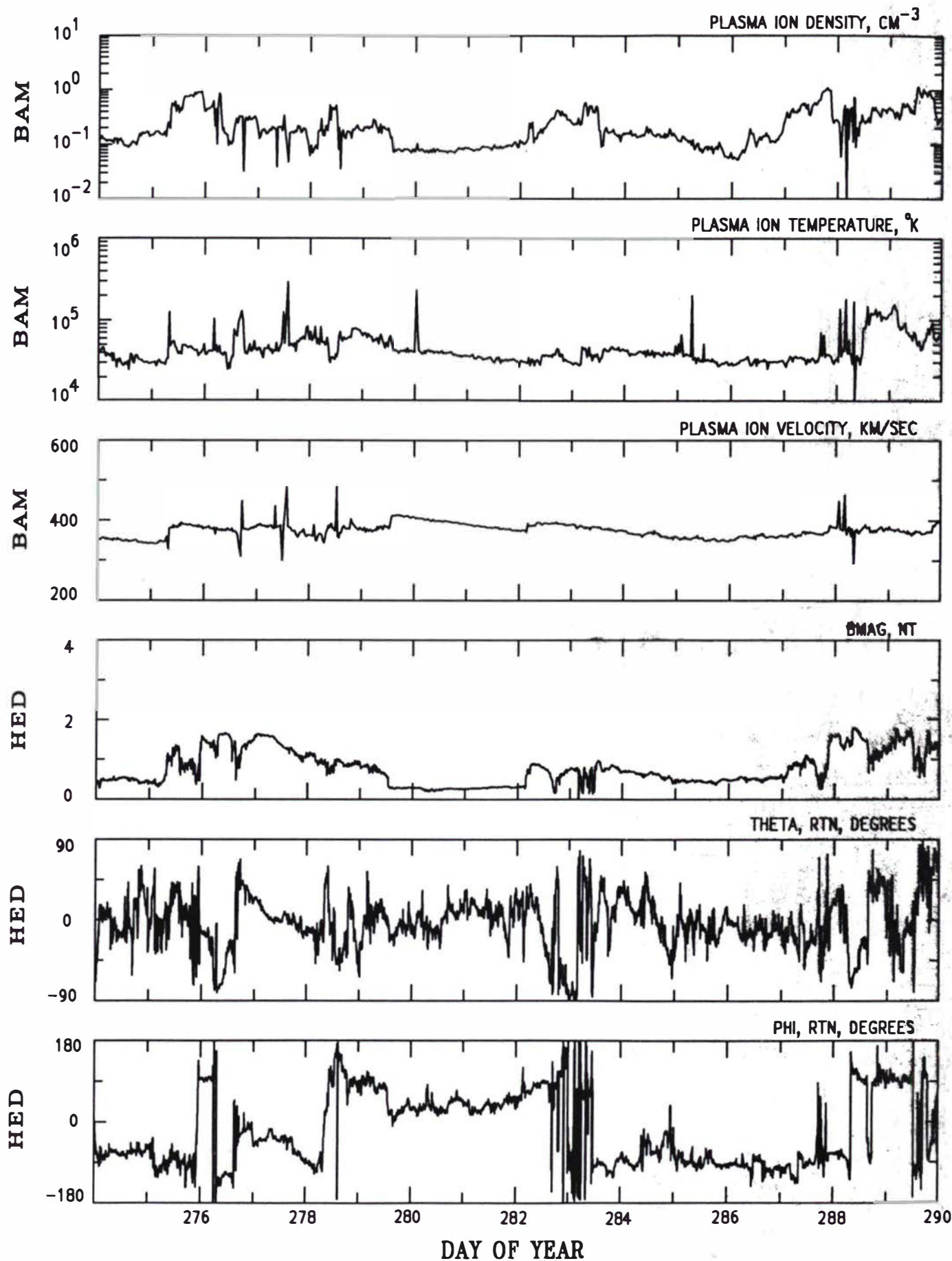


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

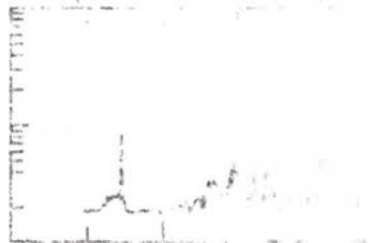
97 274 OCT 1 00:00:00.000 - 97 290 OCT 17 00:00:00.000



2V 12



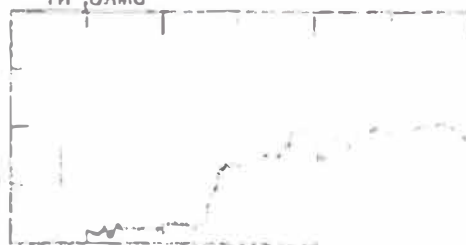
0.000 0.000



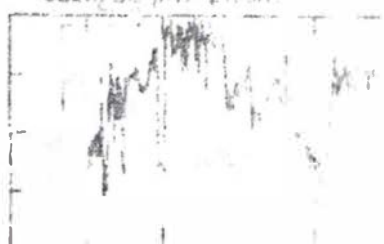
0.000 0.000



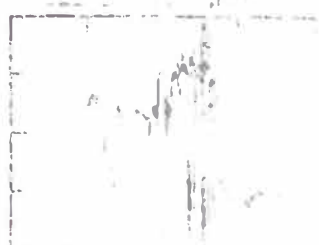
0.000 0.000



0.000 0.000

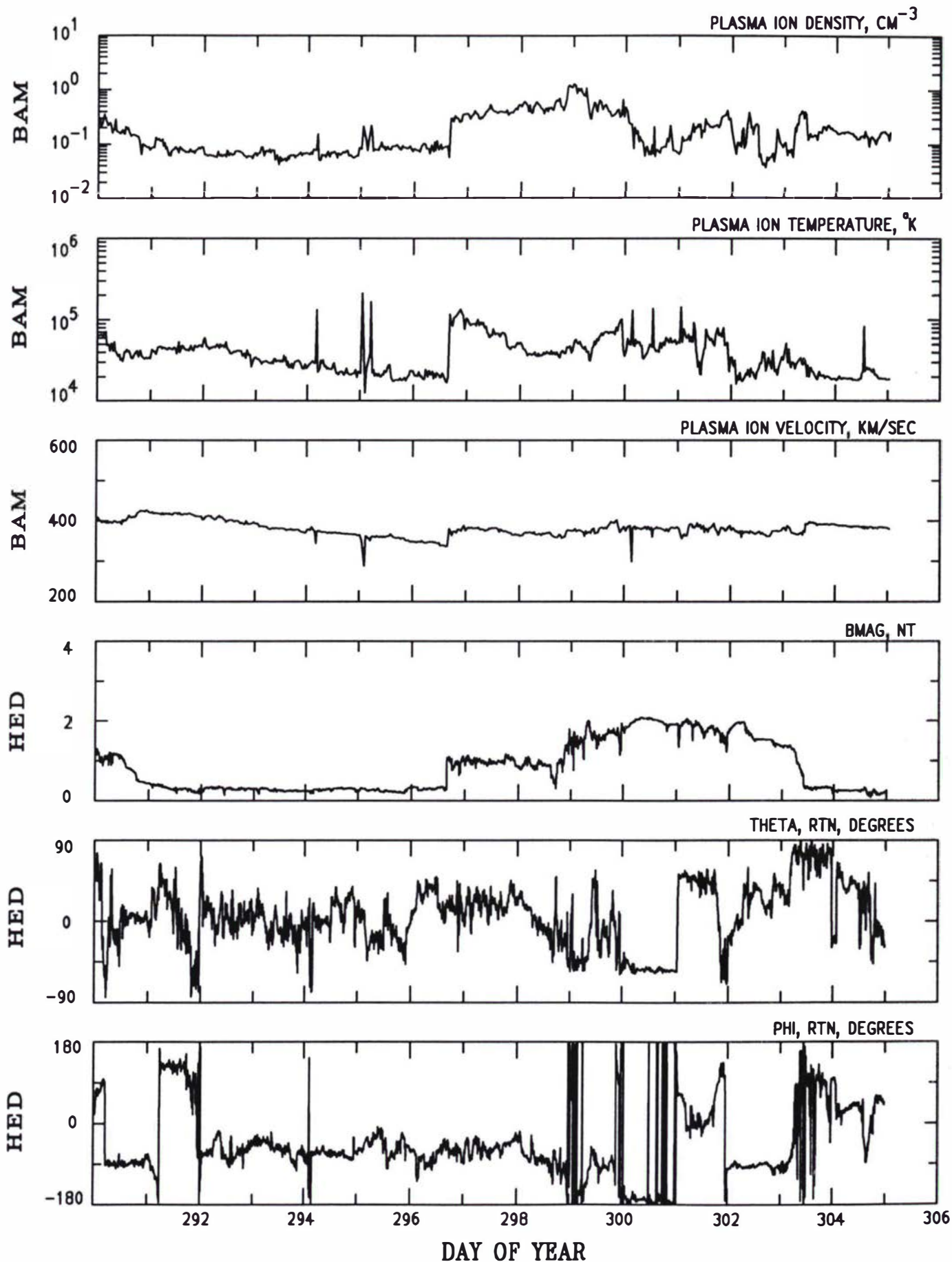


0.000 0.000

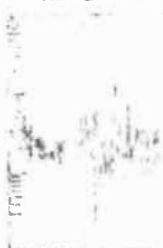


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

97 290 OCT 17 00:00:00.000 - 97 306 NOV 2 00:00:00.000



2 M 2 ER



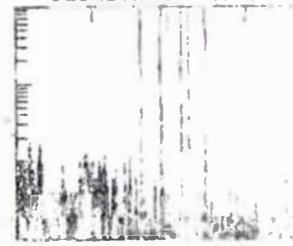
MEV



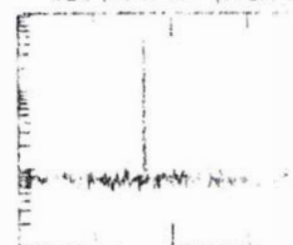
MEV TO MEV



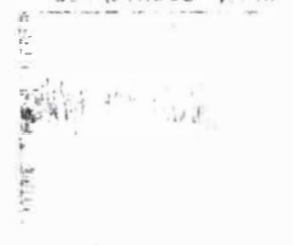
0322270000



MEV TO MEV

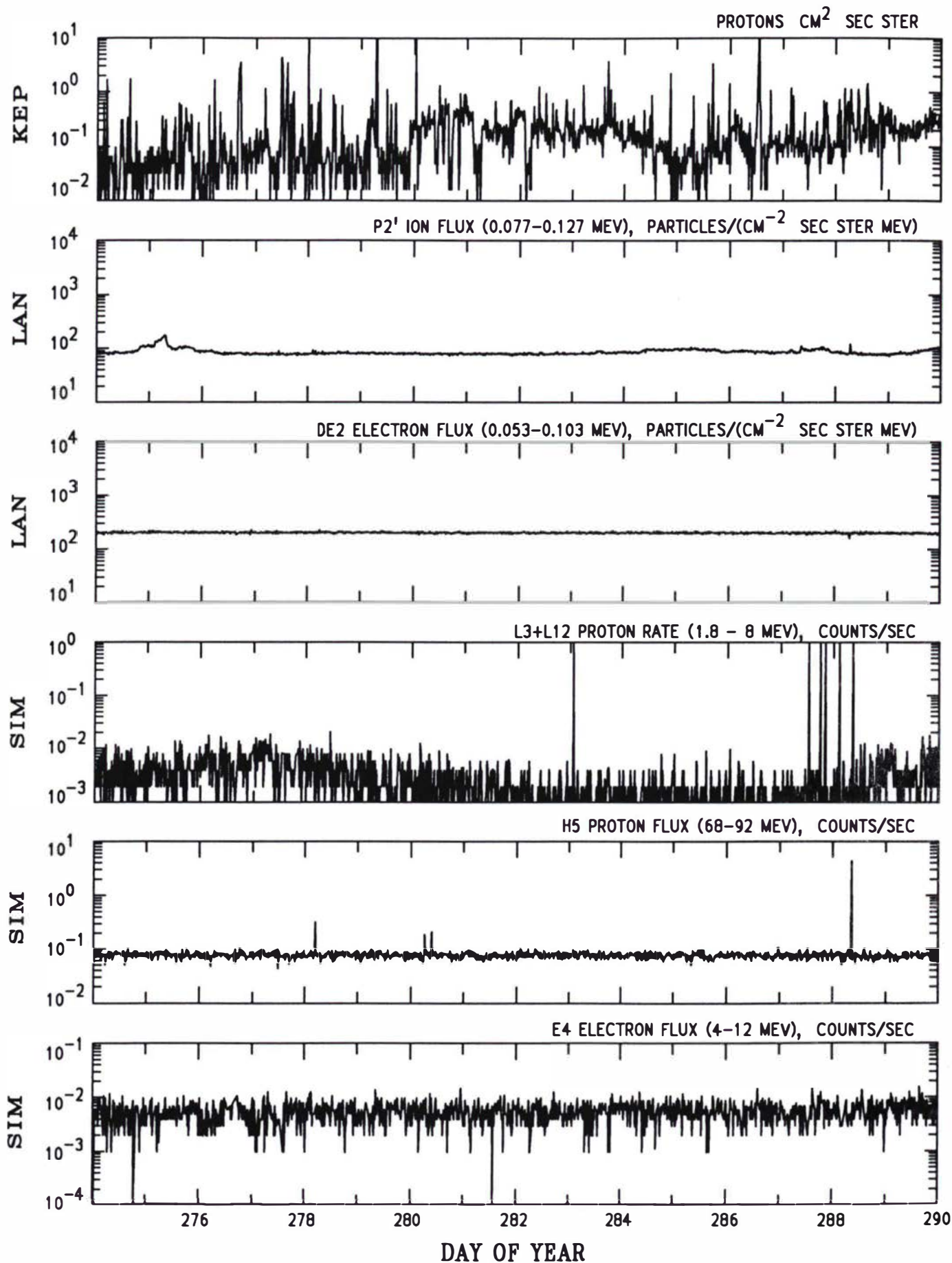


0322270000



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

97 274 OCT 1 00:00:00.000 - 97 290 OCT 17 00:00:00.000



1000 1000 1000

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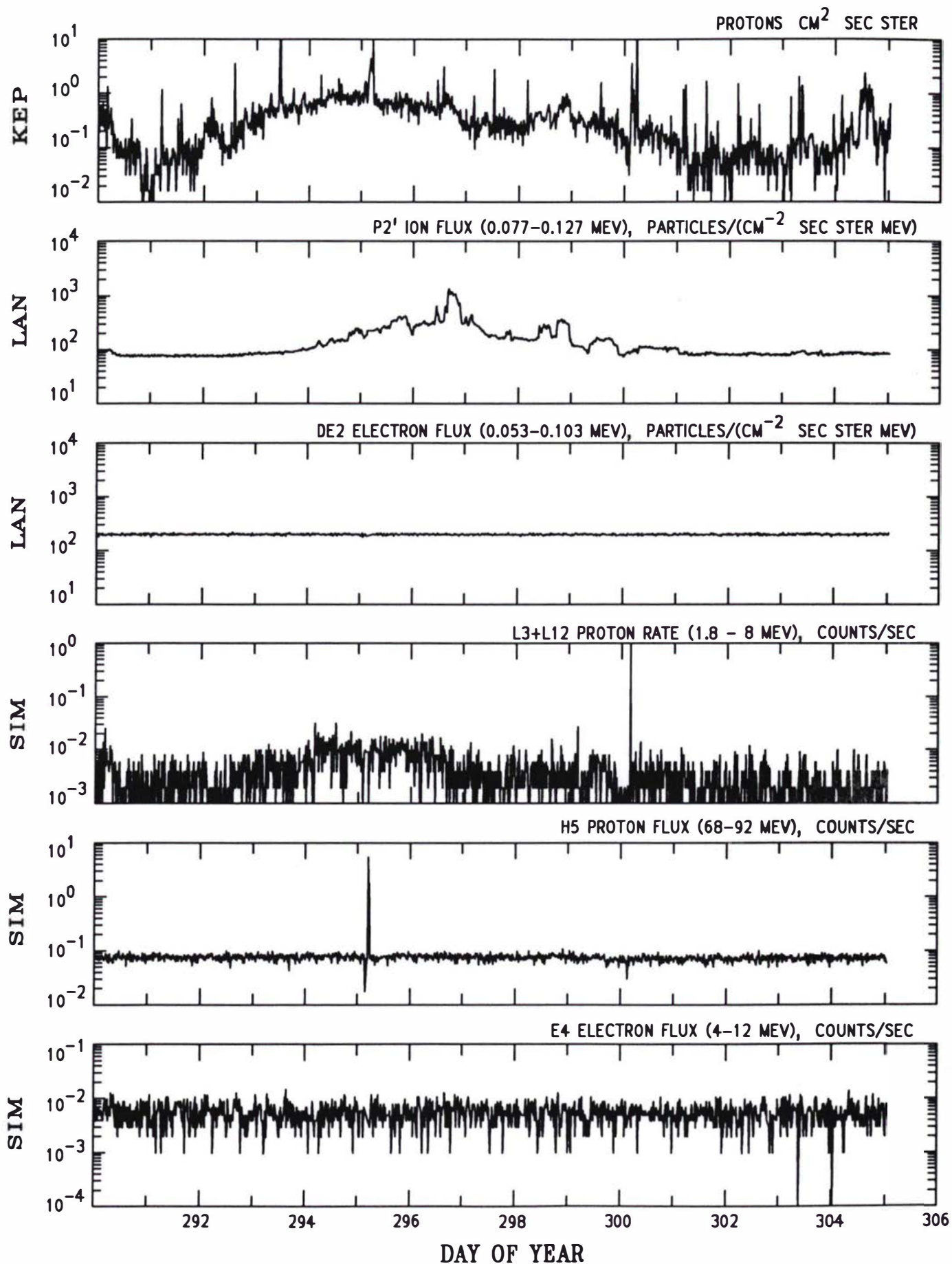
1000 1000 1000

1000 1000 1000

1000 1000 1000

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

97 290 OCT 17 00:00:00.000 - 97 306 NOV 2 00:00:00.000



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1. Small

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1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

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July 1, 1881

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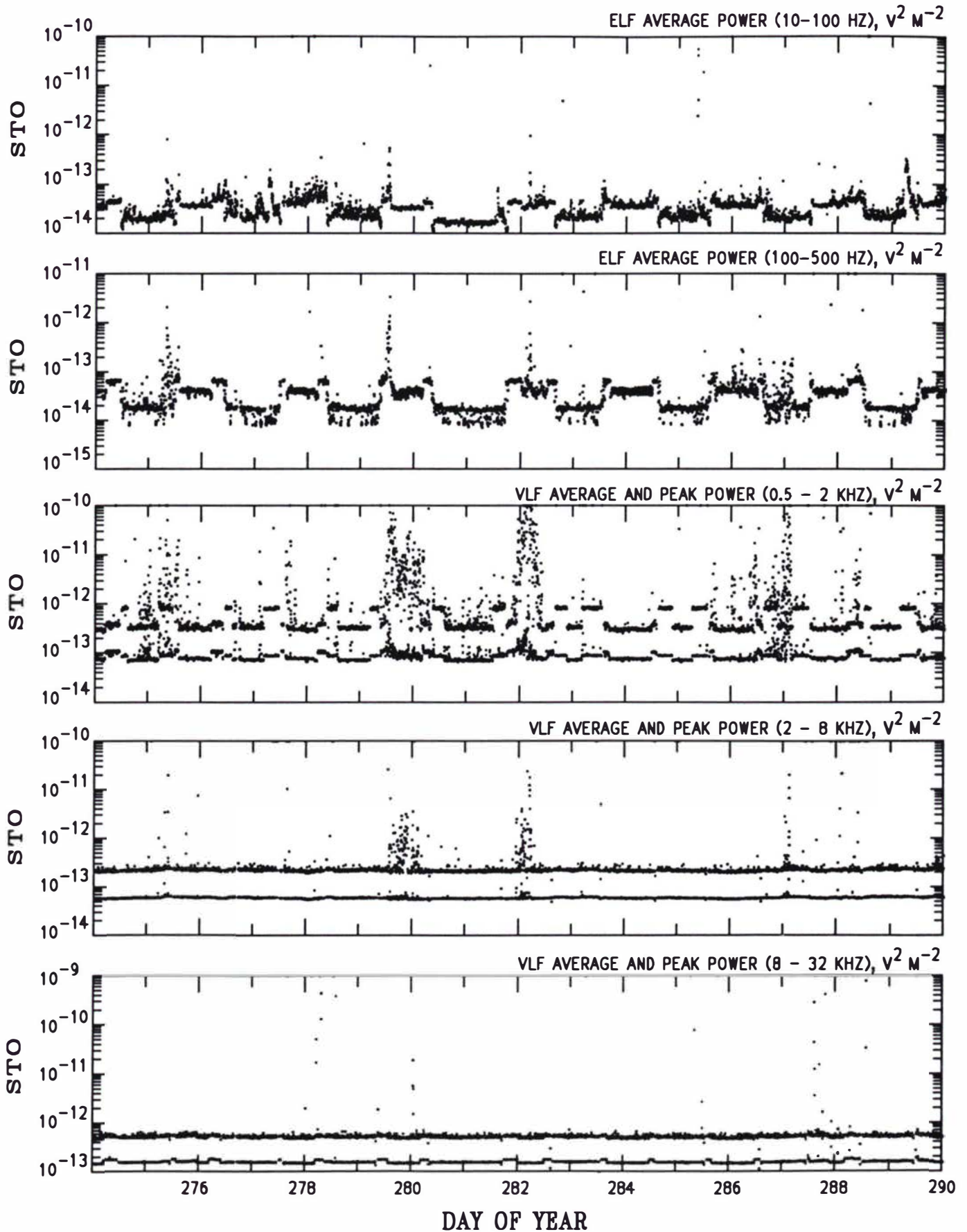
— Printed —

100

1. *...*

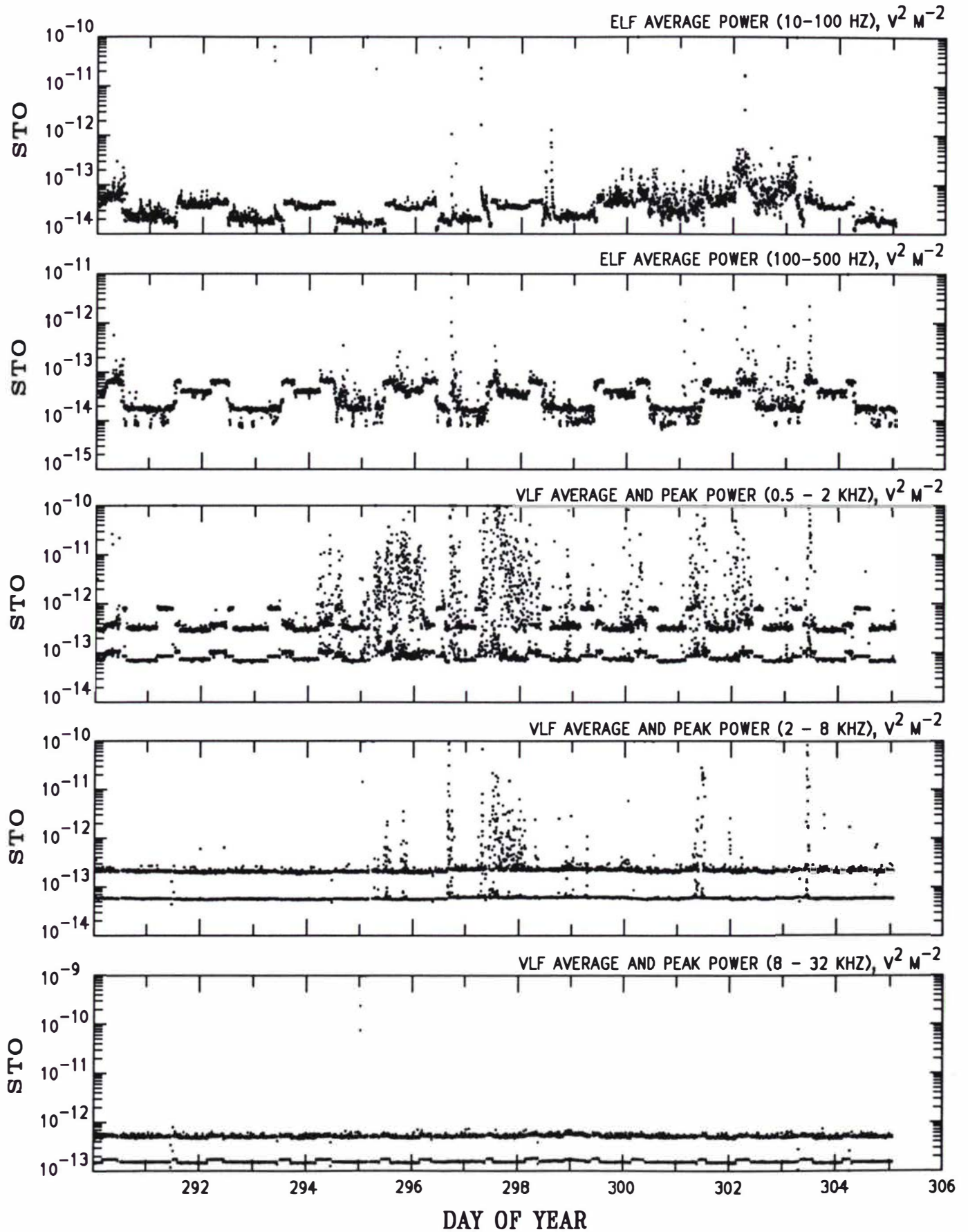
ULYSSES CDR - PLASMA WAVE

97 274 OCT 1 00:00:00.000 - 97 290 OCT 17 00:00:00.000



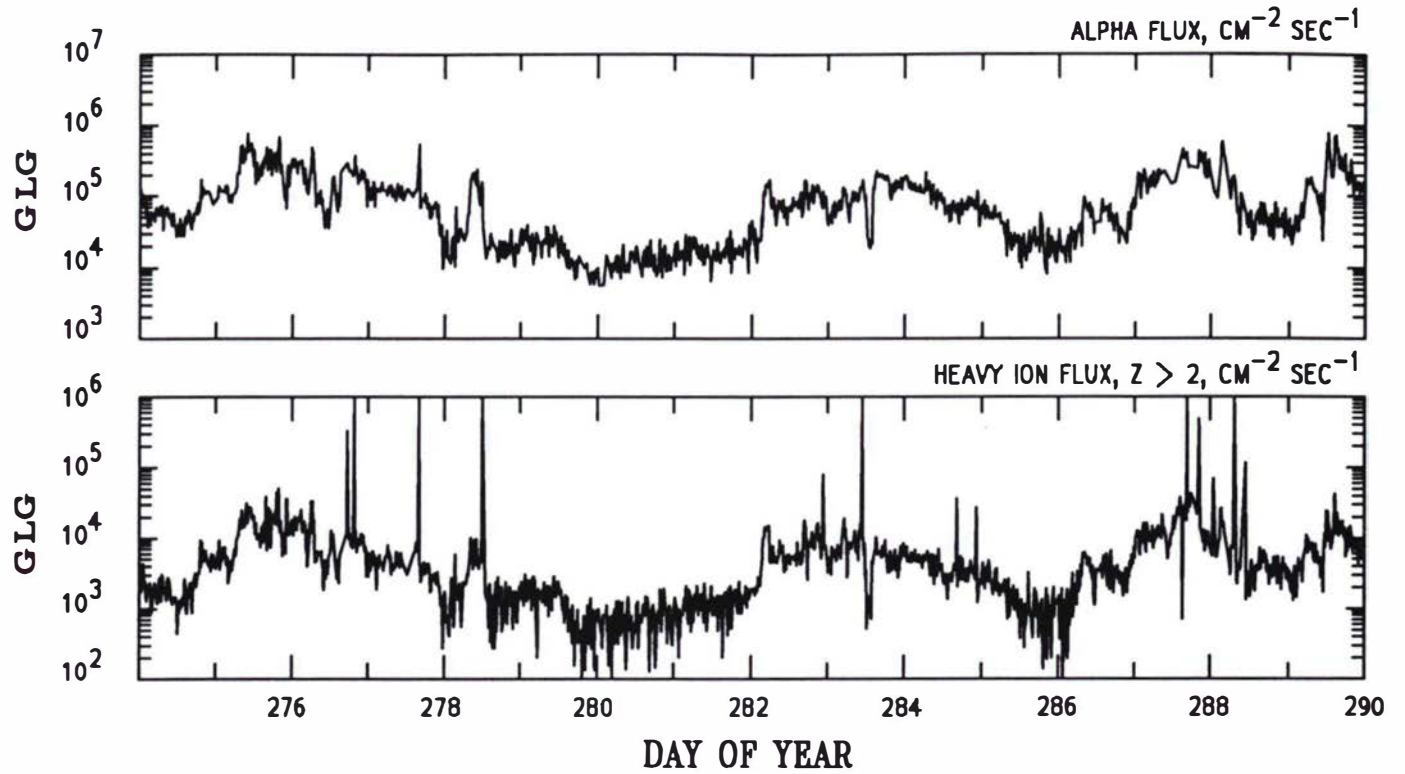
ULYSSES CDR - PLASMA WAVE

97 290 OCT 17 00:00:00.000 - 97 306 NOV 2 00:00:00.000



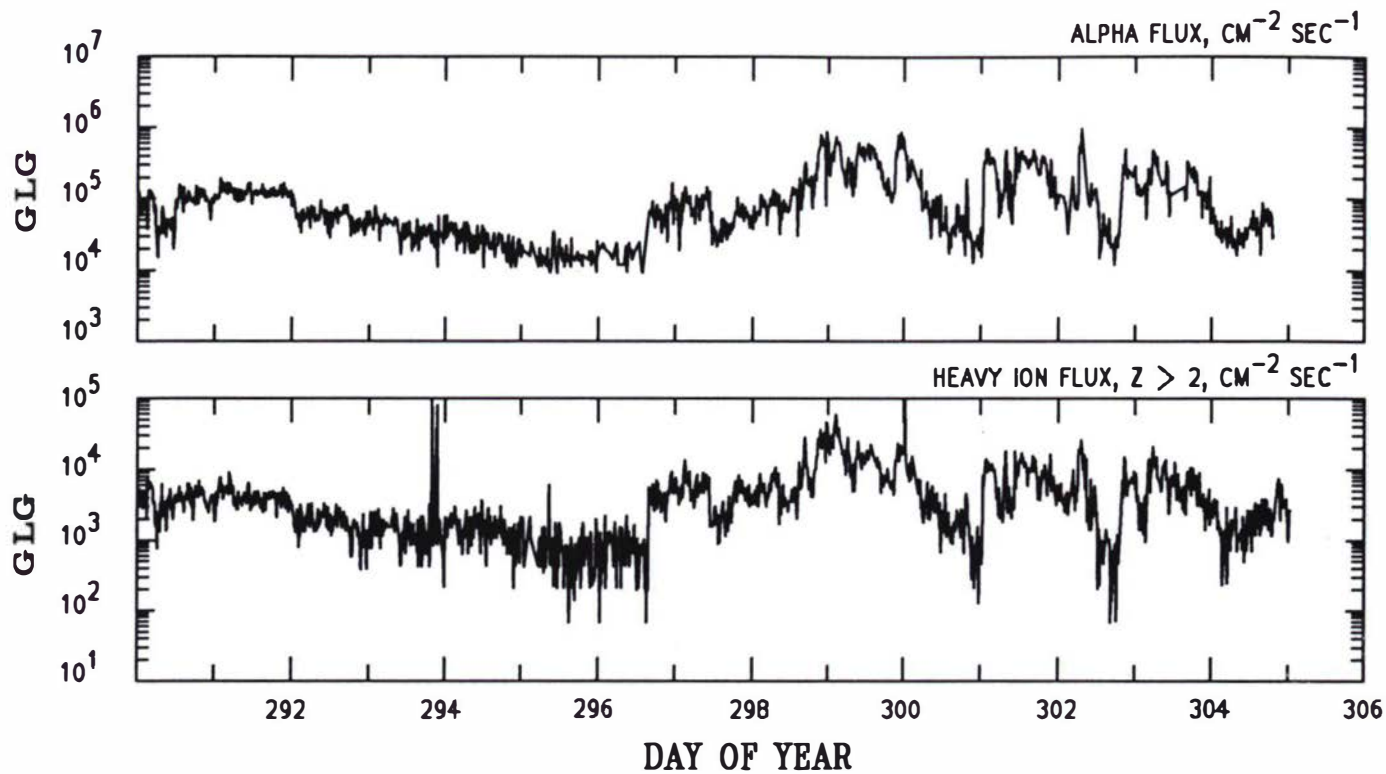
ULYSSES CDR - SOLAR WIND ION COMPOSITION

97 274 OCT 1 00:00:00.000 - 97 290 OCT 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

97 290 OCT 17 00:00:00.000 - 97 306 NOV 2 00:00:00.000



From RICHARDSON@SSLMOR.msfc.nasa.gov Fri Oct 3 12:46:21 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Fri, 3 Oct 1997 14:45:25 -0500 (CDT)
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.: 6406

TIME: TJD=0722 SECONDS=59760

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

From RICHARDSON@SSLMOR.msfc.nasa.gov Fri Oct 3 12:49:23 1997
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Date: Fri, 3 Oct 1997 14:48:20 -0500 (CDT)
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
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6407

TIME: TJD=0722 SECONDS=71822

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

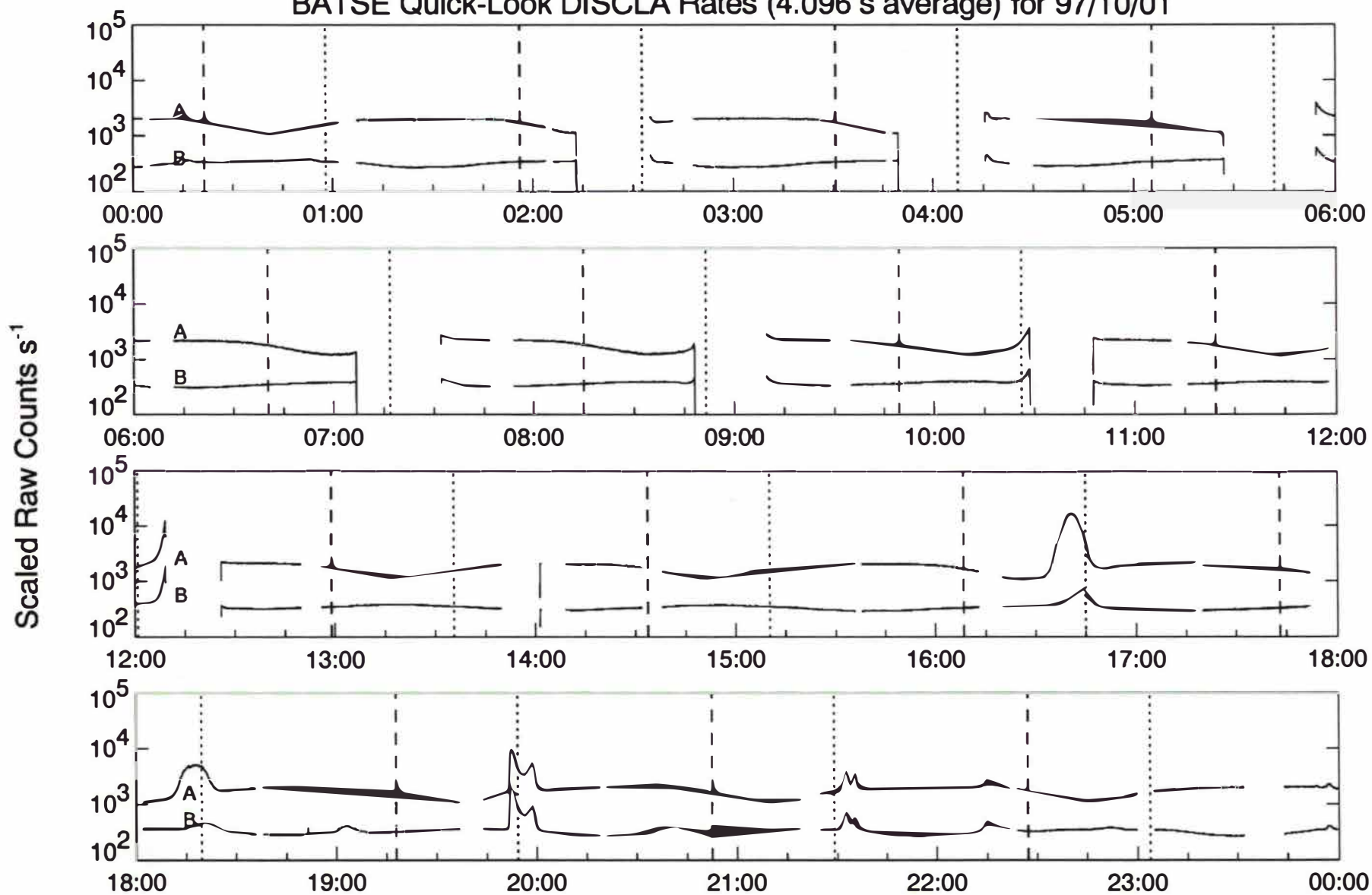
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/01

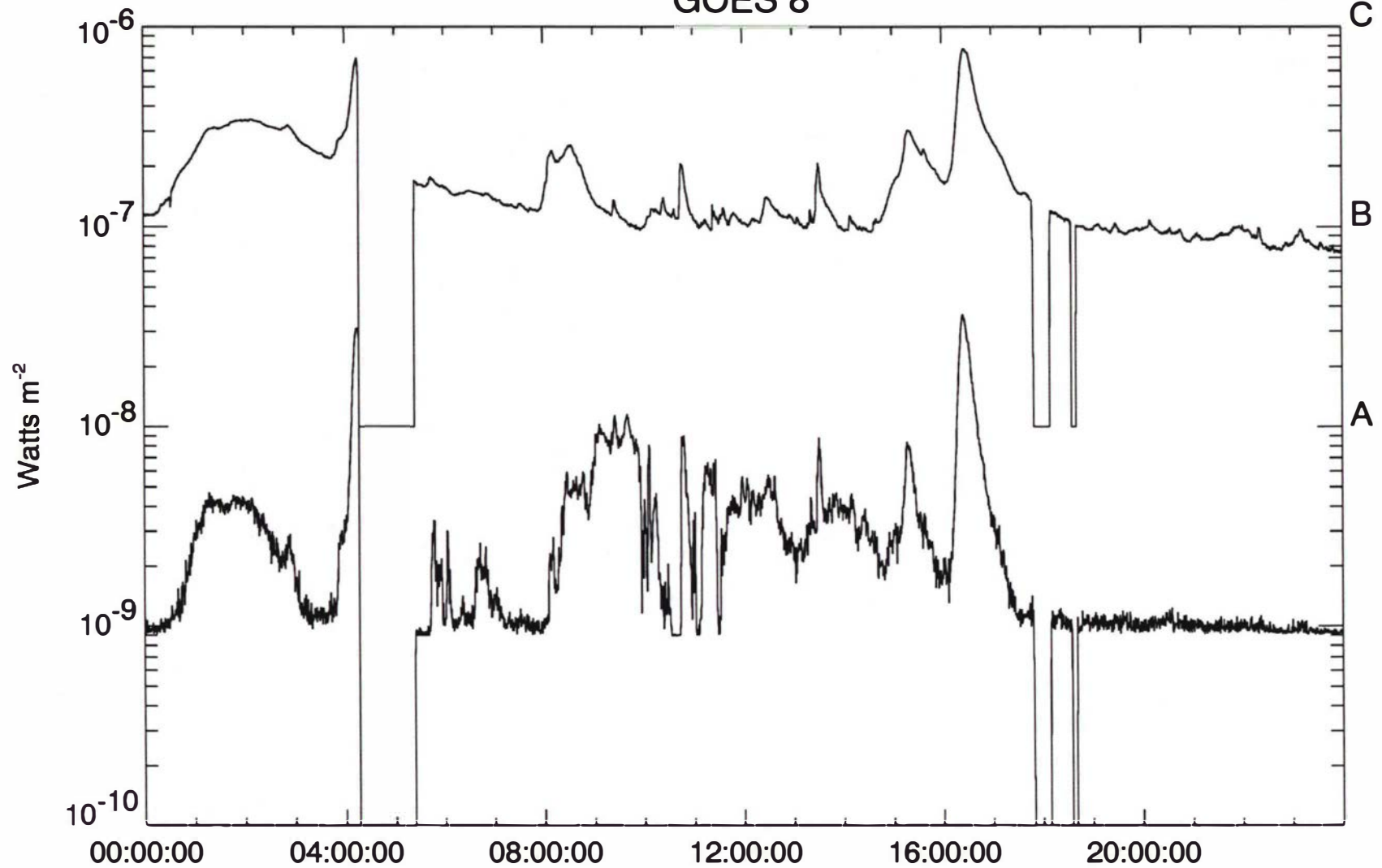


Current Time: 97/10/05, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/10/01, 0000:00

Plot created: 97/10/05, 1007

Channel

1 (1.0 - 8.0 Angstroms)

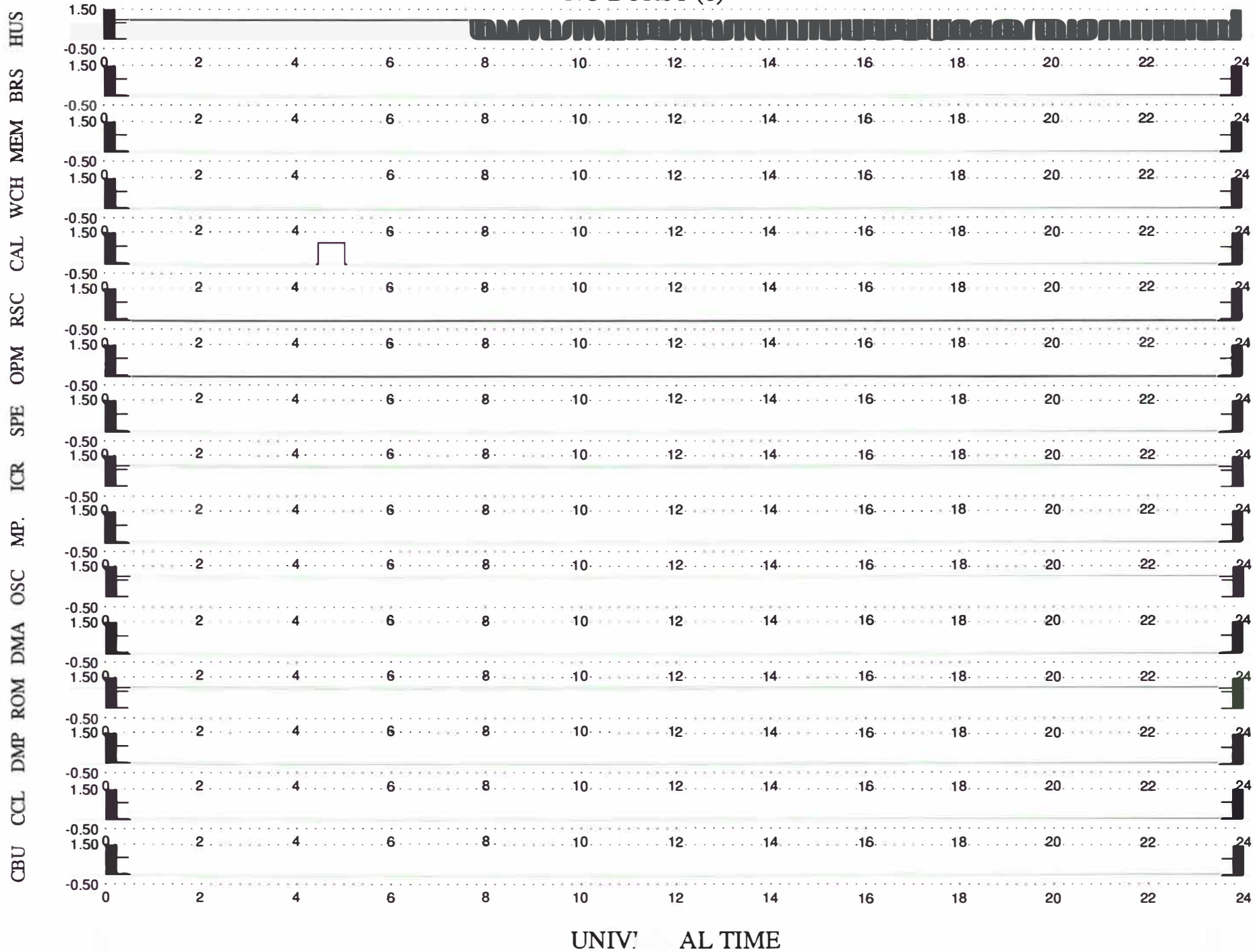
Background not subtracted

2 (0.5 - 4.0 Angstroms)

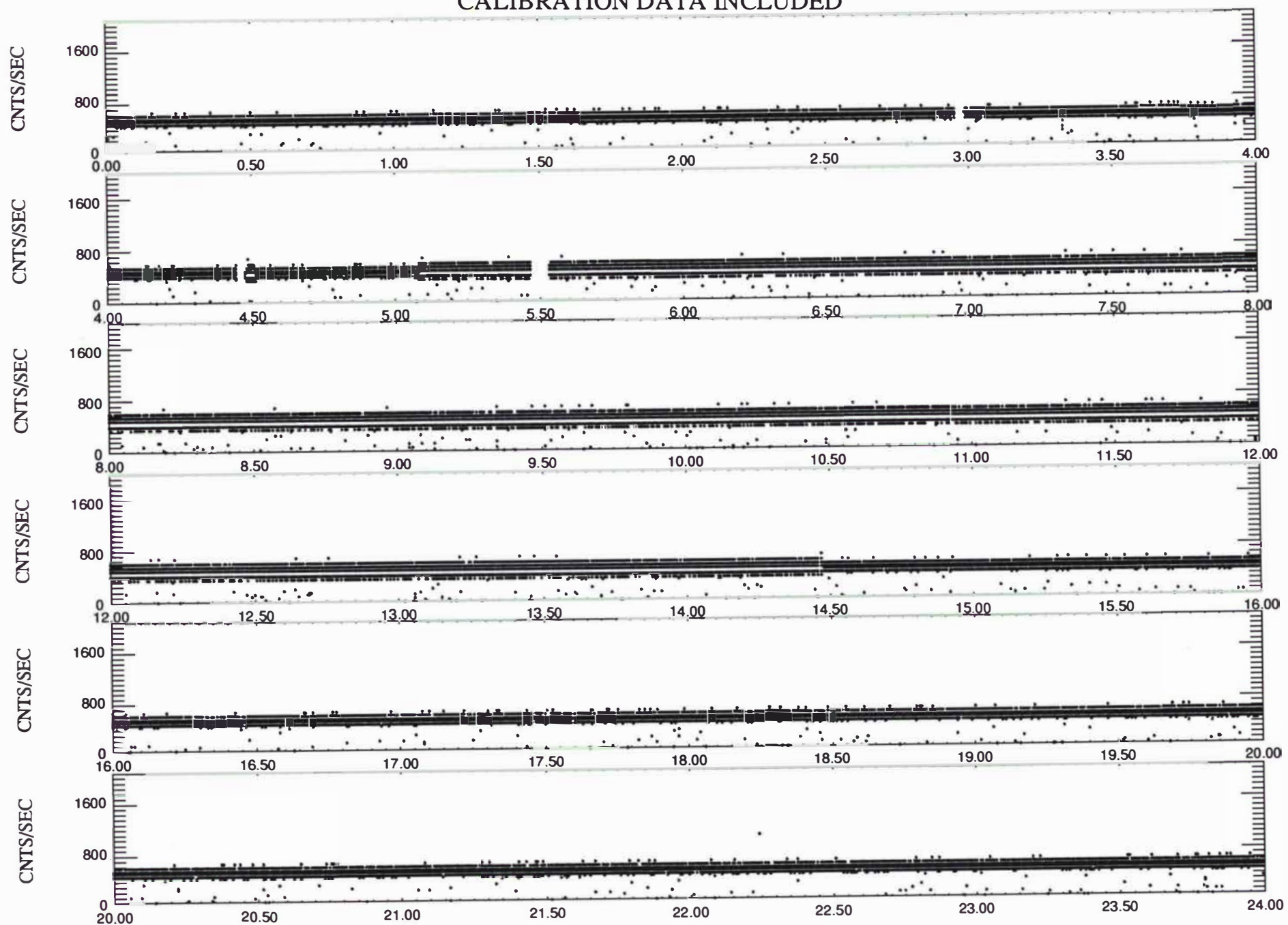
Background not subtracted

Sample average = 10

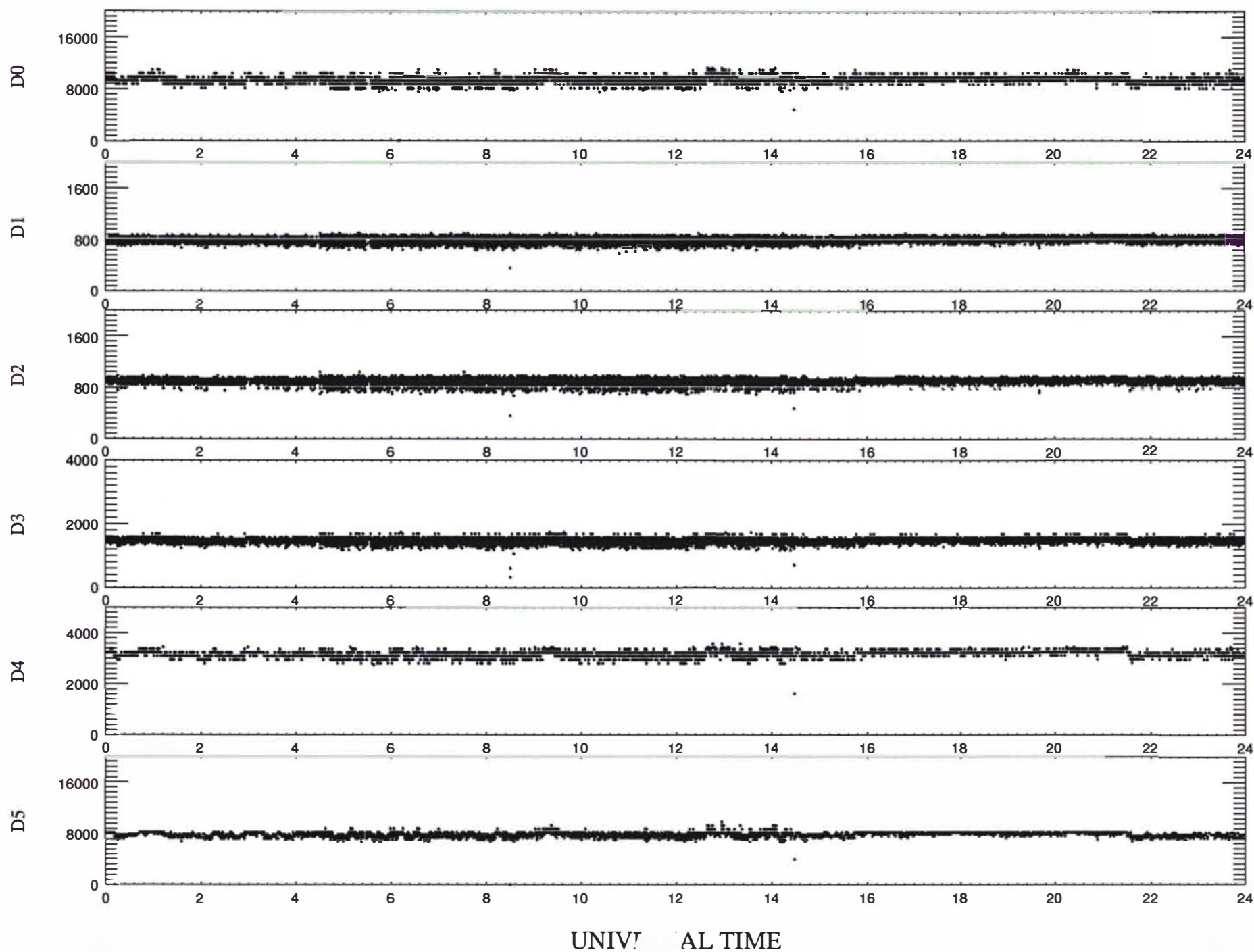
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV' AL TIME



From SAHI@fender.msfc.nasa.gov Fri Oct 3 12:42:32 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 MAA07664; Fri, 3 Oct 1997 12:42:31 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA05175; Fri, 3 Oct 1997 12:42:29 -0700
Date: Fri, 3 Oct 1997 14:41:10 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971003144110.2180cdc4@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6408
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6408
EVENT OF 1997 OCT 2 DAY OF YEAR=275
EVENT CROSSING TIME AT BATSE : 63698. S. OR 17:41:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 8.000 47.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/10/ 97 IS:
RA= 165.866 DEC= 16.033 DIST= 6.129 AU
BATSE-ULYSSES DISTANCE = 916894790. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1239.19 SECS.
CROSSING TIME AT ULYSSES IS 64937. S. OR 18:02:17 +/- 554.27 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/10/ 97 IS:
RA= 239.836 DEC= -21.647 DIST= 1.797 AU
MARS-BATSE DISTANCE = 268845632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 48.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 593.20 SECS.
CROSSING TIME AT MARS IS 64291. S. OR 17:51:31 +/- 125.77 SECONDS

BATSE BURST TRIGGER

NO.: 6408

TIME: TJD=0723 SECONDS=63698

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=162.2 AZIMUTH=116.0 ERROR=5.5 DEGREES

COMMENTS:

BURST, DUR. APPROX. 7 SECS. NOT VISIBLE ABOVE 300 KEV.

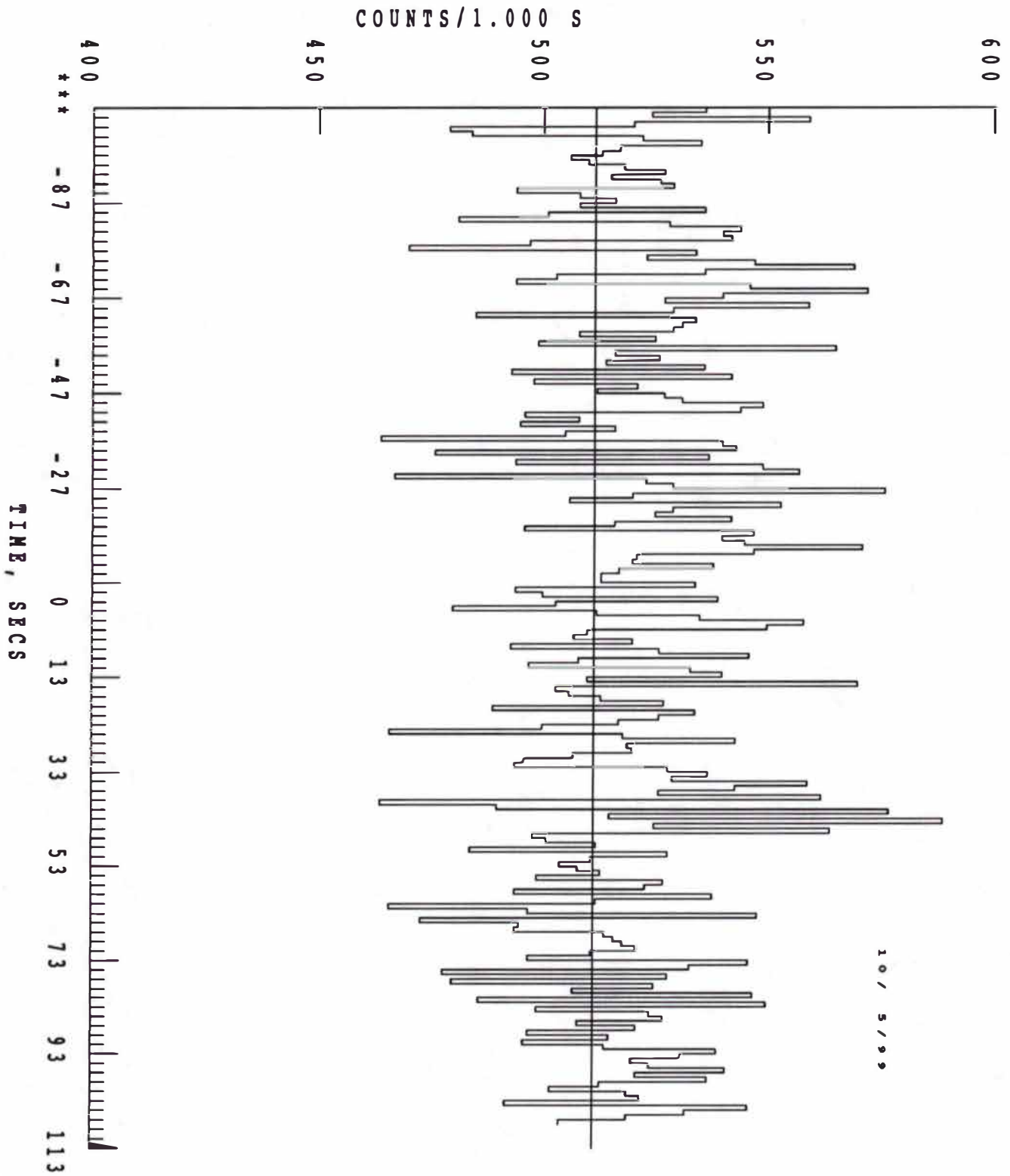
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6408	971002	10723	63698	2500	008	+47	7

NEAR

02/10/97

63462.992

100-1000 keV



BATSE BURST# 6408

ULYSSES RT

3 / 10 / 97

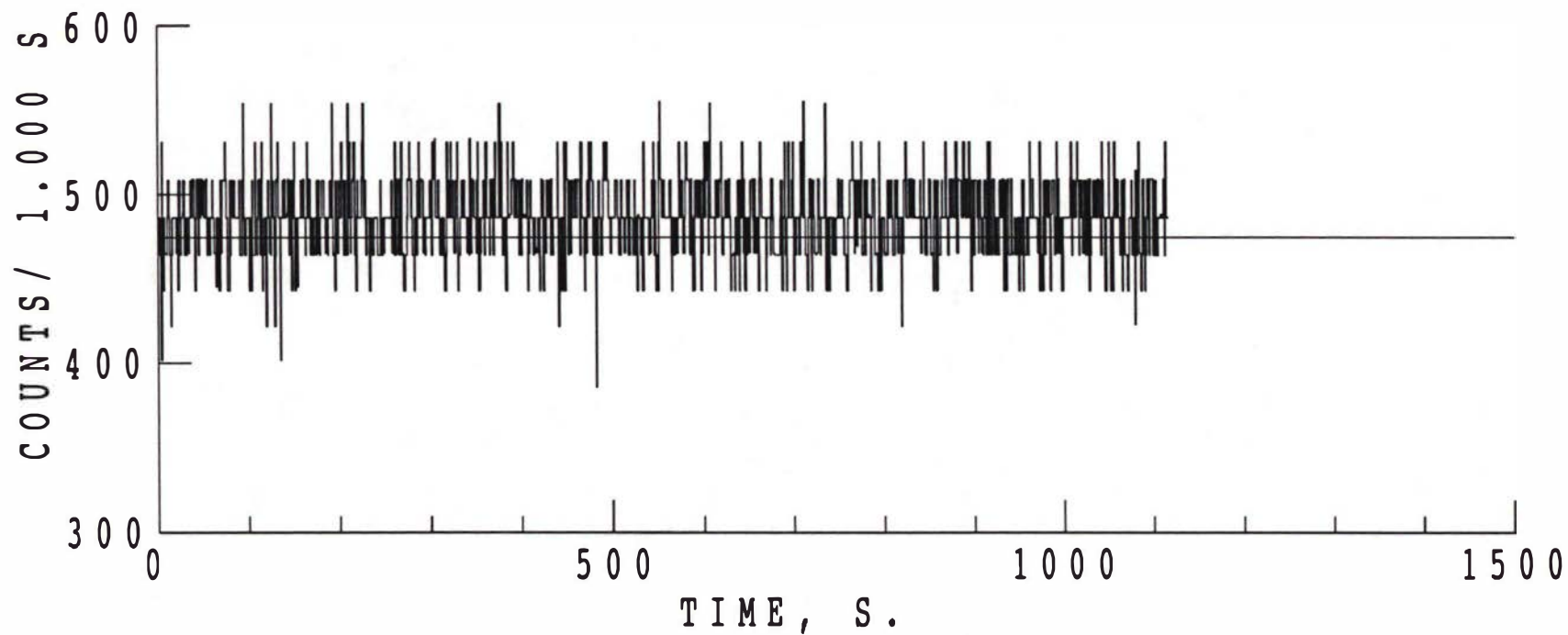
2 / 10 / 97 64368.176 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

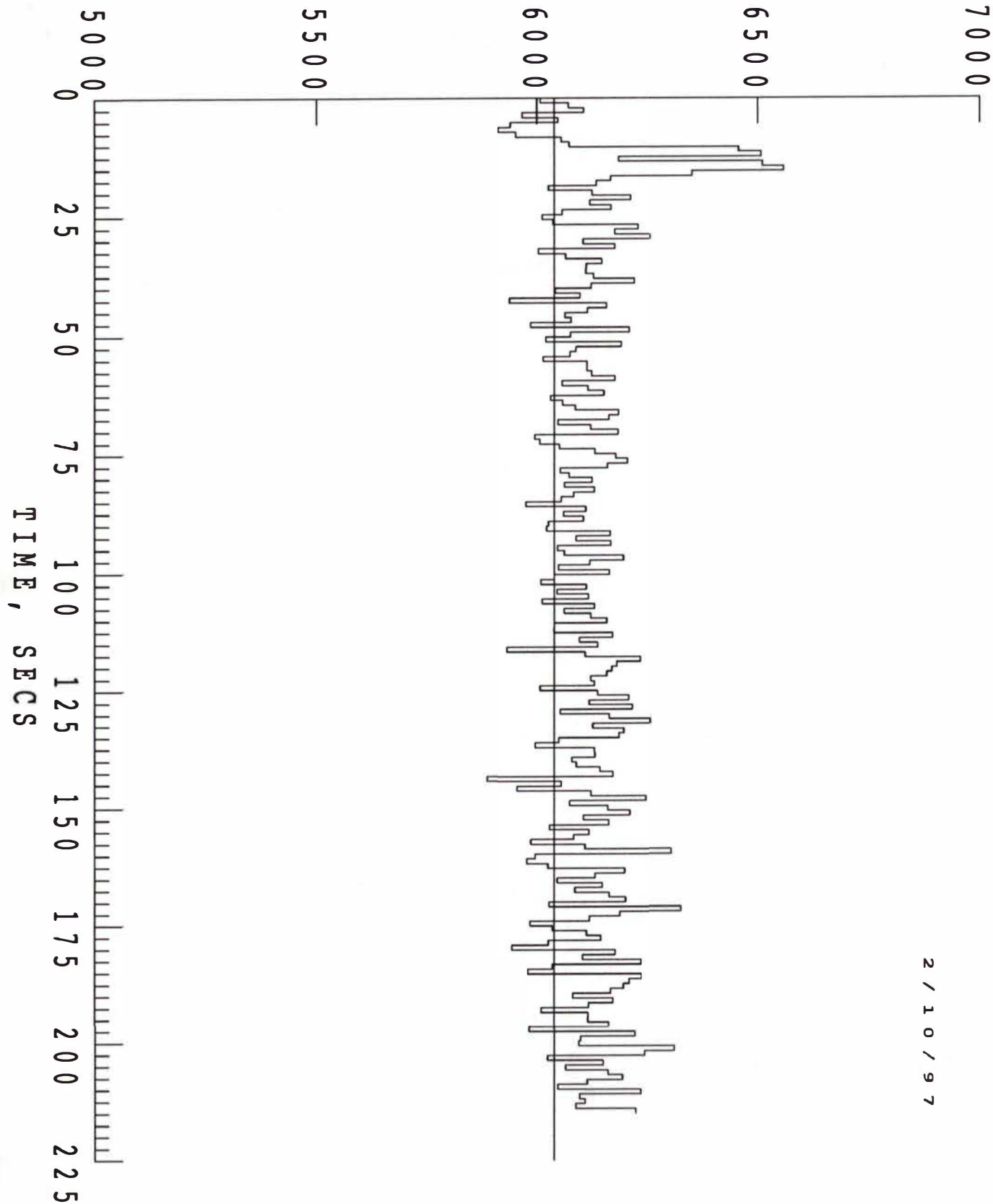
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6408 02/10/97 63686.369

25- 100 keV

COUNTS/1.024 S



From SURASAK@SSLLES.MSFC.NASA.GOV Mon Oct 6 09:34:40 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 JAA25686; Mon, 6 Oct 1997 09:34:38 -0700
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA15754; Mon, 6 Oct 1997 09:34:13 -0700
Date: Mon, 6 Oct 1997 11:32:33 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971006113233.20210aa4@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6409
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6409
EVENT OF 1997 OCT 2 DAY OF YEAR=275
EVENT CROSSING TIME AT BATSE : 77832. S. OR 21:37:12.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 193.000 -8.000
BATSE PEAK COUNTING RATE: 2880 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/10/ 97 IS:
RA= 165.887 DEC= 16.020 DIST= 6.128 AU
BATSE-ULYSSES DISTANCE = 916724442. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=143.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2473.23 SECS.
CROSSING TIME AT ULYSSES IS 75359. S. OR 20:55:58 +/- 324.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/10/ 97 IS:
RA= 239.836 DEC= -21.647 DIST= 1.797 AU
MARS-BATSE DISTANCE = 268845632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -610.70 SECS.
CROSSING TIME AT MARS IS 77221. S. OR 21:27:01 +/- 104.74 SECONDS

BATSE BURST TRIGGER

NO.: 6409

TIME: TJD=0723 SECONDS=77832

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=54.4 AZIMUTH=324.9 ERROR=2.85 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR ABOUT 16S. NOT VISIBLE ABOVE 300 KEV.
CYGX-1 RISE AT T+23S.

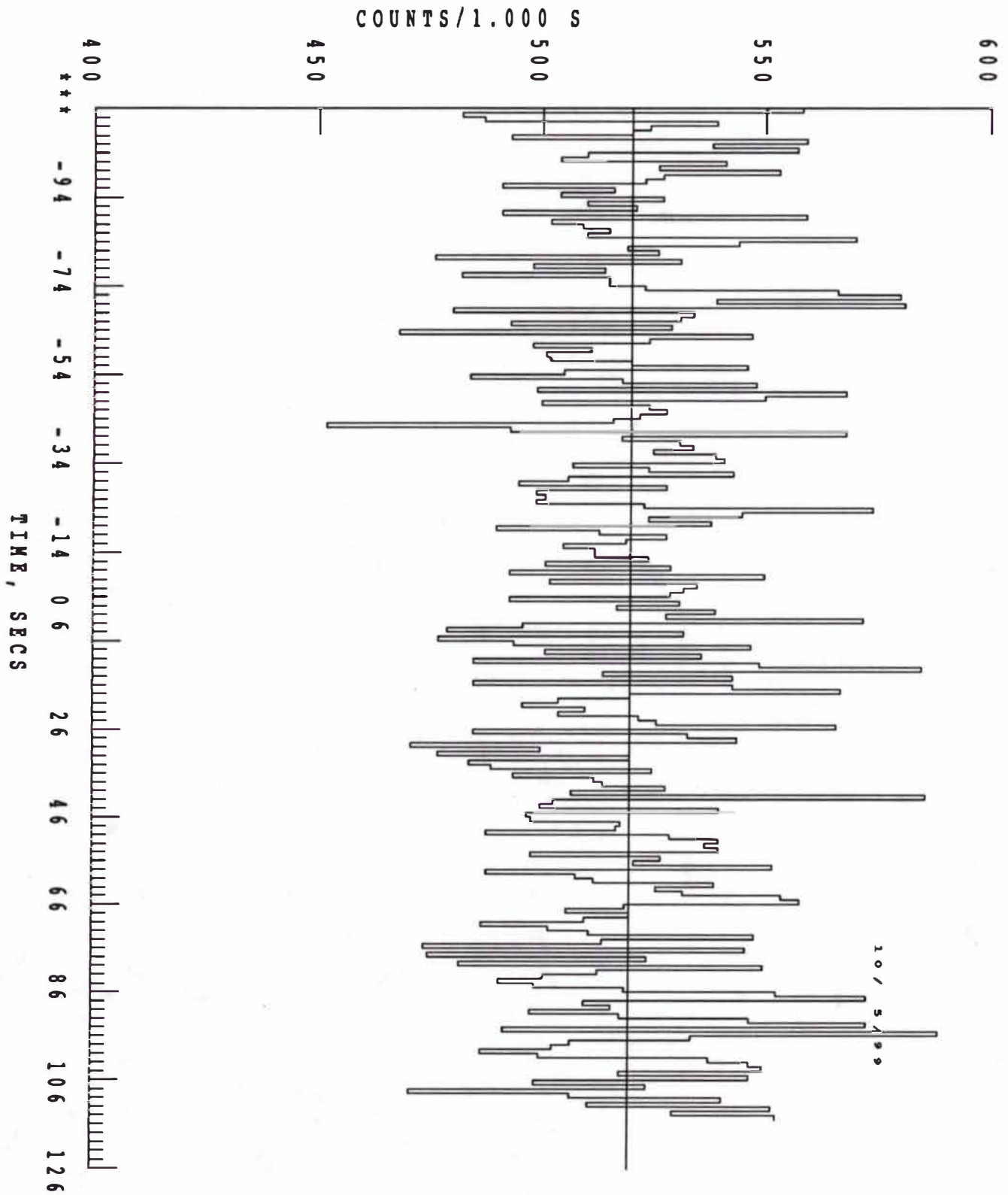
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6409	971002	10723	77832	2880	193	-08	16

NEAR

02/10/97

78059.989

100-1000 keV



BATSE BURST# 6409

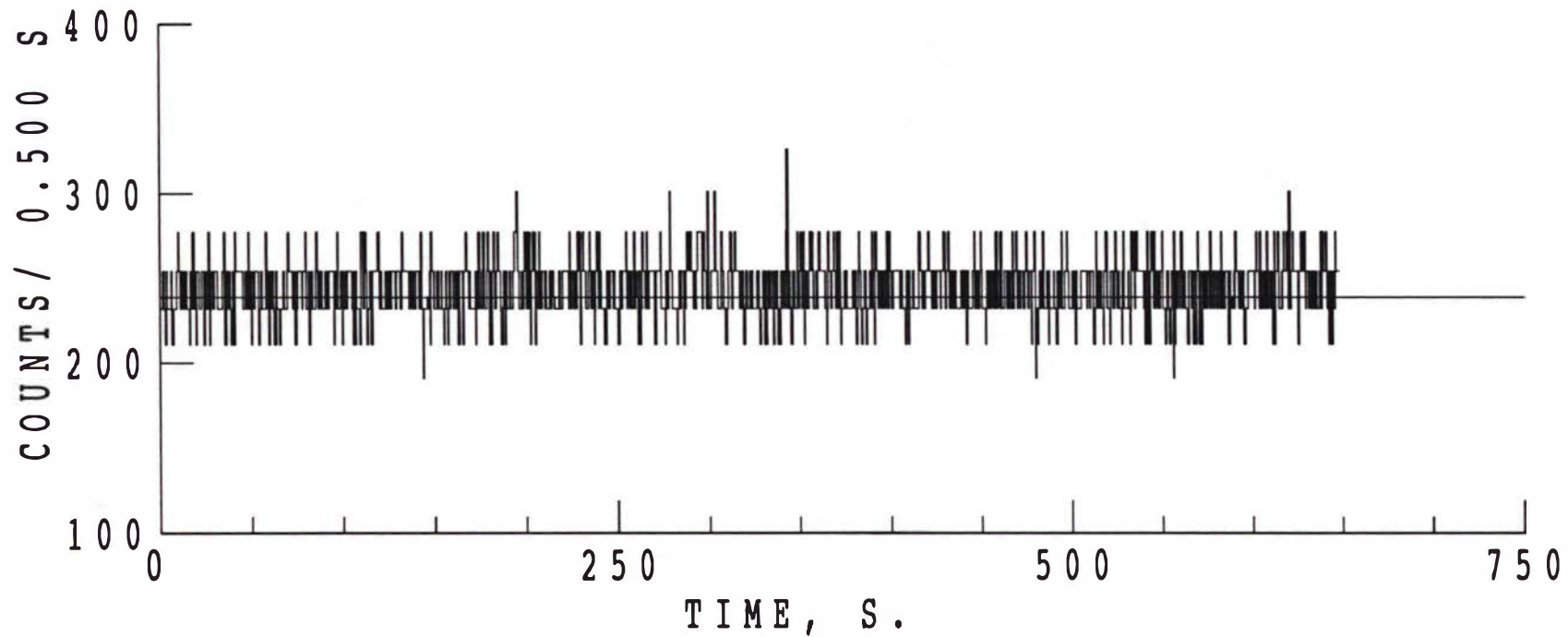
ULYSSES RT

6 / 10 / 97

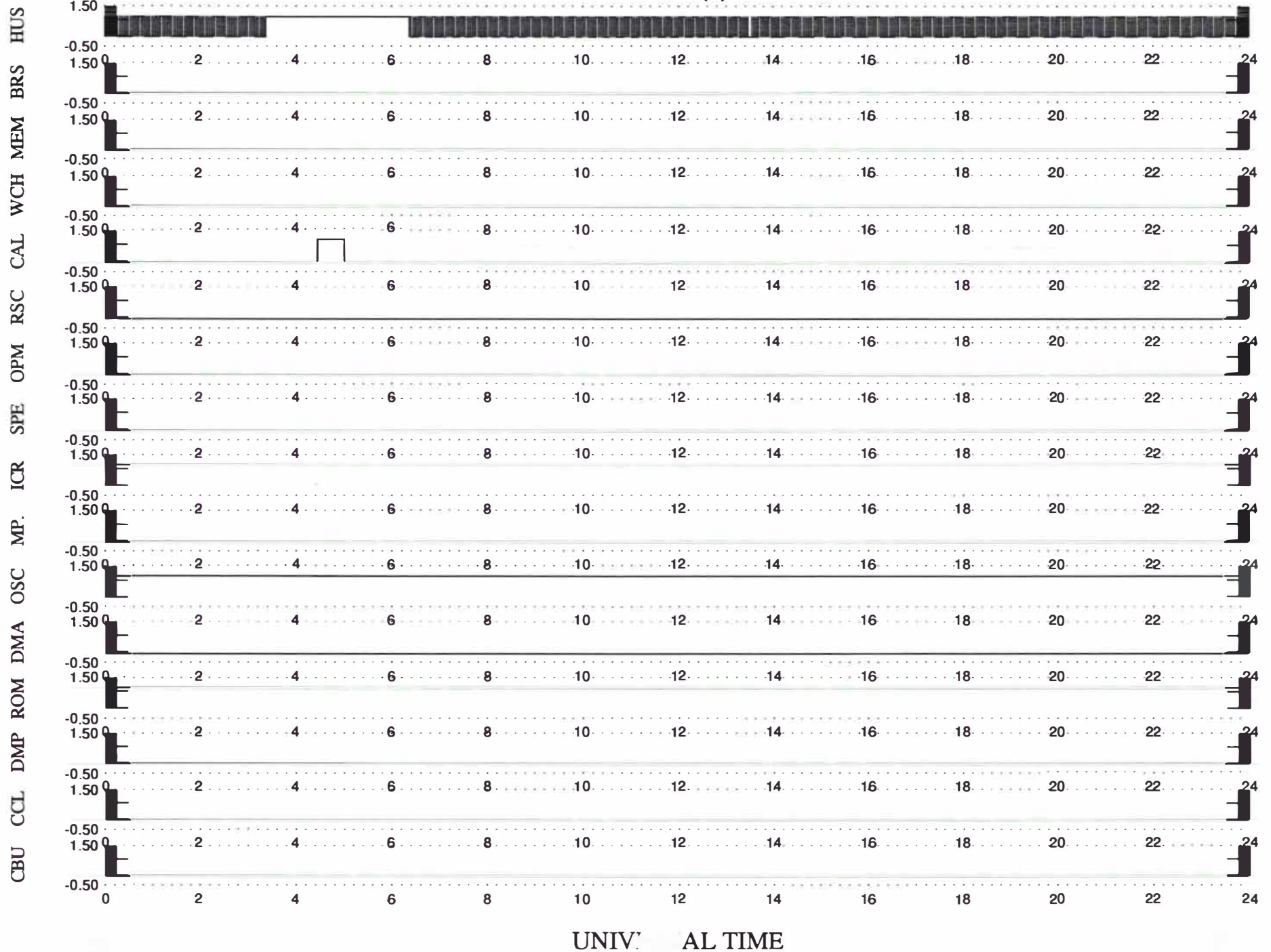
2 / 10 / 97 75024.297 s

0 - 0 keV

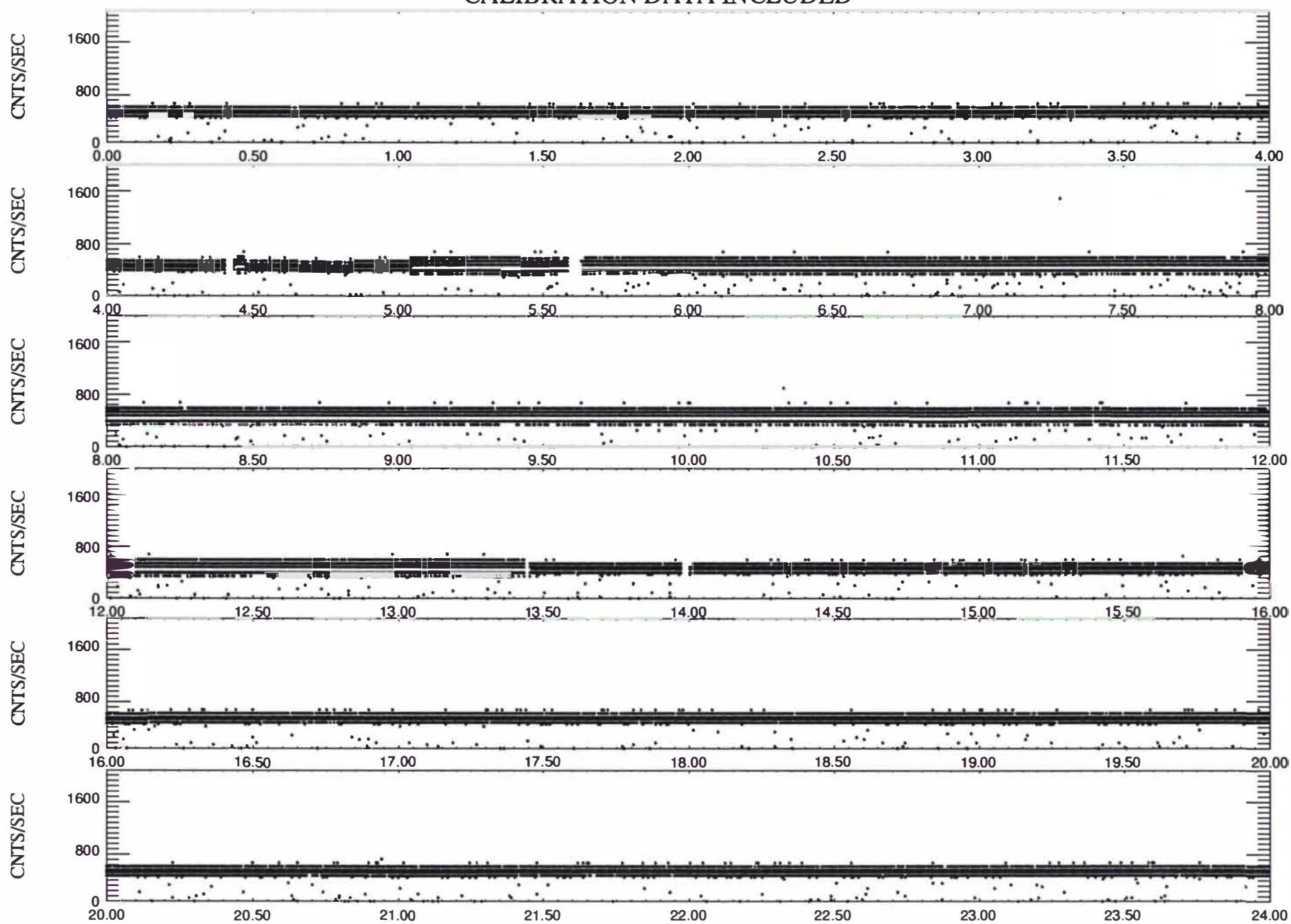
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



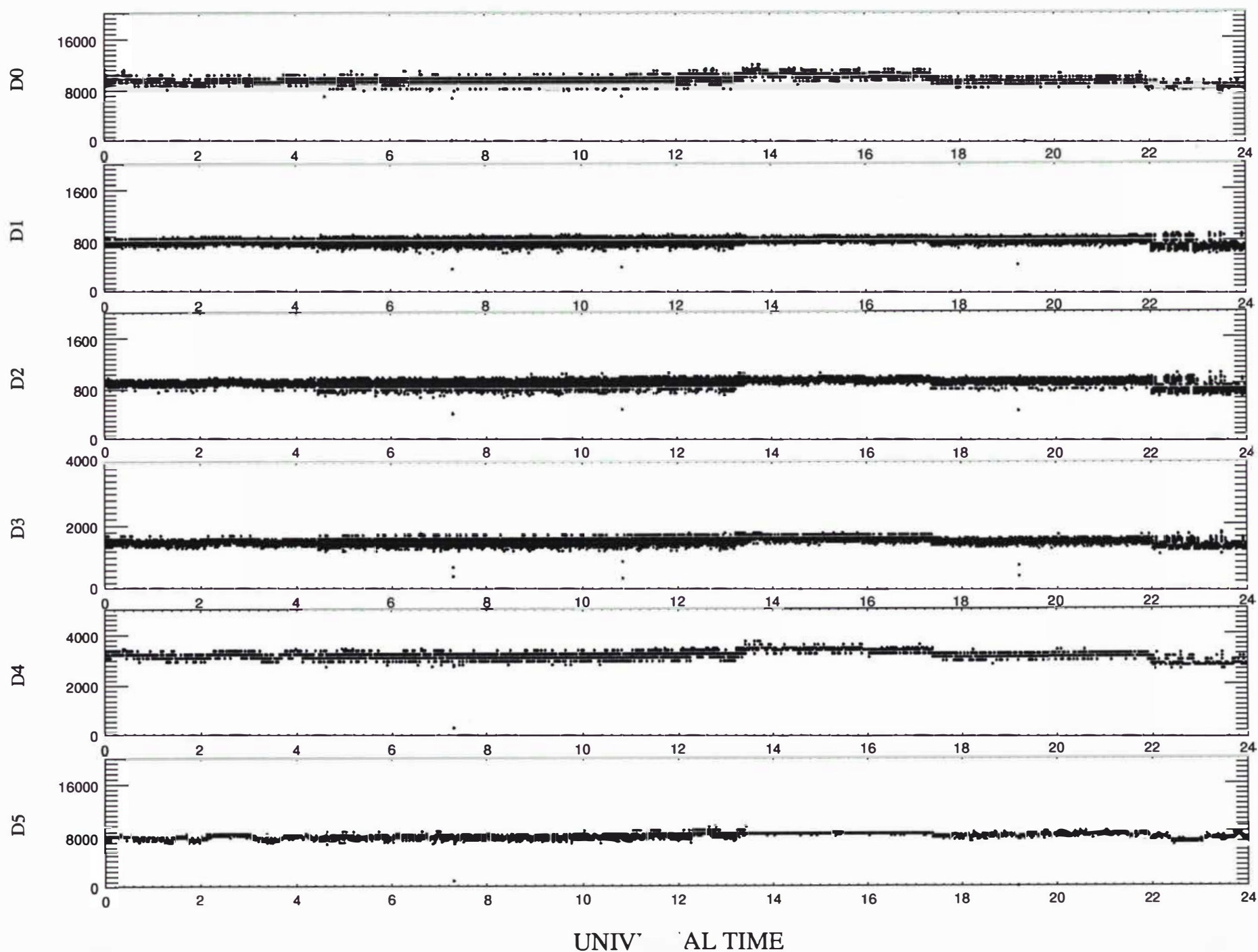
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From WOODSP@SSLMOR.msfc.nasa.gov Mon Oct 6 09:56:55 1997
From: WOODSP@SSLMOR.msfc.nasa.gov
Date: Mon, 6 Oct 1997 11:56:07 -0500 (CDT)
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.: 6410

TIME: TJD=0724 SECONDS=83330

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

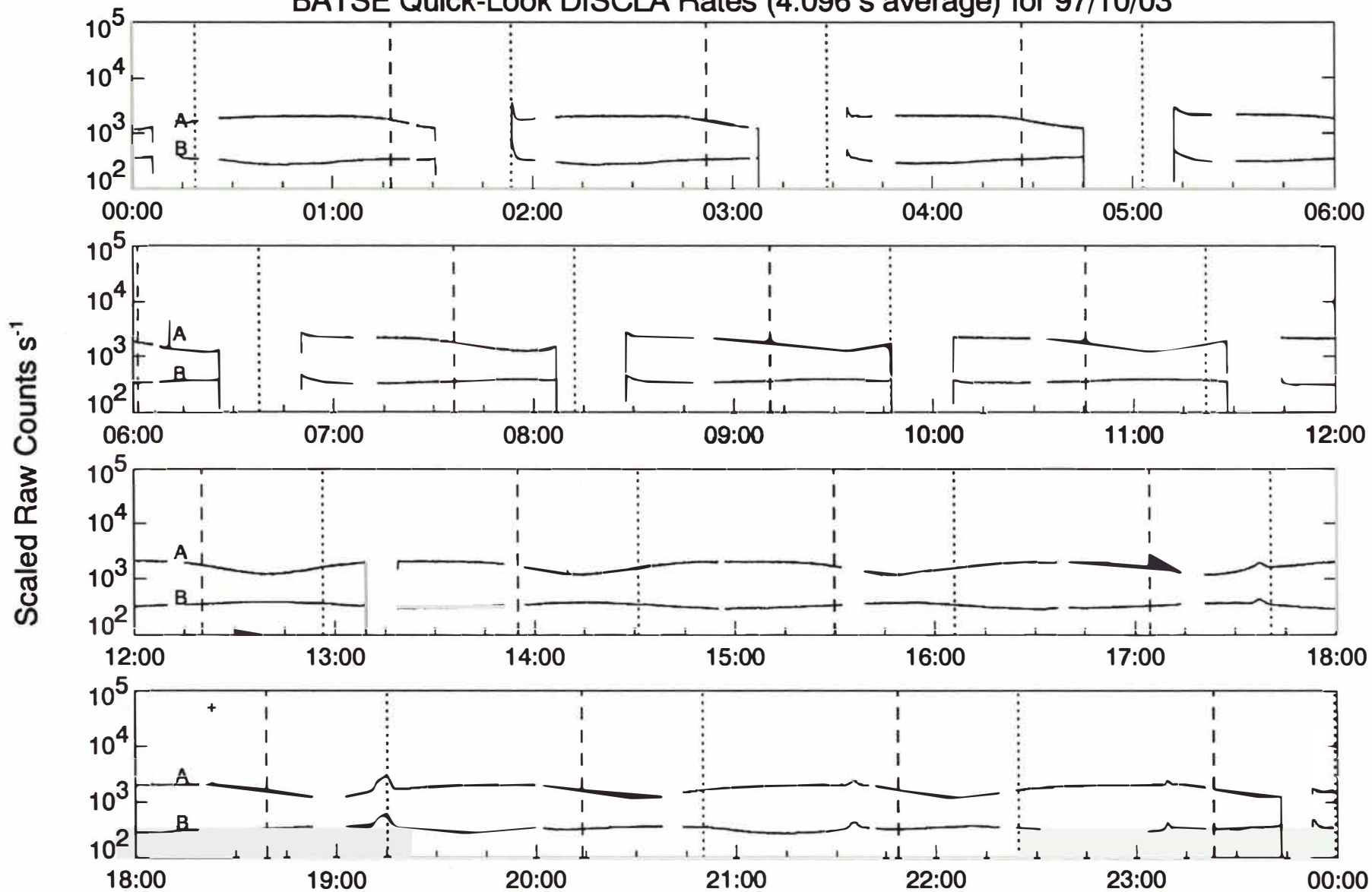
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/03

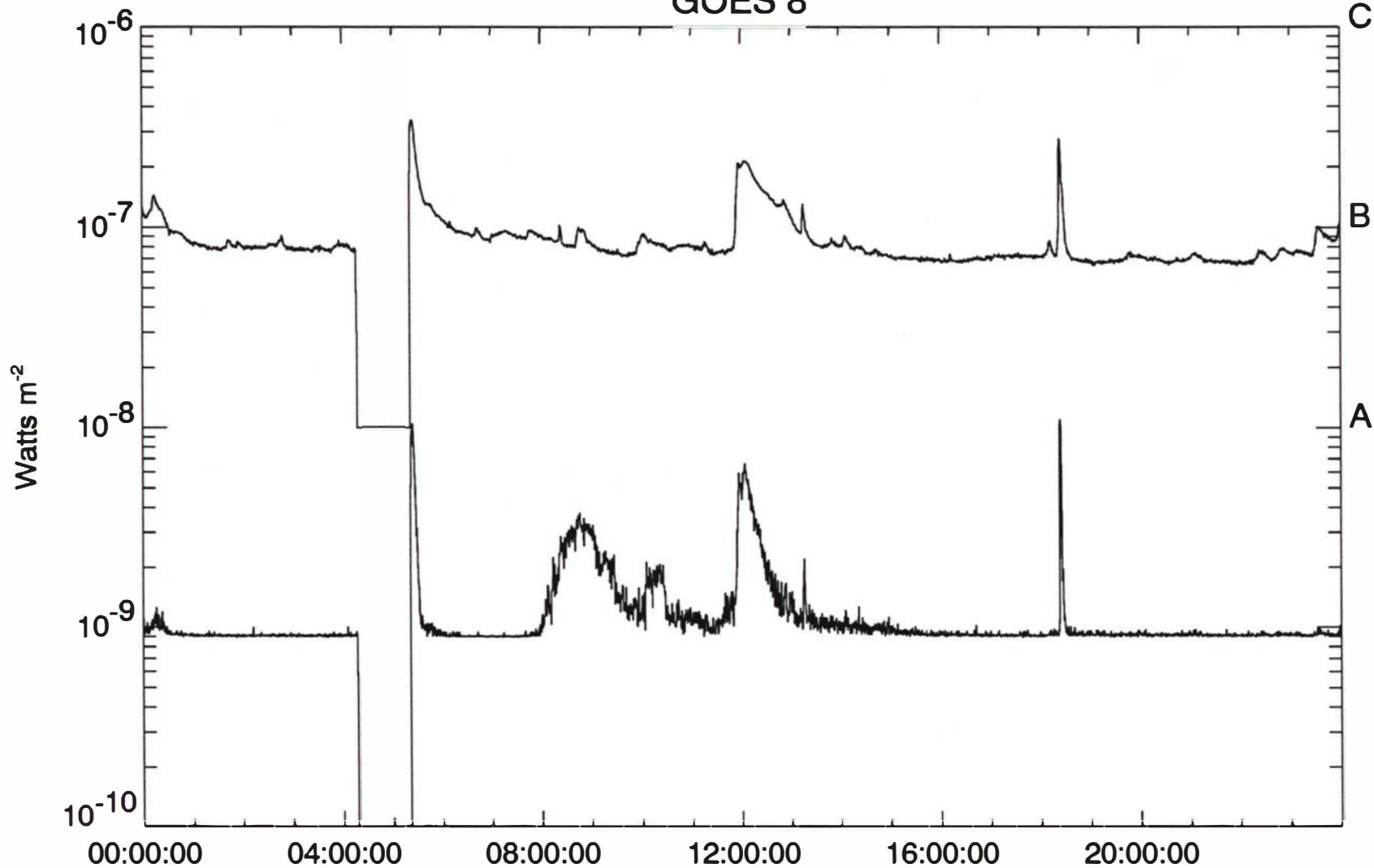


Current Time: 97/10/07, 1009 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/10/03, 0000:00

Plot created: 97/10/07, 1008

Channel

1 (1.0 - 8.0 Angstroms)

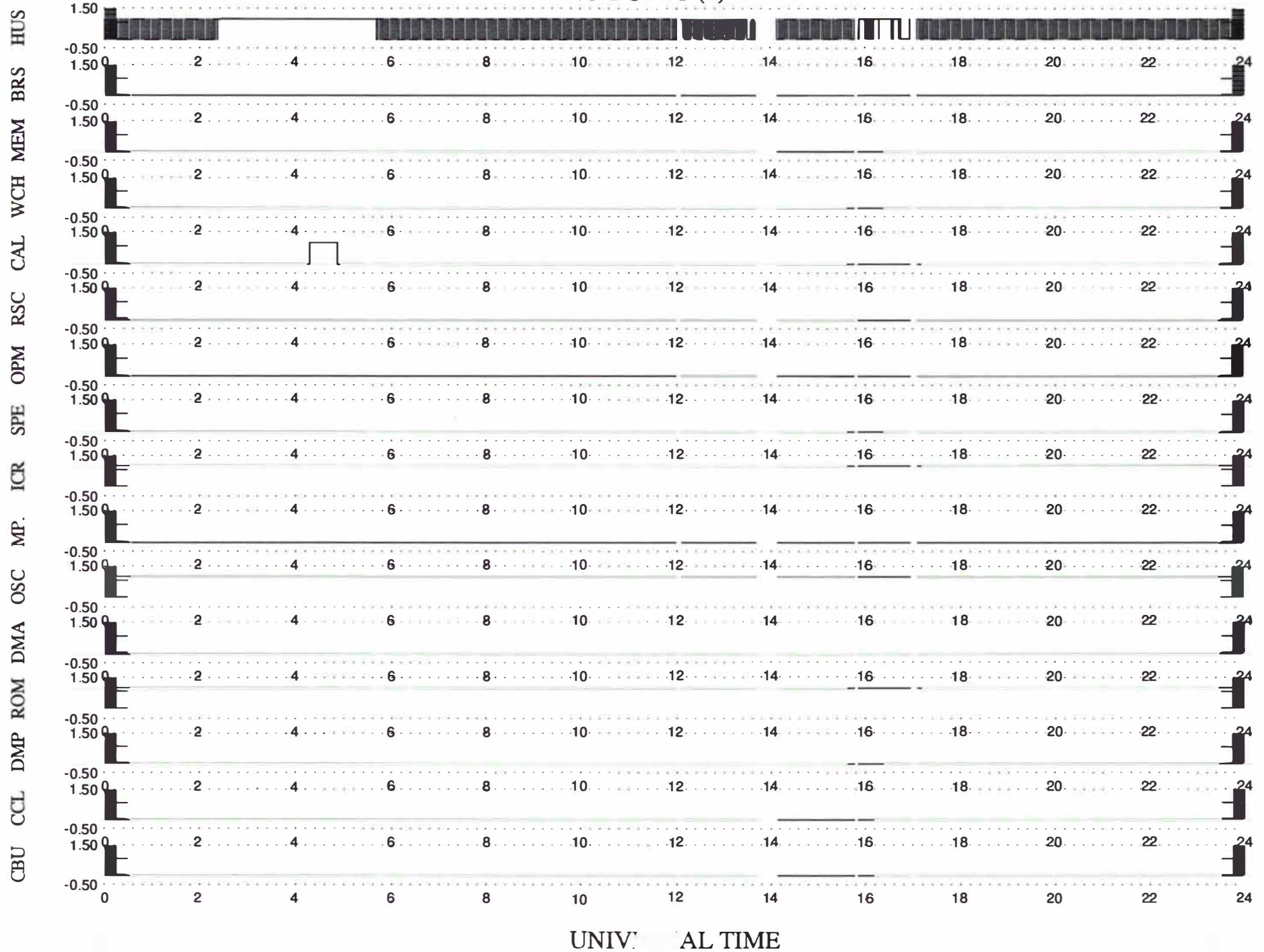
Background not subtracted

2 (0.5 - 4.0 Angstroms)

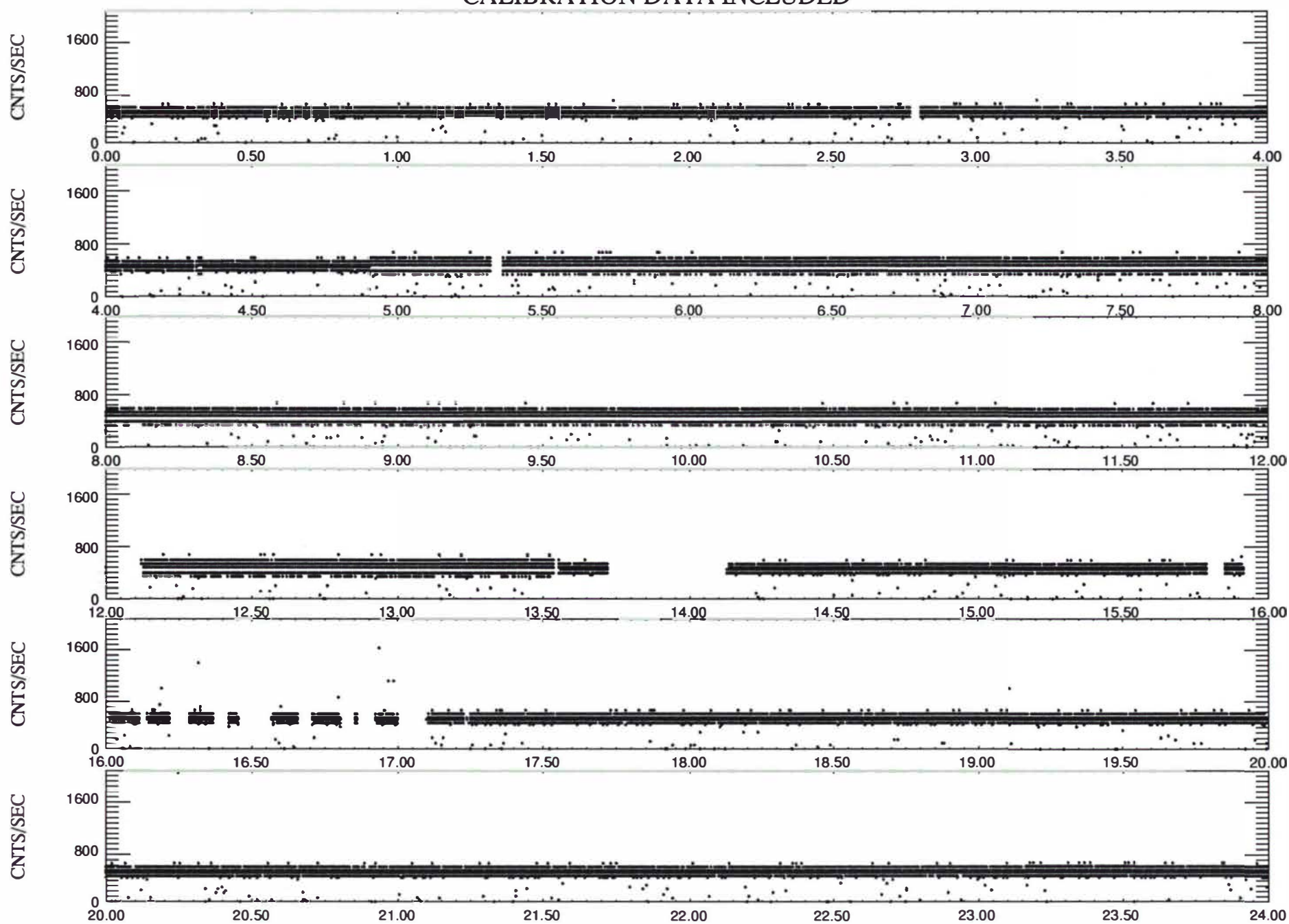
Background not subtracted

Sample average = 10

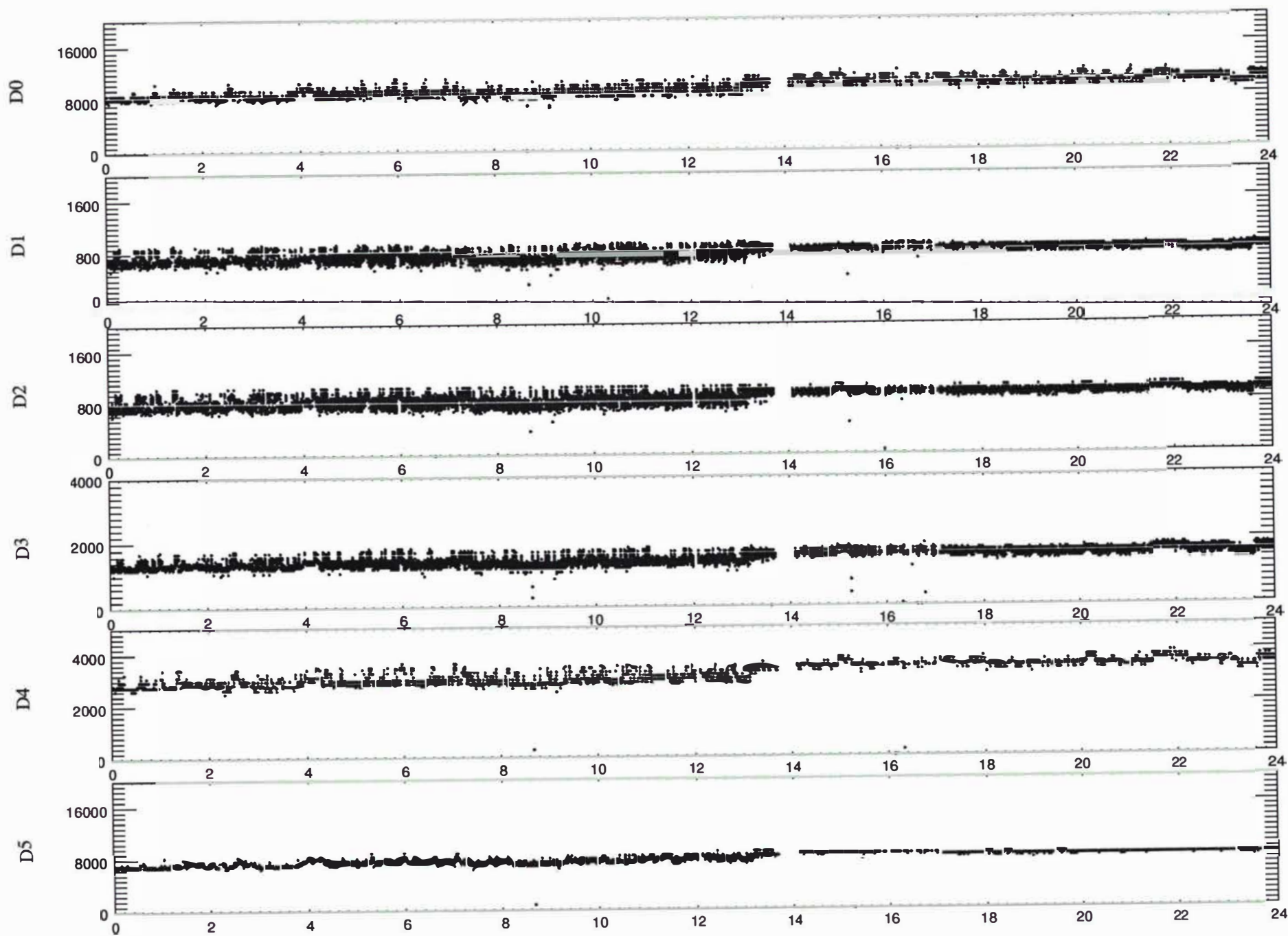
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV' AL TIME

From RICHARDSON@SSLMOR.msfc.nasa.gov Mon Oct 6 09:51:23 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 JAA25911; Mon, 6 Oct 1997 09:51:17 -0700
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA15935; Mon, 6 Oct 1997 09:51:09 -0700
Date: Mon, 6 Oct 1997 11:50:47 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971006115047.2140b4e5@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6411
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6411
EVENT OF 1997 OCT 4 DAY OF YEAR=277
EVENT CROSSING TIME AT BATSE : 50050. S. OR 13:54:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 355.000 -25.000
BATSE PEAK COUNTING RATE: 3700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/10/ 97 IS:
RA= 166.099 DEC= 15.877 DIST= 6.115 AU
BATSE-ULYSSES DISTANCE = 914878011. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 12.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2981.07 SECS.
CROSSING TIME AT ULYSSES IS 53031. S. OR 14:43:51 +/- 208.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/10/ 97 IS:
RA= 241.320 DEC= -21.935 DIST= 1.806 AU
MARS-BATSE DISTANCE = 270191424. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 162.03 SECS.
CROSSING TIME AT MARS IS 50212. S. OR 13:56:52 +/- 156.38 SECONDS

BATSE BURST TRIGGER

NO.: 6411

TIME: TJD=0725 SECONDS=50050

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=97.4 AZIMUTH=171.8 ERROR=6.1 DEGREES

COMMENTS:

GRB SINGLE PULSE. DUR. APPROX. = 1 SEC. NOT VISIBLE ABOVE 300KEV.

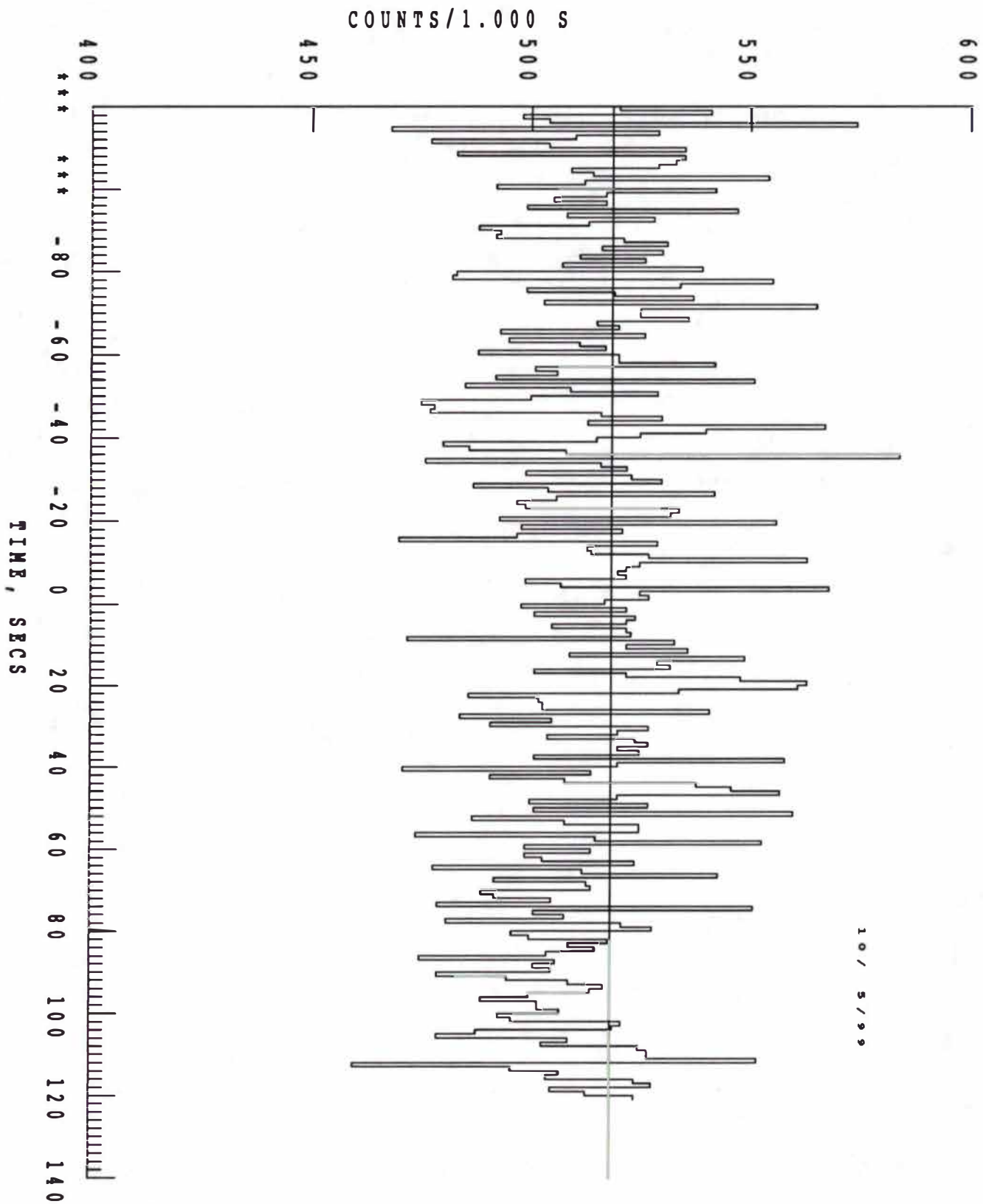
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6411	971004	10725	50050	3700	355	-25	1

NEAR

04/10/97

50034.962

100-1000 keV



BATSE BURST# 6411

ULYSSES RT

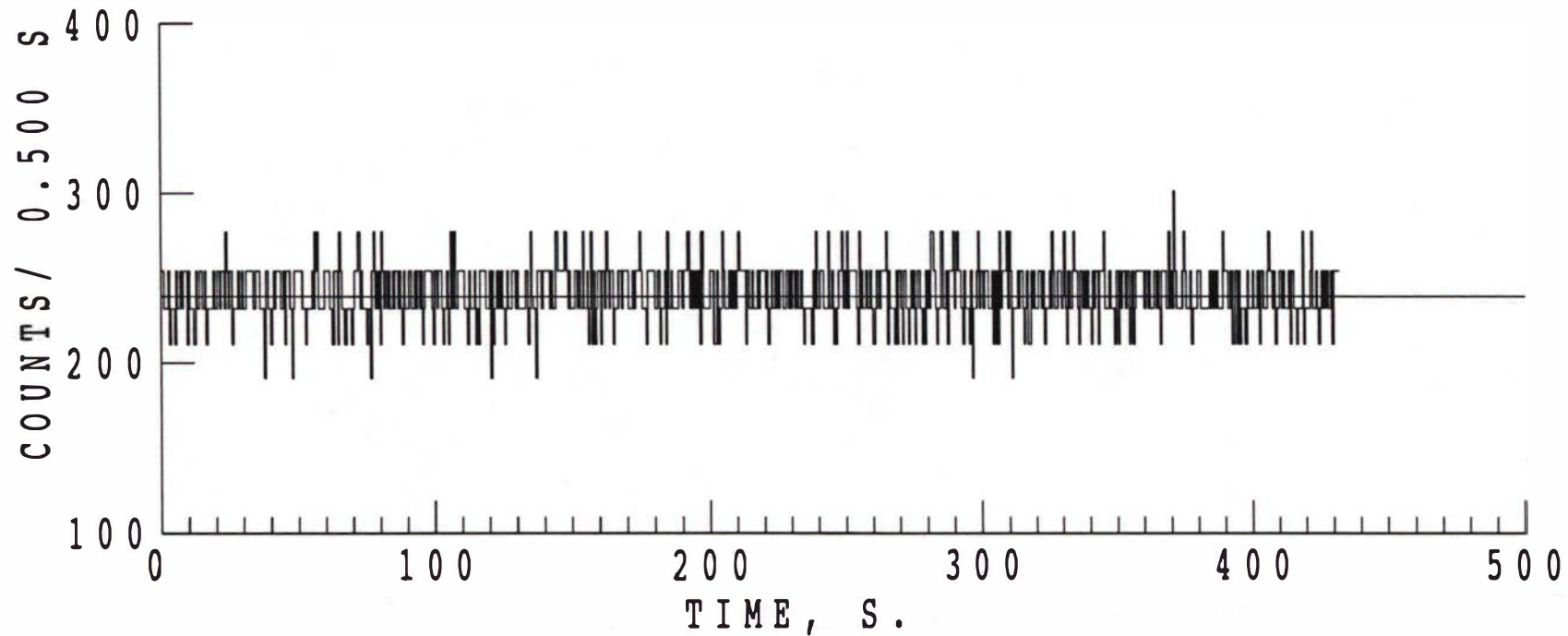
6 / 10 / 97

4 / 10 / 97 52812.488 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



600

From RICHARDSON@SSLMOR.msfc.nasa.gov Mon Oct 6 09:54:17 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 JAA25948; Mon, 6 Oct 1997 09:54:11 -0700
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA15979; Mon, 6 Oct 1997 09:53:38 -0700
Date: Mon, 6 Oct 1997 11:53:26 -0500 (CDT)
From: RICHARDSON@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971006115327.2140b4e5@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6412
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6412
EVENT OF 1997 OCT 4 DAY OF YEAR=277
EVENT CROSSING TIME AT BATSE : 71140. S. OR 19:45:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 324.000 83.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/10/ 97 IS:
RA= 166.130 DEC= 15.857 DIST= 6.114 AU
BATSE-ULYSSES DISTANCE = 914602944. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -496.05 SECS.
CROSSING TIME AT ULYSSES IS 70644. S. OR 19:37:23 +/- 565.08 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/10/ 97 IS:
RA= 241.320 DEC= -21.935 DIST= 1.806 AU
MARS-BATSE DISTANCE = 270191424. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 321.18 SECS.
CROSSING TIME AT MARS IS 71461. S. OR 19:51:01 +/- 151.08 SECONDS

BATSE BURST TRIGGER

NO.: 6412

TIME: TJD=0725 SECONDS=71140

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=153.8 AZIMUTH=355.8 ERROR=9.2 DEGREES

COMMENTS:

GRB THREE SHORT PULSES. TOTAL DURATION APPROX. = 0.35 SEC.
NOT VISIBLE ABOVE 300KEV.

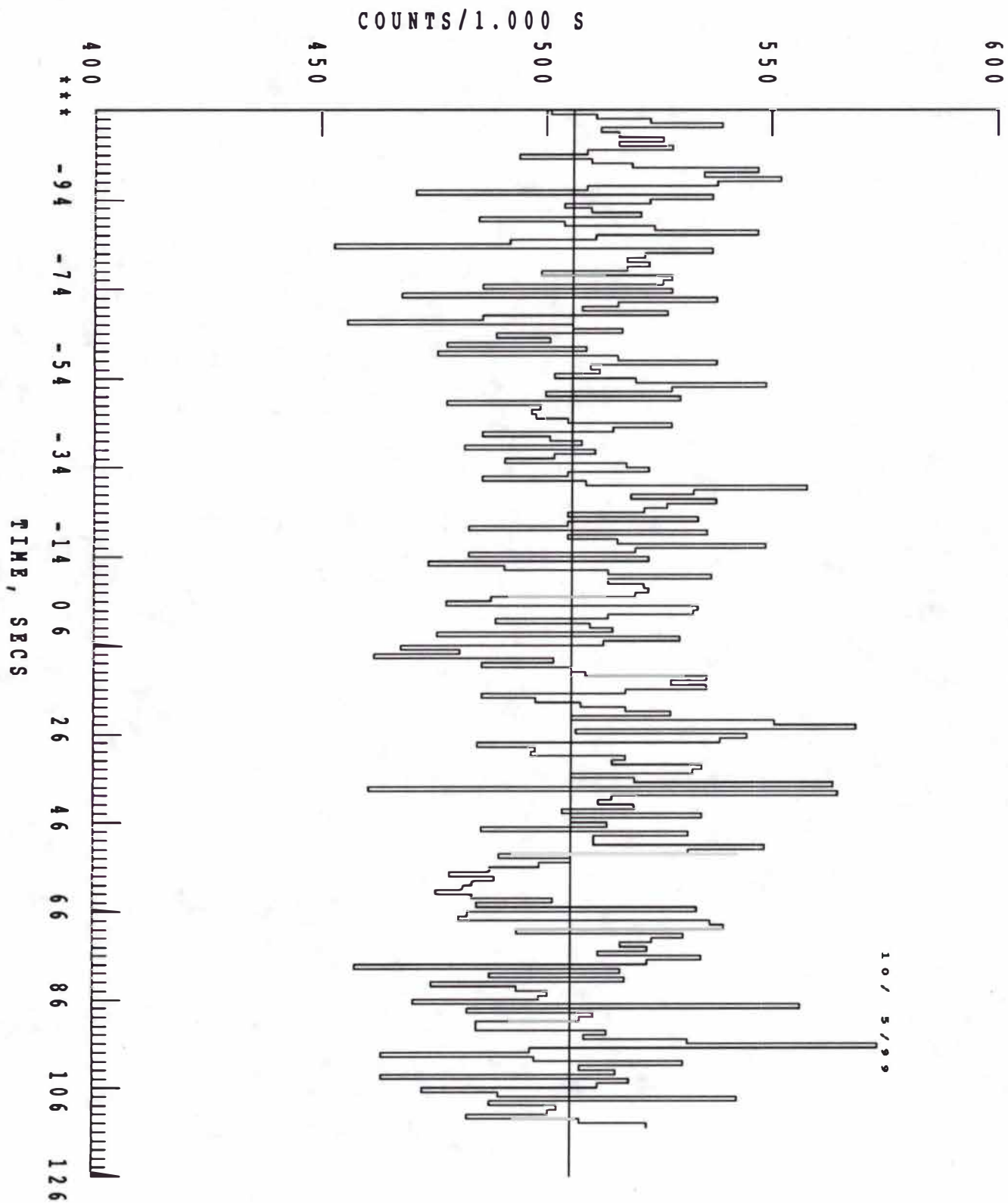
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6412	971004	10725	71140	4500	324	+83	.35

NEAR

04/10/97

71005.958

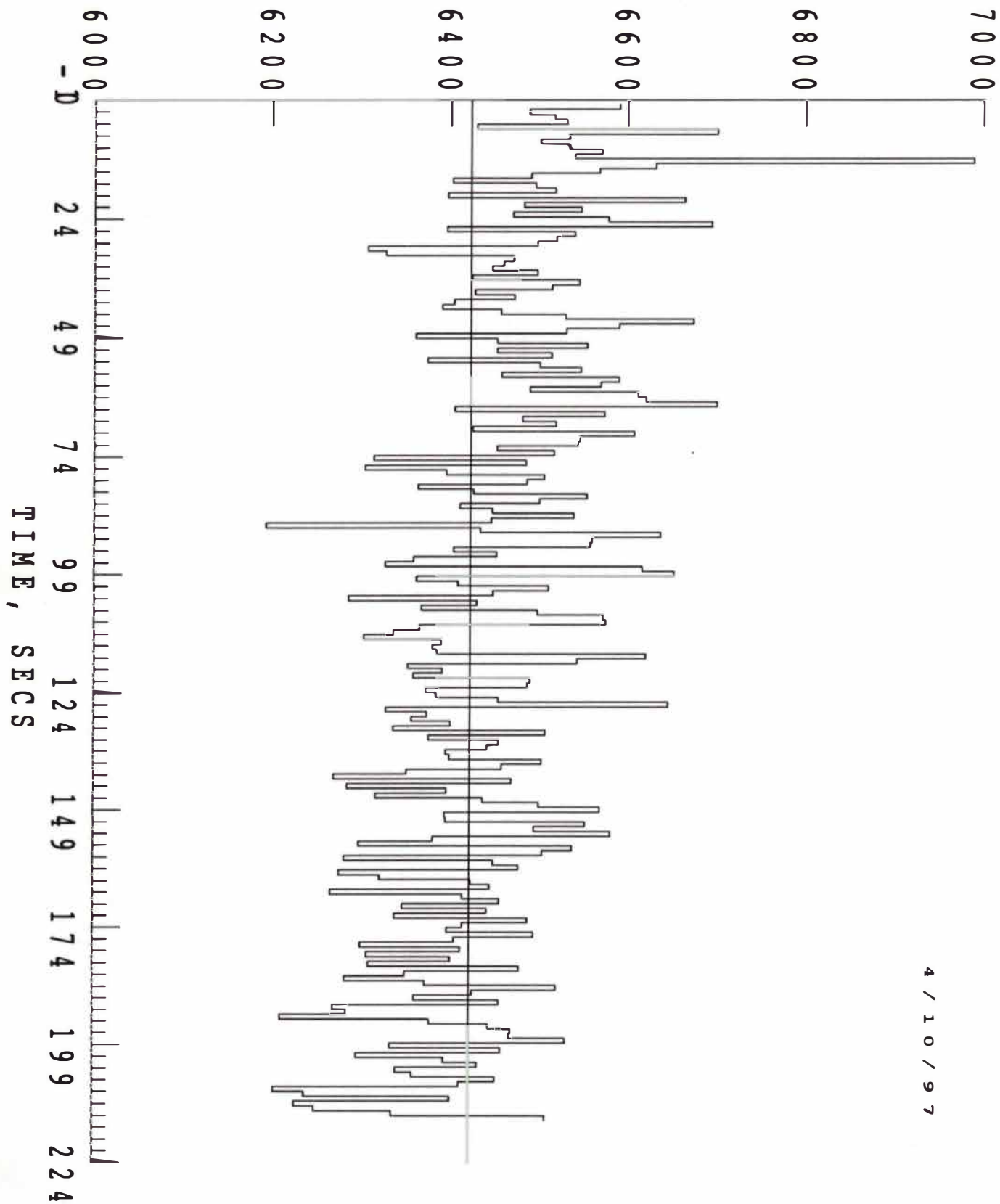
100-1000 keV



BACODINE 6412 04/10/97 71128.801

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6412

ULYSSES RT

6 / 10 / 97

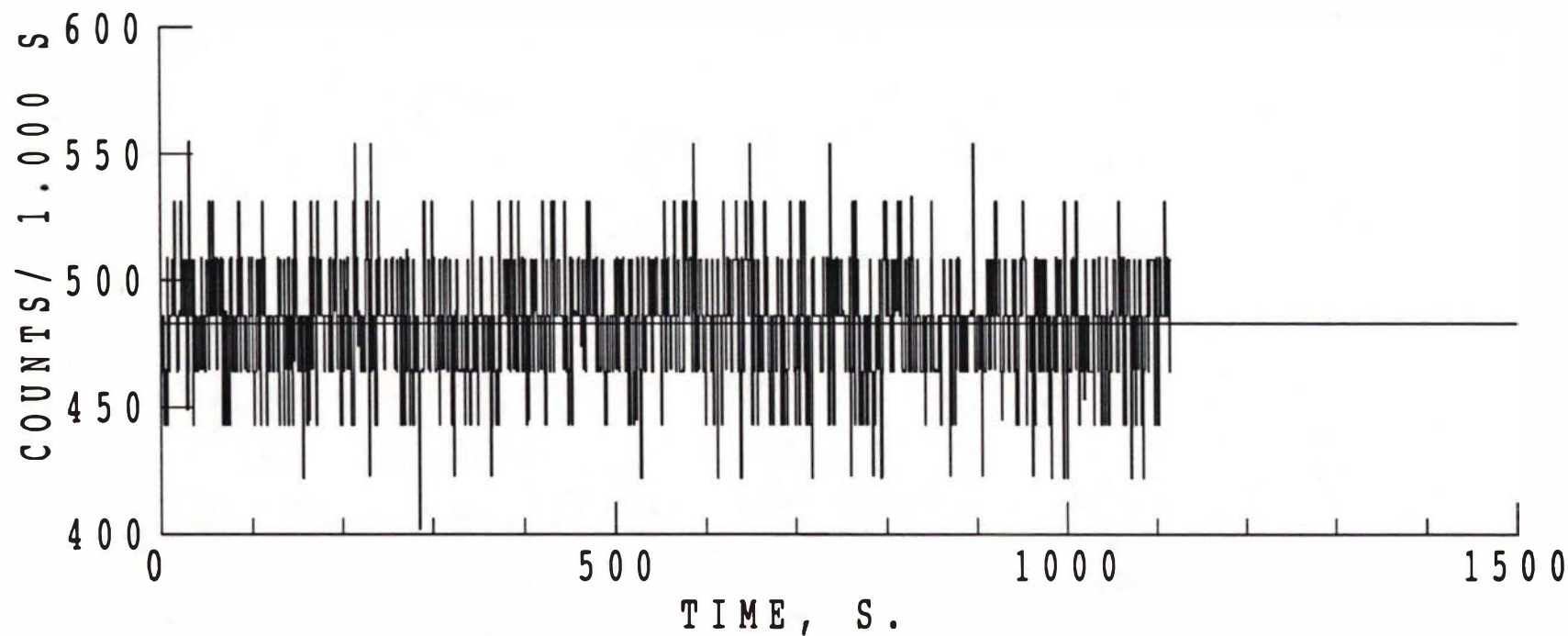
4 / 10 / 97 70092.180 s

0.500 S INTERVALS REGROUPED BY 2

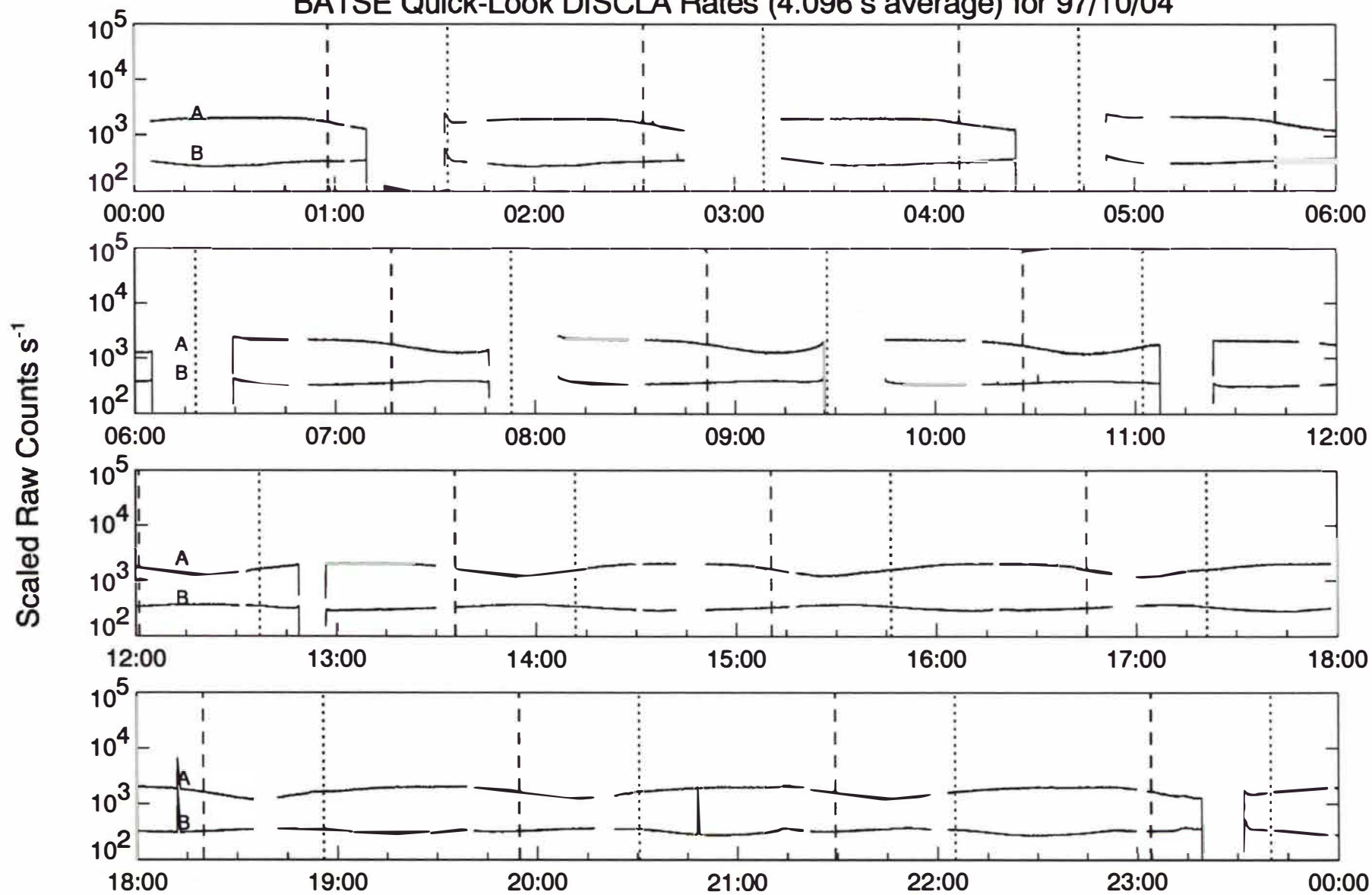
0 - 0 keV

W= 10 M=10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/04



Current Time: 97/10/08, 1008 EDT

A: Channel 0 Most Sunward LAD

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

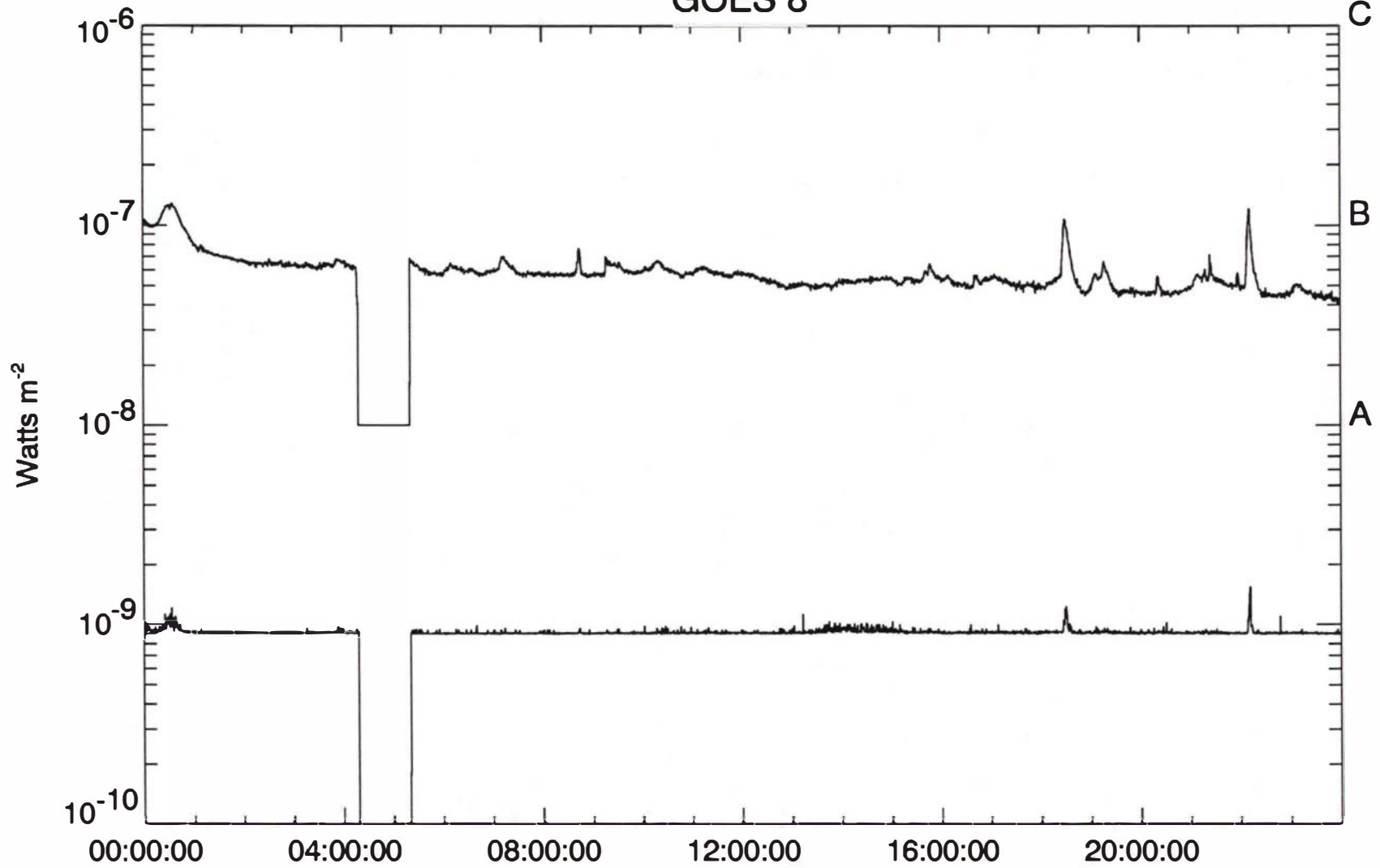
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 97/10/04, 0000:00

Plot created: 97/10/08, 1007

Channel

1 (1.0 - 8.0 Angstroms)

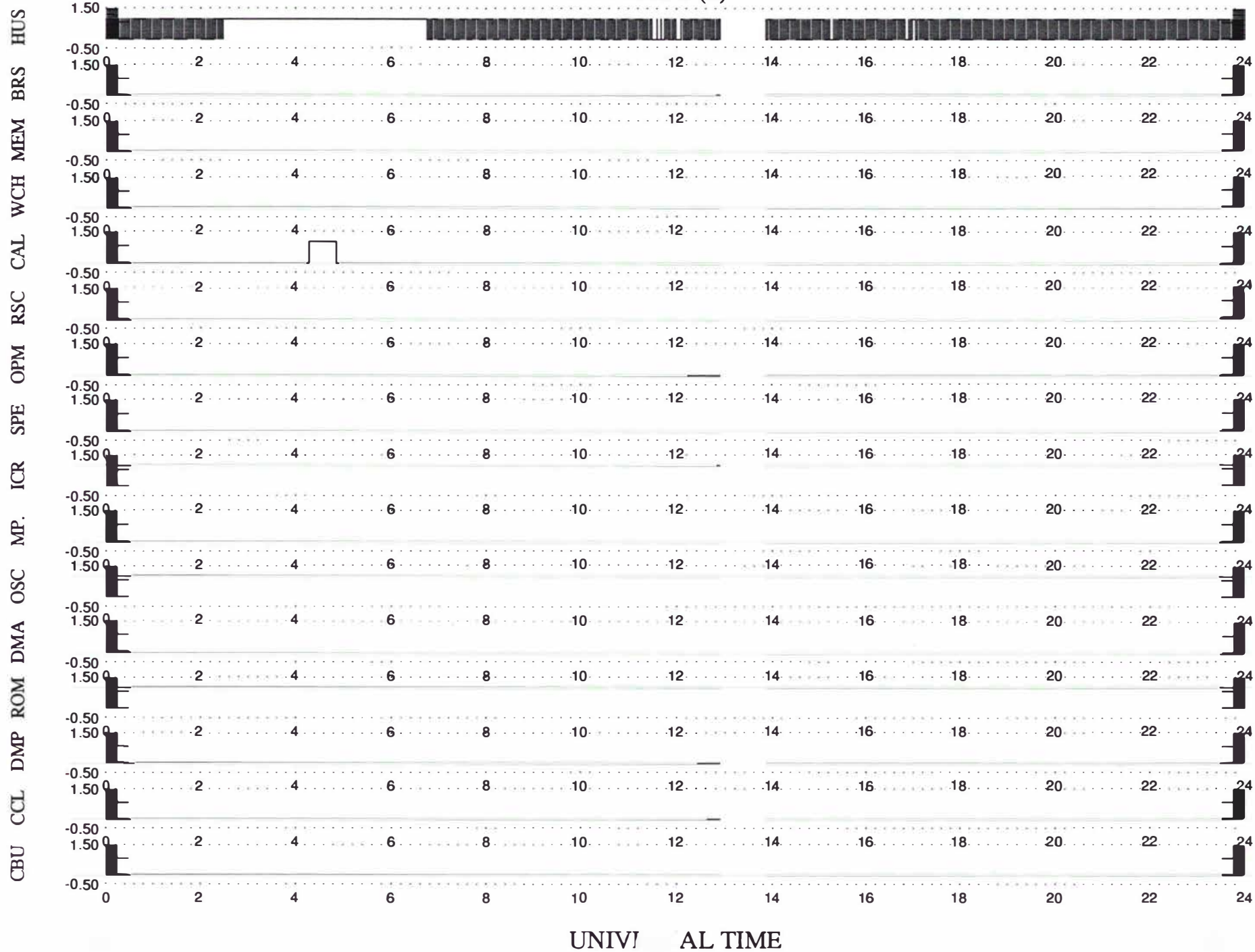
Background not subtracted

2 (0.5 - 4.0 Angstroms)

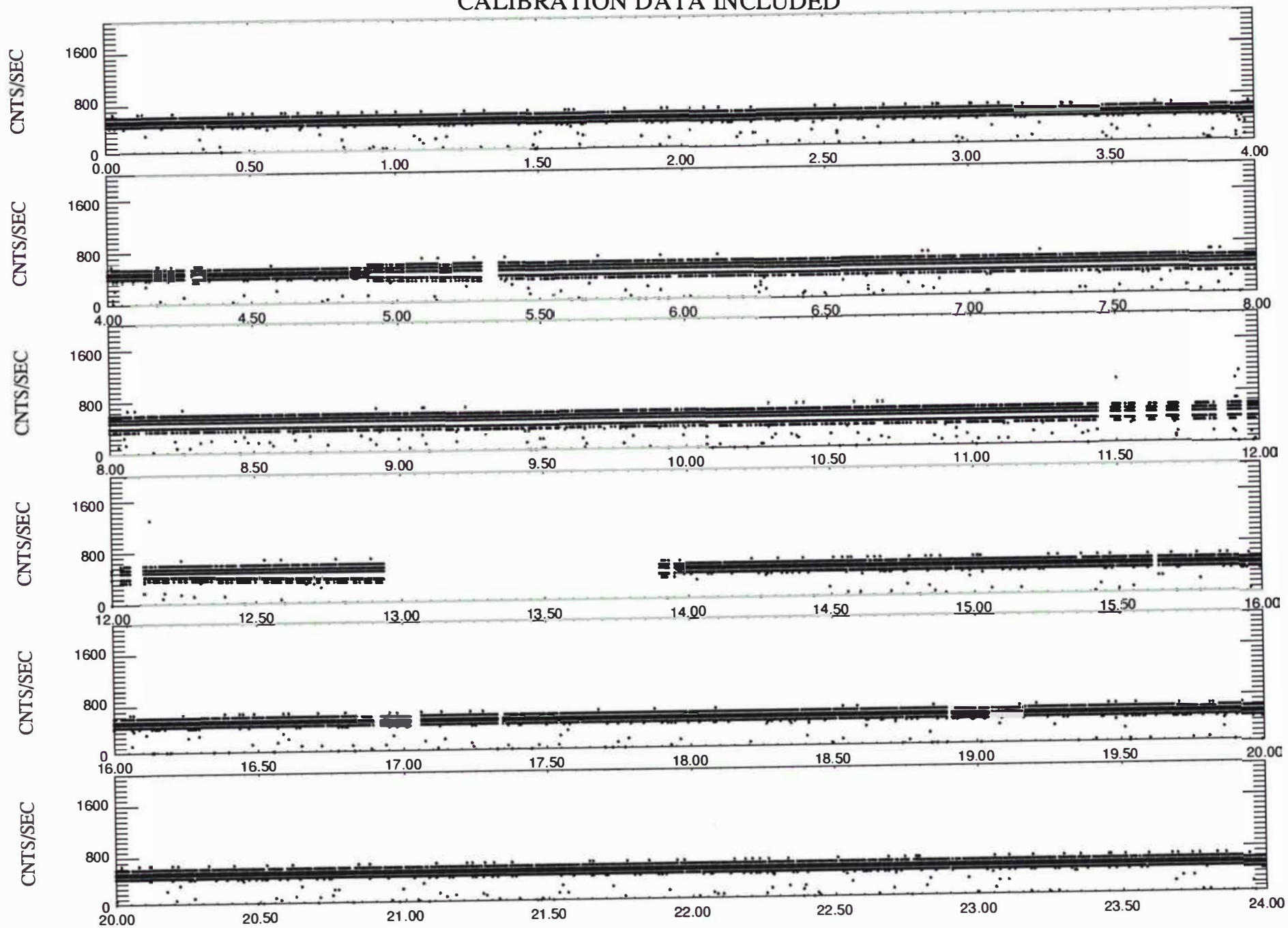
Background not subtracted

Sample average = 10

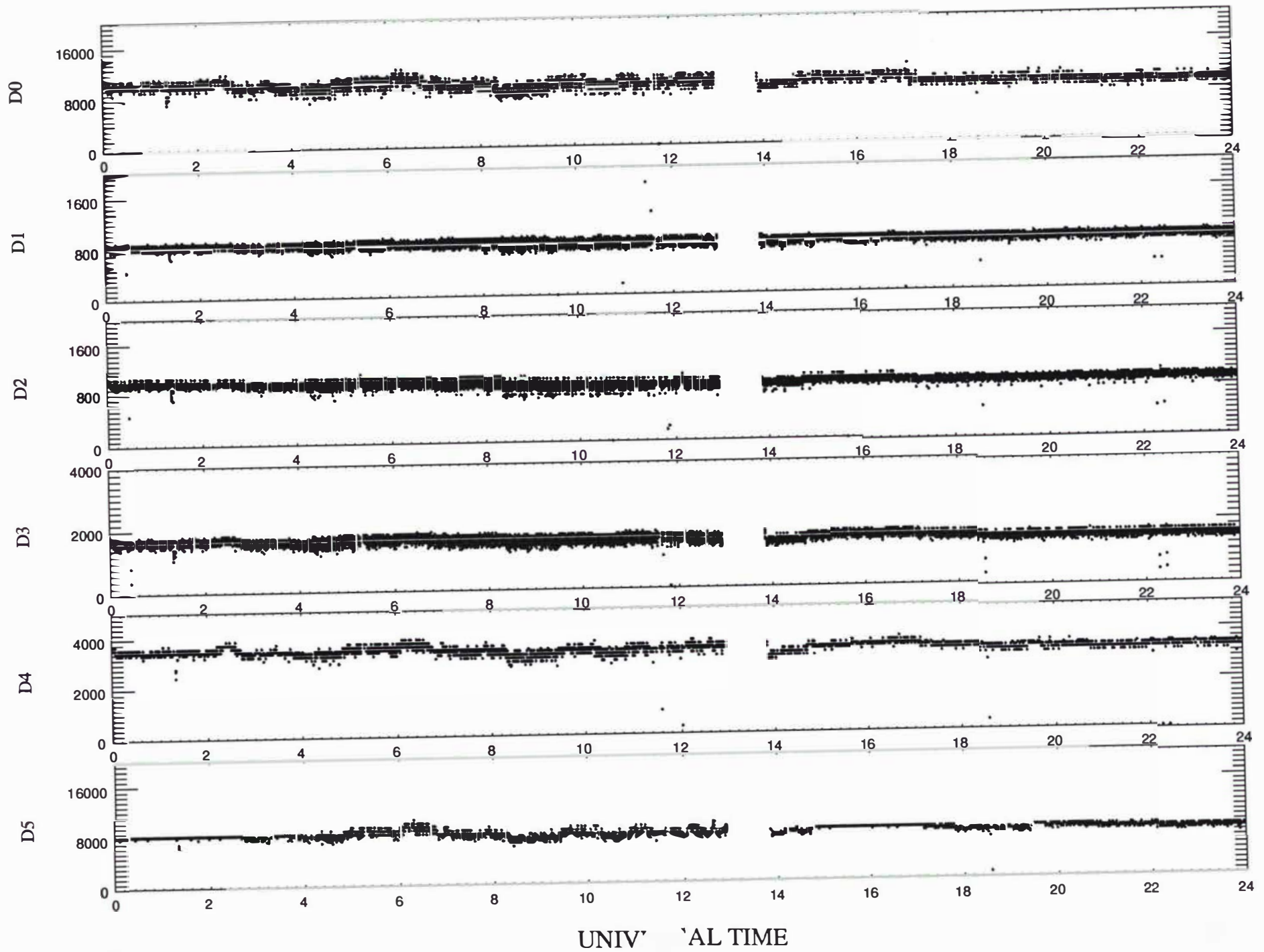
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV. TIME



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Oct 7 09:32:50 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA08106; Tue, 7 Oct 1997 09:32:40 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA23778; Tue, 7 Oct 1997 09:32:39 -0700
Date: Tue, 7 Oct 1997 11:32:23 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971007113223.202108c9@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6413
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6413
EVENT OF 1997 OCT 5 DAY OF YEAR=278
EVENT CROSSING TIME AT BATSE : 4555. S. OR 01:15:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 331.000 -56.000
BATSE PEAK COUNTING RATE: 15200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/10/ 97 IS:
RA= 166.159 DEC= 15.838 DIST= 6.112 AU
BATSE-ULYSSES DISTANCE = 914344855. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2273.73 SECS.
CROSSING TIME AT ULYSSES IS 6829. S. OR 01:53:48 +/- 437.45 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/10/ 97 IS:
RA= 242.067 DEC= -22.075 DIST= 1.811 AU
MARS-BATSE DISTANCE = 270858624. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -290.21 SECS.
CROSSING TIME AT MARS IS 4265. S. OR 01:11:04 +/- 144.14 SECONDS

BATSE BURST TRIGGER

NO.: 6413

TIME: TJD=0726 SECONDS=4555

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=65.7 AZIMUTH=189.1 ERROR=1.875 DEGREES

COMMENTS:

GRB. ONE MAIN PULSE WITH SUBSTRUCTURE AT TRIGGER TIME. DURATION ABOUT 5S.
AT ABOUT T+6S, THERE IS ANOTHER SINGLE PULSE. DURATION ABOUT 1S.
WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6413	971005	10726	04555	15200	331	-56	7.5

Helio corr removed 7 Feb 00

Date: Apr 9 '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*

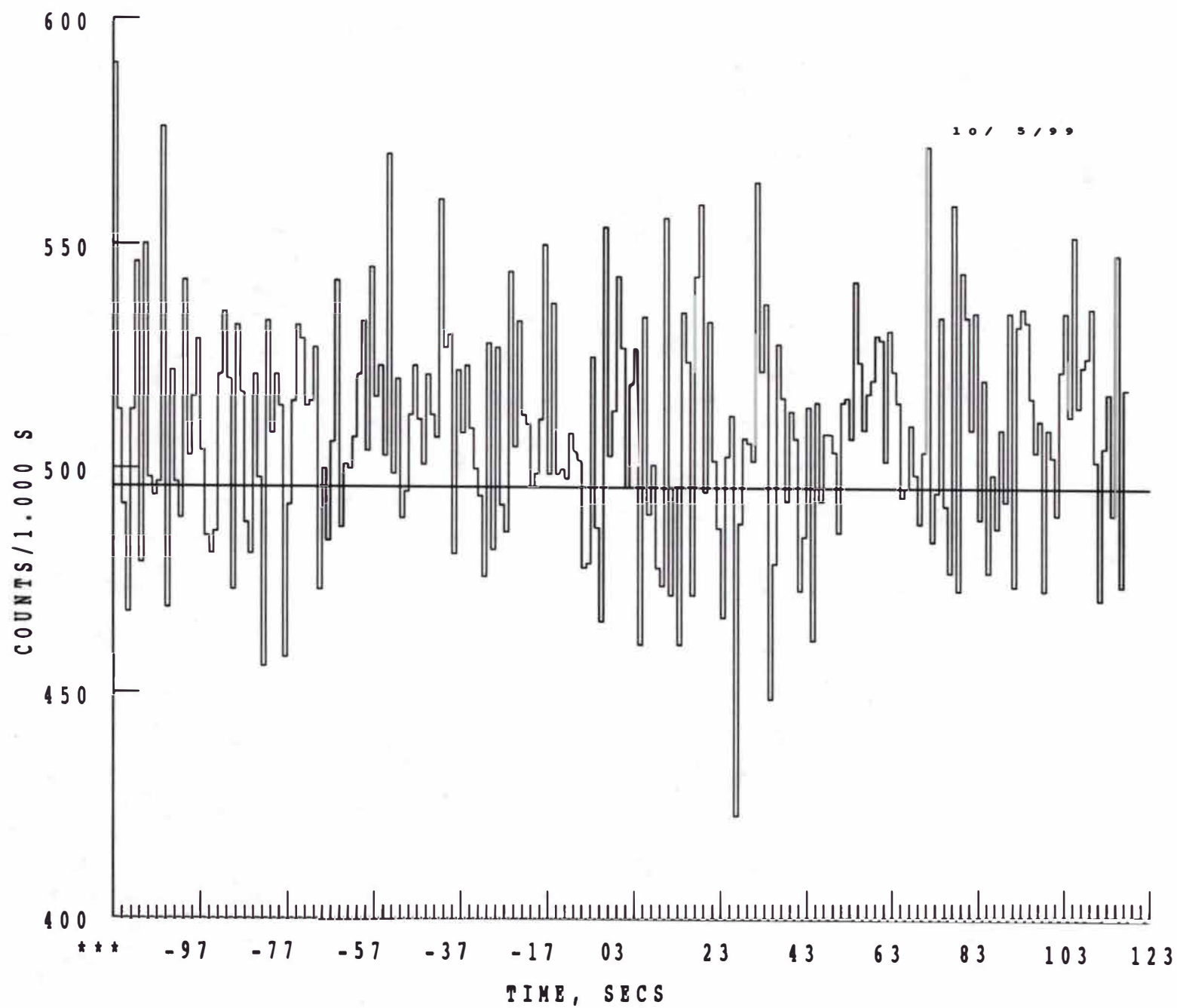
3. PVO Data

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

05/10/97 4716.954

100-1000 keV

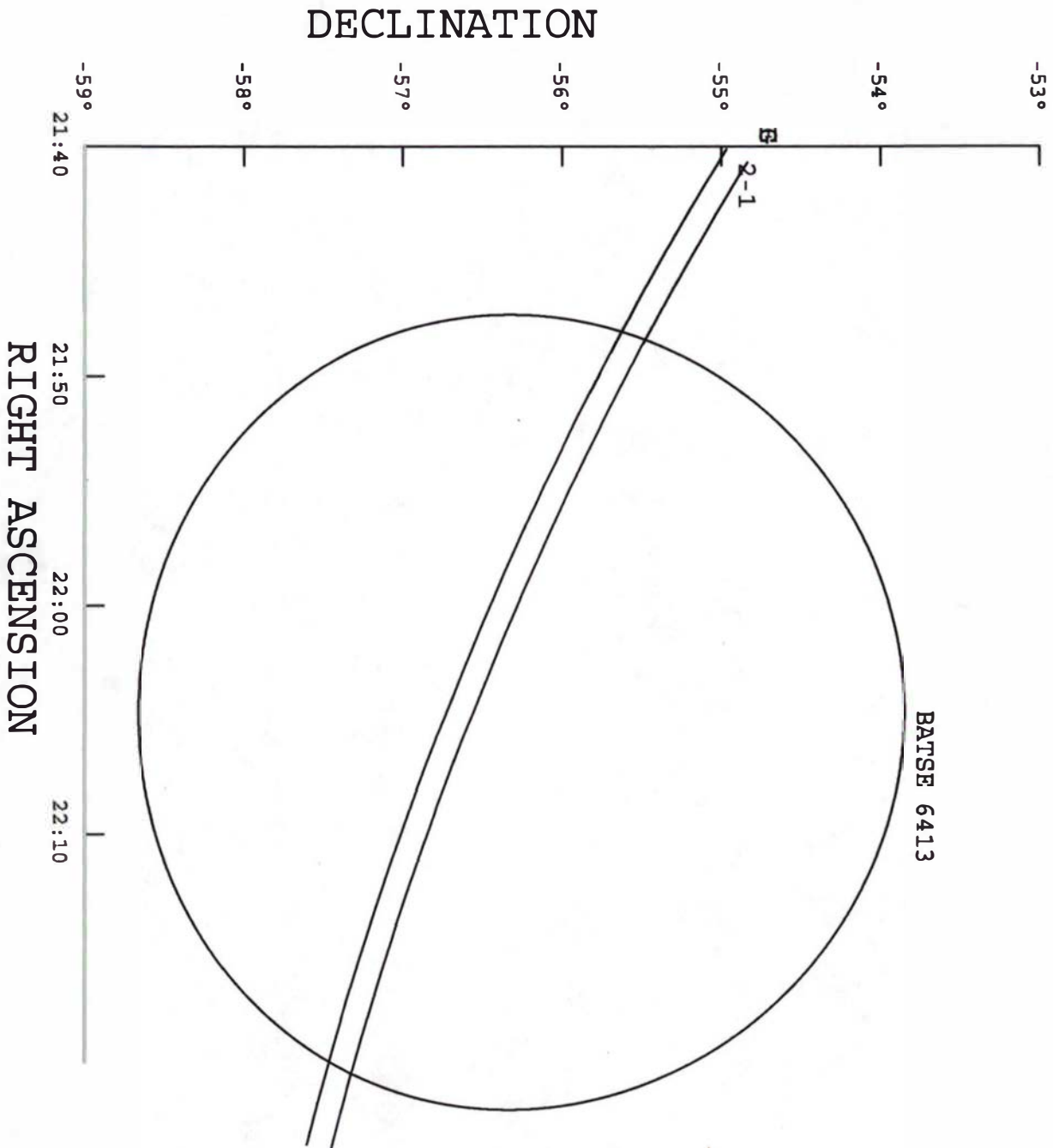
NEAR



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 OCT 5, 1997 1:52

7 / 2 / 0



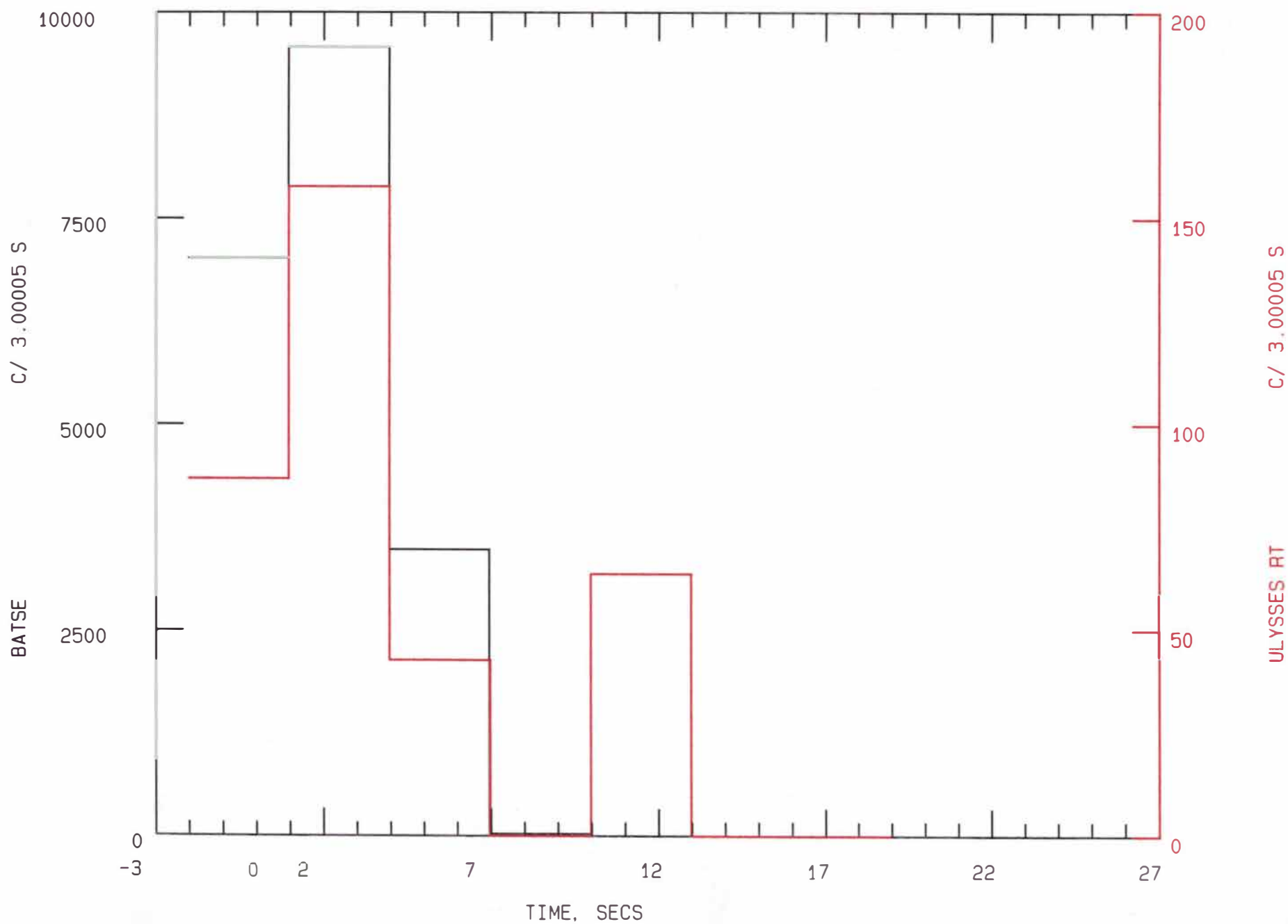
BATSE

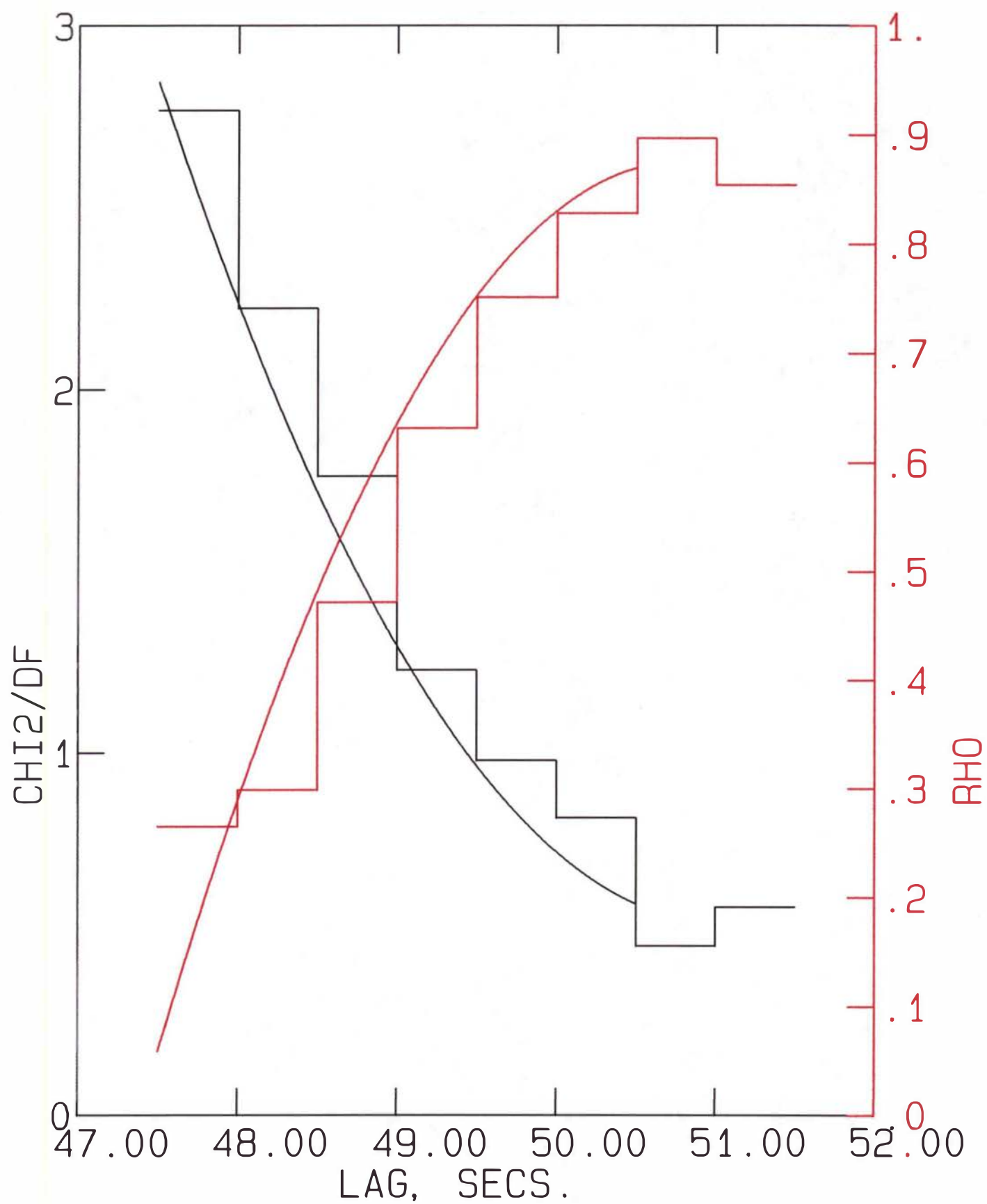
-ULYSSES RT CORRELATION

5/10/97

4554.977

9/ 4/98





ULYSSES RT

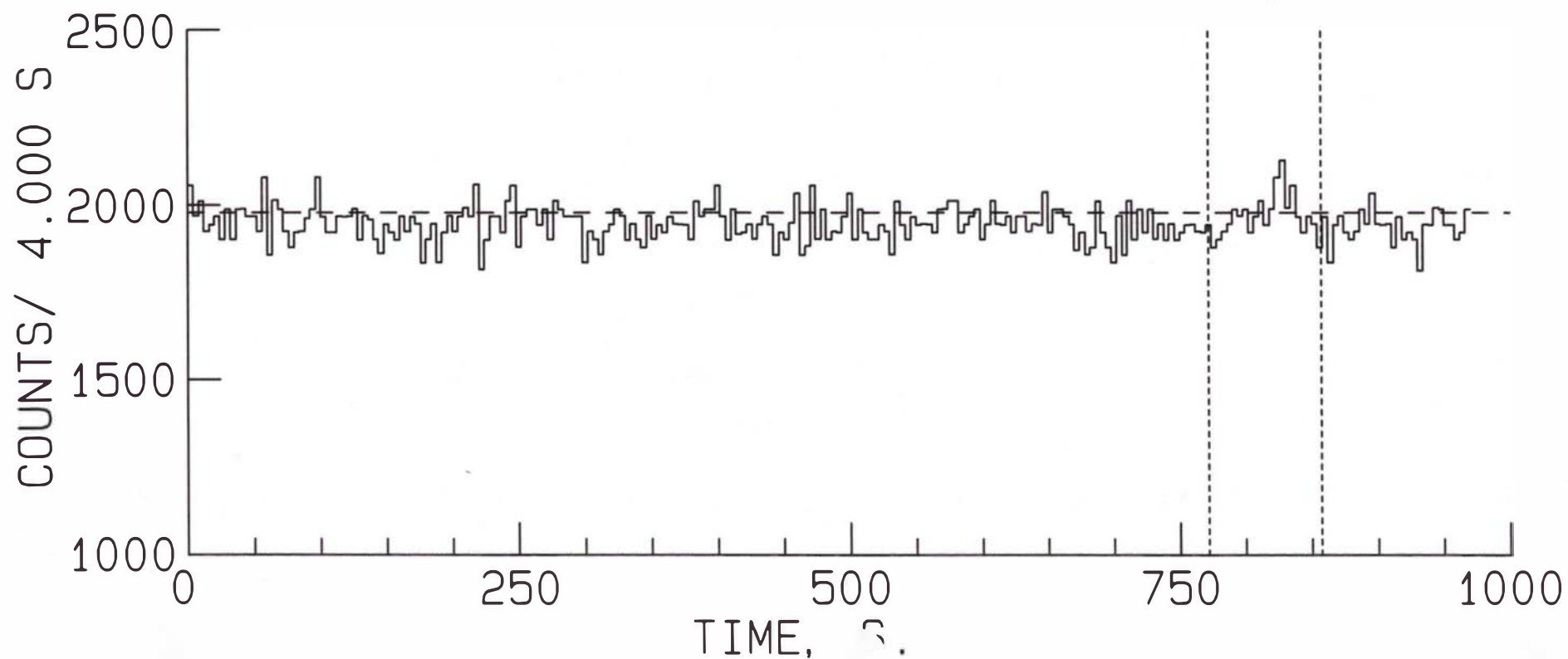
9 / 4 / 98

5/10/97 5976.430 s

0.500 S INTERVALS REGROUPED BY 8

22- 148 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



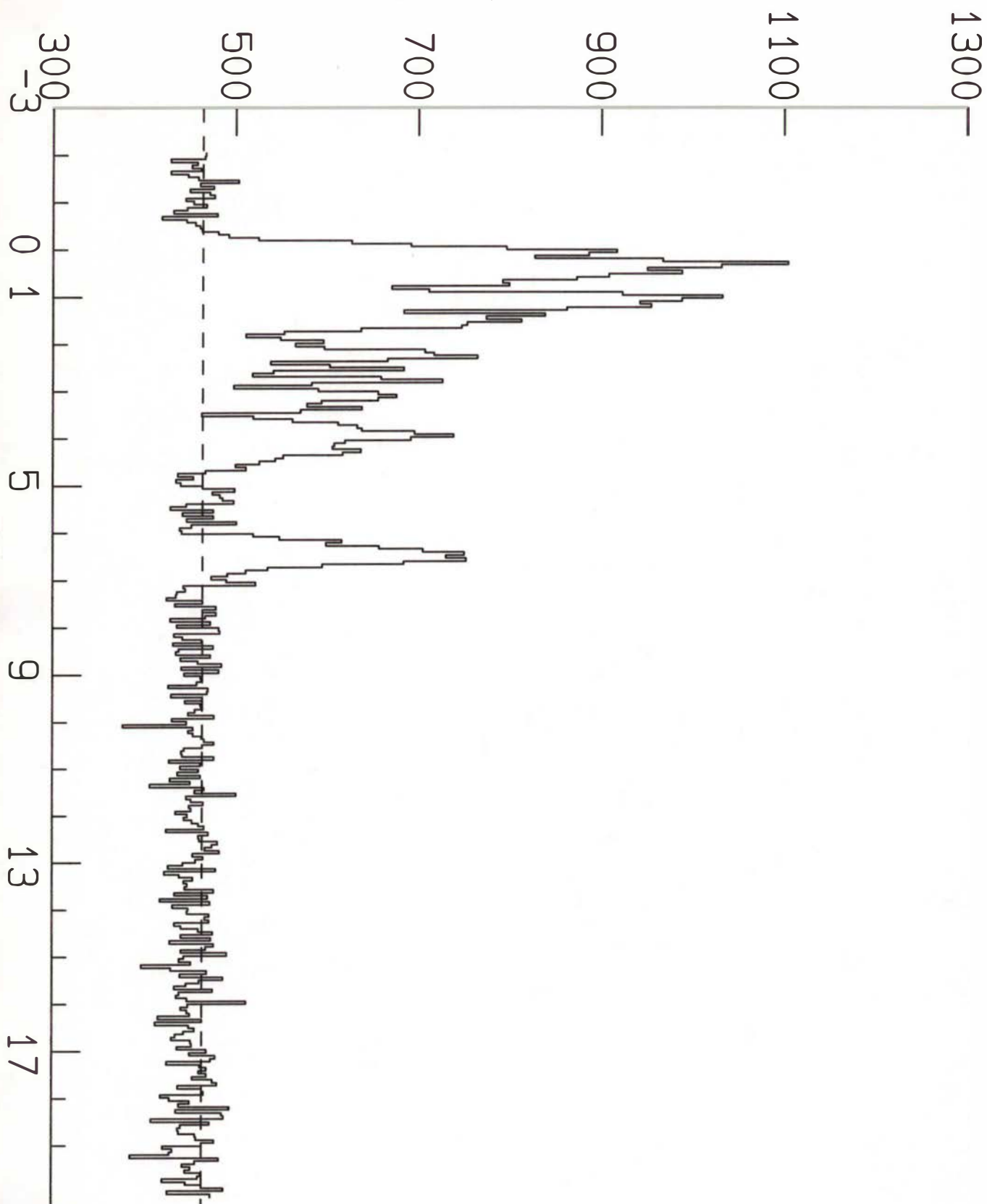
BATSE

05/10/97

4554.977

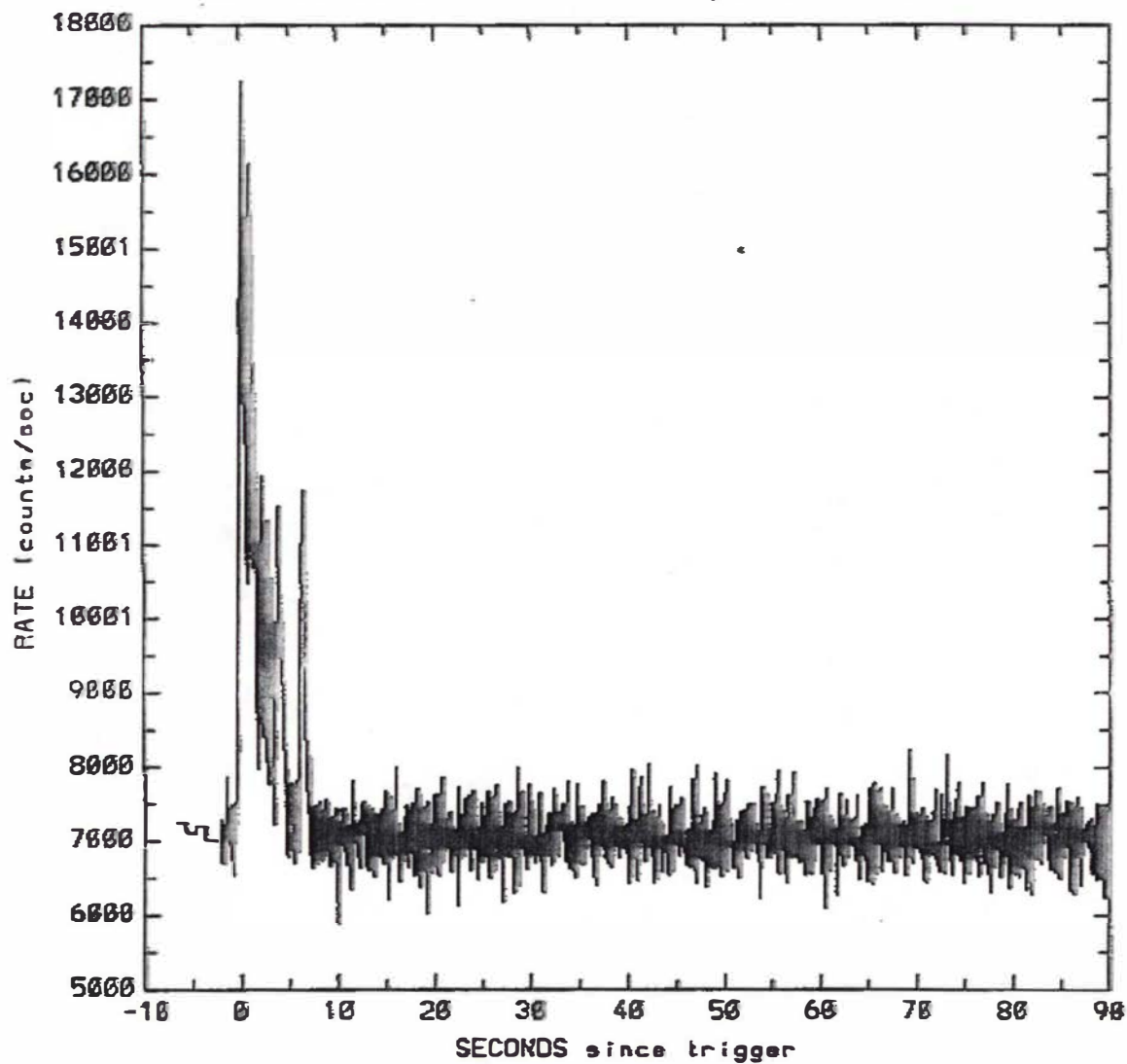
25- 100 keV

COUNTS/0.064 S



17/10/97

DISCSC Data for K. Hurley, No. 6413



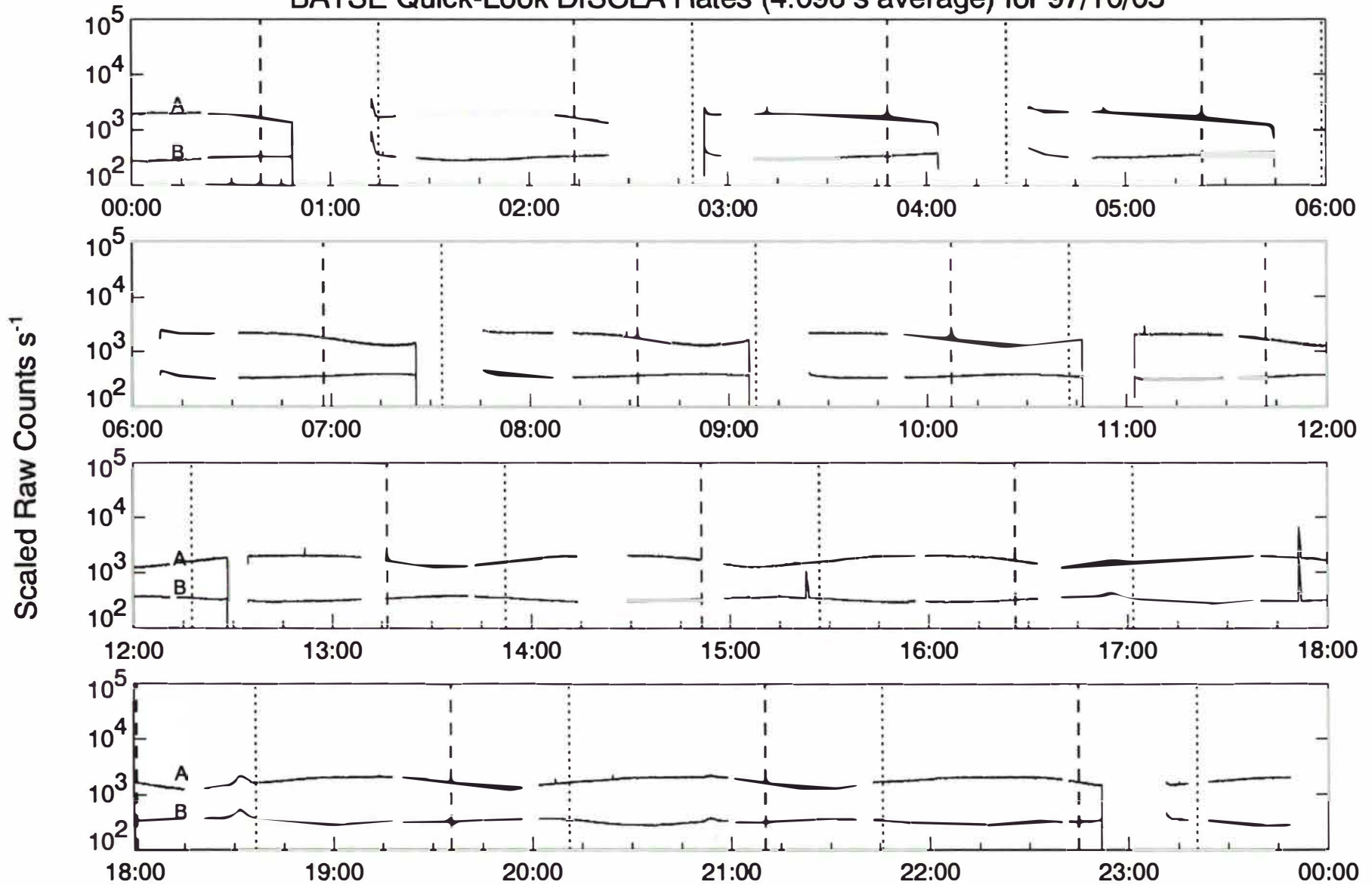
15-OCT-1997 07:57:53

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 6413

Trigger Time:
18726 / 4554.977Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.004 secondsDetectors [7..8]:
-6-4----Discriminators:
[1 . 2]Quality Mask:
BDISP1

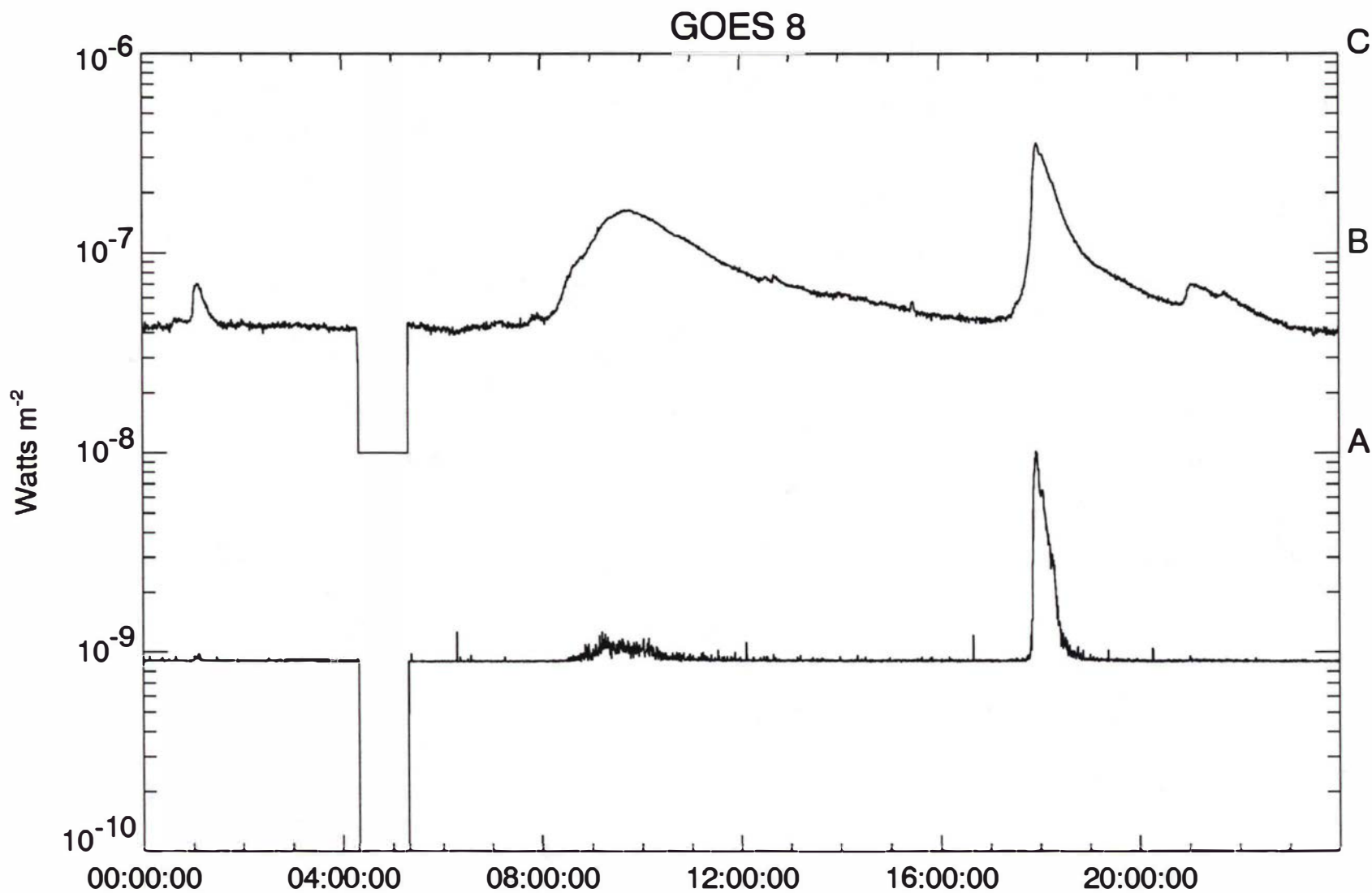
BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/05



Current Time: 97/10/09, 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: 97/10/05, 0000:00

Plot created: 97/10/09, 1008

Channel

1 (1.0 - 8.0 Angstroms)

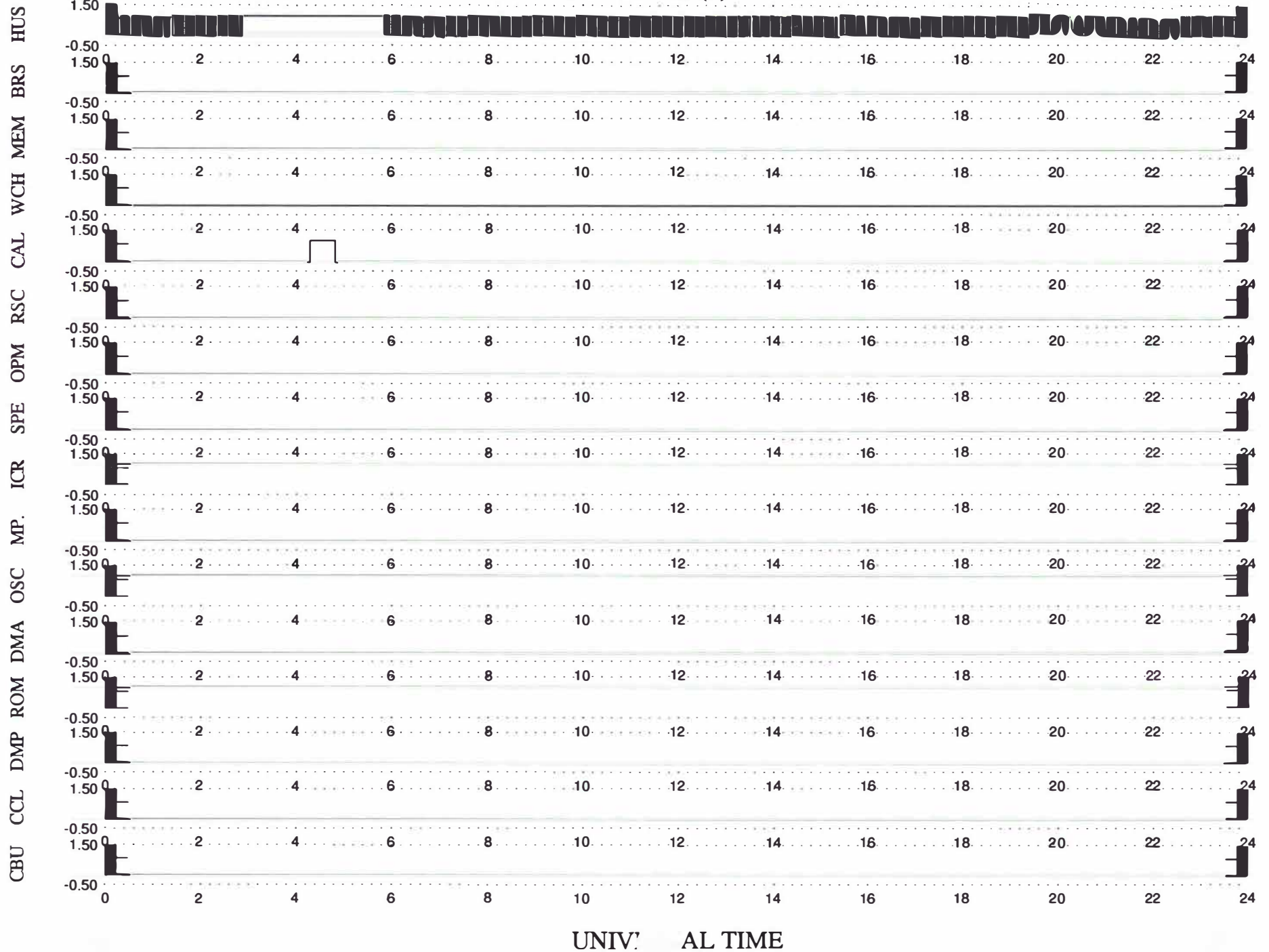
Background not subtracted

2 (0.5 - 4.0 Angstroms)

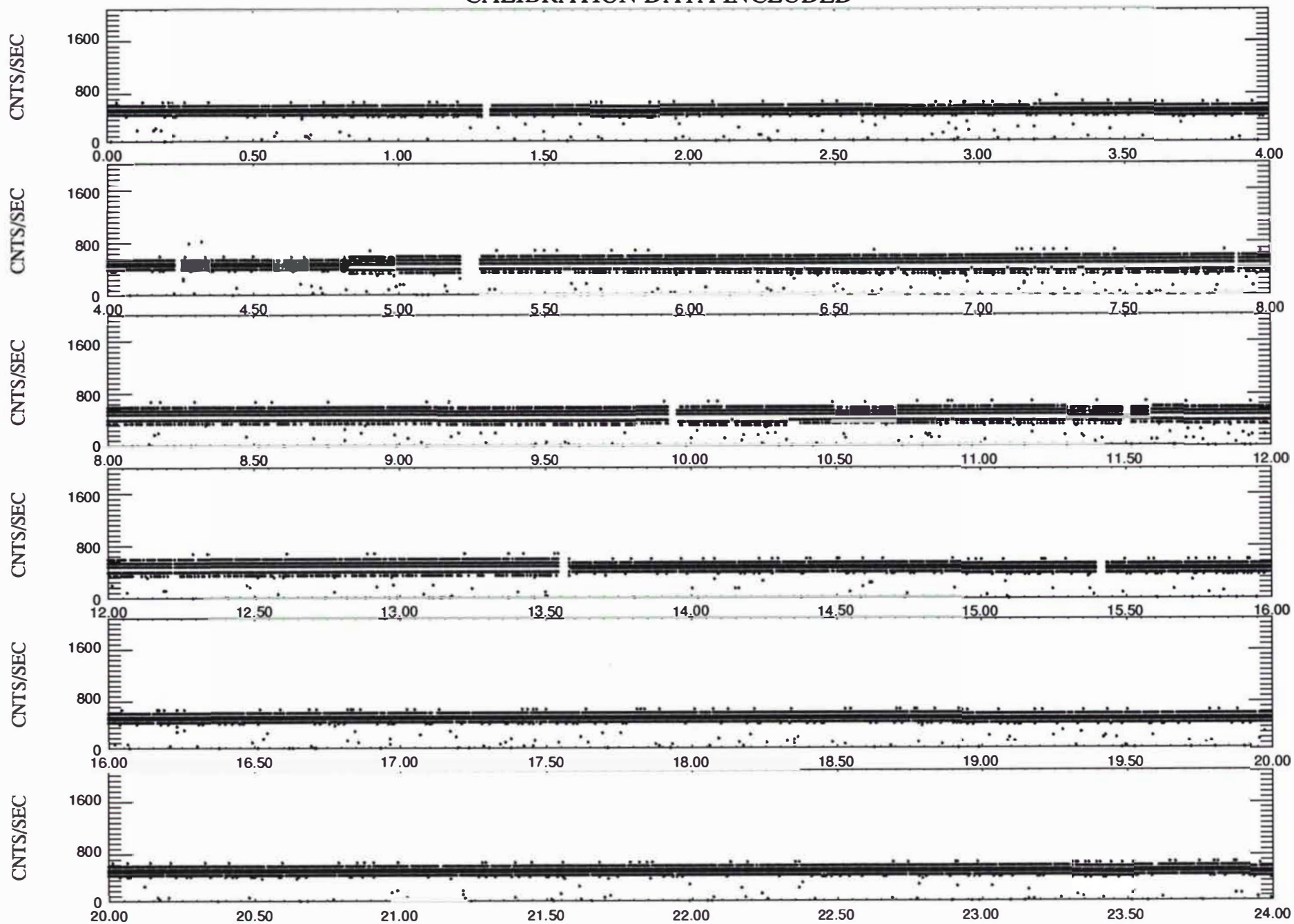
Background not subtracted

Sample average = 10

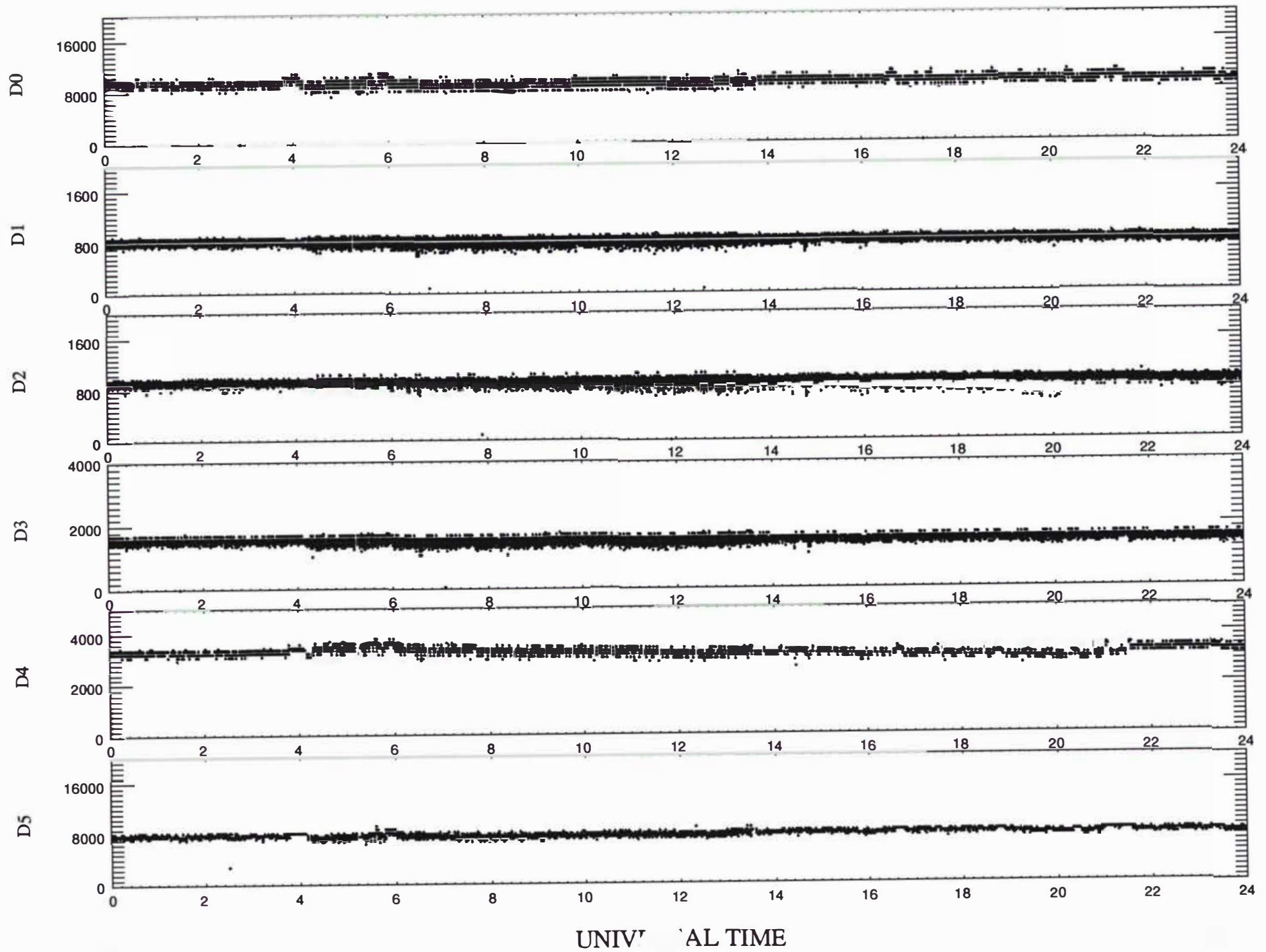
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From SAHI@fender.msfc.nasa.gov Wed Oct 8 09:46:31 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 JAA07103; Wed, 8 Oct 1997 09:46:29 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA02194; Wed, 8 Oct 1997 09:46:28 -0700
Date: Wed, 8 Oct 1997 11:45:58 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971008114558.21821aa2@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6414
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6414
EVENT OF 1997 OCT 6 DAY OF YEAR=279
EVENT CROSSING TIME AT BATSE : 19017. S. OR 05:16:57.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 250.000 53.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/10/ 97 IS:
RA= 166.303 DEC= 15.740 DIST= 6.103 AU
BATSE-ULYSSES DISTANCE = 912987923. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -853.44 SECS.
CROSSING TIME AT ULYSSES IS 18164. S. OR 05:02:43 +/- 544.58 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/10/ 97 IS:
RA= 242.817 DEC= -22.211 DIST= 1.815 AU
MARS-BATSE DISTANCE = 271522112. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -227.22 SECS.
CROSSING TIME AT MARS IS 18790. S. OR 05:13:09 +/- 148.76 SECONDS

BATSE BURST TRIGGER

NO.: 6414

TIME: TJD=0727 SECONDS=19017

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=130.6 AZIMUTH=309.4 ERROR=0.6 DEGREES

COMMENTS:

BURST, SINGLE PULSE WITH WEAK PRE AND POST EMISSION, MAIN PULSE DUR.
APPROX. 30 SECS, MAX. AT APPROX. T+5 SECS, TOTAL DUR. APPROX. 150 SECS.
WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6414	971006	10727	19017	6000	250	+53	150

Helio corr. removed, NEAR/BATSE
annulus added, Access updated
16/7/99

Date: Apr 2 '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*

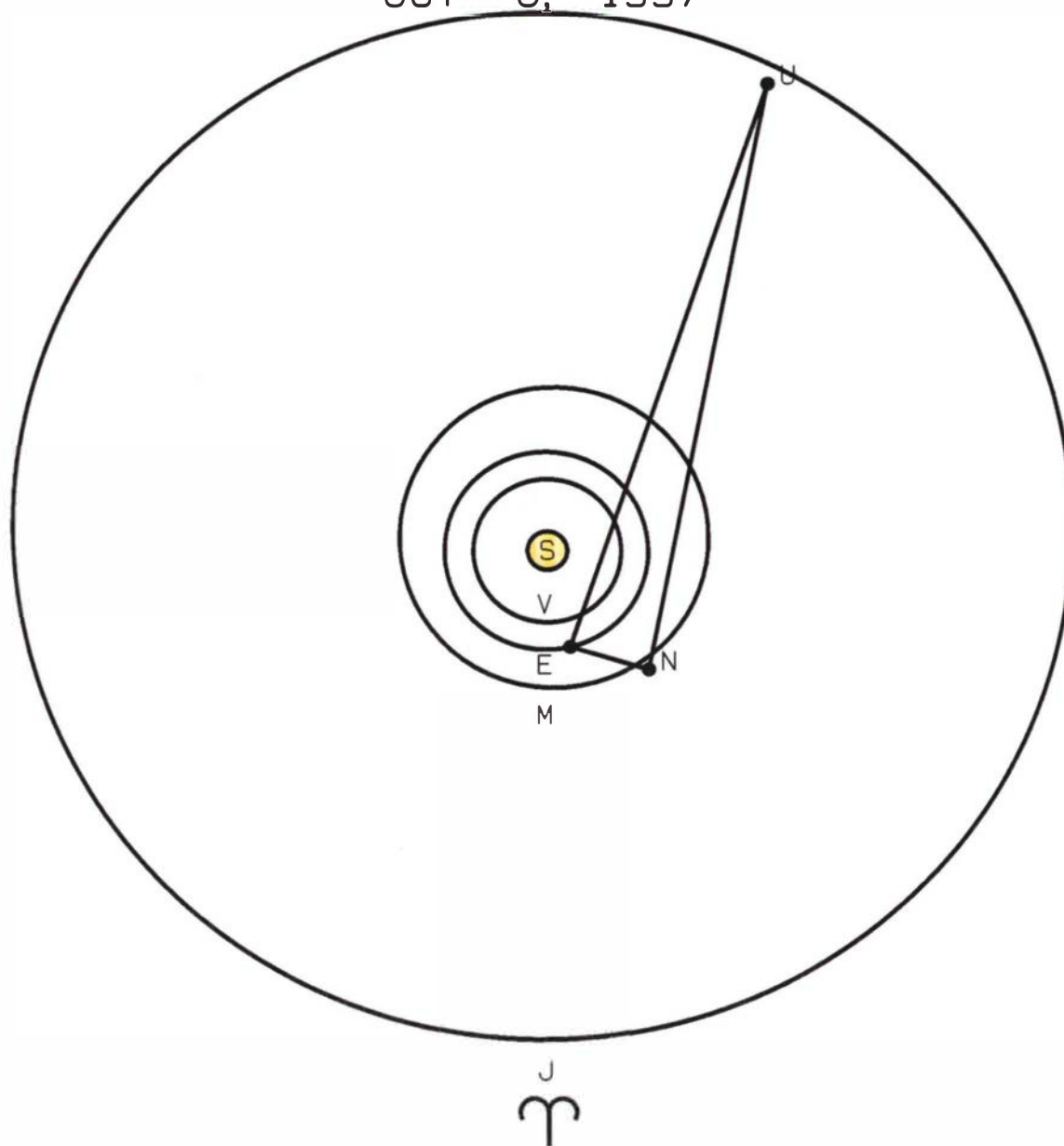
2. BATSE Data

- ☐ 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?

ULYSSES ORBIT - ECLIPTIC PLANE PROJECTION
OCT 6, 1997



From BUTTERWORTH@PIZZA.GSFC.NASA.GOV Thu Oct 9 11:28 PDT 1997
Date: Thu, 9 Oct 1997 14:24:18 -0400 (EDT)
From: BUTTERWORTH@PIZZA.GSFC.NASA.GOV
Subject: NEAR event at 971006:05:18:56 was seen by Konus.
xrtpm@leptpm.gsfc.nasa.gov, cline@apache.gsfc.nasa.gov,
palmer@rosserv.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
X-Vmsmail-To: TIM

Tim,

Konus triggered at 05:17:03.497 in the North-facing detector. The event consisted of a single soft peak lasting 40 seconds.

I haven't seen the data from 971007 yet.

Paul.

Date: Wed, 8 Oct 1997 12:57:56 -0400 (EDT)
From: Tim McClanahan <xrtpm@leptpm.gsfc.nasa.gov>
Message-Id: <199710081657.MAA26154@leptpm.gsfc.nasa.gov>
To: cline@apache.gsfc.nasa.gov, butterworth@pizza.gsfc.nasa.gov,
palmer@iolanthe.gsfc.nasa.gov
Subject: Re: NEAR EVENTS
Cc: xrtpm@leptpm.gsfc.nasa.gov
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
Content-MD5: QHUt0QSlapSJITpndP+4xQ==

The latest NEAR events are as follows.

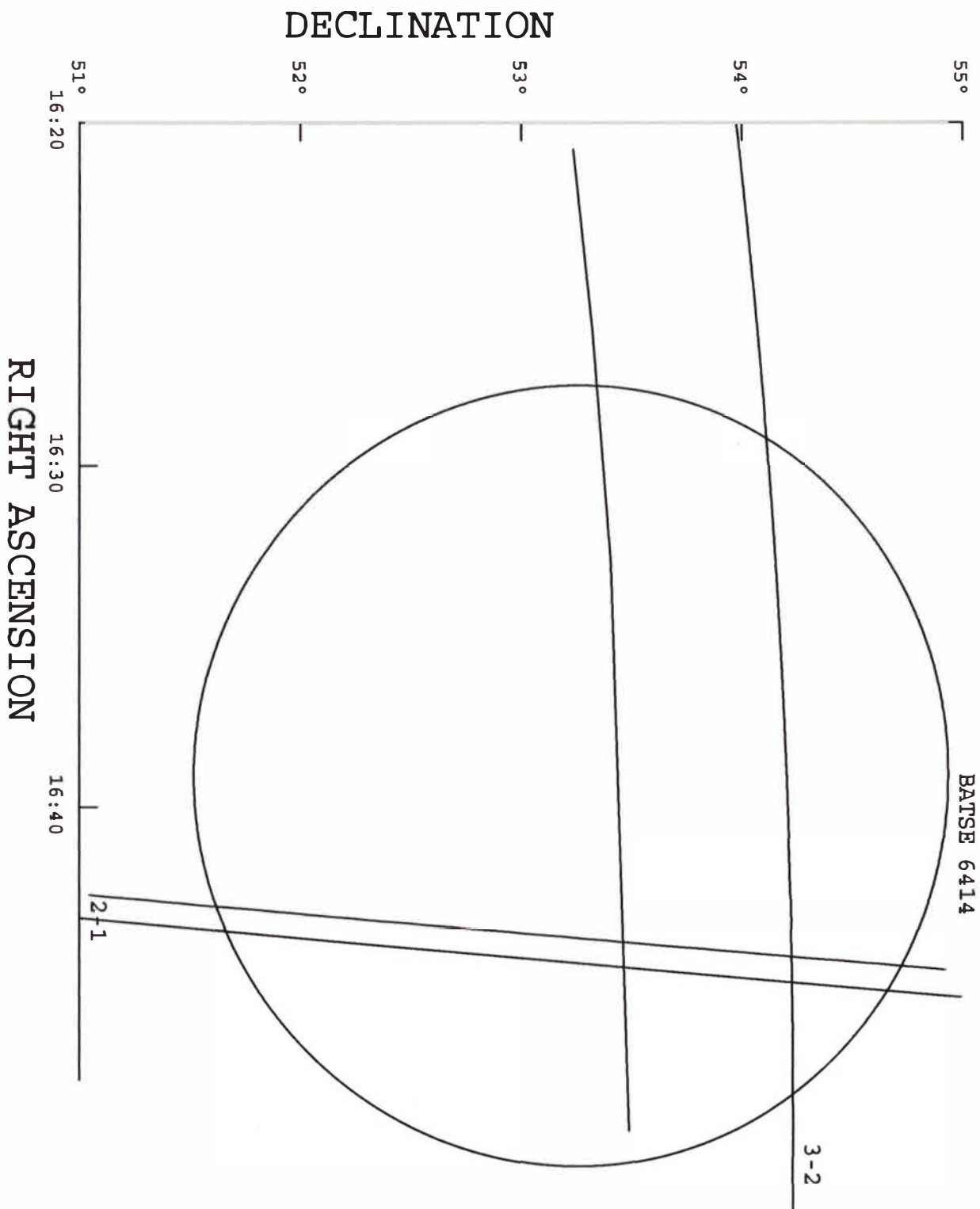
UTC	BACKG	PEAK	DURATION SECS
1997:279:05:18:56	520	653	26
1997:280:21:17:26	520	649	4

Tim McClanahan

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 3 NEAR

EVENT OF OCT 6, 1997 5:02

16/ 7/99



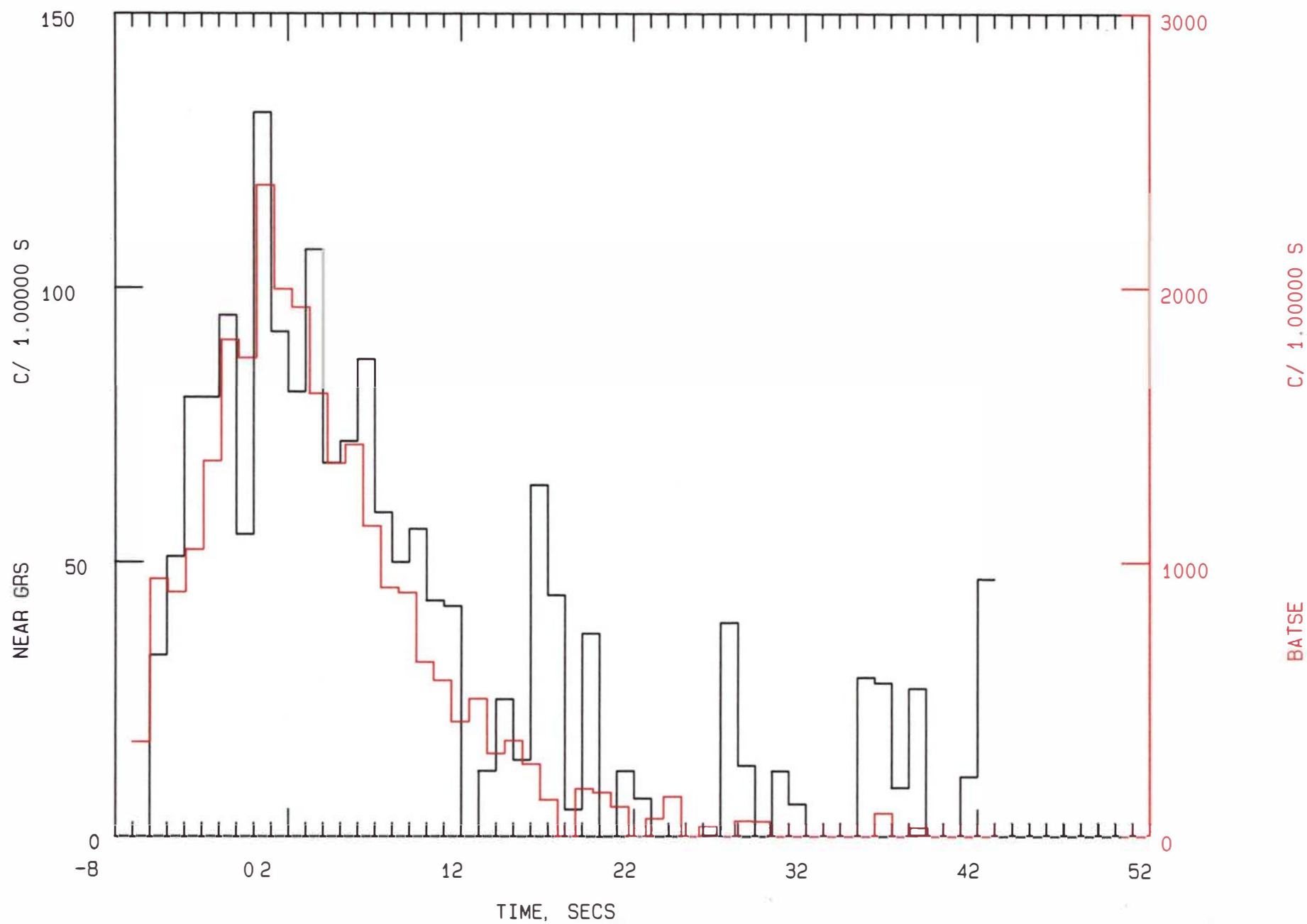
NEAR GRS -BATSE

CORRELATION

06/10/97

19123.818

16/ 7/99

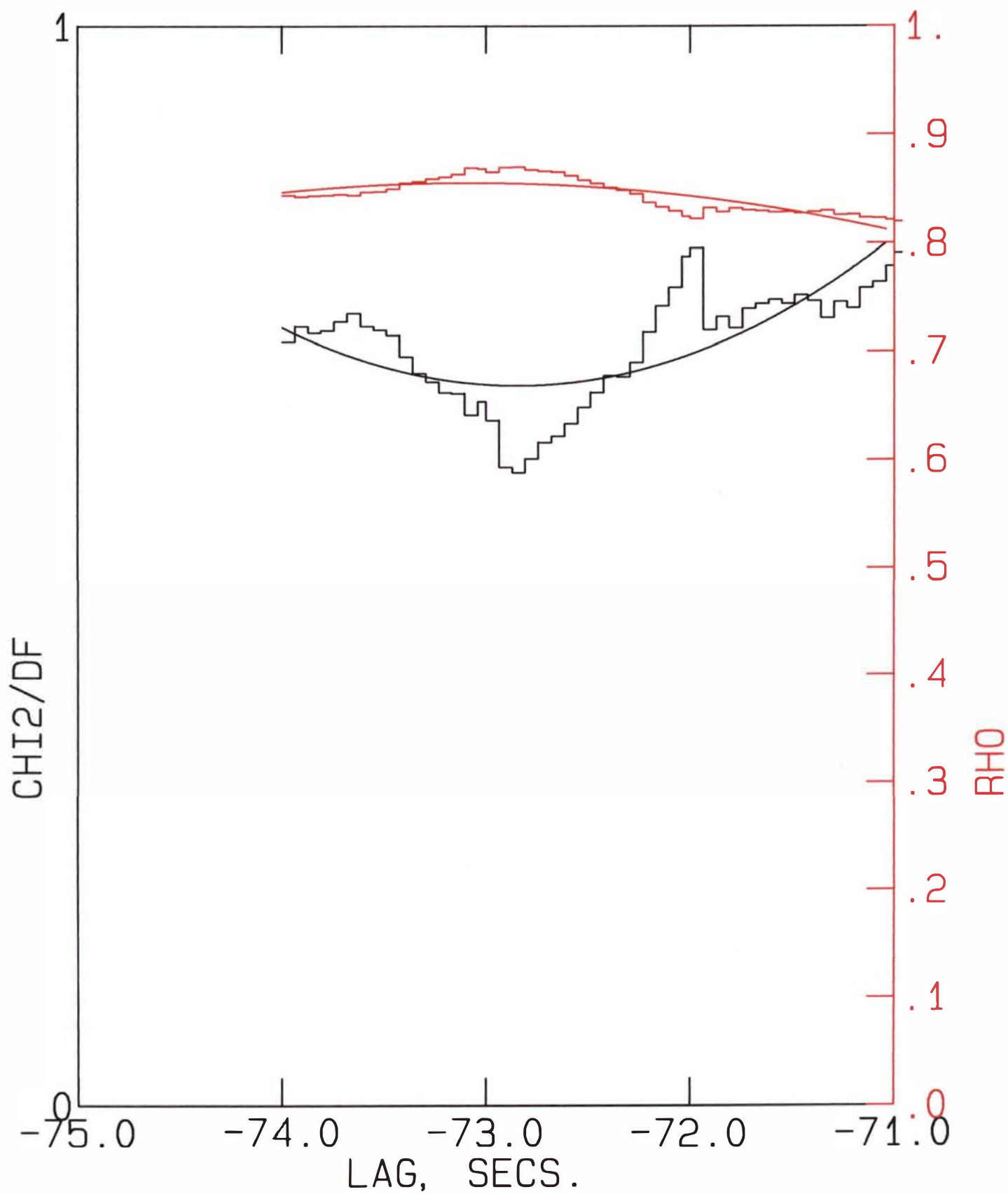


NEAR GRS -BATSE

CORRELATION

06/10/97

19123.818



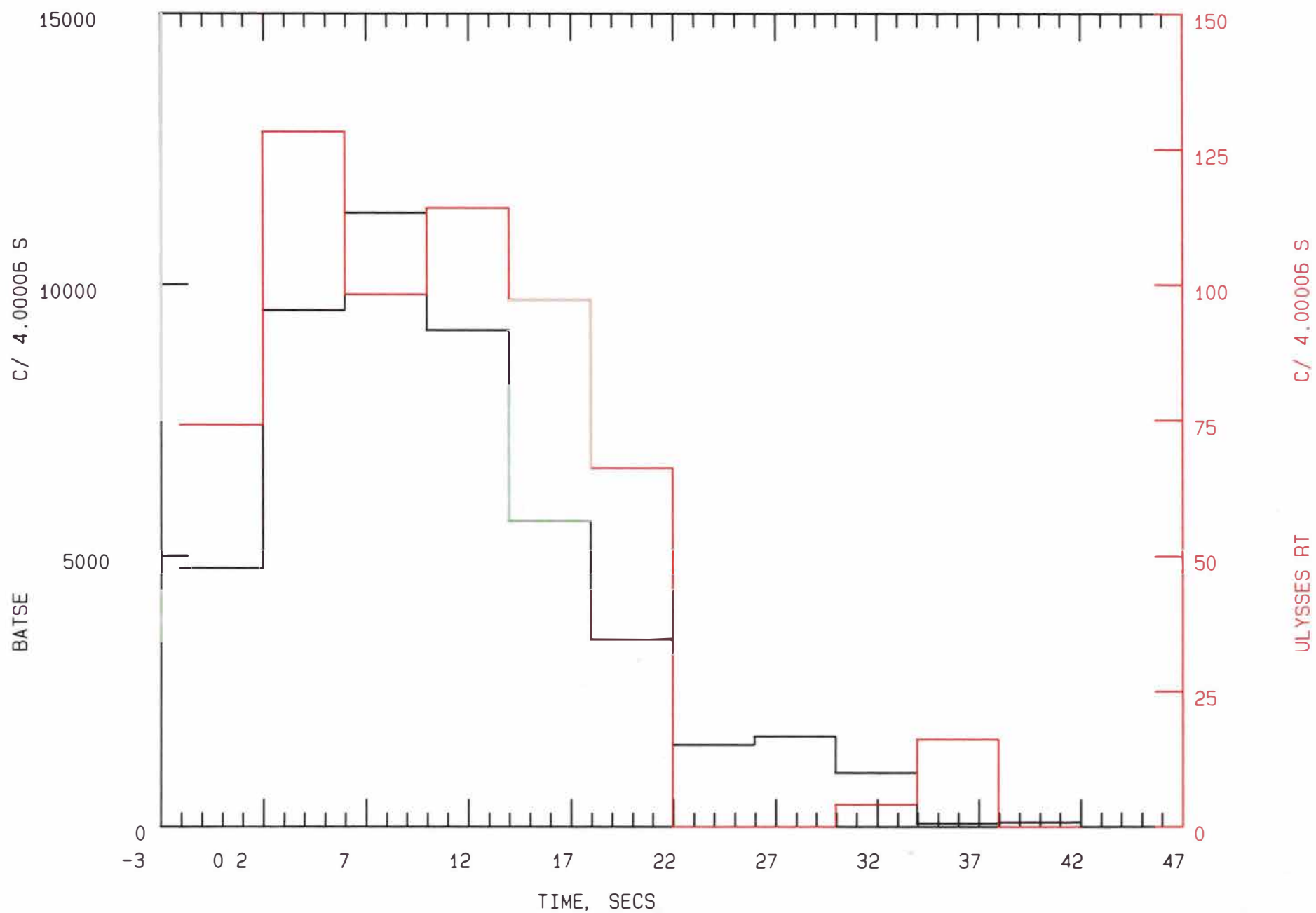
BATSE

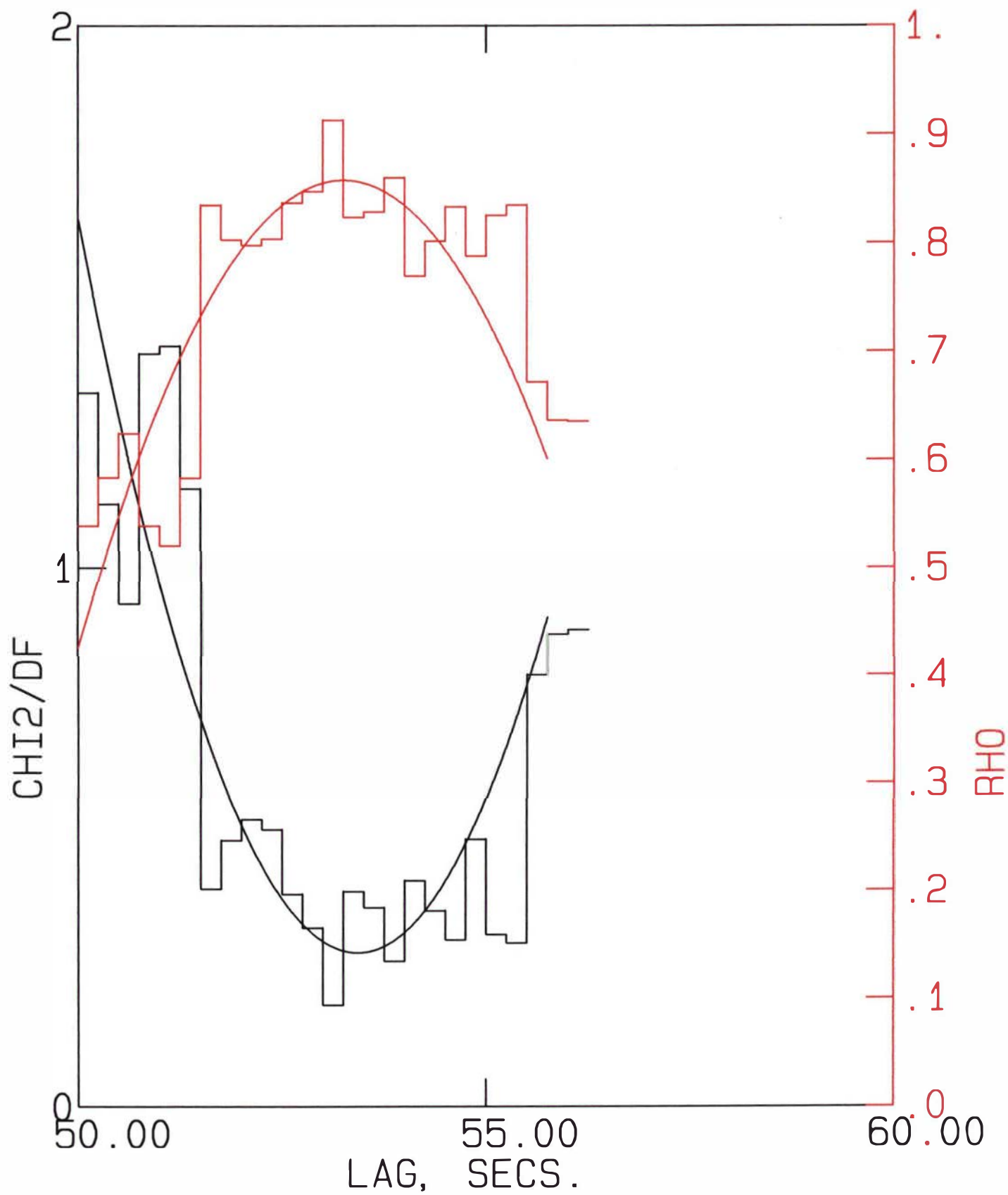
-ULYSSES RT CORRELATION

6/10/97

19017.442

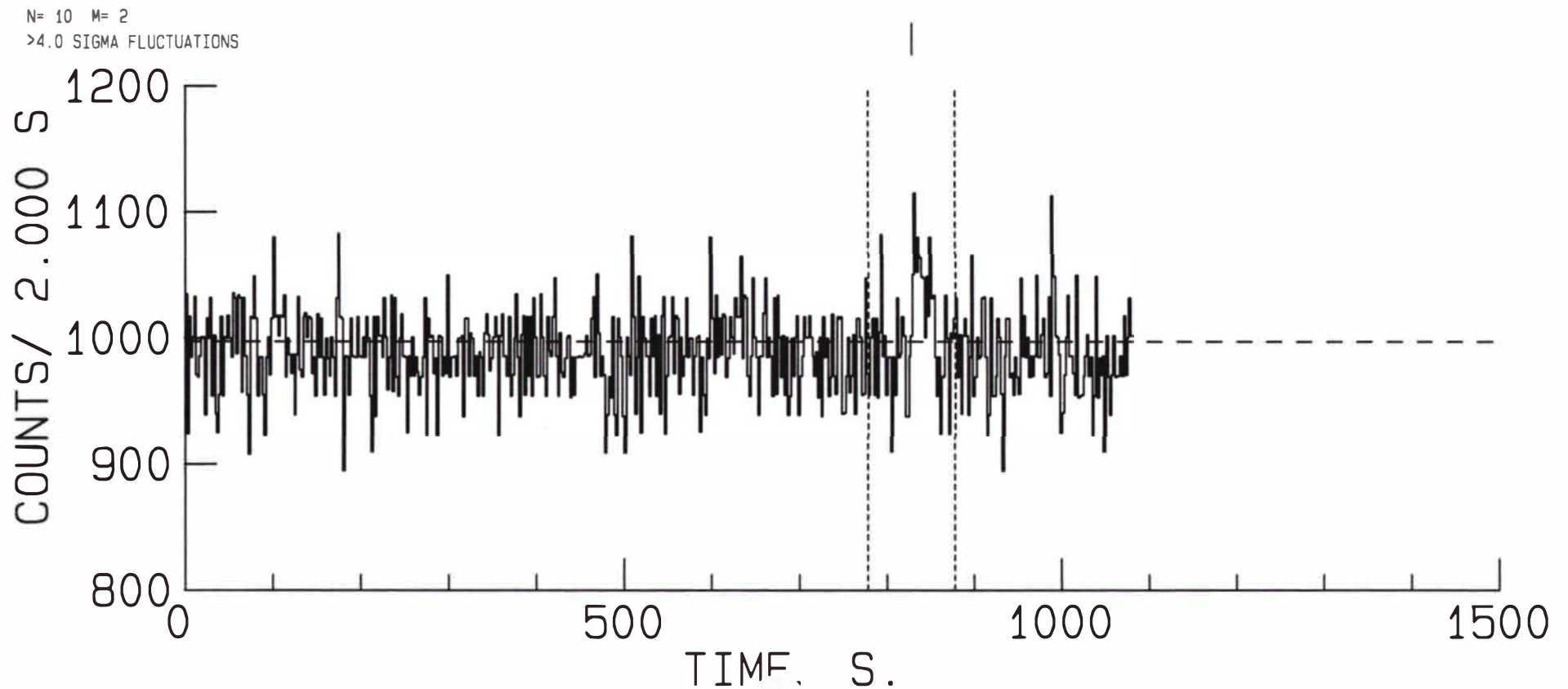
16/ 7/99





ULYSSES RT
6/10/97 17352.026 s
0.250 S INTERVALS REGROUPED BY 8
22- 148 keV

16 / 7 / 99



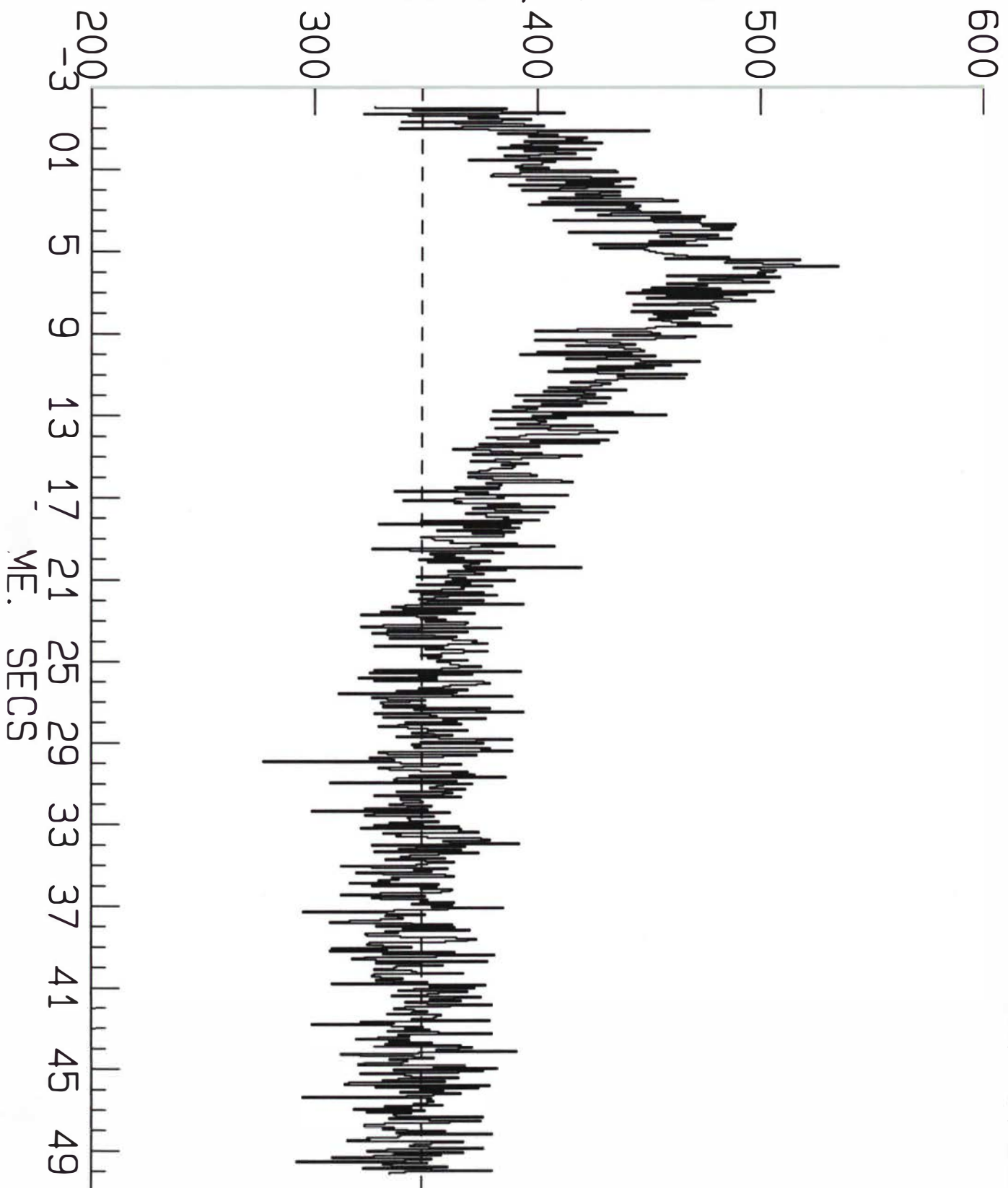
BATSE

06/10/97

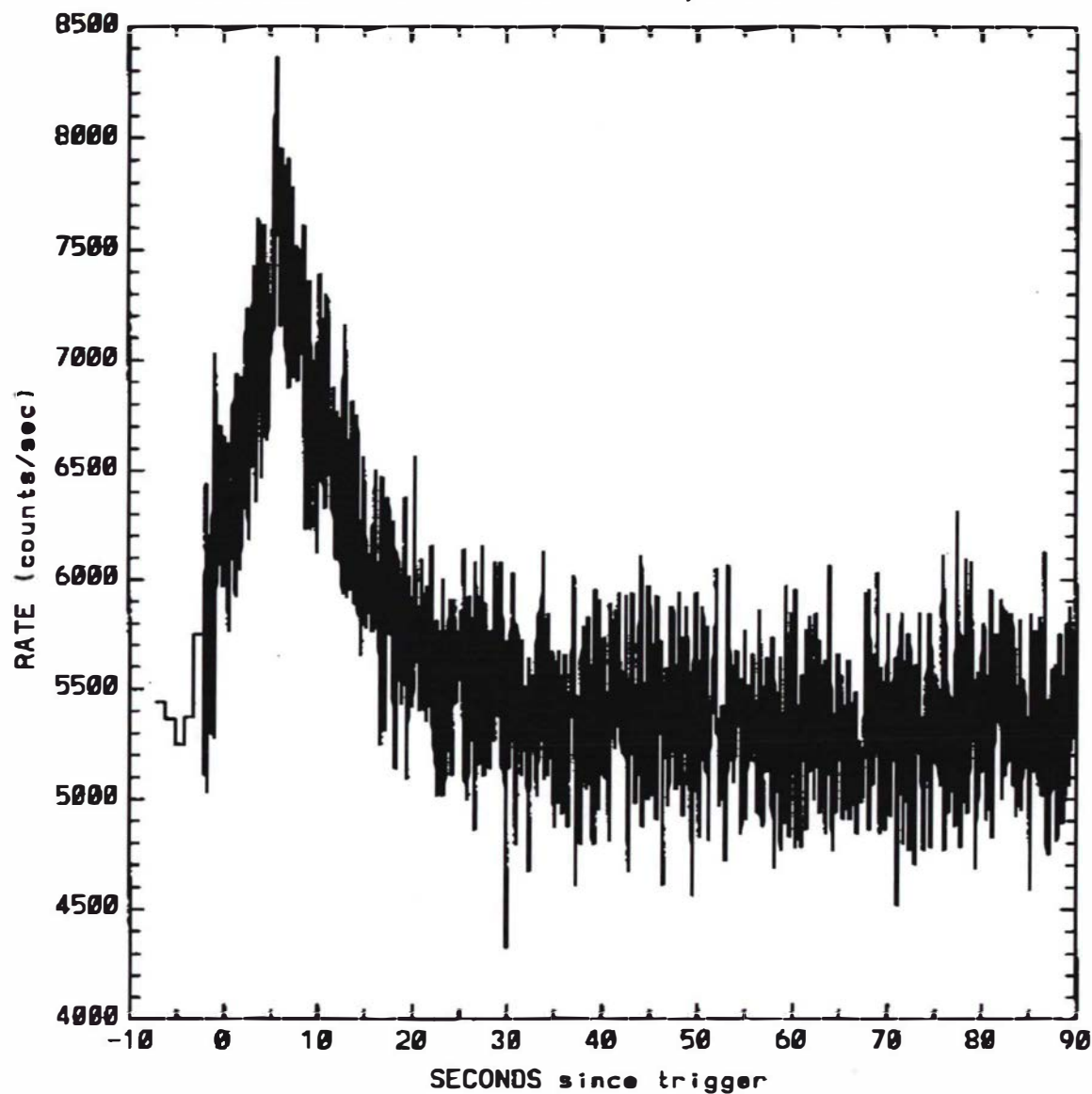
19017.442

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6414



15-JUL-1999 13:58:26

Created by HOPS 80
(Burst Display)
Version 12.26

Trigger # : 6414

Trigger Time:
18727 / 19817.441

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors (7..8):
7---3---

Discriminators:
(3 . 4)

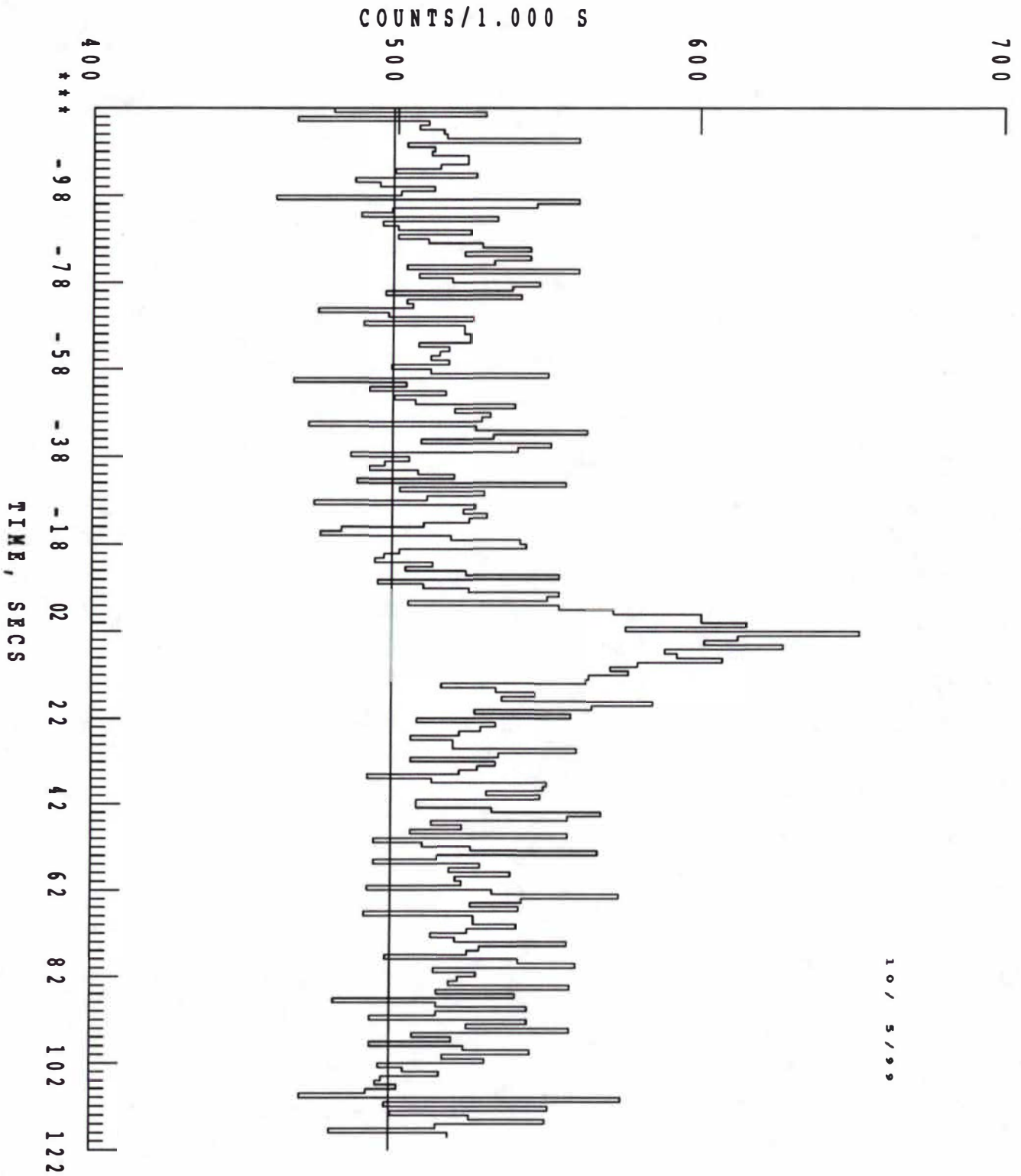
Quality Mask:
801SP1

NEAR

06/10/97

19121.934

100-1000 keV



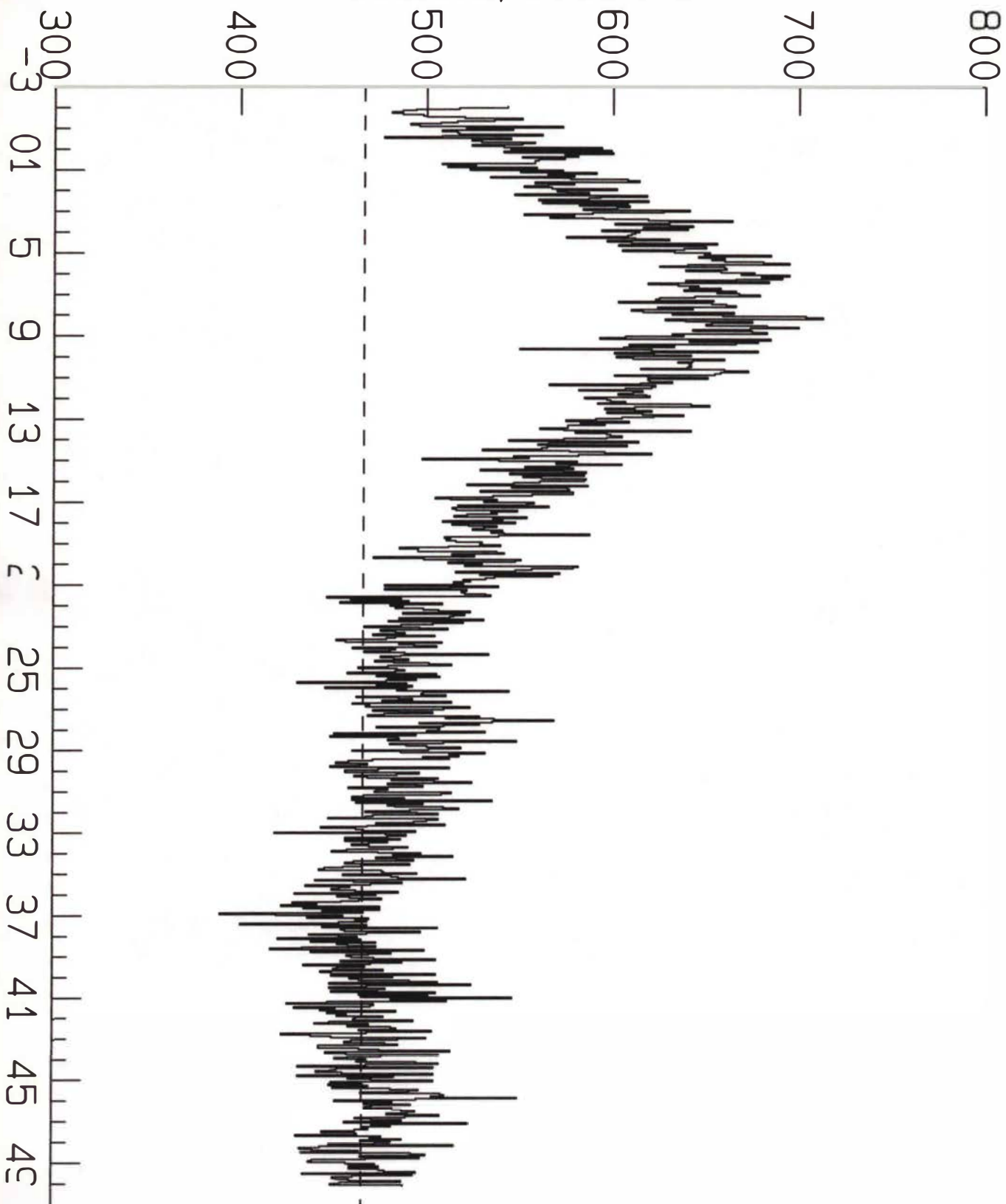
BATSE

06/10/97

19017.442

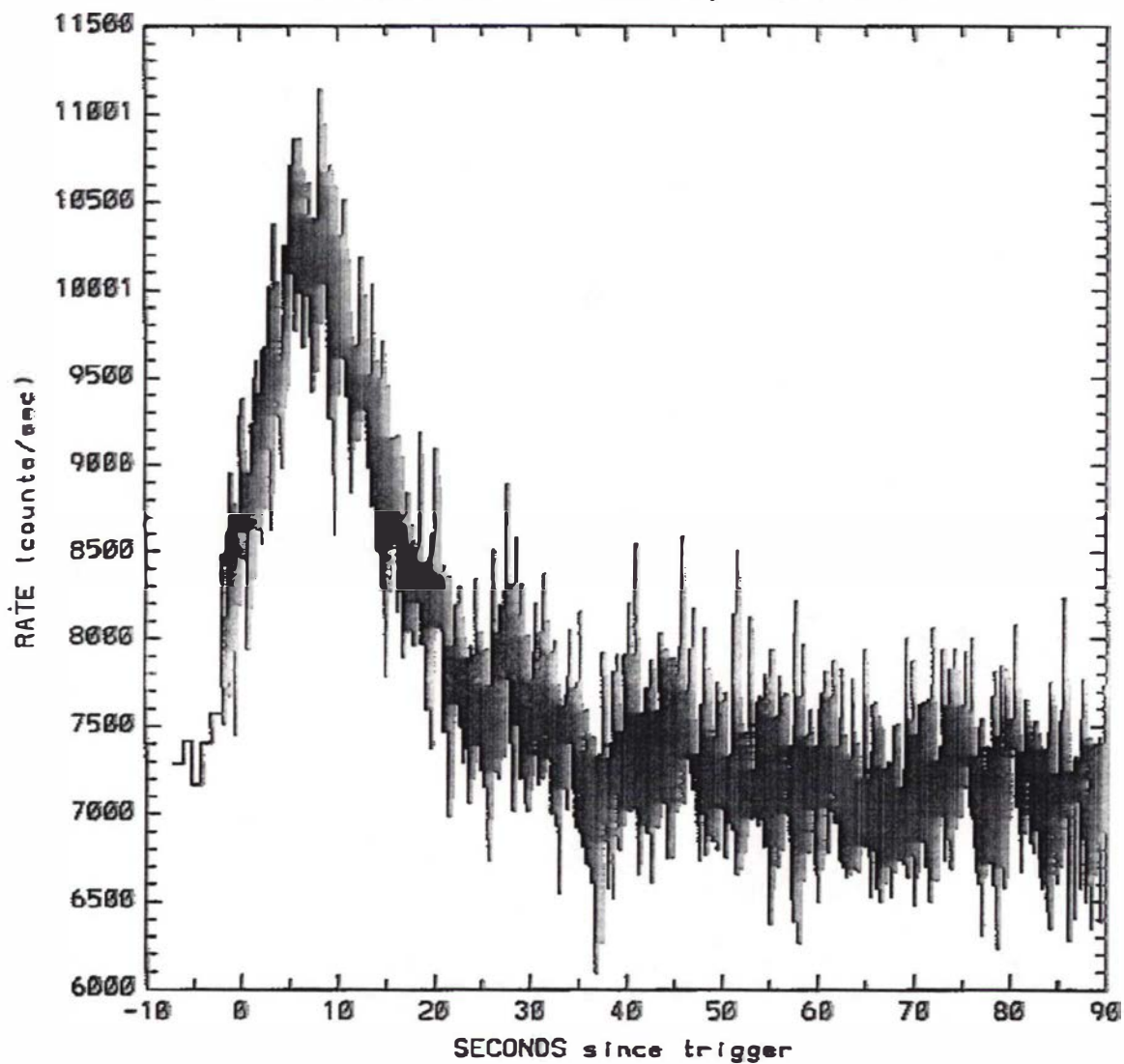
25- 100 keV

COUNTS/0.064 S



17/10/97

DISCSC Data for K. Hurley. No. 6414



15-OCT-1997 07:59:18

Created by ROPS 80
(Burst Display)
Version 12.25

Trigger # = 6414

Trigger Time:
18727 / 19017.441Burst Data Type:
DISCSCDeadline
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.054 secondsDetectors [7..8].
7---3---Discriminators:
[1 , 2]Quality Mask:
BDISP1

From SAHI@fender.msfc.nasa.gov Wed Oct 8 09:41:42 1997
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 8 Oct 1997 11:39:22 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, 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.: 6415

TIME: TJD=0727 SECONDS=59540

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

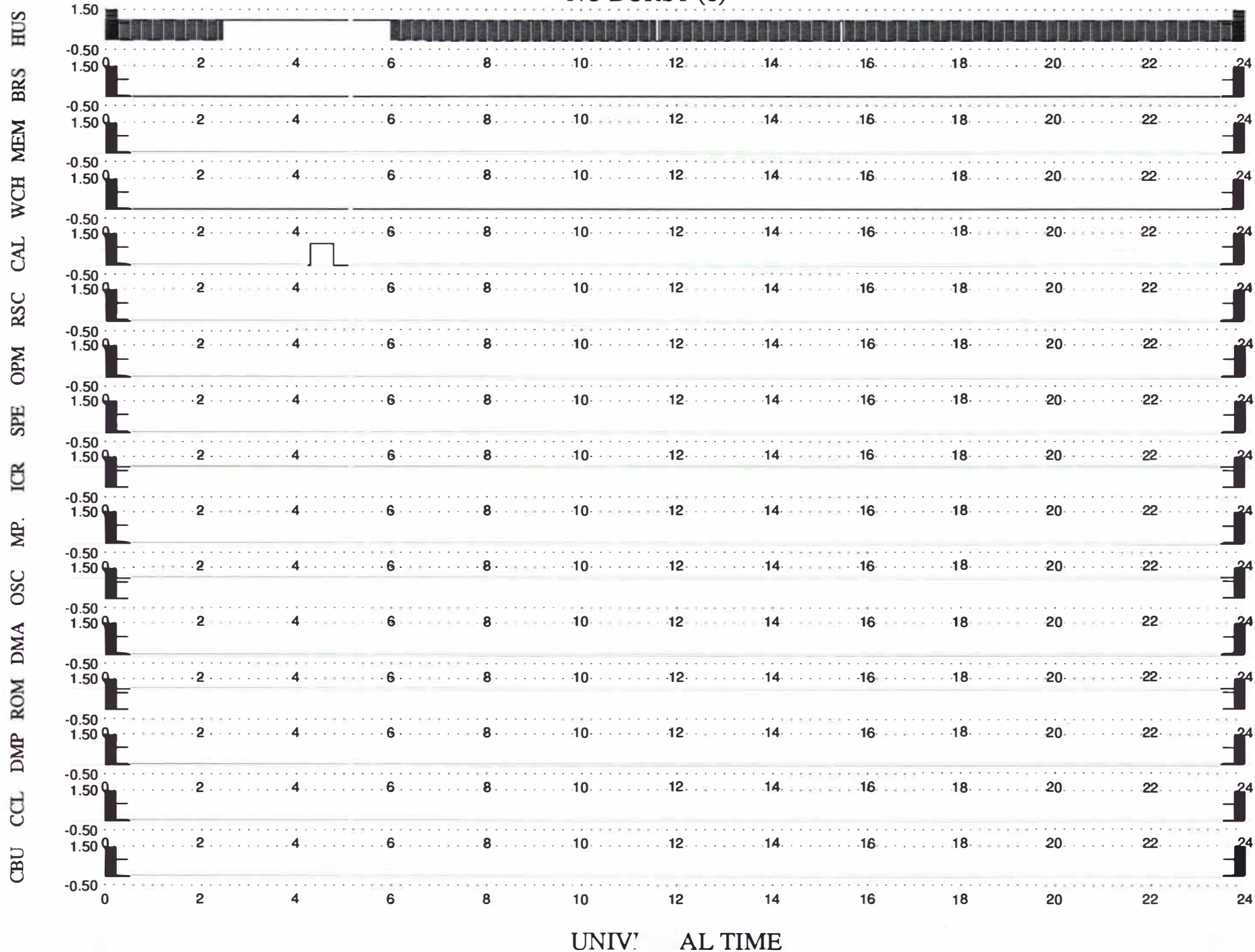
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

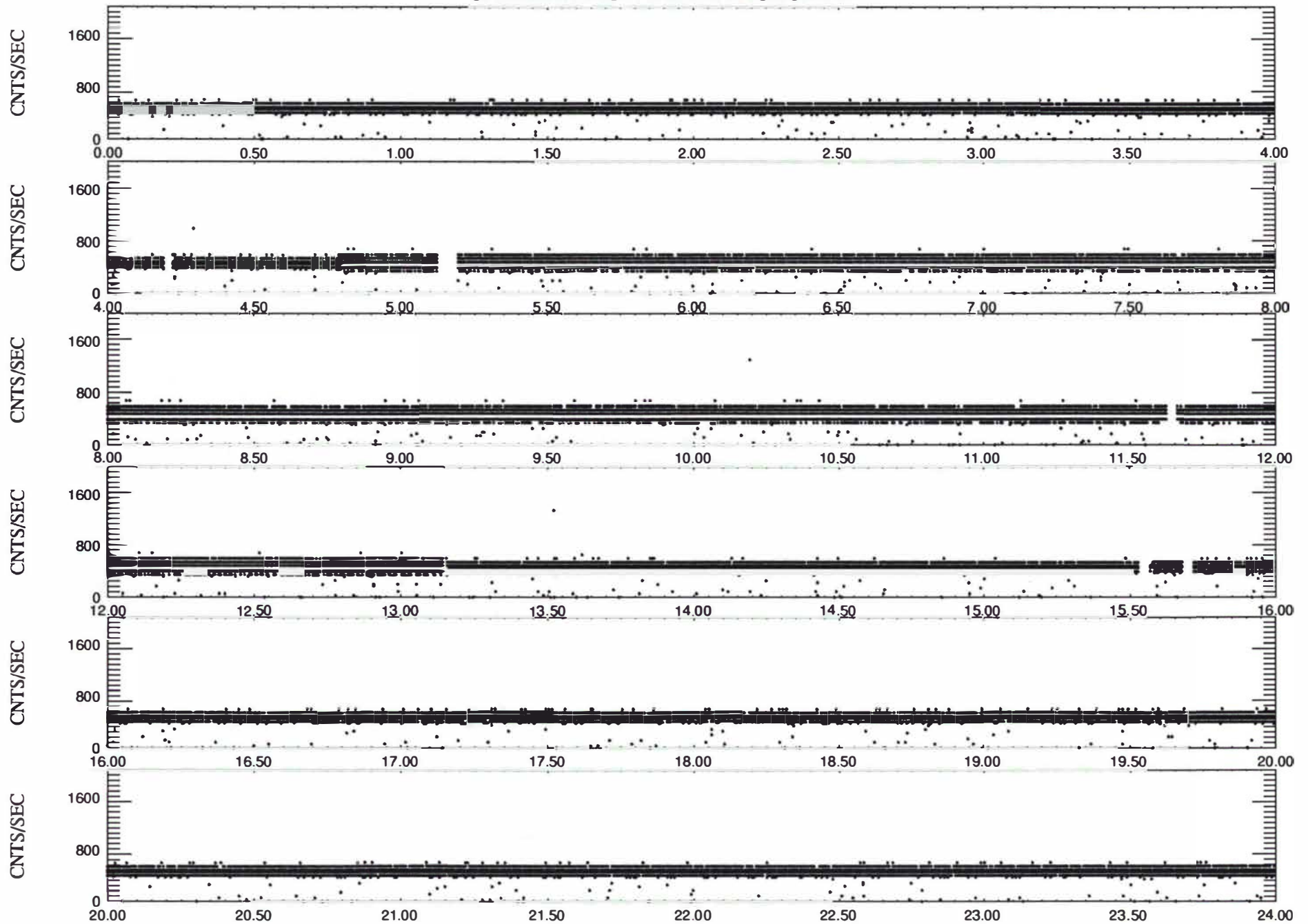
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

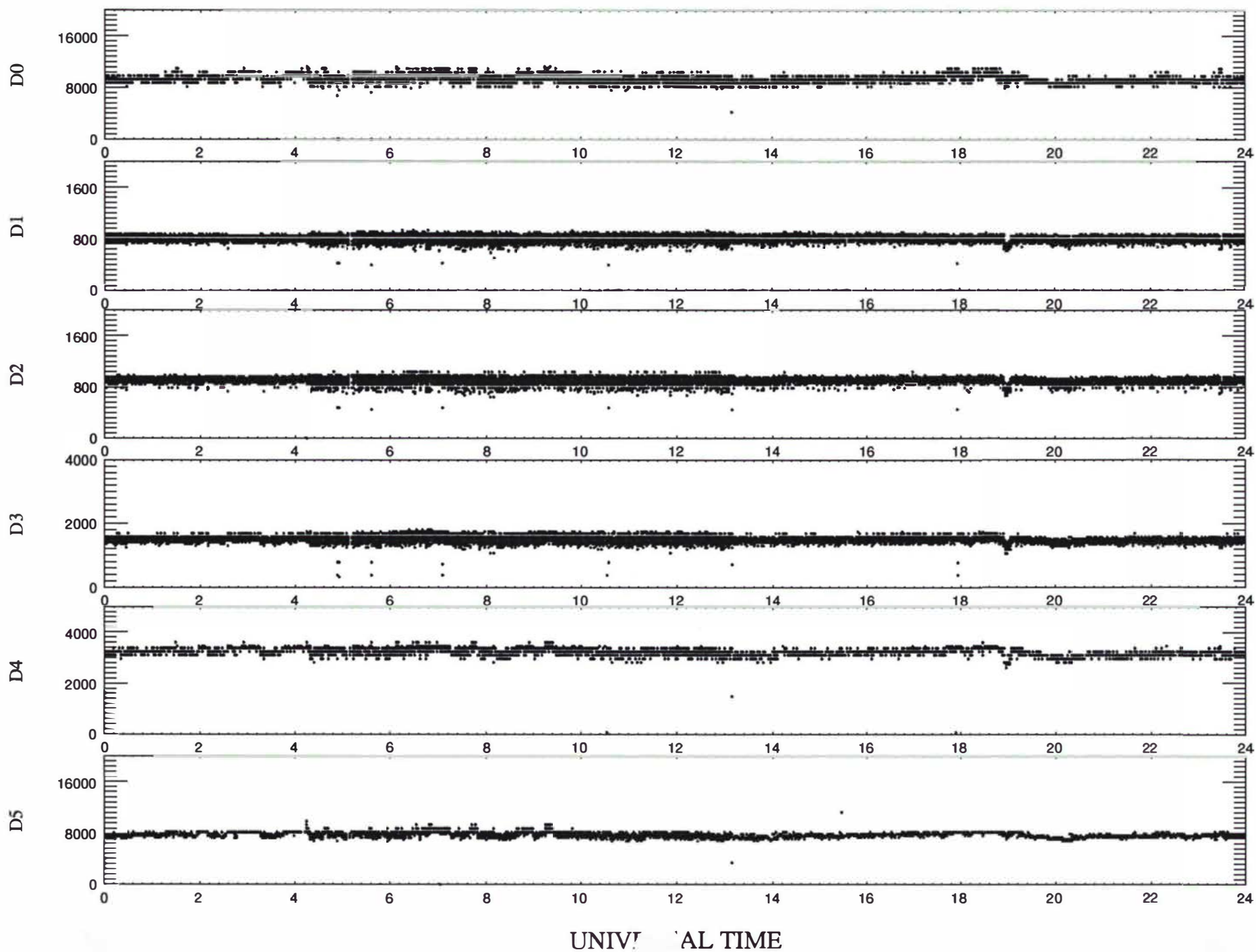
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV'AL TIME



From SURASAK@SSLLES.MSFC.NASA.GOV Thu Oct 9 11:23:54 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA19650; Thu, 9 Oct 1997 11:23:49 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA10952; Thu, 9 Oct 1997 11:23:35 -0700
Date: Thu, 9 Oct 1997 13:23:11 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971009132311.20210f2d@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6416
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6416
EVENT OF 1997 OCT 7 DAY OF YEAR=280
EVENT CROSSING TIME AT BATSE : 57362. S. OR 15:56:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 222.000 -17.000
BATSE PEAK COUNTING RATE: 7250 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/10/ 97 IS:
RA= 166.481 DEC= 15.620 DIST= 6.091 AU
BATSE-ULYSSES DISTANCE = 911247639. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1345.56 SECS.
CROSSING TIME AT ULYSSES IS 56016. S. OR 15:33:36 +/- 502.76 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/10/ 97 IS:
RA= 243.570 DEC= -22.345 DIST= 1.819 AU
MARS-BATSE DISTANCE = 272181824. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=159.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -847.72 SECS.
CROSSING TIME AT MARS IS 56514. S. OR 15:41:54 +/- 43.56 SECONDS

BATSE BURST TRIGGER

NO.: 06416

TIME: TJD=0728 SECONDS=57362

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=53.5 AZIMUTH=322.6 ERROR=1.118 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH DOUBLE PEAKS. DURATION ABOUT 10S. VISIBLE ABOVE 300 KEV.
OCCURED IN DATA GAP.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6416	971007	10728	57362	7250	222	-17	10

Date: Feb 7 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@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

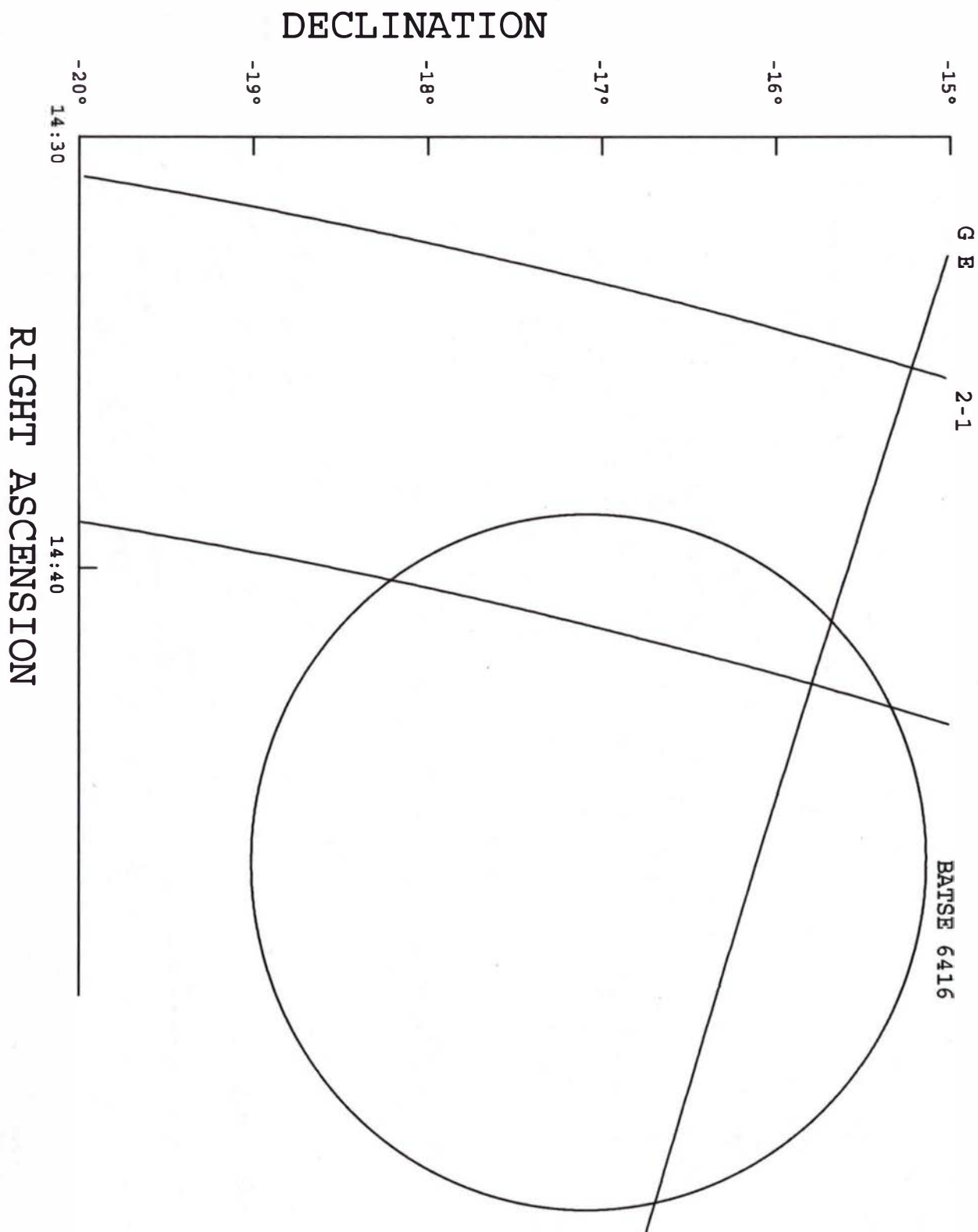
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF OCT 7, 1997 15:56

7 / 2 / 0

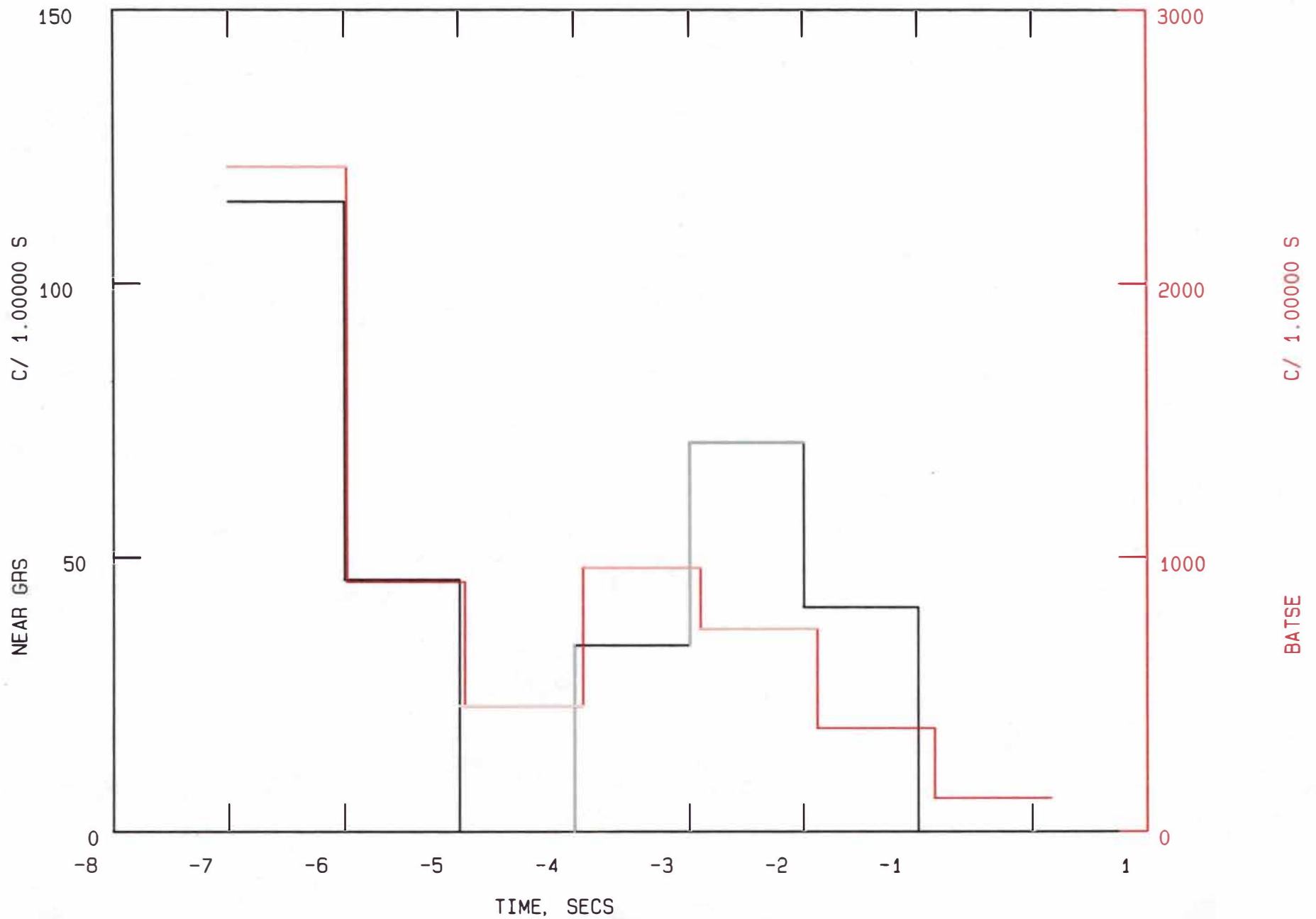


NEAR GRS -BATSE

CORRELATION

07/10/97 57700.911

7/ 2/ 0

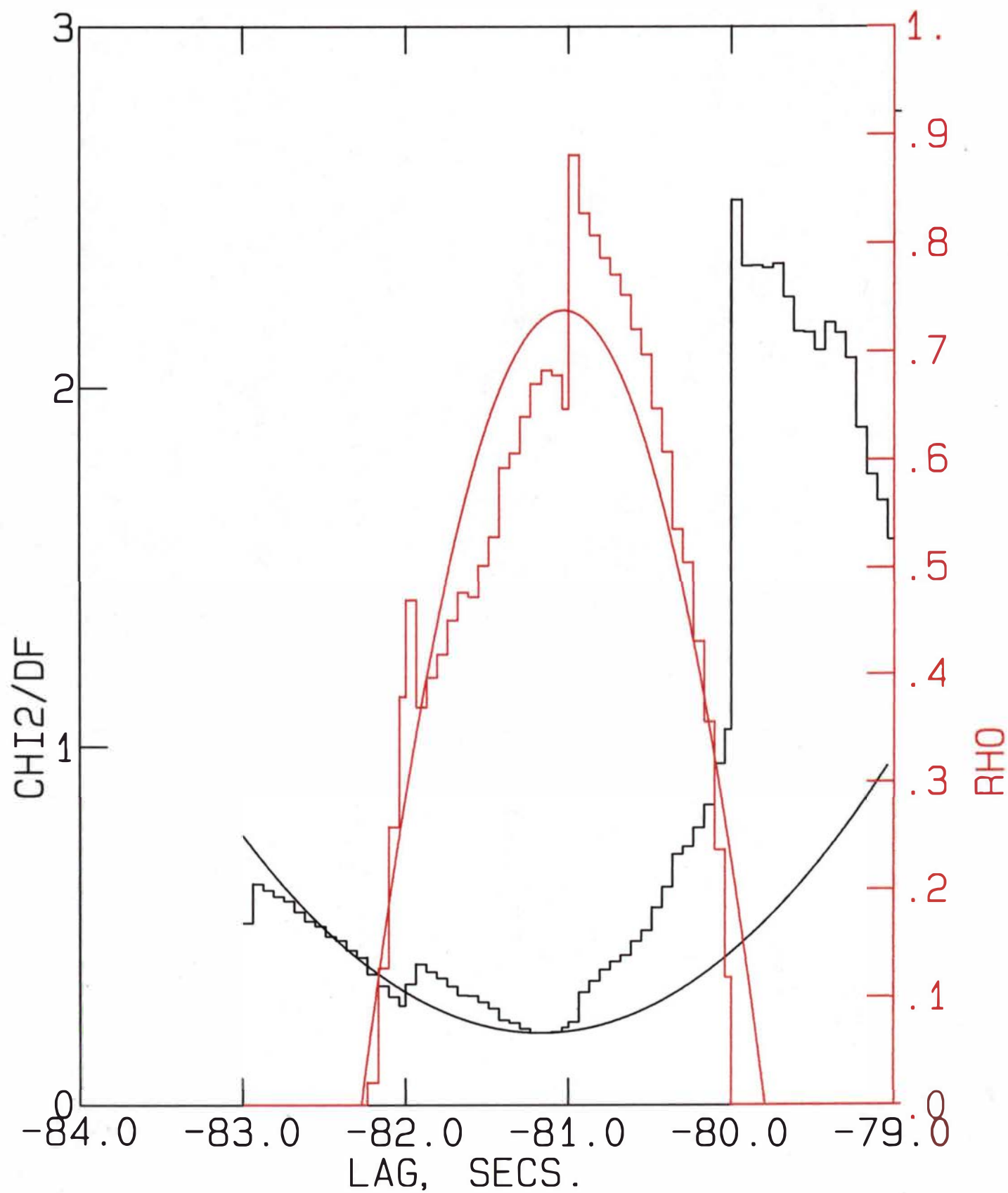


NEAR GRS -BATSE

CORRELATION

07/10/97

57700.911



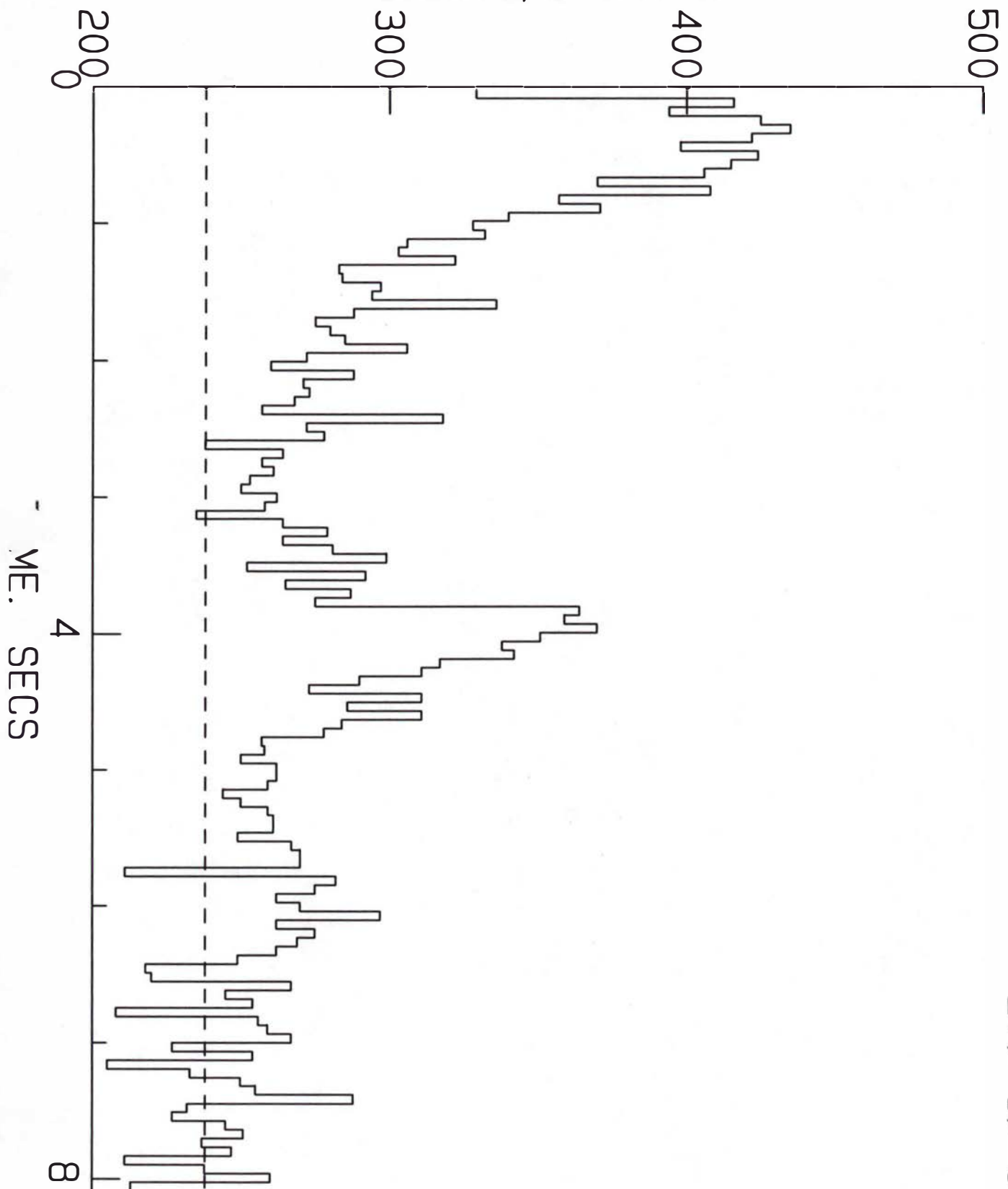
BATSE

07/10/97

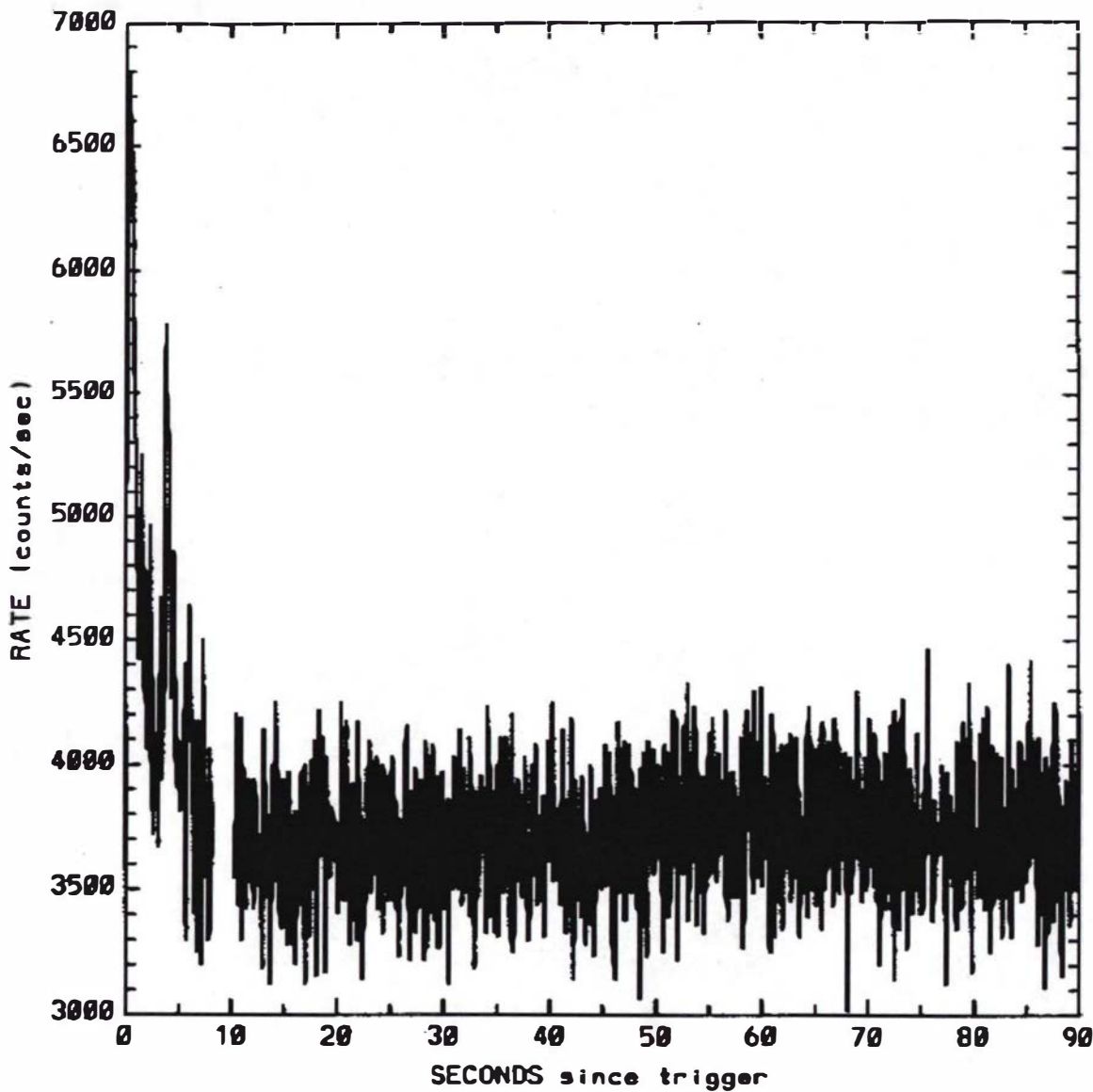
57362.338

100-1000 keV

COUNTS/0.064 S



MER Data for K. Hurley, No. 6416



21-JAN-2000 13:42:03

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # . 6416

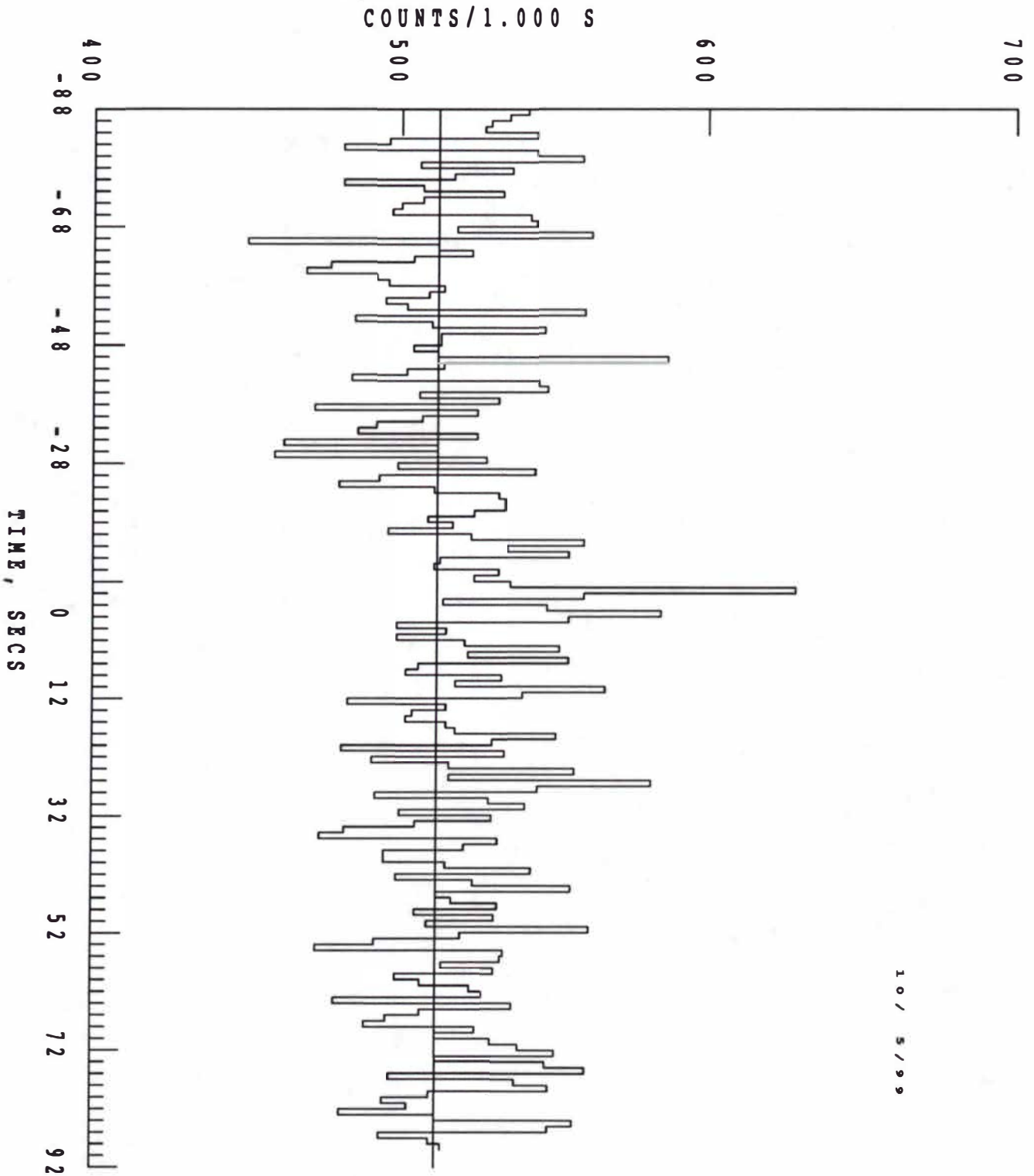
Trigger Time:
10728 / 57362.337Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors (7..01:
----2-0Channels:
(7 ,15)Quality Mask:
BOTSP1

NEAR

07/10/97

57700.911

100-1000 keV



10 / 5 / 99

BATSE BURST# 6416

ULYSSES RT

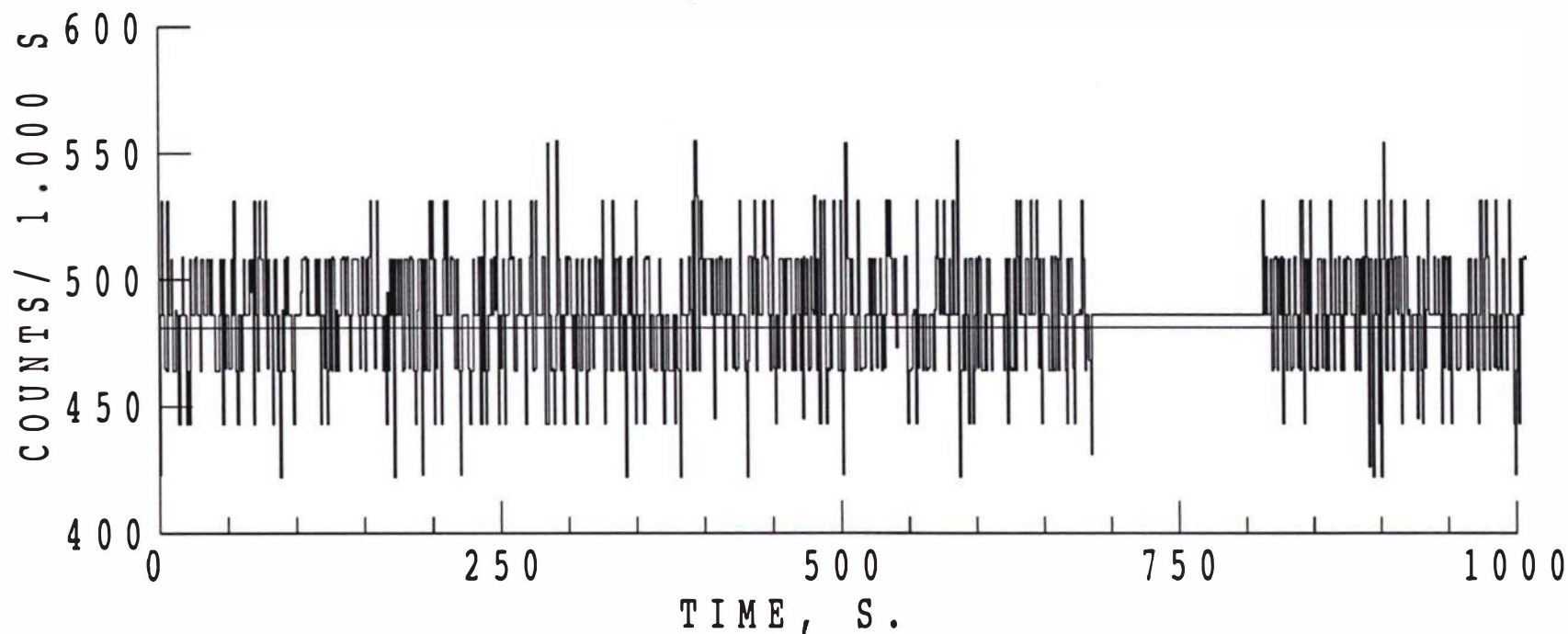
4 / 2 / 98

7 / 10 / 97 55512.422 s

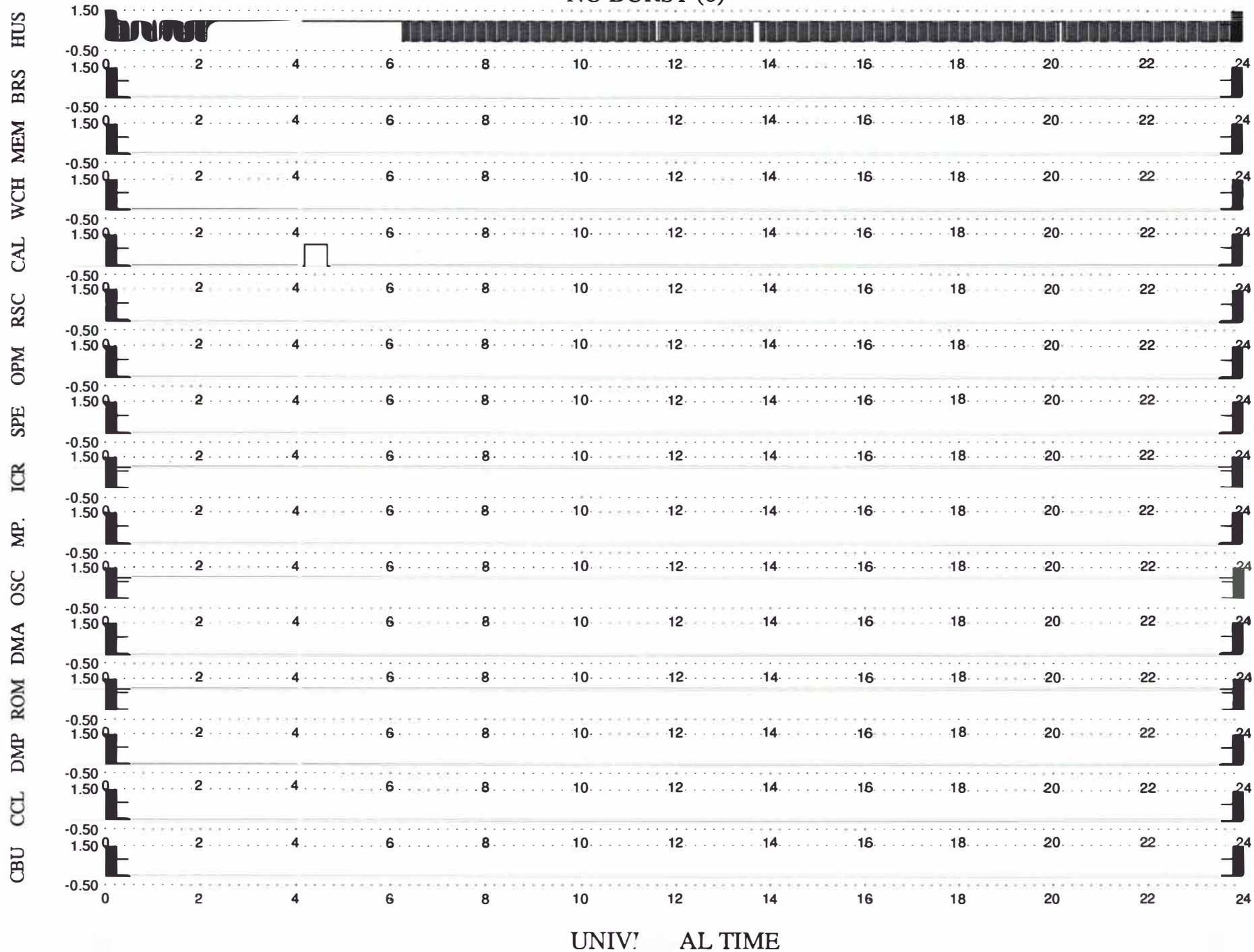
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

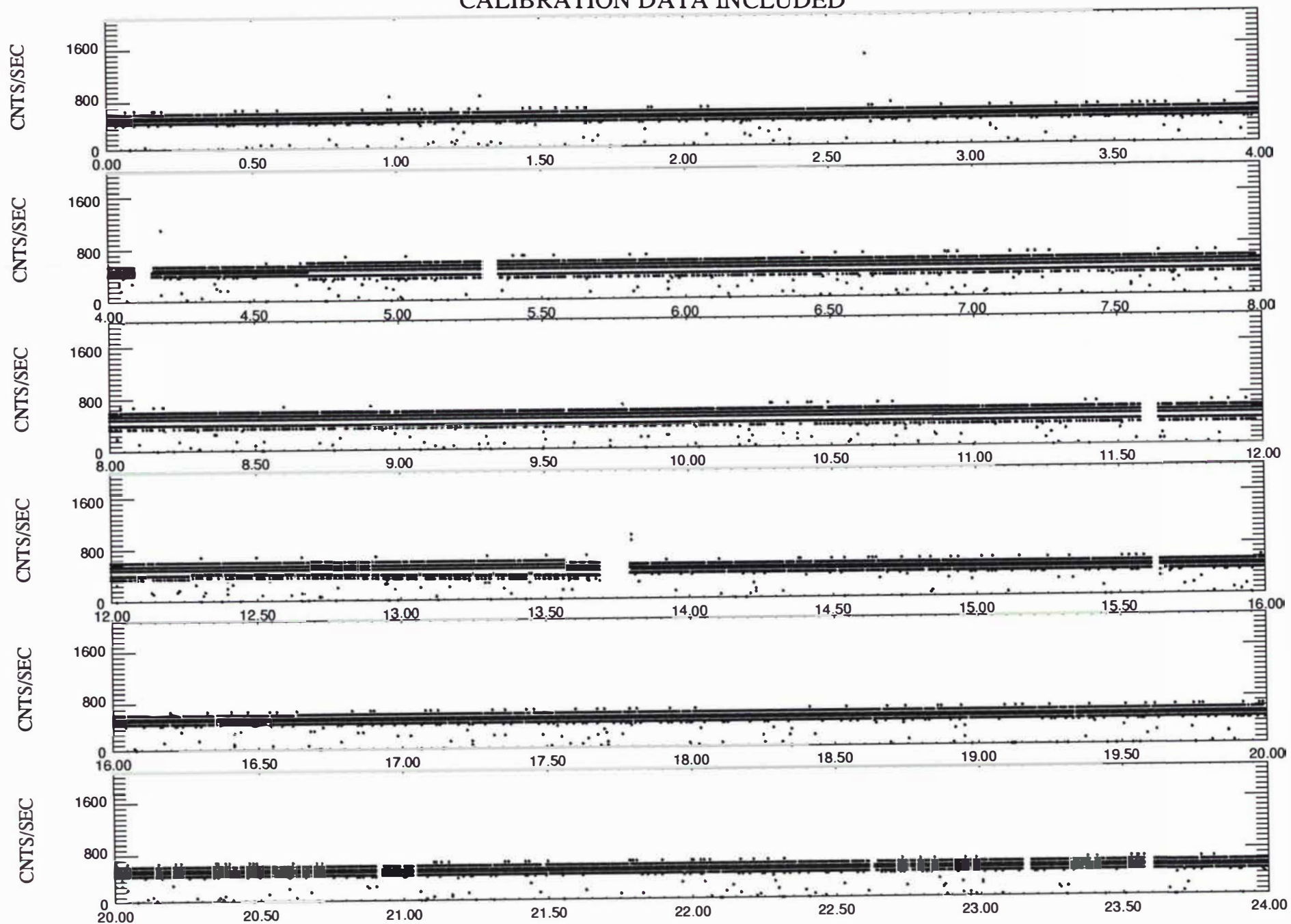
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



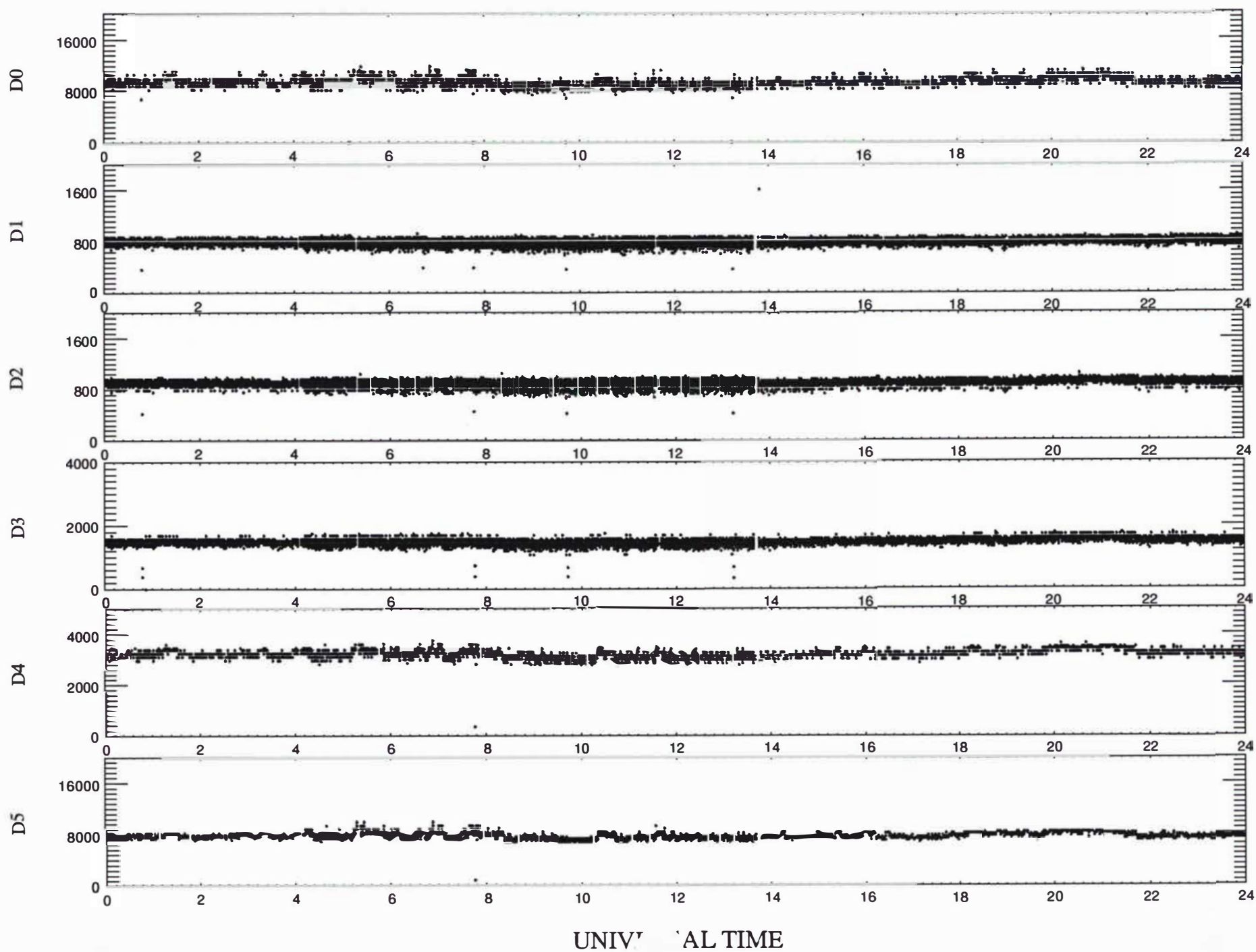
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV' AL TIME



From RICHARDSON@SSLLES.MSFC.NASA.GOV Fri Oct 10 14:11:55 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 OAA04707; Fri, 10 Oct 1997 14:11:54 -0700
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA19455; Fri, 10 Oct 1997 14:11:43 -0700
Date: Fri, 10 Oct 1997 16:11:34 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971010161134.202116a2@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6417
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6417
EVENT OF 1997 OCT 8 DAY OF YEAR=281
EVENT CROSSING TIME AT BATSE : 13483. S. OR 03:44:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 38.000 -48.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/10/ 97 IS:
RA= 166.541 DEC= 15.580 DIST= 6.087 AU
BATSE-ULYSSES DISTANCE = 910641079. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1826.19 SECS.
CROSSING TIME AT ULYSSES IS 15309. S. OR 04:15:09 +/- 499.15 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/10/ 97 IS:
RA= 244.326 DEC= -22.475 DIST= 1.824 AU
MARS-BATSE DISTANCE = 272837856. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 245.81 SECS.
CROSSING TIME AT MARS IS 13729. S. OR 03:48:48 +/- 155.87 SECONDS

BATSE BURST TRIGGER

NO.: 6417

TIME: TJD=0729 SECONDS=13483

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.5 AZIMUTH=151.7 ERROR=4.3 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DURATION APPROX. = 4 SEC. NOT VISIBLE ABOVE 300KEV.

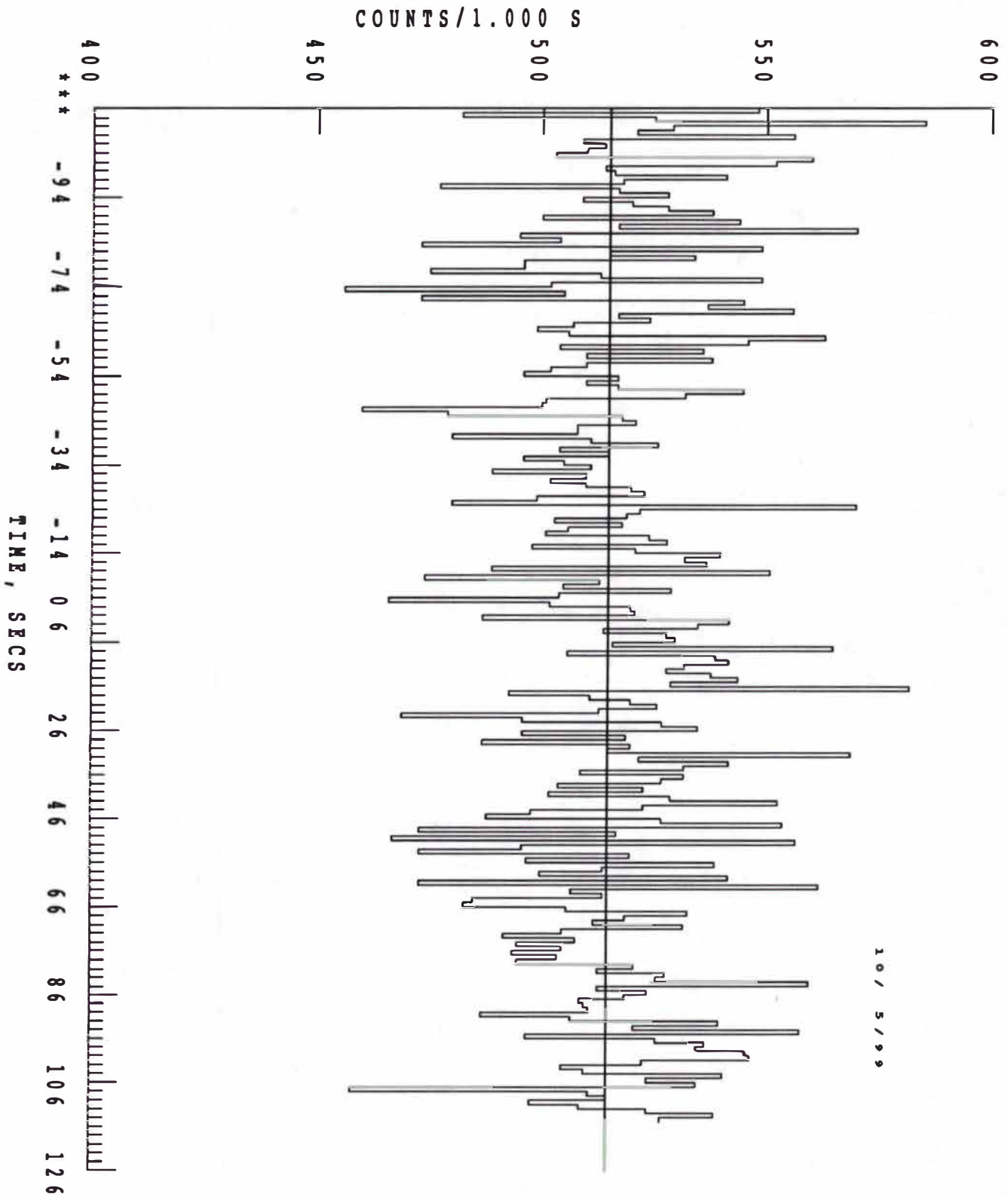
BATSE #	Date	TJD	SOD	Max ct/s	RA	Dec	Dur (s)
6417	971008	10729	13483	2500	038	-48	4

NEAR

08/10/97

13392.903

100-1000 keV



BATSE BURST# 6417

ULYSSES RT

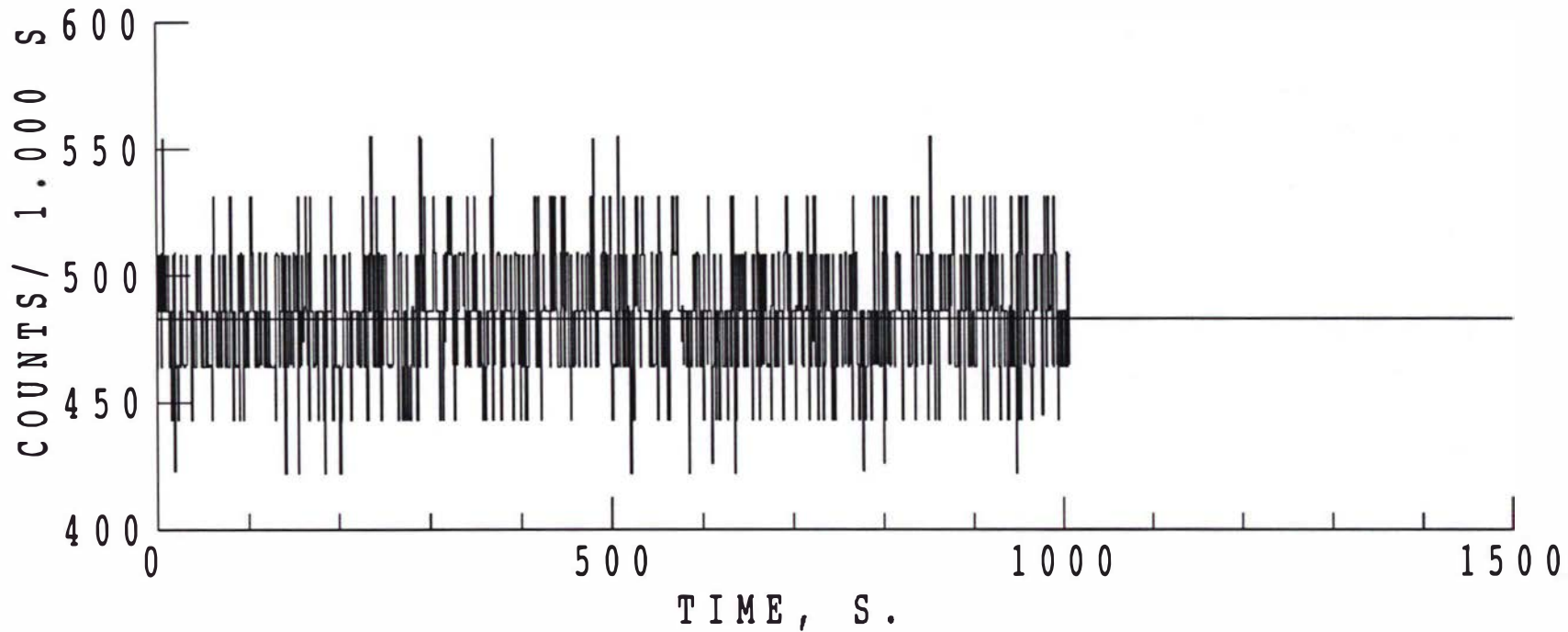
4 / 2 / 98

8 / 10 / 97 14796.432 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N=10 M=2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLLES.MSFC.NASA.GOV Fri Oct 10 14:10:16 1997
Date: Fri, 10 Oct 1997 16:09:42 -0500 (CDT)
From: RICHARDSON@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.: 6418

TIME: TJD=0729 SECONDS=56986

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

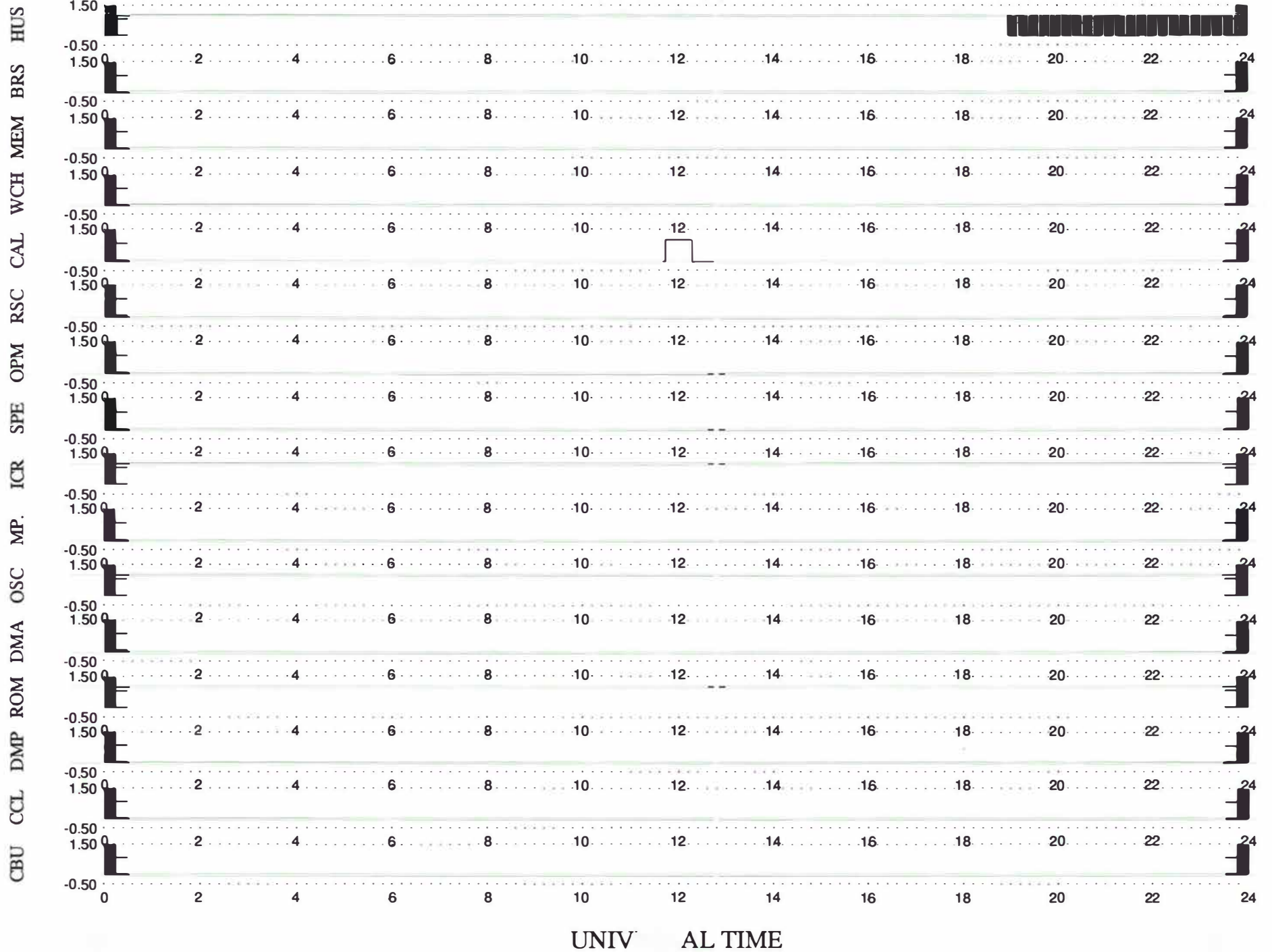
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

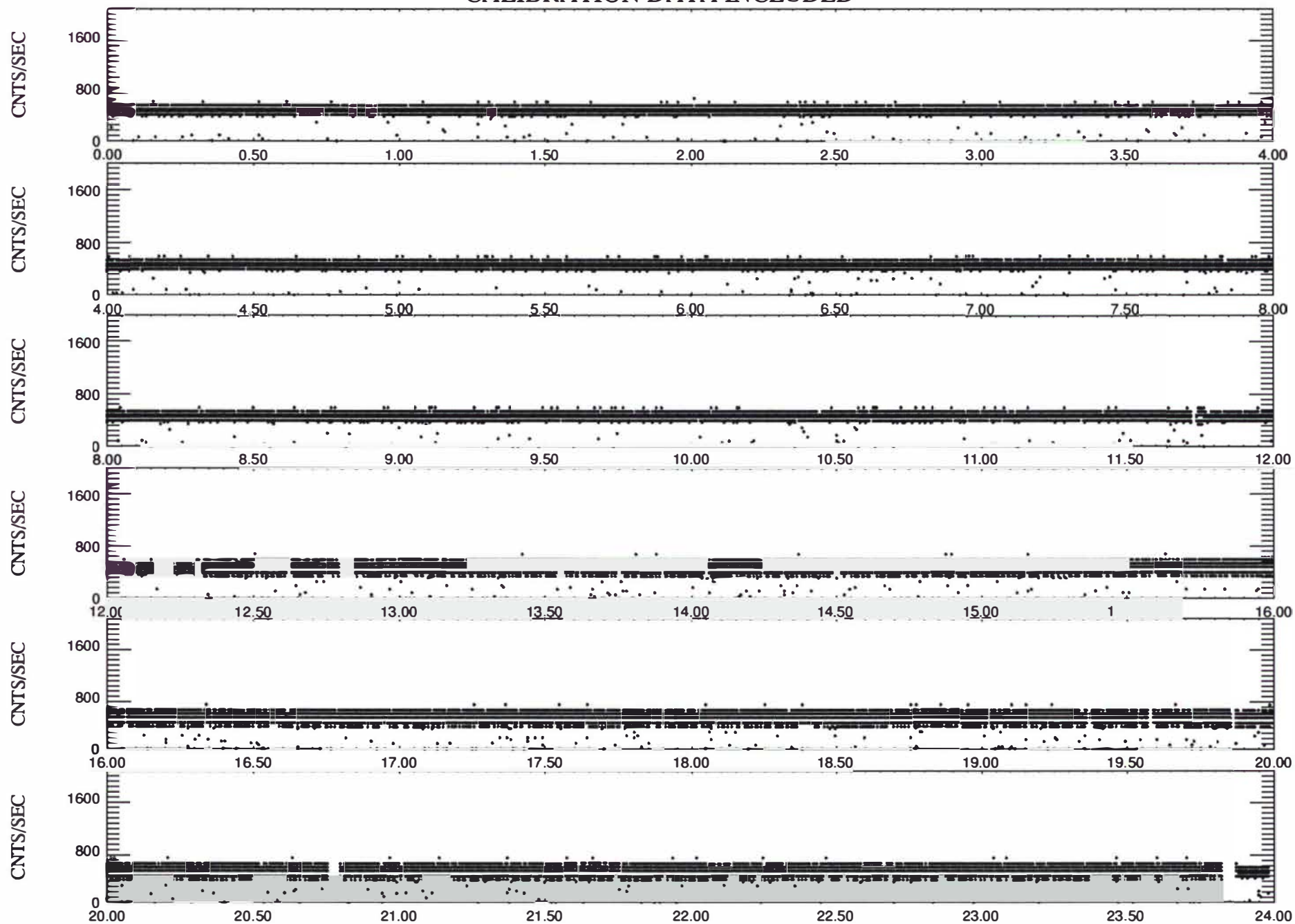
COMMENTS:

PARTICLE EVENT

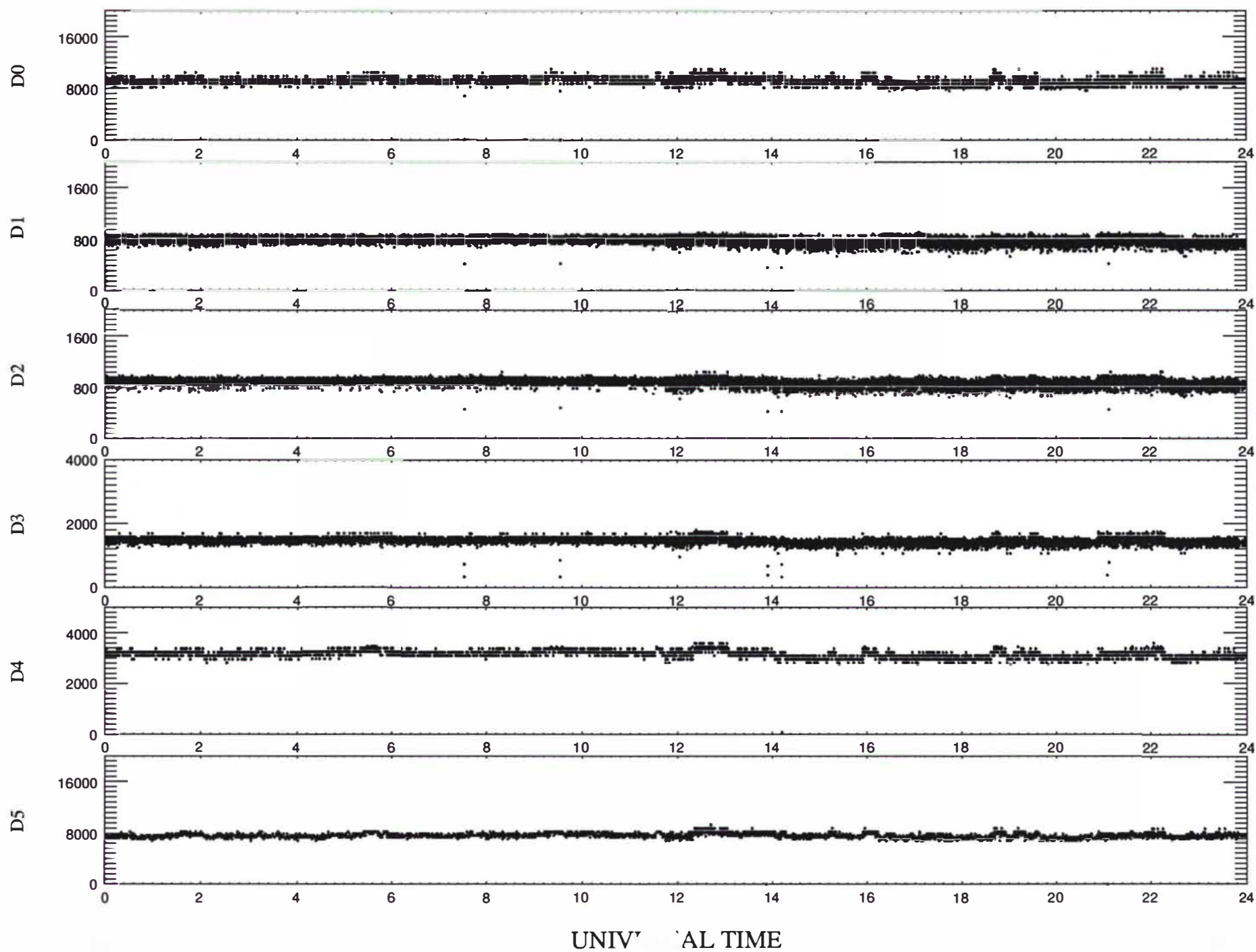
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From SAHI@fender.msfc.nasa.gov Fri Oct 10 13:51:52 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 NAA04389; Fri, 10 Oct 1997 13:51:45 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA19246; Fri, 10 Oct 1997 13:51:41 -0700
Date: Fri, 10 Oct 1997 15:45:55 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971010154555.21823608@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6419
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6419
EVENT OF 1997 OCT 9 DAY OF YEAR=282
EVENT CROSSING TIME AT BATSE : 29639. S. OR 08:13:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 256.000 -31.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/10/ 97 IS:
RA= 166.684 DEC= 15.484 DIST= 6.077 AU
BATSE-ULYSSES DISTANCE = 909145686. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 387.06 SECS.
CROSSING TIME AT ULYSSES IS 30026. S. OR 08:20:26 +/- 578.08 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/10/ 97 IS:
RA= 245.084 DEC= -22.602 DIST= 1.828 AU
MARS-BATSE DISTANCE = 273490208. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=167.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -889.42 SECS.
CROSSING TIME AT MARS IS 28750. S. OR 07:59:09 +/- 21.71 SECONDS

BATSE BURST TRIGGER

NO.: 6419

TIME: TJD=0730 SECONDS=29639

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=47.2 AZIMUTH=278.6 ERROR=4.5 DEGREES

COMMENTS:

BURST, SINGLE PULSE, DUR. APPROX. 40 SECS, MAX AT TRIGGER. WEAKLY VISIBLE
ABOVE 300 KEV.

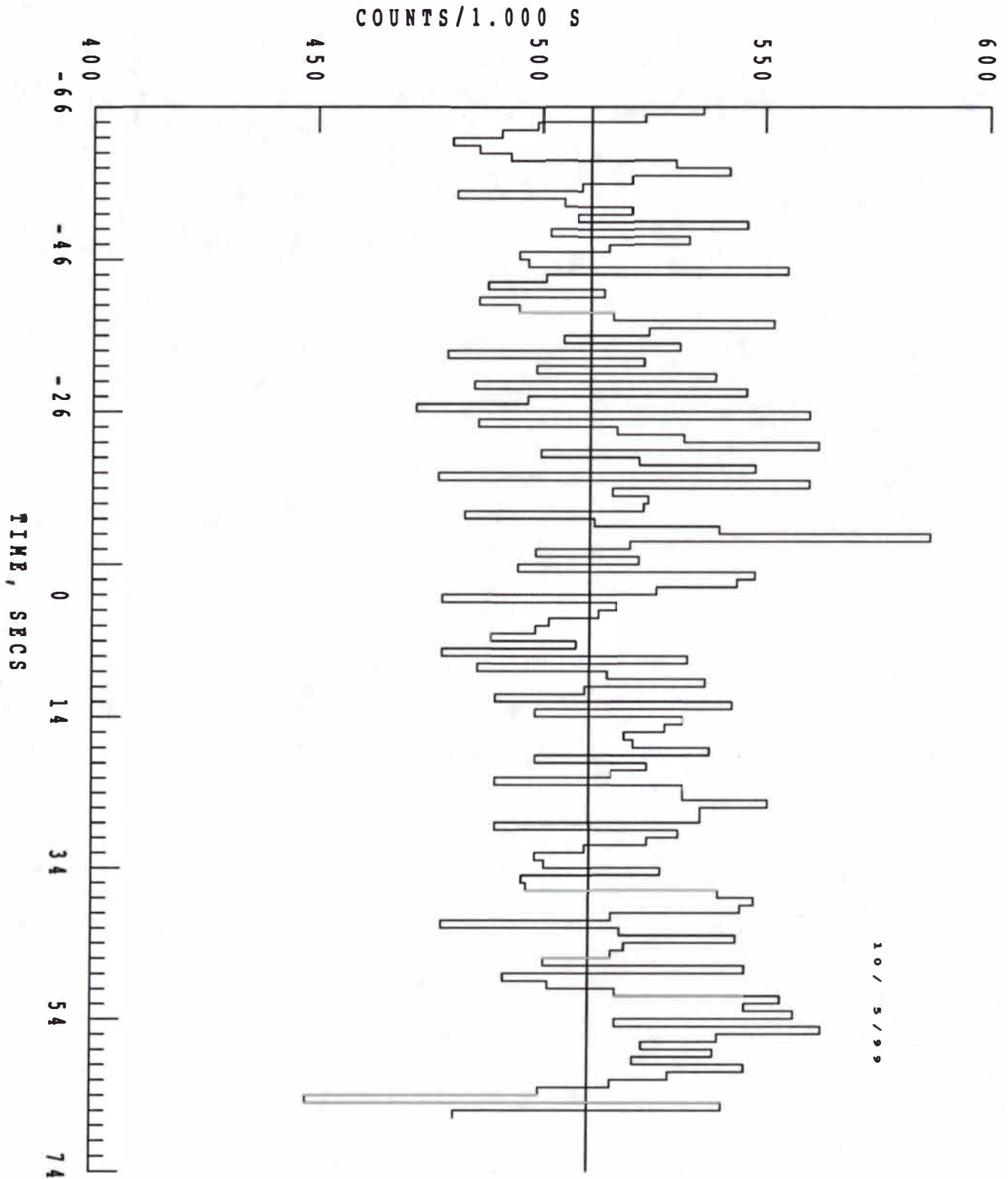
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6419	971009	10730	29639	3500	256	-31	40

NEAR

09/10/97

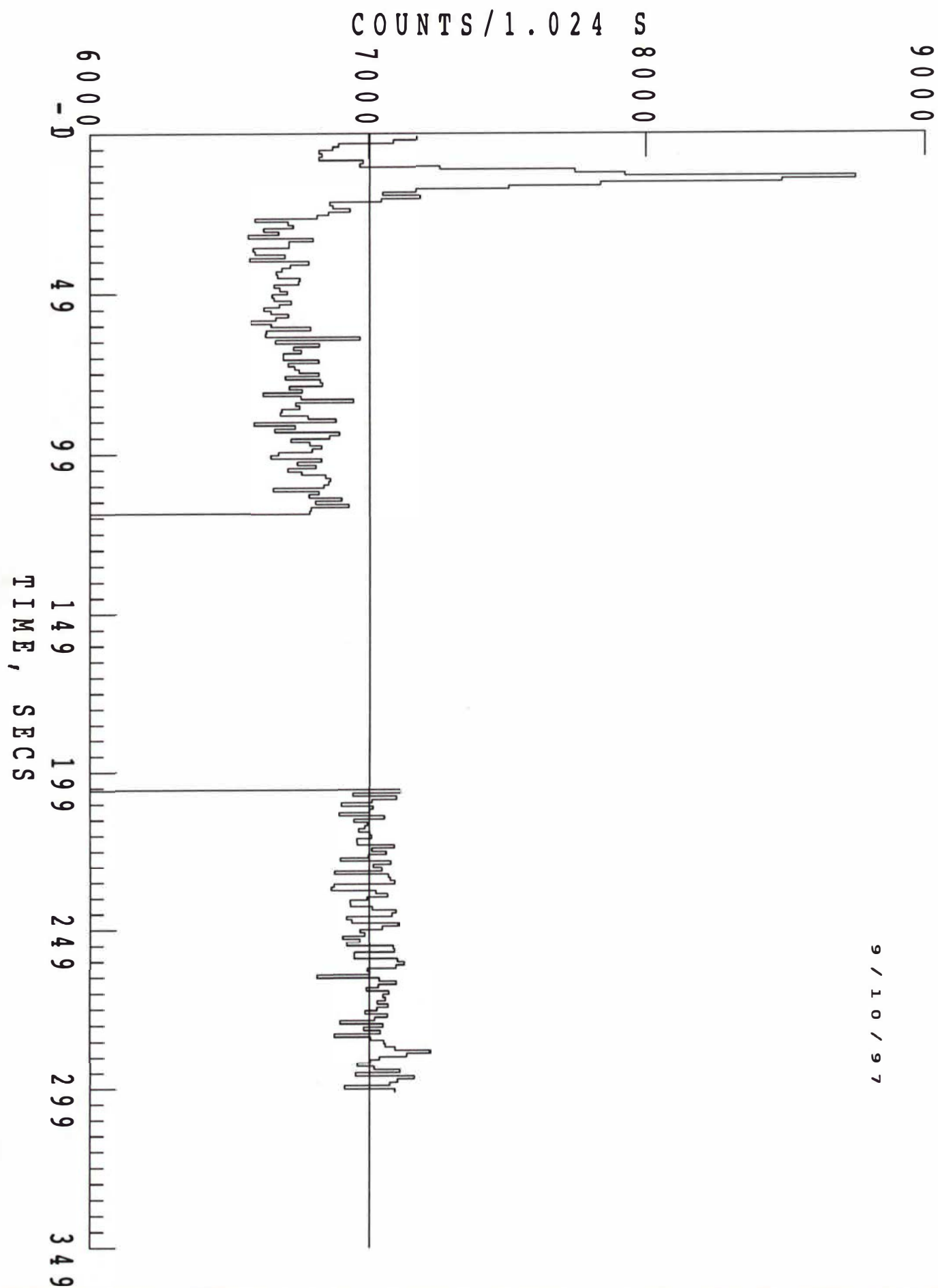
30013.883

100-1000 keV



BACODINE 6419 09/10/97 29627.105

25- 100 keV



BATSE BURST# 6419

ULYSSES RT

4 / 2 / 98

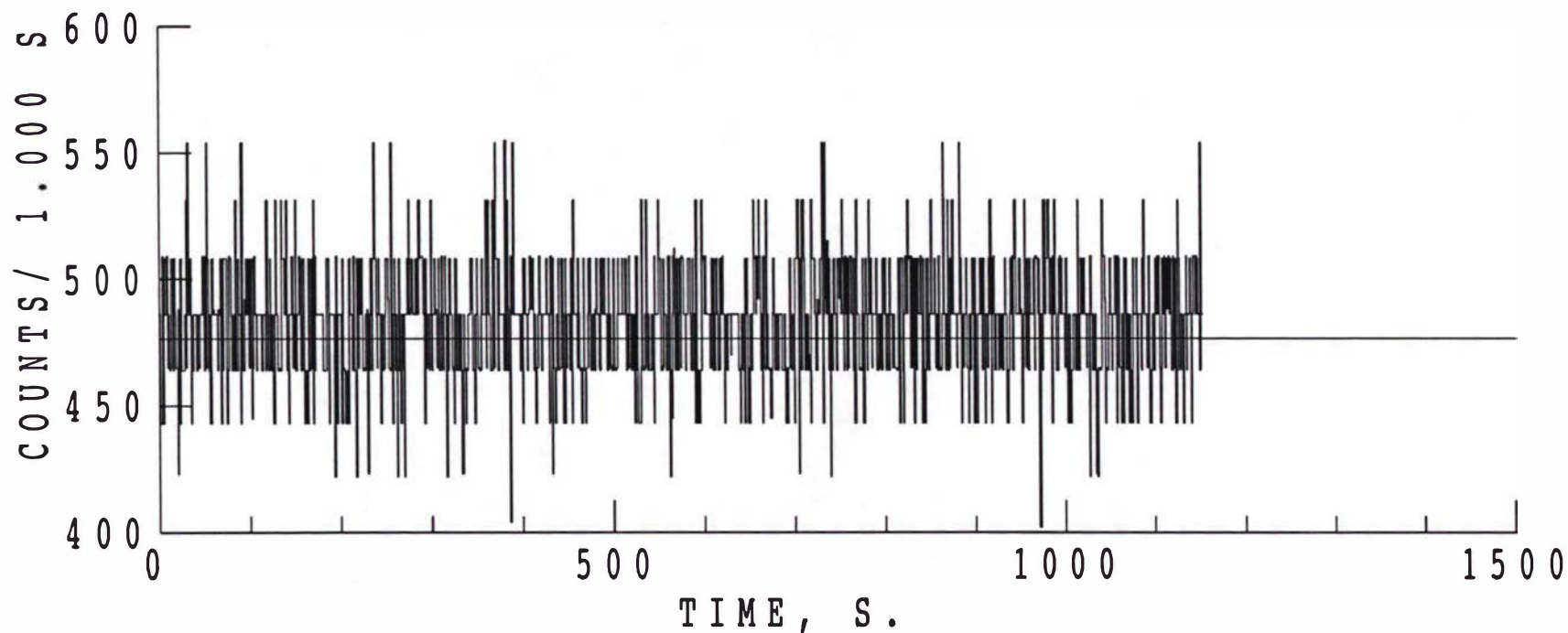
9/10/97 29448.064 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Fri Oct 10 13:58:14 1997
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 10 Oct 1997 15:42:30 -0500 (CDT)
To: burst@compTEL.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, 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.: 6420

TIME: TJD=0730 SECONDS=55794

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From HENZE@BATSE.MSFC.NASA.GOV Tue Oct 14 11:28:03 1997
Date: Tue, 14 Oct 1997 13:25:34 -0500 (CDT)
From: Bill Henze (205-544-7616) <HENZE@BATSE.MSFC.NASA.GOV>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevaww.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@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.: 6421

TIME: TJD=0730 SECONDS=67089

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From WOODSP@SSLMOR.msfc.nasa.gov Wed Oct 15 16:41:18 1997
Return-Path: <WOODSP@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA00653; Wed, 15 Oct 1997 16:41:17 -0700
From: WOODSP@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA21896; Wed, 15 Oct 1997 16:41:14 -0700
Date: Wed, 15 Oct 1997 18:41:06 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971015184106.214136ad@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6422
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6422
EVENT OF 1997 OCT 9 DAY OF YEAR=282
EVENT CROSSING TIME AT BATSE : 68215. S. OR 18:56:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 274.000 -66.000
BATSE PEAK COUNTING RATE: 28000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/10/ 97 IS:
RA= 166.738 DEC= 15.448 DIST= 6.073 AU
BATSE-ULYSSES DISTANCE = 908572939. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 68.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1090.05 SECS.
CROSSING TIME AT ULYSSES IS 69305. S. OR 19:15:05 +/- 557.51 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/10/ 97 IS:
RA= 245.084 DEC= -22.602 DIST= 1.828 AU
MARS-BATSE DISTANCE = 273490208. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.83 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -620.14 SECS.
CROSSING TIME AT MARS IS 67595. S. OR 18:46:34 +/- 106.74 SECONDS

BATSE BURST TRIGGER

NO.: 6422

TIME: TJD=0730 SECONDS=68215

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=23.8 AZIMUTH=225.9 ERROR=0.5 DEGREES

COMMENTS:

GRB LASTING ABOUT 11 SEC. SINGLE PULSE WITH MULTIPLE PEAKS.
VISIBLE ABOVE 300 KEV.

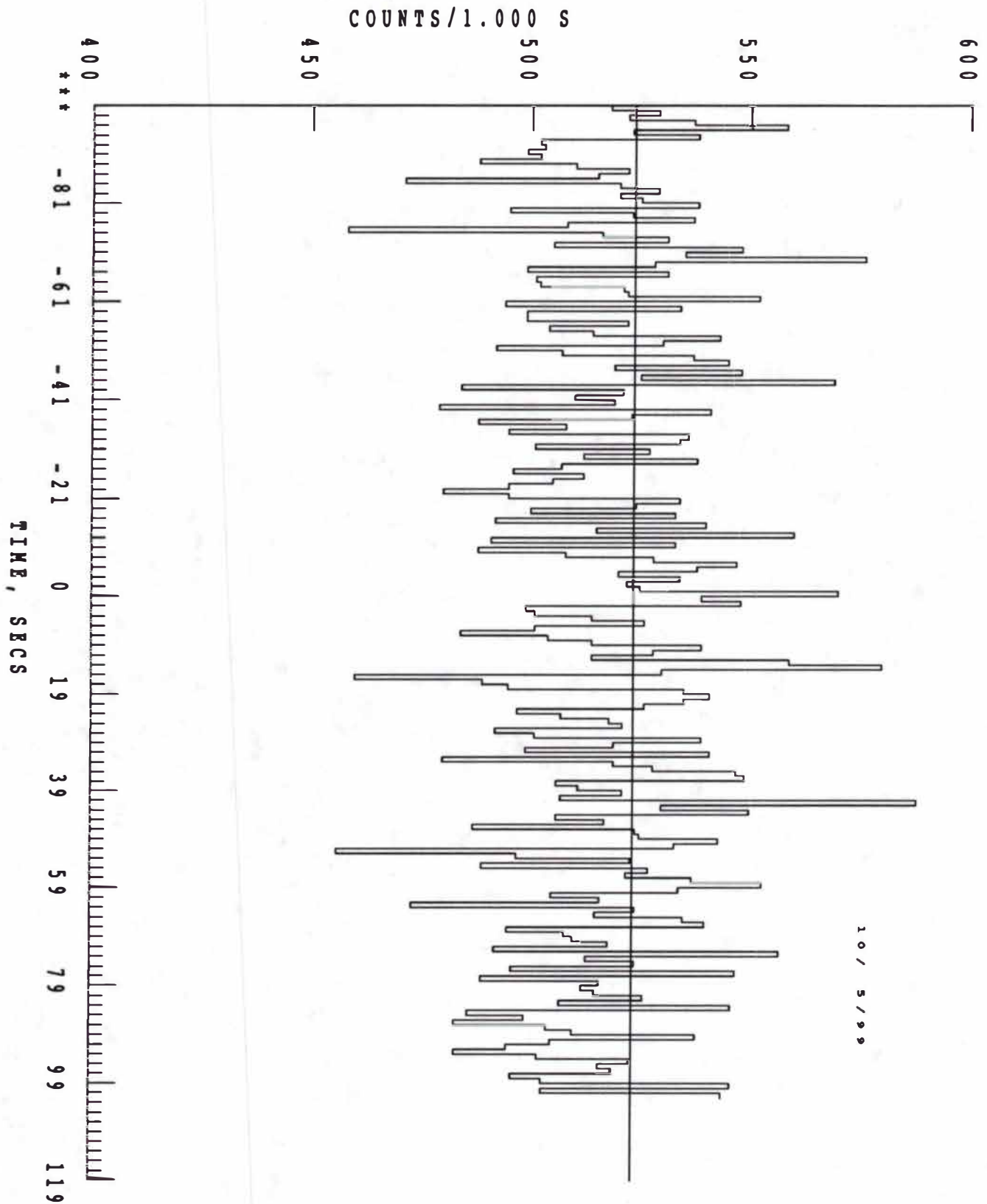
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6422	971009	10730	68215	28000	274	-66	11

NEAR

09/10/97

68475.876

100-1000 keV



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@heavx.gsfc.nasa.gov, cline@heavx.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@heavx.gsfc.nasa.gov, cline@heavx.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@heavx.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	BEPPPO 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	BEPPPOSAX (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 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.

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This event was not detected by Konus.

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

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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

From kraken@rosserv.gsfc.nasa.gov Thu Oct 30 08:33 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 30 Oct 1997 12:37:00 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses burst seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

Here are the results of a search through TGRS data for some recent
Ulysses bursts:

<u>Ulysses burst</u>	<u>TGRS sees?</u>	<u>TGRS characteristics</u>
Oct. 9 19:14	NO	
Oct. 10 23:36	NO	
Oct. 19 14:10	YES	TGRS #643. 10/19/97 53756 s. 180 cts/s peak 6 s duration (100-300 keV) 130 cts/s peak, 9 s duration (35-100 keV) i.e. a weak burst

Take care,

Pete

Helio corr removed 7 Feb 00

Date: Apr 9 '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*

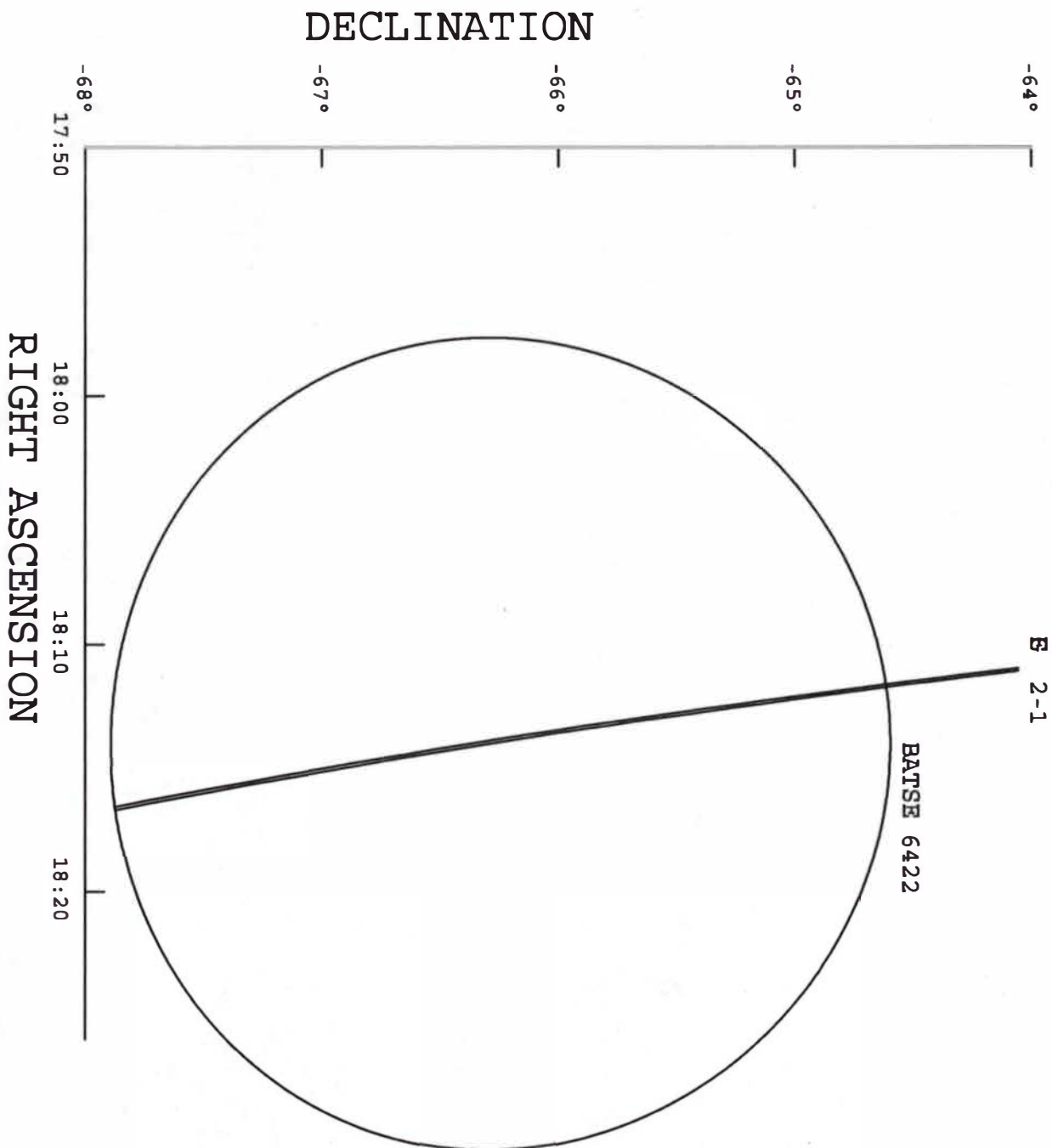
3. PVO Data

- ☐ 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 OCT 9, 1997 19:14

7 / 2 / 0



ULYSSES

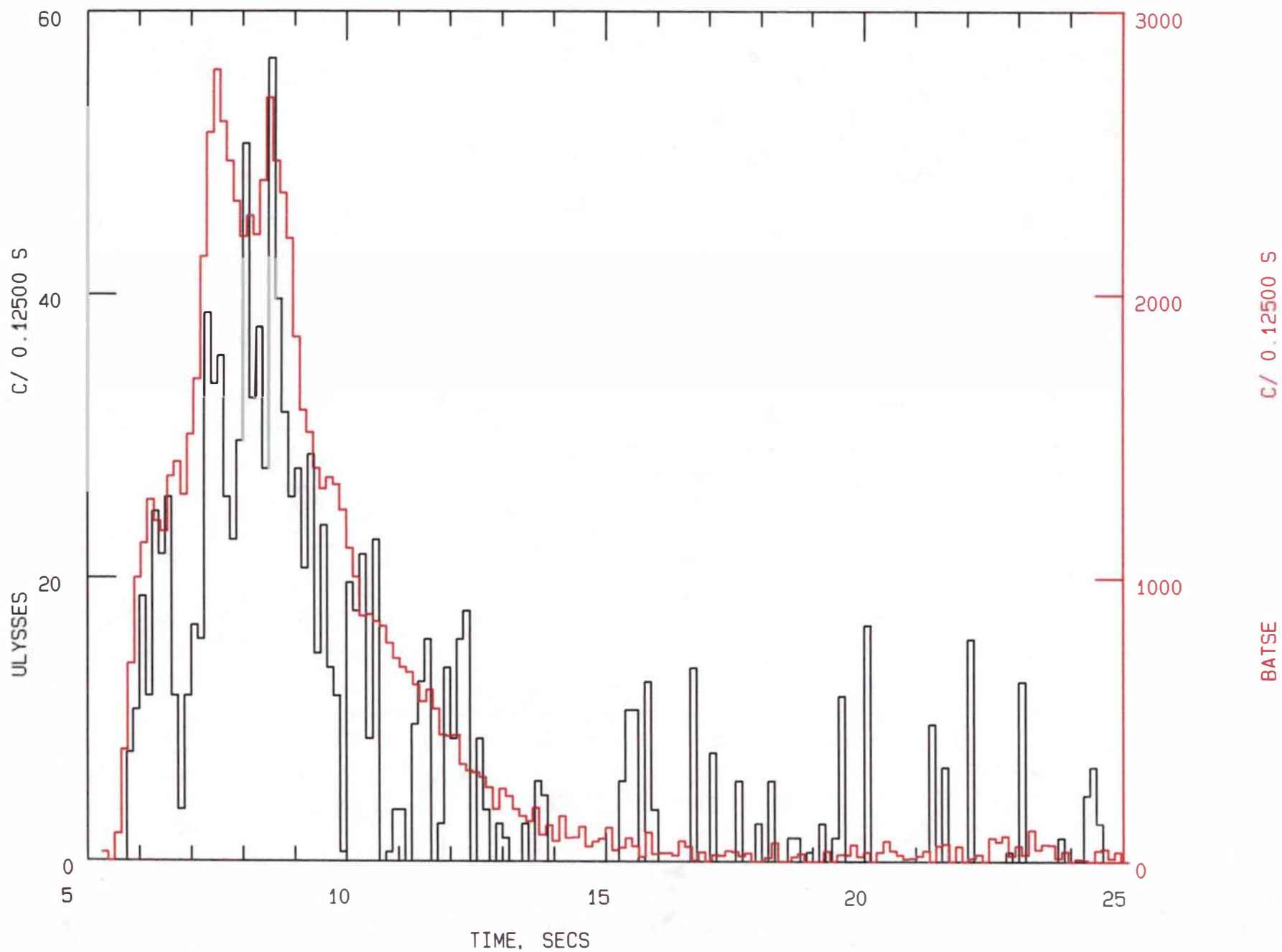
-BATSE

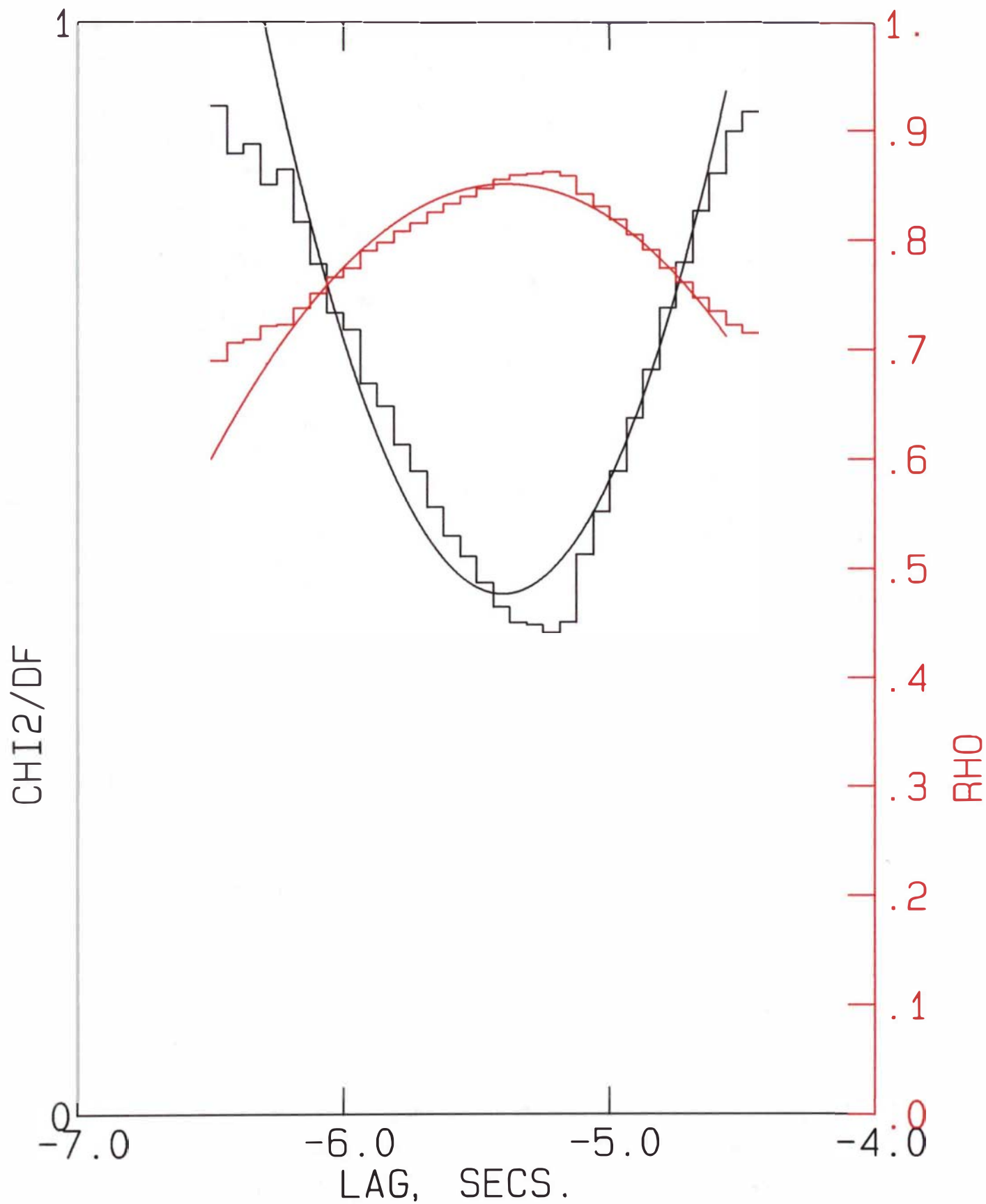
CORRELATION

09/10/97

69276.044

9/ 4/98





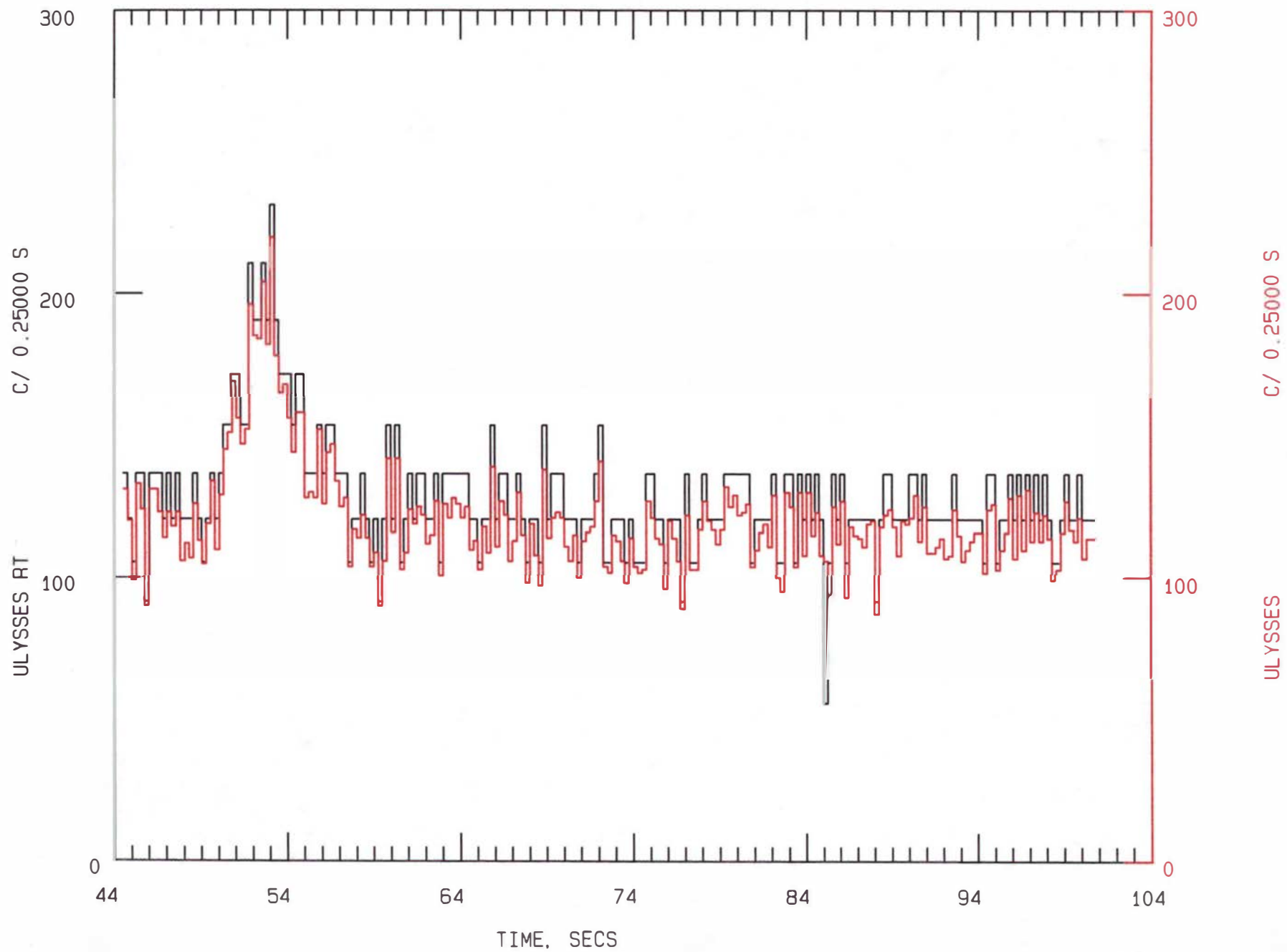
ULYSSES RT-ULYSSES

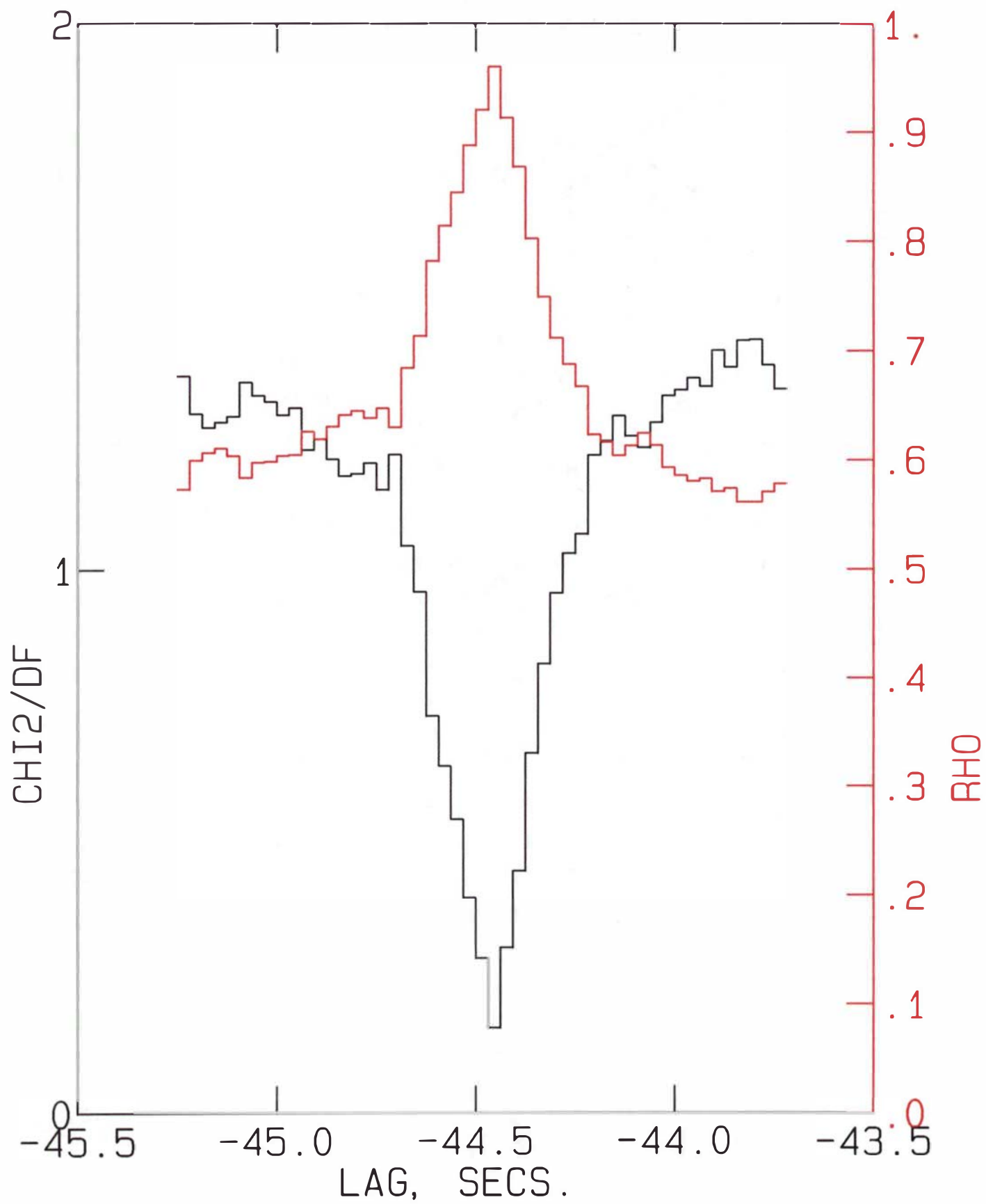
CORRELATION

9/10/97

69224.171

9/ 4/98

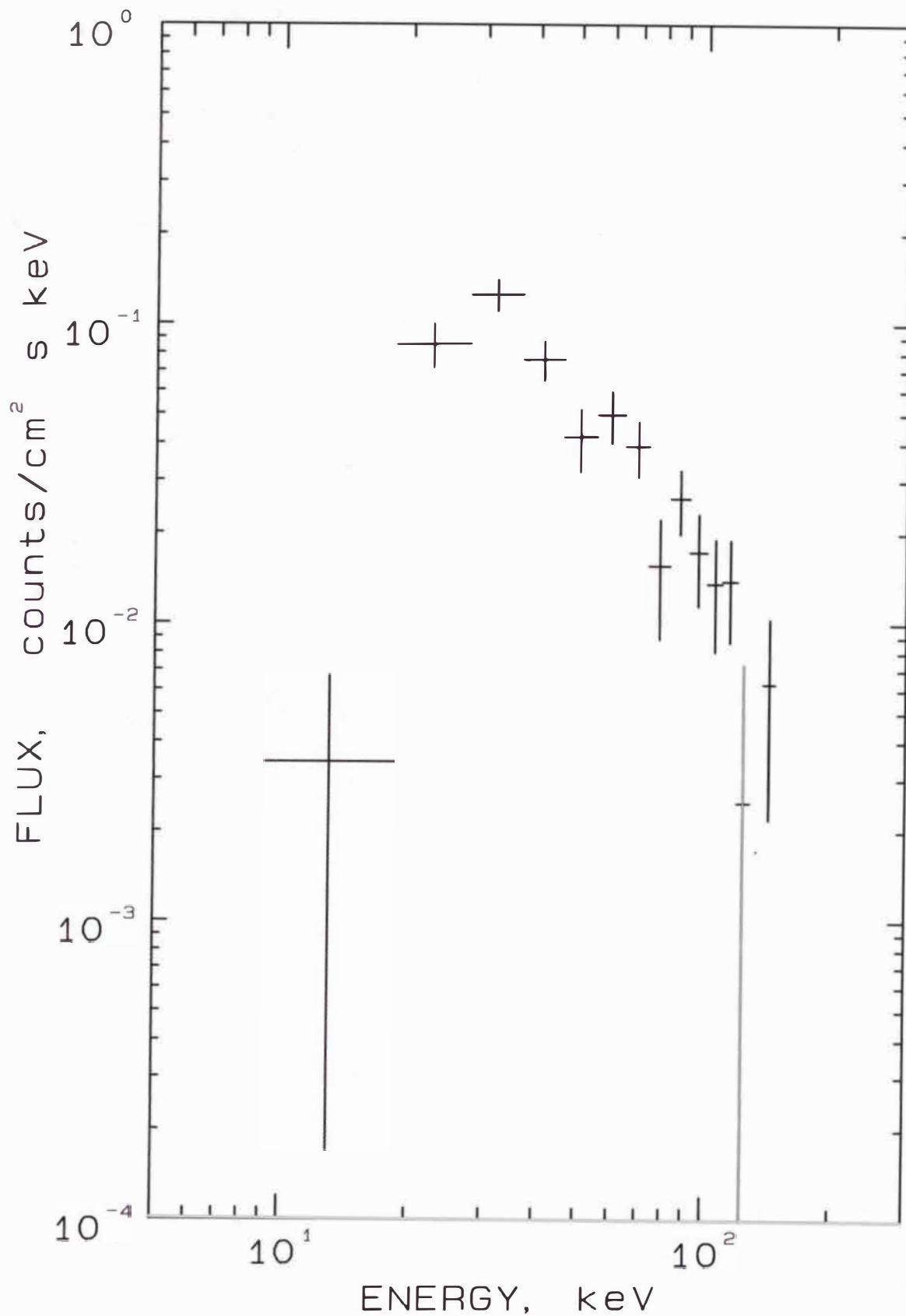




ULYSSES 09/10/97 69275.878

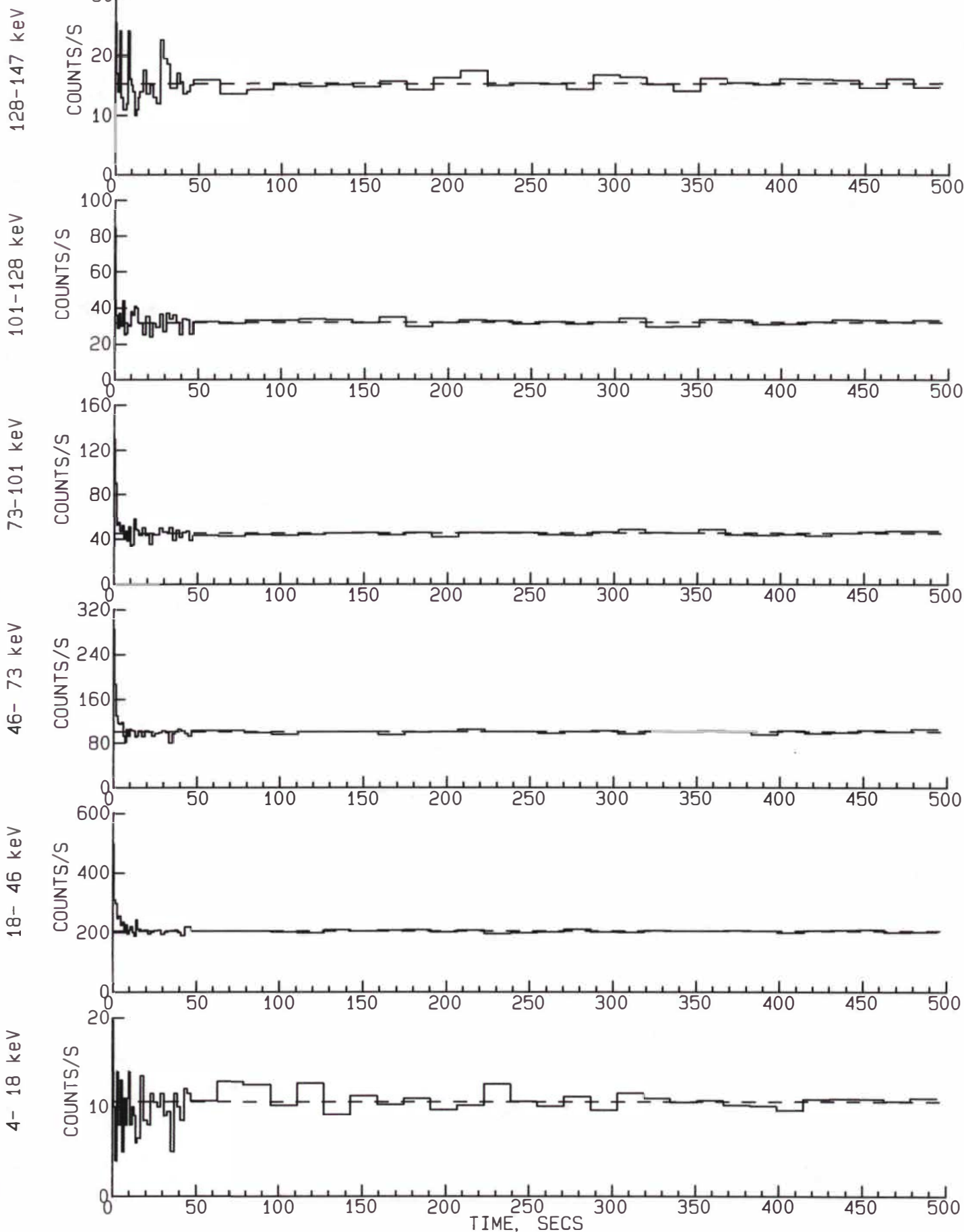
9/ 4/98

SPECTRUM INTEGRATED OVER 20.7 SECONDS, INTERVALS 2 TO 20



ULYSSES 09/10/97 69275.878 BURST SPECTRAL COUNT RATES

9 / 4 / 98



ULYSSES

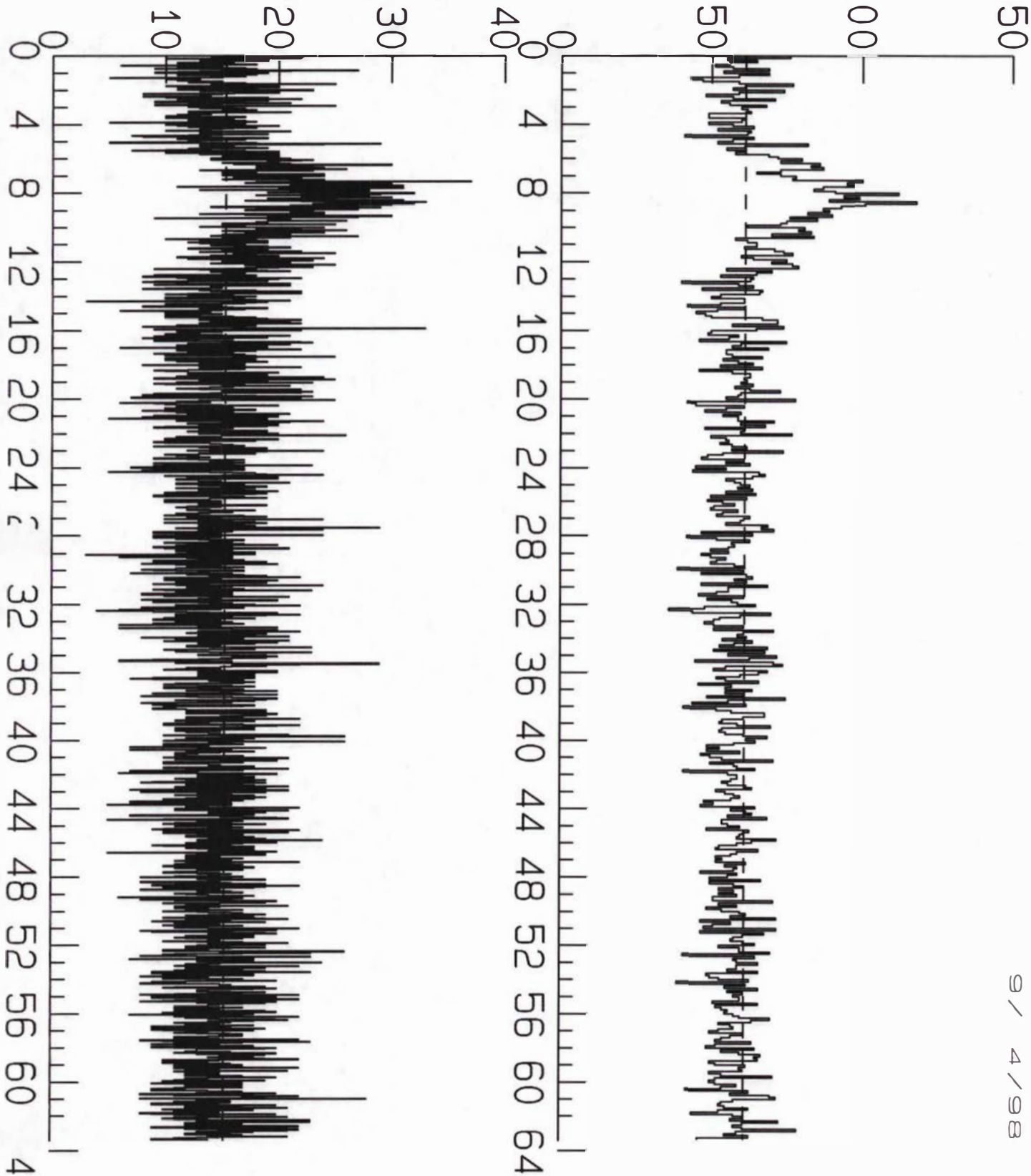
09/10/97

Ttrig=69276.044

22- 147 keV

COUNTS/0.031 S

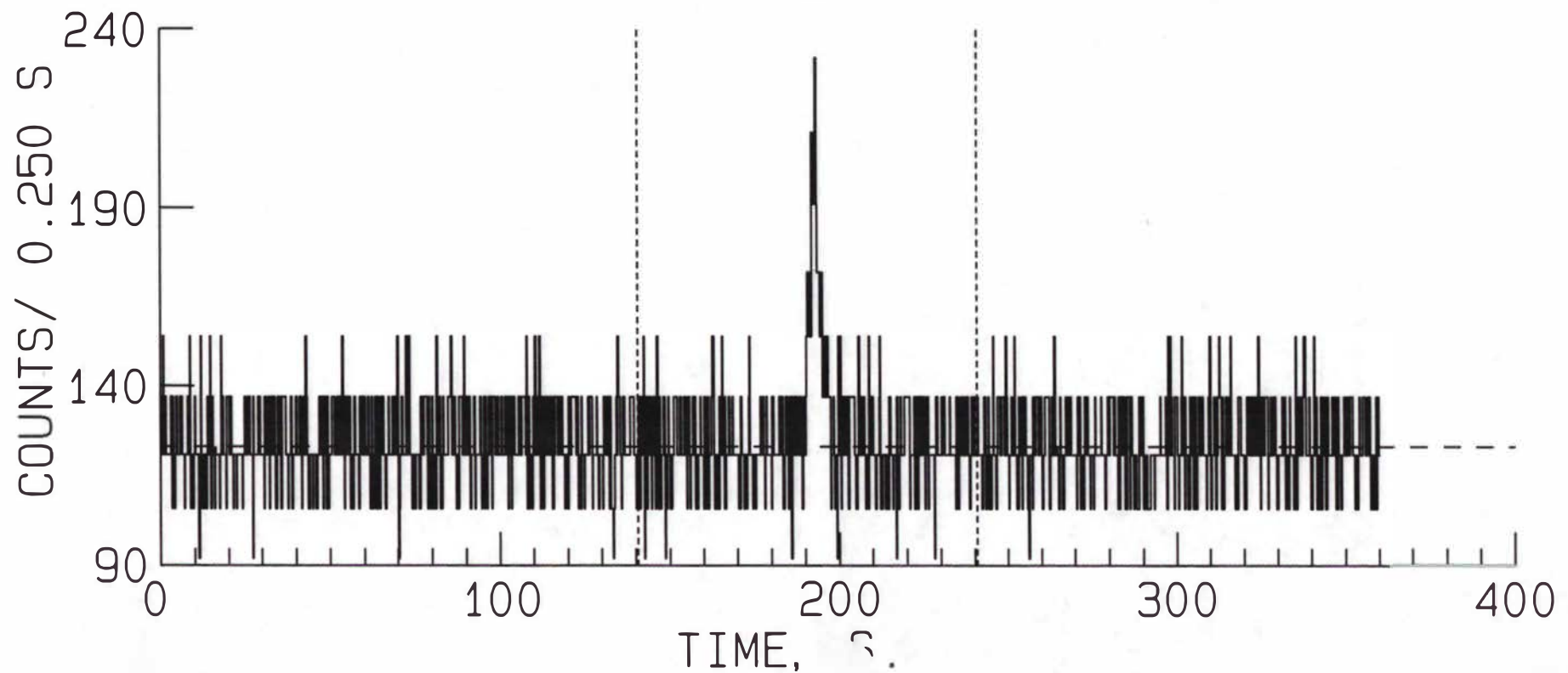
COUNTS/0.125 S



ULYSSES RT
9/10/97 69084.011 s
22- 147 keV

9 / 4 / 98

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



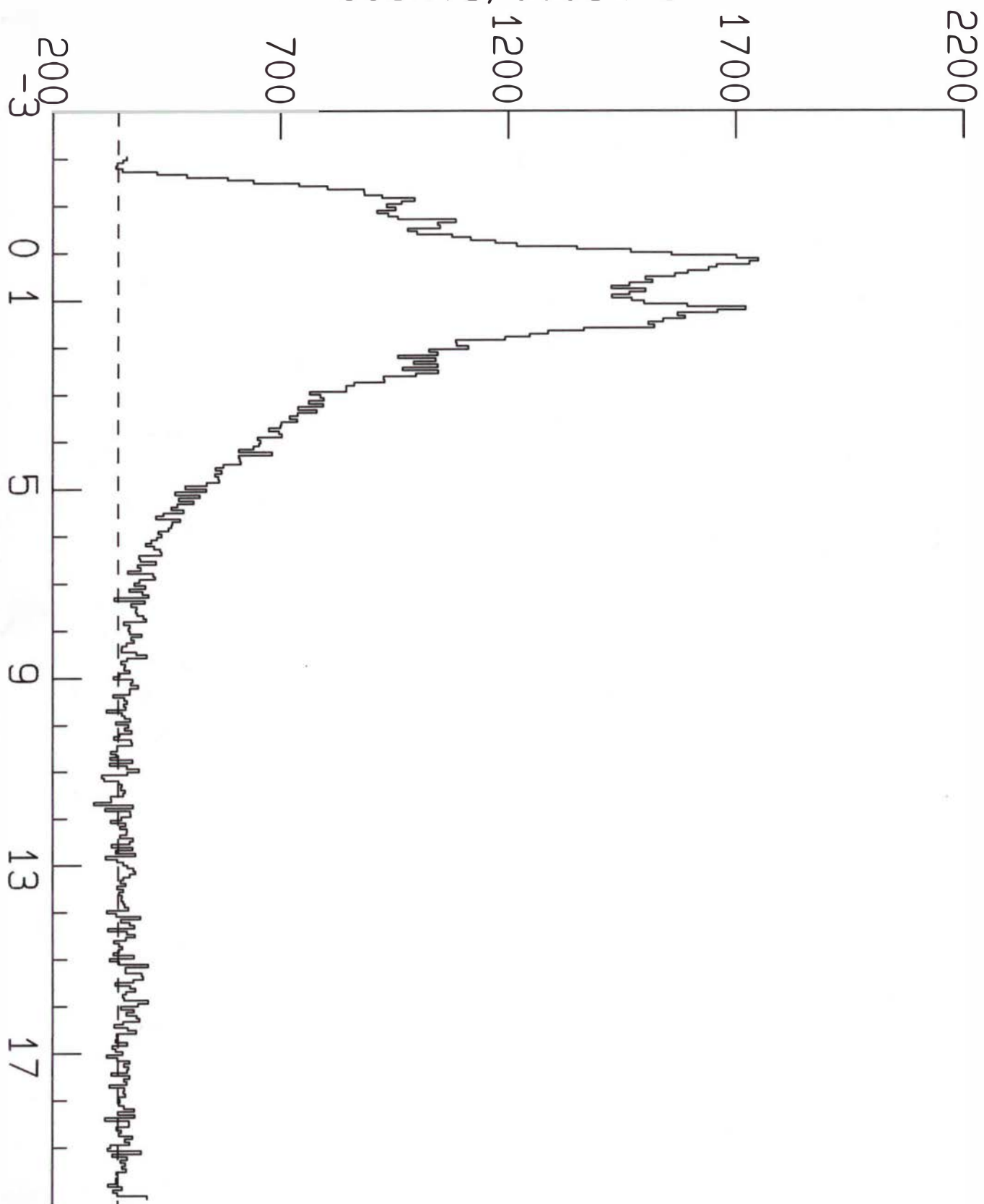
BATSE

09/10/97

68215.777

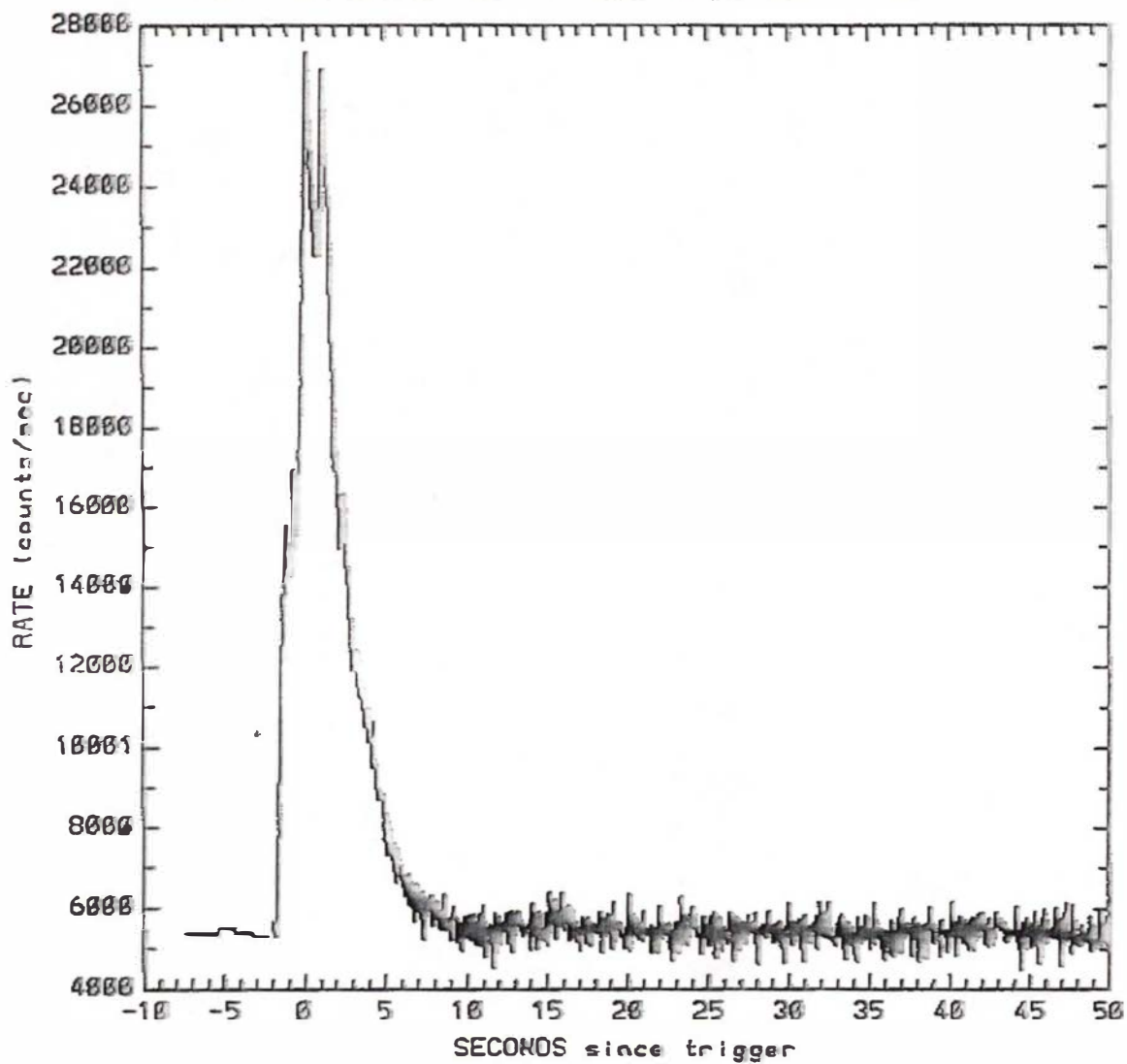
25- 100 keV

COUNTS/0.064 S



13 / 11 / 97

DISCSC Data for K. Hurley, No. 6422



22-OCT-1997 13:58:45

Created by KOPS 80
(Burst Display)
Version 12.25

Trigger # : 6422

Trigger Time:
10730 / 68215.777Burst Data Type:
DISCSCDead time
Corrected: N
Background Data
Type: PREB + DISCLAMinimum Integ. Time:
0.054 secondsDetectors (7..8):
-6---2--Discriminators:
(1 . 2)Quality Mask:
B01501

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/09



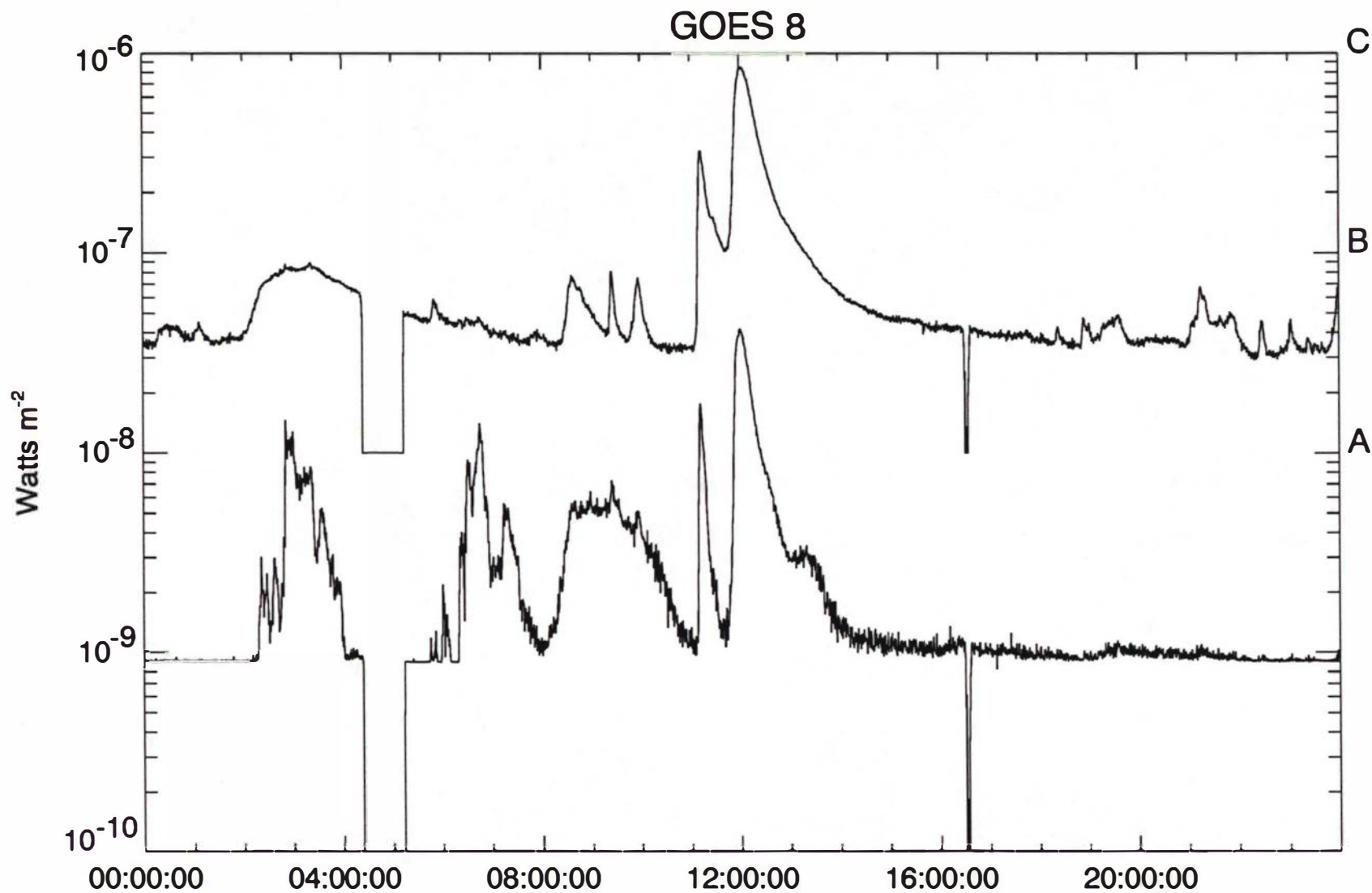
Current Time: 97/10/13, 1009 EDT

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: 97/10/09, 0000:00

Plot created: 97/10/13, 1008

Channel

1 (1.0 - 8.0 Angstroms)

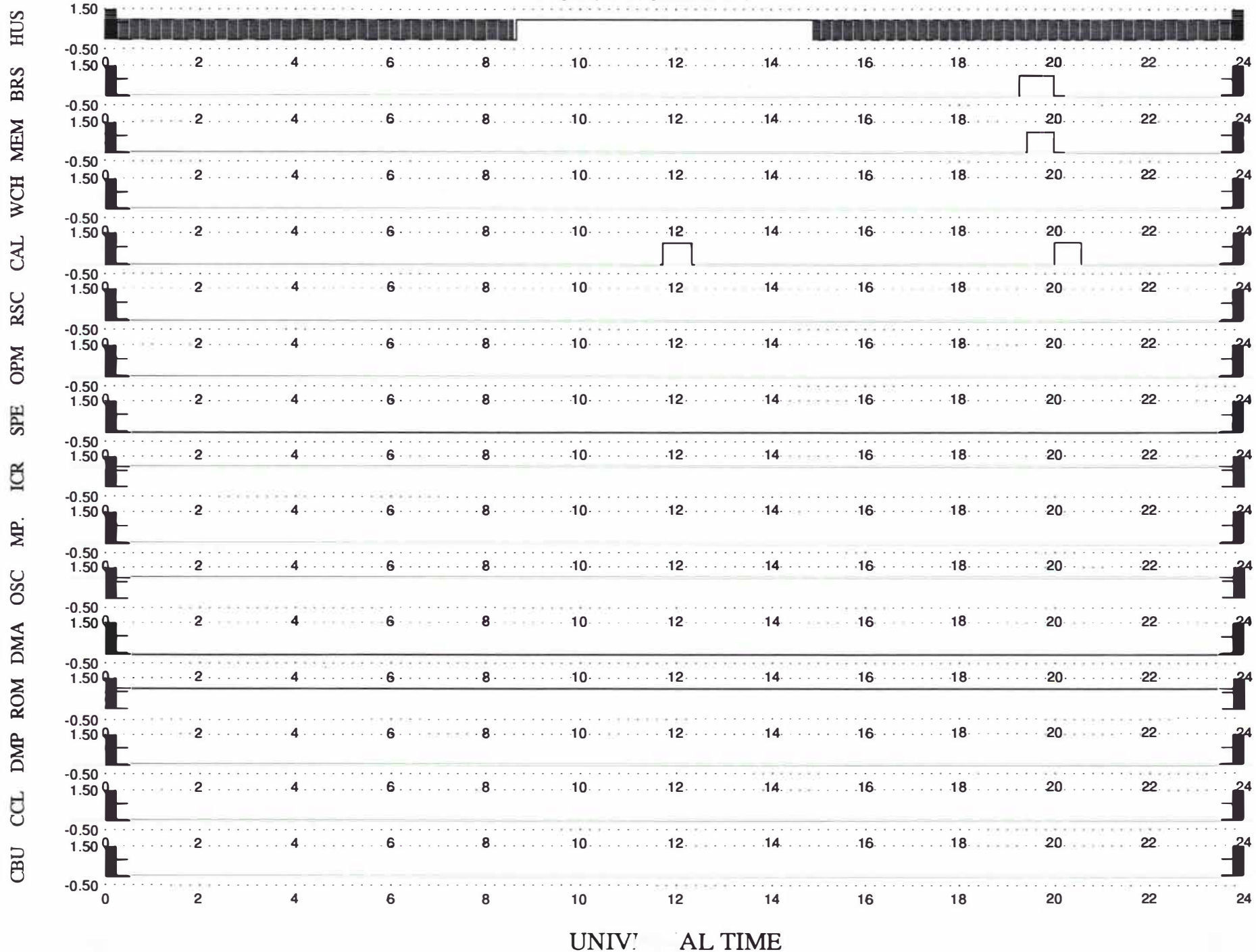
Background not subtracted

2 (0.5 - 4.0 Angstroms)

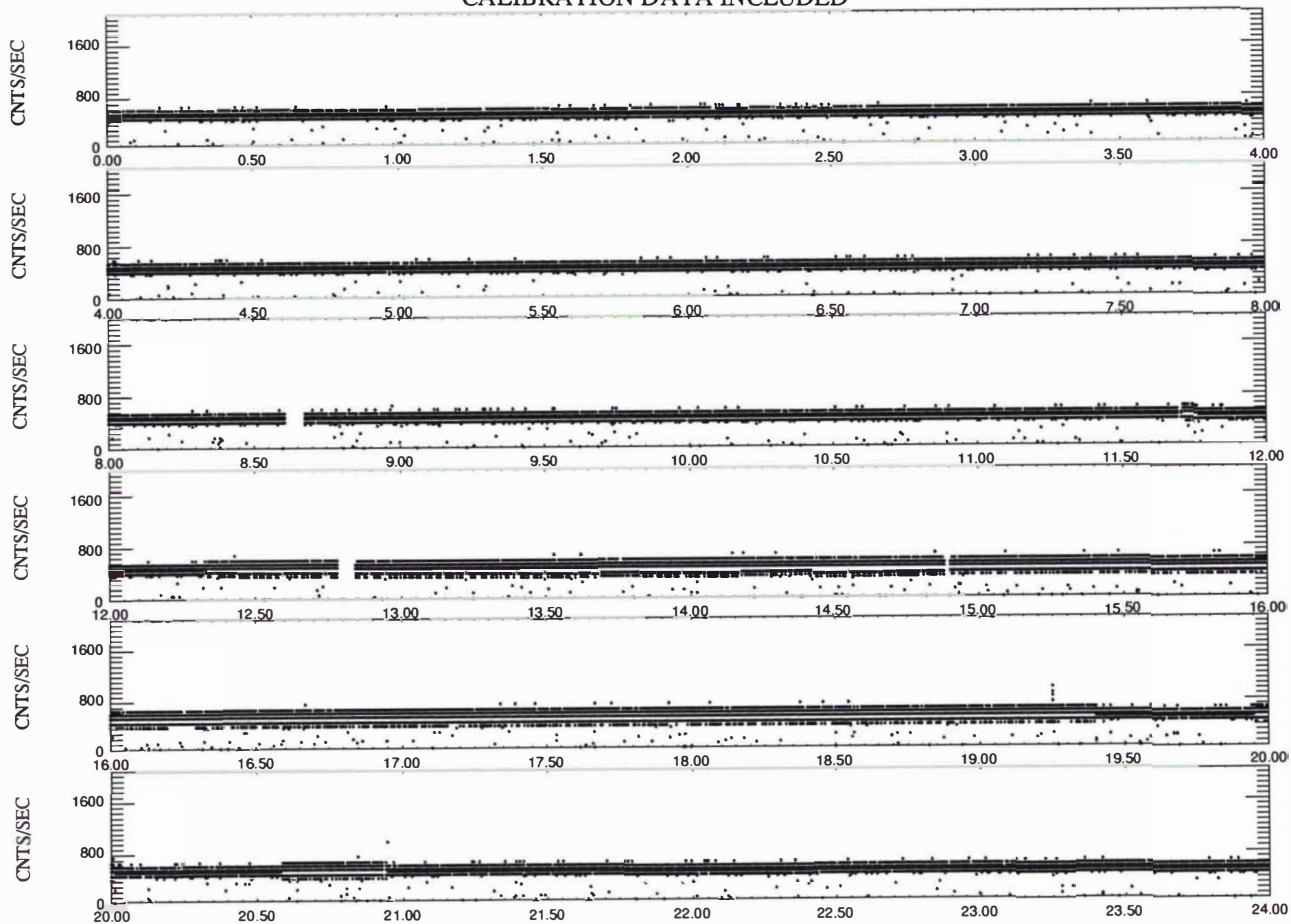
Background not subtracted

Sample average = 10

BURST NUMBER 7

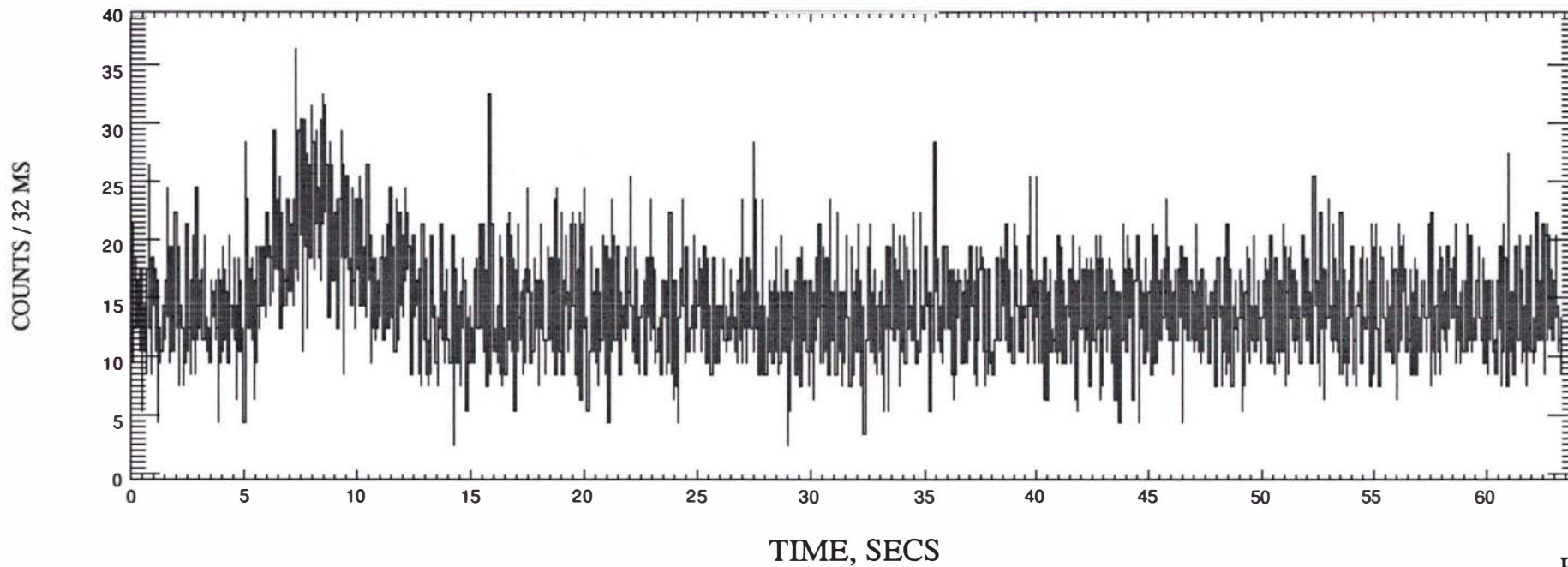
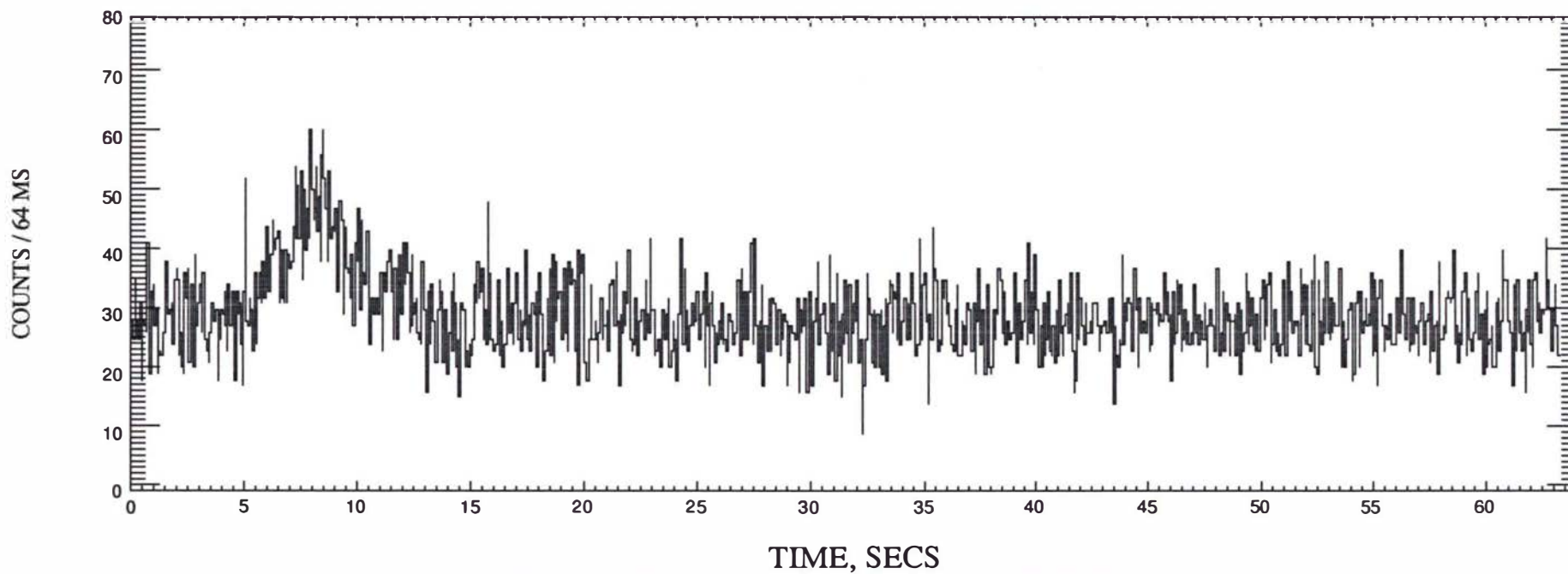


CALIBRATION DATA INCLUDED

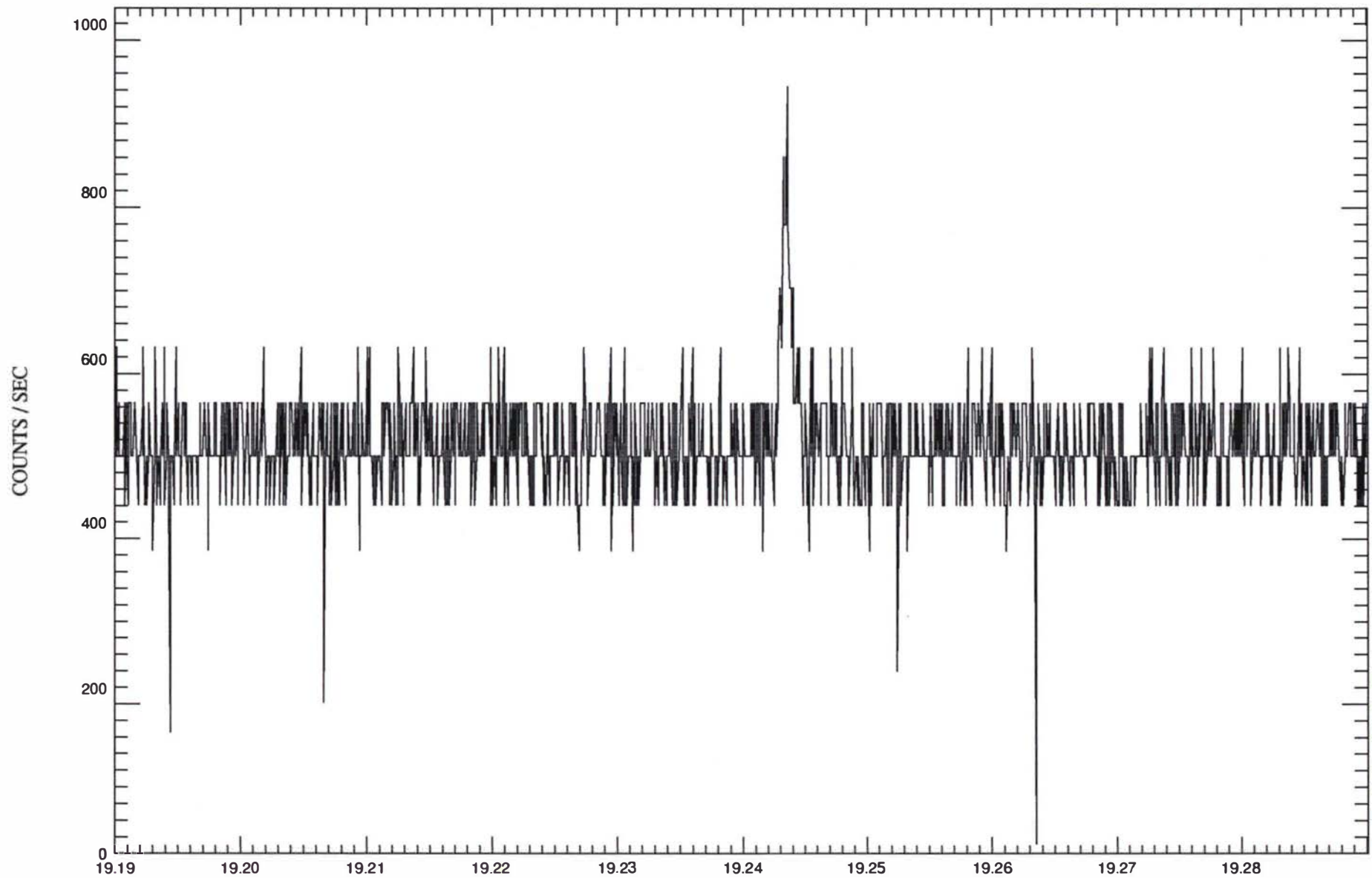


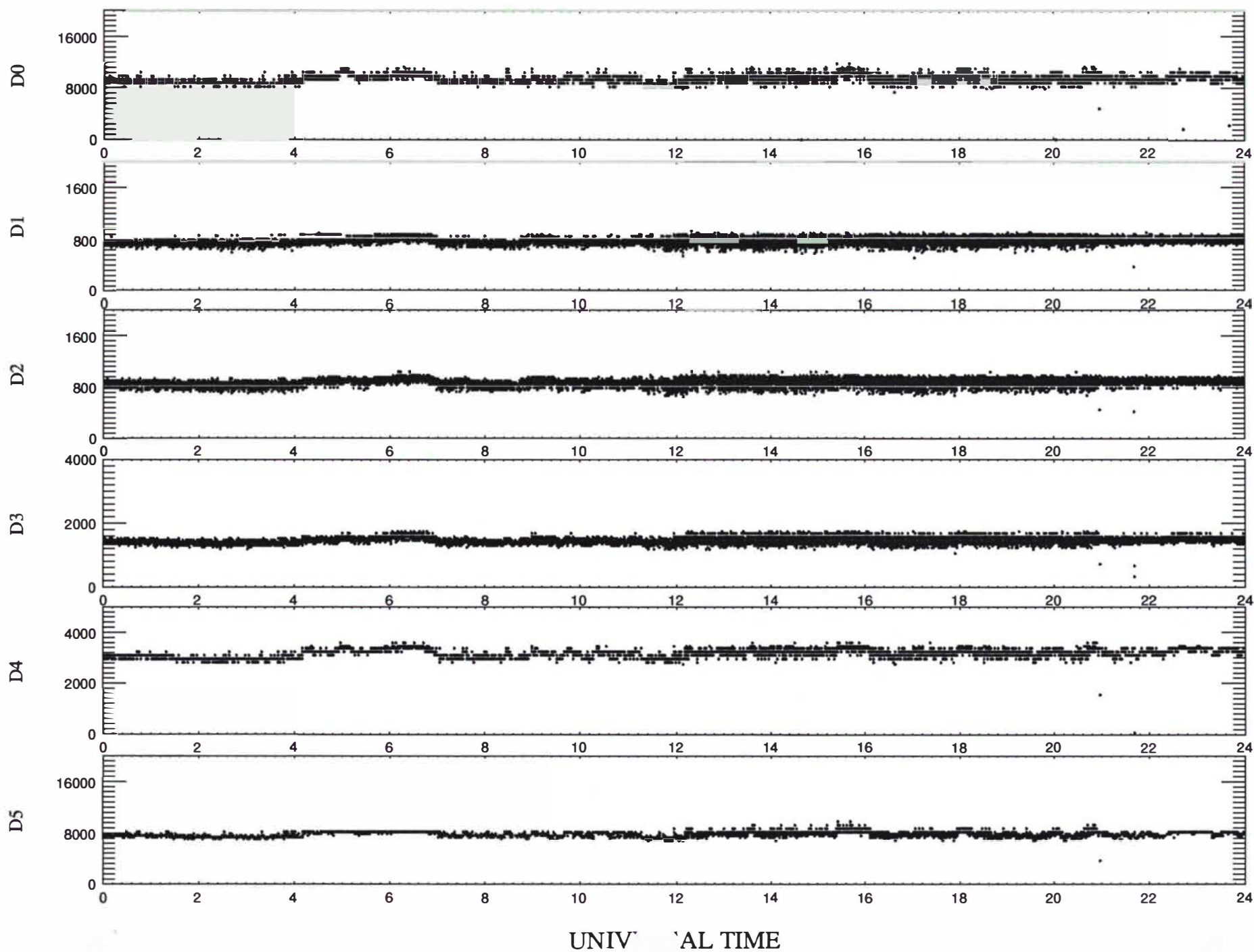
UNIVERSAL TIME

Burst Counter 7 at UT=19.243299543593 h=69275.878 s 19:14:35.878



CALIBRATION DATA INCLUDED





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

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From kraken@rosserv.gsfc.nasa.gov Thu Oct 30 08:33 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 30 Oct 1997 12:37:00 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses burst seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

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Take care,

Pete

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Oct 14 16:57:47 1997
Date: Tue, 14 Oct 1997 18:56:52 -0500 (CDT)
From: RICHARDSON@SSLLES.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
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6423

TIME: TJD=0731 SECONDS=54550

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Oct 14 16:58:38 1997
Date: Tue, 14 Oct 1997 18:58:09 -0500 (CDT)
From: RICHARDSON@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.: 6424

TIME: TJD=0731 SECONDS=68695

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:

SIGNIFICANCE: SIGMA

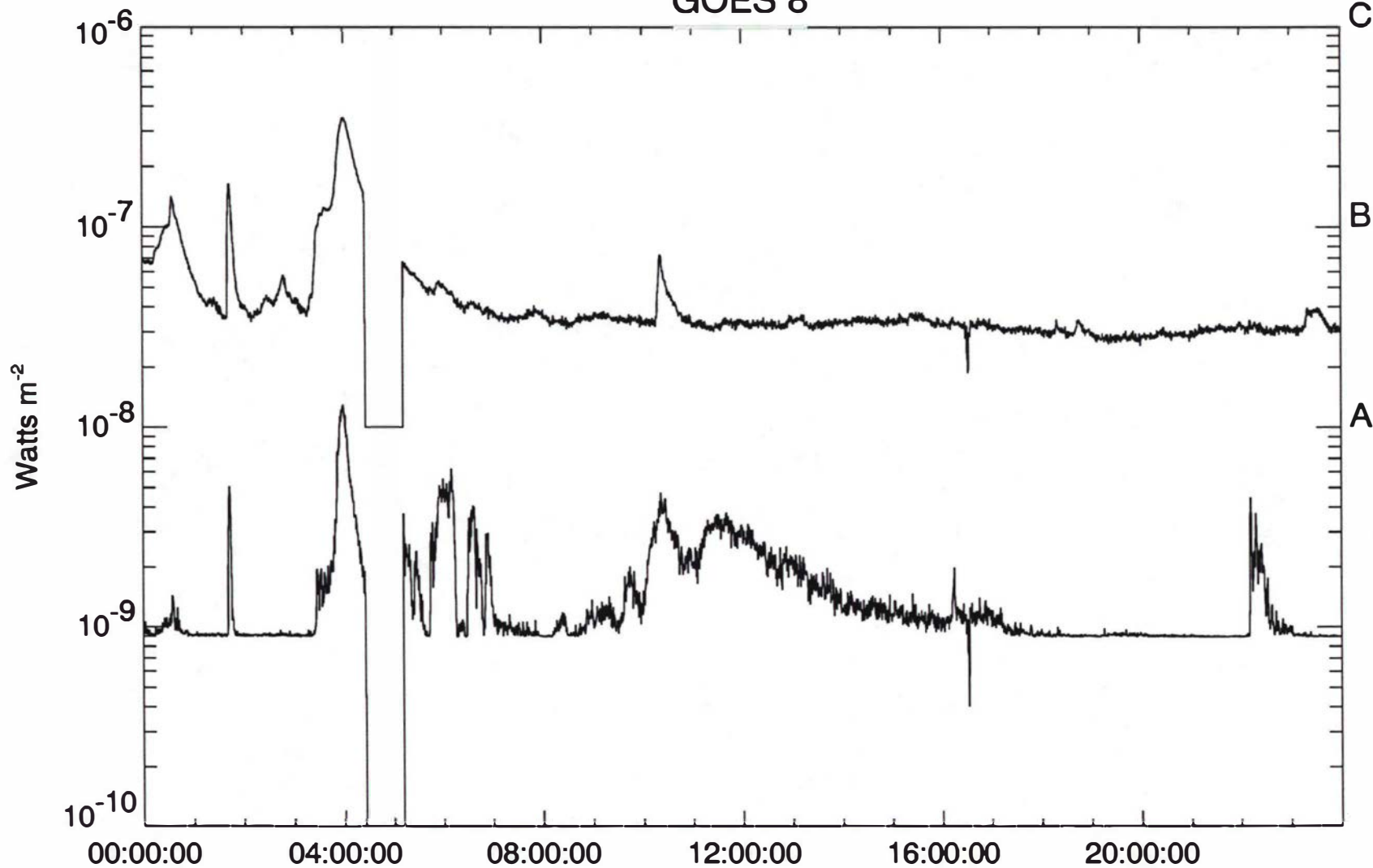
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT

GOES 8



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

Plot created: 97/10/14, 1008

Channel

1 (1.0 - 8.0 Angstroms)

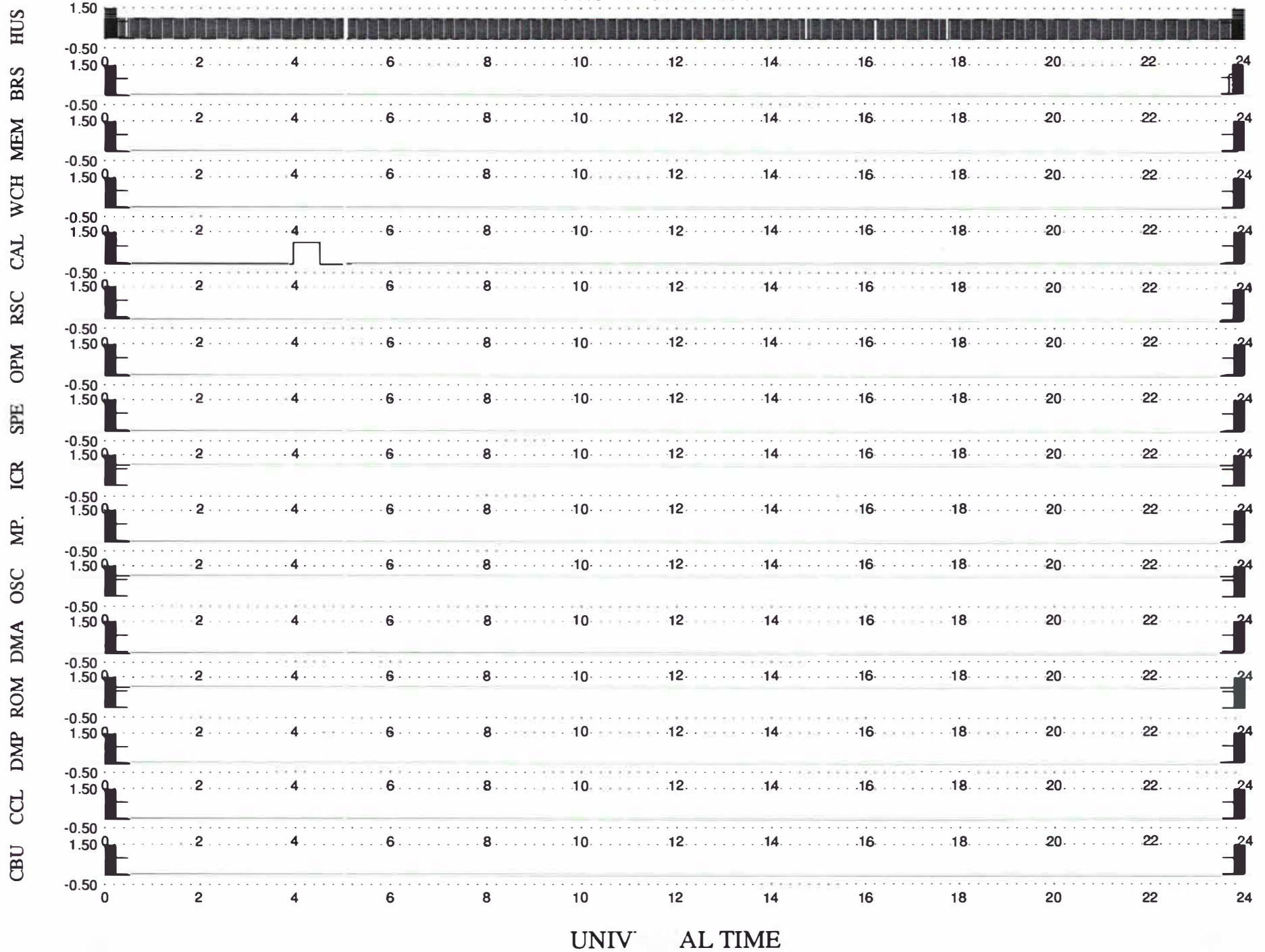
Background not subtracted

2 (0.5 - 4.0 Angstroms)

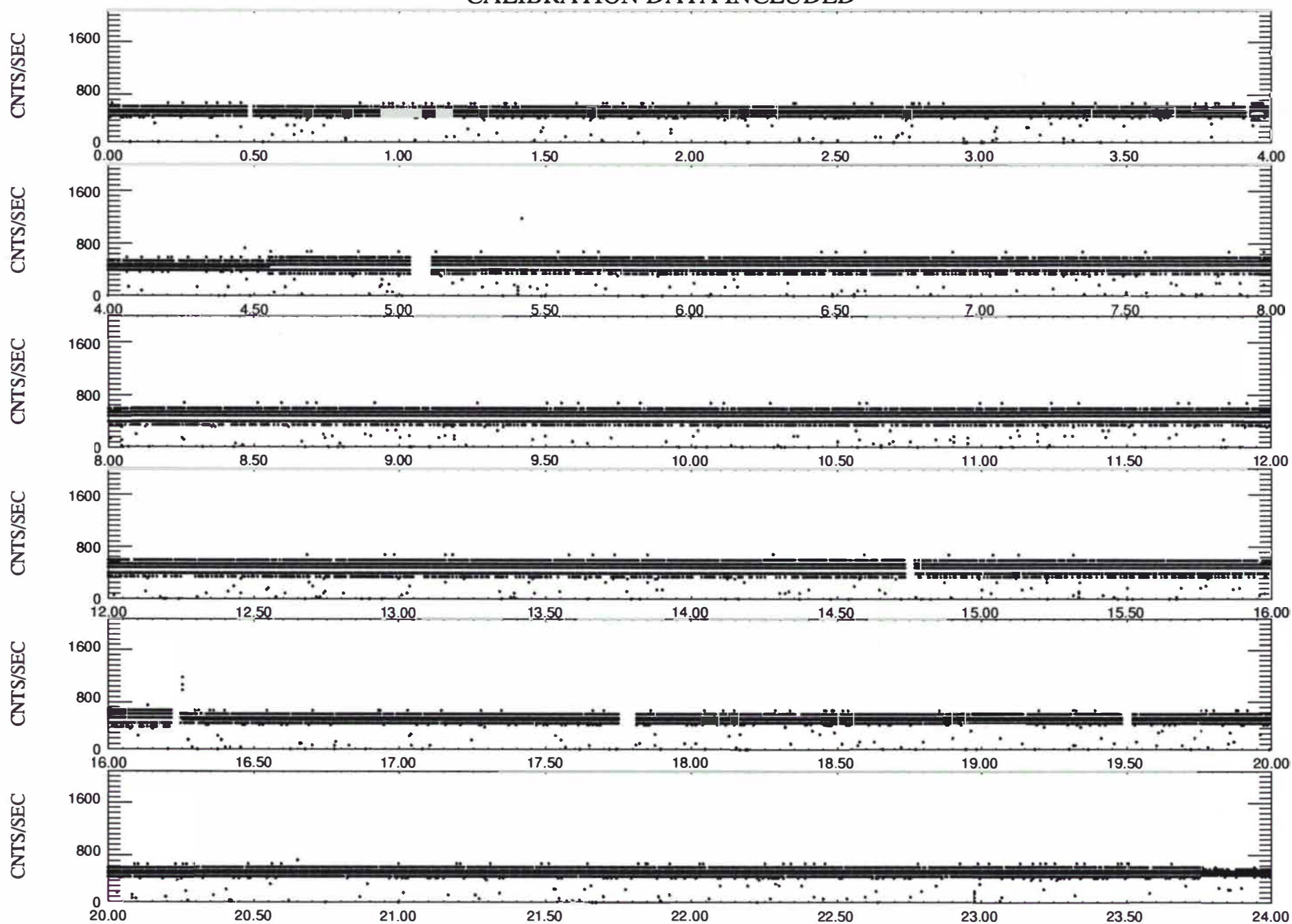
Background not subtracted

Sample average = 10

BURST NUMBER 8

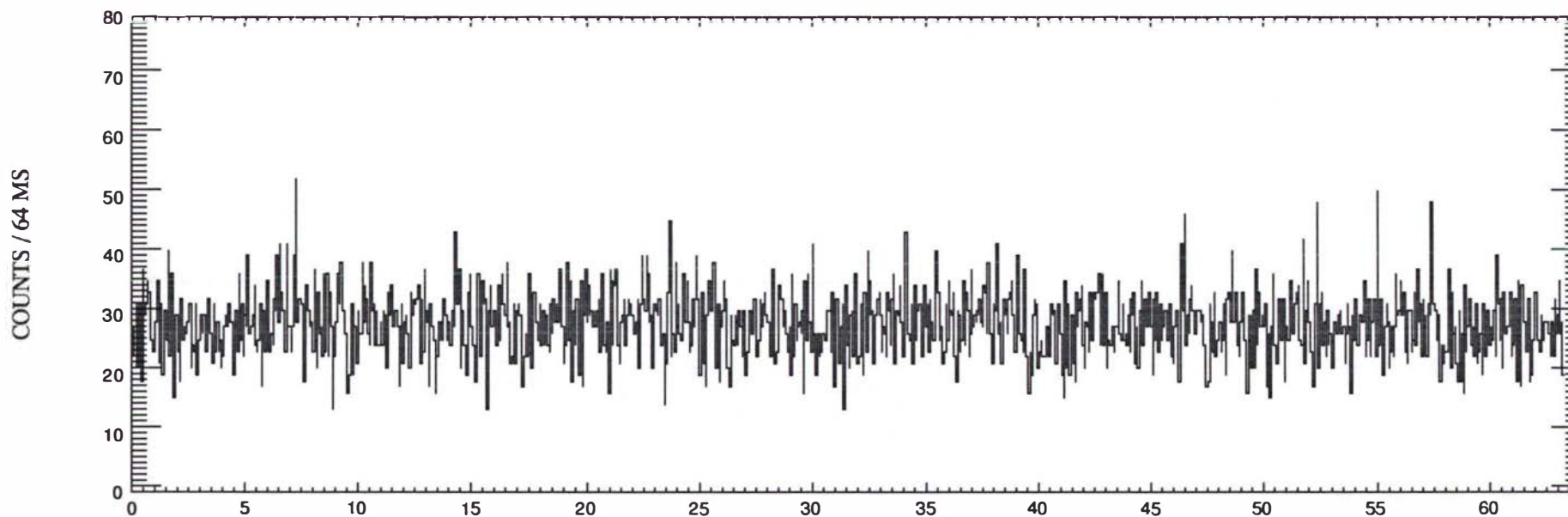


CALIBRATION DATA INCLUDED

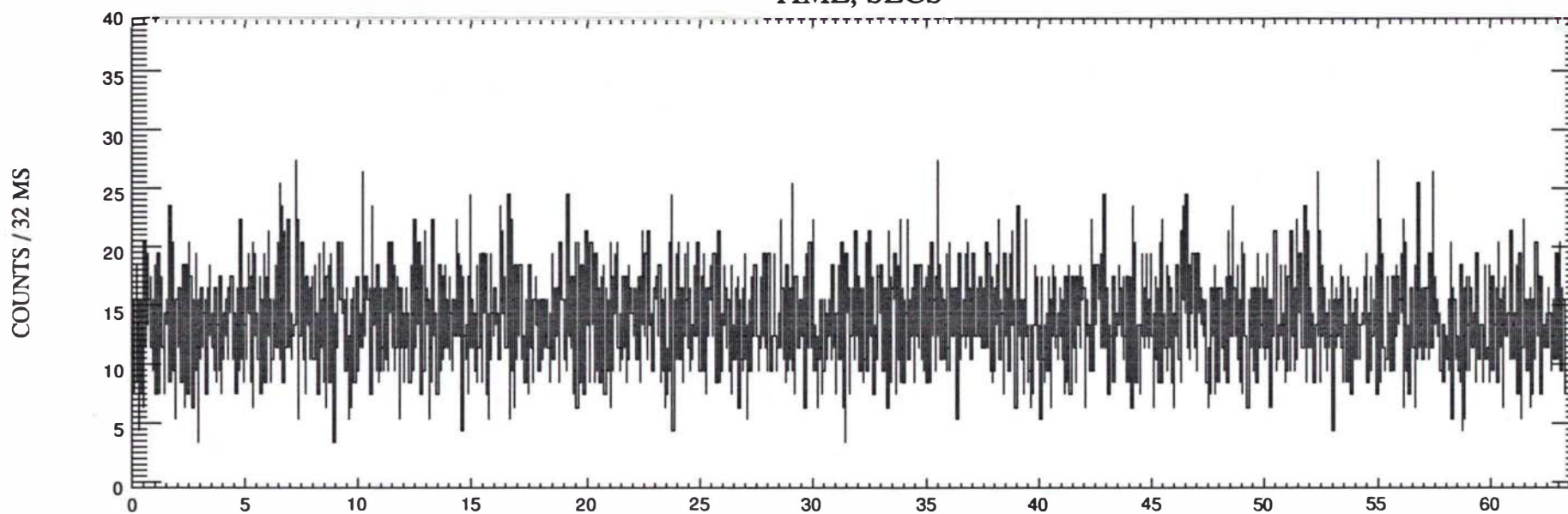


UNIV AL TIME

Burst Counter 8 at UT=23.596811514960 h=84948.521 s 23:35:48.521

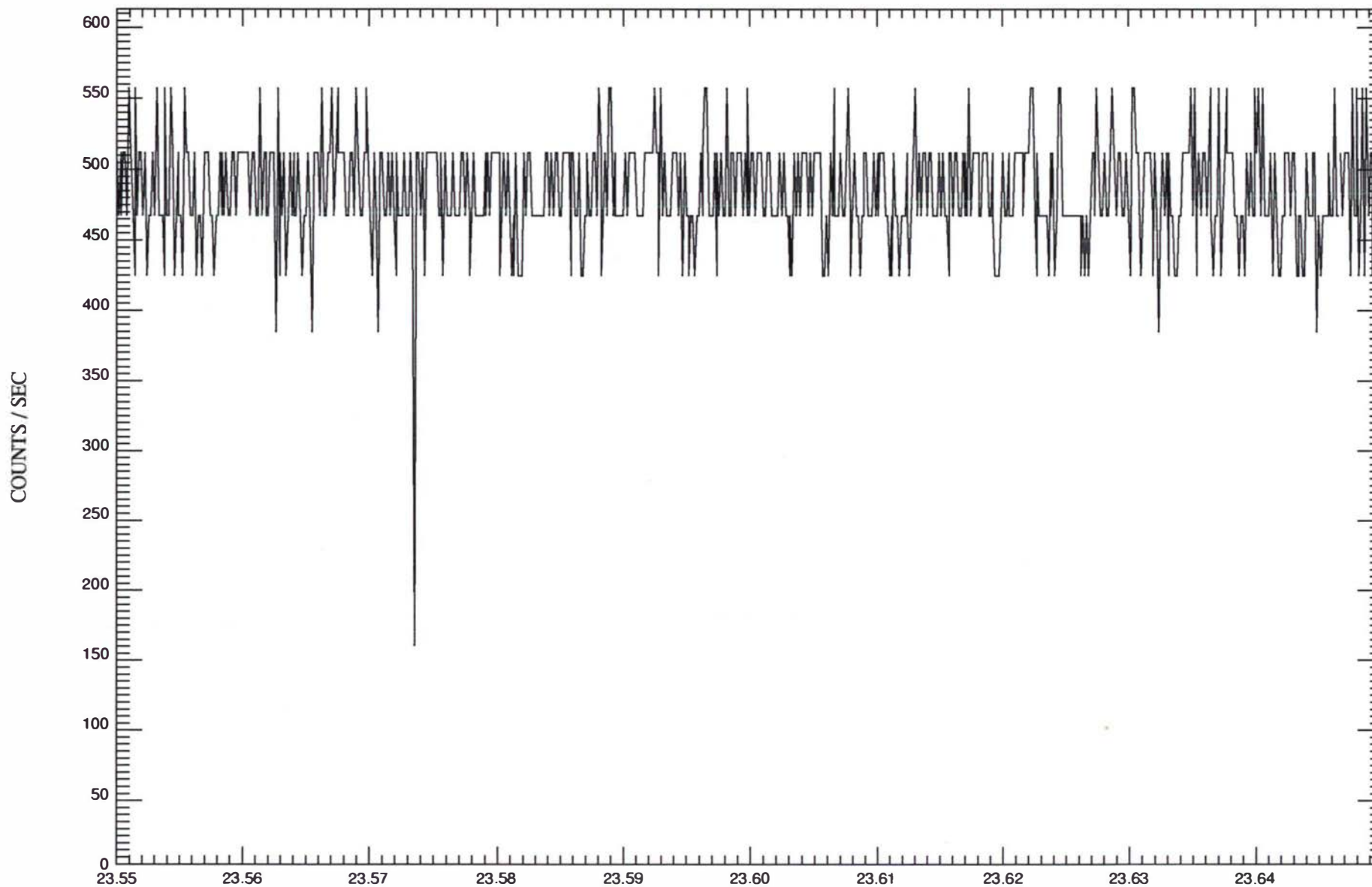


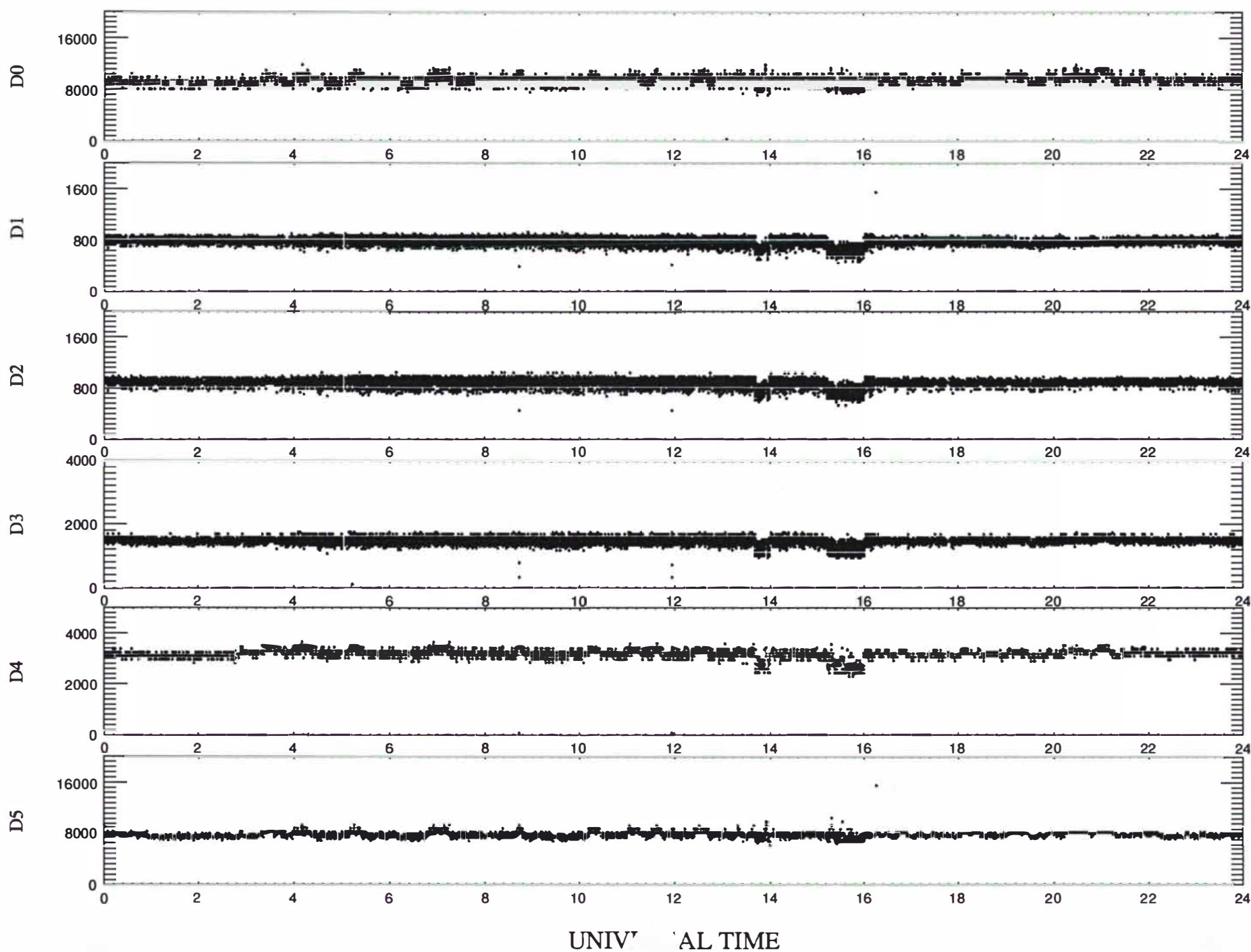
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Oct 14 17:03:06 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 RAA17488; Tue, 14 Oct 1997 17:03:01 -0700
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id RAA13940; Tue, 14 Oct 1997 17:02:58 -0700
Date: Tue, 14 Oct 1997 19:02:50 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971014190250.2021243e@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6425
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6425
EVENT OF 1997 OCT 11 DAY OF YEAR=284
EVENT CROSSING TIME AT BATSE : 42652. S. OR 11:50:52.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 206.000 -60.000
BATSE PEAK COUNTING RATE: 15000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/10/ 97 IS:
RA= 166.941 DEC= 15.312 DIST= 6.058 AU
BATSE-ULYSSES DISTANCE = 906317617. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -440.71 SECS.
CROSSING TIME AT ULYSSES IS 42211. S. OR 11:43:31 +/- 562.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/10/ 97 IS:
RA= 246.610 DEC= -22.846 DIST= 1.837 AU
MARS-BATSE DISTANCE = 274784288. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -628.81 SECS.
CROSSING TIME AT MARS IS 42023. S. OR 11:40:23 +/- 106.23 SECONDS

BATSE BURST TRIGGER

NO.: 6425

TIME: TJD=0732 SECONDS=42652

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=10.1 AZIMUTH=343.4 ERROR=1.6 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH STRUCTURE. DUR. APPROX. = 15 SEC.
SLIGHTLY VISIBLE ABOVE 300KEV.

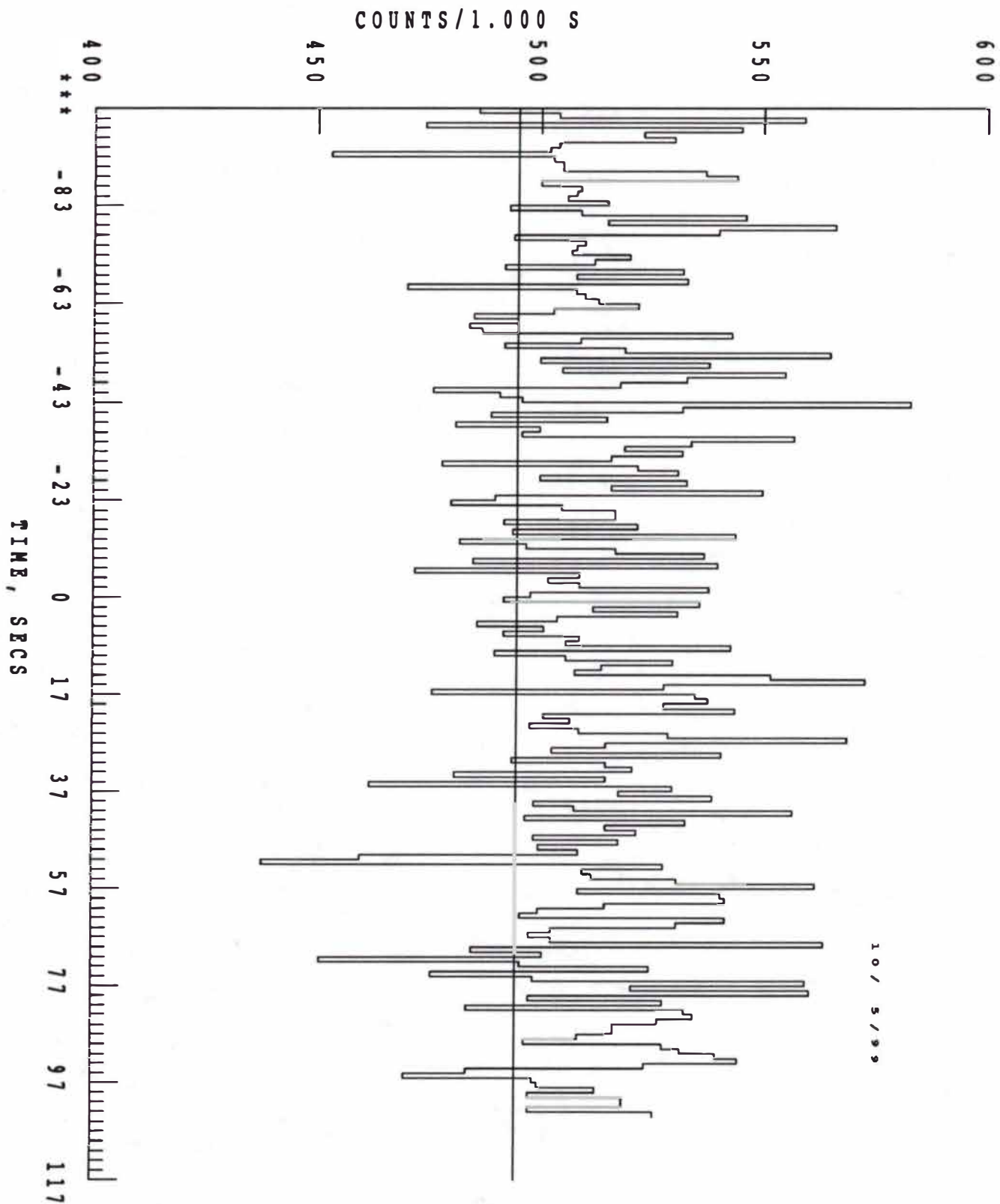
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6425	971011	10732	42652	15000	206	-60	15

NEAR

11/10/97

42883.847

100-1000 keV



BATSE BURST# 6425

ULYSSES RT

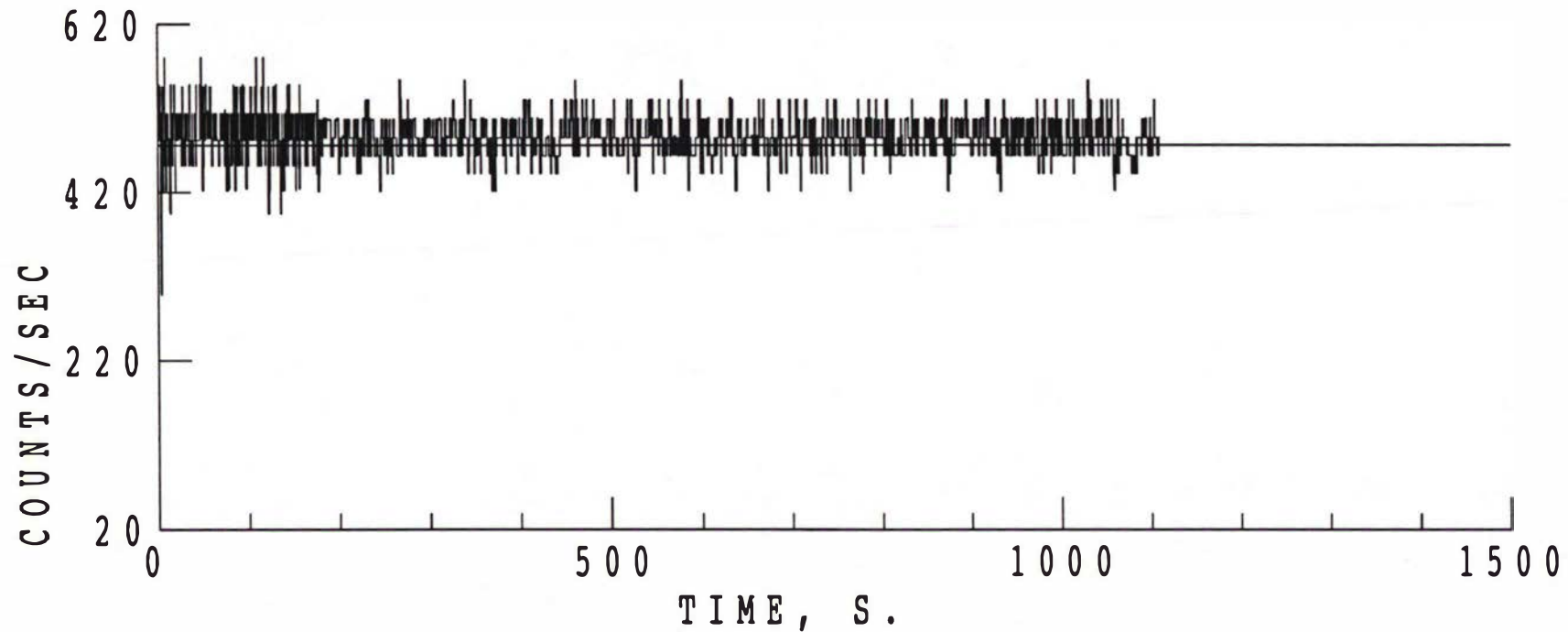
14 / 10 / 97

11 / 10 / 97 41658.391 s

INTERVALS REGROUPED BY 2

0 - 0 keV

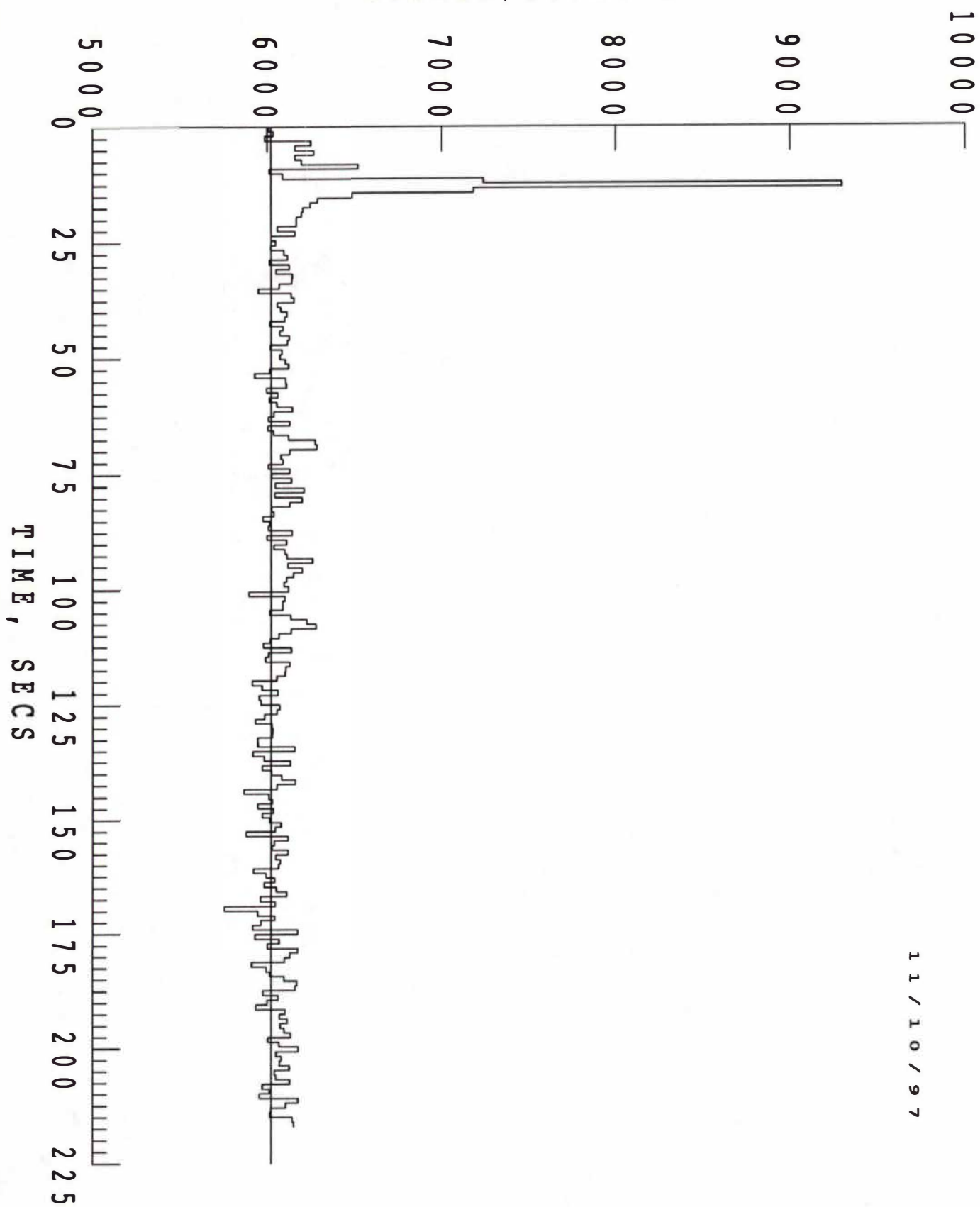
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6425 11/10/97 42640.097

25 - 100 keV

COUNTS/1.024 S



11/10/97

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Oct 14 17:01:40 1997
Date: Tue, 14 Oct 1997 19:01:18 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevsn.gsfc.nasa.gov, barthelmy@lhevsn.gsfc.nasa.gov,
bacodine@lhevsn.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevsn.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6426

TIME: TJD=0732 SECONDS=69919

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

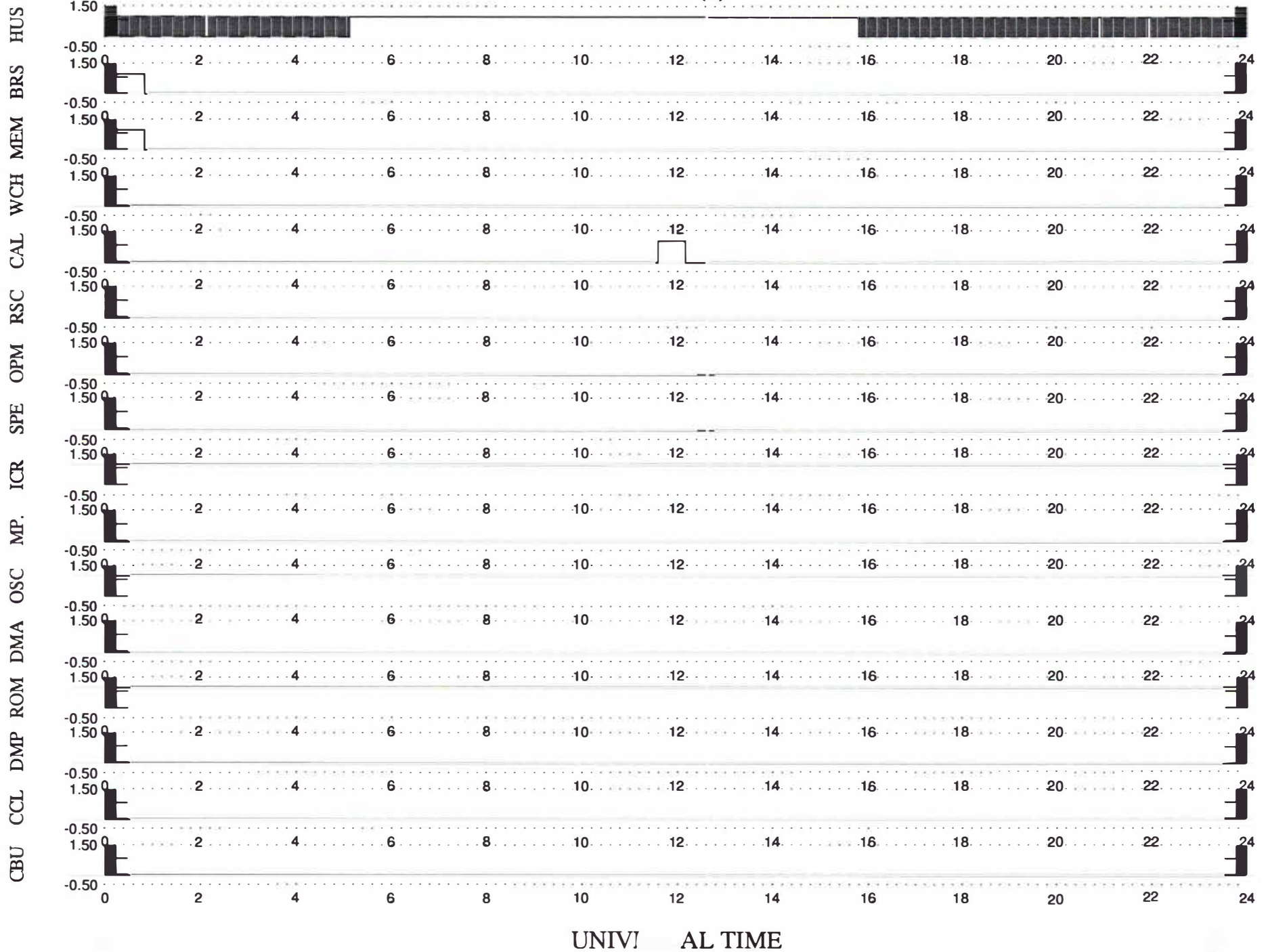
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

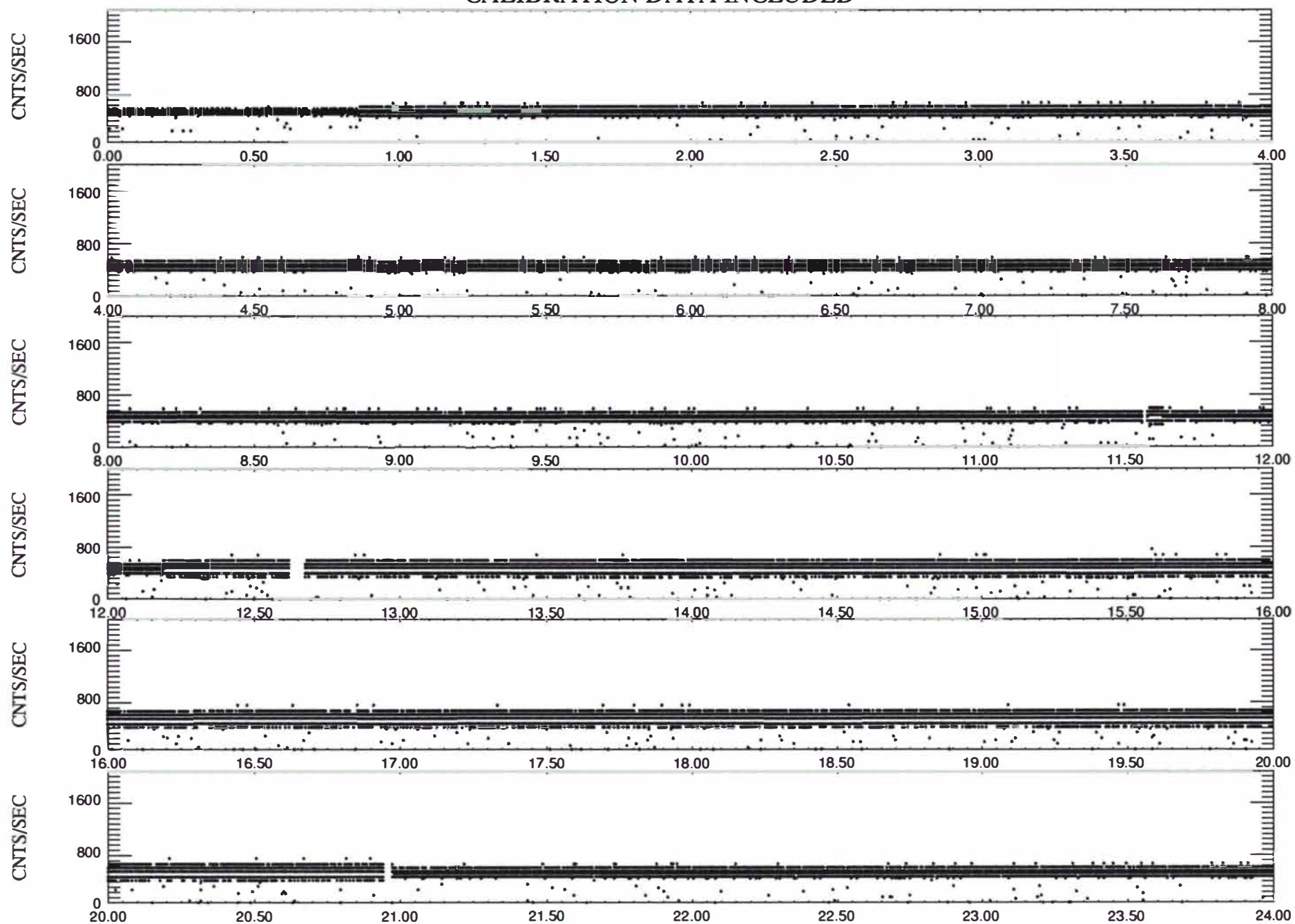
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT

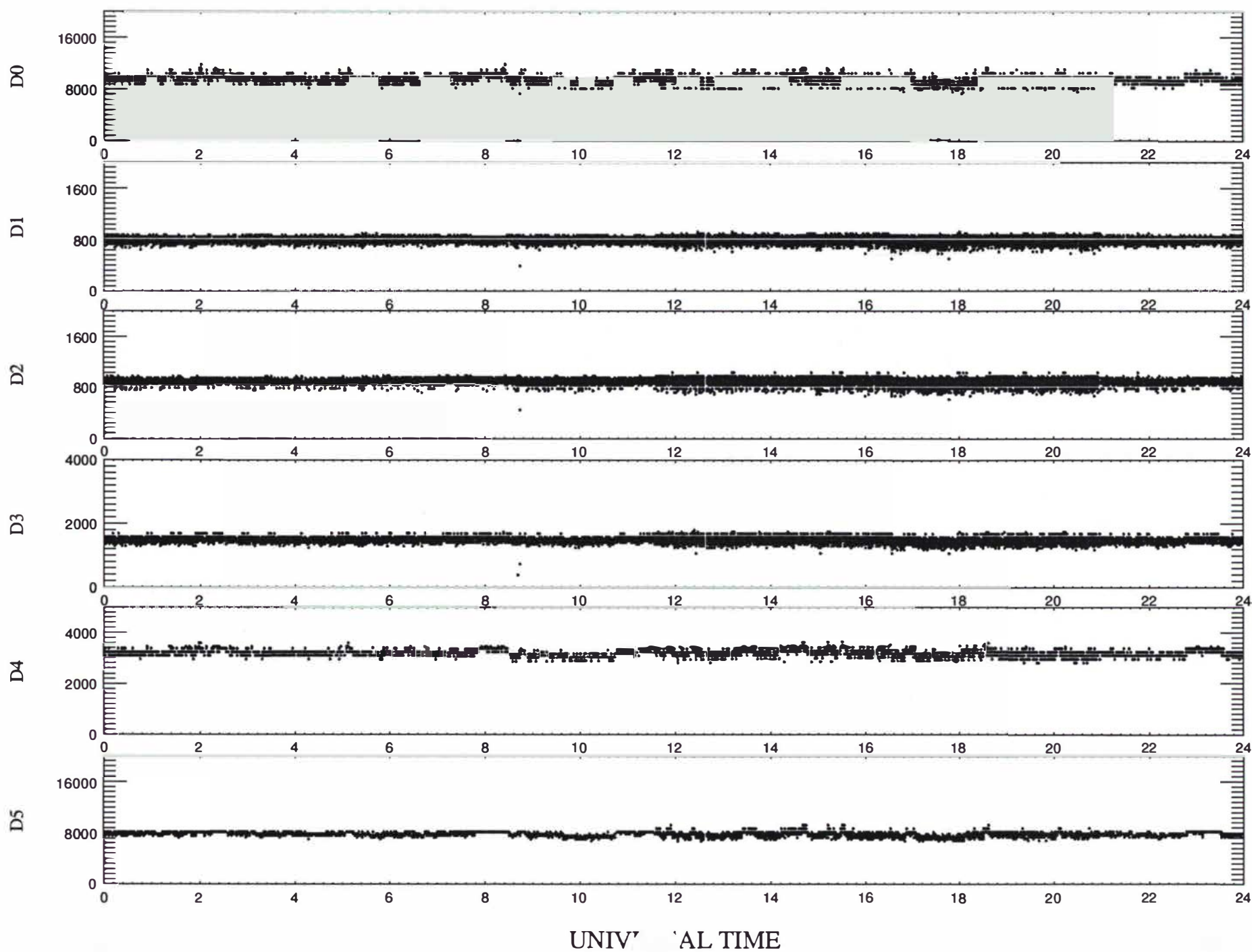
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIV. TIME



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Oct 14 12:11:47 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA12909; Tue, 14 Oct 1997 12:11:37 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA11601; Tue, 14 Oct 1997 12:11:11 -0700
Date: Tue, 14 Oct 1997 14:11:01 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971014141101.2021232f@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6427
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6427
EVENT OF 1997 OCT 12 DAY OF YEAR=285
EVENT CROSSING TIME AT BATSE : 28860. S. OR 08:01:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 330.000 41.000
BATSE PEAK COUNTING RATE: 7900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/10/ 97 IS:
RA= 167.040 DEC= 15.245 DIST= 6.051 AU
BATSE-ULYSSES DISTANCE = 905172478. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1581.18 SECS.
CROSSING TIME AT ULYSSES IS 30441. S. OR 08:27:21 +/- 520.59 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/10/ 97 IS:
RA= 247.377 DEC= -22.963 DIST= 1.841 AU
MARS-BATSE DISTANCE = 275426112. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 153.17 SECS.
CROSSING TIME AT MARS IS 29013. S. OR 08:03:33 +/- 159.60 SECONDS

BATSE BURST TRIGGER

NO.: 06427

TIME: TJD=0733 SECONDS=28860

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=139.0 AZIMUTH=236.3 ERROR=7.166 DEGREES

COMMENTS:

GRB. DURATION ABOUT 0.25 SEC. SINGLE PULSE. VISIBLE ABOVE 300 KEV.

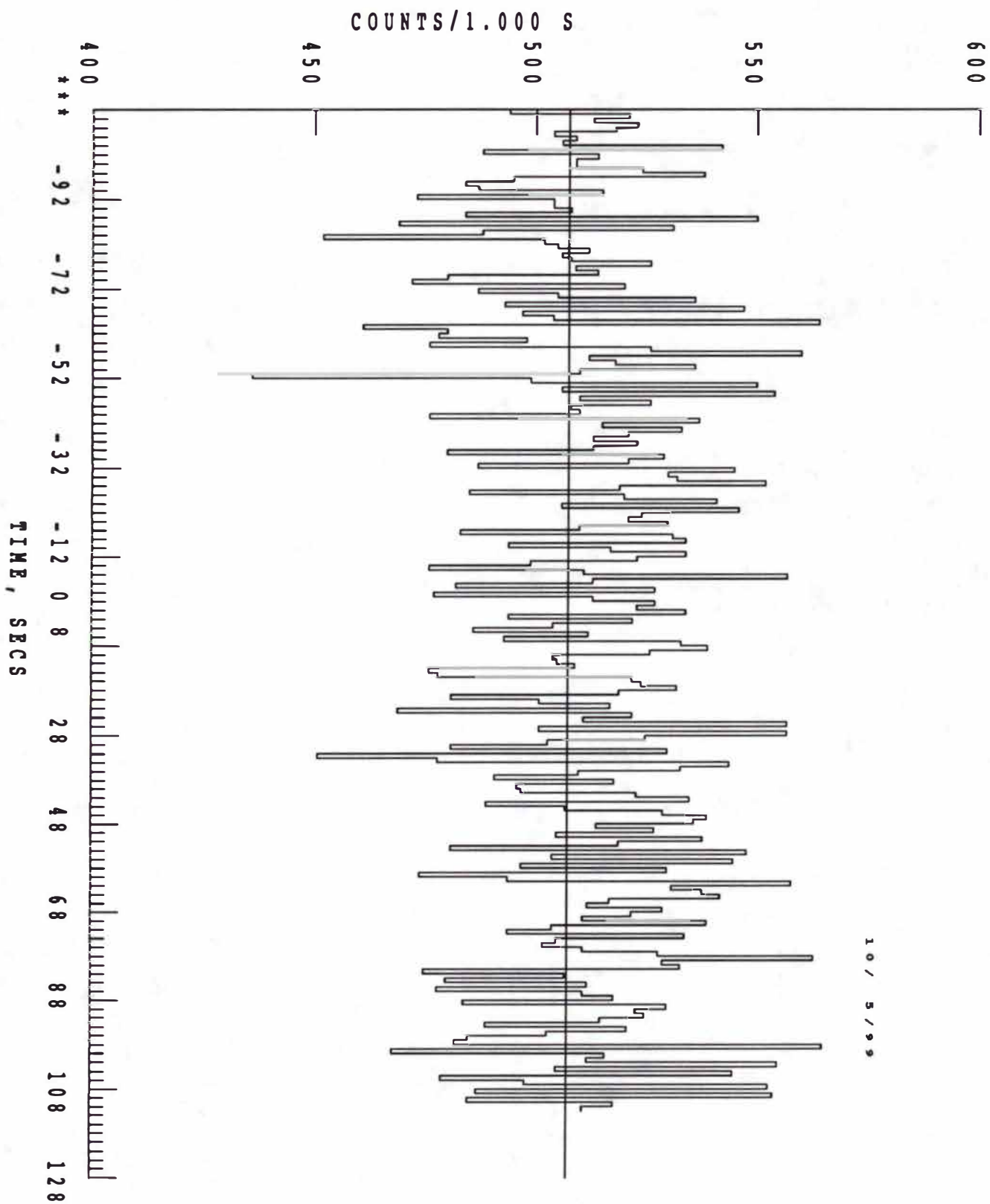
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6427	971012	10733	28860	7900	330	+41	.25

NEAR

12/10/97

28836.834

100-1000 keV



BATSE BURST# 6427

ULYSSES RT

14 / 10 / 97

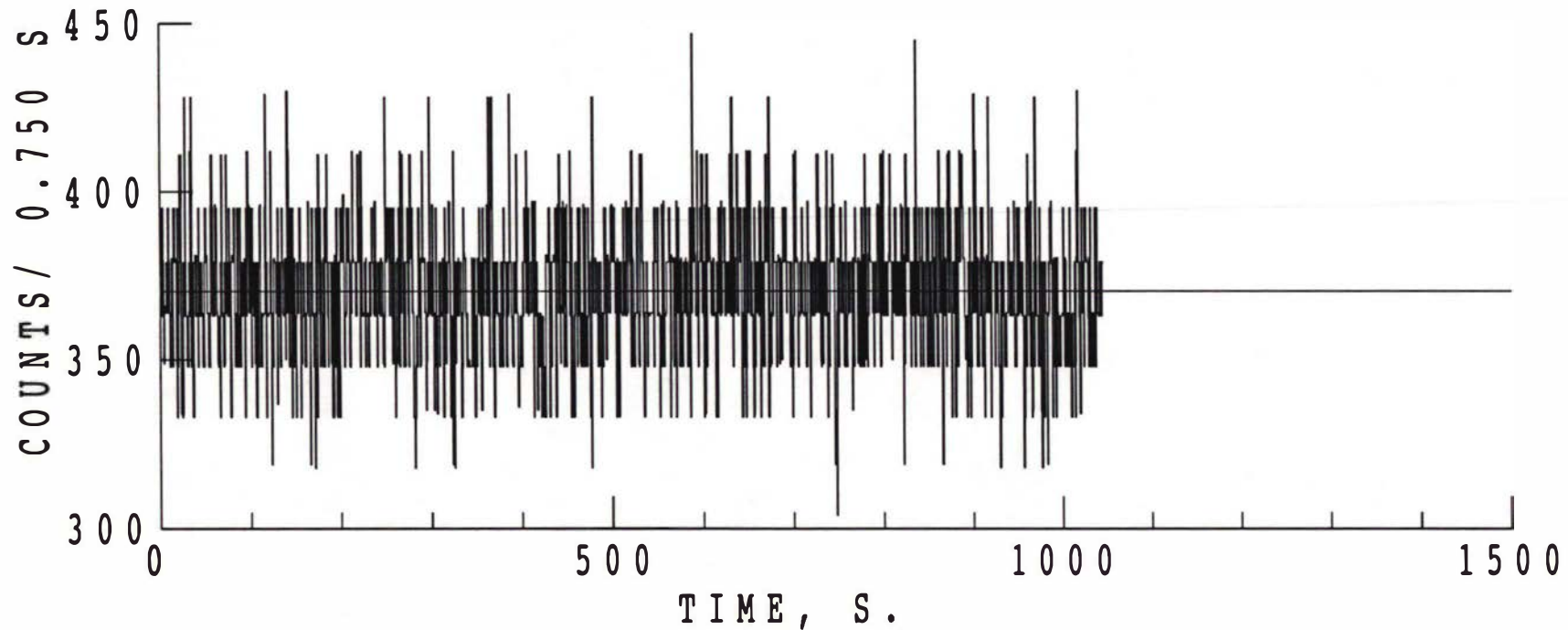
12 / 10 / 97 29916.229 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

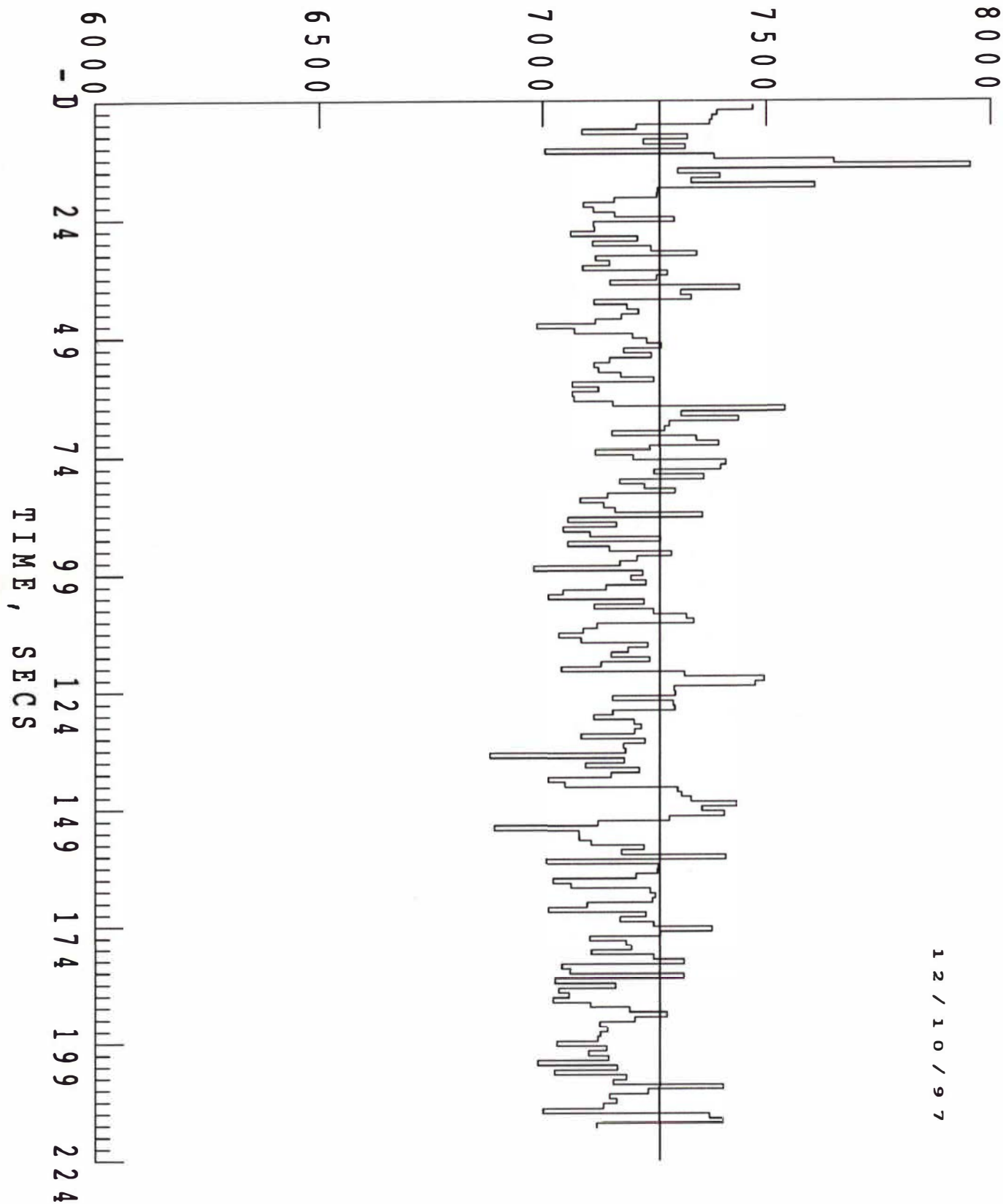
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

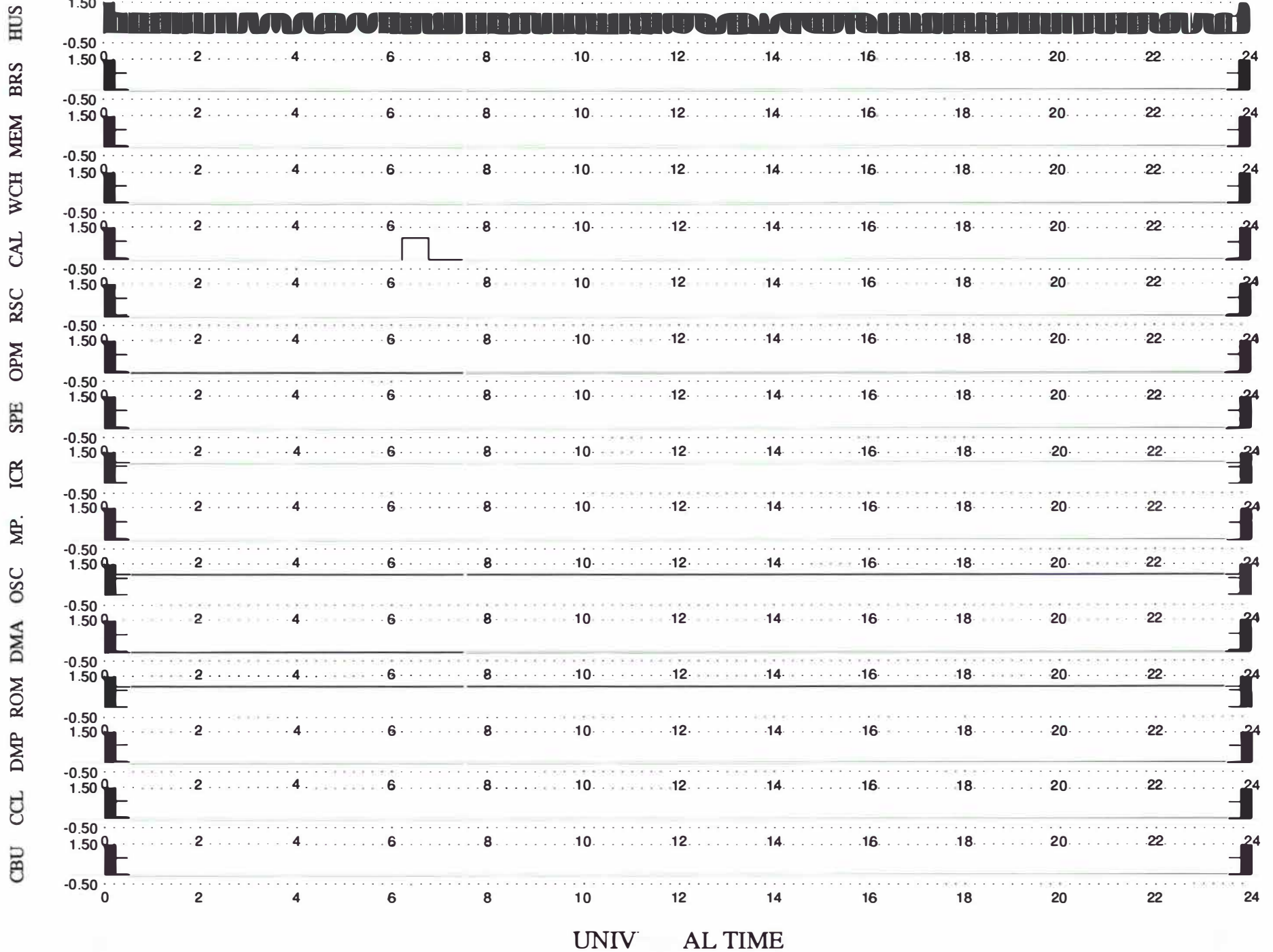


BACODINE 6427 12/10/97 28847.841
25- 100 keV

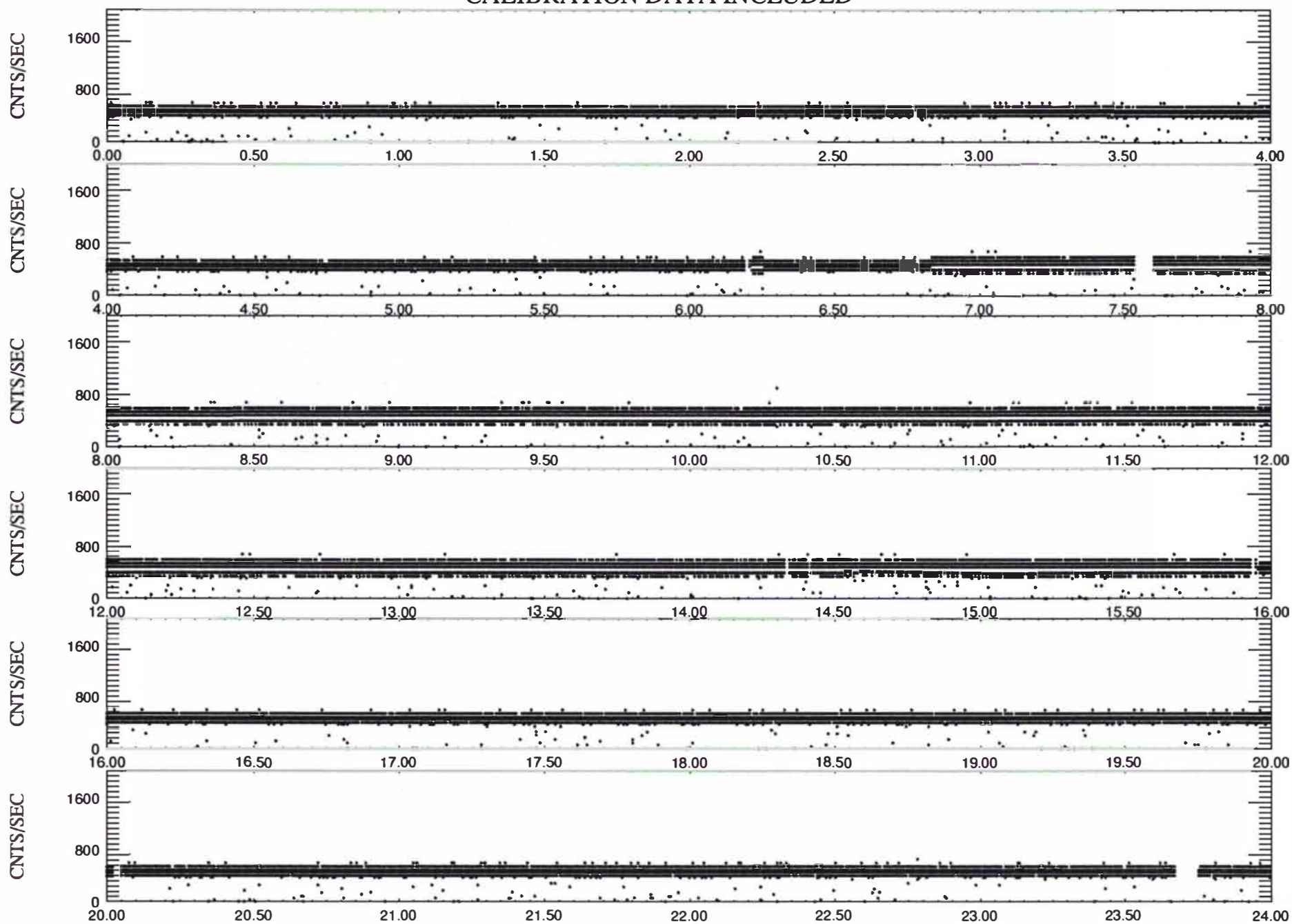
COUNTS/1.024 S



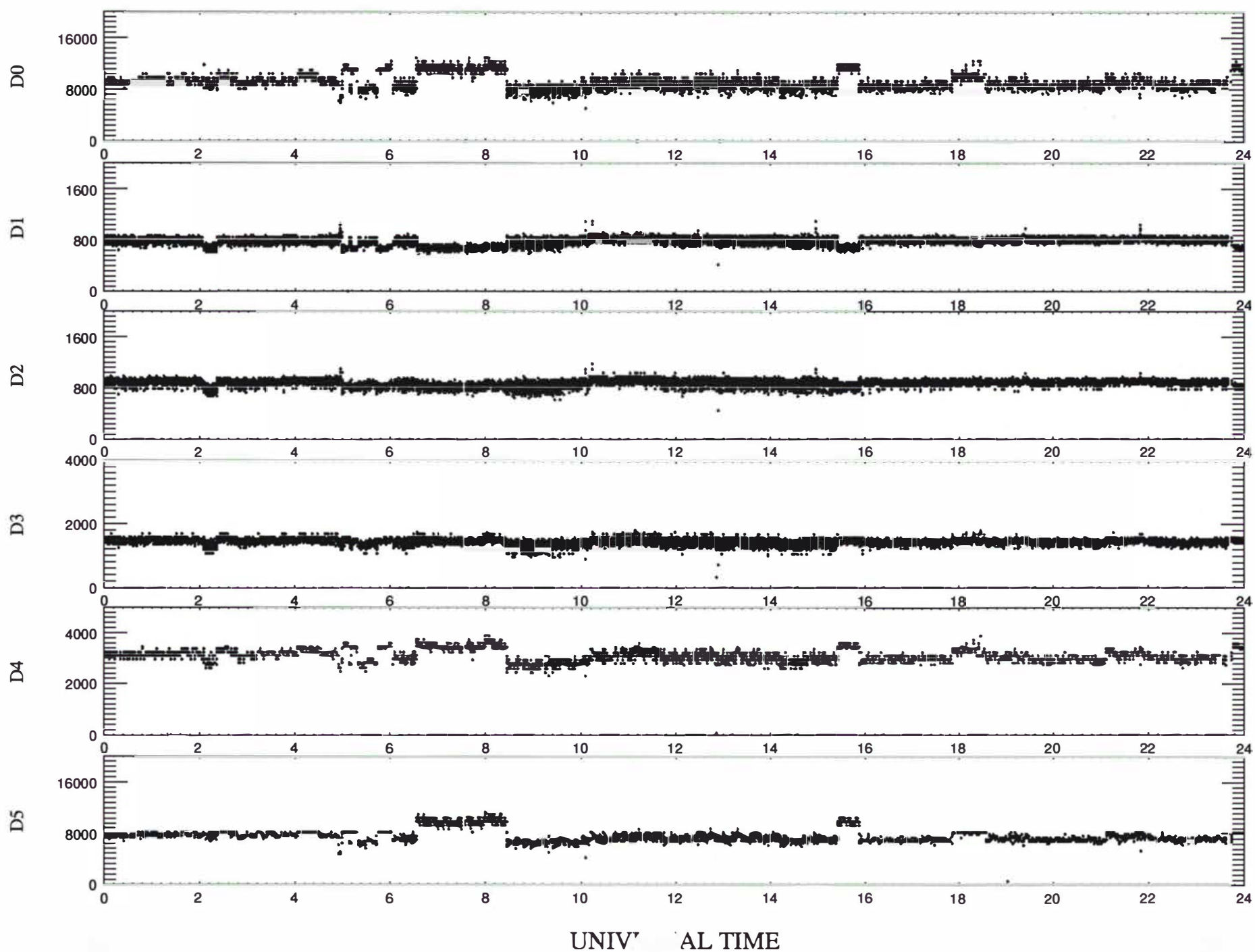
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIV AL TIME

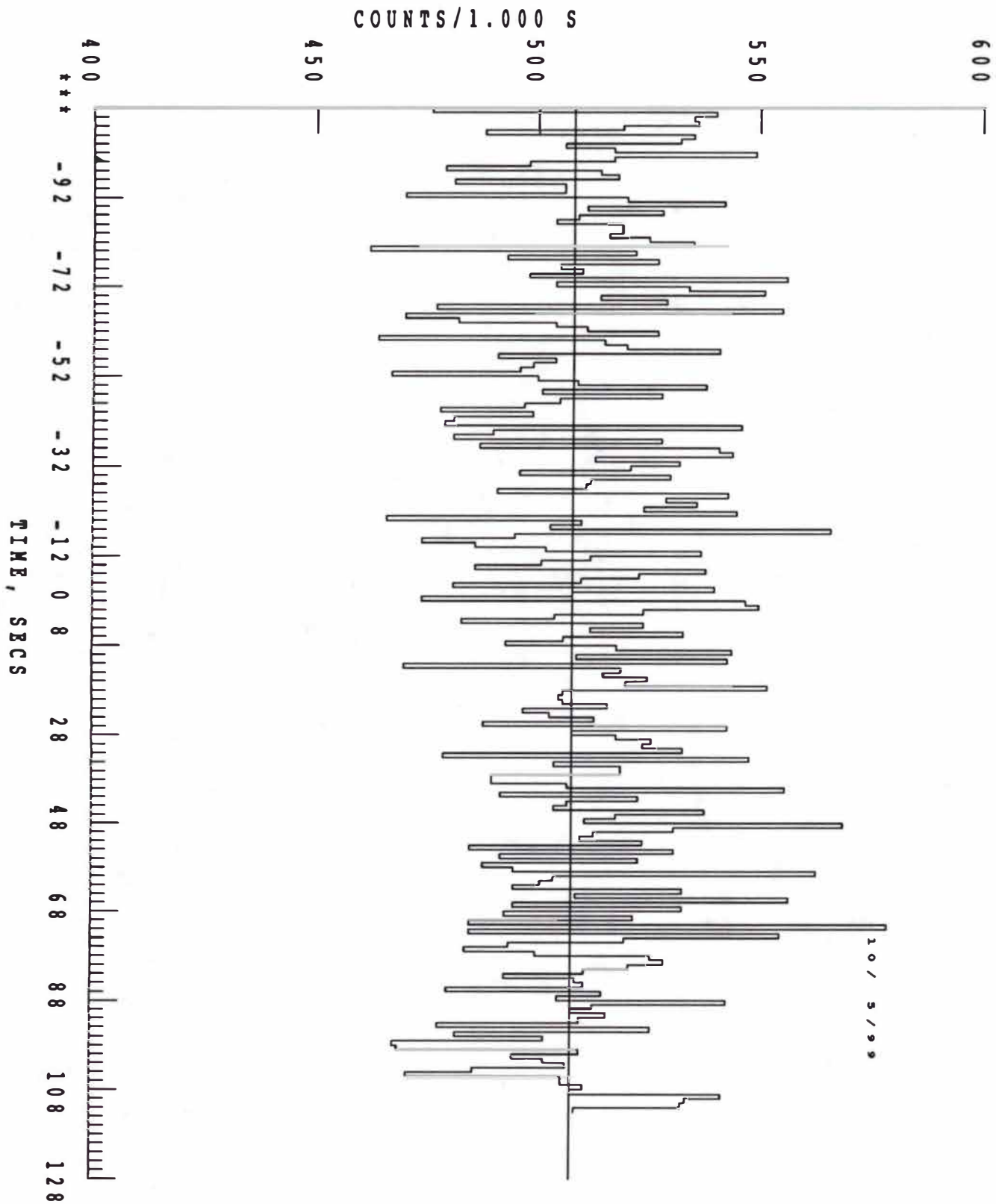


NEAR

13/10/97

31408.817

100-1000 keV



From HENZE@BATSE.MSFC.NASA.GOV Tue Oct 14 13:57:47 1997
Date: Tue, 14 Oct 1997 15:56:58 -0500 (CDT)
From: Bill Henze (205-544-7616) <HENZE@BATSE.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@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.: 6429

TIME: TJD=0734 SECONDS=50961

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT (NEAR AUSTRALIA).

From HENZE@BATSE.MSFC.NASA.GOV Tue Oct 14 14:00:31 1997
Date: Tue, 14 Oct 1997 15:59:42 -0500 (CDT)
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@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@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.: 6430

TIME: TJD=0734 SECONDS=56528

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT (NEAR AUSTRALIA).

From HENZE@BATSE.MSFC.NASA.GOV Wed Oct 15 09:58:13 1997
Date: Wed, 15 Oct 1997 11:57:17 -0500 (CDT)
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@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@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.: 6431

TIME: TJD=0734 SECONDS=73769

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT ON TAIL OF SAA EXIT.

From HENZE@SSLMOR.msfc.nasa.gov Thu Oct 16 12:31:59 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 MAA07560; Thu, 16 Oct 1997 12:31:48 -0700
From: HENZE@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA27957; Thu, 16 Oct 1997 12:31:47 -0700
Date: Thu, 16 Oct 1997 14:30:56 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971016143056.21e002b8@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6432
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6432
EVENT OF 1997 OCT 13 DAY OF YEAR=286
EVENT CROSSING TIME AT BATSE : 86228. S. OR 23:57:08.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 222.000 -64.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/10/ 97 IS:
RA= 167.233 DEC= 15.114 DIST= 6.035 AU
BATSE-ULYSSES DISTANCE = 902847391. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -29.48 SECS.
CROSSING TIME AT ULYSSES IS 86199. S. OR 23:56:38 +/- 572.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/10/ 97 IS:
RA= 248.147 DEC= -23.076 DIST= 1.845 AU
MARS-BATSE DISTANCE = 276064576. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=135.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -657.77 SECS.
CROSSING TIME AT MARS IS 85570. S. OR 23:46:10 +/- 101.90 SECONDS

BATSE BURST TRIGGER

NO.: 6432

TIME: TJD=0734 SECONDS=86228

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=008.2 AZIMUTH=289.4 ERROR=002.1 DEGREES

COMMENTS:

SINGLE PULSE, DUR. APPROX. 10 S, FOLLOWED BY POSSIBLE EXTENDED EMISSION TO
APPROX. T+50 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6432	971013	10734	86228	6000	222	-64	10

BATSE BURST# 6432

ULYSSES RT

8 / 3 / 98

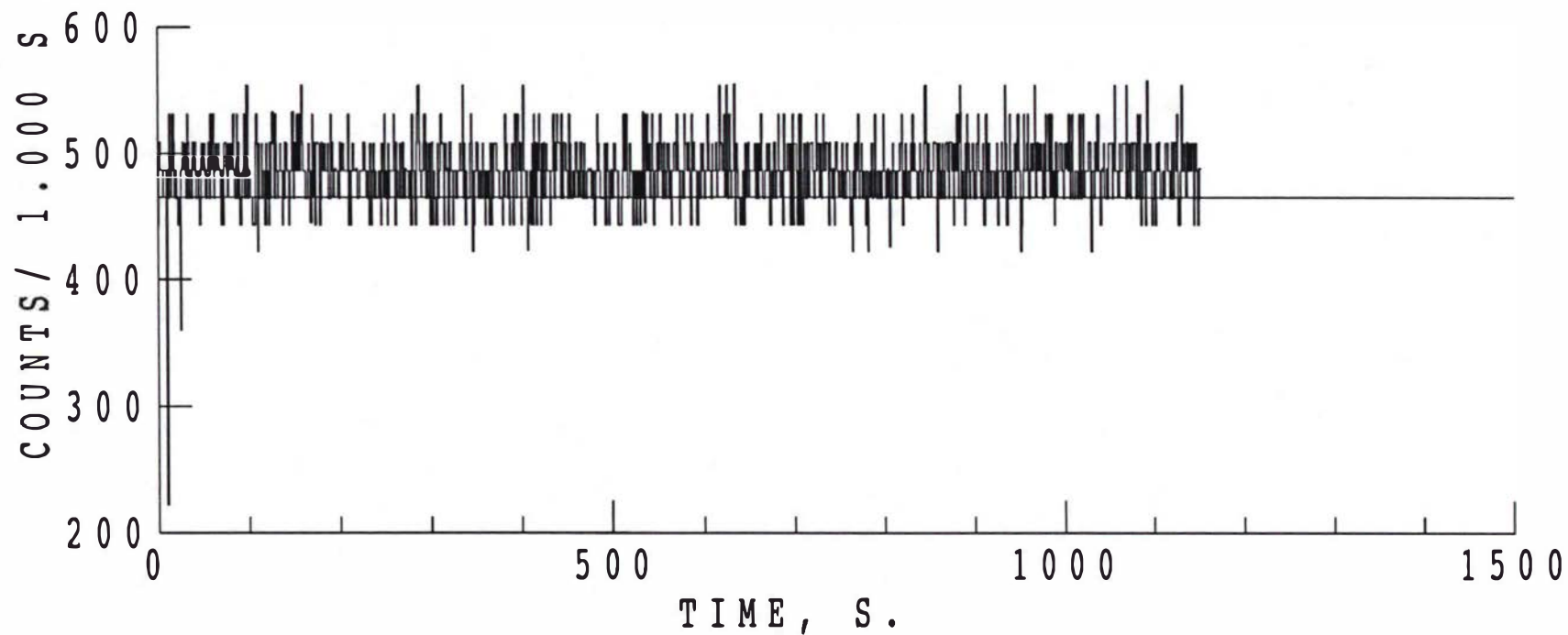
13/10/97 85608.062 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

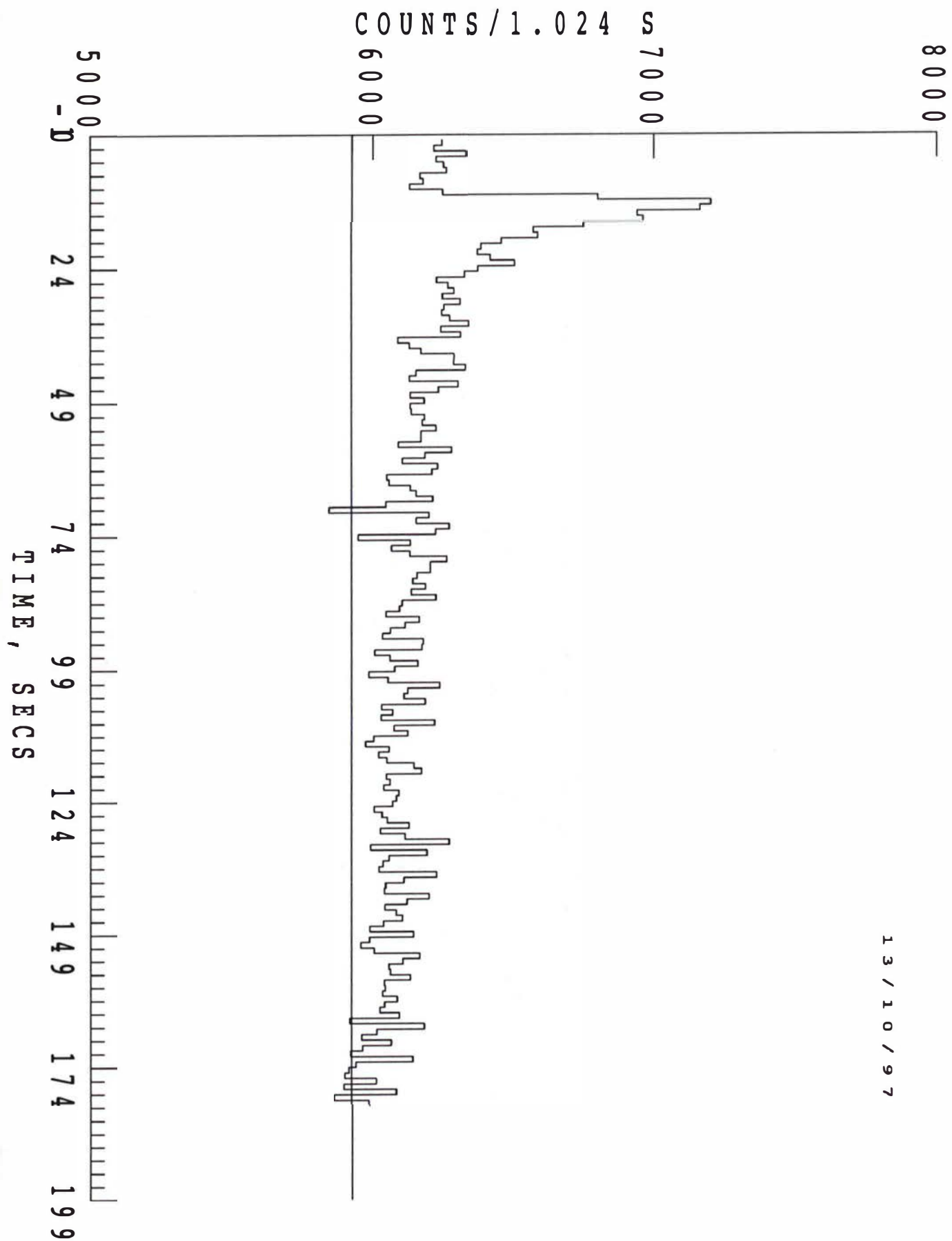
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

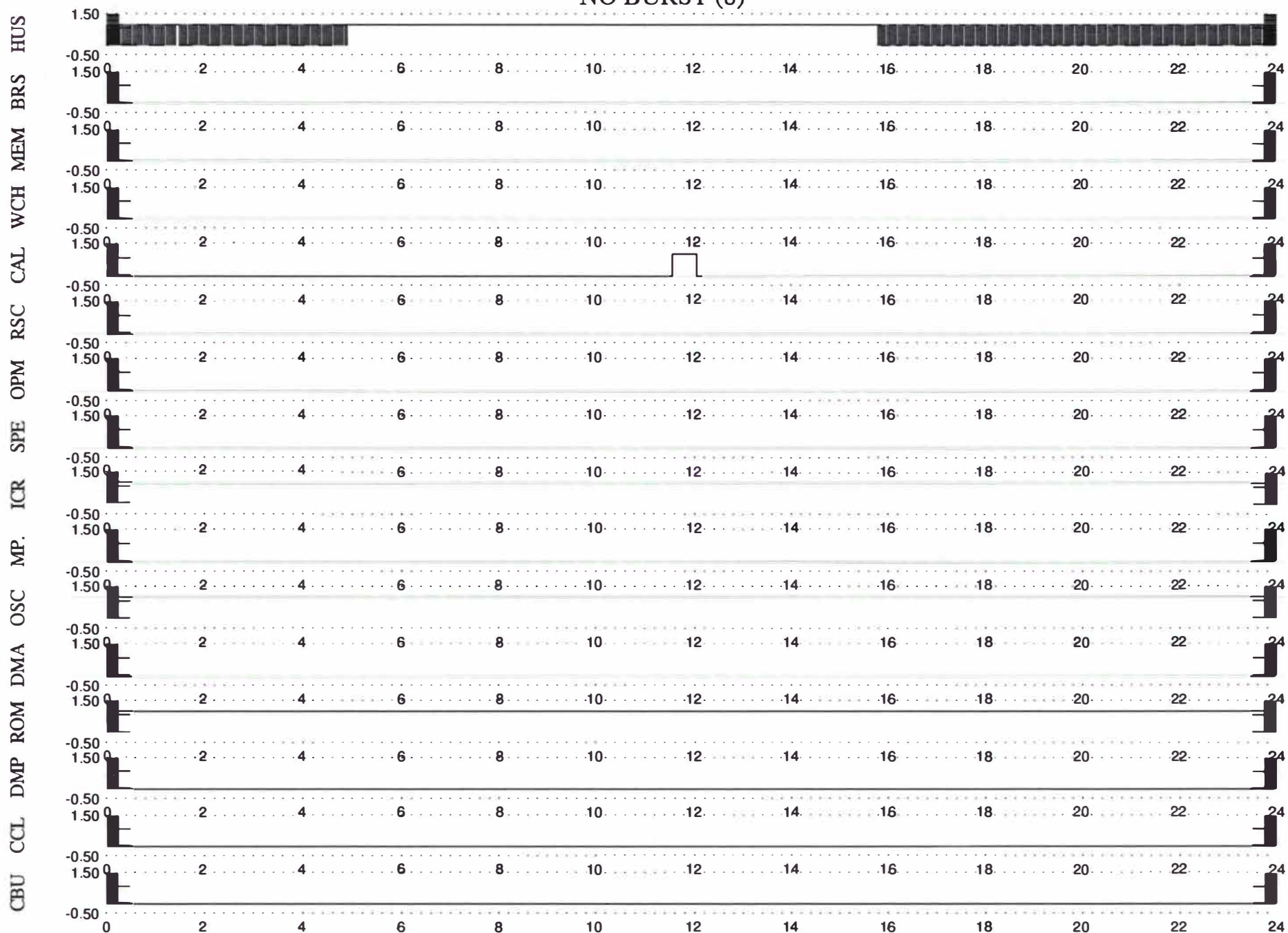


BACODINE 6432 13/10/97 86217.441

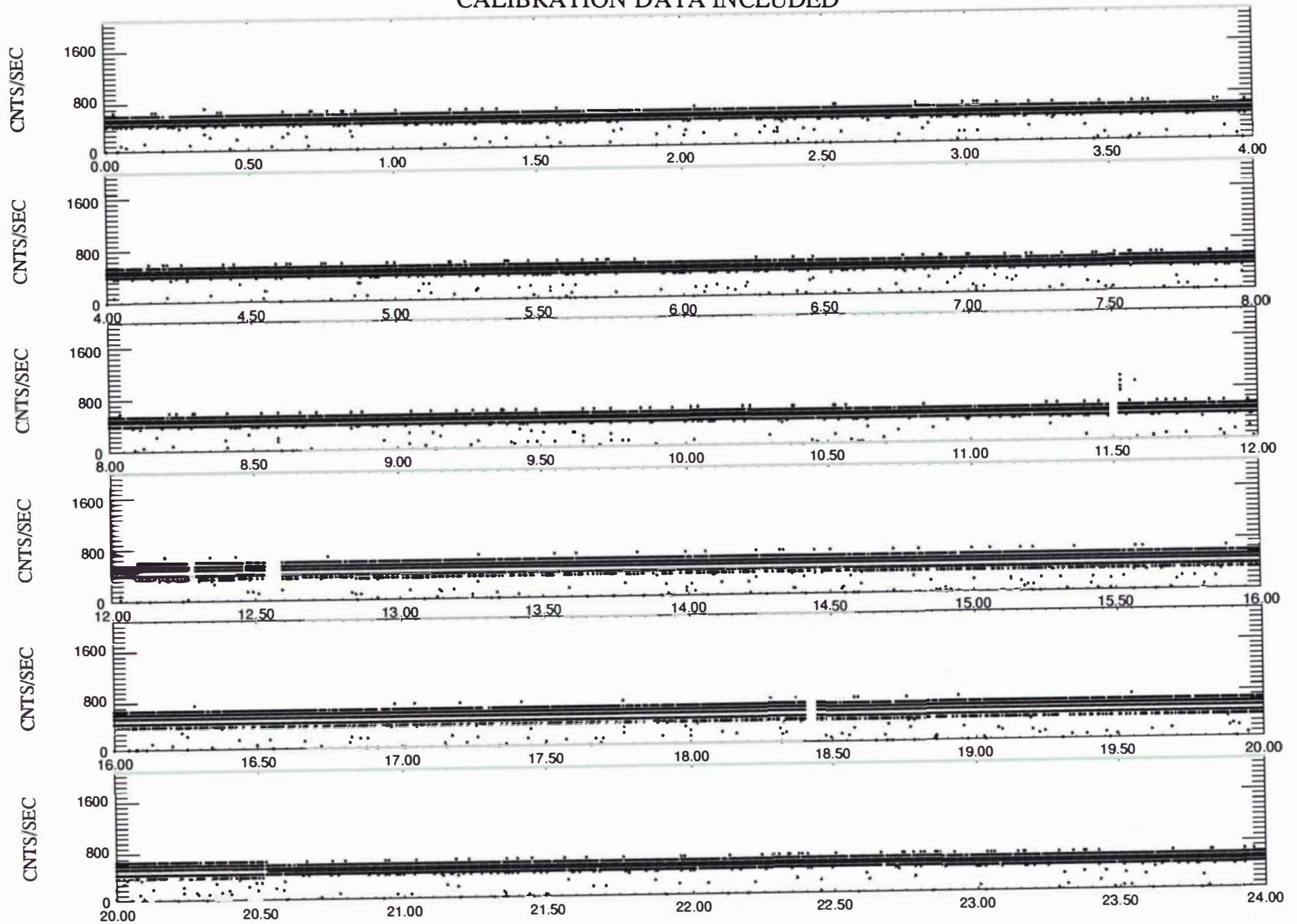
25 - 100 keV



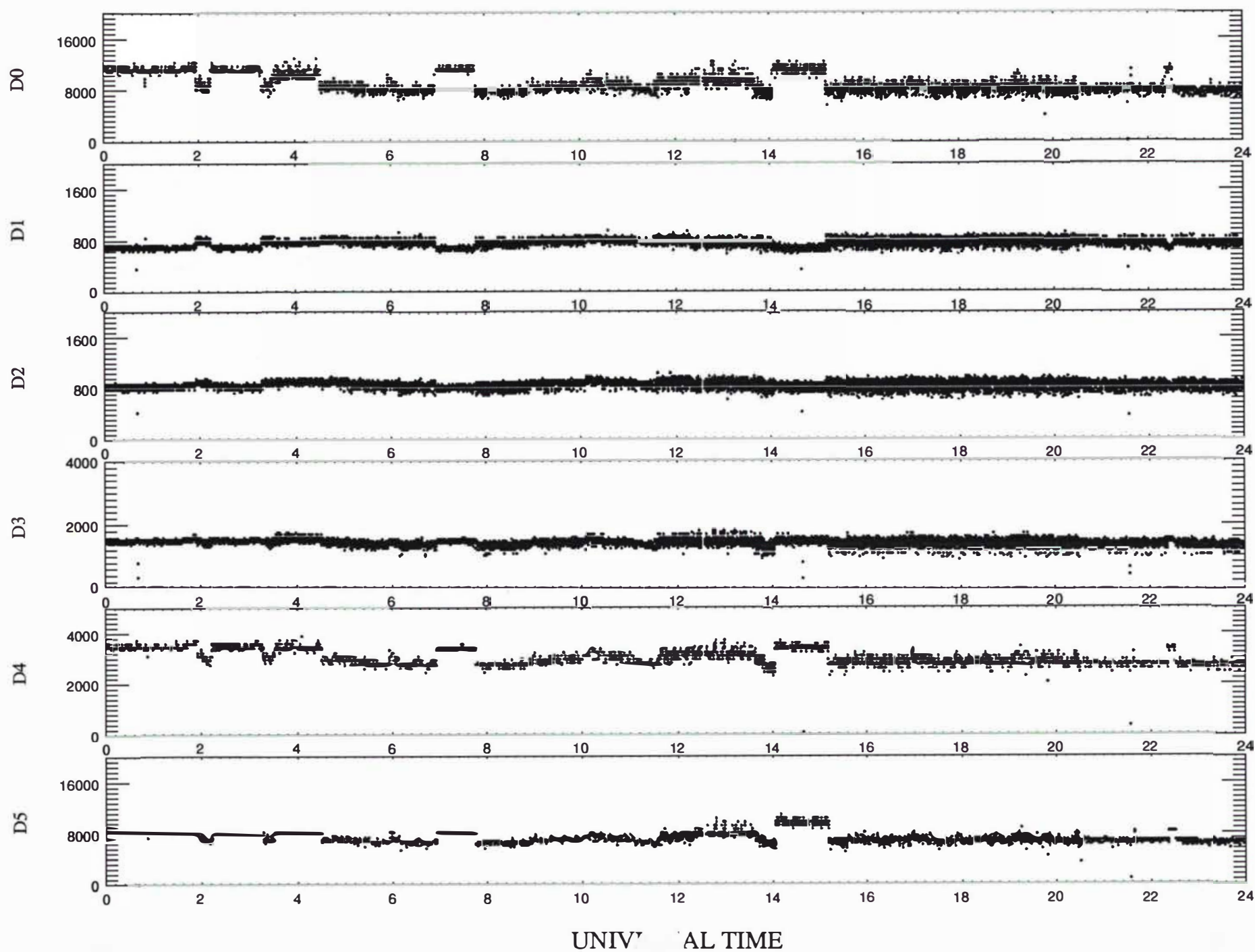
UNIV. AL TIME



CALIBRATION DATA INCLUDED

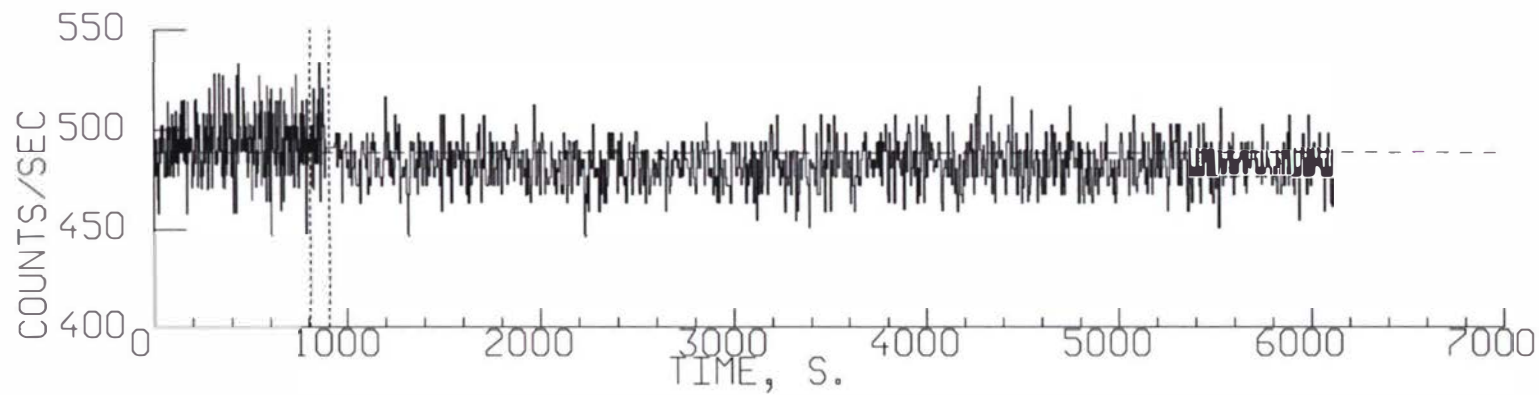


UNIV' 'AL TIME



ULYSSES RT
14/10/97 43920.066 s
INTERVALS REGROUPED BY 10
22- 147 keV

15/12/11



From SURASAK@SSLLES.MSFC.NASA.GOV Thu Oct 16 11:31:42 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA06964; Thu, 16 Oct 1997 11:31:36 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA27260; Thu, 16 Oct 1997 11:31:21 -0700
Date: Thu, 16 Oct 1997 13:30:06 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971016133006.20212896@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6433
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6433
EVENT OF 1997 OCT 14 DAY OF YEAR=287
EVENT CROSSING TIME AT BATSE : 19468. S. OR 05:24:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 285.000 -53.000
BATSE PEAK COUNTING RATE: 17600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/10/ 97 IS:
RA= 167.259 DEC= 15.096 DIST= 6.033 AU
BATSE-ULYSSES DISTANCE = 902518109. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1440.41 SECS.
CROSSING TIME AT ULYSSES IS 20908. S. OR 05:48:28 +/- 530.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/10/ 97 IS:
RA= 248.920 DEC= -23.186 DIST= 1.850 AU
MARS-BATSE DISTANCE = 276699744. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -702.88 SECS.
CROSSING TIME AT MARS IS 18765. S. OR 05:12:45 +/- 93.18 SECONDS

BATSE BURST TRIGGER

NO.: 06433

TIME: TJD=0735 SECONDS=19468

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.5 AZIMUTH=235.3 ERROR=4.297 DEGREES

COMMENTS:

GRB. DURATION ABOUT 0.2 SEC. SINGLE PULSE WITH SUBSTRUCTURE. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6433	971014	10735	19468	17600	285	-53	.2

BATSE BURST# 6433

ULYSSES RT

16 / 10 / 97

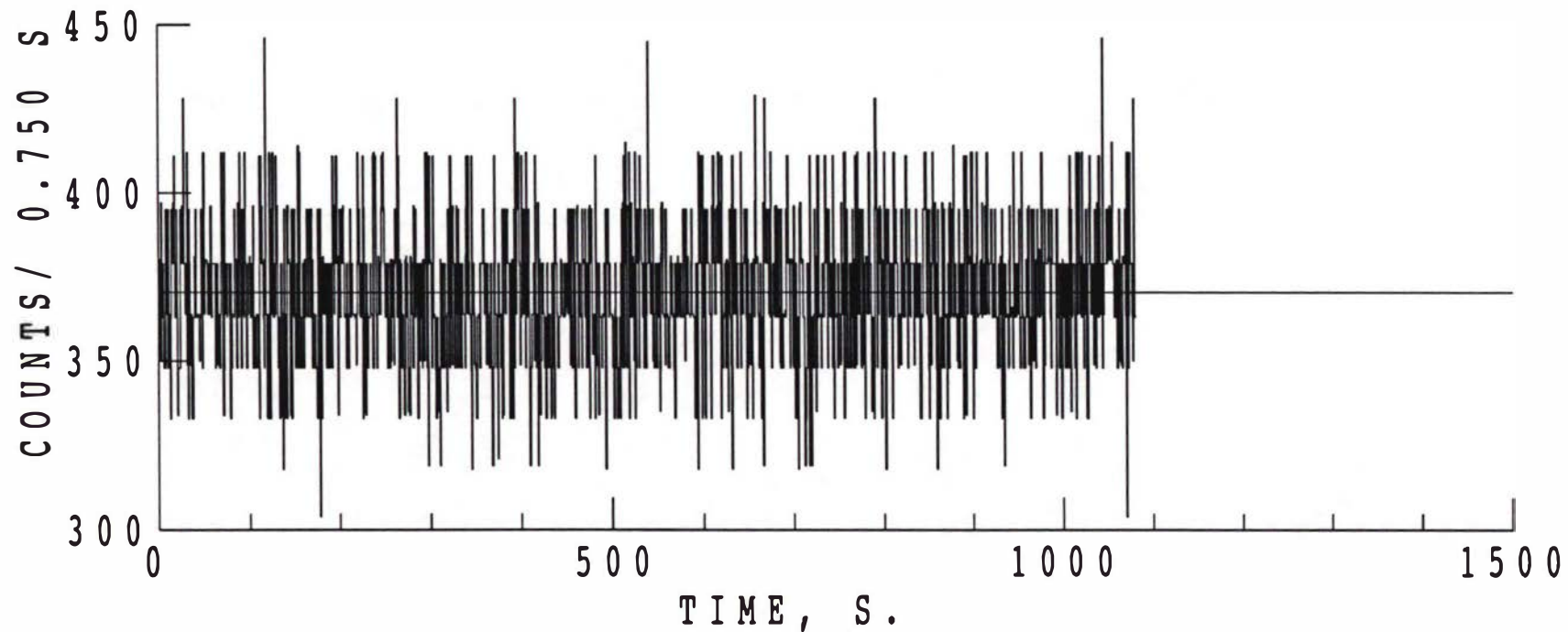
14 / 10 / 97 20376.057 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

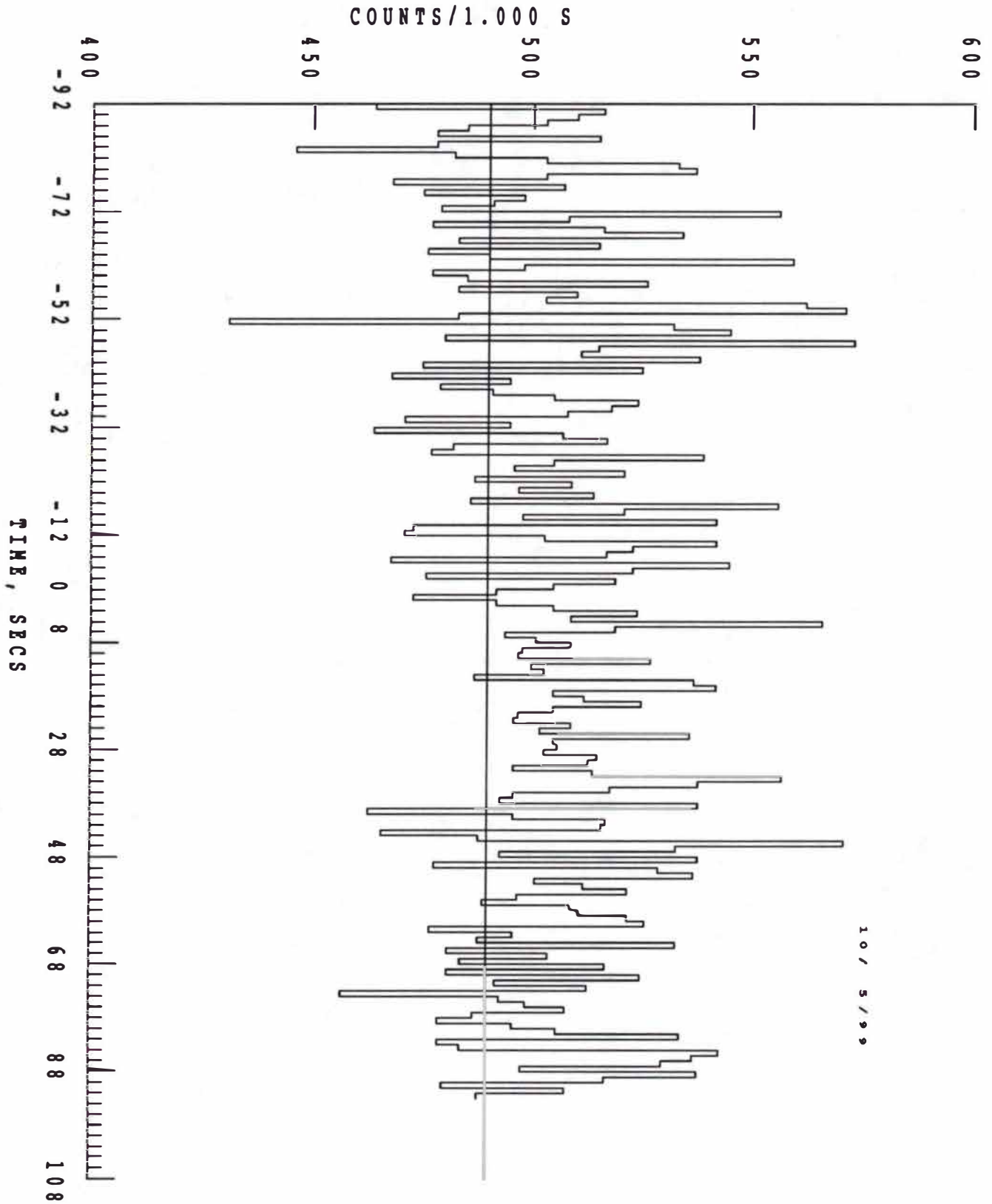


NEAR

14/10/97

19743.802

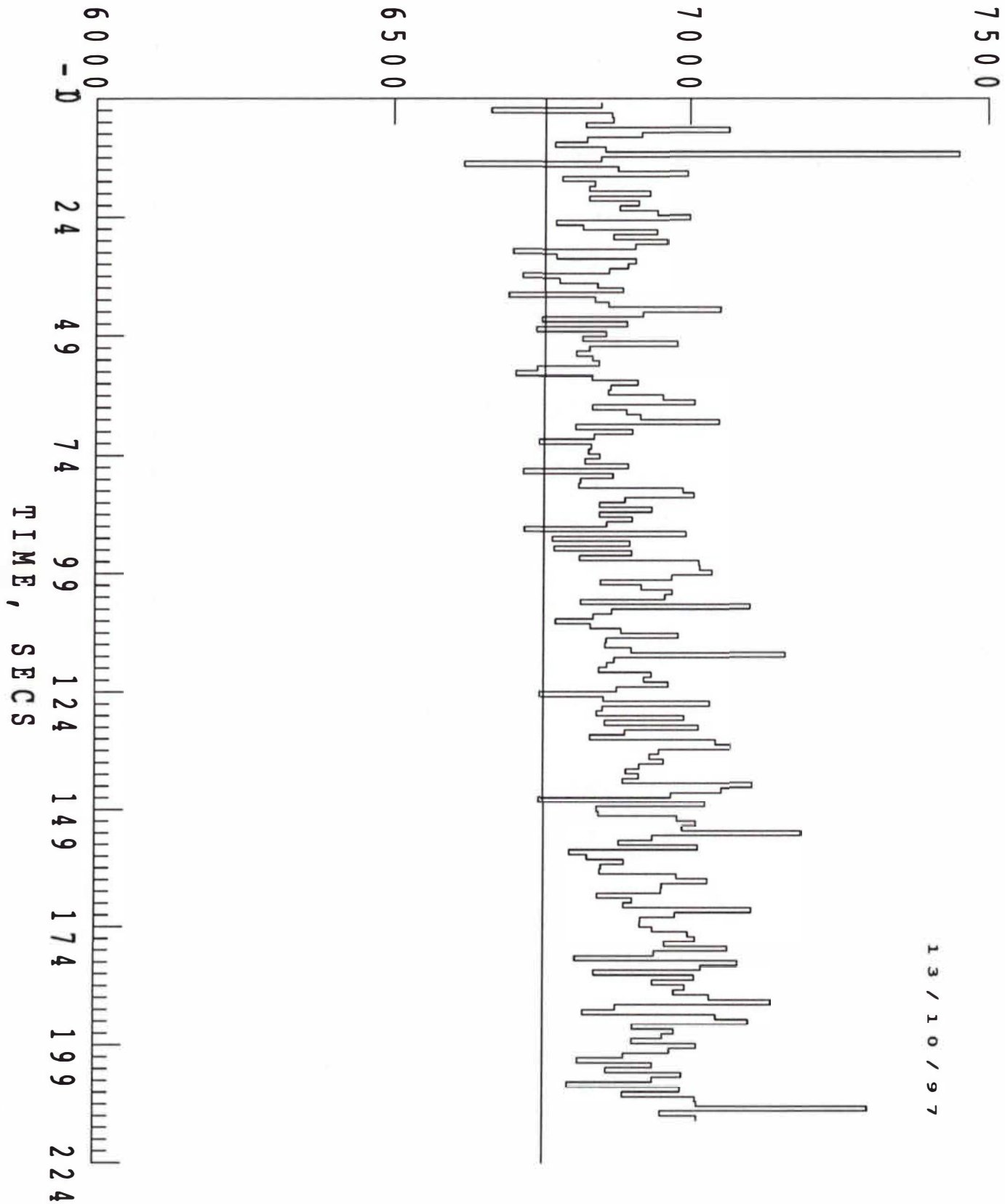
100-1000 keV



BACODINE 6433 14/10/97 19457.761

25- 100 keV

COUNTS/1.024 S



From SAHI@fender.msfc.nasa.gov Wed Oct 15 12:00:11 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 MAA25891; Wed, 15 Oct 1997 12:00:06 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA19291; Wed, 15 Oct 1997 12:00:03 -0700
Date: Wed, 15 Oct 1997 13:57:01 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971015135701.21824a20@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6428
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6428
EVENT OF 1997 OCT 14 DAY OF YEAR=287
EVENT CROSSING TIME AT BATSE : 31403. S. OR 08:43:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 167.000 3.000
BATSE PEAK COUNTING RATE: 700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/10/ 97 IS:
RA= 167.275 DEC= 15.086 DIST= 6.032 AU
BATSE-ULYSSES DISTANCE = 902317230. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=167.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2943.06 SECS.
CROSSING TIME AT ULYSSES IS 28460. S. OR 07:54:19 +/- 114.74 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/10/ 97 IS:
RA= 248.920 DEC= -23.186 DIST= 1.850 AU
MARS-BATSE DISTANCE = 276699744. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -100.07 SECS.
CROSSING TIME AT MARS IS 31303. S. OR 08:41:42 +/- 157.78 SECONDS

BATSE BURST TRIGGER

NO.: 6428

TIME: TJD=0735 SECONDS=31403

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=77.3 AZIMUTH=21.3 ERROR=8.8 DEGREES

COMMENTS:

BURST, WEAK SINGLE PULSE, DUR. APPROX. 8 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6428	971014	10735	31403	700	167	+03	8

BATSE BURST# 6428

ULYSSES RT

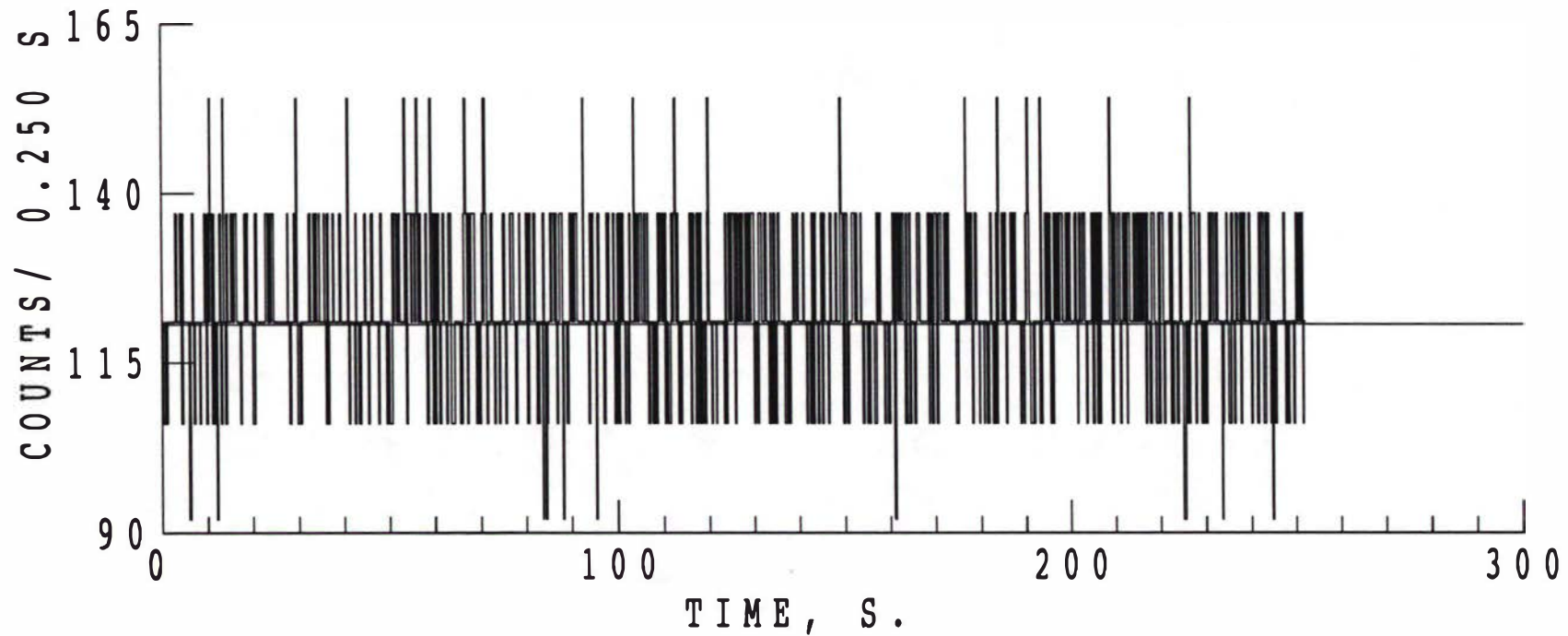
15 / 10 / 97

14 / 10 / 97 28332.145 s

0 - 0 keV

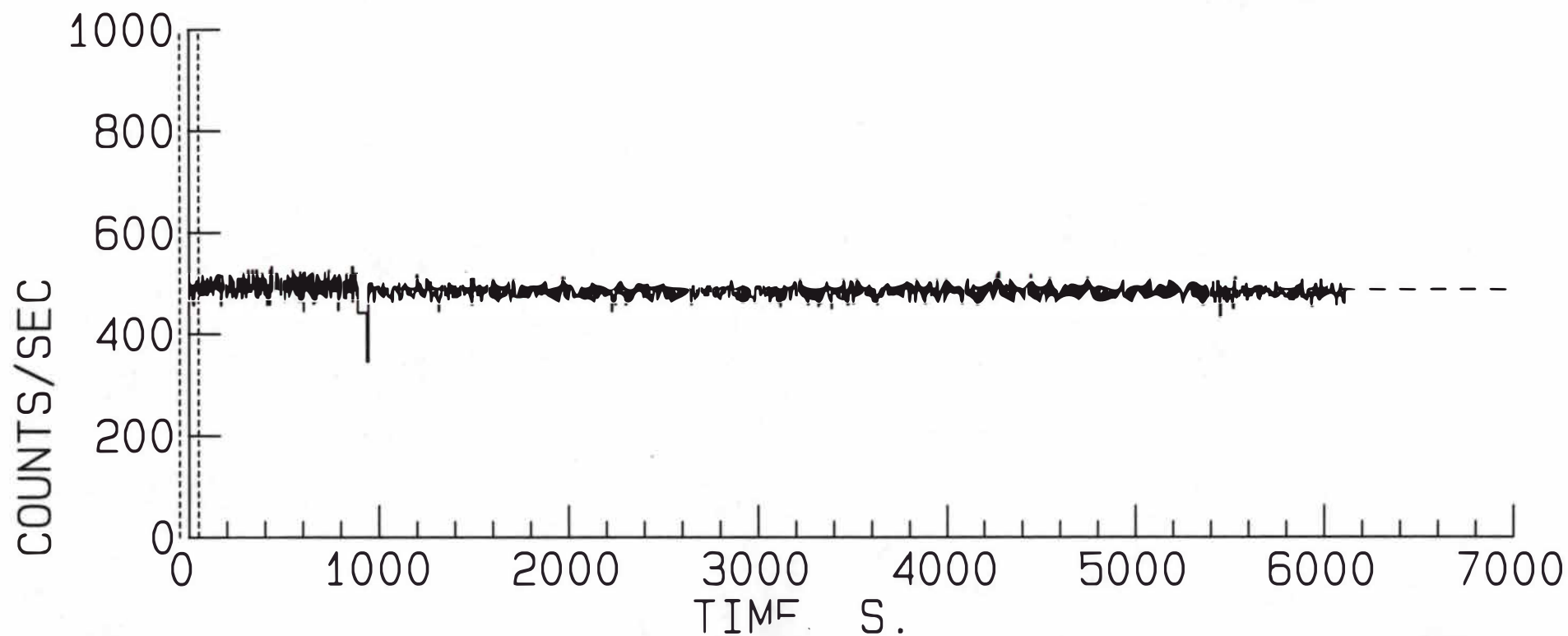
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
14/10/97 43920.069 s
INTERVALS REGROUPED BY 10
22- 147 keV

16 / 2 / 0



From HENZE@fender.msfc.nasa.gov Thu Oct 16 12:28:08 1997
Date: Thu, 16 Oct 1997 14:27:22 -0500 (CDT)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevaww.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.: 6434

TIME: TJD=0735 SECONDS=71116

TYPE: ACCIDEN SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

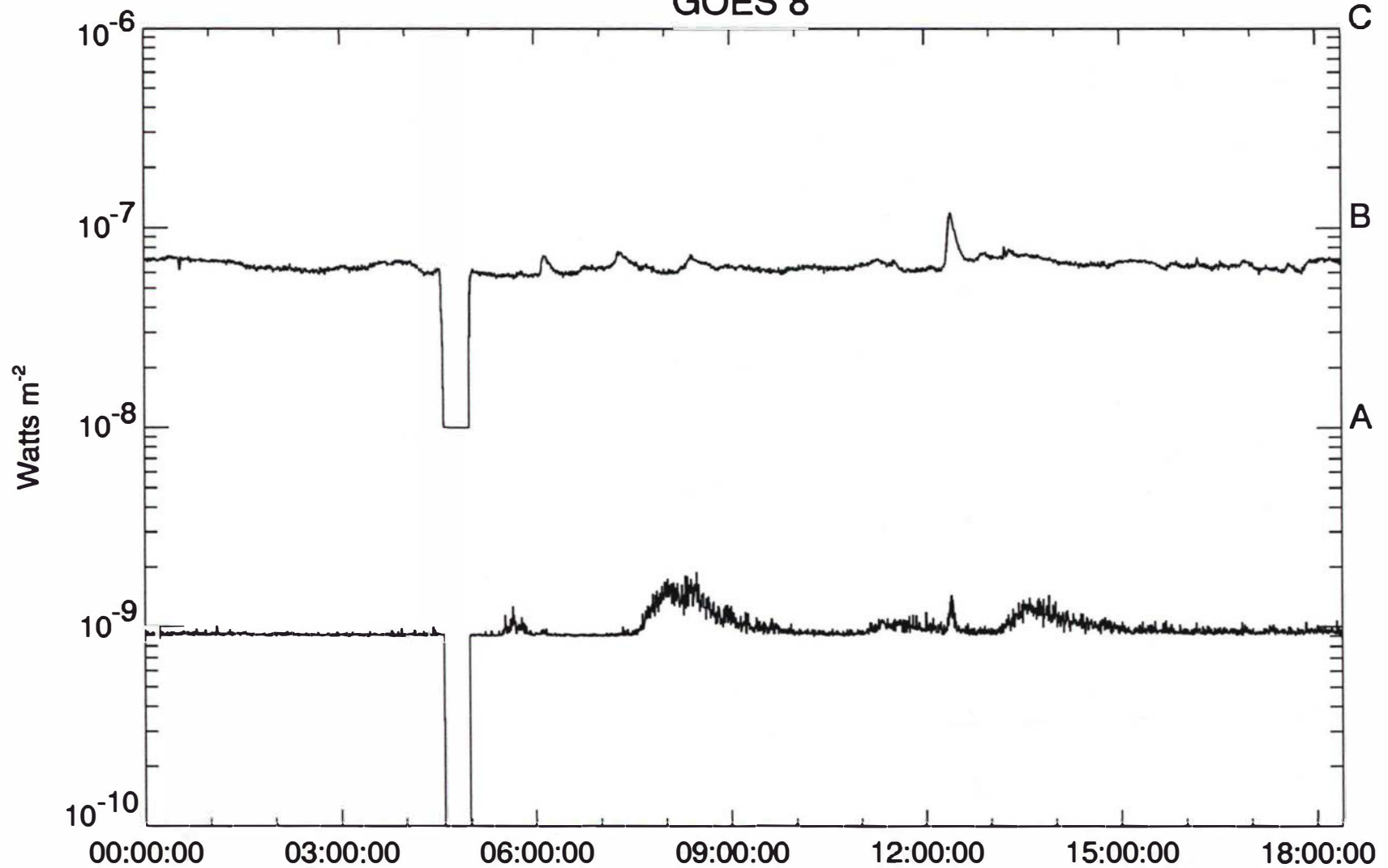
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

CAUSED BY ACCIDENTAL SENDING OF COMMANDS WHILE GRO WAS IN SAA.

GOES 8



Data Start: 97/10/14, 0000:00

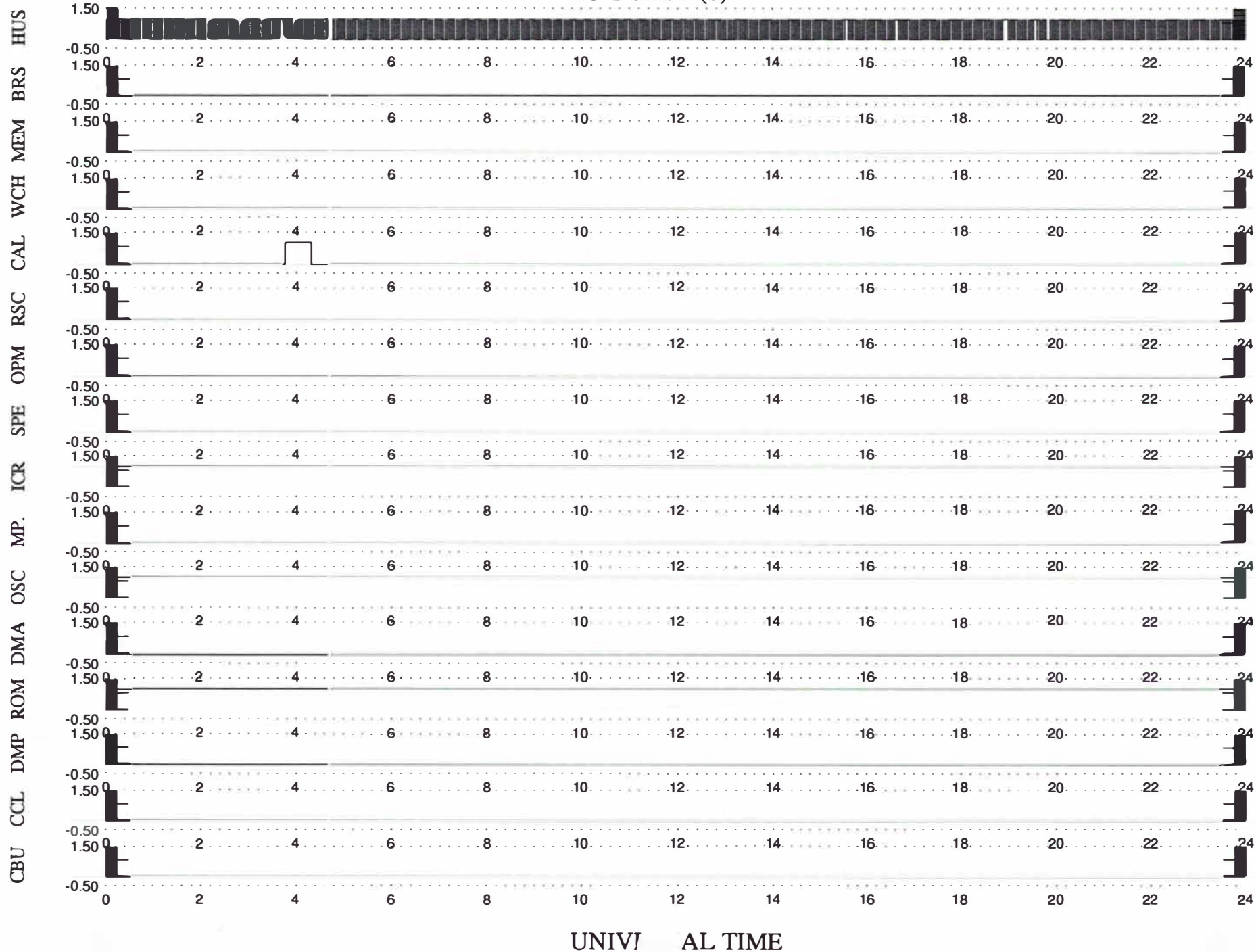
Plot created: 97/10/18, 1007

Channel

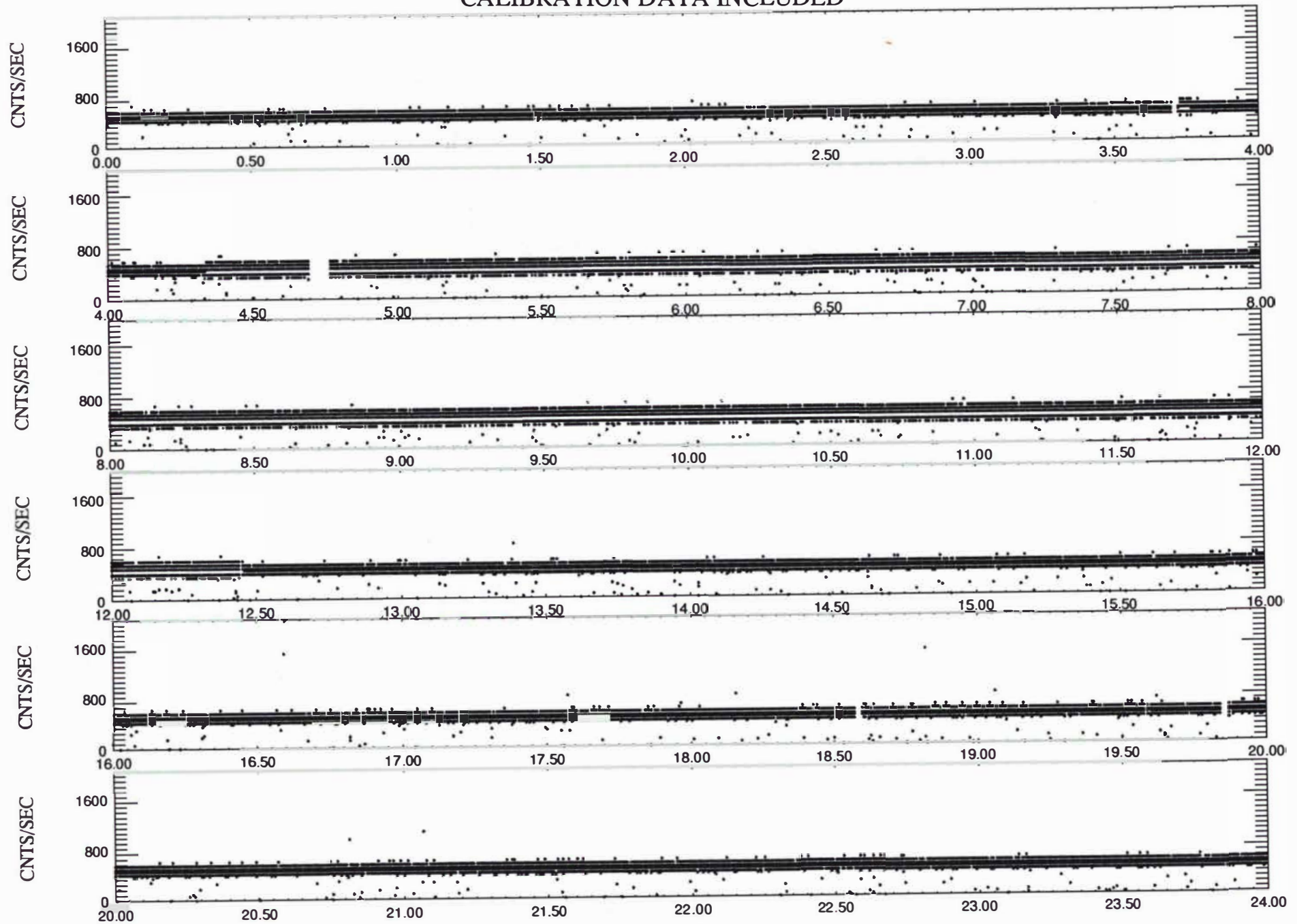
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

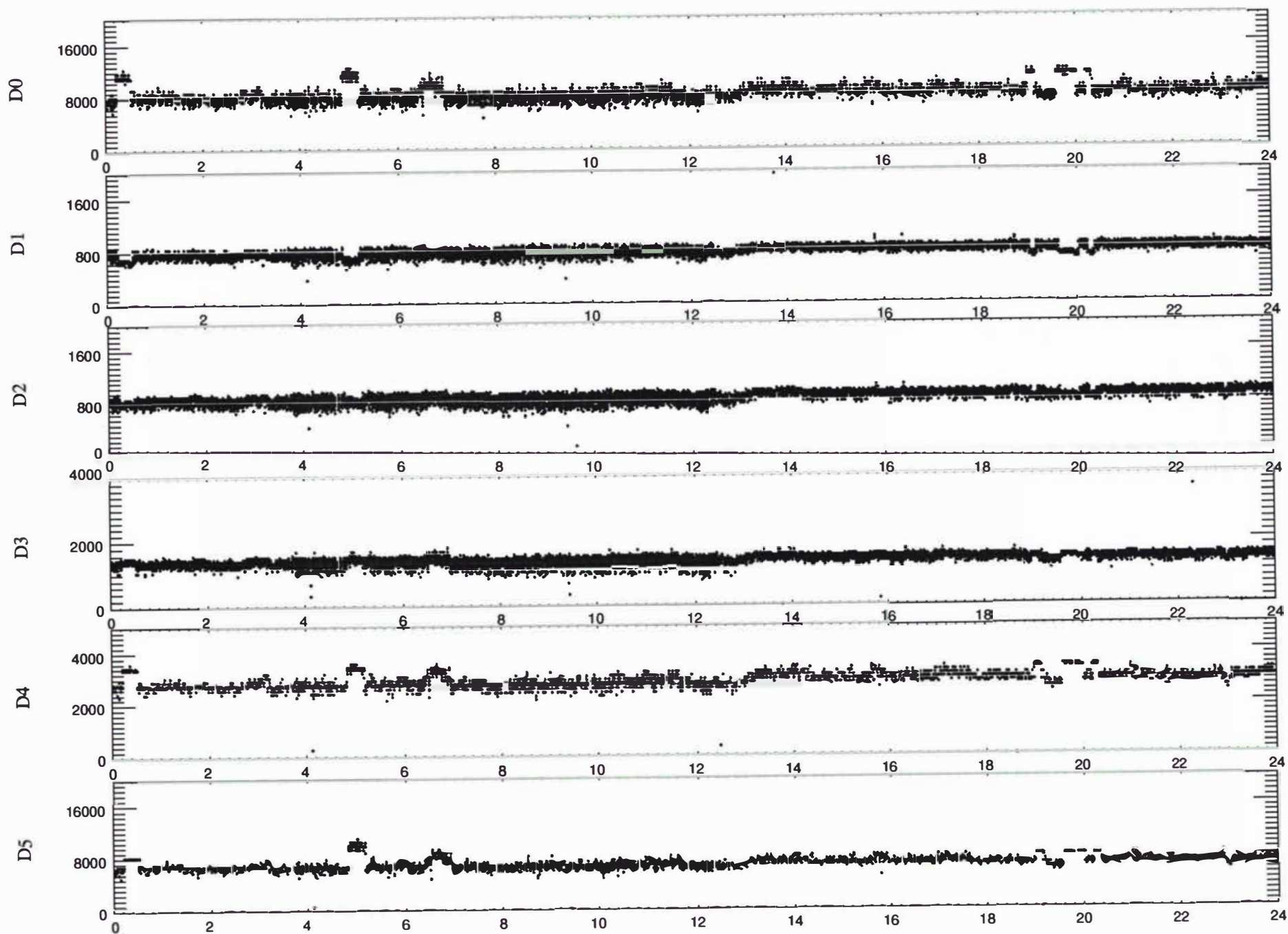
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIV. CAL TIME

From WOODSP@SSLMOR.msfc.nasa.gov Tue Oct 21 08:19:33 1997
Return-Path: <WOODSP@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id IAA22998; Tue, 21 Oct 1997 08:19:32 -0700
From: WOODSP@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id IAA25209; Tue, 21 Oct 1997 08:19:20 -0700
Date: Tue, 21 Oct 1997 10:18:51 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971021101851.21e00add@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6435
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6435
EVENT OF 1997 OCT 15 DAY OF YEAR=288
EVENT CROSSING TIME AT BATSE : 13782. S. OR 03:49:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 266.000 13.000
BATSE PEAK COUNTING RATE: 2900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/10/ 97 IS:
RA= 167.365 DEC= 15.024 DIST= 6.024 AU
BATSE-ULYSSES DISTANCE = 901167883. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 249.44 SECS.
CROSSING TIME AT ULYSSES IS 14031. S. OR 03:53:51 +/- 573.87 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/10/ 97 IS:
RA= 249.695 DEC= -23.293 DIST= 1.854 AU
MARS-BATSE DISTANCE = 277331712. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -712.32 SECS.
CROSSING TIME AT MARS IS 13070. S. OR 03:37:49 +/- 91.66 SECONDS

BATSE BURST TRIGGER

NO.: 6435

TIME: TJD=0736 SECONDS=13782

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=91.9 AZIMUTH=283.7 ERROR=6 DEGREES

COMMENTS:

GRB LASTING ABOUT 75 SEC. WEAK, SPIKEY EVENT. NOT VISIBLE ABOVE
300 KEV.

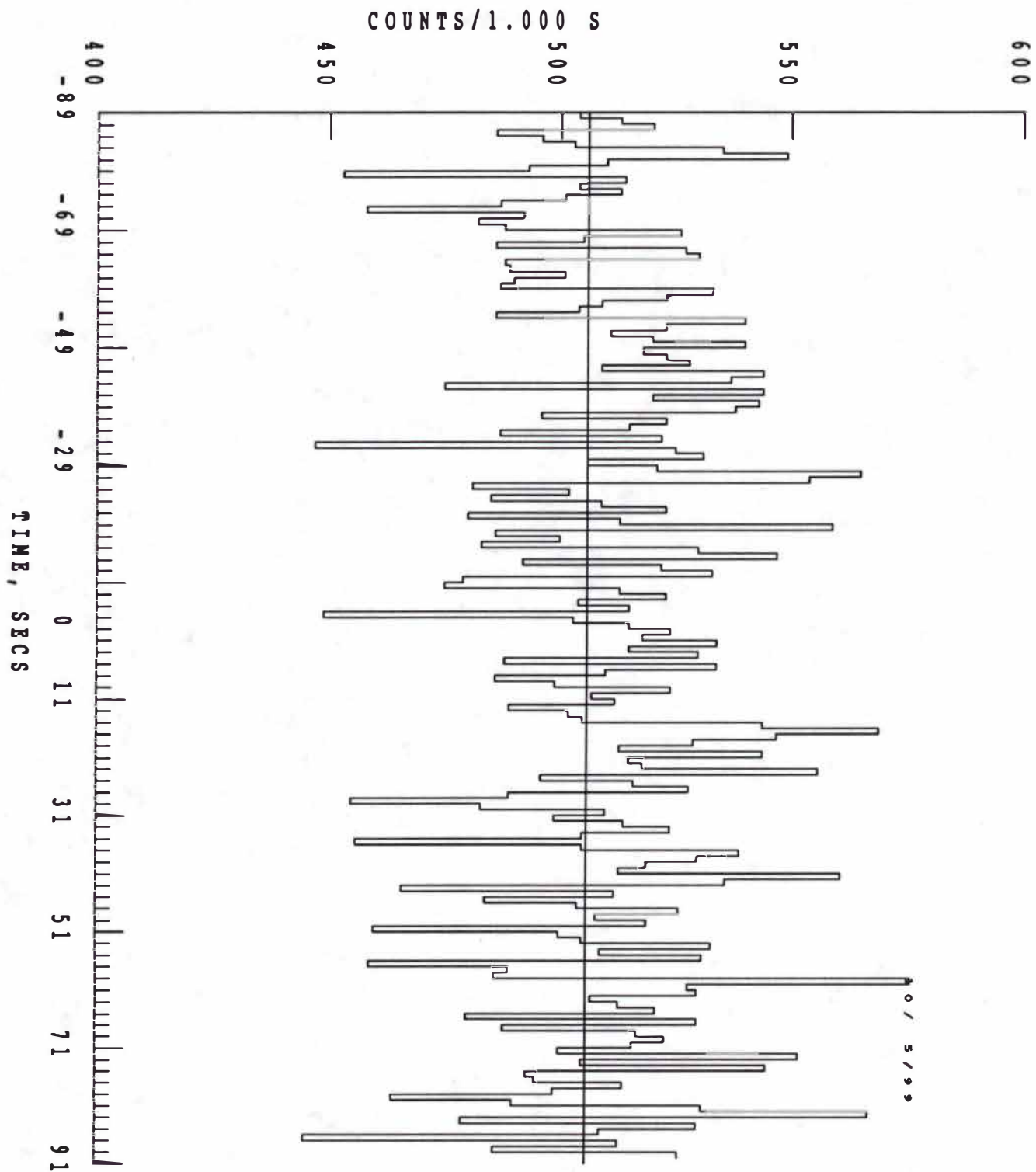
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6435	971015	10736	13782	2900	266	+13	75

NEAR

15/10/97

14062.787

100-1000 keV



BATSE BURST# 6435

ULYSSES RT

21 / 10 / 97

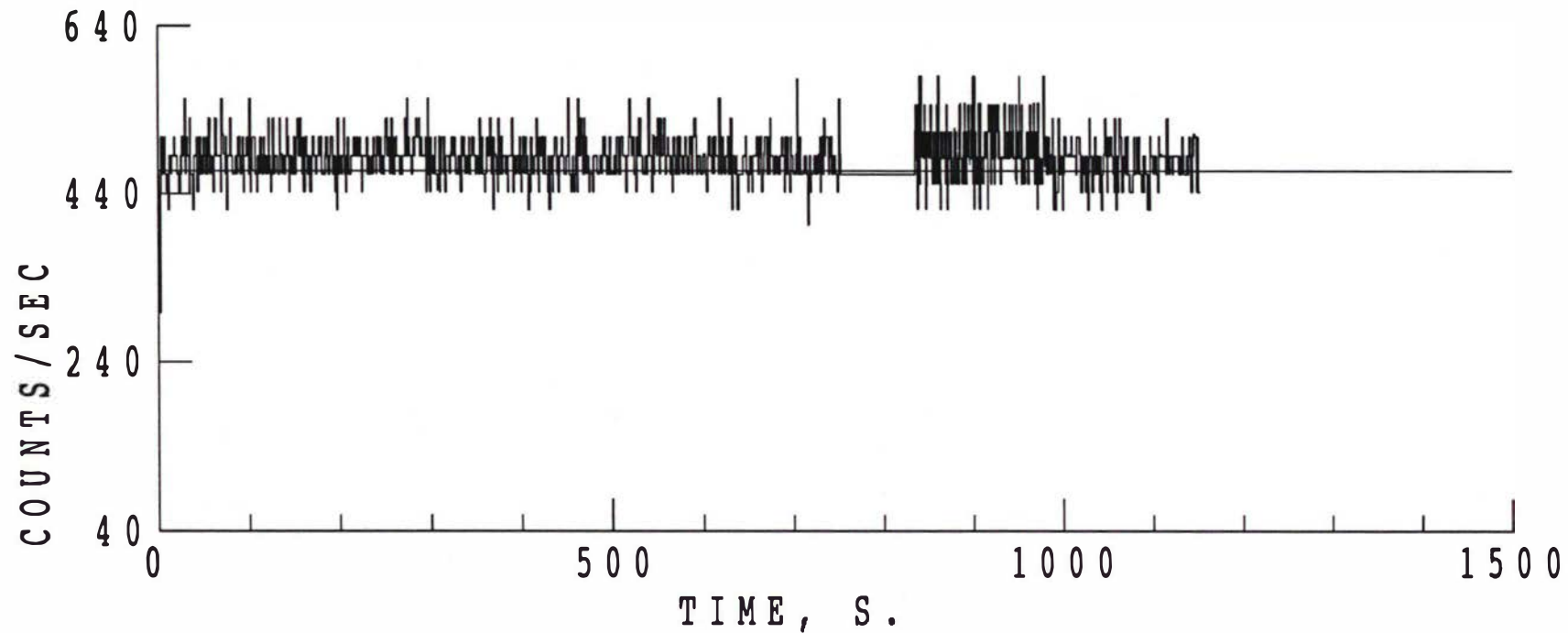
15 / 10 / 97 13464.194 s

INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



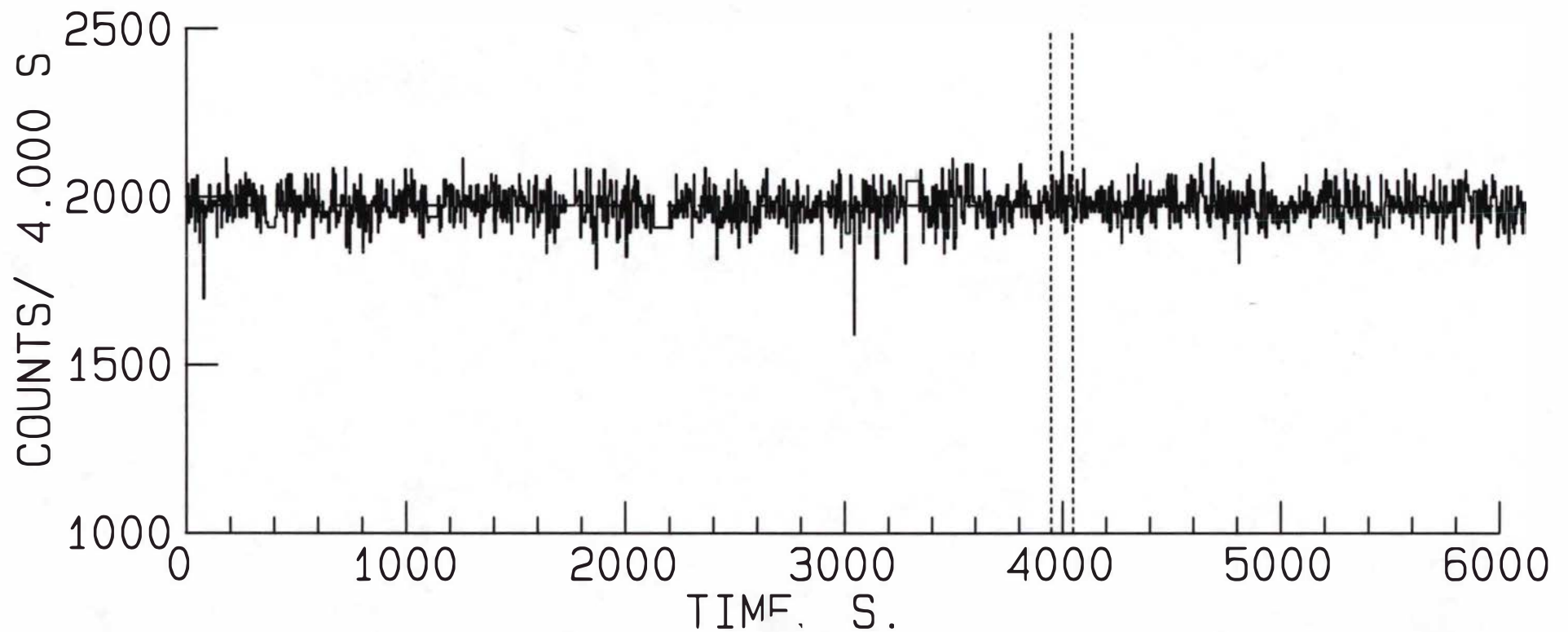
ULYSSES RT

5 / 2 / 0

15/10/97 17280.239 s

0.250 S INTERVALS REGROUPED BY 16

22- 148 keV



From WOODSP@SSLMOR.msfc.nasa.gov Tue Oct 21 08:20:19 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 IAA23036; Tue, 21 Oct 1997 08:20:18 -0700
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id IAA25232; Tue, 21 Oct 1997 08:20:13 -0700
Date: Tue, 21 Oct 1997 10:19:55 -0500 (CDT)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971021101955.21e00add@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6436
Content-Length: 1135
X-Lines: 26
Status: RO

No - probably a noise spike

BATSEARCH PROGRAM

BATSE BURST # 6436
EVENT OF 1997 OCT 15 DAY OF YEAR=288
EVENT CROSSING TIME AT BATSE : 30459. S. OR 08:27:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 280.000 19.000
BATSE PEAK COUNTING RATE: 50500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/10/ 97 IS:
RA= 167.387 DEC= 15.009 DIST= 6.022 AU
BATSE-ULYSSES DISTANCE = 900881117. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 801.86 SECS.
CROSSING TIME AT ULYSSES IS 31261. S. OR 08:41:00 +/- 564.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/10/ 97 IS:
RA= 249.695 DEC= -23.293 DIST= 1.854 AU
MARS-BATSE DISTANCE = 277331712. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.39 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -574.51 SECS.
CROSSING TIME AT MARS IS 29884. S. OR 08:18:04 +/- 117.16 SECONDS

BATSE BURST TRIGGER

NO.: 6436

TIME: TJD=0736 SECONDS=30459

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=101.7 AZIMUTH=272.3 ERROR=1.4 DEGREES

COMMENTS:

GRB LASTING ABOUT 2.5 SEC. SINGLE BRIGHT PULSE LASTING ABOUT
0.15 SEC WITH MULTIPLE DIMMER PULSES BEFORE AND AFTER. PROBABLE
SPECTRAL EVOLUTION IN BRIGHT PULSE. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6436	971015	10736	30459	50500	280	+19	2.5

Date: Feb 7 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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

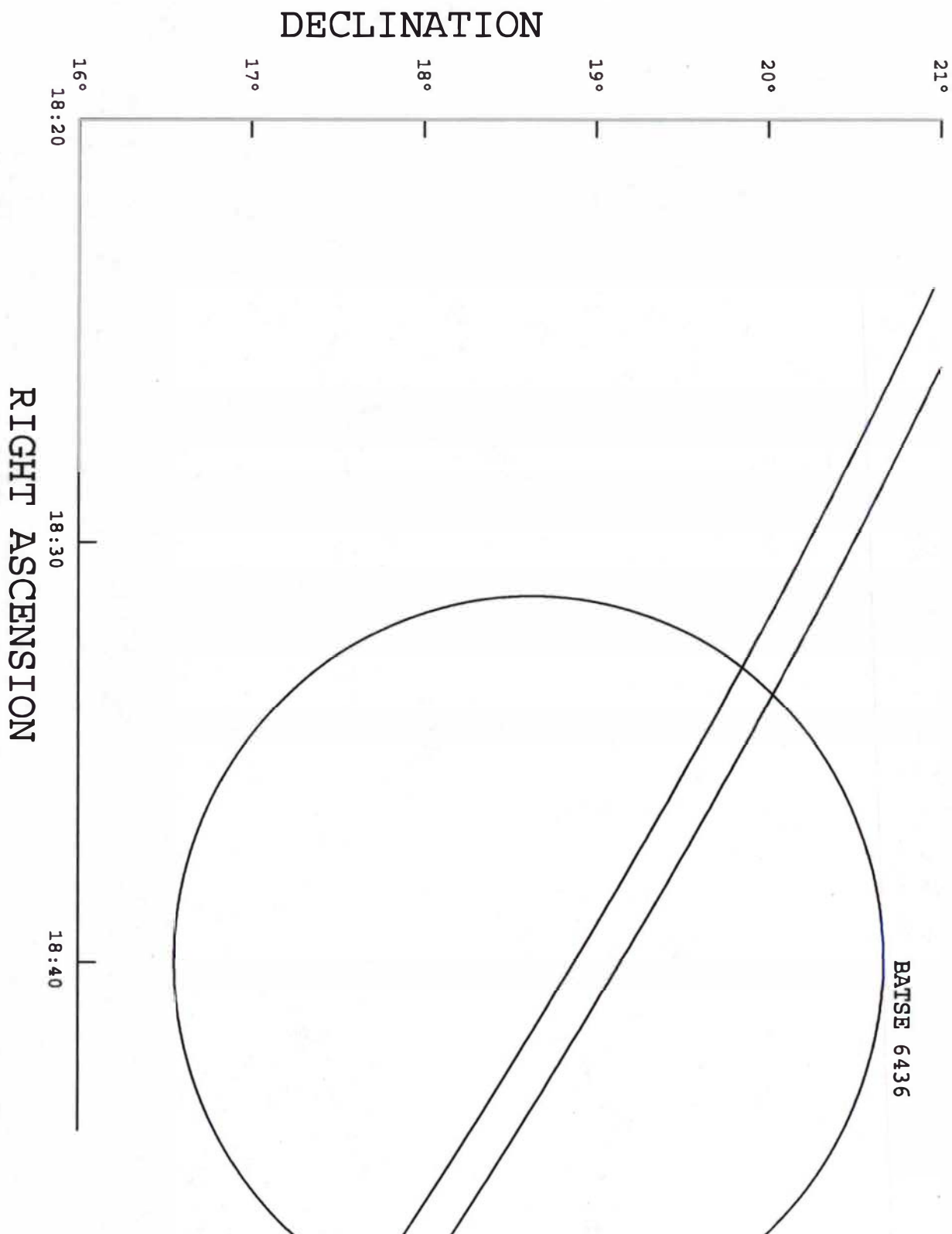
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF OCT 15, 1997 8:27

7 / 2 / 0



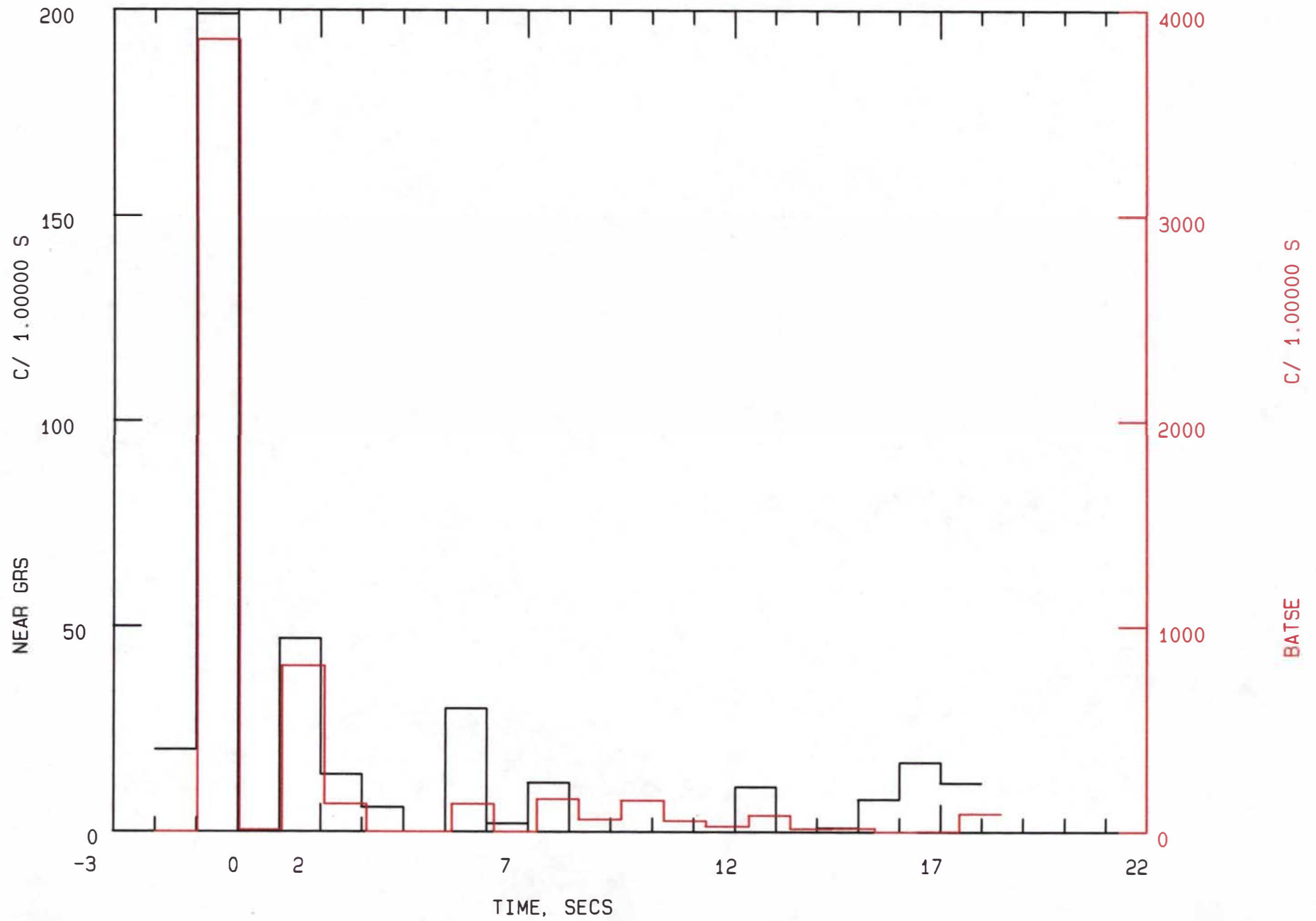
NEAR GRS -BATSE

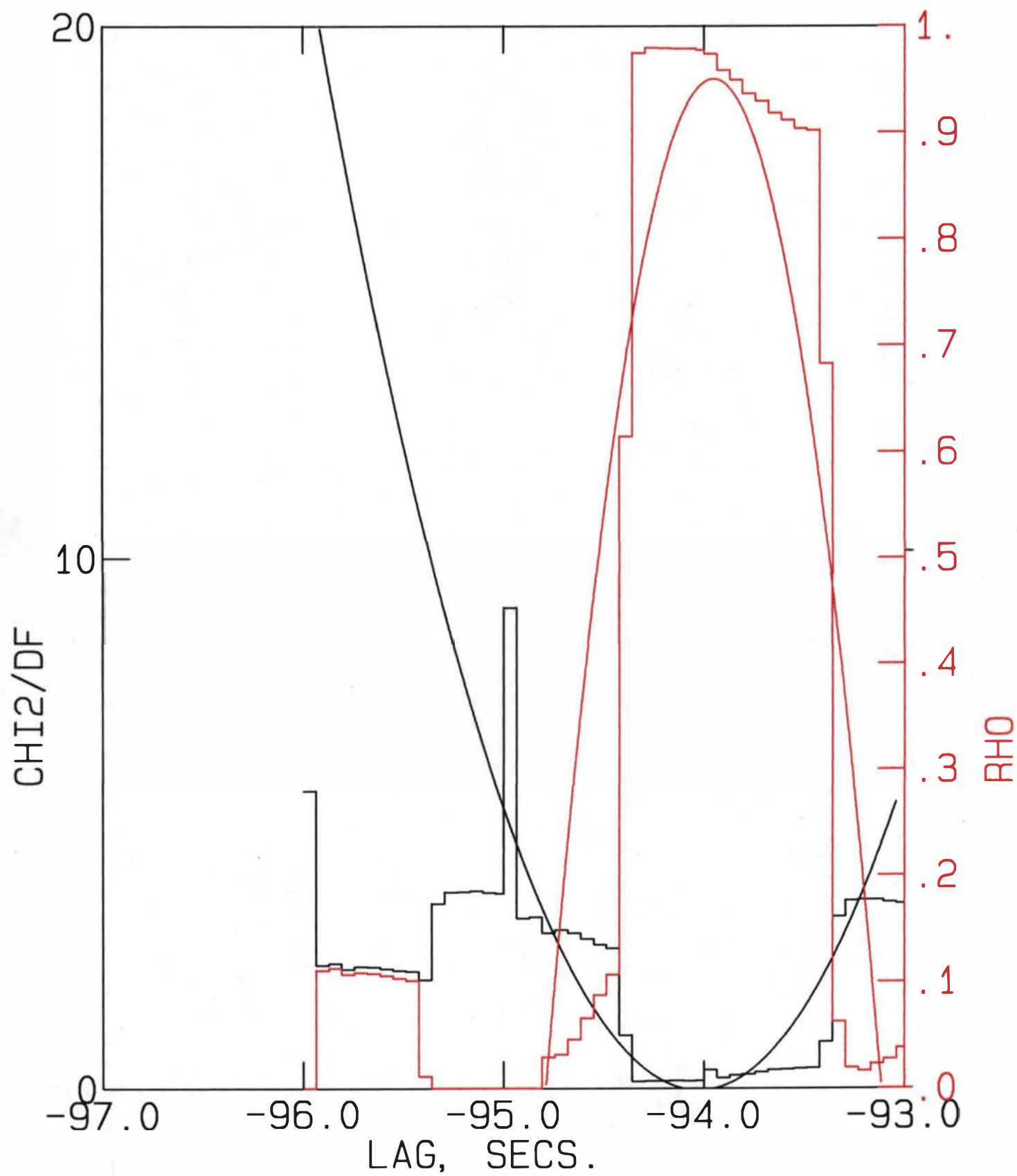
CORRELATION

15/10/97

30694.784

7/ 2/ 0



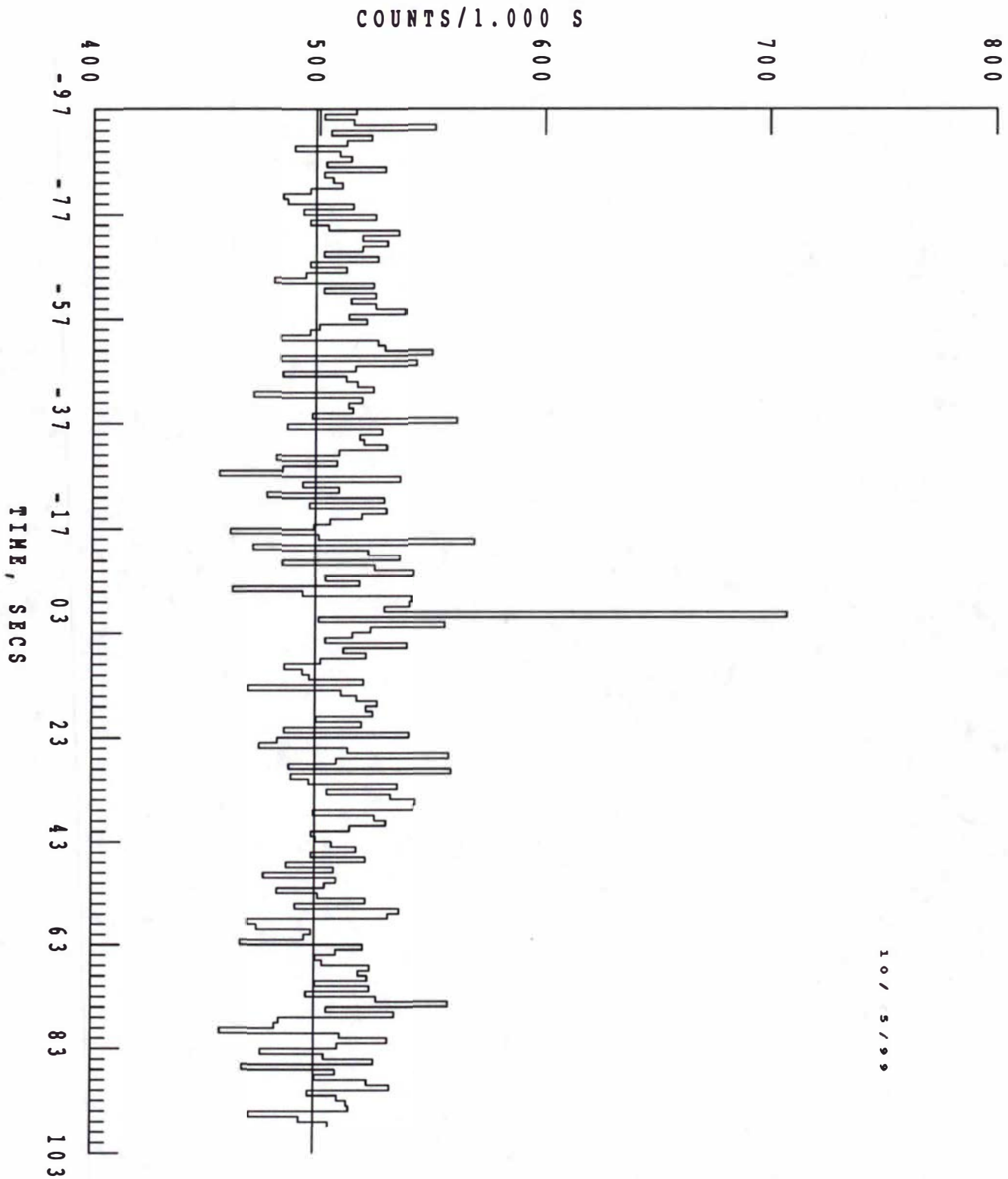


NEAR

15/10/97

30694.784

100-1000 keV



10 / 5 / 99

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

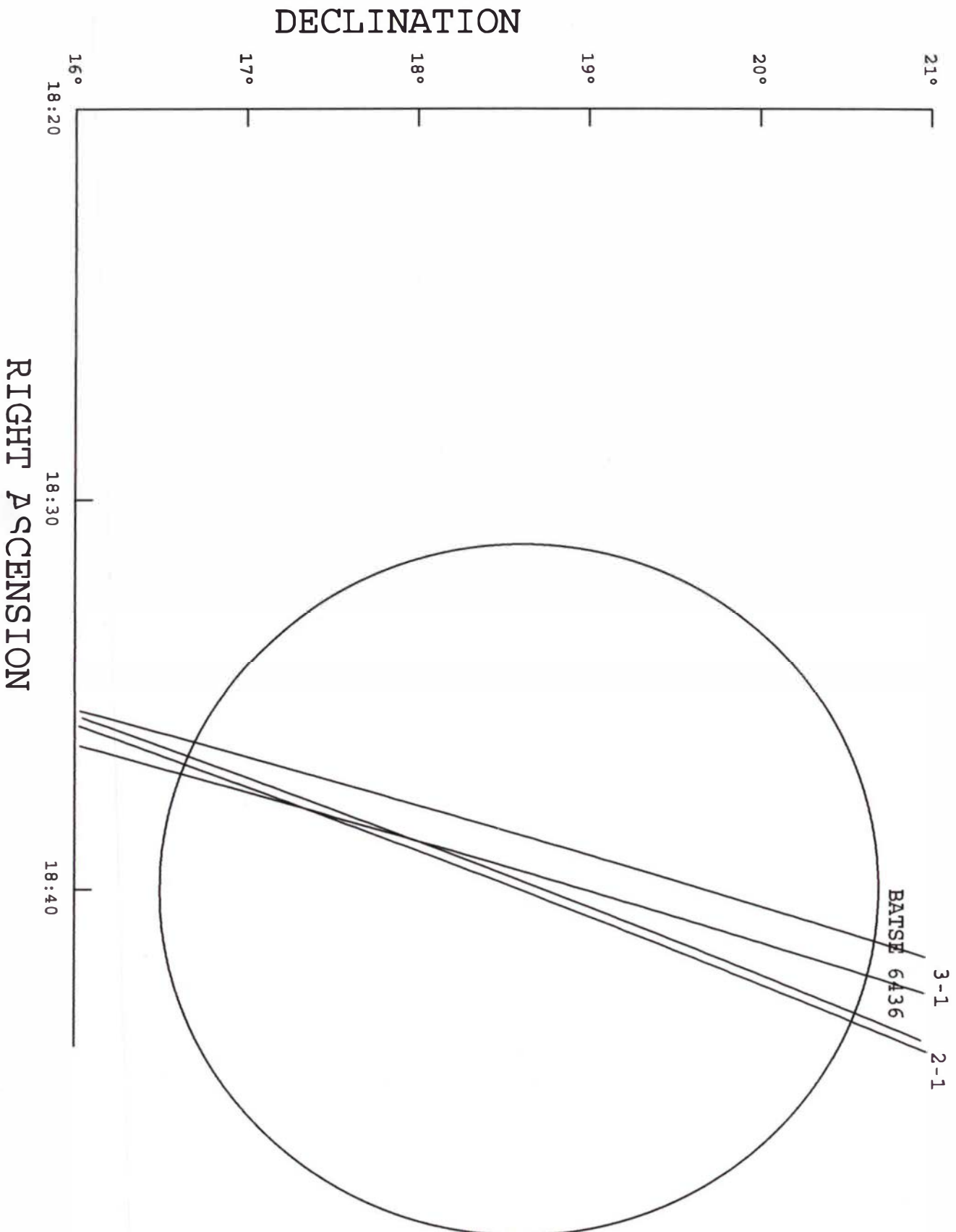
1 ULYSSES

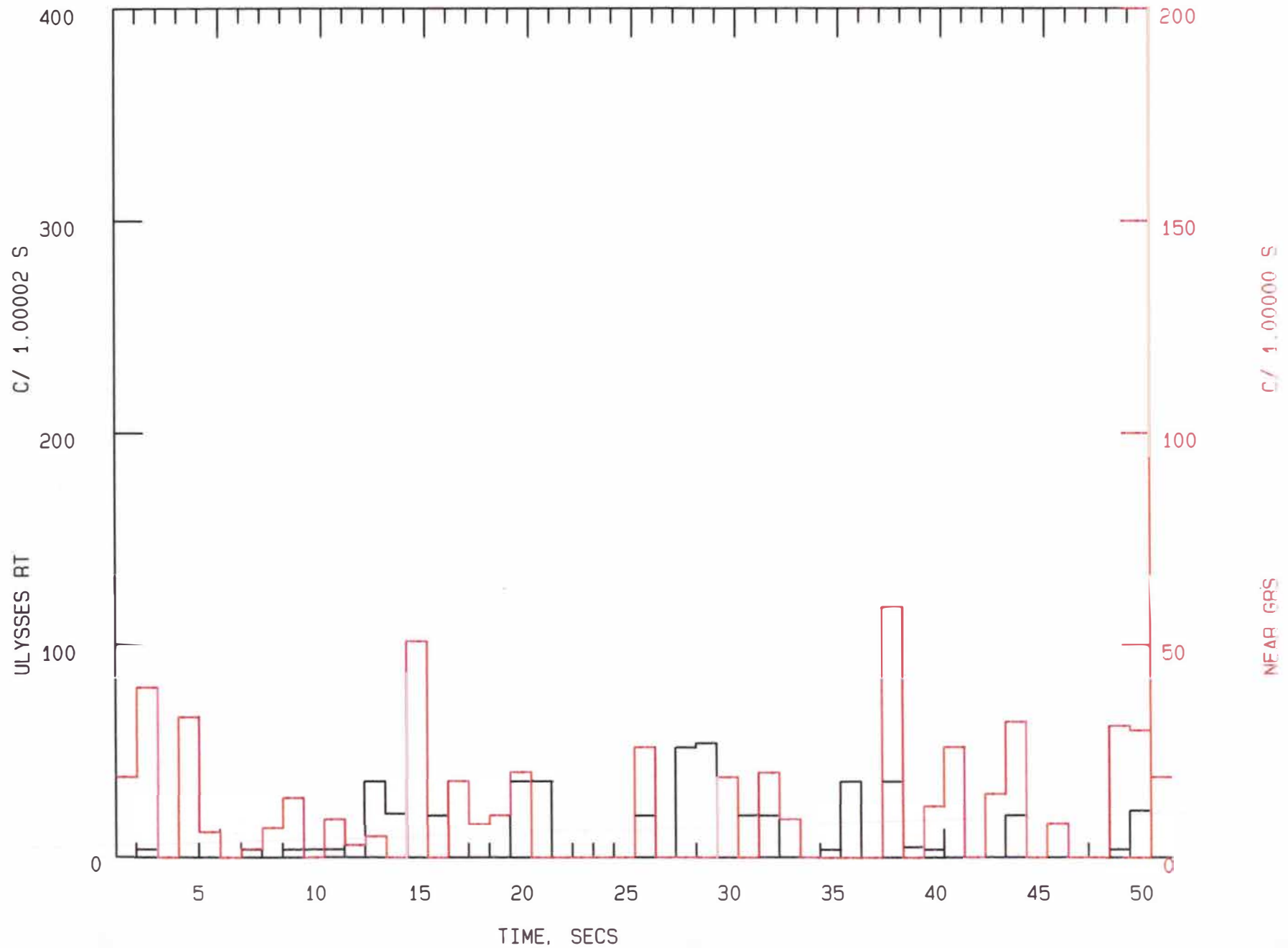
2 BATSE

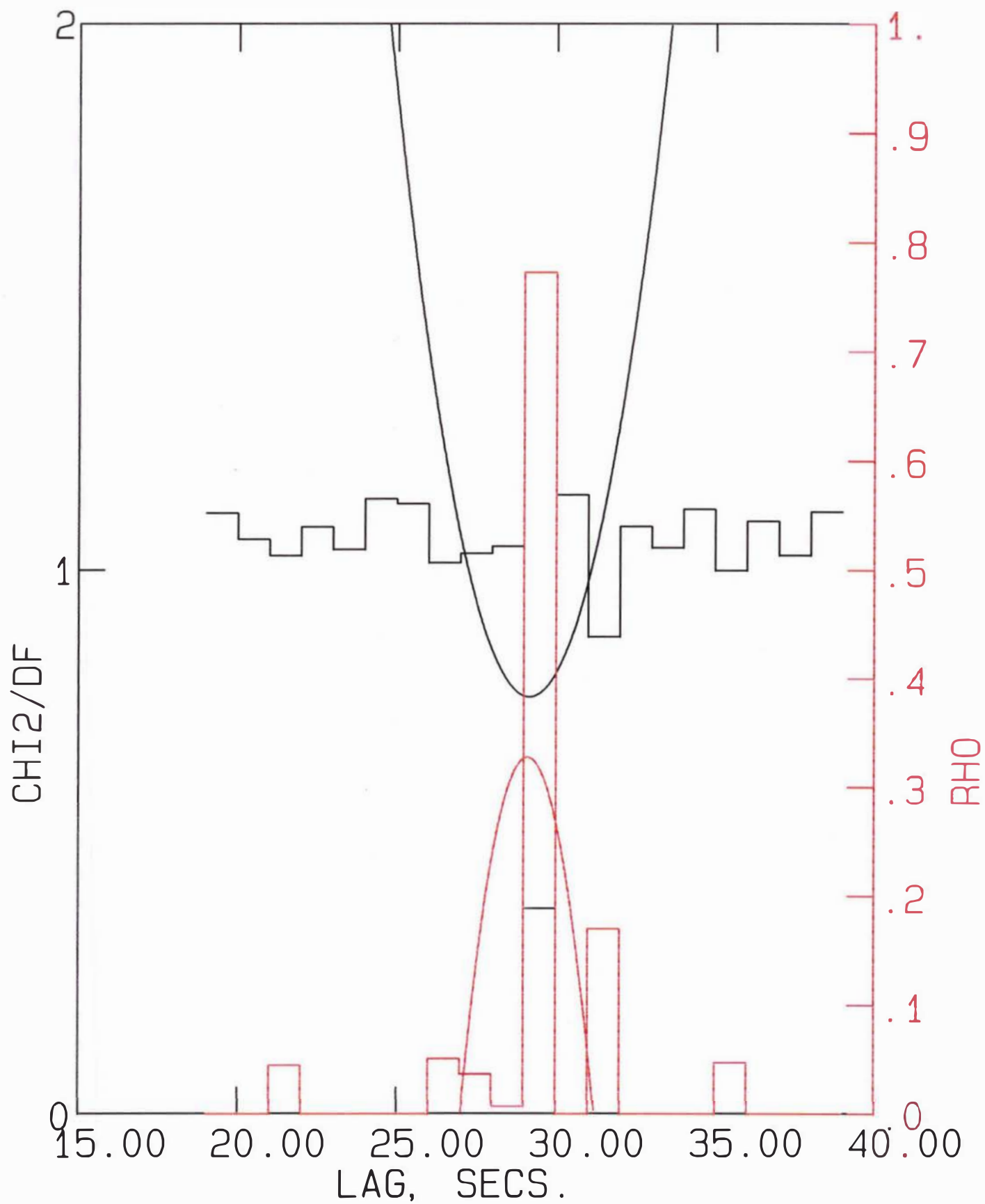
3 NEAR

EVENT OF OCT 15, 1997 8:39

17/12/97







N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

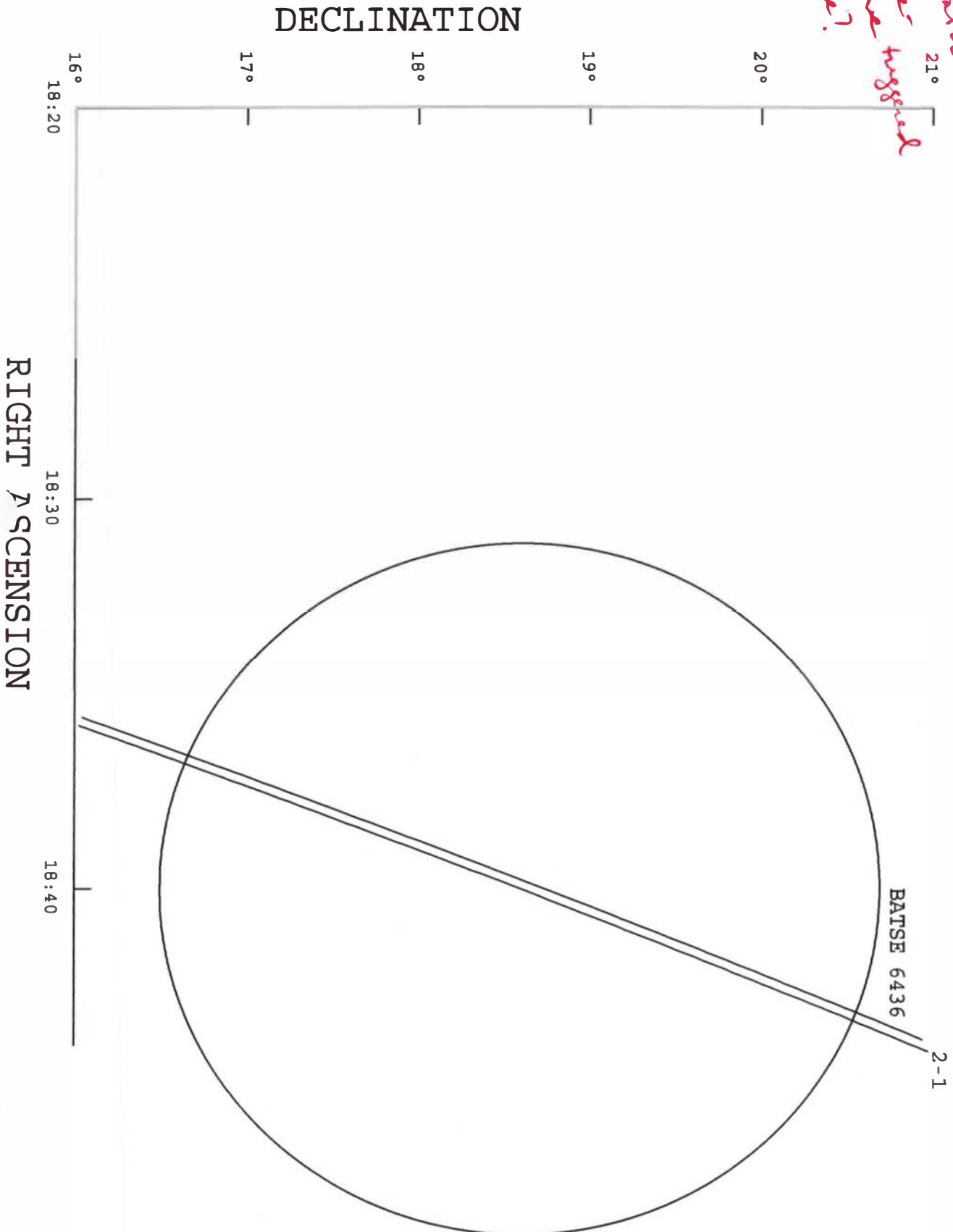
1 ULYSSES

2 BATSE

*Question -
High v/B ratio
single spikes
should have
triggered
more?*

EVENT OF OCT 15, 1997 8:39

13/11/97



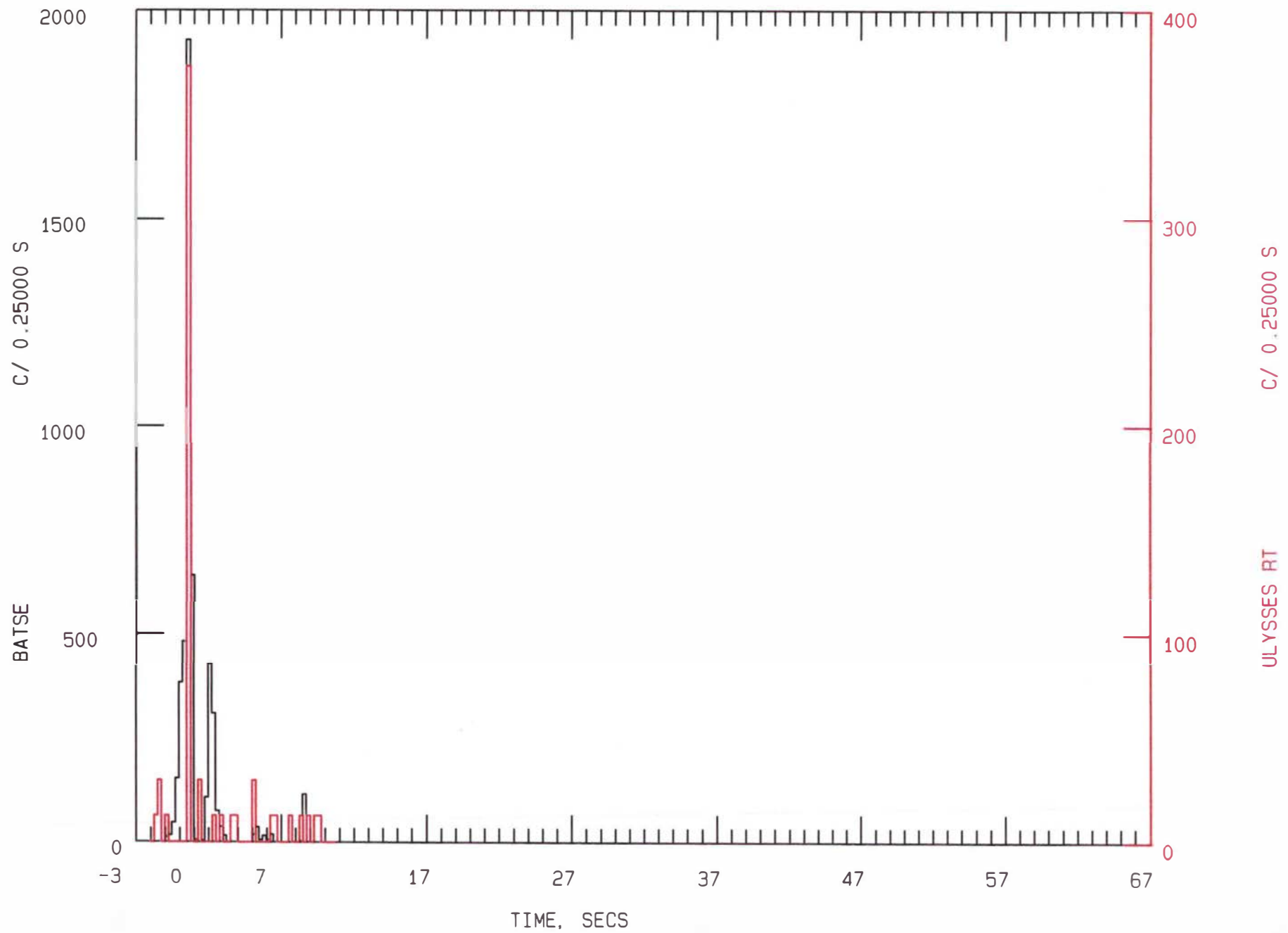
BATSE

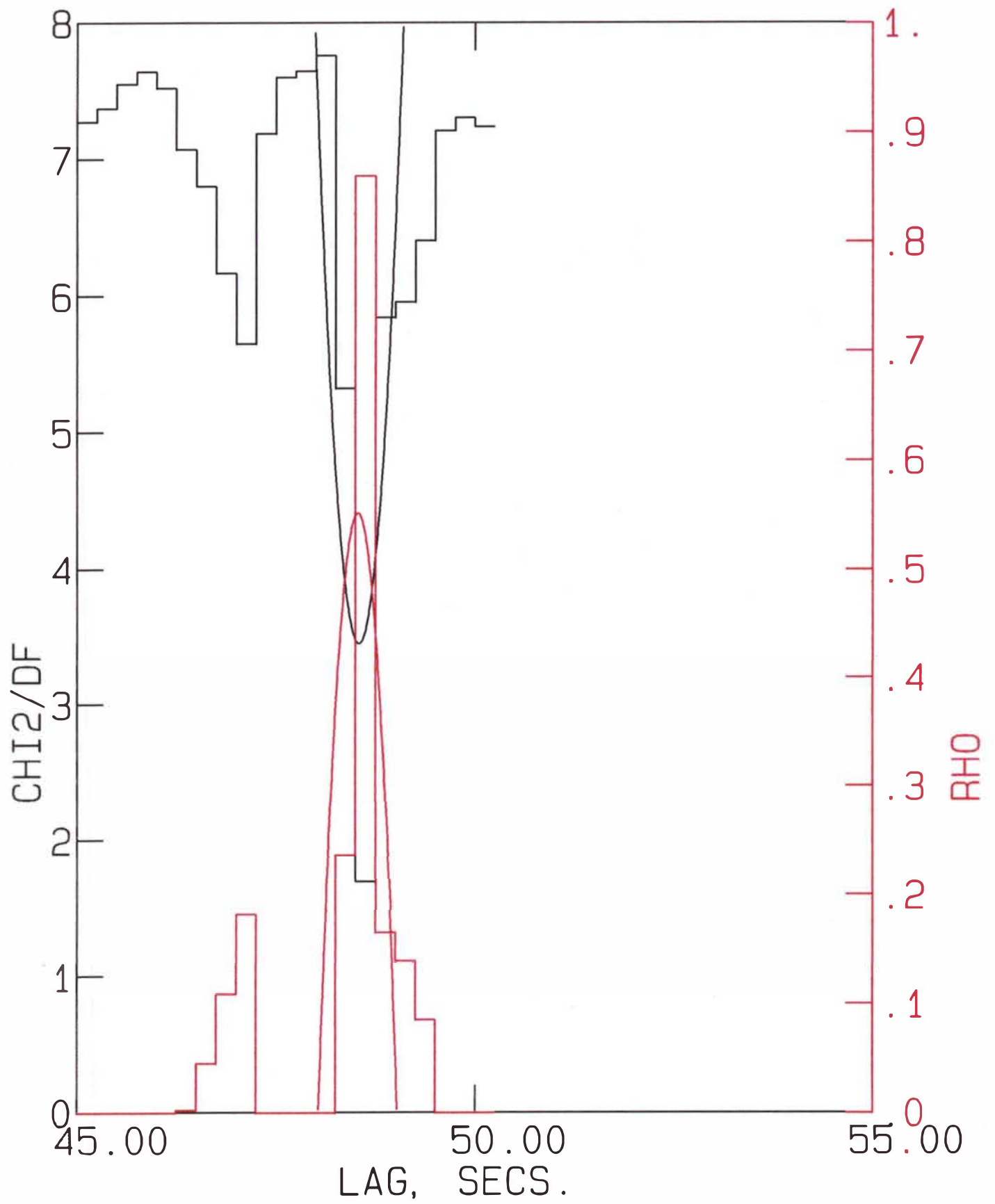
-ULYSSES RT CORRELATION

15/10/97

30459.361

13/11/97





ULYSSES RT

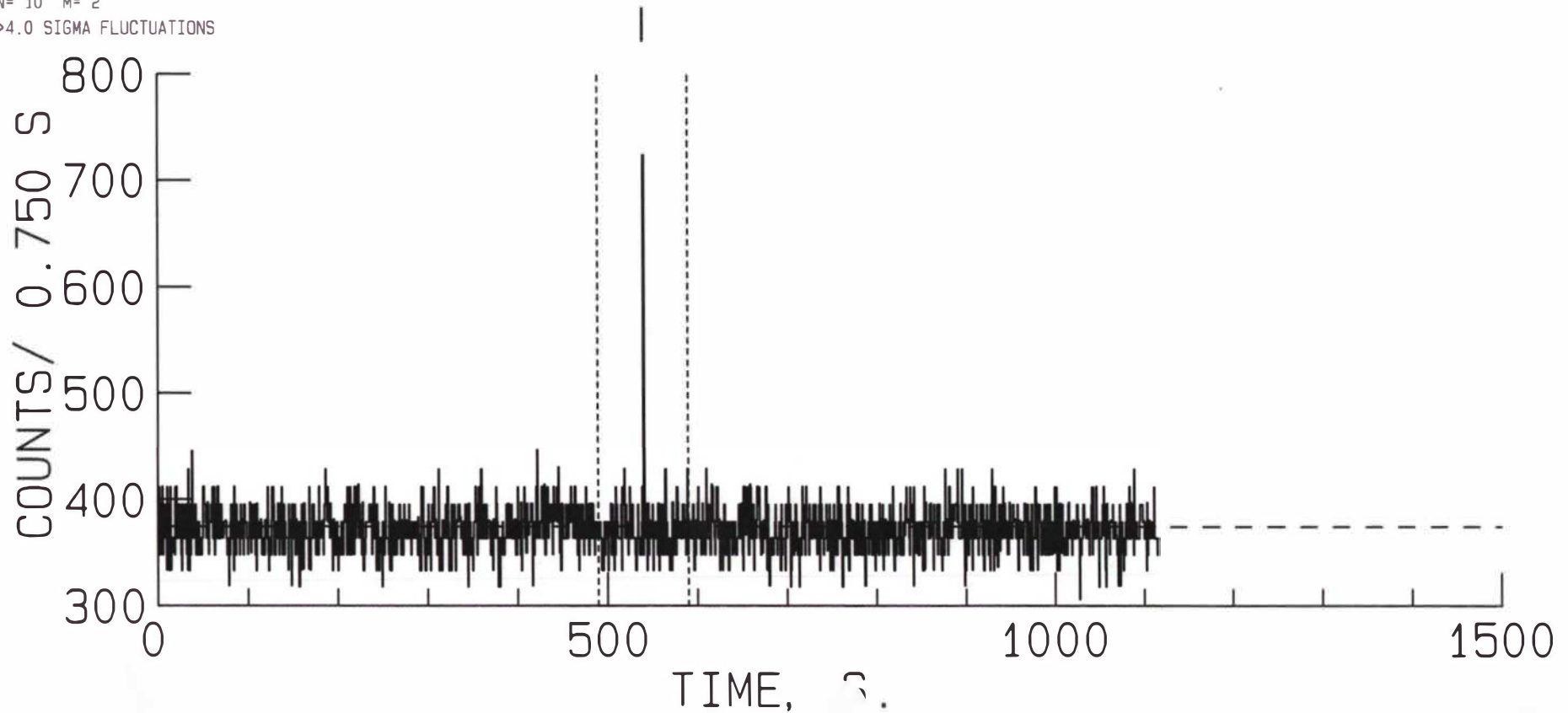
13 / 11 / 97

15/10/97 30708.138 s

0.250 S INTERVALS REGROUPED BY 3

22- 147 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



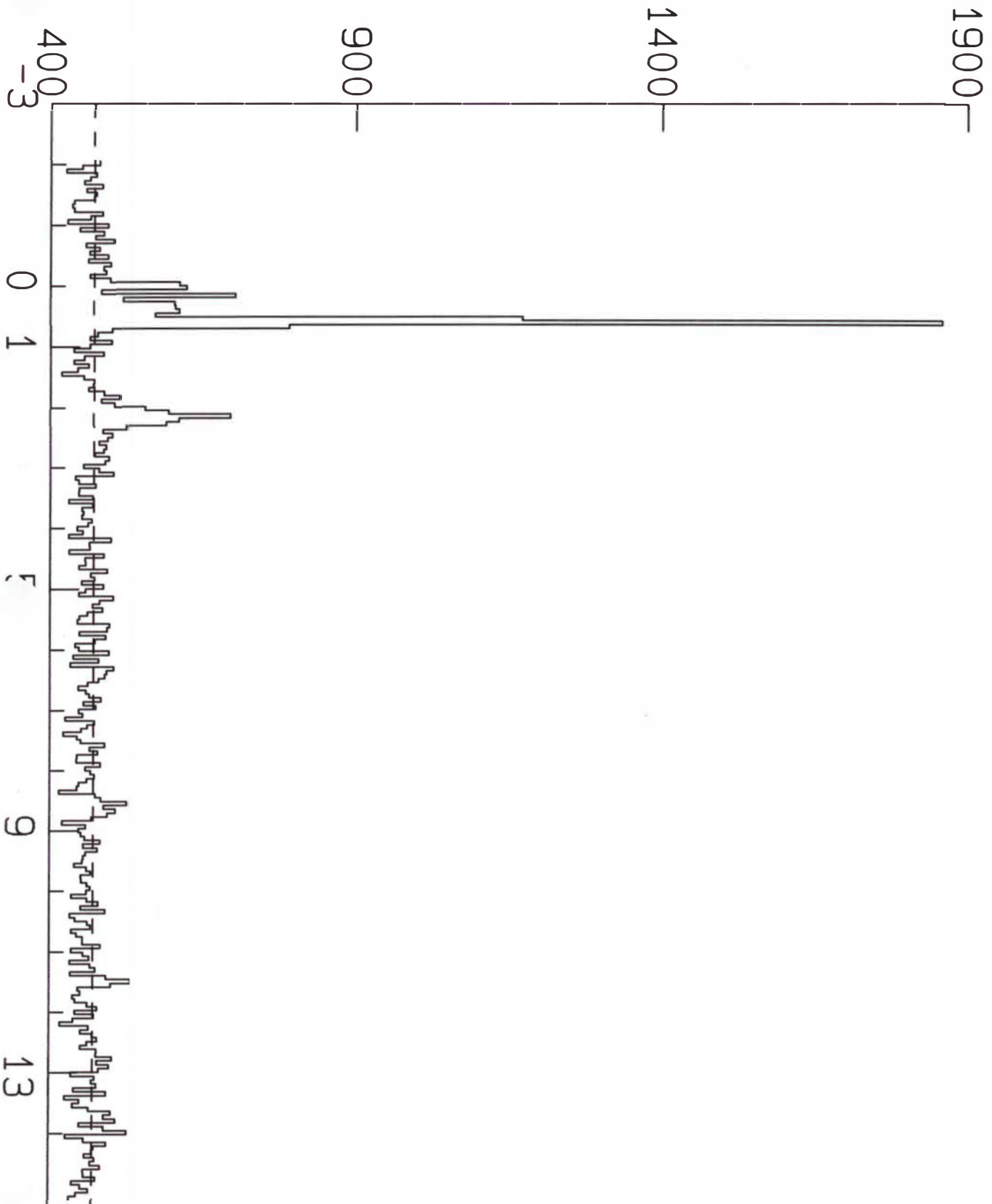
BATSE

15/10/97

30459.361

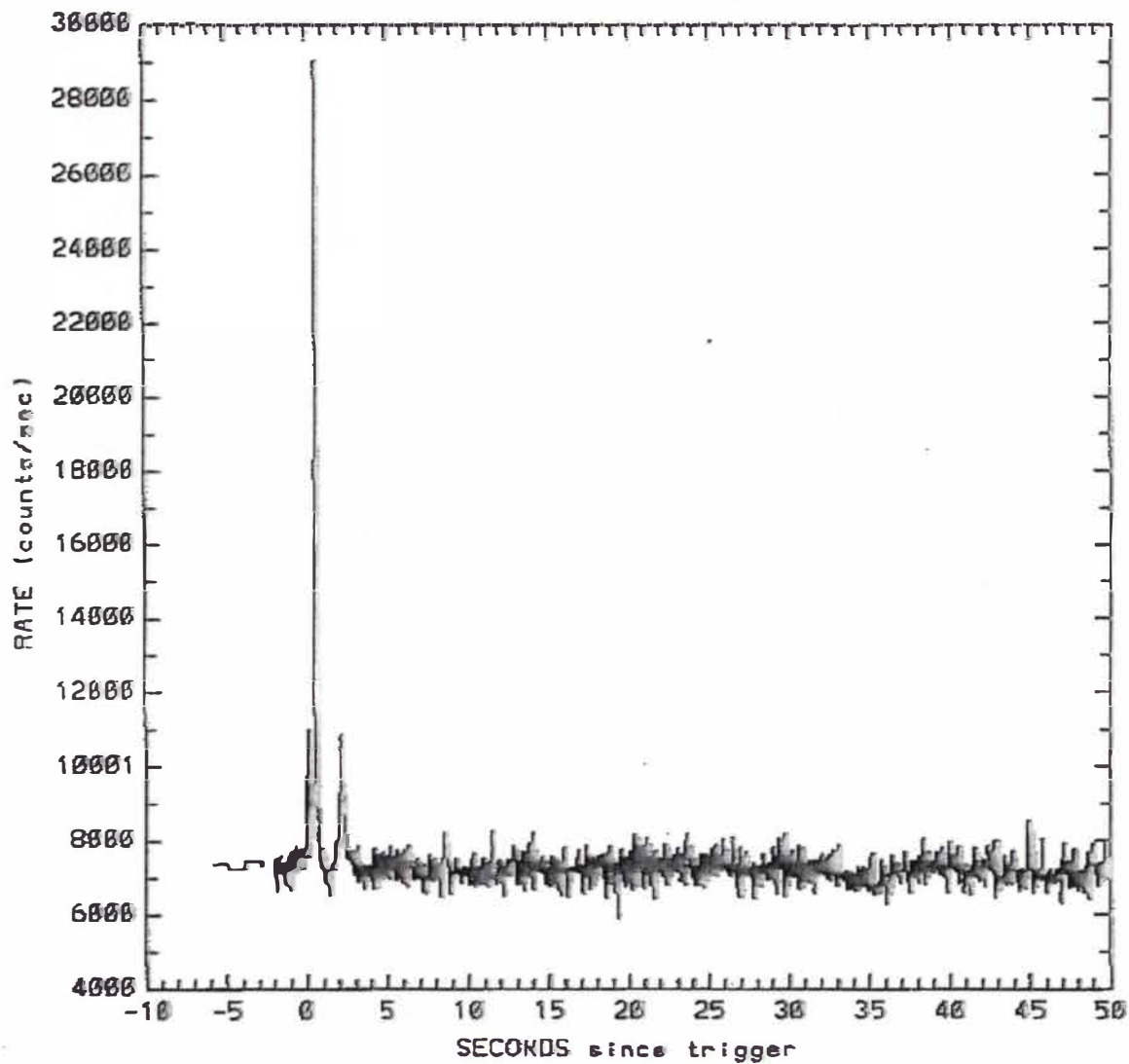
25- 100 keV

COUNTS/0.064 S



13 / 11 / 97

DISCSC Data for K. Hurley, No. 6436



29-OCT-1997 04:03.42

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # = 6436

Trigger Time:
18736 / 38459.361

Burst Data Type:
DISCSC

Deadtime:
Corrected: N

Background Data:
Type: PREB + DISCSC

Minimum Integ. Time:
8.054 seconds

Detectors [7..0]:
7---3---

Discriminators:
[1 : 2]

Quality Mask:
B0[S0]

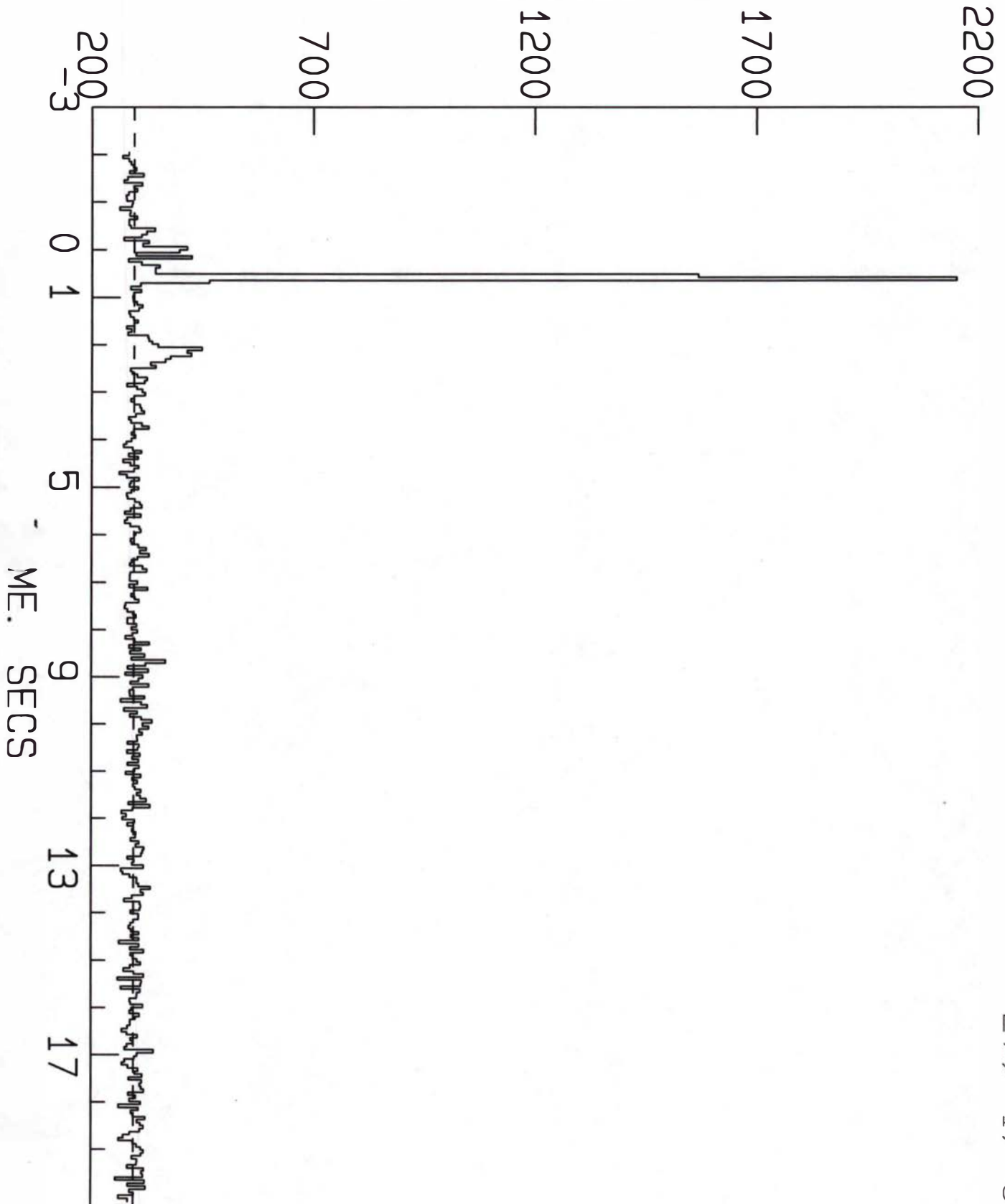
BATSE

15/10/97

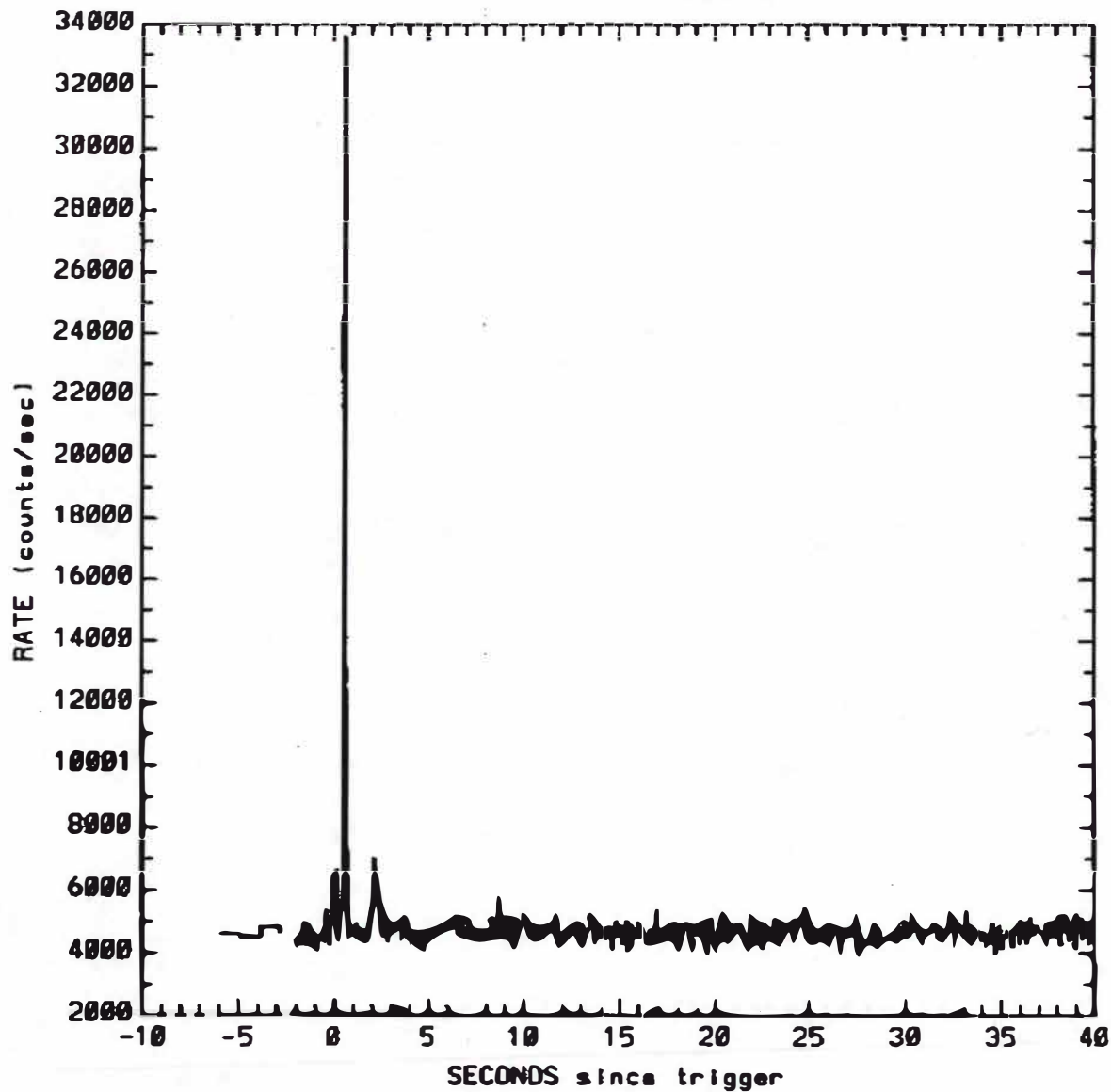
30459.361

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 6436



21-JAN-2000 13:44:02

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

Trigger = 6436

Trigger Time:
18738 / 38459.361Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..0],
7---3---Discriminators:
(3..4)Quality Mask:
BDISP1

From WOODSP@SSLMOR.msfc.nasa.gov Tue Oct 21 08:21:44 1997
Return-Path: <WOODSP@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id IAA23045; Tue, 21 Oct 1997 08:21:38 -0700
From: WOODSP@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id IAA25255; Tue, 21 Oct 1997 08:21:34 -0700
Date: Tue, 21 Oct 1997 10:20:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971021102049.21e00add@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6437
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6437
EVENT OF 1997 OCT 15 DAY OF YEAR=288
EVENT CROSSING TIME AT BATSE : 78236. S. OR 21:43:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 193.000 28.000
BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/10/ 97 IS:
RA= 167.449 DEC= 14.967 DIST= 6.017 AU
BATSE-ULYSSES DISTANCE = 900070040. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=152.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2674.52 SECS.
CROSSING TIME AT ULYSSES IS 75561. S. OR 20:59:21 +/- 246.21 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/10/ 97 IS:
RA= 249.695 DEC= -23.293 DIST= 1.854 AU
MARS-BATSE DISTANCE = 277331712. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -240.21 SECS.
CROSSING TIME AT MARS IS 77996. S. OR 21:39:55 +/- 151.45 SECONDS

BATSE BURST TRIGGER

NO.: 6437

TIME: TJD=0736 SECONDS=78236

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=98.8 AZIMUTH=352.8 ERROR=3.8 DEGREES

COMMENTS:

GRB LASTING ABOUT 12 SEC. SINGLE FRED LIKE PULSE. marginally
VISIBLE ABOVE 300 KEV.

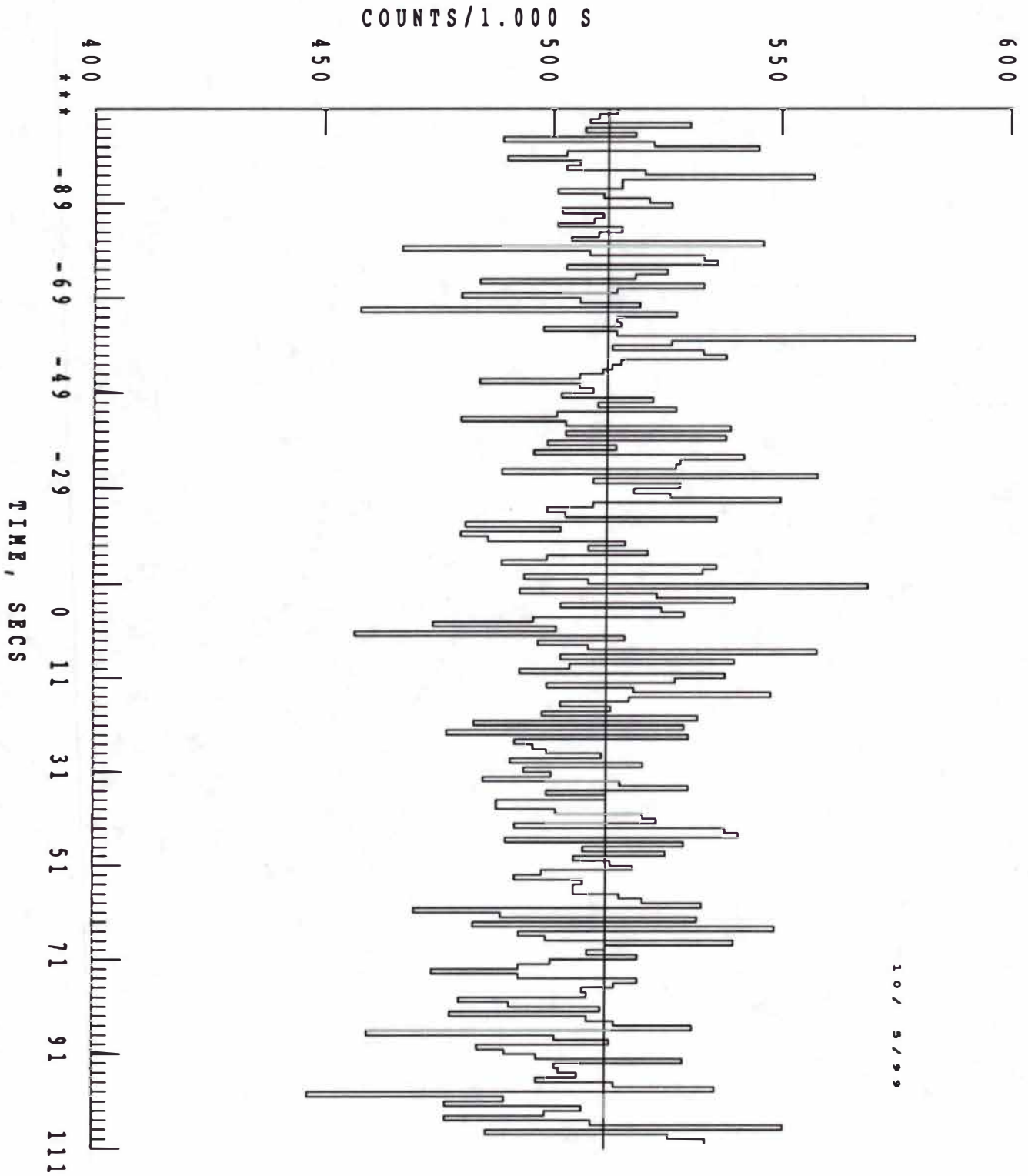
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6437	971015	10736	78236	3900	193	+28	12

NEAR

15/10/97

78301.775

100-1000 keV



BATSE BURST# 6437

ULYSSES RT

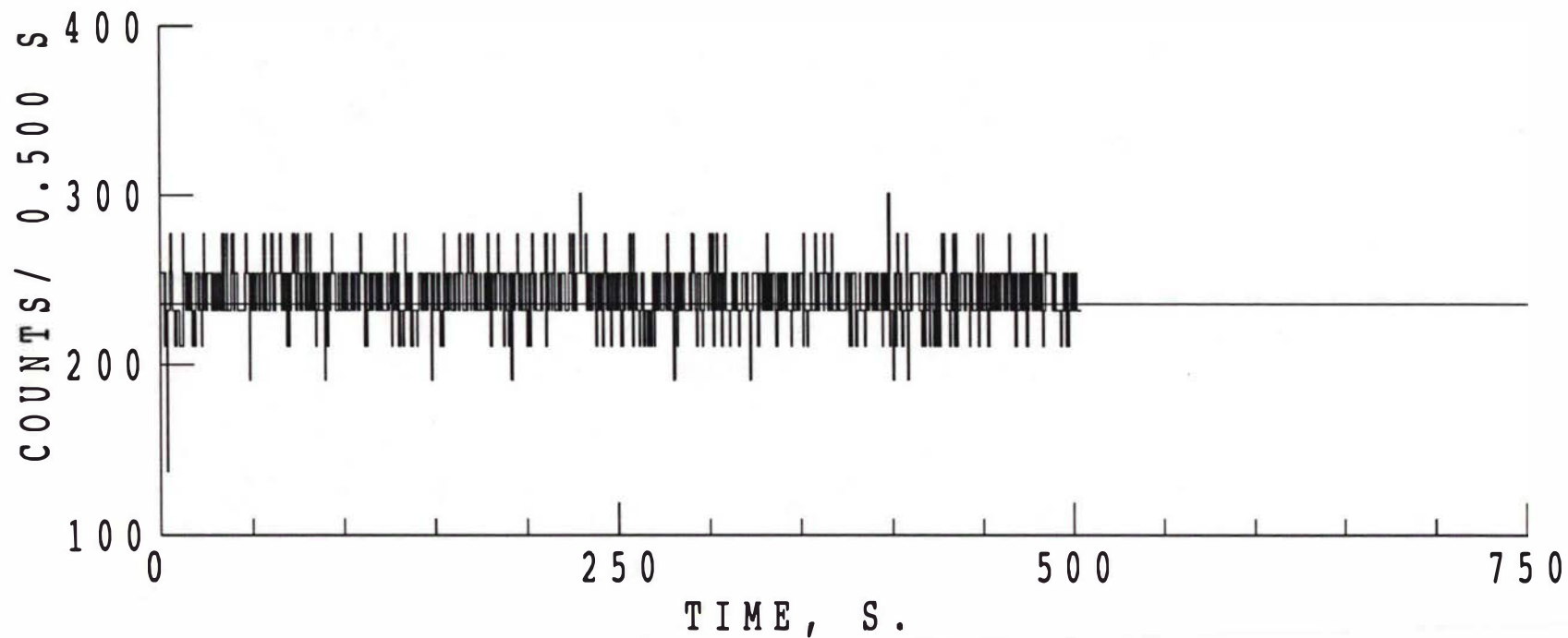
21 / 10 / 97

15 / 10 / 97 75312.383 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

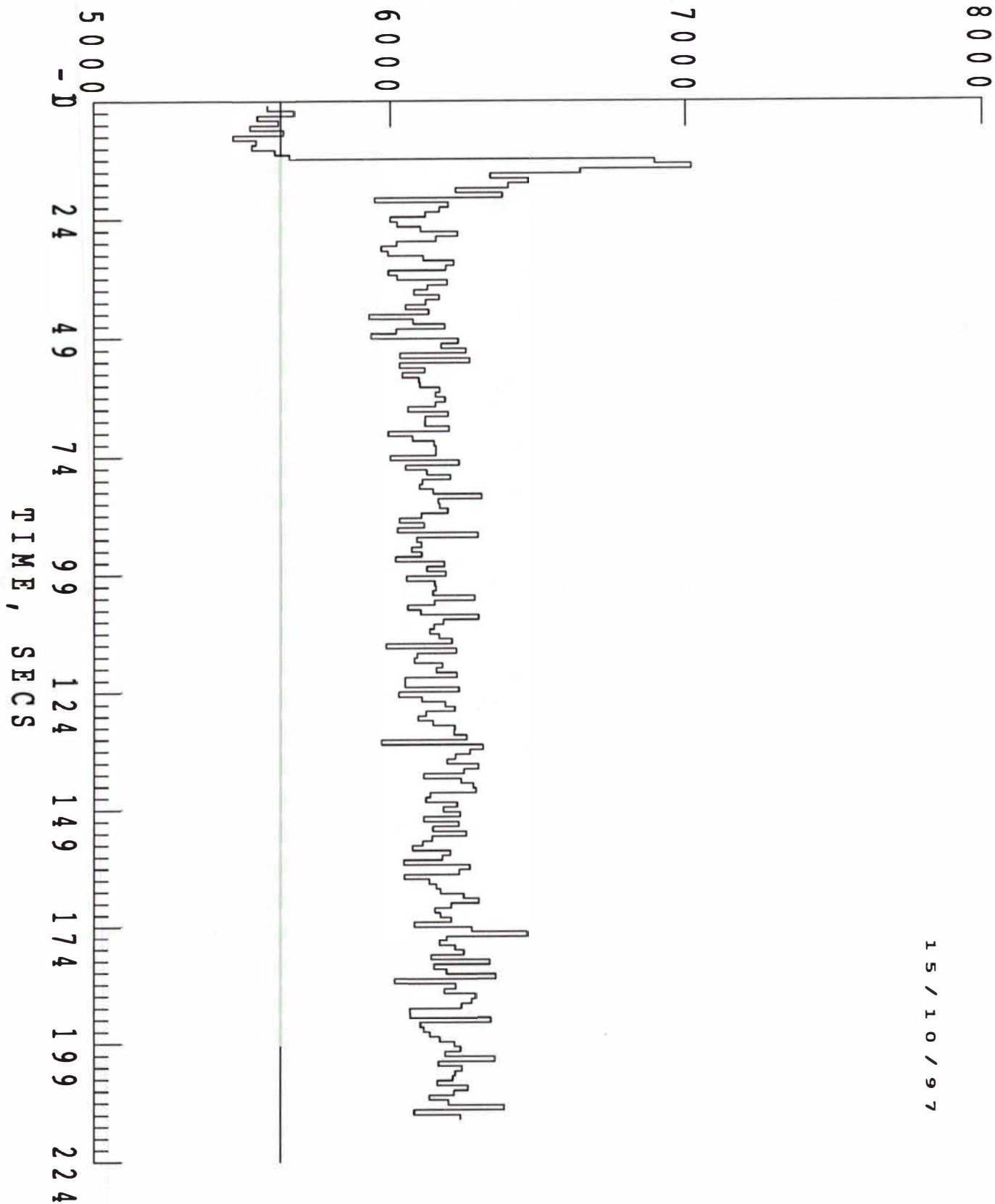
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6437 15/10/97 78224.097

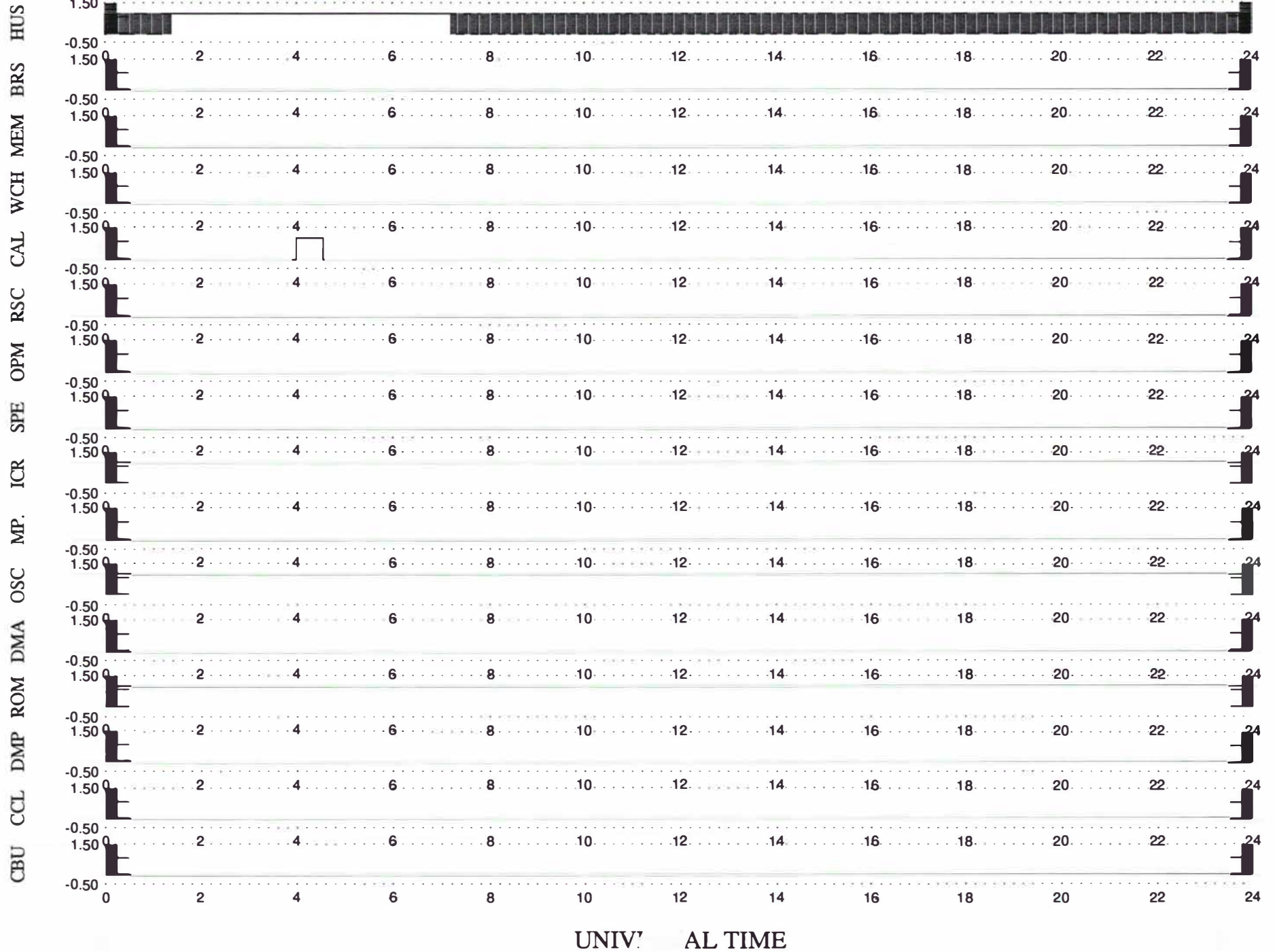
25 - 100 keV

COUNTS/1.024 S

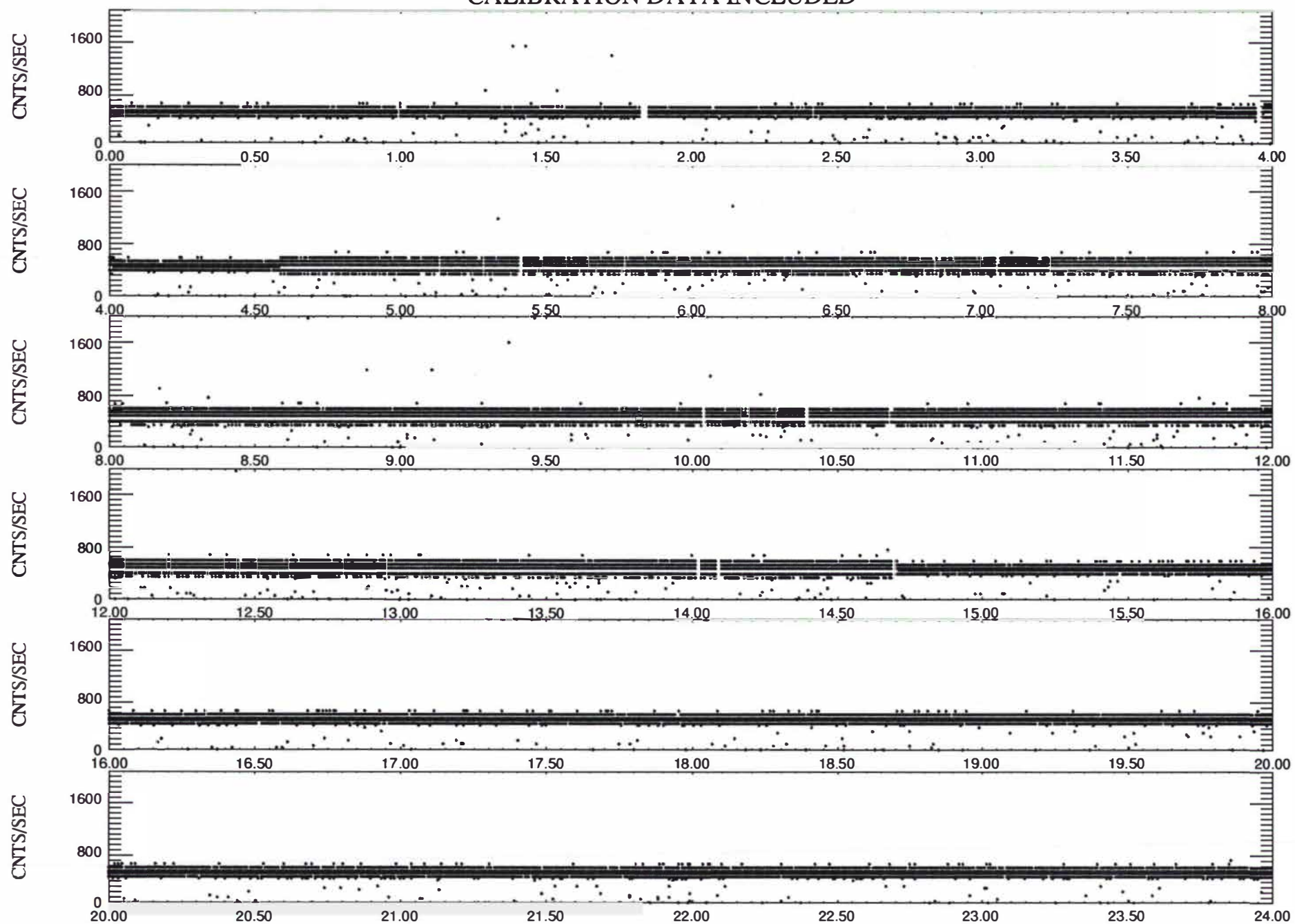


15 / 10 / 97

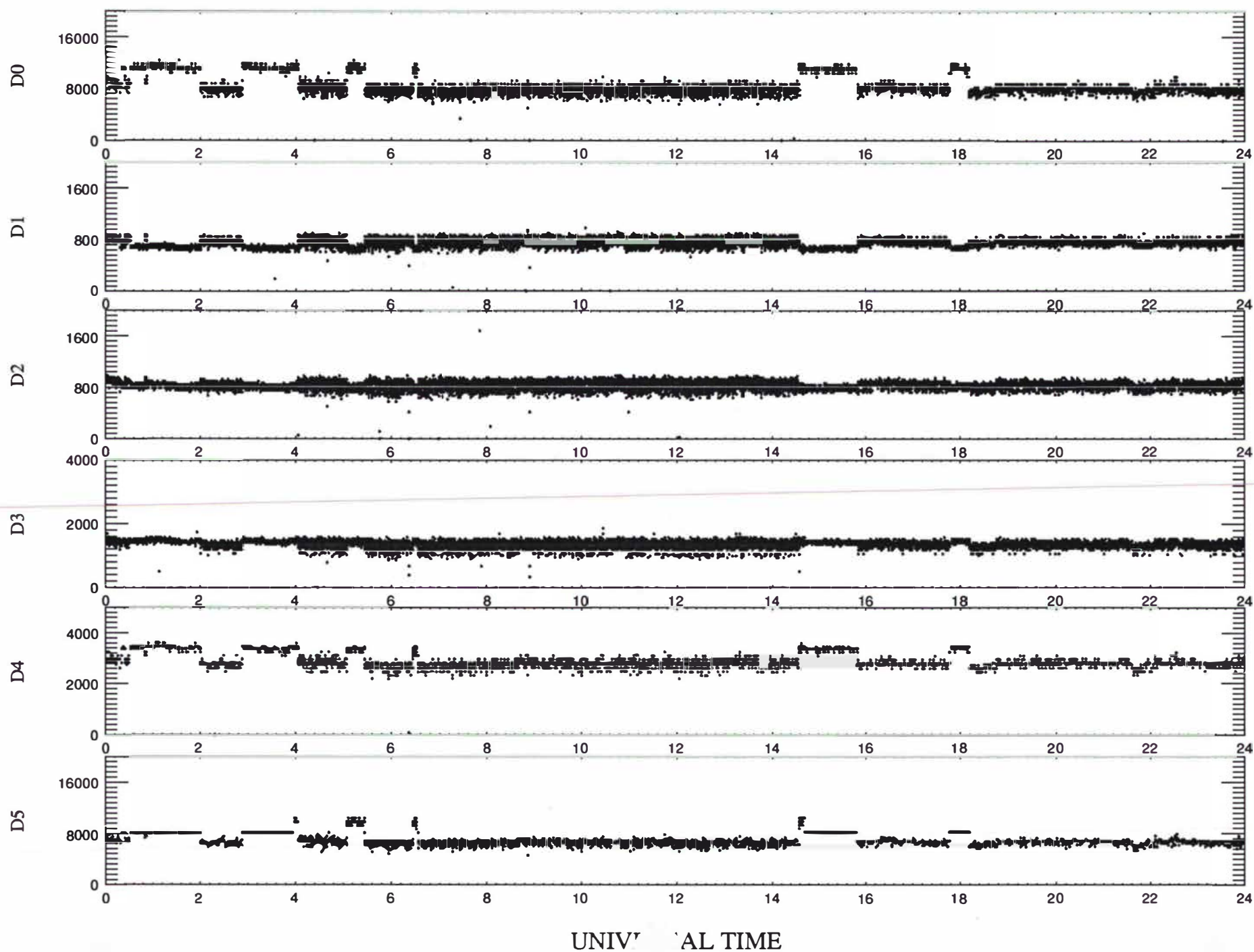
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Oct 21 11:48:37 1997
Date: Tue, 21 Oct 1997 13:47:07 -0500 (CDT)
From: RICHARDSON@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@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.: 6438

TIME: TJD=0737 SECONDS=26989

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

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=130.9 AZIMUTH=293.9 ERROR=23.9 DEGREES

COMMENTS:

CYG X-1 OCCULTATION RISE.

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Oct 21 11:54:27 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 LAA25817; Tue, 21 Oct 1997 11:54:20 -0700
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA27150; Tue, 21 Oct 1997 11:54:12 -0700
Date: Tue, 21 Oct 1997 13:53:02 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971021135302.20212d02@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6439
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6439
EVENT OF 1997 OCT 16 DAY OF YEAR=289
EVENT CROSSING TIME AT BATSE : 41696. S. OR 11:34:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 52.000 49.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/10/ 97 IS:
RA= 167.514 DEC= 14.923 DIST= 6.011 AU
BATSE-ULYSSES DISTANCE = 899202822. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.49 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 236.05 SECS.
CROSSING TIME AT ULYSSES IS 41932. S. OR 11:38:52 +/- 572.72 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/10/ 97 IS:
RA= 250.473 DEC= -23.396 DIST= 1.858 AU
MARS-BATSE DISTANCE = 277960544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 29.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 807.36 SECS.
CROSSING TIME AT MARS IS 42503. S. OR 11:48:23 +/- 91.41 SECONDS

BATSE BURST TRIGGER

NO.: 6439

TIME: TJD=0737 SECONDS=41696

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=156.4 AZIMUTH=117.4 ERROR=17.9 DEGREES

COMMENTS:

GRB WEAK SINGLE PULSE. DUR. APPROX = 0.5 SEC. NOT VISIBLE ABOVE 300KEV.

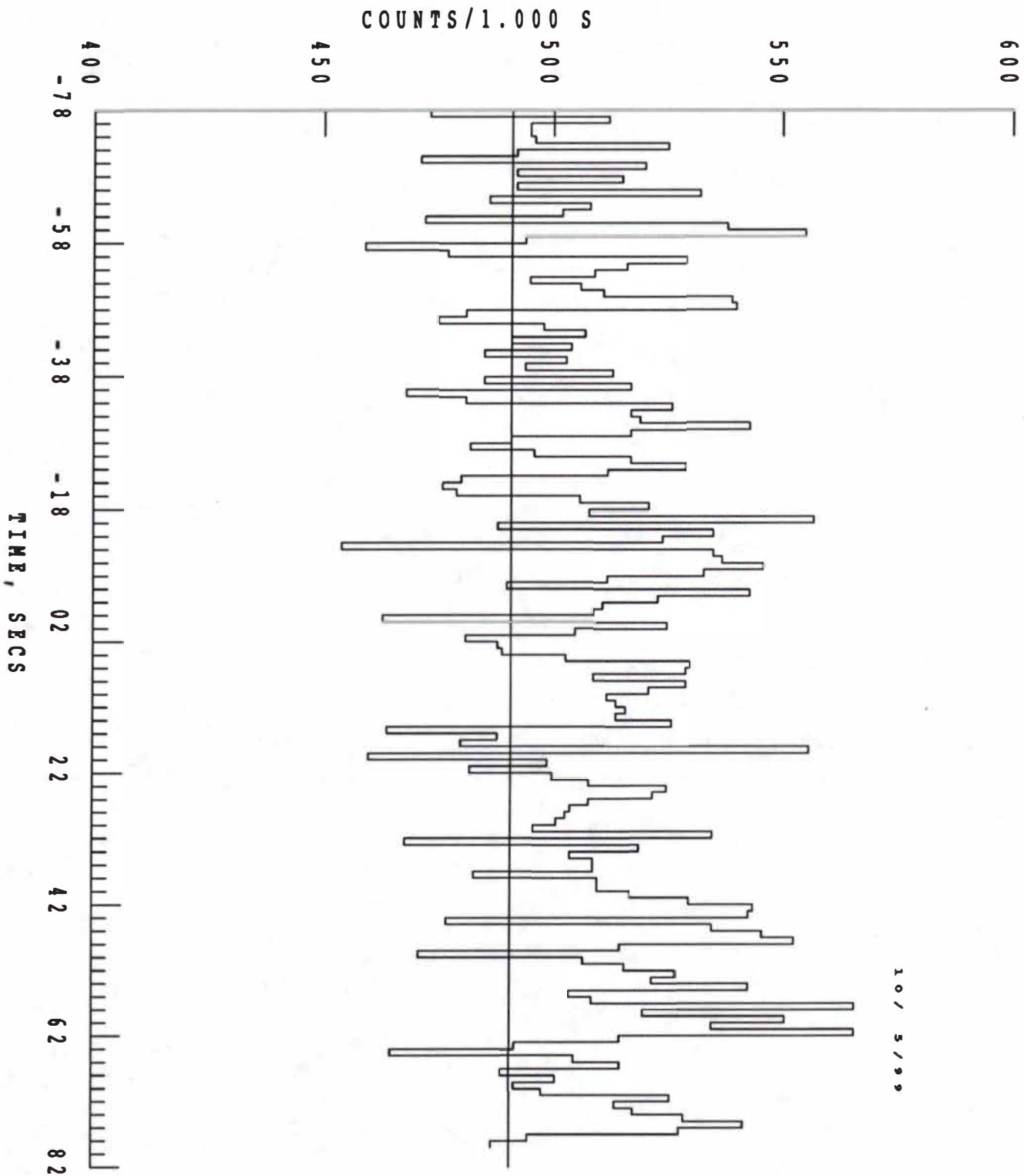
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6439	971016	10737	41696	4500	052	+49	.5

NEAR

16/10/97

41413.765

100-1000 keV



BATSE BURST# 6439

ULYSSES RT

21 / 10 / 97

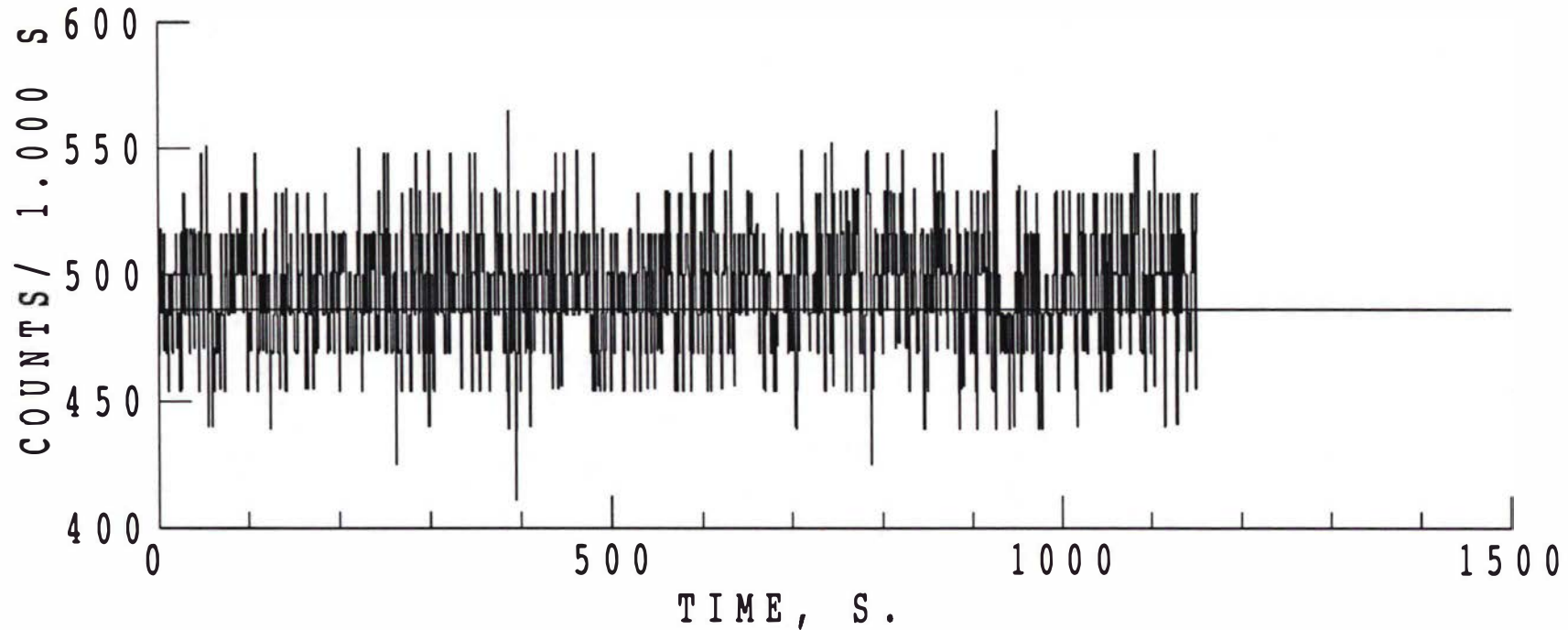
16 / 10 / 97 41364.223 s

0.250 S INTERVALS REGROUPED BY 4

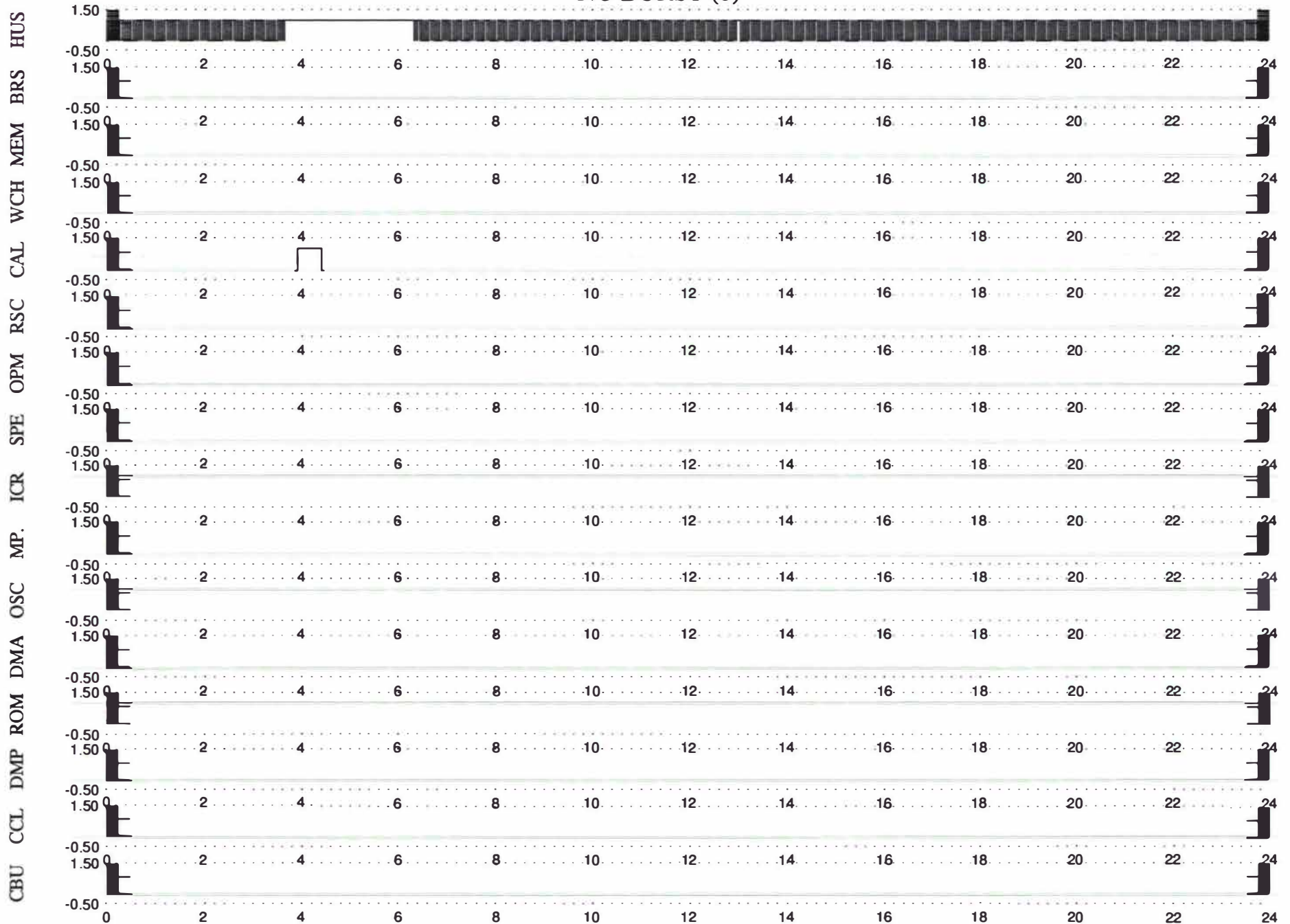
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

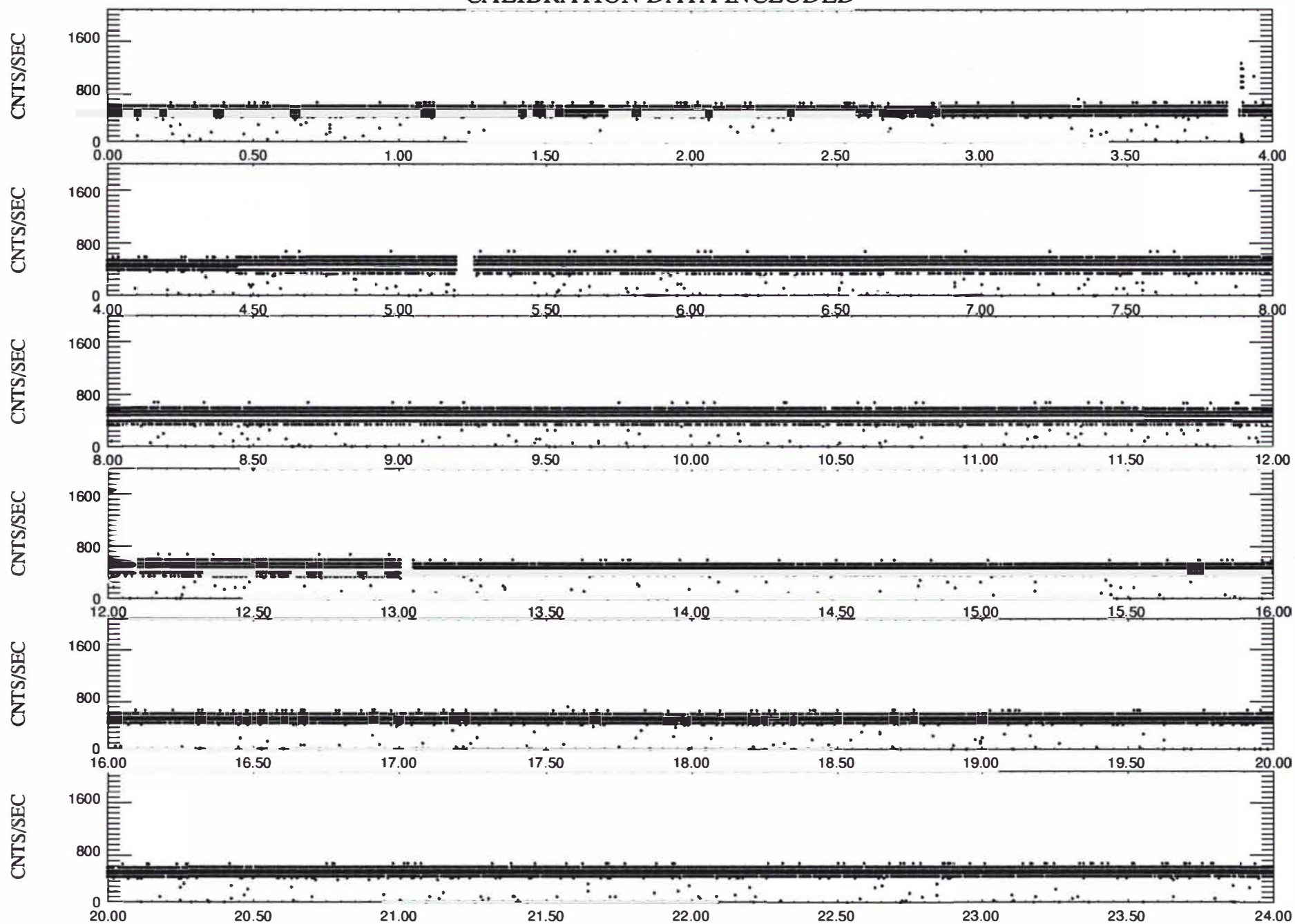
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



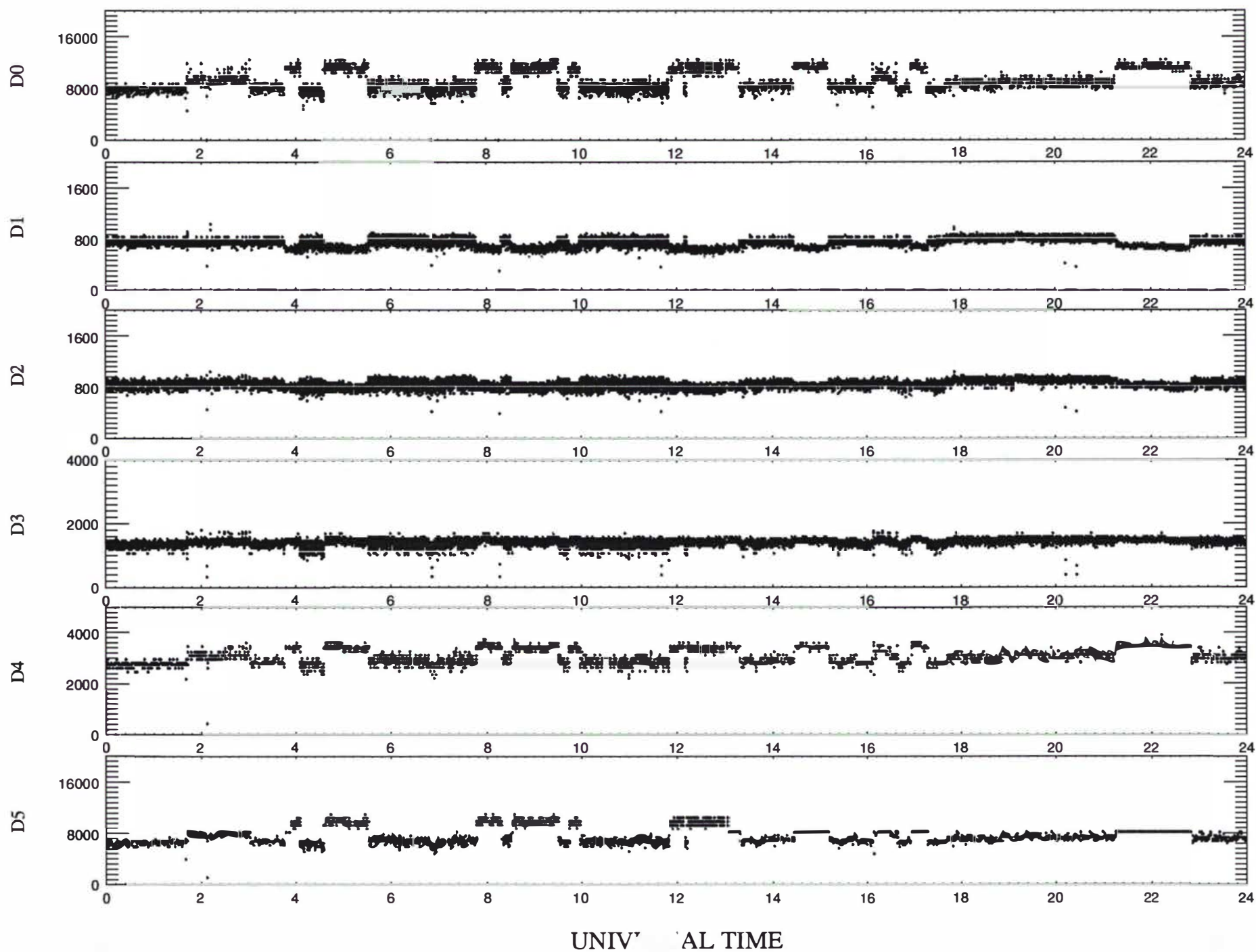
UNIV! AL TIME



CALIBRATION DATA INCLUDED



UNIV AL TIME



*17th
for KONUS*

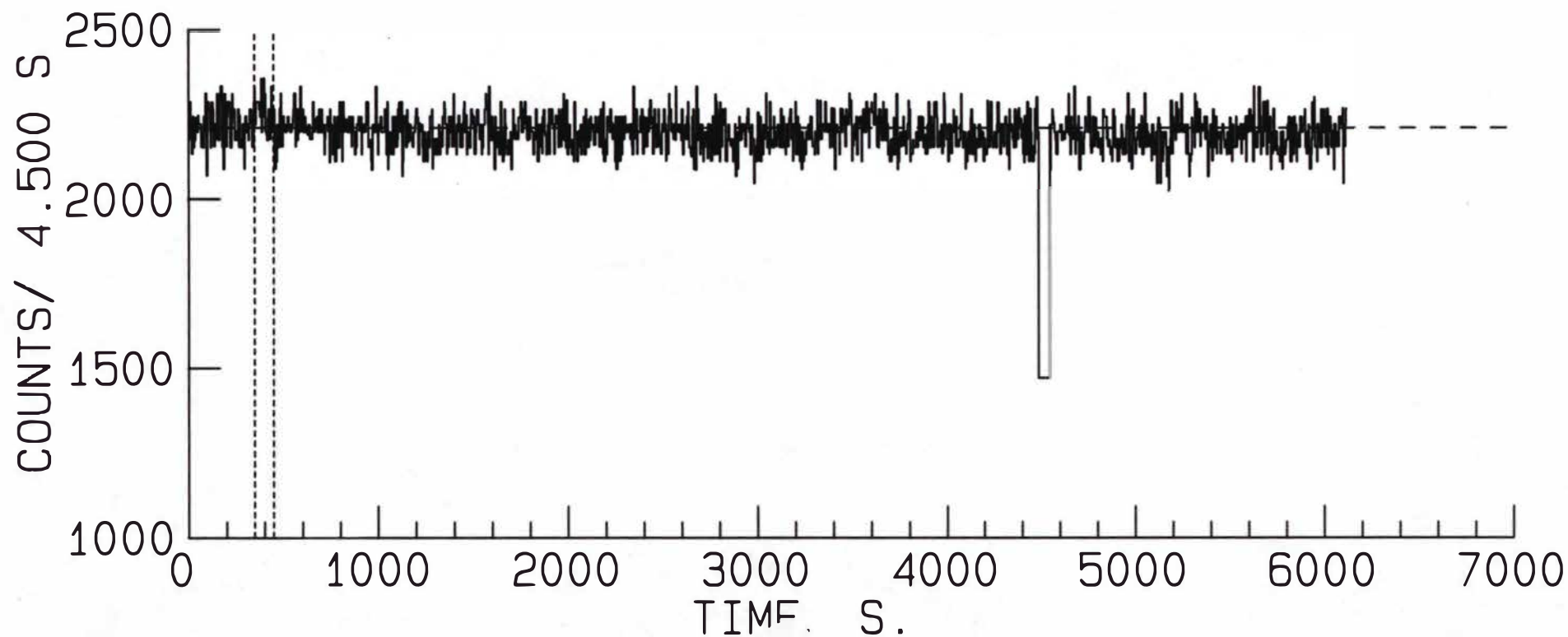
ULYSSES RT

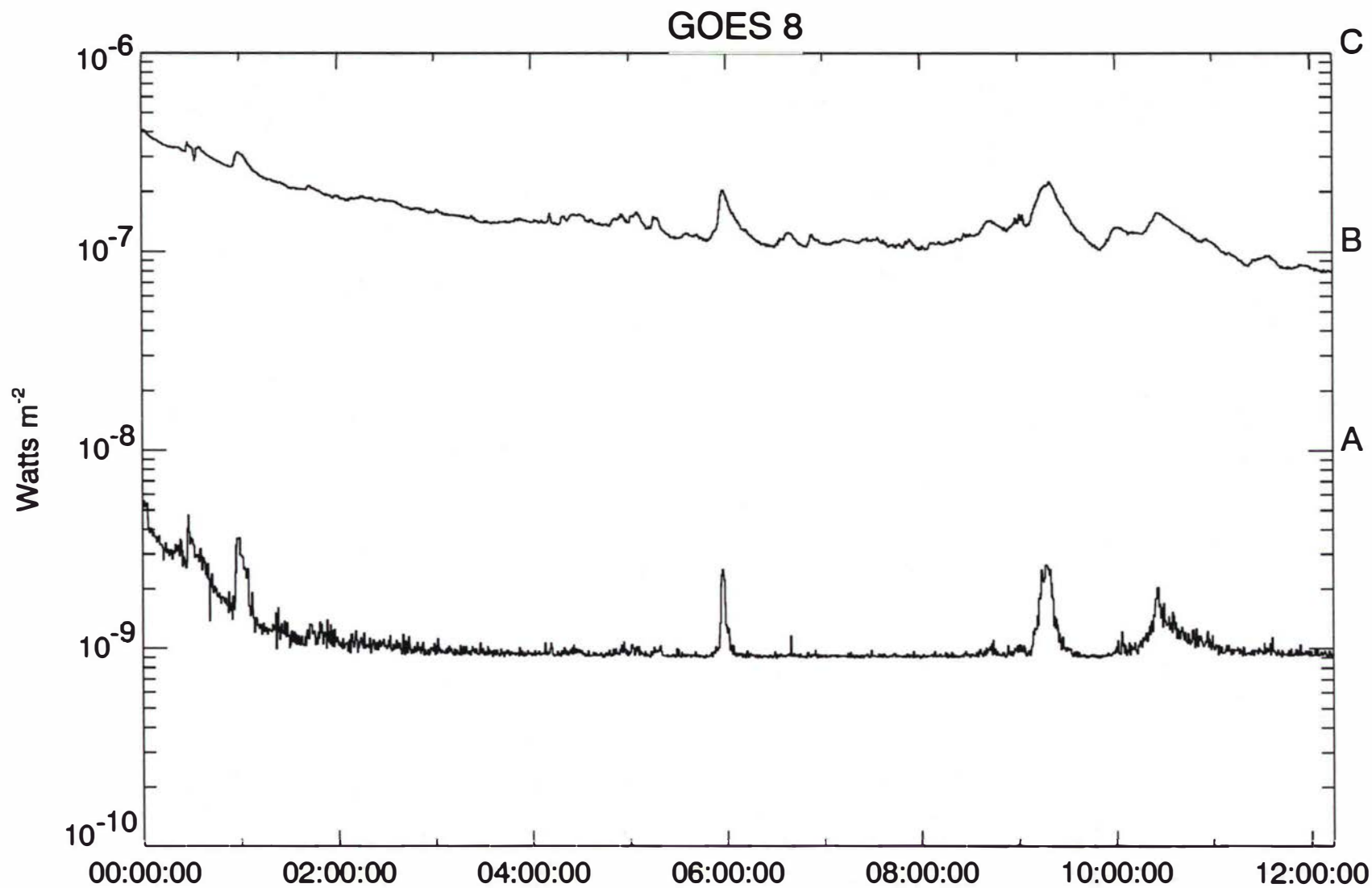
5 / 2 / 0

16/10/97 85248.465 s

0.500 S INTERVALS REGROUPED BY 9

22- 147 keV





Data Start: 97/10/17, 0000:00

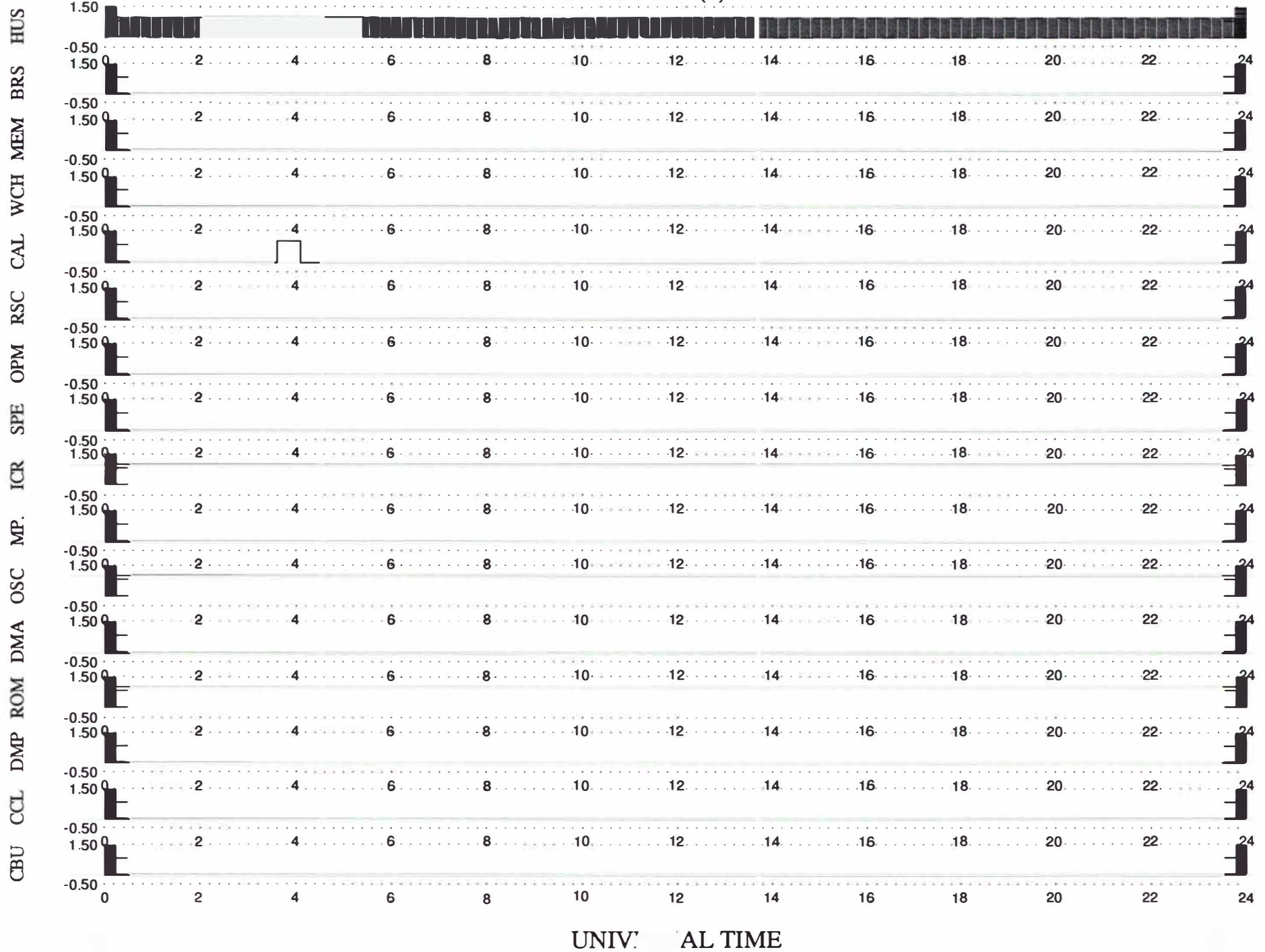
Plot created: 97/10/21, 1010

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

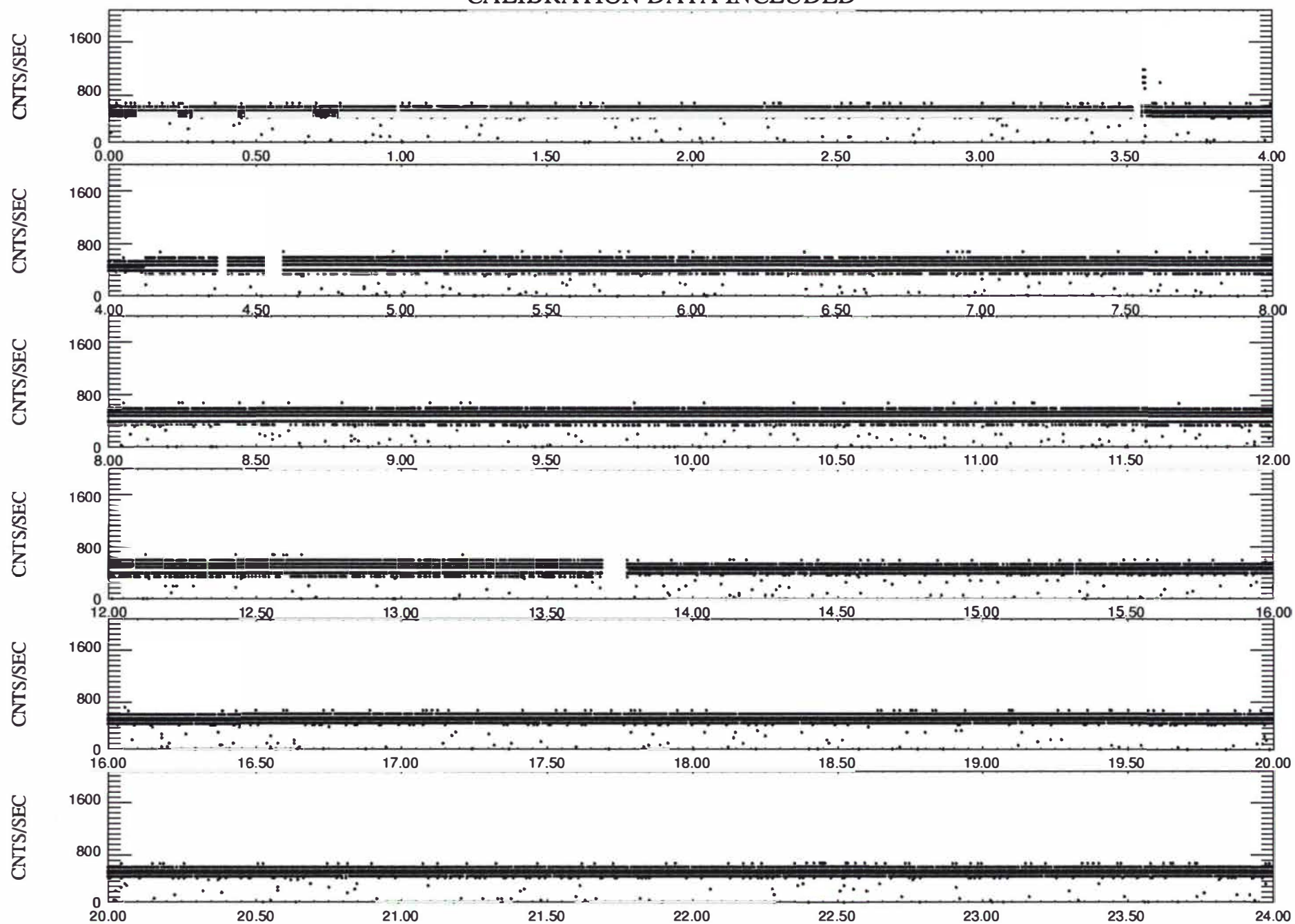
2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

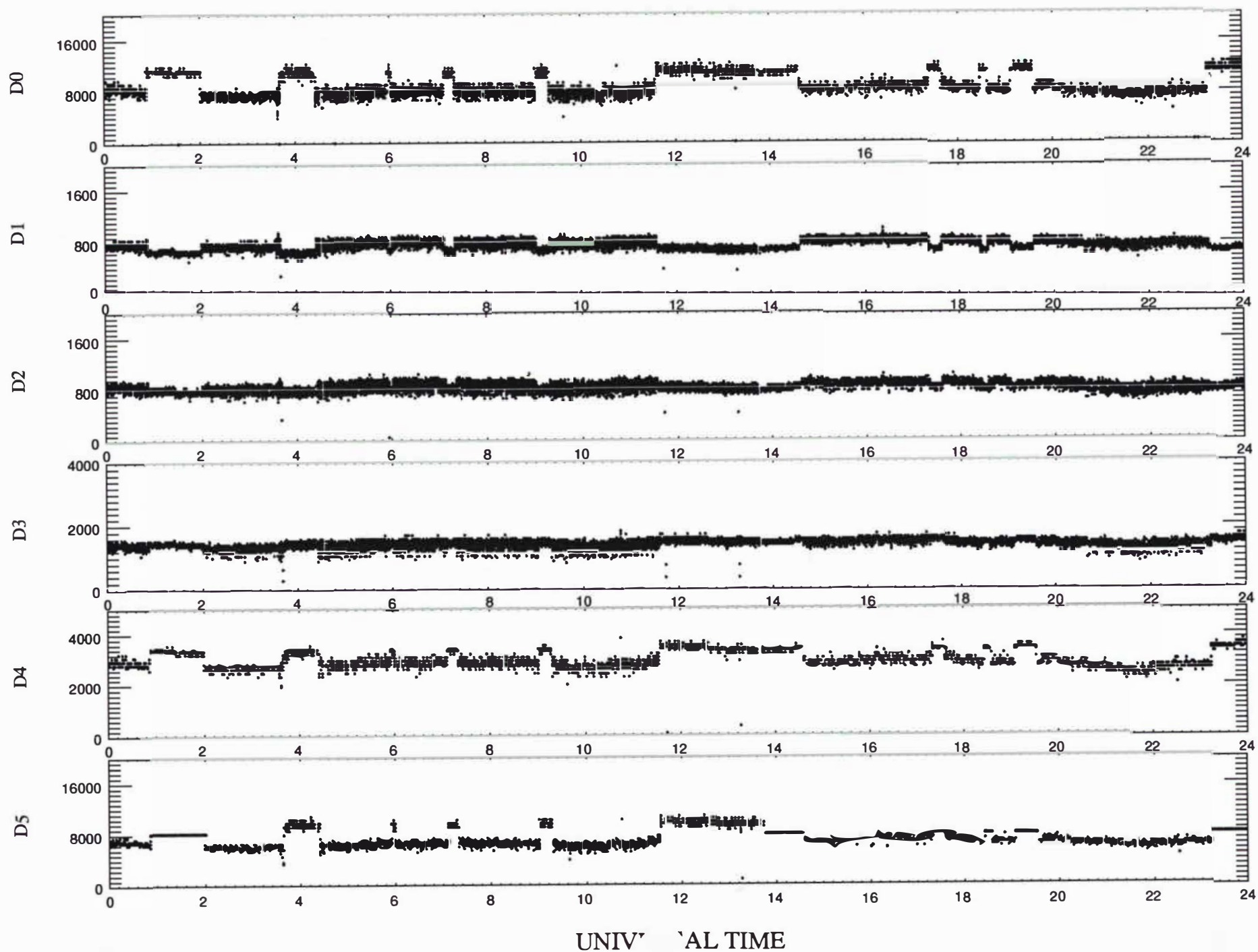
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



KONUS

ULYSSES RT

15 / 02 / 00

18 / 10 / 97 41364.164 s

0.250 S INTERVALS REGROUPED BY 17

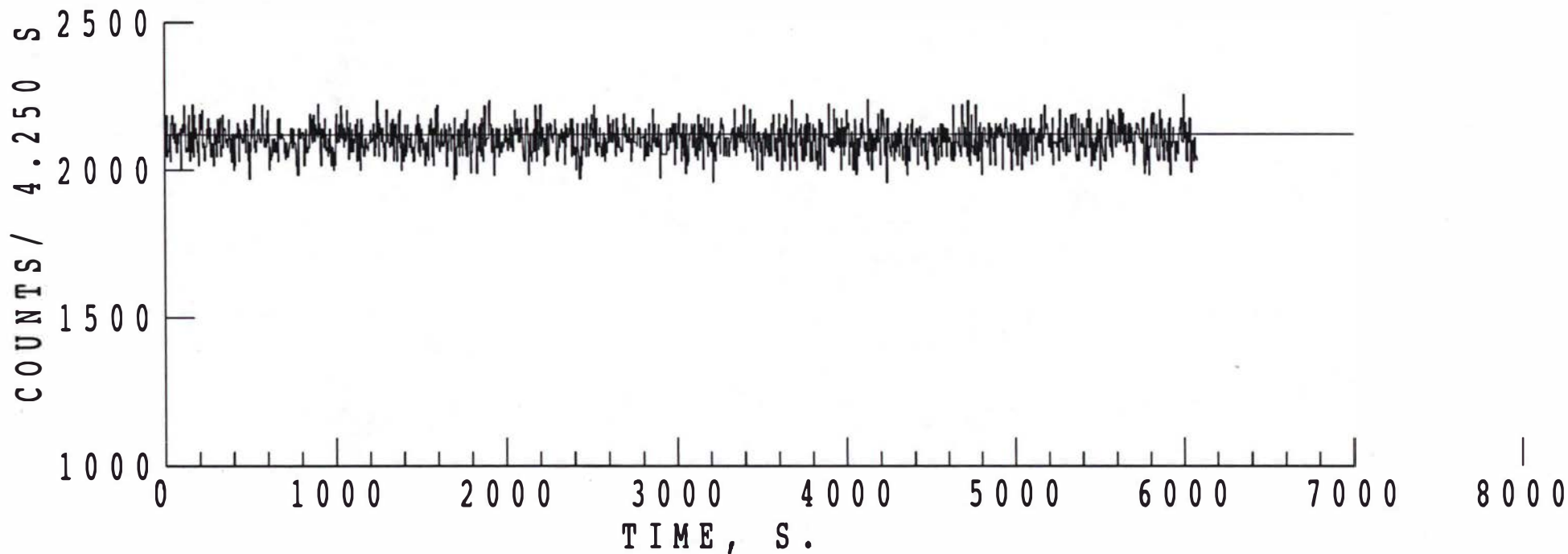
0 - 0 keV

N= 10 M= 10

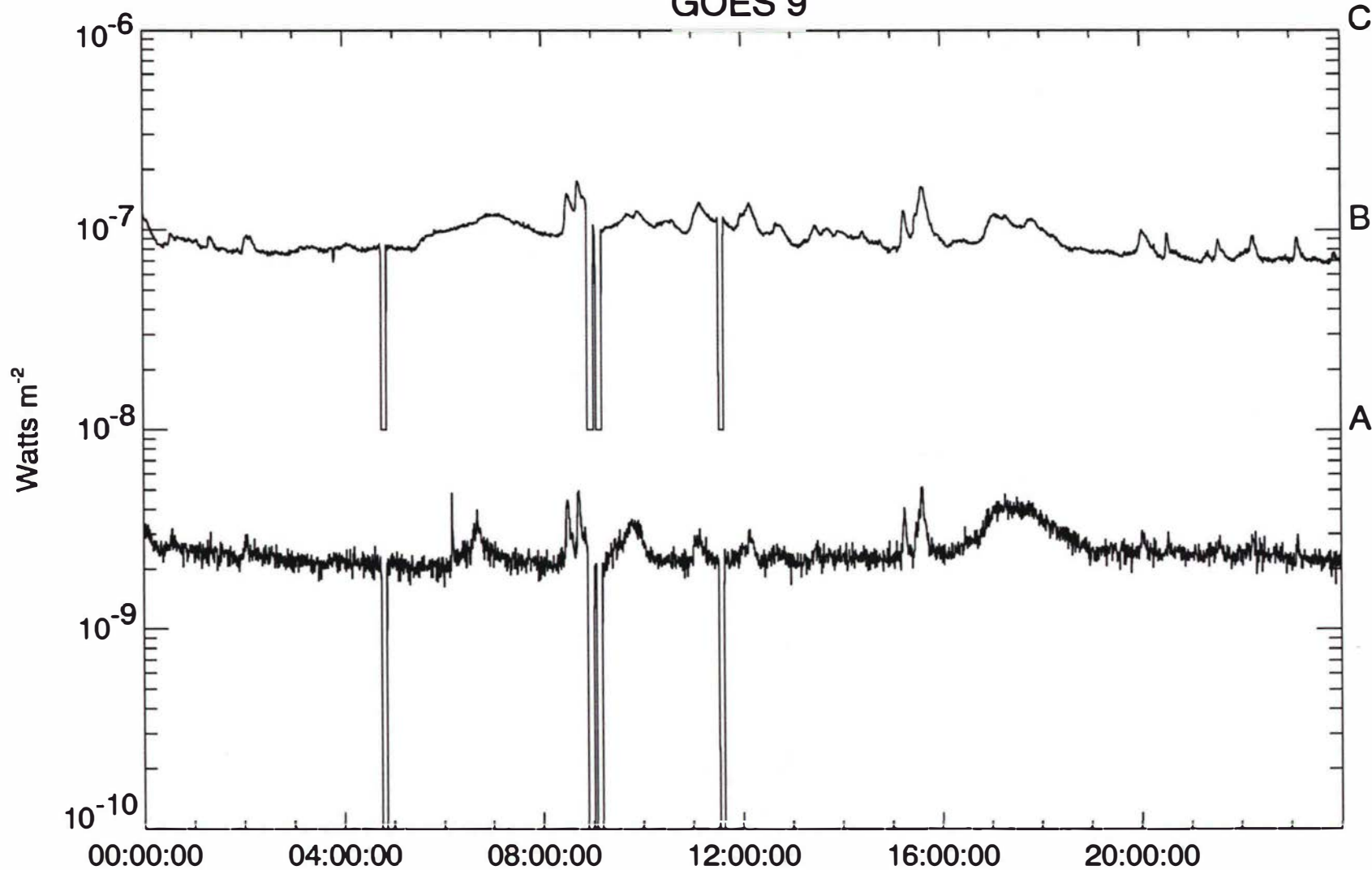
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



GOES 9



Data Start: 97/10/18, 0000:00

Plot created: 97/10/22, 1011

Channel

1 (1.0 - 8.0 Angstroms)

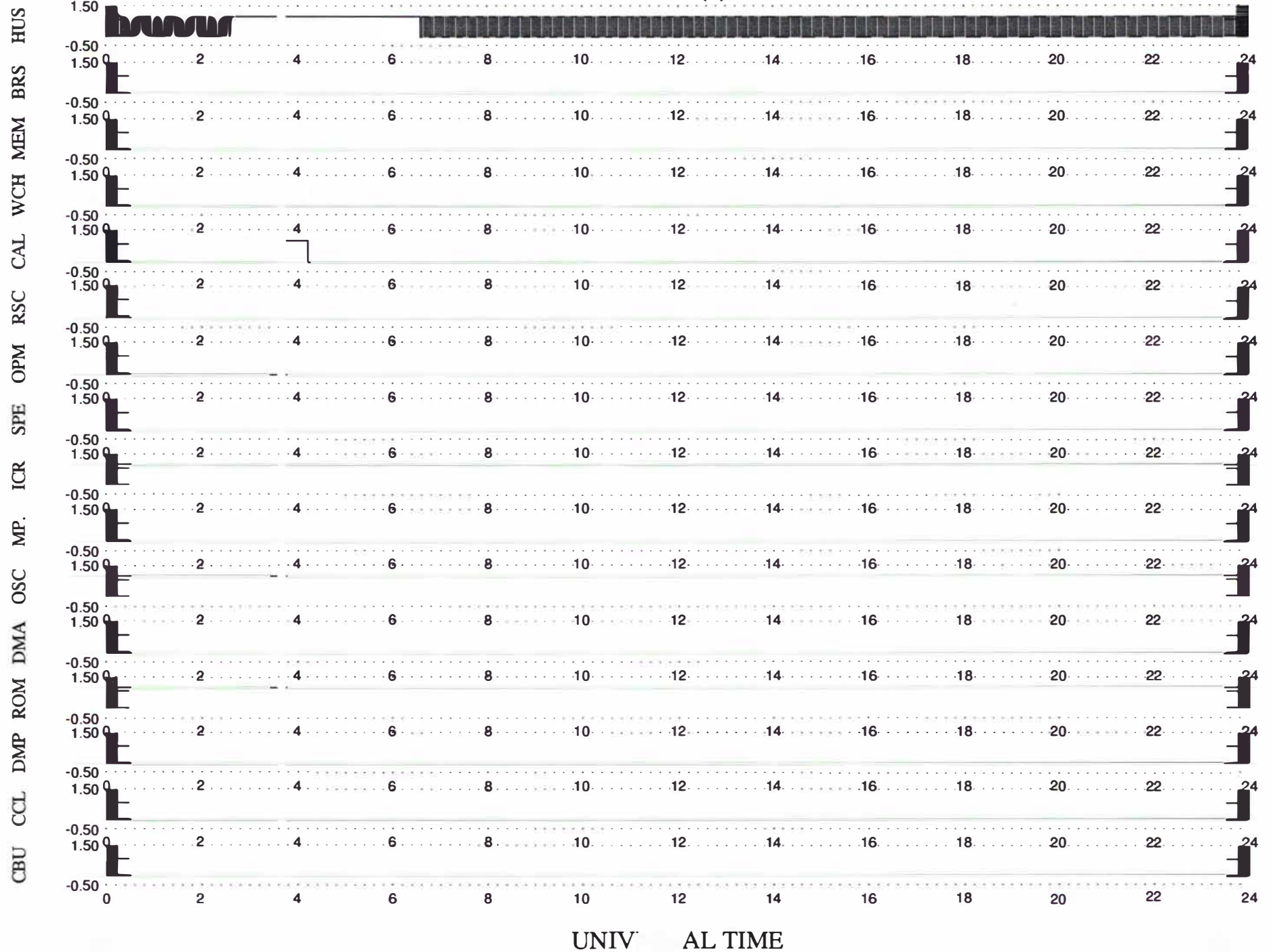
Background not subtracted

2 (0.5 - 4.0 Angstroms)

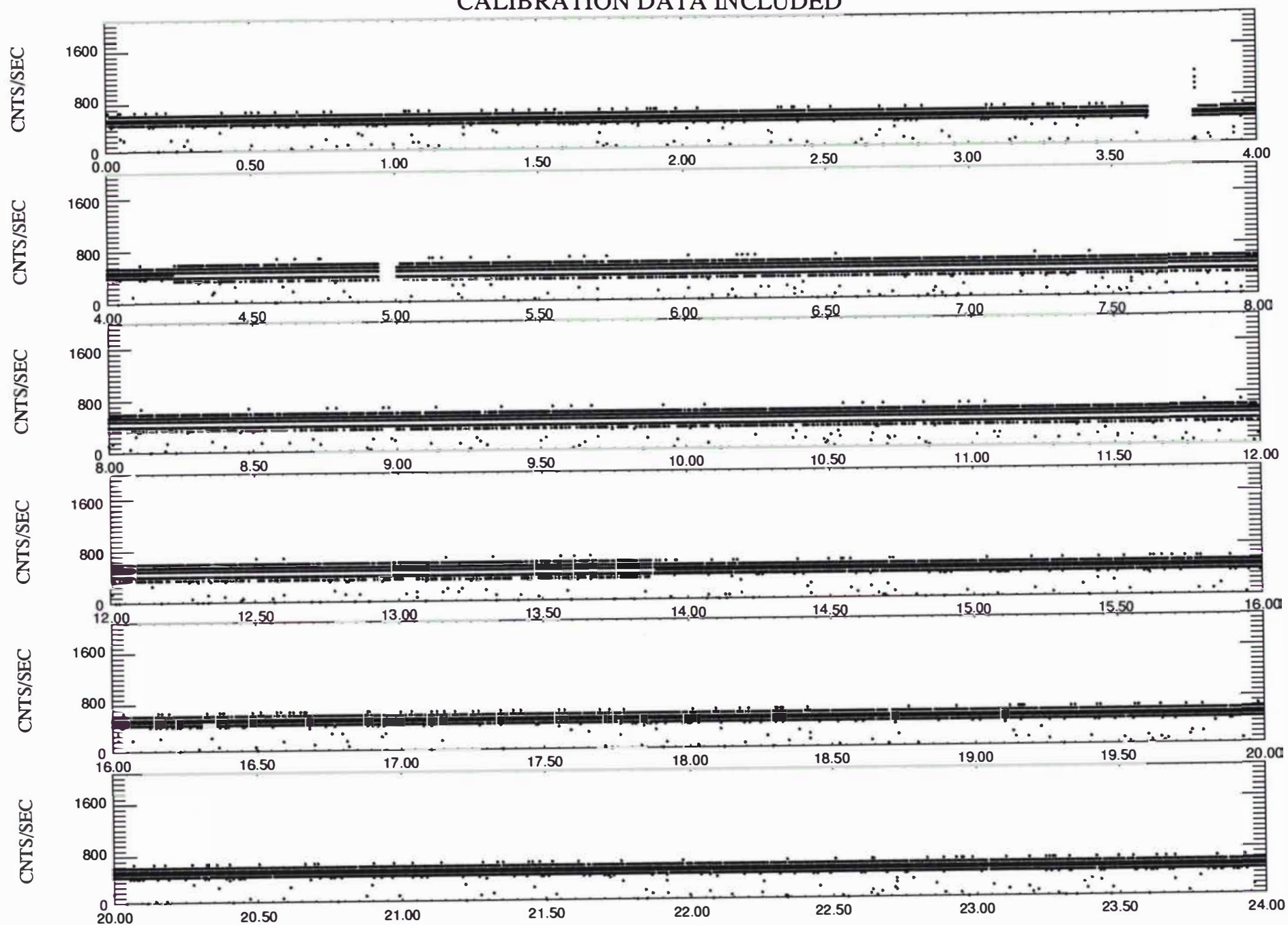
Background not subtracted

Sample average = 10

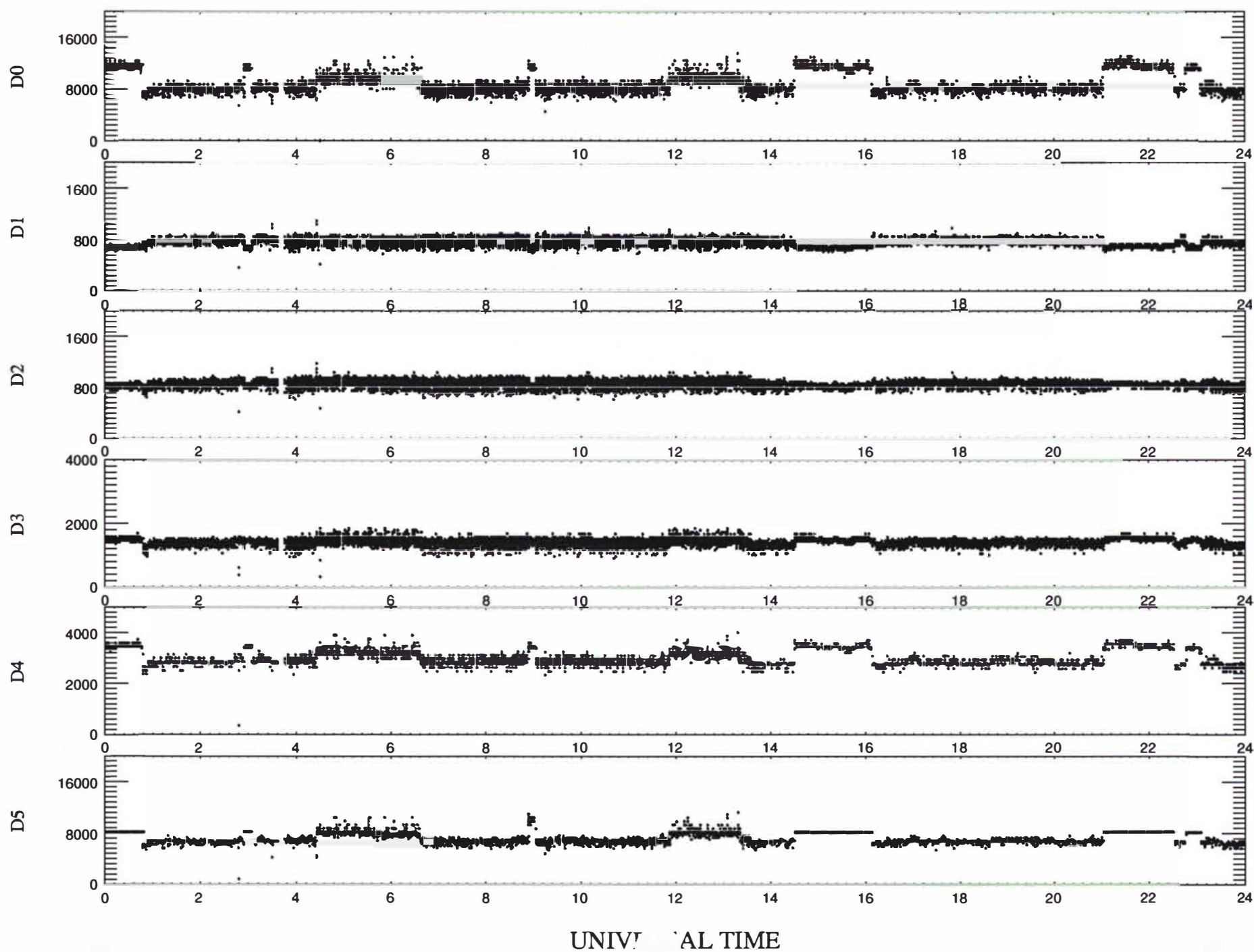
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIV 'AL TIME



Date: May 11 '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? *Ulysses triggered data corrupted - can't get trigger time*

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

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?

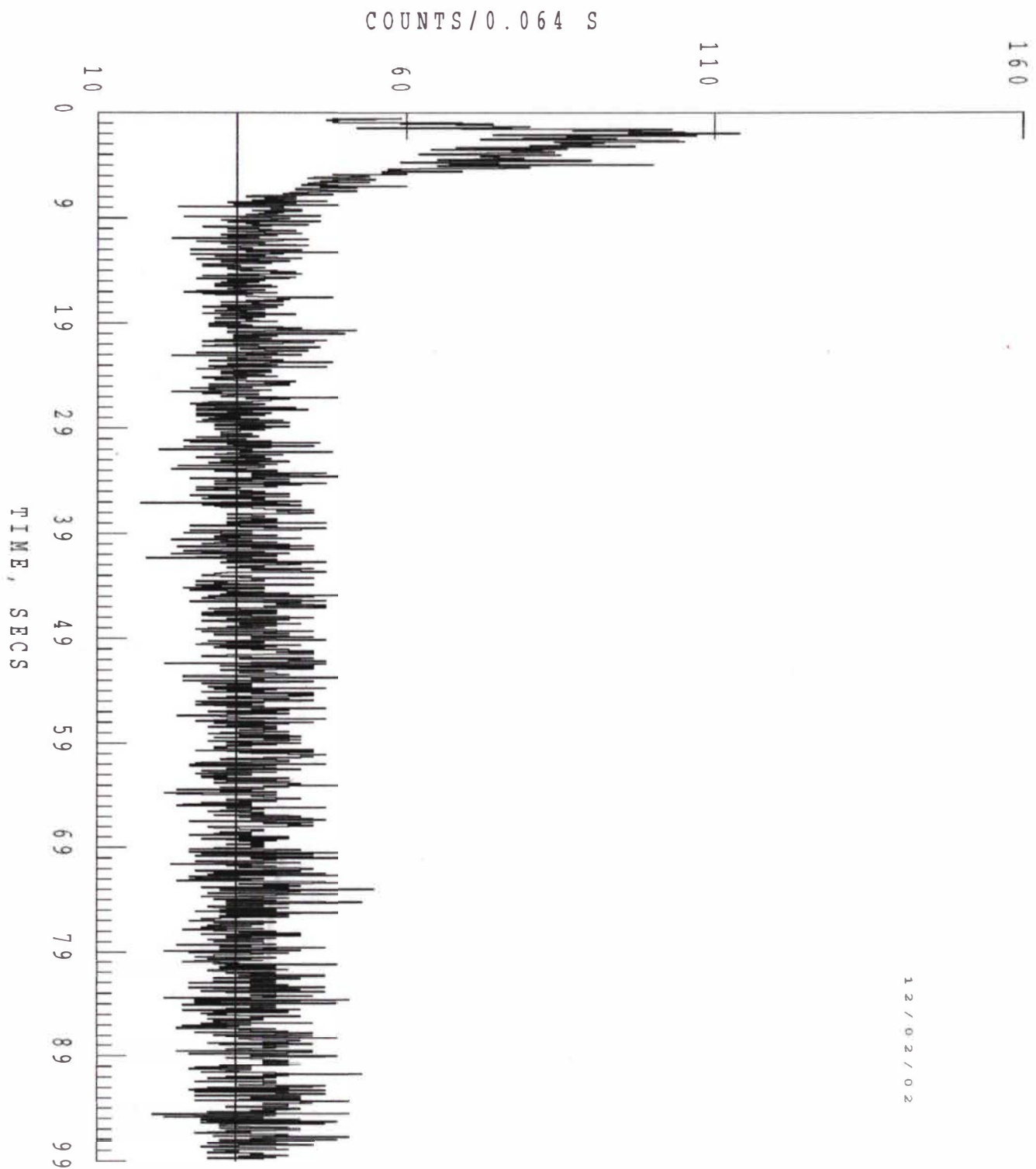
-
- ☒ ACCESS database updated?

KONUS1

19/10/97

53754.243

50 - 200 keV



12 / 02 / 02

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

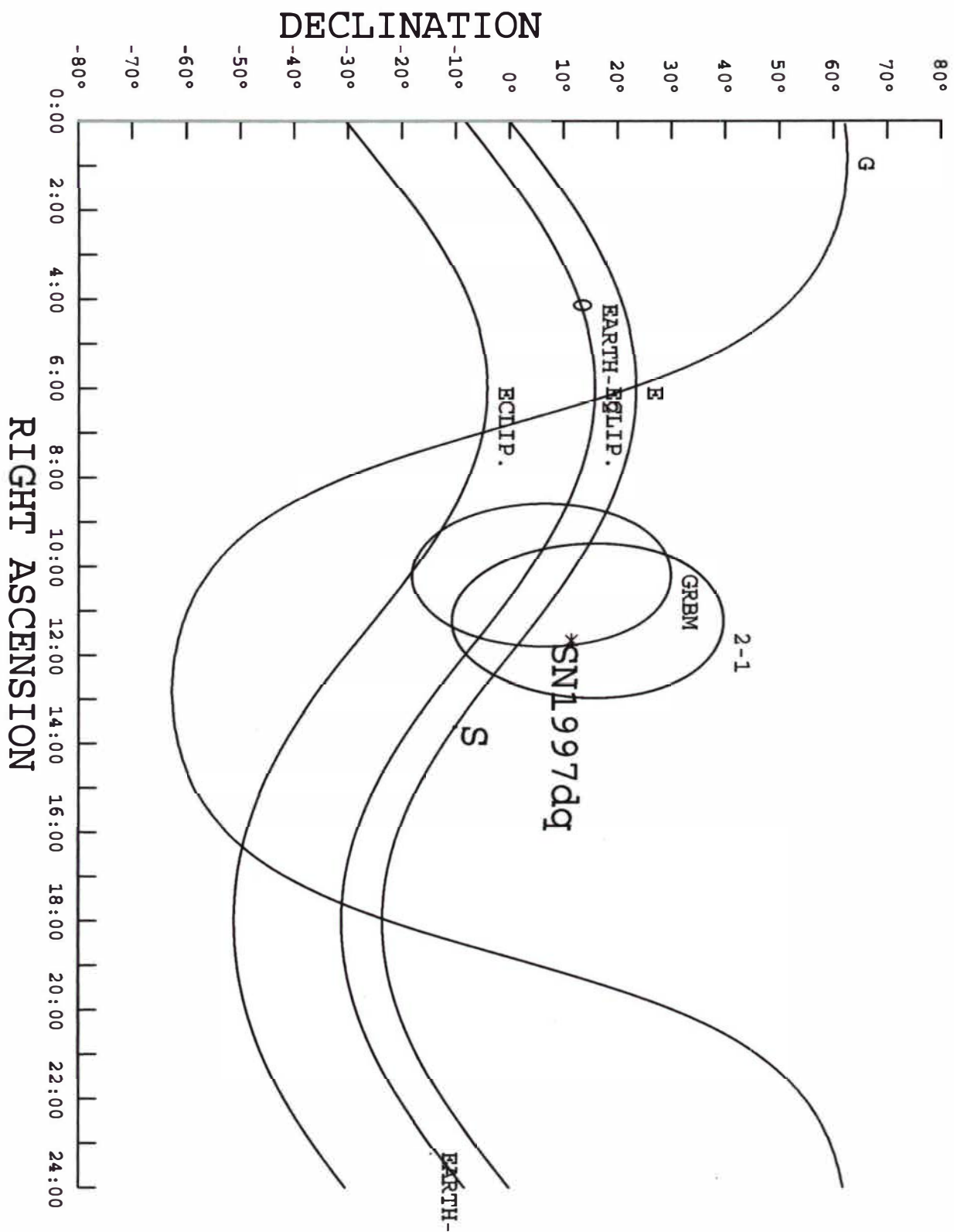
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS1

EVENT OF OCT 19, 1997 14:08

7 / 5 / 4



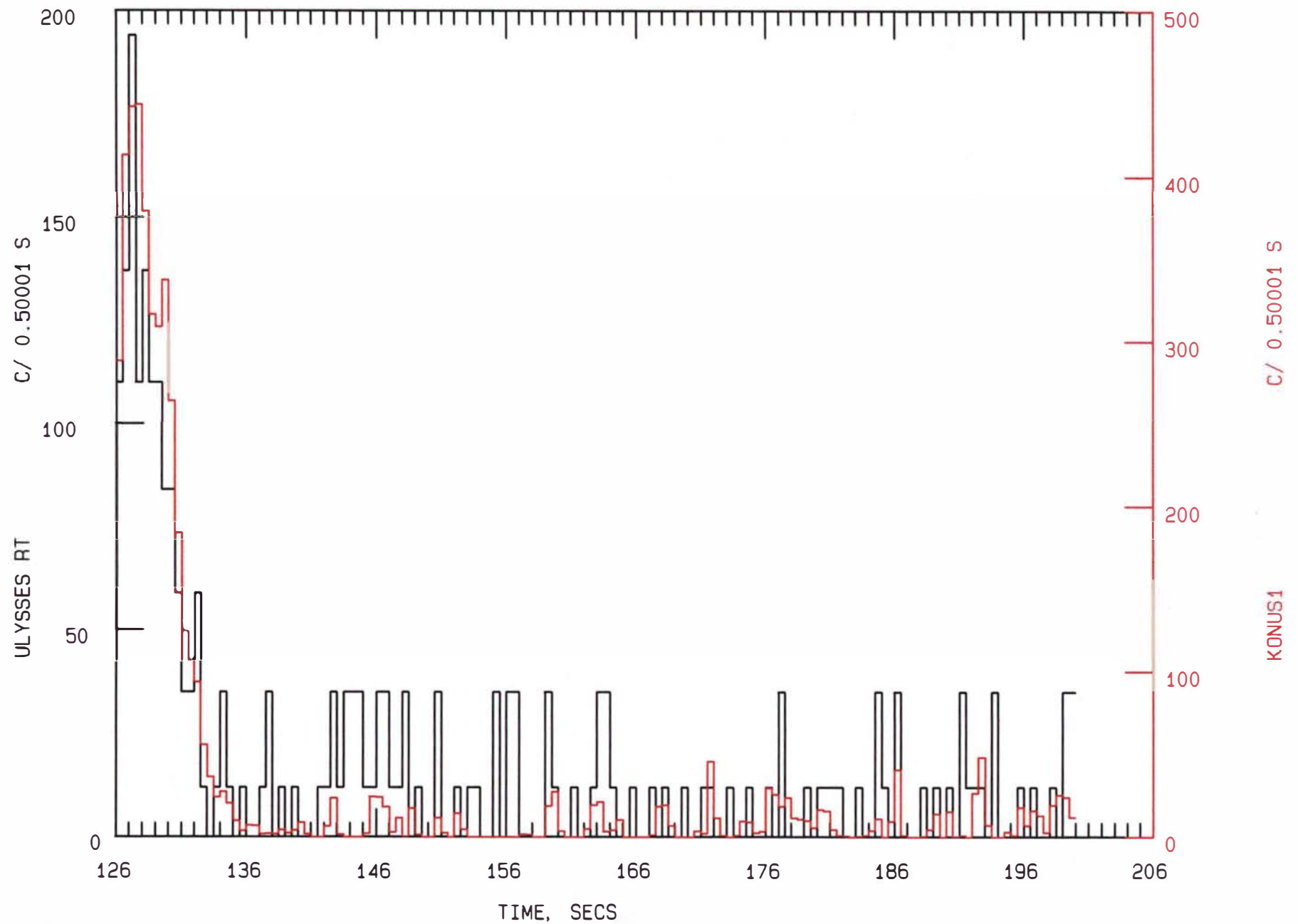
ULYSSES RT-KONUS1

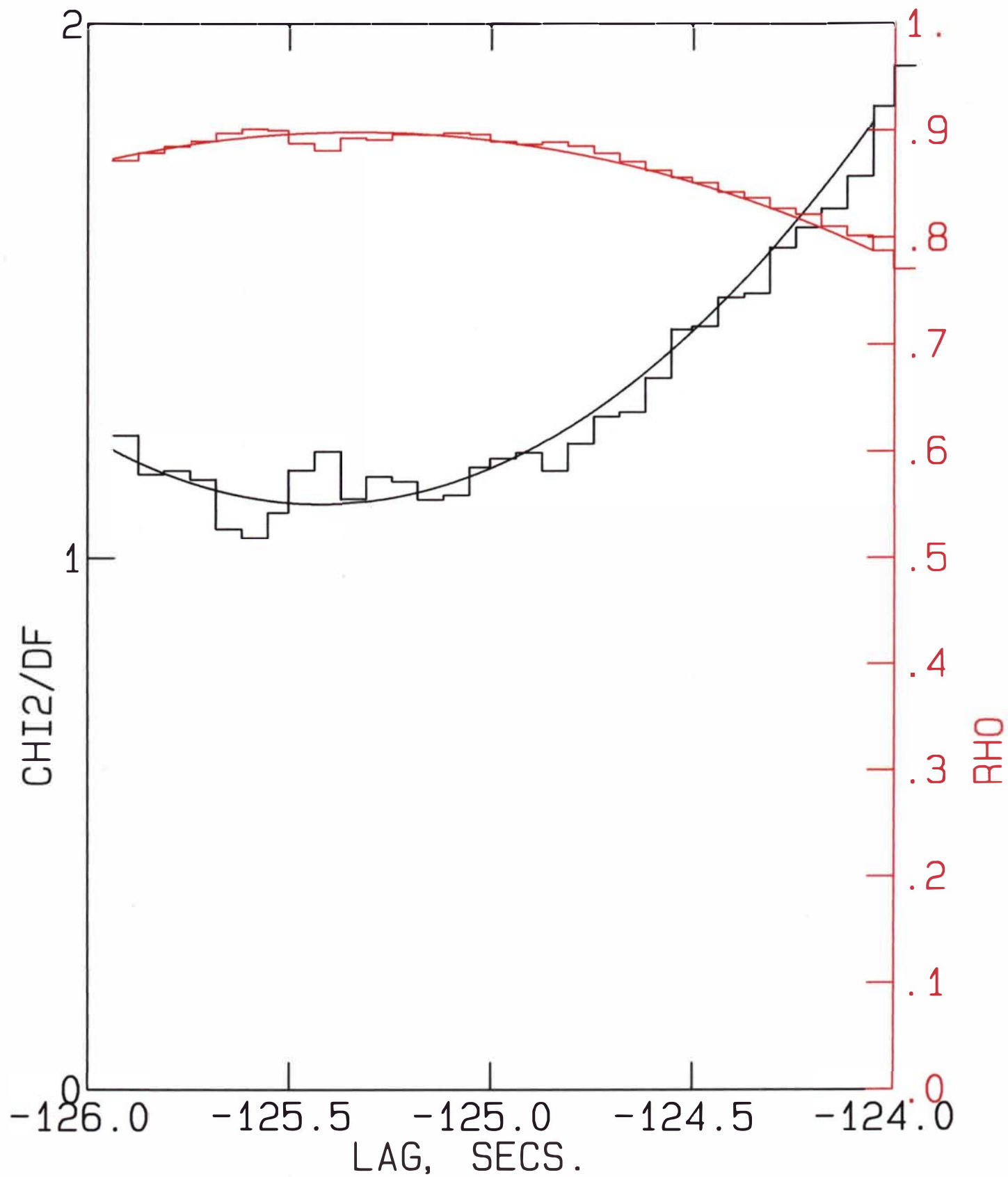
CORRELATION

19/10/97

50924.473

7/ 5/ 4

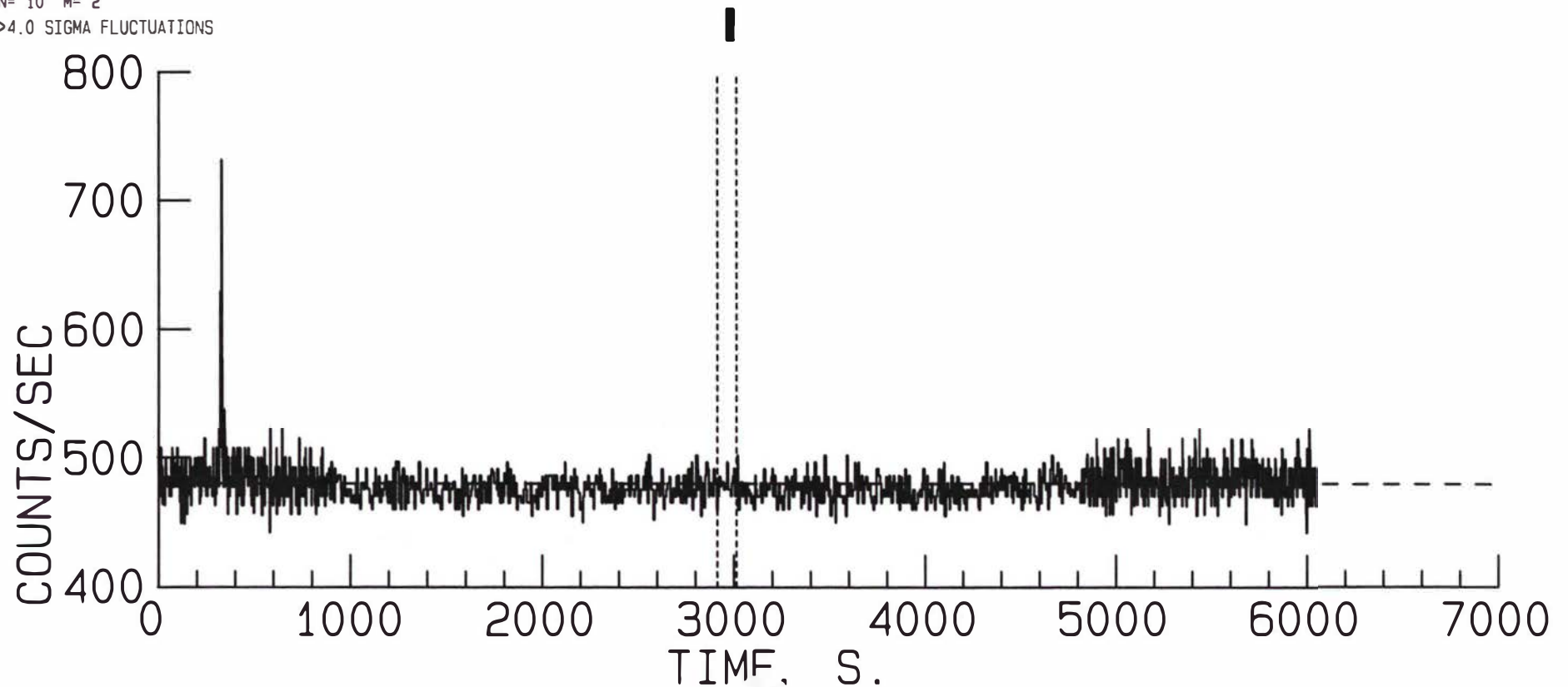




ULYSSES RT
19/10/97 50724.488 s
INTERVALS REGROUPED BY 6
22- 148 keV

7 / 5 / 4

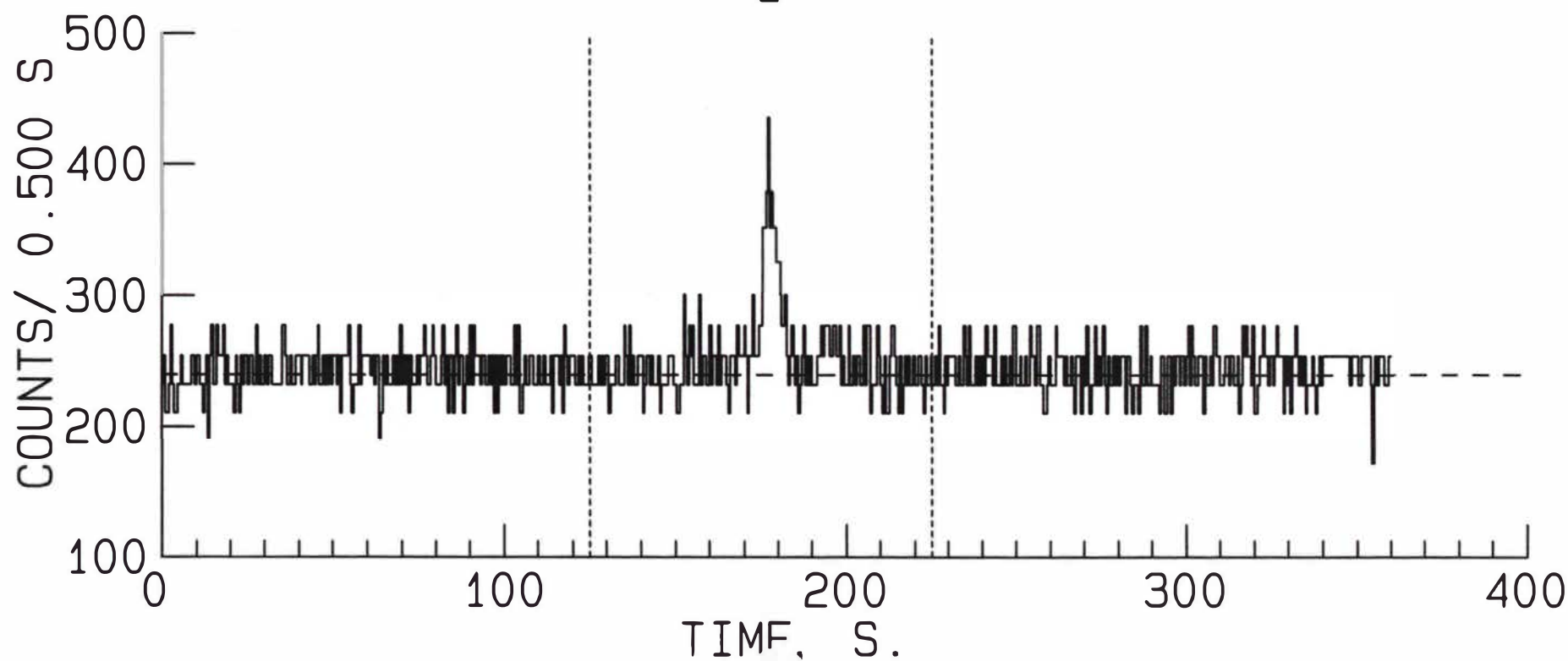
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
19/10/97 50868.488 s
22- 148 keV

7 / 5 / 4

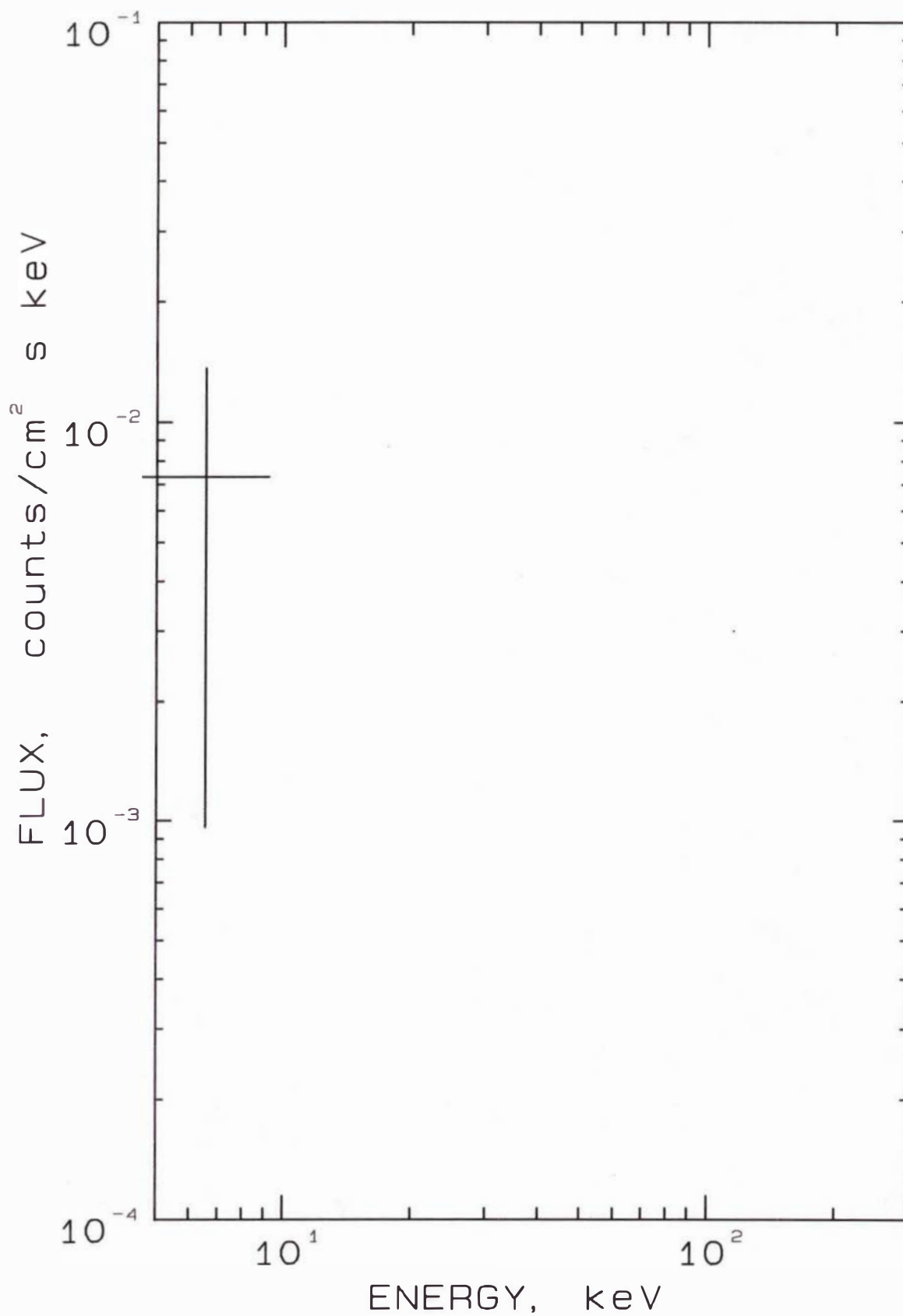
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES 19/10/97 51044.479

24/ 4/98

SPECTRUM INTEGRATED OVER 30.5 SECONDS, INTERVALS 2 TO 25



ULYSSES 19/10/97 51044.479 BURST SPECTRAL COUN. RATES

4- 18 keV

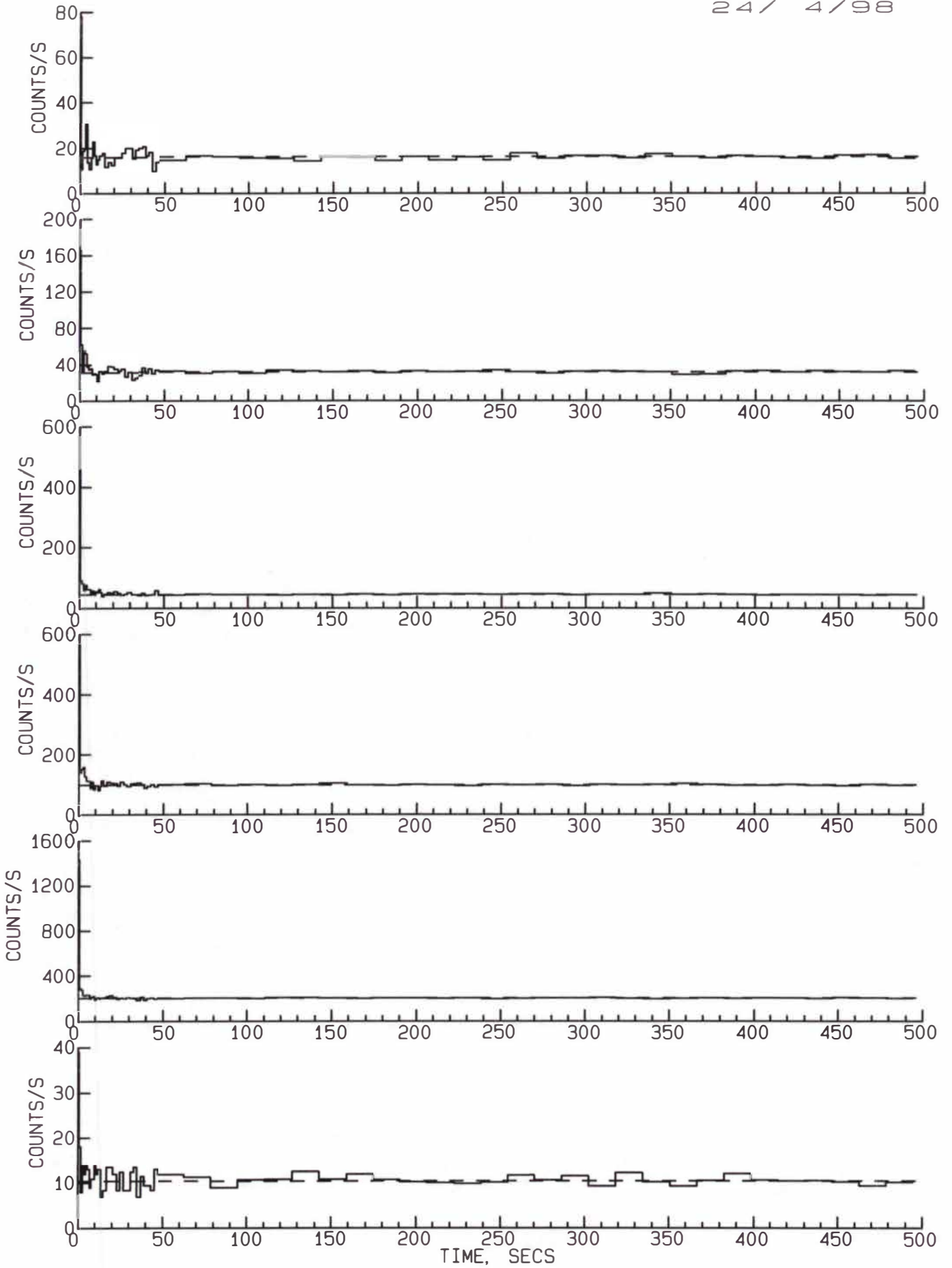
18- 46 keV

46- 74 keV

74-101 keV

101-129 keV

129-148 keV



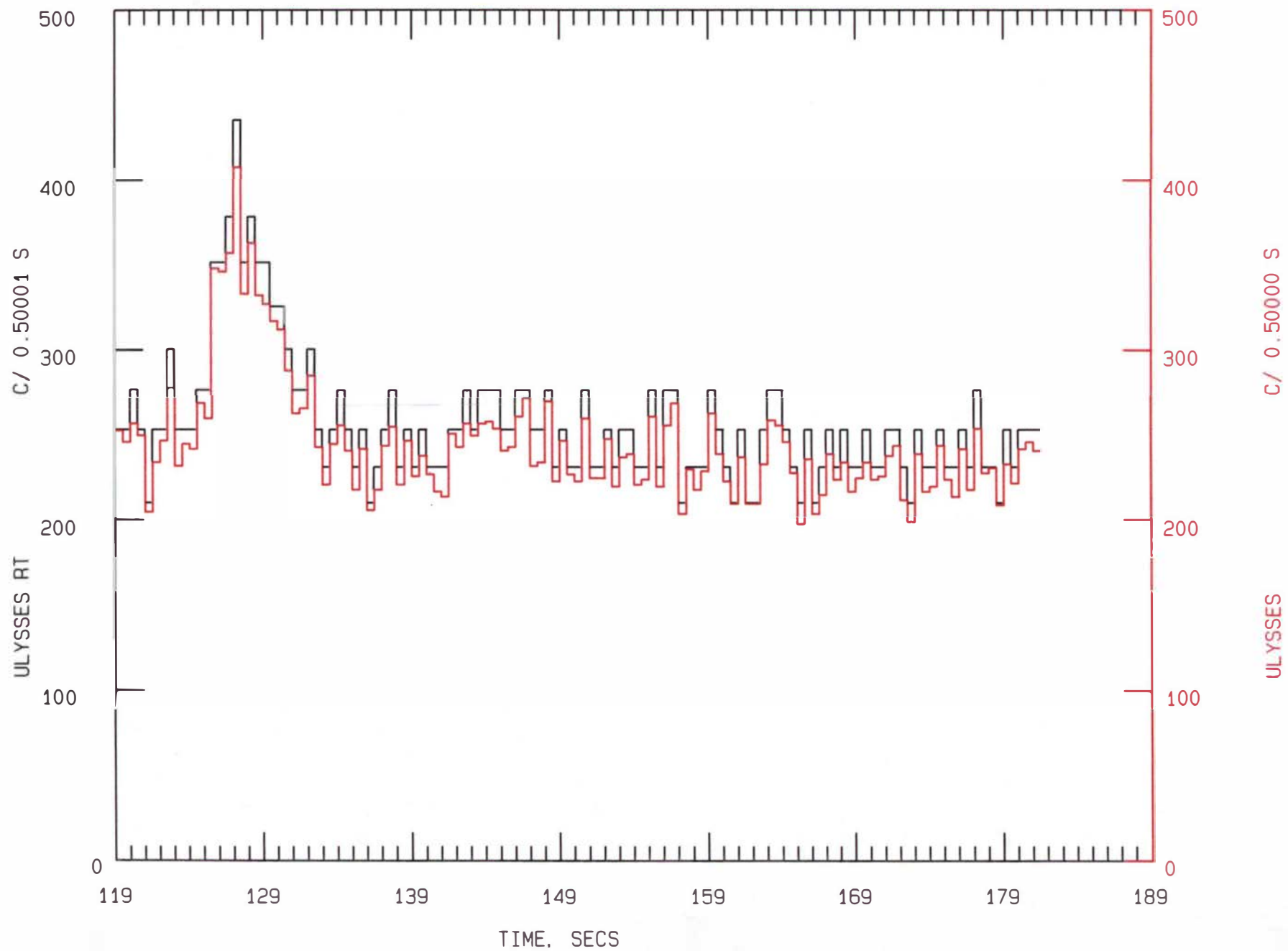
ULYSSES RT-ULYSSES

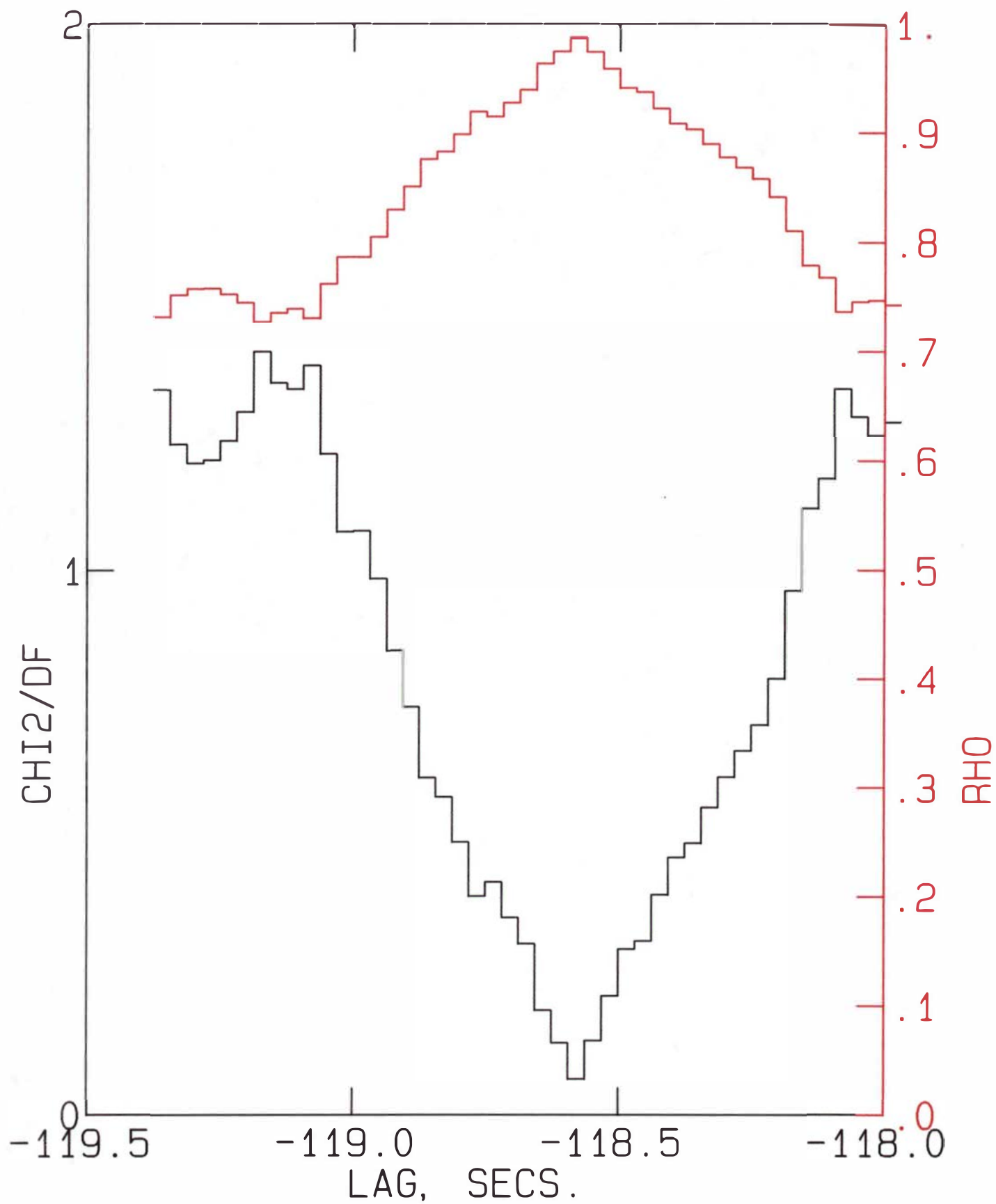
CORRELATION

19/10/97

50918.672

24/ 4/98





ULYSSES

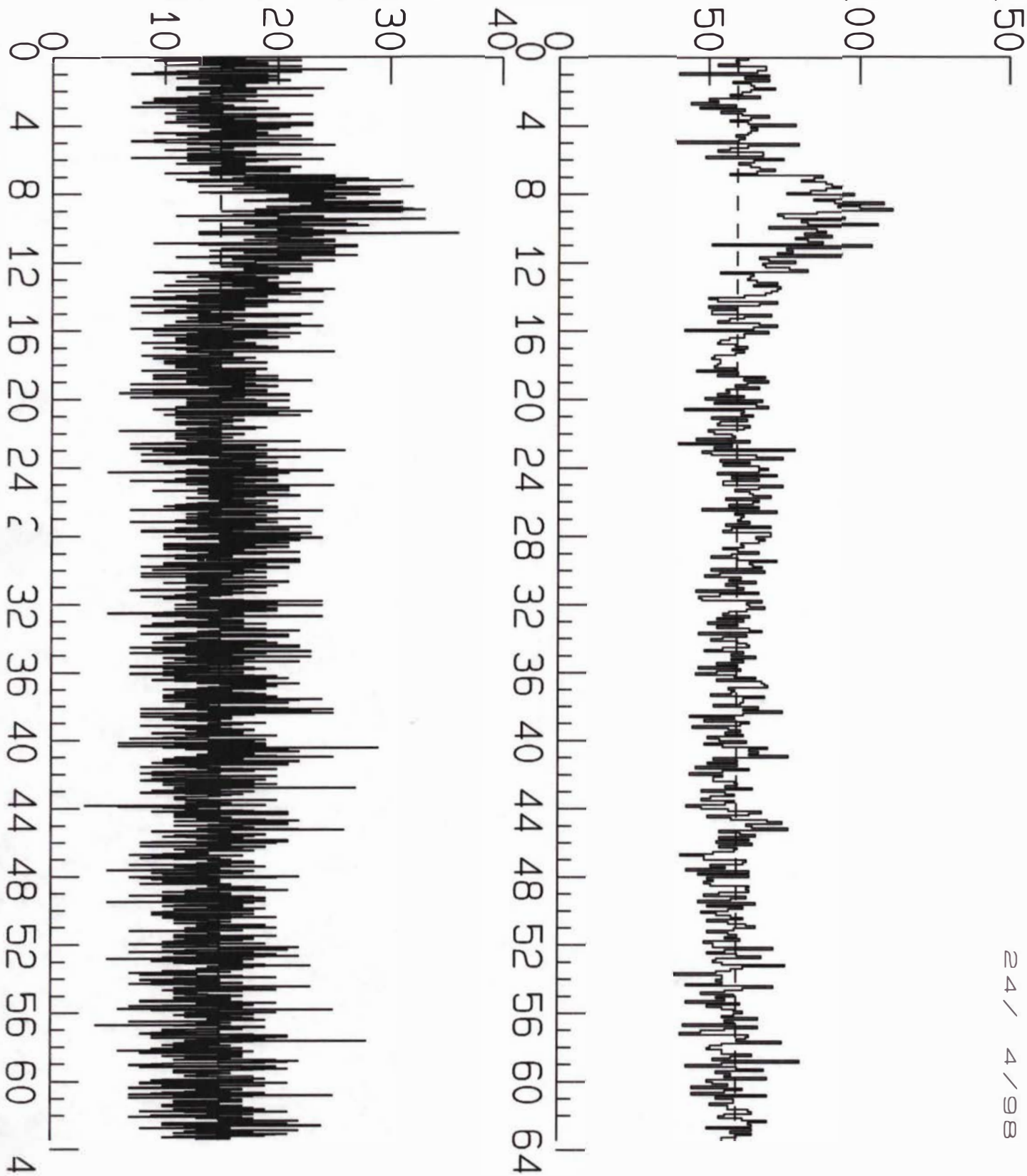
19/10/97

Ttrig=51044.664

22- 148 keV

COUNTS/0.031 S

COUNTS/0.125 S

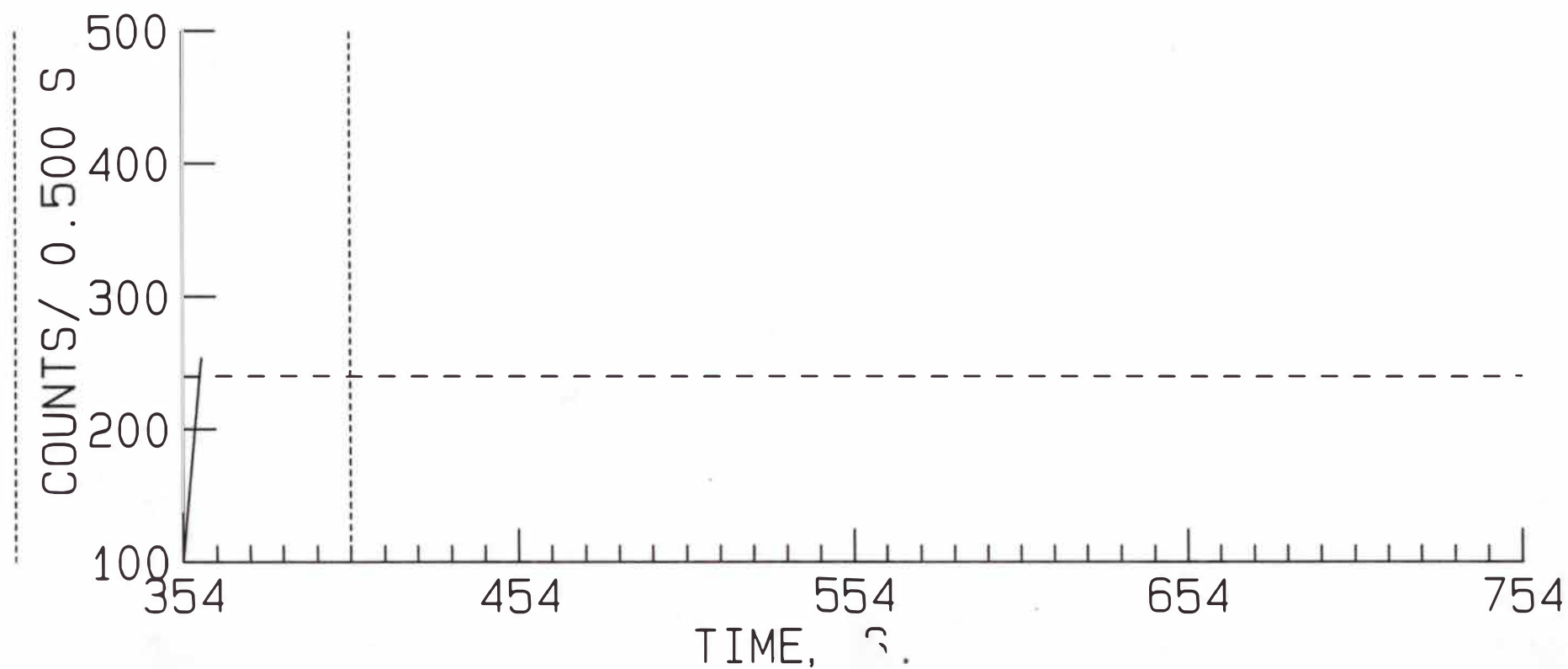


ULYSSES RT

24 / 4 / 98

19/10/97 50868.487 s

22- 148 keV



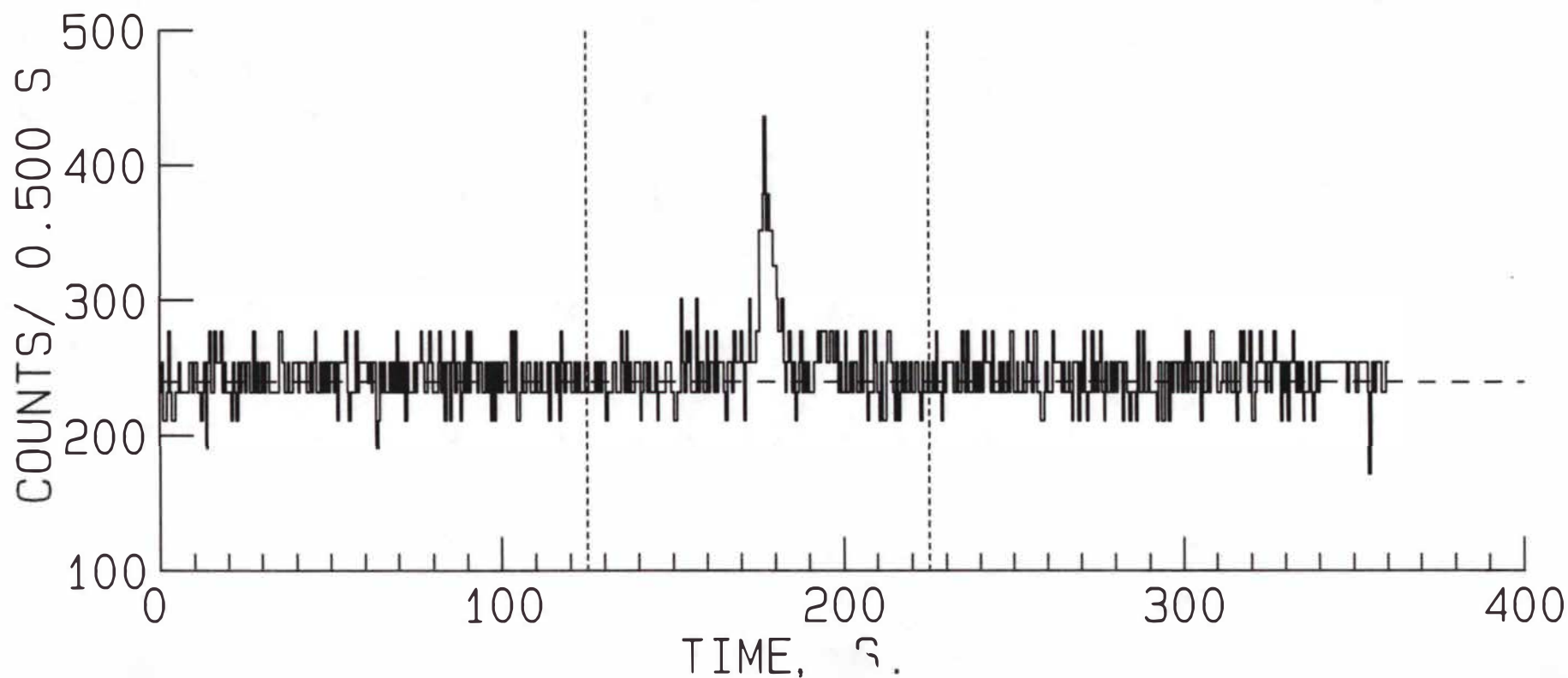
ULYSSES RT

24 / 4 / 98

19/10/97 50868.487 s

22- 148 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

04 / 02 / 00

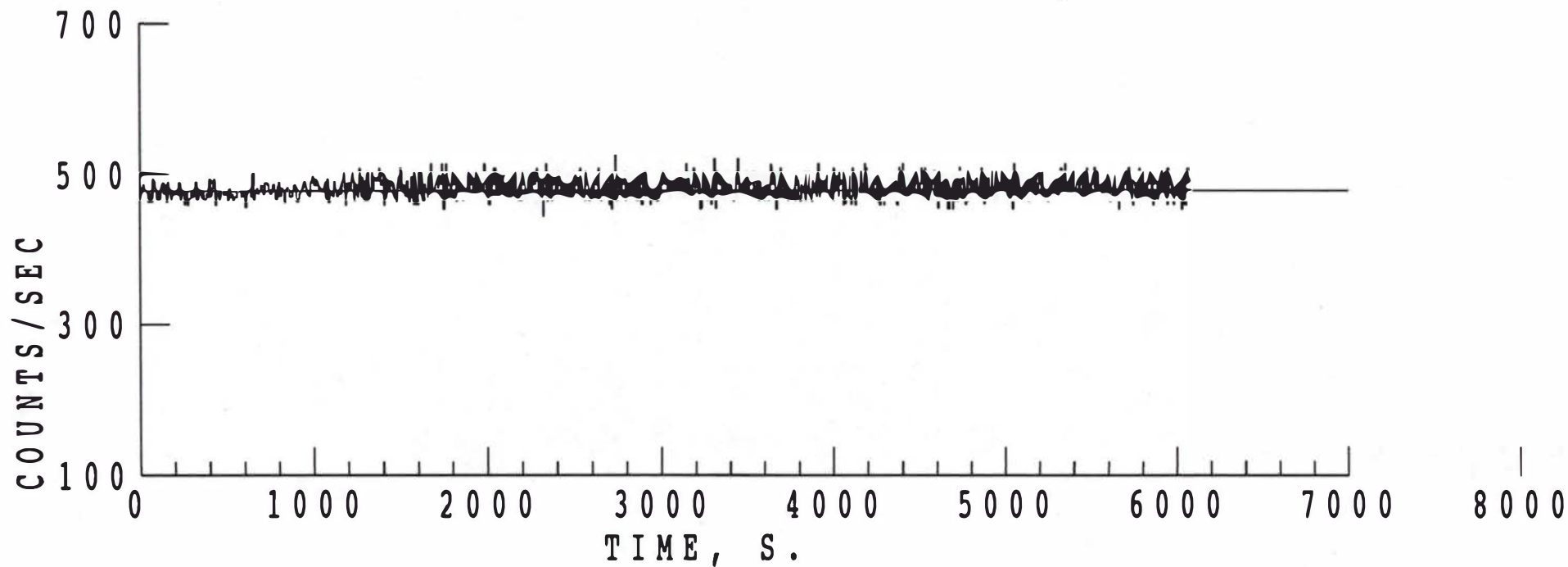
ULYSSES RT

19 / 10 / 97 54396.027 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From BUTTERWORTH@heavx.gsfc.nasa.gov Thu Jan 8 11:23 PST 1998

From: BUTTERWORTH@heavx.gsfc.nasa.gov

Date: Thu, 8 Jan 1998 14:22:31 -0500 (EST)

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@heavx.gsfc.nasa.gov

X-Vmsmail-To: @ULYSSES

X-Vmsmail-Cc: BUTTERWORTH

Subject: Konus summary for events recently reported by Ulysses but not by BATSE

Konus summary for events recently reported by Ulysses but not seen by 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 was 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 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

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

Konus triggered at 14:55:54.243 in the South-facing detector. There was a single peak lasting 10 seconds with a lot of substructure.

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

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@nisdpo.lanl.gov Fri Feb 27 15:11 PST 1998
 From: TERRELL@nisdpo.lanl.gov
 Date: Fri, 27 Feb 1998 16:11:55 -0700
 To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
 butterworth@heavx.gsfc.nasa.gov, cline@heavx.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@heavx.gsfc.nasa.gov, cline@heavx.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@heavx.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	BEPPPO 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	BEPPPOSAX(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 Thu Oct 30 08:33 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 30 Oct 1997 12:37:00 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses burst seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

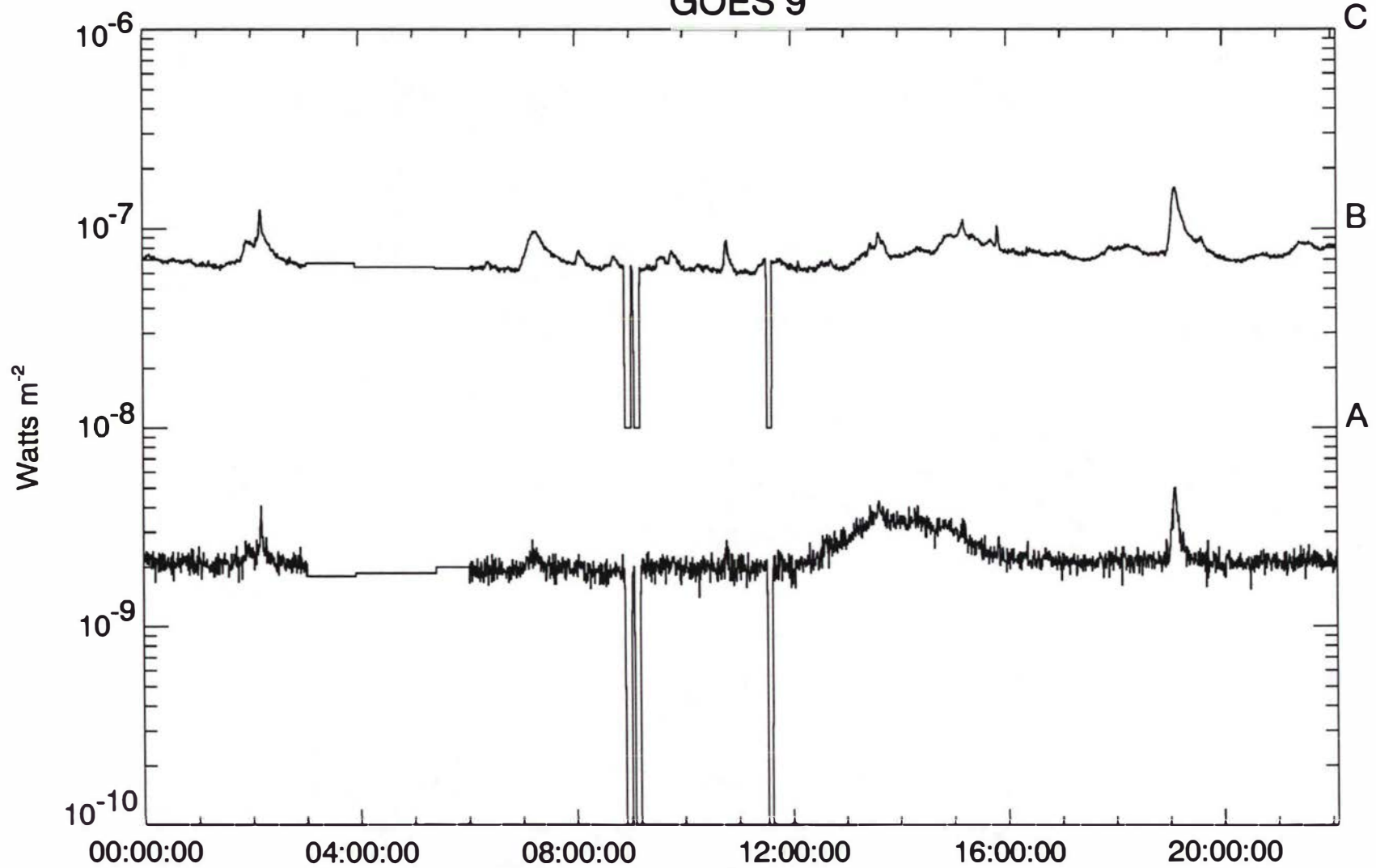
Here are the results of a search through TGRS data for some recent
Ulysses bursts:

Ulysses burst	TGRS sees?	TGRS characteristics
Oct. 9 19:14	NO	
Oct. 10 23:36	NO	
Oct. 19 14:10	YES	TGRS #643. 10/19/97 53756 s. 180 cts/s peak 6 s duration (100-300 keV) 130 cts/s peak, 9 s duration (35-100 keV) i.e. a weak burst

Take care,

Pete

GOES 9



Data Start: 97/10/19, 0000:00

Plot created: 97/10/23, 1008

Channel

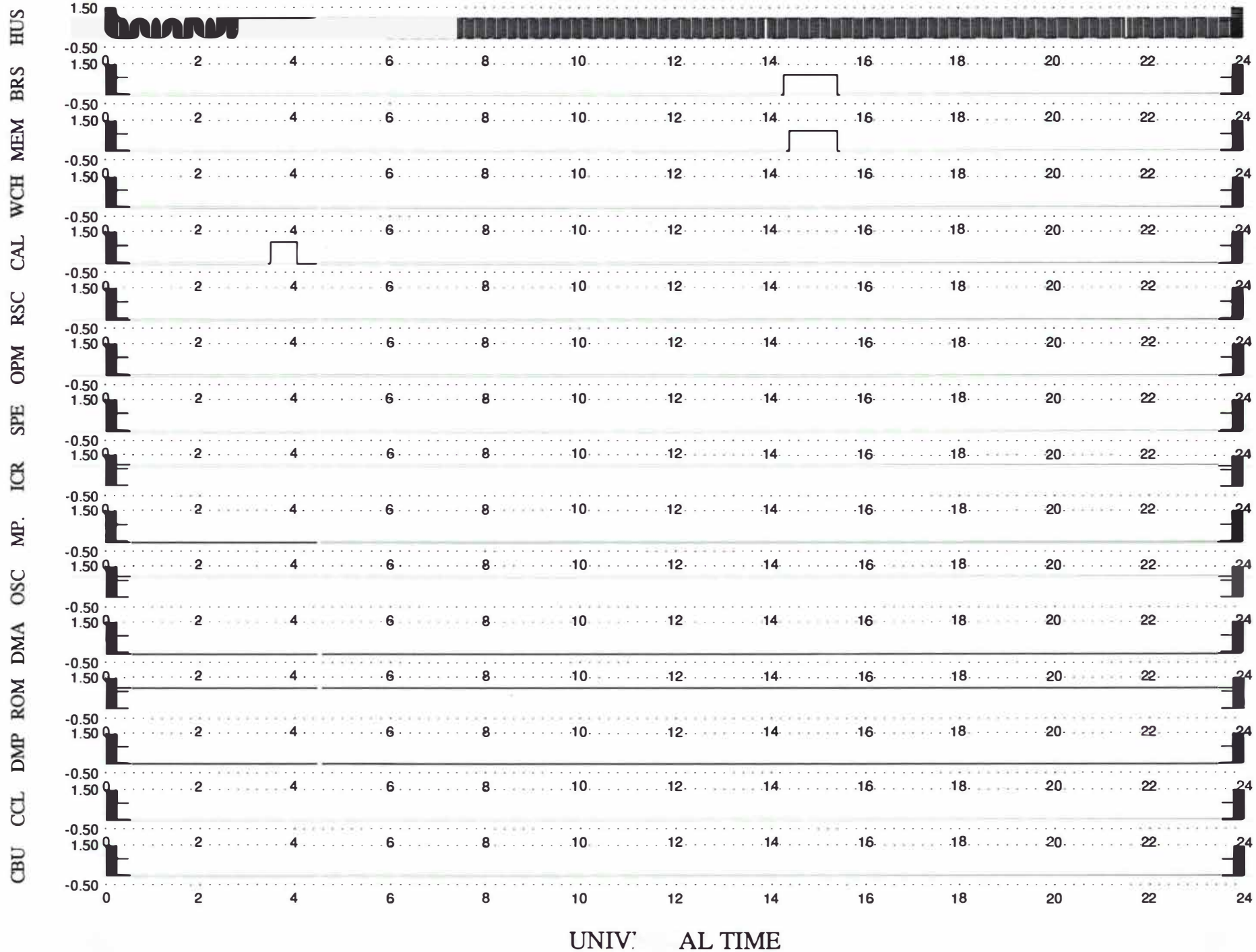
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted

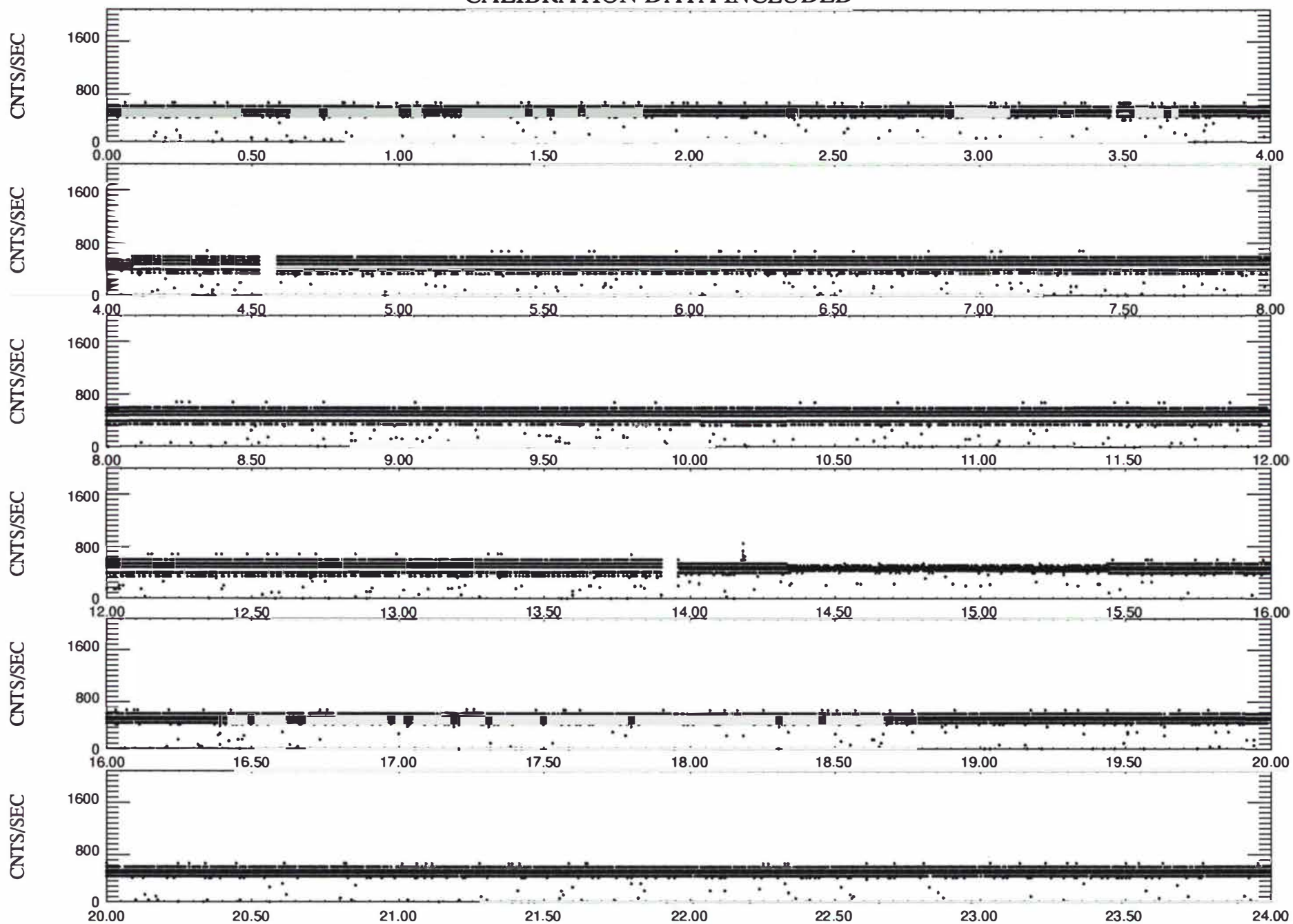
Background not subtracted

Sample average = 10

BURST NUMBER 9

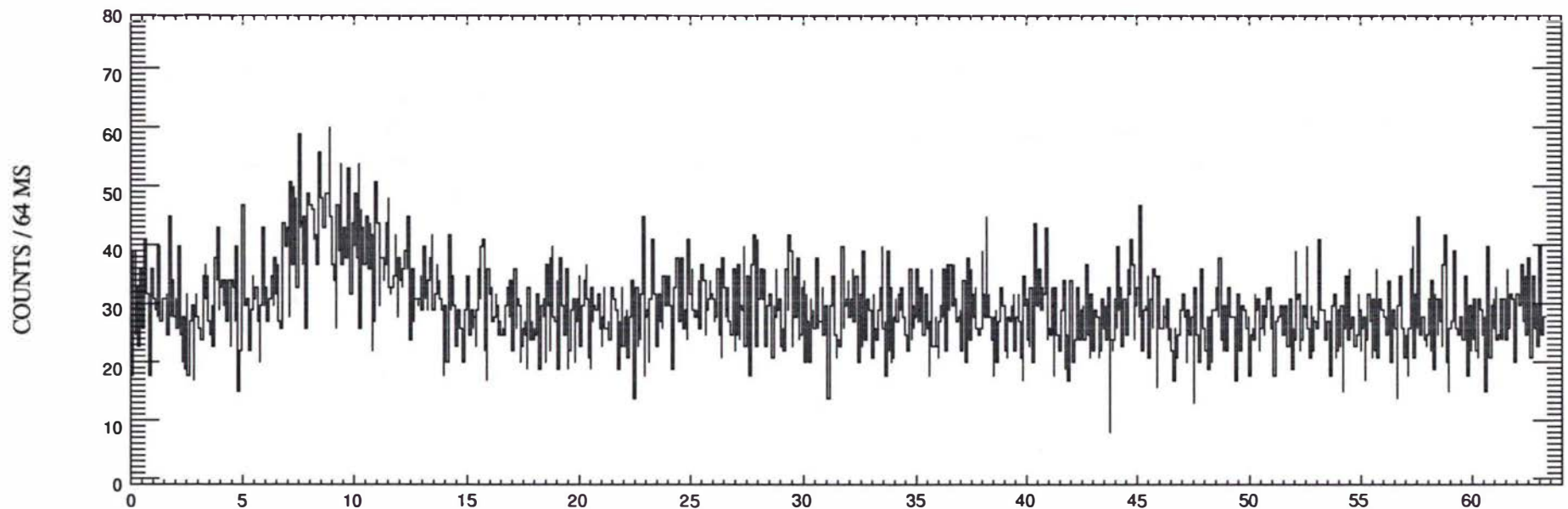


CALIBRATION DATA INCLUDED

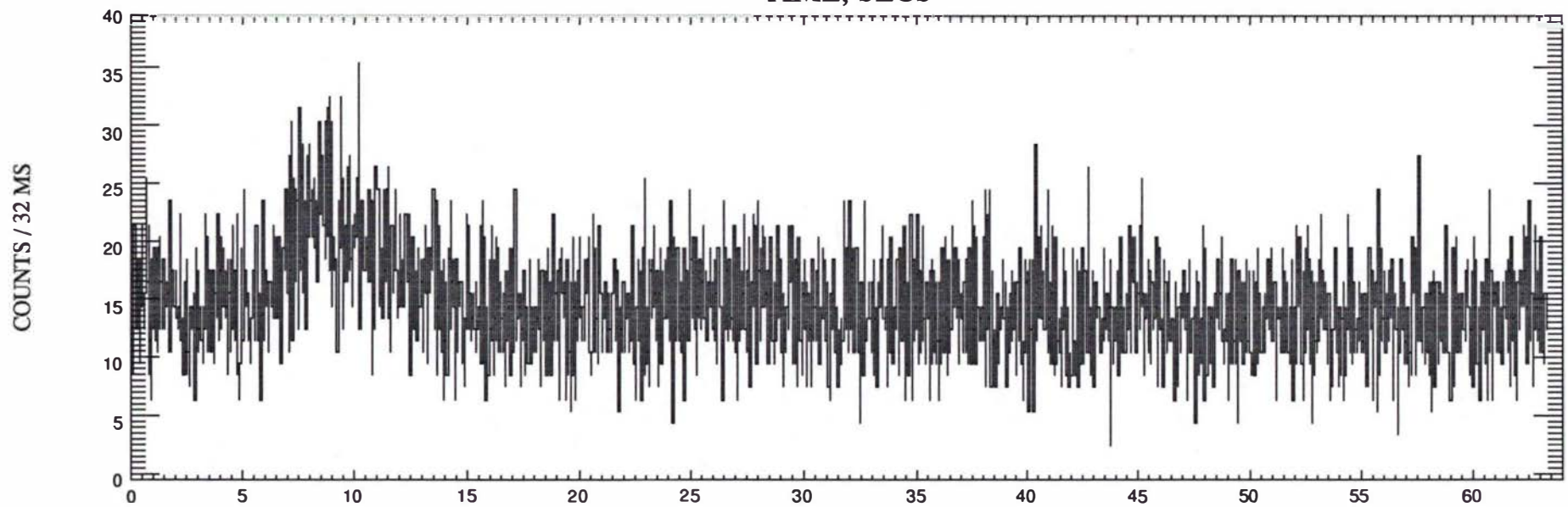


UNIV. TIME

Burst Counter 9 at UT=14.179022051493 h=51044.479 s 14:10:44.479

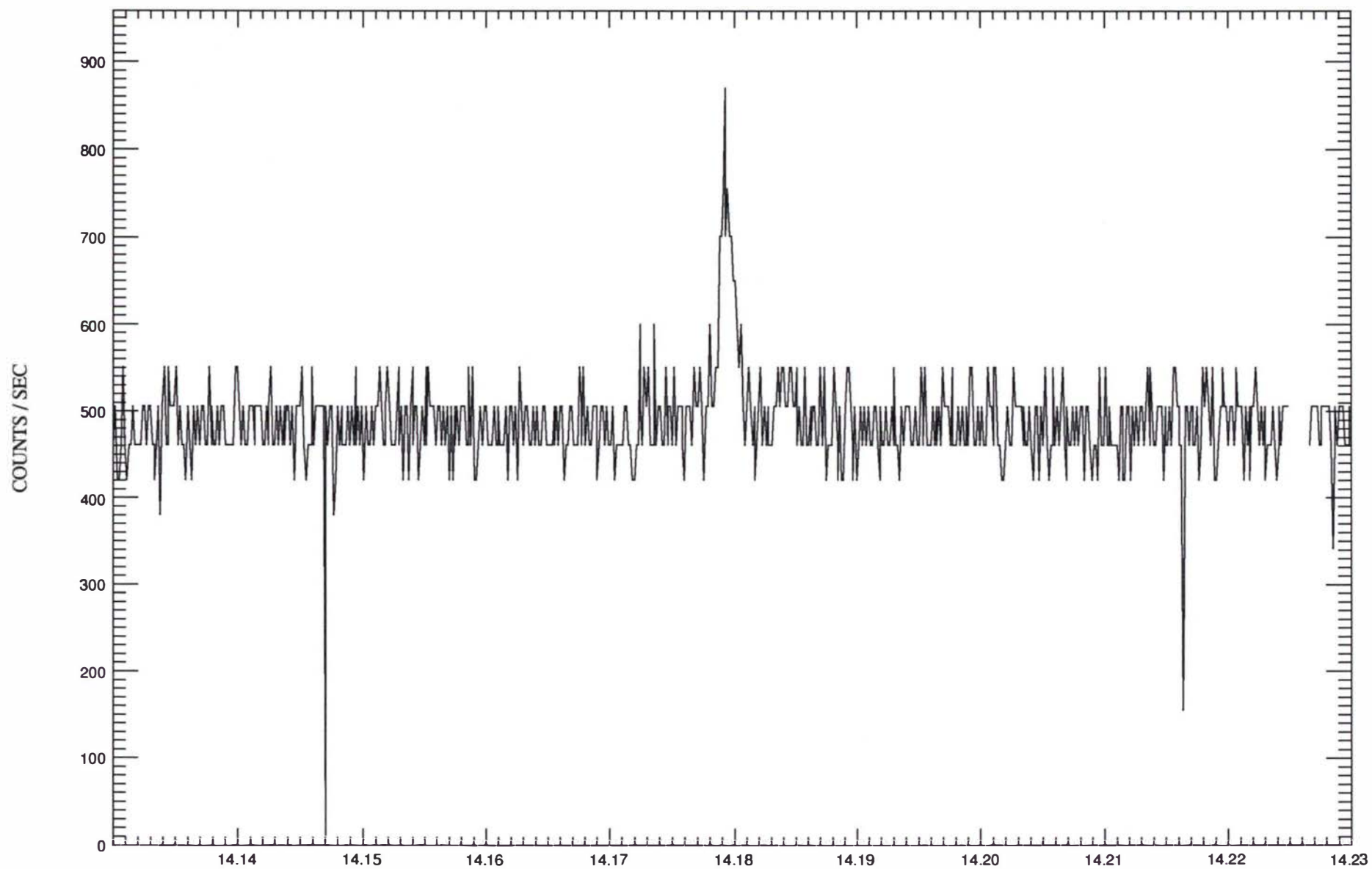


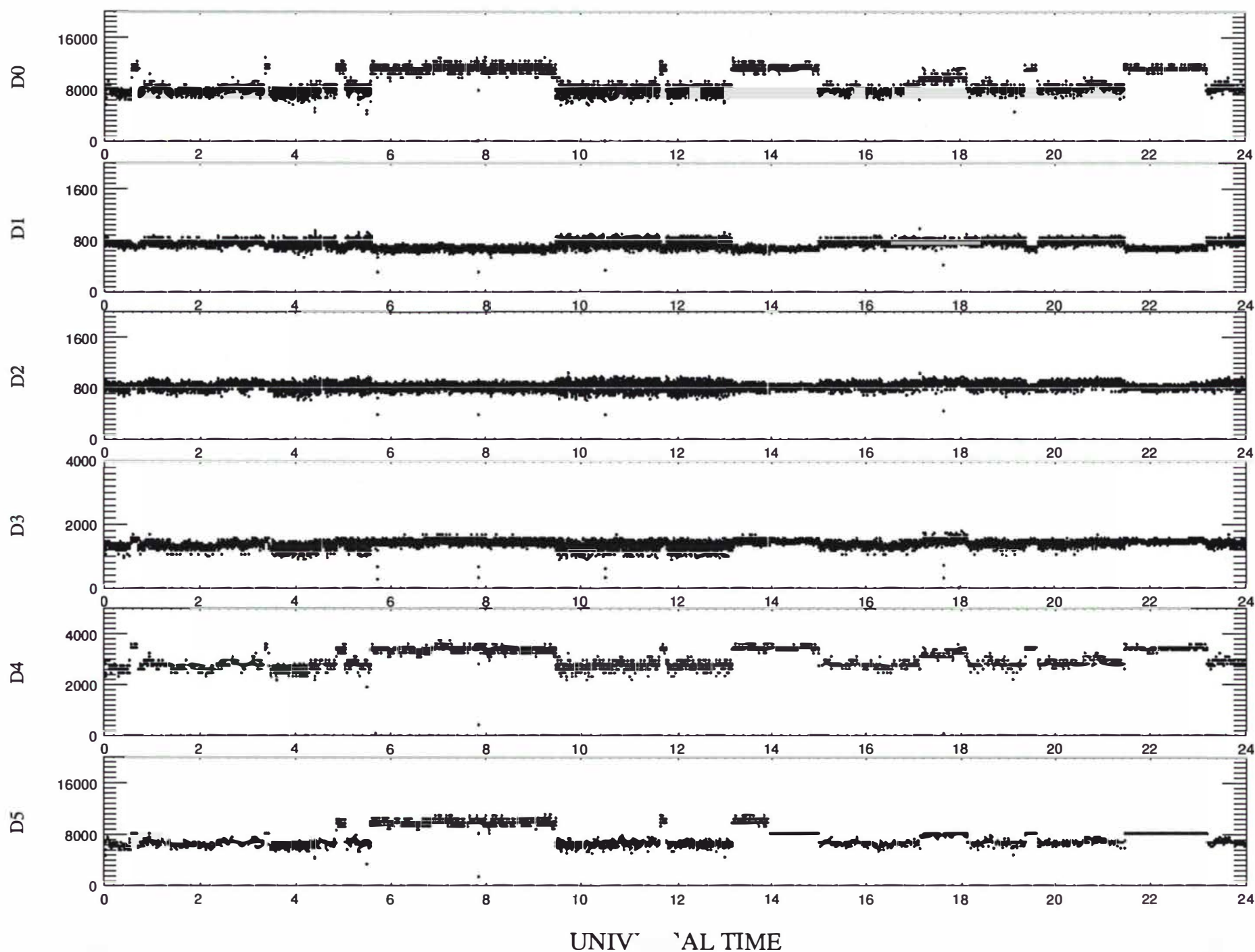
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





grbm 19971020 14628

ULYSSES RT

06/05/04

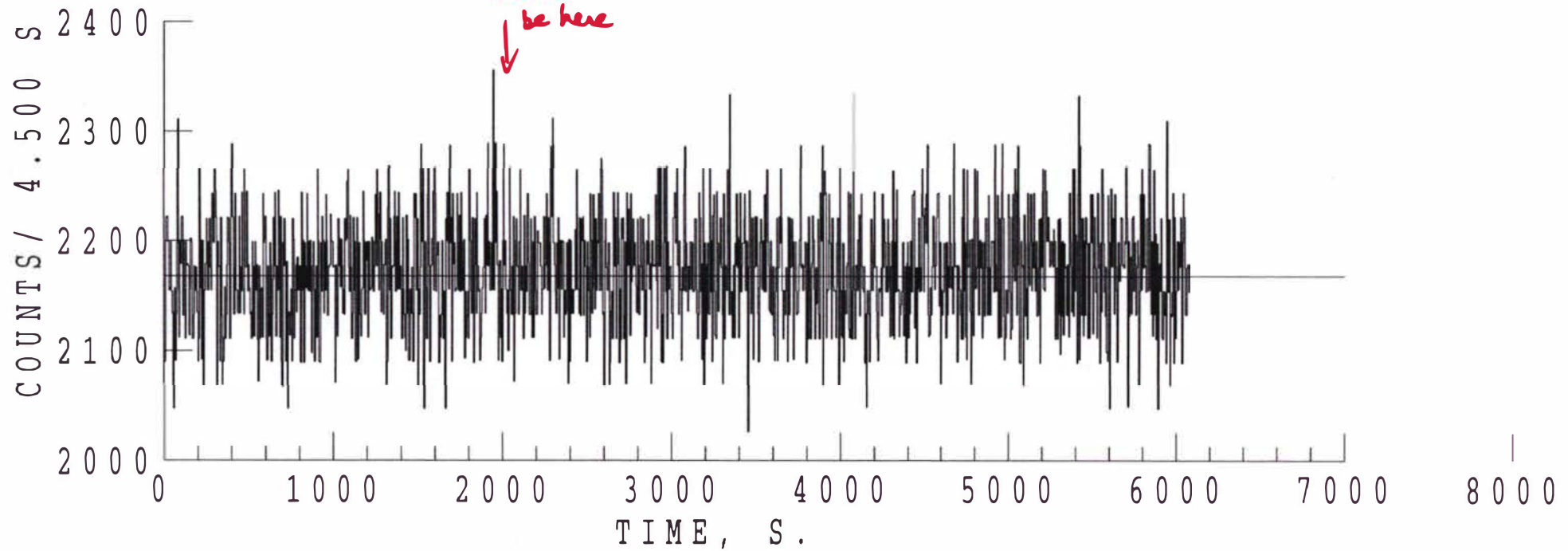
20/10/97 11592.014 s

0.500 S INTERVALS REGROUPED BY 9

0 - 0 keV

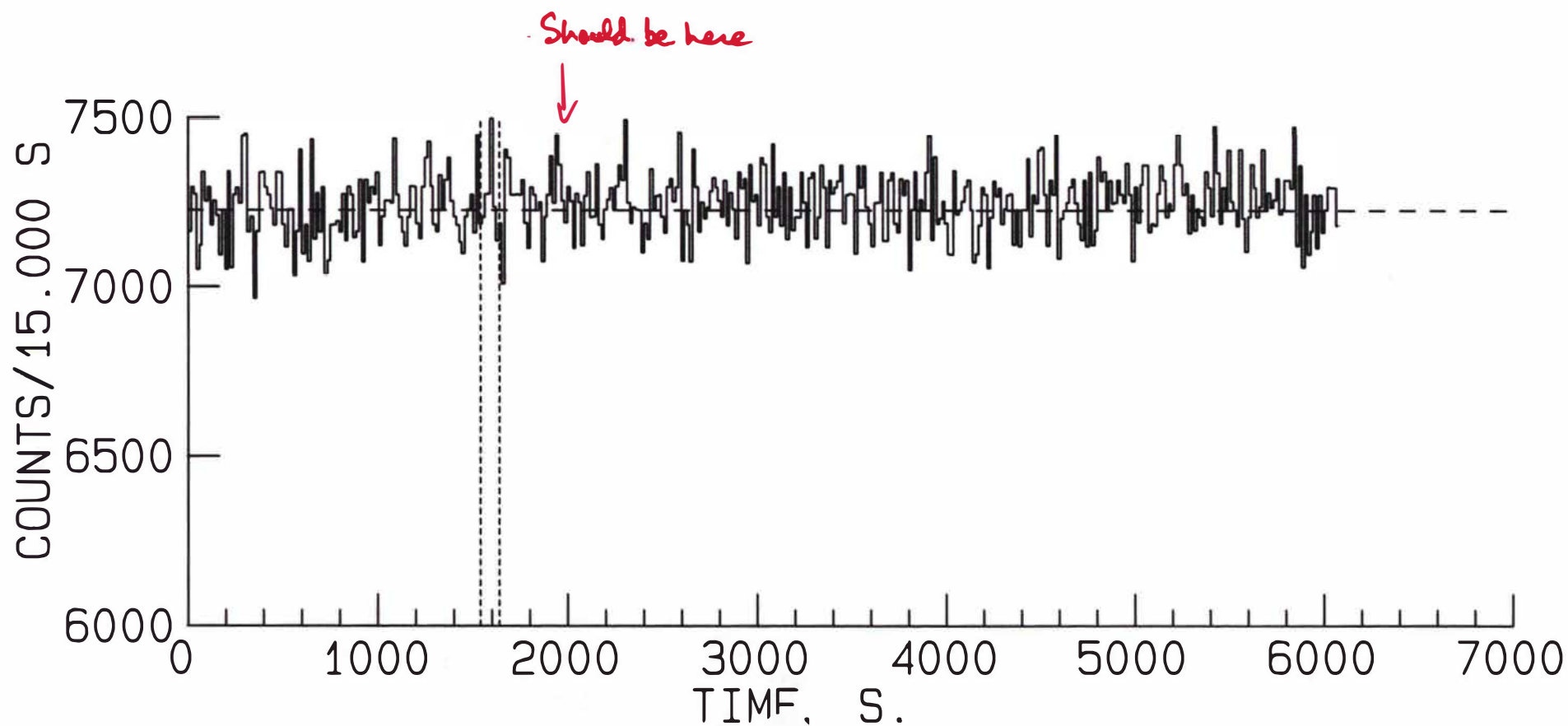
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
20/10/97 11592.014 s
0.500 S INTERVALS REGROUPED BY 30
22- 147 keV

7 / 5 / 4



From SURASAK@SSLMOR.msfc.nasa.gov Wed Oct 22 09:47:56 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 JAA04915; Wed, 22 Oct 1997 09:47:47 -0700
From: SURASAK@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA03973; Wed, 22 Oct 1997 09:47:43 -0700
Date: Wed, 22 Oct 1997 11:47:32 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971022114732.21e020be@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6440
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6440
EVENT OF 1997 OCT 20 DAY OF YEAR=293
EVENT CROSSING TIME AT BATSE : 20264. S. OR 05:37:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 29.000 -45.000
BATSE PEAK COUNTING RATE: 9500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/10/ 97 IS:
RA= 167.923 DEC= 14.643 DIST= 5.972 AU
BATSE-ULYSSES DISTANCE = 893365707. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 46.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2069.49 SECS.
CROSSING TIME AT ULYSSES IS 22333. S. OR 06:12:13 +/- 453.68 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/10/ 97 IS:
RA= 253.610 DEC= -23.771 DIST= 1.875 AU
MARS-BATSE DISTANCE = 280446208. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 164.34 SECS.
CROSSING TIME AT MARS IS 20428. S. OR 05:40:28 +/- 162.38 SECONDS

BATSE BURST TRIGGER

NO.: 06440

TIME: TJD=0741 SECONDS=20264

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y74

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=65.0 AZIMUTH=158.7 ERROR=2.248 DEGREES

COMMENTS:

GRB. DOUBLE PULSE. DURATION ABOUT 15S.SECOND PULSE SMALLER THAN THE FIRST.
NOT VISIBLE ABOVE 300 KEV.

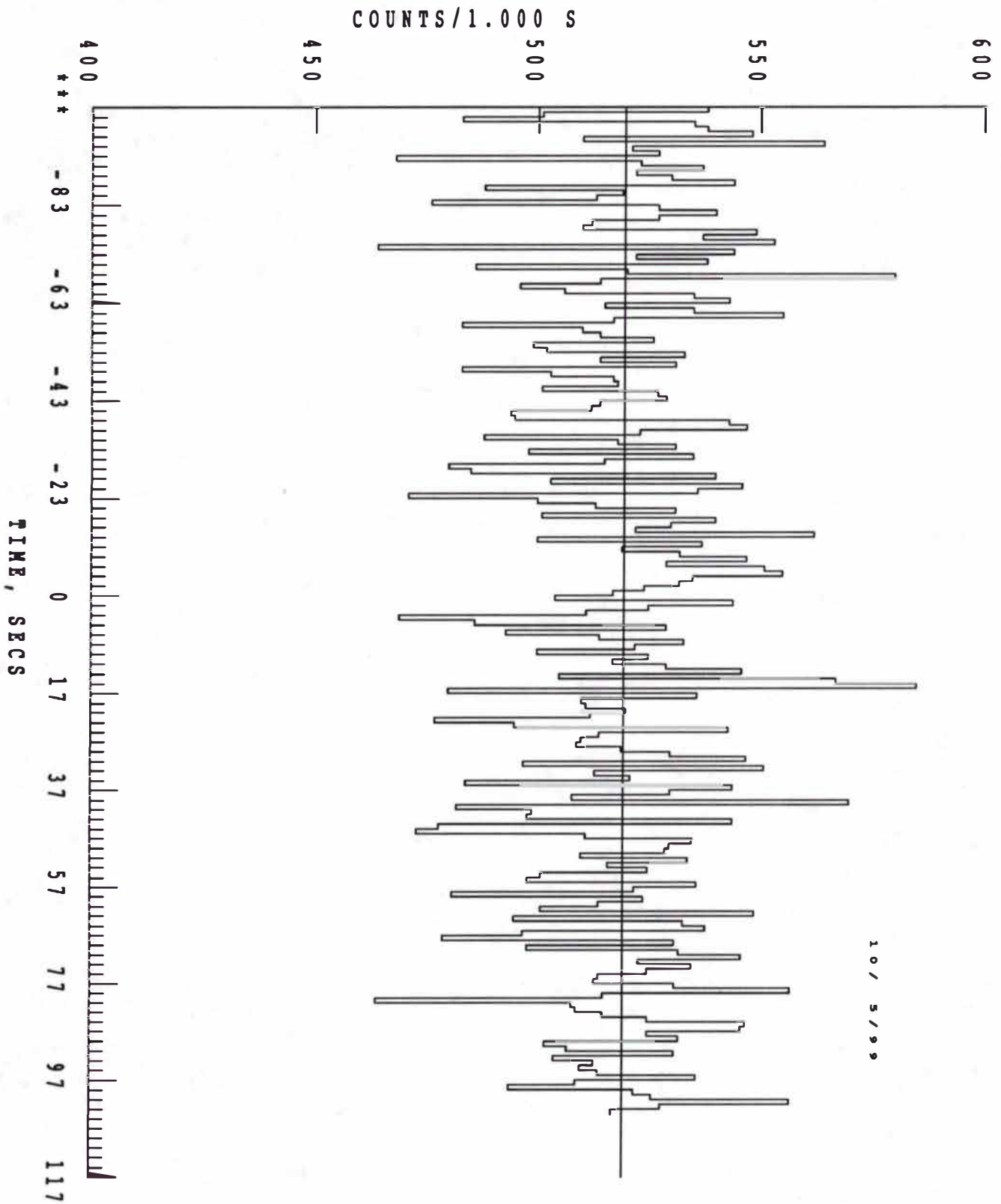
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6440	971020	10741	20264	9500	029	-45	15

NEAR

20/10/97

20209.703

100-1000 keV



BATSE BURST# 6440

ULYSSES RT

22 / 10 / 97

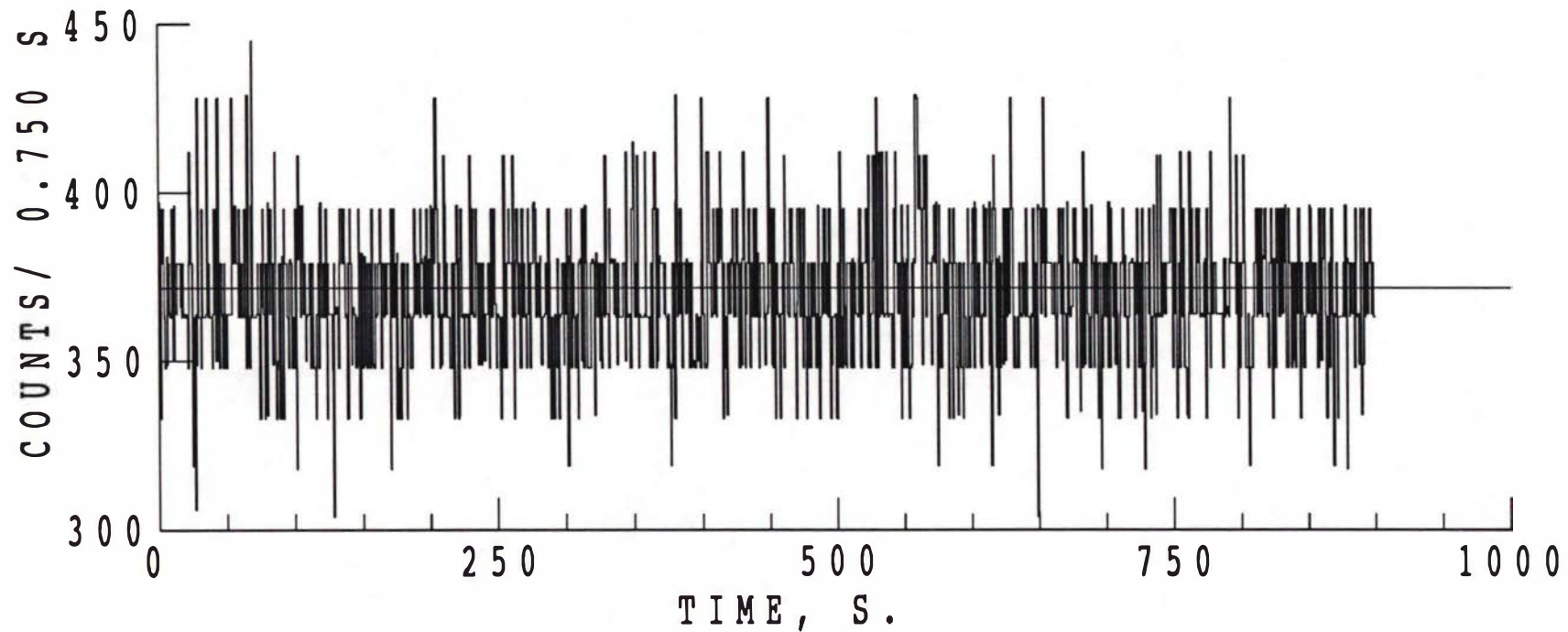
20 / 10 / 97 21888.131 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

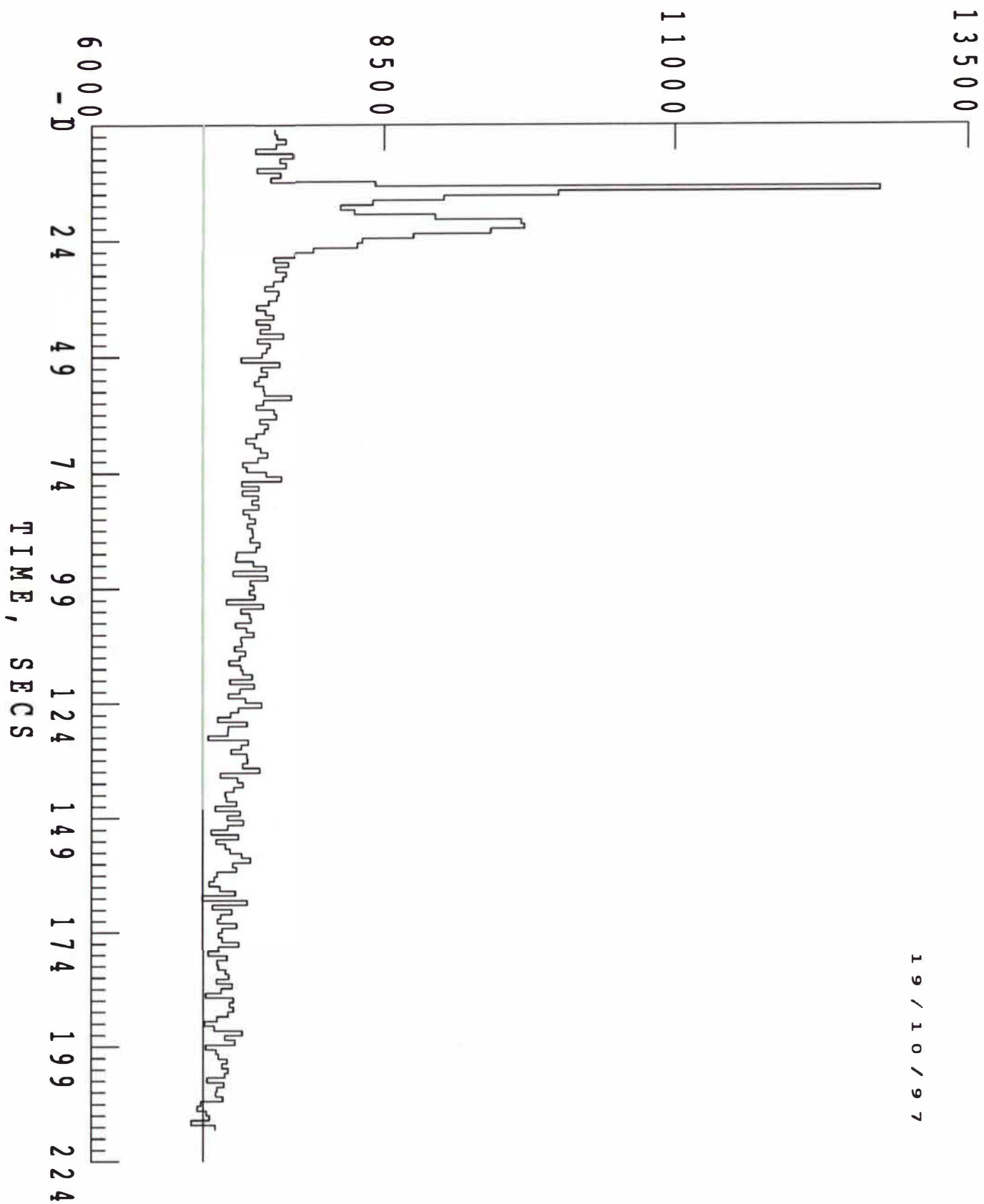
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6440 20/10/97 20252.385

25- 100 keV

COUNTS/1.024 S



From SURASAK@SSLLES.MSFC.NASA.GOV Wed Oct 22 06:30:51 1997
Date: Wed, 22 Oct 1997 8:30:10 -0500 (CDT)
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.: 06441

TIME: TJD=0741 SECONDS=42107

TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL:N

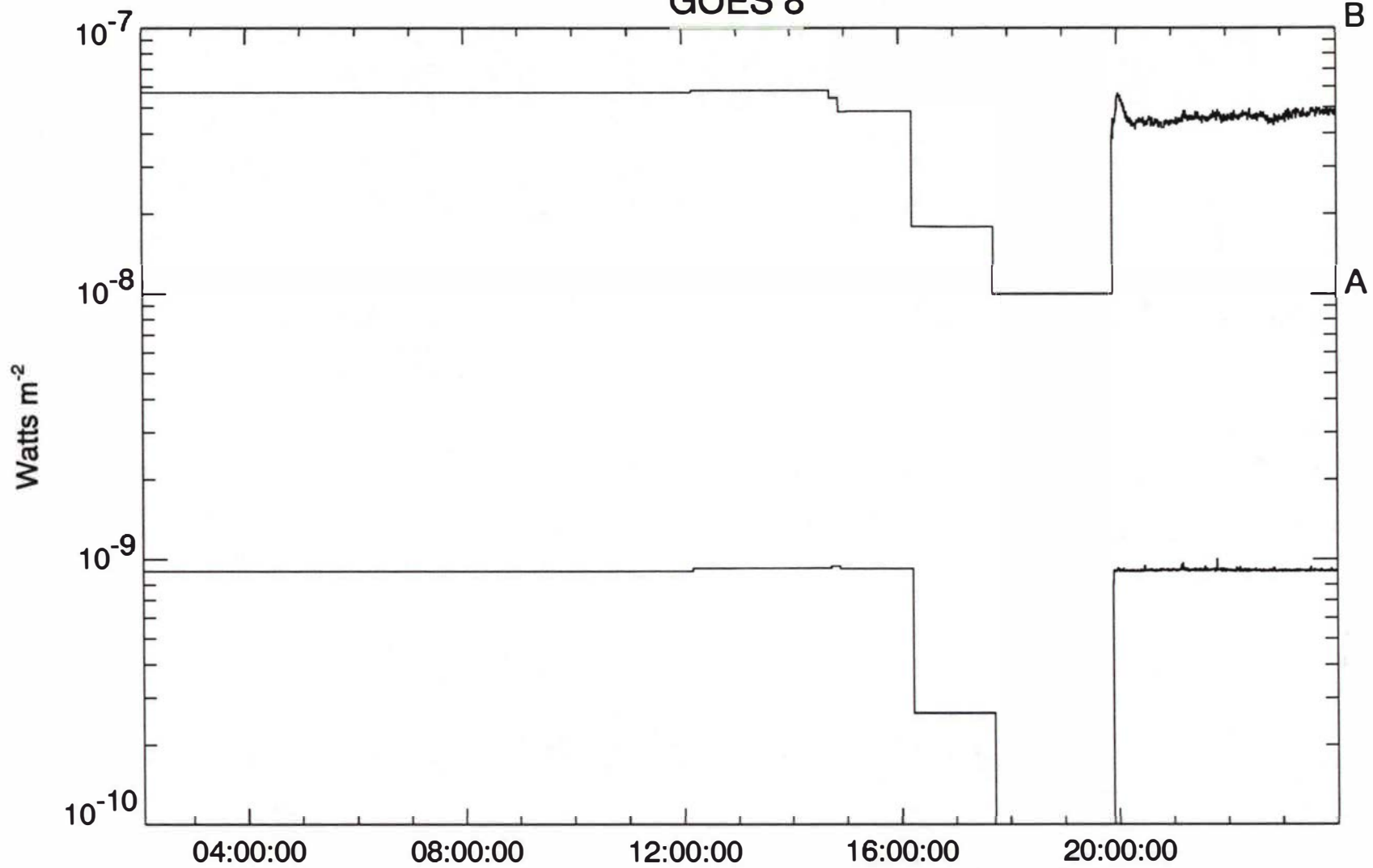
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

GOES 8



Data Start: 97/10/20, 0205:09

Plot created: 97/10/24, 1007

Channel

1 (1.0 - 8.0 Angstroms)

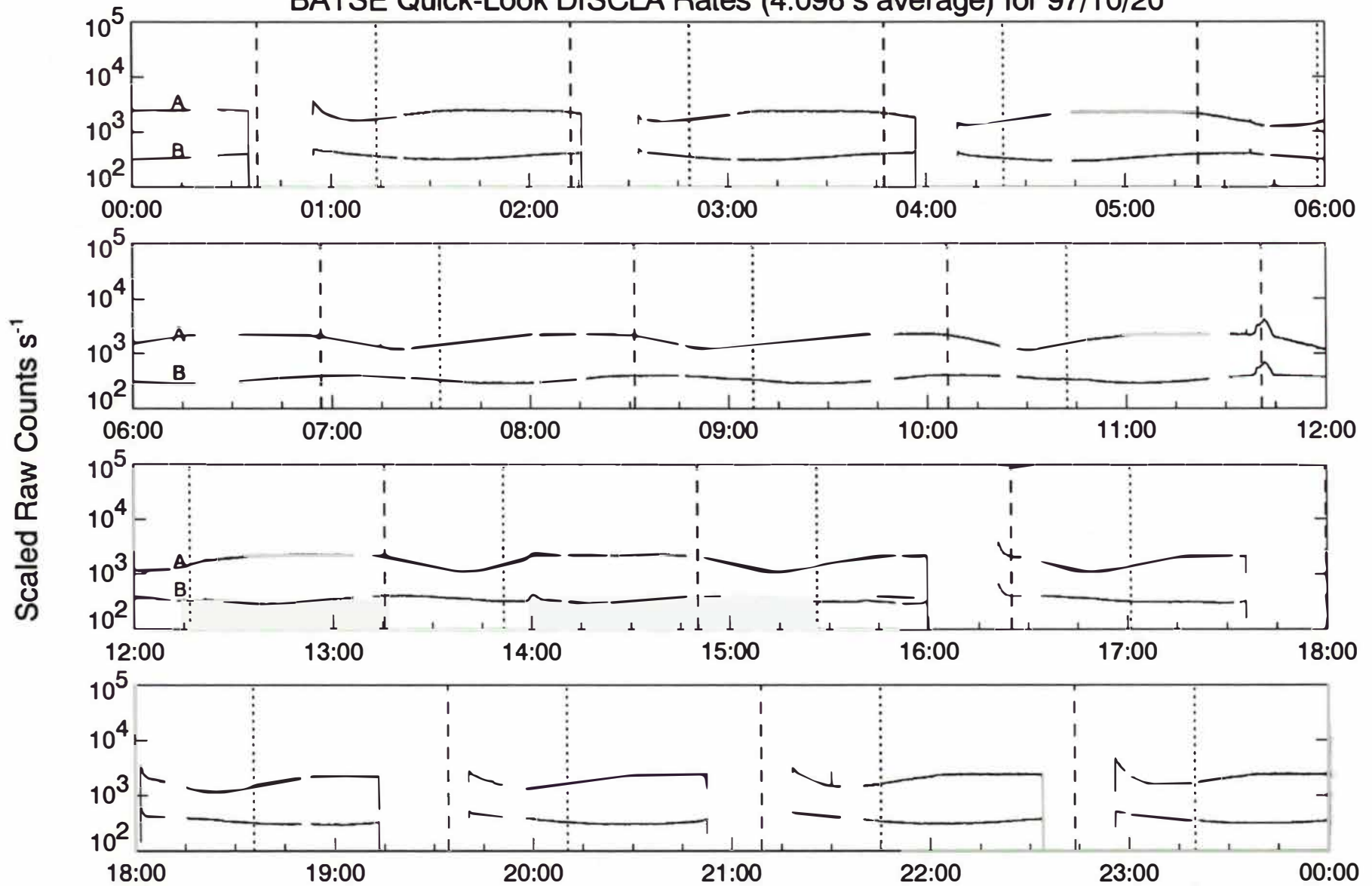
Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

Sample average = 10

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/20



Current Time: 97/10/24, 1009 EDT

A: Channel 0 Most Sunward LAD

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

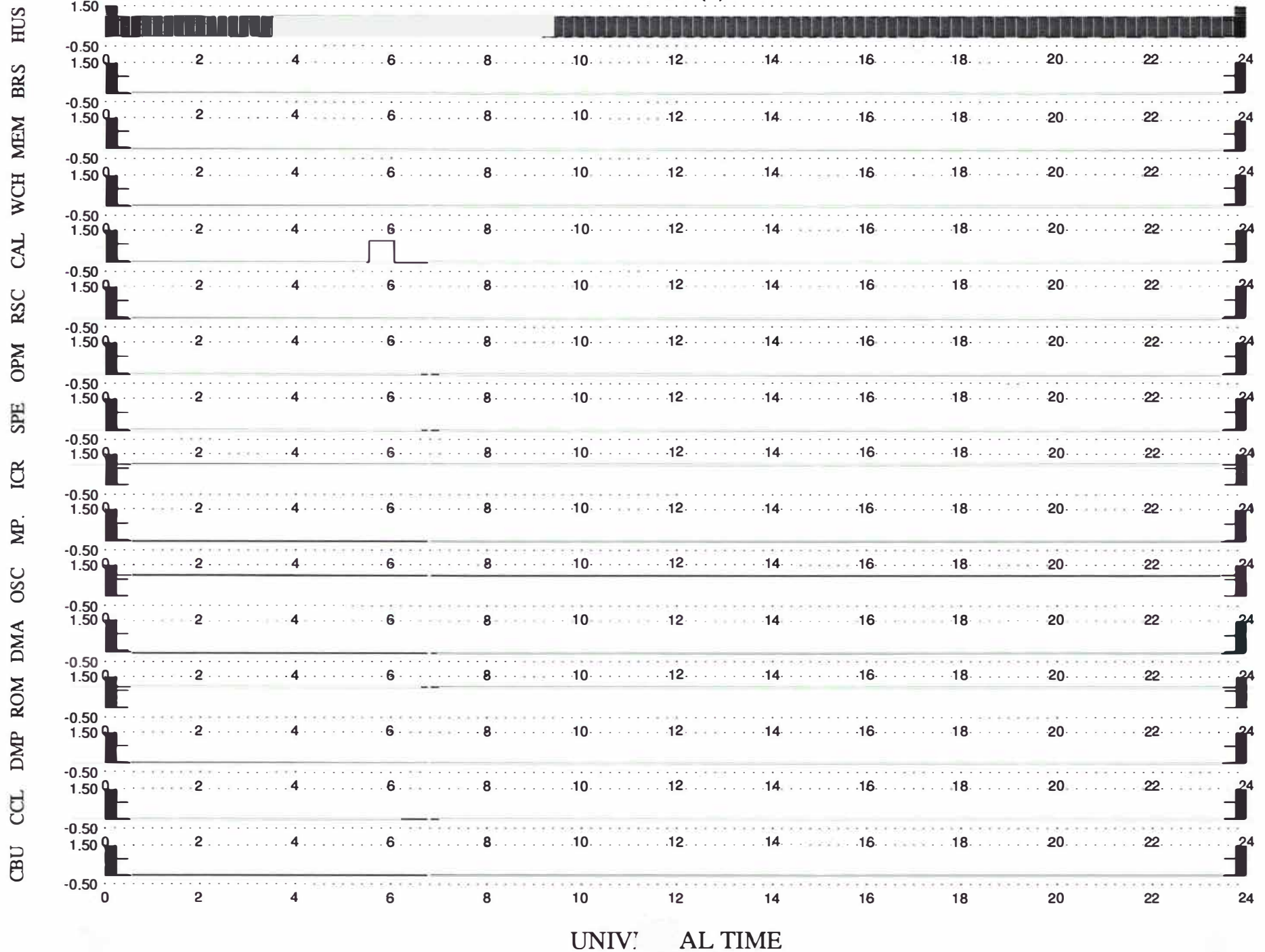
Dotted line: Day entry

Dashed line: Night entry

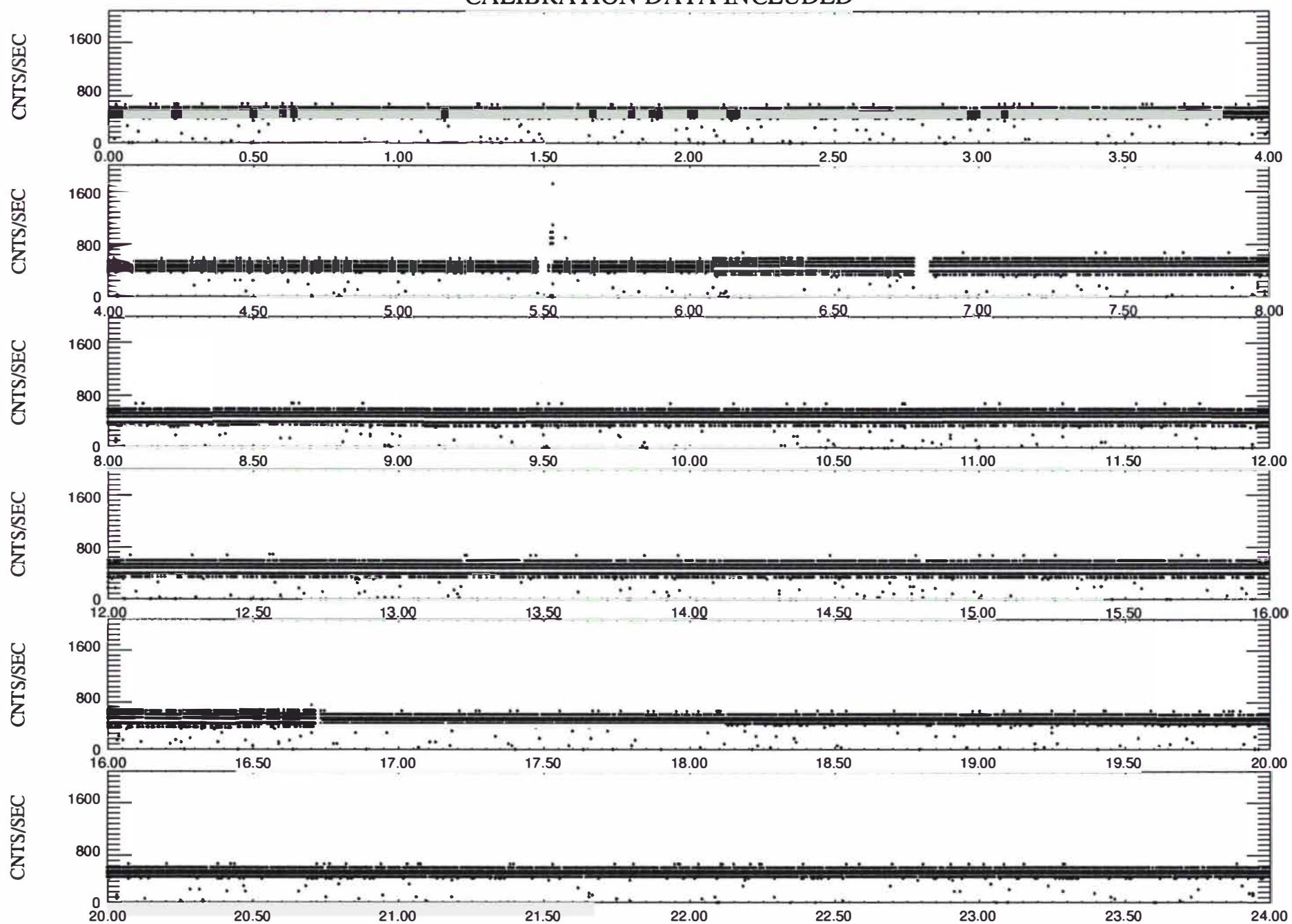
* Solar Burst Trigger

+ Solar Flare

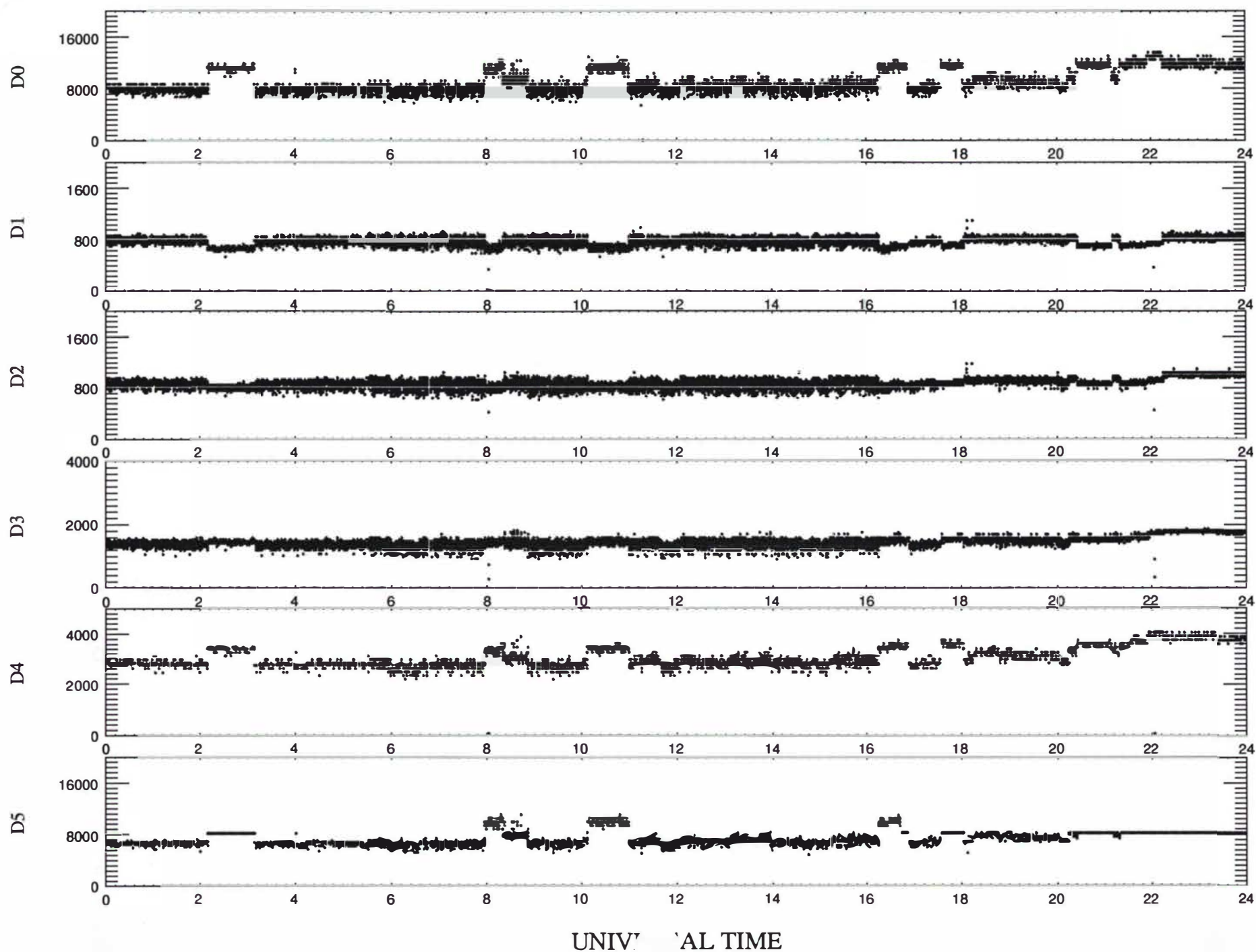
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From SAHI@fender.msfc.nasa.gov Thu Oct 23 13:08:20 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 NAA18445; Thu, 23 Oct 1997 13:08:09 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA16434; Thu, 23 Oct 1997 13:07:53 -0700
Date: Thu, 23 Oct 1997 15:06:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971023150657.224001ad@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6443
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6443
EVENT OF 1997 OCT 21 DAY OF YEAR=294
EVENT CROSSING TIME AT BATSE : 61697. S. OR 17:08:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 147.000 3.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/10/ 97 IS:
RA= 168.079 DEC= 14.535 DIST= 5.956 AU
BATSE-ULYSSES DISTANCE = 890949025. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=156.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2719.63 SECS.
CROSSING TIME AT ULYSSES IS 58977. S. OR 16:22:57 +/- 216.73 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/10/ 97 IS:
RA= 254.401 DEC= -23.855 DIST= 1.879 AU
MARS-BATSE DISTANCE = 281060480. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 275.91 SECS.
CROSSING TIME AT MARS IS 61973. S. OR 17:12:52 +/- 159.75 SECONDS

BATSE BURST TRIGGER

NO.: 6443

TIME: TJD=0742 SECONDS=61697

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.4 AZIMUTH=40.6 ERROR=9.5 DEGREES

COMMENTS:

BURST. DOUBLE SPIKE, DUR. APPROX. 3 SECS, MAX. AT APPROX. T+1.8 SECS.
SECOND PEAK IS VISIBLE ABOVE 300 KEV.

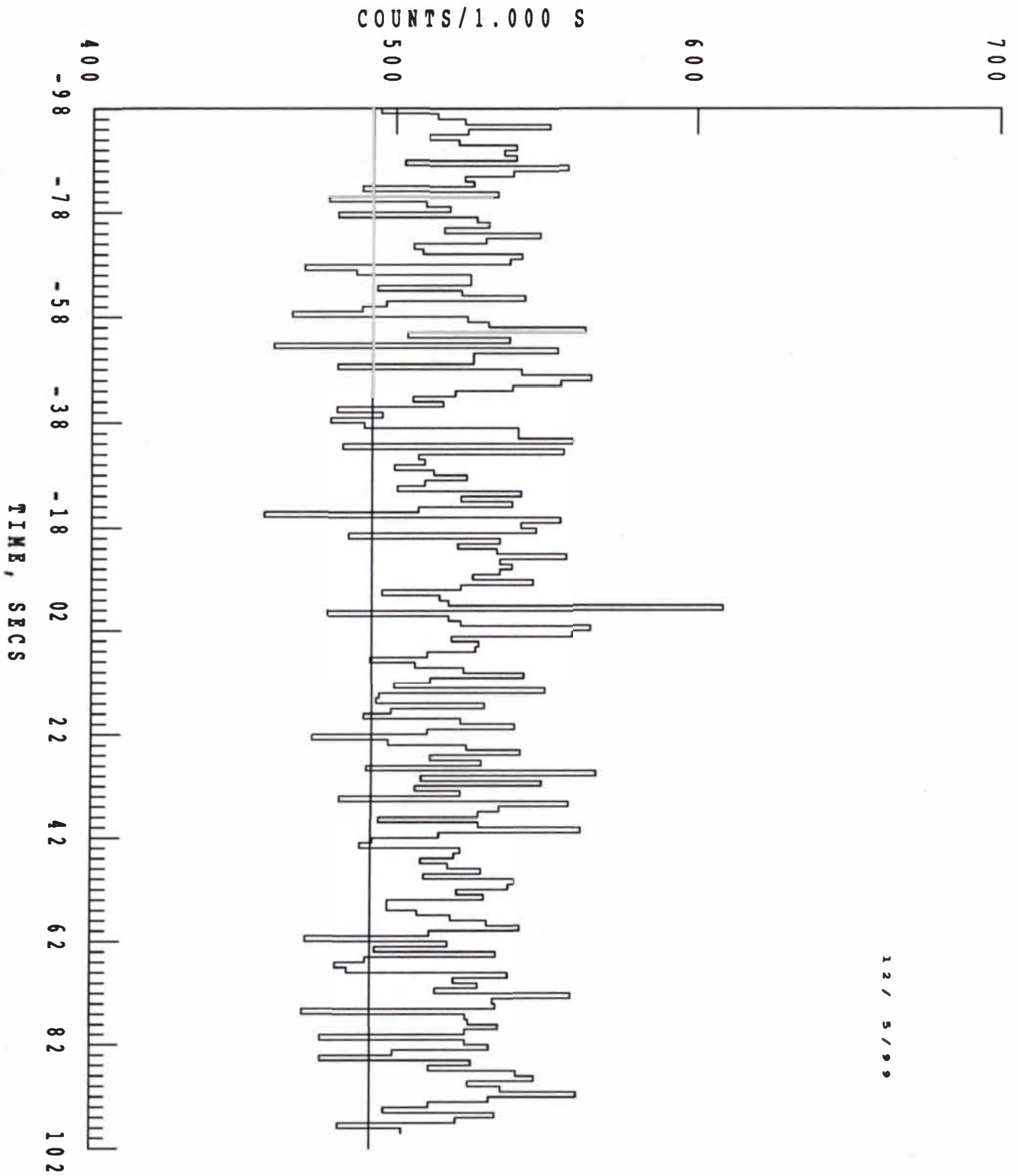
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6443	971021	10742	61697	6000	147	+03	3

NEAR

21/10/97

61587.679

100-1000 keV



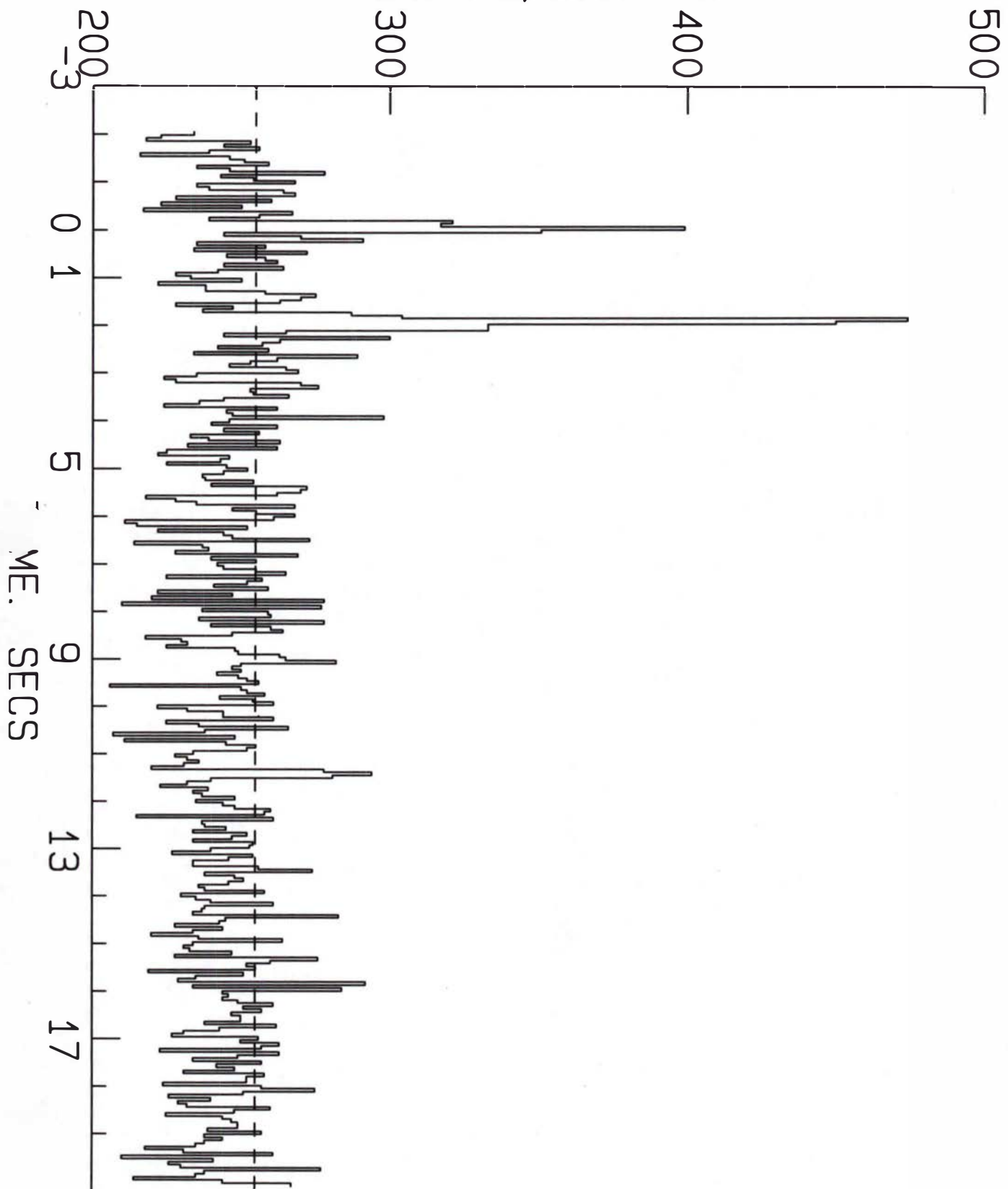
BATSE

21/10/97

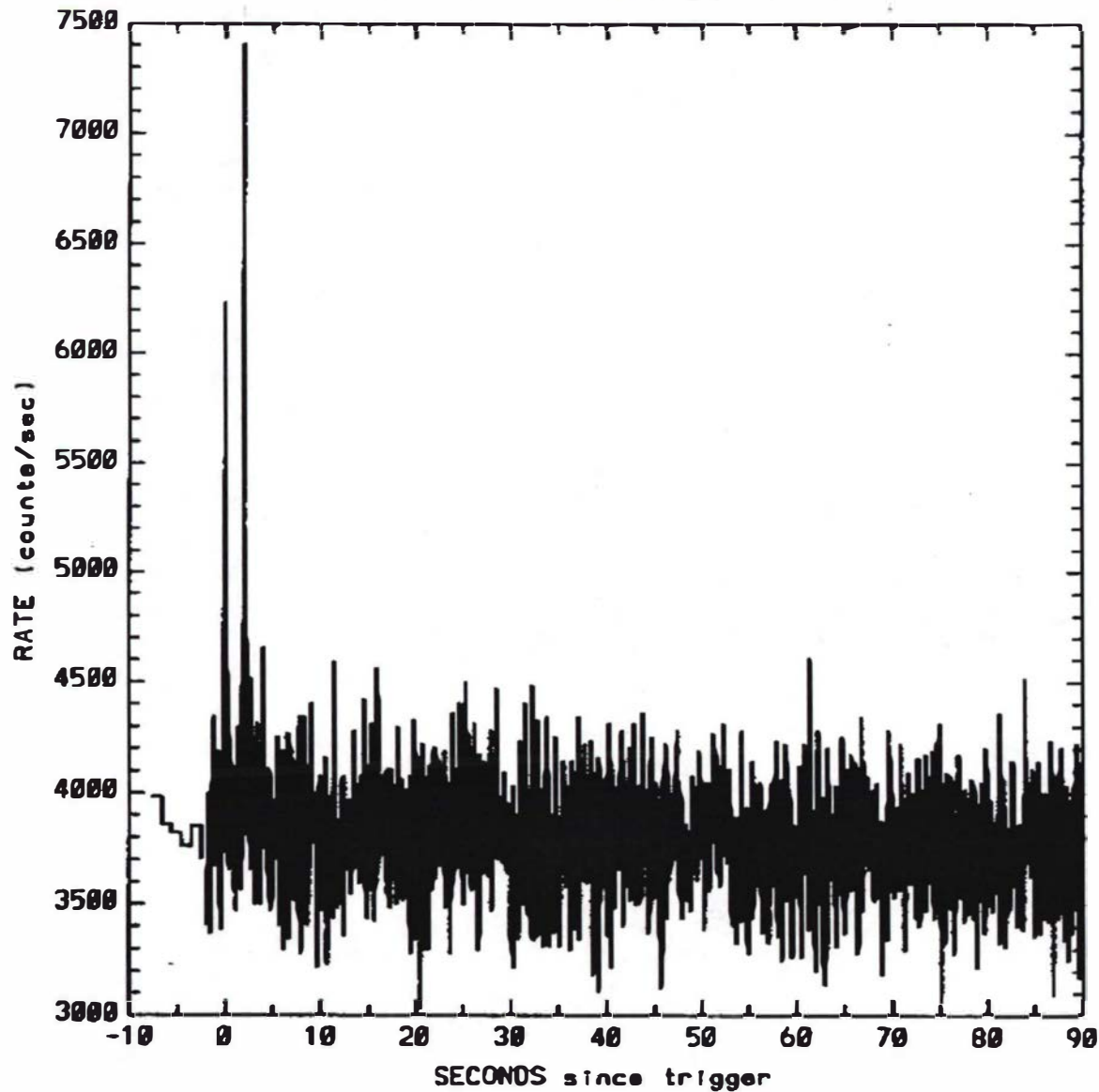
61697.185

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6443



21-JAN-2000 13:47:16

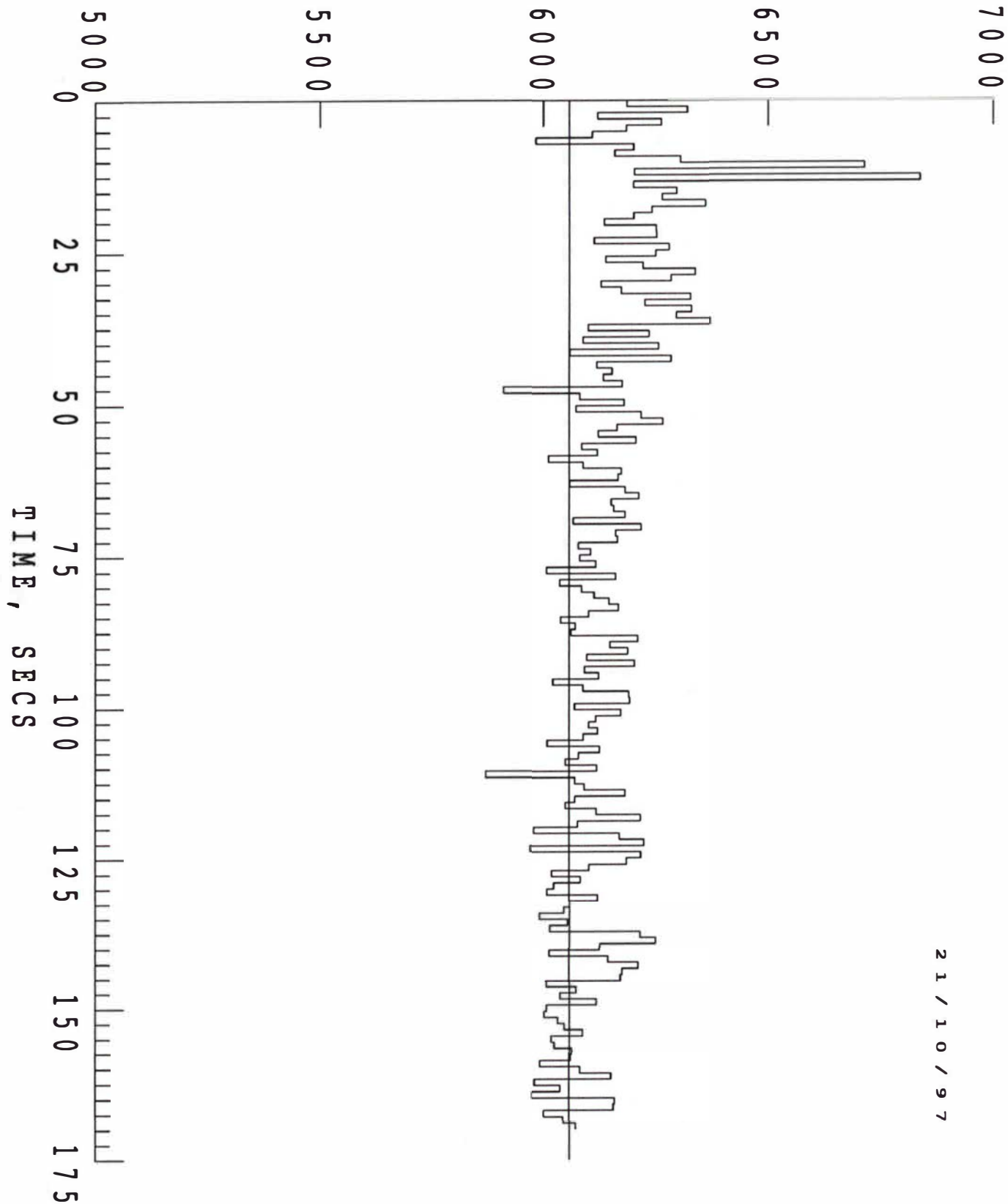
Created by MOPS 80
(Burst Display)
Version t2.26

Trigger # : 6443

Trigger Time:
18742 / 61697.185Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8].
-----18Discriminators:
[3 . 4]Quality Mask:
80ISP1

BACODINE 6443 21/10/97 61686.497
25- 100 keV

COUNTS/1.024 S



21/10/97

BATSE BURST# 6443

ULYSSES RT

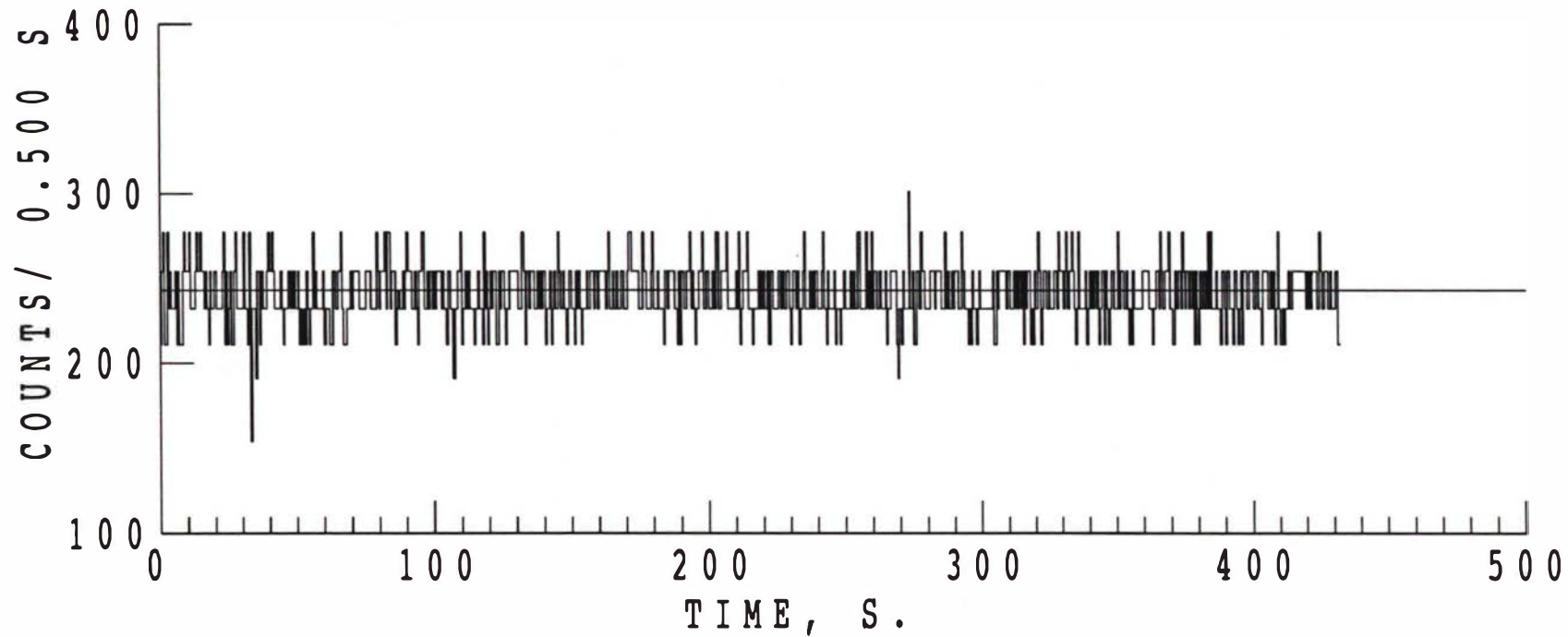
23 / 10 / 97

21 / 10 / 97 58752.008 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Thu Oct 23 12:51:21 1997
From: SAHI@fender.msfc.nasa.gov
Date: Thu, 23 Oct 1997 14:50:25 -0500 (CDT)
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.: 6442

TIME: TJD=0742 SECONDS=40920

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

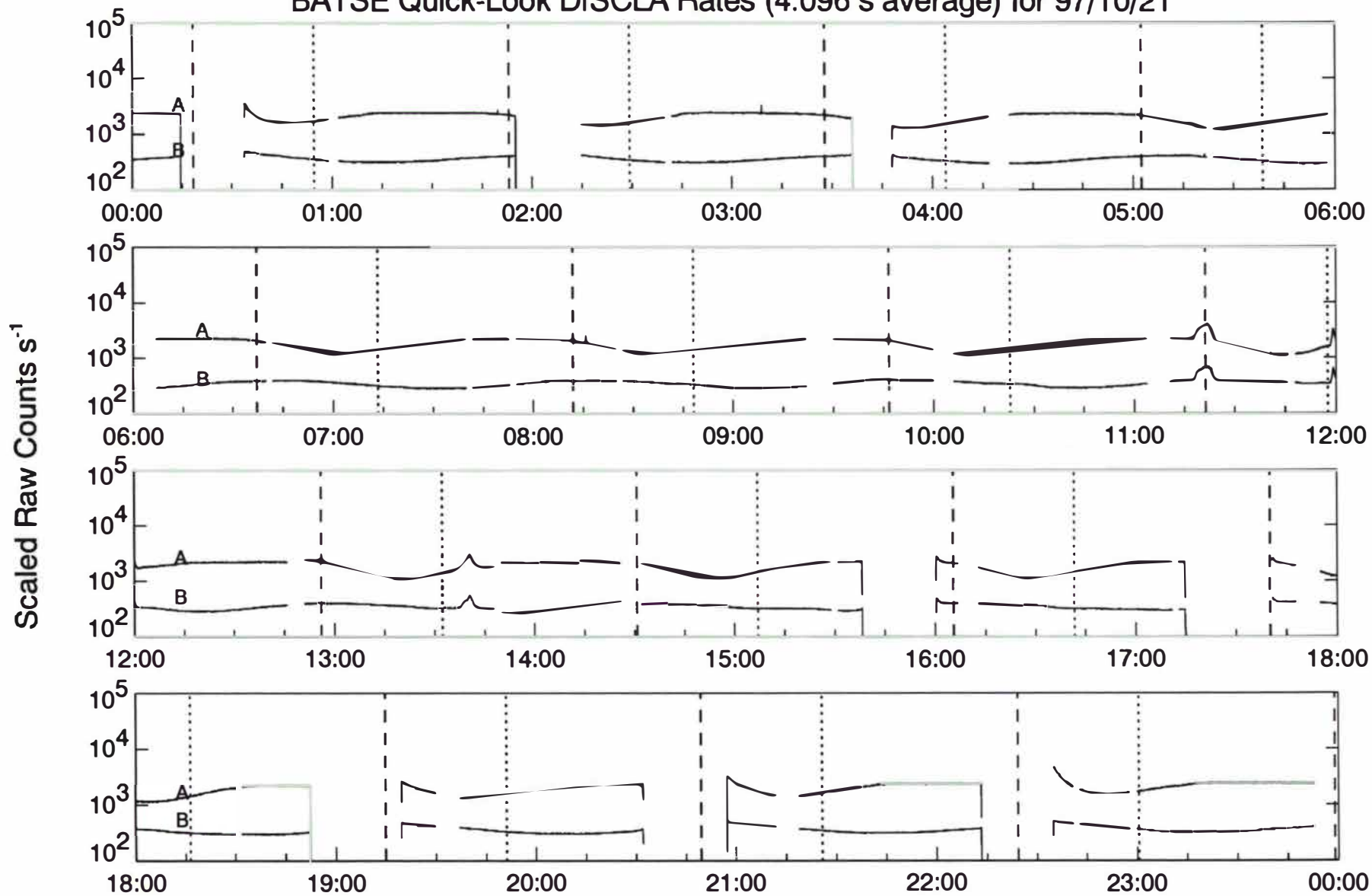
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/21

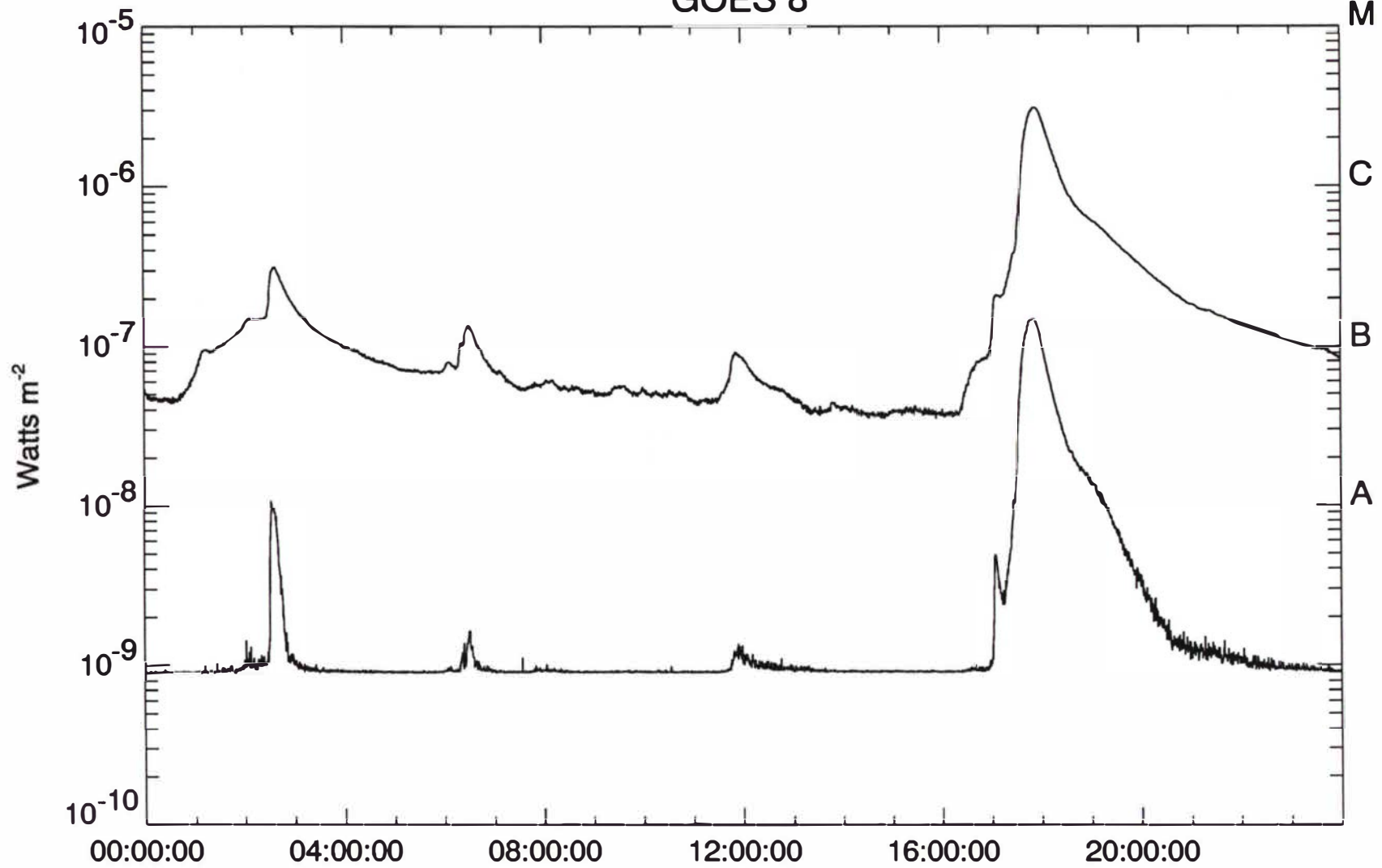


Current Time: 97/10/25, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 97/10/21, 0000:00

Plot created: 97/10/25, 1007

Channel

1 (1.0 - 8.0 Angstroms)

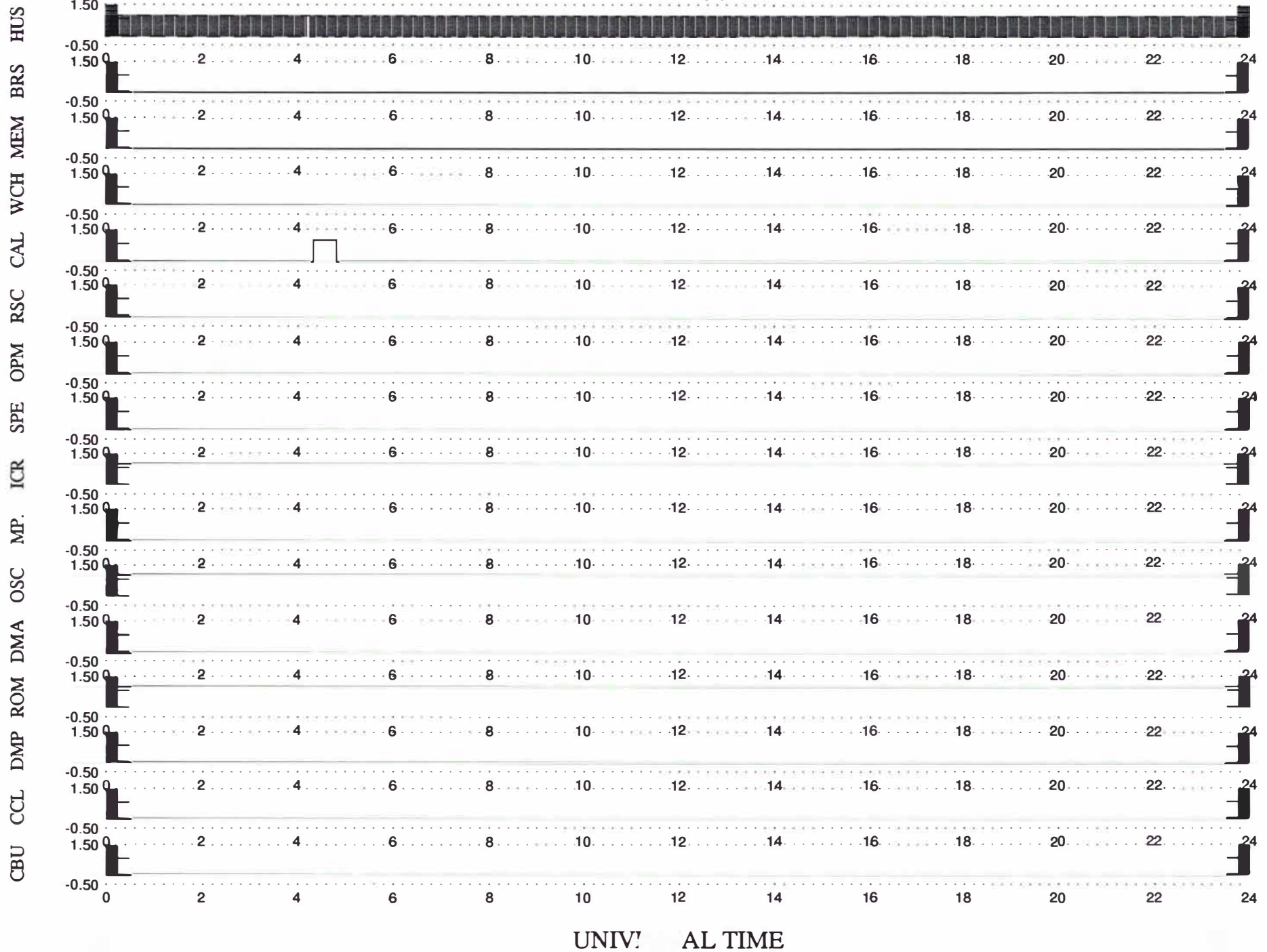
Background not subtracted

2 (0.5 - 4.0 Angstroms)

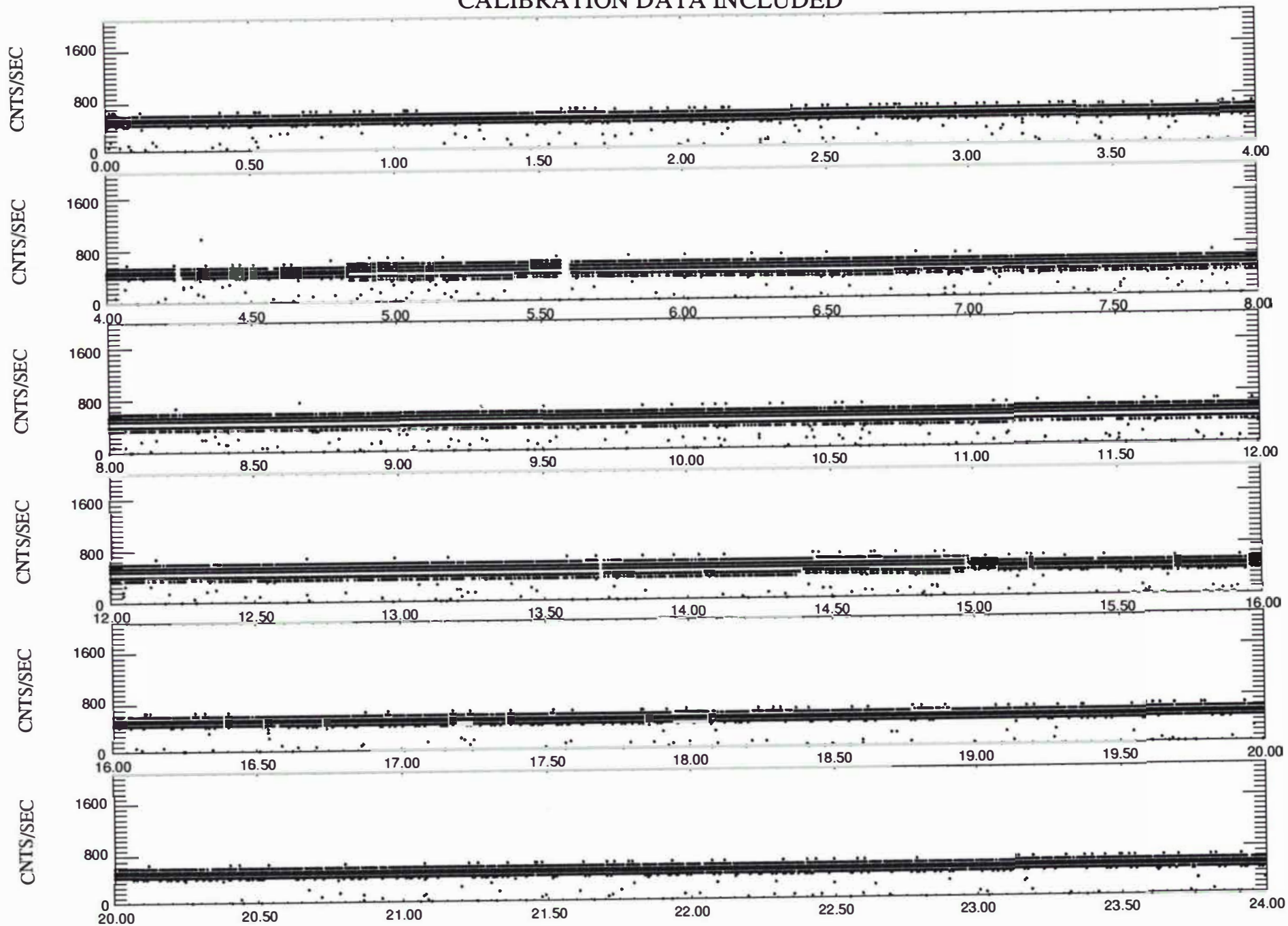
Background not subtracted

Sample average = 10

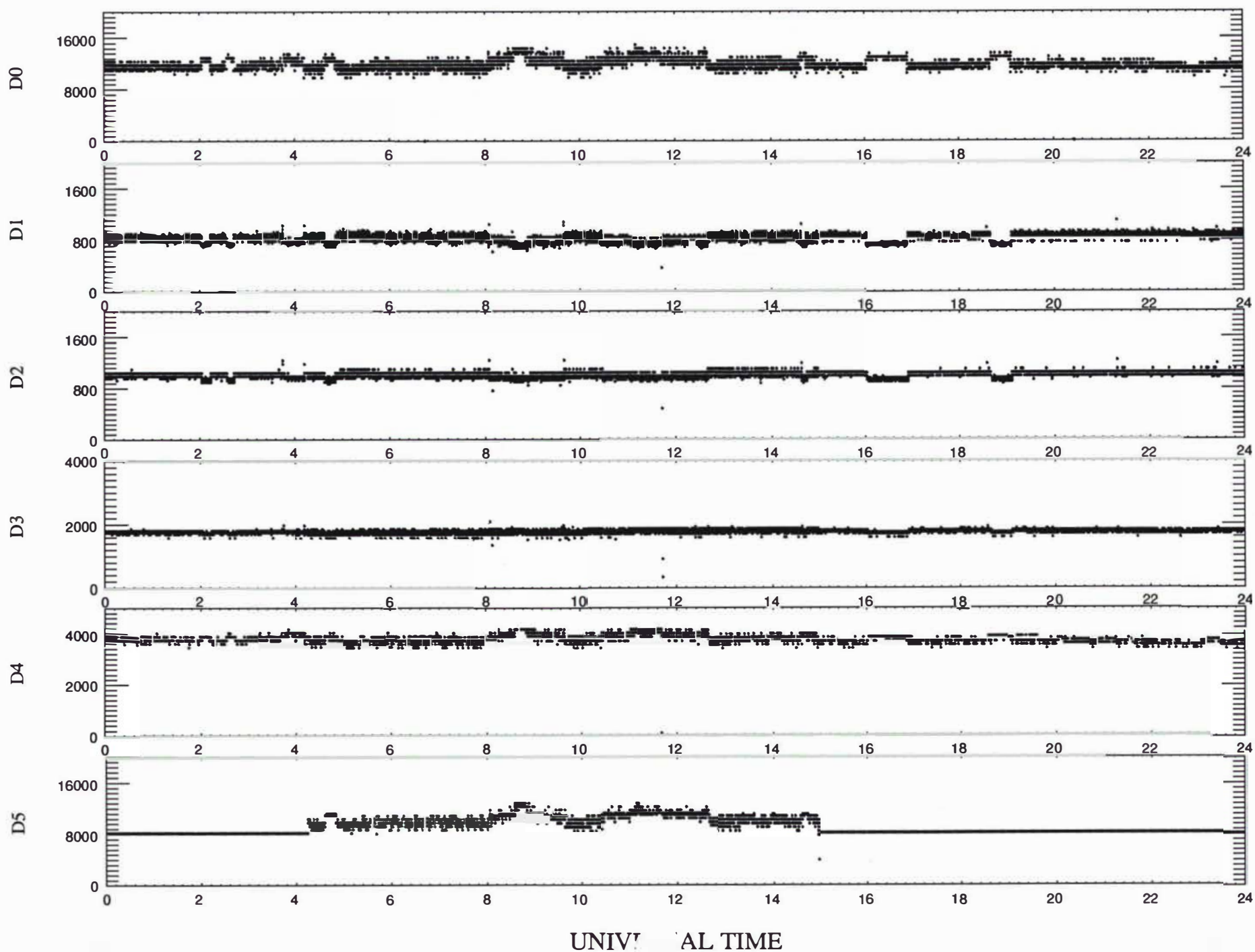
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIV' AL TIME



From SAHI@fender.msfc.nasa.gov Thu Oct 23 13:12:12 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 NAA18482; Thu, 23 Oct 1997 13:12:11 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA16502; Thu, 23 Oct 1997 13:11:59 -0700
Date: Thu, 23 Oct 1997 15:08:29 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971023150829.224001ad@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6444
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6444
EVENT OF 1997 OCT 22 DAY OF YEAR=295
EVENT CROSSING TIME AT BATSE : 42773. S. OR 11:52:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 239.000 -32.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/10/ 97 IS:
RA= 168.160 DEC= 14.478 DIST= 5.947 AU
BATSE-ULYSSES DISTANCE = 889644596. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -406.58 SECS.
CROSSING TIME AT ULYSSES IS 42366. S. OR 11:46:06 +/- 554.18 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/10/ 97 IS:
RA= 255.194 DEC= -23.935 DIST= 1.883 AU
MARS-BATSE DISTANCE = 281671968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=163.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -901.37 SECS.
CROSSING TIME AT MARS IS 41872. S. OR 11:37:51 +/- 32.34 SECONDS

BATSE BURST TRIGGER

NO.: 6444

TIME: TJD=0743 SECONDS=42773

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=41.8 AZIMUTH=298.0 ERROR=5.5 DEGREES

COMMENTS:

BURST. SINGLE PULSE, DUR. APPROX. 50 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6444	971022	10743	42773	2200	239	-32	50

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

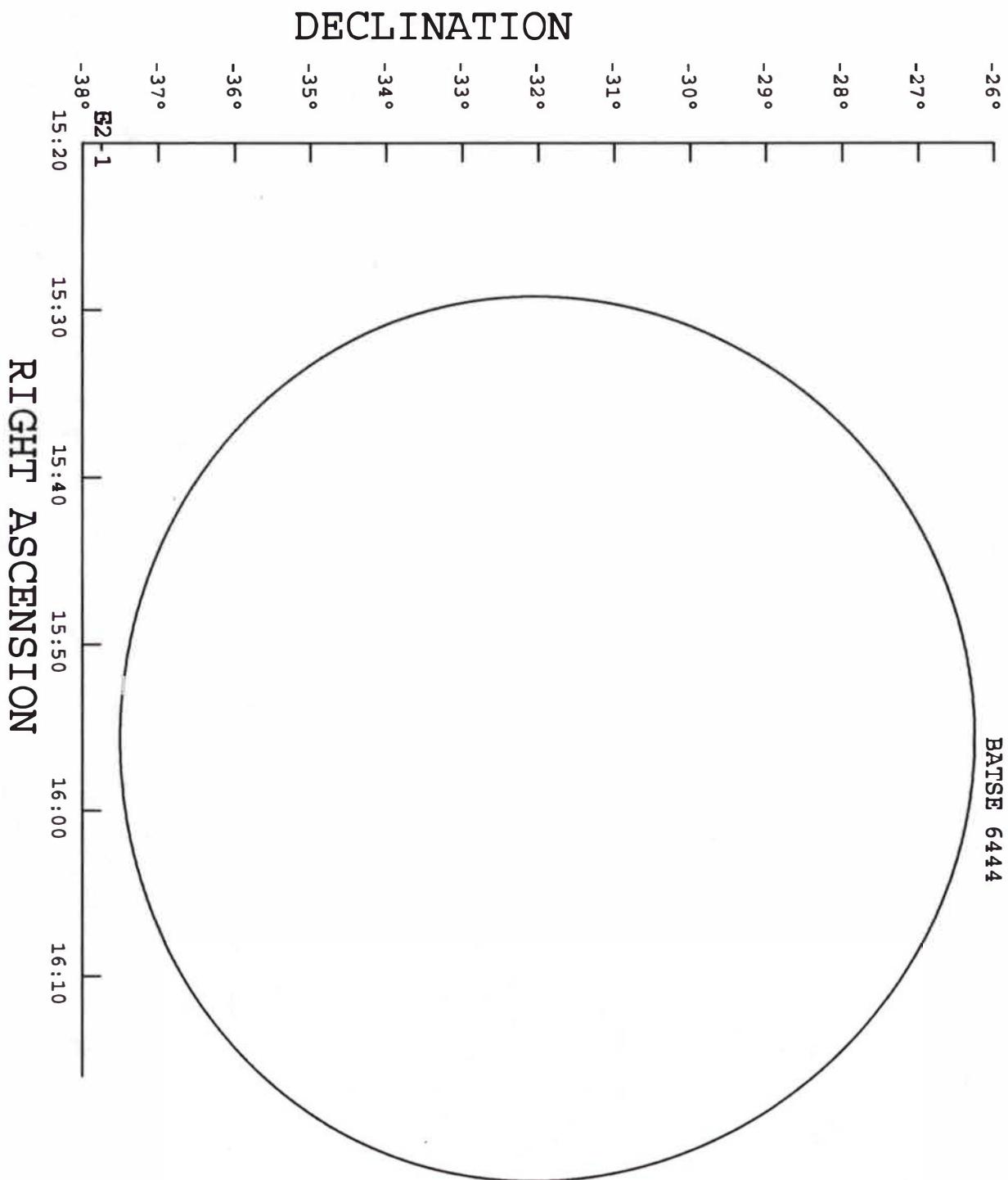
G=GALACTIC EQUATOR

1 BATSE

2 NEAR

EVENT OF OCT 22, 1997 11:52

7 / 2 / 0



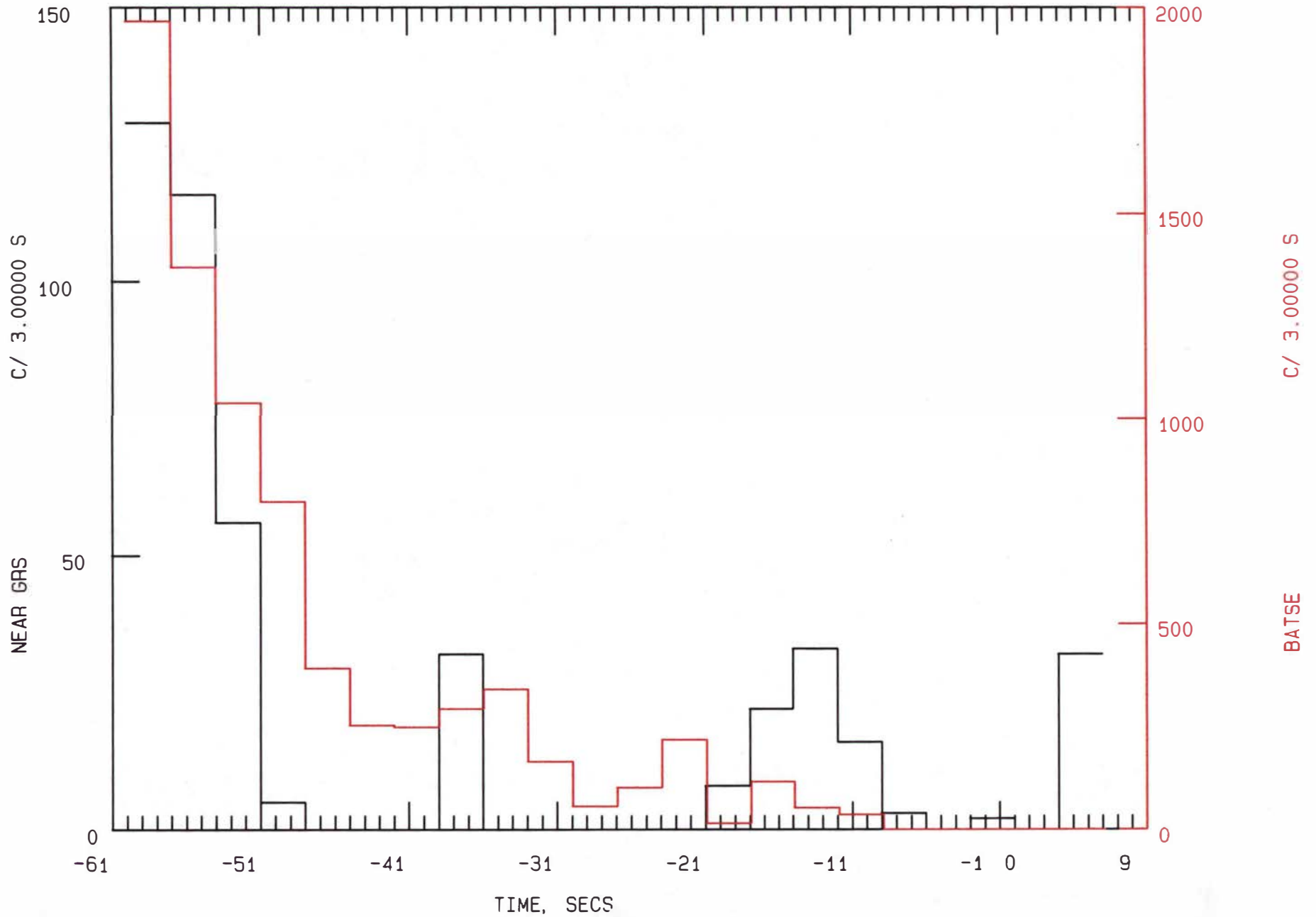
NEAR GRS -BATSE

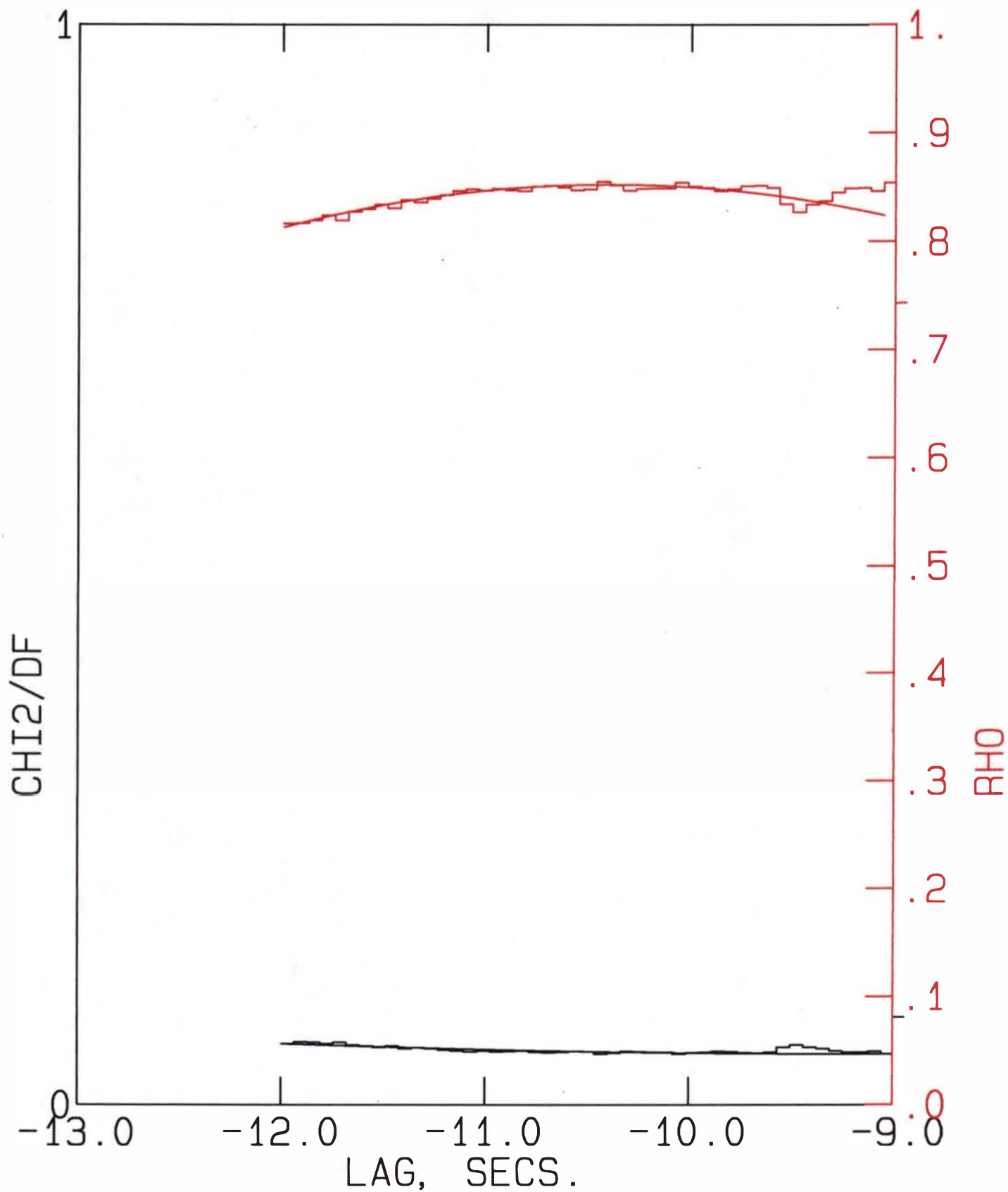
CORRELATION

22/10/97

43059.666

7/ 2/ 0



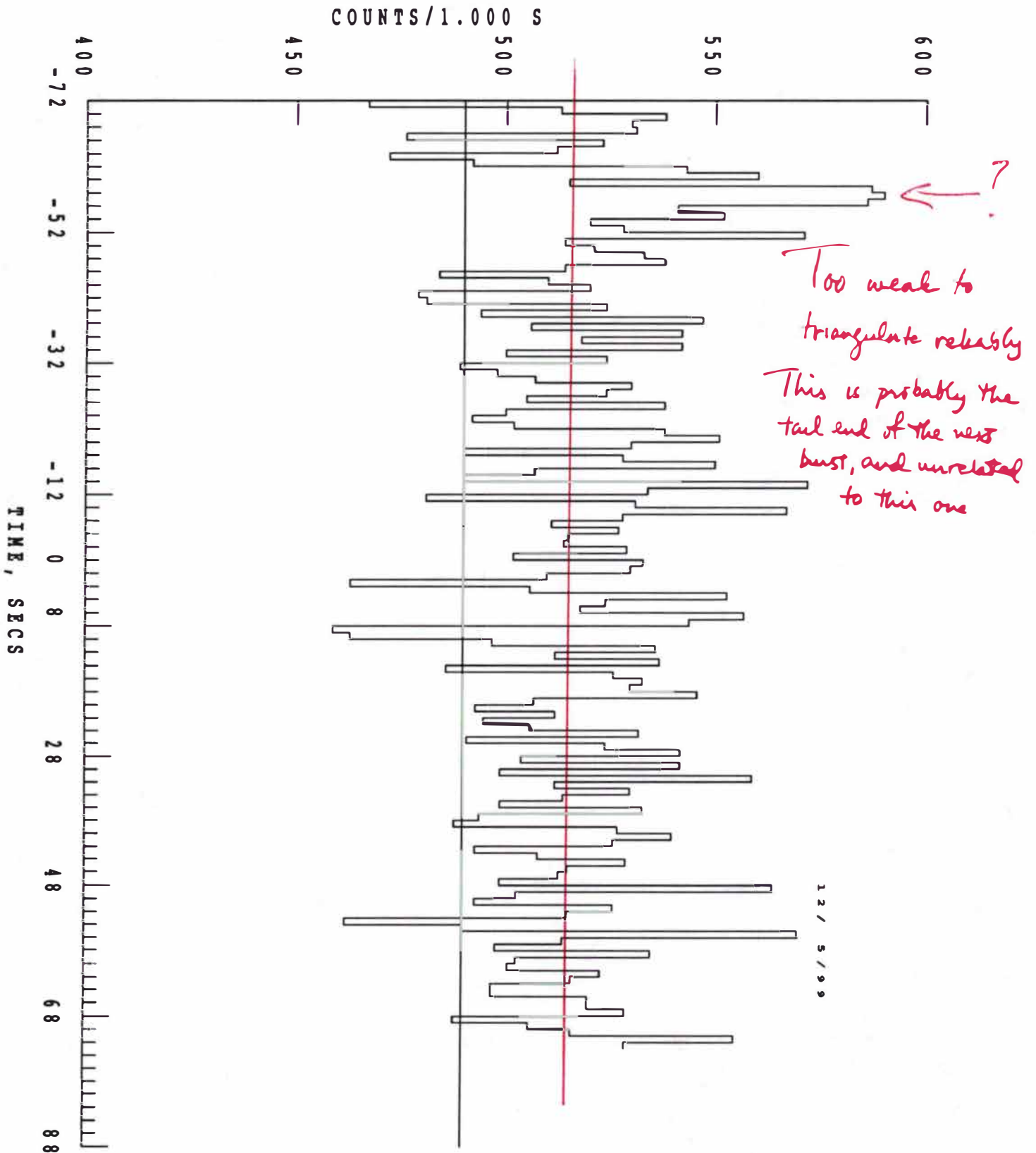


NEAR

22/10/97

43059.666

100-1000 keV



BATSE

22/10/97

42773.217

100-1000 keV

COUNTS/0.064 S

500

400

300

200

-3 0

13

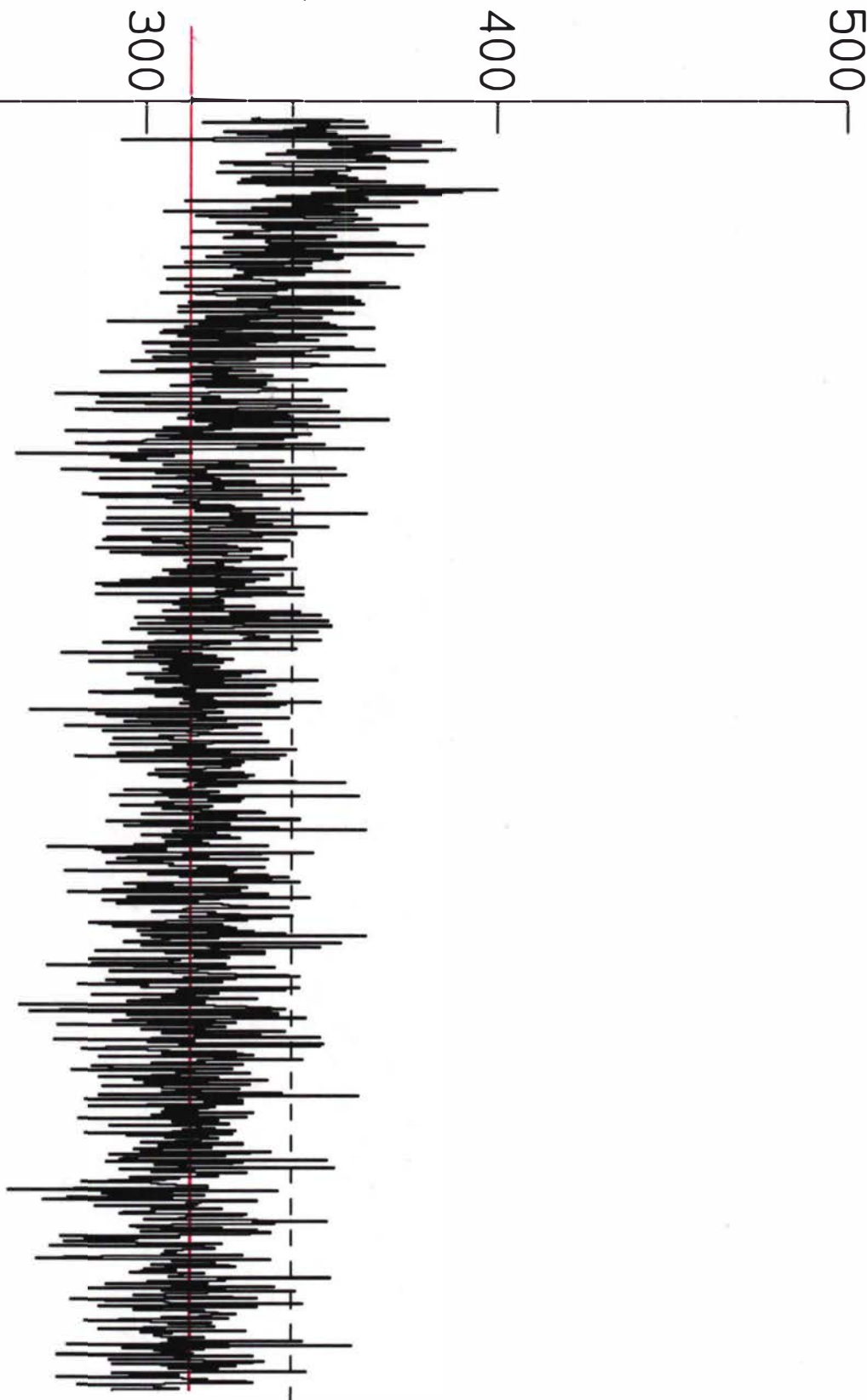
29

ME. SECS

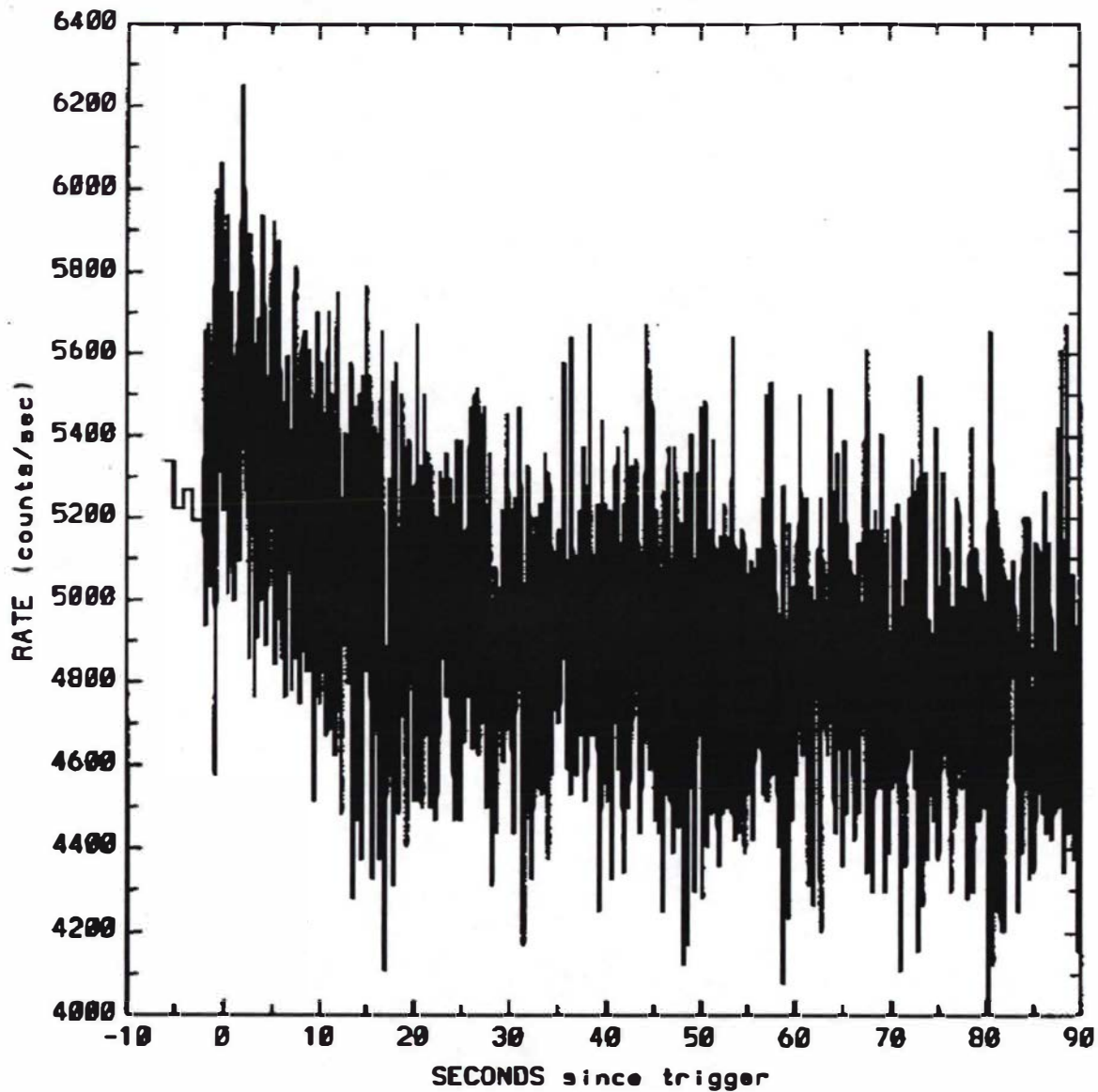
45

61

27 / 1 / 0



DISCSC Data for K. Hurley. No. 6444



21-JAN-2000 13:48:25

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

Trigger # : 6444

Trigger Time:
18743 / 42773.217Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors {7..8}
-8--2-Discriminators:
(3 . 4)Quality Mask:
B0TSP1

BATSE BURST# 6444

ULYSSES RT

23 / 10 / 97

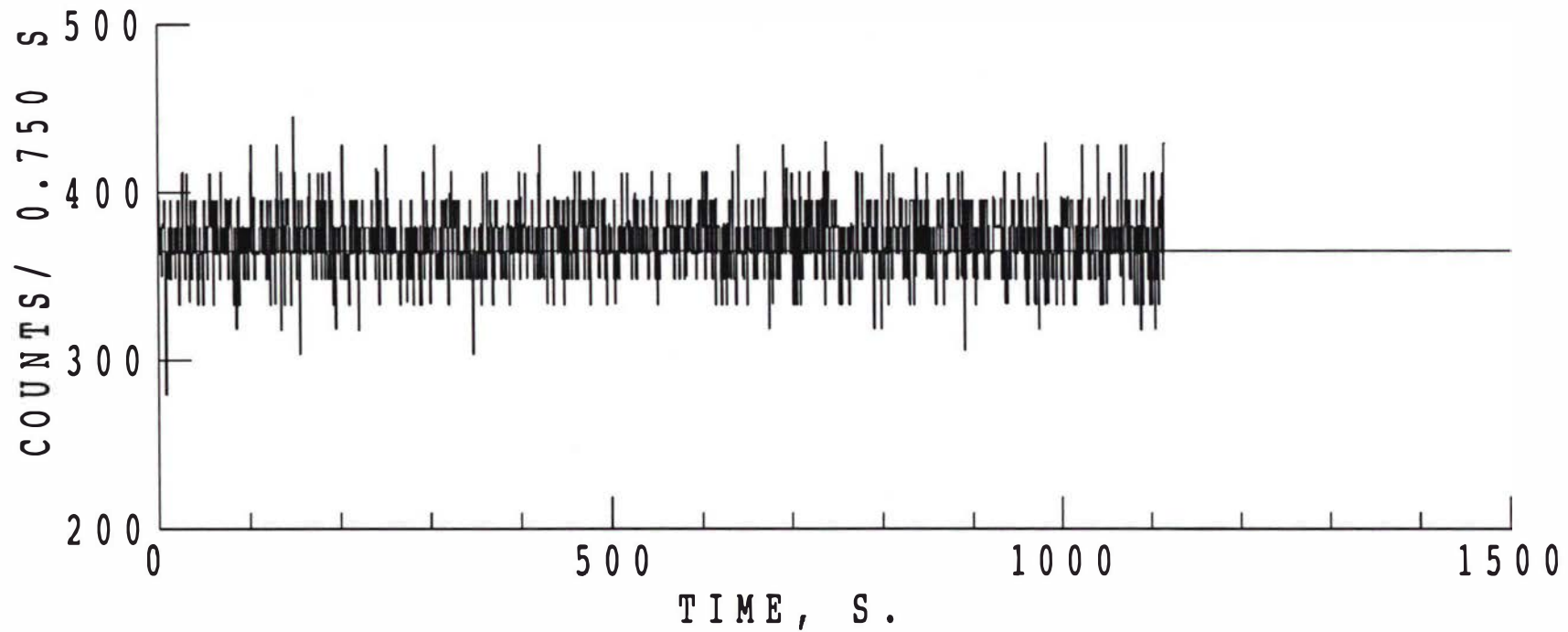
22 / 10 / 97 41796.039 s

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



Date: May 7 '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?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

2. For 3 Spacecraft events

- ☐ $\Sigma 3\Delta t$'s calculated?

3. For INTEGRAL events

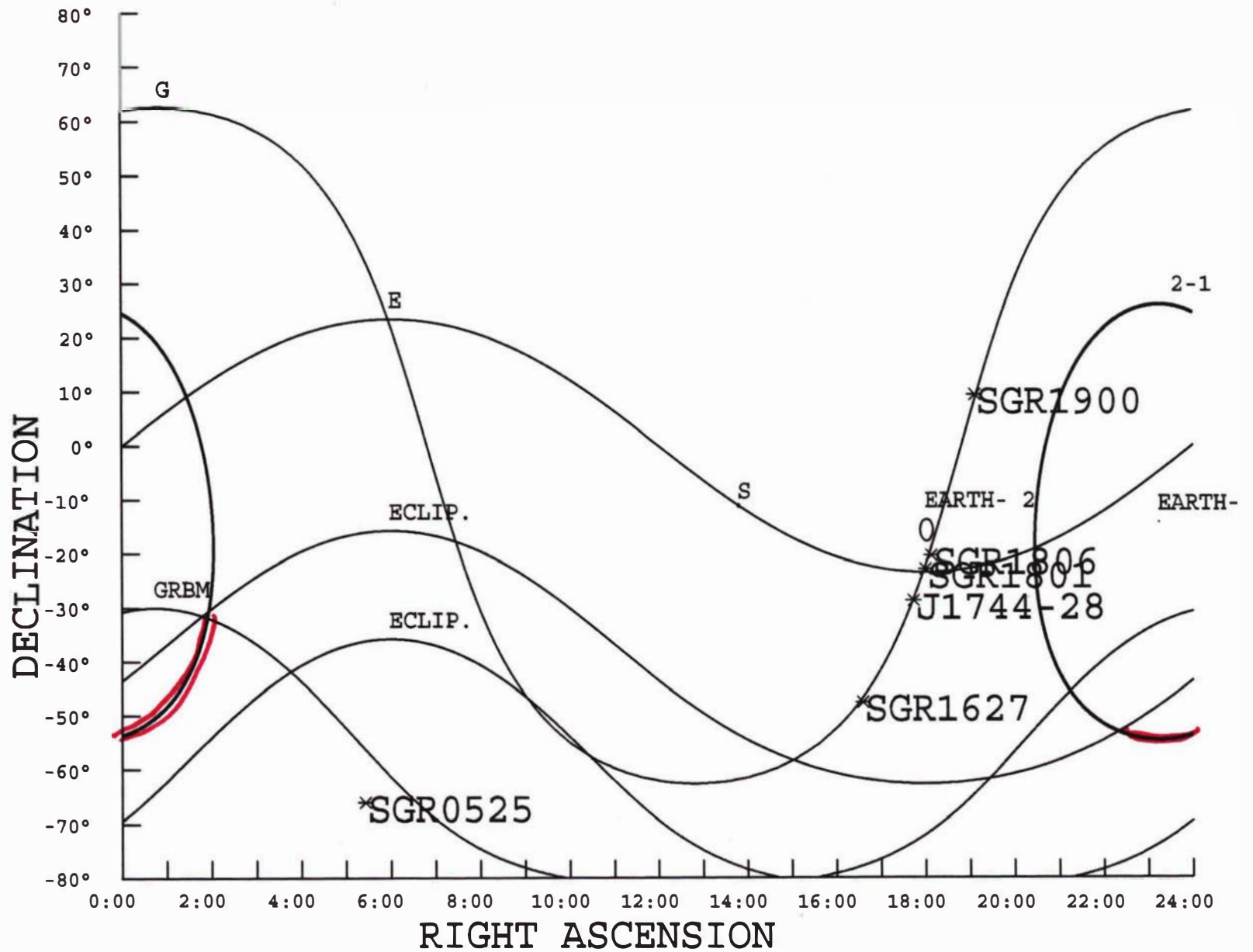
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

-
- ☒ ACCESS database updated?

EVENT OF OCT 22, 1997 12:33

7/ 5/ 4

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



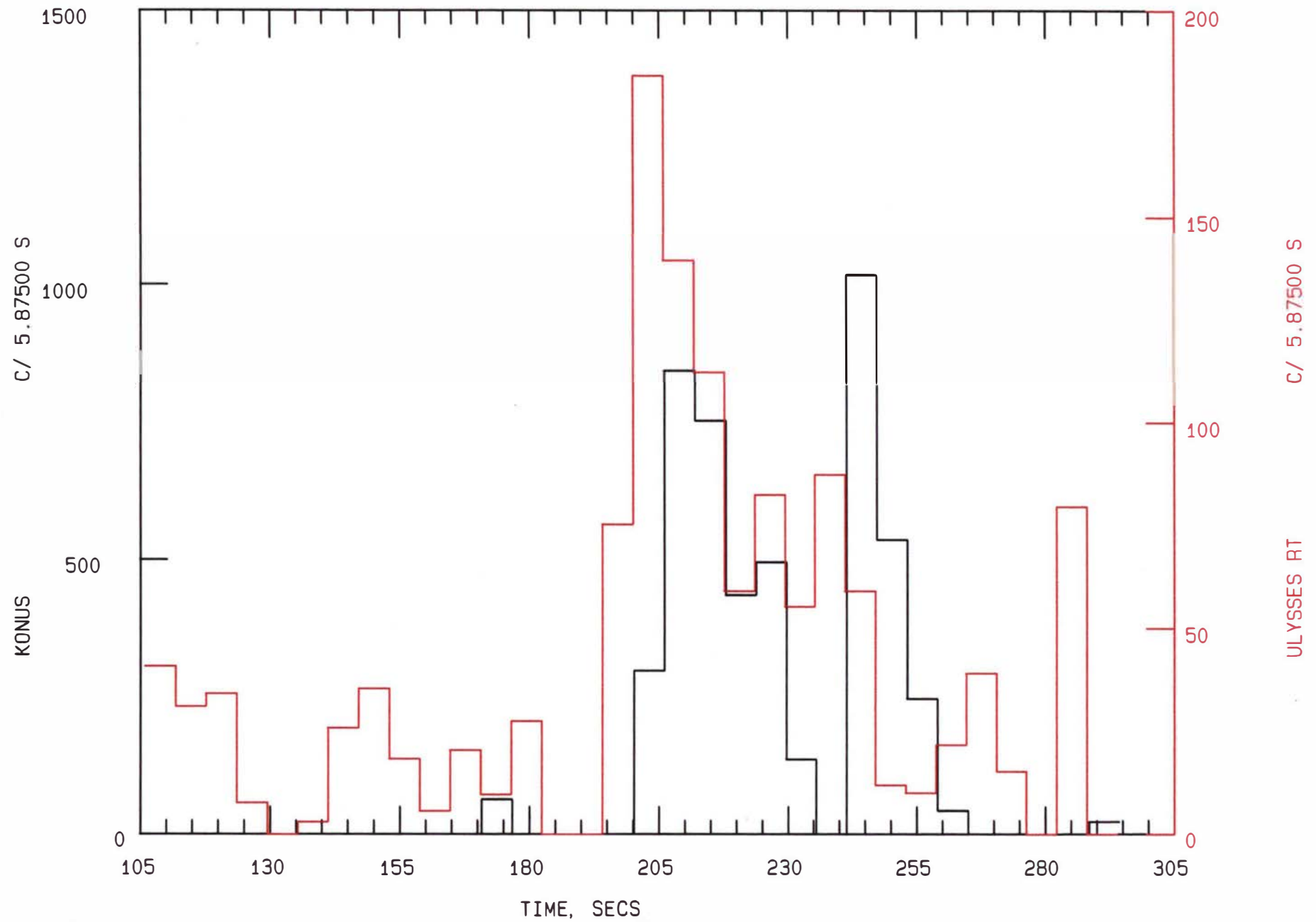
KONUS

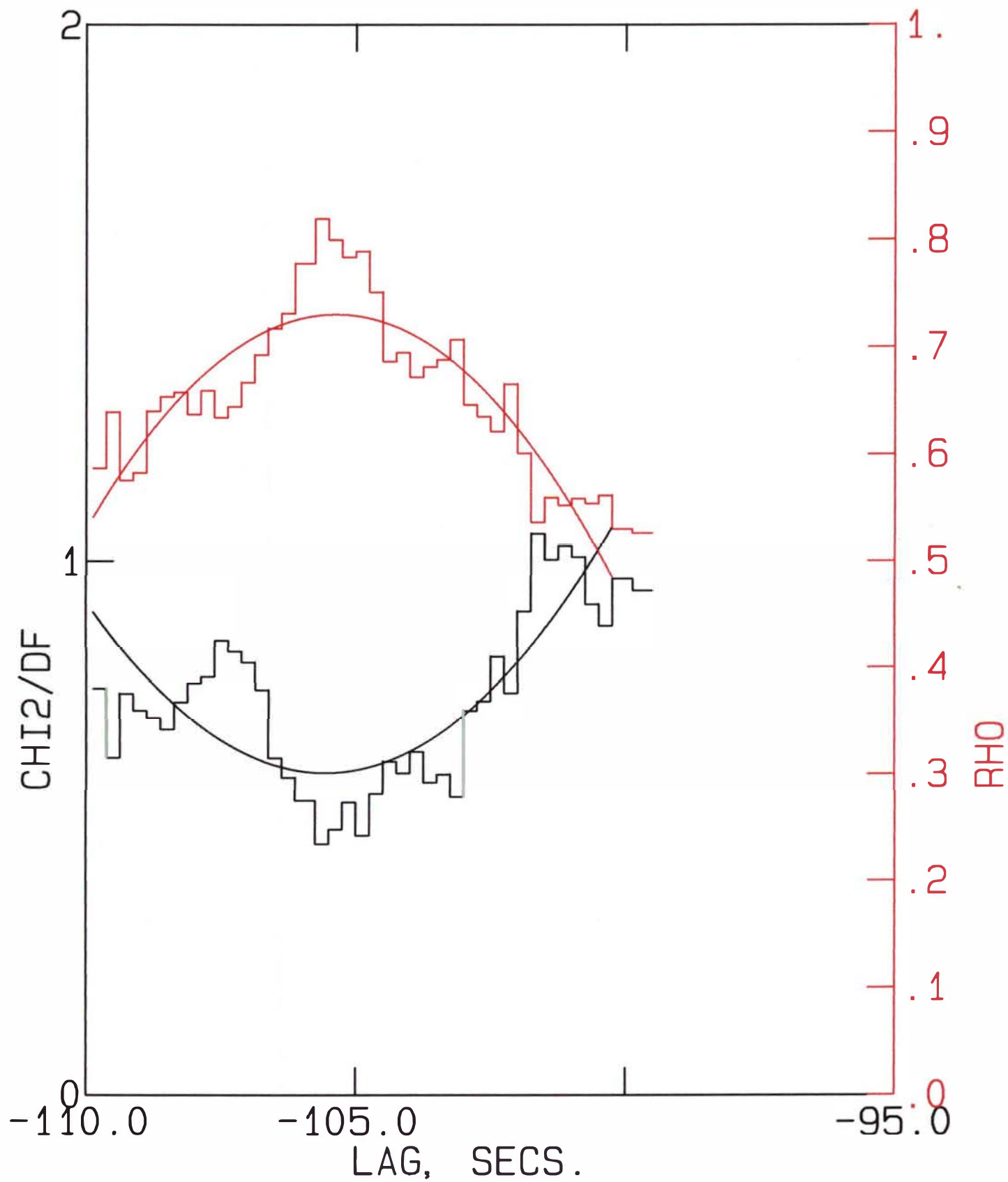
-ULYSSES RT CORRELATION

22/10/97

42832.309

7/ 5/ 4





KONUS

22/10/97 42832.309

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/1.469 S

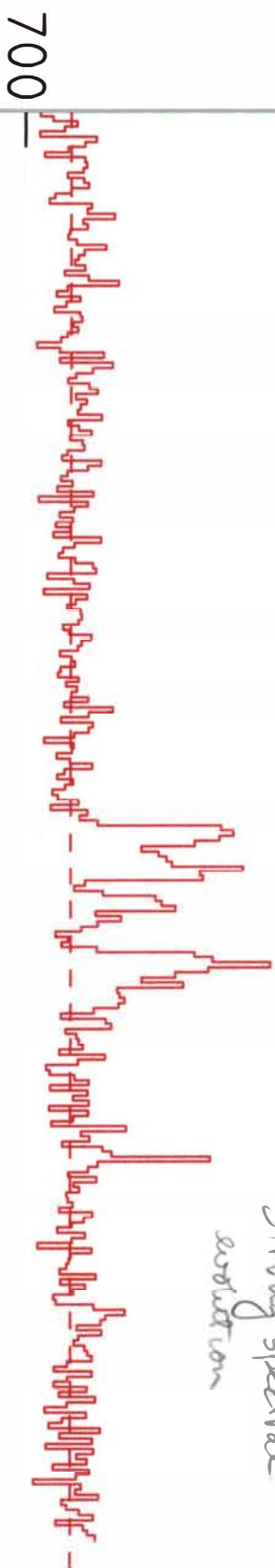
2200

DETECTOR 1 - S. ECLIPIC

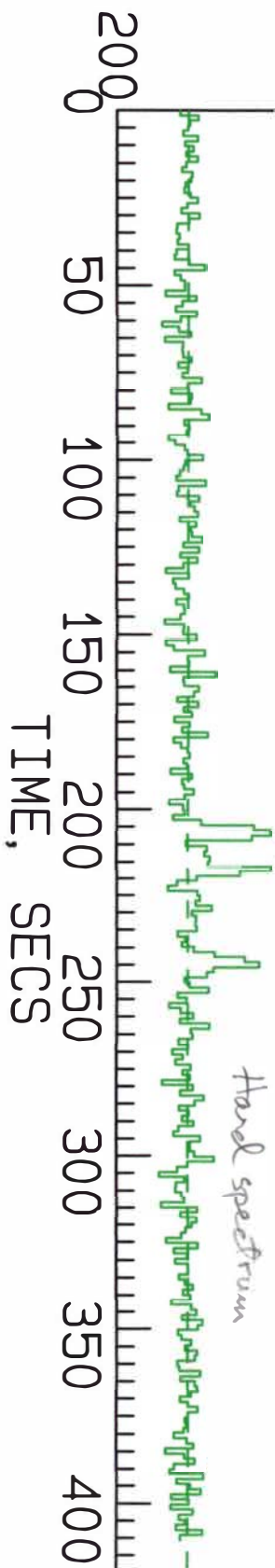
07/05/04



Strong spectral
excitation



hard spectrum



TIME, SECS

KONUS

22/10/97 42832.309

10- 50 keV

50- 200 keV

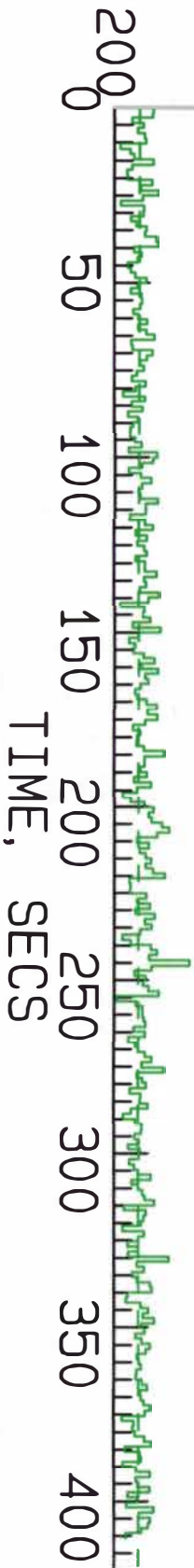
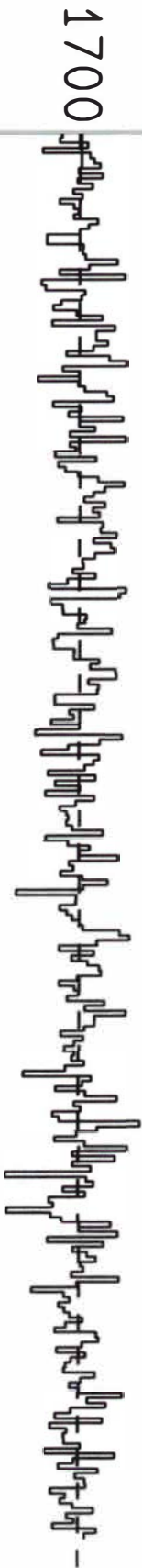
200- 750 keV

COUNTS/1.469 S

2200

DETECTOR 2 - N. ECLIPIC

07/05/04

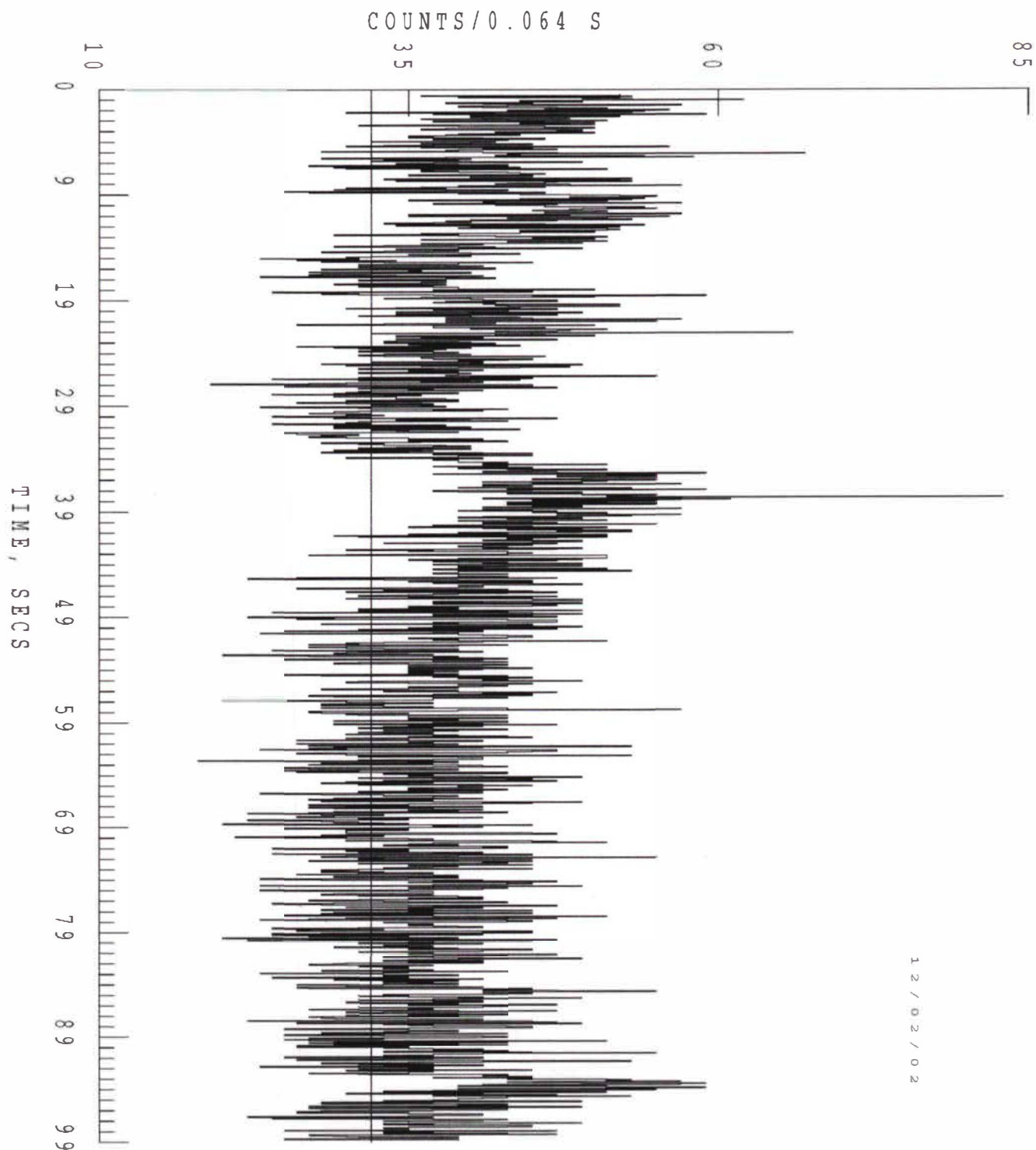


KONUS1

22/10/97

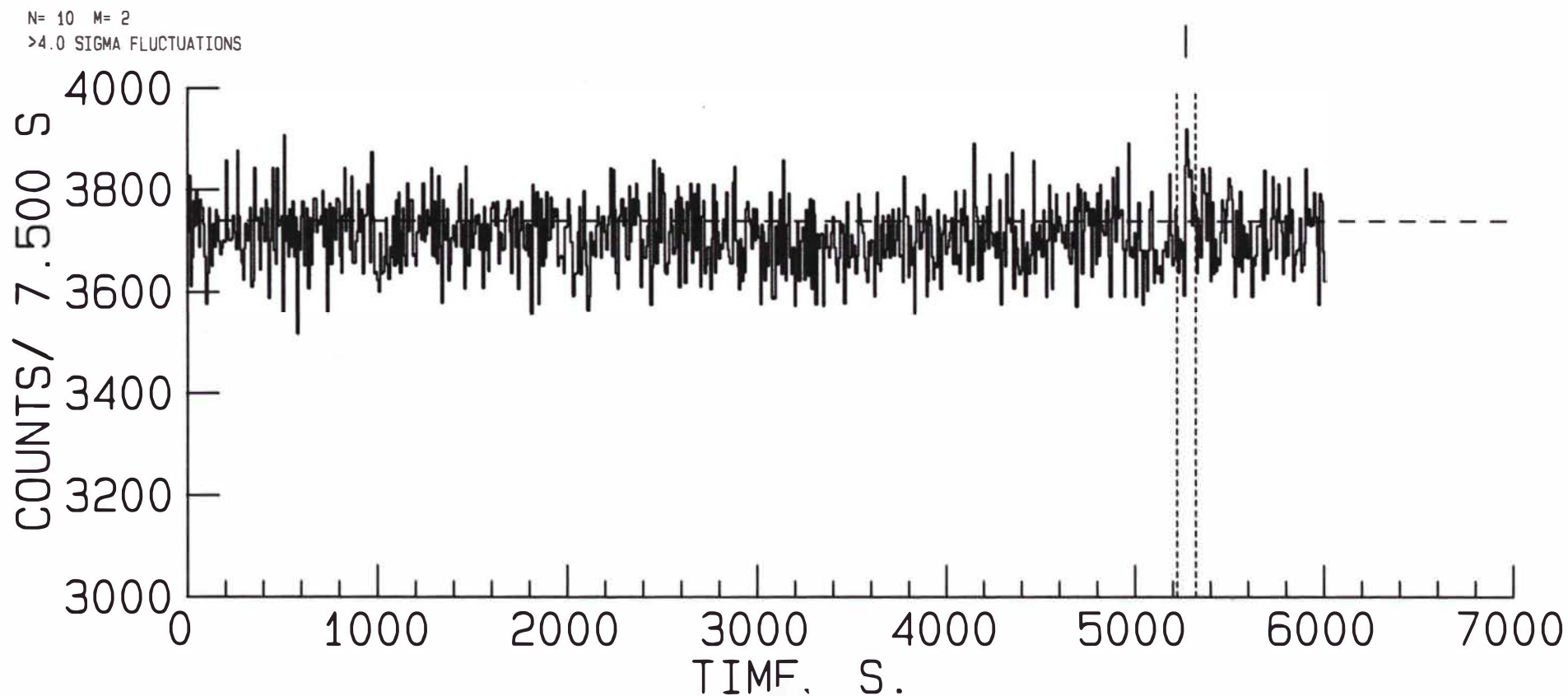
43039.408

50- 200 keV



ULYSSES RT
22/10/97 40032.020 s
0.250 S INTERVALS REGROUPED BY 30
22- 148 keV

7 / 5 / 4



grbm 19971022 70823

ULYSSES RT

06/05/04

22/10/97 67788.078 s

0.500 S INTERVALS REGROUPED BY 9

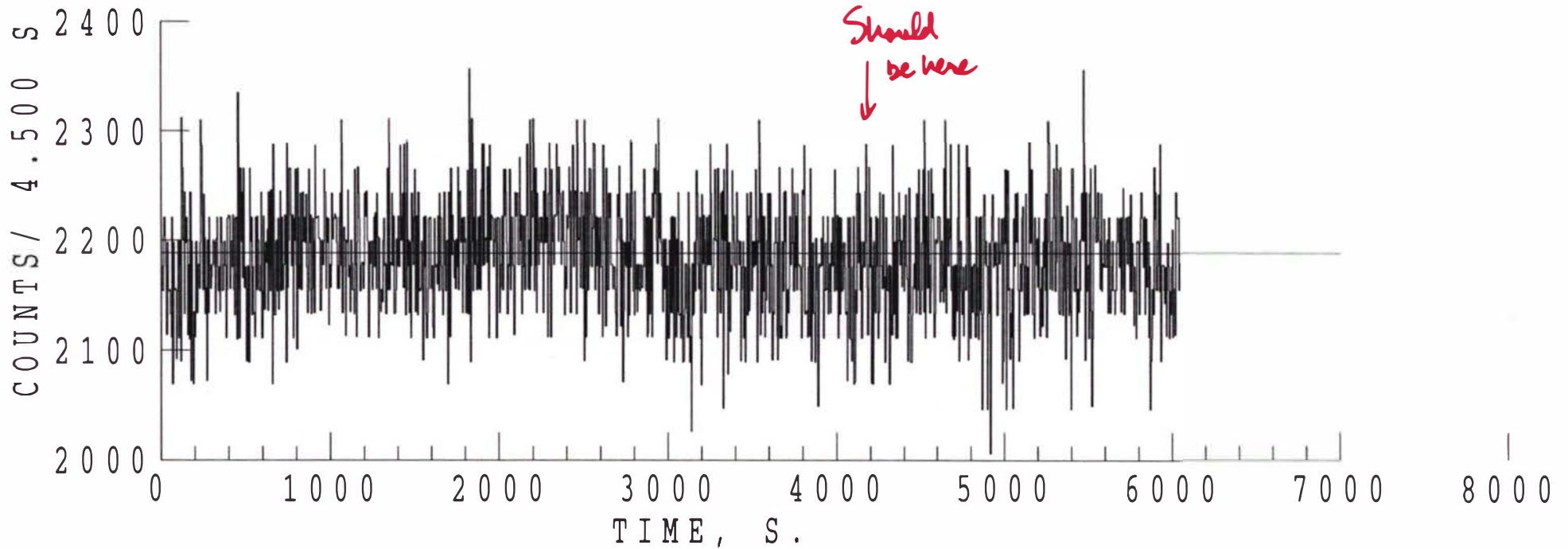
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

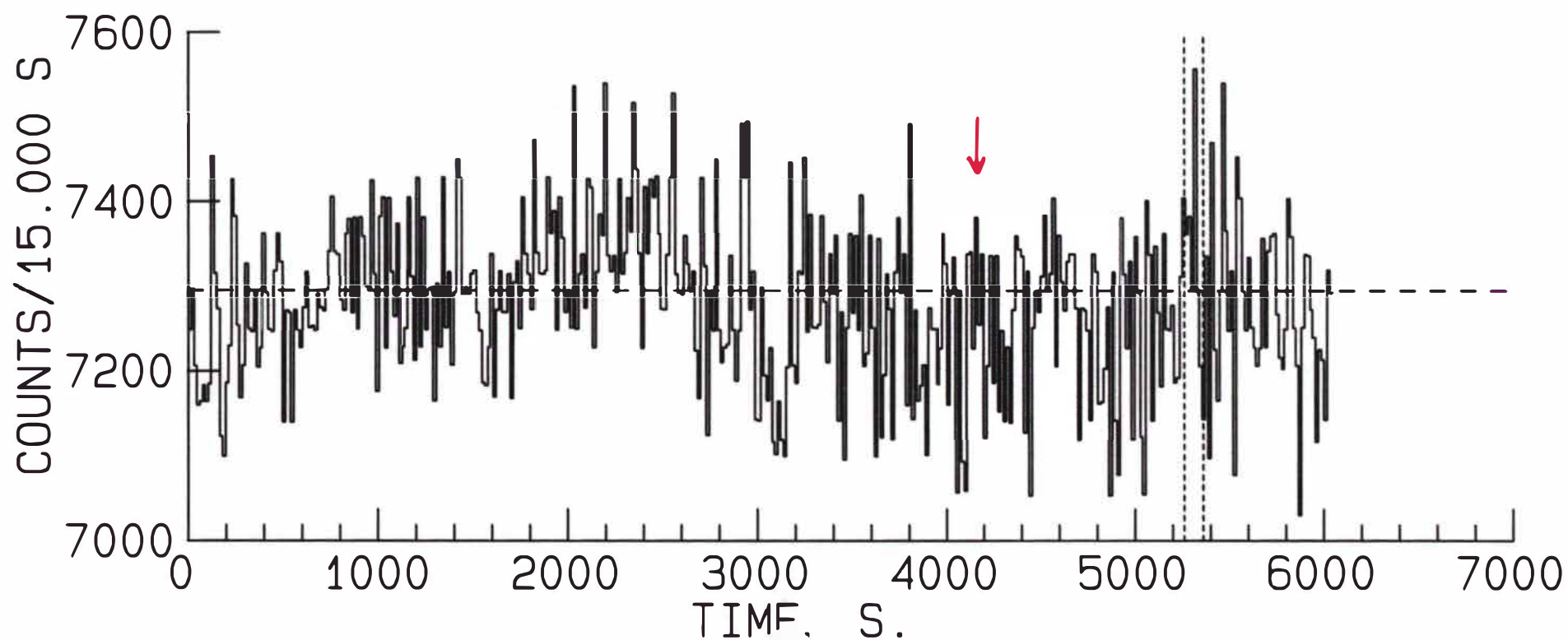
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

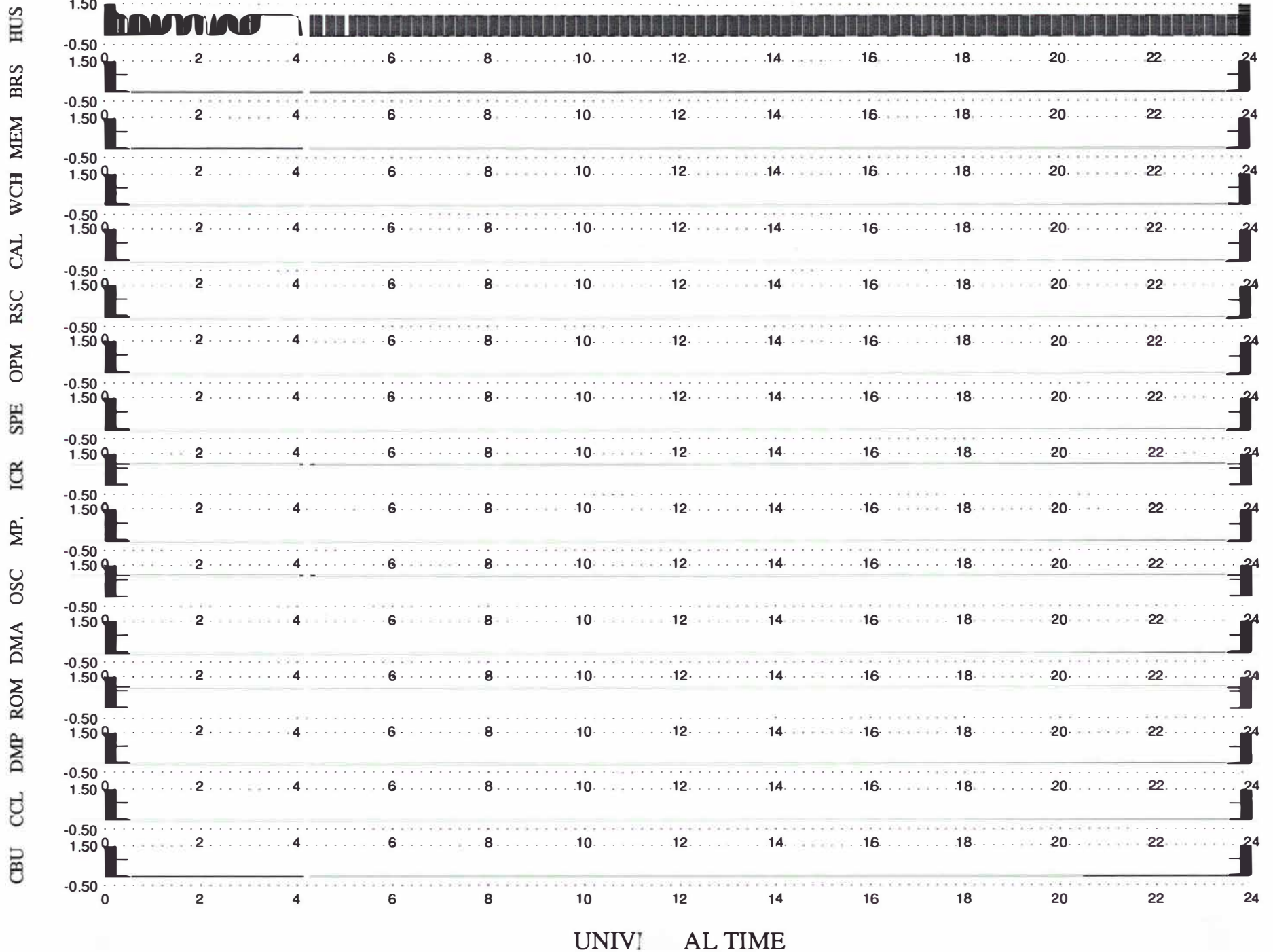


ULYSSES RT
22/10/97 67788.078 s
0.500 S INTERVALS REGROUPED BY 30
22- 148 keV

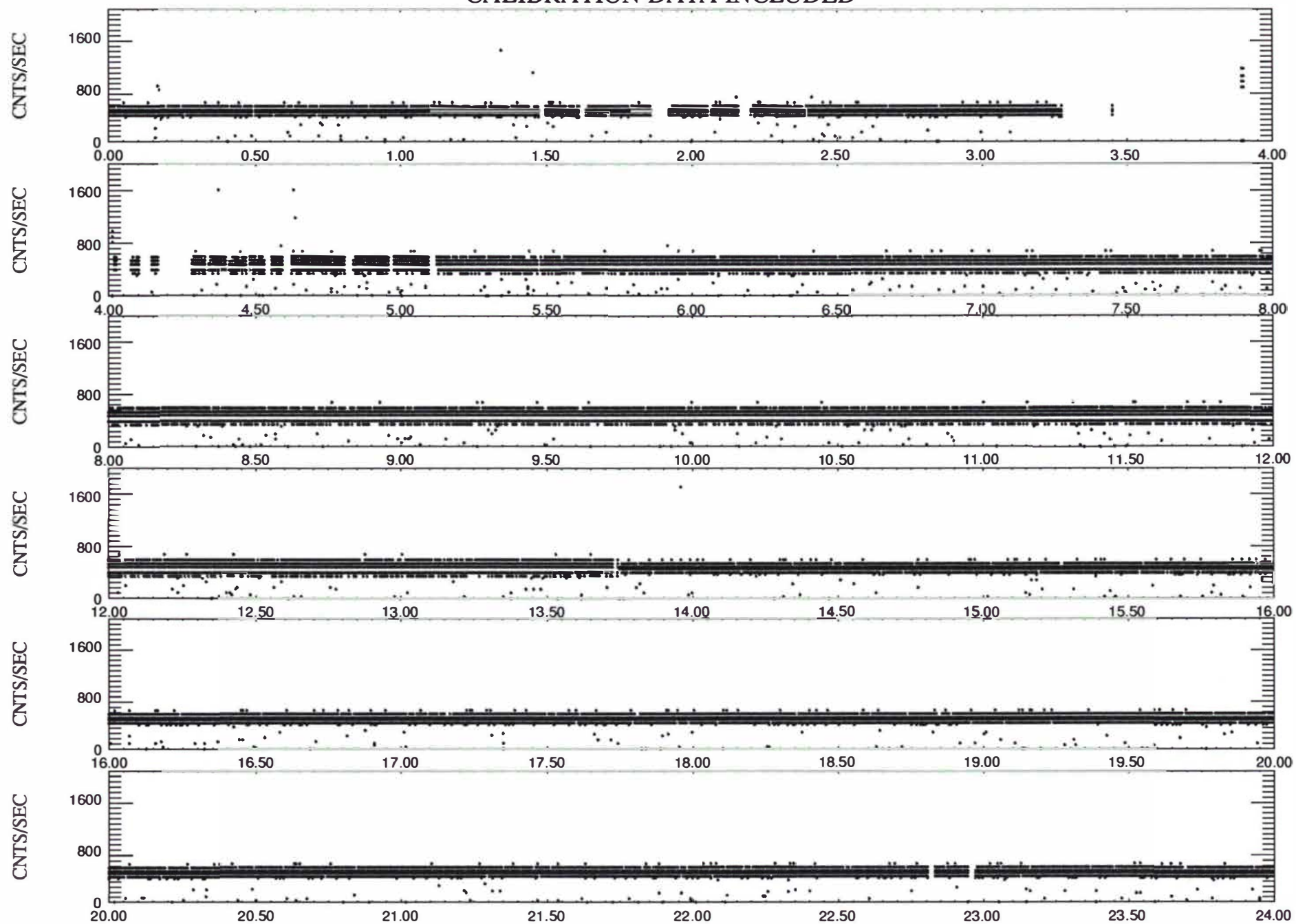
7 / 5 / 4



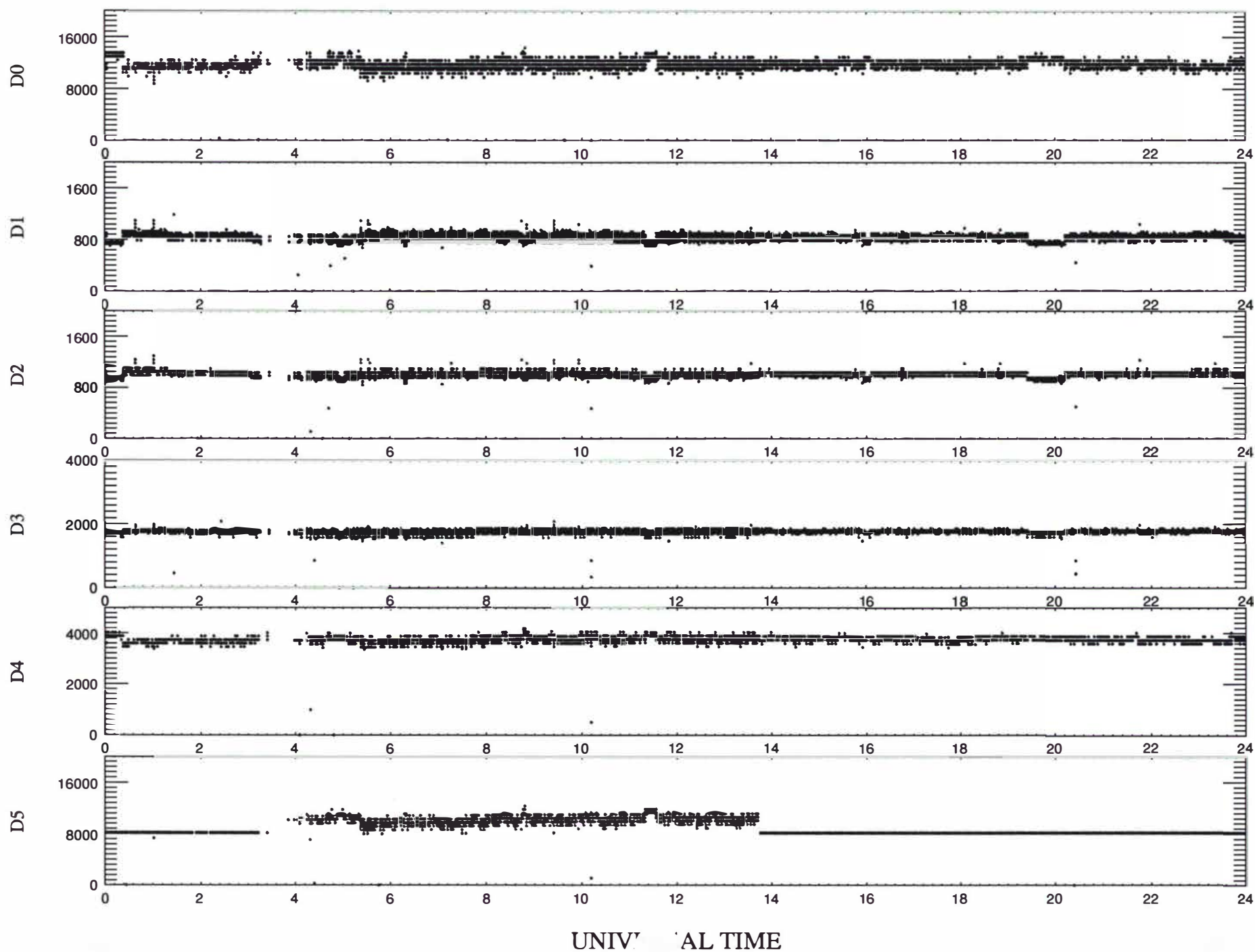
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIV. TIME



Date: Feb 9 2010

BURST TRIANGULATION CHECKLIST

1. Suzaku Data

- ☐ 1 second timing error corrected? (Jan 1 – Apr 24 2009)

2. AGILE Data

- ☐ 1 second timing error corrected?

3. MESSENGER Data

- ☐ Coarse or fine oscillator?
- ☐ Timing checked after ~ 1 week?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For Odyssey events

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

6. For 3 or More Spacecraft events

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

7. For INTEGRAL events

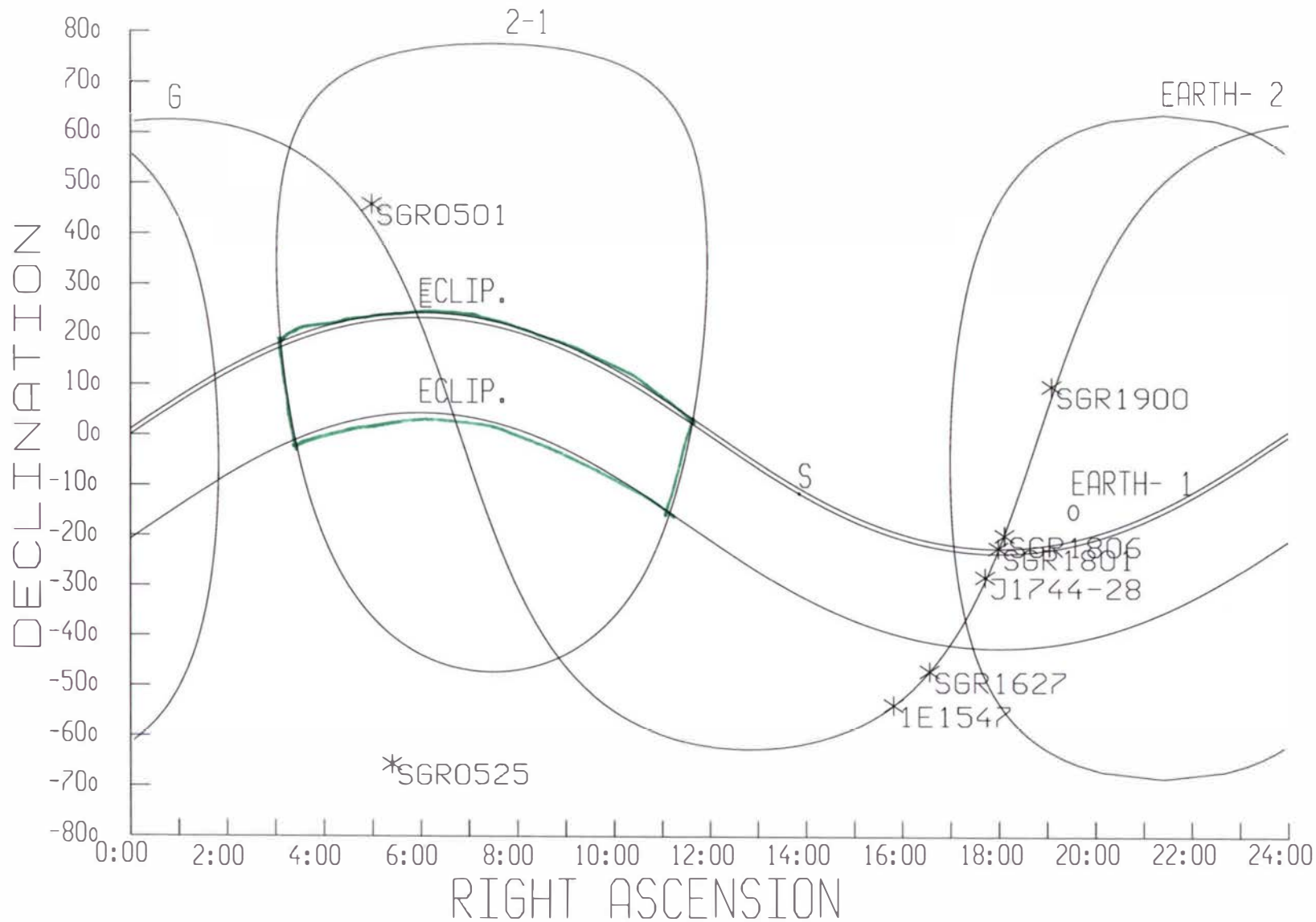
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

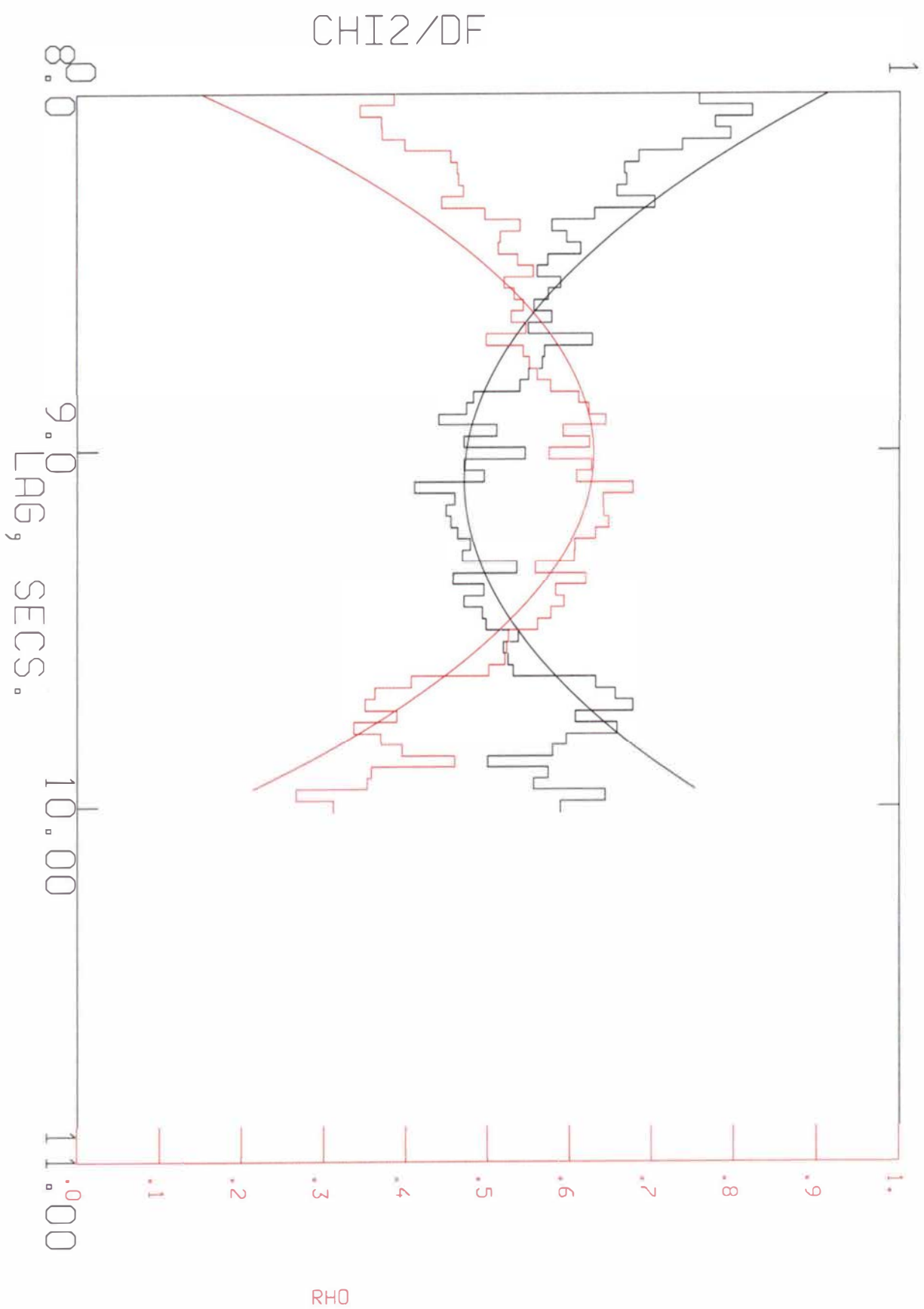
-
- ☒ ACCESS and MBL4 databases updated, with identical times?

EVENT OF OCT 23, 1997 5:43

09/02/2010

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





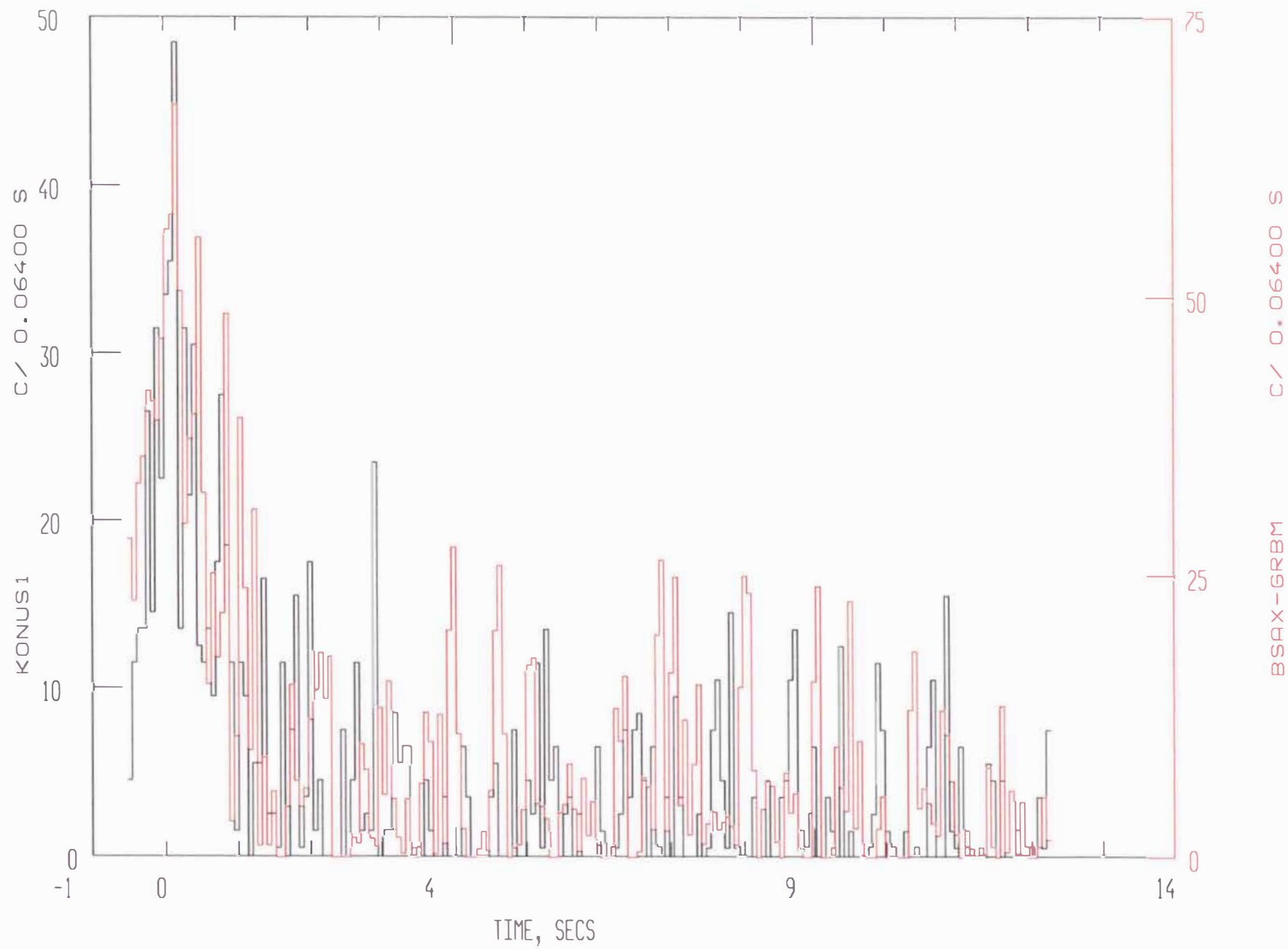
KONUS1

-BSAX-GRBM CORRELATION

23/10/97

20610.166

9/ 2/10

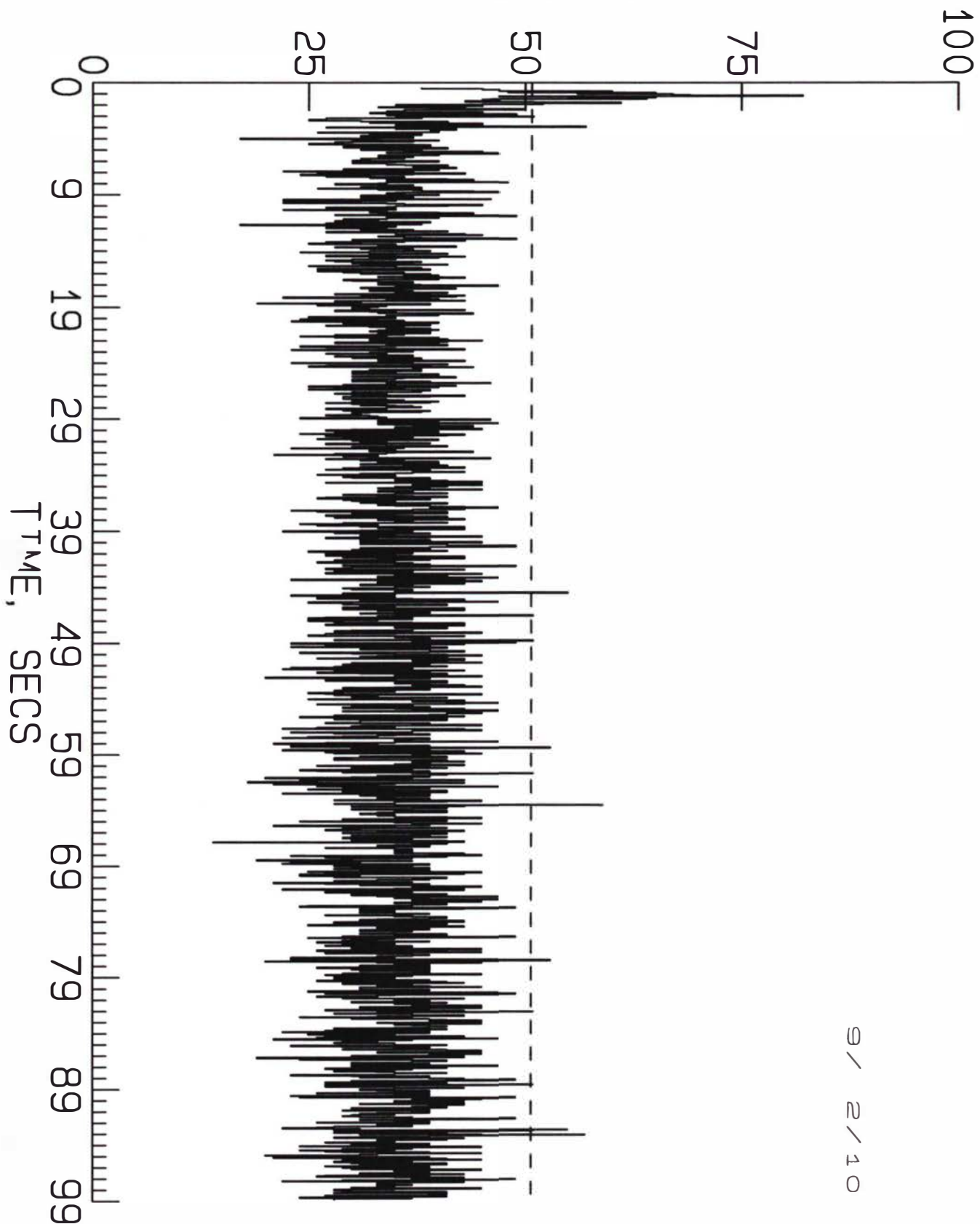


KONUS

23/10/97 20610.160

50- 200 keV

COUNTS/0.064 S

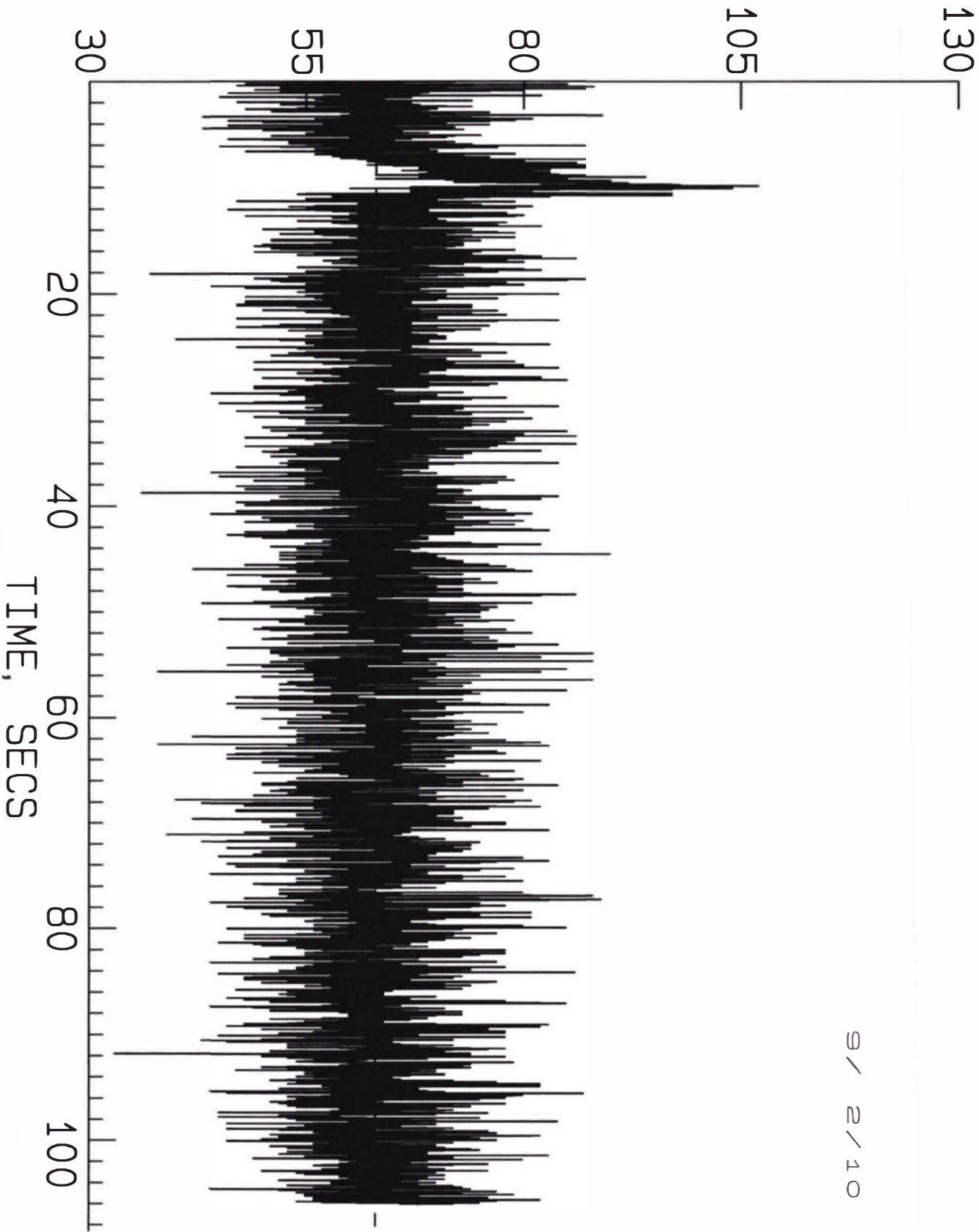


SAX GRBM

23/10/97 20601.278

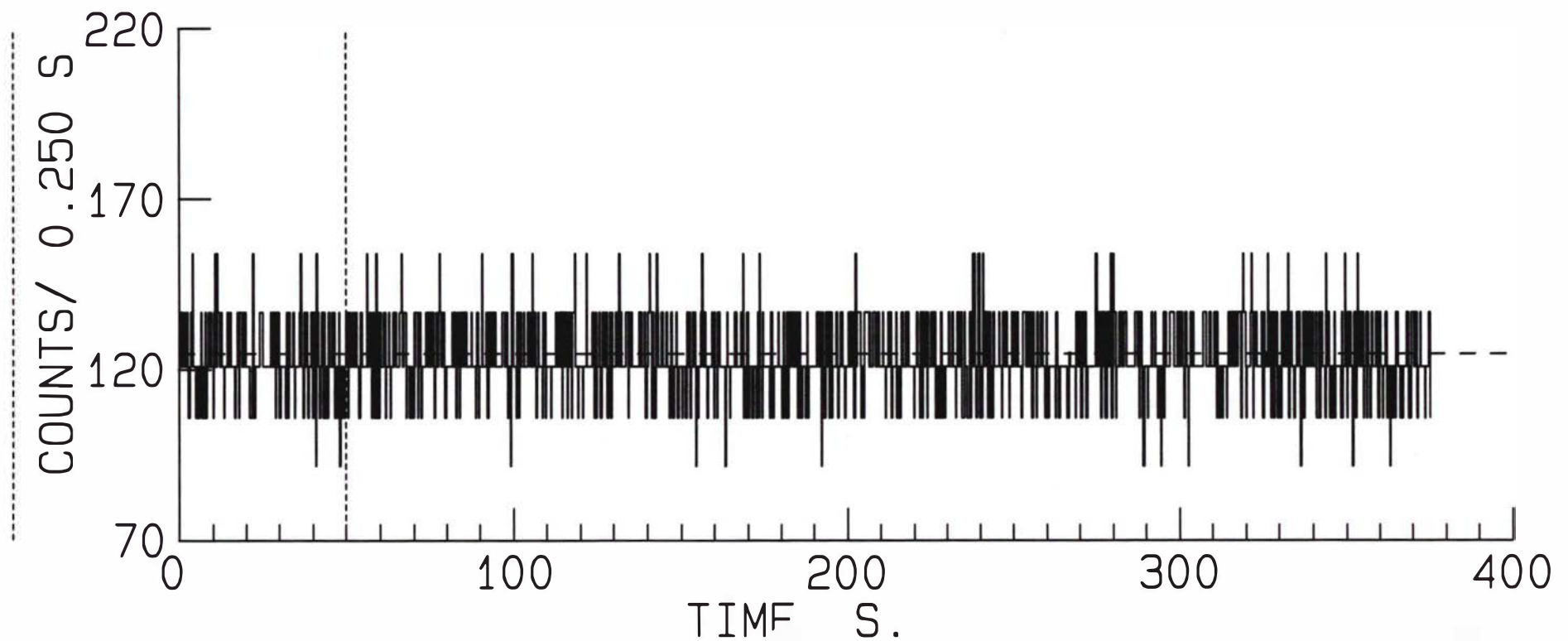
40- 700 keV

COUNTS/0.031 S



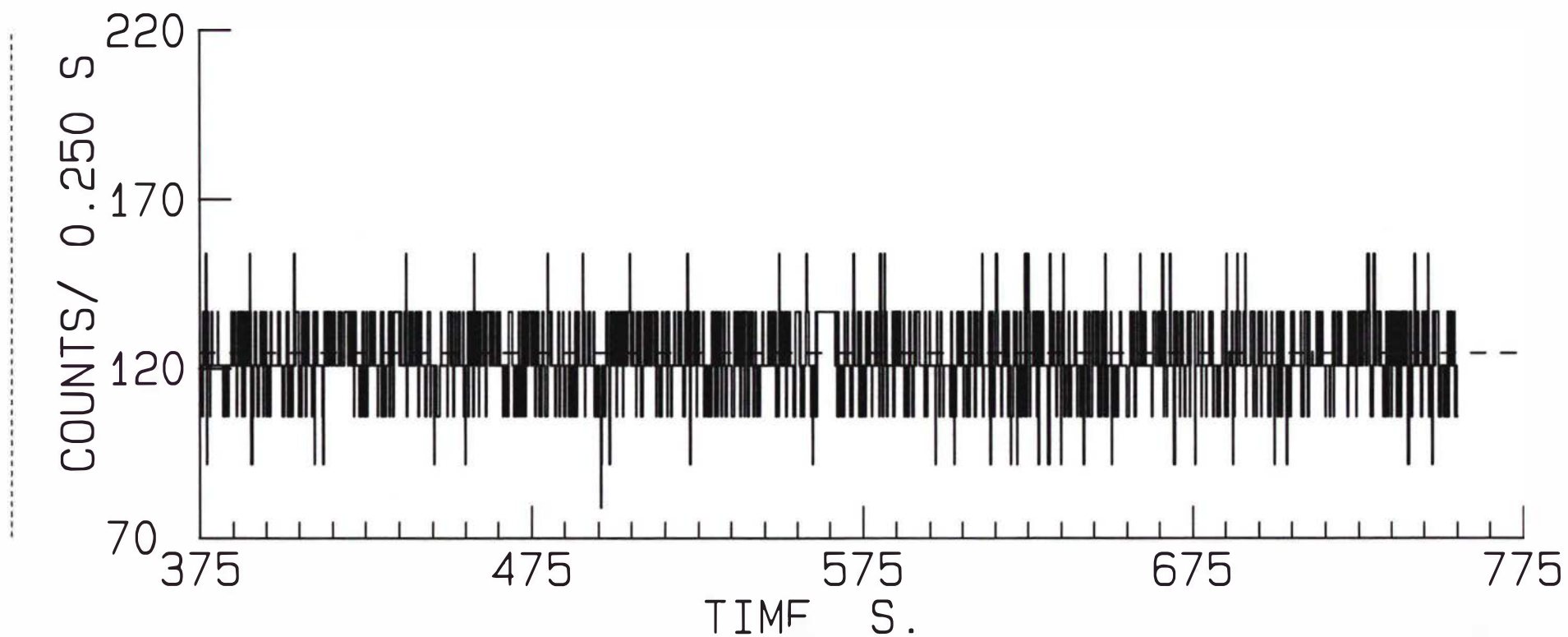
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



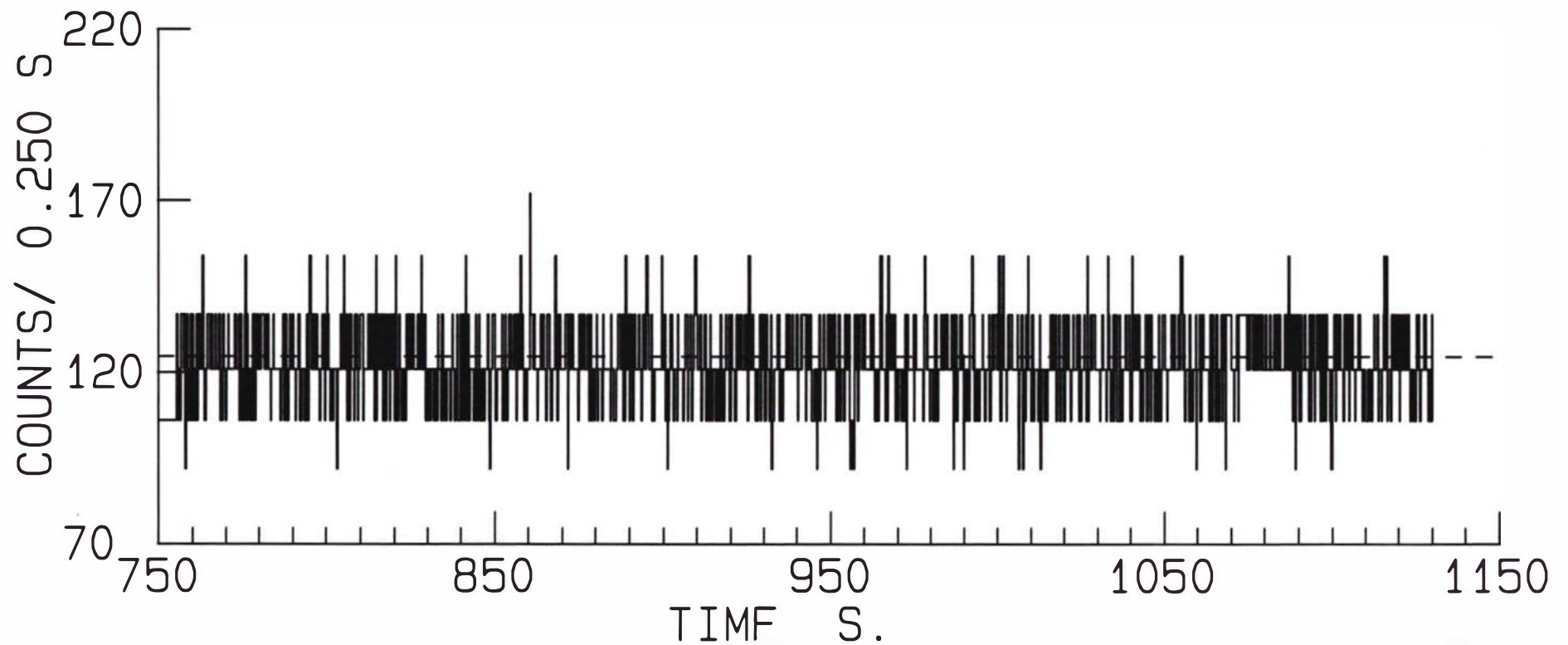
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



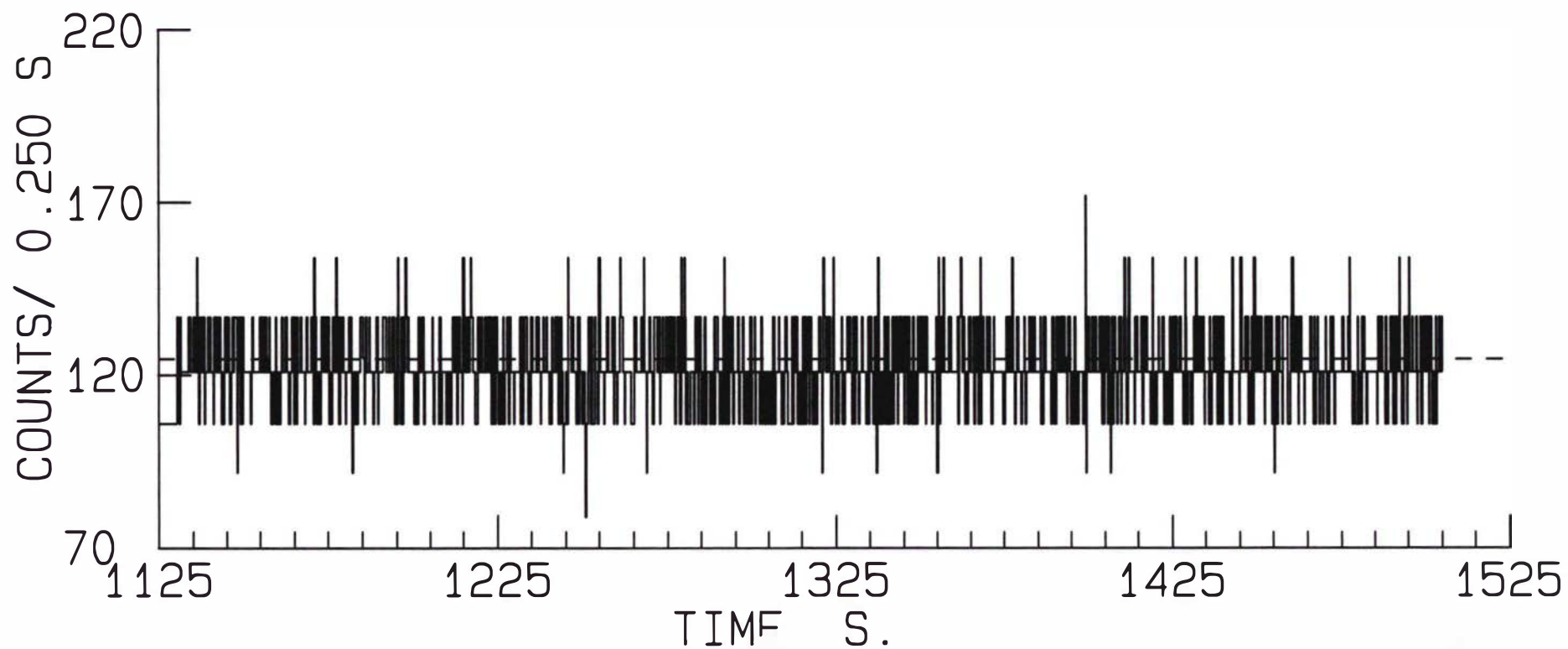
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



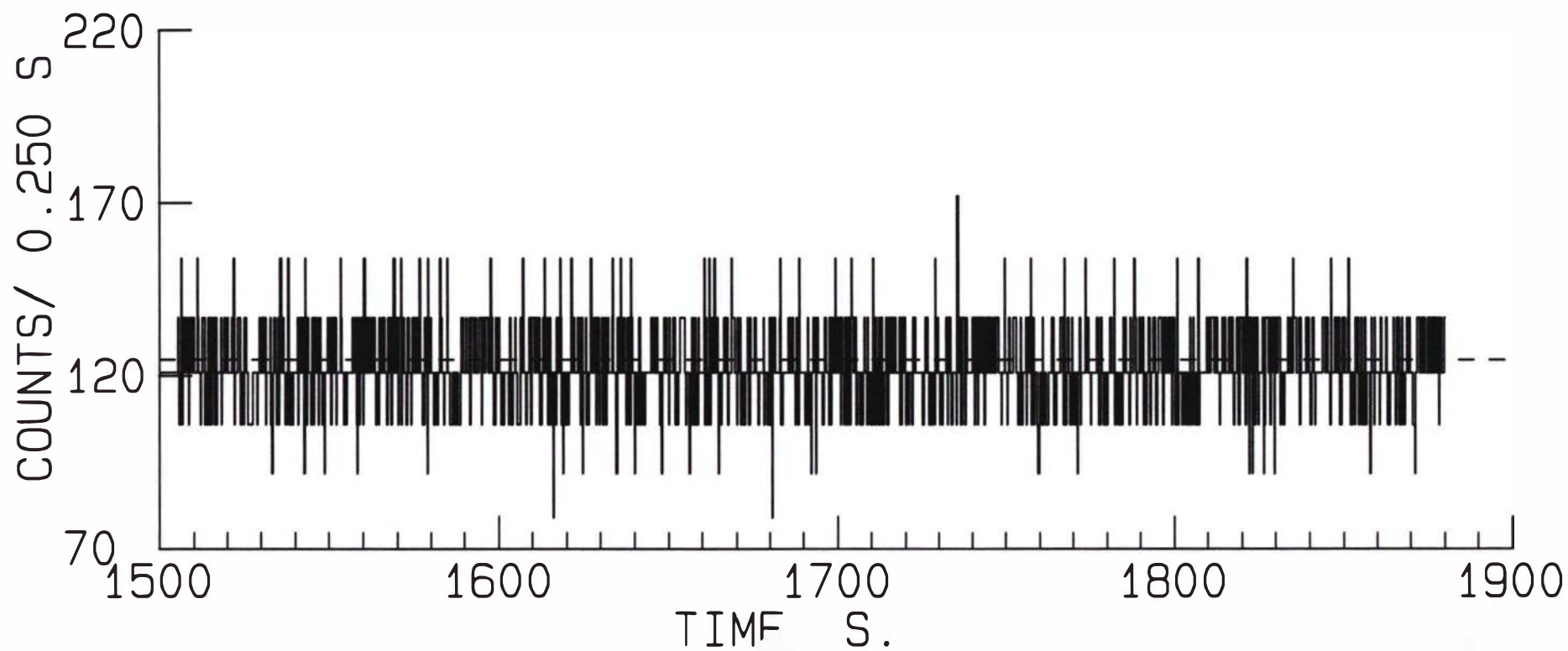
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

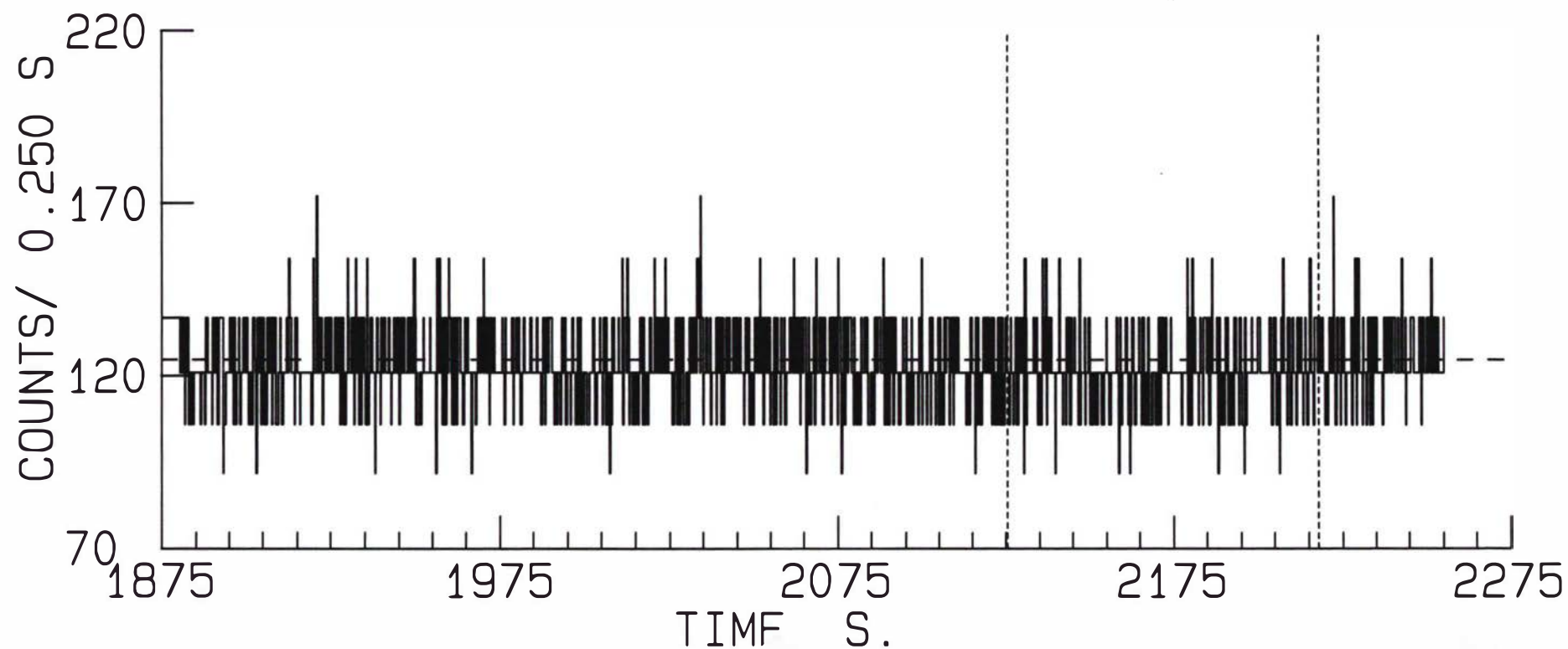
9 / 2 / 10



ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

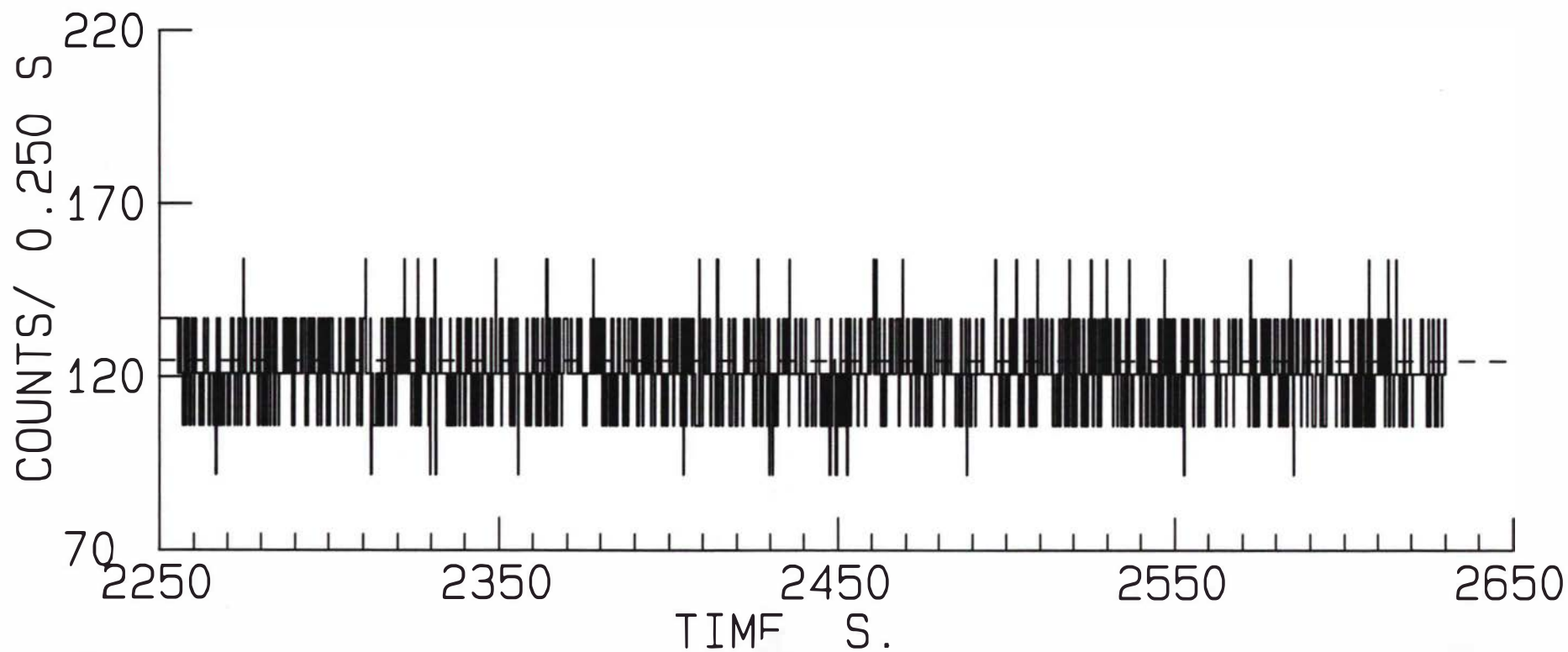
9/ 2/10

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



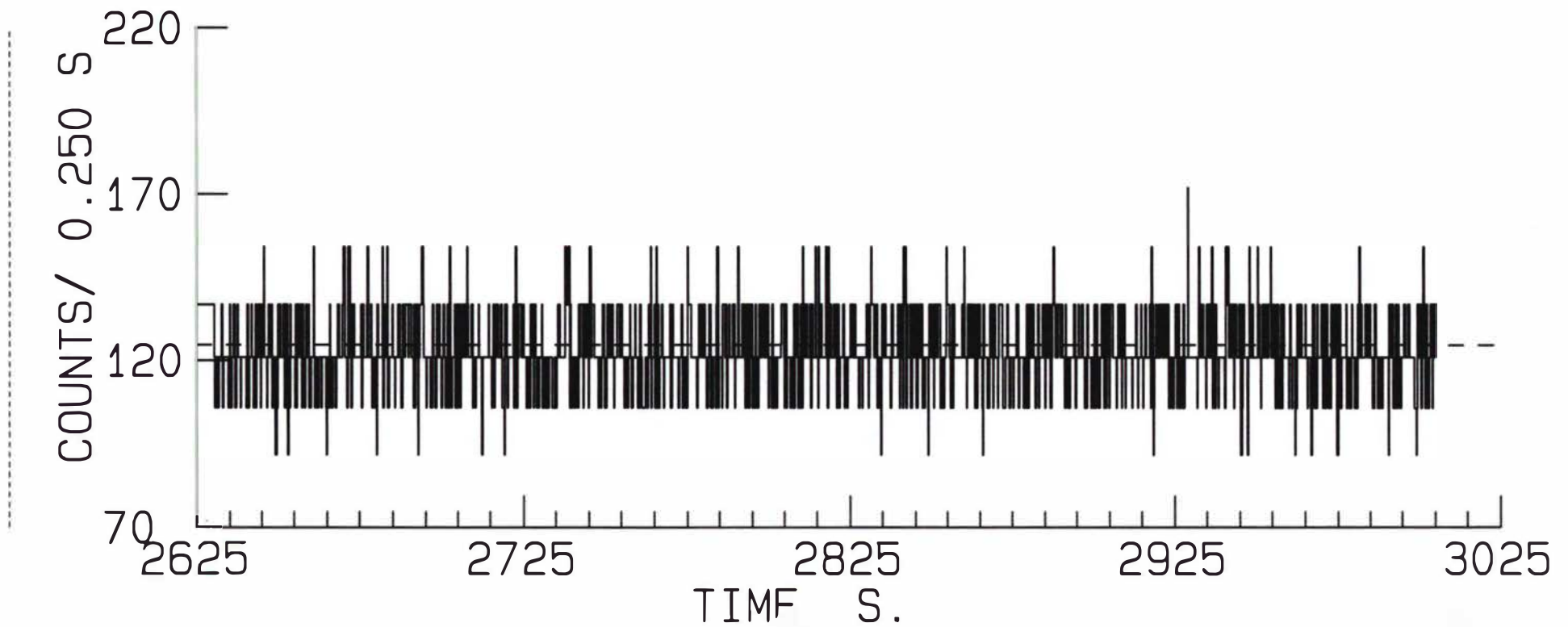
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



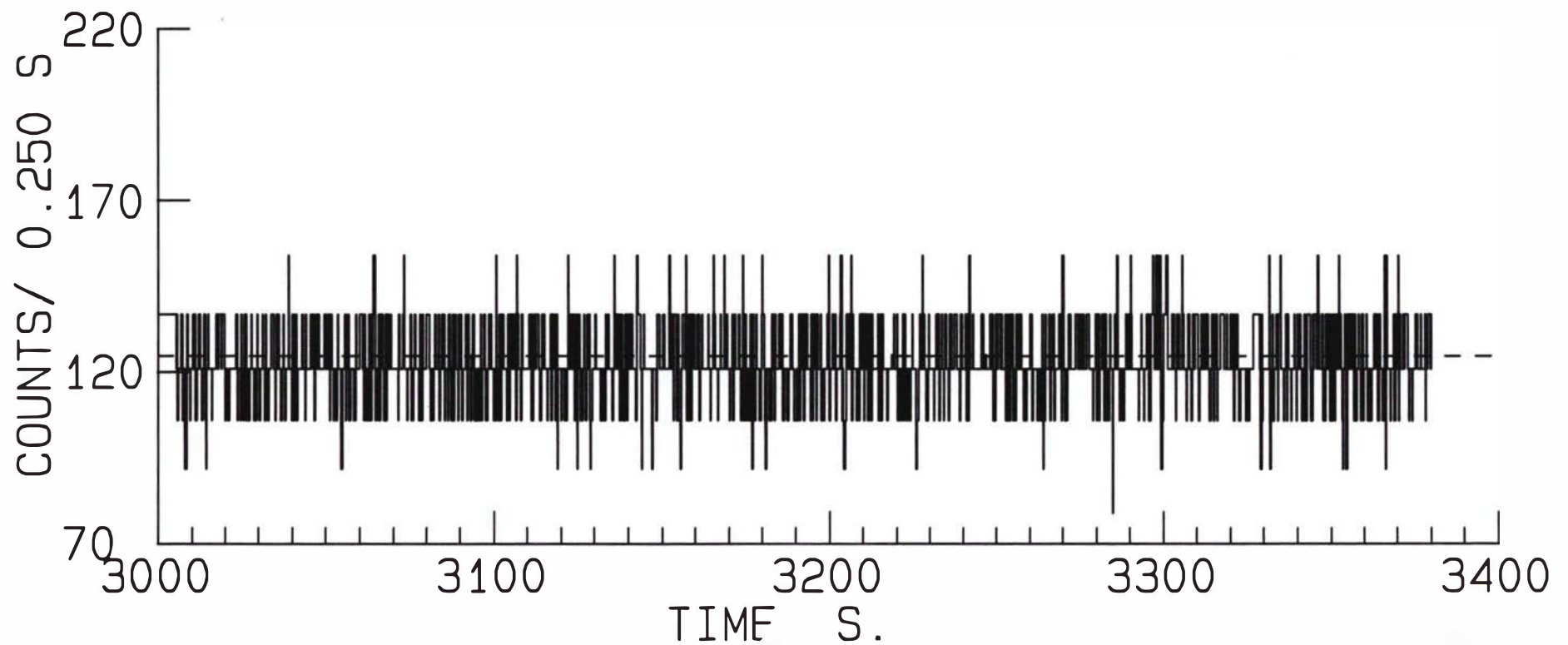
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



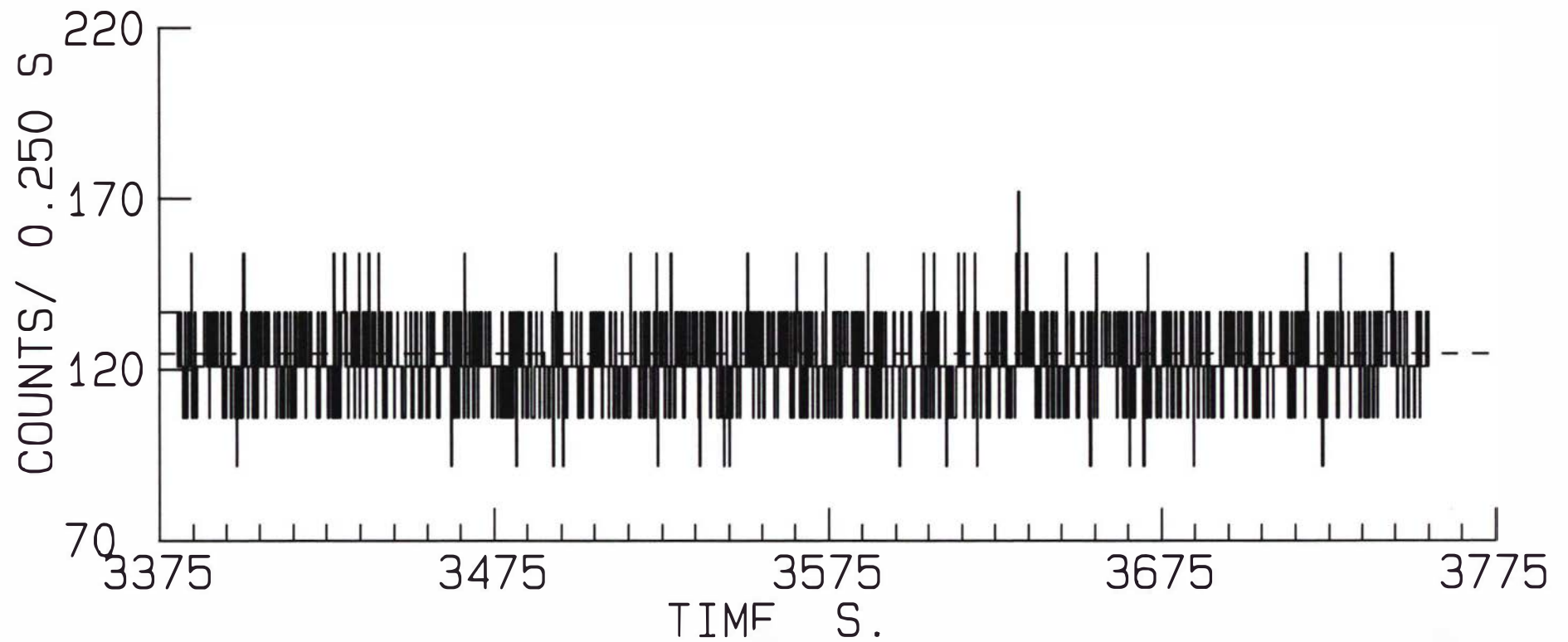
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



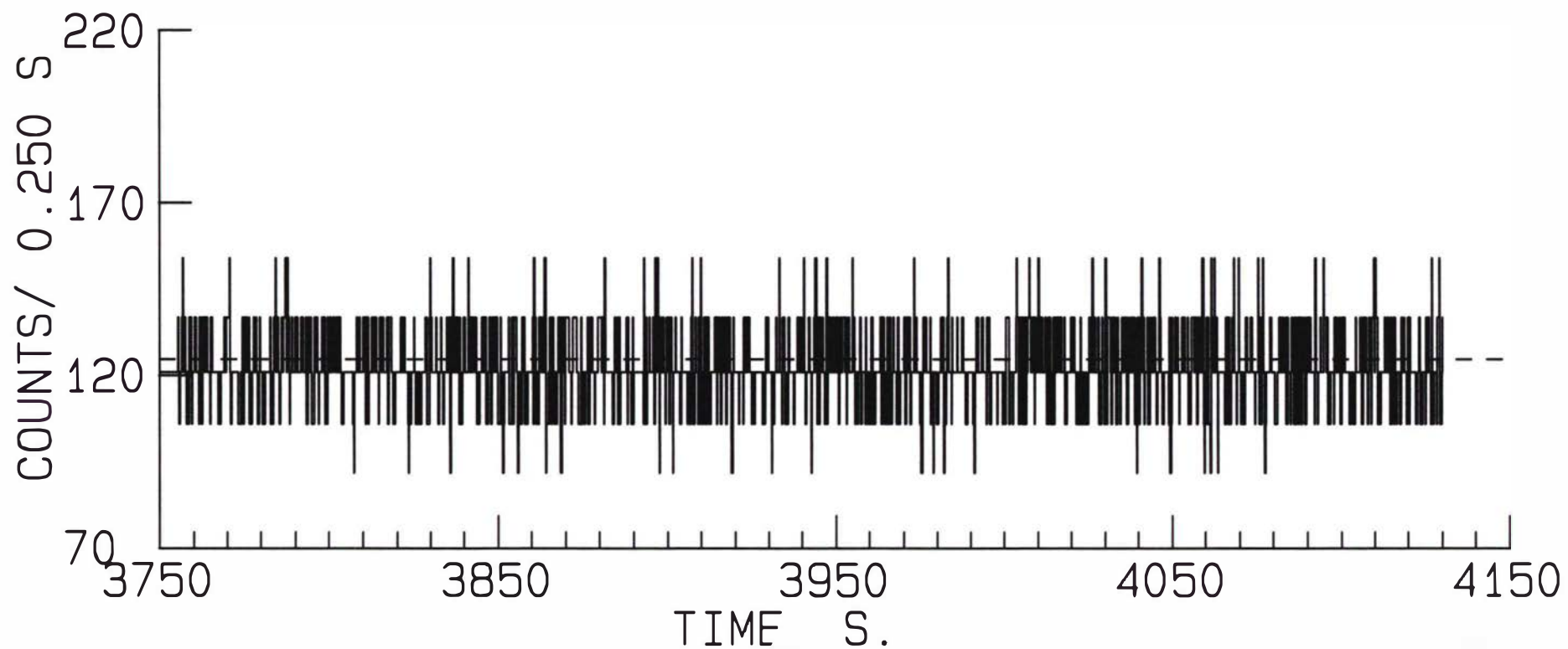
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



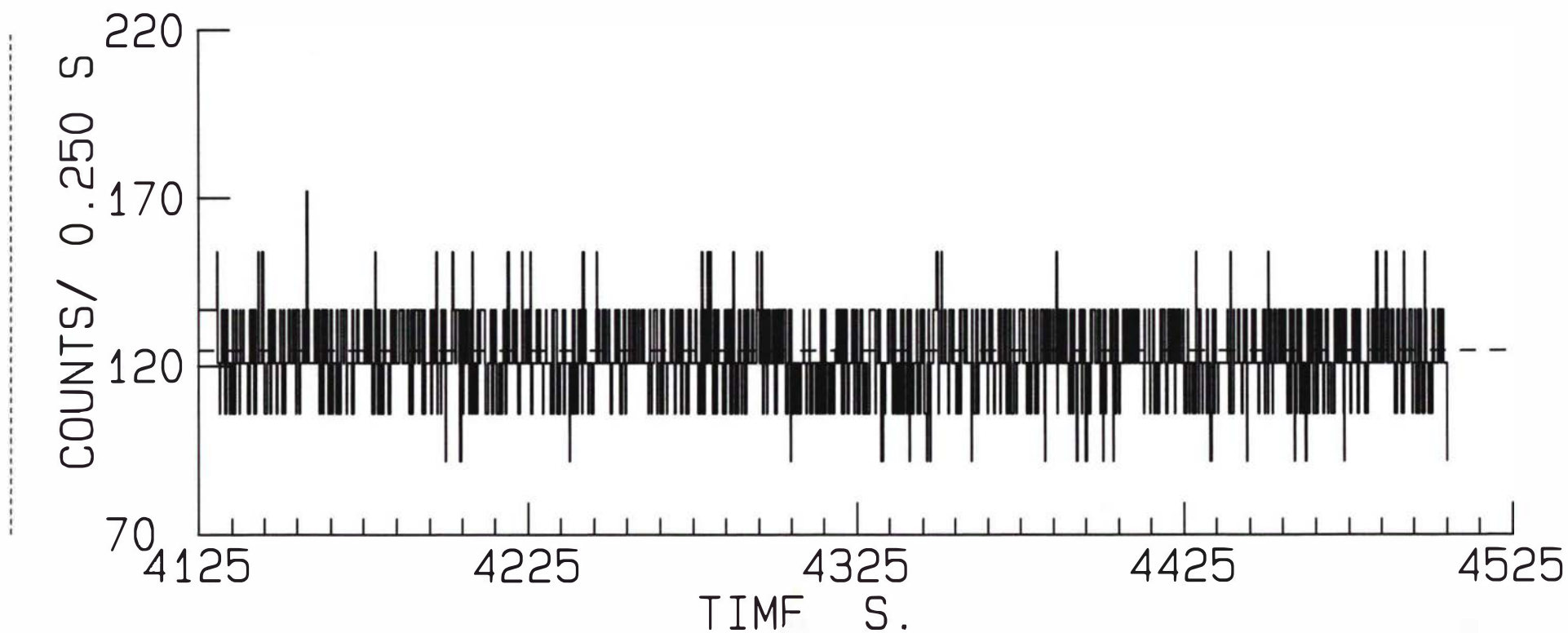
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



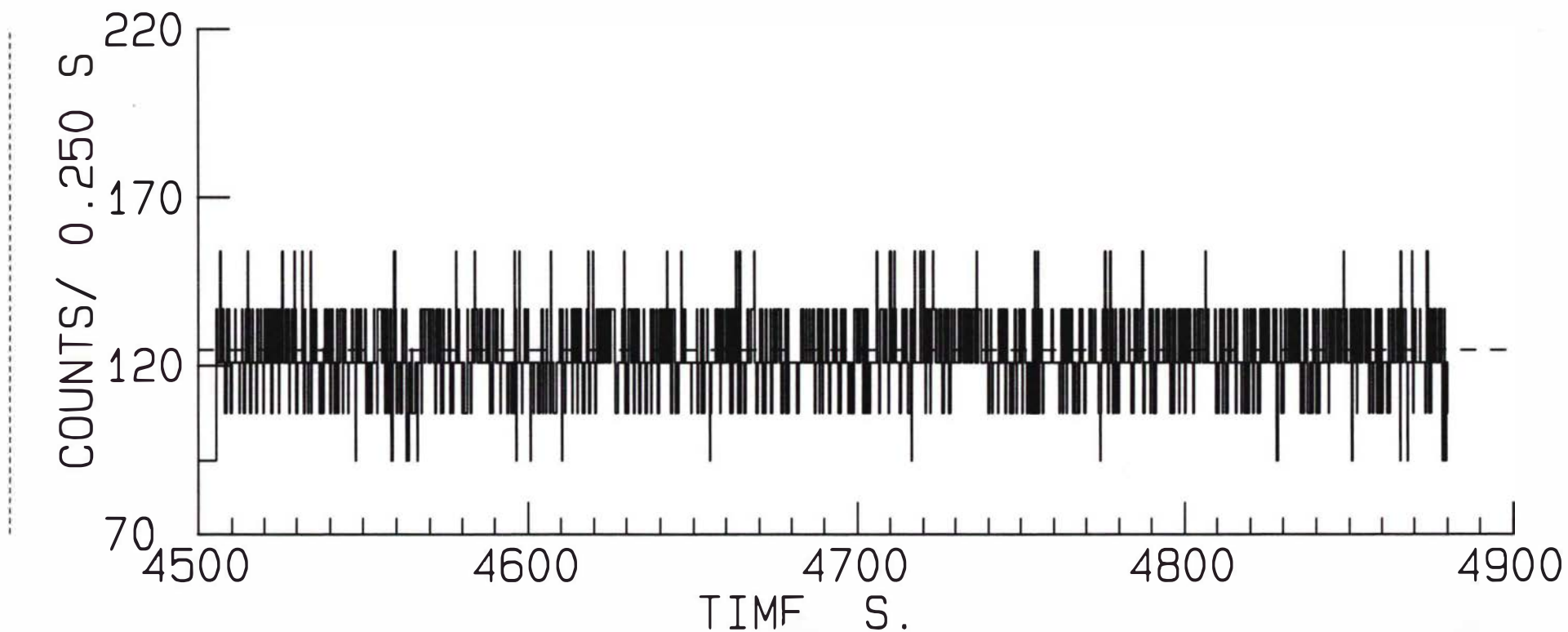
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



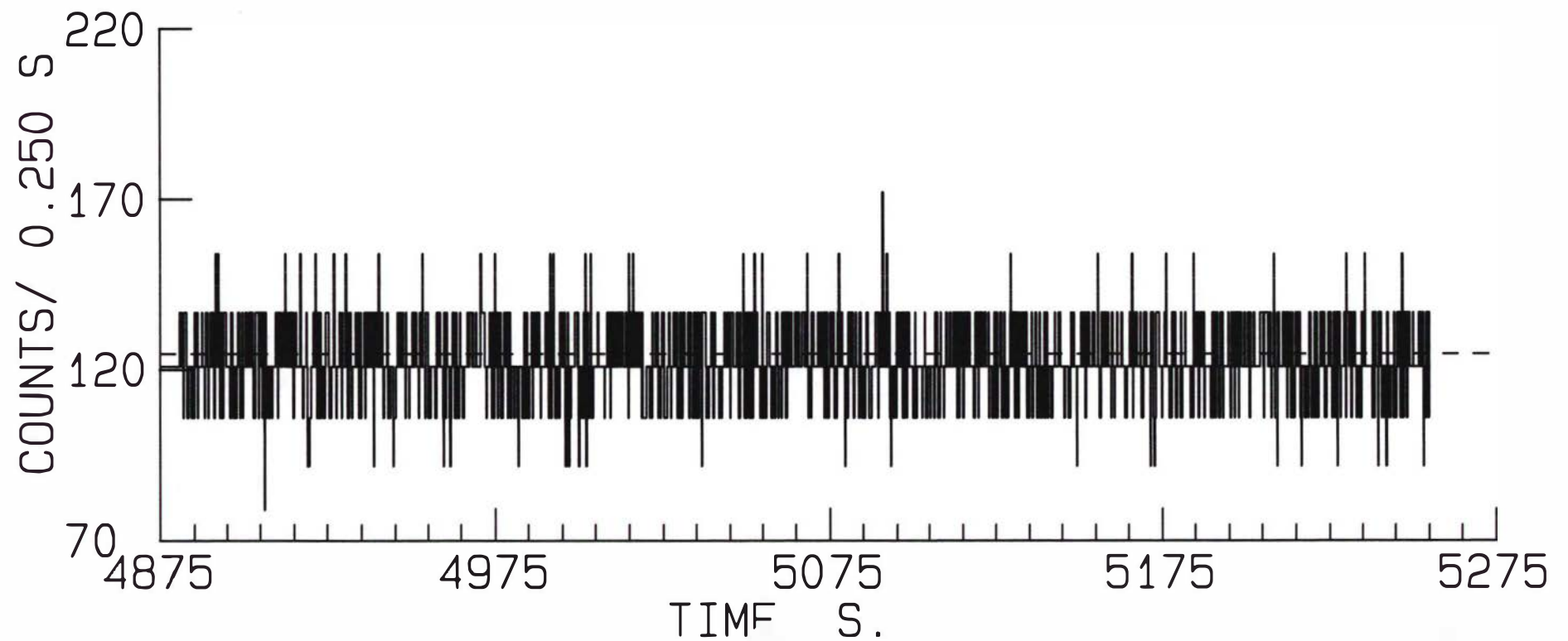
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



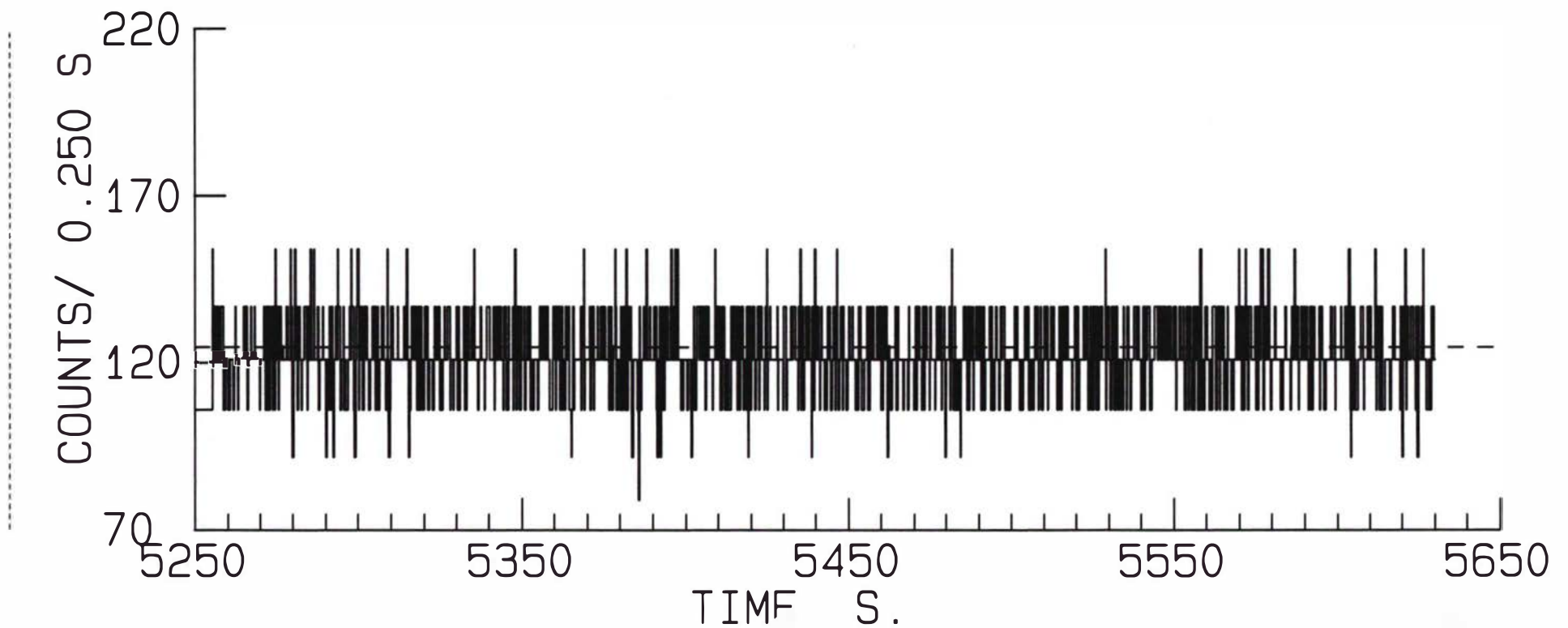
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



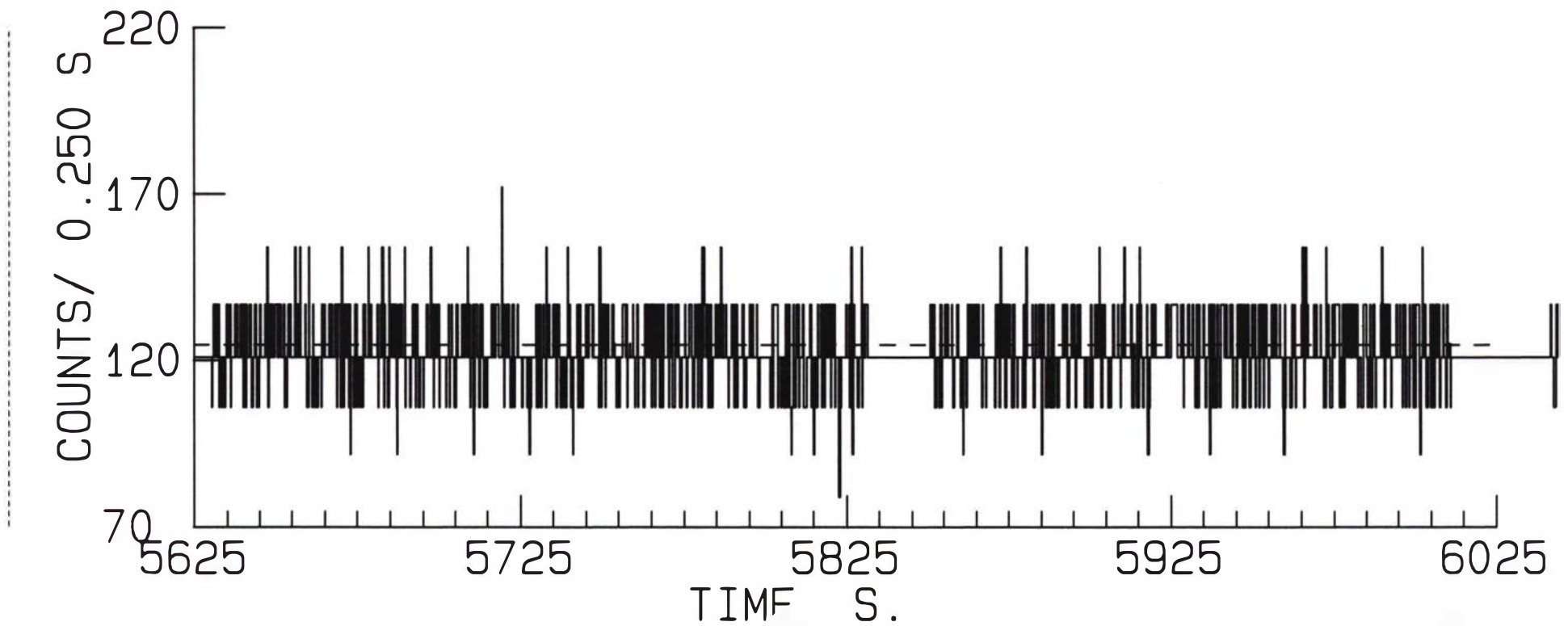
ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



ULYSSES RT
23/10/97 17568.238 s
22- 147 keV

9 / 2 / 10



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Oct 28 09:21:34 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 JAA27067; Tue, 28 Oct 1997 09:21:29 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA14820; Tue, 28 Oct 1997 09:21:24 -0800
Date: Tue, 28 Oct 1997 11:21:11 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971028112111.20214631@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6445
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6445
EVENT OF 1997 OCT 23 DAY OF YEAR=296
EVENT CROSSING TIME AT BATSE : 30971. S. OR 08:36:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 246.000 29.000
BATSE PEAK COUNTING RATE: 5400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/10/ 97 IS:
RA= 168.248 DEC= 14.416 DIST= 5.937 AU
BATSE-ULYSSES DISTANCE = 888186227. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -890.01 SECS.
CROSSING TIME AT ULYSSES IS 30081. S. OR 08:21:20 +/- 527.09 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/10/ 97 IS:
RA= 255.989 DEC= -24.012 DIST= 1.887 AU
MARS-BATSE DISTANCE = 282280736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -555.10 SECS.
CROSSING TIME AT MARS IS 30416. S. OR 08:26:55 +/- 123.61 SECONDS

BATSE BURST TRIGGER

NO.: 6445

TIME: TJD=0744 SECONDS=30971

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=103.0 AZIMUTH=305.5 ERROR=13.27 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR ABOUT 0.4 S. NOT VISIBLE ABOVE
300 KEV.

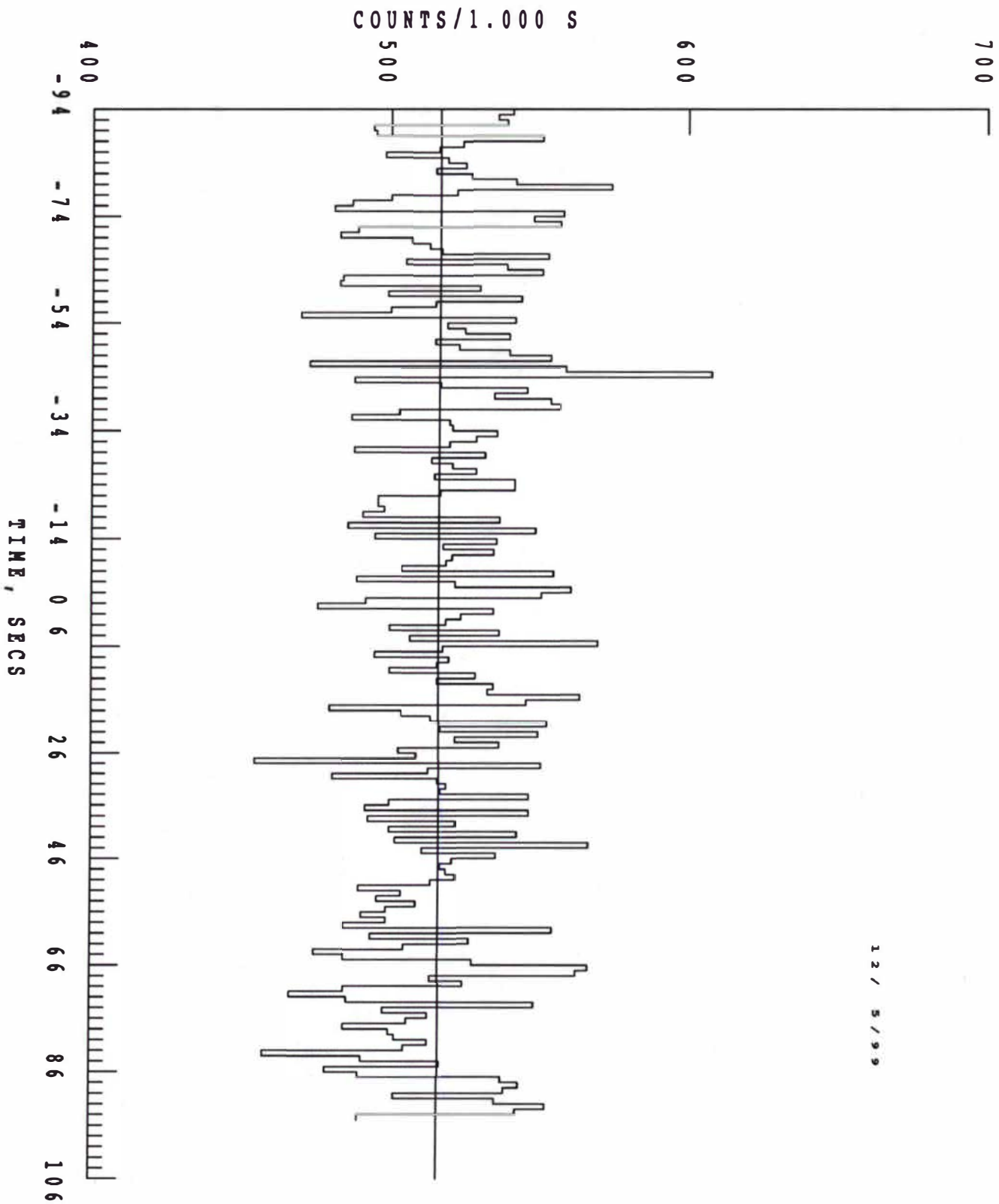
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6445	971023	10744	30971	5400	246	+29	.4

NEAR

23/10/97

31154.652

100-1000 keV



BATSE BURST# 6445

ULYSSES RT

28 / 10 / 97

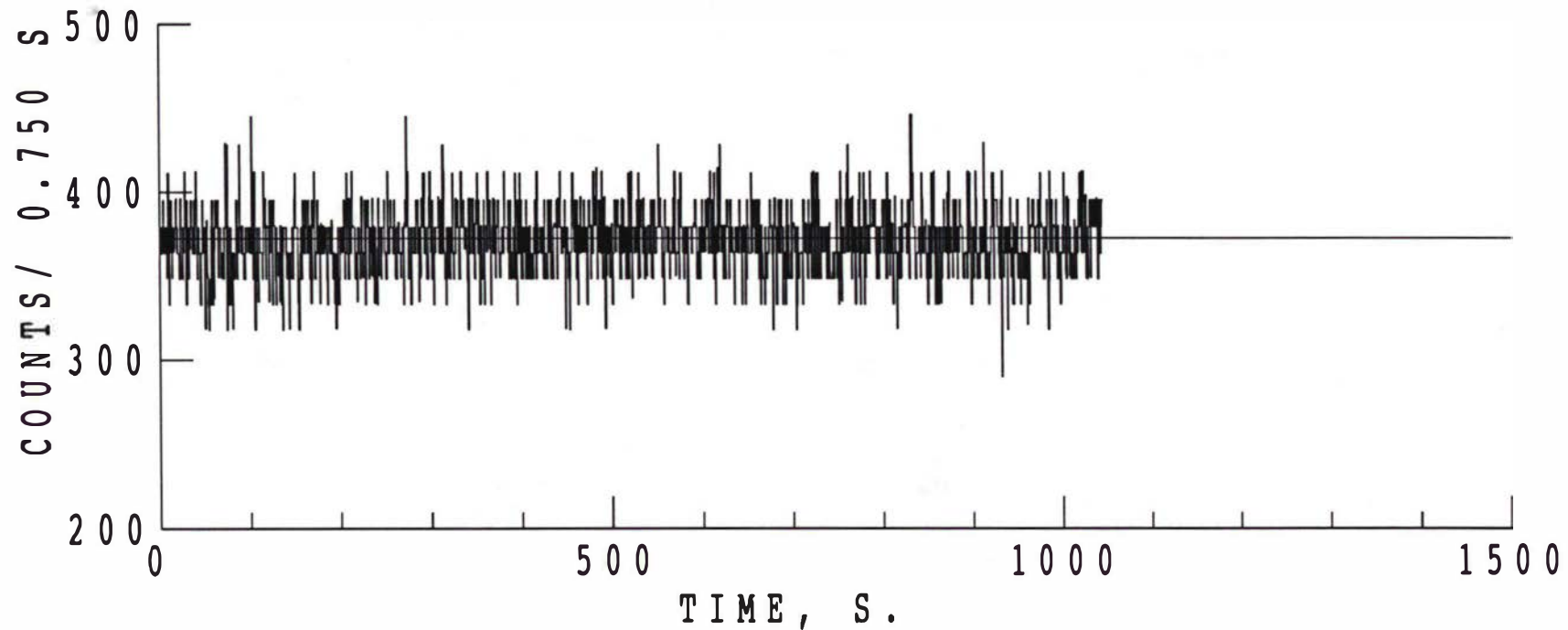
23 / 10 / 97 29556.119 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Oct 28 07:11:24 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA25955; Tue, 28 Oct 1997 07:11:08 -0800
From: SURASAK@SSLLES.MSFC.NASA.GOV
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA14052; Tue, 28 Oct 1997 07:11:06 -0800
Date: Tue, 28 Oct 1997 9:10:47 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971028091047.202144f6@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6446
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6446
EVENT OF 1997 OCT 23 DAY OF YEAR=296
EVENT CROSSING TIME AT BATSE : 40334. S. OR 11:12:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 288.000 51.000
BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/10/ 97 IS:
RA= 168.259 DEC= 14.409 DIST= 5.936 AU
BATSE-ULYSSES DISTANCE = 888000970. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 322.83 SECS.
CROSSING TIME AT ULYSSES IS 40657. S. OR 11:17:36 +/- 566.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/10/ 97 IS:
RA= 255.989 DEC= -24.012 DIST= 1.887 AU
MARS-BATSE DISTANCE = 282280736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -161.21 SECS.
CROSSING TIME AT MARS IS 40173. S. OR 11:09:32 +/- 158.61 SECONDS

BATSE BURST TRIGGER

NO.: 6446

TIME: TJD=0744 SECONDS=40334

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=134.4 AZIMUTH=280.5 ERROR=4.534 DEGREES

COMMENTS:

GRB. TWO PULSES. FIRST ONE DUR ABOUT 5 S. SECOND ONE PEAKS AT ABOUT T+50S.
DUR ABOUT 50S WITH SUBSTRUCTURE. THE COUNT RATE OF SECOND PULSE IS SMALLER THAN
THE FIRST. BOTH ARE NOT VISIBLE ABOVE 300 KEV.

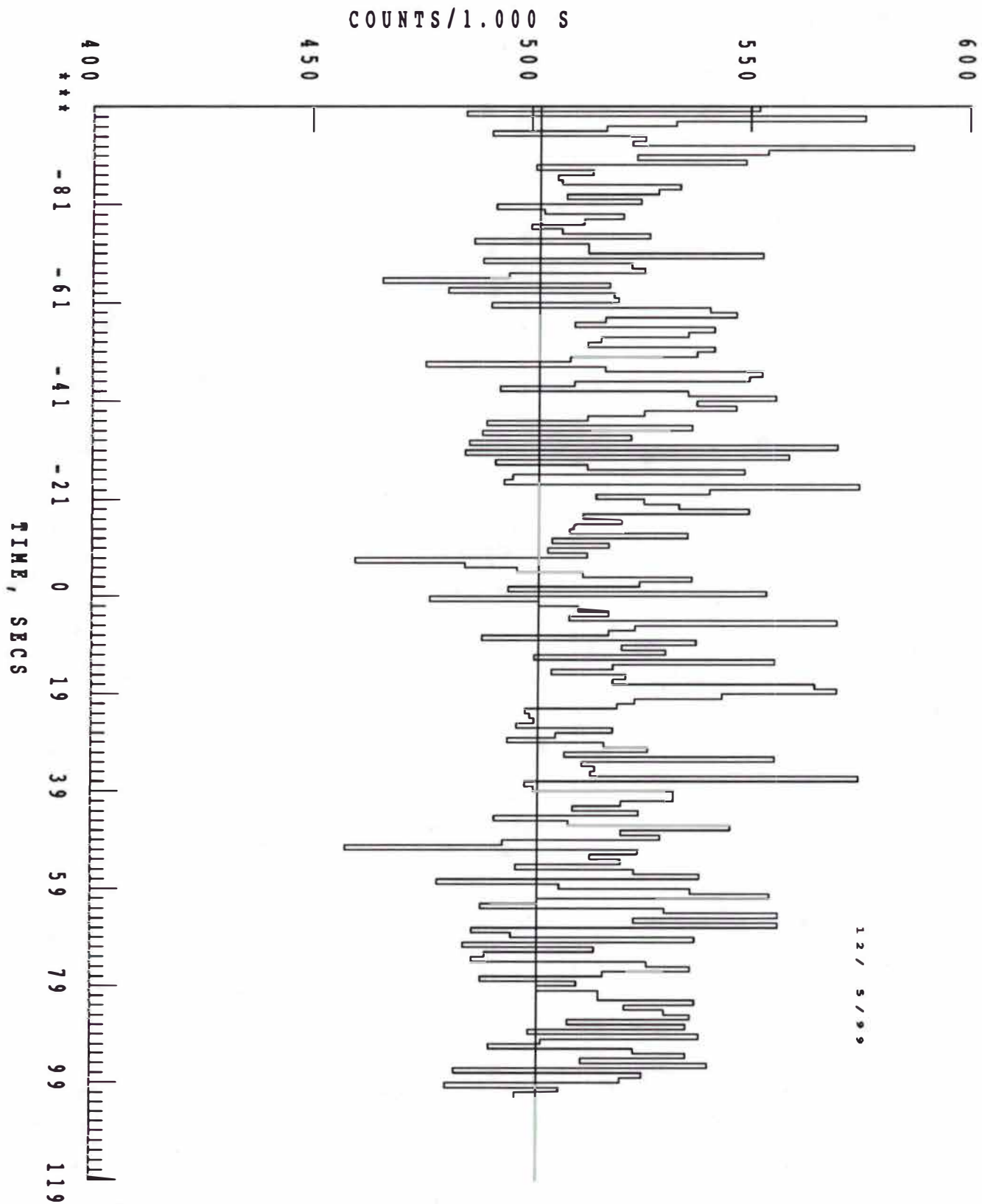
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6446	971023	10744	40334	3900	288	+51	80

NEAR

23/10/97

40396.650

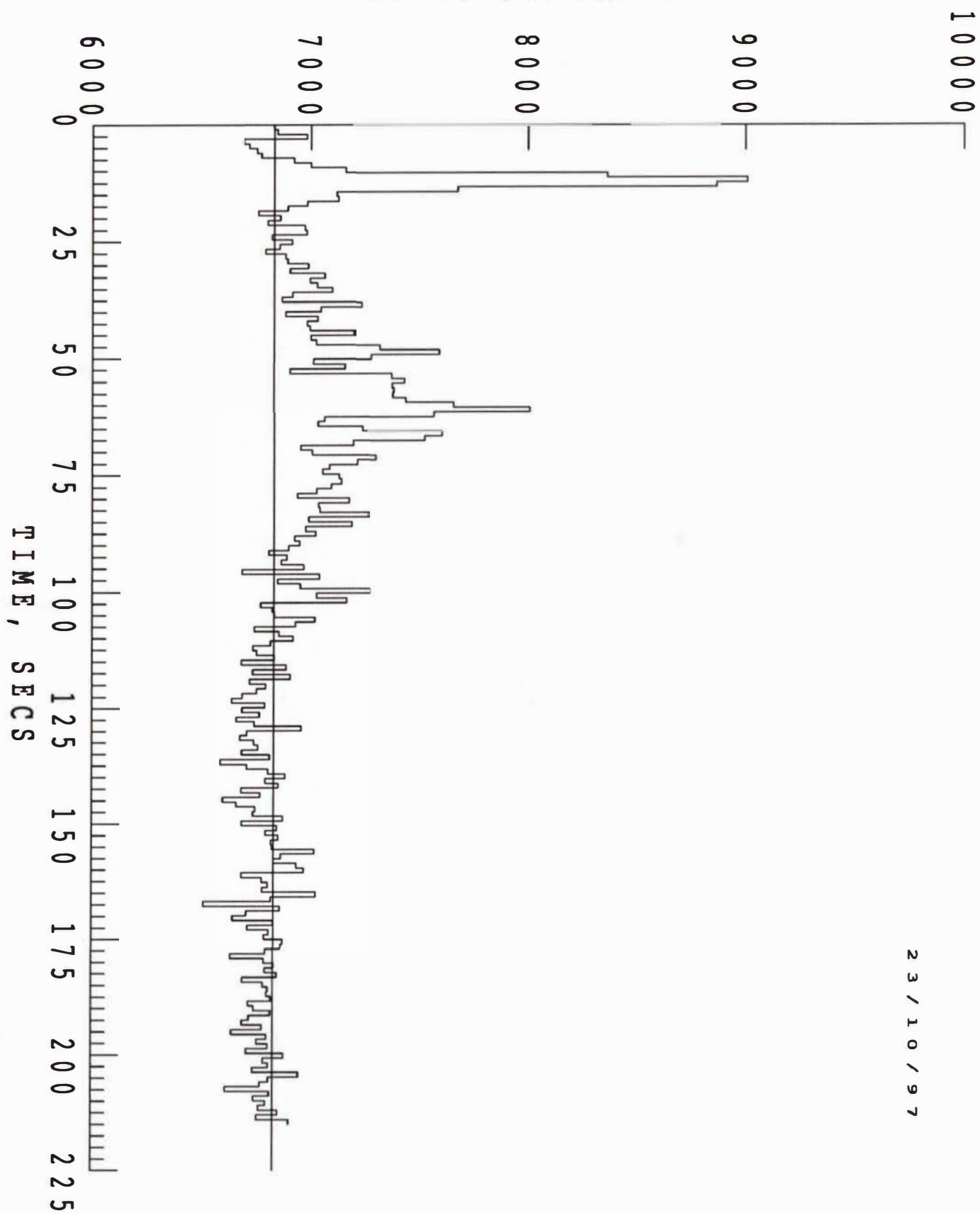
100-1000 keV



BACODINE 6446 23/10/97 40323.809

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6446

ULYSSES RT

28 / 10 / 97

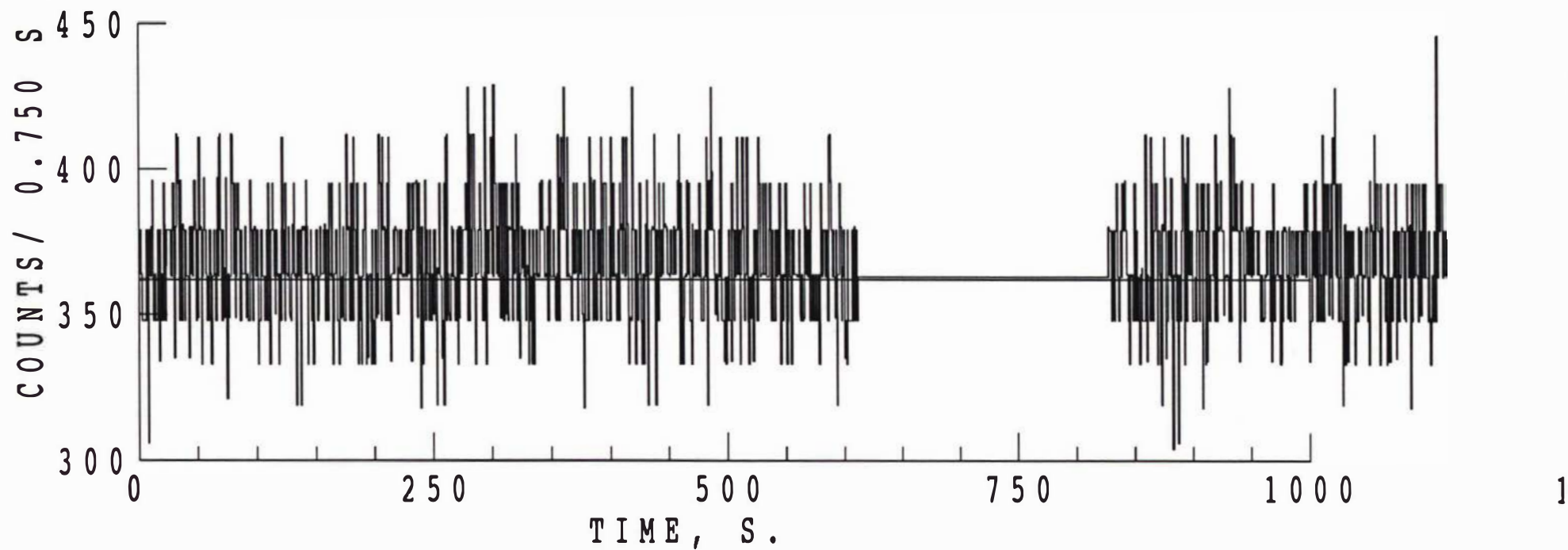
23/10/97 40104.238 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Oct 28 09:23:52 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 JAA27167; Tue, 28 Oct 1997 09:23:46 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA14874; Tue, 28 Oct 1997 09:23:43 -0800
Date: Tue, 28 Oct 1997 11:23:08 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971028112308.20214631@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6447
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6447
EVENT OF 1997 OCT 23 DAY OF YEAR=296
EVENT CROSSING TIME AT BATSE : 43111. S. OR 11:58:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 191.000 -37.000
BATSE PEAK COUNTING RATE: 5820 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/10/ 97 IS:
RA= 168.262 DEC= 14.407 DIST= 5.935 AU
BATSE-ULYSSES DISTANCE = 887948682. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=124.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1669.53 SECS.
CROSSING TIME AT ULYSSES IS 41441. S. OR 11:30:41 +/- 449.40 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/10/ 97 IS:
RA= 255.989 DEC= -24.012 DIST= 1.887 AU
MARS-BATSE DISTANCE = 282280736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=123.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -521.01 SECS.
CROSSING TIME AT MARS IS 42590. S. OR 11:49:49 +/- 128.26 SECONDS

BATSE BURST TRIGGER

NO.: 6447

TIME: TJD=0744 SECONDS=43111

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=34.3 AZIMUTH=2.8 ERROR=14.77 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR ABOUT 0.3 S. NOT VISIBLE ABOVE 300 KEV

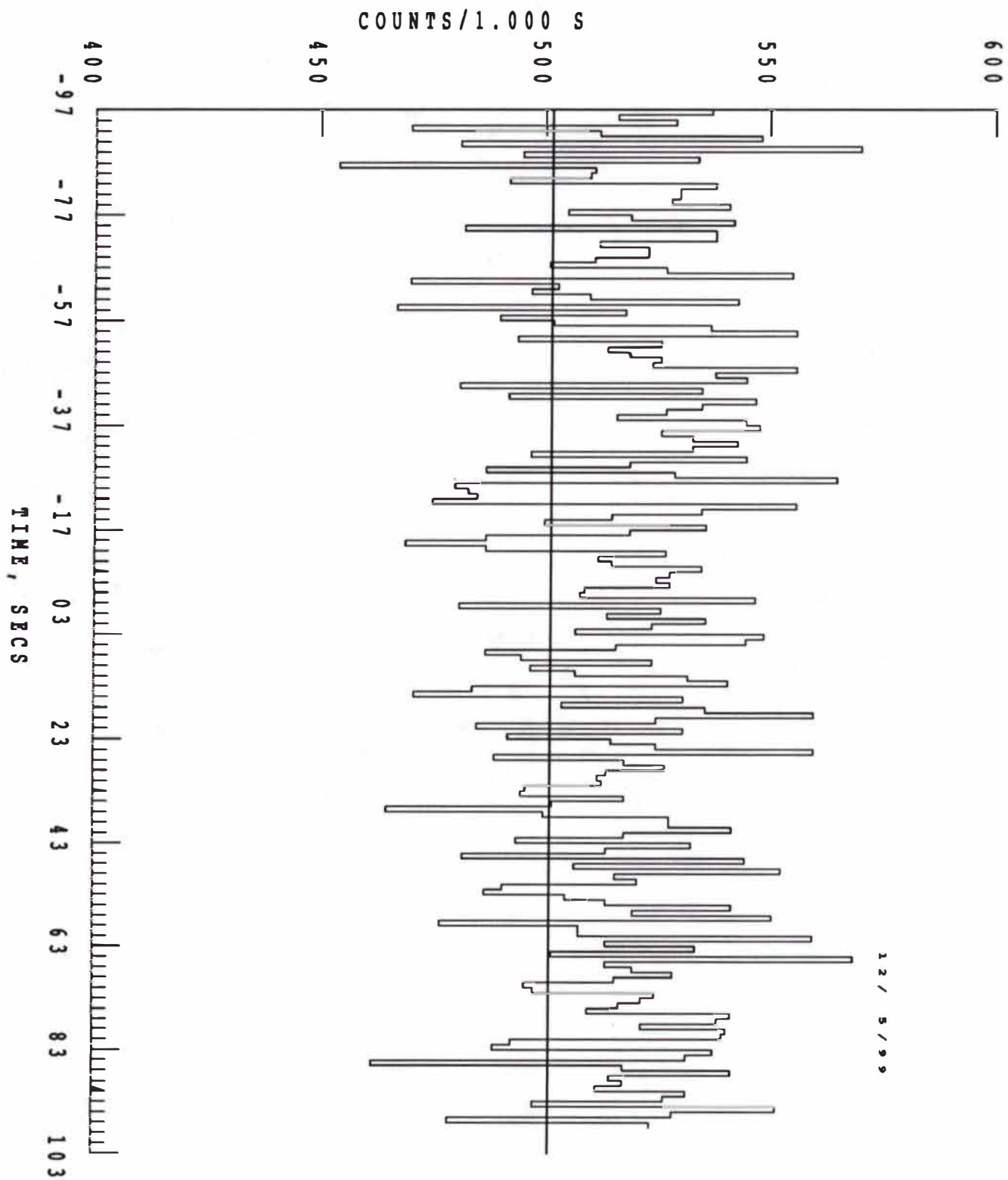
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6447	971023	10744	43111	5820	191	-37	.3

NEAR

23/10/97

43265.649

100-1000 keV



BATSE BURST# 6447

ULYSSES RT

28 / 10 / 97

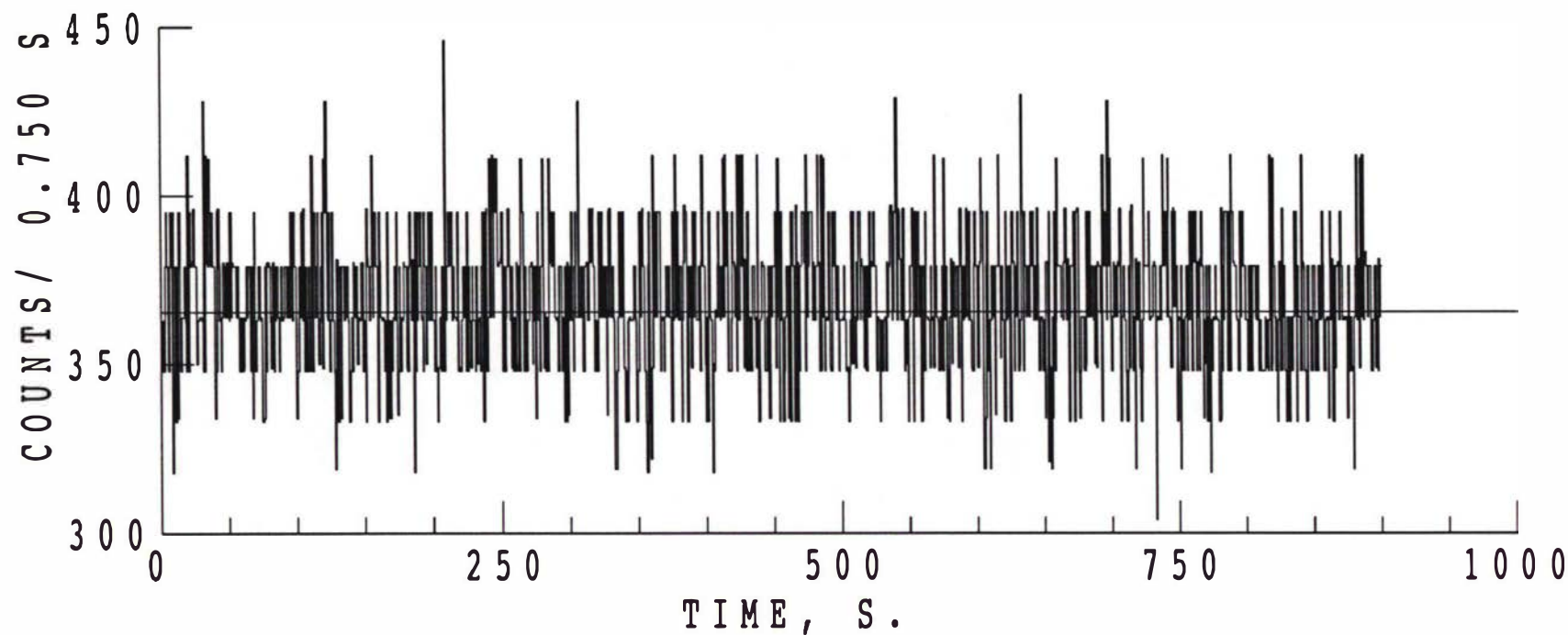
23 / 10 / 97 41004.000 s

0.250 S INTERVALS REGROUPED BY 3

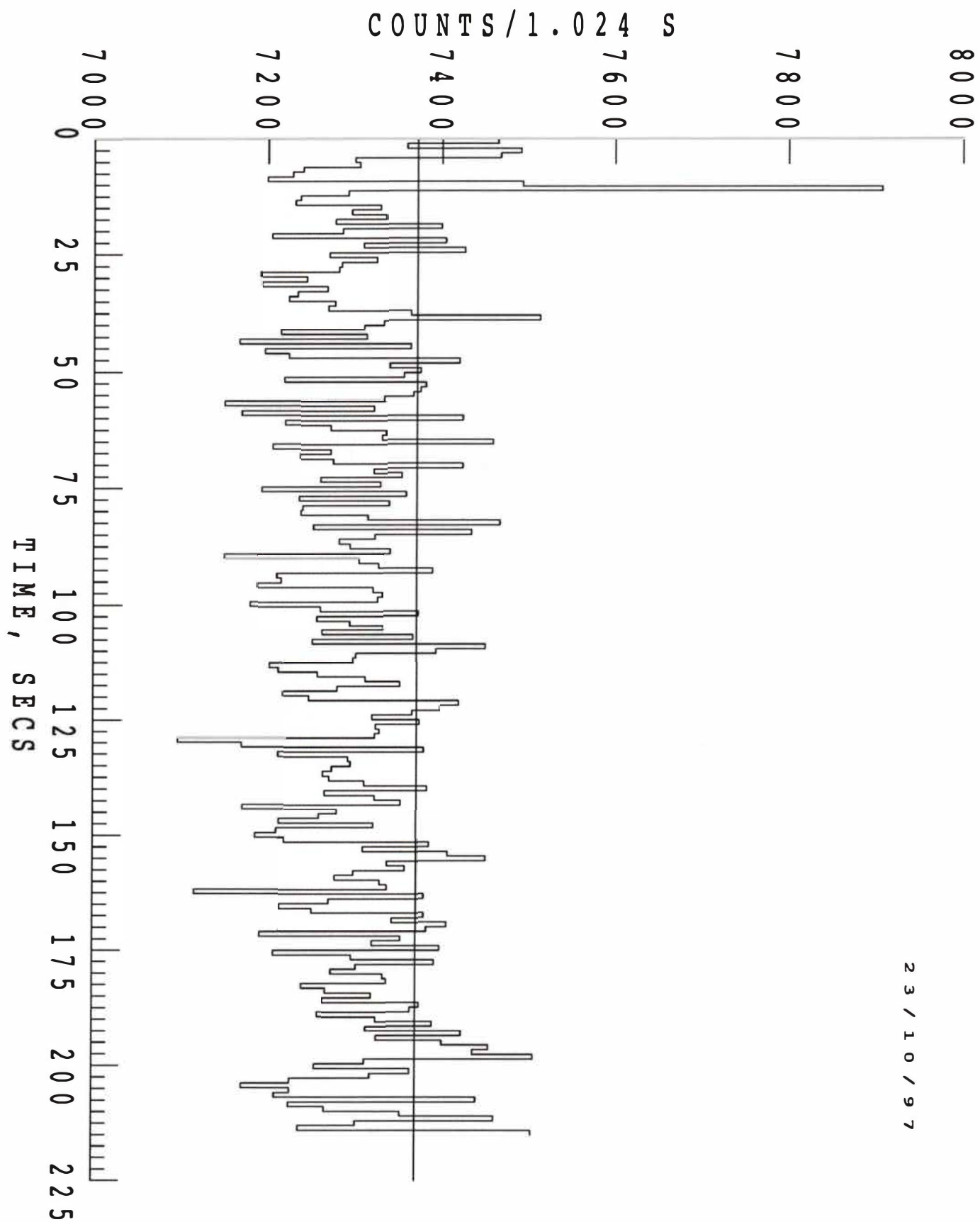
0 - 0 keV

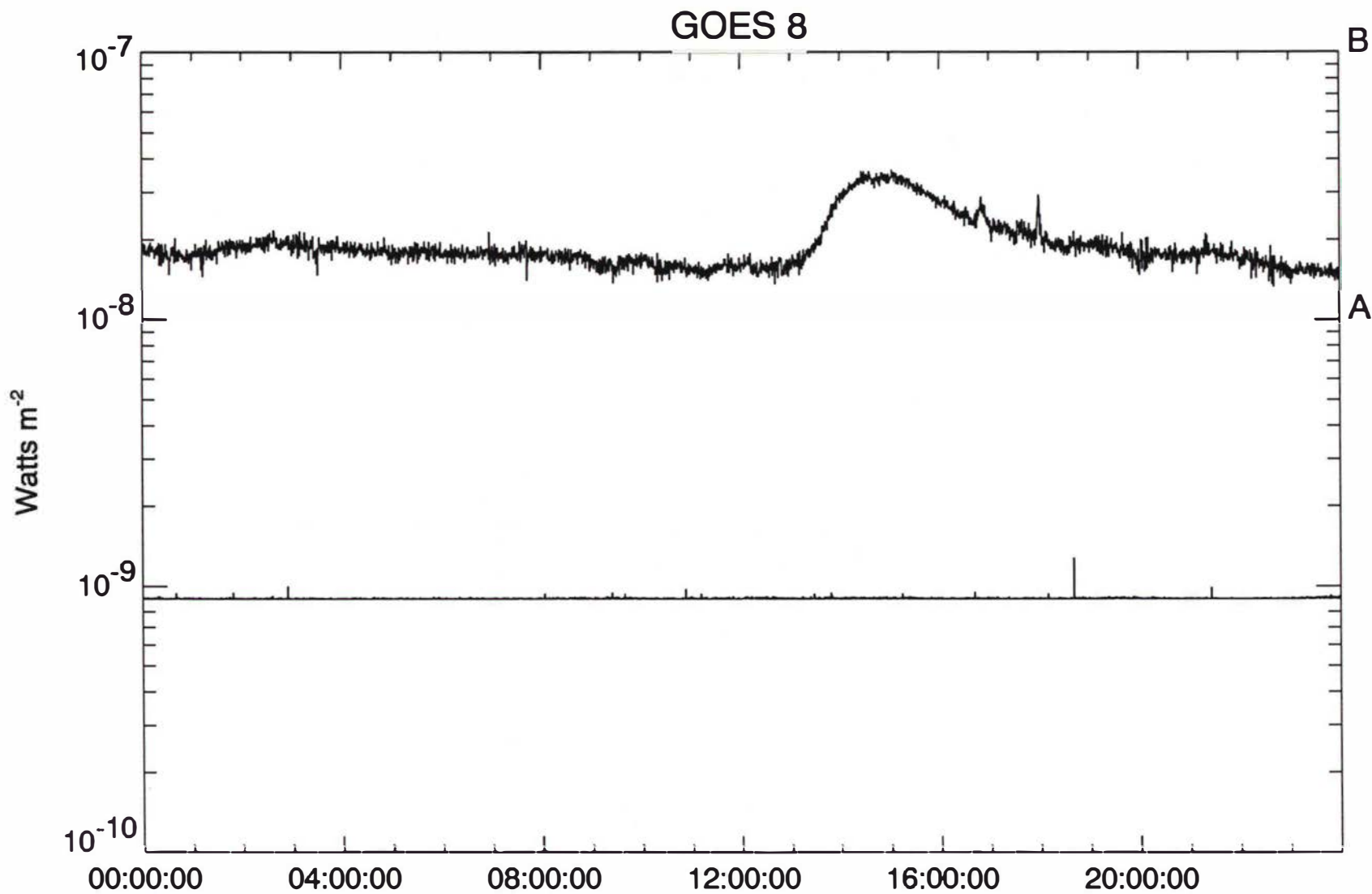
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6447 23/10/97 43100.897
25- 100 keV





Data Start: 97/10/23, 0000:00

Plot created: 97/10/27, 1007

Channel

1 {1.0 - 8.0 Angstroms}

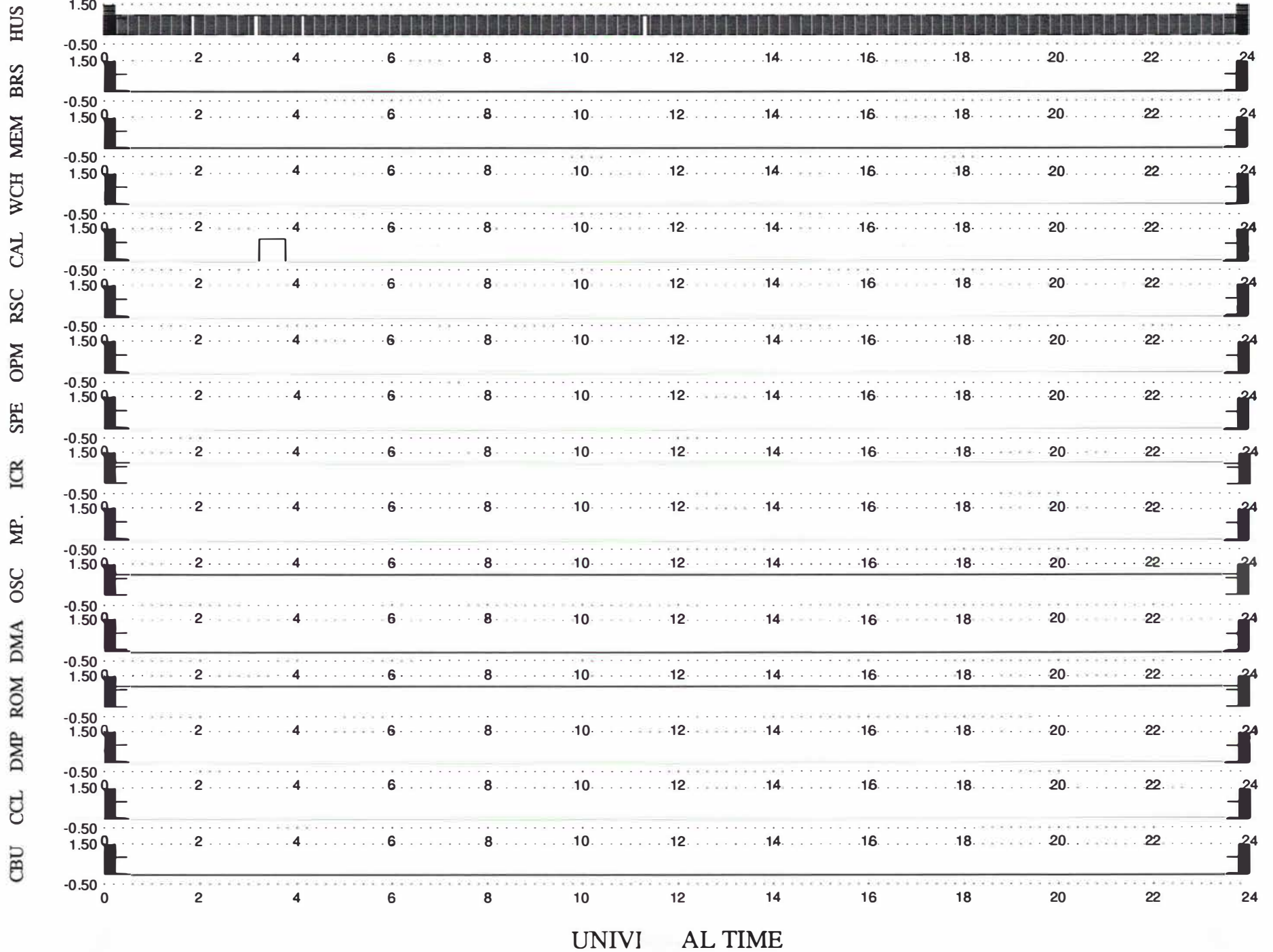
Background not subtracted

2 {0.5 - 4.0 Angstroms}

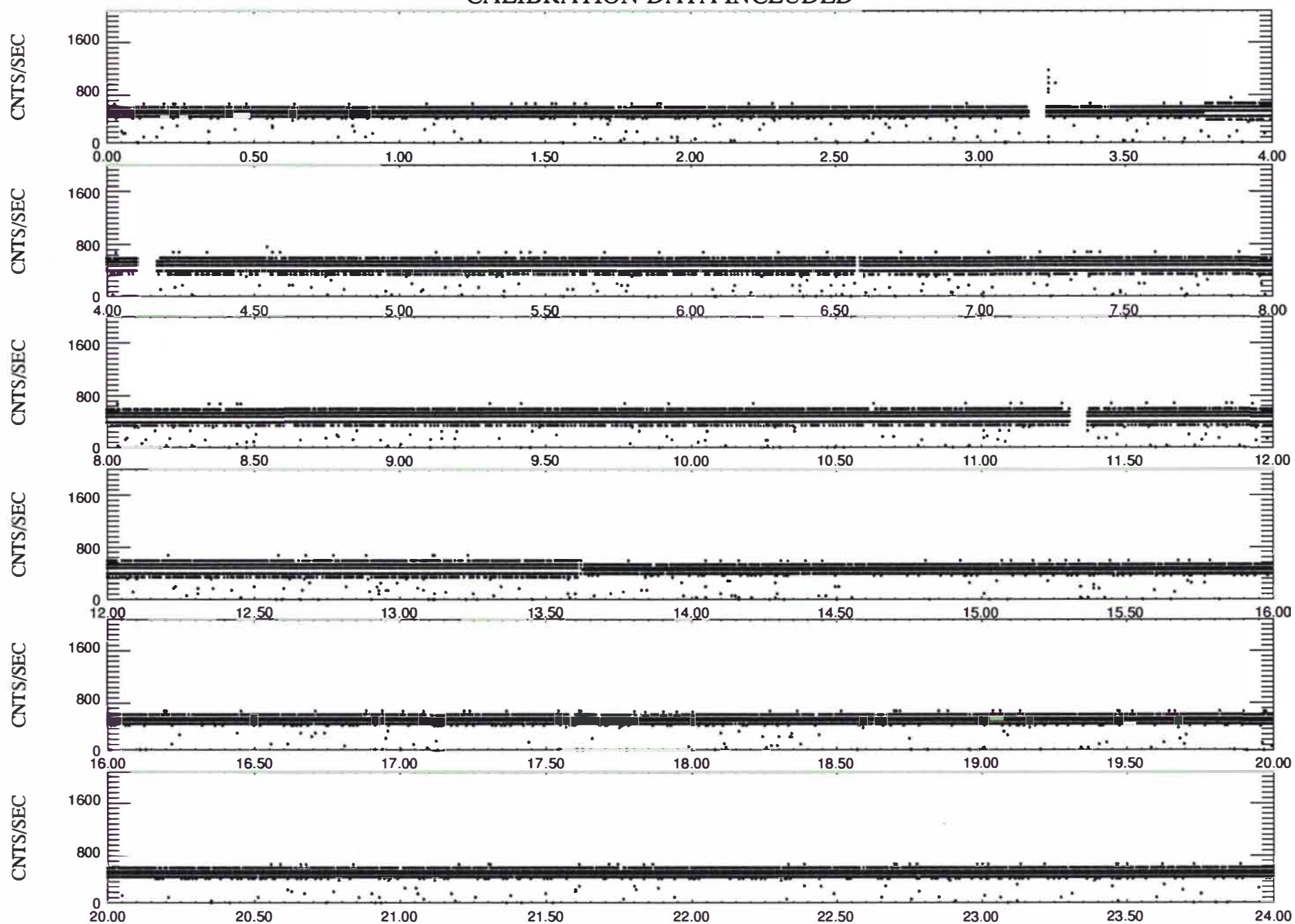
Background not subtracted

Sample average = 10

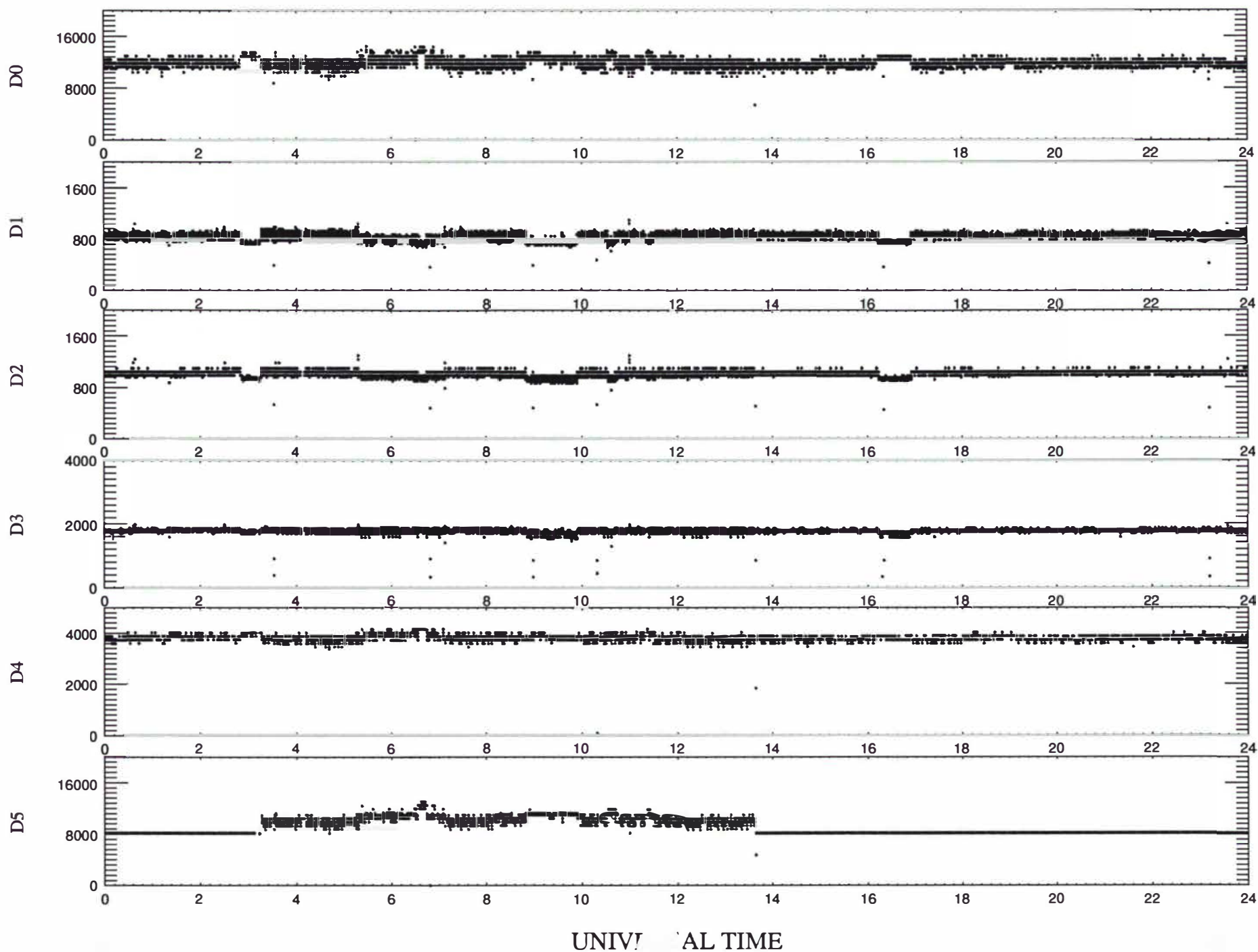
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From RICHARDSON@SSLMOR.msfc.nasa.gov Tue Oct 28 11:46:48 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 LAA29087; Tue, 28 Oct 1997 11:46:47 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA16228; Tue, 28 Oct 1997 11:46:44 -0800
Date: Tue, 28 Oct 1997 13:46:10 -0600 (CST)
From: RICHARDSON@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971028134610.21e05204@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6448
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6448
EVENT OF 1997 OCT 24 DAY OF YEAR=297
EVENT CROSSING TIME AT BATSE : 41612. S. OR 11:33:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 271.000 50.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/10/ 97 IS:
RA= 168.362 DEC= 14.337 DIST= 5.924 AU
BATSE-ULYSSES DISTANCE = 886258046. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -157.96 SECS.
CROSSING TIME AT ULYSSES IS 41454. S. OR 11:30:54 +/- 560.12 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/10/ 97 IS:
RA= 256.786 DEC= -24.084 DIST= 1.891 AU
MARS-BATSE DISTANCE = 282886784. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.85 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -241.80 SECS.
CROSSING TIME AT MARS IS 41370. S. OR 11:29:30 +/- 154.68 SECONDS

BATSE BURST TRIGGER

NO.: 6448

TIME: TJD=0745 SECONDS=41612

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=127.9 AZIMUTH=292.7 ERROR=4.1 DEGREES

COMMENTS:

GRB RISE FASTER THAN DECAY. SINGLE PULSE. DURATION APPROX. = 120 SEC.
NOT VISIBLE ABOVE 300KEV

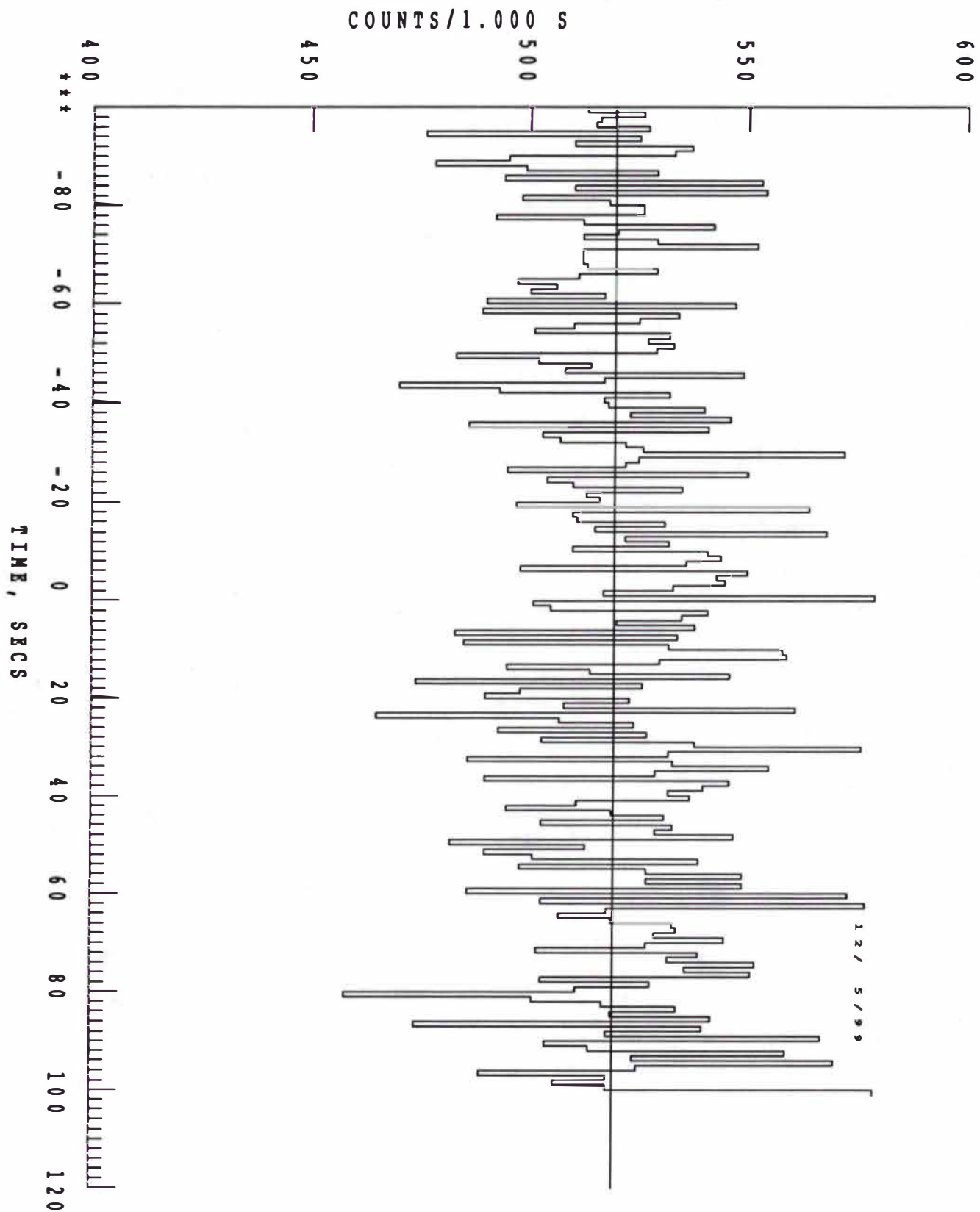
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6448	971024	10745	41612	2000	271	+50	120

NEAR

24/10/97

41701.633

100-1000 keV



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

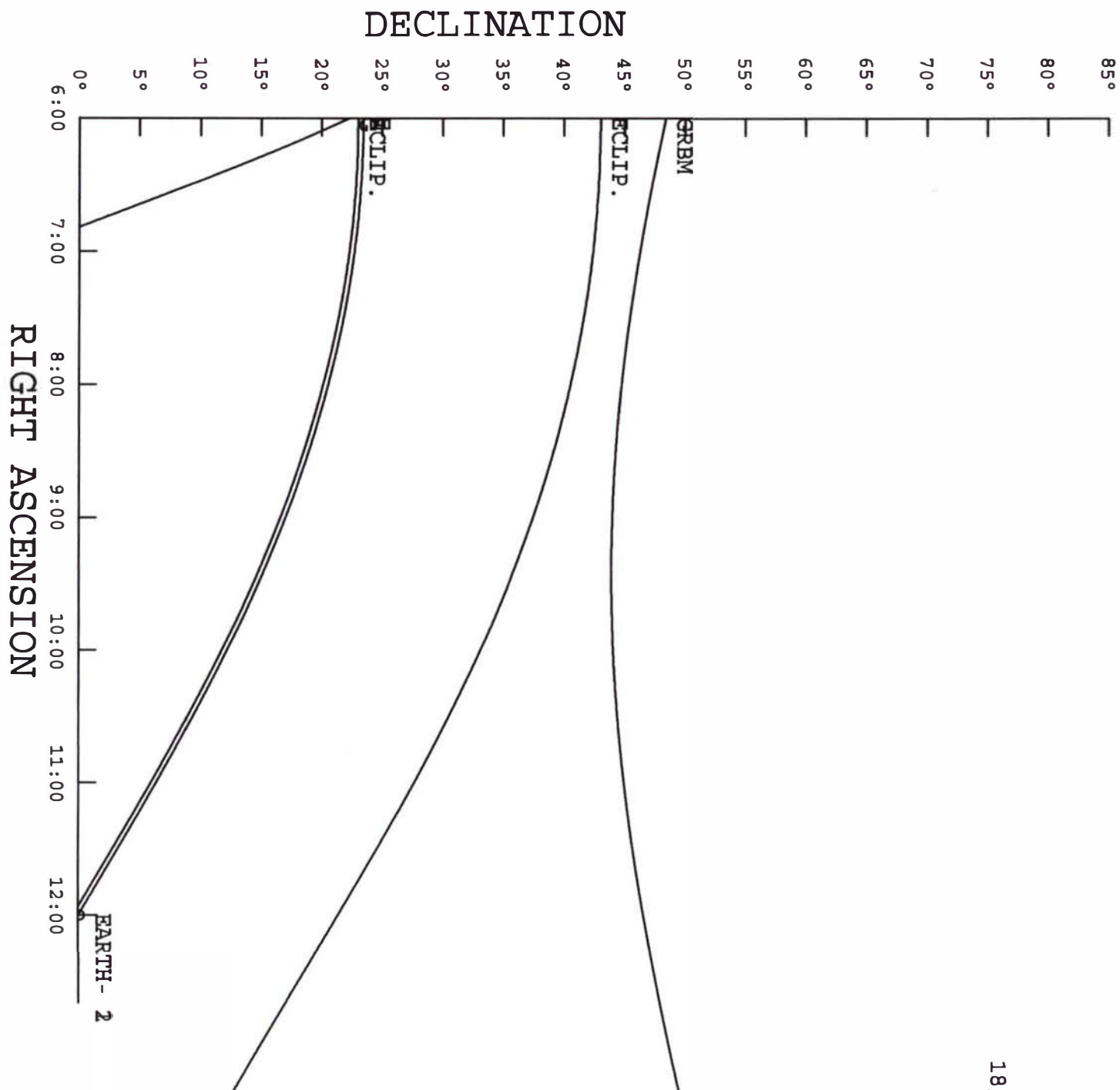
S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 SAX GRBM

2 KONUS



BATSE BURST# 6448

ULYSSES RT

28 / 10 / 97

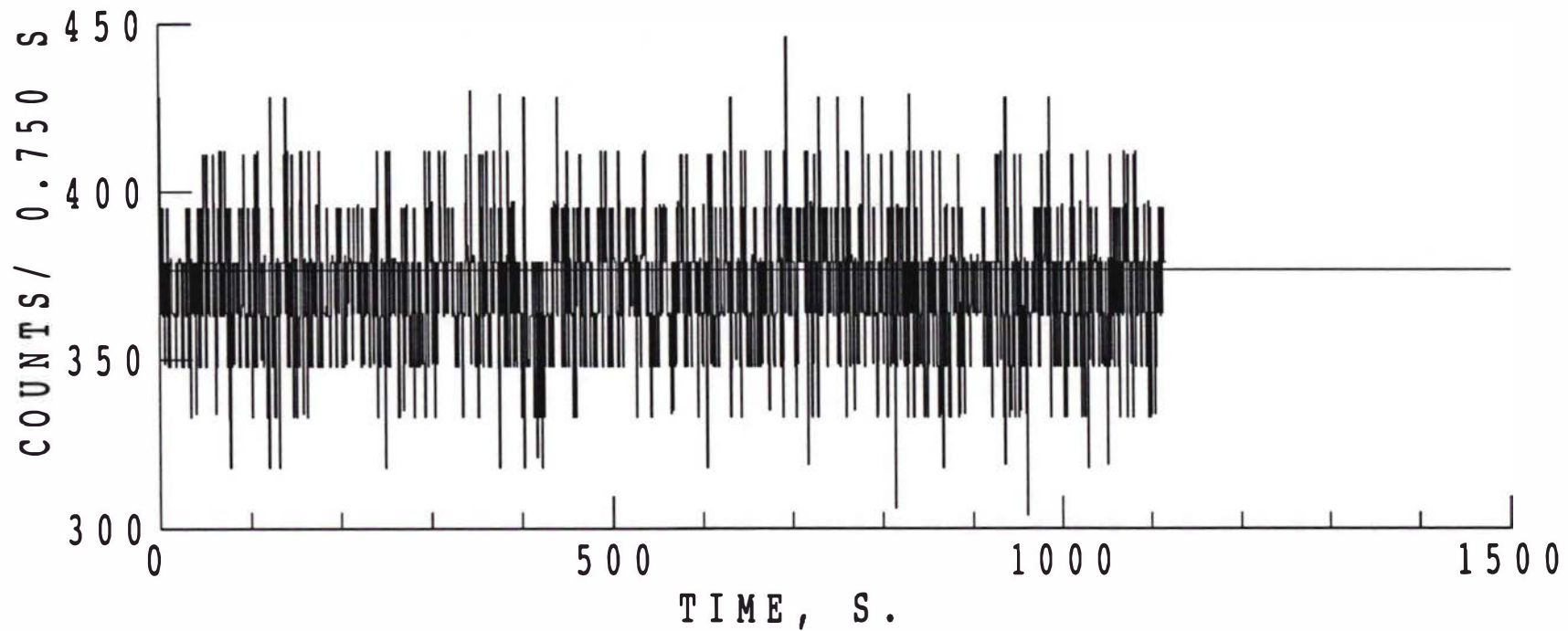
24 / 10 / 97 40896.215 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS, GRBM

04 / 02 / 00

ULYSSES RT

24 / 10 / 97 45397.270 s

0.500 S INTERVALS REGROUPED BY 9

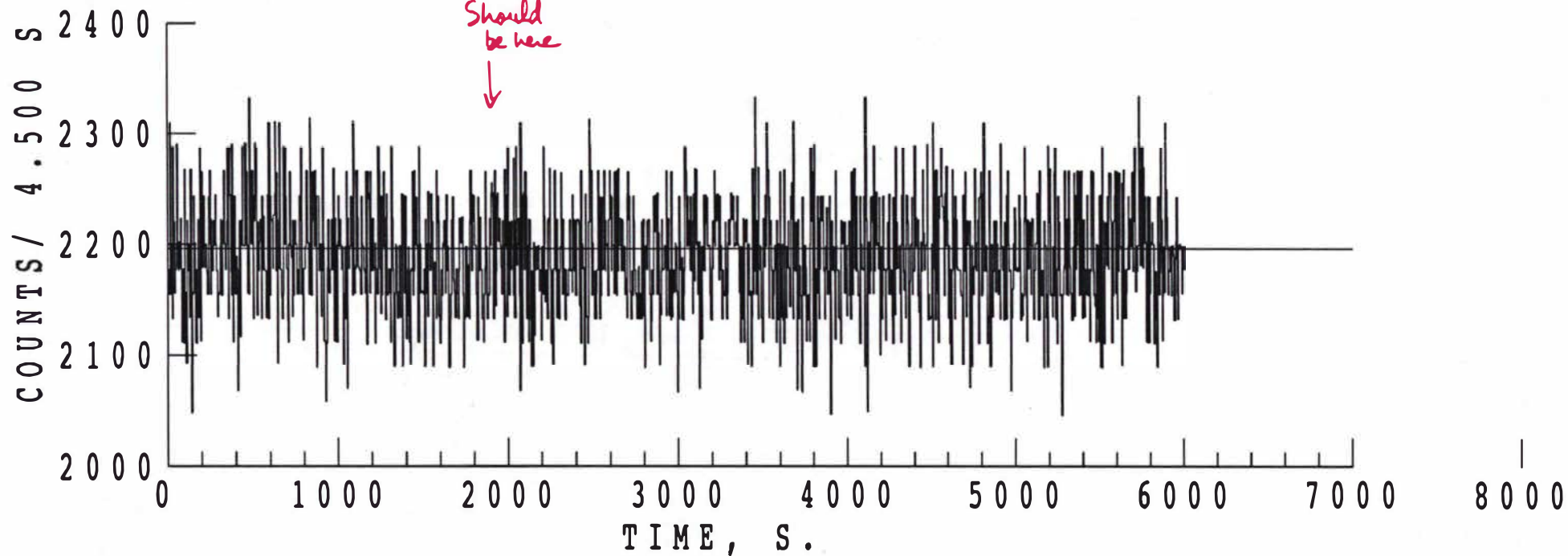
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLMOR.msfc.nasa.gov Tue Oct 28 11:39:33 1997
Date: Tue, 28 Oct 1997 13:38:42 -0600 (CST)
From: RICHARDSON@SSLMOR.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.: 6449

TIME: TJD=0745 SECONDS=53922

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT

From RICHARDSON@SSLMOR.msfc.nasa.gov Tue Oct 28 11:48:07 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 LAA29105; Tue, 28 Oct 1997 11:48:01 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA16259; Tue, 28 Oct 1997 11:47:59 -0800
Date: Tue, 28 Oct 1997 13:47:52 -0600 (CST)
From: RICHARDSON@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971028134752.21e05204@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6450
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6450
EVENT OF 1997 OCT 24 DAY OF YEAR=297
EVENT CROSSING TIME AT BATSE : 80575. S. OR 22:22:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 105.000 26.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/10/ 97 IS:
RA= 168.407 DEC= 14.306 DIST= 5.919 AU
BATSE-ULYSSES DISTANCE = 885475645. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1471.45 SECS.
CROSSING TIME AT ULYSSES IS 79104. S. OR 21:58:23 +/- 472.29 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/10/ 97 IS:
RA= 256.786 DEC= -24.084 DIST= 1.891 AU
MARS-BATSE DISTANCE = 282886784. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 851.09 SECS.
CROSSING TIME AT MARS IS 81426. S. OR 22:37:06 +/- 83.67 SECONDS

BATSE BURST TRIGGER

NO.: 6450

TIME: TJD=0745 SECONDS=80575

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=118.3 AZIMUTH=72.3 ERROR=4.4 DEGREES

COMMENTS:

GRB. TWO PULSES. FIRST PULSE MUCH SHORTER THAN SECOND. TOTAL DURATION
APPROX. = 30 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6450	971024	10745	80575	2500	105	+26	30

Helio corr removed Feb 7 00

Date: Apr 9 '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*

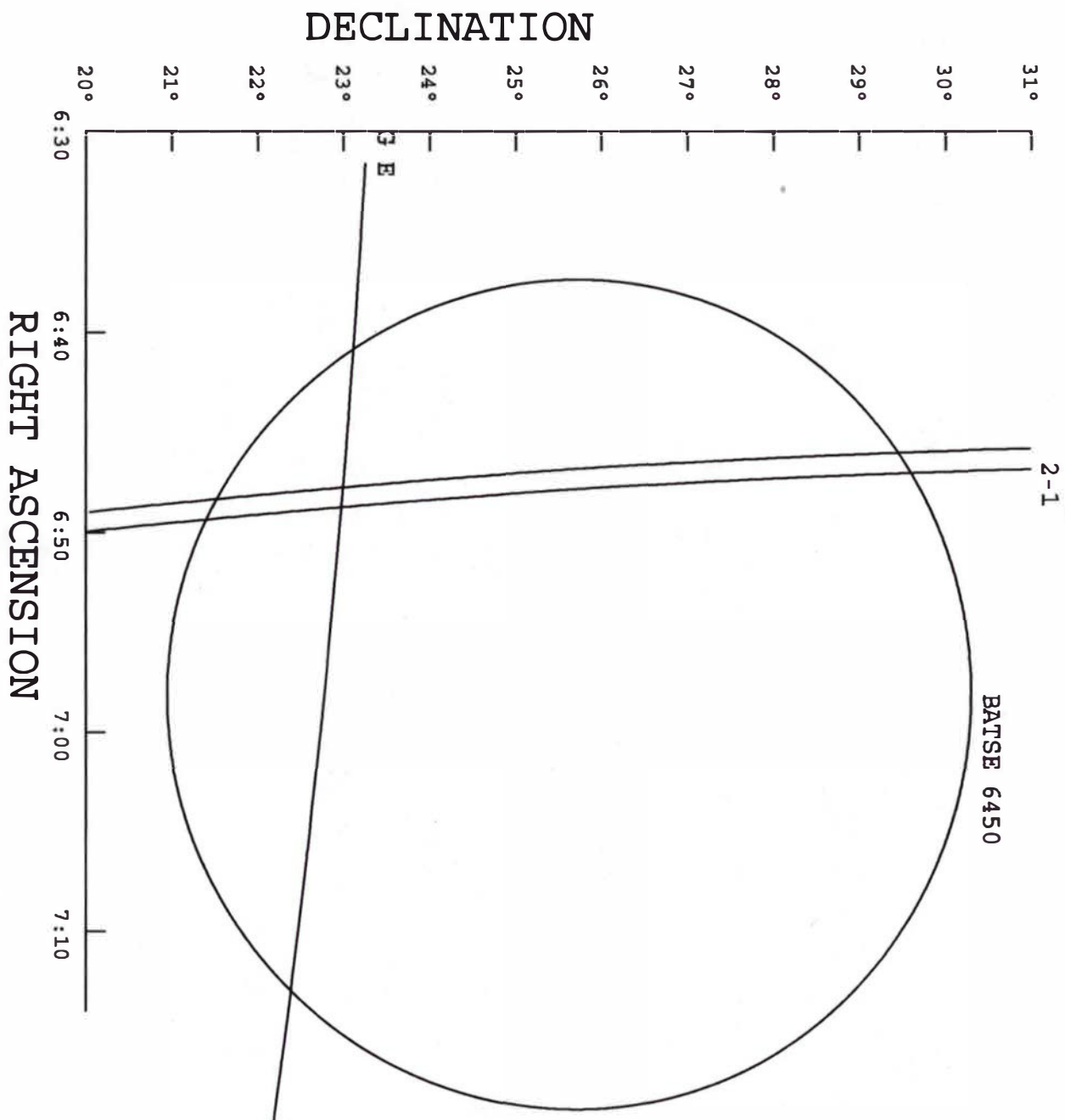
3. PVO Data

- ☐ 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 OCT 24, 1997 22:00

7 / 2 / 0

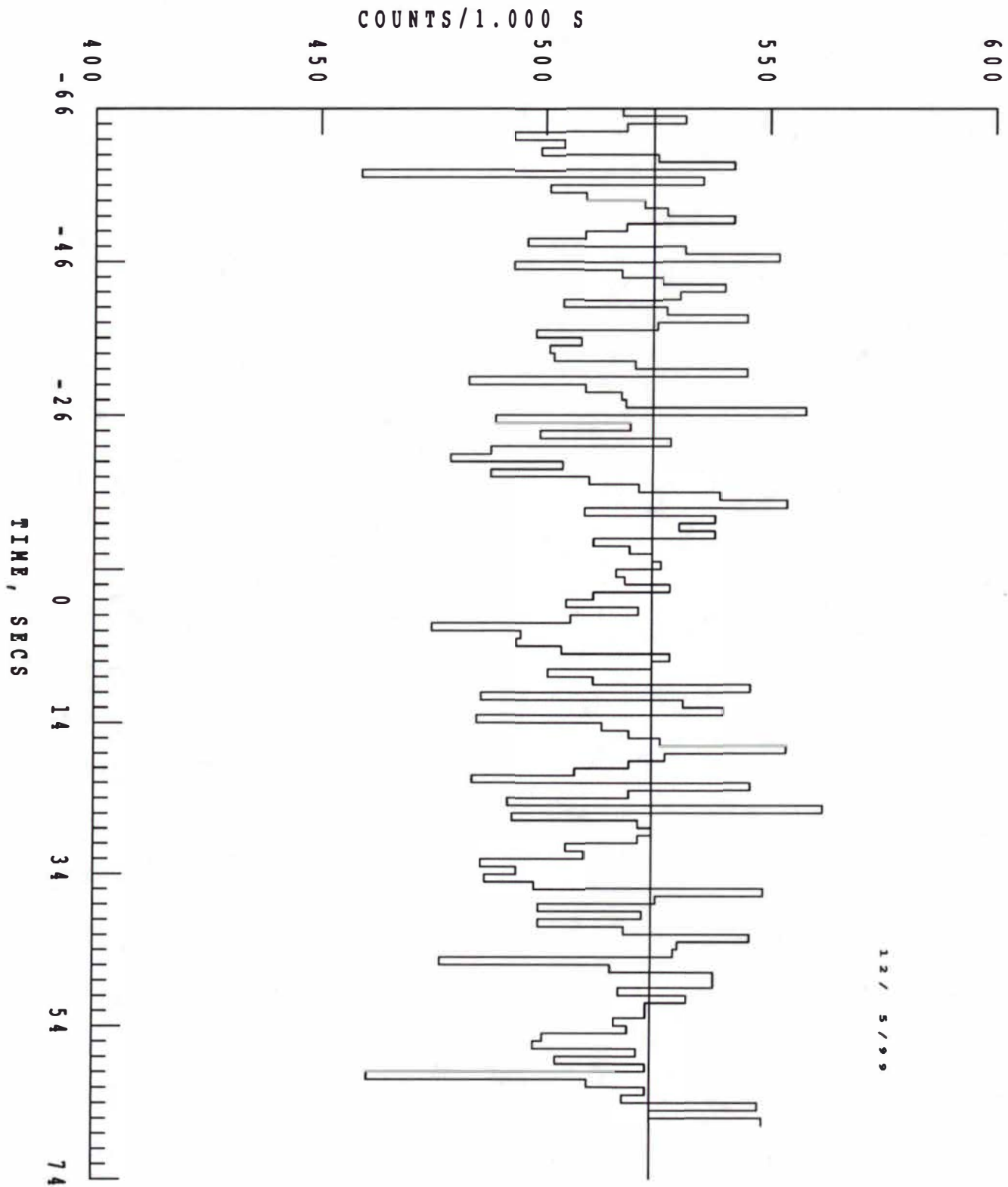


NEAR

24/10/97

80306.626

100-1000 keV



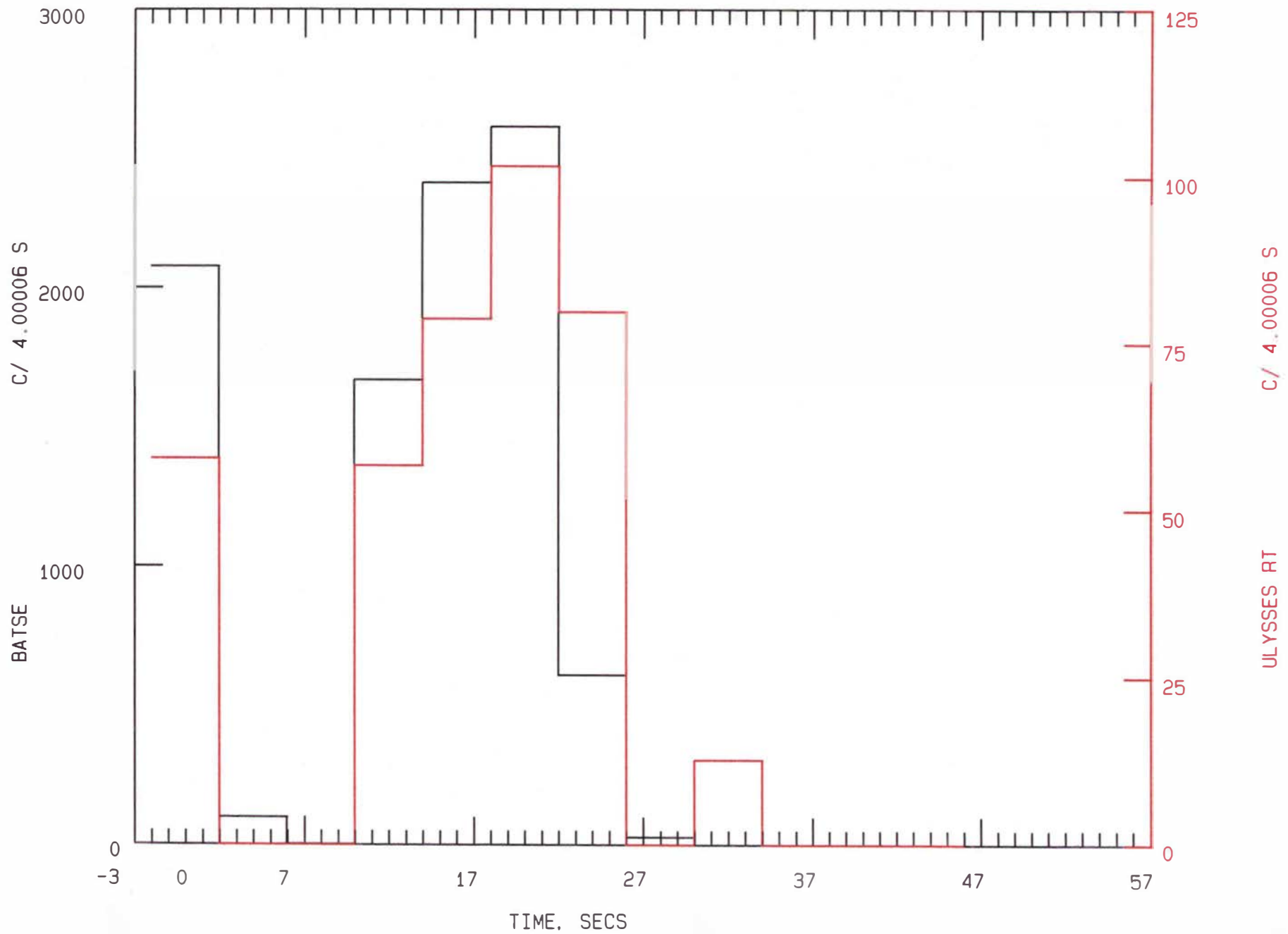
BATSE

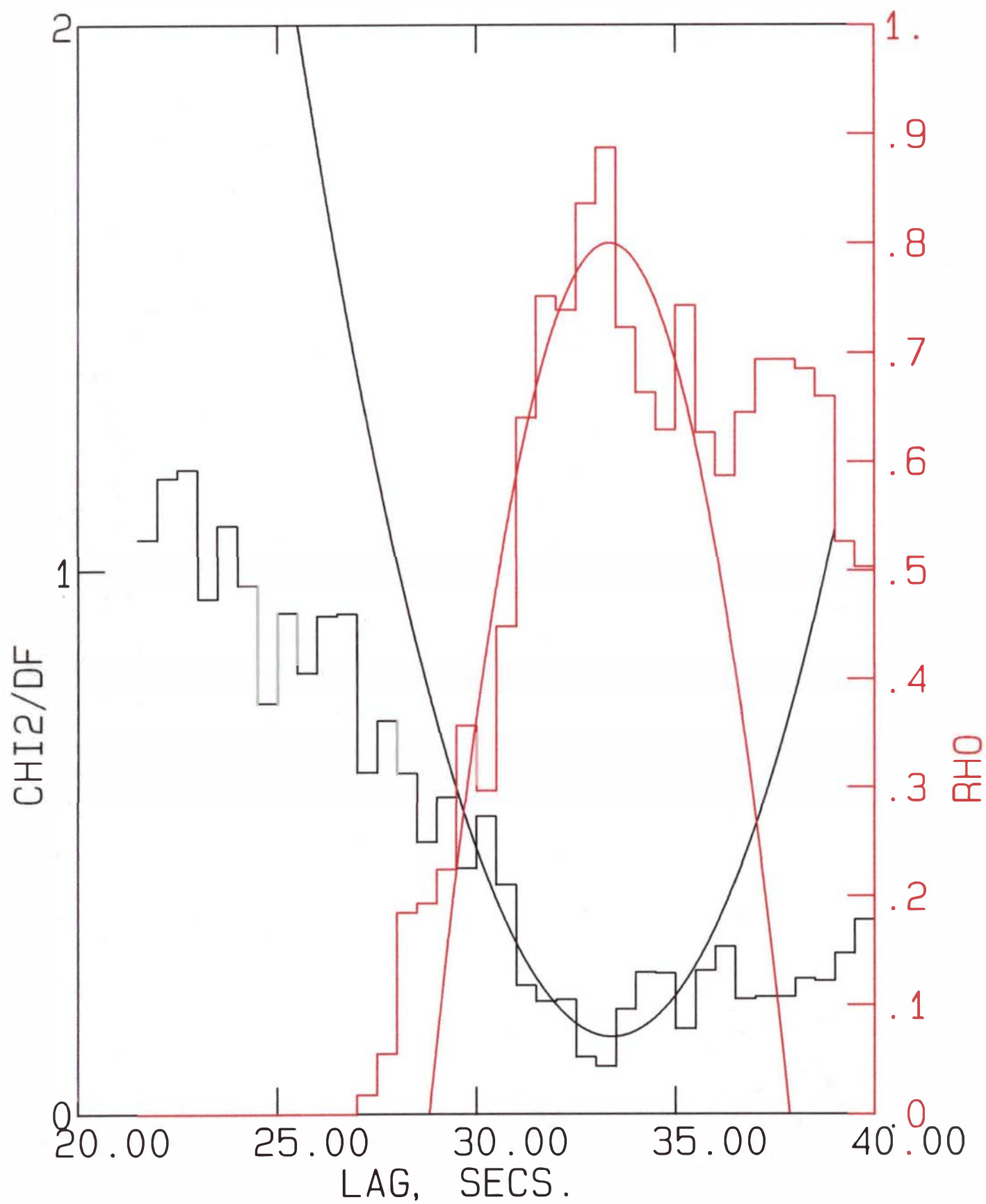
-ULYSSES RT CORRELATION

24/10/97

80575.201

9/ 4/98





ULYSSES RT

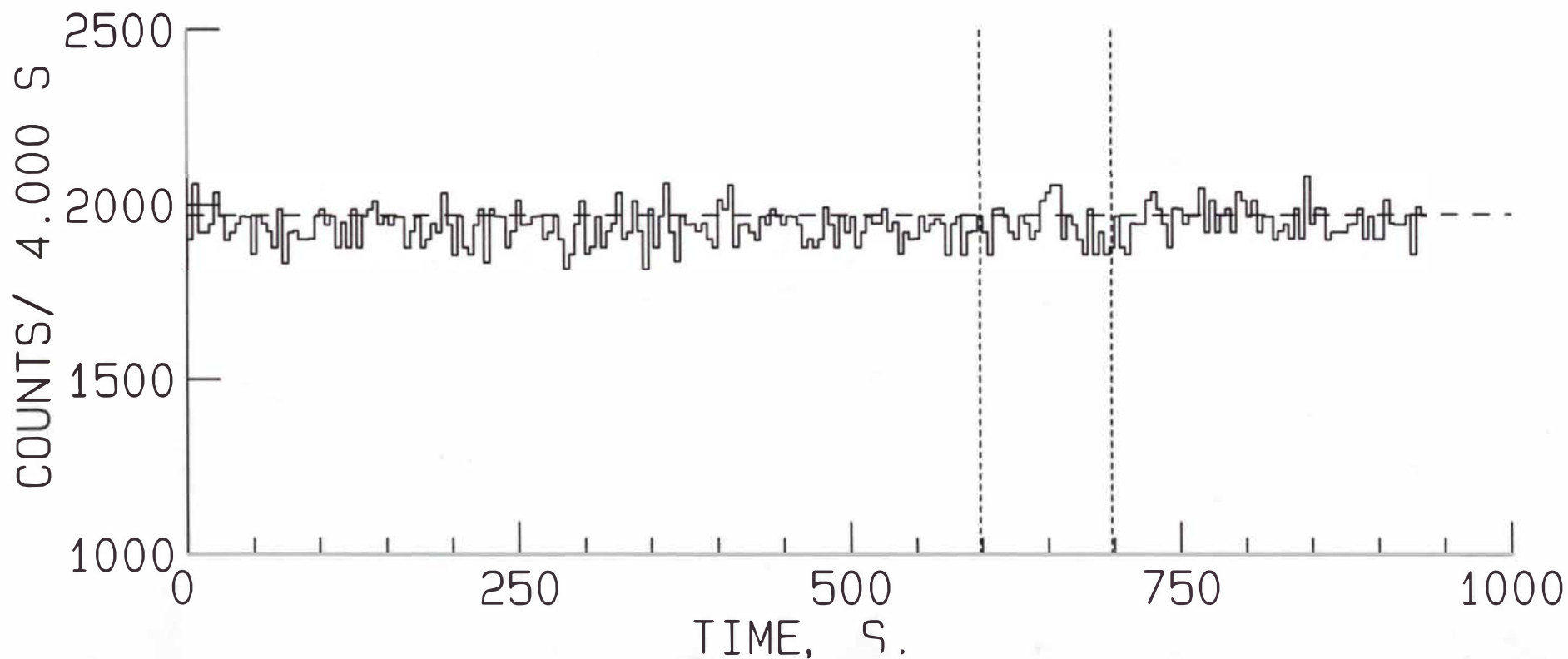
9 / 4 / 98

24/10/97 78624.140 s

0.500 S INTERVALS REGROUPED BY 8

22- 148 keV

N= 10 M= 2
>3.0 SIGMA FLUCTUATIONS



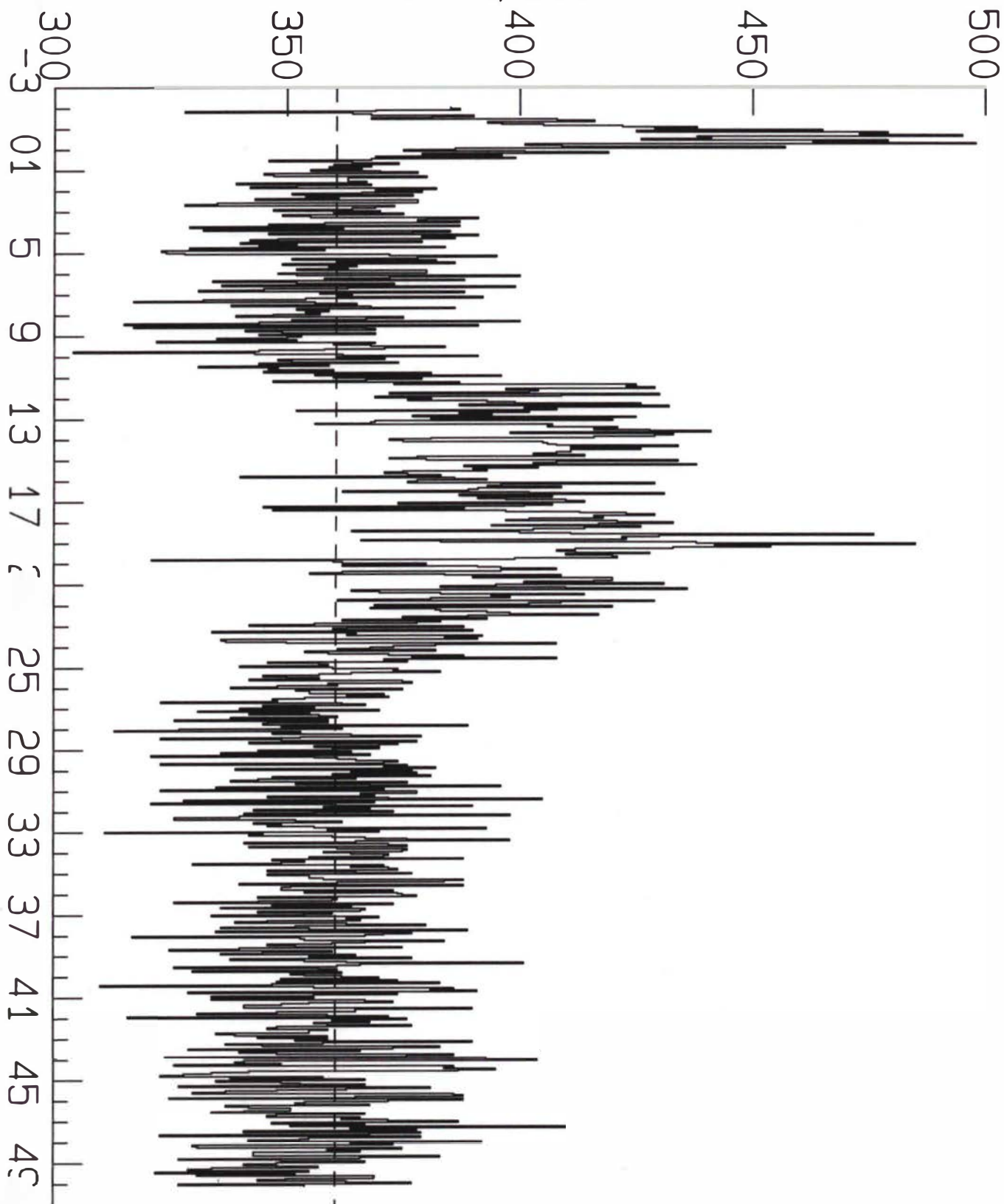
BATSE

24/10/97

80575.201

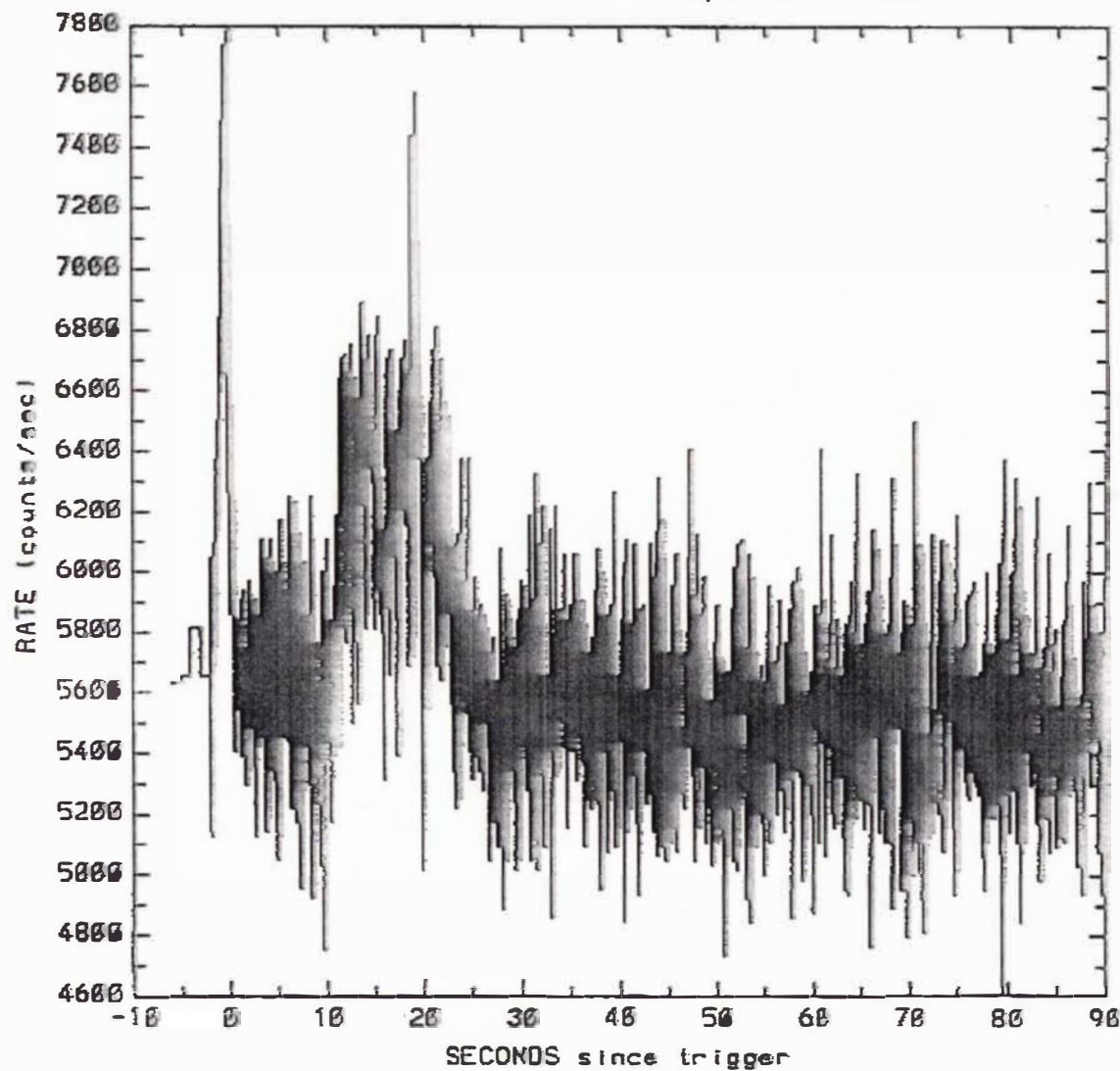
25- 100 keV

COUNTS/0.064 S



13/11/97

DISCSC Data for K. Hurley, No. 6450



29-OCT-1997 09:05:59

Created by KOPS 80
 (Burst Display)
 Version 12.25

Trigger # = 6450

Trigger Time:
 18745 / 82575.201

Burst Data Type:
 DISCSC

Dedline:
 Corrected: 31

Background Data
 Type: PREB + DISCSC

Minimum Integ. Time:
 0.056 seconds

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

Discriminators:
 (1, 2)

Quality Mask:
 801SP1

From scott@rosserv.gsfc.nasa.gov Tue Oct 28 06:19 PST 1997

From: Scott Barthelmy <scott@rosserv.gsfc.nasa.gov>

Subject: GCN Message on GRB971024

To: khurley@sunspot.ssl.berkeley.edu, tony@ucolick.org, wilkerson@csa2.lbl.gov,
khurley@sunspot.ssl.berkeley.edu, williams@sunspot.ssl.berkeley.edu,
dfrail@ao.nrao.edu (Dale Frail), bjmccall@cco.caltech.edu,
bjmccall@rainbow.uchicago.edu, bjmccall@howard.uchicago.edu,
gas@cco.caltech.edu, jgrunsfe@cal.jsc.nasa.gov,
Matthew.S.Muller@gctc.nasa.ru, lamb@oddjob.uchicago.edu (Don Lamb),
titus@astro.uva.nl, srhie@nd.edu, bennett@nd.edu, gman@mso.anu.edu.au,
grb@qso.bao.ac.cn, jinzhu@sun.ihep.ac.cn, zhu@samuri.la.asu.edu,
hyy@bao01.bao.ac.cn, jiang@sun.midwest.co.cn, ajct@laeff.esa.es,
khurley@sunspot.ssl.berkeley.edu (Kevin and XTE notices),
pmcc@alnitak.sdsu.edu, pulokas@alnitak.sdsu.edu,
anton@cgrsmx.iki.rssi.ru, alex@cgrsmx.iki.rssi.ru,
igor@lsgrsim.iki.rssi.ru, sokolov@sao.ru, gruendl@astro.uiuc.edu,
ian@spacsun.rice.edu, draza@physics.uiuc.edu,
shrader@grossc.gsfc.nasa.gov, rmw@altair.lowell.edu,
murakami@astro.isas.ac.jp, ayoshida@postman.riken.go.jp,
srk@astro.caltech.edu,
garcia@cfa.harvard.edu (Mike Garcia at Whipple 1.2m tele),
scott@rosserv.gsfc.nasa.gov

Date: Tue, 28 Oct 1997 09:19:06 -0500 (EST)

MIME-Version: 1.0

Content-Transfer-Encoding: 7bit

GRB971024

The KPNO reduced 4m Mosaic (8k x 8k imager) data are now available on our web page (<http://www.noao.edu/noao/grb/971024.html>). As briefly stated here, these data have been block averaged (binned) 2x2 to reduce the image size to 4k x 4k. The images are about 77 Mb each. The seeing was poor, about 1.5" on the first night and about 2" on the second night, so with the ~0.25" Mosaic pixels the images are still well sampled after binning.

The images were taken in the R-band and total 50 minutes exposure each. Zero points are not yet available.

Buell Jannuzi, Arjun Dey and collaborators observed, processed, and combined these images. James Rhoads and Ted von Hippel have performed preliminary photometry on these images and find a large number of objects which deviate between the two epochs when comparing aperture photometry. Most of the objects which deviate from one epoch to the other seem to be due to crowding causing aperture photometry differences due to the different seeing, and some are due to image defects. Careful psf-fitting photometry should improve the analysis. We are still studying these images but do not want to delay the efforts of others, so we are now making the reduced images available.

This message is citable in publications.

From scott@rosserv.gsfc.nasa.gov Mon Oct 27 16:06 PST 1997

From: Scott Barthelmy <scott@rosserv.gsfc.nasa.gov>

Subject: GCN Message on GRB971024

To: khurley@sunspot.ssl.berkeley.edu, tony@ucolick.org, wilkerson@csa2.lbl.gov,
khurley@sunspot.ssl.berkeley.edu, williams@sunspot.ssl.berkeley.edu,
dfrail@aoc.nrao.edu (Dale Frail), bjmccall@cco.caltech.edu,
bjmccall@rainbow.uchicago.edu, bjmccall@howard.uchicago.edu,
gas@cco.caltech.edu, jgrunsfe@cal.jsc.nasa.gov,
Matthew.S.Muller@gctc.nasa.ru, lamb@oddjob.uchicago.edu (Don Lamb),
titus@astro.uva.nl, srhie@nd.edu, bennett@nd.edu, gman@mso.anu.edu.au,
grb@qso.bao.ac.cn, jinzhu@sun.ihep.ac.cn, zhu@samuri.la.asu.edu,
hyy@bao01.bao.ac.cn, jiang@sun.midwest.co.cn, ajct@laeff.esa.es,
khurley@sunspot.ssl.berkeley.edu (Kevin and XTE notices),
pmcc@alnitak.sdsu.edu, pulokas@alnitak.sdsu.edu,
anton@cgrsmx.iki.rssi.ru, alex@cgrsmx.iki.rssi.ru,
igor@lsgrsim.iki.rssi.ru, sokolov@sao.ru, gruendl@astro.uiuc.edu,
ian@spacsun.rice.edu, draza@physics.uiuc.edu,
shrader@grossc.gsfc.nasa.gov, rmw@altair.lowell.edu,
murakami@astro.isas.ac.jp, ayoshida@postman.riken.go.jp,
srk@astro.caltech.edu,
garcia@cfa.harvard.edu (Mike Garcia at Whipple 1.2m tele),
scott@rosserv.gsfc.nasa.gov

Date: Mon, 27 Oct 1997 19:05:53 -0500 (EST)

MIME-Version: 1.0

Content-Transfer-Encoding: 7bit

GRB971024

We reobserved the entire 90% confidence RXTE_ASM localization

of GRB971024 (Trigger No. 6448, GCN notice of 24 Oct 97 22:41:47 UT)

with the USNO, Flagstaff Station 1.0-m telescope in the R band, 48 hours after our first set of observations (which were obtained 14-14.5 hours after the GRB event). The two sets of frames (both approximately as deep as the DSS in this region) were blinked against each other. No significantly variable objects (approx. 1 mag) were detected to approximately $R = 19$ (in our previous notice, the first set of frames were blinked against DSS, and no significantly brighter objects in our frames were found).

This message is citable in publications.

J.A. Munn, F.J. Vrba, A.A. Henden, U.S. Naval Observatory, Flagstaff Station

From scott@rosserv.gsfc.nasa.gov Sun Oct 26 09:17 PST 1997

From: Scott Barthelmy <scott@rosserv.gsfc.nasa.gov>

Subject: GCN Message on GRB971024

To: khurley@sunspot.ssl.berkeley.edu, tony@ucolick.org, wilkerson@csa2.lbl.gov,
khurley@sunspot.ssl.berkeley.edu, williams@sunspot.ssl.berkeley.edu,
dfraill@aoc.nrao.edu (Dale Frail), bjmccall@cco.caltech.edu,
bjmccall@rainbow.uchicago.edu, bjmccall@howard.uchicago.edu,
gas@cco.caltech.edu, jgrunsfe@cal.jsc.nasa.gov,
Matthew.S.Muller@gctc.nasa.ru, lamb@oddjjob.uchicago.edu (Don Lamb),
titus@astro.uva.nl, srhie@nd.edu, bennett@nd.edu, gman@mso.anu.edu.au,
grb@qso.bao.ac.cn, jinzhu@sun.ihep.ac.cn, zhu@samuri.la.asu.edu,
hgy@bao01.bao.ac.cn, jiang@sun.midwest.co.cn, ajct@laeff.esa.es,
khurley@sunspot.ssl.berkeley.edu (Kevin and XTE notices),
pmcc@alnitak.sdsu.edu, pulokas@alnitak.sdsu.edu,
anton@cgrsmx.iki.rssi.ru, alex@cgrsmx.iki.rssi.ru,
igor@lsgrsim.iki.rssi.ru, sokolov@sao.ru, gruendl@astro.uiuc.edu,
ian@spacsun.rice.edu, draza@physics.uiuc.edu,
shrader@grossc.gsfc.nasa.gov, rmw@altair.lowell.edu,
murakami@astro.isas.ac.jp, ayoshida@postman.riken.go.jp,
garcia@cfa.harvard.edu (Mike Garcia at Whipple 1.2m tele),
scott@rosserv.gsfc.nasa.gov

Date: Sun, 26 Oct 1997 12:17:05 -0500 (EST)

MIME-Version: 1.0

Content-Transfer-Encoding: 7bit

Buell Jannuzi and James Rhoads of KPNO report:

We obtained images this evening [evening of 25-26 Oct] of the reported position of GRB971024. We used the KPNO 4m and the prime focus Mosaic imager, providing a 35' field of view.

We obtained five 10 minute exposures in the R-band under apparently photometric conditions (still need to reduce our data and standards) in poor seeing (1.5" FWHM; the jet stream is on top of us at the moment). We plan to make the reduce image available sometime tomorrow evening via the NOAO Web page (the mosaic data, 8kx8k, unfortunately take awhile to reduce), and will try to obtain a second epoch tomorrow.

From scott@rosserv.gsfc.nasa.gov Sat Oct 25 17:51 PDT 1997

From: Scott Barthelmy <scott@rosserv.gsfc.nasa.gov>

Subject: GCN Notice on GRB971024

To: khurley@sunspot.ssl.berkeley.edu, tony@ucolick.org, wilkerson@csa2.lbl.gov,
khurley@sunspot.ssl.berkeley.edu, williams@sunspot.ssl.berkeley.edu,
dfrail@aoc.nrao.edu (Dale Frail), bjmccall@cco.caltech.edu,
bjmccall@rainbow.uchicago.edu, bjmccall@howard.uchicago.edu,
gas@cco.caltech.edu, jgrunsfe@cal.jsc.nasa.gov,
Matthew.S.Muller@gctc.nasa.ru, lamb@oddjob.uchicago.edu (Don Lamb),
titus@astro.uva.nl, srhie@nd.edu, bennett@nd.edu, gman@mso.anu.edu.au,
grb@qso.bao.ac.cn, jinzhu@sun.ihep.ac.cn, zhu@samuri.la.asu.edu,
hgy@bao01.bao.ac.cn, jiang@sun.midwest.co.cn, ajct@laeff.esa.es,
khurley@sunspot.ssl.berkeley.edu (Kevin and XTE notices),
pmcc@alnitak.sdsu.edu, pulokas@alnitak.sdsu.edu,
anton@cgrsmx.iki.rssi.ru, alex@cgrsmx.iki.rssi.ru,
igor@lsgrsim.iki.rssi.ru, sokolov@sao.ru, gruendl@astro.uiuc.edu,
ian@spacsun.rice.edu, draza@physics.uiuc.edu,
shrader@grossc.gsfc.nasa.gov, rmw@altair.lowell.edu,
murakami@astro.isas.ac.jp, ayoshida@postman.riken.go.jp,
garcia@cfa.harvard.edu (Mike Garcia at Whipple 1.2m tele)

Date: Sat, 25 Oct 1997 20:50:29 -0400 (EDT)

Cc: scott@rosserv.gsfc.nasa.gov (Scott Barthelmy)

MIME-Version: 1.0

Content-Transfer-Encoding: 7bit

GRB971024

We observed the entire 90% confidence RXTE_ASM localization

of GRB971024 (Trigger No. 6448, GCN notice of 24 Oct 97 22:41:47 UT)

with the USNO, Flagstaff Station 1.0-m telescope in the R band between
14-14.5 hours after the GRB event. The frames were approximately as
deep as the DSS in this region. Our frames were blinked against the
DSS and no objects substantially brighter on our frames than on the
DSS were found.

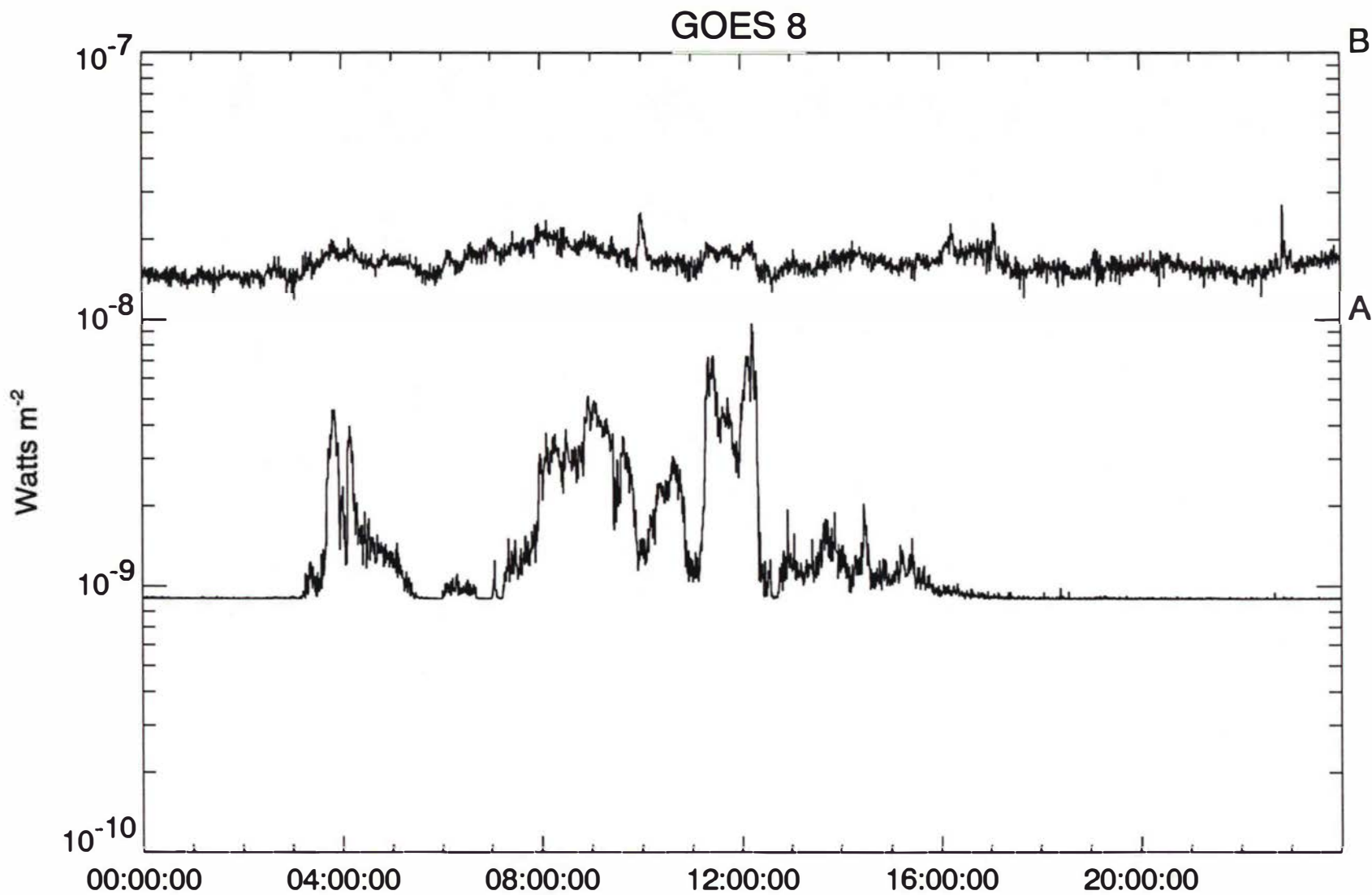
This message is citable in publications.

F.J. Vrba, J.A. Munn, U.S. Naval Observatory, Flagstaff Station

GCN Administrative PS:

This notice is being distributed with a significant time delay (~20 hrs)
because of a network problem here at GSFC which prevented me from receiving
this notice earlier. This is a very rare occurrence.

Also, work is progressing on the automated form of these follow-up notices.



Data Start: 97/10/24, 0000:00

Plot created: 97/10/28, 1007

Channel

1 (1.0 - 8.0 Angstroms)

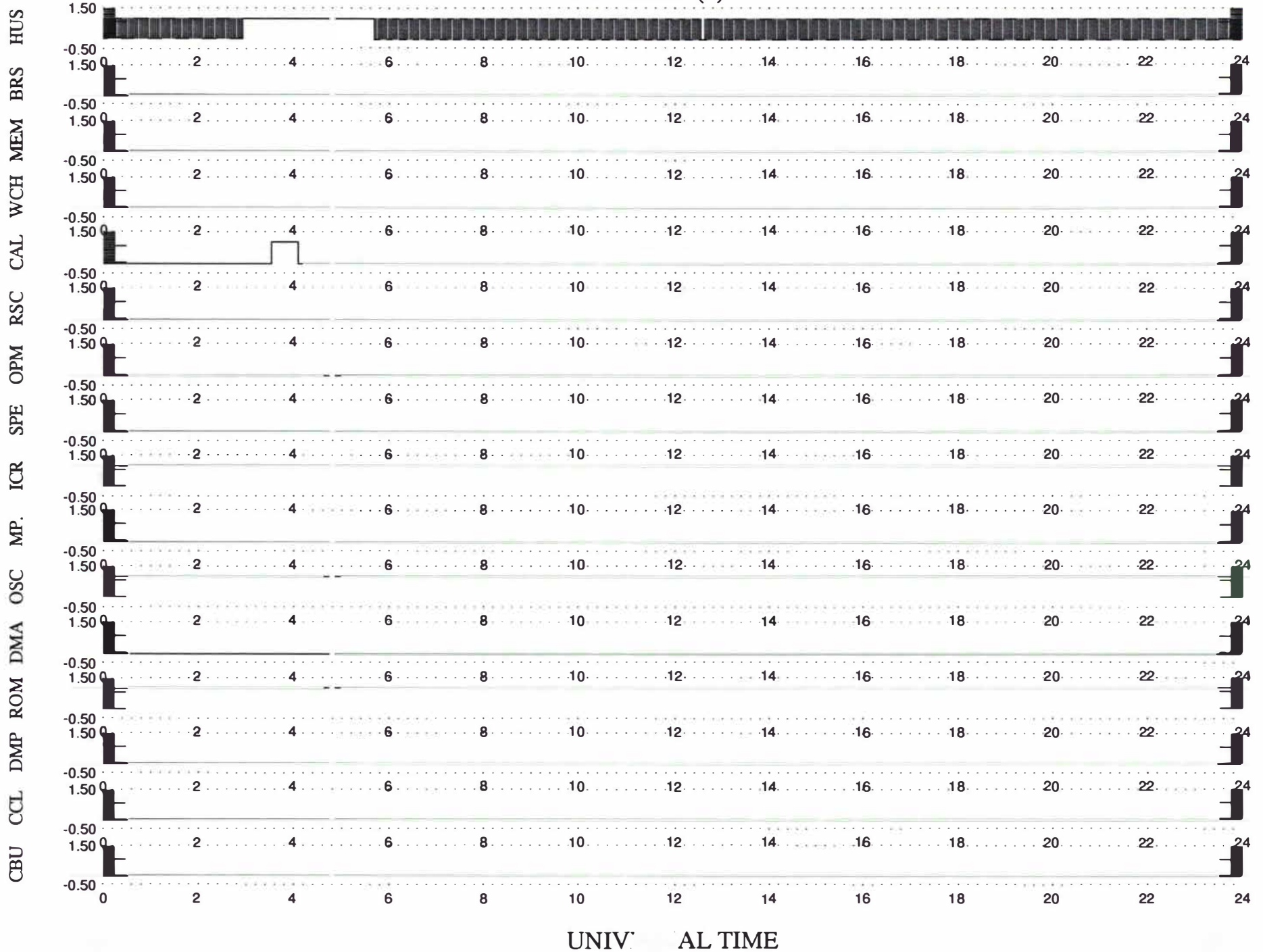
Background not subtracted

2 (0.5 - 4.0 Angstroms)

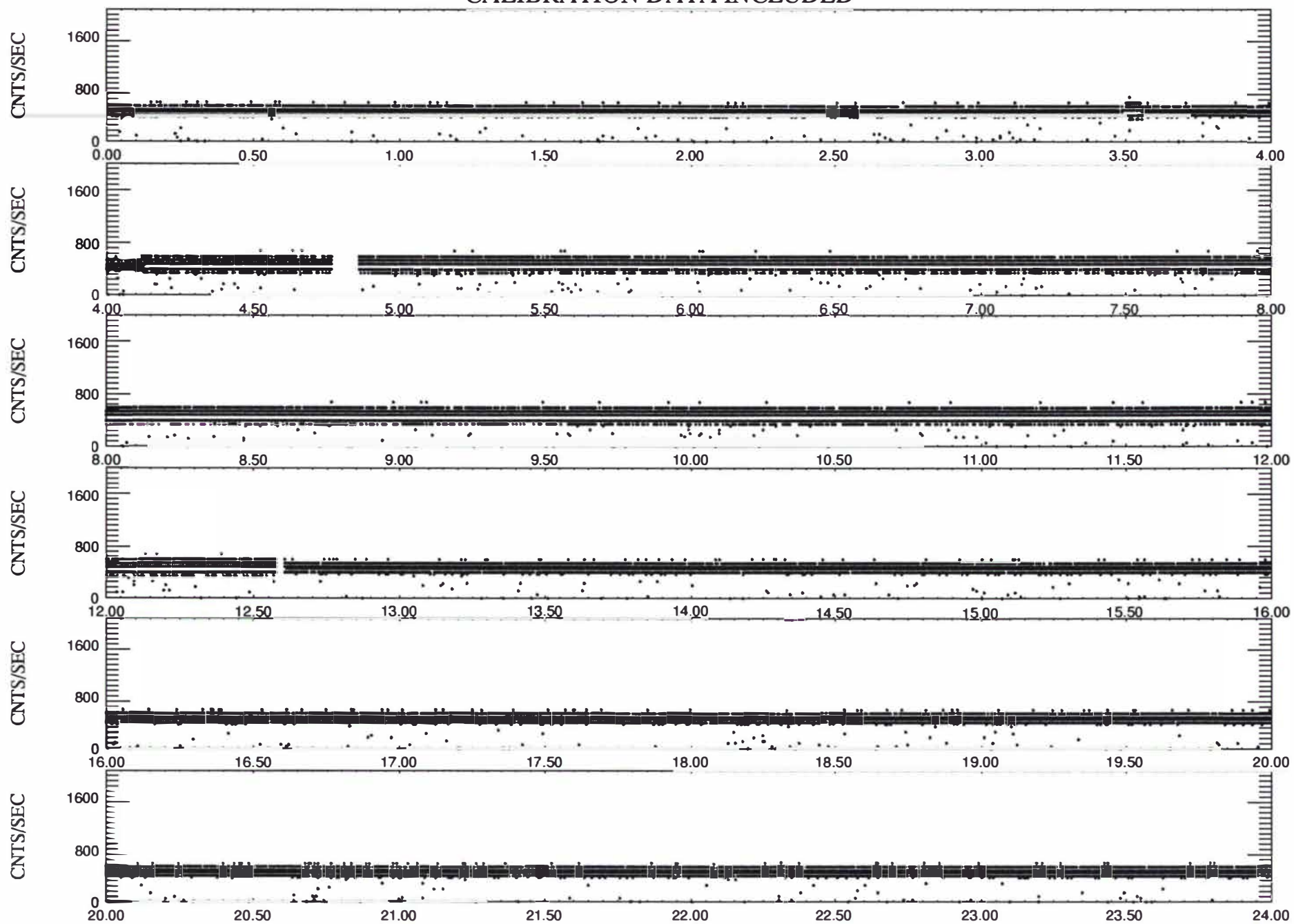
Background not subtracted

Sample average = 10

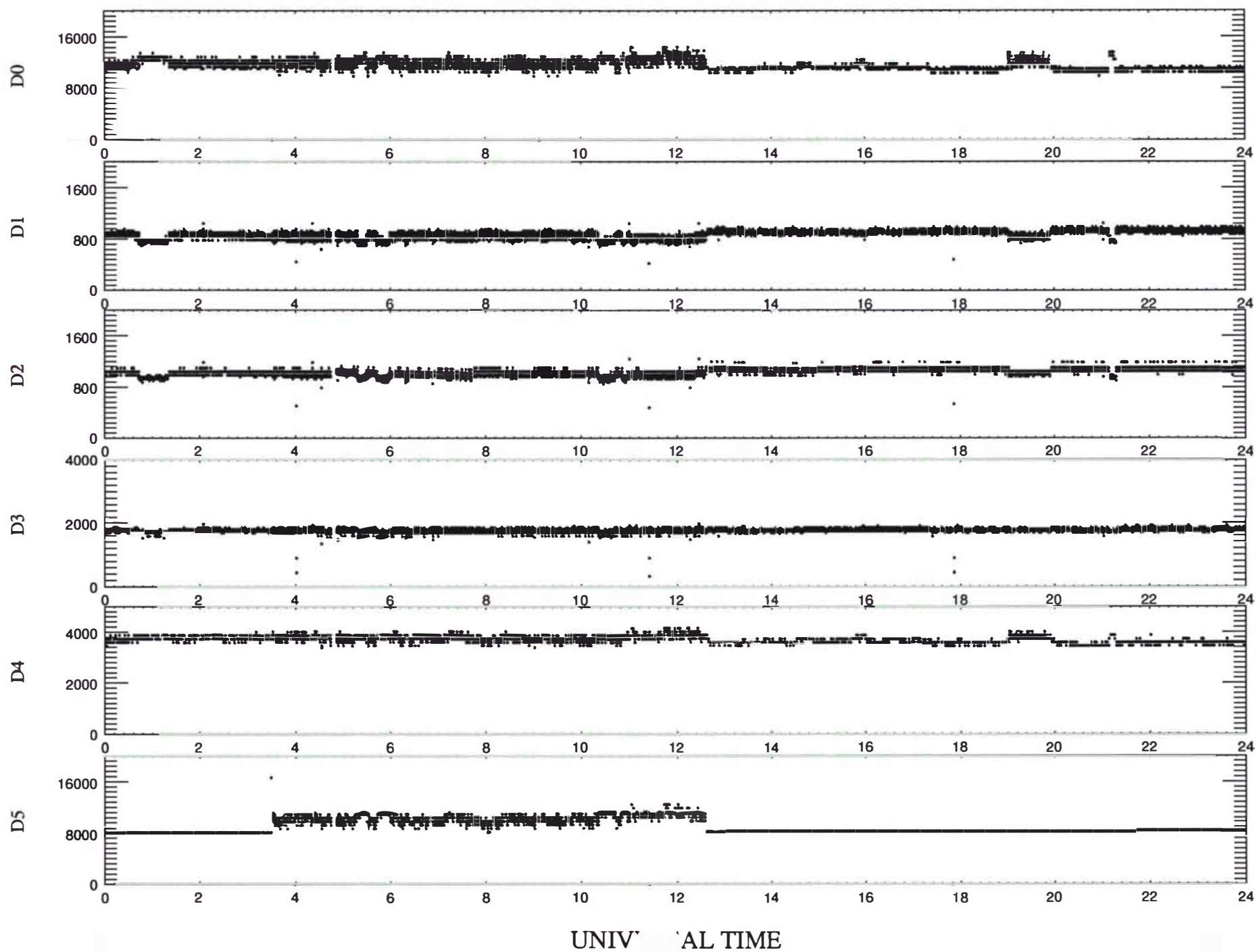
NO BURST (9)

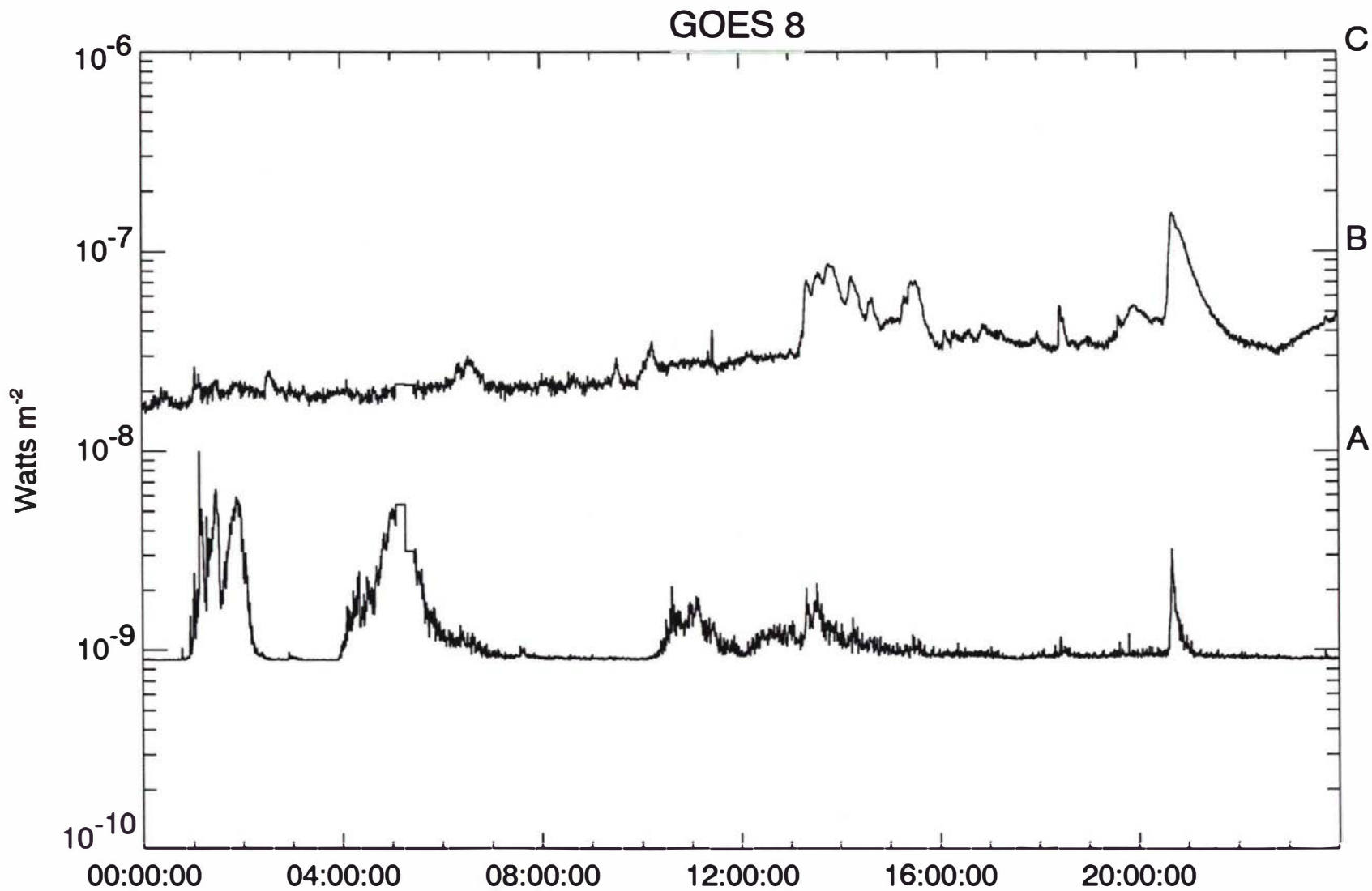


CALIBRATION DATA INCLUDED



UNIV AL TIME





Data Start: 97/10/25, 0000:00

Plot created: 97/10/29, 1008

Channel

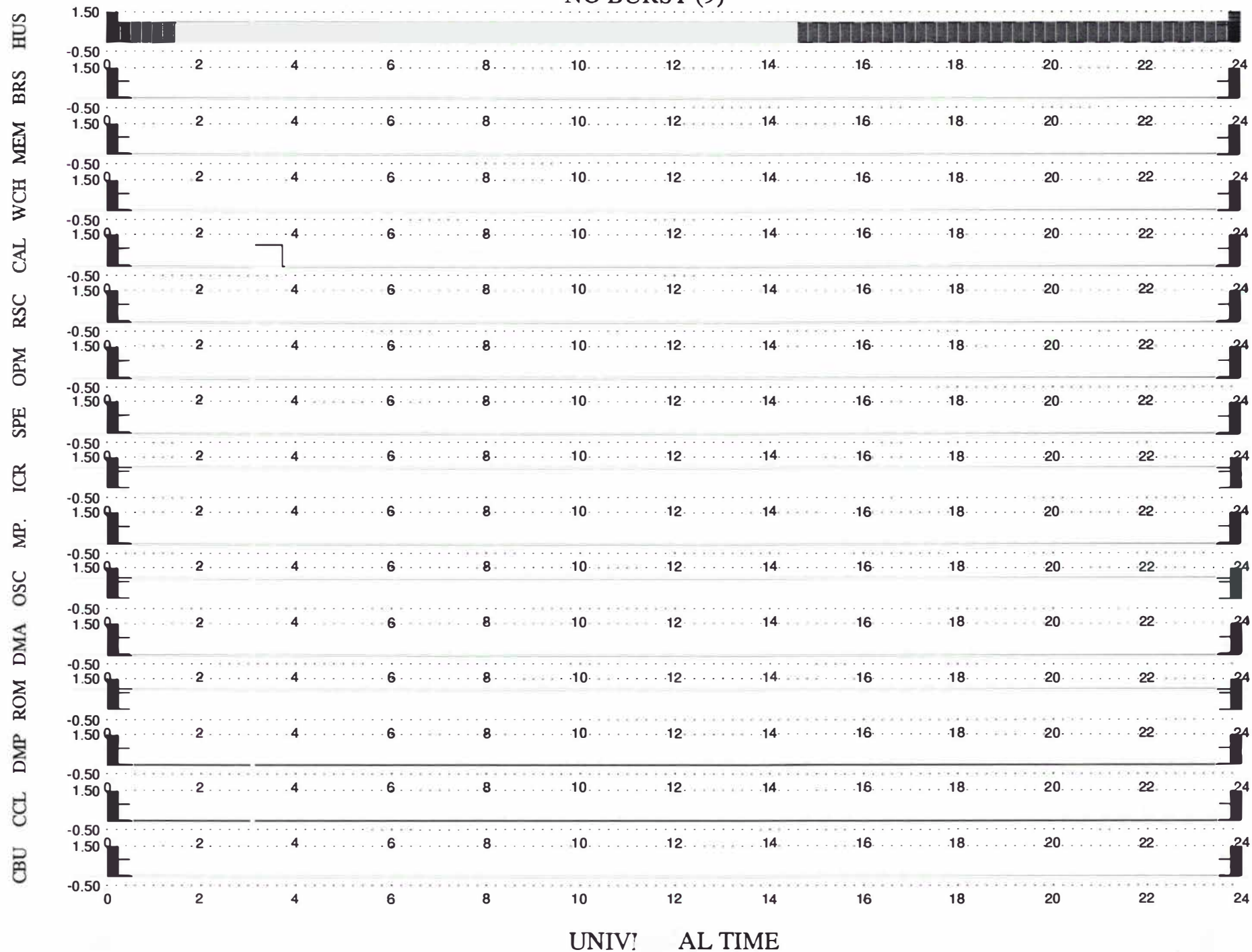
1 (1.0 - 8.0 Angstroms)

Background not subtracted

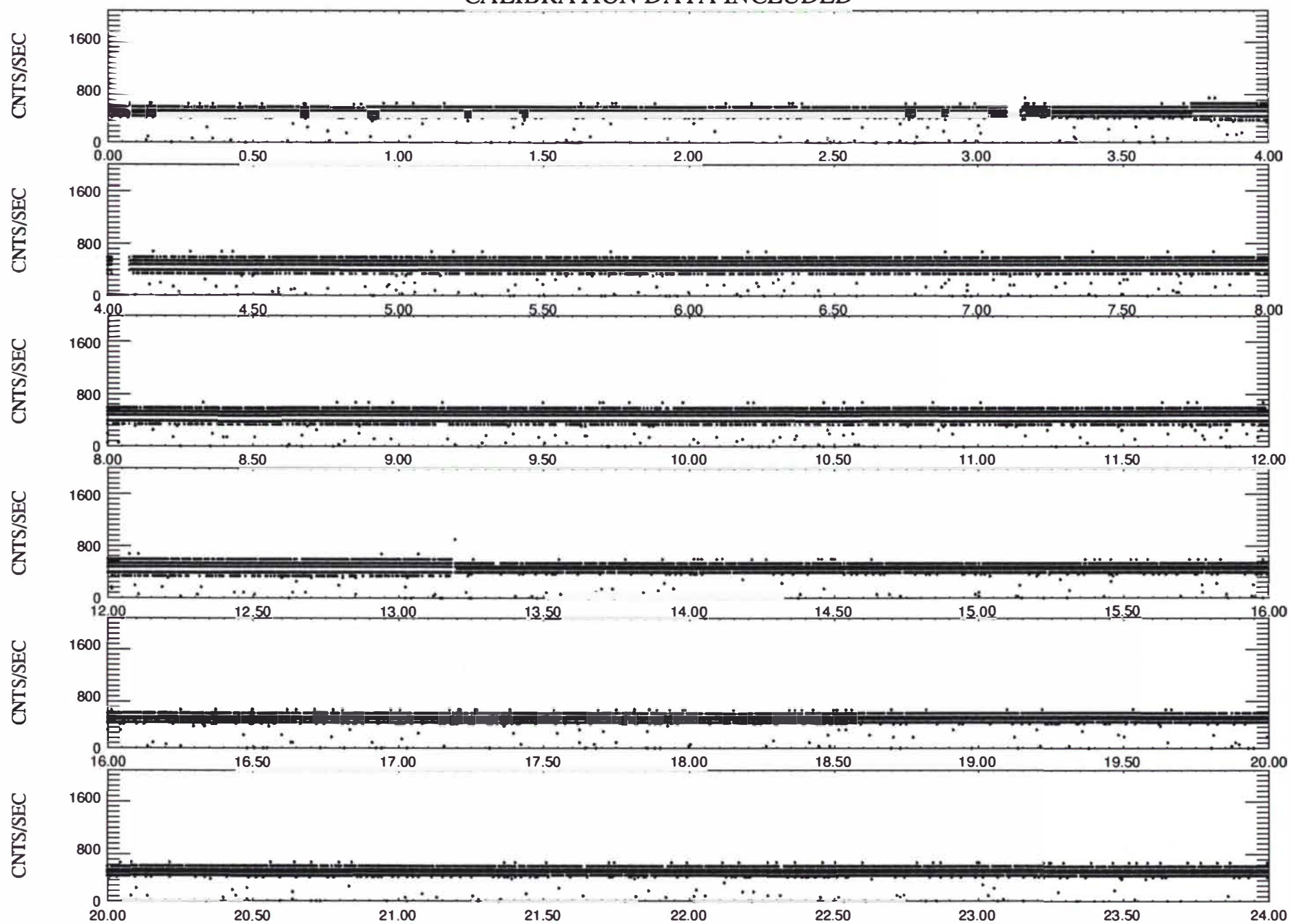
2 (0.5 - 4.0 Angstroms)

Background not subtracted

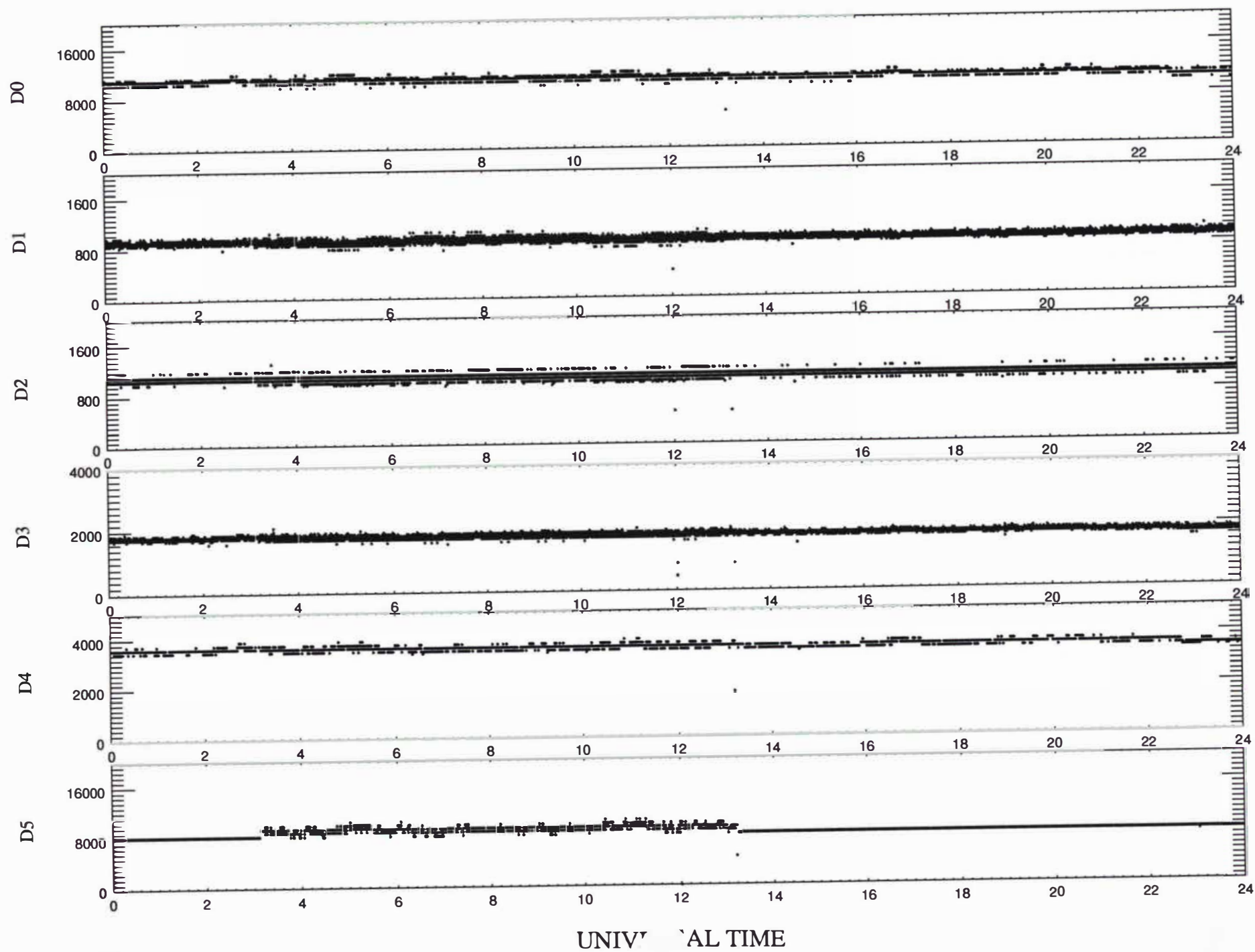
Sample average = 10



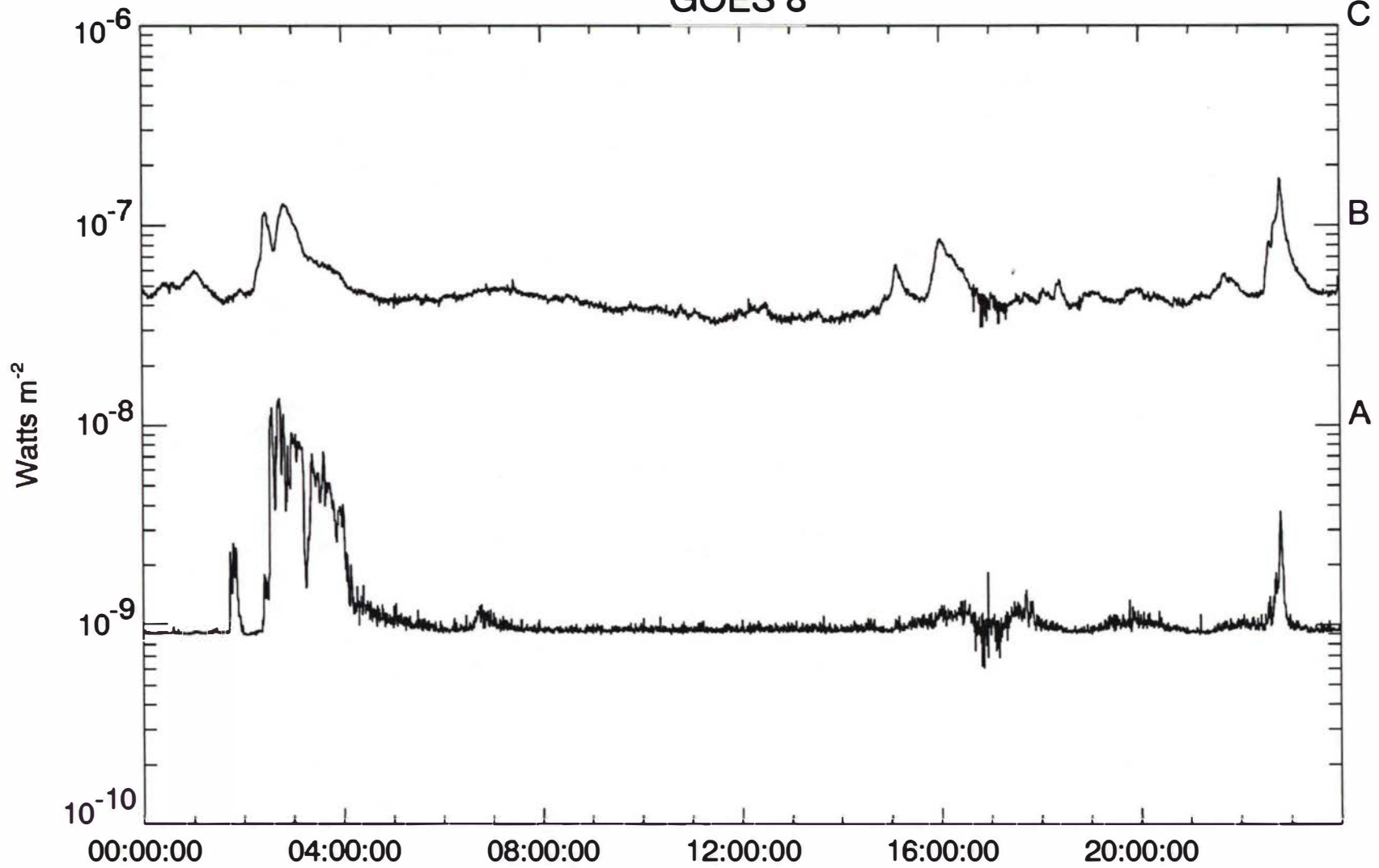
CALIBRATION DATA INCLUDED



UNIV'AL TIME



GOES 8



Data Start: 97/10/26, 0000:00

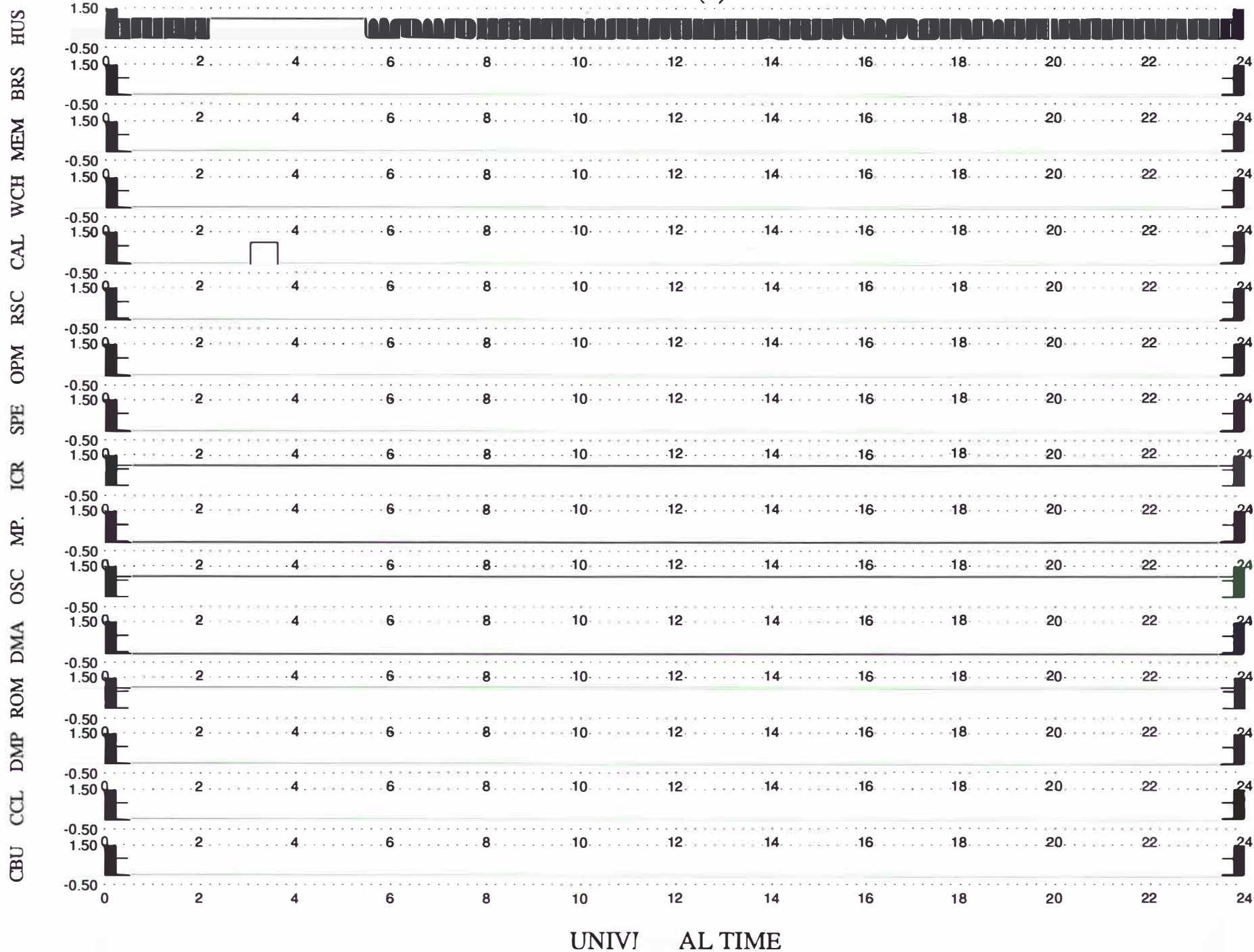
Plot created: 97/10/30, 1008

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

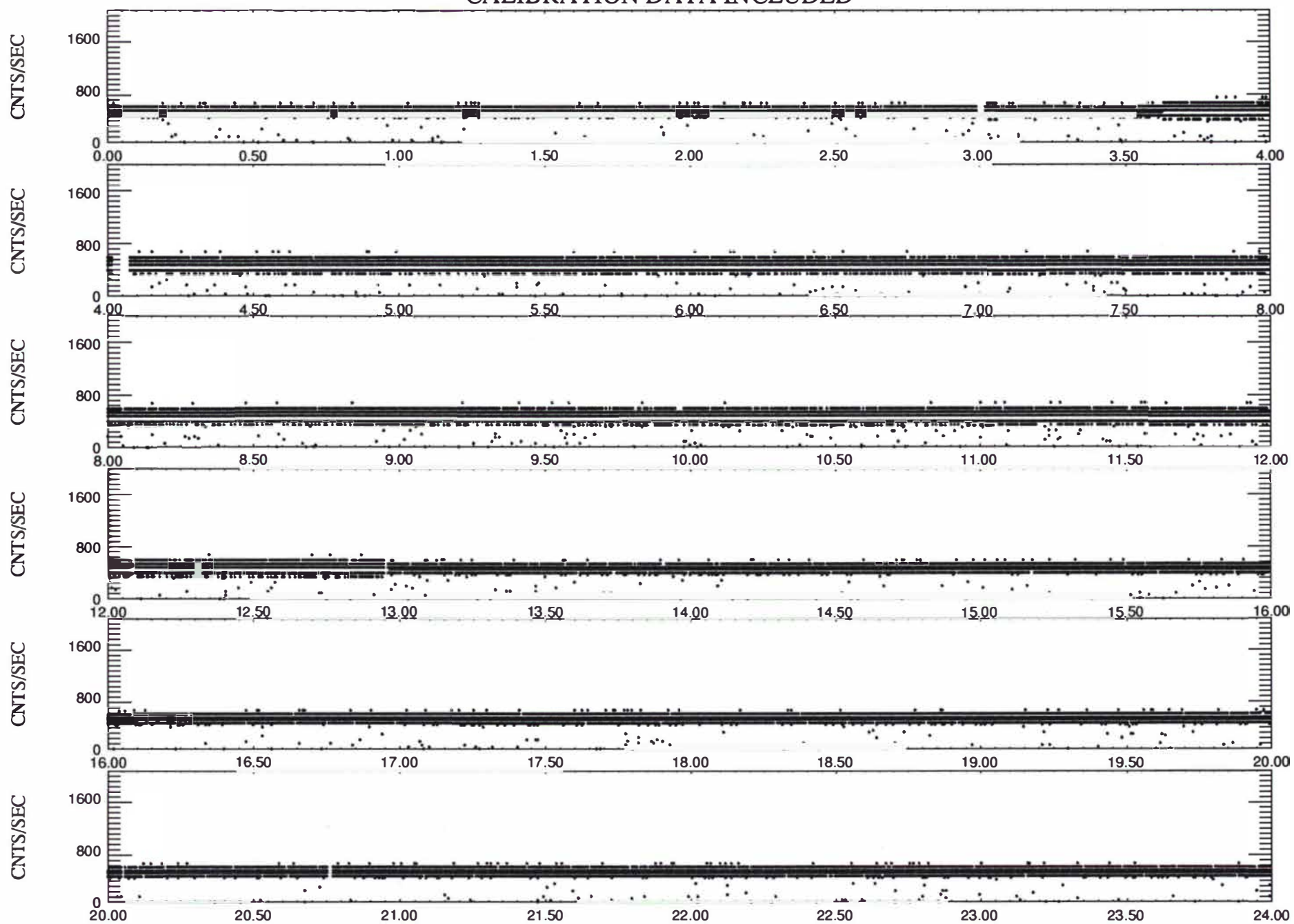
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

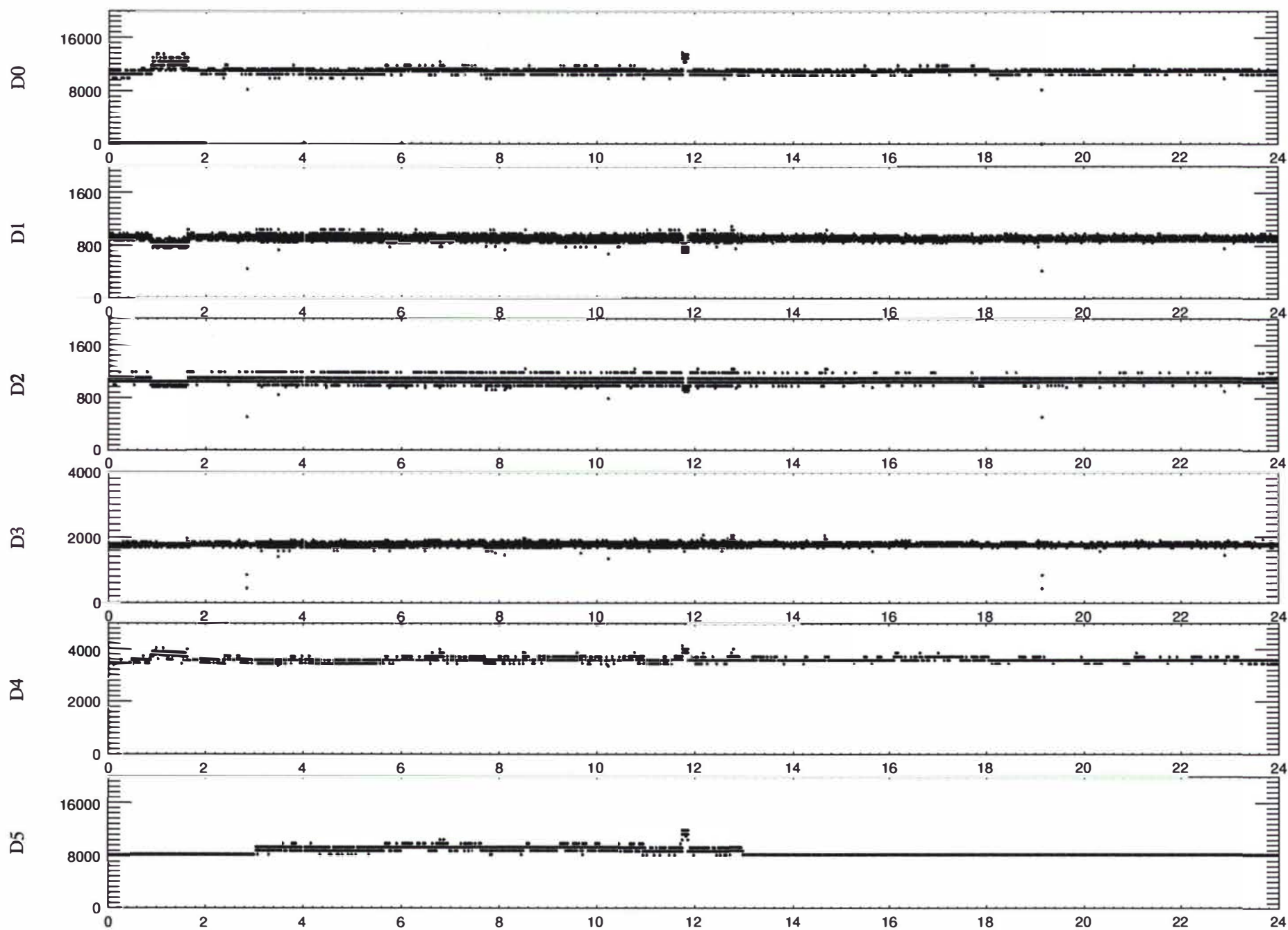
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV'AL TIME

From RICHARDSON@SSLMOR.msfc.nasa.gov Wed Oct 29 11:27:55 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 LAA18214; Wed, 29 Oct 1997 11:27:49 -0800
From: RICHARDSON@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA24067; Wed, 29 Oct 1997 11:27:29 -0800
Date: Wed, 29 Oct 1997 12:51:49 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971029125149.21e0511f@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6451
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6451
EVENT OF 1997 OCT 27 DAY OF YEAR=300
EVENT CROSSING TIME AT BATSE : 9473. S. OR 02:37:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 121.000 -8.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/10/ 97 IS:
RA= 168.620 DEC= 14.156 DIST= 5.893 AU
BATSE-ULYSSES DISTANCE = 881609583. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=127.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1803.21 SECS.
CROSSING TIME AT ULYSSES IS 7670. S. OR 02:07:49 +/- 425.92 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/10/ 97 IS:
RA= 259.192 DEC= -24.278 DIST= 1.903 AU
MARS-BATSE DISTANCE = 284688640. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.00 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 584.61 SECS.
CROSSING TIME AT MARS IS 10058. S. OR 02:47:37 +/- 138.80 SECONDS

BATSE BURST TRIGGER

NO.: 6451

TIME: TJD=0748 SECONDS=9473

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.5 AZIMUTH=68.9 ERROR=6.6 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DURATION APPROX. = 2 SEC. NOT VISIBLE ABOVE 300KEV.
UNRELATED UNTRIGGERED EVENT AT APPROX. T+335 SEC. WITH DURATION APPROX. = 25SEC.

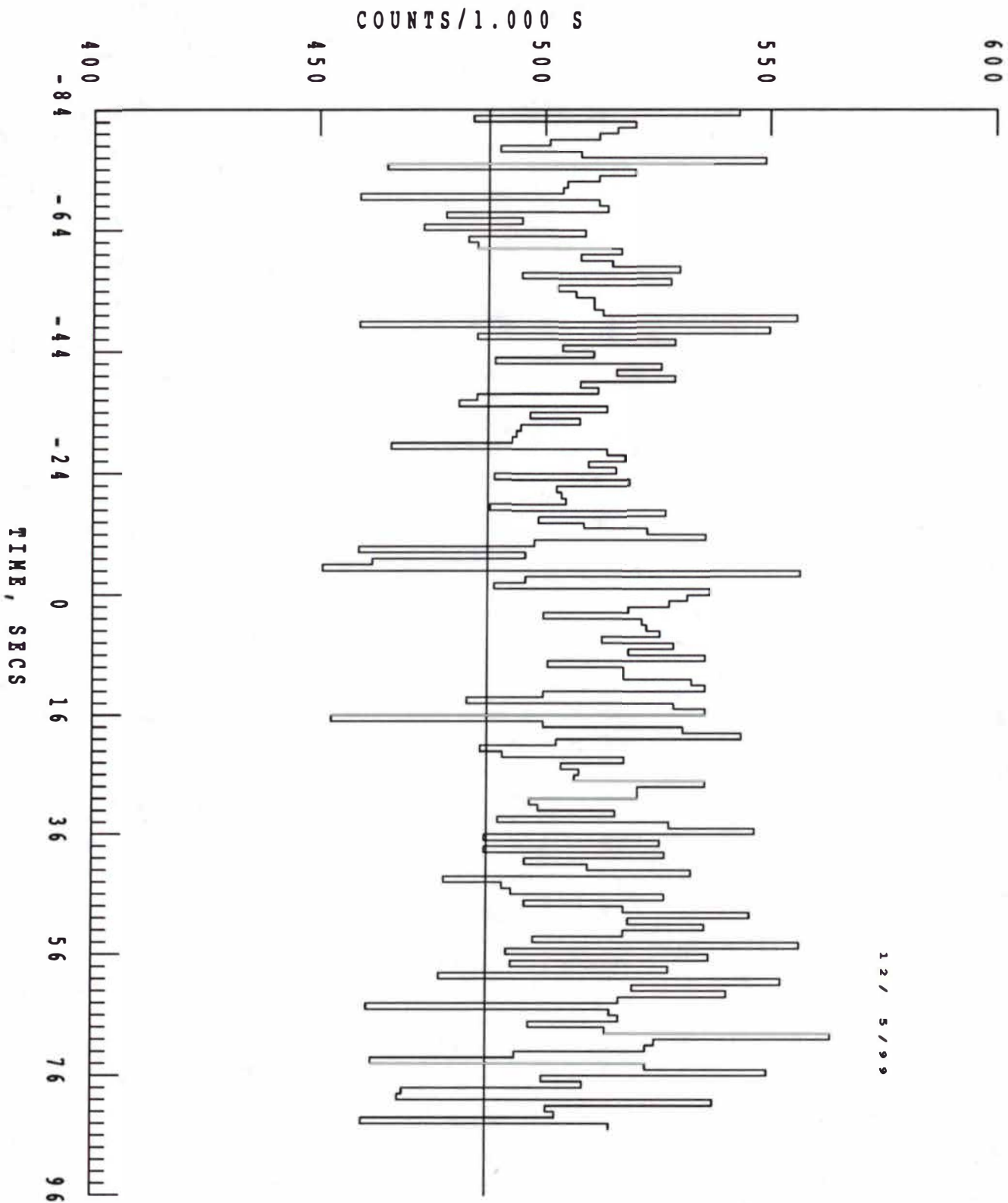
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6451	971027	10748	09473	3000	121	-08	2

NEAR

27/10/97

9293.590

100-1000 keV



BATSE BURST# 6451

ULYSSES RT

29 / 10 / 97

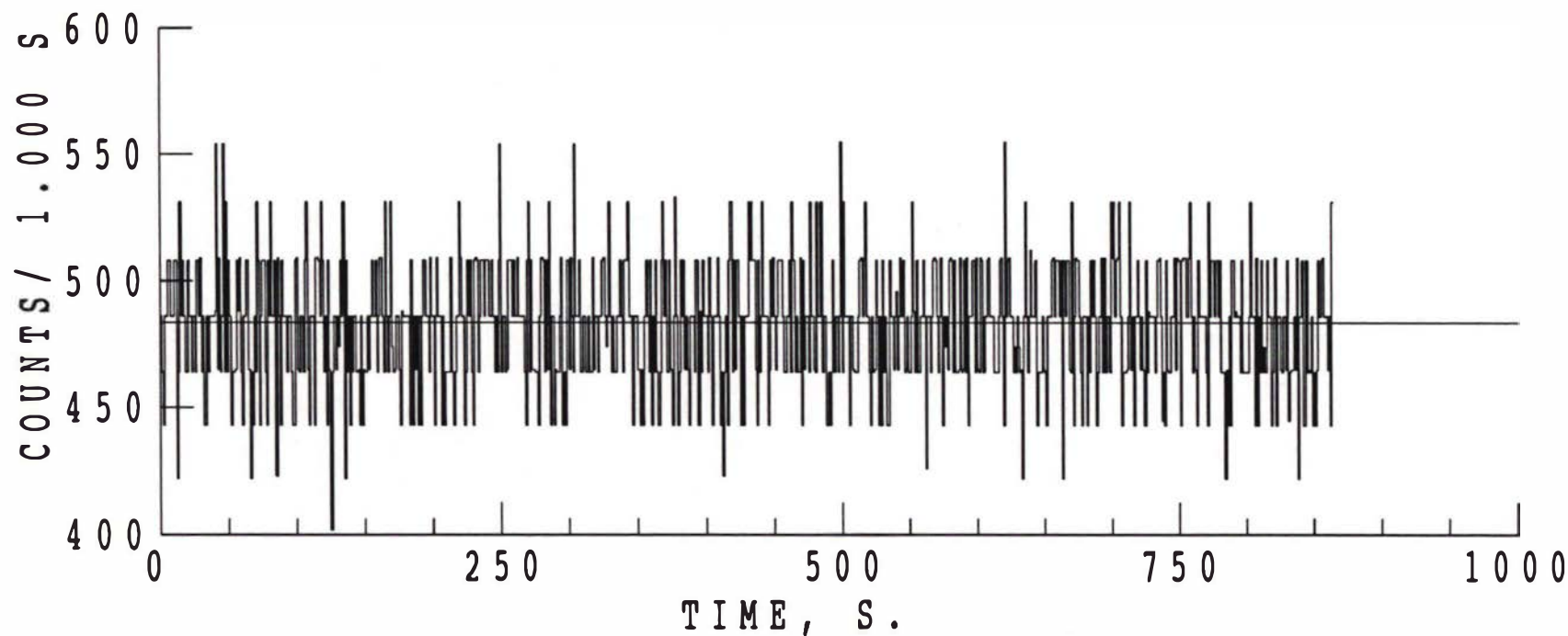
27 / 10 / 97 7236.244 s

0.500 S INTERVALS REGROUPED BY 2

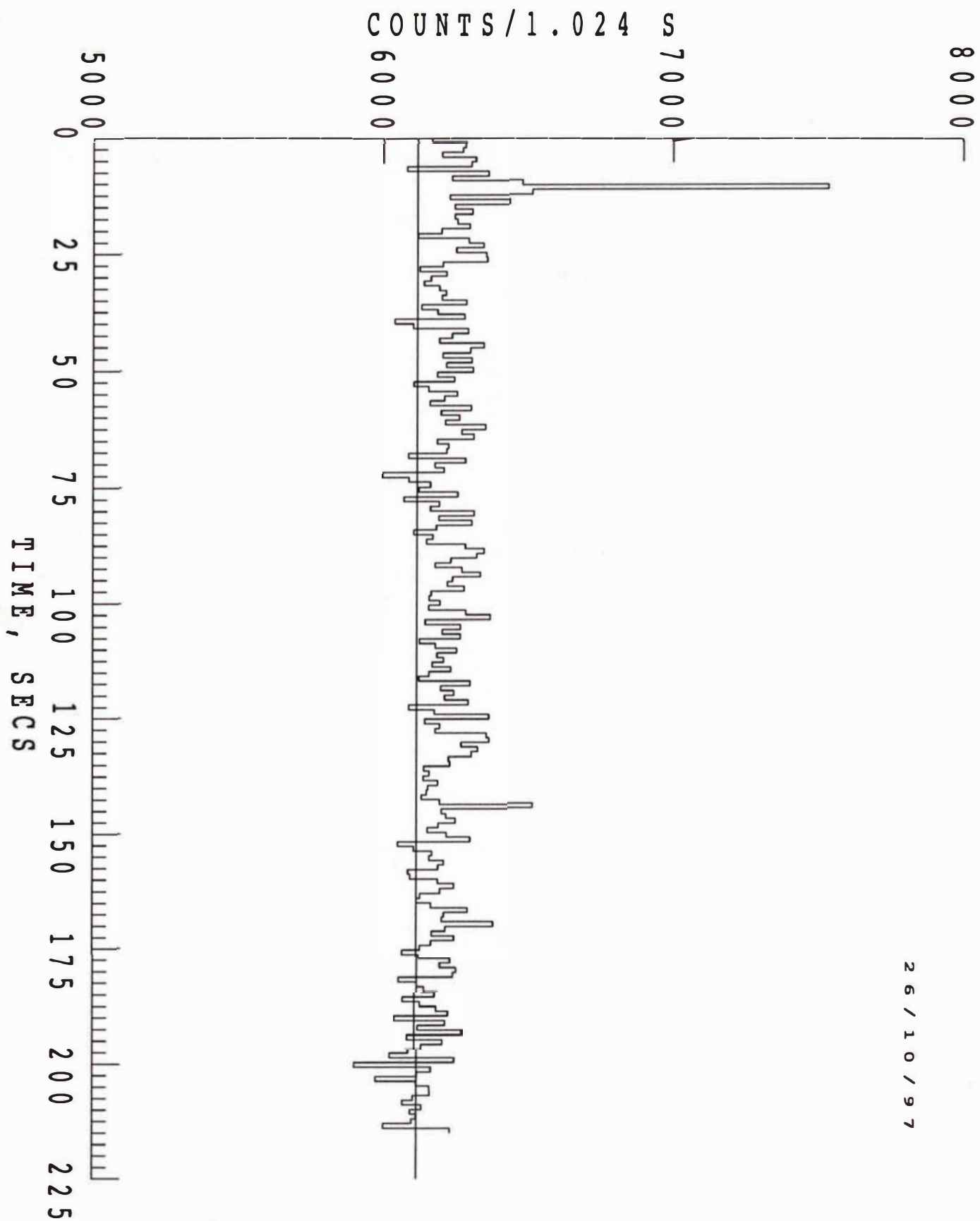
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6451 27/10/97 9462.497
25 - 100 keV



BATSE time corrected 9/26

Date: June 17 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

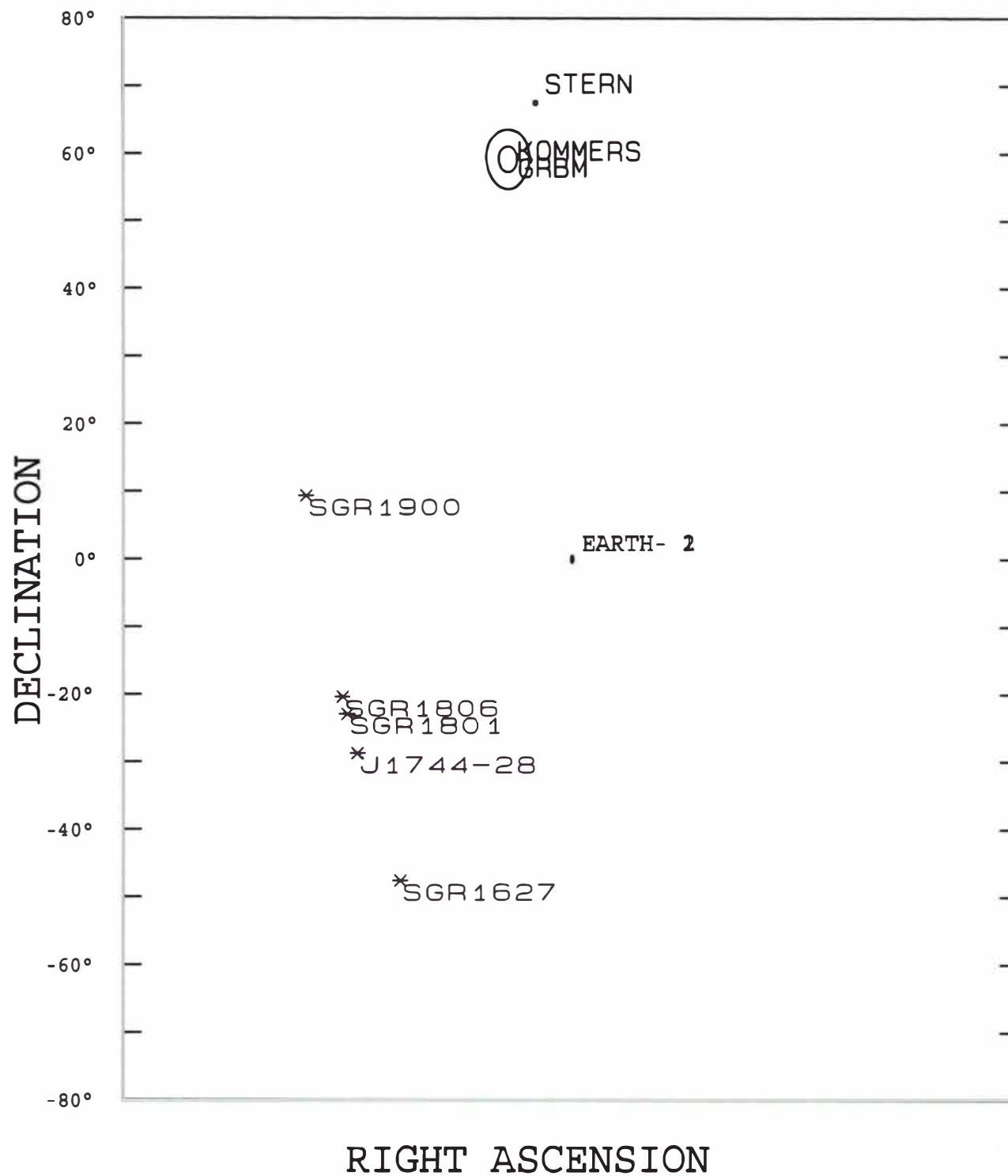
- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? No

2. BATSE Data

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

3. NEAR Data

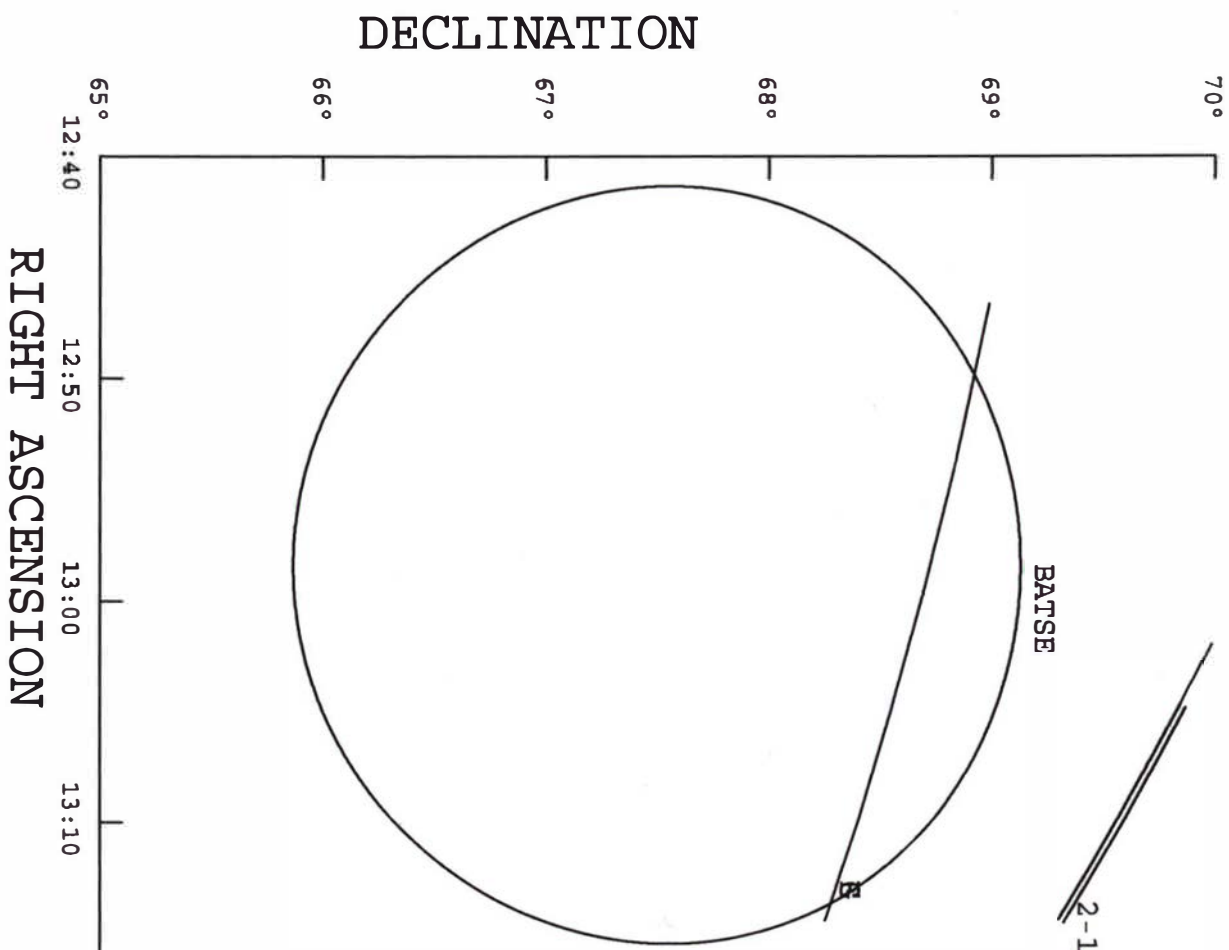
- ☐ Final, correct time used? (Files postmarked vw@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

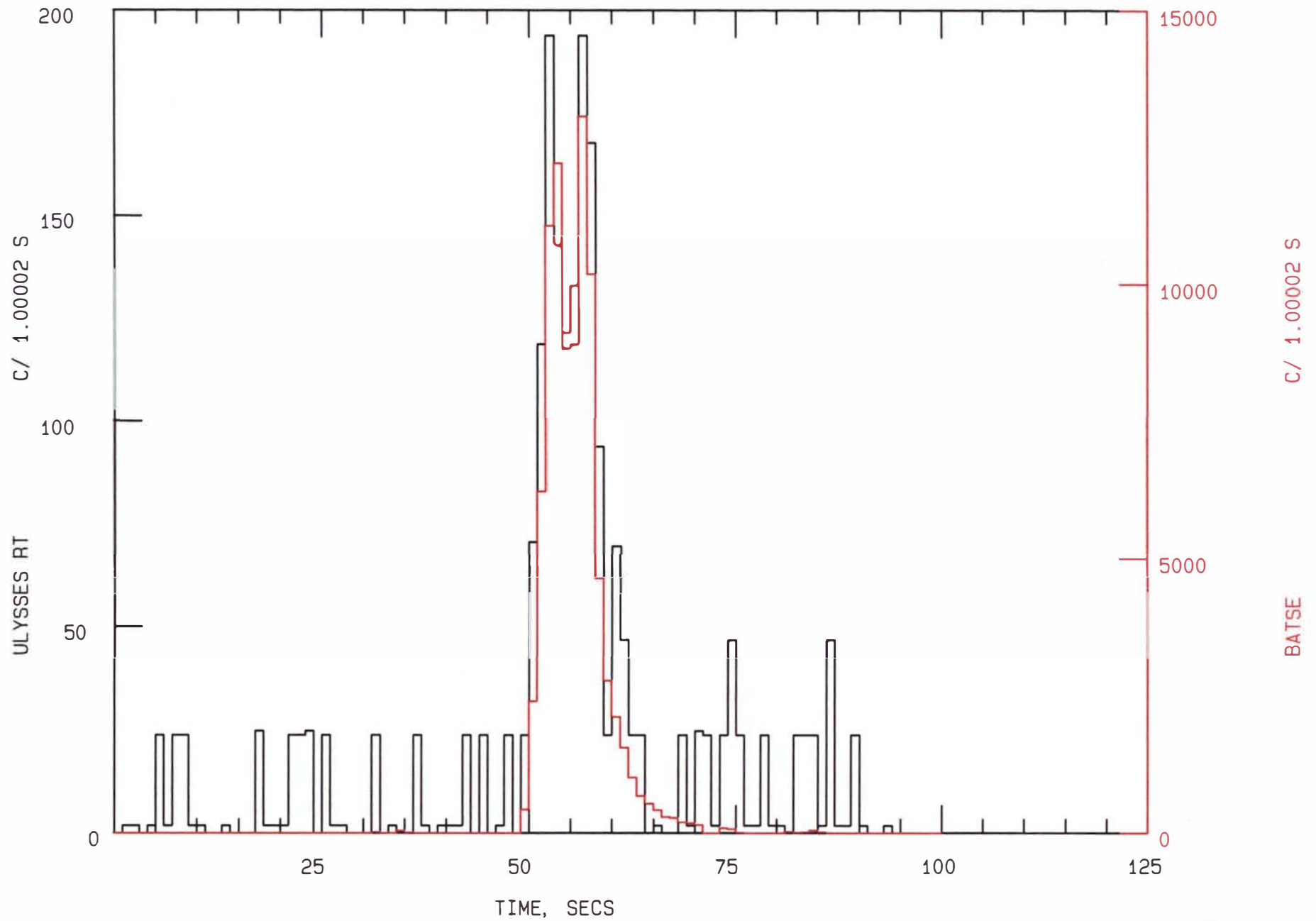


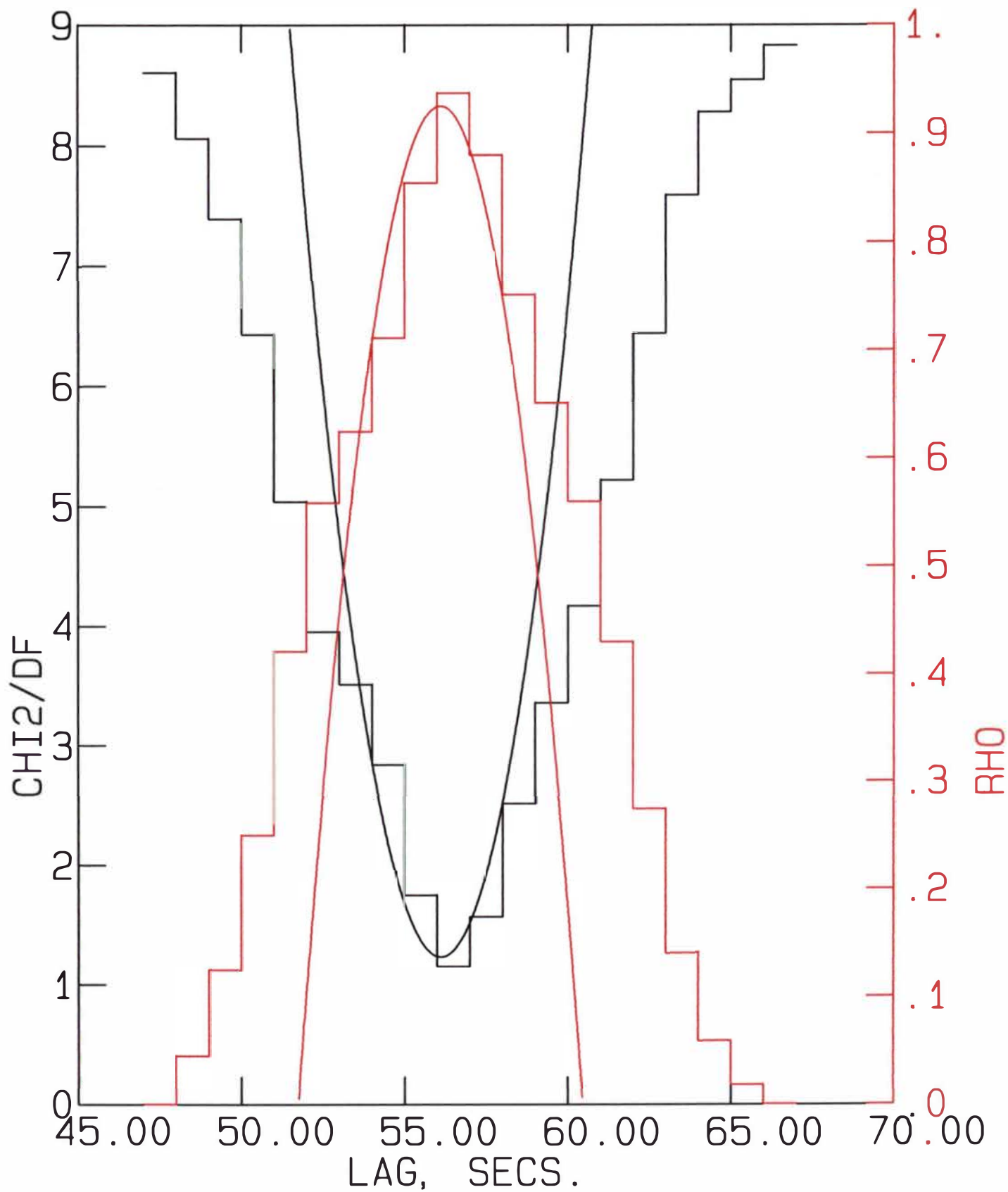
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 BATSE 2 ULYSSES

EVENT OF OCT 27, 1997 2:43

17/ 6/ 2

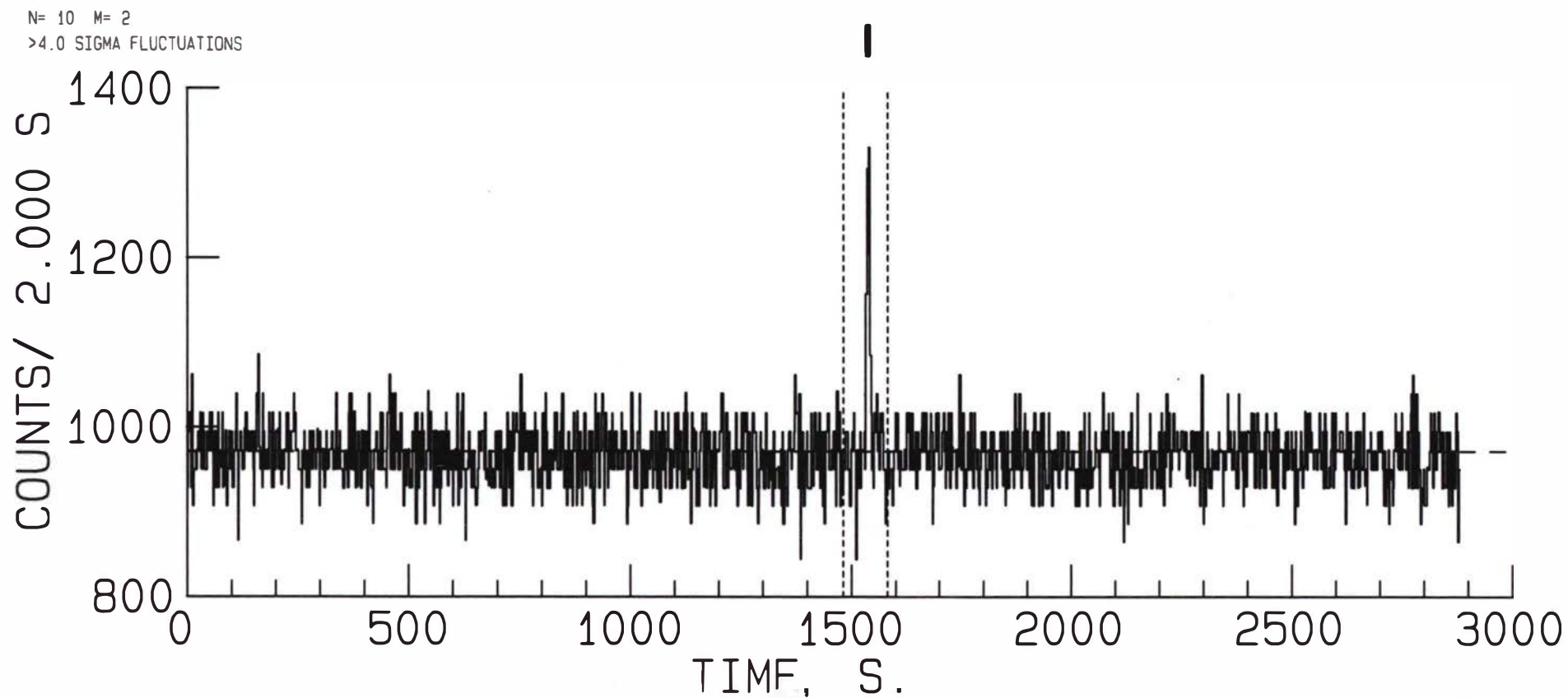






ULYSSES RT
27/10/97 6732.202 s
0.500 S INTERVALS REGROUPED BY 4
27- 187 keV

17 / 6 / 2



grbm 19971027 31945

ULYSSES RT

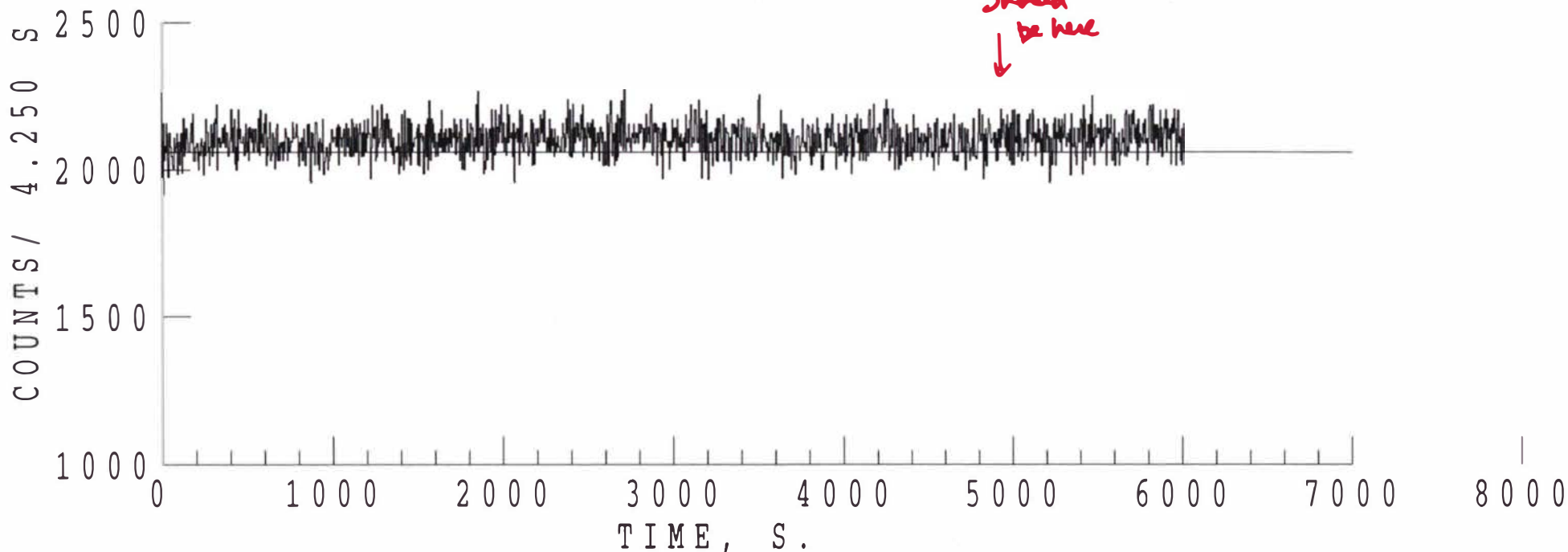
06/05/04

27/10/97 28944.201 s

0.250 S INTERVALS REGROUPED BY 17

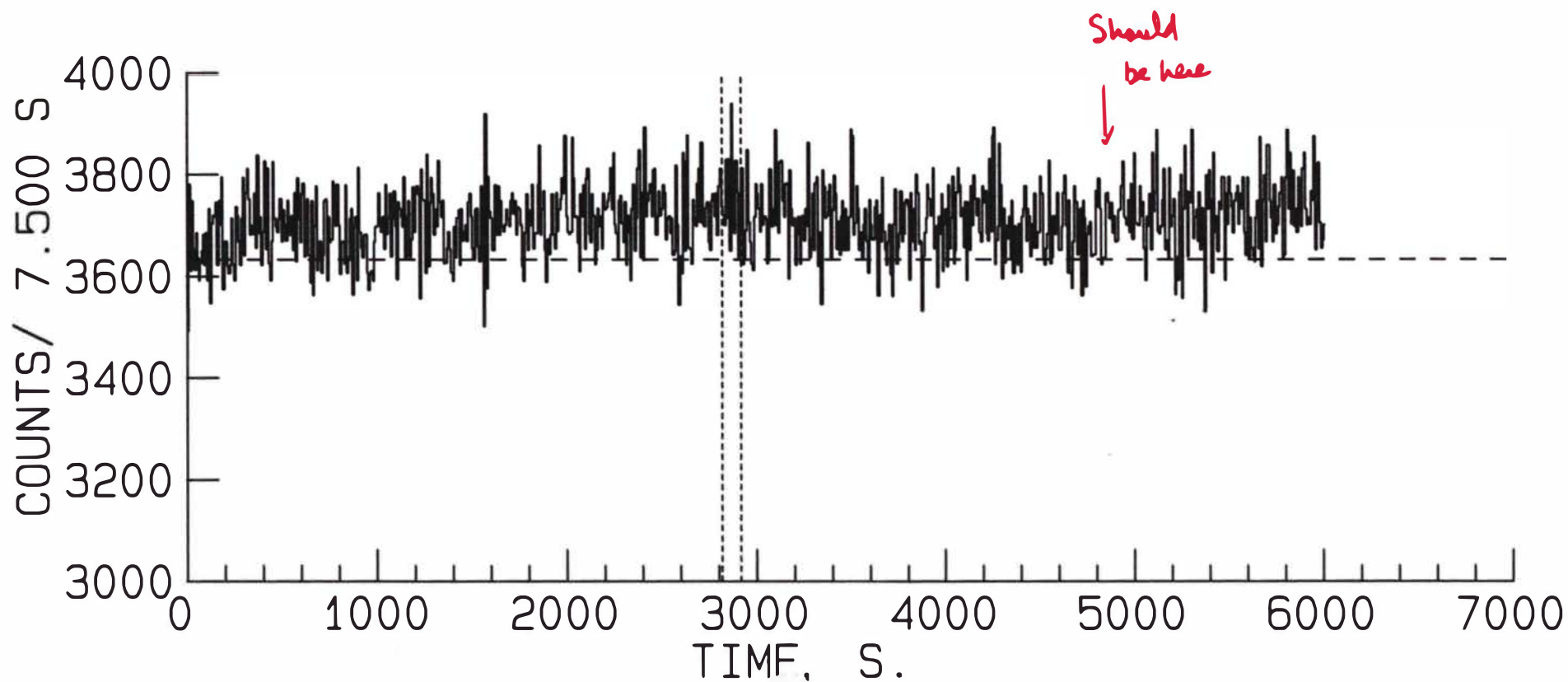
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
27/10/97 28944.201 s
0.250 S INTERVALS REGROUPED BY 30
27- 187 keV

7 / 5 / 4



grbm 19971027 48134

ULYSSES RT

06/05/04

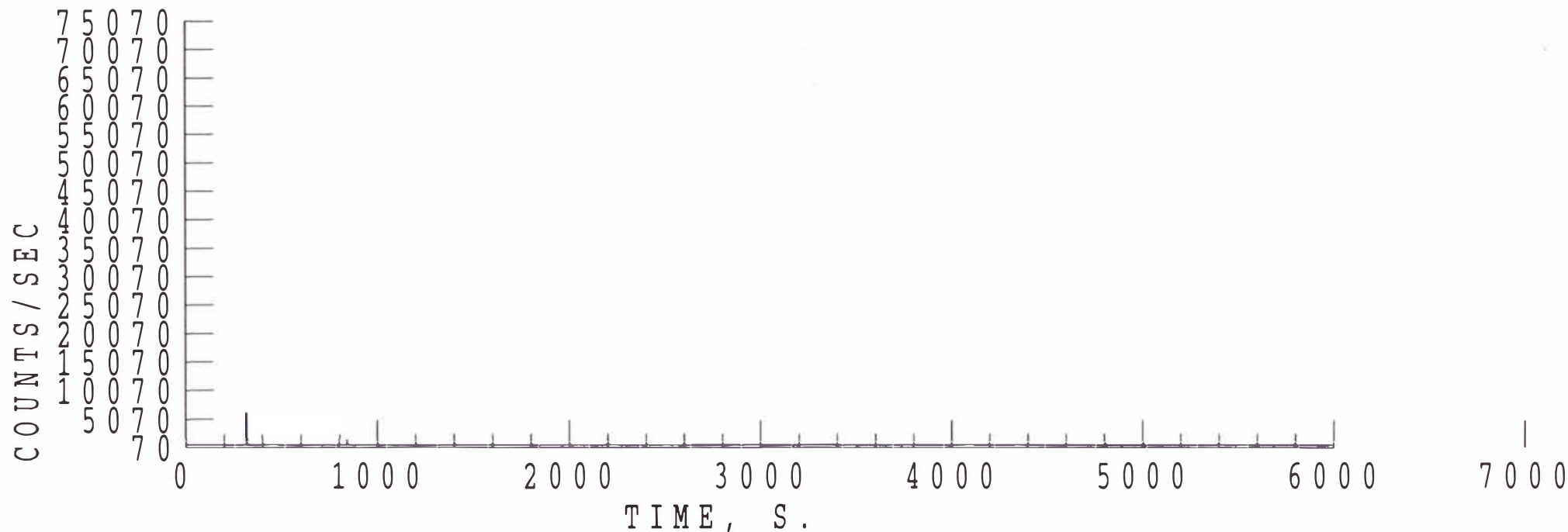
27/10/97 45144.137 s

INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 2

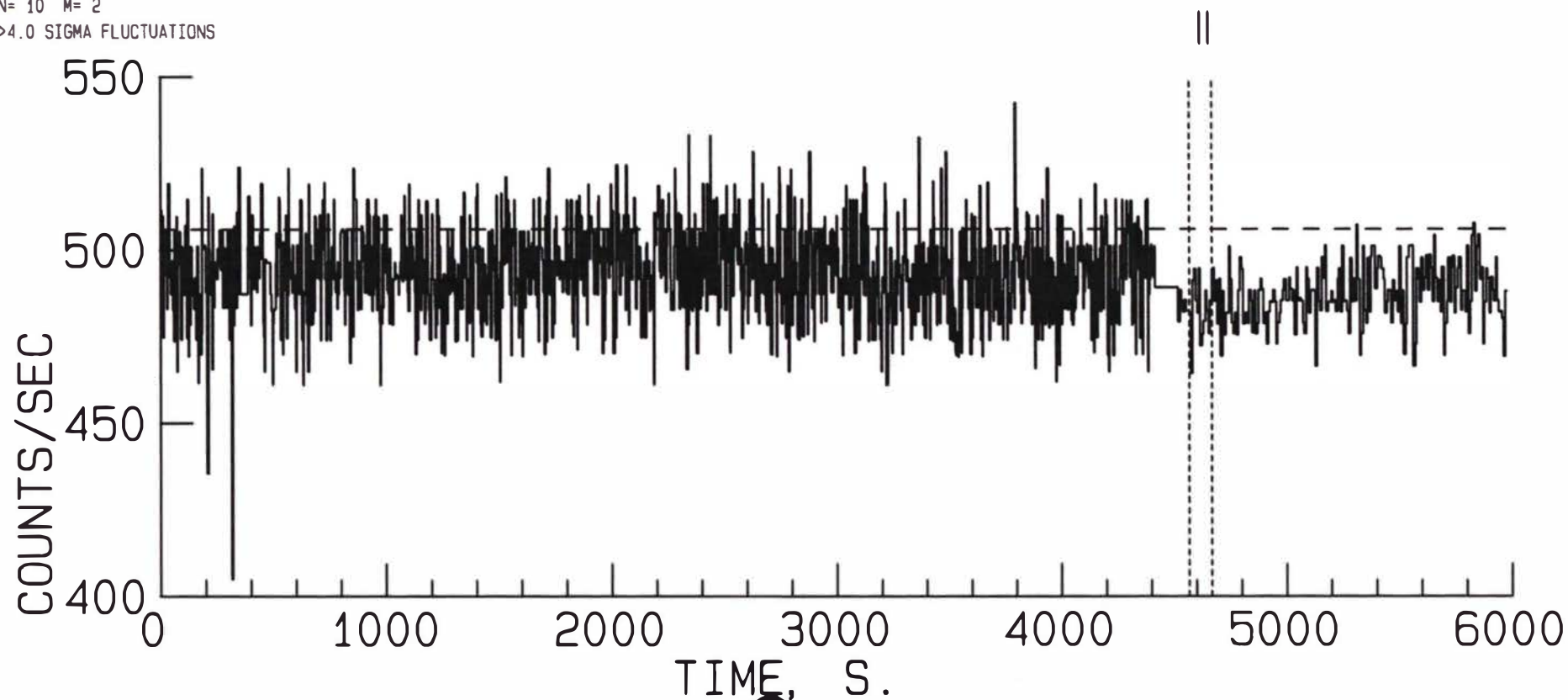
>4.0 SIGMA FLUCTUATIONS



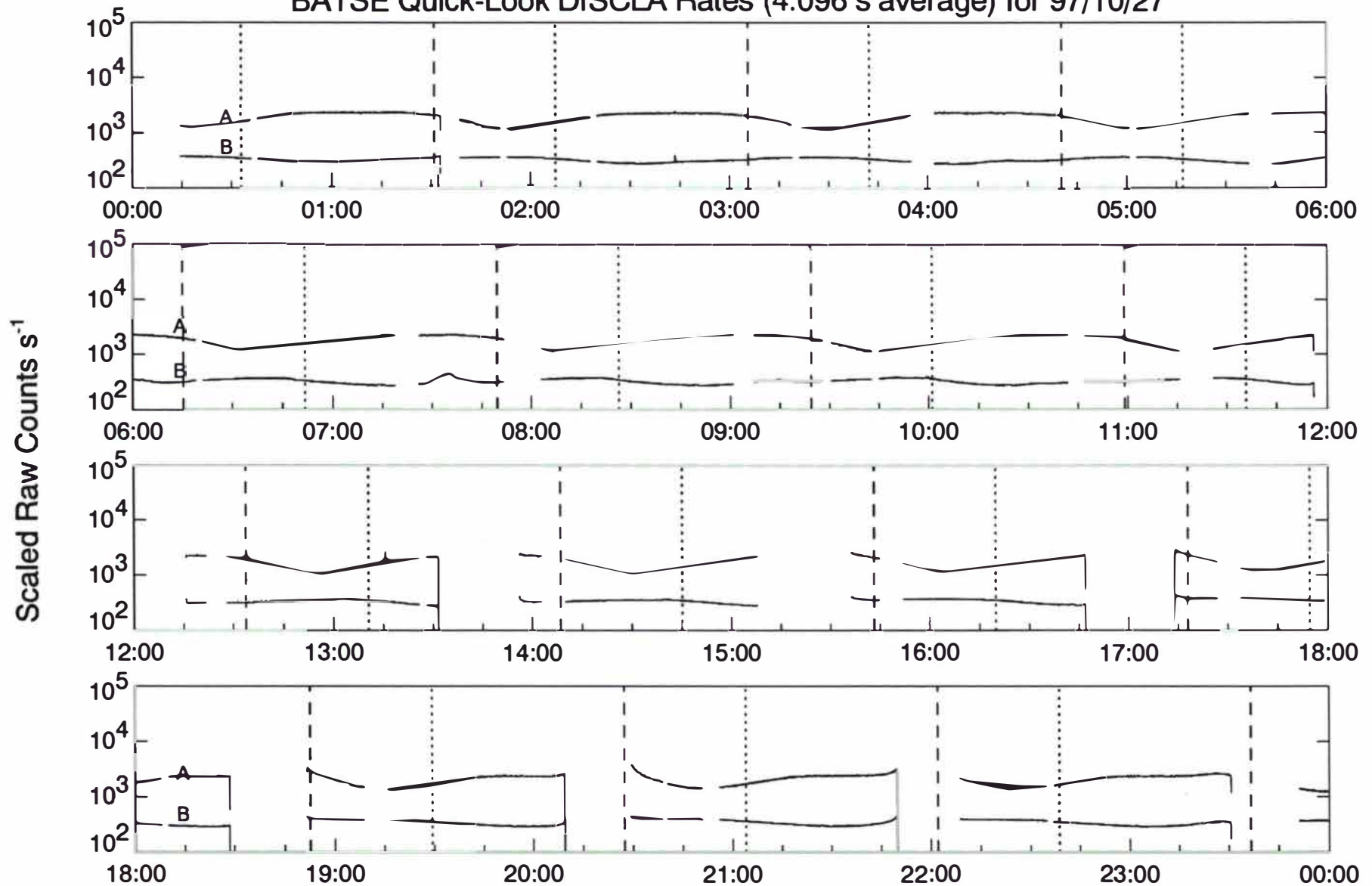
ULYSSES RT
27/10/97 45144.137 s
INTERVALS REGROUPED BY 14
27- 187 keV

7 / 5 / 4

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



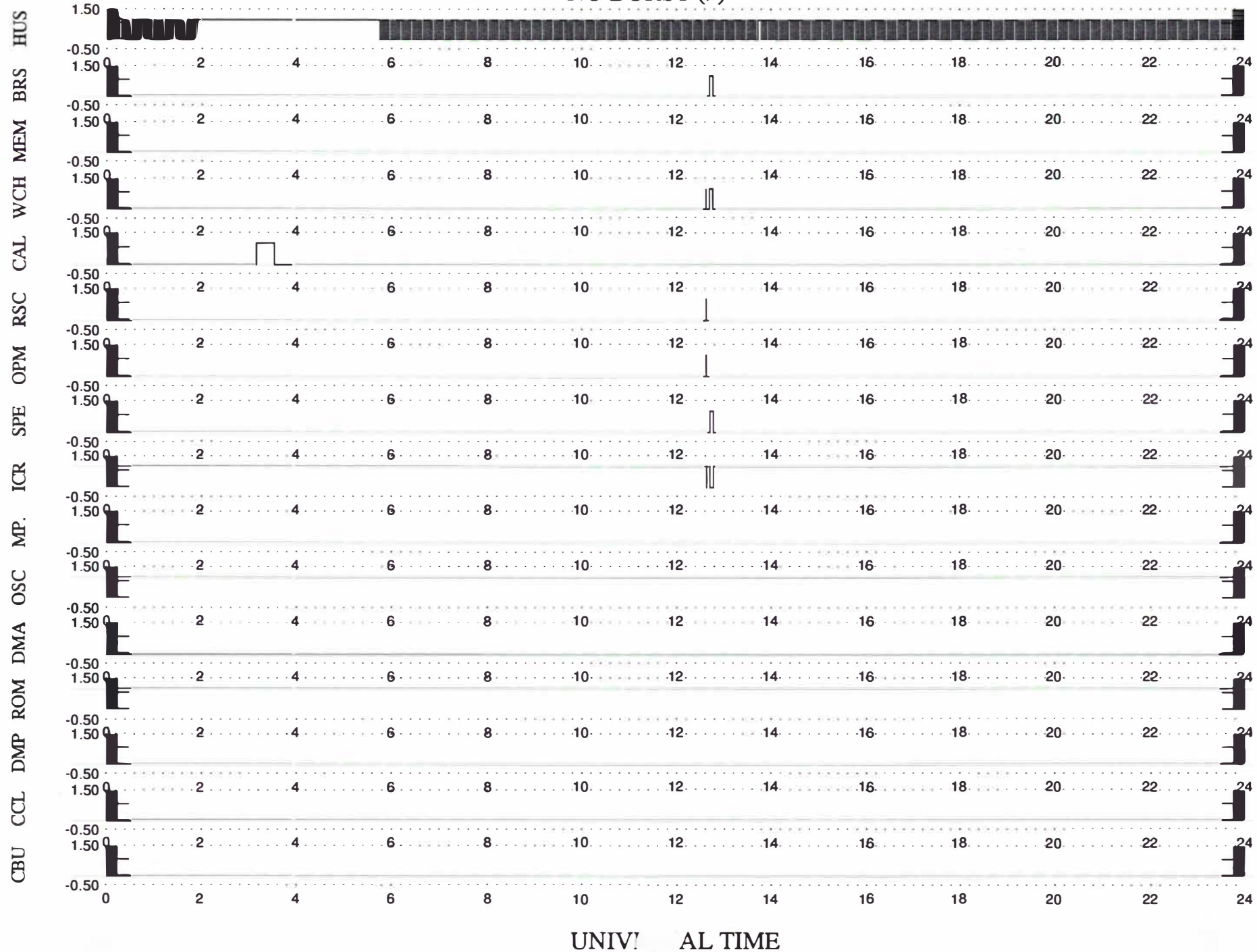
BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/27



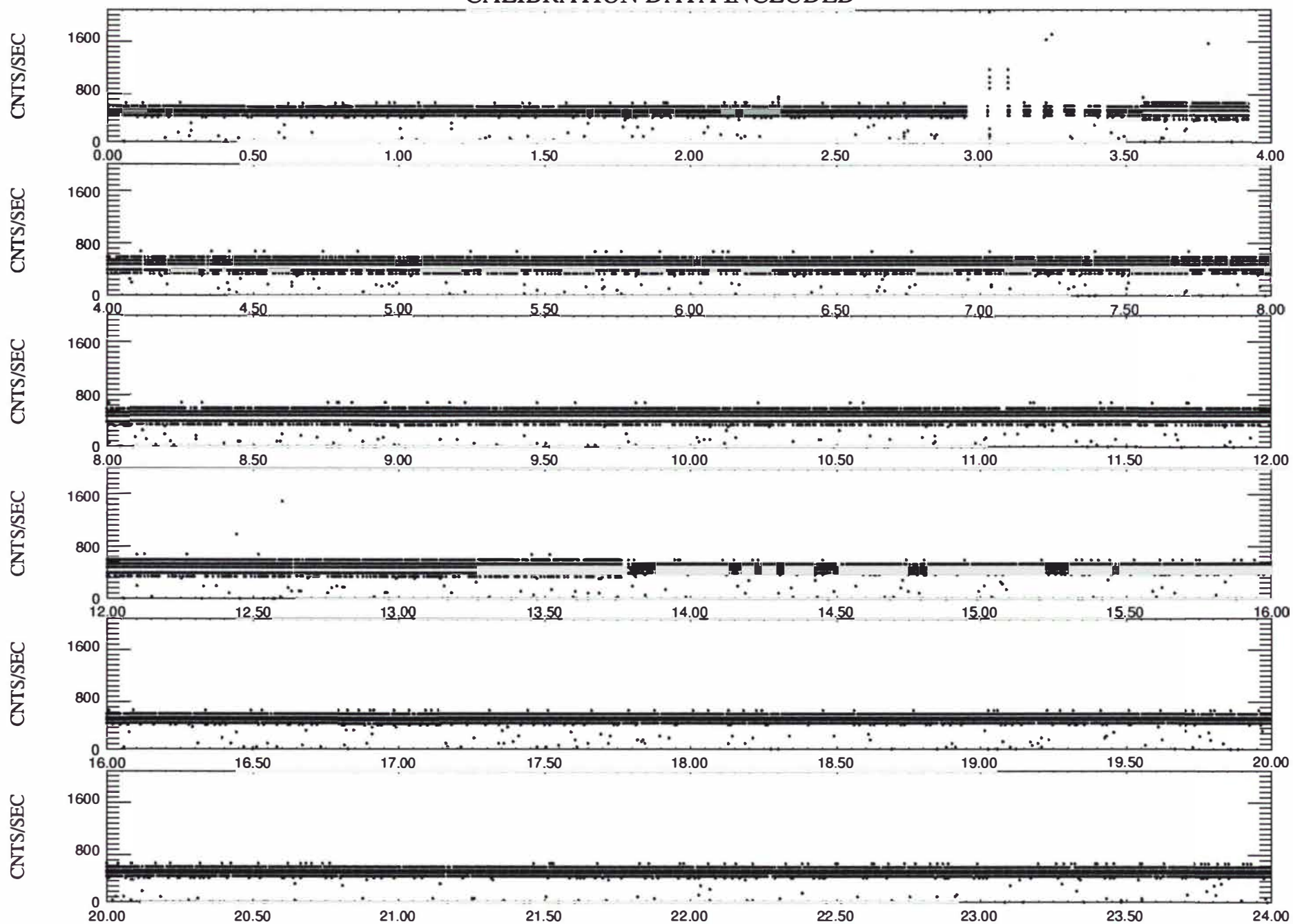
Current Time: 97/10/31, 1019 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

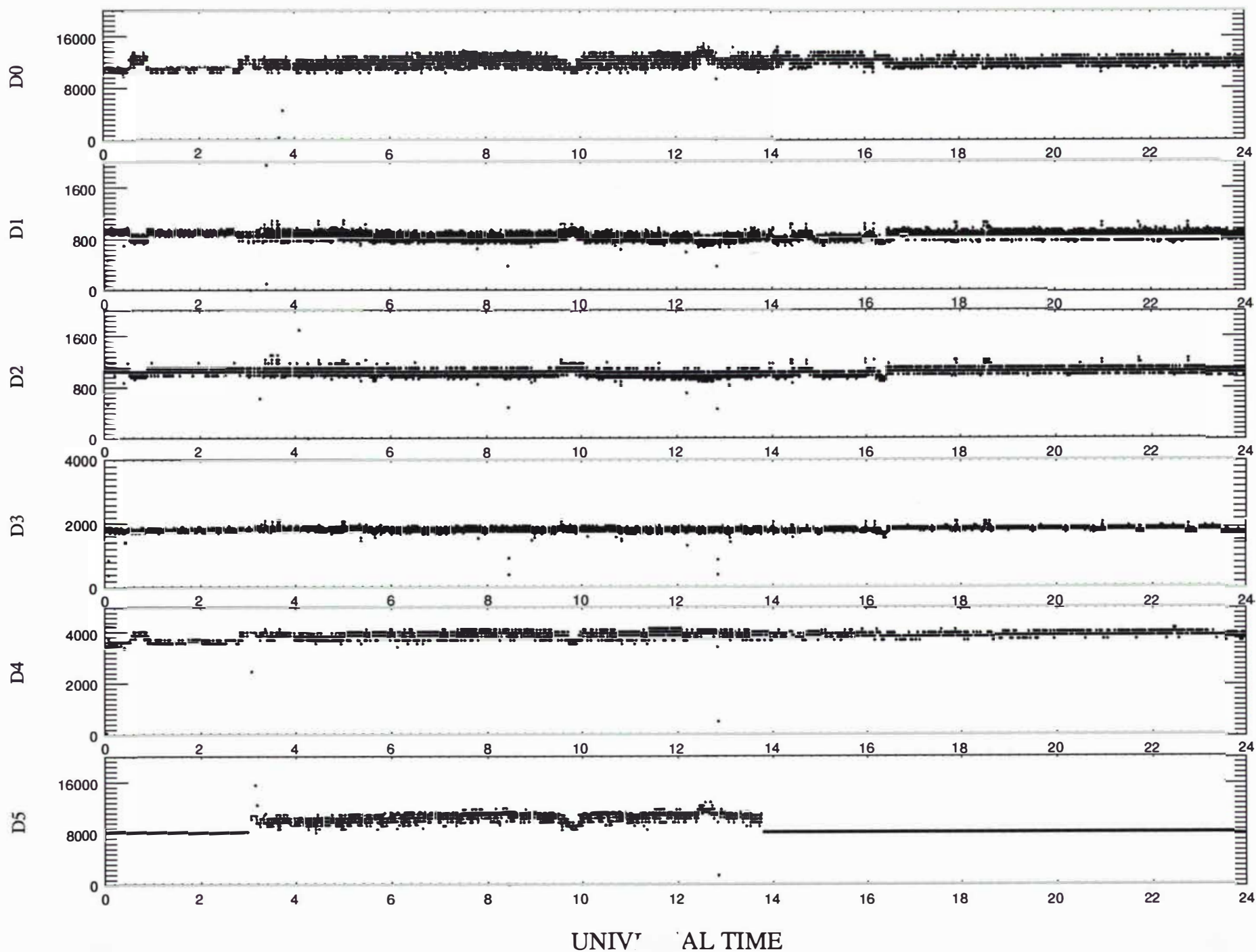
* Solar Burst Trigger
+ Solar Flare



CALIBRATION DATA INCLUDED



UNIV 'AL TIME



From SURASAK@SSLLES.MSFC.NASA.GOV Thu Oct 30 09:36:23 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 JAA13534; Thu, 30 Oct 1997 09:36:16 -0800
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA00681; Thu, 30 Oct 1997 09:34:57 -0800
Date: Thu, 30 Oct 1997 11:26:27 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971030112628.20214af5@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6452
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6452
EVENT OF 1997 OCT 28 DAY OF YEAR=301
EVENT CROSSING TIME AT BATSE : 23931. S. OR 06:38:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 199.000 -2.000
BATSE PEAK COUNTING RATE: 3320 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/10/ 97 IS:
RA= 168.730 DEC= 14.078 DIST= 5.879 AU
BATSE-ULYSSES DISTANCE = 879489154. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=145.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2431.18 SECS.
CROSSING TIME AT ULYSSES IS 21500. S. OR 05:58:19 +/- 298.13 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/10/ 97 IS:
RA= 259.999 DEC= -24.335 DIST= 1.907 AU
MARS-BATSE DISTANCE = 285283776. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -433.80 SECS.
CROSSING TIME AT MARS IS 23497. S. OR 06:31:37 +/- 140.46 SECONDS

BATSE BURST TRIGGER

NO.: 6452

TIME: TJD=0749 SECONDS=23931

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=68.3 AZIMUTH=348.5 ERROR=13.07 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DURATION ABOUT 0.75 S. NOT VISIBLE ABOVE
300 KEV. POSSIBLE EMISSION AT ABOUT T-2 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6452	971028	10749	23931	3320	199	-02	.75

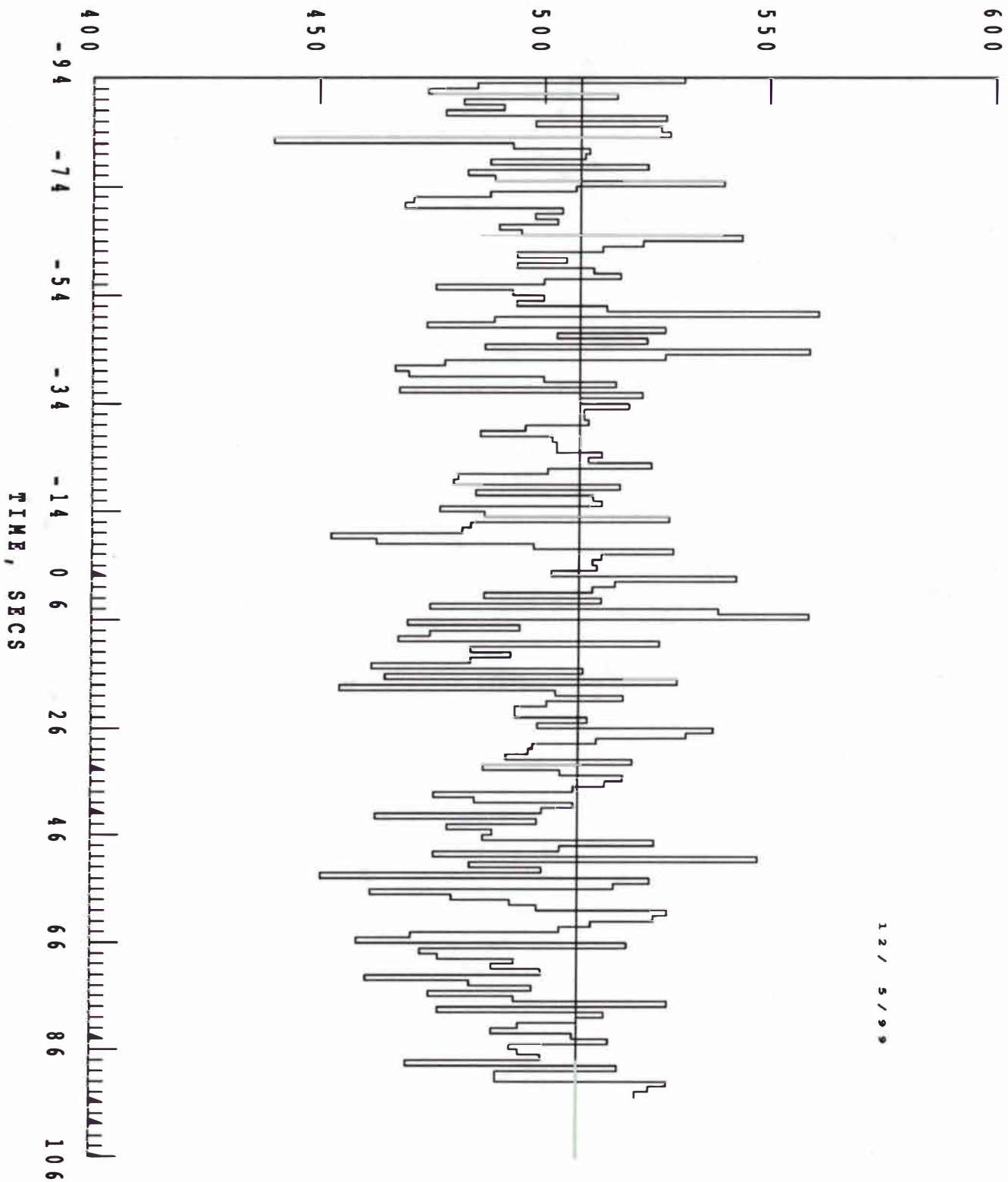
NEAR

28/10/97

24059.570

100-1000 keV

COUNTS/1.000 S



BATSE BURST# 6452

ULYSSES RT

30 / 10 / 97

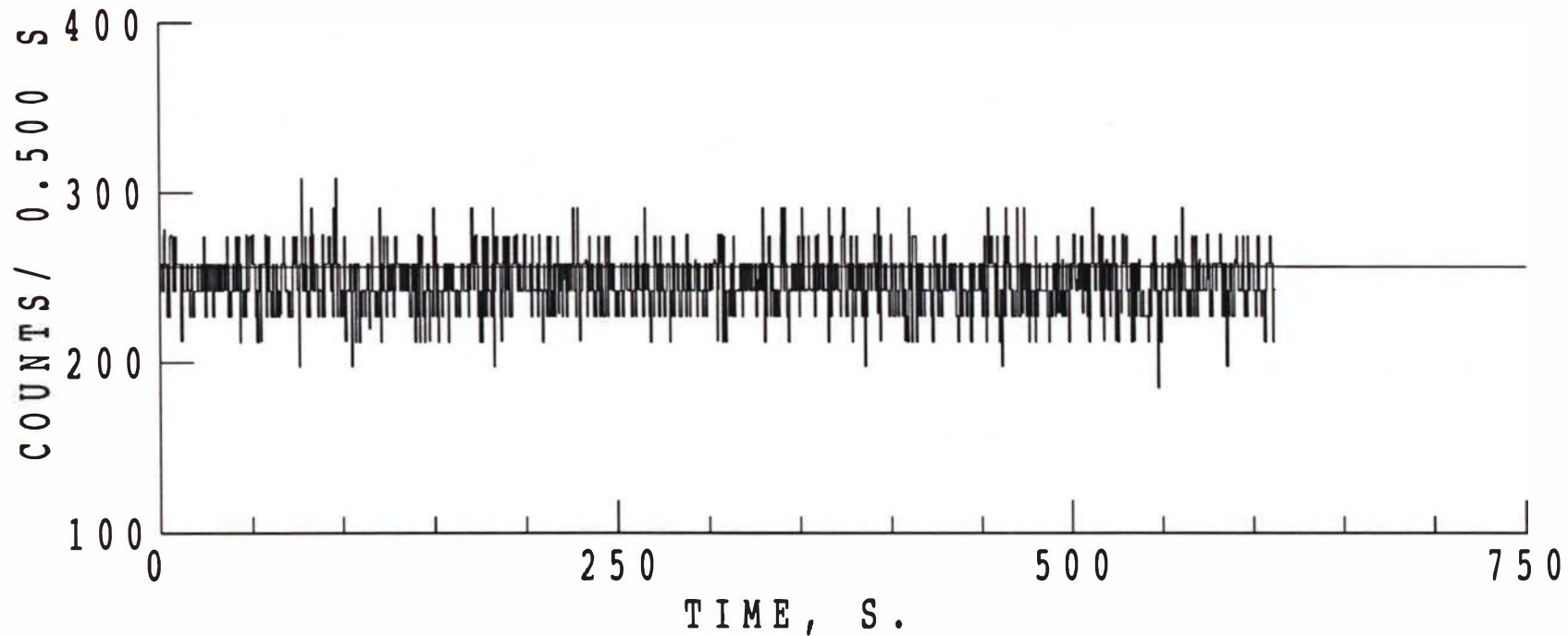
28 / 10 / 97 21204.080 s

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



From BUTTERWORTH@heavx.gsfc.nasa.gov Thu Jan 8 11:23 PST 1998

From: BUTTERWORTH@heavx.gsfc.nasa.gov

Date: Thu, 8 Jan 1998 14:22:31 -0500 (EST)

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@heavx.gsfc.nasa.gov

X-Vmsmail-To: @ULYSSES

X-Vmsmail-Cc: BUTTERWORTH

Subject: Konus summary for events recently reported by Ulysses but not by BATSE

Konus summary for events recently reported by Ulysses but not seen by 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 was 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 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

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

Konus triggered at 14:55:54.243 in the South-facing detector. There was a single peak lasting 10 seconds with a lot of substructure.

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

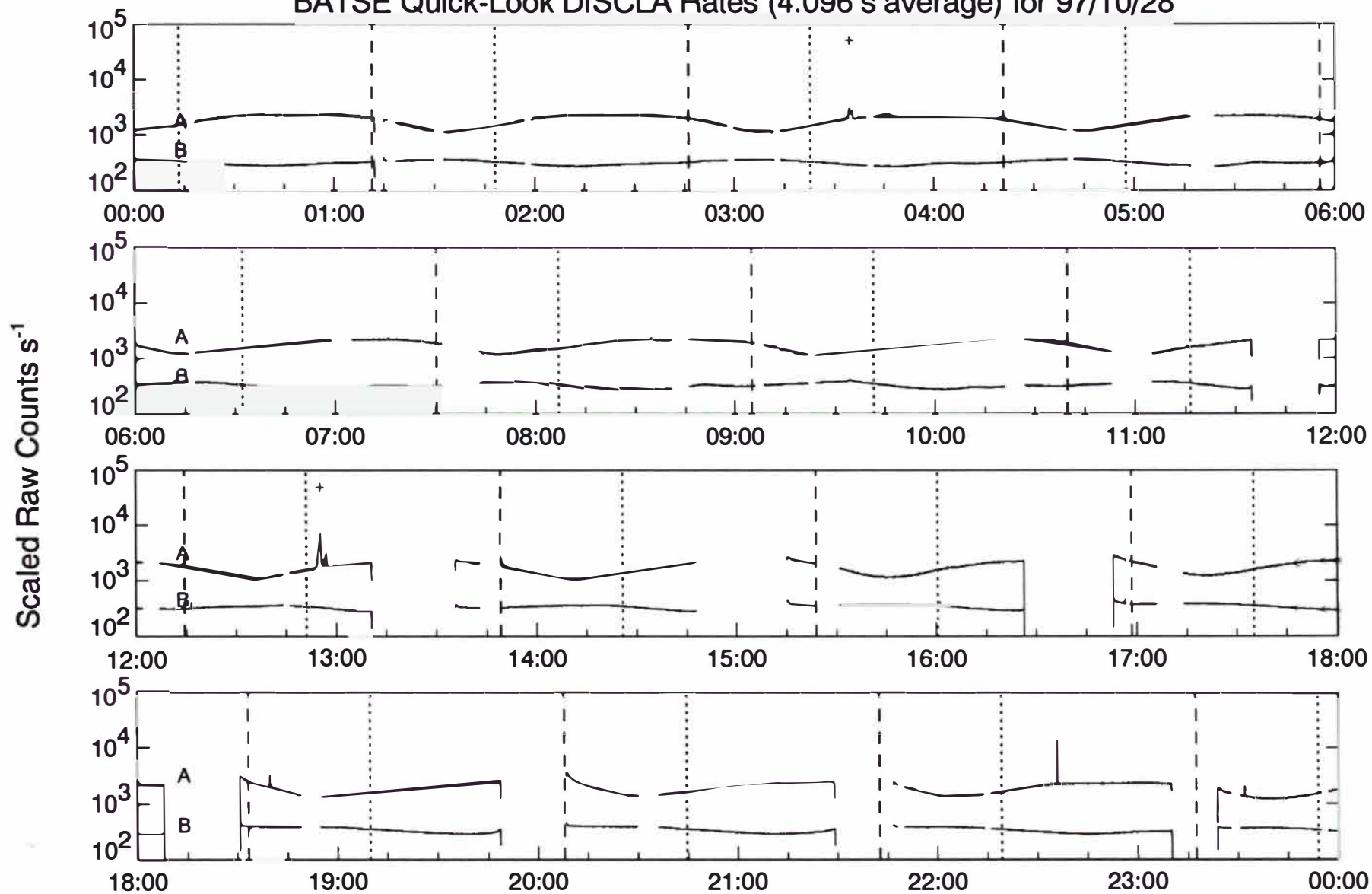
Konus triggered at 01:29:11.805 in the North-facing detector. The event

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.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/28

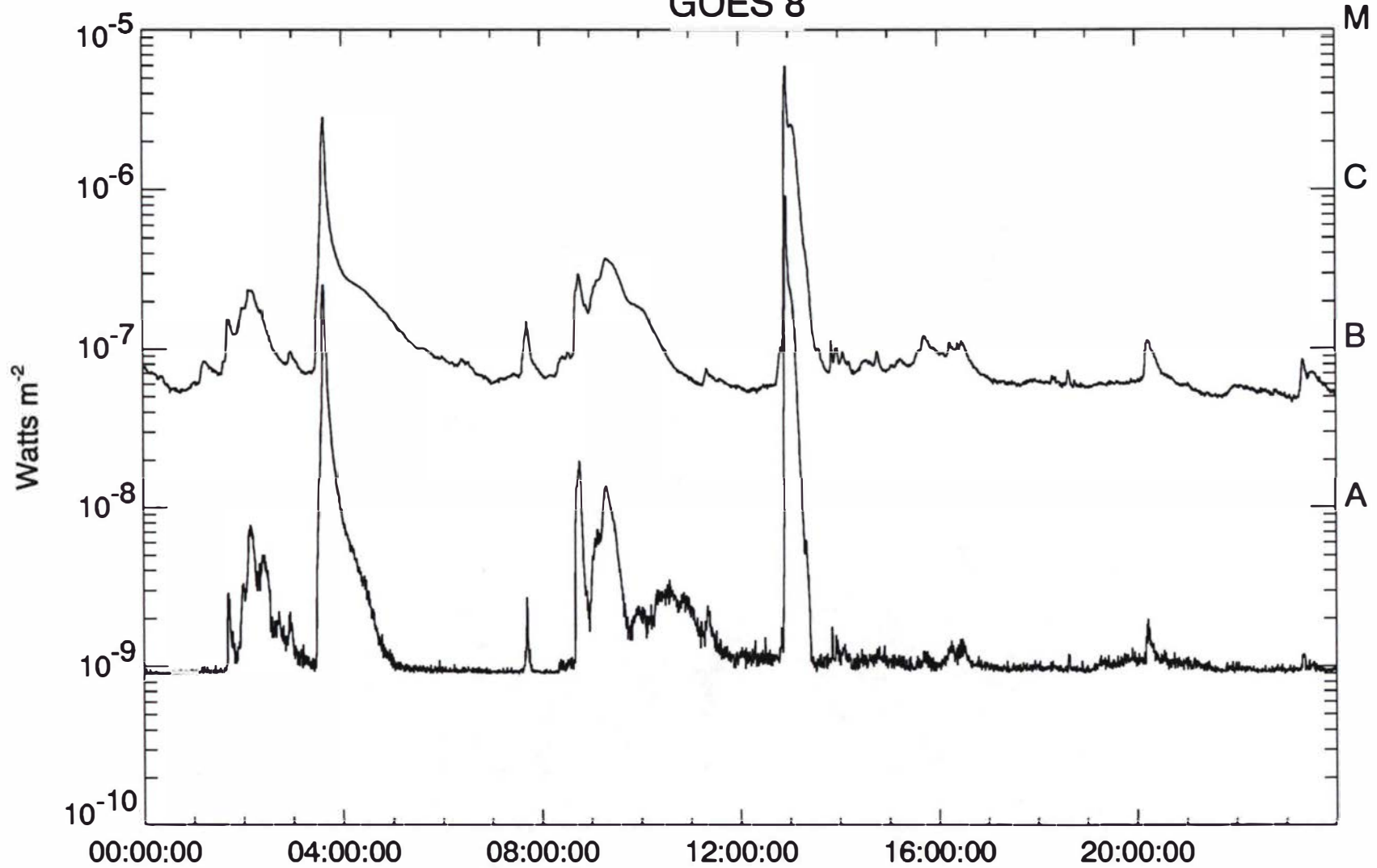


Current Time: 97/11/01, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 97/10/28, 0000:00

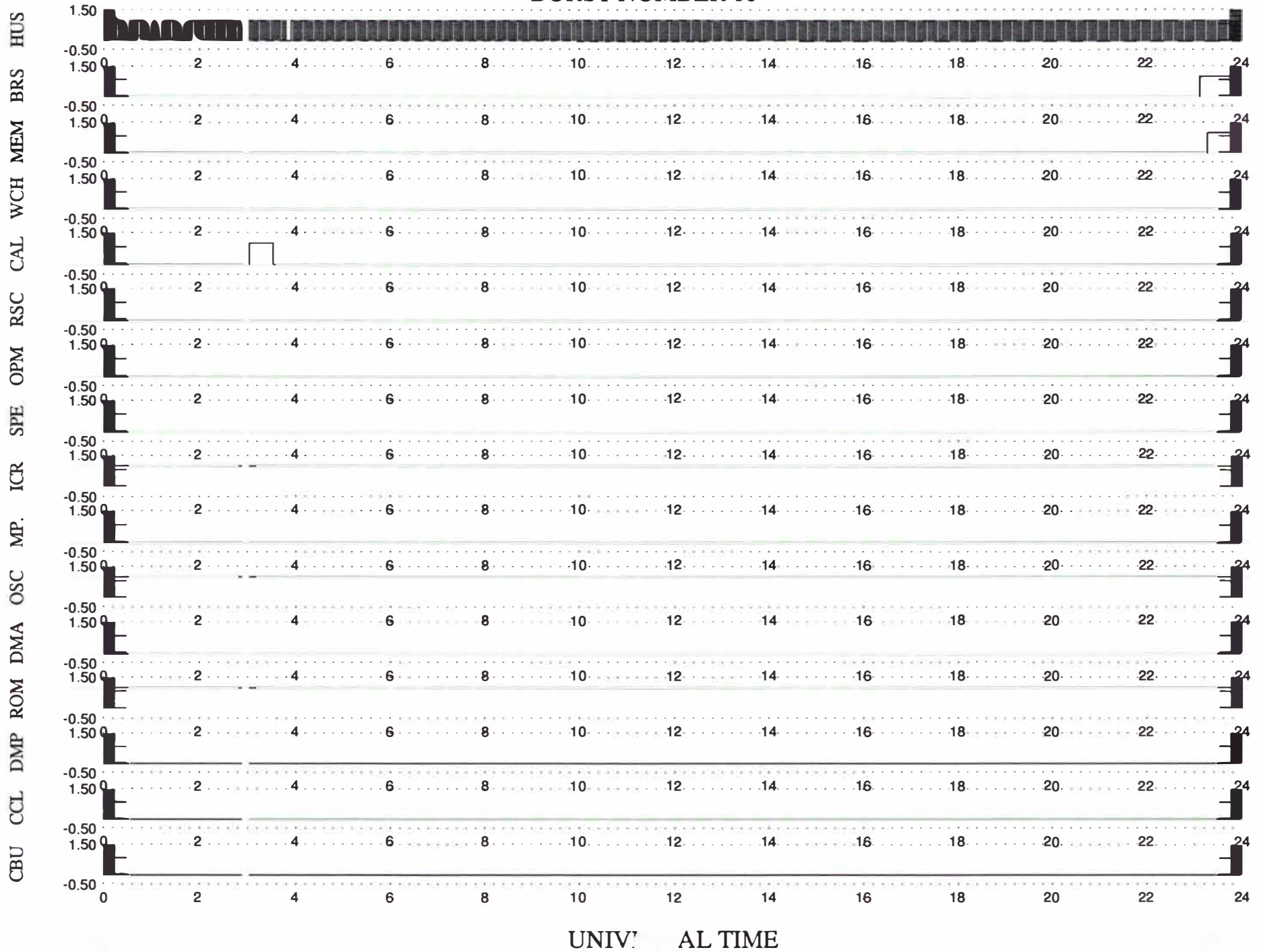
Plot created: 97/11/01, 1007

Channel

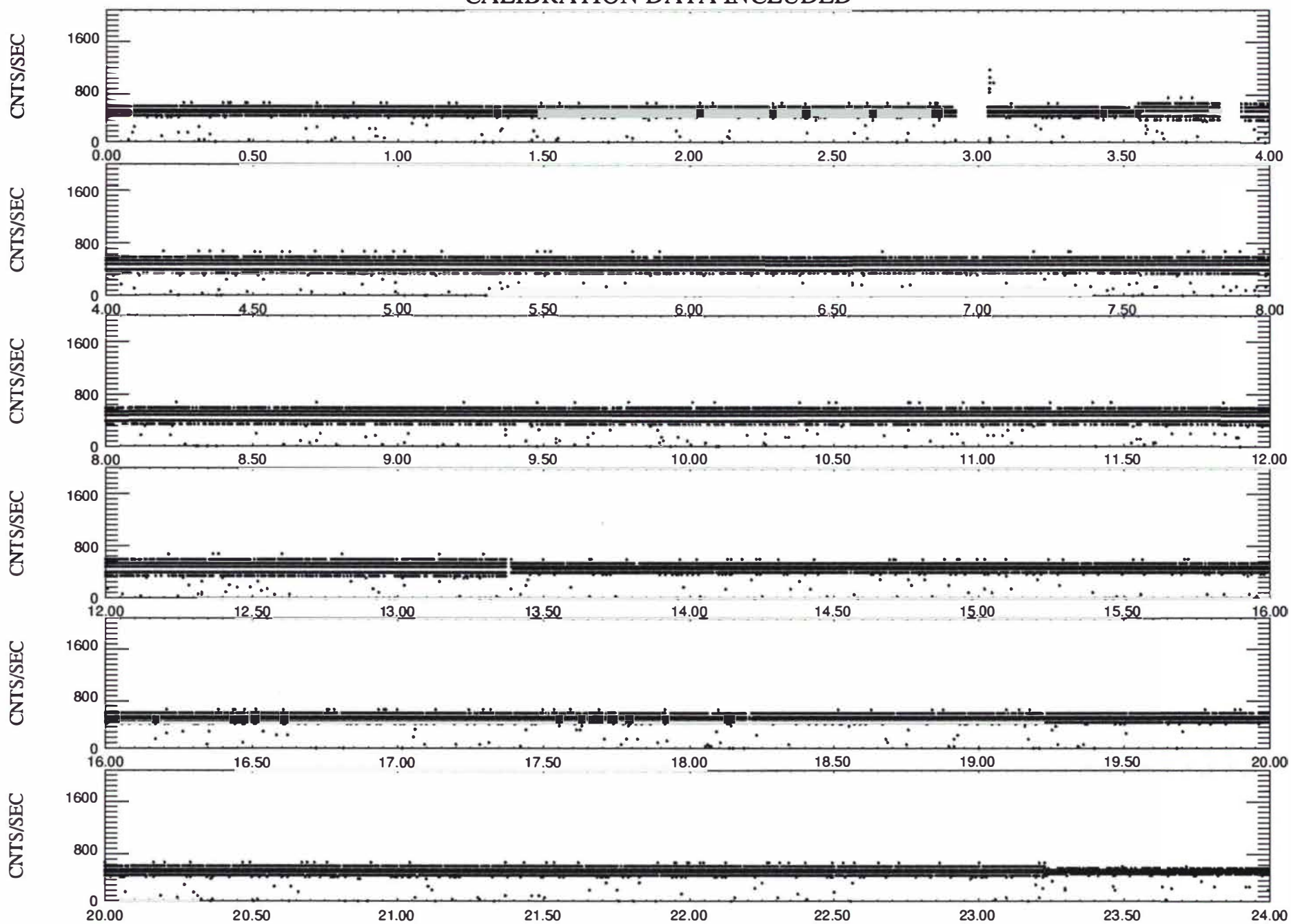
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 10

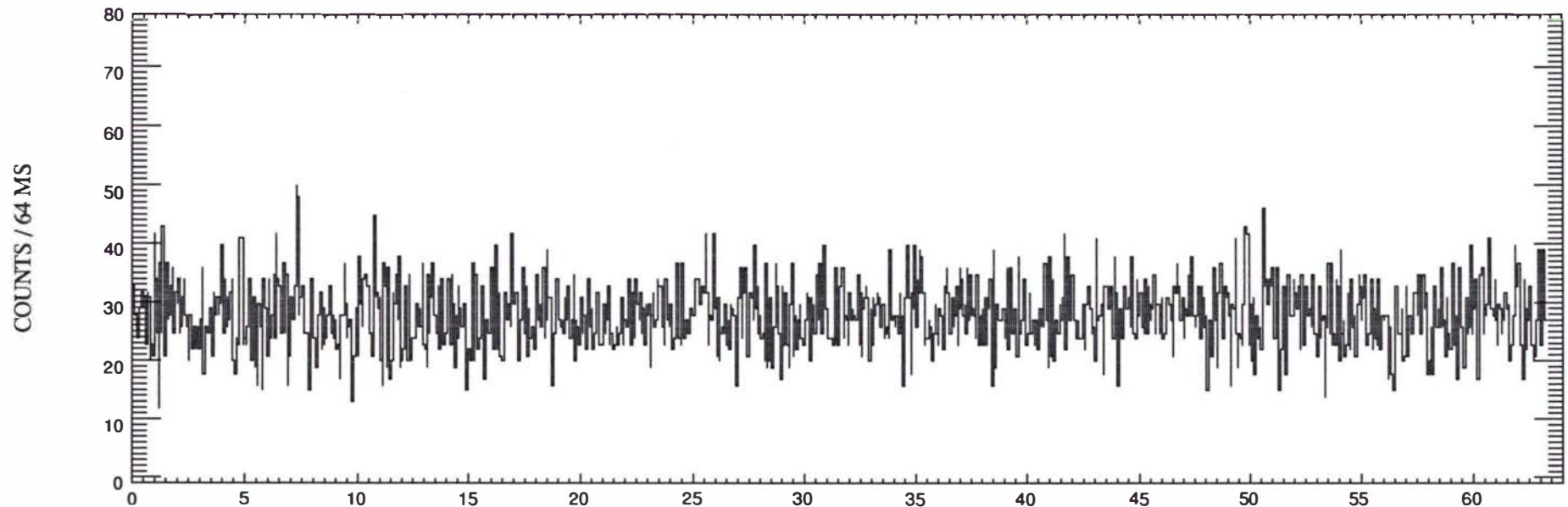


CALIBRATION DATA INCLUDED

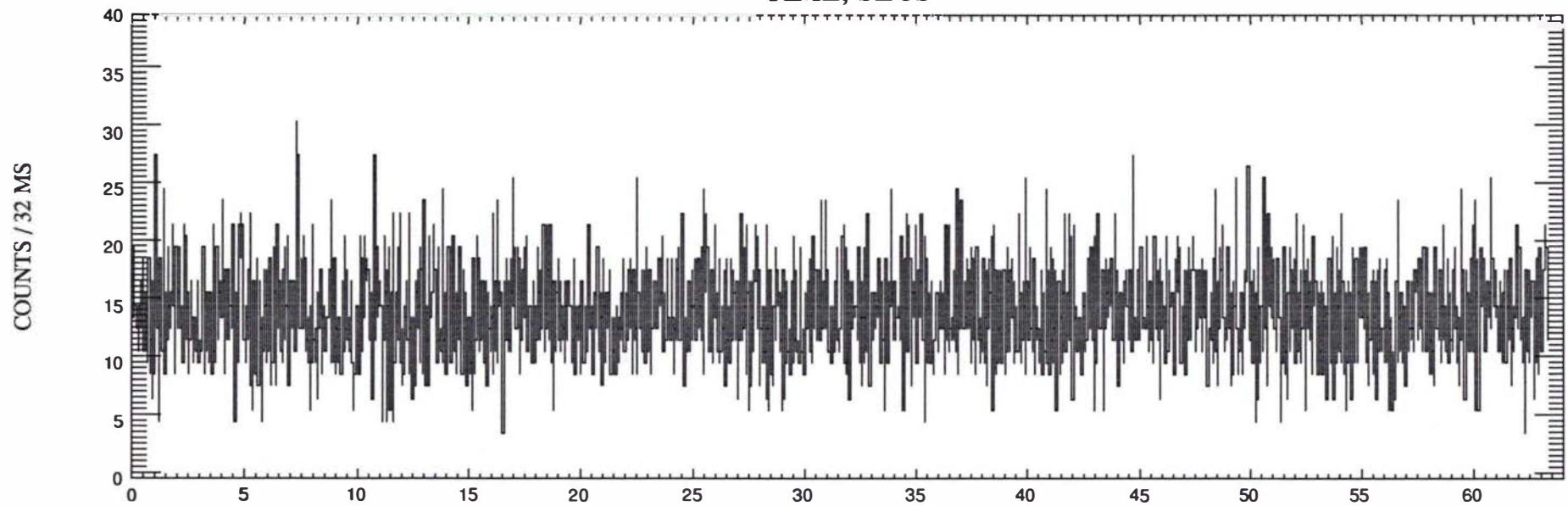


UNIV AL TIME

Burst Counter 10 at UT=23.063162295024 h=83027.384 s 23:03:47.384

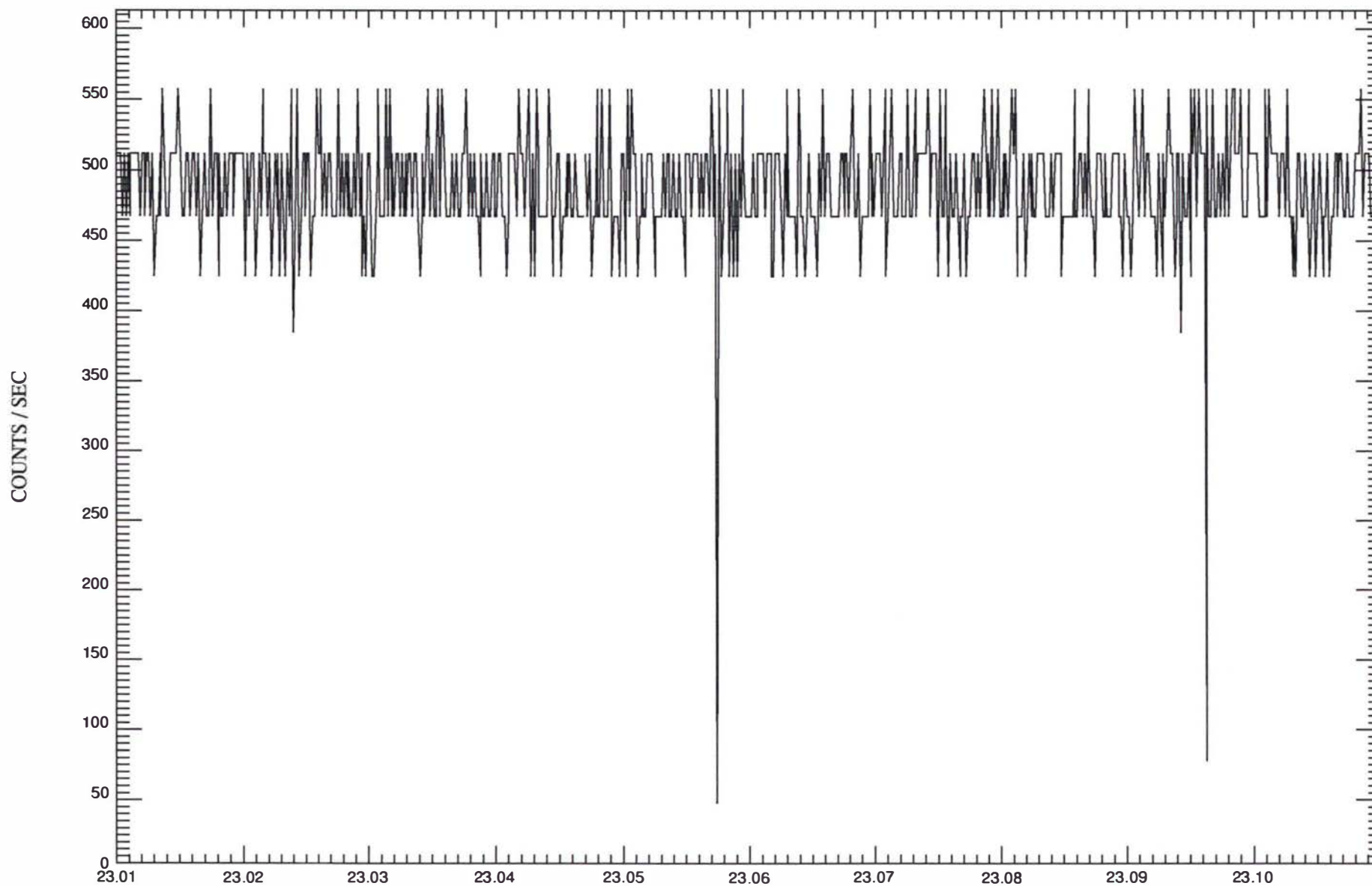


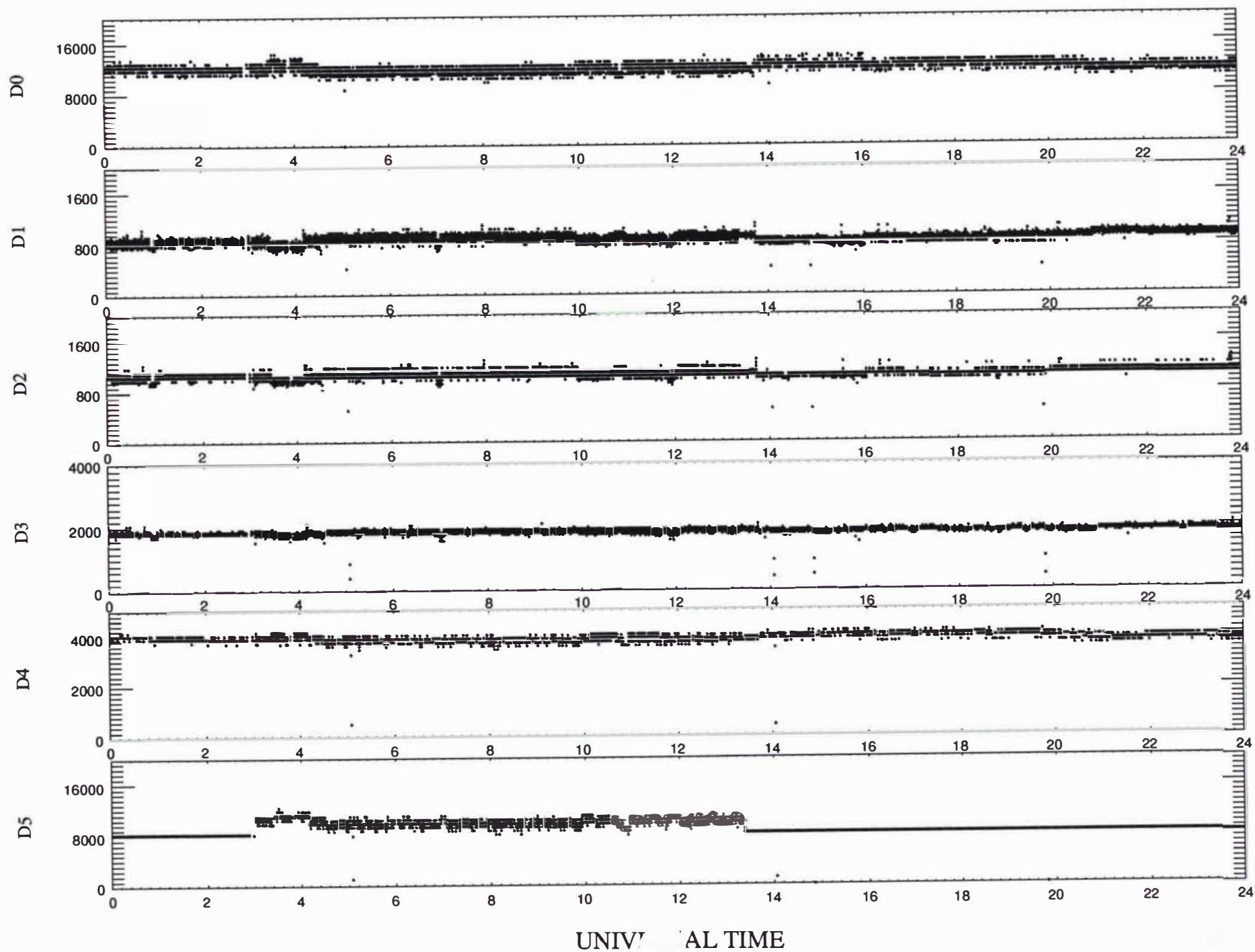
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





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:

Ulysees burst -----	TGRS sees? -----	TGRS characteristics -----
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

From WOODSP@SSLMOR.msfc.nasa.gov Mon Nov 3 08:25:03 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 IAA16030; Mon, 3 Nov 1997 08:24:58 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id IAA23652; Mon, 3 Nov 1997 08:24:52 -0800
Date: Mon, 3 Nov 1997 10:22:46 -0600 (CST)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971103102246.21e06ea5@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6453
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6453
EVENT OF 1997 OCT 29 DAY OF YEAR=302
EVENT CROSSING TIME AT BATSE : 5318. S. OR 01:28:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 101.000 25.000
BATSE PEAK COUNTING RATE: 8500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/10/ 97 IS:
RA= 168.804 DEC= 14.025 DIST= 5.869 AU
BATSE-ULYSSES DISTANCE = 878042056. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1272.86 SECS.
CROSSING TIME AT ULYSSES IS 4045. S. OR 01:07:25 +/- 488.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/10/ 97 IS:
RA= 260.807 DEC= -24.387 DIST= 1.911 AU
MARS-BATSE DISTANCE = 285876224. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 18.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 905.15 SECS.
CROSSING TIME AT MARS IS 6223. S. OR 01:43:43 +/- 65.84 SECONDS

BATSE BURST TRIGGER

NO.: 6453

TIME: TJD=0750 SECONDS=5318

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=118.6 AZIMUTH=76.0 ERROR=0.4 DEGREES

COMMENTS:

BRIGHT GRB LASTING ABOUT 150 SEC. SINGLE PULSE WITH MULTIPLE
PEAKS. LOTS OF SUBSTRUCTURE. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6453	971029	10750	05318	8500	101	+25	150

Date: Feb 7 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*

*Helio. corr. removed
by hand*

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?

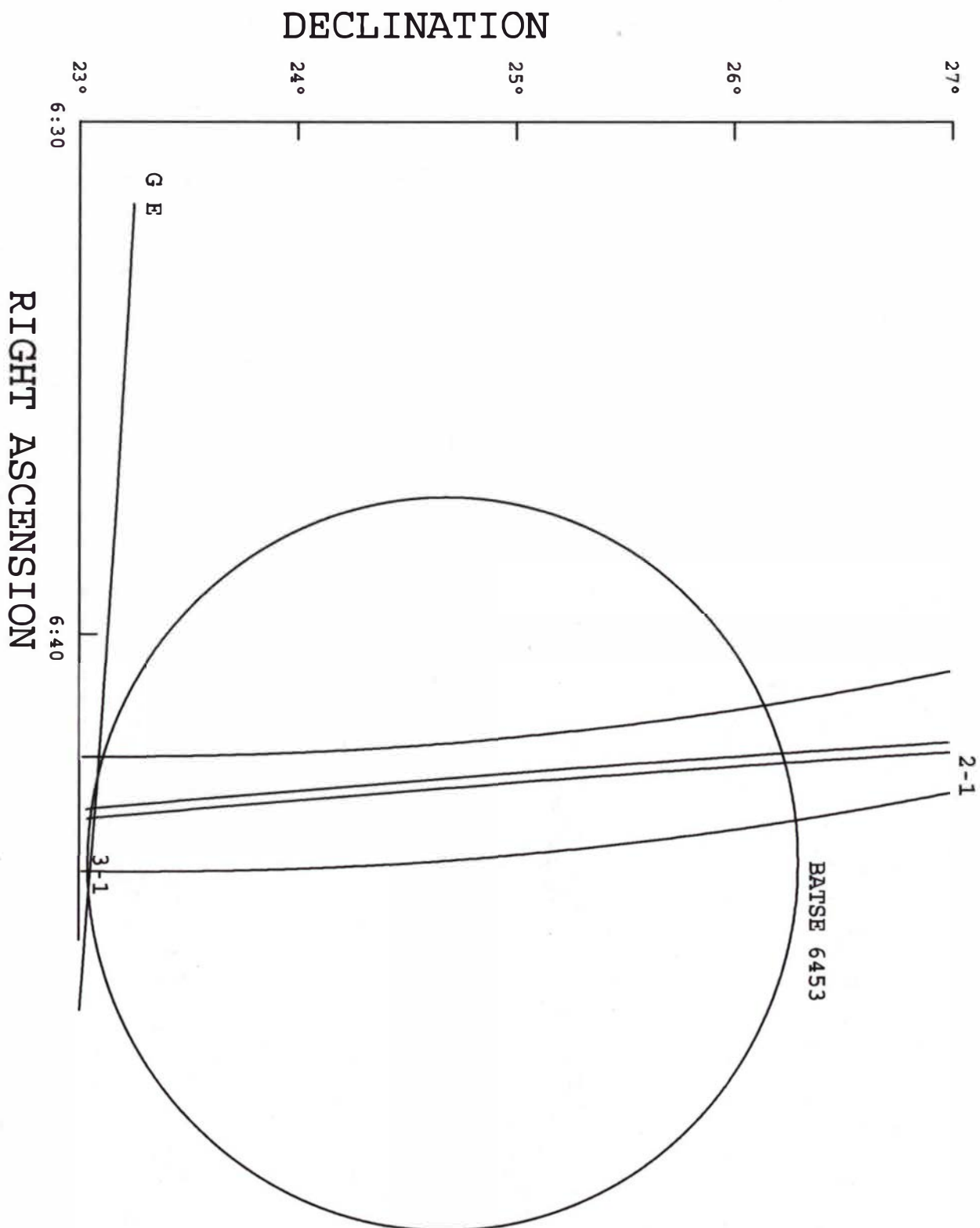
3. NEAR Data

- ☒ 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?
Parallel annuli - no intersection
- ☒ 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 OCT 29, 1997 1:28

7 / 2 / 0



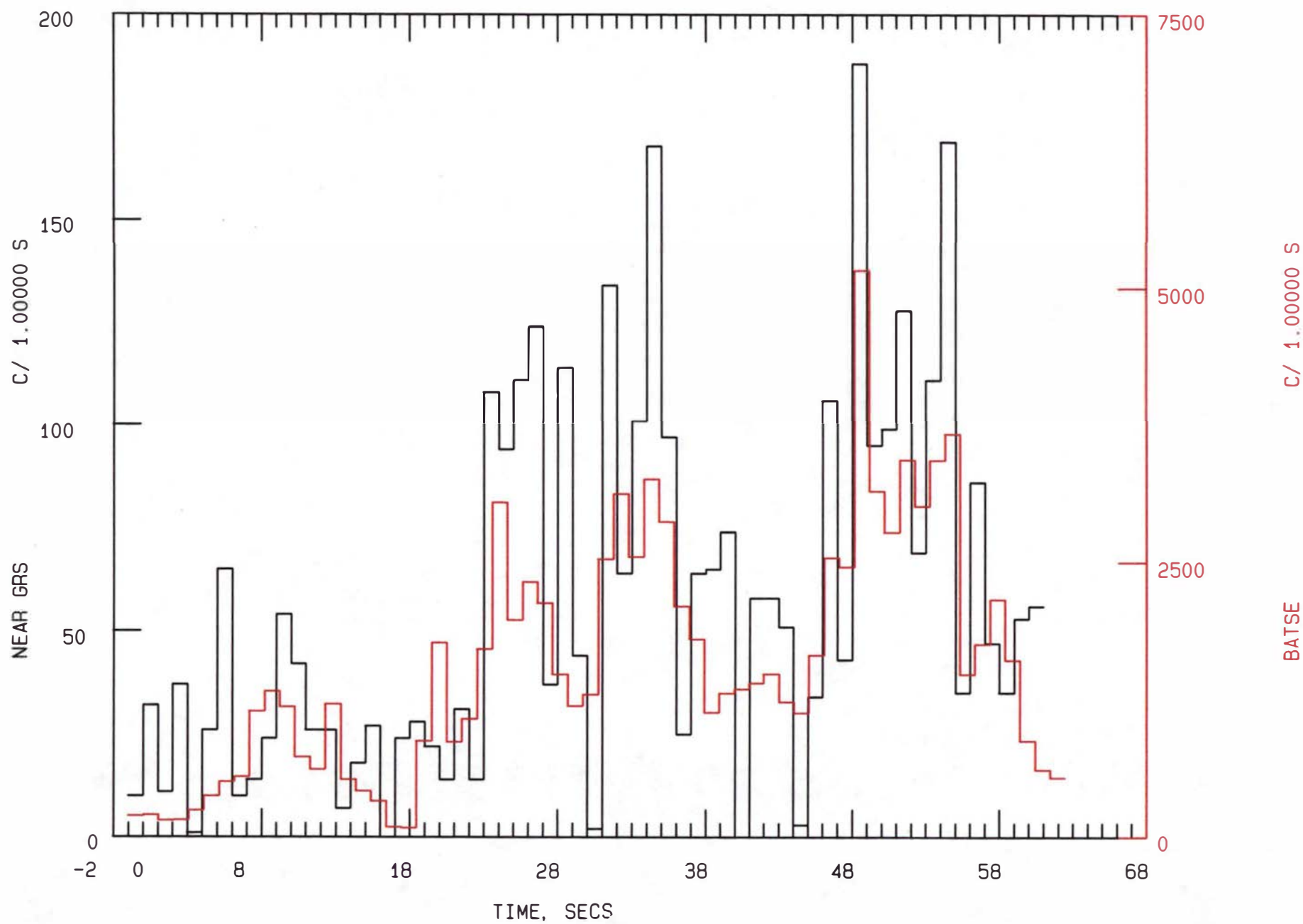
NEAR GRS -BATSE

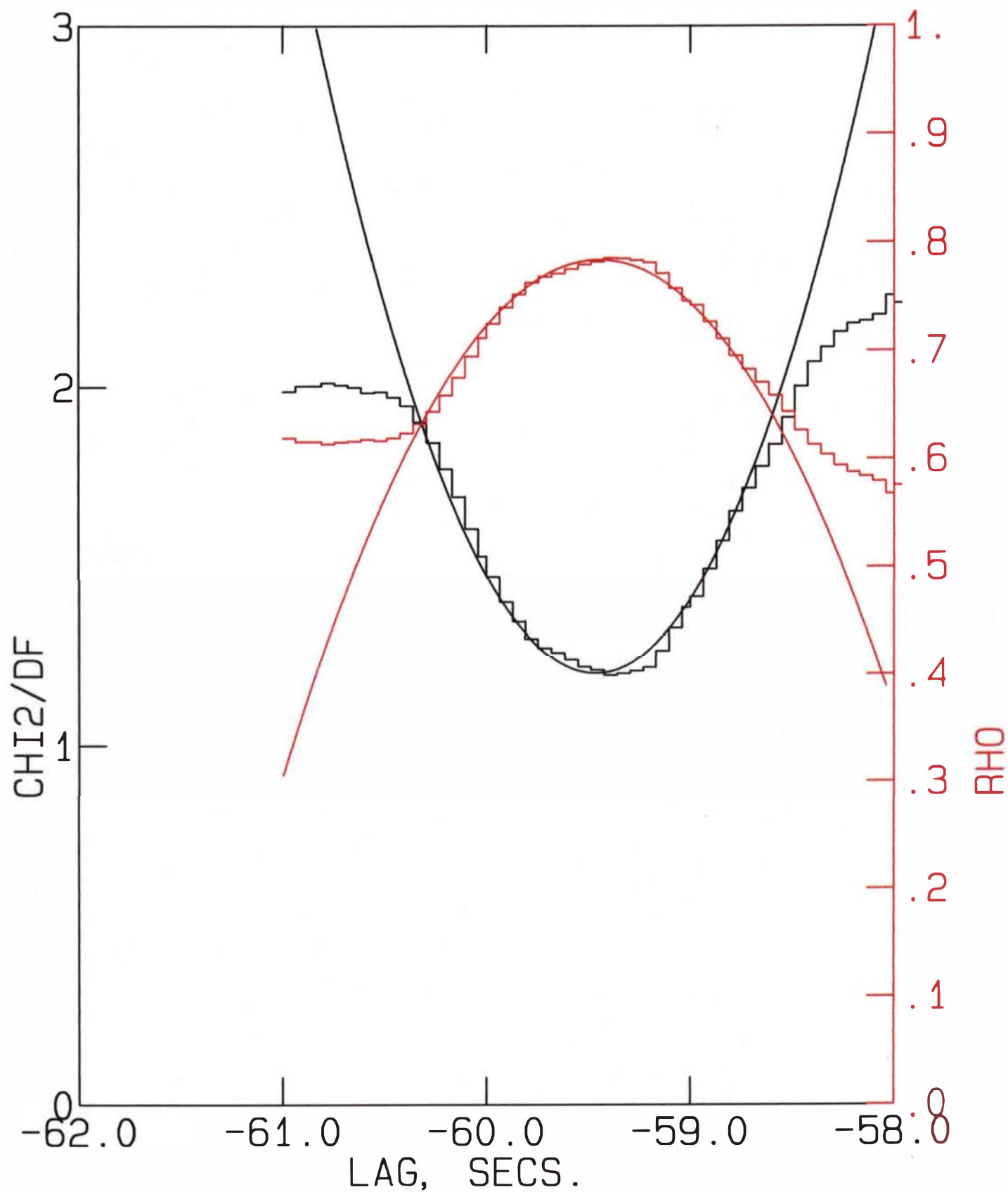
CORRELATION

29/10/97

5062.558

7/ 2/ 0



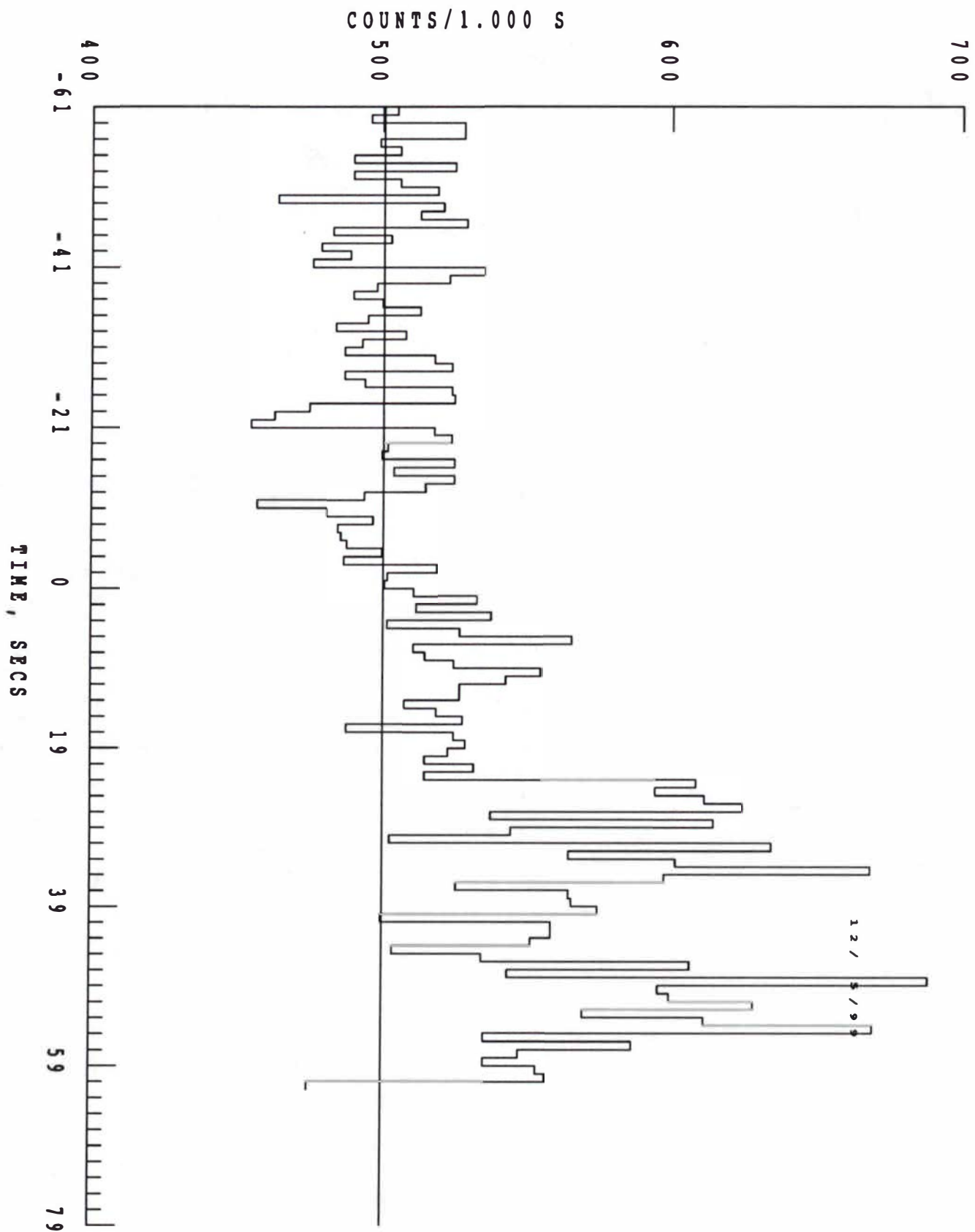


NEAR

29/10/97

5062.558

100-1000 keV



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@nisdpo.lanl.gov Fri Feb 27 15:11 PST 1998
 From: TERRELL@nisdpo.lanl.gov
 Date: Fri, 27 Feb 1998 16:11:55 -0700
 To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
 butterworth@heavx.gsfc.nasa.gov, cline@heavx.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@heavx.gsfc.nasa.gov, cline@heavx.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@heavx.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	BEPPO 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	BEPPOSAX(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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

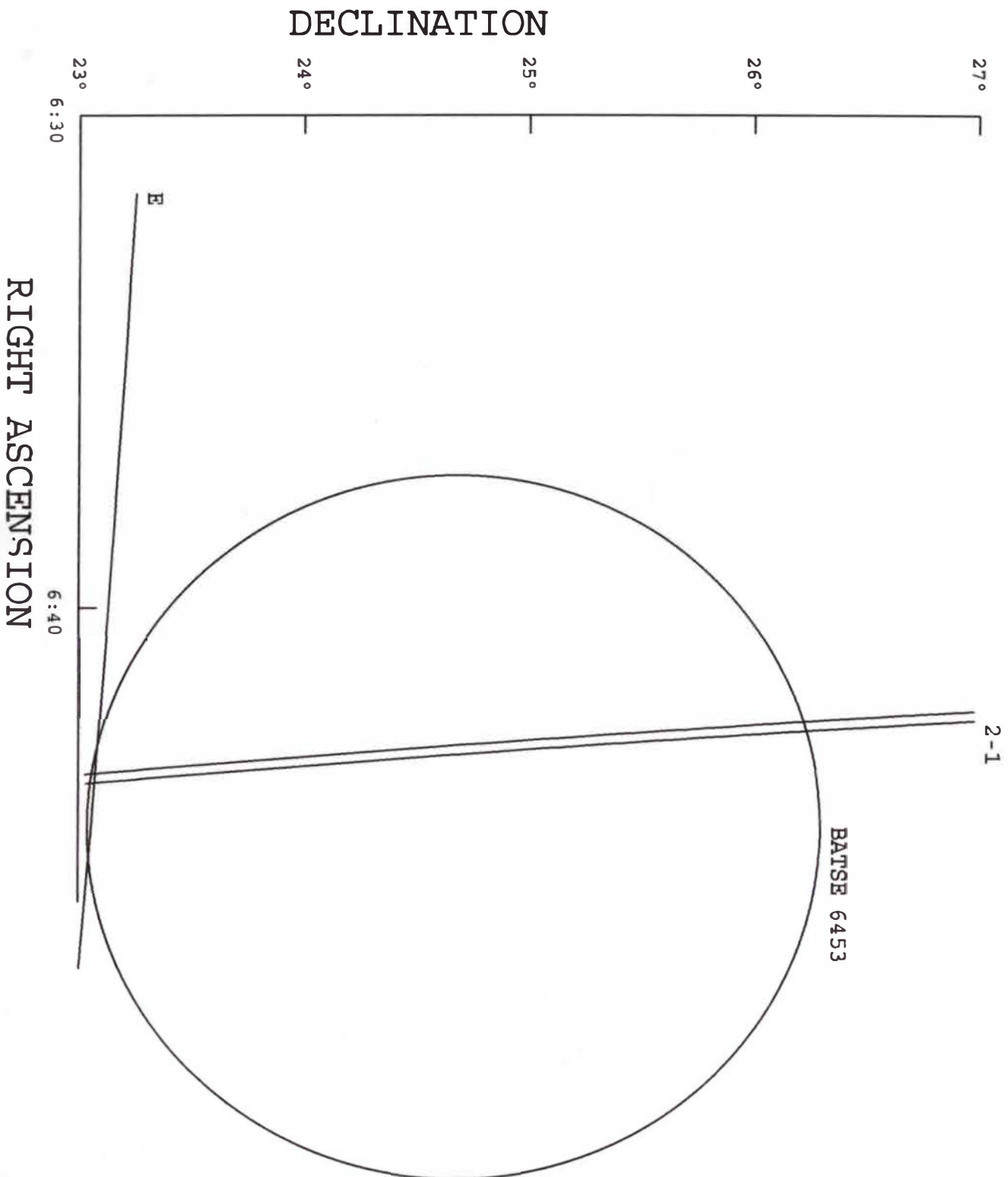
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF OCT 29, 1997 1:06

9 / 4 / 98



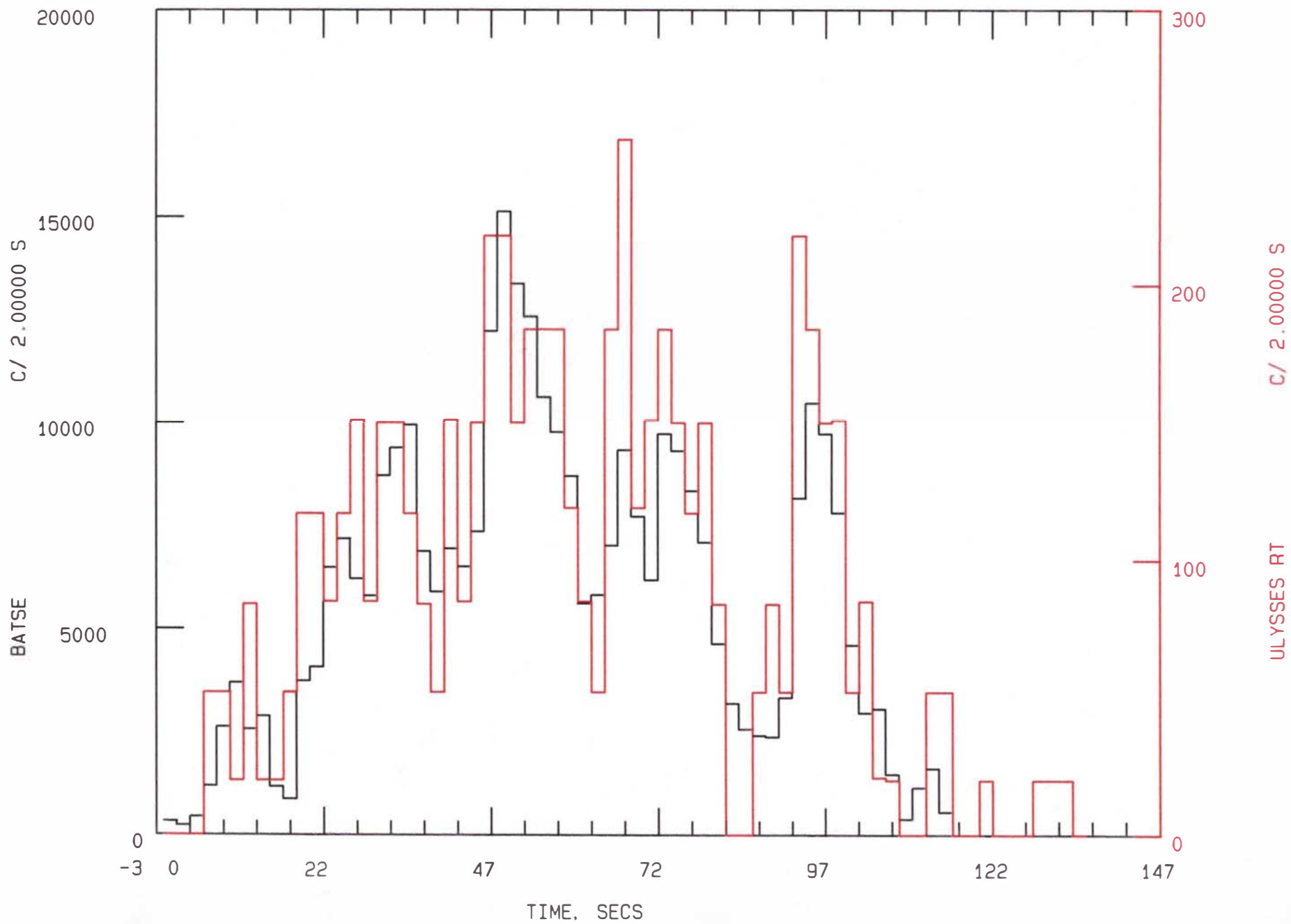
BATSE

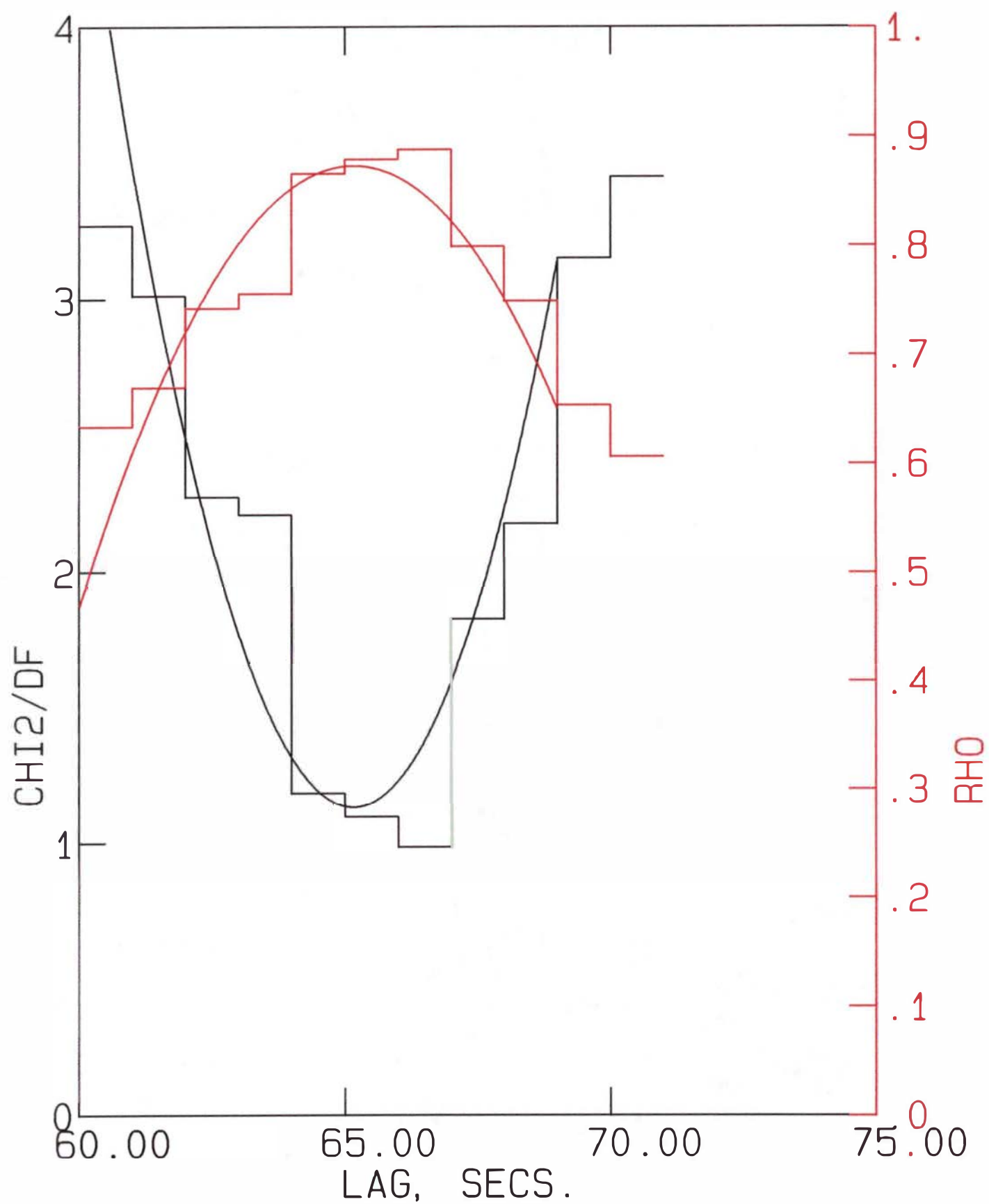
-ULYSSES RT CORRELATION

29/10/97

5318.369

9/ 4/98

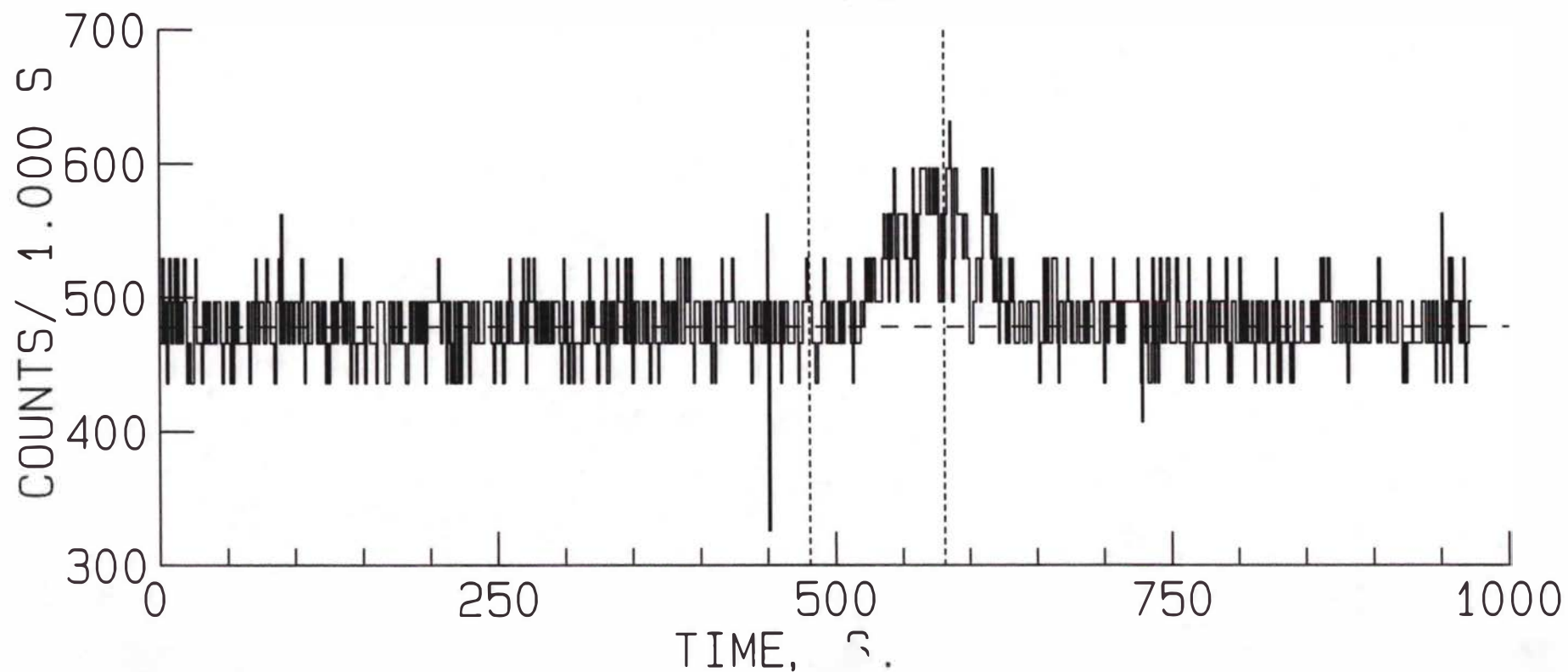




ULYSSES RT
29/10/97 3564.097 s
22- 147 keV

9 / 4 / 98

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS



BATSE

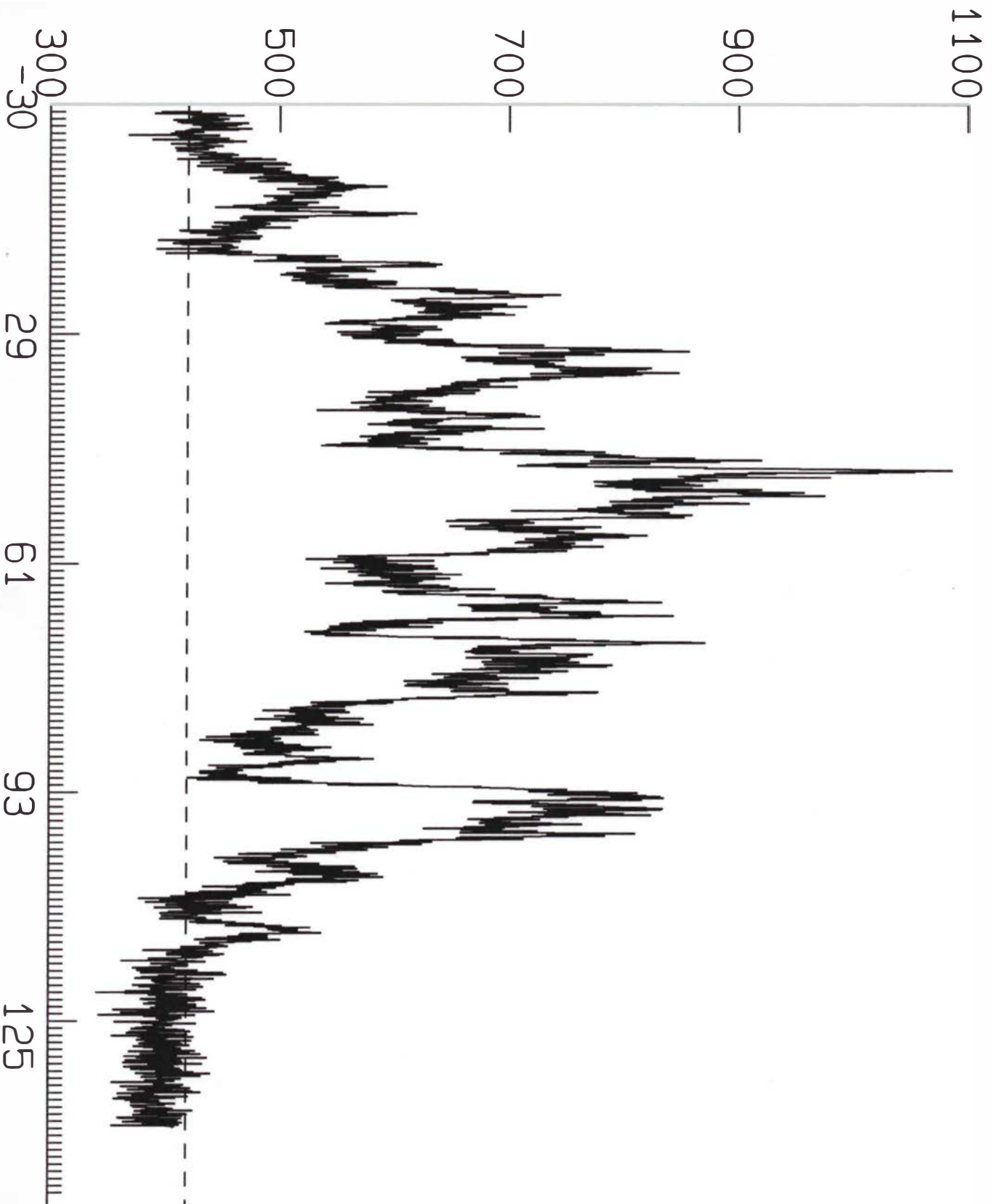
29/10/97

5318.369

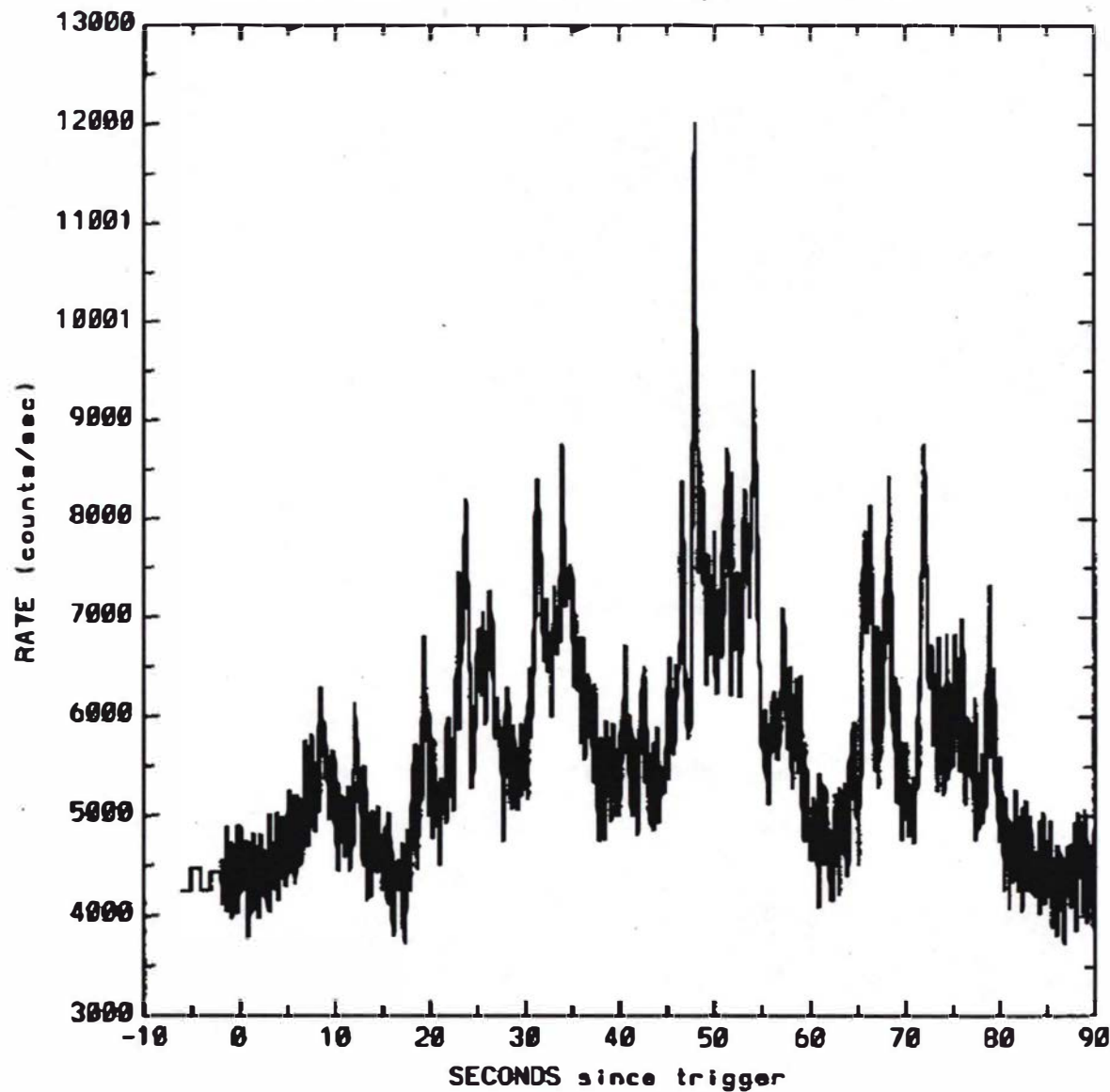
25- 100 keV

COUNTS/0.064 S

28/11/97



DISCSC Data for K. Hurley, No. 6453



21-JAN-2000 13:52:25

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # : 6453

Trigger Time:
19750 / 5310.369Burst 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:
BD[SP]

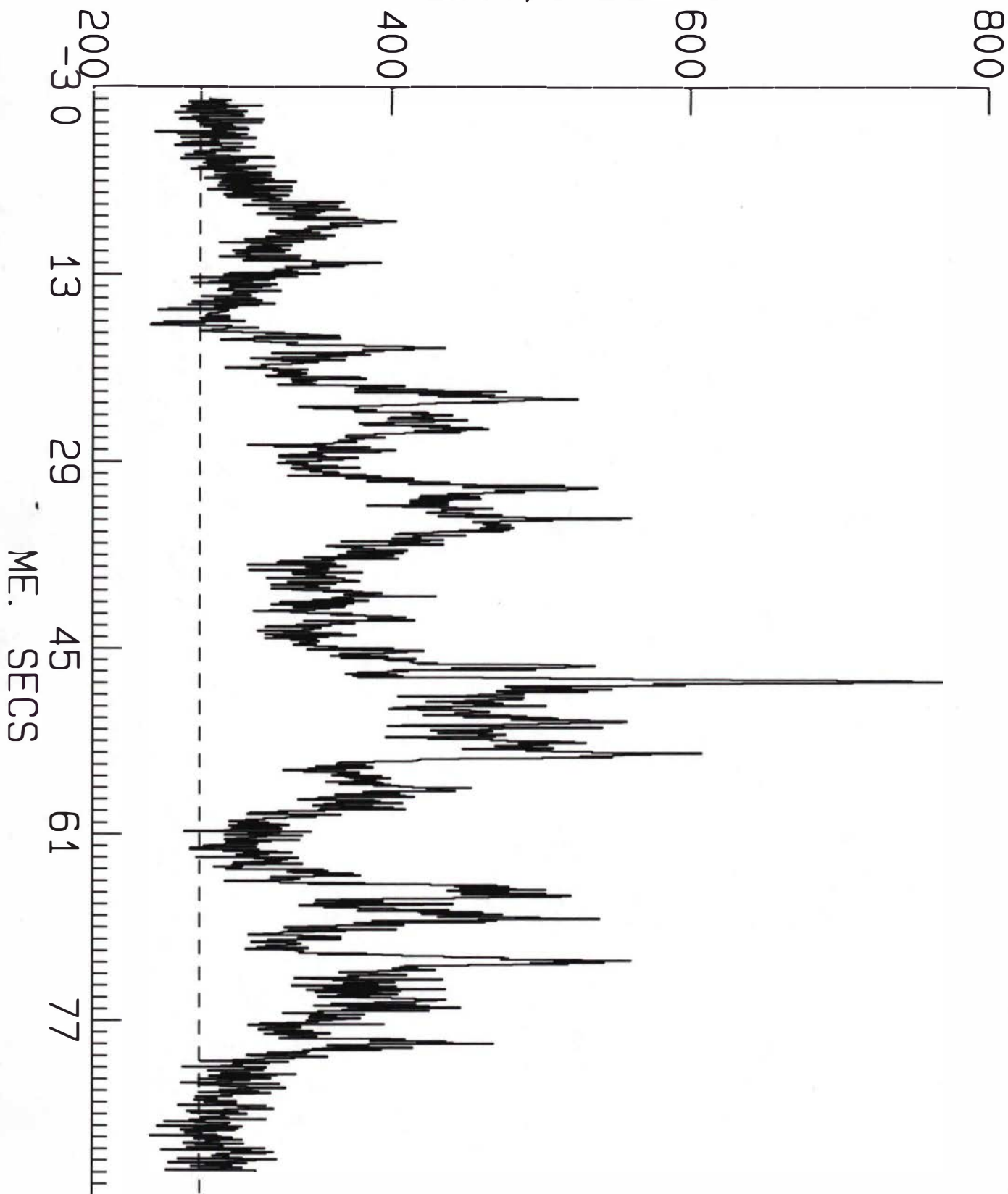
BATSE

29/10/97

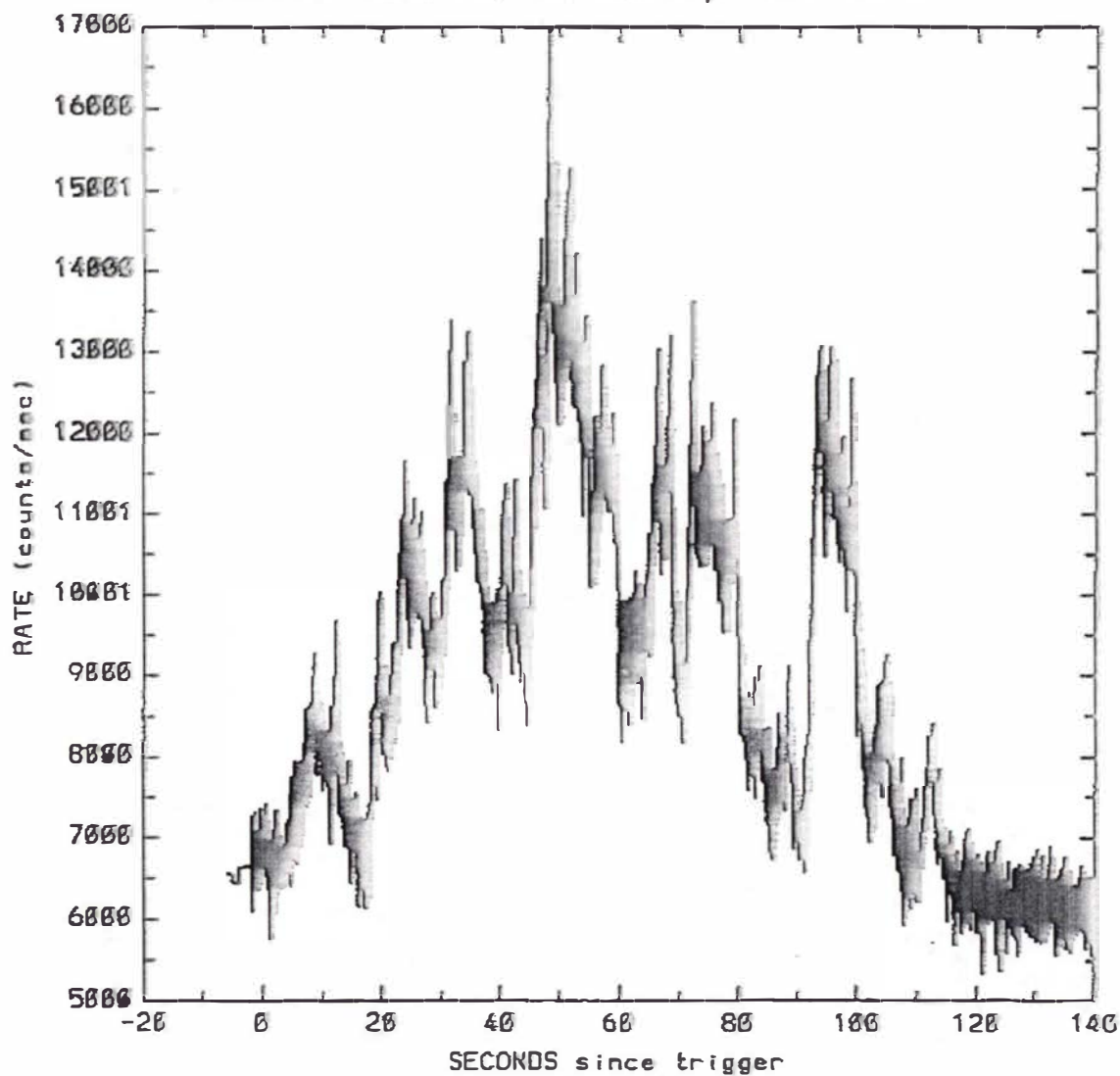
5318.369

100-1000 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6453



20-NOV-1997 09:42:03

Created by KOPS 80
(Burst Display)
Version 12.25

Trigger # = 6453

Trigger Time:
18750 / 5310.369Burst Data Type:
DISCSCDeadline
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Enlep. Time:
0.854 secondsDetectors [7..8]:
--5--1-Discriminators:
[1 : 2]Quality Mask:
B01SP1

From WOODSP@SSLMOR.msfc.nasa.gov Fri Oct 31 13:28:47 1997
Return-Path: <WOODSP@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA28993; Fri, 31 Oct 1997 13:28:35 -0800
From: WOODSP@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA10265; Fri, 31 Oct 1997 13:28:21 -0800
Date: Fri, 31 Oct 1997 15:28:05 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971031152805.21e06a42@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6454
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

*No - too weak ?
Look again
Yes!*

BATSE BURST # 6454
EVENT OF 1997 OCT 29 DAY OF YEAR=302
EVENT CROSSING TIME AT BATSE : 22428. S. OR 06:13:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 67.000 -45.000
BATSE PEAK COUNTING RATE: 7700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/10/ 97 IS:
RA= 168.822 DEC= 14.012 DIST= 5.867 AU
BATSE-ULYSSES DISTANCE = 877672827. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 71.83 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 912.72 SECS.
CROSSING TIME AT ULYSSES IS 23341. S. OR 06:29:00 +/- 546.81 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/10/ 97 IS:
RA= 260.807 DEC= -24.387 DIST= 1.911 AU
MARS-BATSE DISTANCE = 285876224. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 70.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 317.96 SECS.
CROSSING TIME AT MARS IS 22746. S. OR 06:19:05 +/- 160.91 SECONDS

BATSE BURST TRIGGER

NO.: 6454

TIME: TJD=0750 SECONDS=22428

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.6 AZIMUTH=129.0 ERROR=1.3 DEGREES

COMMENTS:

EXTREMELY LONG GRB LASTING ABOUT 830 SEC. MULTIEPISODIC BURST
WITH SUBSTRUCTURE WITHIN PULSES. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6454	971029	10750	22428	7700	067	-45	830

Date: Feb 7 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 vw@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

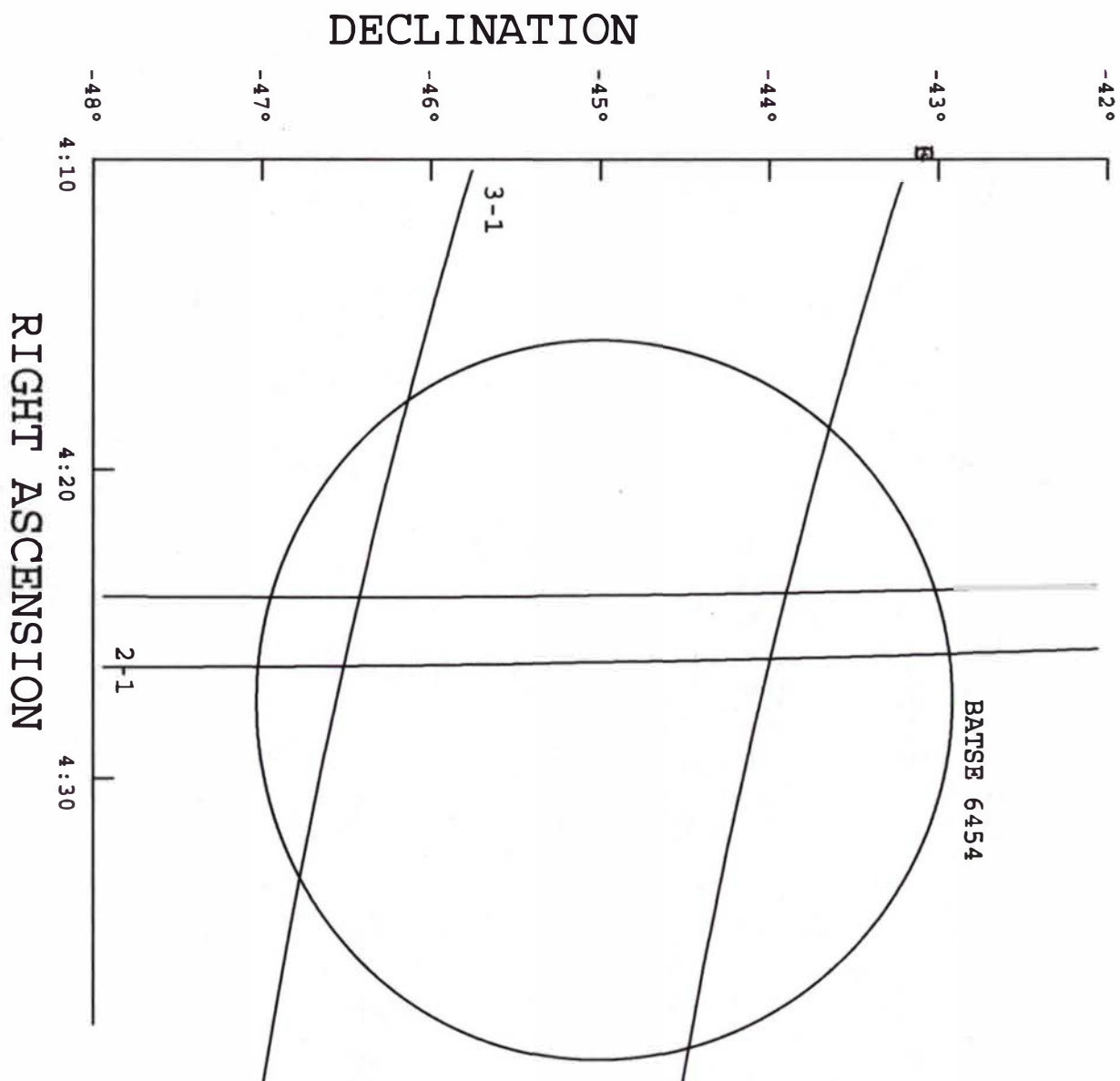
1 BATSE

2 ULYSSES

3 NEAR

EVENT OF OCT 29, 1997 6:13

7 / 2 / 0



BATSE

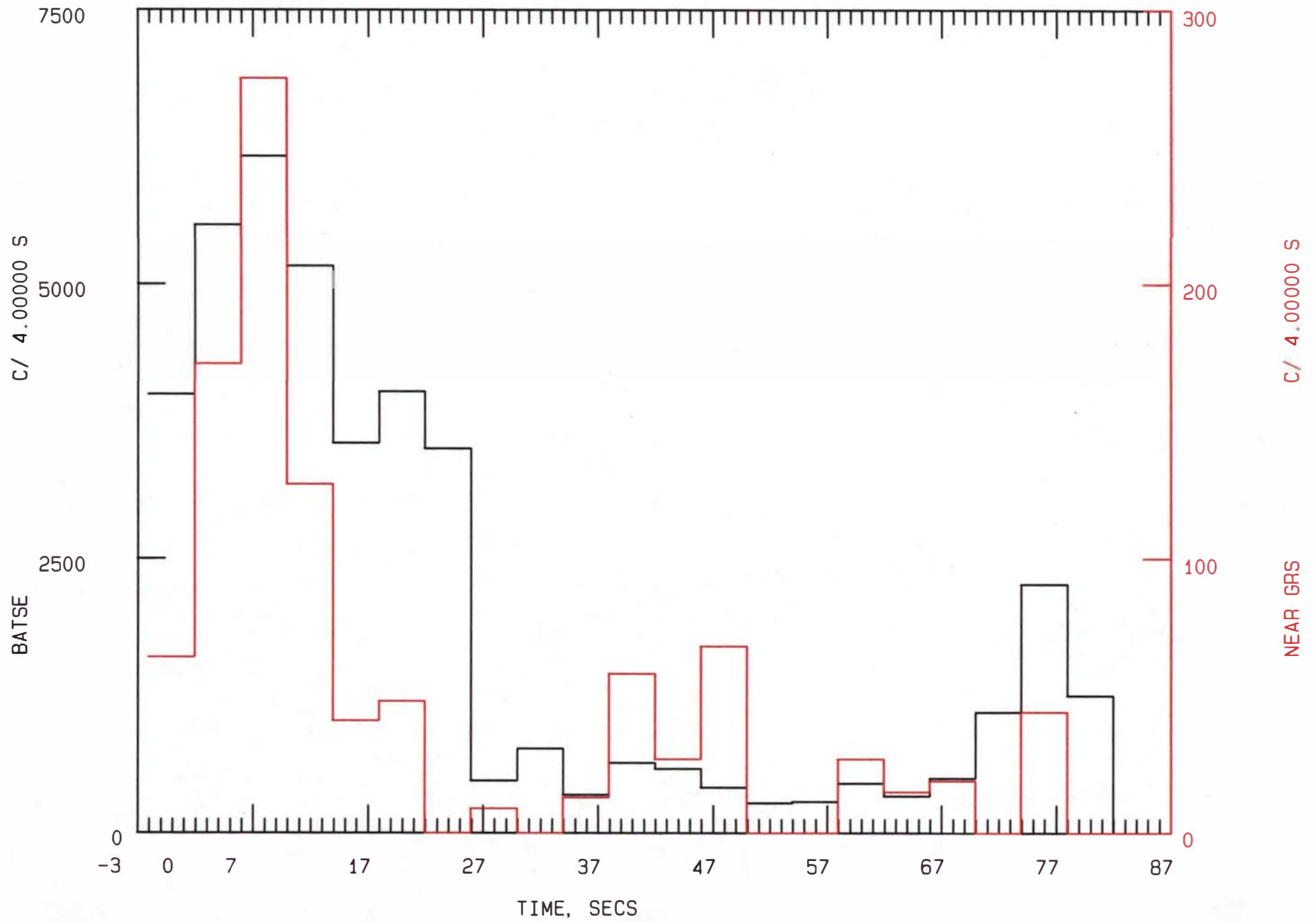
-NEAR GRS

CORRELATION

29/10/97

22428.897

7/ 2/ 0



BATSE

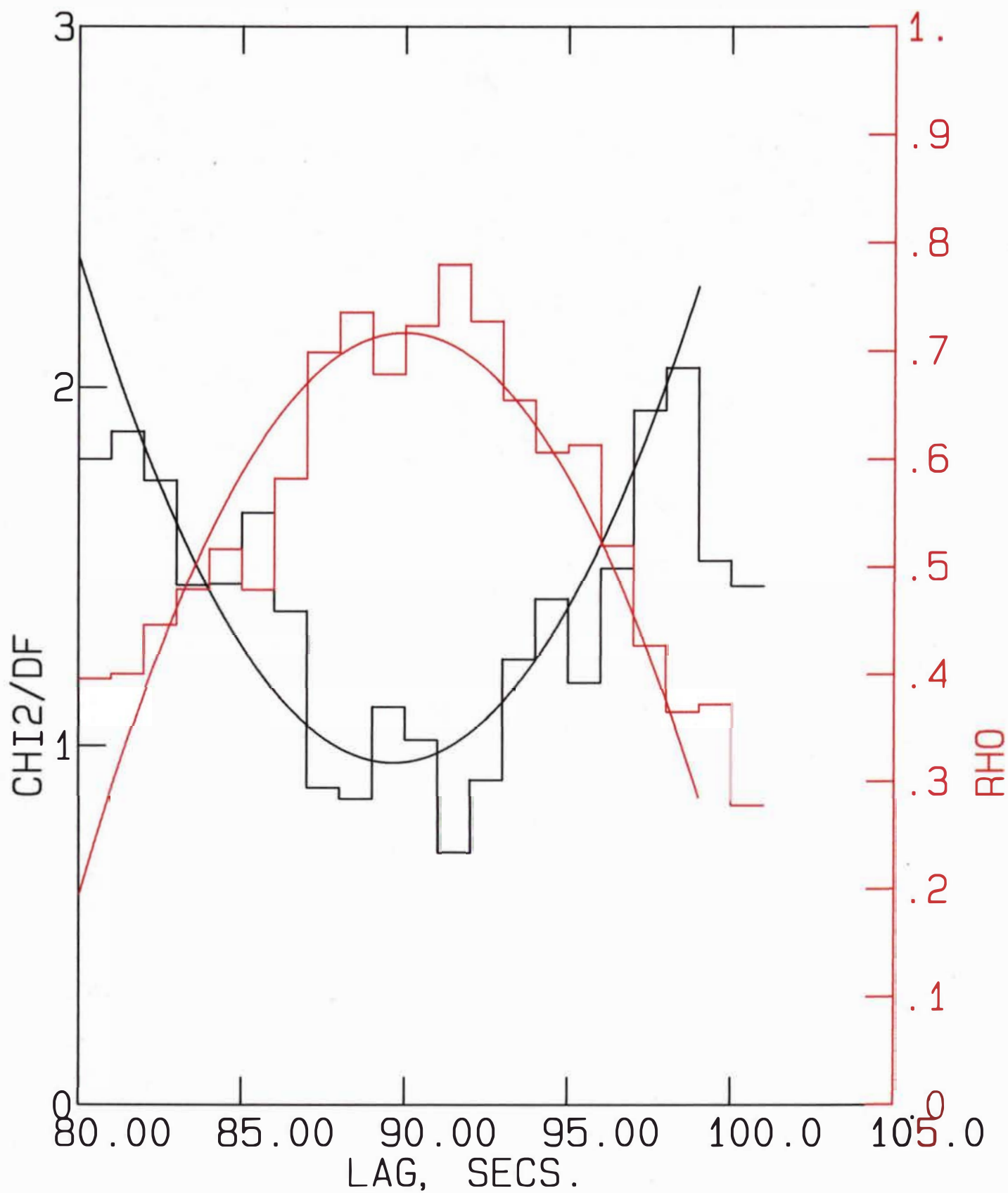
-NEAR GRS

CORRELATION

29/10/97

22428.897

7/ 2/ 0



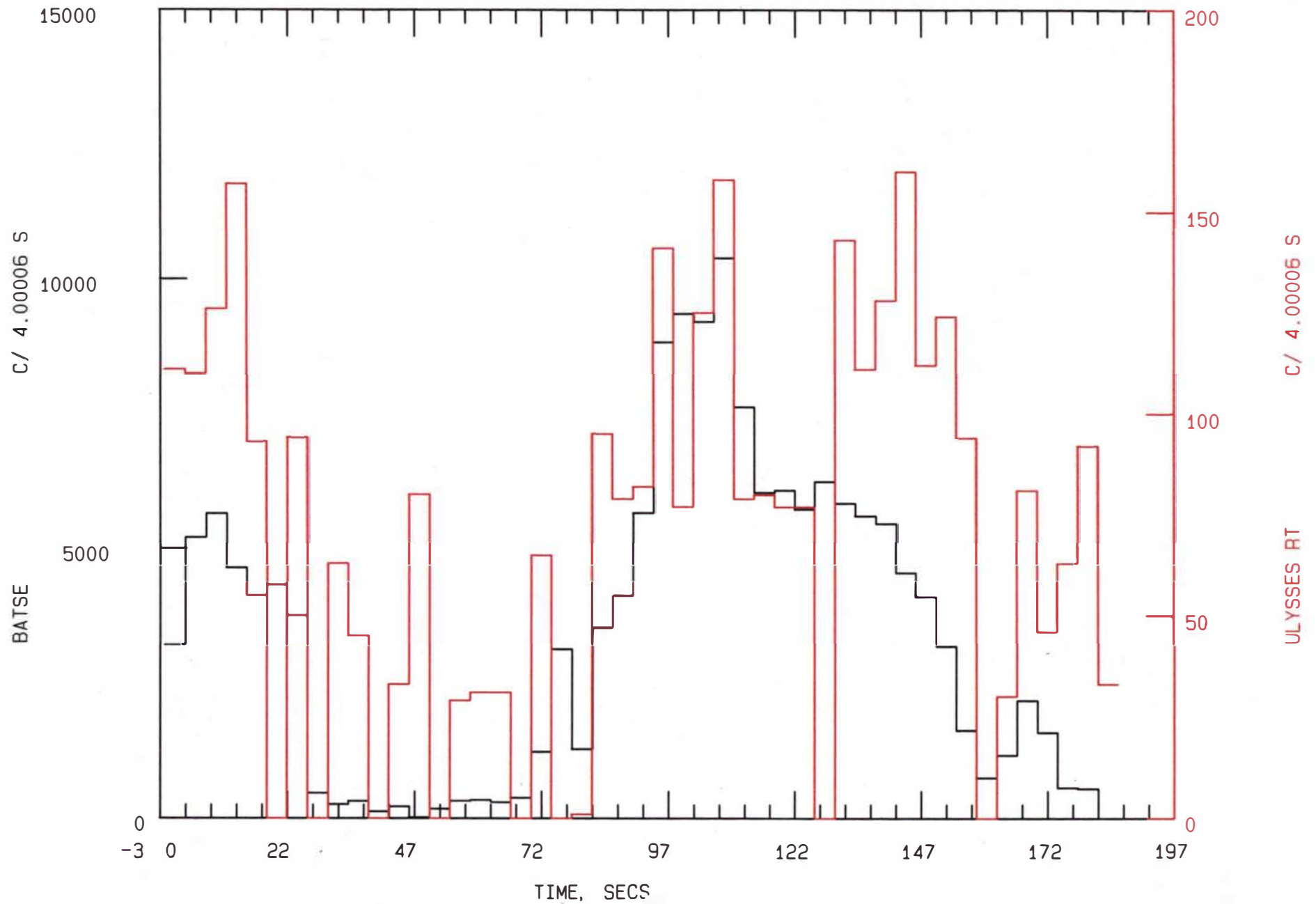
BATSE

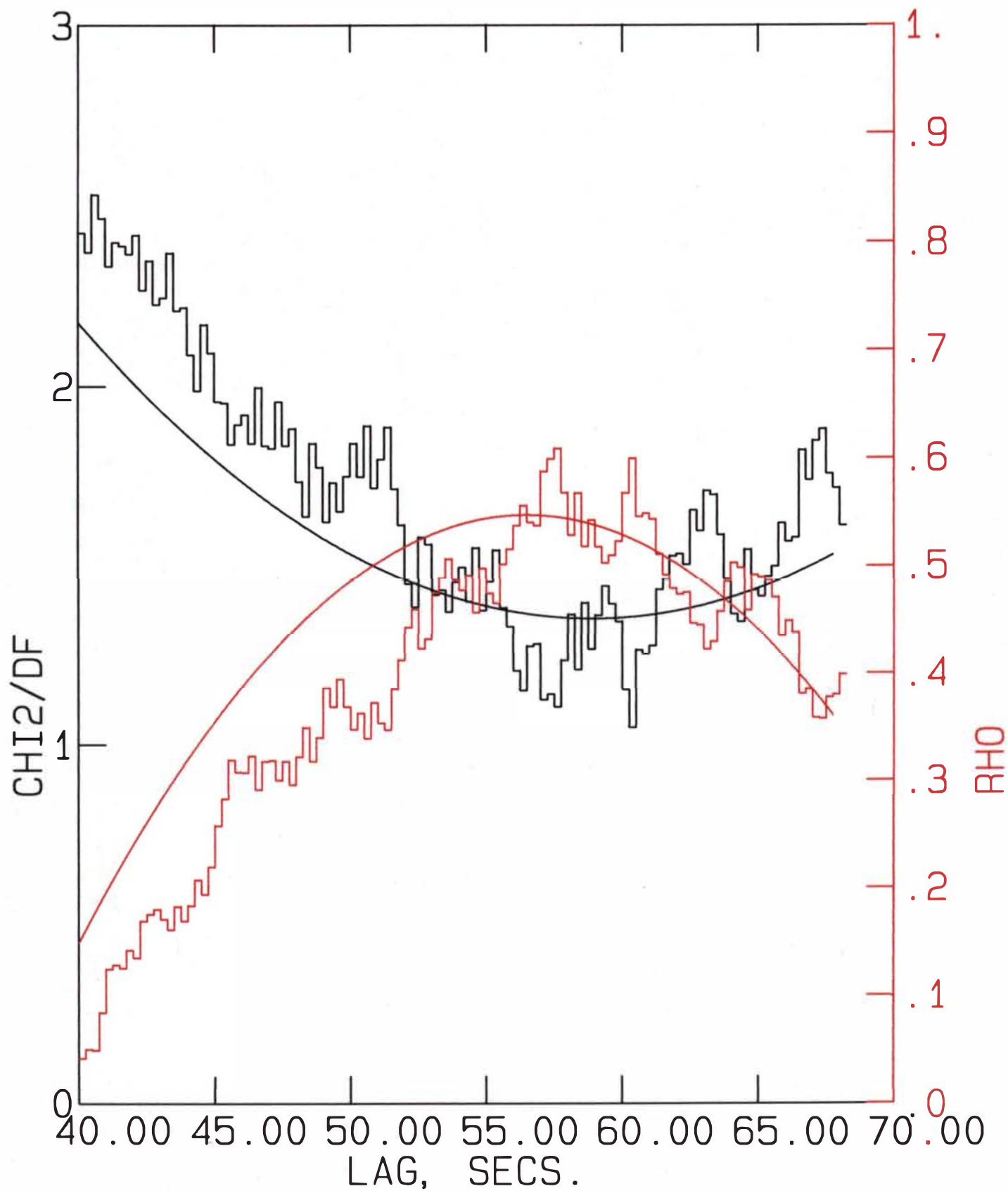
-ULYSSES RT CORRELATION

29/10/97

22428.897

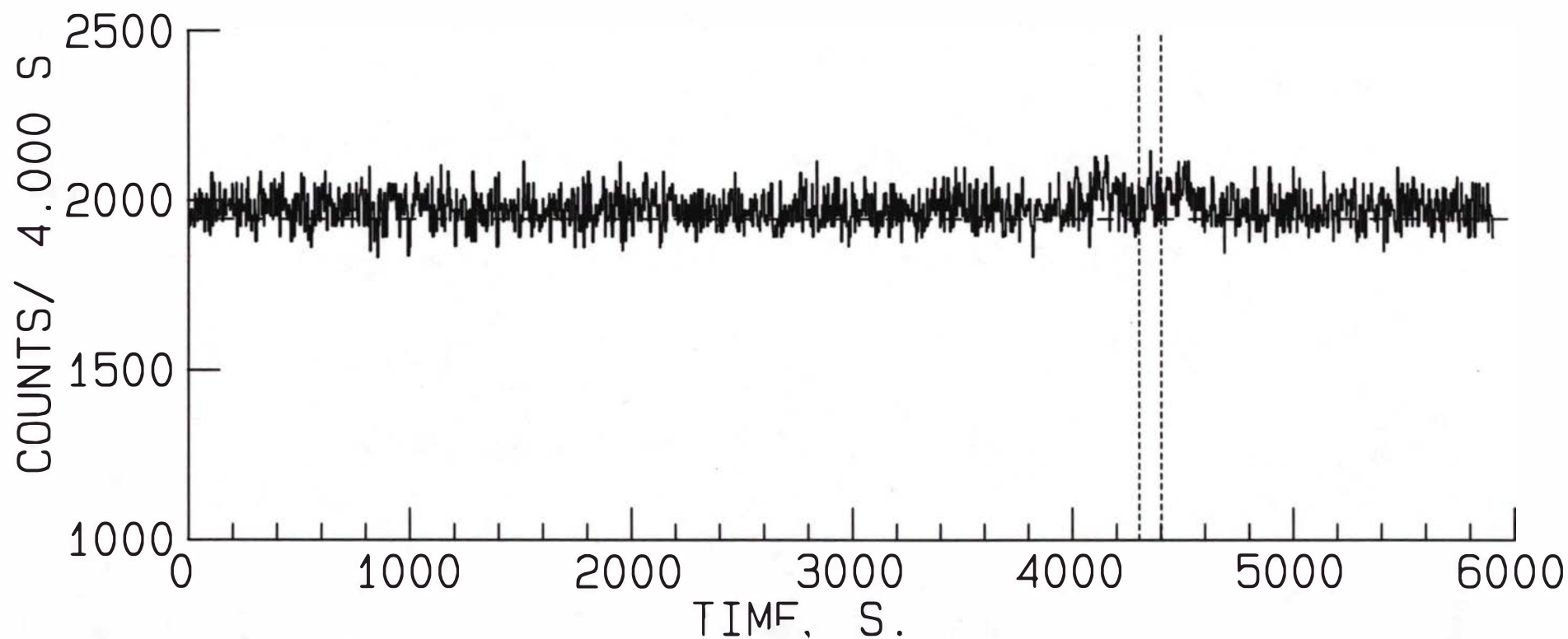
7/ 2/ 0





ULYSSES RT
29/10/97 19368.024 s
0.250 S INTERVALS REGROUPED BY 16
22- 147 keV

7 / 2 / 0



BATSE

29/10/97

22428.897

100-1000 keV

COUNTS/0.064 S

600

500

400

300

-30

13

29

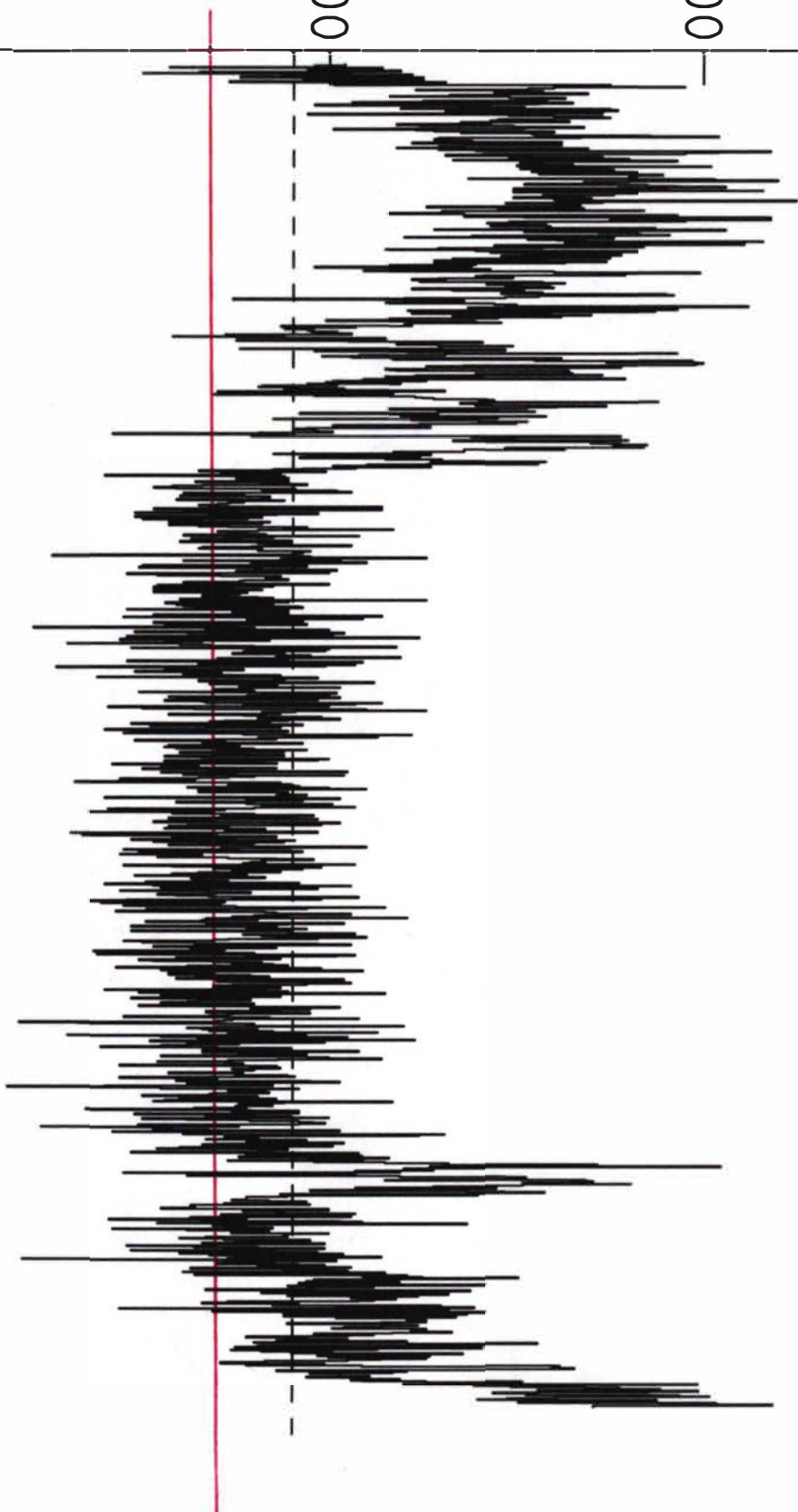
ME. SECS

45

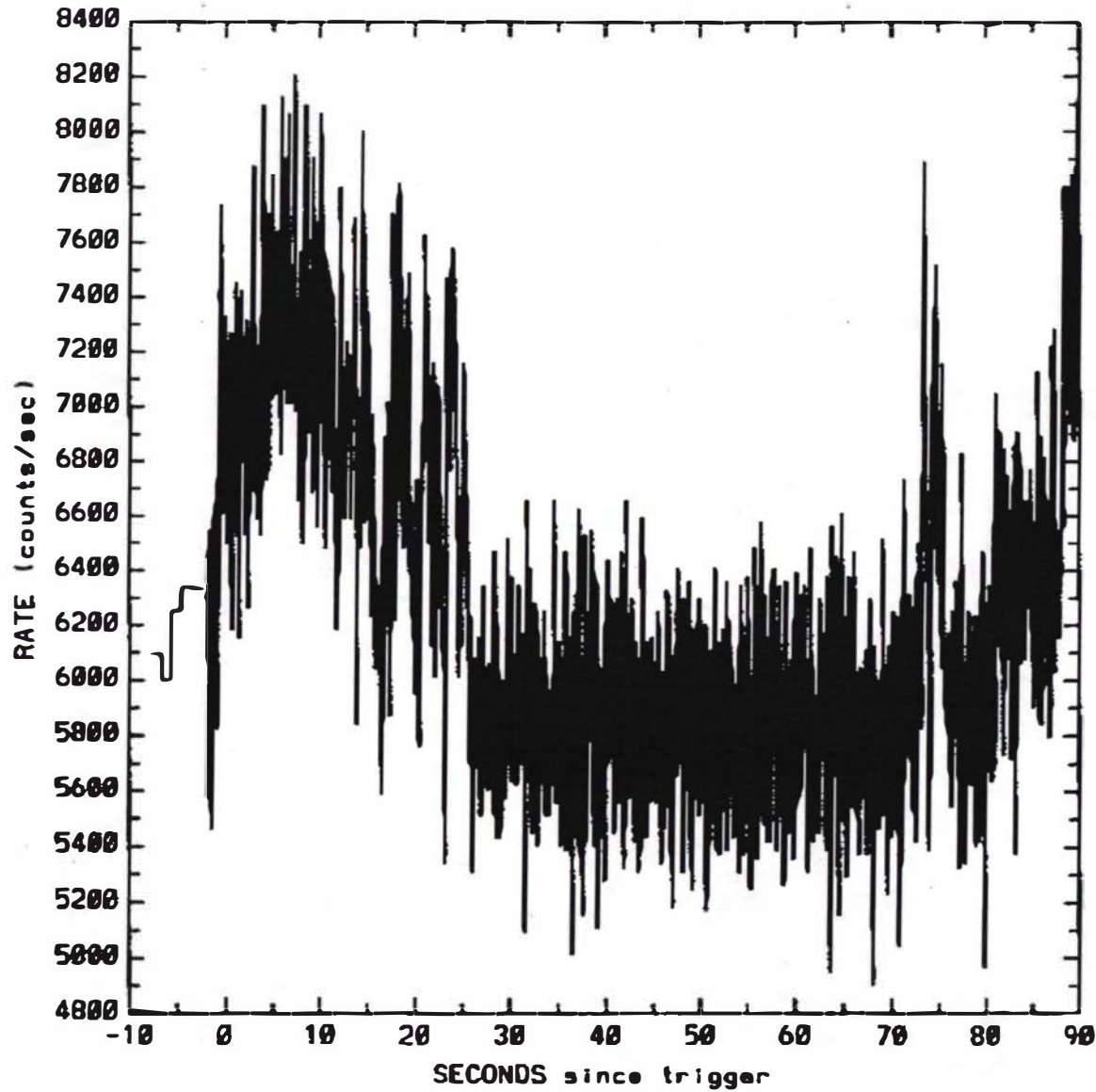
61

77

27 / 1 / 0



DISCSC Data for K. Hurley, No. 6454



21-JAN-2000 13:53:32

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

Trigger # . 6454

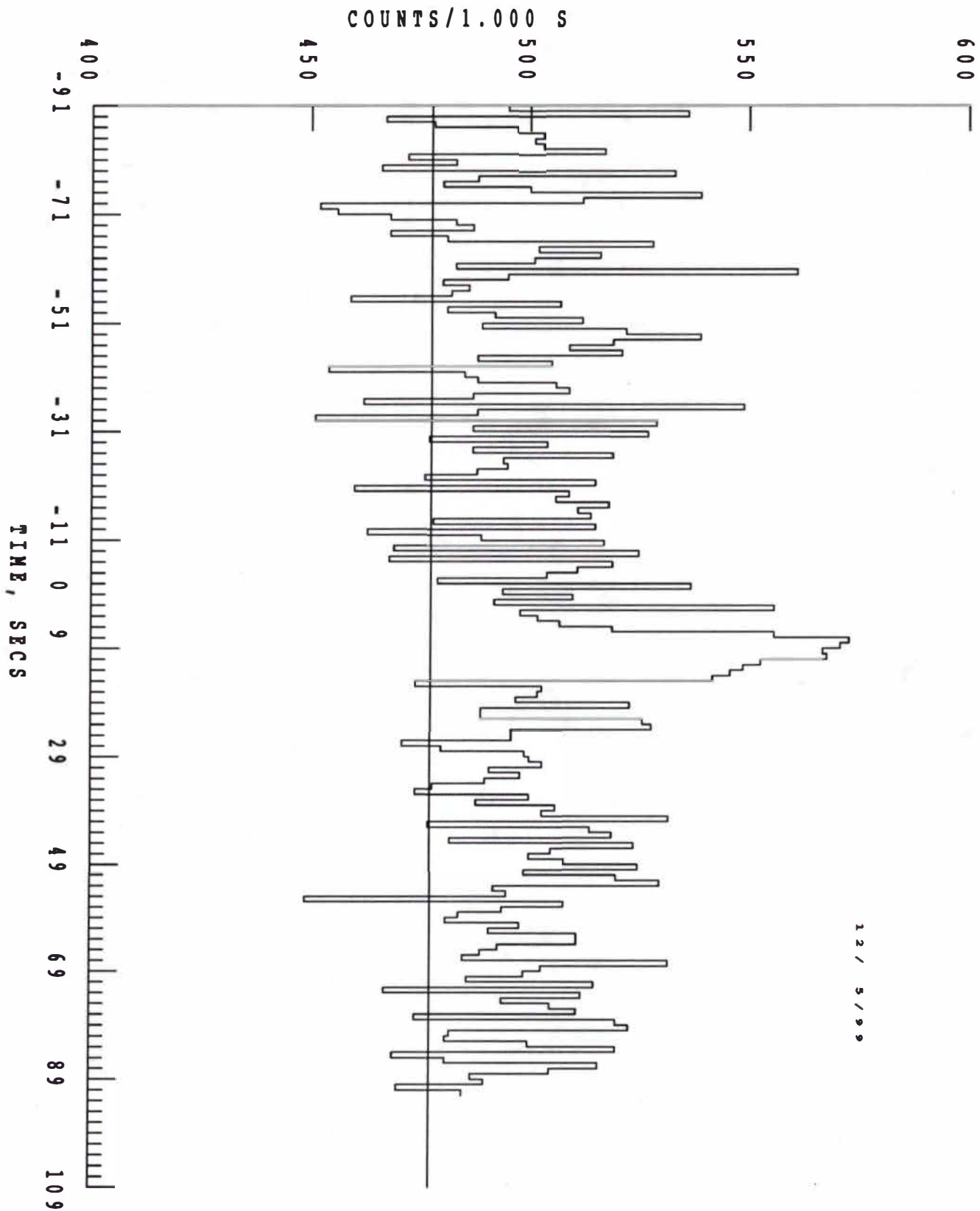
Trigger Time:
18758 / 22428.897Burst Data Type:
DISCSCDeadline
Corrected. NBackground Data
Type: PRED + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors (7..8):
--54--8Discriminators:
(3 , 4)Quality Mask:
801SP1

NEAR

29/10/97

22326.554

100-1000 keV



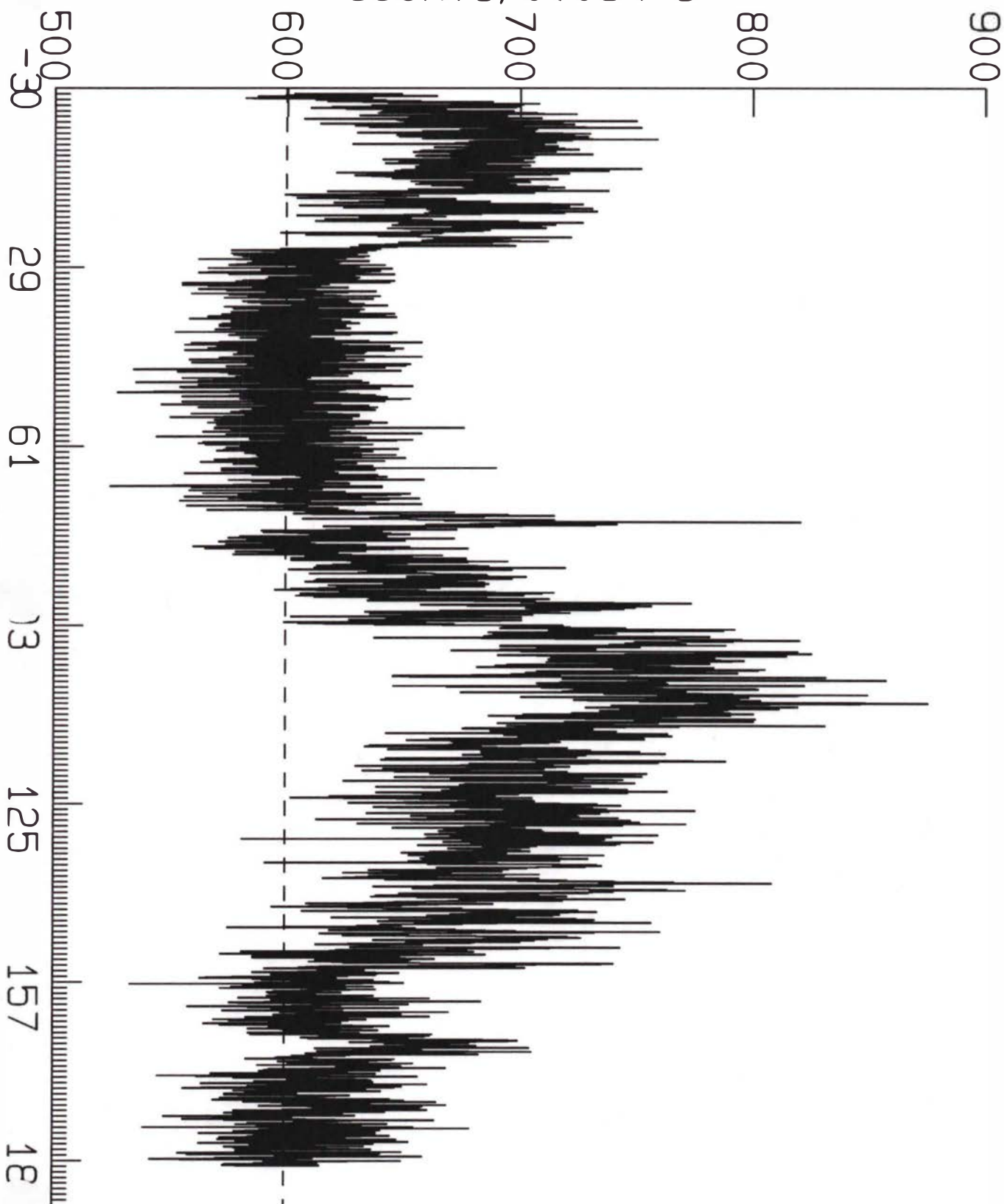
BATSE

29/10/97

22428.897

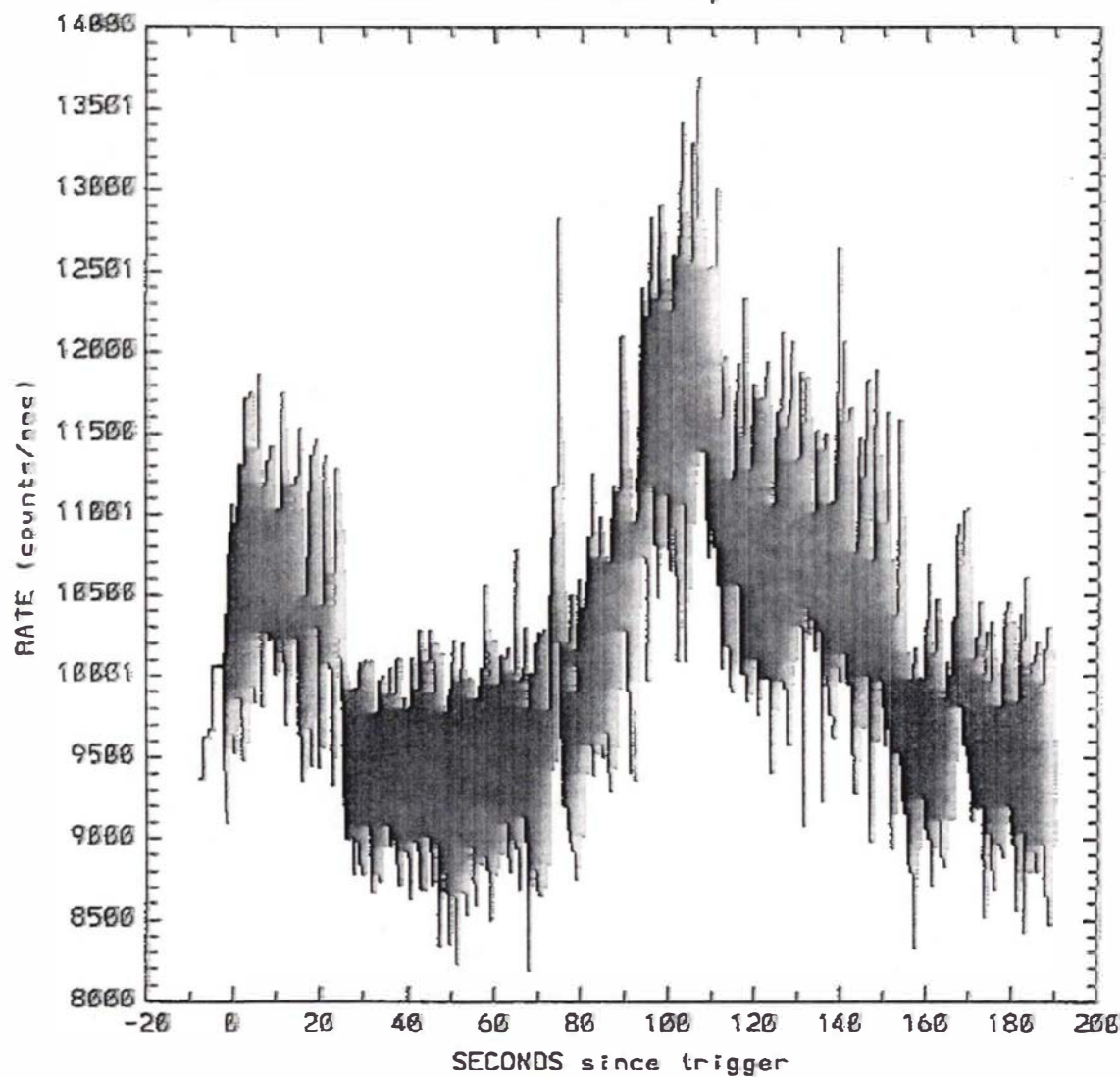
25- 100 keV

COUNTS/0.064 S



28 / 11 / 97

DISCSC Data for K. Hurley, No. 6454



20-NOV-1997 09:07:27

Created by KOPS BD
(Burst Display)
Version 12.25

Trigger # : 6454

Trigger Time:
10750 / 22420.897Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCSC
Minimum Integ. Time:
0.064 secondsDetectors [7..8]:
--54--0Discriminator:
(1, 2)Quality Mask:
BDISP1

From WOODSP@SSLMOR.msfc.nasa.gov Fri Oct 31 13:31:46 1997
Return-Path: <WOODSP@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA29056; Fri, 31 Oct 1997 13:31:46 -0800
From: WOODSP@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA10300; Fri, 31 Oct 1997 13:31:33 -0800
Date: Fri, 31 Oct 1997 15:29:05 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <971031152905.21e06a42@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6455
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6455
EVENT OF 1997 OCT 29 DAY OF YEAR=302
EVENT CROSSING TIME AT BATSE : 60483. S. OR 16:48:03.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 243.000 71.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/10/ 97 IS:
RA= 168.862 DEC= 13.983 DIST= 5.861 AU
BATSE-ULYSSES DISTANCE = 876851121. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -920.79 SECS.
CROSSING TIME AT ULYSSES IS 59562. S. OR 16:32:42 +/- 518.00 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/10/ 97 IS:
RA= 260.807 DEC= -24.387 DIST= 1.911 AU
MARS-BATSE DISTANCE = 285876224. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 103.08 SECS.
CROSSING TIME AT MARS IS 60586. S. OR 16:49:46 +/- 166.15 SECONDS

BATSE BURST TRIGGER

NO.: 6455

TIME: TJD=0750 SECONDS=60483

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142.4 AZIMUTH=321.3 ERROR=4 DEGREES

COMMENTS:

GRB LASTING ABOUT 28 SEC. TWO SHORT PULSES SEPARATED BY ABOUT
25 SEC. HARD SPECTRUM. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6455	971029	10750	60483	4500	243	+71	28

Date: Feb 7 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?

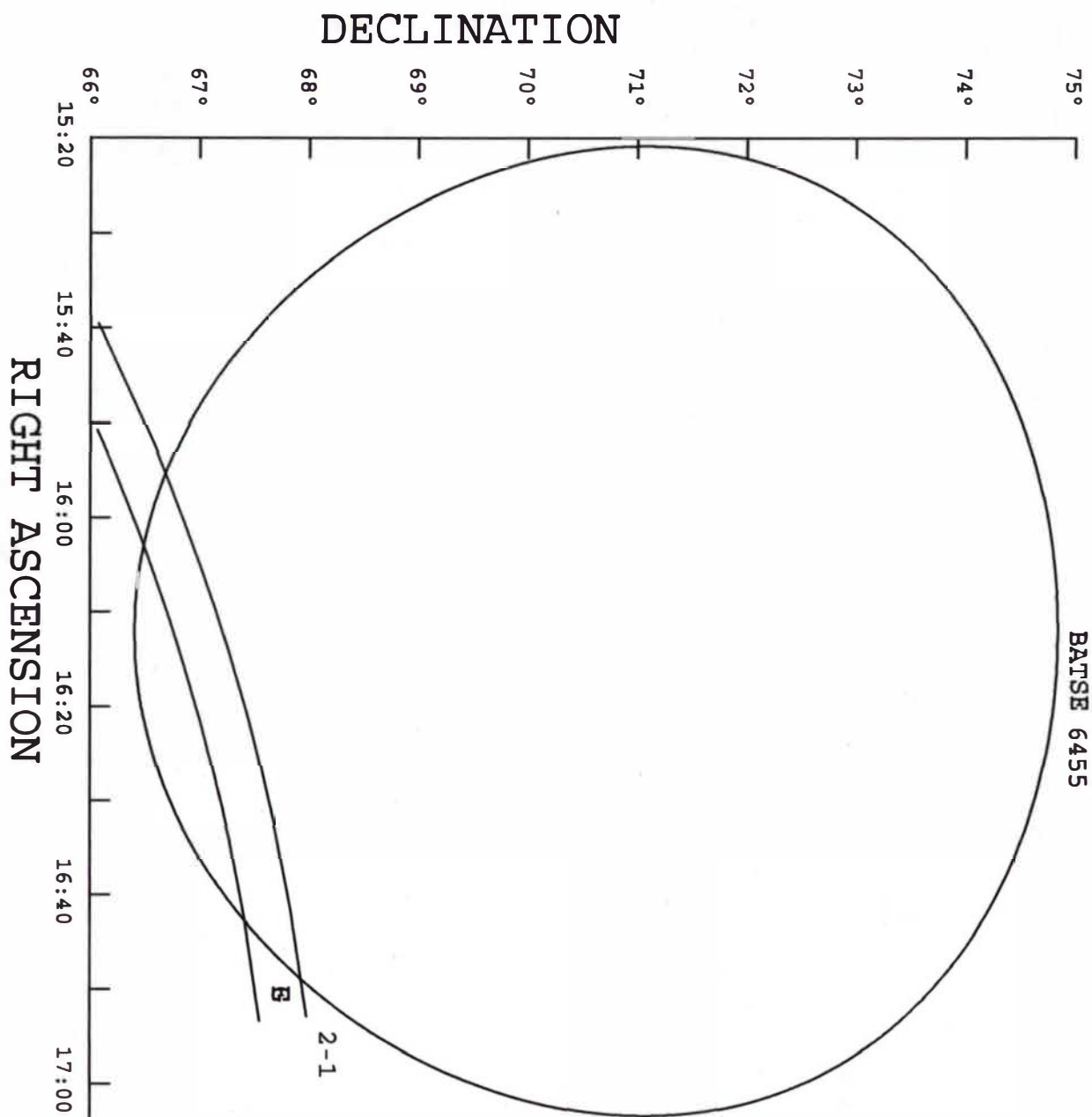
*No - BATSE 1s data used,
25-100 keV. Events is ≤ 1 s long*

- ☒ 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 OCT 29, 1997 16:48

7 / 2 / 0



BATSE

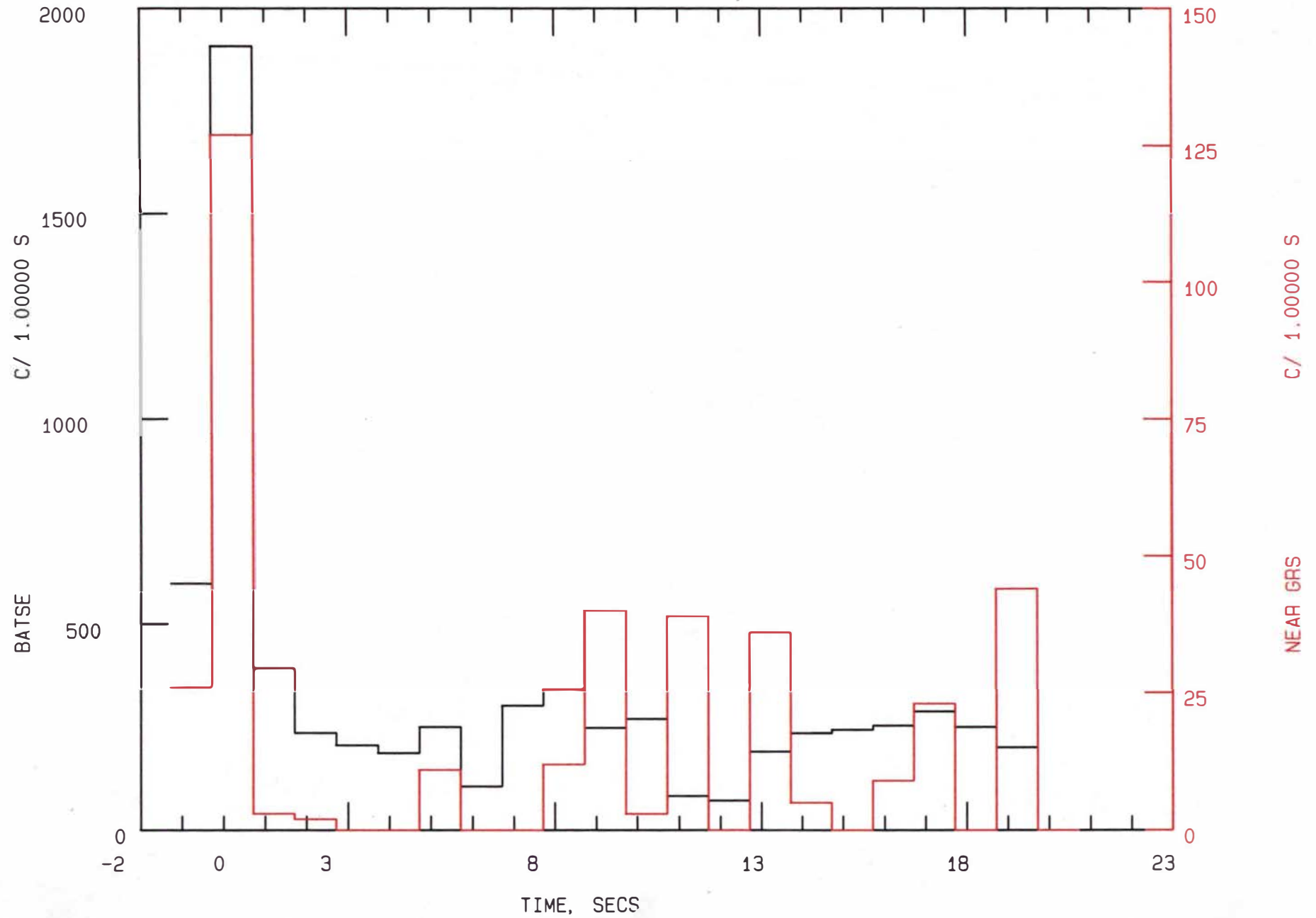
-NEAR GRS

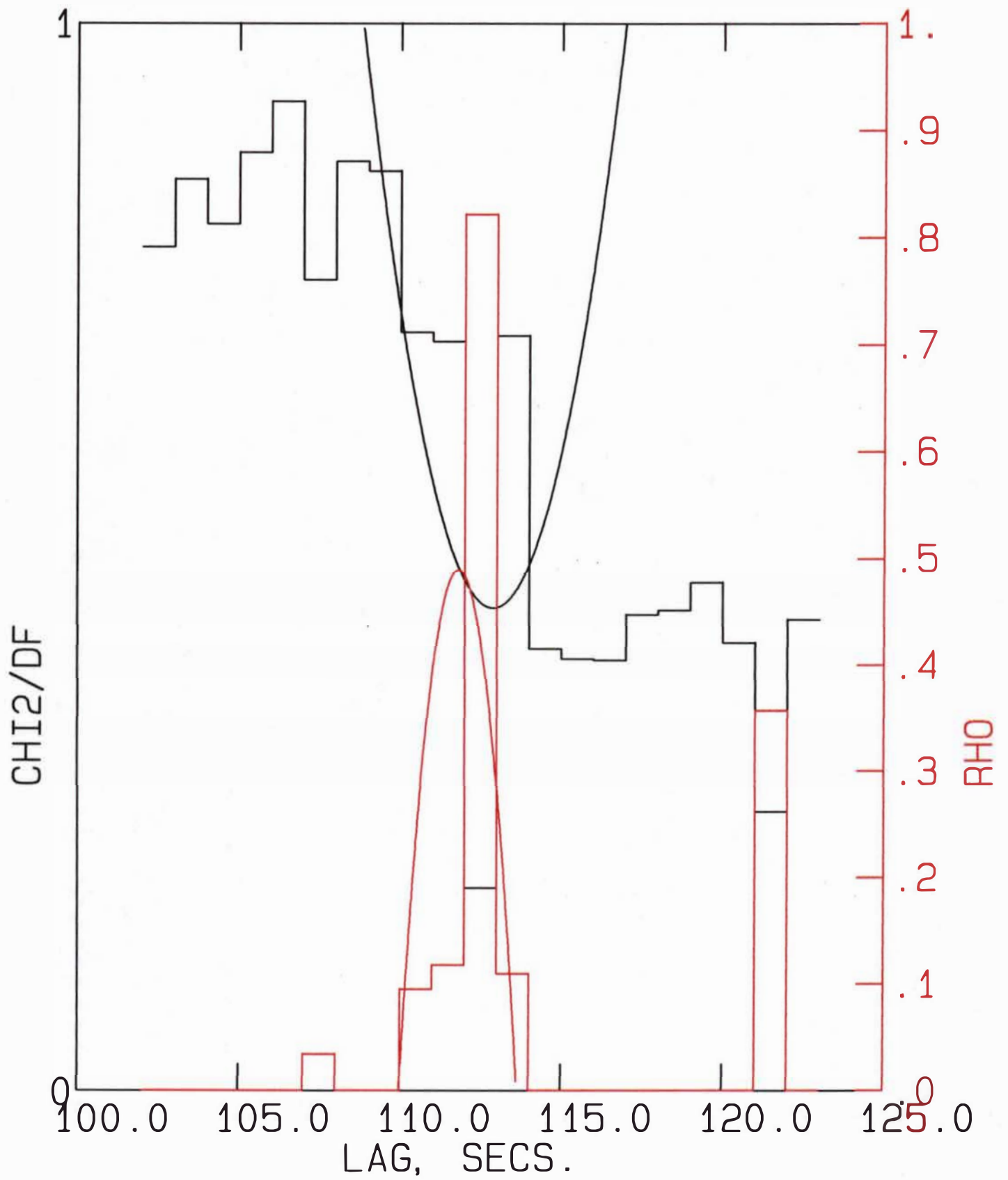
CORRELATION

29/10/97

60483.554

7/ 2/ 0





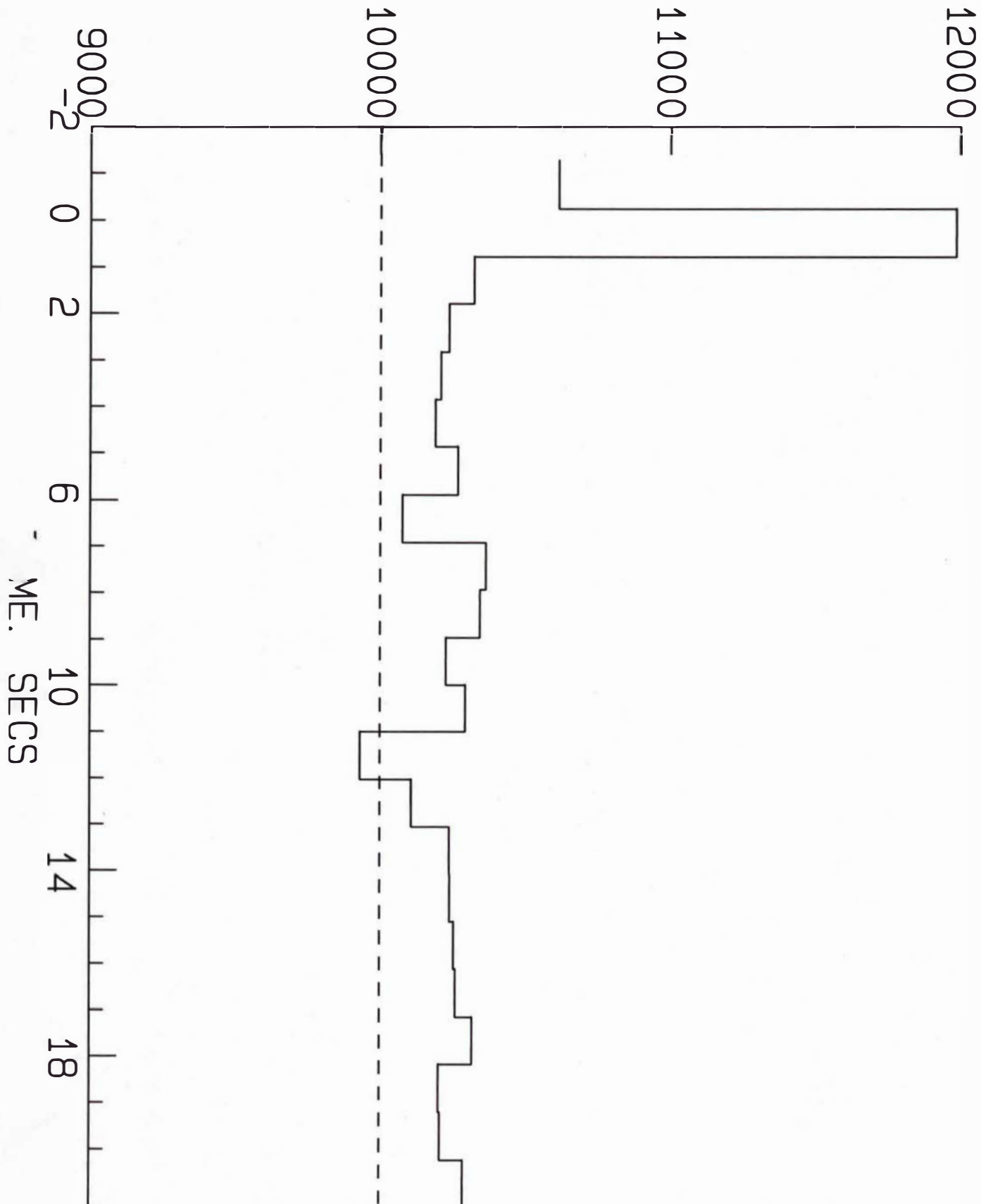
BATSE

29/10/97

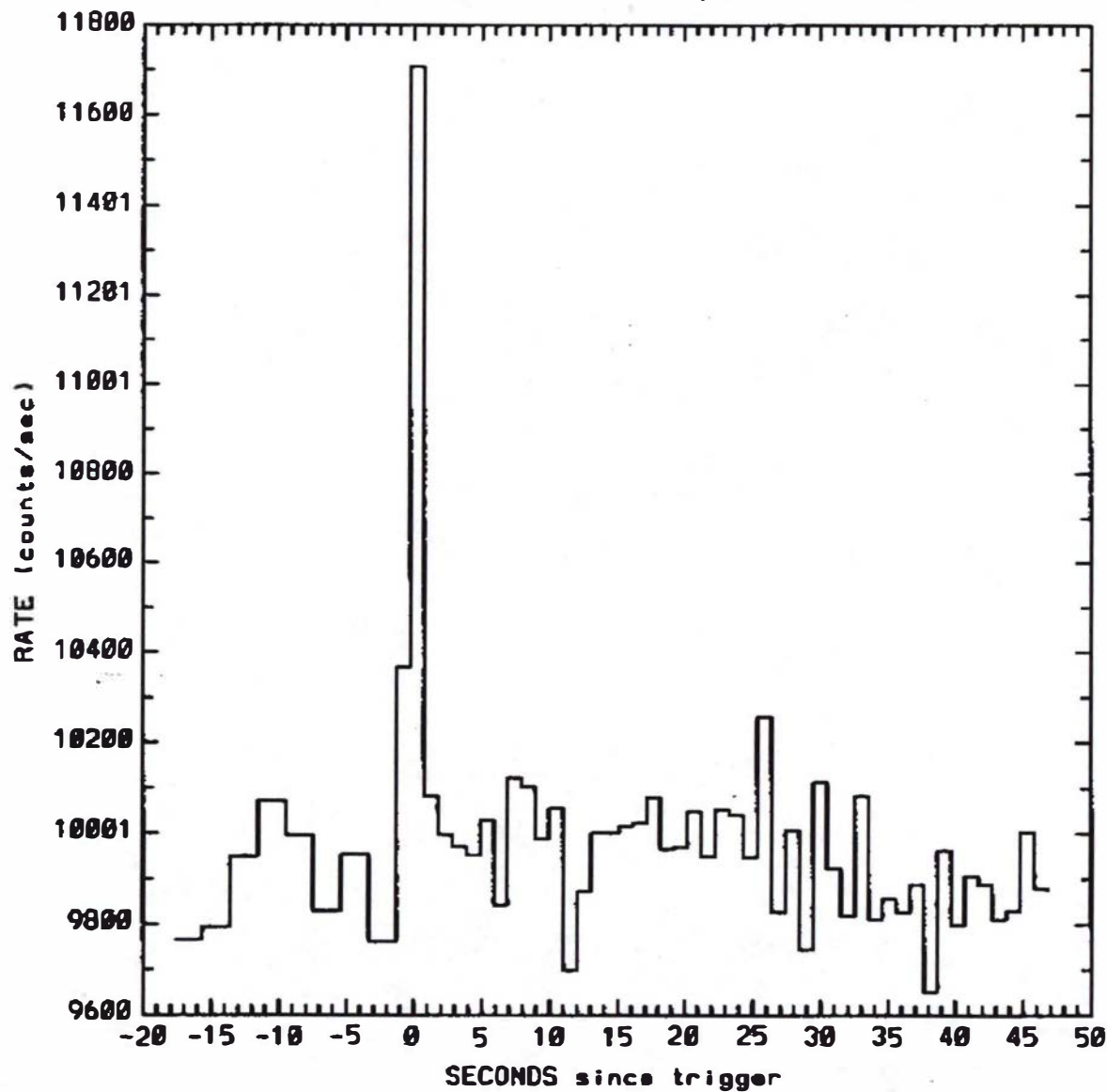
60483.554

25- 100 keV

COUNTS/1.024 S



DISCLB Data for K. Hurley, No. 6455



21-JAN-2000 13:55:55

Created by MOPS BD
(Burst Display)
Version 12.26

Trigger # . 6455

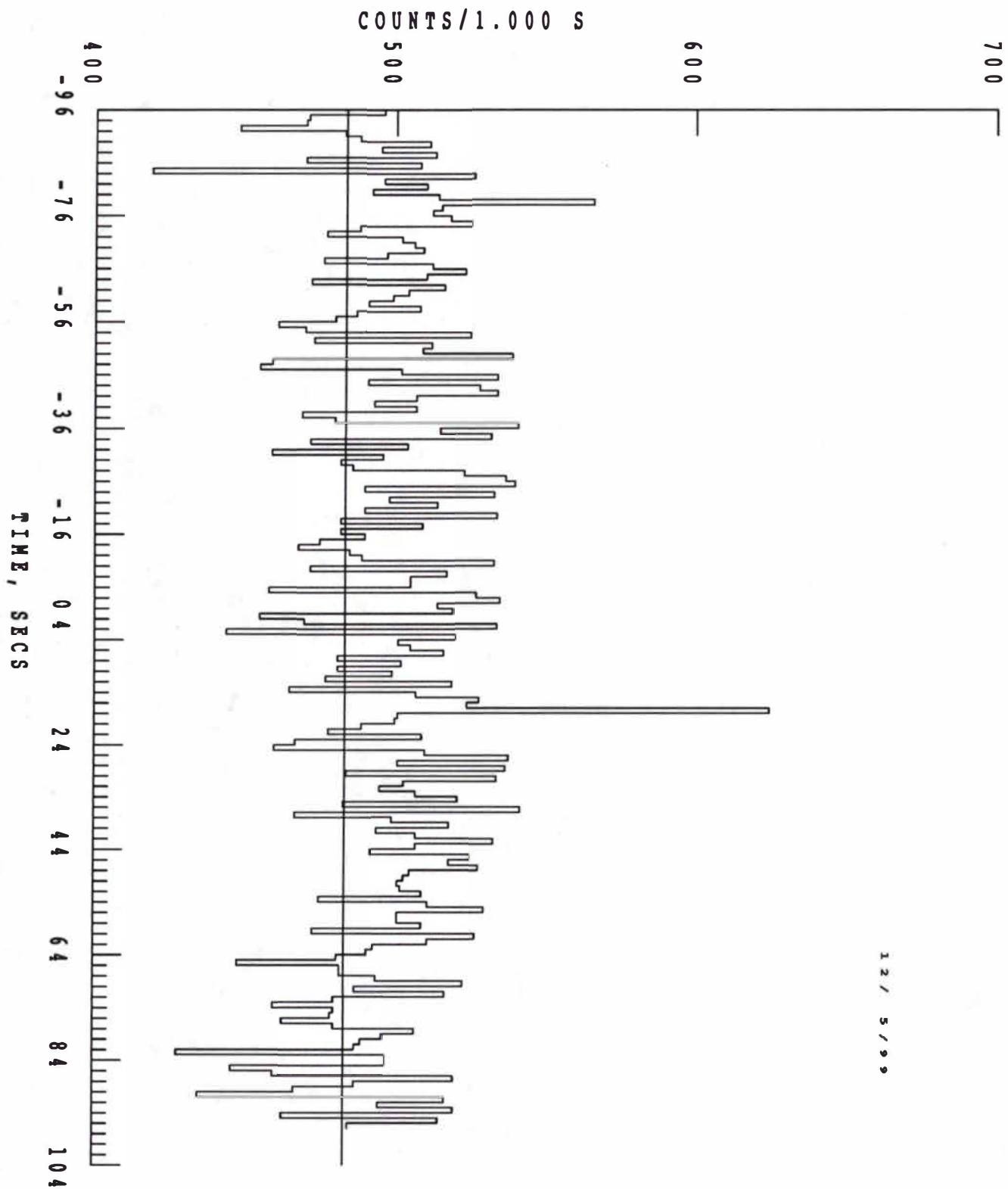
Trigger Time:
10750 / 68483.553Burst Data Type:
DISCLBDeadtime
Corrected: NBackground Data
Type: NoneMinimum Integ. Time:
1.024 secondsDetectors (7..9):
7---3-1-Discriminators:
(1..2)Quality Mask:
BDISP1

NEAR

29/10/97

60467.547

100-1000 keV



BATSE BURST# 6455

ULYSSES RT

31 / 10 / 97

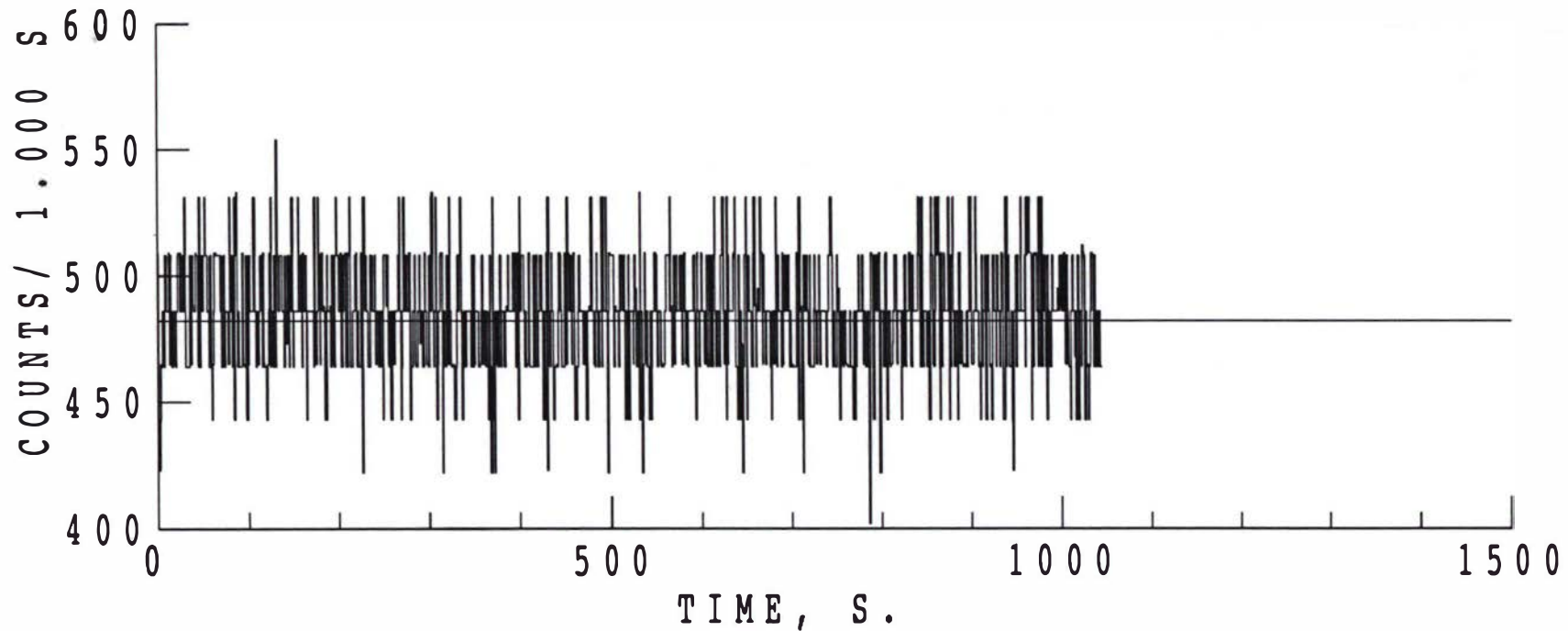
29 / 10 / 97 59040.219 s

0.500 S INTERVALS REGROUPED BY 2

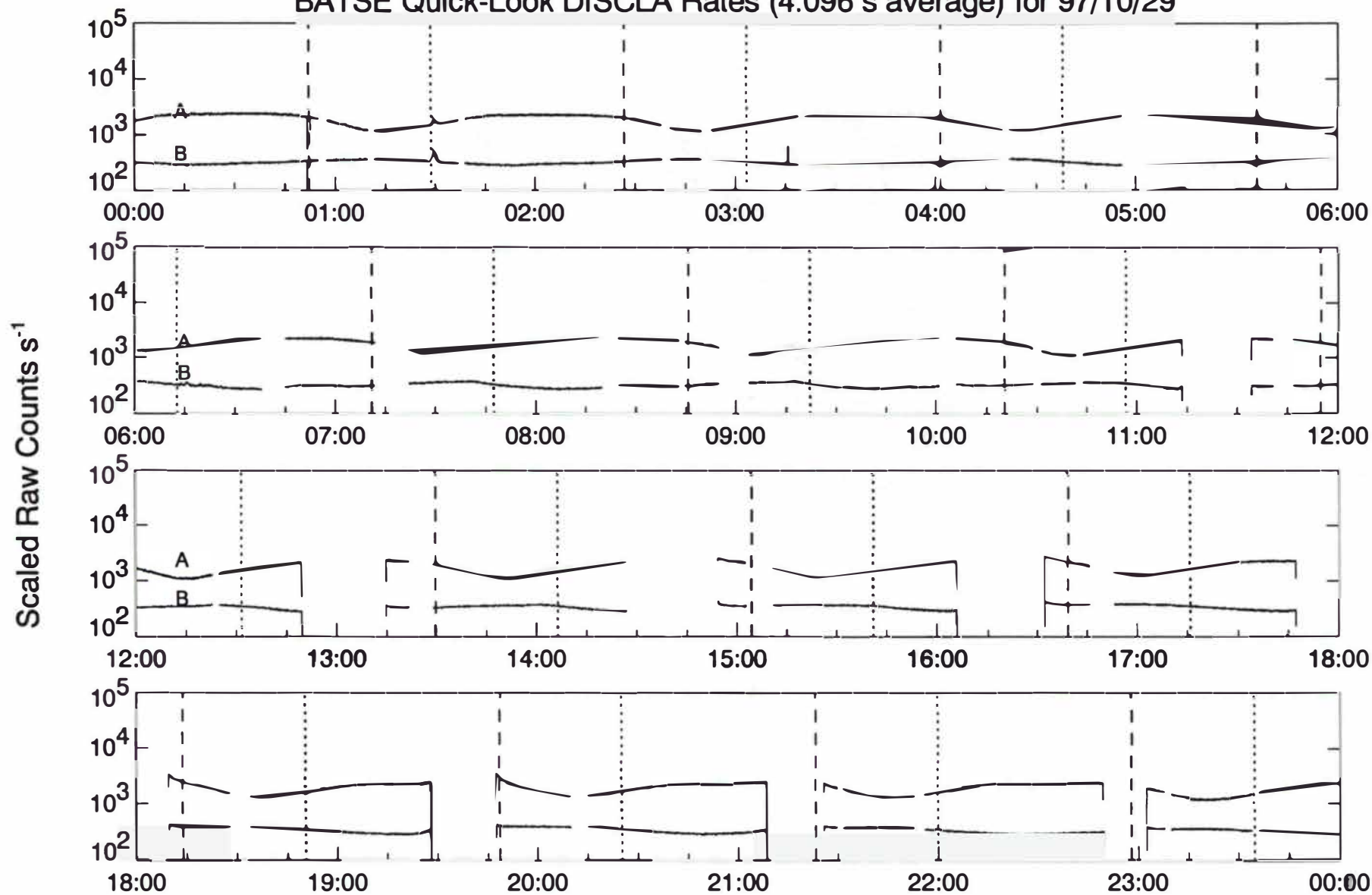
0 - 0 keV

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 97/10/29



Current Time: 97/11/02, 1008 EDT

A: Channel 0 Most Sunward LAD

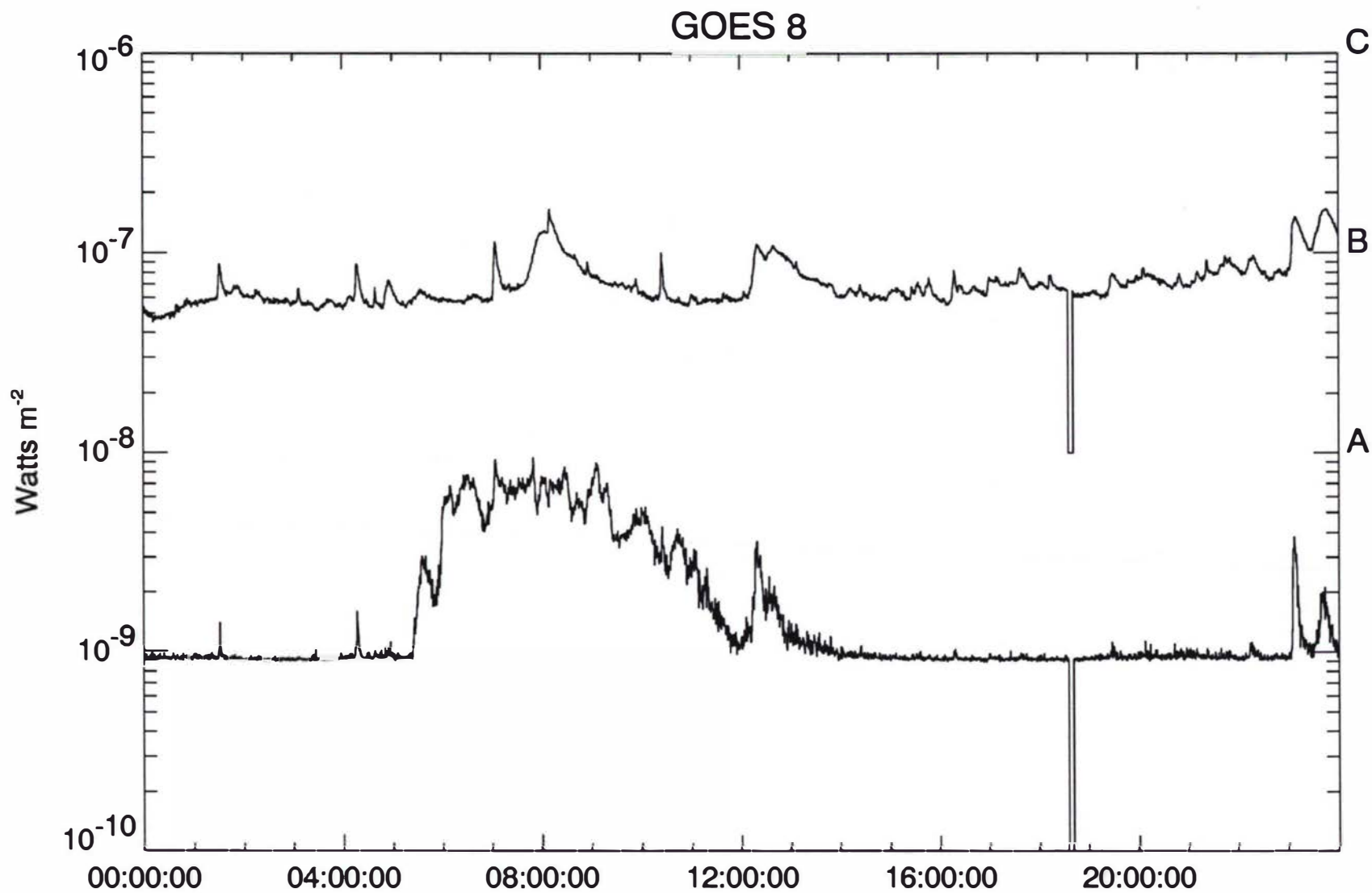
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare



Data Start: 97/10/29, 0000:00

Plot created: 97/11/02, 1007

Channel

1 (1.0 - 8.0 Angstroms)

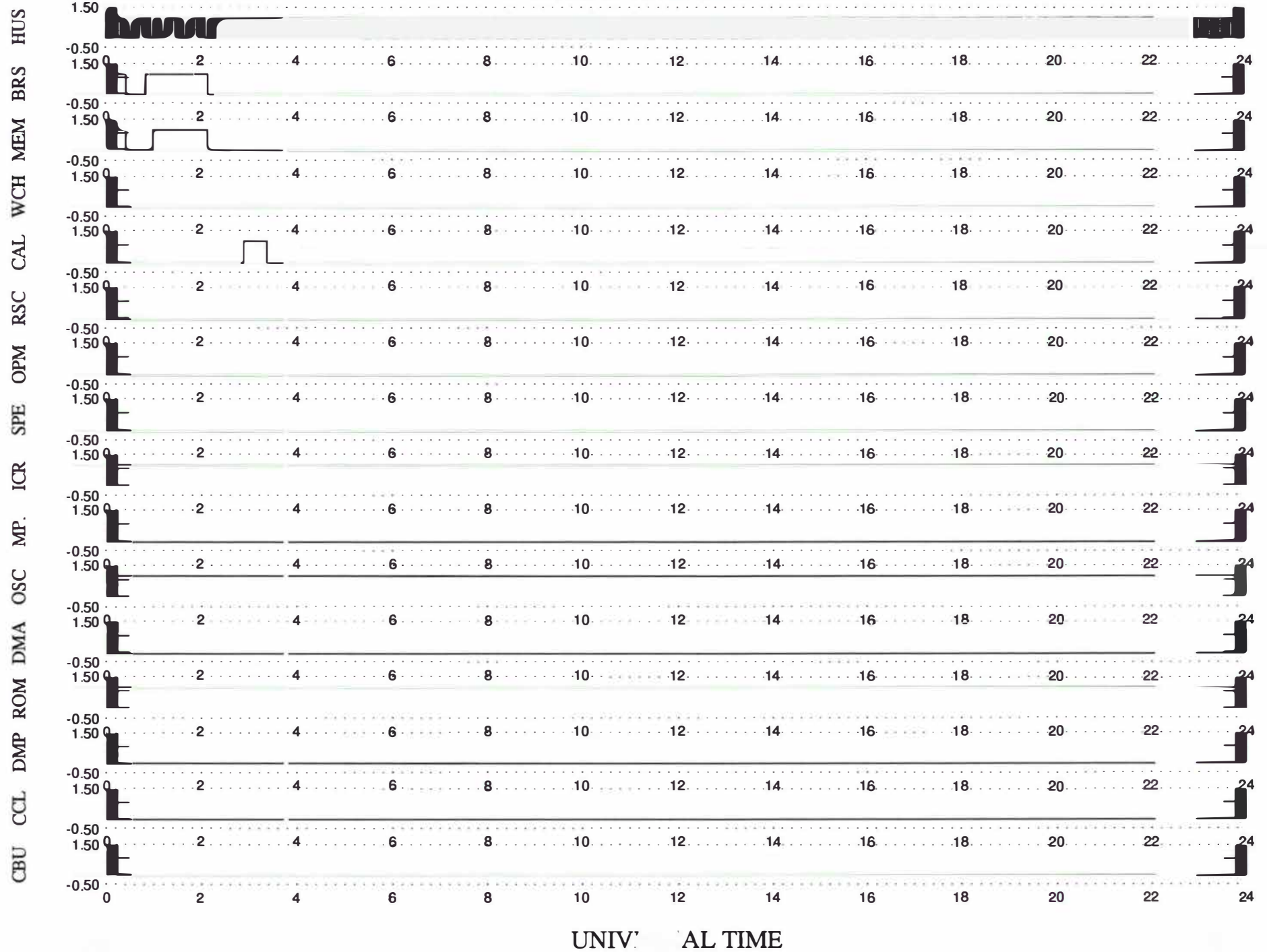
Background not subtracted

2 (0.5 - 4.0 Angstroms)

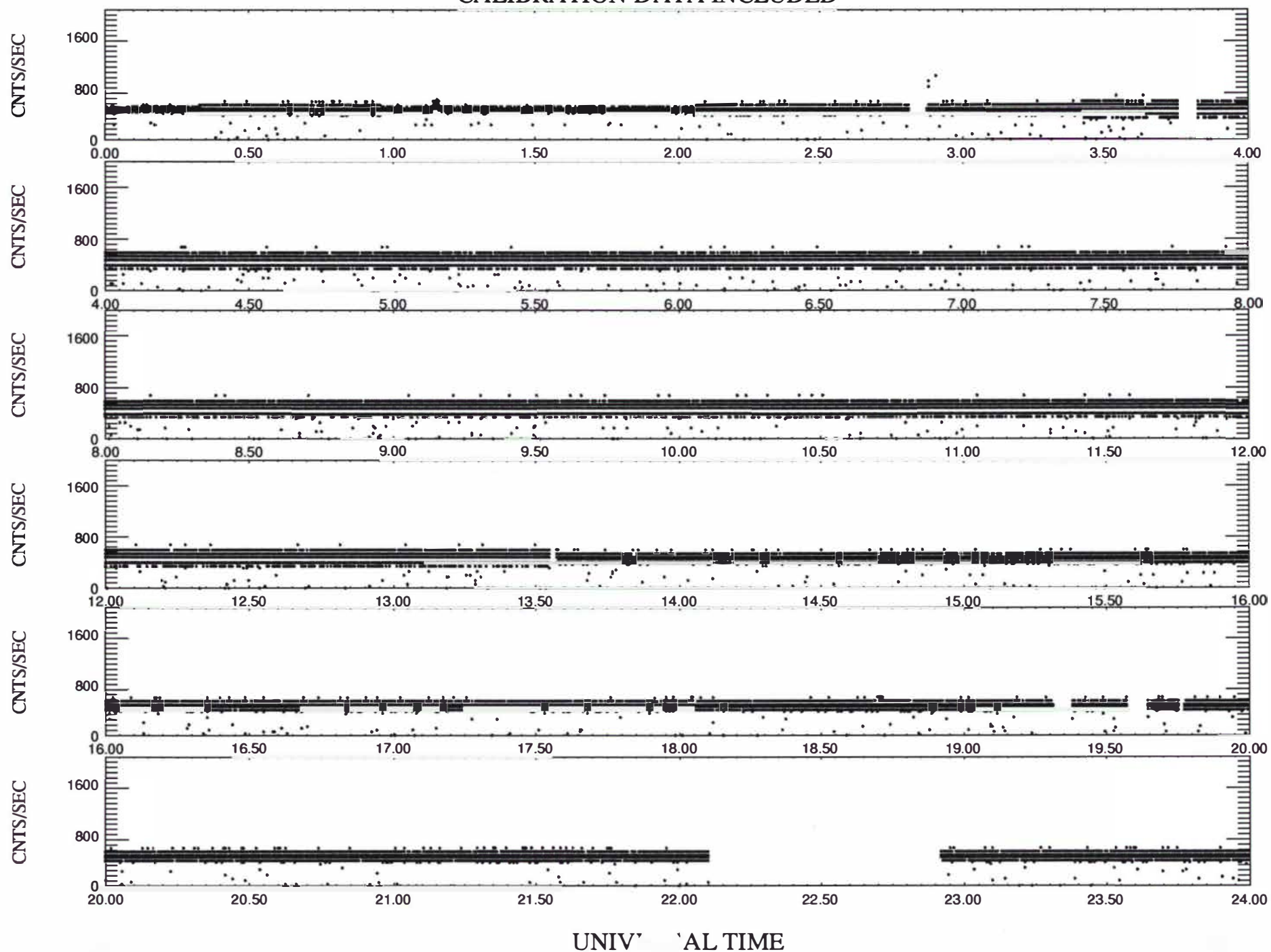
Background not subtracted

Sample average = 10

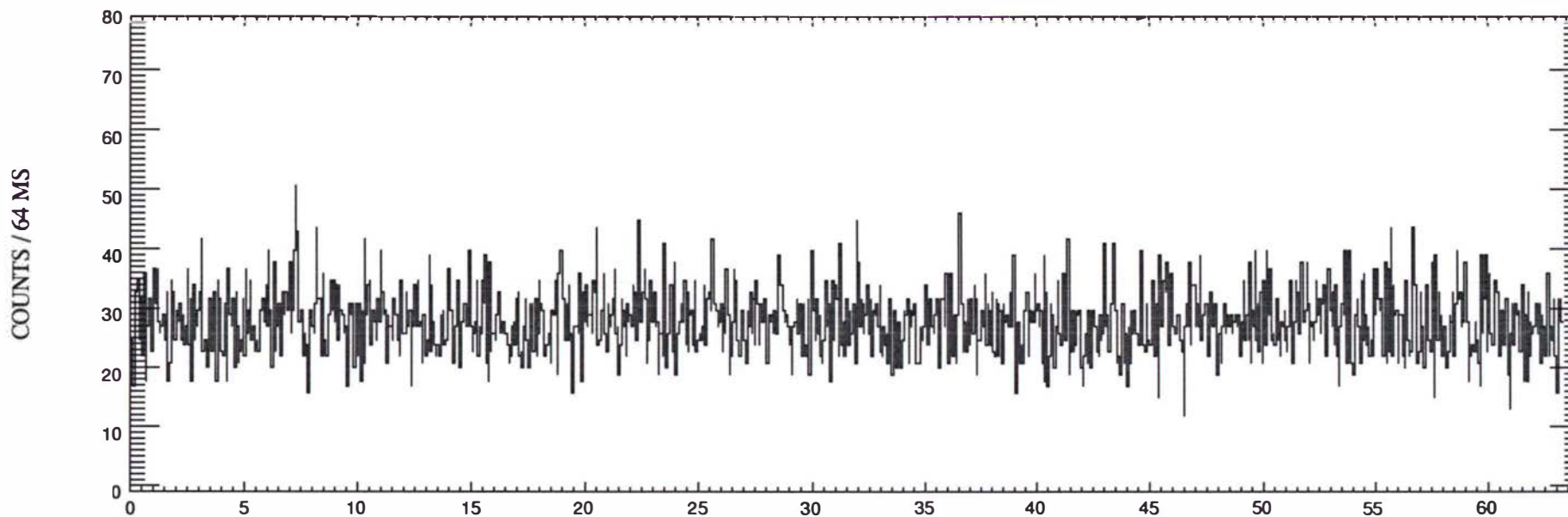
BURST NUMBER 11



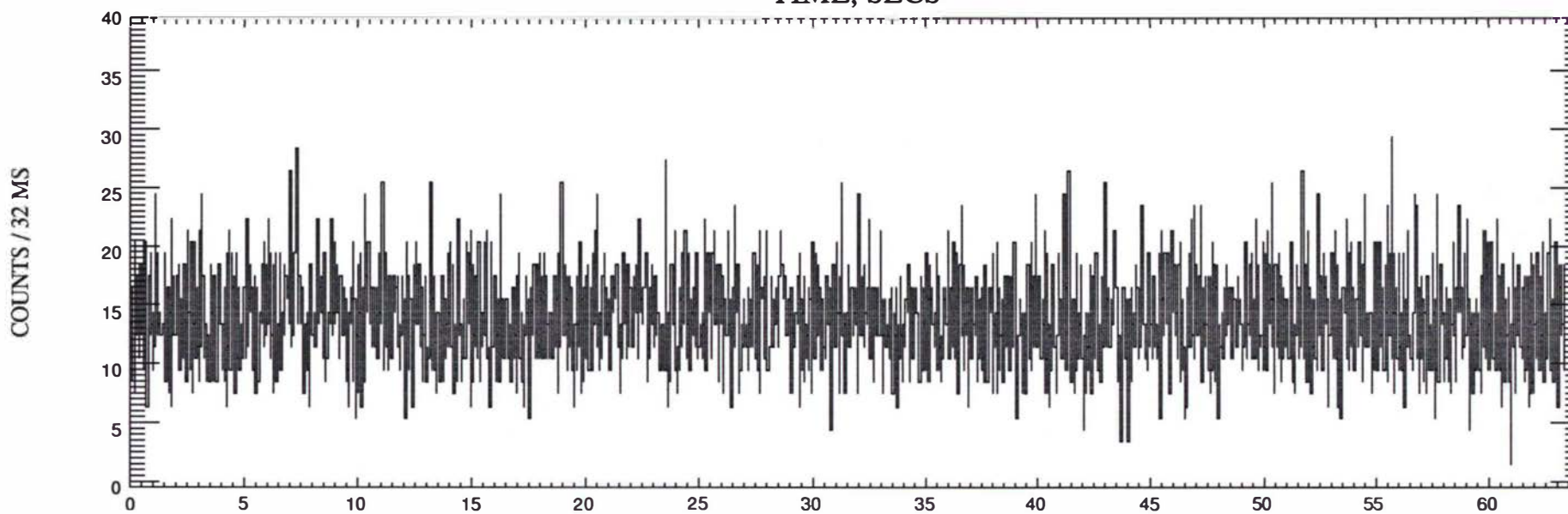
CALIBRATION DATA INCLUDED



Burst Counter 11 at UT= 0.791966069539 h= 2851.078 s 00:47:31.078

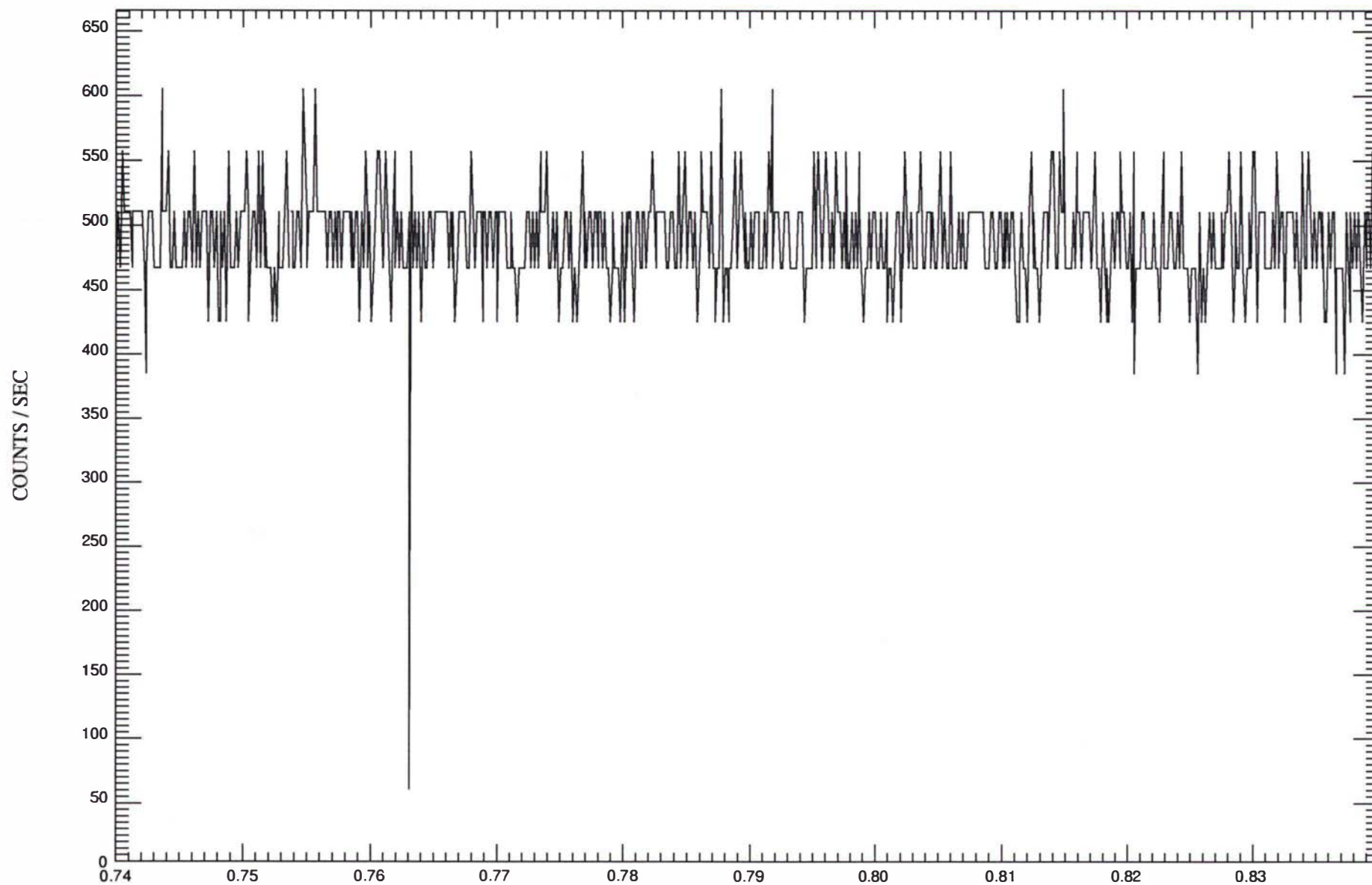


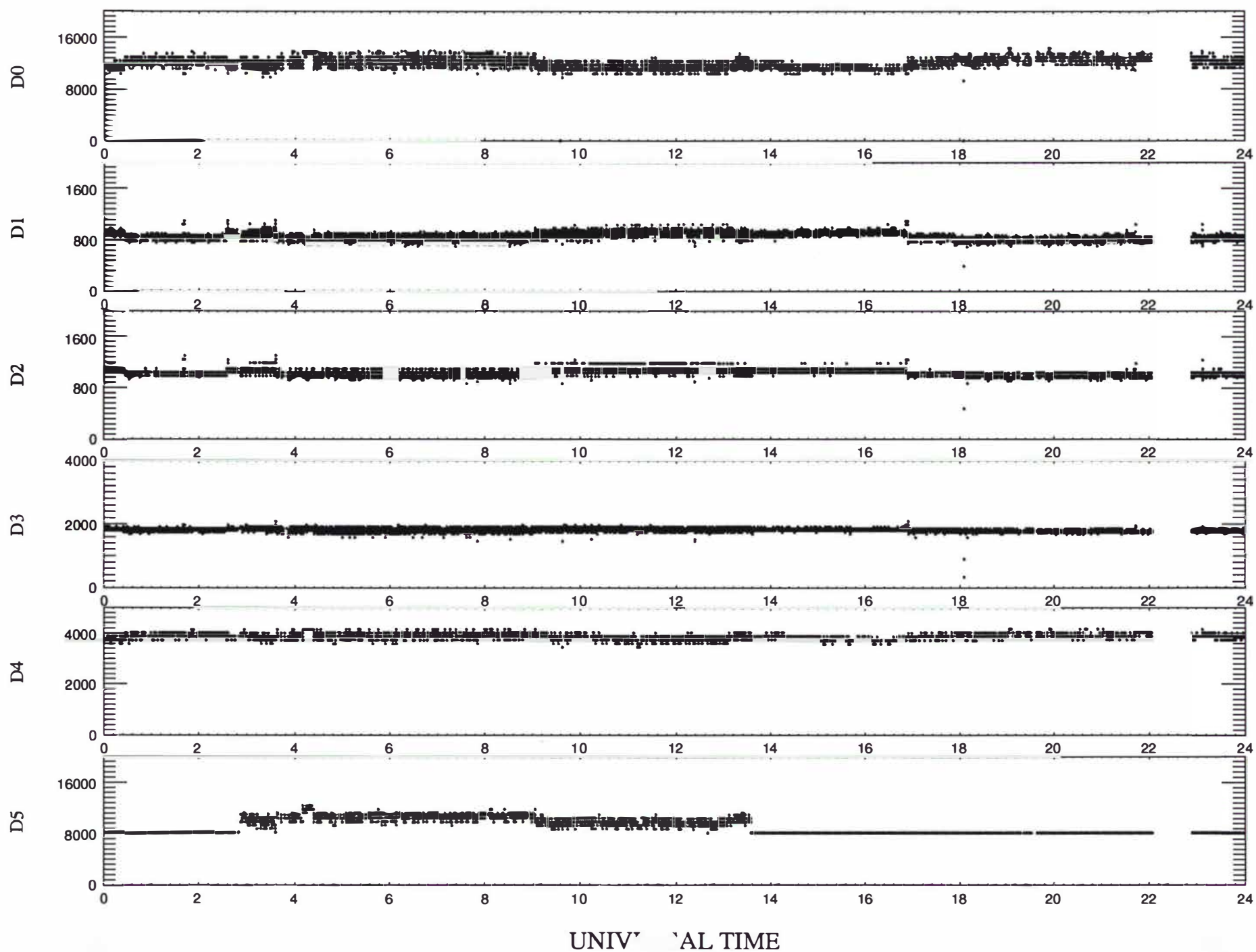
TIME, SECS



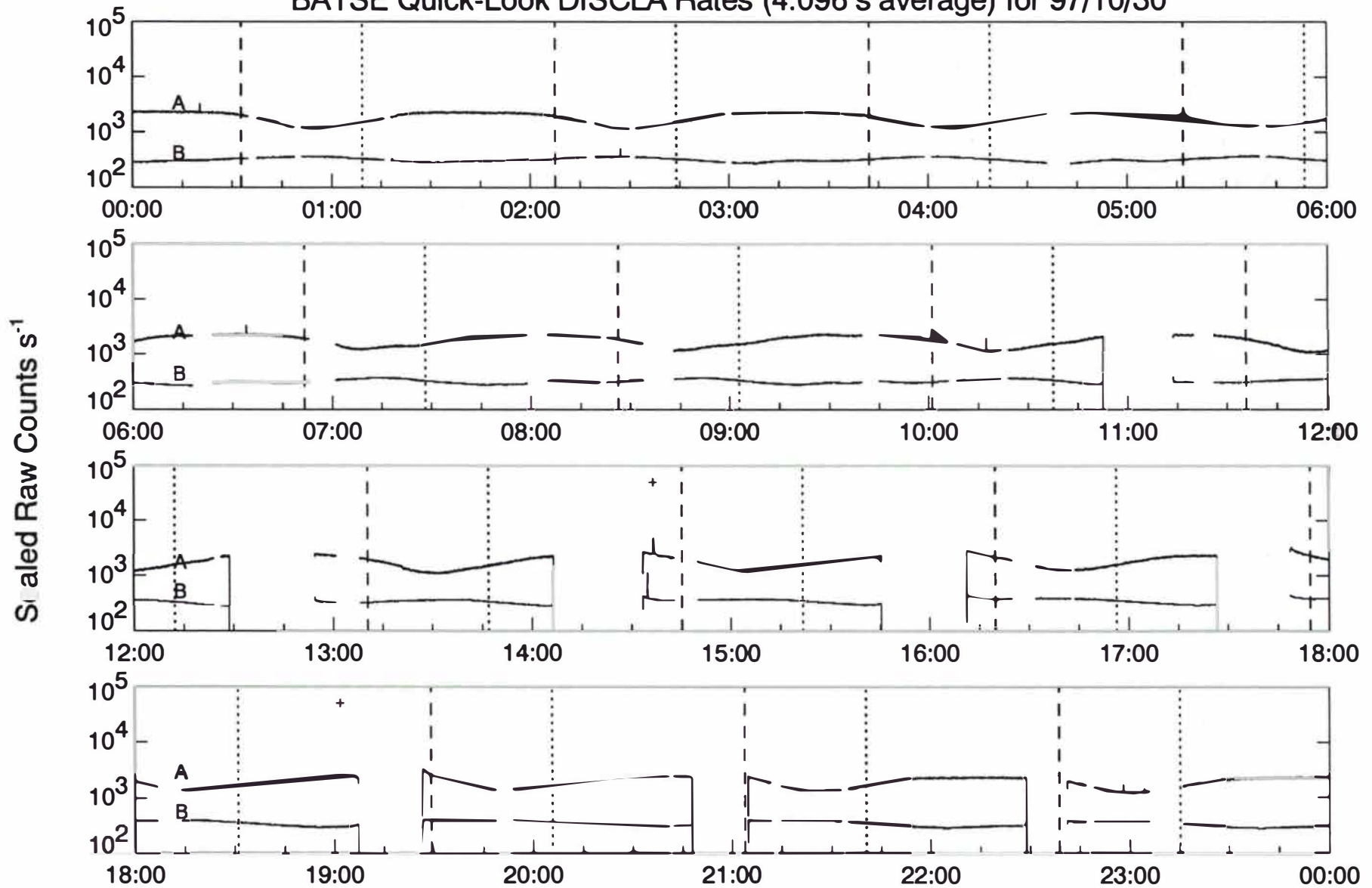
TIME, SECS

CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/30



Current Time: 97/11/03, 1008 EDT

A: Channel 0 Most Sunward LAD

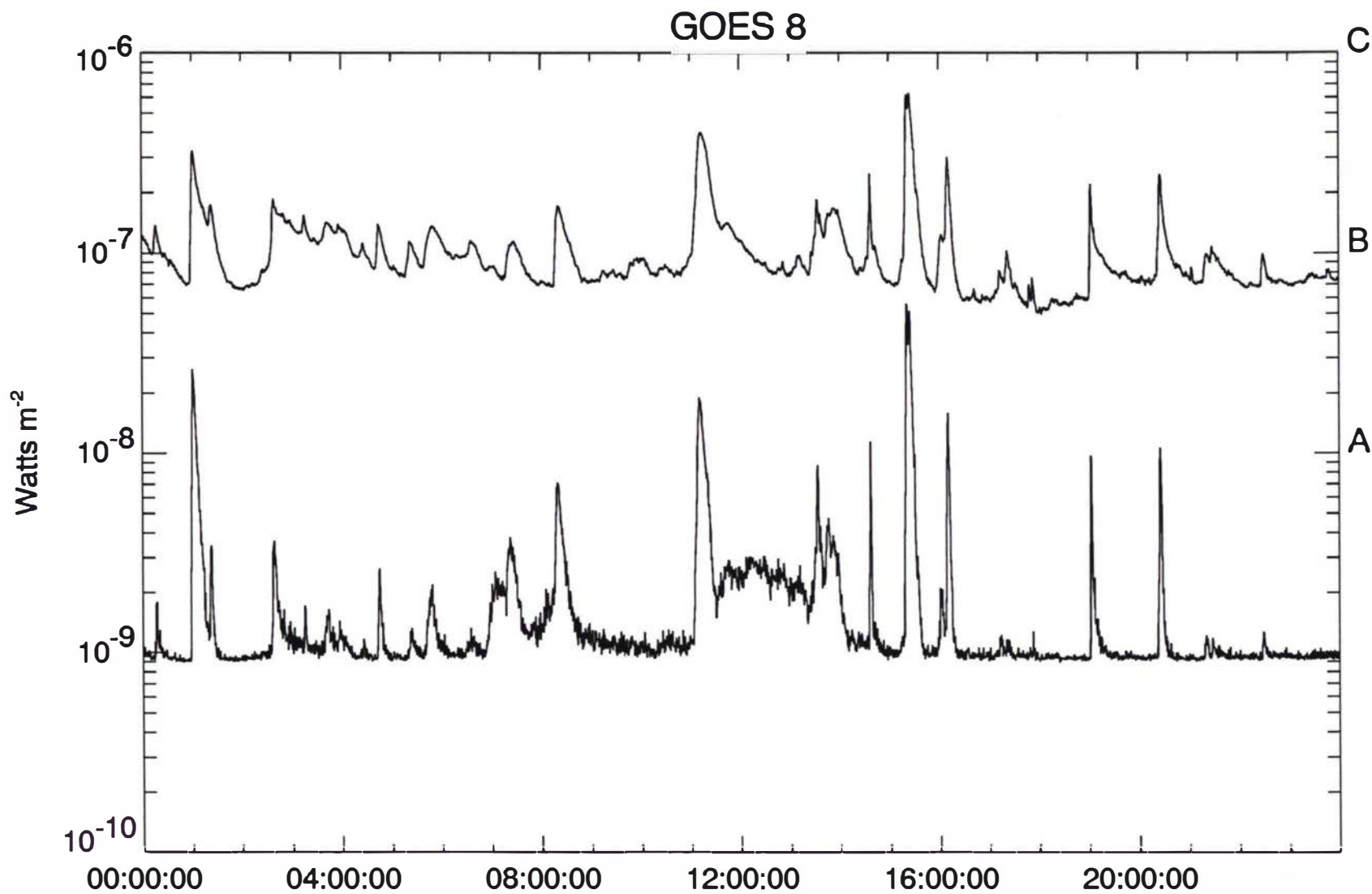
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare



Data Start: 97/10/30, 0000:00

Plot created: 97/11/03, 1007

Channel

1 (1.0 - 8.0 Angstroms)

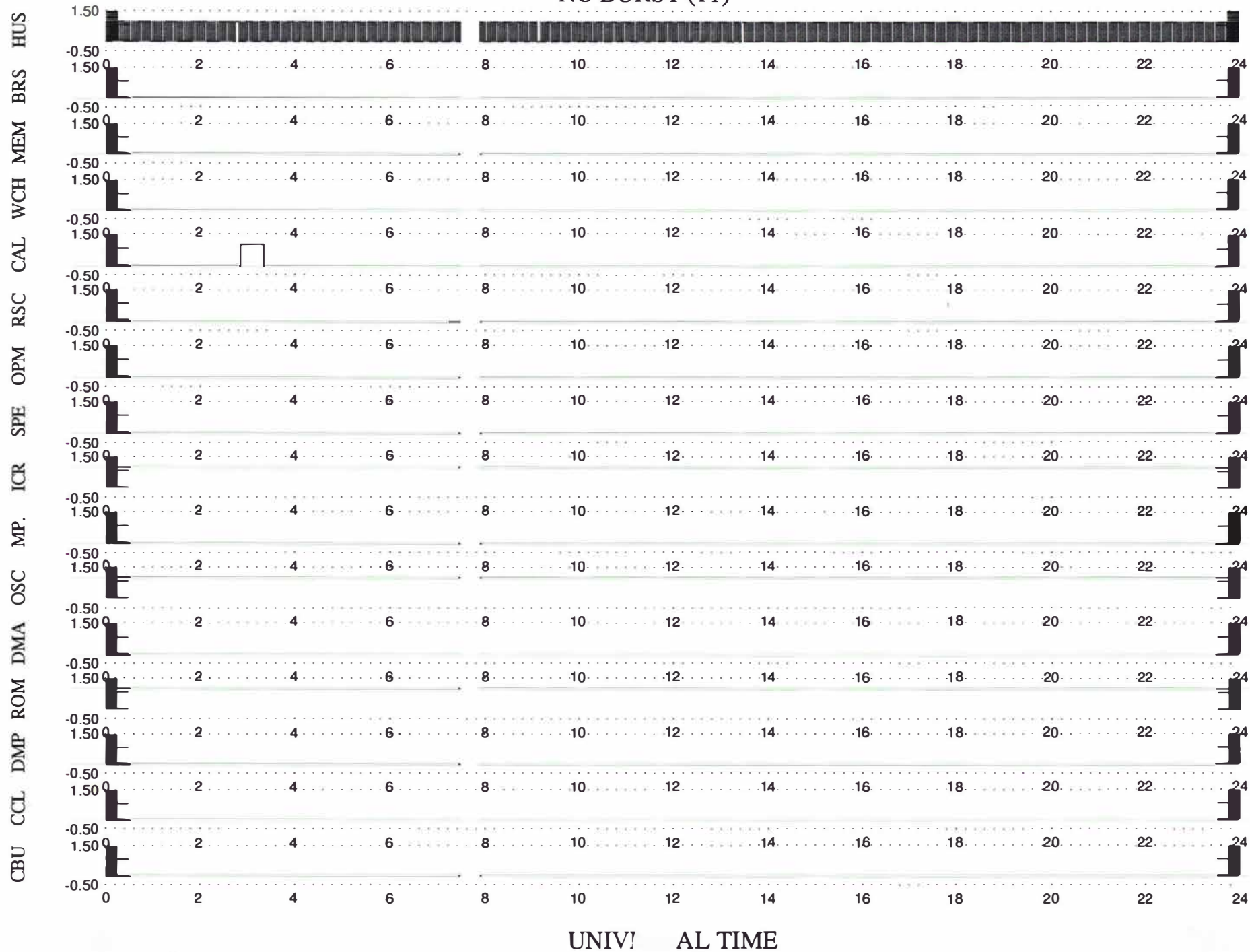
Background not subtracted

2 (0.5 - 4.0 Angstroms)

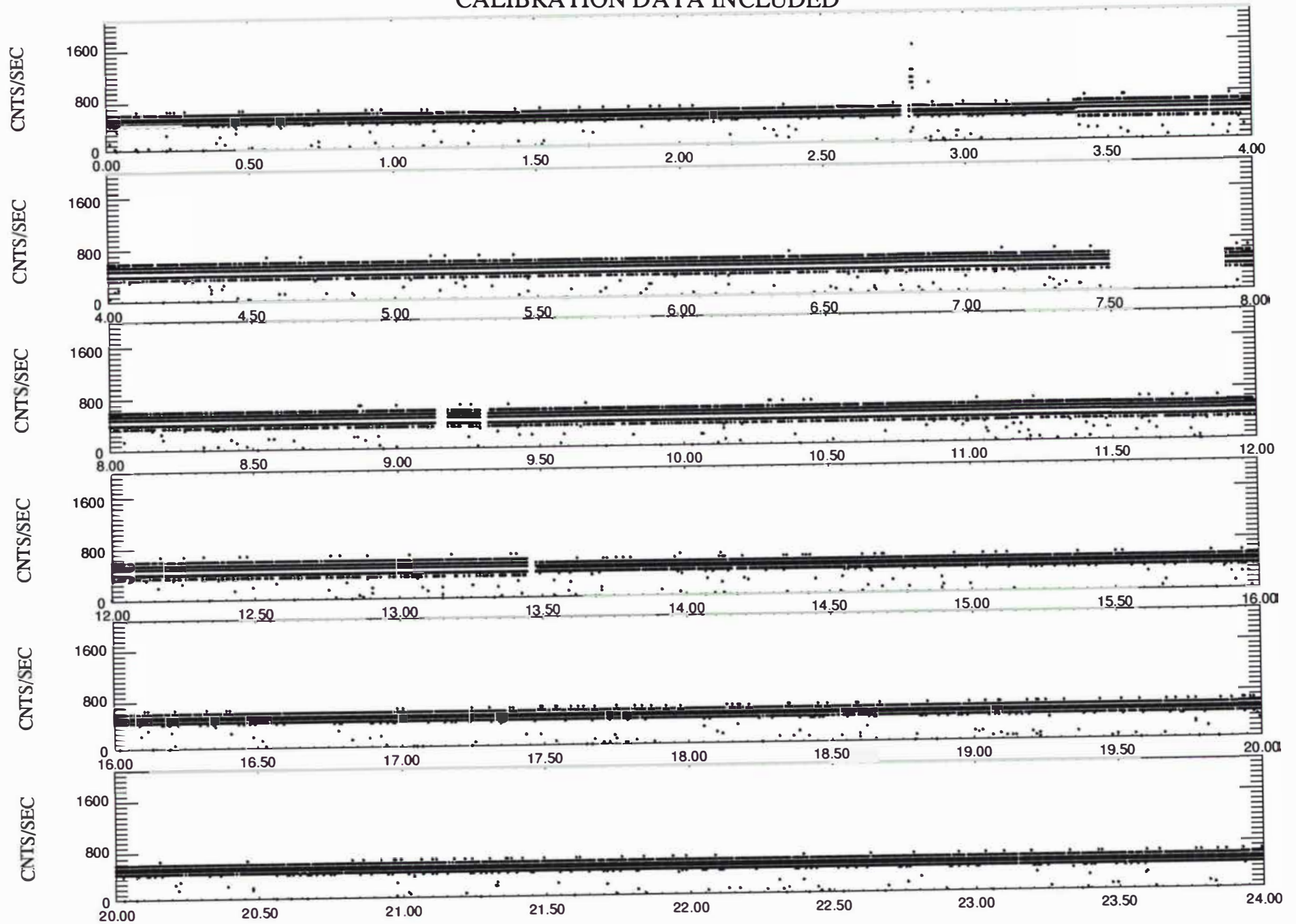
Background not subtracted

Sample average = 10

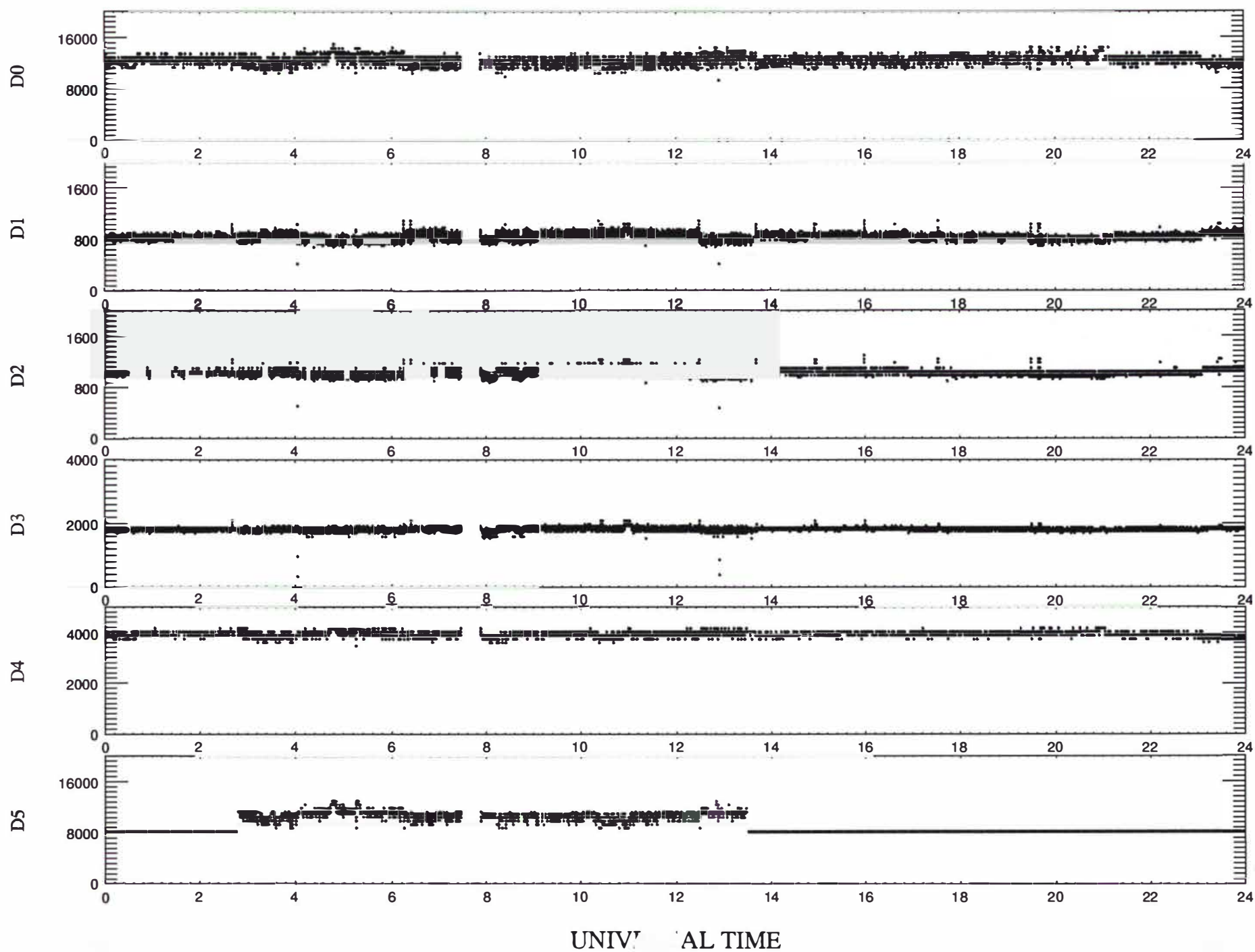
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV AL TIME



KONUS

04 / 02 / 00

ULYSSES RT

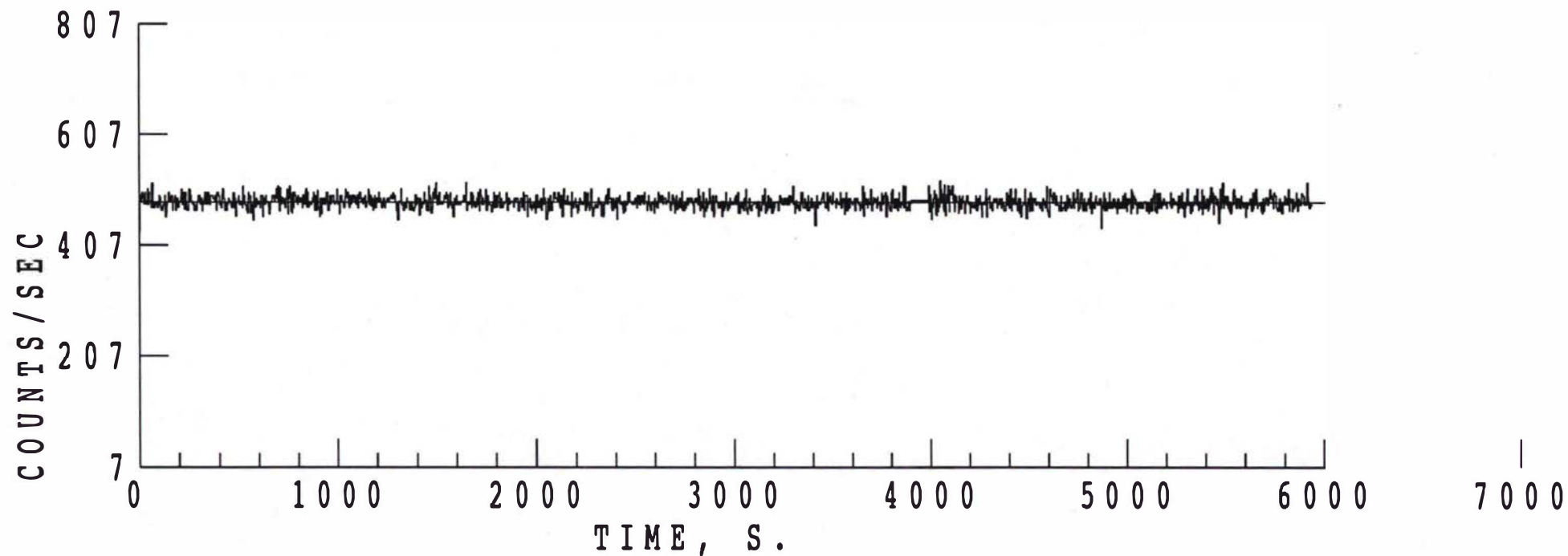
31/10/97 5976.053 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

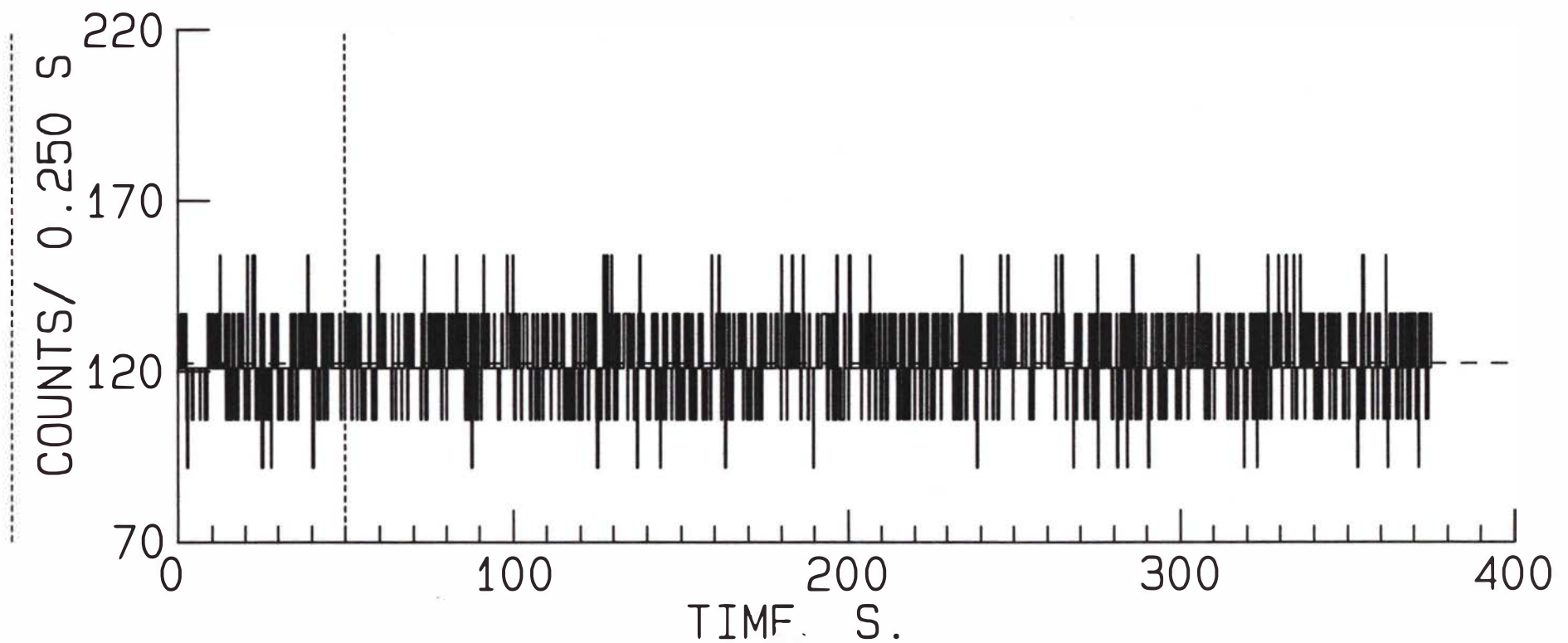
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Konus .16 s.

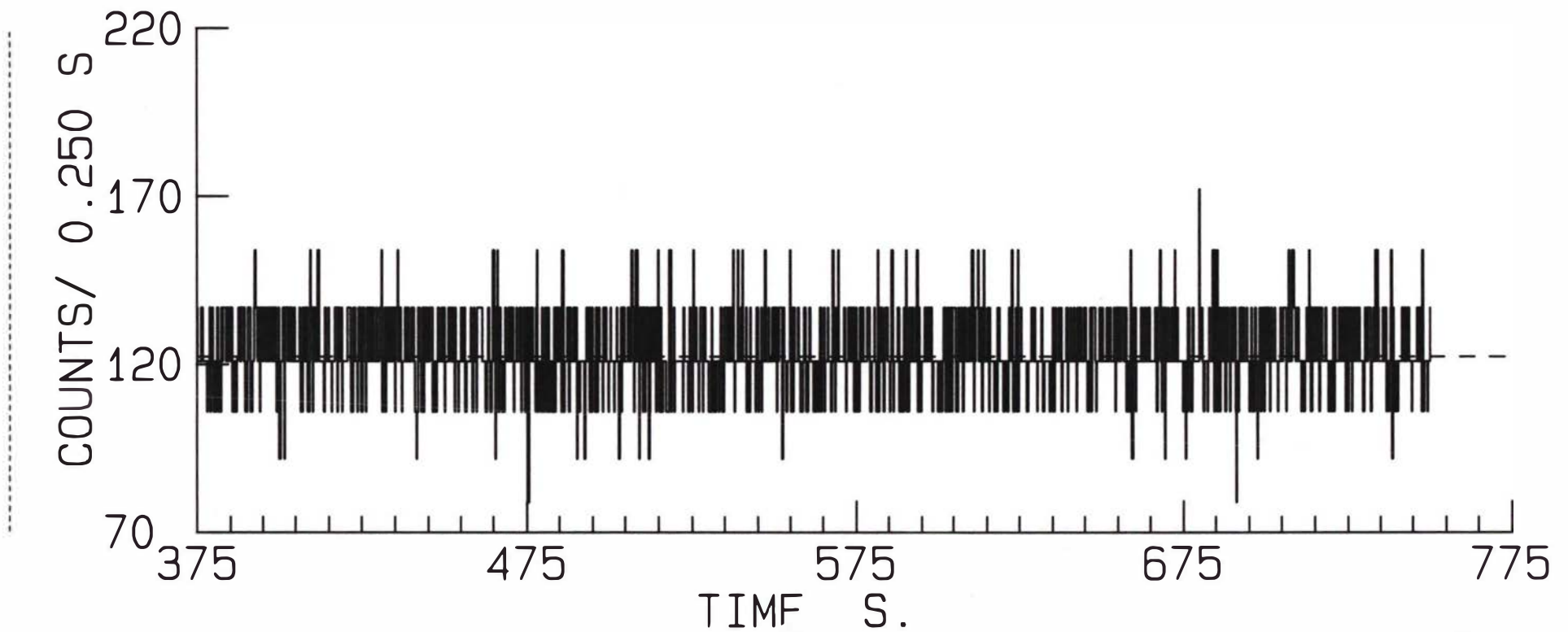
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



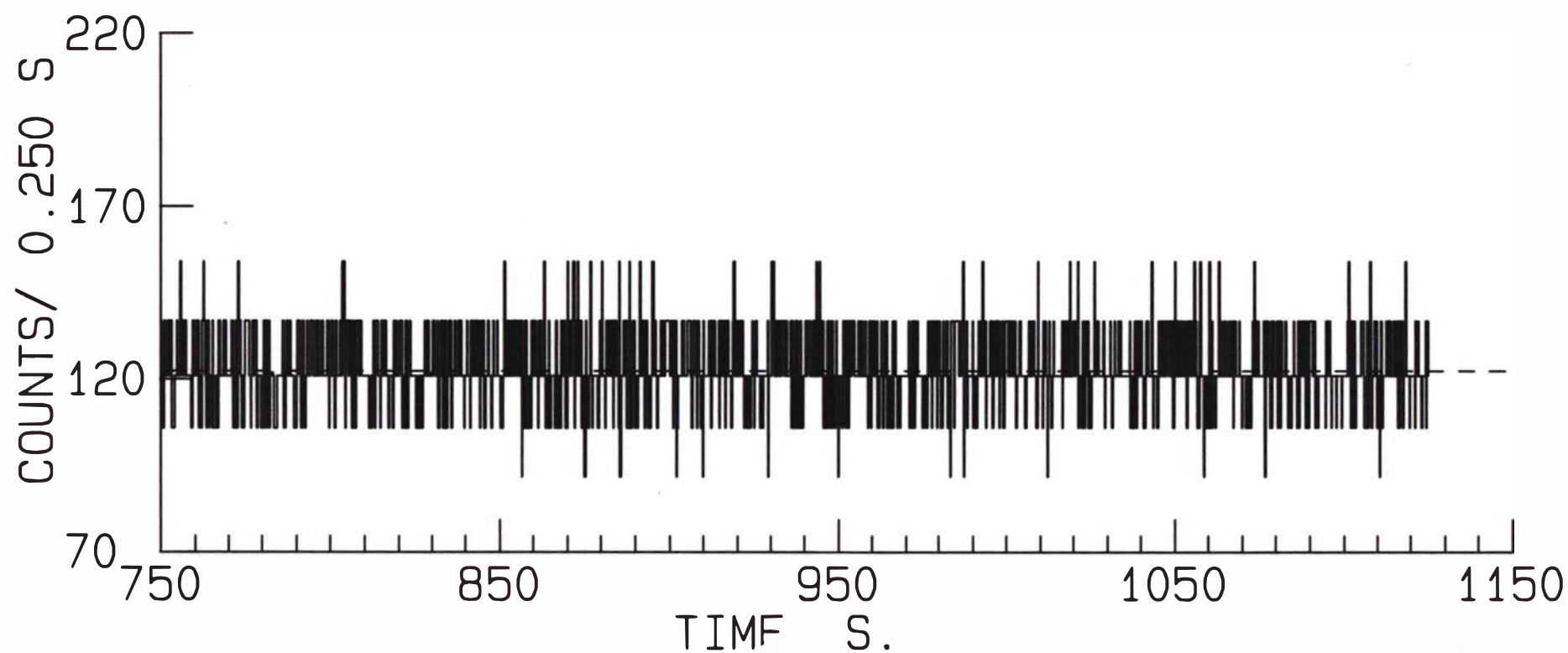
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



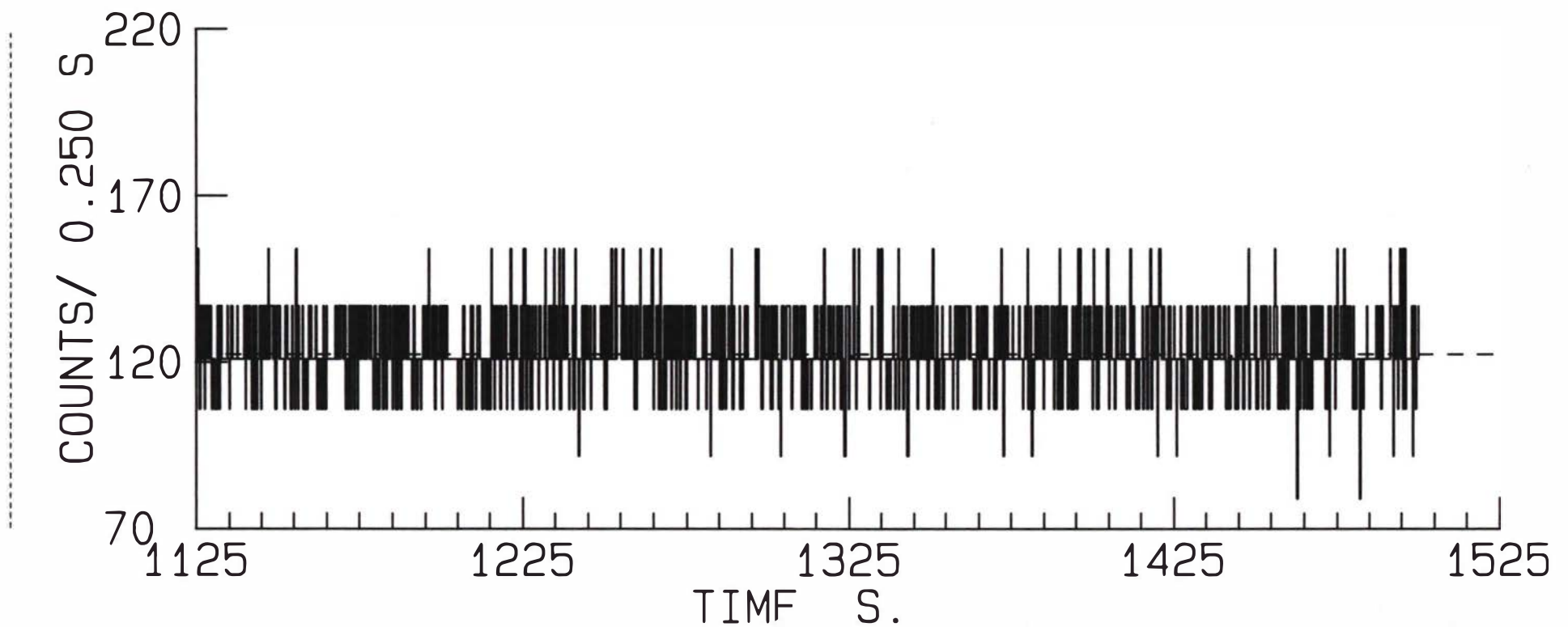
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



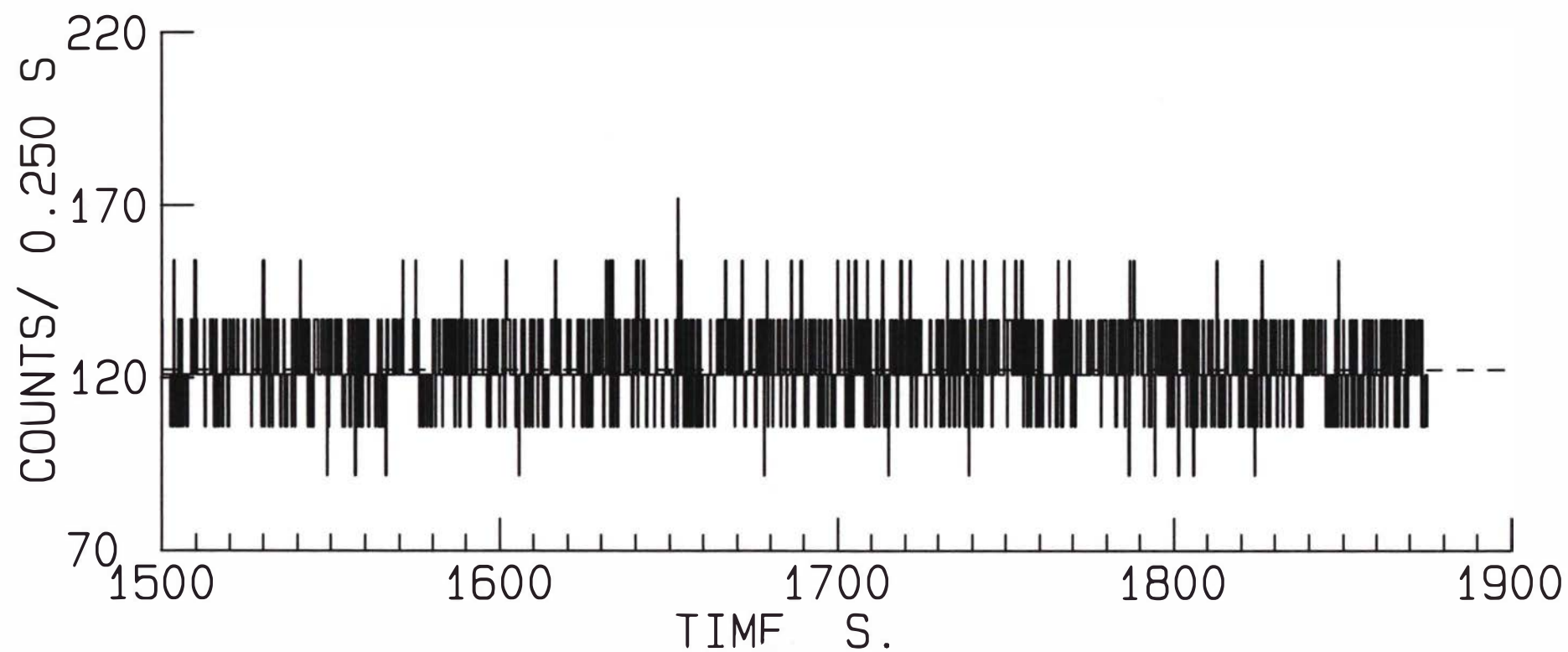
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



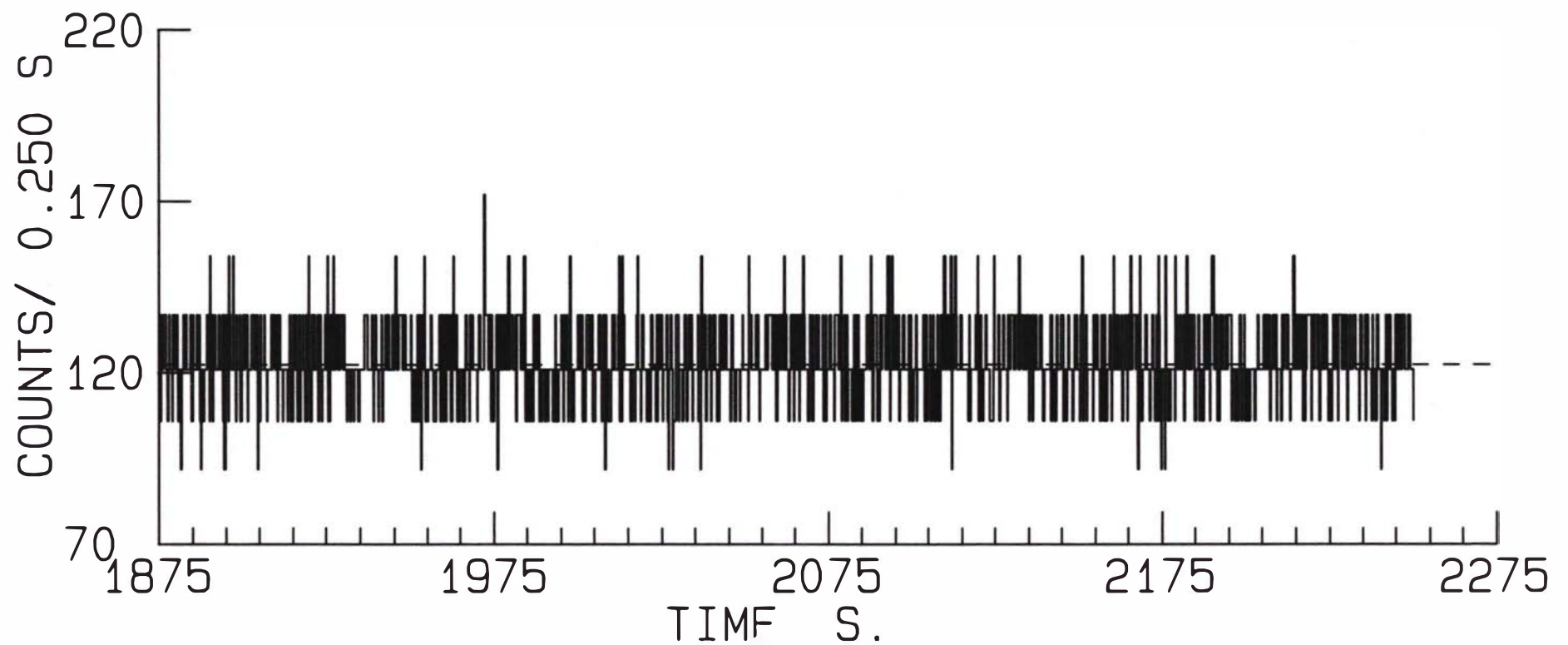
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



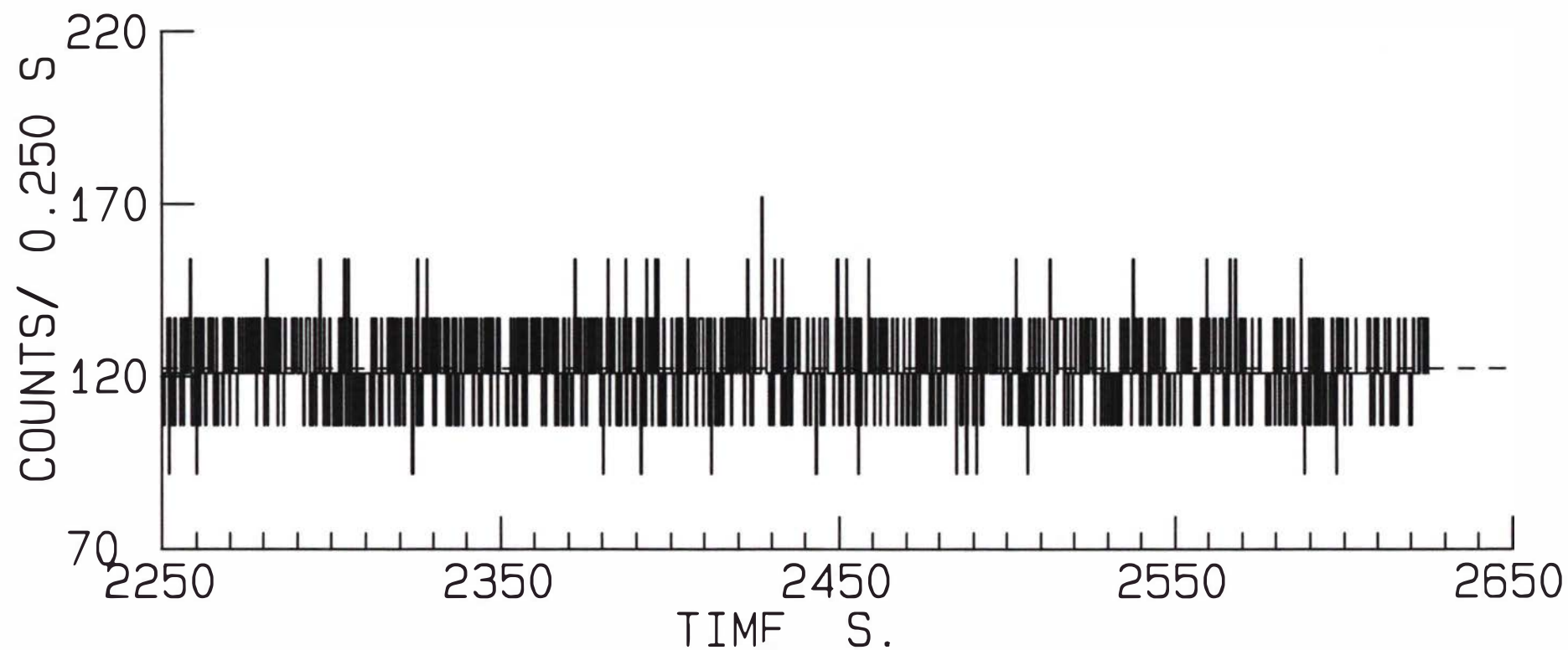
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



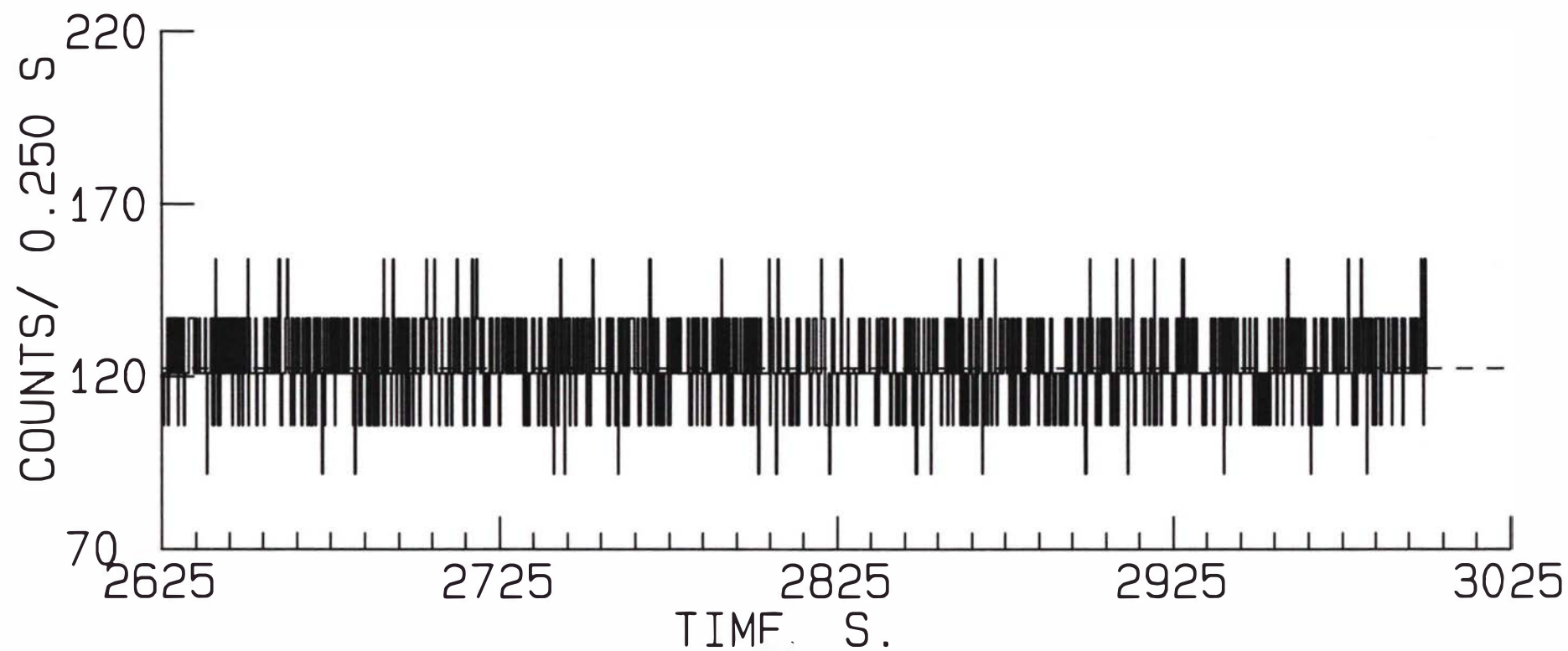
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



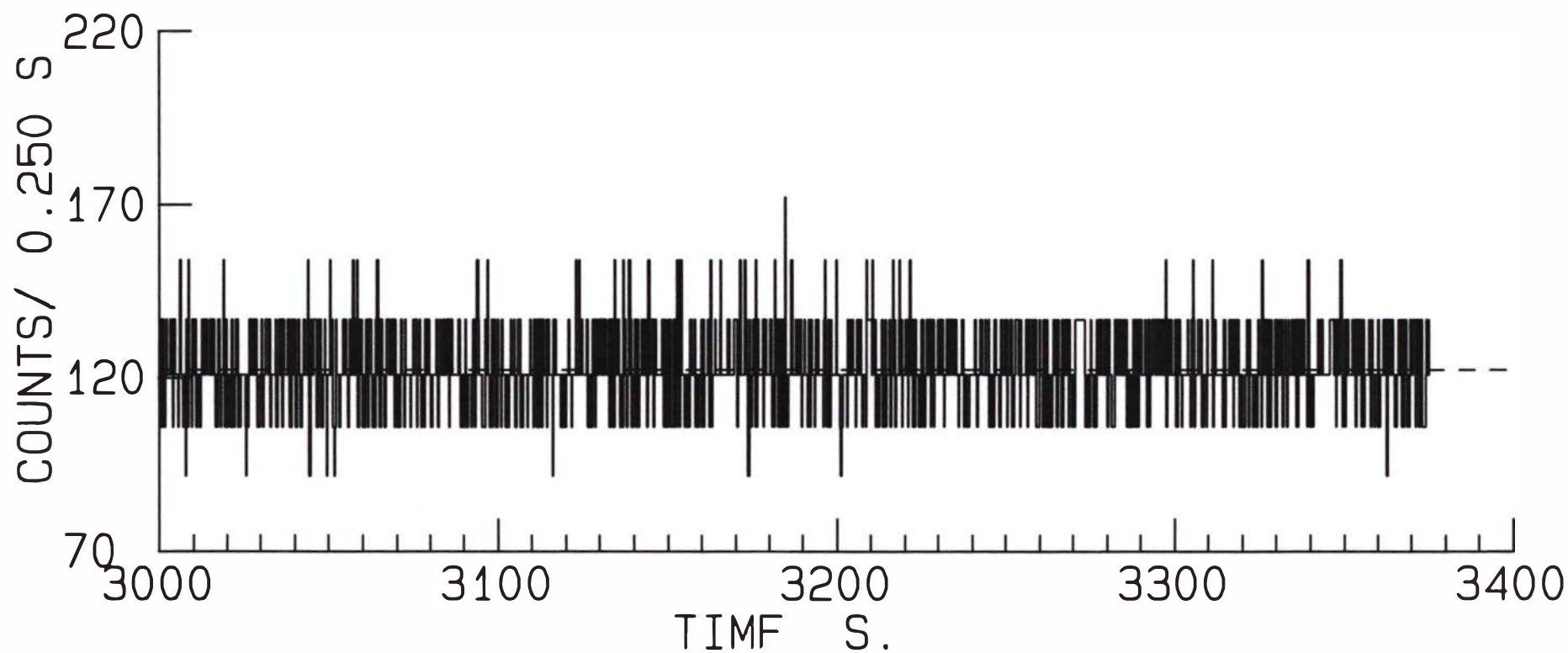
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



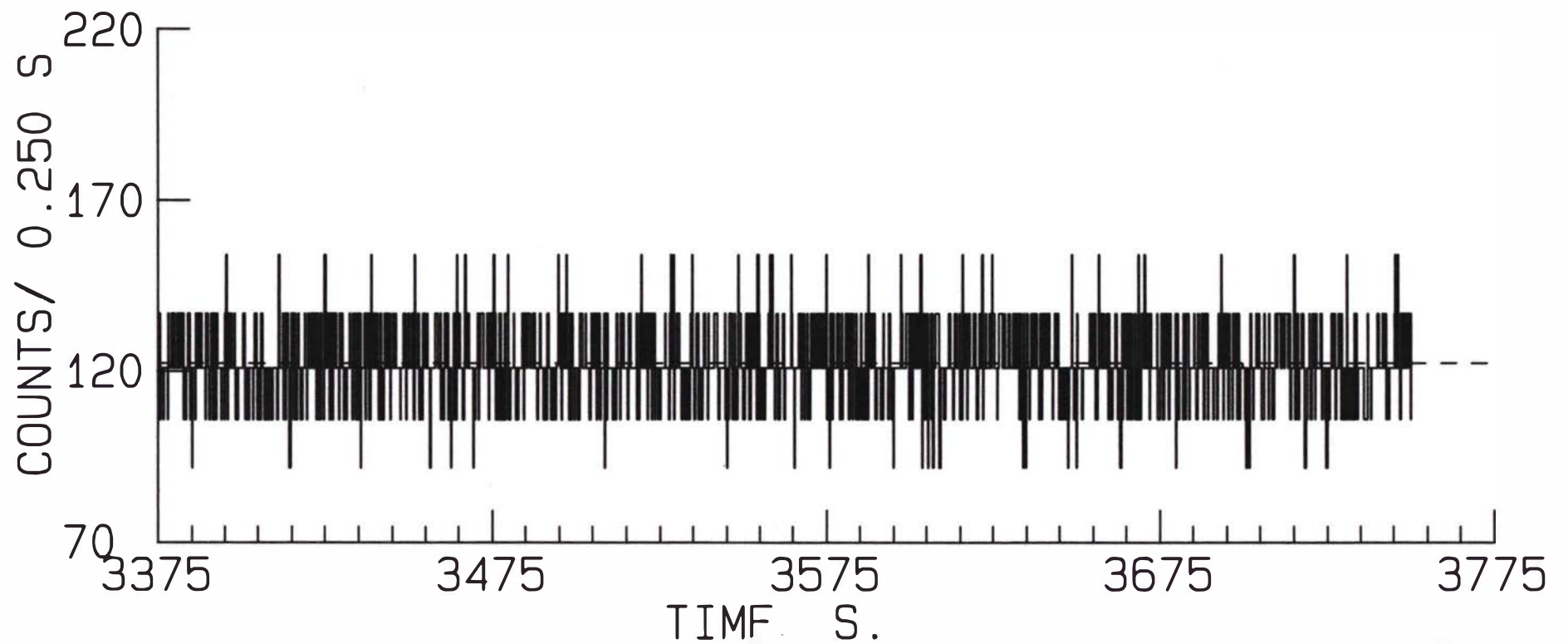
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



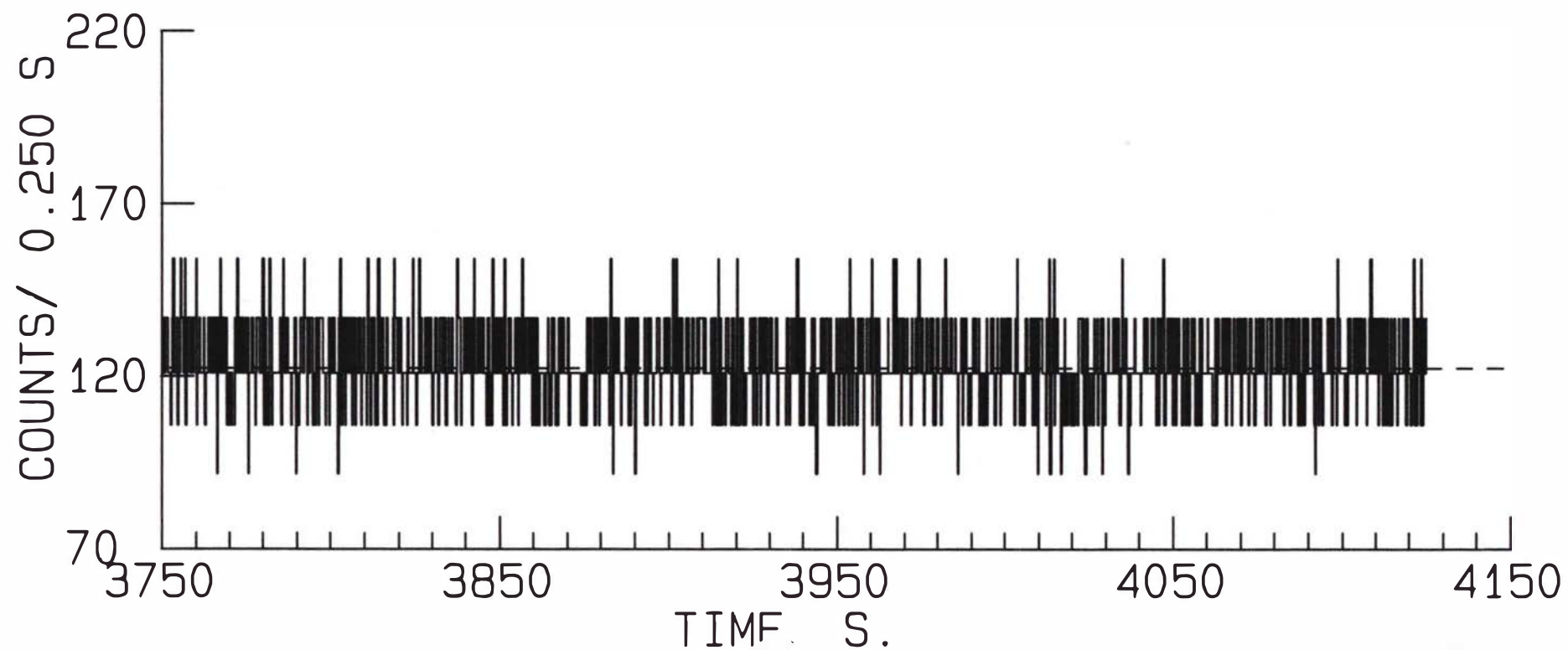
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



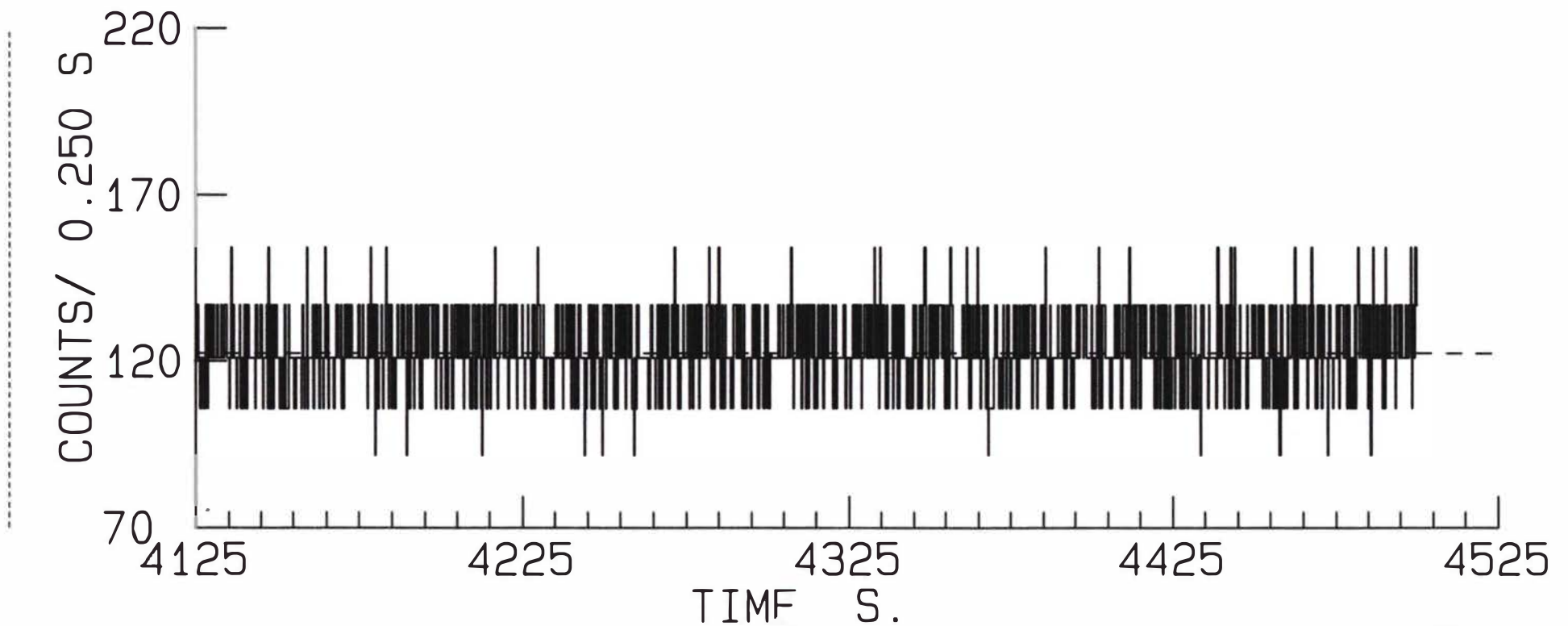
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



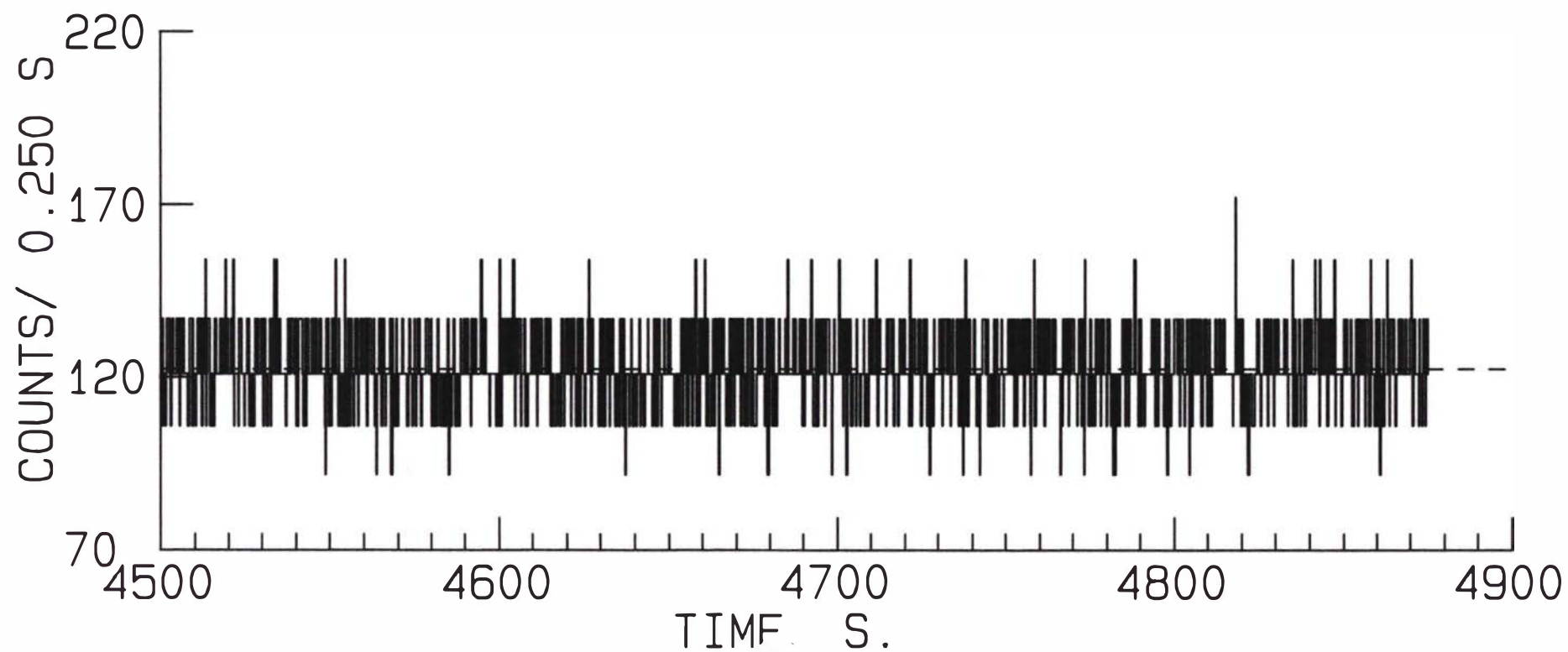
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



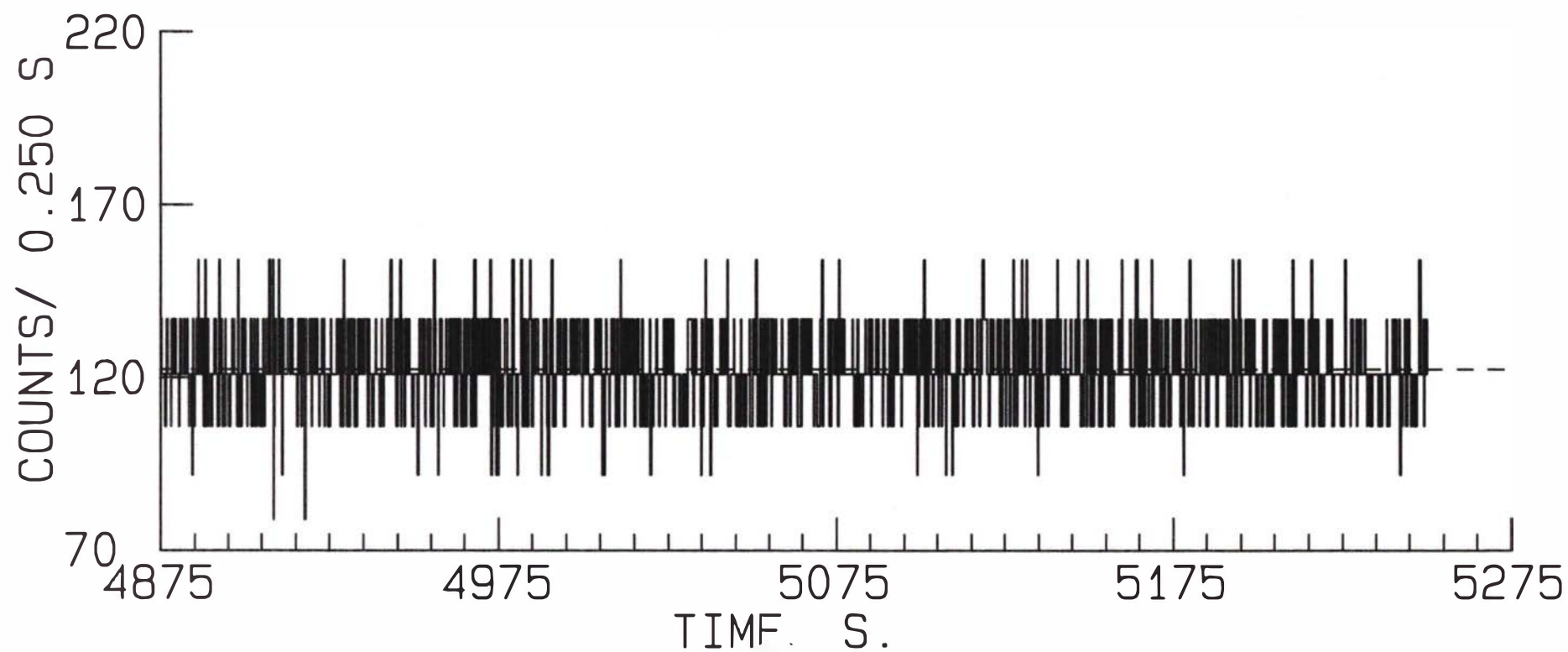
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



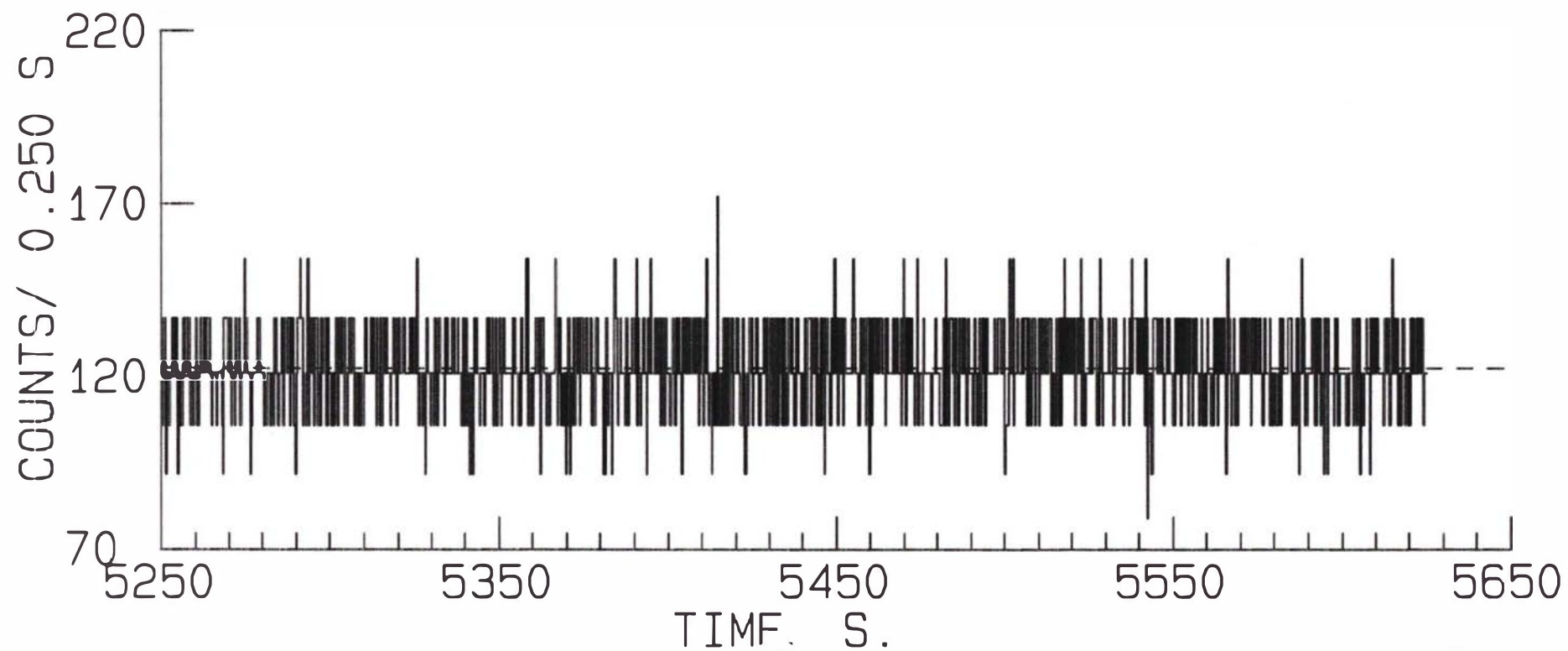
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



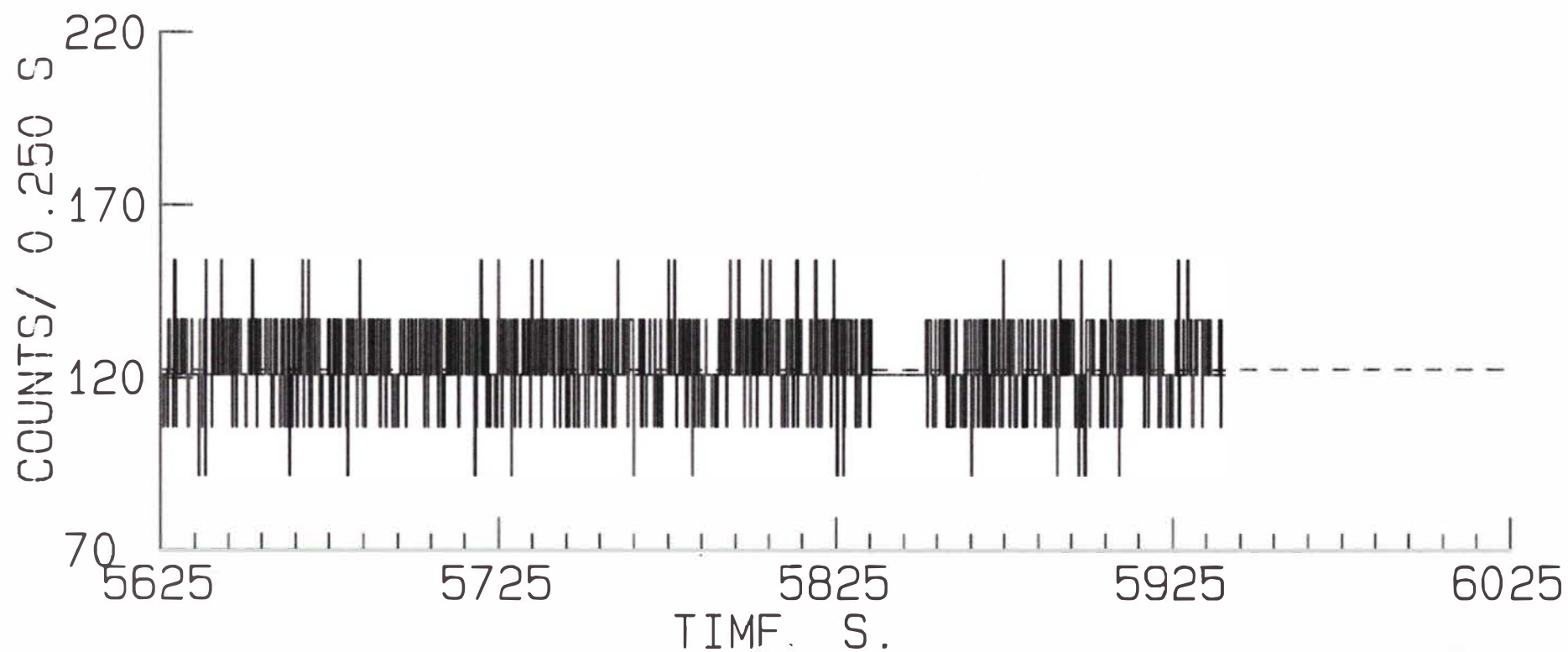
ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8

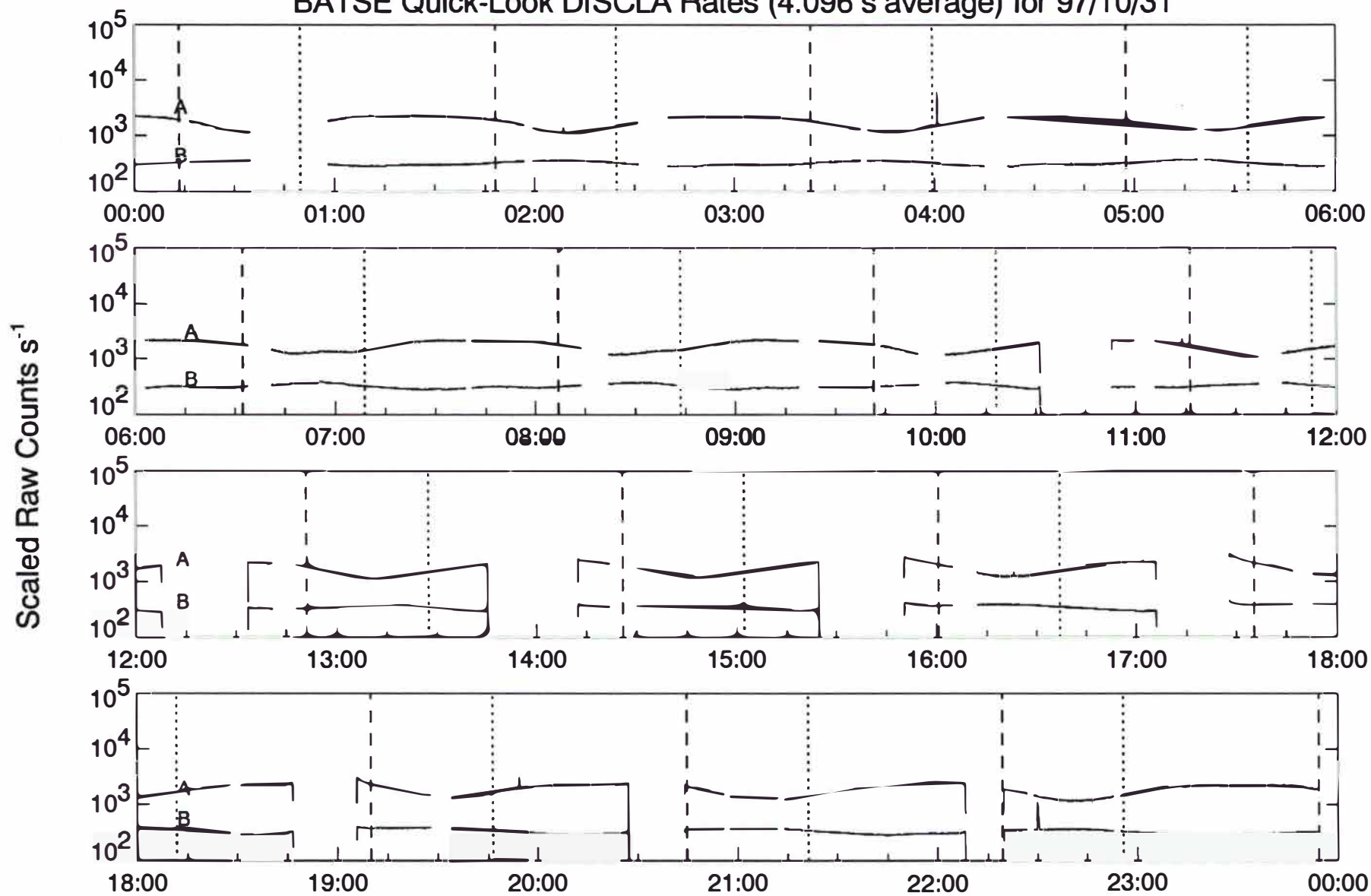


ULYSSES RT
31/10/97 20448.217 s
22- 148 keV

31/10/ 8



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/10/31

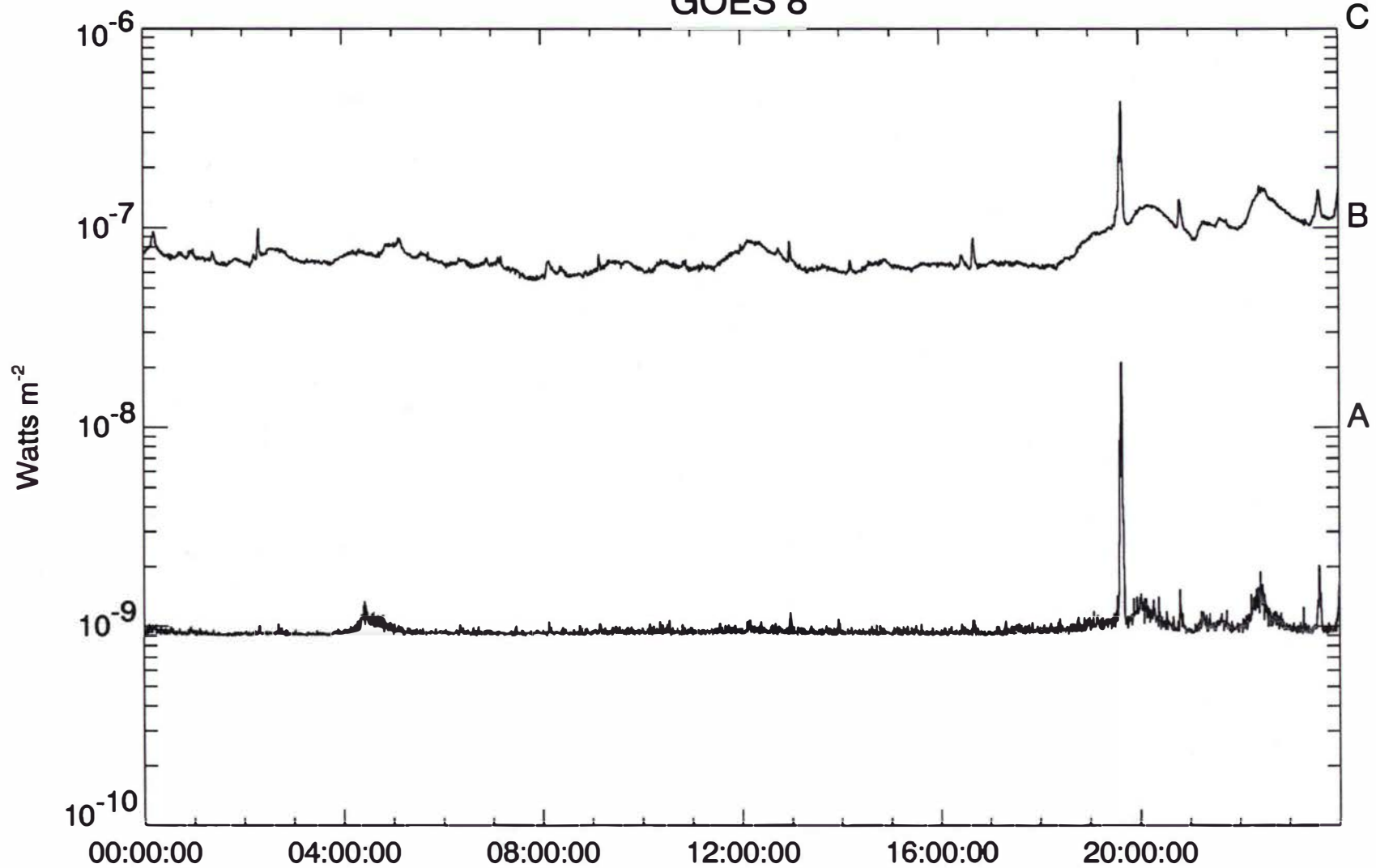


Current Time: 97/11/04, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 97/10/31, 0000:00

Plot created: 97/11/04, 1008

Channel

1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

Sample average = 10

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1932

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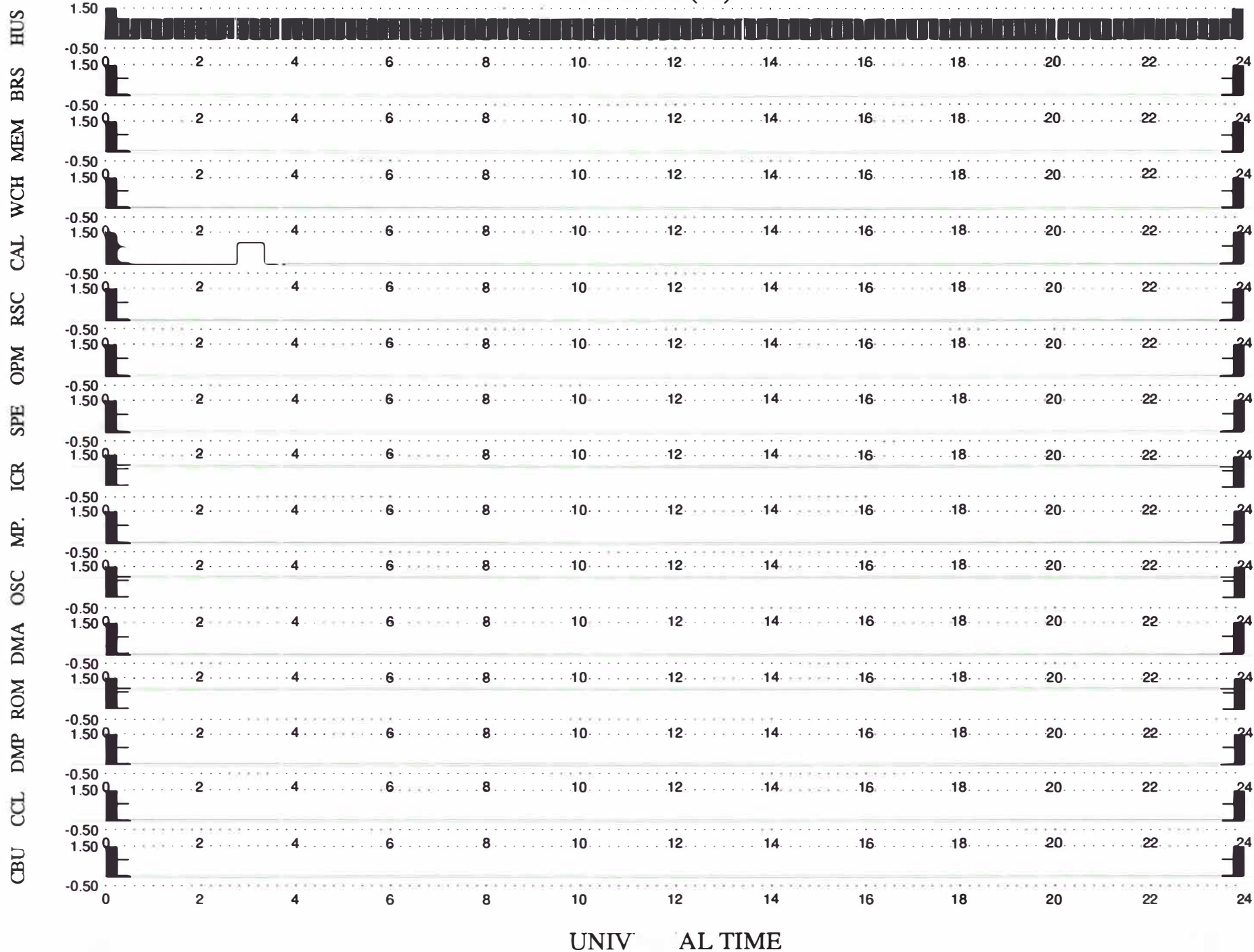
347

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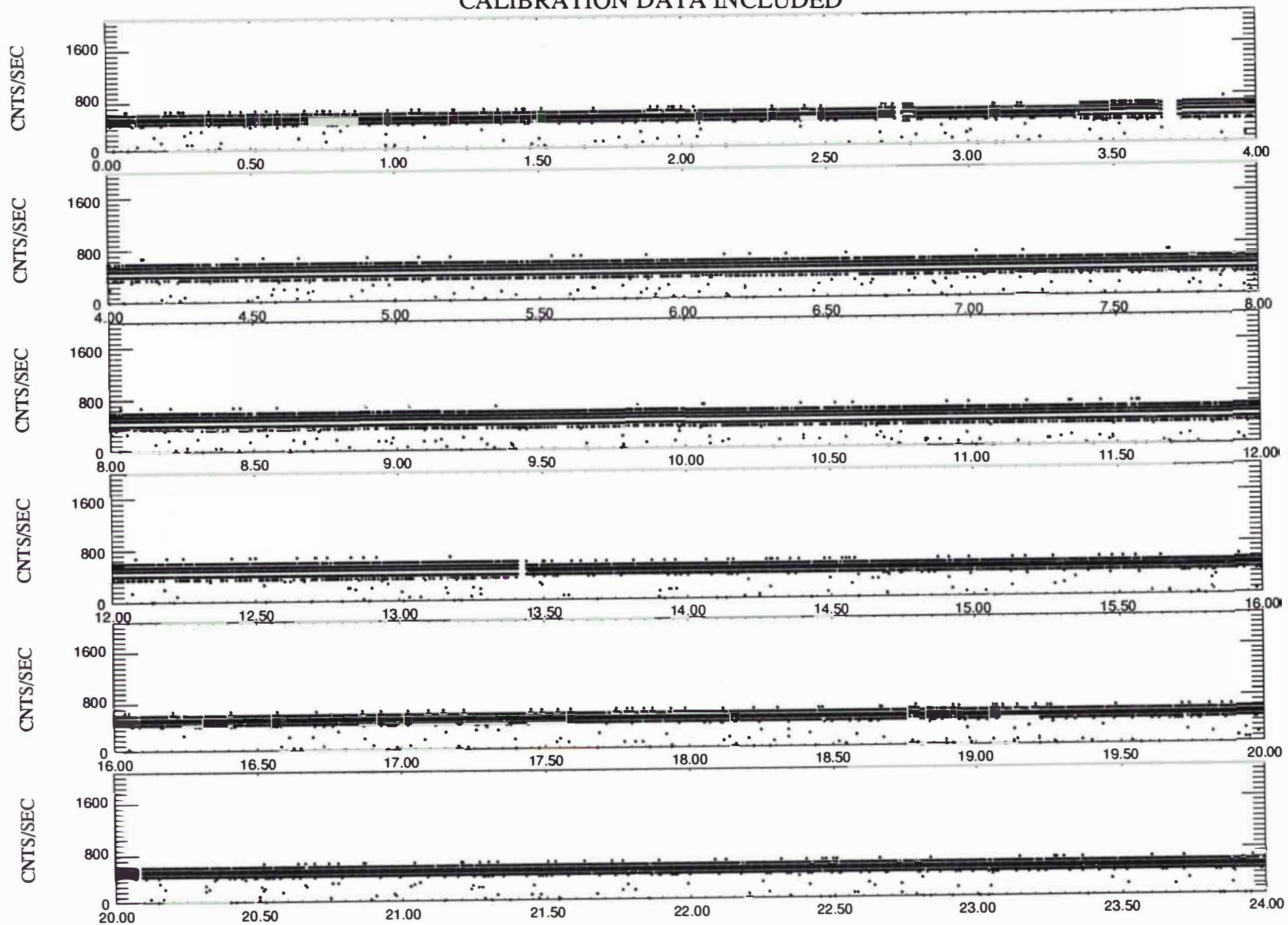
349

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NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV AL TIME

22 23 24

[illegible][illegible]

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[illegible]

卷之三

[illegible]

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1. *Chlorophyll a* (Chl *a*)

1. The first part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$. It is shown that the solutions of the system (1) converge to the solutions of the system (2) in the sense of the weak convergence in the space $L^2(\Omega; \mathbb{R}^n)$. The second part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1) as $\epsilon \rightarrow 0$. It is shown that the solutions of the system (1) converge to the solutions of the system (2) in the sense of the weak convergence in the space $L^2(\Omega; \mathbb{R}^n)$.

1980

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5/4/88

