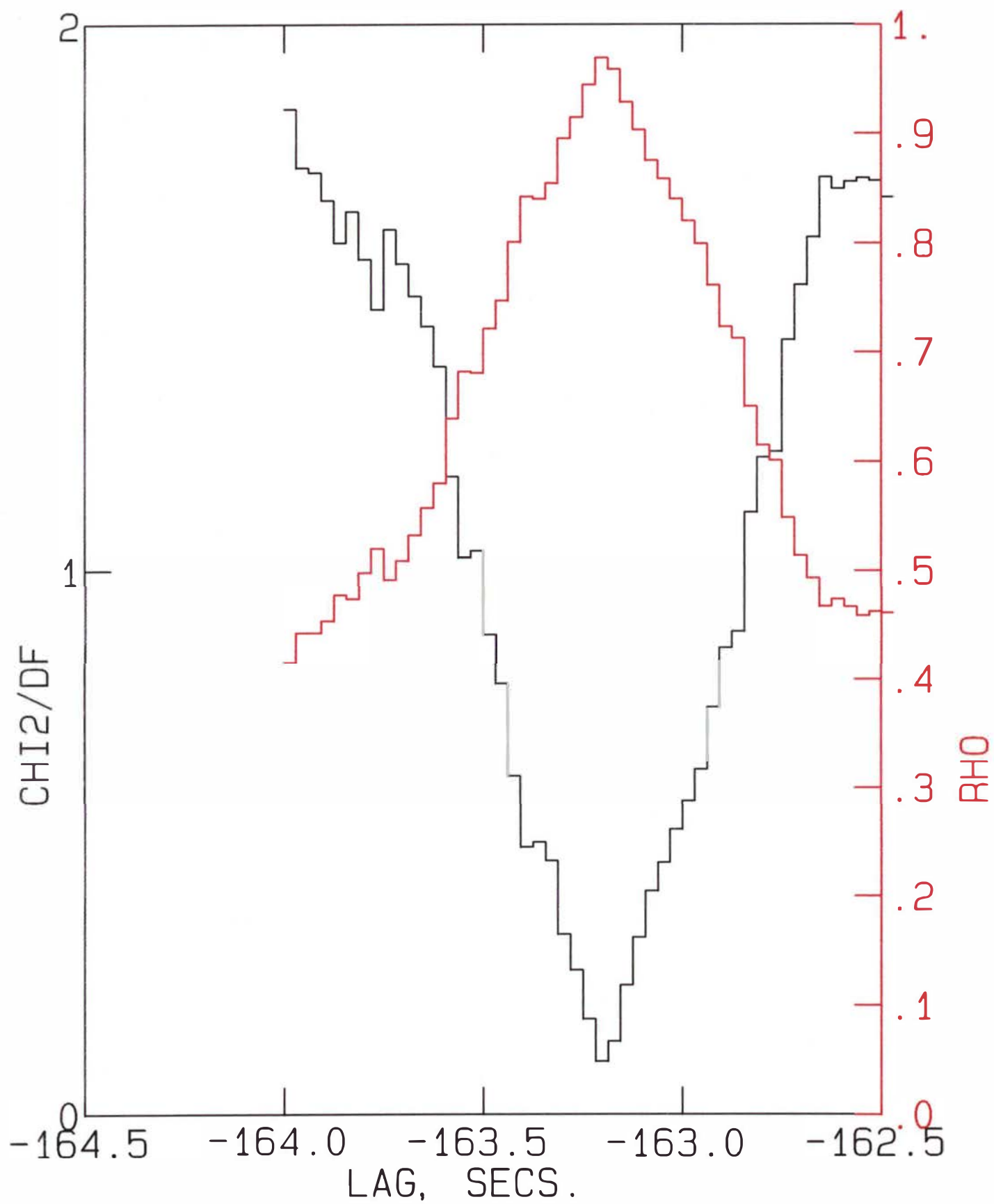
CORRELATION

10/11/97

66925.100

10/ 4/98

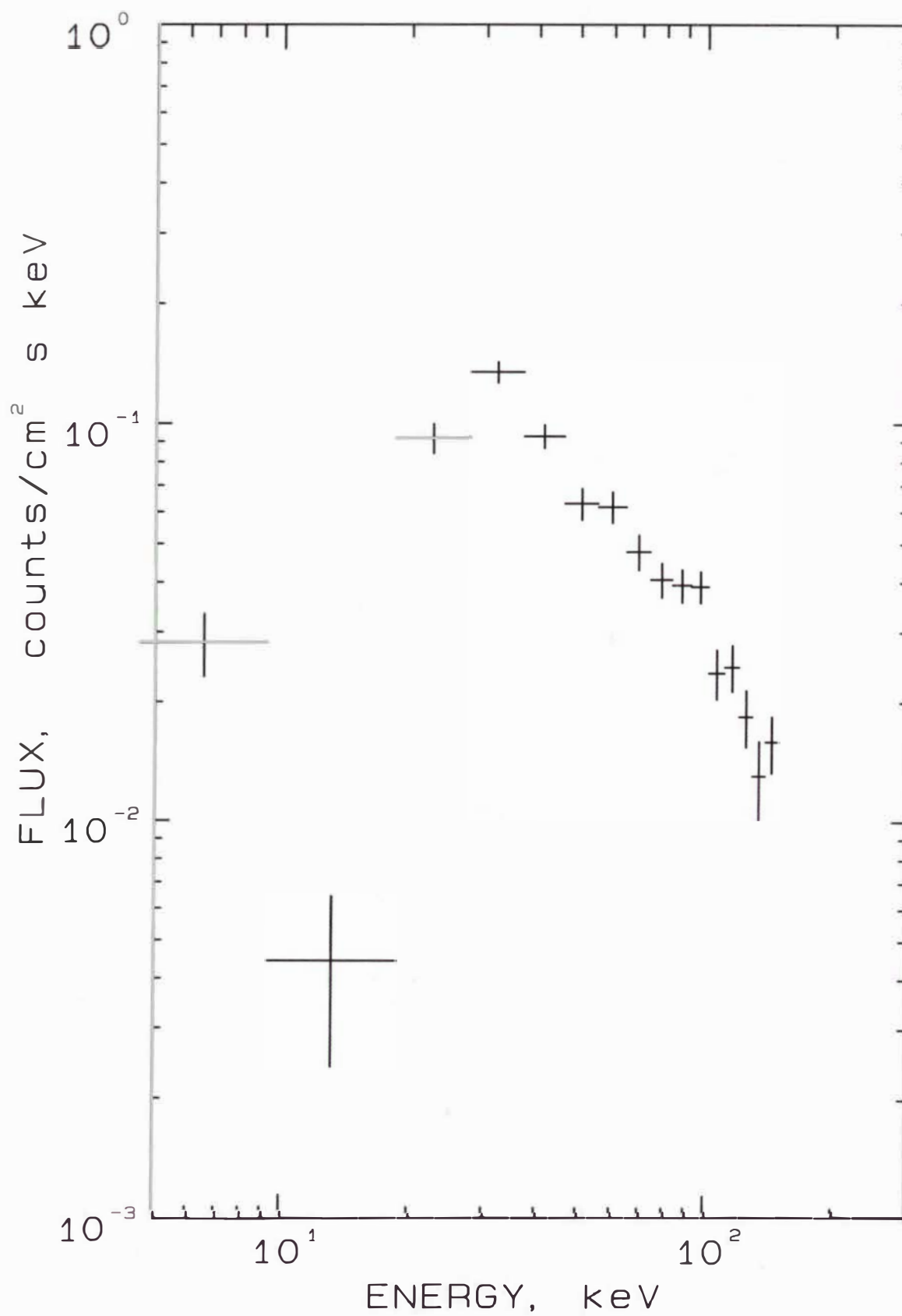




ULYSSES 10/11/97 67095.493

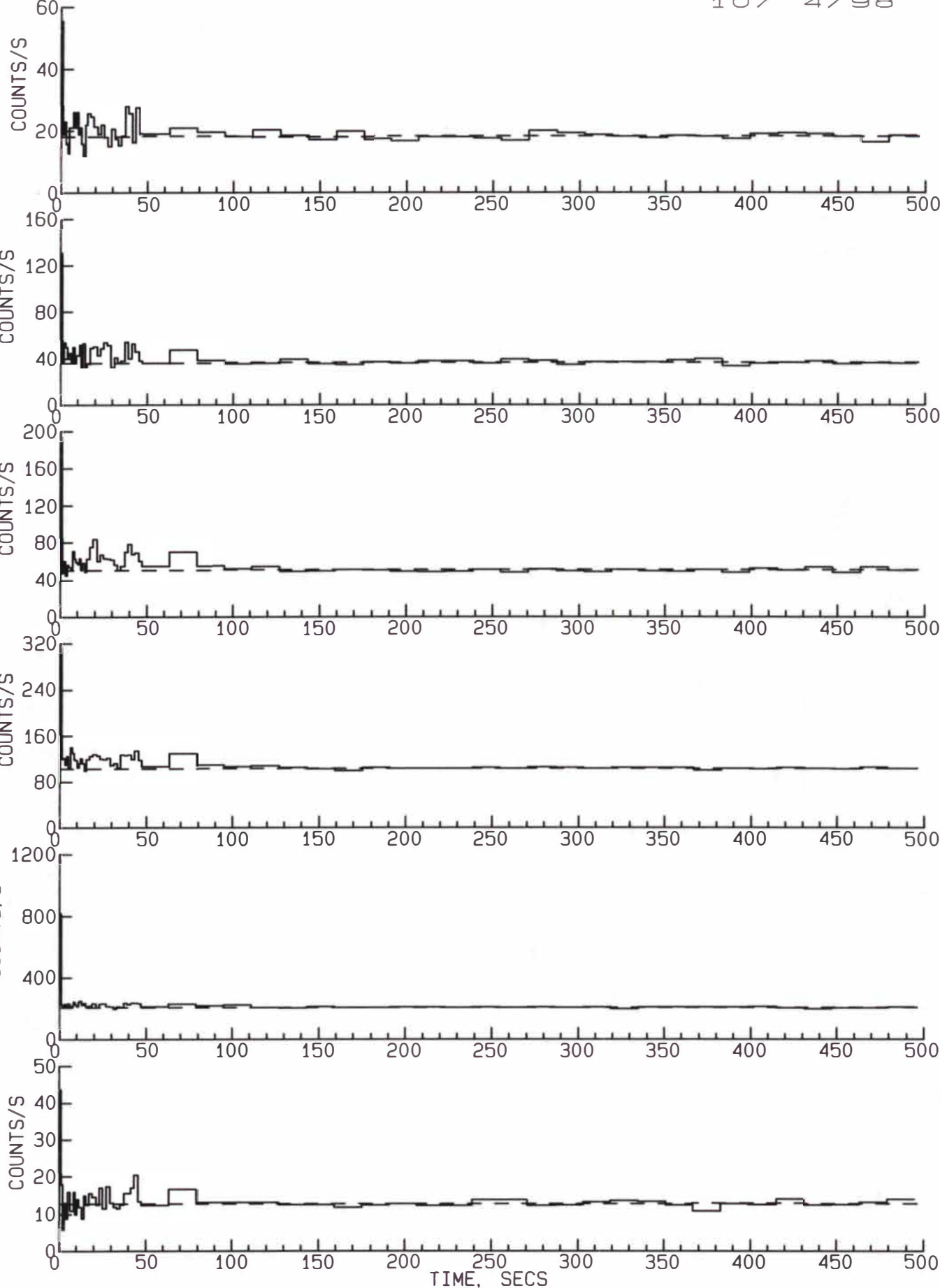
10/ 4/98

SPECTRUM INTEGRATED OVER 110.9 SECONDS, INTERVALS 2 TO 37

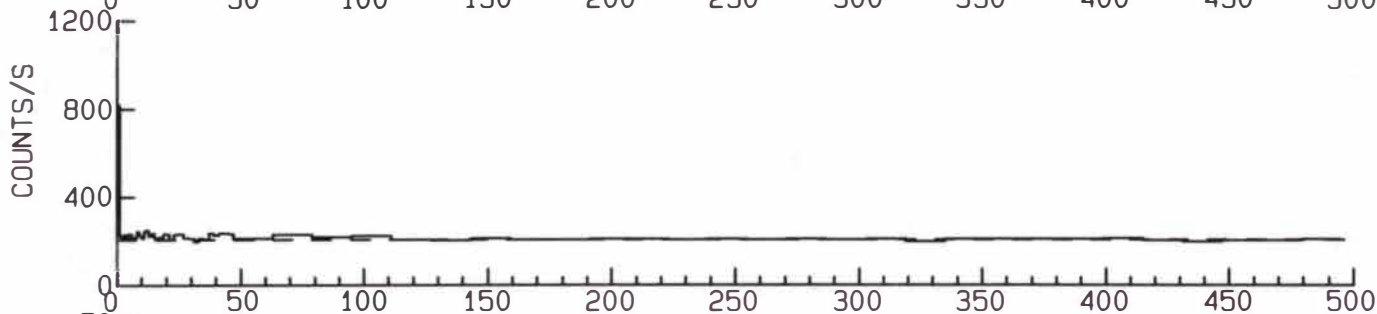


ULYSSES 10/11/97 67095.493 BURST SPECTRAL COUNT RATES

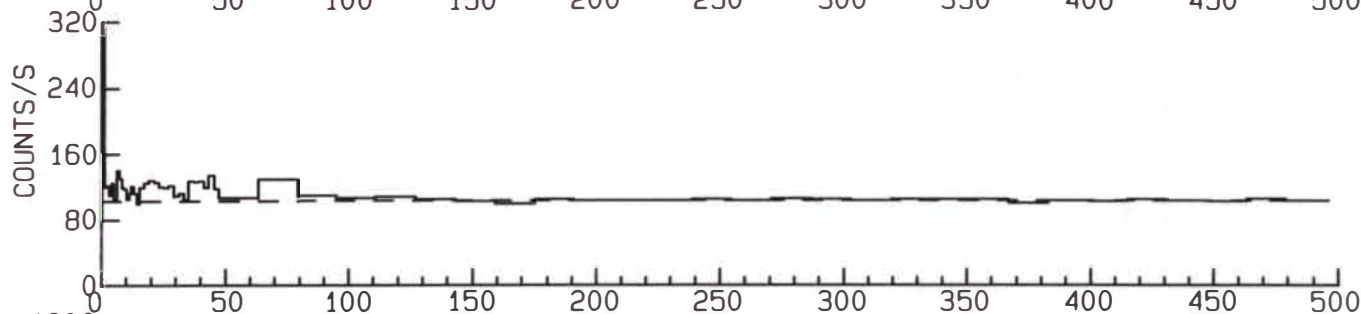
4- 18 keV



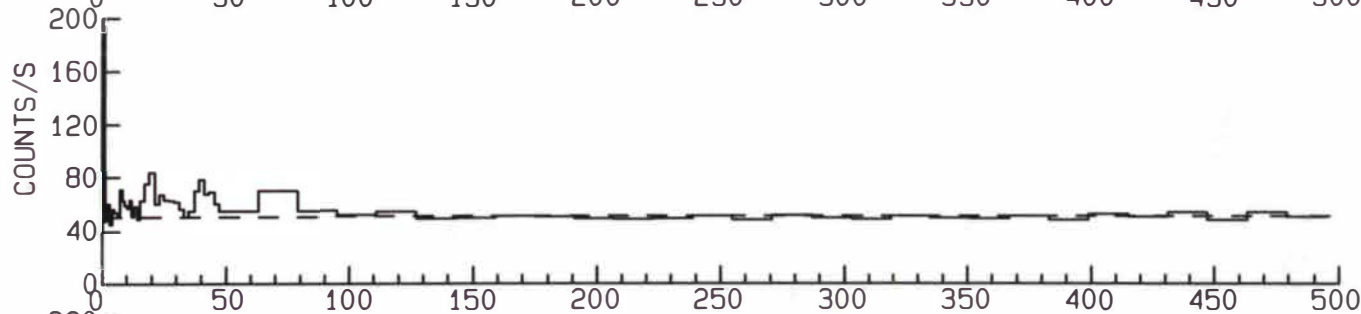
18- 46 keV



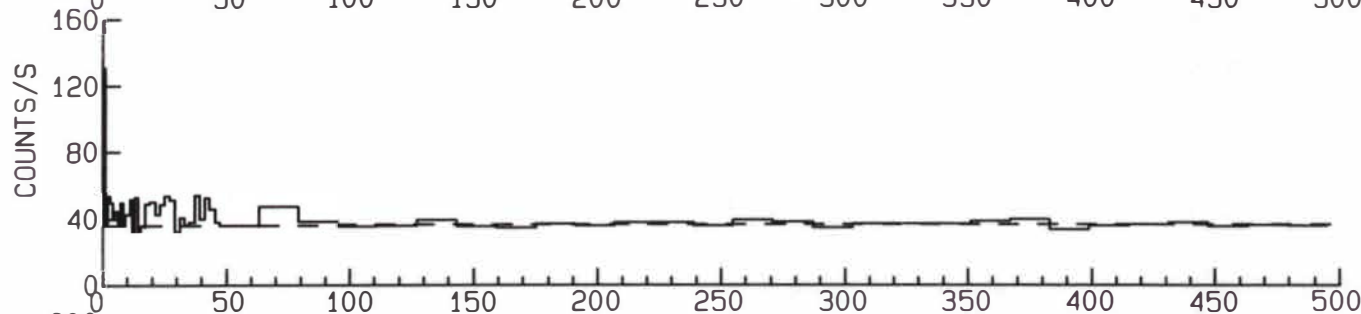
46- 73 keV



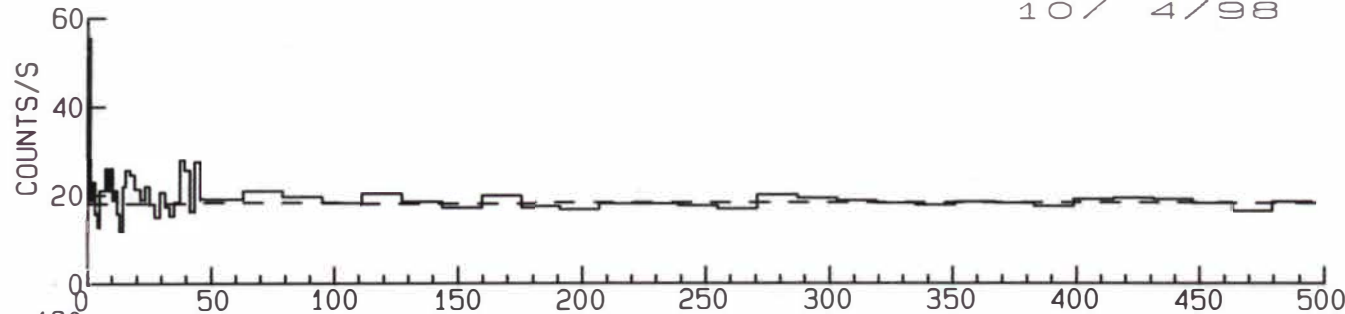
73-101 keV



101-129 keV



129-147 keV



10 / 4 / 98

ULYSSES

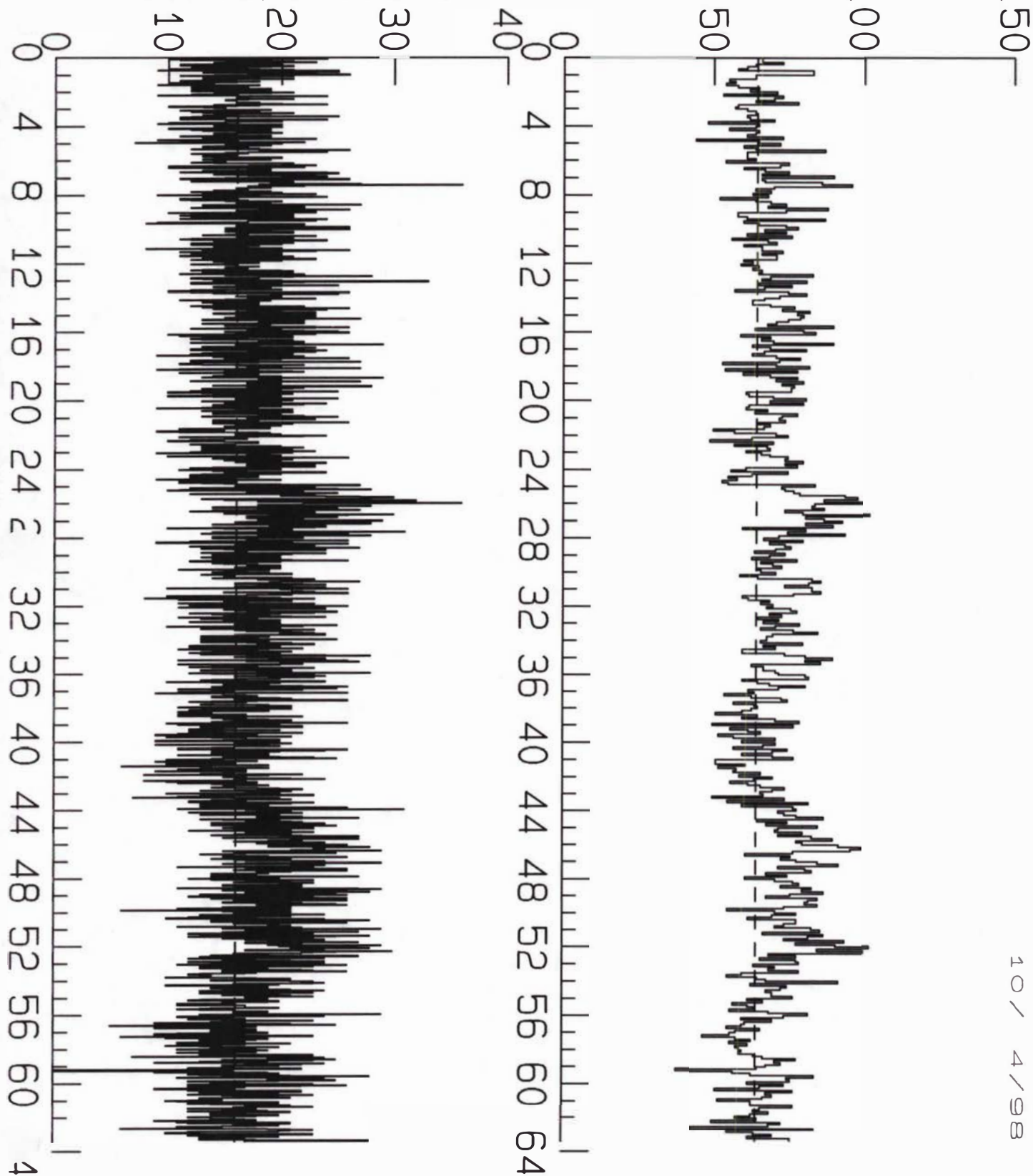
10/11/97

Ttrig=67095.731

22- 147 keV

COUNTS/0.031 S

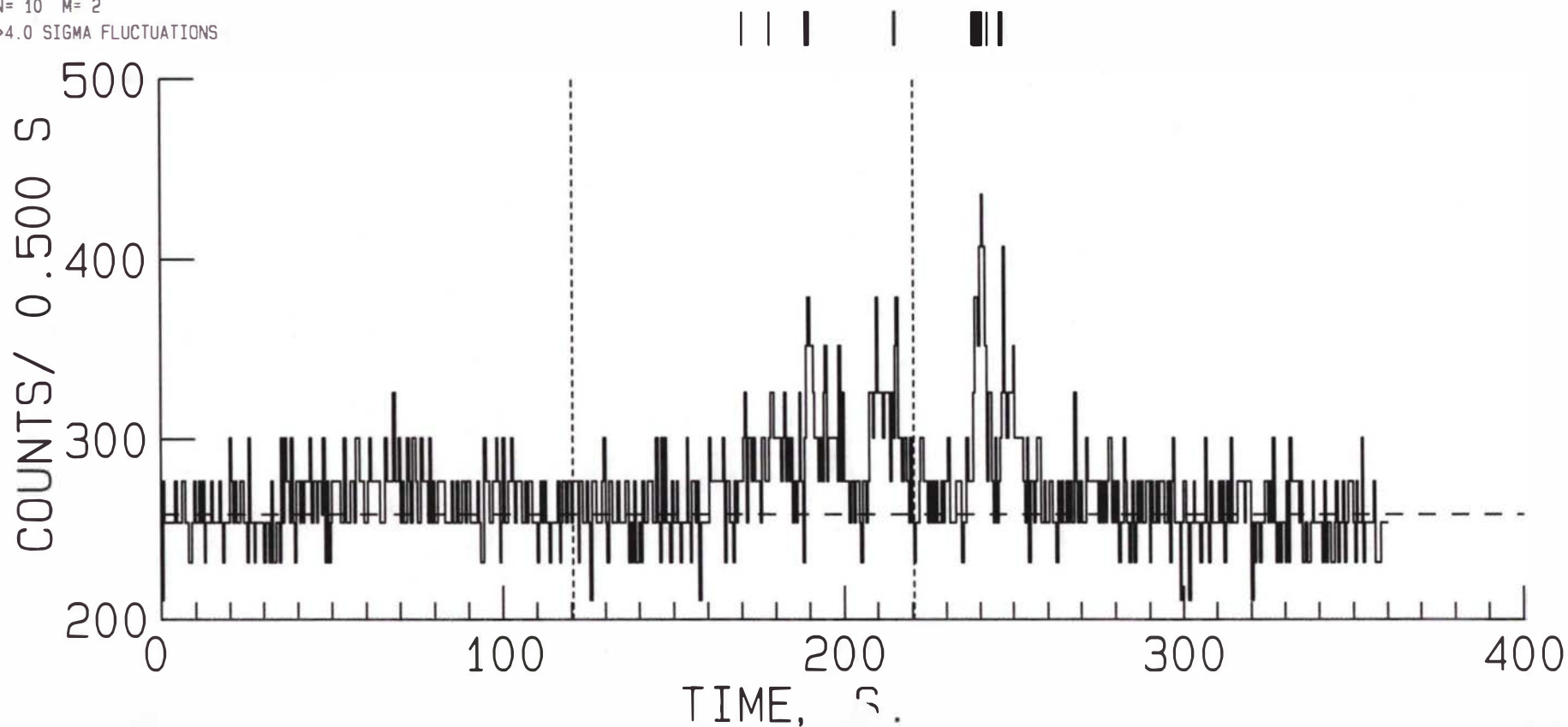
COUNTS/0.125 S

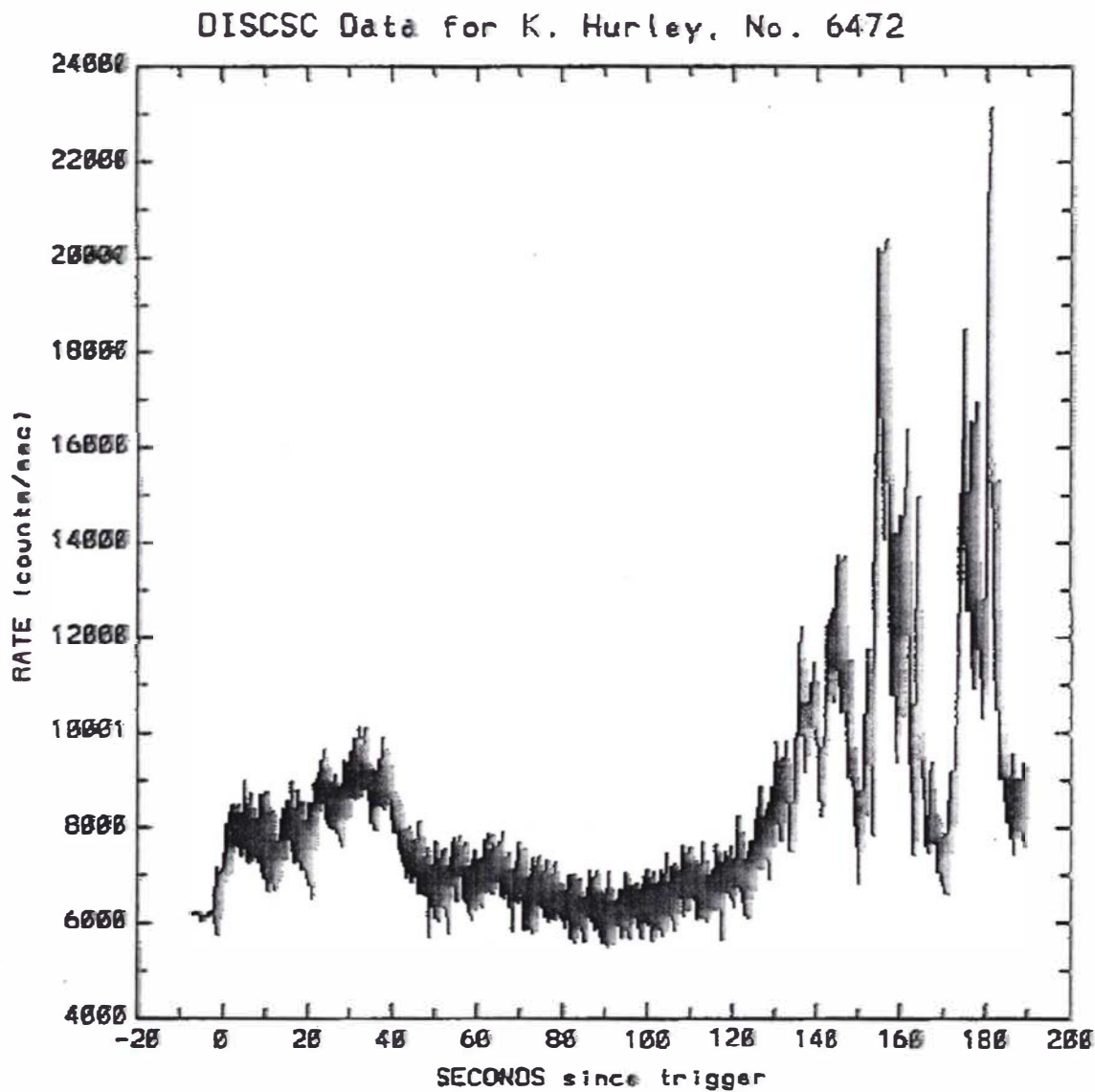


ULYSSES RT
10/11/97 66924.376 s
22- 147 keV

10 / 4 / 98

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





9-DEC-1997 17:22:18

Created by NOPS BD
Burst Display
Version 12.25

Trigger # : 6472

Trigger Time:
18762 / 68866.881

Burst Data Type:
DISCSC

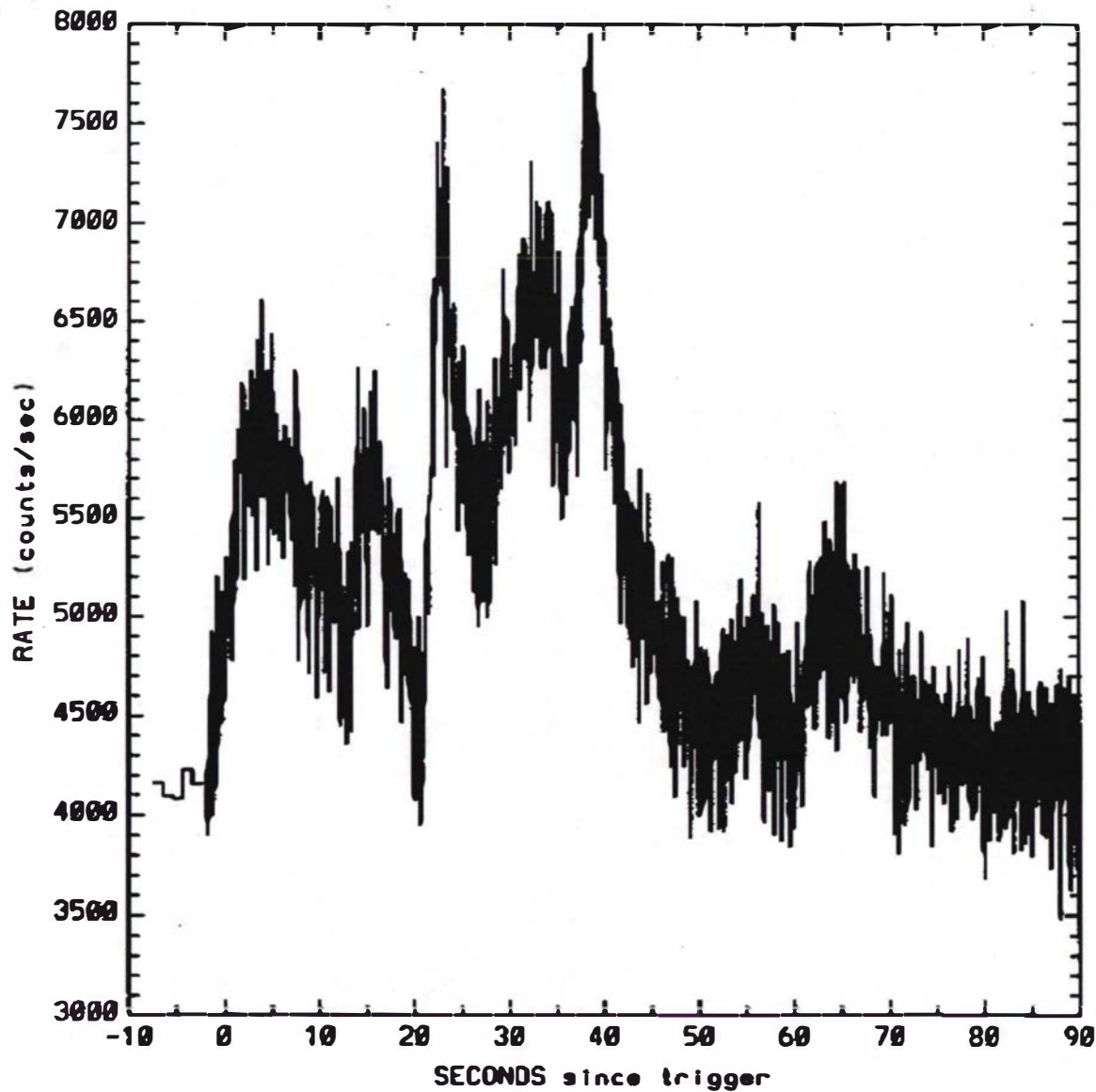
Deadline
Corrected: K
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds

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

Discriminators:
[1 : 2]

Quality Mask:
BD(SPI)

DISCSC Data for K. Hurley, No. 6472



21-JAN-2000 13:57:02

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 6472

Trigger Time:
18762 / 60006.881Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors (7..8):
---3-1-Discriminators:
(3, 4)Quality Mask:
BDISP

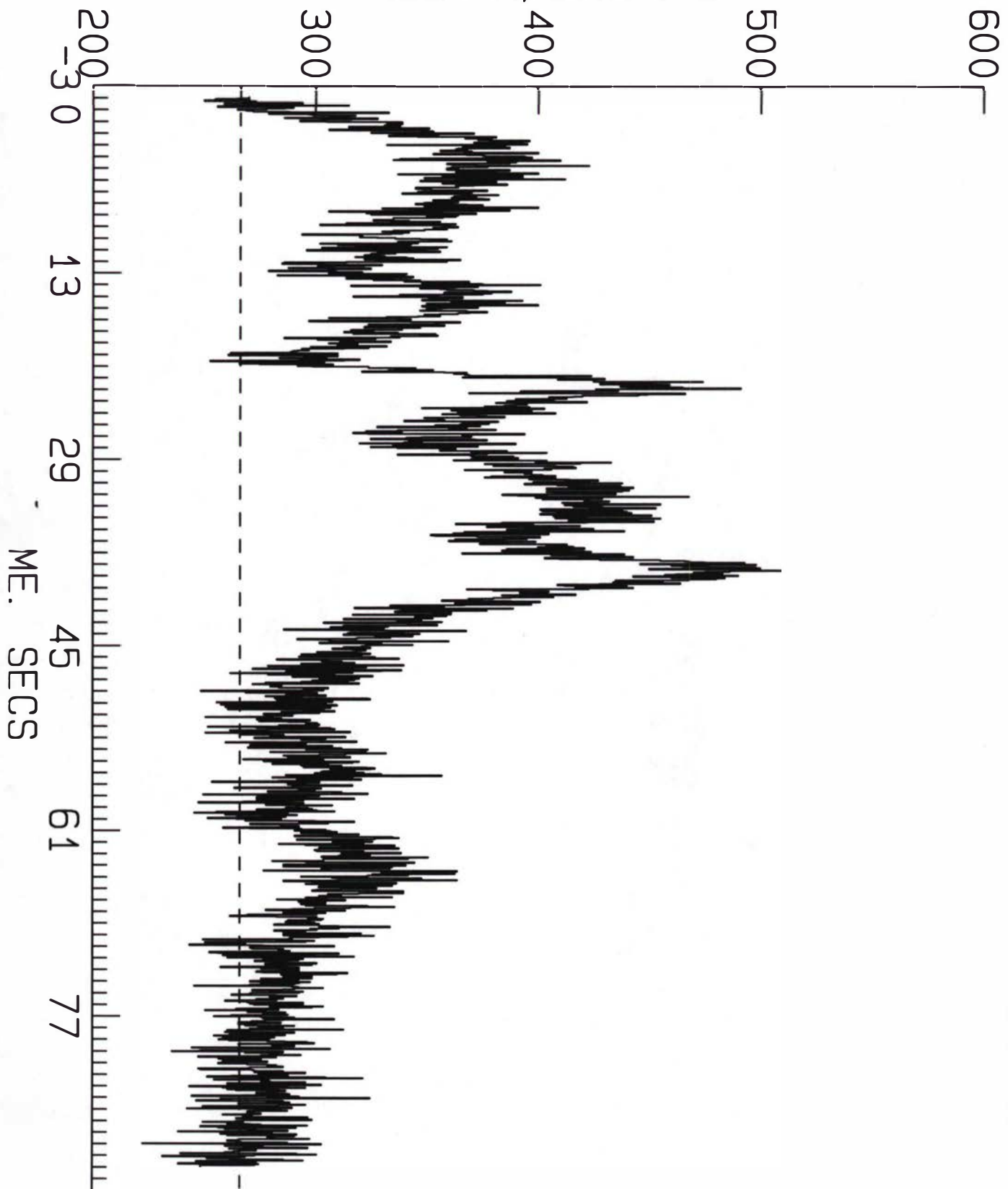
BATSE

10/11/97

68006.882

100-1000 keV

COUNTS/0.064 S



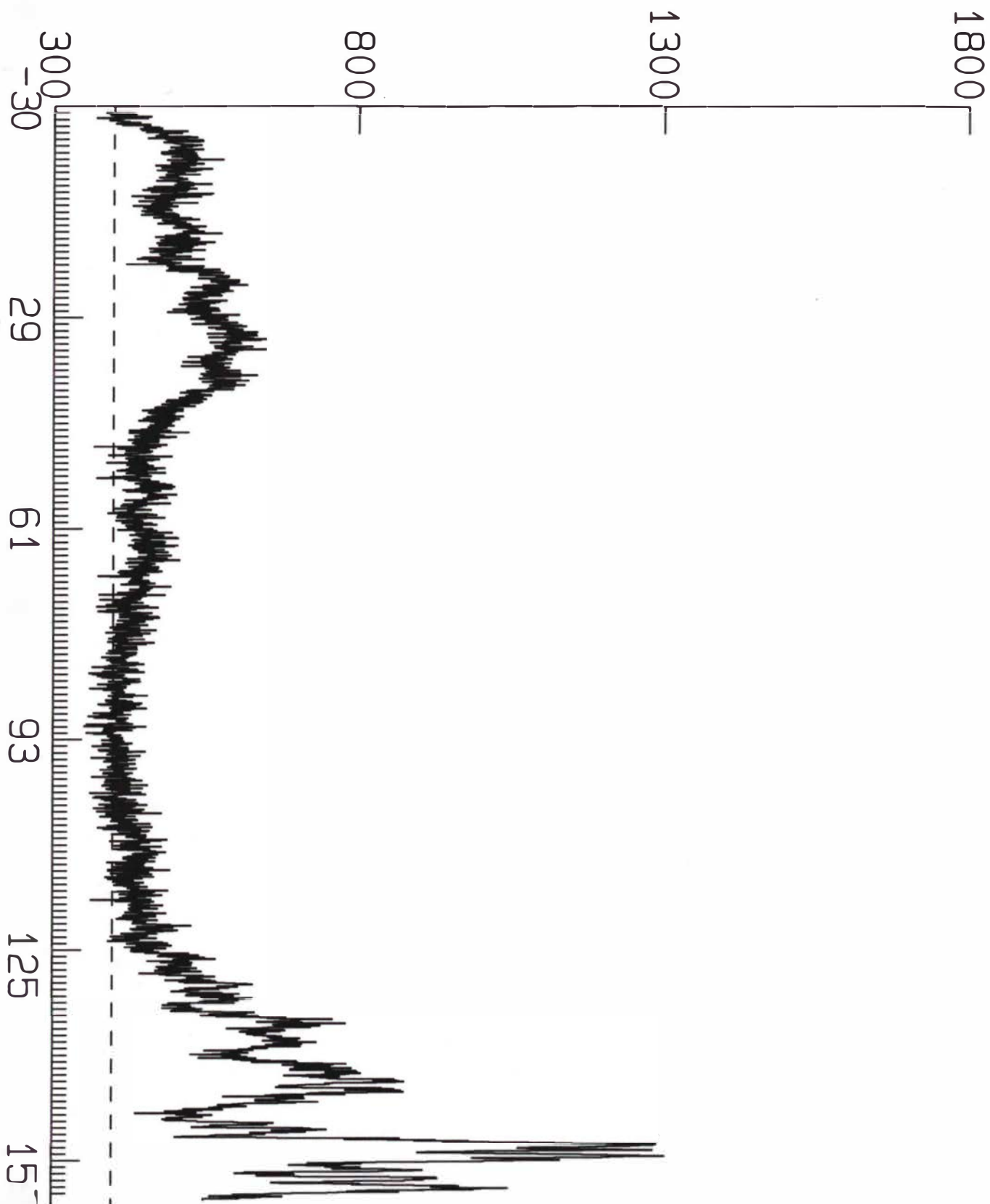
BATSE

10/11/97

68006.882

25- 100 keV

COUNTS/0.064 S



10/12/97

From HENZE@BATSE.MSFC.NASA.GOV Wed Nov 12 08:47:01 1997
Date: Wed, 12 Nov 1997 10:15:19 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@BATSE.MSFC.NASA.GOV>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@BATSE.MSFC.NASA.GOV, HORACK@BATSE.MSFC.NASA.GOV,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6470

TIME: TJD=0762 SECONDS=14672

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

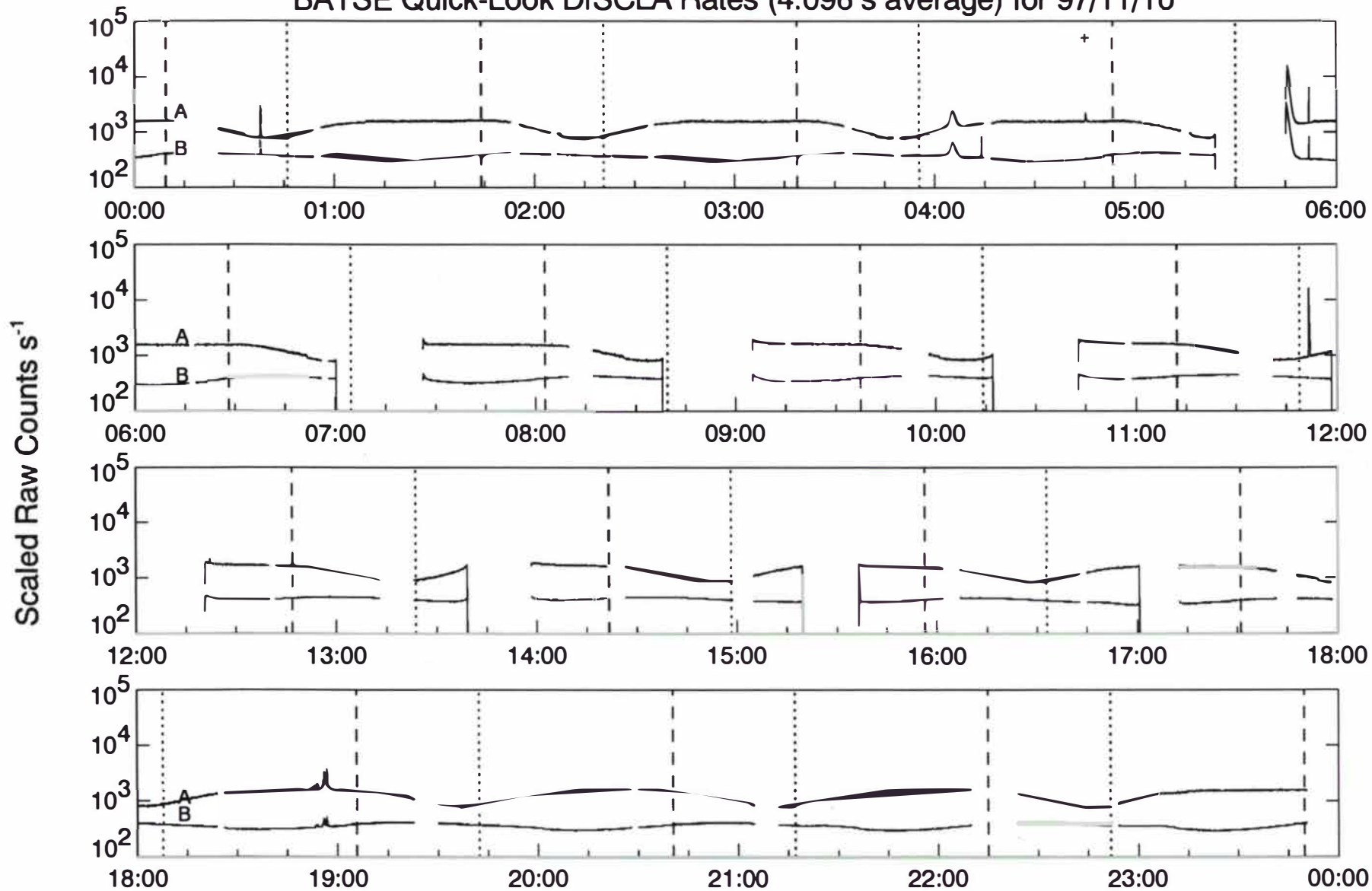
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT, NEAR SAA EXIT REGION.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/10

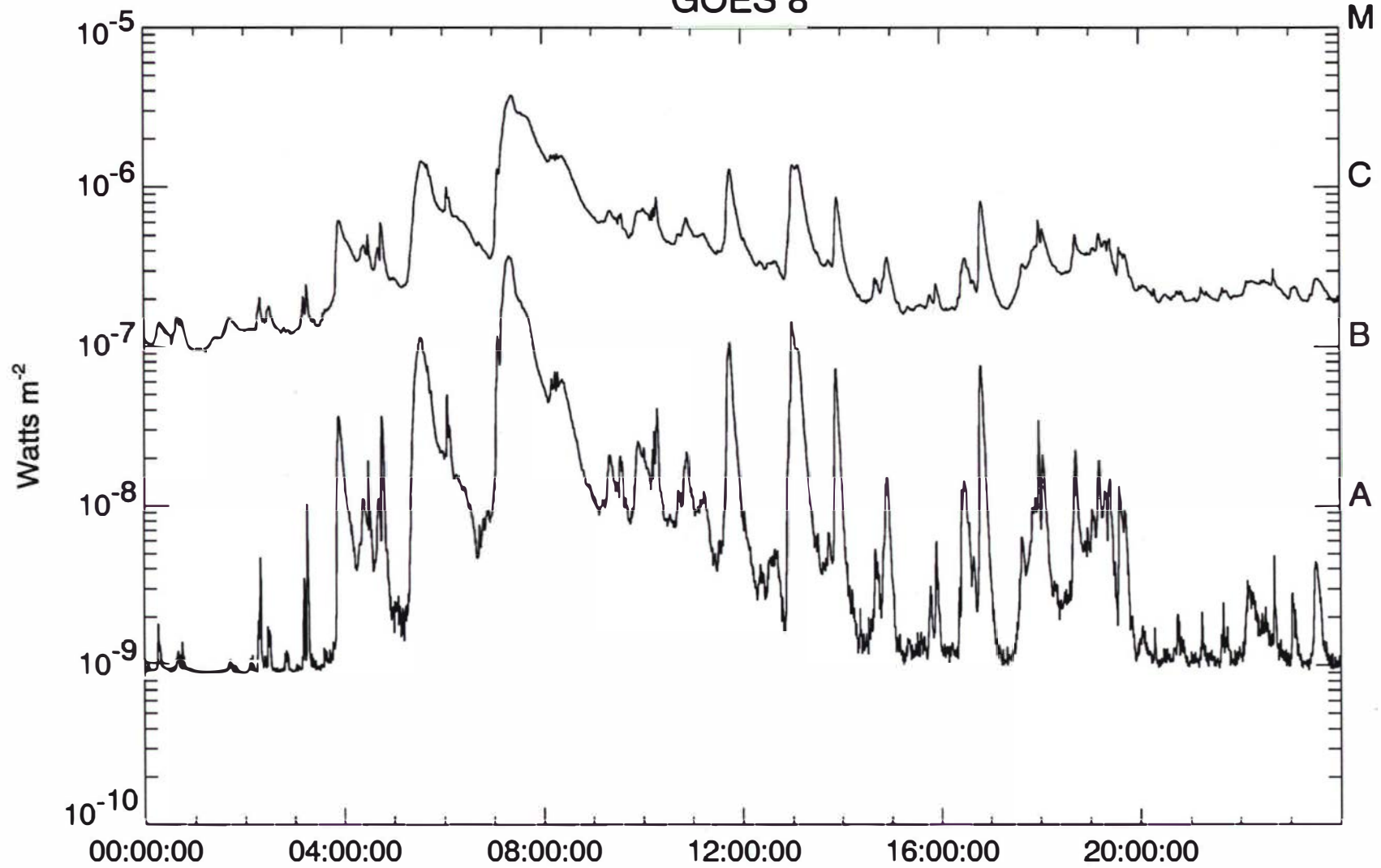


Current Time: 97/11/14, 1010 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/10, 0000:00

Plot created: 97/11/14, 1009

Channel

1 (1.0 - 8.0 Angstroms)

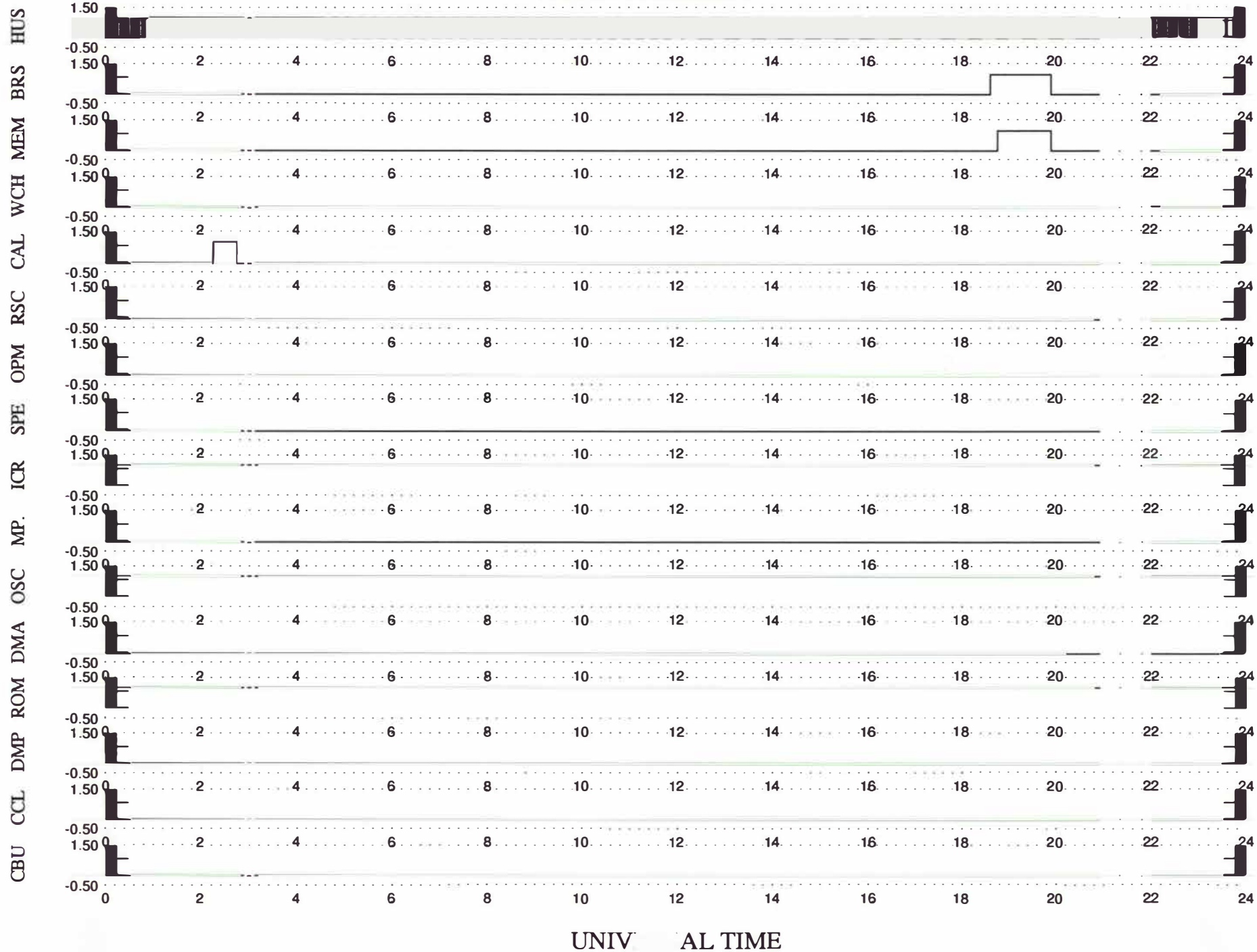
Background not subtracted

2 (0.5 - 4.0 Angstroms)

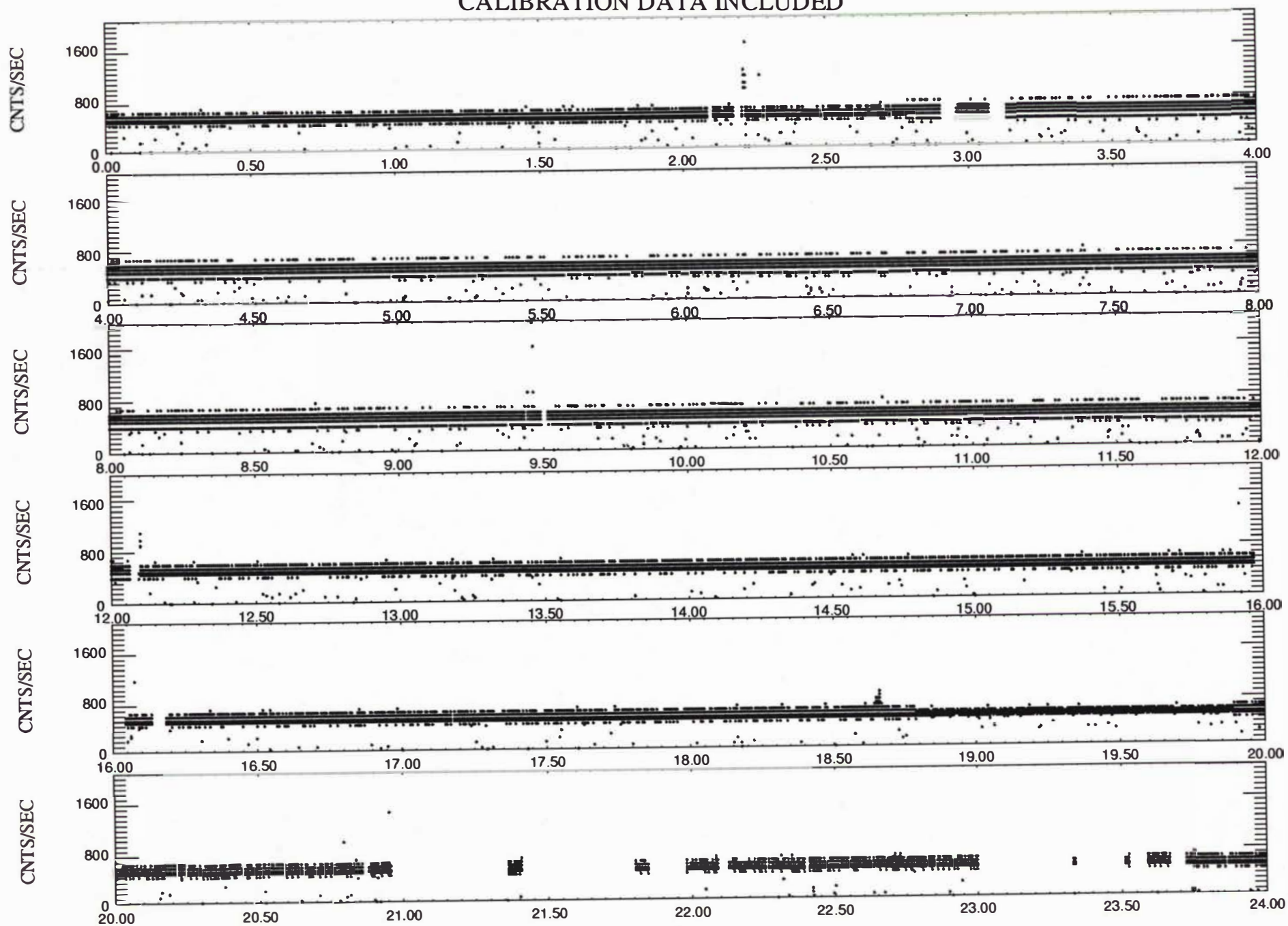
Background not subtracted

Sample average = 10

BURST NUMBER 2

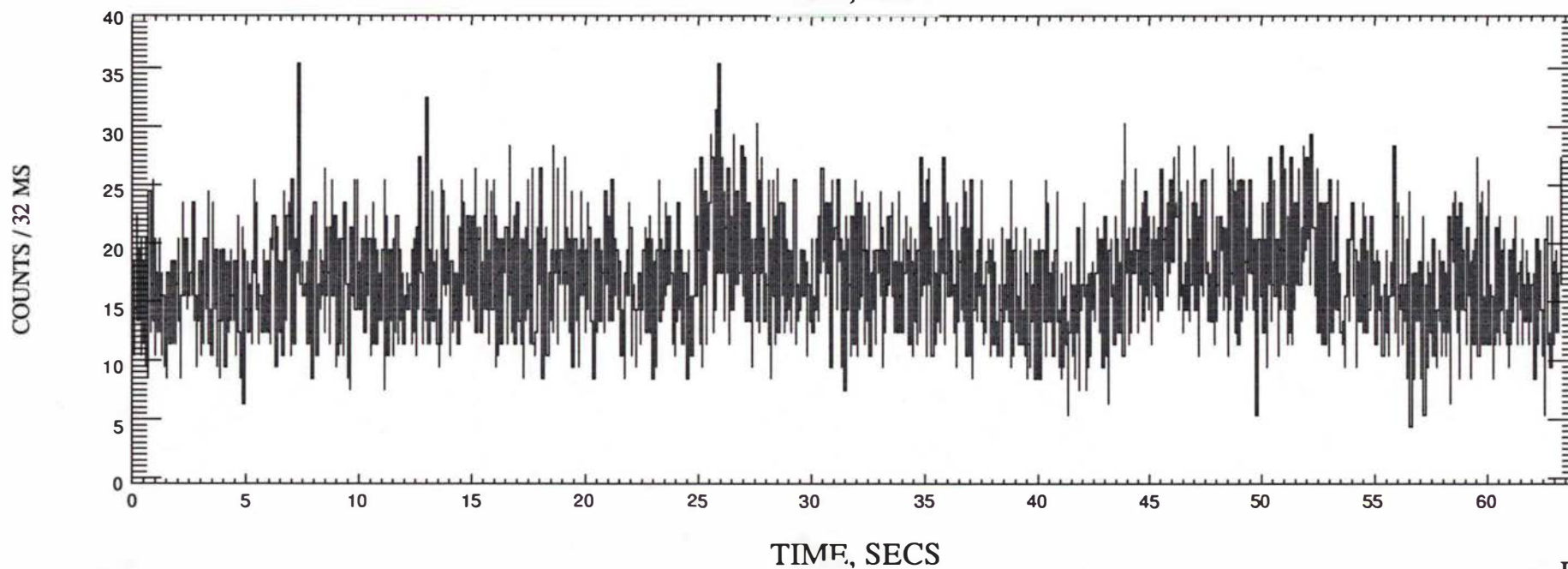
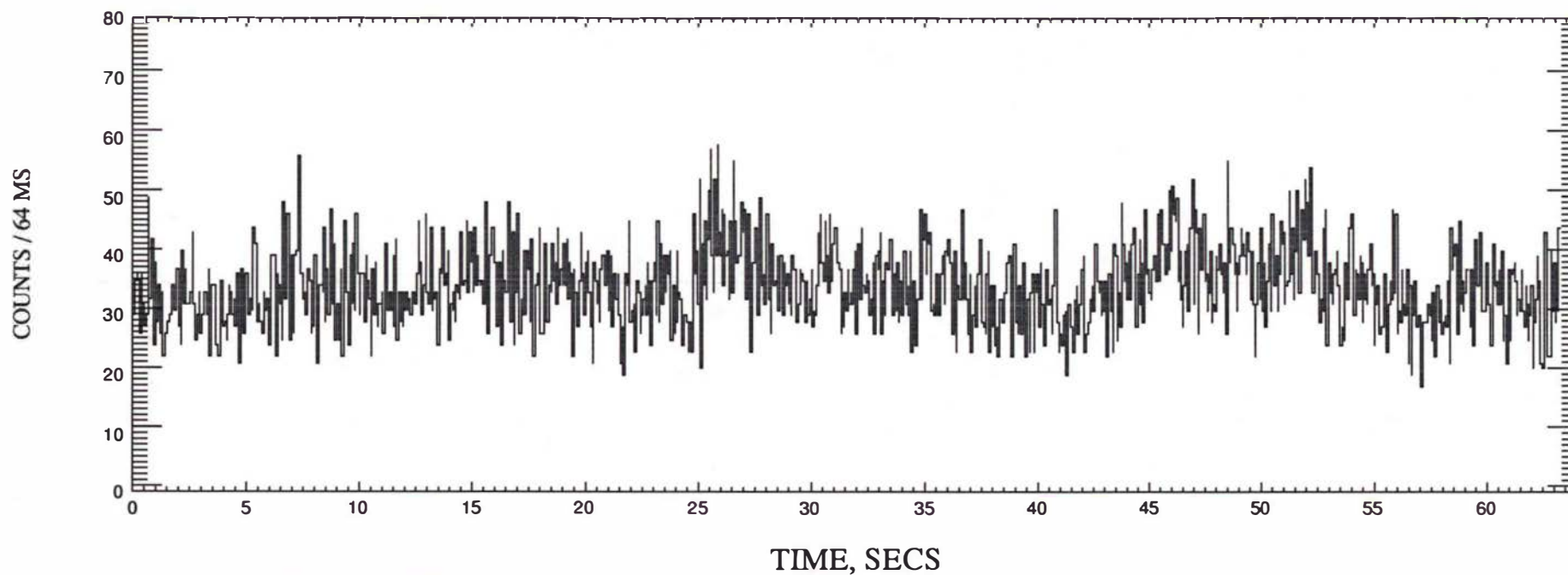


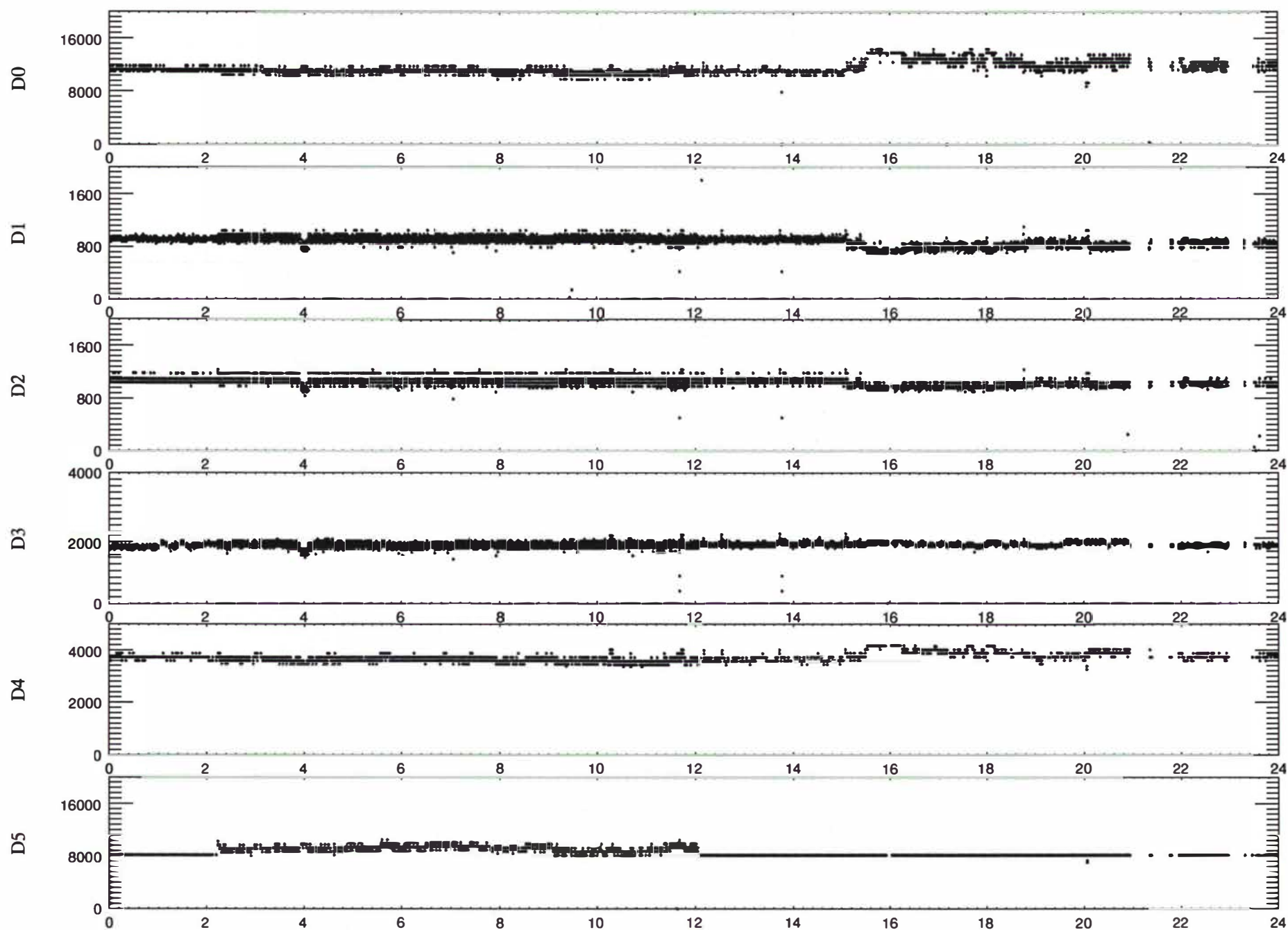
CALIBRATION DATA INCLUDED



UNIV 'AL TIME

Burst Counter 2 at UT=18.637637049357 h=67095.493 s 18:38:15.493





UNIV' AL TIME

lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

Konus triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

From kraken@rosserv.gsfc.nasa.gov Fri Nov 21 07:47 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 21 Nov 1997 10:48:31 -0500
 khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts *NOT* seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

The following bursts were not seen by TGRS, in either burst or waiting mode data.

Pete

November 9 1997 06:41	Ulysses time; weak burst, 64 ms long
November 10 1997 18:38	" ; moderate burst, 100 s long
November 11 1997 08:04	" ; weak burst, 64 ms long
November 12 1997 06:00	" ; weak burst, 64 ms long
November 12 1997 13:37	" ; weak burst, 64 ms long
November 13 1997 05:38	Ulysses time; weak burst, 100 ms long

From SURASAK@SSLLES.MSFC.NASA.GOV Thu Nov 13 09:25:00 1997
Date: Thu, 13 Nov 1997 11:24:08 -0600 (CST)
From: SURASAK@SSLLES.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@lheavwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6473

TIME: TJD=0763 SECONDS=14330

TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

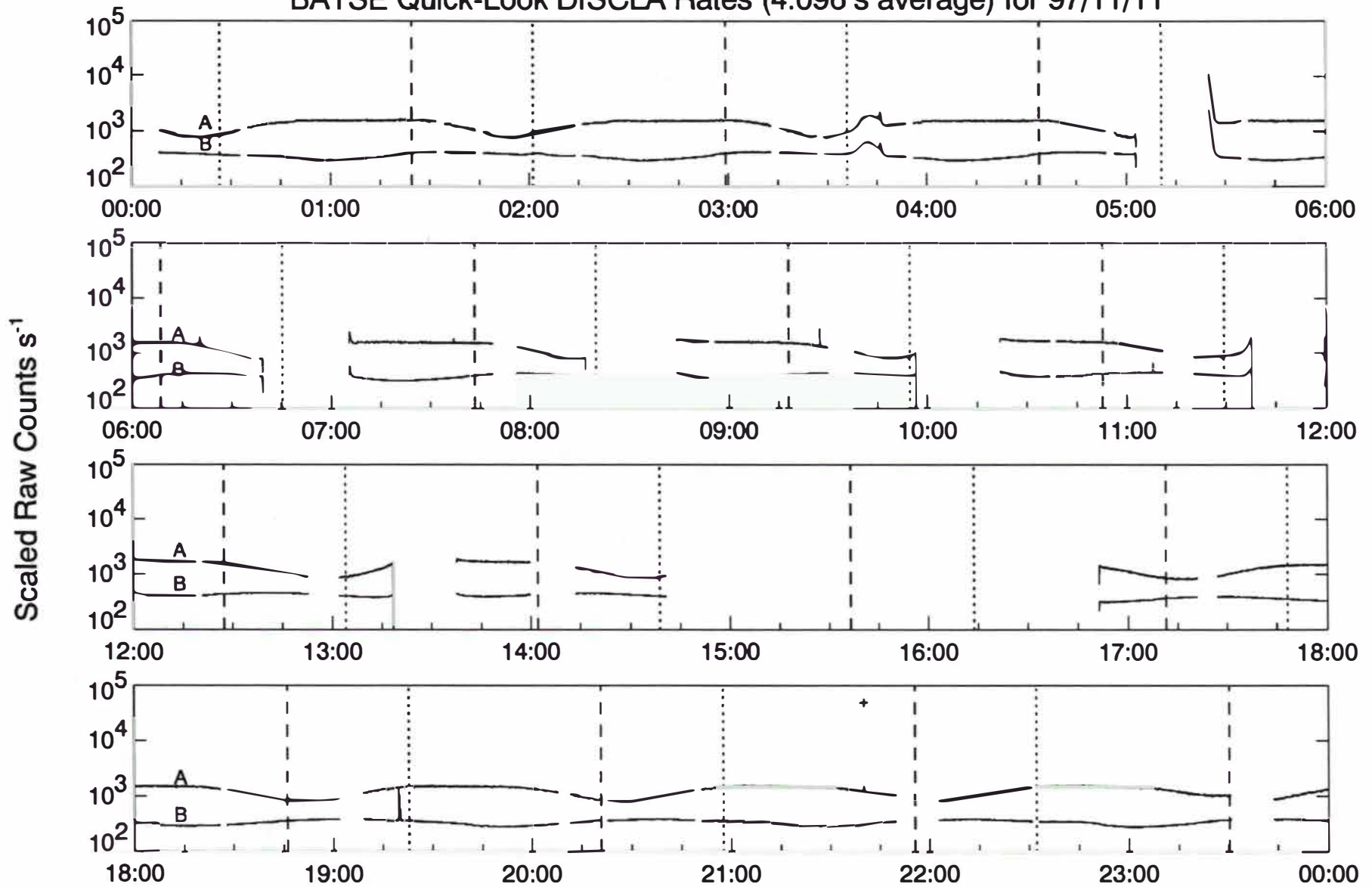
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=91.7 AZIMUTH=64.9 ERROR=10.94 DEGREES

COMMENTS:

CYGX-1 FLUCTUATION AFTER A RISE AT SOD 14313

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/11

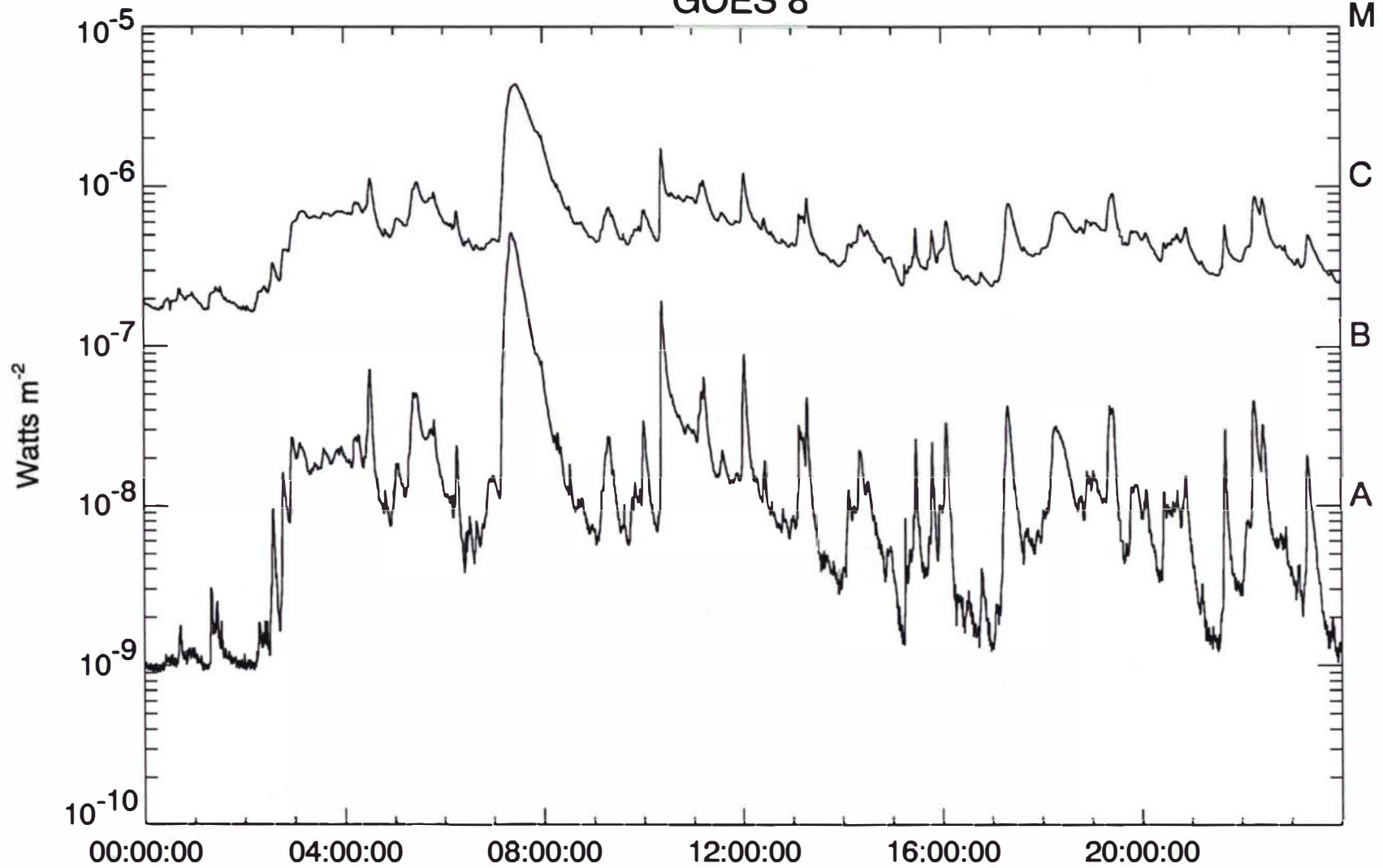


Current Time: 97/11/15, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/11, 0000:00

Plot created: 97/11/15, 1007

Channel

1 (1.0 - 8.0 Angstroms)

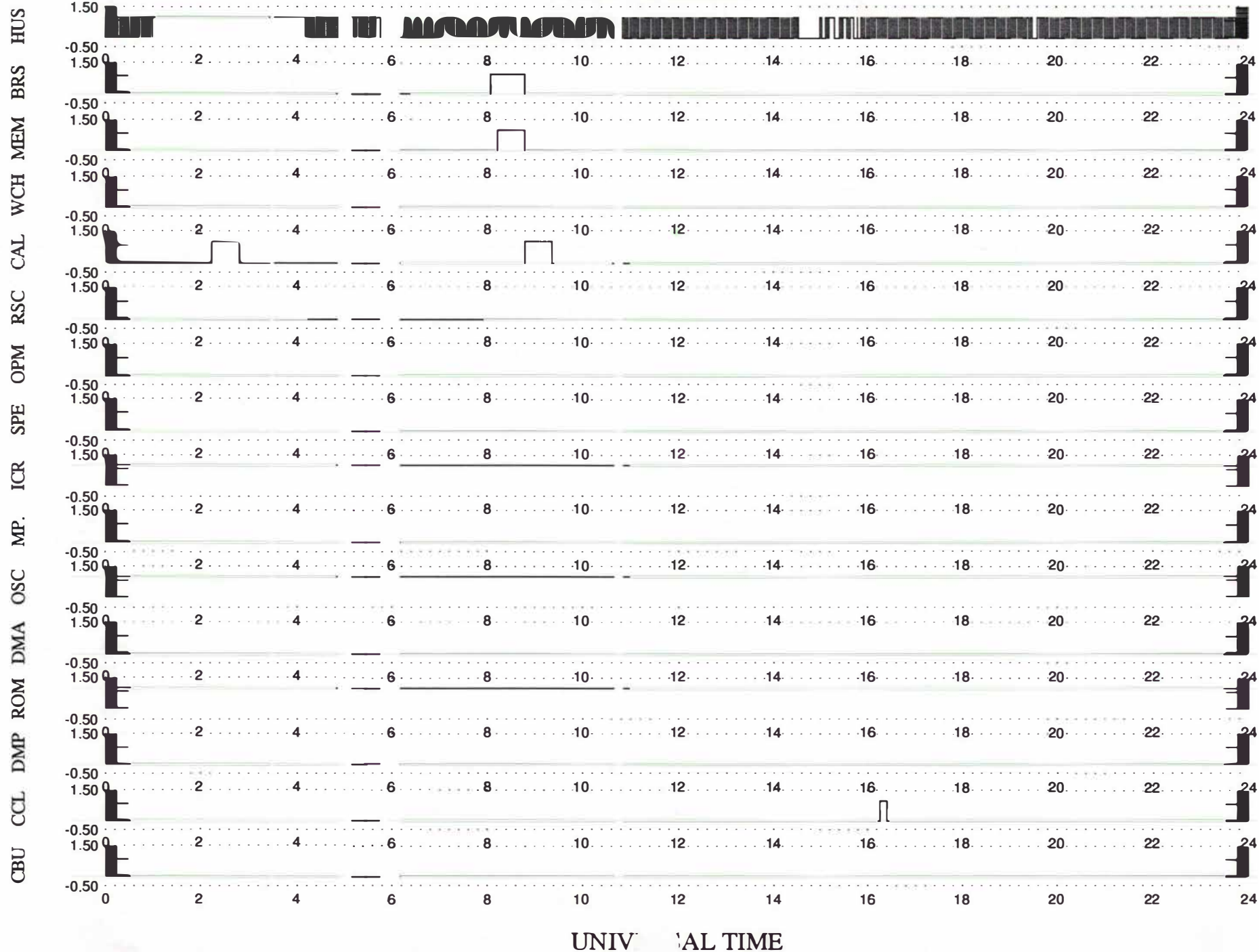
Background not subtracted

2 (0.5 - 4.0 Angstroms)

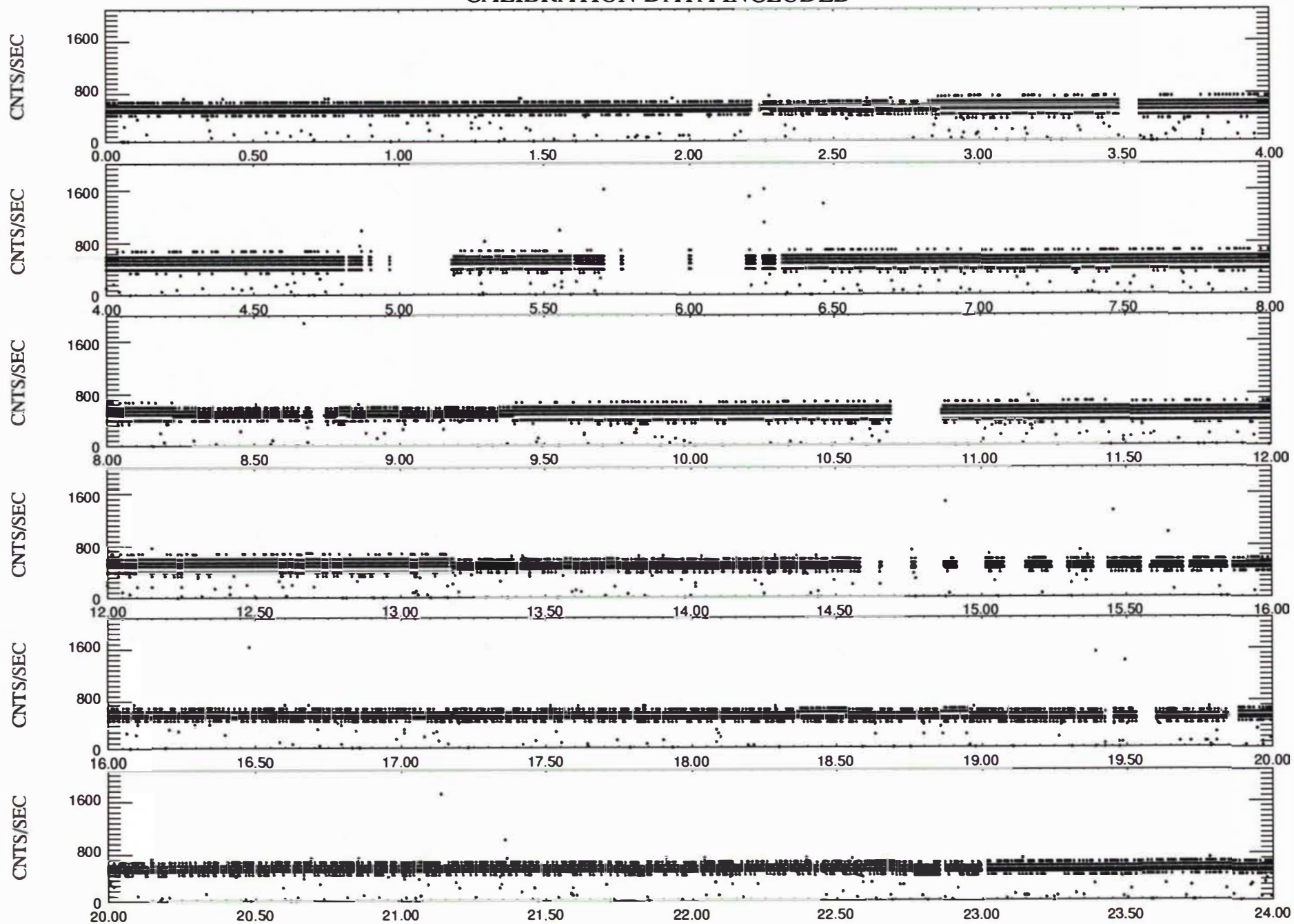
Background not subtracted

Sample average = 10

BURST NUMBER 3

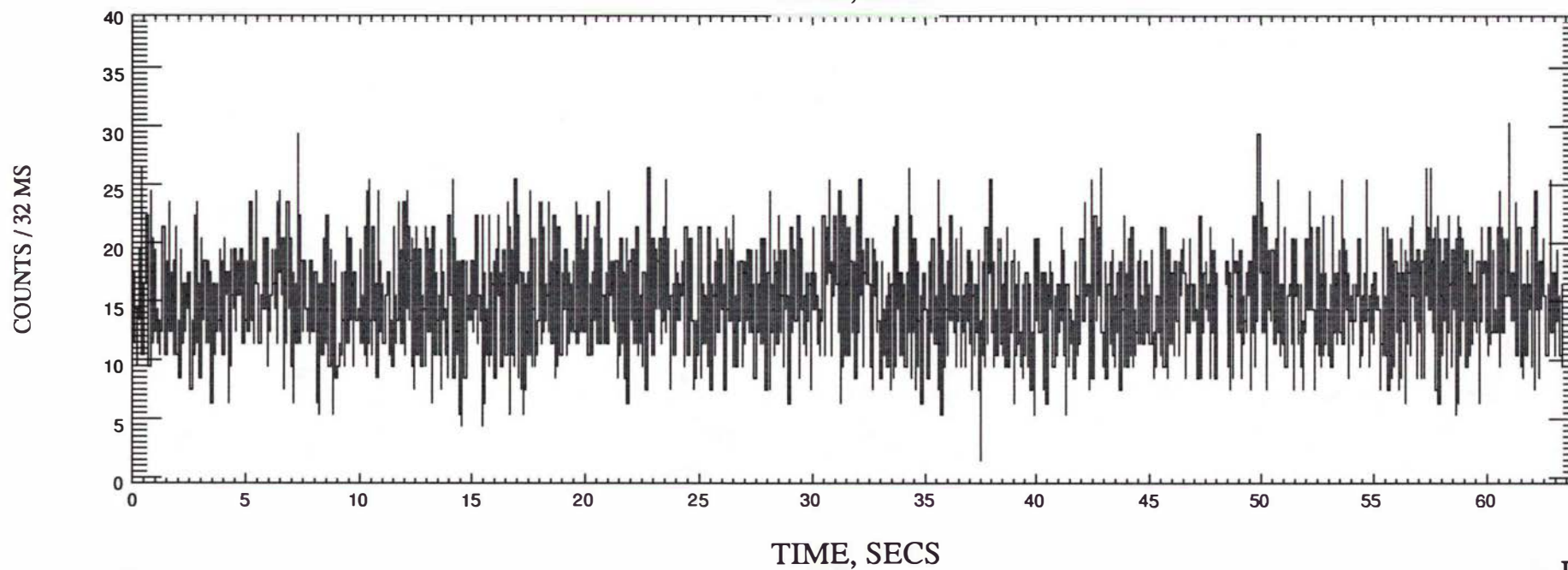
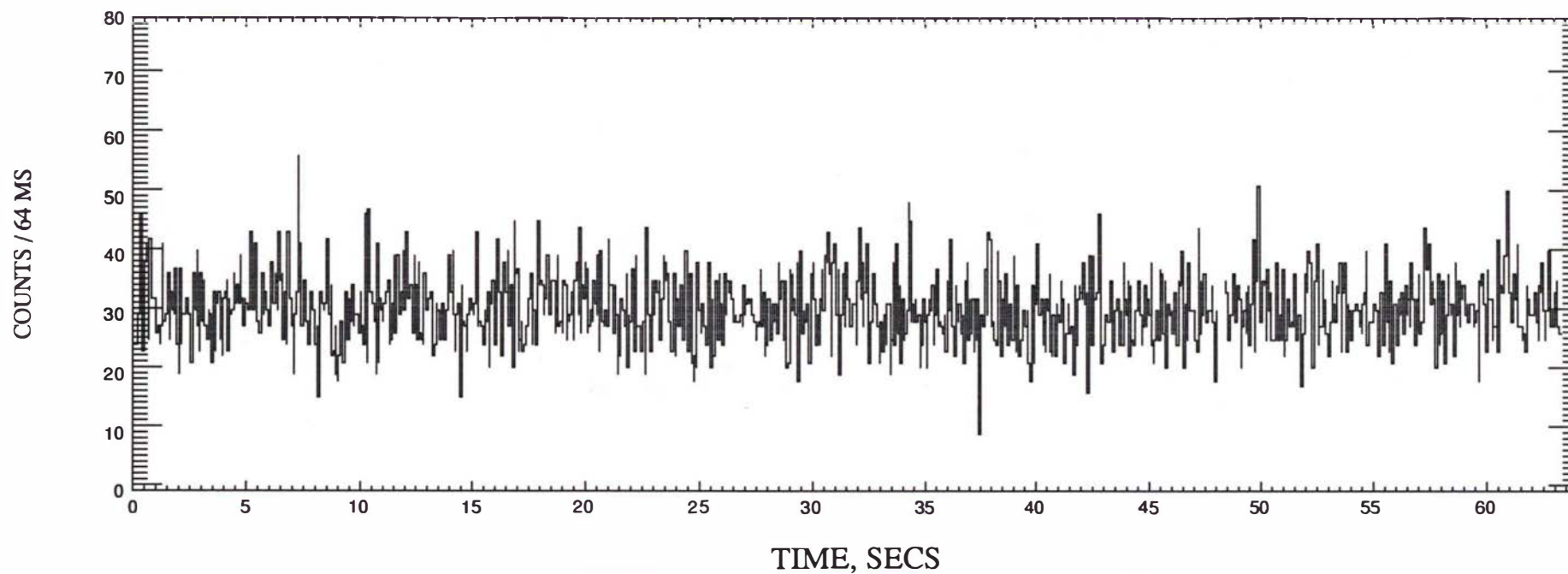


CALIBRATION DATA INCLUDED

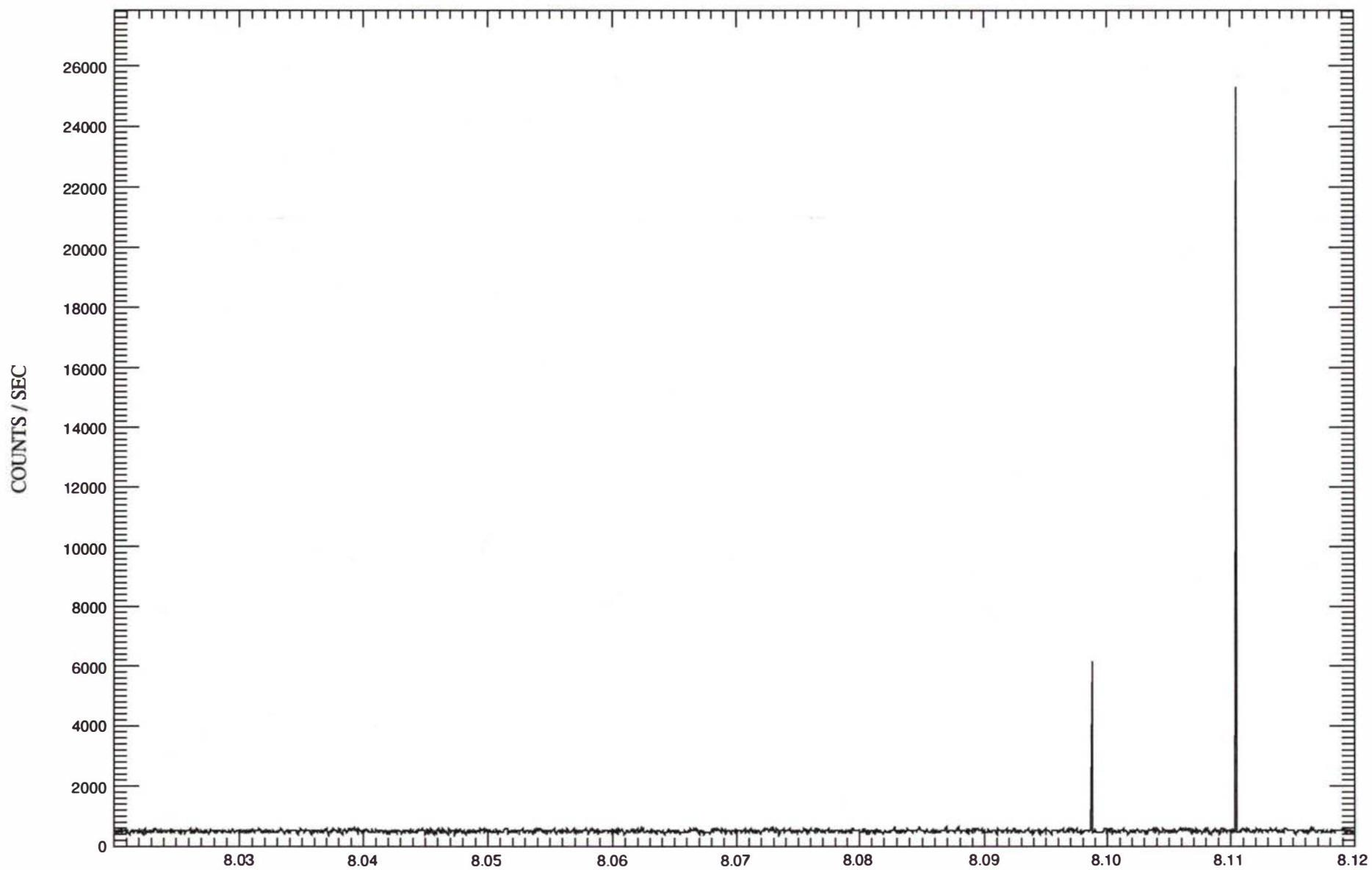


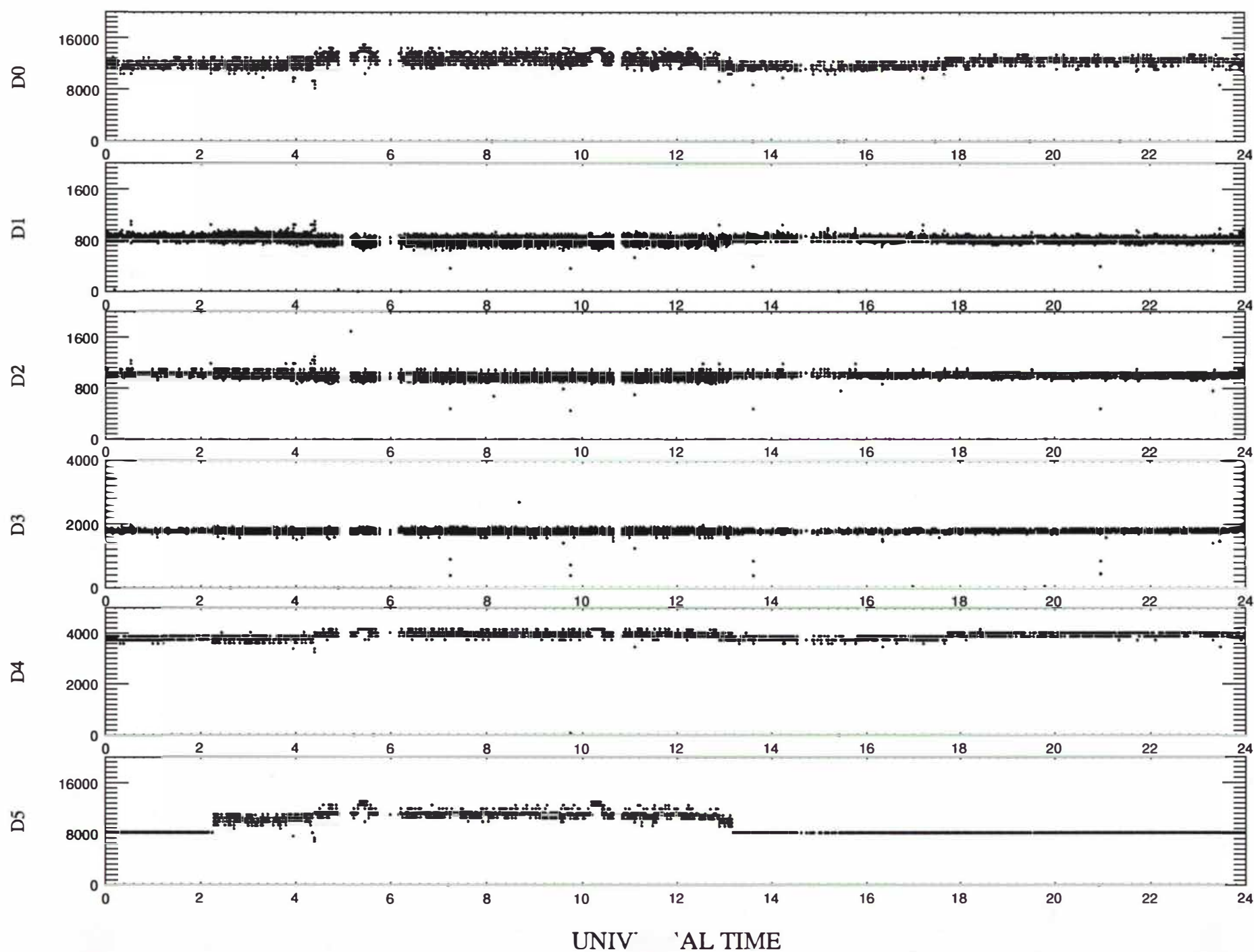
UNIV AL TIME

Burst Counter 3 at UT= 8.073100963169 h=29063.163 s 08:04:23.163



CALIBRATION DATA INCLUDED





lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

is triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

From kraken@rosserv.gsfc.nasa.gov Fri Nov 21 07:47 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 21 Nov 1997 10:48:31 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts *NOT* seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

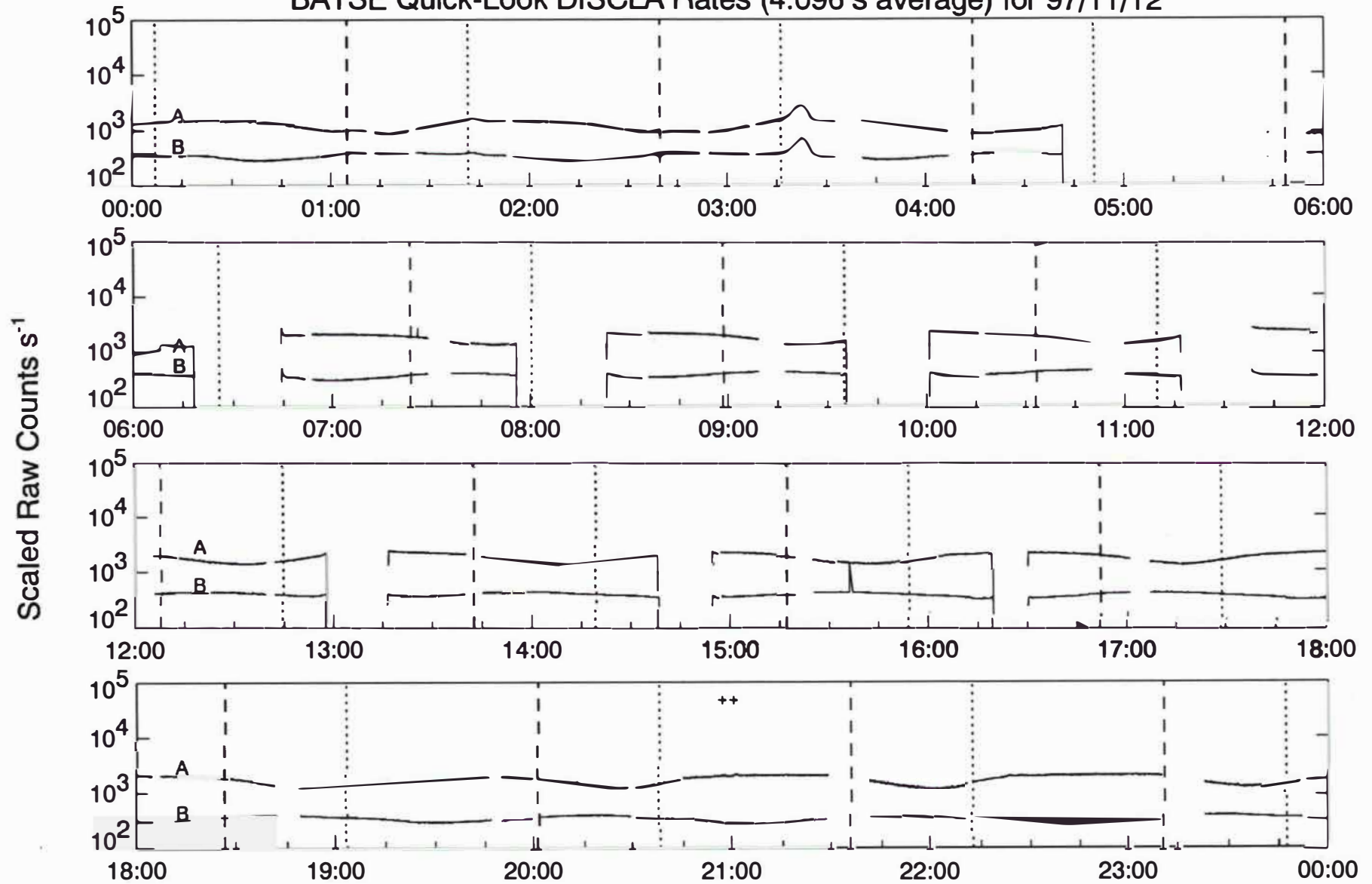
Hi Kevin,

The following bursts were not seen by TGRS, in either burst or waiting mode data.

Pete

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long
November 10 1997 18:38 " " ; moderate burst, 100 s long
November 11 1997 08:04 " " ; weak burst, 64 ms long
November 12 1997 06:00 " " ; weak burst, 64 ms long
November 12 1997 13:37 " " ; weak burst, 64 ms long
November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/12

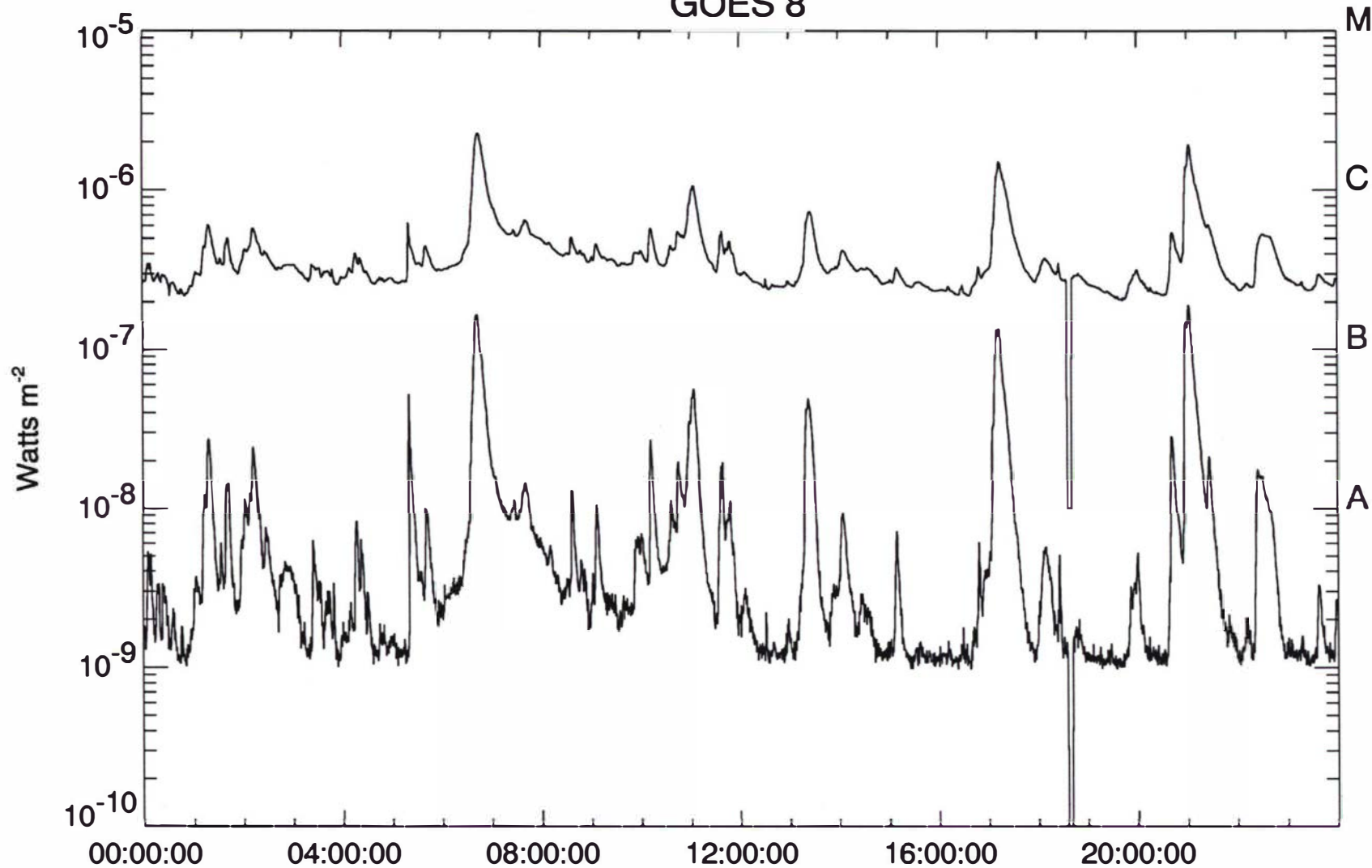


Current Time: 97/11/16, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

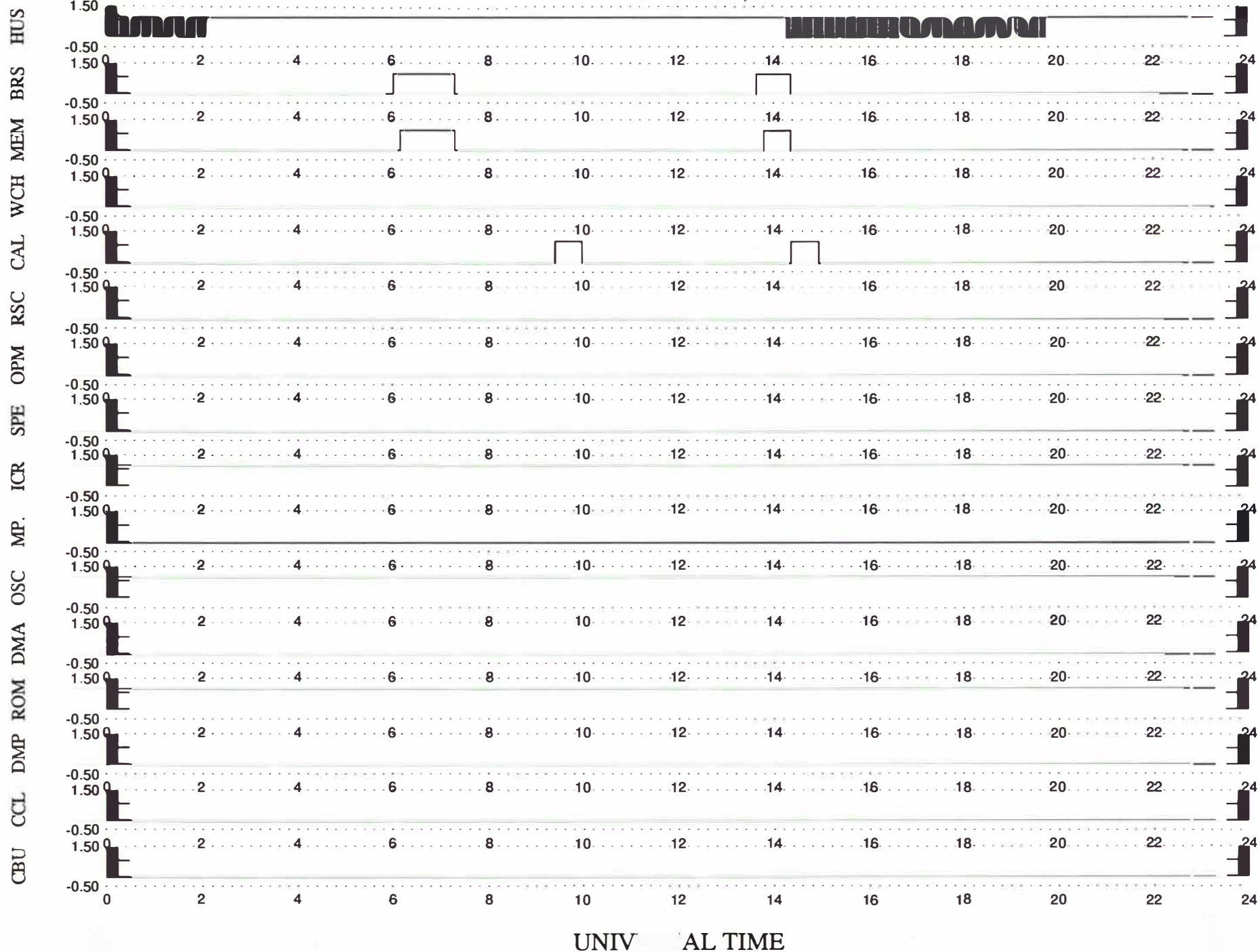


Data Start: 97/11/12, 0000:00

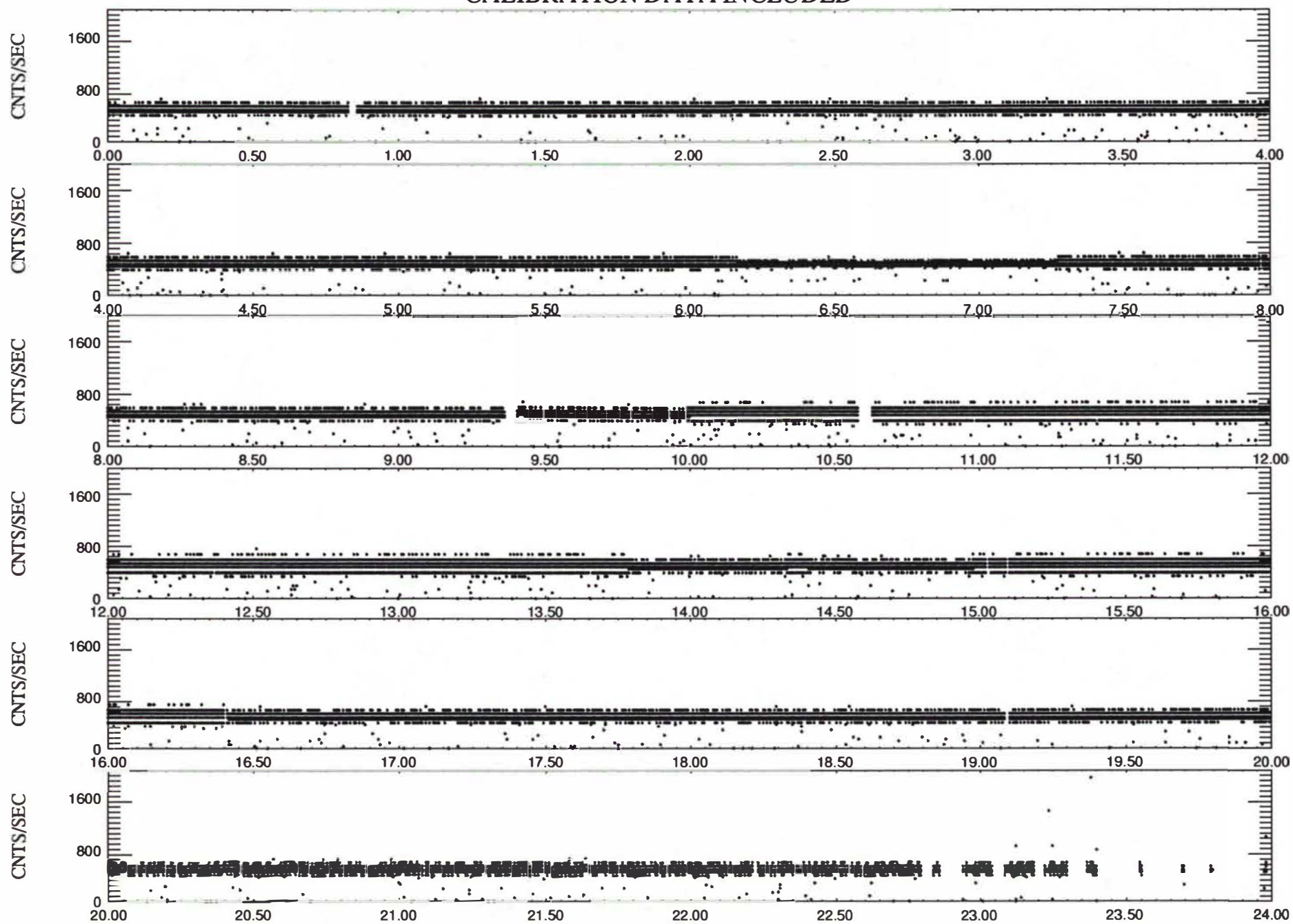
Plot created: 97/11/16, 1007

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

BURST NUMBER 4, 5

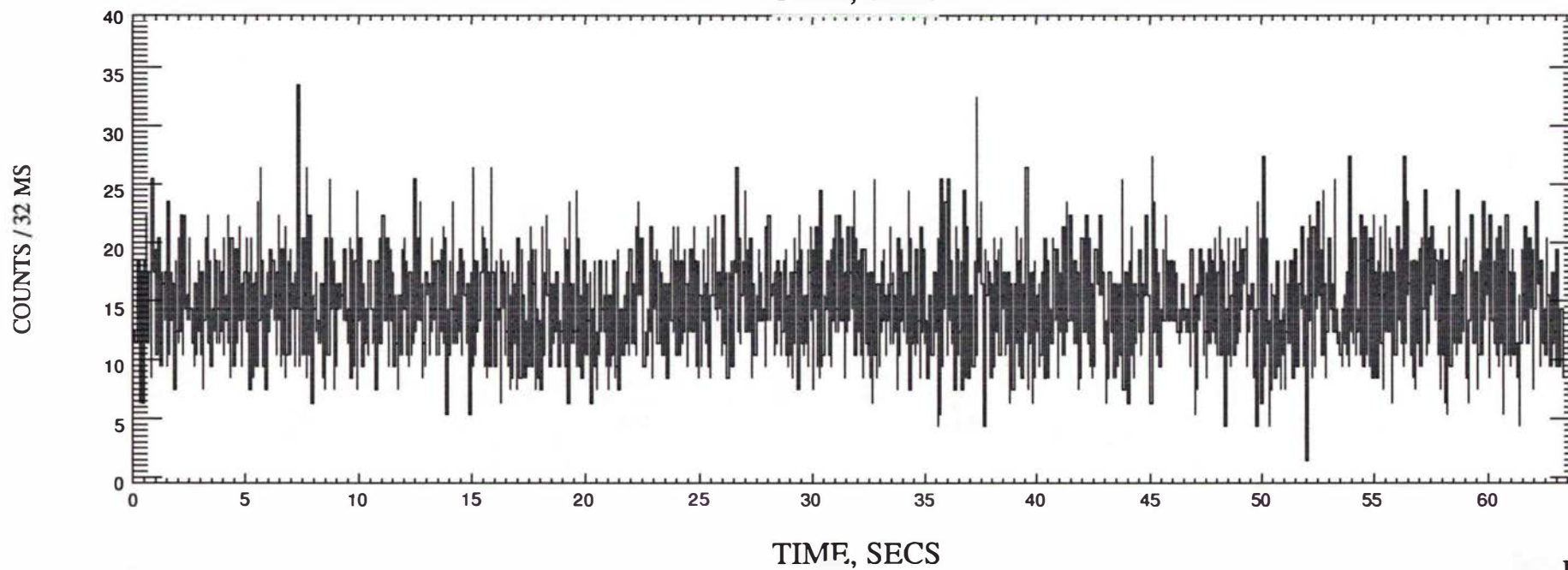
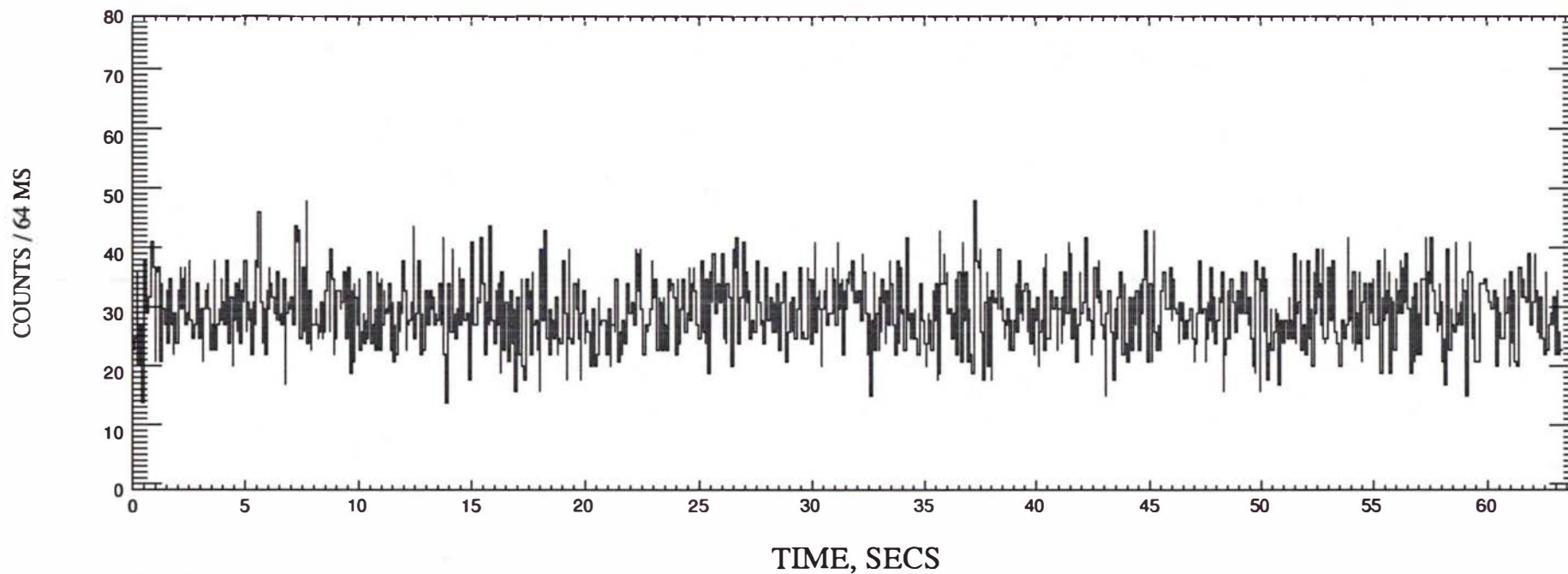


CALIBRATION DATA INCLUDED

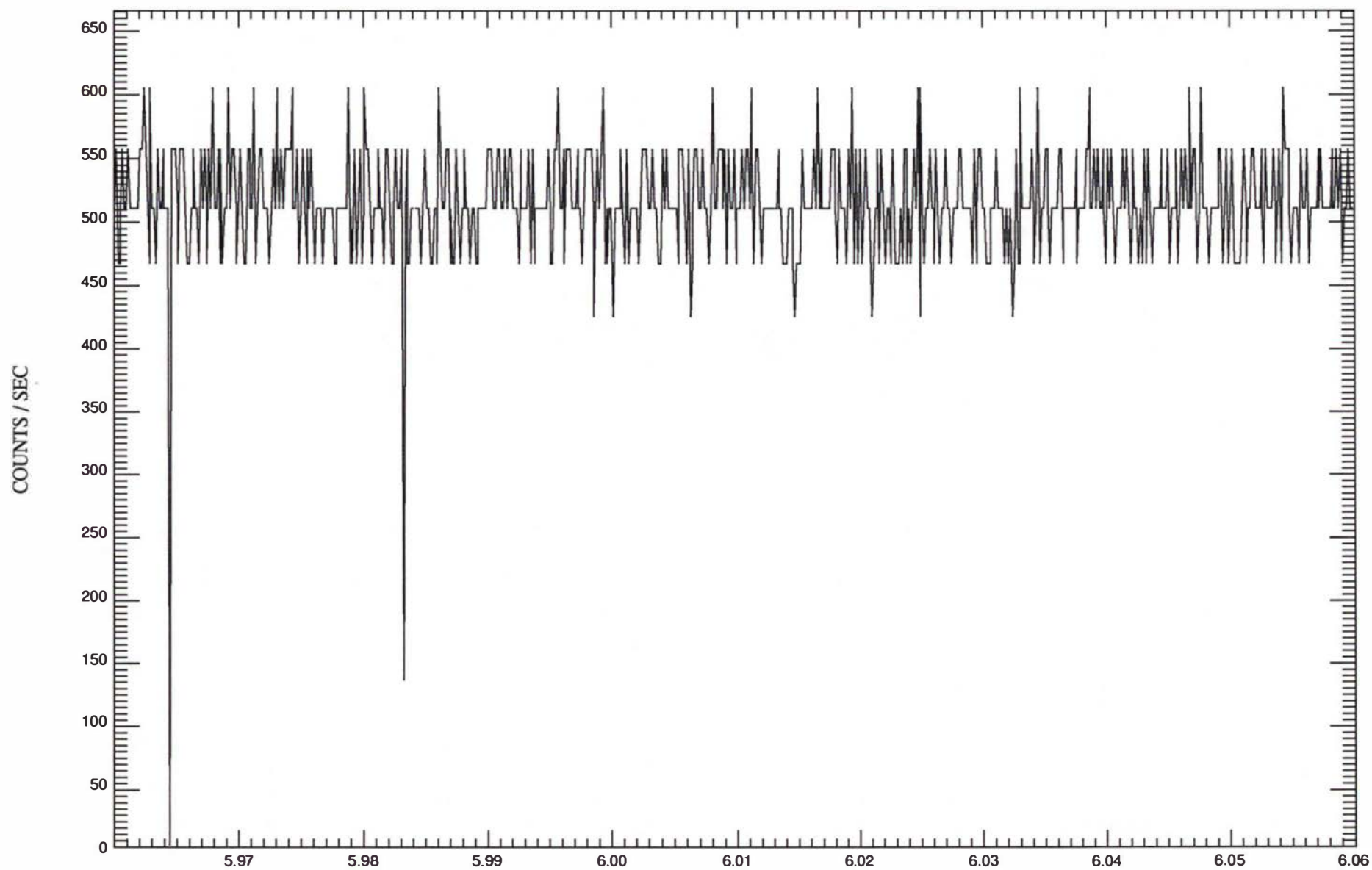


UNIV 'AL TIME

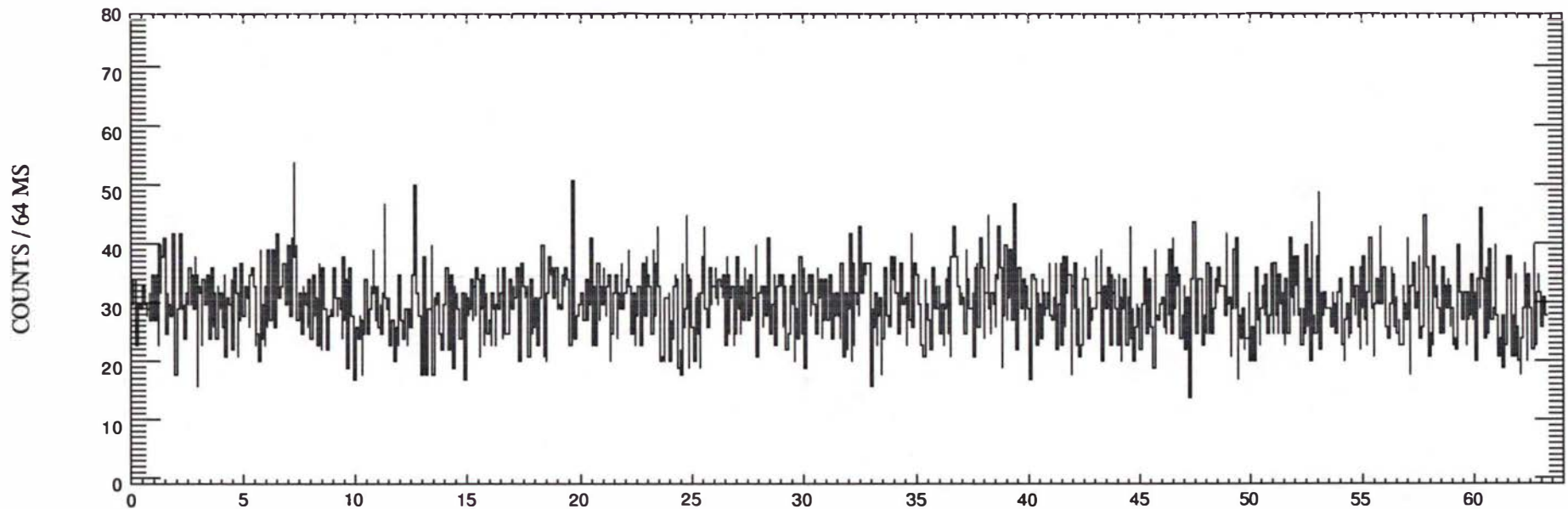
Burst Counter 4 at UT= 6.011250042386 h=21640.500 s 06:00:40.500



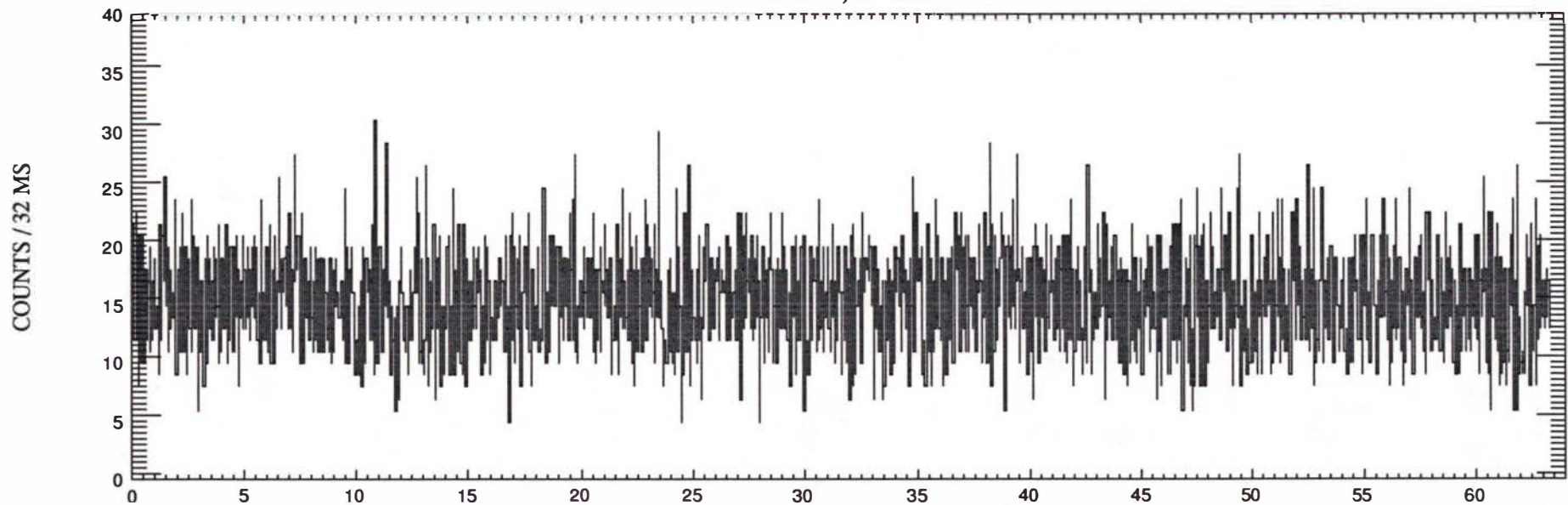
CALIBRATION DATA INCLUDED



Burst Counter 5 at UT=13.625782890320 h=49052.818 s 13:37:32.818

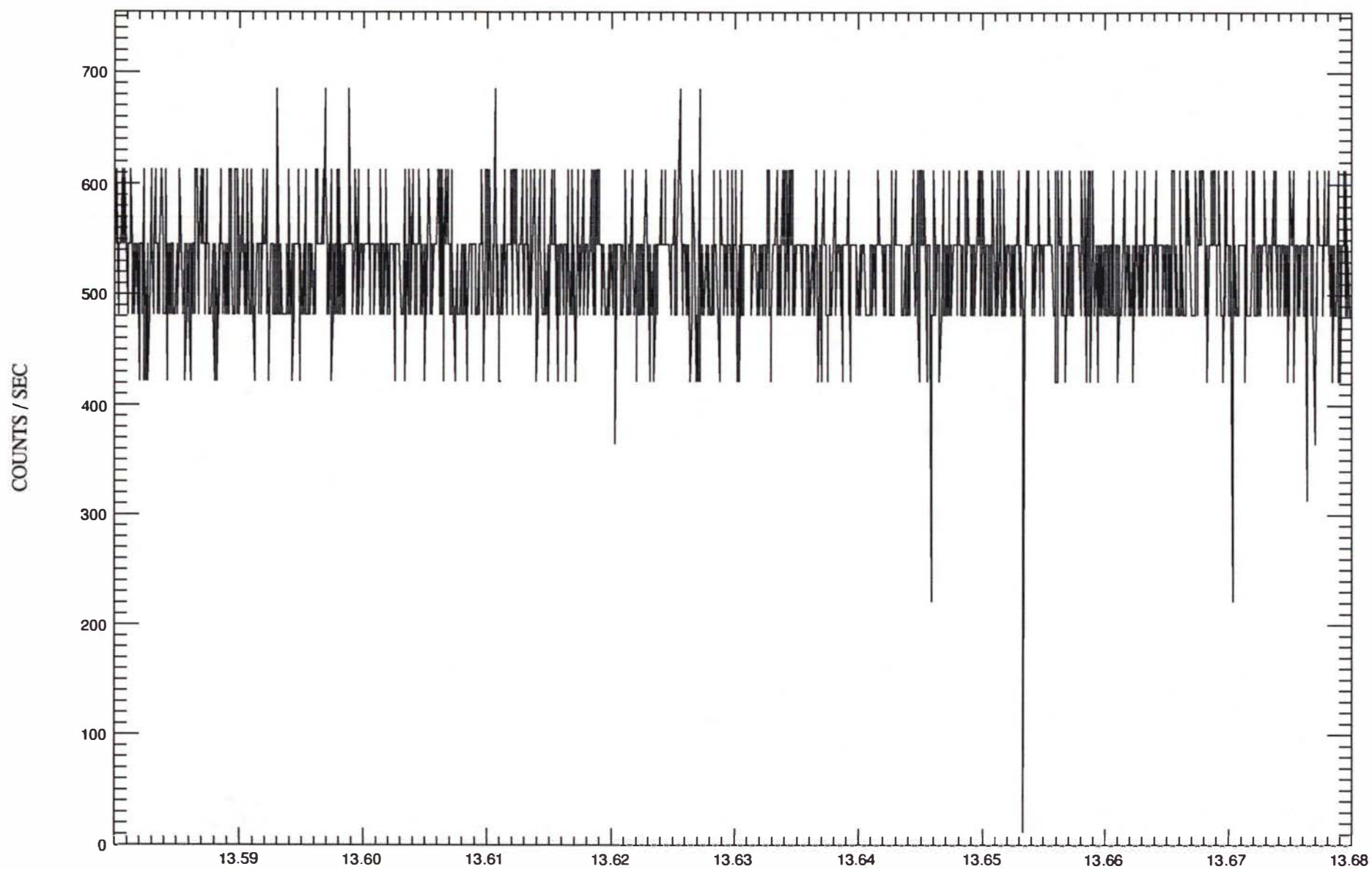


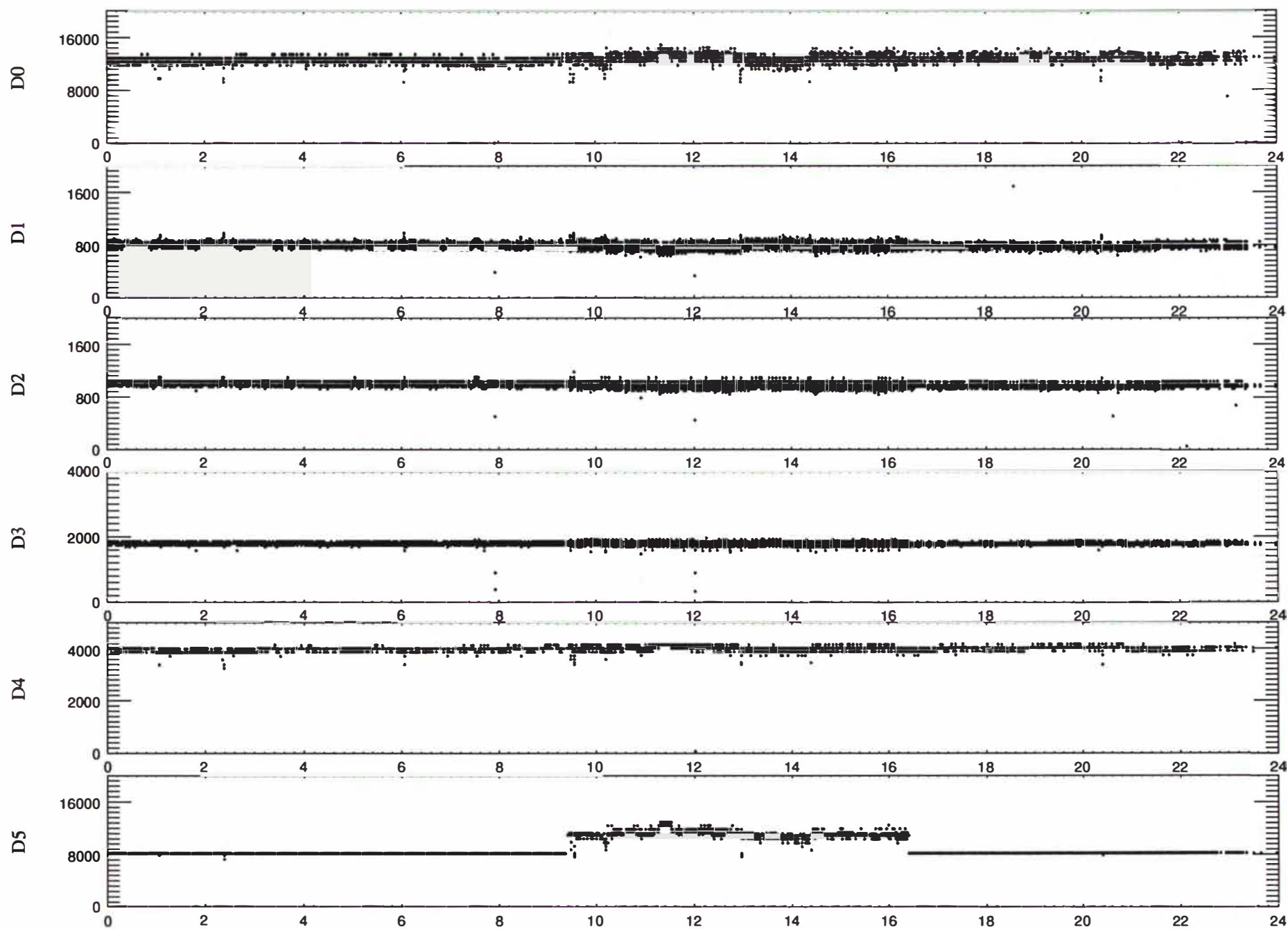
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





UNIV. CAL TIME

lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 06:31:24.526 in the North-facing detector. The event was a 10 second FRED which was initially very hard, but became gradually softer.

November 2 1997 03:12 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 10 1997 18:38 Ulysses time; moderate burst, 100 s long

is triggered at 18:55:41.281 in the North-facing detector. The event lasted 100 seconds and consisted of multiple hard peaks.

November 11 1997 08:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 06:00 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 12 1997 13:37 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

From kraken@rosserv.gsfc.nasa.gov Fri Nov 21 07:47 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 21 Nov 1997 10:48:31 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts *NOT* seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

The following bursts were not seen by TGRS, in either burst or waiting mode data.

Pete

November 9 1997 06:41 Ulysses time; weak burst, 64 ms long
November 10 1997 18:38 " " ; moderate burst, 100 s long
November 11 1997 08:04 " " ; weak burst, 64 ms long
November 12 1997 06:00 " " ; weak burst, 64 ms long
November 12 1997 13:37 " " ; weak burst, 64 ms long
November 13 1997 05:38 Ulysses time; weak burst, 100 ms long

From SURASAK@SSLLES.MSFC.NASA.GOV Fri Nov 14 09:40:48 1997
Date: Fri, 14 Nov 1997 11:38:32 -0600 (CST)
From: SURASAK@SSLLES.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, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6474

TIME: TJD=0765 SECONDS=10969

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From SURASAK@SSLLES.MSFC.NASA.GOV Fri Nov 14 09:41:39 1997
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Fri, 14 Nov 1997 11:40:20 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6475

TIME: TJD=0765 SECONDS=17030

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From SURASAK@SSLLES.MSFC.NASA.GOV Fri Nov 14 11:17:20 1997
Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA13893; Fri, 14 Nov 1997 11:17:14 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA18760; Fri, 14 Nov 1997 11:16:53 -0800
Date: Fri, 14 Nov 1997 13:15:53 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971114131553.202172a5@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6476
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

Too weak

BATSE BURST # 6476
EVENT OF 1997 NOV 13 DAY OF YEAR=317
EVENT CROSSING TIME AT BATSE : 58130. S. OR 16:08:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 217.000 -77.000
BATSE PEAK COUNTING RATE: 59000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/11/ 97 IS:
RA= 170.016 DEC= 13.096 DIST= 5.657 AU
BATSE-ULYSSES DISTANCE = 846238131. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 201.29 SECS.
CROSSING TIME AT ULYSSES IS 58331. S. OR 16:12:11 +/- 541.88 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/11/ 97 IS:
RA= 273.129 DEC= -24.660 DIST= 1.968 AU
MARS-BATSE DISTANCE = 294442624. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -511.18 SECS.
CROSSING TIME AT MARS IS 57619. S. OR 16:00:18 +/- 137.84 SECONDS

BATSE BURST TRIGGER

NO.: 6476

TIME: TJD=0765 SECONDS=58130

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.6 AZIMUTH=53.7 ERROR=0.9 DEGREES

COMMENTS:

GRB.COMPLEX, DURATION ABOUT 80 S. STARTS AT ABOUT T-20S. MAX AT ABOUT T+2.7S.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6476	971113	10765	58130	59000	217	-77	80

Date: Feb 8 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

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

2. BATSE Data

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

3. NEAR Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

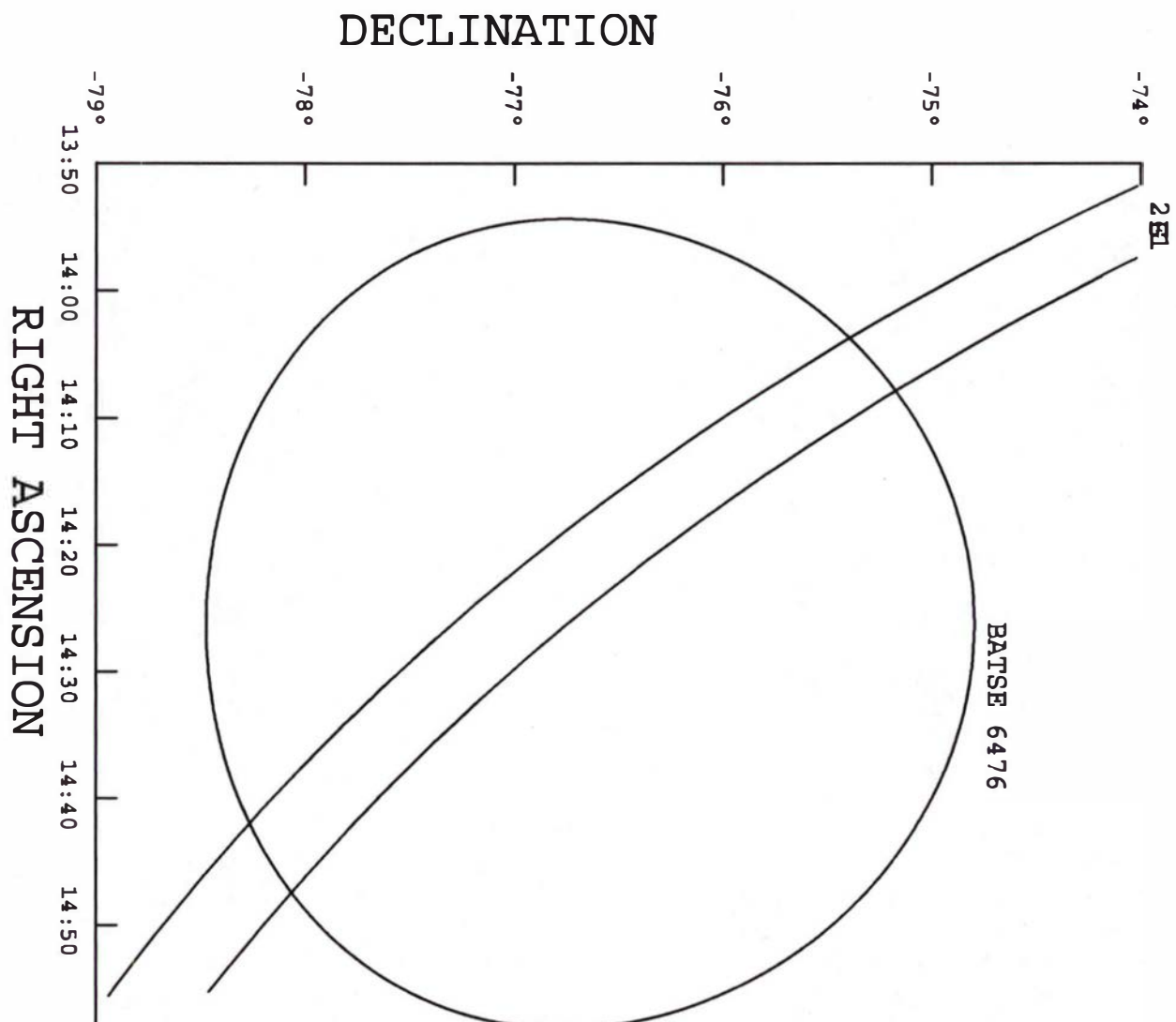
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF NOV 13, 1997 16:08

8 / 2 / 0

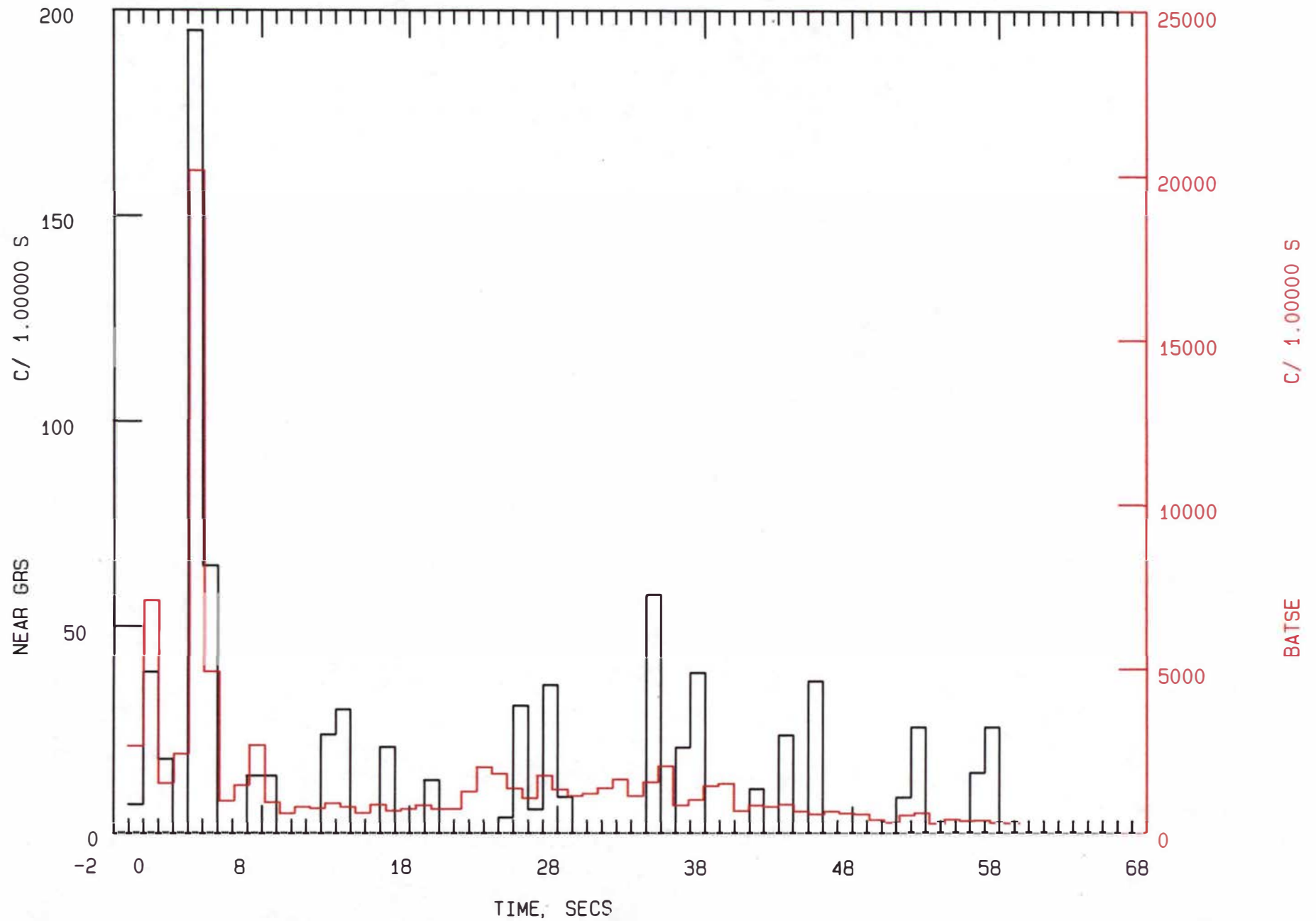


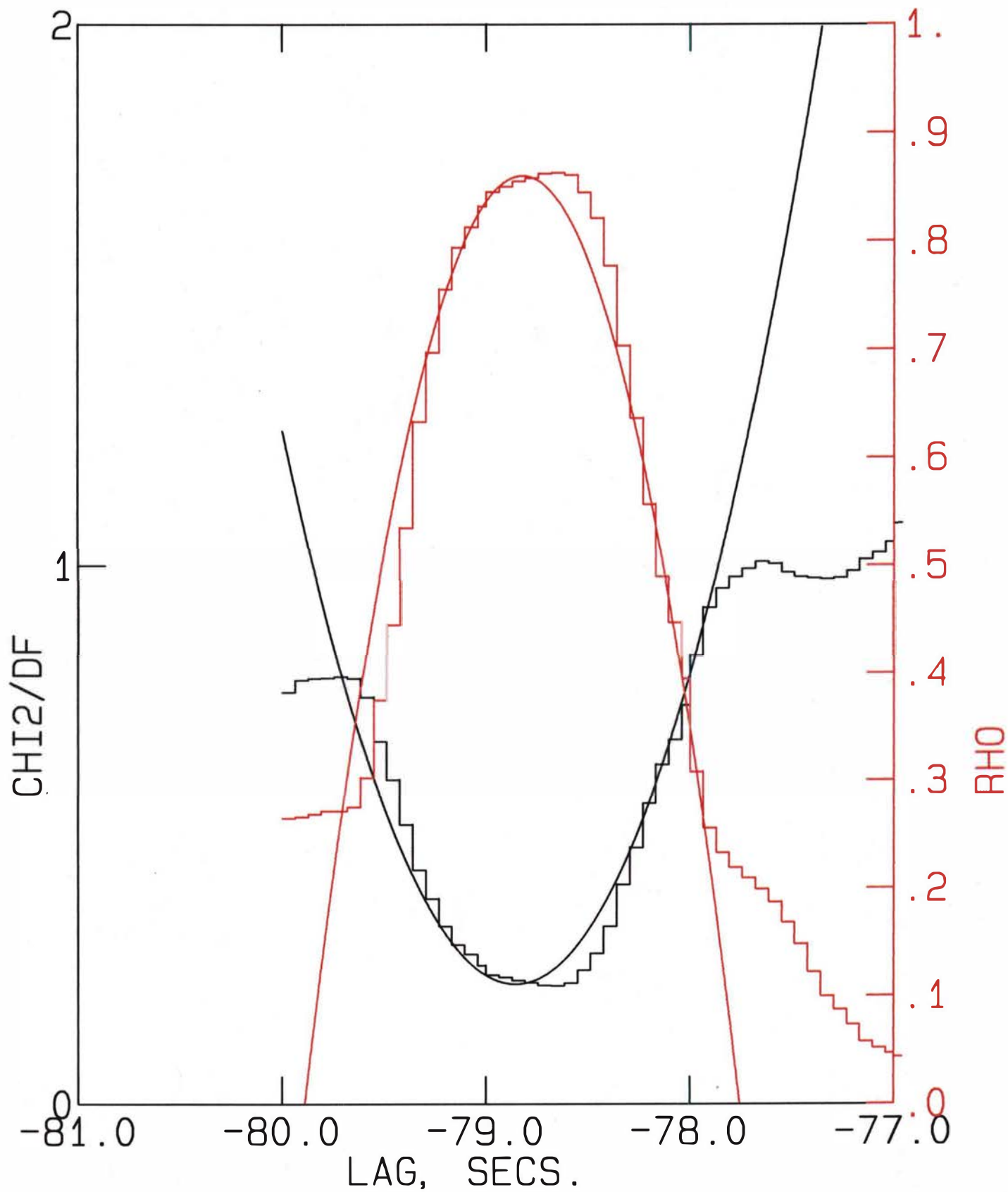
NEAR GRS -BATSE

CORRELATION

13/11/97 58229.300

8/ 2/ 0



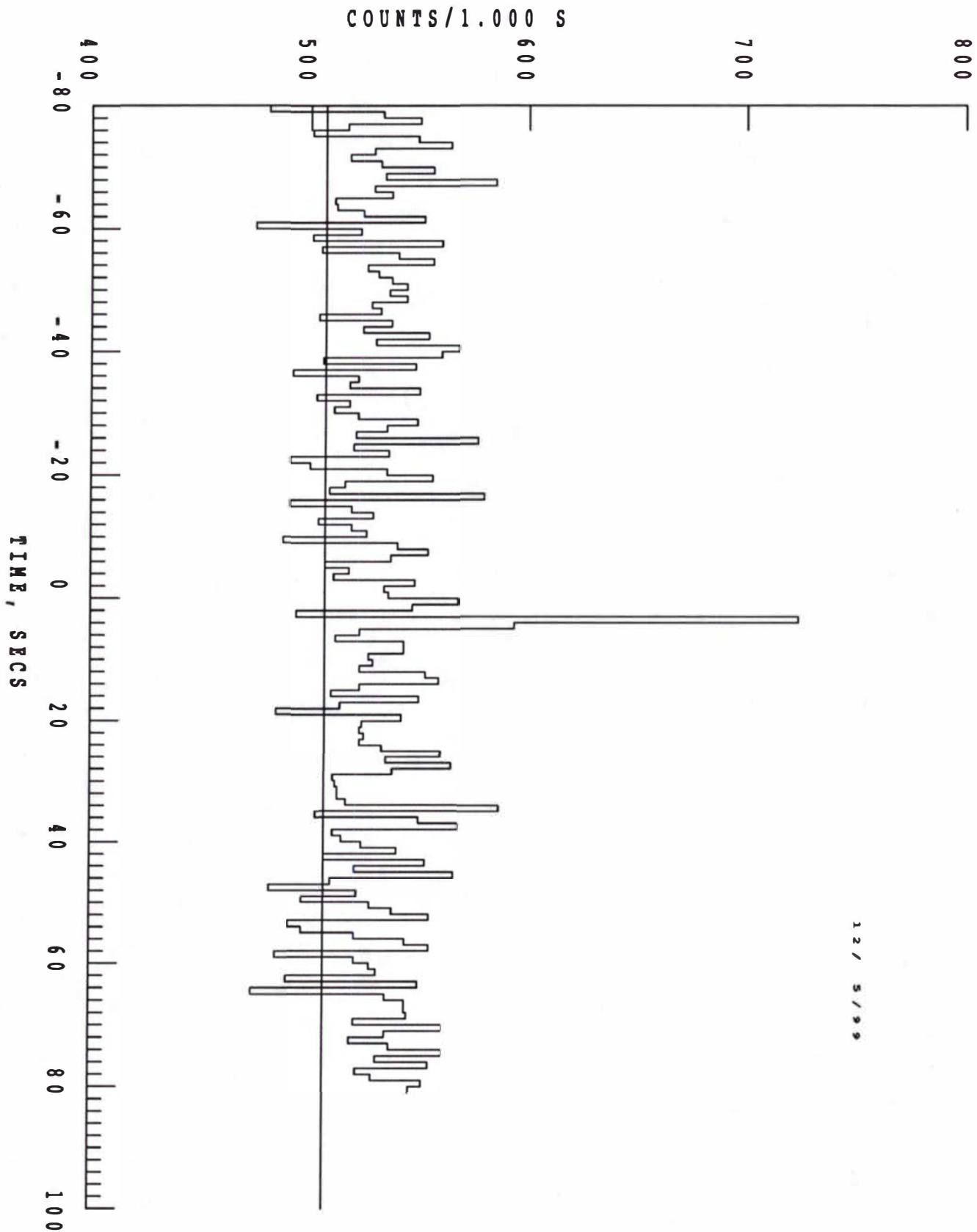


NEAR

13/11/97

58229.300

100-1000 keV



12 / 5 / 99

KNEAR GRS 19971113 58229

ULYSSES RT

12 / 5 / 99

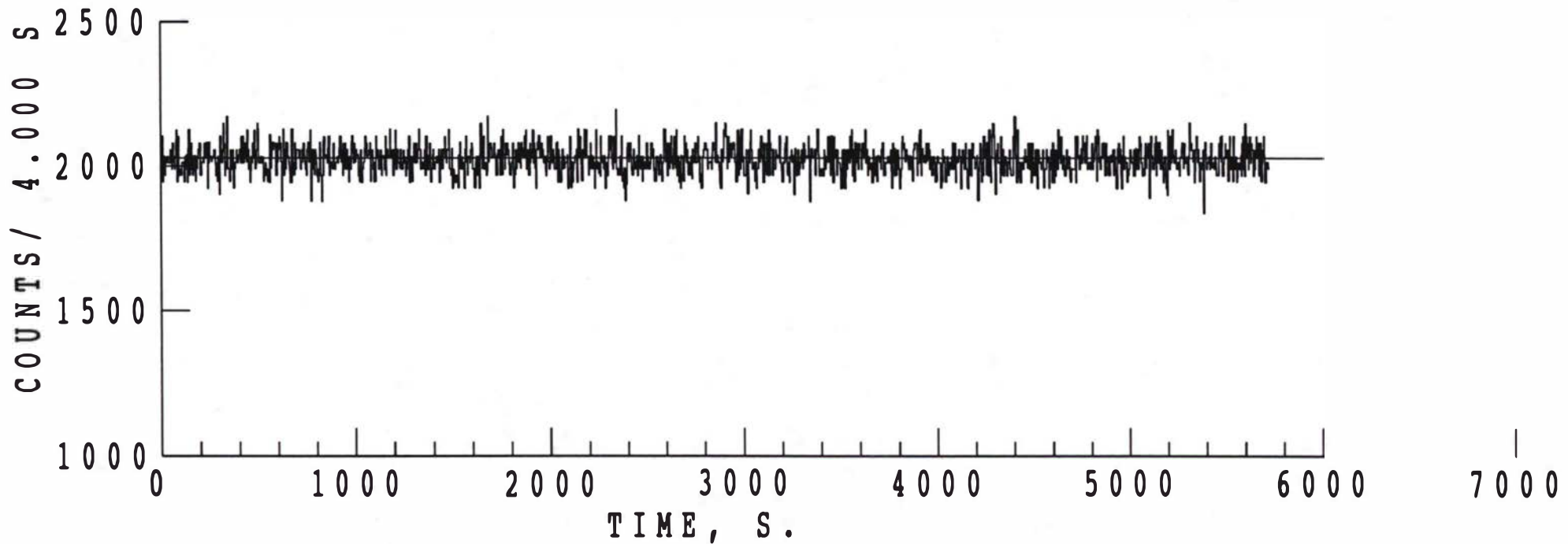
13/11/97 55368.105 s

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 BURST# 6476

ULYSSES RT

14 / 11 / 97

13 / 11 / 97 57780.129 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

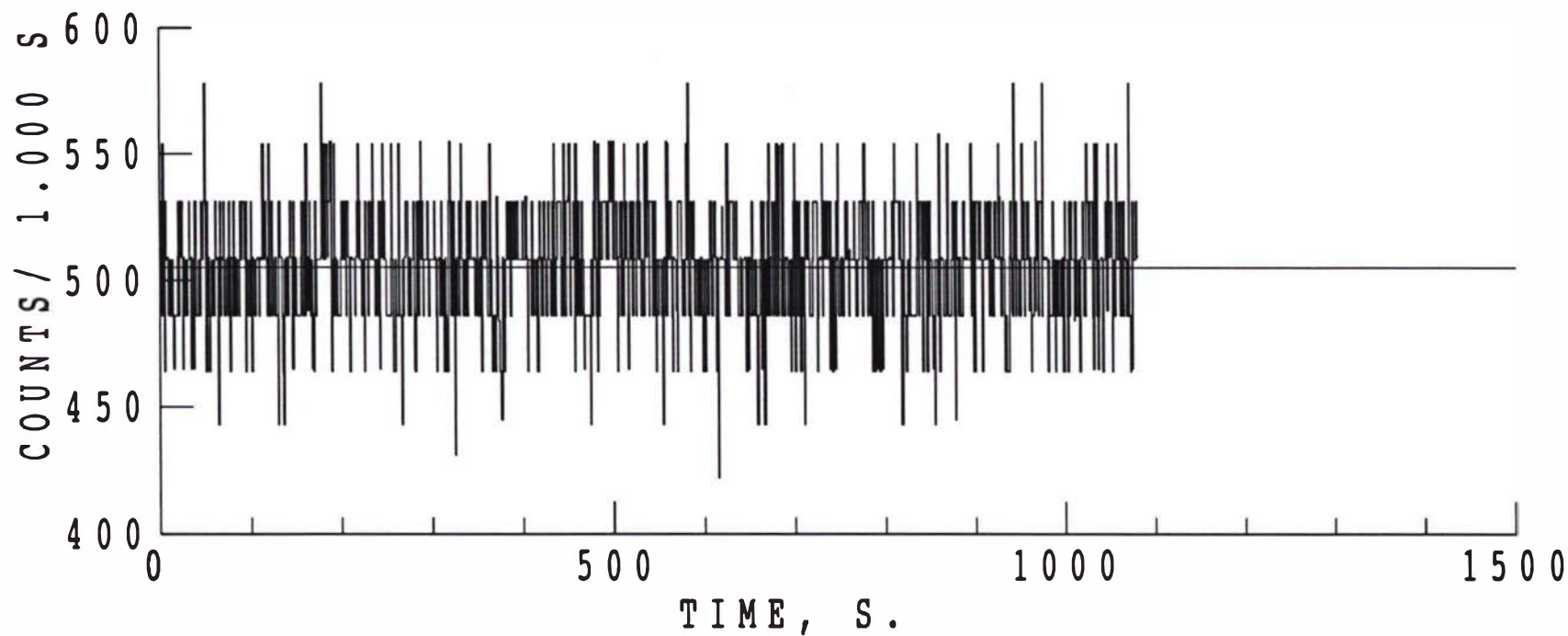
N= 10 M=10

>4.0 SIGMA FLUCTUATIONS

I

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



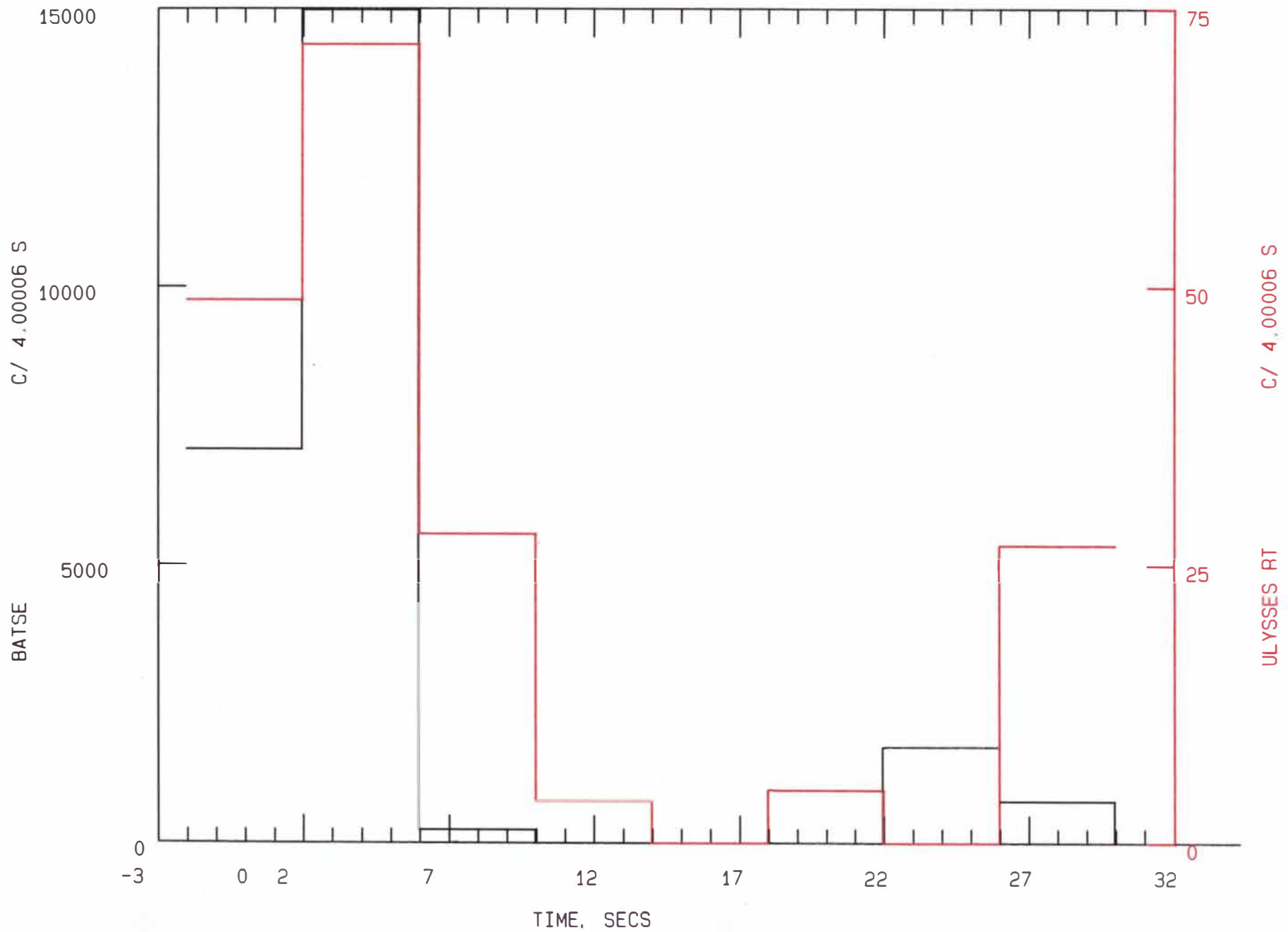
BATSE

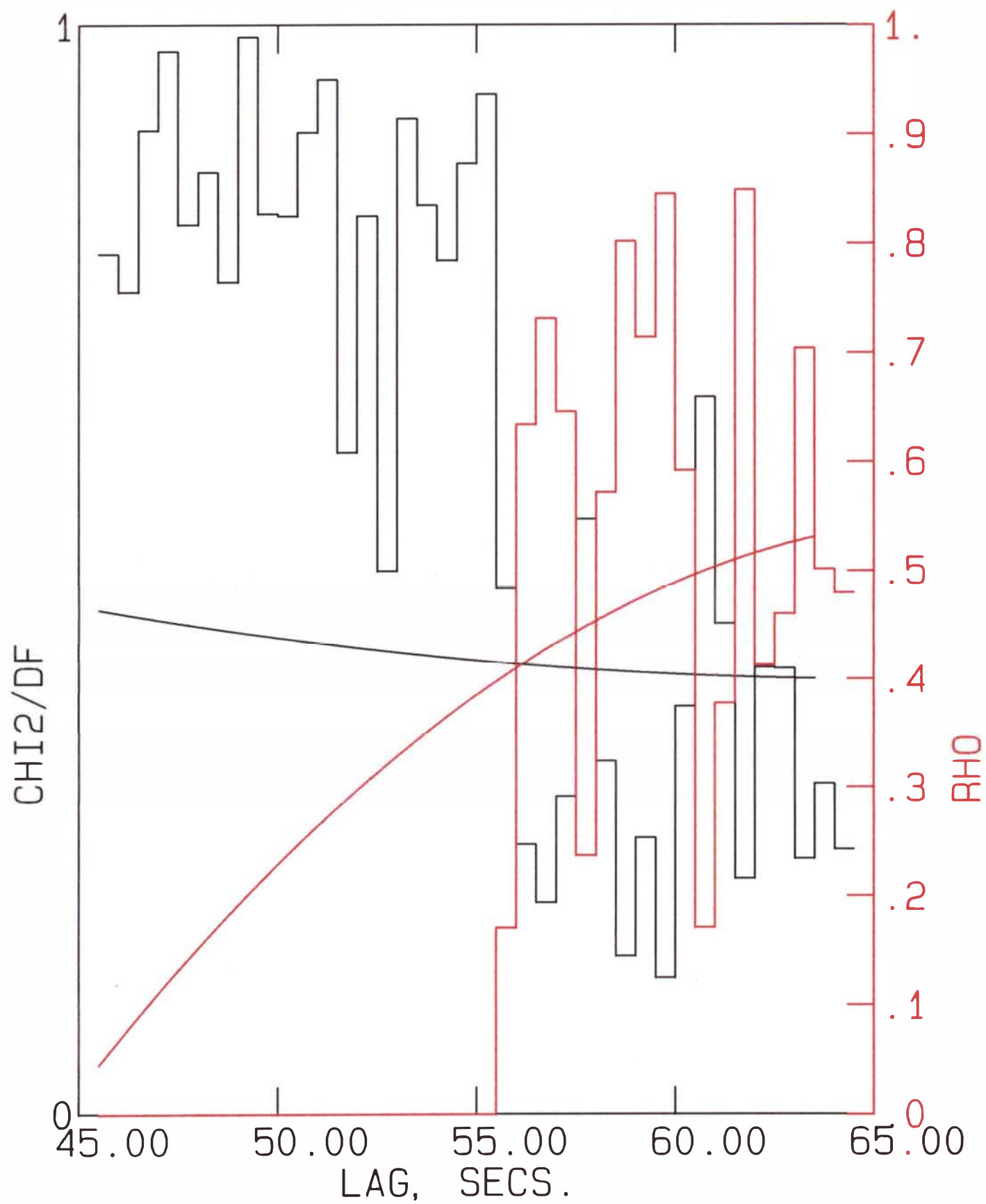
-ULYSSES RT CORRELATION

13/11/97

58130.849

29/11/97





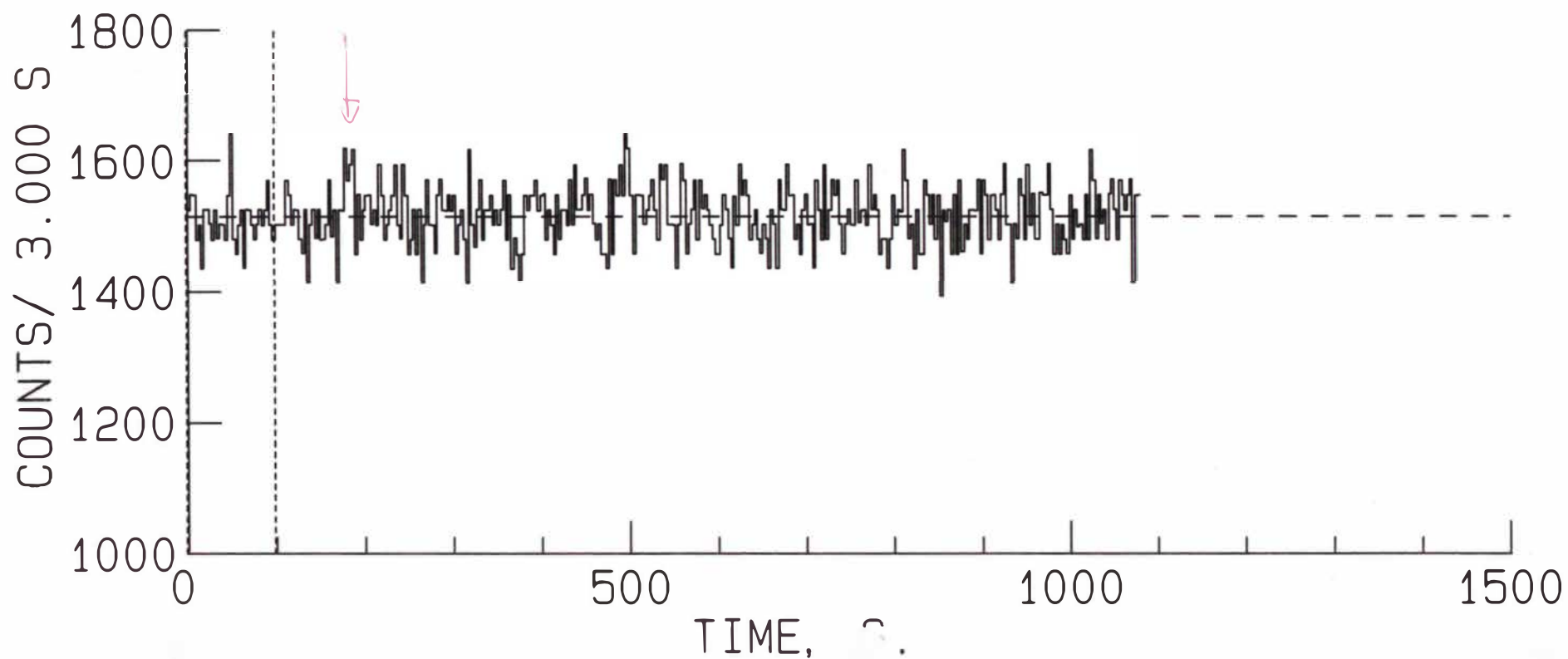
ULYSSES RT

29 / 11 / 97

13/11/97 57780.128 s

0.500 S INTERVALS REGROUPED BY 6

22- 147 keV



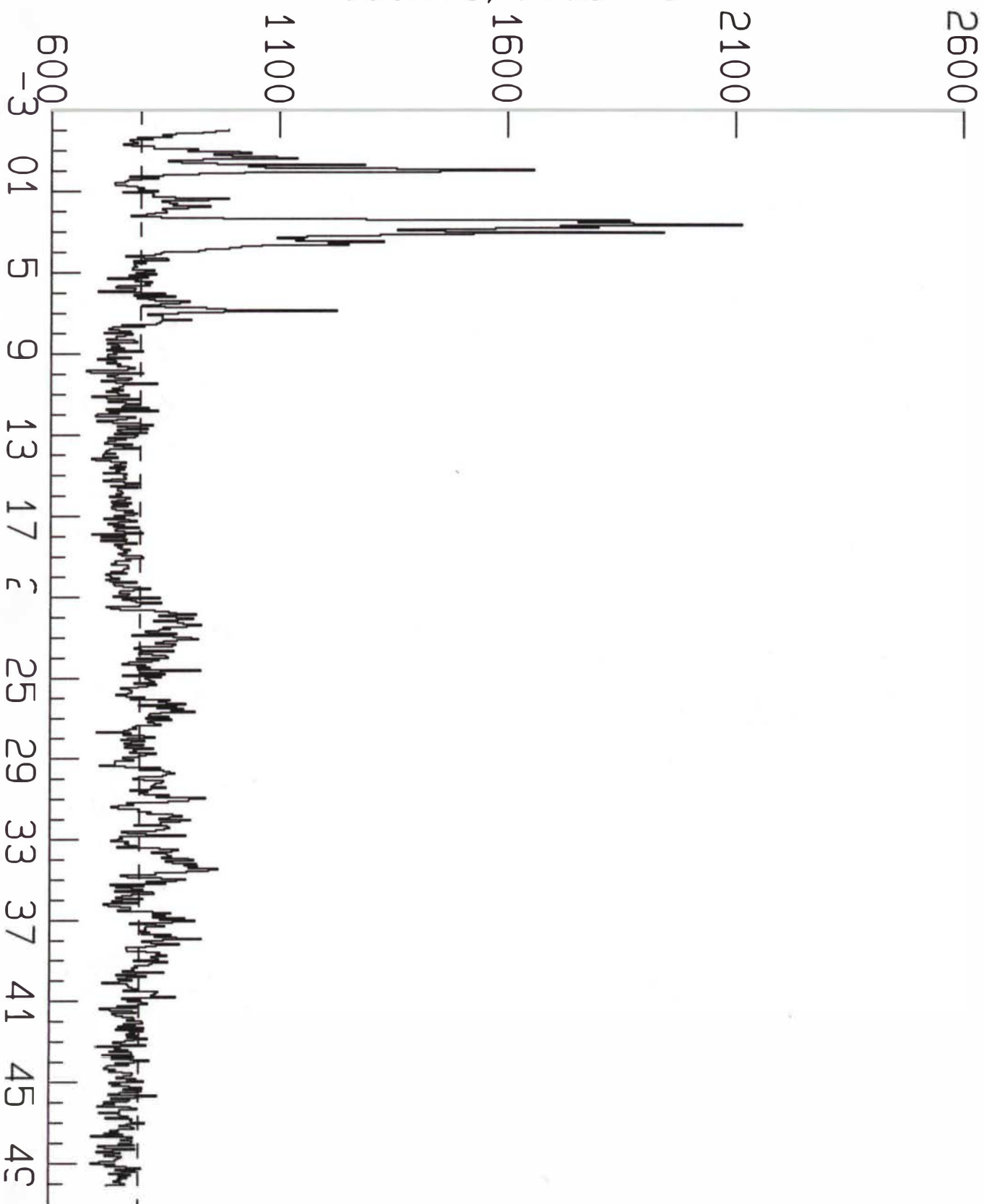
BATSE

13/11/97

58130.849

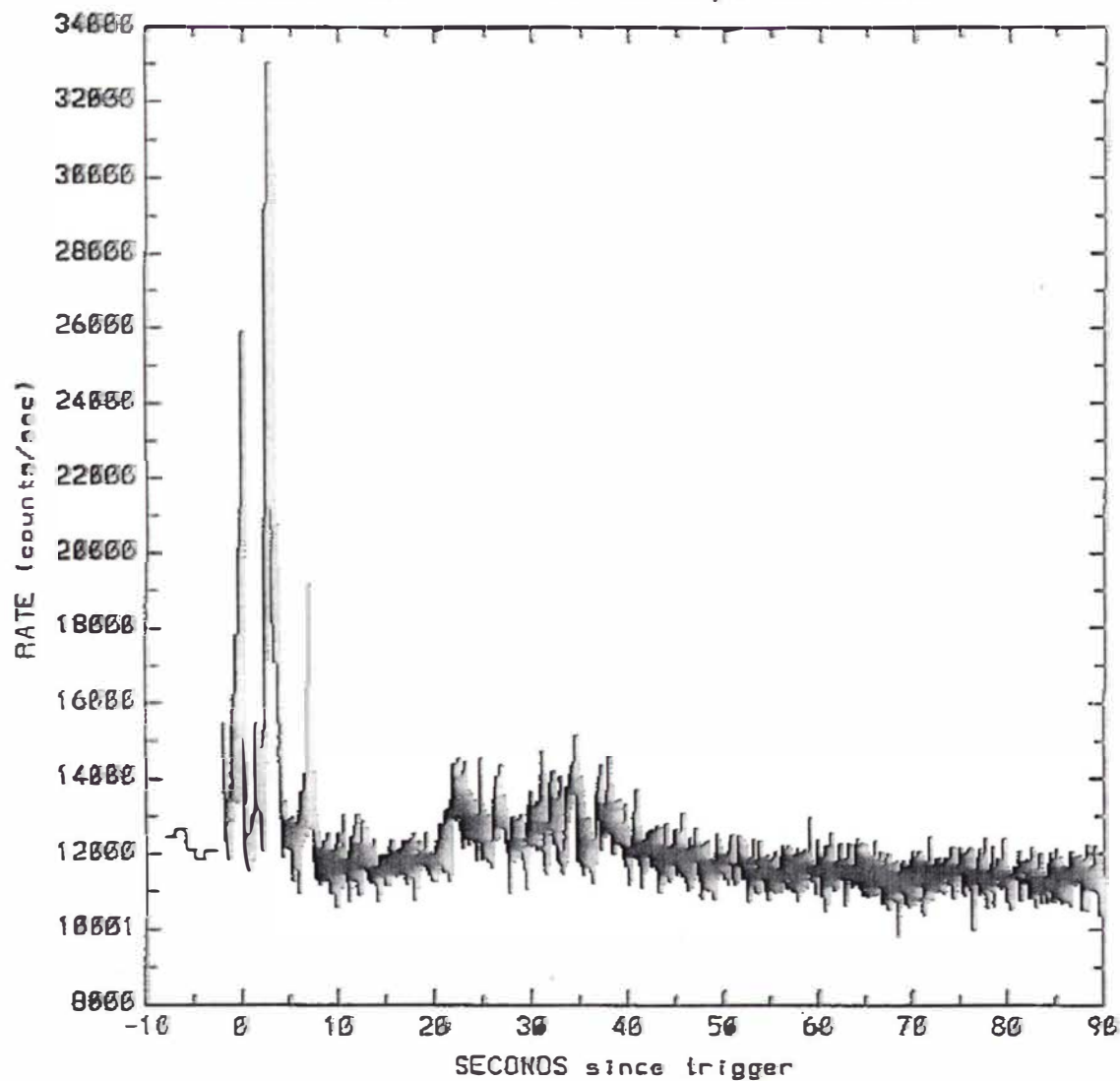
25- 100 keV

COUNTS/0.064 S



29/11/97

DISCSC Data for K. Hurley, No. 6476



20-KY-1997 09:25:14

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger # = 6476

Trigger Time:
18765 / 50130.849Burst Data Type:
DISCSCDeadtime:
Corrected: 11
Background Data
Type: PREB + DISCSC
Kinetic Integ. Time:
0.854 secondsDetectors (7.0):
--54--10Discriminators:
(1 + 2)Quality Mask:
BDISP1

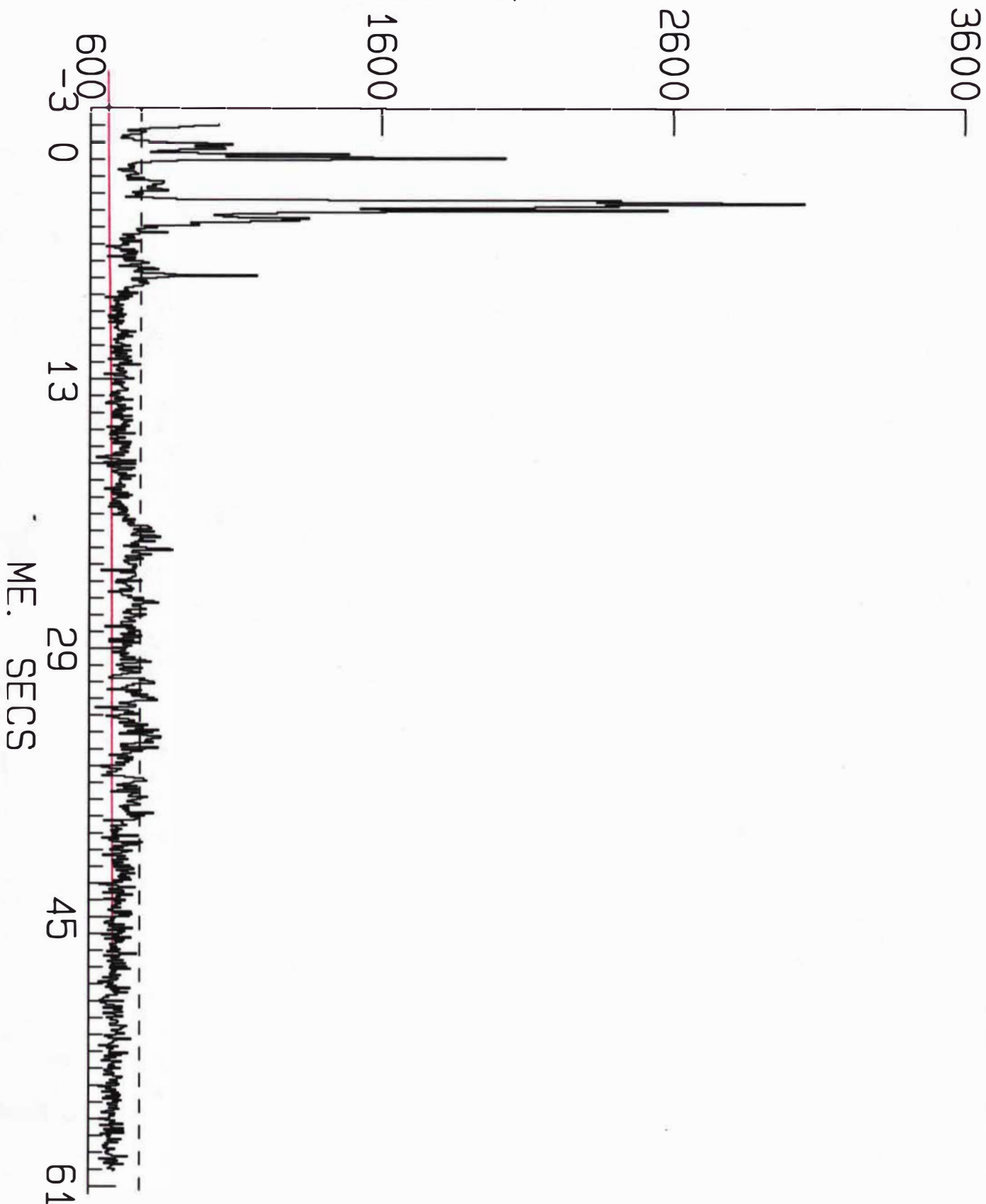
BATSE

13/11/97

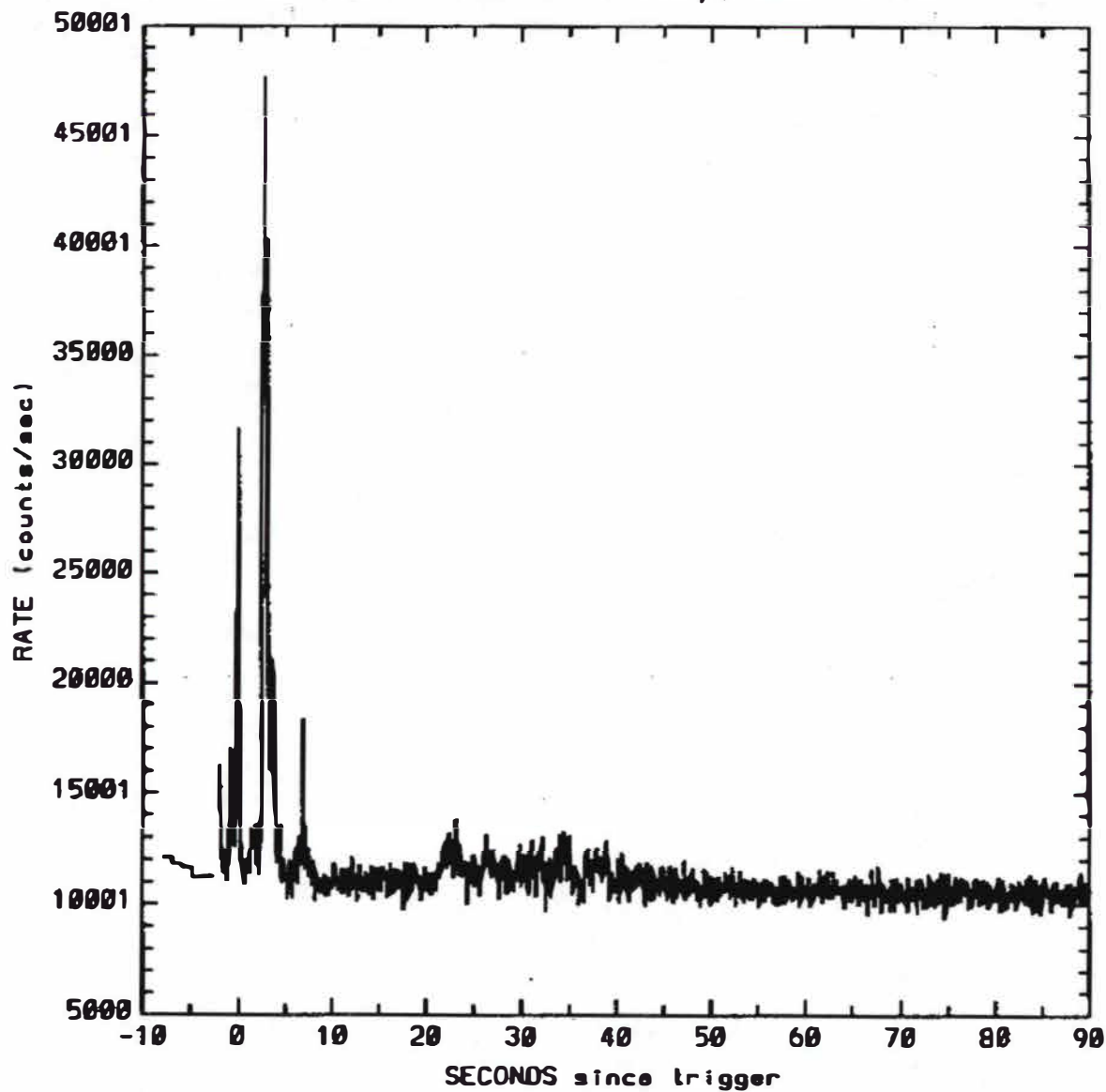
58130.849

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6476



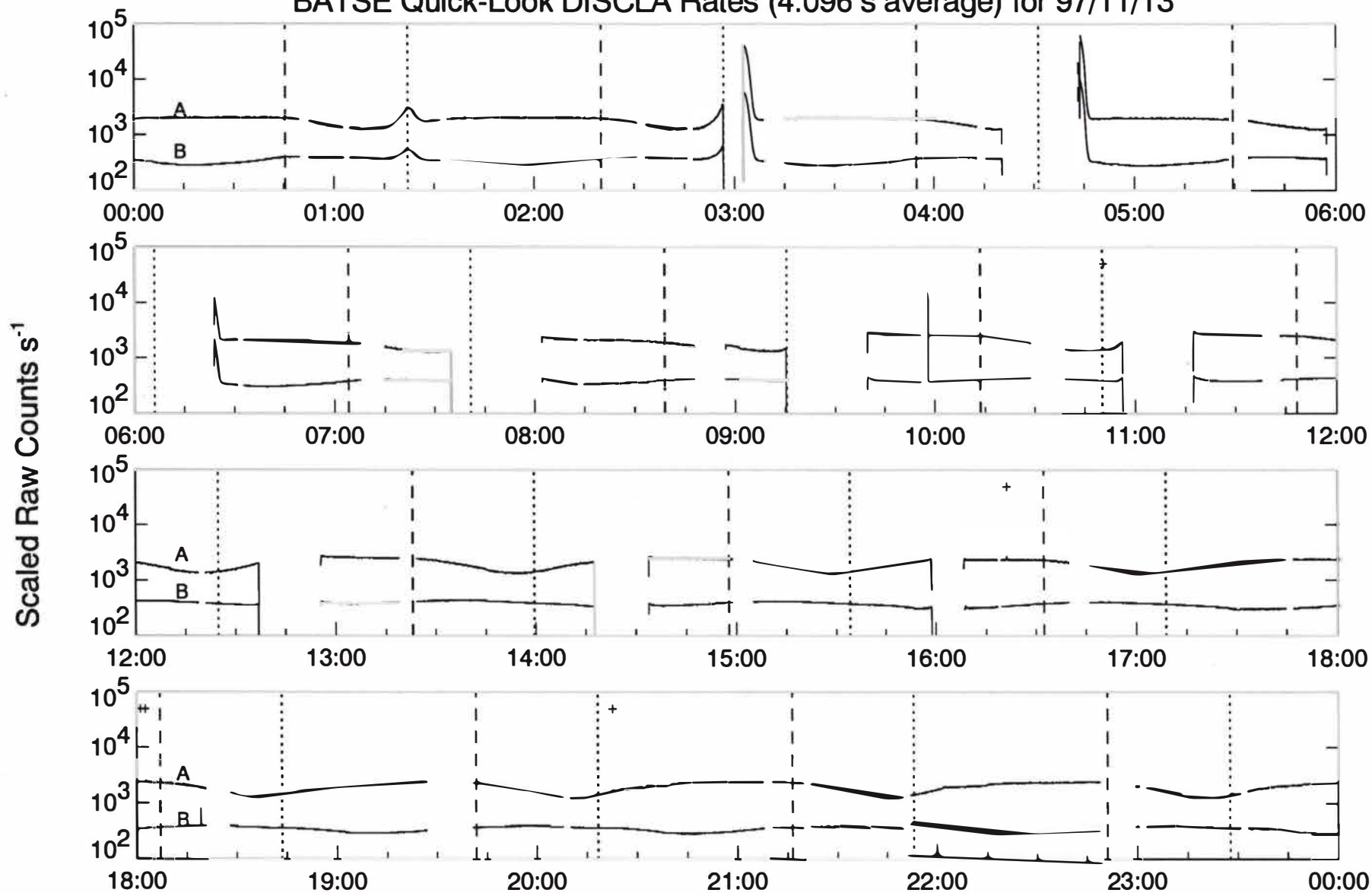
21-JAN-2000 15:00:43

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

Trigger # . 6476

Trigger Time:
10765 / 58130.849Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors (7..0):
--54--18Discriminators:
(3 . 4)Quality Mask:
80ISPI

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/13



Current Time: 97/11/17, 1009 EDT

A: Channel 0 Most Sunward LAD

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

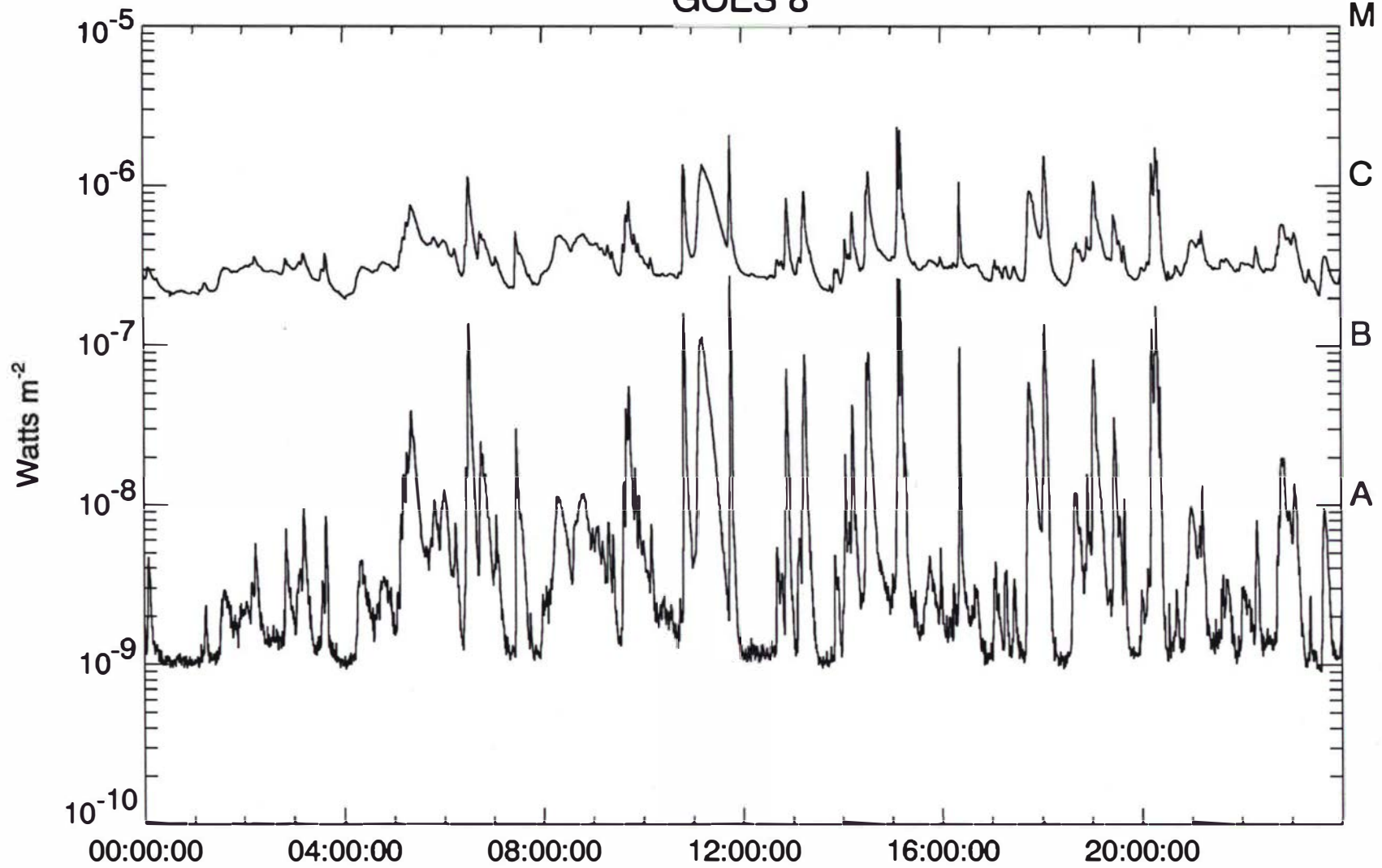
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 97/11/13, 0000:00

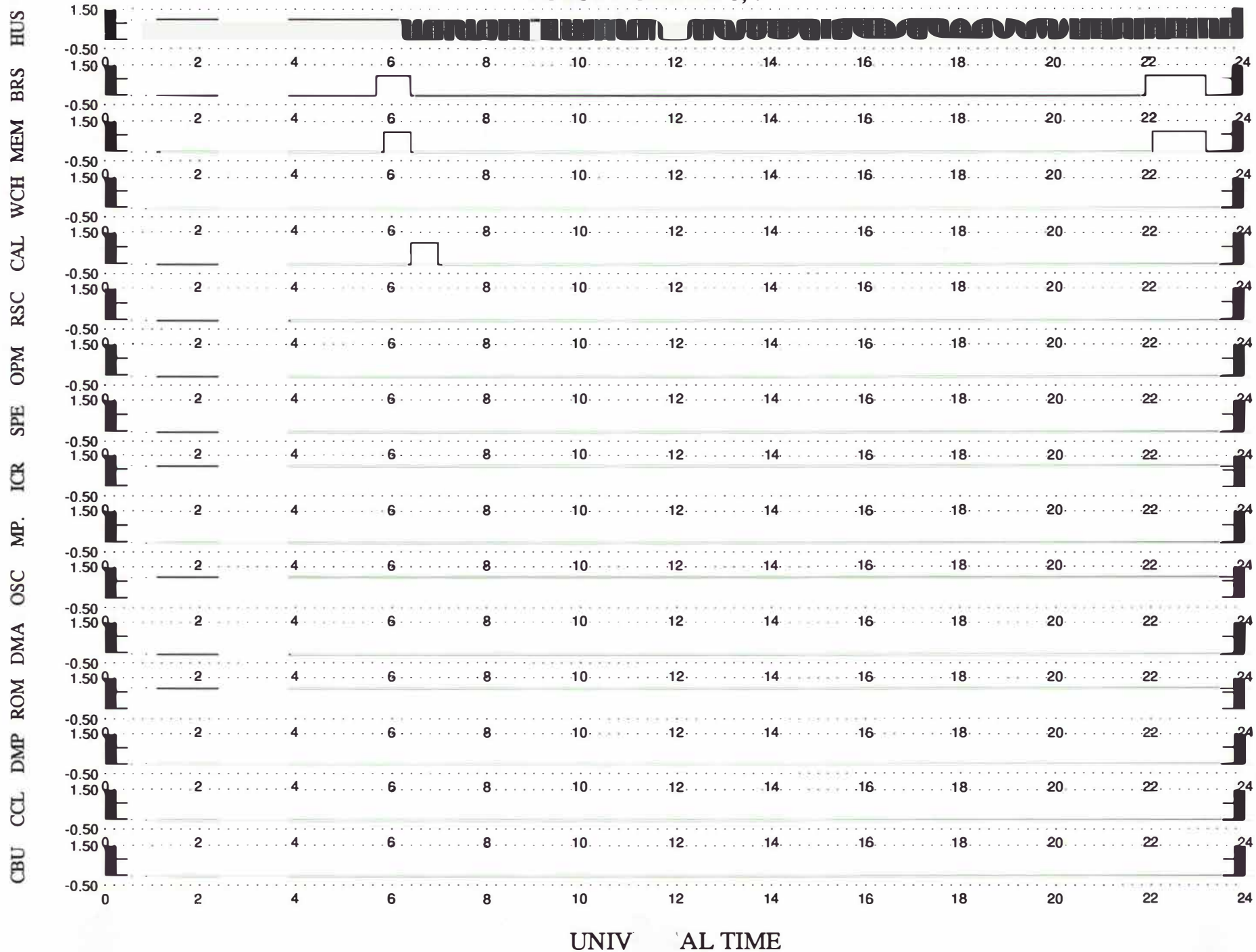
Plot created: 97/11/17, 1007

Channel

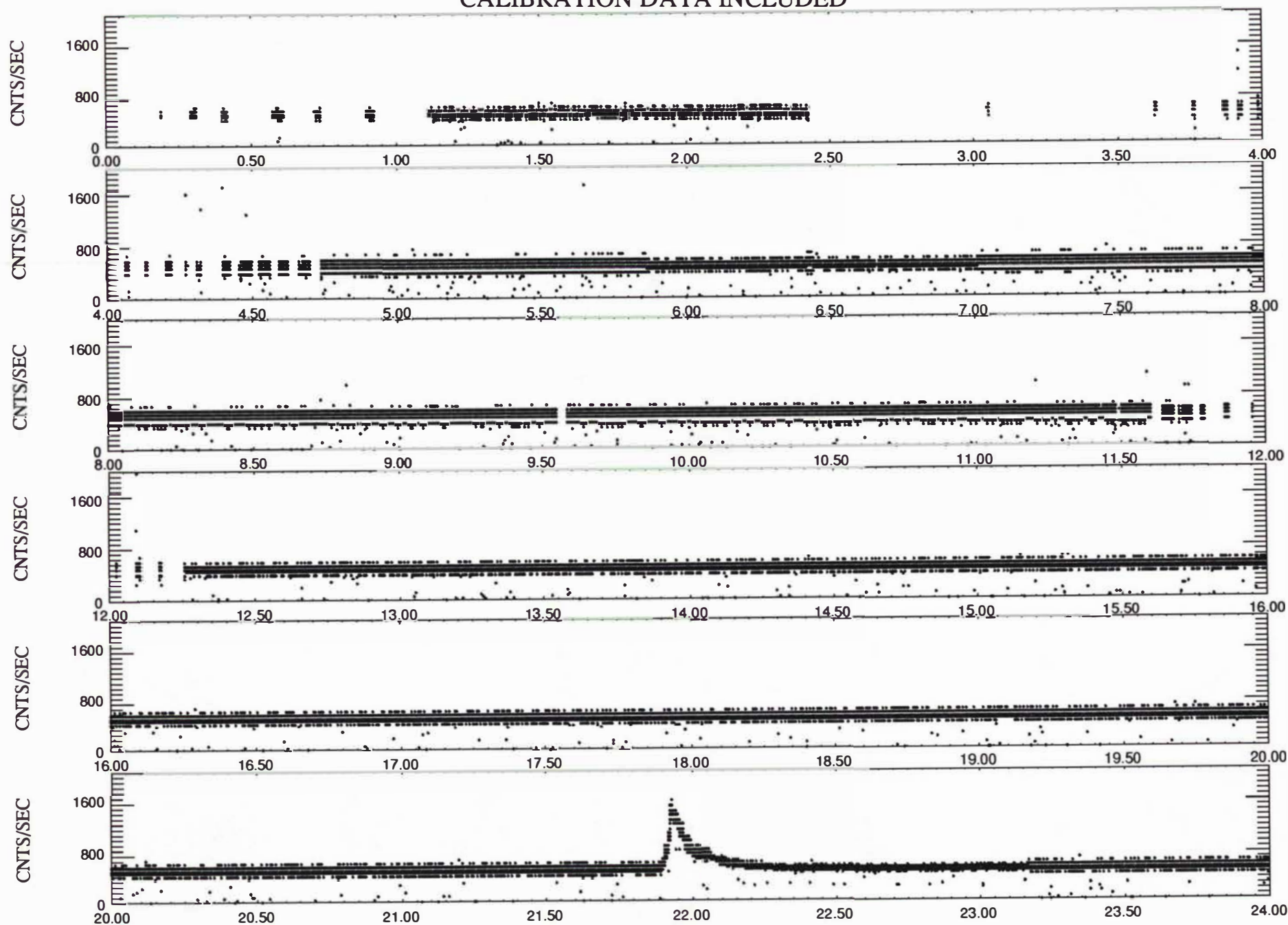
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 6, 7

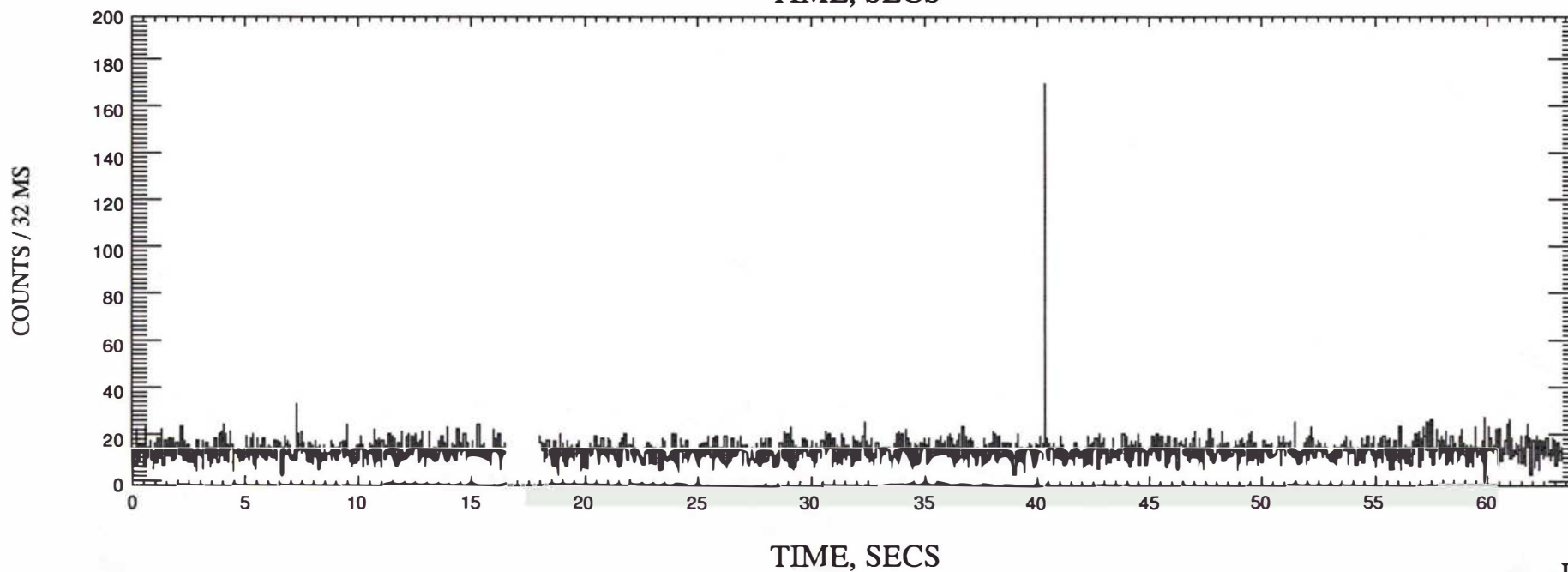
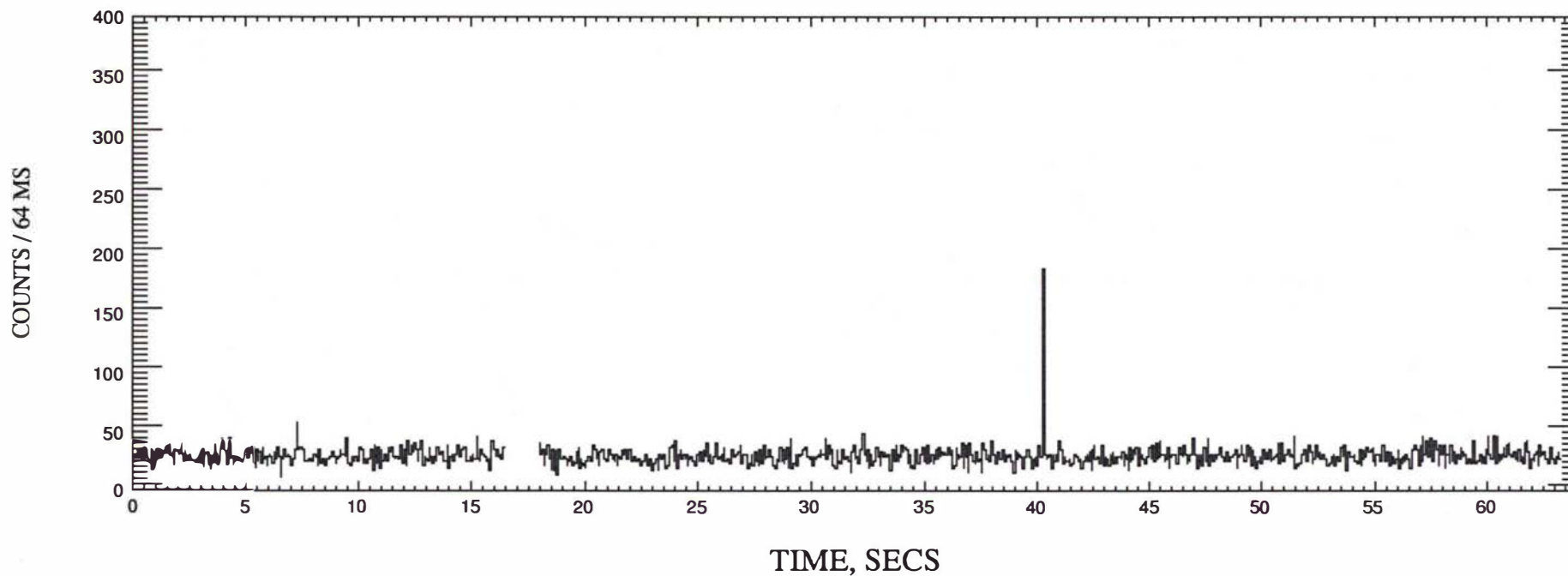


CALIBRATION DATA INCLUDED

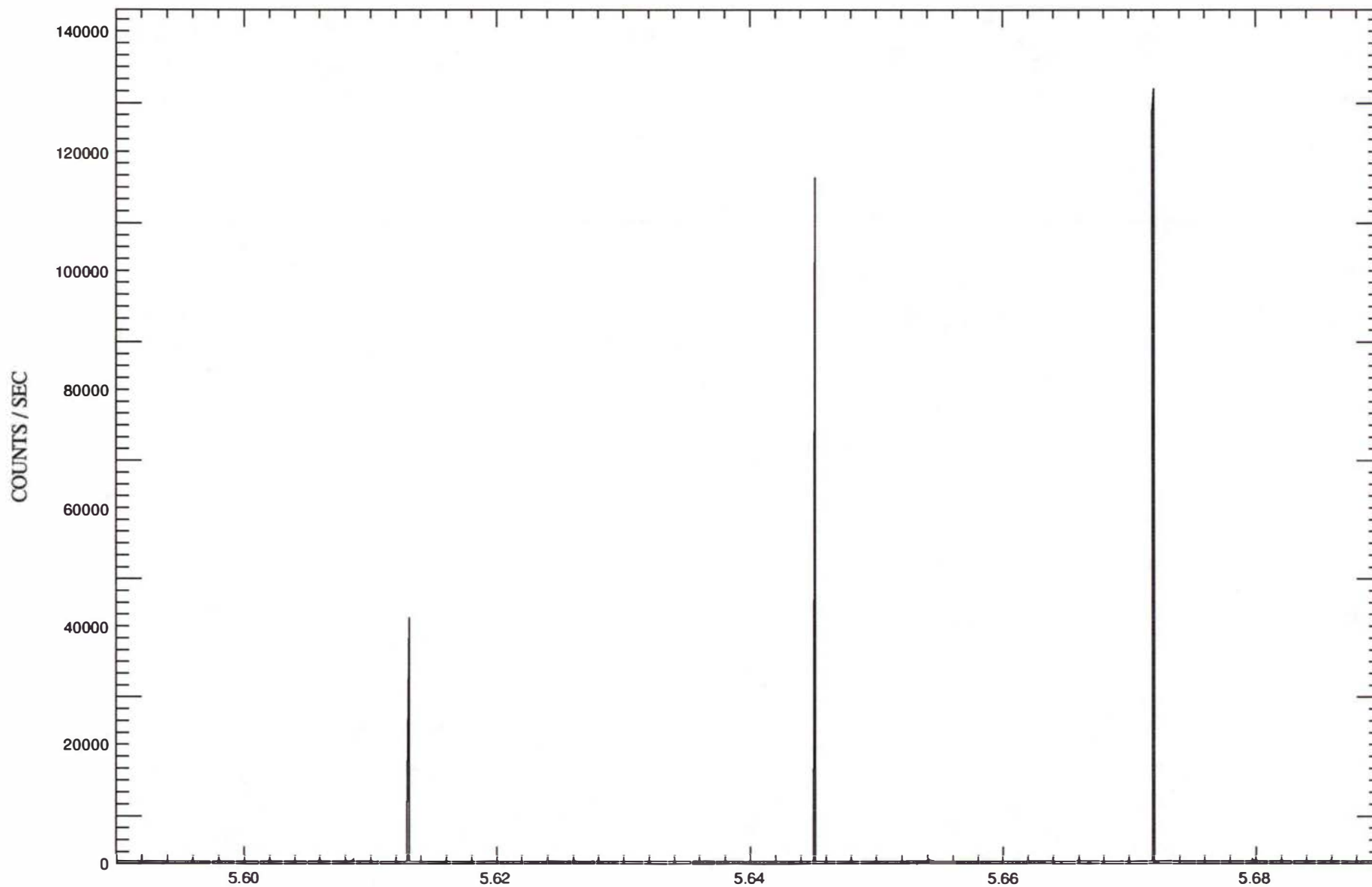


UNIVERSAL TIME

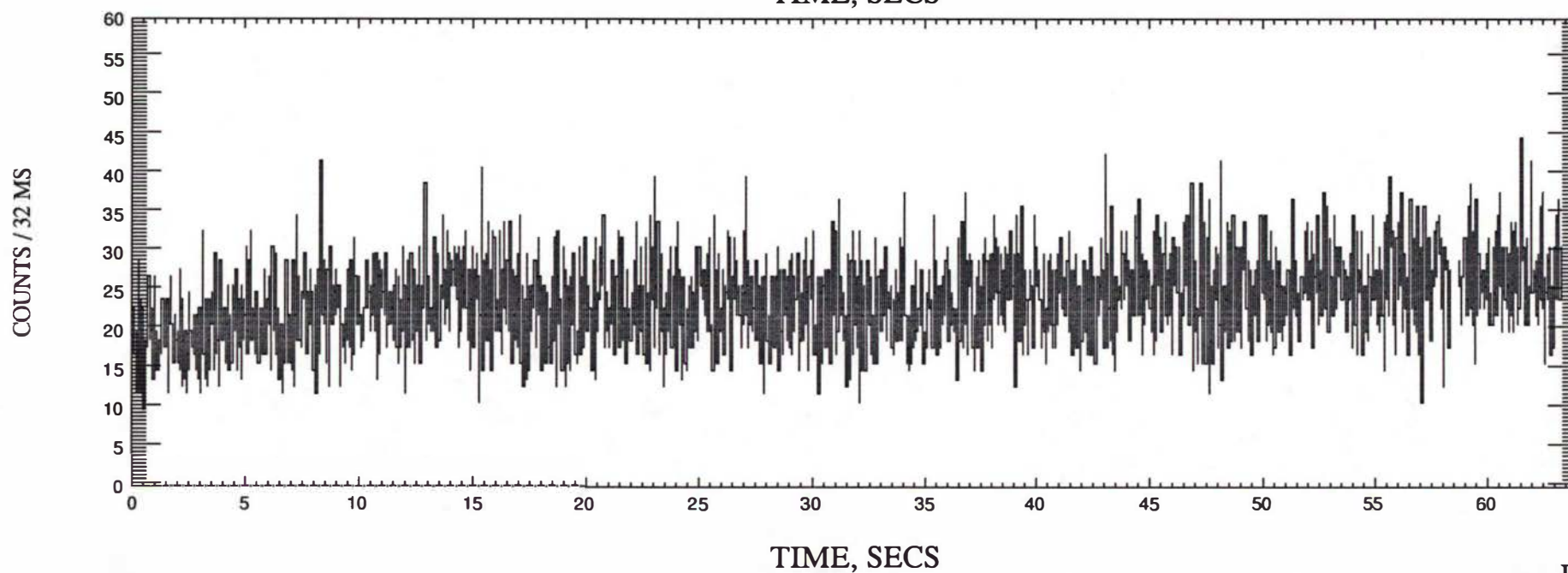
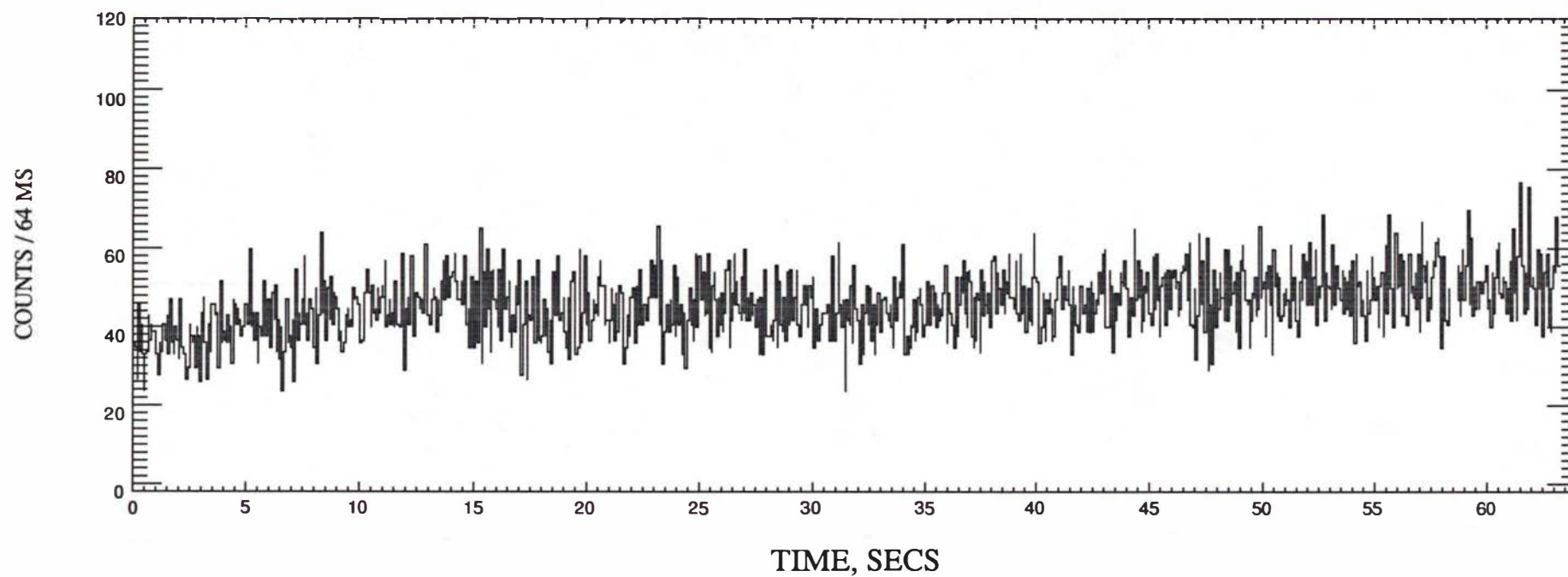
Burst Counter 6 at UT= 5.637346225315 h=20294.446 s 05:38:14.446



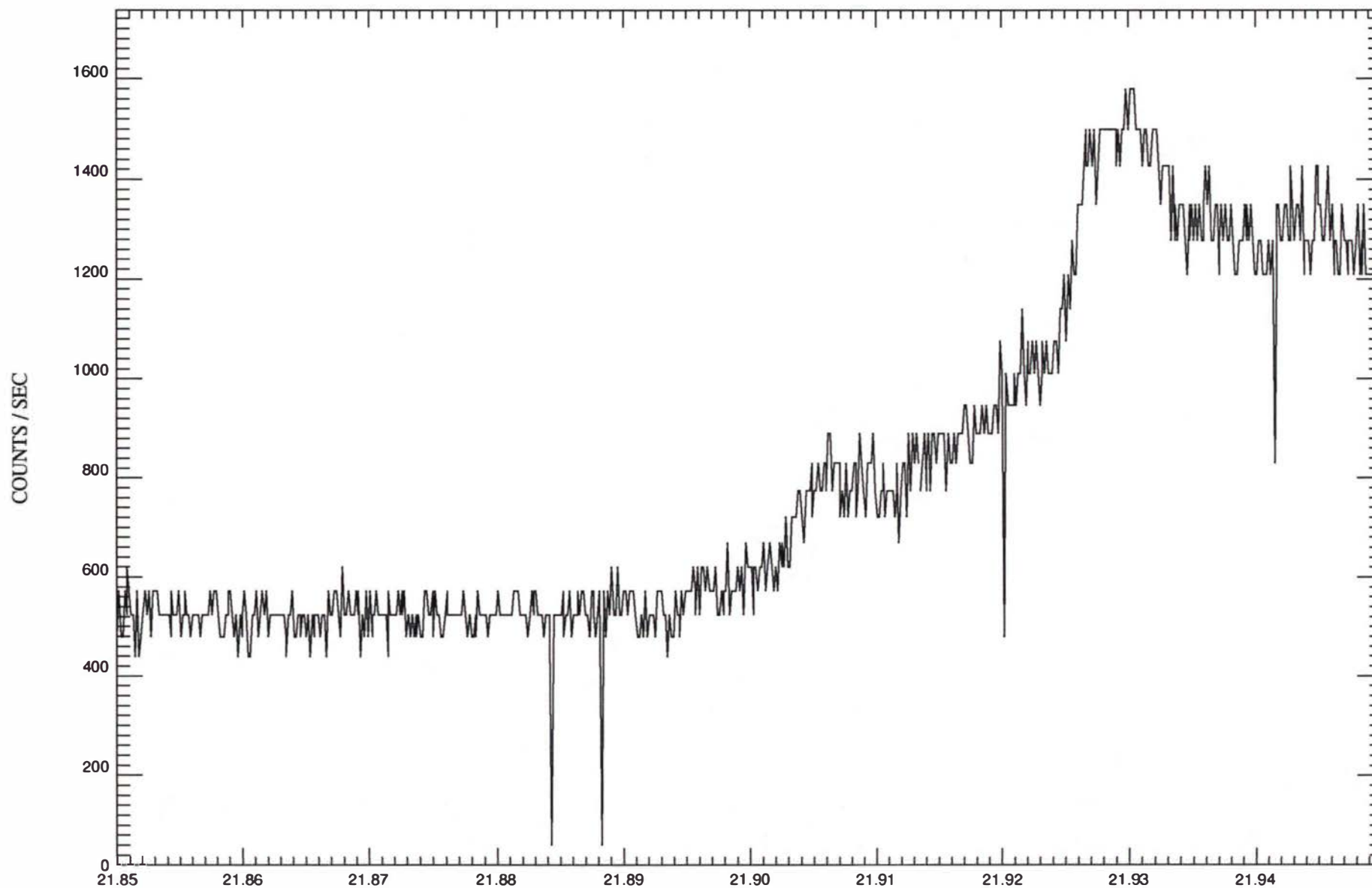
CALIBRATION DATA INCLUDED

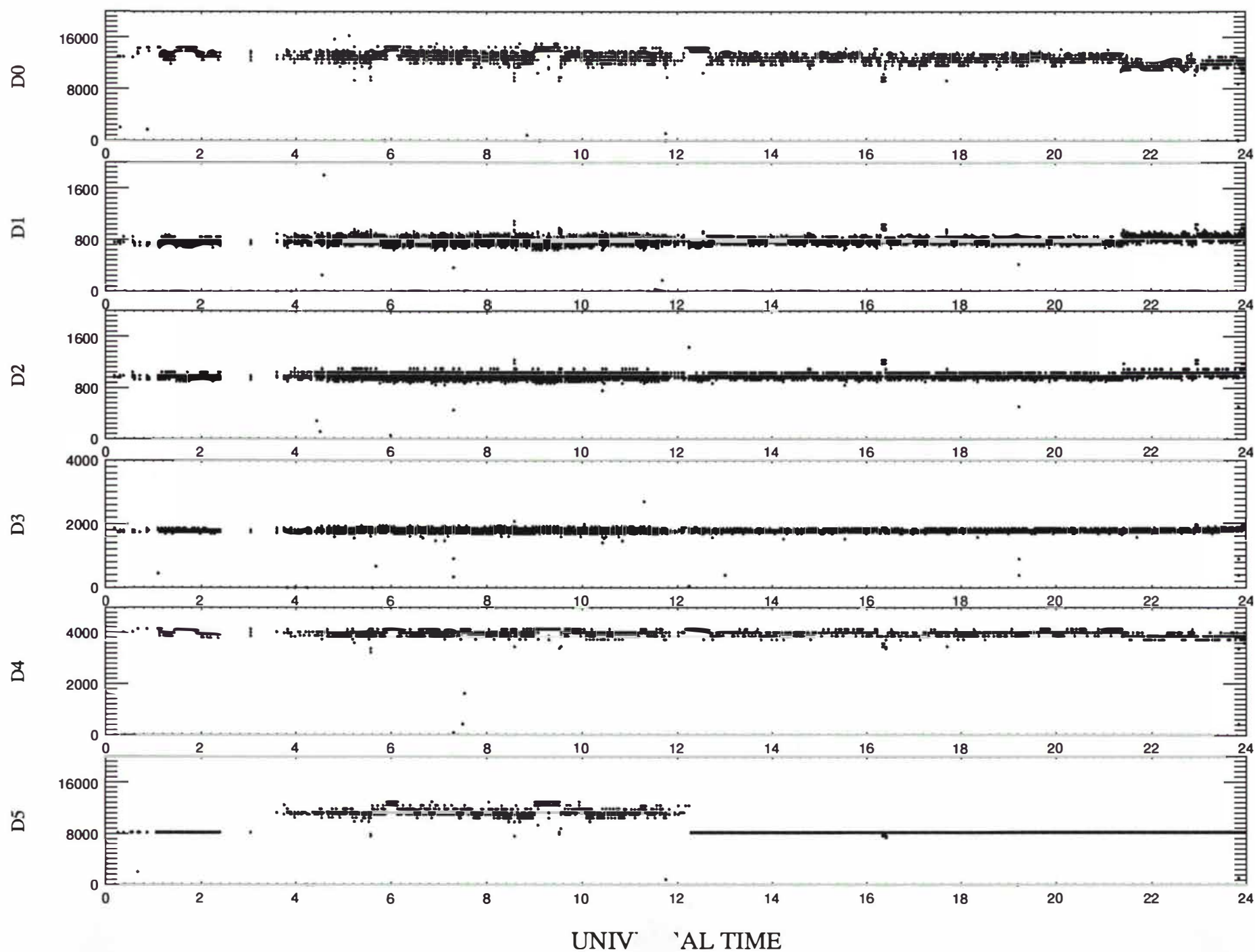


Burst Counter 7 at UT=21.904473203023 h=78856.104 s 21:54:16.104



CALIBRATION DATA INCLUDED





From RICHARDSON@SSLMOR.msfc.nasa.gov Mon Nov 17 16:55:46 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Mon, 17 Nov 1997 18:54:55 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6477

TIME: TJD=0766 SECONDS=5148

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=89.2 AZIMUTH=358.0 ERROR=0.1 DEGREES

COMMENTS:

SOLAR FLARE. GOES C3.6. OPTICAL SF. LOTS OF STRUCTURE. NOT VISIBLE ABOVE
300KEV.

Date: Aug 24 '04

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; when there is no data in the database, the ephemeris is for the time requested.)
- ☐ Was Mars-blocking used?

2. For 3 Spacecraft events

- ☒ $3\Delta t$'s calculated?

3. For INTEGRAL events

- ☐ 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 database updated?

IPN/GRBM circle inconsistent. IPN/G12BM contours consis.
"other" circle added

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

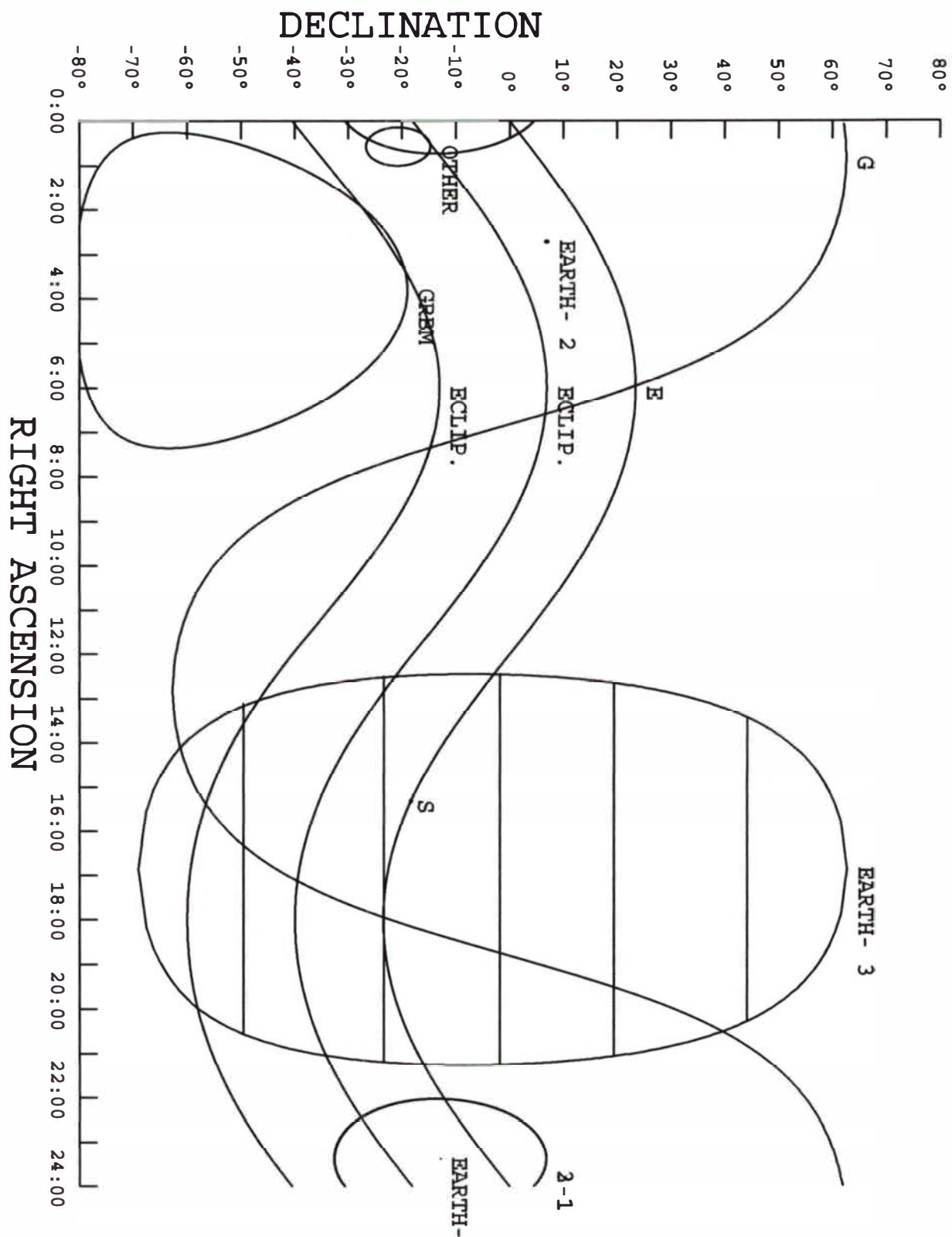
1 ULYSSES

2 KONUS1

3 SAX

EVENT OF NOV 14, 1997 13:04

23 / 7 / 9



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

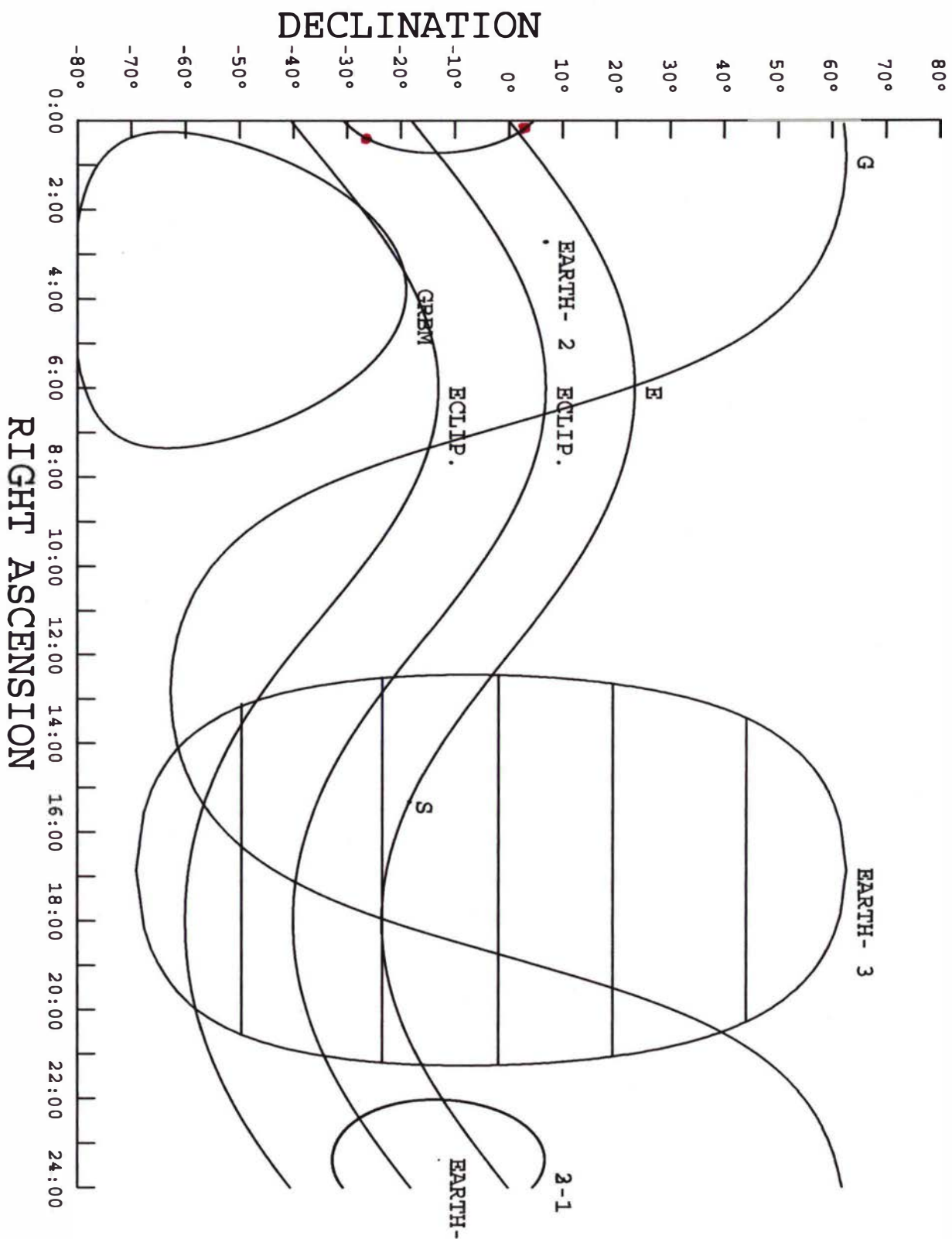
1 ULYSSES

2 KONUS1

3 SAX

EVENT OF NOV 14, 1997 13:04

24 / 8 / 4



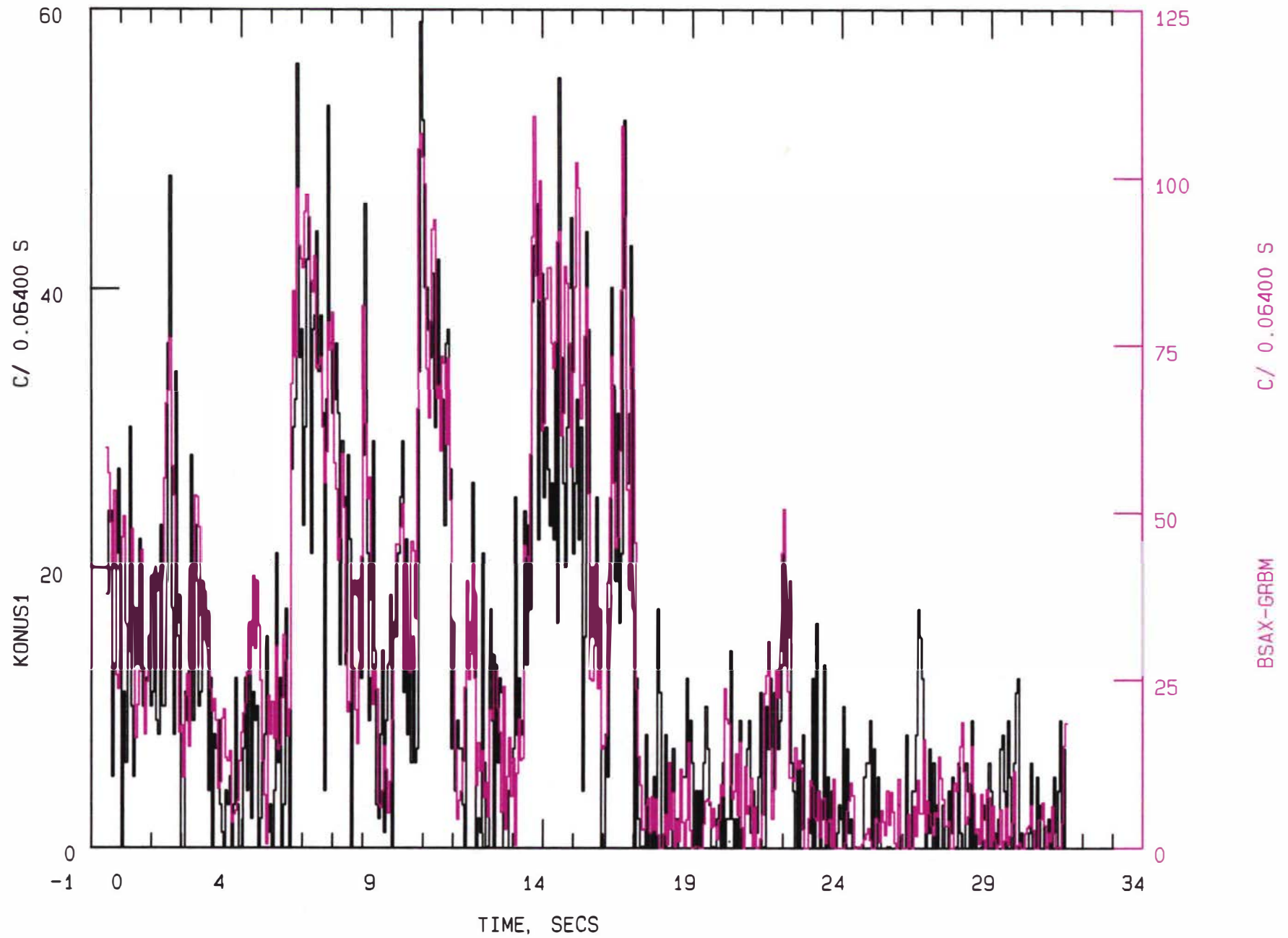
KONUS1

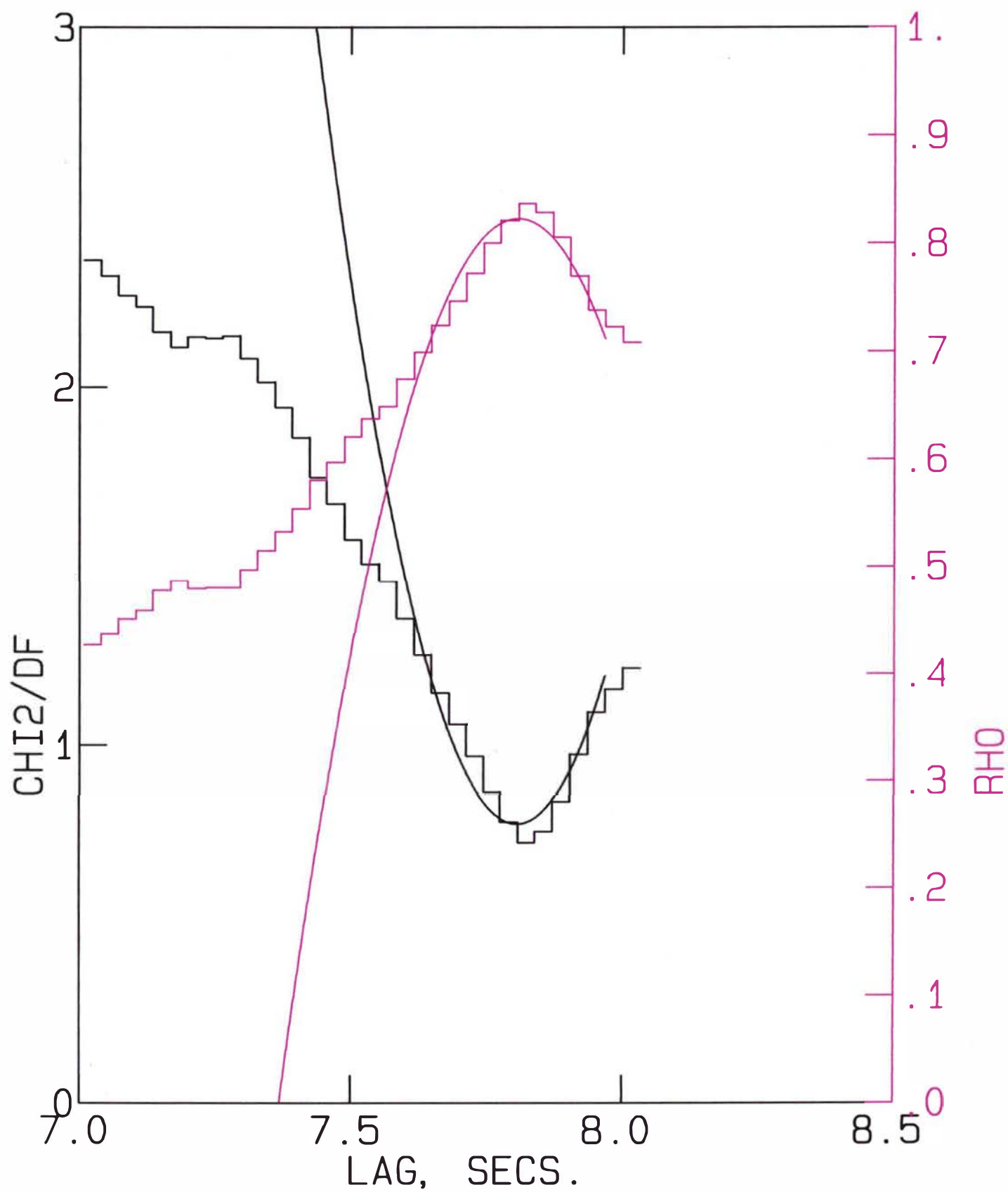
-BSAX-GRBM CORRELATION

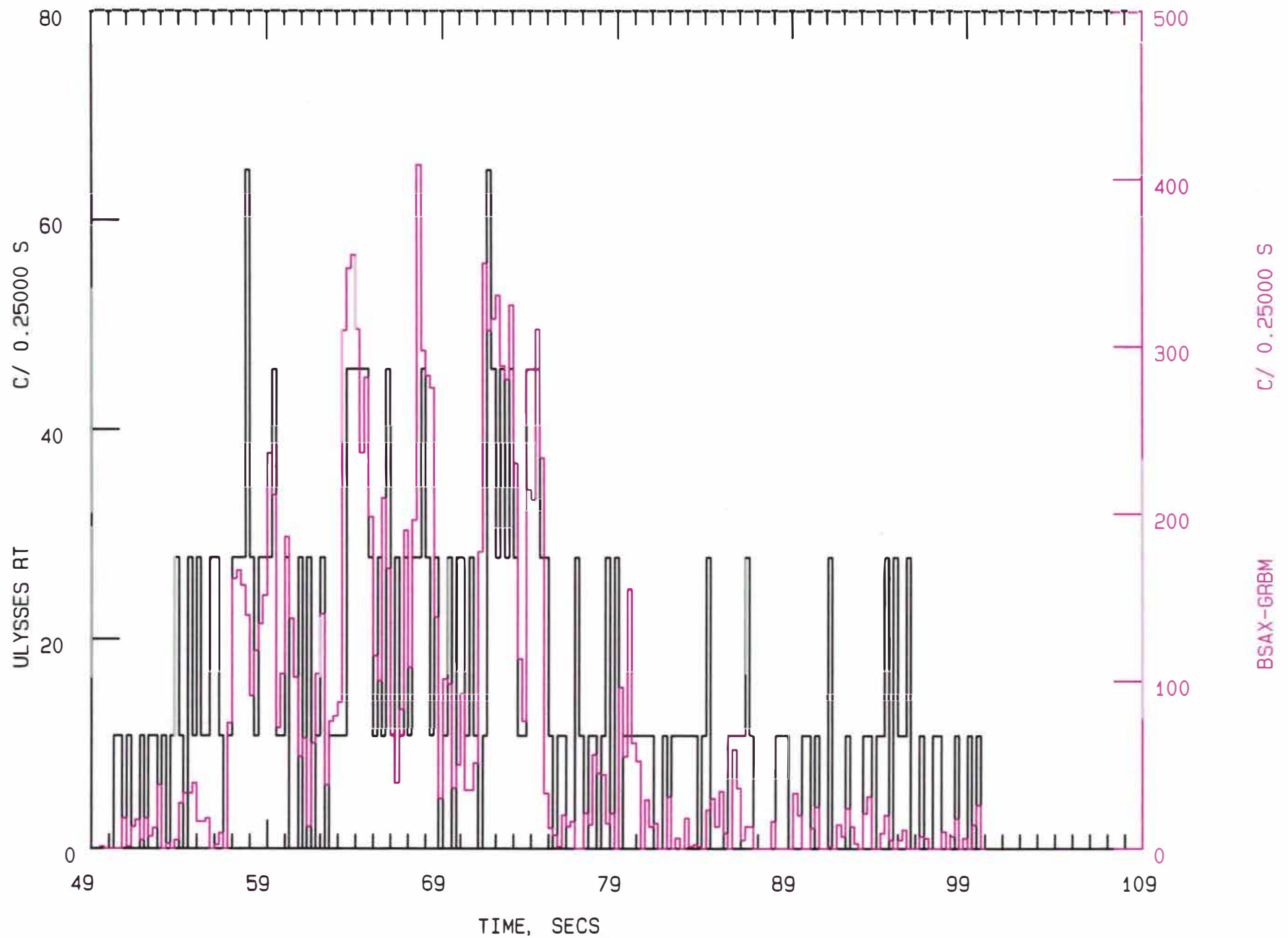
14/11/97

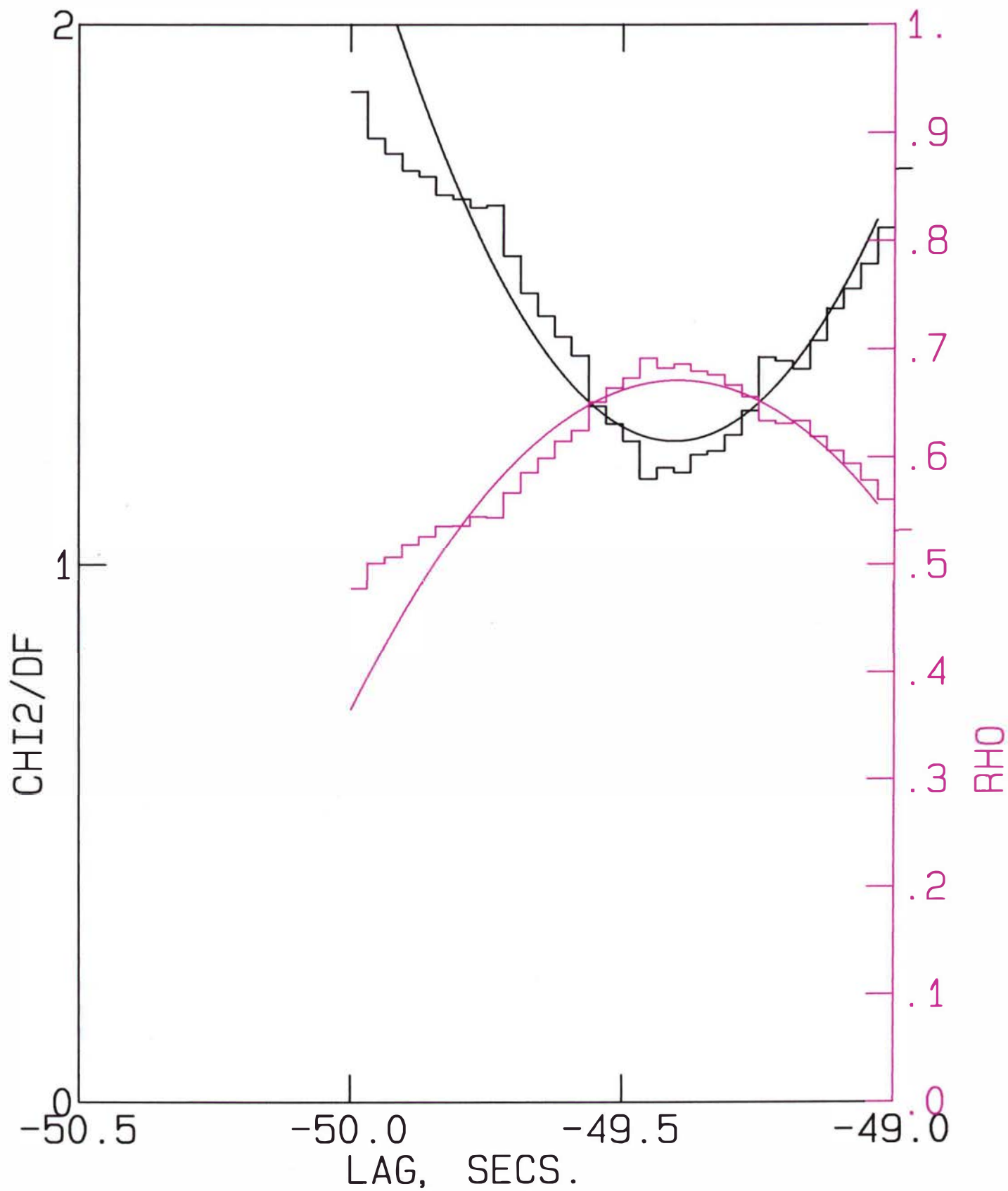
44465.947

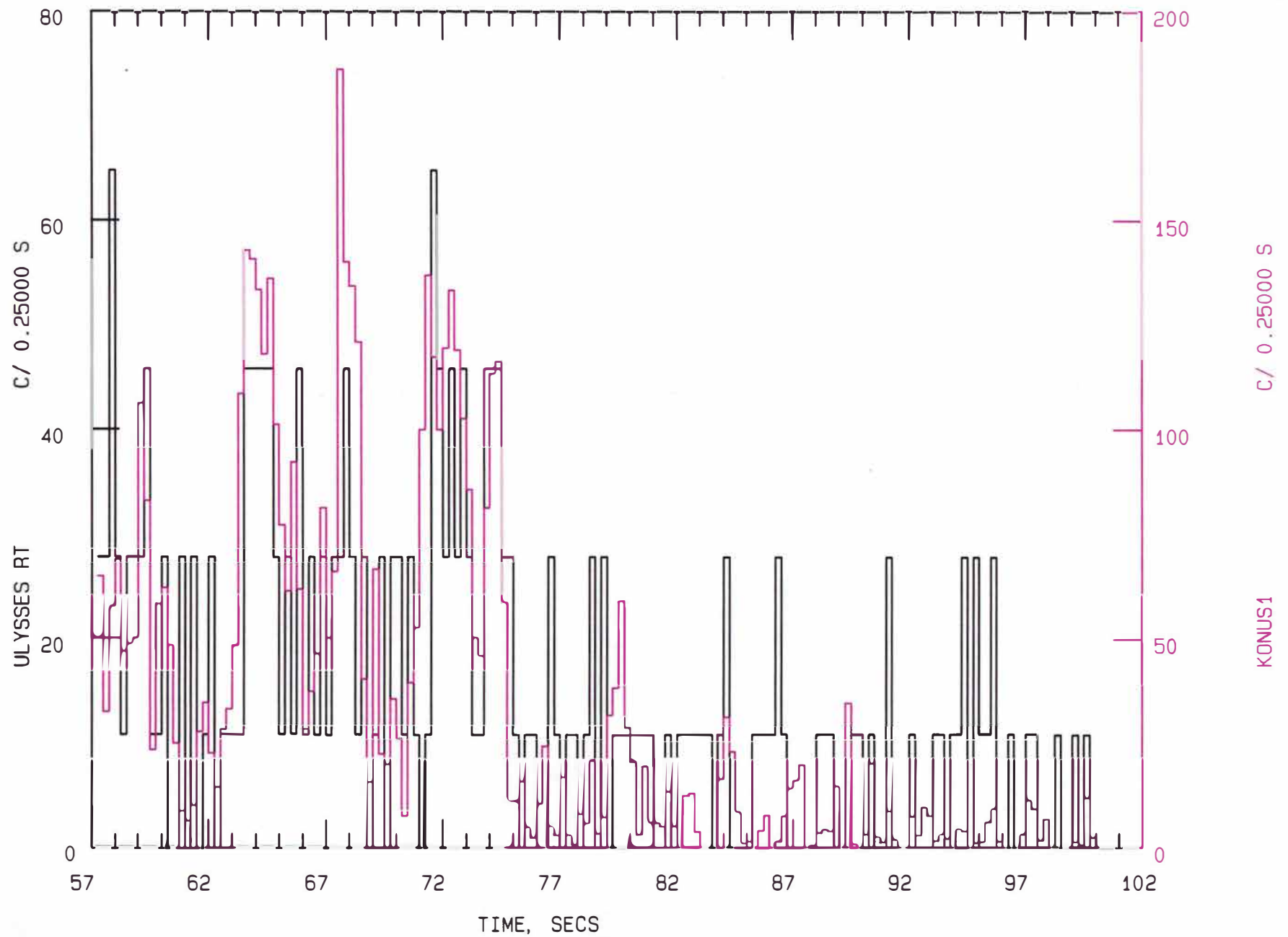
24/ 8/ 4

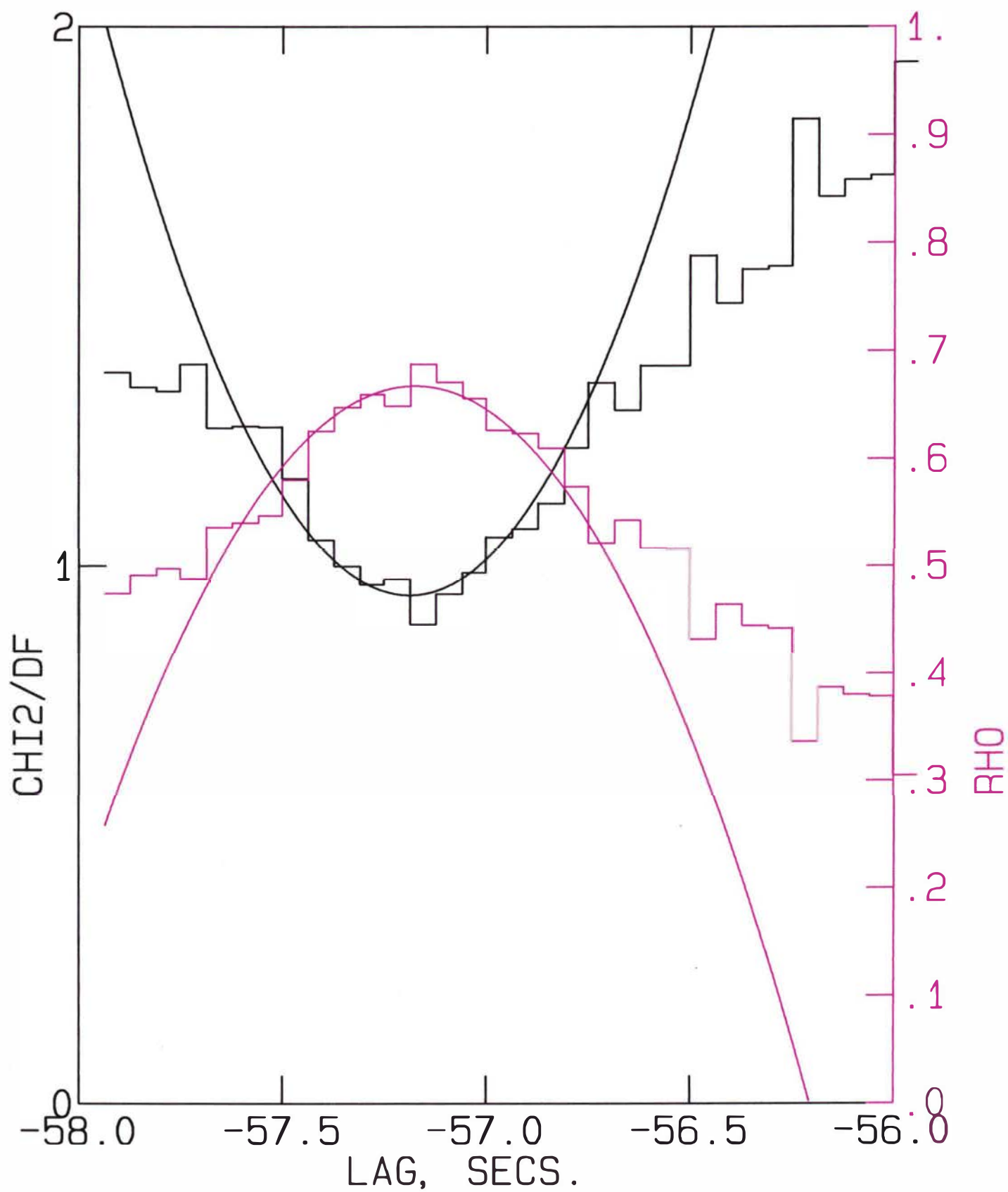






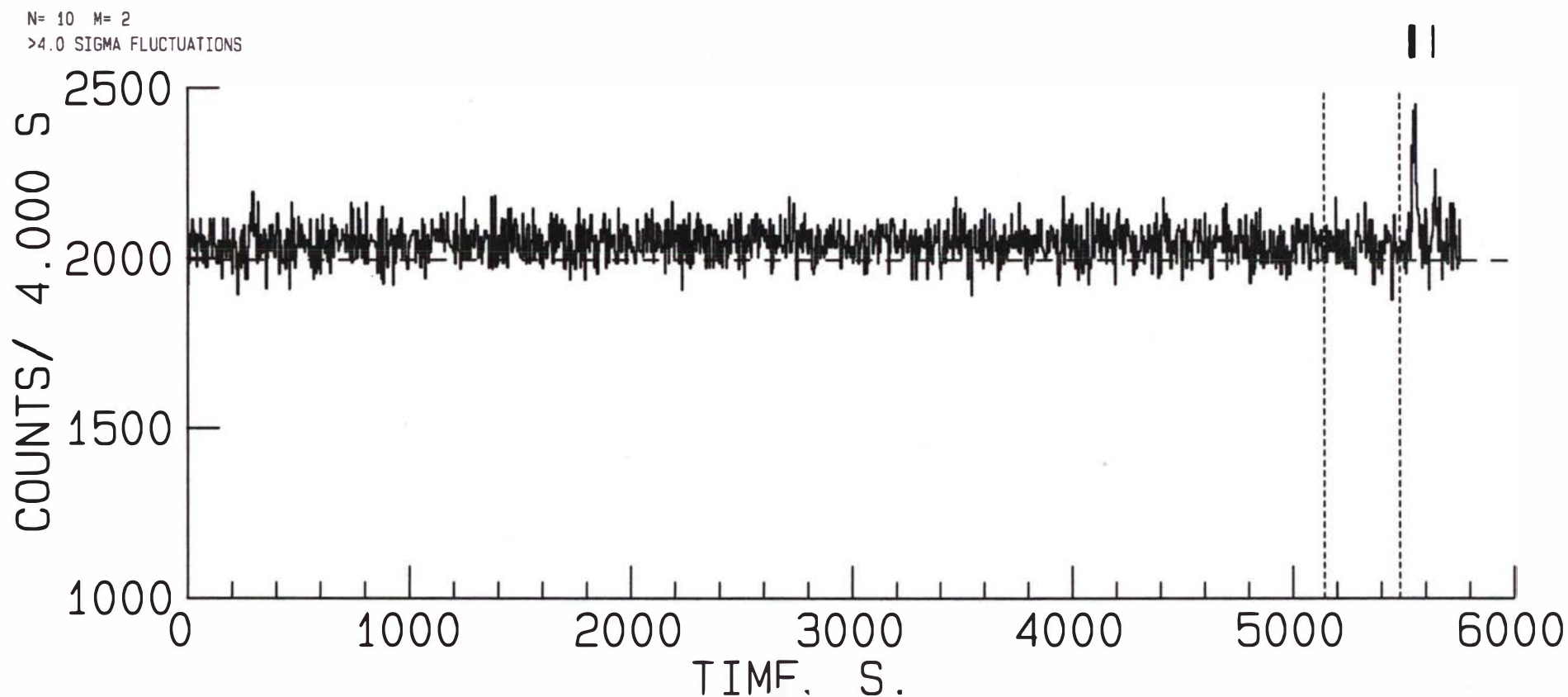






ULYSSES RT
14/11/97 41580.160 s
0.250 S INTERVALS REGROUPED BY 16
22- 148 keV

23 / 8 / 4



KONUS1

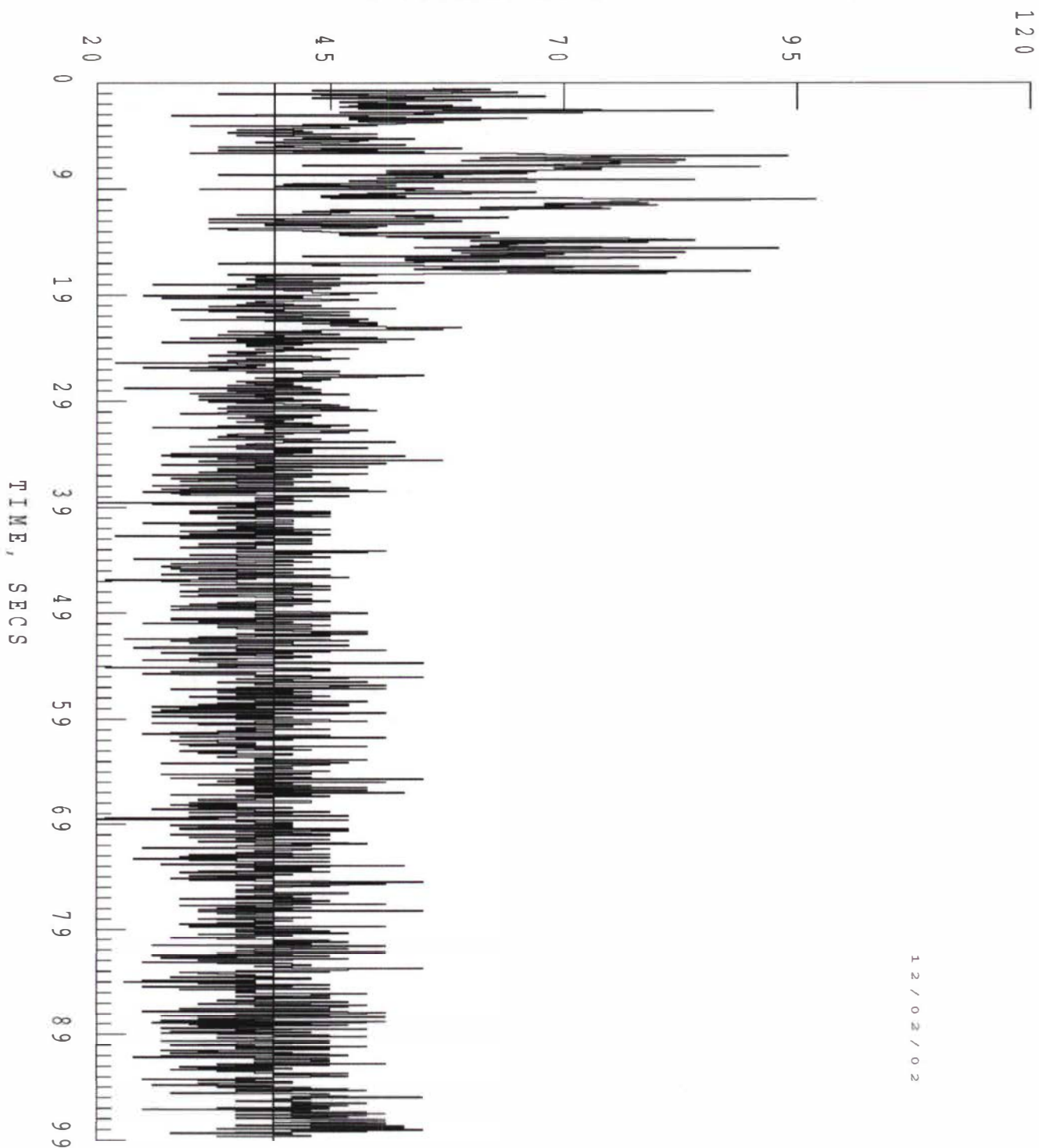
14/11/97

44465.947

50 - 200 keV

12:21:06

COUNTS/0.064 S

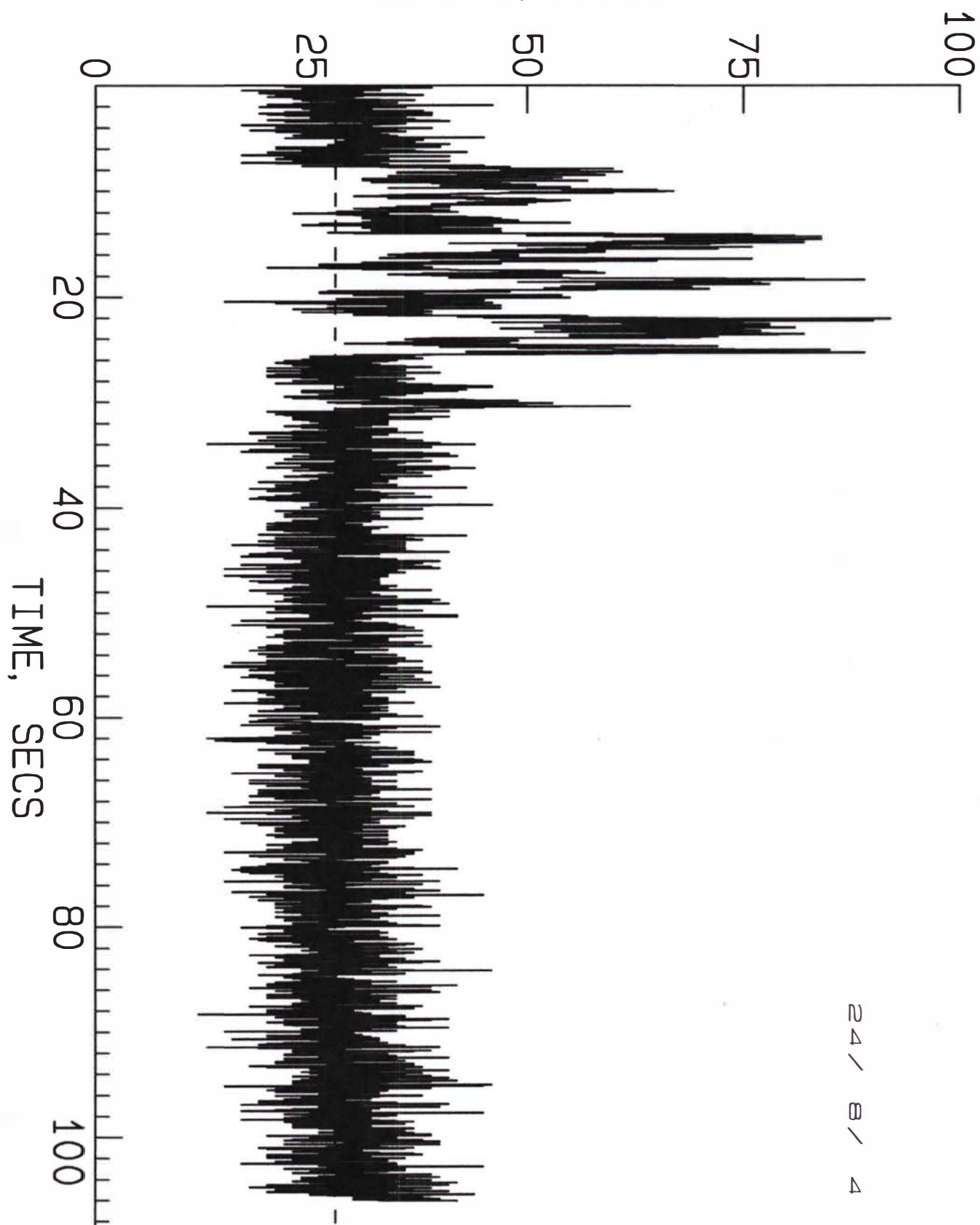


SAX GRBM

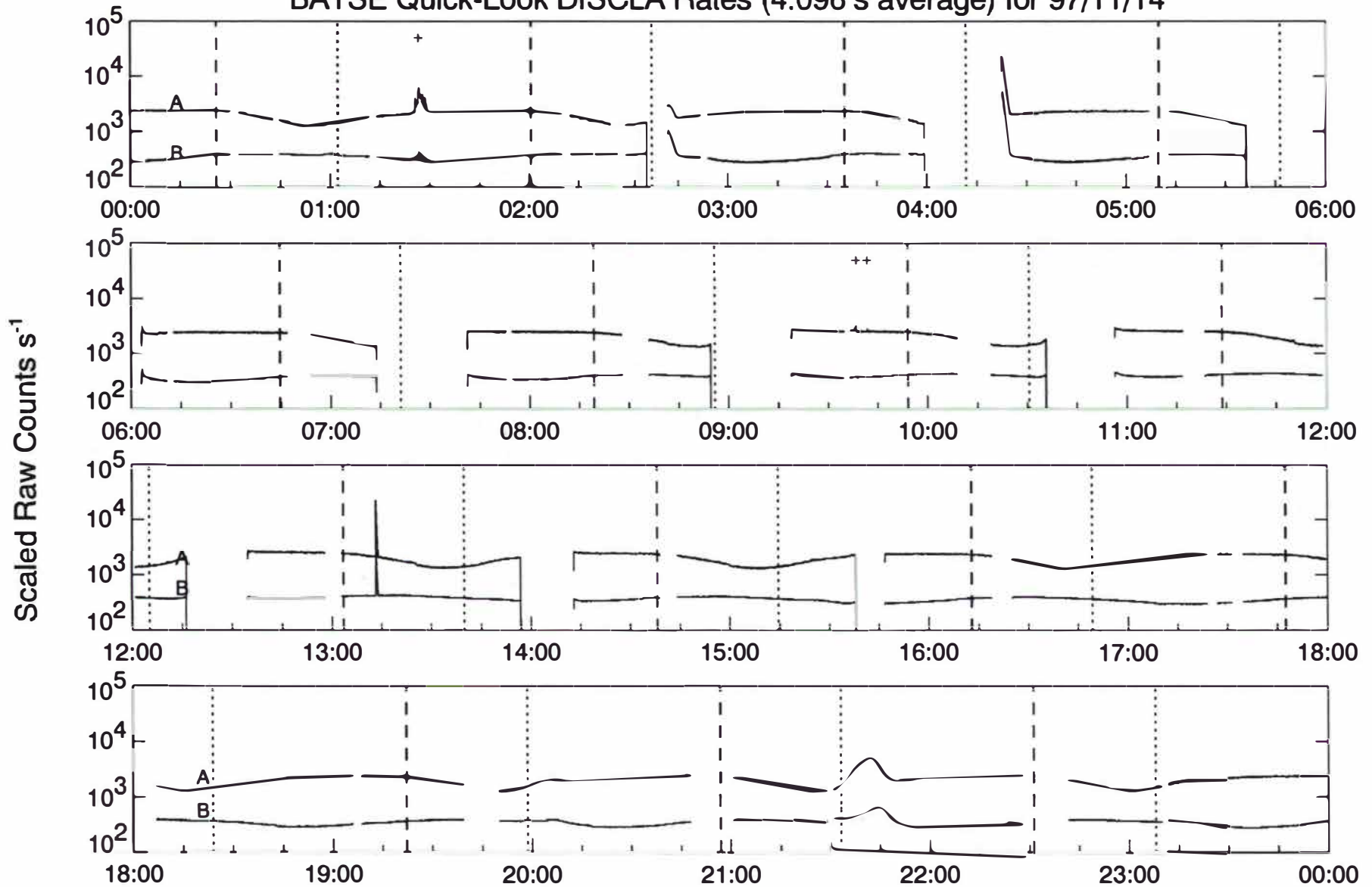
14/11/97 44454.900

40- 700 keV

COUNTS/0.031 S



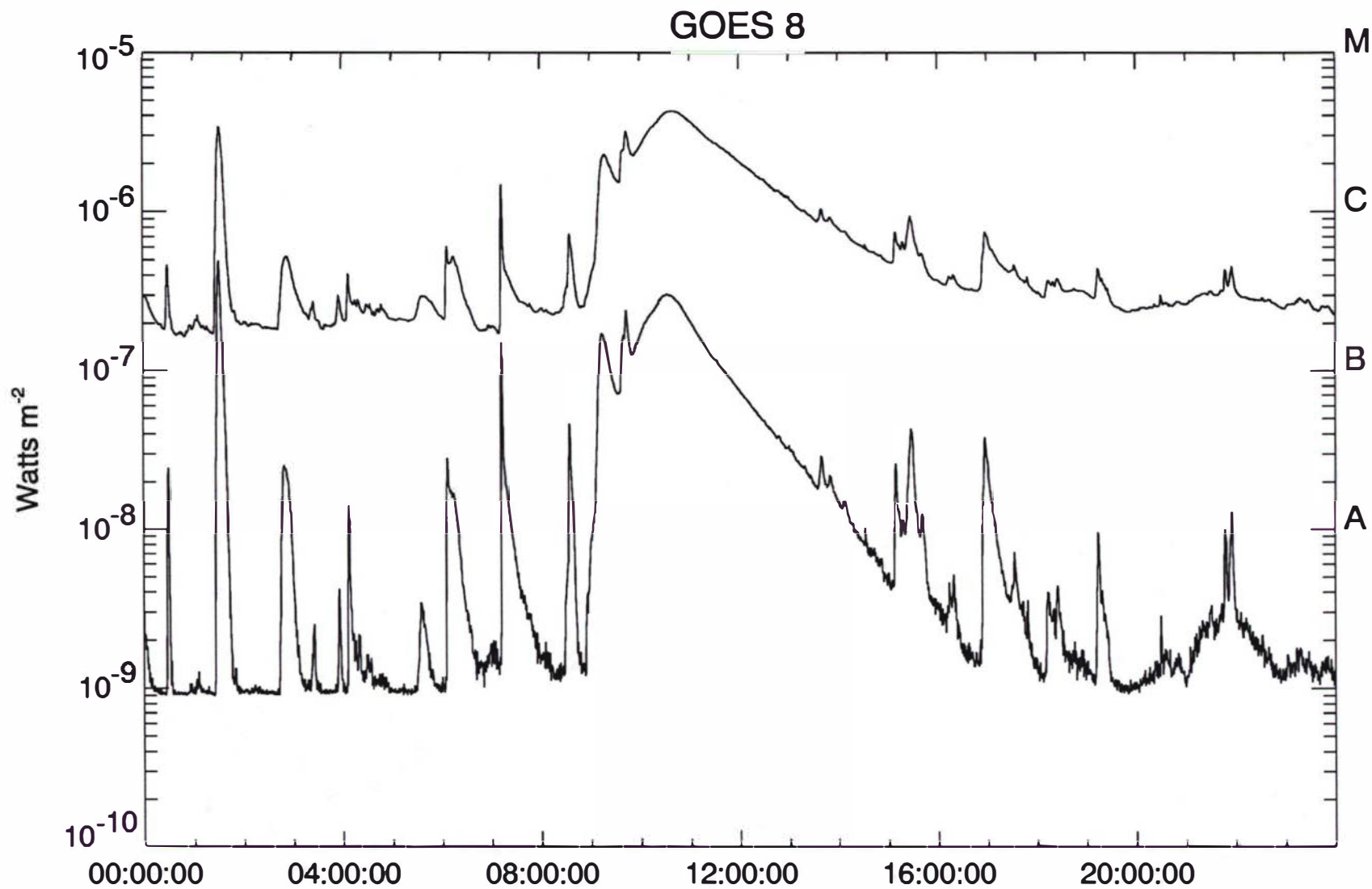
BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/14



Current Time: 97/11/18, 1009 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 97/11/14, 0000:00

Plot created: 97/11/18, 1008

Channel

1 (1.0 - 8.0 Angstroms)

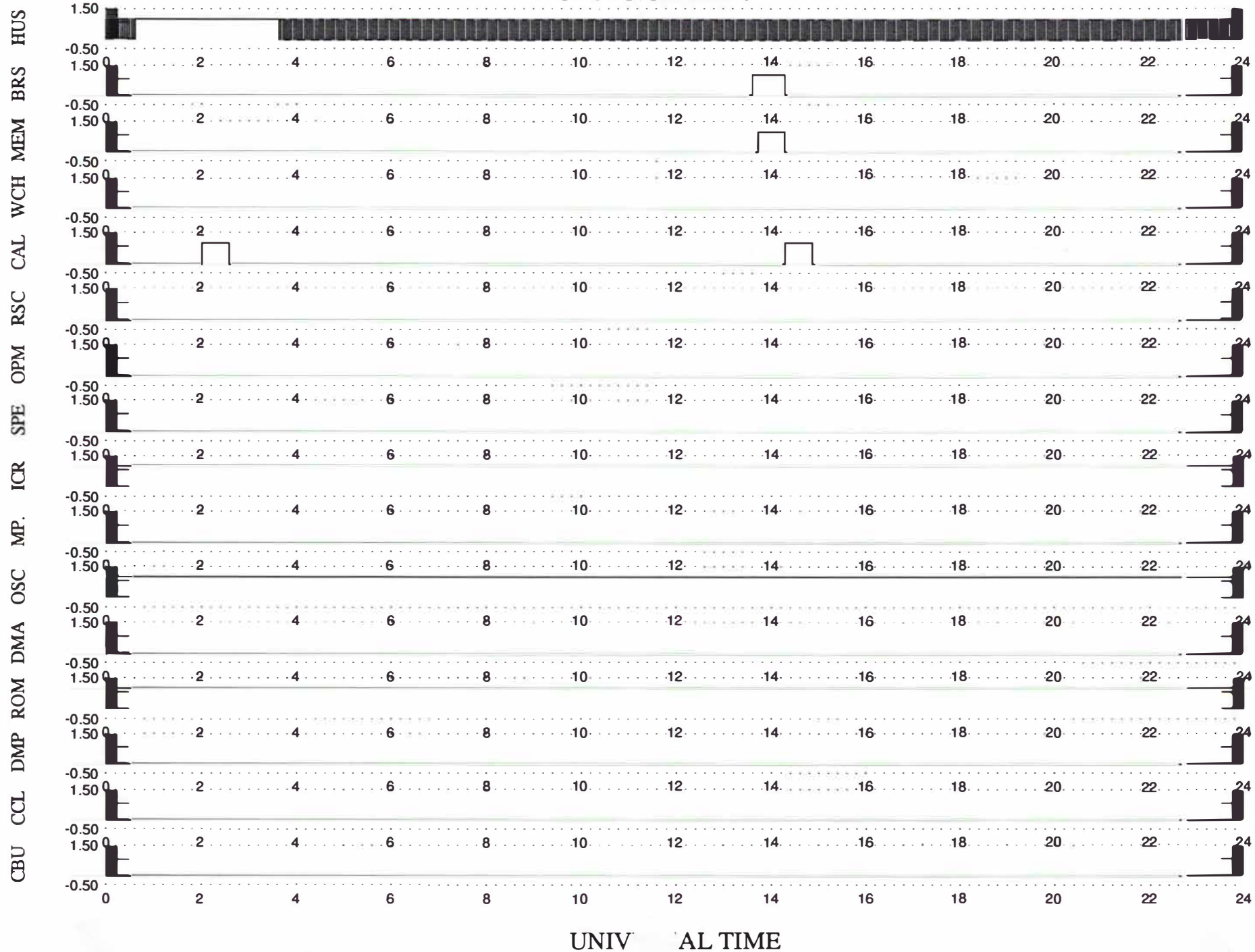
Background not subtracted

2 (0.5 - 4.0 Angstroms)

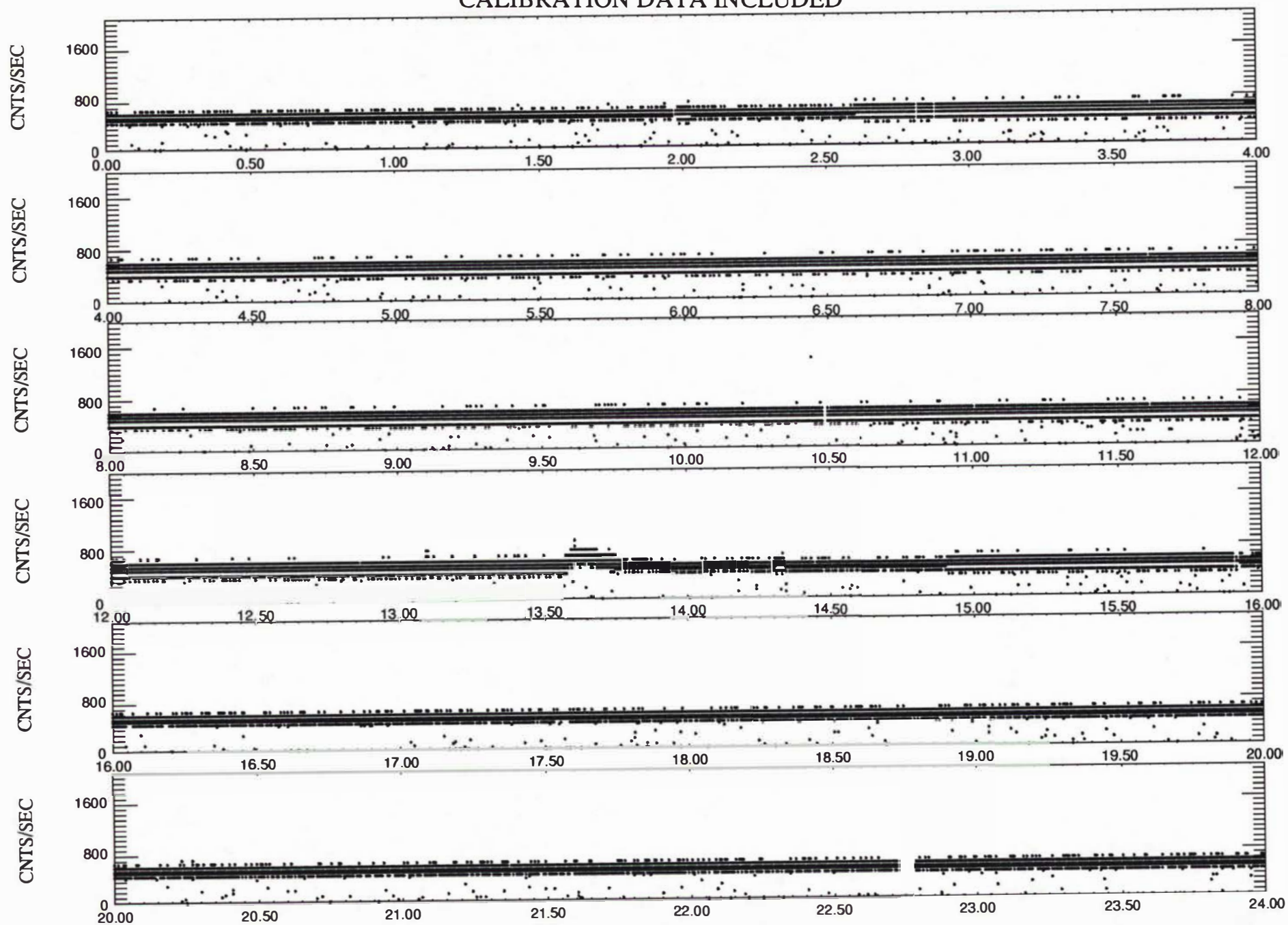
Background not subtracted

Sample average = 10

BURST NUMBER 8

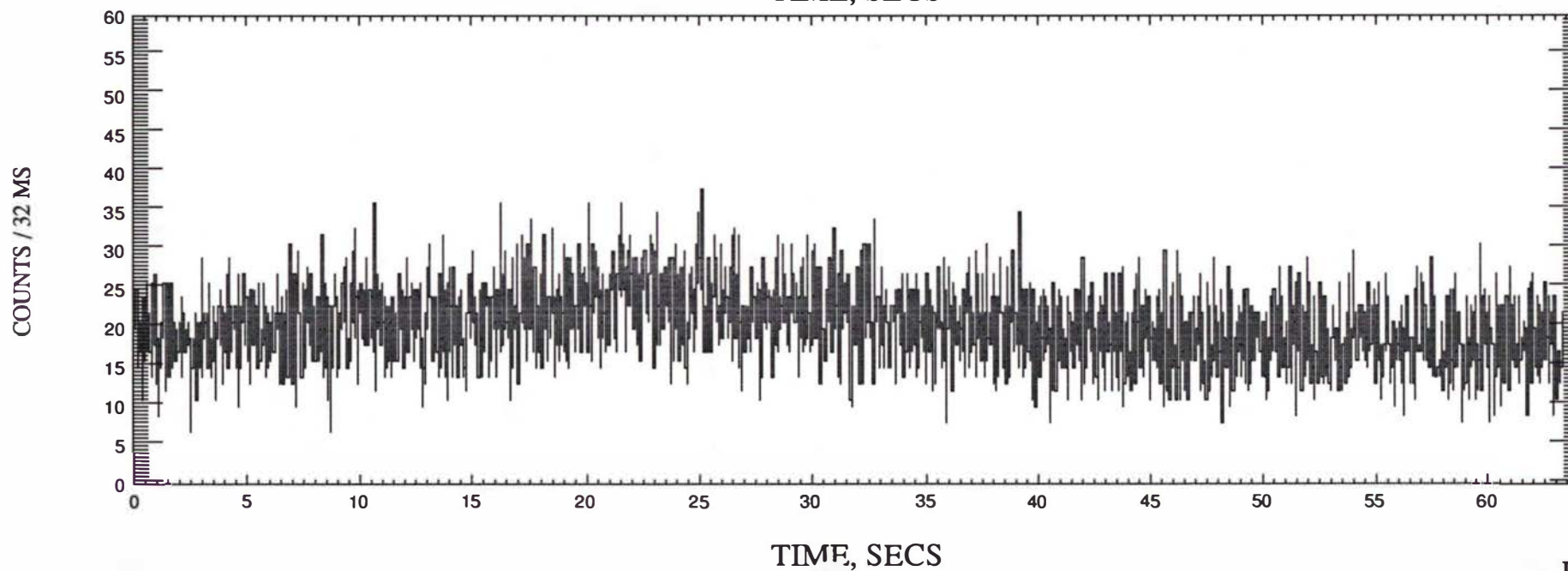
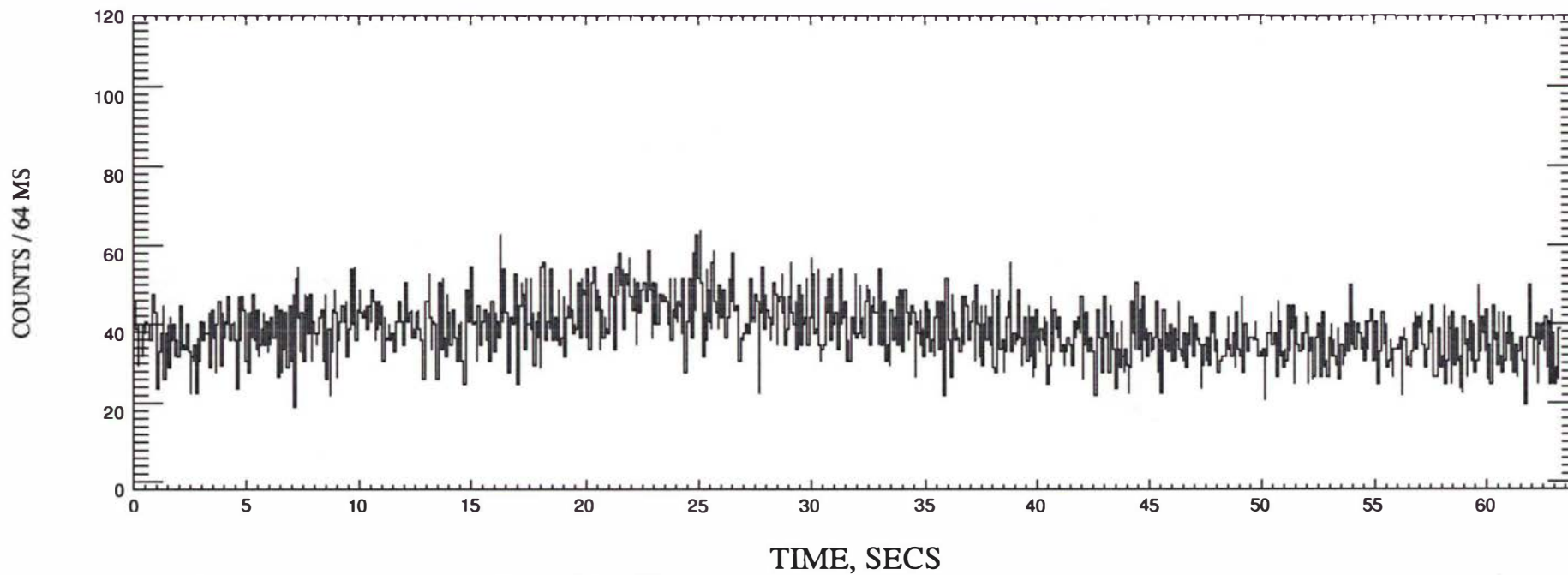


CALIBRATION DATA INCLUDED

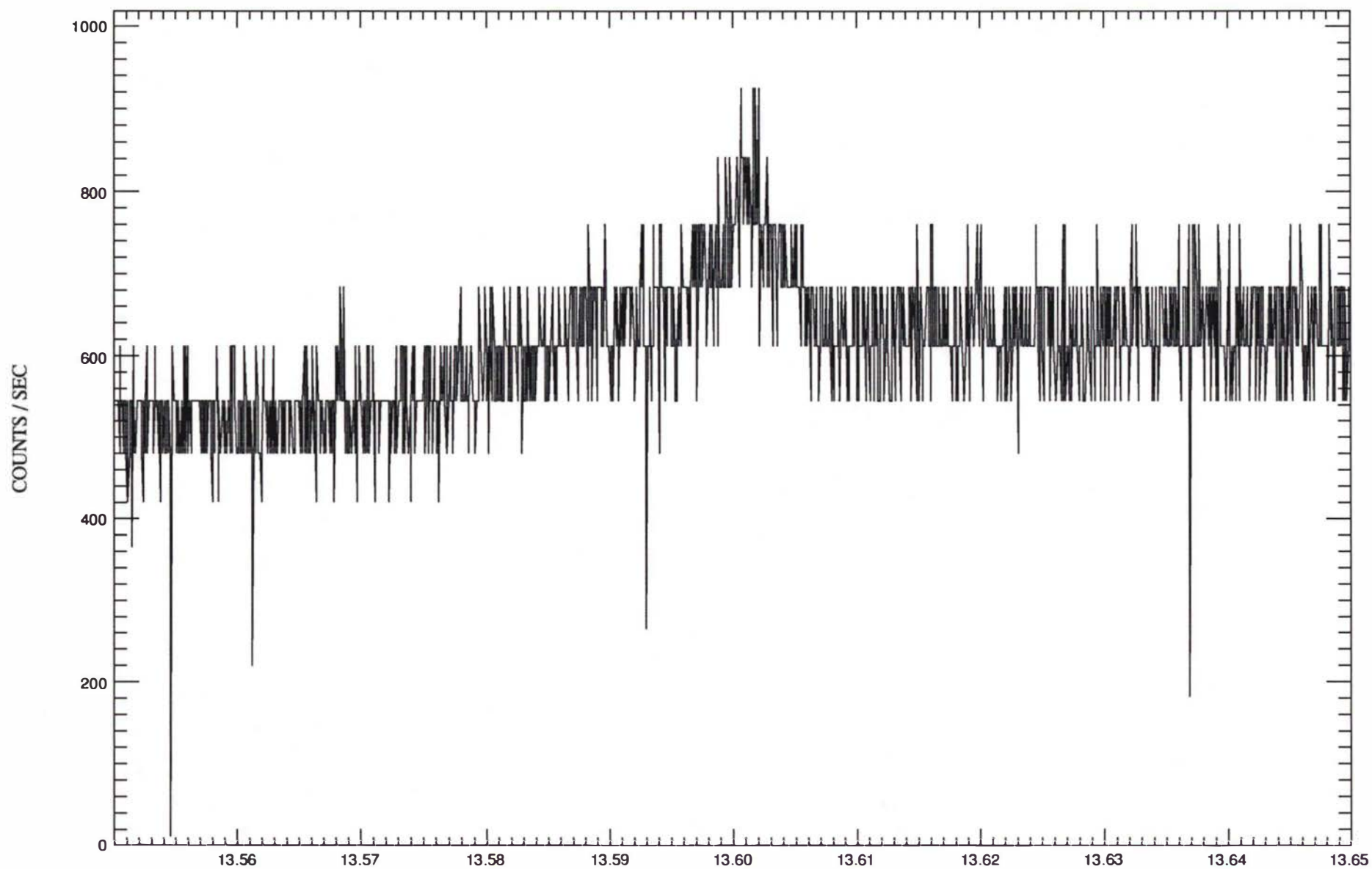


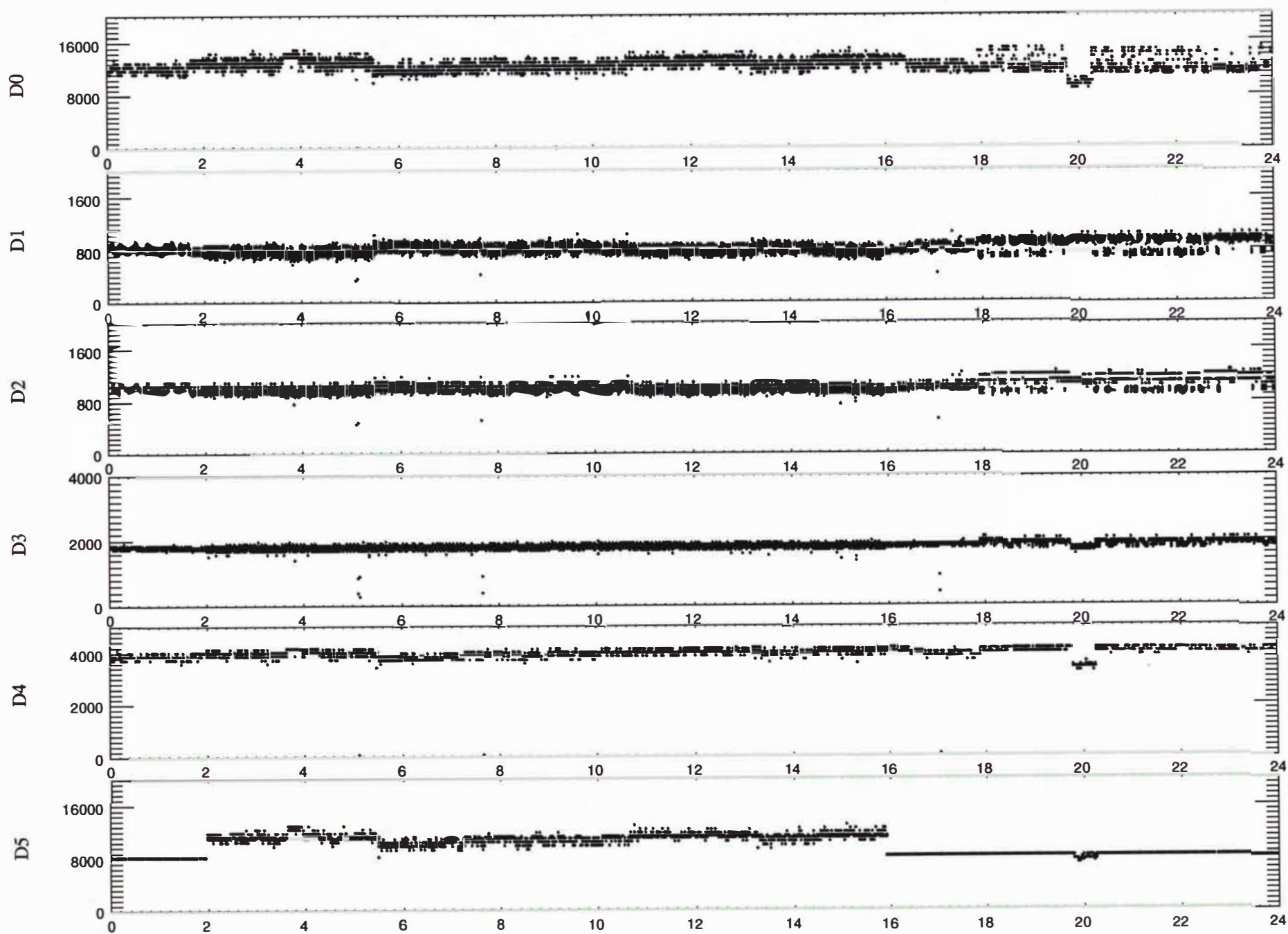
UNIV 'AL TIME

Burst Counter 8 at UT=13.596869867113 h=48948.732 s 13:35:48.732



CALIBRATION DATA INCLUDED





UNIV AL TIME

From SAHI@fender.msfc.nasa.gov Wed Nov 19 11:37:39 1997
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 19 Nov 1997 13:36:29 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevax.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevax.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6478

TIME: TJD=0767 SECONDS=14651

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

ELECTRON EVENT. TRIGGERED UPON EXIT FROM SAA.

From SAHI@fender.msfc.nasa.gov Wed Nov 19 12:01:38 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA15391; Wed, 19 Nov 1997 12:01:34 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA21896; Wed, 19 Nov 1997 12:01:30 -0800
Date: Wed, 19 Nov 1997 14:00:39 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971119140039.224256c2@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6479
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6479
EVENT OF 1997 NOV 15 DAY OF YEAR=319
EVENT CROSSING TIME AT BATSE : 66159. S. OR 18:22:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 85.000 42.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/11/ 97 IS:
RA= 170.140 DEC= 12.988 DIST= 5.626 AU
BATSE-ULYSSES DISTANCE = 841594019. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -594.40 SECS.
CROSSING TIME AT ULYSSES IS 65565. S. OR 18:12:44 +/- 517.31 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/11/ 97 IS:
RA= 274.792 DEC= -24.621 DIST= 1.976 AU
MARS-BATSE DISTANCE = 295544544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 19.18 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 931.12 SECS.
CROSSING TIME AT MARS IS 67090. S. OR 18:38:10 +/- 70.36 SECONDS

BATSE BURST TRIGGER

NO.: 6479

TIME: TJD=0767 SECONDS=66159

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=128.3 AZIMUTH=186.3 ERROR=11.8 DEGREES

COMMENTS:

BURST. SINGLE PULSE, WITH SUBSTRUCTURE, DUR. APPROX. 60 S, MAX. AT
APPROX. T+22 S. WEAKLY VISIBLE ABOVE 300 KEV. CRAB OCCULTATION SET AT
T+70 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6479	971115	10767	66159	2200	085	+42	60

Date: Feb 8 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

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

2. BATSE Data

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

3. NEAR Data

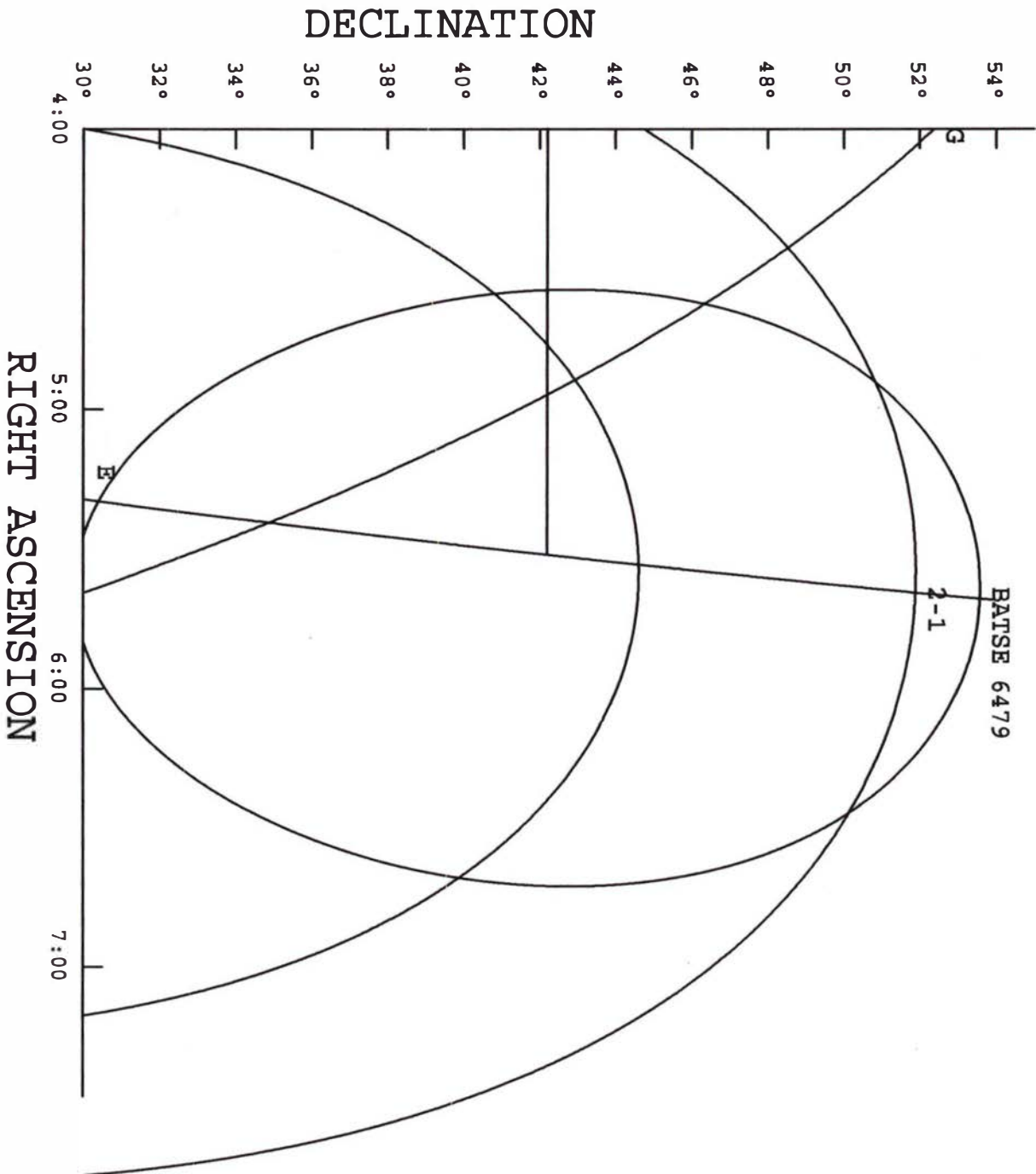
- ☒ Final, correct time used? (Files postmarked vw@boccl, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

EVENT OF NOV 15, 1997 18:22

23/ 8/ 4

*SN199

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 NOV 15, 1997 18:22

8 / 2 / 0

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

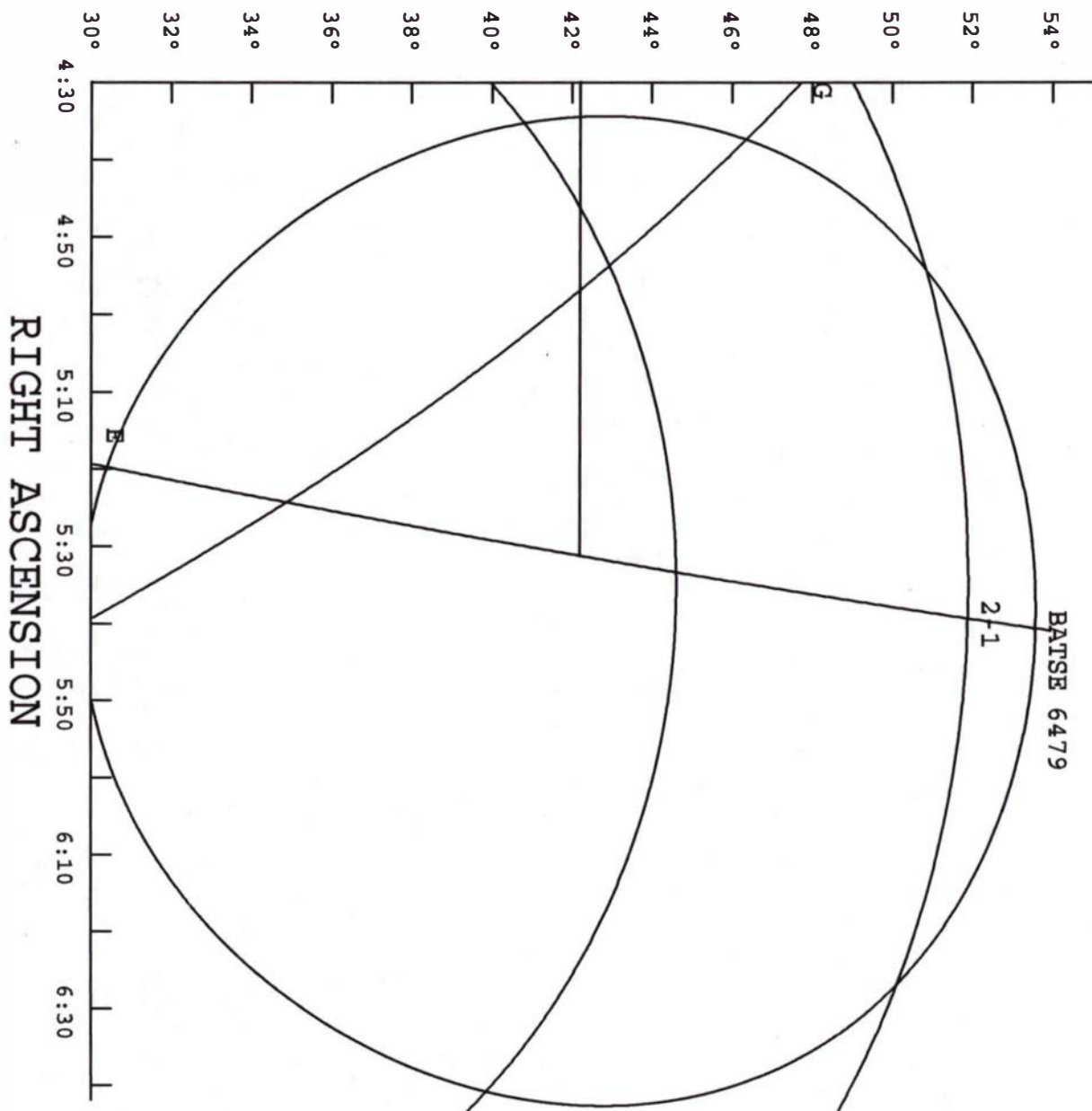
E=ECLIPTIC

G=GALACTIC EQUATOR

1 BATSE

2 NEAR

DECLINATION



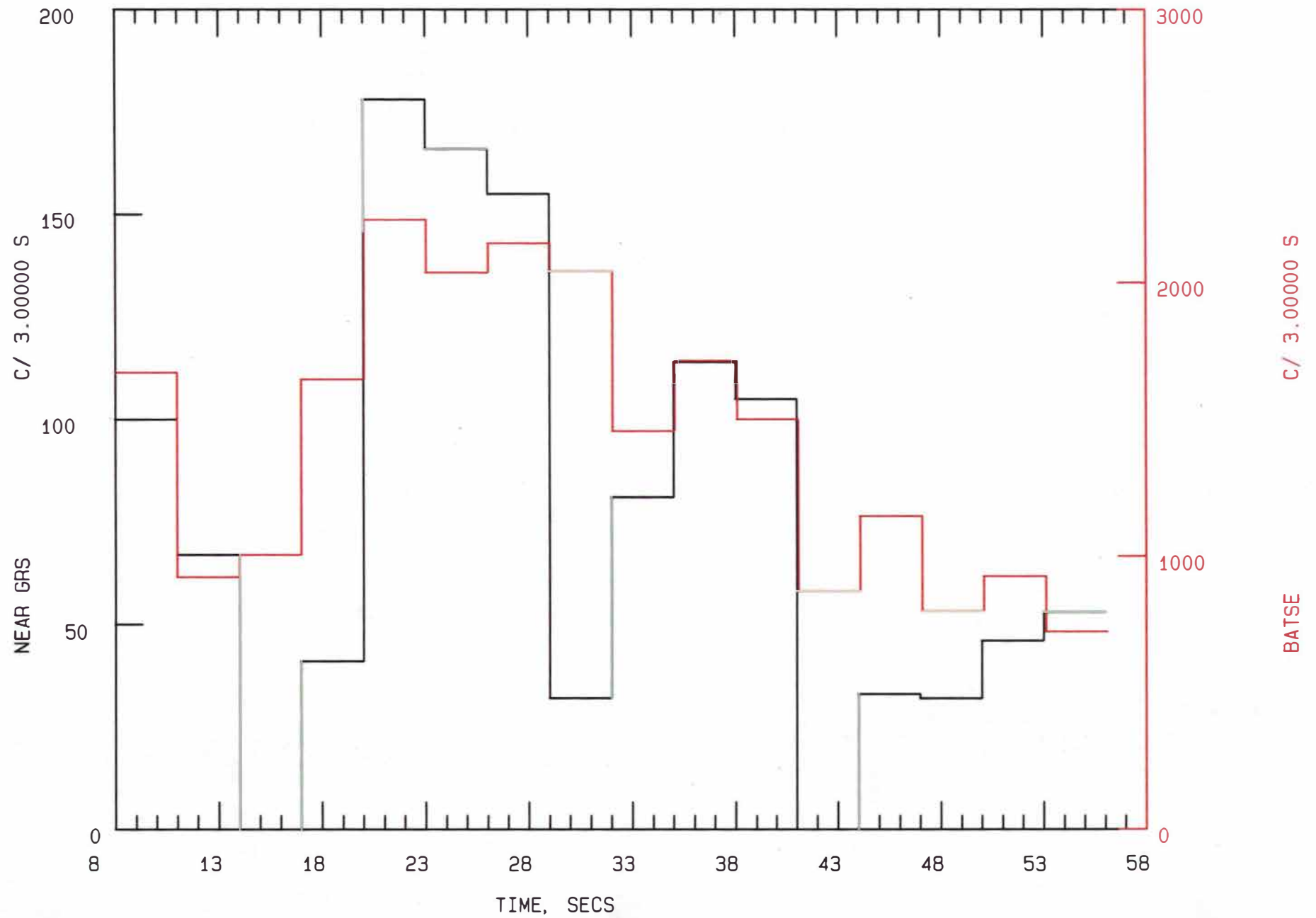
NEAR GRS -BATSE

CORRELATION

15/11/97

65981.265

8/ 2/ 0

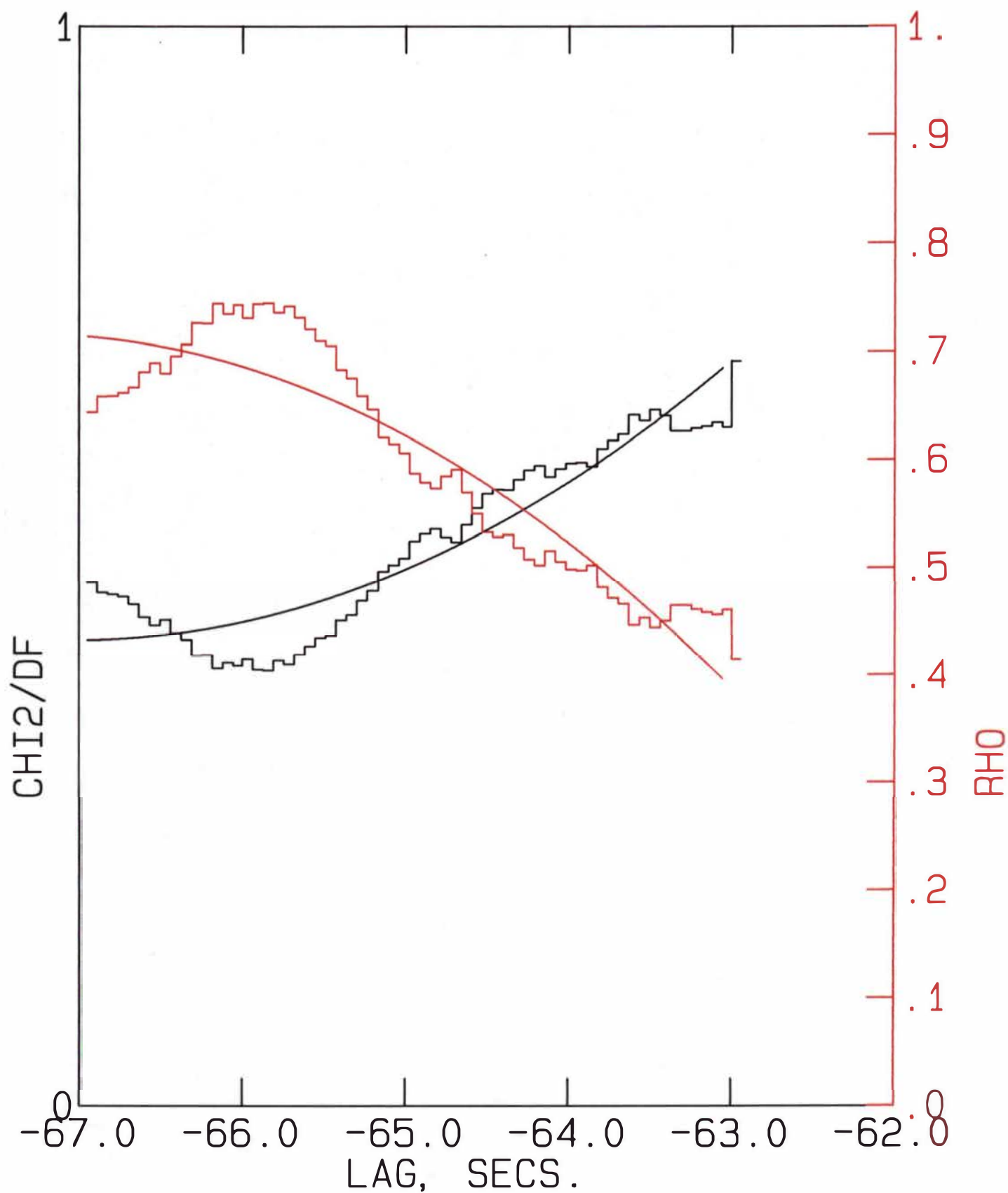


NEAR GRS -BATSE

CORRELATION

15/11/97

65981.265



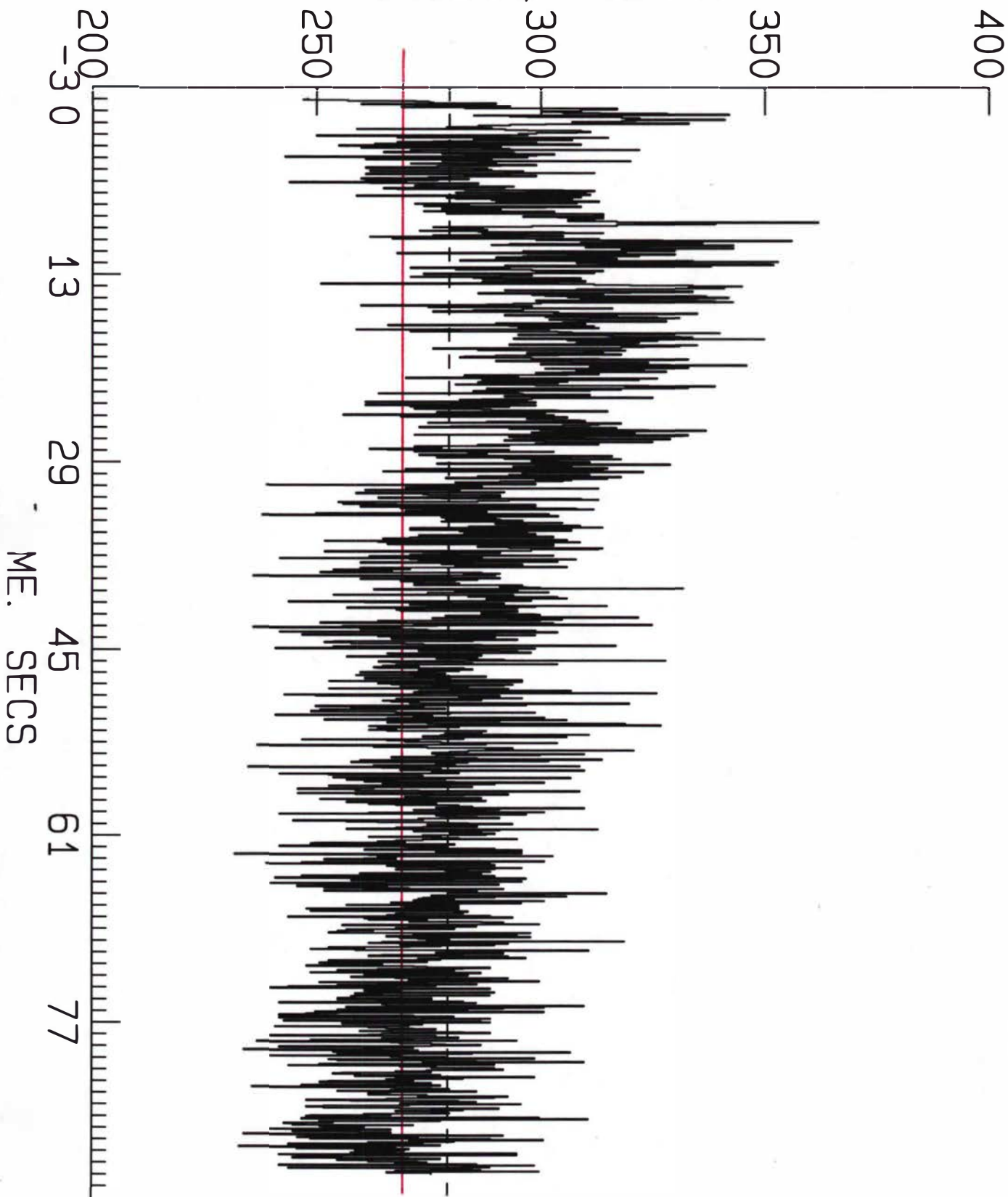
BATSE

15/11/97

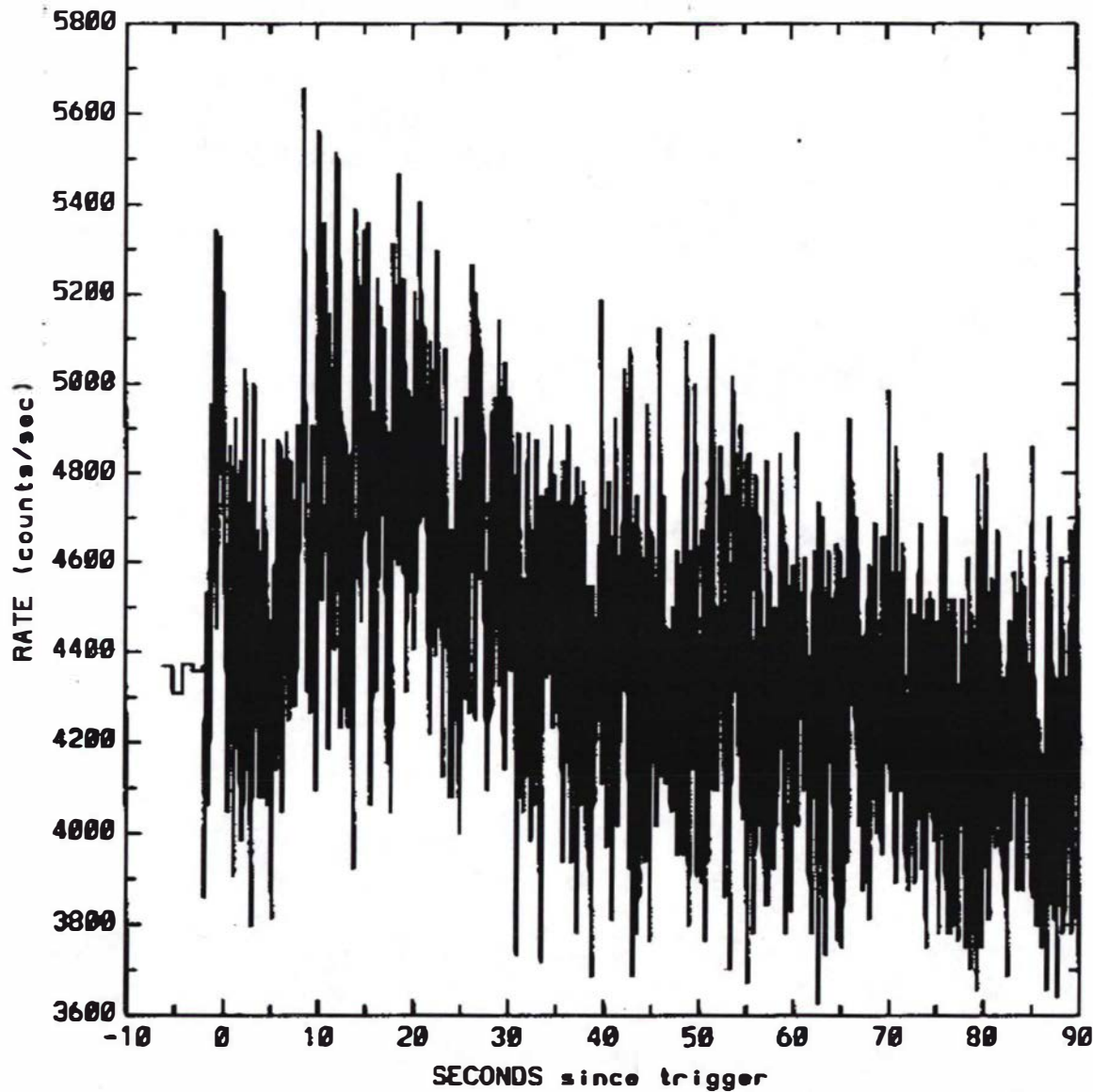
66159.330

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6479



21-JAN-2000 15:01:41

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 6479

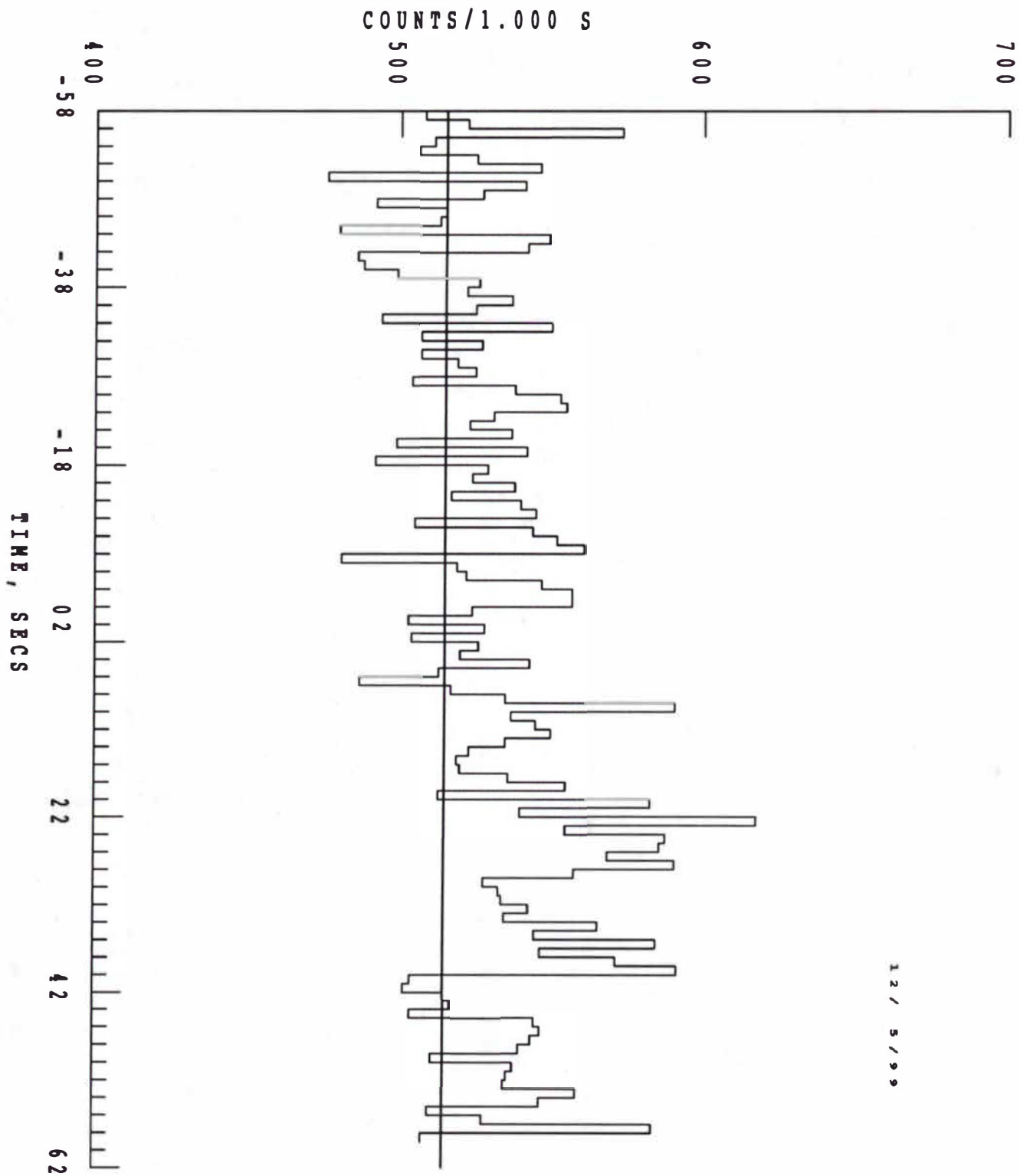
Trigger Time:
10767 / 66159.329Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PRED + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..0).
7-5----Discriminators:
(3..4)Quality Mask:
001SP1

NEAR

15/11/97

65981.265

100-1000 keV



12 / 5 / 99

KNEAR GRS 19971115 65981

ULYSSES RT

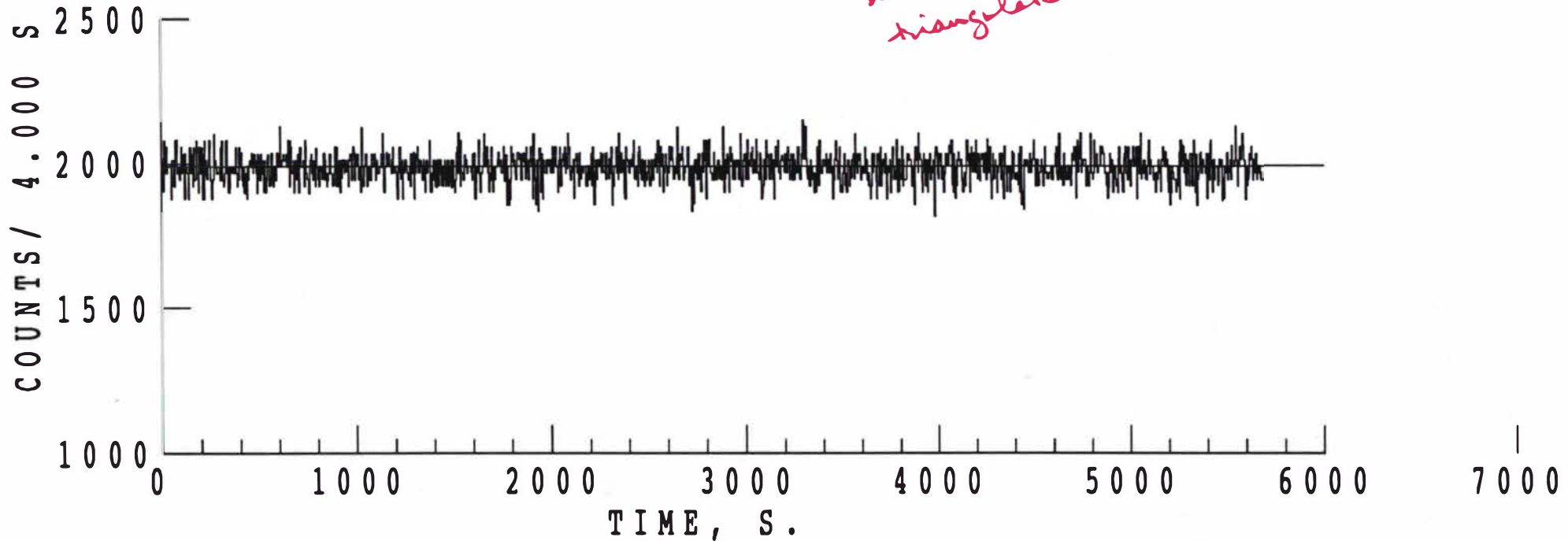
12 / 5 / 99

15 / 11 / 97 63144.109 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

W= 16 N= 2
>4.0 SIGMA FLUCTUATIONS



BATSE BURST# 6479

ULYSSES RT

19 / 11 / 97

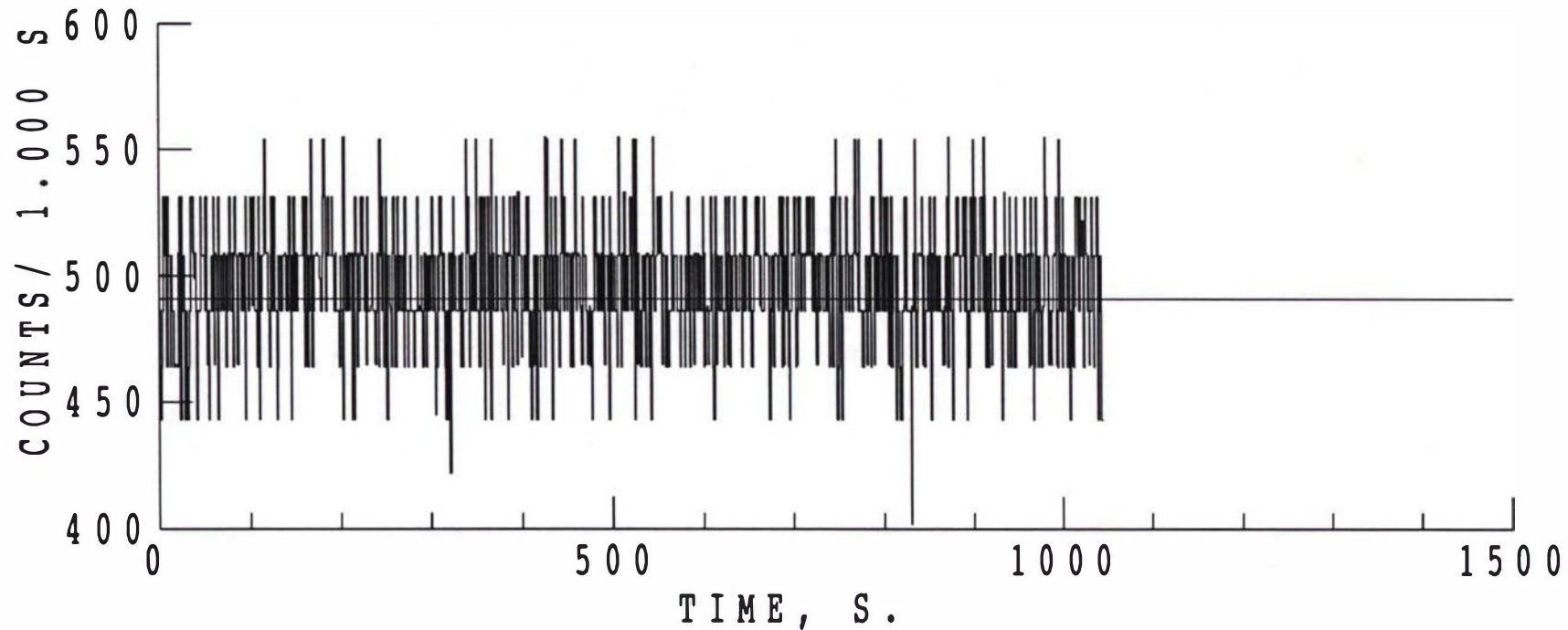
15 / 11 / 97 65052.129 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

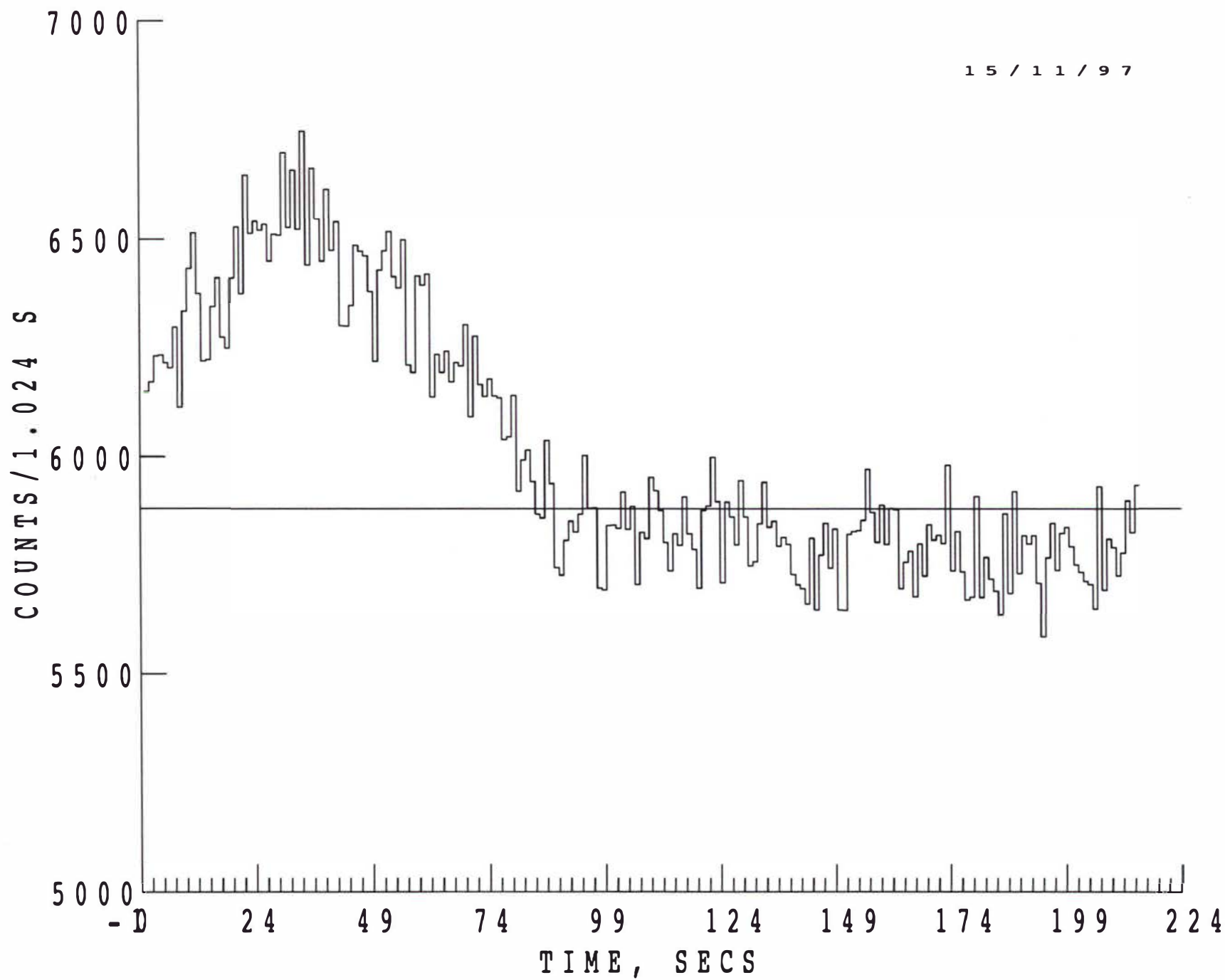
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6479 15/11/97 66148.065
25- 100 keV

15 / 11 / 97



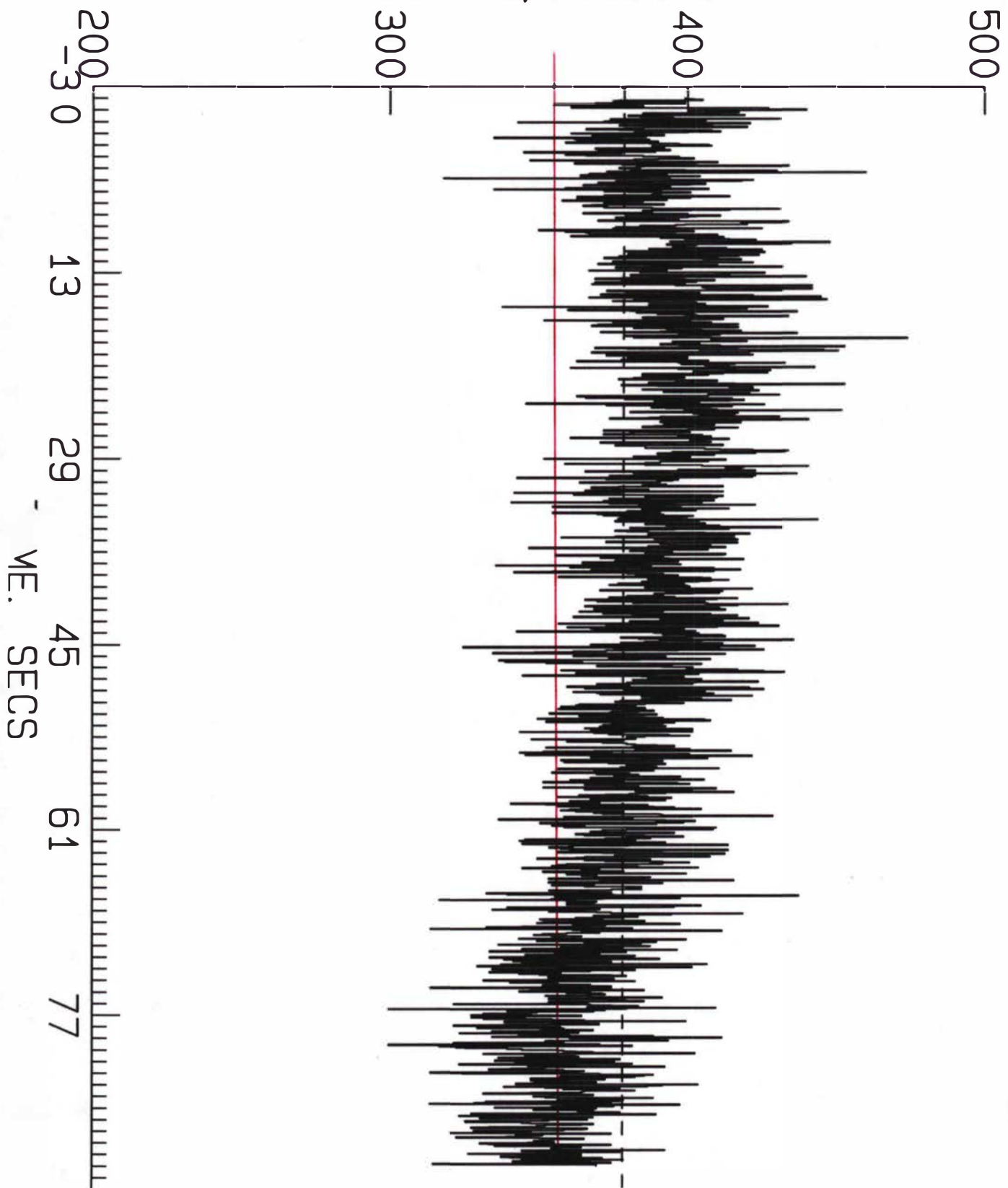
BATSE

15/11/97

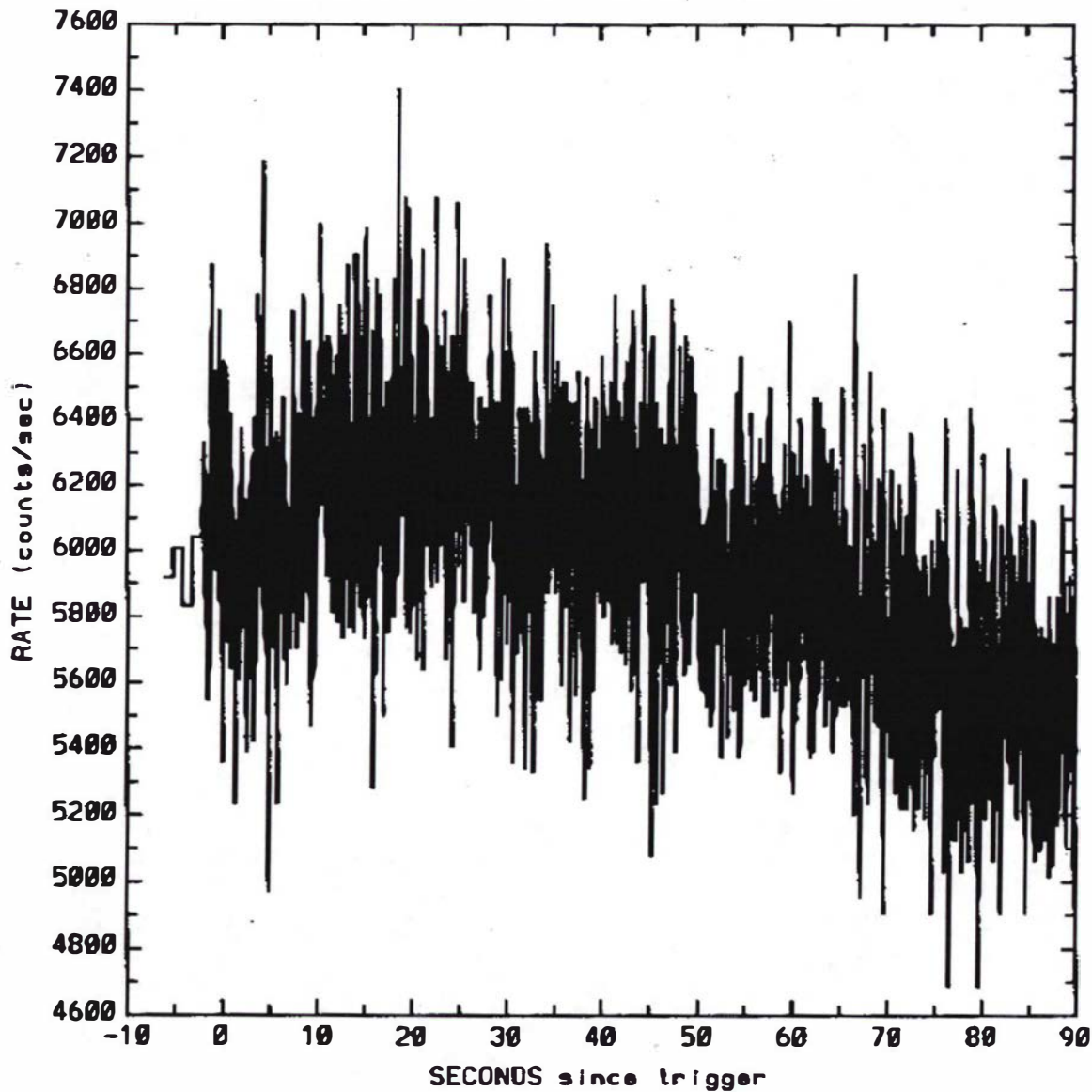
66159.330

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 6479



3-FEB-2000 16:32:42

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

Trigger #: 6479

Trigger Time:
18767 / 66159.329Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors (7..0).
7-5-----Discriminators:
(1 . 2)Quality Mask:
B0ISP1

From SAHI@fender.msfc.nasa.gov Wed Nov 19 12:06:34 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA15447; Wed, 19 Nov 1997 12:06:29 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA21962; Wed, 19 Nov 1997 12:06:16 -0800
Date: Wed, 19 Nov 1997 14:05:53 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971119140553.224256c2@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6480
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6480
EVENT OF 1997 NOV 15 DAY OF YEAR=319
EVENT CROSSING TIME AT BATSE : 69922. S. OR 19:25:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 61.000 -5.000
BATSE PEAK COUNTING RATE: 3300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/11/ 97 IS:
RA= 170.142 DEC= 12.986 DIST= 5.625 AU
BATSE-ULYSSES DISTANCE = 841500856. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 70.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 948.45 SECS.
CROSSING TIME AT ULYSSES IS 70870. S. OR 19:41:10 +/- 523.07 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/11/ 97 IS:
RA= 274.792 DEC= -24.621 DIST= 1.976 AU
MARS-BATSE DISTANCE = 295544544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 706.18 SECS.
CROSSING TIME AT MARS IS 70628. S. OR 19:37:08 +/- 130.15 SECONDS

BATSE BURST TRIGGER

NO.: 6480

TIME: TJD=0767 SECONDS=69922

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=86.7 AZIMUTH=154.0 ERROR=1.9 DEGREES

COMMENTS:

BURST, SINGLE PULSE DUR. APPROX. 23 SECS, MAX. AT APPROX. T+2 SECS.
WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6480	971115	10767	69922	3300	061	-05	23

Helio. corr. removed
Date: Apr 10 '98 Feb 8 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- ☐ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? *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? *N/A*

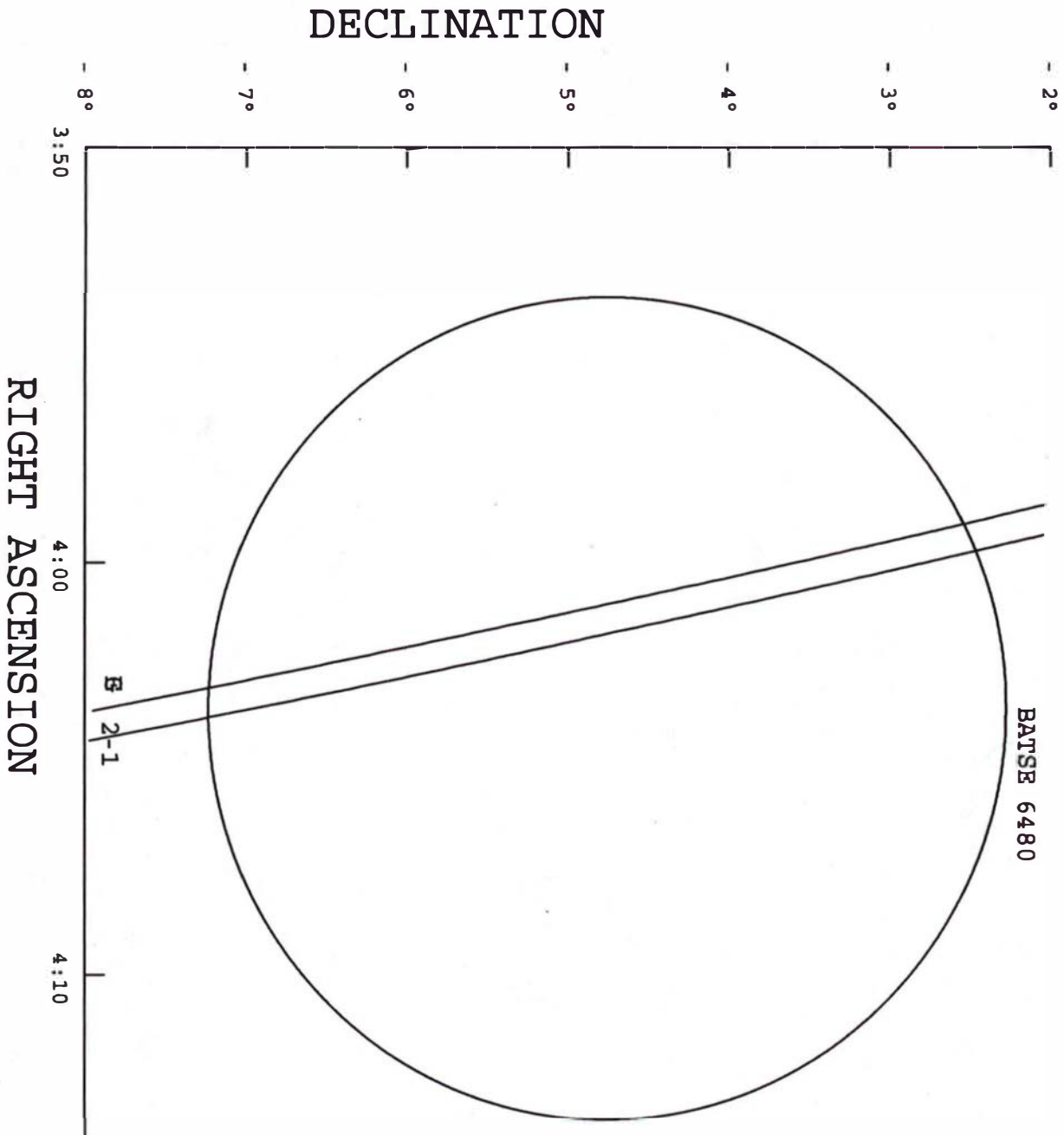
3. PVO Data

- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS database updated?

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

EVENT OF NOV 15, 1997 19:40

8 / 2 / 0



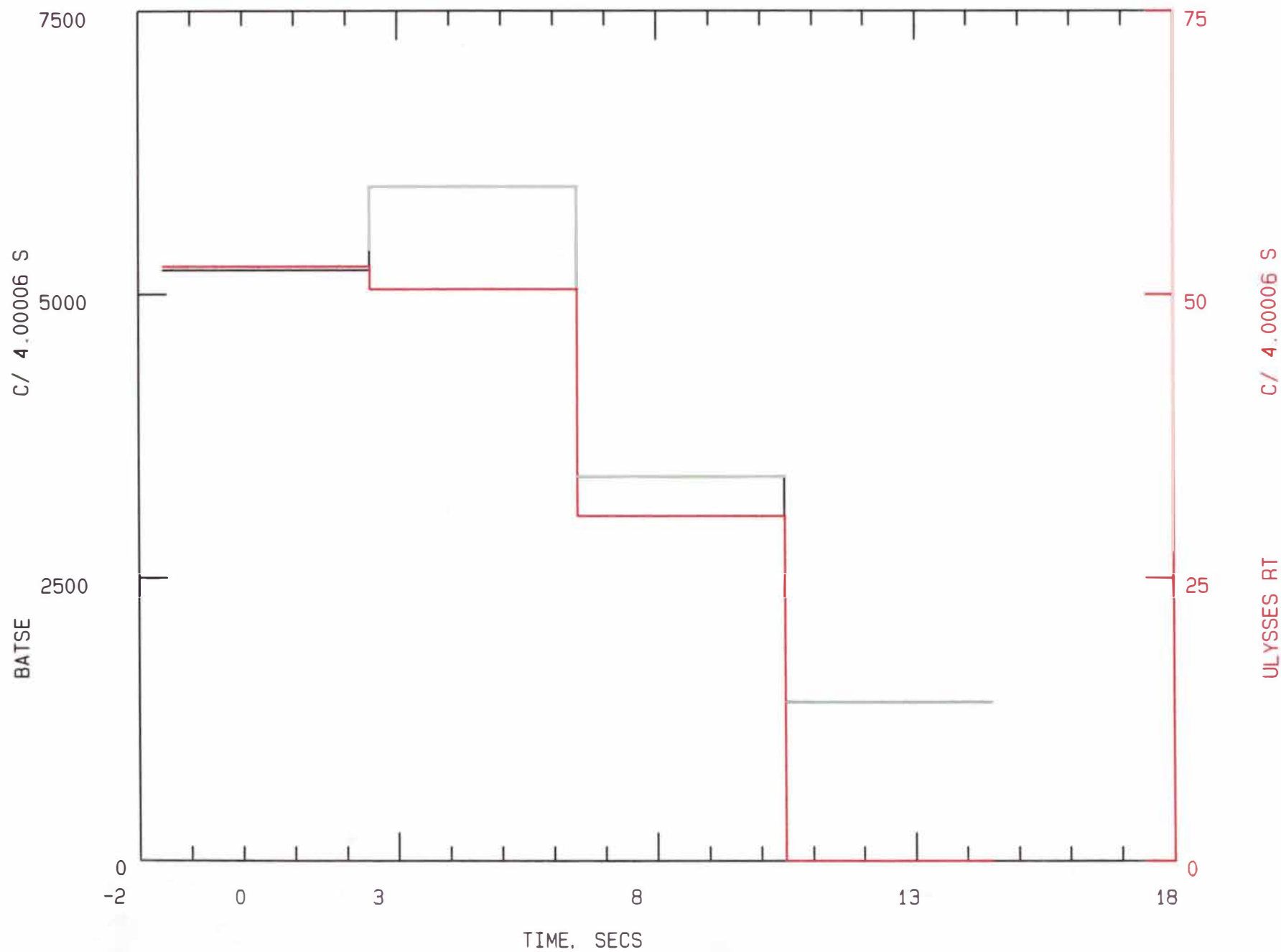
BATSE

-ULYSSES RT CORRELATION

15/11/97

69922.018

10/ 4/98

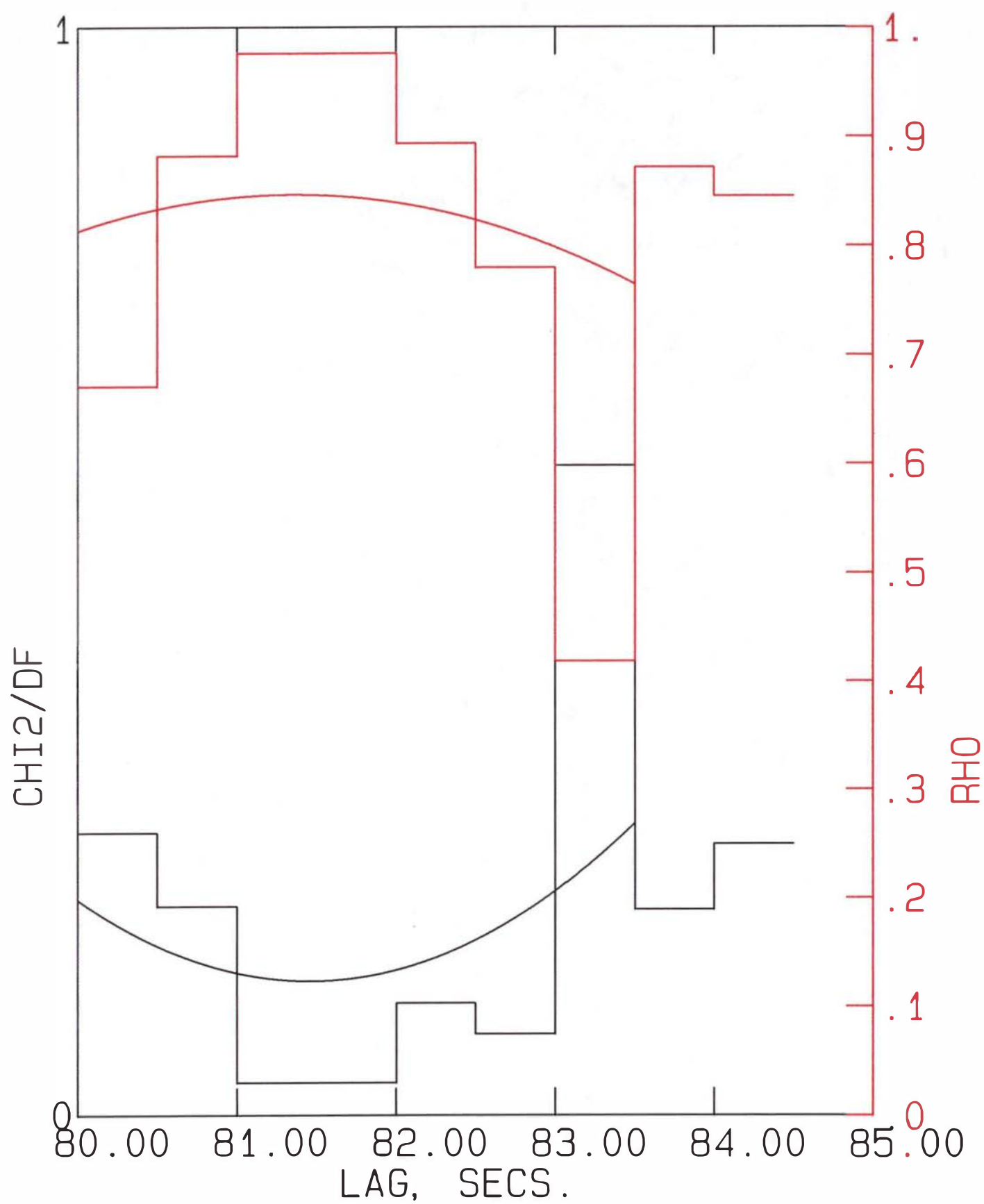


BATSE

-ULYSSES RT CORRELATION

15/11/97

69922.018



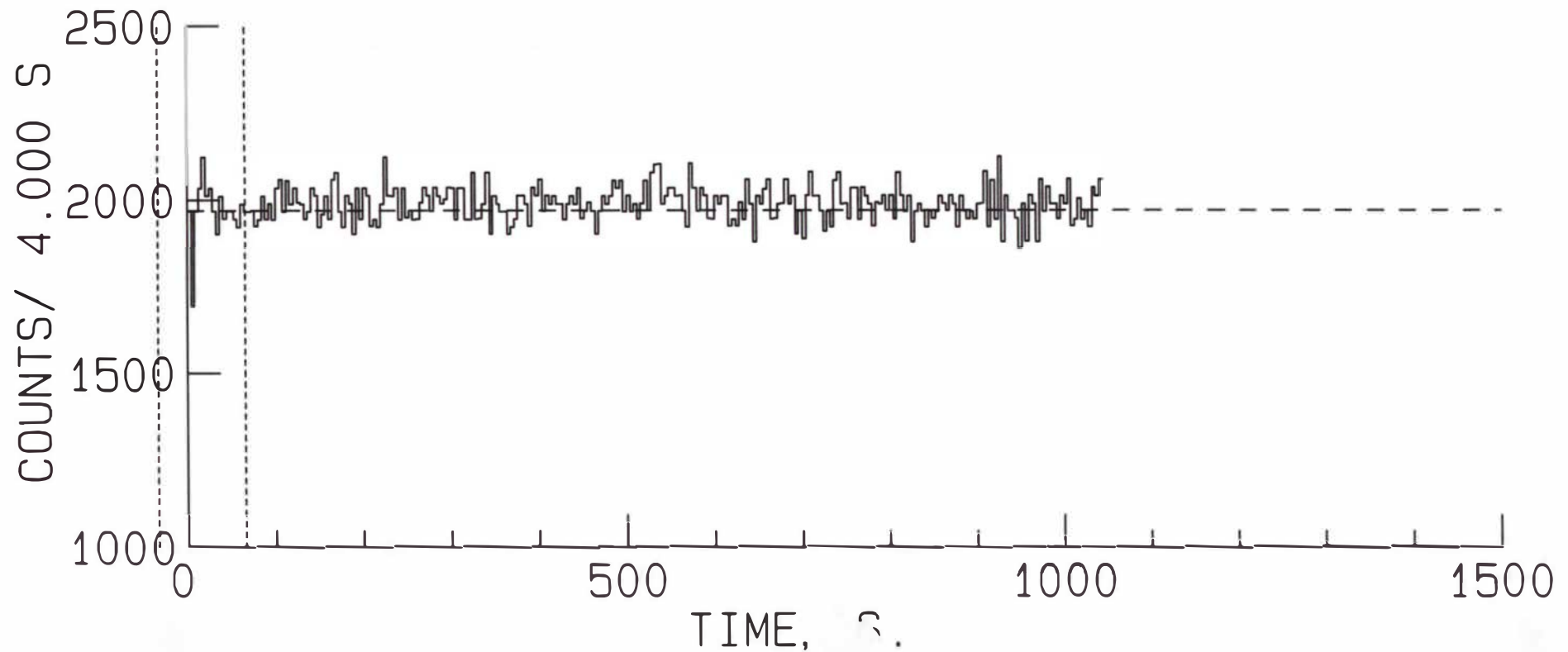
ULYSSES RT

10 / 4 / 98

15/11/97 70344.187 s

0.500 S INTERVALS REGROUPED BY 8

22- 147 keV



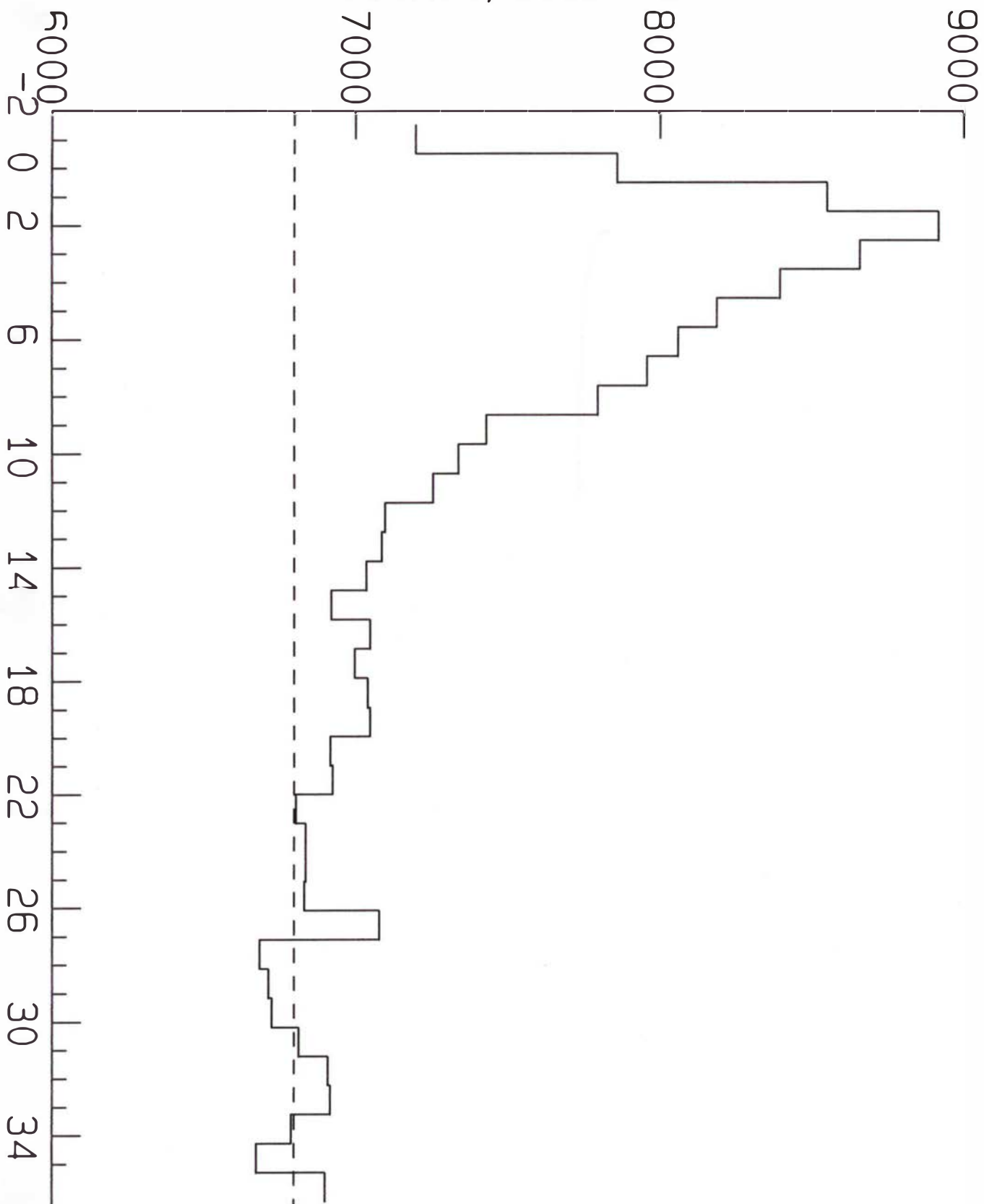
BATSE

15/11/97

69922.018

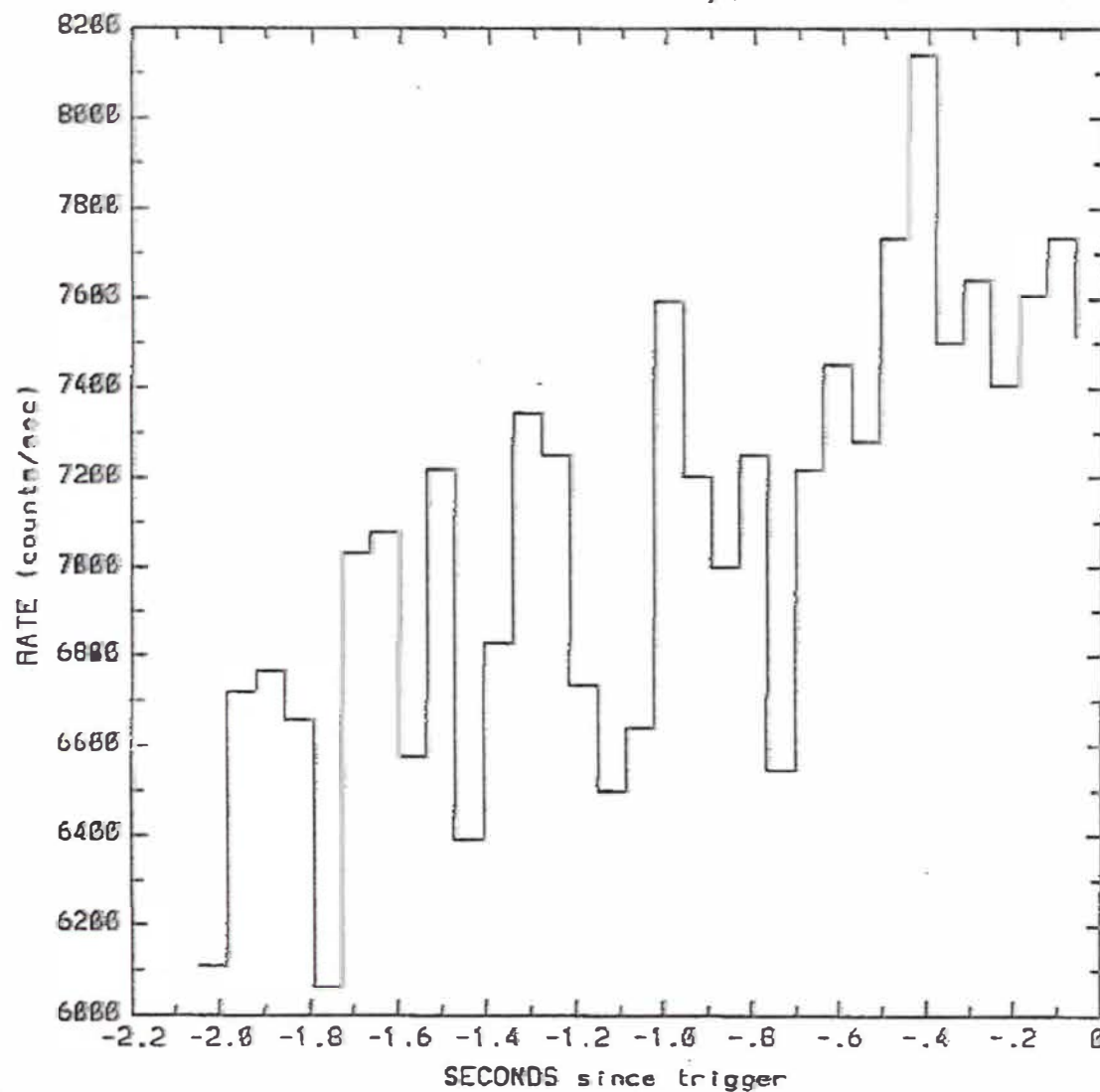
25- 100 keV

COUNTS/1.024 S



29 / 11 / 97

DISCSC Data for K. Hurley, No. 6480



24-NOV-1997 09:26:30

Created by NOPS BD
(Burnt Display)
Version 12.25

Trigger # : 6480

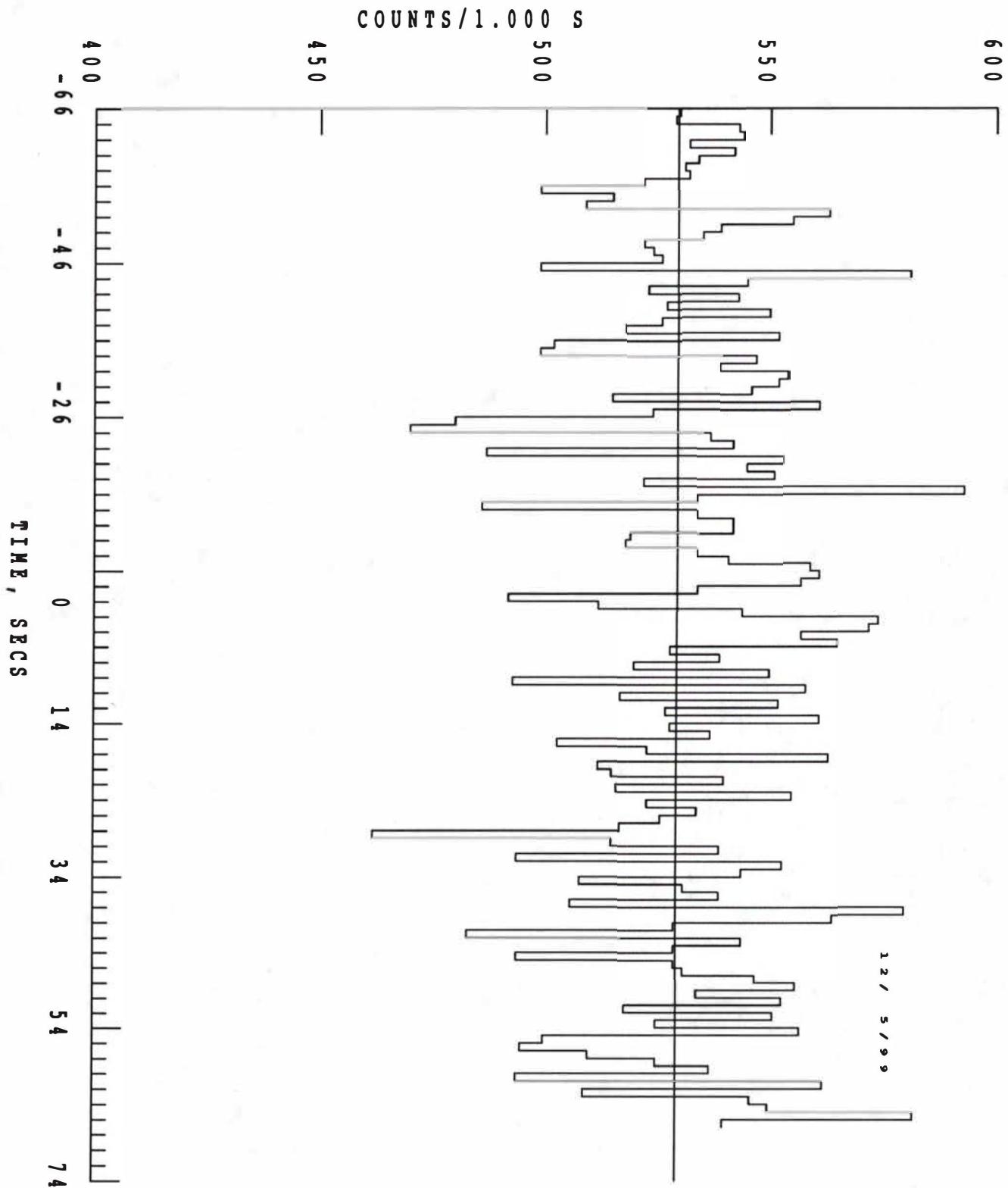
Trigger Time:
18767 / 64922.817Burnt Data Type:
DISCSCDeadTime
Corrected: N
Background Data
Type: PREB + DISCSC
Kinetic Integ. Time:
0.054 secondsDetectors [7..0]:
--5--Discriminators:
[1, 2]Quality Mask:
BDISP

NEAR

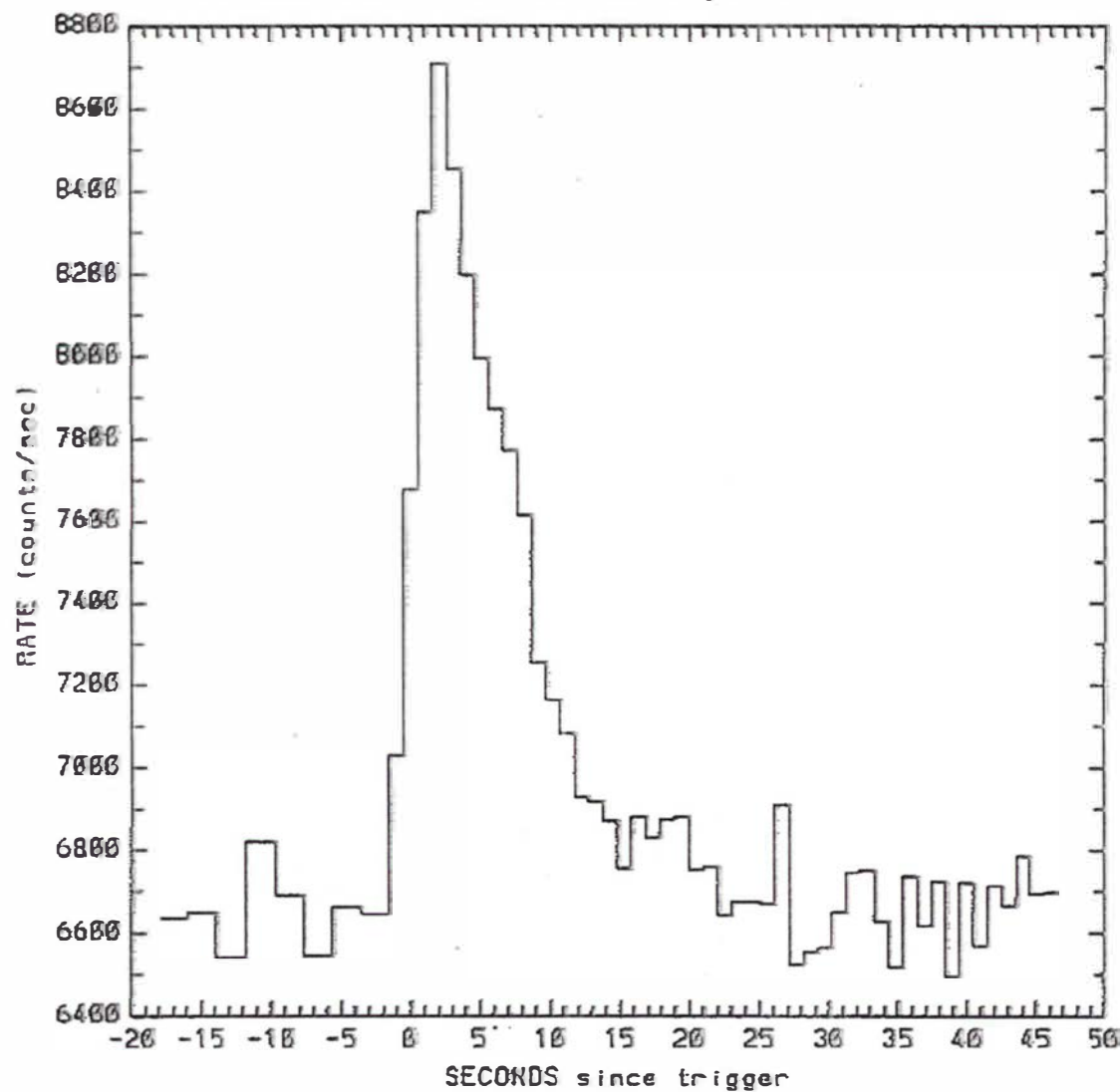
15/11/97

69766.265

100-1000 keV



DISCLB Data for K. Hurley, No. 6480



24-NOT-1997 09:28:05

Created by KOPS BD
(Burst Display)
Version 12.25

Trigger # : 6480

Trigger Times:
10767 / 64922.017Burst Data Type:
DISCLBDeadline:
Corrected: 11Background Data
Type: NoneKinetic Integ. Time:
1.024 secondsDetectors [7.0]:
--5--Discriminators:
11, 21Quality Mask:
80197

From SAHI@fender.msfc.nasa.gov Wed Nov 19 11:54:42 1997
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 19 Nov 1997 13:54:12 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@lhev.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6481

TIME: TJD=0767 SECONDS=83402

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

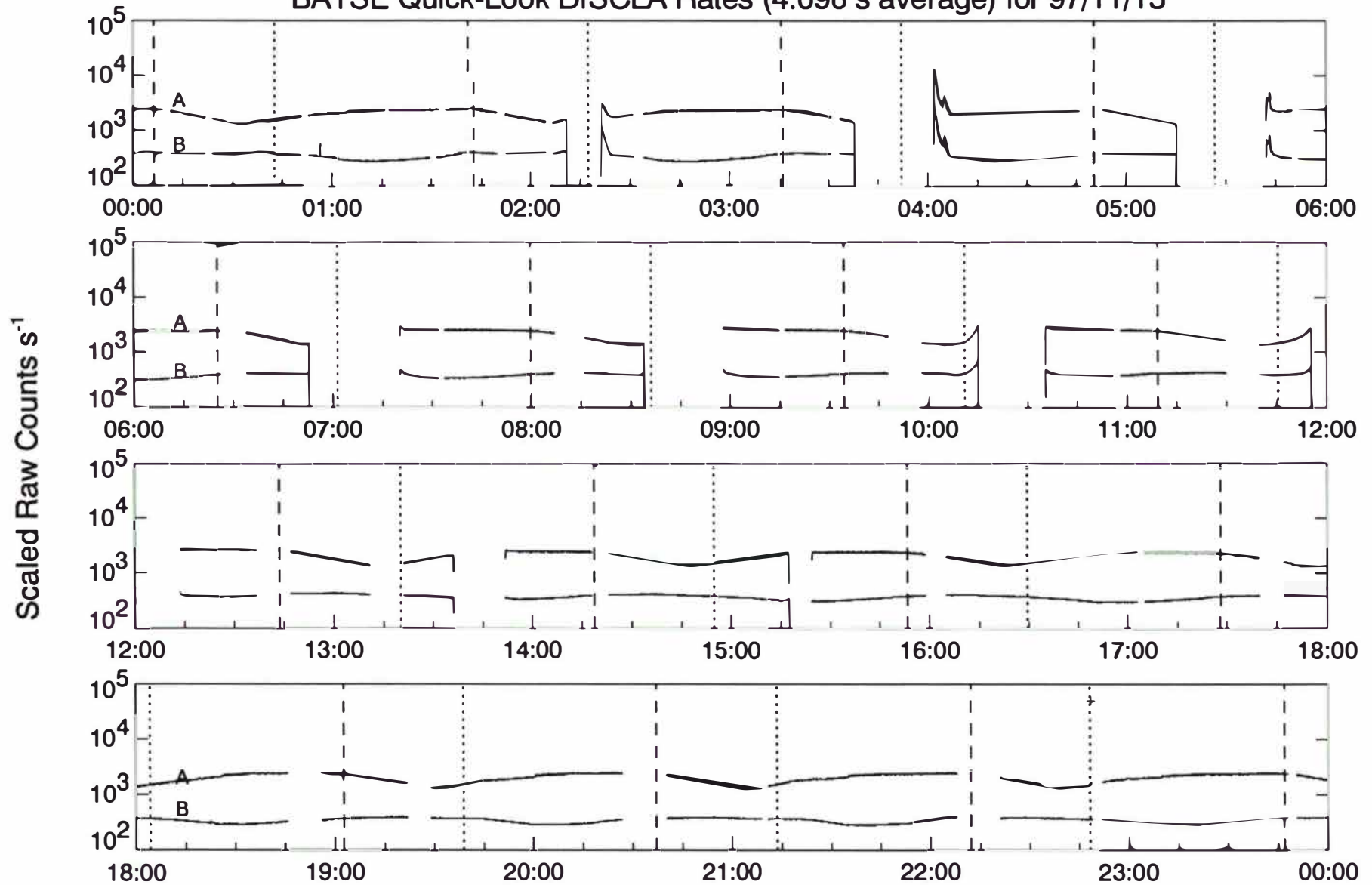
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

TRIGGERED ON A CYGX-1 OCCULTATION STEP.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/15

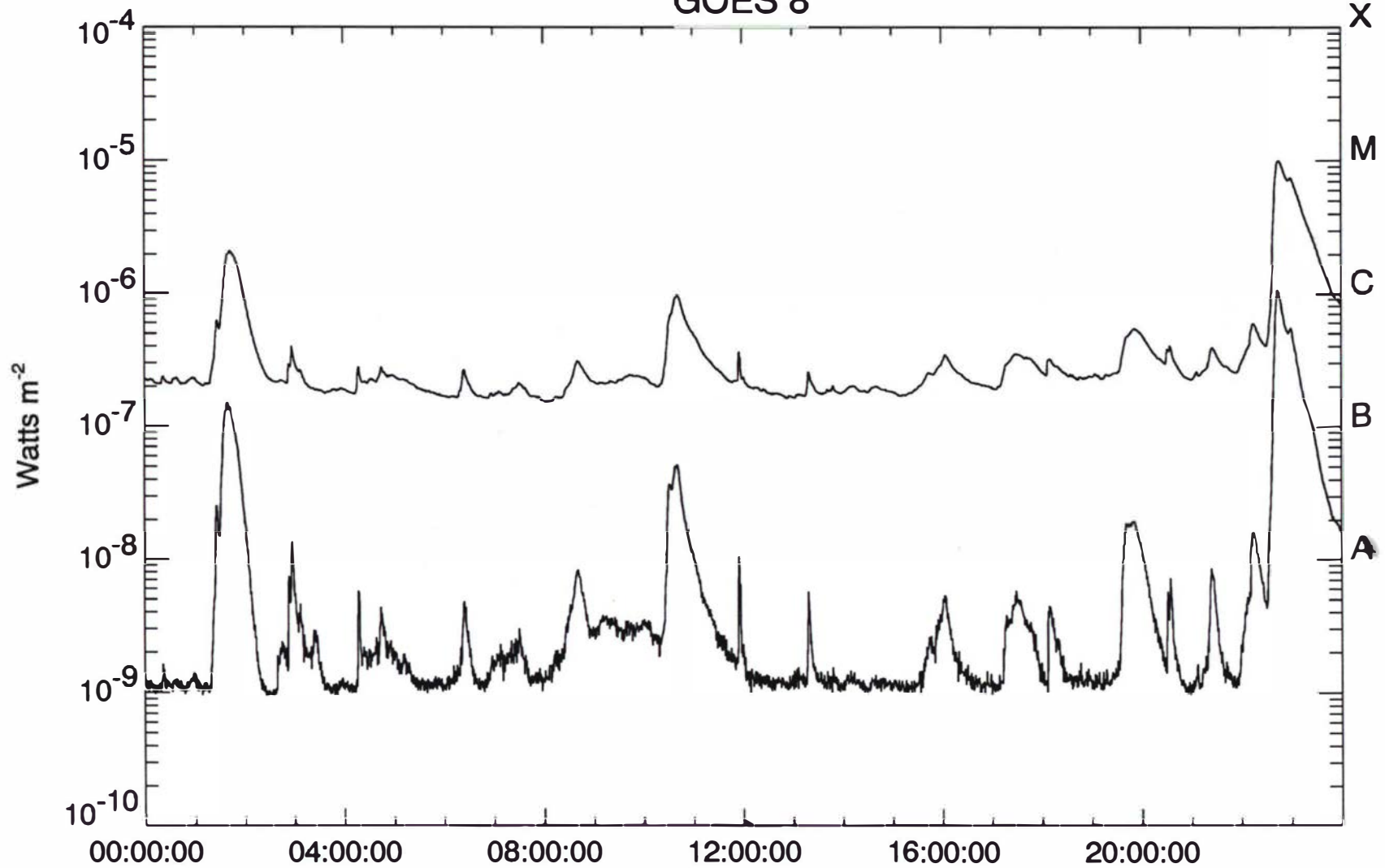


Current Time: 97/11/19, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 97/11/15, 0000:00

Plot created: 97/11/19, 1008

Channel

1 (1.0 - 8.0 Angstroms)

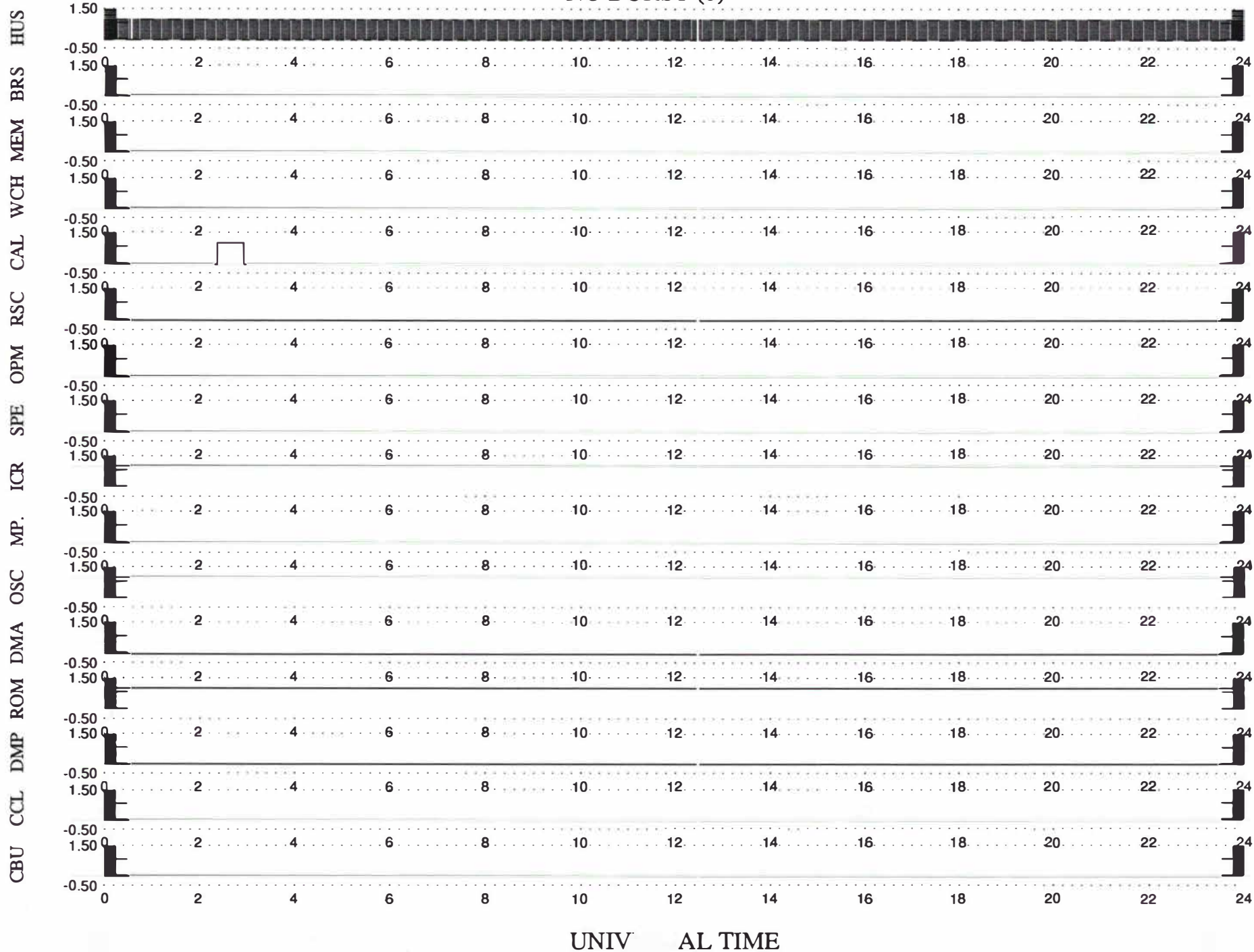
Background not subtracted

2 (0.5 - 4.0 Angstroms)

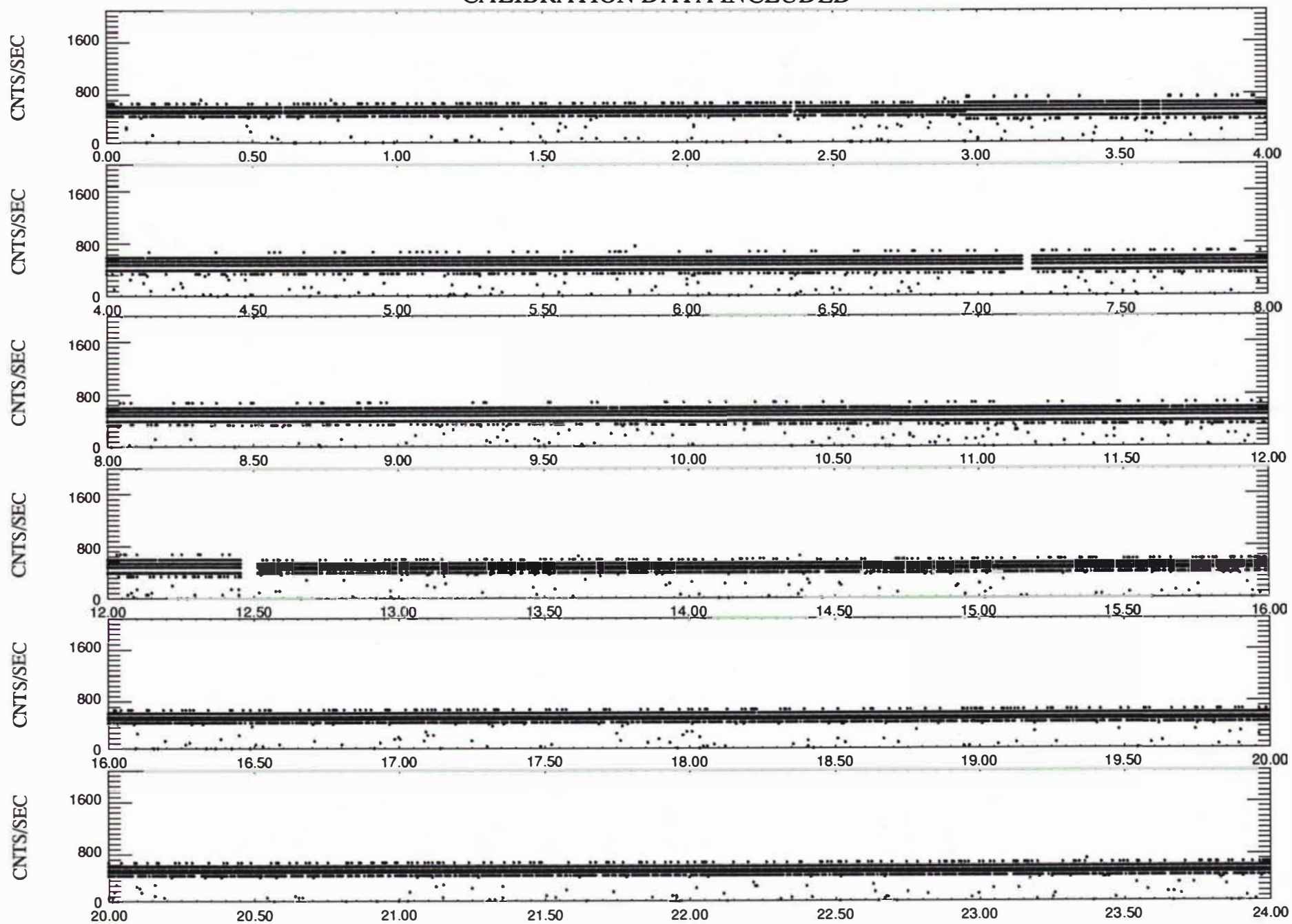
Background not subtracted

Sample average = 10

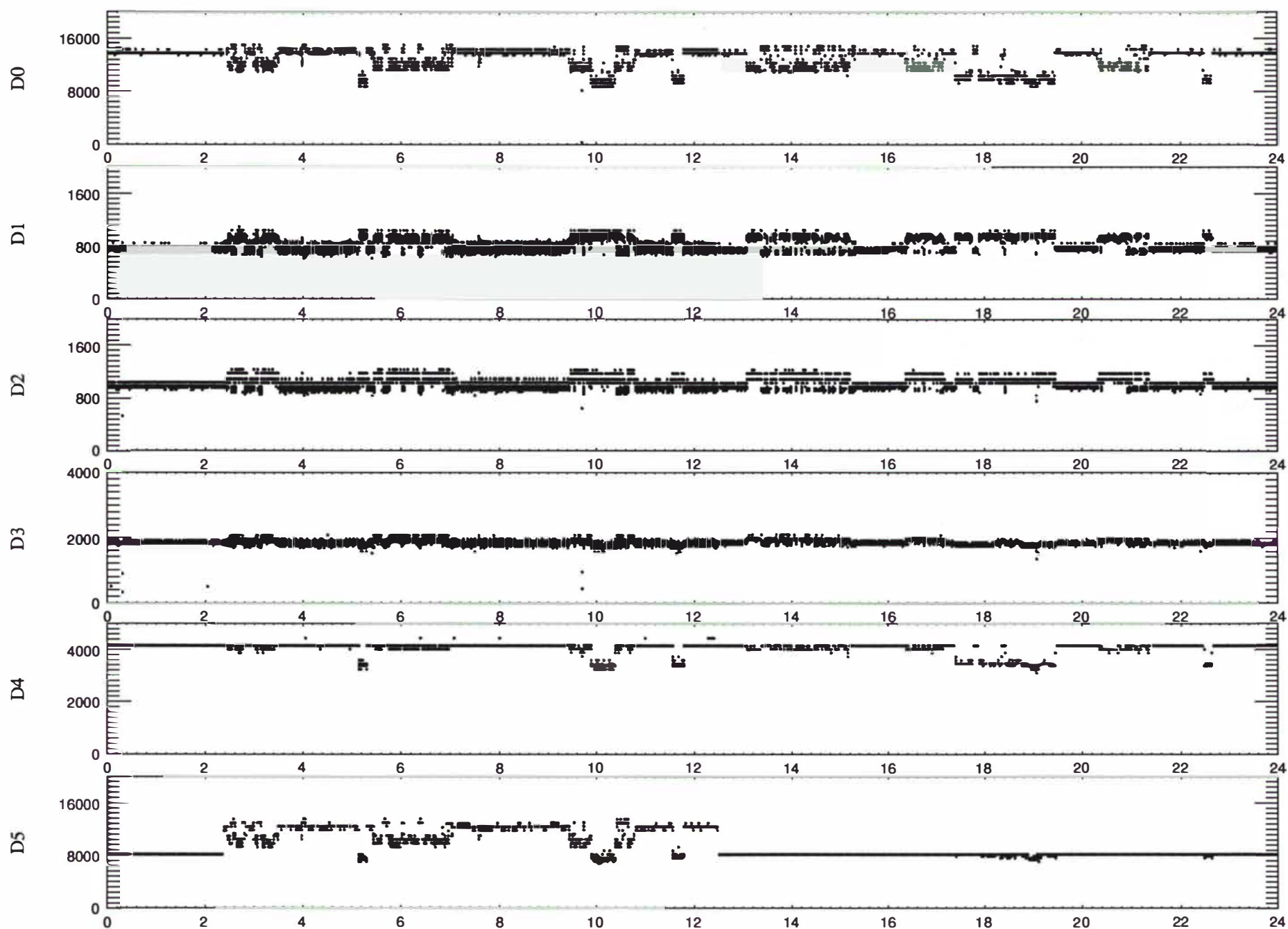
NO BURST (8)



CALIBRATION DATA INCLUDED

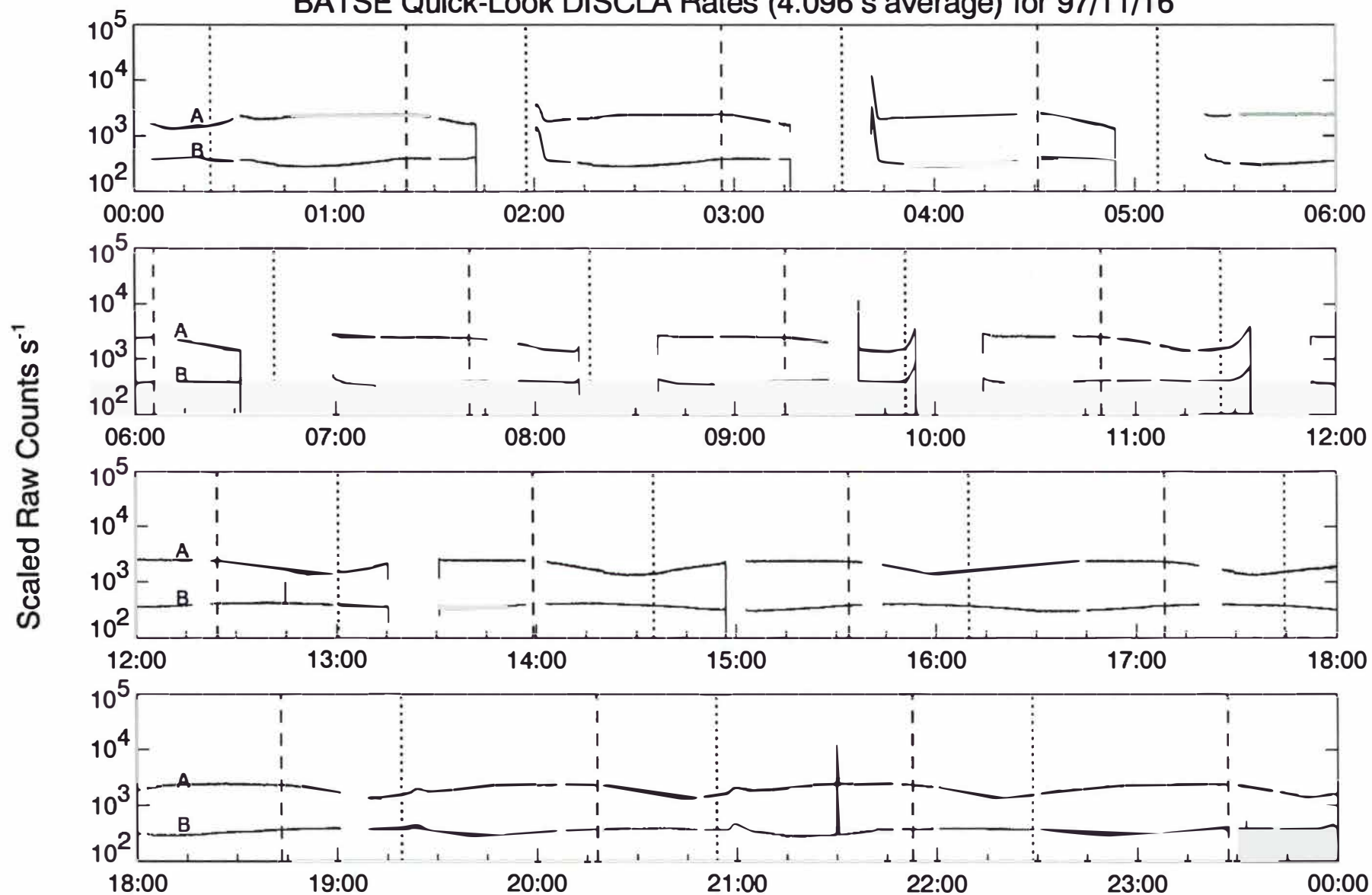


UNIV AL TIME



UNIV AL TIME

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/16

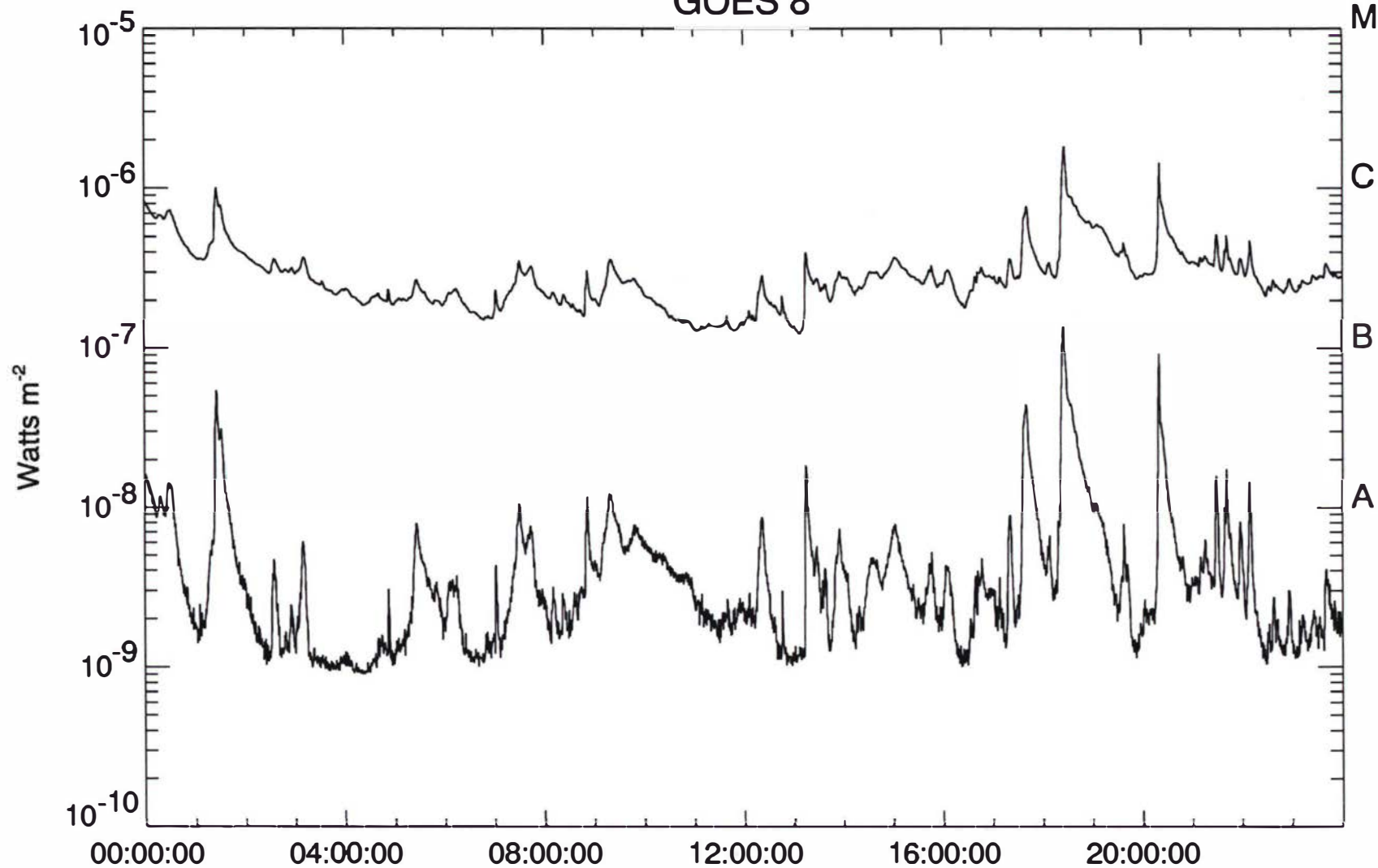


Current Time: 97/11/20, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/16, 0000:00

Plot created: 97/11/20, 1007

Channel

1 (1.0 - 8.0 Angstroms)

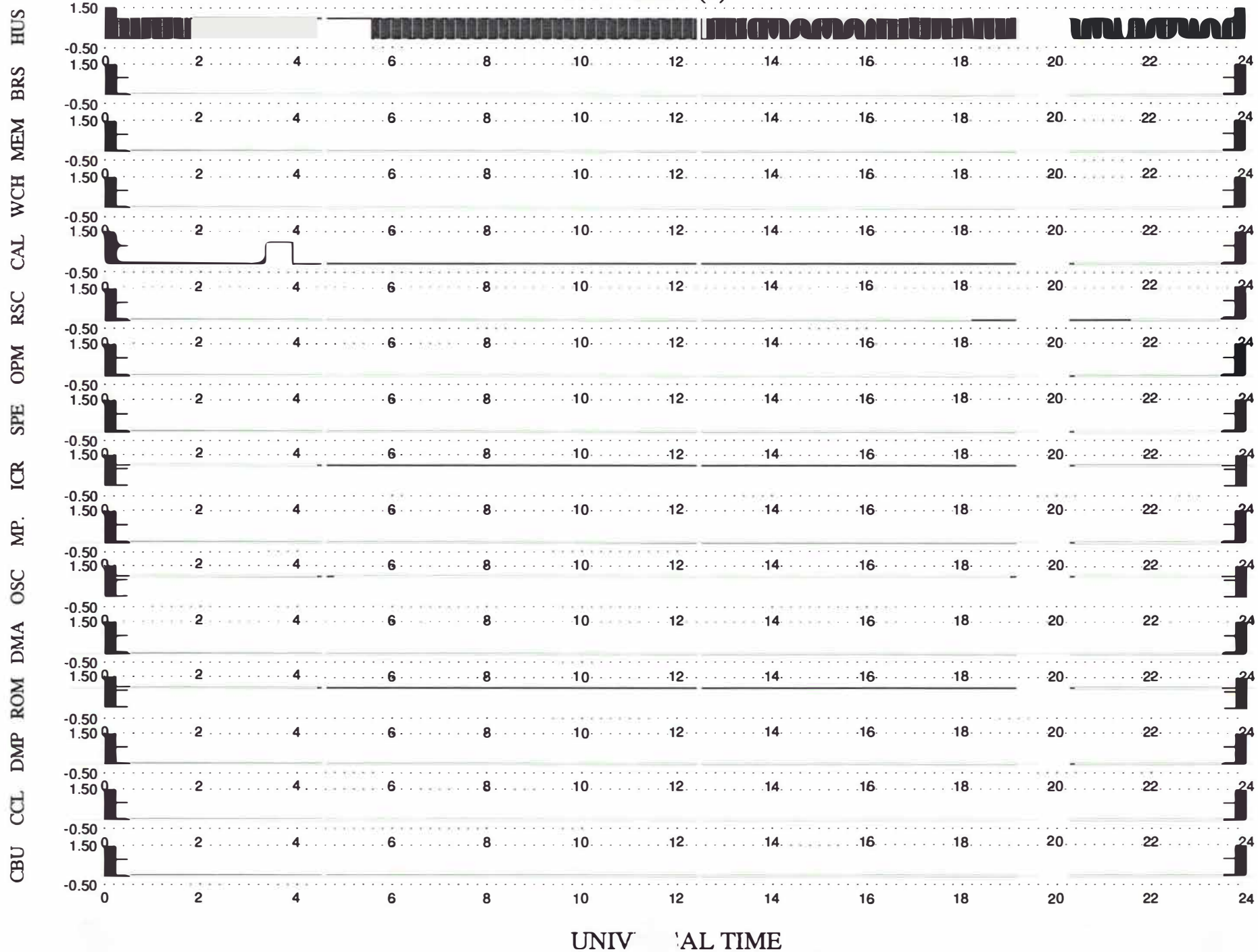
Background not subtracted

2 (0.5 - 4.0 Angstroms)

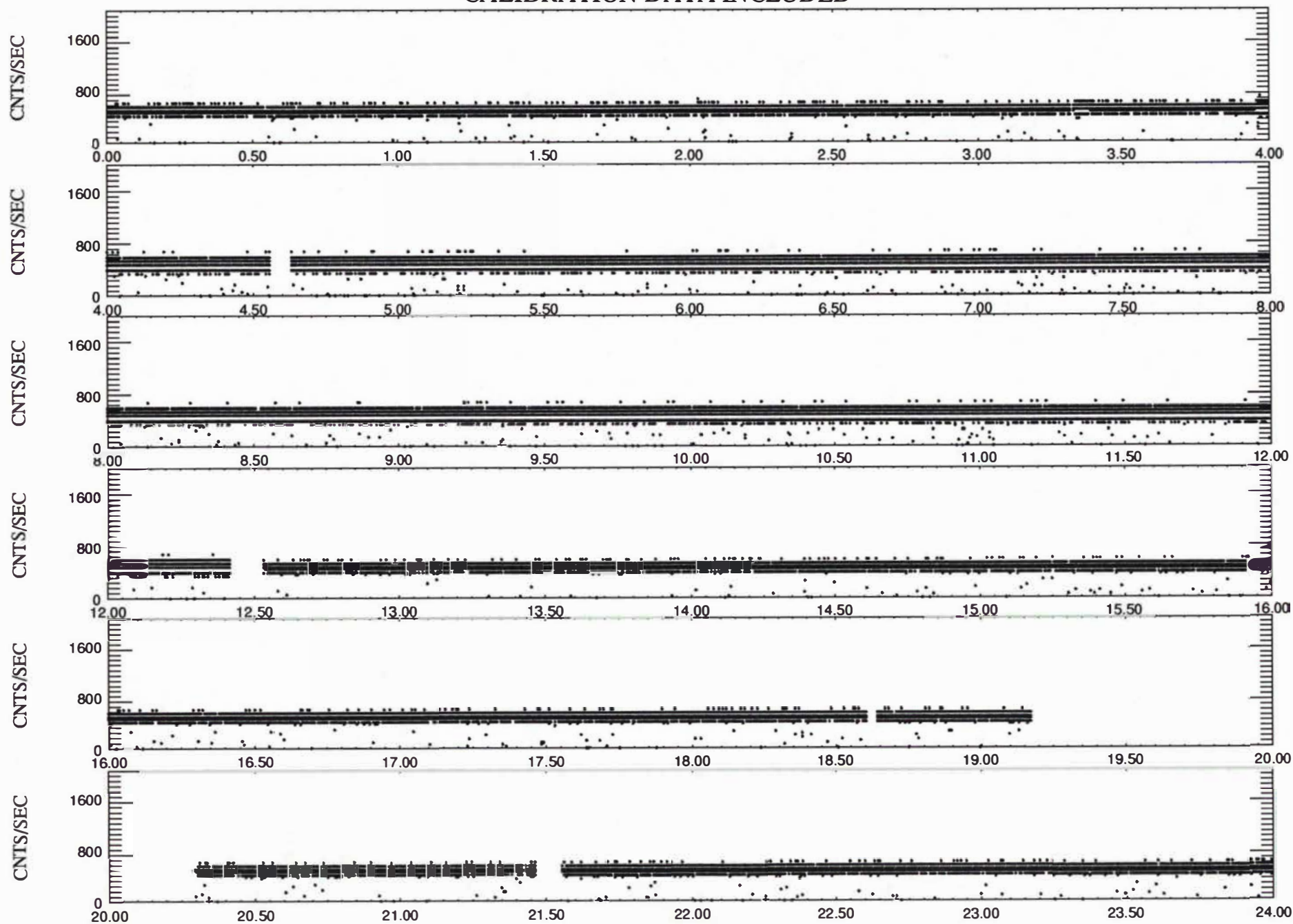
Background not subtracted

Sample average = 10

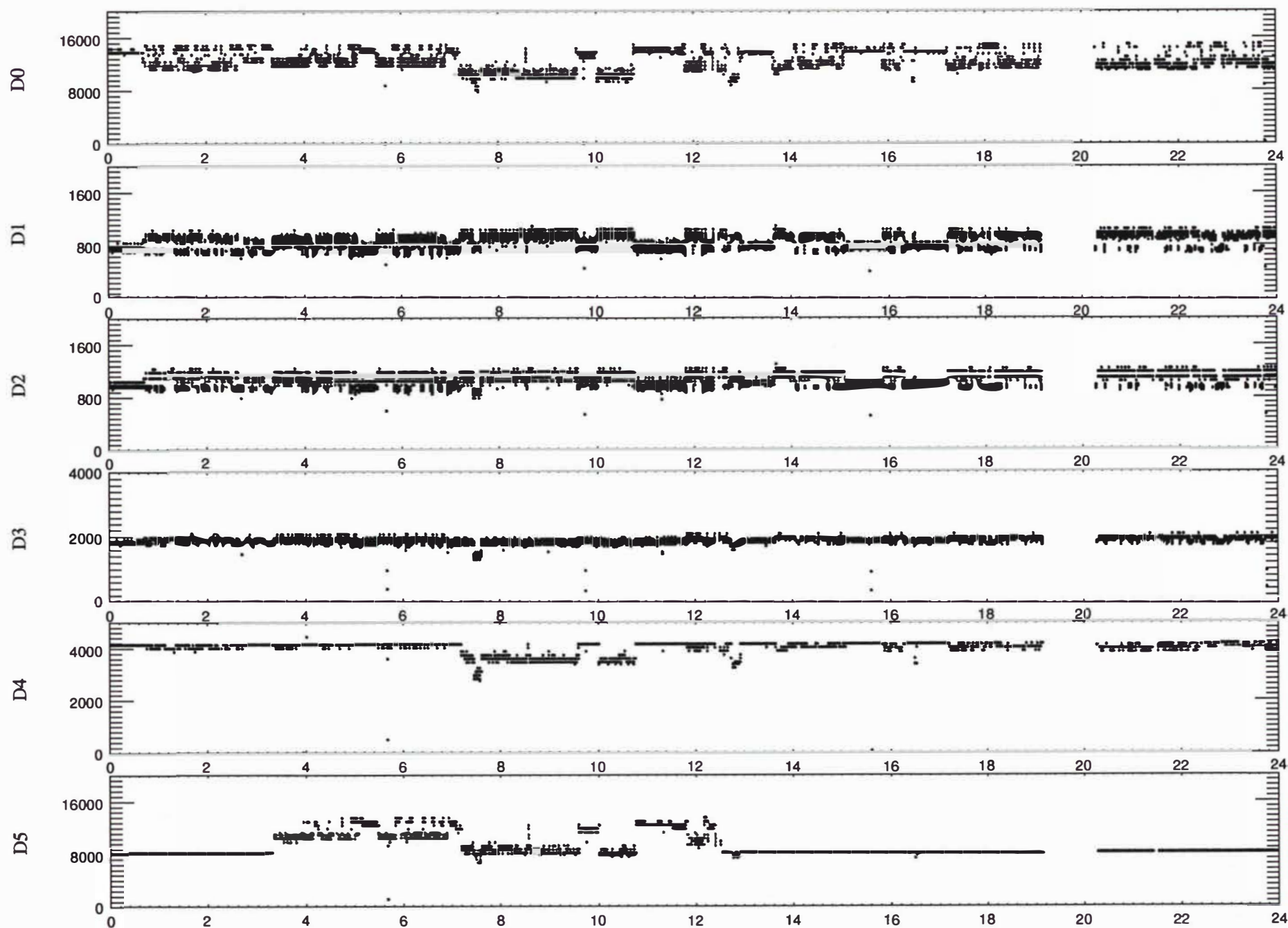
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIV 'AL TIME



UNIV' AL TIME

November 17 1997 02:08 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 18 1997 11:22 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 29 1997 20:25 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

December 7 1997 11:24 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

December 11 1997 20:22 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

December 14 1997 08:44 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

December 19 1997 21:33 Ulysses time; moderate burst, 15 s long

Konus triggered at 22:12:54.241 in the North-facing detector. The event consisted of a single broad soft peak lasting 10 seconds, with a 50-200 keV spike 4 seconds after the trigger and lasting 0.5 seconds.

November 25 1997 17:23 Ulysses time; weak burst, 32 ms long

Konus waiting-mode data records a couple of events during the period of interest. There was a weak to moderate North-facing detector soft event lasting 60 seconds, with a peak at 18:00:35. A single 3-second timebin

From kraken@rosserv.gsfc.nasa.gov Wed Dec 17 14:05 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 17 Dec 1997 17:07:14 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@rosserv.gsfc.nasa.gov>
Subject: Ulysses bursts and TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

Here are the results of a search through TGRS data for recent Ulysses bursts. We cannot report the detection of any of the bursts listed below. Three bursts had interesting anomalies within a 6000 second window centered on the Ulysses trigger time. Such events are under investigation, but are probably not GRB's.

November 17 1997 02:08 Ulysses time; weak burst, 100 ms long
TGRS sees a single high data channel at 7100s between 100-300 keV

November 18 1997 11:22 " " ; weak burst, 64 ms long
November 29 1997 20:25 Ulysses time; weak burst, 100 ms long
December 7 1997 11:24 Ulysses time; weak burst, 64 ms long
December 11 1997 20:22 Ulysses time; weak burst, 32 ms long
TGRS sees a single high data channel at 75700s between 35-100 keV

December 14 1997 08:44 Ulysses time; weak burst, 32 ms long
TGRS sees a single high data channel at 35100s between 100-300 keV

Take care, and Happy Holidays.

Pete

From HENZE@fender.msfc.nasa.gov Wed Nov 19 10:48:41 1997
Date: Wed, 19 Nov 1997 12:47:56 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@ests2.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6482

TIME: TJD=0769 SECONDS=12327

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 85.6 AZIMUTH=356.4 ERROR= 0.3 DEGREES

COMMENTS:

GOES B5.3 FLARE. SINGLE PULSE, DUR. APPROX. 50 S, STARTS AT APPROX. T-30 S,
MAX AT T. NOT VISIBLE ABOVE 100 KEV.

From HENZE@fender.msfc.nasa.gov Tue Nov 18 14:07:49 1997
Date: Tue, 18 Nov 1997 16:05:26 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lheaWWW.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6483

TIME: TJD=0769 SECONDS=28349

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From HENZE@fender.msfc.nasa.gov Wed Nov 19 10:53:02 1997
Date: Wed, 19 Nov 1997 12:52:35 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6484

TIME: TJD=0769 SECONDS=48908

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 85.2 AZIMUTH=356.7 ERROR= 0.5 DEGREES

COMMENTS:

GOES C2.6 FLARE. SINGLE PULSE, DUR. APPROX. 95 S, STARTS AT APPROX. T-45 S,
MAX AT T. WEAKLY VISIBLE ABOVE 100 KEV.

From HENZE@fender.msfc.nasa.gov Wed Nov 19 10:57:10 1997
Date: Wed, 19 Nov 1997 12:56:39 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@ests2.esa.nl,
cline@heavx.gsfc.nasa.gov, barthelmy@heavx.gsfc.nasa.gov,
bacodine@heavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@heavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6485

TIME: TJD=0769 SECONDS=51350

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 85.3 AZIMUTH=356.5 ERROR= 0.1 DEGREES

COMMENTS:

GOES C1.3 FLARE. SINGLE PULSE WITH STRUCTURE, DUR. APPROX. 60 S, STARTS AT
APPROX. T-15 S, MAX AT APPROX. T+6 S. NOT VISIBLE ABOVE 300 KEV.

Date: Jan 6 2012

BURST TRIANGULATION CHECKLIST

I. 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?

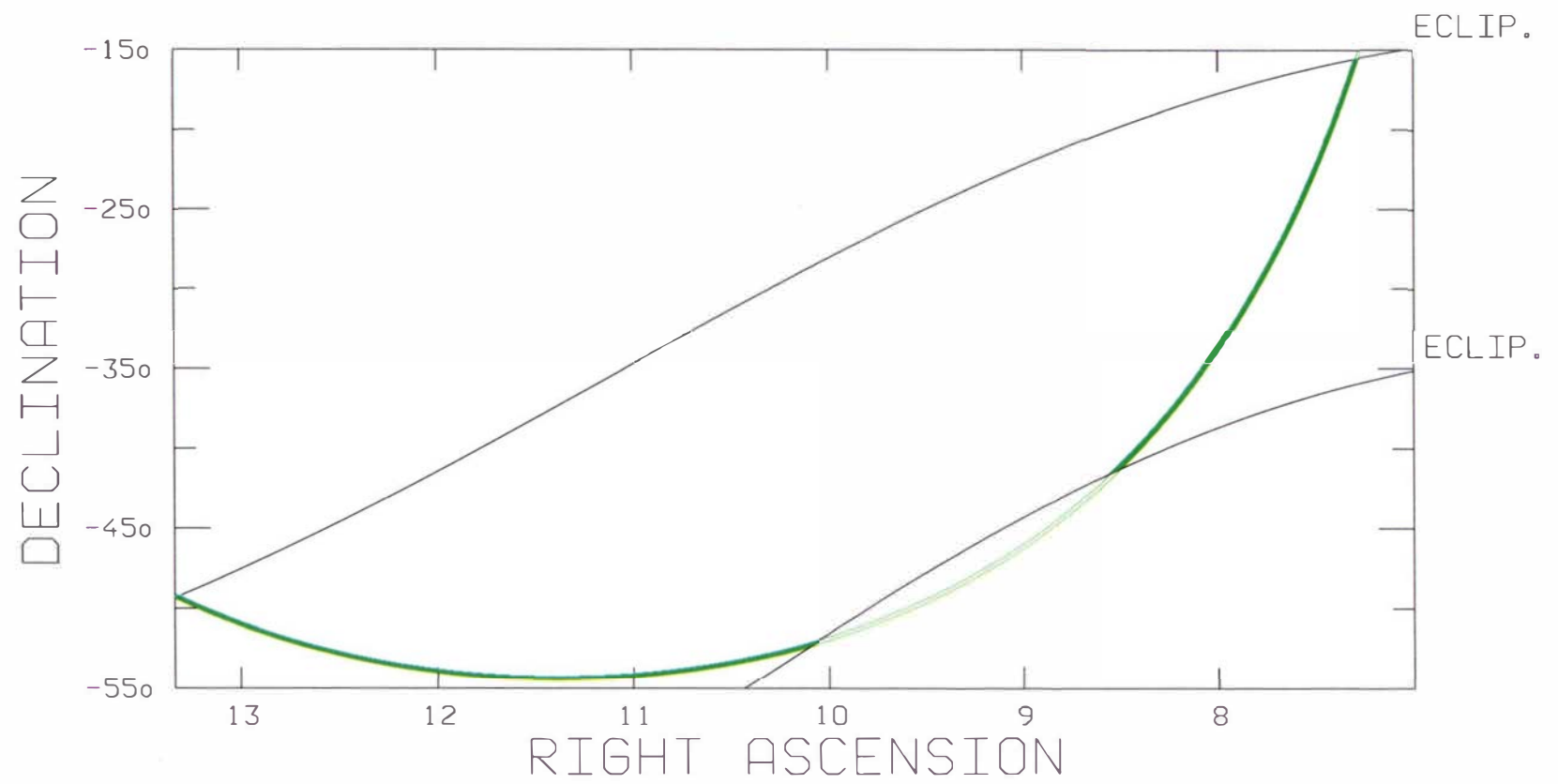
2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

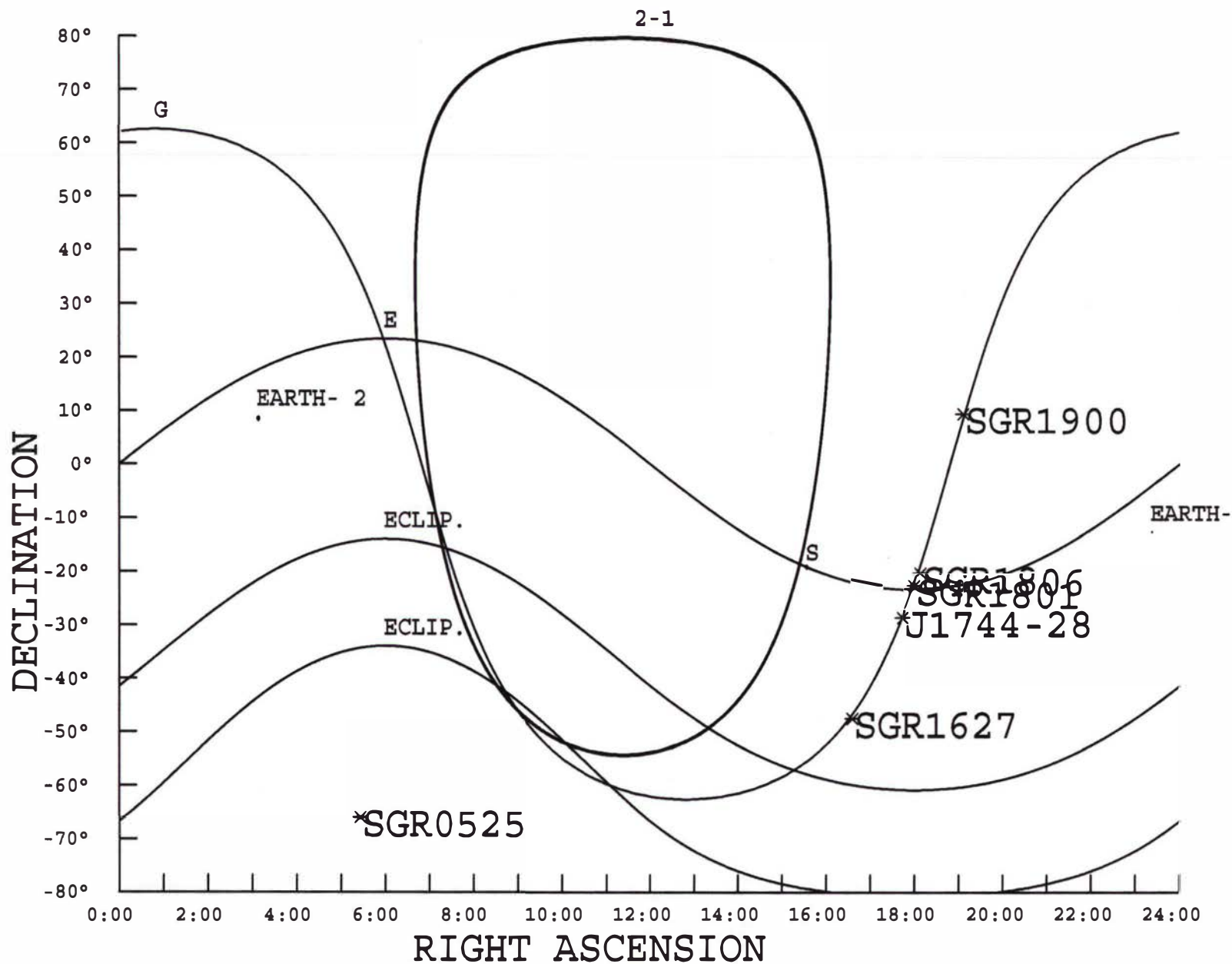
-
- ☒ ACCESS and MBL4 databases updated with identical times?



EVENT OF NOV 17, 1997 22:40

24/ 8/ 4

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



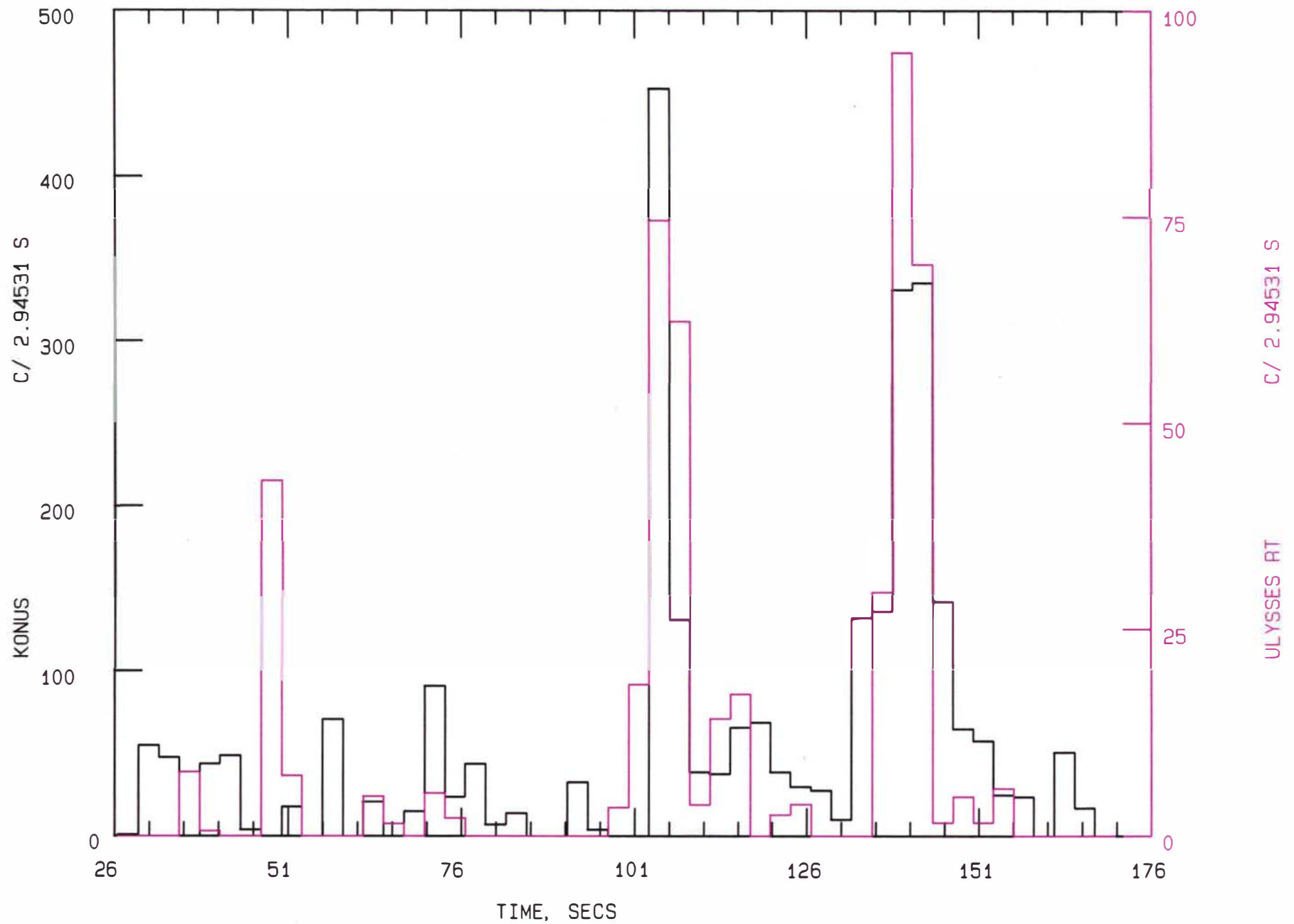
KONUS

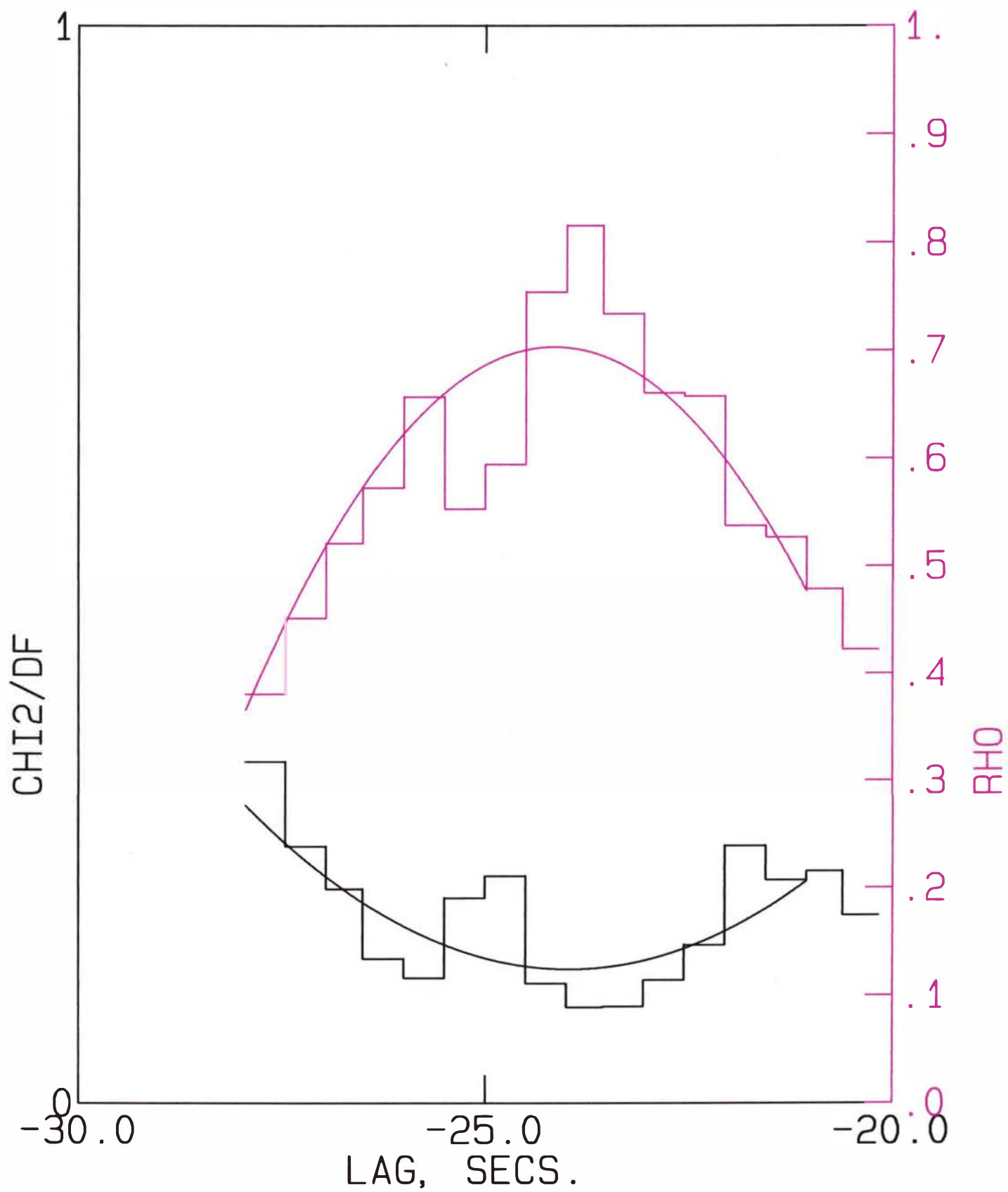
-ULYSSES RT CORRELATION

17/11/97

82698.781

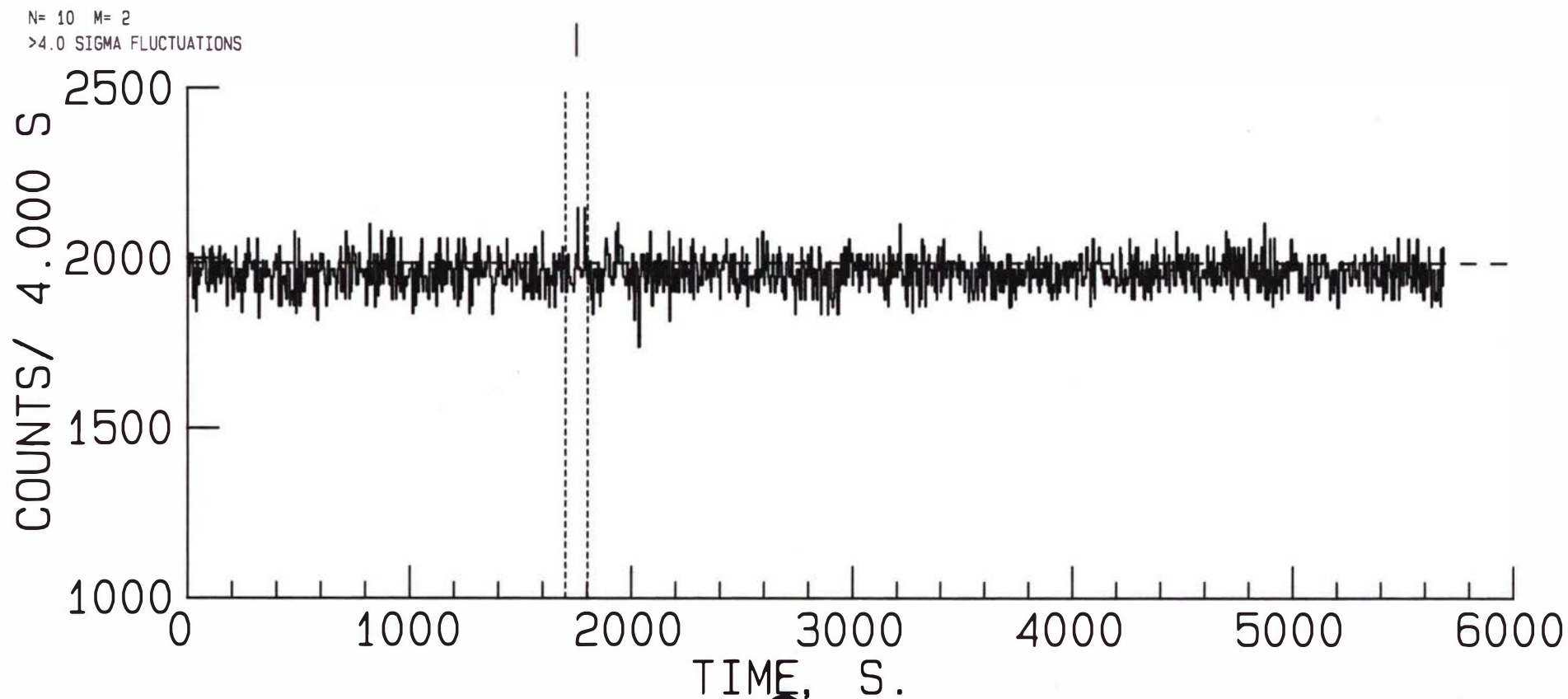
24/ 8/ 4





ULYSSES RT
17/11/97 79956.219 s
0.500 S INTERVALS REGROUPED BY 8
22- 148 keV

24 / 8 / 4



KONUS

17/11/97 82698.781

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4400

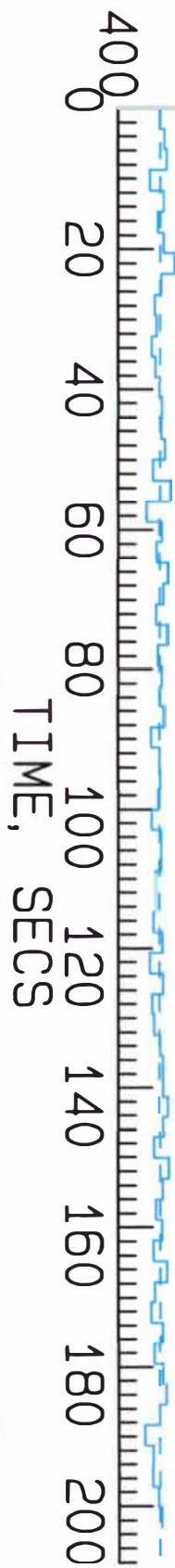
3400

2400

1400

DETECTOR 2 - N. ECLIPHTIC

24/08/04



KONUS

17/11/97 82698.781

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4600

3600

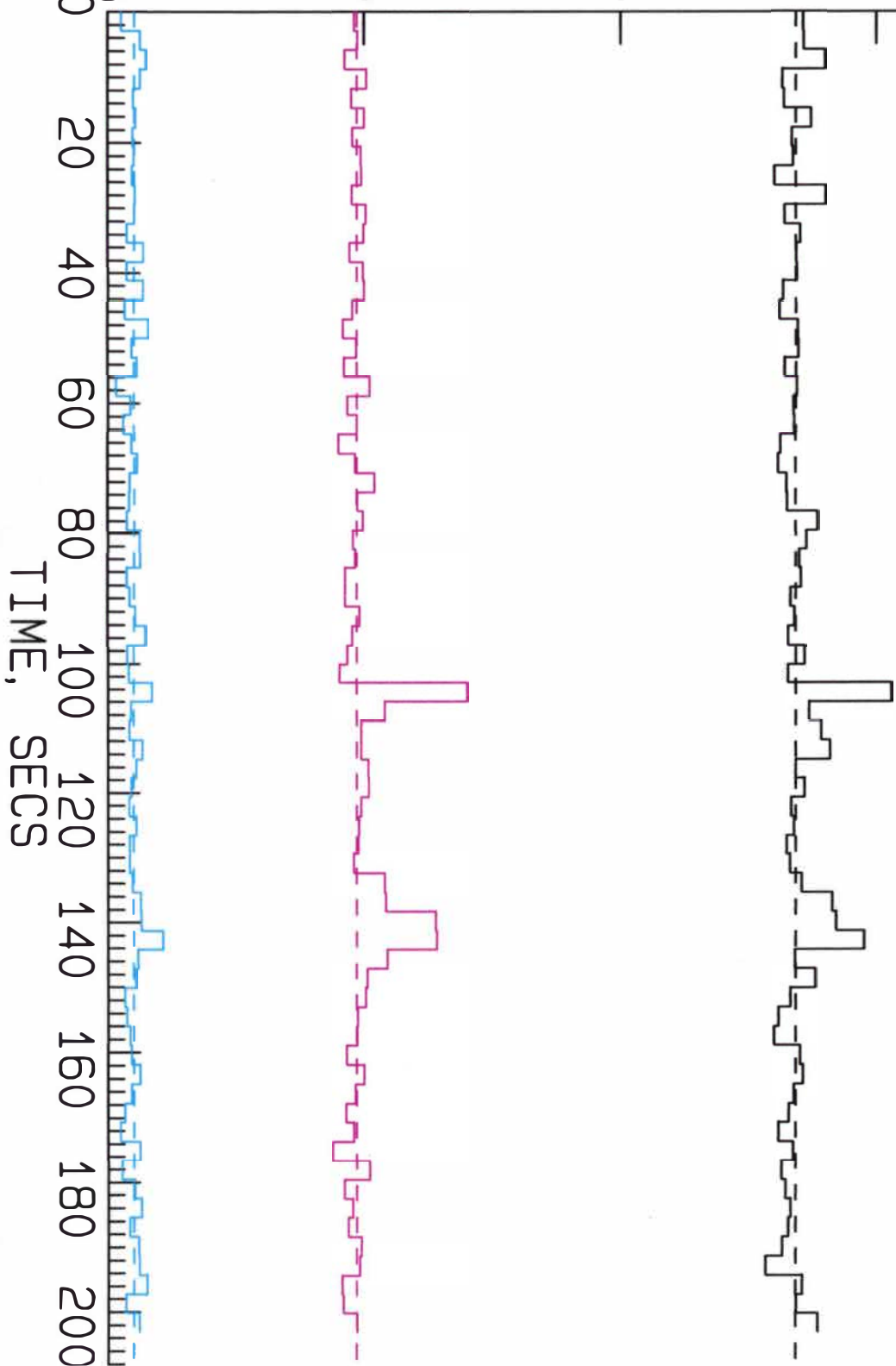
2600

1600

600

DETECTOR 1 - S. ECLIPTEIC

24/08/04

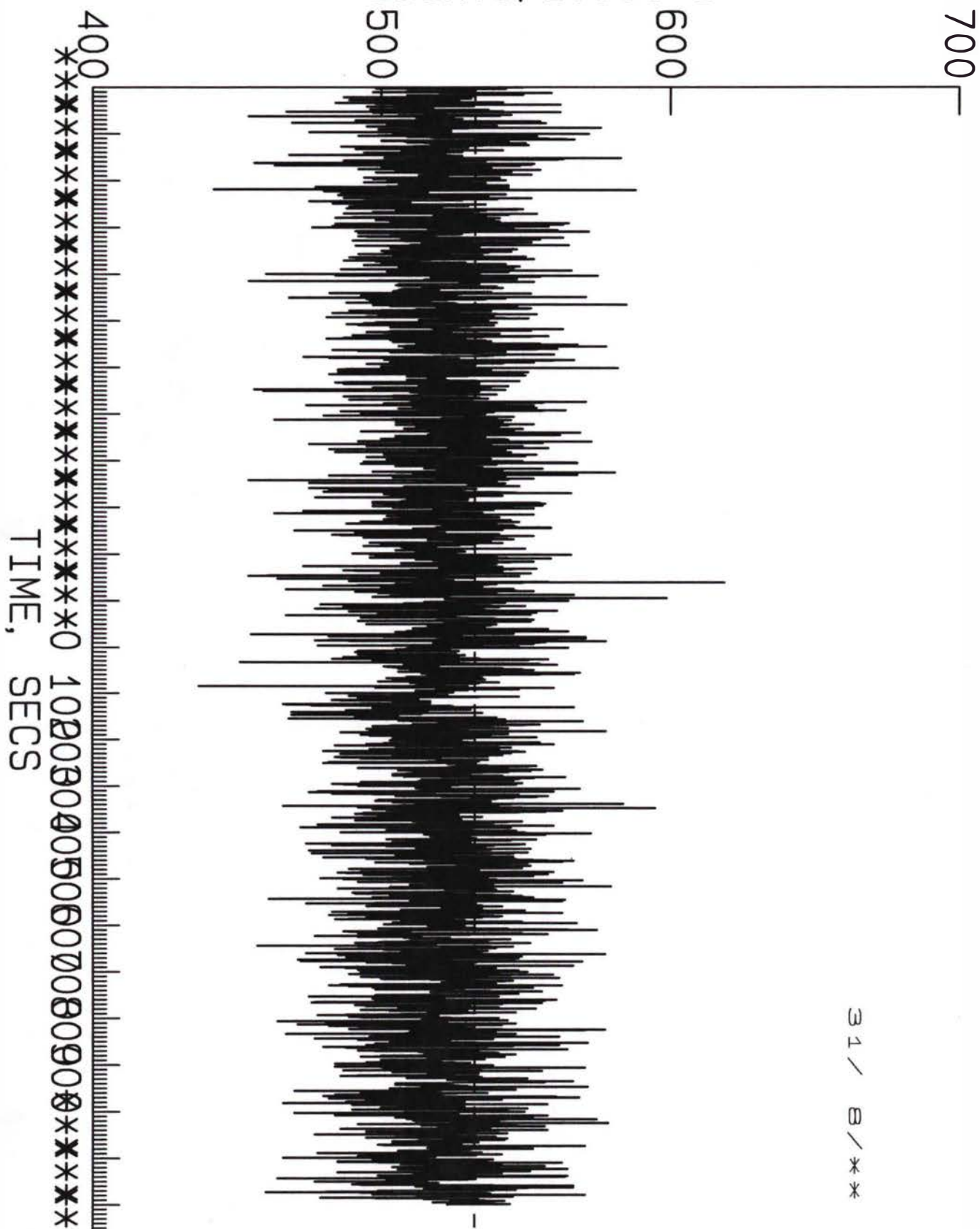


NEAR

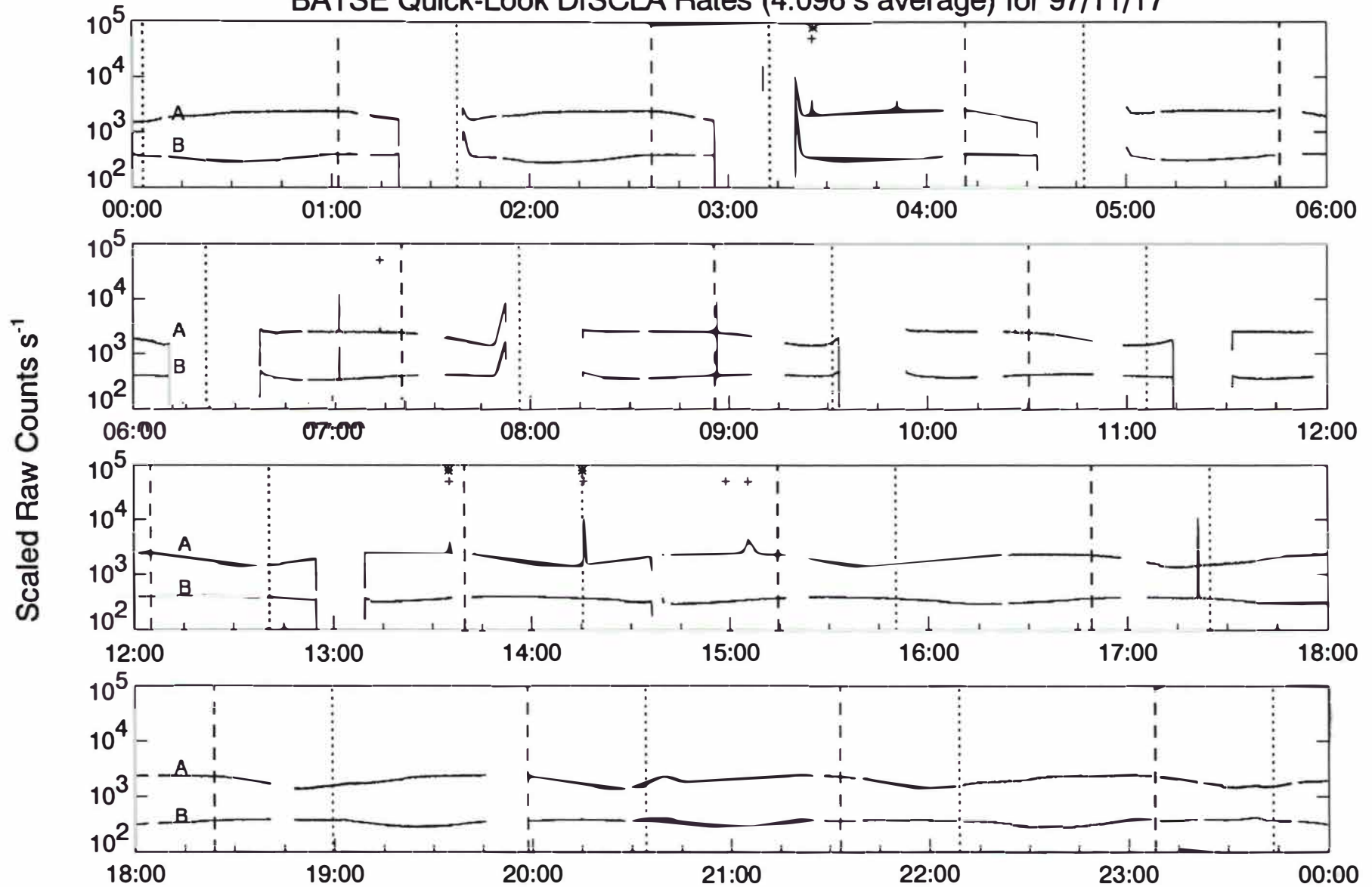
17/11/97 82799.229

100-1000 keV

COUNTS/1.000 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/17

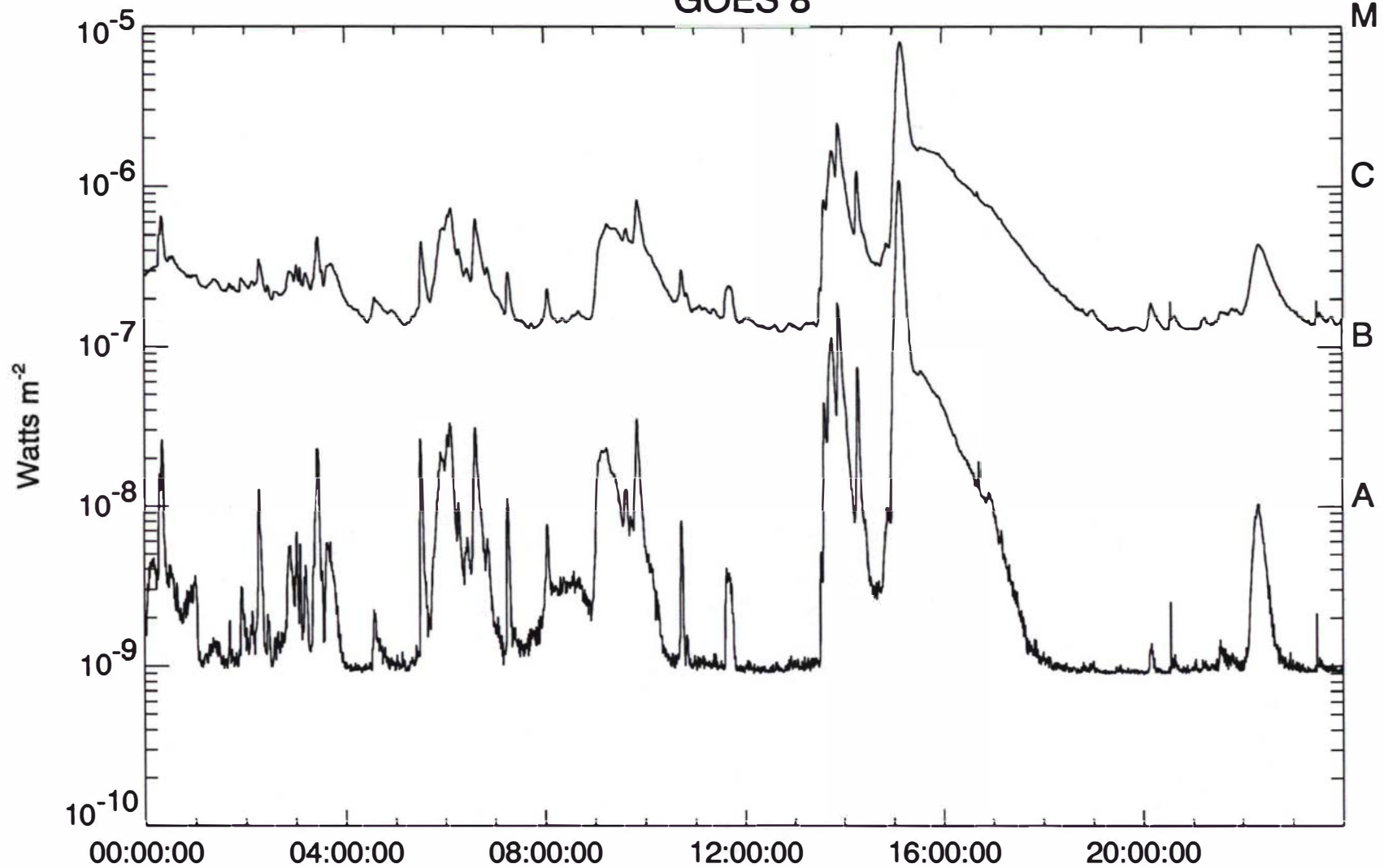


Current Time: 97/11/21, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/17, 0000:00

Plot created: 97/11/21, 1007

Channel

1 (1.0 - 8.0 Angstroms)

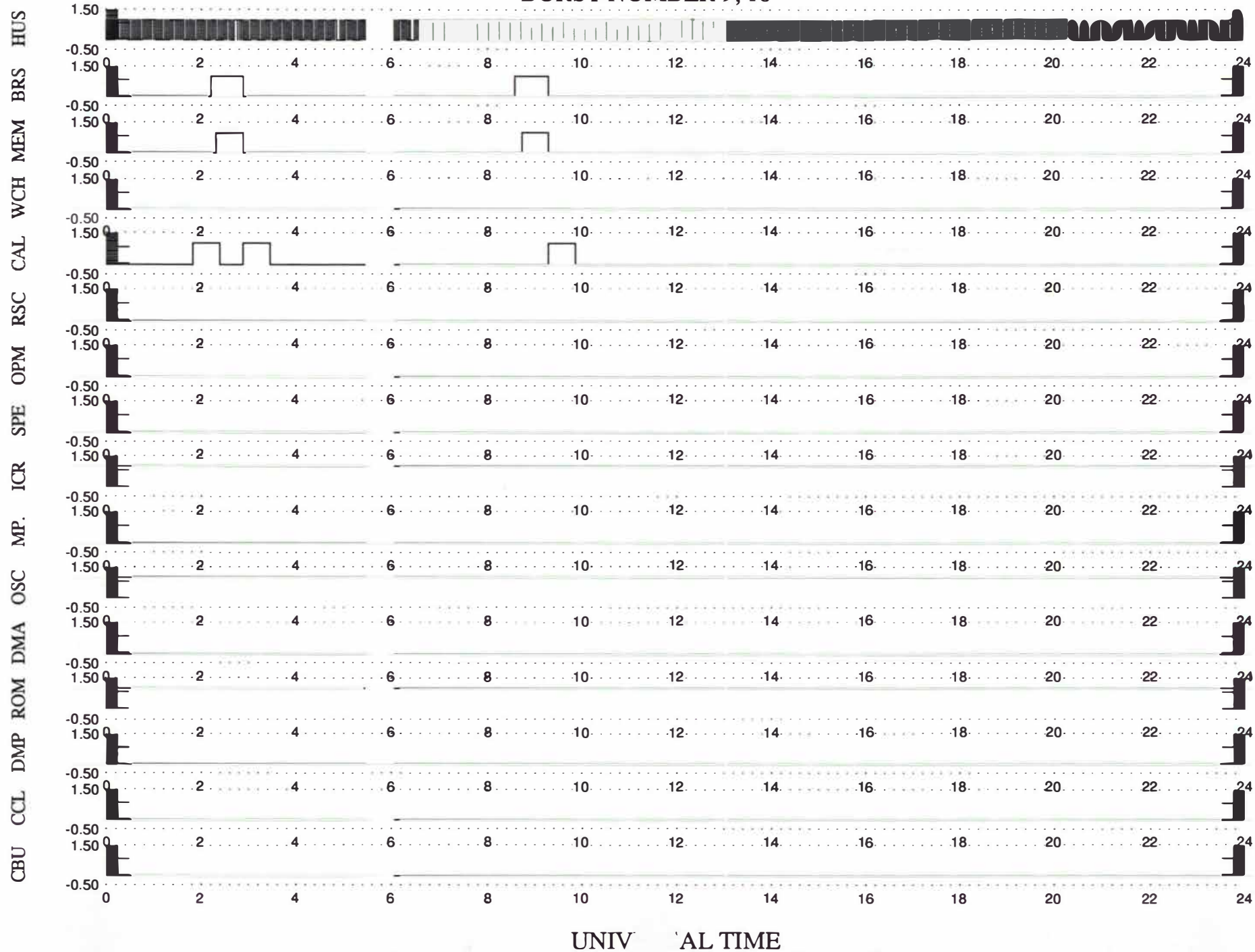
Background not subtracted

2 (0.5 - 4.0 Angstroms)

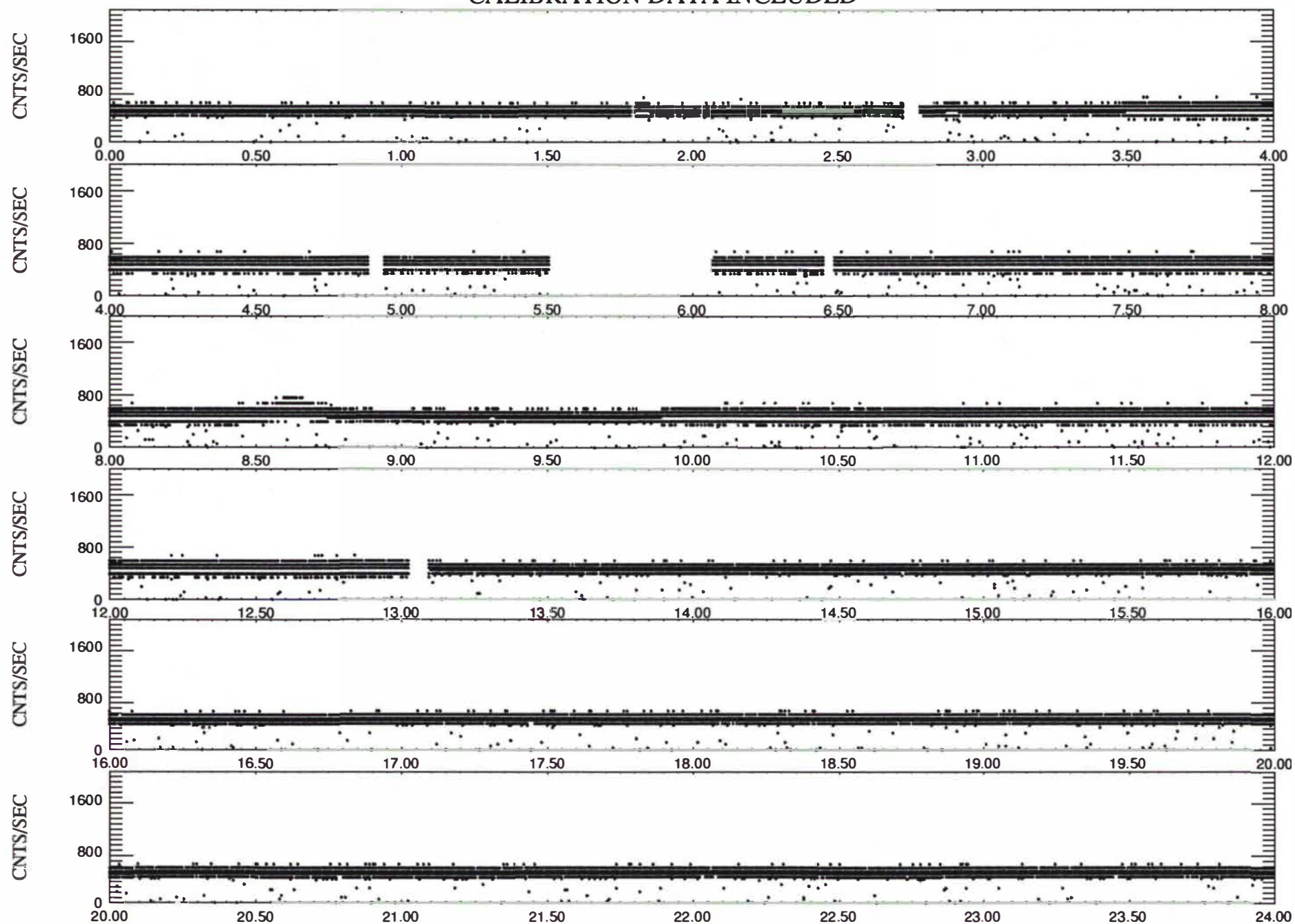
Background not subtracted

Sample average = 10

BURST NUMBER 9, 10

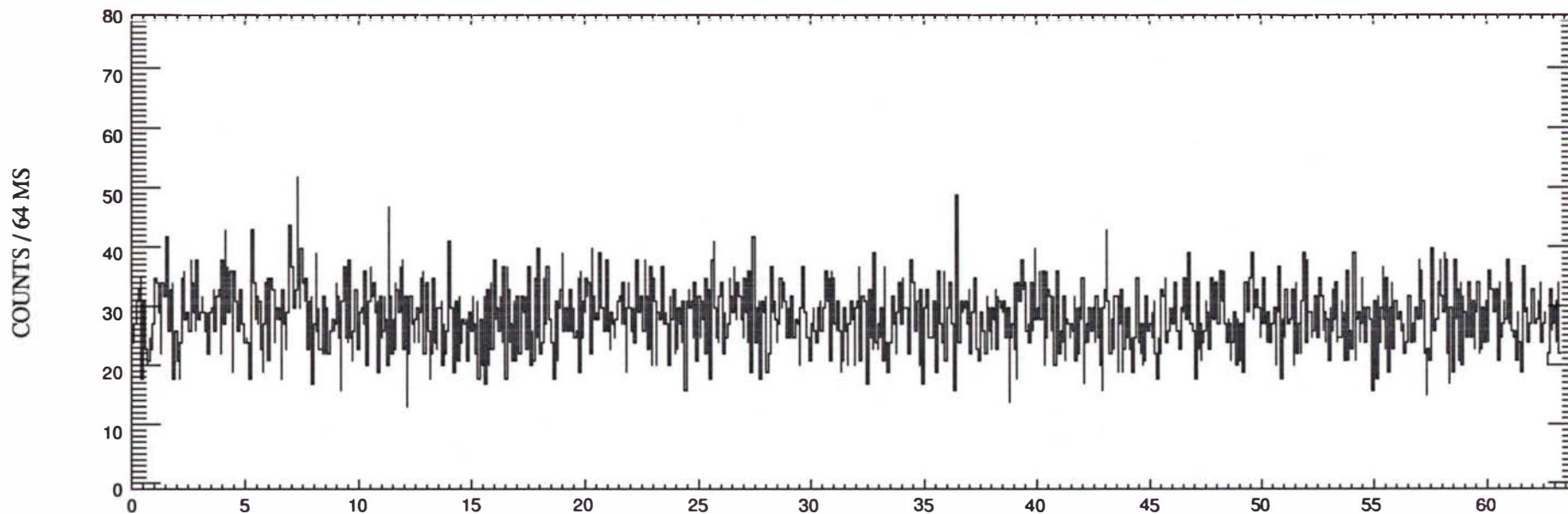


CALIBRATION DATA INCLUDED

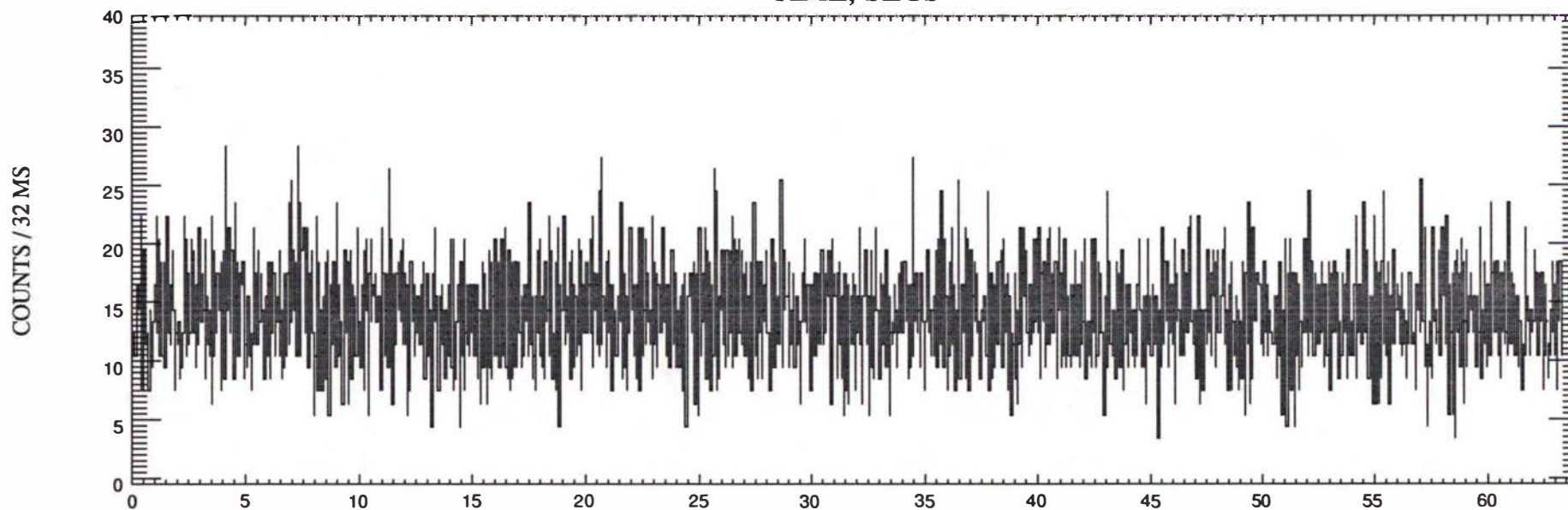


UNIV AL TIME

Burst Counter 9 at UT= 2.163861821493 h= 7789.903 s 02:09:49.903

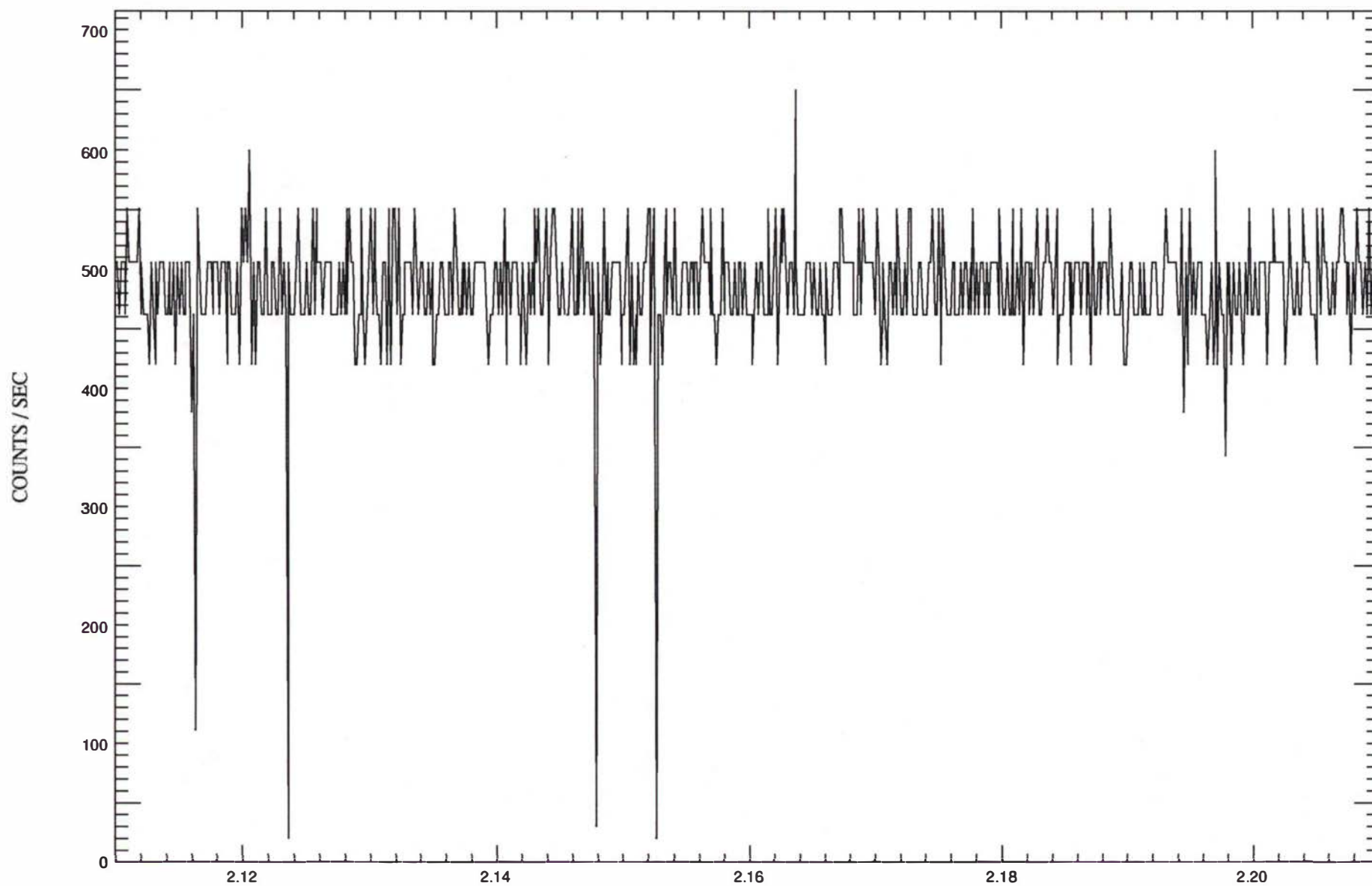


TIME, SECS

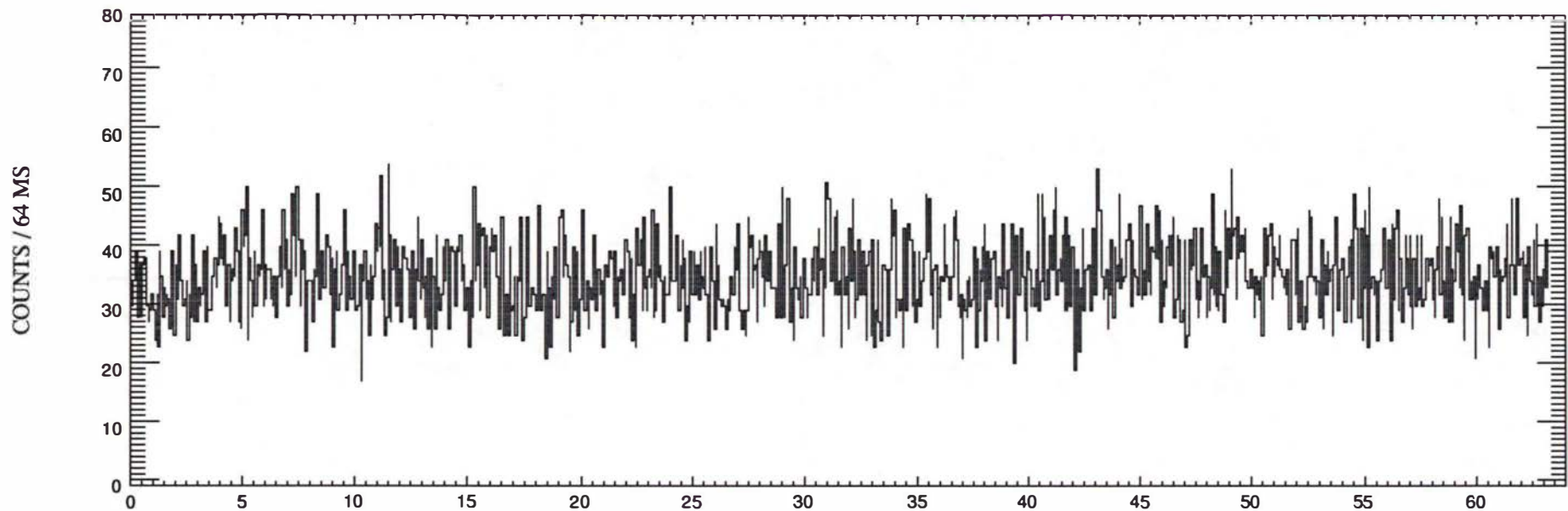


TIME, SECS

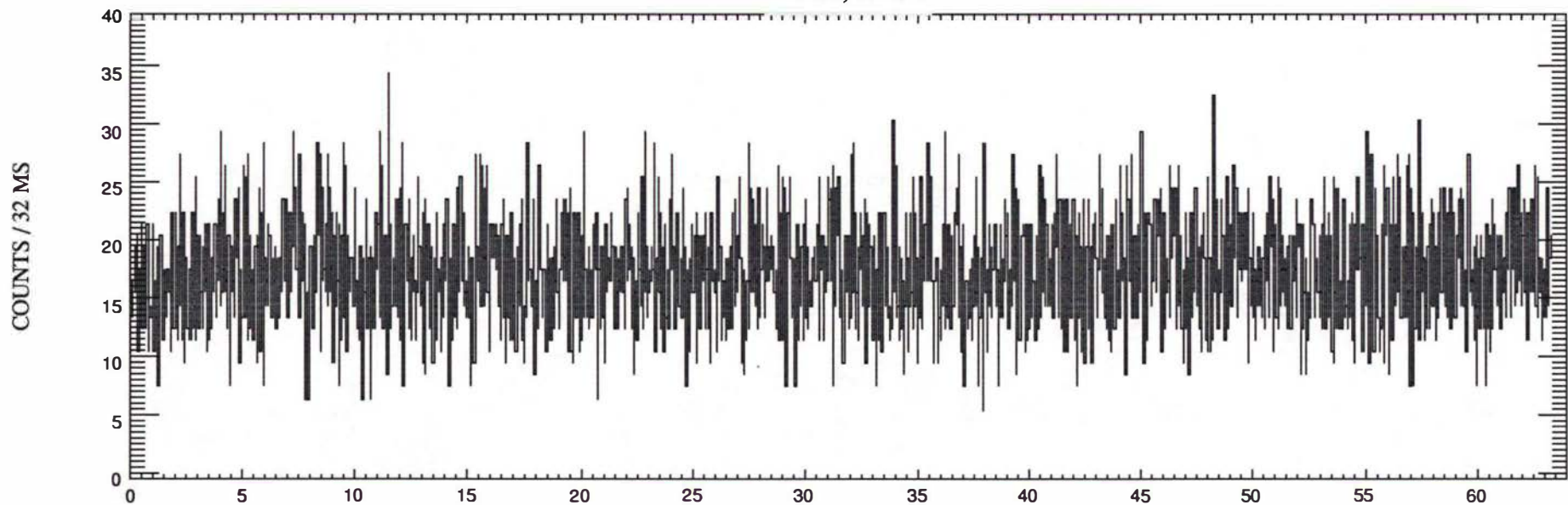
CALIBRATION DATA INCLUDED



Burst Counter 10 at UT= 8.593377308316 h=30936.158 s 08:35:36.158

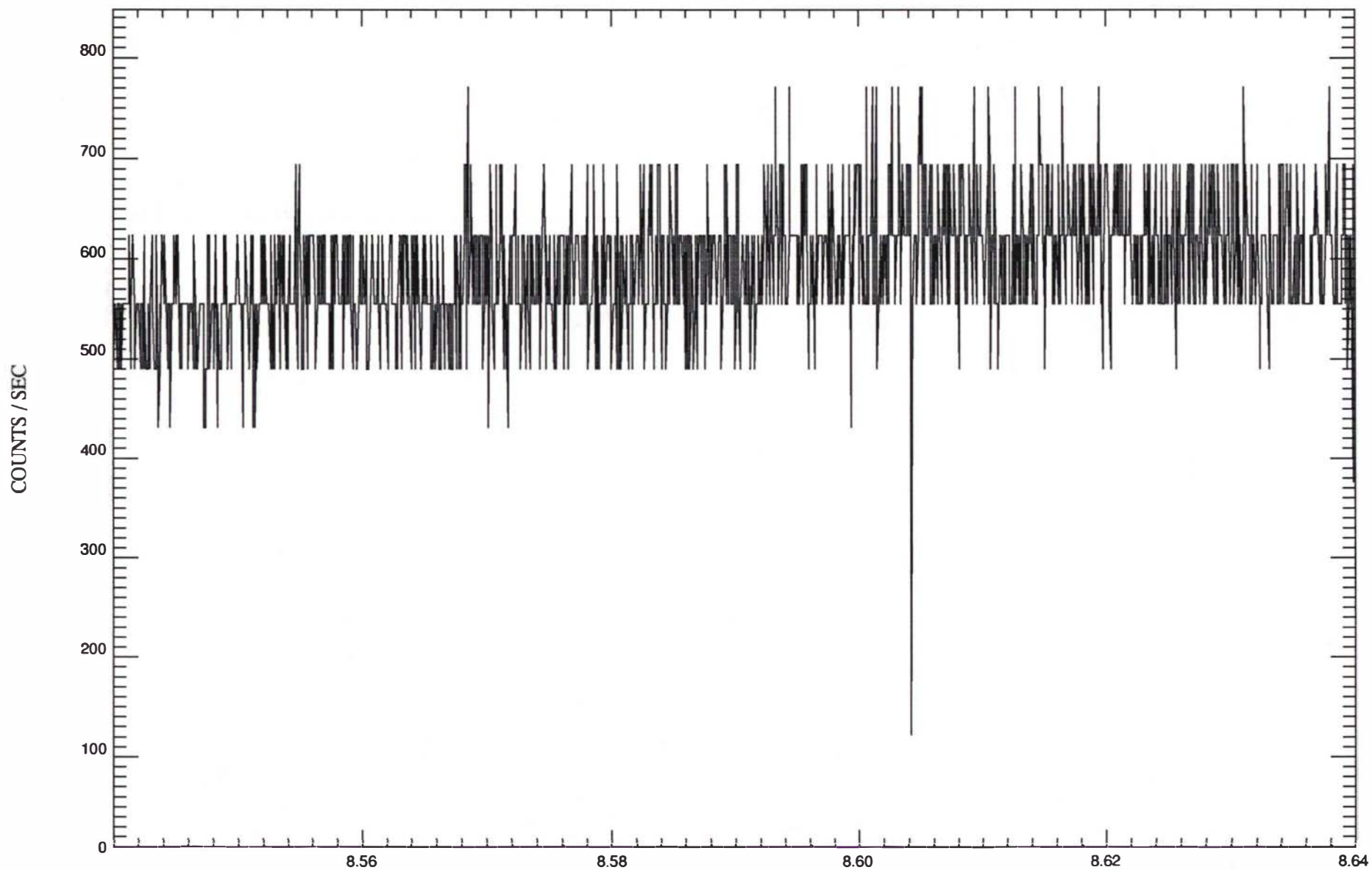


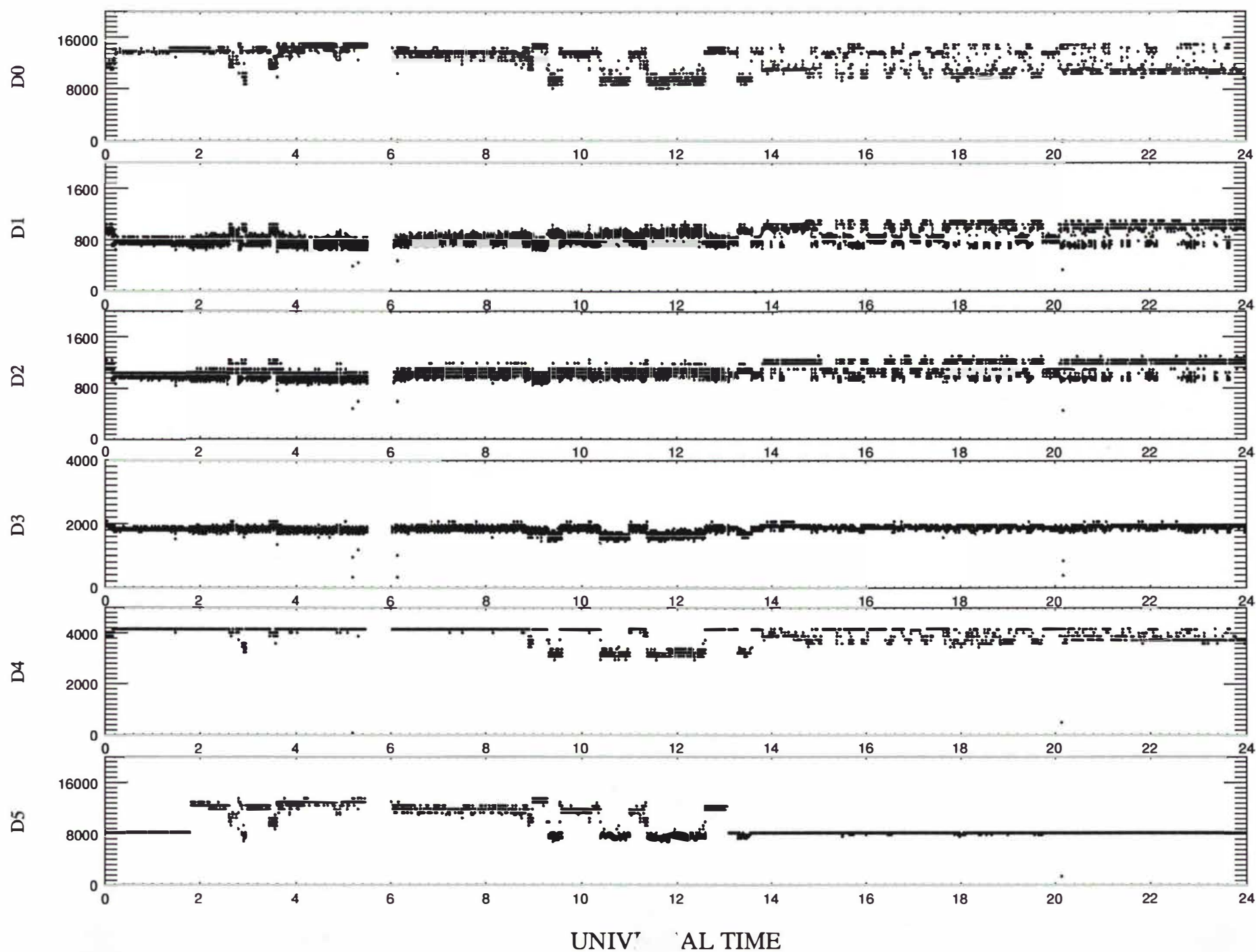
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Thu Nov 20 09:44:20 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA02266; Thu, 20 Nov 1997 09:44:15 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA28273; Thu, 20 Nov 1997 09:44:14 -0800
Date: Thu, 20 Nov 1997 11:43:40 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971120114340.22428343@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6486
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6486
EVENT OF 1997 NOV 18 DAY OF YEAR=322
EVENT CROSSING TIME AT BATSE : 29008. S. OR 08:03:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 114.000 -74.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/11/ 97 IS:
RA= 170.278 DEC= 12.862 DIST= 5.587 AU
BATSE-ULYSSES DISTANCE = 835793284. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 180.66 SECS.
CROSSING TIME AT ULYSSES IS 29189. S. OR 08:06:28 +/- 535.75 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/11/ 97 IS:
RA= 277.292 DEC= -24.528 DIST= 1.987 AU
MARS-BATSE DISTANCE = 297183104. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -157.50 SECS.
CROSSING TIME AT MARS IS 28851. S. OR 08:00:50 +/- 167.53 SECONDS

BATSE BURST TRIGGER

NO.: 6486

TIME: TJD=0770 SECONDS=29008

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=68.5 AZIMUTH=78.1 ERROR=2.5 DEGREES

COMMENTS:

BURST, SINGLE SPIKE WITH SUBSTRUCTURE, DUR. APPROX. 0.1 SECS. VISIBLE ABOVE
300 KEV.

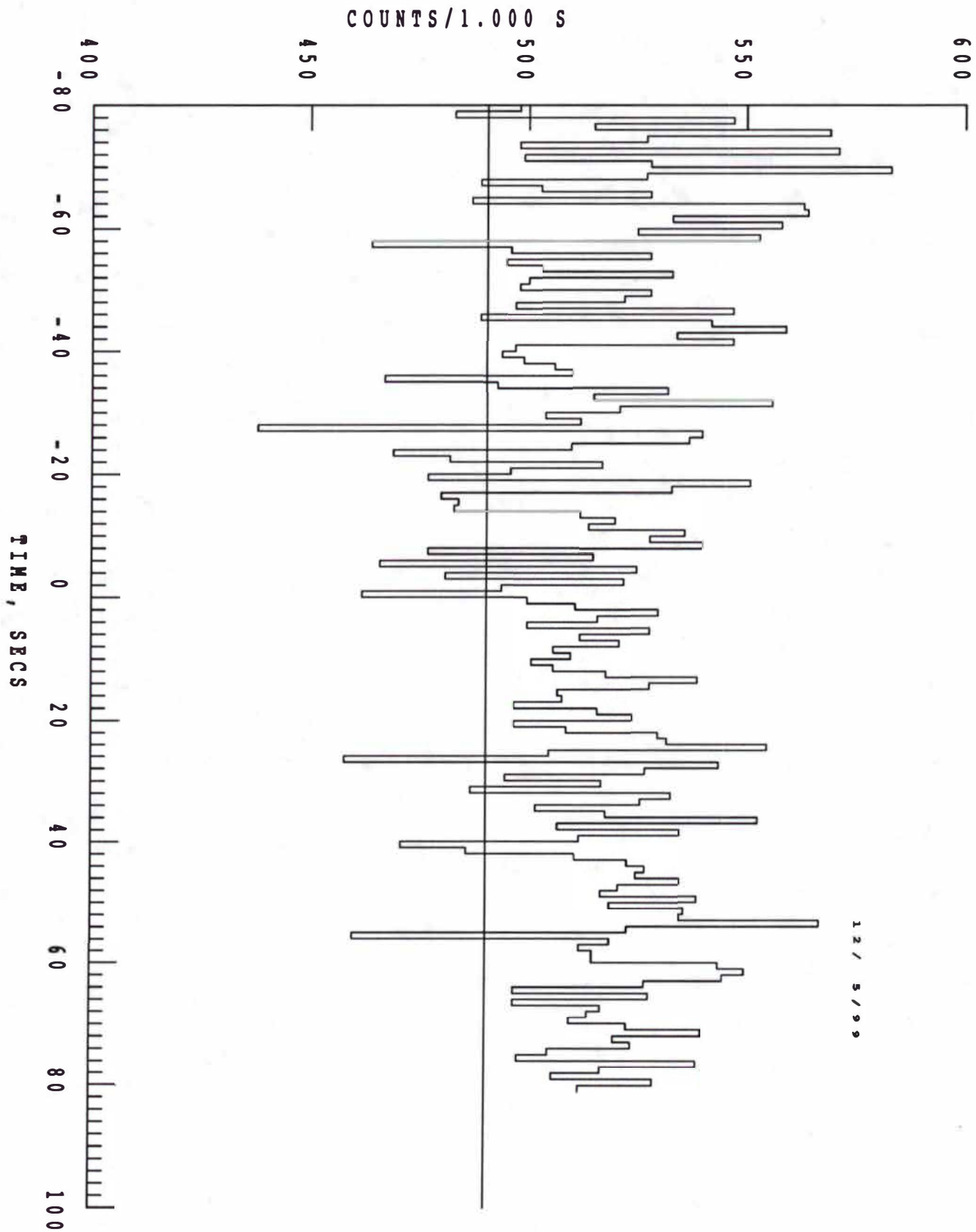
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6486	971118	10770	29008	30000	114	-74	.1

NEAR

18/11/97

29030.223

100-1000 keV

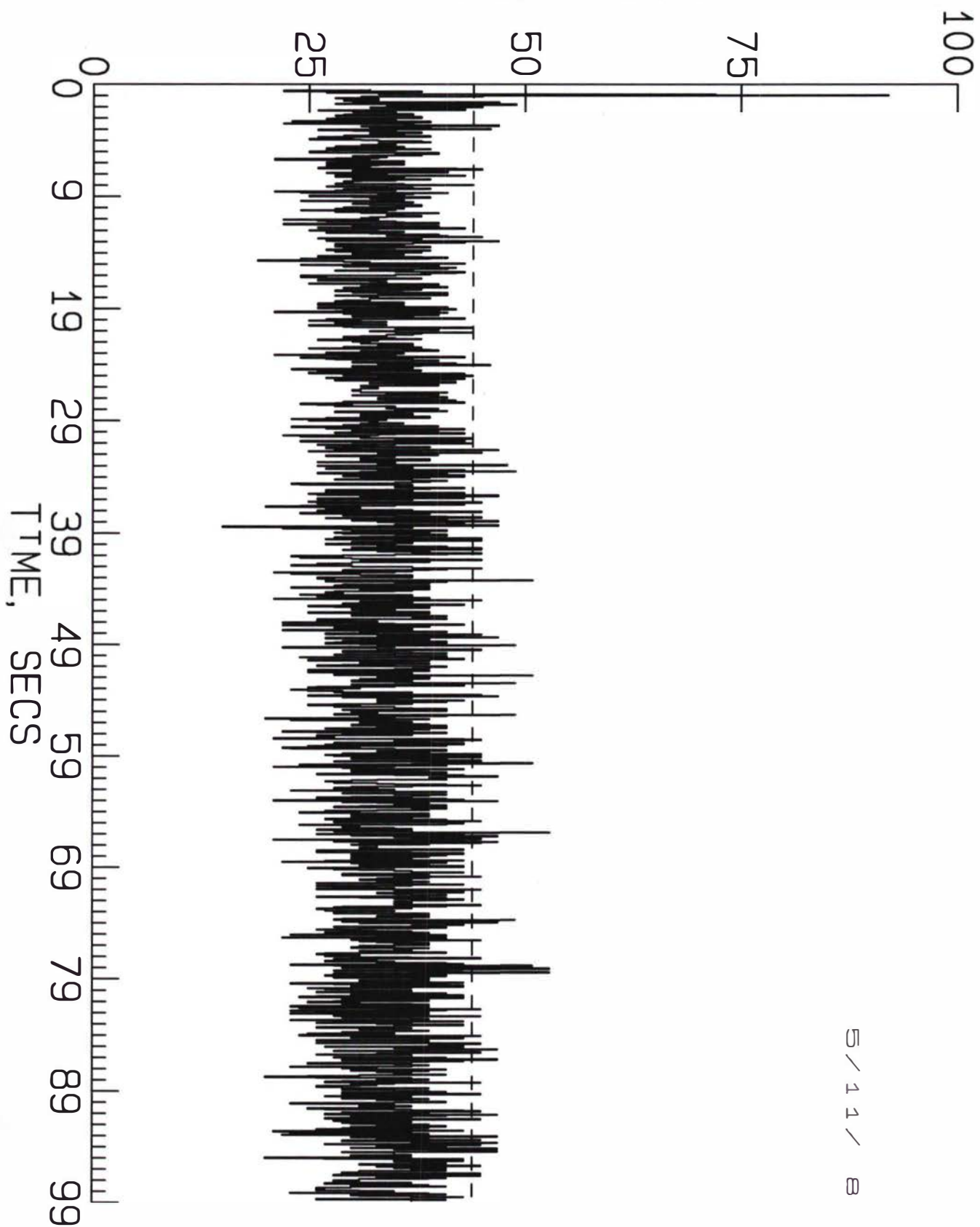


KONUS

18/11/97 29008.520

50- 200 keV

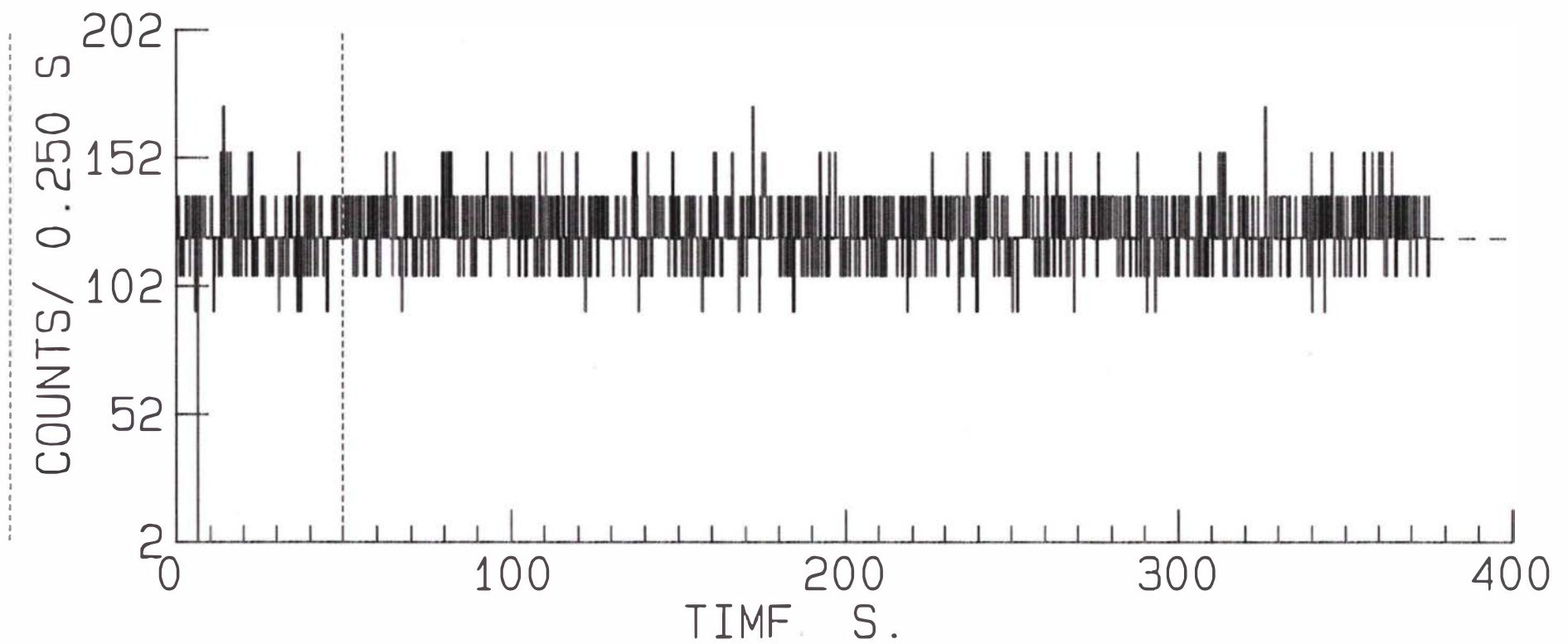
COUNTS/0.064 S



~.07 s

ULYSSES RT
18/11/97 28656.104 s
22- 149 keV

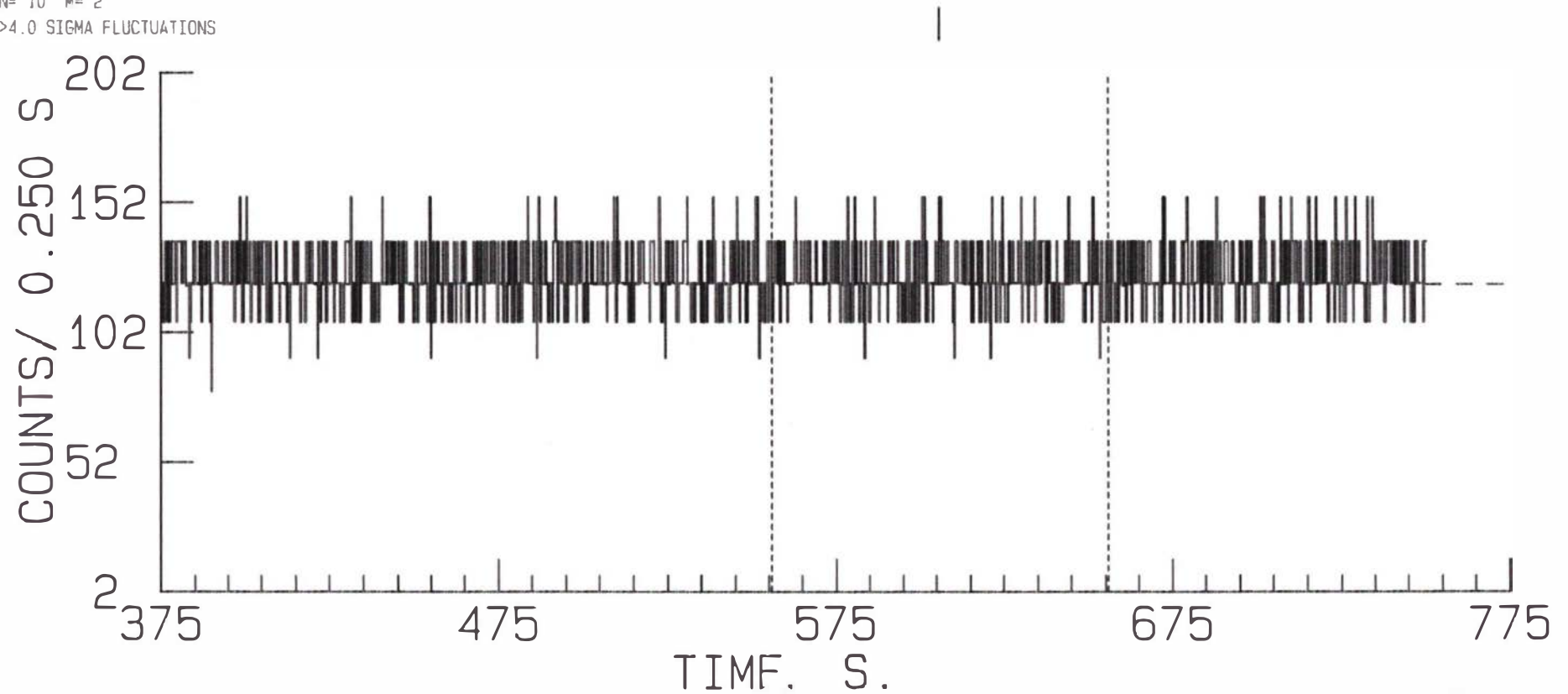
31/10/ 8



ULYSSES RT
18/11/97 28656.104 s
22- 149 keV

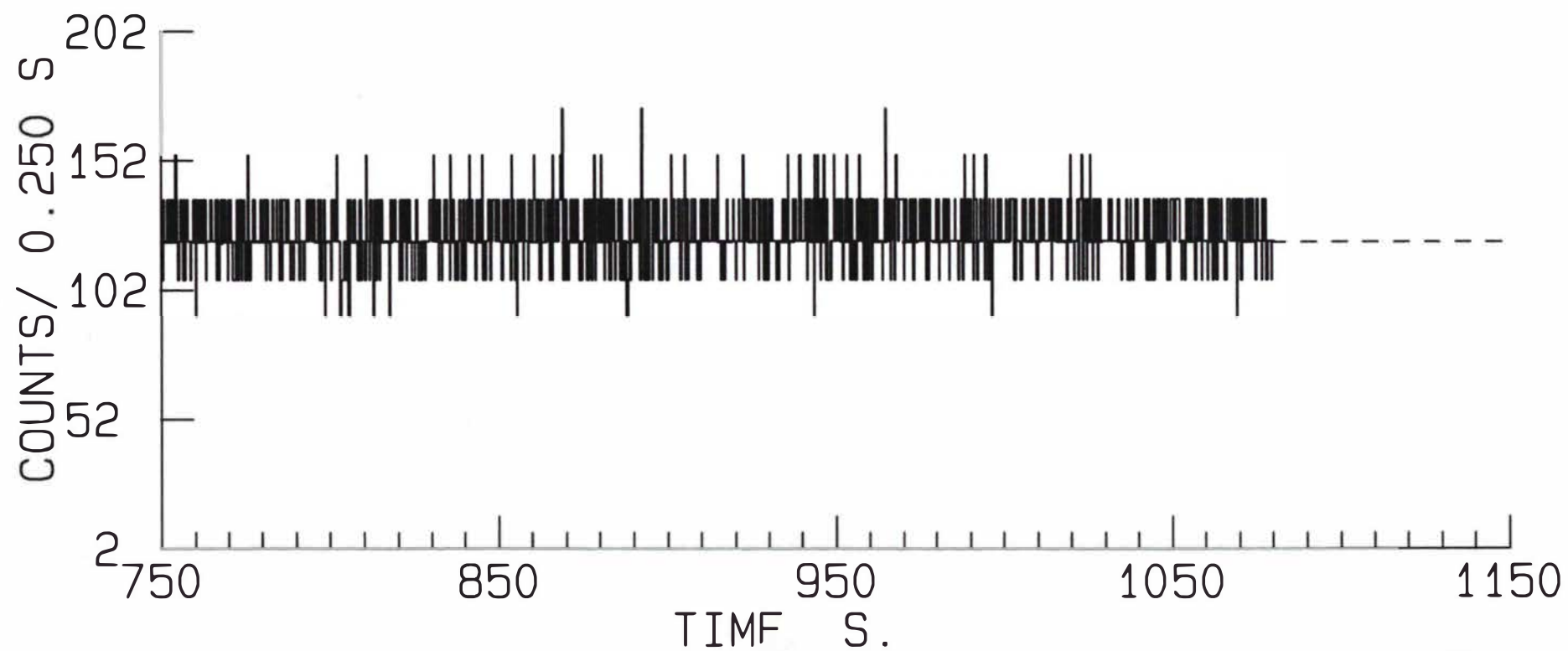
31/10/8

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

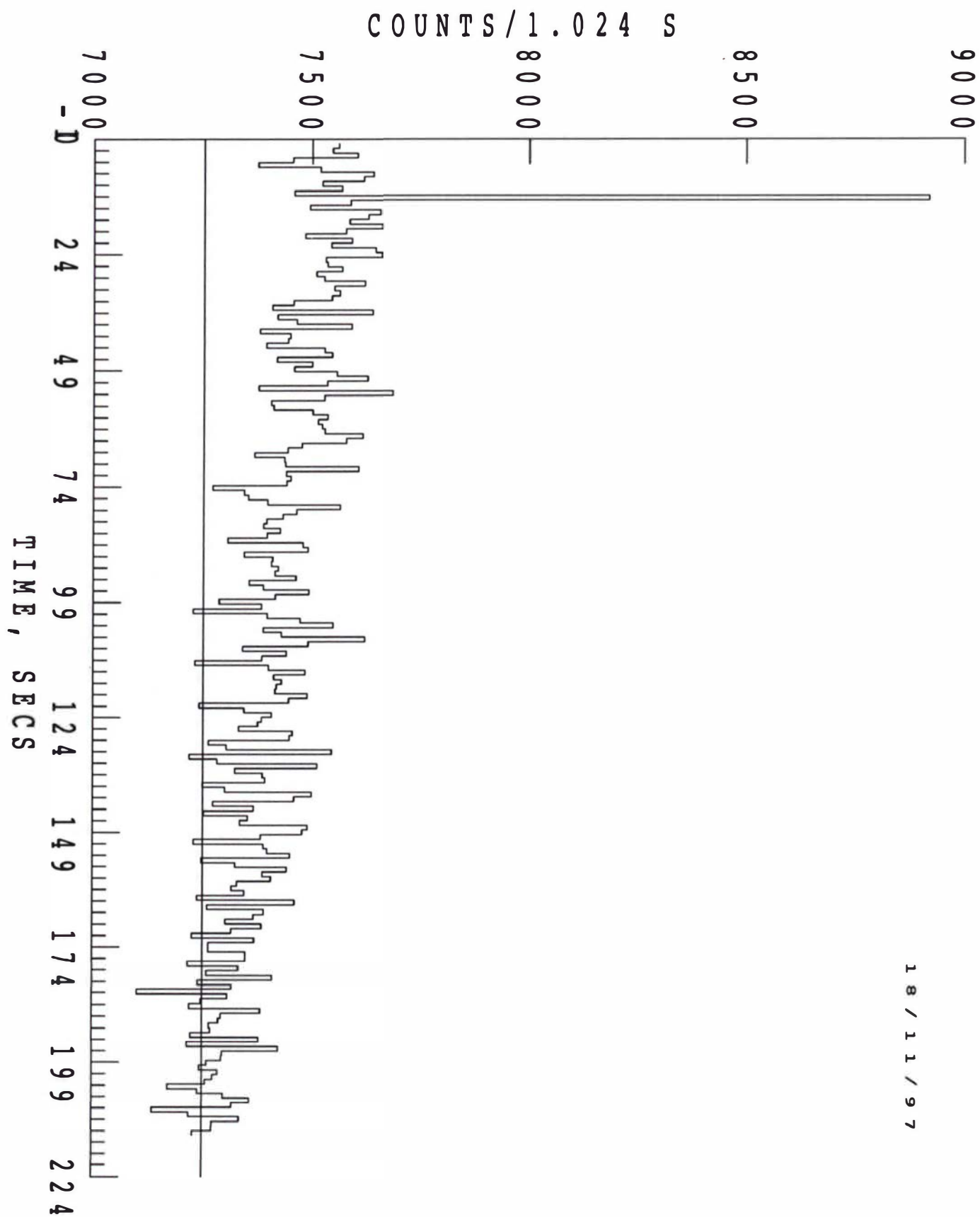


ULYSSES RT
18/11/97 28656.104 s
22- 149 keV

31/10/8



BACODINE 6486 18/11/97 28996.321
25- 100 keV



November 17 1997 02:08 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 18 1997 11:22 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 29 1997 20:25 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

December 7 1997 11:24 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

December 11 1997 20:22 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

December 14 1997 08:44 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

December 19 1997 21:33 Ulysses time; moderate burst, 15 s long

Konus triggered at 22:12:54.241 in the North-facing detector. The event consisted of a single broad soft peak lasting 10 seconds, with a 50-200 keV spike 4 seconds after the trigger and lasting 0.5 seconds.

November 25 1997 17:23 Ulysses time; weak burst, 32 ms long

Konus waiting-mode data records a couple of events during the period of interest. There was a weak to moderate North-facing detector soft event lasting 60 seconds, with a peak at 18:00:35. A single 3-second timebin

From kraken@rosserv.gsfc.nasa.gov Wed Dec 17 14:05 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 17 Dec 1997 17:07:14 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@rosserv.gsfc.nasa.gov>
Subject: Ulysses bursts and TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

Here are the results of a search through TGRS data for recent Ulysses bursts. We cannot report the detection of any of the bursts listed below. Three bursts had interesting anomalies within a 6000 second window centered on the Ulysses trigger time. Such events are under investigation, but are probably not GRB's.

November 17 1997 02:08 Ulysses time; weak burst, 100 ms long
TGRS sees a single high data channel at 7100s between 100-300 keV

November 18 1997 11:22 " " ; weak burst, 64 ms long
November 29 1997 20:25 Ulysses time; weak burst, 100 ms long
December 7 1997 11:24 Ulysses time; weak burst, 64 ms long
December 11 1997 20:22 Ulysses time; weak burst, 32 ms long
TGRS sees a single high data channel at 75700s between 35-100 keV

December 14 1997 08:44 Ulysses time; weak burst, 32 ms long
TGRS sees a single high data channel at 35100s between 100-300 keV

Take care, and Happy Holidays.

Pete

Date: Mar 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events N/A

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

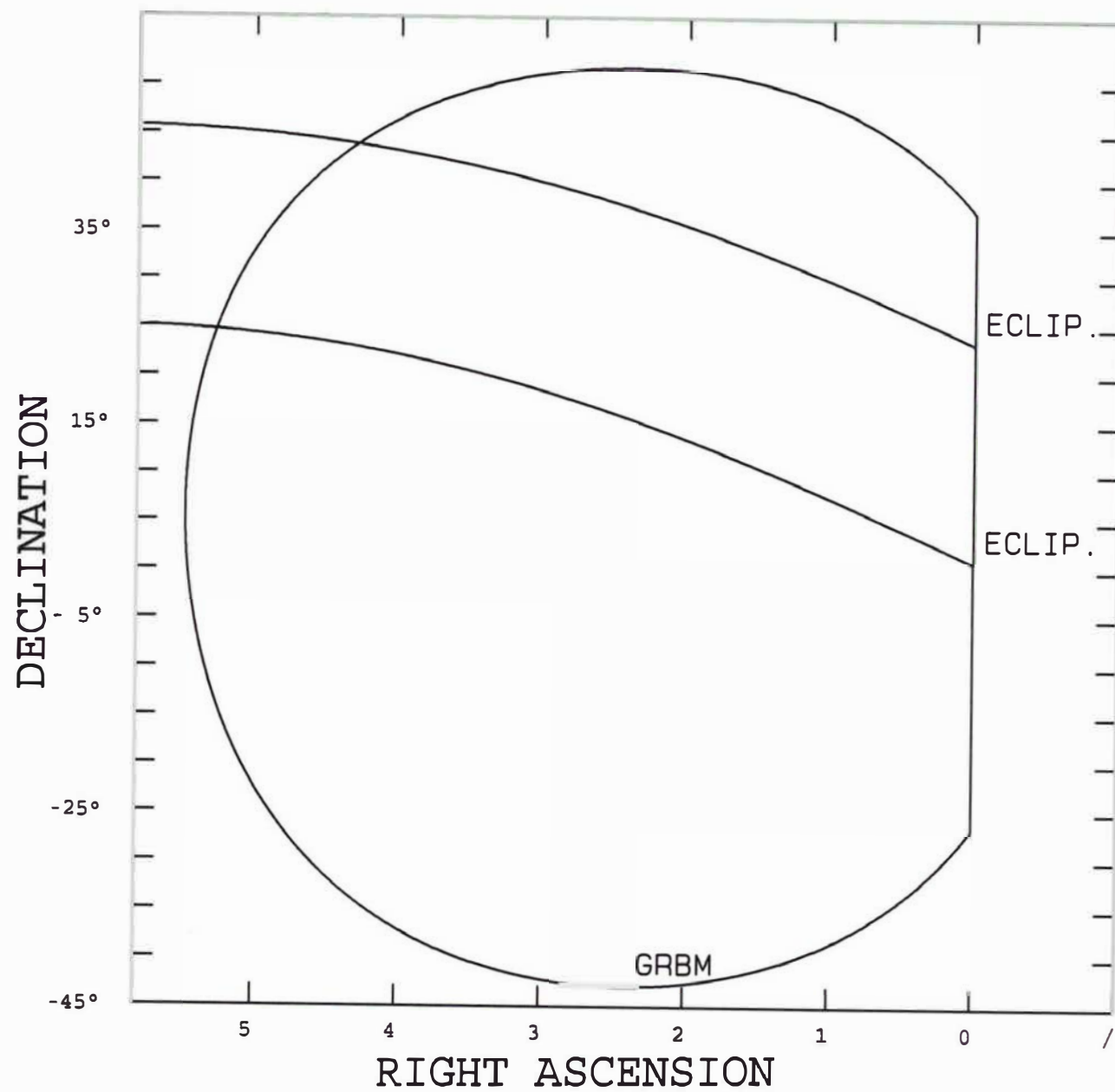
2. For 3 or More Spacecraft events N/A

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

3. For INTEGRAL events N/A

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

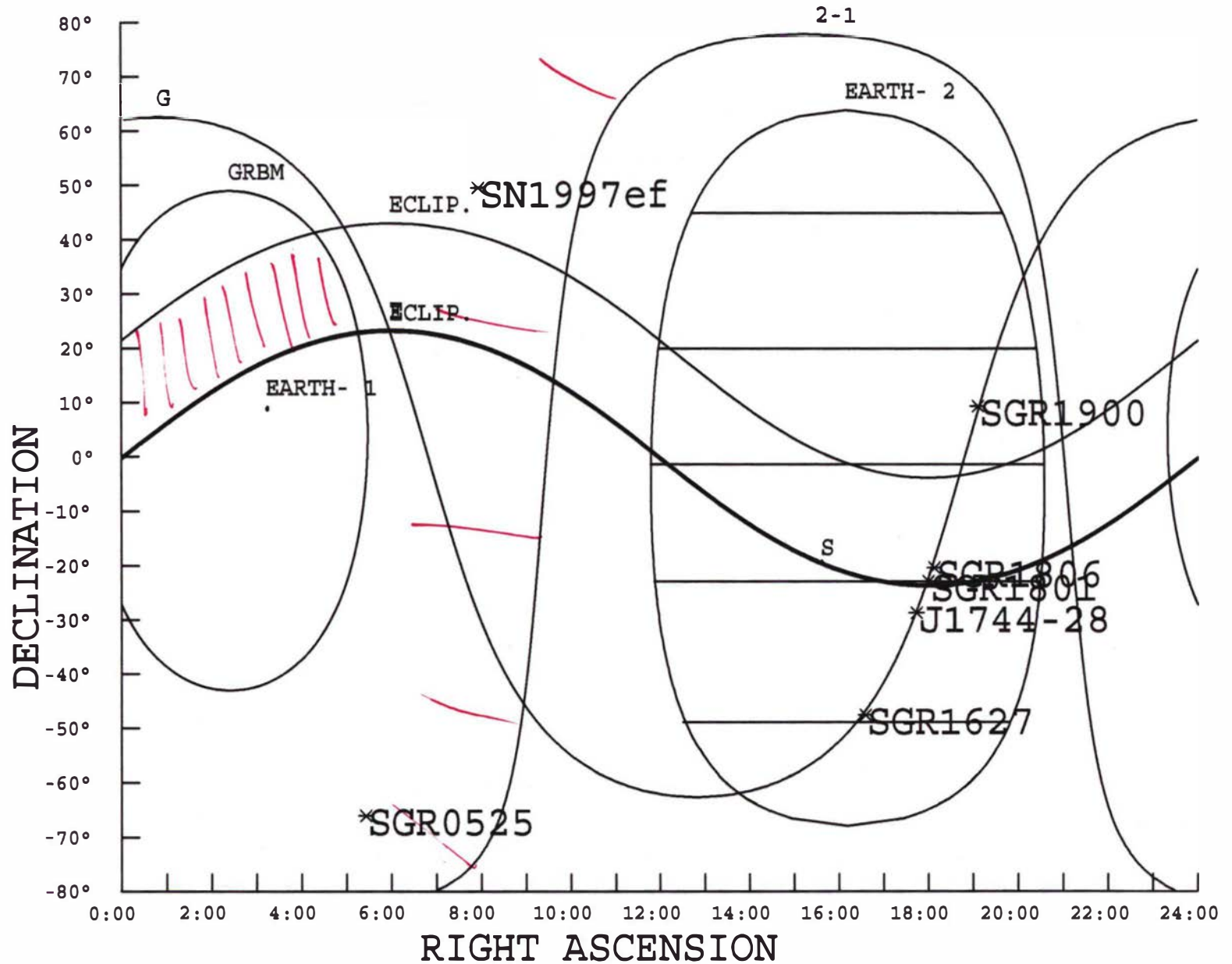
☒ ACCESS and MBL4 databases updated?



EVENT OF NOV 18, 1997 20:38

24/ 8/ 4

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



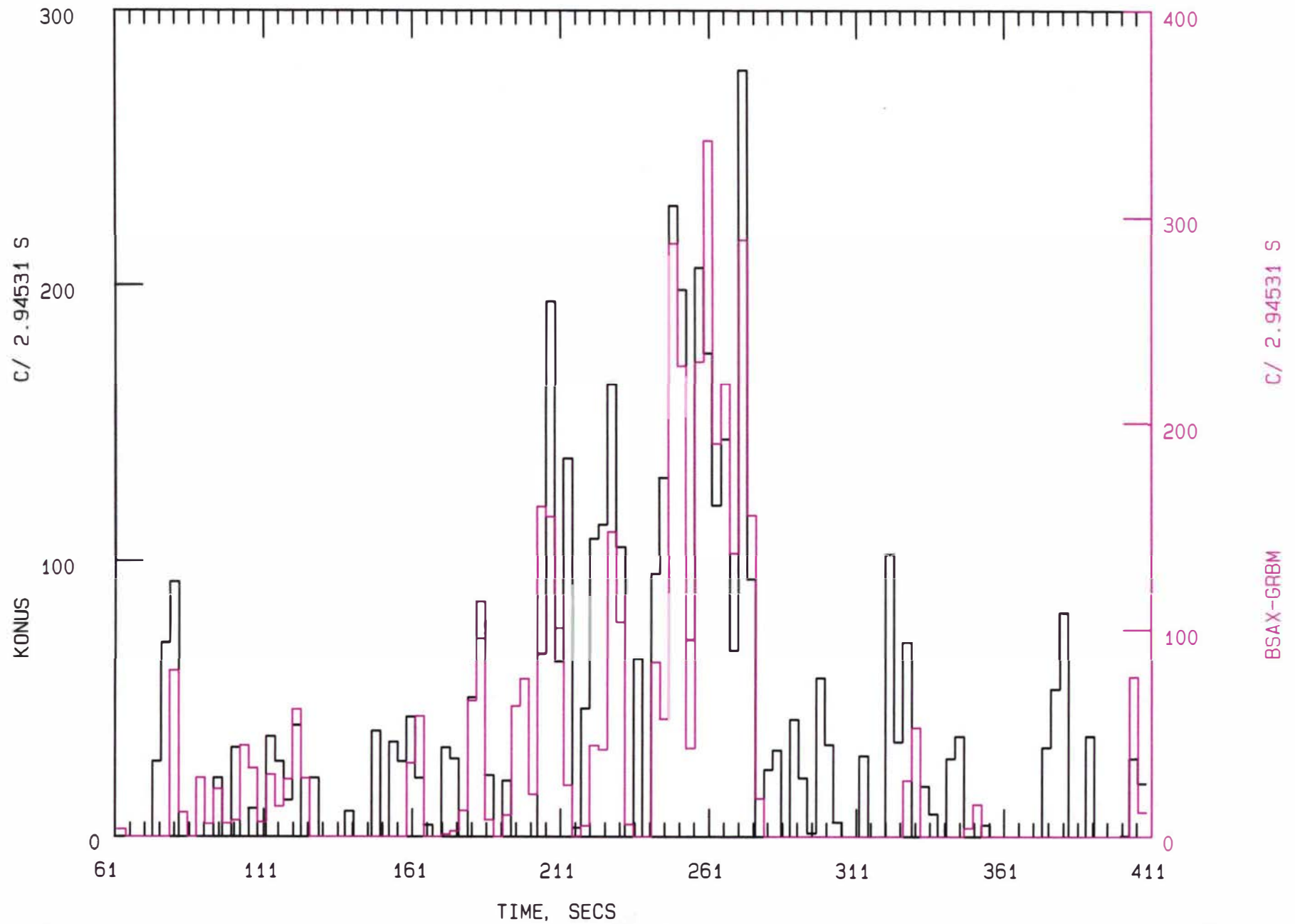
KONUS

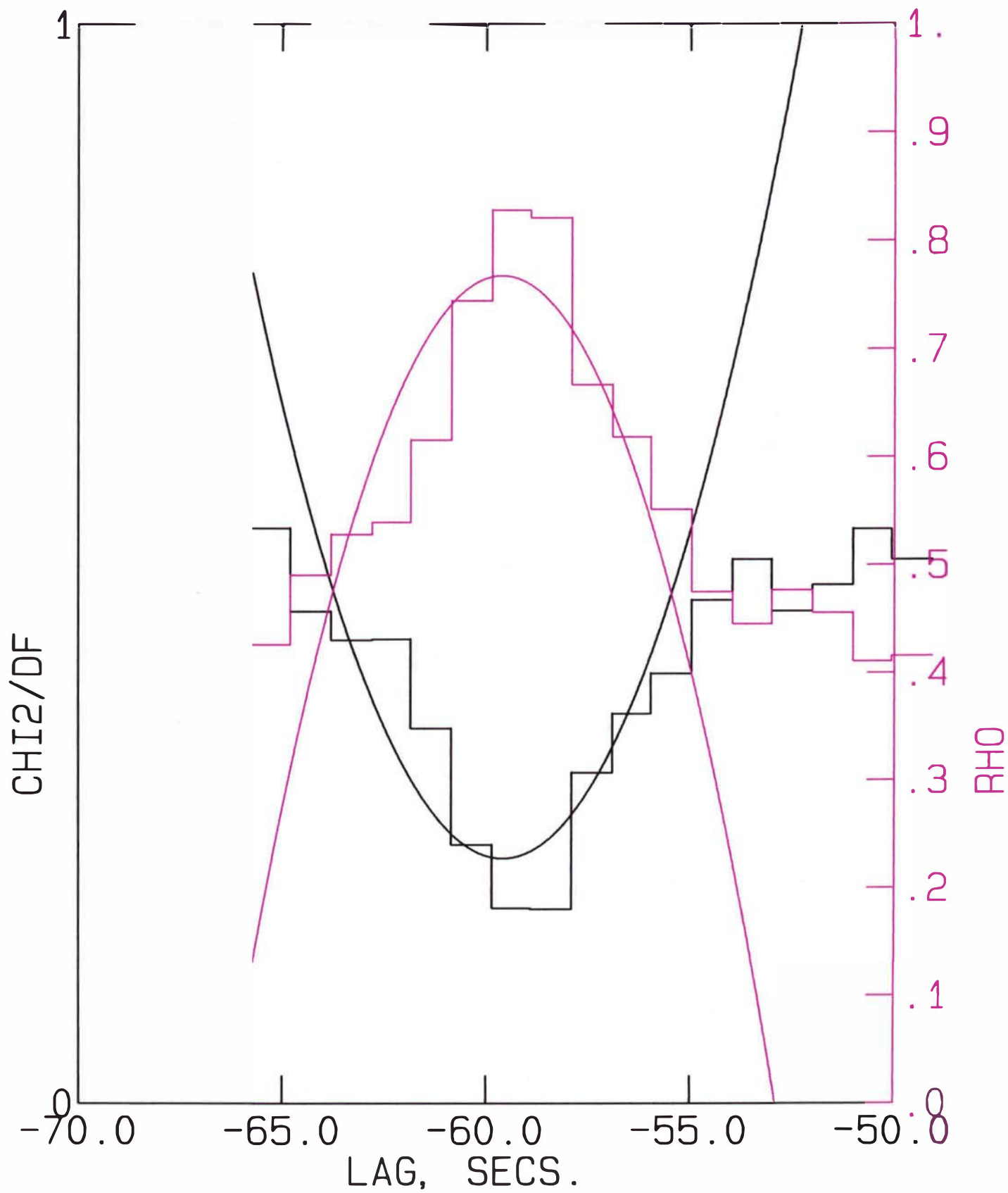
-BSAX-GRBM CORRELATION

18/11/97

74335.383

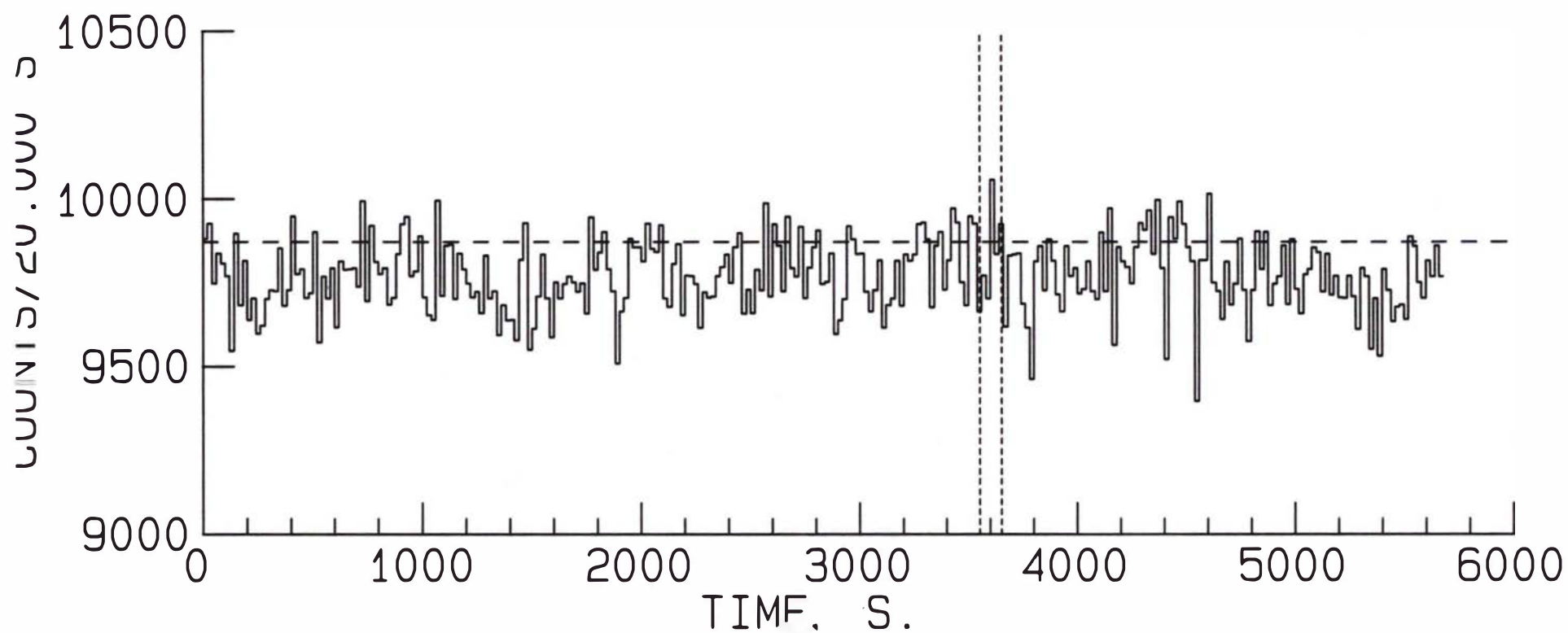
24/ 8/ 4





ULYSSES RT
18/11/97 71712.078 s
0.500 S INTERVALS REGROUPED BY 40
22- 149 keV

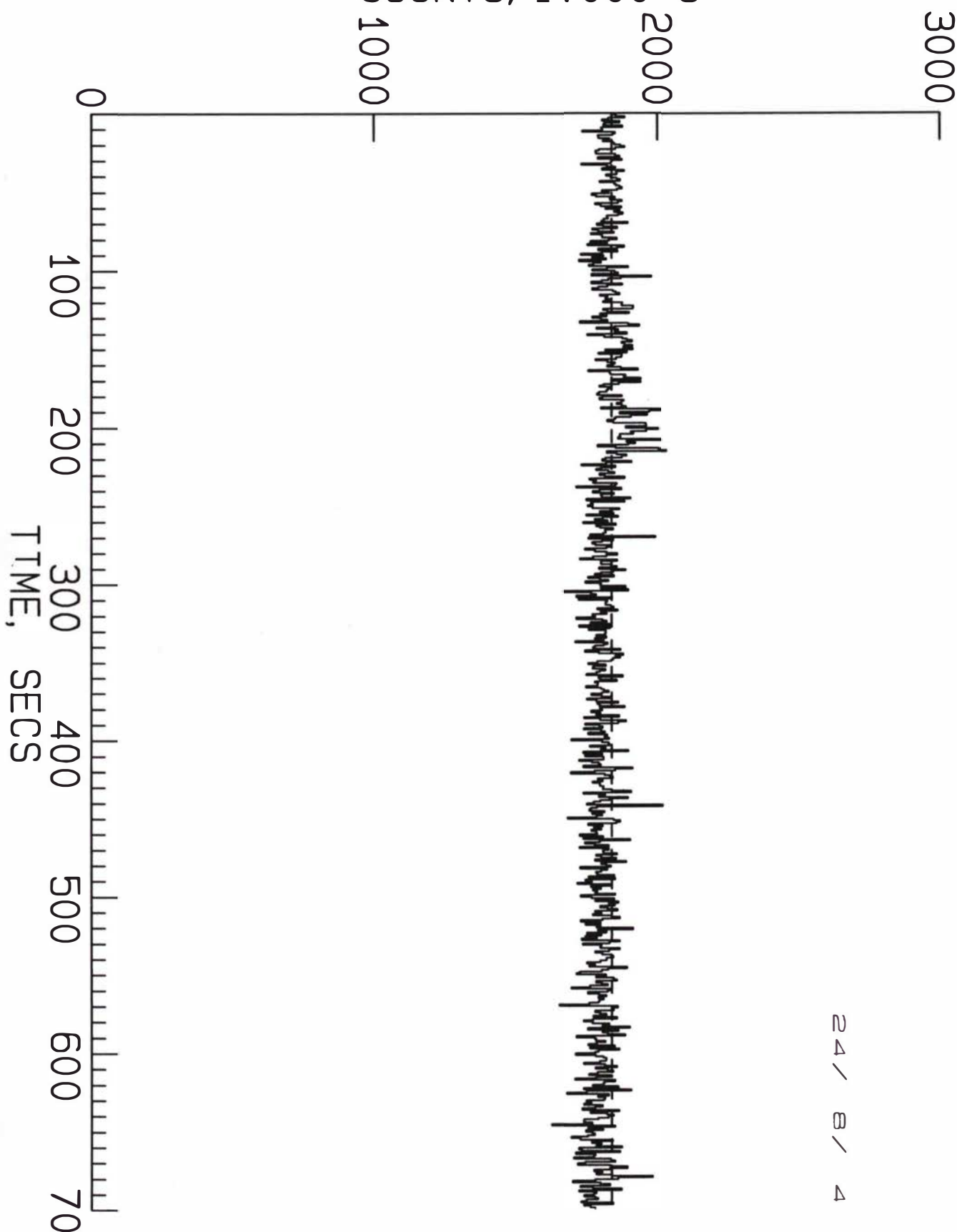
24 / 8 / 4



SAX GRBM

18/11/97 74391.400
40- 700 keV

COUNTS/1.000 S



KONUS

18/11/97 74335.383

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4400

DETECTOR 2 - N. ECLIPHTIC

3400

2400

1400

400

50

100

150

200

250

300

350

400

TIME, SECS

24/08/04

KONUS

18/11/97 74335.383

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.945 S

8000

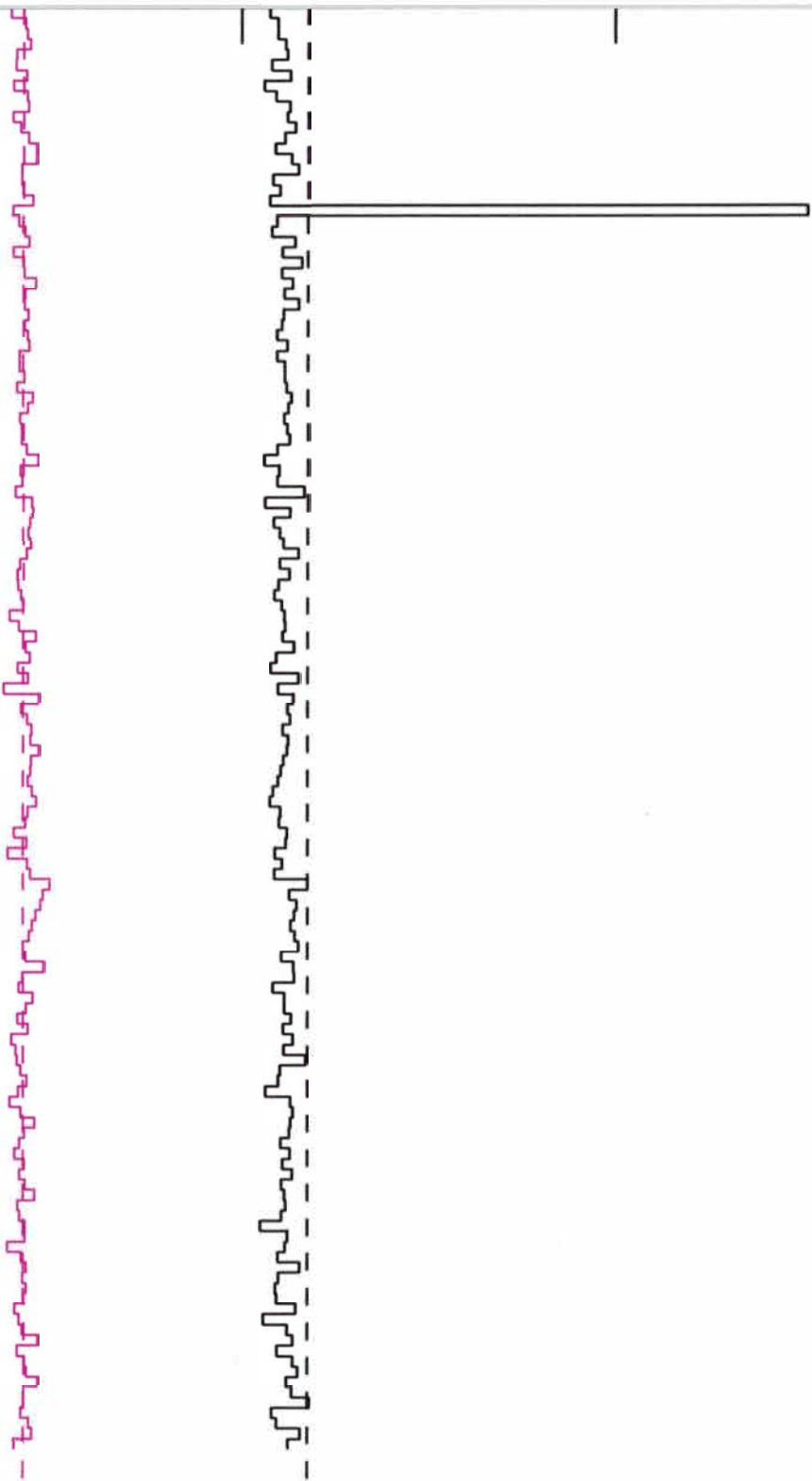
5500

3000

DETECTOR 1 - S. ECLIPTEIC

24/08/04

500
0
50
100
150
200
250
300
350
400
TIME, SECS

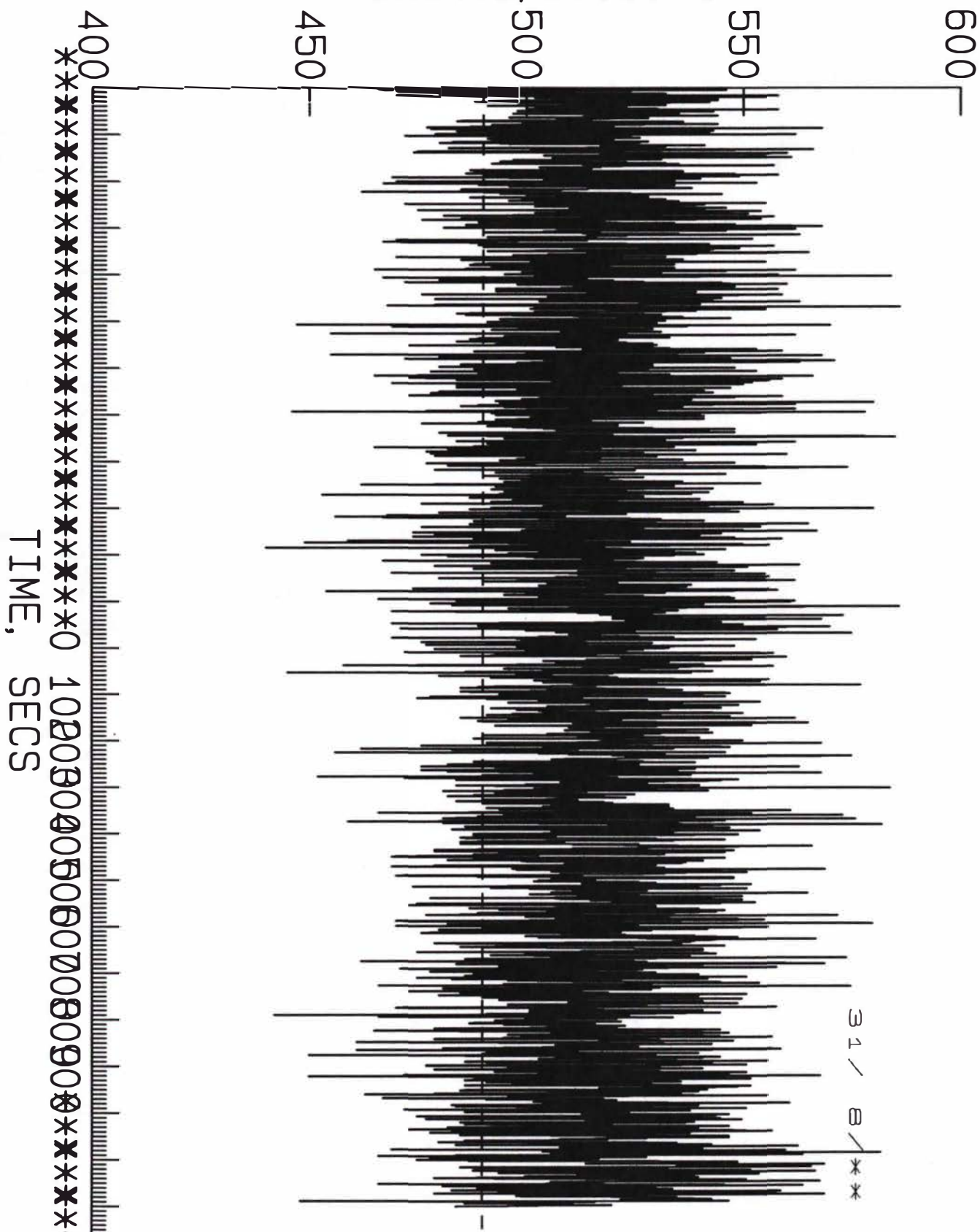


NEAR

18/11/97 74534.214

100-1000 keV

COUNTS/1.000 S



From SAHI@fender.msfc.nasa.gov Thu Nov 20 09:45:32 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA02314; Thu, 20 Nov 1997 09:45:30 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA28312; Thu, 20 Nov 1997 09:45:30 -0800
Date: Thu, 20 Nov 1997 11:45:18 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971120114518.22428343@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6487
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6487
EVENT OF 1997 NOV 18 DAY OF YEAR=322
EVENT CROSSING TIME AT BATSE : 79690. S. OR 22:08:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 319.000 -58.000
BATSE PEAK COUNTING RATE: 3300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/11/ 97 IS:
RA= 170.307 DEC= 12.835 DIST= 5.578 AU
BATSE-ULYSSES DISTANCE = 834459608. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 50.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1753.12 SECS.
CROSSING TIME AT ULYSSES IS 81443. S. OR 22:37:23 +/- 451.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/11/ 97 IS:
RA= 277.292 DEC= -24.528 DIST= 1.987 AU
MARS-BATSE DISTANCE = 297183104. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=135.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -705.77 SECS.
CROSSING TIME AT MARS IS 78984. S. OR 21:56:24 +/- 110.14 SECONDS

BATSE BURST TRIGGER

NO.: 6487

TIME: TJD=0770 SECONDS=79690

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=24.2 AZIMUTH=56.4 ERROR=5.8 DEGREES

COMMENTS:

BURST, SINGLE PULSE, DUR. APPROX. 2.5 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6487	971118	10770	79690	3300	319	-58	2.5

Date: Feb 25 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data

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

3. NEAR Data

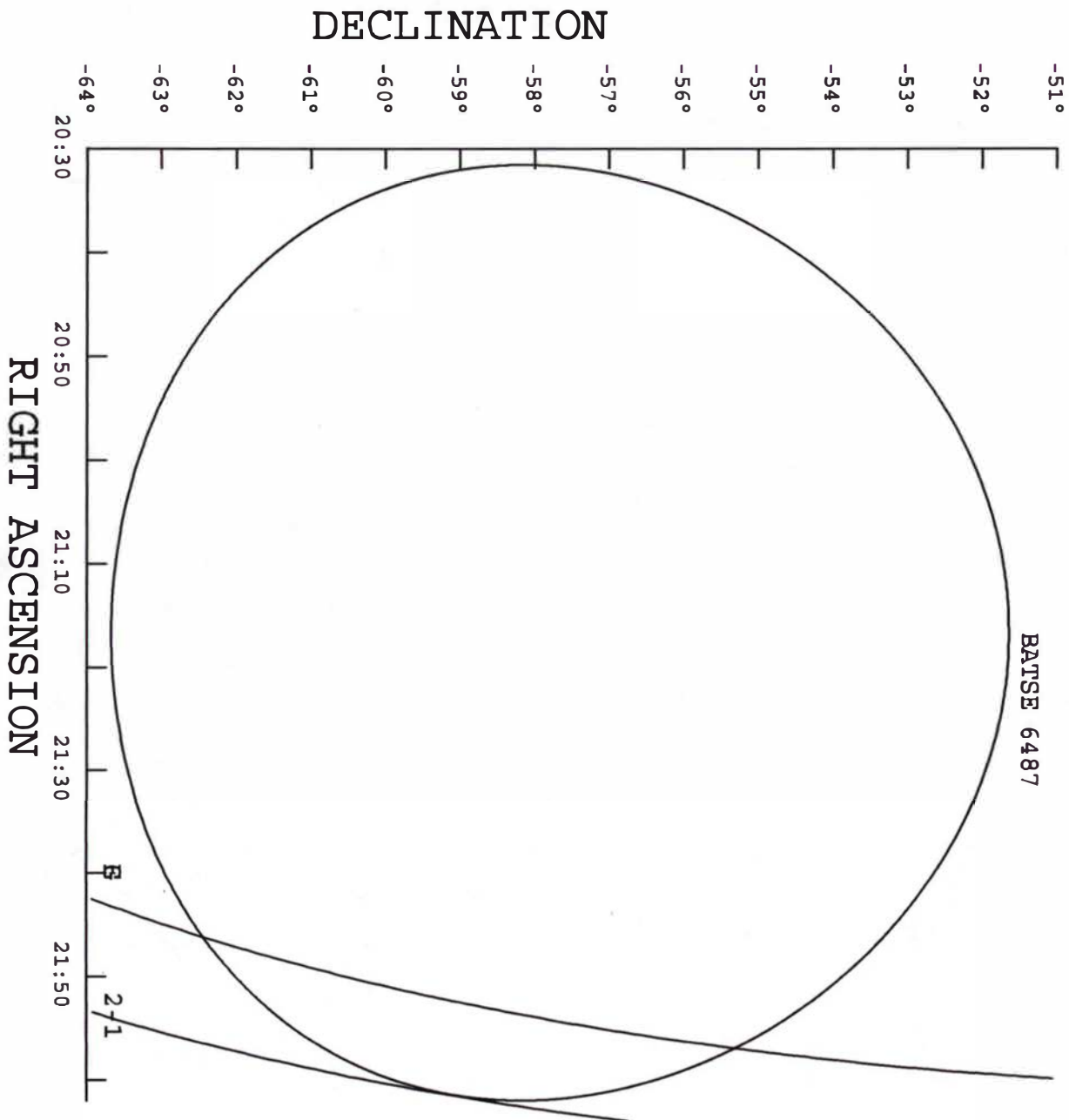
- ☒ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☒ BATSE >100 keV data used for NEAR correlation?

- ☒ ACCESS database updated?

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

EVENT OF NOV 18, 1997 22:08

25 / 2 / 0



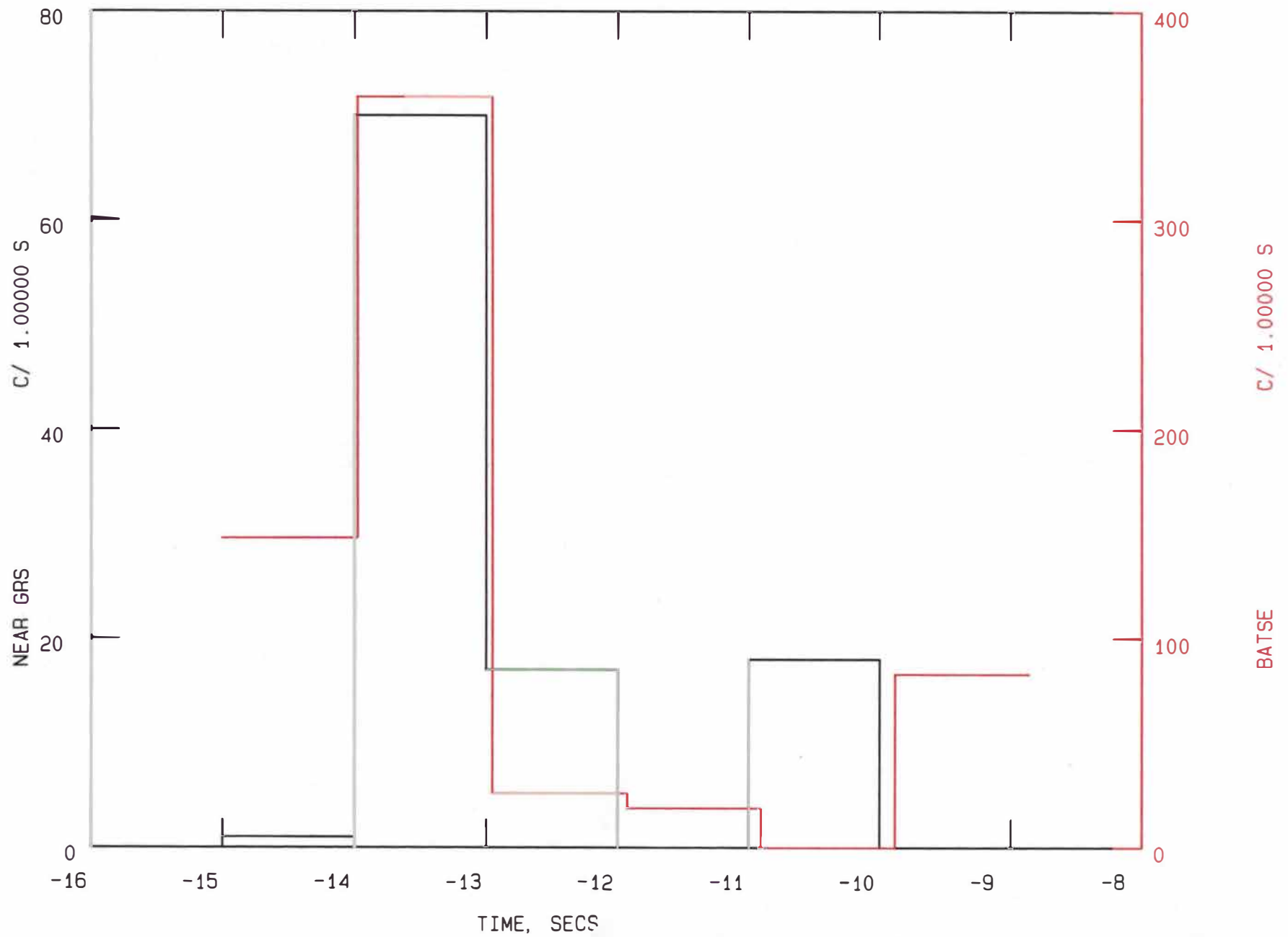
NEAR GRS -BATSE

CORRELATION

18/11/97

79794.213

25/ 2/ 0

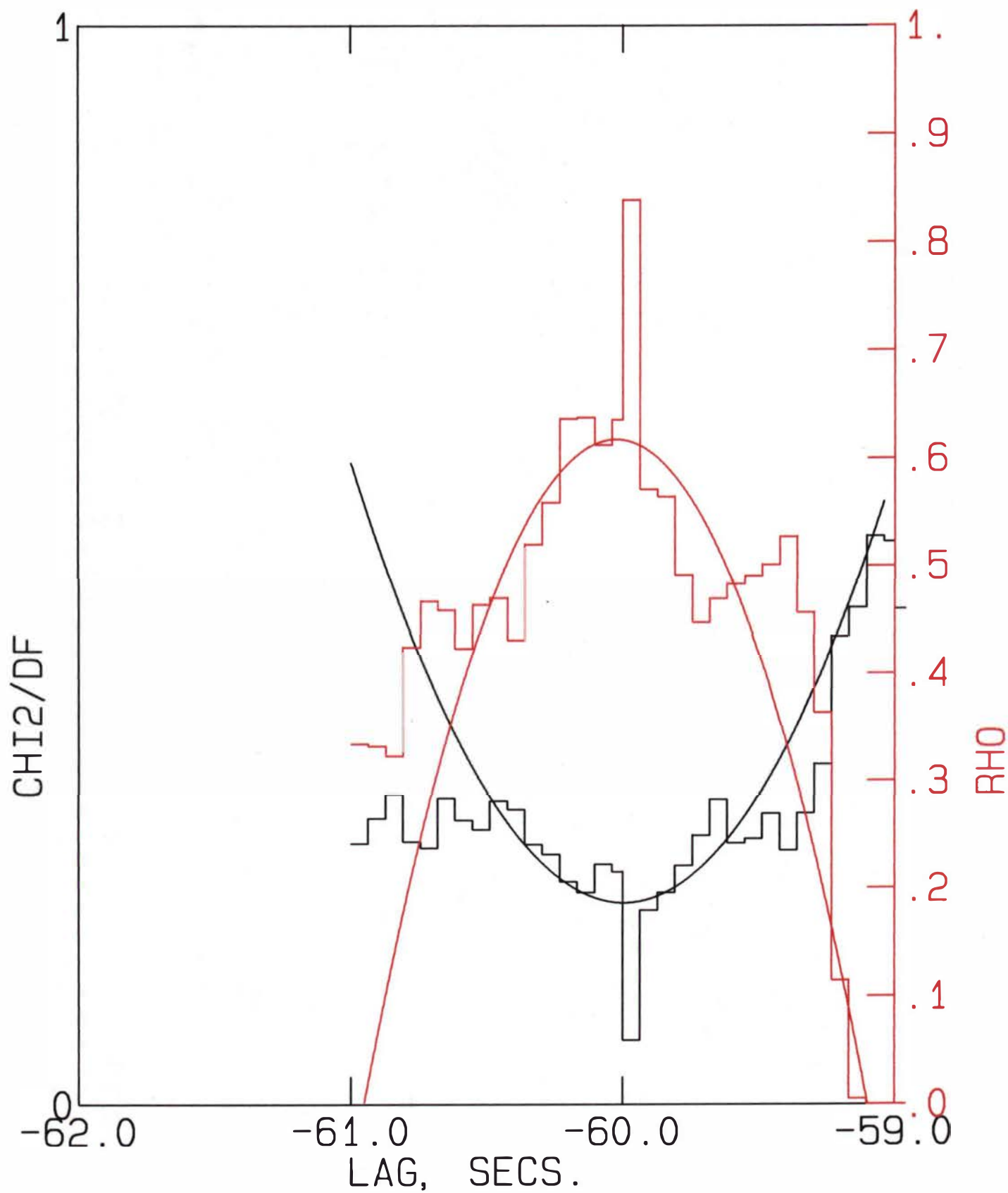


NEAR GRS -BATSE

CORRELATION

18/11/97

79794.213



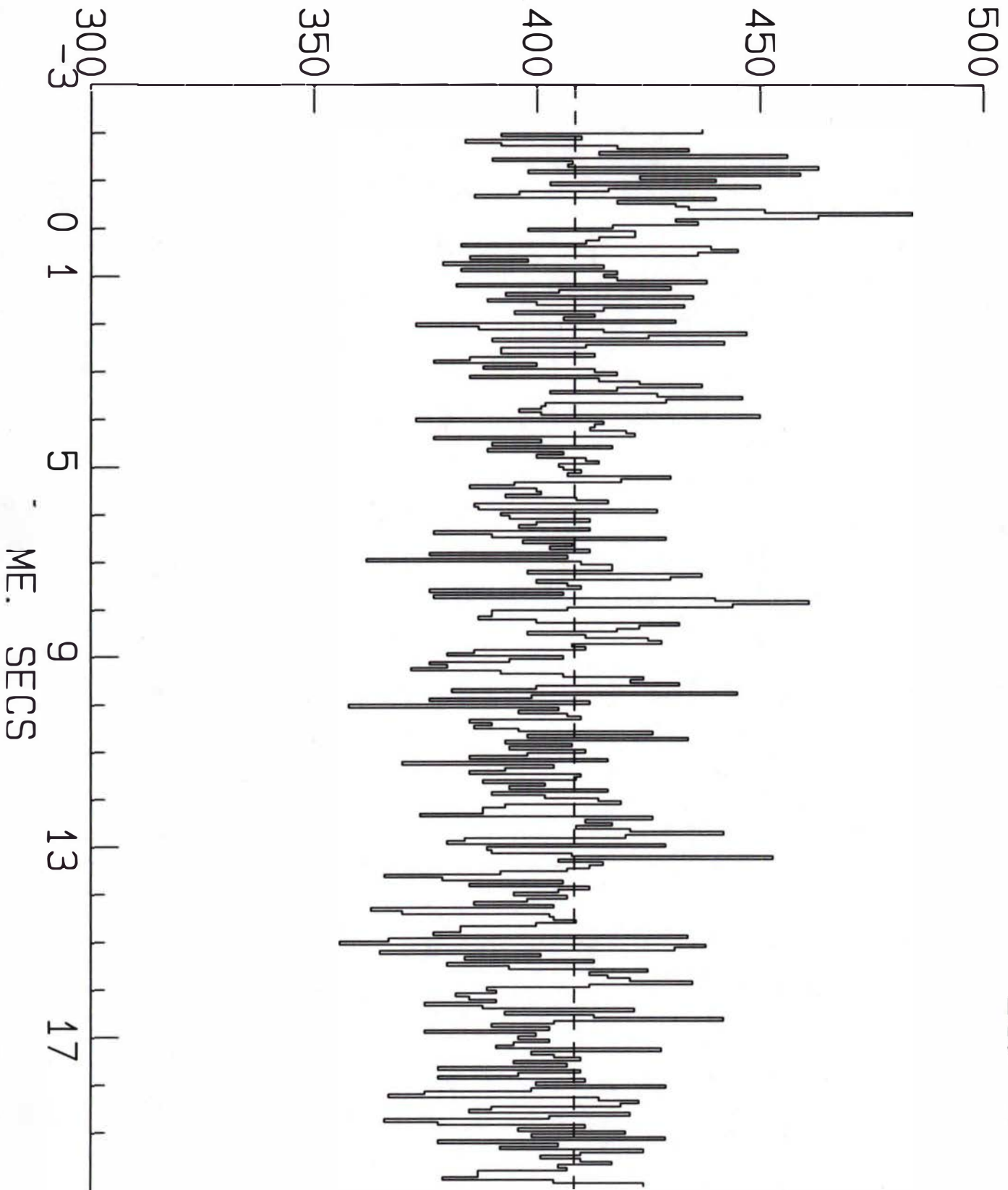
BATSE

18/11/97

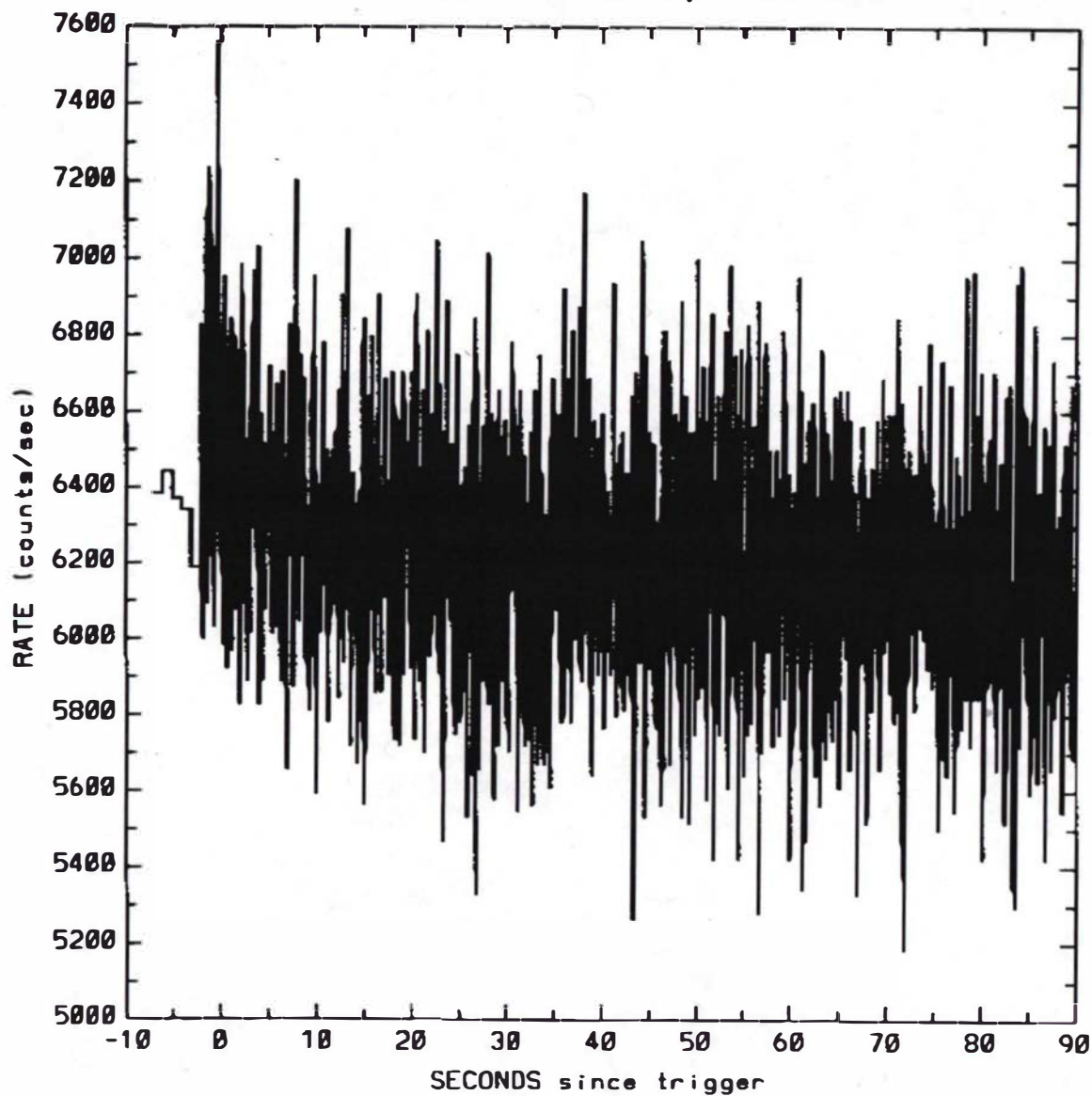
79690.466

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6487



24-FEB-2000 10:38:56

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

Trigger # . 6487

Trigger Time:
10770 / 79690.465

Burst Data Type:
DISCSC

Deadtime
Corrected. N

Background Data
Type. PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..8):
---4-2-0

Discriminators:
(3 : 4)

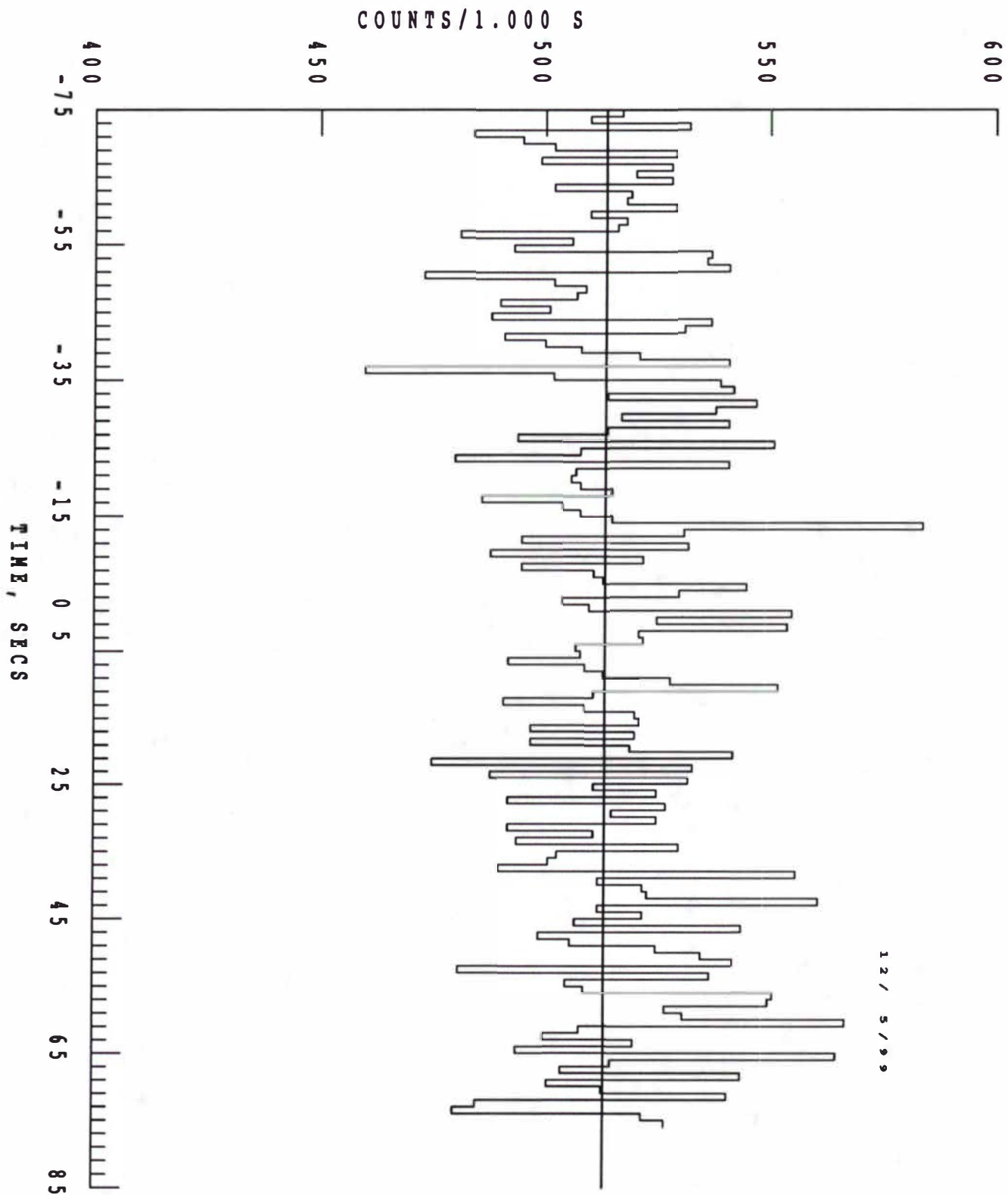
Quality Mask:
BDISP1

NEAR

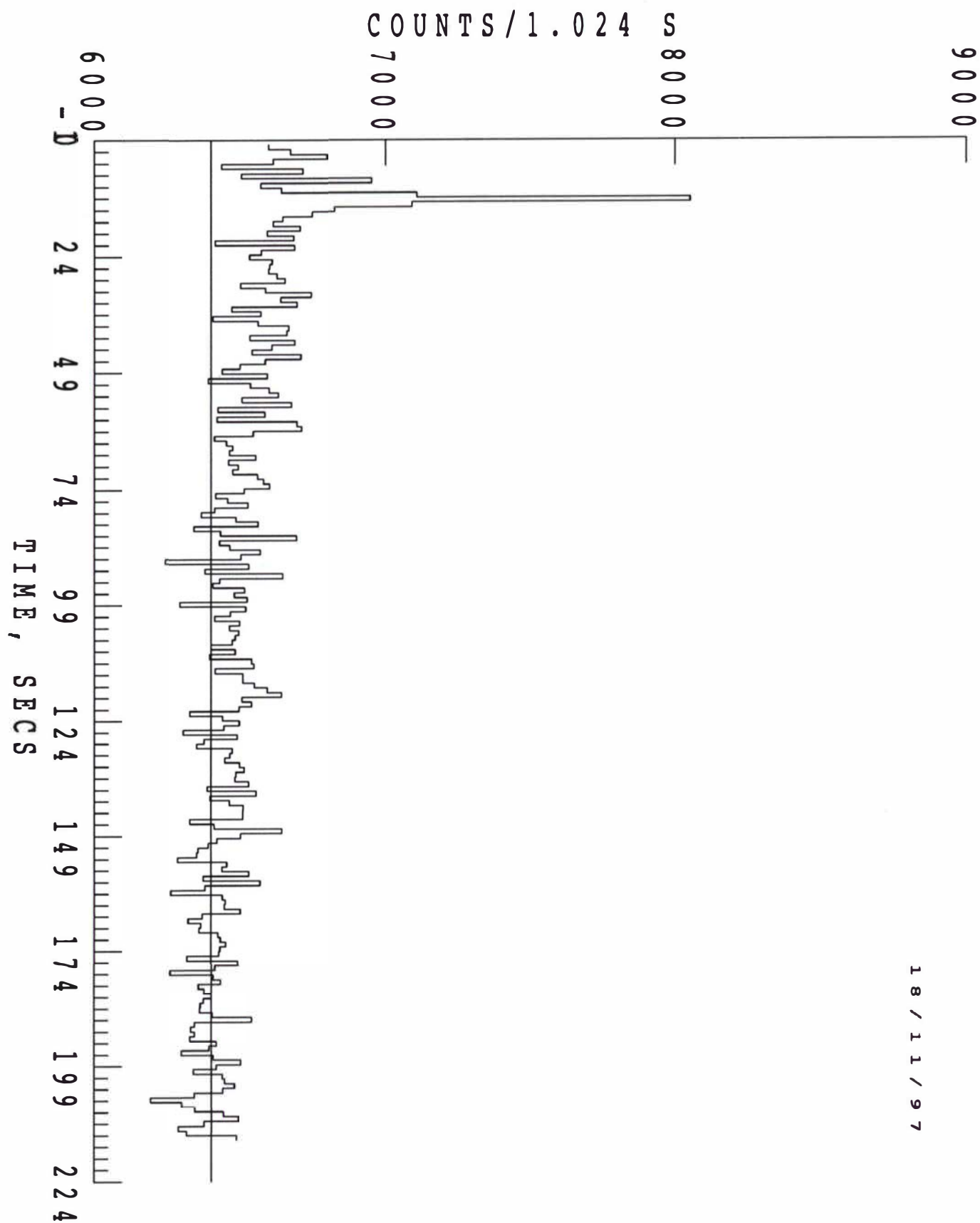
18/11/97

79794.213

100-1000 keV



BACODINE 6487 18/11/97 79678.177
25- 100 keV



BATSE BURST# 6487

ULYSSES RT

25 / 2 / 98

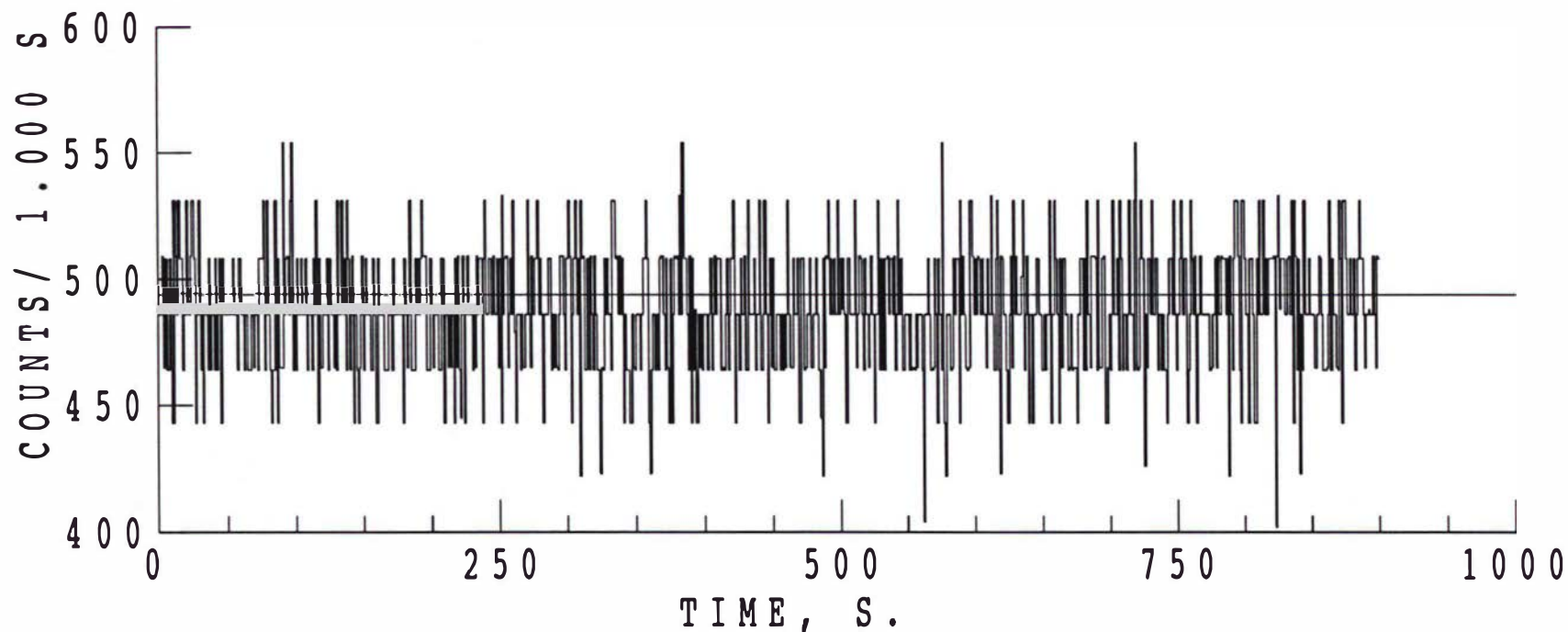
18/11/97 81000.188 s

0.500 S INTERVALS REGROUPED BY 2

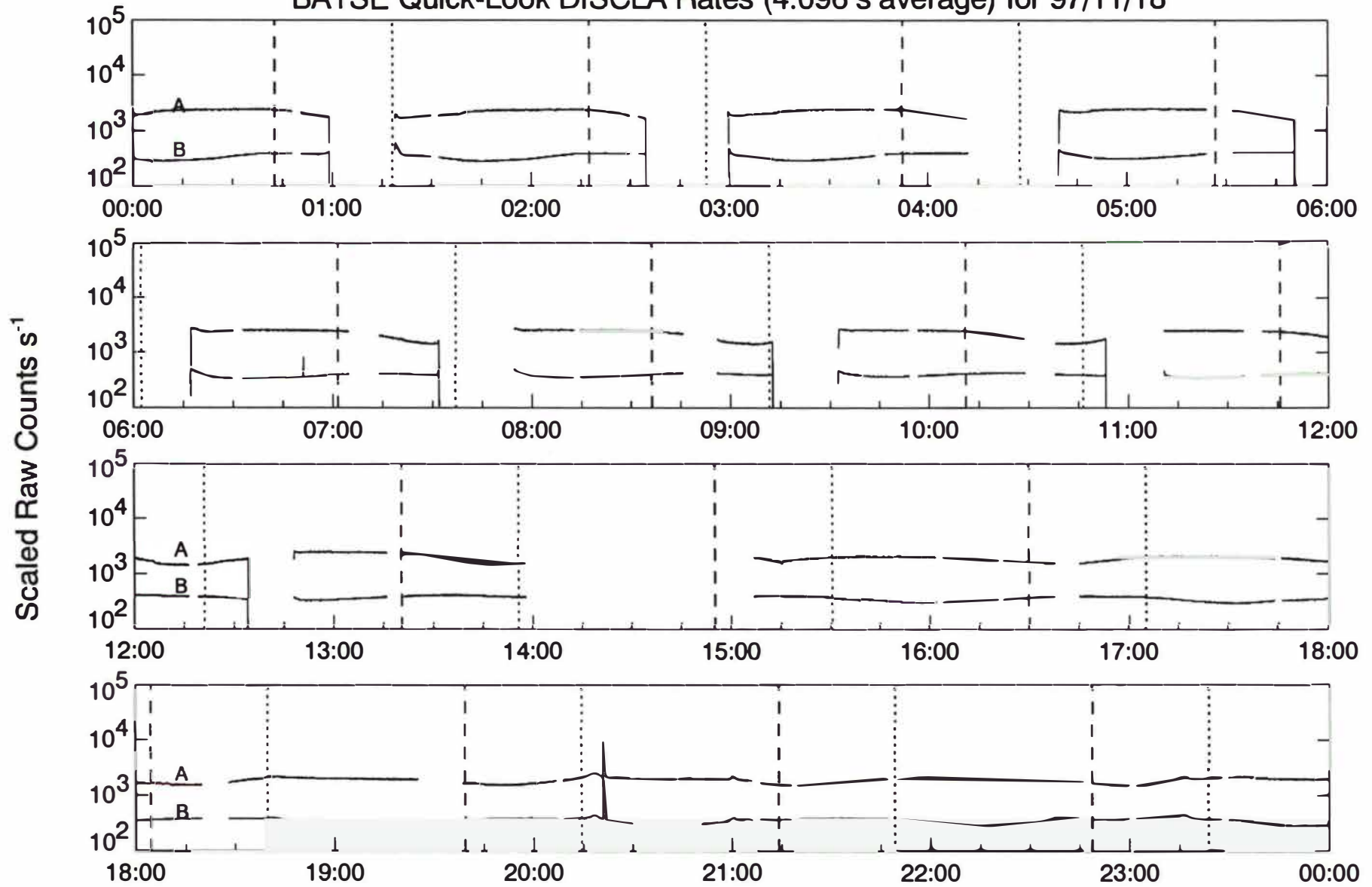
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/18



Current Time: 97/11/22, 1008 EDT

A: Channel 0 Most Sunward LAD

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

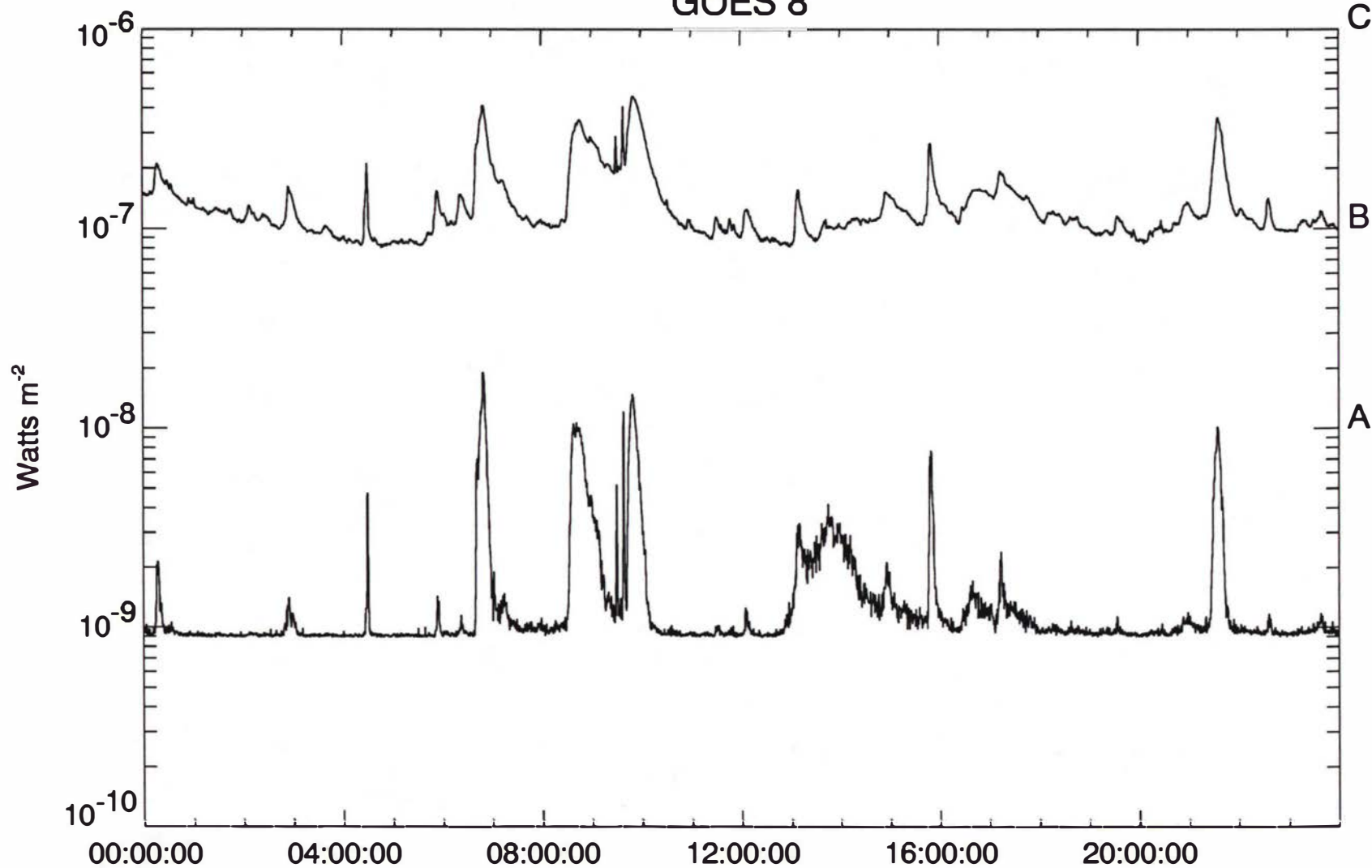
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 97/11/18, 0000:00

Plot created: 97/11/22, 1007

Channel

1 (1.0 - 8.0 Angstroms)

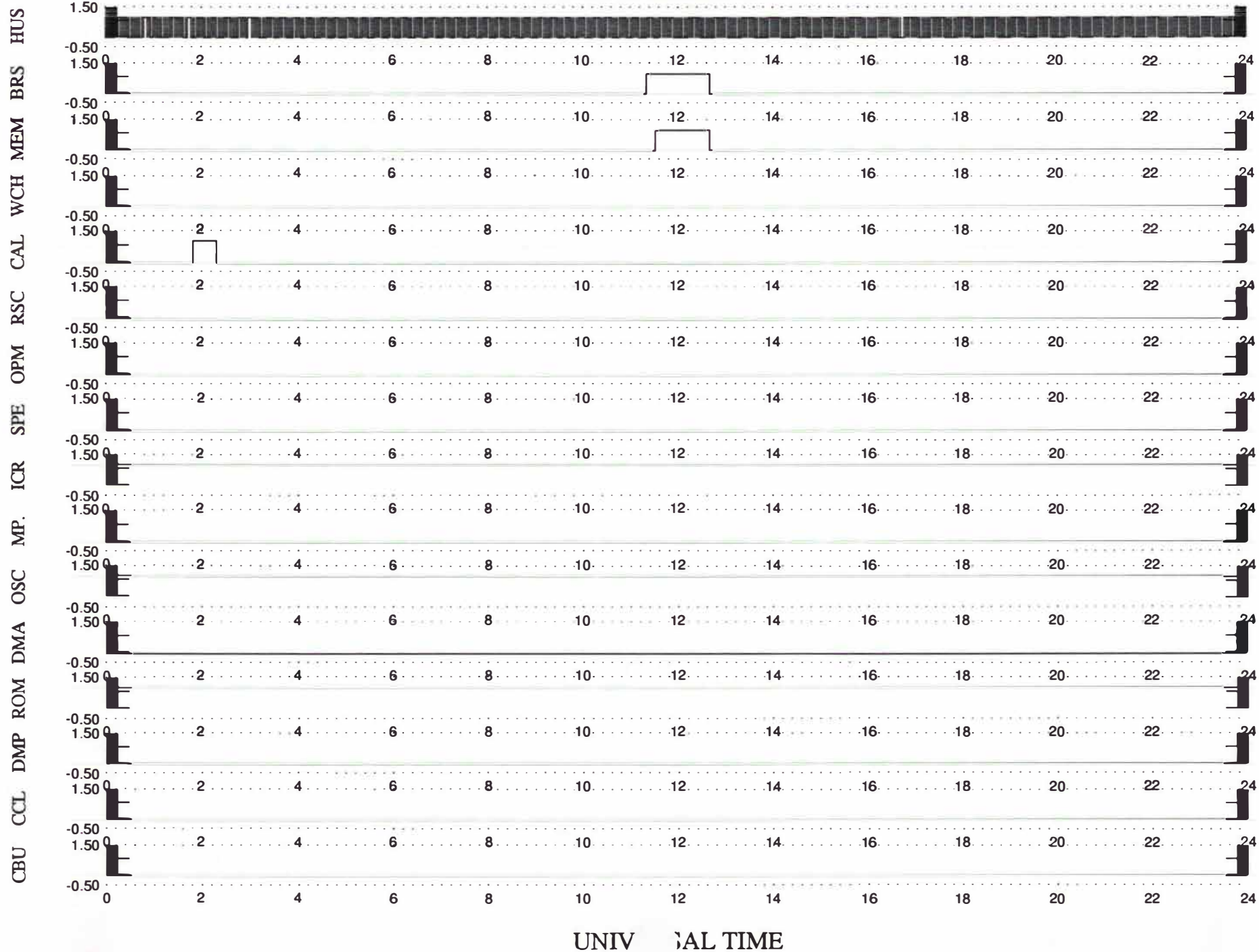
Background not subtracted

2 (0.5 - 4.0 Angstroms)

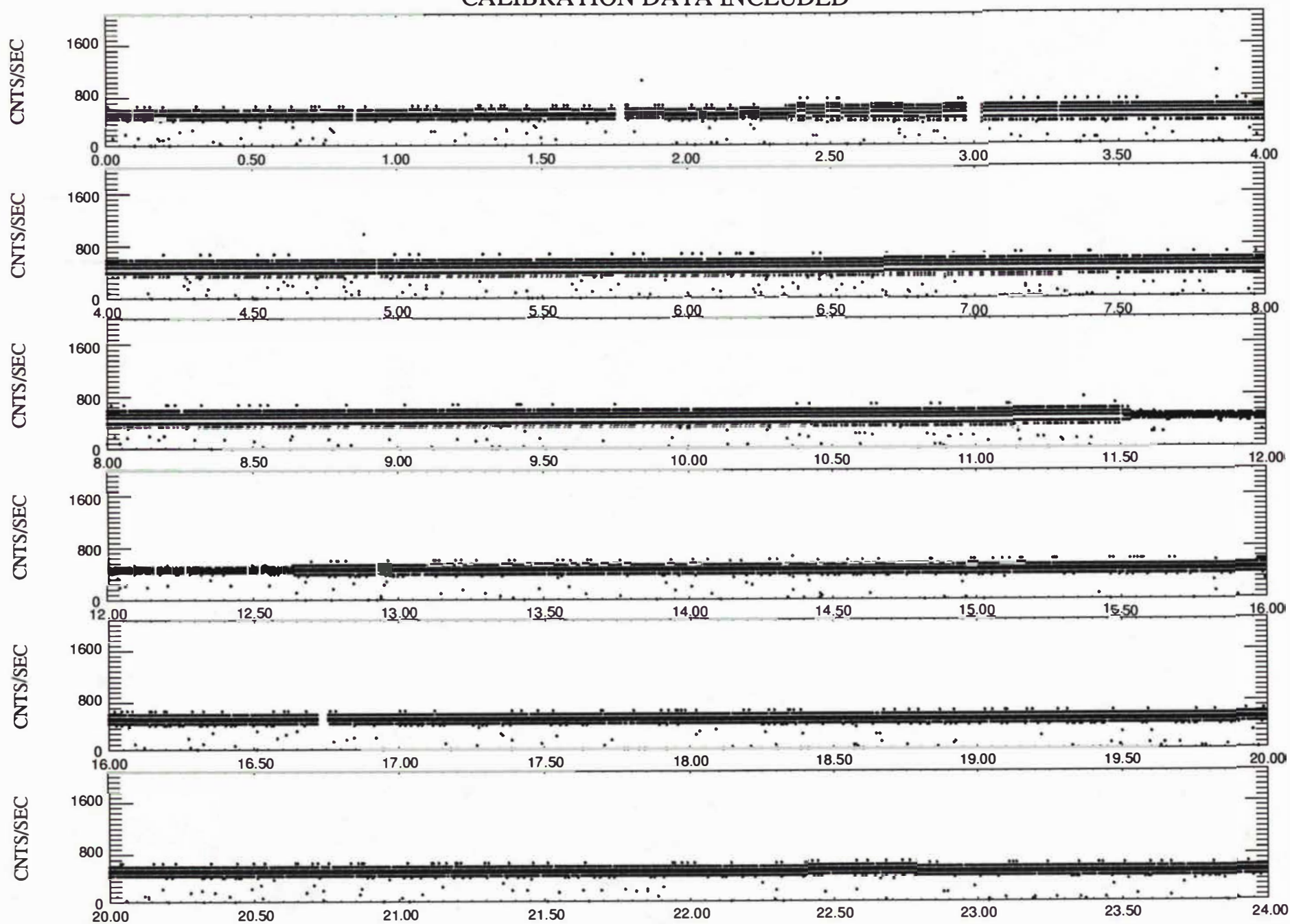
Background not subtracted

Sample average = 10

BURST NUMBER 11

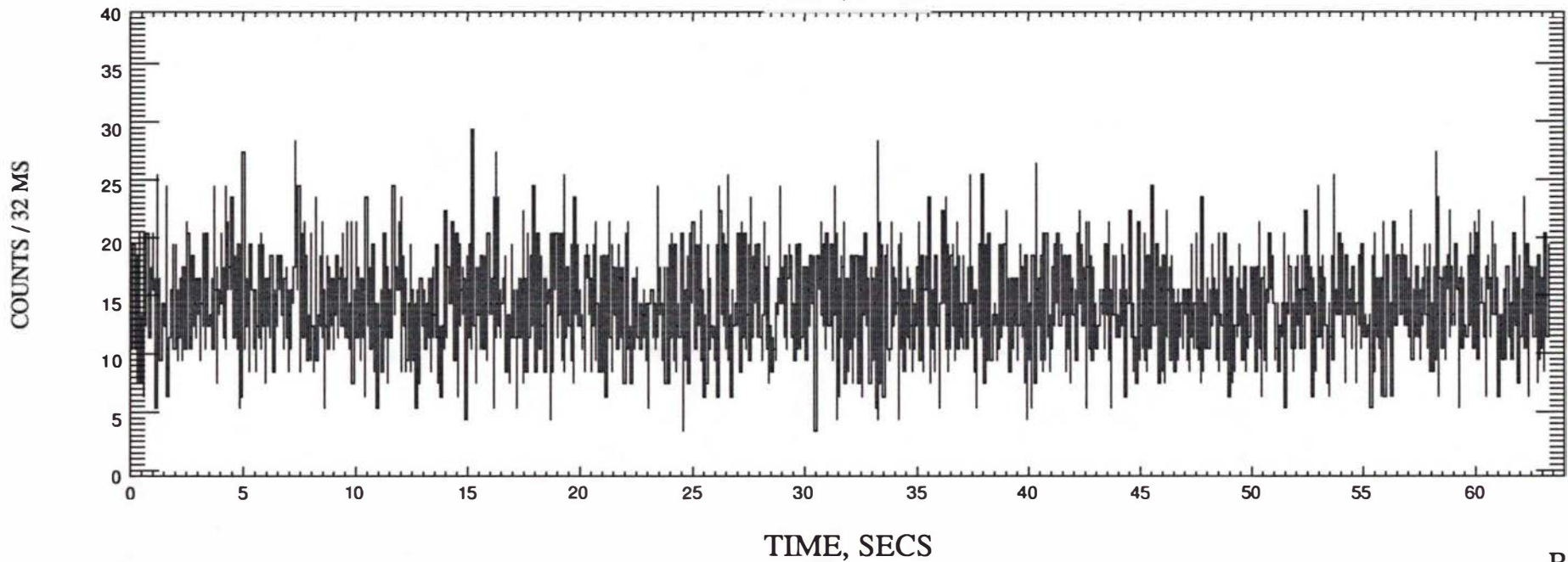
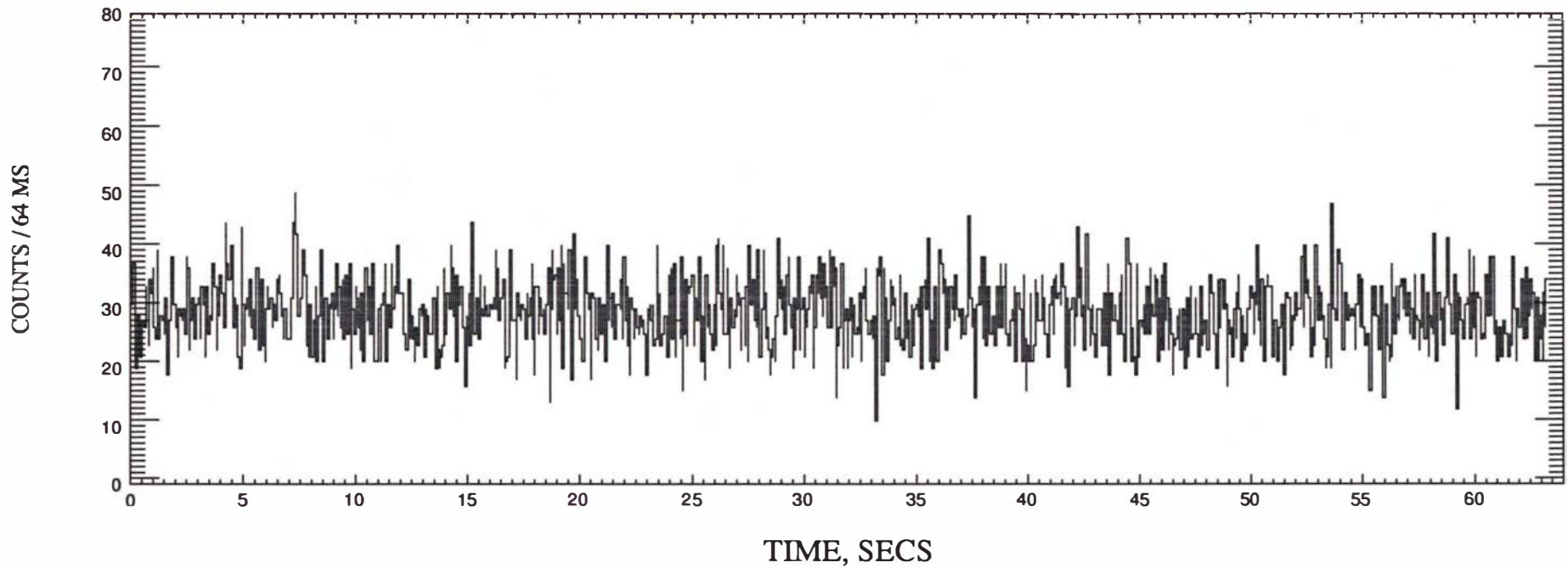


CALIBRATION DATA INCLUDED

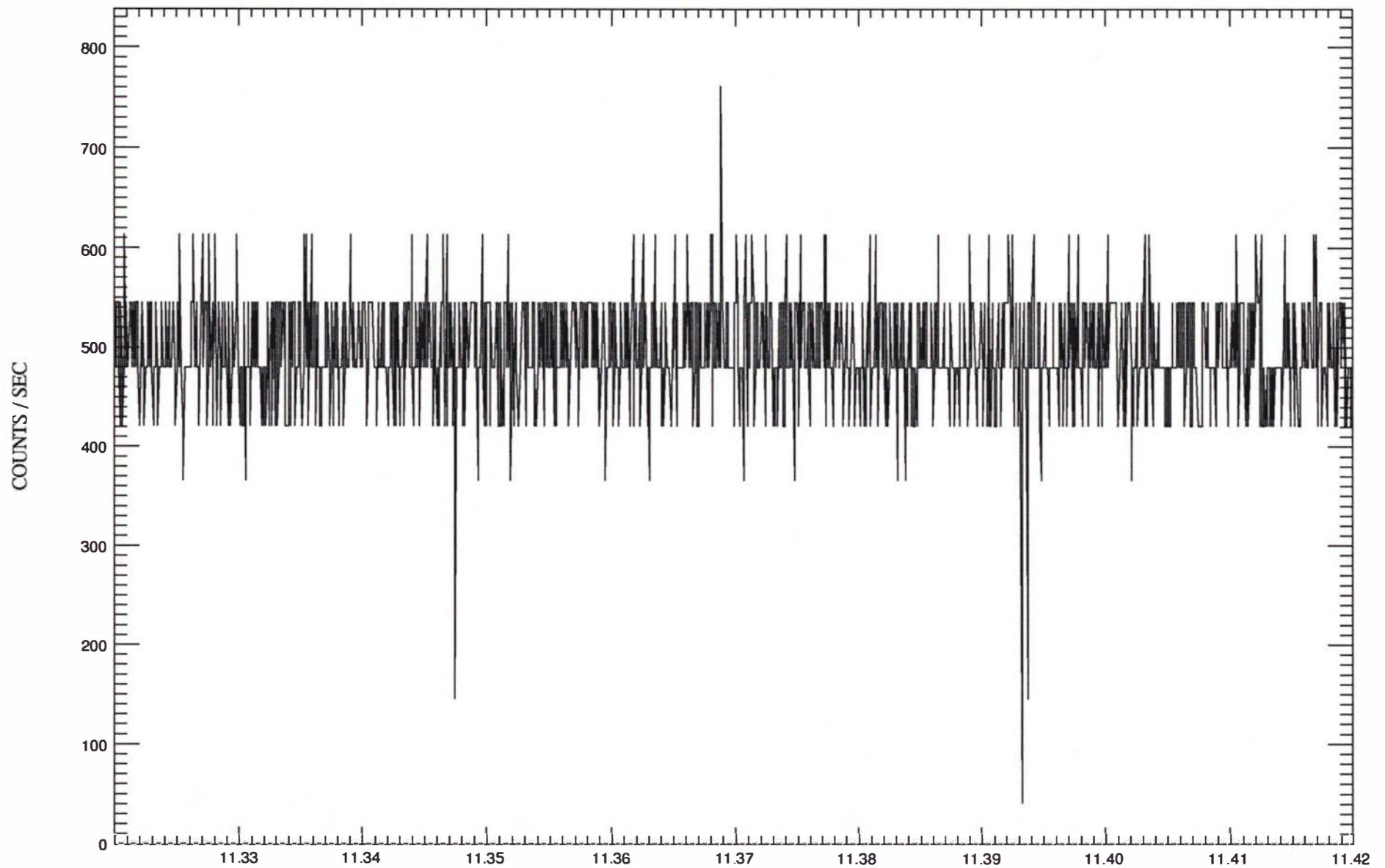


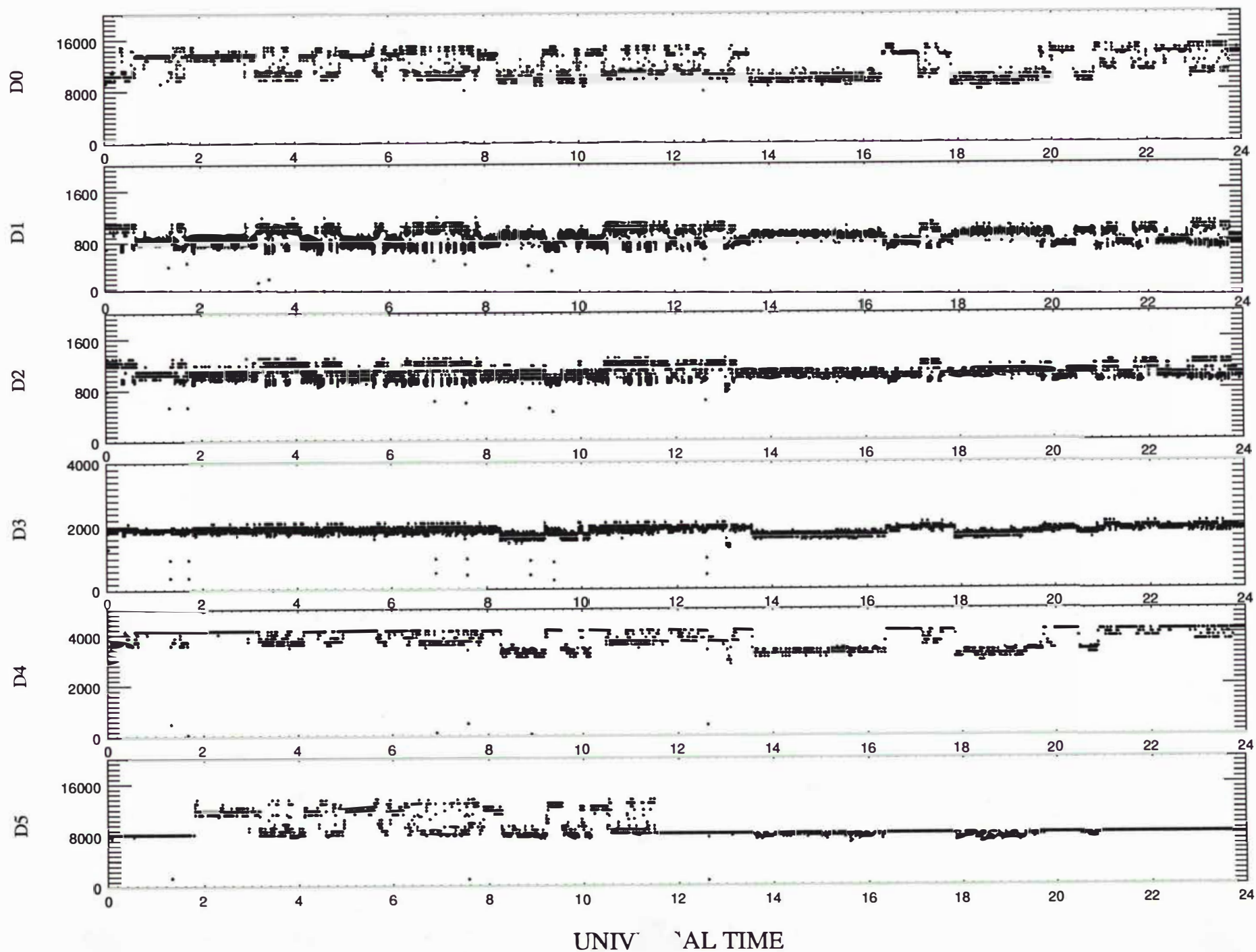
UNIV TIME

Burst Counter 11 at UT=11.368989359538 h=40928.362 s 11:22:08.362

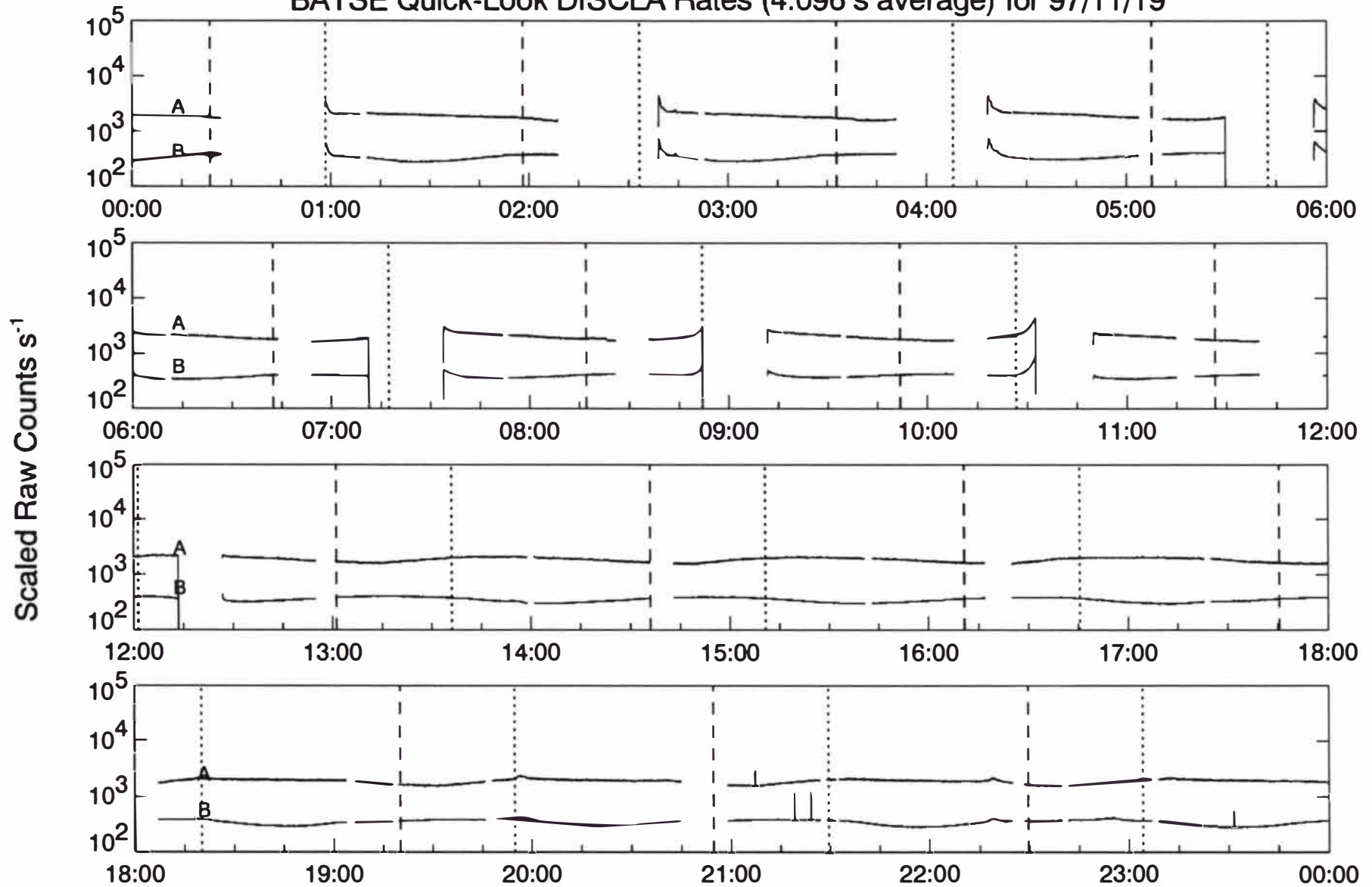


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/19

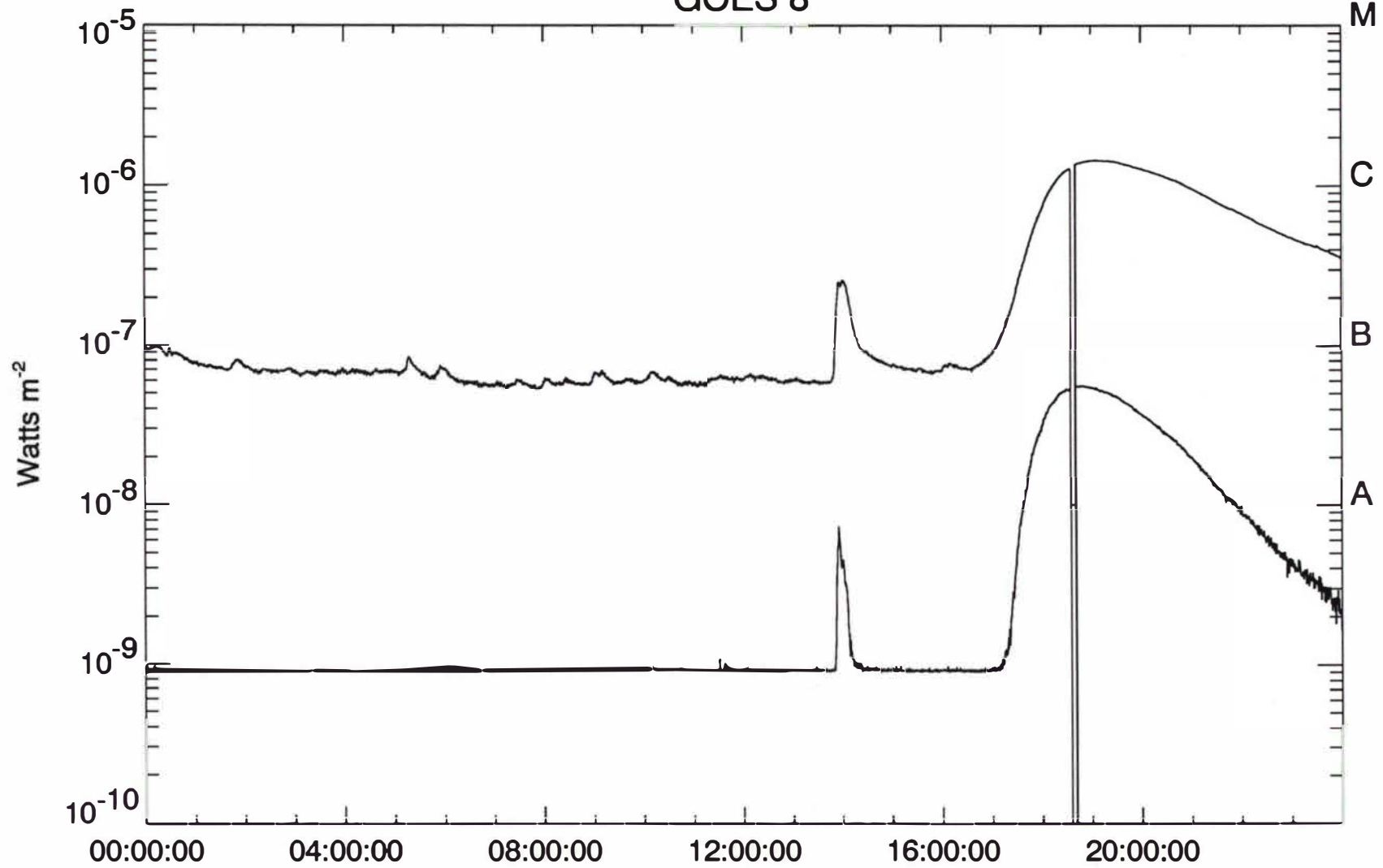


Current Time: 97/11/23, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/19, 0000:00

Plot created: 97/11/23, 1007

Channel

1 (1.0 - 8.0 Angstroms)

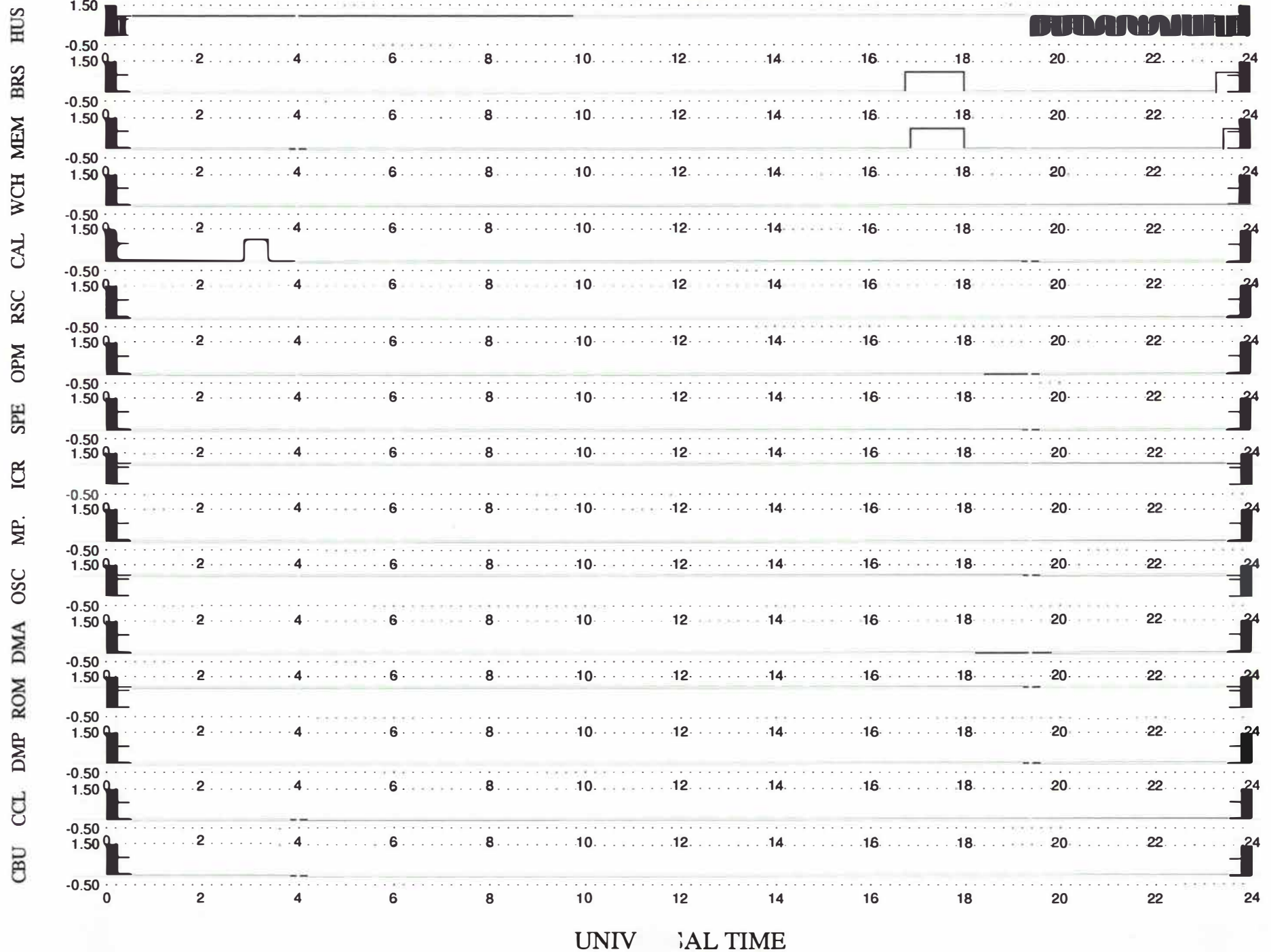
Background not subtracted

2 (0.5 - 4.0 Angstroms)

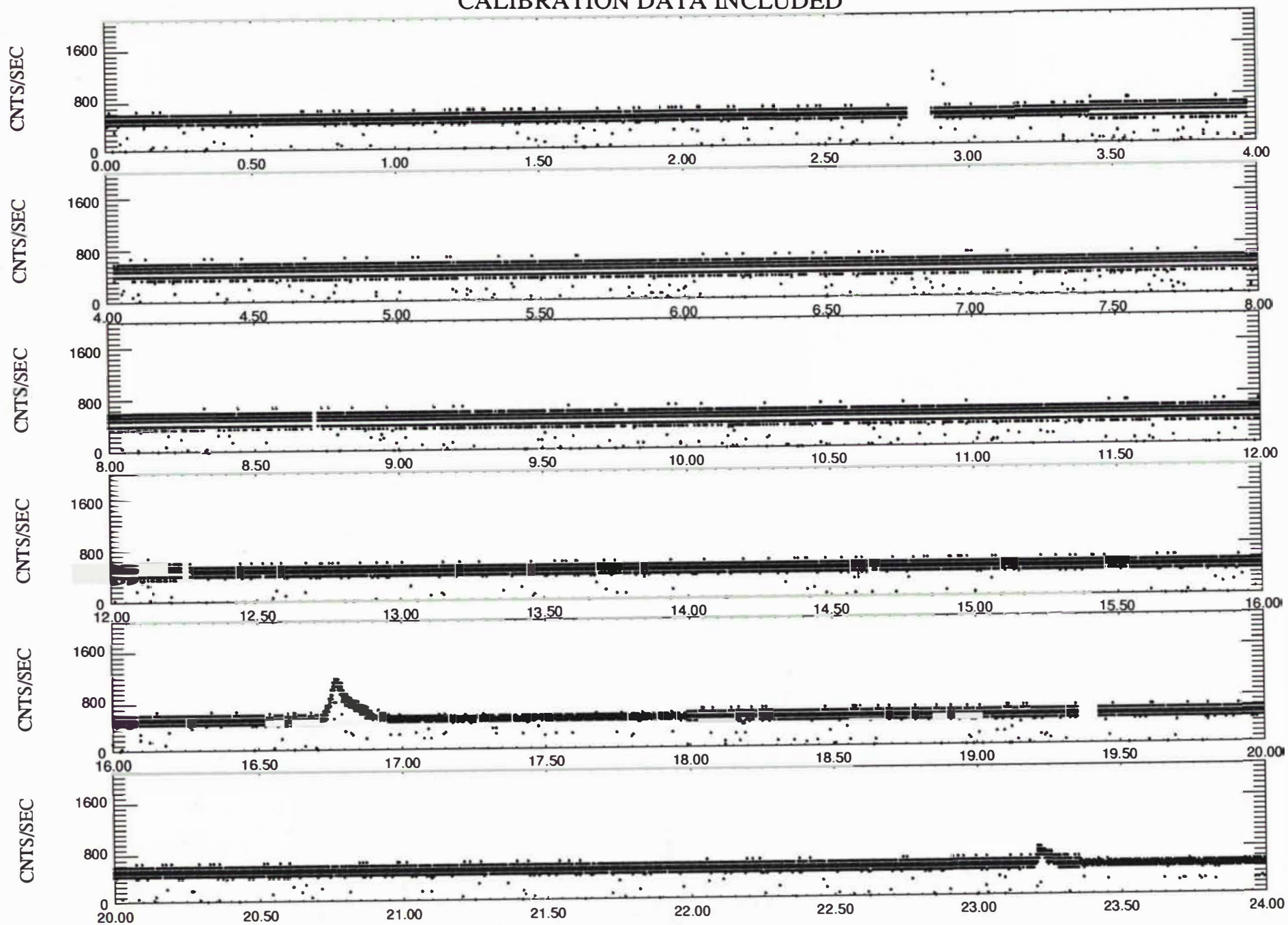
Background not subtracted

Sample average = 10

BURST NUMBER 12, 13

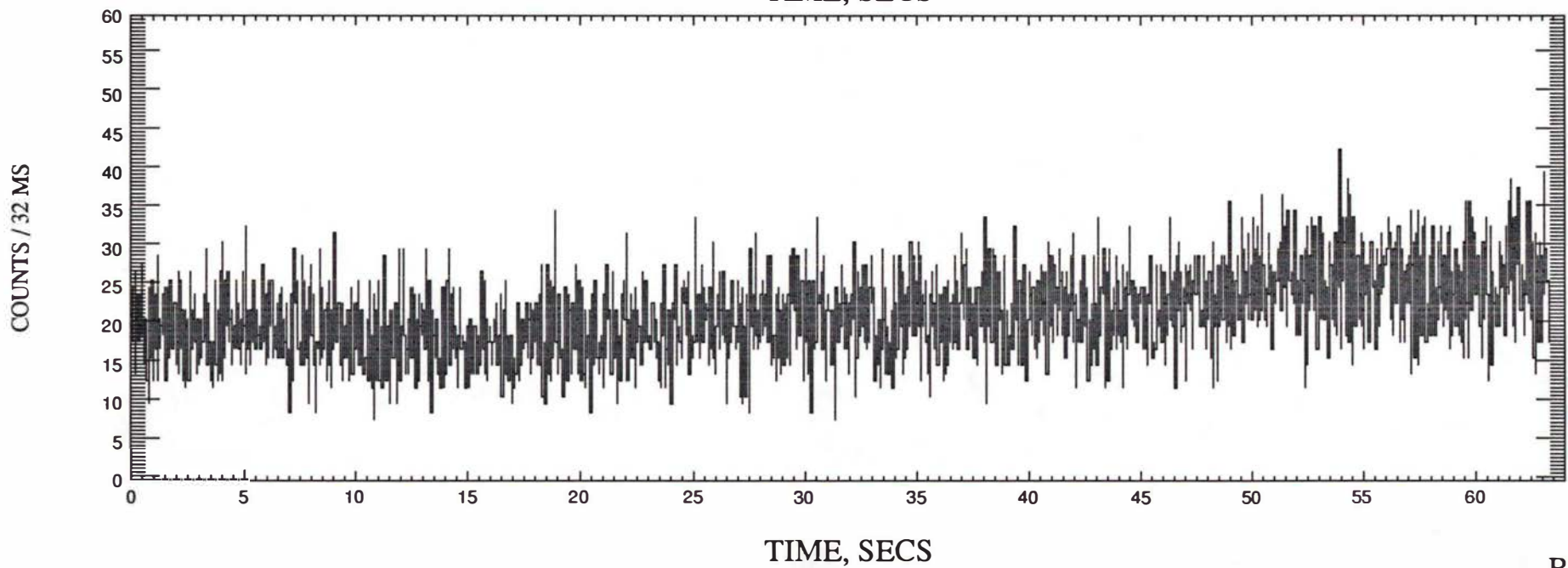
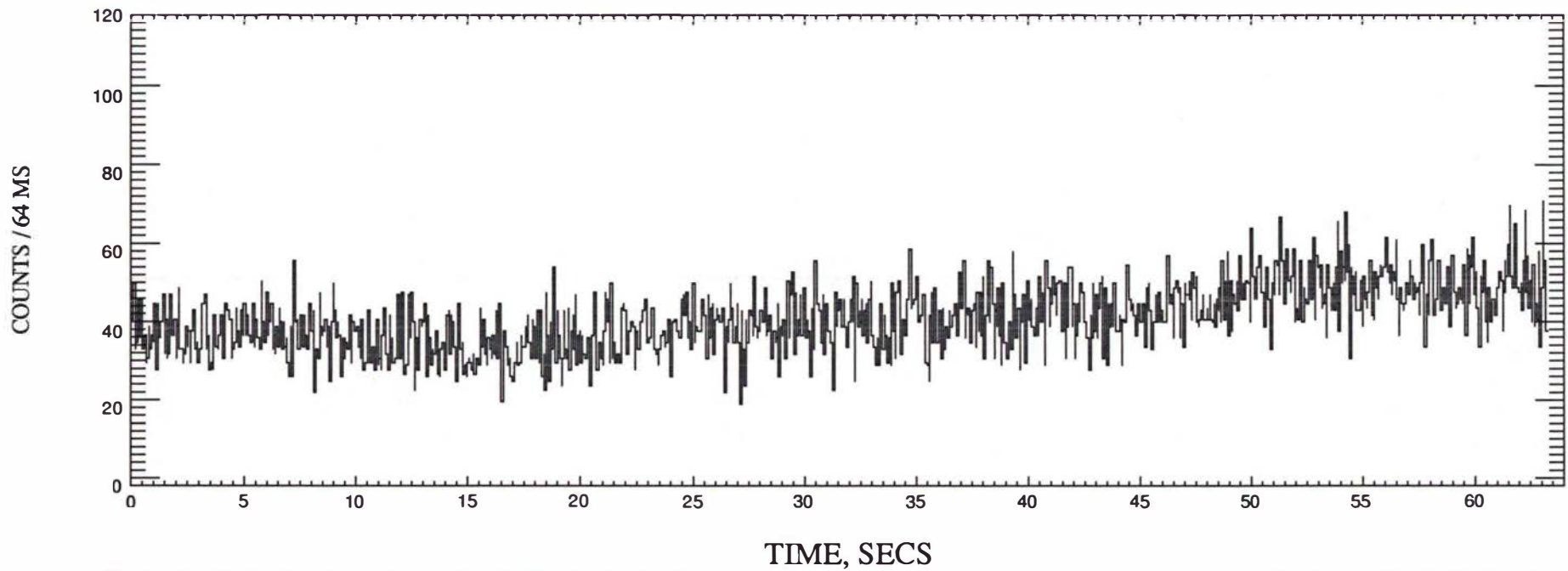


CALIBRATION DATA INCLUDED

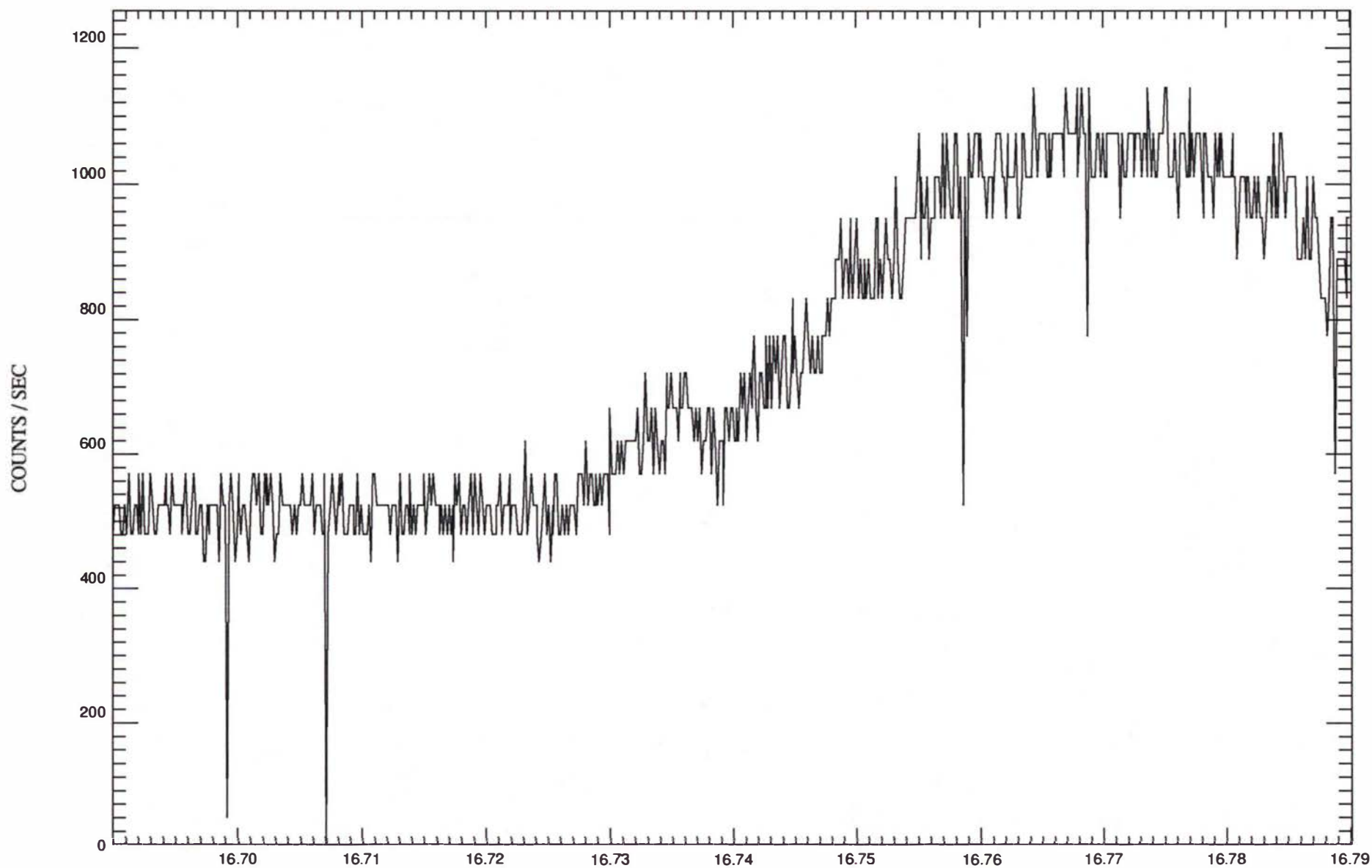


UNIV AL TIME

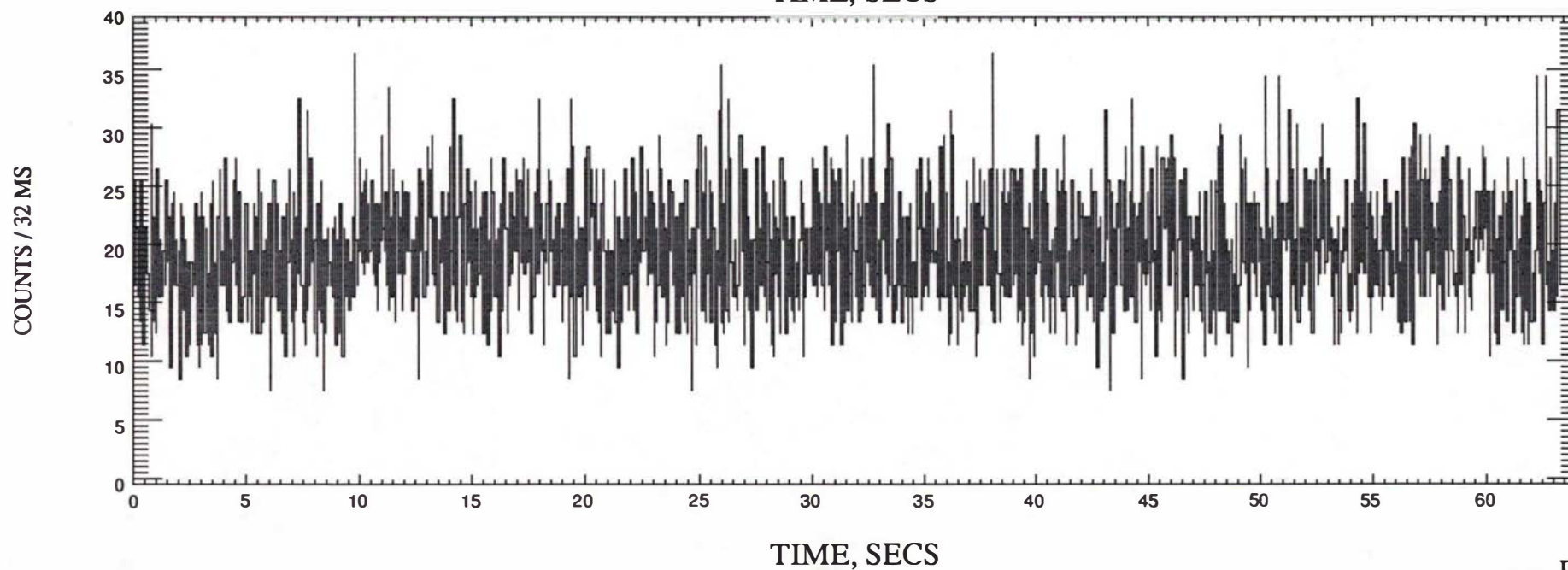
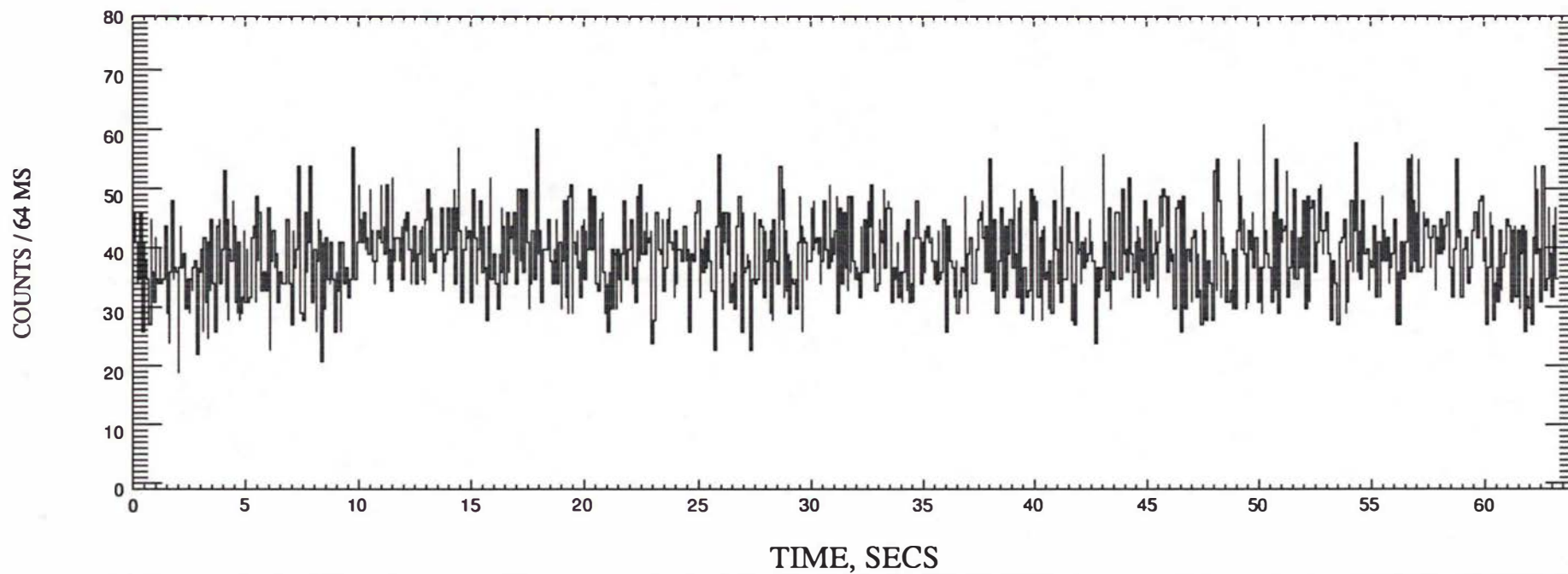
Burst Counter 12 at UT=16.736638192071 h=60251.897 s 16:44:11.897



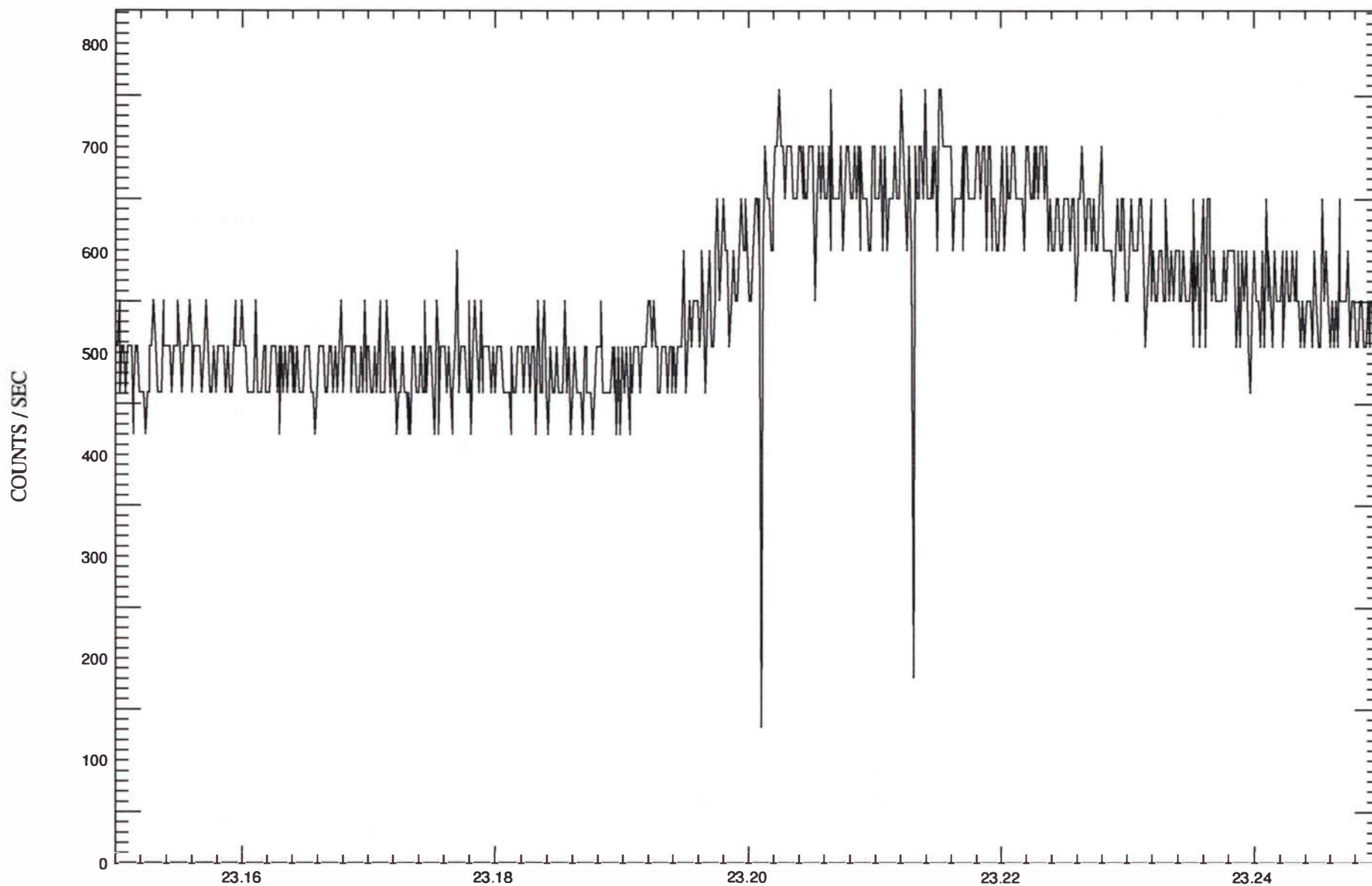
CALIBRATION DATA INCLUDED

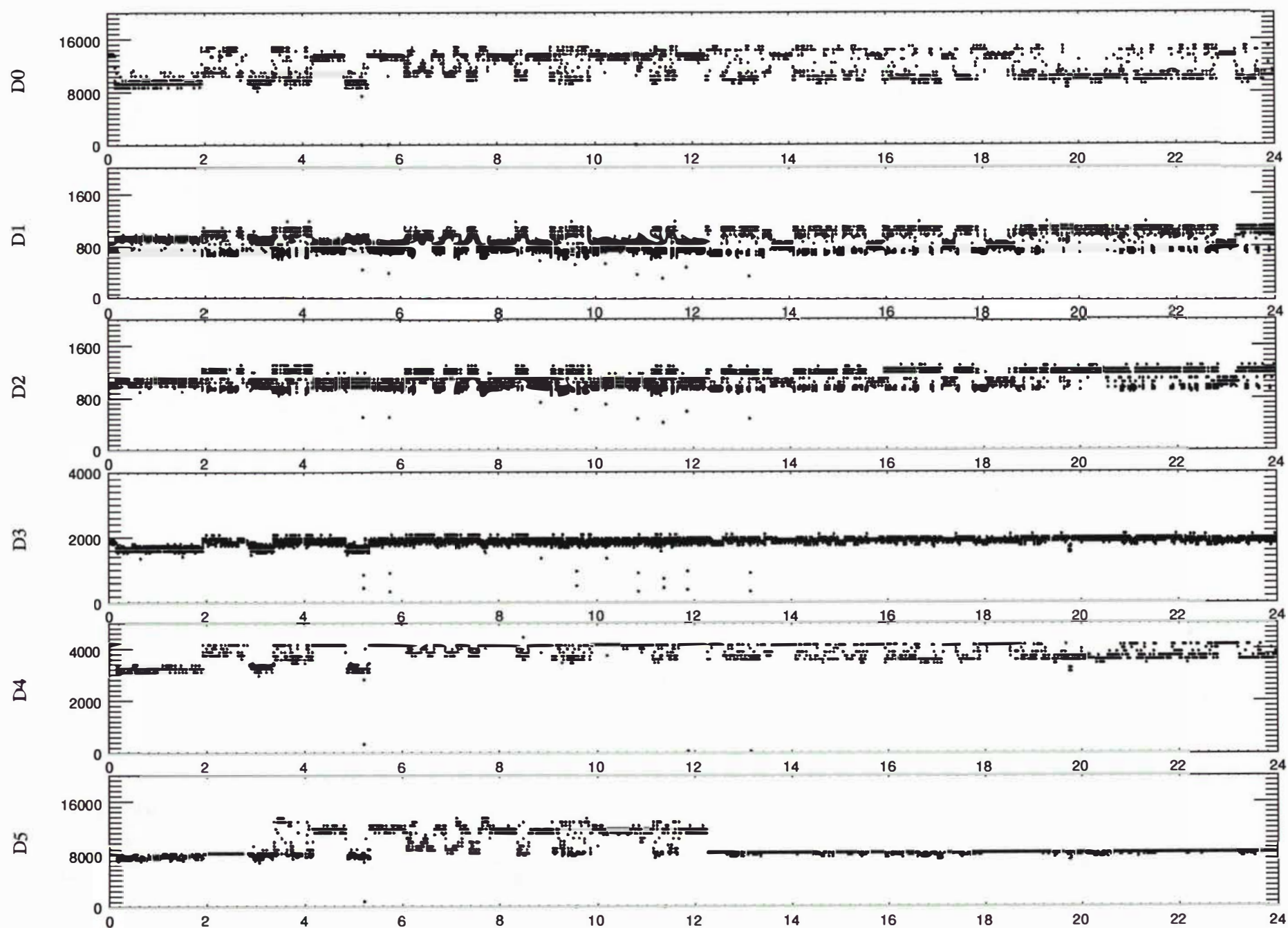


Burst Counter 13 at UT=23.201572710673 h=83525.662 s 23:12:05.662



CALIBRATION DATA INCLUDED





UNIV CAL TIME

From RICHARDSON@SSLMOR.msfc.nasa.gov Mon Nov 24 13:42:58 1997
Return-Path: <RICHARDSON@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA05661; Mon, 24 Nov 1997 13:42:57 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA26123; Mon, 24 Nov 1997 13:42:55 -0800
Date: Mon, 24 Nov 1997 15:42:48 -0600 (CST)
From: RICHARDSON@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971124154248.21e0e085@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6488
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6488
EVENT OF 1997 NOV 20 DAY OF YEAR=324
EVENT CROSSING TIME AT BATSE : 77695. S. OR 21:34:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 156.000 76.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/11/ 97 IS:
RA= 170.400 DEC= 12.744 DIST= 5.548 AU
BATSE-ULYSSES DISTANCE = 829908731. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1225.19 SECS.
CROSSING TIME AT ULYSSES IS 76470. S. OR 21:14:29 +/- 462.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/11/ 97 IS:
RA= 278.961 DEC= -24.444 DIST= 1.994 AU
MARS-BATSE DISTANCE = 298266688. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 518.69 SECS.
CROSSING TIME AT MARS IS 78214. S. OR 21:43:33 +/- 155.28 SECONDS

BATSE BURST TRIGGER

NO.: 6488

TIME: TJD=0772 SECONDS=77695

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=138.4 AZIMUTH=254.2 ERROR=9.9 DEGREES

COMMENTS:

GRB. SHORT PULSE. DURATION APPROX.= 3 SEC. NOT VISIBLE ABOVE 300KEV.

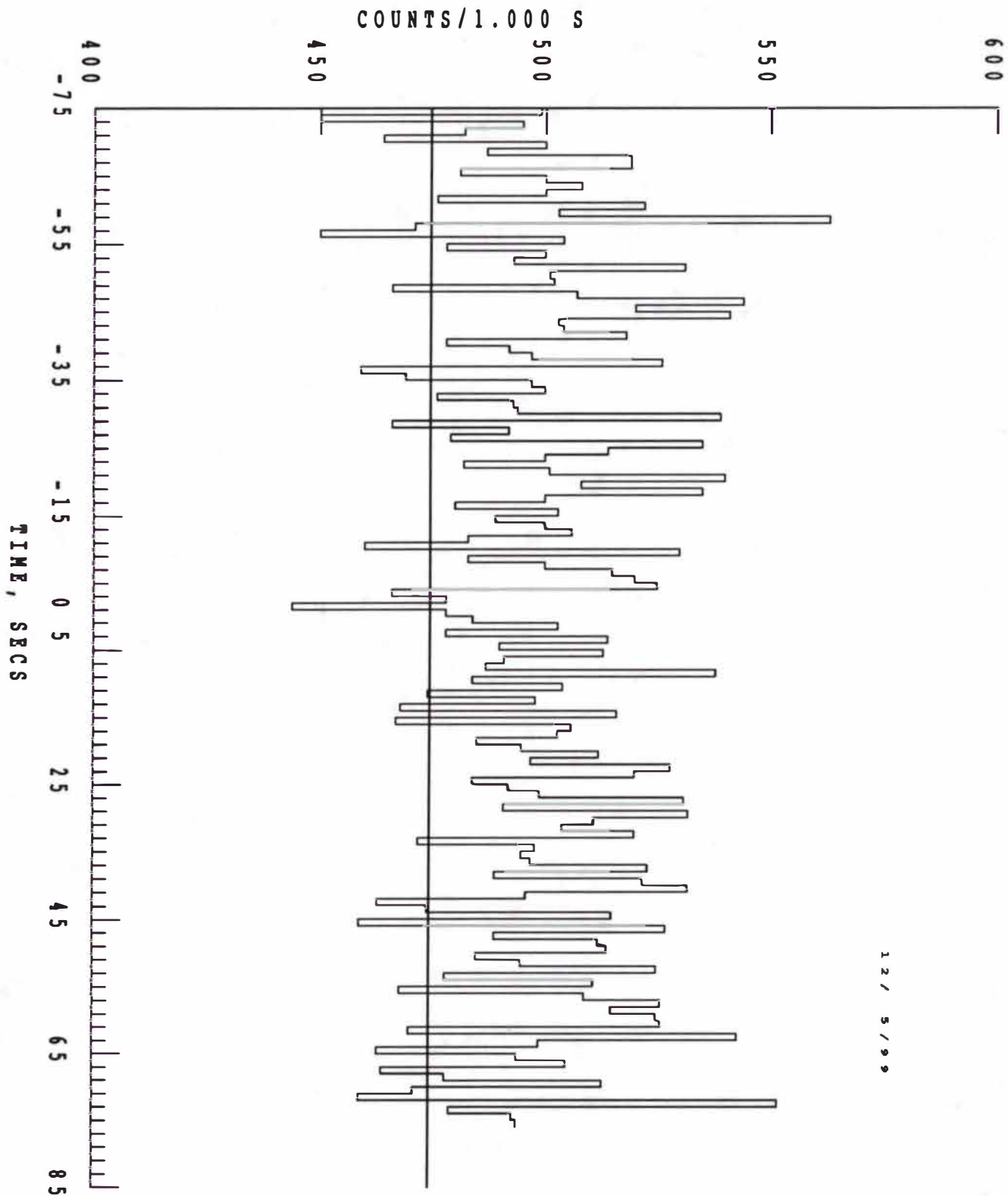
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6488	971120	10772	77695	2500	156	+76	3

NEAR

20/11/97

77623.181

100-1000 keV



BATSE BURST# 6488

ULYSSES RT

24 / 11 / 97

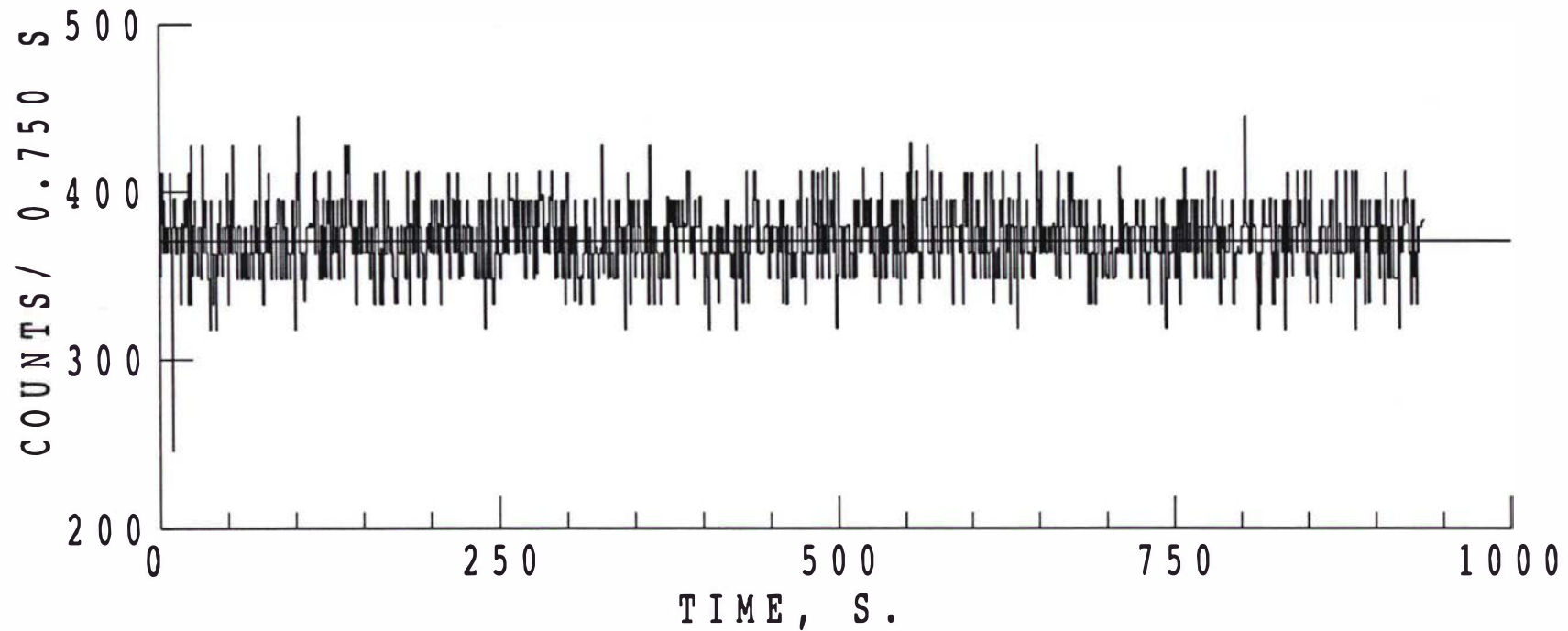
20 / 11 / 97 75996.047 s

0.250 S INTERVALS REGROUPED BY 3

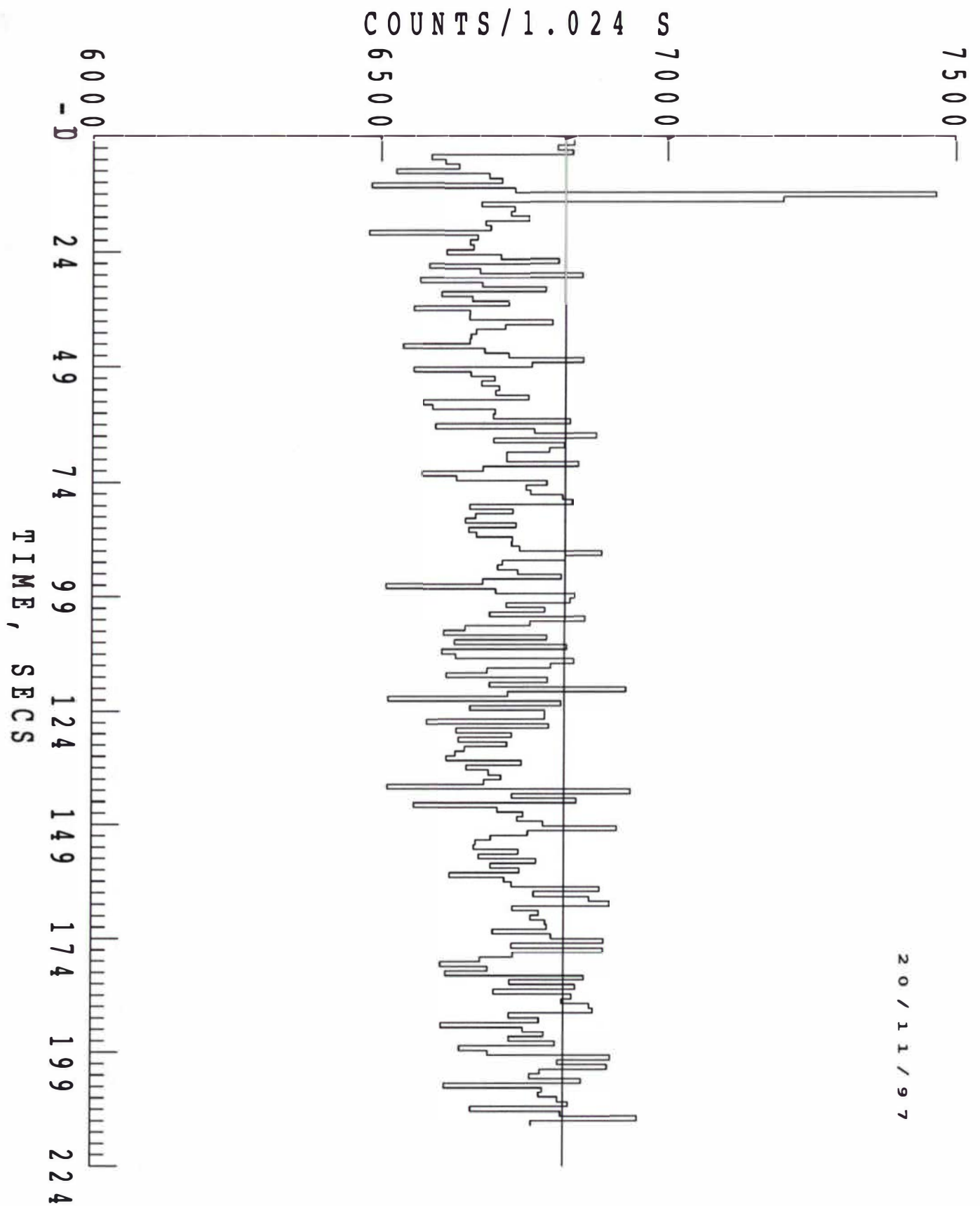
0 - 0 keV

W= 10 M=10
>4.0 SIGMA FLUCTUATIONS

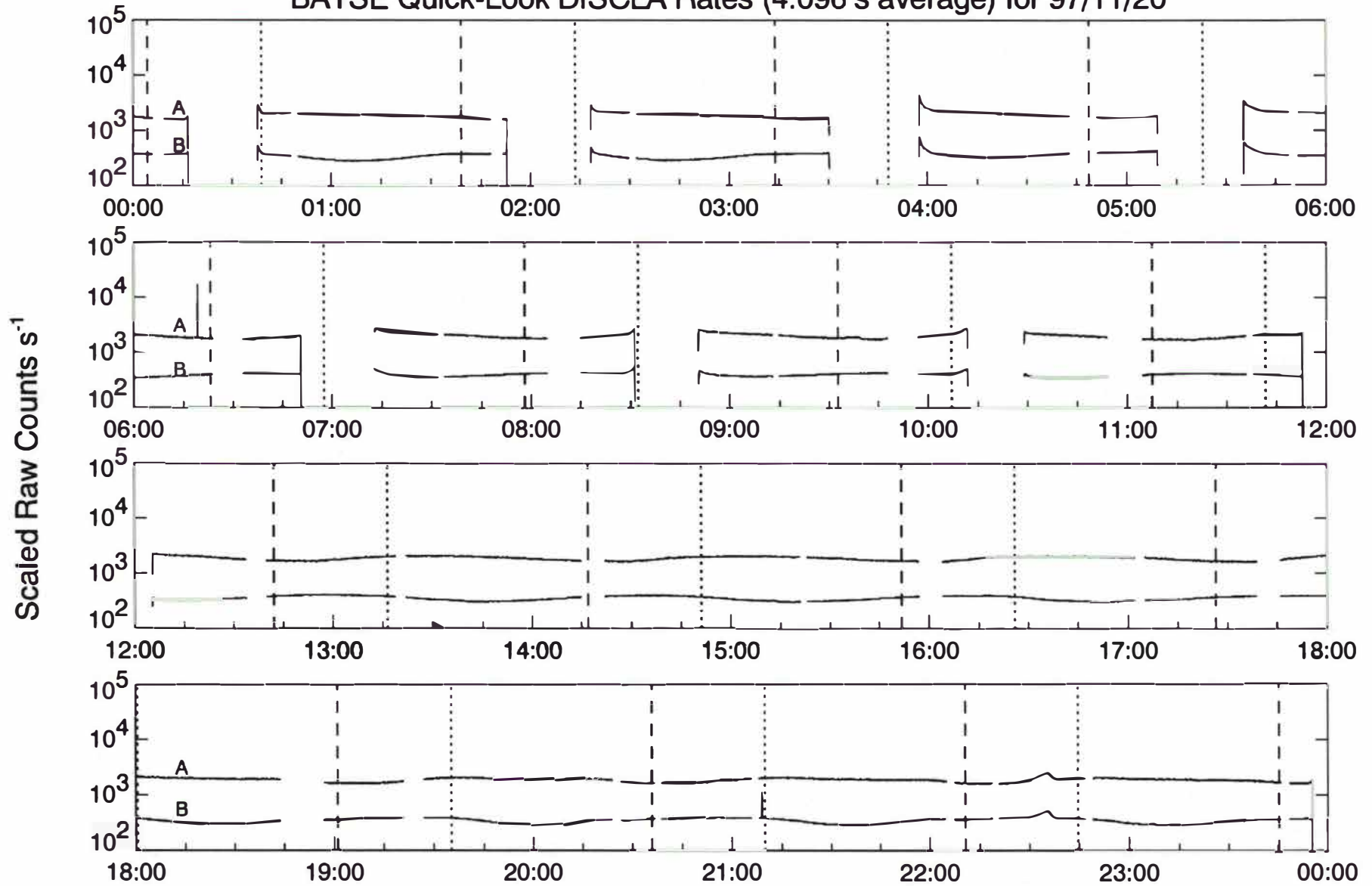
W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6488 20/11/97 77683.425
25- 100 keV



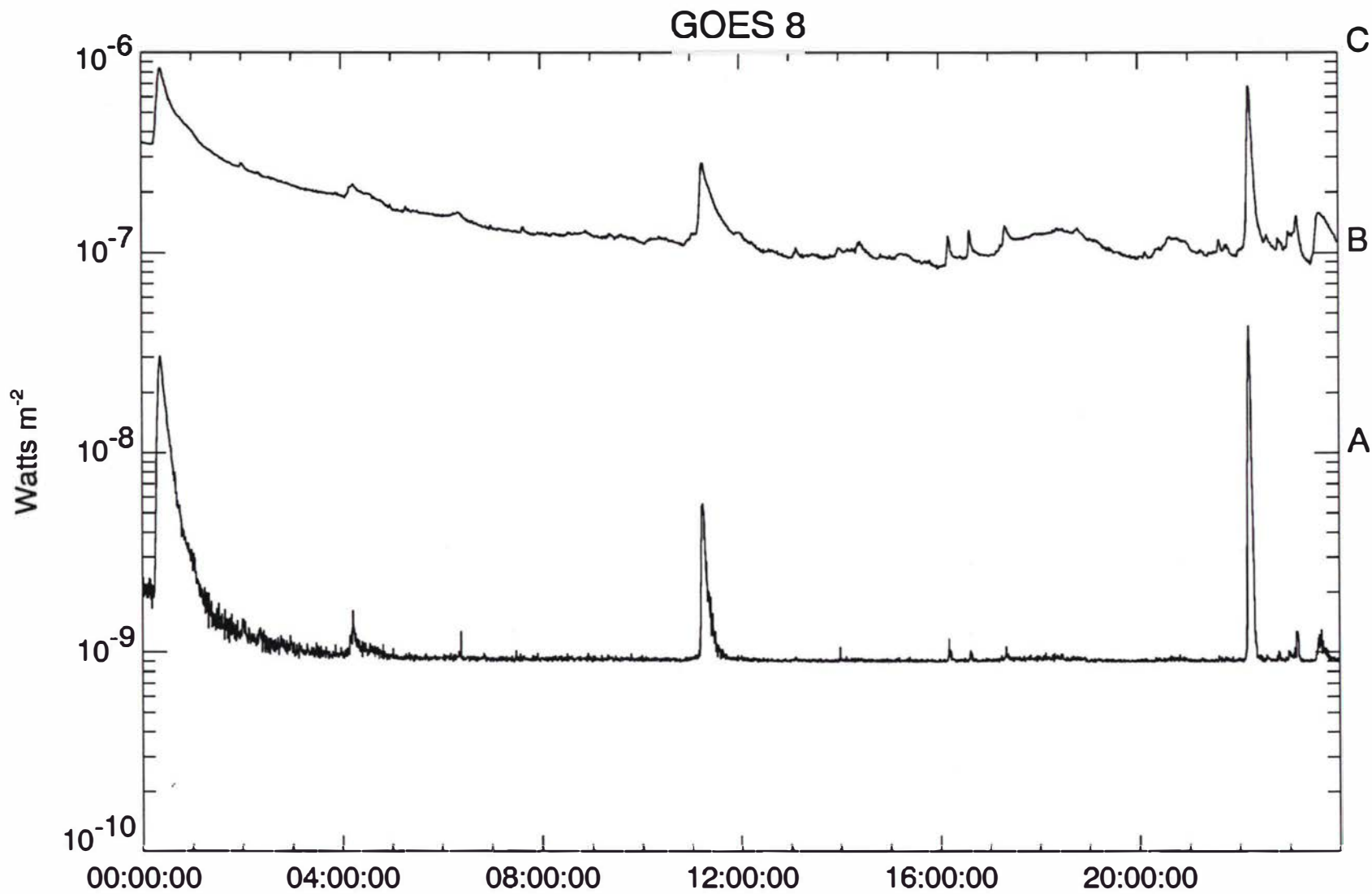
BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/20



Current Time: 97/11/24, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 97/11/20, 0000:00

Plot created: 97/11/24, 1007

Channel

1 (1.0 - 8.0 Angstroms)

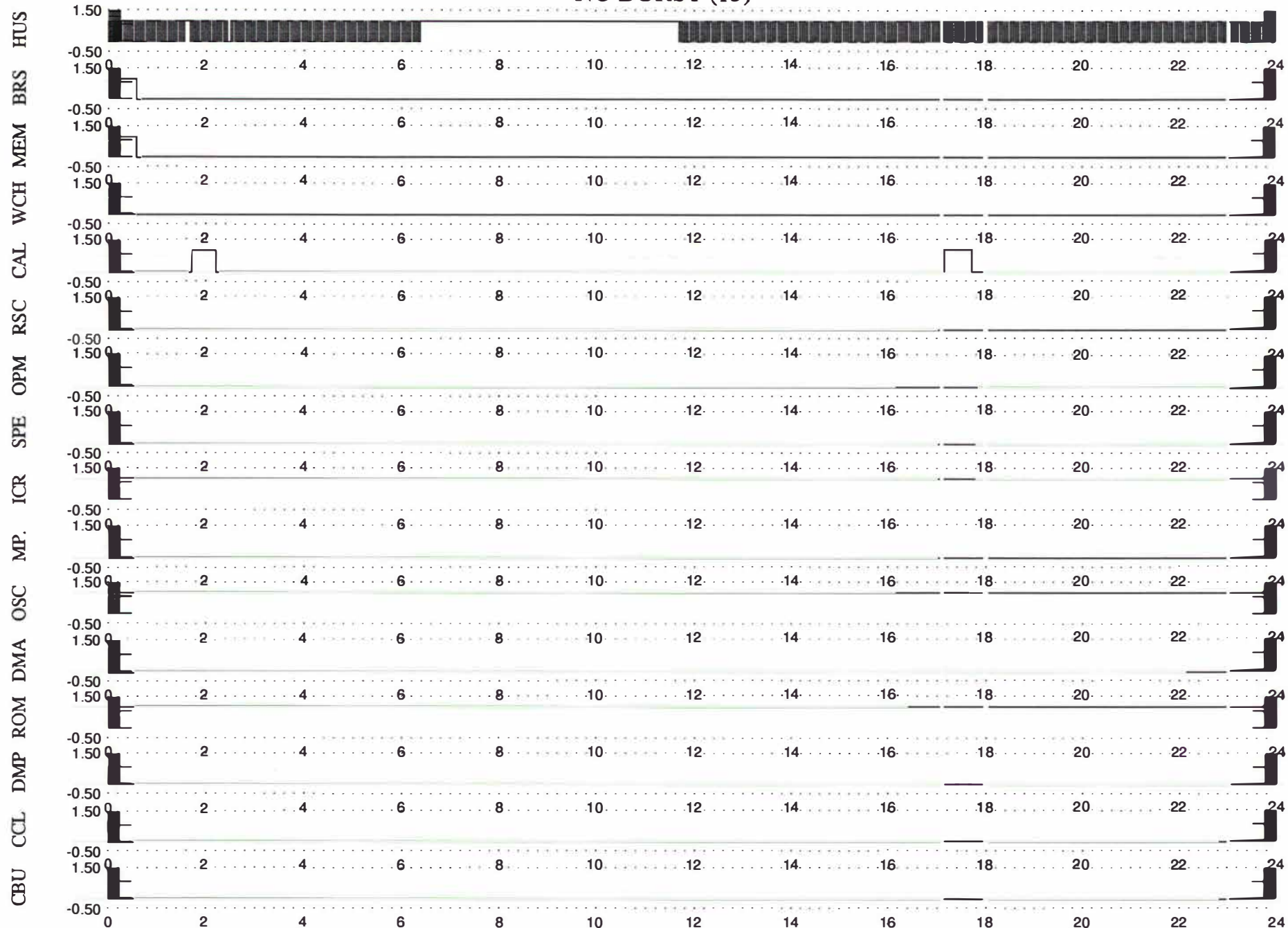
Background not subtracted

2 (0.5 - 4.0 Angstroms)

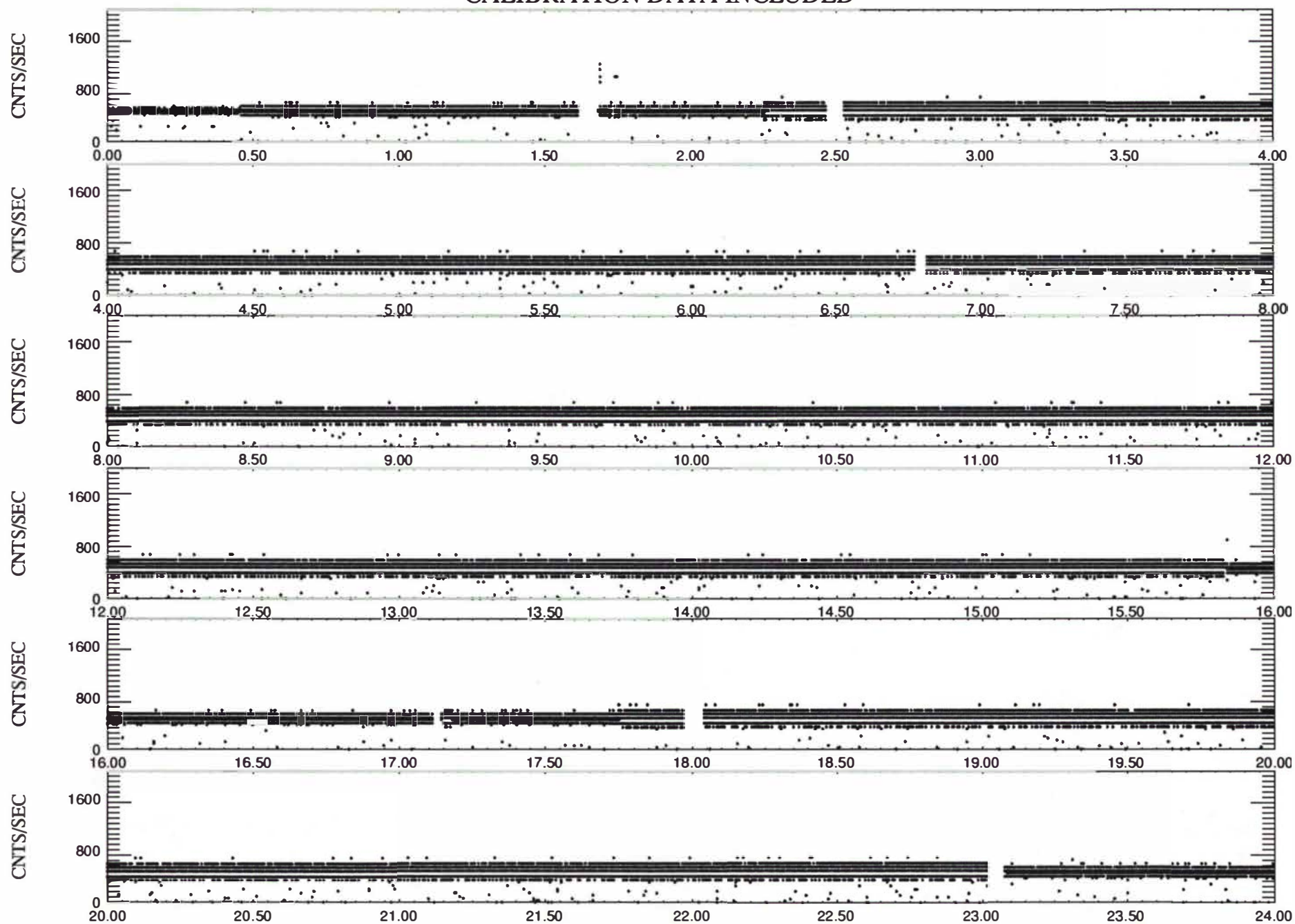
Background not subtracted

Sample average = 10

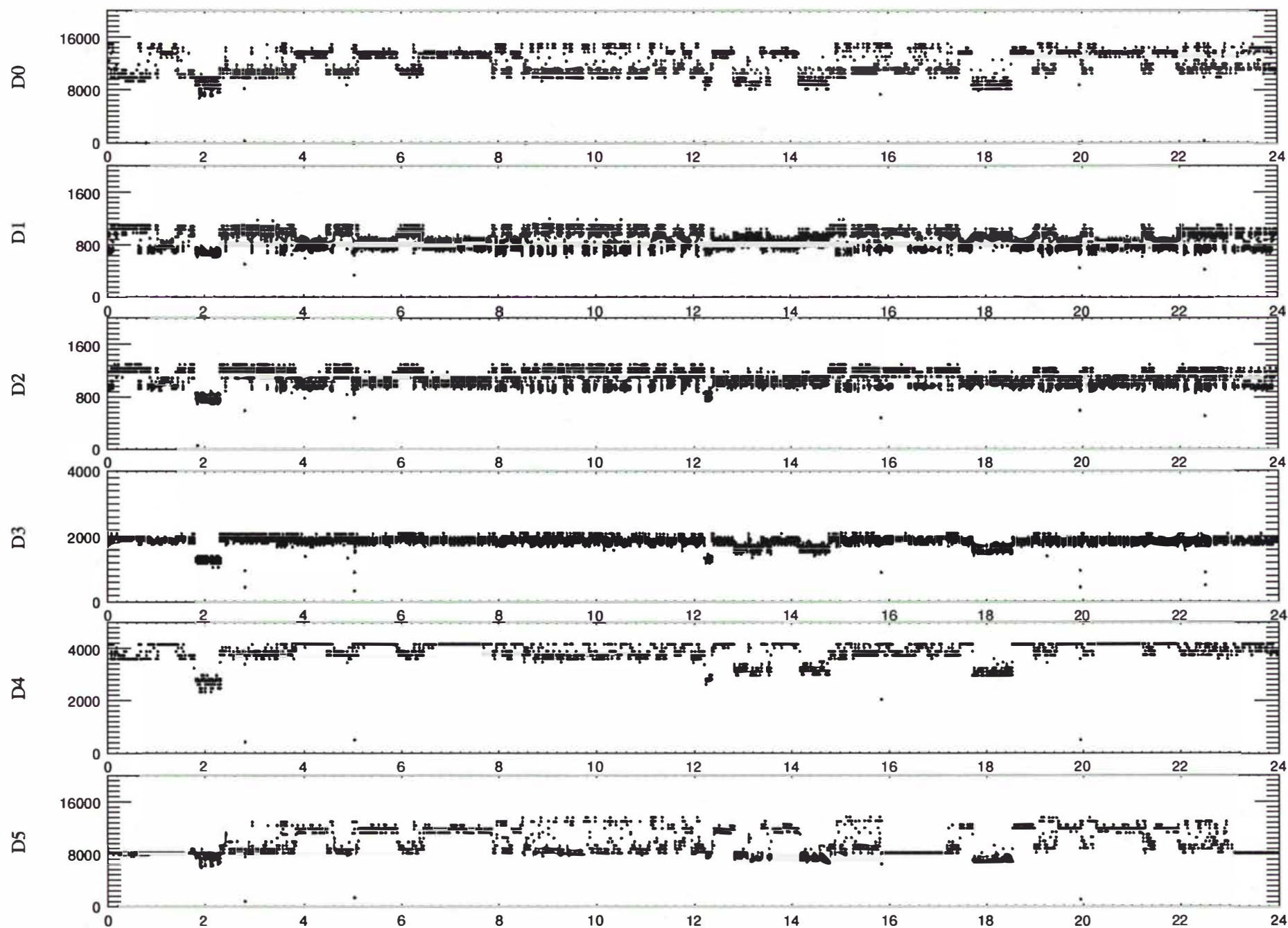
UNIVERSAL TIME



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV 'AL TIME

Date: Oct 4 02

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data **N/A**

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

3. NEAR Data

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

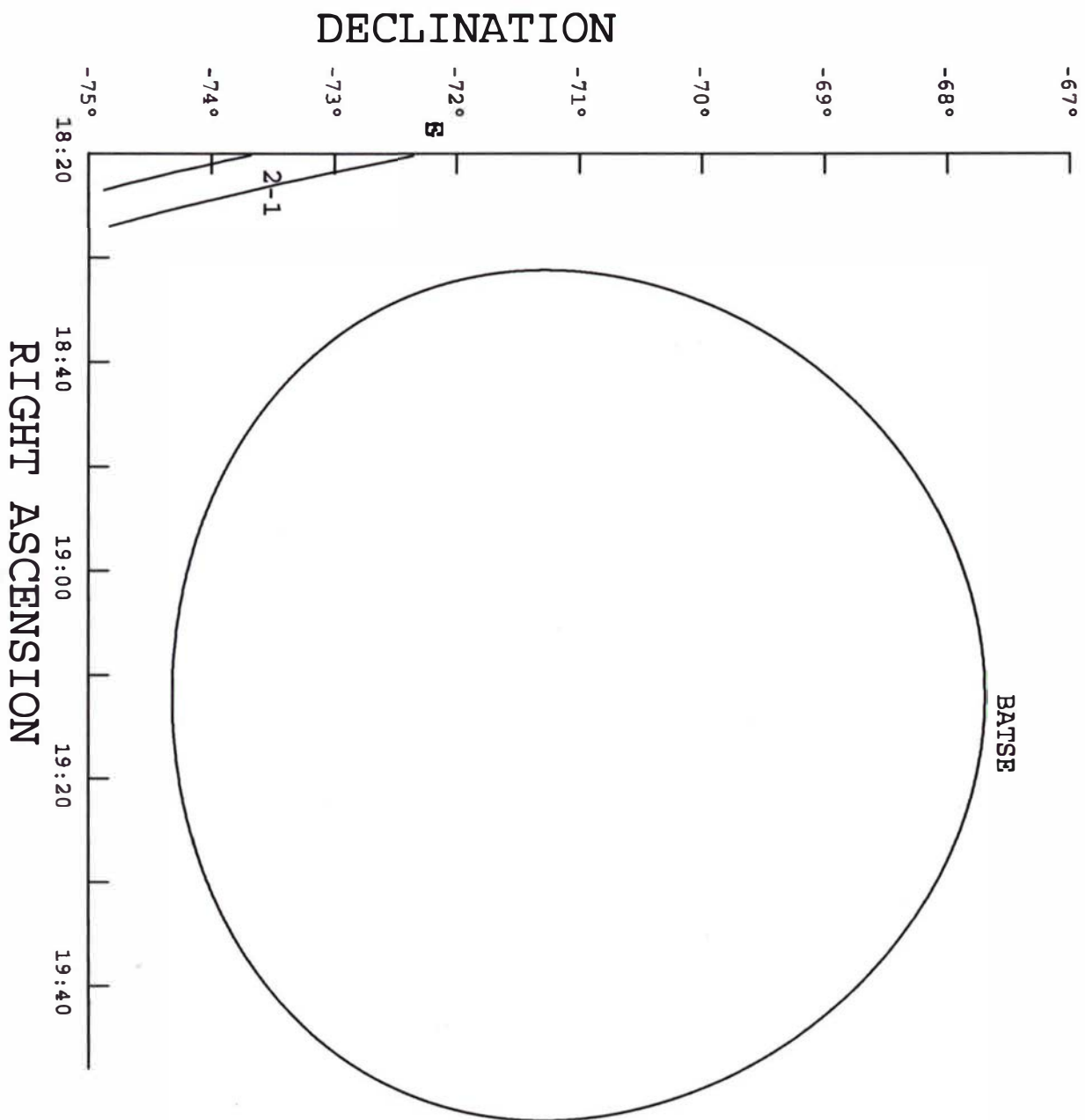
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF NOV 21, 1997 12:13

4/10/ 2



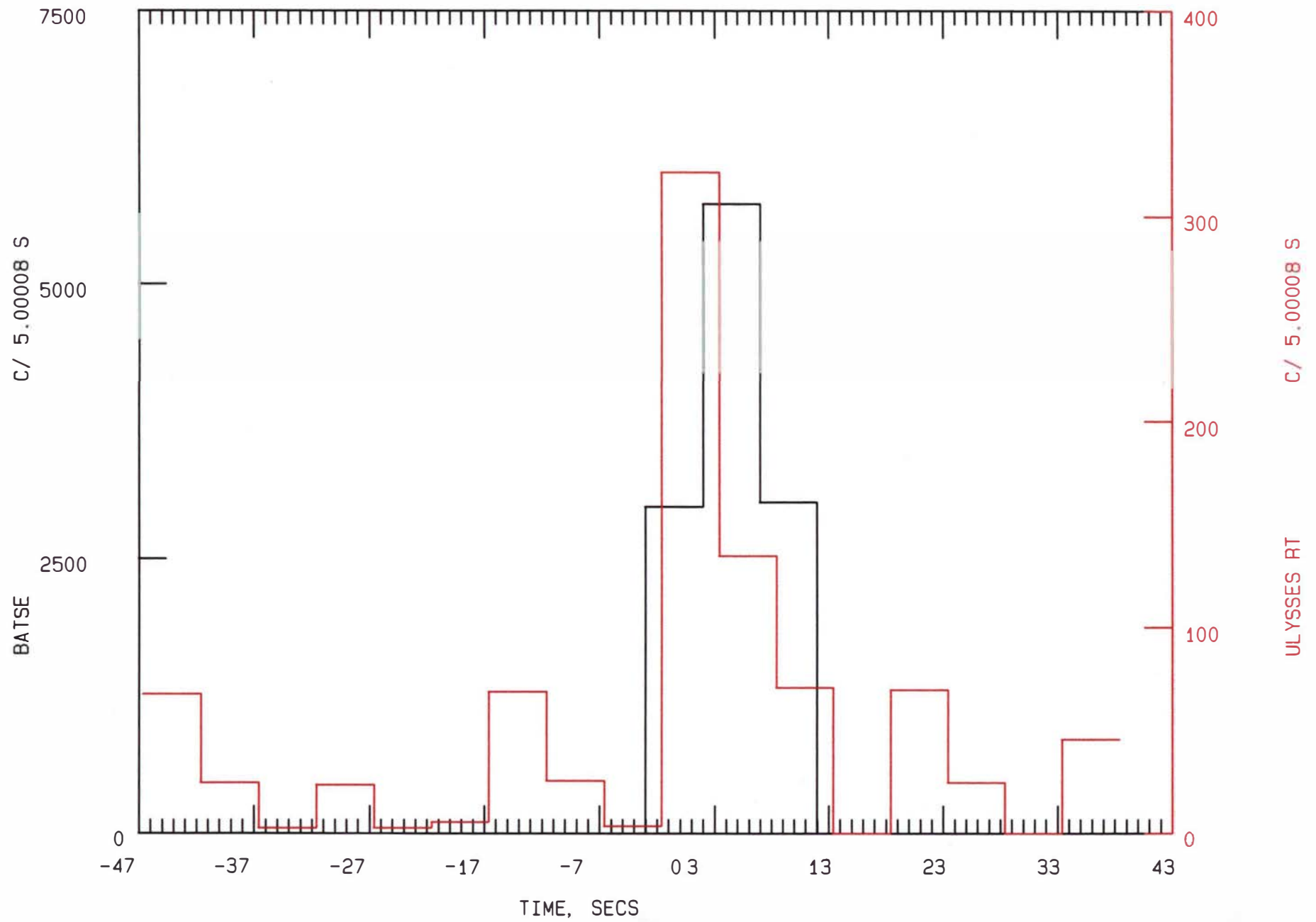
BATSE

-ULYSSES RT CORRELATION

21/11/97

43992.289

4/10/ 2

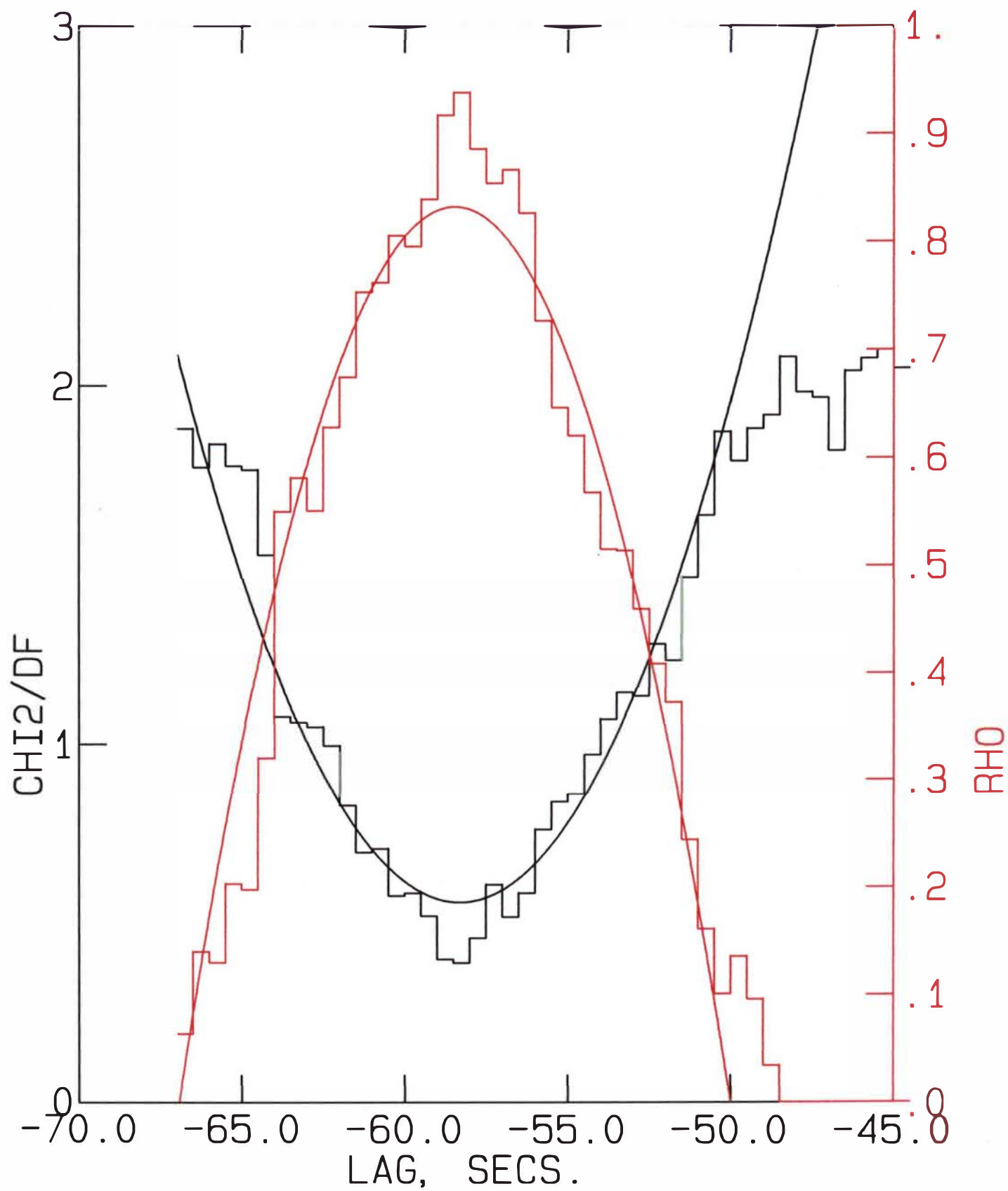


BATSE

-ULYSSES RT CORRELATION

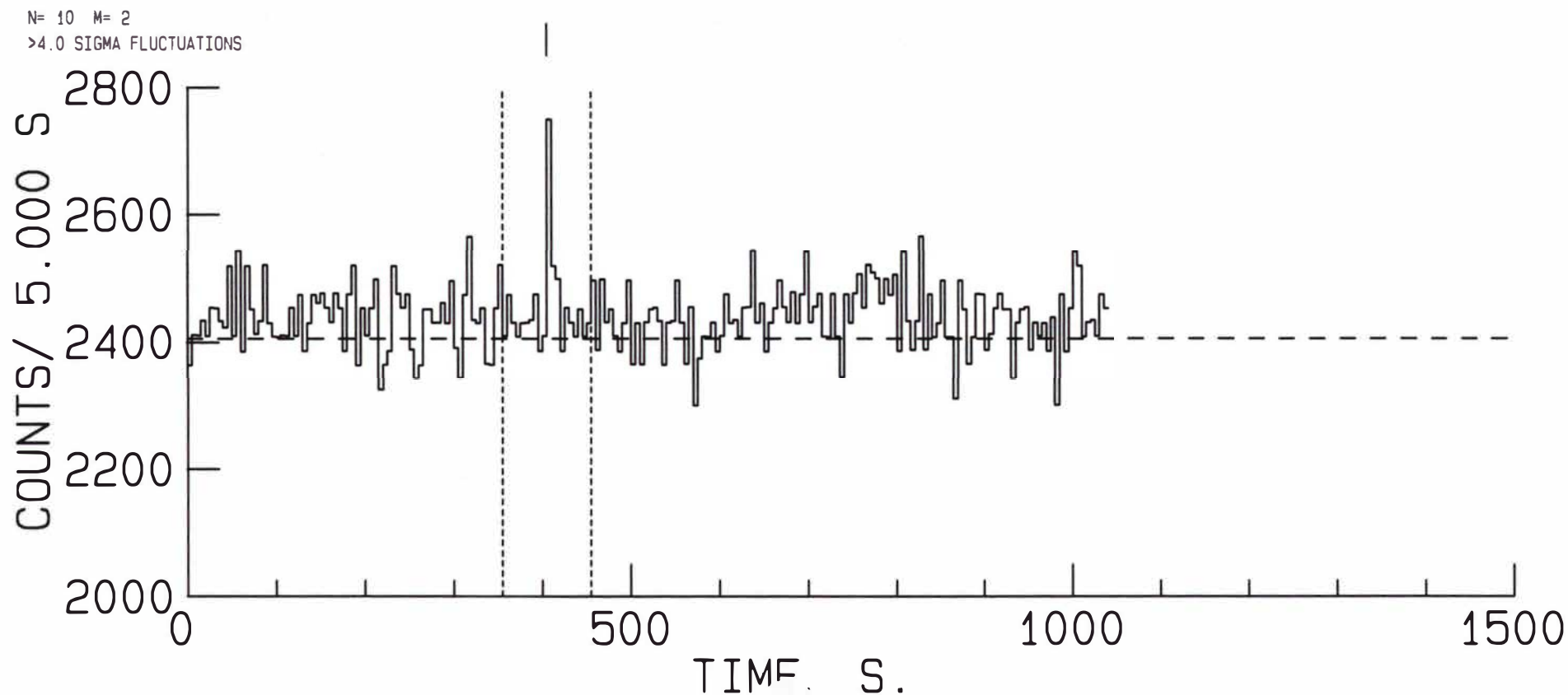
21/11/97

43992.289



ULYSSES RT
21/11/97 44352.156 s
0.500 S INTERVALS REGROUPED BY 10
22- 149 keV

4/10/ 2



KONUS

05 / 02 / 00

ULYSSES RT

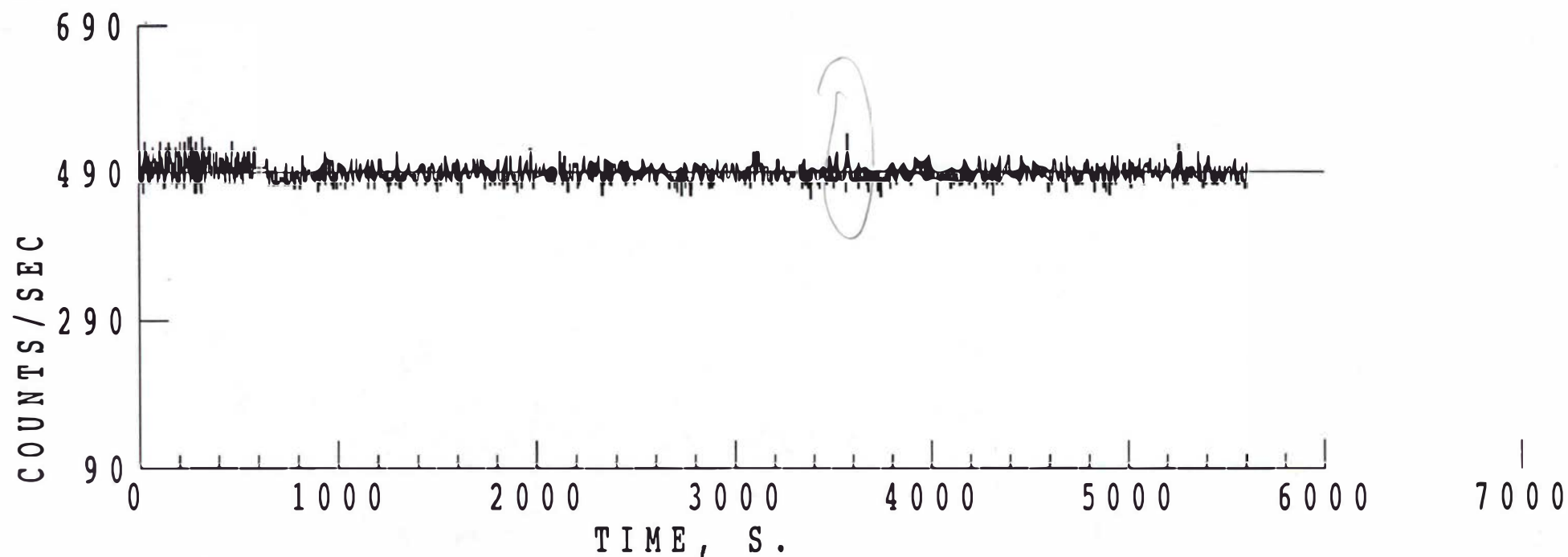
21 / 11 / 97 41184.121 s

INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@SSLMOR.msfc.nasa.gov Mon Nov 24 12:48:50 1997
Return-Path: <HENZE@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA04880; Mon, 24 Nov 1997 12:48:45 -0800
From: HENZE@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA25727; Mon, 24 Nov 1997 12:48:44 -0800
Date: Mon, 24 Nov 1997 14:14:42 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971124141442.21e0dcc5@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6489
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6489
EVENT OF 1997 NOV 21 DAY OF YEAR=325
EVENT CROSSING TIME AT BATSE : 43568. S. OR 12:06:08.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 188.000 -9.000
BATSE PEAK COUNTING RATE: 9000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/11/ 97 IS:
RA= 170.426 DEC= 12.716 DIST= 5.538 AU
BATSE-ULYSSES DISTANCE = 828502578. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=152.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2443.18 SECS.
CROSSING TIME AT ULYSSES IS 41125. S. OR 11:25:24 +/- 237.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/11/ 97 IS:
RA= 279.796 DEC= -24.395 DIST= 1.997 AU
MARS-BATSE DISTANCE = 298805952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 92.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -36.30 SECS.
CROSSING TIME AT MARS IS 43532. S. OR 12:05:31 +/- 172.38 SECONDS

BATSE BURST TRIGGER

NO.: 6489

TIME: TJD=0773 SECONDS=43568

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.2 AZIMUTH= 28.3 ERROR= 0.6 DEGREES

COMMENTS:

COMPLEX EVENT, MULTYPEAKED, TOTAL DUR. APPROX. 70 S. VISIBLE ABOVE 300 KEV.
UNRELATED, UNTRIGGERED EVENT AT ~T+430 S.

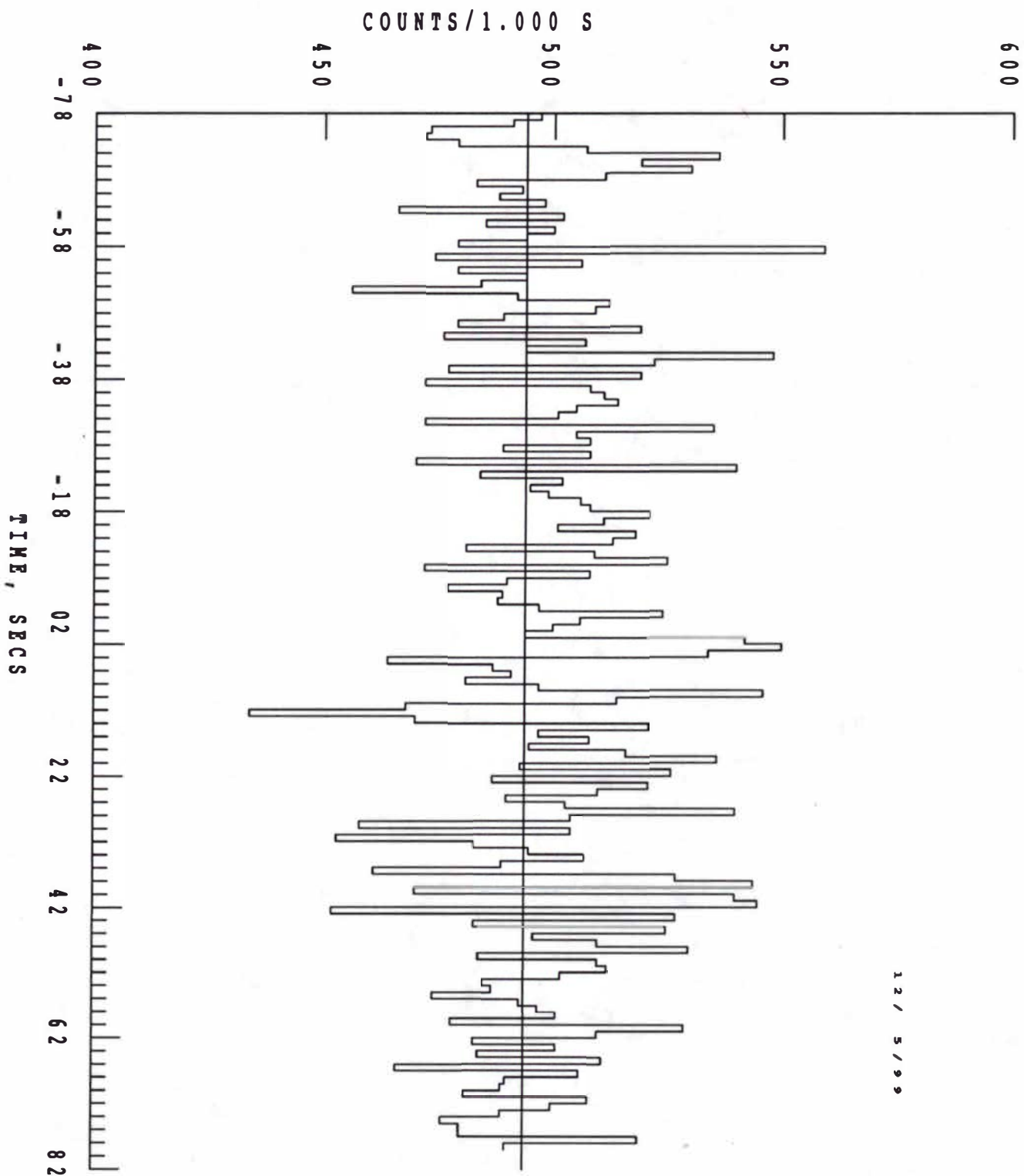
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6489	971121	10773	43568	9000	188	-09	70.

NEAR

21/11/97

43611.171

100-1000 keV



From HENZE@fender.msfc.nasa.gov Tue Nov 25 07:26:31 1997
Date: Tue, 25 Nov 1997 9:25:53 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6489

TIME: TJD=0773 SECONDS=43568

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.2 AZIMUTH= 28.3 ERROR= 0.6 DEGREES

COMMENTS:

CORRECTION TO PREVIOUS MESSAGE. THIS EVENT WAS NOT OSSE-SLEWABLE.
COMPLEX EVENT, MULTYPEAKED, TOTAL DUR. APPROX. 70 S. VISIBLE ABOVE 300 KEV.
UNRELATED, UNTRIGGERED EVENT AT ~T+430 S.



Helio. corr. removed Feb 8 00
Date: Apr 10 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- ☐ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? *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? *N/A*

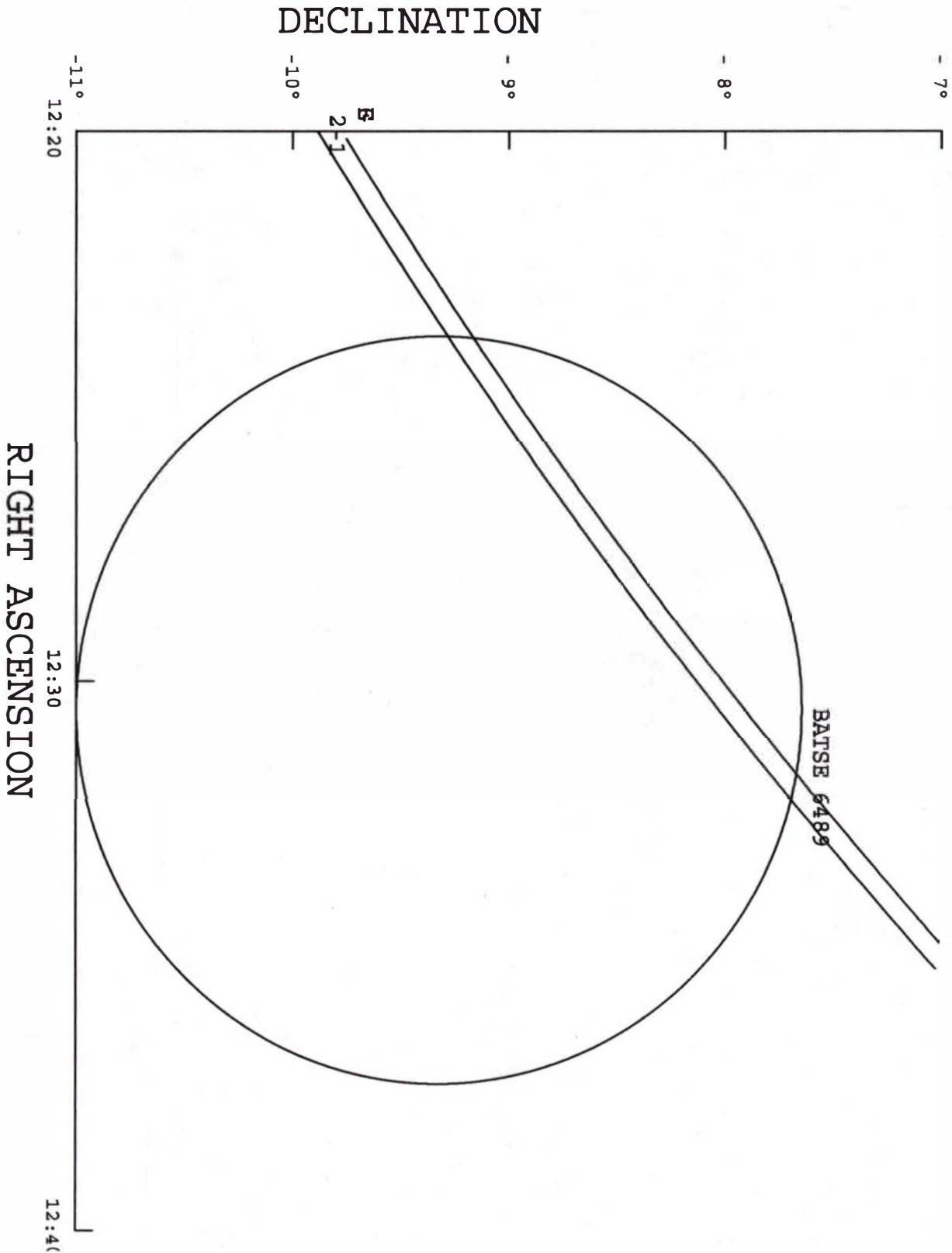
3. PVO Data

- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS database updated?

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

EVENT OF NOV 21, 1997 11:24

8 / 2 / 0



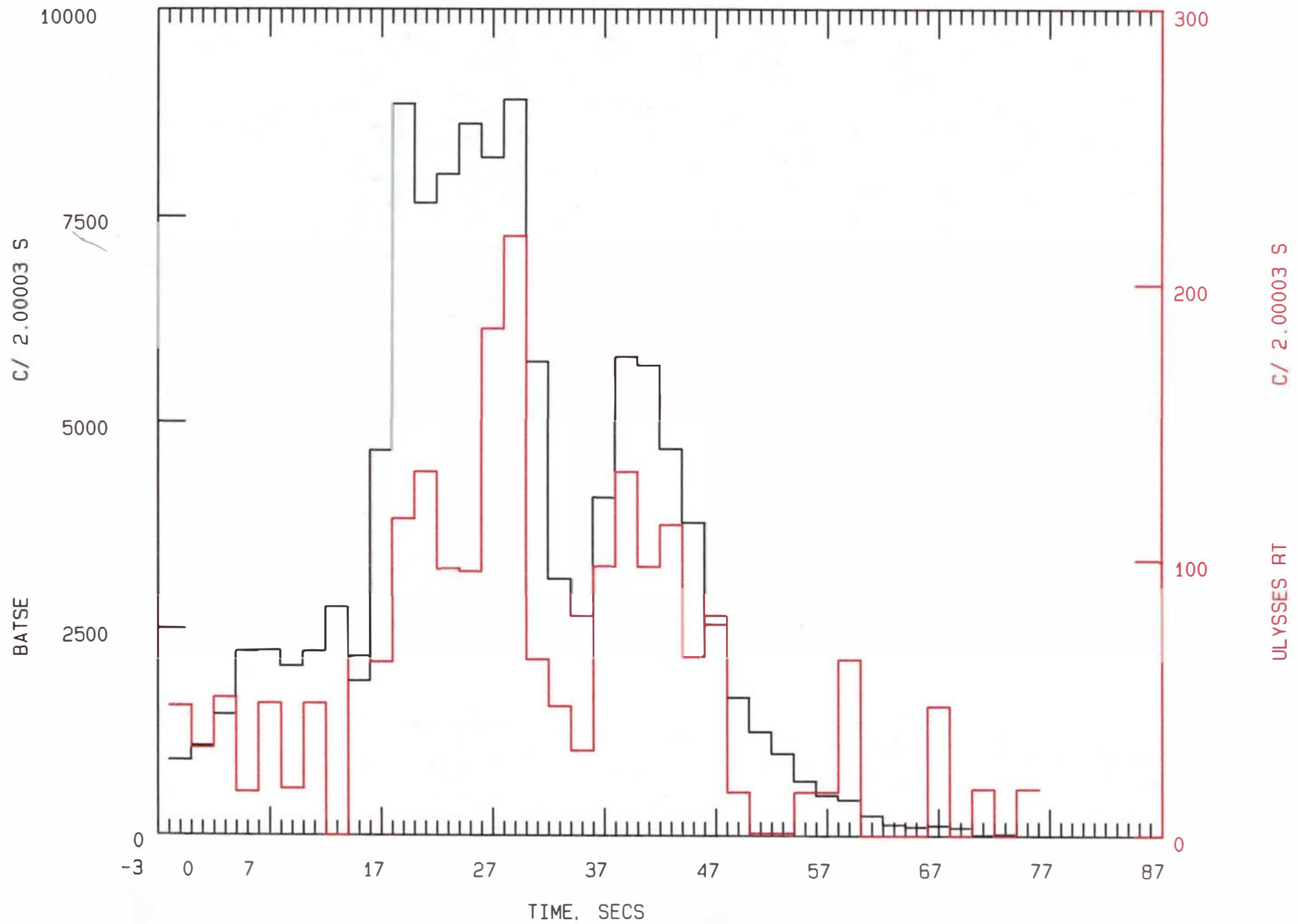
BATSE

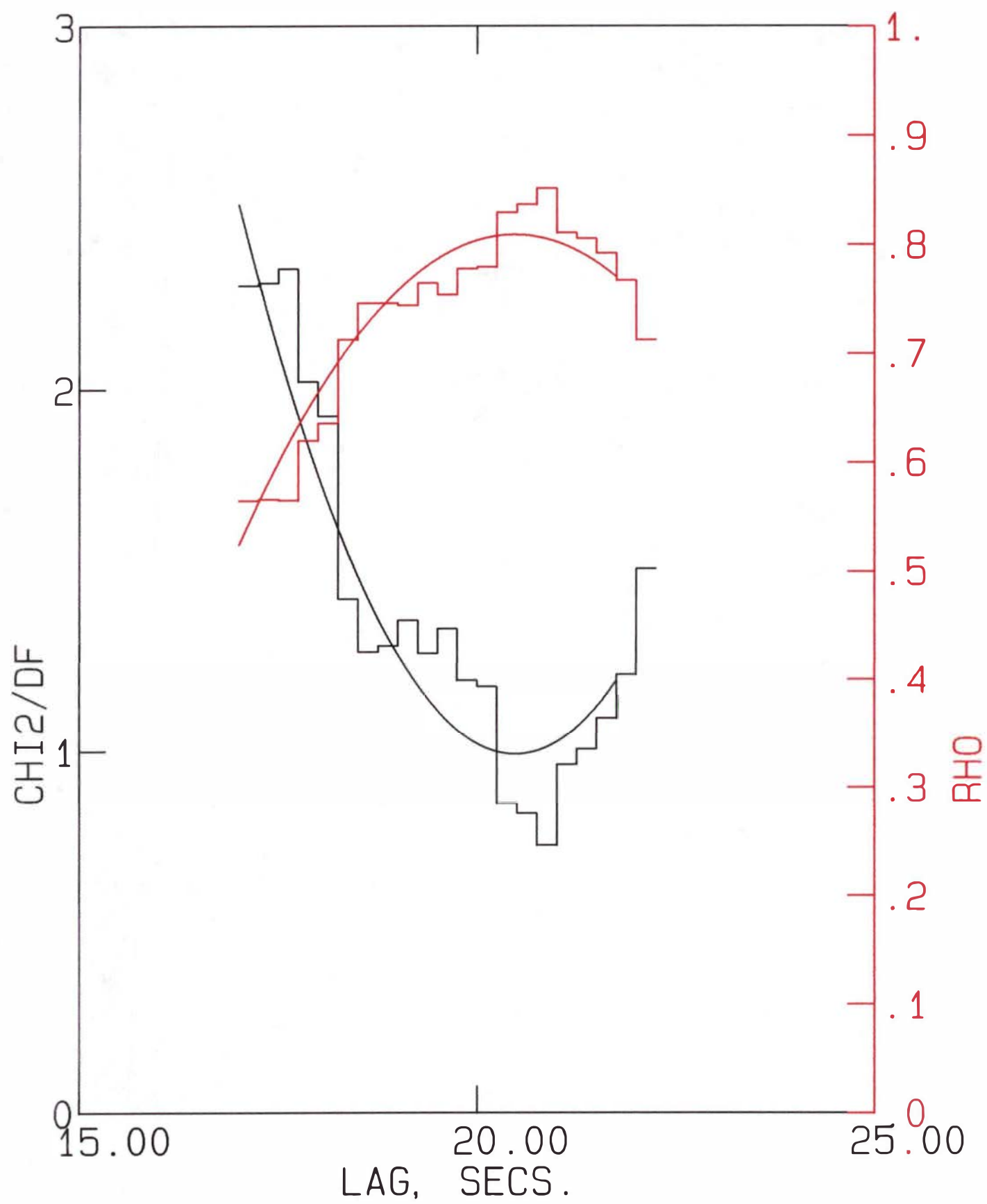
-ULYSSES RT CORRELATION

21/11/97

43568.865

10/ 4/98





ULYSSES RT

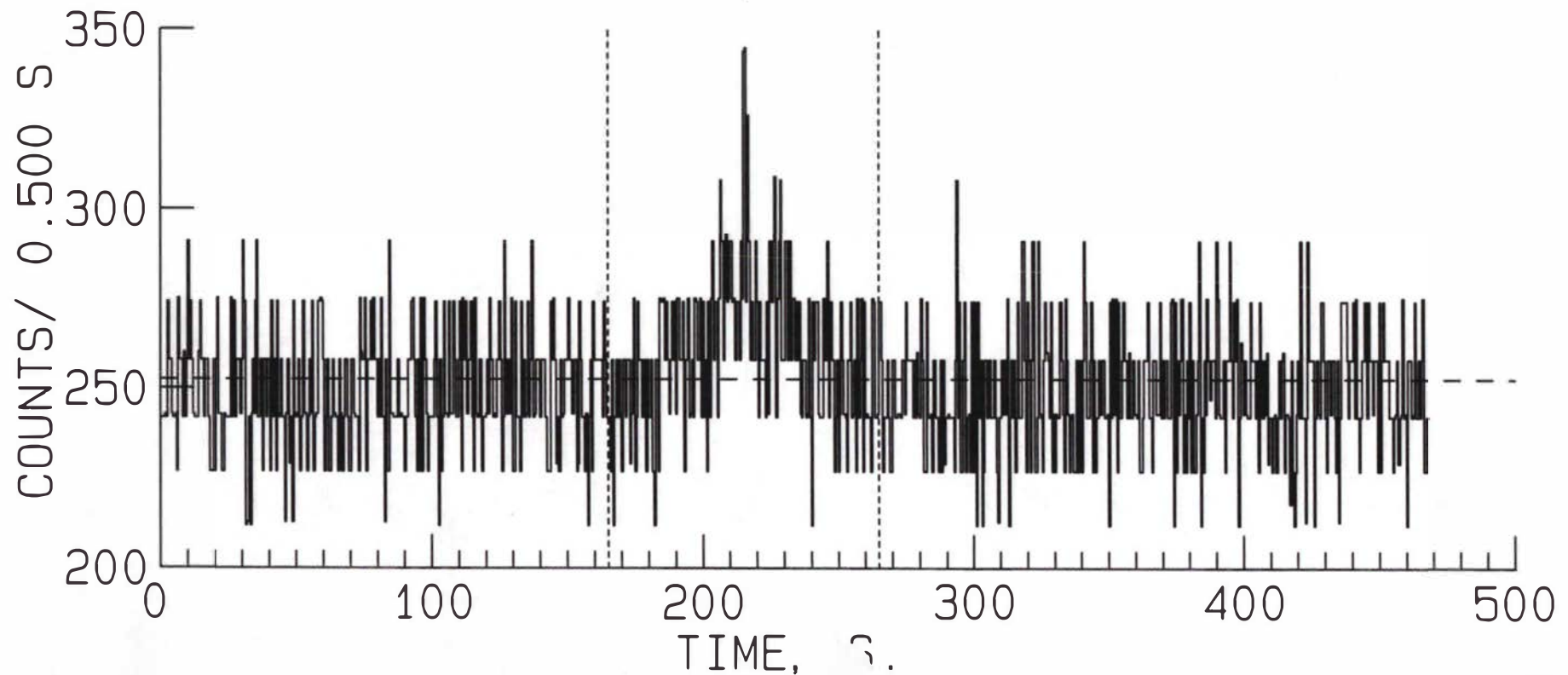
10 / 4 / 98

21/11/97 40896.116 s

0.250 S INTERVALS REGROUPED BY 2

22- 149 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



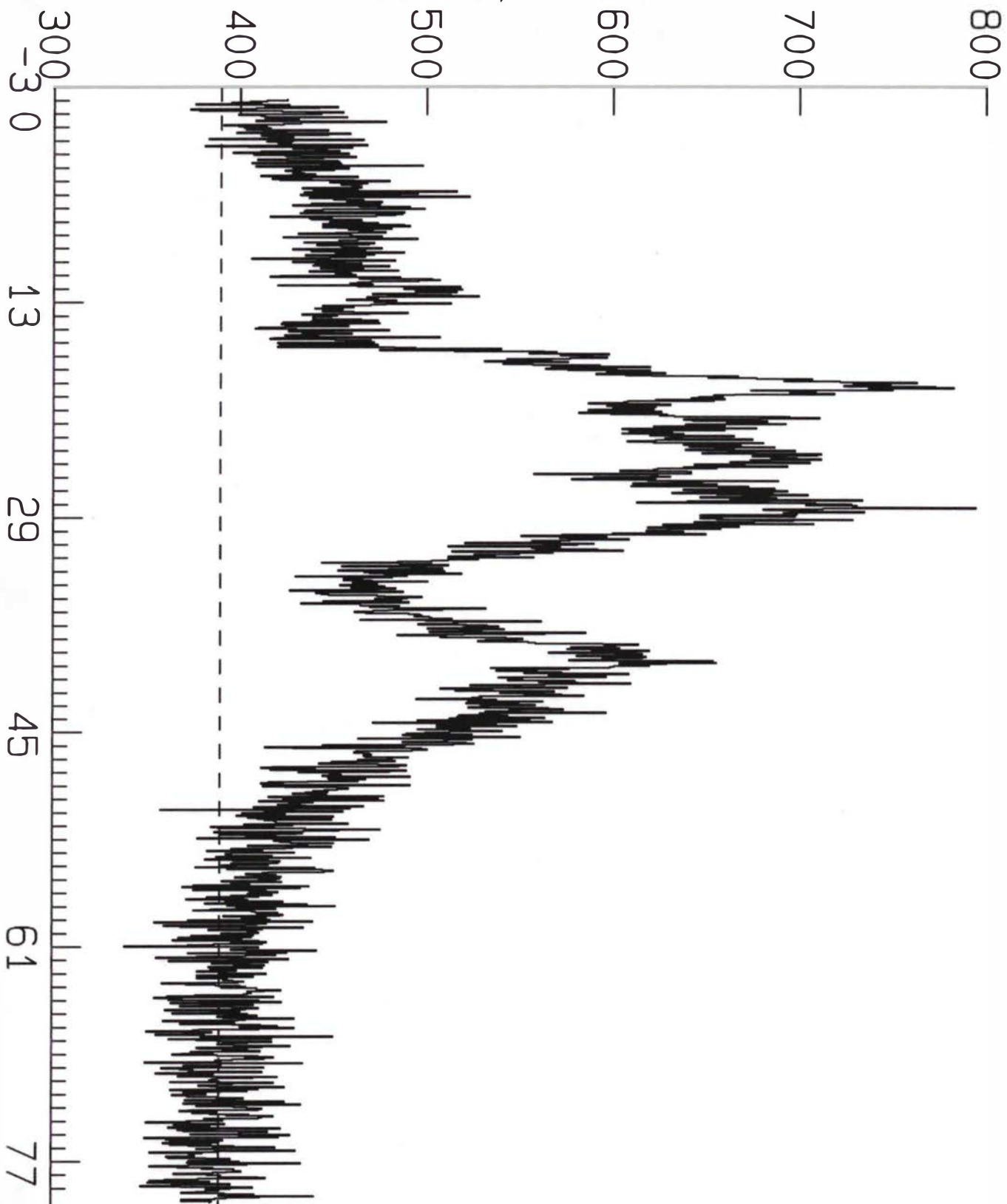
BATSE

21/11/97

43568.865

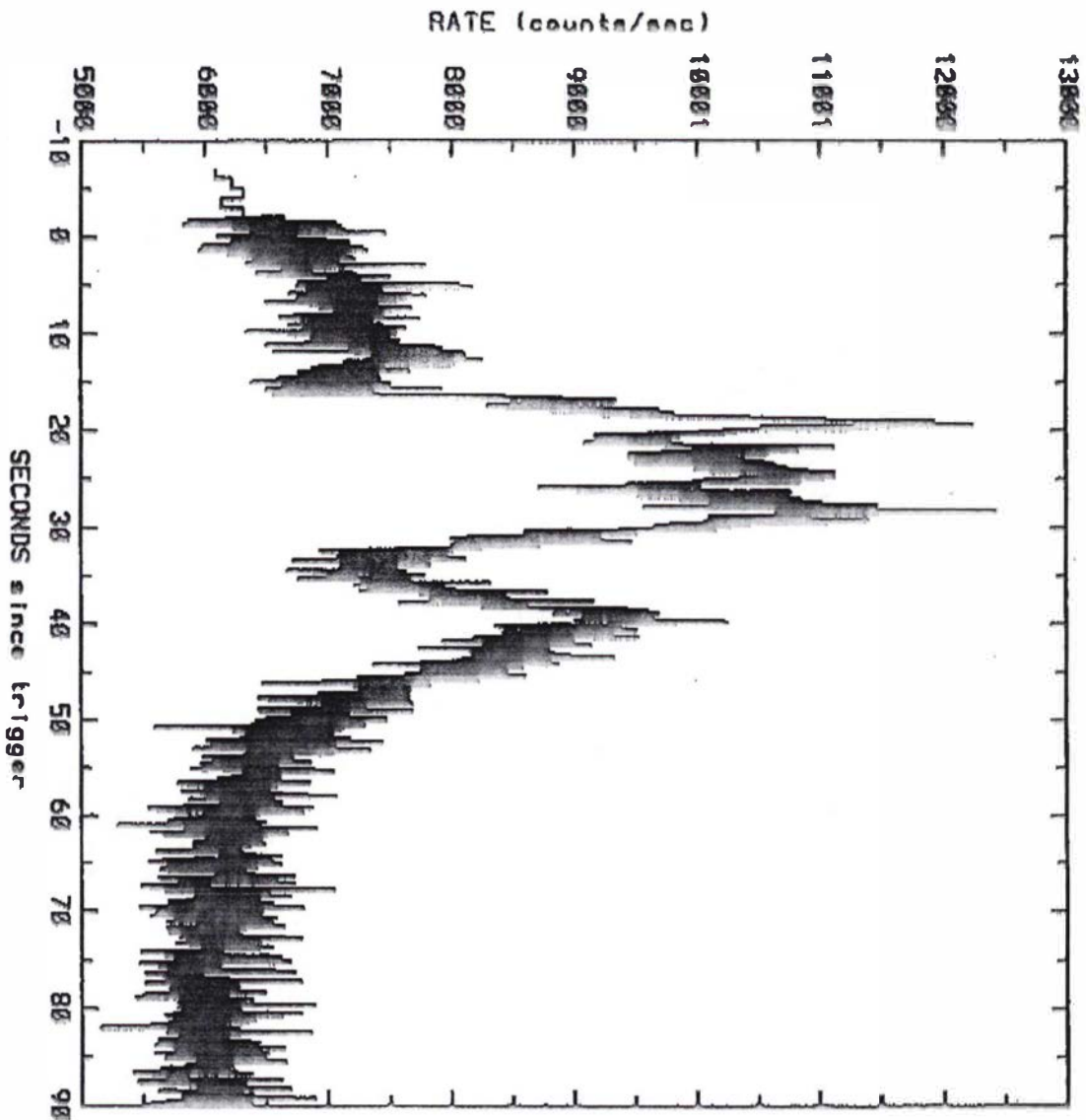
25- 100 keV

COUNTS/0.064 S



12/12/97

DISCSC Data for K. Hurley. No. 6489

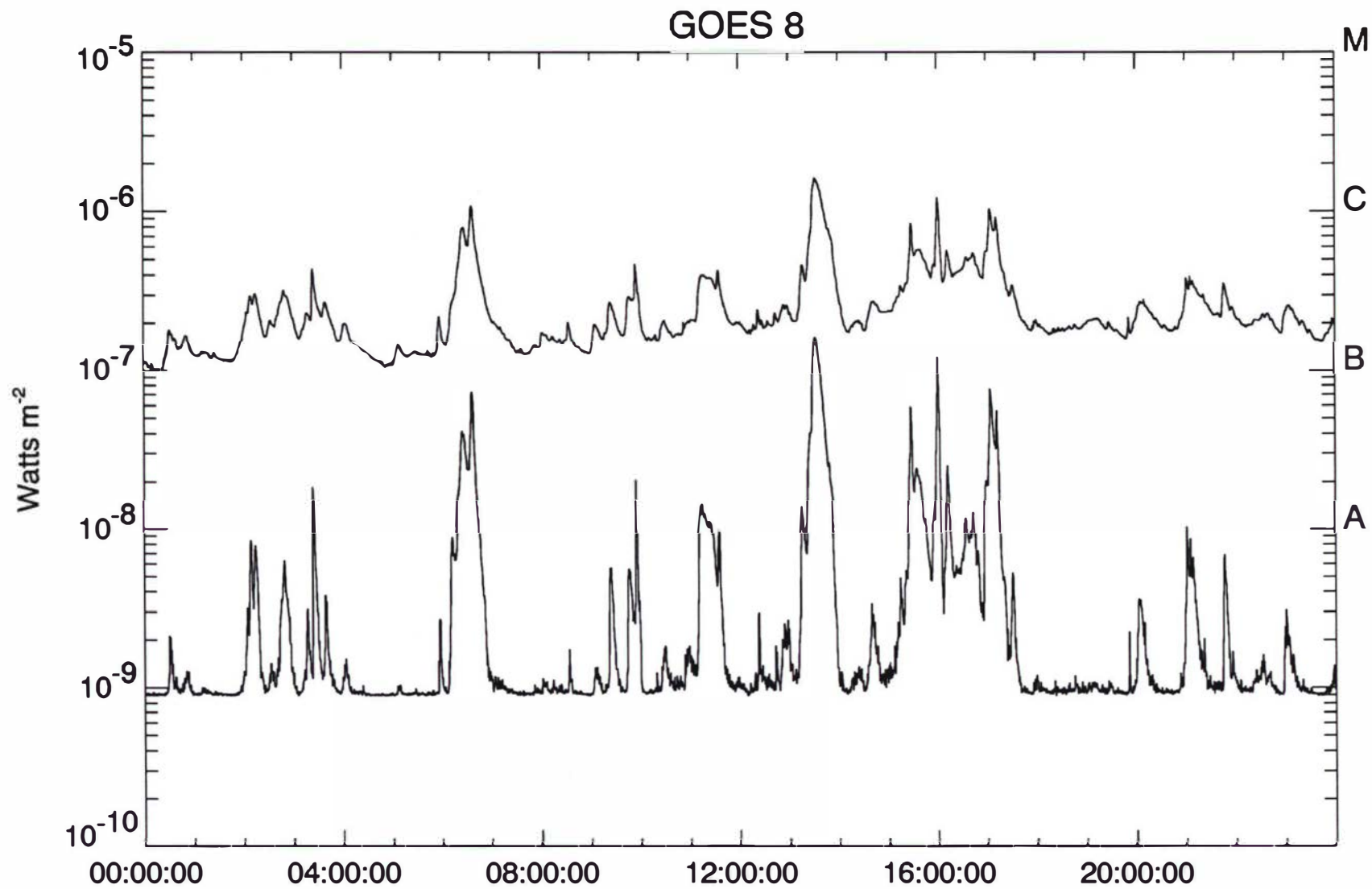


9-DEC-1997 17:26:05

Created by KOPS 80
(Burst Display)
Version 12.25

Trigger # : 6489

Trigger Time:
18773 / 42566.865Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PRED + DISCLAKinetic Integ. Time:
0.004 secondsDetectors [7.0].
-----3-1-Discriminators:
[1, 2]Quality Result:
801SP1



Data Start: 97/11/21, 0000:00

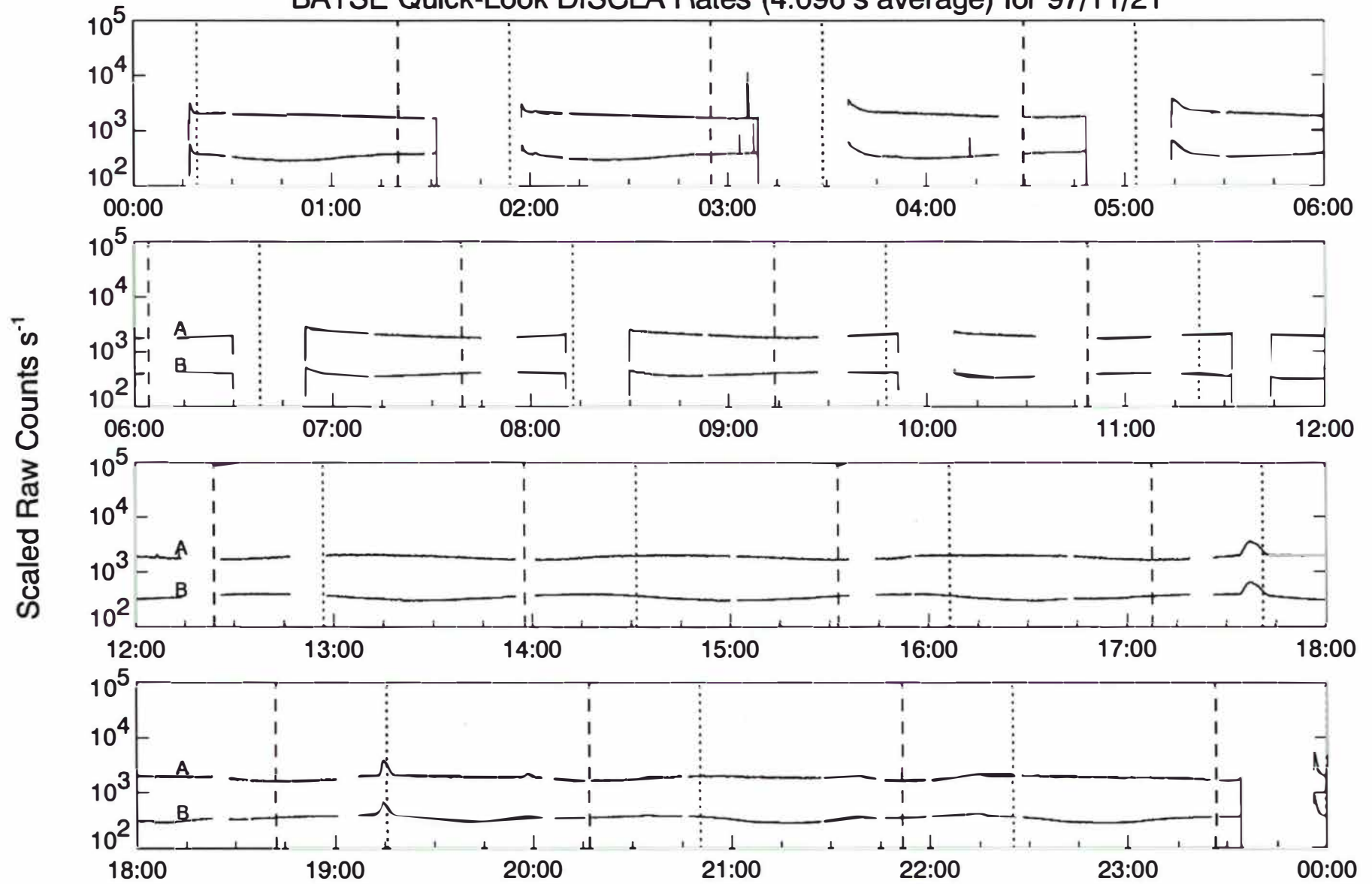
Plot created: 97/11/25, 1007

Channel

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

Background not subtracted
Background not subtracted
Sample average = 10

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/21

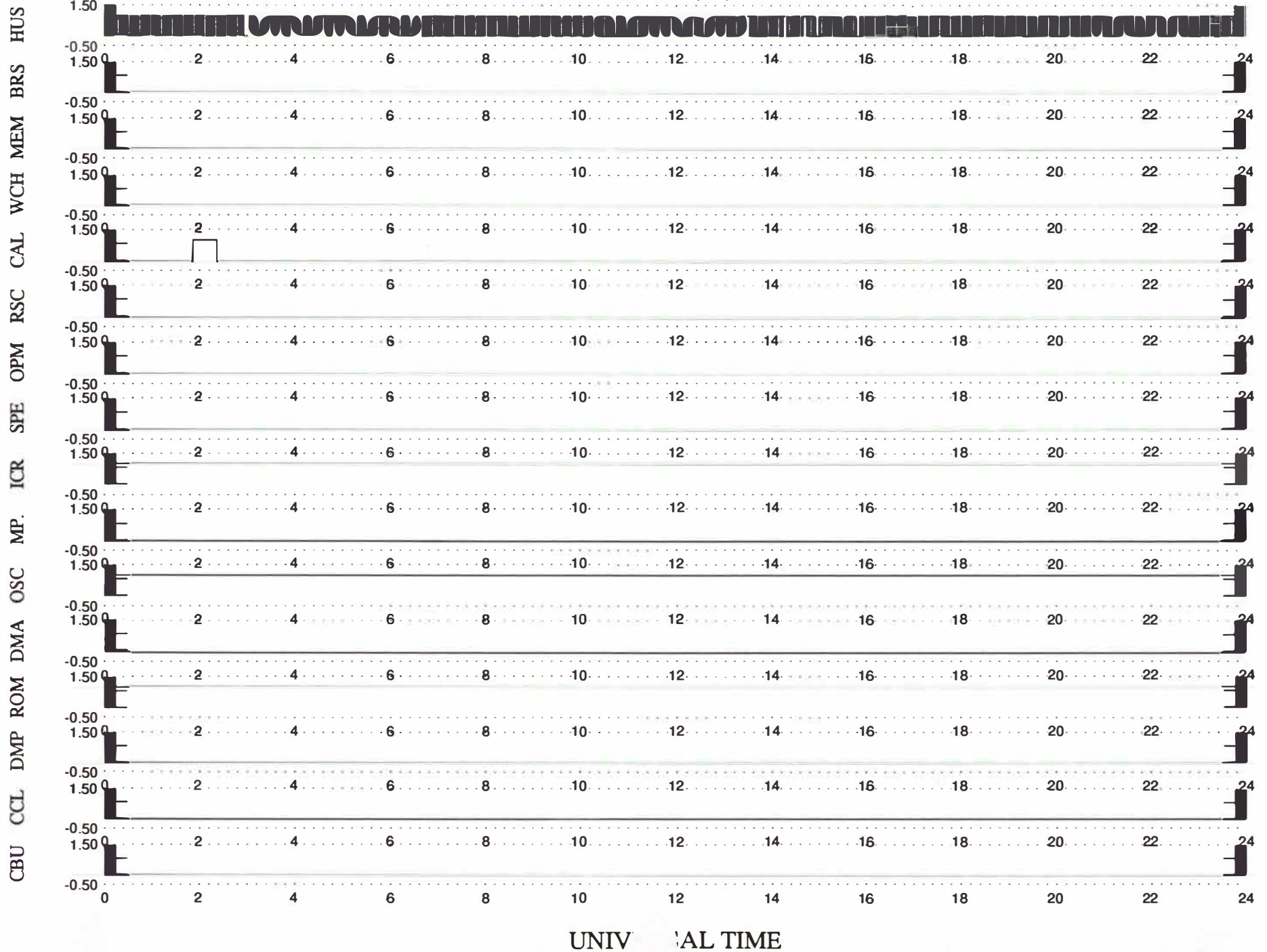


Current Time: 97/11/25, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

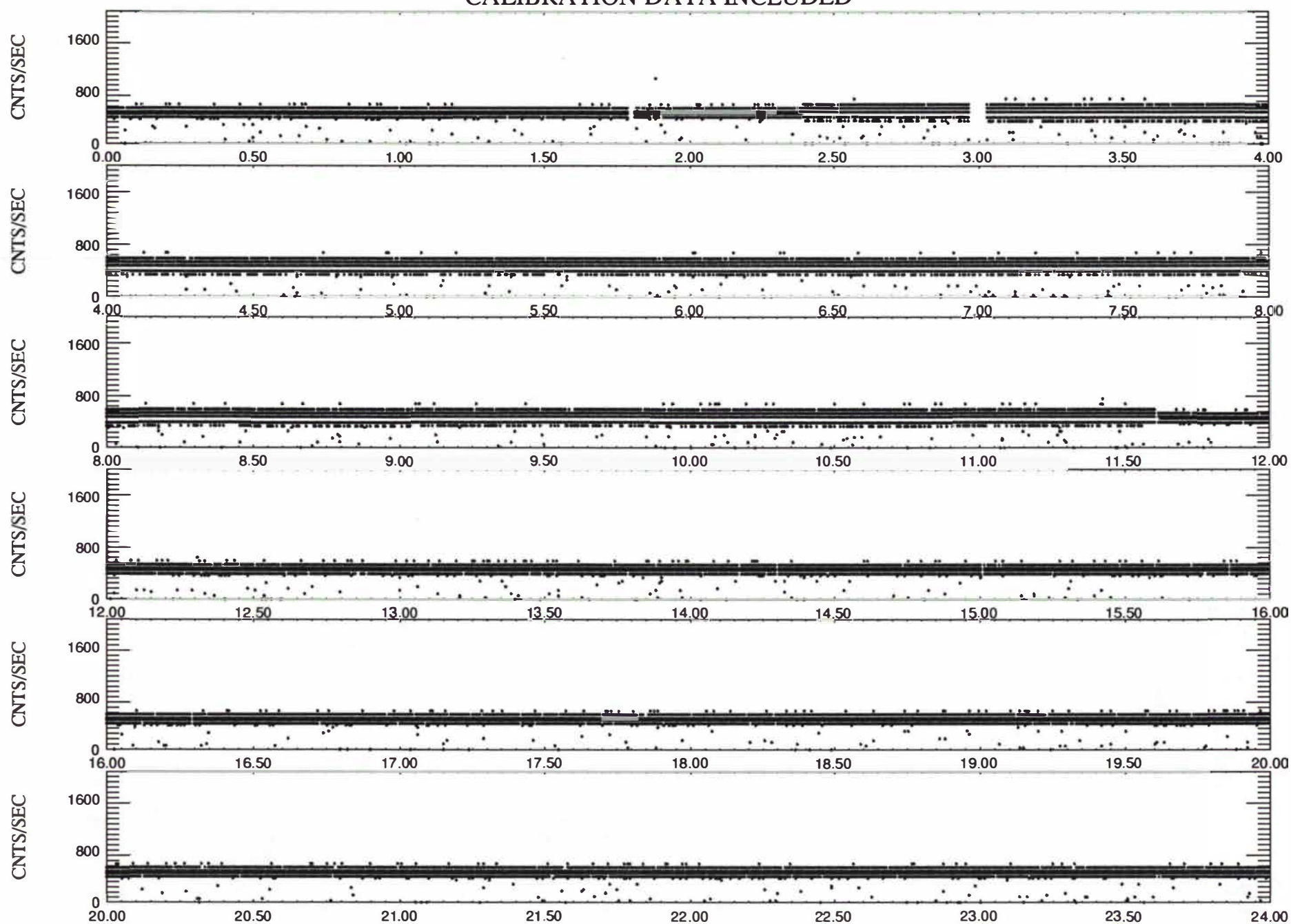
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

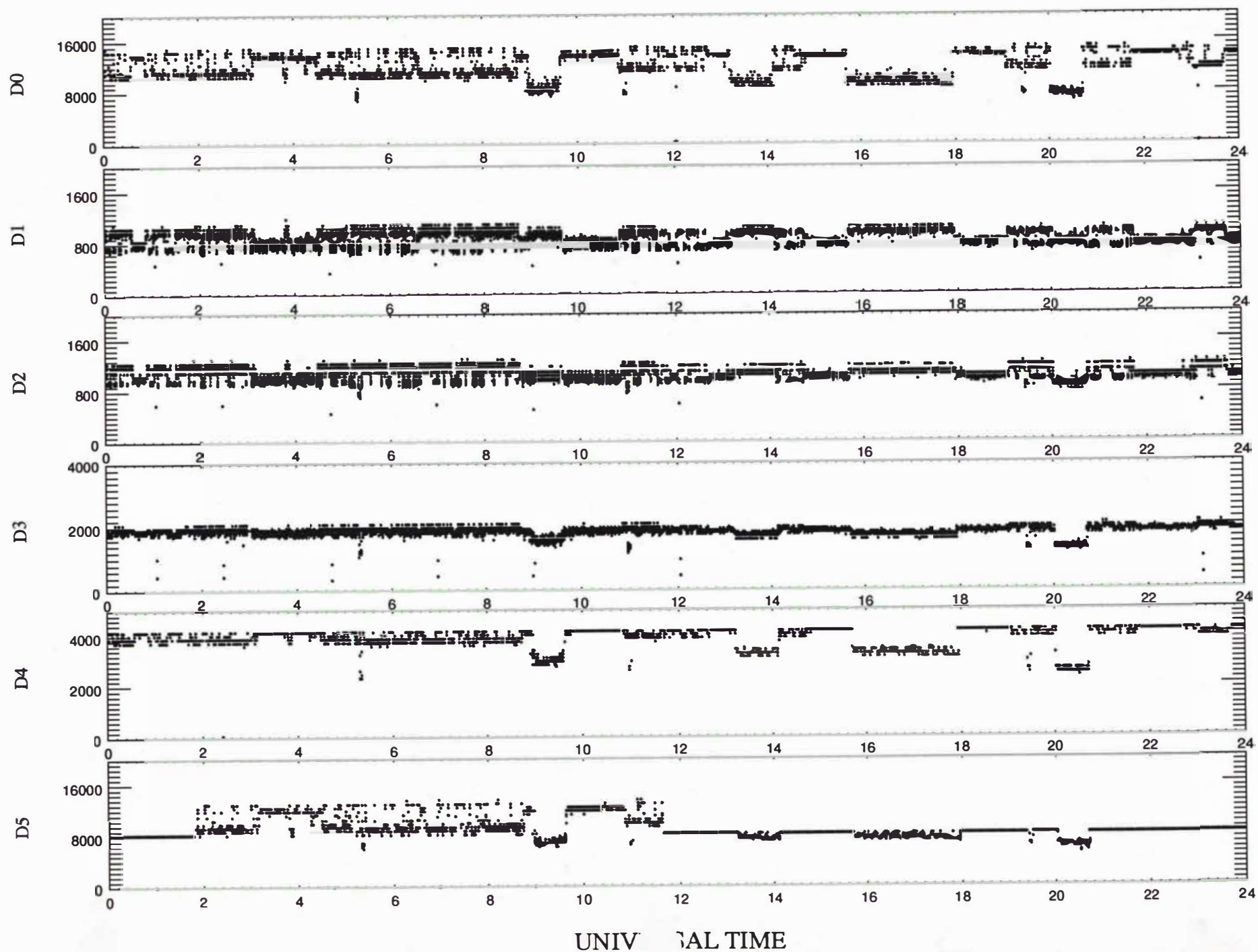
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV. TIME



From SAHI@fender.msfc.nasa.gov Mon Nov 24 09:47:59 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA01812; Mon, 24 Nov 1997 09:47:47 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA22550; Mon, 24 Nov 1997 09:47:46 -0800
Date: Mon, 24 Nov 1997 11:45:16 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971124114516.224308b2@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6490
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6490
EVENT OF 1997 NOV 22 DAY OF YEAR=326
EVENT CROSSING TIME AT BATSE : 3392. S. OR 00:56:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 73.000 -10.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/11/ 97 IS:
RA= 170.449 DEC= 12.692 DIST= 5.530 AU
BATSE-ULYSSES DISTANCE = 827262708. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 448.97 SECS.
CROSSING TIME AT ULYSSES IS 3841. S. OR 01:04:00 +/- 529.52 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/11/ 97 IS:
RA= 280.632 DEC= -24.342 DIST= 2.001 AU
MARS-BATSE DISTANCE = 299343520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 43.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 722.27 SECS.
CROSSING TIME AT MARS IS 4114. S. OR 01:08:34 +/- 130.67 SECONDS

BATSE BURST TRIGGER

NO.: 6490

TIME: TJD=0774 SECONDS=3392

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=93.2 AZIMUTH=148.5 ERROR=3.7 DEGREES

COMMENTS:

BURST, SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 70 SECS, STARTS AT APPROX.
T-15 SECS. NOT VISIBLE ABOVE 300 KEV. CRAB RISE AT APPROX. T-140 SECS.

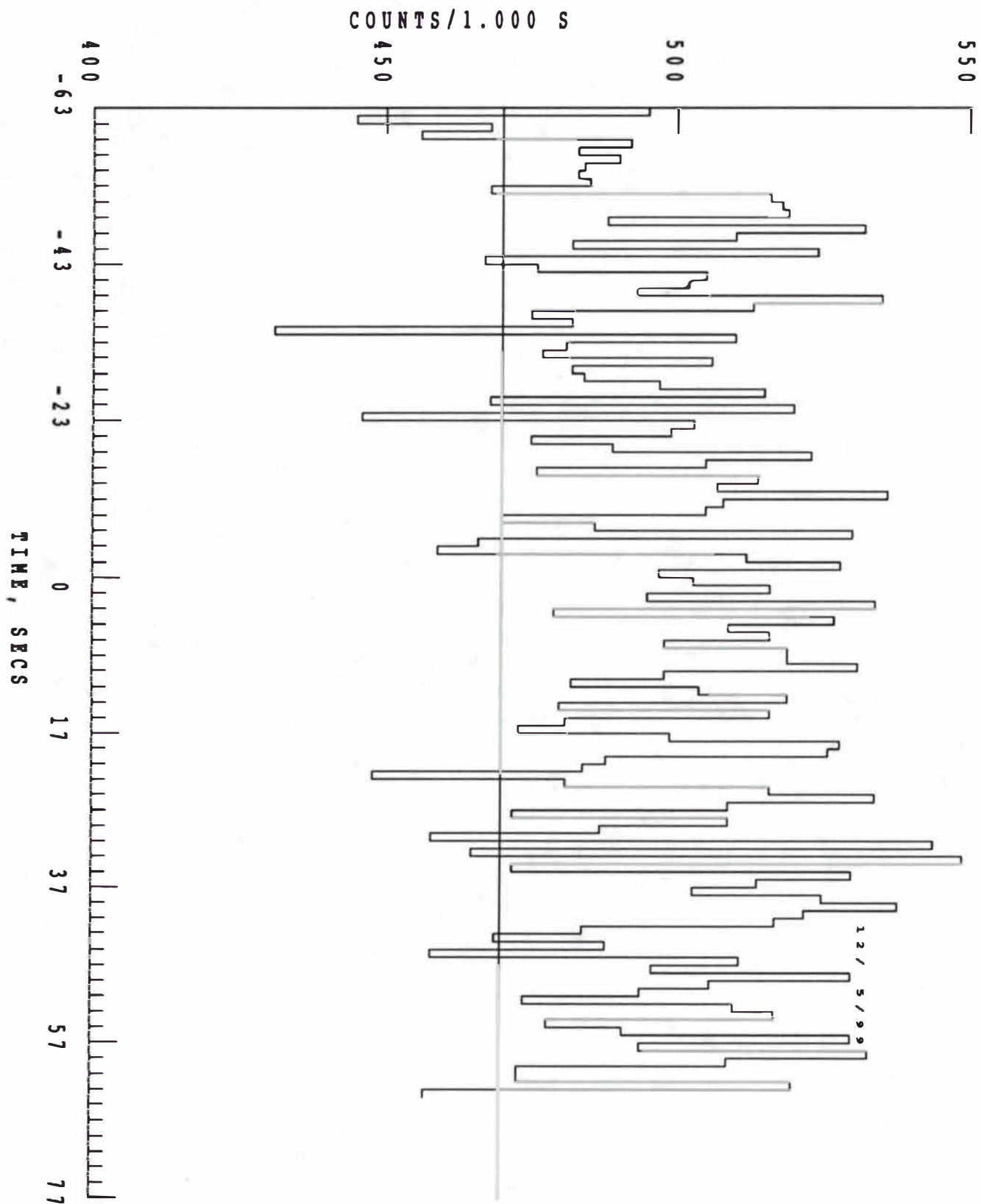
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6490	971122	10774	03392	2200	073	-10	70

NEAR

22/11/97

3255.162

100-1000 keV



BATSE BURST# 6490

ULYSSES RT

24 / 11 / 97

22 / 11 / 97 3312.158 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

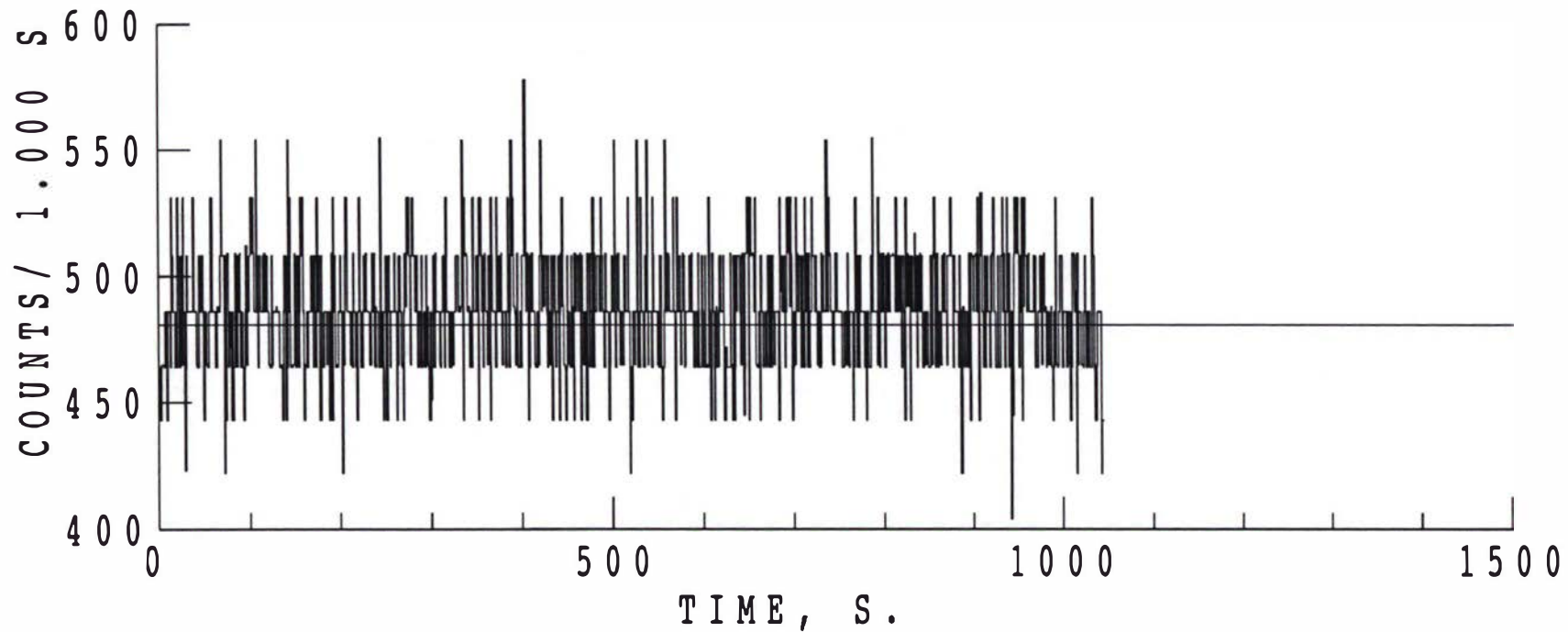
1

N= 10 M=10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Mon Nov 24 14:01:06 1997
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA06015; Mon, 24 Nov 1997 14:01:05 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA26314; Mon, 24 Nov 1997 14:01:02 -0800
Date: Mon, 24 Nov 1997 15:55:42 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971124155542.2242ed48@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6491
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6491
EVENT OF 1997 NOV 22 DAY OF YEAR=326
EVENT CROSSING TIME AT BATSE : 52842. S. OR 14:40:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 119.000 -31.000
BATSE PEAK COUNTING RATE: 9000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/11/ 97 IS:
RA= 170.472 DEC= 12.668 DIST= 5.521 AU
BATSE-ULYSSES DISTANCE = 825929245. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=114.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1123.99 SECS.
CROSSING TIME AT ULYSSES IS 51718. S. OR 14:21:58 +/- 469.62 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/11/ 97 IS:
RA= 280.632 DEC= -24.342 DIST= 2.001 AU
MARS-BATSE DISTANCE = 299343520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 528.10 SECS.
CROSSING TIME AT MARS IS 53370. S. OR 14:49:30 +/- 155.14 SECONDS

BATSE BURST TRIGGER

NO.: 6491

TIME: TJD=0774 SECONDS=52842

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=107.5 AZIMUTH=102.0 ERROR=2.7 DEGREES

COMMENTS:

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

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6491	971122	10774	52842	9000	119	-31	2

Date: Feb 8 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

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

2. BATSE Data

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

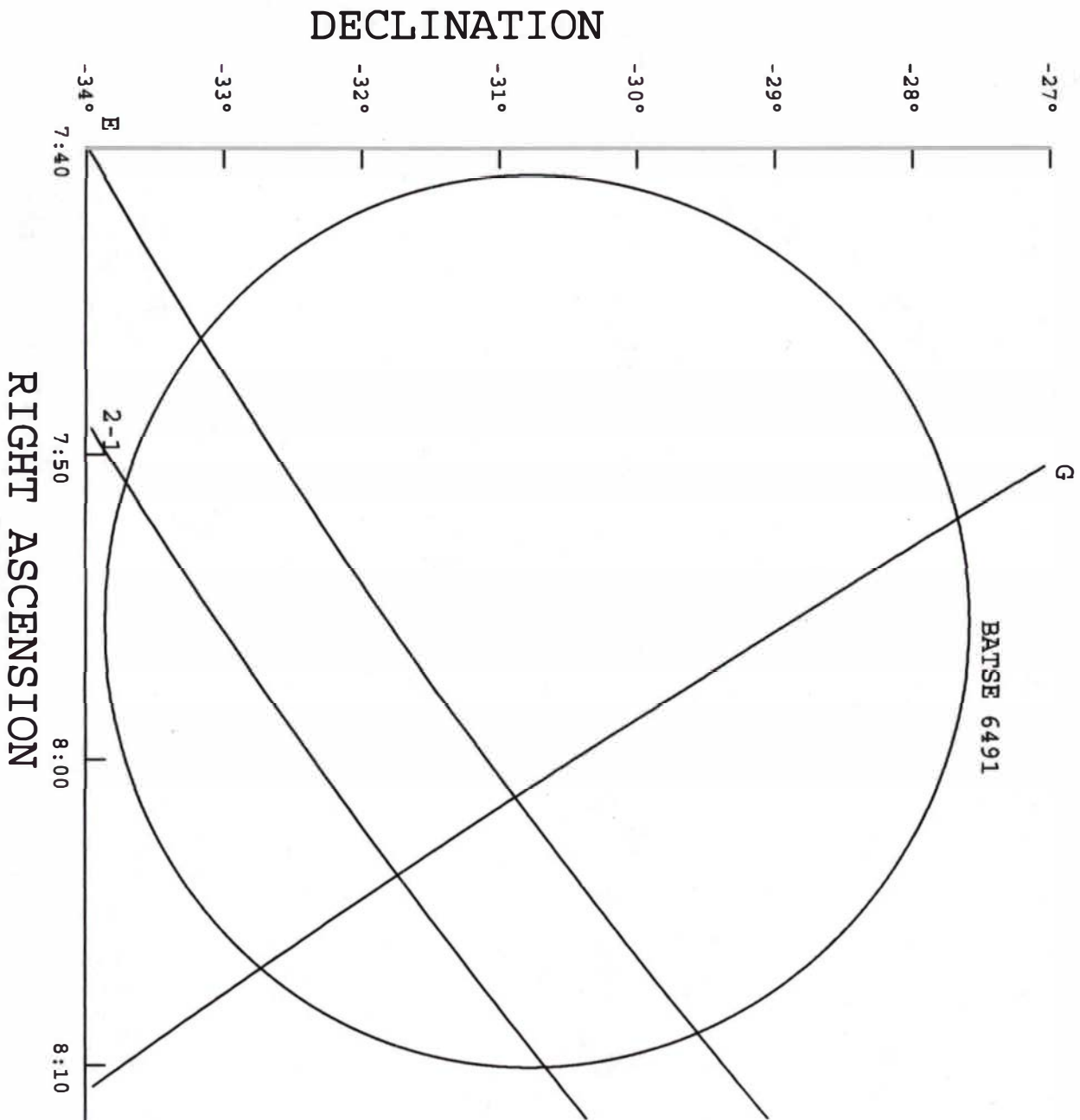
3. NEAR Data

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

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

EVENT OF NOV 22, 1997 14:40

8 / 2 / 0



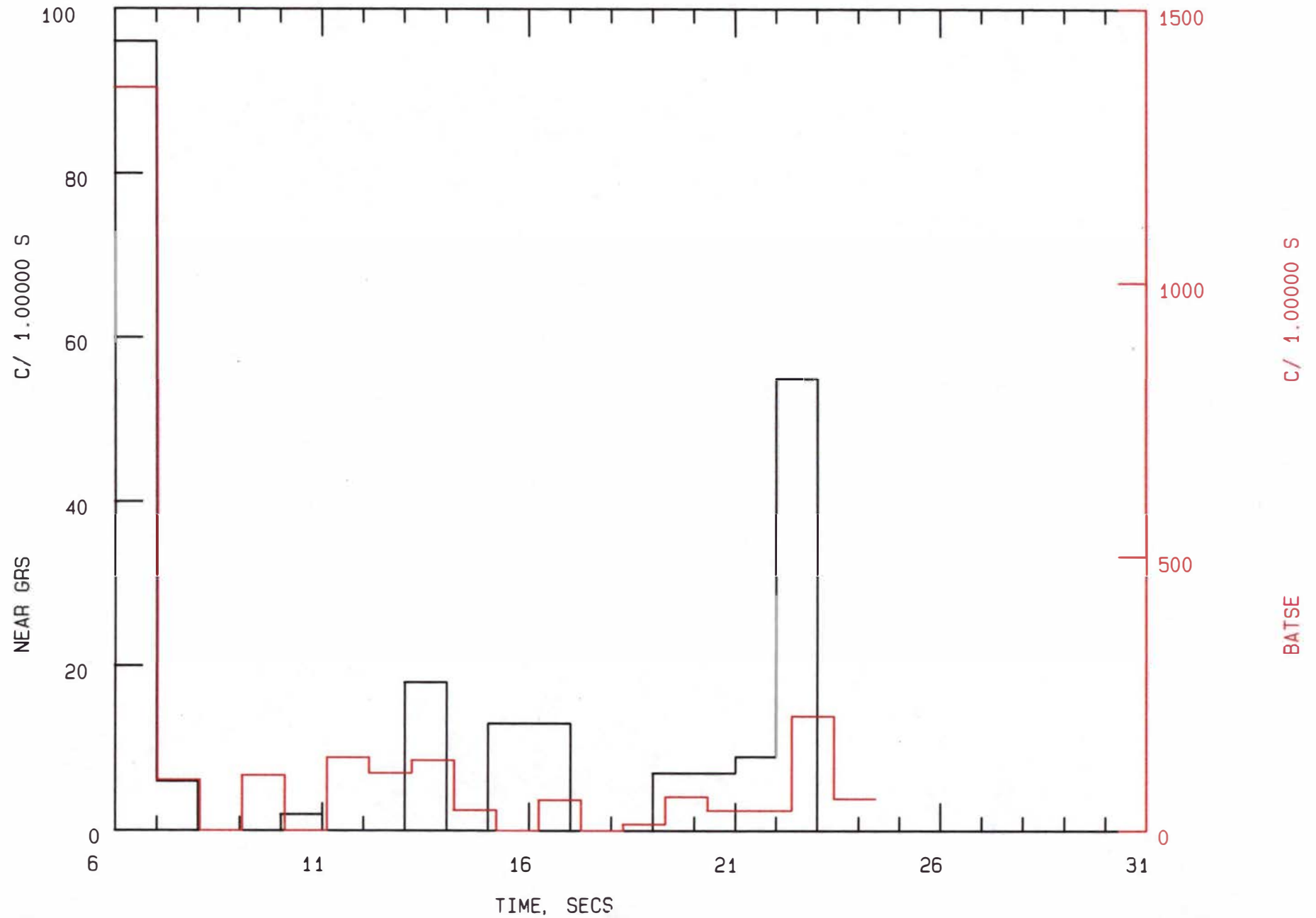
NEAR GRS -BATSE

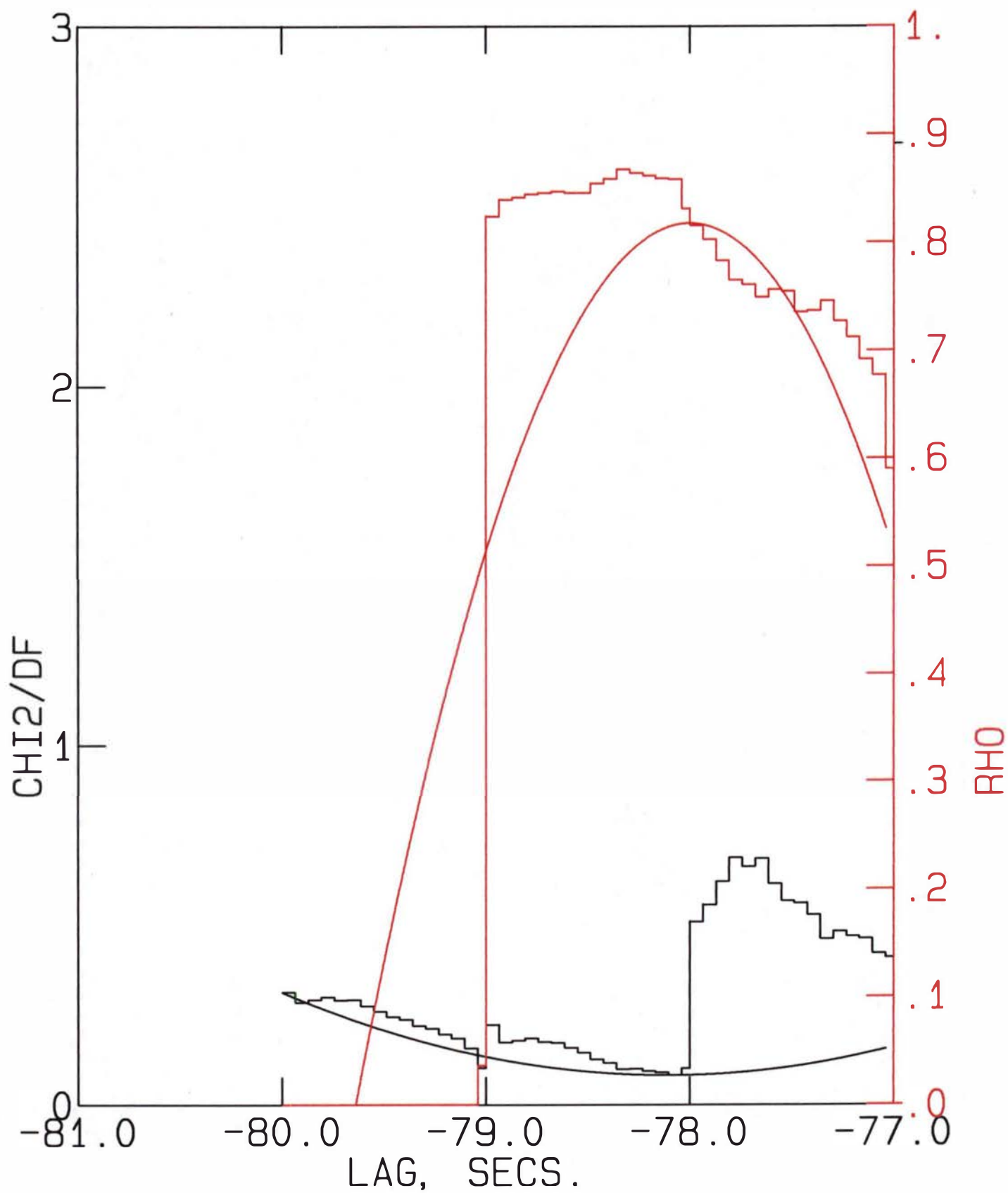
CORRELATION

22/11/97

52765.152

8/ 2/ 0





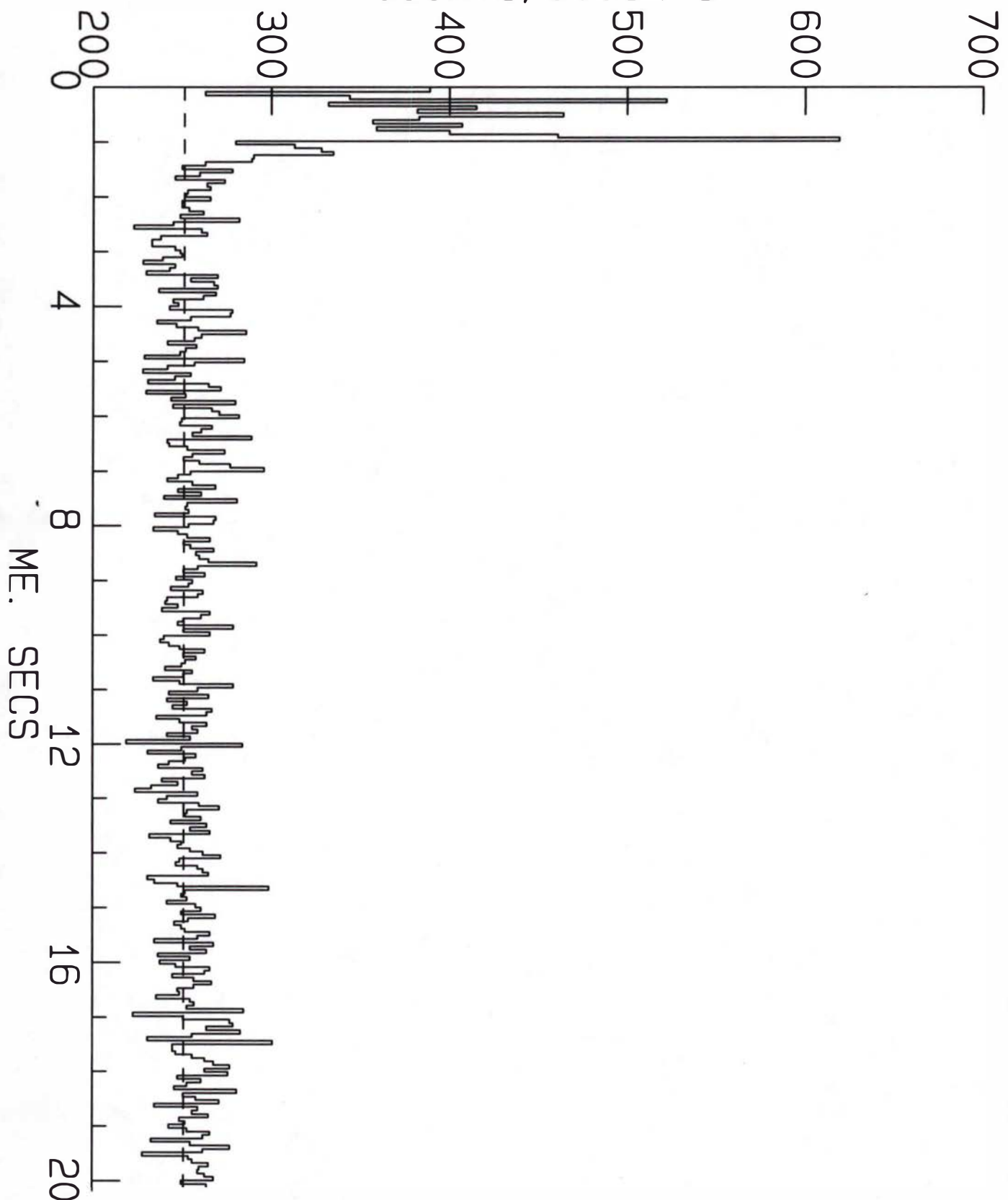
BATSE

22/11/97

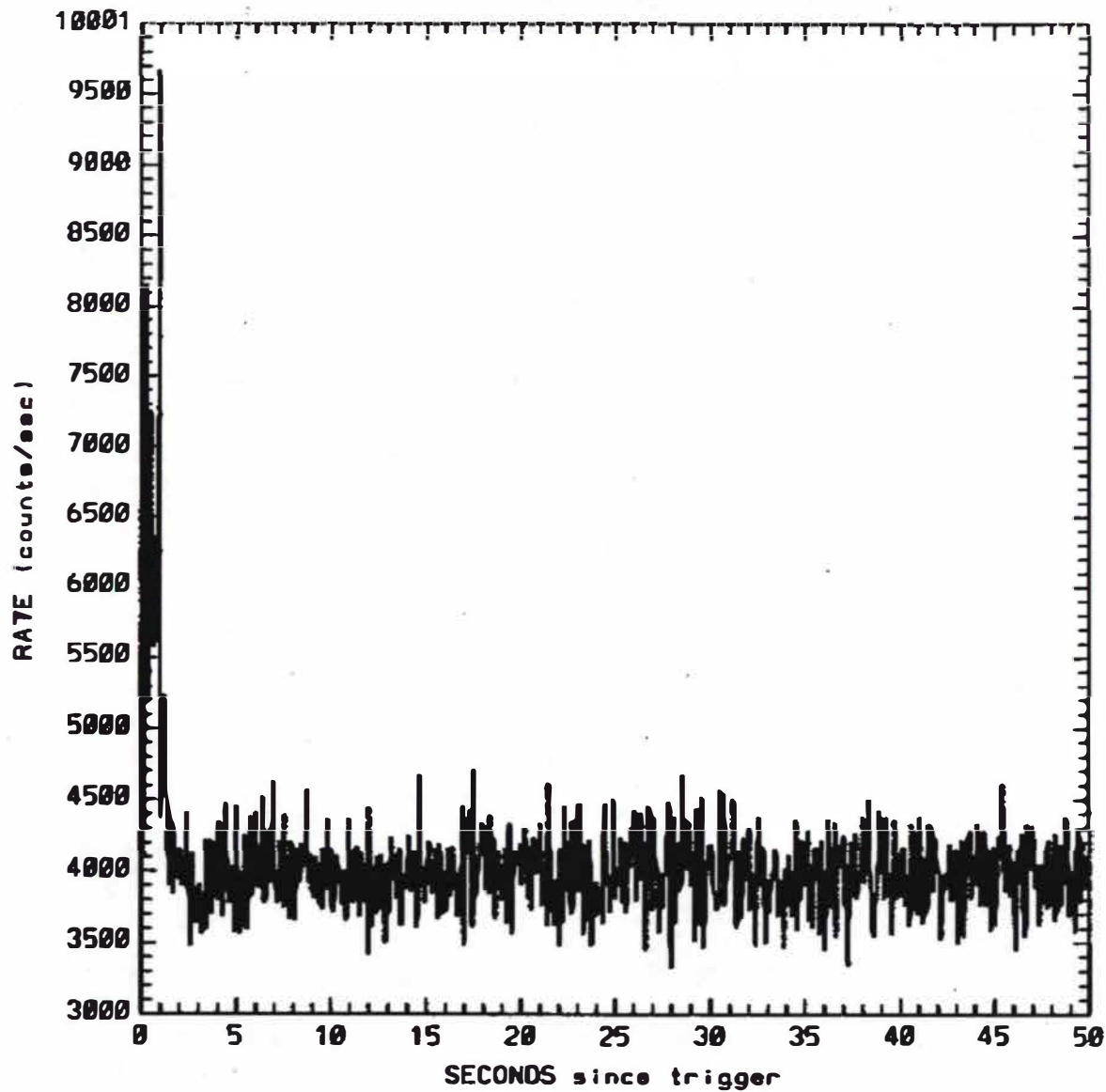
52842.658

100-1000 keV

COUNTS/0.064 S



MER Data for K. Hurley, No. 6491



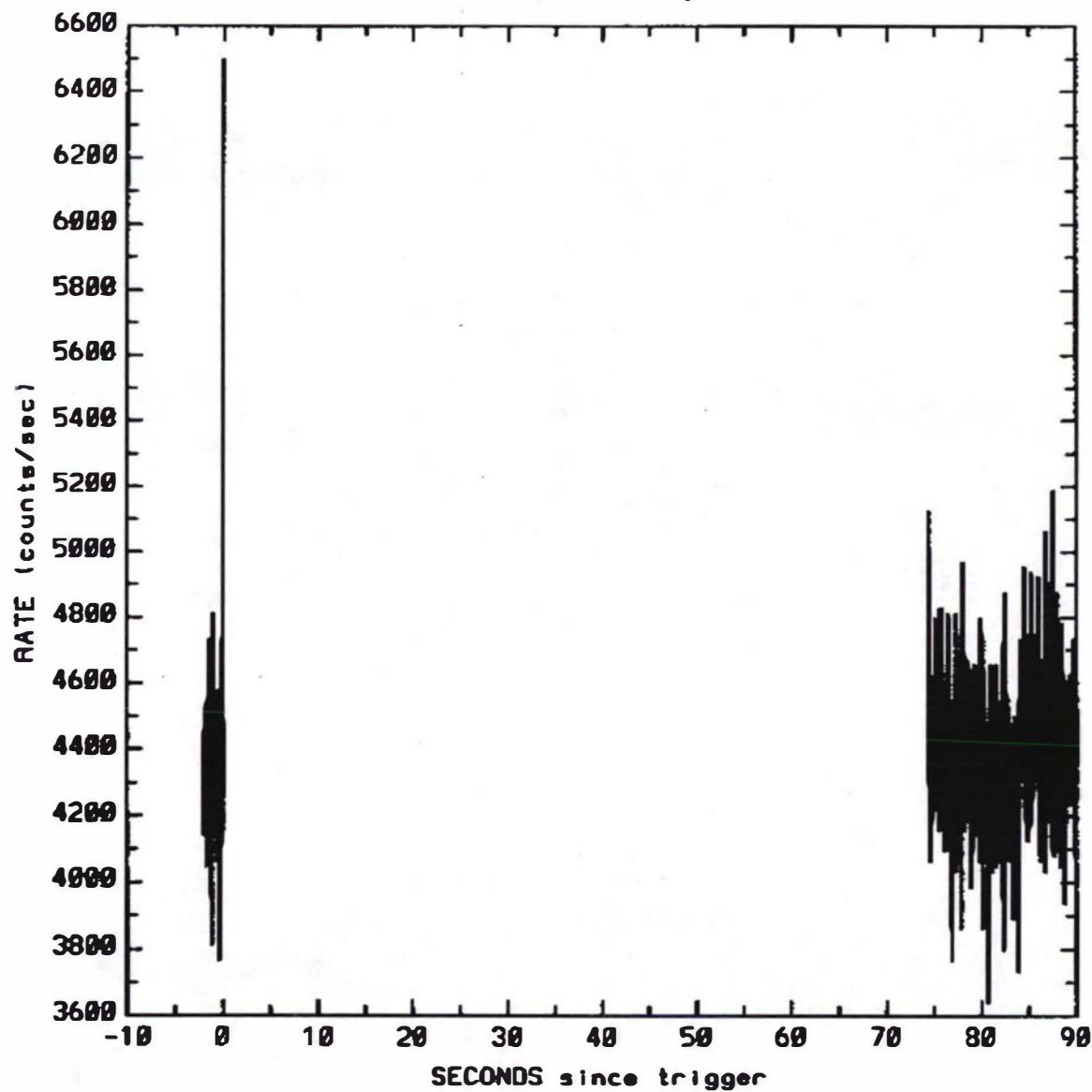
21-JAN-2000 15:04:50

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

Trigger # : 6491

Trigger Time:
10774 / 52042.657Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 second(s)Detectors [7..8]:
--5--1-Channels:
(7 .15)Quality Mask:
BDISP1

DISCSC Data for K. Hurley. No. 6491



21-JAN-2000 15:02:53

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

Trigger = 6491

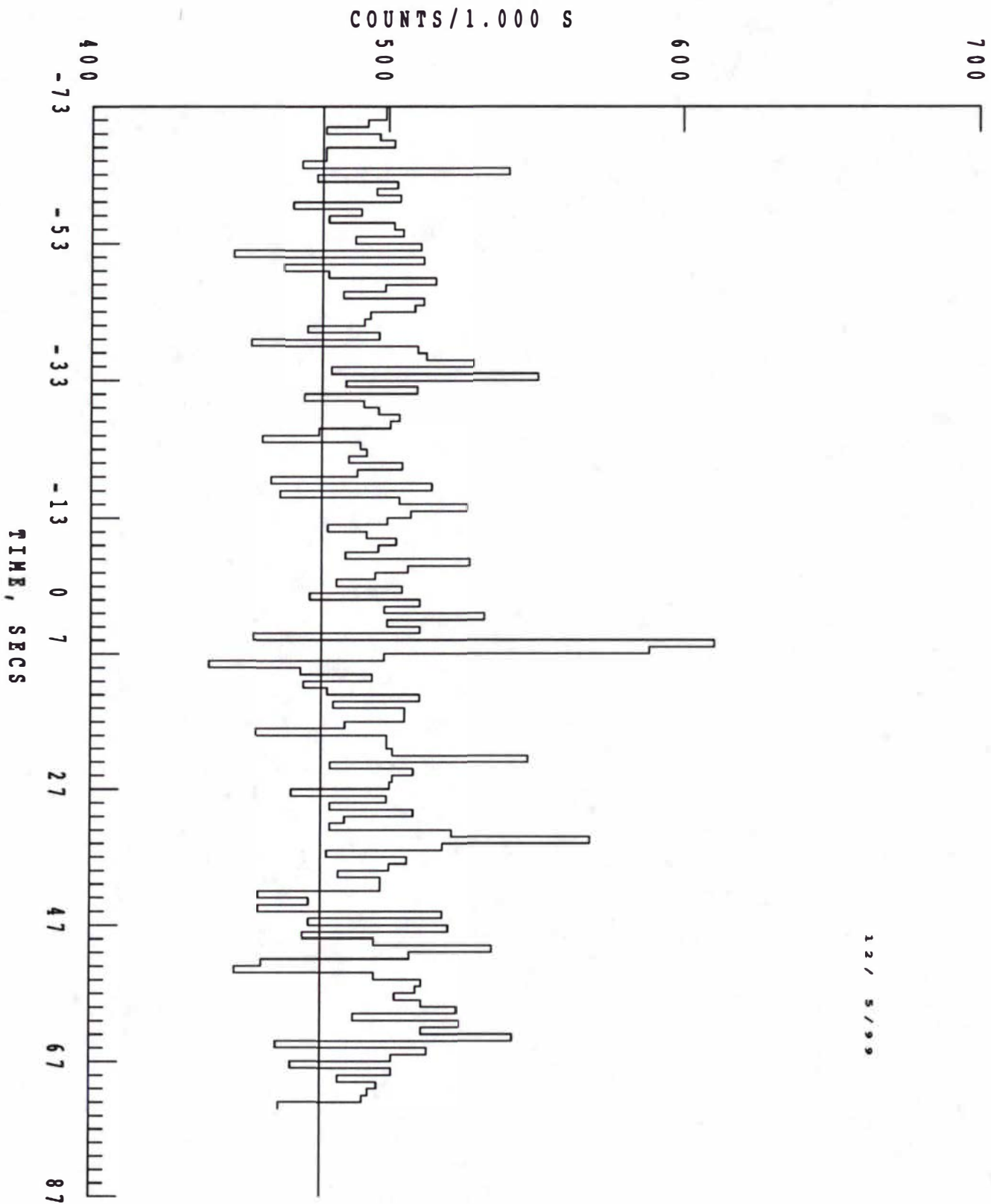
Trigger Time:
10774 / 52842.657Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors [7..8]:
--5--1-Discriminators:
[3..4]Quality Mask:
001SP1

NEAR

22/11/97

52765.152

100-1000 keV



BATSE BURST# 6491

ULYSSES RT

24 / 11 / 97

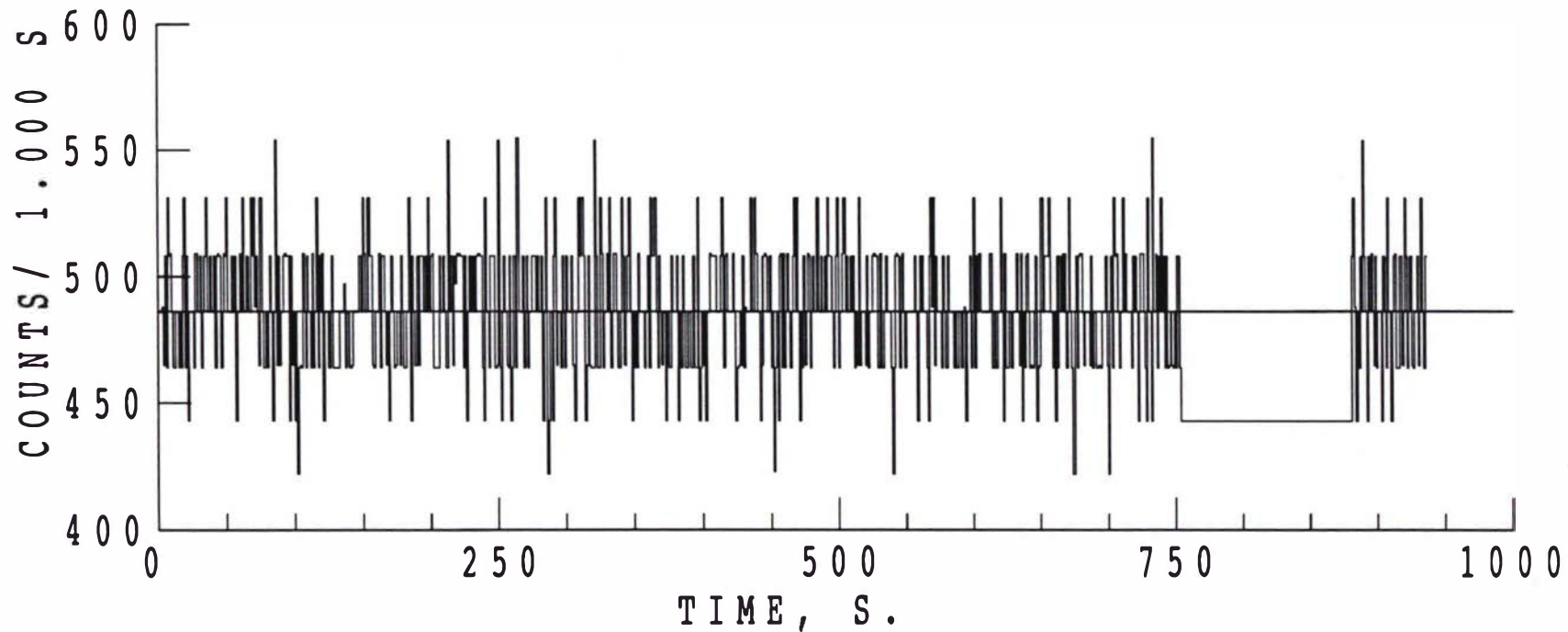
22 / 11 / 97 51264.191 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLMOR.msfc.nasa.gov Mon Nov 24 13:44:58 1997
Return-Path: <RICHARDSON@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA05678; Mon, 24 Nov 1997 13:44:57 -0800
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA26162; Mon, 24 Nov 1997 13:44:54 -0800
Date: Mon, 24 Nov 1997 15:44:50 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971124154450.21e0e085@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6492
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

No

BATSE BURST # 6492
EVENT OF 1997 NOV 22 DAY OF YEAR=326
EVENT CROSSING TIME AT BATSE : 77351. S. OR 21:29:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 301.000 79.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/11/ 97 IS:
RA= 170.484 DEC= 12.656 DIST= 5.516 AU
BATSE-ULYSSES DISTANCE = 825265760. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -259.07 SECS.
CROSSING TIME AT ULYSSES IS 77092. S. OR 21:24:51 +/- 521.87 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/11/ 97 IS:
RA= 280.632 DEC= -24.342 DIST= 2.001 AU
MARS-BATSE DISTANCE = 299343520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 241.27 SECS.
CROSSING TIME AT MARS IS 77592. S. OR 21:33:12 +/- 171.88 SECONDS

BATSE BURST TRIGGER

NO.: 6492

TIME: TJD=0774 SECONDS=77351

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.8 AZIMUTH=259.3 ERROR=1.4 DEGREES

COMMENTS:

GRB. TWO PULSES WHOSE RISE IS FASTER THAN DECAY. THE FIRST PULSE STARTS AT APPROX. T-2 SEC WITH DURATION APPROX. = 10SEC. SECOND PULSE STARTS AT APPROX. T+27 SEC. WITH DURATION APPROX. = 40SEC. TOTAL DURATION APPROX. = 70 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6492	971122	10774	77351	10000	301	+79	70

Date: Feb 8 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

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

2. BATSE Data

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

3. NEAR Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

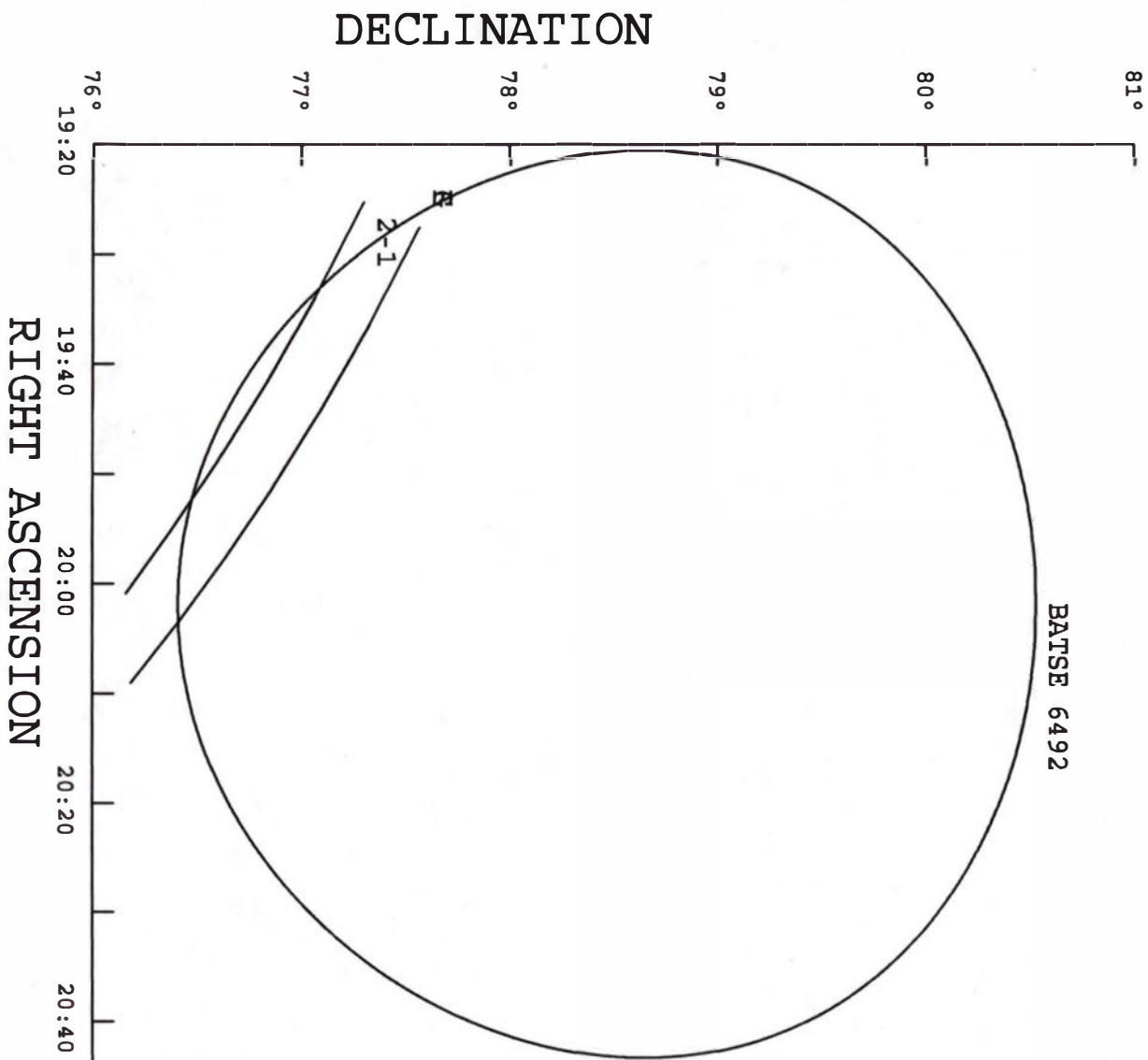
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF NOV 22, 1997 21:29

8 / 2 / 0



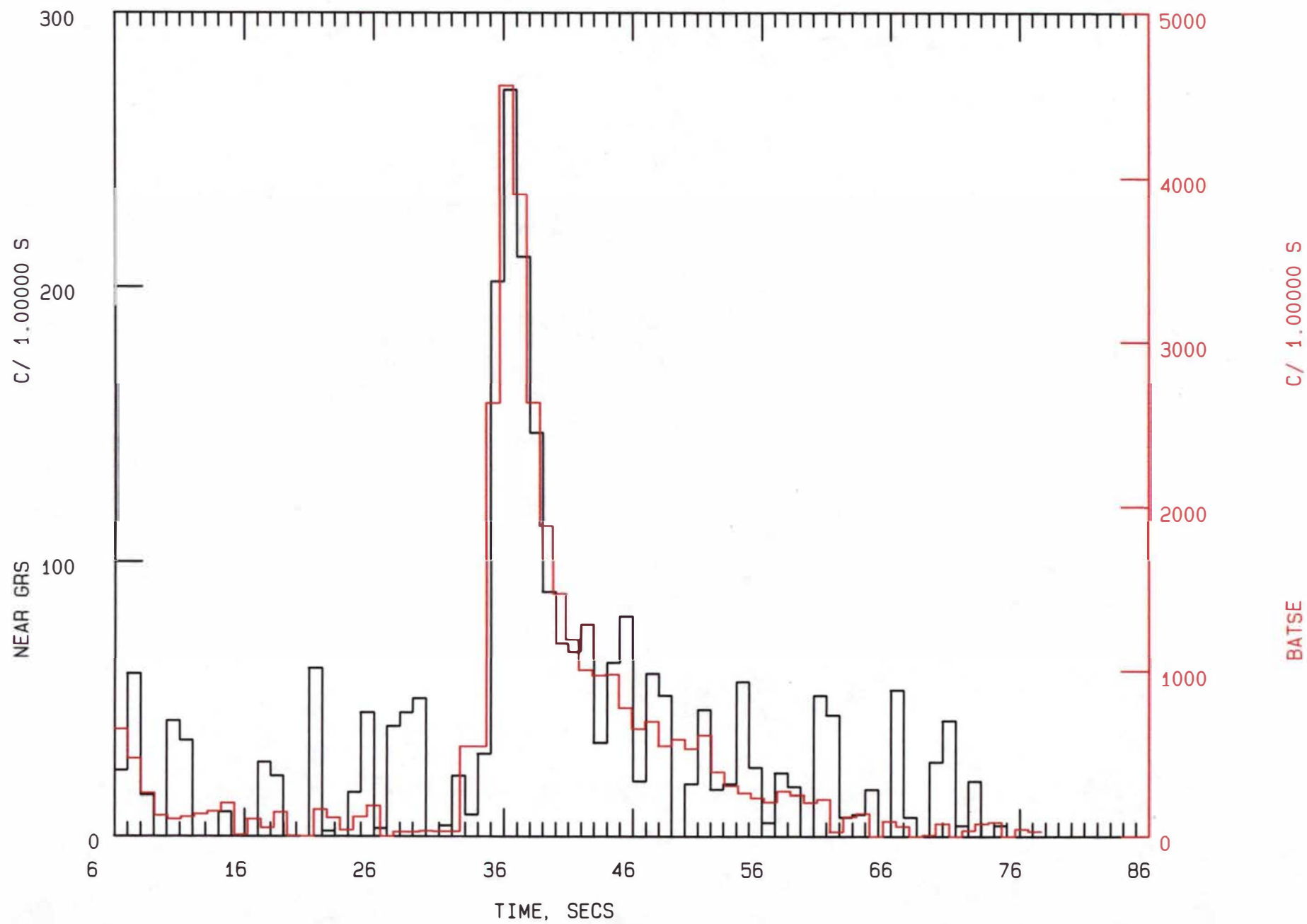
NEAR GRS -BATSE

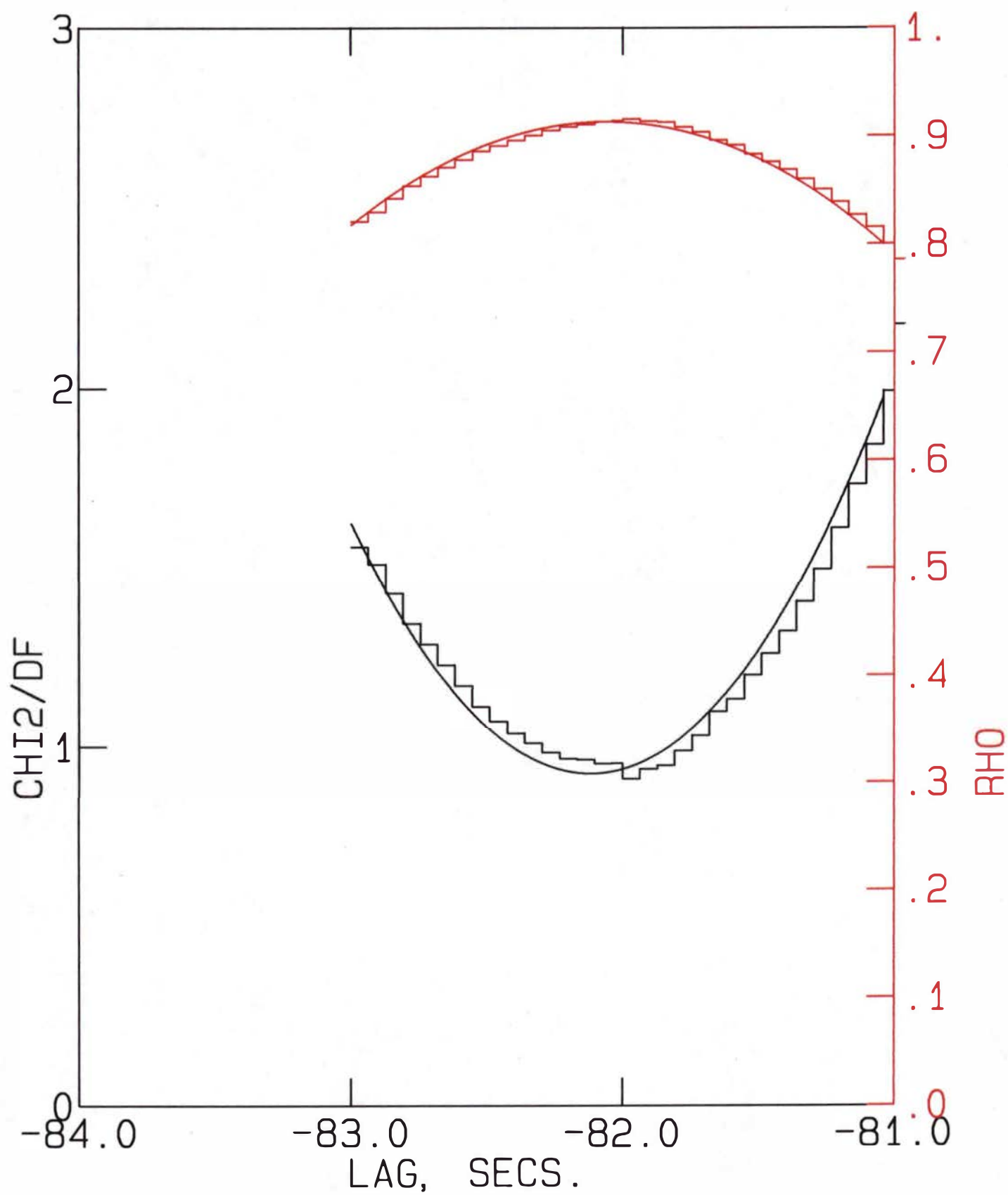
CORRELATION

22/11/97

77317.148

8/ 2/ 0



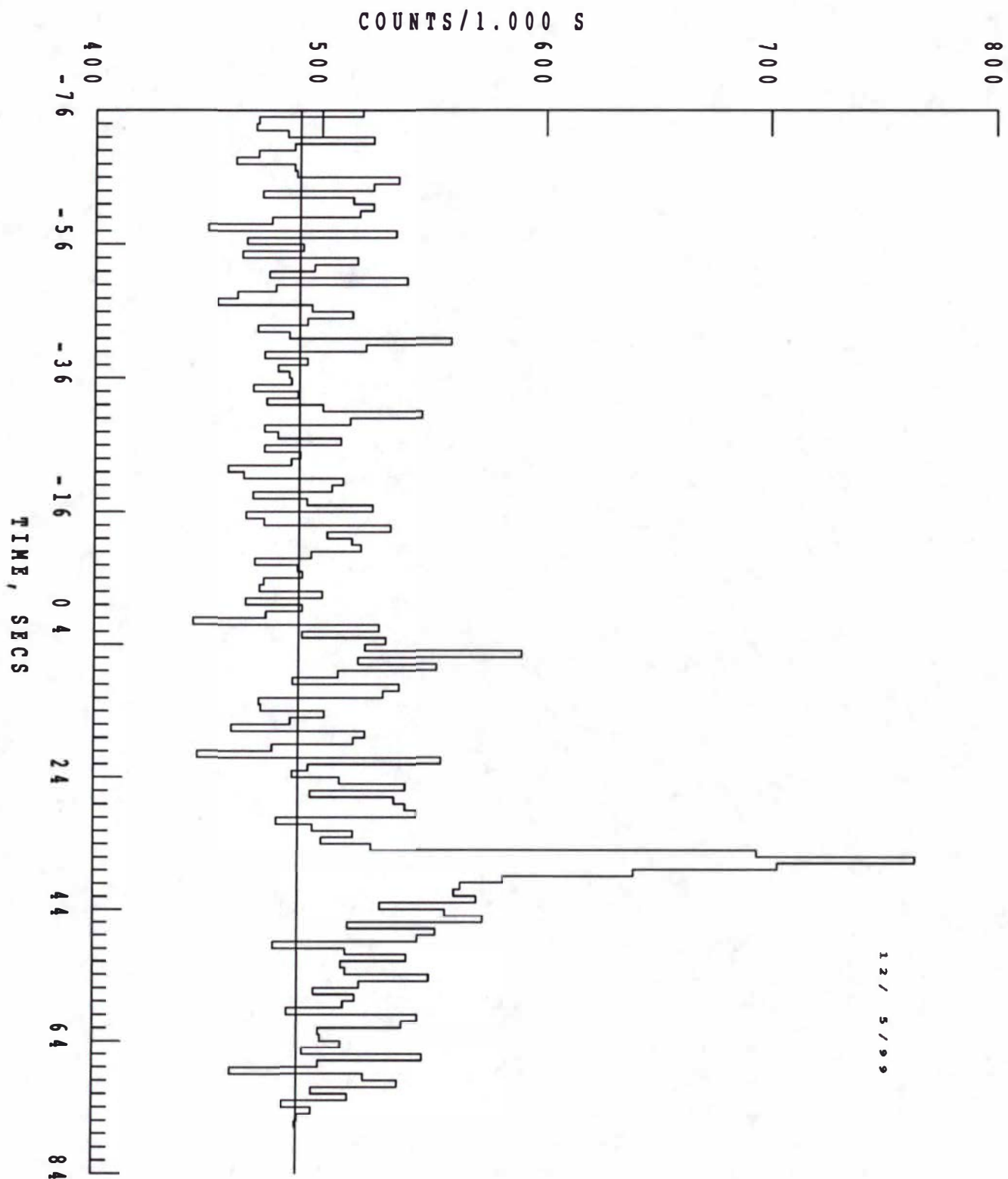


NEAR

22/11/97

77317.148

100-1000 keV



KNEAR GRS 19971122 77317

ULYSSES RT

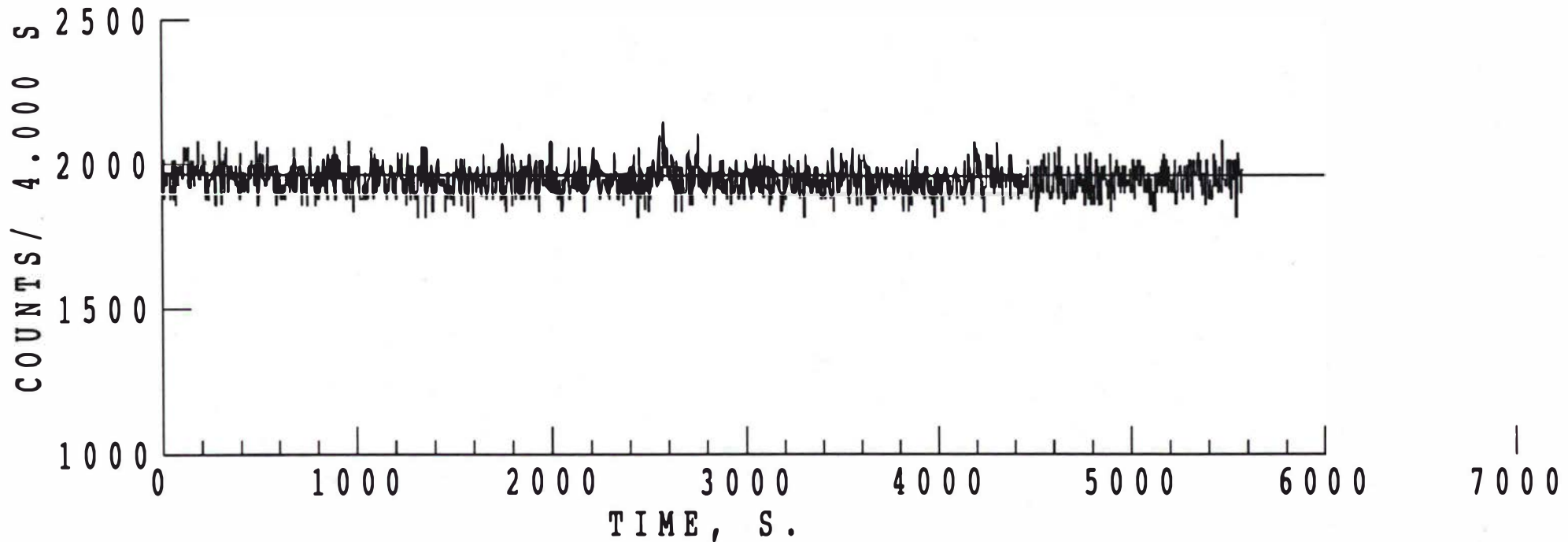
12 / 5 / 99

22/11/97 74520.445 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: Apr 10 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☐ ACCESS database updated?

χ^2 too high
U/B ratio out of bounds
Max g + min χ^2 lags disagree

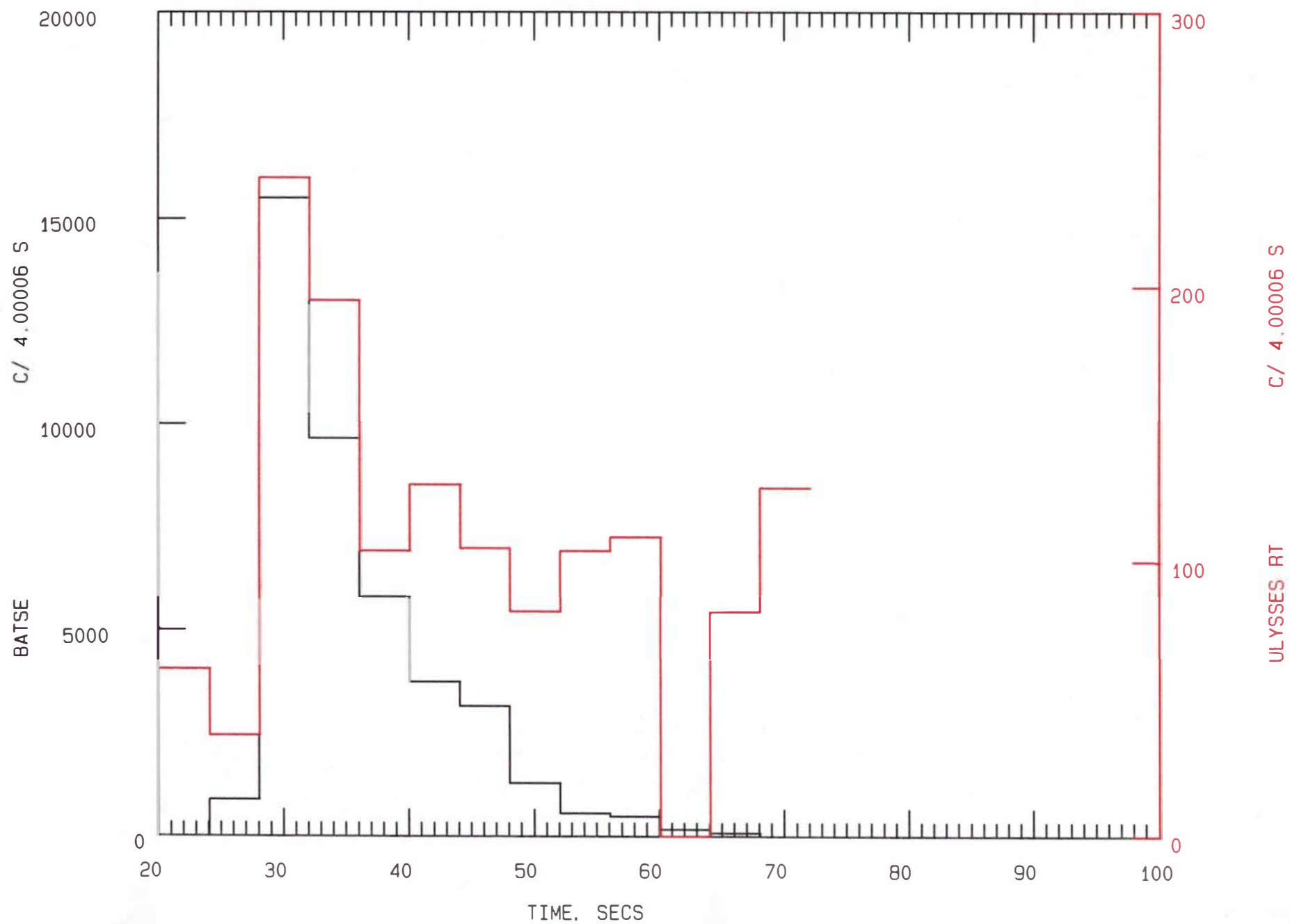
BATSE

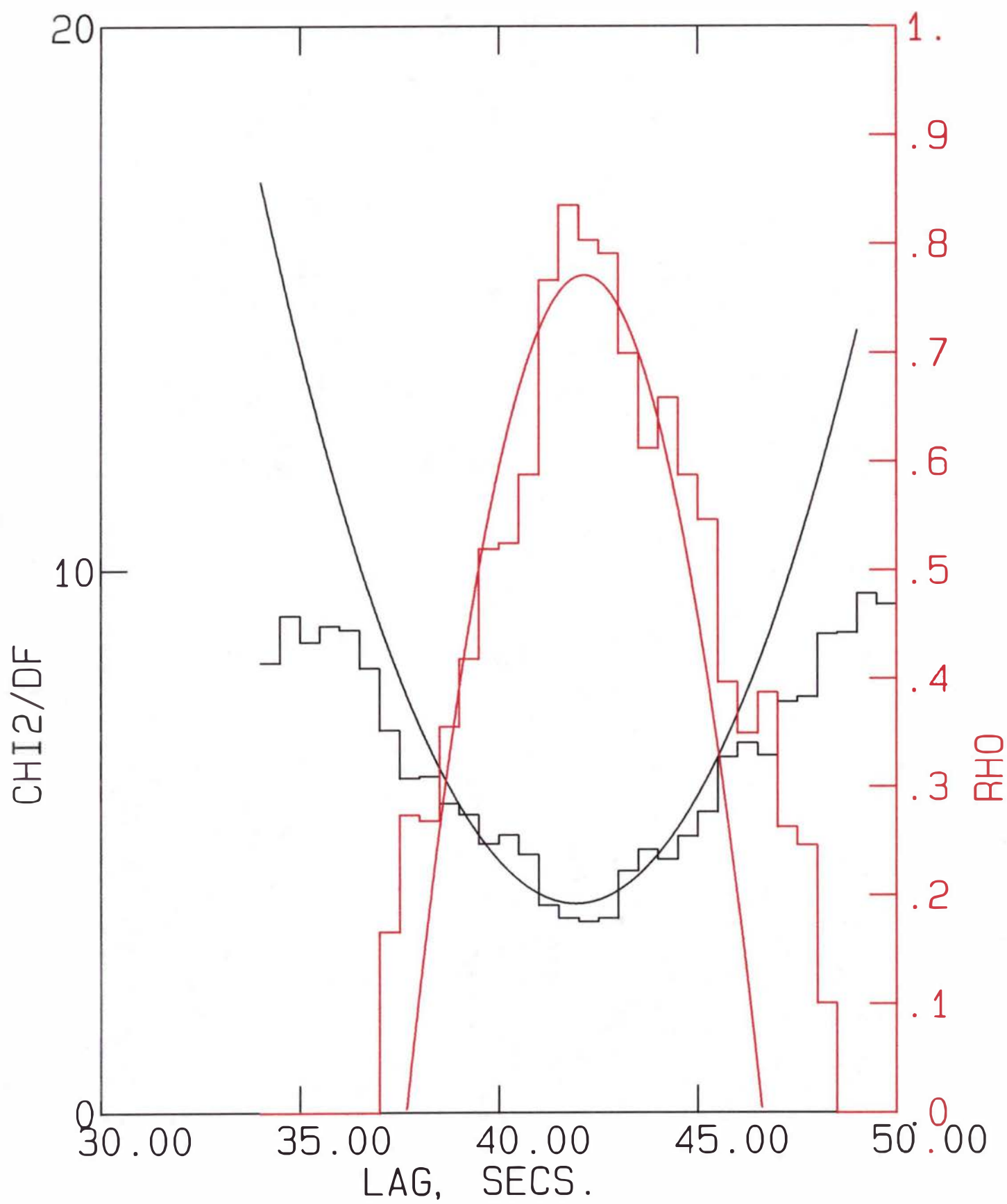
-ULYSSES RT CORRELATION

22/11/97

77351.649

10/ 4/98





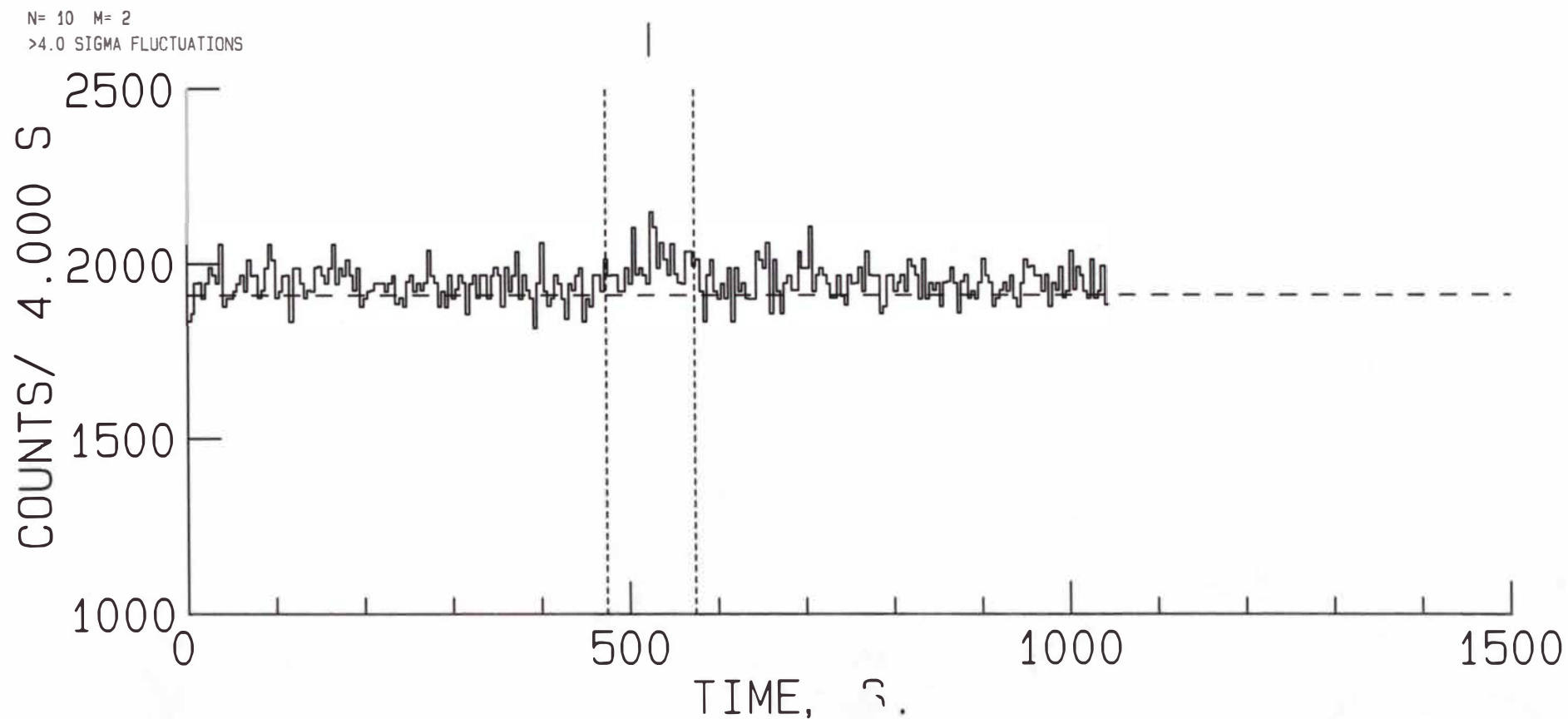
ULYSSES RT

10 / 4 / 98

22/11/97 76572.468 s

0.500 S INTERVALS REGROUPED BY 8

22- 148 keV



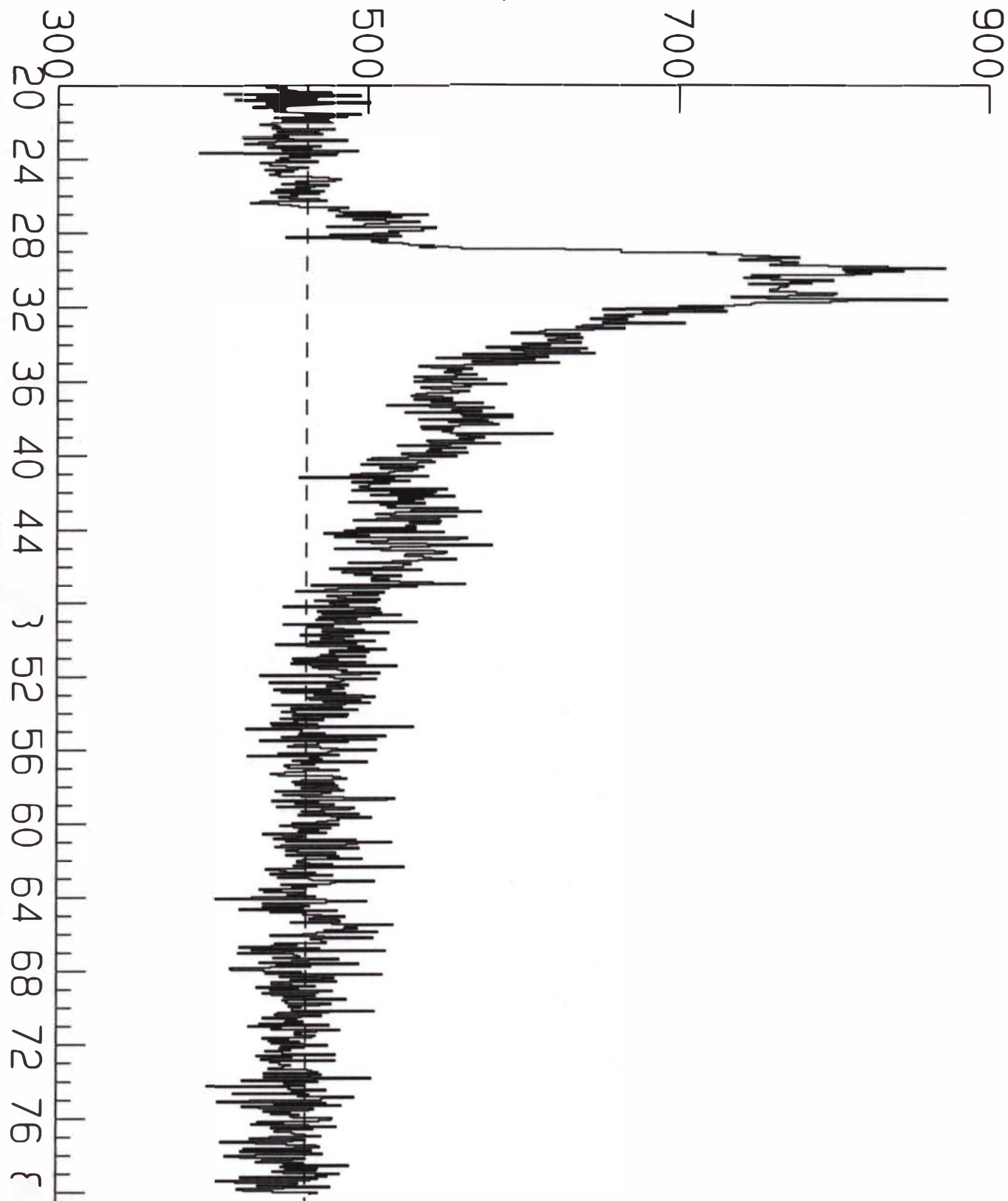
BATSE

22/11/97

77351.649

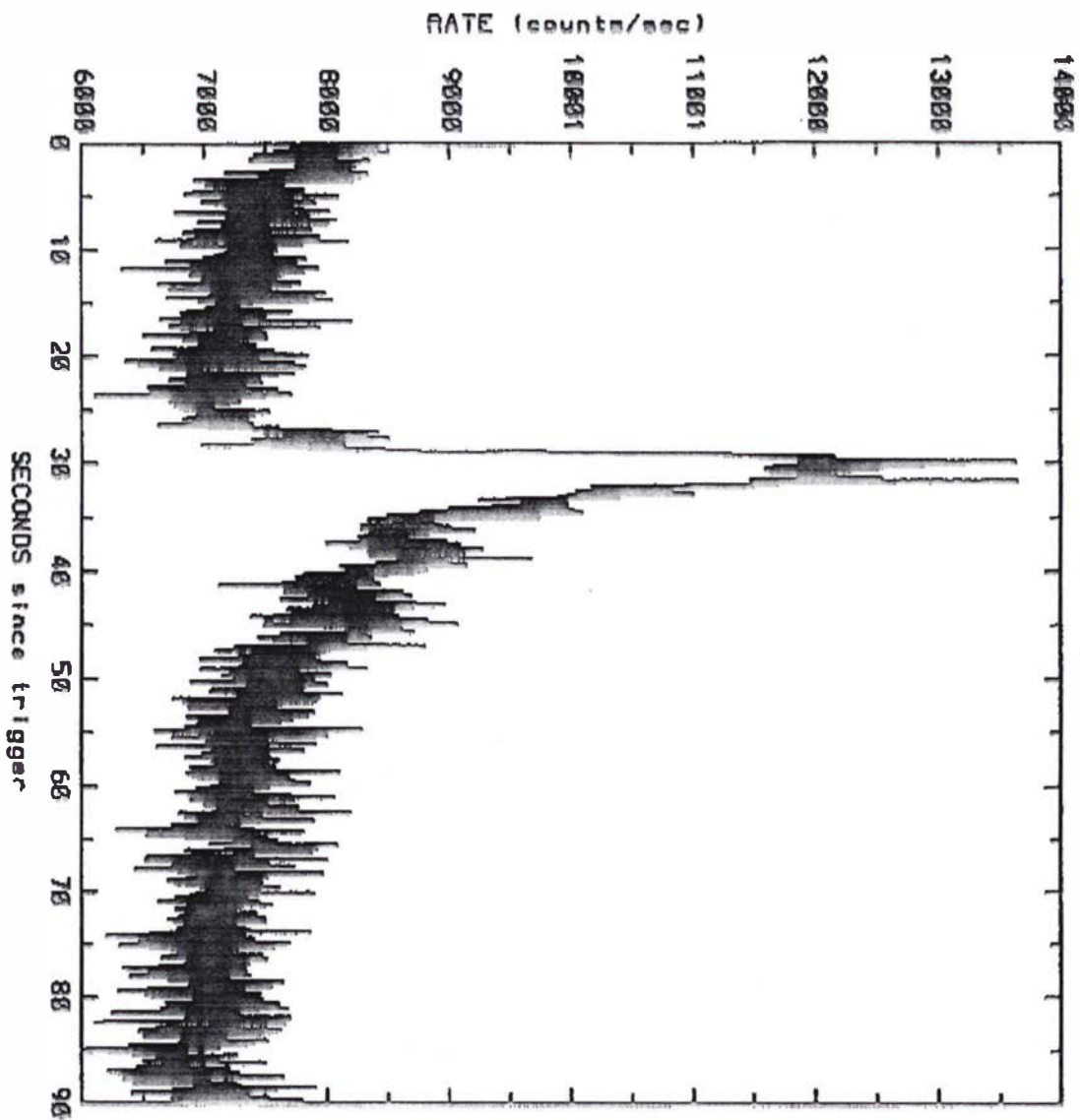
25- 100 keV

COUNTS/0.064 S



12/12/97

MER Data for K. Hurley, No. 6492



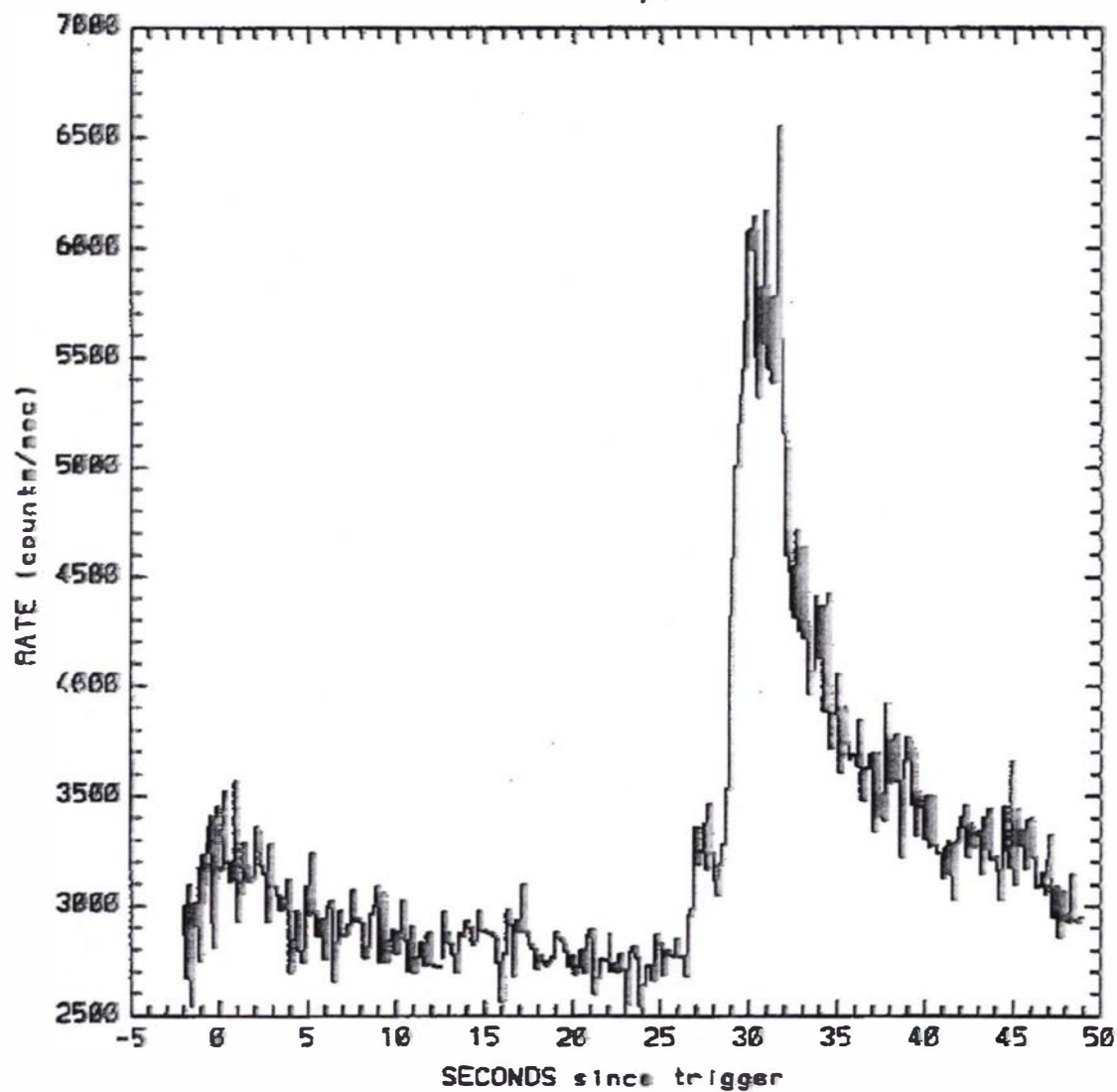
4-DEC-1997 17:24:56

Created by NOPS 80
(Burst Display)
Version 2.25

Trigger # : 6492

Trigger Time:
16776 / 77351.649Burst Data Type:
MERUnitless
Corrected: NBackground Data
Type: DOKTMinimum Integ. Time:
0.064 secondsDetector [7.0]:
7---3---Channels:
(6 + 6)Quality Mask:
B01SP1

TTS Data for K. Hurley, No. 6492



9-DEC-1997 17:36:26

Created by NOPS 80
(Burst Display)
Version 12.25

Trigger #: 6492

Trigger Time:
18774 / 77351.649Burst Data Type:
TTS

Time Corrected: Y

Maximum Time Error:
0.04899 second(s)Deadline
Corrected: NBackground Data
Type: PREB + DISCLA

Bin Count: 8

Detectors [7..8]:
7---3---Discriminators:
(2..2)Quality Mask:
B01SP1

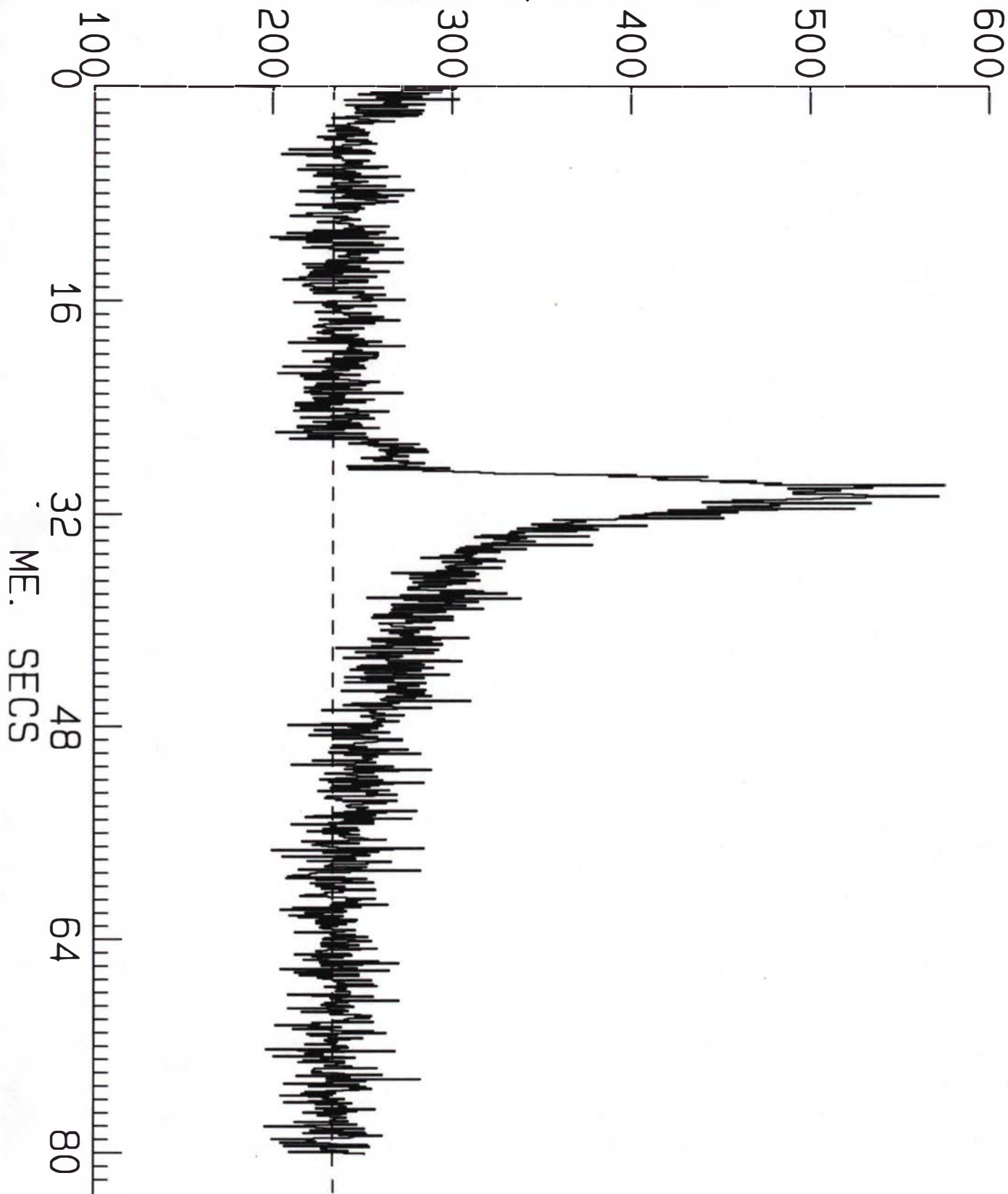
BATSE

22/11/97

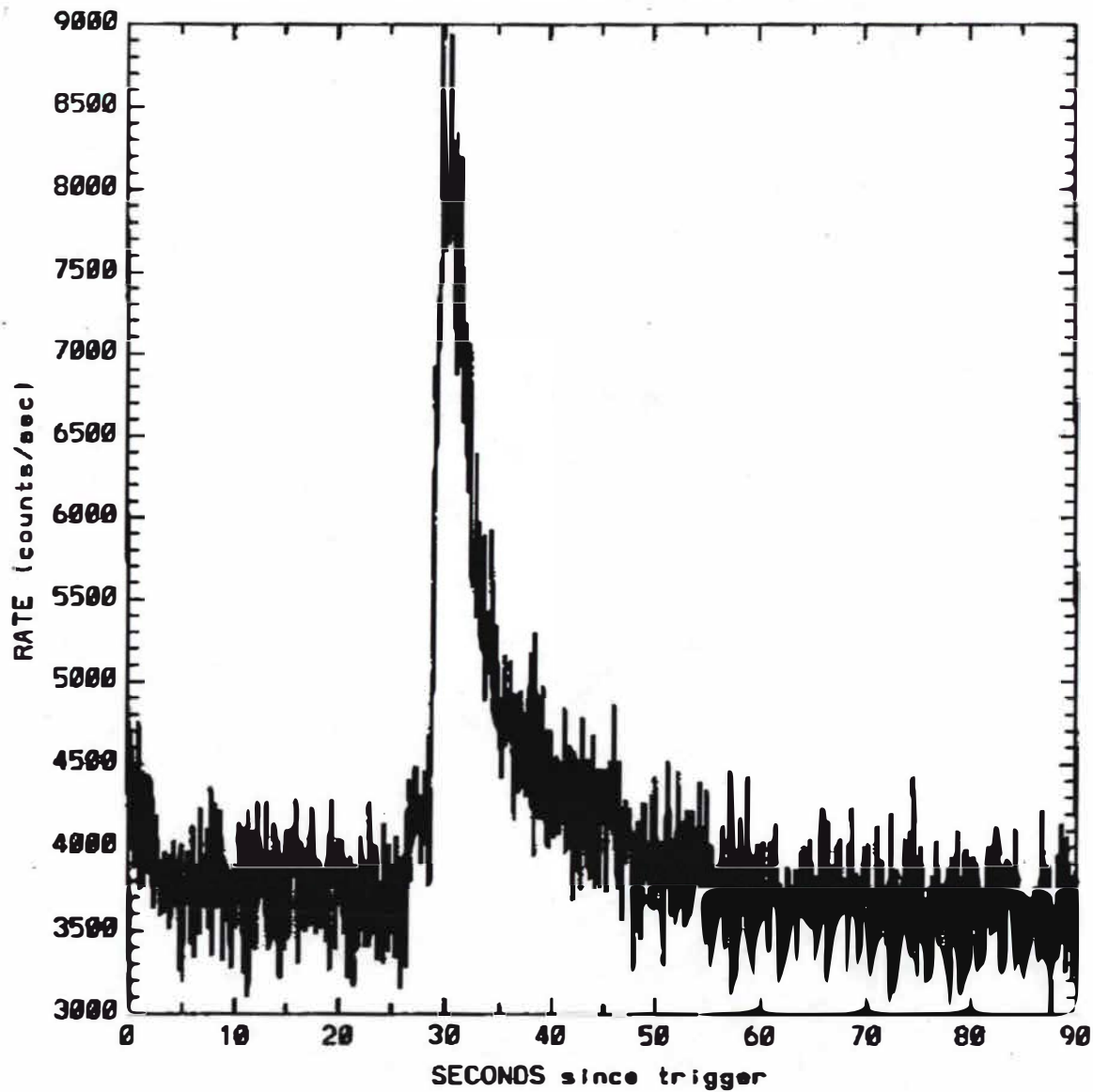
77351.649

100-1000 keV

COUNTS/0.064 S



MER Data for K. Hurley, No. 6492



21-JAN-2000 15:06.11

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

Trigger # . 6492

Trigger Time:
10774 / 77351.649Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 second(s)Detectors (7..0).
7---3---Channels:
(7 .15)Quality Mask:
801SP1

From RICHARDSON@SSLMOR.msfc.nasa.gov Mon Nov 24 13:39:49 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Mon, 24 Nov 1997 15:39:28 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6493

TIME: TJD=0774 SECONDS=85000

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

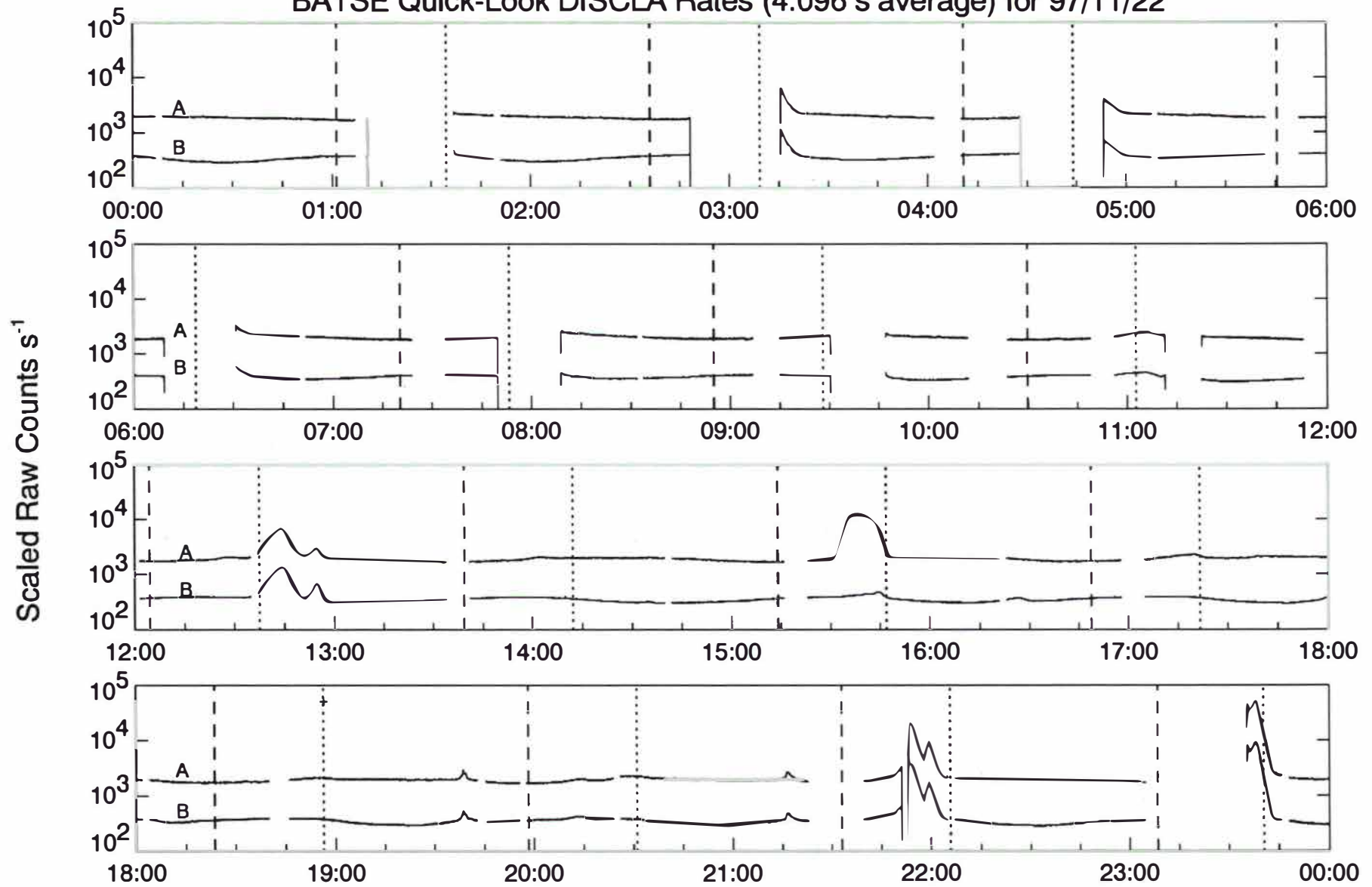
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/22

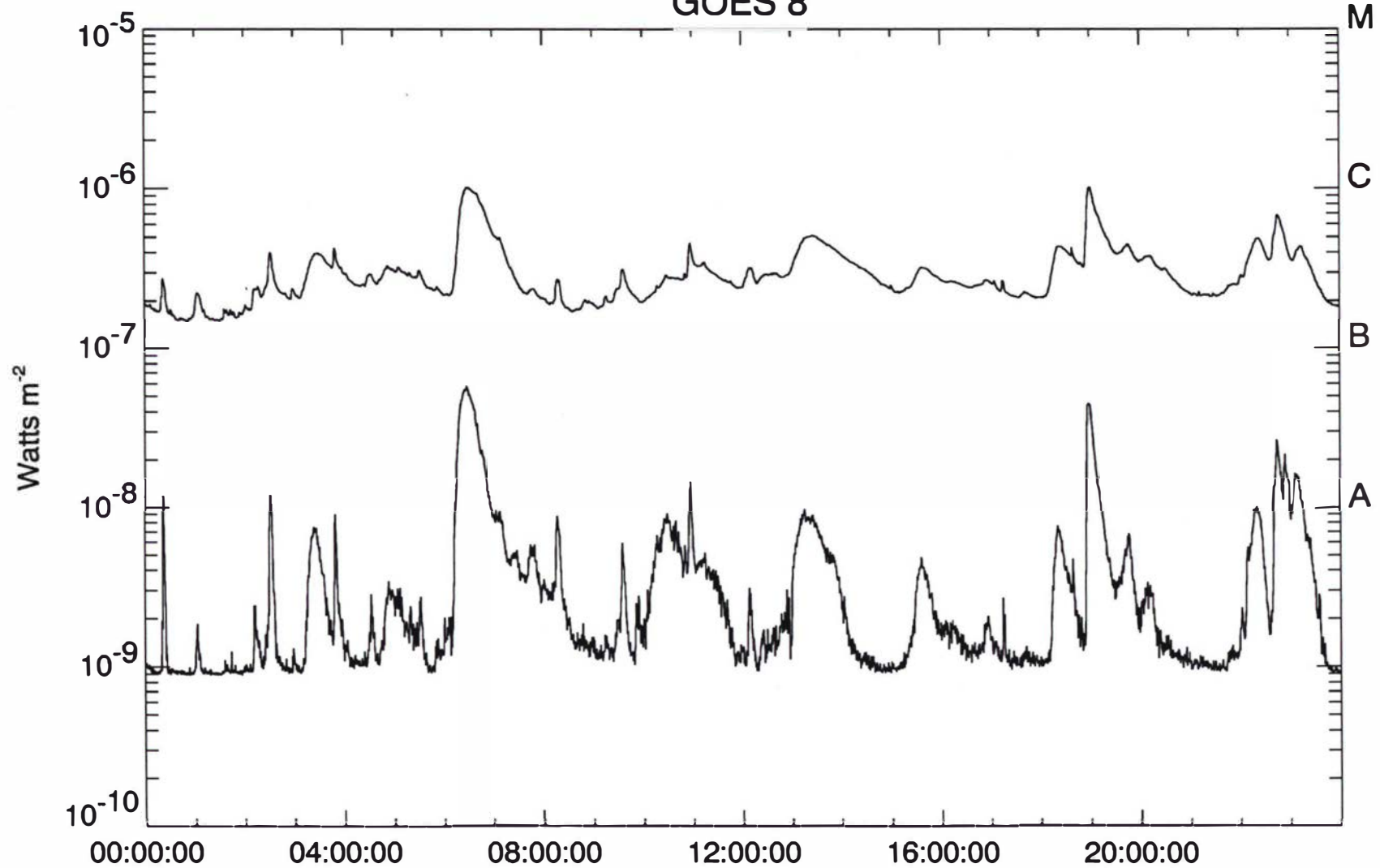


Current Time: 97/11/26, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/22, 0000:00

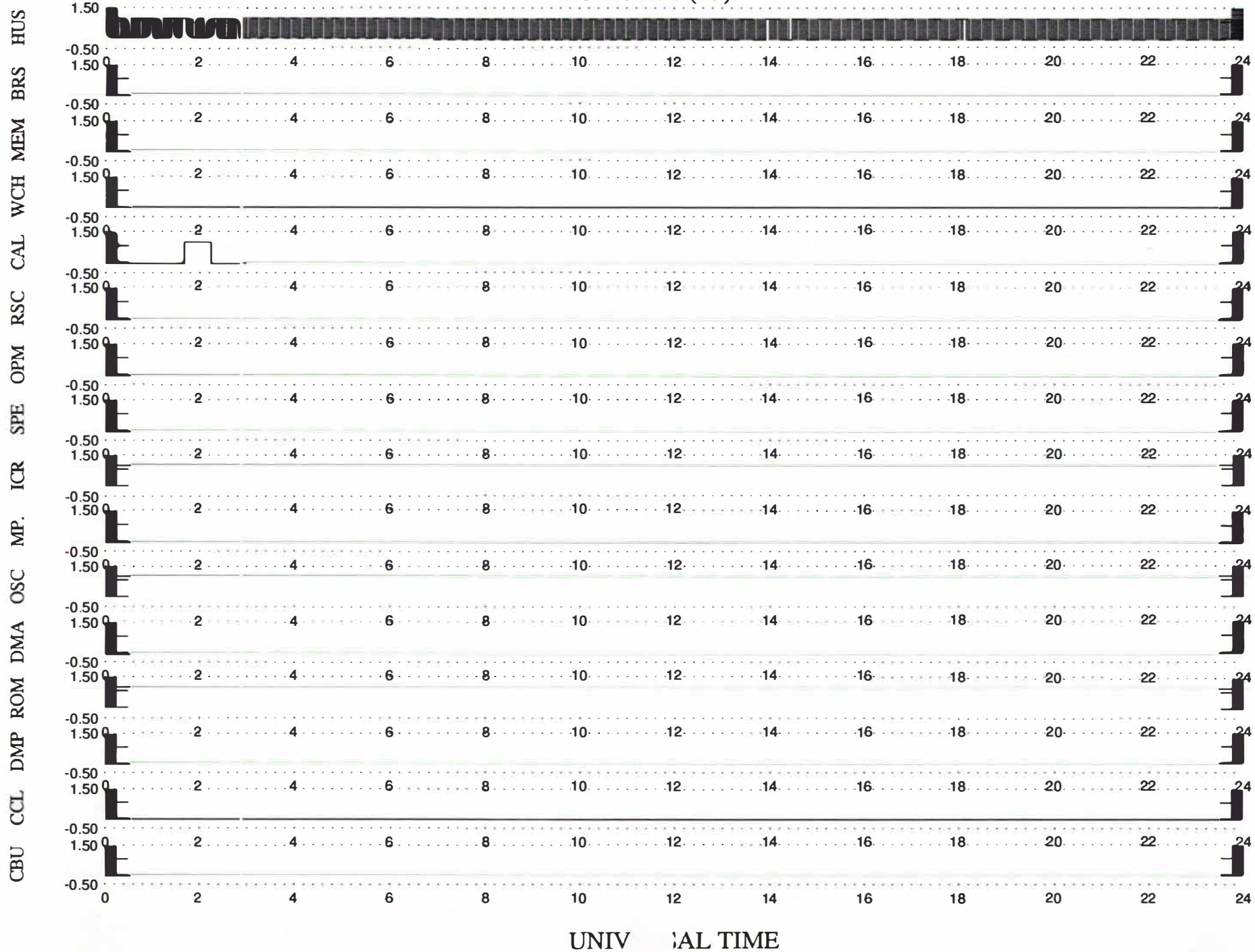
Plot created: 97/11/26, 1007

Channel

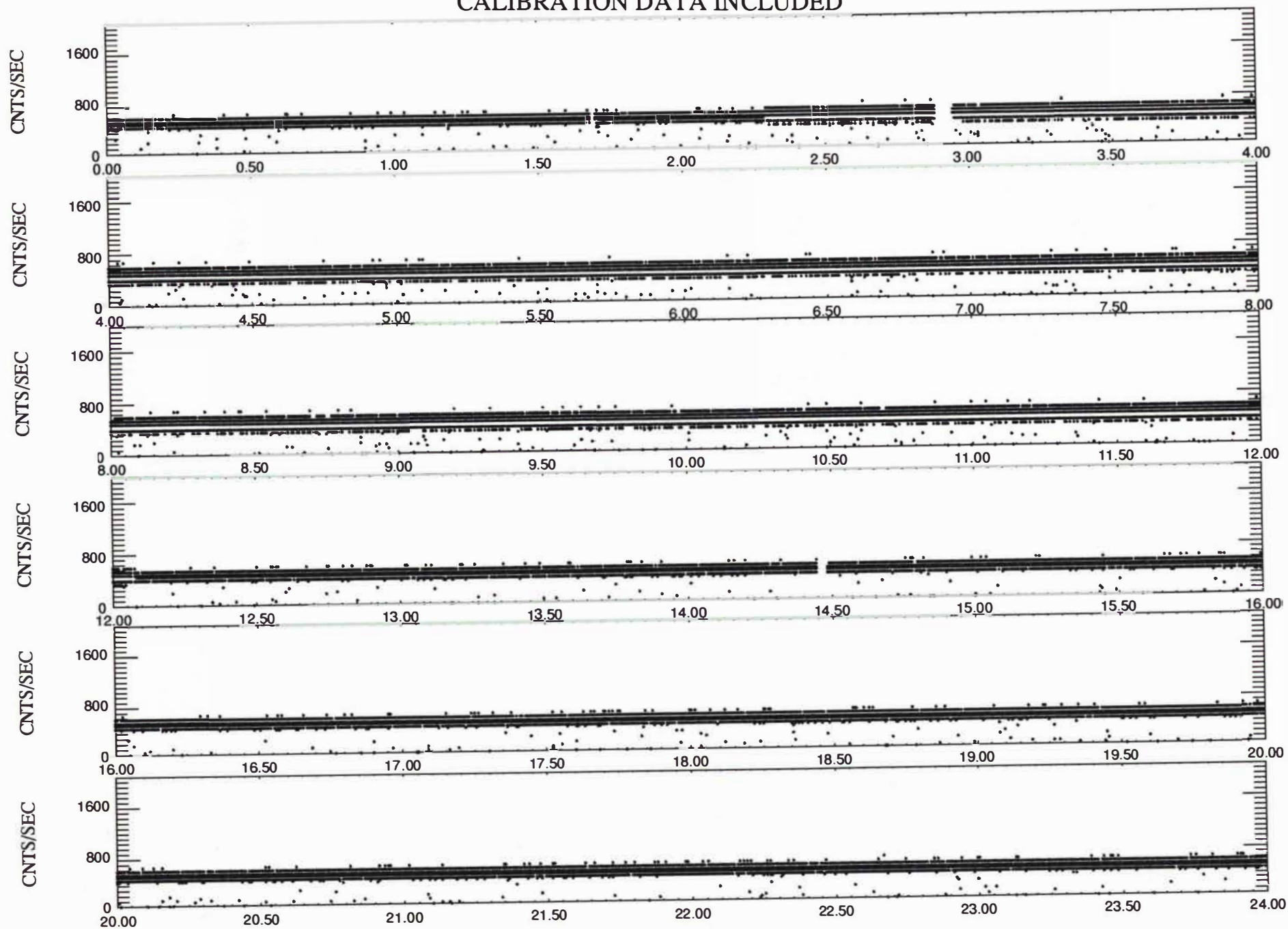
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

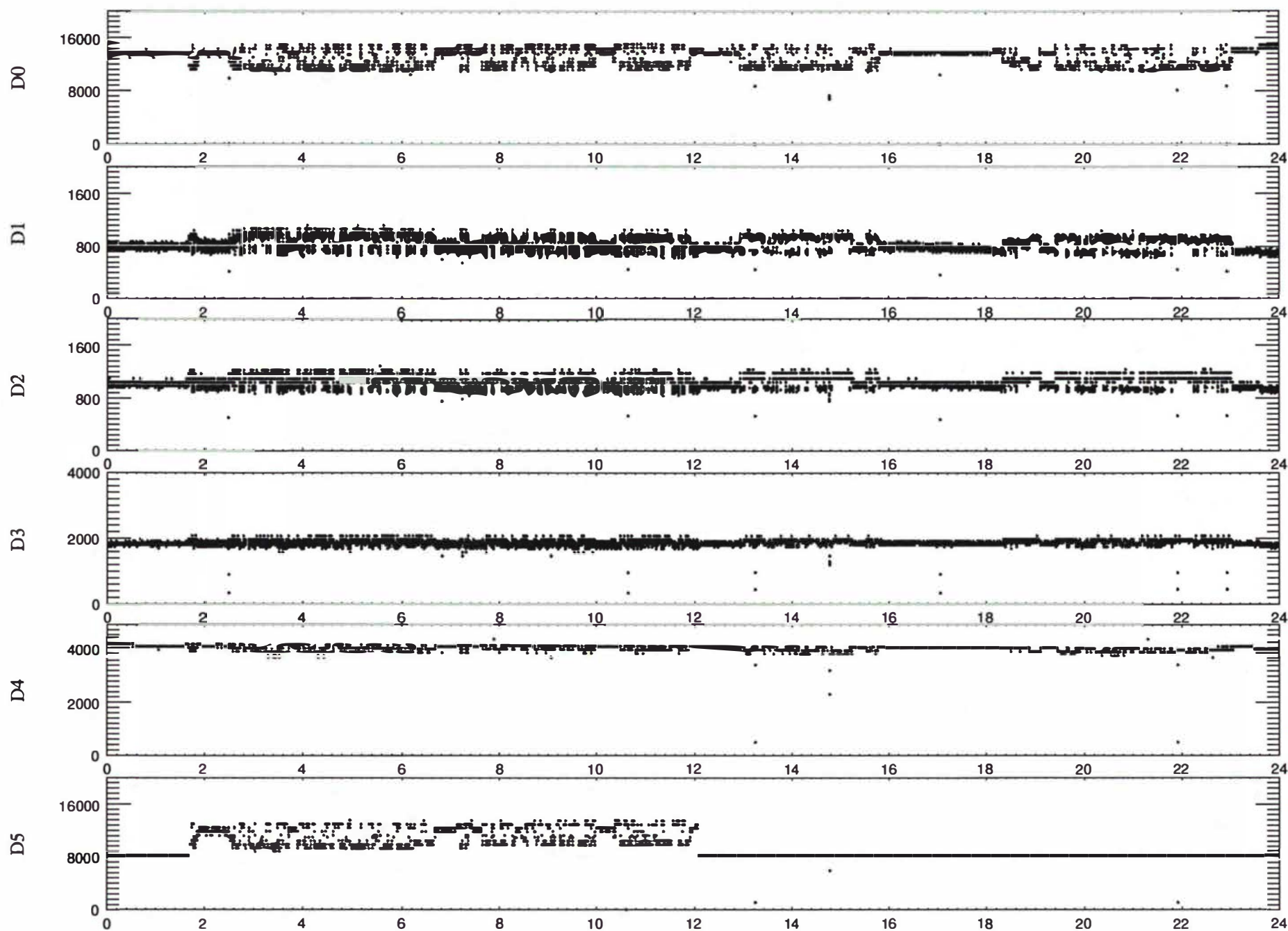
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV 'AL TIME



UNIV AL TIME

From HENZE@fender.msfc.nasa.gov Tue Nov 25 08:32:57 1997
Date: Tue, 25 Nov 1997 10:31:12 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevax.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevax.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6494

TIME: TJD=0775 SECONDS=10505

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA EXIT; PROBABLY TRIGGERED ON RECOVERY FROM ONBOARD OVERFLOW.

From HENZE@fender.msfc.nasa.gov Tue Nov 25 08:33:47 1997
Date: Tue, 25 Nov 1997 10:33:14 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6495

TIME: TJD=0775 SECONDS=16365

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA EXIT; PROBABLY TRIGGERED ON RECOVERY FROM ONBOARD OVERFLOW.

From HENZE@fender.msfc.nasa.gov Tue Nov 25 08:35:32 1997
Date: Tue, 25 Nov 1997 10:34:52 -0600 (CST)
From: Bill Henze (205-544-7616) <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, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6496

TIME: TJD=0775 SECONDS=54967

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT, OVER AUSTRALIA.

GRBM 19971123 23713

ULYSSES RT

23 / 08 / 04

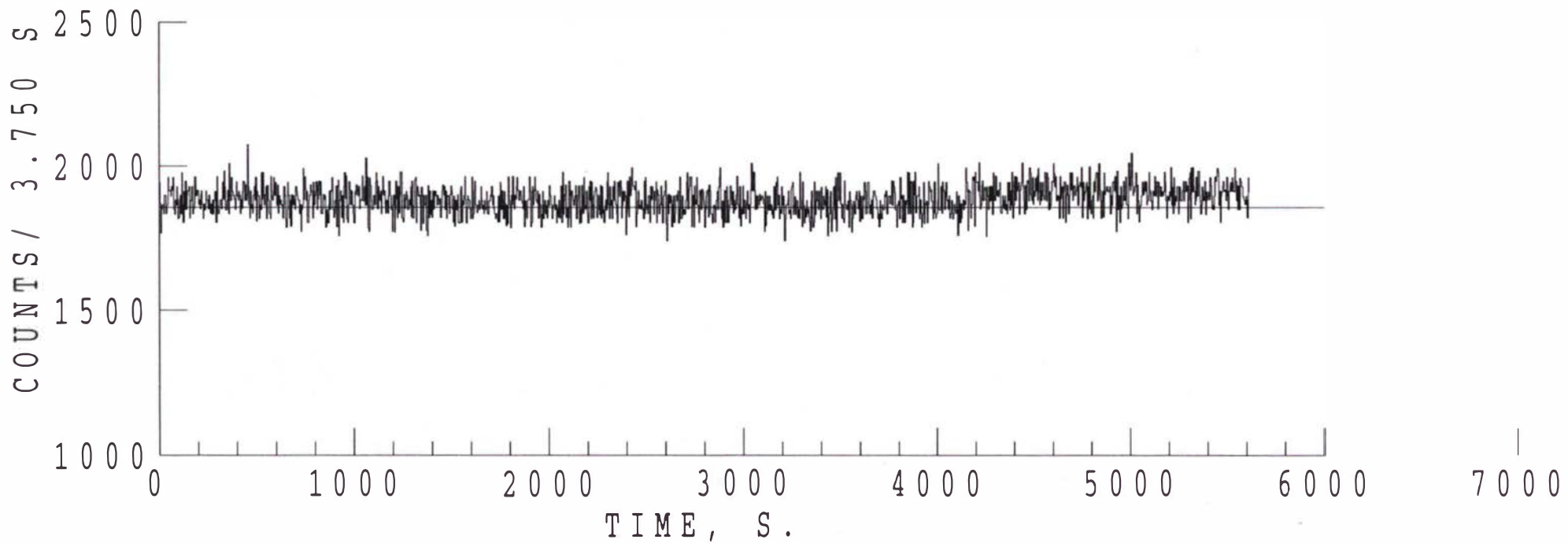
23 / 11 / 97 20916.064 s

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

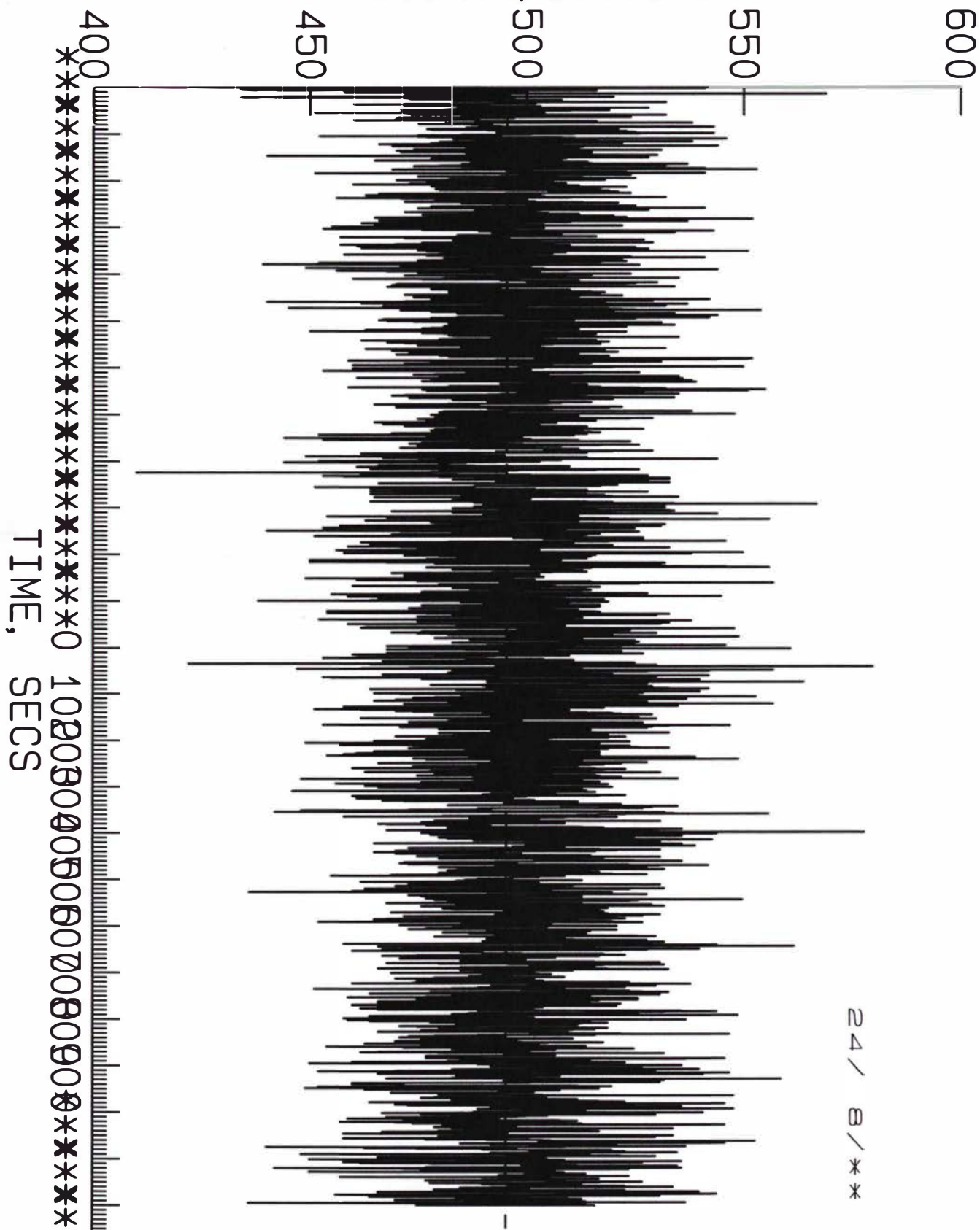


NEAR

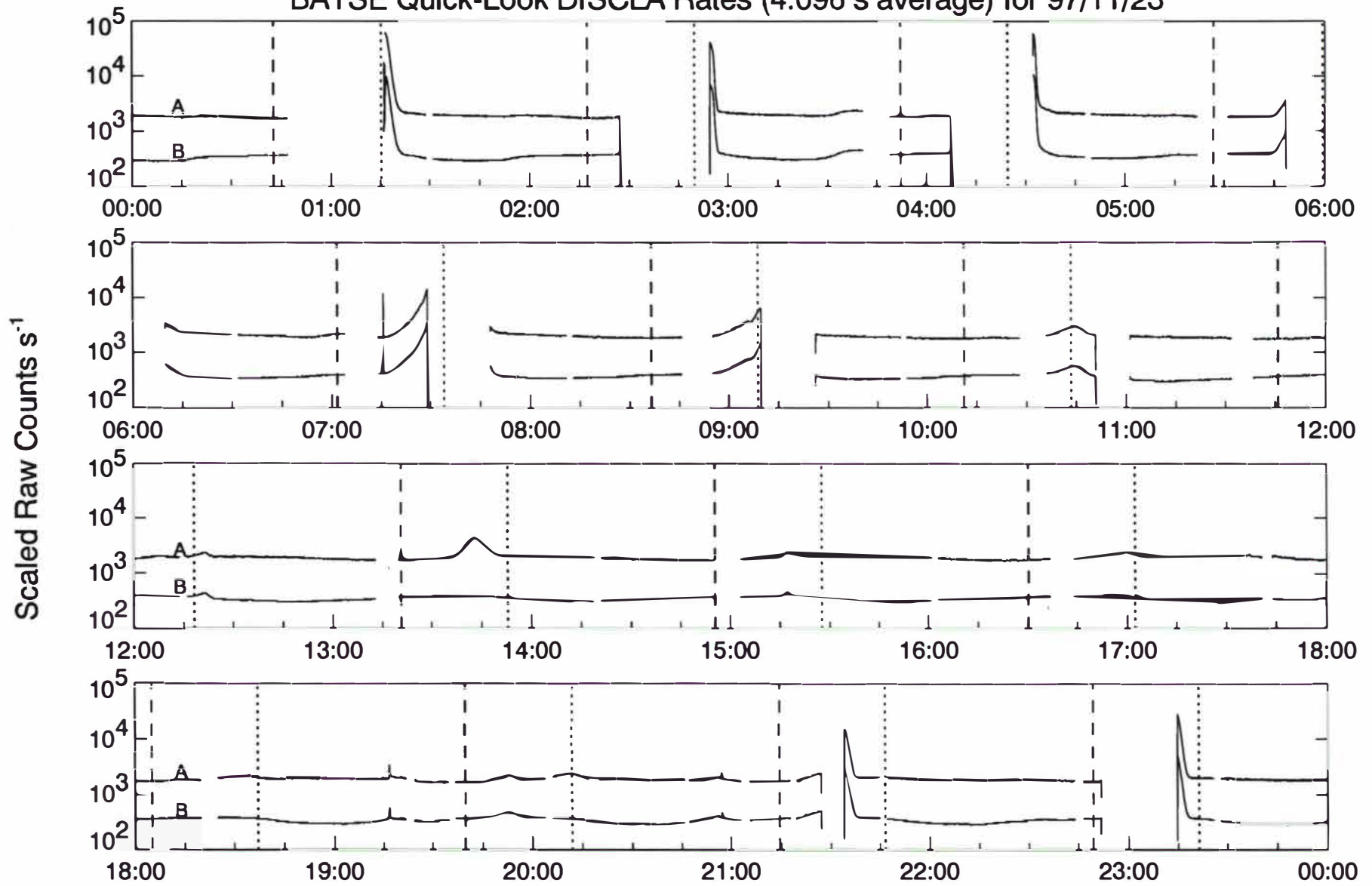
23/11/97 23712.142

100-1000 keV

COUNTS/1.000 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/23



Current Time: 97/11/27, 1008 EDT

A: Channel 0 Most Sunward LAD

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

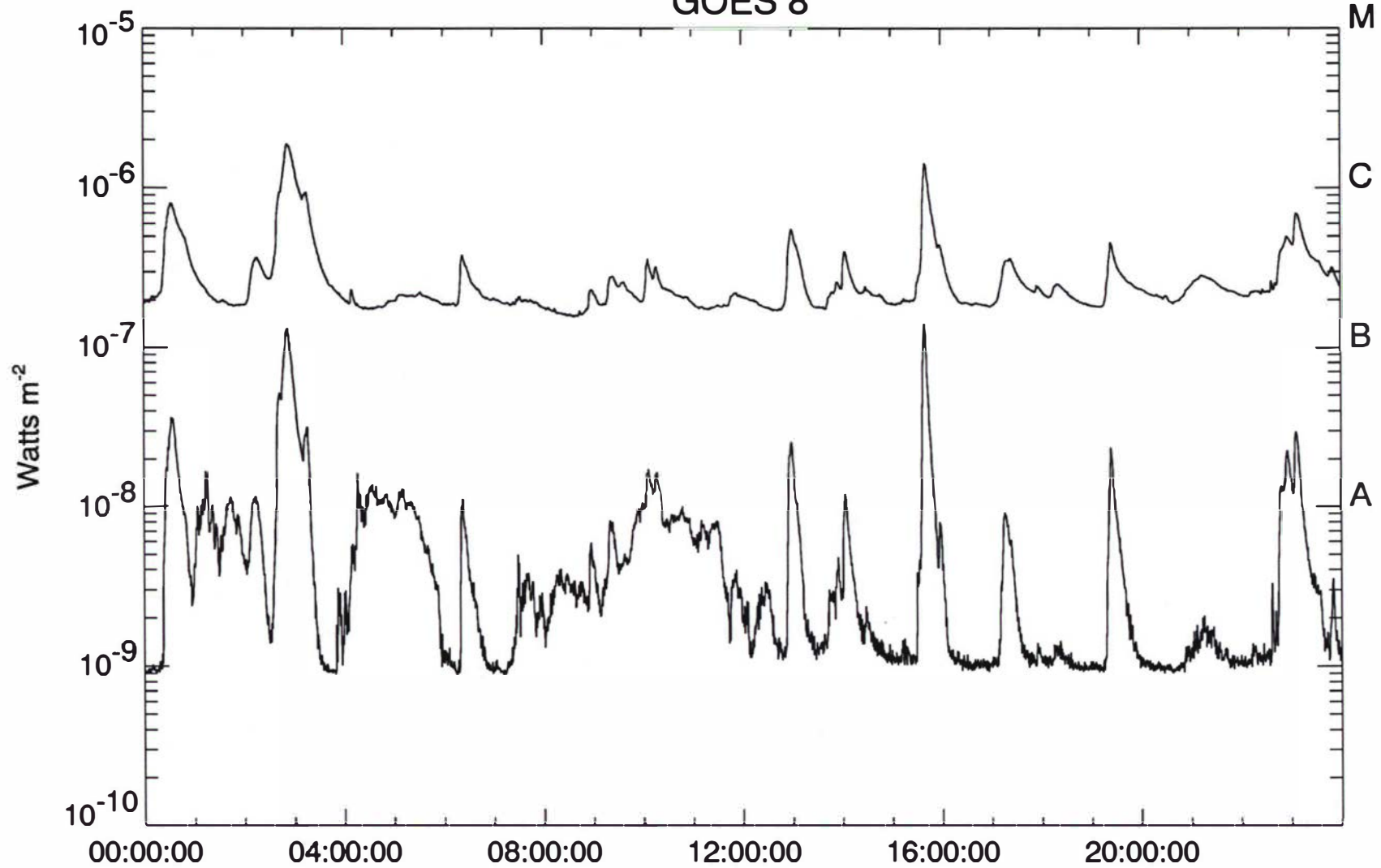
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 97/11/23, 0000:00

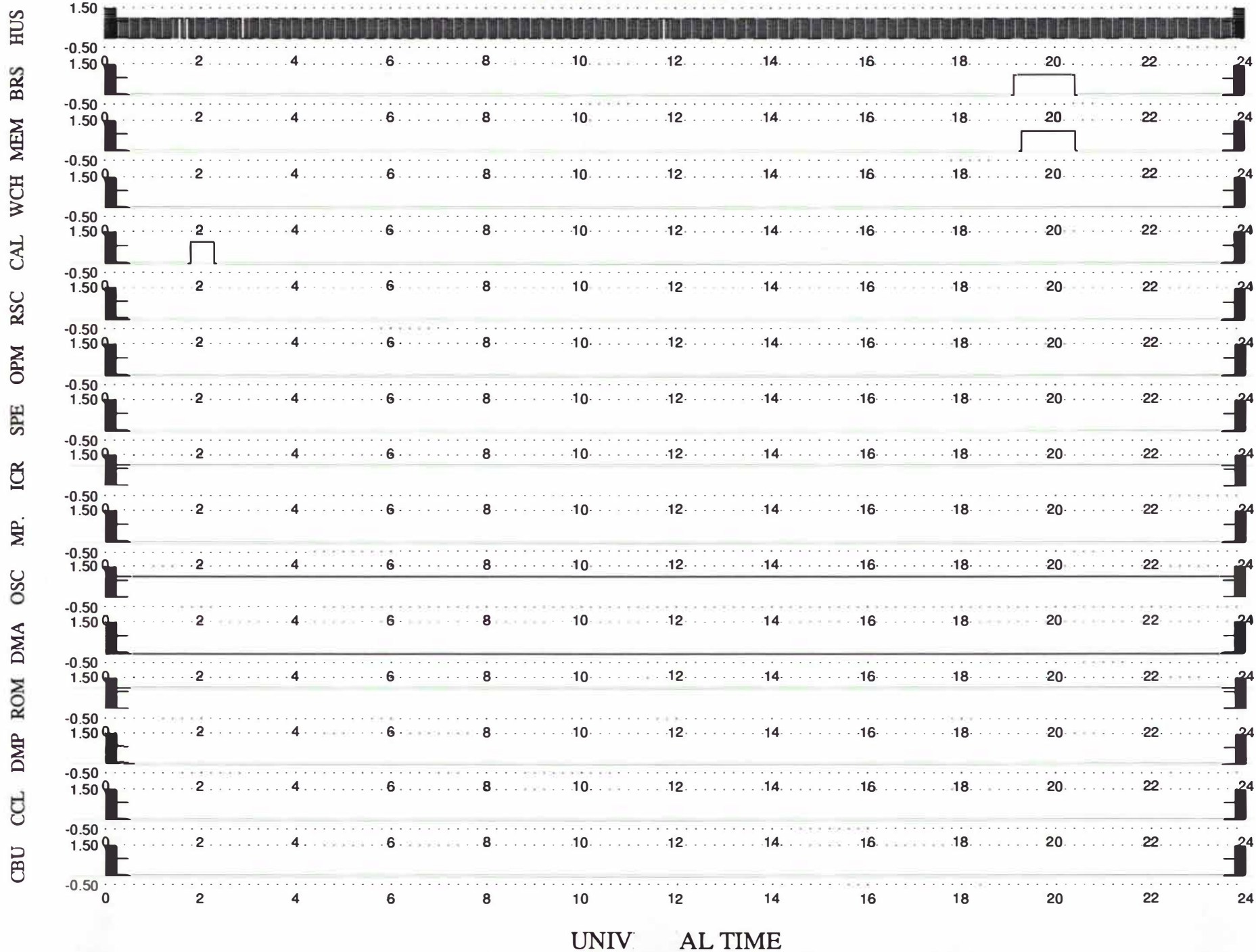
Plot created: 97/11/27, 1007

Channel

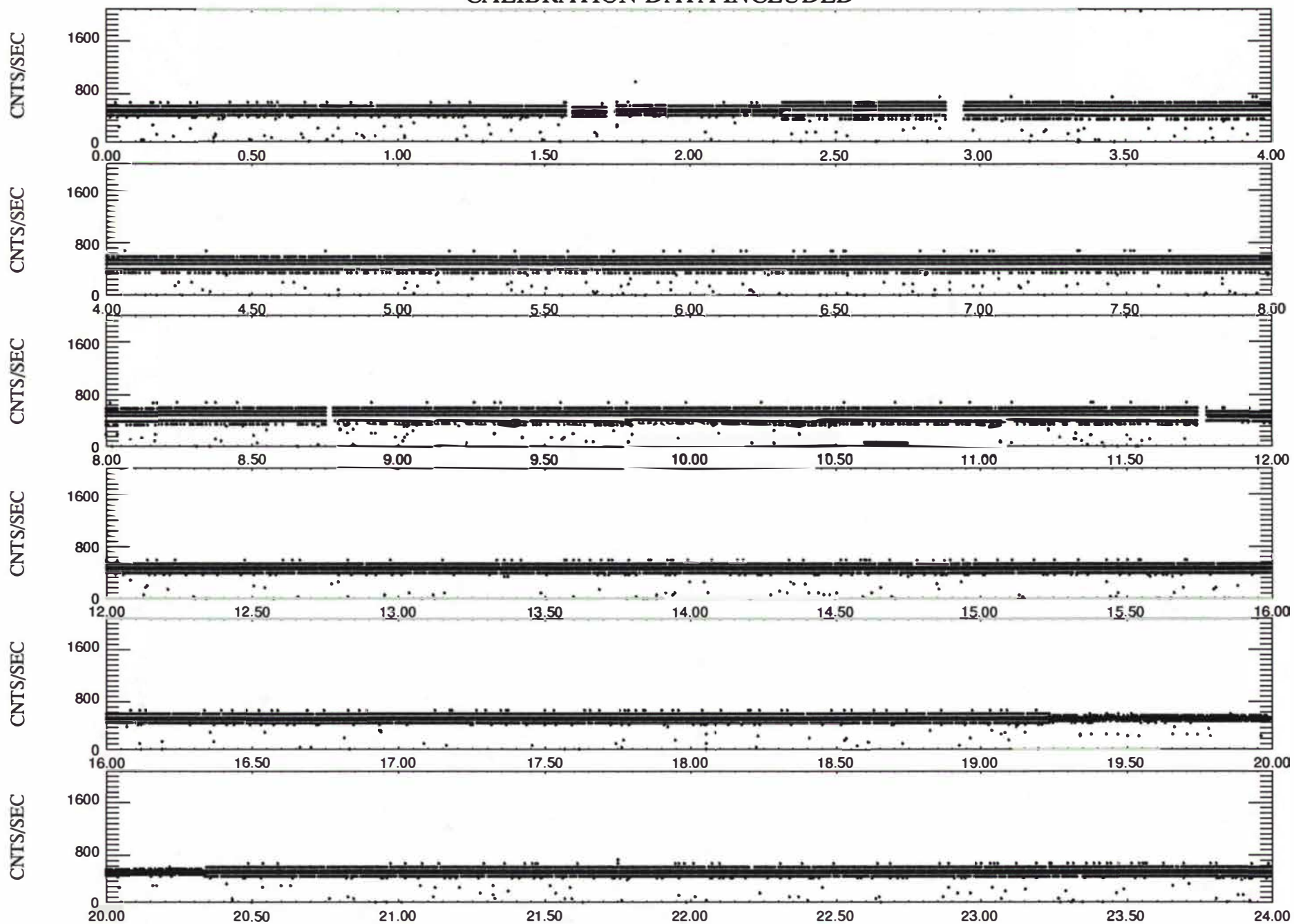
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 14

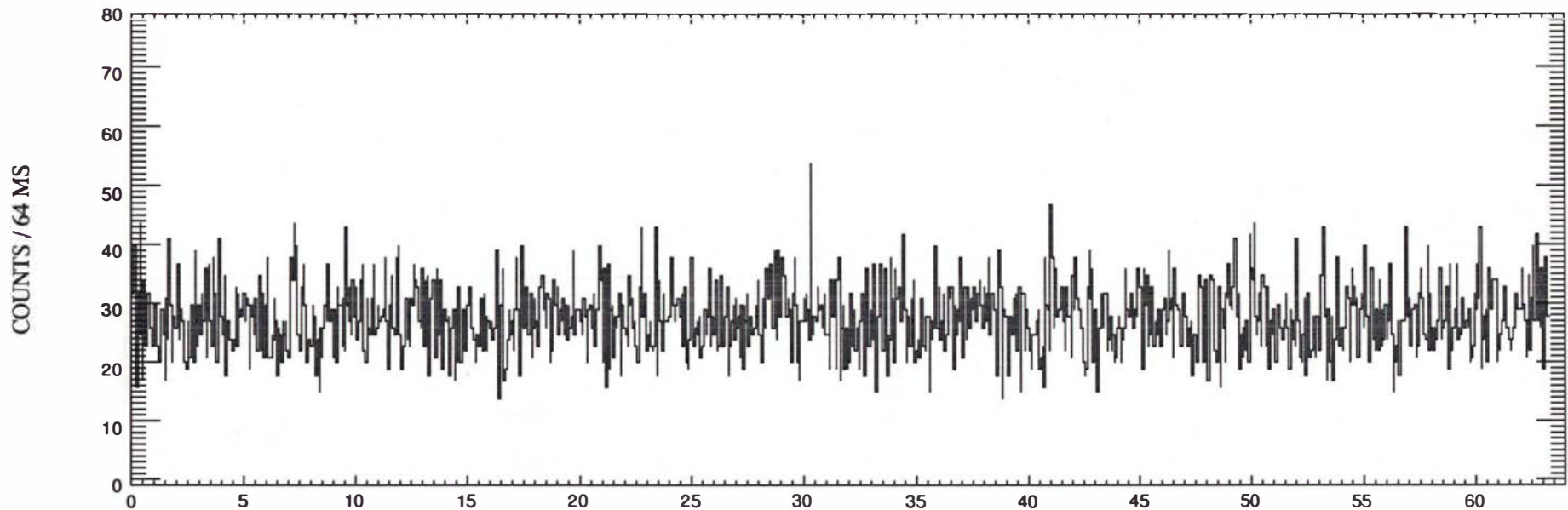


CALIBRATION DATA INCLUDED

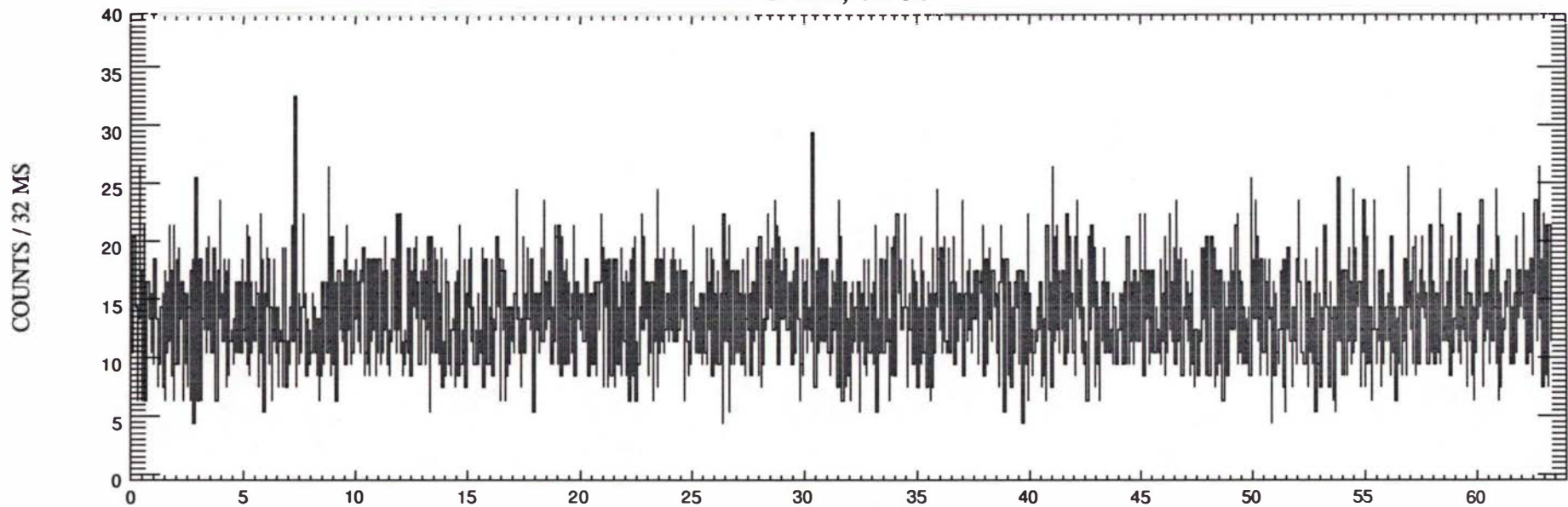


UNIV 'AL TIME

Burst Counter 14 at UT=19.079710583157 h=68686.958 s 19:04:46.958

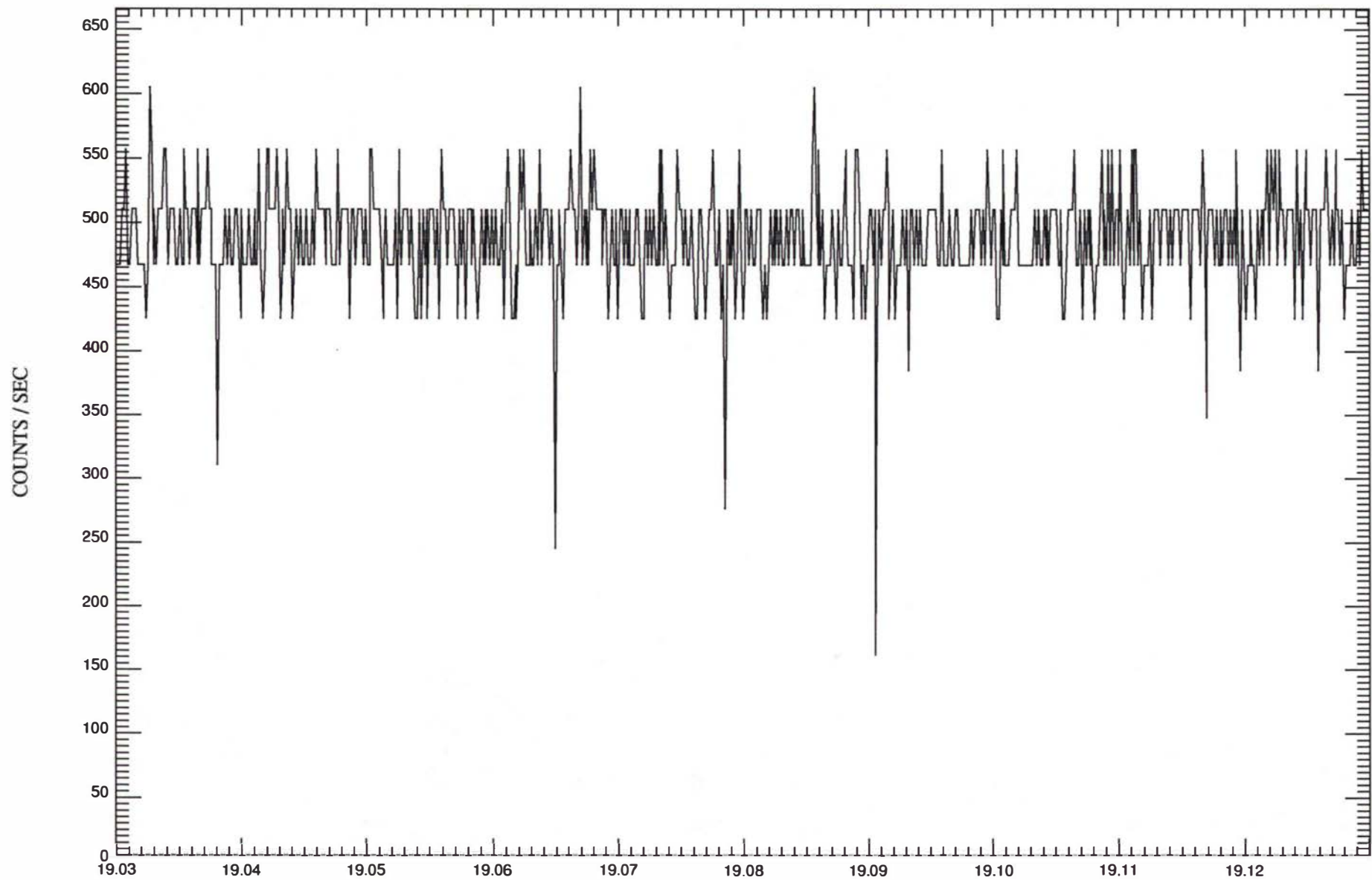


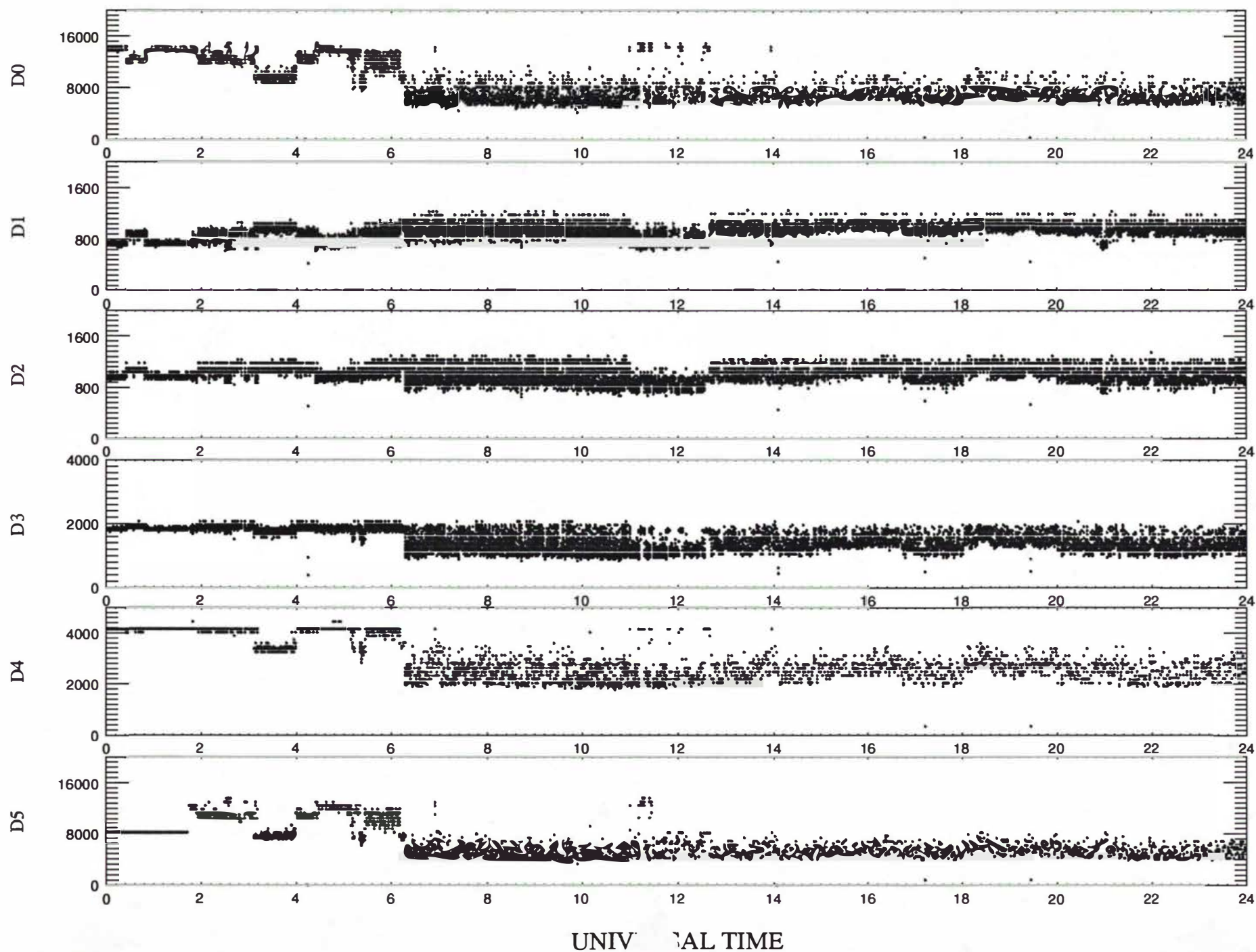
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





From SURASAK@SSLLES.MSFC.NASA.GOV Tue Nov 25 09:25:15 1997
Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA14907; Tue, 25 Nov 1997 09:25:14 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA01859; Tue, 25 Nov 1997 09:25:13 -0800
Date: Tue, 25 Nov 1997 11:25:01 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971125112501.234016d5@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6497
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6497
EVENT OF 1997 NOV 24 DAY OF YEAR=328
EVENT CROSSING TIME AT BATSE : 1414. S. OR 00:23:34.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 255.000 -87.000
BATSE PEAK COUNTING RATE: 1800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/11/ 97 IS:
RA= 170.526 DEC= 12.608 DIST= 5.499 AU
BATSE-ULYSSES DISTANCE = 822628939. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 584.66 SECS.
CROSSING TIME AT ULYSSES IS 1999. S. OR 00:33:18 +/- 524.34 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/11/ 97 IS:
RA= 282.303 DEC= -24.221 DIST= 2.008 AU
MARS-BATSE DISTANCE = 300413600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -453.04 SECS.
CROSSING TIME AT MARS IS 961. S. OR 00:16:00 +/- 148.30 SECONDS

BATSE BURST TRIGGER

NO.: 6497

TIME: TJD=0776 SECONDS=1414

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=54.5 AZIMUTH=69.2 ERROR=9.58 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DURATION ABOUT 6 SECONDS.
NOT VISIBLE ABOVE 300 KEV.

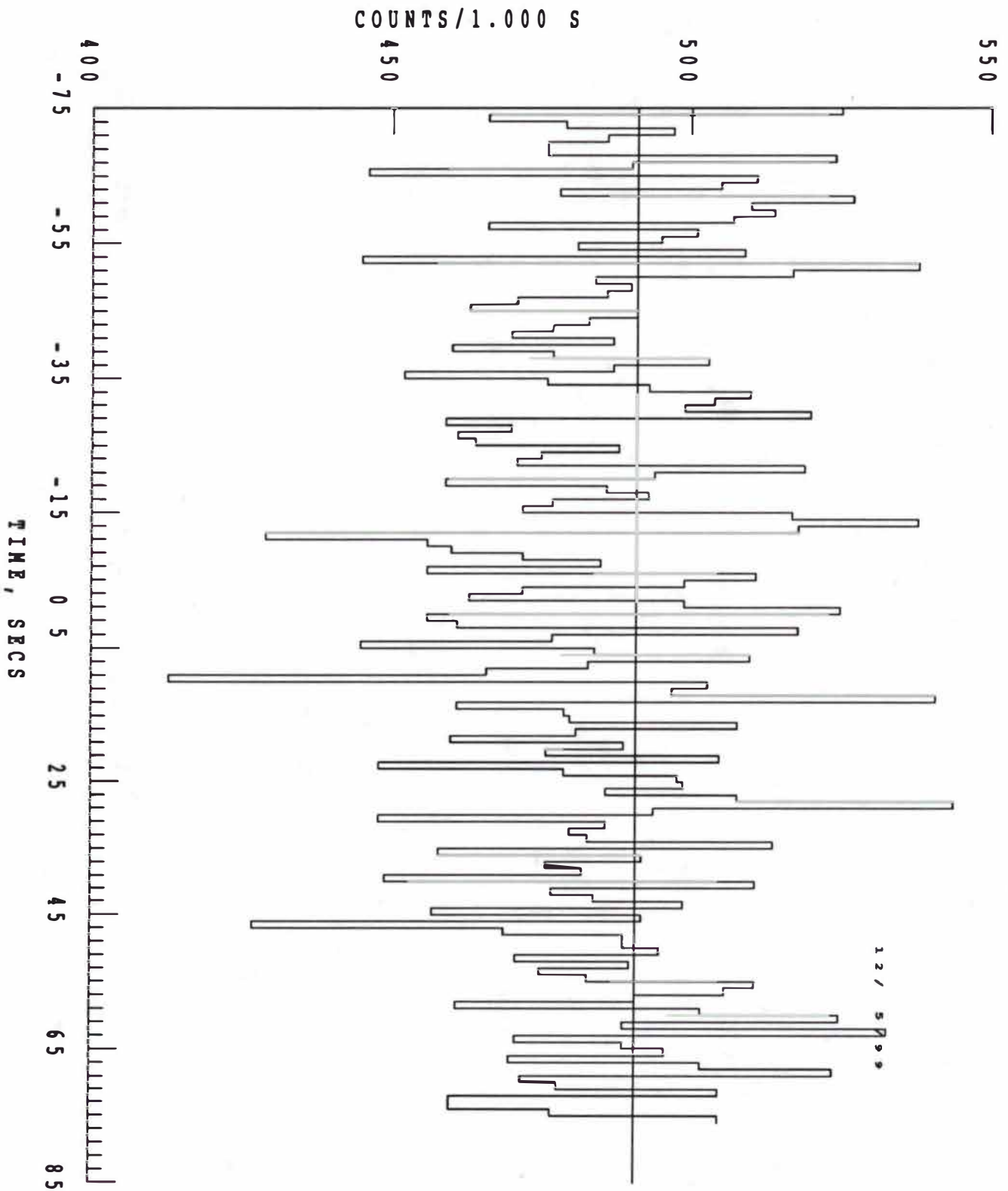
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6497	971124	10776	01414	1800	255	-87	6

NEAR

24/11/97

1478.129

100-1000 keV



BATSE BURST# 6497

ULYSSES RT

25 / 11 / 97

24 / 11 / 97 1476.056 s

0.500 S INTERVALS REGROUPED BY 2

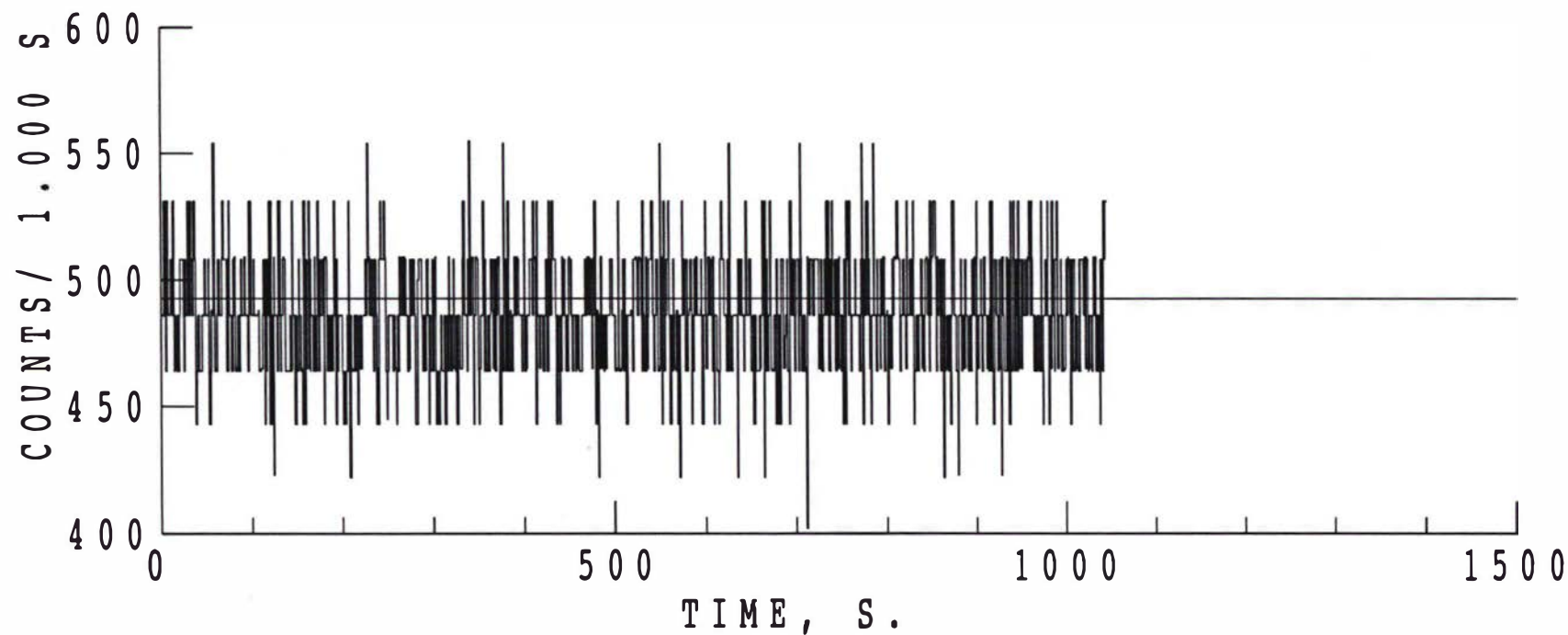
0 - 0 keV

N= 10 M=10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From khurley@sunspot Thu Nov 27 08:43 PST 1997

Date: Thu, 27 Nov 1997 08:45:21 -0800

From: khurley@sunspot (Kevin Hurley)

To: peterson@fender.msfc.nasa.gov, henze@fender.msfc.nasa.gov, khurley@sunspot

Subject: GRB971124A&B

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts:

November 24 1997 01:20 " " ; weak burst, 64 ms long

November 24 1997 18:42 " " ; weak burst, 64 ms long

The spacecraft was about 2750 light-seconds from Earth.

Were these events detected by anyone else?

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, frontera, kouveliotou, kurczynski, marar, teegarden, terrell,

Date: Sep 3 '04

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; when there is no data in the database, the ephemeris is for the time requested.)
- ☐ Was Mars-blocking used?

2. For 3 Spacecraft events

- ☒ $\Sigma 3\Delta t$'s calculated?

3. For INTEGRAL events

- ☐ 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 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

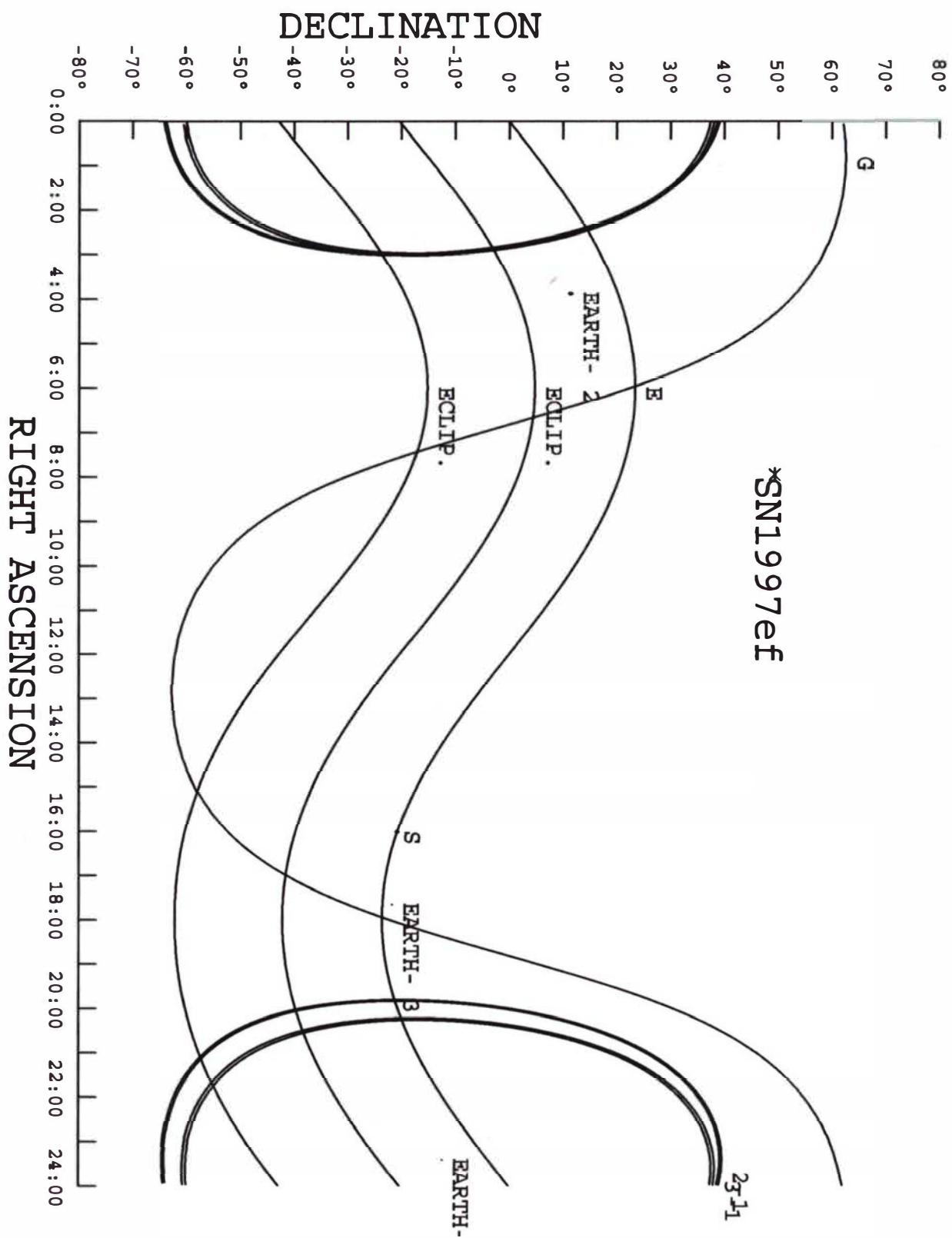
1 ULYSSES

2 KONUS

3 NEAR

EVENT OF NOV 24, 1997 17:33

3 / 9 / 4



KONUS

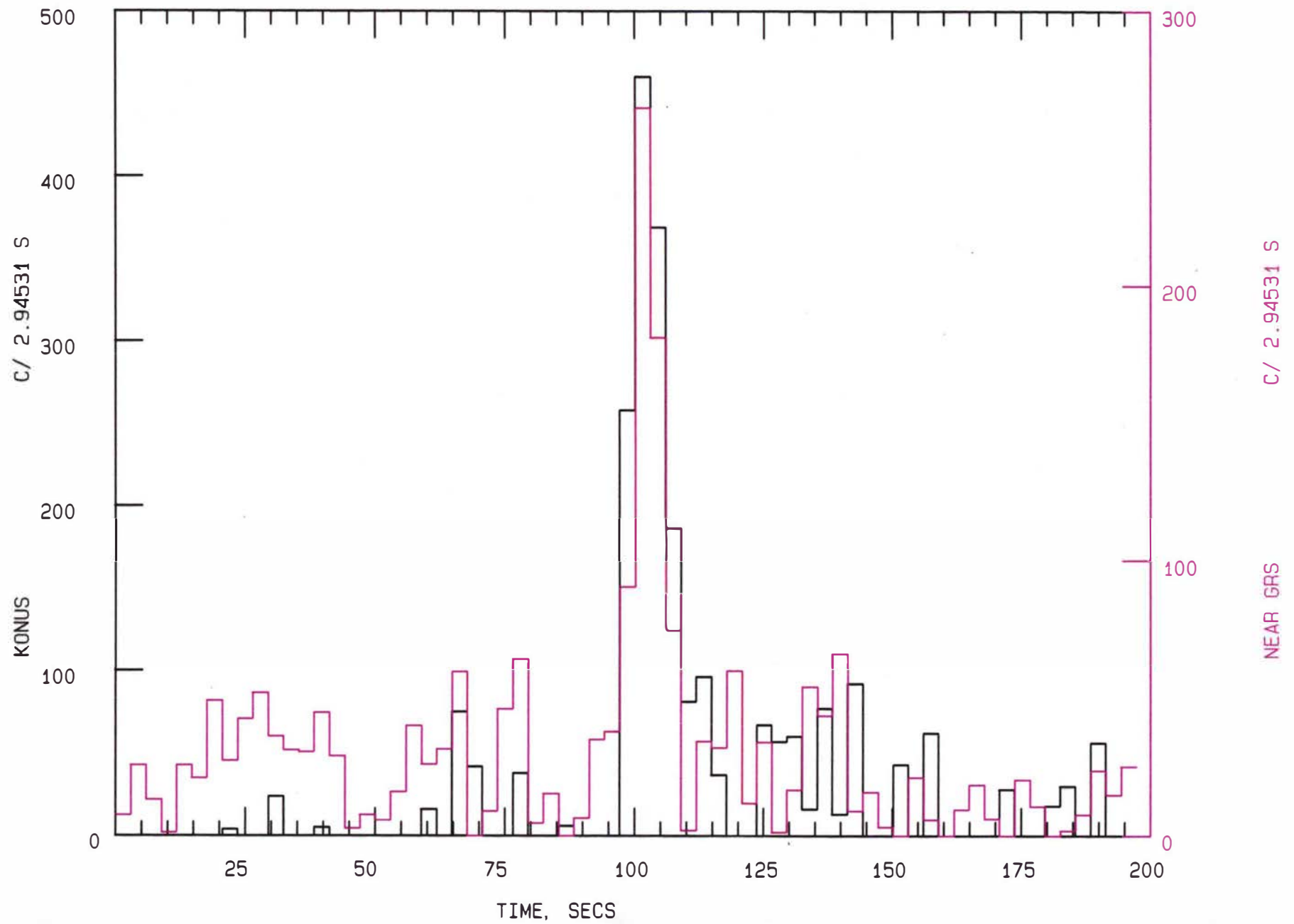
-NEAR GRS

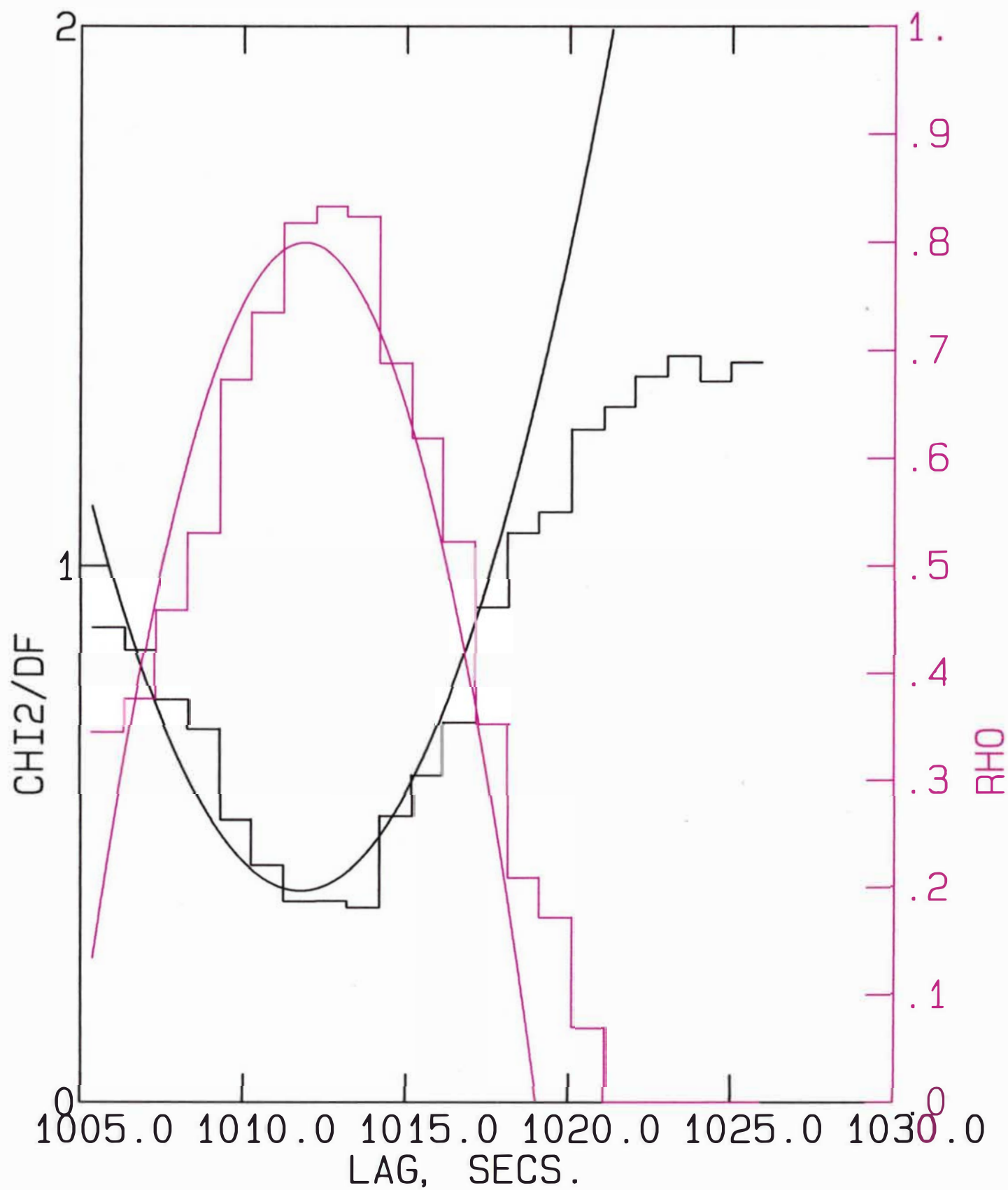
CORRELATION

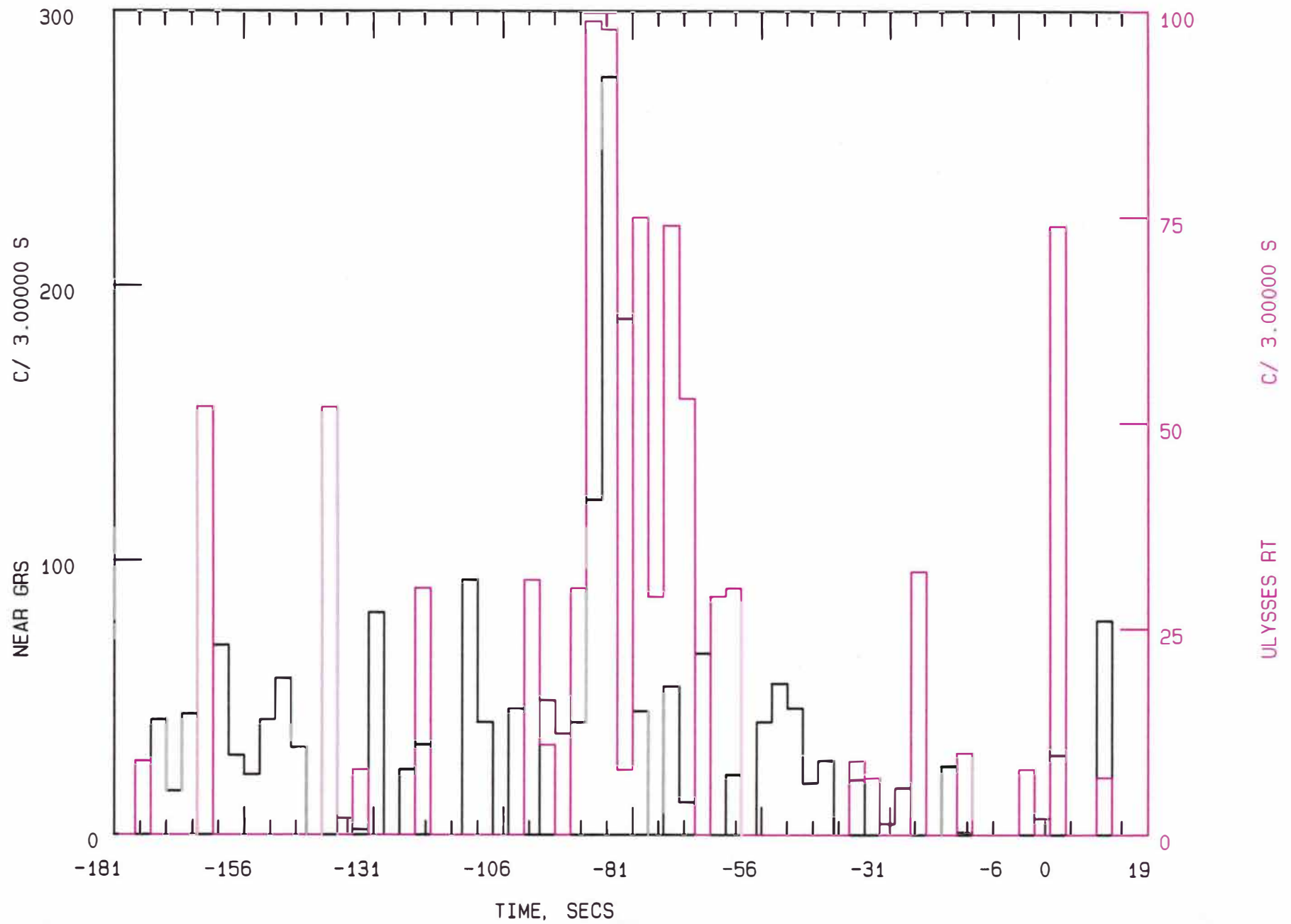
24/11/97

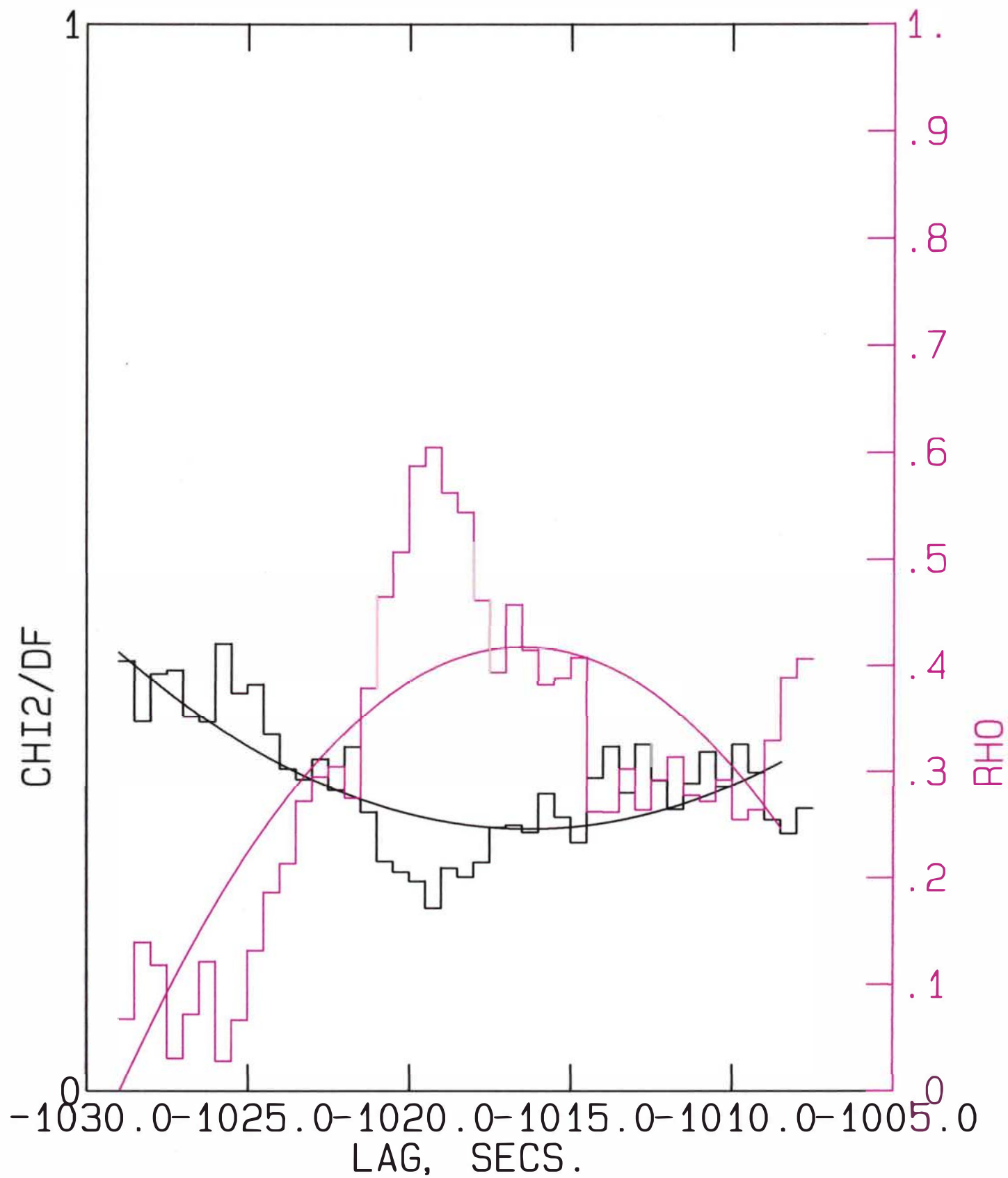
61526.137

3/ 9/ 4









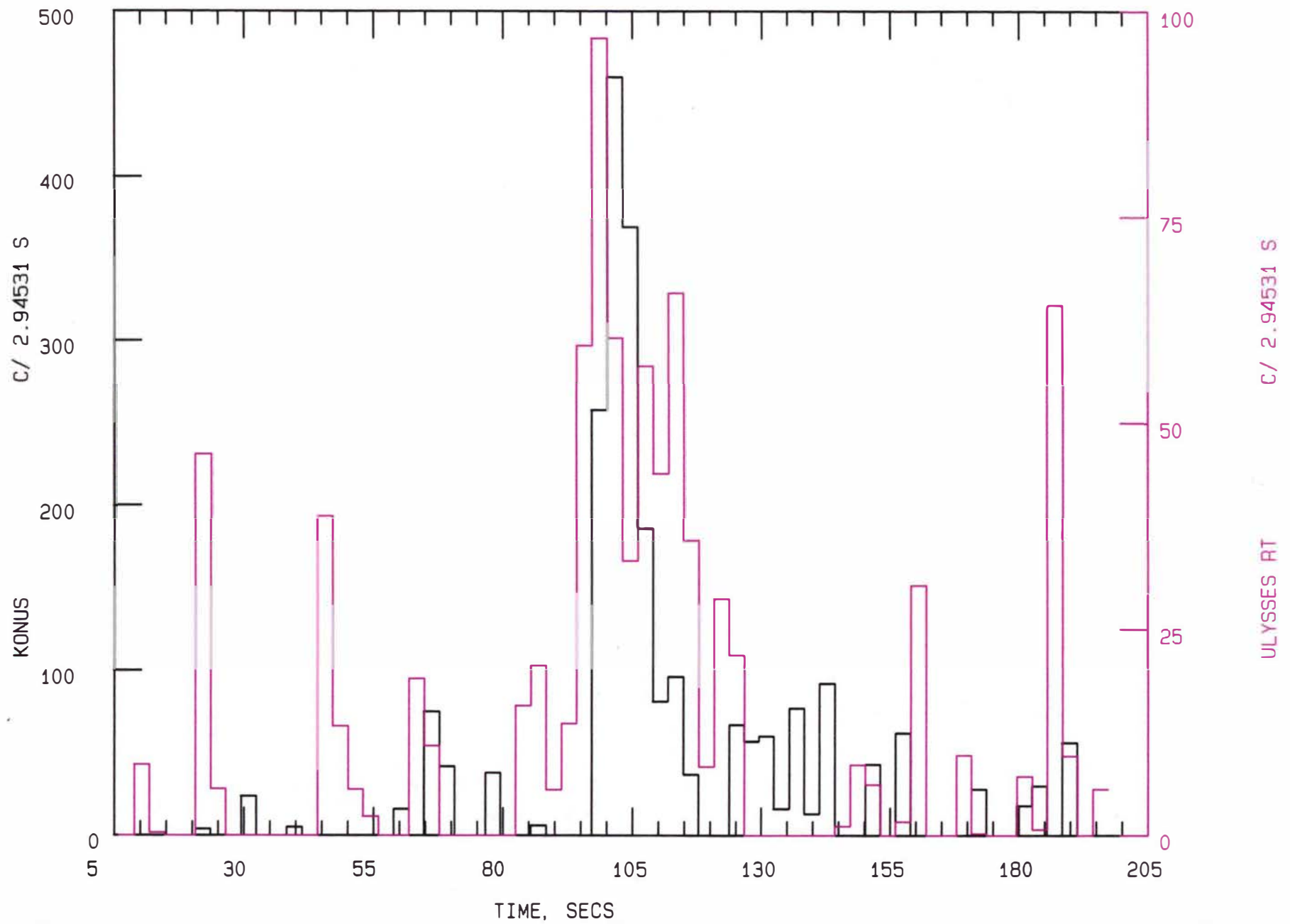
KONUS

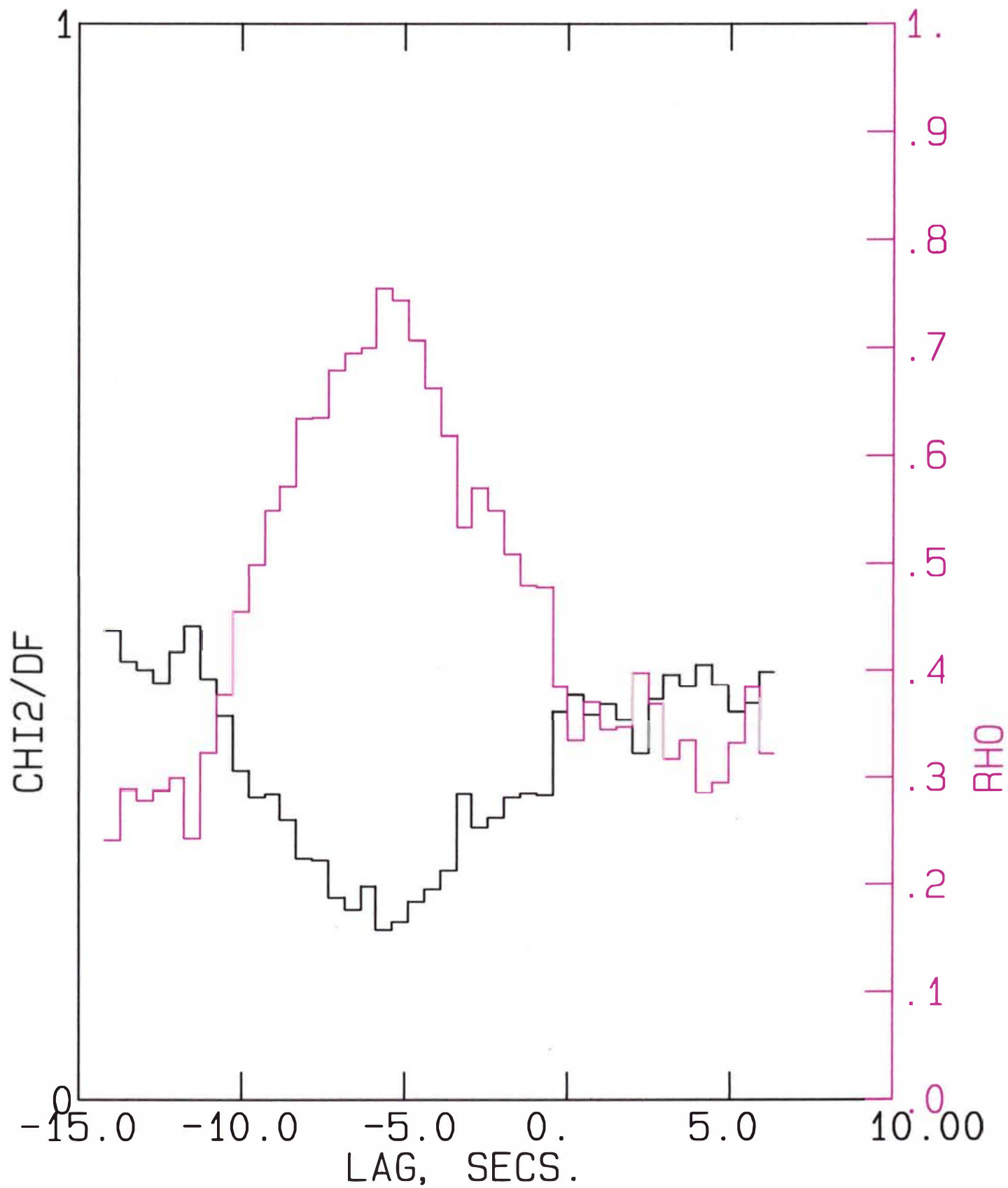
-ULYSSES RT CORRELATION

24/11/97

61526.137

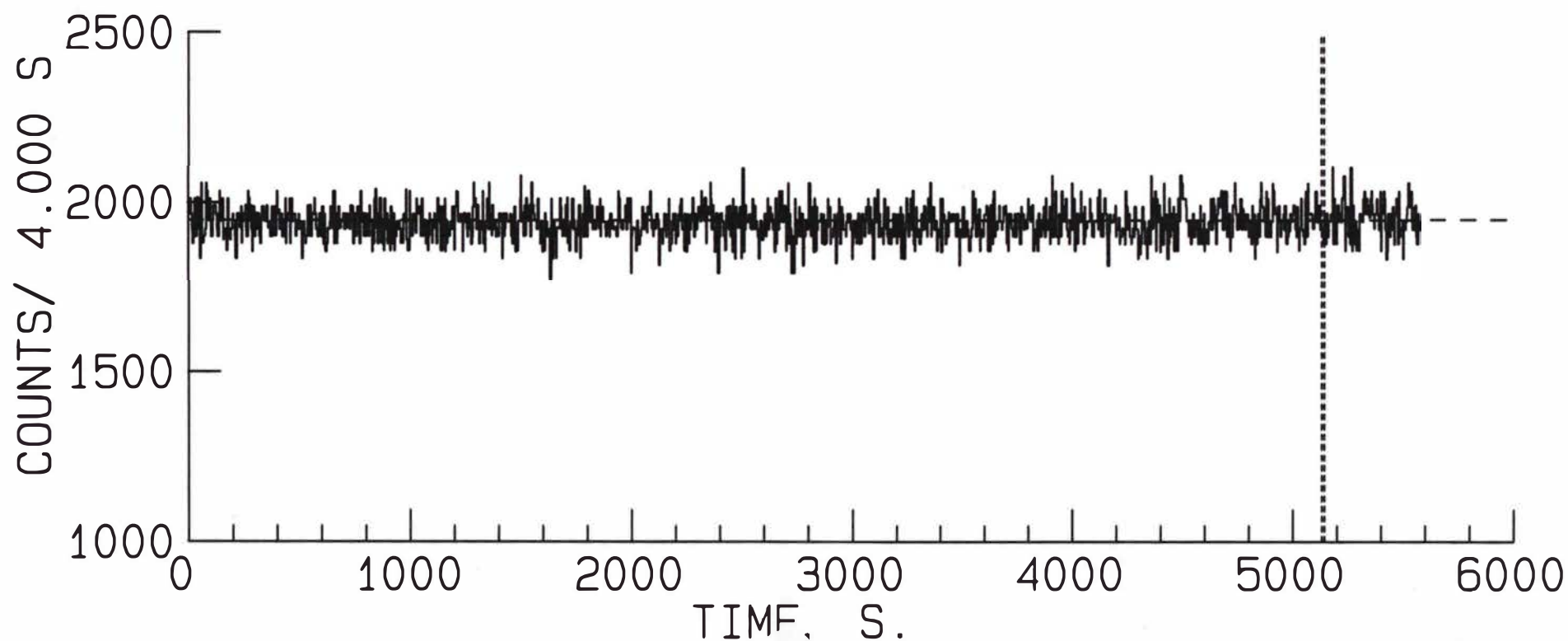
3/ 9/ 4





ULYSSES RT
24/11/97 58824.191 s
0.500 S INTERVALS REGROUPED BY 8
22- 149 keV

3 / 9 / 4



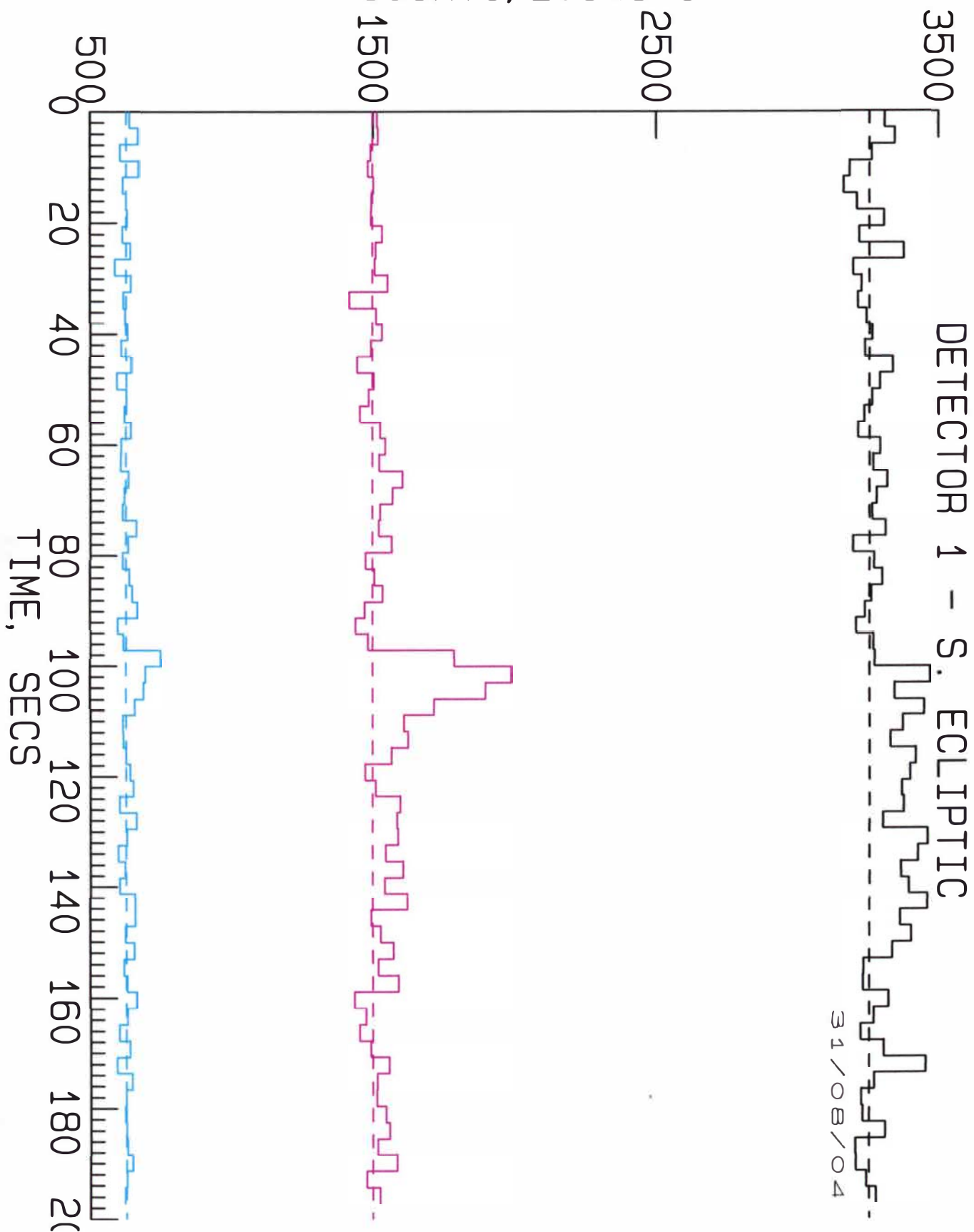
KONUS

24/11/97 61526.137

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/2.945 S



KONUS

24/11/97 61526.137

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4400

DETECTOR 2 - N. ECLIPPTIC

31/08/04

3400

2400

1400

400

20

40

60

80

100

120

140

160

180

200

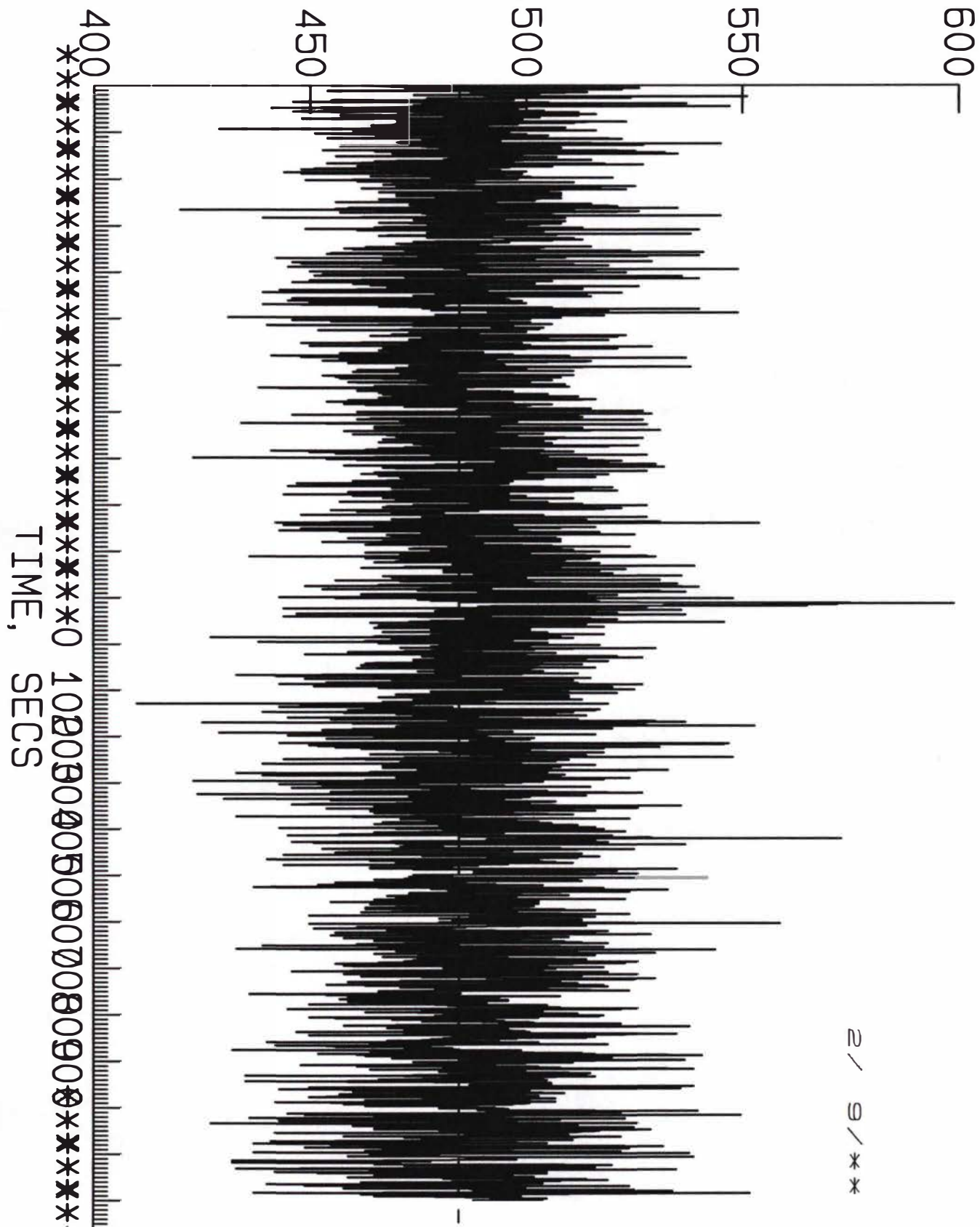
TIME, SECS

NEAR

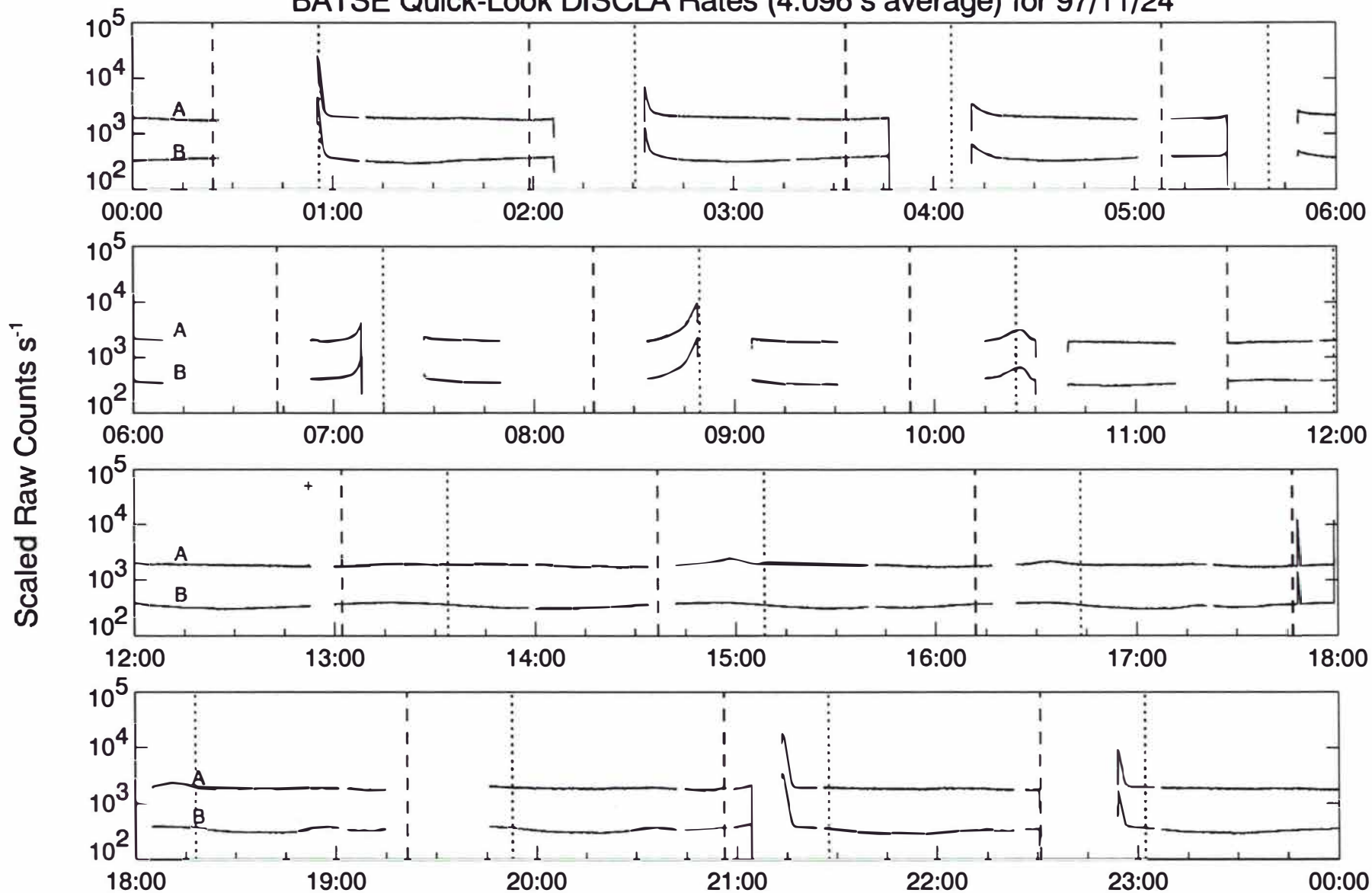
24/11/97 61623.118

100-1000 keV

COUNTS/1.000 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/24



Current Time: 97/11/28, 1008 EDT

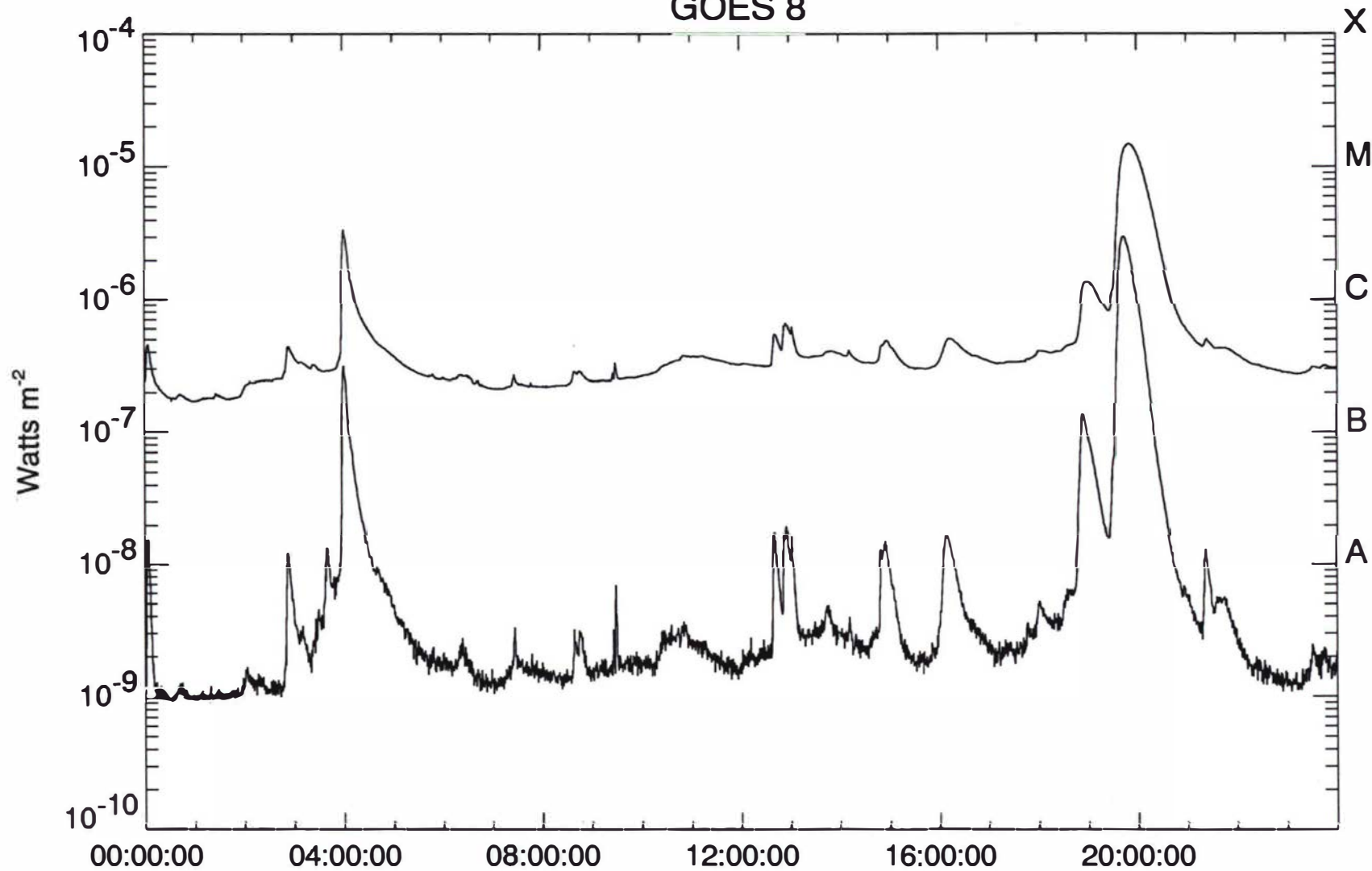
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 97/11/24, 0000:00

Plot created: 97/11/28, 1007

Channel

1 (1.0 - 8.0 Angstroms)

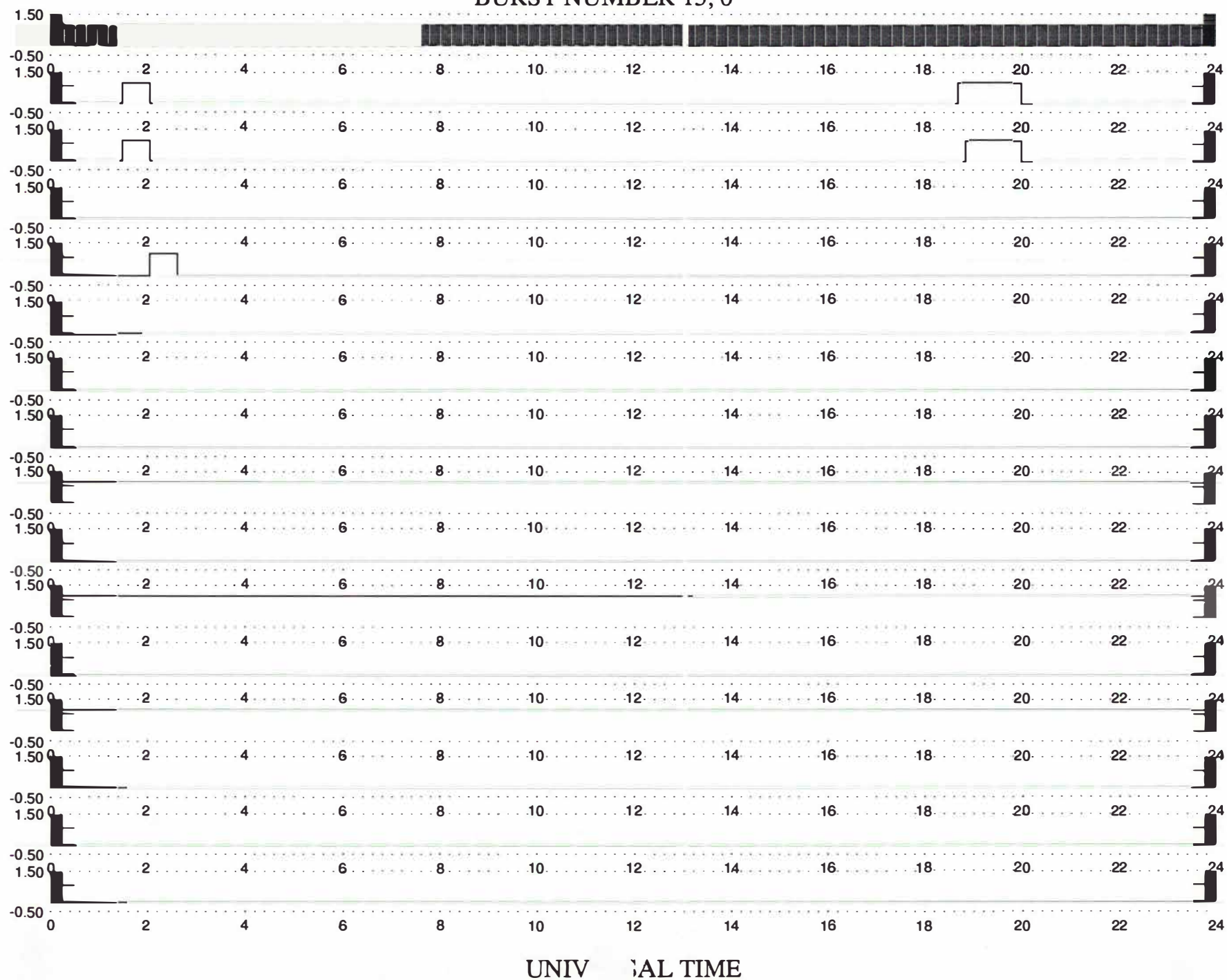
Background not subtracted

2 (0.5 - 4.0 Angstroms)

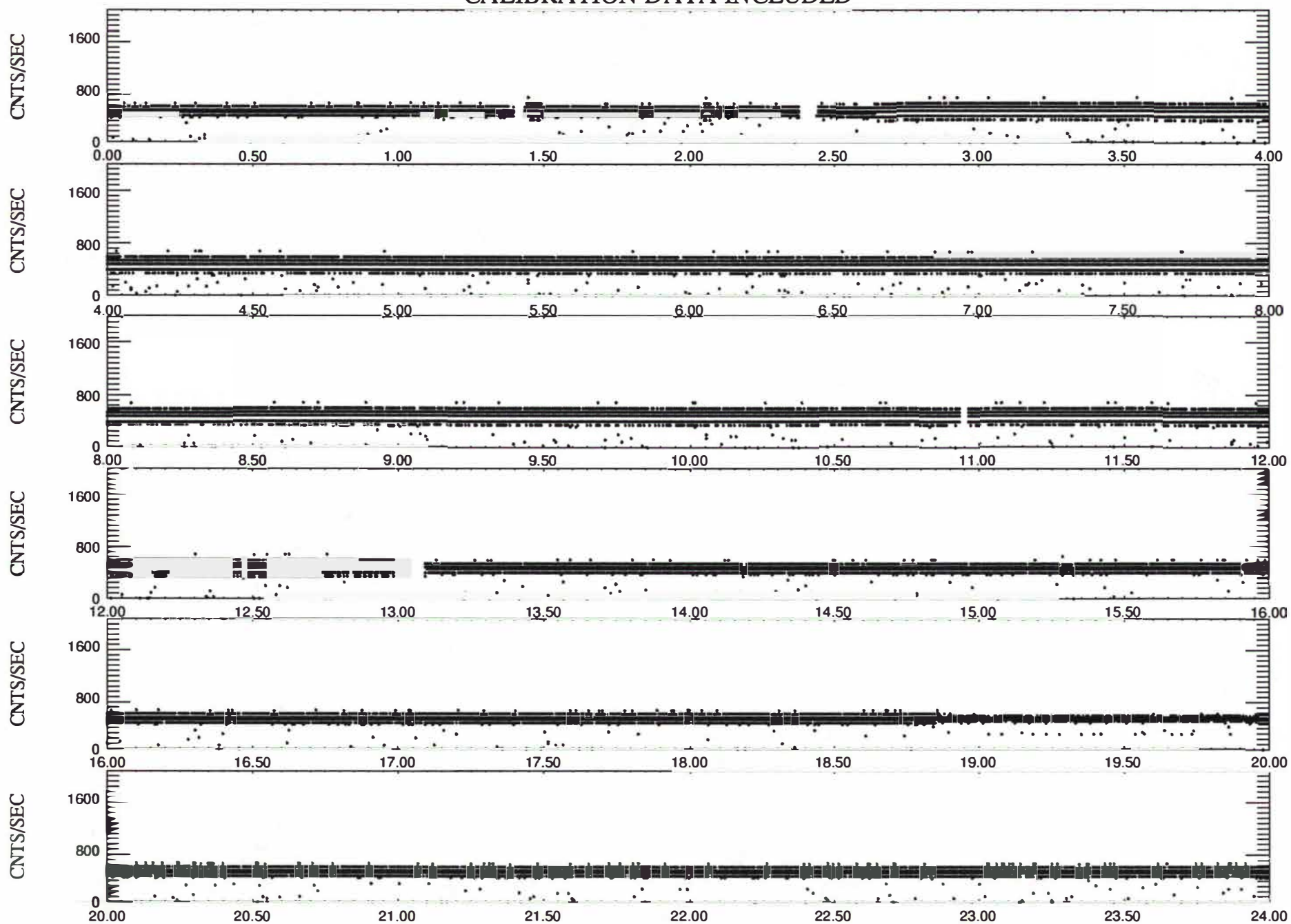
Background not subtracted

Sample average = 10

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

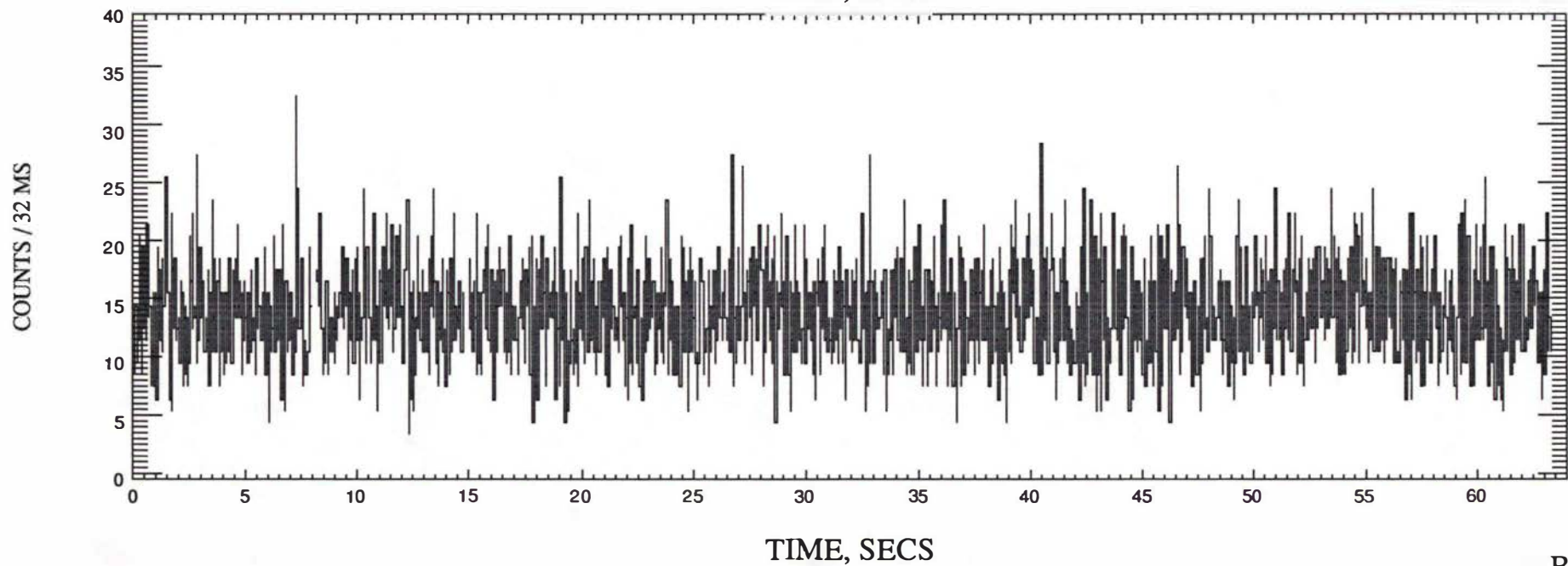
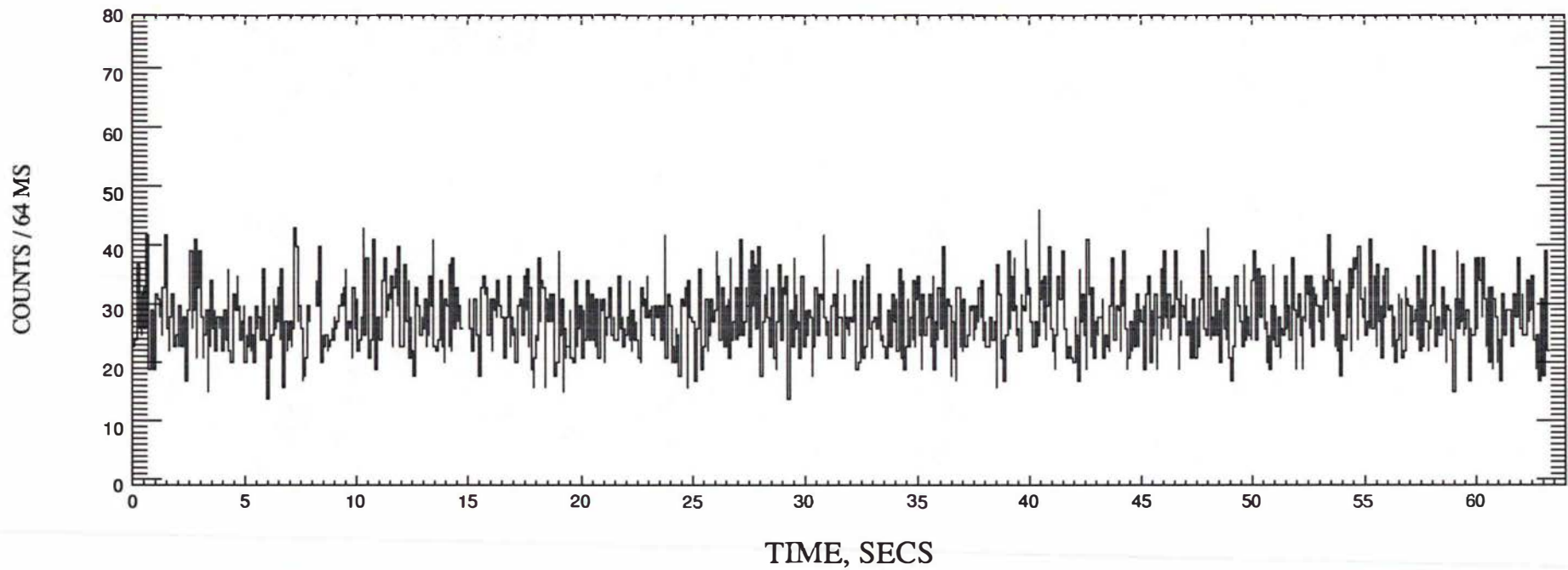


CALIBRATION DATA INCLUDED

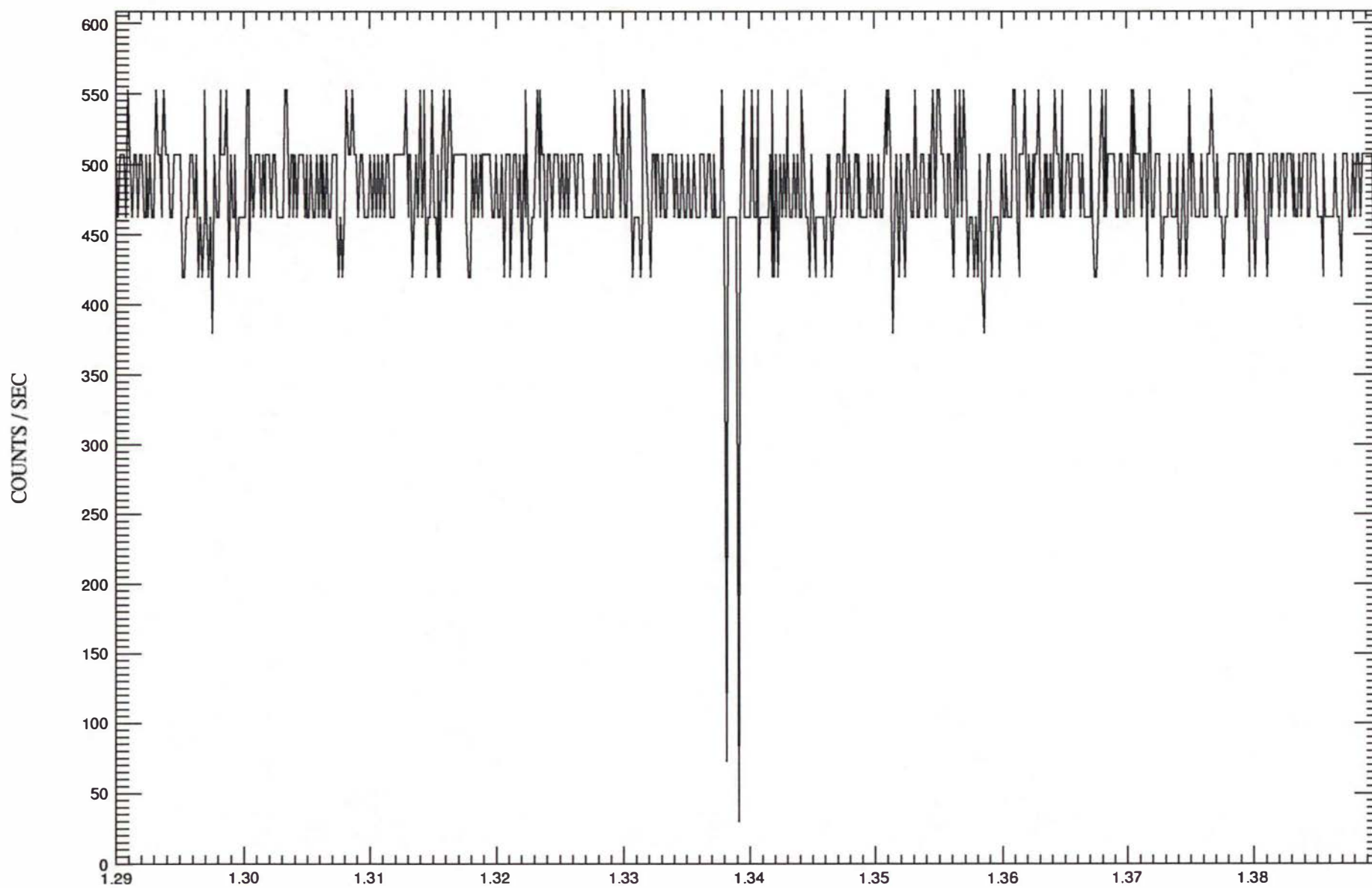


UNIVERSAL TIME

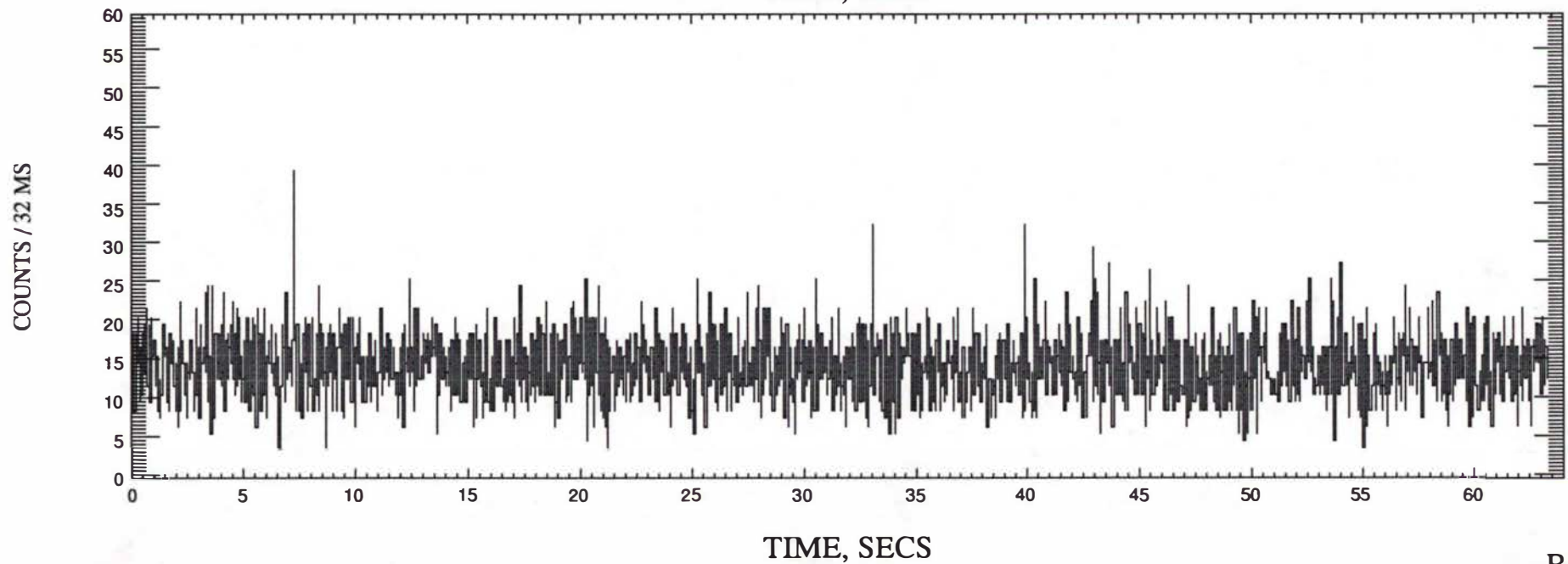
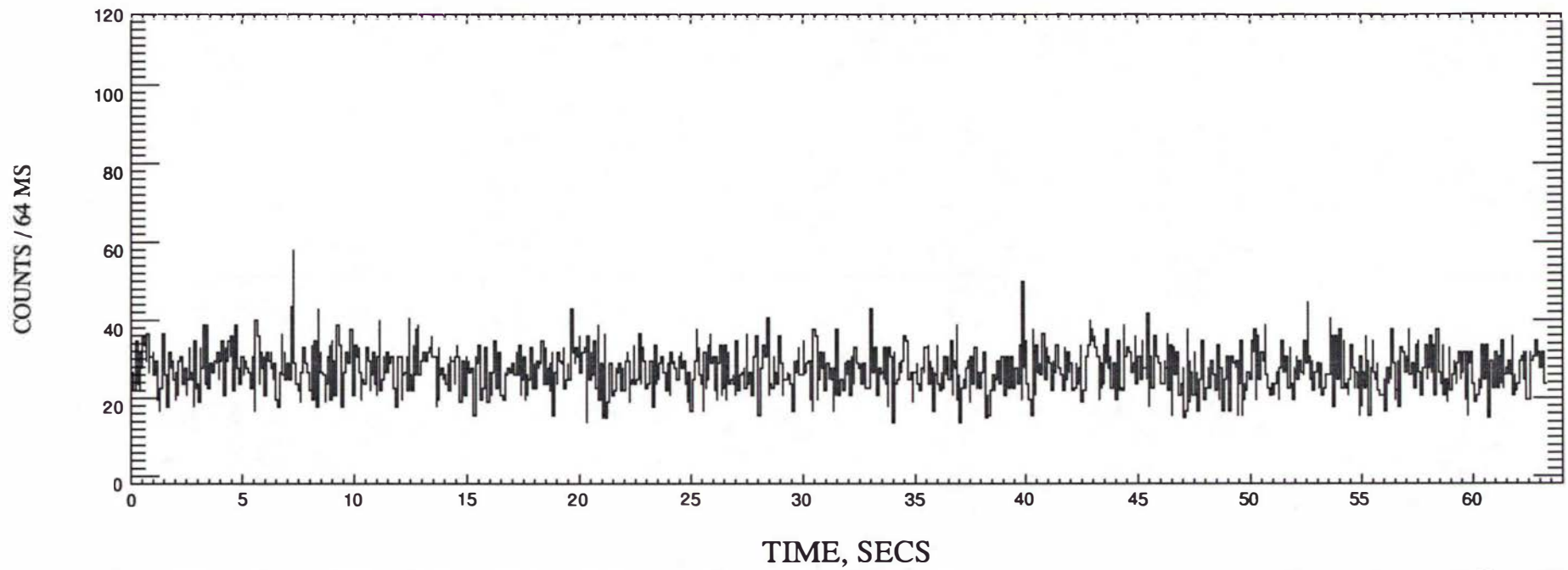
Burst Counter 15 at UT= 1.342036989000 h= 4831.333 s 01:20:31.333



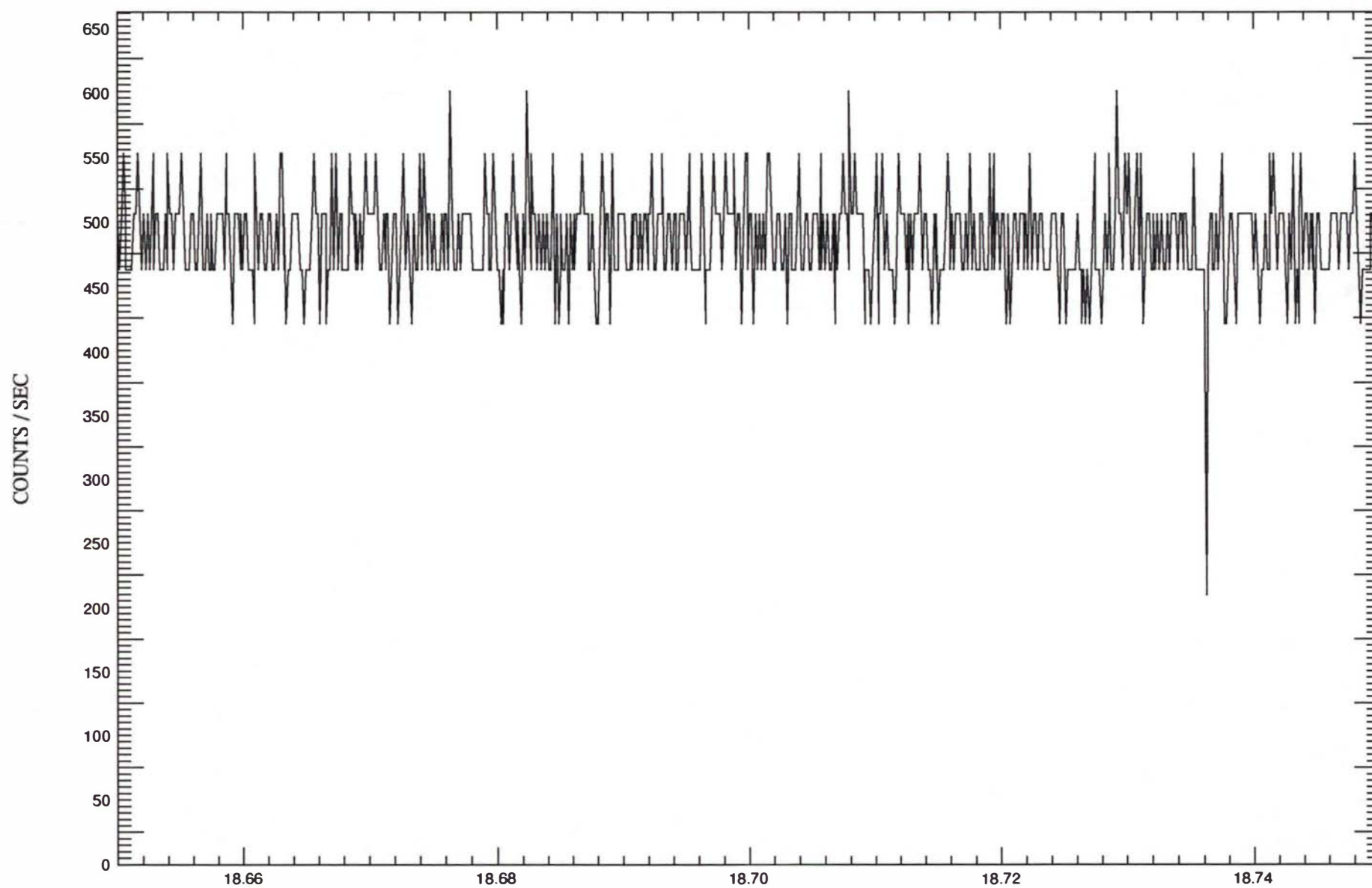
CALIBRATION DATA INCLUDED

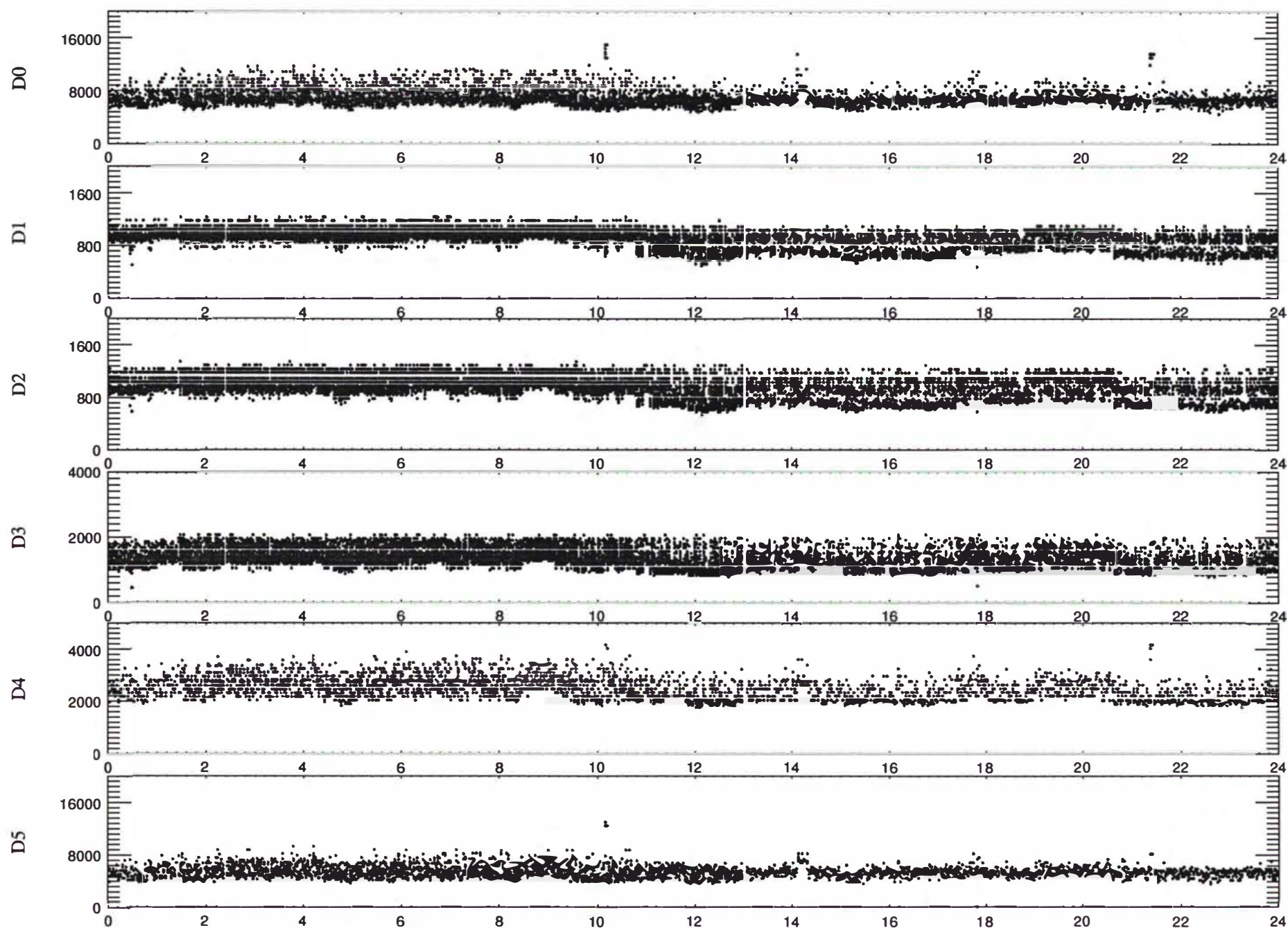


Burst Counter 0 at UT=18.698302226596 h=67313.888 s 18:41:53.888



CALIBRATION DATA INCLUDED





UNIV'AL TIME

From SURASAK@SSLLES.MSFC.NASA.GOV Wed Nov 26 12:44:32 1997
Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA03202; Wed, 26 Nov 1997 12:44:27 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA10921; Wed, 26 Nov 1997 12:44:26 -0800
Date: Wed, 26 Nov 1997 14:44:21 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971126144421.23401afe@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6498
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6498
EVENT OF 1997 NOV 25 DAY OF YEAR=329
EVENT CROSSING TIME AT BATSE : 26509. S. OR 07:21:49.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 223.000 -13.000
BATSE PEAK COUNTING RATE: 2620 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/11/ 97 IS:
RA= 170.570 DEC= 12.555 DIST= 5.478 AU
BATSE-ULYSSES DISTANCE = 819580659. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1451.66 SECS.
CROSSING TIME AT ULYSSES IS 25057. S. OR 06:57:37 +/- 430.15 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/11/ 97 IS:
RA= 283.140 DEC= -24.154 DIST= 2.012 AU
MARS-BATSE DISTANCE = 300946080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -536.76 SECS.
CROSSING TIME AT MARS IS 25972. S. OR 07:12:52 +/- 139.13 SECONDS

BATSE BURST TRIGGER

NO.: 6498

TIME: TJD=0777 SECONDS=26509

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=96.9 AZIMUTH=4.2 ERROR=1.679 DEGREES

COMMENTS:

GRB. COMPLEX. DURATION ABOUT 110S. NOT VISIBLE ABOVE 300 KEV.
PEAK AT ABOUT T+80S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6498	971125	10777	26509	2620	223	-13	110

BATSE BURST# 6498

ULYSSES RT

26 / 11 / 97

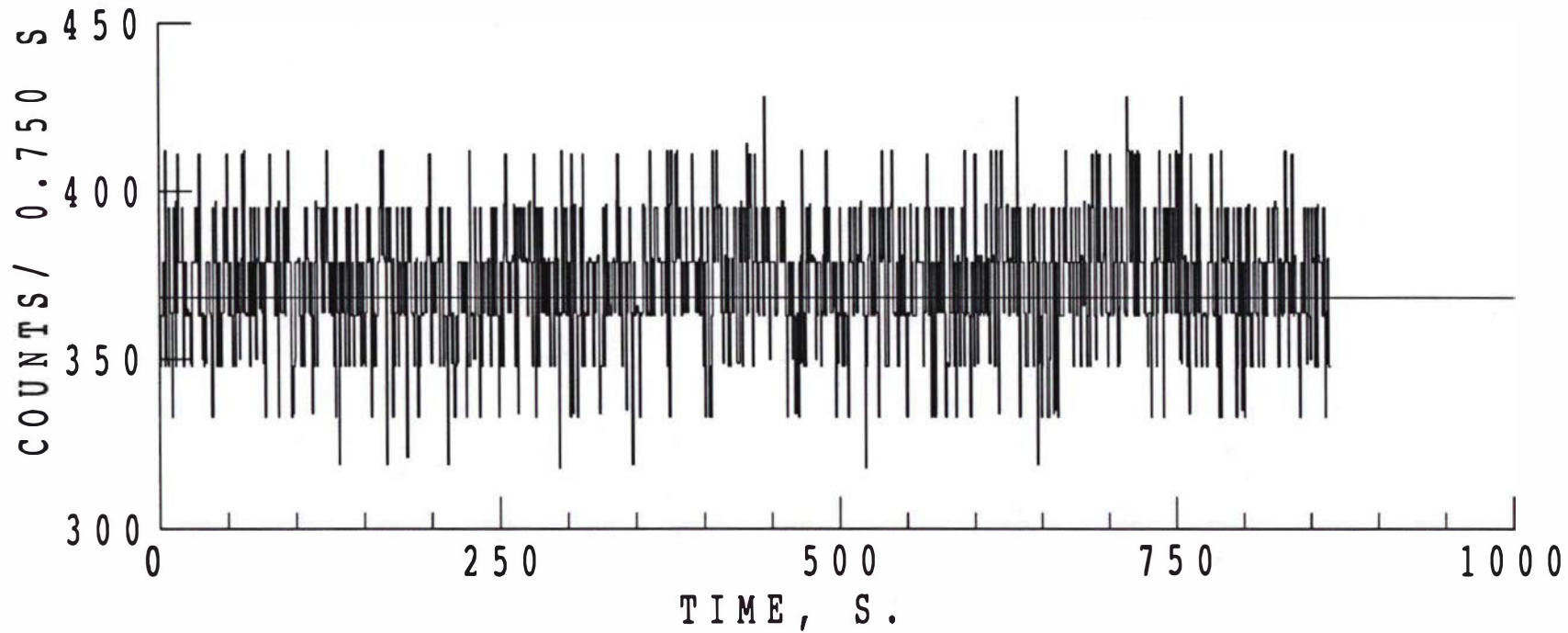
25 / 11 / 97 24624.020 s

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



BATSE

25/11/97

26509.025

100-1000 keV

COUNTS/0.064 S

500

400

300

200

18

34

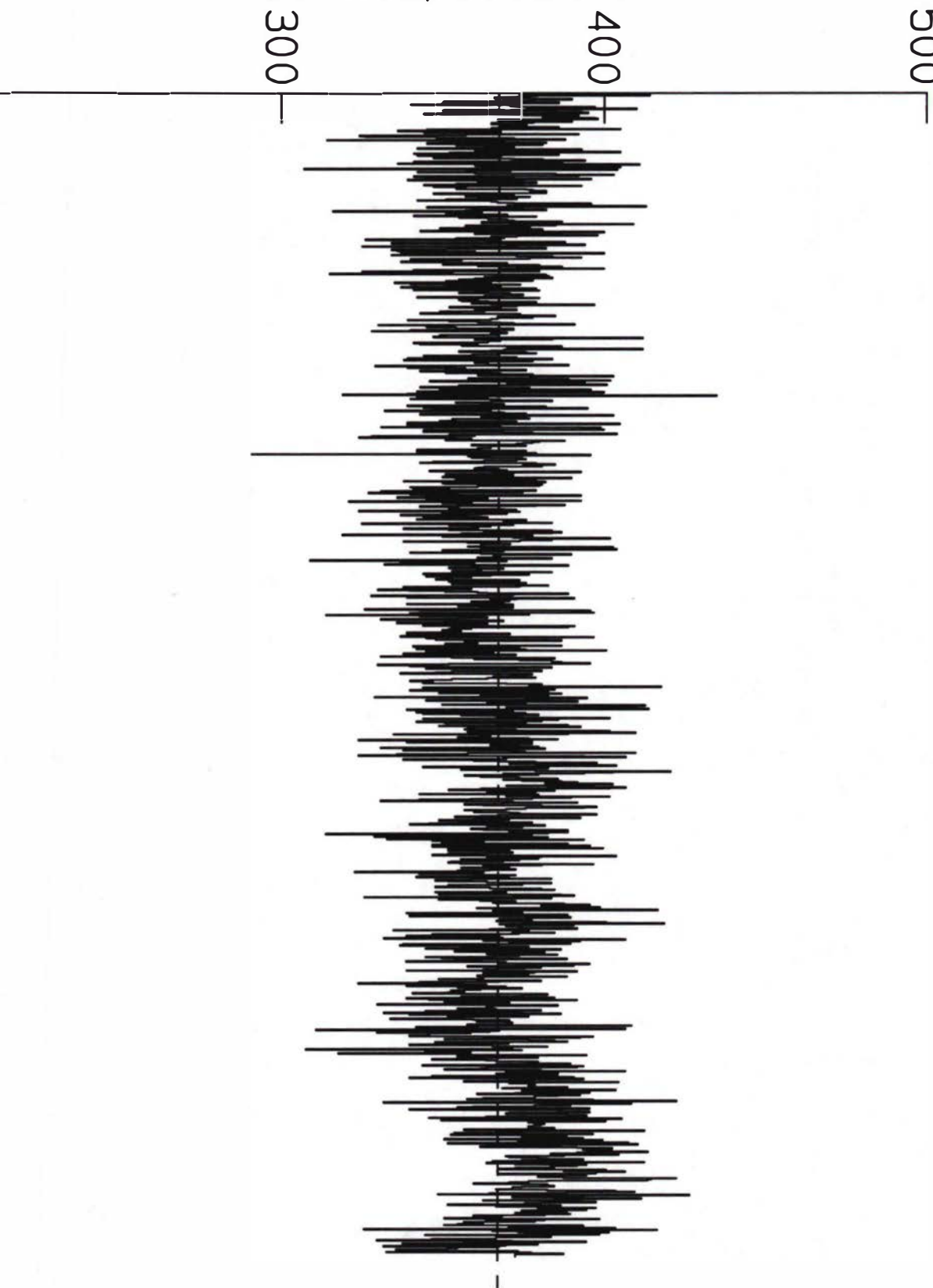
ME. SECS

50

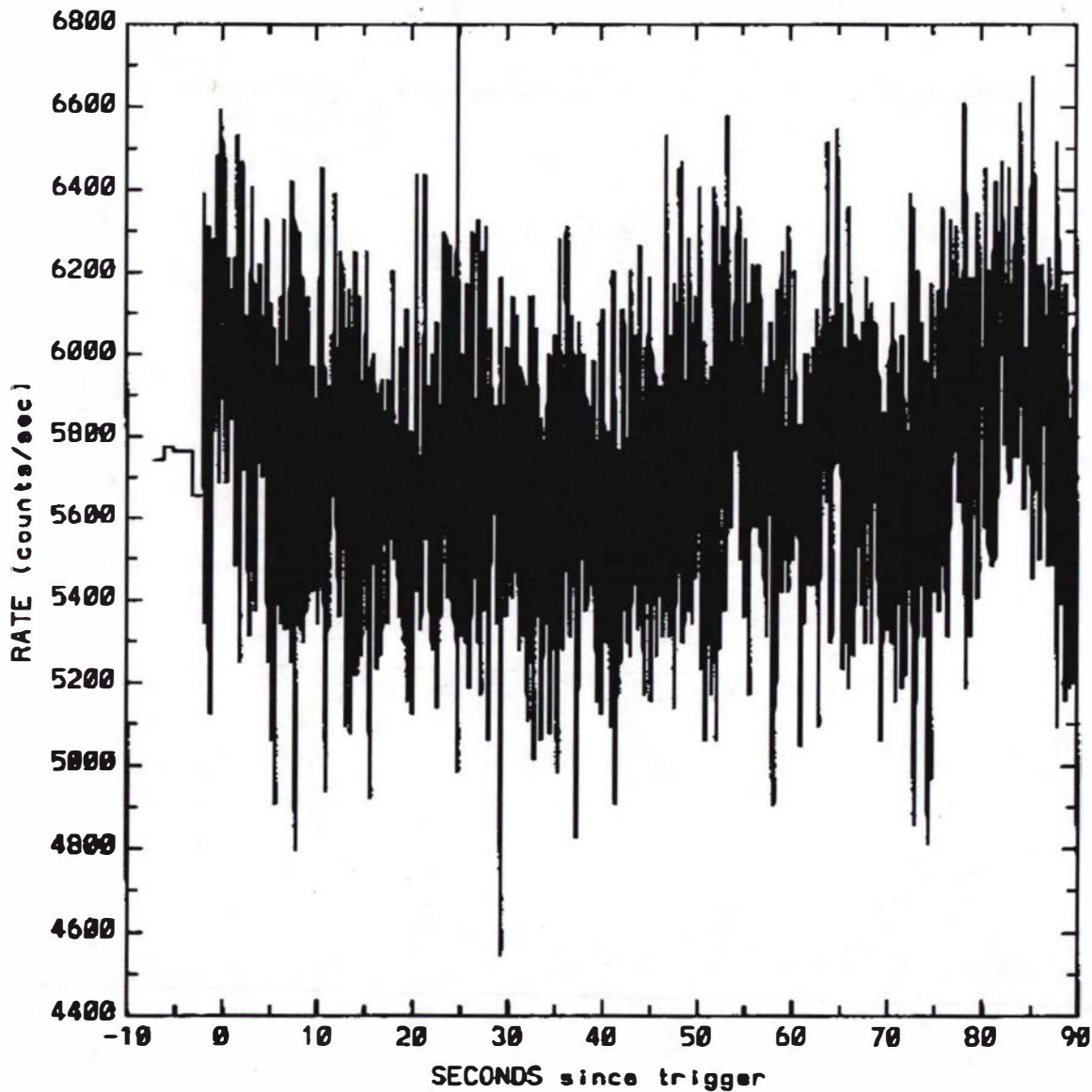
66

82

28 / 1 / 0



DISCSC Data for K. Hurley, No. 6498



21-JAN-2000 15:07:42

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # . 6498

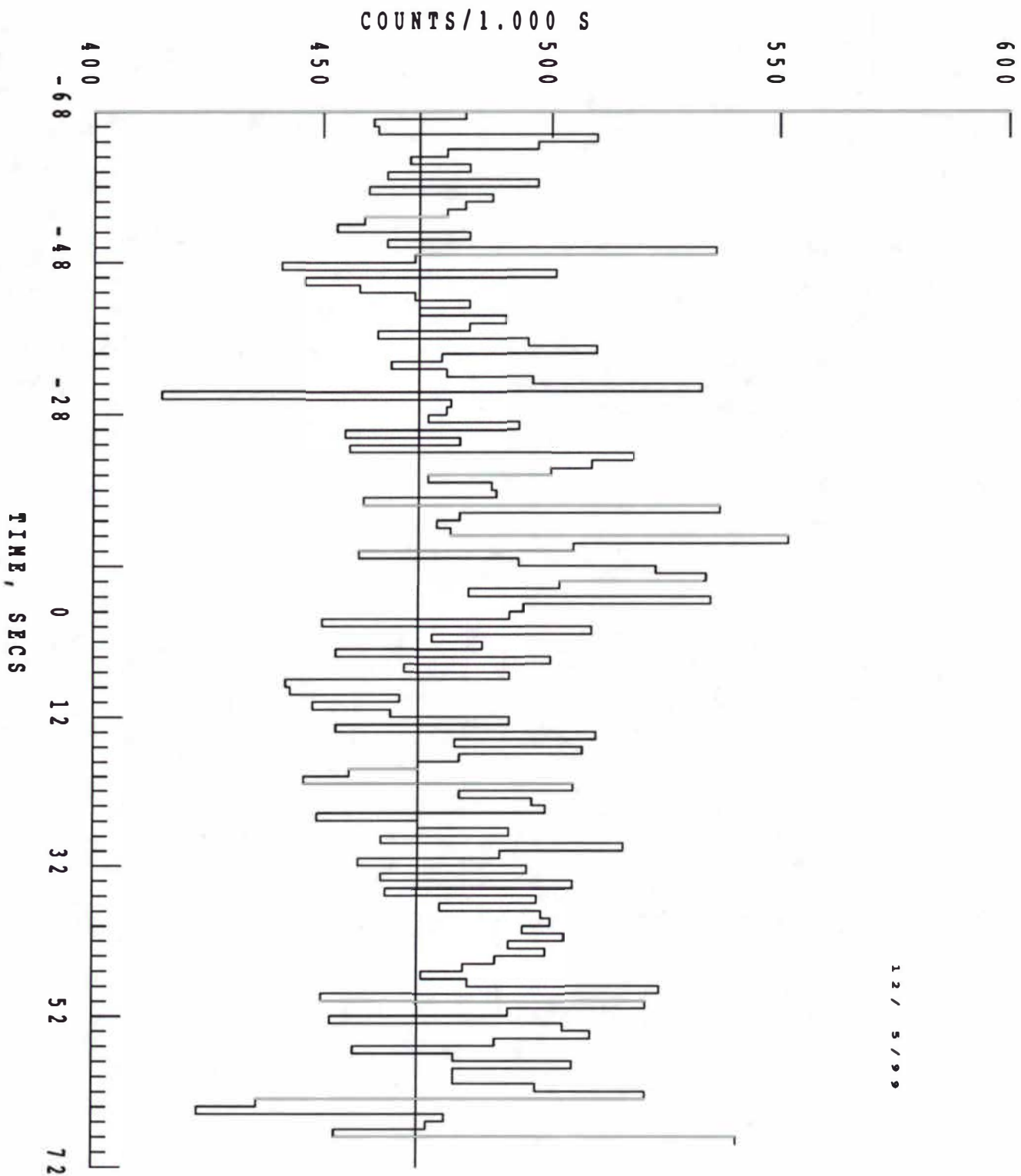
Trigger Time:
10777 / 26509.025Burst Data Type:
DISCSCDeadtime
Corrected. NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8],
----3-1-Discriminators:
(3 . 4)Quality Mask:
B0ISP1

NEAR

25/11/97

26622.108

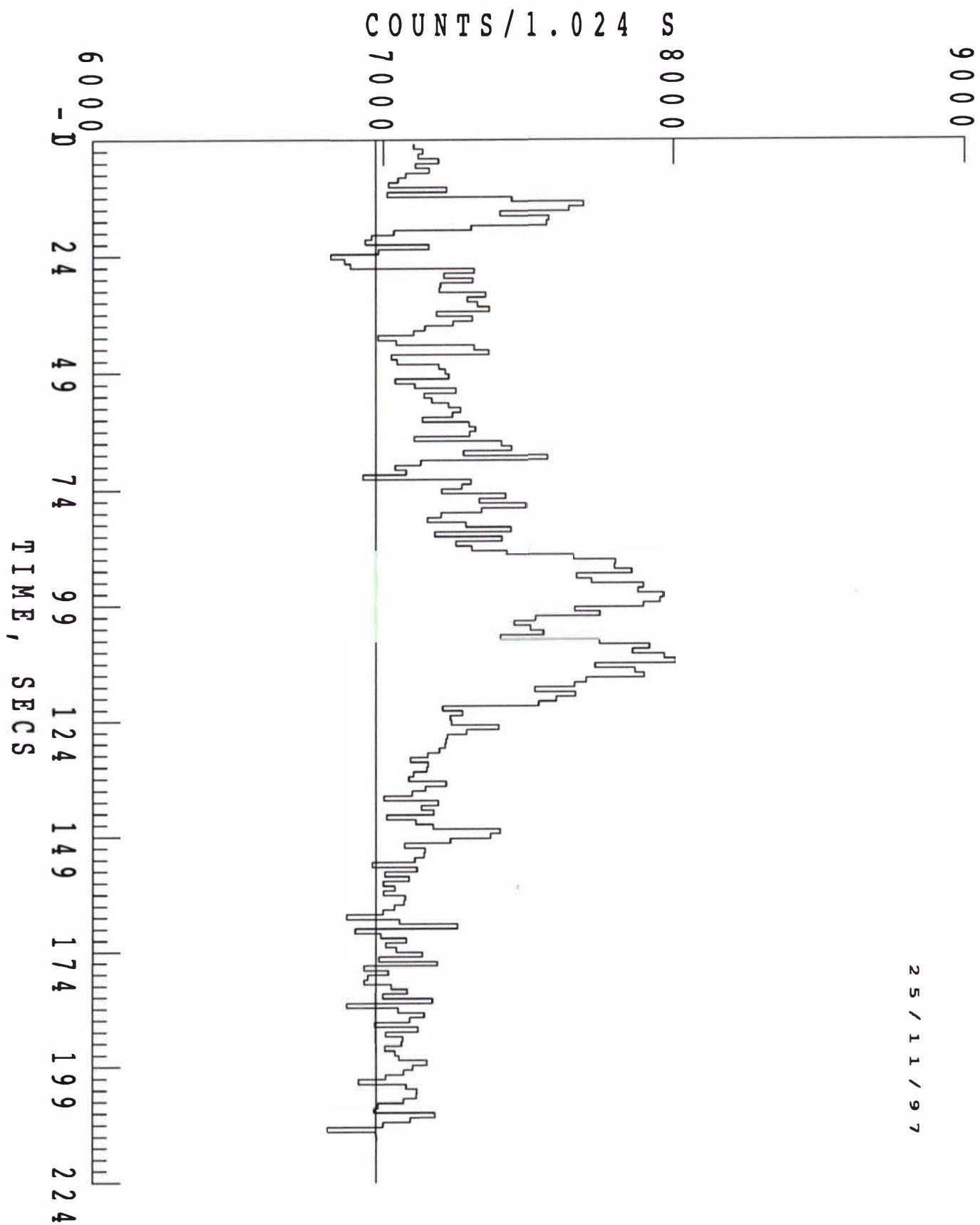
100-1000 keV



12 / 5 / 99

BACODINE 6498 25/11/97 26496.737

25- 100 keV



From HENZE@fender.msfc.nasa.gov Tue Dec 2 13:56:52 1997
Date: Tue, 2 Dec 1997 15:55:34 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6499

TIME: TJD=0777 SECONDS=57253

TYPE: UNKNOWN SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PROBABLE GRB BUT OFFICIALLY CLASSIFIED AS "UNKNOWN" BECAUSE OCCURRED DURING
REORIENTATION AND DATA GAP SO NO SPACECRAFT ATTITUDE AVAILABLE AND NO LOCATION
POSSIBLE. SPARSE DATA. SINGLE SPIKE, DUR. APPROX. 0.2 S. NOT VIS. ABOVE 300 KEV.

From SURASAK@SSLLES.MSFC.NASA.GOV Sat Nov 29 11:11:58 1997
Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA21973; Sat, 29 Nov 1997 11:11:57 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA22314; Sat, 29 Nov 1997 11:11:52 -0800
Date: Sat, 29 Nov 1997 13:11:39 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971129131139.23402467@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6500
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6500
EVENT OF 1997 NOV 25 DAY OF YEAR=329
EVENT CROSSING TIME AT BATSE : 68088. S. OR 18:54:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 305.000 12.000
BATSE PEAK COUNTING RATE: 1450 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/11/ 97 IS:
RA= 170.586 DEC= 12.535 DIST= 5.471 AU
BATSE-ULYSSES DISTANCE = 818437304. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1701.07 SECS.
CROSSING TIME AT ULYSSES IS 69789. S. OR 19:23:09 +/- 446.55 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/11/ 97 IS:
RA= 283.140 DEC= -24.154 DIST= 2.012 AU
MARS-BATSE DISTANCE = 300946080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -746.12 SECS.
CROSSING TIME AT MARS IS 67342. S. OR 18:42:21 +/- 105.27 SECONDS

BATSE BURST TRIGGER

NO.: 6500

TIME: TJD=0777 SECONDS=68088

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.4 AZIMUTH=129.4 ERROR=4.209 DEGREES

COMMENTS:

GRB. DURATION ABOUT 35 S. SINGLE PULSE. NOT VISIBLE ABOVE 300 KEV.
THIS BURST IS IN THE DATA GAP.

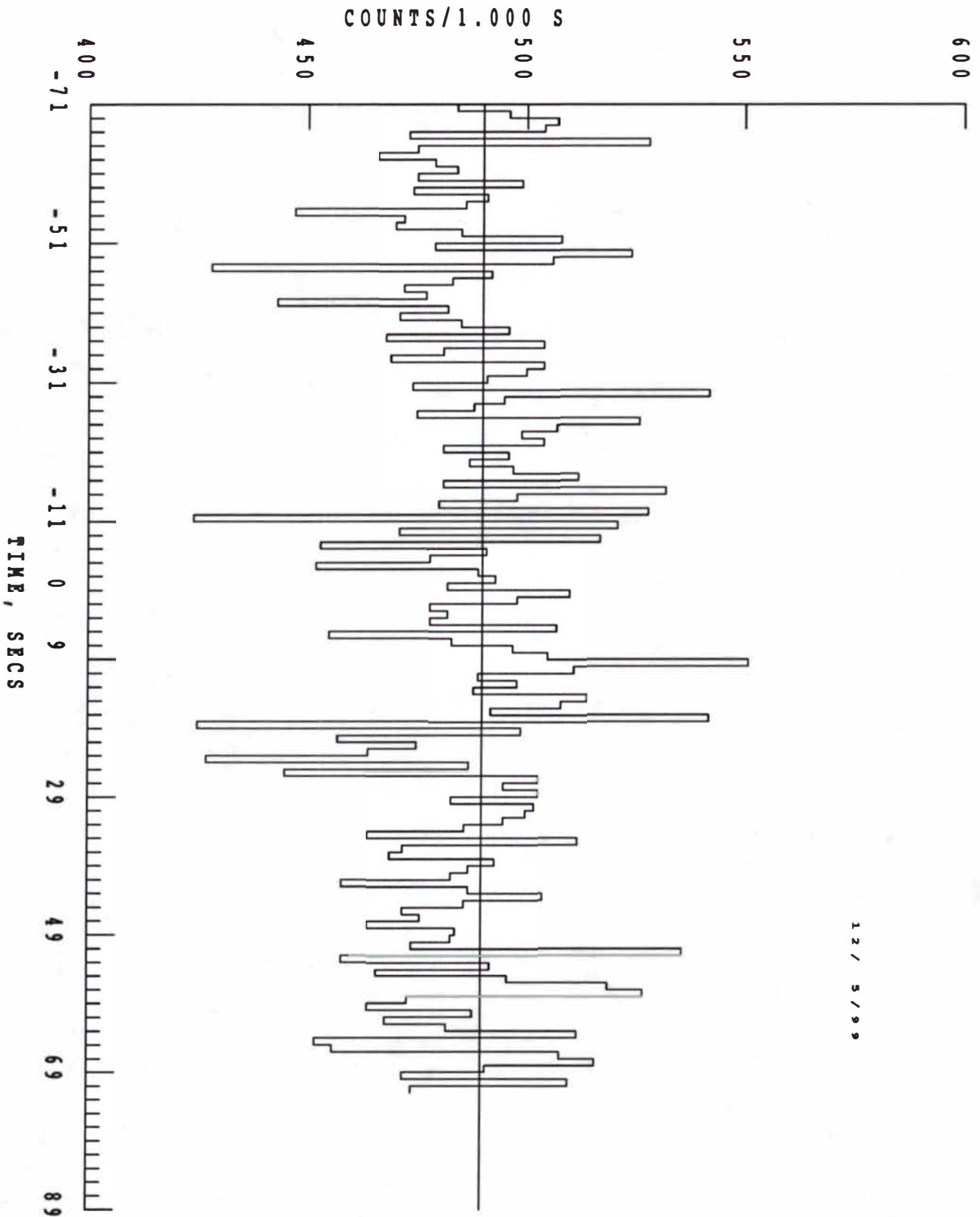
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6500	971125	10777	68088	1450	305	+12	35

NEAR

25/11/97

68179.100

100-1000 keV



BATSE BURST# 6500

ULYSSES RT

29 / 11 / 97

25 / 11 / 97 69336.305 s

0.500 S INTERVALS REGROUPED BY 2

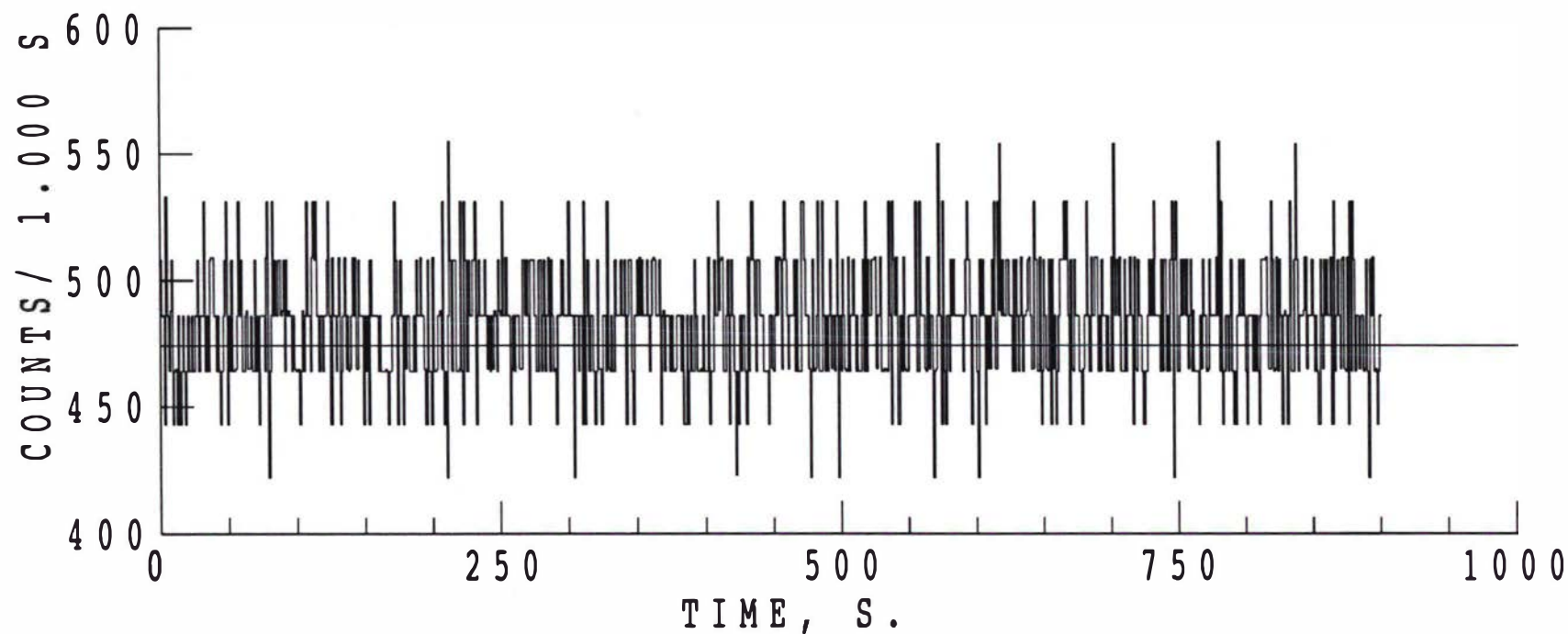
0 - 0 keV

N= 10 M=10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Wed Nov 26 12:32:35 1997
Date: Wed, 26 Nov 1997 14:31:56 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6501

TIME: TJD=0777 SECONDS=71201

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=45.2 AZIMUTH=350.6 ERROR=0.573 DEGREES

COMMENTS:

SOLAR FLARE. GOES C9.3, NO OPTICAL ID. SINGLE STRONG PULSE, STARTS AT ABOUT
T-150 S, THAT LAST ABOUT 230 S FOLLOWED BY SOME FLUCTUATION. TOTAL DURATION
IS ABOUT 440 S. NOT VISIBLE ABOVE 300 KEV.

From SURASAK@SSLLES.MSFC.NASA.GOV Wed Nov 26 12:26:06 1997
Date: Wed, 26 Nov 1997 14:25:44 -0600 (CST)
From: SURASAK@SSLLES.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, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6502

TIME: TJD=0777 SECONDS=75234

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

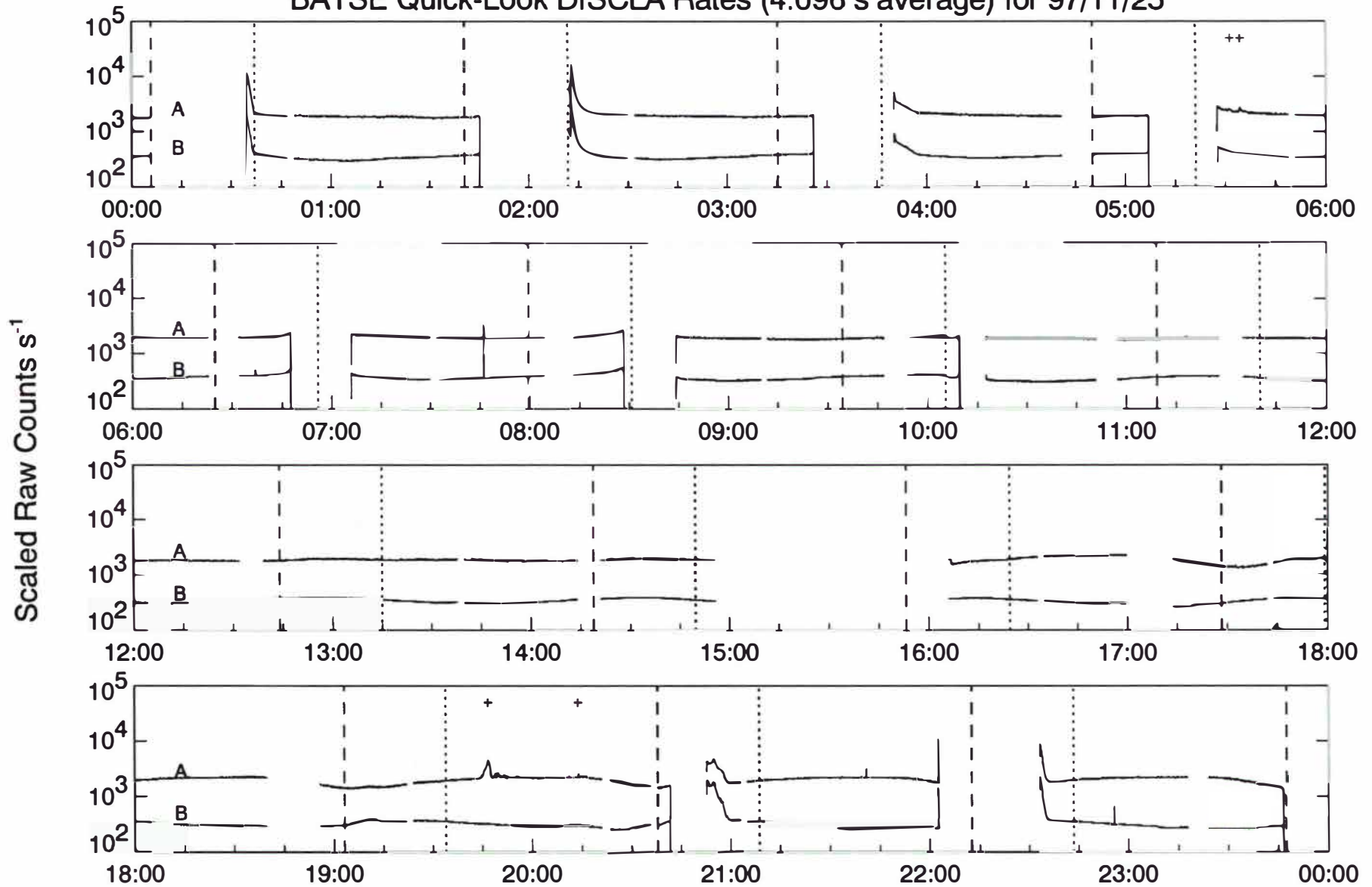
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/25



Current Time: 97/11/29, 1008 EDT

A: Channel 0 Most Sunward LAD

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

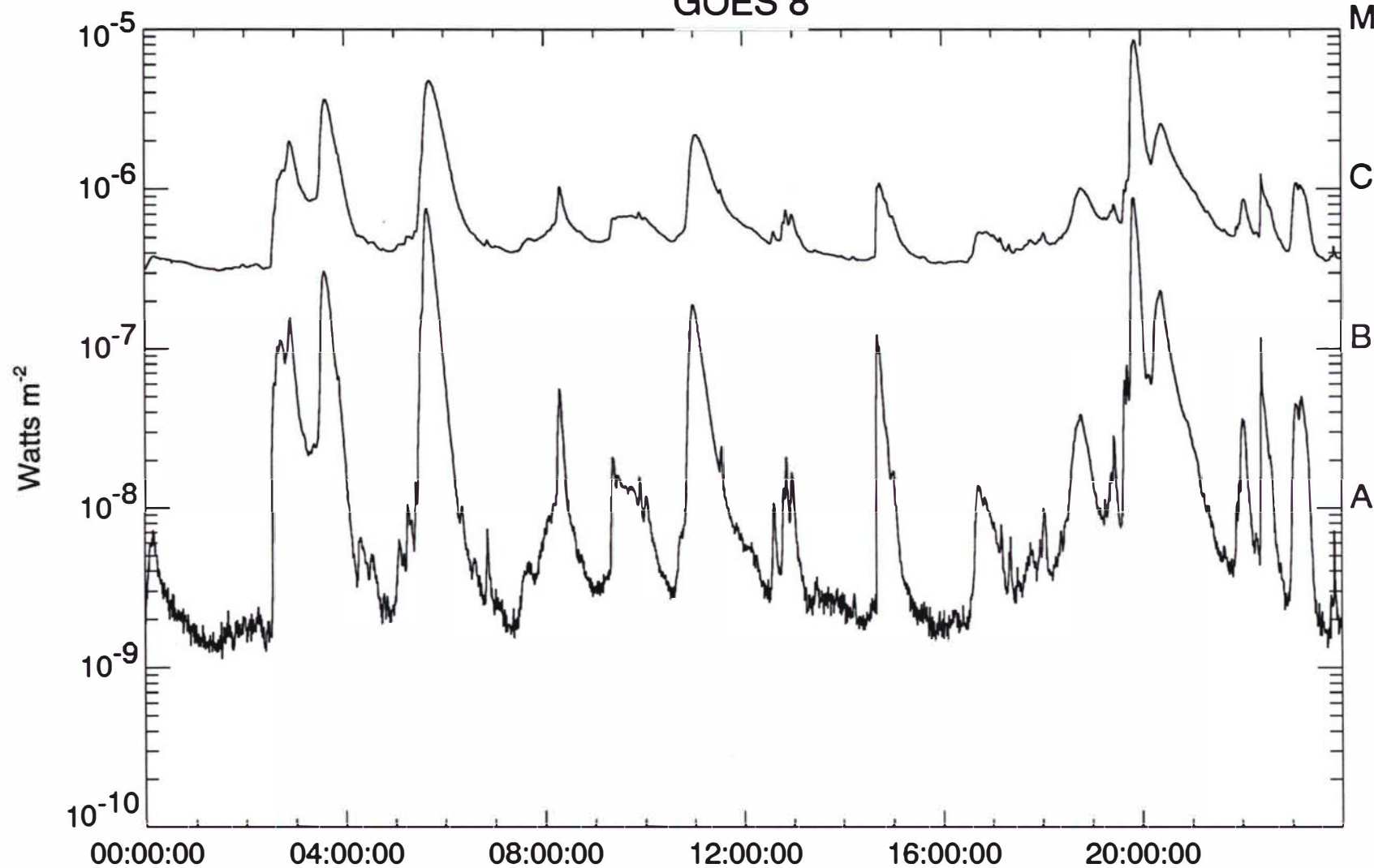
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 97/11/25, 0000:00

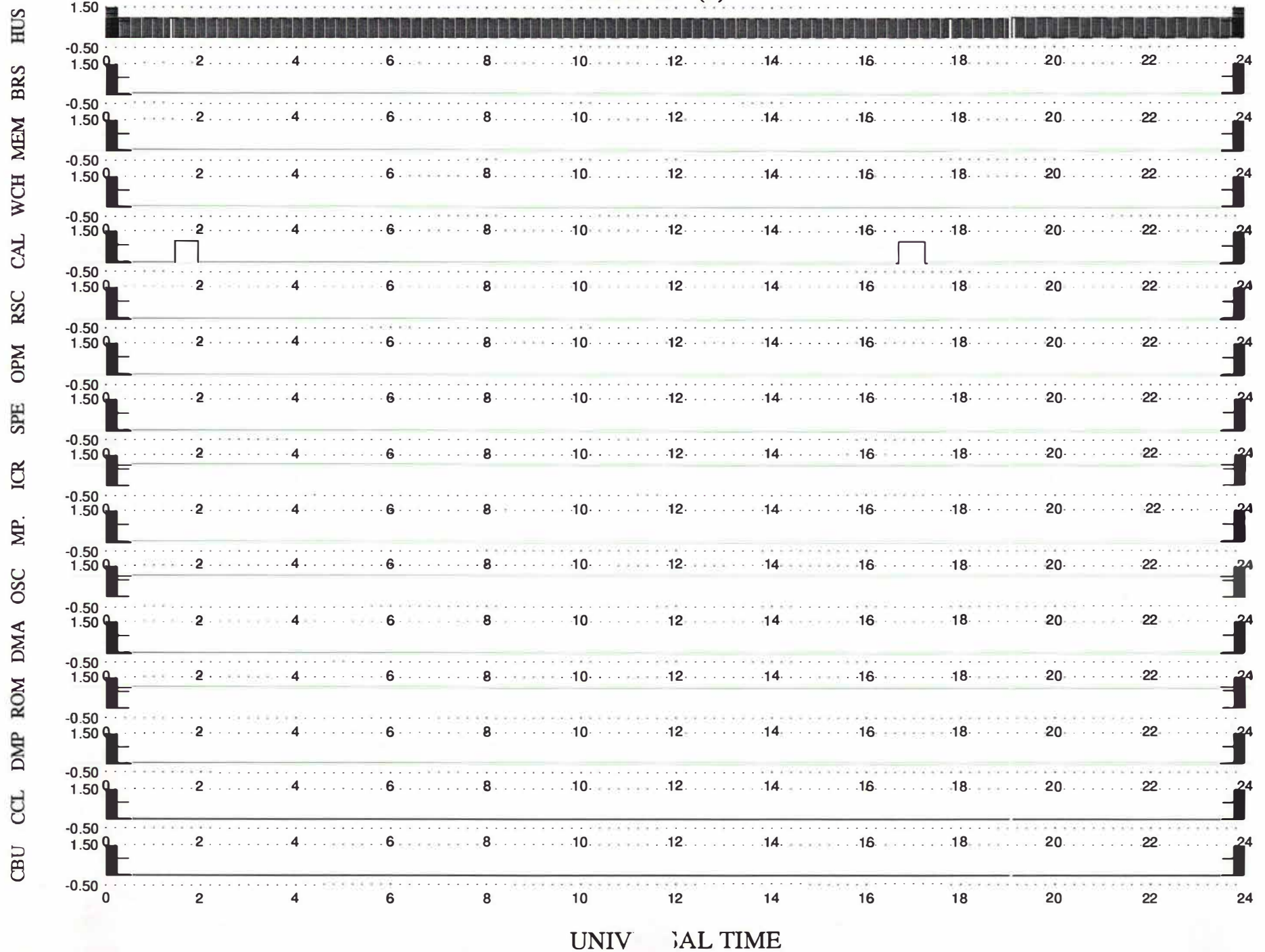
Plot created: 97/11/29, 1007

Channel

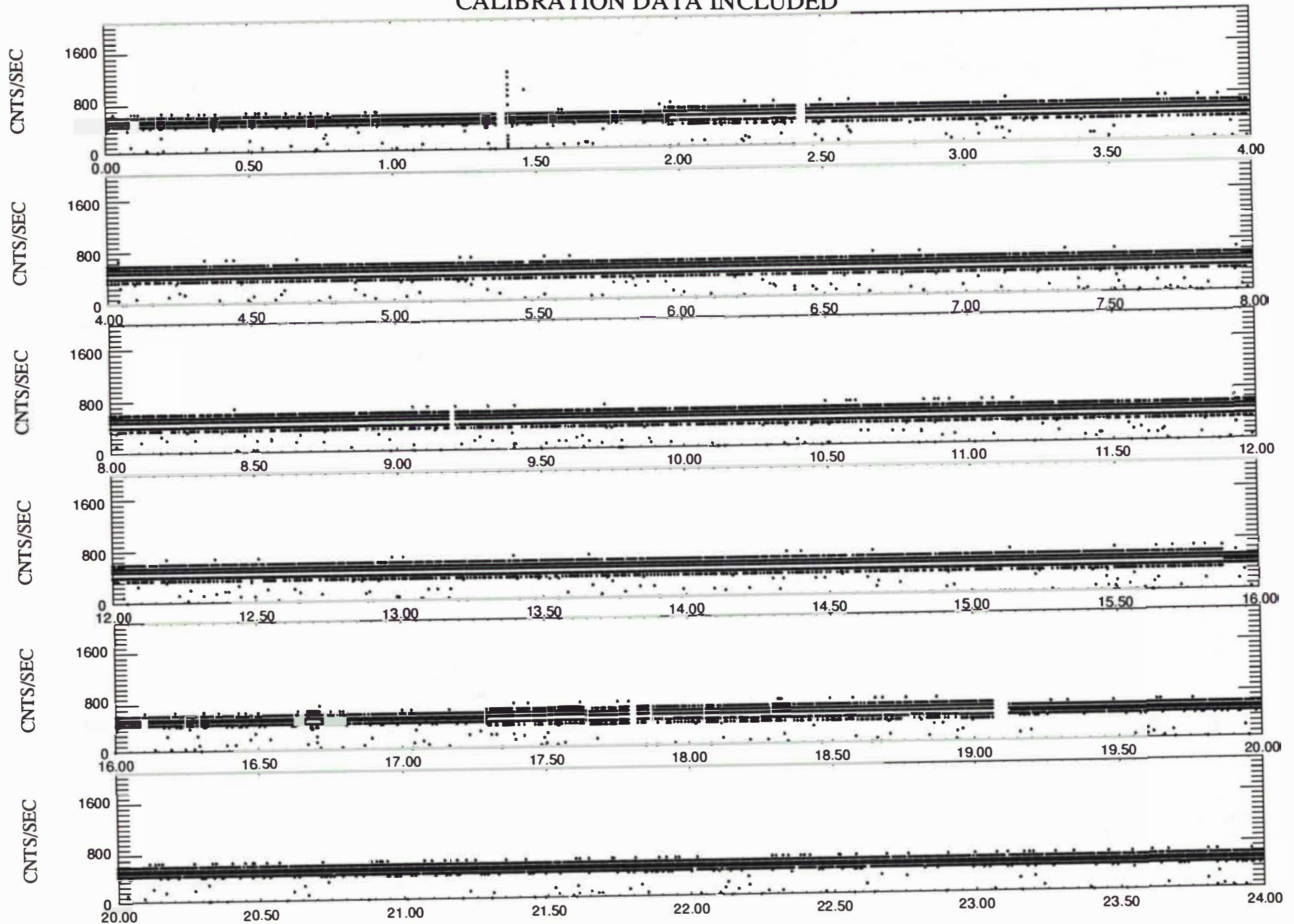
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

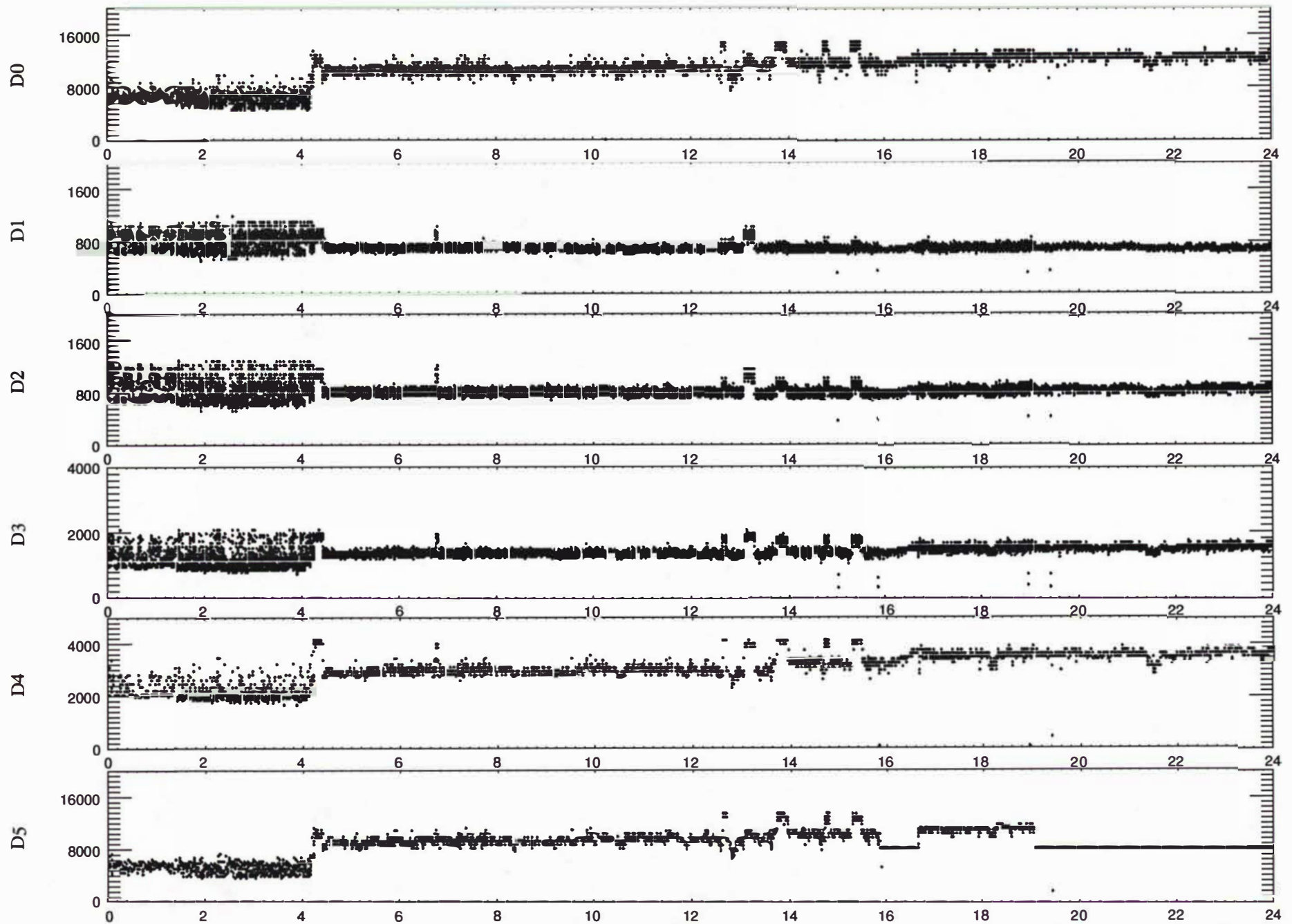
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV AL TIME

From HENZE@fender.msfc.nasa.gov Sat Nov 29 16:27:49 1997
Date: Sat, 29 Nov 1997 18:27:00 -0600 (CST)
From: Bill Henze (205-544-7616) <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@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6503

TIME: TJD=0778 SECONDS=66723

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

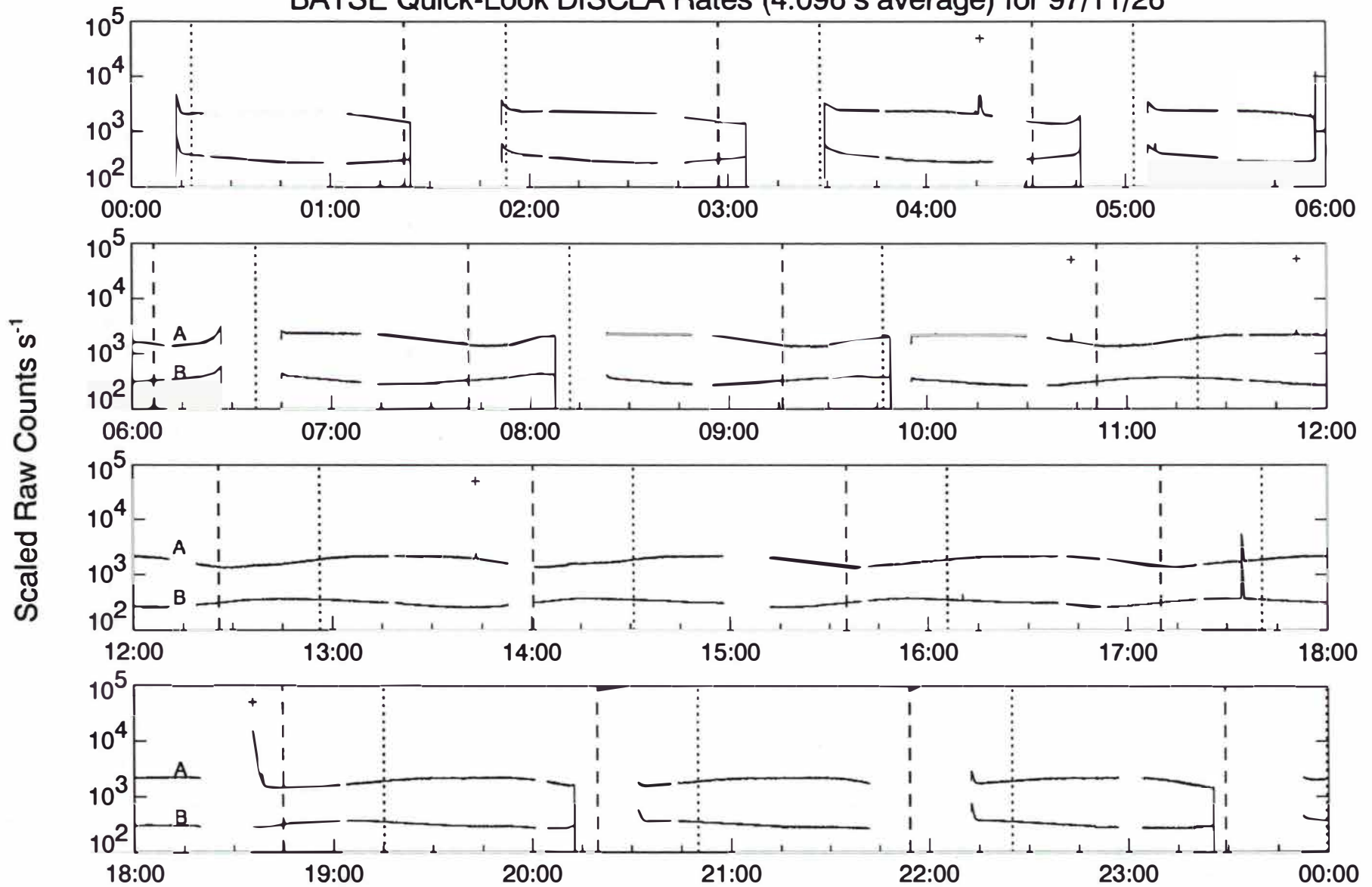
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 44.2 AZIMUTH=343.0 ERROR= 0.5 DEGREES

COMMENTS:

GOES M2.0, OPTICAL SF SOLAR FLARE. COMPLEX, TOTAL DUR. 430 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/26



Current Time: 97/11/30, 1008 EDT

A: Channel 0 Most Sunward LAD

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

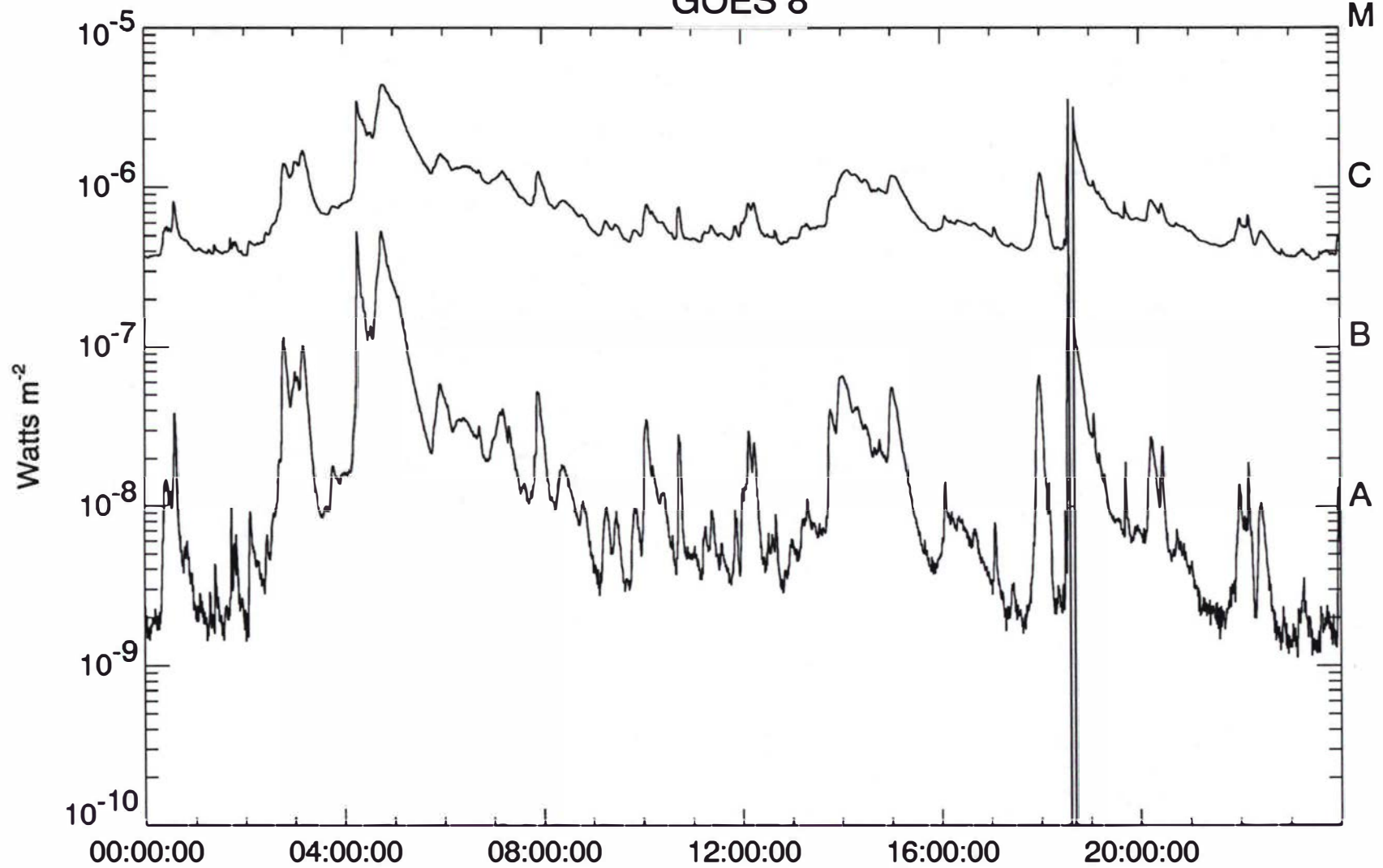
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 97/11/26, 0000:00

Plot created: 97/11/30, 1007

Channel

1 (1.0 - 8.0 Angstroms)

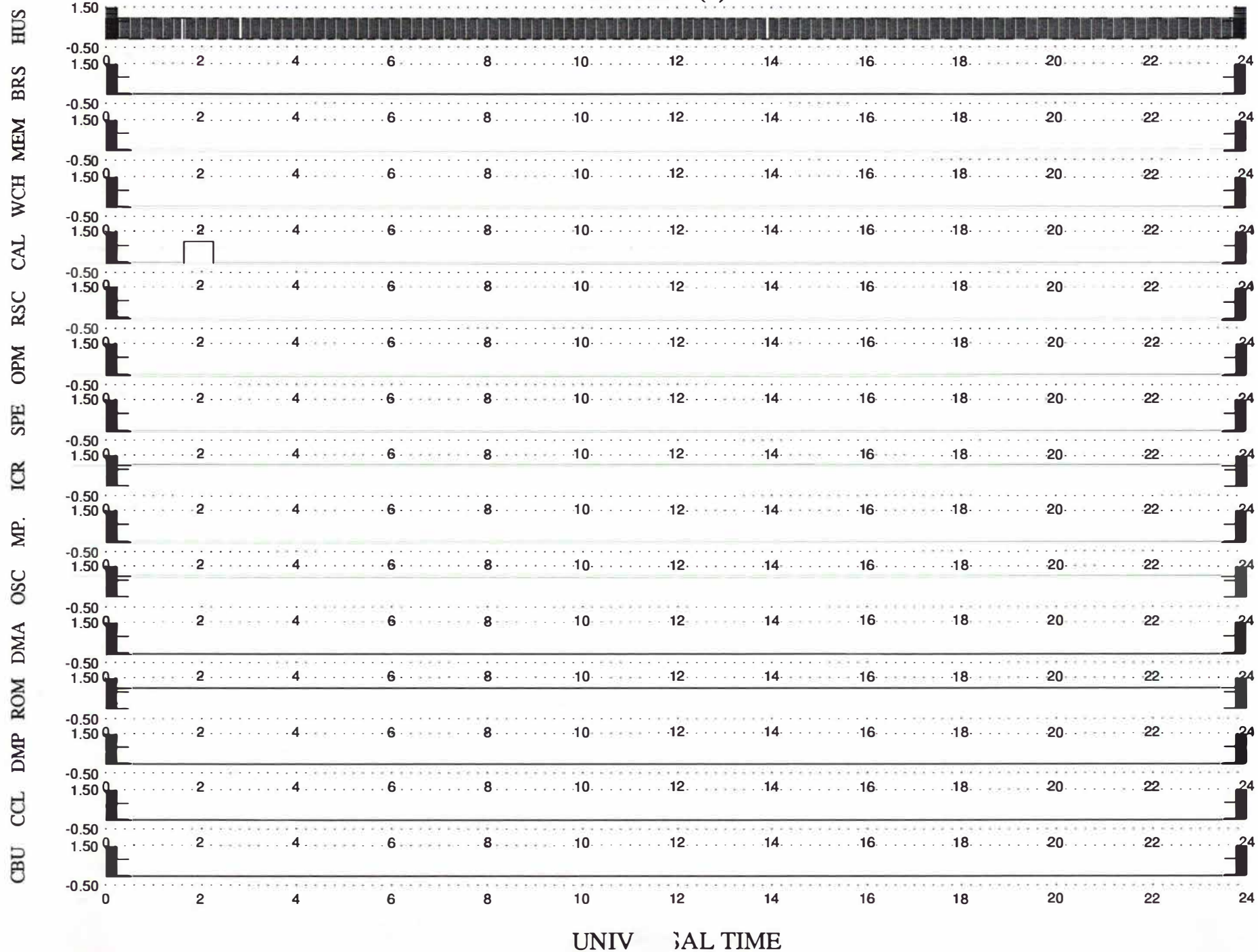
Background not subtracted

2 (0.5 - 4.0 Angstroms)

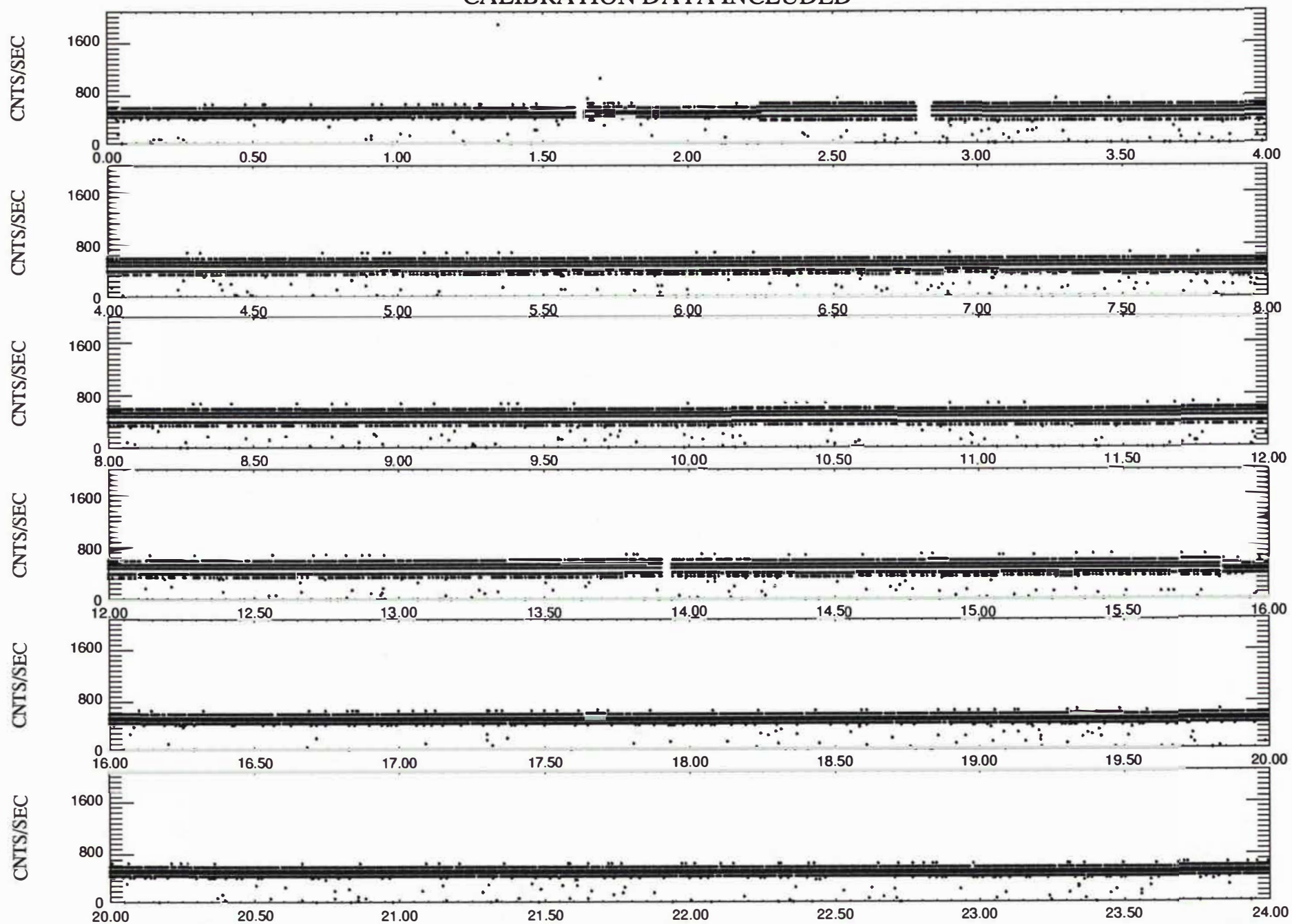
Background not subtracted

Sample average = 10

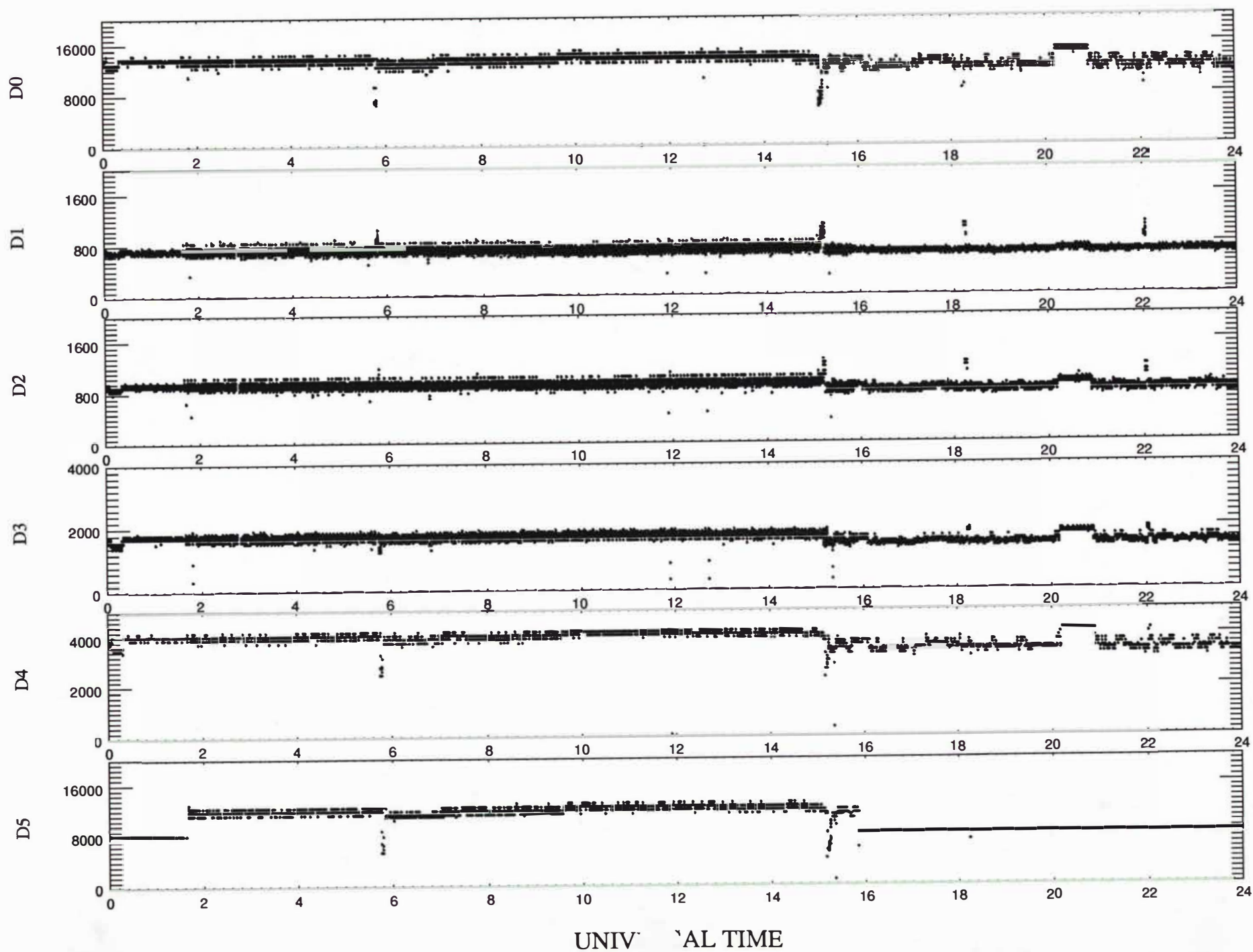
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From SAHI@fender.msfc.nasa.gov Mon Dec 1 14:45:54 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA11978; Mon, 1 Dec 1997 14:45:53 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA03501; Mon, 1 Dec 1997 14:45:51 -0800
Date: Mon, 1 Dec 1997 16:45:15 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971201164515.22435a9b@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6504
Content-Length: 1135
X-Lines: 26
Status: RO

Look at Ulysses response again

BATSEARCH PROGRAM

BATSE BURST # 6504
EVENT OF 1997 NOV 27 DAY OF YEAR=331
EVENT CROSSING TIME AT BATSE : 282. S. OR 00:04:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 226.000 32.000
BATSE PEAK COUNTING RATE: 7600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/11/ 97 IS:
RA= 170.623 DEC= 12.488 DIST= 5.451 AU
BATSE-ULYSSES DISTANCE = 815543749. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=125.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1591.48 SECS.
CROSSING TIME AT ULYSSES IS 85091. S. OR 23:38:10 +/- 408.87 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/11/ 97 IS:
RA= 284.812 DEC= -24.006 DIST= 2.019 AU
MARS-BATSE DISTANCE = 302005952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -186.96 SECS.
CROSSING TIME AT MARS IS 95. S. OR 00:01:35 +/- 169.02 SECONDS

BATSE BURST TRIGGER

NO.: 6504

TIME: TJD=0779 SECONDS=282

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=43.4 AZIMUTH=266.4 ERROR=1.4 DEGREES

COMMENTS:

BURST, SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 70 SECS, RISE IS FASTER
THAN FALL. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6504	971127	10779	00282	7600	226	+32	70

Date: Feb 8 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. NEAR Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

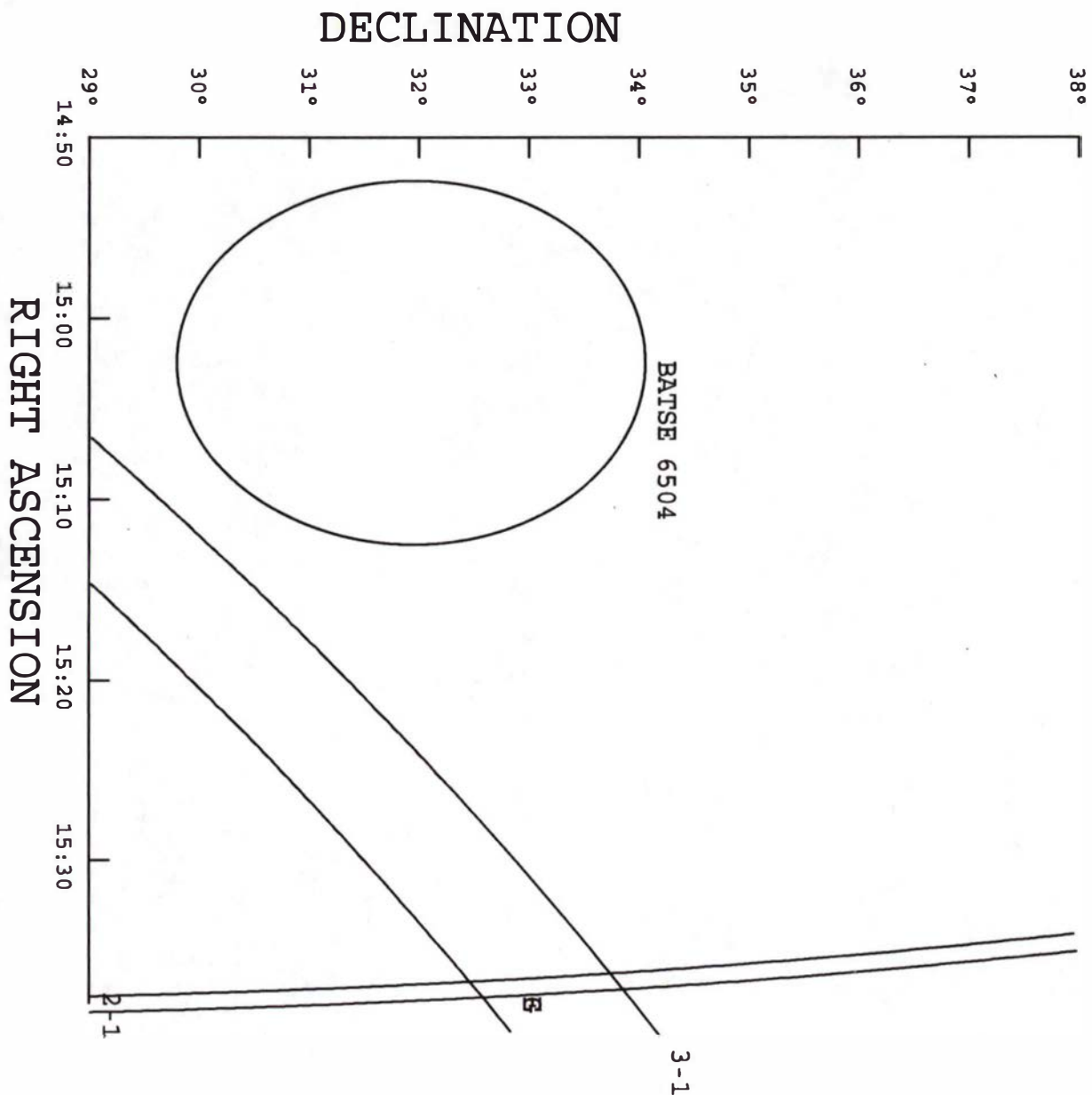
1 BATSE

2 ULYSSES

3 NEAR

EVENT OF NOV 27, 1997 0:04

8 / 2 / 0



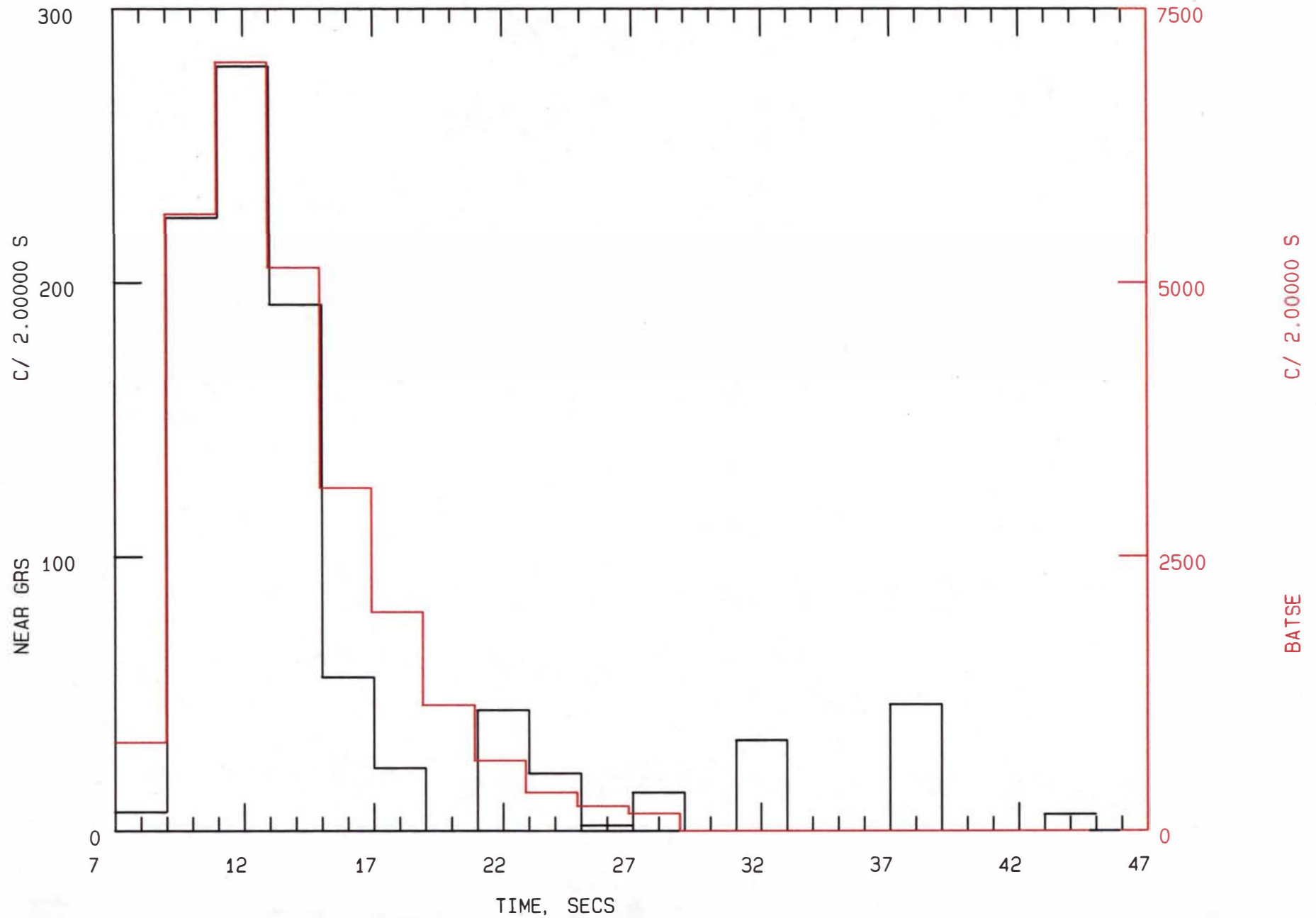
NEAR GRS -BATSE

CORRELATION

27/11/97

341.080

8/ 2/ 0

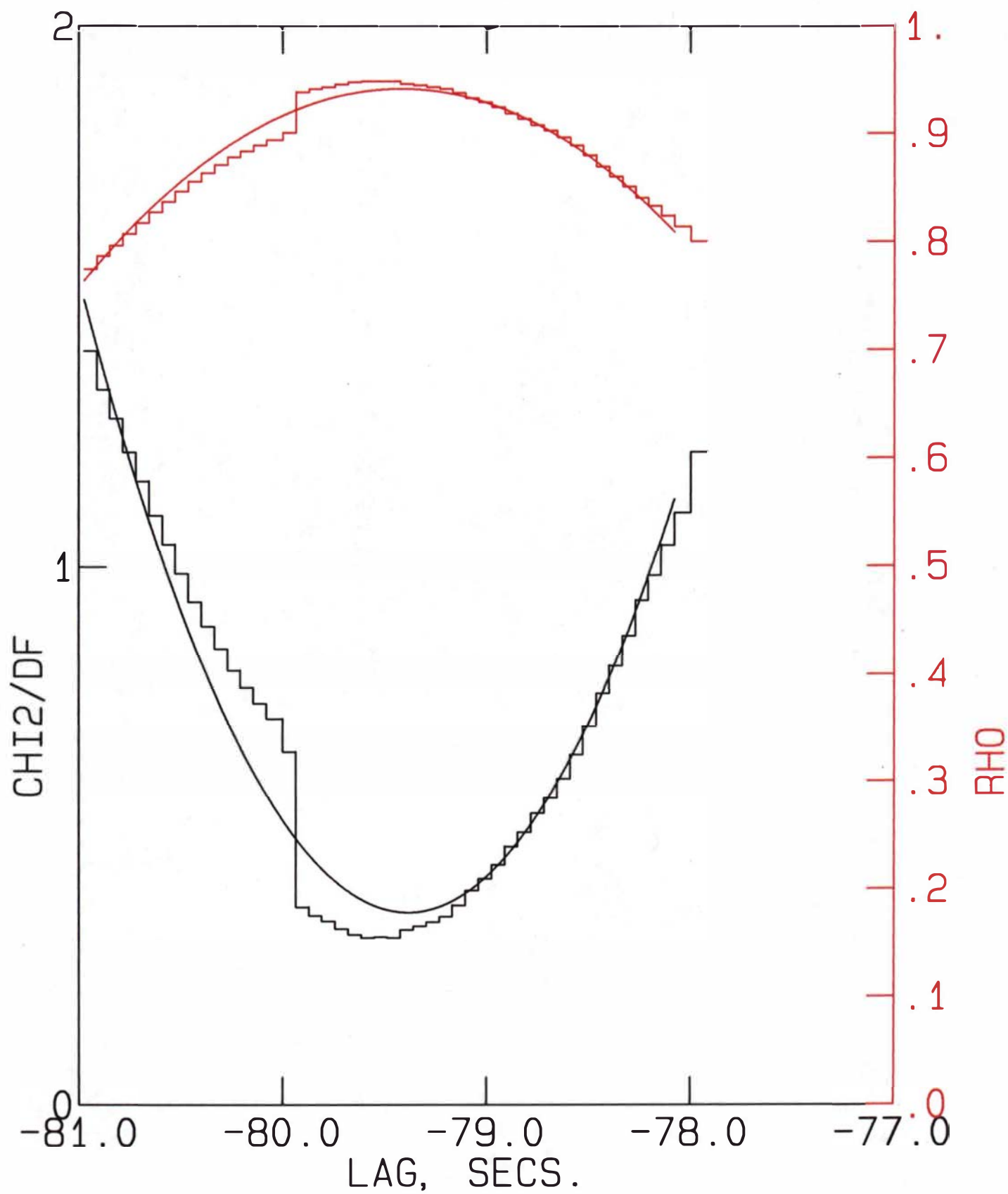


NEAR GRS -BATSE

CORRELATION

27/11/97

341.080



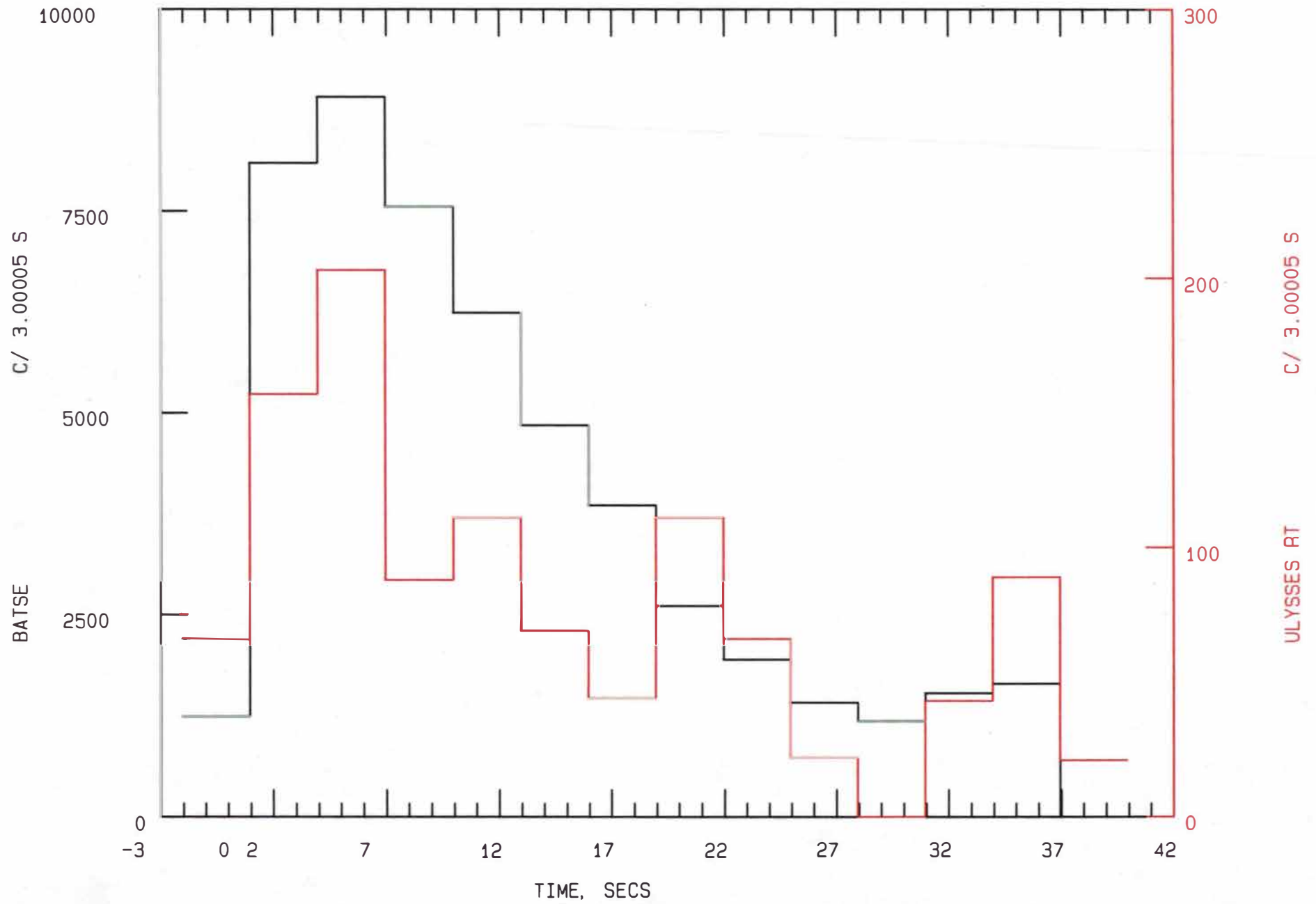
BATSE

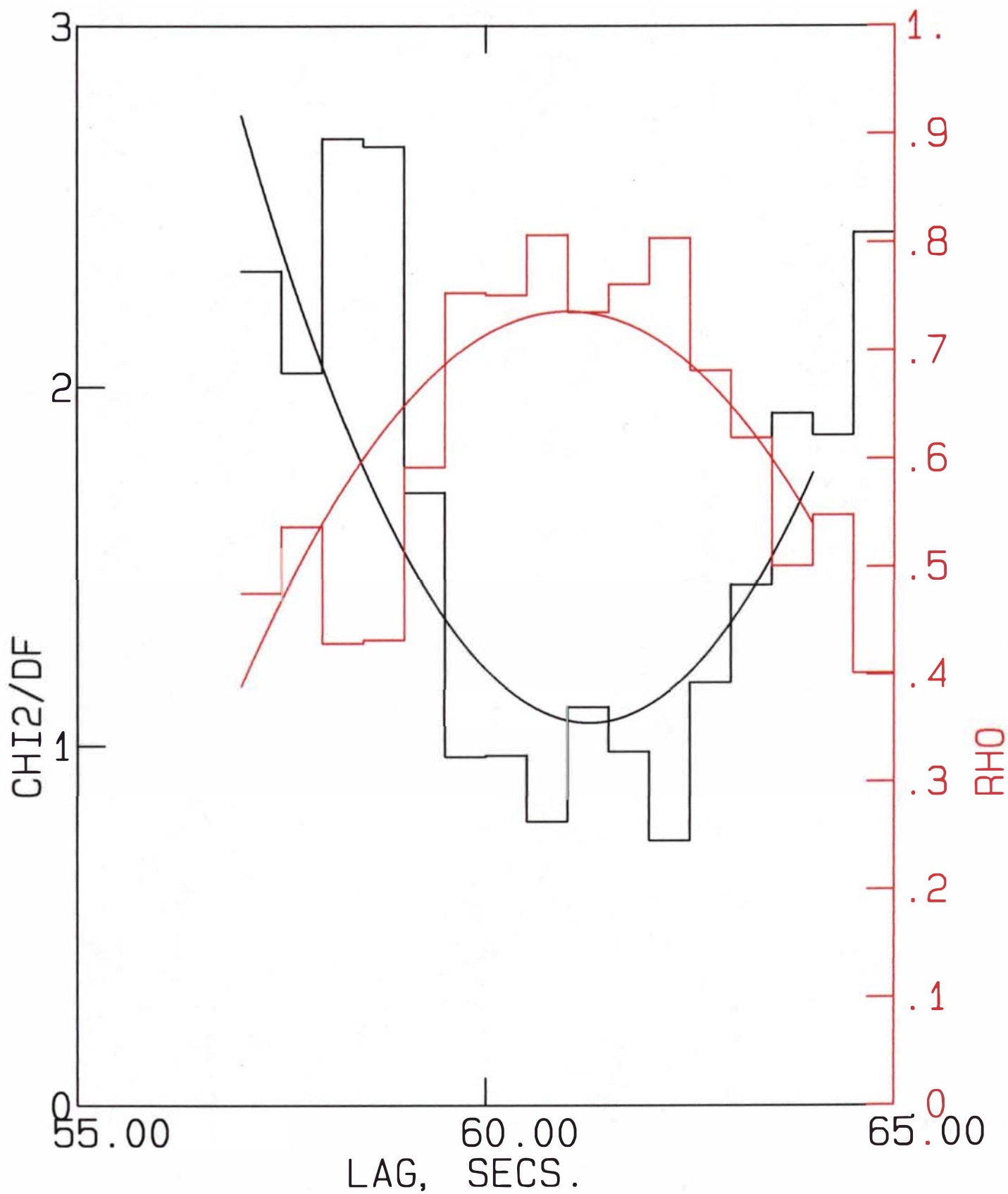
-ULYSSES RT CORRELATION

27/11/97

282.337

8/ 2/ 0



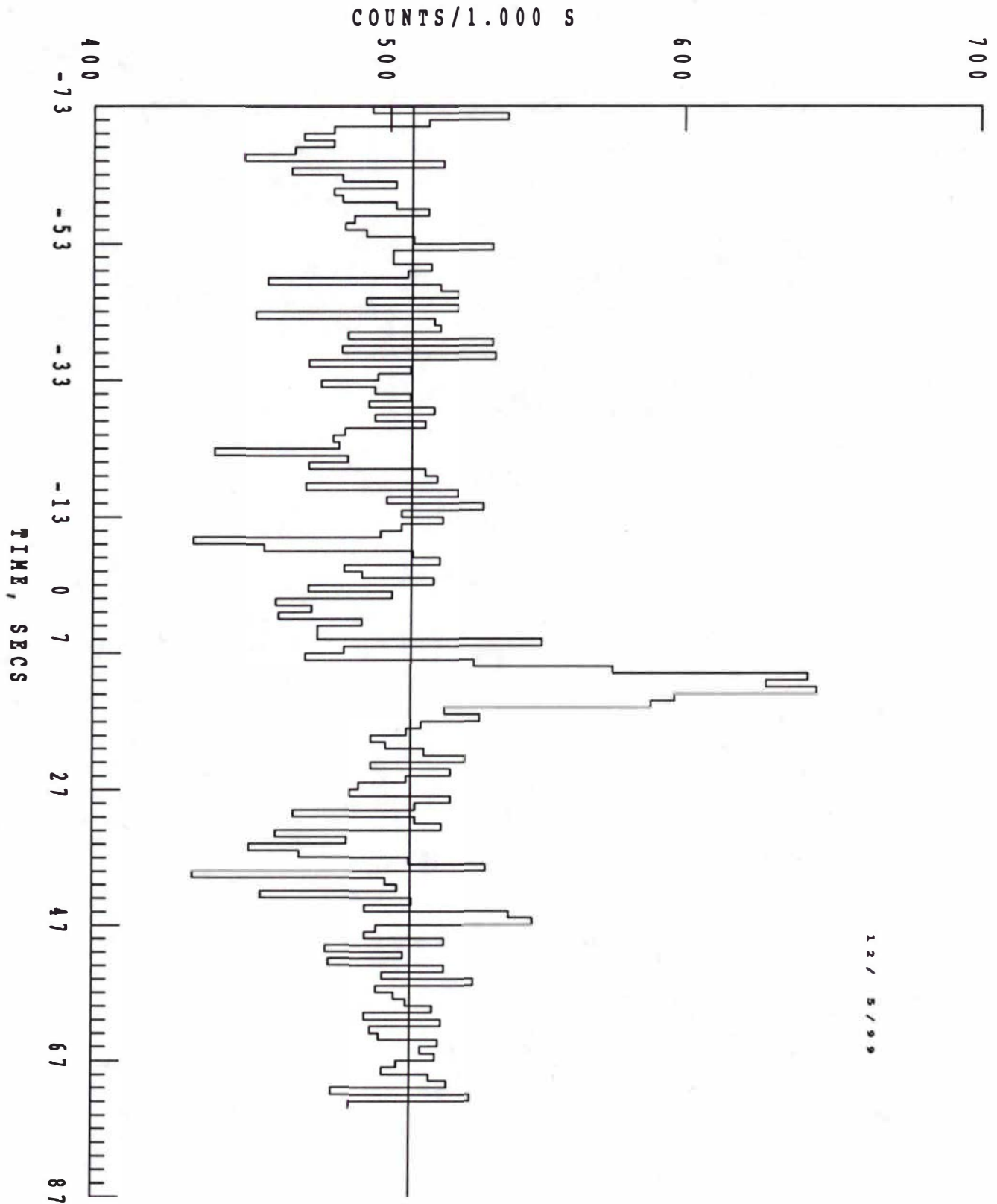


NEAR

27/11/97

341.080

100-1000 keV



KNEAR GRS 19971127 00341

ULYSSES RT

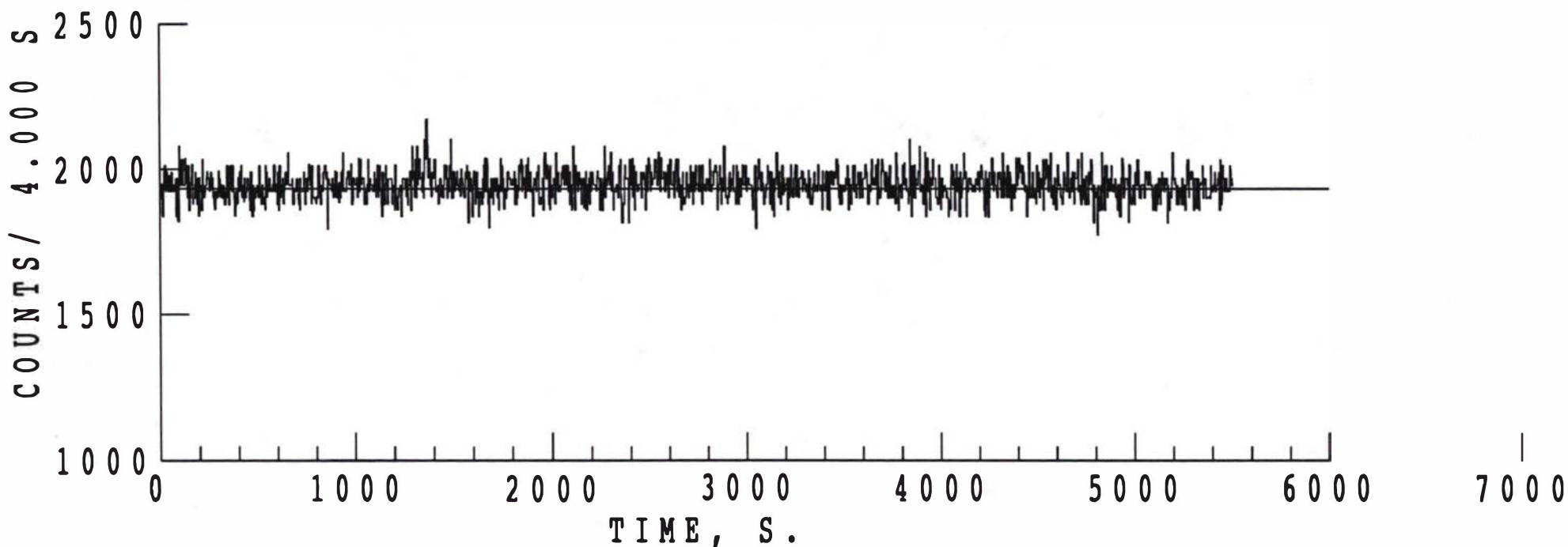
12 / 5 / 99

26/11/97 83988.430 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE BURST# 6504

ULYSSES RT

1 / 12 / 97

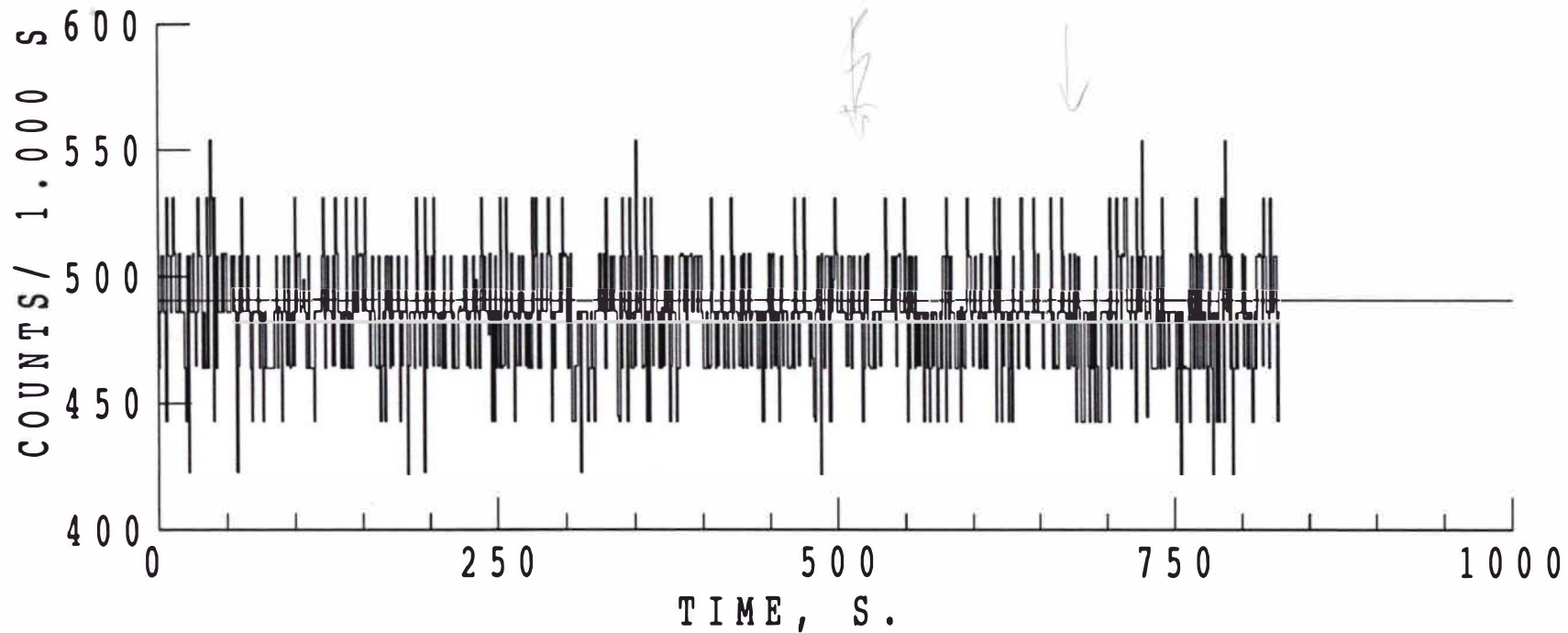
27 / 11 / 97 84672.406 s

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



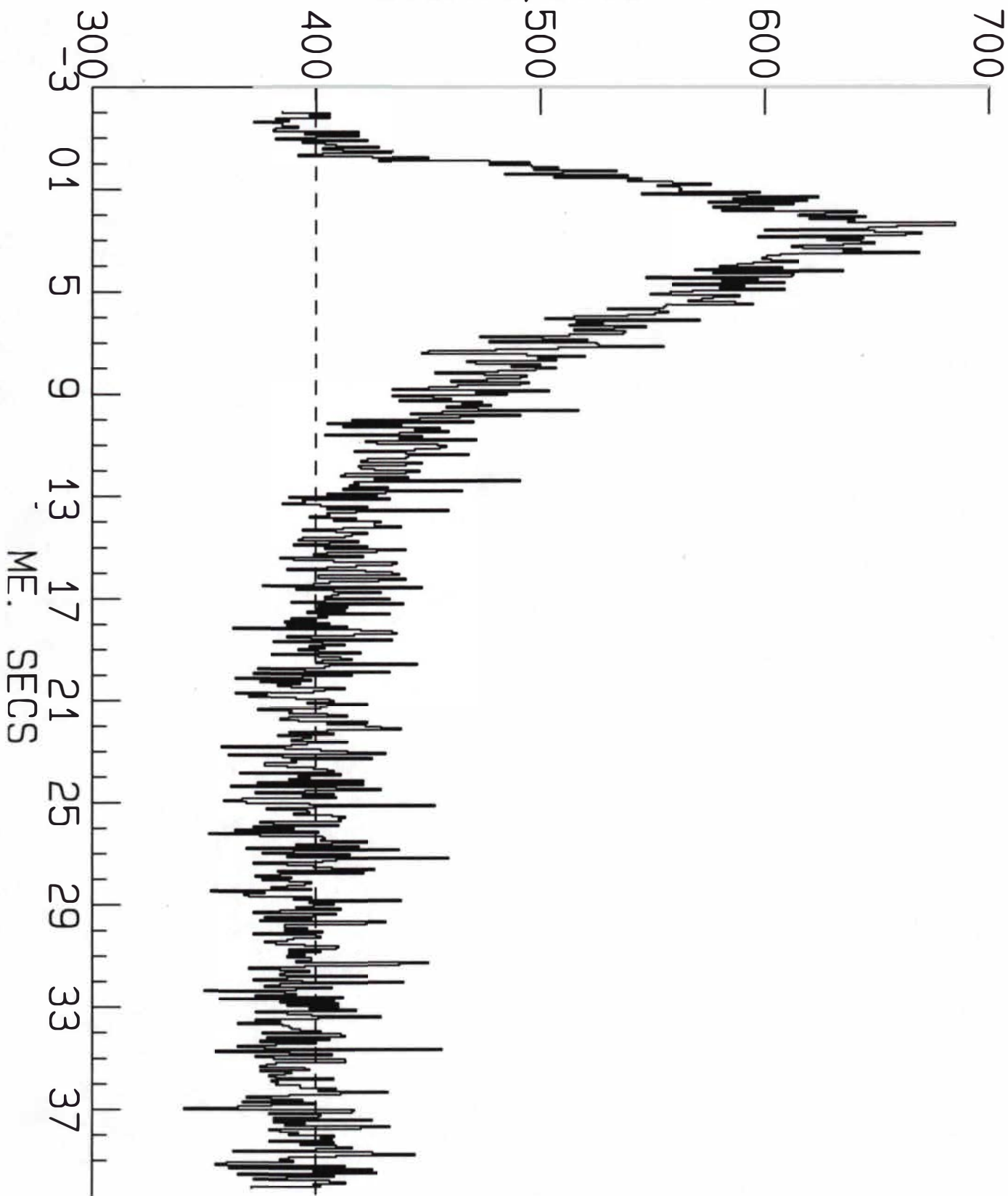
BATSE

27/11/97

282.337

100-1000 keV

COUNTS/0.064 S



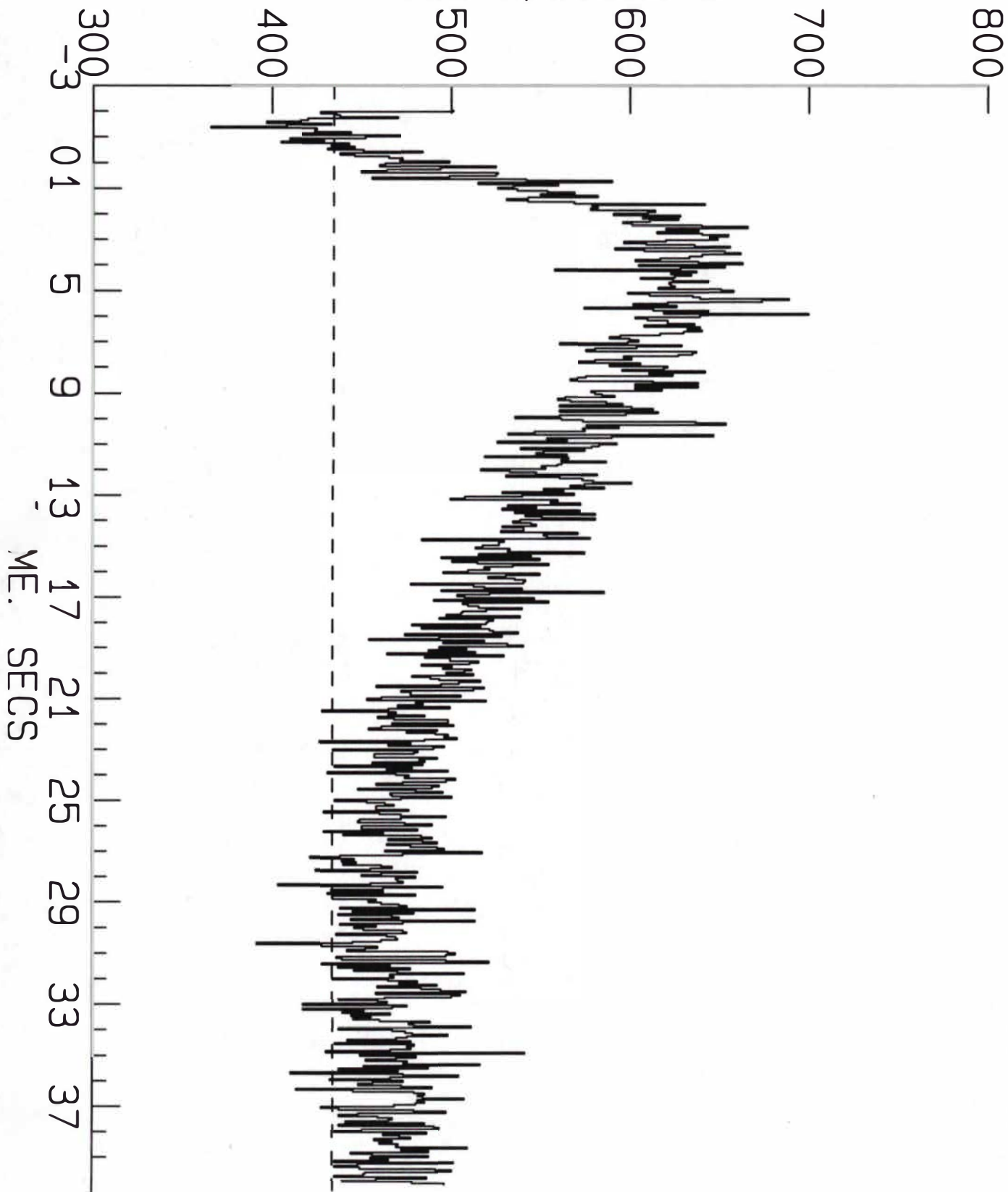
BATSE

27/11/97

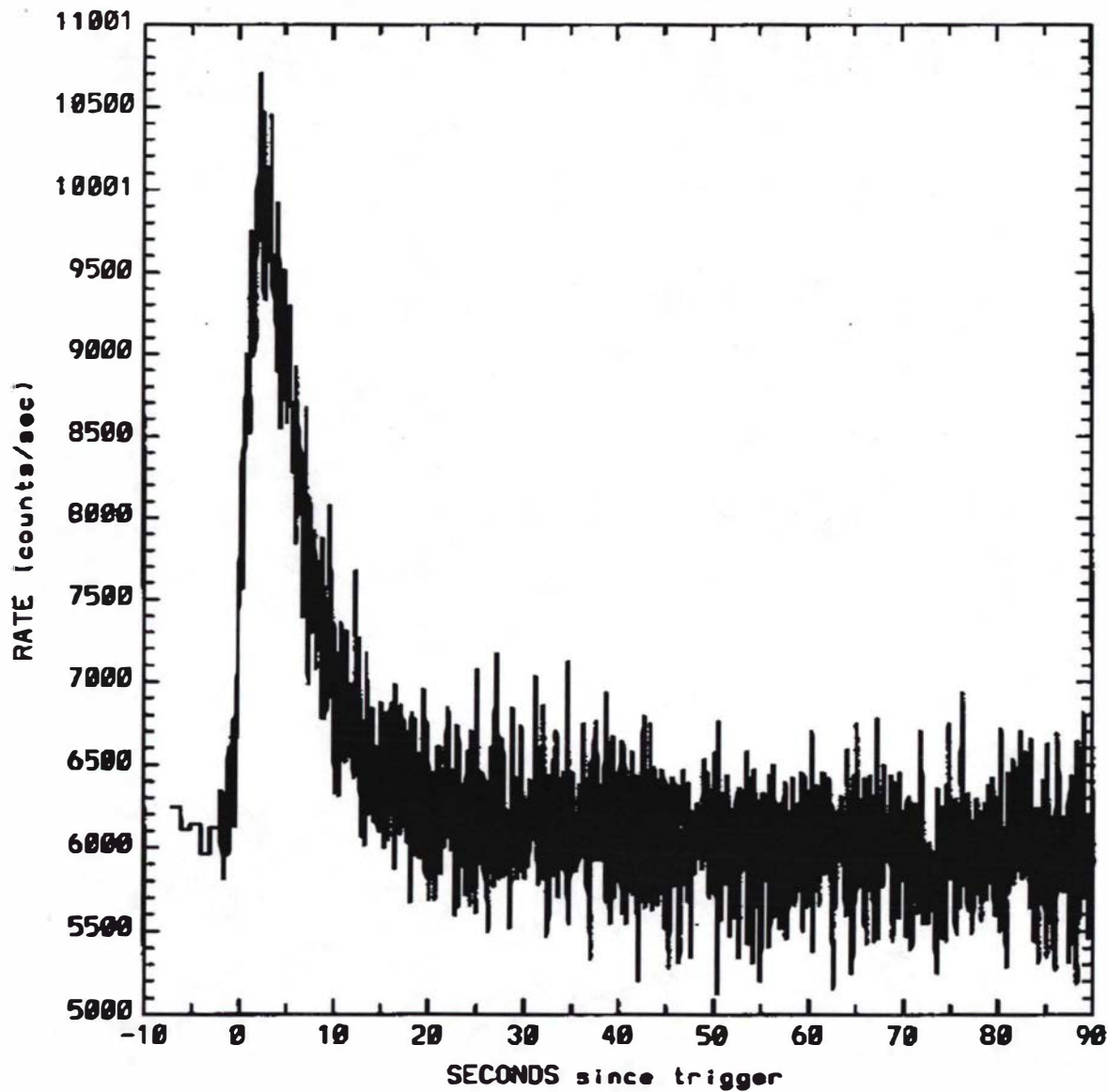
282.337

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6504



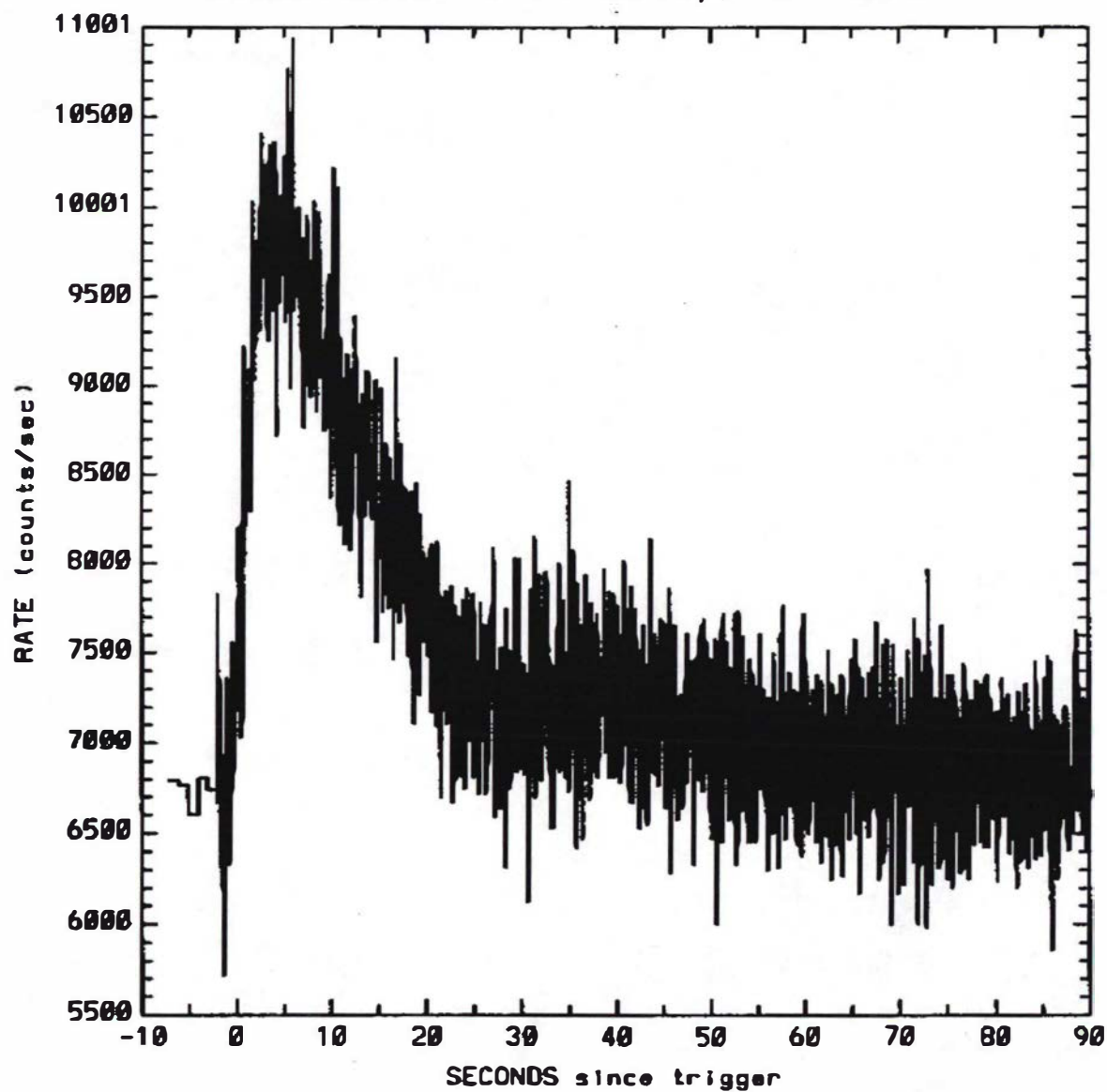
21-JAN-2000 15:11.49

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # : 6504

Trigger Time:
18779 / 282.337Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)Detectors [7..8].
-6--2--Discriminators:
[3..4]Quality Mask:
BDISP1

DISCSC Data for K. Hurley, No. 6504



21-JAN-2000 15:17:48

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # . 6504

Trigger Time:
10779 / 282.337Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..0):
-6---2--Discriminators:
(1, 2)Quality Mask:
80ISP1

From SAHI@fender.msfc.nasa.gov Mon Dec 1 14:34:41 1997
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 1 Dec 1997 16:33:41 -0600 (CST)
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6505

TIME: TJD=0779 SECONDS=7337

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.4 AZIMUTH=353.1 ERROR=0.7 DEGREES

COMMENTS:

GOES C1.3, NO OPTICAL ID. SINGLE PULSE WITH SUBSTRUCTURE DUR. APPROX. 60 SECS
STARTS AT APPROX. T-20 SECS, MAX. AT APPROX. T+2 SECS. MARGINALLY VISIBLE ABOVE
100 KEV.

From SAHI@fender.msfc.nasa.gov Mon Dec 1 14:40:38 1997
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 1 Dec 1997 16:39:37 -0600 (CST)
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6506

TIME: TJD=0779 SECONDS=23786

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.2 AZIMUTH=355.3 ERROR=1.96 DEGREES

COMMENTS:

NO GOES, OPTICAL SF. COMPLEX, DUR. APPROX. 60 SECS, AX. AT APPROX. T+35 SECS
NOT VISIBLE ABOVE 100 KEV.

From SAHI@fender.msfc.nasa.gov Mon Dec 1 14:43:55 1997
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 1 Dec 1997 16:43:05 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messaging@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6507

TIME: TJD=0779 SECONDS=41618

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=36.5 AZIMUTH=354.9 ERROR=1.90 DEGREES

COMMENTS:

GOES C1.0, NO OPTICAL ID. SINGLE PULSE WITH DUR. APPROX. 25 SECS, STARTS AT
APPROX. T-10 SECS. NOT VISIBLE ABOVE 100 KEV.

From HENZE@fender.msfc.nasa.gov Tue Dec 2 13:38:11 1997
Date: Tue, 2 Dec 1997 15:37:33 -0600 (CST)
From: Bill Henze (205-544-7616) <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@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6508

TIME: TJD=0779 SECONDS=46900

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 37.2 AZIMUTH=350.6 ERROR= 2.7 DEGREES

COMMENTS:

INITIAL PART OF GOES X2.6, OPTICAL 2B SOLAR FLARE. COMPLEX, TOTAL DUR. APPROX.
190 S. STRONGEST PULSE HAS MAX AT APPROX T+130 S. NOT VISIBLE ABOVE 300 KEV.

From HENZE@fender.msfc.nasa.gov Tue Dec 2 13:48:08 1997
Date: Tue, 2 Dec 1997 15:47:28 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil,
park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6509

TIME: TJD=0779 SECONDS=47595

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 42.3 AZIMUTH=350.5 ERROR= 0.5 DEGREES

COMMENTS:

MAIN PART OF GOES X2.6, OPTICAL 2B SOLAR FLARE. COMPLEX, TOTAL DUR. APPROX.
470 S. BRIGHTEST MAX AT APPROX. T+163 S. VISIBLE ABOVE 300 KEV.
OVERWROTE PRECEDING TRIGGER.

262 65663.9 KONUS 30S,HARD,2PKS (+UL@63120,3100LS,MOD,20S) (13NO,14NO)

970922 265 2888.4 BATSE#6392,32880/SEC

13 265 2894.4 PEAK(50/S),2910.5(110),@97DEG,ONE-SIDED,EDGE SR. DUBIOUS

14 265 2894.6 PKS(200/S),2910.6(500/S),@109,ONE-SIDED,EDGE SAA.DUBIOUS

970925 268 81795.8 BATSE#6397,9551/SEC

14 268 81798.3 PEAK (70/S,<10S) @ 42DEG (13SAA)

971009 282 68215.8 BATSE#6422,10861/S@1.8S+UL@69240,3050LS,MOD+KONUS@68215.0

14 282 68217.2 PEAK(180/S,<2S)@83 (TRIGGER PEAK 68215.64) (13NO@145)

971019 292 53754.2 KONUS,10S (+UL@51000,2950LS,MOD,10S)

14 292 53752.6 RISE,~50SEC,SOFT,NO TRIG (13 NO)

971029 302 5318.4 BATSE#6453,4717/S@35.8S (KONUS@5351.8,120S) (UL WEAK@2820)

14 302 5326.0 PKS, 44.0,66.0,NO TRIG,@102DEG (13NO@49DEG)

971101 305 23484.5 KONUS (10SEC,FRED) (UL@26040,MOD,10S@2950LS)

14 305 23483.8 PEAK (200/S,<2S) (13SR) TRIGGER PEAK 23483.0

971110 314 68141.3 KONUS,100SEC (UL@67080 @2950LS,MOD) (13 SR)

14 314 68161.3 PEAKS, 213.3, MULT PEAKS,HARD,TRIGGER PKS 68213.19,213.91

971127 331 47595.8 BATSE#6509 (139968/S)

13 331 47595.8 PKS,613.8,759.8(240),767.8(140)

14 331 47760.5 PKS(3000/S),47768.5(2000), INTENSE, NOTRIG

971201 335 9295.6 BATSE#6515 (8768/S)

14 335 9306.4 PK(SOFT)+9310.4(160)+9316.4(220)+9328.4(150),NOTRIG(13NR)

971207 341 72232.9 BATSE#6525 (7892/S@12.0)

14 341 72244.2 PK(270),268.2,284.2 (@80DEG),TRIG PK 72244.28 (13NR)

971218 352 52499.9 BATSE#6535 (9181/S@+2.3S)

13 352 52500.2 PK(70),52536.2(?) (SOFT,@38DEG) (14SAA)

971219 353 79974.5 KONUS,10S,SPIKE@+4 (UL 77580,15SEC,MOD) (13SAA,14NR)

980109 009 4345.6 BATSE#6564(1401/S)+SAX,25S(IAU6805) (13NO@74,14NA@144)

980113 013 14845.7 BATSE#6570 (9376/S,COMPLEX,DUR60S)

13 013 14869.2 PKS(50),879.2(50),883.2(50) (ONE-SIDED,@119DEG)

14 013 14848.3 PEAK(60/S,<4S), NO TRIGGER

980119 019U 5100 ULYSSES MOD(32MS) @2350LS

14 019 5375.9 PEAK (900/S,<8S,SOFT) (TRIG PEAKS 5372.9,5374.6) (13NO)

980124 024 23673.0 BATSE#6576, 16971/S @7.7S,SPIKY,MAX@+42.5,DUR100S)

13 024 23679.1 PEAK(90/S,<8S),23707.1,23717.1 (LAST 2 WEAK,ONE-SIDED)

14 024 23679.6 PEAK(300/S,<10S),707.6WEAK,715.6WEAK

14 024 23679.1 TRIGGER PKS 679.07,679.99 (.1024S); 12.8MS PEAK 23678.43

980125 025 74368.7 BATSE#6581, 34996/S,MULT PKS,MAIN PK@+40,270S

13 025 74416.4 PEAK @108DEG(220/S,<8S) (14NO@125)

J202 033U37380 ULYSSES MODERATE, 10SEC@2265LS

13 033 35713.6 PEAK(80/S),35717.6(70),<8SEC OVERALL

14 033 35712.9 PEAK(200/S),35718.9(400/S),<10SEC OVERALL, NO TRIGGER

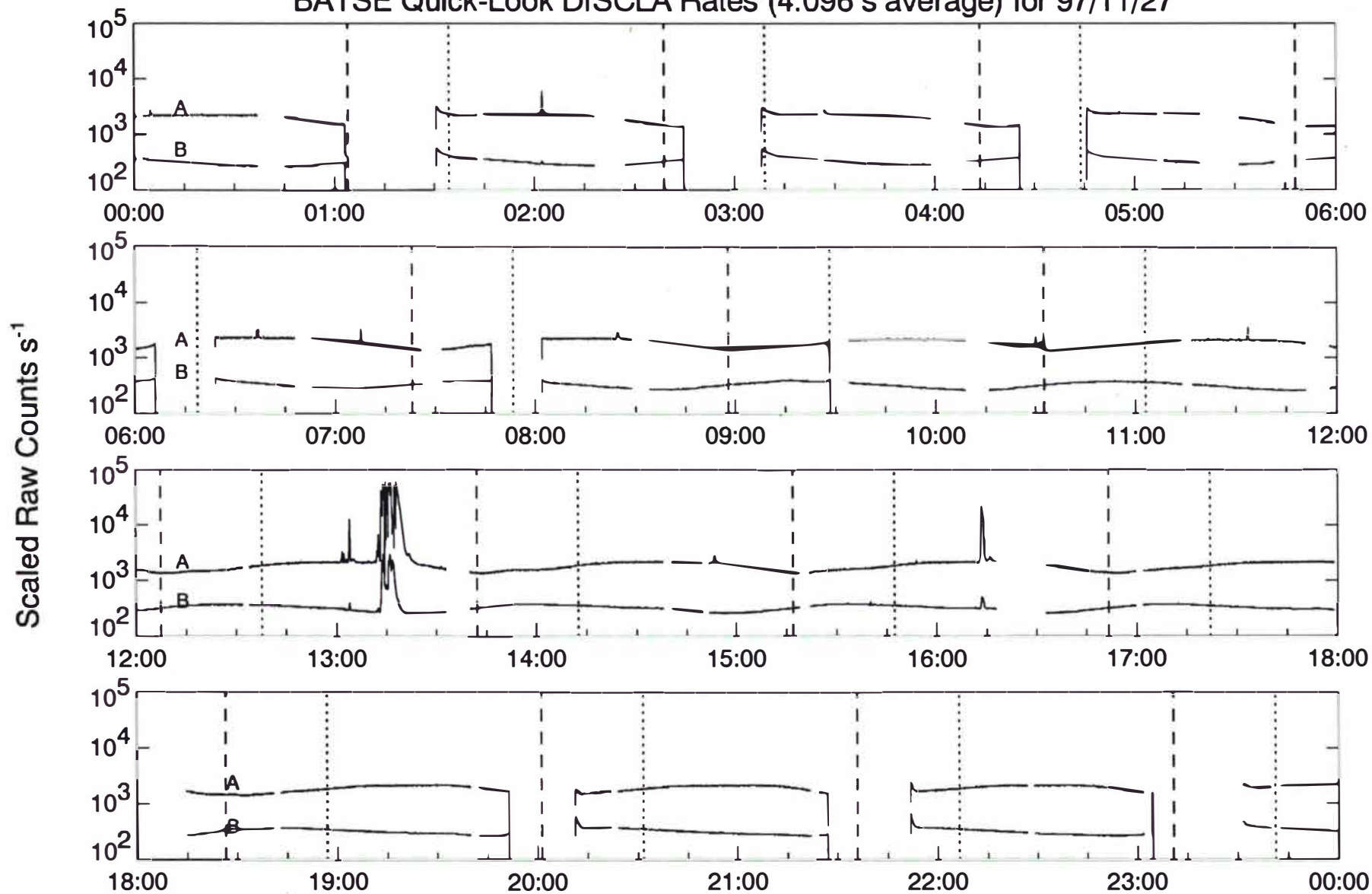
From TERRELL@nisdp0.lanl.gov Fri Feb 27 15:11 PST 1998
From: TERRELL@nisdp0.lanl.gov
Date: Fri, 27 Feb 1998 16:11:55 -0700
To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
henze@fender.msfc.nasa.gov, filippo@botes1.tesre.bo.cnr.it,
kmarar@isac.ernet.in
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: DMSP GRB: 1997(many), 980109, 980113, 980119, 980124, 980125, 980202, 980203

From: jterrell@lanl.gov (James Terrell) 980227
To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kmarar@isac.ernet.in, kraken@rosserv.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov, teegarden@lheavx.gsfc.nasa.gov,
vnp@isac.ernet.in, yosimori@rikkyo.ac.jp
Subj: DMSP GRB detections: 1997(many), 980109, 980113, 980119, 980124, 980125, 980202, 980203

The following GRB were detected by DMSP13 or DMSP14 (or NOT detected, if indicated).
No detection can occur for bursts more than 118 degrees from spacecraft zenith,
or if in the presence of very high counting rates (SAA,SR,NR).
Data are normally in 2-sec counts, except when the DMSP14 trigger circuit is
tripped, giving 12.8ms data, usually reported here as 102.4ms counts.
Numerous other BATSE GRB were also detected, but not reported here; numerous
weak detections by Ulysses have not been checked because of low counting
rates expected at an indefinite time.

DATE	FL	DAY	TIME	NOTES---	(ND=NO DATA, NA=NOT APPARENT & NOT ANALYZED)-----REPORTED
				(NO=DATA CHECKED--SHOWS NO DETECTION) (SR=S. RADIATION BELT)	
				(NR=NORTH RADIATION BELT) (SAA=SOUTH ATLANTIC ANOMALY)	
970111	011	35040.2	BATSE GRB#5773 (8727CTS/2S) (SEE IAU6569,6571,6574,6598)		
	011	35040.2	BEPP0 SAX TRIG,INTENSE,50S,3 PEAKS(232.10,19.67J) IAU6533		
13	011	35040.0	PEAKS(40/S),48.0(50/S),58.0(60/S),@24DEG,@848KM,SOFT		REP0313
970111	011	85744.6	KONUS (HARD,SLOW RISE) +TGR (UL:NO) (DMSP13:NO)		
970117	017	53211	TGR+SAX GRB (KONUS INOP)+UL@54420(STRONG,20S) (13:NO)		
970124	024	44343.4	KONUS(MULT PKS)+UL@46253@2100LS,STRONG+TGR (13SAA)		
970201	032	57250.7	BATSE GRB#5989 (53612/SEC) +UL		
13	032	57222.1	PEAK (100/S,~30S,SOFT,BROAD) (@111DEG) UNCONVINCING		
970218	049	50996.1	KONUS (STRONG,5SEC) +UL@51274,2000LS (STRONG,8SEC)		
13	049	51001.0	PEAK (320/S,<6S)		REP0624
970222	053	86006.6	KONUS (MOD.STRONG,SEV.SEC) +UL@85873,2000LS,MOD,2S(13NO)		
970226	057	31585.9	KONUS (STRONG,SOFT PK@+39) +UL@30547,2000LS(V.INT,40S)		
13	057	31595.8	PEAK (270/S,10SEC) (MODERATELY STRONG)		REP0313
970228	059	10680.8	BEPP0SAX(IAU6572)MOD.INT.,80S,4 PKS (75.46,11.75J) IAU6578		
	059	10680.8	INT.X-RAY,RADIO(IAU6576,6577),OPTICAL(6584),MOTION(6629) OPTICAL		
13	059	10659.1	PKS,667.1(60/S,ONE-SIDED,SOFT,@74DEG) DOUBTFUL (+UL,WIND)		
970313	072	30096.5	KONUS(MOD.STRONG,PK@+11,40S)+UL@28380,2000LS(MOD.INT,10S)		
13	072	28355.8	PEAK (180/S,<2S,SOFT) (NO PEAK AT 30096!) (CONFLICT) REP0501		

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/27

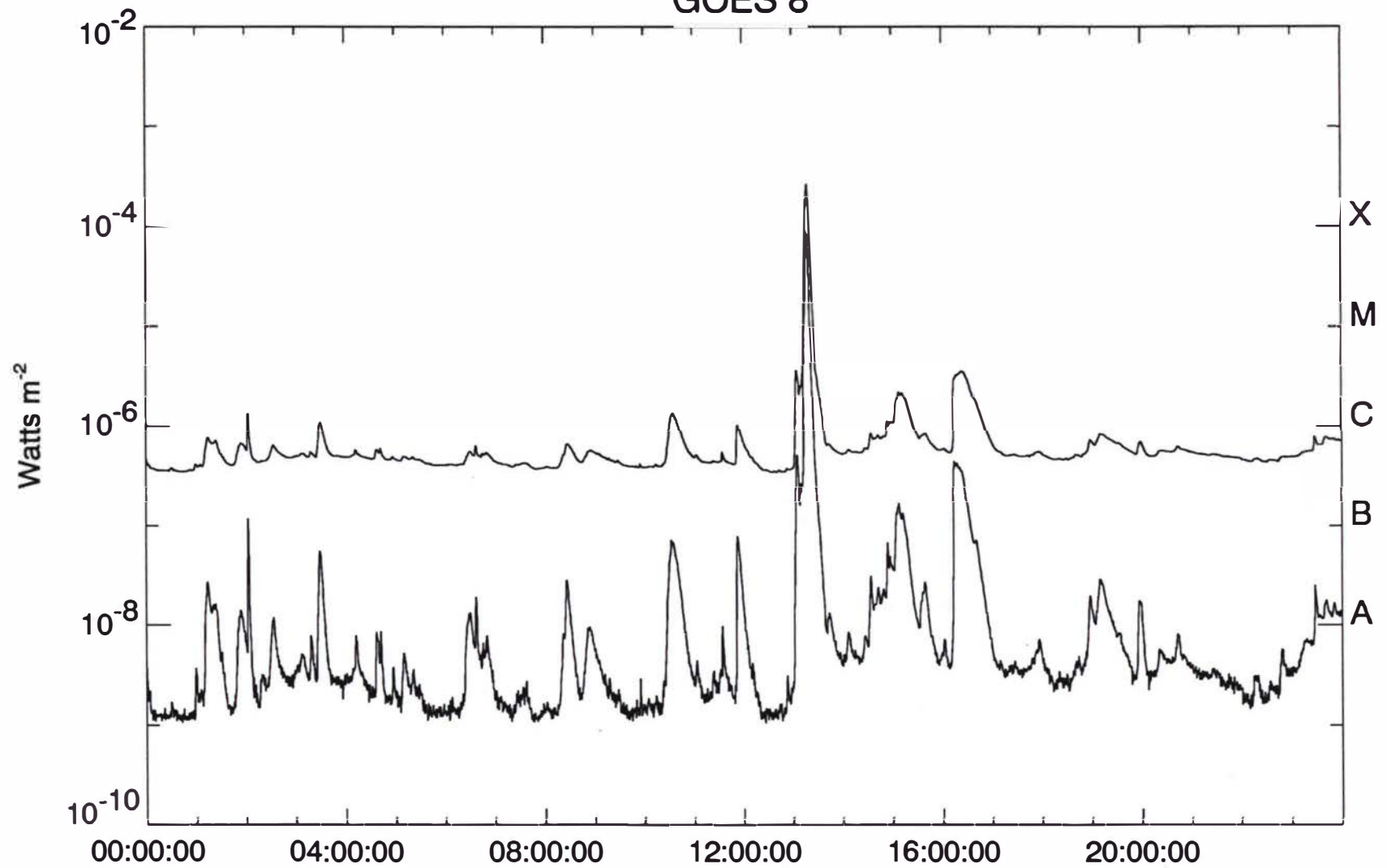


Current Time: 97/12/01, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/11/27, 0000:00

Plot created: 97/12/01, 1007

Channel

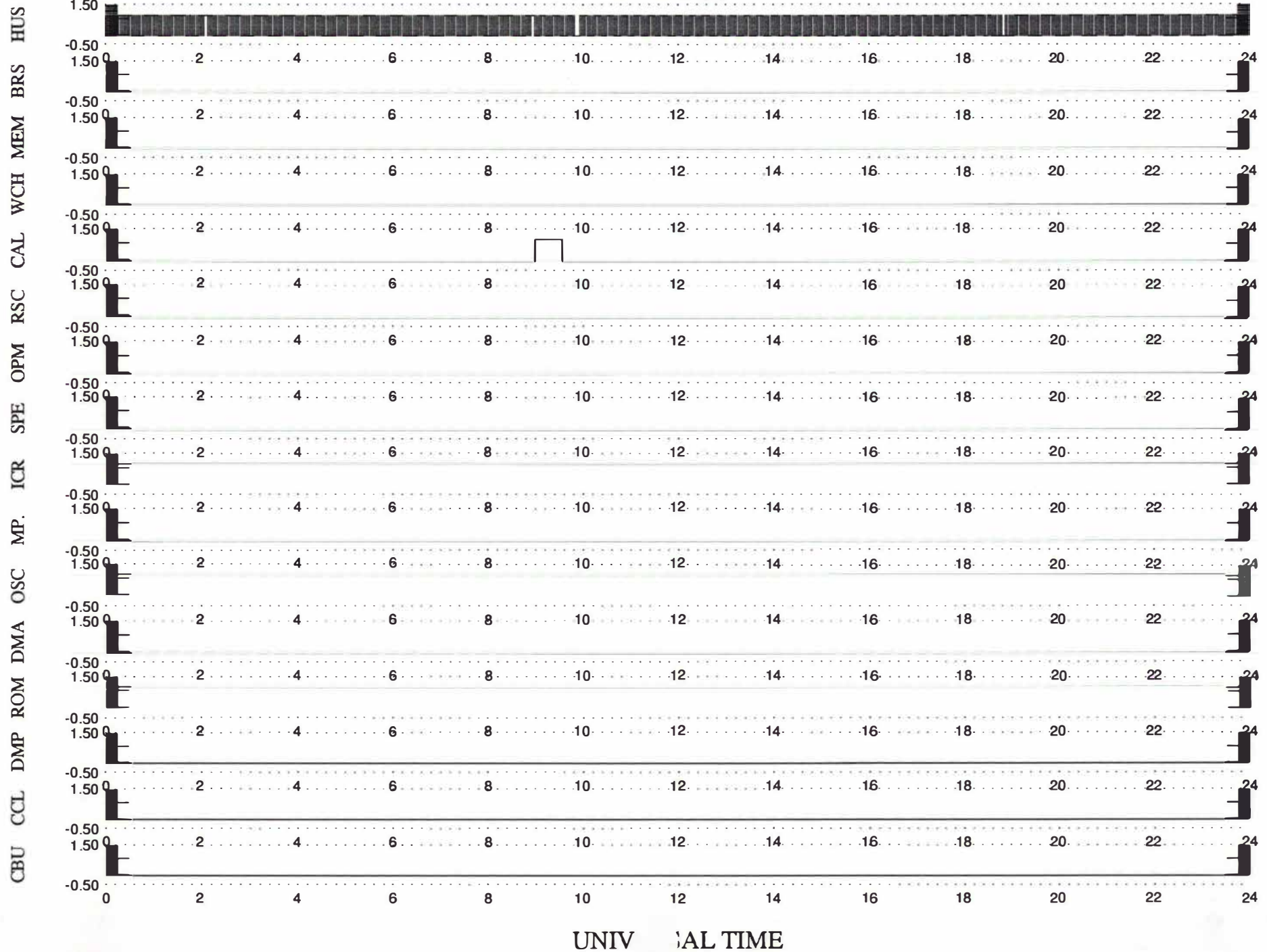
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted

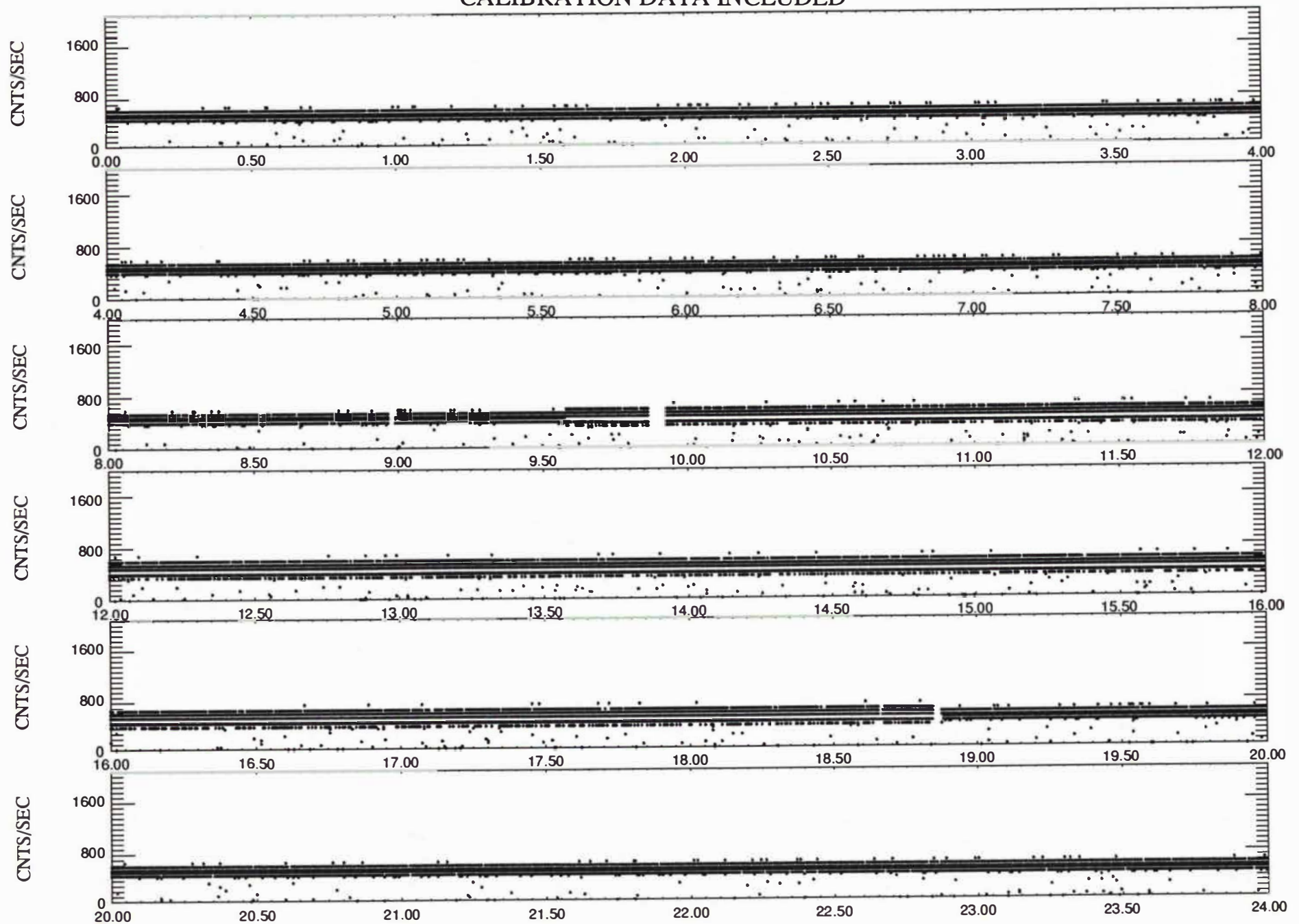
Background not subtracted

Sample average = 10

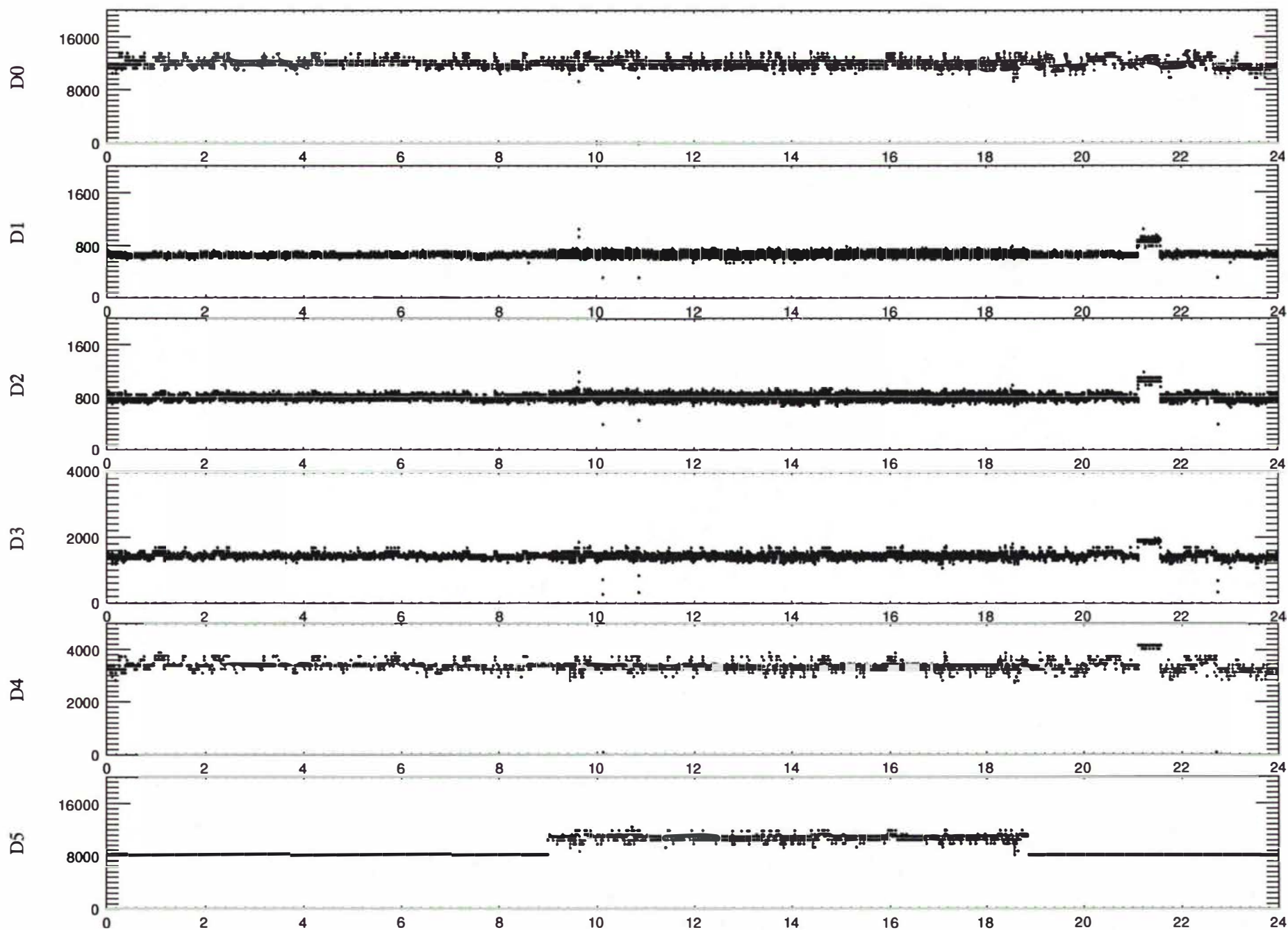
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV AL TIME

From SURASAK@SSLLES.MSFC.NASA.GOV Mon Dec 1 11:10:51 1997
Date: Mon, 1 Dec 1997 13:09:45 -0600 (CST)
From: SURASAK@SSLLES.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@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6510

TIME: TJD=0780 SECONDS=17759

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=40.0 AZIMUTH=348.8 ERROR=0.948 DEGREES

COMMENTS:

SOLAR FLARE. GOES M6.8, OPTICAL 2B. COMPLEX. DURATION ABOUT 1000S.
NOT VISIBLE ABOVE 300 KEV.

From SURASAK@SSLLES.MSFC.NASA.GOV Mon Dec 1 11:12:13 1997
Date: Mon, 1 Dec 1997 13:11:13 -0600 (CST)
From: SURASAK@SSLLES.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@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6511

TIME: TJD=0780 SECONDS=60119

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

KONUS

ULYSSES RT

05 / 02 / 00

28 / 11 / 97 80712.336 s

0.500 S INTERVALS REGROUPED BY 8

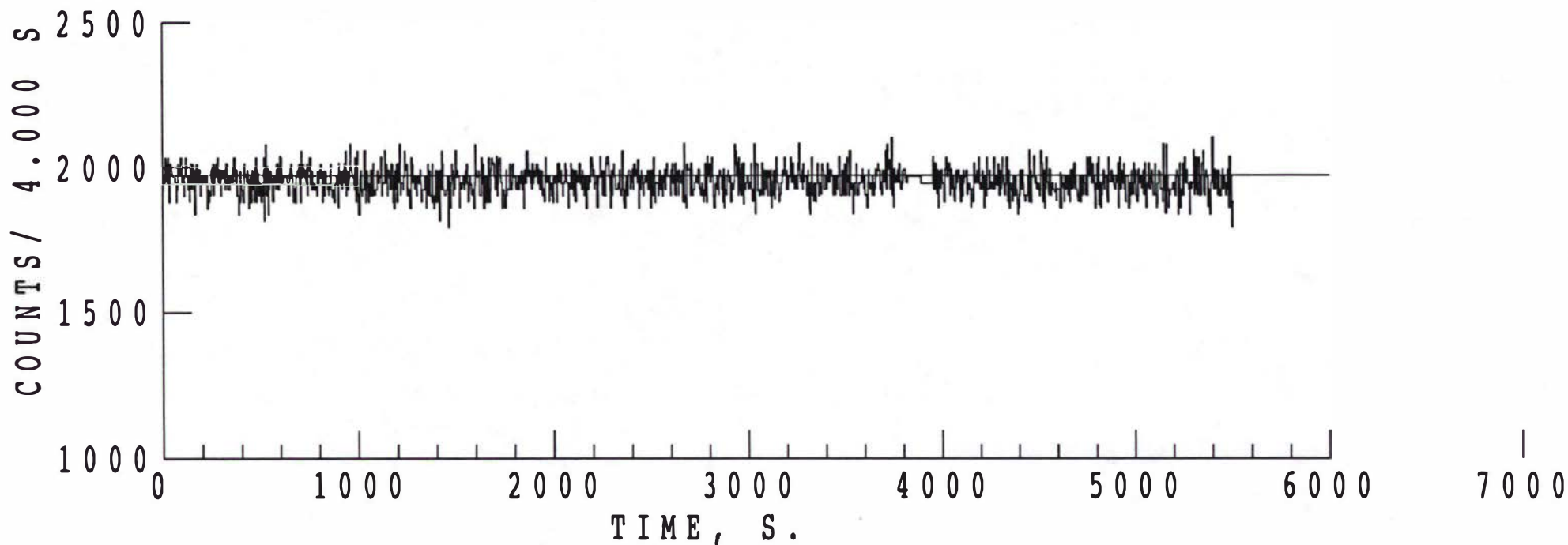
0 - 0 keV

W= 10 M= 10

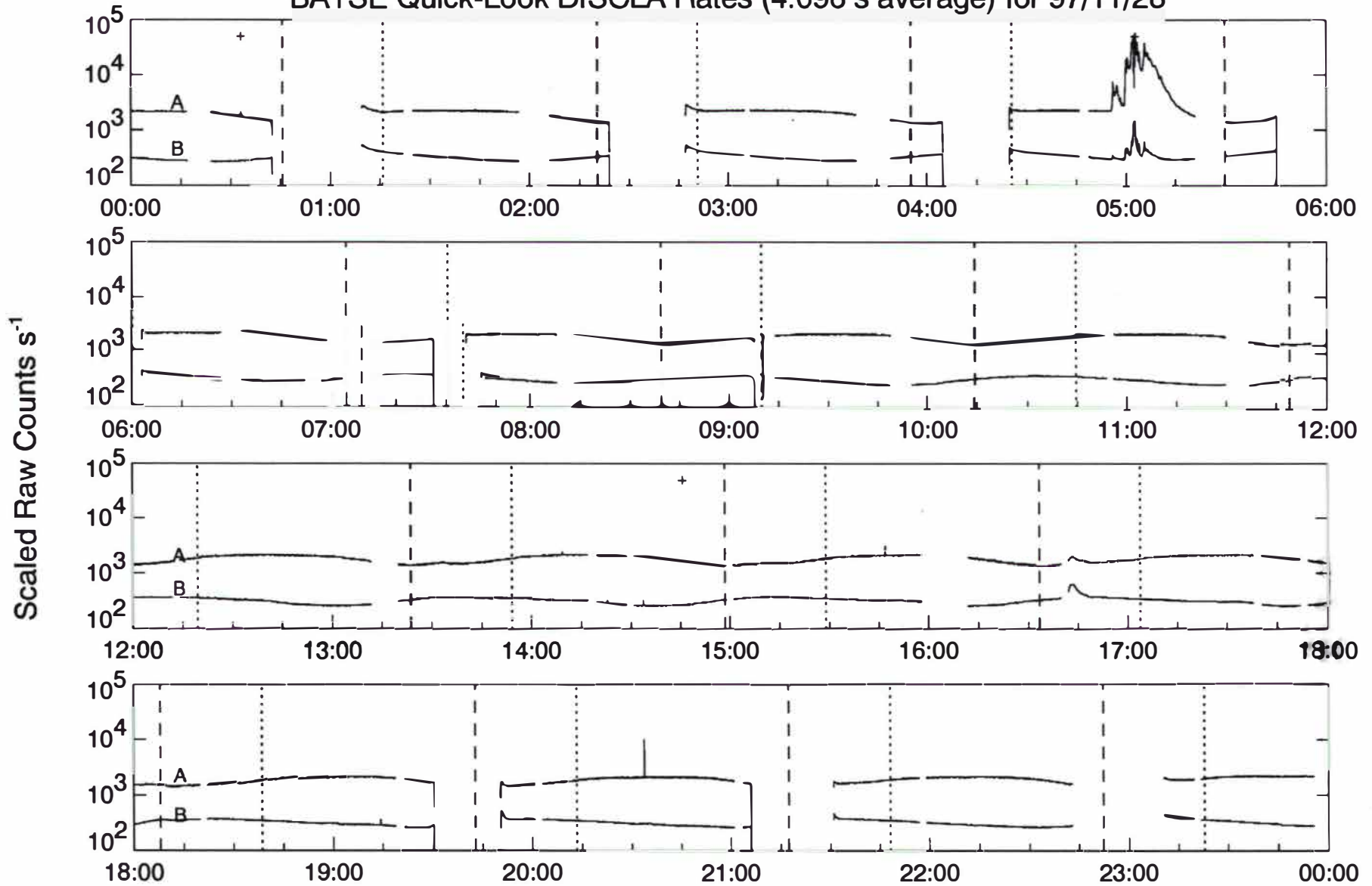
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/28

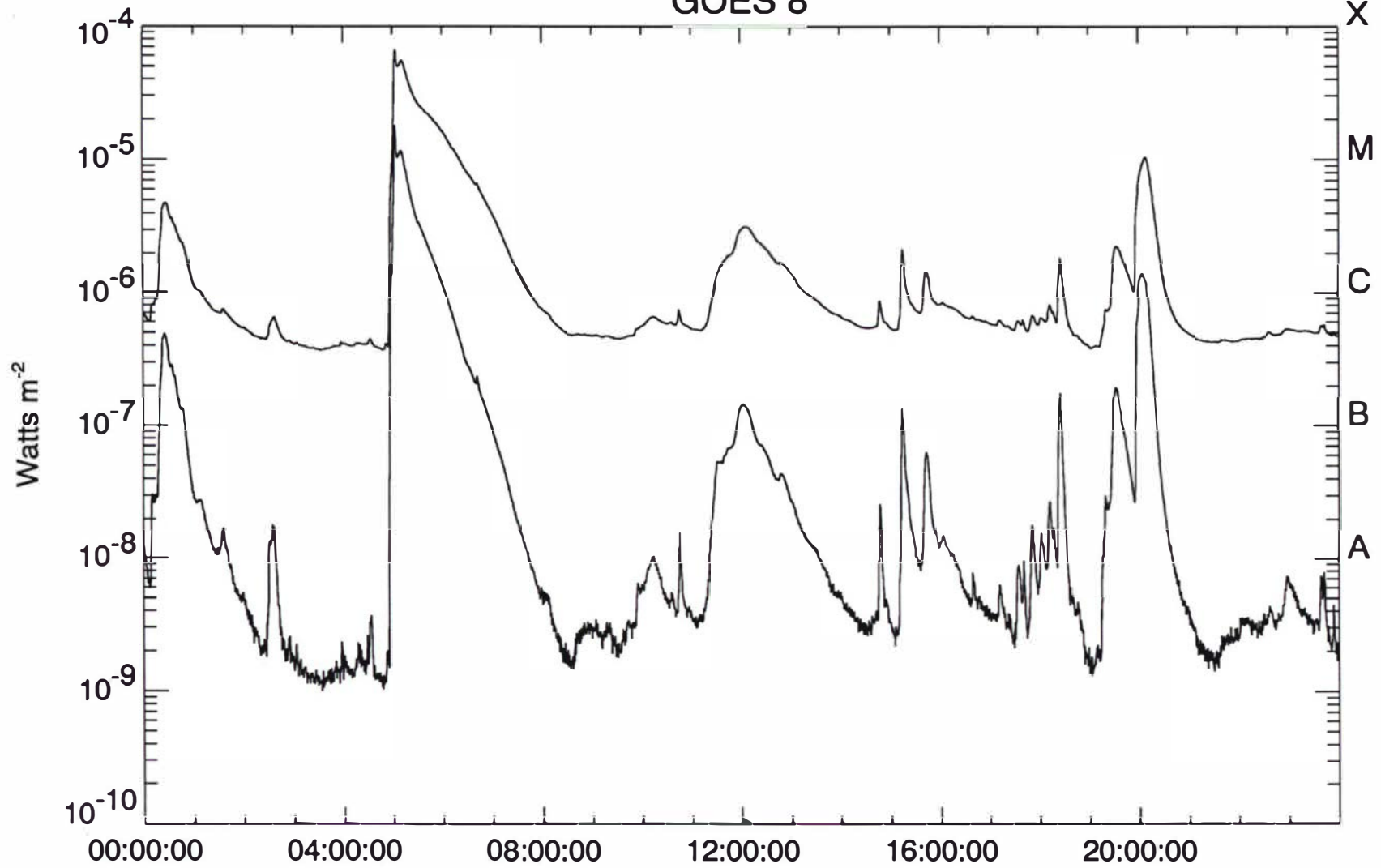


Current Time: 97/12/02, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 97/11/28, 0000:00

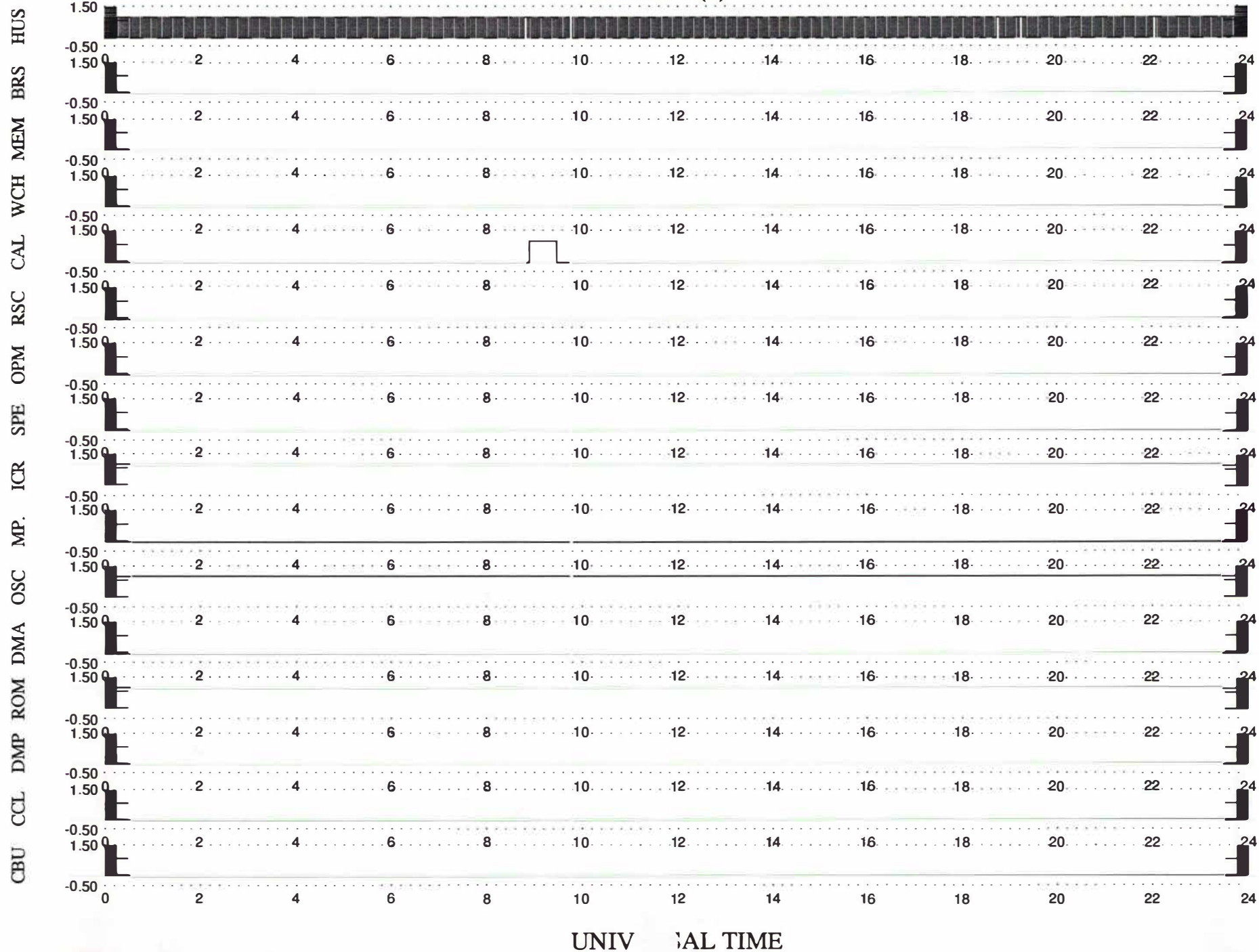
Plot created: 97/12/02, 1007

Channel

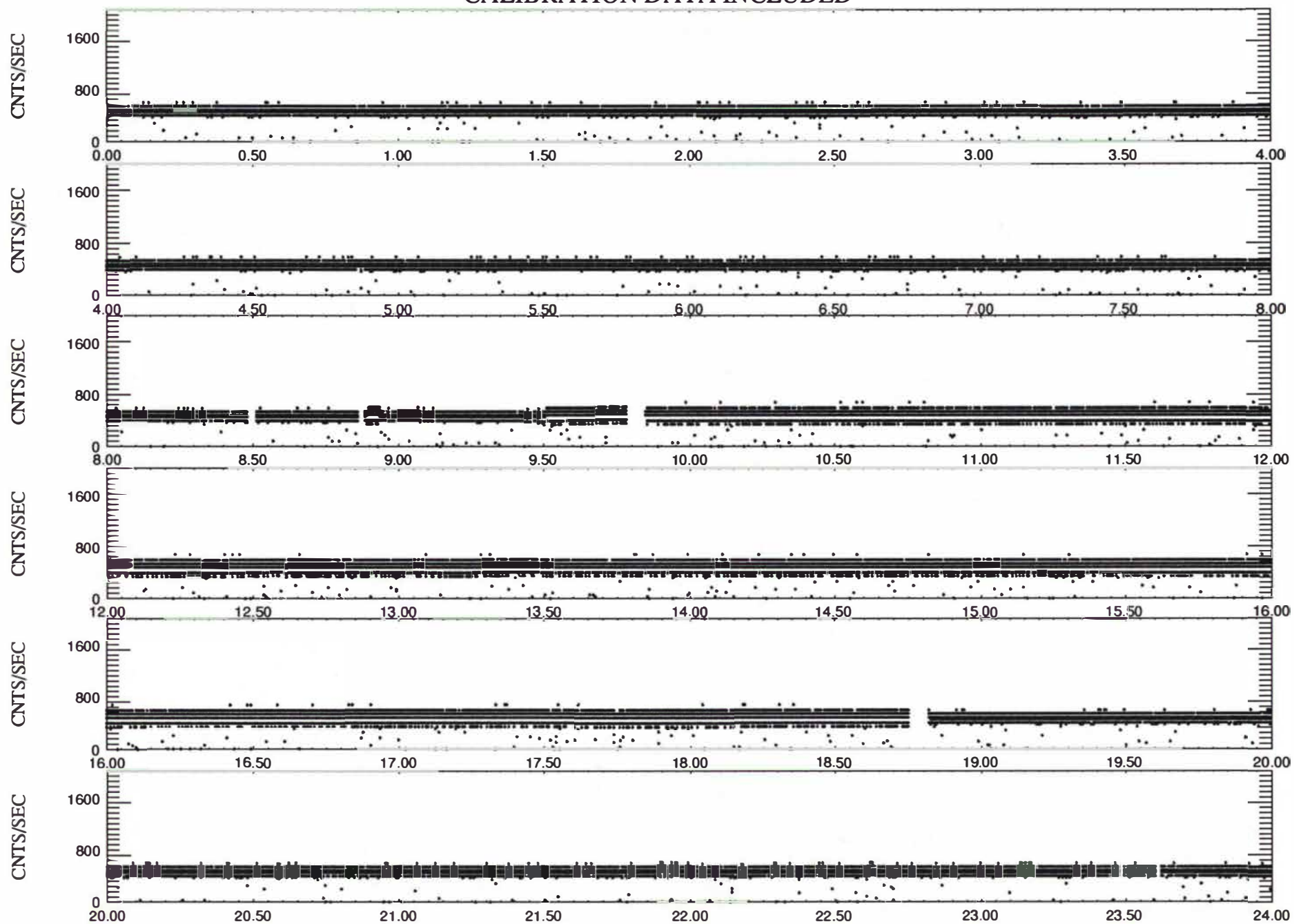
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

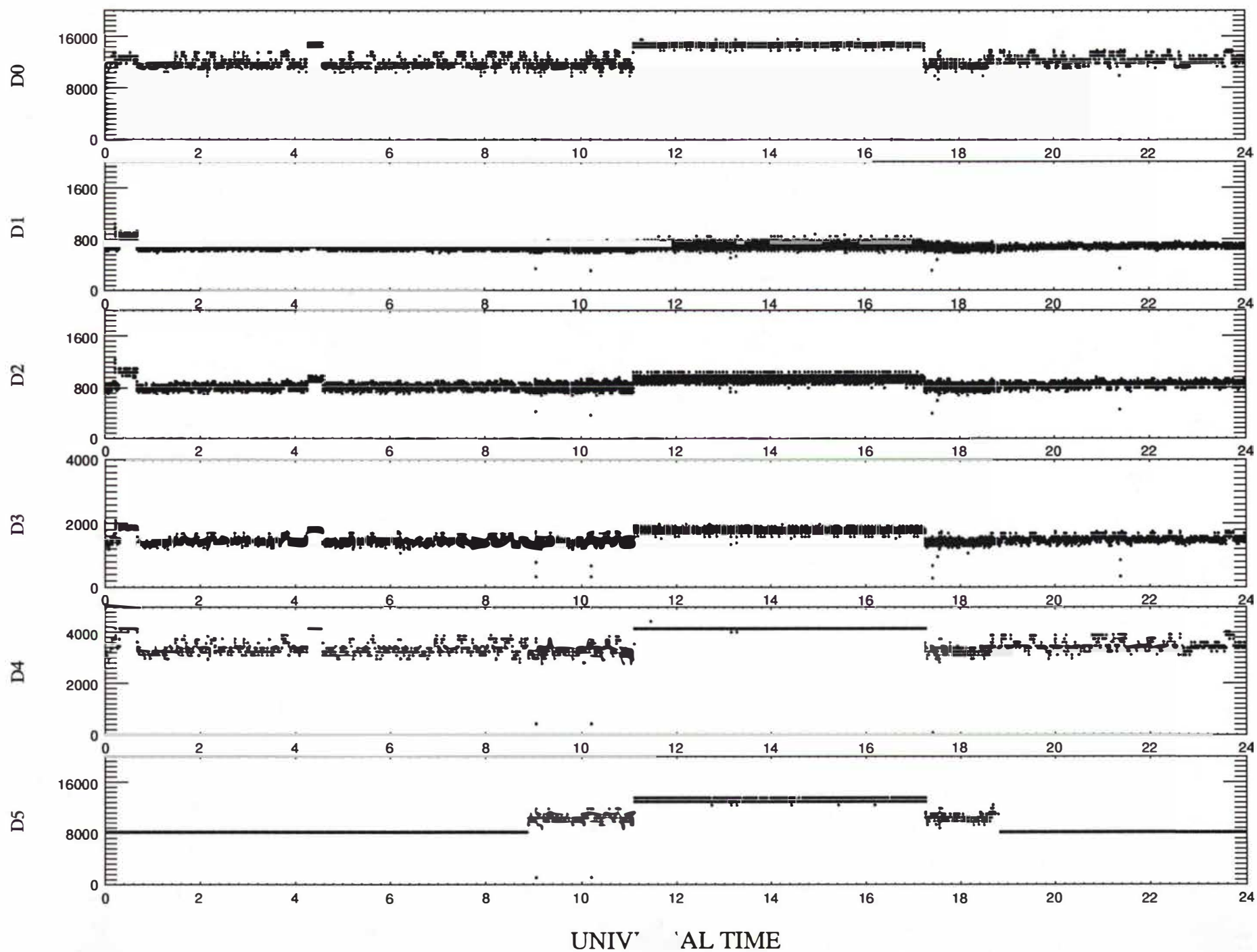
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV AL TIME



ember 17 1997 02:08 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 18 1997 11:22 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

November 29 1997 20:25 Ulysses time; weak burst, 100 ms long

This event was not detected by Konus.

December 7 1997 11:24 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

December 11 1997 20:22 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

December 14 1997 08:44 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

December 19 1997 21:33 Ulysses time; moderate burst, 15 s long

Konus triggered at 22:12:54.241 in the North-facing detector. The event consisted of a single broad soft peak lasting 10 seconds, with a 50-200 keV spike 4 seconds after the trigger and lasting 0.5 seconds.

ember 25 1997 17:23 Ulysses time; weak burst, 32 ms long

Konus waiting-mode data records a couple of events during the period of interest. There was a weak to moderate North-facing detector soft event lasting 60 seconds, with a peak at 18:00:35. A single 3-second timebin

From kraken@rosserv.gsfc.nasa.gov Wed Dec 17 14:05 PST 1997
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 17 Dec 1997 17:07:14 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@rosserv.gsfc.nasa.gov>
Subject: Ulysses bursts and TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

Here are the results of a search through TGRS data for recent Ulysses bursts. We cannot report the detection of any of the bursts listed below. Three bursts had interesting anomalies within a 6000 second window centered on the Ulysses trigger time. Such events are under investigation, but are probably not GRB's.

November 17 1997 02:08 Ulysses time; weak burst, 100 ms long
TGRS sees a single high data channel at 7100s between 100-300 keV

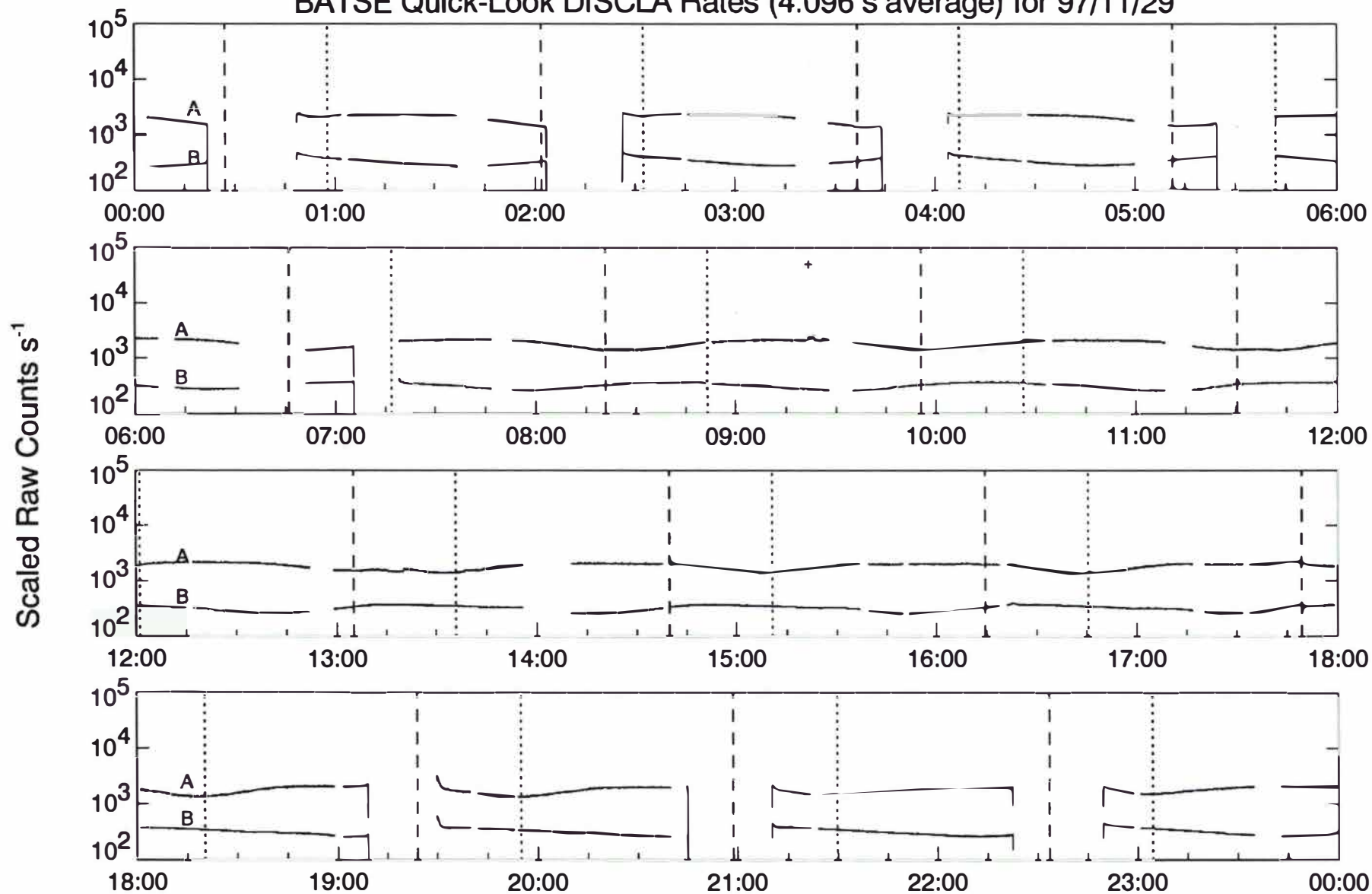
November 18 1997 11:22 " " ; weak burst, 64 ms long
November 29 1997 20:25 Ulysses time; weak burst, 100 ms long
December 7 1997 11:24 Ulysses time; weak burst, 64 ms long
December 11 1997 20:22 Ulysses time; weak burst, 32 ms long
TGRS sees a single high data channel at 75700s between 35-100 keV

December 14 1997 08:44 Ulysses time; weak burst, 32 ms long
TGRS sees a single high data channel at 35100s between 100-300 keV

Take care, and Happy Holidays.

Pete

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/29

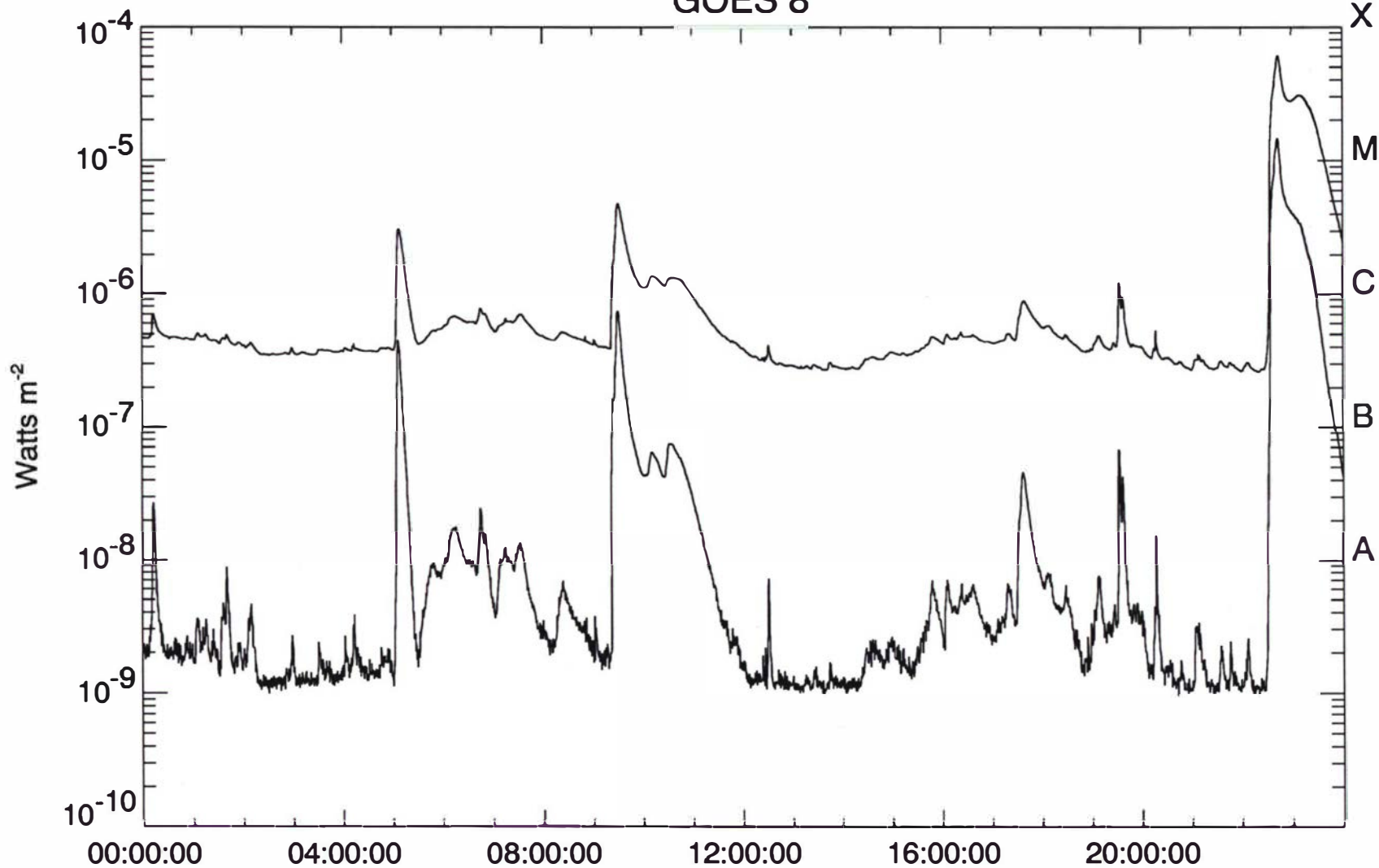


Current Time: 97/12/03, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 97/11/29, 0000:00

Plot created: 97/12/03, 1007

Channel

1 (1.0 - 8.0 Angstroms)

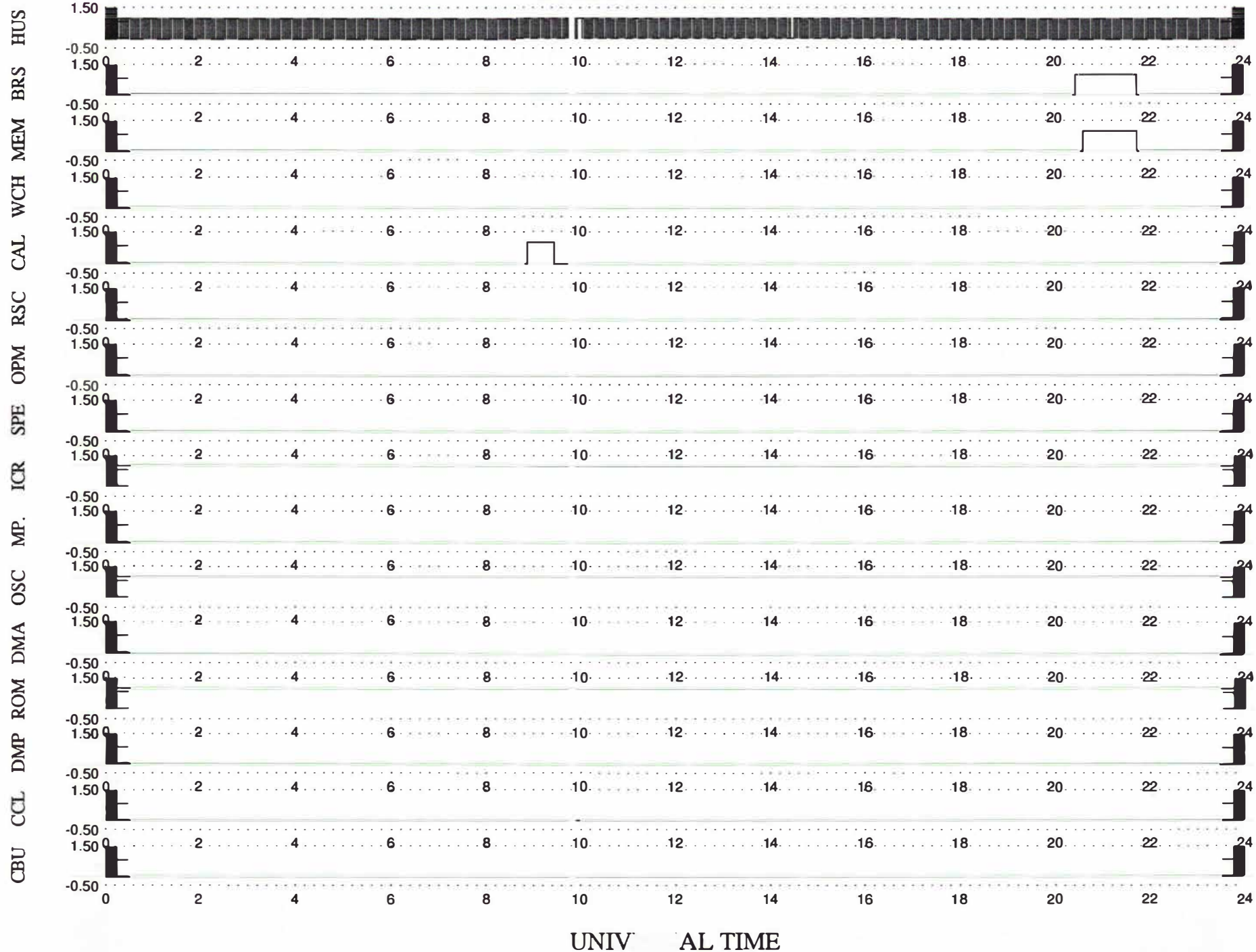
Background not subtracted

2 (0.5 - 4.0 Angstroms)

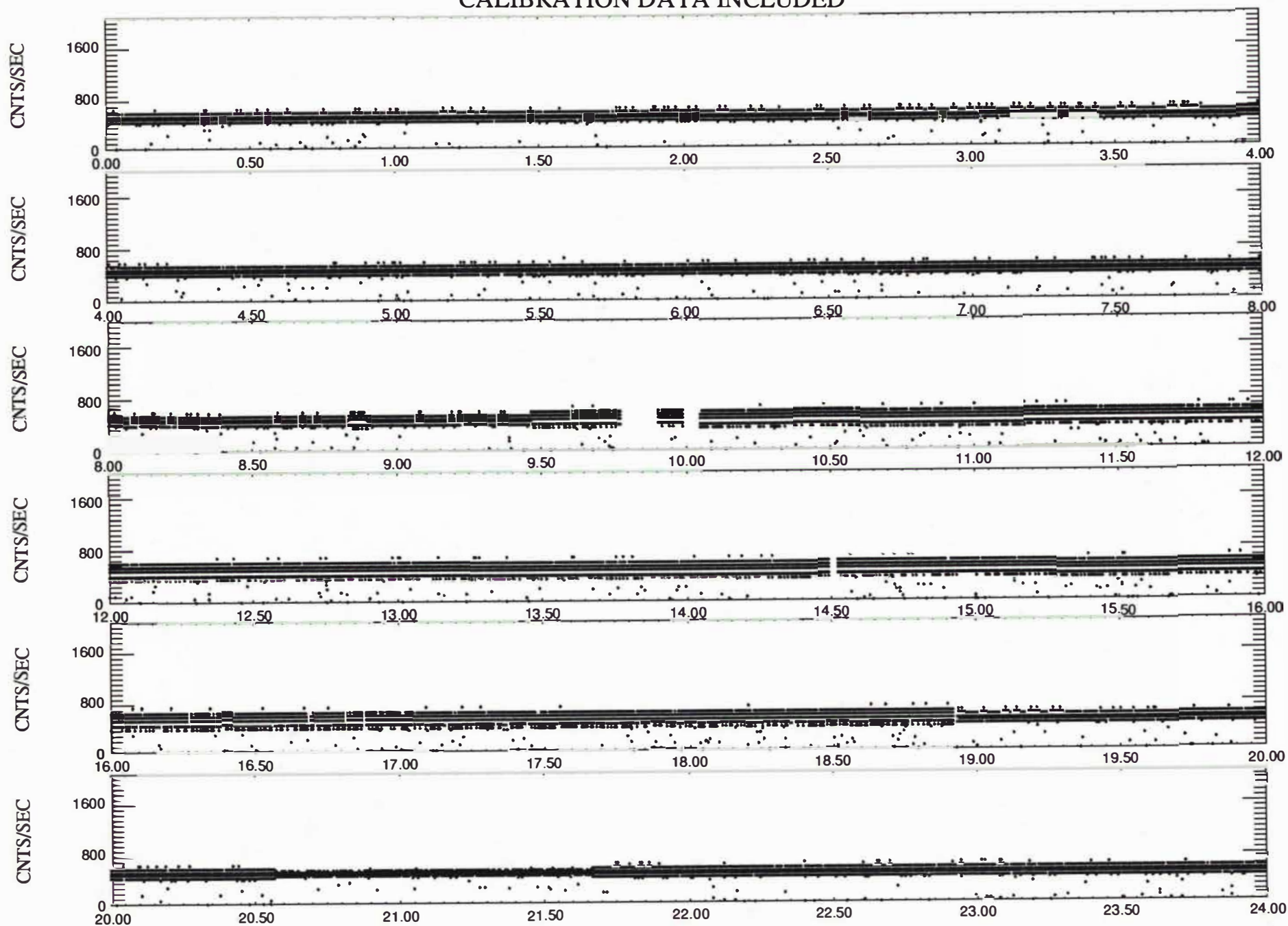
Background not subtracted

Sample average = 10

BURST NUMBER 1

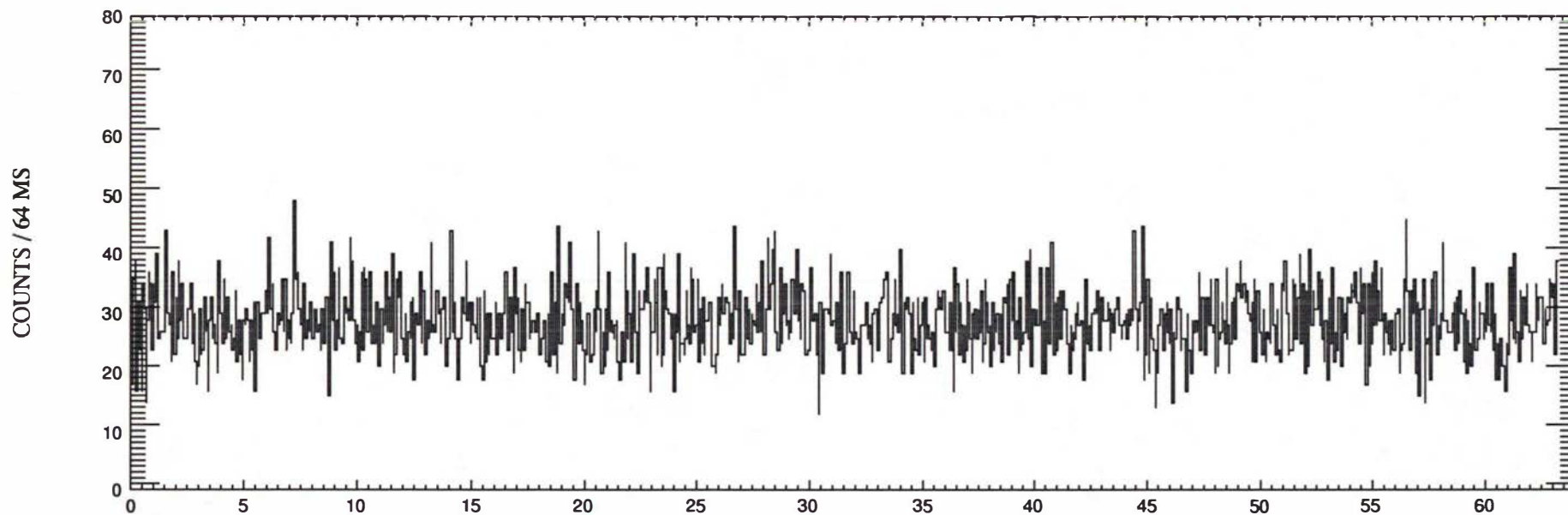


CALIBRATION DATA INCLUDED

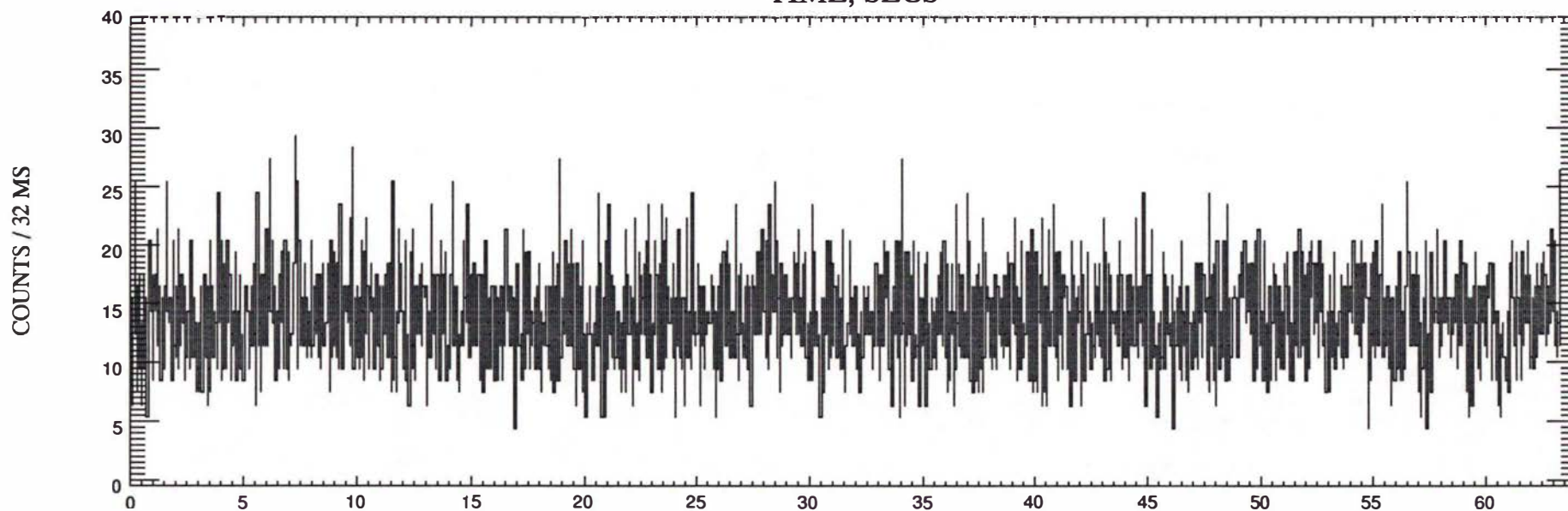


UNIV' AL TIME

Burst Counter 1 at UT=20.419189003838 h=73509.080 s 20:25:09.080

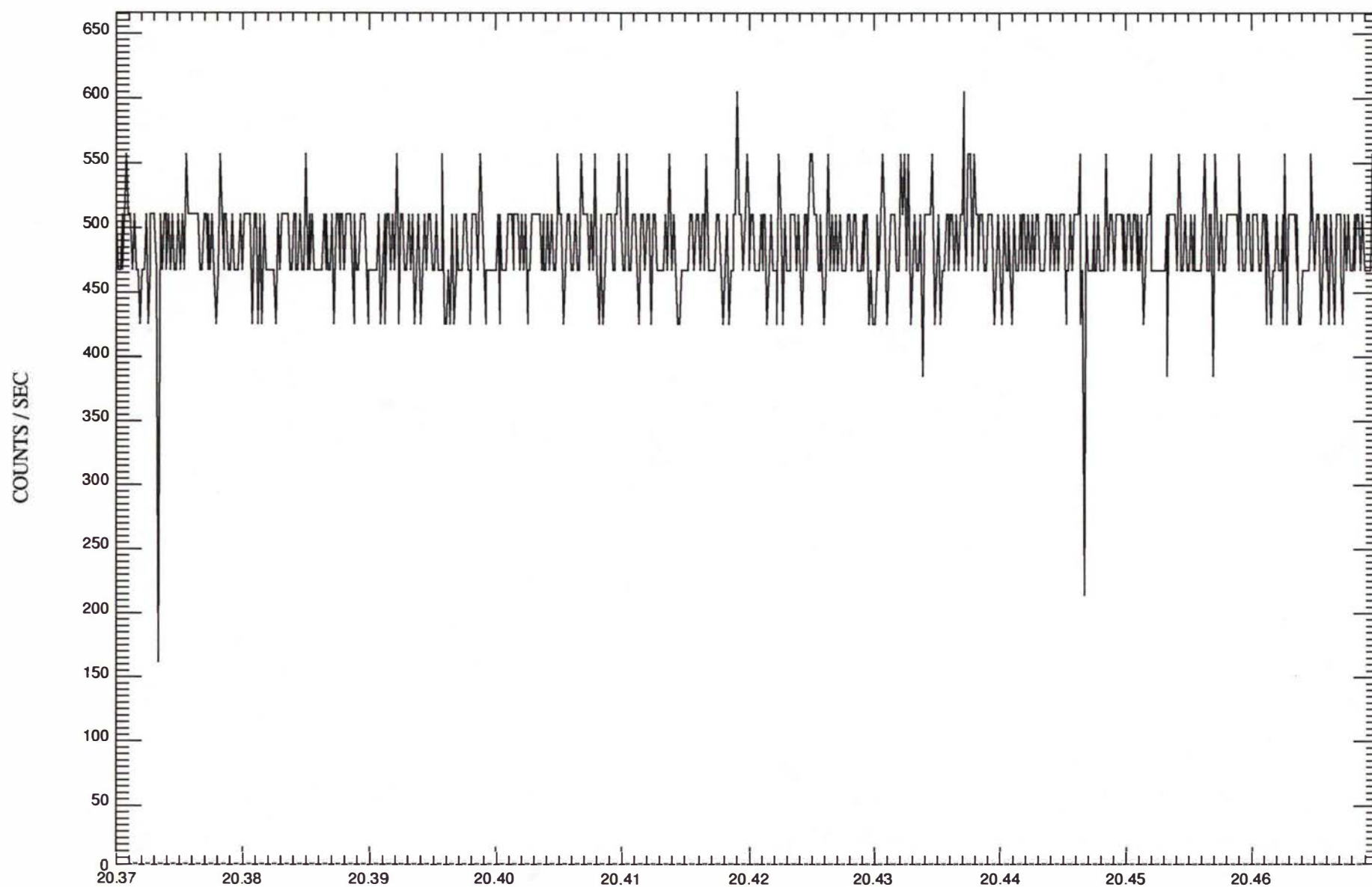


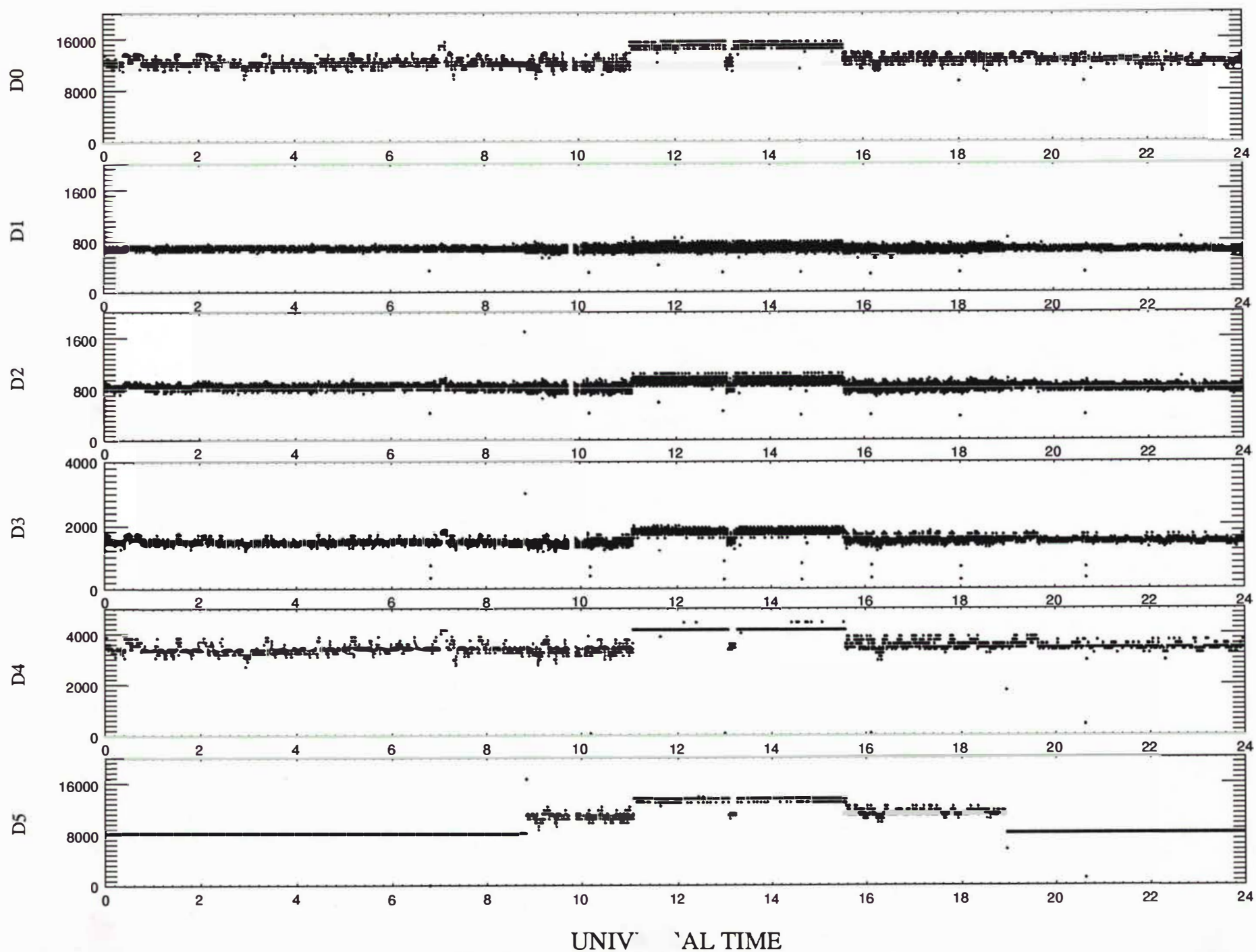
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Dec 3 09:40:25 1997
Return-Path: <RICHARDSON@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA05572; Wed, 3 Dec 1997 09:40:24 -0800
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA17751; Wed, 3 Dec 1997 09:40:18 -0800
Date: Wed, 3 Dec 1997 11:39:46 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971203113946.21e10cb4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6512
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6512
EVENT OF 1997 NOV 30 DAY OF YEAR=334
EVENT CROSSING TIME AT BATSE : 10831. S. OR 03:00:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 224.000 -12.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/11/ 97 IS:
RA= 170.697 DEC= 12.374 DIST= 5.402 AU
BATSE-ULYSSES DISTANCE = 808130276. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1418.94 SECS.
CROSSING TIME AT ULYSSES IS 9412. S. OR 02:36:52 +/- 426.37 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/11/ 97 IS:
RA= 287.319 DEC= -23.750 DIST= 2.029 AU
MARS-BATSE DISTANCE = 303582752. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -491.88 SECS.
CROSSING TIME AT MARS IS 10339. S. OR 02:52:19 +/- 146.21 SECONDS

BATSE BURST TRIGGER

NO.: 6512

TIME: TJD=0782 SECONDS=10831

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=47.9 AZIMUTH=329.4 ERROR=13.6 DEGREES

COMMENTS:

GRB SINGLE SPIKE. DURATION APPROX.= 0.5 SEC. NOT VISIBLE ABOVE 300KEV.

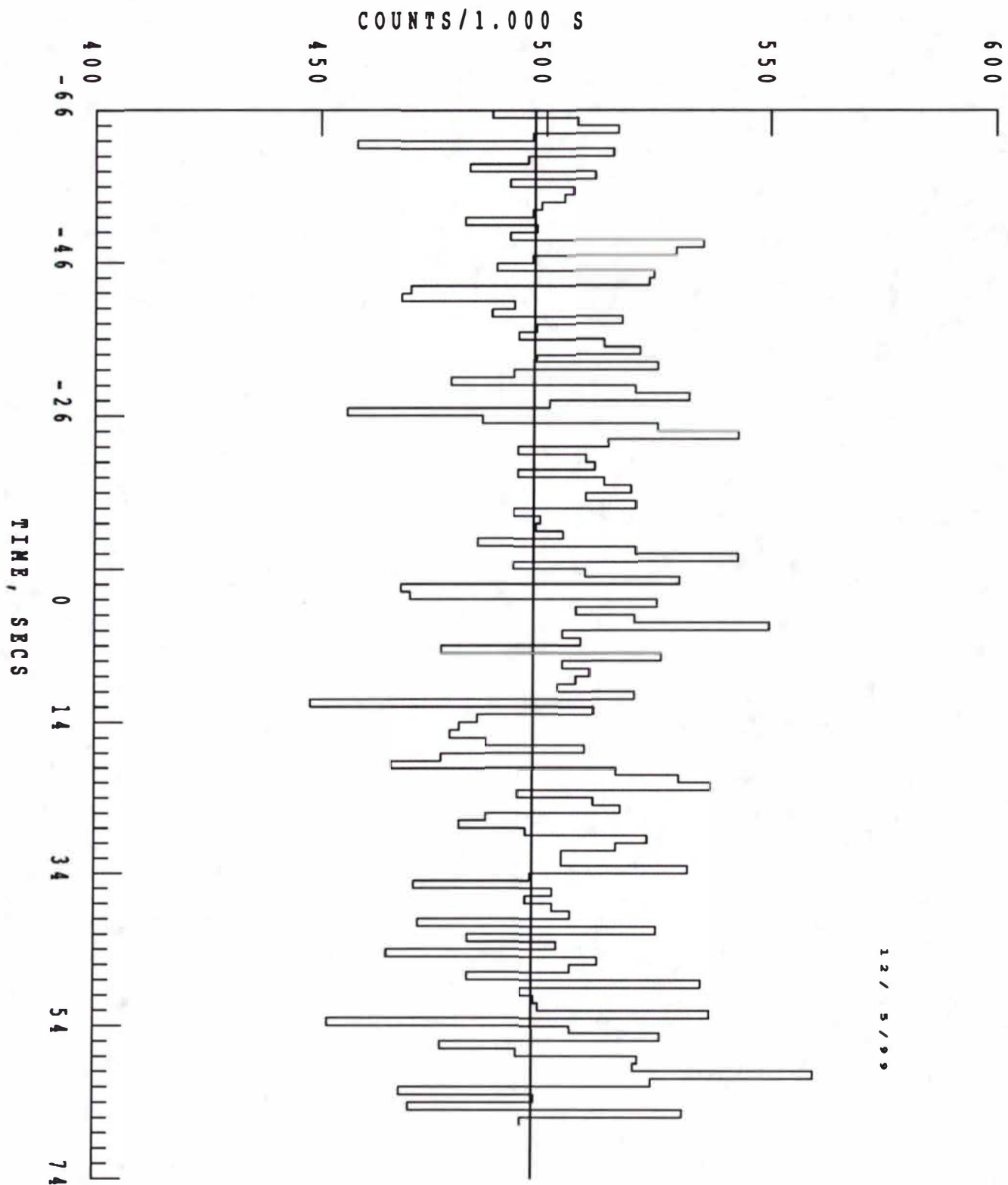
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6512	971130	10782	10831	2500	224	-12	.5

NEAR

30/11/97

10931.028

100-1000 keV



BATSE BURST# 6512

ULYSSES RT

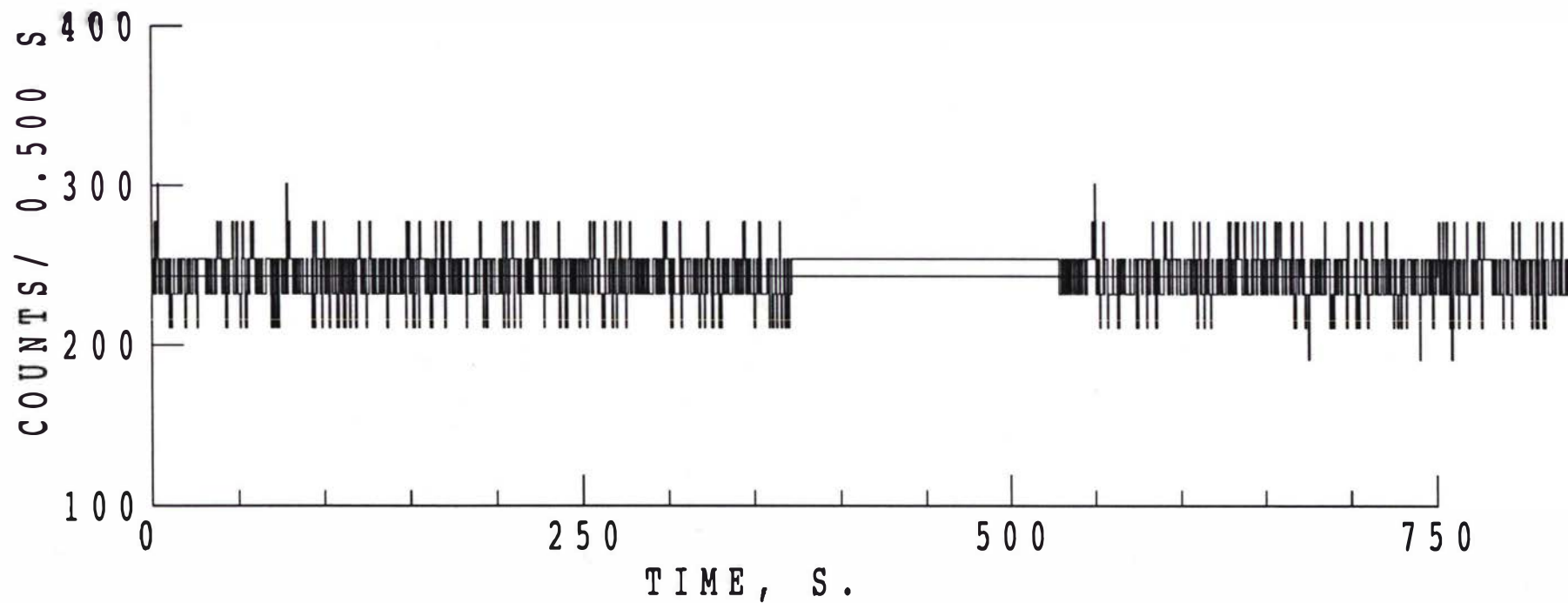
3 / 12 / 97

30 / 11 / 97 9000.465 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Dec 3 07:26:15 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Wed, 3 Dec 1997 9:24:59 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6513

TIME: TJD=0782 SECONDS=17327

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=34.2 AZIMUTH=356.4 ERROR=0.1 DEGREES

COMMENTS:

SOLAR FLARE: RADIO BURSTS, NO GOES CLASS., NO OPTICAL.
SINGLE PULSE, DURATION APPROX. = 20SEC. NOT VISIBLE ABOVE 300KEV.

From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Dec 3 09:41:58 1997
Return-Path: <RICHARDSON@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA05590; Wed, 3 Dec 1997 09:41:50 -0800
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA17775; Wed, 3 Dec 1997 09:41:47 -0800
Date: Wed, 3 Dec 1997 11:41:42 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971203114142.21e10cb4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6514
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6514
EVENT OF 1997 NOV 30 DAY OF YEAR=334
EVENT CROSSING TIME AT BATSE : 55802. S. OR 15:30:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 200.000 -29.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/11/ 97 IS:
RA= 170.703 DEC= 12.362 DIST= 5.396 AU
BATSE-ULYSSES DISTANCE = 807241586. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1726.75 SECS.
CROSSING TIME AT ULYSSES IS 54075. S. OR 15:01:15 +/- 382.48 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/11/ 97 IS:
RA= 287.319 DEC= -23.750 DIST= 2.029 AU
MARS-BATSE DISTANCE = 303582752. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -235.64 SECS.
CROSSING TIME AT MARS IS 55566. S. OR 15:26:06 +/- 167.41 SECONDS

BATSE BURST TRIGGER

NO.: 6514

TIME: TJD=0782 SECONDS=55802

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=75.2 AZIMUTH=336.2 ERROR=3.5 DEGREES

COMMENTS:

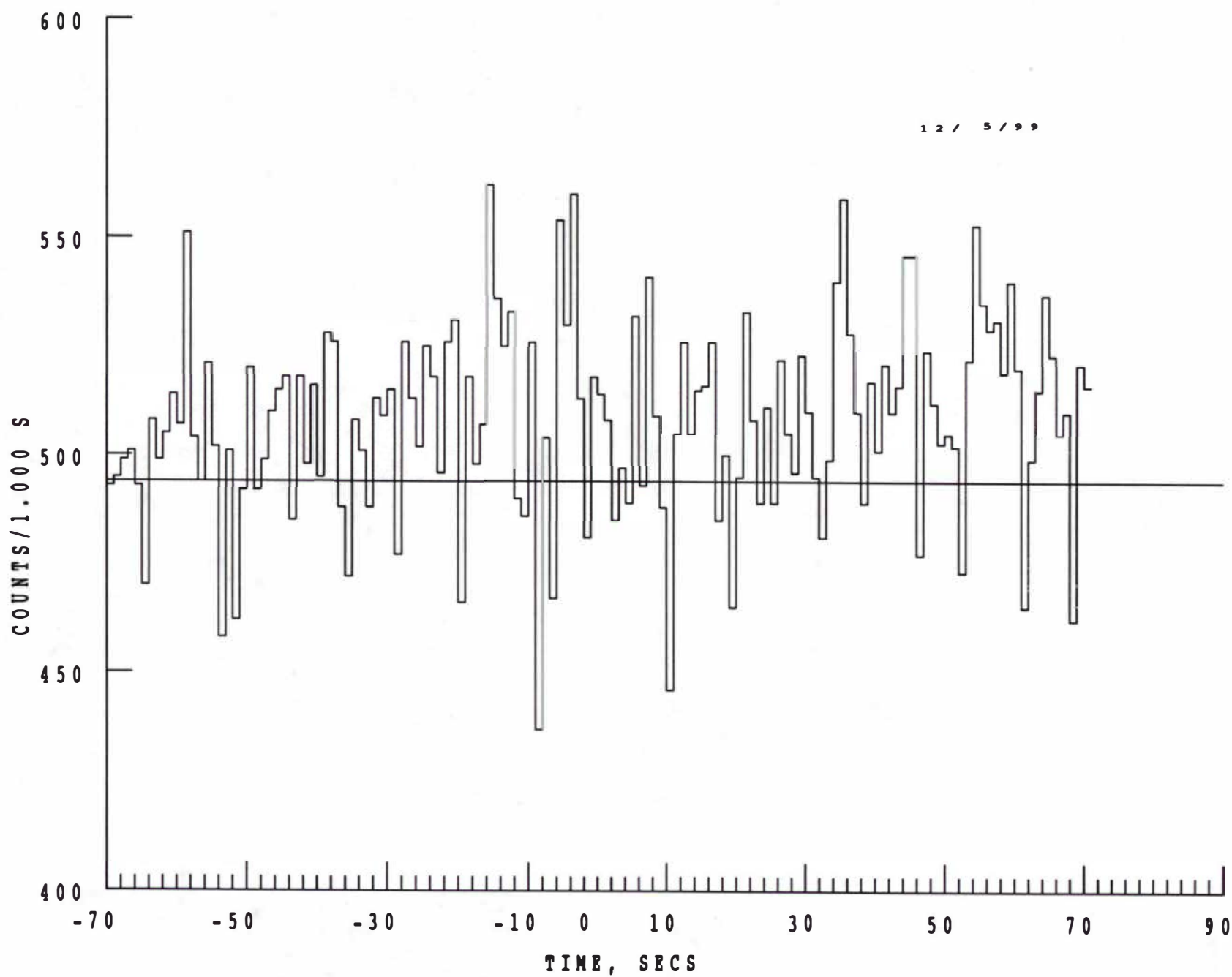
GRB. SINGLE SPIKE. DURATION APPROX = 0.15SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6514	971130	10782	55802	30000	200	-29	.15

30/11/97 55868.020

100-1000 keV

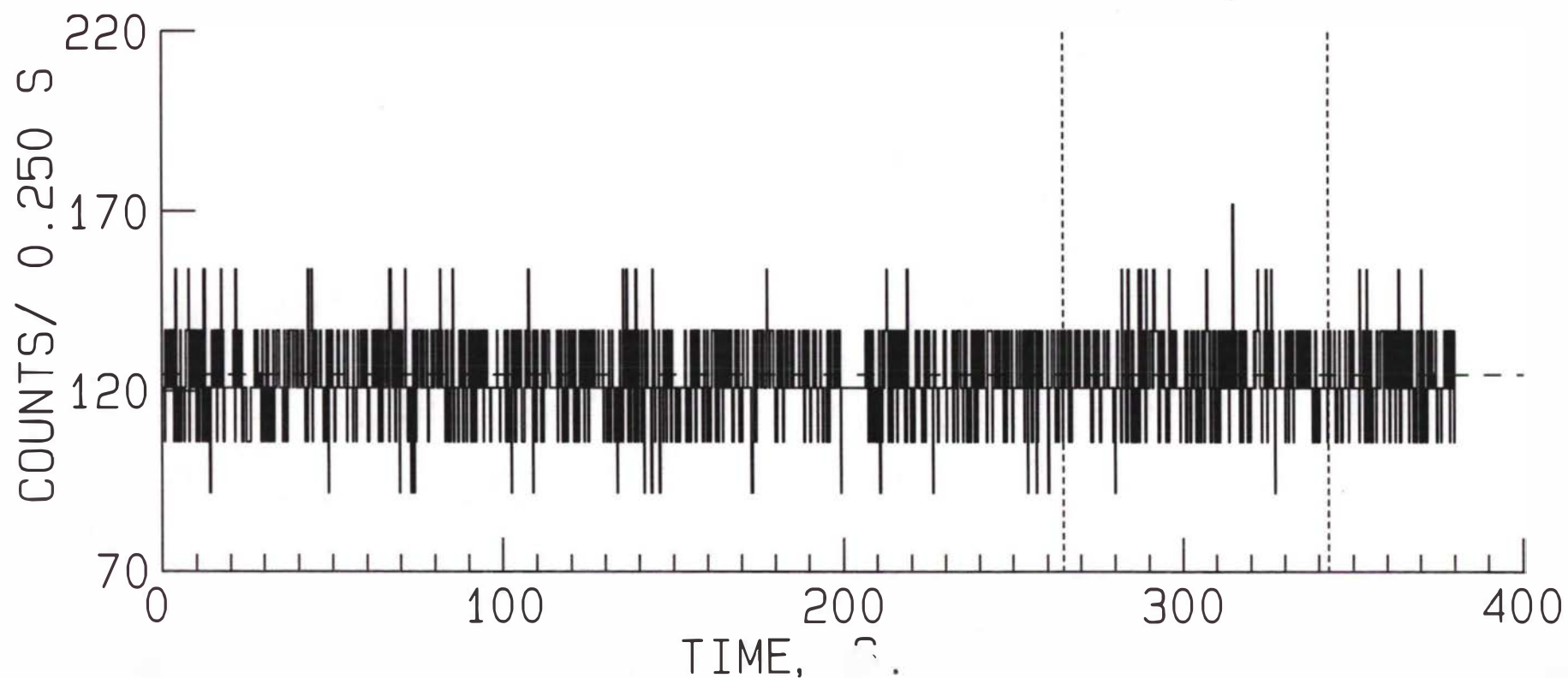
NEAR



ULYSSES RT
30/11/97 53676.215 s
22- 147 keV

5/12/97

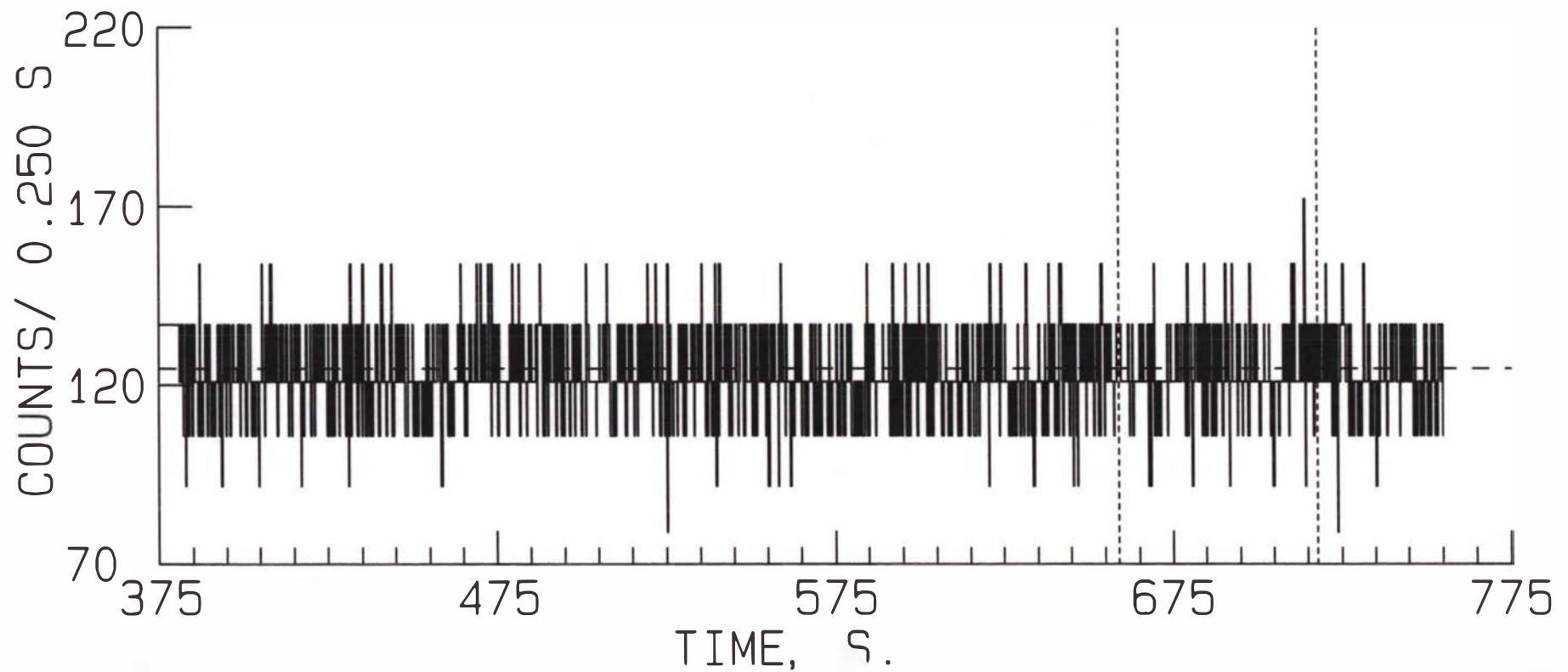
N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS



ULYSSES RT
30/11/97 53676.215 s
22- 147 keV

5/12/97

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS

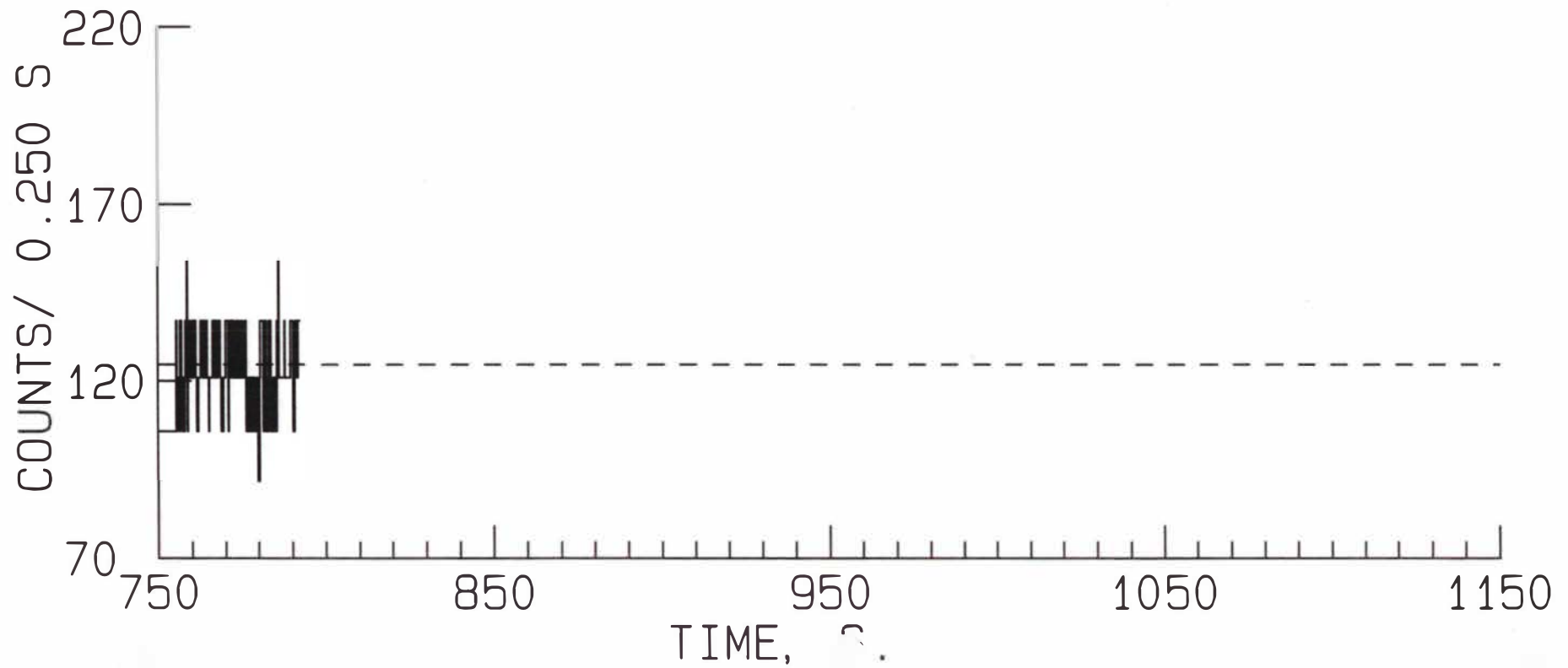


ULYSSES RT

5/12/97

30/11/97 53676.215 s

22- 147 keV



grbm 19971130 72332

ULYSSES RT

03/09/04

30/11/97 71748.156 s

0.500 S INTERVALS REGROUPED BY 2

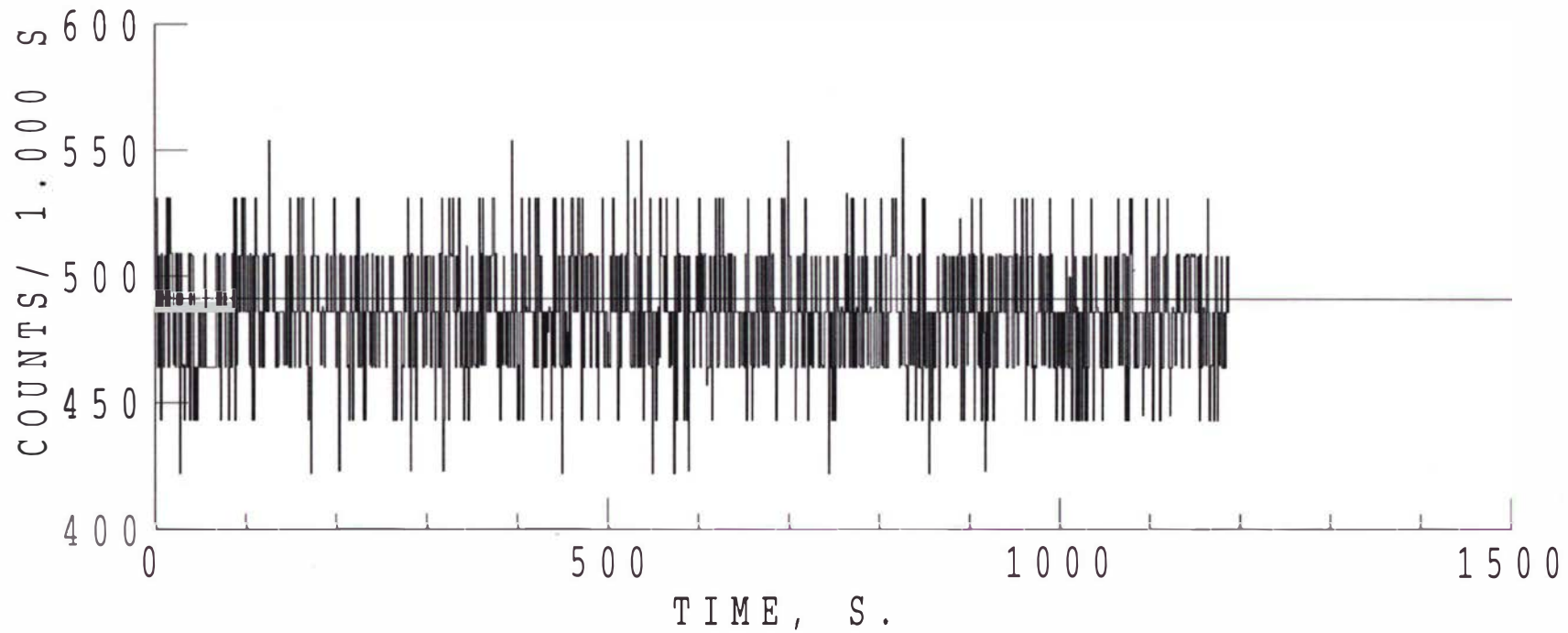
0 - 0 keV

N= 10 M= 10

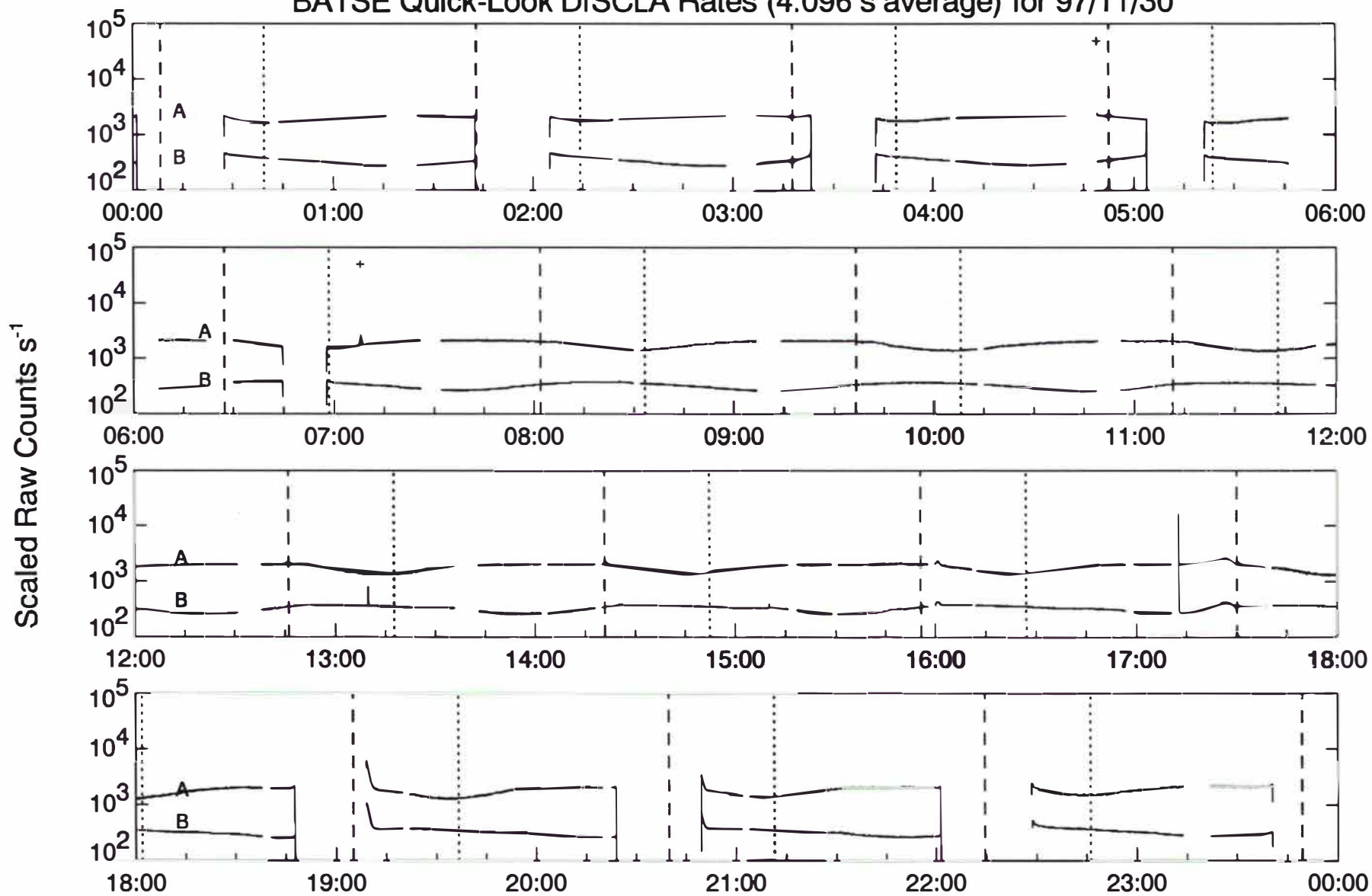
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/11/30



Current Time: 97/12/04, 1009 EDT

A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

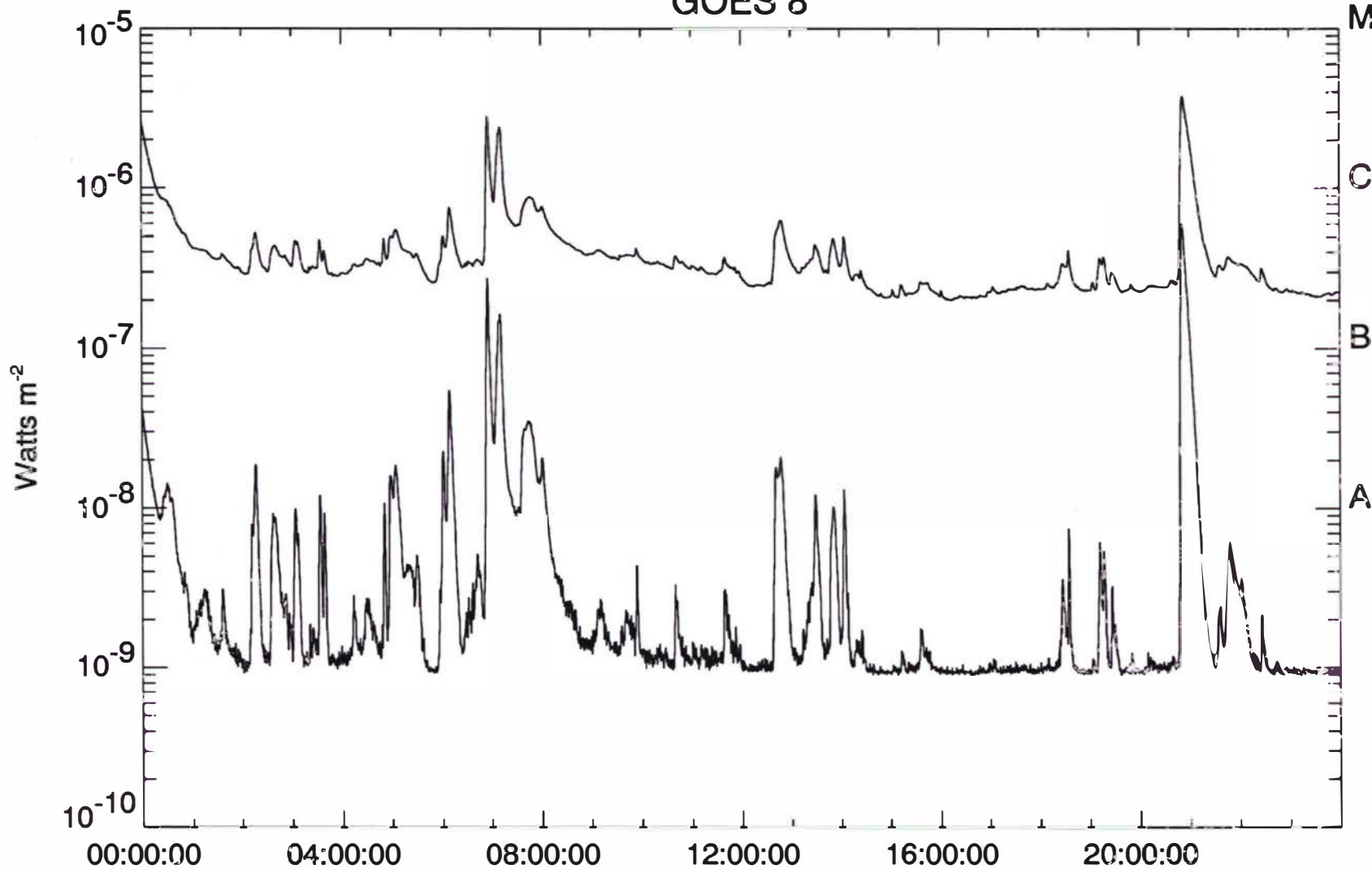
1000



1000



GOES 8



Data Start: 97/11/30, 0000:00

Plot created: 97/12/04, 1008

Channel

1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

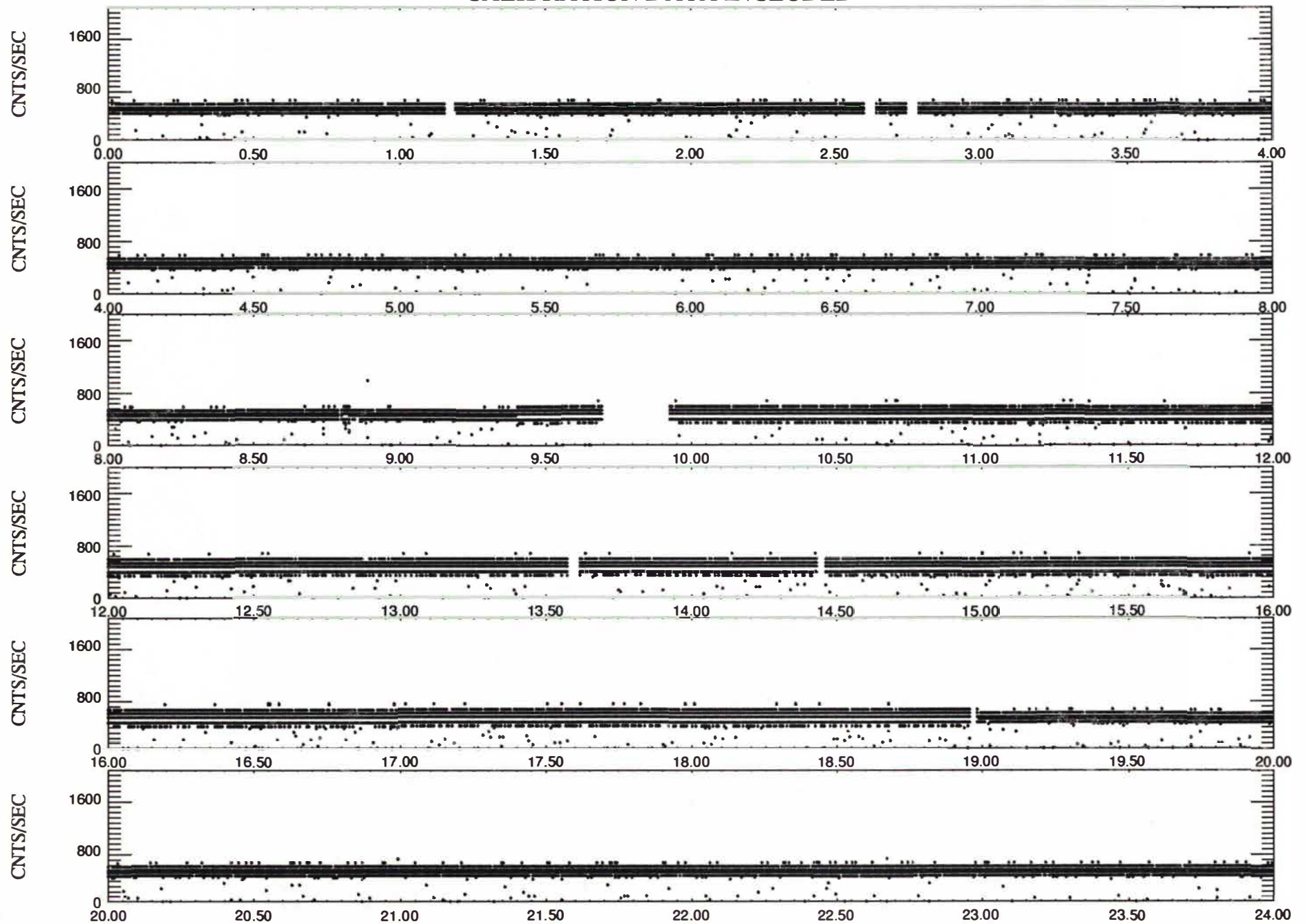
Background not subtracted

Sample average = 10

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

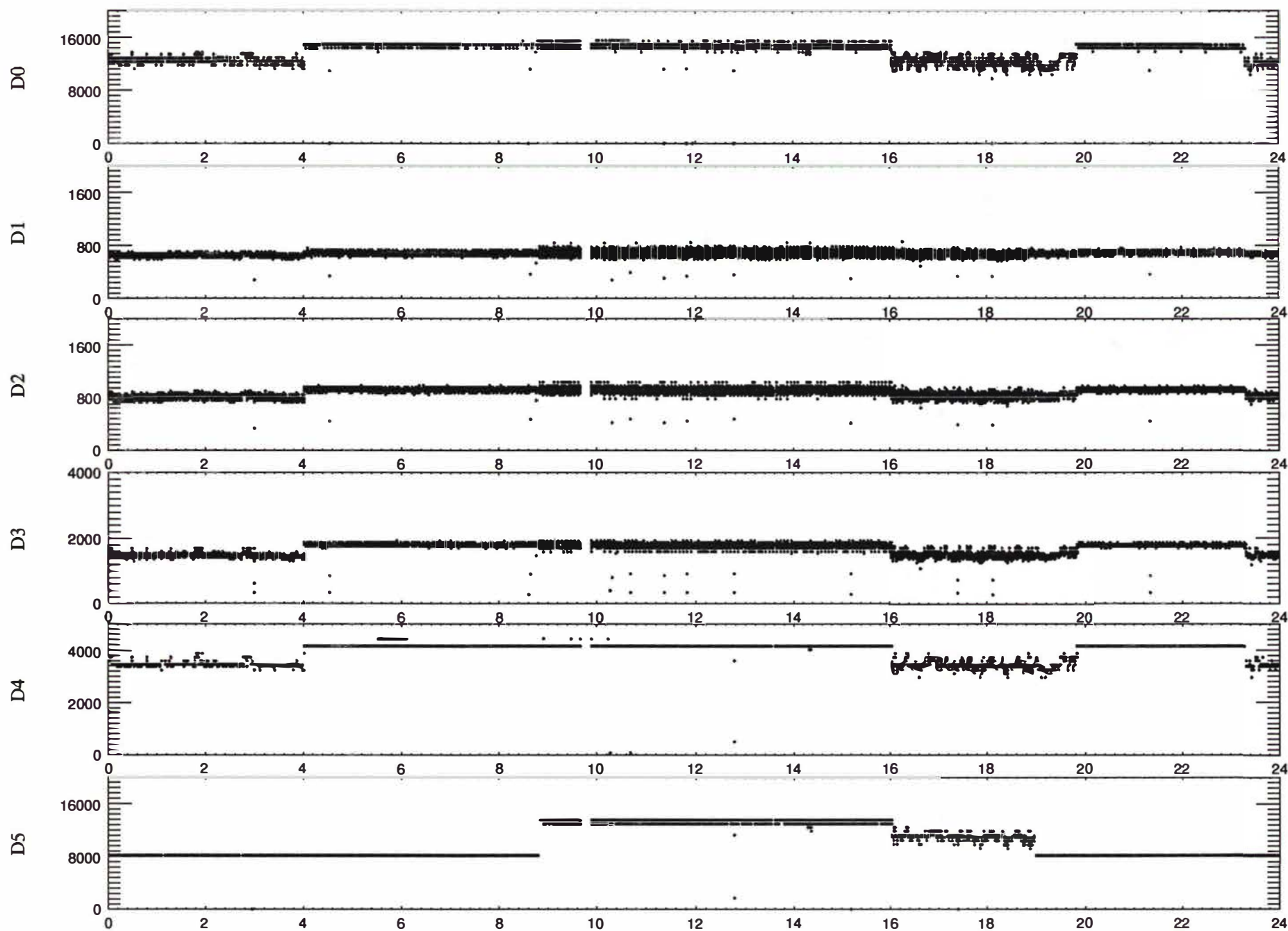


CALIBRATION DATA INCLUDED



UNIV AL TIME

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	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	---



UNIV' AL TIME