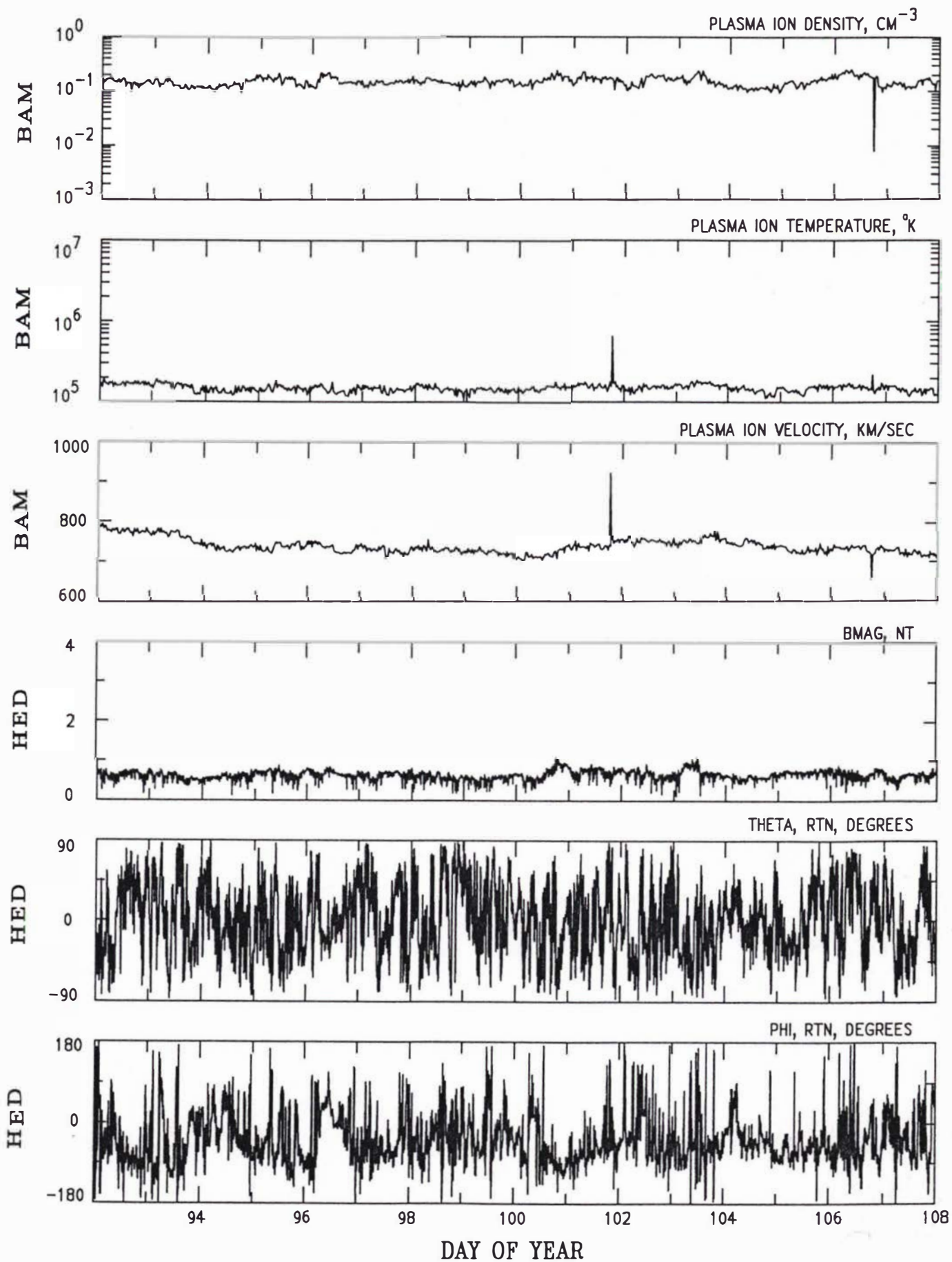


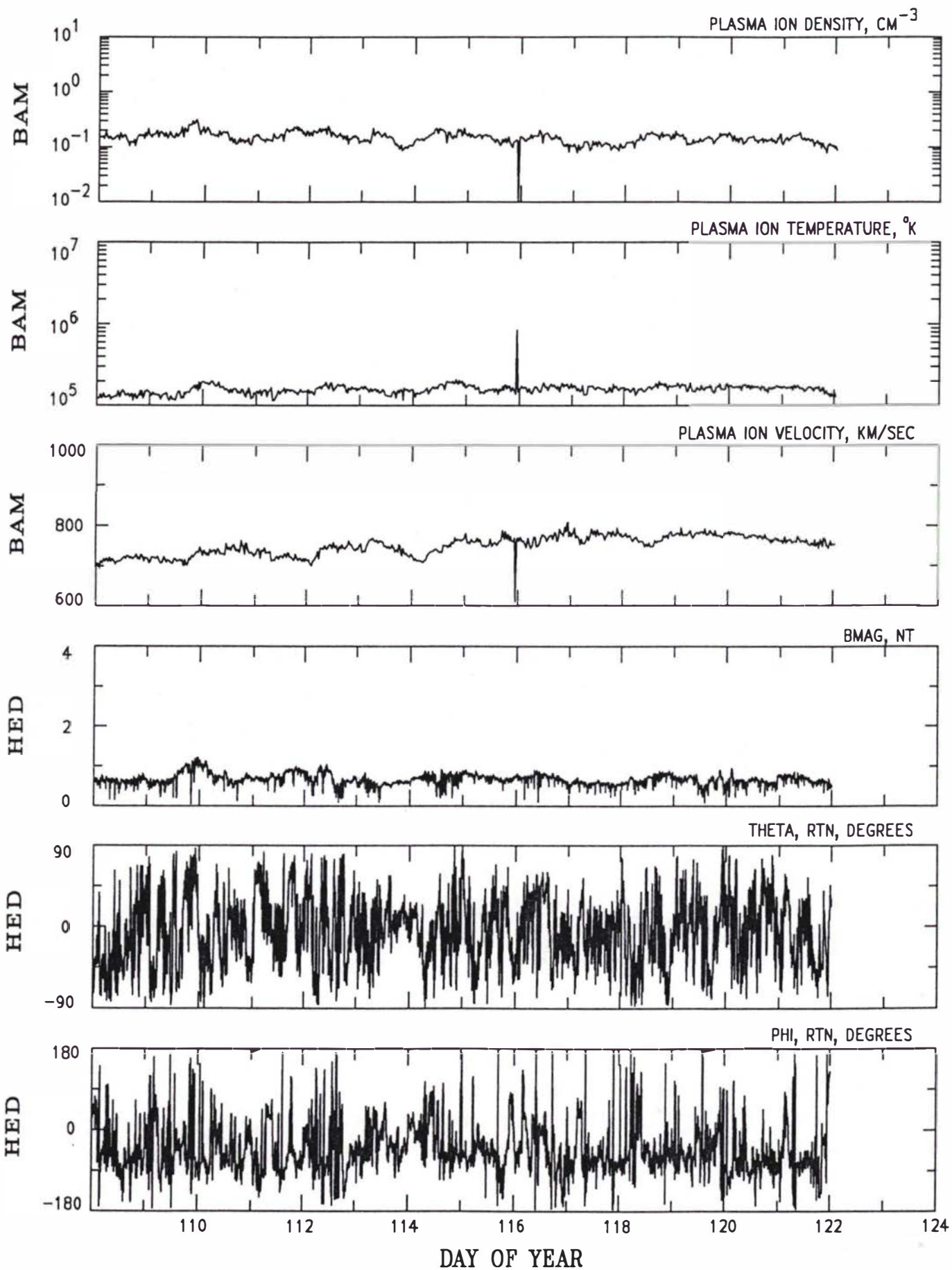
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 092 APR 1 00:00:00.000 - 96 108 APR 17 00:00:00.000



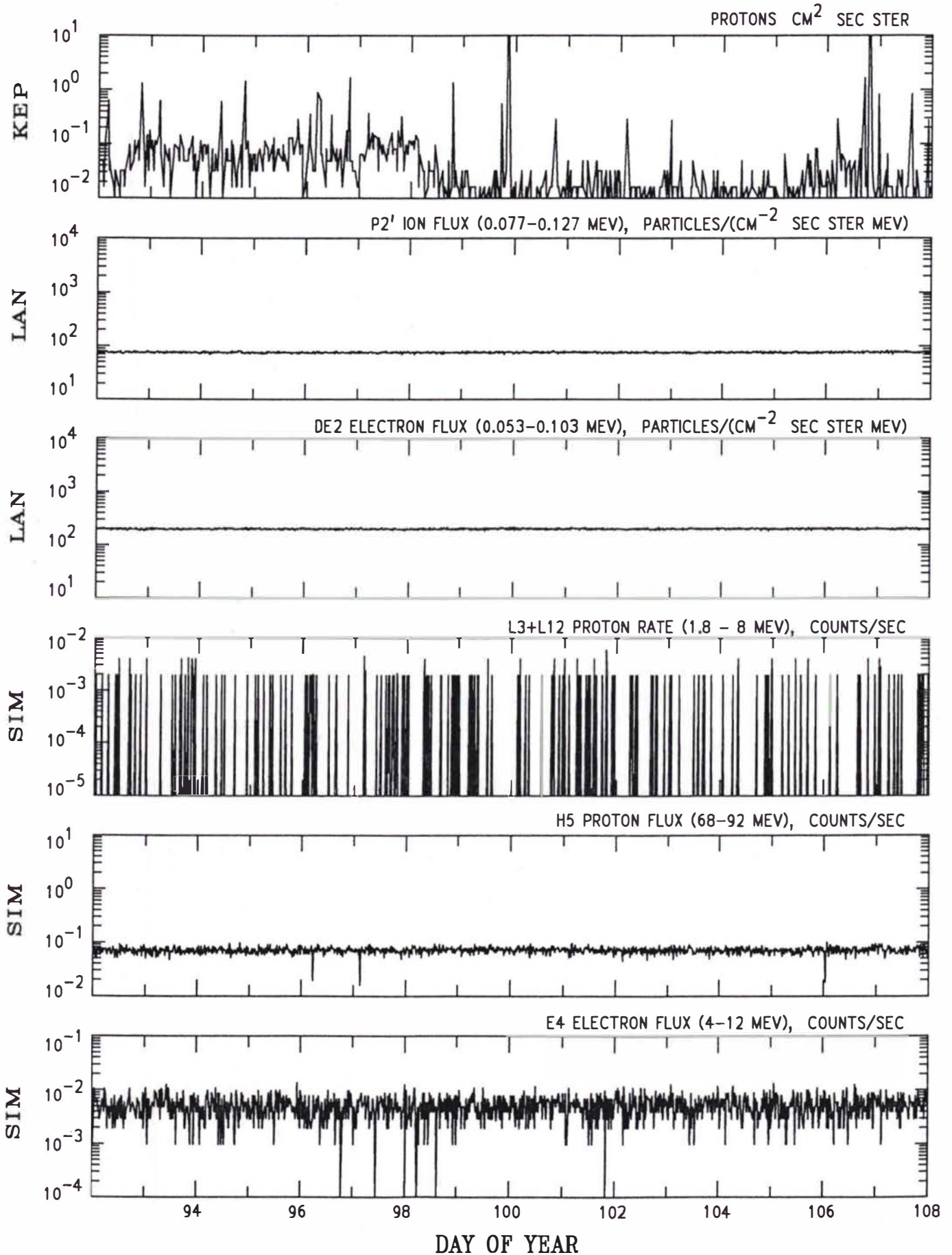
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 108 APR 17 00:00:00.000 - 96 124 MAY 3 00:00:00.000



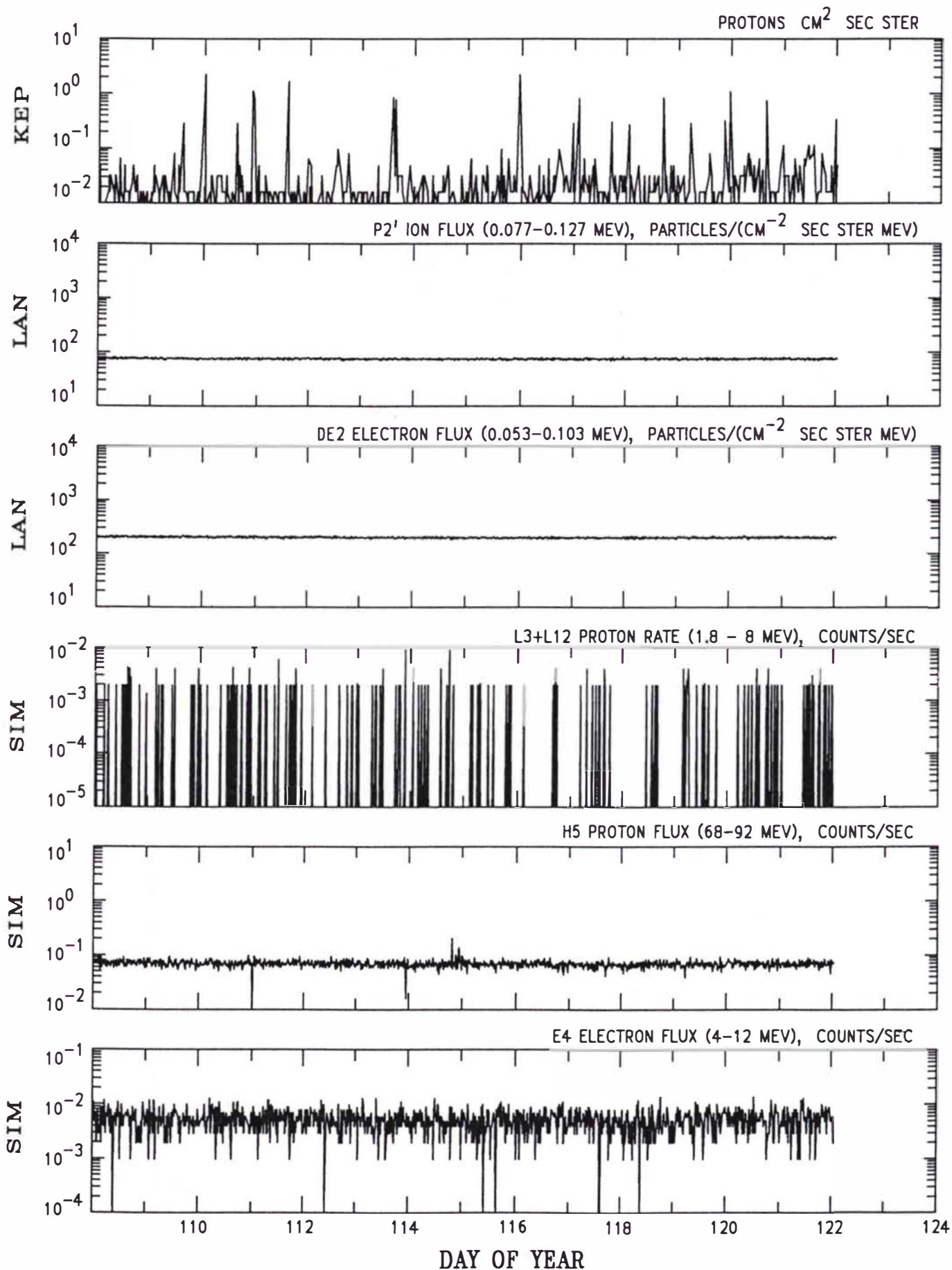
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

96 092 APR 1 00:00:00.000 - 96 108 APR 17 00:00:00.000



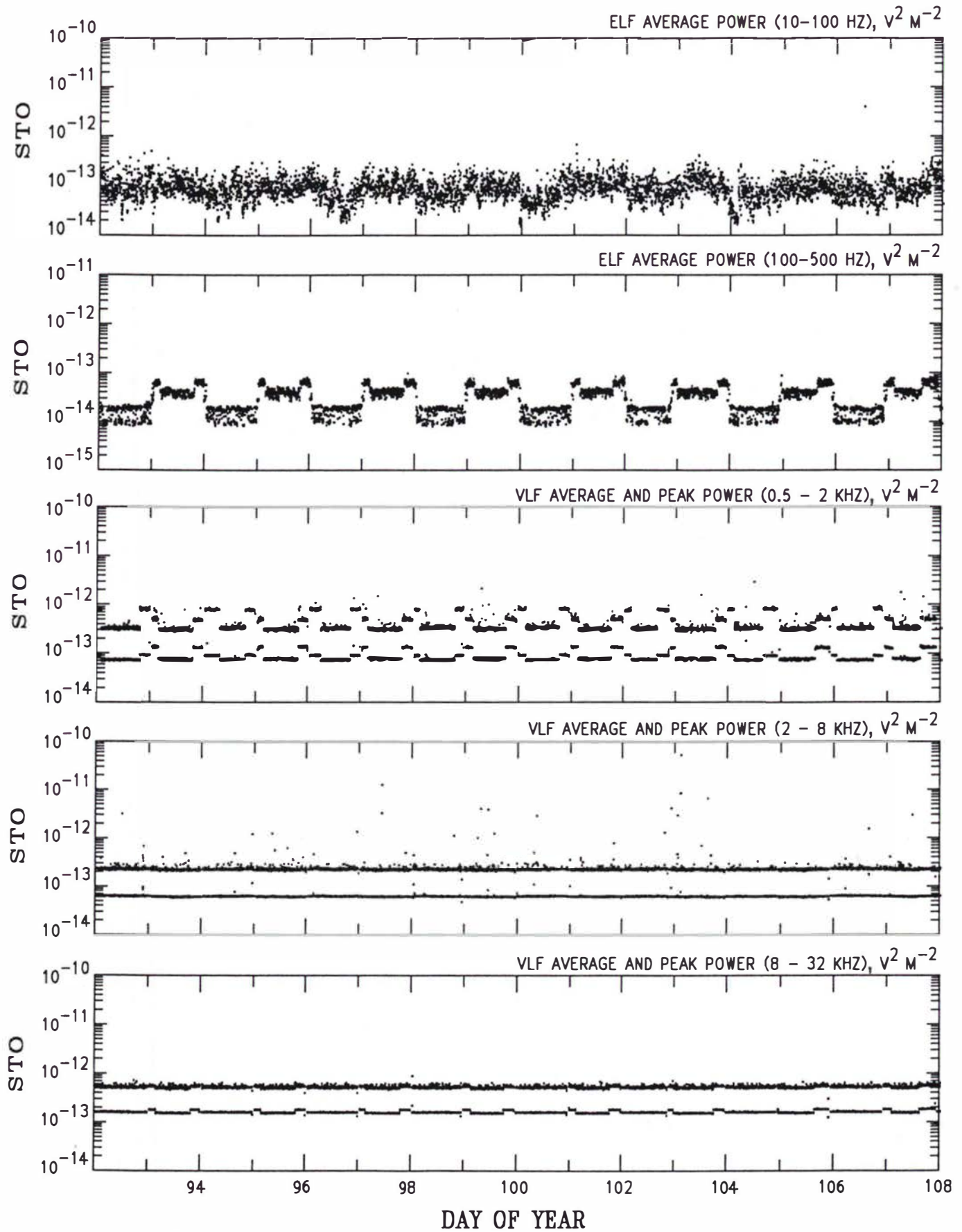
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

96 108 APR 17 00:00:00.000 - 96 124 MAY 3 00:00:00.000



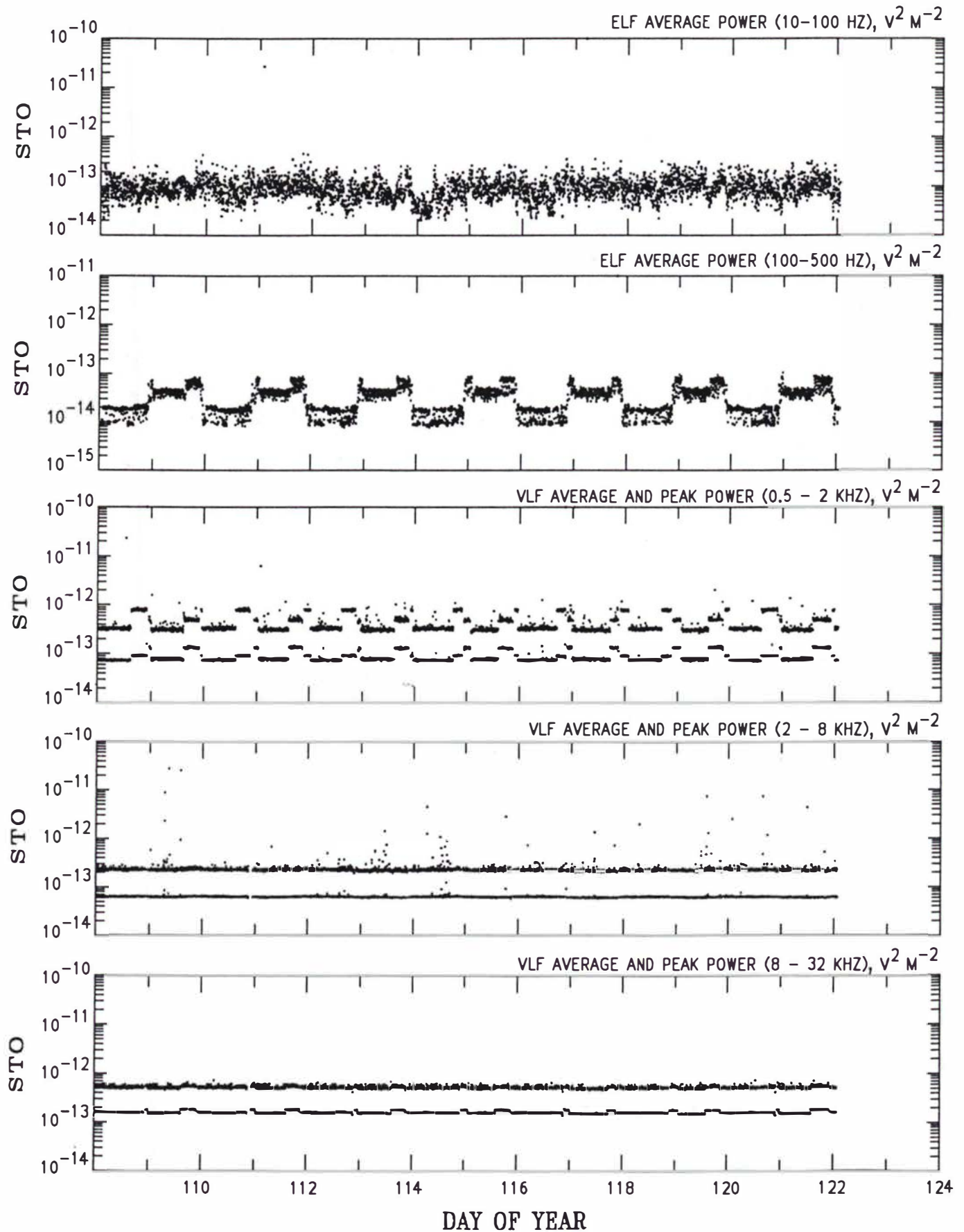
ULYSSES CDR - PLASMA WAVE

96 092 APR 1 00:00:00.000 - 96 108 APR 17 00:00:00.000



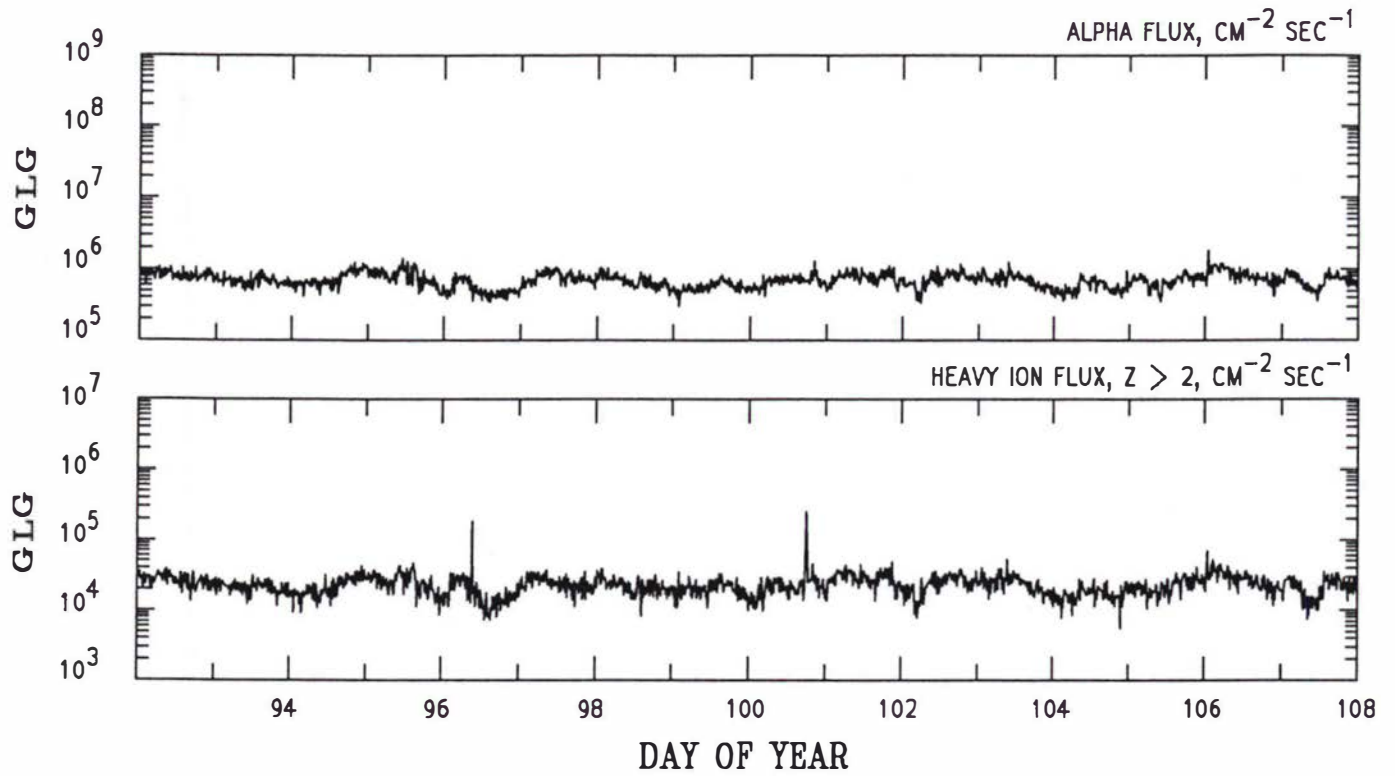
ULYSSES CDR - PLASMA WAVE

96 108 APR 17 00:00:00.000 - 96 124 MAY 3 00:00:00.000



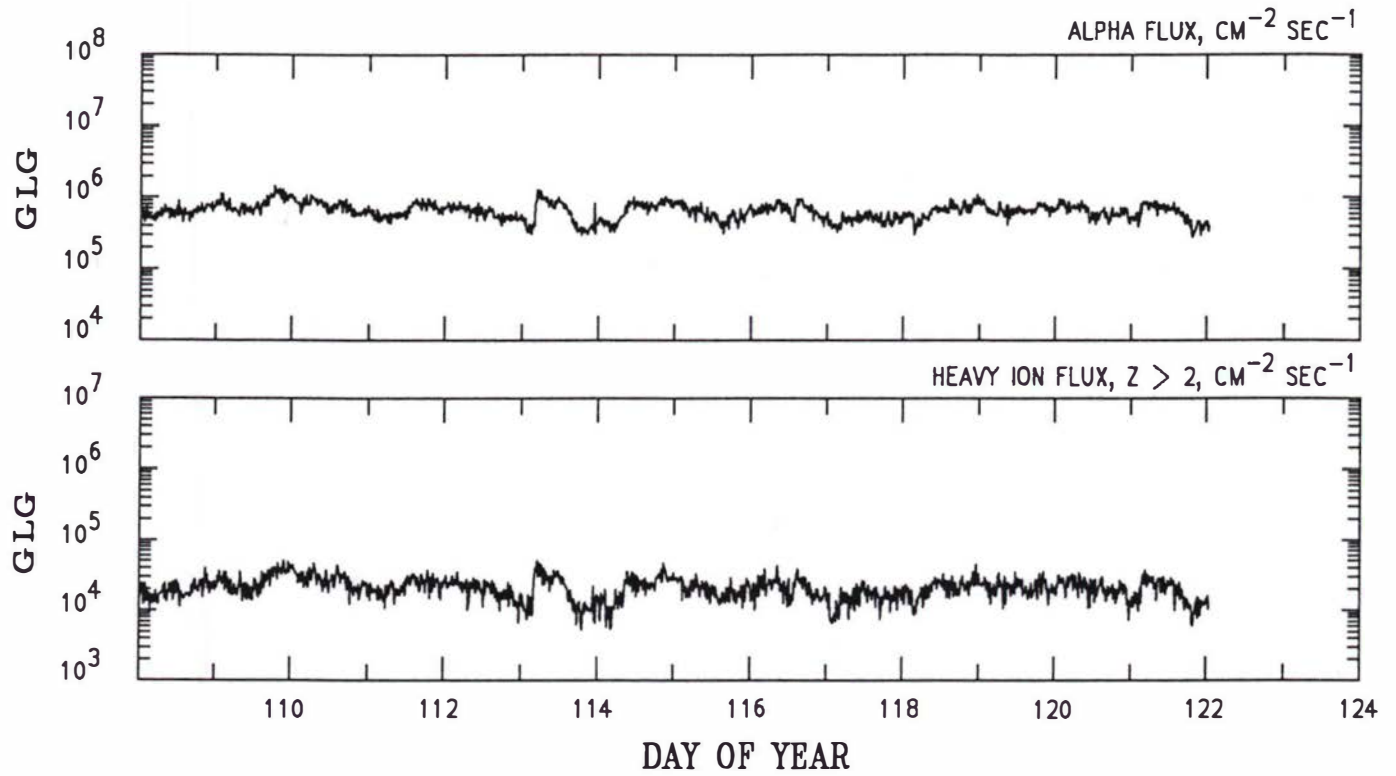
ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 092 APR 1 00:00:00.000 - 96 108 APR 17 00:00:00.000

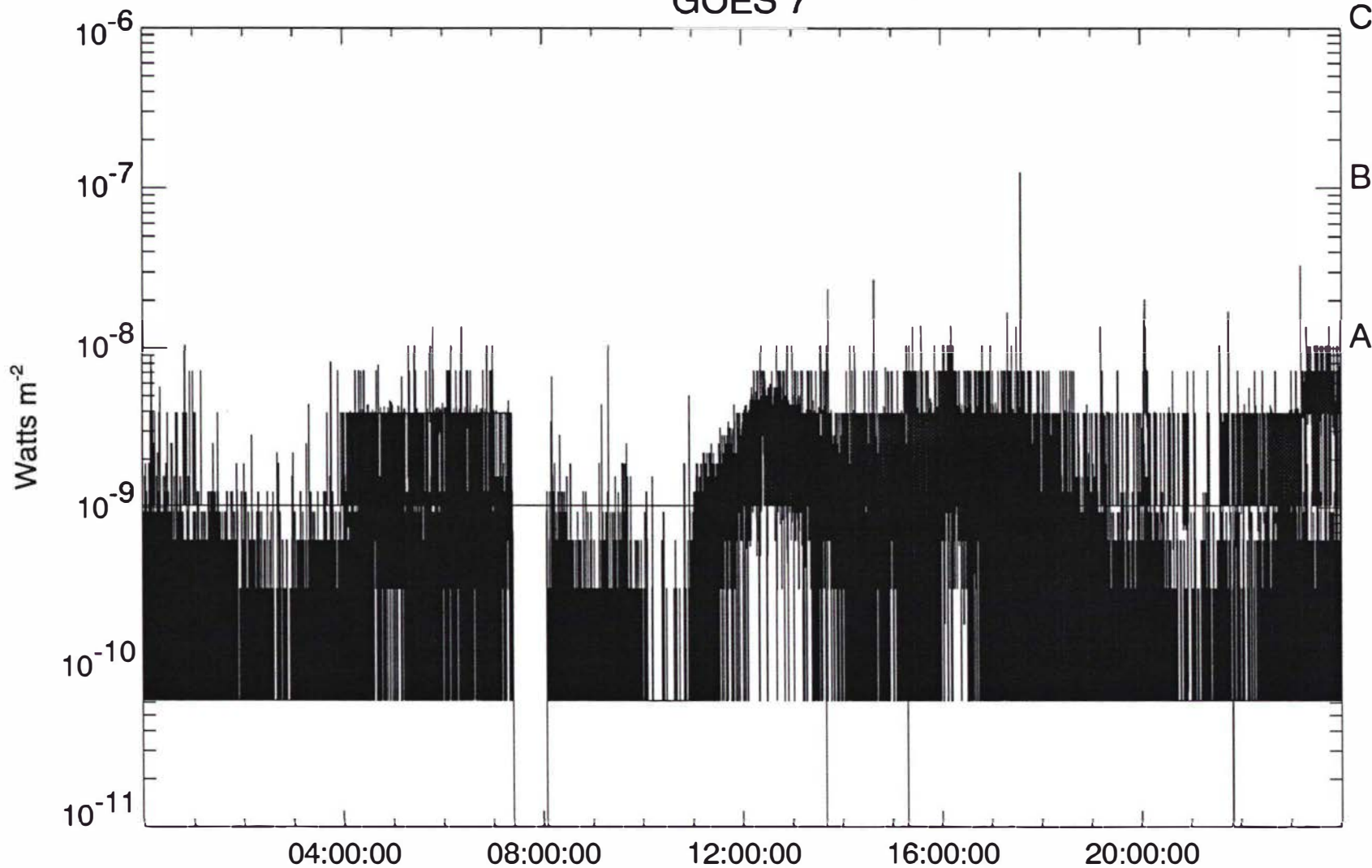


ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 108 APR 17 00:00:00.000 - 96 124 MAY 3 00:00:00.000



GOES 7

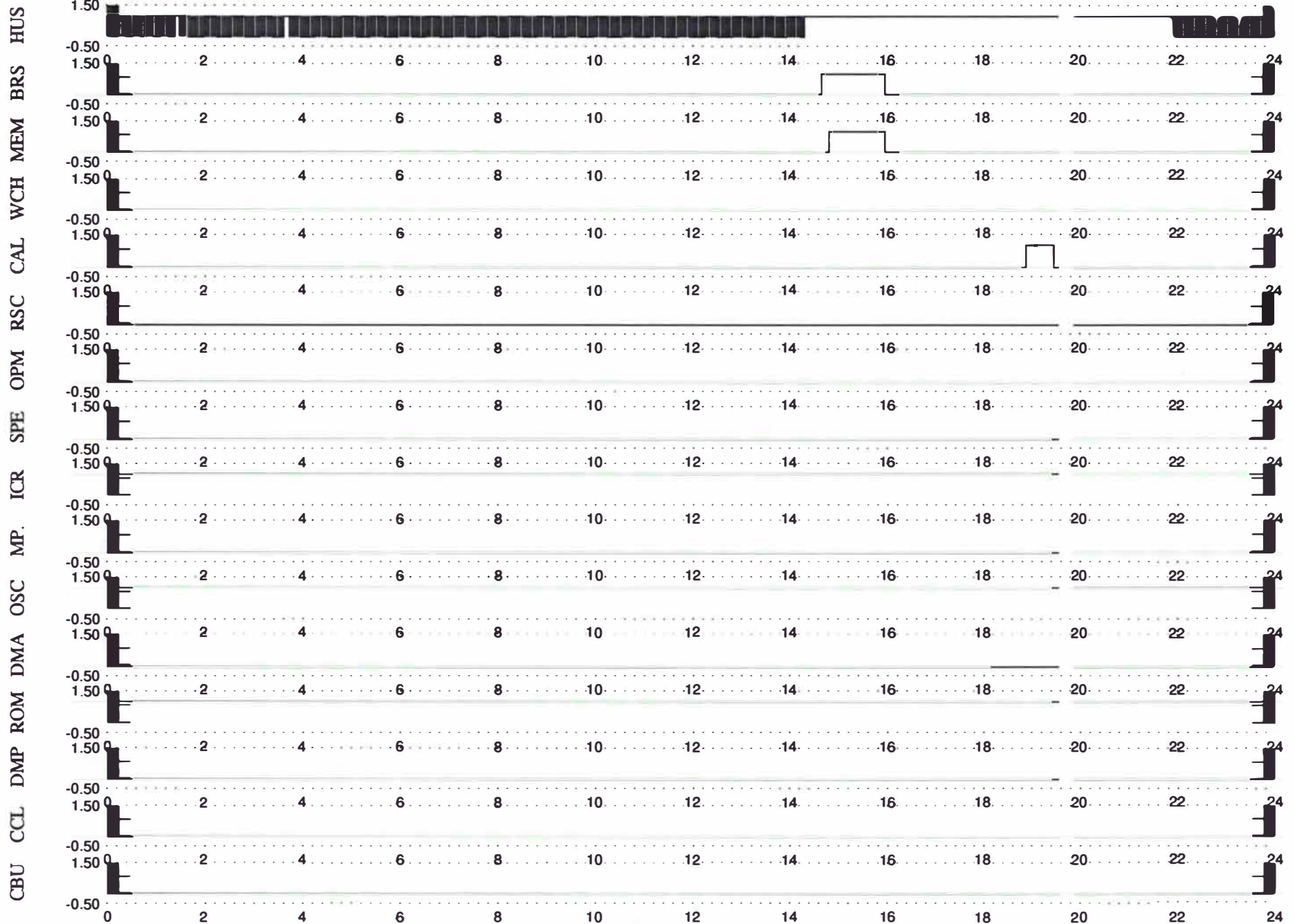


Data Start: 96/04/01, 0000:02

Plot created: 96/04/03, 1004

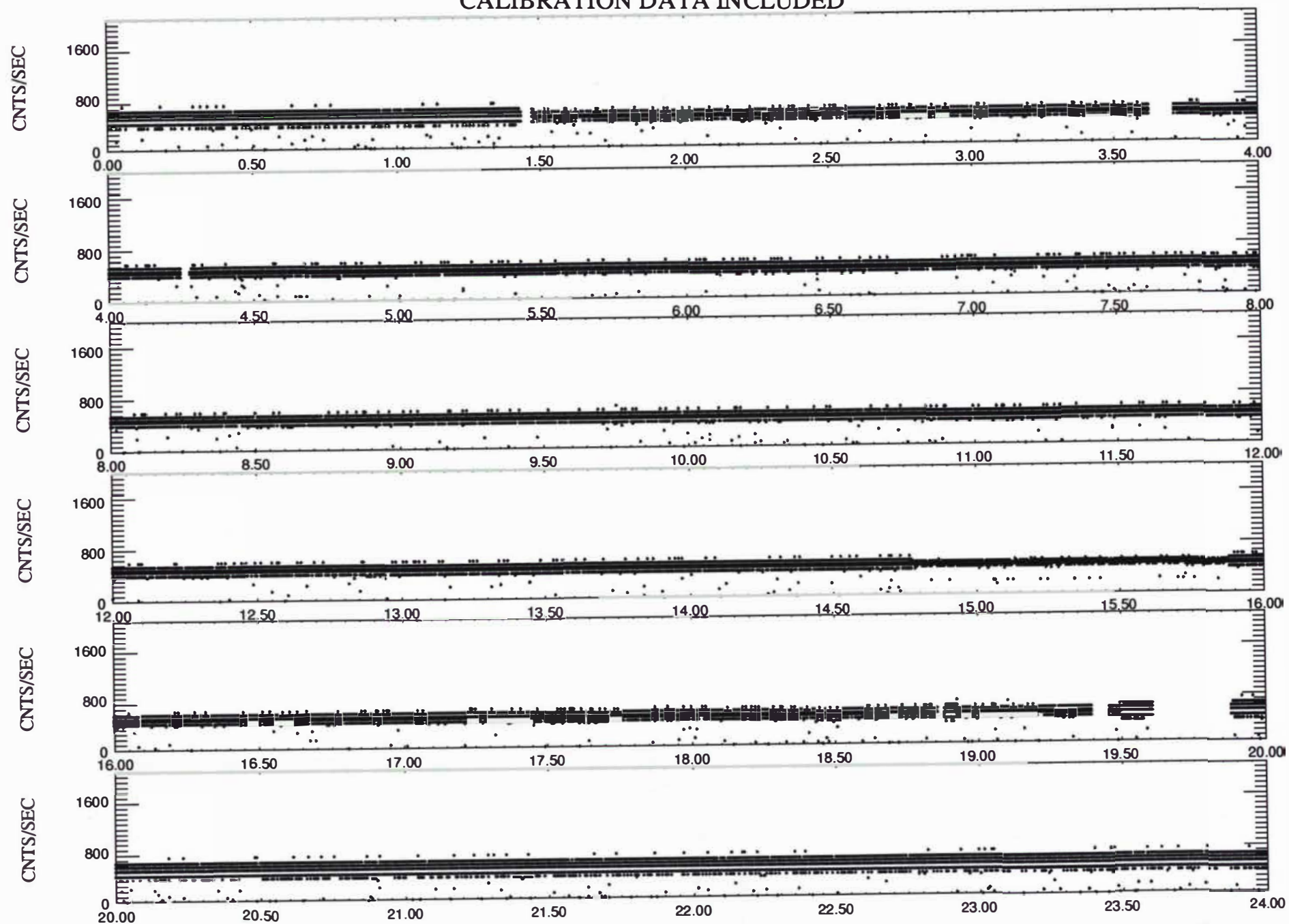
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BURST NUMBER 1



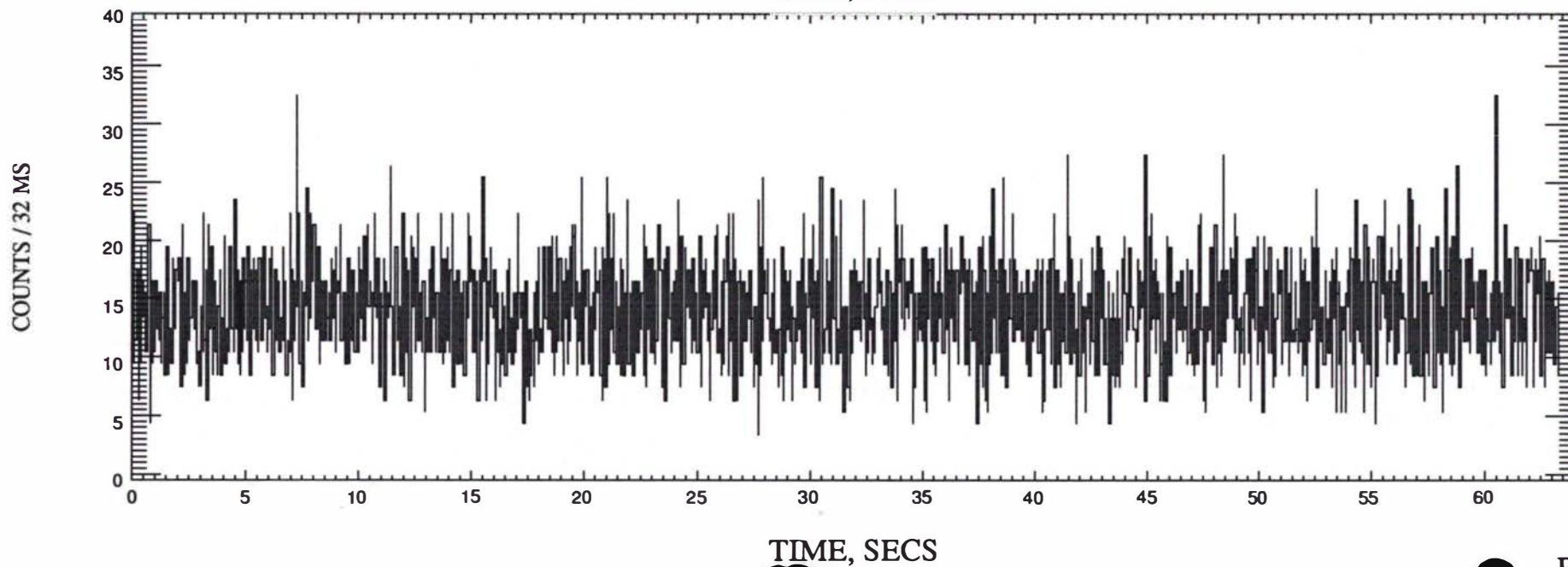
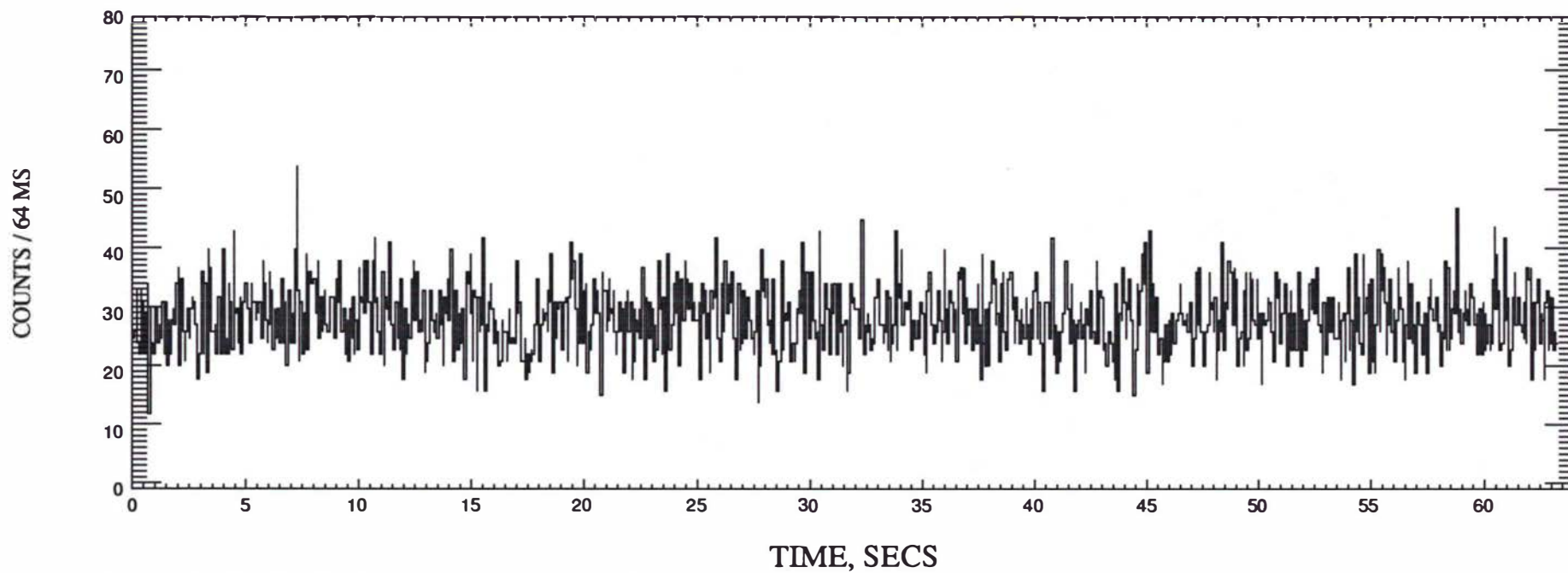
UNIVERSAL TIME

CALIBRATION DATA INCLUDED

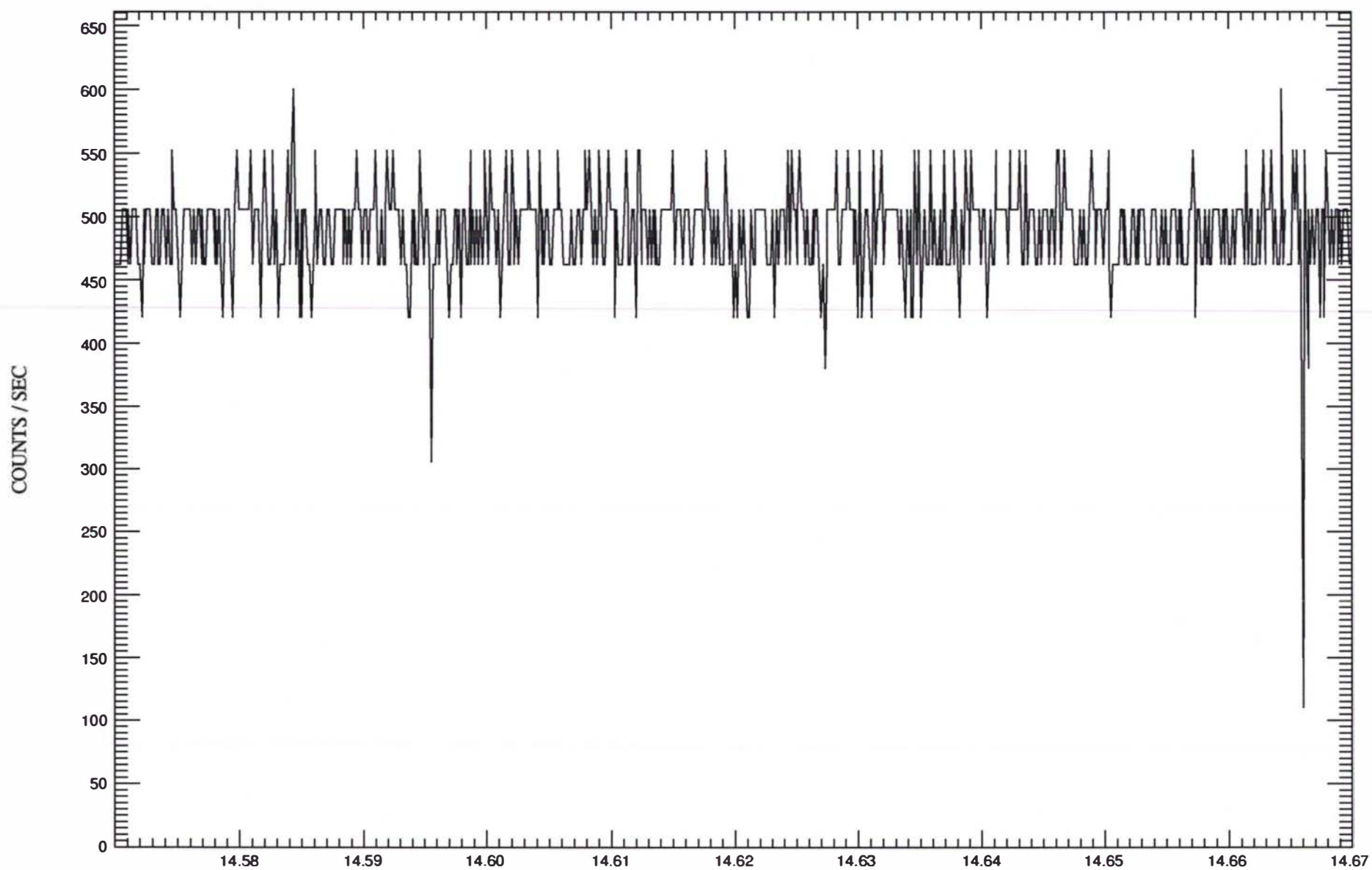


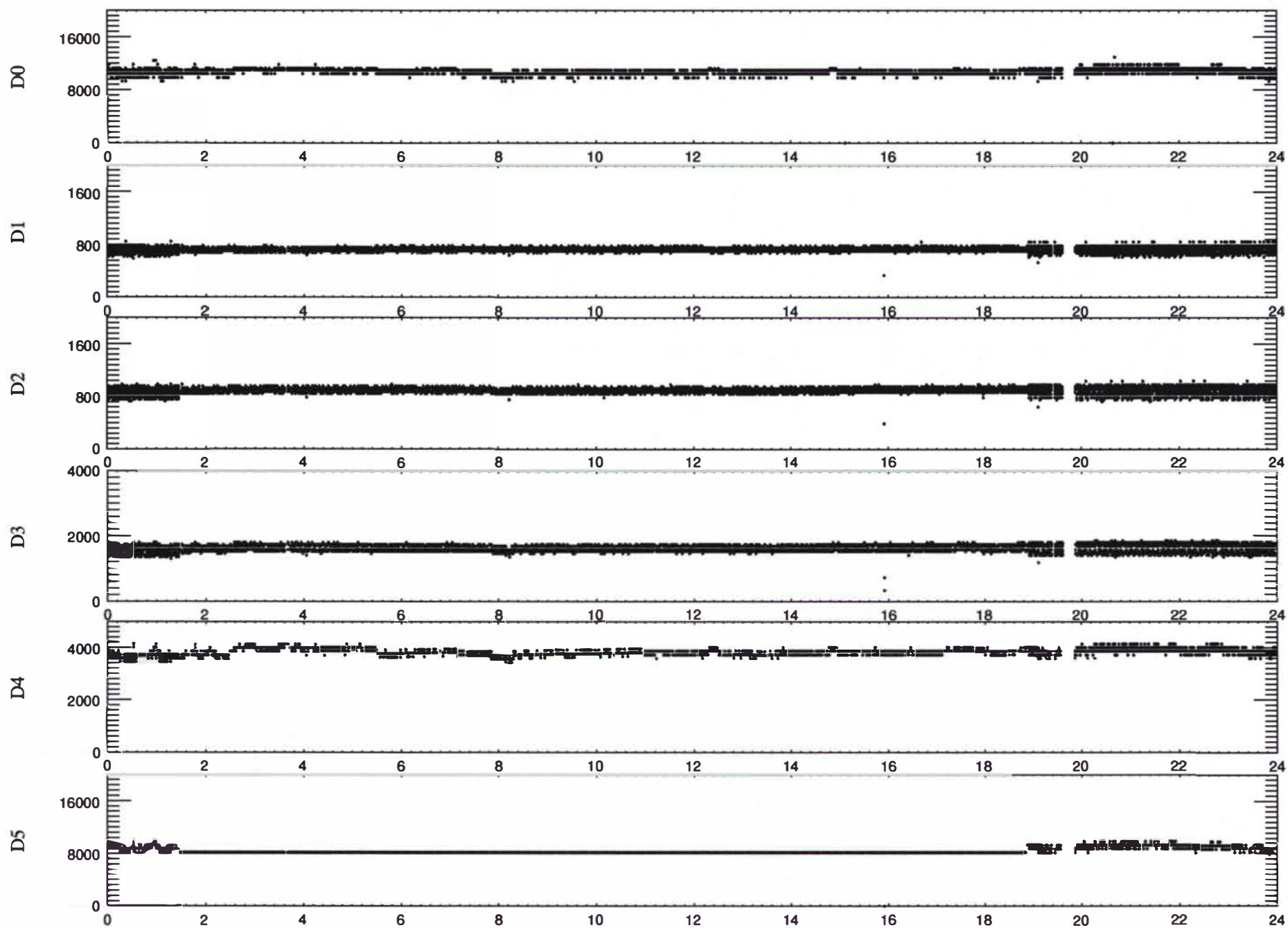
UNRSAL TIME

Burst Counter 1 at UT=14.624591013590 h=52648.528 s 14:37:28.528



CALIBRATION DATA INCLUDED





UNIVERSAL TIME

From RICHARDSON@SSLLES.MSFC.NASA.GOV Thu Apr 4 06:43 PST 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Thu, 4 Apr 1996 8:43:22 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@SSLLES.MSFC.NASA.GOV,
"LHEAVX::BARTHELMY"@SSLLES.MSFC.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.: 5404

TIME: TJD=0175 SECONDS=79490

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

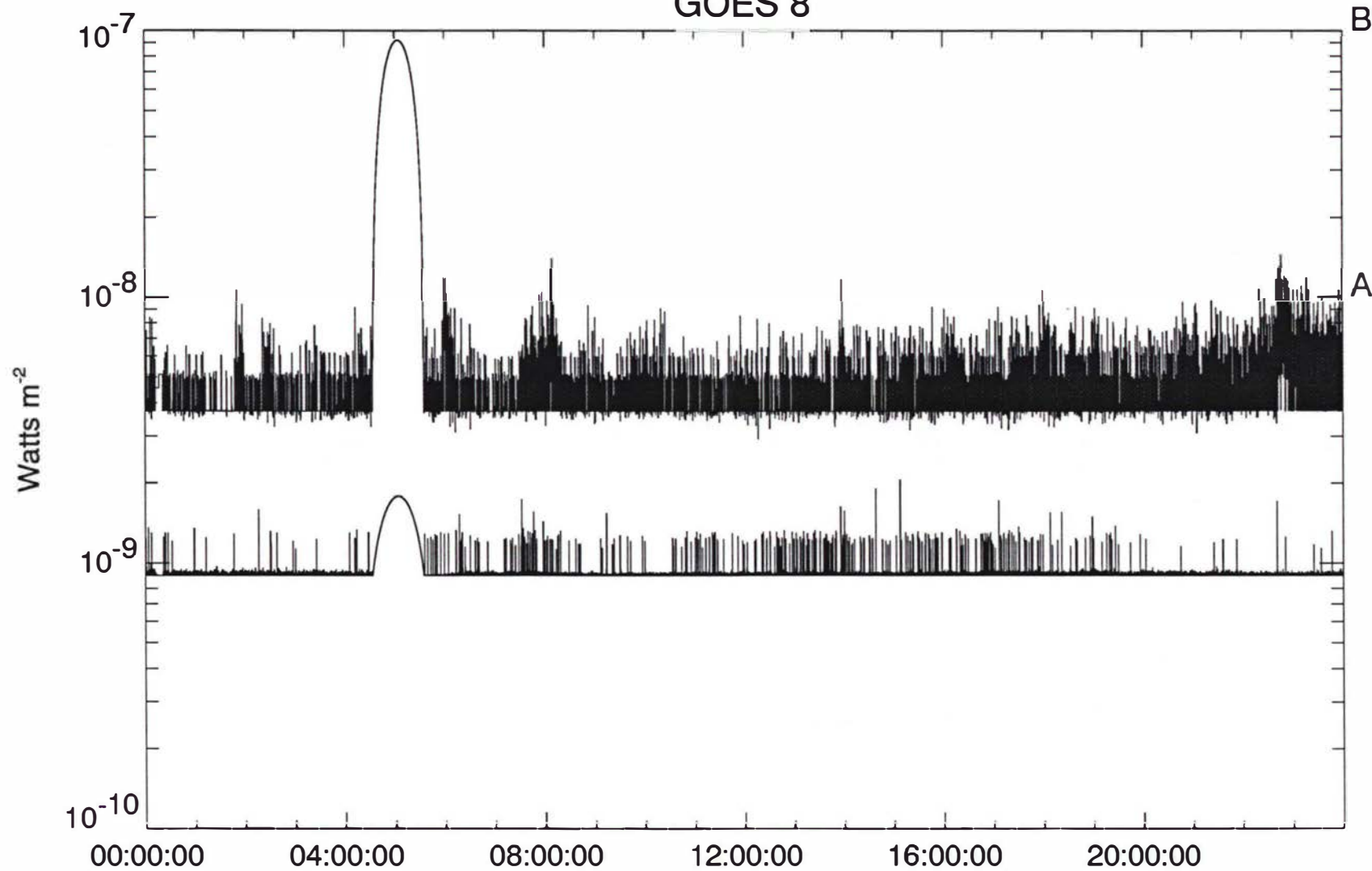
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYG X-1 RISE.

GOES 8



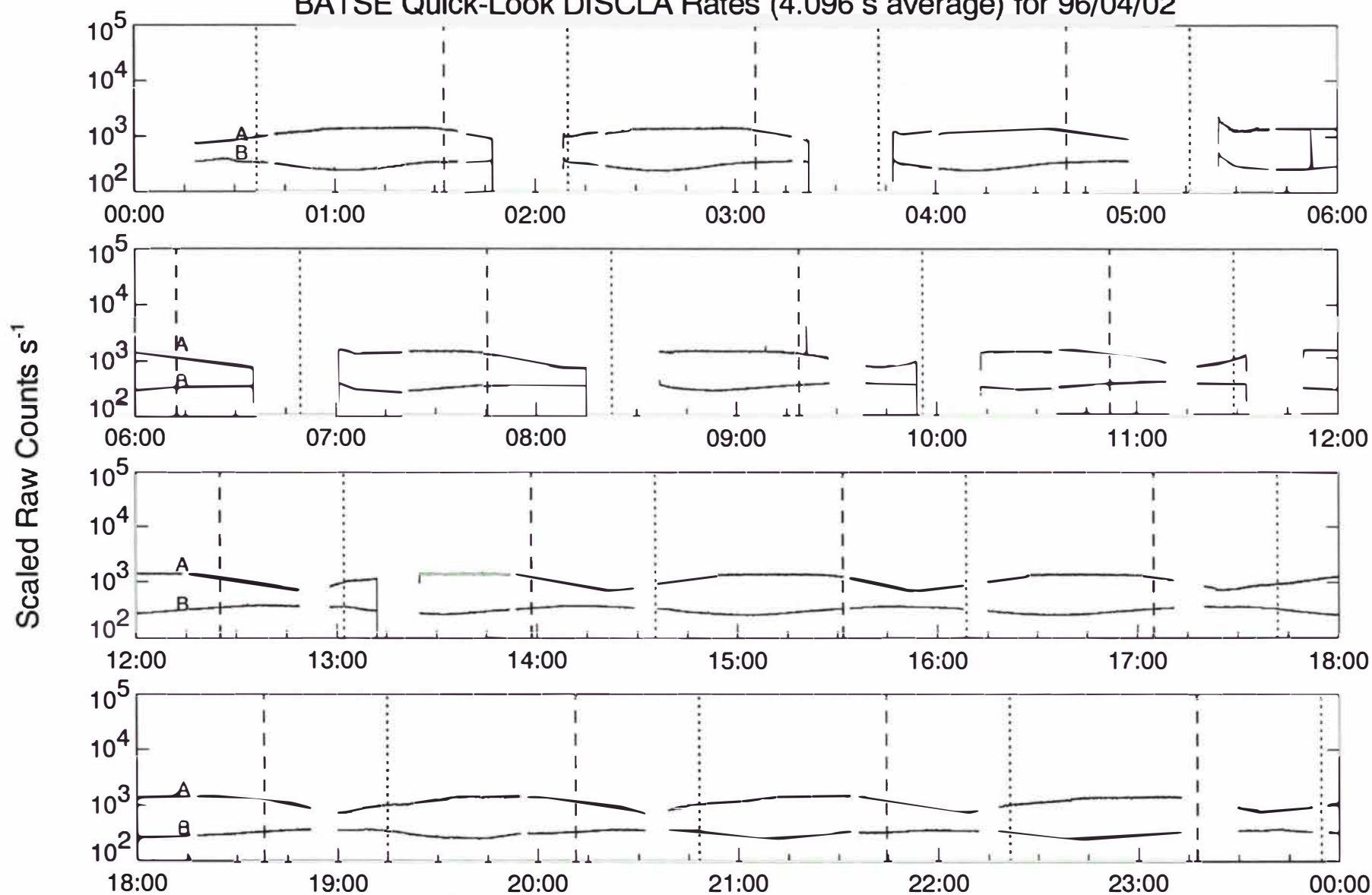
Data Start: 96/04/02, 0000:00

Plot created: 96/04/04, 1636

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/02

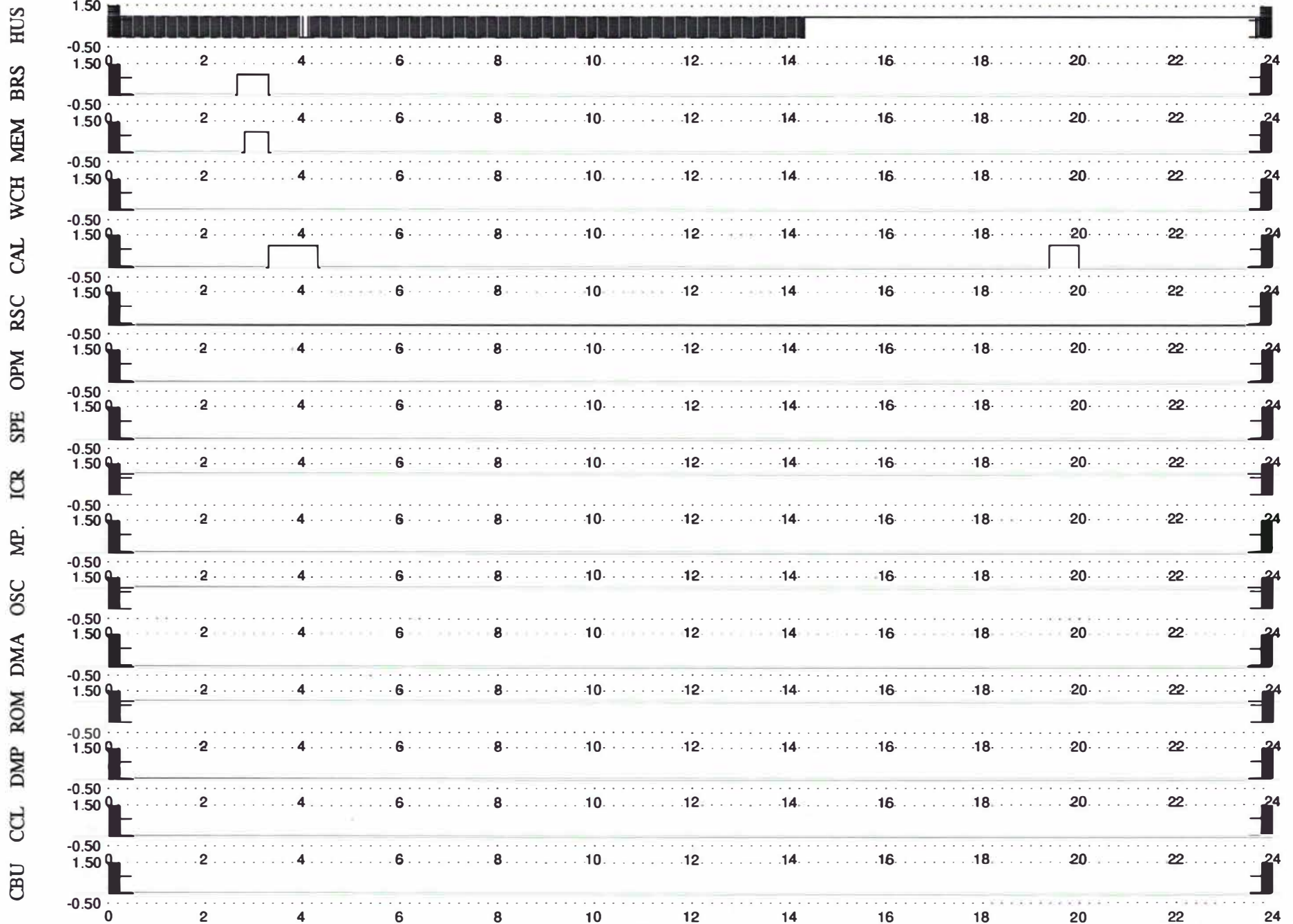


Current Time: 96/04/04, 1636 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

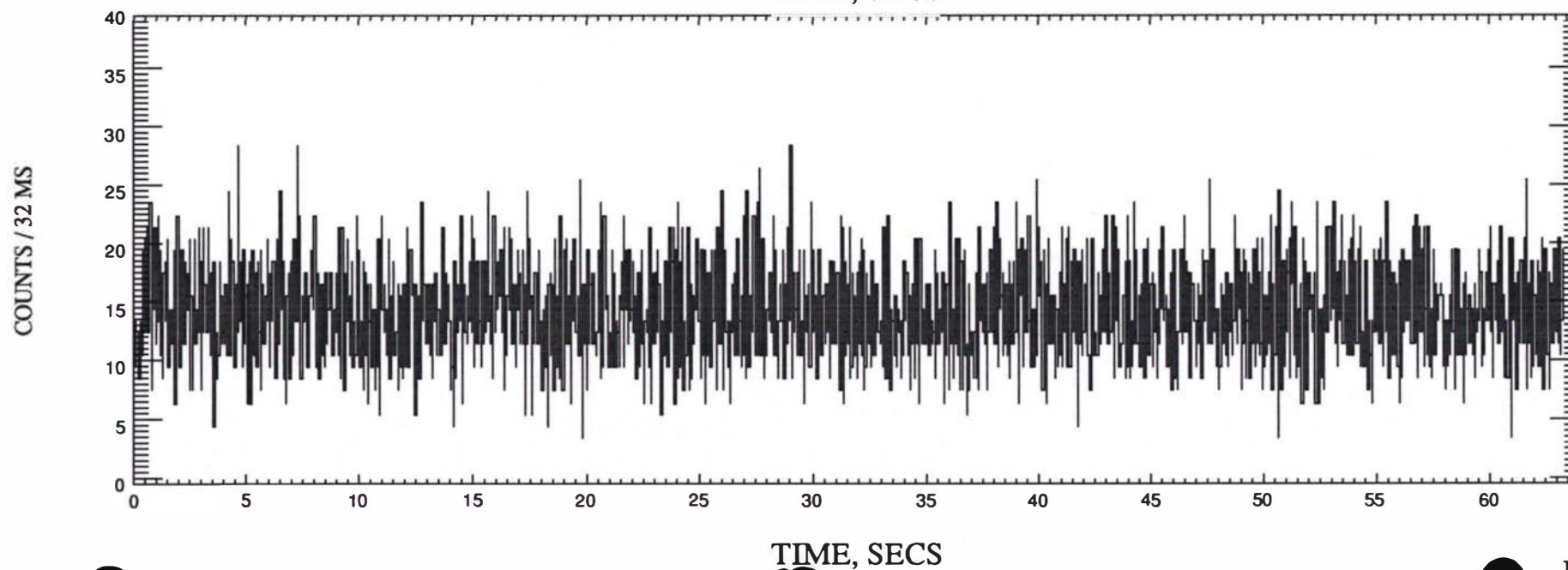
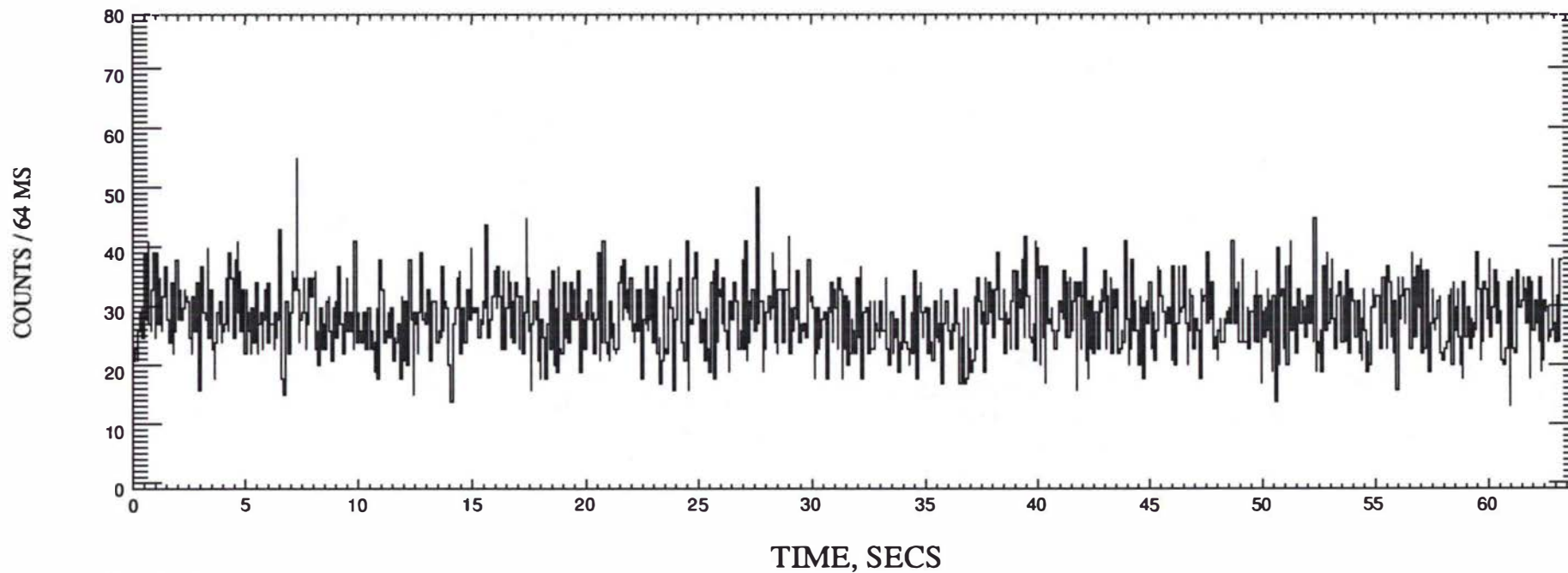
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

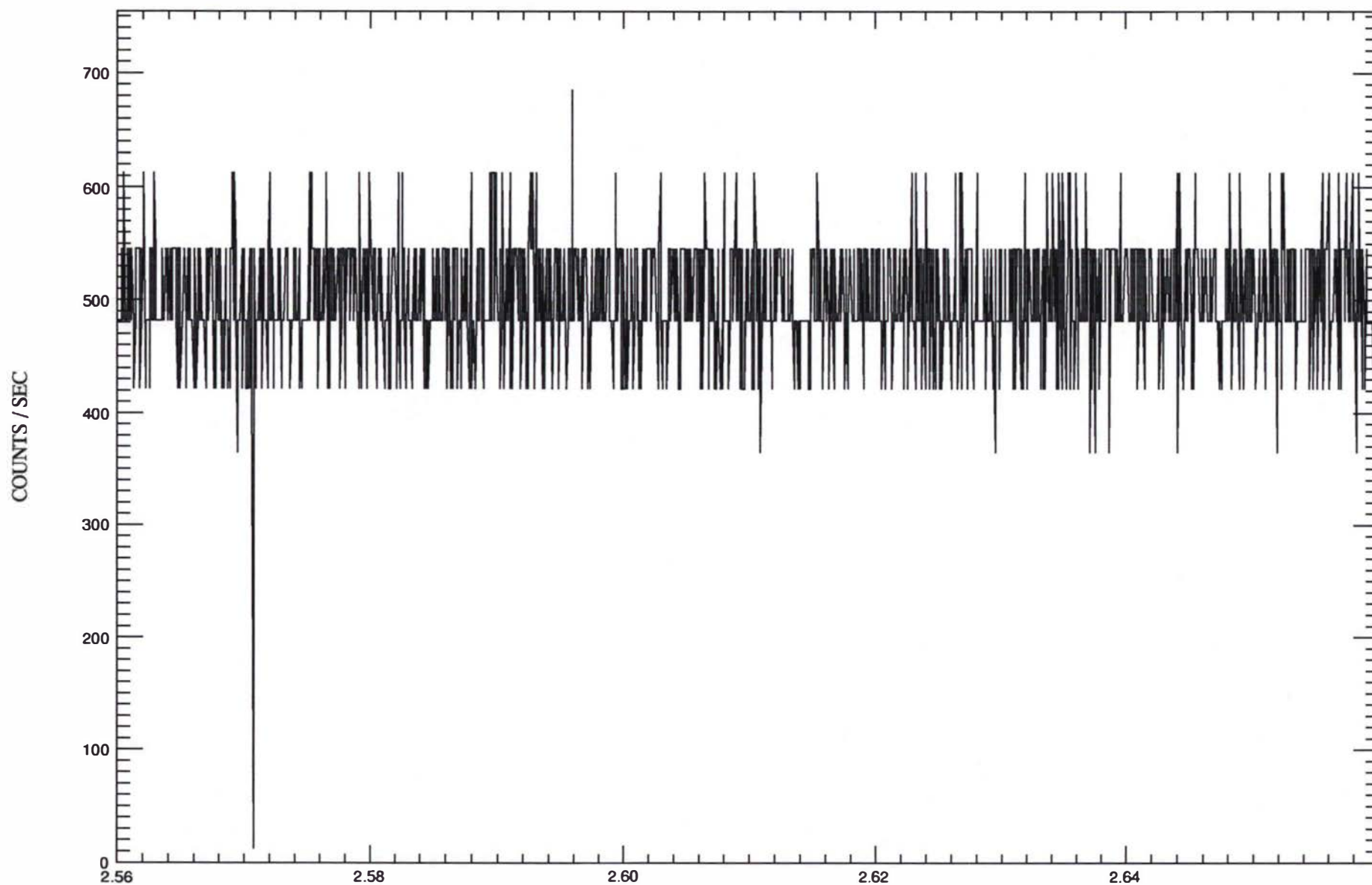
BURST NUMBER 2



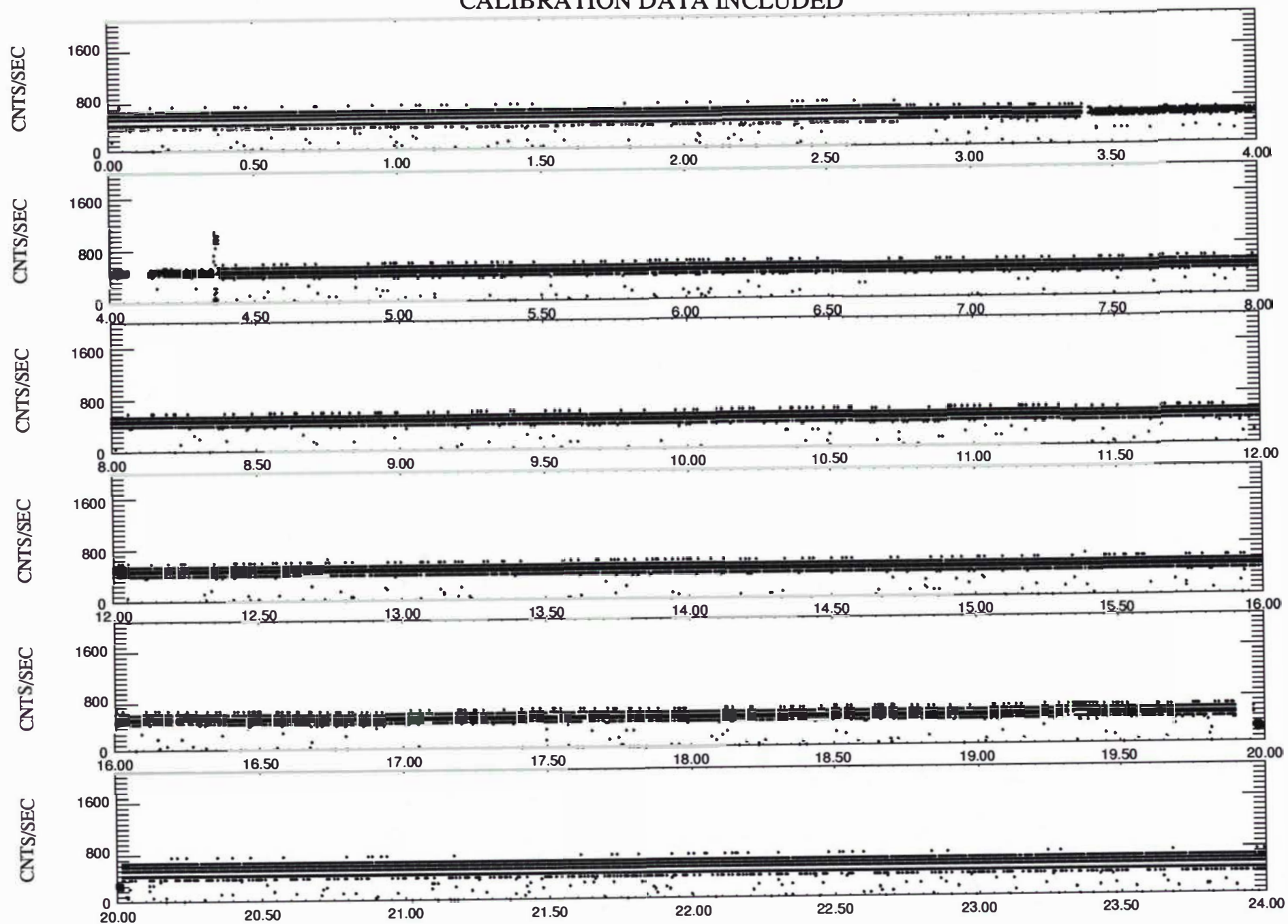
Burst Counter 2 at UT= 2.606596781413 h= 9383.748 s 02:36:23.748



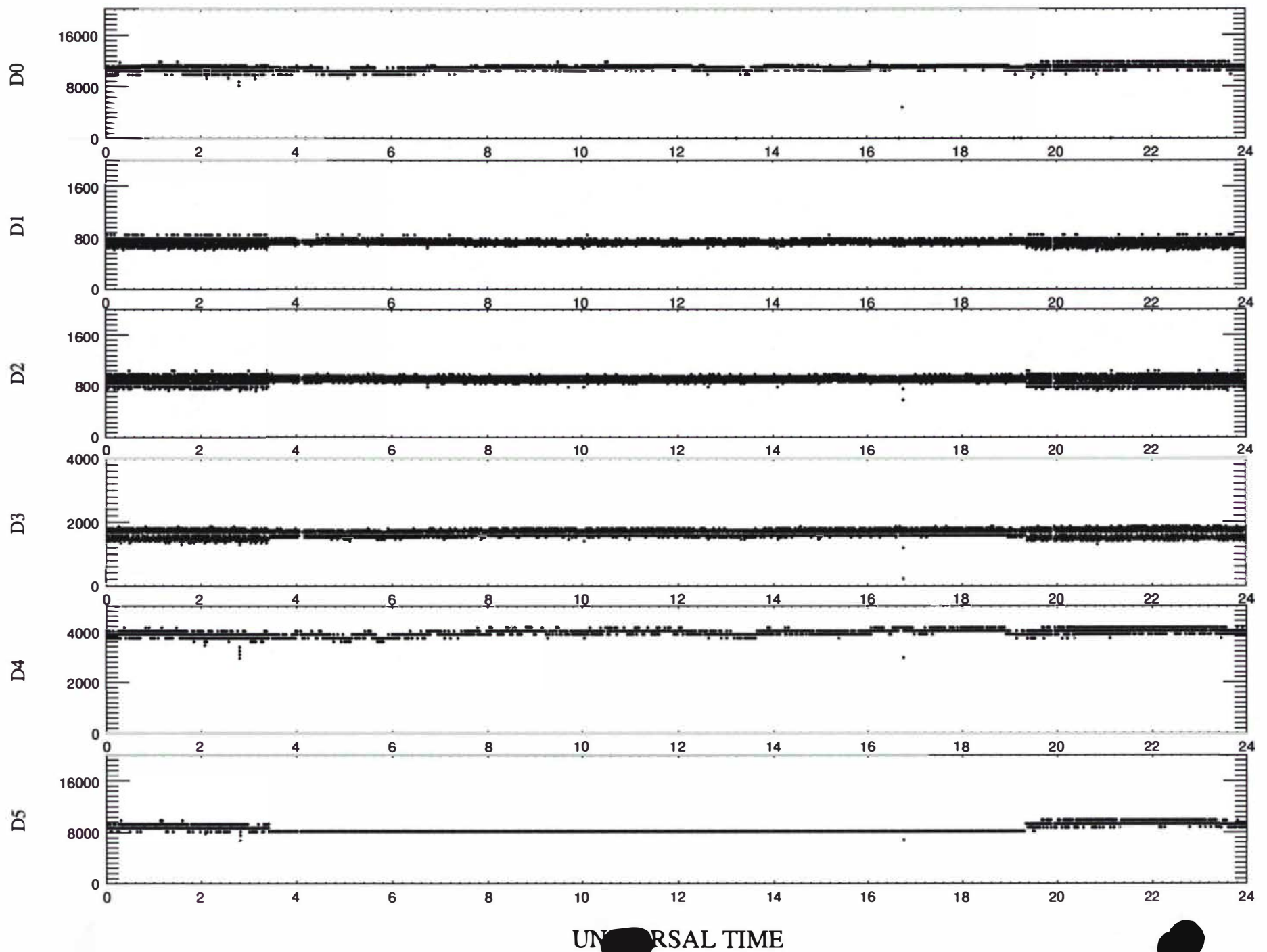
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME





From DEAL@ssl.msfc.nasa.gov Mon Apr 8 05:52 PDT 1996
From: DEAL@ssl.msfc.nasa.gov
Date: Mon, 8 Apr 1996 7:51:52 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5407

BATSEARCH PROGRAM

BATSE BURST # 5407
EVENT OF 1996 APR 3 DAY OF YEAR= 94
EVENT CROSSING TIME AT BATSE : 31022. S. OR 08:37:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 189.000 5.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 4/ 96 IS:
RA= 157.165 DEC= 70.647 DIST= 3.281 AU
BATSE-ULYSSES DISTANCE = 90809729. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -593.80 SECS.
CROSSING TIME AT ULYSSES IS 30428. S. OR 08:27:08 +/- 305.86 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 4/ 96 IS:
RA= 6.995 DEC= 2.165 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356620032. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 7.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1179.54 SECS.
CROSSING TIME AT MARS IS 32202. S. OR 08:56:41 +/- 44.65 SECONDS

BATSE BURST TRIGGER

NO.: 5407

TIME: TJD=0176 SECONDS=31022

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=64.0 AZIMUTH=184.5 ERROR=4.9 DEGREES

COMMENTS:

GRB LASTING ~ 70 S. marginally visible above 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5407	960403	10176	31022	3000	189	+05	70

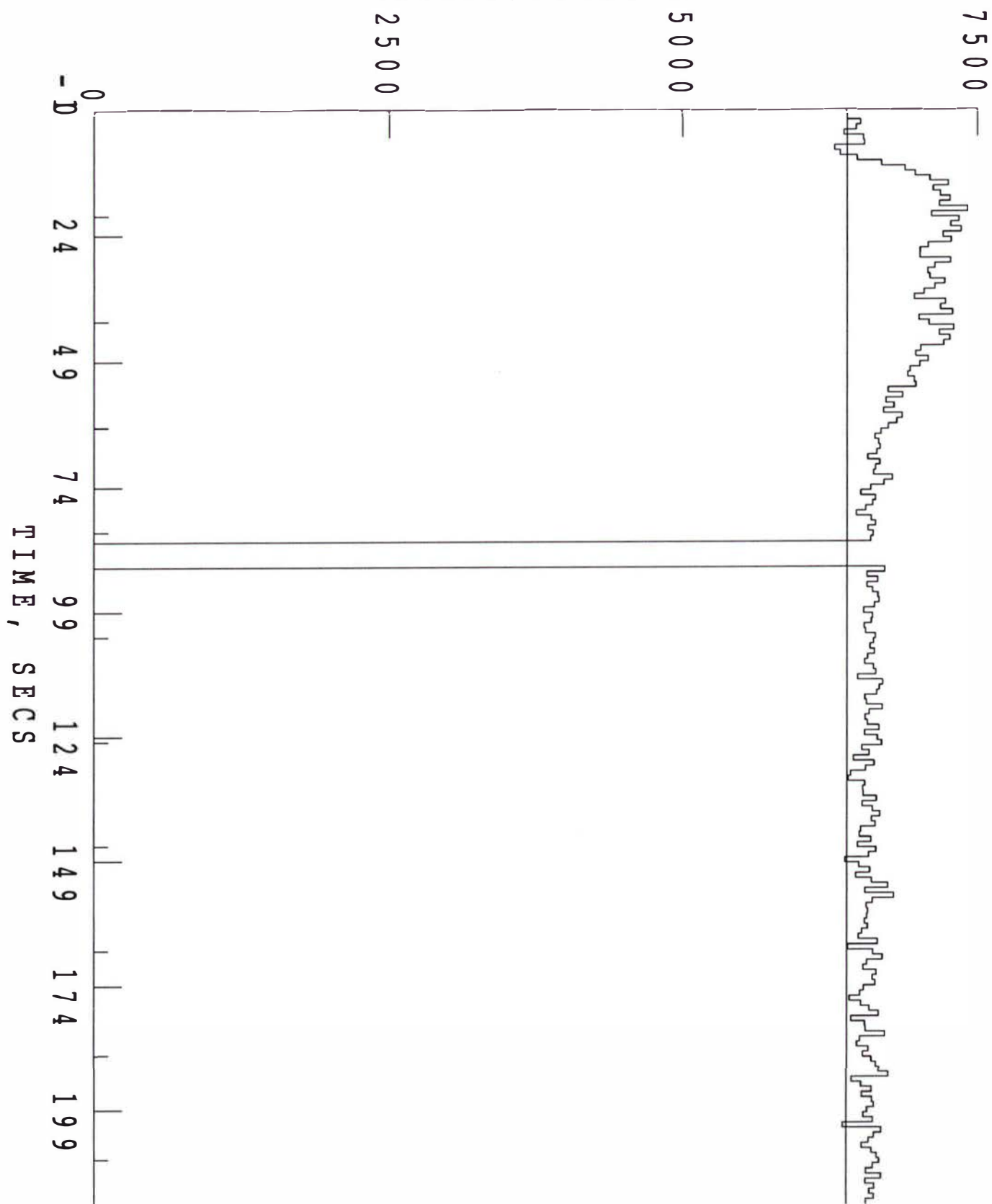
BACODINE

03/04/96

31010.505

25 - 100 keV

COUNTS/1.024 S



BATSE BURST# 5407

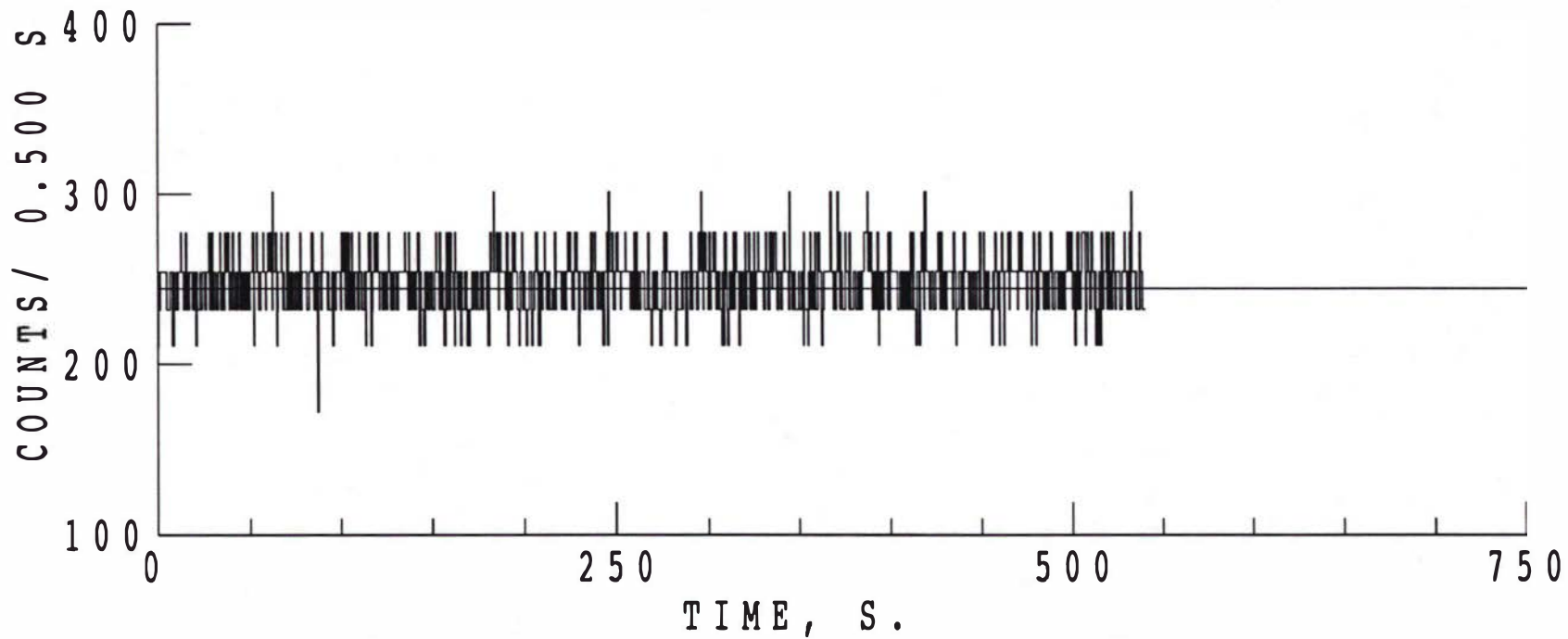
ULYSSES RT

4 / 5 / 98

3 / 4 / 96 29952.100 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From DEAL@SSLLES.MSFC.NASA.GOV Mon Apr 8 05:46 PDT 1996
Date: Mon, 8 Apr 1996 7:46:08 -0500 (CDT)
From: DEAL@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5408

TIME: TJD=0176 SECONDS=49047

TYPE: TRANSIE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

CYGX-1 RISING OCCULTATION STEP.

From DEAL@SSLLES.MSFC.NASA.GOV Mon Apr 8 05:53 PDT 1996
Date: Mon, 8 Apr 1996 7:53:47.-0500 (CDT)
From: DEAL@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5409

BATSEARCH PROGRAM

ND

BATSE BURST # 5409
EVENT OF 1996 APR 3 DAY OF YEAR= 94
EVENT CROSSING TIME AT BATSE : 63505. S. OR 17:38:25.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 107.000 20.000
BATSE PEAK COUNTING RATE: 3400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 4/ 96 IS:
RA= 156.921 DEC= 70.549 DIST= 3.286 AU
BATSE-ULYSSES DISTANCE = 491546118. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -859.11 SECS.
CROSSING TIME AT ULYSSES IS 62646. S. OR 17:24:05 +/- 279.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 4/ 96 IS:
RA= 6.995 DEC= 2.165 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356620032. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 178.70 SECS.
CROSSING TIME AT MARS IS 63684. S. OR 17:41:23 +/- 206.90 SECONDS

BATSE BURST TRIGGER

NO.: 5409

TIME: TJD=0176 SECONDS=63505

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=51.5 AZIMUTH=72.9 ERROR=2.0 DEGREES

COMMENTS:

GRB LASTING ~ 90 S. VISIBLE ABOVE 300 KEV.

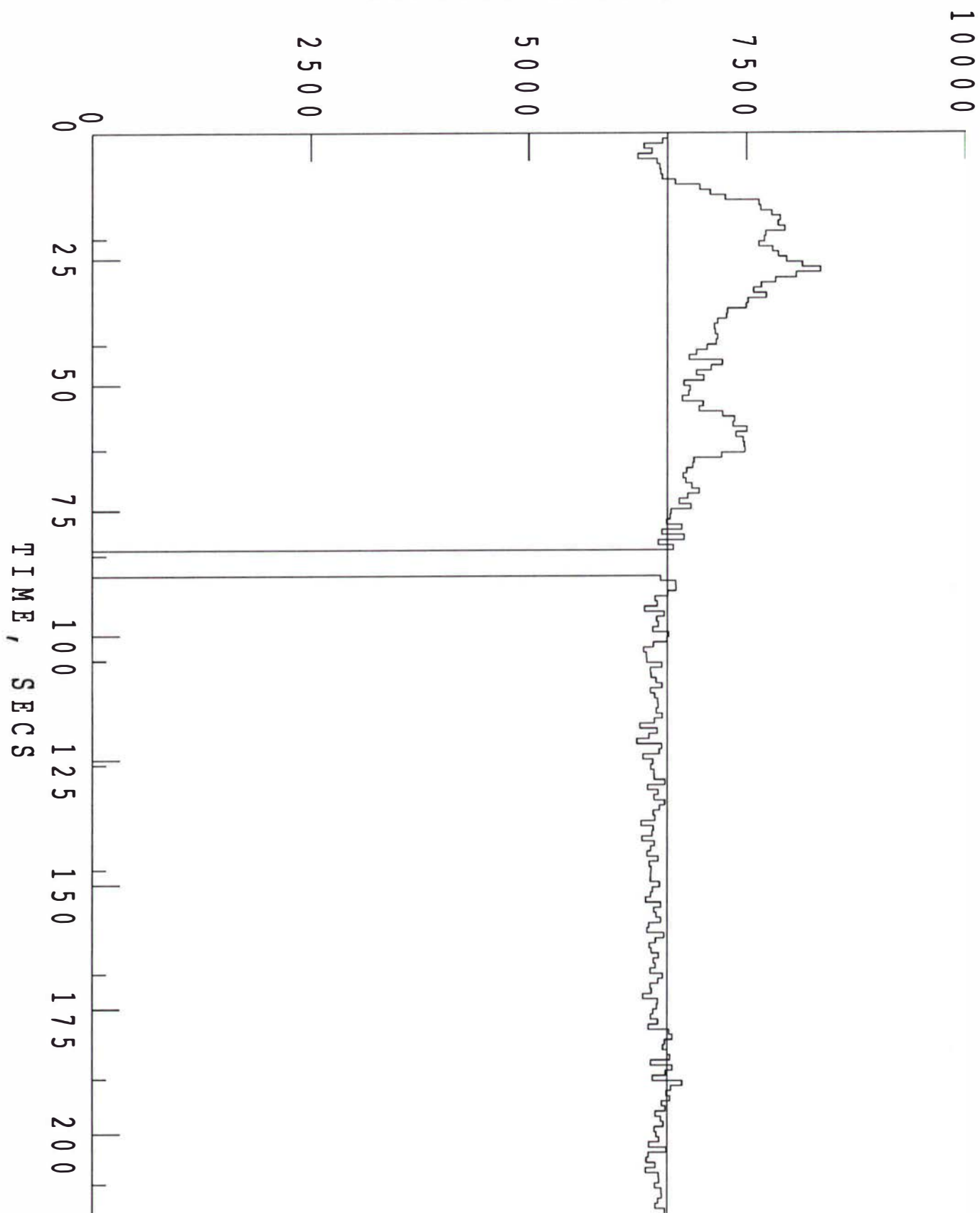
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5409	960403	10176	63505	3400	107	+20	90

BACODINE

03/04/96

63493.833

25 - 100 keV
COUNTS/1.024 S



BATSE #

5409

8 / 4 / 96

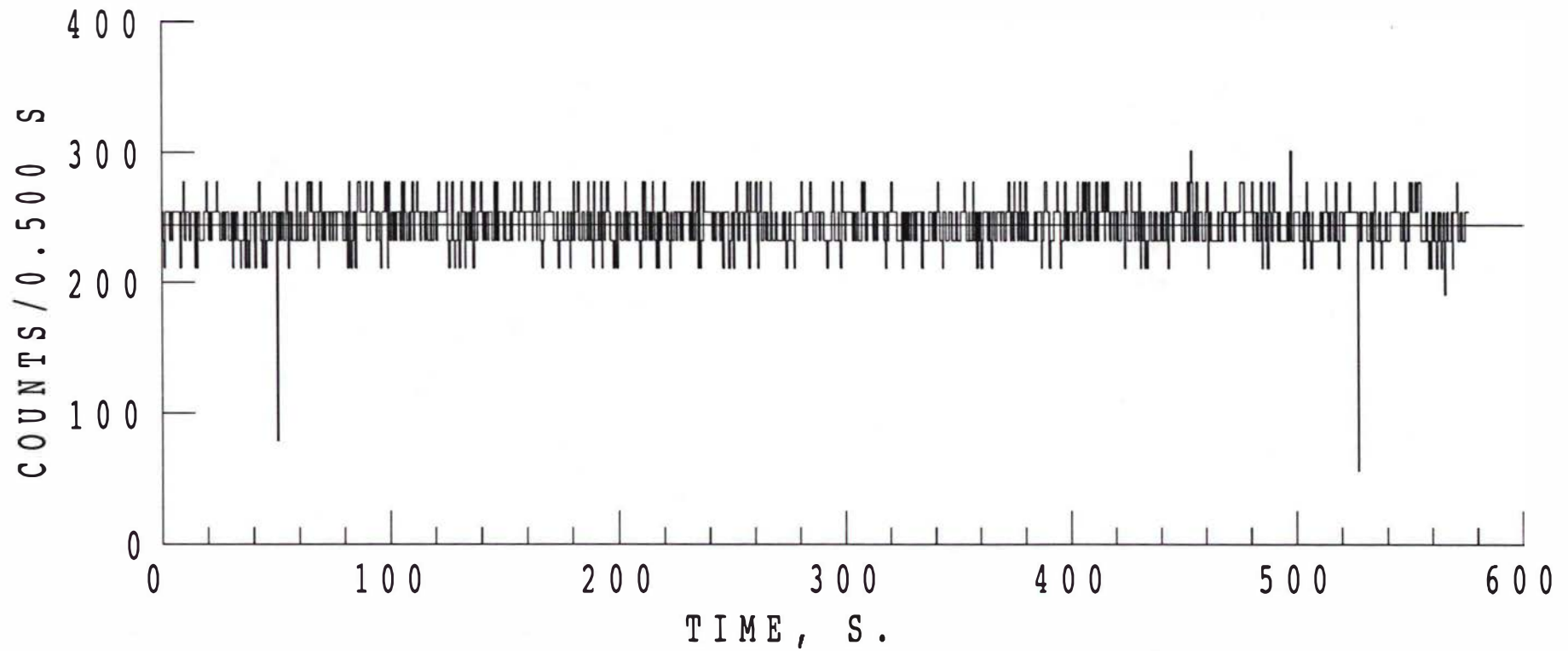
ULYSSES RT

3 / 4 / 96 62352.043 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



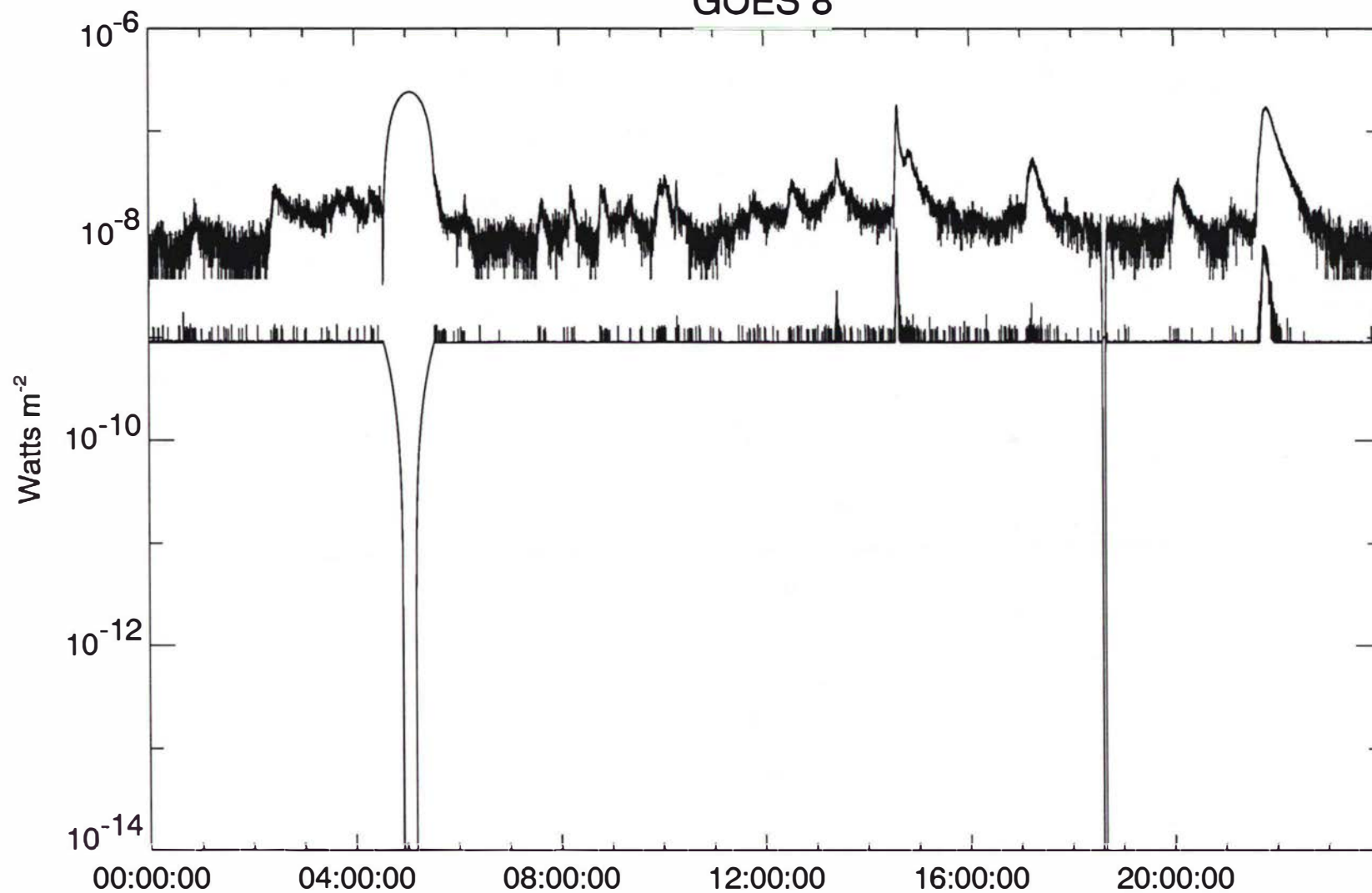
M

GOES 8

C

B

A



Data Start: 96/04/03, 0000:00

Plot created: 96/04/05, 1004

Channel

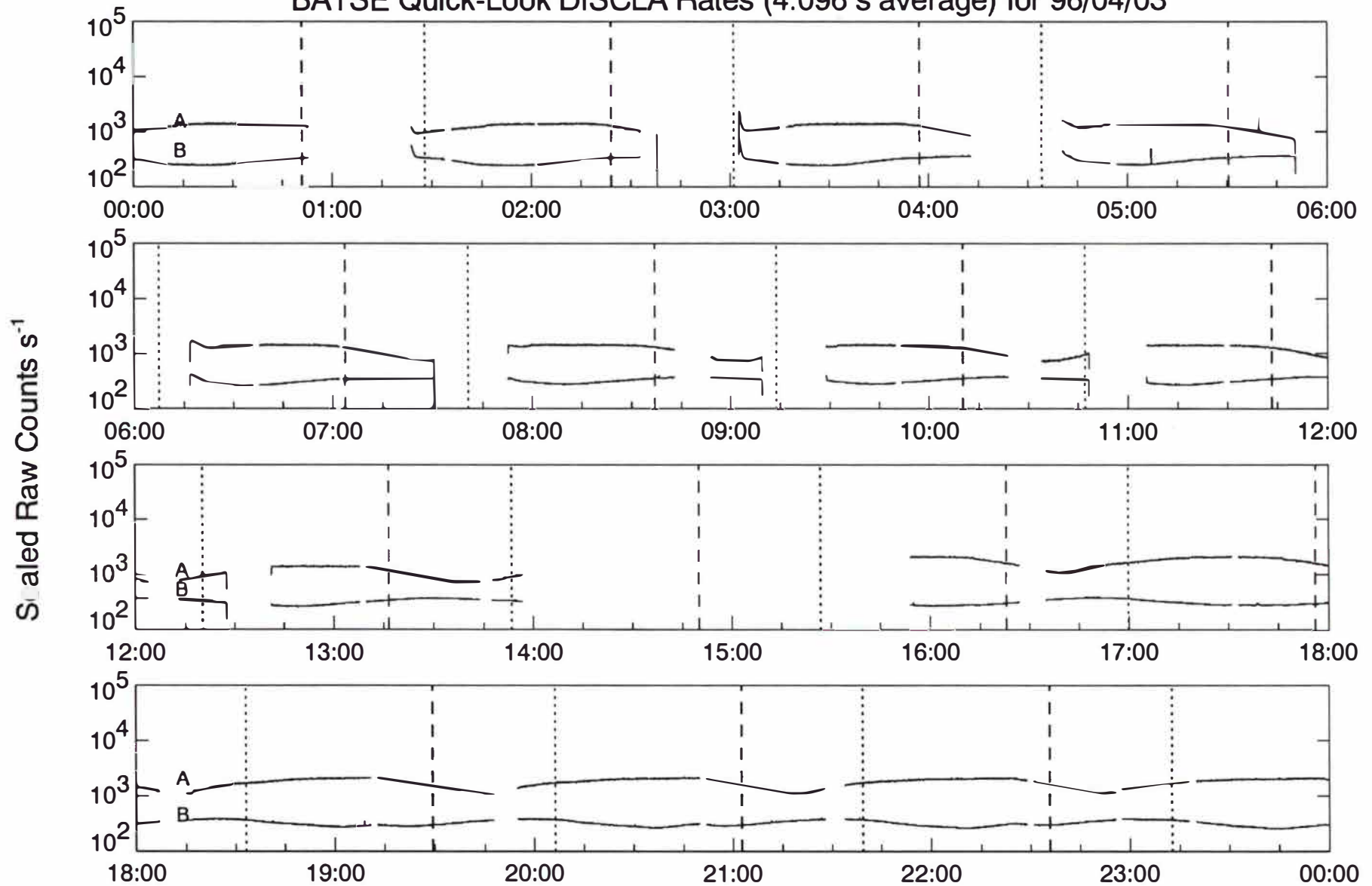
1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/03

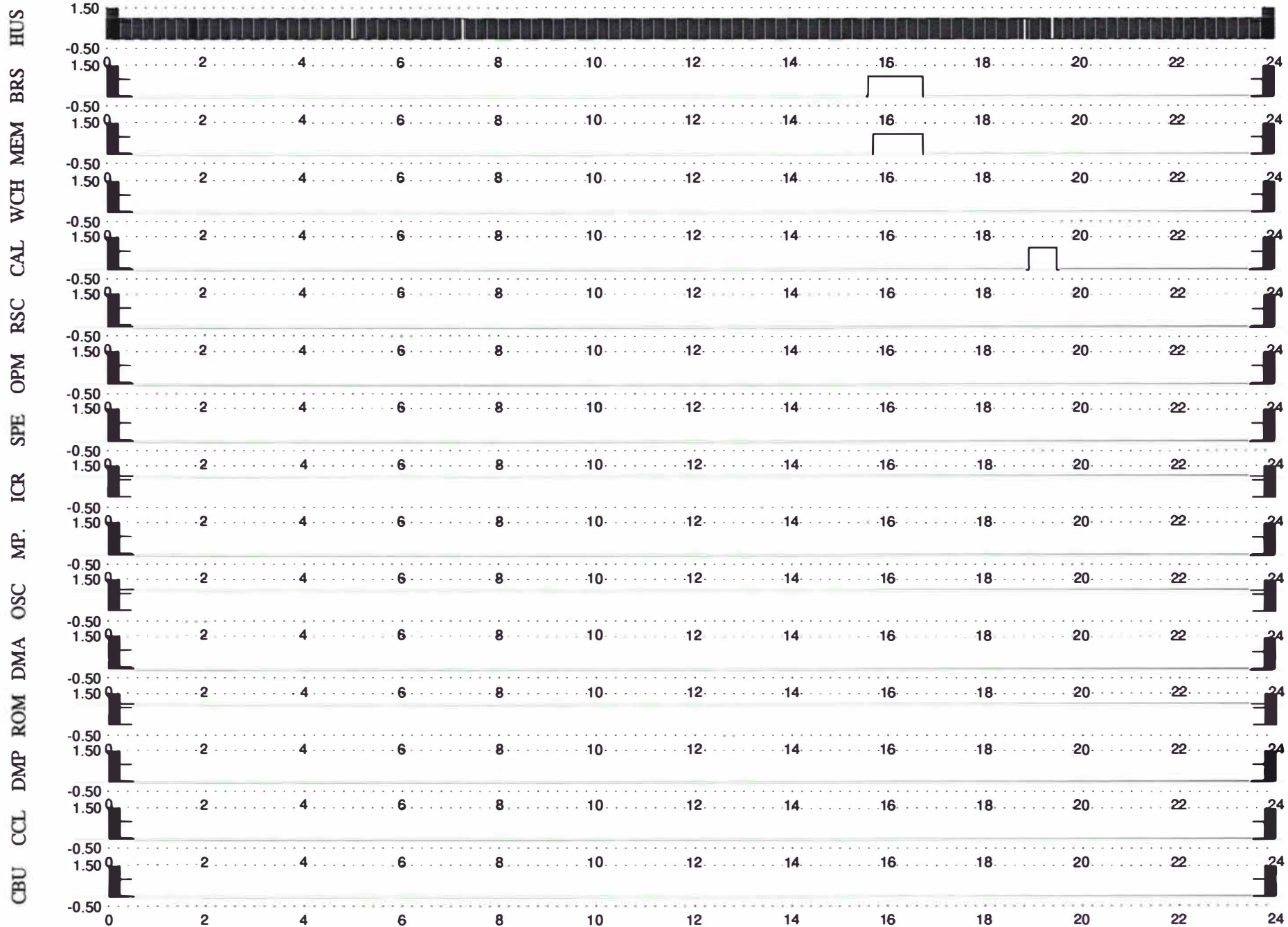


Current Time: 96/04/05, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

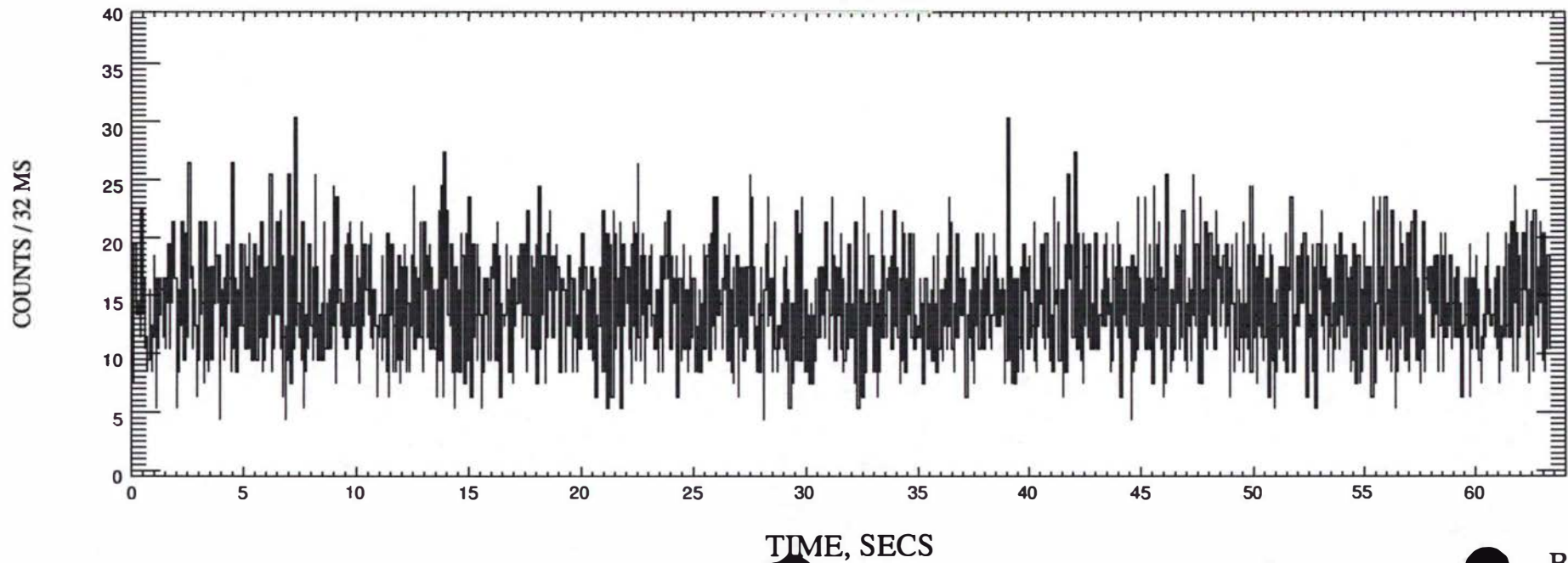
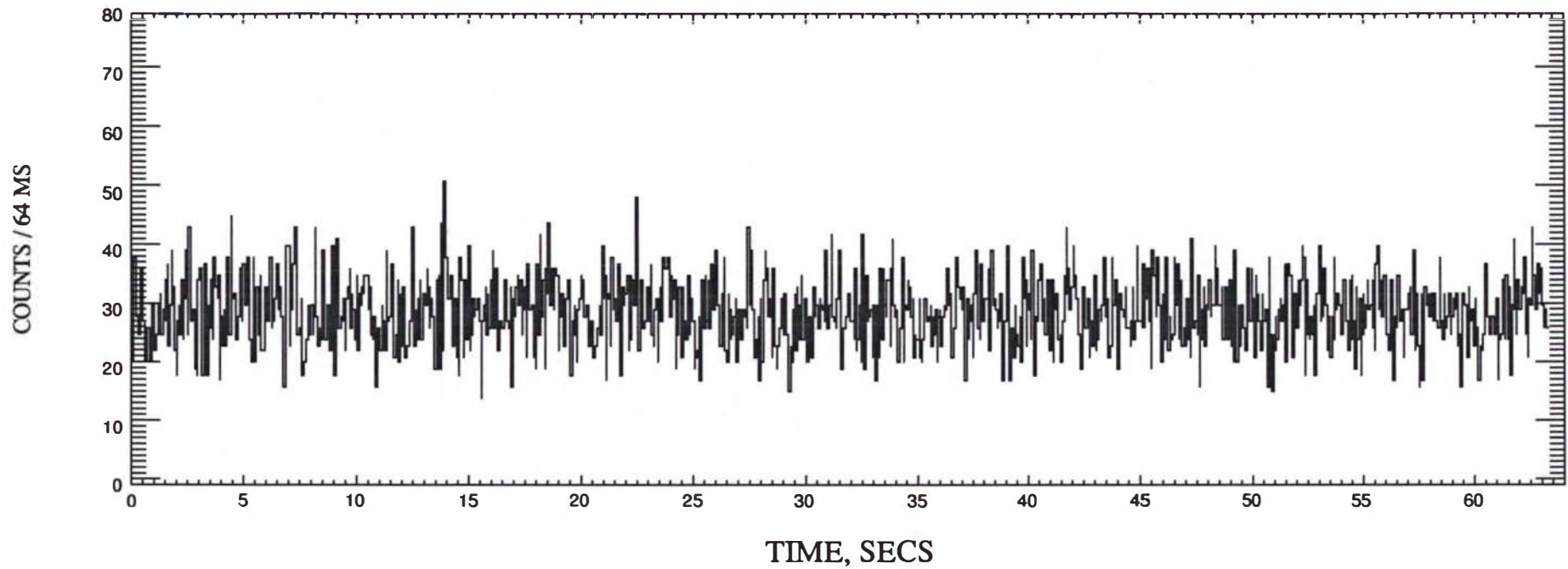
* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 3

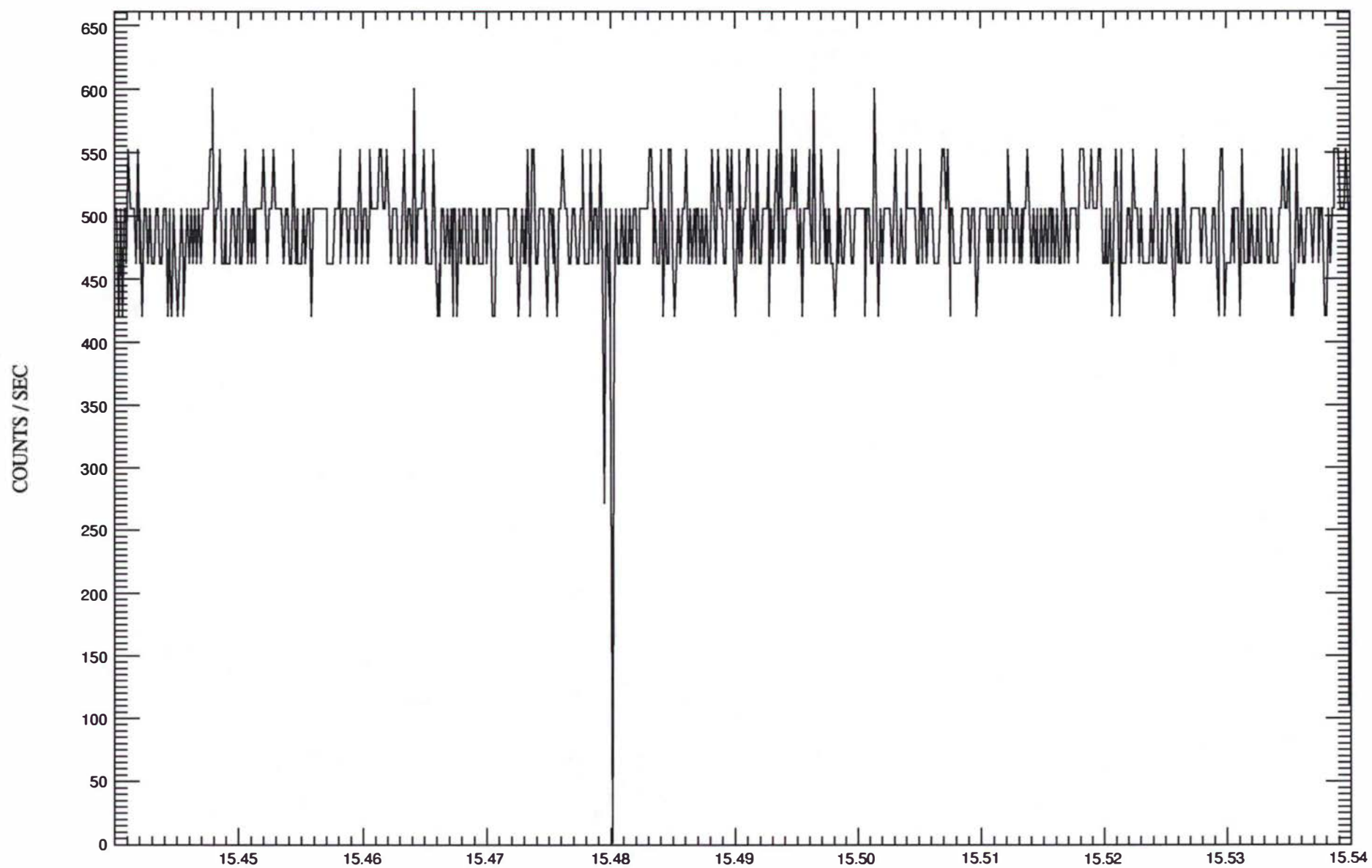


UNIVERSAL TIME

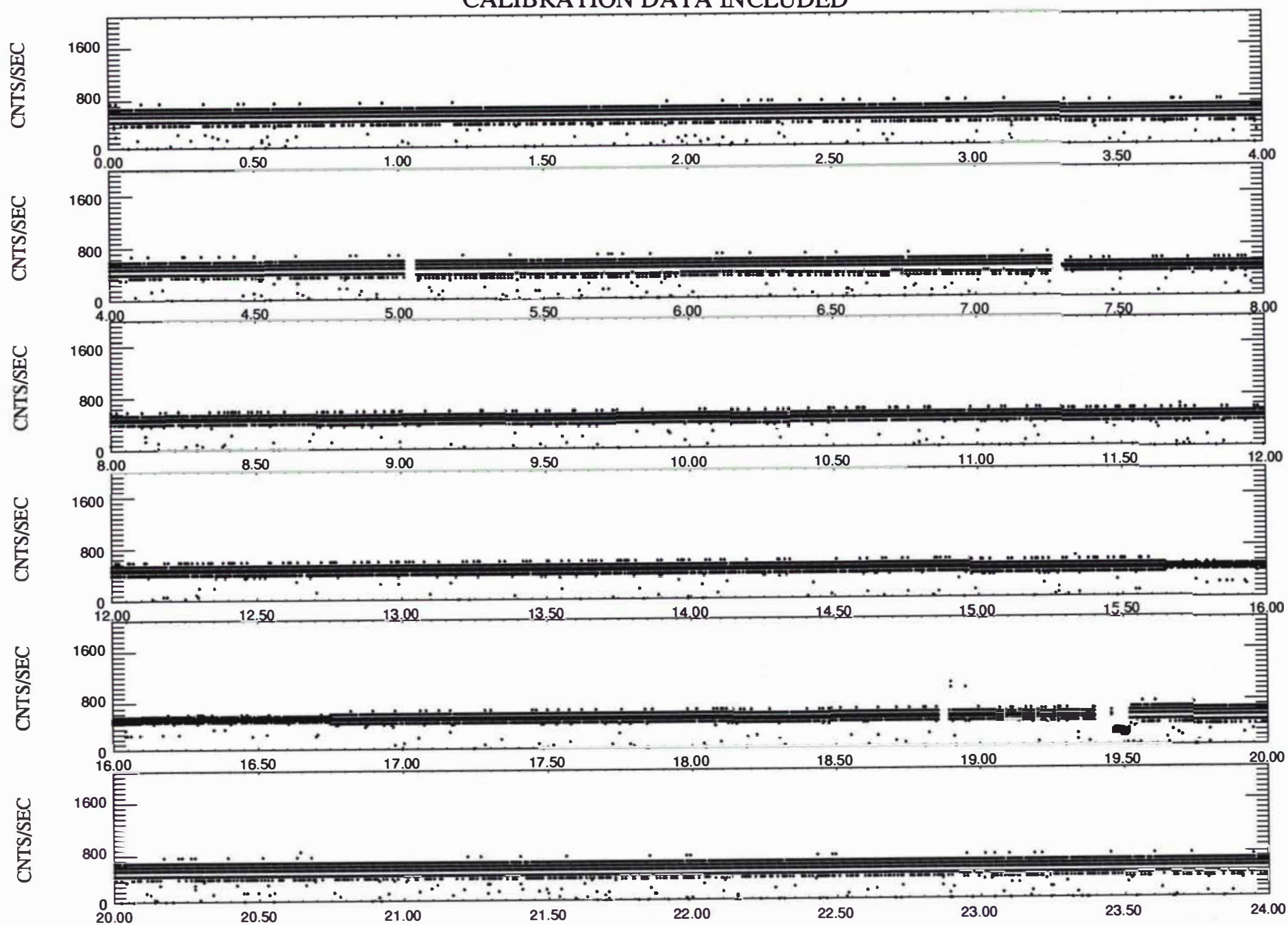
Burst Counter 3 at UT=15.491964136759 h=55771.071 s 15:29:31.071



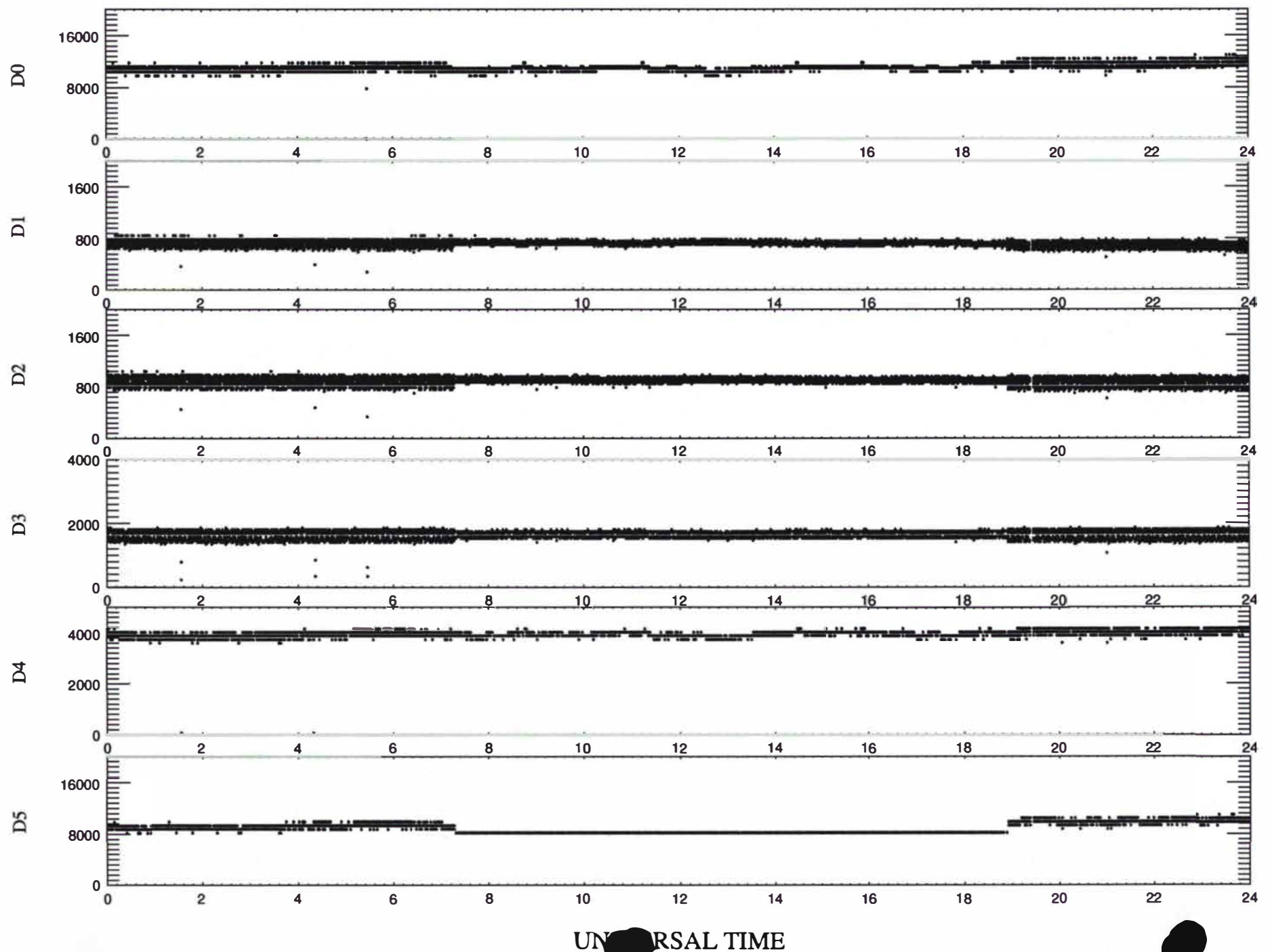
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SURASAK@SSLLES.MSFC.NASA.GOV Fri Apr 5 12:40 PST 1996
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA26705; Fri, 5 Apr 1996 12:40:03 -0800
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Fri, 5 Apr 1996 14:39:55 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <960405143955.20201a84@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 5410
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 5410
EVENT OF 1996 APR 4 DAY OF YEAR= 95
EVENT CROSSING TIME AT BATSE : 8896. S. OR 02:28:16.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 290.000 -14.000
BATSE PEAK COUNTING RATE: 2400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 4/ 96 IS:
RA= 156.685 DEC= 70.453 DIST= 3.291 AU
BATSE-ULYSSES DISTANCE = 492268312. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 63.21 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 740.05 SECS.
CROSSING TIME AT ULYSSES IS 9636. S. OR 02:40:36 +/- 315.73 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 4/ 96 IS:
RA= 7.703 DEC= 2.477 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356647648. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -233.16 SECS.
CROSSING TIME AT MARS IS 8663. S. OR 02:24:22 +/- 198.99 SECONDS

BATSE BURST TRIGGER

NO.: 5410

TIME: TJD=0177 SECONDS=8896

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=123 AZIMUTH=257 ERROR=006.1 DEGREES

COMMENTS:

MA RAY BURST. DOUBLE PULSE. DURATION ~ 70. FIRST PULSE IS STRONGER.
ST PULSE DURATION~35 SEC.THE SECOND ONE ~10 SEC. NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5410	960404	10177	08896	2400	290	-14	70

BATSE #

5410

5 / 4 / 96

ULYSSES RT

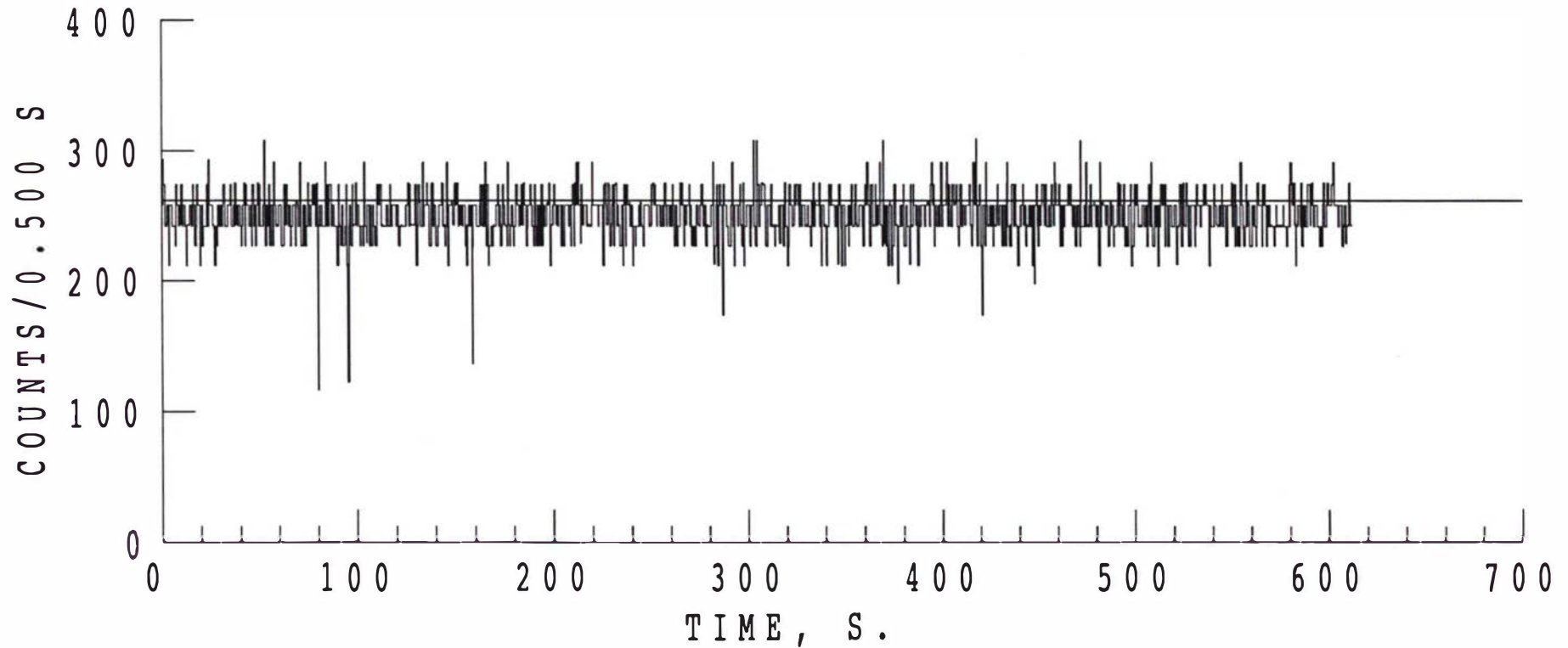
4 / 4 / 96 9324.007 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Sep 28 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

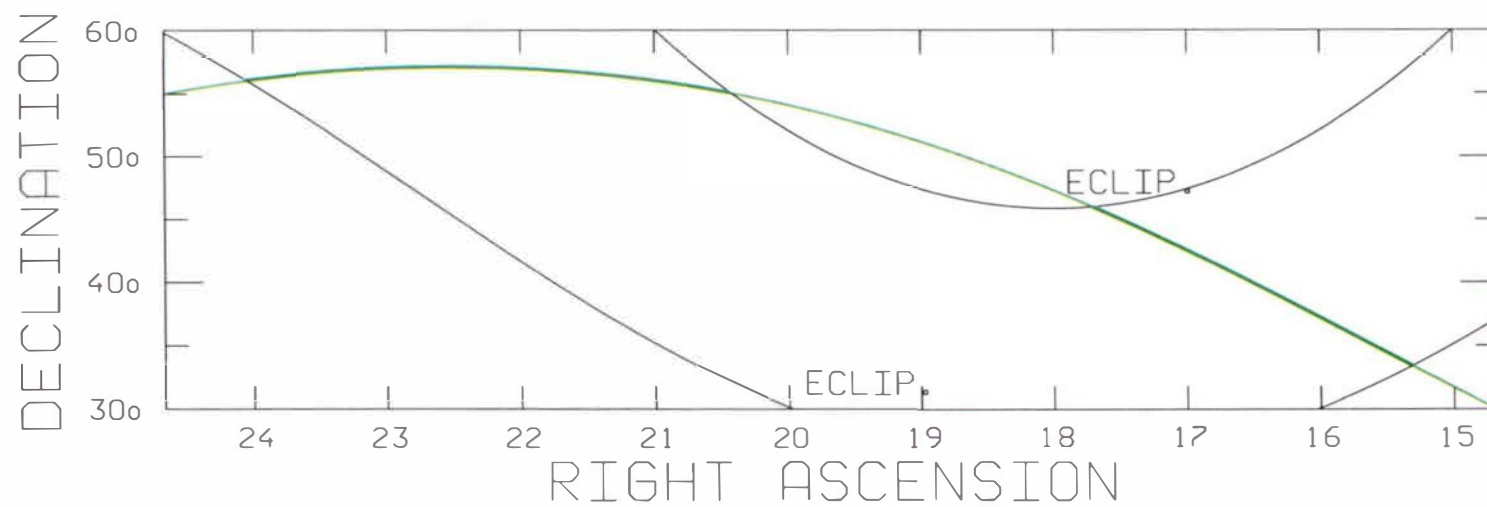
- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ Were data checked by Joe Springer for 0.5 s errors?
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is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

2. BATSE Data

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

3. PVO Data

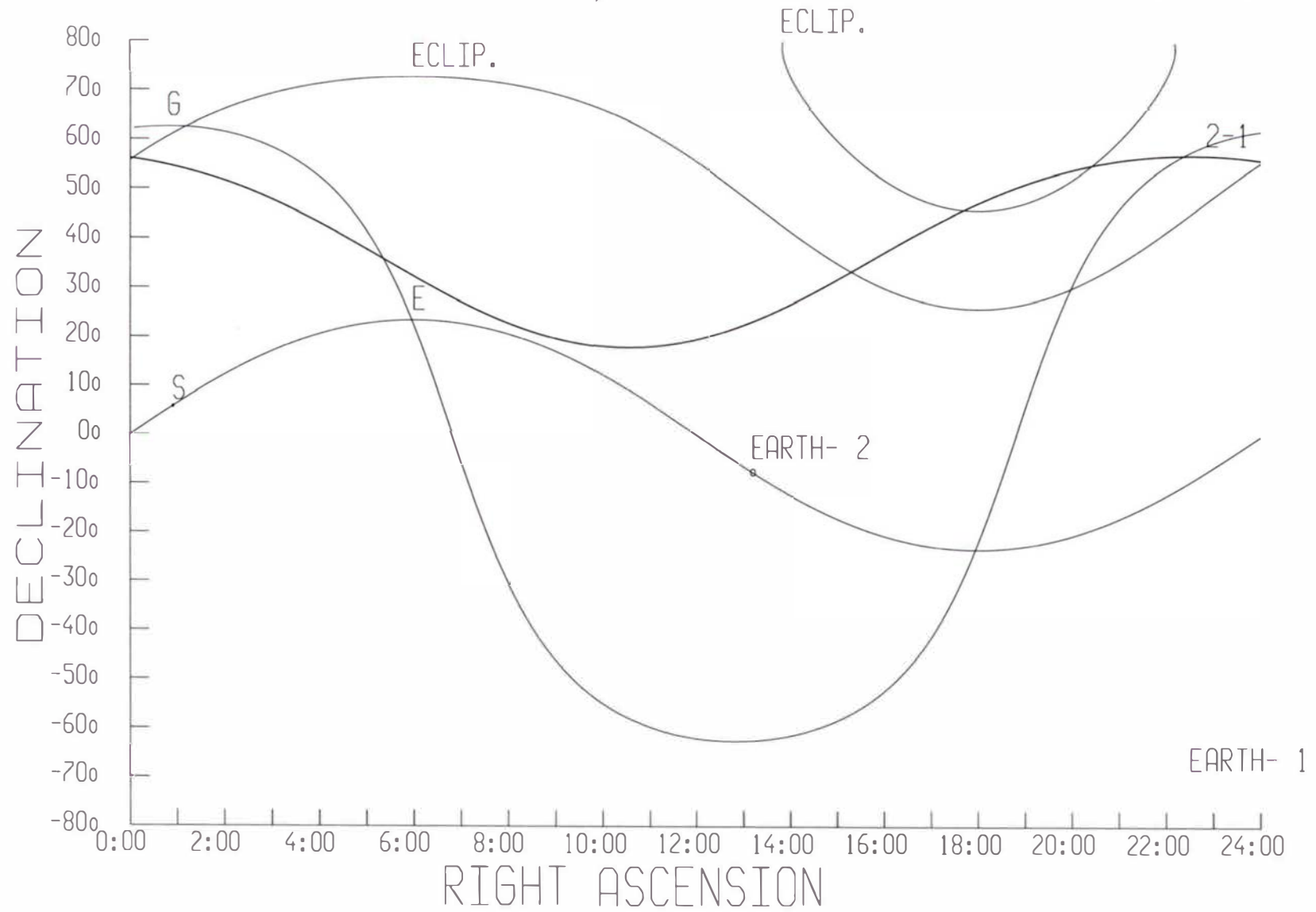
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS and MBL databases updated with identical times?

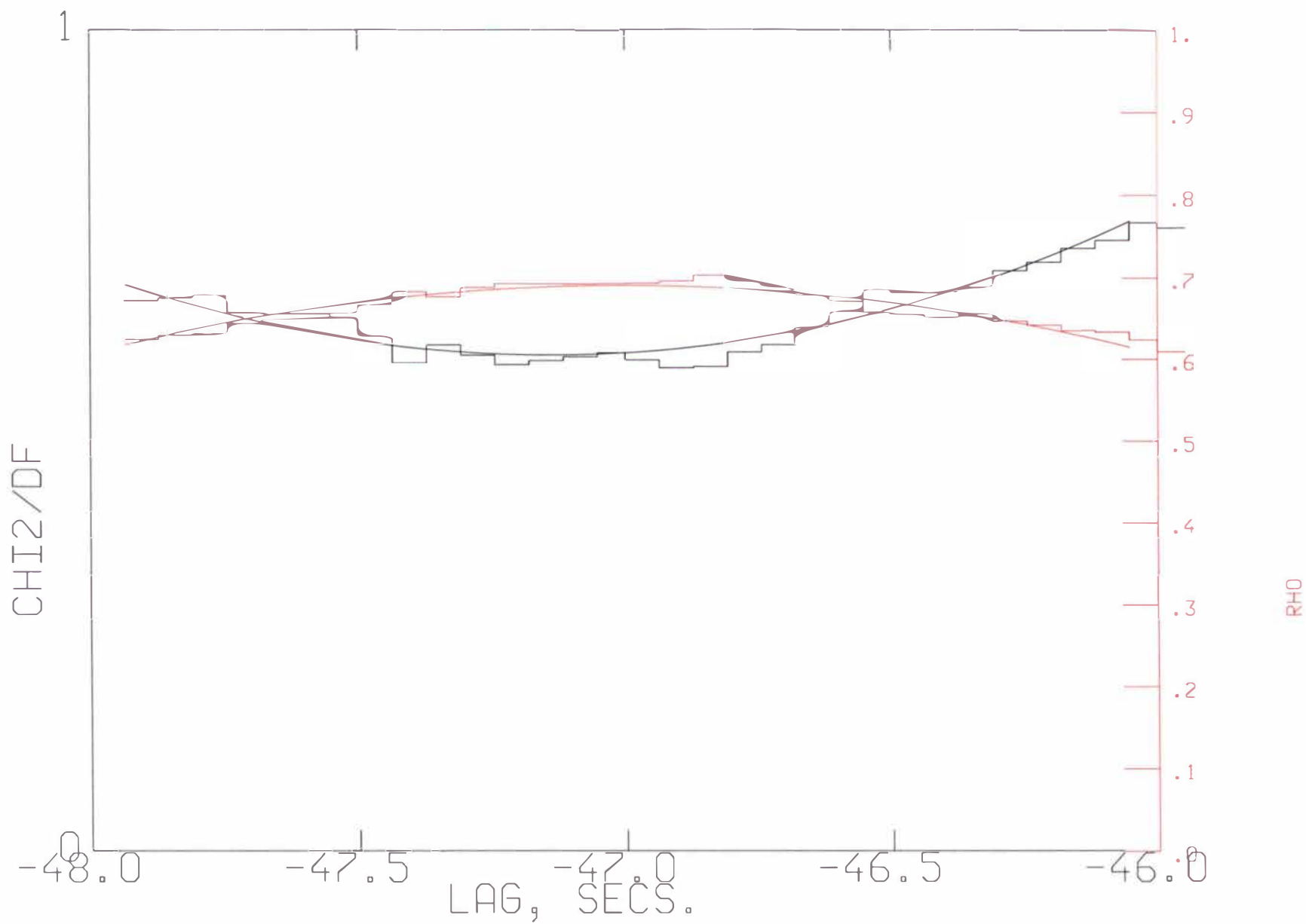


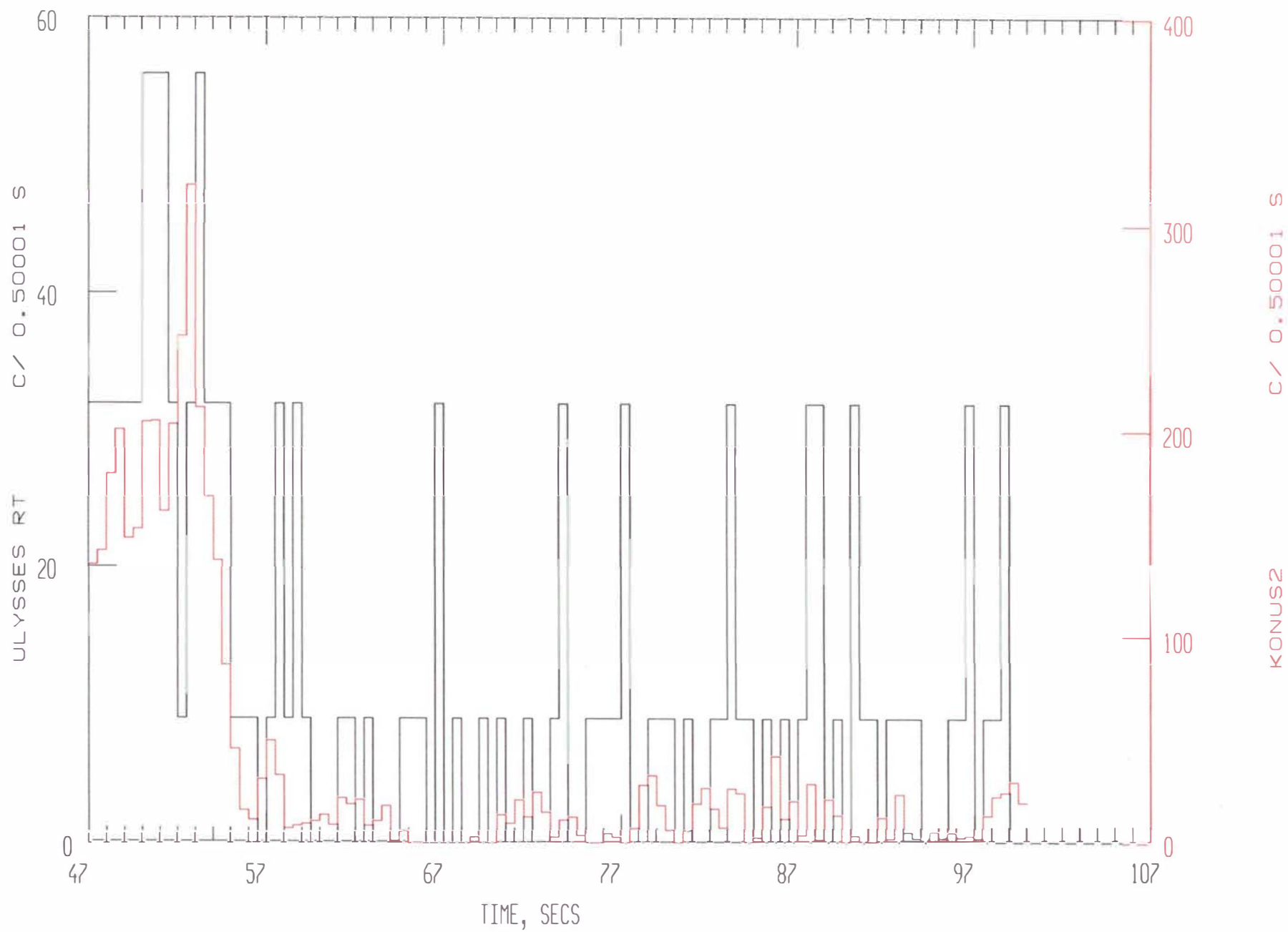
EVENT OF APR 4, 1996 6:44

28/09/2011

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







KONUS 19960404 24280

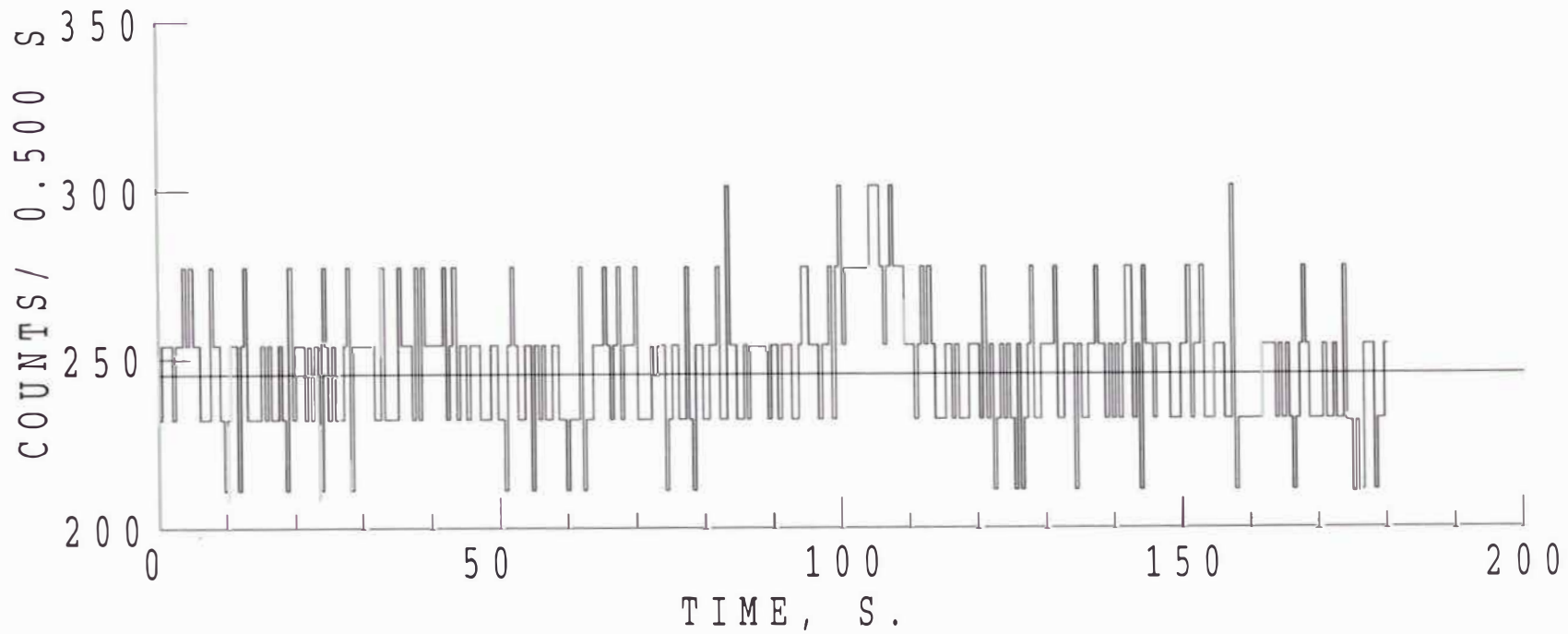
ULYSSES RT

27 / 09 / 11

04/04/96 24192.205 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



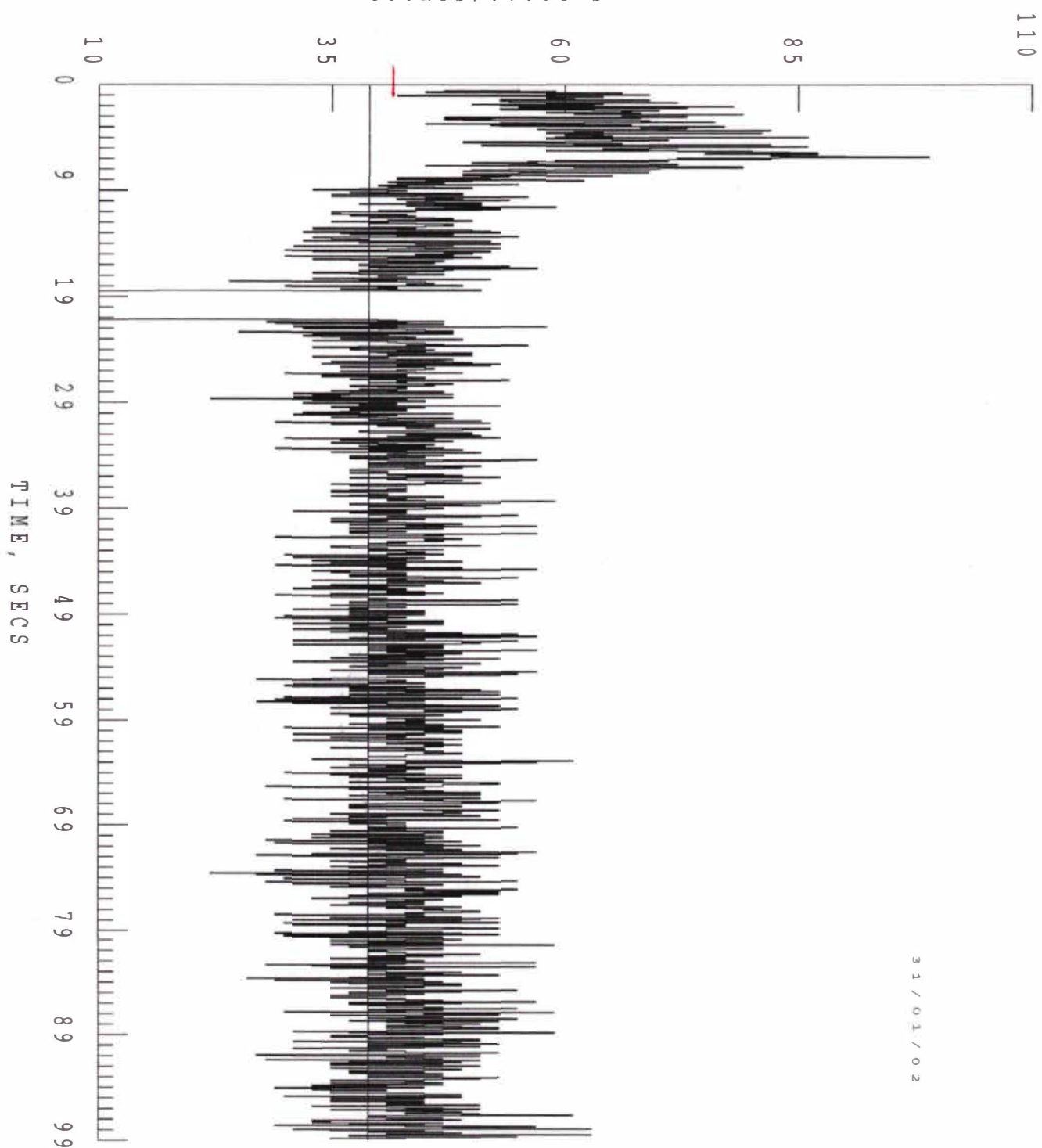
KONUS2

04/04/96

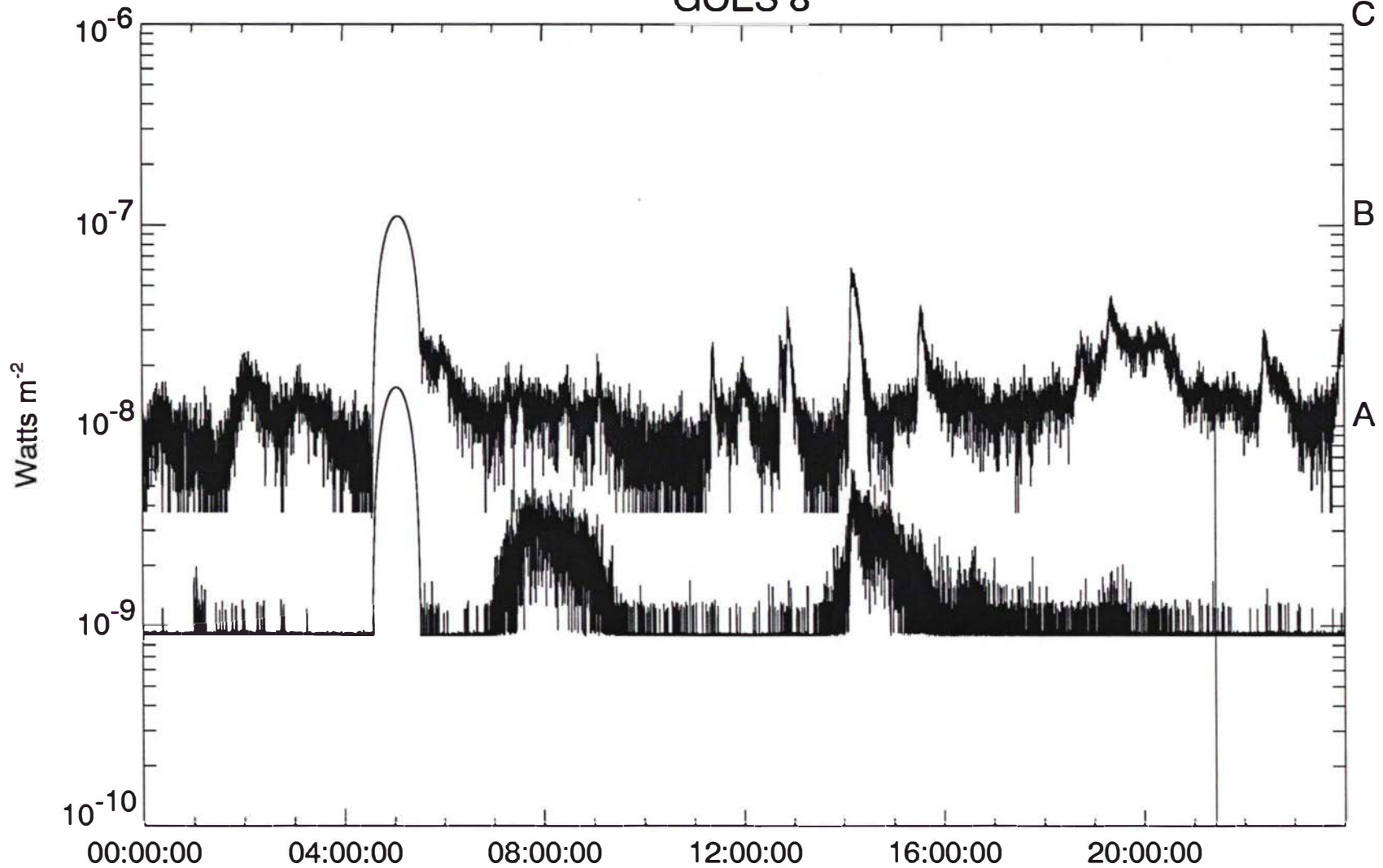
25289.264

50 - 200 keV

COUNTS/0.064 S



GOES 8

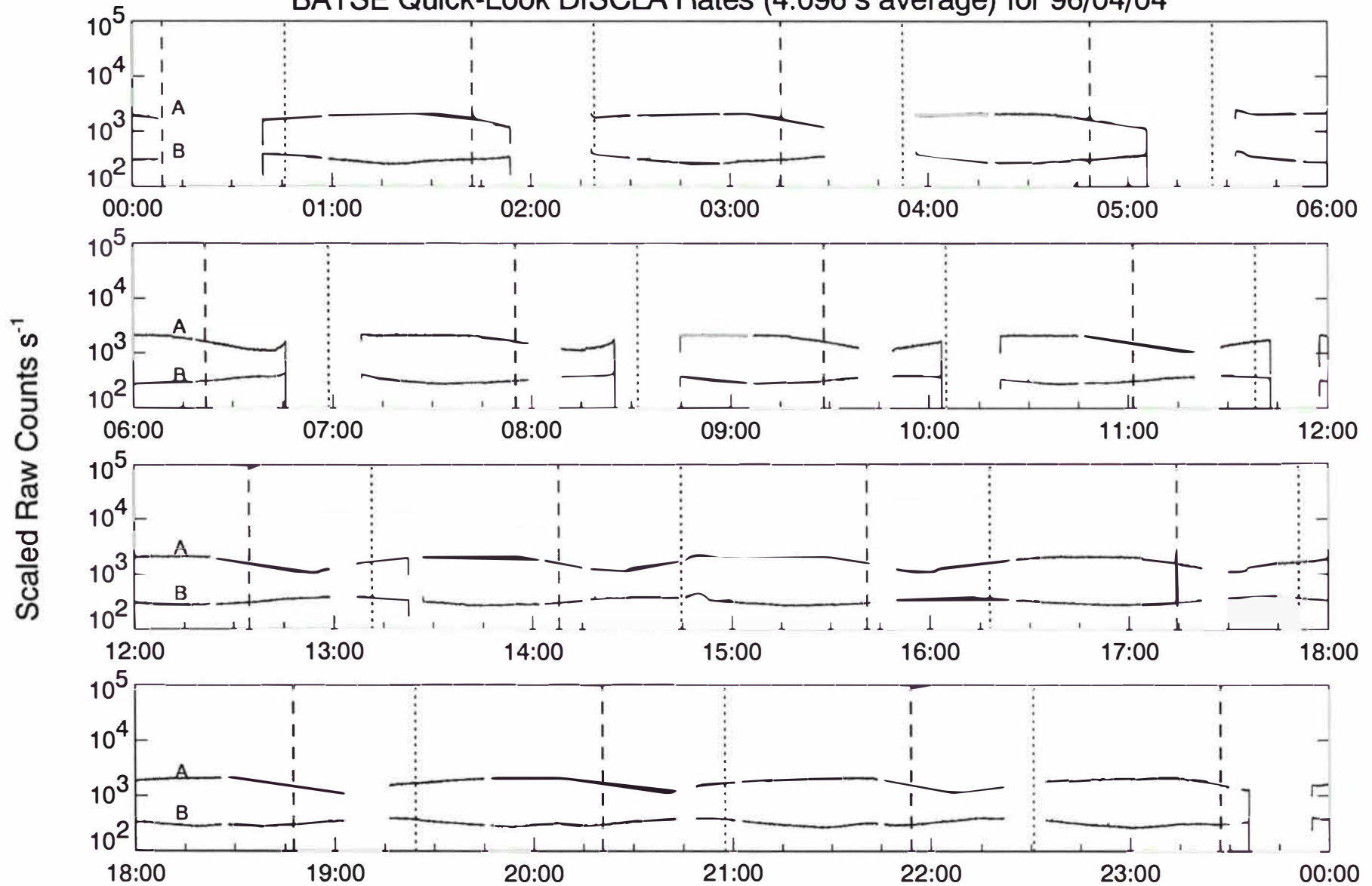


Data Start: 96/04/04, 0000:00

Plot created: 96/04/08, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/04



Current Time: 96/04/08, 1004 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

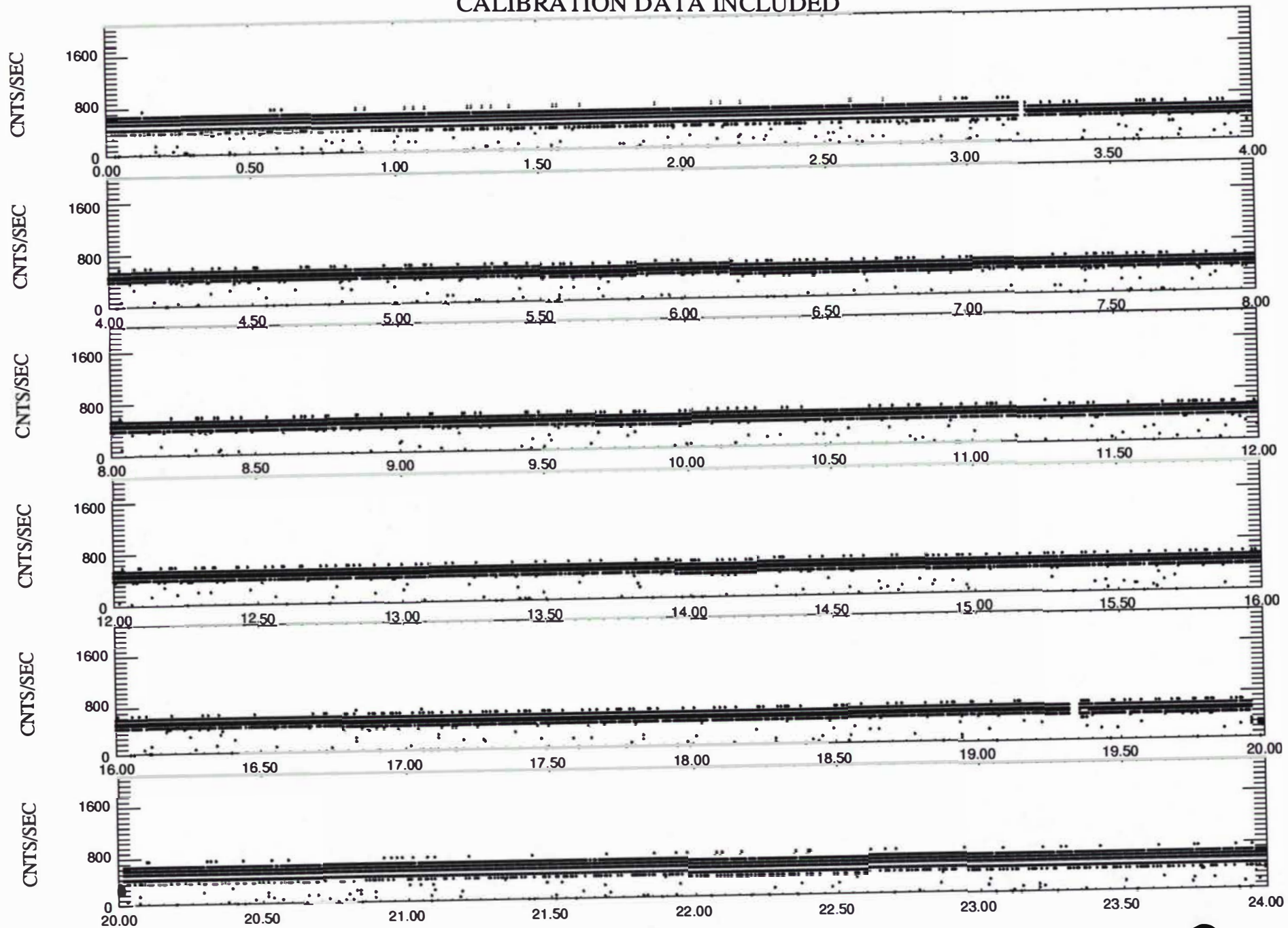
+ Solar Flare

NO BURST (3)

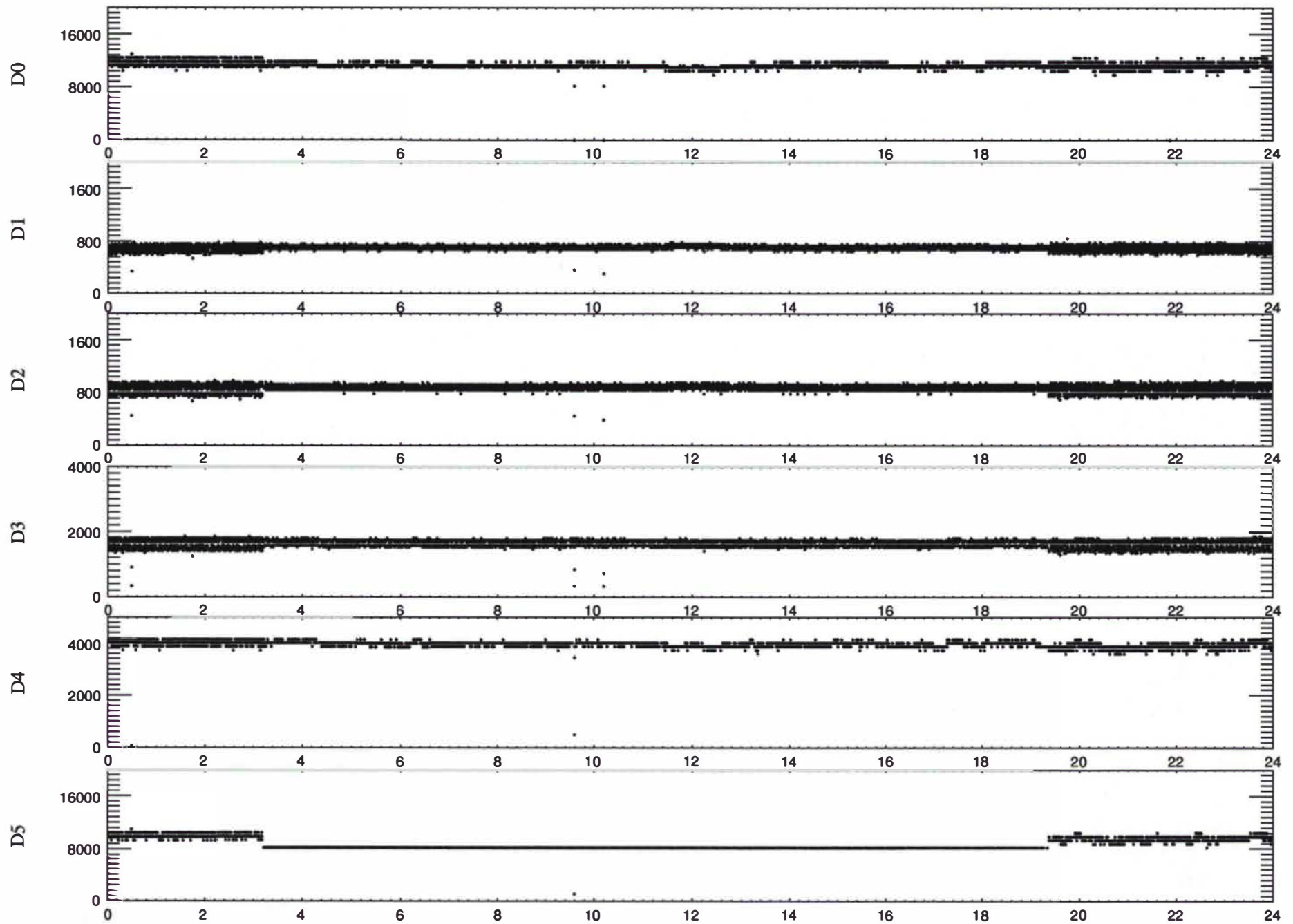


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 9 07:58 PDT 1996
Date: Tue, 9 Apr 1996 9:58:02 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5411

BATSEARCH PROGRAM

BATSE BURST # 5411
EVENT OF 1996 APR 5 DAY OF YEAR= 96
EVENT CROSSING TIME AT BATSE : 59500. S. OR 16:31:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 70.000 27.000
BATSE PEAK COUNTING RATE: 4000 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 4/ 96 IS:
RA= 155.722 DEC= 70.032 DIST= 3.312 AU
BATSE-ULYSSES DISTANCE = 495420706. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -742.64 SECS.
CROSSING TIME AT ULYSSES IS 58757. S. OR 16:19:17 +/- 295.03 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 4/ 96 IS:
RA= 8.411 DEC= 2.789 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356673792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -530.05 SECS.
CROSSING TIME AT MARS IS 58970. S. OR 16:22:49 +/- 176.87 SECONDS

BATSE BURST TRIGGER

NO.: 5411

TIME: TJD=0178 SECONDS=59500

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=49.9 AZIMUTH=27.6 ERROR=2.6 DEGREES

COMMENTS:

GRB LASTING 15 SEC. ONE PEAK WITH SOME POSSIBLE SUBSTRUCTURE.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5411	960405	10178	59500	4000	070	+27	15

BATSE #

5411

11 / 4 / 96

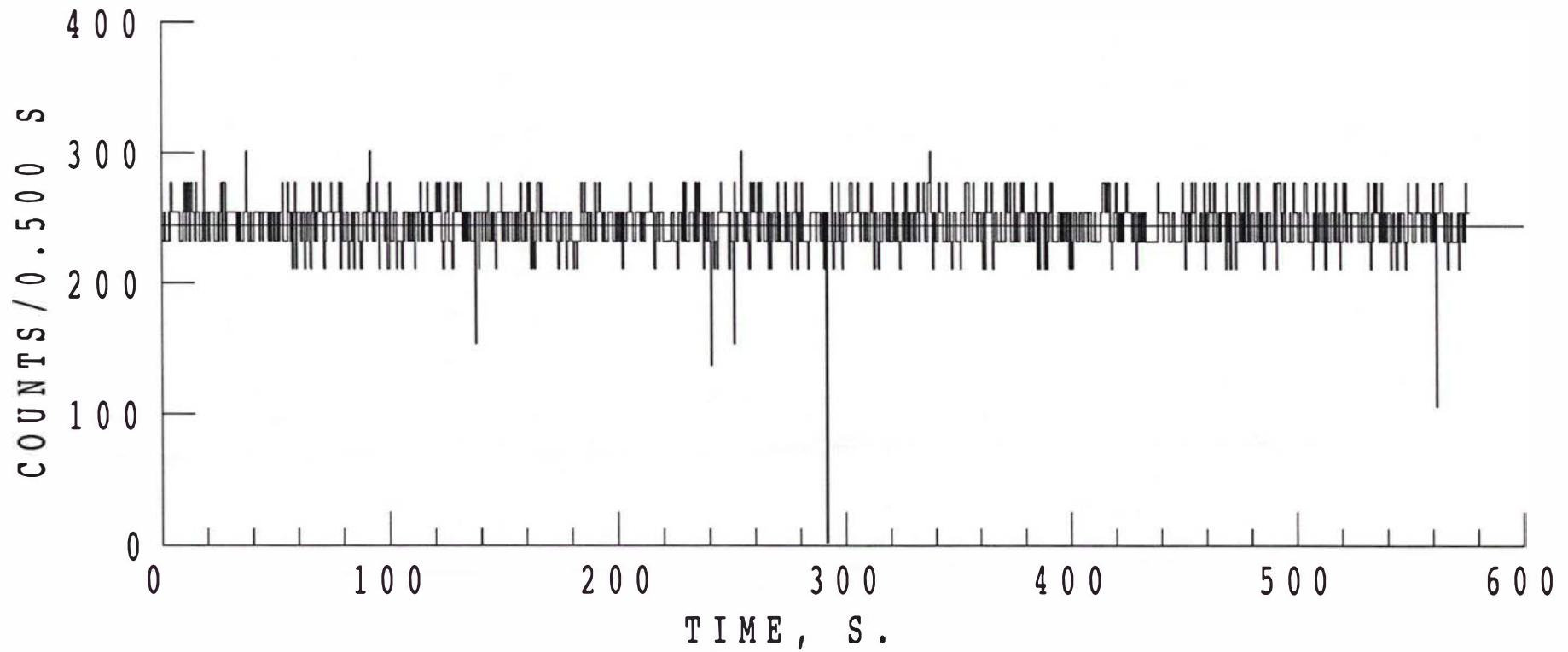
ULYSSES RT

5 / 4 / 96 58464.367 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



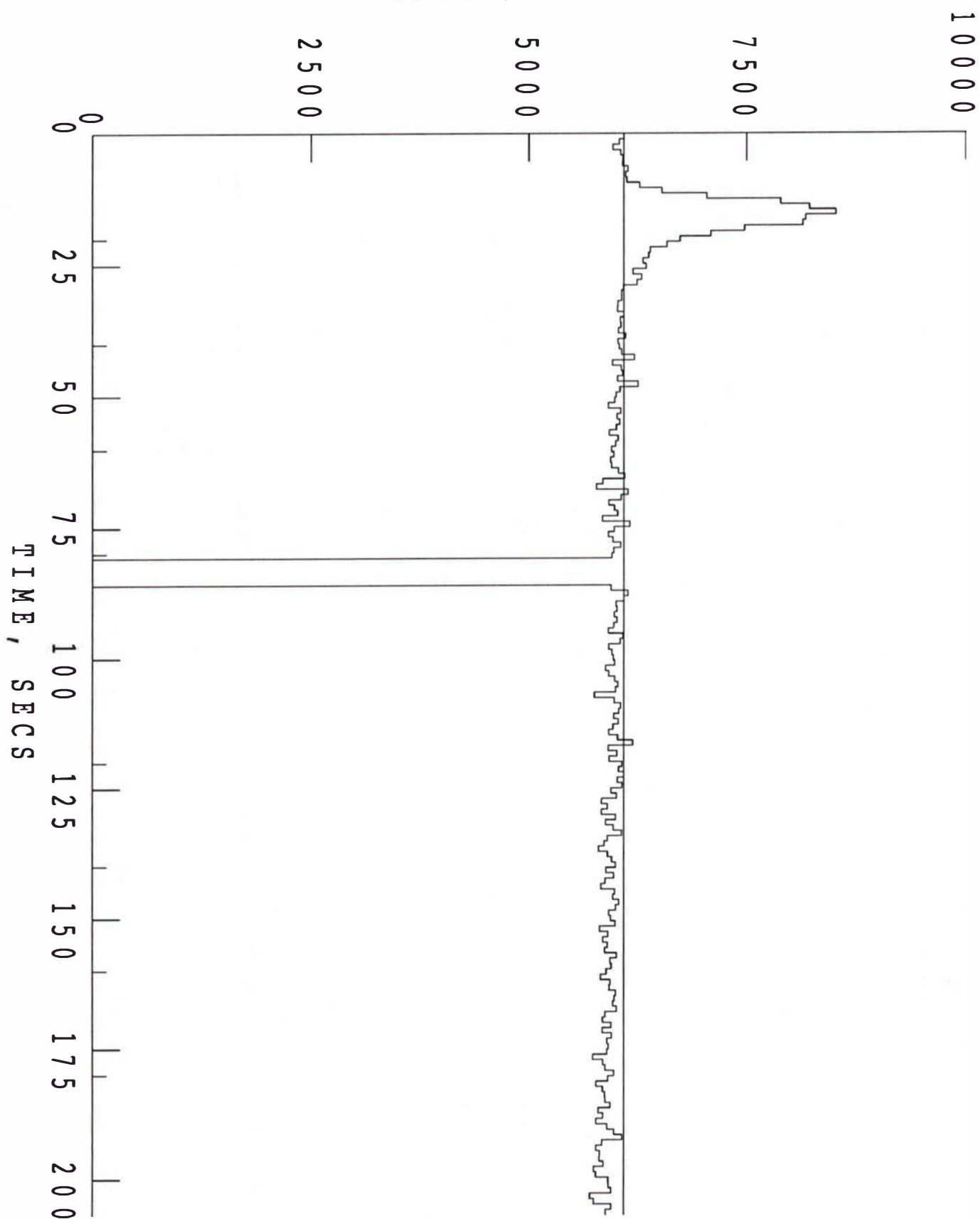
BACODINE

05/04/96

59487.945

25 - 100 keV

COUNTS/1.024 S



From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 9 08:00 PDT 1996
Date: Tue, 9 Apr 1996 10:00:09 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5412

BATSEARCH PROGRAM

BATSE BURST # 5412
EVENT OF 1996 APR 5 DAY OF YEAR= 96
EVENT CROSSING TIME AT BATSE : 67323. S. OR 18:42:03.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 332.000 -14.000
BATSE PEAK COUNTING RATE: 4900 C/S

130

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 4/ 96 IS:
RA= 155.668 DEC= 70.008 DIST= 3.313 AU
BATSE-ULYSSES DISTANCE = 495604678. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 56.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 923.13 SECS.
CROSSING TIME AT ULYSSES IS 68246. S. OR 18:57:26 +/- 302.12 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 4/ 96 IS:
RA= 8.411 DEC= 2.789 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356673792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -913.92 SECS.
CROSSING TIME AT MARS IS 66409. S. OR 18:26:49 +/- 118.37 SECONDS

BATSE BURST TRIGGER

NO.: 5412

TIME: TJD=0178 SECONDS=67323

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=117.7 AZIMUTH=303.7 ERROR=1.1 DEGREES

COMMENTS:

GRB LASTING 130 SEC. MULTI-EPISODIC. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5412	960405	10178	67323	4900	332	-14	130

BATSE #

5412

11 / 4 / 96

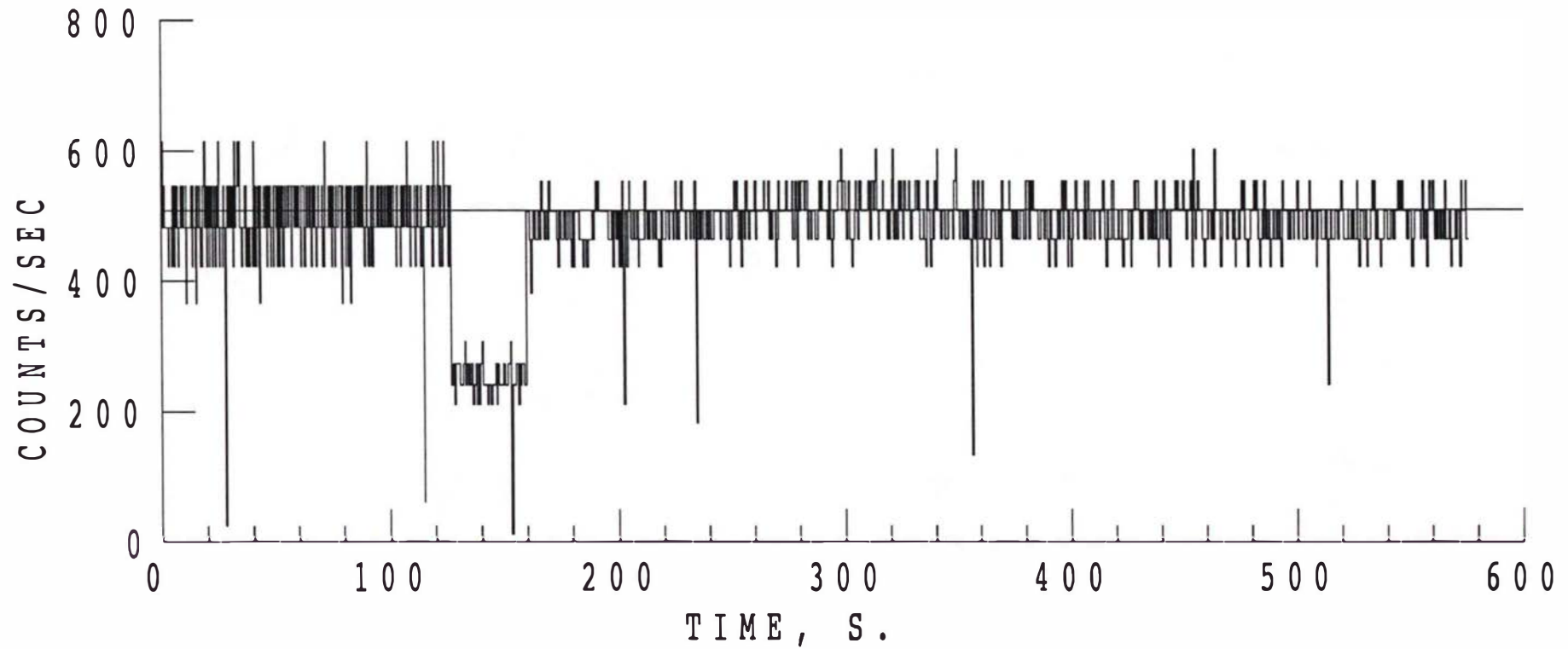
ULYSSES RT

5 / 4 / 96 67968.258 s

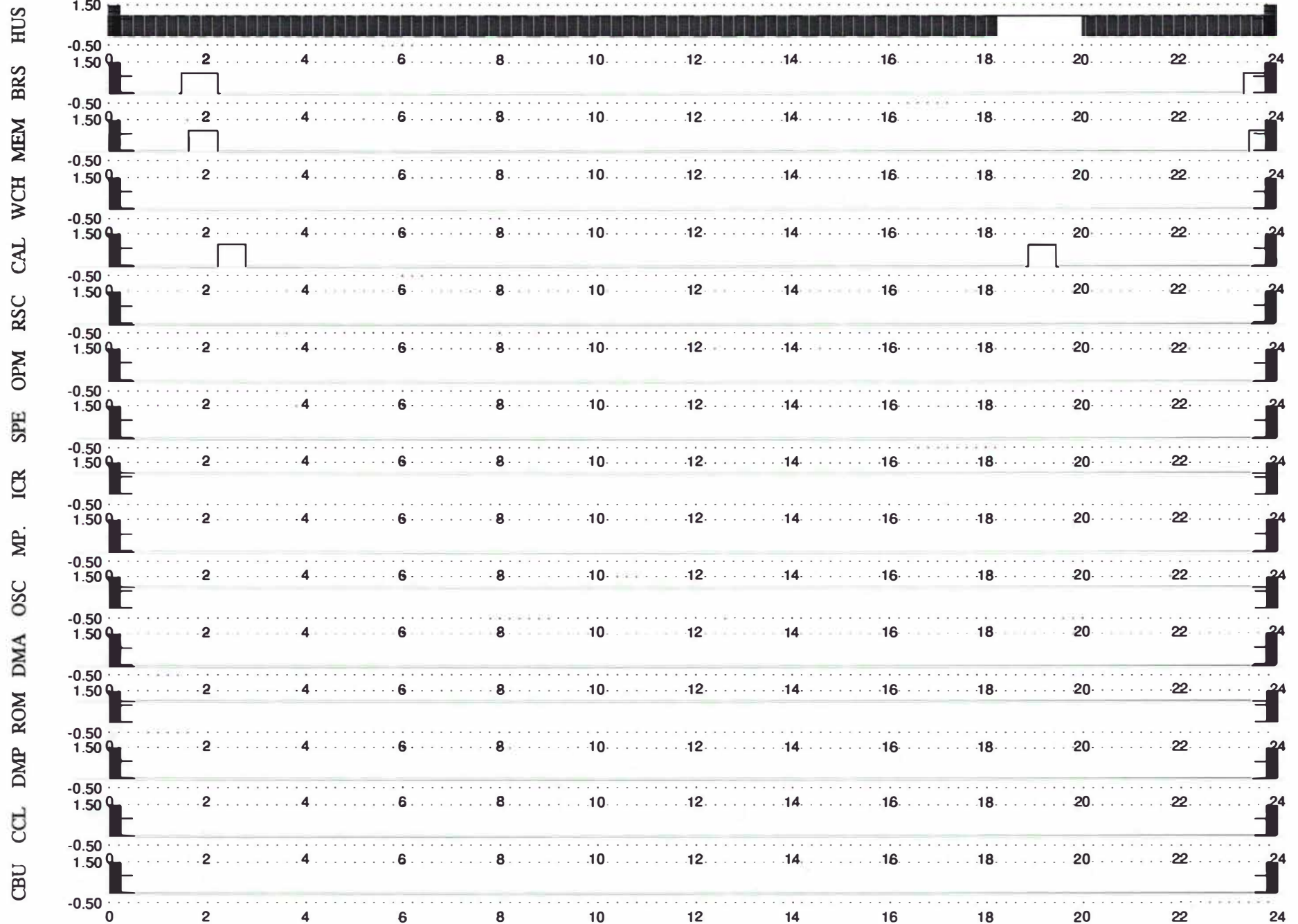
0 - 0 keV

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

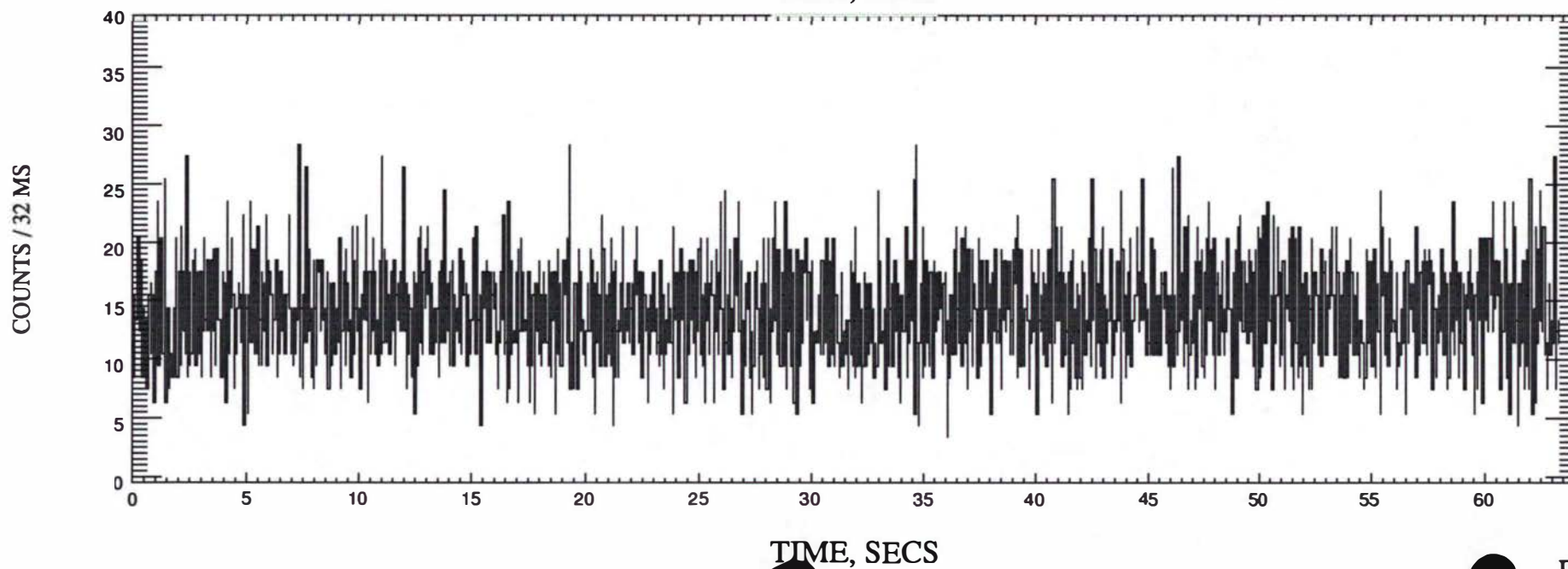
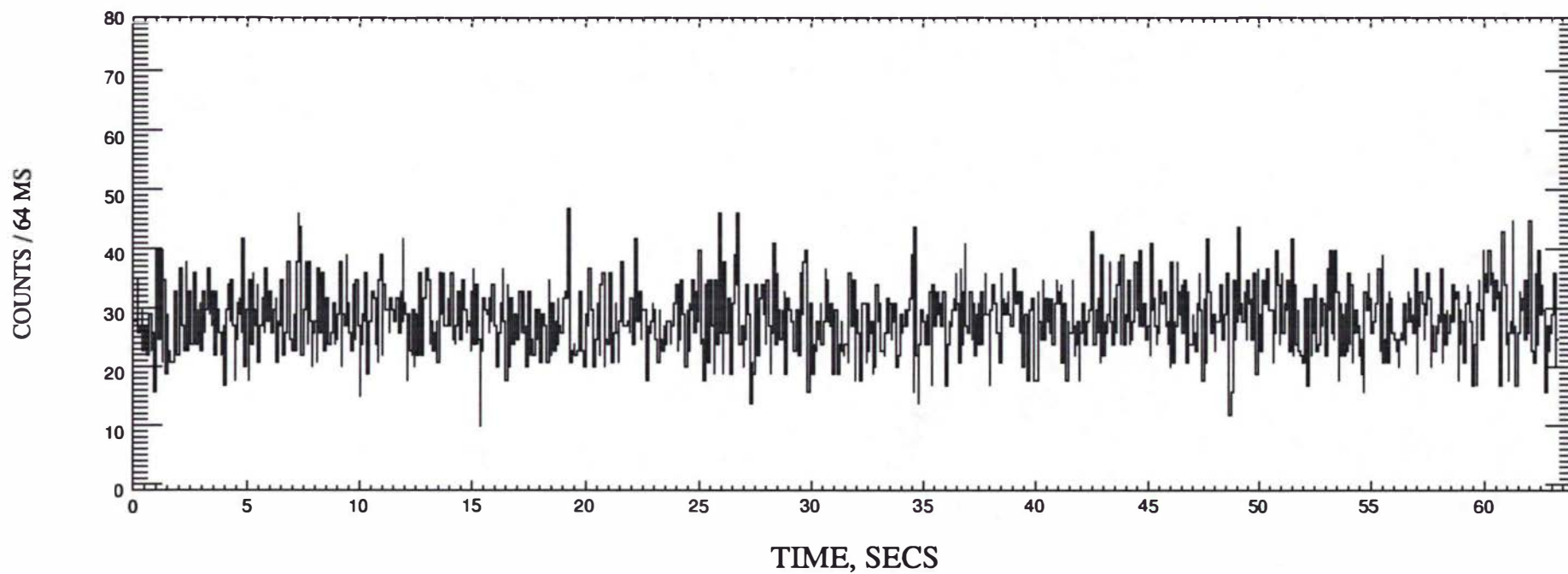


BURST NUMBER 4, 5

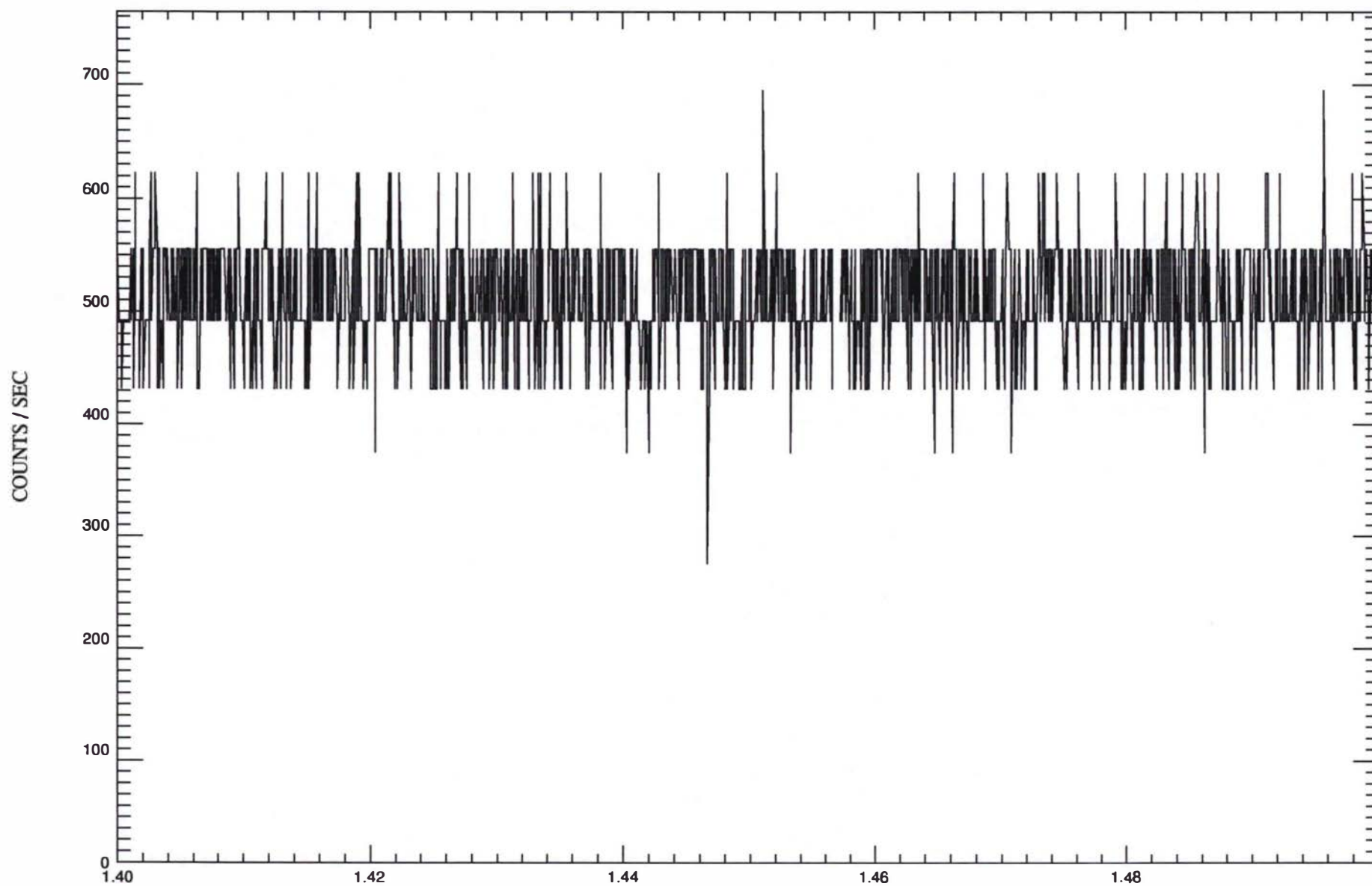


UNIVERSAL TIME

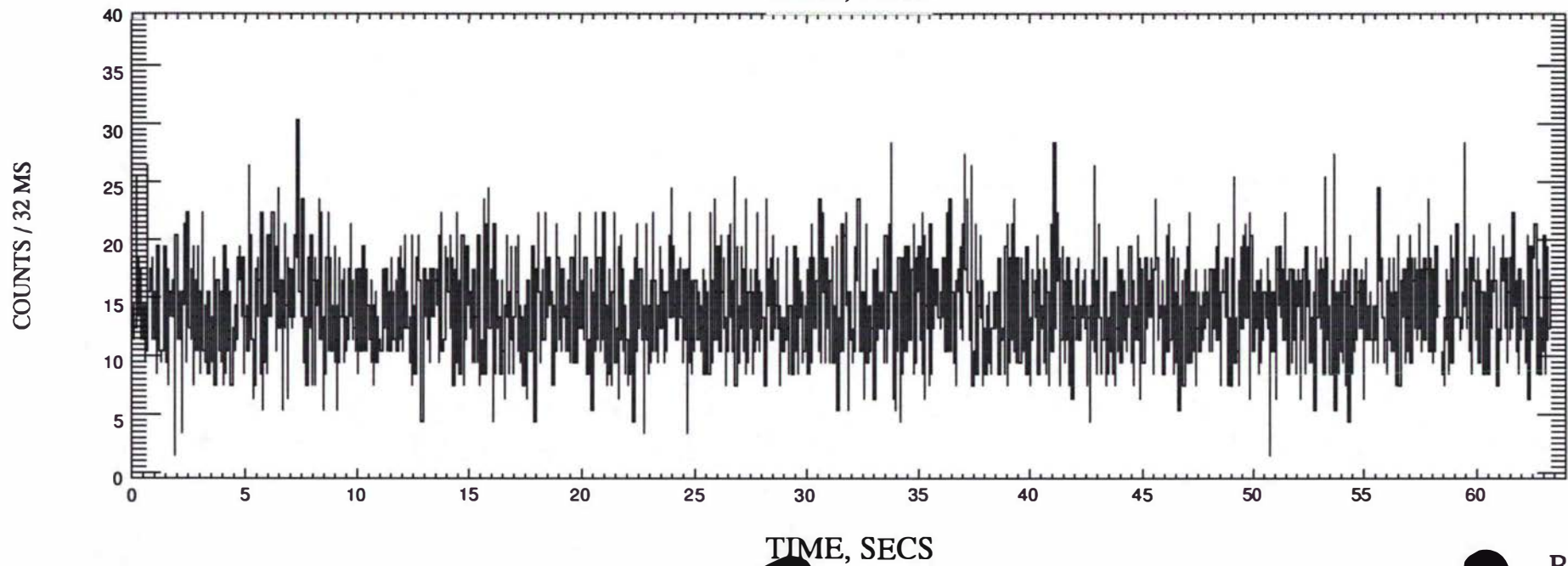
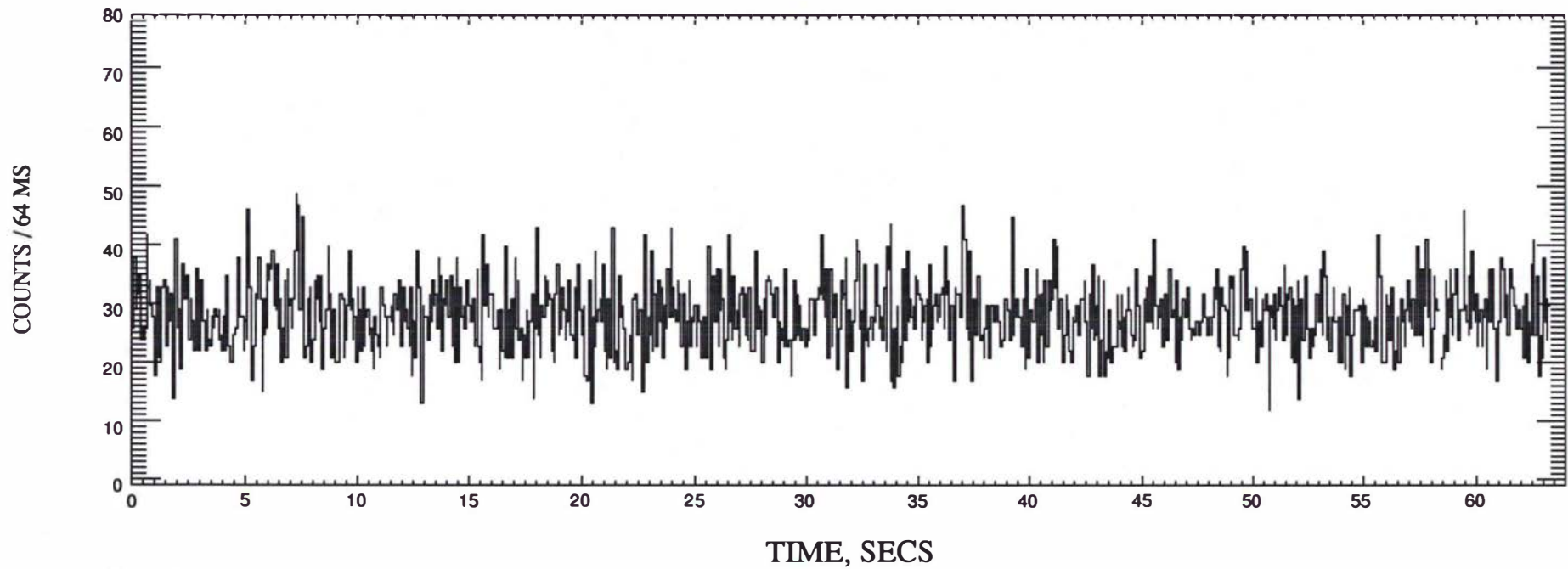
Burst Counter 4 at UT= 1.451737314860 h= 5226.254 s 01:27:06.254



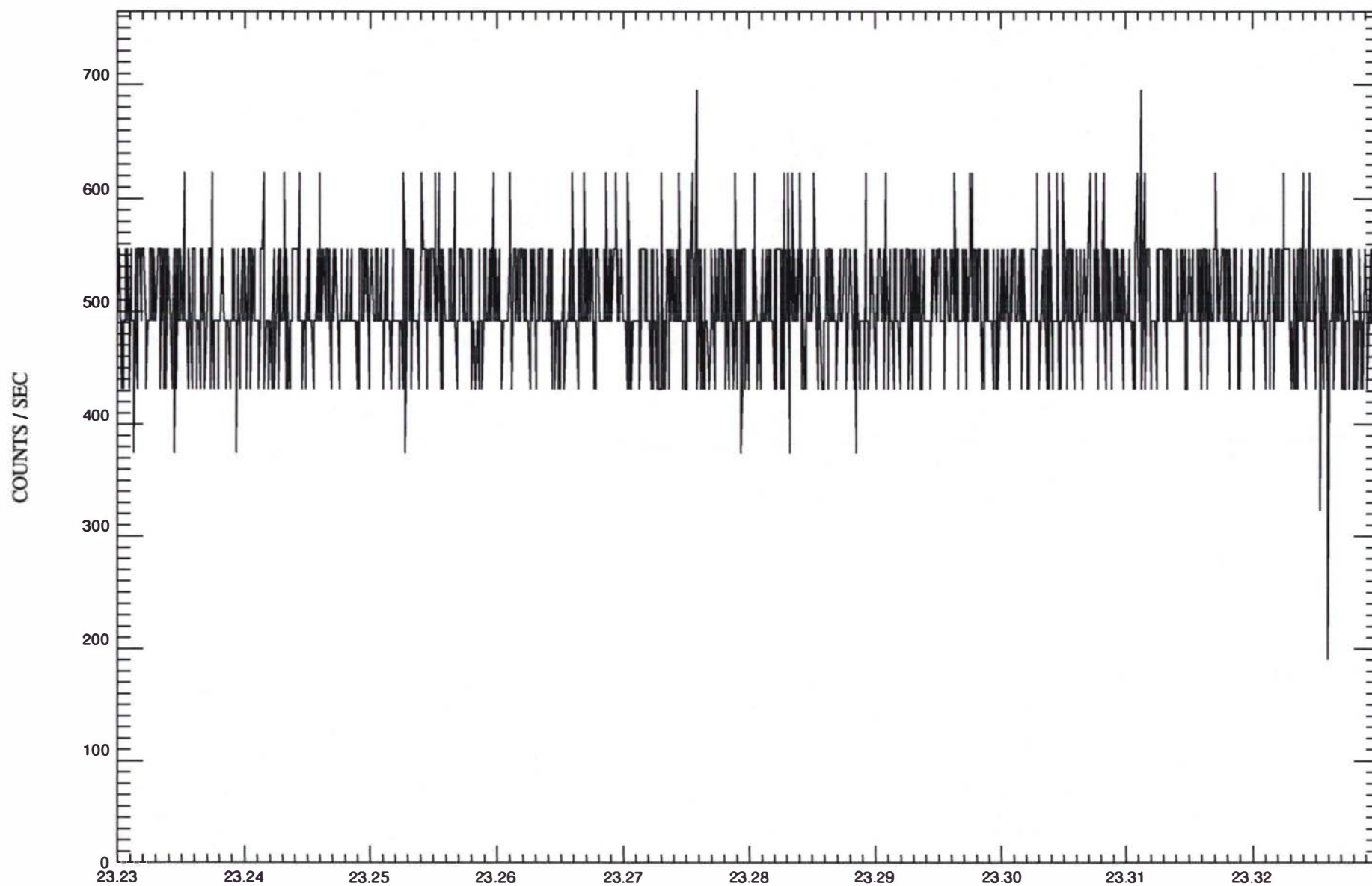
CALIBRATION DATA INCLUDED



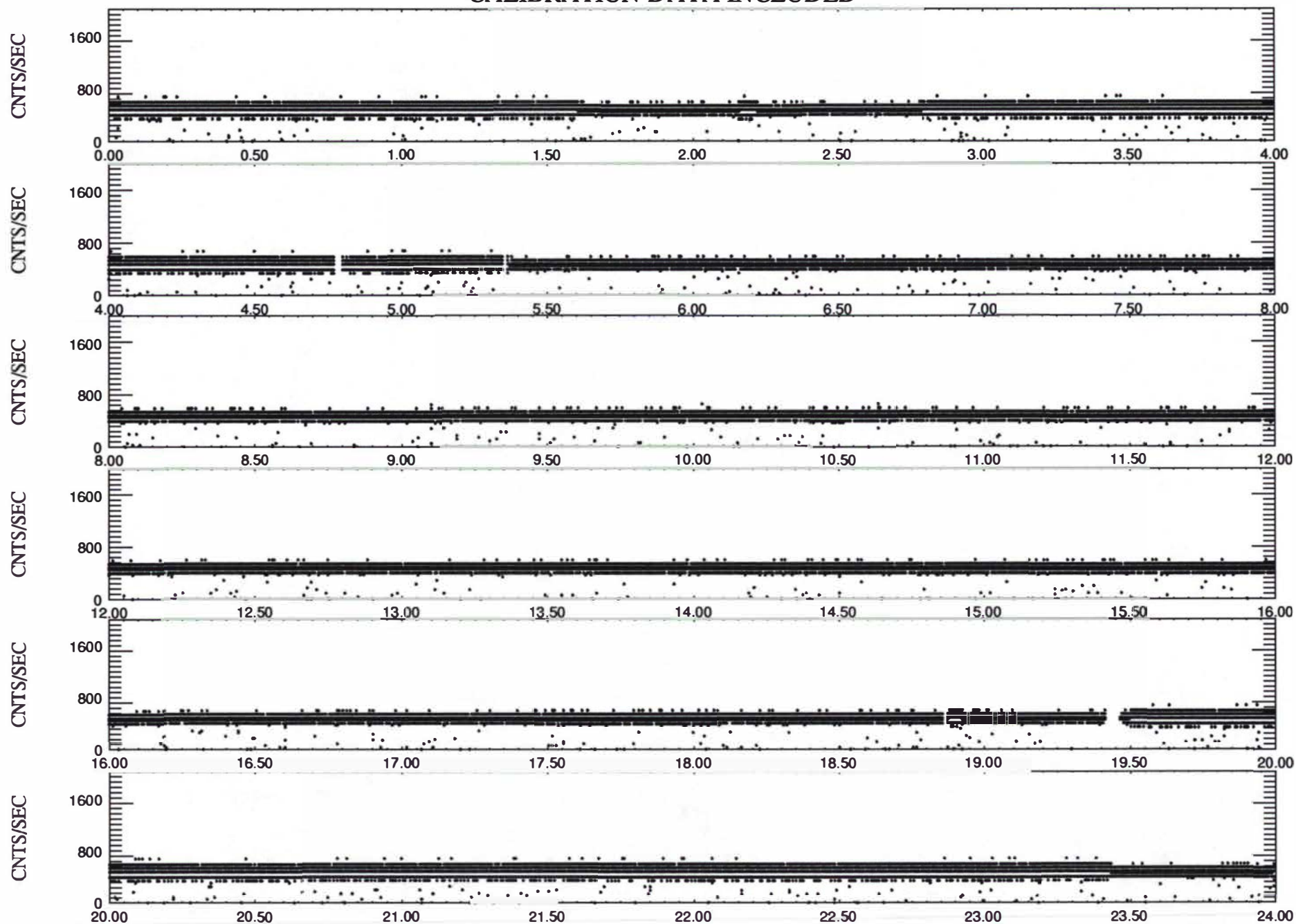
Burst Counter 5 at UT=23.275891655816 h=83793.210 s 23:16:33.210



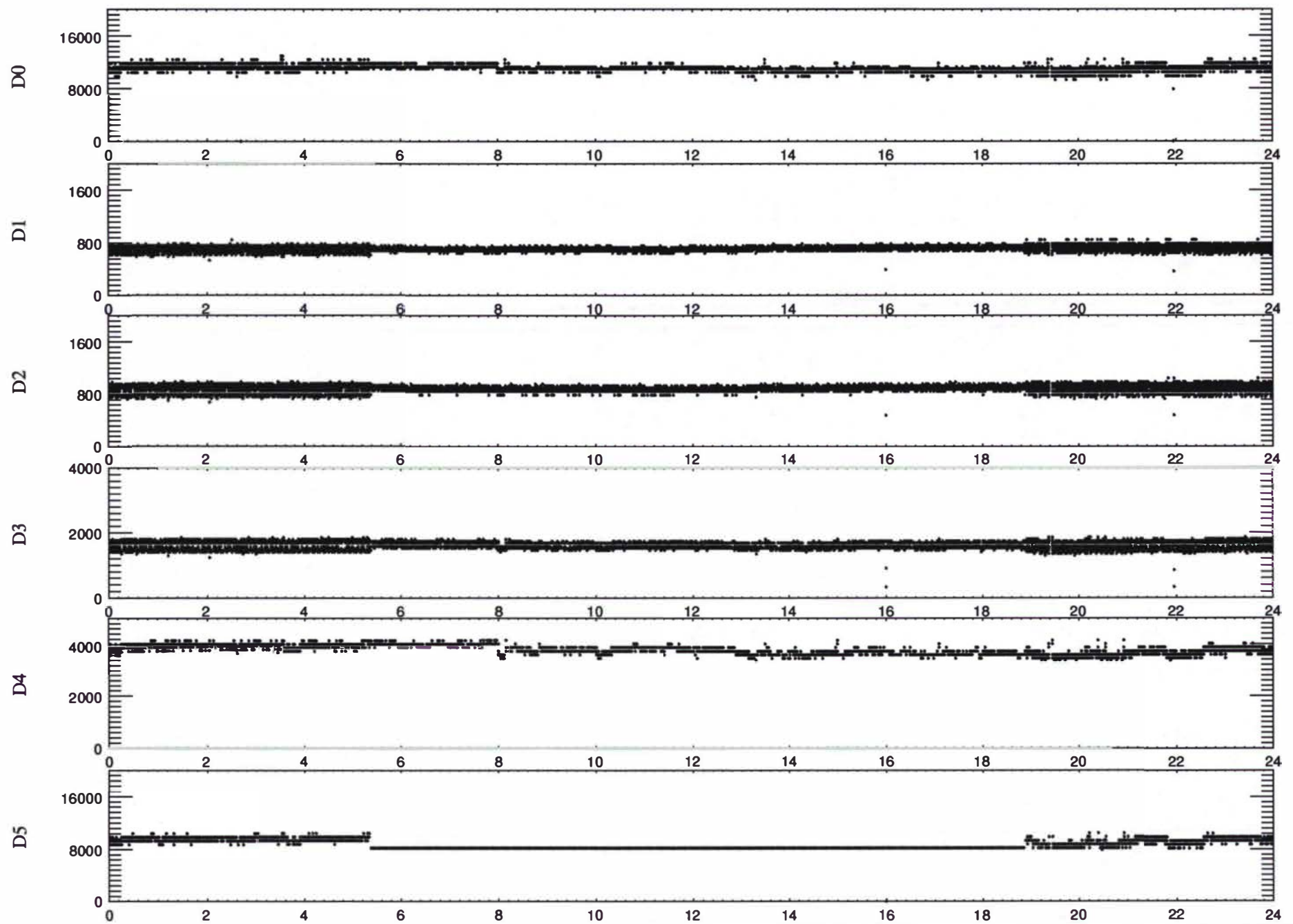
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

Date: Sep 28 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

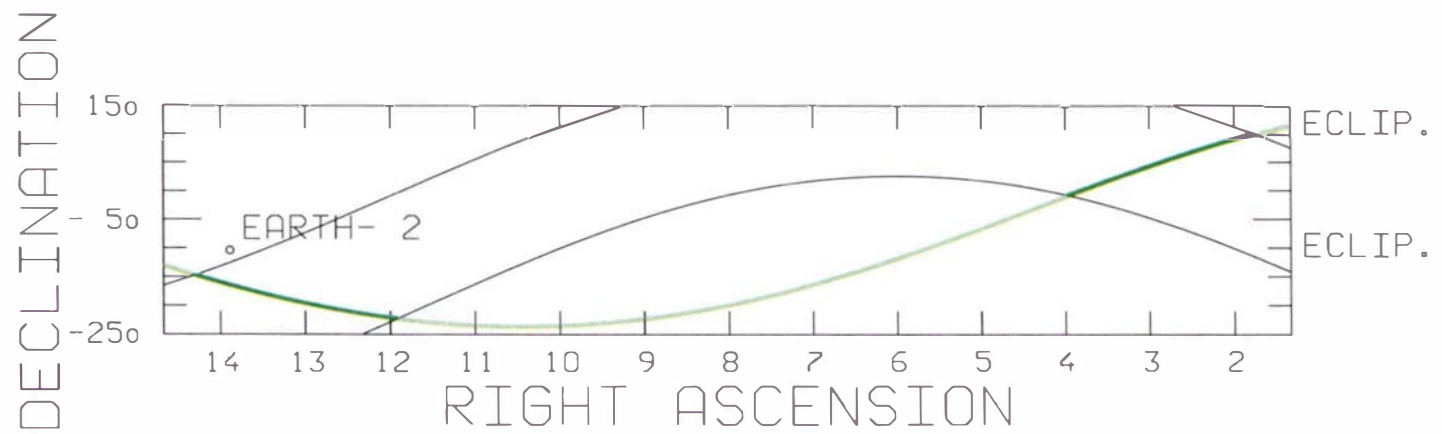
- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Were data checked by Joe Springer for 0.5 s errors?
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is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

2. BATSE Data

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

3. PVO Data

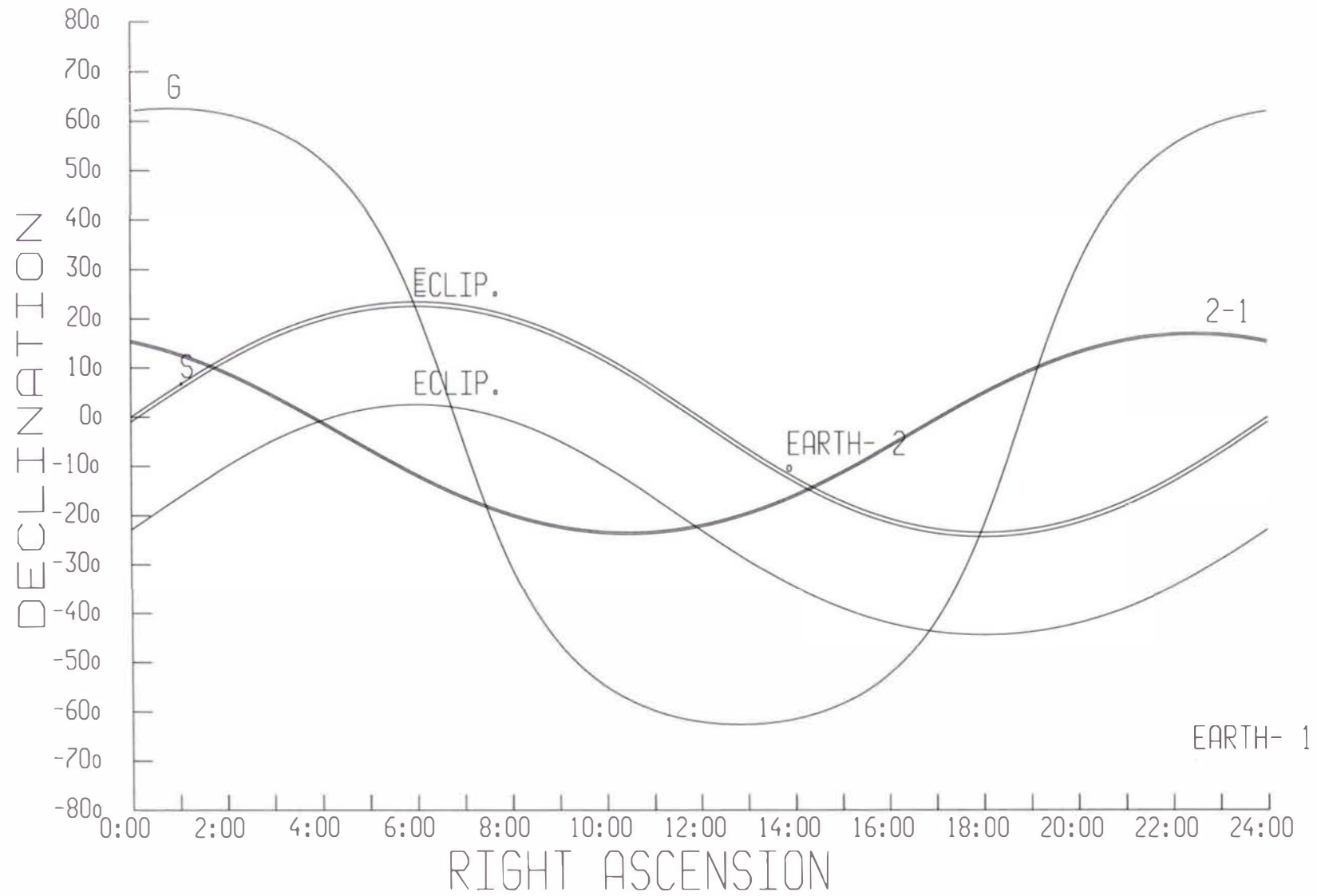
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS and MBL databases updated with identical times?

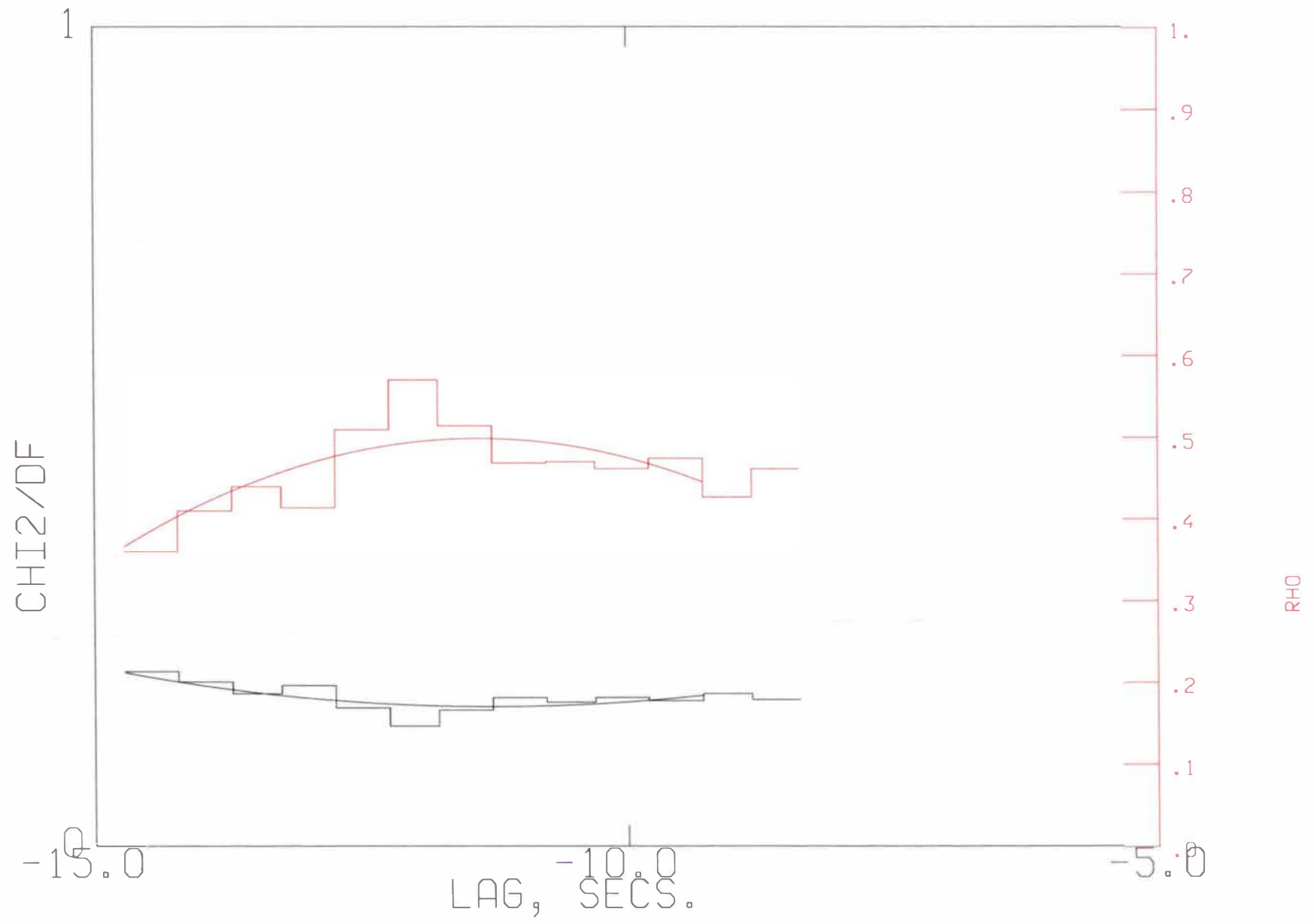


EVENT OF APR 6, 1996 16:50

28/09/2011

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





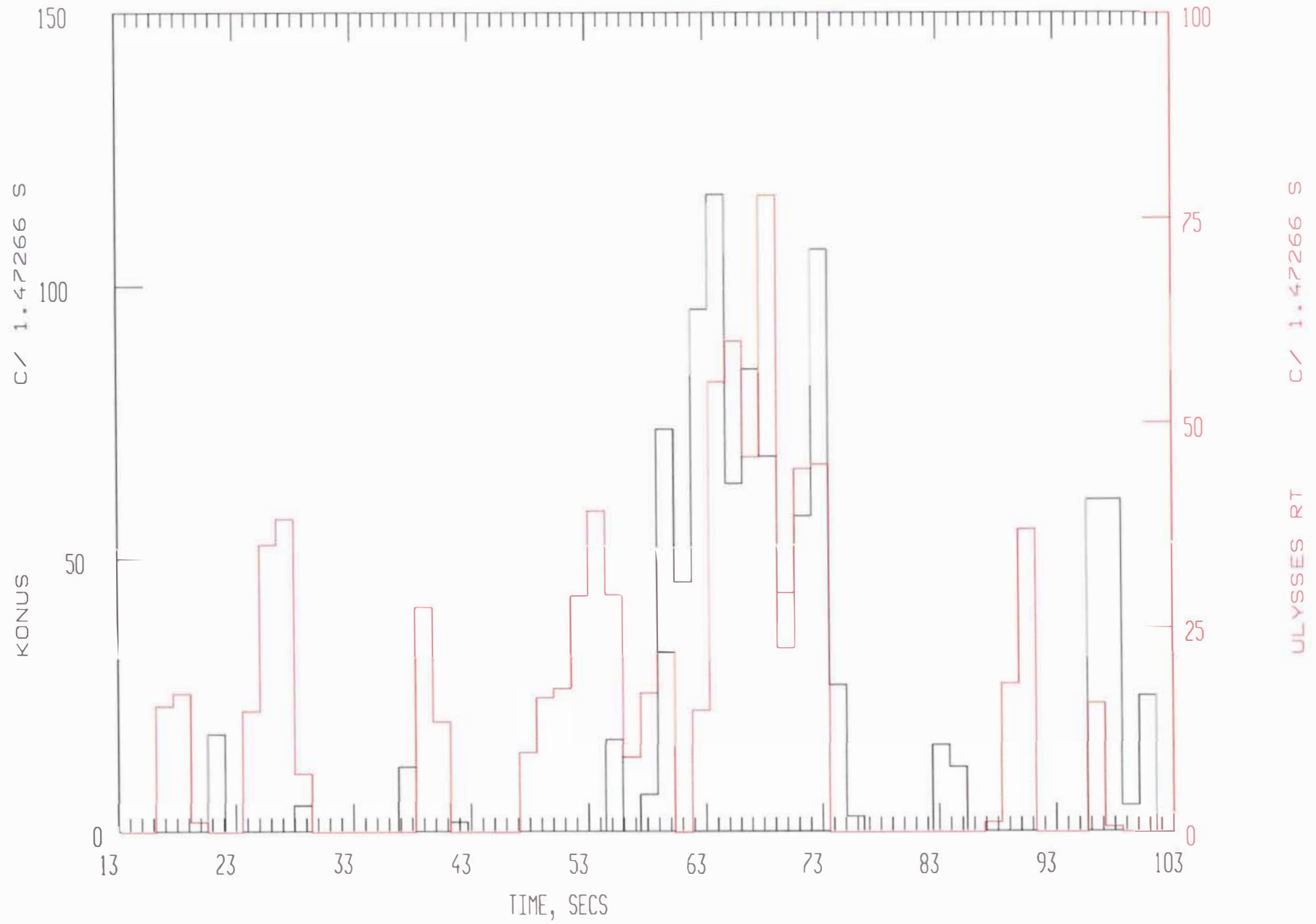
KONUS

-ULYSSES RT CORRELATION

06/04/96

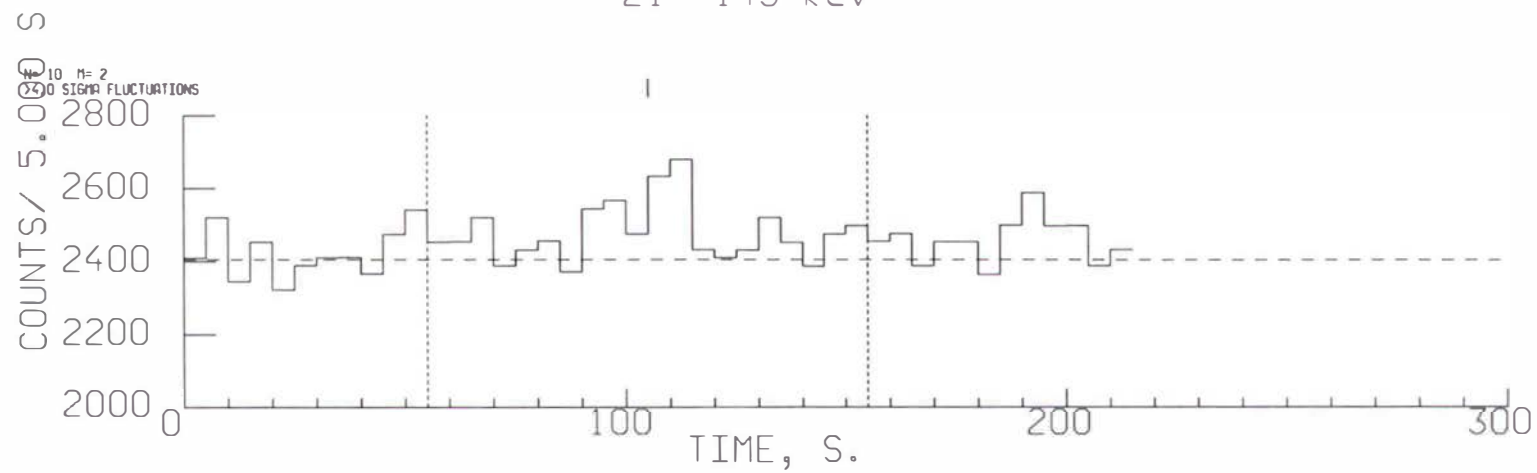
60498.895

28/ 9/11



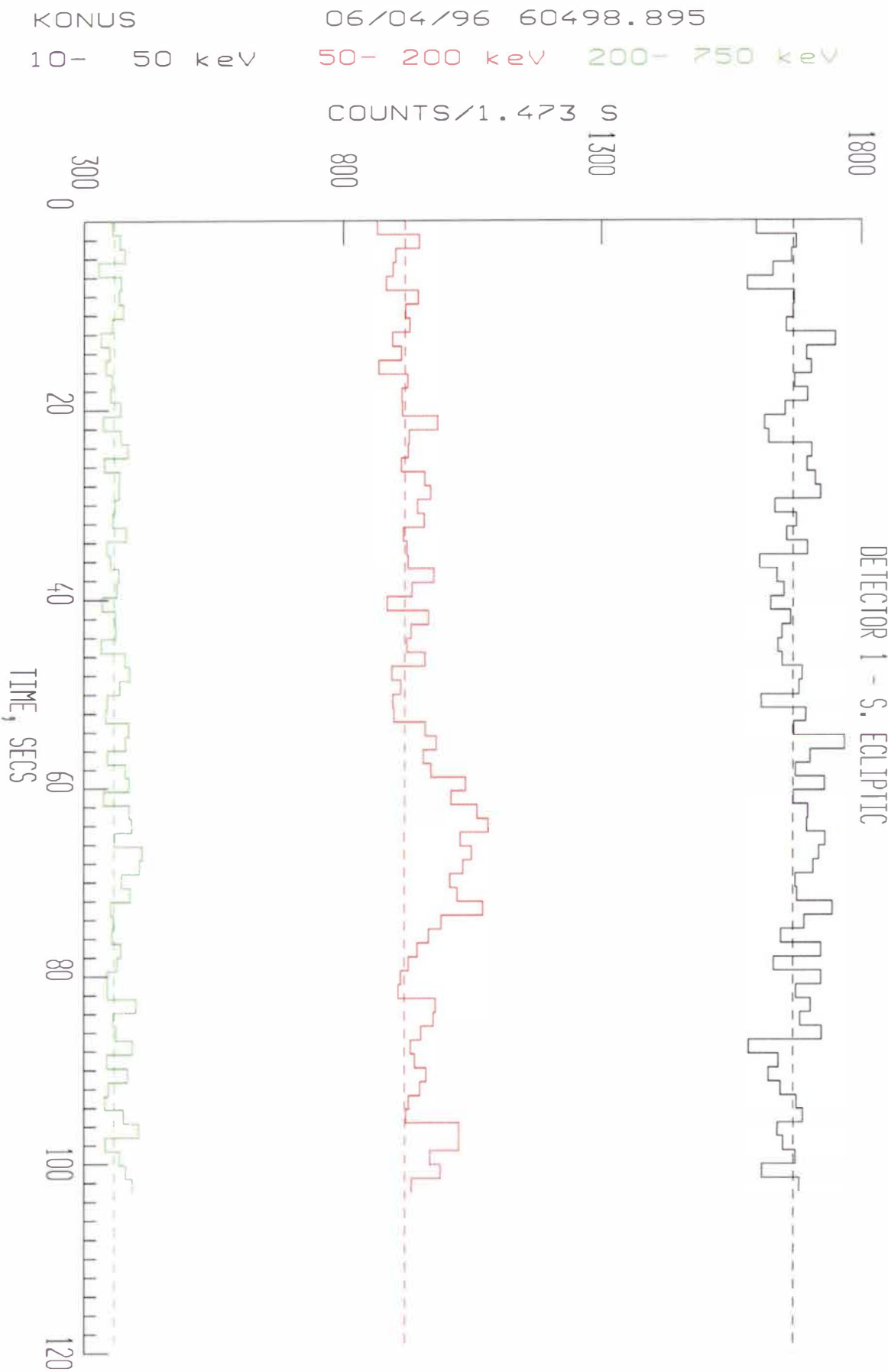
ULYSSES RT
6/ 4/96 60552.078 s
0.500 S INTERVALS REGROUPED BY 10
21- 145 keV

28/ 9/11



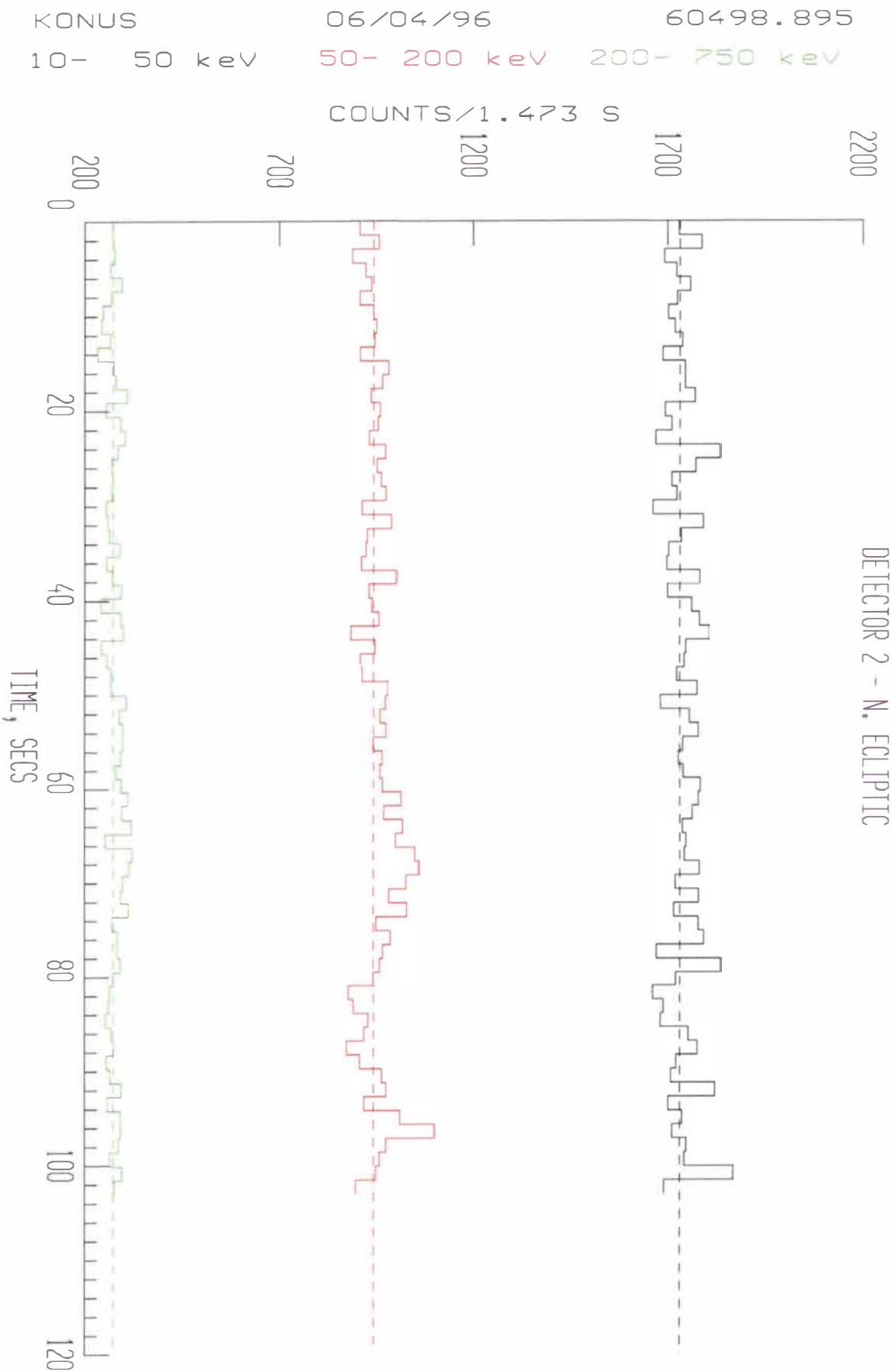
28/09/2011

DETECTOR 1 - S. ECLIPSE



28/09/2011

DETECTOR 2 - N. ECLIPIC



KONUS 19960406 60660

ULYSSES RT

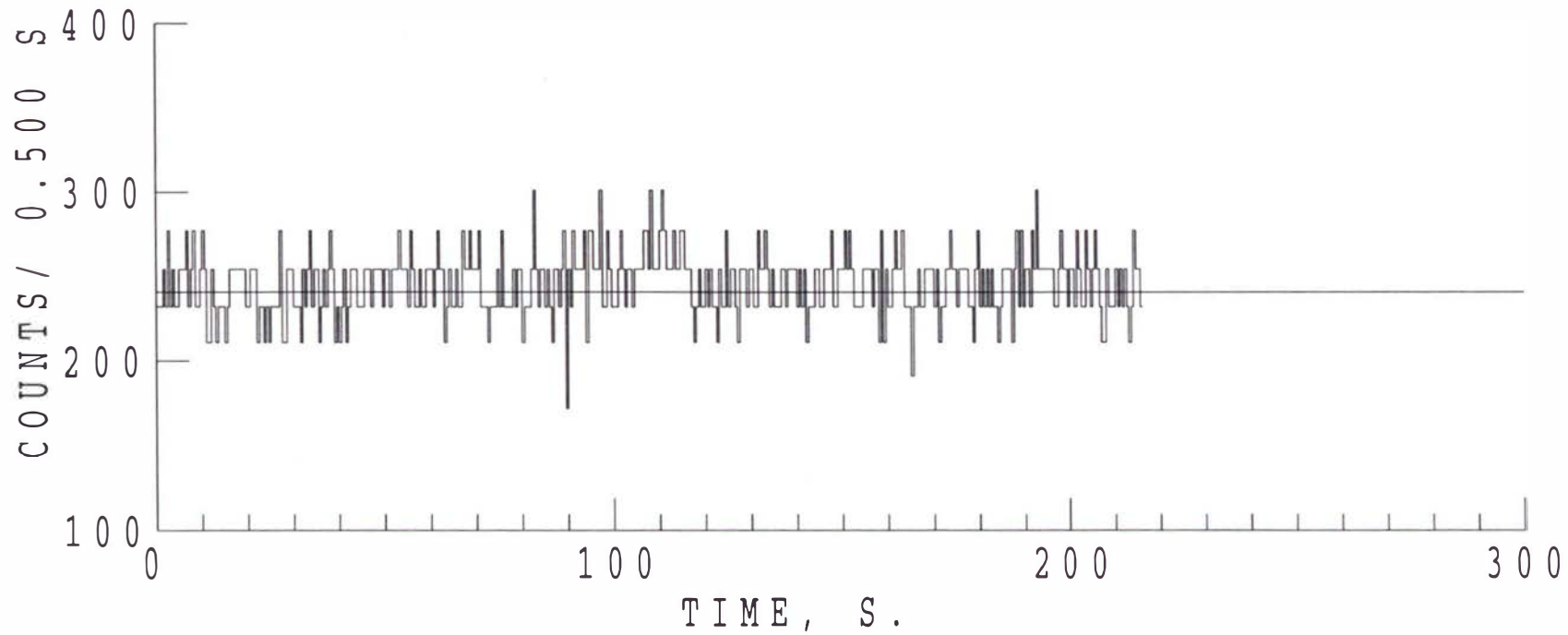
27 / 09 / 11

06 / 04 / 96 60552.078 s

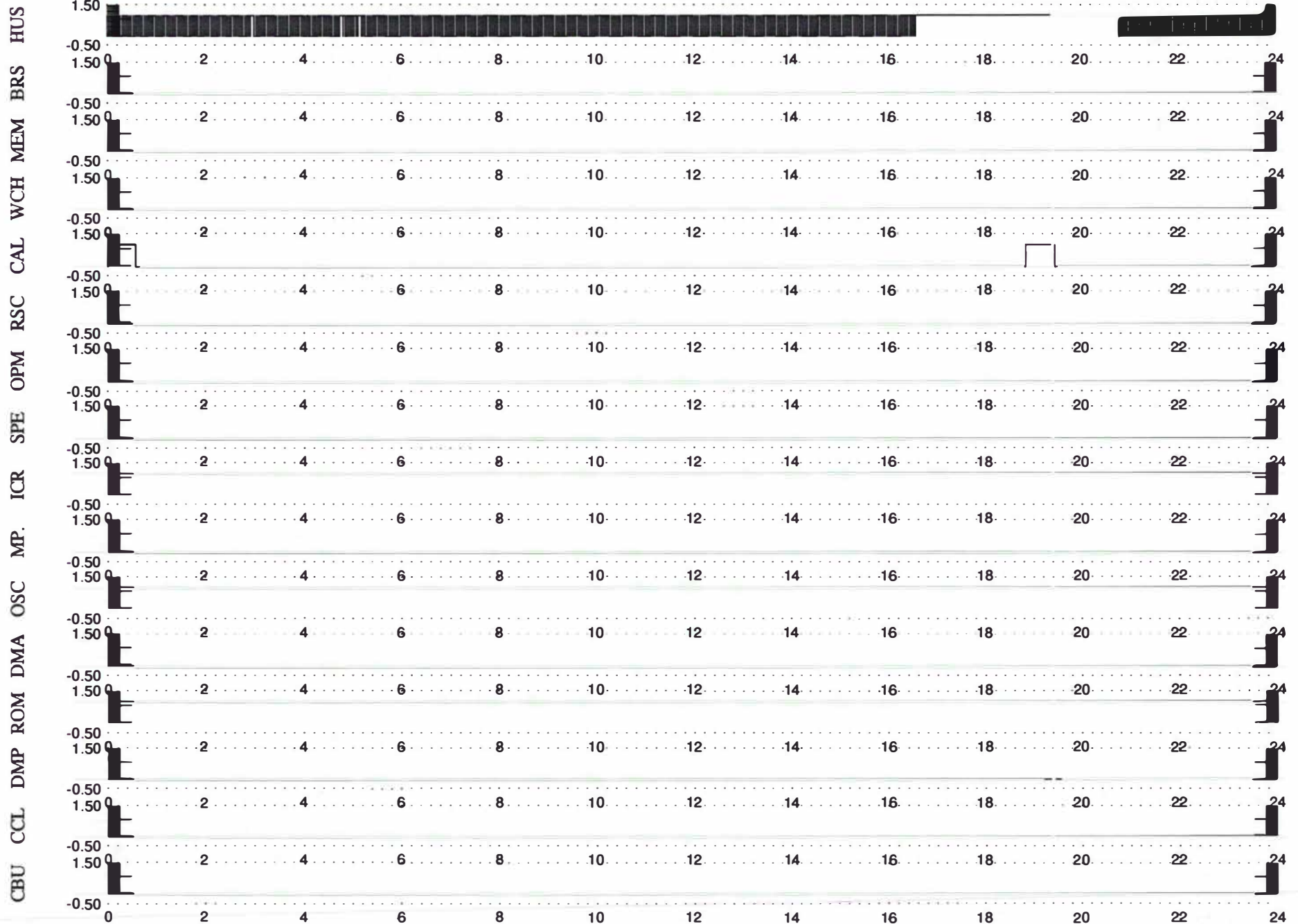
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

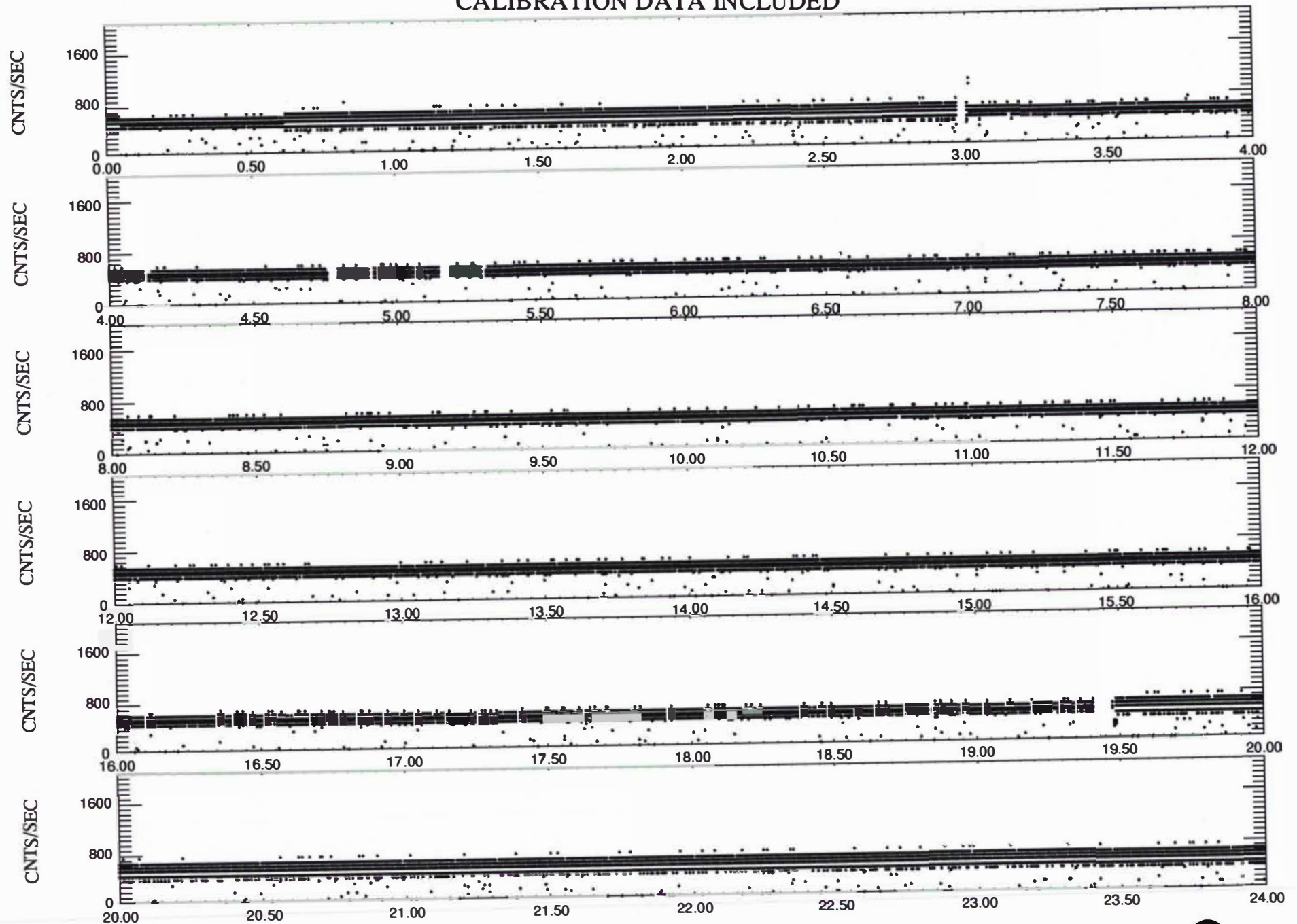


NO BURST (5)

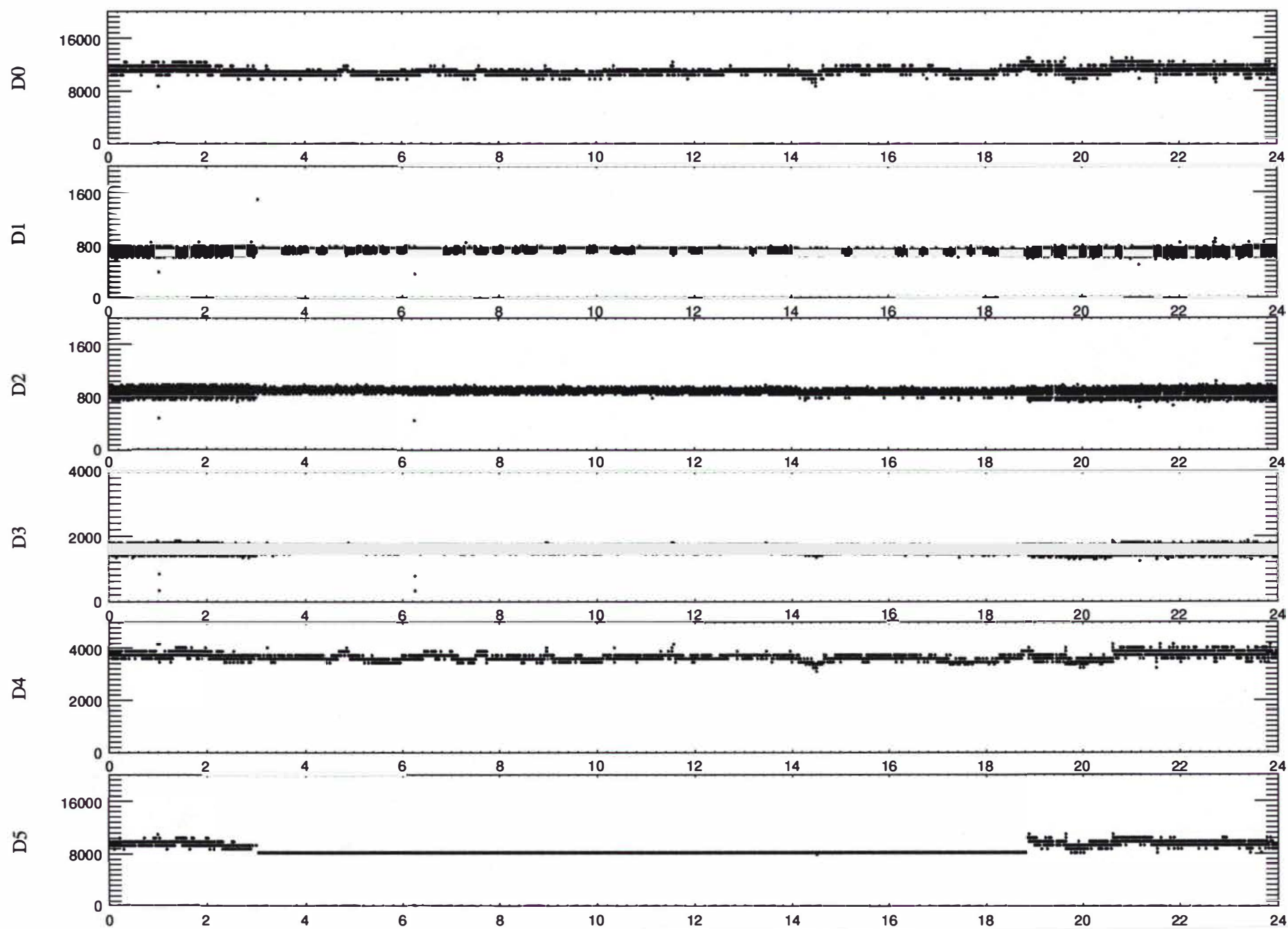


UNIVERSAL TIME

CALIBRATION DATA INCLUDED

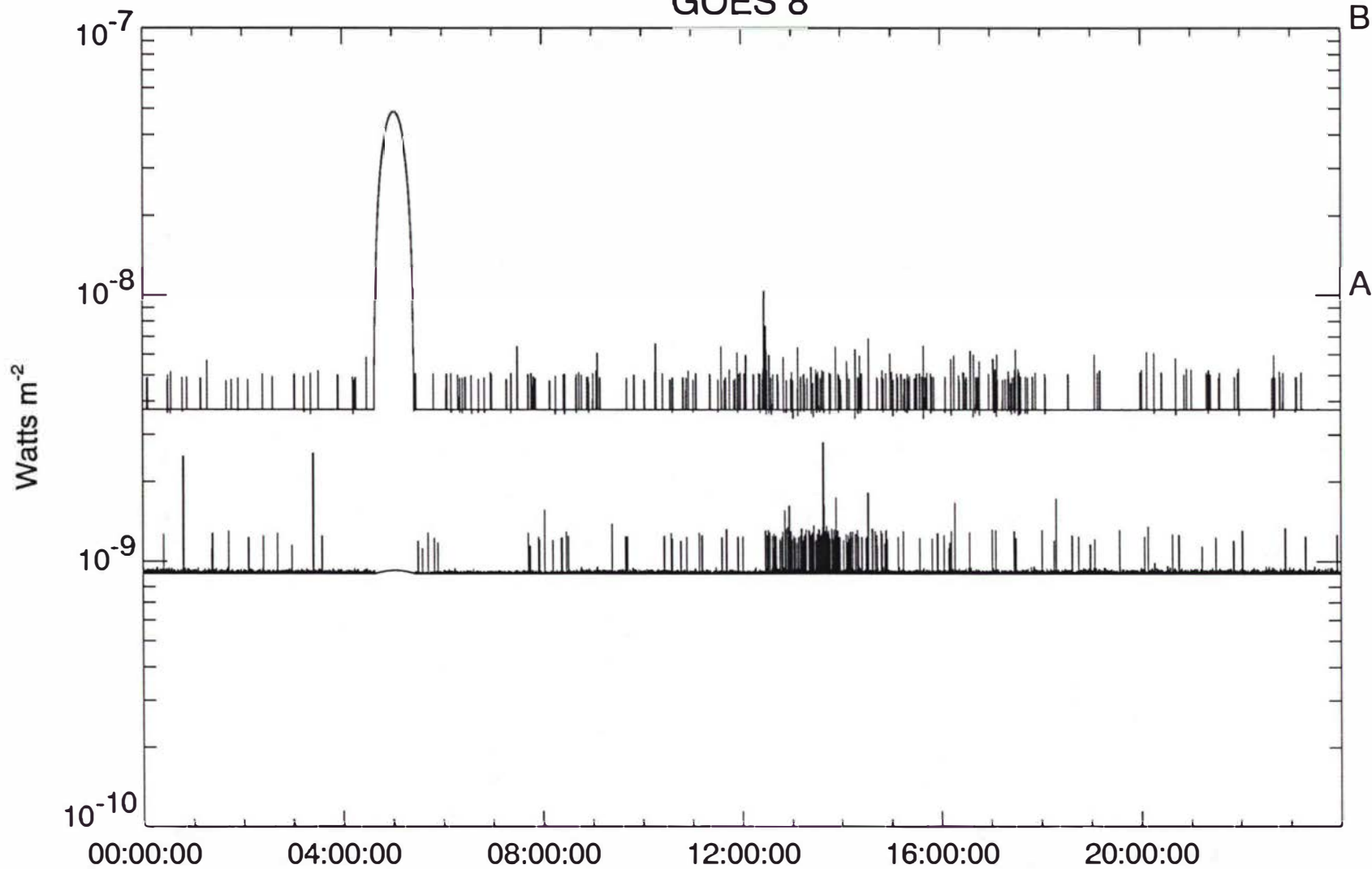


UNIVERSAL TIME



UNIVERSAL TIME

GOES 8



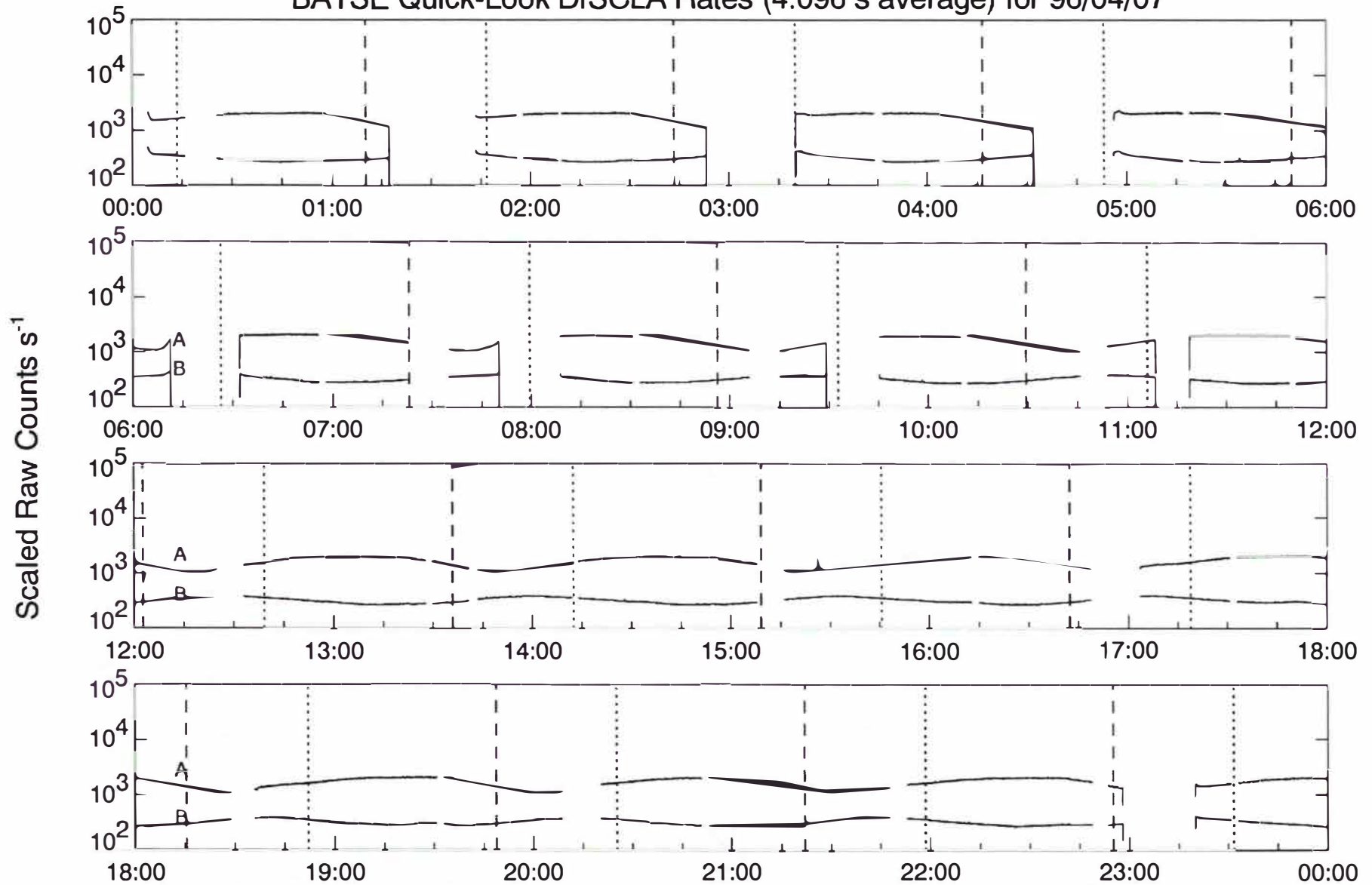
Data Start: 96/04/07, 0000:00

Plot created: 96/04/09, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/07



Current Time: 96/04/09, 1004 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

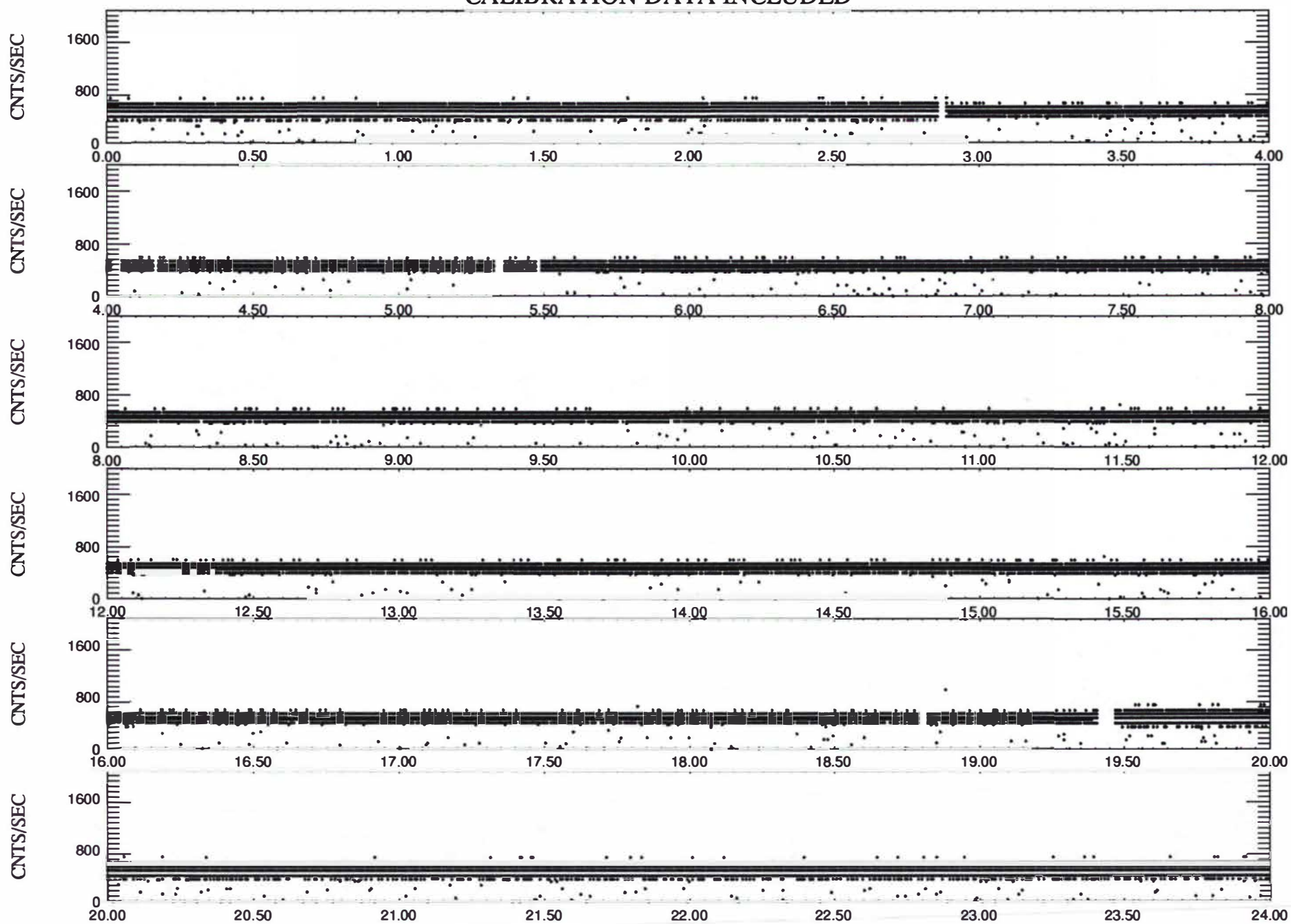
NO BURST (5)

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

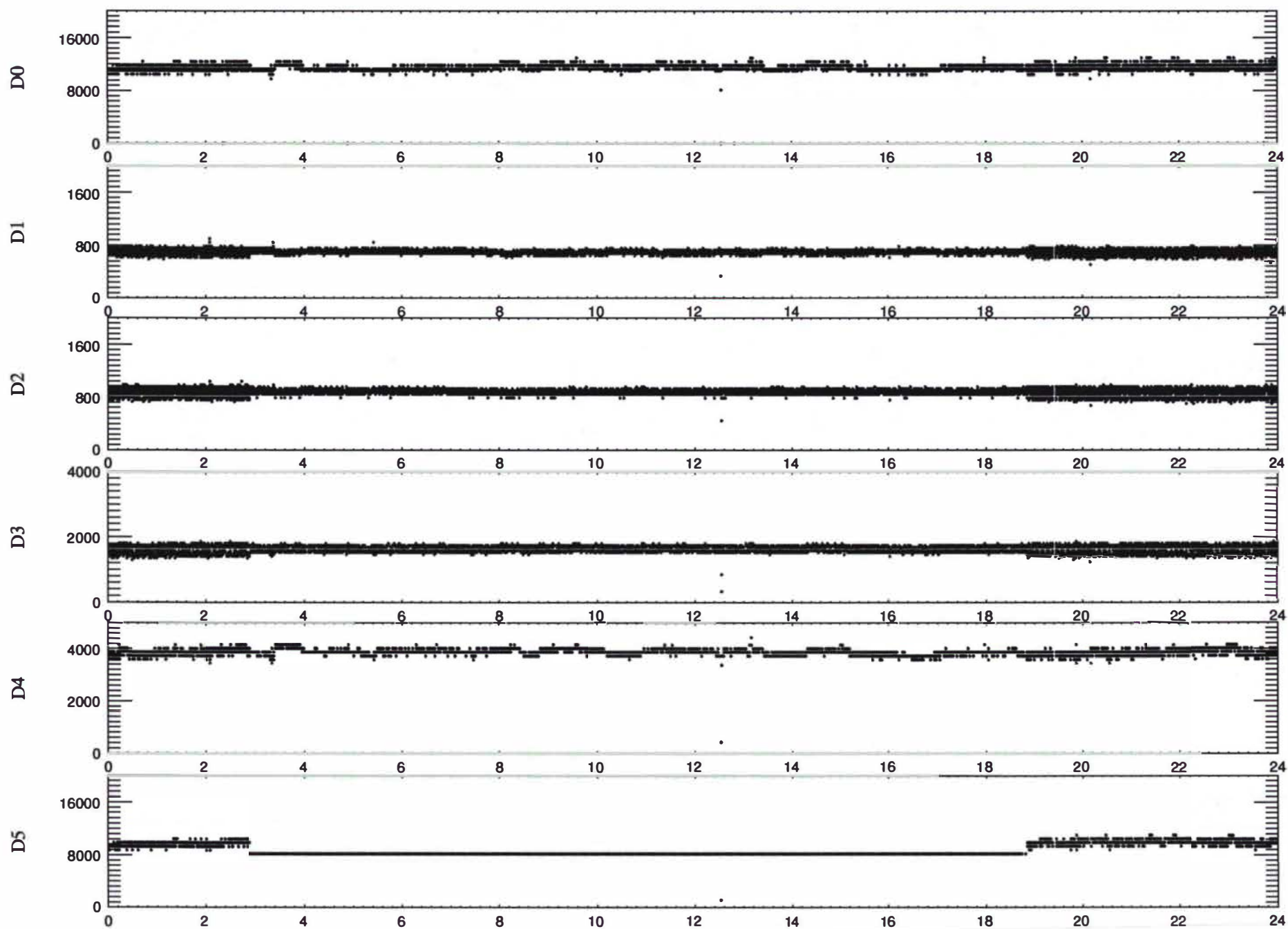


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From khurley@sunspot Fri Sep 26 08:05 PDT 1997
Date: Fri, 26 Sep 1997 08:06:31 -0700
From: khurley@sunspot (Kevin Hurley)
To: dasmith@space.mit.edu
Subject: Ulysses responses to XTE events
From: khurley@sunspot

Dear Don,

Well, that changes things a bit! Here are the replies.

Kevin

> From dasmith@space.mit.edu Thu Sep 25 08:43 PDT 1997
> From: "Don A. Smith" <dasmith@space.mit.edu>
> Subject: Re: PS
> To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
> Date: Thu, 25 Sep 1997 11:43:26 -0400 (EDT)
> Mime-Version: 1.0
>
> > I forgot to ask: why are all the times in the 50000 second range?
> > Is there something to be suspicious about here?
>
> I think we have a misunderstanding here. I gave the times in MJD,
> not in seconds. Am I to understand that you took the decimal
> number (e.g. 50232.23211) as the seconds of the day in question?
> Here are the numbers in the format you want:
>
> Ulysses response
> 96 05 29 20054 35.5 83.5 'XTE' NO
> 96 04 08 68196 110.5 -03.8 'XTE' NO
> 96 07 30 02545 100.8 -19.5 'XTE' NO
> 96 10 02 75222 83.3 -16.8 'XTE' RATE INCREASE
> 97 04 12 24132 283.8 -31.8 'XTE' NO
> 96 10 29 68696 97.5 -41.7 'XTE' NO
> 97 02 24 26044 179.8 -58.7 'XTE' NO
> 96 12 30 07472 309.0 -69.0 'XTE' RATE INCREASE
>
> That ought to be better,
> --
> Don Smith The Rossi X-Ray Timing Explorer
> dasmith@space.mit.edu <http://www.mit.edu/~dasmith/>
>
> "There are love dogs no one knows the names of
> Give your life to be one of them."
> - Rumi (13th Century Persian Sufi Mystic Poet)
>

X T E

ULYSSES RT

25 / 9 / 97

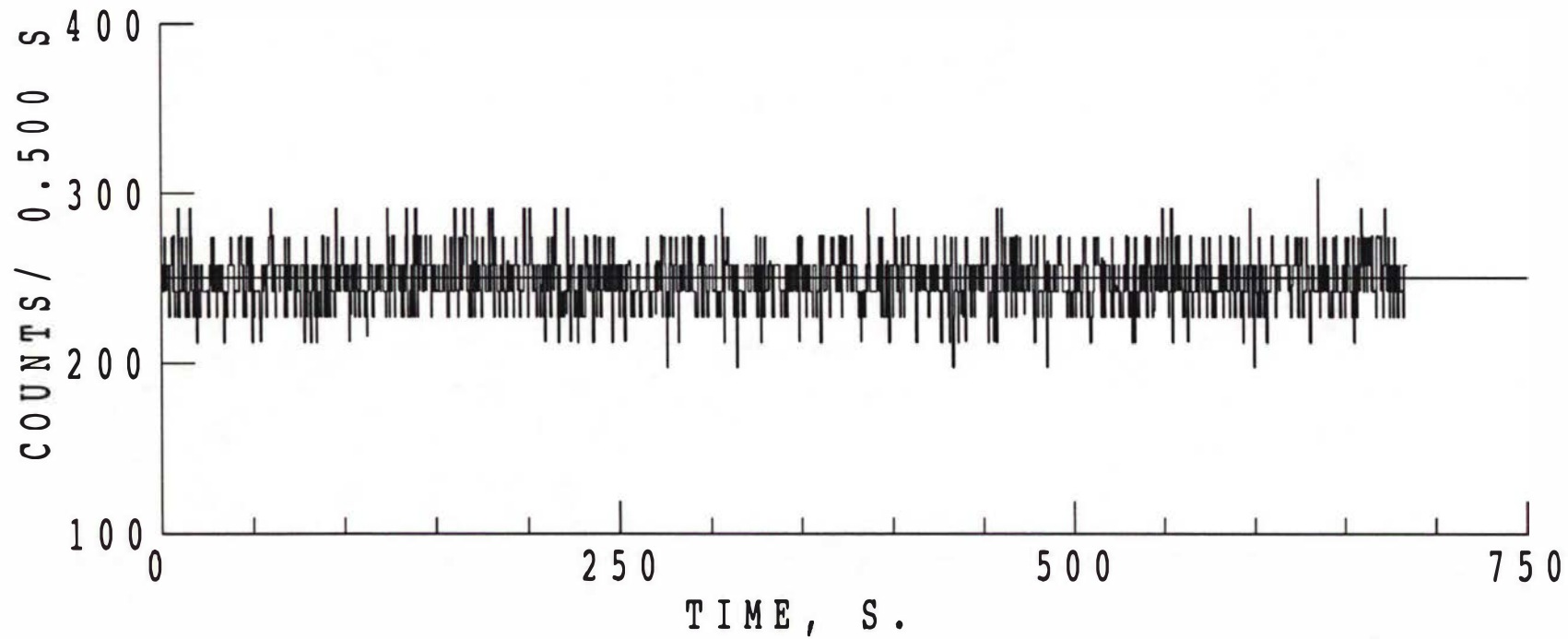
8 / 4 / 96 67536.062 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

W= 10 M=10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 9 09:45 PDT 1996
Date: Tue, 9 Apr 1996 11:44:54 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5413

BATSEARCH PROGRAM

BATSE BURST # 5413
EVENT OF 1996 APR 8 DAY OF YEAR= 99
EVENT CROSSING TIME AT BATSE : 79947. S. OR 22:12:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 85.000 2.000
BATSE PEAK COUNTING RATE: 6700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 4/ 96 IS:
RA= 153.974 DEC= 69.148 DIST= 3.356 AU
BATSE-ULYSSES DISTANCE = 502012294. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -268.34 SECS.
CROSSING TIME AT ULYSSES IS 79679. S. OR 22:07:58 +/- 332.89 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 4/ 96 IS:
RA= 10.534 DEC= 3.720 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356742848. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -320.52 SECS.
CROSSING TIME AT MARS IS 79626. S. OR 22:07:06 +/- 194.09 SECONDS

BATSE BURST TRIGGER

NO.: 5413

TIME: TJD=0181 SECONDS=79947

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=71.3 AZIMUTH=50.2 ERROR=1.1 DEGREES

COMMENTS:

GRB LASTING 135 SEC. MULTI-EPISODIC. SUCCESSIVE PEAKS SHOW SOFTENING
AS A FUNCTION OF TIME. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5413	960408	10181	79947	6700	085	+02	135

Helio corr removed

Date: Mar 6 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

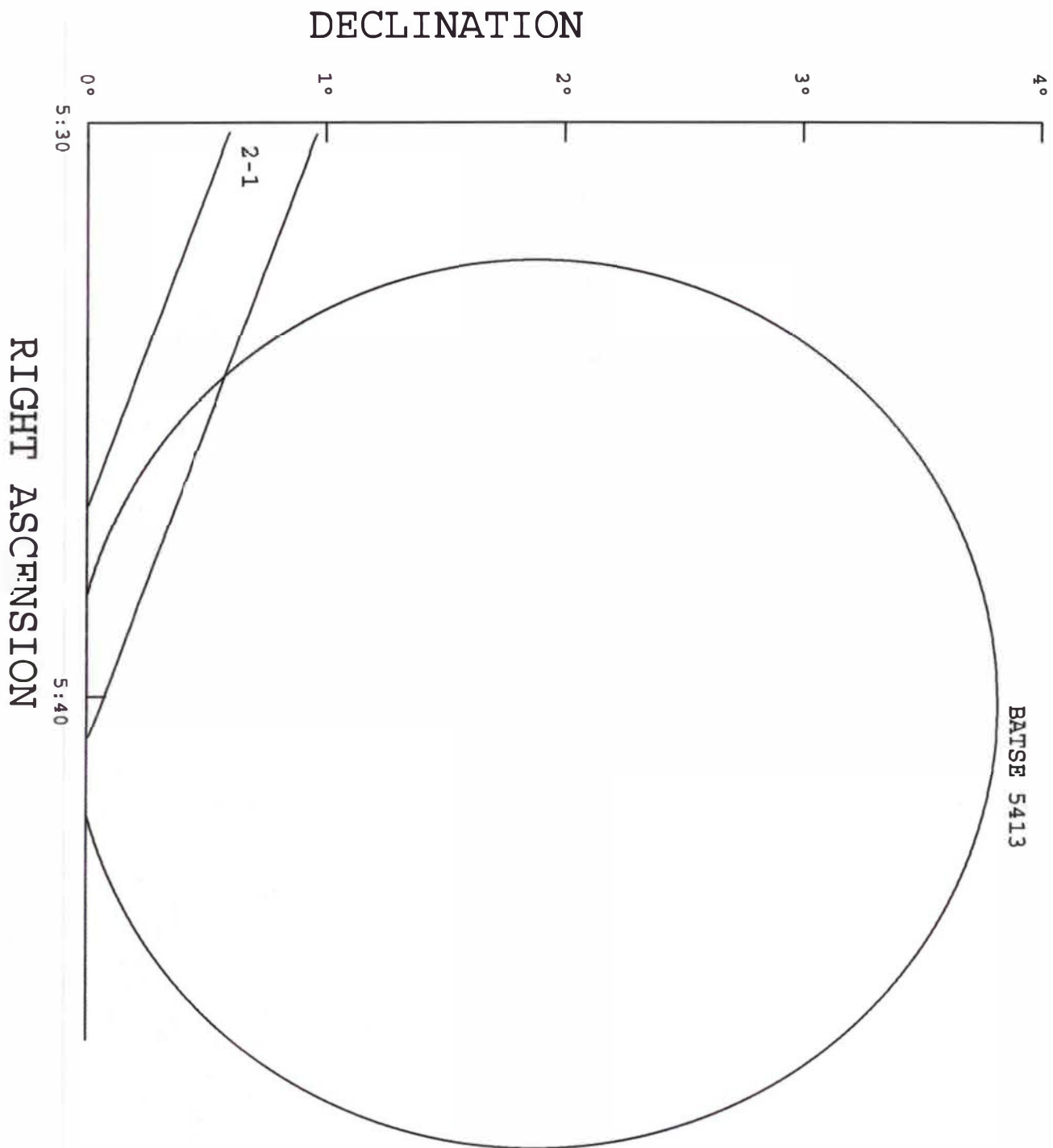
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 8, 1996 22:08

6 / 3/98



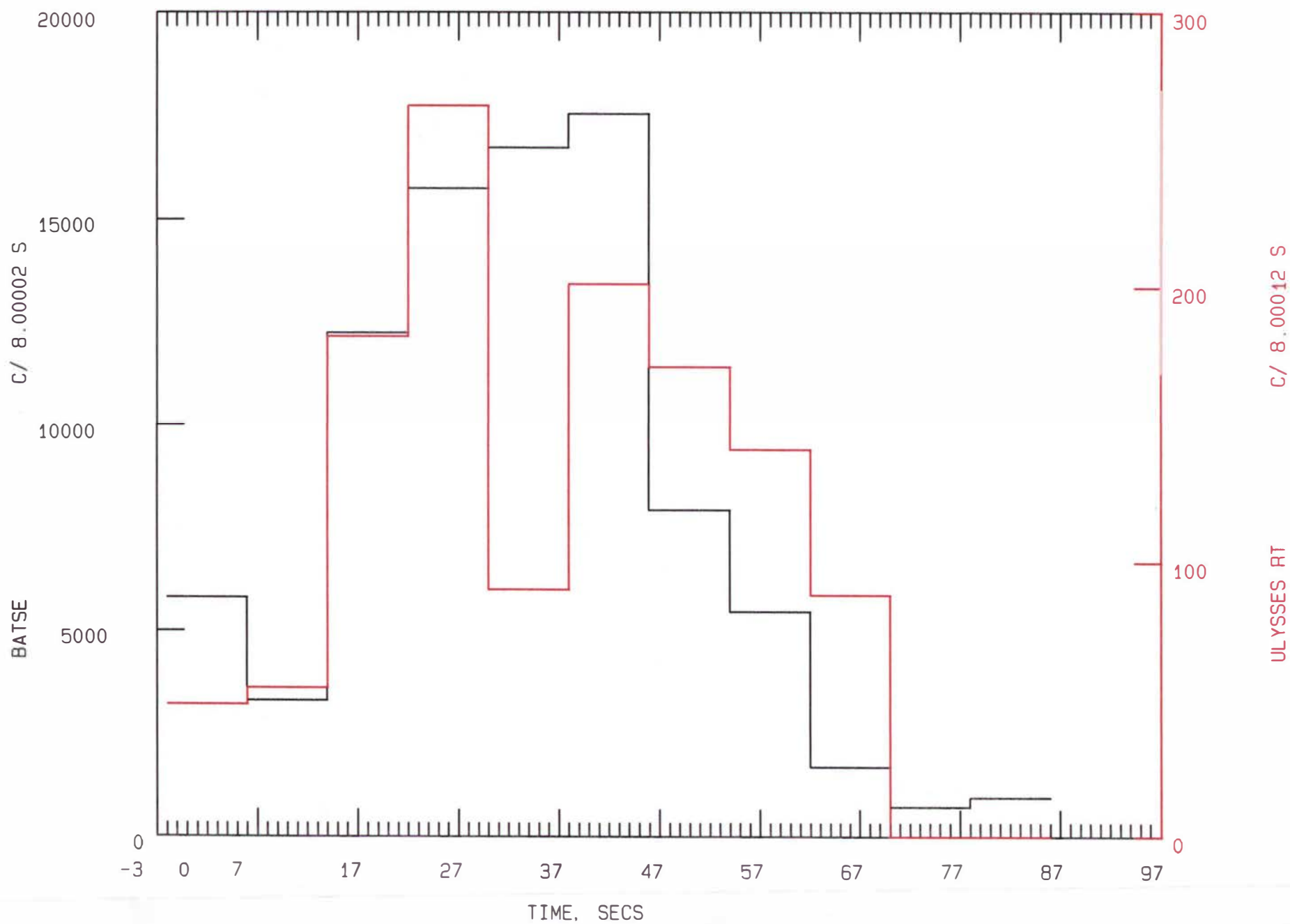
BATSE

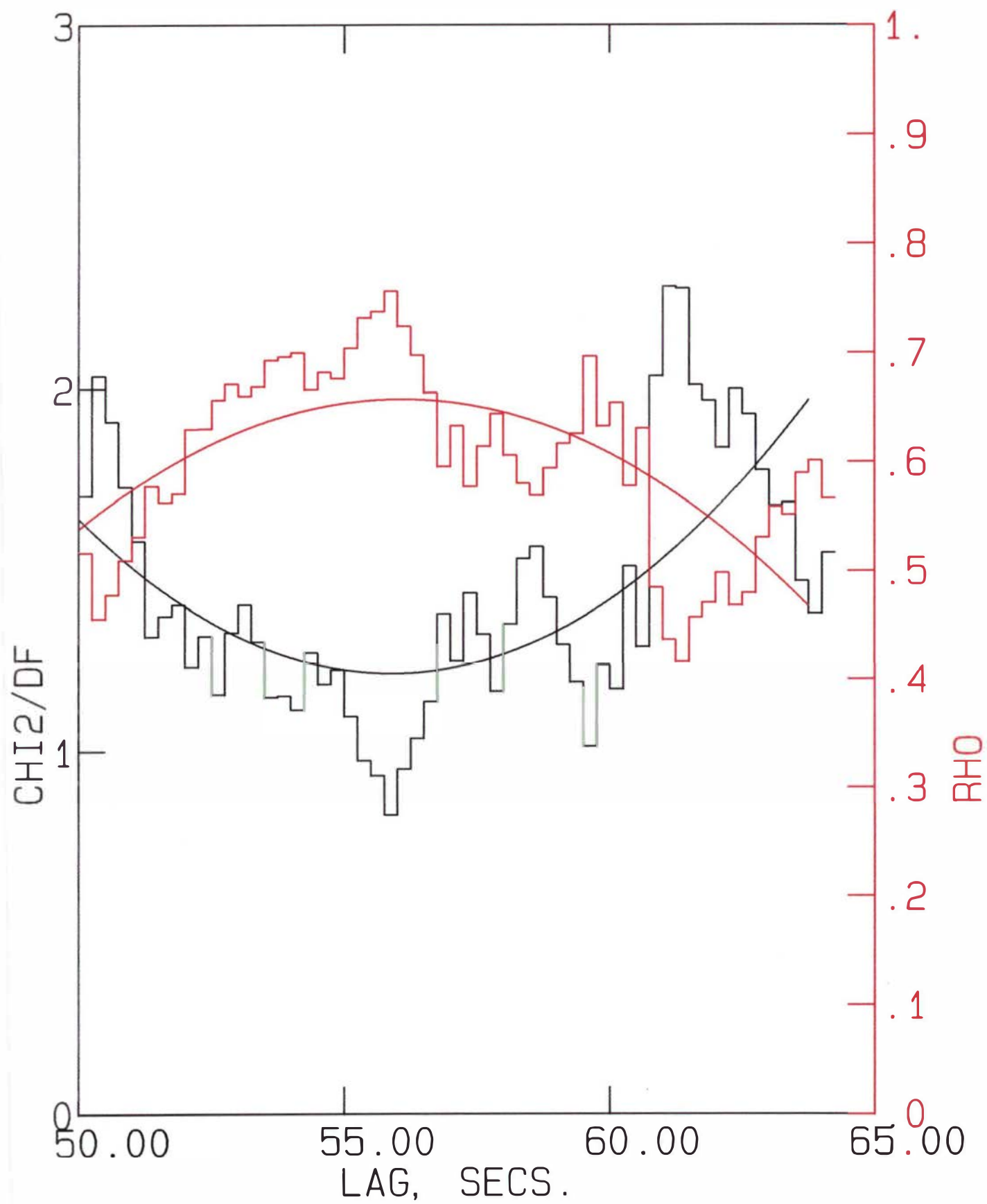
-ULYSSES RT CORRELATION

8/ 4/96

79947.466

6/ 3/98





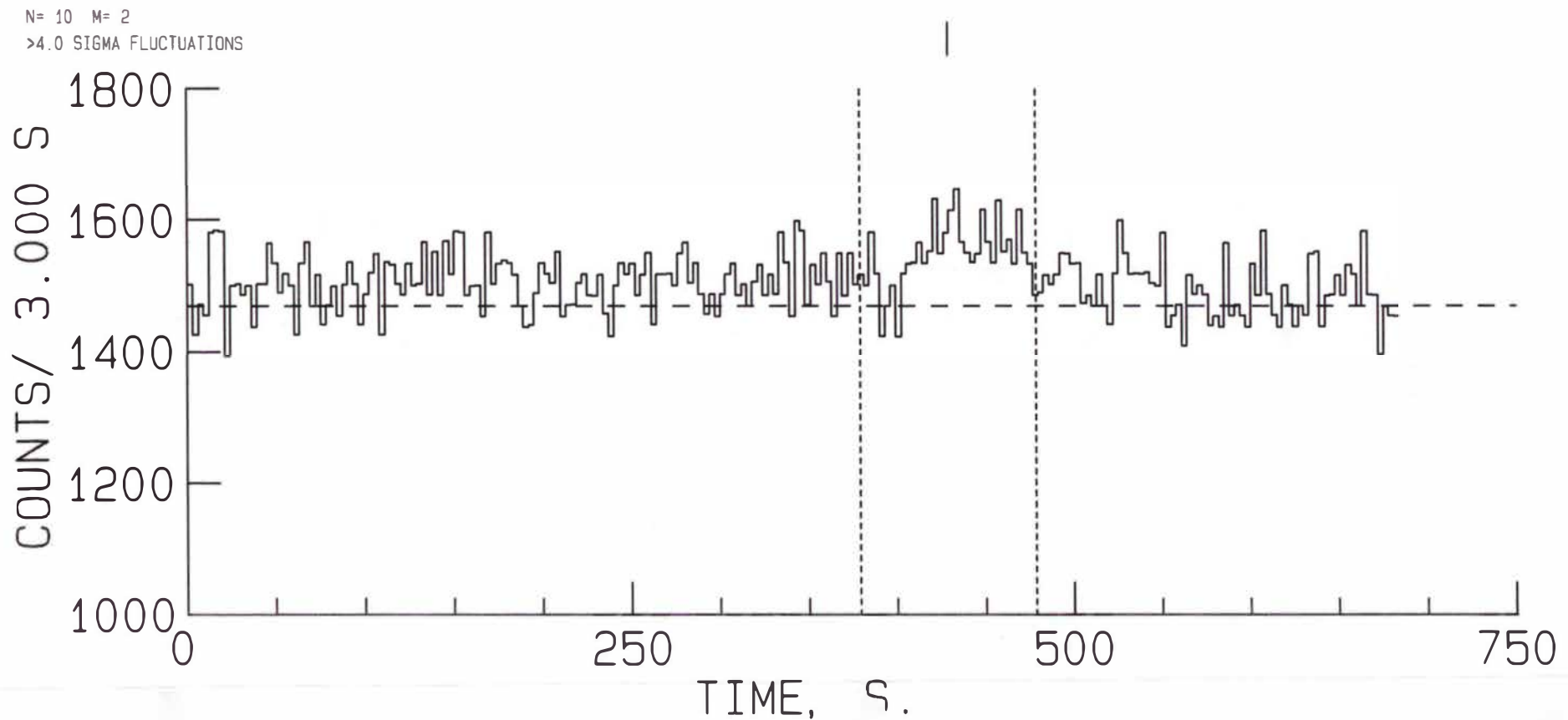
ULYSSES RT

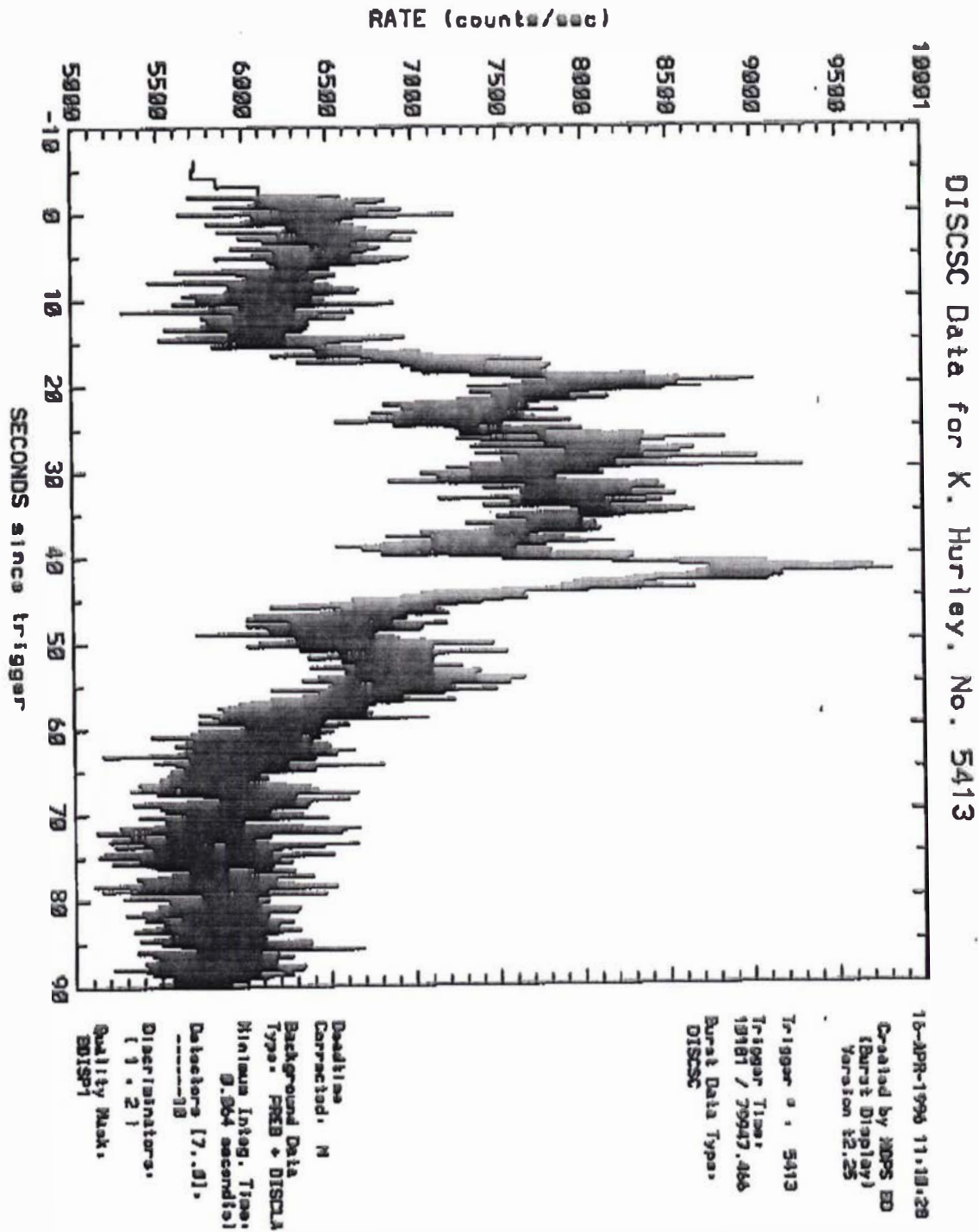
6 / 3 / 98

8 / 4 / 96 79344.222 s

0.250 S INTERVALS REGROUPED BY 12

21- 144 keV





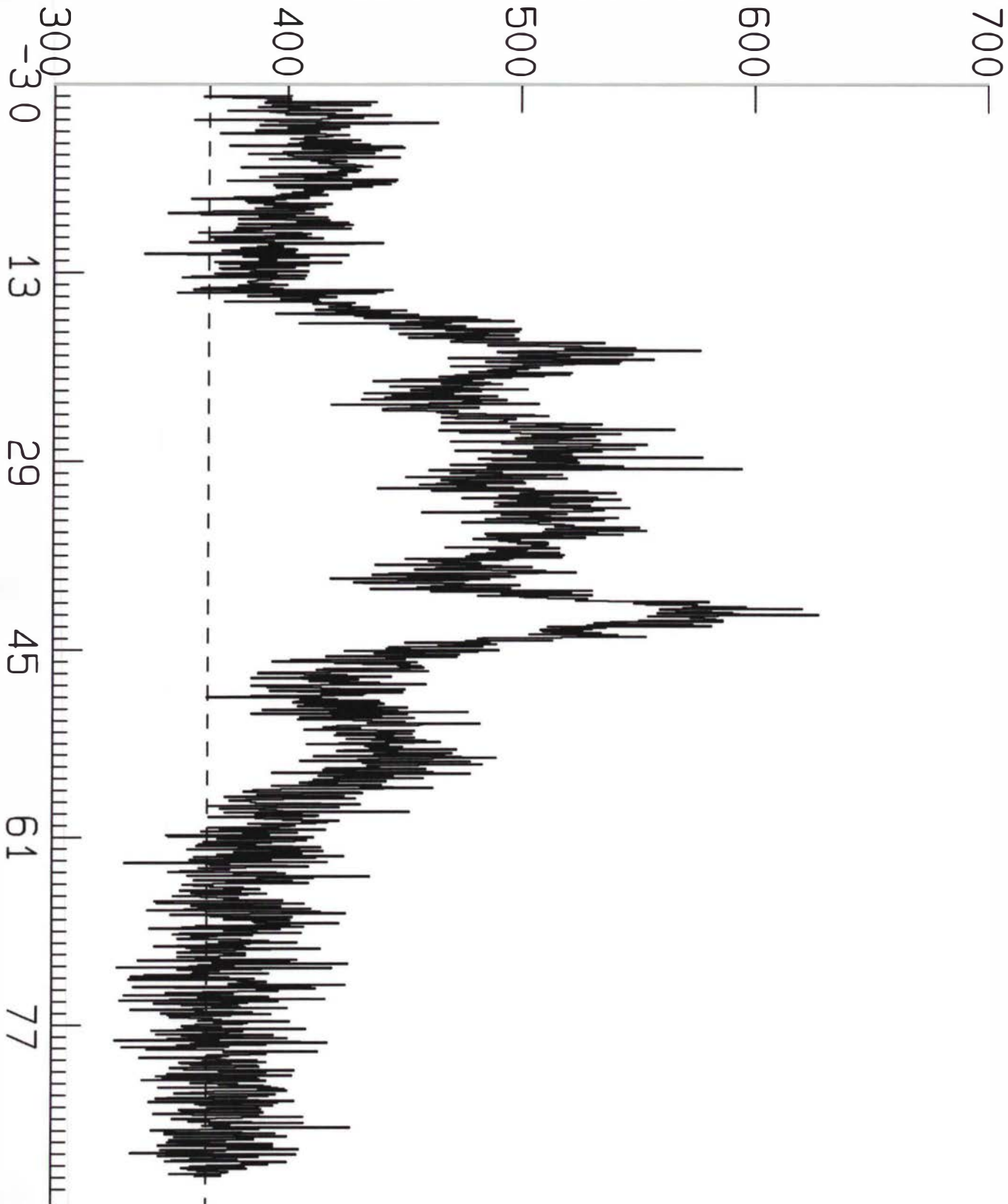
BATSE

08/04/96

79947.466

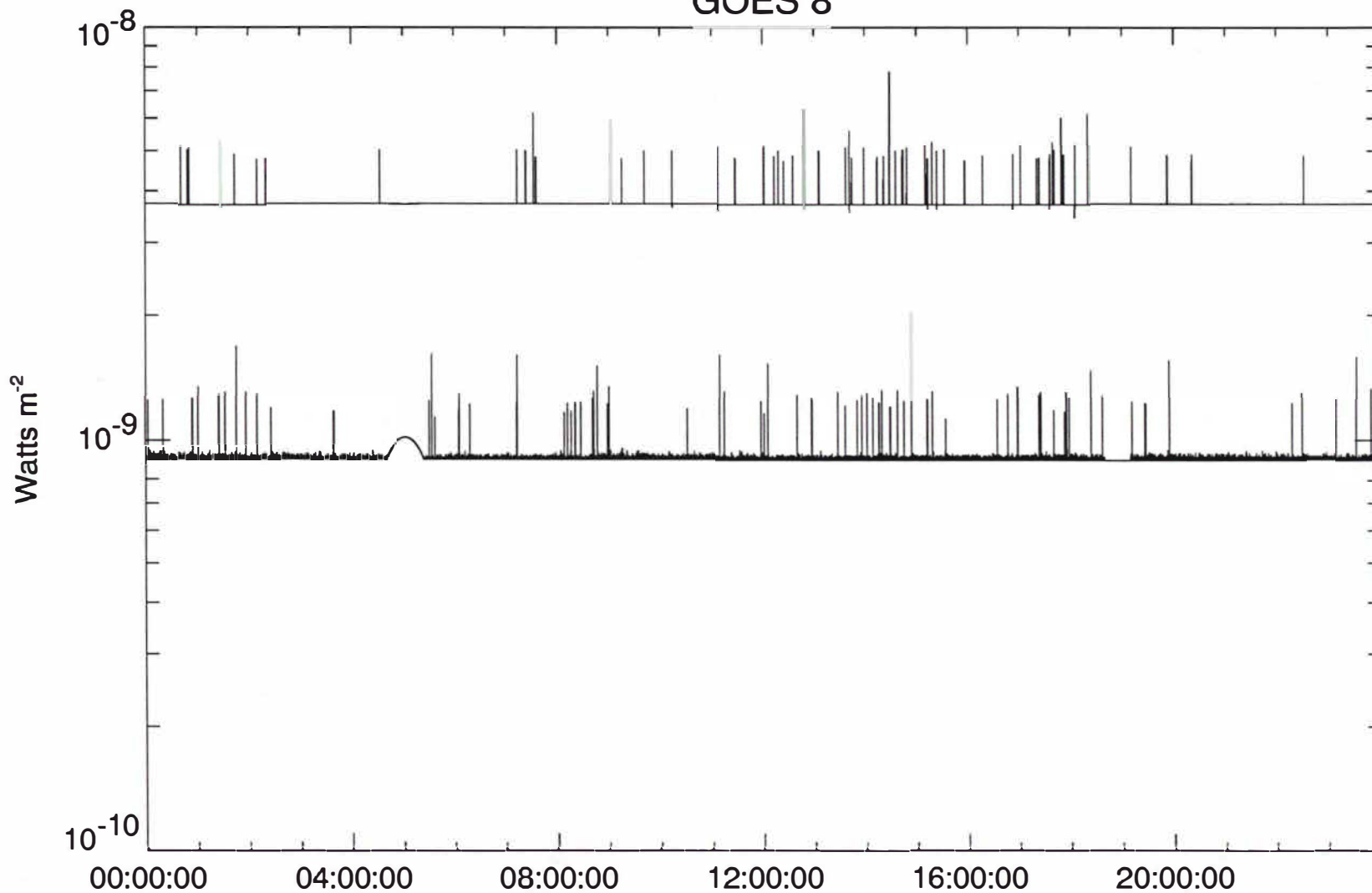
25- 100 keV

COUNTS/0.064 S



GOES 8

A



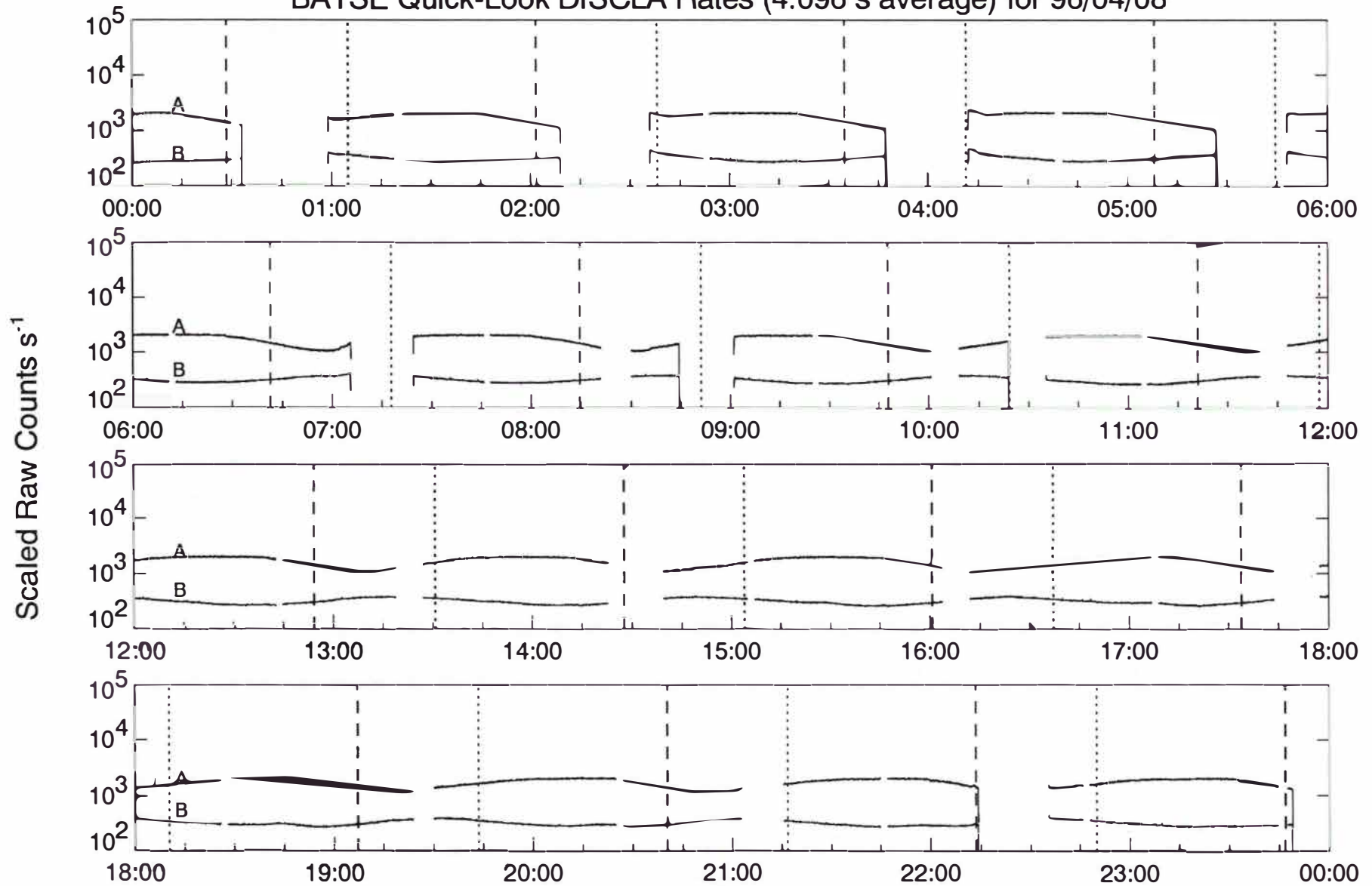
Data Start: 96/04/08, 0000:00

Plot created: 96/04/10, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/08

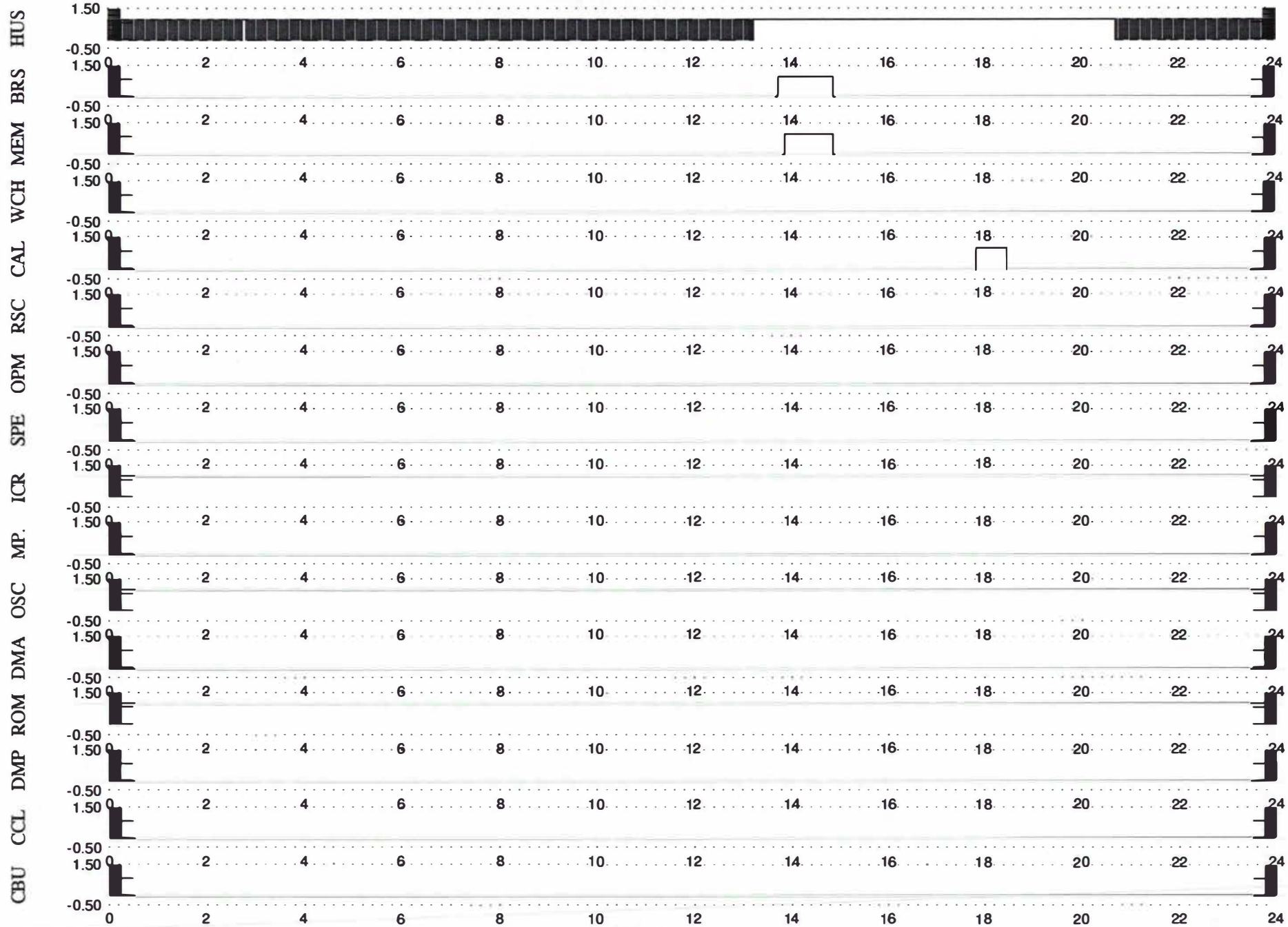


Current Time: 96/04/10, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

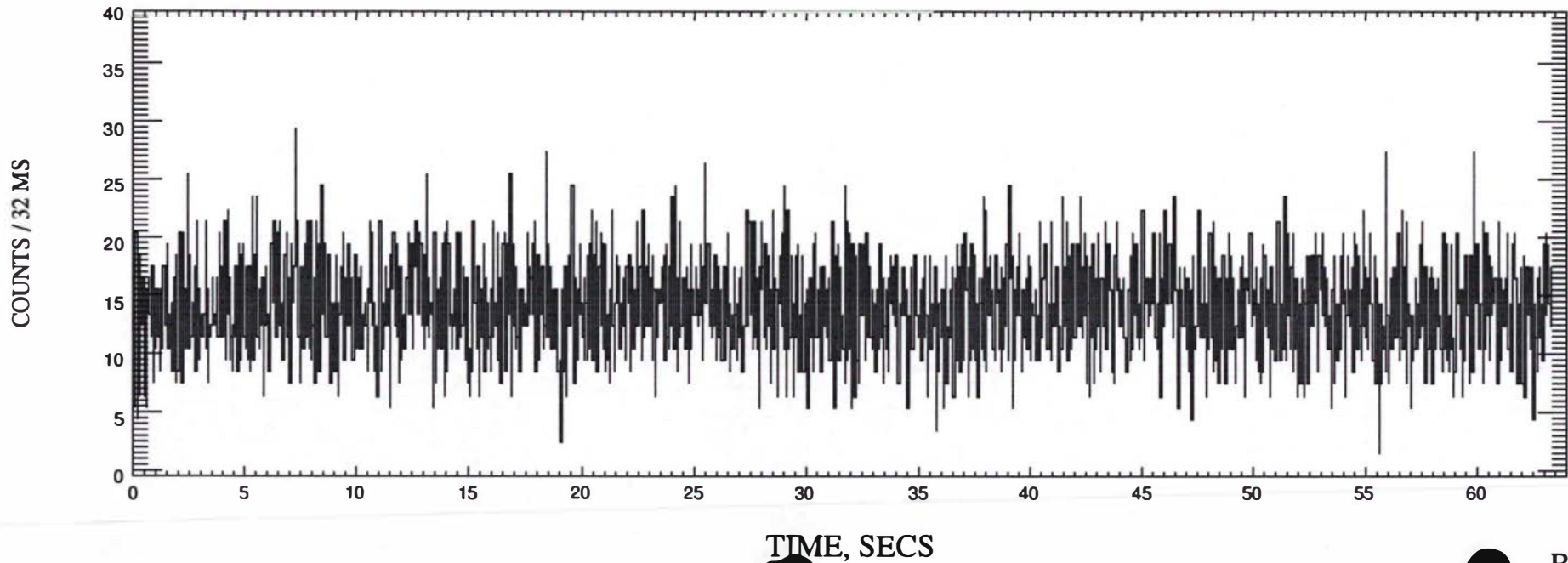
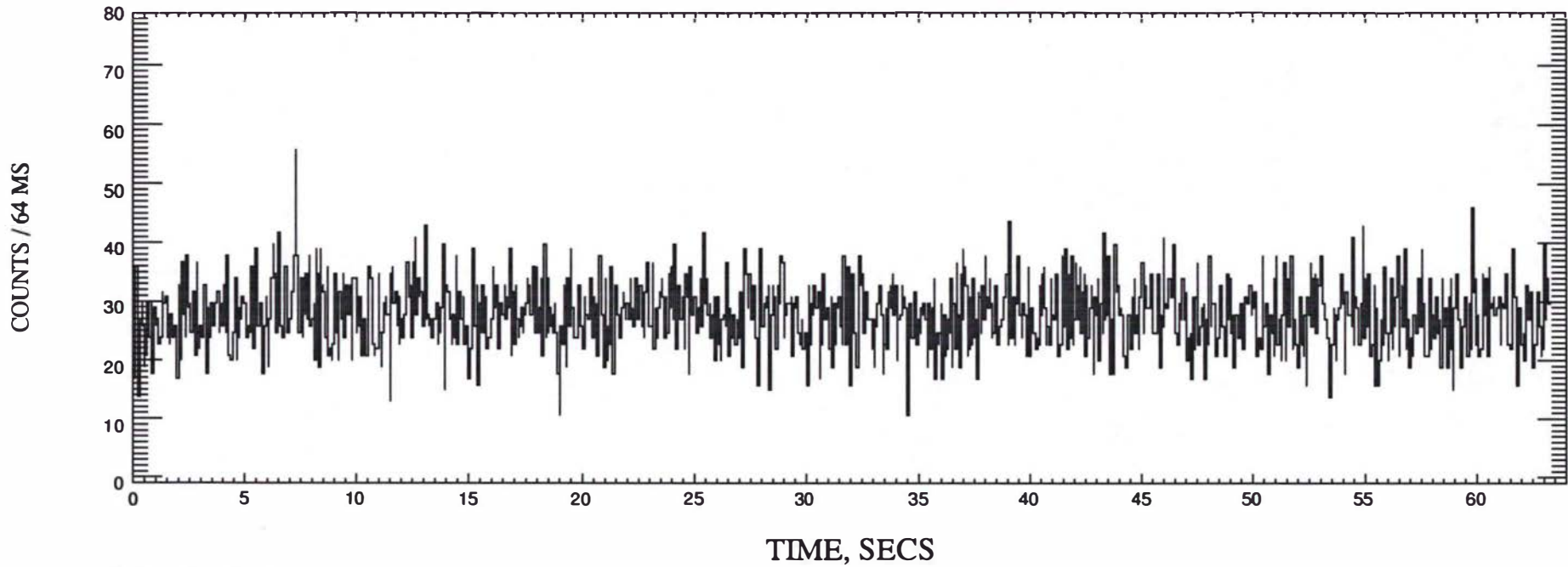
* Solar Burst Trigger
+ Solar Flare

BURST NUMBER 6

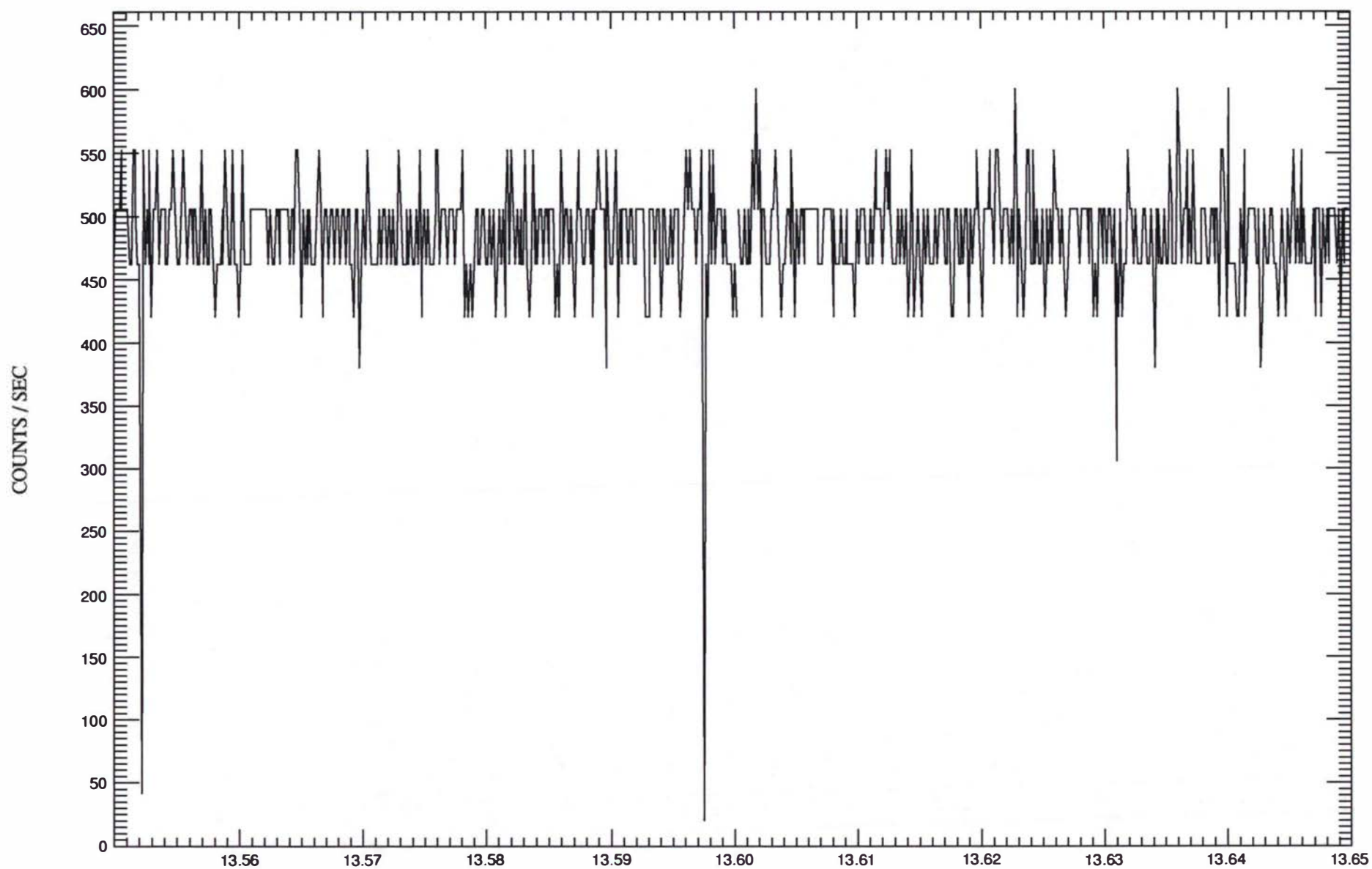


UNIVERSAL TIME

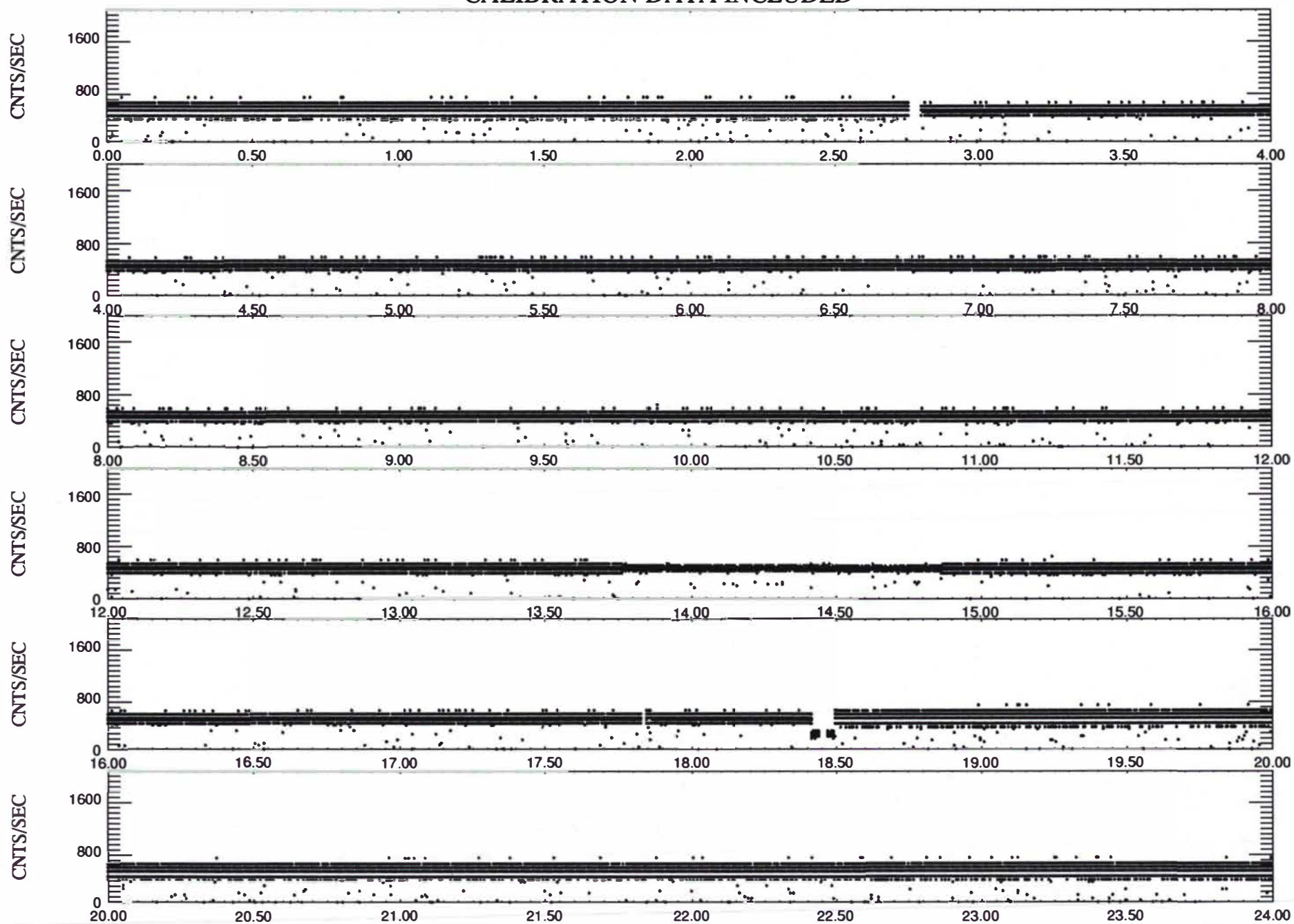
Burst Counter 6 at UT=13.601957745022 h=48967.048 s 13:36:07.048



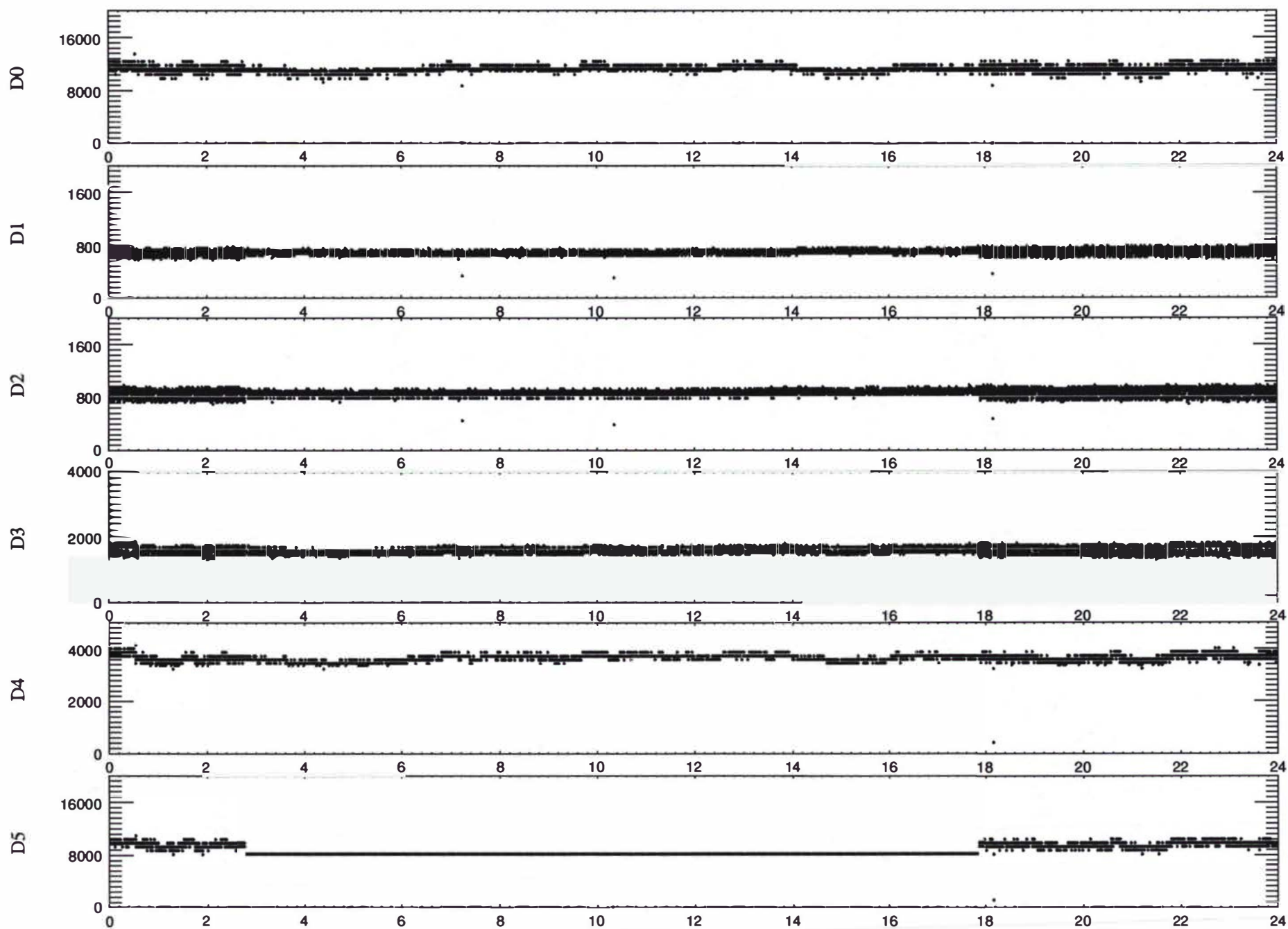
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From RICHARDSON@SSLLES.MSFC.NASA.GOV Fri Apr 12 11:56 PDT 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Fri, 12 Apr 1996 13:55:50 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@SSLLES.MSFC.NASA.GOV,
"LHEAVX::BARTHELMY"@SSLLES.MSFC.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.: 5414

TIME: TJD=0182 SECONDS=155

TYPE: ACCIDEN SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

ACCIDENTAL TRIGGER IN THE SAA.

From RICHARDSON@ssl.msfc.nasa.gov Fri Apr 12 12:14 PDT 1996
Date: Fri, 12 Apr 1996 14:13:15 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5415

BATSEARCH PROGRAM

BATSE BURST # 5415
EVENT OF 1996 APR 9 DAY OF YEAR=100
EVENT CROSSING TIME AT BATSE : 44166. S. OR 12:16:06.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 225.000 67.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 4/ 96 IS:
RA= 153.691 DEC= 68.984 DIST= 3.364 AU
BATSE-ULYSSES DISTANCE = 503226806. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=154.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1517.74 SECS.
CROSSING TIME AT ULYSSES IS 42648. S. OR 11:50:48 +/- 151.44 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 4/ 96 IS:
RA= 11.242 DEC= 4.028 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356762528. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 308.68 SECS.
CROSSING TIME AT MARS IS 44475. S. OR 12:21:14 +/- 204.22 SECONDS

BATSE BURST TRIGGER

NO.: 5415

TIME: TJD=0182 SECONDS=44166

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=34.6 AZIMUTH=218.8 ERROR=1.3 DEGREES

COMMENTS:

GRB. SMOOTH FAST RISE, EXPONENTIAL DECAY. DUR.~30SEC. marginally visible
above 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5415	960409	10182	44166	4500	225	+67	30

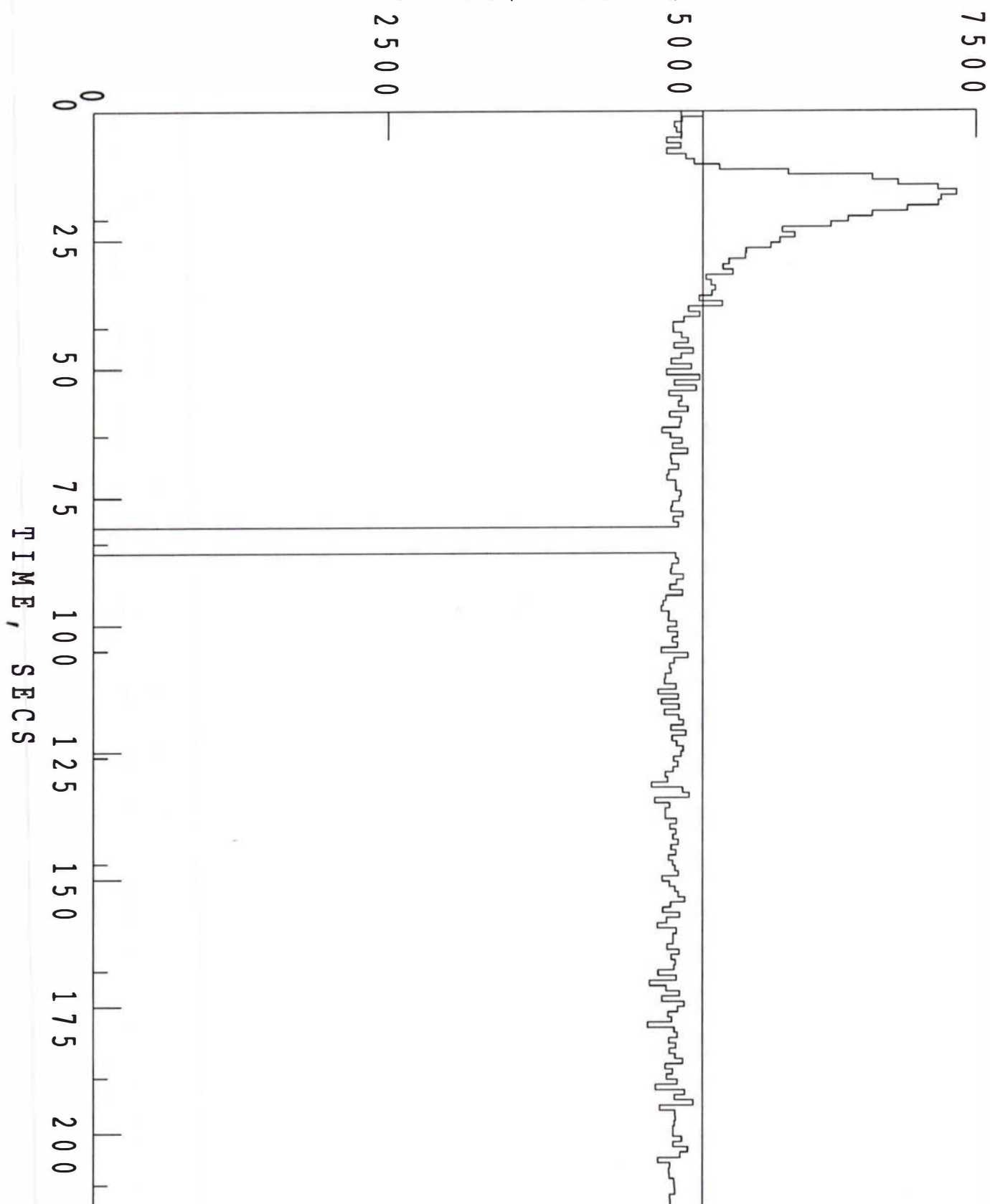
BACODINE

09/04/96

44154.569

25 - 100 keV

COUNTS/1.024 s



BATSE #

5415

ULYSSES RT

5 / 12 / 96

9 / 4 / 96 42480.398 s

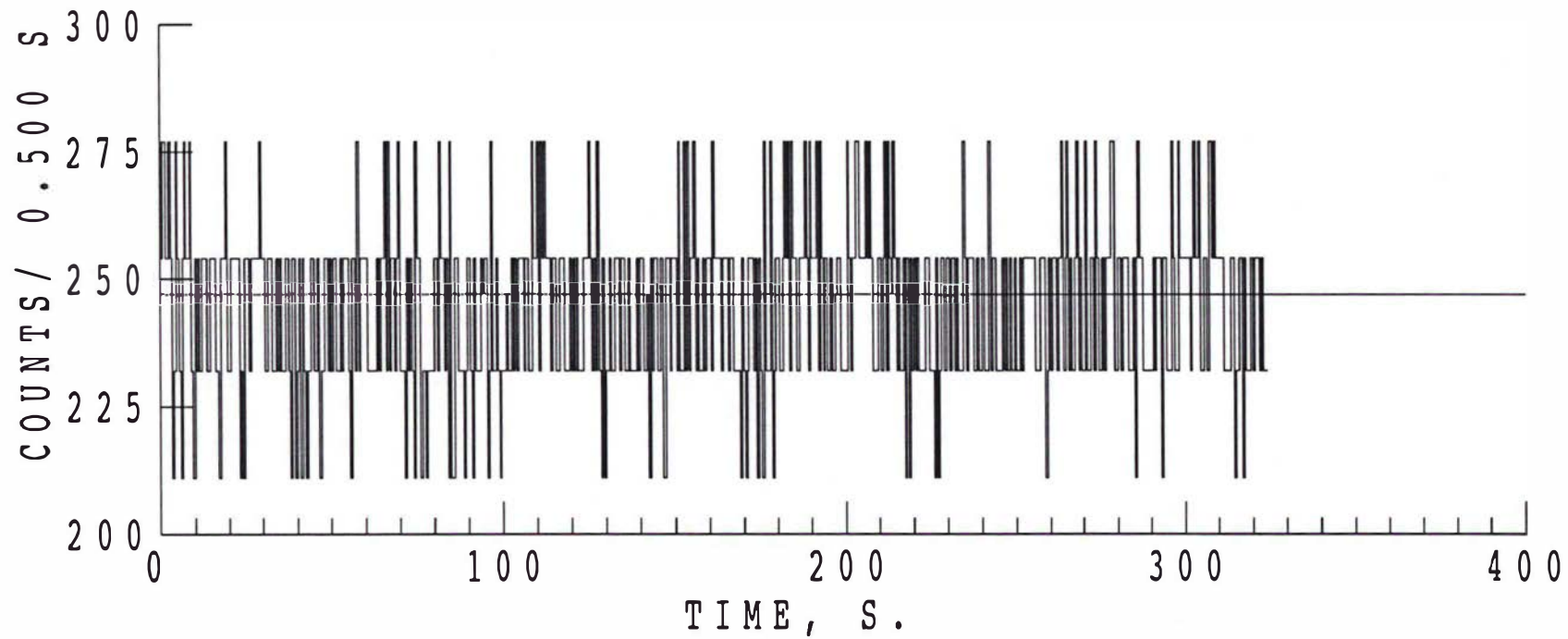
0 - 0 keV

N= 10 M=10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



KONUS 19960409 65045

ULYSSES RT

28 / 09 / 11

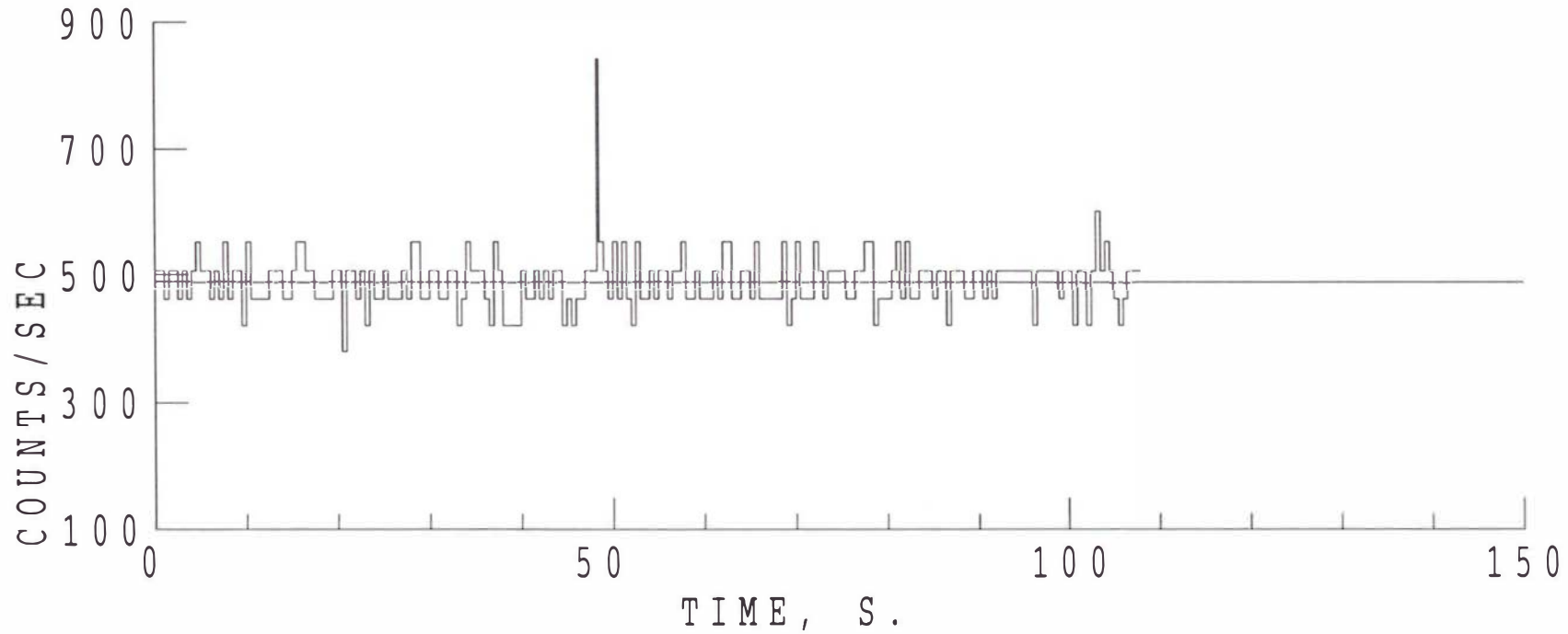
09 / 04 / 96 64980.211 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

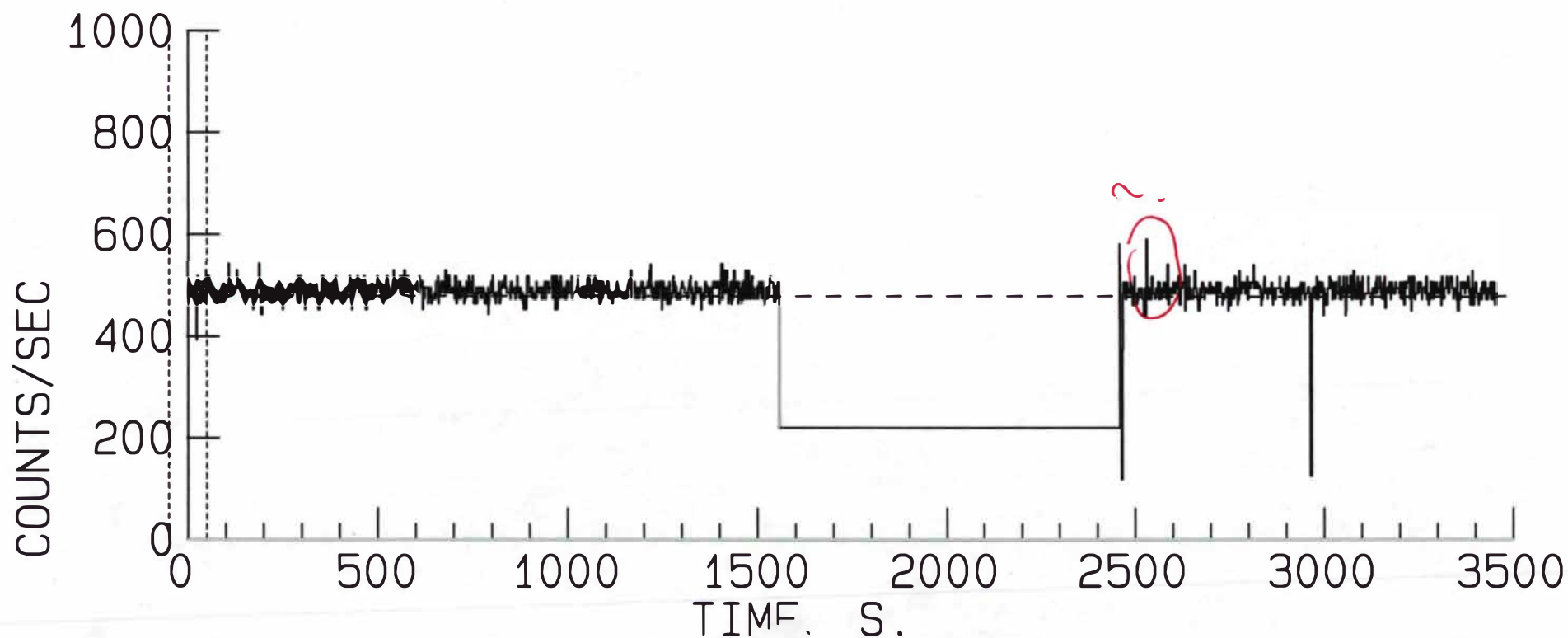
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

*Konus event is 7 s long -
must be different burst*



ULYSSES RT
9/ 4/96 62496.176 s
INTERVALS REGROUPED BY 4
21- 144 keV

29/ 1/ 0



From RICHARDSON@ssl.msfc.nasa.gov Fri Apr 12 12:14 PDT 1996
Date: Fri, 12 Apr 1996 14:14:23 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5416

BATSEARCH PROGRAM

BATSE BURST # 5416
EVENT OF 1996 APR 9 DAY OF YEAR=100
EVENT CROSSING TIME AT BATSE : 71778. S. OR 19:56:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 16.000 42.000
BATSE PEAK COUNTING RATE: 15500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 4/ 96 IS:
RA= 153.537 DEC= 68.895 DIST= 3.368 AU
BATSE-ULYSSES DISTANCE = 503892930. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -717.43 SECS.
CROSSING TIME AT ULYSSES IS 71061. S. OR 19:44:20 +/- 303.00 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 4/ 96 IS:
RA= 11.242 DEC= 4.028 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356762528. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -935.07 SECS.
CROSSING TIME AT MARS IS 70843. S. OR 19:40:42 +/- 113.59 SECONDS

BATSE BURST TRIGGER

NO.: 5416

TIME: TJD=0182 SECONDS=71778

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=51.7 AZIMUTH=326.7 ERROR=1.4 DEGREES

COMMENTS:

GRB TWO PULSES, TOTAL DUR.~20SEC. 1ST PULSE AT ~T-1 WITH DUR.~8SEC.
2ND PULSE AT ~T+12 WITH DUR.~7SEC. SLIGHTLY VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5416	960409	10182	71778	15500	016	+42	20

Helio corr removed

Date: Mar 17 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

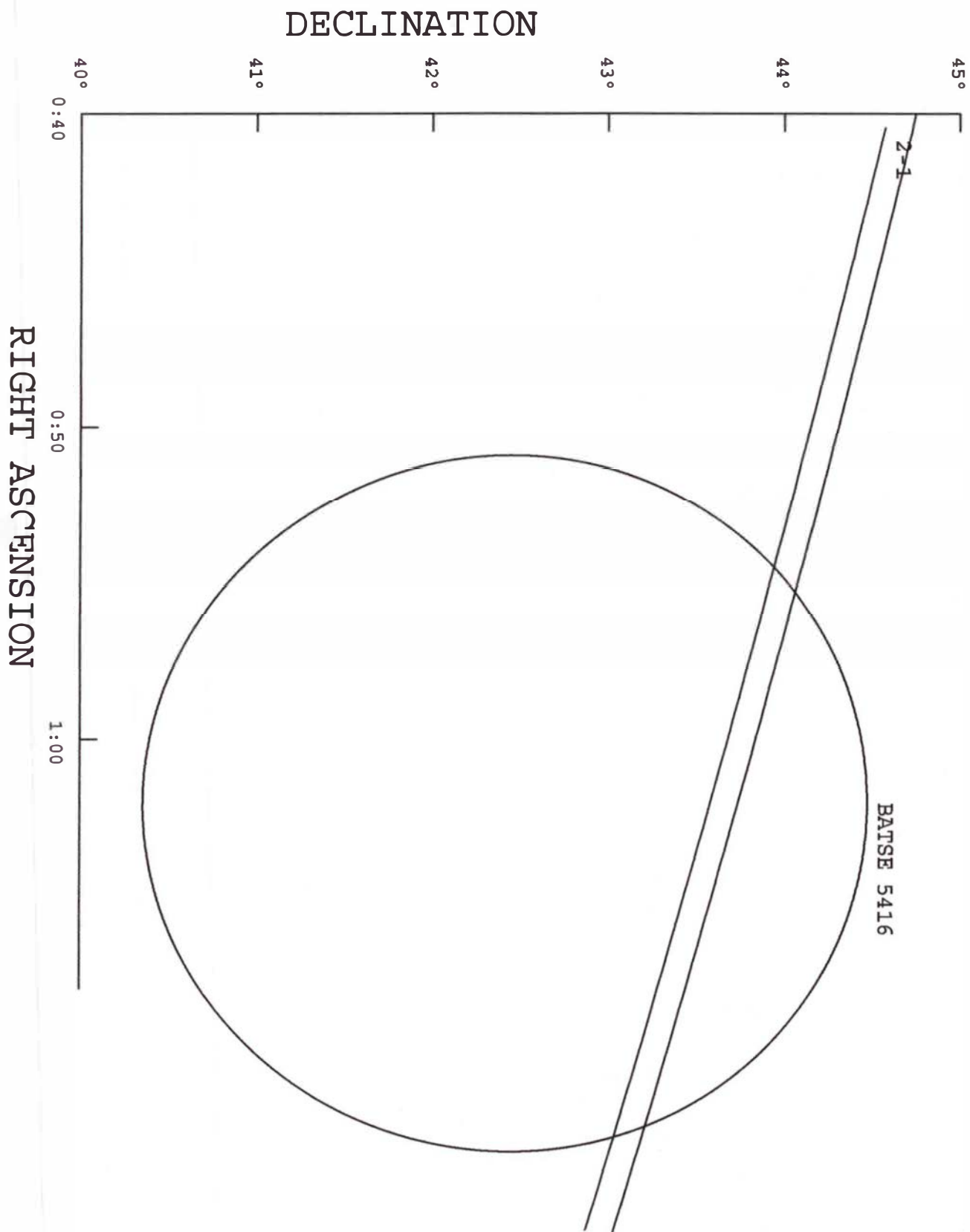
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 9, 1996 19:43

17/ 3/98



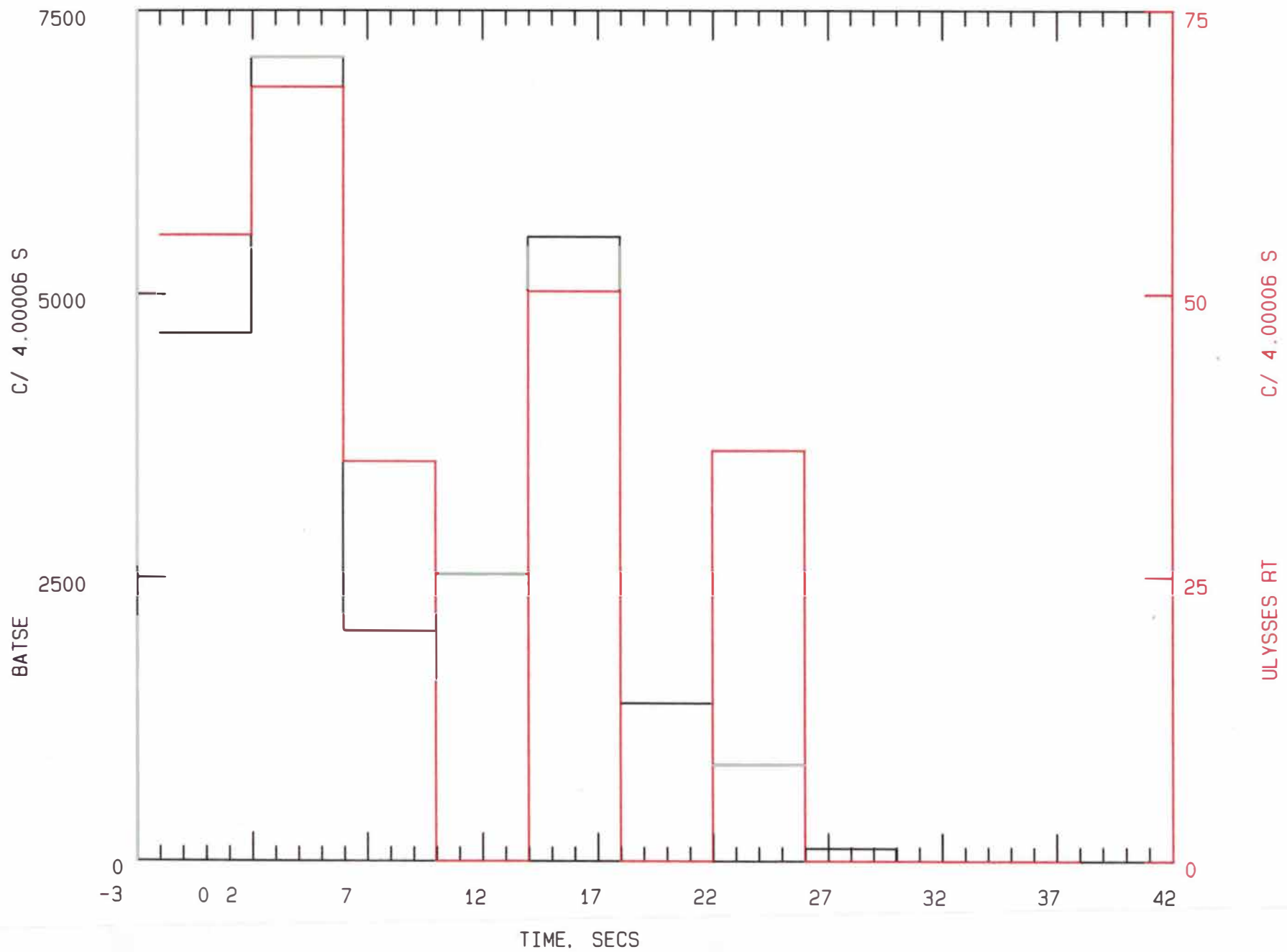
BATSE

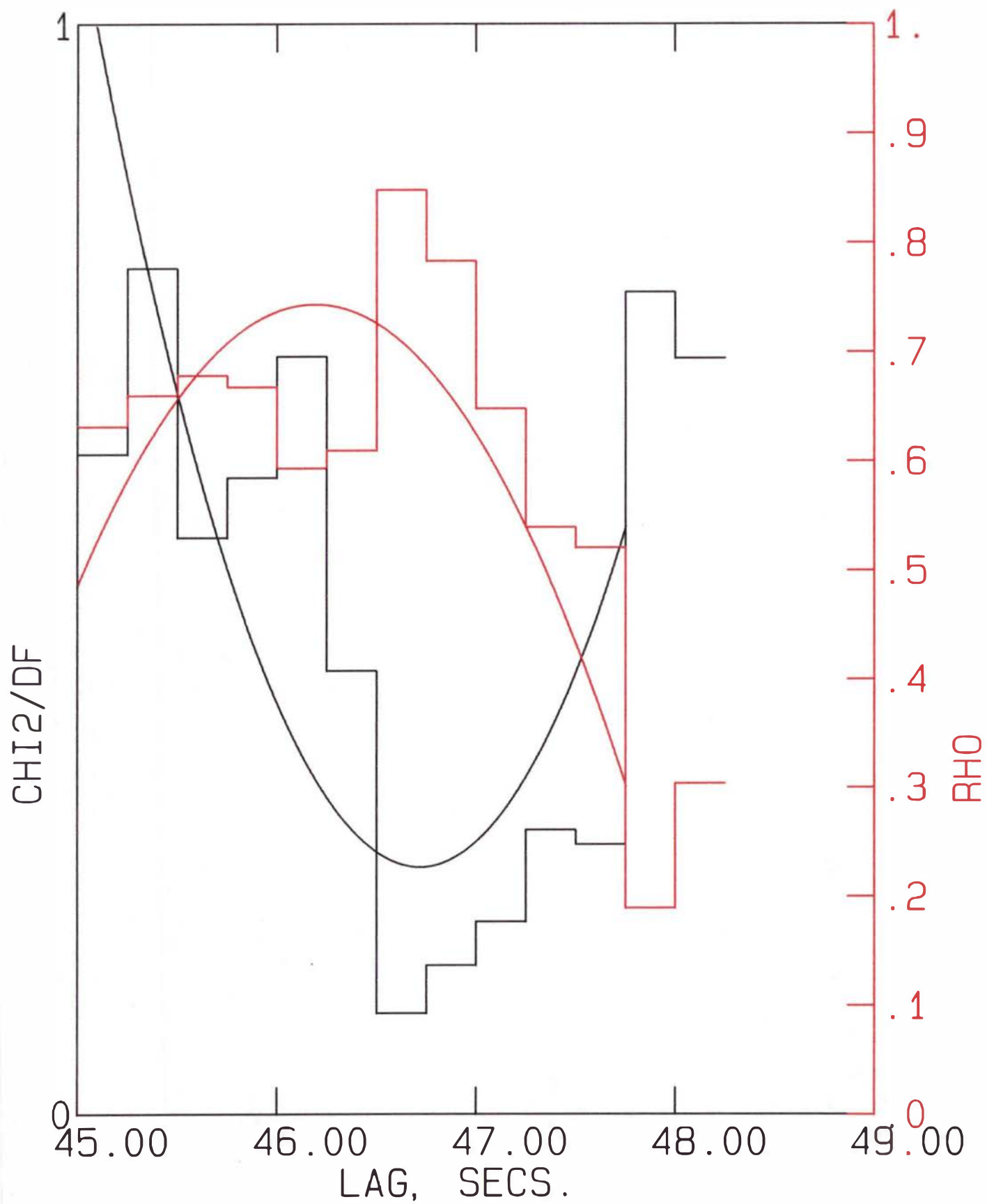
-ULYSSES RT CORRELATION

9/ 4/96

71777.994

17/ 3/98





ULYSSES RT

17 / 3 / 98

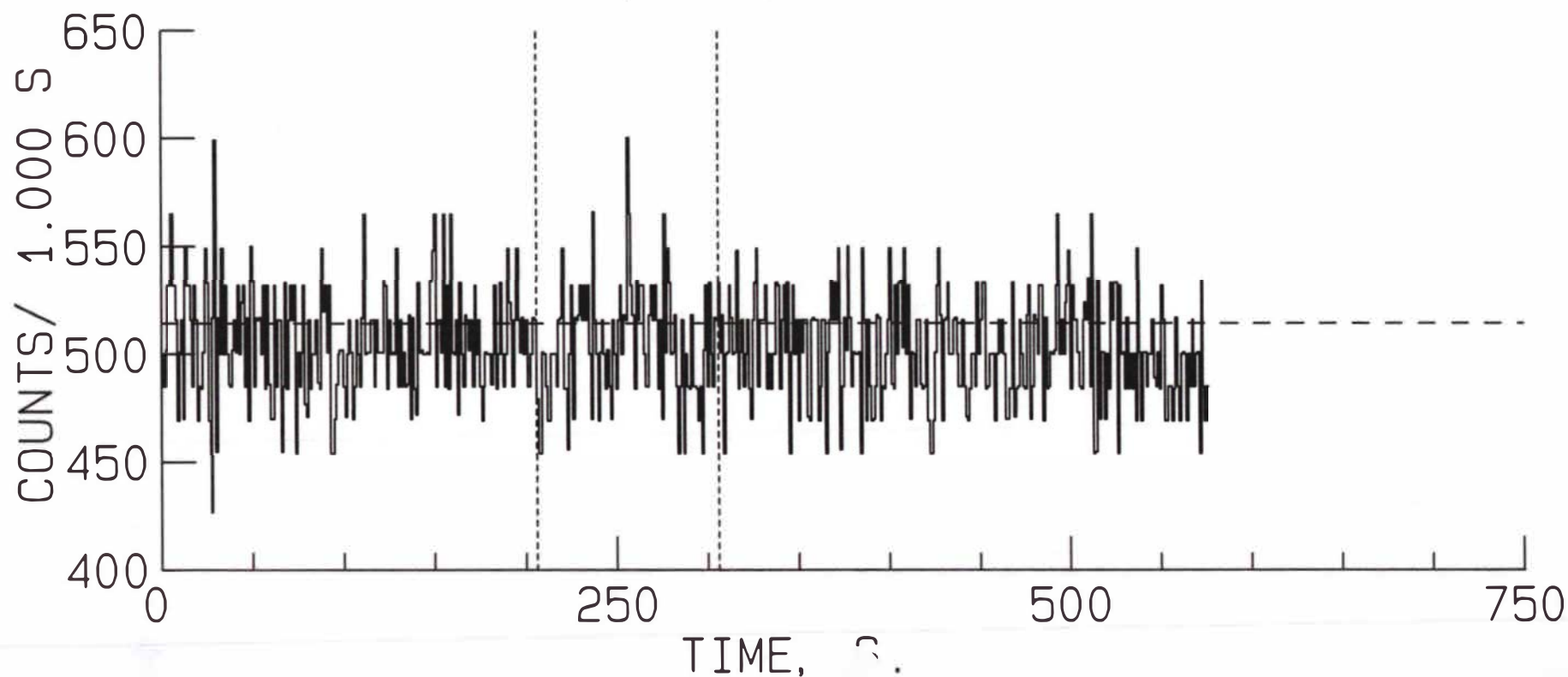
9 / 4 / 96 70776.040 s

0.250 S INTERVALS REGROUPED BY 4

21- 144 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



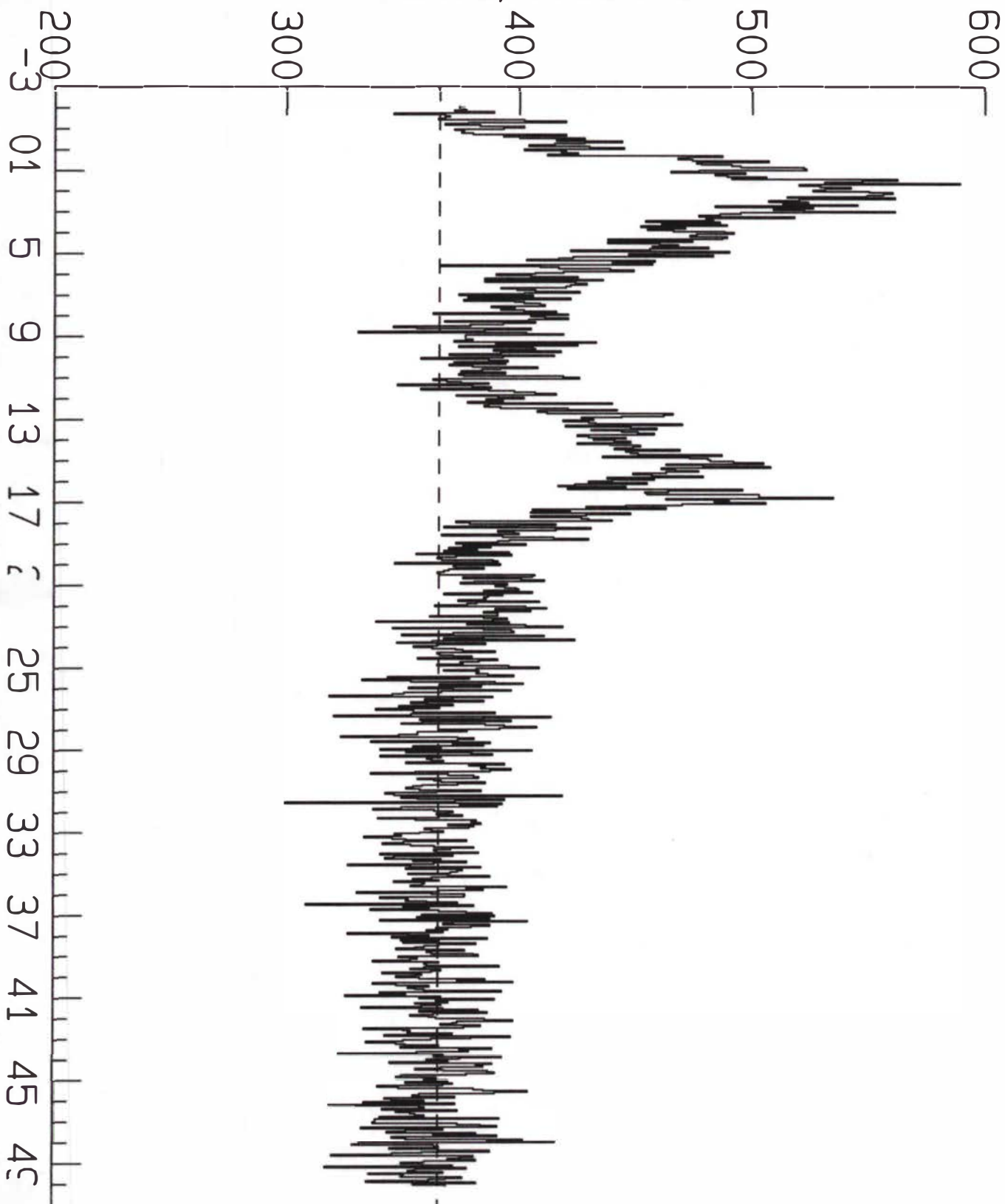
BATSE

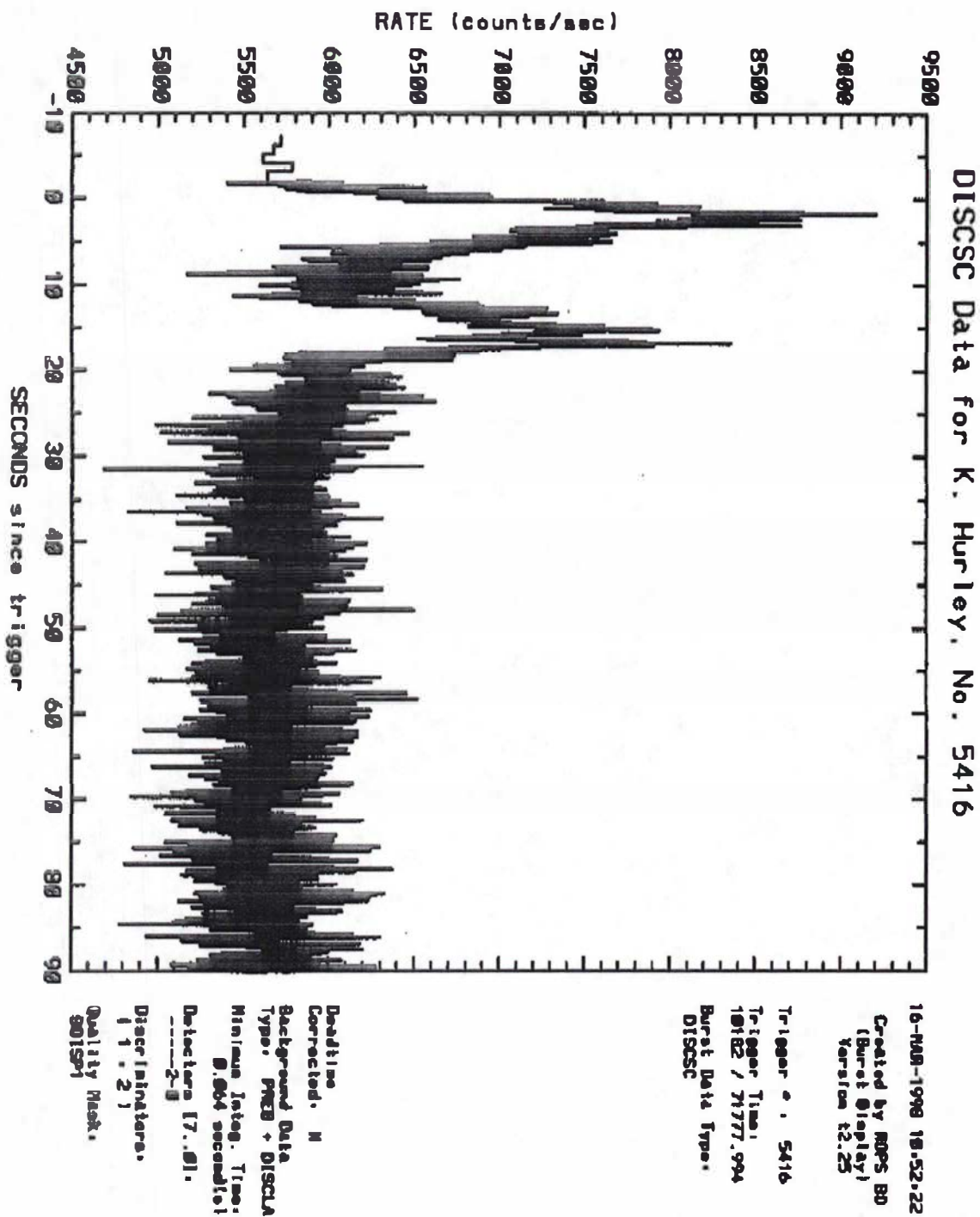
09/04/96

71777.994

25- 100 keV

COUNTS/0.064 S





From RICHARDSON@SSLLES.MSFC.NASA.GOV Fri Apr 12 12:16 PDT 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Fri, 12 Apr 1996 14:16:01 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5417

BATSEARCH PROGRAM

RI

BATSE BURST # 5417
EVENT OF 1996 APR 9 DAY OF YEAR=100
EVENT CROSSING TIME AT BATSE : 77144. S. OR 21:25:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 43.000 42.000
BATSE PEAK COUNTING RATE: 31000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 4/ 96 IS:
RA= 153.507 DEC= 68.877 DIST= 3.369 AU
BATSE-ULYSSES DISTANCE = 504020334. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -891.64 SECS.
CROSSING TIME AT ULYSSES IS 76252. S. OR 21:10:52 +/- 283.92 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 4/ 96 IS:
RA= 11.242 DEC= 4.028 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356762528. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -806.03 SECS.
CROSSING TIME AT MARS IS 76338. S. OR 21:12:17 +/- 139.76 SECONDS

BATSE BURST TRIGGER

NO.: 5417

TIME: TJD=0182 SECONDS=77144

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=43.7 AZIMUTH=351.5 ERROR=1.4 DEGREES

COMMENTS:

GRB. FAST RISE, EXPONENTIAL DECAY. DUR.~10SEC. POSSIBLE POST EMISSION AT
~T+35SEC. WITH DUR.~30SEC. POSSIBLE PRE EMISSION AT ~T-40SEC. WITH DUR.~
25SEC. TOTAL DUR.~100SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5417	960409	10182	77144	31000	043	+42	100

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	SEARCH	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	SEARCH	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	SEARCH	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

Helio corr removed

Date: Mar 6 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

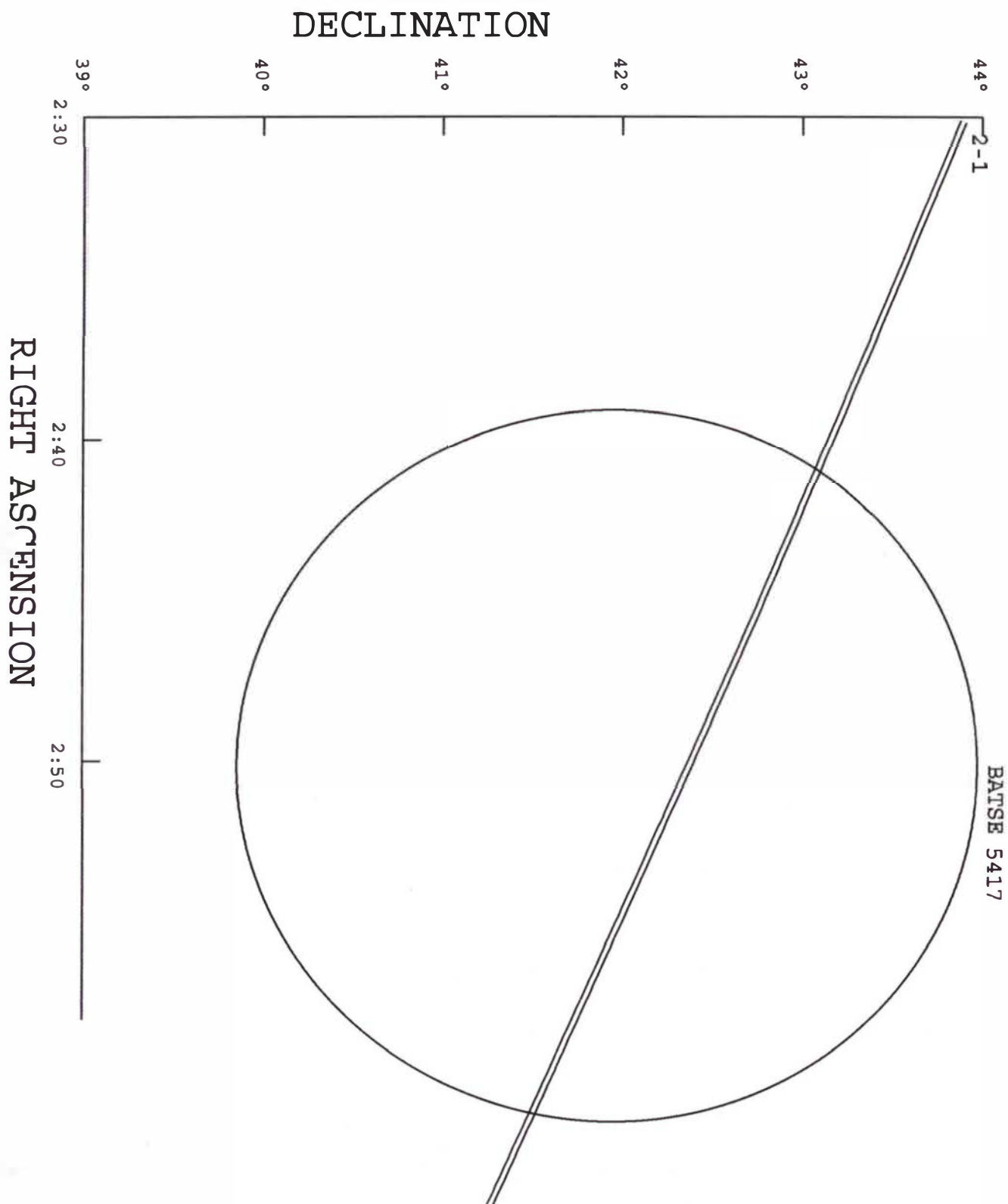
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 9, 1996 21:10

6 / 3 / 98



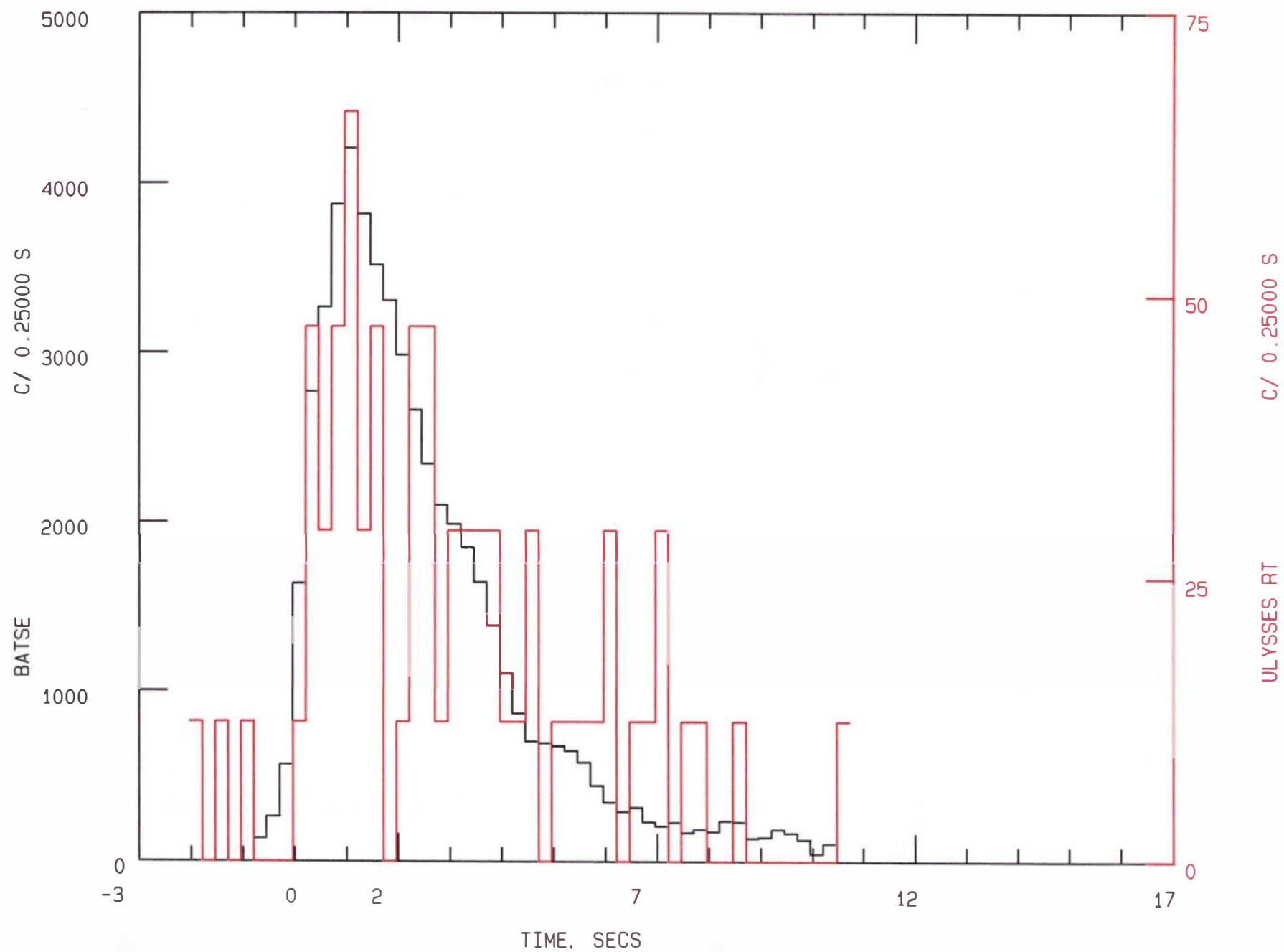
BATSE

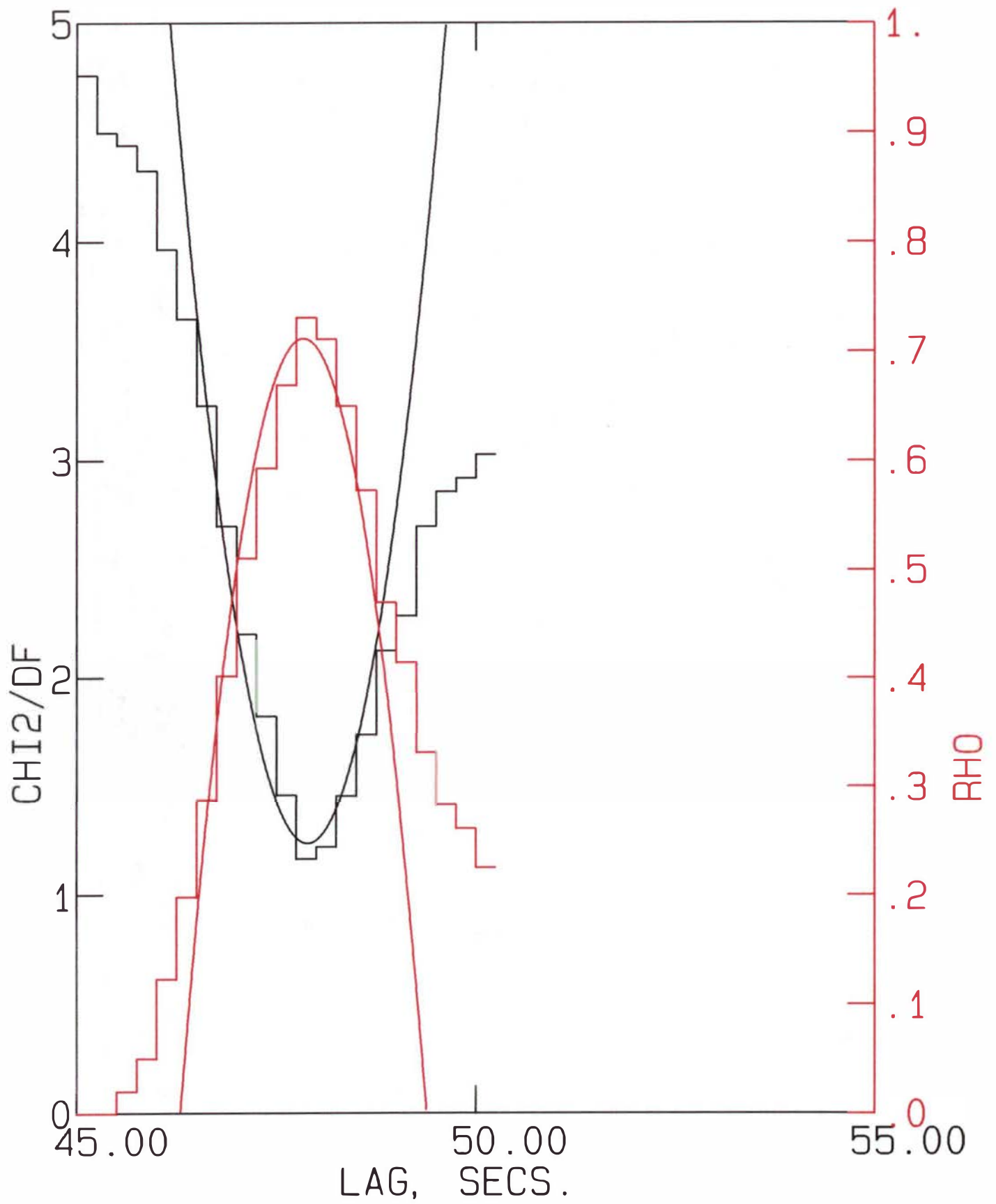
-ULYSSES RT CORRELATION

9/ 4/96

77144.970

6/ 3/98





ULYSSES RT

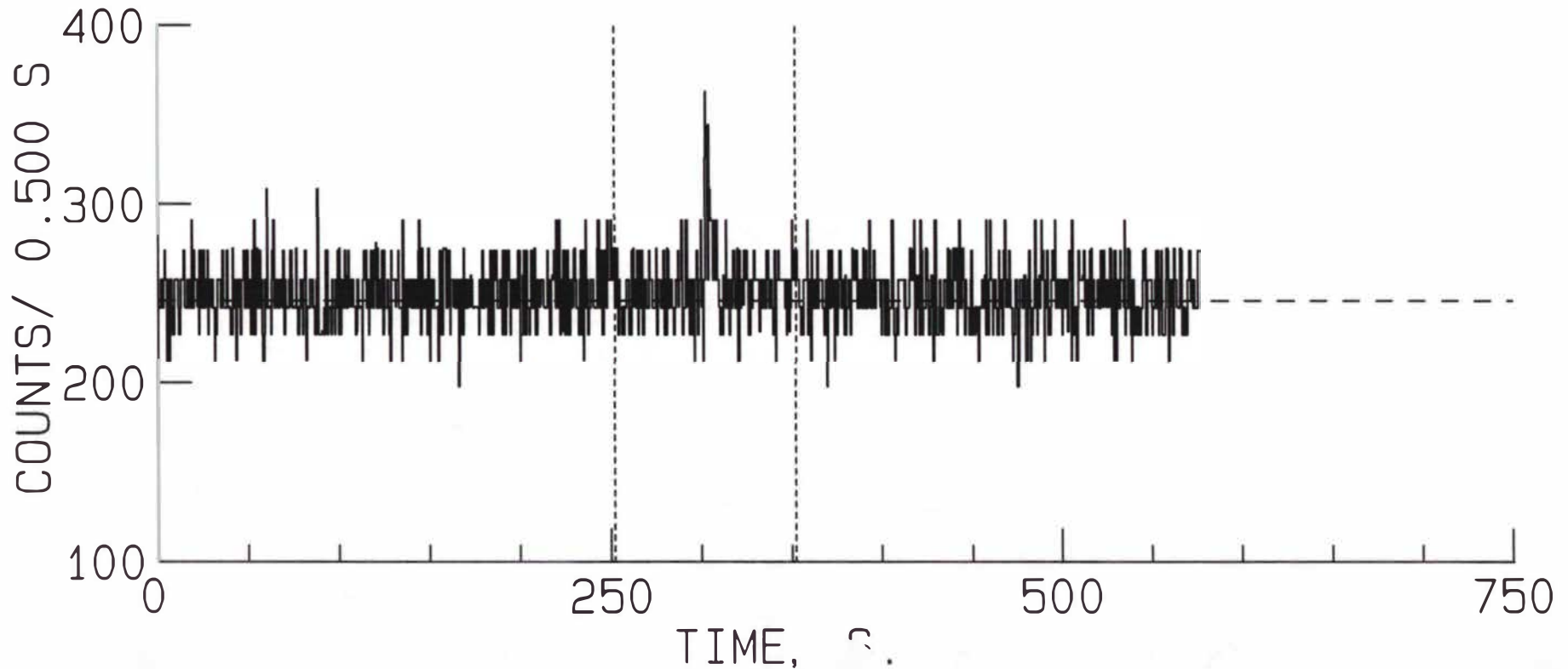
6 / 3 / 98

9 / 4 / 96 75960.114 s

0.250 S INTERVALS REGROUPED BY 2

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



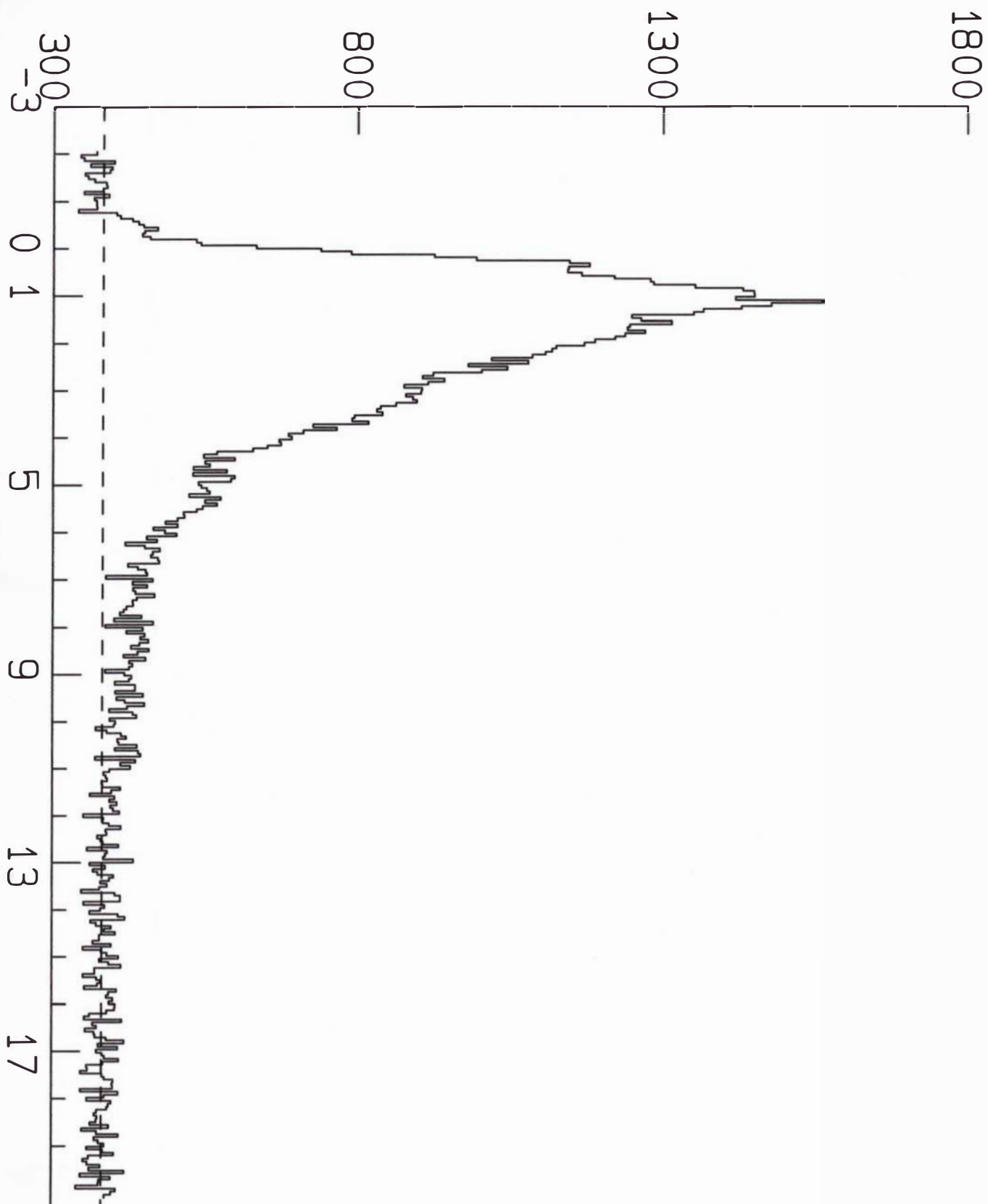
BATSE

09/04/96

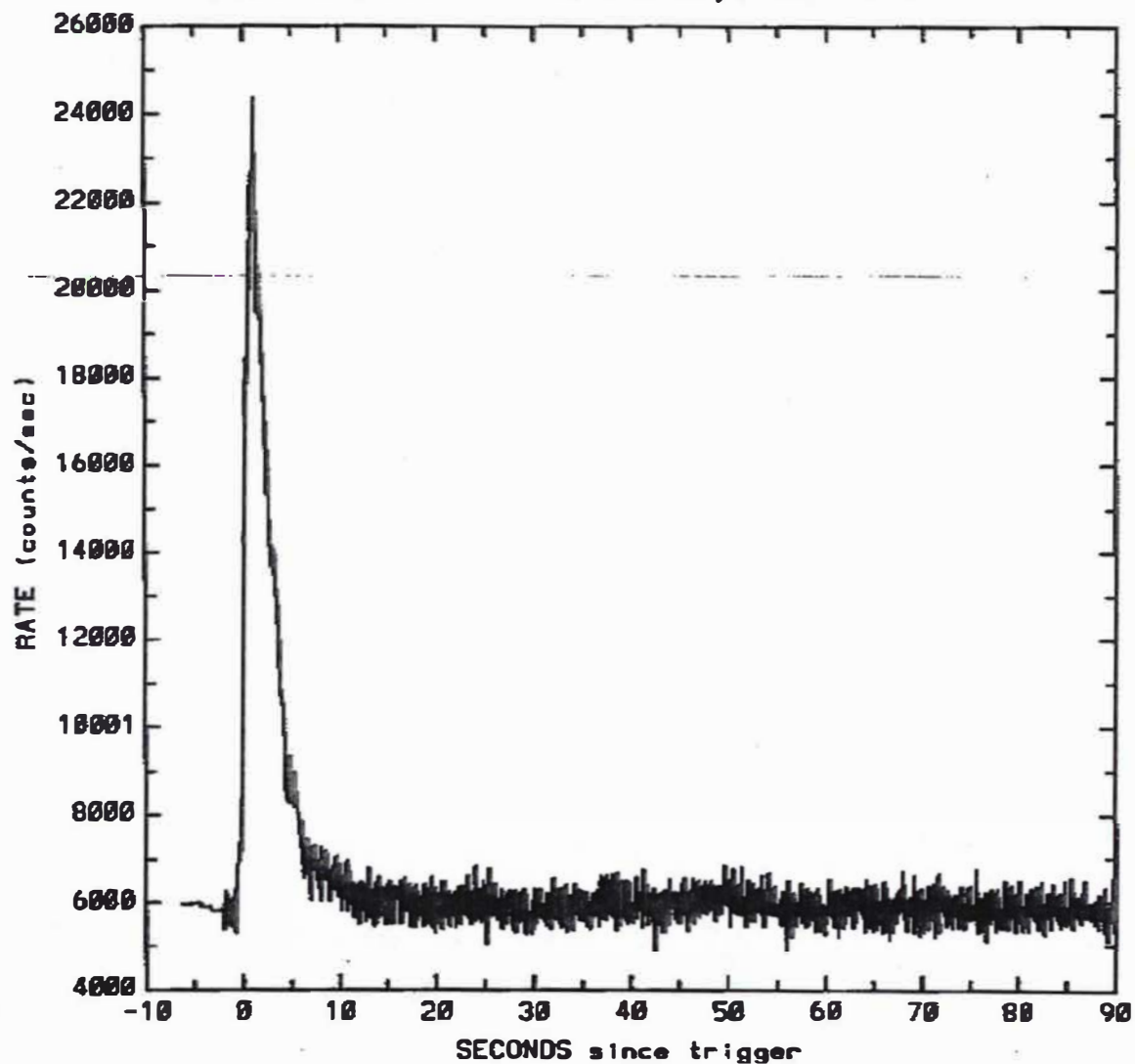
77144.970

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5417



6-DEC-1996 12:58:56

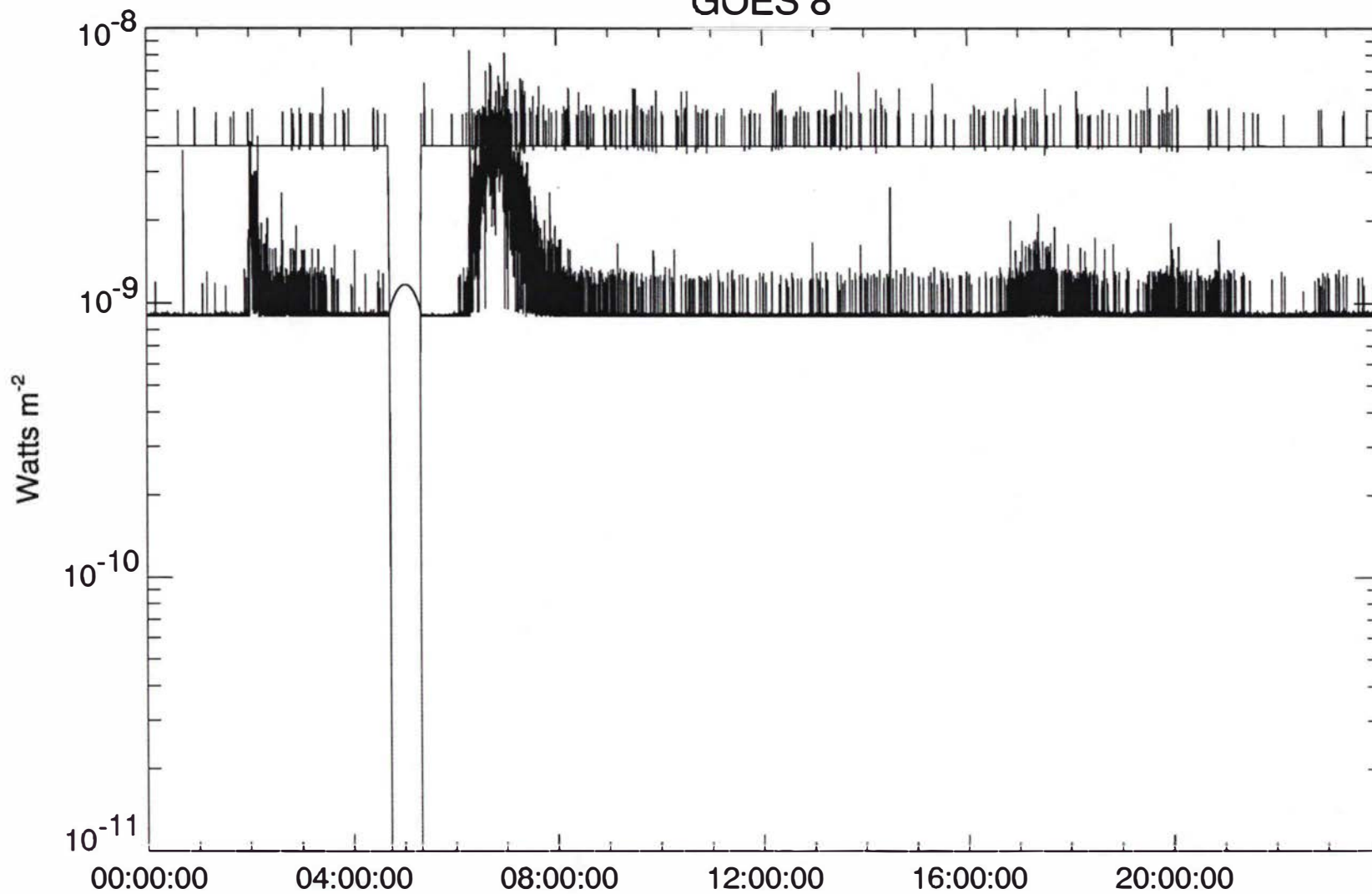
Created by NOPS 80
(Burst Display)
Version 12.25

Trigger # : 5417

Trigger Time:
18182 / 77144.978Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..0):
-----2-8Discriminators:
(1 , 2)Quality Mask:
BOTSP1

GOES 8

A

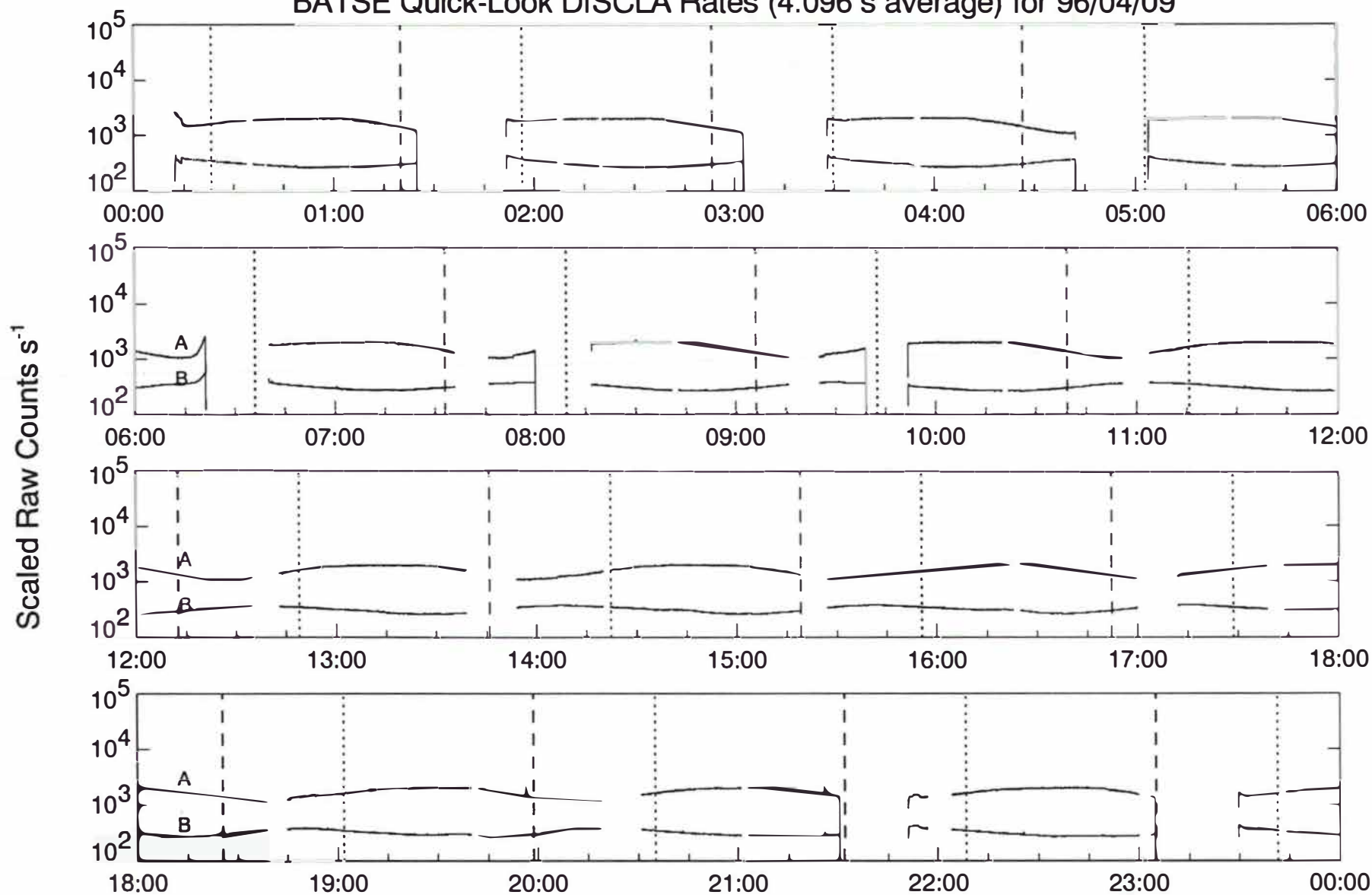


Data Start: 96/04/09, 0000:00

Plot created: 96/04/11, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/09



Current Time: 96/04/11, 1004 EDT

A: Channel 0 Most Sunward LAD

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

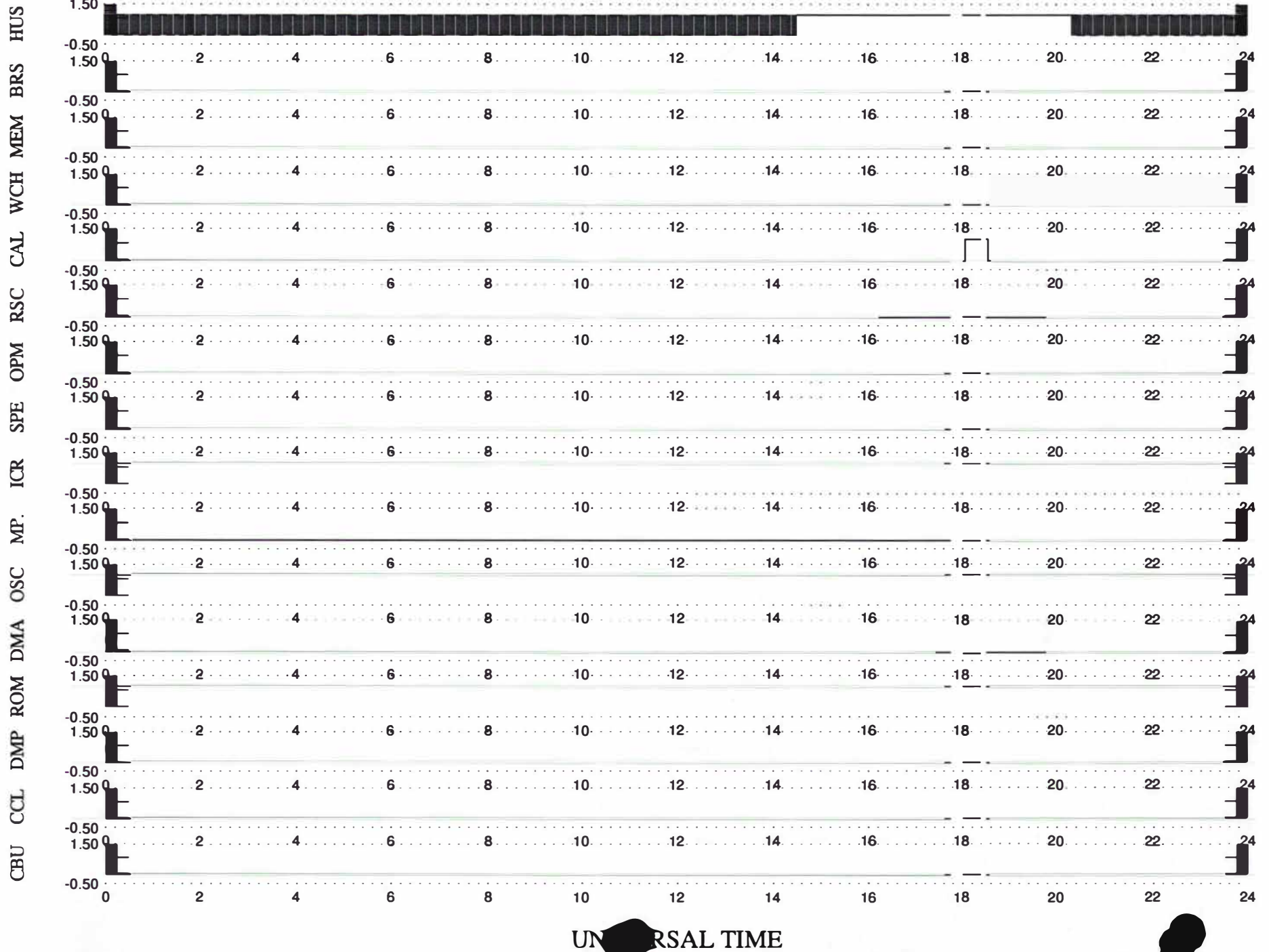
Dotted line: Day entry

Dashed line: Night entry

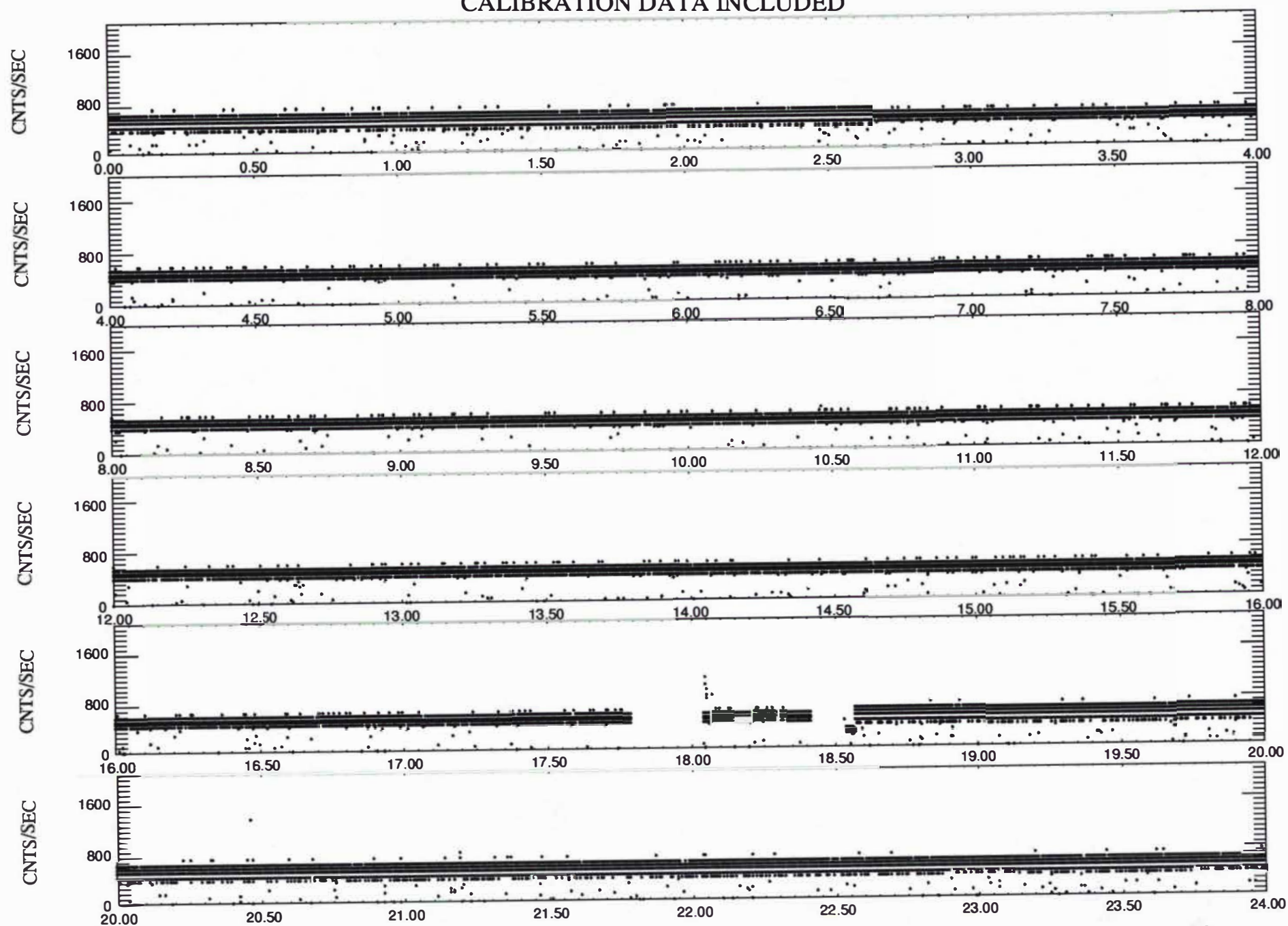
* Solar Burst Trigger

+ Solar Flare

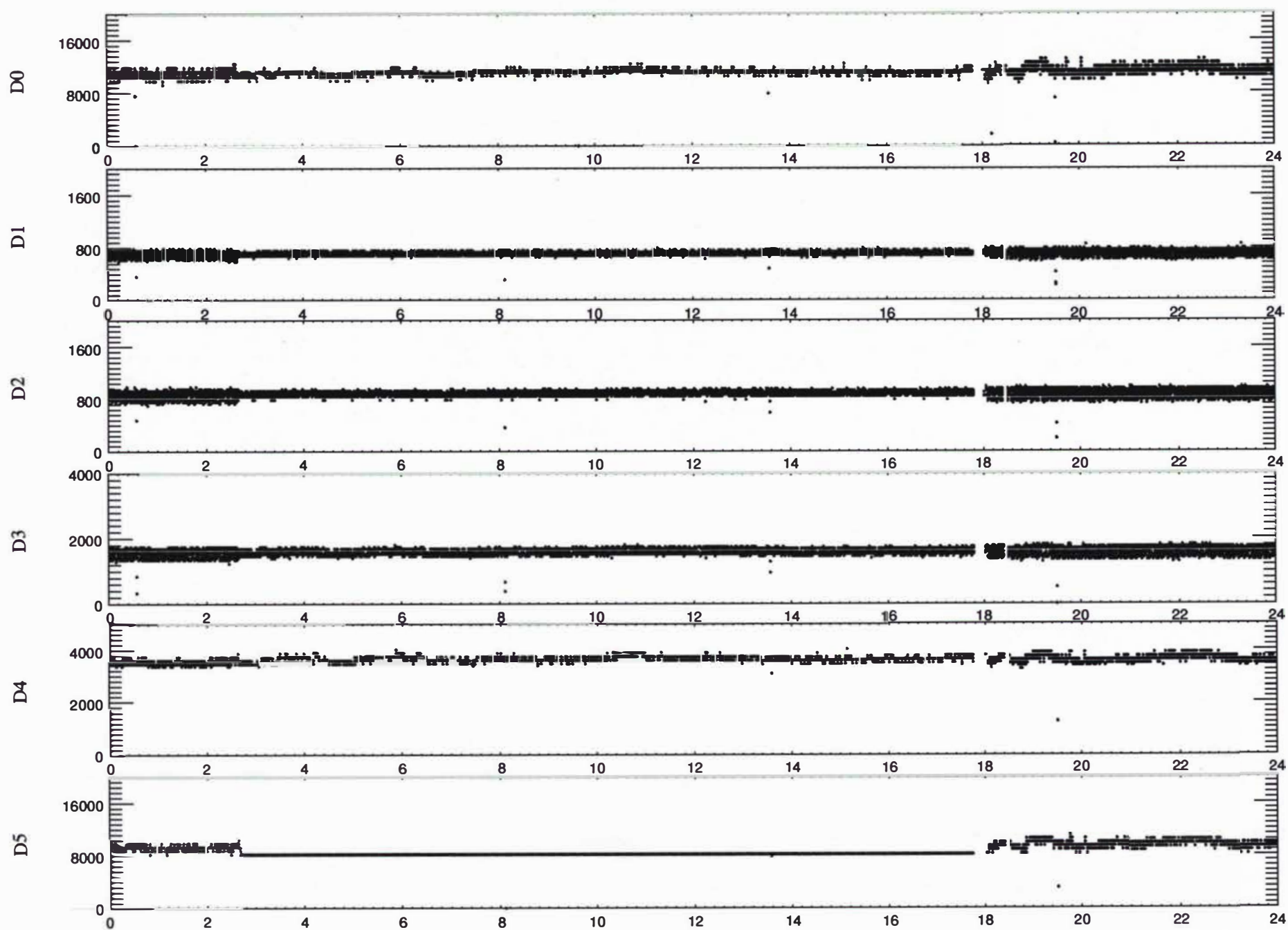
NO BURST (6)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

Date: 28 Sep 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

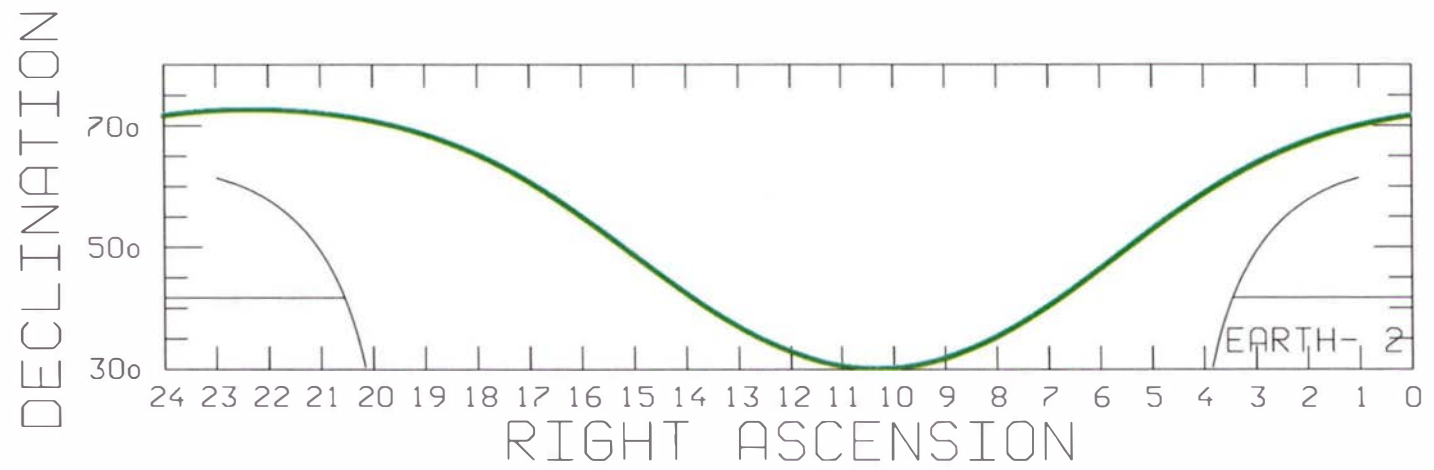
- ☒ Jim Schmidling's stat file correction applied?
- ☐ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ Were data checked by Joe Springer for 0.5 s errors?
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is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

2. BATSE Data

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

3. PVO Data

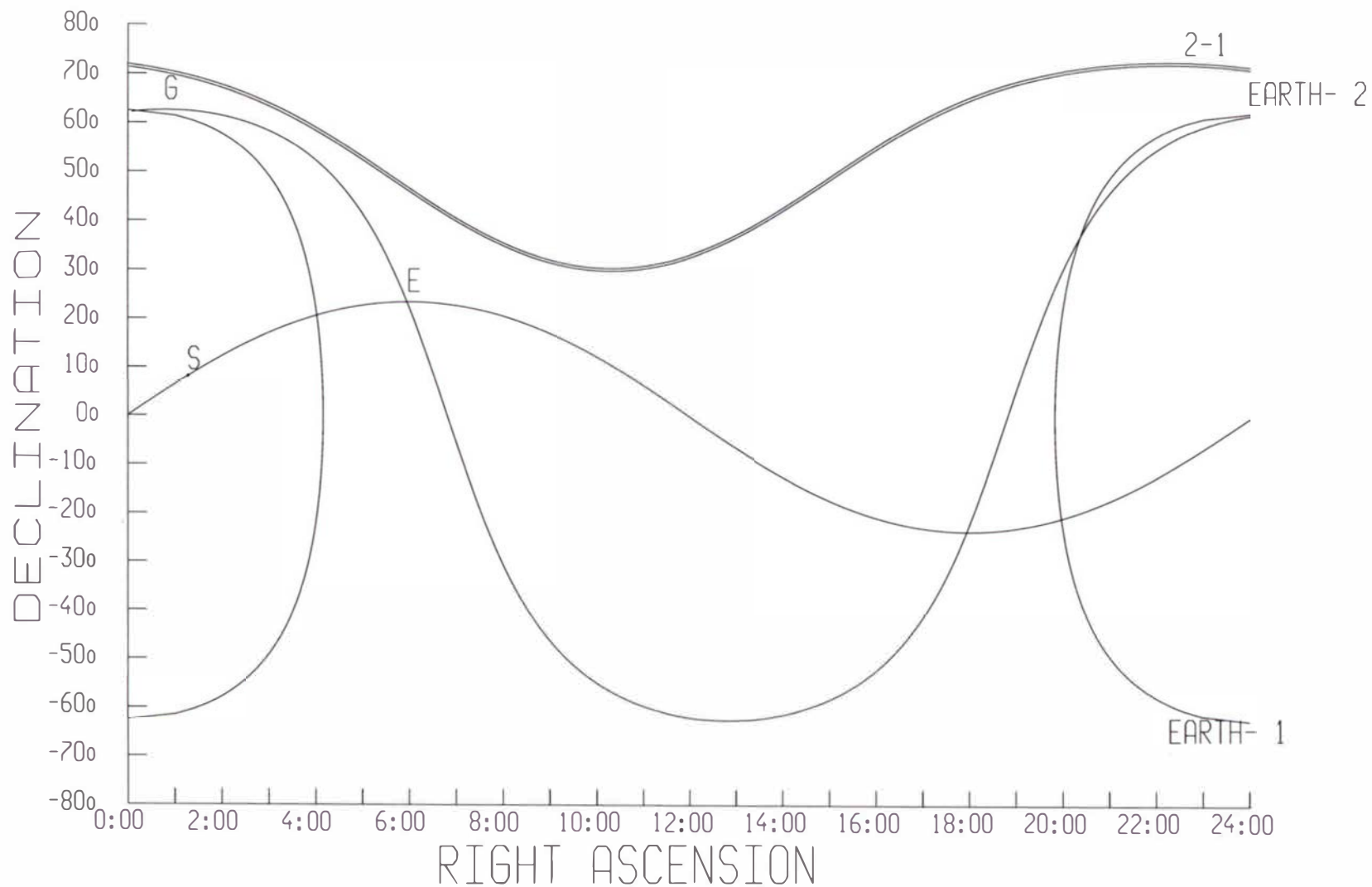
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS and MBL databases updated with identical times?



EVENT OF APR 10, 1996 12:02

28/09/2011

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 DMSP12



DMSP 19960410 43373

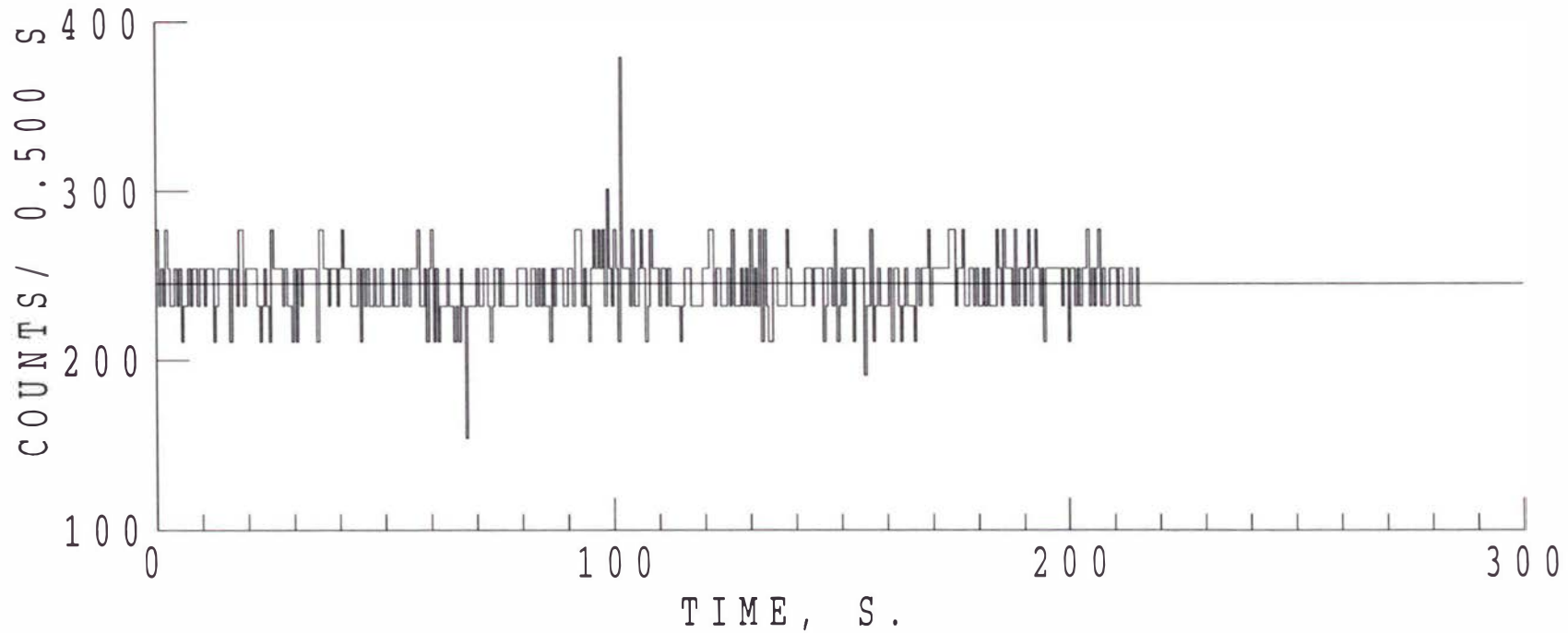
ULYSSES RT

27 / 09 / 11

10/04/96 43272.102 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From TERRELL@nisdpo.lanl.gov Fri Jun 28 13:58 PDT 1996

From: TERRELL@nisdpo.lanl.gov

Date: Fri, 28 Jun 1996 14:58:51 -0600 (MDT)

To: khurley@sunspot.ssl.berkeley.edu

Subject: DMSP detections

From: jterrell@lanl.gov (James Terrell) 960628

To: khurley@sunspot.ssl.berkeley.edu, butterworth@lheavx.gsfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, kmarar@isac.ernet.in,
scott@rosserv.gsfc.nasa.gov, teegarden@lheavx.gsfc.nasa.gov,
yosimori@rikkyo.ac.jp

Subj: DMSP GRB detections of non-BATSE bursts (960410, 960612)

DMSP 12 detected the ULYSSES/KONUS burst of 960612 as a hard (>550 keV) multiple burst, with peaks at 71201.8, 71205.8, and 71209.8 sec UT (2-sec counts), extending over 14 sec. DMSP 13 did not detect it, but was entering the South Atlantic Anomaly.

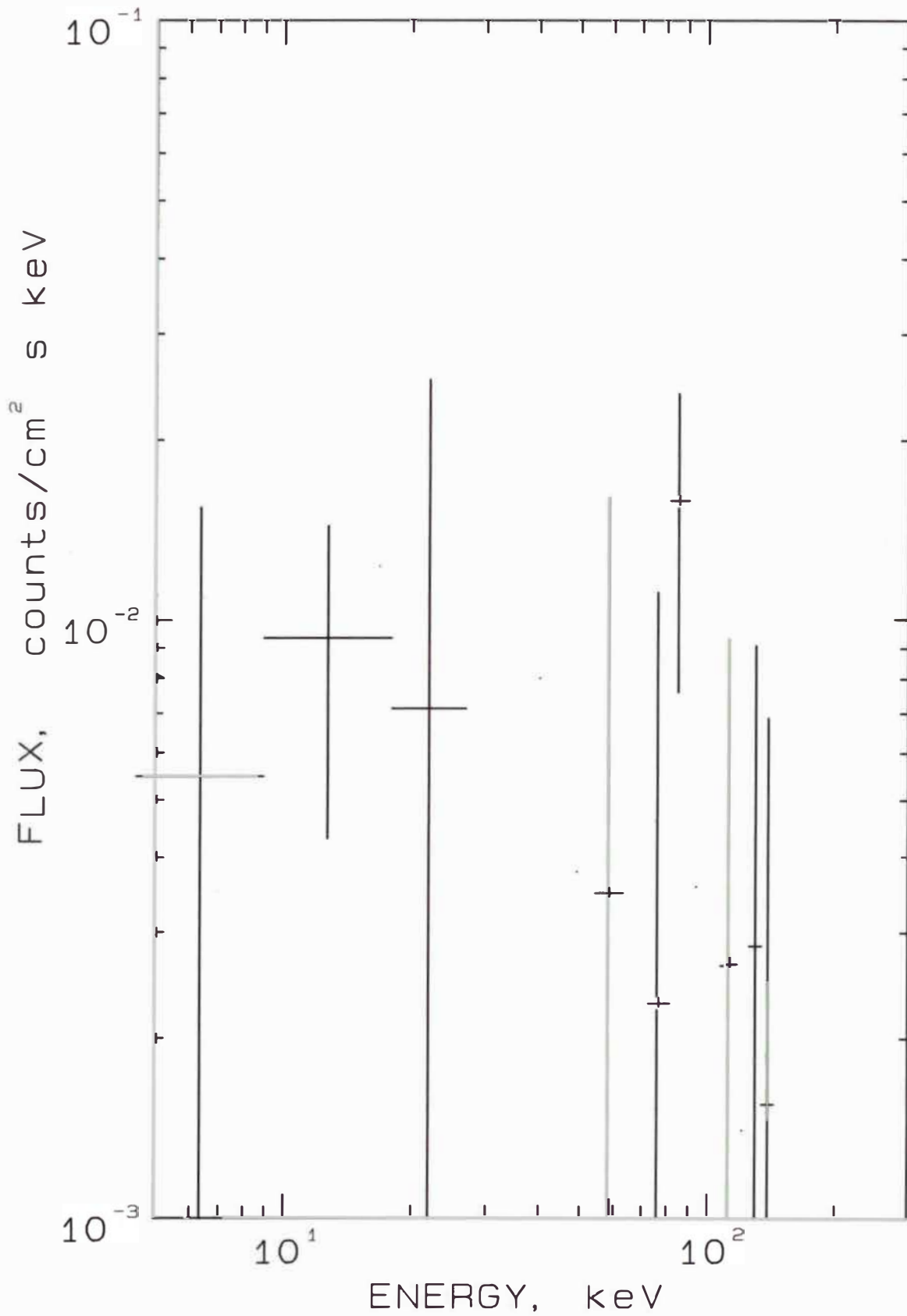
DMSP 12 apparently detected the ULYSSES (<2 sec) of 960410 (43320 UT) as a short (<2 sec) moderately hard (>200 keV) burst at 44685.5 UT peak, but DMSP 13 did not.

Other ULYSSES bursts in the 960229--960531 range were not (or apparently not) detected, in some cases because of radiation belts. --Jim

ULYSSES 10/04/96 43373.952

20/11/97

SPECTRUM INTEGRATED OVER 10.7 SECONDS, INTERVALS 2 TO 13



ULYSSES 10/04/96 43373.952 BURST SPECTRAL COUNT RATES

4- 18 keV

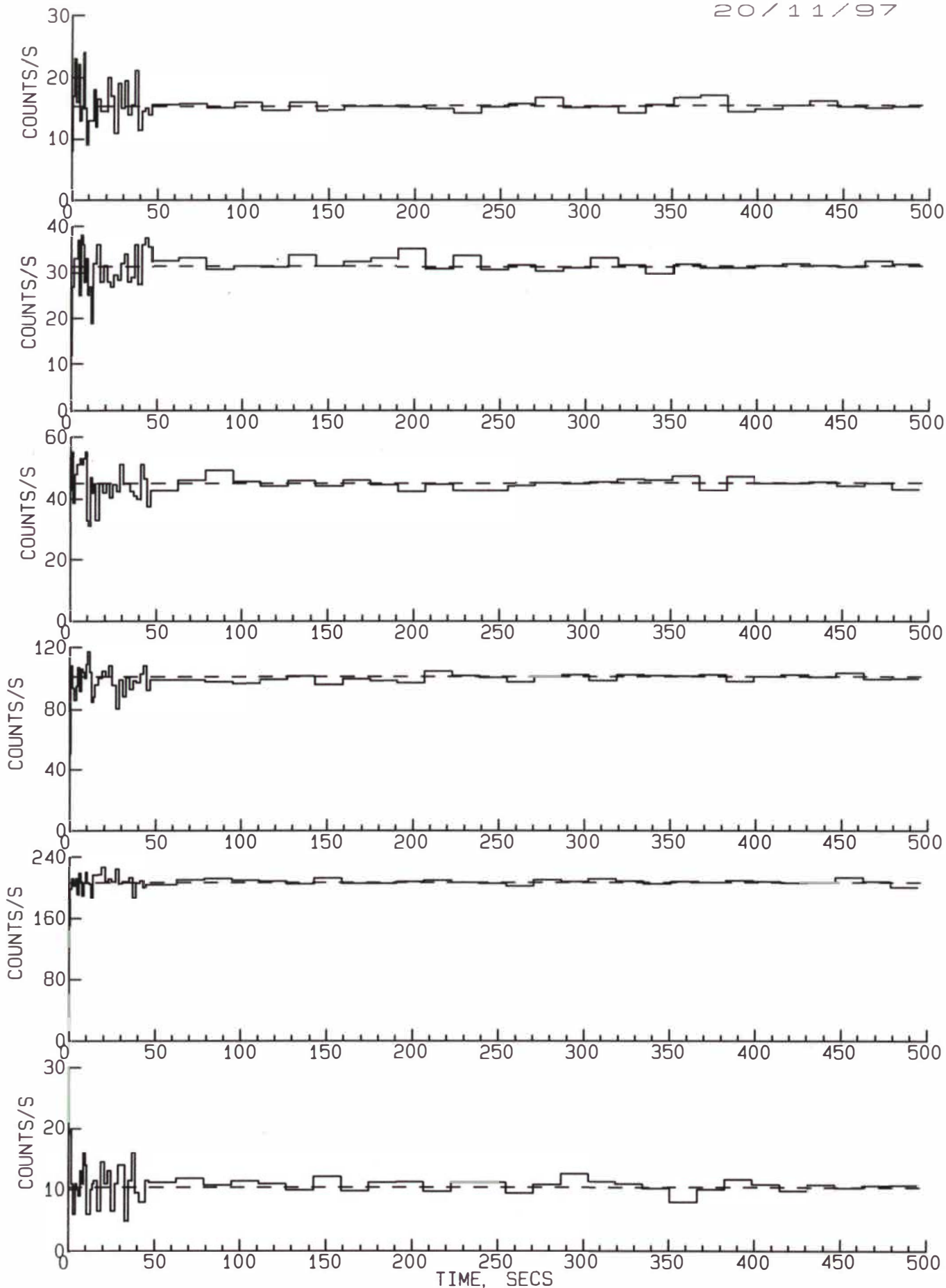
18- 45 keV

45- 72 keV

72- 99 keV

99-126 keV

126-144 keV



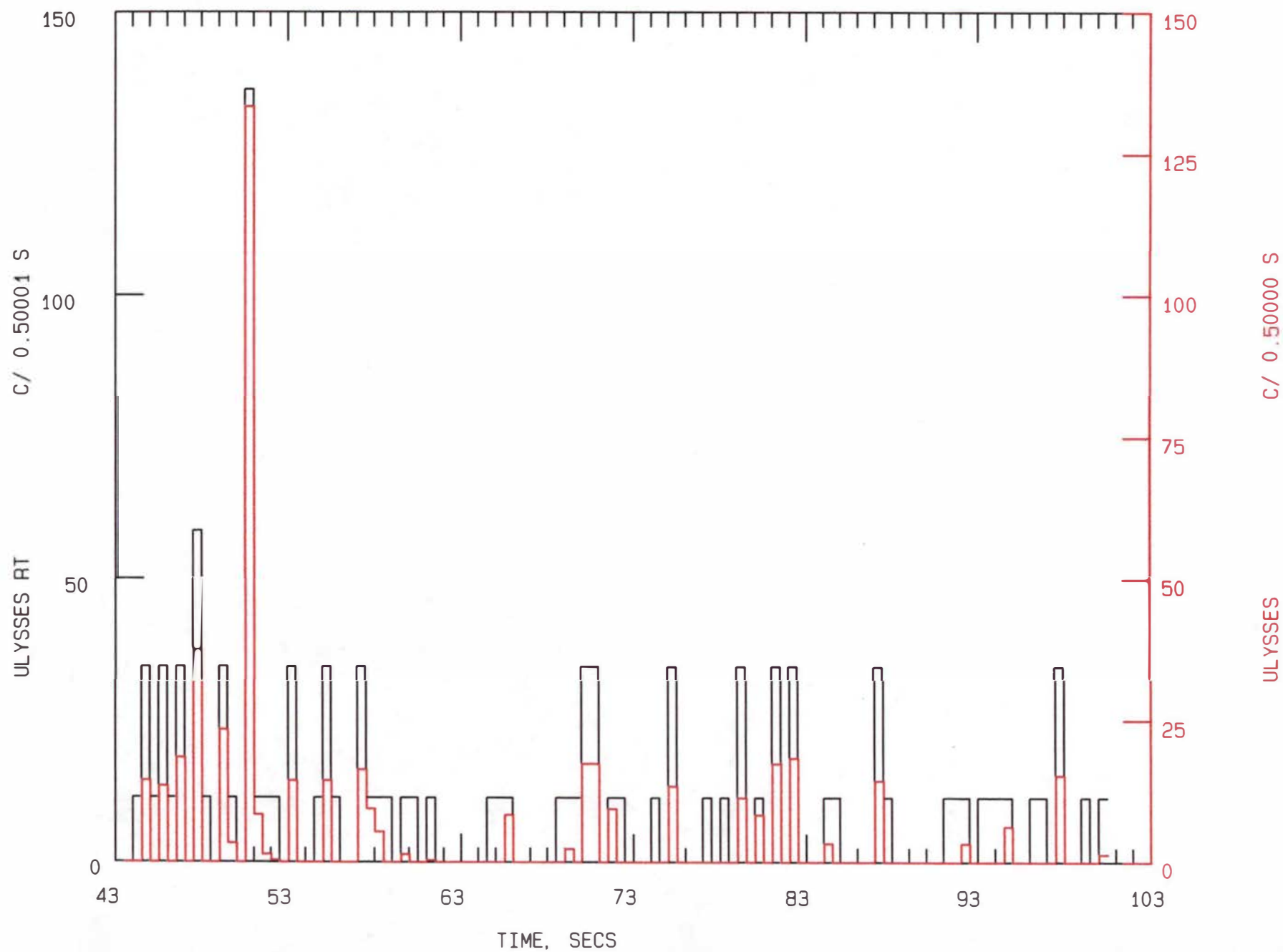
ULYSSES RT-ULYSSES

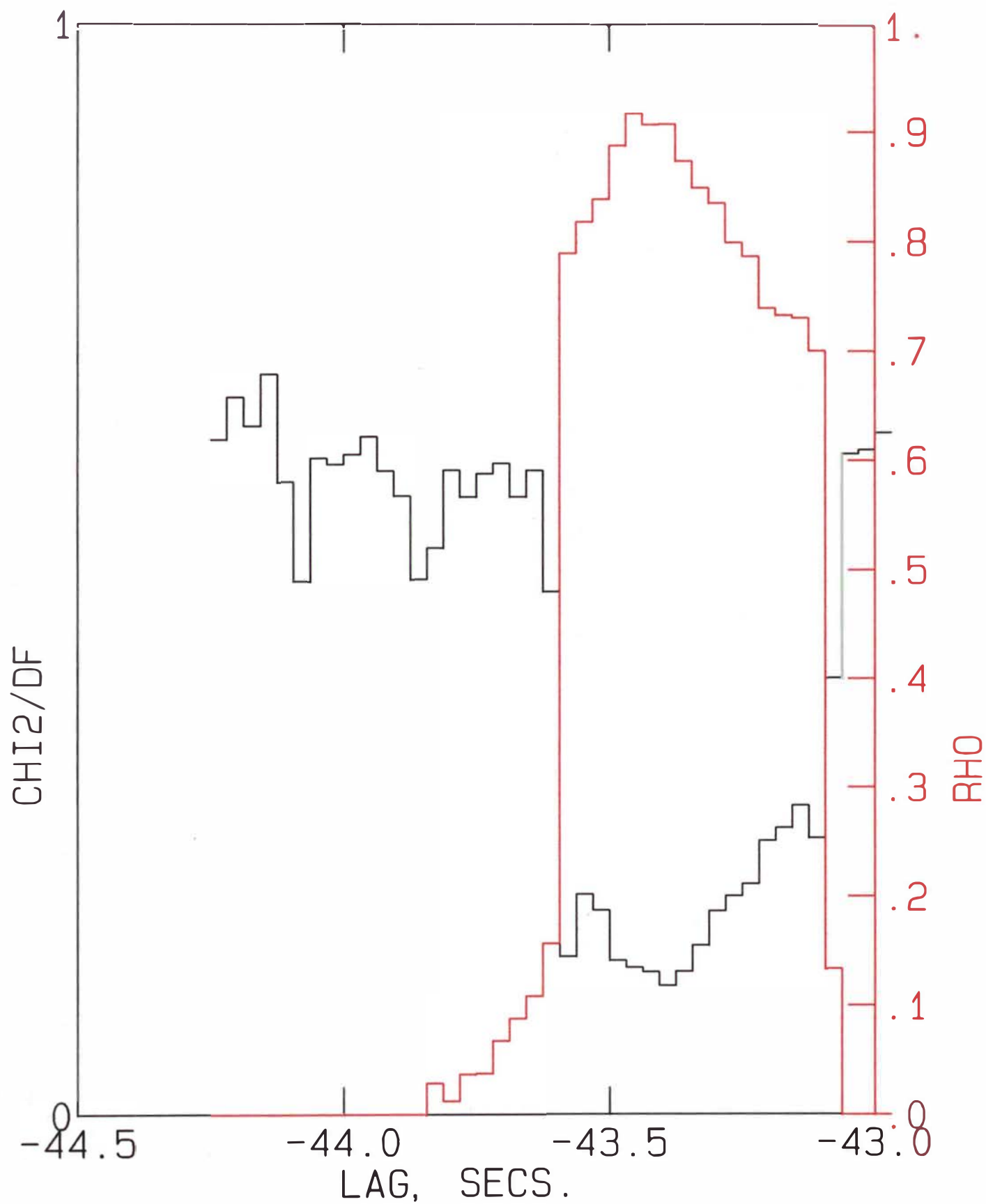
CORRELATION

10/ 4/96

43323.009

20/11/97





ULYSSES

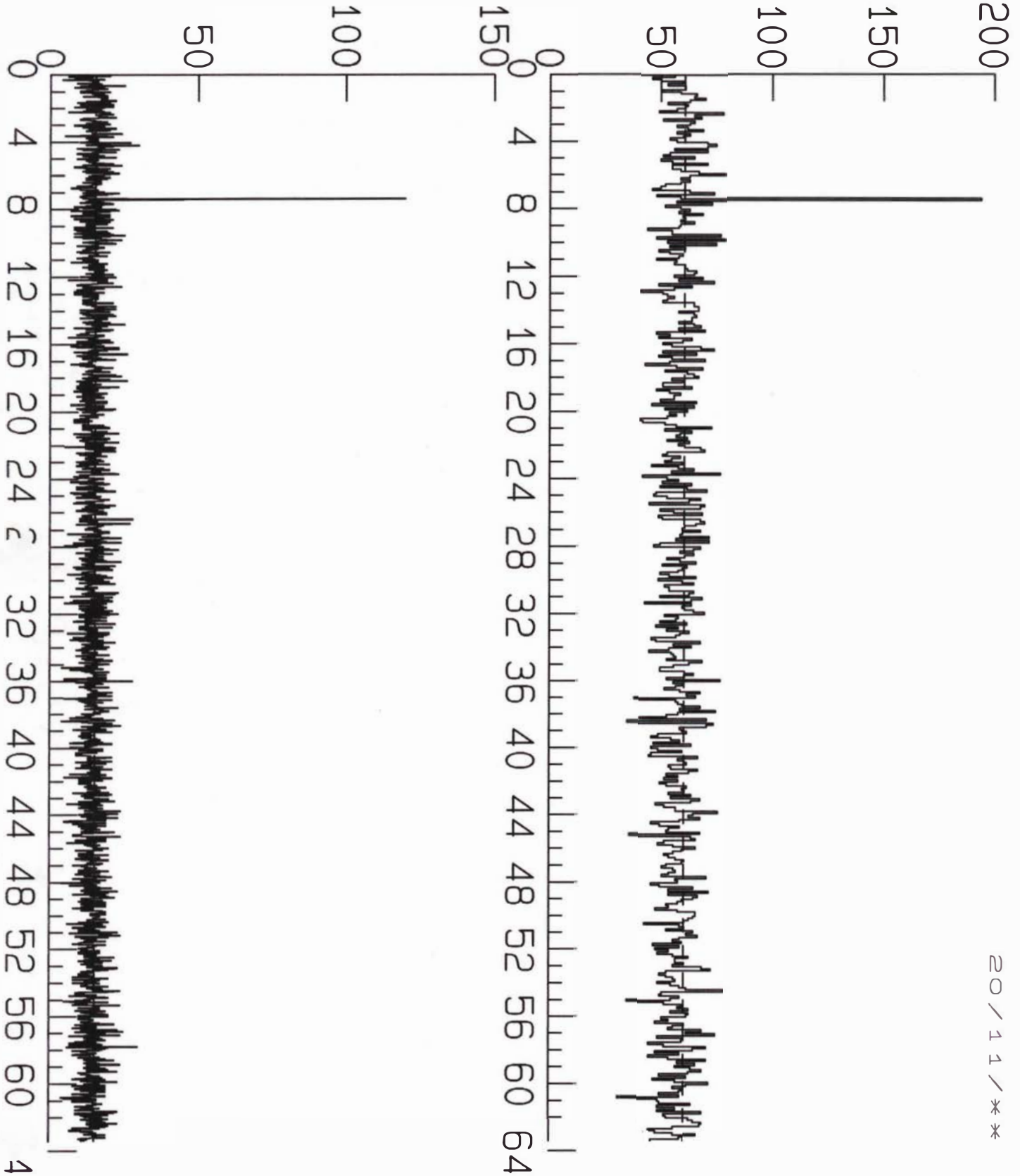
10/04/96

Ttrig=43373.871

0- 0 keV

COUNTS/0.031 S

COUNTS/0.125 S



20 / 1 1 / ** *

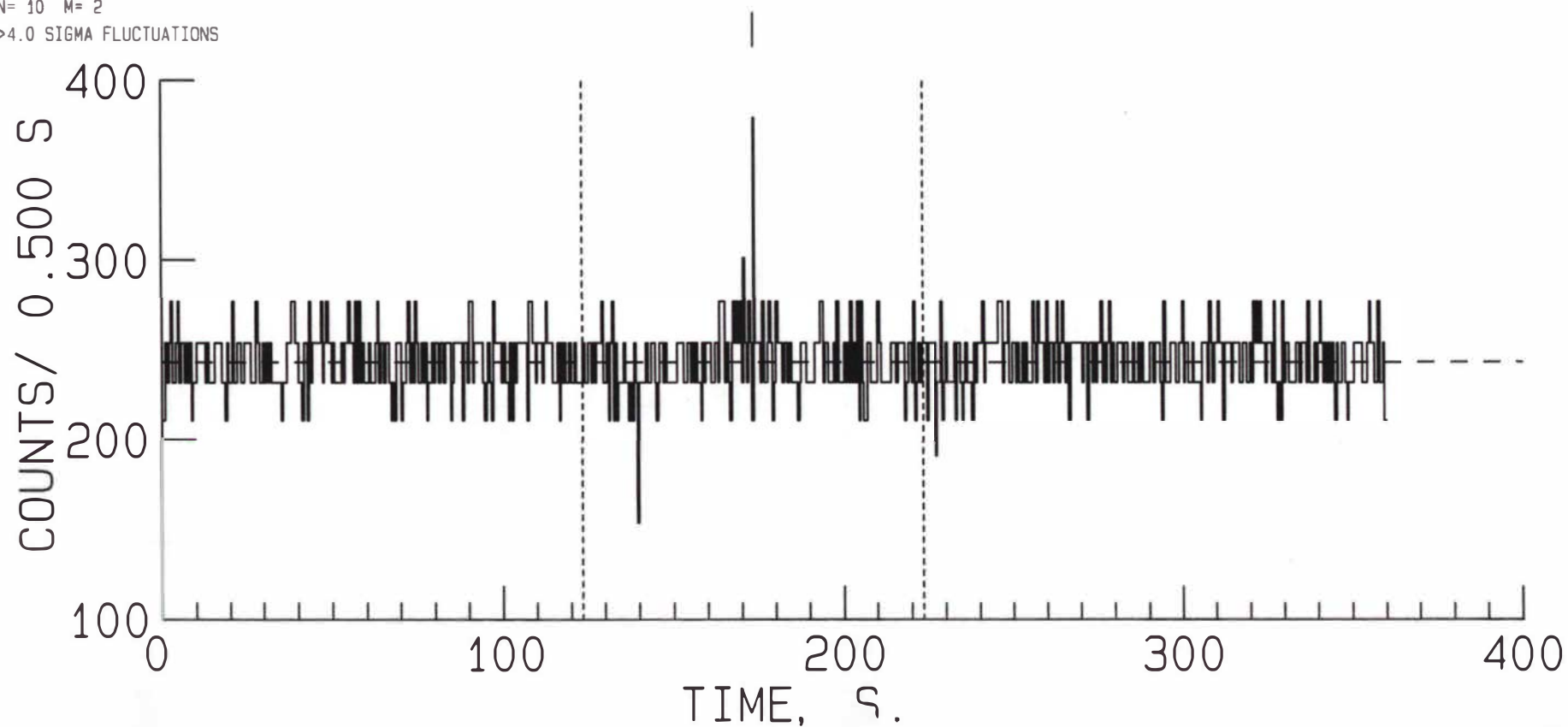
ULYSSES RT

20 / 11 / 97

10/ 4/96 43200.100 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: 28 Sep 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

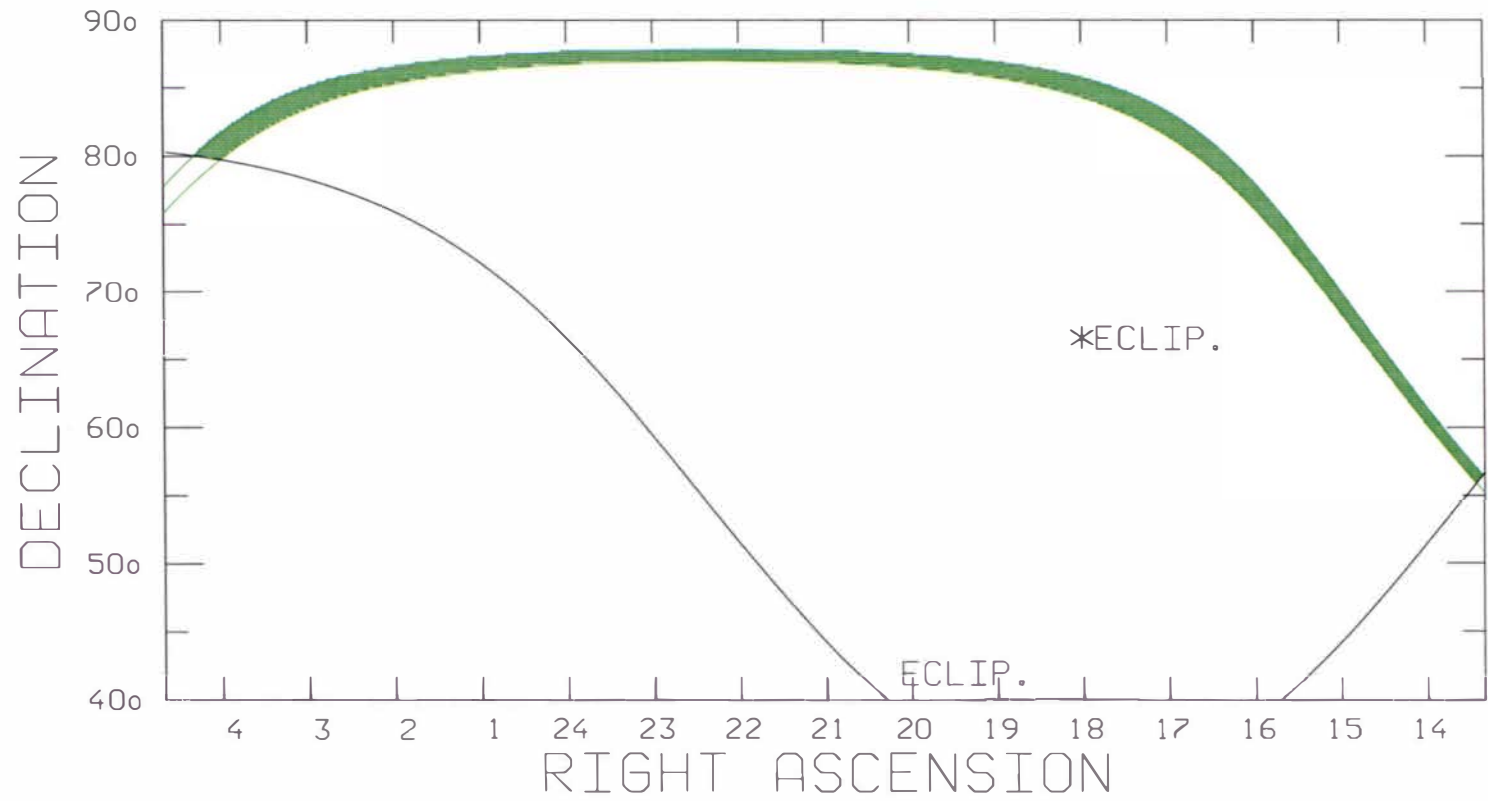
- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ Were data checked by Joe Springer for 0.5 s errors?
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☒ Is the order of the data in CORREL such that a vernier is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

2. BATSE Data

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

3. PVO Data

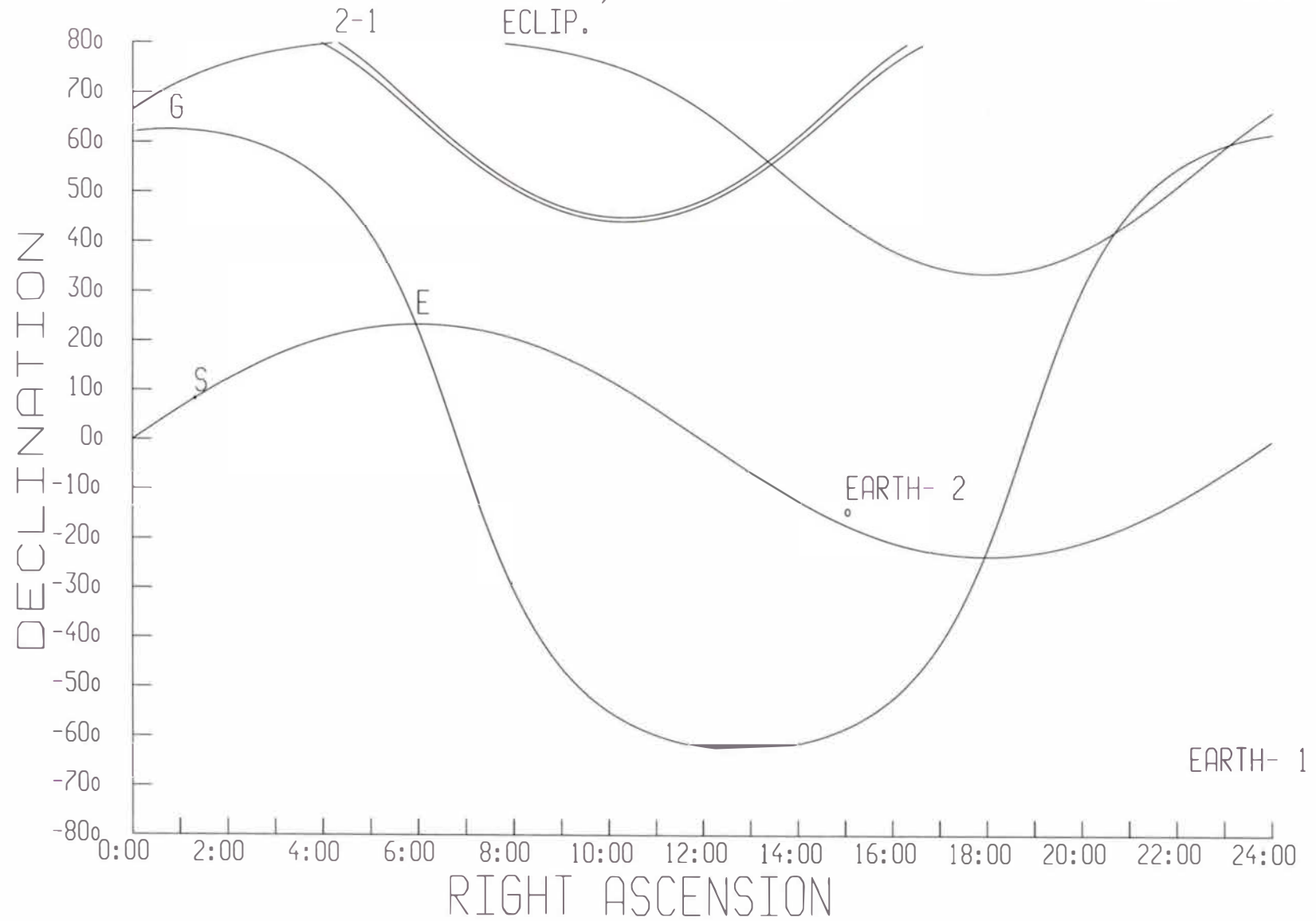
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS and MBL databases updated with identical times?



EVENT OF APR 10, 1996 21:57

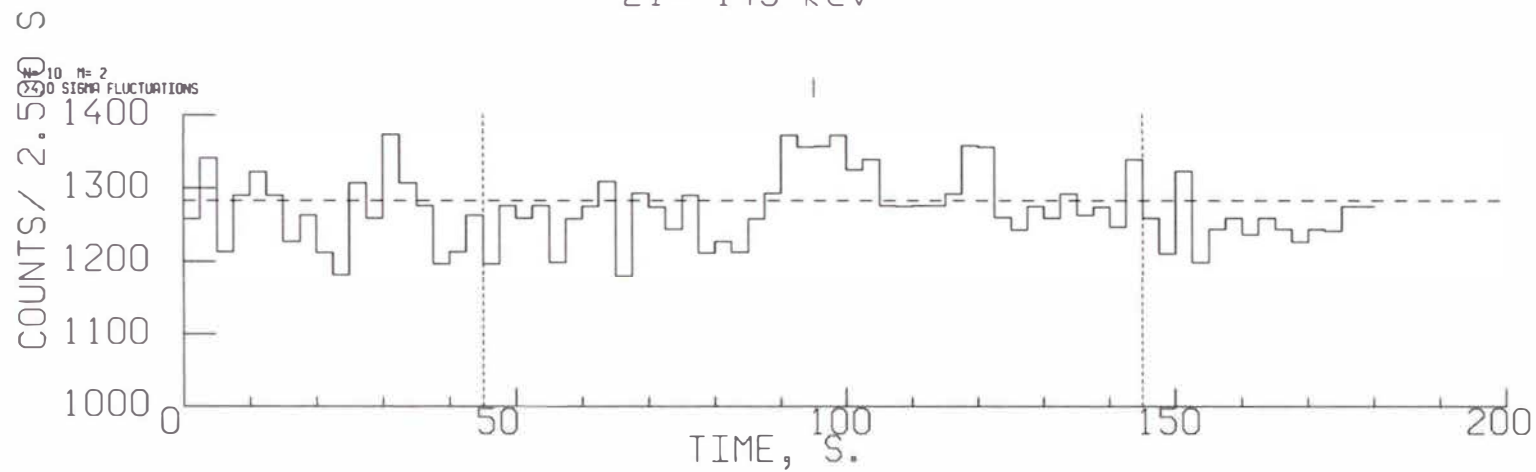
28/09/2011

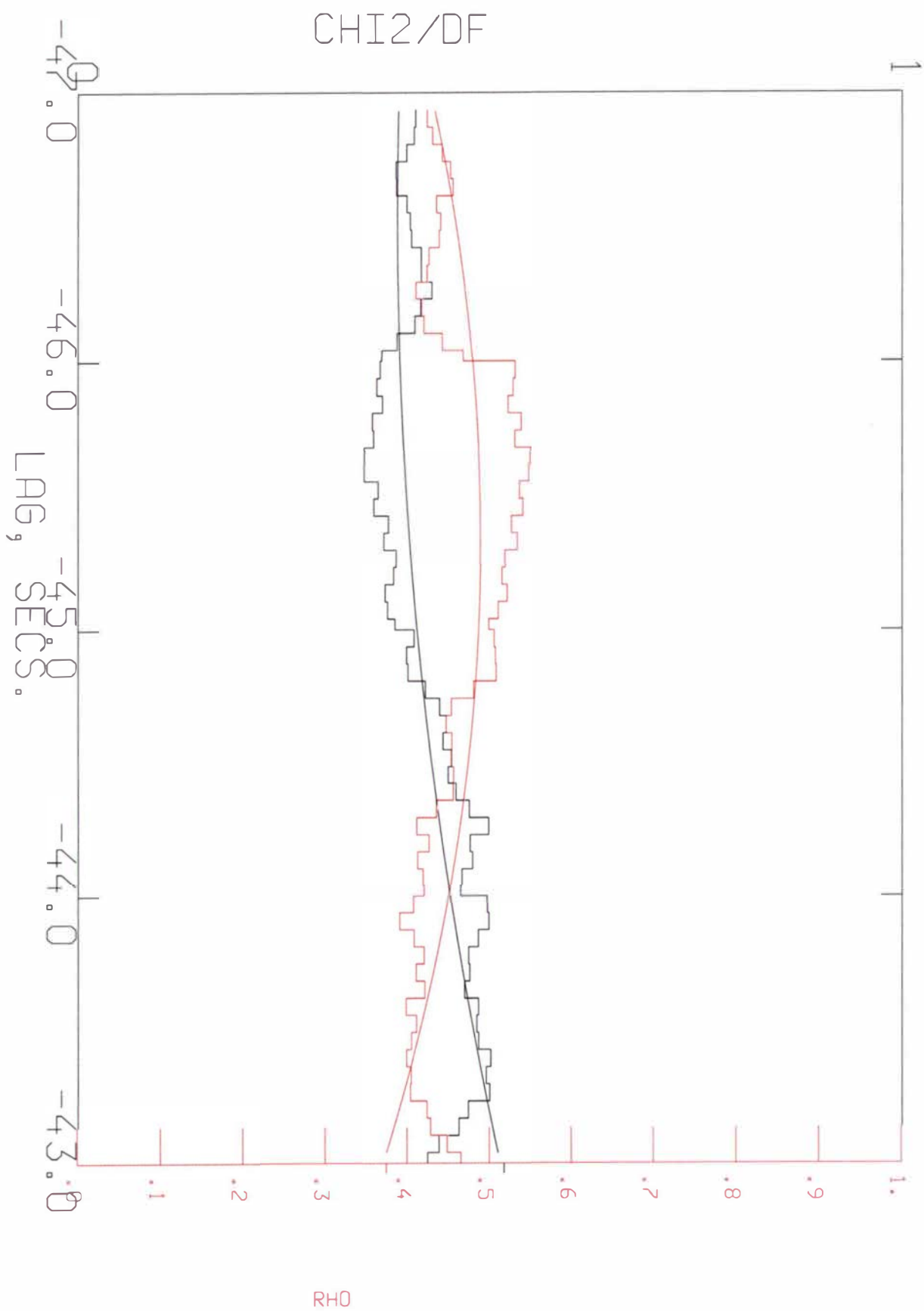
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS2

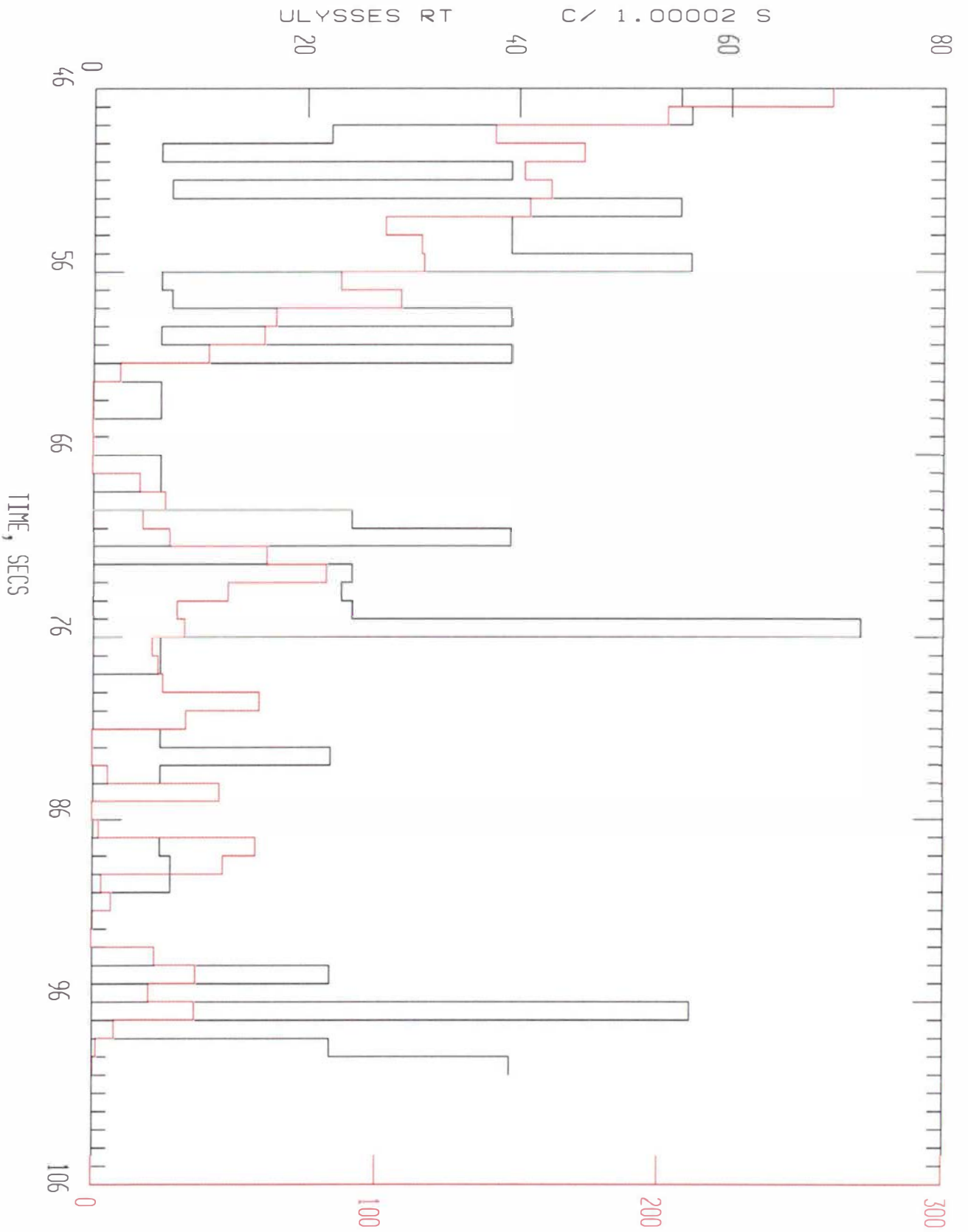


ULYSSES RT
10/ 4/96 79020.086 s
0.250 S INTERVALS REGROUPED BY 10
21- 145 keV

28/ 9/11







KONUS 19960410 79112

ULYSSES RT

27 / 09 / 11

10/04/96 79020.086 s

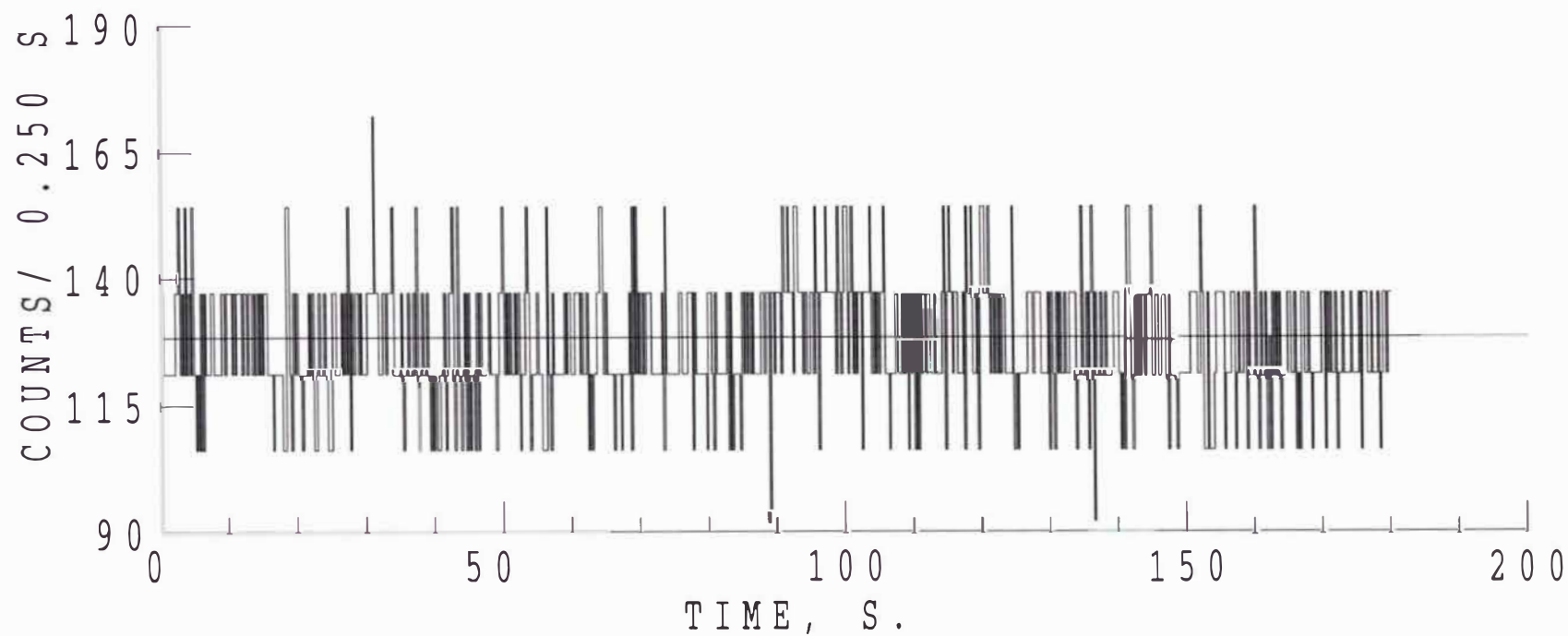
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

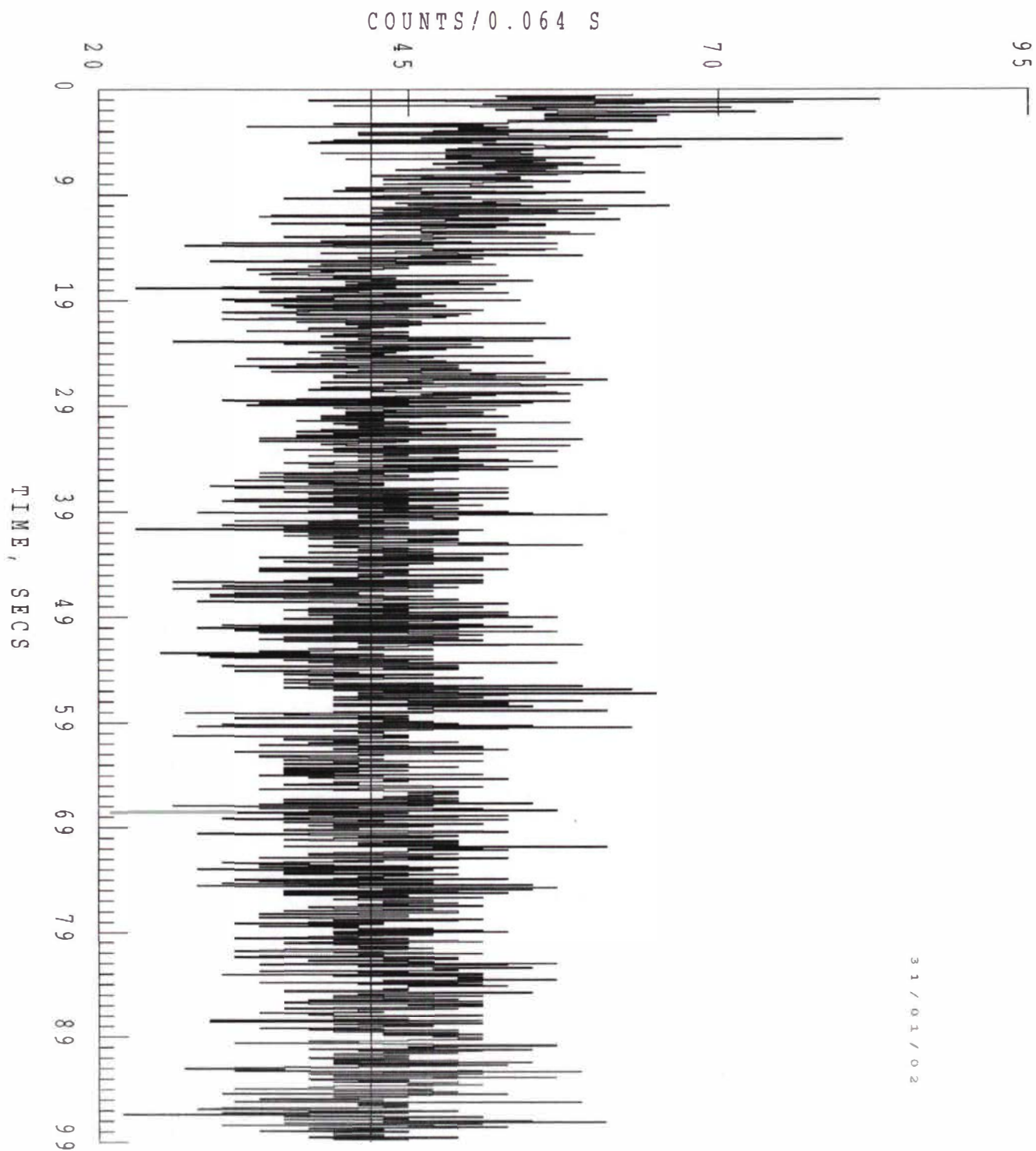


KONUS2

10/04/96

80648.201

50 - 200 keV



KONUS2 19960410 80648

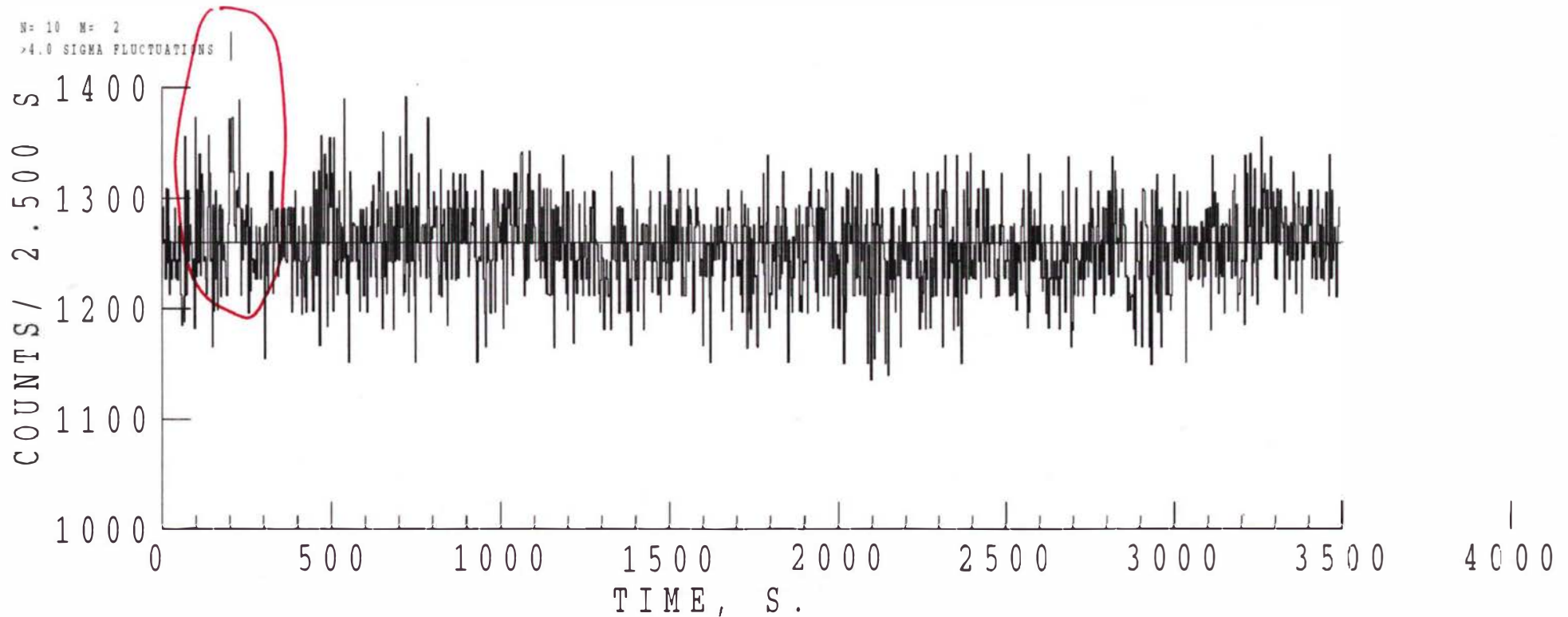
ULYSSES RT

31 / 01 / 02

10 / 04 / 96 78912.086 s

0.250 S INTERVALS REGROUPED BY 10

0 - 0 keV



From BUTTERWORTH@LHEAVX.GSFC.NASA.GOV Mon Apr 15 11:22 PDT 1996
From: BUTTERWORTH@LHEAVX.GSFC.NASA.GOV
Date: Mon, 15 Apr 1996 14:22:41 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, CLINE@LHEAVX.GSFC.NASA.GOV,
scott@rosserv.gsfc.nasa.gov, TEEGARDEN@LHEAVX.GSFC.NASA.GOV
CC: BUTTERWORTH@LHEAVX.GSFC.NASA.GOV
Subject: Konus saw nothing corresponding to the April 10, 12.02 UT Ulysses event

Hi Everyone,

Konus only triggered once on the 10th, at 22:24 UT. There is nothing in the waiting-mode measurements (which are integrated over 1.5 seconds) to indicate that a significant event occurred between 11.30 and 12.30 UT.

Paul.

Date: Mon, 15 Apr 1996 10:30:41 +0800
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <9604151730.AA08129@gammaray.>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp
X-Sun-Charset: US-ASCII

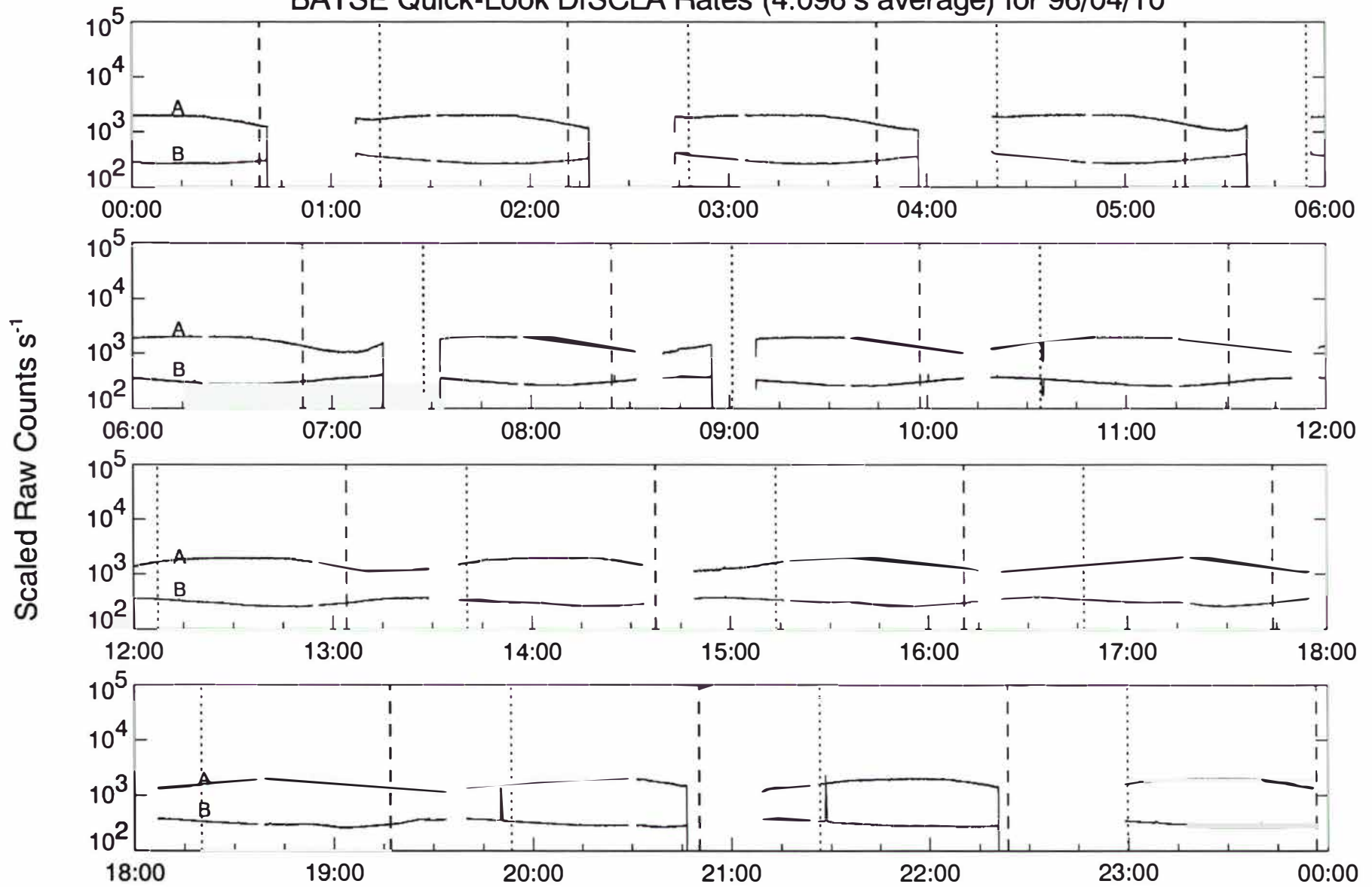
ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses triggered on an intense, 32 ms long event April 10 1996 around 12:02 UT at Ulysses. The spacecraft was about 1600 light-seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, marar, teegarden, terrell, yoshimori)

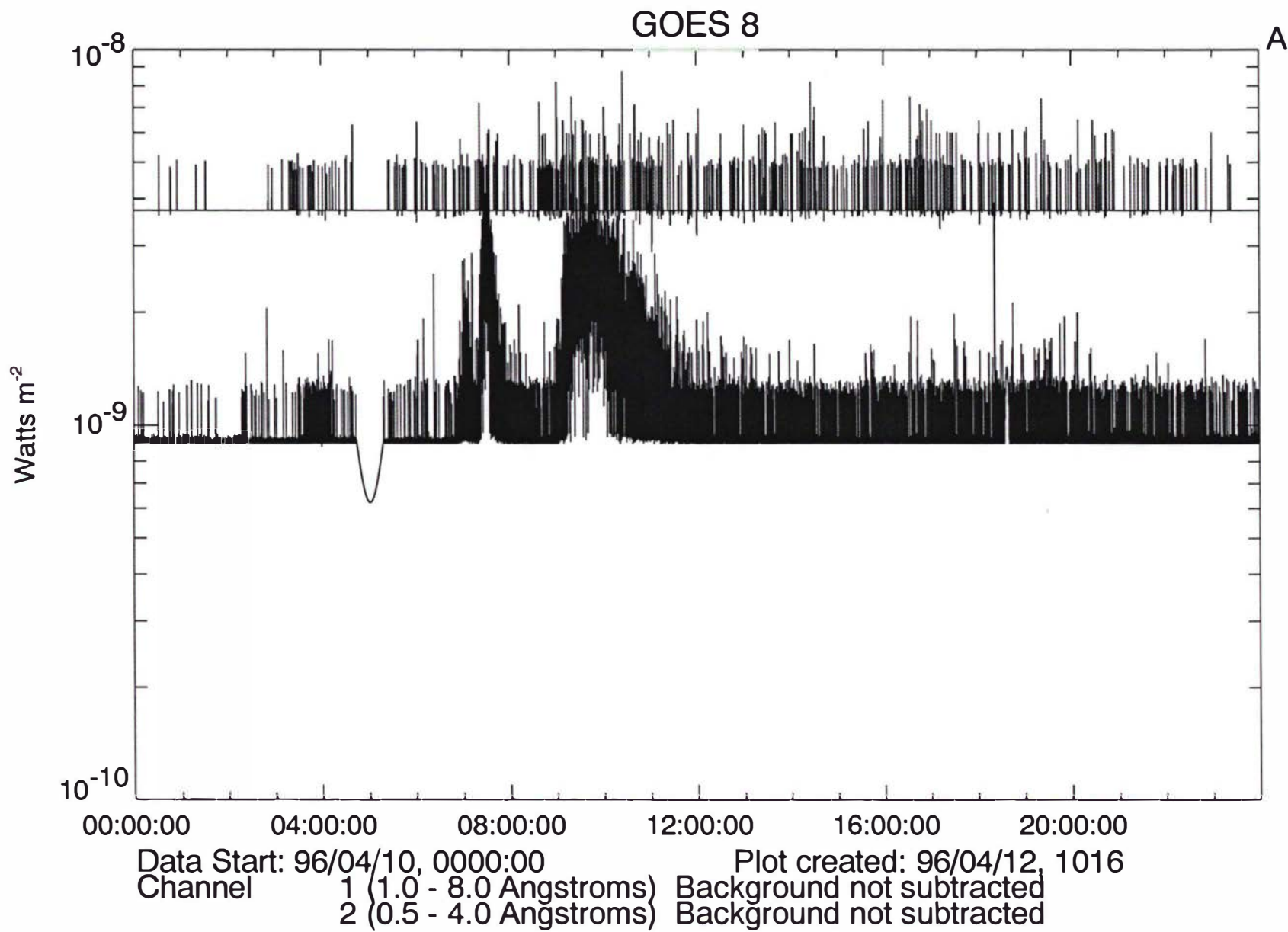
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/10



Current Time: 96/04/12, 1017 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

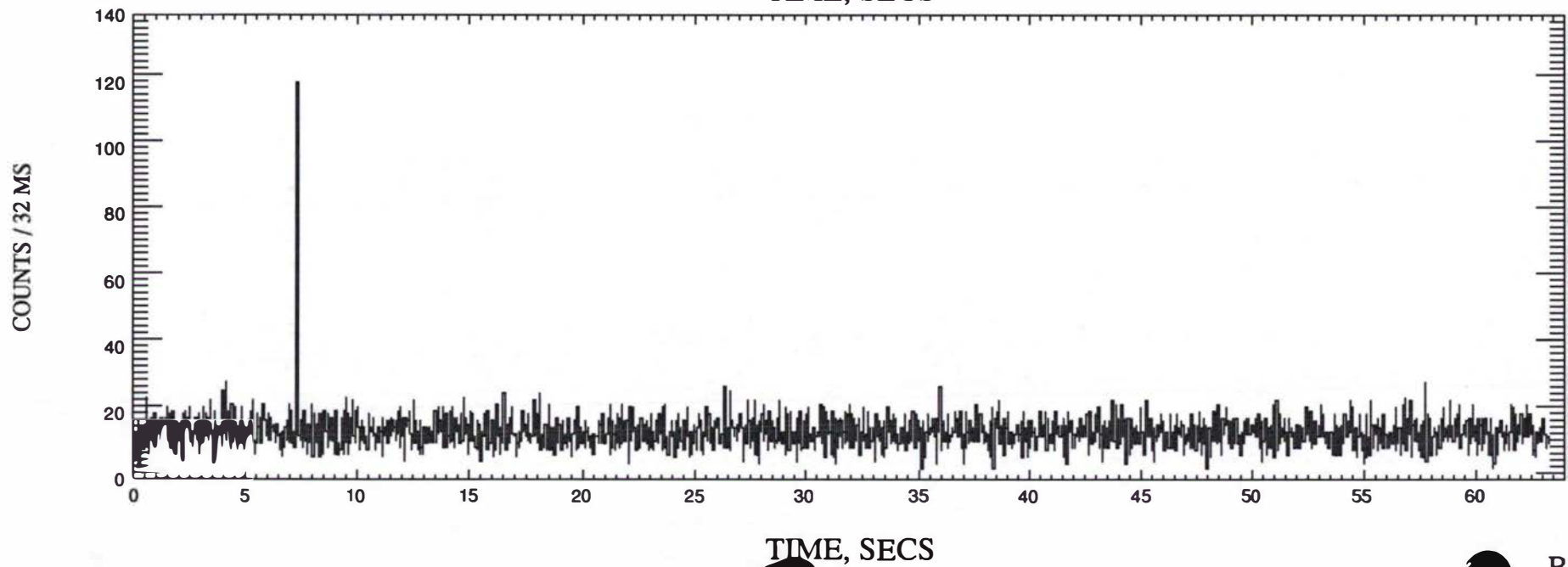
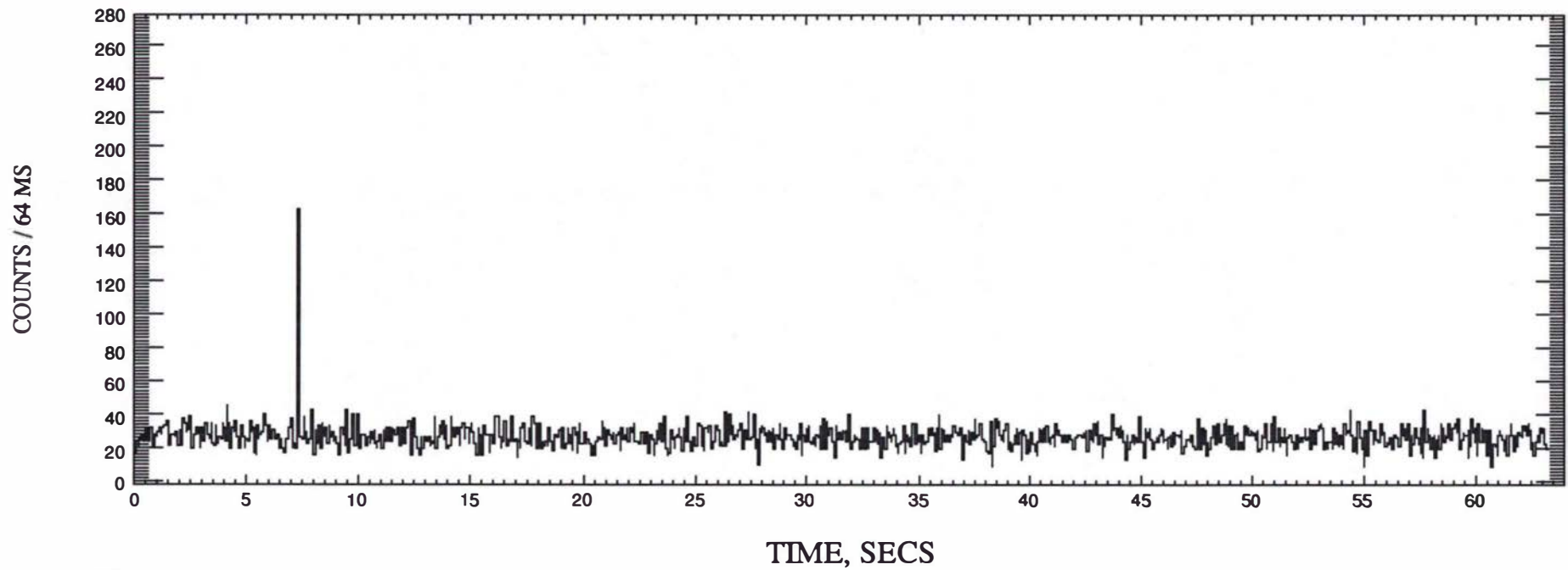
* Solar Burst Trigger
 + Solar Flare



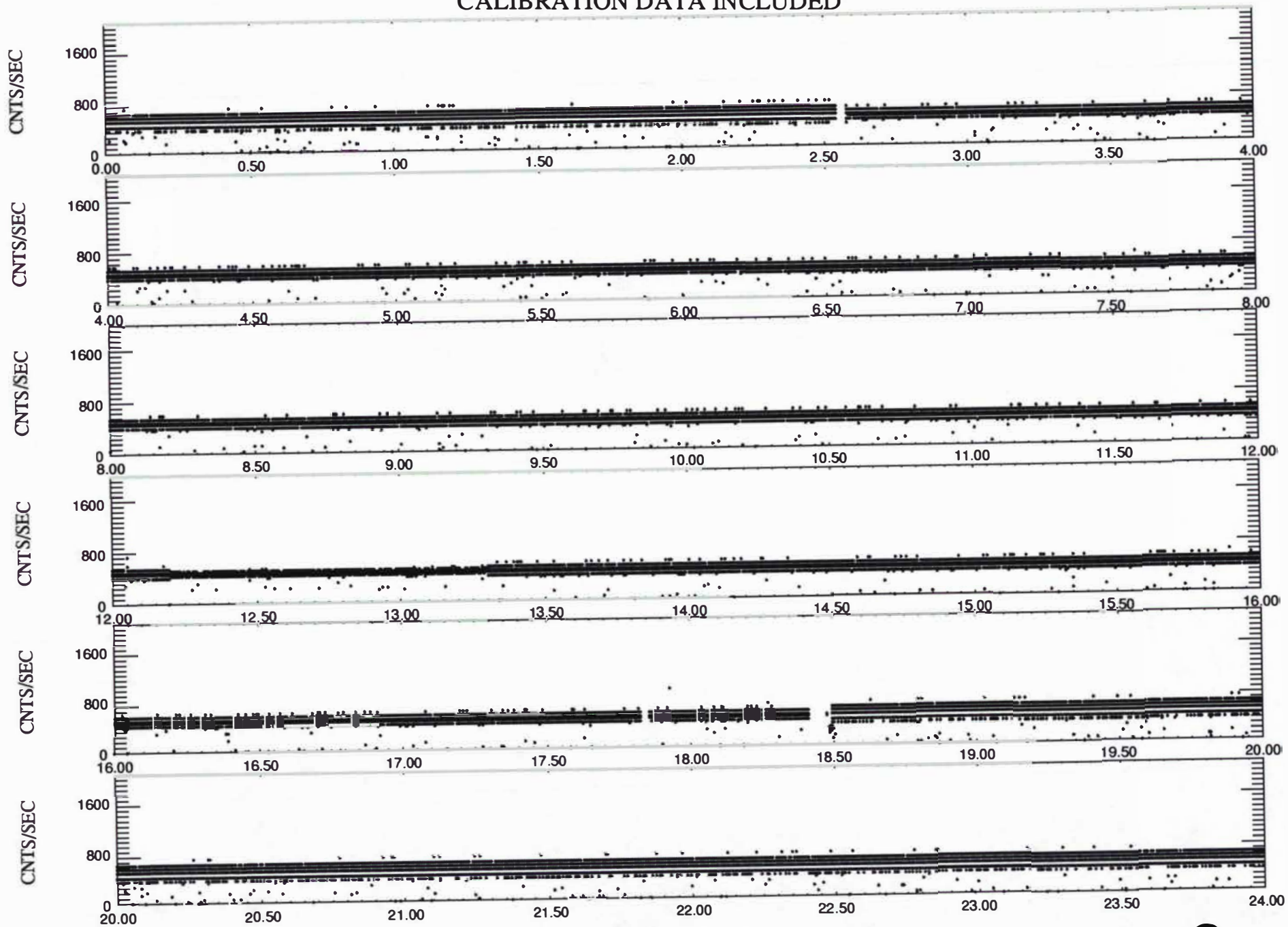
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



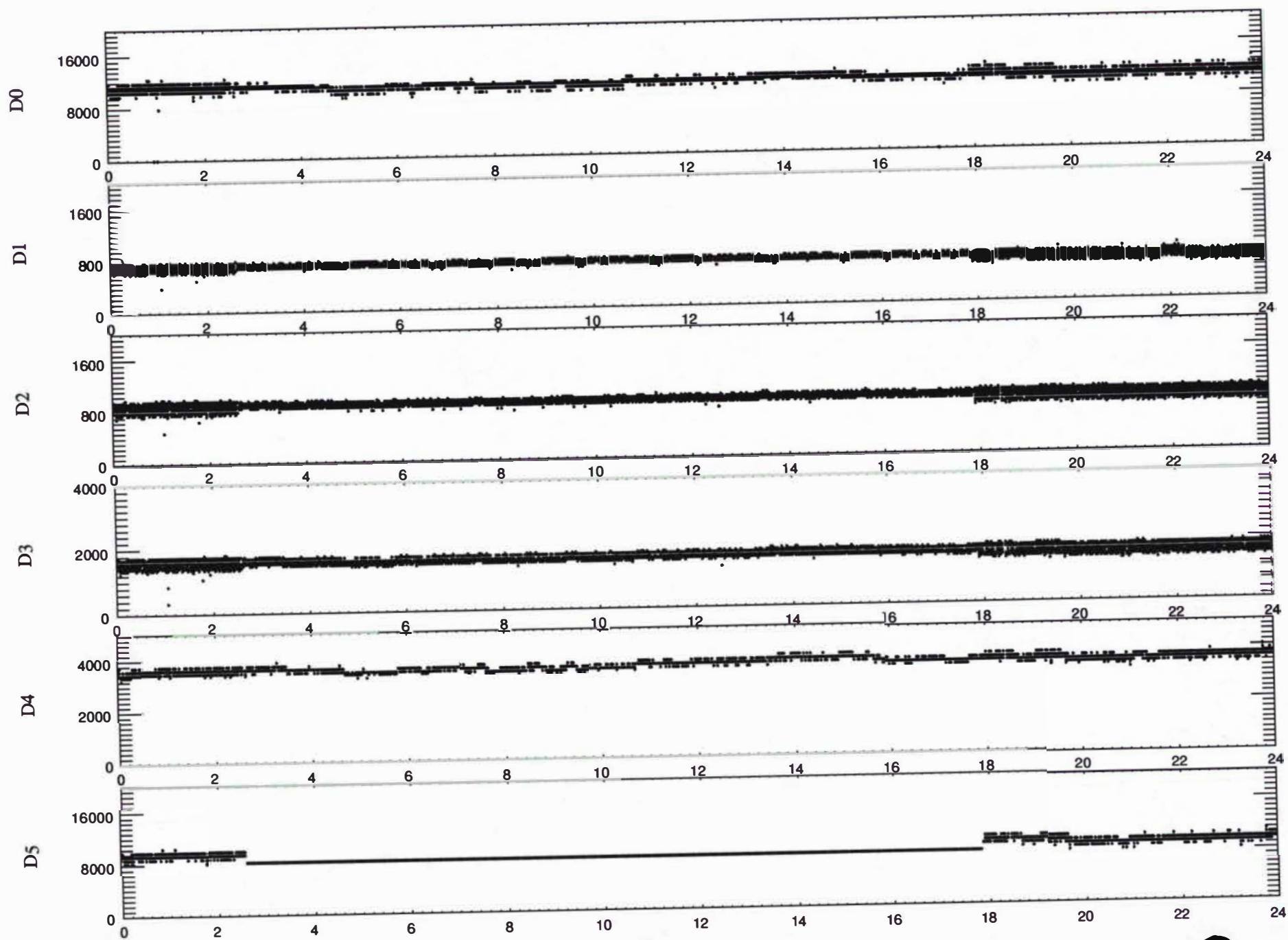
Burst Counter 7 at UT=12.048320083618 h=43373.952 s 12:02:53.952



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From SURASAK@SSLLES.MSFC.NASA.GOV Mon Apr 15 11:02 PDT 1996
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Mon, 15 Apr 1996 13:01:34 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5418

BATSEARCH PROGRAM

NO

BATSE BURST # 5418
EVENT OF 1996 APR 11 DAY OF YEAR=102
EVENT CROSSING TIME AT BATSE : 8178. S. OR 02:16:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 31.000 -4.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 4/ 96 IS:
RA= 152.959 DEC= 68.538 DIST= 3.386 AU
BATSE-ULYSSES DISTANCE = 506545481. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 436.13 SECS.
CROSSING TIME AT ULYSSES IS 8614. S. OR 02:23:34 +/- 340.03 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 4/ 96 IS:
RA= 12.657 DEC= 4.642 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356796448. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=159.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1116.50 SECS.
CROSSING TIME AT MARS IS 7061. S. OR 01:57:41 +/- 54.60 SECONDS

BATSE BURST TRIGGER

NO.: 5418

TIME: TJD=0184 SECONDS=8178

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=90.3 AZIMUTH=358.4 ERROR=5.304 DEGREES

COMMENTS:

GRB. SINGLE PULSE, DUR~15S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5418	960411	10184	08178	3000	031	-04	15

BATSE #

5418

15 / 4 / 96

ULYSSES RT

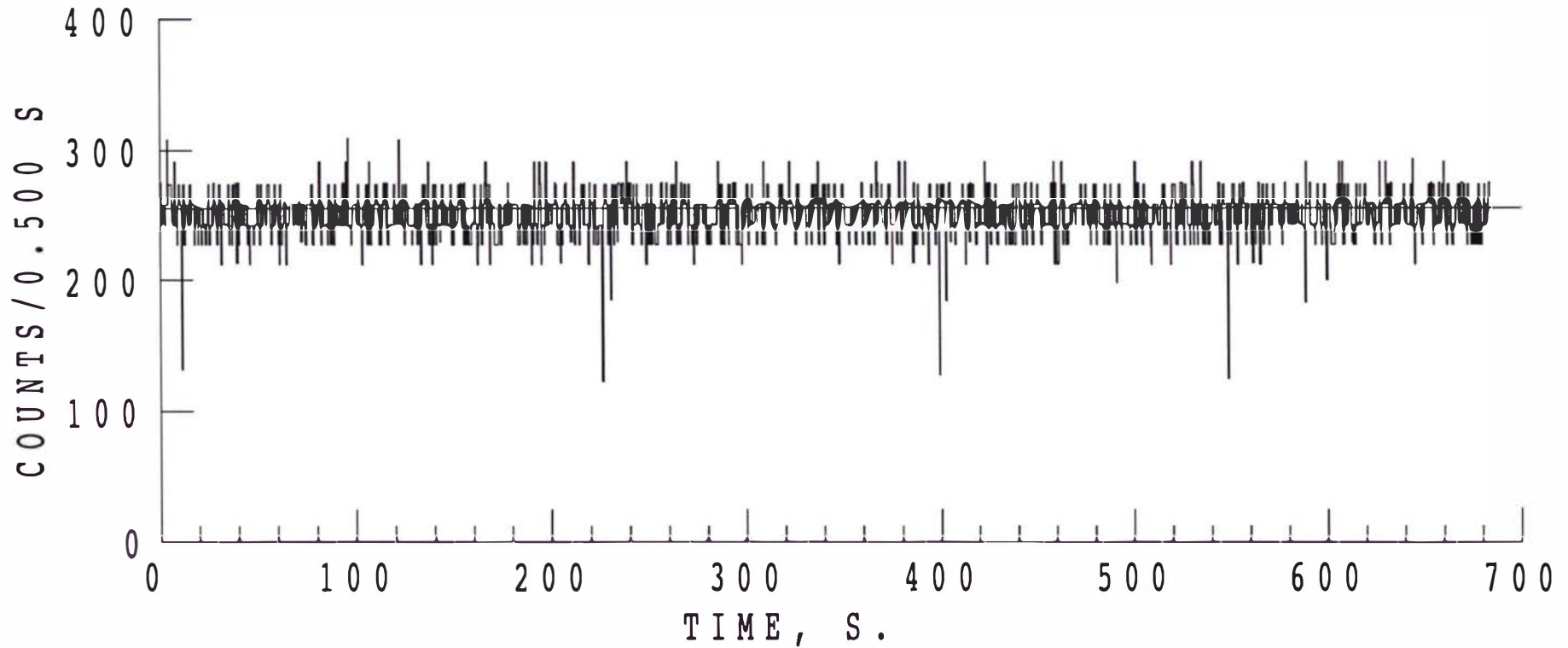
11 / 4 / 96 8280.058 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Mon Apr 15 11:03 PDT 1996
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Mon, 15 Apr 1996 13:03:14 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5419

BATSEARCH PROGRAM

ND

BATSE BURST # 5419
EVENT OF 1996 APR 11 DAY OF YEAR=102
EVENT CROSSING TIME AT BATSE : 21168. S. OR 05:52:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 148.000 -6.000
BATSE PEAK COUNTING RATE: 12200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 4/ 96 IS:
RA= 152.894 DEC= 68.495 DIST= 3.388 AU
BATSE-ULYSSES DISTANCE = 506863670. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.43 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -449.71 SECS.
CROSSING TIME AT ULYSSES IS 20718. S. OR 05:45:18 +/- 326.13 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 4/ 96 IS:
RA= 12.657 DEC= 4.642 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356796448. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 849.26 SECS.
CROSSING TIME AT MARS IS 22017. S. OR 06:06:57 +/- 157.66 SECONDS

BATSE BURST TRIGGER

NO.: 5419

TIME: TJD=0184 SECONDS=21168

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.9 AZIMUTH=114.8 ERROR=1.14 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR~35S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5419	960411	10184	21168	12200	148	-06	35

BATSE #

5419

15 / 4 / 96

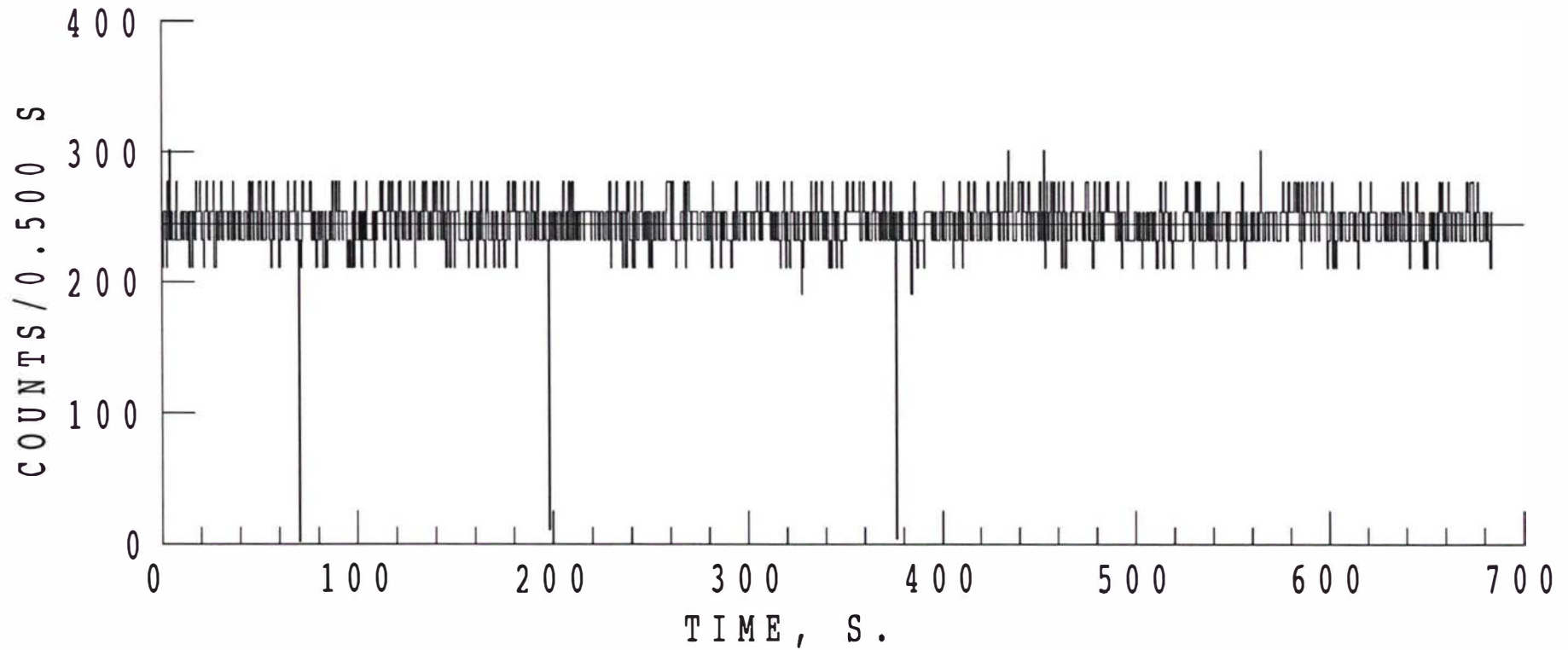
ULYSSES RT

11 / 4 / 96 20376.473 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



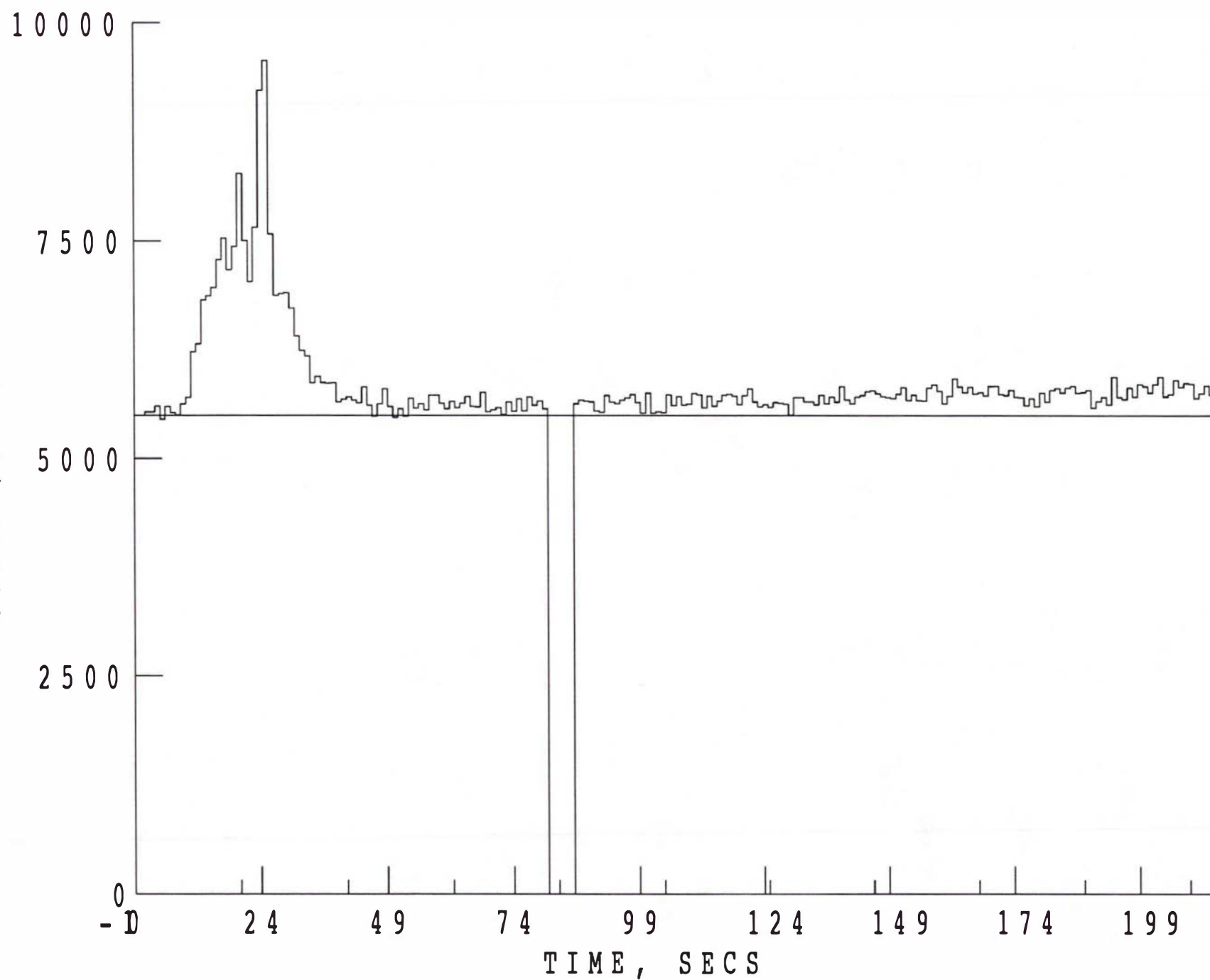
21157.577

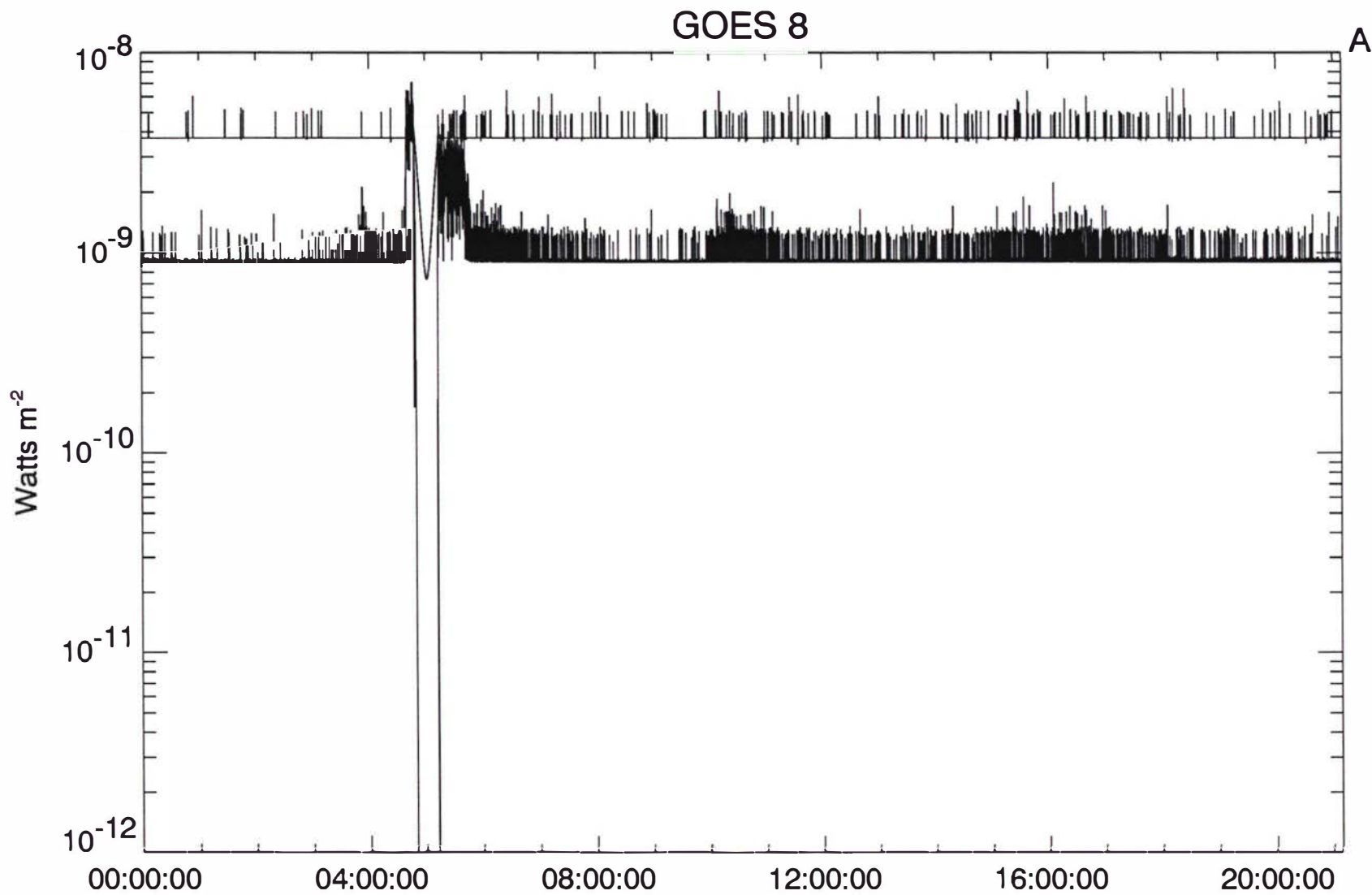
11/04/96

BACODINE

25 - 100 keV

COUNTS/1.024 S





Data Start: 96/04/11, 0000:00

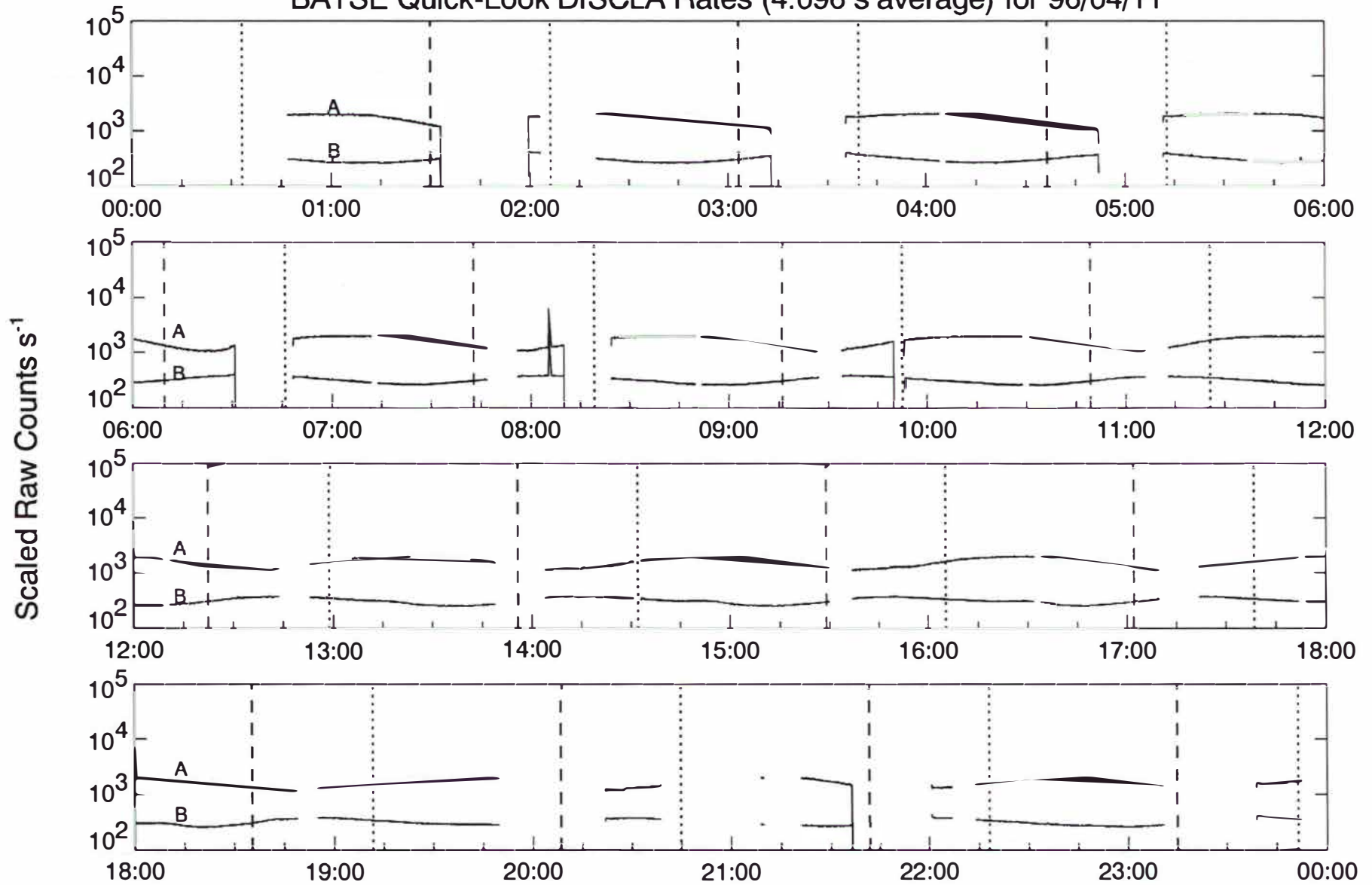
Plot created: 96/04/13, 1004

Channel

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

Background not subtracted
Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/11



Current Time: 96/04/13, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

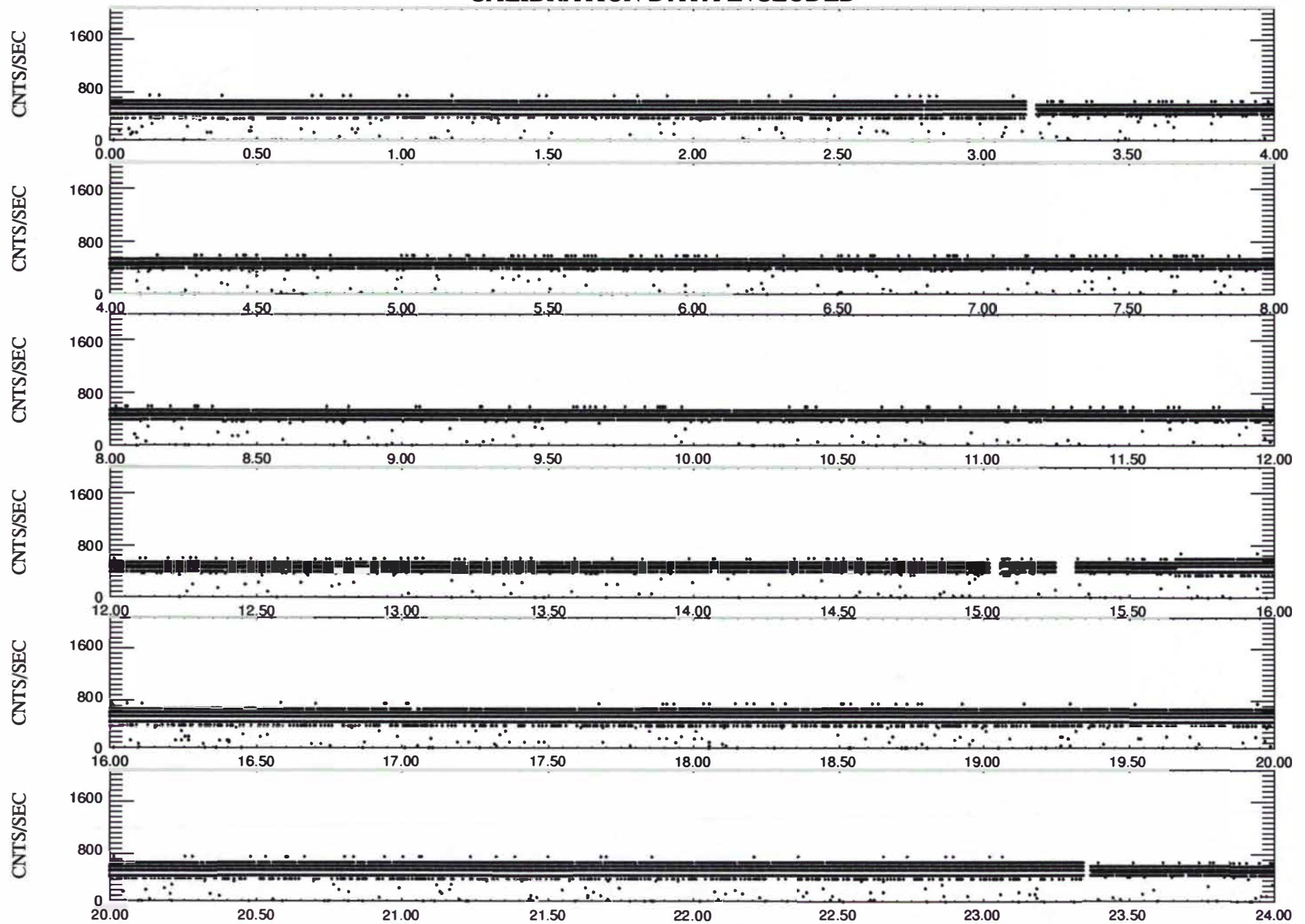
* Solar Burst Trigger
 + Solar Flare

NO BURST (7)

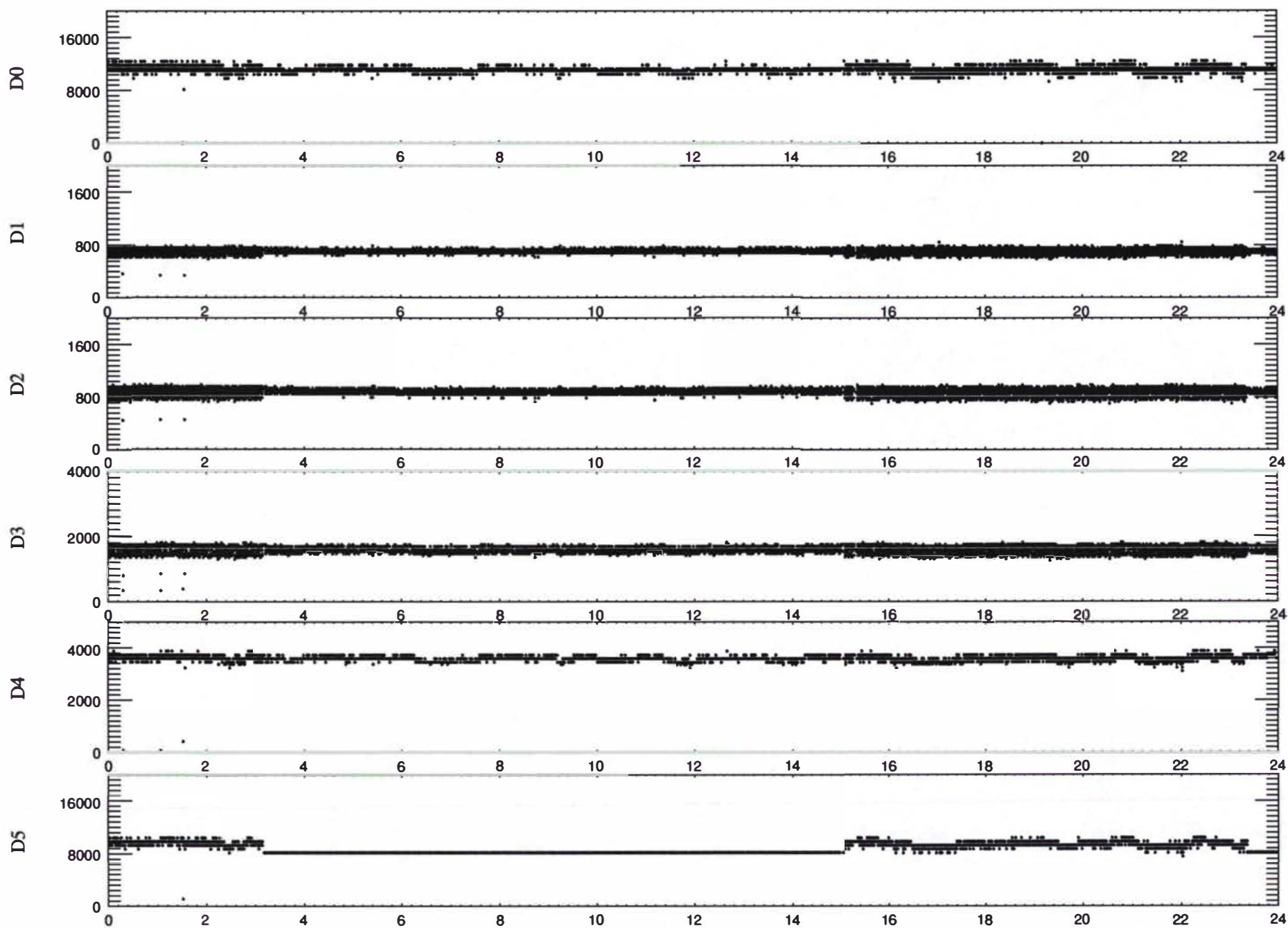


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From SURASAK@SSLLES.MSFC.NASA.GOV Mon Apr 15 11:04 PDT 1996
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Mon, 15 Apr 1996 13:04:47 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5420

BATSEARCH PROGRAM

XJO

BATSE BURST # 5420
EVENT OF 1996 APR 12 DAY OF YEAR=103
EVENT CROSSING TIME AT BATSE : 78901. S. OR 21:55:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 266.000 -1.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 4/ 96 IS:
RA= 152.196 DEC= 68.020 DIST= 3.412 AU
BATSE-ULYSSES DISTANCE = 510410937. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.37 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 284.71 SECS.
CROSSING TIME AT ULYSSES IS 79186. S. OR 21:59:45 +/- 345.75 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 4/ 96 IS:
RA= 13.364 DEC= 4.948 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356810496. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 355.63 SECS.
CROSSING TIME AT MARS IS 79257. S. OR 22:00:56 +/- 202.60 SECONDS

BATSE BURST TRIGGER

NO.: 5420

TIME: TJD=0185 SECONDS=78901

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=108.1 AZIMUTH=231.1 ERROR=7.601 DEGREES

COMMENTS:

GRB. WEAK SINGLE PULSE. DUR~100S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5420	960412	10185	78901	2000	266	-01	100

BATSE #

5420

17 / 4 / 96

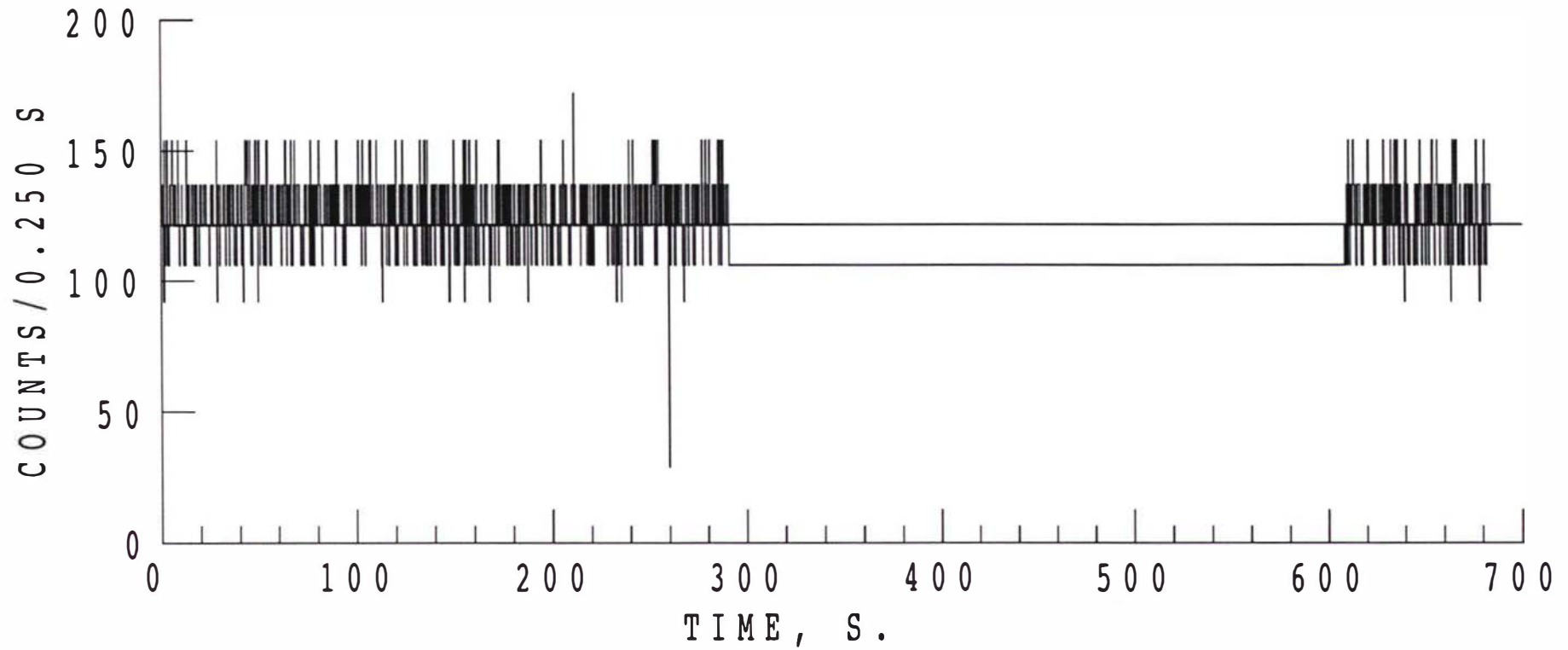
ULYSSES RT

12 / 4 / 96 78840.219 s

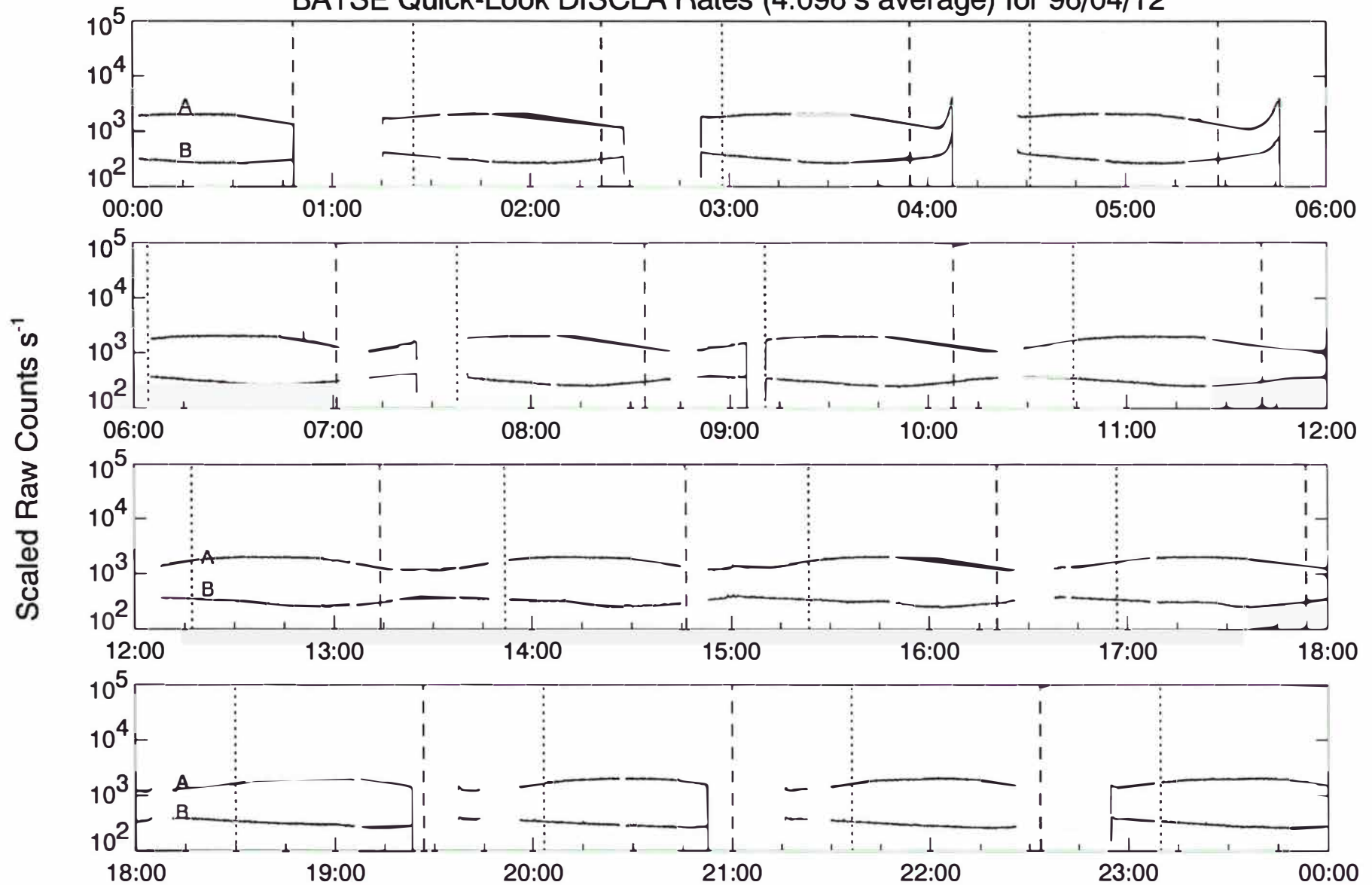
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/12



Current Time: 96/04/14, 1004 EDT

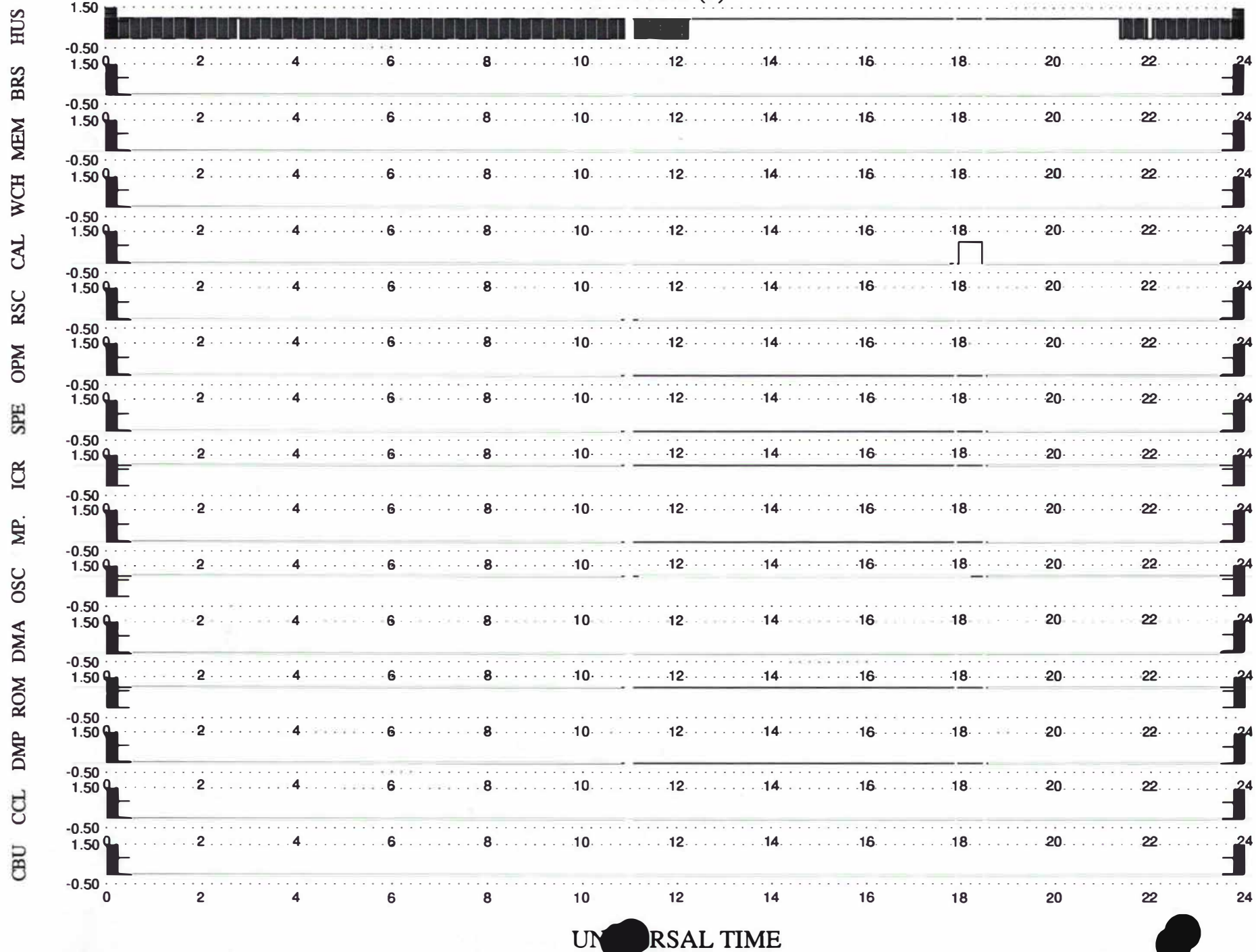
A: Channel 0 Most Sunward LAD

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

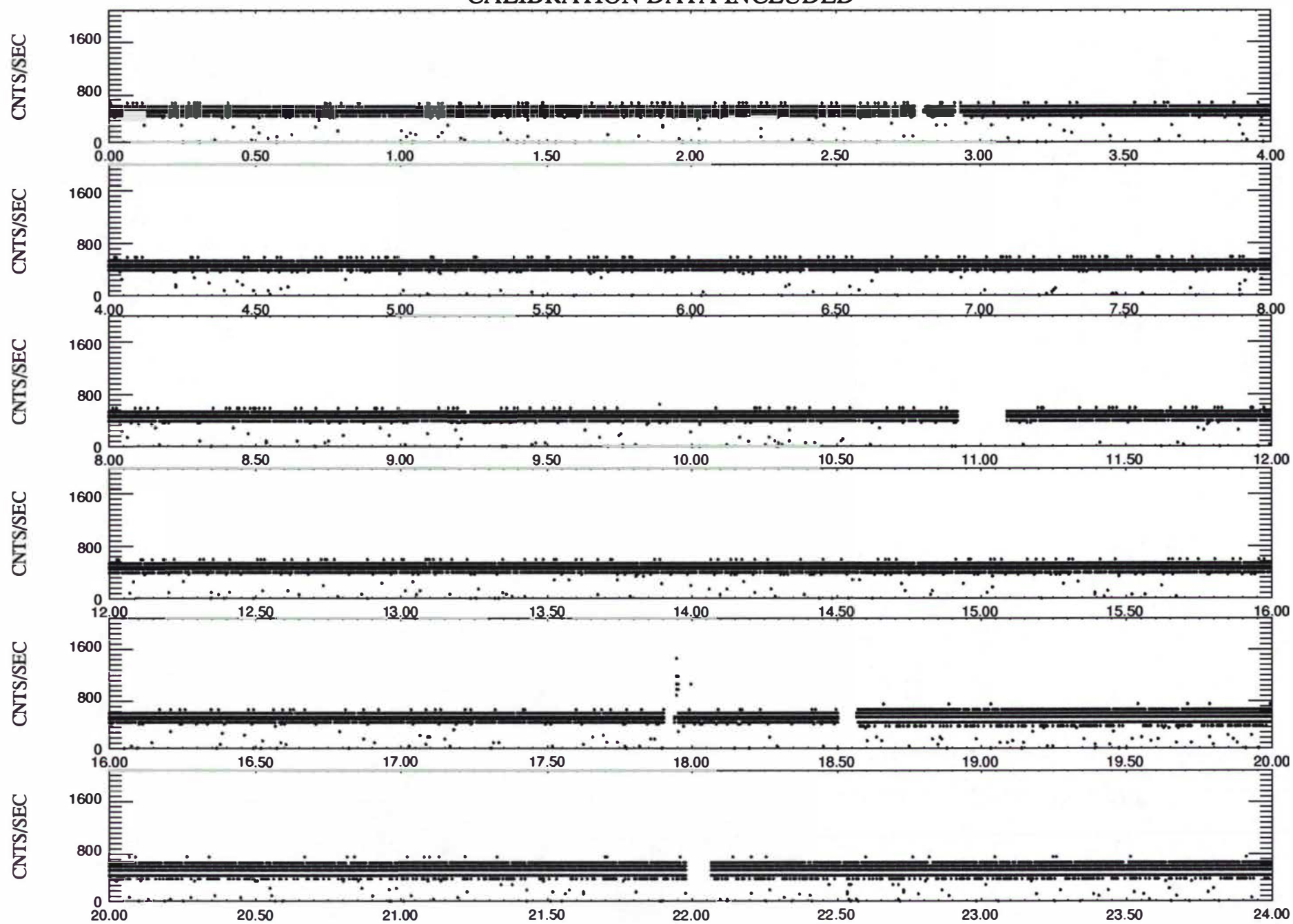
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

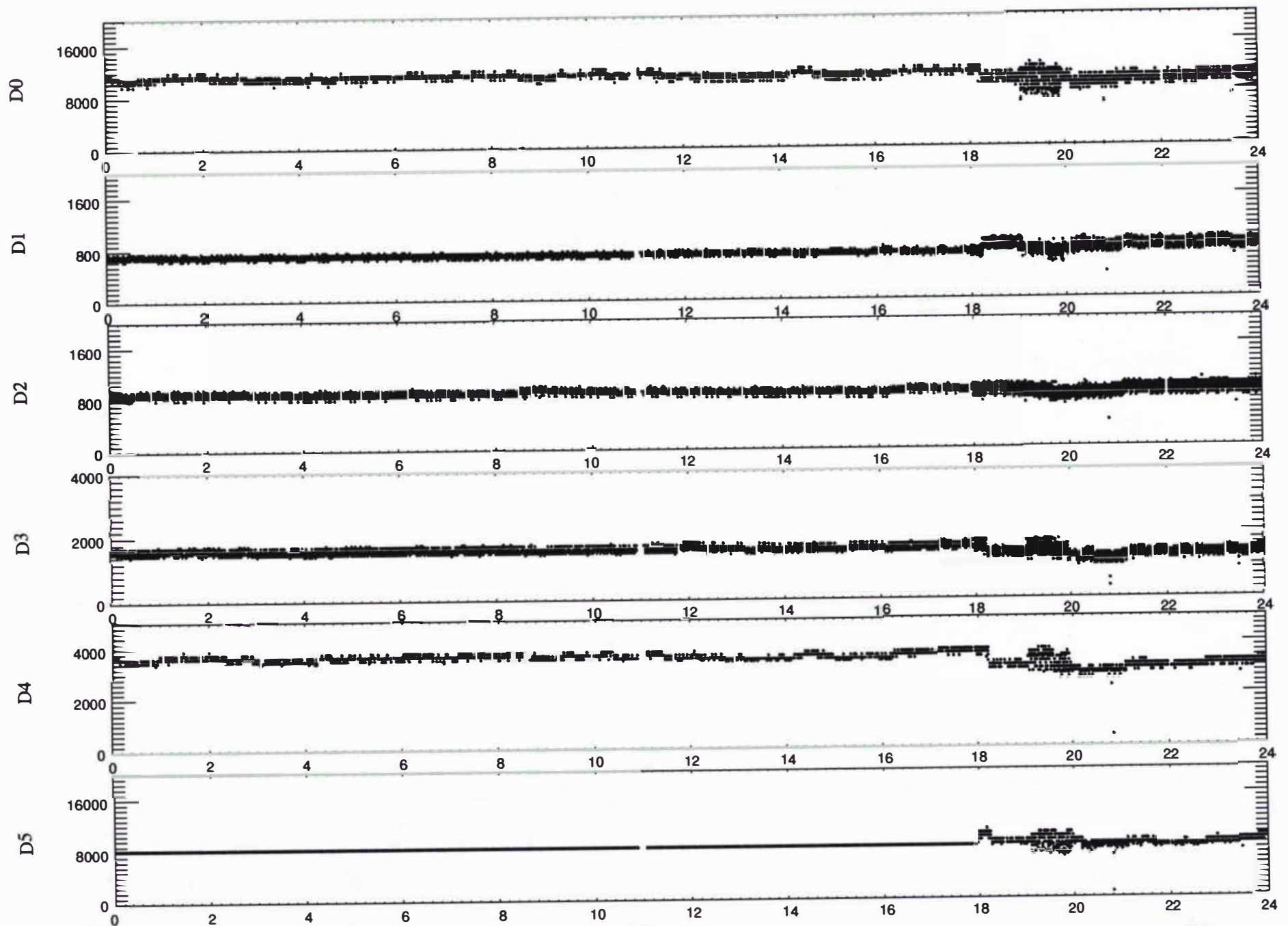
NO BURST (7)



CALIBRATION DATA INCLUDED

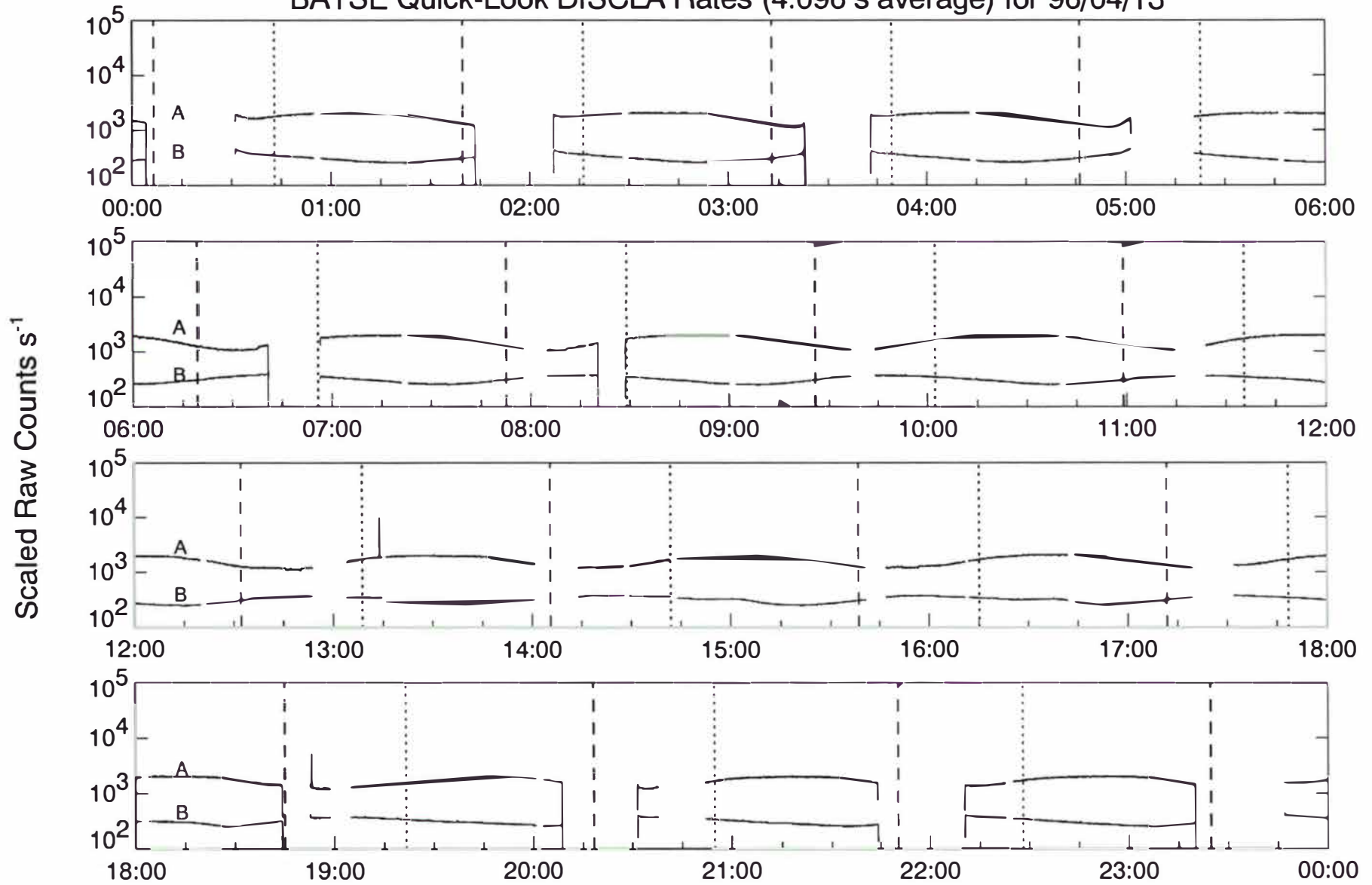


UNIVERSAL TIME



UNIVERSAL TIME

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/13



Current Time: 96/04/15, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

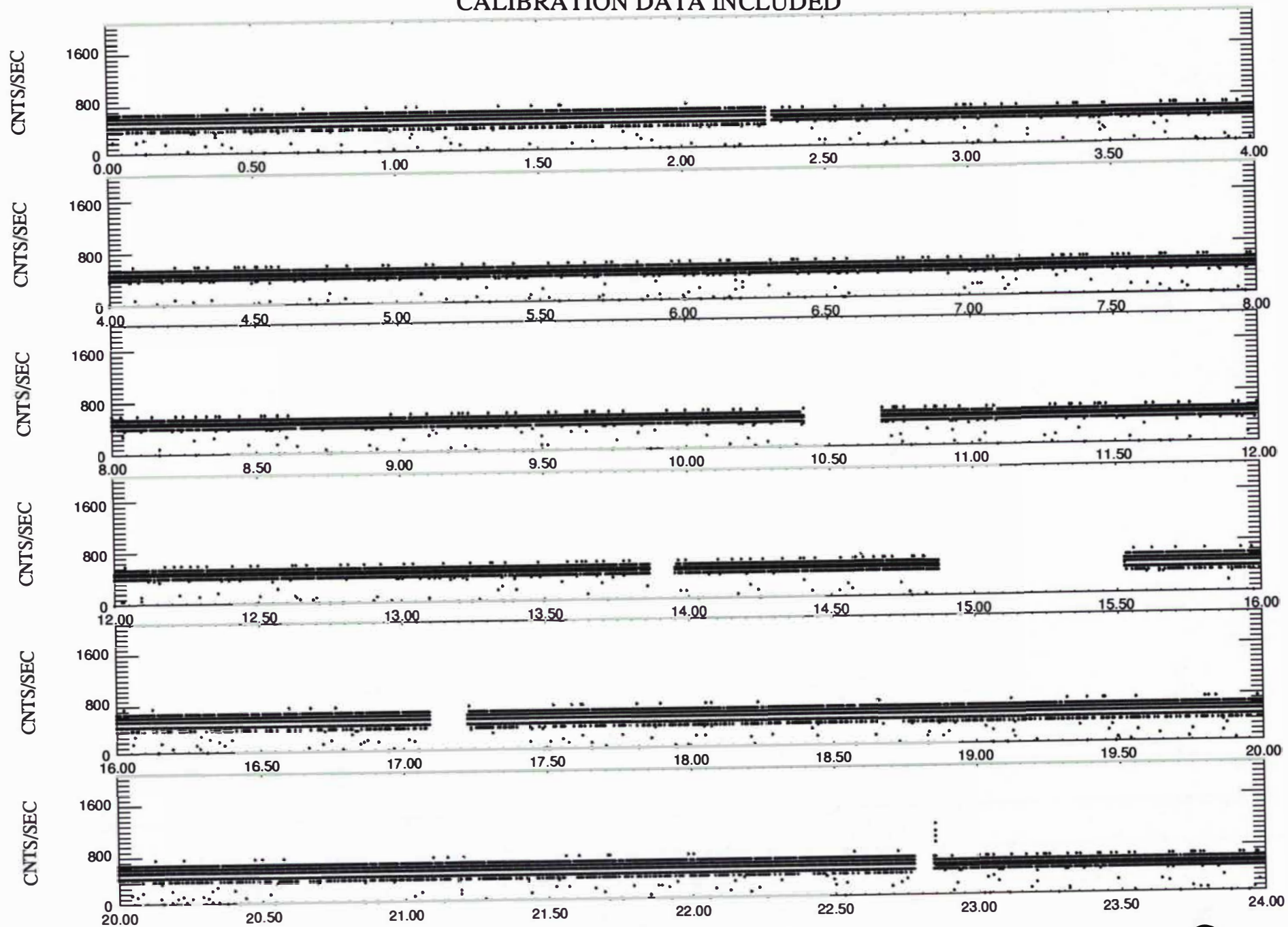
* Solar Burst Trigger
 + Solar Flare

NO BURST (7)

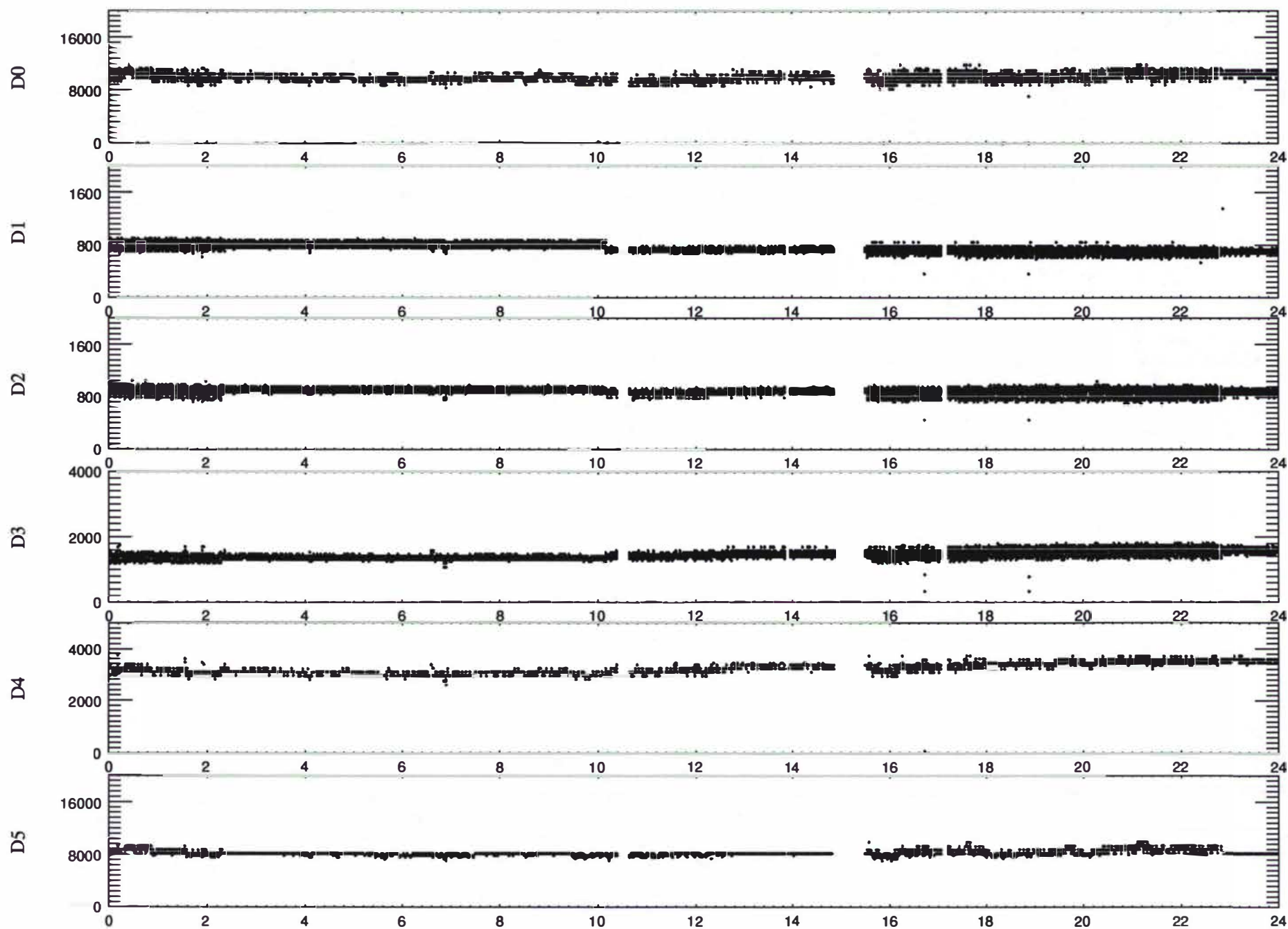


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From HAGEDON@fender.msfc.nasa.gov Mon Apr 15 12:51 PDT 1996
Return-Path: <HAGEDON@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA14651; Mon, 15 Apr 1996 12:51:03 -0700
From: HAGEDON@fender.msfc.nasa.gov
Date: Mon, 15 Apr 1996 14:50:48 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <960415145048.20c0107b@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5421
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 5421
EVENT OF 1996 APR 14 DAY OF YEAR=105
EVENT CROSSING TIME AT BATSE : 13065. S. OR 03:37:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 350.000 -46.000
BATSE PEAK COUNTING RATE: 8200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 4/ 96 IS:
RA= 151.723 DEC= 67.664 DIST= 3.430 AU
BATSE-ULYSSES DISTANCE = 513071085. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 23.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1567.75 SECS.
CROSSING TIME AT ULYSSES IS 14633. S. OR 04:03:52 +/- 192.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 4/ 96 IS:
RA= 14.780 DEC= 5.556 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356832416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=123.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -664.27 SECS.
CROSSING TIME AT MARS IS 12401. S. OR 03:26:40 +/- 161.39 SECONDS
BATSE BURST TRIGGER

NO.: 5421

TIME: TJD=0187 SECONDS=13065

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142.6 AZIMUTH=336.6 ERROR=2.1 DEGREES

COMMENTS:

BURST. LONG, COMPLEX EVENT. TOTAL DUR.~290 SEC. MAX AT ~T+62 SEC.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5421	960414	10187	13065	8200	350	-46	290

BATSE #

5421

17 / 4 / 96

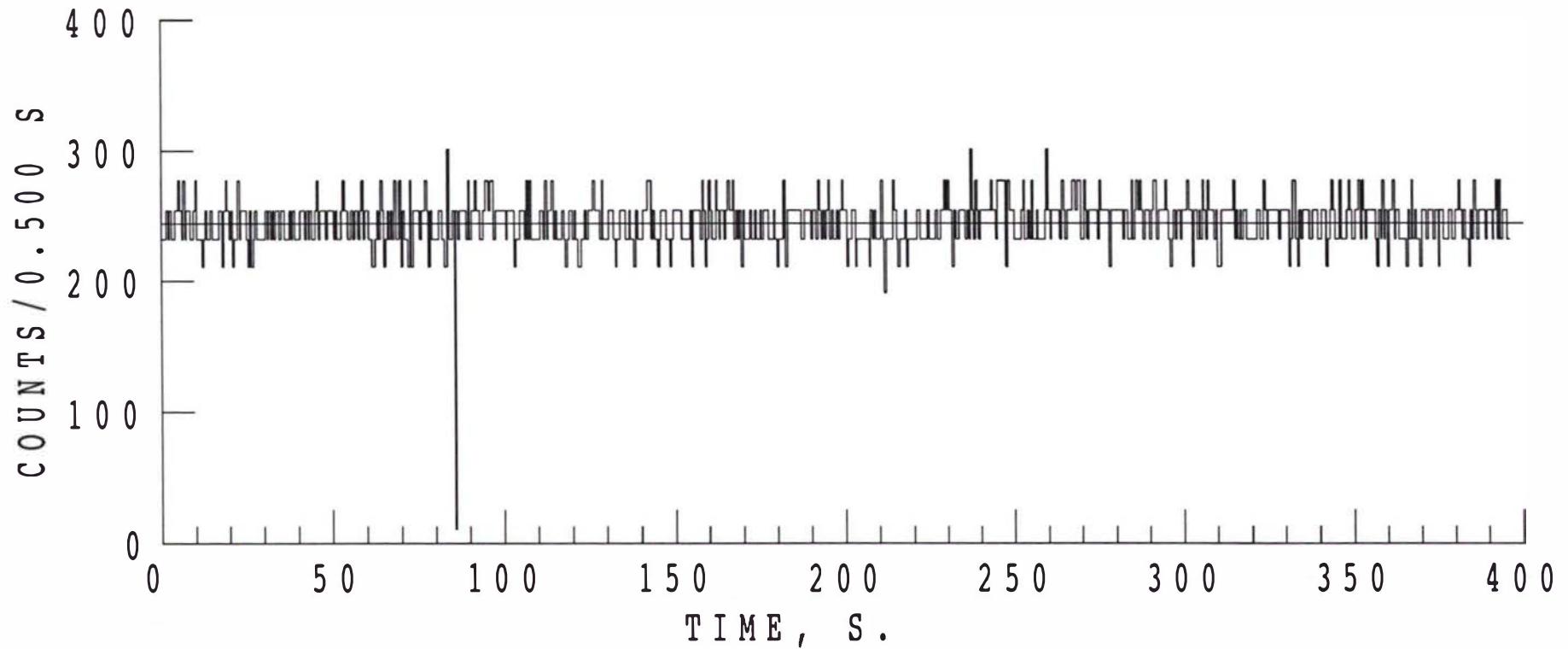
ULYSSES RT

14 / 4 / 96 14436.456 s

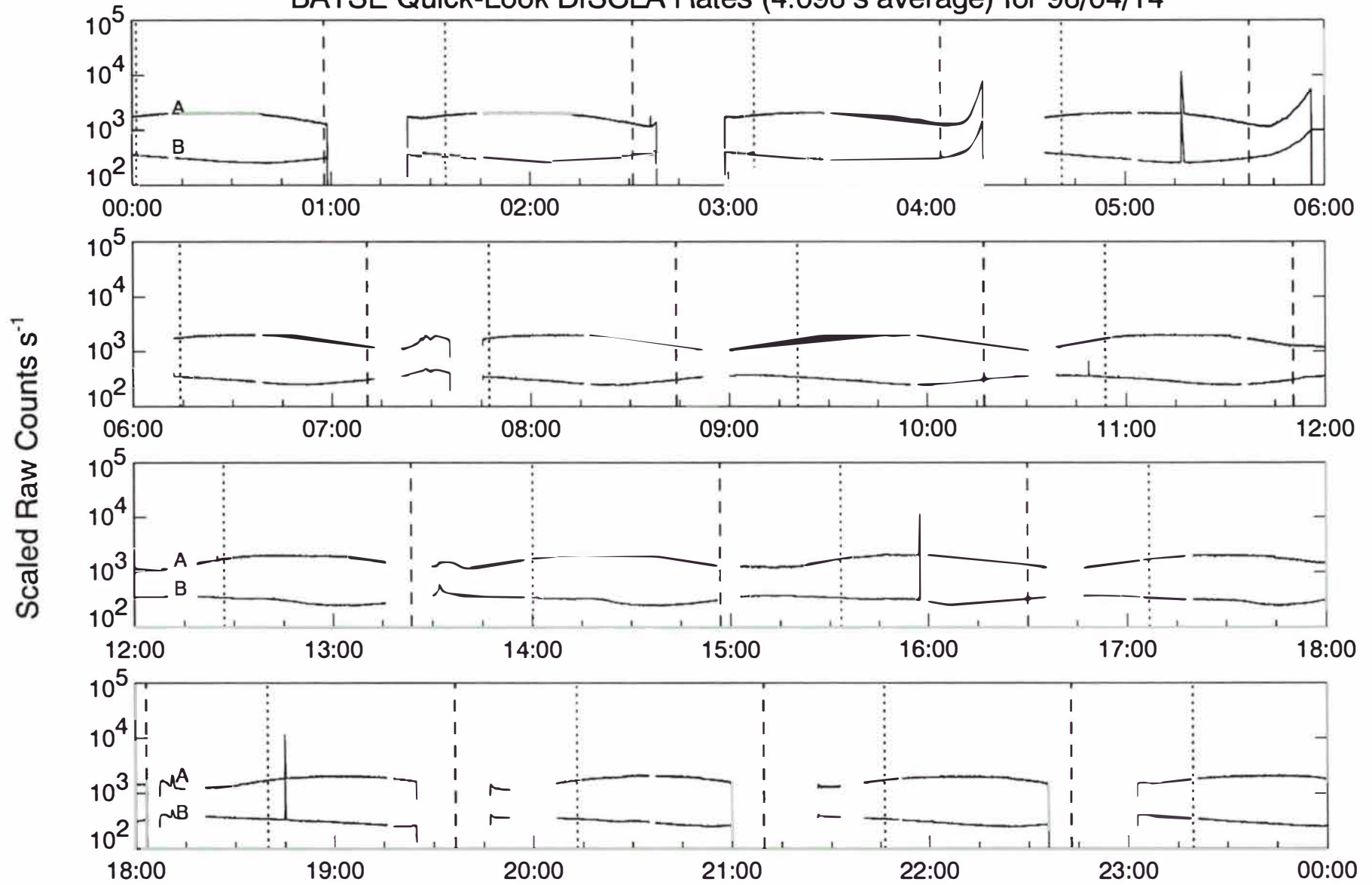
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/14

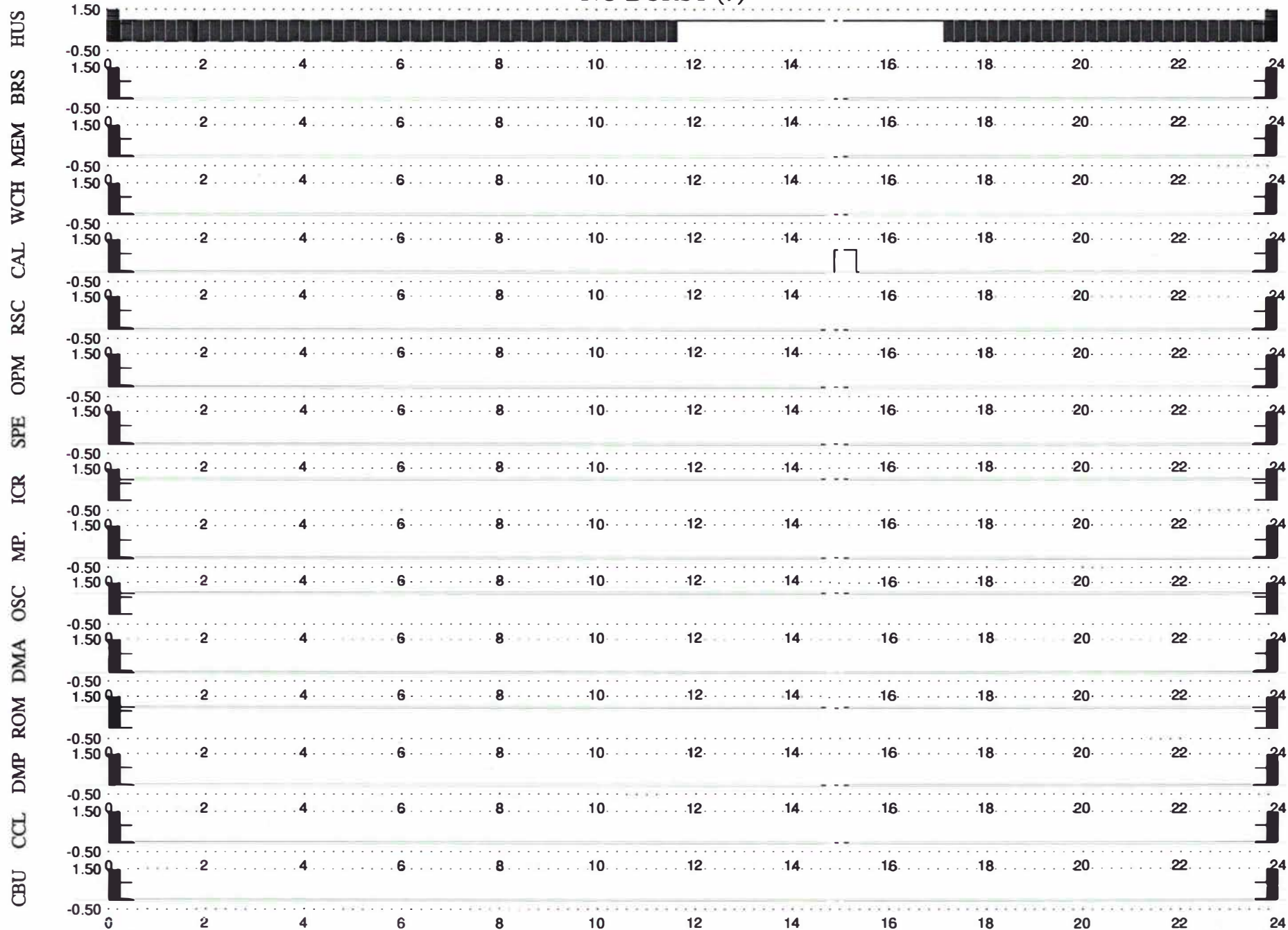


Current Time: 96/04/16, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

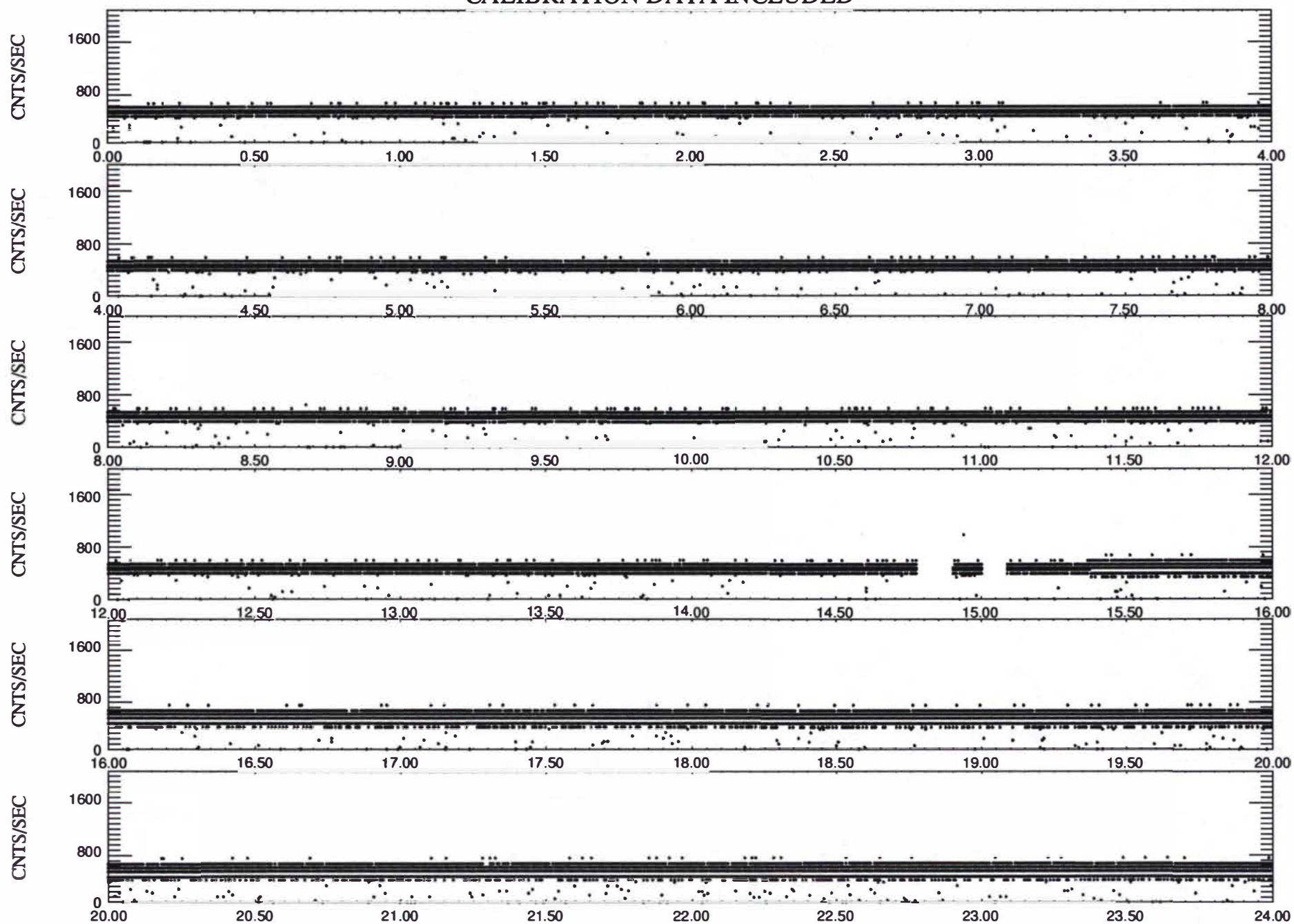
* Solar Burst Trigger
 + Solar Flare

NO BURST (7)

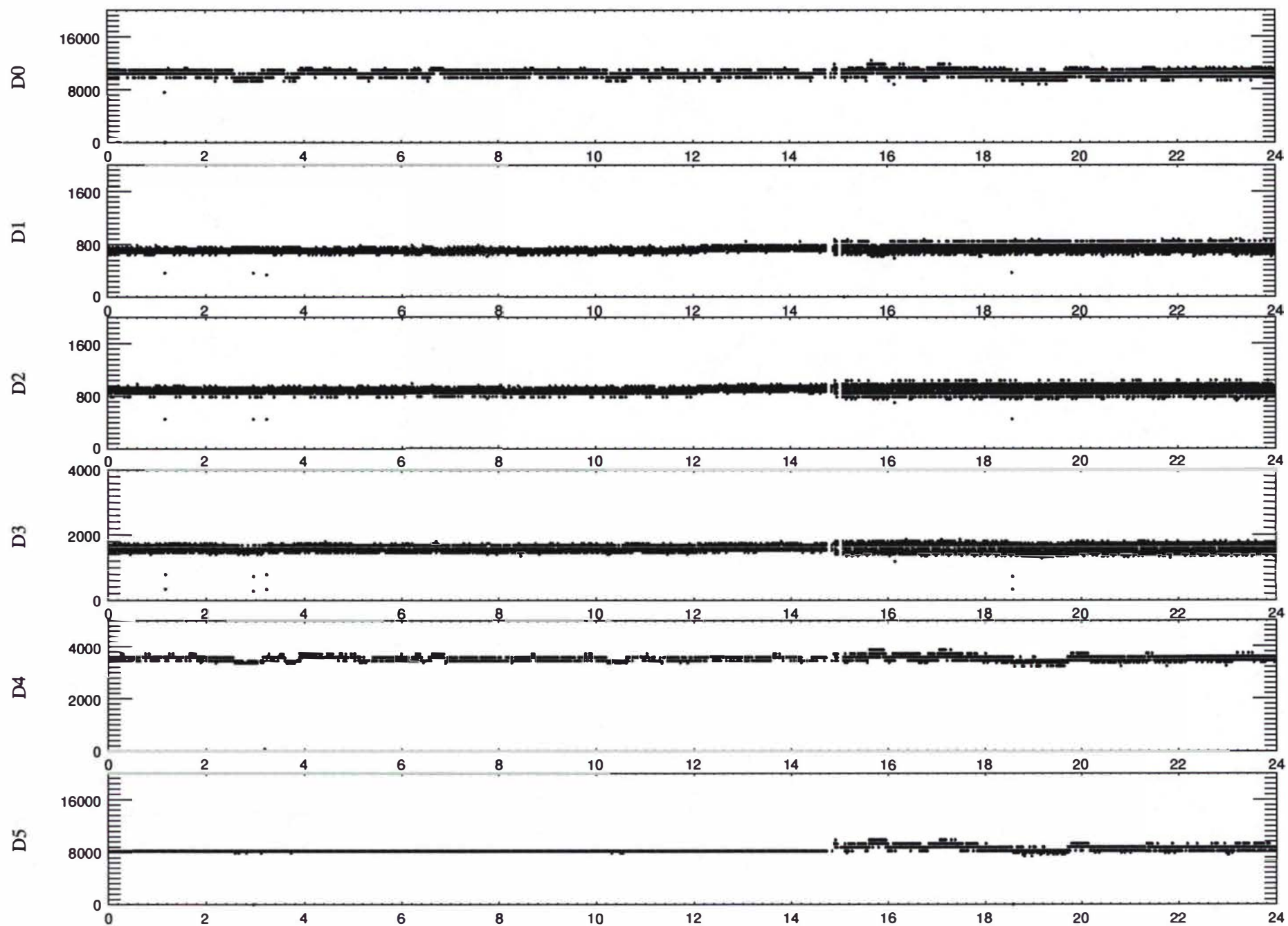


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 16 11:50 PDT 1996
Date: Tue, 16 Apr 1996 13:49:33 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5422

TIME: TJD=0188 SECONDS=6548

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From WOODSP@SSLLE3.MSFC.NASA.GOV Tue Apr 16 15:18 PDT 1996
Date: Tue, 16 Apr 1996 17:17:42 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5423

BATSEARCH PROGRAM

No

BATSE BURST # 5423
EVENT OF 1996 APR 15 DAY OF YEAR=106
EVENT CROSSING TIME AT BATSE : 17503. S. OR 04:51:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 159.000 -57.000
BATSE PEAK COUNTING RATE: 3300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 4/ 96 IS:
RA= 151.346 DEC= 67.359 DIST= 3.445 AU
BATSE-ULYSSES DISTANCE = 515356867. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 55.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 973.40 SECS.
CROSSING TIME AT ULYSSES IS 18476. S. OR 05:07:56 +/- 310.78 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 4/ 96 IS:
RA= 15.487 DEC= 5.858 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356840128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 620.38 SECS.
CROSSING TIME AT MARS IS 18123. S. OR 05:02:03 +/- 185.79 SECONDS

BATSE BURST TRIGGER

NO.: 5423

TIME: TJD=0188 SECONDS=17503

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=132.6 AZIMUTH=111.1 ERROR=5.4 DEGREES

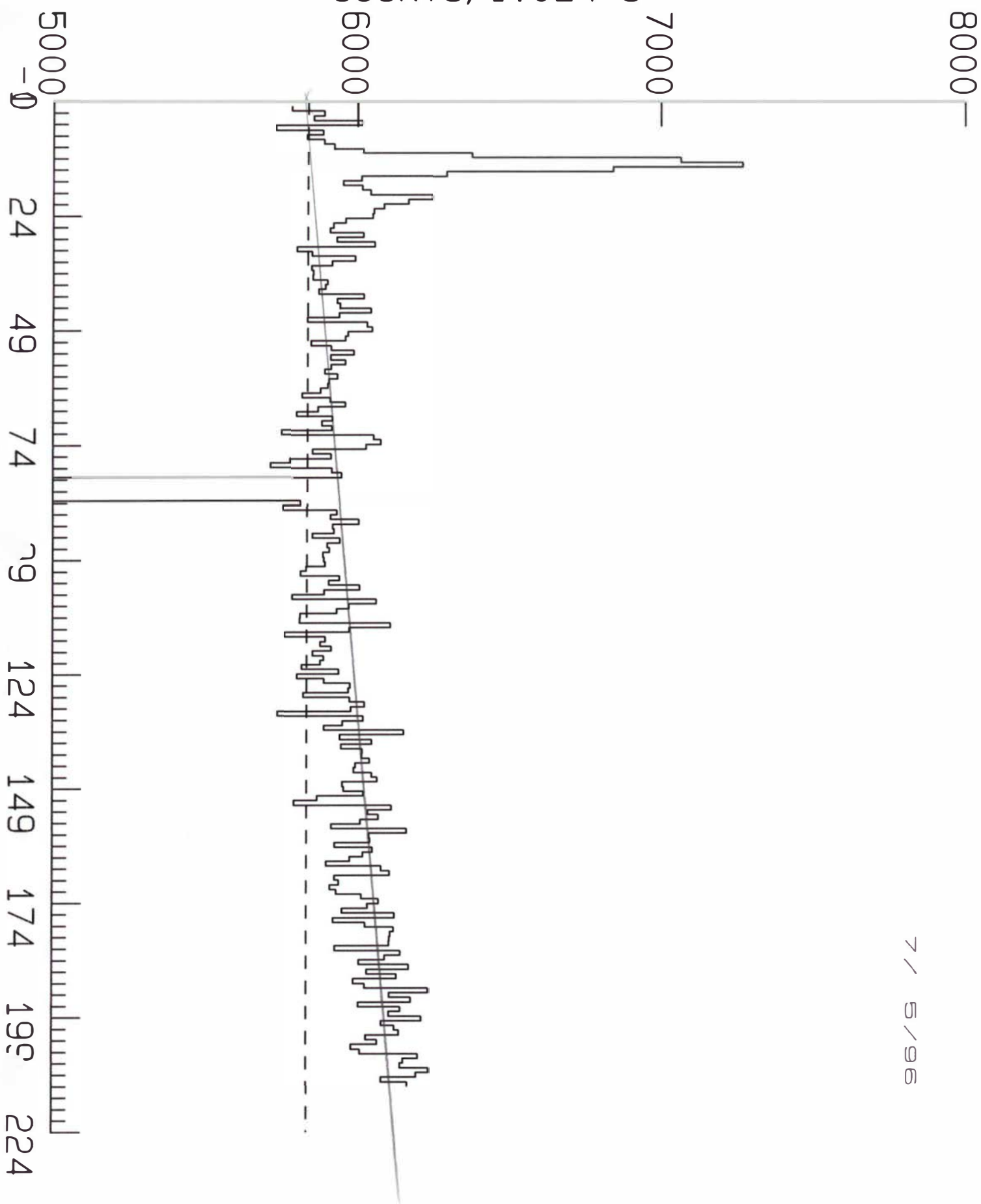
COMMENTS:

GRB LASTING 13 SEC. ONE PEAK WITH 2ND HUMP AT T+8SEC. NOT VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5423	960415	10188	17503	3300	159	-57	13

BACODINE 5423 15/04/96 17491.657
25- 100 keV

COUNTS/1.024 S



BATSE #

5 4 2 3

ULYSSES RT

5 / 1 2 / 9 6

15 / 4 / 96 18180.193 s

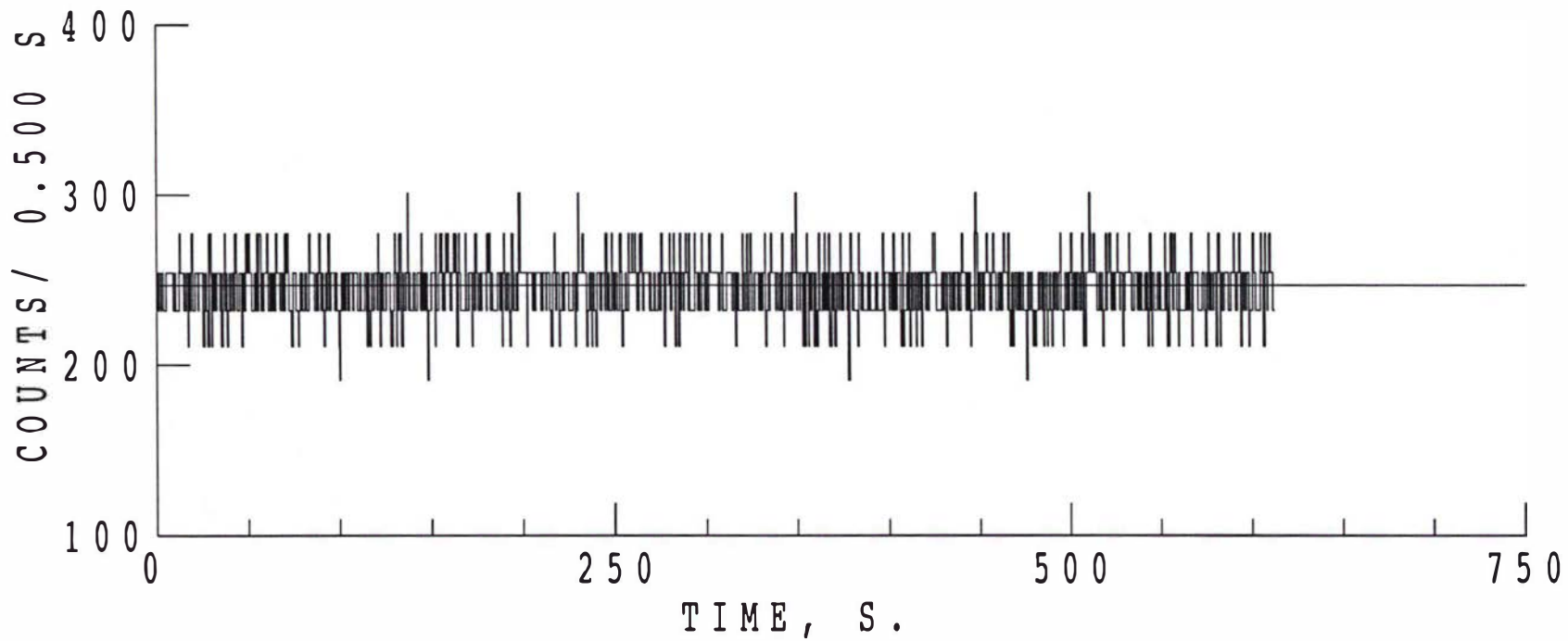
0 - 0 keV

W= 10 M=10

>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 16 15:56 PDT 1996
Date: Tue, 16 Apr 1996 17:02:24 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5424

TIME: TJD=0188 SECONDS=46156

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 16 15:15 PDT 1996
Date: Tue, 16 Apr 1996 17:15:39 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5425

BATSEARCH PROGRAM

NO

BATSE BURST # 5425
EVENT OF 1996 APR 15 DAY OF YEAR=106
EVENT CROSSING TIME AT BATSE : 57173. S. OR 15:52:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 216.000 9.000
BATSE PEAK COUNTING RATE: 15200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 4/ 96 IS:
RA= 151.189 DEC= 67.225 DIST= 3.452 AU
BATSE-ULYSSES DISTANCE = 516360727. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -528.71 SECS.
CROSSING TIME AT ULYSSES IS 56644. S. OR 15:44:04 +/- 326.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 4/ 96 IS:
RA= 15.487 DEC= 5.858 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356840128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1076.34 SECS.
CROSSING TIME AT MARS IS 58249. S. OR 16:10:49 +/- 104.58 SECONDS

BATSE BURST TRIGGER

NO.: 5425

TIME: TJD=0188 SECONDS=57173

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=86.1 AZIMUTH=184.3 ERROR=5.8 DEGREES

COMMENTS:

GRB LASTIN <= 1 SEC. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5425	960415	10188	57173	15200	216	+09	1

BATSE #

5 4 2 5

ULYSSES RT

5 / 1 2 / 9 6

15 / 4 / 96 56304.223 s

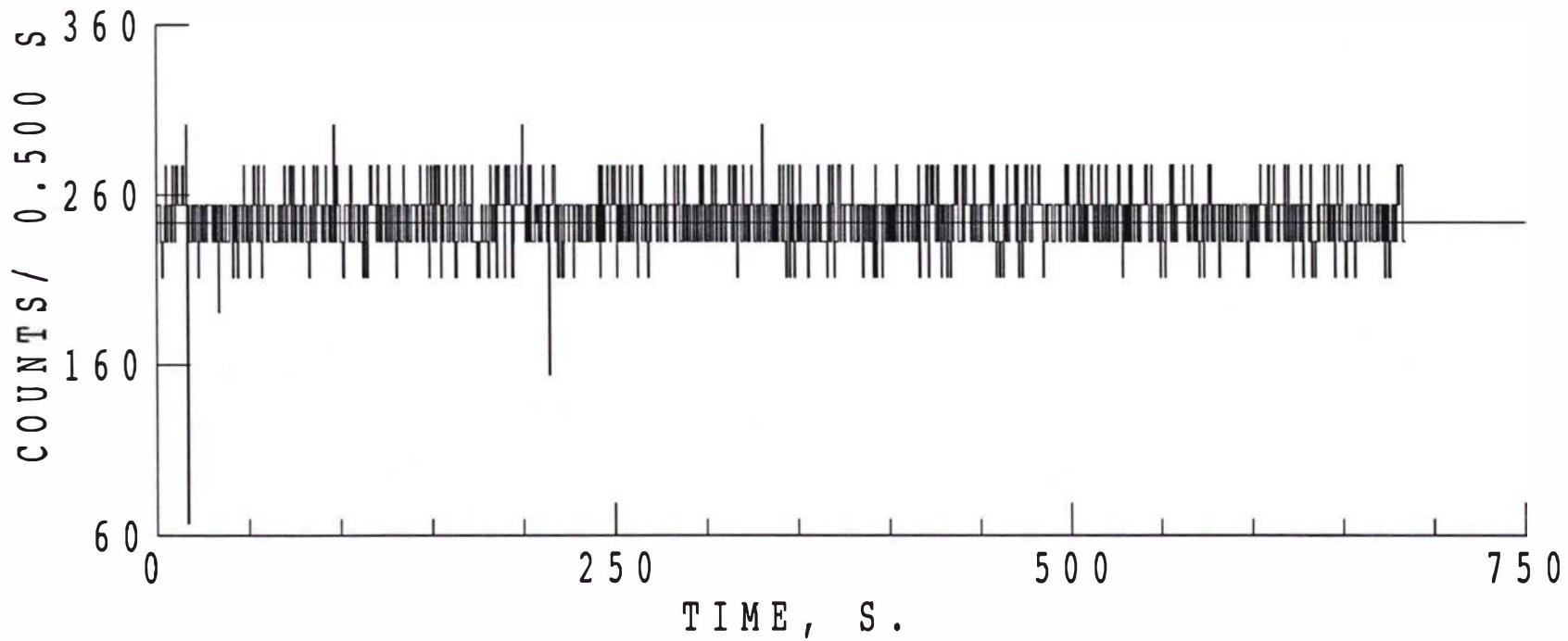
0 - 0 keV

N= 10 M=10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 16 15:56 PDT 1996
Date: Tue, 16 Apr 1996 17:08:43 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5426

TIME: TJD=0188 SECONDS=60275

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From WOODSP@SSLLES.MSFC.NASA.GOV Tue Apr 16 15:13 PDT 1996
Date: Tue, 16 Apr 1996 17:12:47 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5427

BATSEARCH PROGRAM

RI

BATSE BURST # 5427
EVENT OF 1996 APR 15 DAY OF YEAR=106
EVENT CROSSING TIME AT BATSE : 78088. S. OR 21:41:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 3.000 15.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 4/ 96 IS:
RA= 151.106 DEG= 67.155 DIST= 3.455 AU
BATSE-ULYSSES DISTANCE = 516890031. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 137.74 SECS.
CROSSING TIME AT ULYSSES IS 78226. S. OR 21:43:45 +/- 350.48 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 4/ 96 IS:
RA= 15.487 DEC= 5.858 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356840128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=164.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1148.11 SECS.
CROSSING TIME AT MARS IS 76940. S. OR 21:22:19 +/- 37.09 SECONDS

BATSE BURST TRIGGER

NO.: 5427

TIME: TJD=0188 SECONDS=78088

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.2 AZIMUTH=325.5 ERROR=2.1 DEGREES

COMMENTS:

GRB LASTING 14 SEC. SOME SUBSTRUCTURE. MARGINALLY VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5427	960415	10188	78088	6000	003	+15	14

Helio corr removed
Date: Mar 6 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

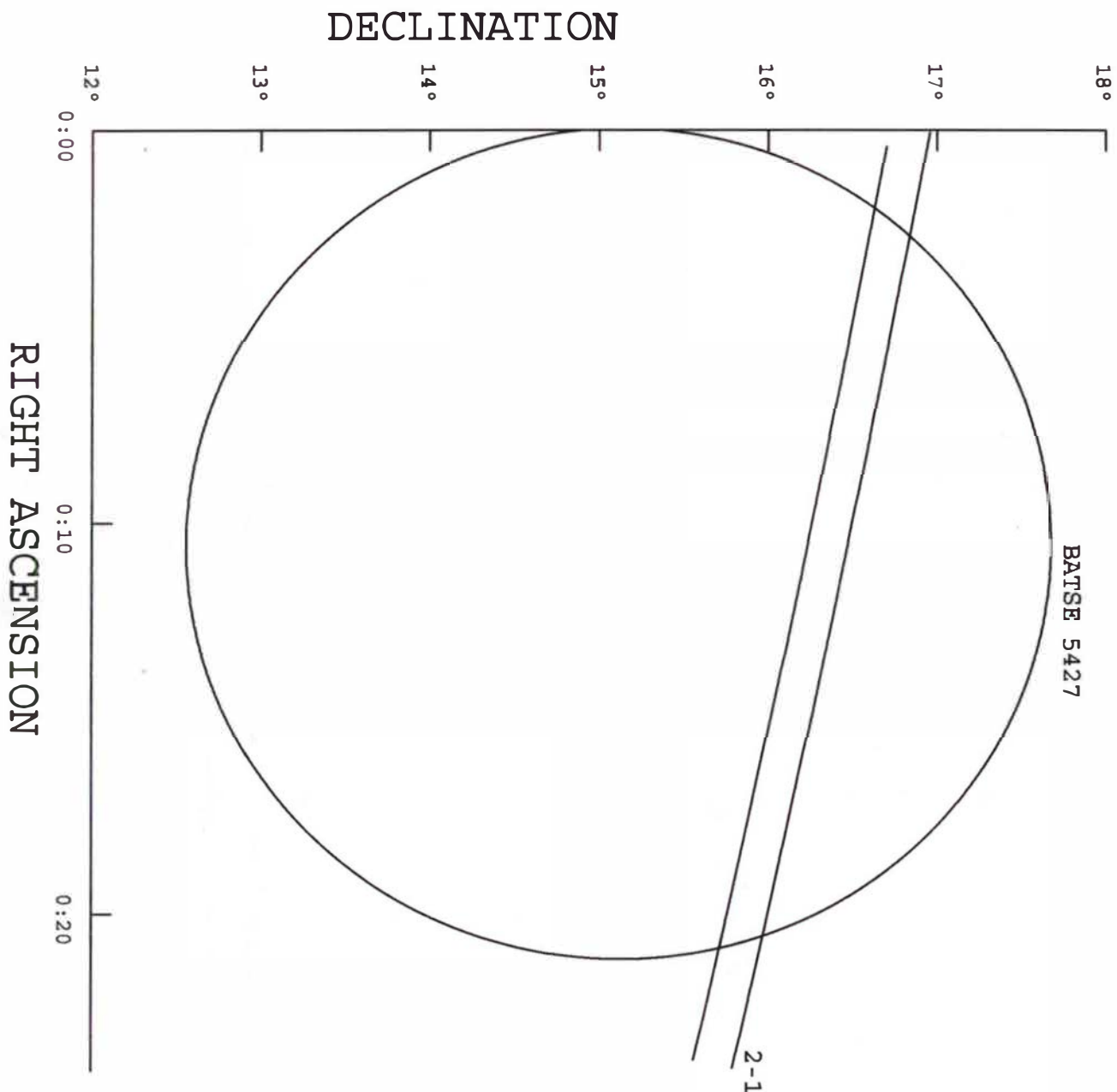
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 15, 1996 21:42



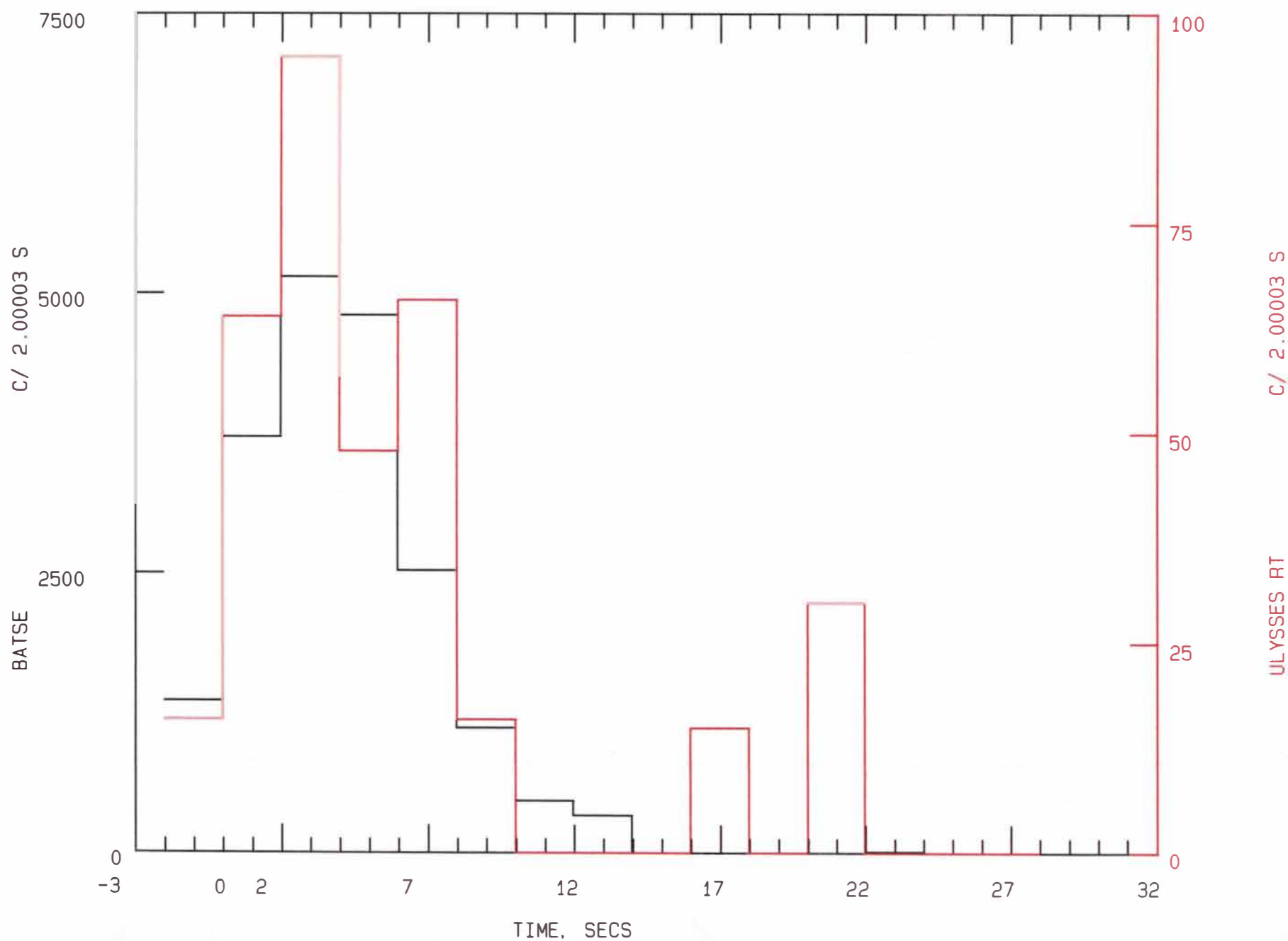
BATSE

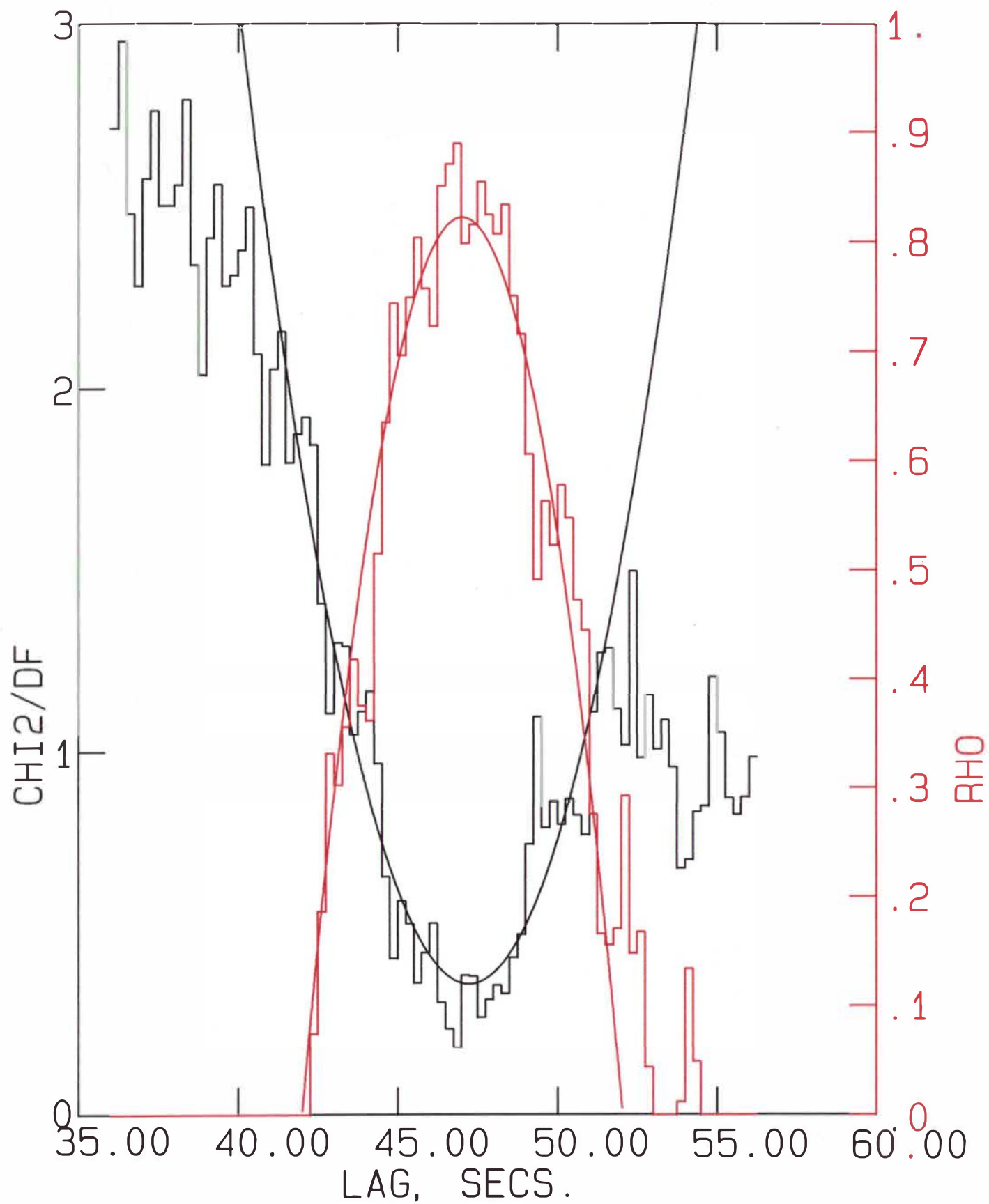
-ULYSSES RT CORRELATION

15/ 4/96

78088.906

6/ 3/98





ULYSSES RT

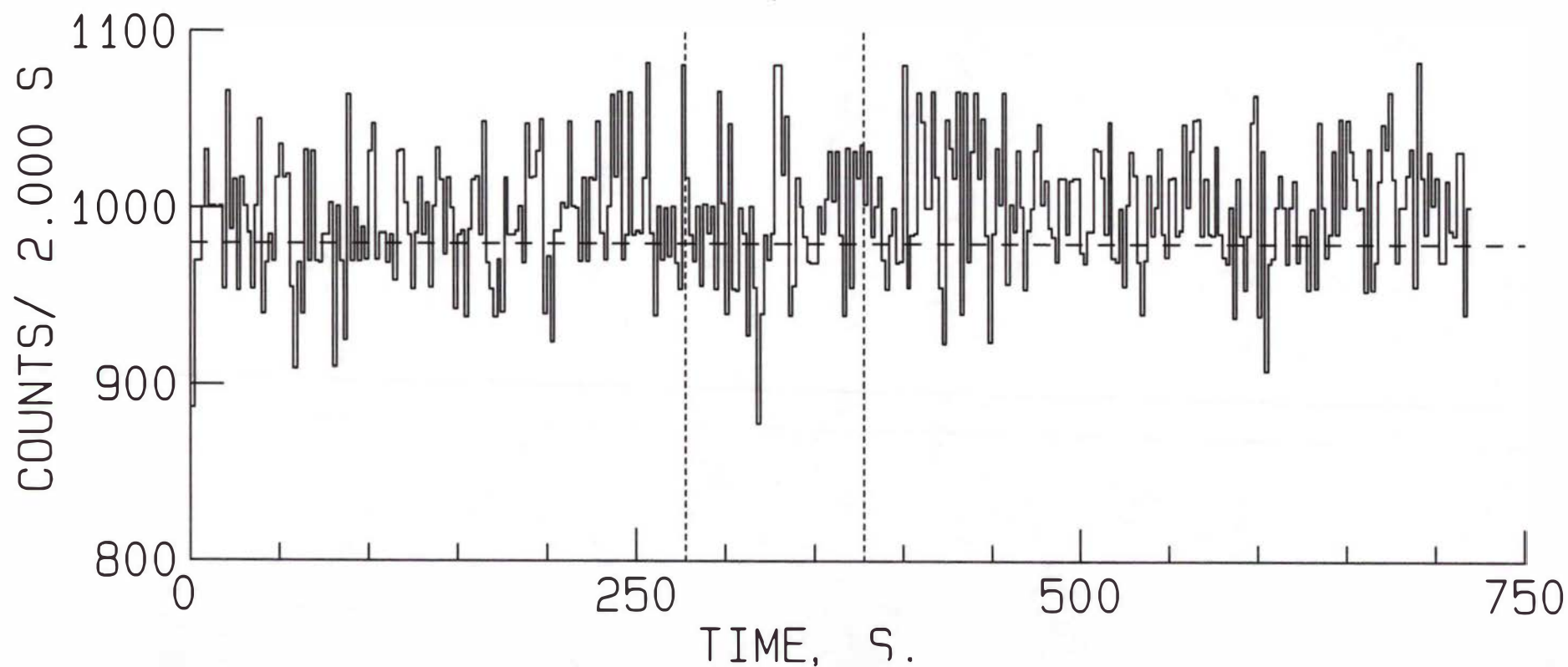
6 / 3 / 98

15 / 4 / 96 77868.018 s

0.250 S INTERVALS REGROUPED BY 8

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



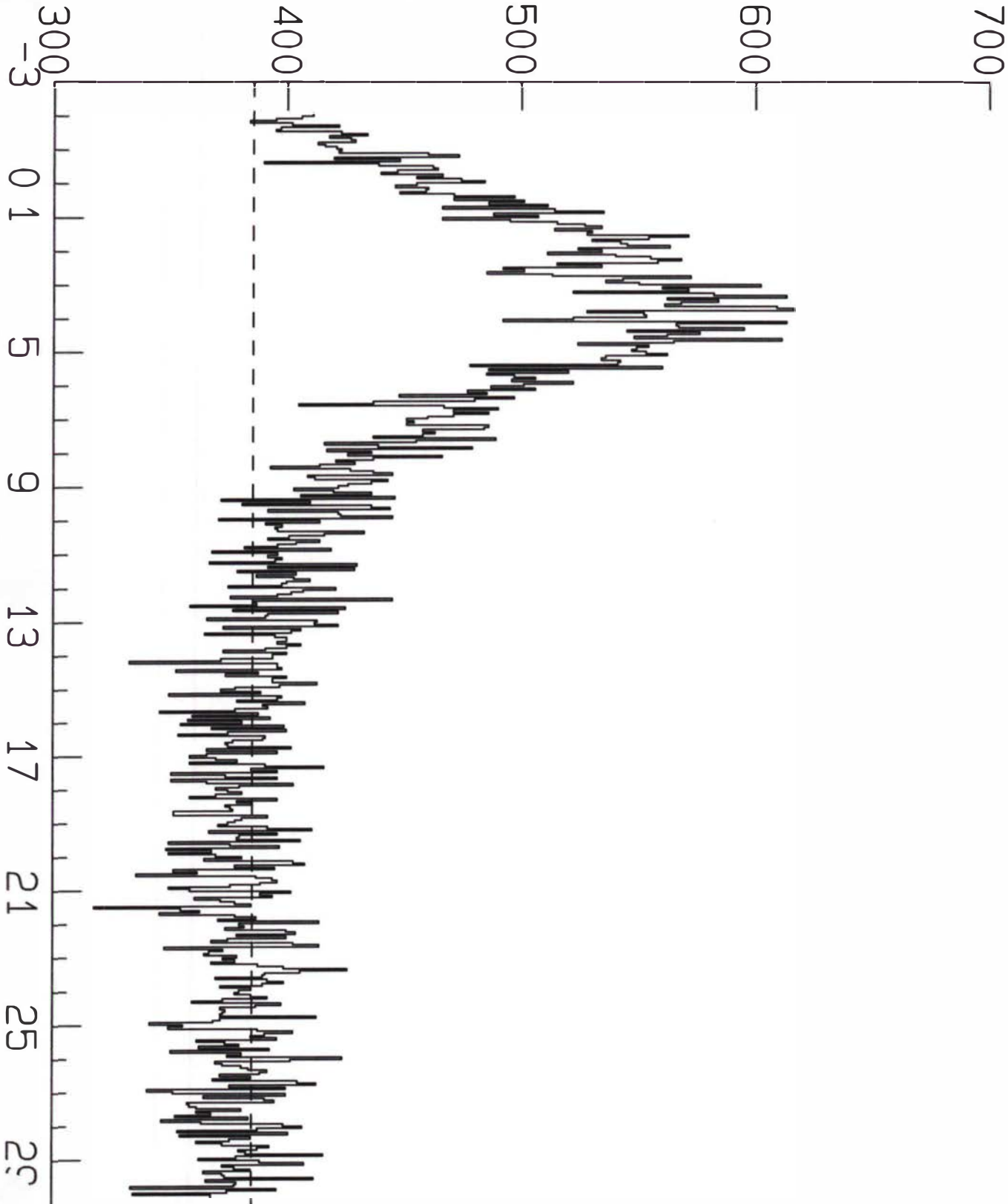
BATSE

15/04/96

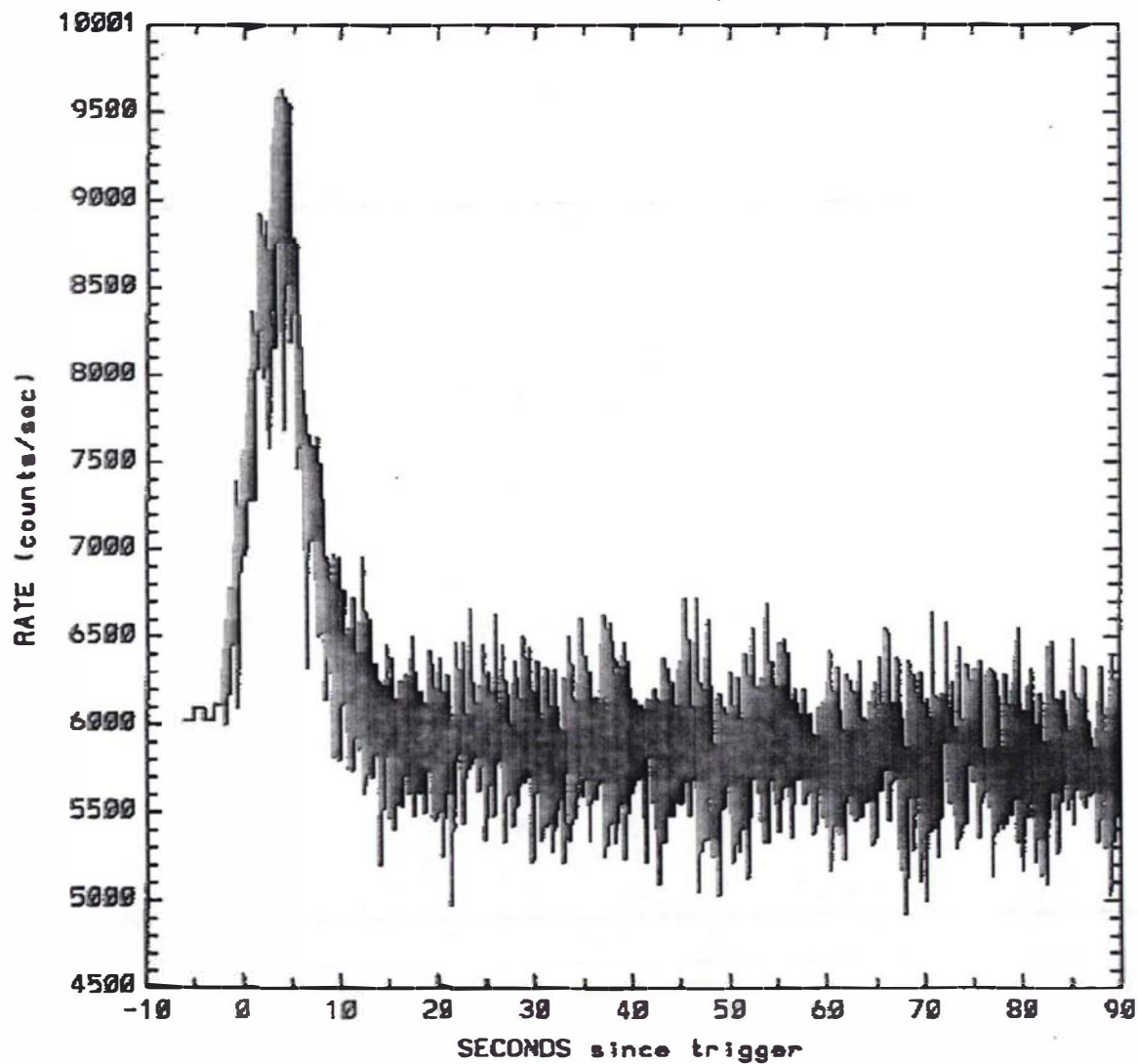
78088.906

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5427



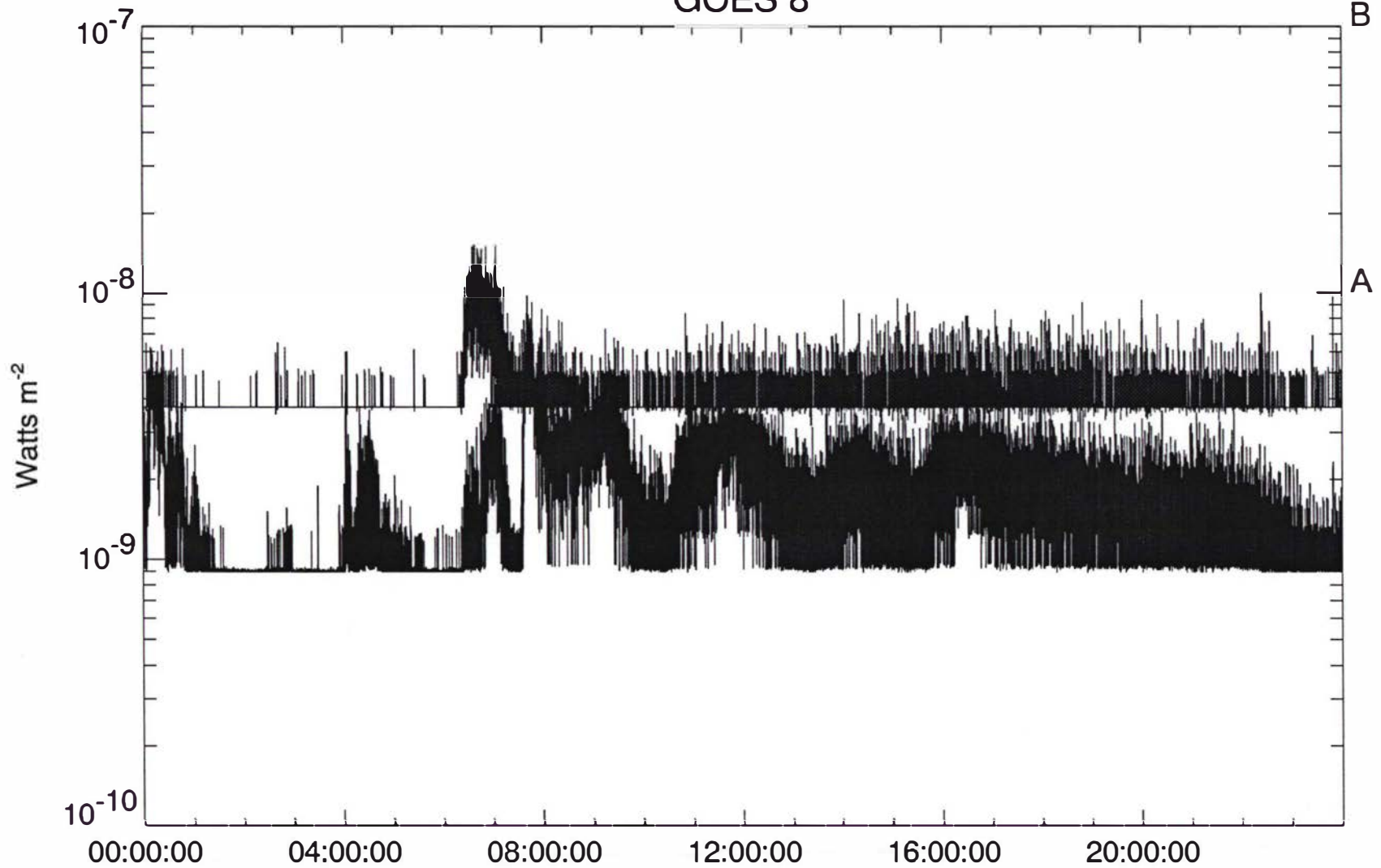
25-APR-1996 13:24:38

Created by HCPS BD
(Burst Display)
Version t2.25

Trigger # . 5427

Trigger Time:
18188 / 78888.586Burst Data Type:
DISCSCDeadtime
Corrected. NBackground Data
Type: FREQ + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors [7..8],
---32---Discriminators:
(1, 2)Quality Mask:
80ISP1

GOES 8



Data Start: 96/04/15, 0000:00

Plot created: 96/04/24, 1856

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

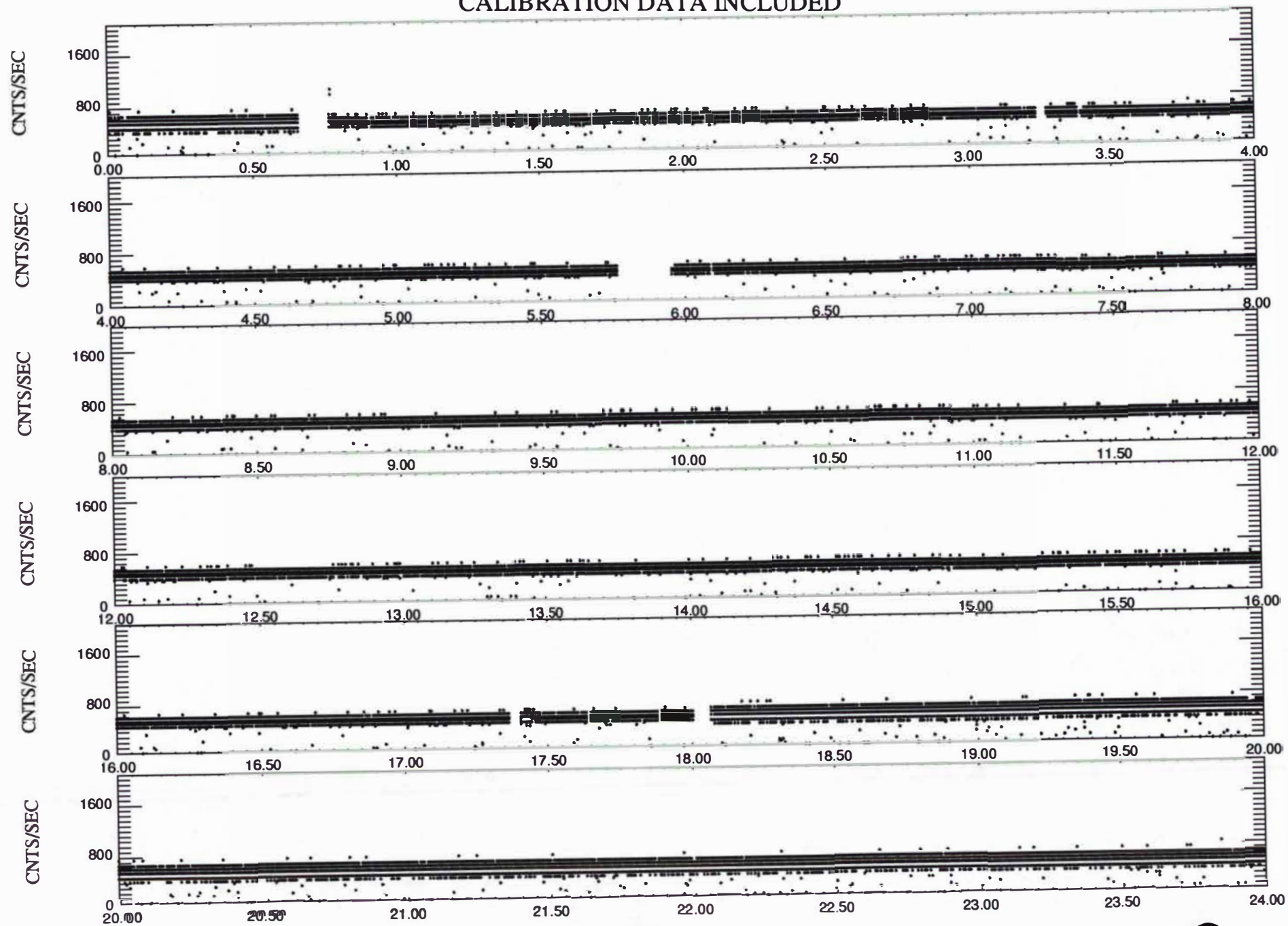
NO BURST (7)

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

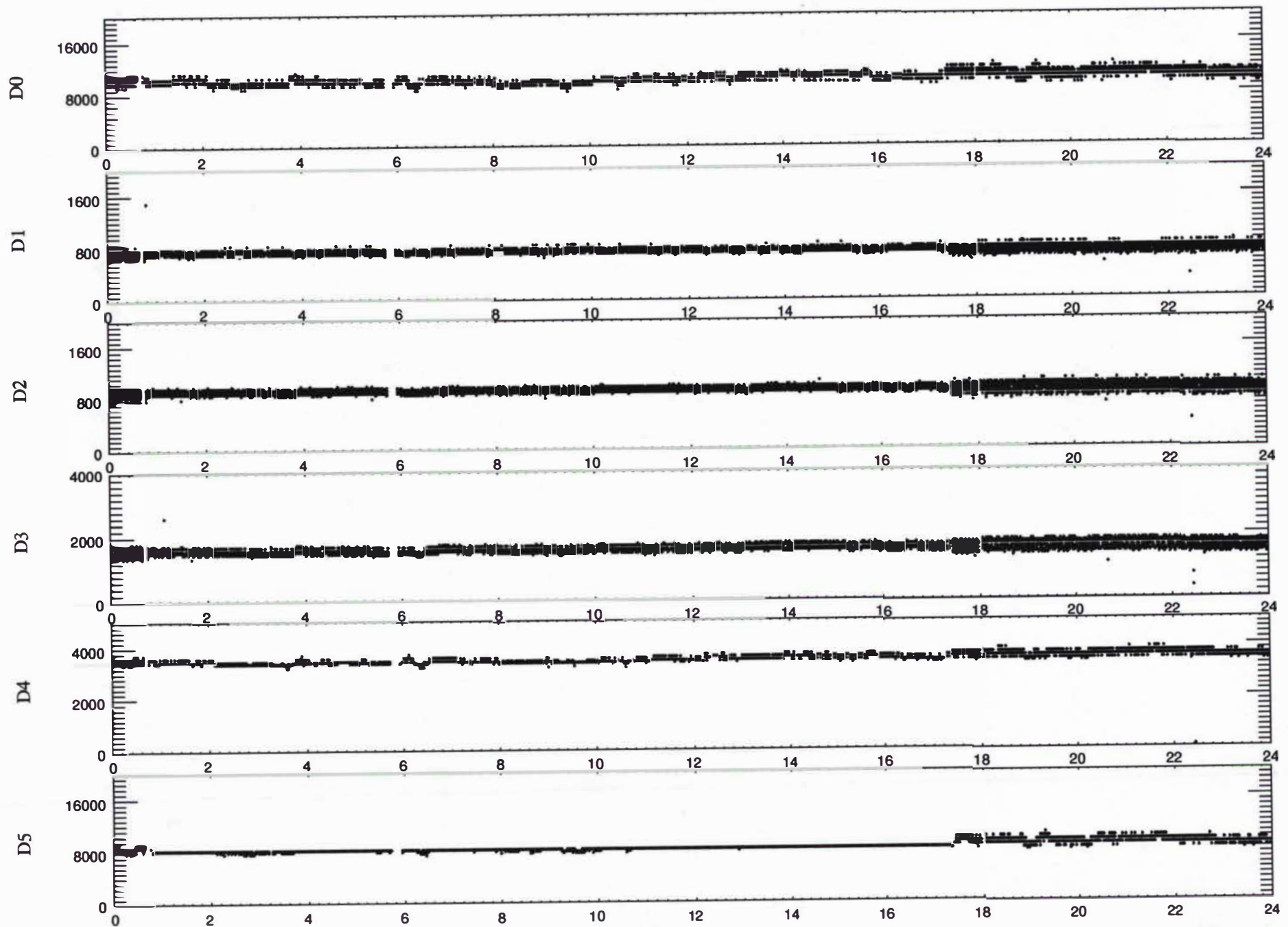


UNIVERSAL TIME

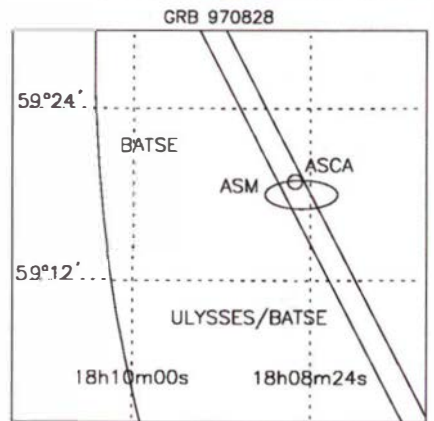
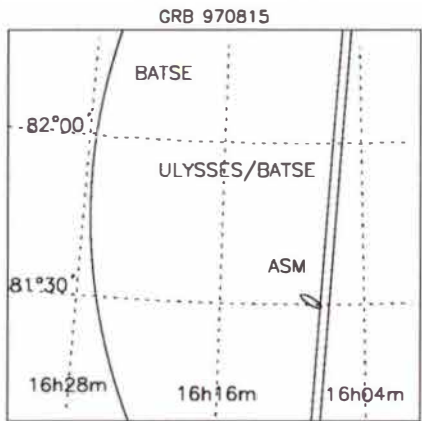
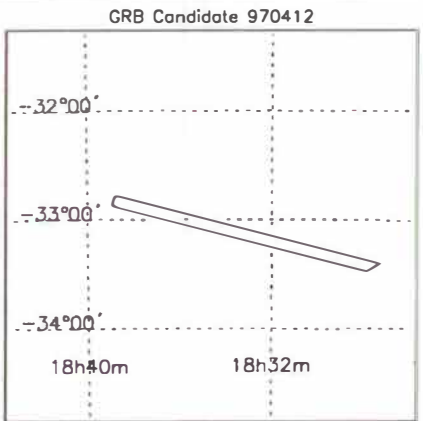
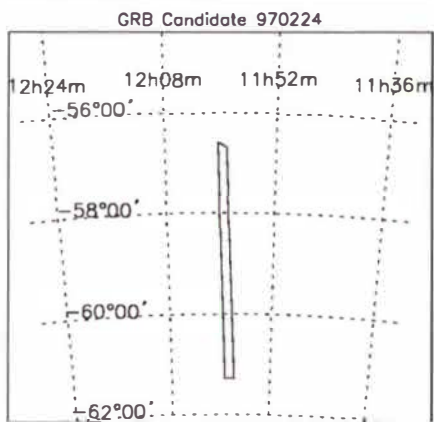
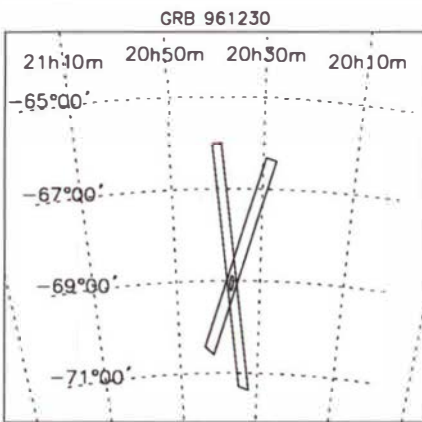
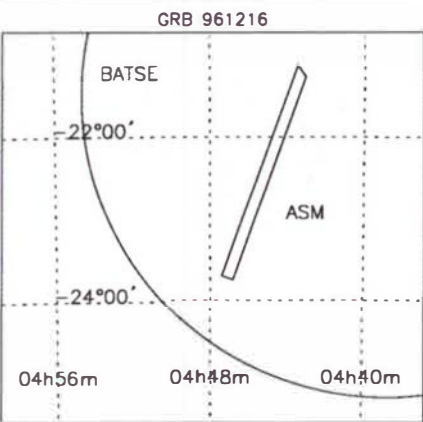
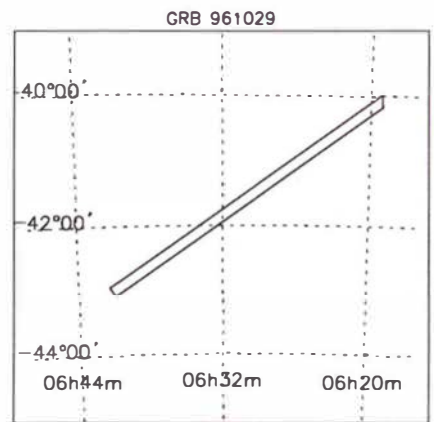
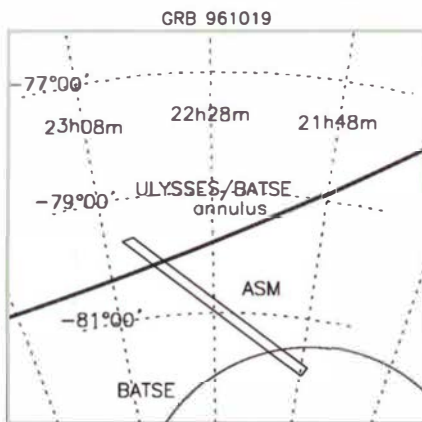
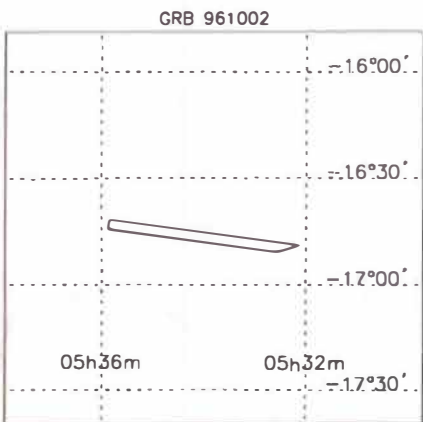
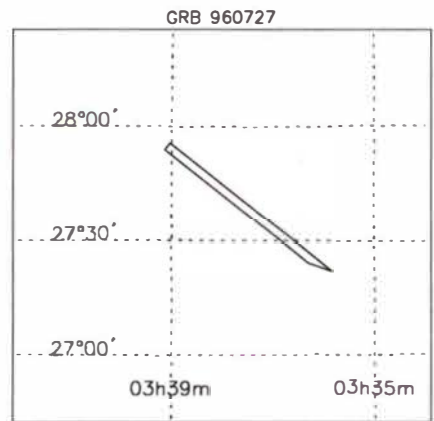
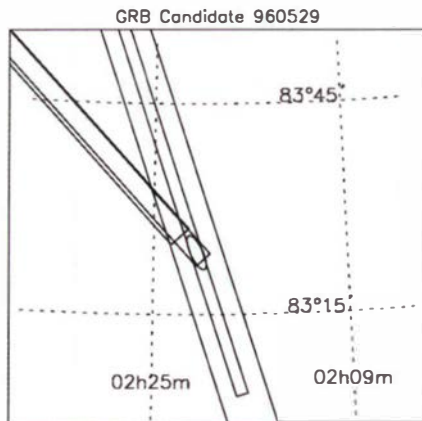
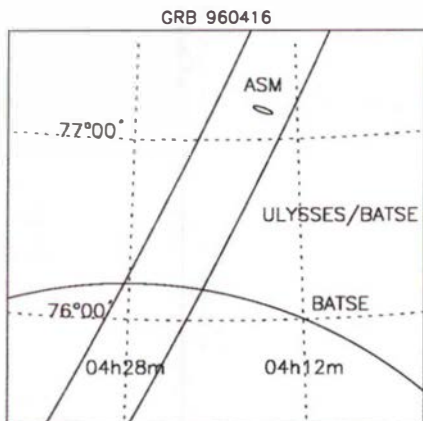
CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME



From RICHARDSON@SSLLES.MSFC.NASA.GOV Thu Apr 18 08:56 PDT 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Thu, 18 Apr 1996 10:56:28 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5428

BATSEARCH PROGRAM

BATSE BURST # 5428 RI
EVENT OF 1996 APR 16 DAY OF YEAR=107
EVENT CROSSING TIME AT BATSE : 14939. S. OR 04:08:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 67.000 74.000
BATSE PEAK COUNTING RATE: 4300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 4/ 96 IS:
RA= 151.019 DEC= 67.077 DIST= 3.459 AU
BATSE-ULYSSES DISTANCE = 517476689. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=153.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1547.52 SECS.
CROSSING TIME AT ULYSSES IS 13391. S. OR 03:43:11 +/- 159.25 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 4/ 96 IS:
RA= 16.195 DEC= 6.159 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356845568. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -328.91 SECS.
CROSSING TIME AT MARS IS 14610. S. OR 04:03:30 +/- 193.62 SECONDS

BATSE BURST TRIGGER

NO.: 5428

TIME: TJD=0189 SECONDS=14939

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=13.0 AZIMUTH=316.9 ERROR=2.1 DEGREES

COMMENTS:

GRB. TWO SPIKES. THE FIRST AT ~T-4SEC. WITH DUR.~10SEC. THE SECOND AT
~T+33SEC. WITH DUR.~75 SEC. TOTAL DUR.~110SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5428	960416	10189	14939	4300	067	+74	110

Helw. corr. never applied!

Date: Oct 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

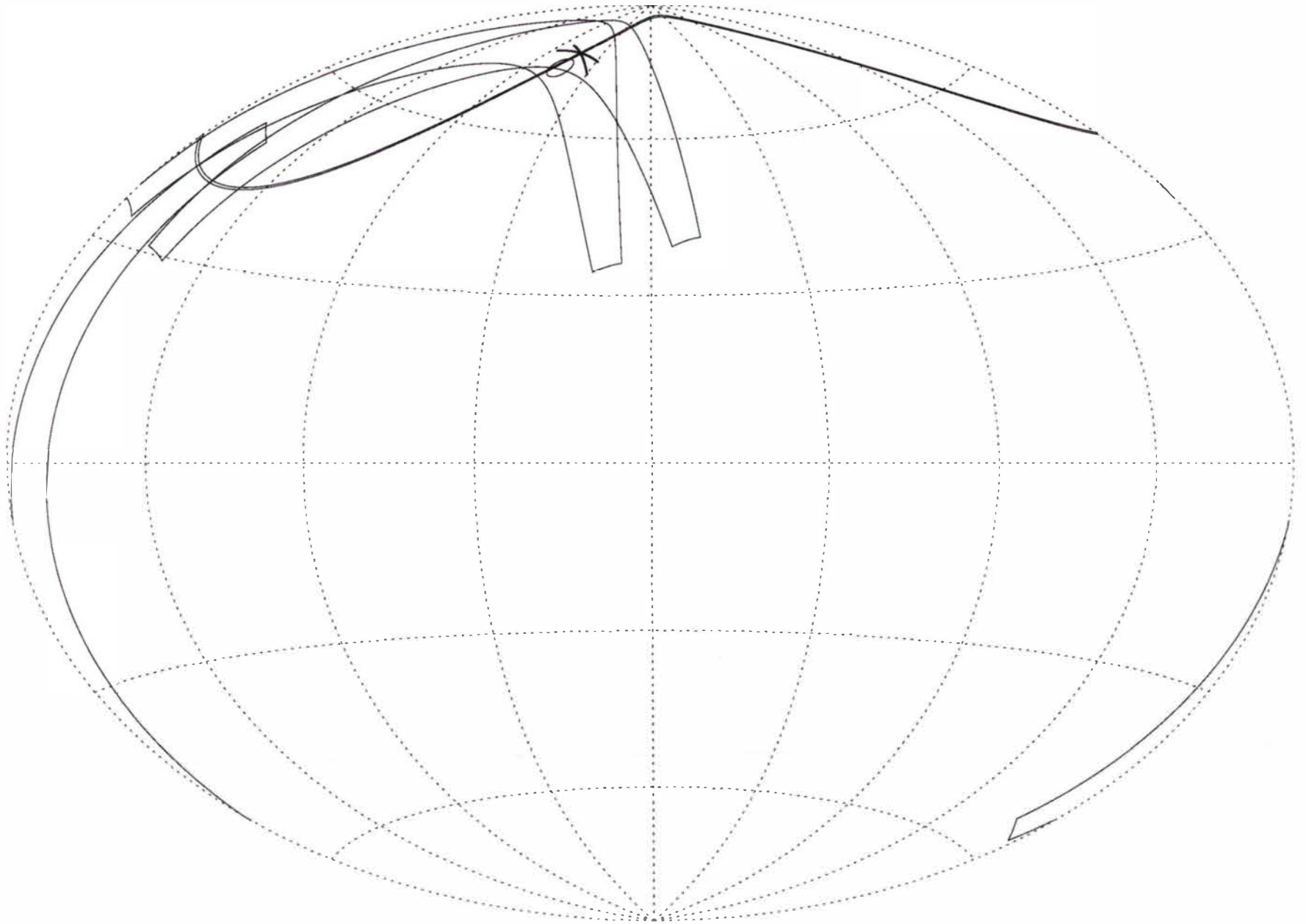
2. BATSE Data

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

3. PVO Data

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

GRB 960416 in the RXTE ASM



TO: ASM Team and Kevin Hurley
From: Garrett Jernigan
Date: March 27, 1997

Here is the preliminary information on the one BATSE burst seen by the ASM. It is BATSE burst 5428 (RA=67 DEC=+74) seen in dwell 72245226.01 in both ssc1 and ssc2. (See files in the directory /nfs/sco94/d3/jgj/BATSE5428.) I made a map centered on RA=63.2 DEC=77.1, the approximate position of the burst. The map is composed of the three dwells 72245226.00, 72245226.01 and 72245226.02 for both ssc1 and ssc2. The file T5428_ANS_as.ps shows the allsky configuration of the six dwells. The file T5428_saosky.fits is the map file centered on RA=63.2 DEC=77.1 with a radius of 5.000 degrees. The fitted intensity of the burst is flux about 185 mCrab +- 17 mCrab (~11 sigma detection). Just run "/nfs/sco94/h1/dv/pear/extras/saoimage T5428_saosky.fits &" to look at the sky map. I also created a postscript version T5428_saosky.ps. I pass along Kevin's email below. He has an IPN position for this burst (roughly 1 out 4 chance of this). I ran my TOO finding software on this dwell and found that if it had been running at the time it would have worked. SIMBAD shows a star (see below) near the position. I do not know what that might mean.

More later.

Garrett

===== Info from Kevin Hurley =====
Garrett,

It's *very* weak for Ulysses, but we have it. I can get an annulus perhaps 10' wide going through the BATSE error circle. Let me know what the coordinates of your source are.

Kevin

===== Info from Simbad =====
#1 | *|AG+77 86 |04 18 59.23 +77 07 02.9 |F8 |12.3 11.5 |0
simbad-coolist display ->1
Type: Star
Coord 1950.0 = 04 18 59.23 +77 07 02.9 mb, mv = 12.3 11.5 :
Coord 2000.0 = 04 26 00.20 +77 13 56.5 sp type = F8
gal = 133.79 +19.15
pm = +0.005 [8] +0.019 [7]
rv = ./.

AG+77 86 BD+76 159 SAO 5189
IRAS 04190+7707 PPM 5590

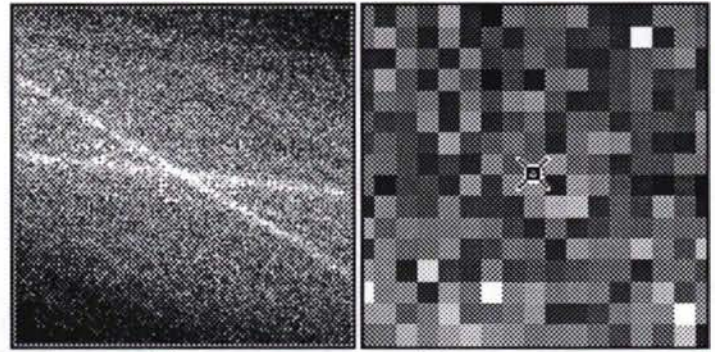
Measurements:
pos: 1 PM: 1 SAO: 1 IRAS: 1
=====

Garrett Jernigan
1 Grizzly Peak Blvd. (needed for Fed. Ex. only)
Space Sciences Laboratory
University of California
Berkeley, CA 94720-7450

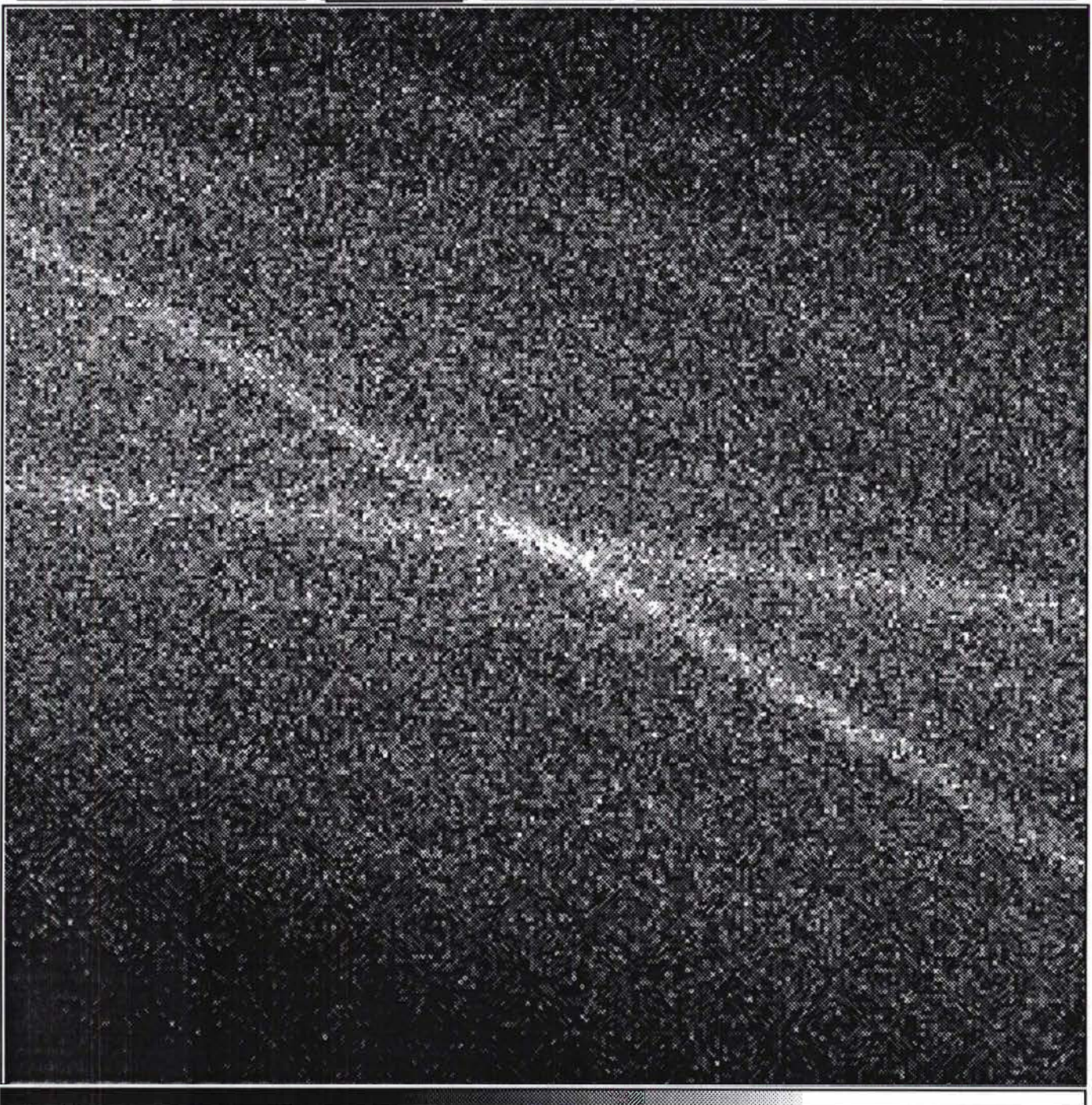
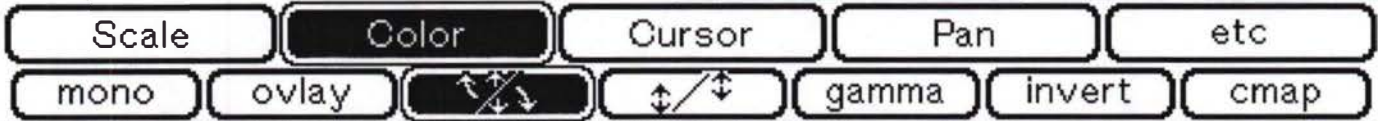
Email: gjgj@XNET.SSL.BERKELEY.EDU
Work 510-642-1070
home 415-897-5599
Fax 510-643-7629

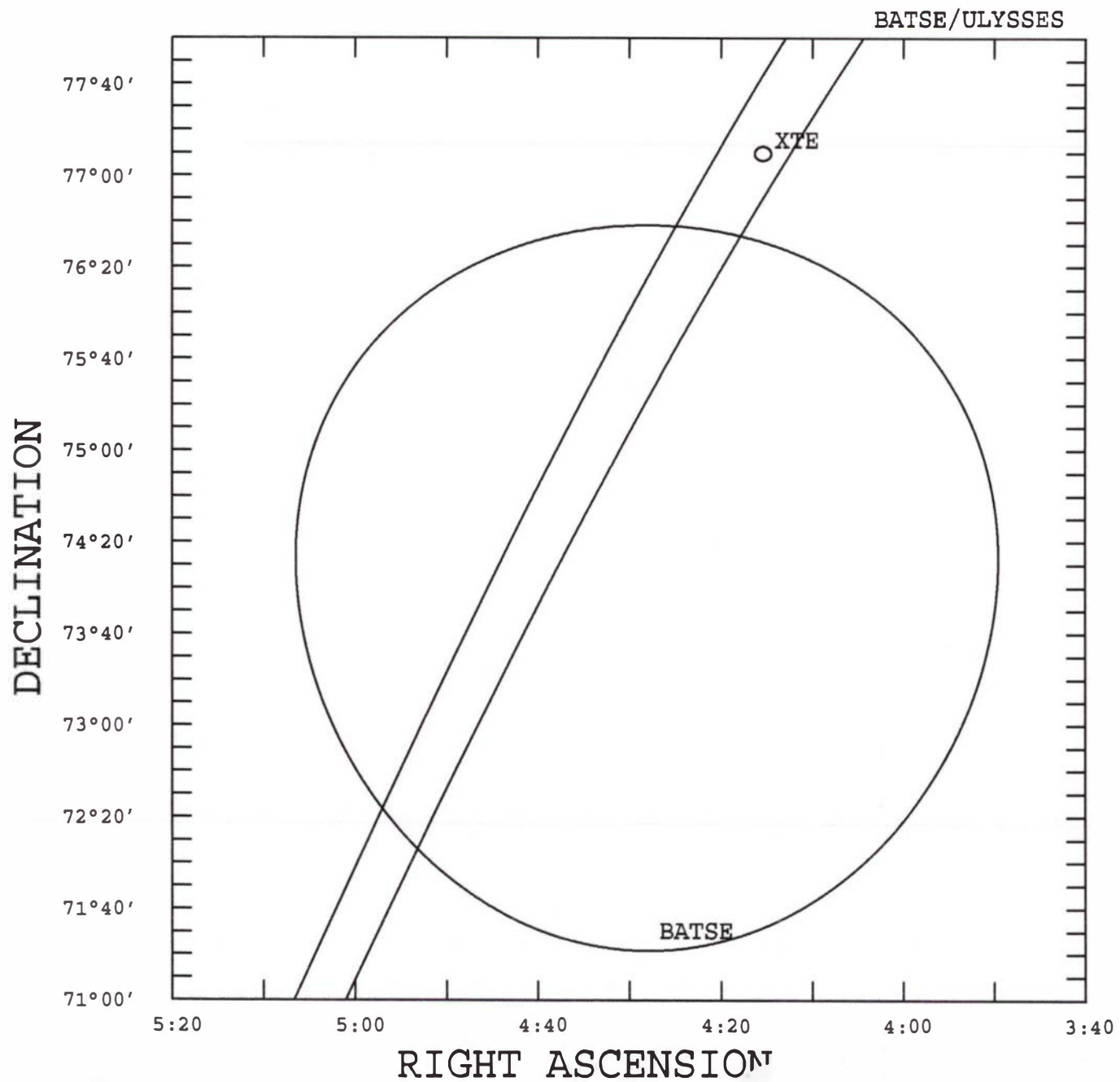
Corratt → Kevin 3/27/97

file: T5428_saosky.fits
dir: .



230.0 125.5 151





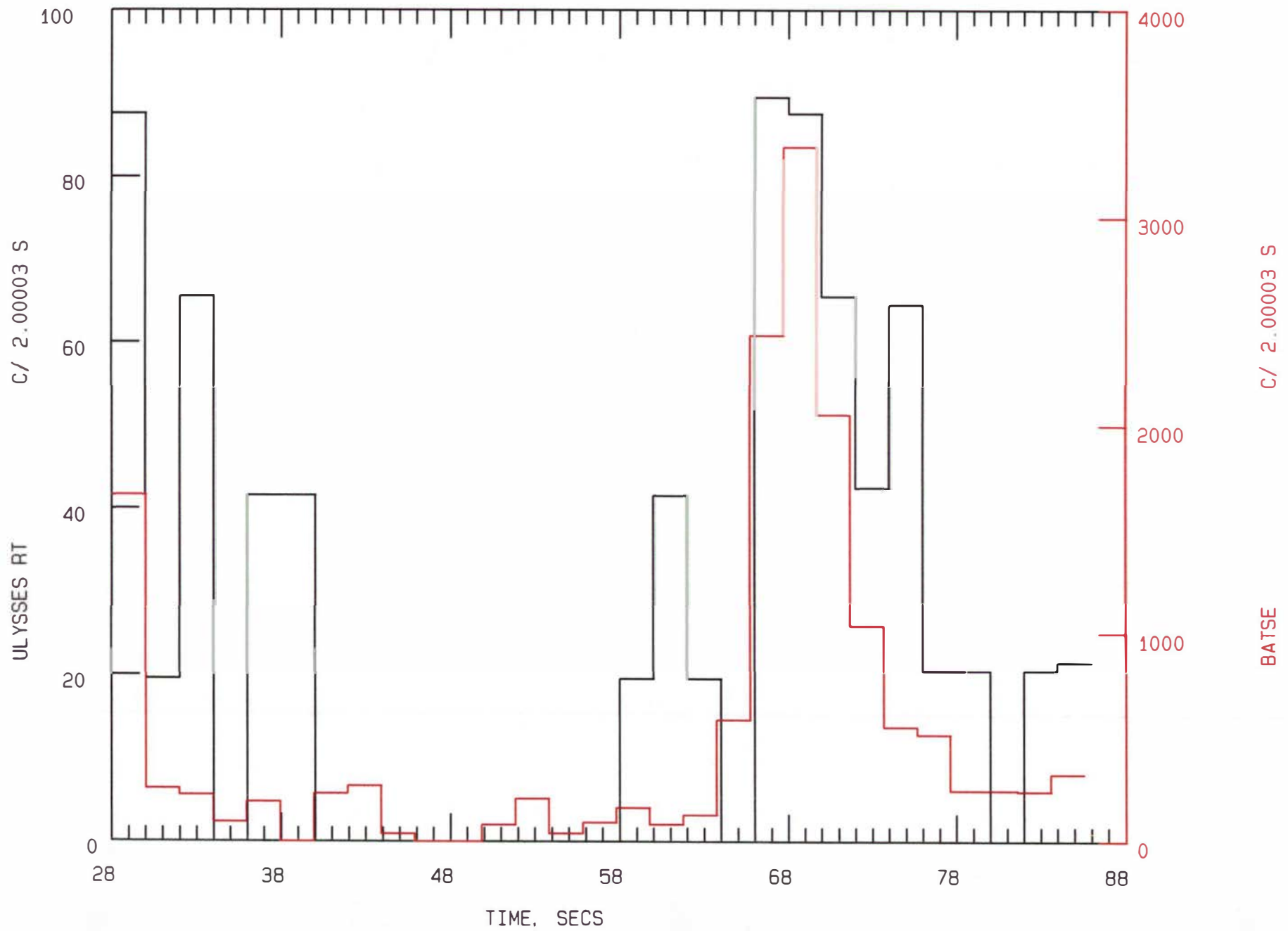
ULYSSES RT-BATSE

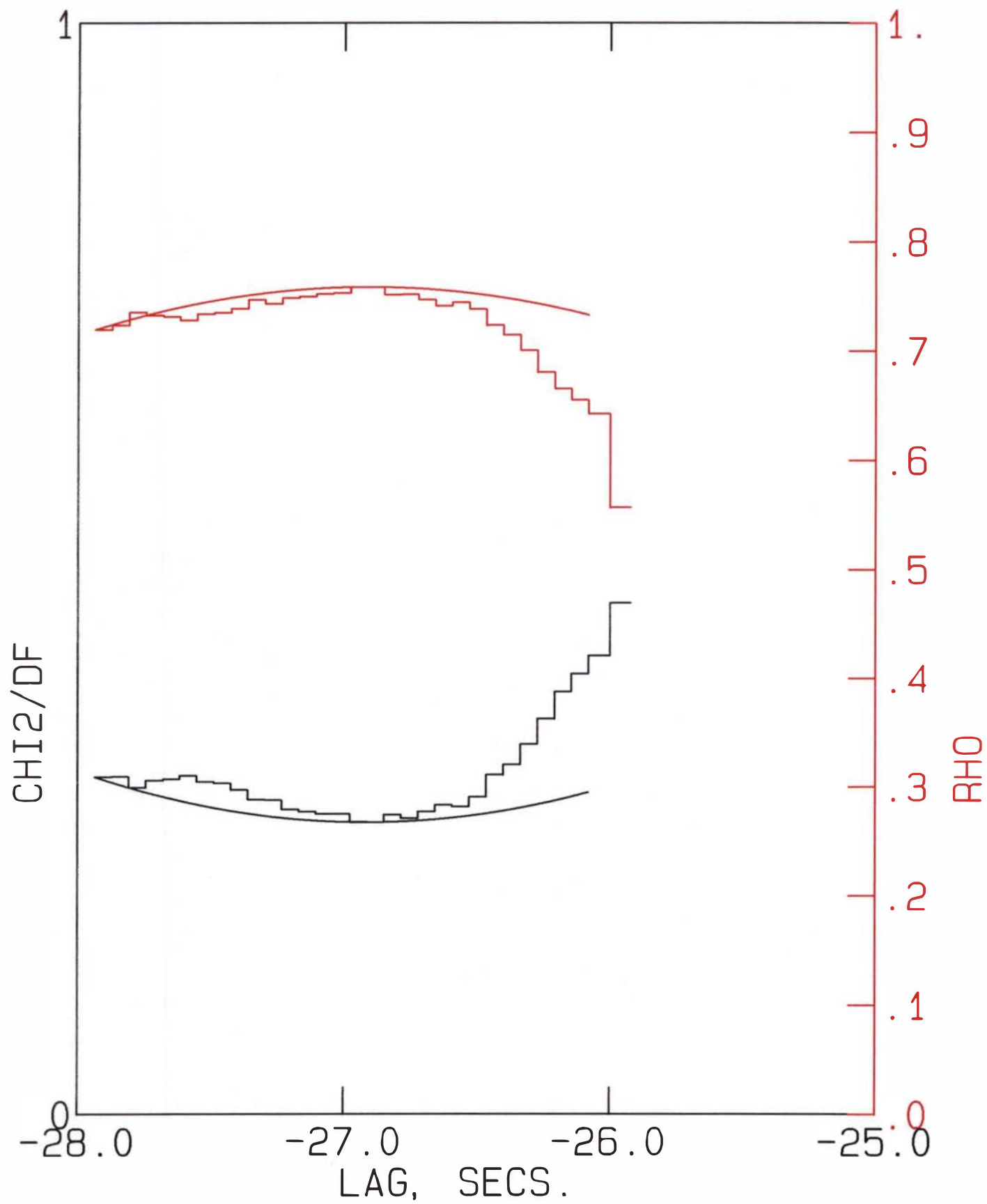
CORRELATION

16/ 4/96

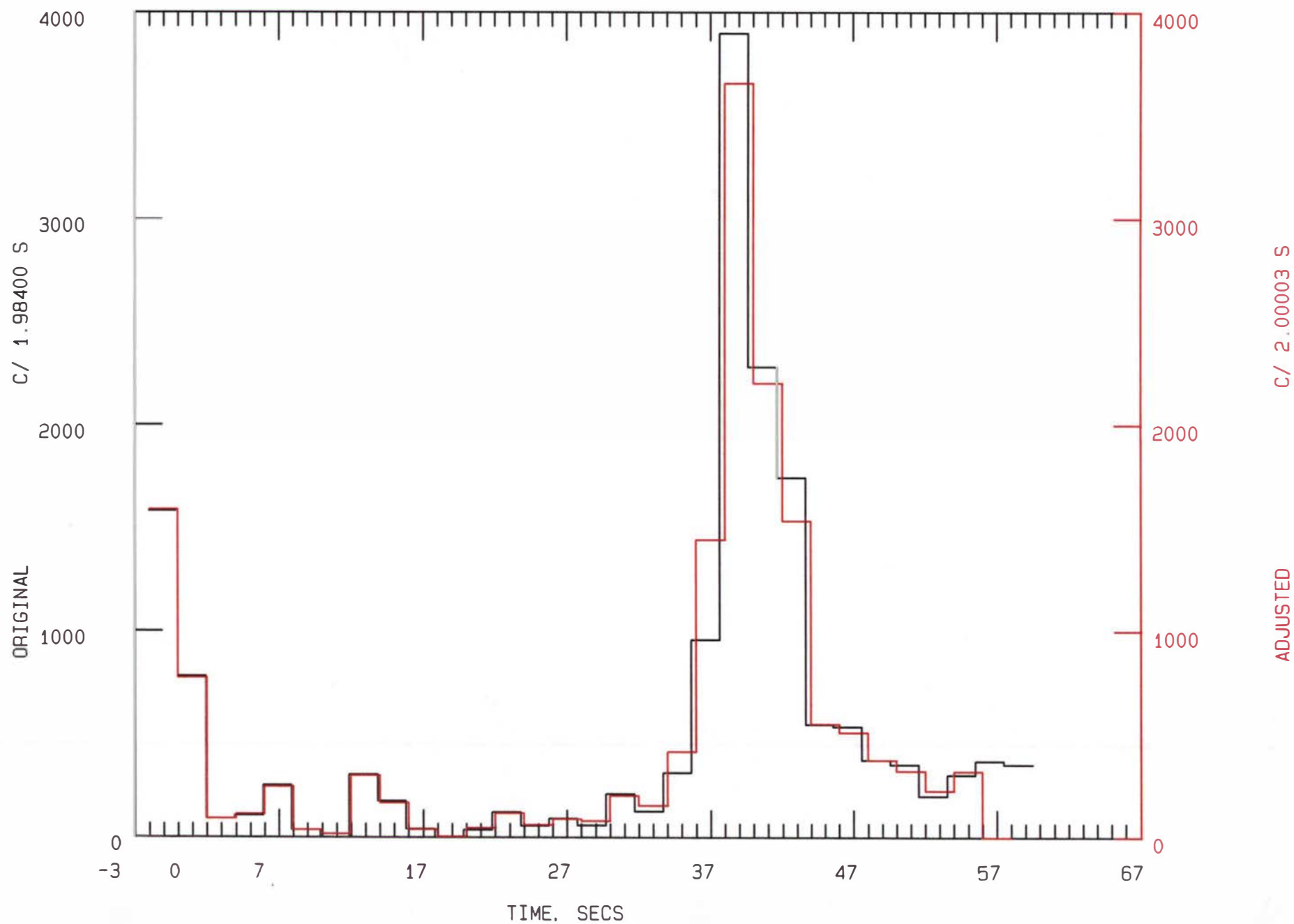
13362.302

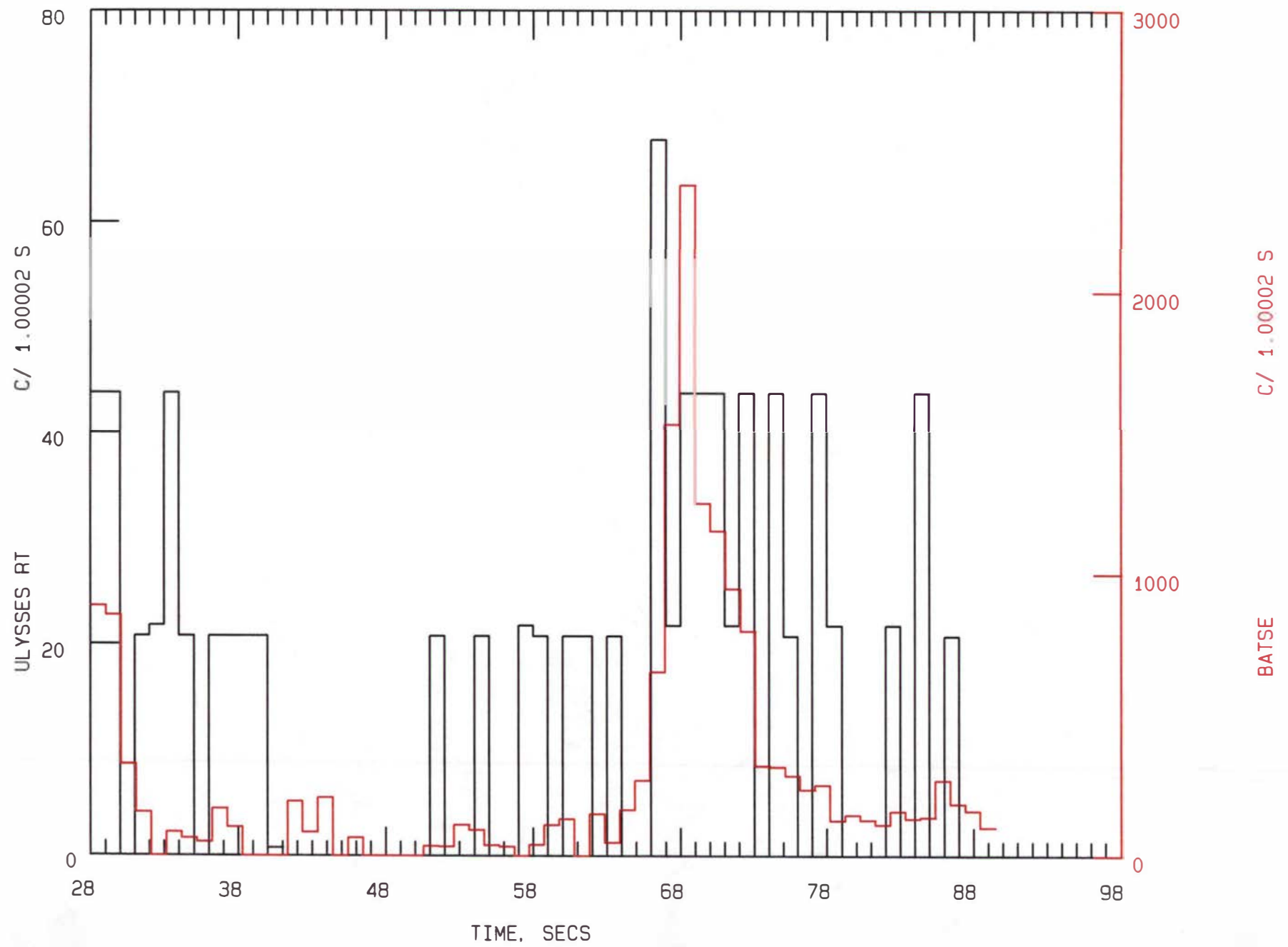
9/ 4/97

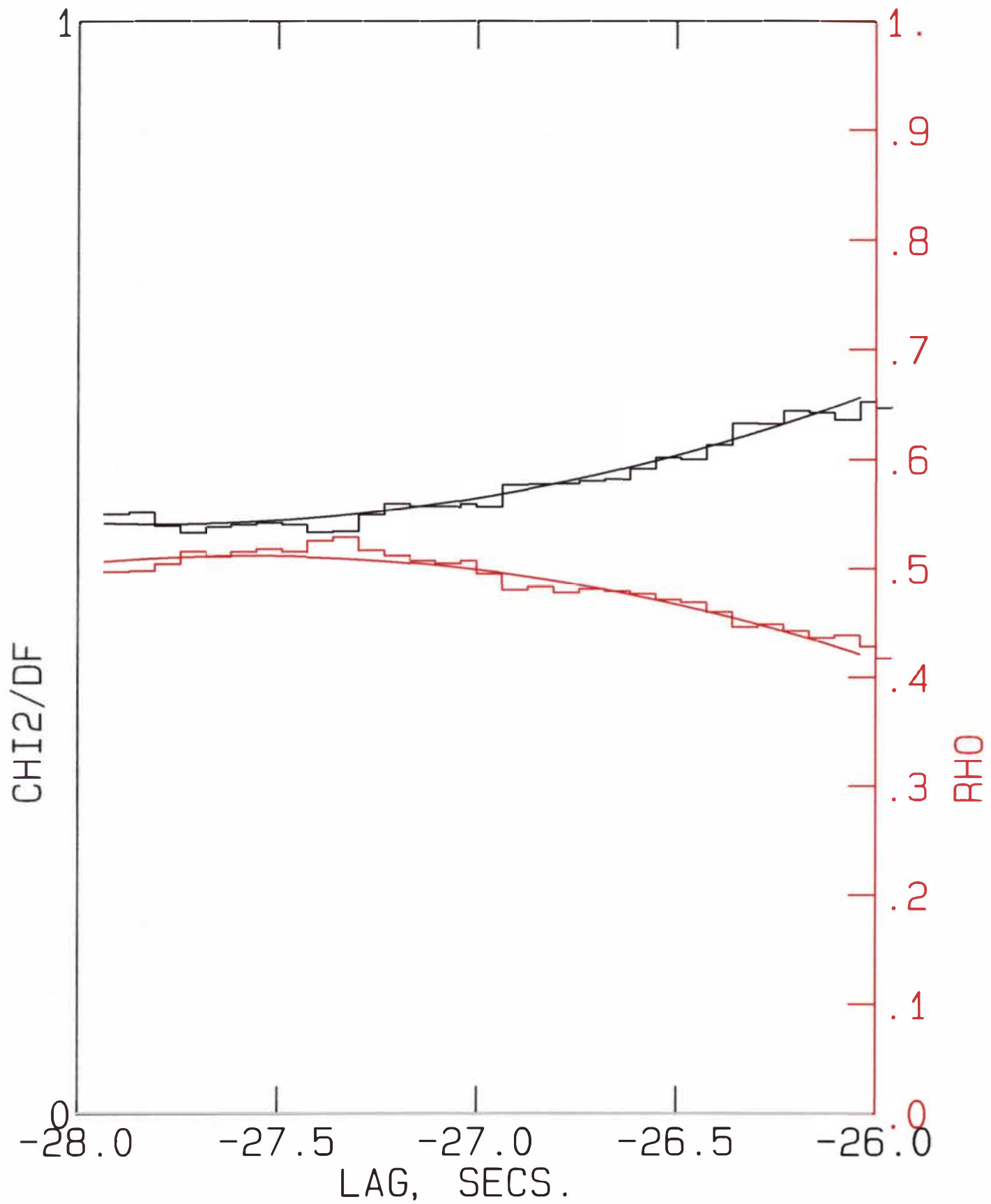




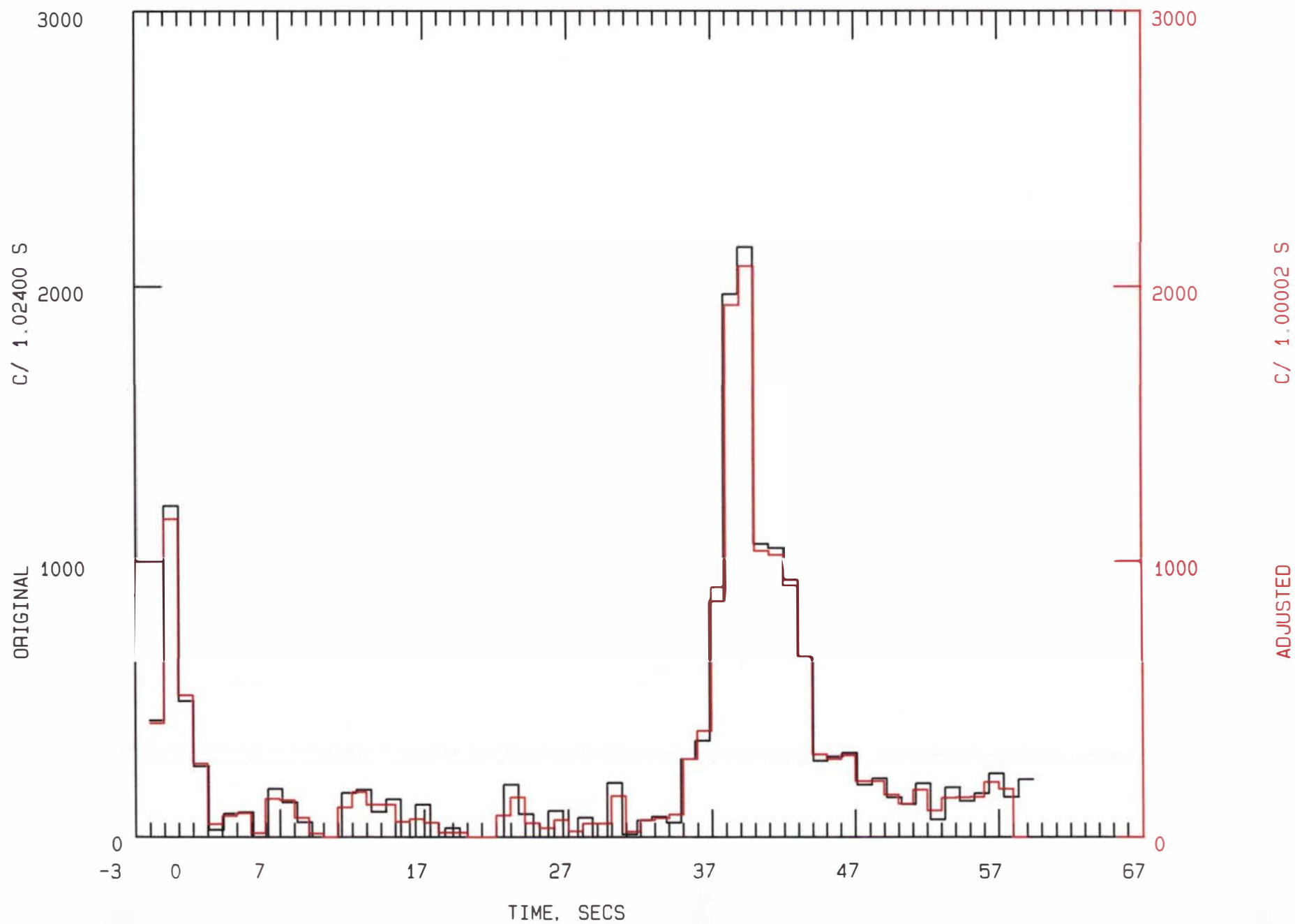
9/ 4/97







9/ 4/97



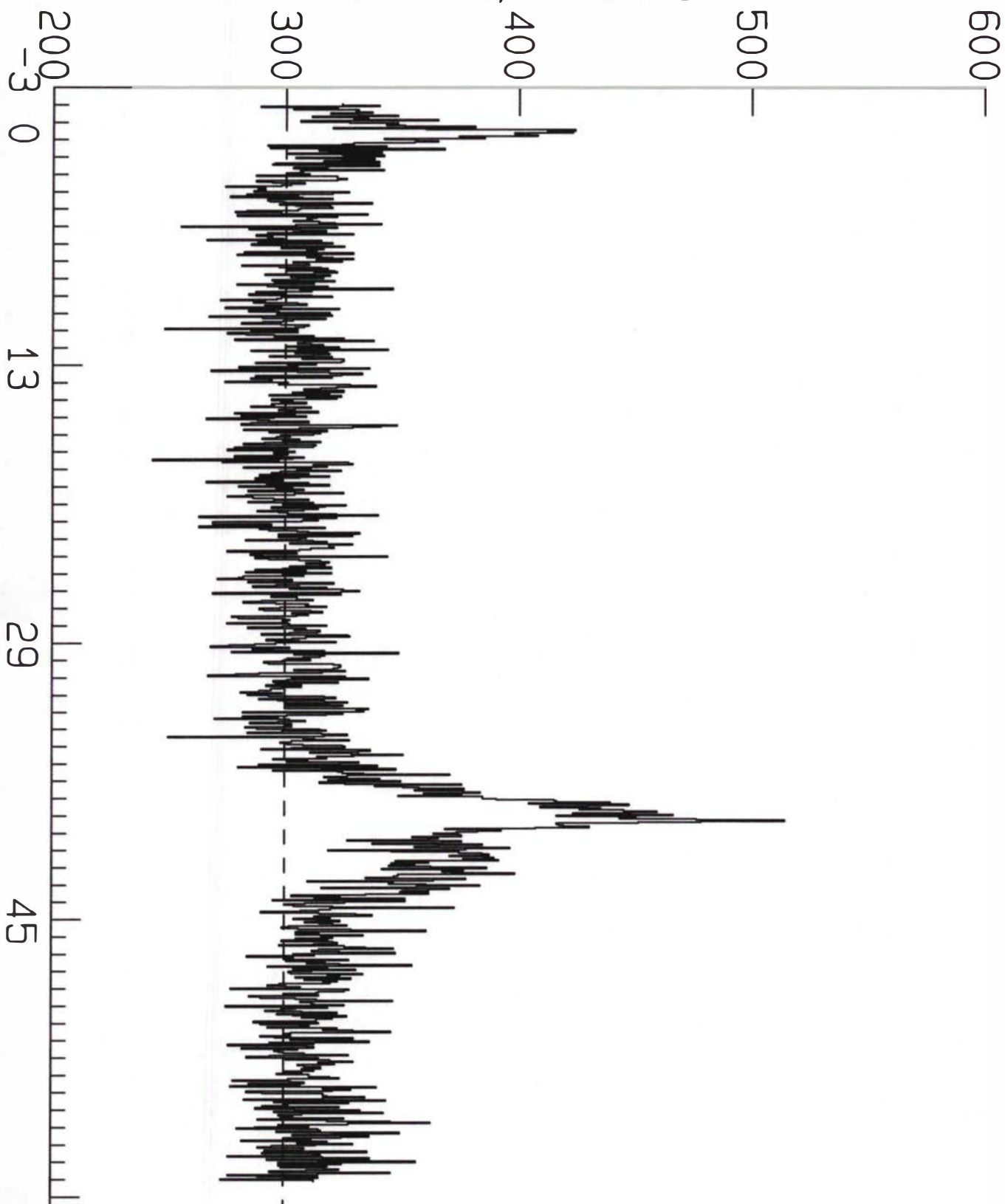
BATSE

16/04/96

14939.850

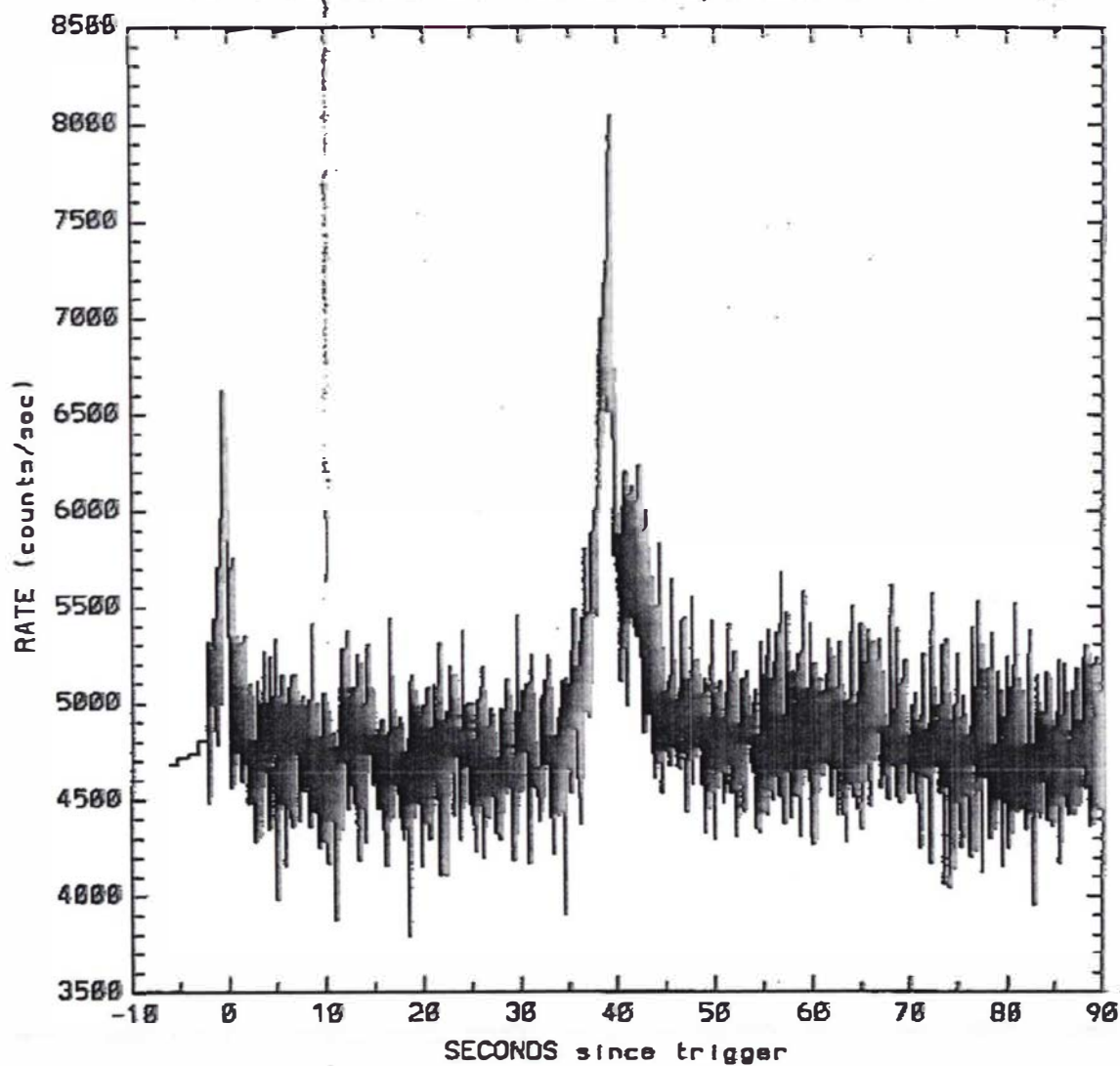
25- 100 keV

COUNTS/0.064 S



960416

DISCSC Data for K. Hurley, No. 5428



28-MAR-1997 13:34:33

Created by KOPS 80
(Burst Display)
Version 12.25

Trigger # : 5428

Trigger Time:
18189 / 14939.850Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.864 secondsDetectors (7..8):
-6---2-Discriminators:
1 1 . 2 1Quality Mask:
BOLSP1

ULYSSES RT

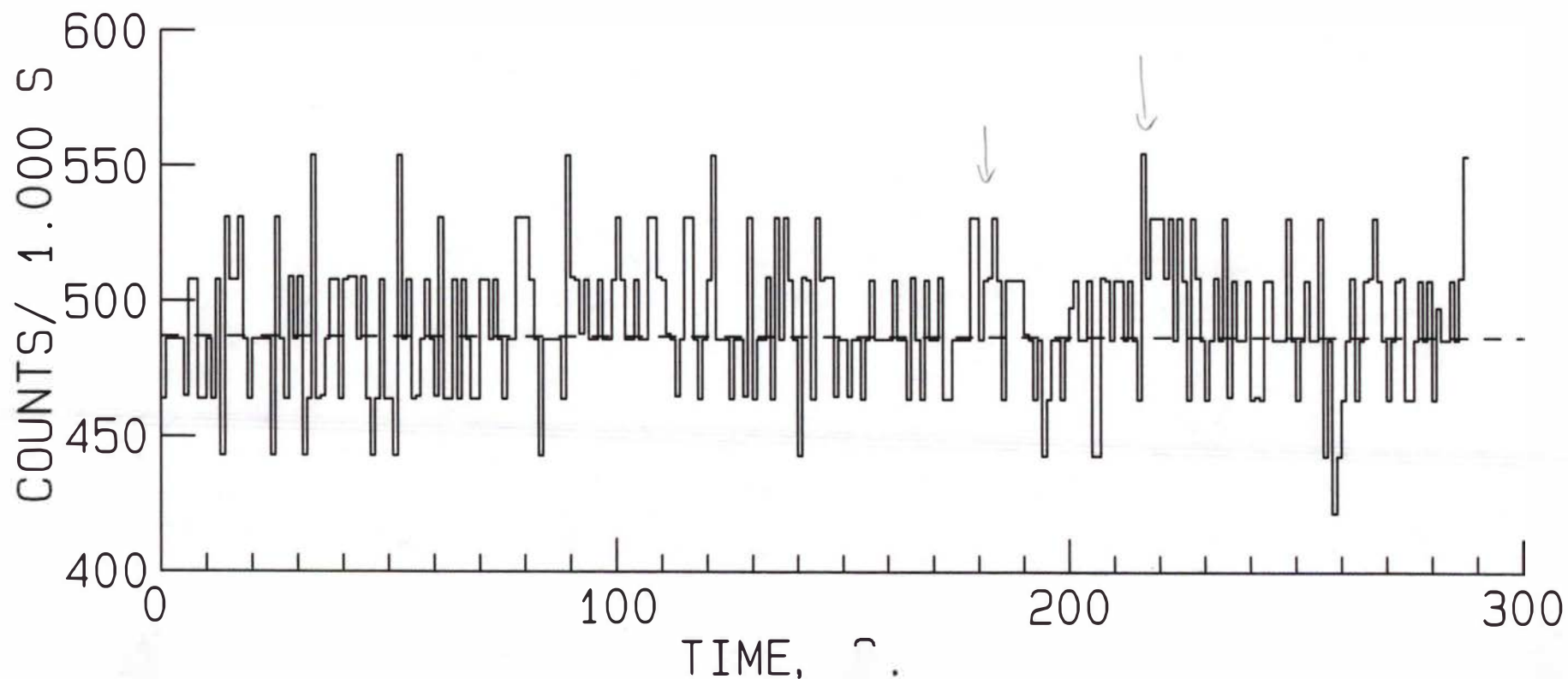
27 / 3 / 97

16 / 4 / 96 13212.311 s

0.500 S INTERVALS REGROUPED BY 2

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From BUTTERWORTH@LHEAVX.GSFC.NASA.GOV Thu Apr 18 11:44 PDT 1996
From: BUTTERWORTH@LHEAVX.GSFC.NASA.GOV
Date: Thu, 18 Apr 1996 14:44:50 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, CLINE@LHEAVX.GSFC.NASA.GOV,
scott@rosserv.gsfc.nasa.gov, TEEGARDEN@LHEAVX.GSFC.NASA.GOV
CC: BUTTERWORTH@LHEAVX.GSFC.NASA.GOV
Subject: Konus did not see the 960416 18:31 UT Ulysses event

Kevin,

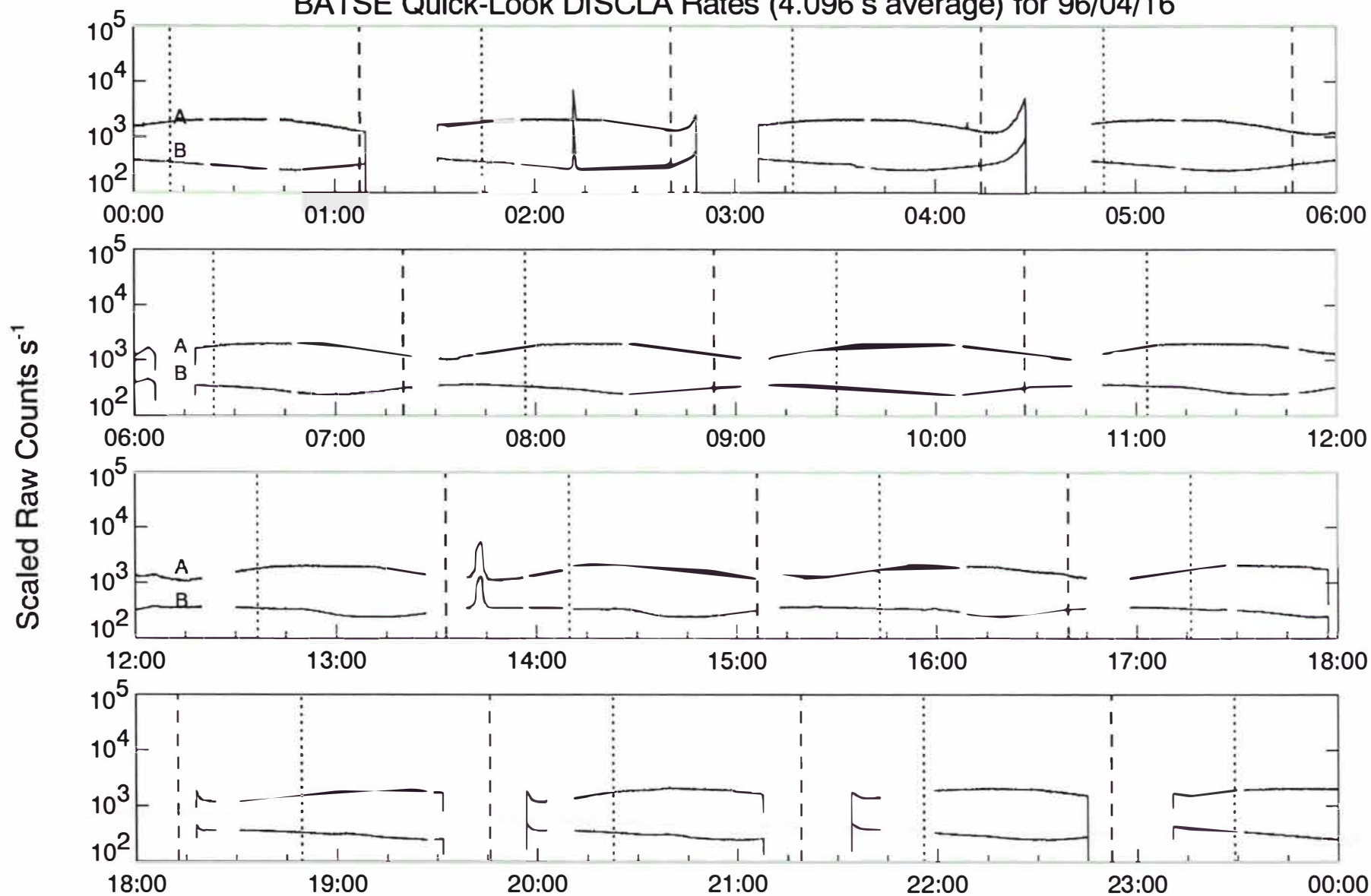
Konus didn't detect this event either. There were no triggers on 960416,
and there are no signs of a sub-threshold event in the waiting-mode data
accumulated every 1.5 seconds.

Paul.

>Kevin,
>BATSE did not "trigger" on anything at that time.
>You will have to wait for Huntsville to look for subthreshold events.
>--scott

>> ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:
>>
>> Ulysses triggered on a weak, 100 ms long event April 16
>> 1996 around 18:31 UT at Ulysses. The spacecraft was about 1725
>> light-seconds from Earth.
>>
>> Was this event detected by anyone else?
>>
>> CC: ulyssesbursts alias list
>> (barthelmy, butterworth, cline, marar, teegarden, terrell, yoshimori)

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/16



Current Time: 96/04/18, 1004 EDT

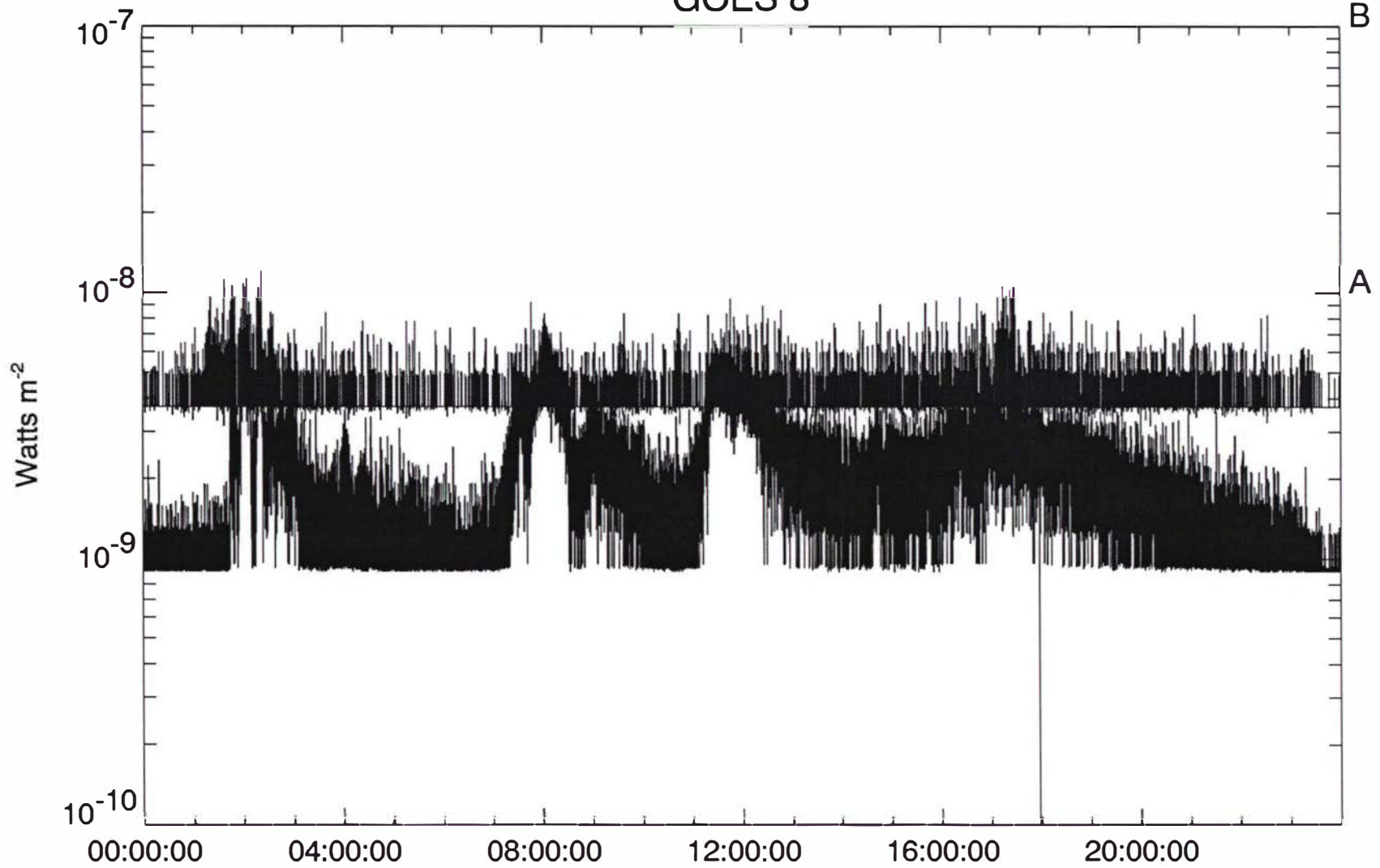
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



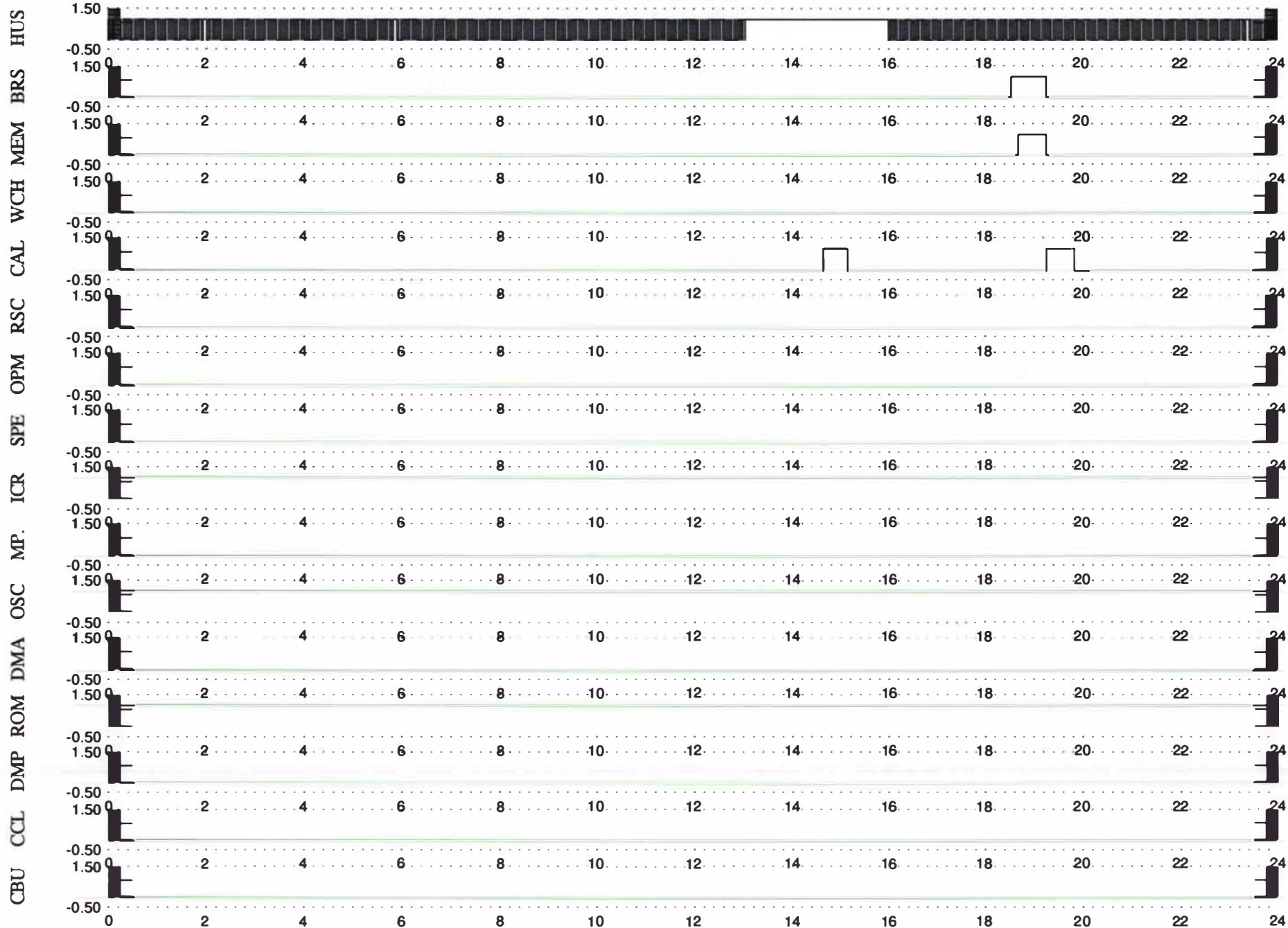
Data Start: 96/04/16, 0000:00

Plot created: 96/04/18, 1004

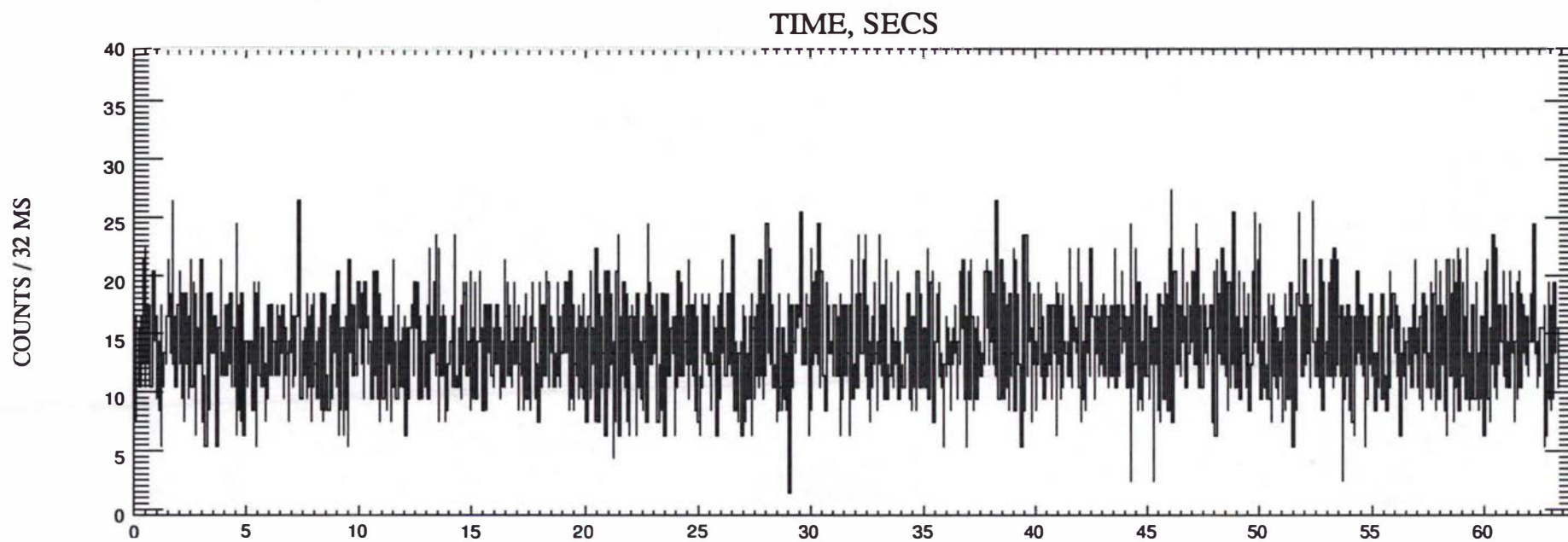
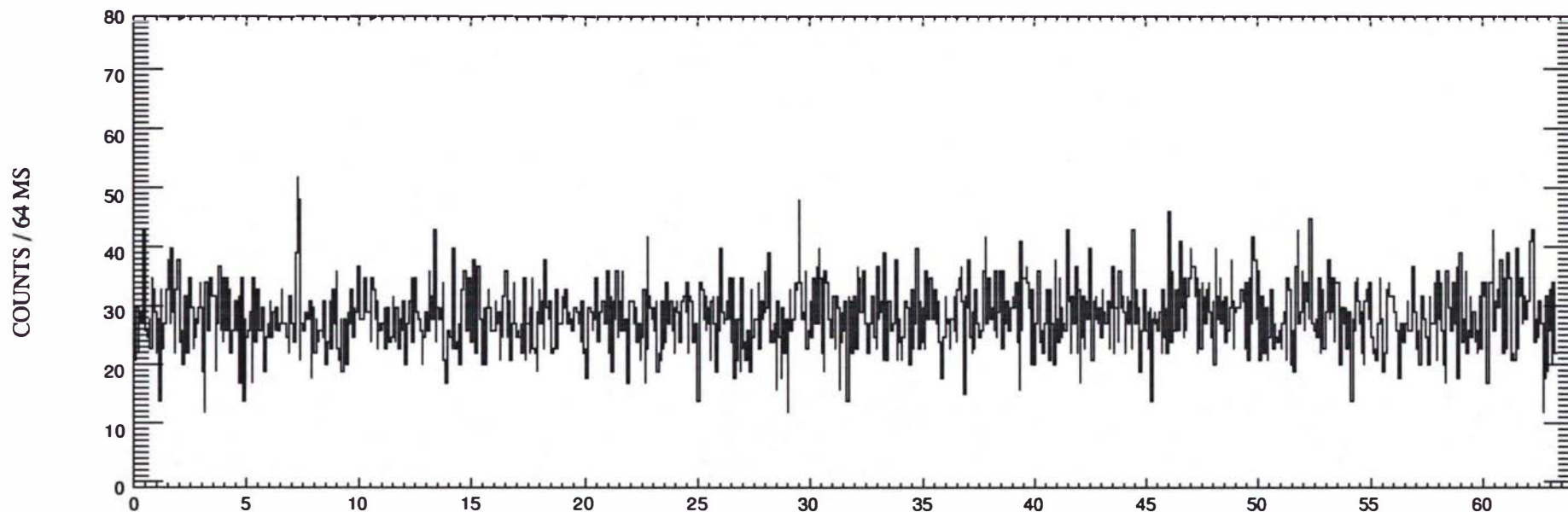
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

UNIVERSAL TIME

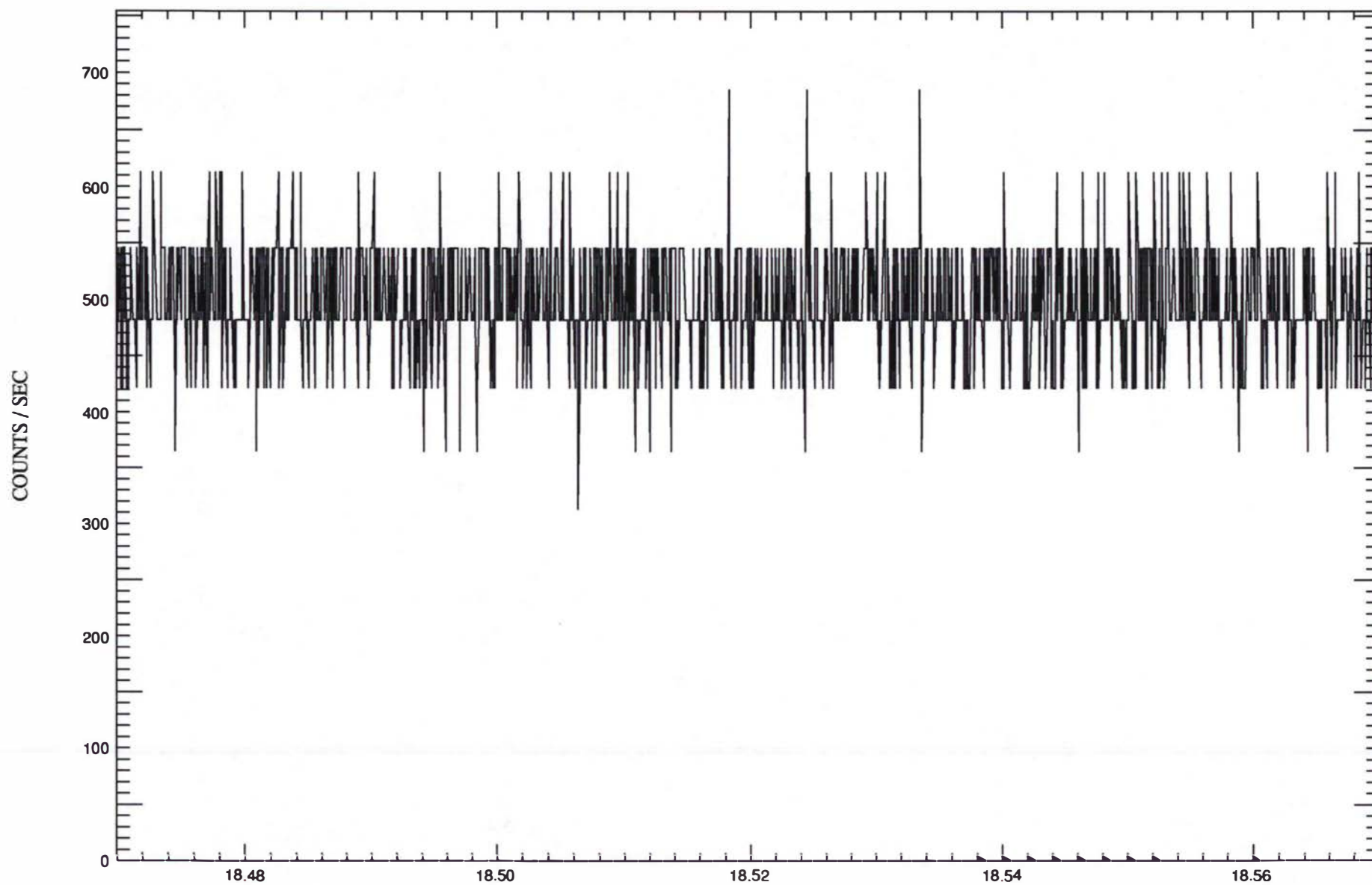


Burst Counter 8 at UT=18.518414967855 h=66666.294 s 18:31:06.294

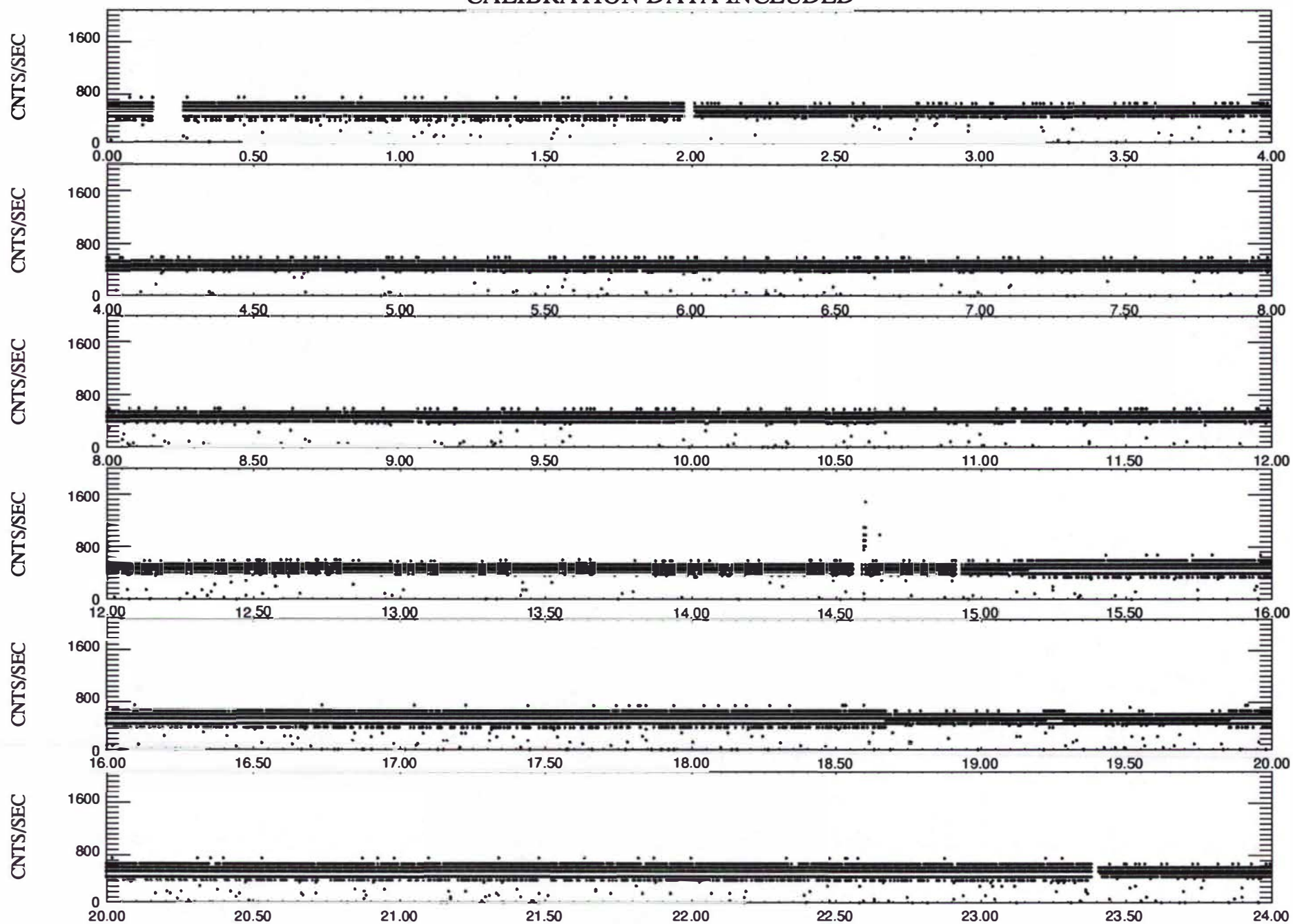


TIME, SECS

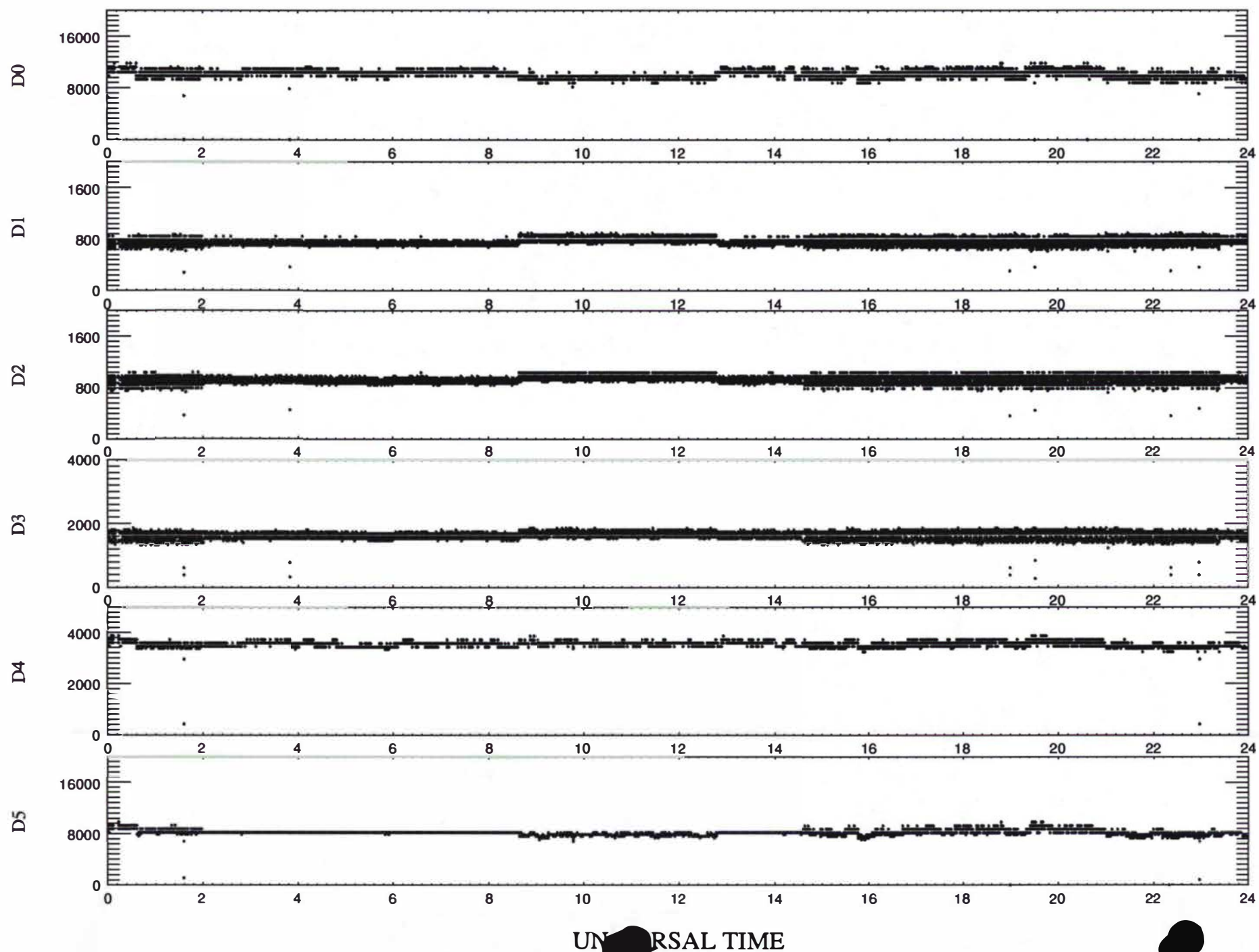
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



KONUS 19960417 04662

ULYSSES RT

27 / 09 / 11

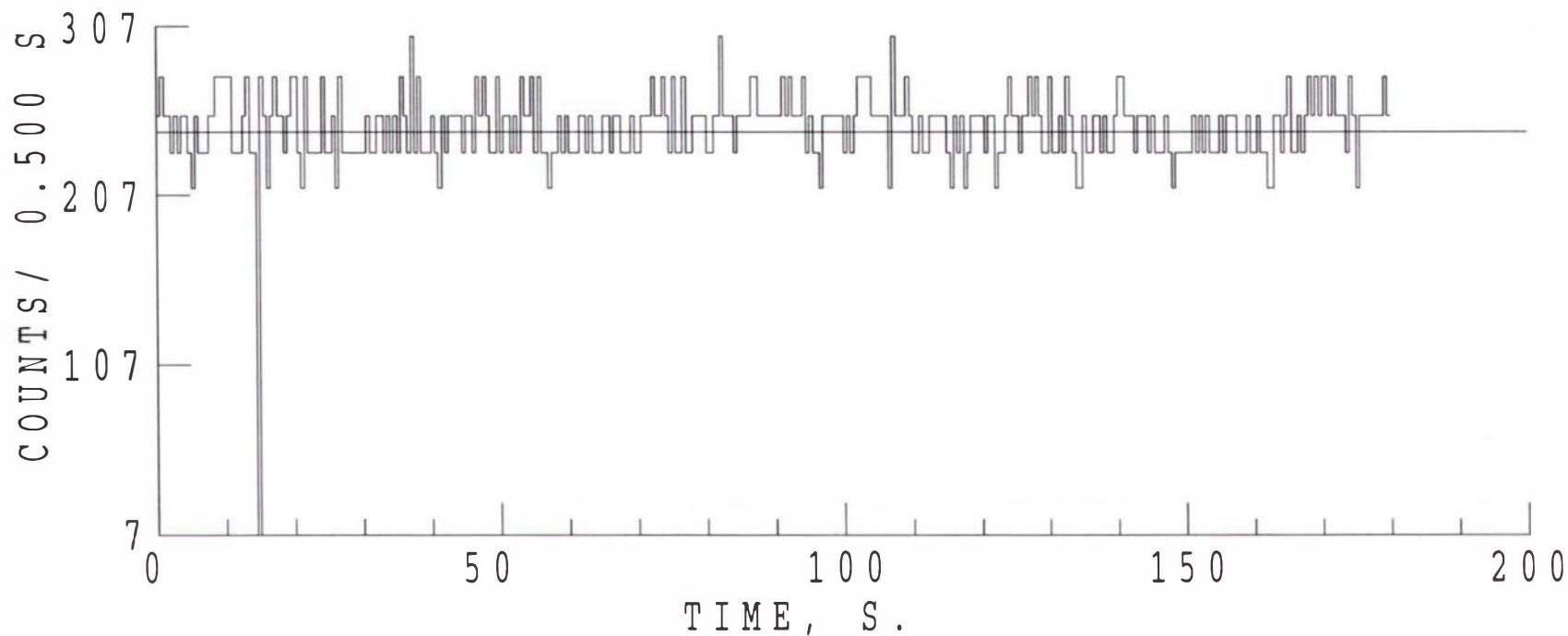
17/04/96 4572.385 s

0 - 0 keV

*Konus event is
120 s long - must
be different*

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

28 / 01 / 00

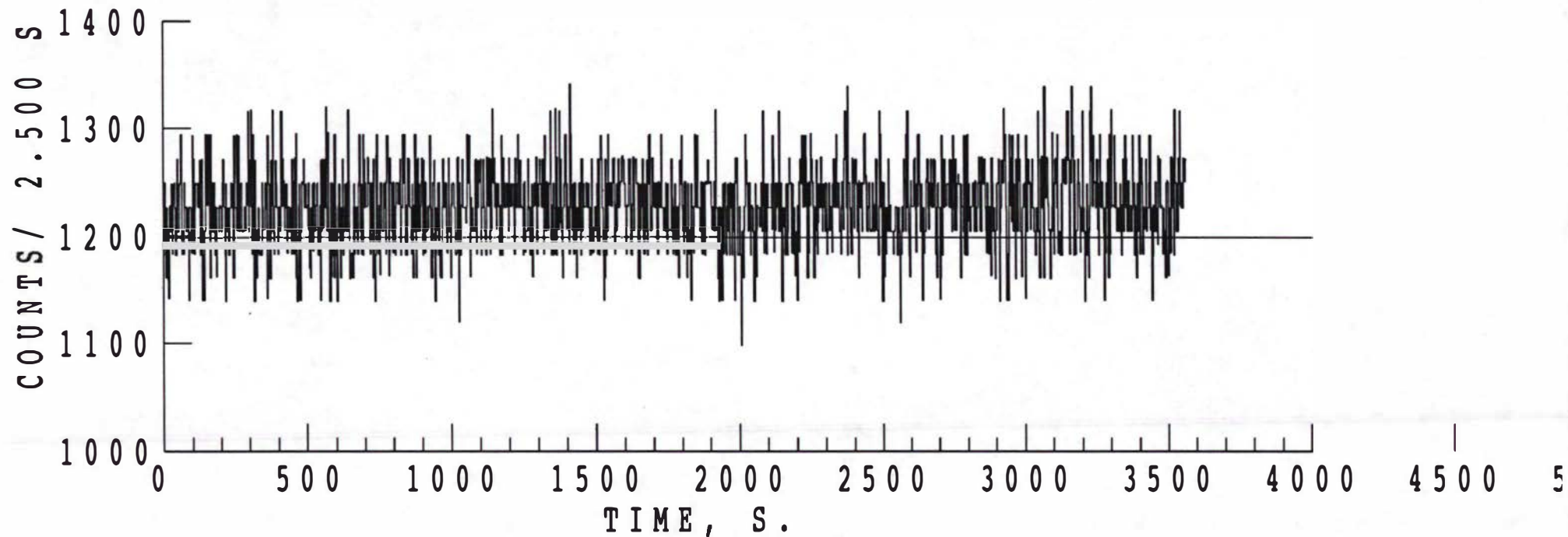
17 / 04 / 96 1512.342 s

0.500 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Fri Apr 19 07:40 PDT 1996
Date: Fri, 19 Apr 1996 9:40:49 -0500 (CDT)
From: SURASAK@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5429

BATSEARCH PROGRAM

BATSE BURST # 5429
EVENT OF 1996 APR 17 DAY OF YEAR=108
EVENT CROSSING TIME AT BATSE : 11003. S. OR 03:03:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 50.000 -4.000
BATSE PEAK COUNTING RATE: 6350 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 4/ 96 IS:
RA= 150.714 DEC= 66.798 DIST= 3.473 AU
BATSE-ULYSSES DISTANCE = 519579711. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 237.76 SECS.
CROSSING TIME AT ULYSSES IS 11241. S. OR 03:07:20 +/- 351.66 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 4/ 96 IS:
RA= 16.904 DEC= 6.459 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356848736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=145.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -979.11 SECS.
CROSSING TIME AT MARS IS 10024. S. OR 02:47:03 +/- 102.65 SECONDS

BATSE BURST TRIGGER

NO.: 5429

TIME: TJD=0190 SECONDS=11003

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.0 AZIMUTH=16.7 ERROR=1.54 DEGREES

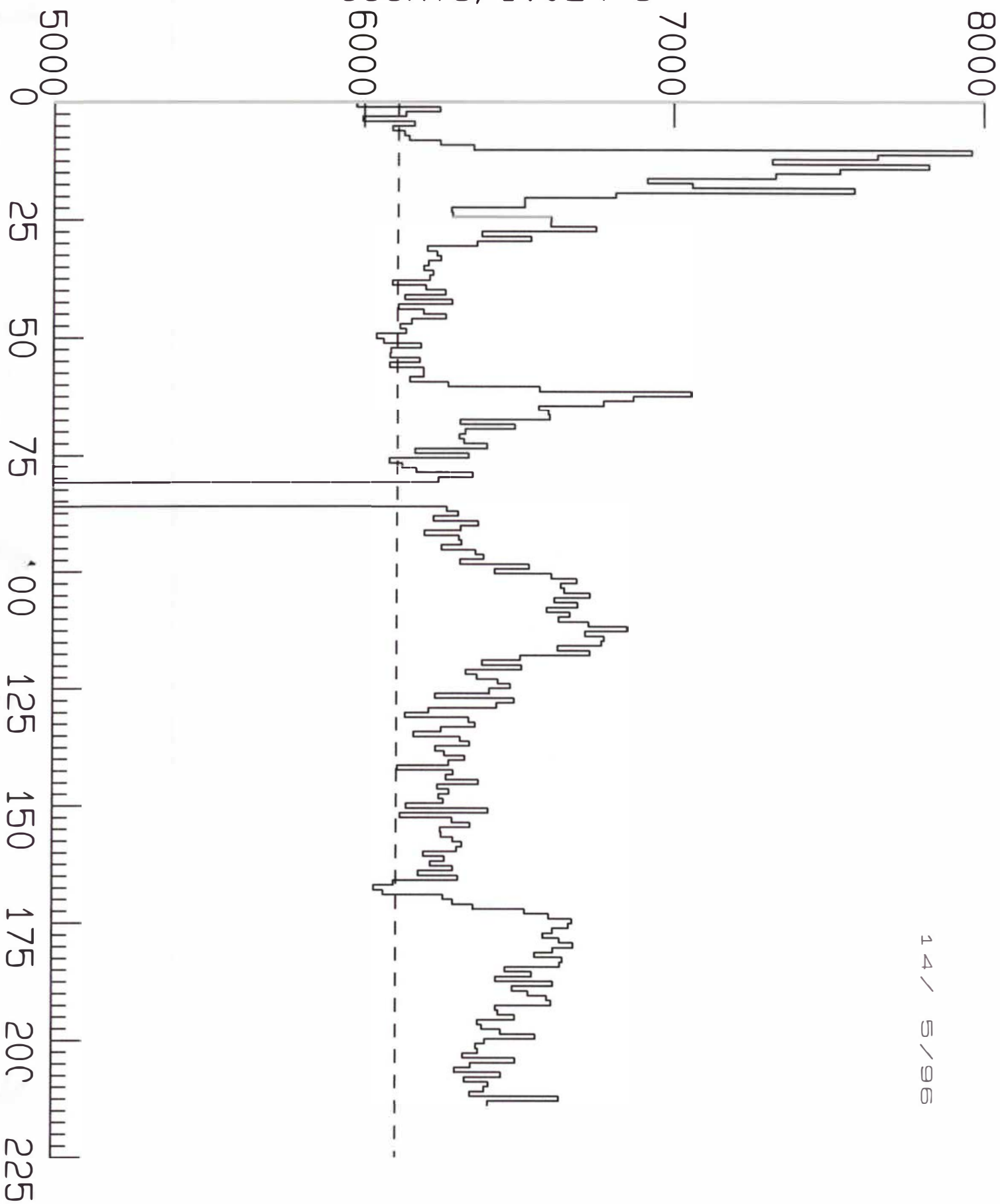
COMMENTS:

GRB. COMPLEX. DURATION~220S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5429	960417	10190	11003	6350	050	-04	220

BACODINE 5429 17/04/96 10993.353
25- 100 keV

COUNTS/1.024 S



BACODINE# 5429

ULYSSES RT

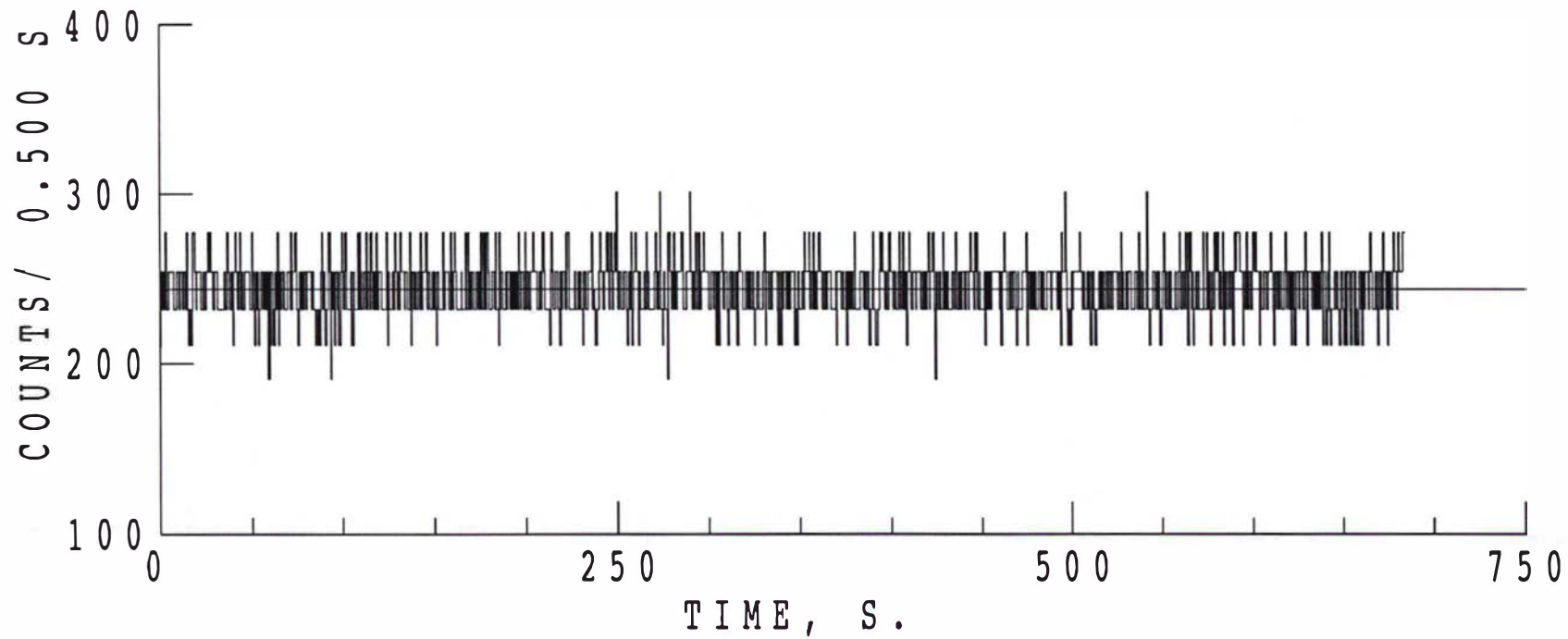
5 / 12 / 96

17 / 4 / 96 11052.469 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

28 / 01 / 00

ULYSSES RT

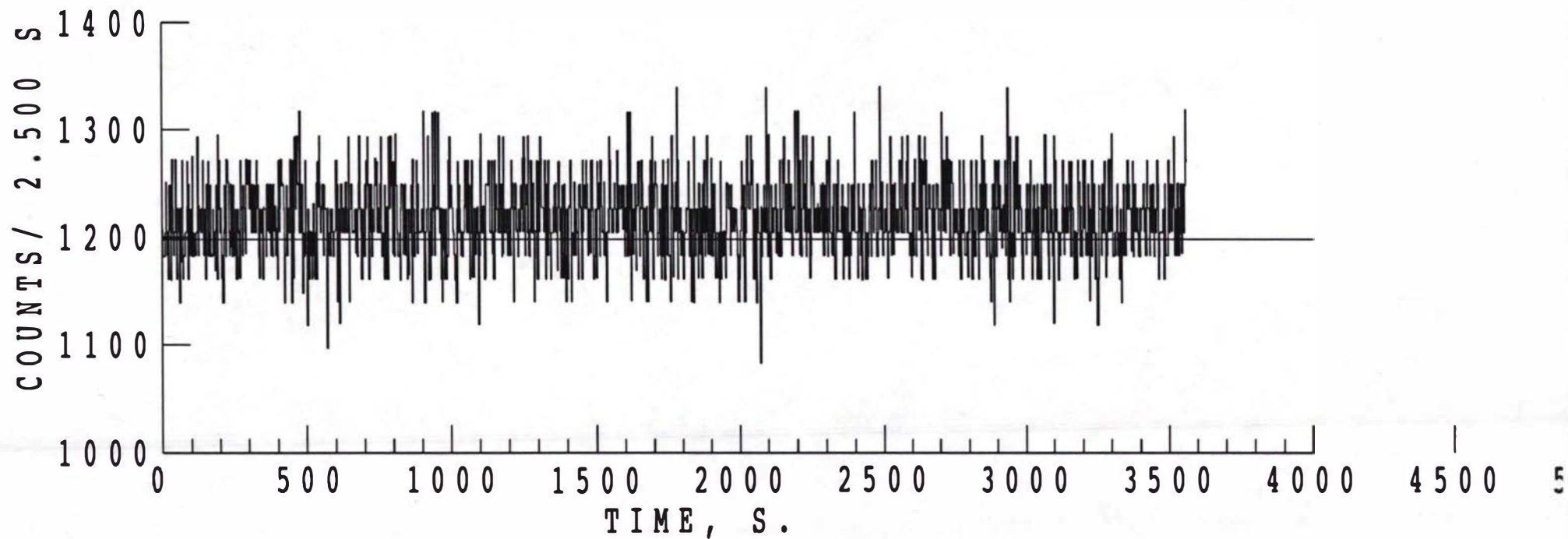
17/04/96 14616.018 s

0.500 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Fri Apr 19 07:55 PDT 1996
Date: Fri, 19 Apr 1996 9:55:09 -0500 (CDT)
From: SURASAK@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5430

TIME: TJD=0190 SECONDS=40821

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From SURASAK@SSLLES.MSFC.NASA.GOV Fri Apr 19 07:59 PDT 1996
Date: Fri, 19 Apr 1996 9:59:09 -0500 (CDT)
From: SURASAK@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5431

TIME: TJD=0190 SECONDS=54850

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From SURASAK@ssl.msfc.nasa.gov Fri Apr 19 09:39 PDT 1996
Date: Fri, 19 Apr 1996 11:38:50 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5432

BATSEARCH PROGRAM

BATSE BURST # 5432
EVENT OF 1996 APR 17 DAY OF YEAR=108
EVENT CROSSING TIME AT BATSE : 75653. S. OR 21:00:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 228.000 3.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 4/ 96 IS:
RA= 150.489 DEC= 66.579 DIST= 3.484 AU
BATSE-ULYSSES DISTANCE = 521238745. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.69 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -232.74 SECS.
CROSSING TIME AT ULYSSES IS 75420. S. OR 20:57:00 +/- 345.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 4/ 96 IS:
RA= 16.904 DEC= 6.459 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356848736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 32.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1004.41 SECS.
CROSSING TIME AT MARS IS 76657. S. OR 21:17:37 +/- 126.15 SECONDS

BATSE BURST TRIGGER

NO.: 5432

TIME: TJD=0190 SECONDS=75653

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=95.3 AZIMUTH=194.2 ERROR=4.51 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DUR~15S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5432	960417	0190	75653	3000	228	+03	15

BATSE #

5 4 3 2

2 4 / 4 / 9 6

ULYSSES RT

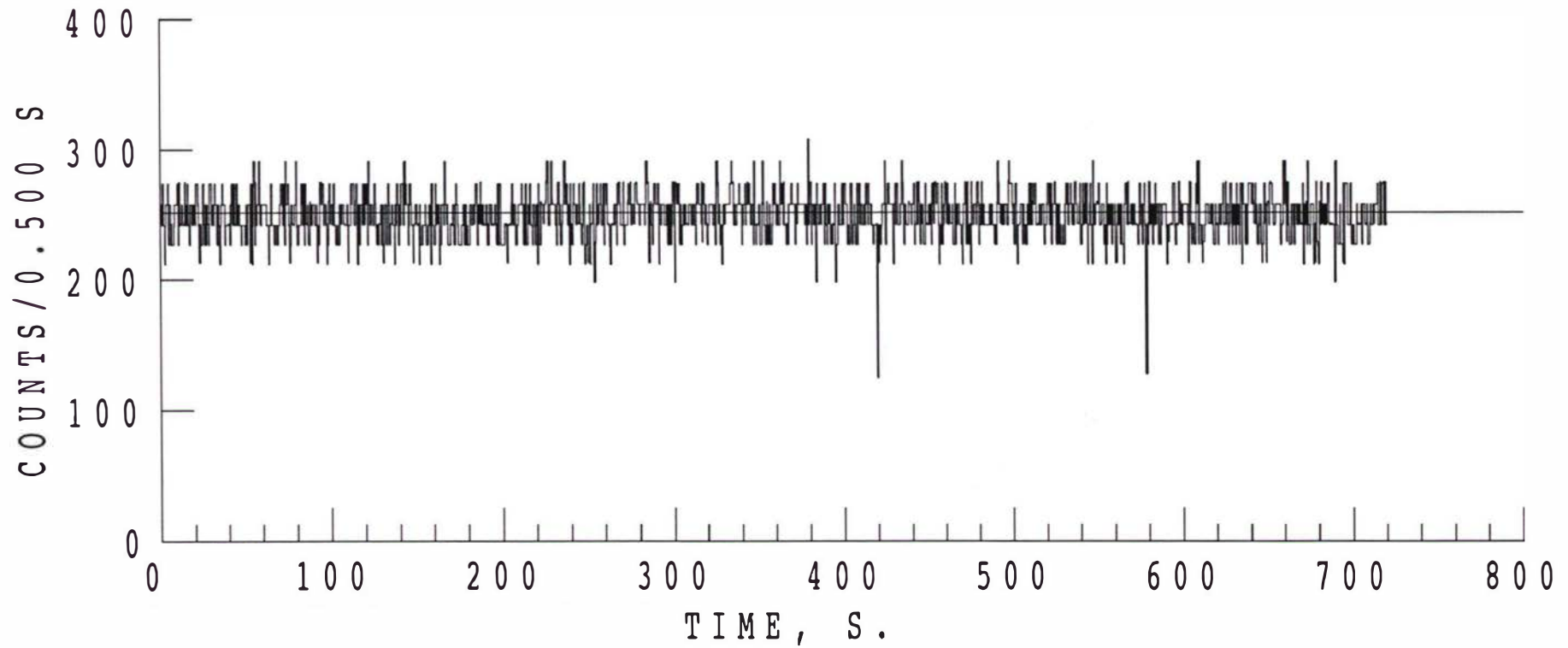
17 / 4 / 96 75060.102 s

0.250 S INTERVALS REGROUPED BY 2

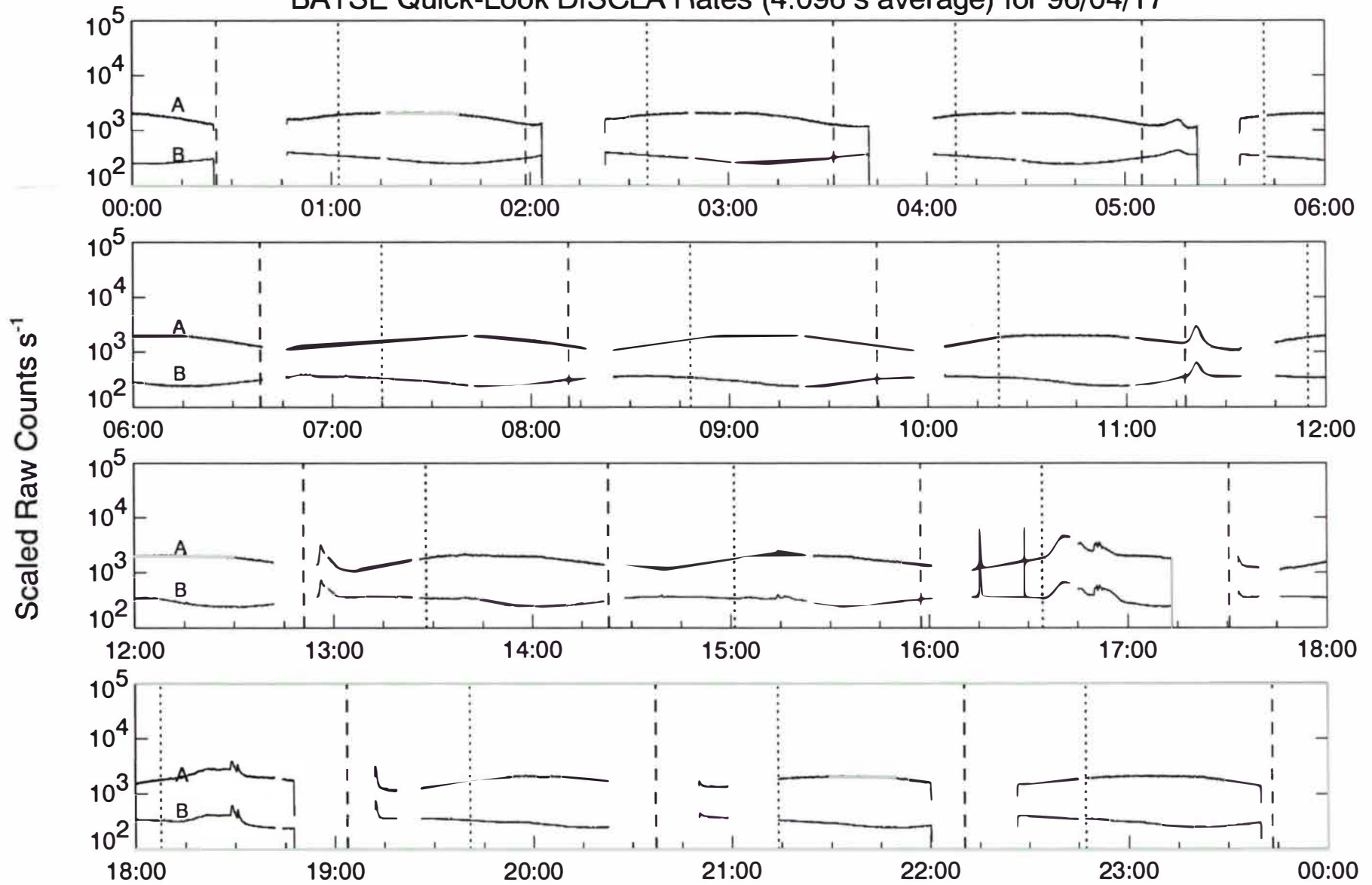
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



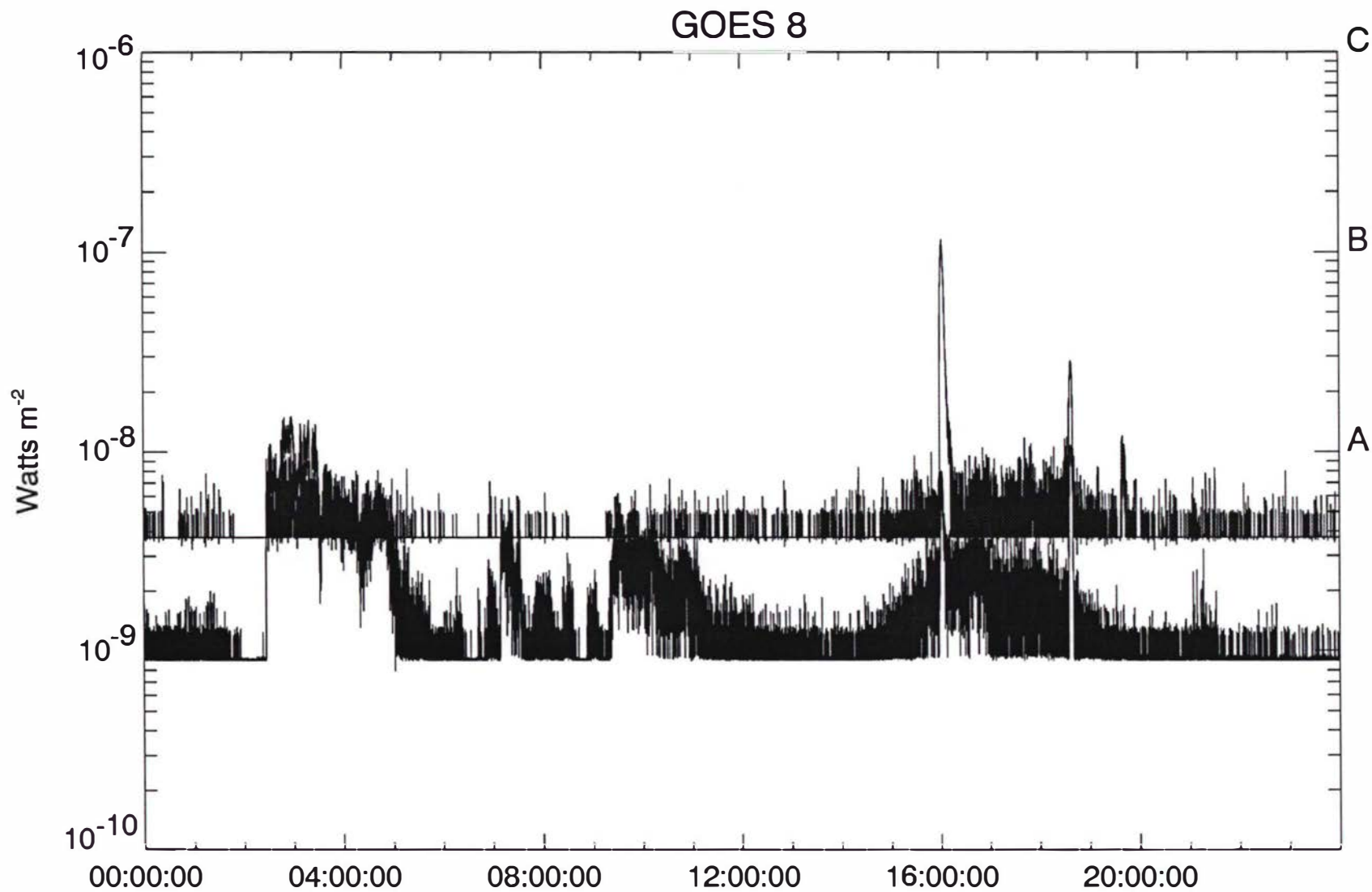
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/17



Current Time: 96/04/19, 1004 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



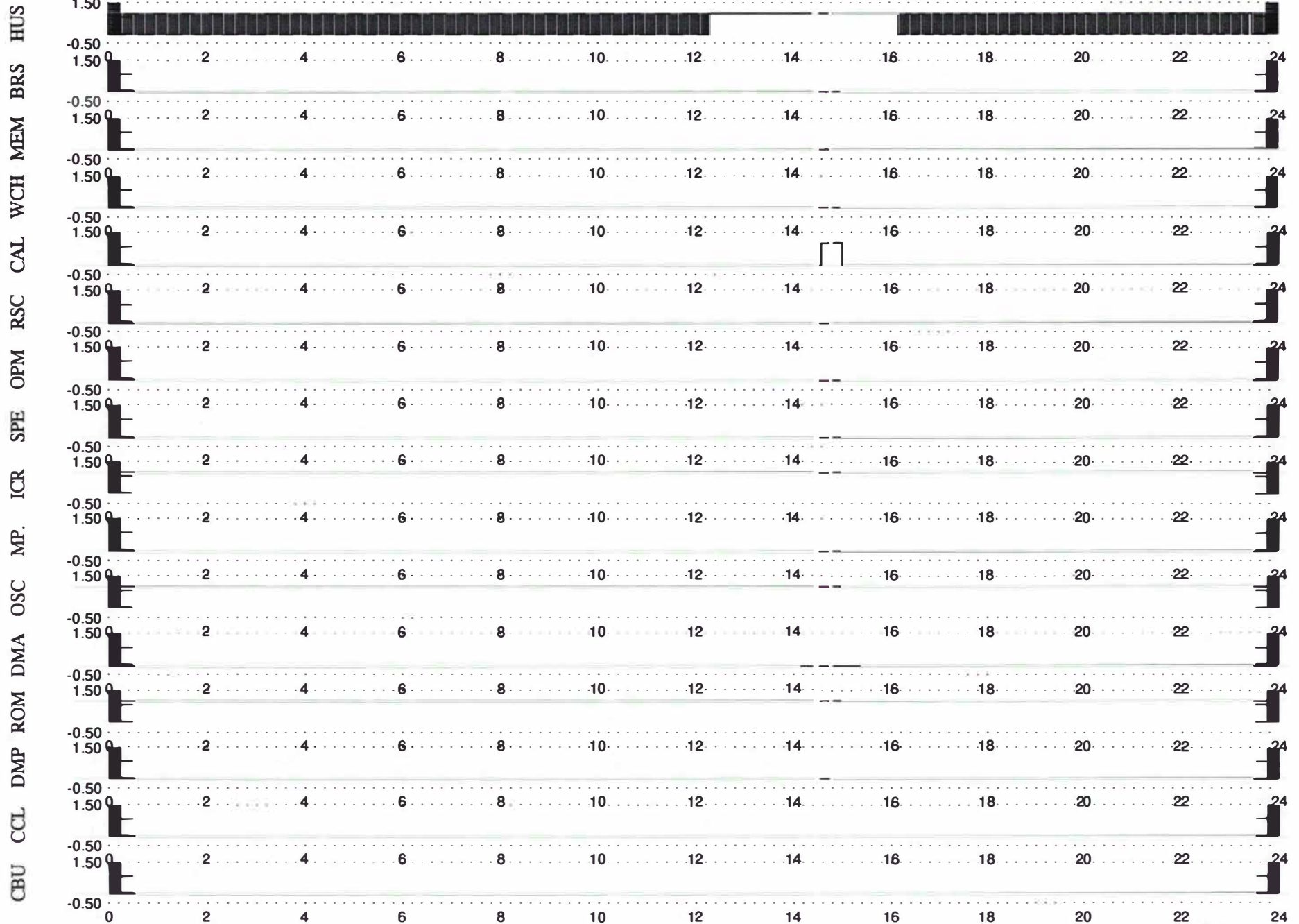
Data Start: 96/04/17, 0000:00

Plot created: 96/04/19, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

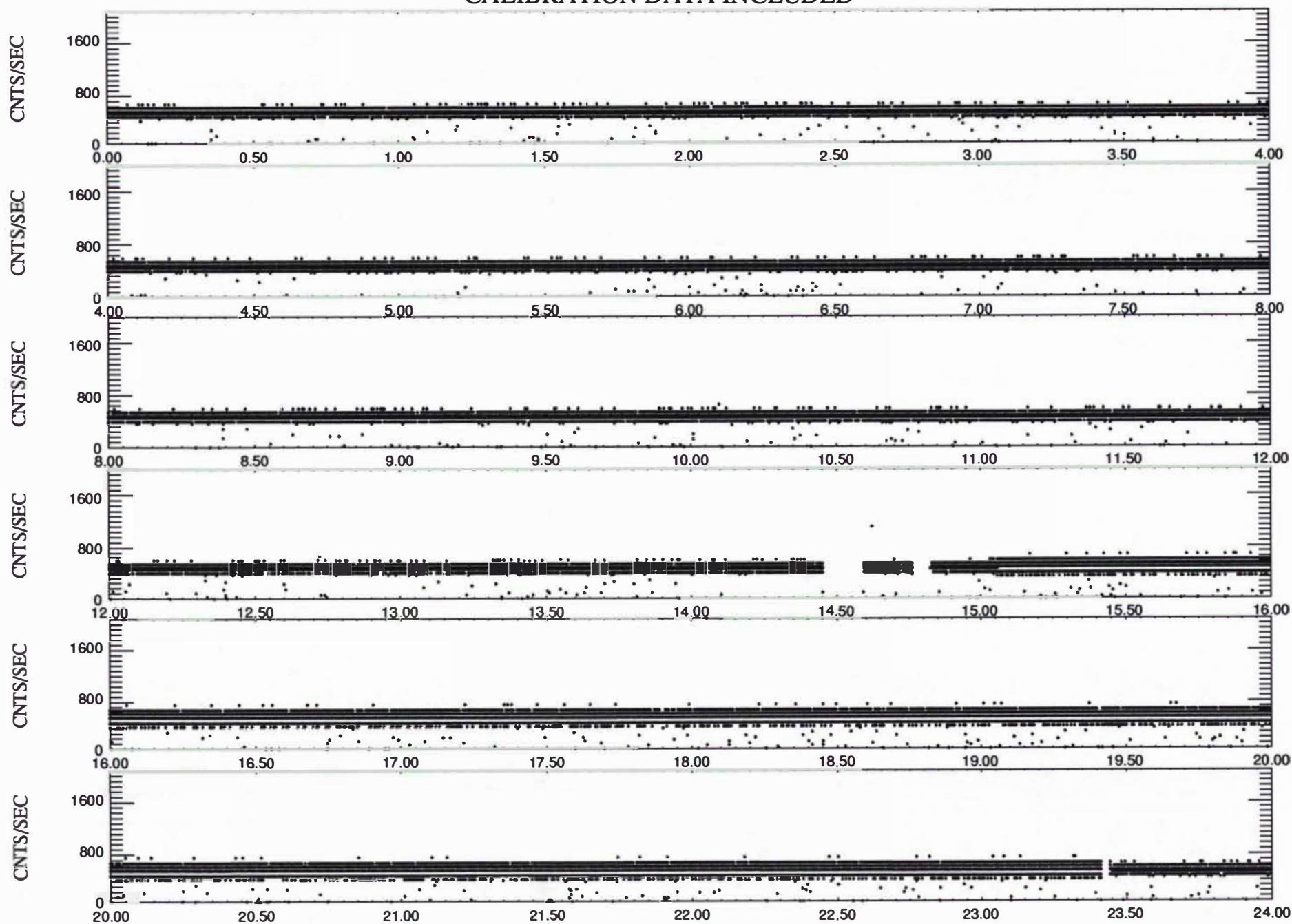
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

NO BURST (8)

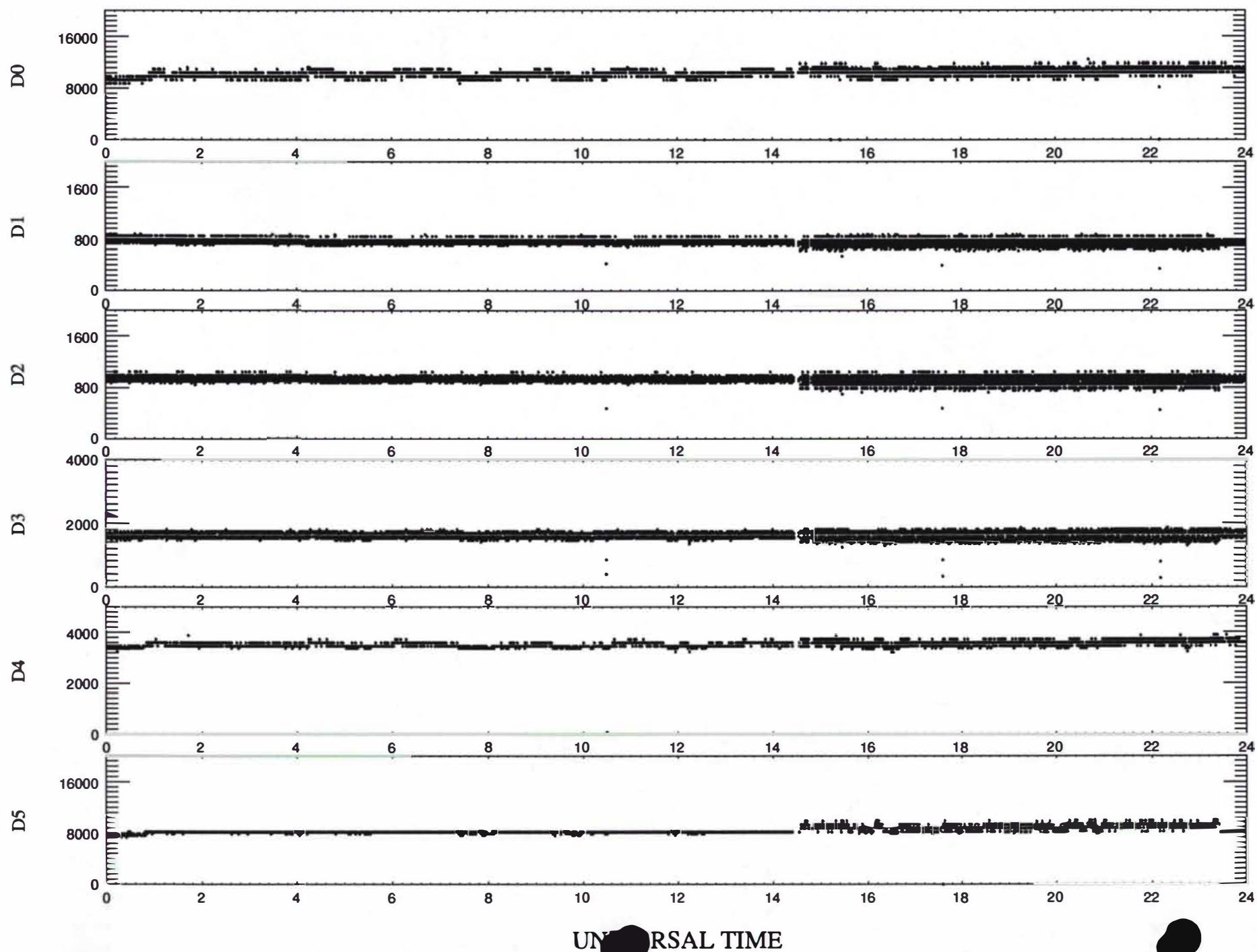


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From HAGEDON@fender.msfc.nasa.gov Fri Apr 19 13:57 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 19 Apr 1996 15:57:15 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5433

BATSEARCH PROGRAM

BATSE BURST # 5433
EVENT OF 1996 APR 18 DAY OF YEAR=109
EVENT CROSSING TIME AT BATSE : 6104. S. OR 01:41:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 171.000 0.000
BATSE PEAK COUNTING RATE: 10500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 4/ 96 IS:
RA= 150.432 DEC= 66.522 DIST= 3.487 AU
BATSE-ULYSSES DISTANCE = 521671106. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -649.06 SECS.
CROSSING TIME AT ULYSSES IS 5455. S. OR 01:30:54 +/- 320.45 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 4/ 96 IS:
RA= 17.612 DEC= 6.758 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356849504. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 27.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1056.83 SECS.
CROSSING TIME AT MARS IS 7161. S. OR 01:59:20 +/- 111.14 SECONDS

BATSE BURST TRIGGER

NO.: 5433

TIME: TJD=0191 SECONDS=06104

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.4 AZIMUTH=138.6 ERROR=1.5 DEGREES

COMMENTS:

BURST. TWO PULSES SEPARATED BY ~40 SEC. SECOND IS VERY WEAK.
TOTAL DUR.~60 SEC. FIRST PULSE IS VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5433	960418	10191	06104	10500	171	0	60

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5419
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	Search	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	Search	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	Search	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Trig	NO

KONUS2 19960418 08271

ULYSSES RT

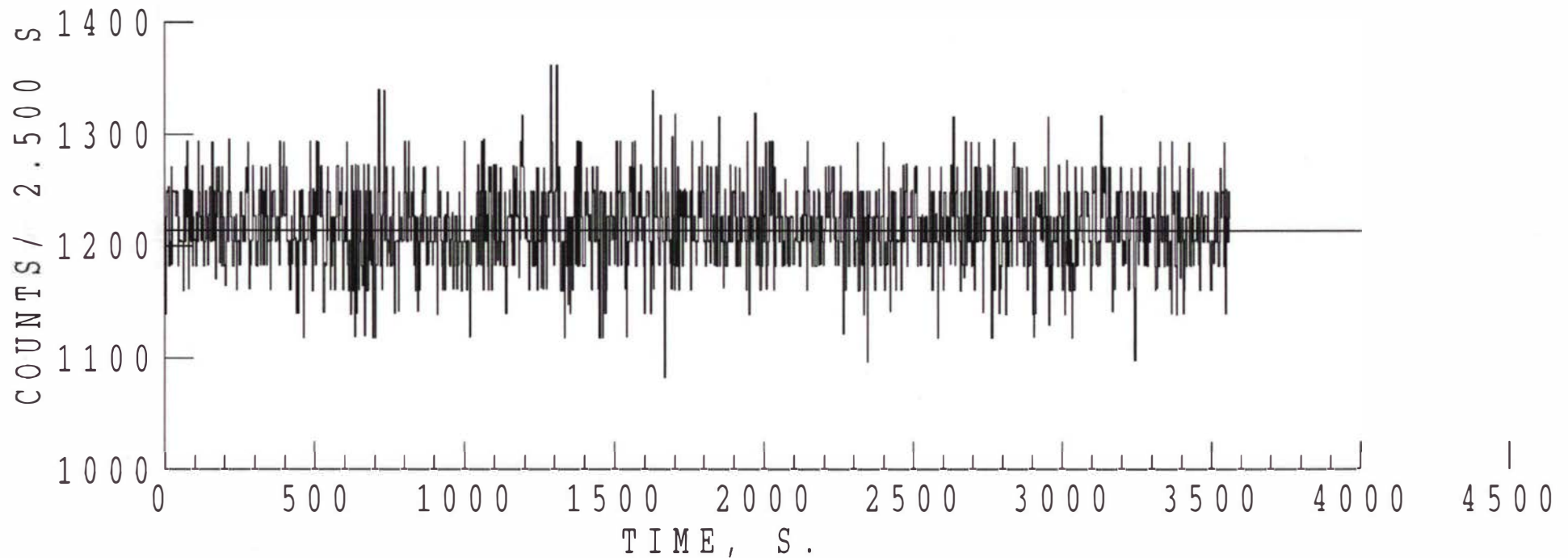
12/07/02

18/04/96 6480.096 s

0.500 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Helio corr removed

Date: Mar 6 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

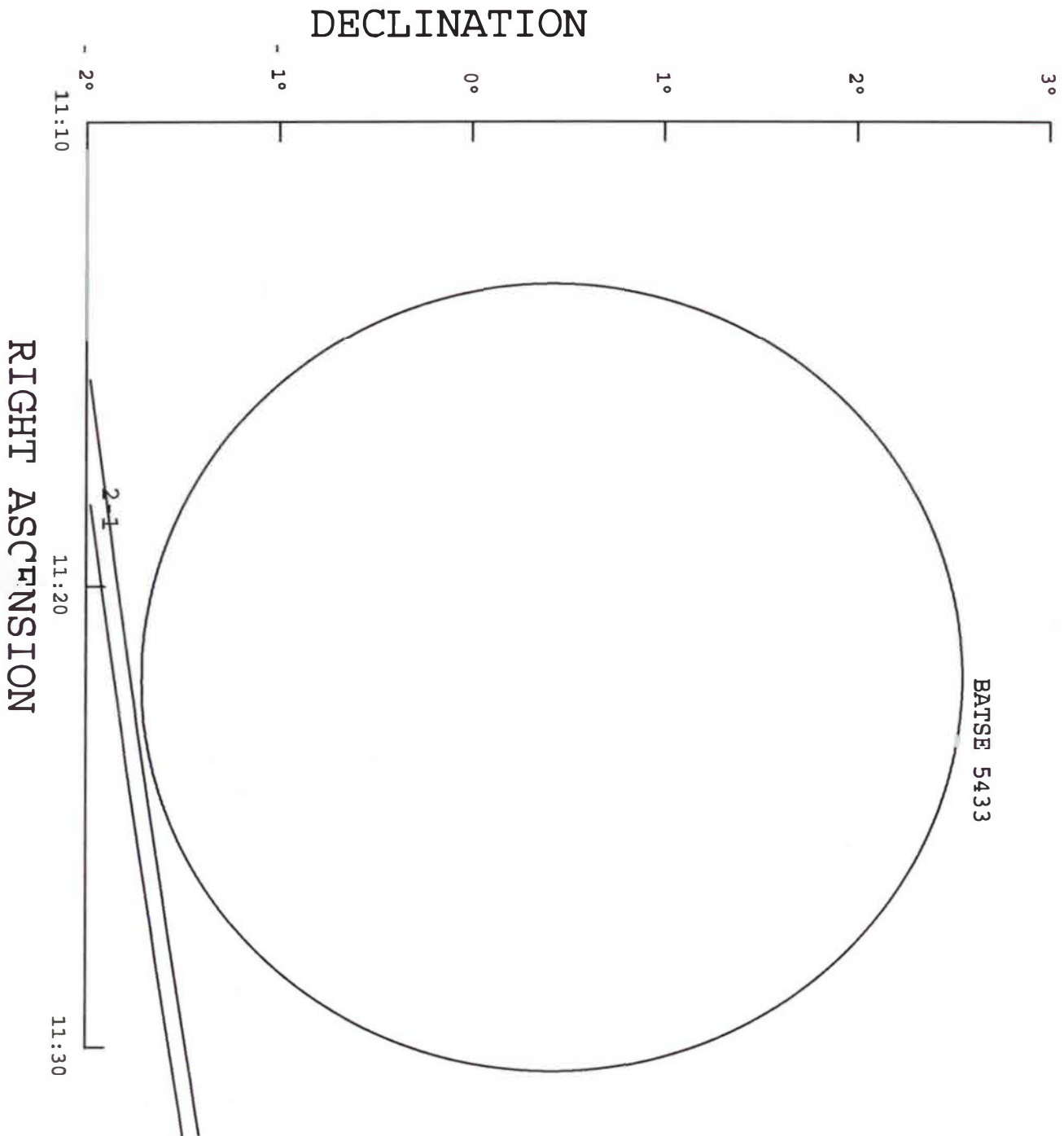
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 18, 1996 1:30

6 / 3/98



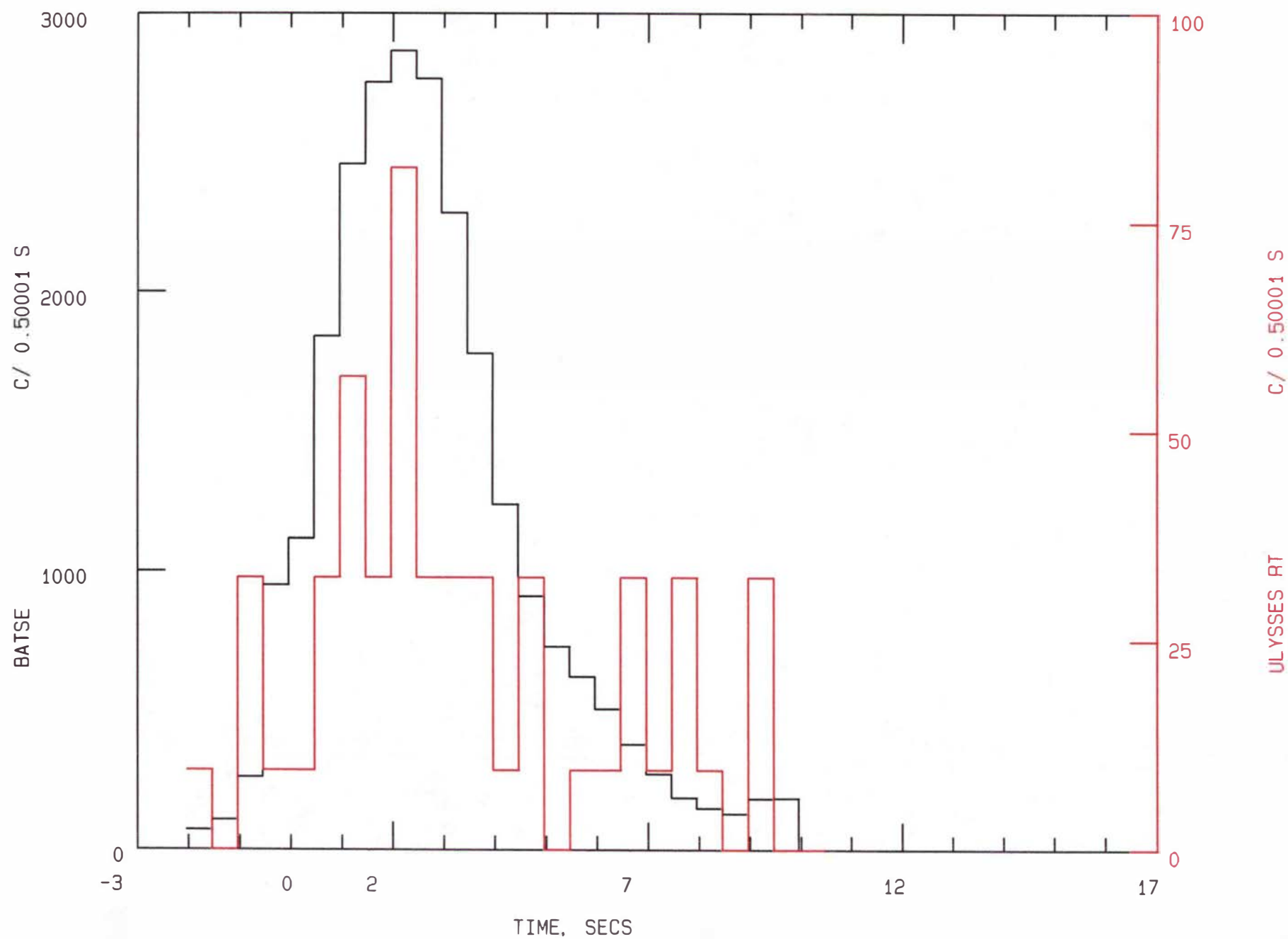
BATSE

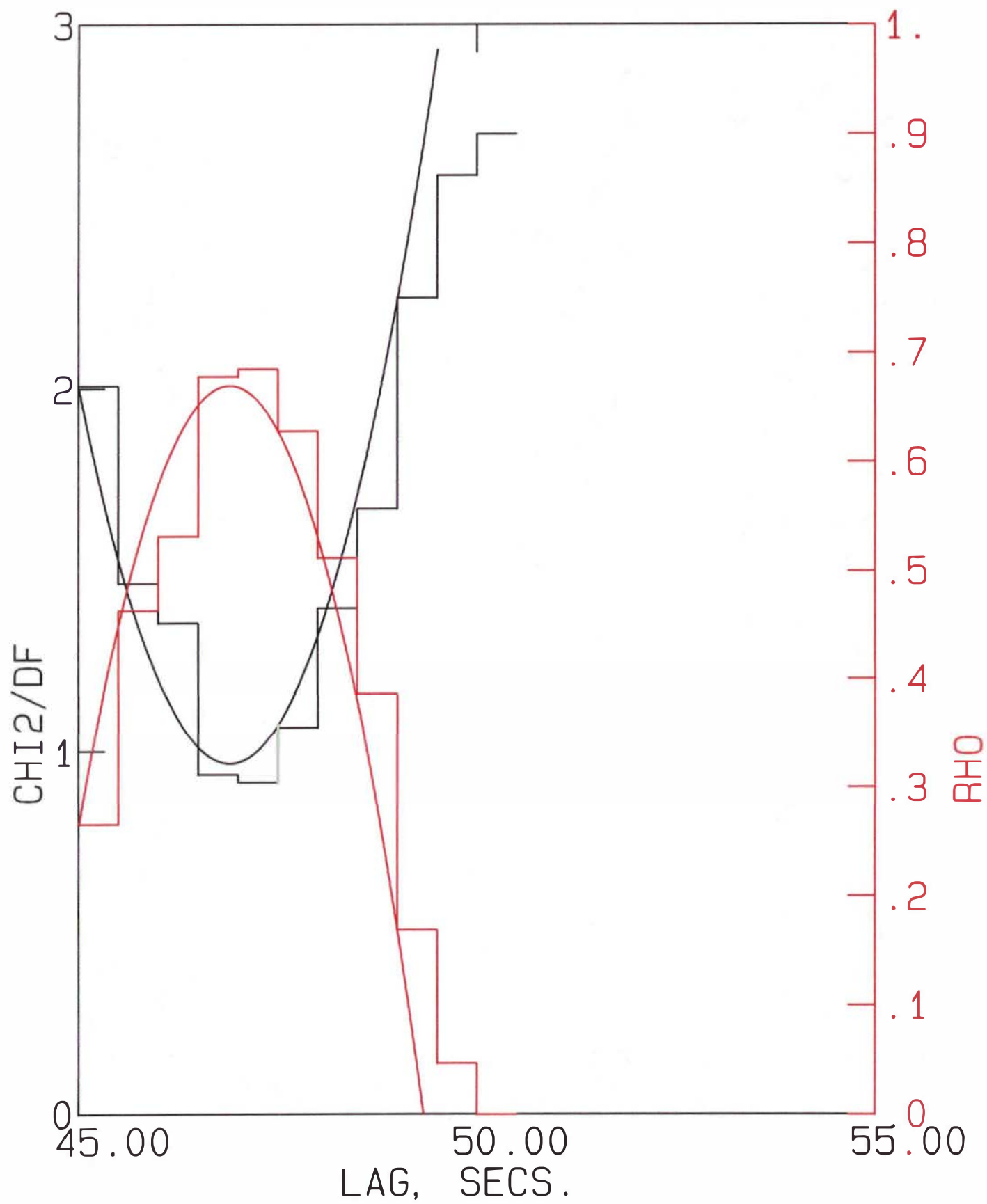
-ULYSSES RT CORRELATION

18/ 4/96

6104.522

6/ 3/98





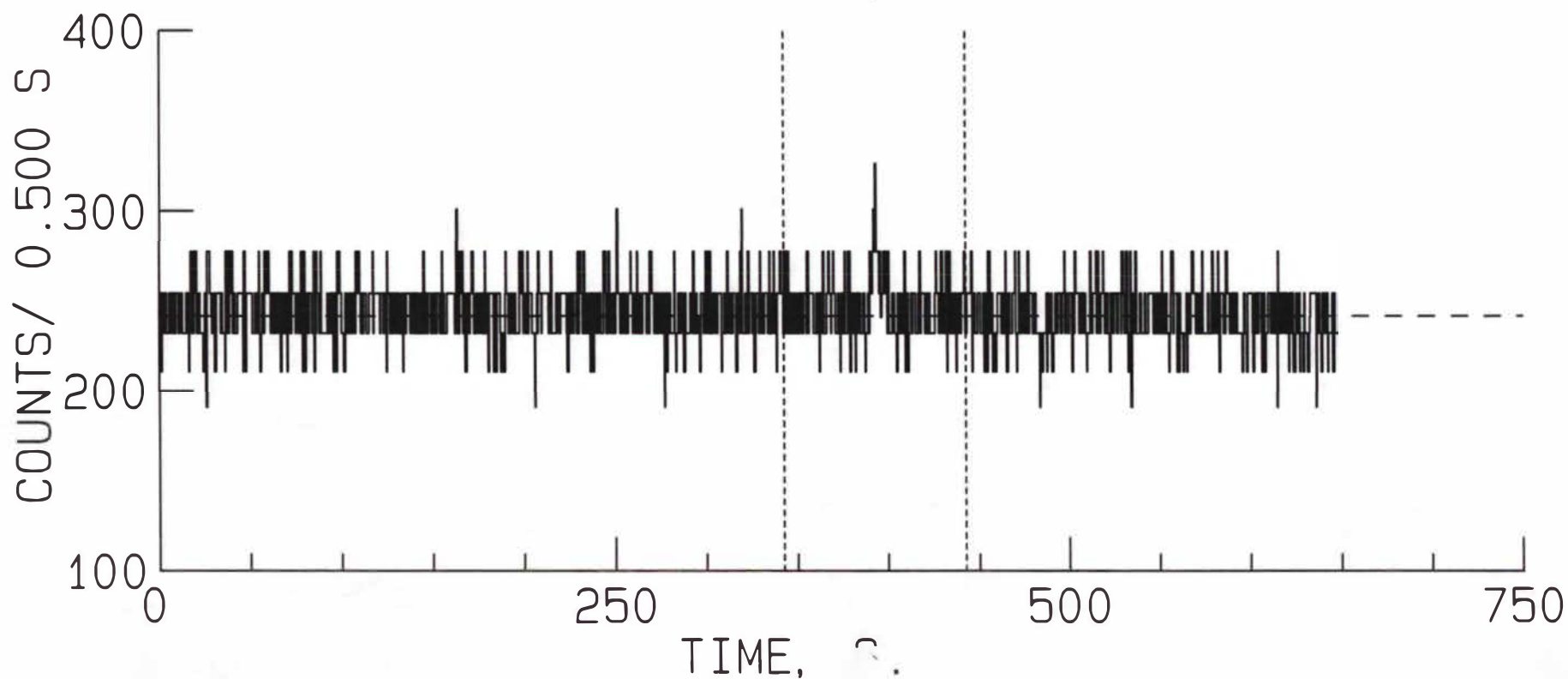
ULYSSES RT

6 / 3 / 98

18 / 4 / 96 5112.082 s

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



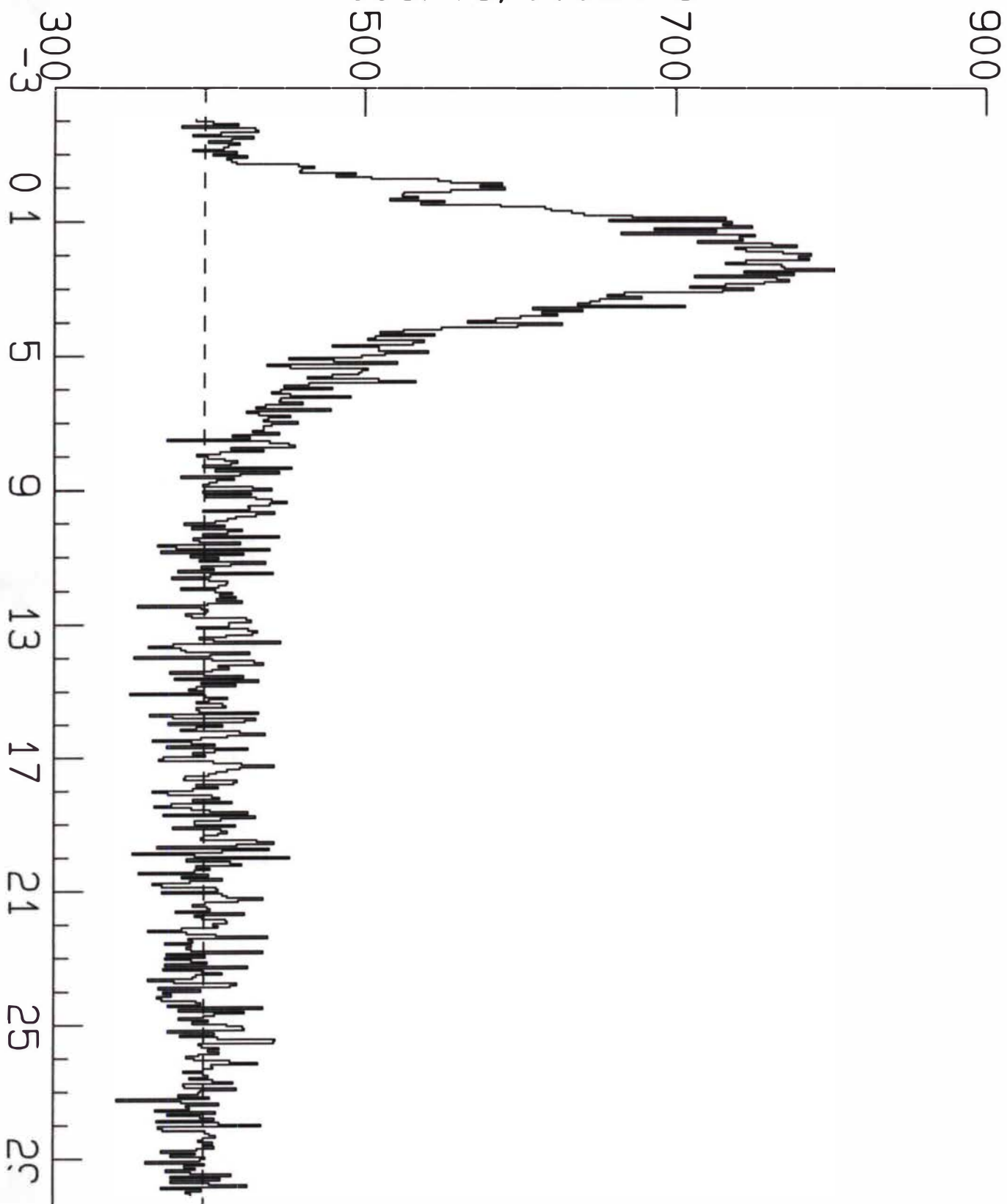
BATSE

18/04/96

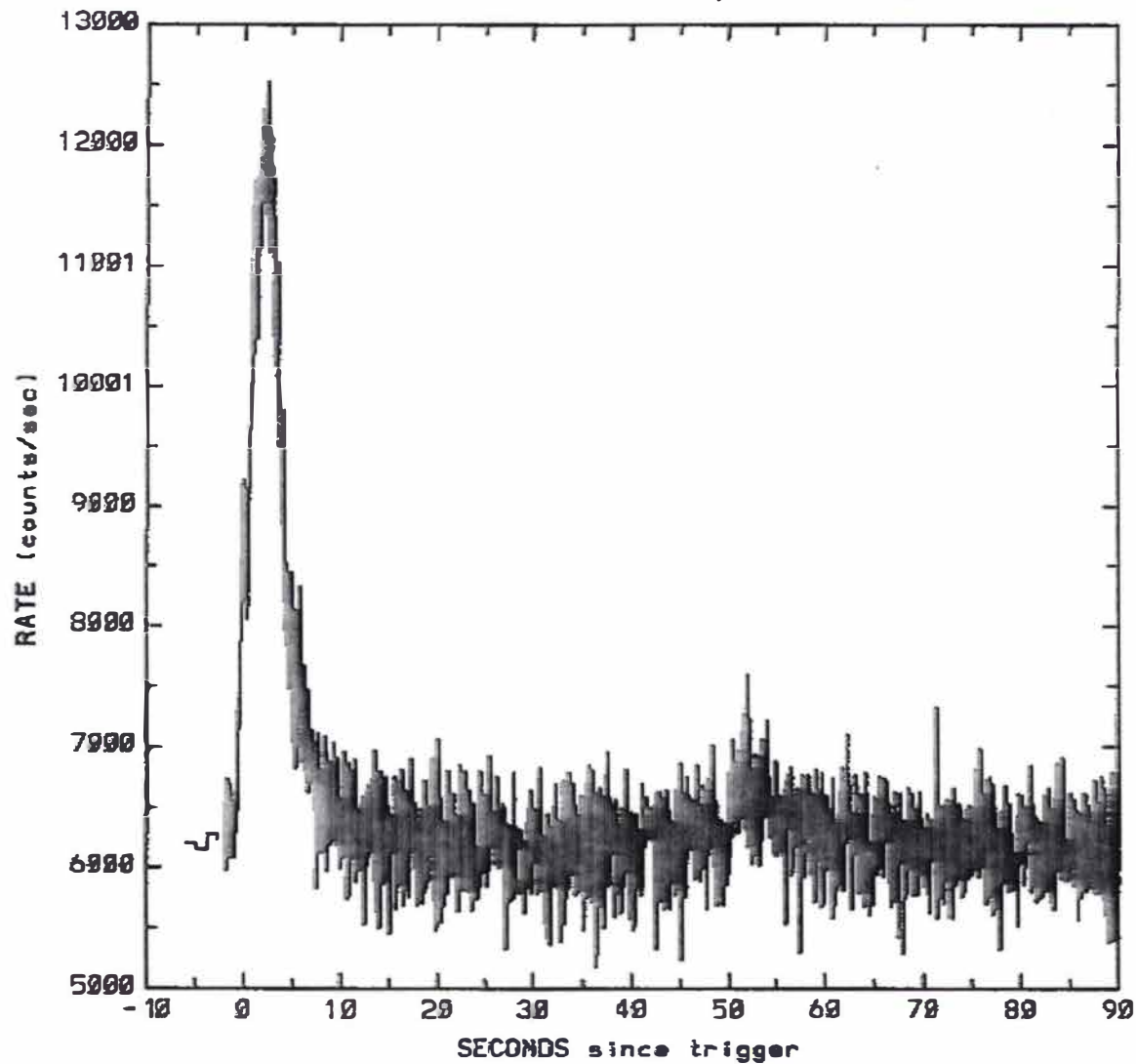
6104.522

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5433



26-APR-1996 10:27:05

Created by HOPS BD
 (Burst Display)
 Version 2.25

Trigger # : 5433

Trigger Time:
 19191 / 6194.522

Burst Data Type:
 DISCSC

Deadtime
 Corrected: N

Background Data
 Type: PREB + DISCLA

Minimum Integ. Time:
 0.064 seconds

Detectors (7..0).
 --52--

Discriminators:
 1 1 2 1

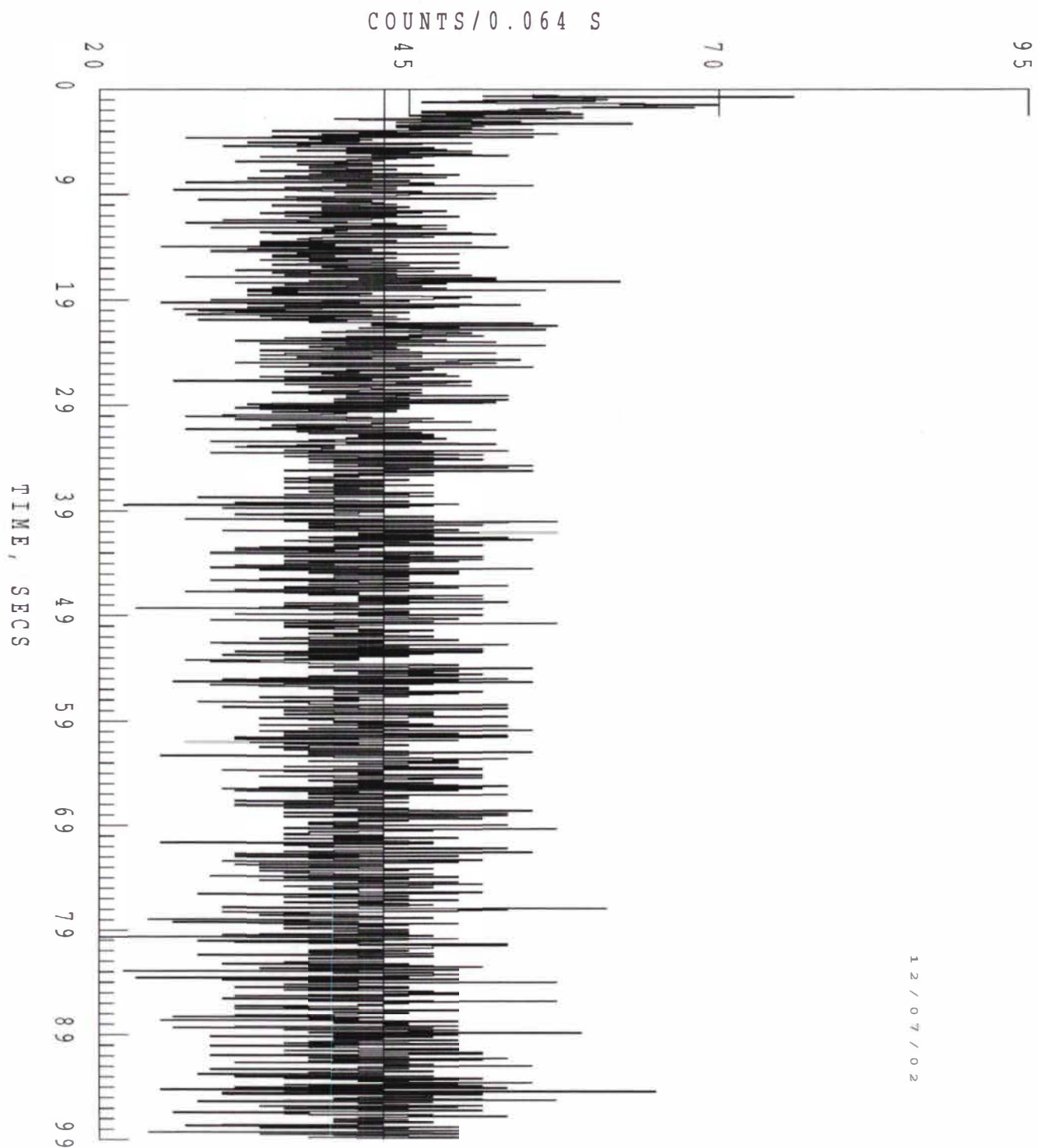
Quality Mask:
 80ISP1

KONUS2

18/04/96

8271.303

50 - 200 keV



KONUS 10

ULYSSES RT

25 / 11 / 96

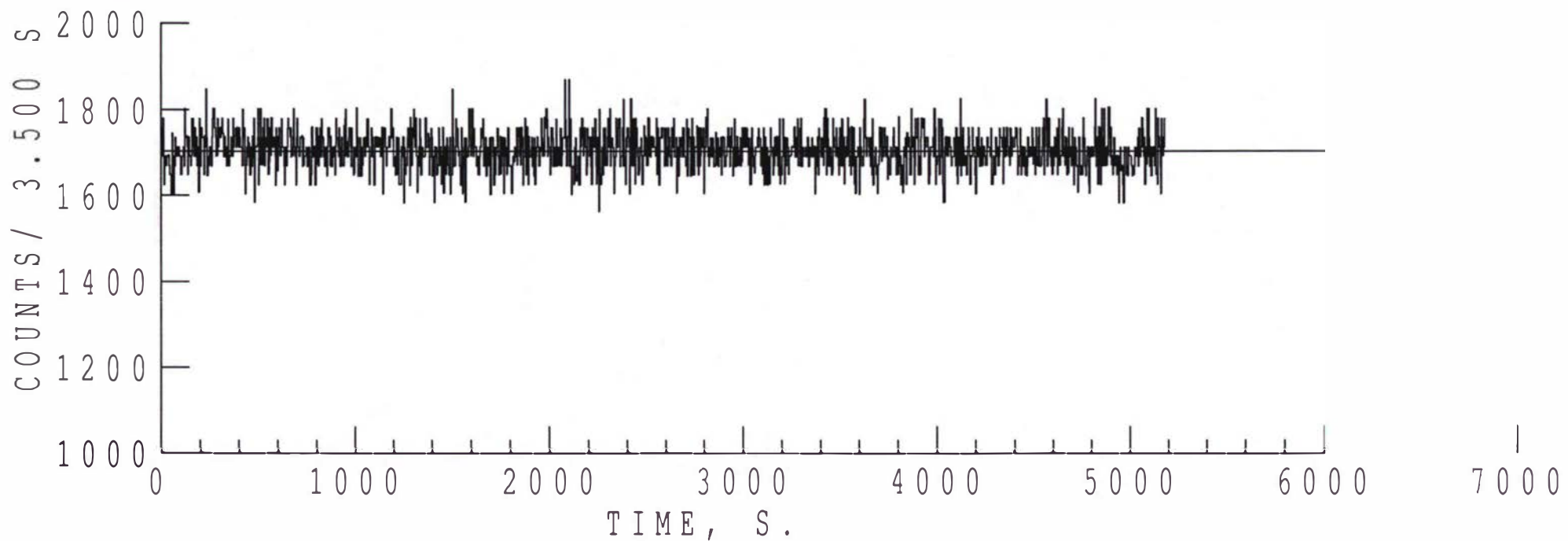
18 / 4 / 96 5688.089 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HAGEDON@fender.msfc.nasa.gov Fri Apr 19 14:00 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 19 Apr 1996 15:59:29 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5434

BATSEARCH PROGRAM

BATSE BURST # 5434
EVENT OF 1996 APR 18 DAY OF YEAR=109
EVENT CROSSING TIME AT BATSE : 15230. S. OR 04:13:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 91.000 8.000
BATSE PEAK COUNTING RATE: 3100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 4/ 96 IS:
RA= 150.402 DEC= 66.491 DIST= 3.489 AU
BATSE-ULYSSES DISTANCE = 521906368. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -572.21 SECS.
CROSSING TIME AT ULYSSES IS 14658. S. OR 04:04:17 +/- 326.76 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 4/ 96 IS:
RA= 17.612 DEC= 6.758 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356849504. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -354.14 SECS.
CROSSING TIME AT MARS IS 14876. S. OR 04:07:55 +/- 191.92 SECONDS

BATSE BURST TRIGGER

NO.: 5434

TIME: TJD=0191 SECONDS=15230

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=64.5 AZIMUTH=55.8 ERROR=2.4 DEGREES

COMMENTS:

BURST. WEAK SINGLE PULSE. DUR.~15 SEC. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5434	960418	10191	15230	3100	091	+08	15

BATSE #

5434

24 / 4 / 96

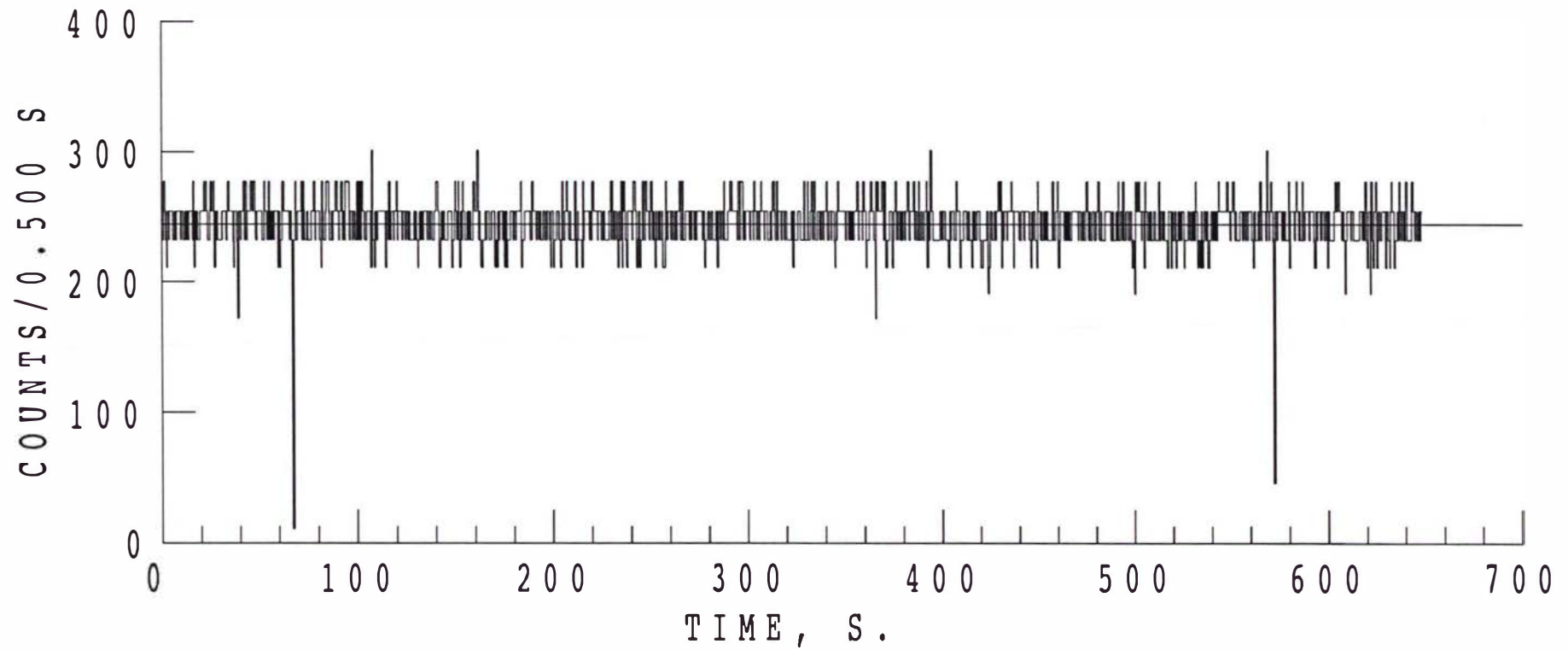
ULYSSES RT

18 / 4 / 96 14328.208 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



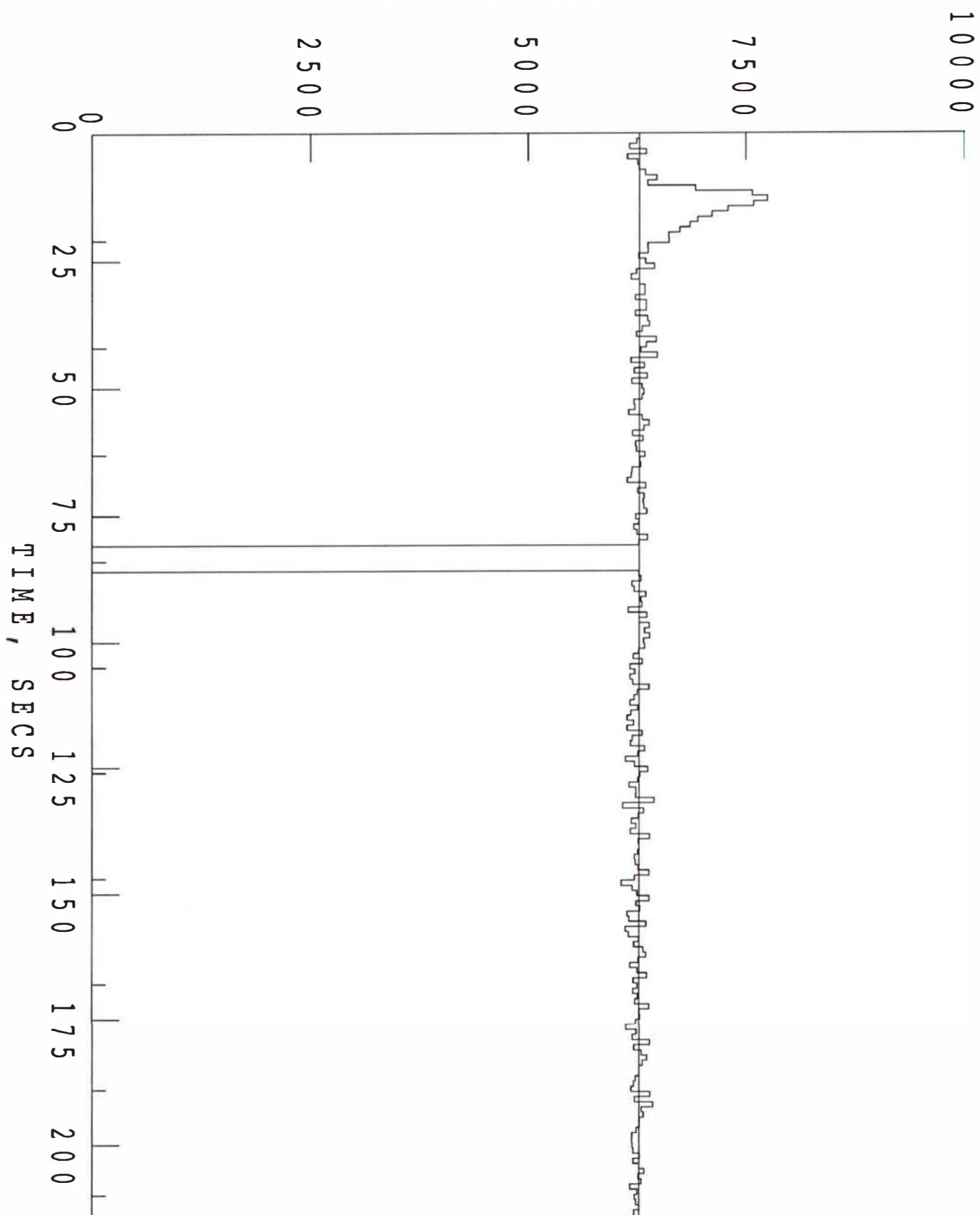
BACODINE

18/04/96

15219.401

25 - 100 keV

COUNTS/1.024 S



From HAGEDON@fender.msfc.nasa.gov Fri Apr 19 13:42 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 19 Apr 1996 15:42:24 -0500 (CDT)
To: burst@compel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5435

TIME: TJD=0191 SECONDS=52196

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From HAGEDON@fender.msfc.nasa.gov Fri Apr 19 14:01 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 19 Apr 1996 16:00:38 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5436

BATSEARCH PROGRAM

TRIGGER

BATSE BURST # 5436
EVENT OF 1996 APR 18 DAY OF YEAR=109
EVENT CROSSING TIME AT BATSE : 66795. S. OR 18:33:15.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 110.000 -16.000
BATSE PEAK COUNTING RATE: 18500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 4/ 96 IS:
RA= 150.235 DEC= 66.317 DIST= 3.498 AU
BATSE-ULYSSES DISTANCE = 523231413. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 92.43 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -73.90 SECS.
CROSSING TIME AT ULYSSES IS 66721. S. OR 18:32:01 +/- 351.62 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 4/ 96 IS:
RA= 17.612 DEC= 6.758 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356849504. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 85.96 SECS.
CROSSING TIME AT MARS IS 66881. S. OR 18:34:40 +/- 207.42 SECONDS

BATSE BURST TRIGGER

NO.: 5436

TIME: TJD=0191 SECONDS=66795

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=87.5 AZIMUTH=77.0 ERROR=0.7 DEGREES

COMMENTS:

BURST. SINGLE PULSE WITH SUBSTRUCTURE. DUR.~5 SEC.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5436	960418	10191	66795	18500	110	-16	5

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
6	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	SEARCH	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	SEARCH	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	SEARCH	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Trig	NO

Helio corr removed

Date: Mar 6 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

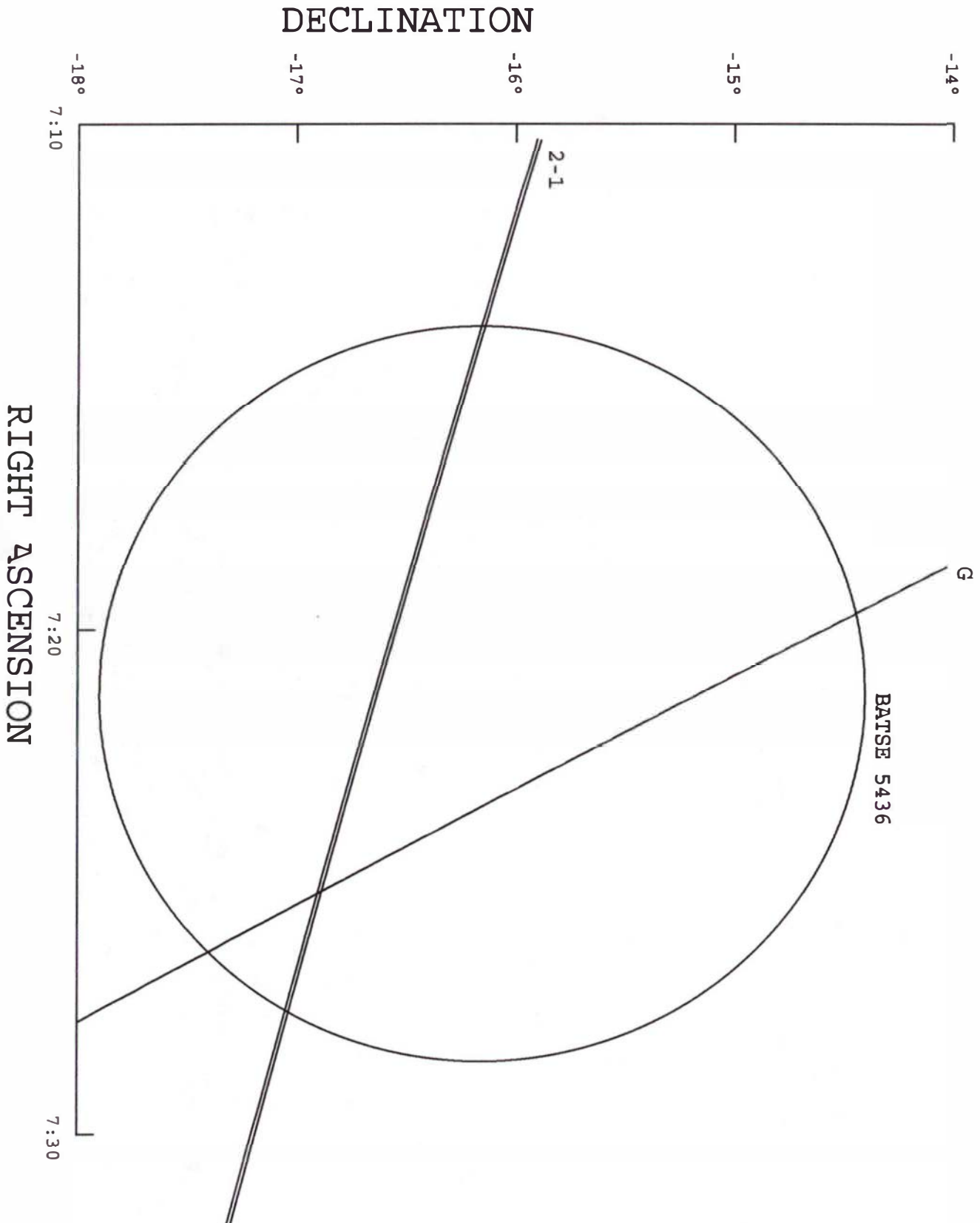
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 18, 1996 18:32

6 / 3 / 98



ULYSSES

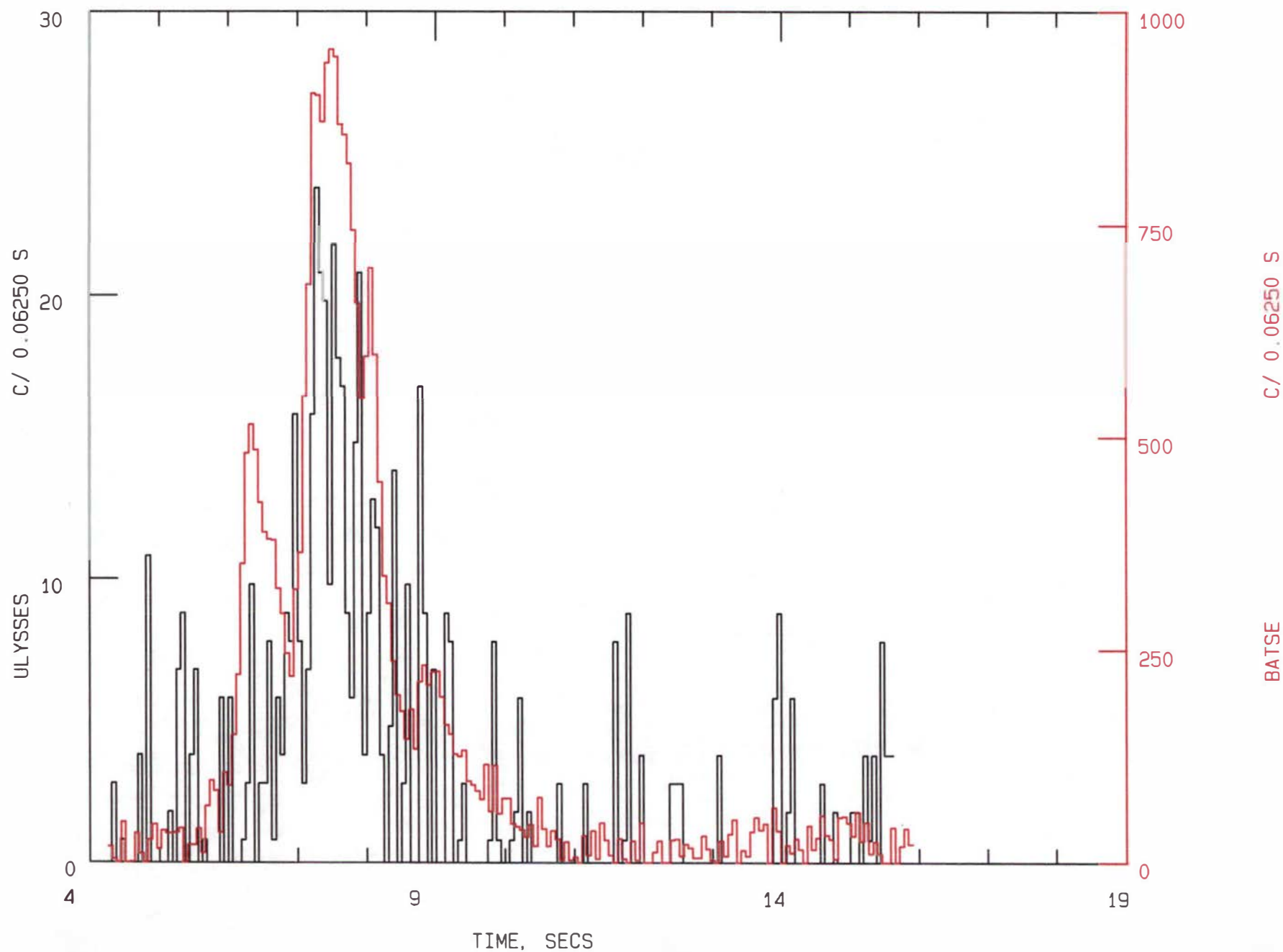
-BATSE

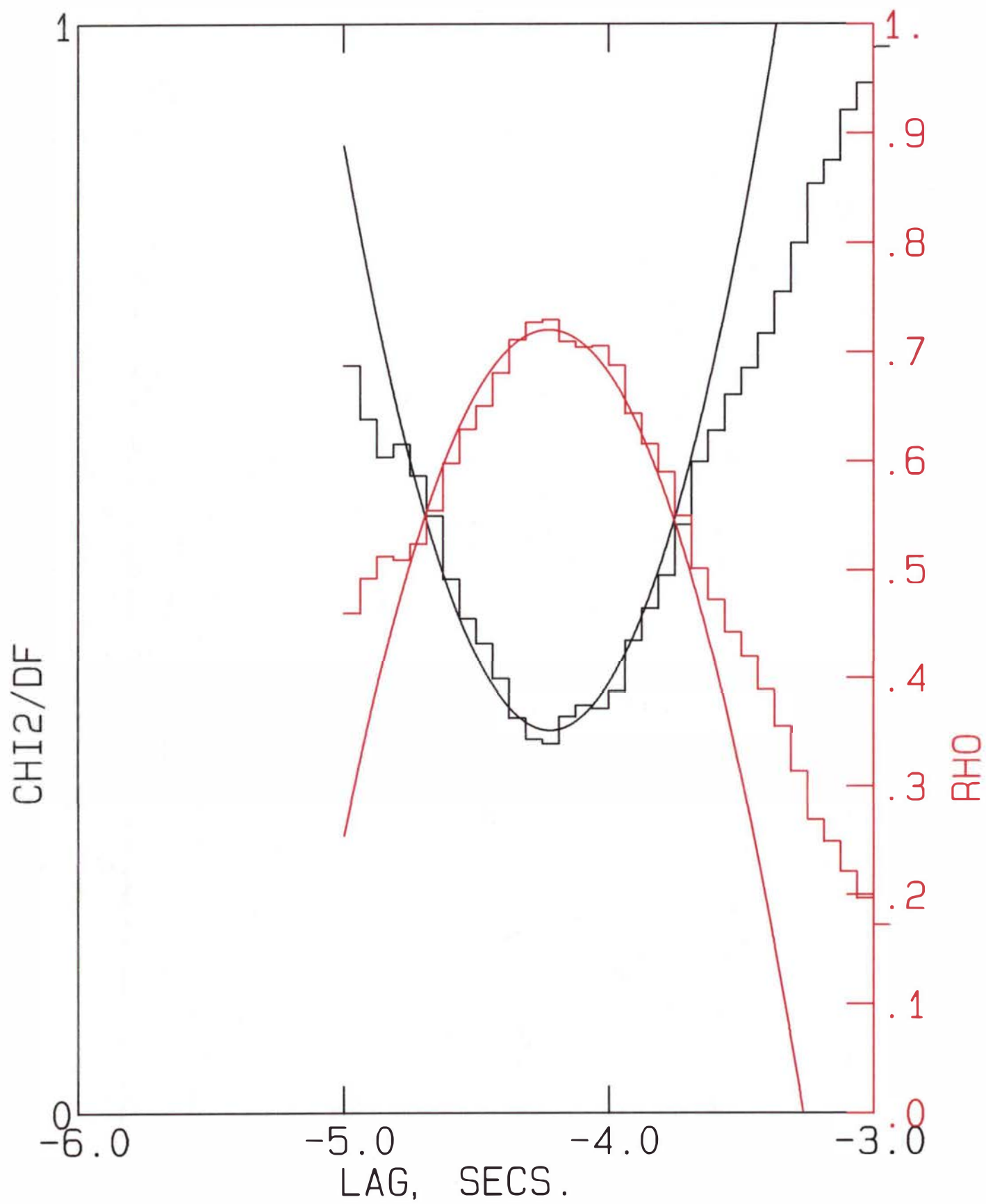
CORRELATION

18/04/96

66749.653

6/ 3/98





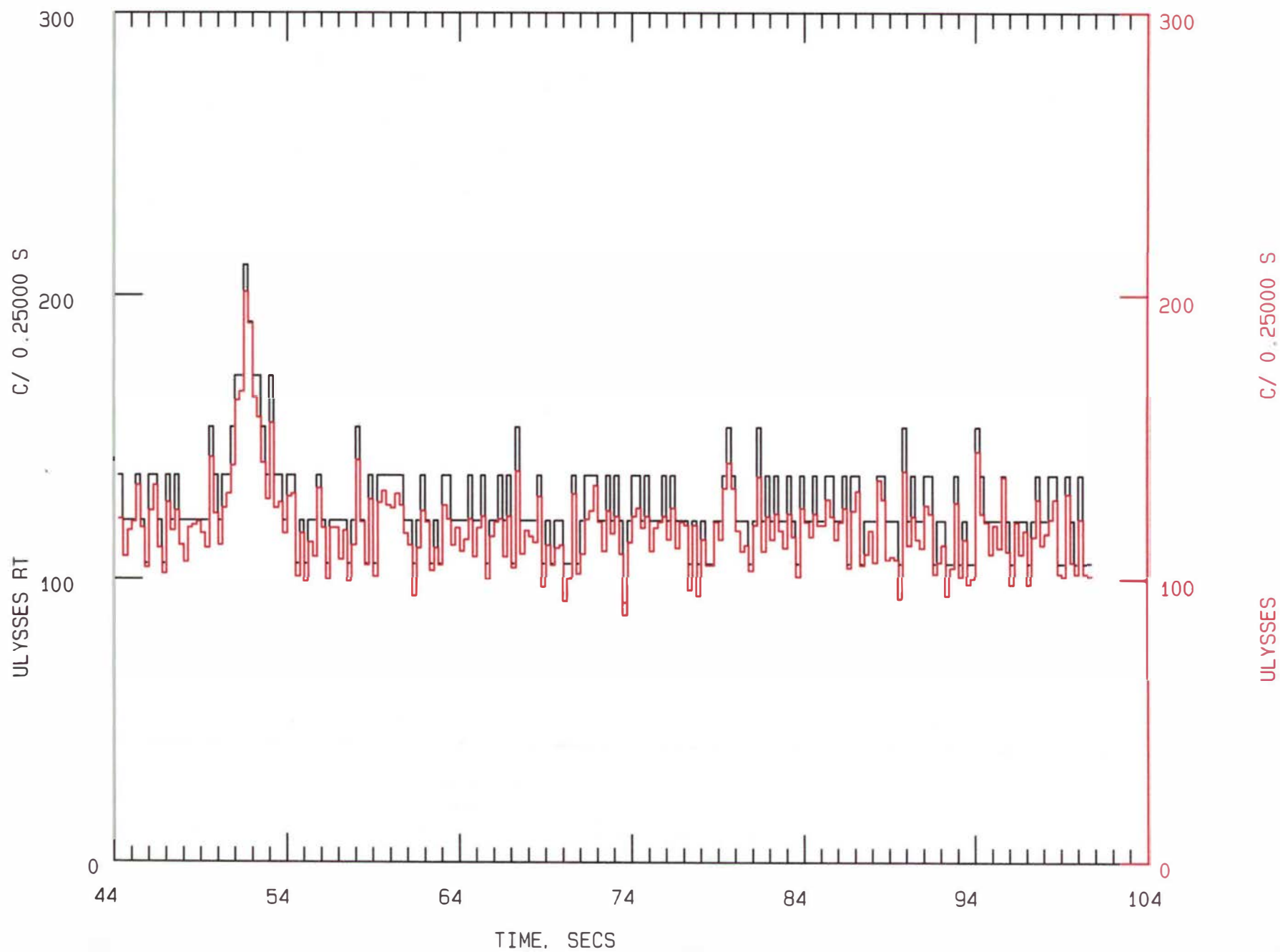
ULYSSES RT-ULYSSES

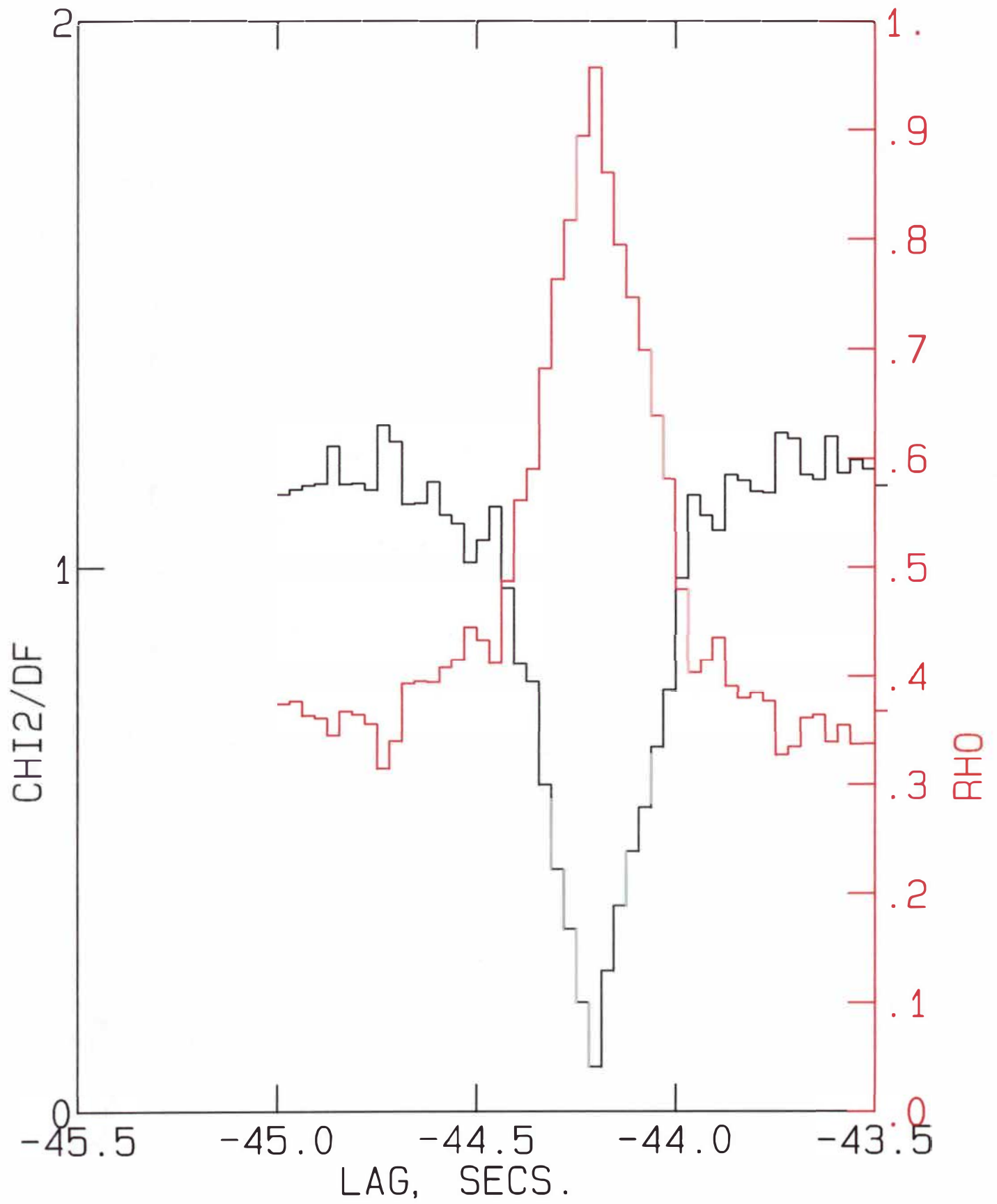
CORRELATION

18/ 4/96

66698.034

6/ 3/98

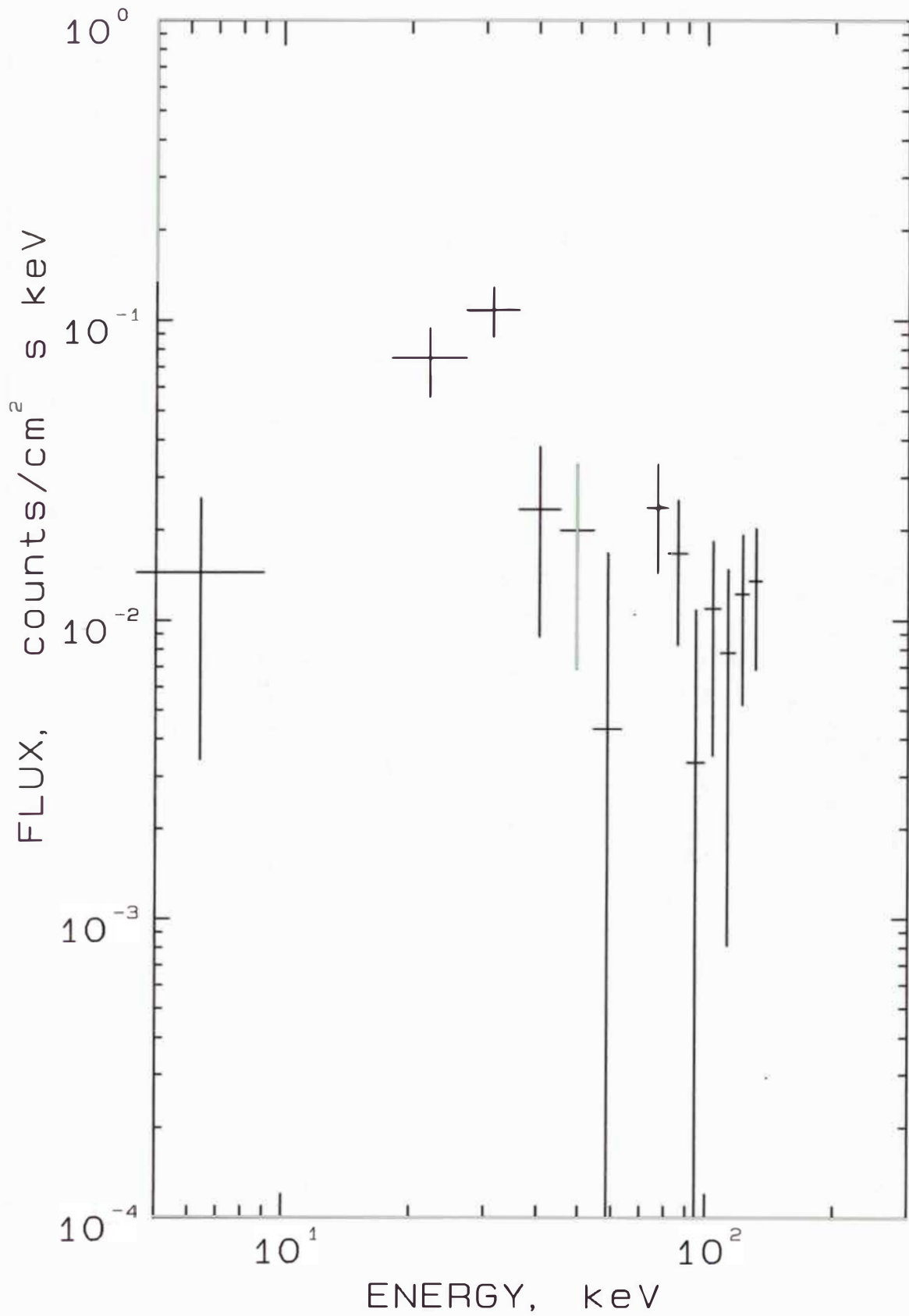




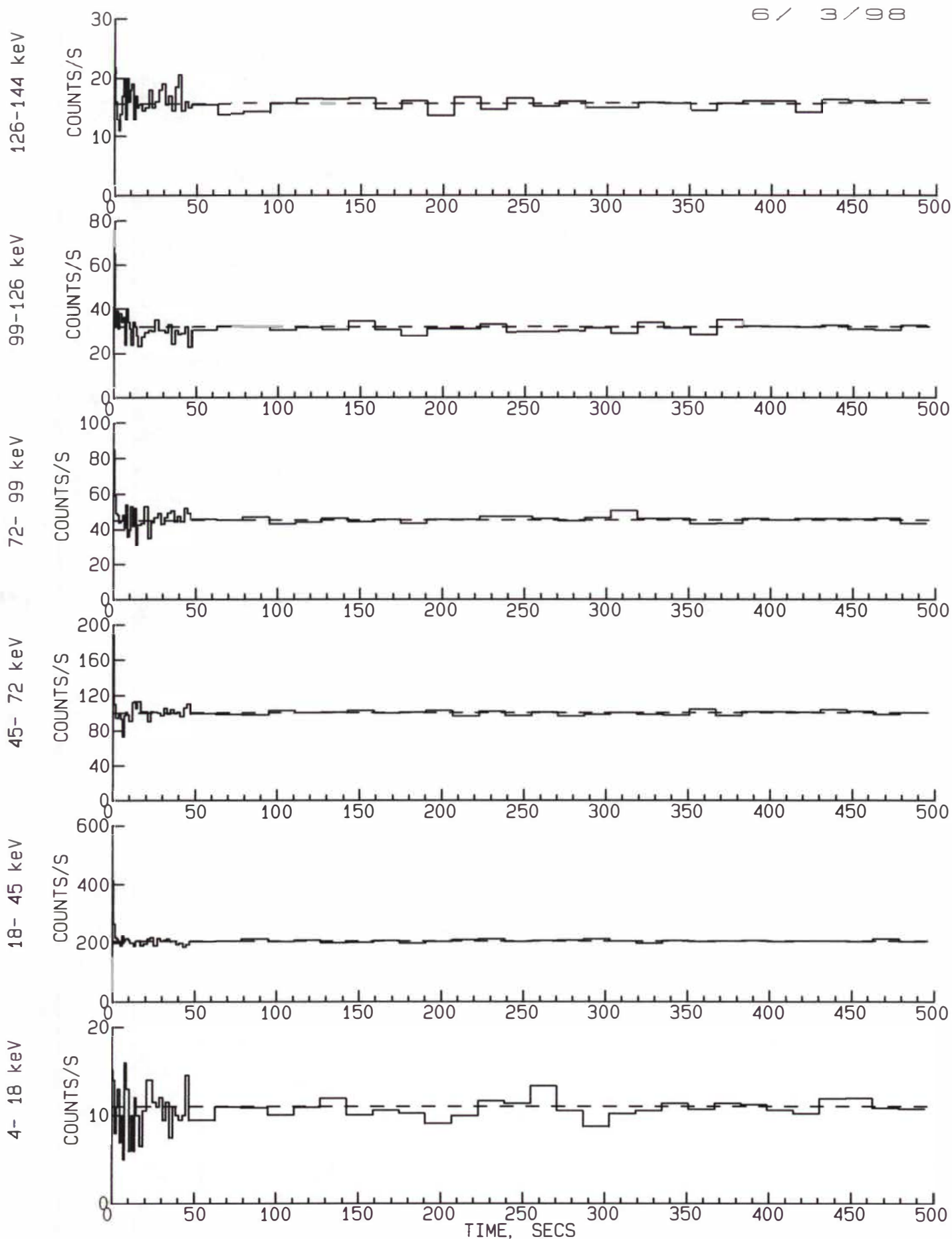
ULYSSES 18/04/96 66749.796

6/ 3/98

SPECTRUM INTEGRATED OVER 10.7 SECONDS, INTERVALS 2 TO 13



ULYSSES 18/04/96 66749.796 BURST SPECTRAL COUNT RATES



ULYSSES

18/04/96

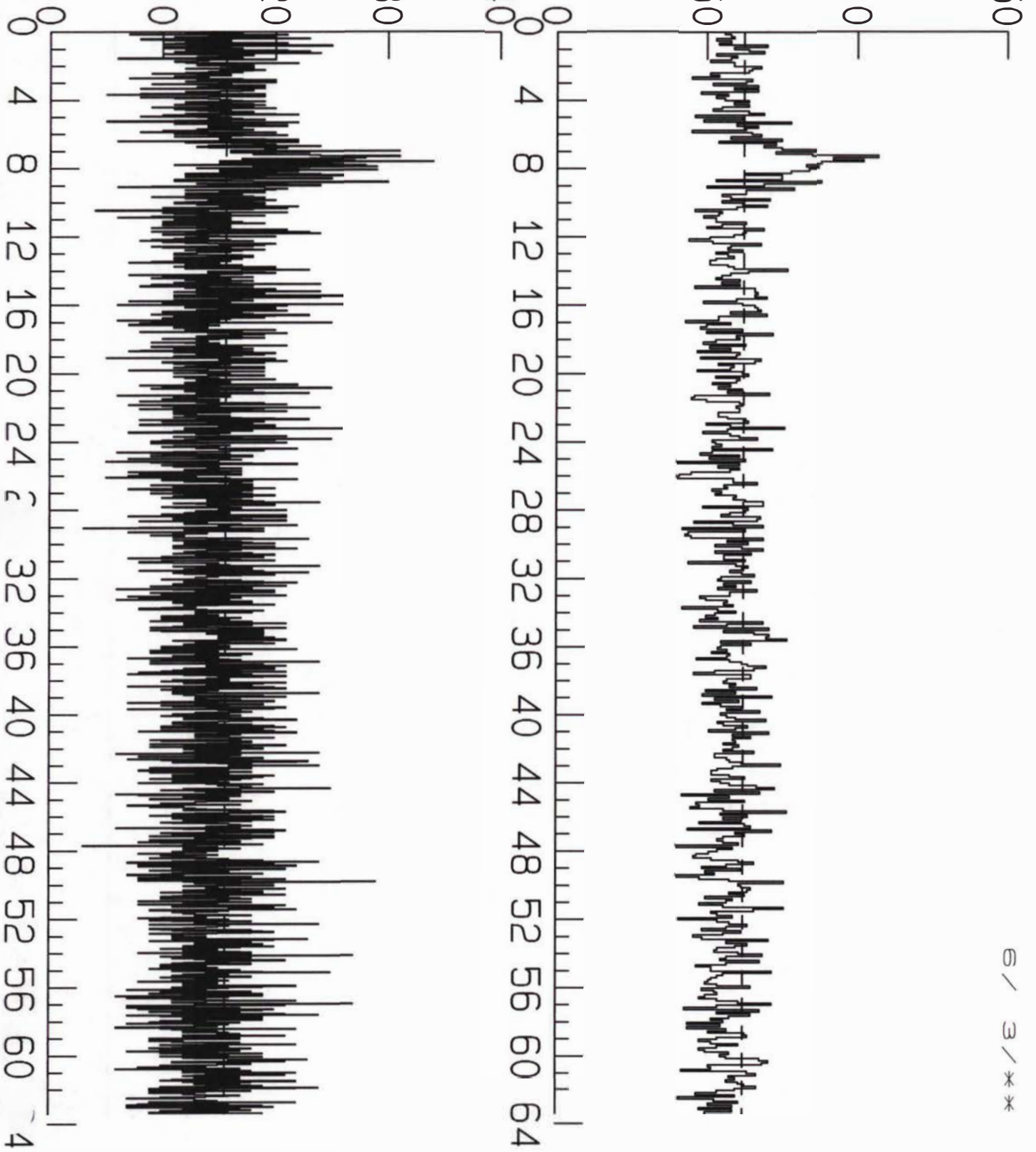
Ttrig=66749.653

0- 0 keV

COUNTS/0.031 S

COUNTS/0.125 S

6 / 3 **



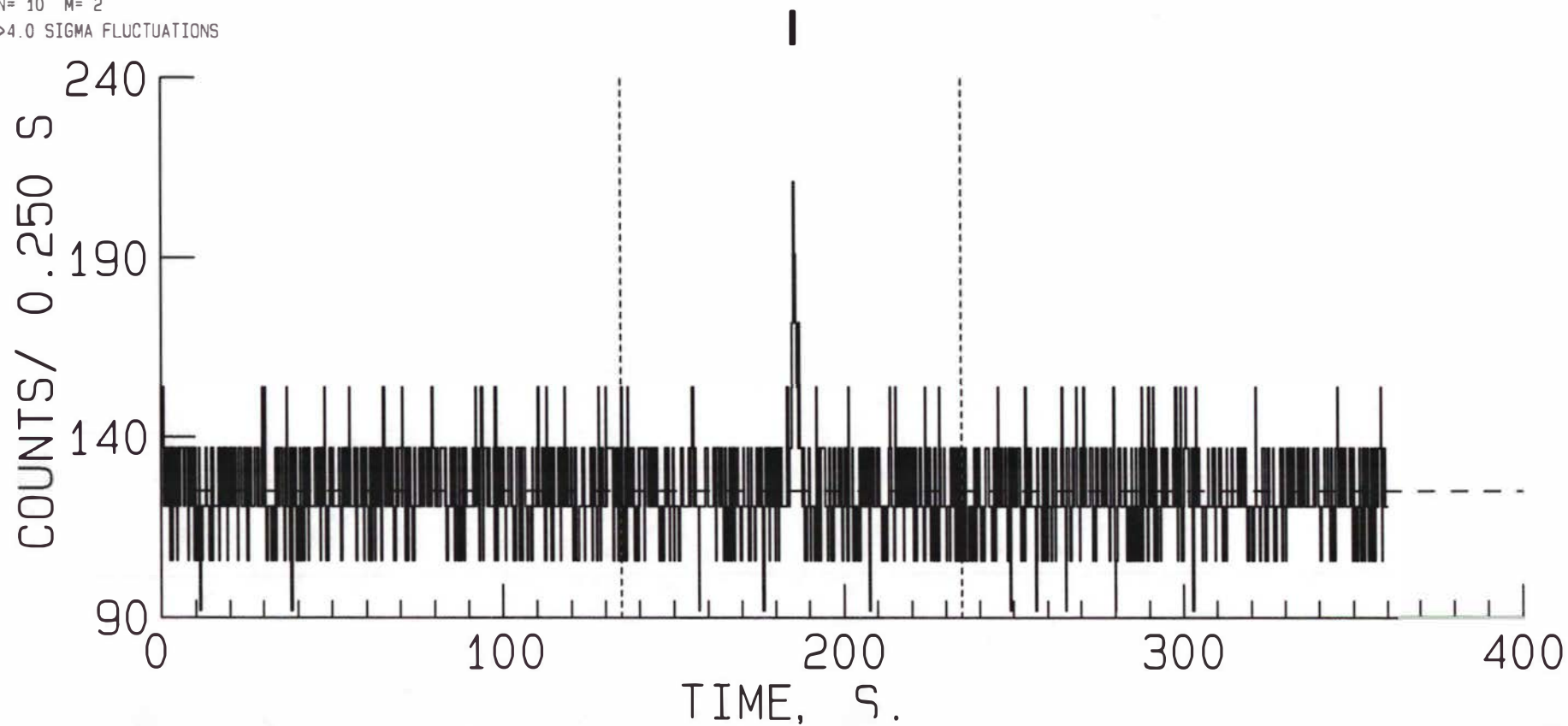
ULYSSES RT

6 / 3 / 98

18 / 4 / 96 66564.175 s

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



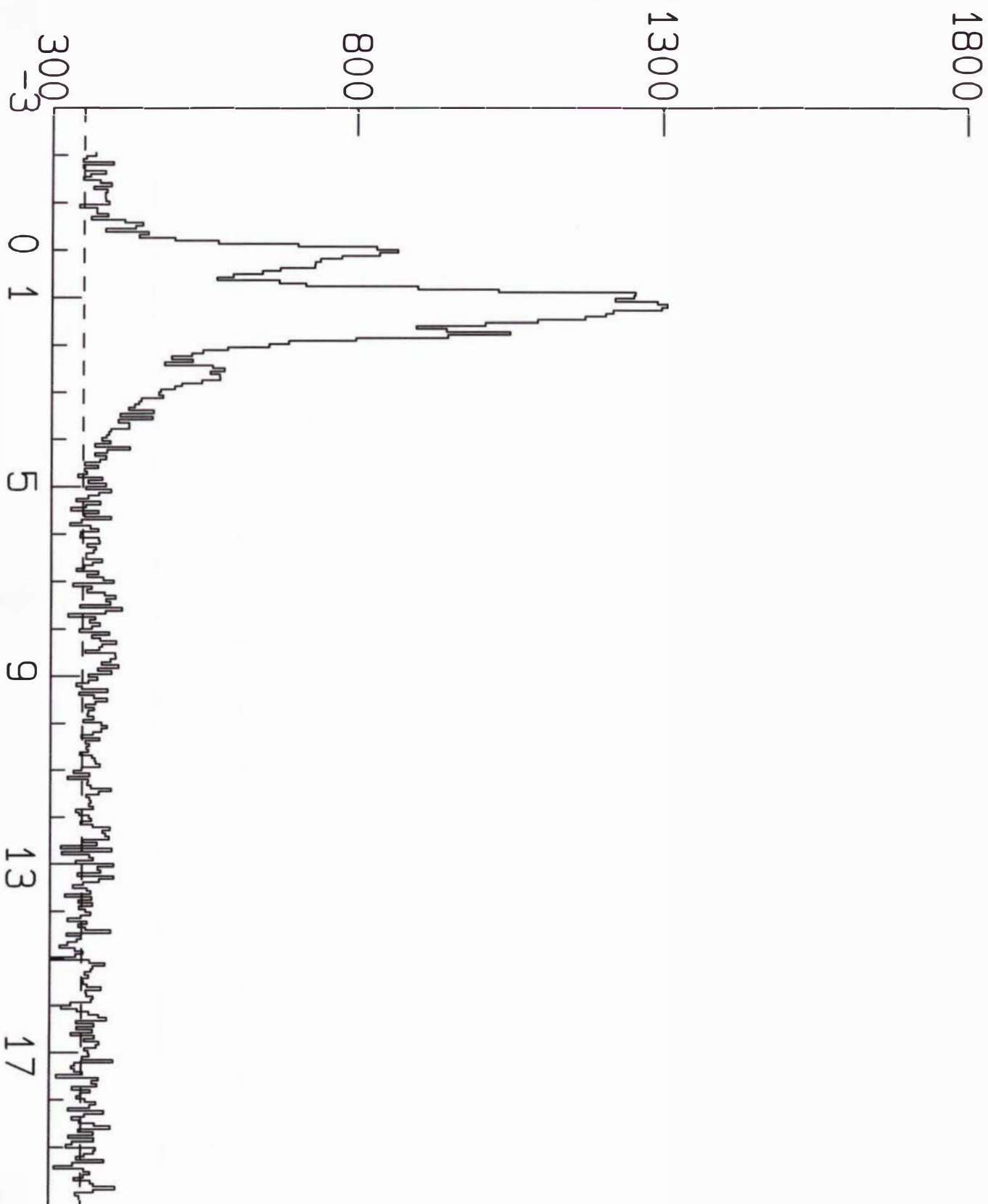
BATSE

18/04/96

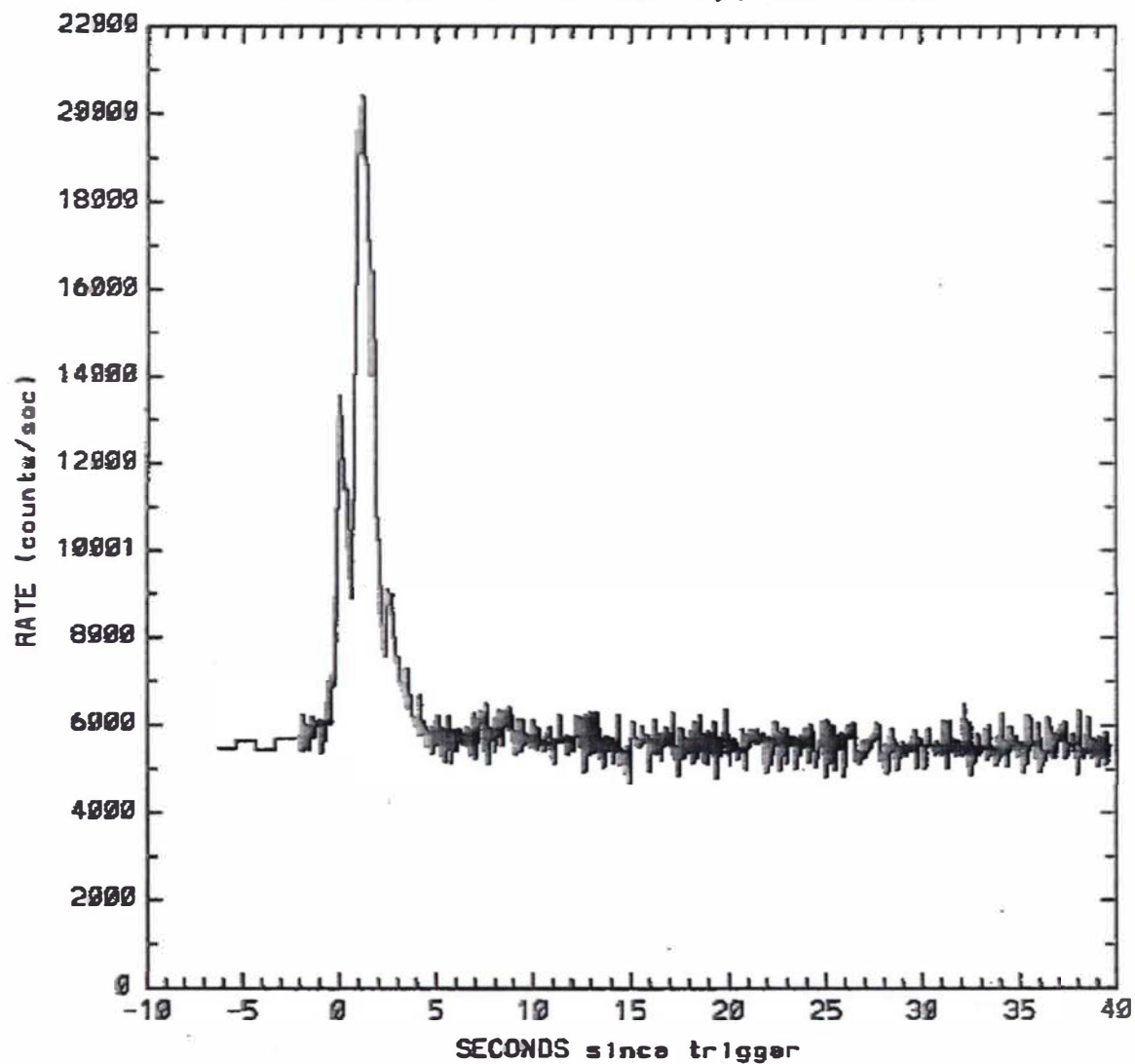
66795.402

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5436



25-APR-1996 10:28:49

Created by XOPS 80
 (Burst Display)
 Version 12.25

Trigger # . 5436

Trigger Time:
 19191 / 66795.482

Burst Data Type:
 DISCSC

Deadtime
 Corrected: N

Background Data
 Type: PREB + DISCLA

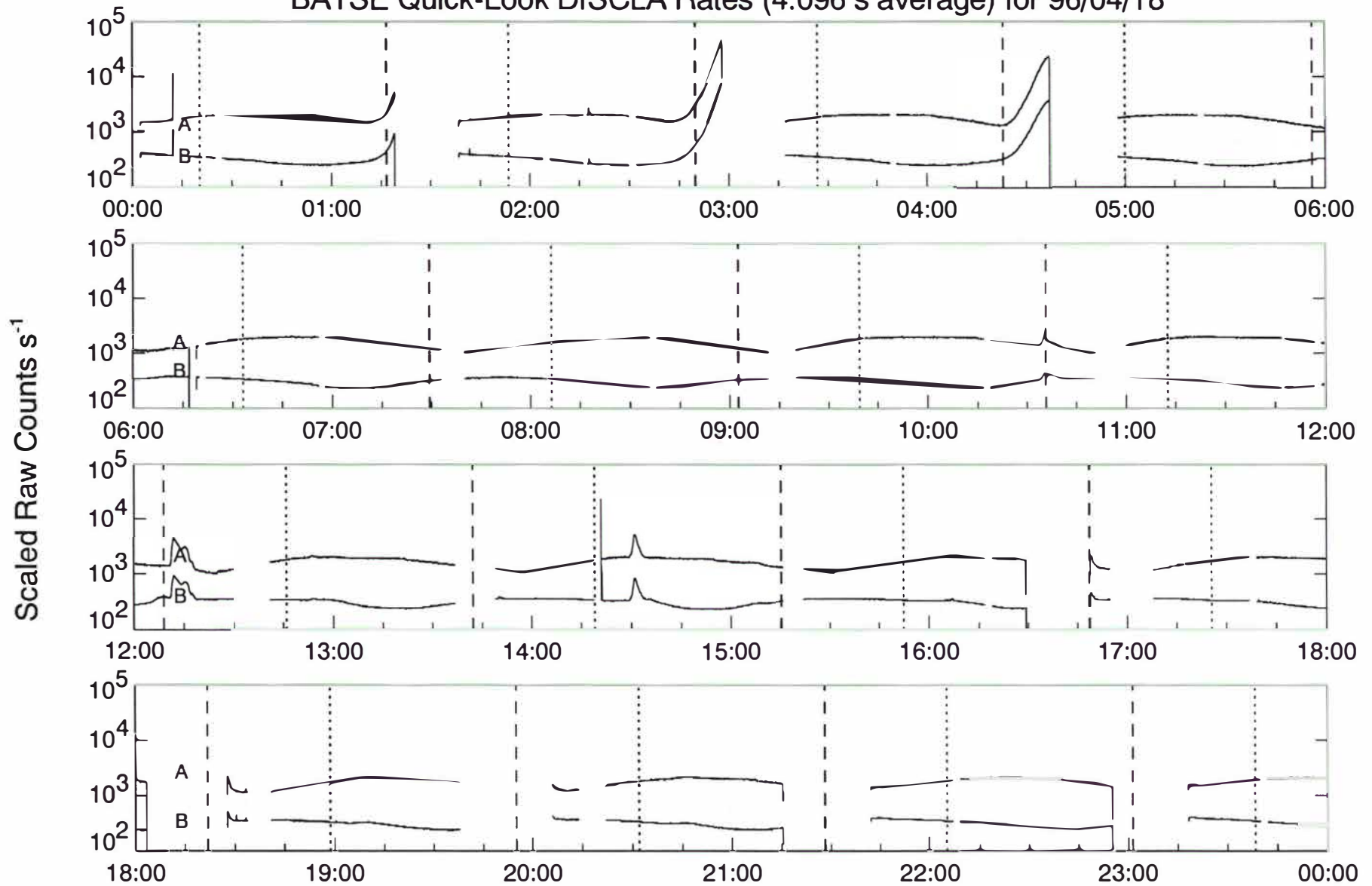
Minimum Integ. Time:
 0.064 second(s)

Detectors (7..0):
 -----19

Discriminators:
 1 1 . 2 1

Quality Mask:
 001SP1

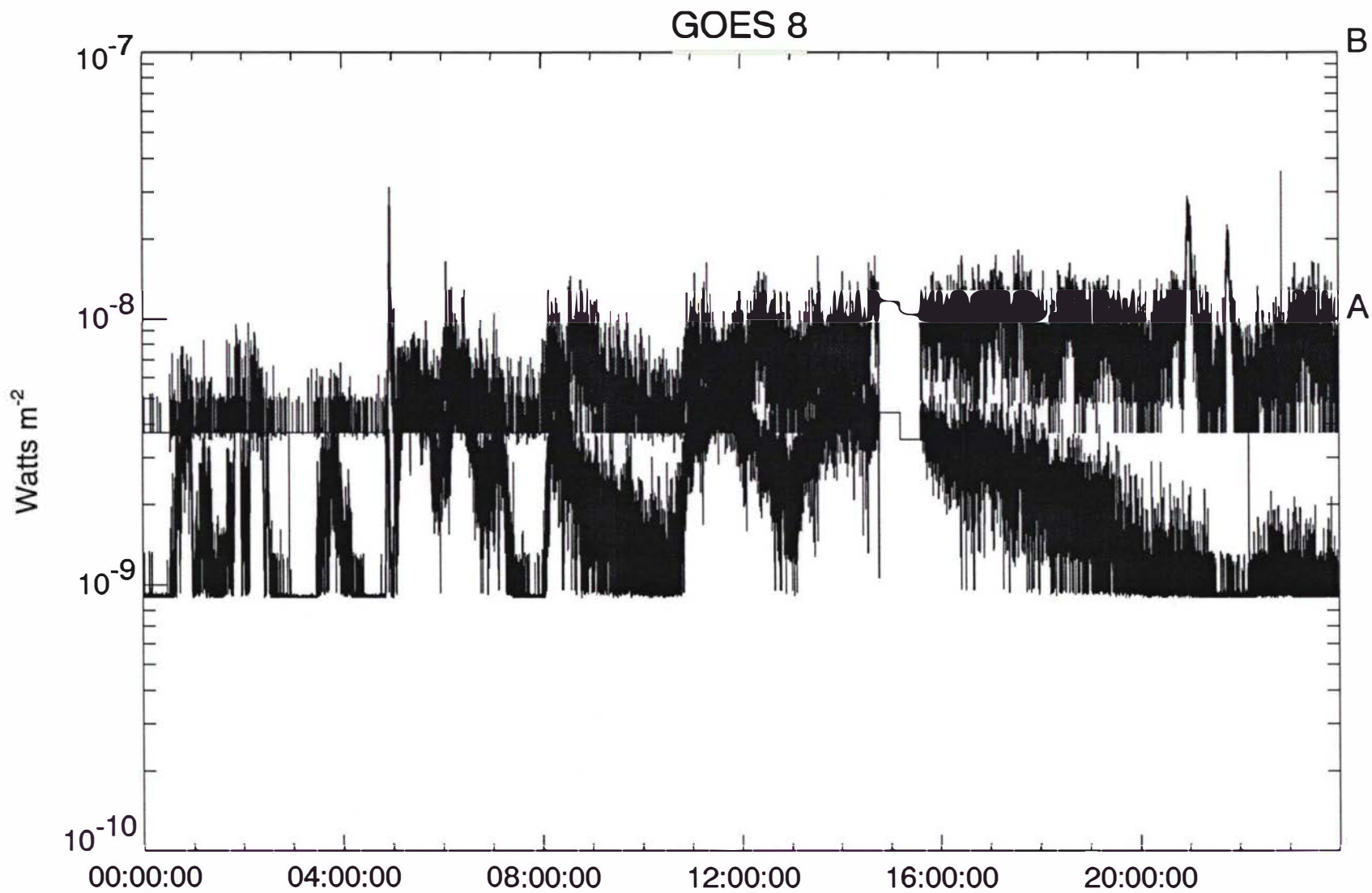
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/18



Current Time: 96/04/24, 1726 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



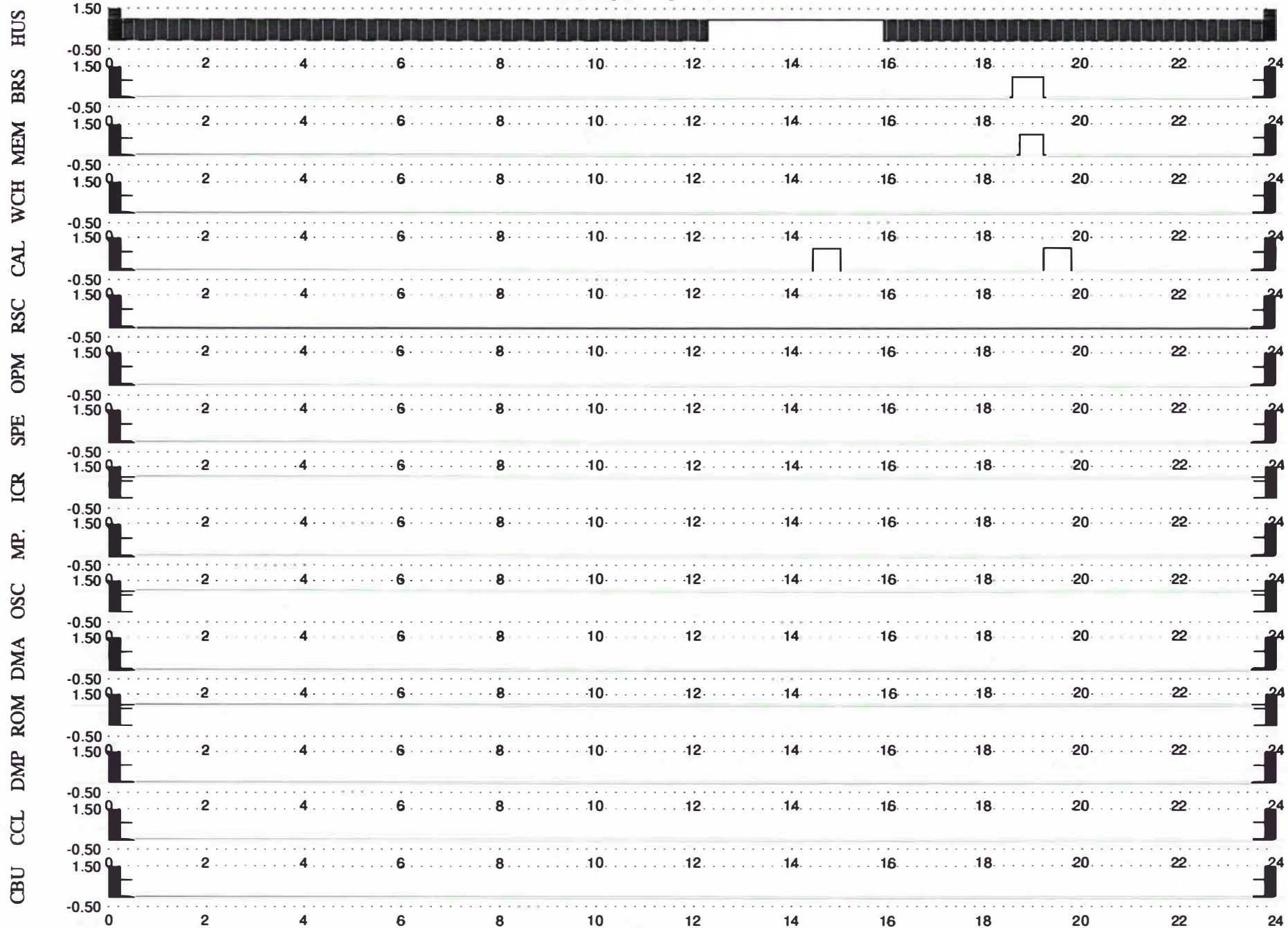
Data Start: 96/04/18, 0000:00

Plot created: 96/04/24, 1725

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

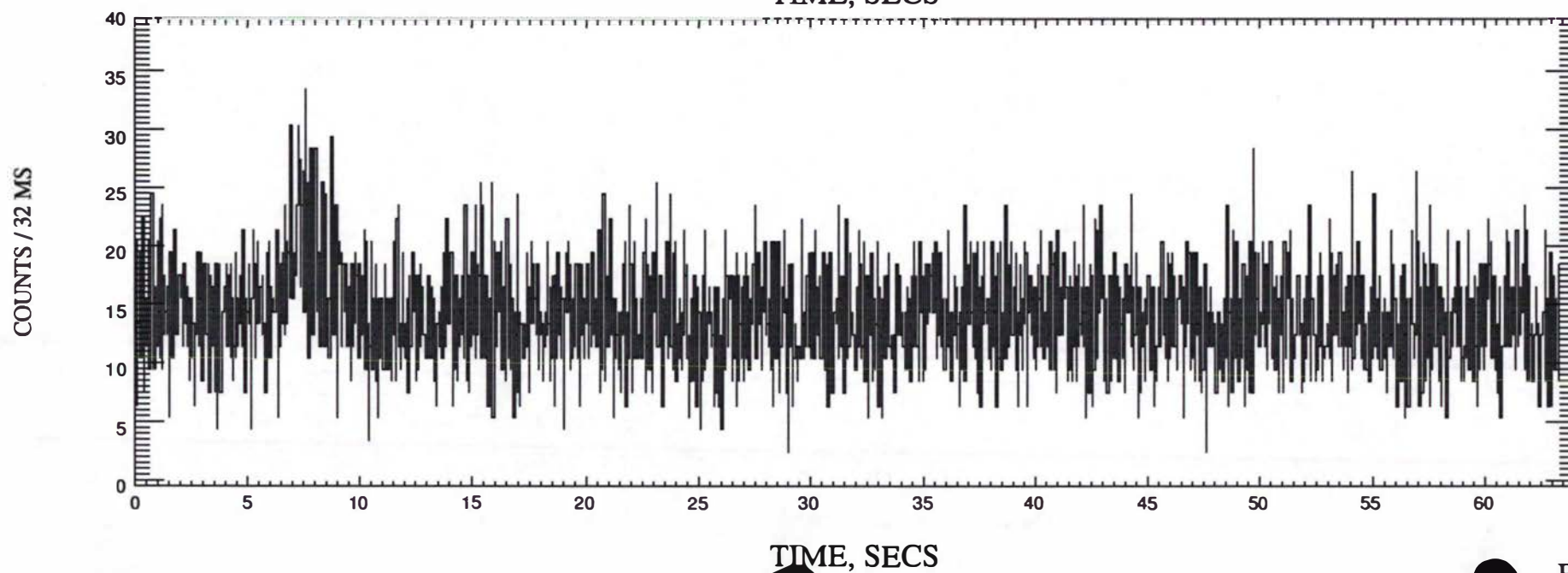
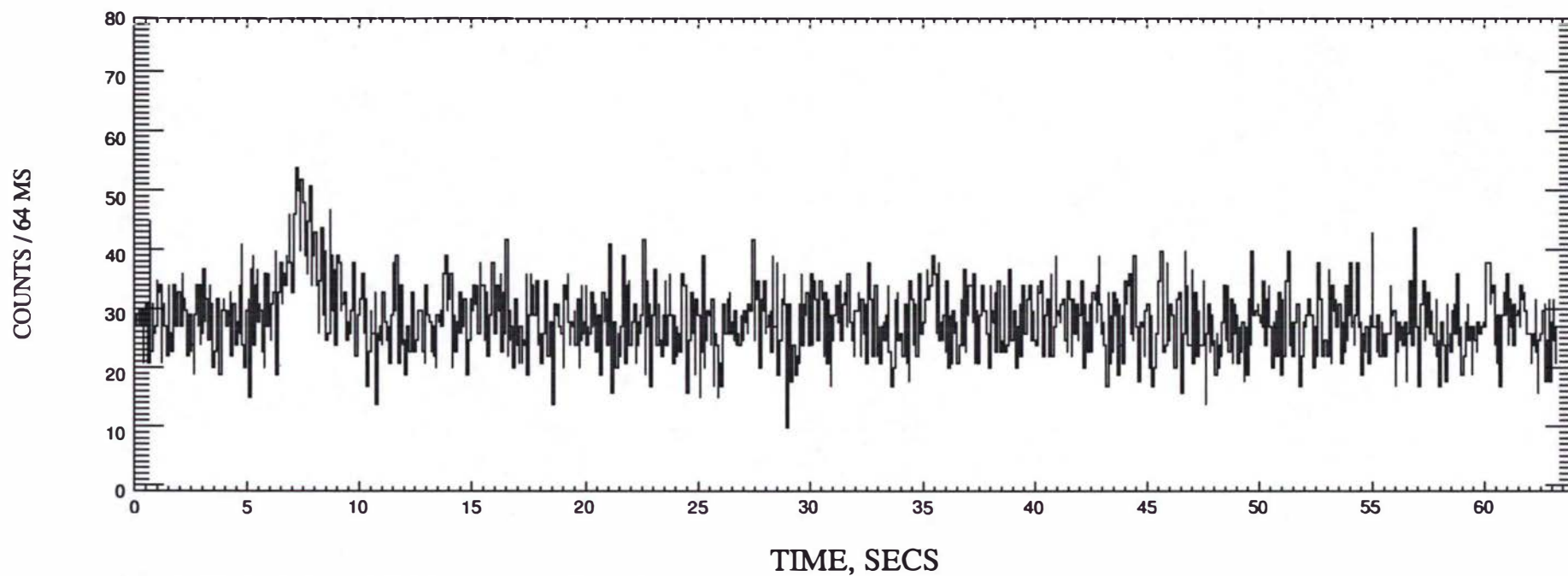
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BURST NUMBER 9

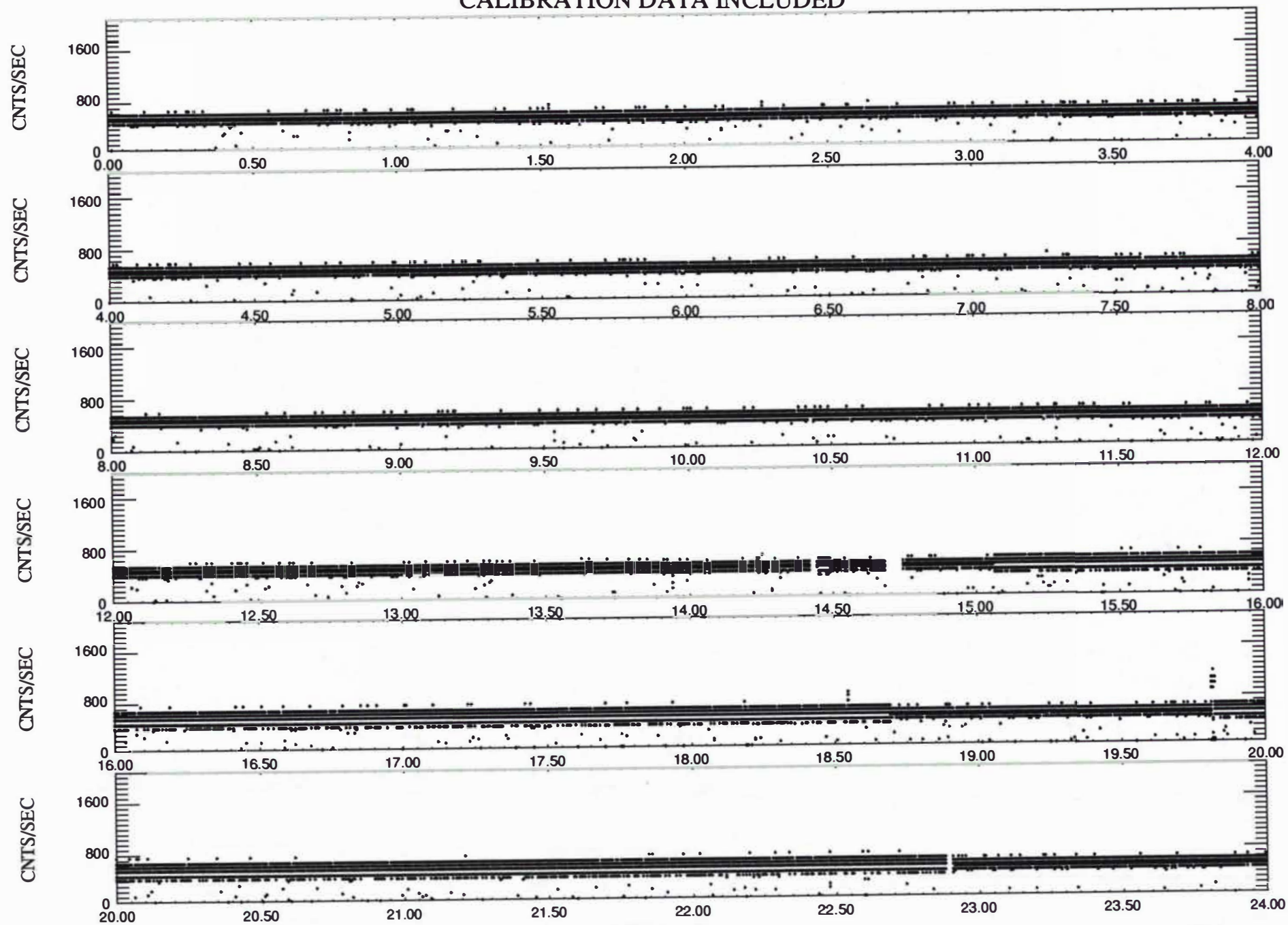


UNIVERSAL TIME

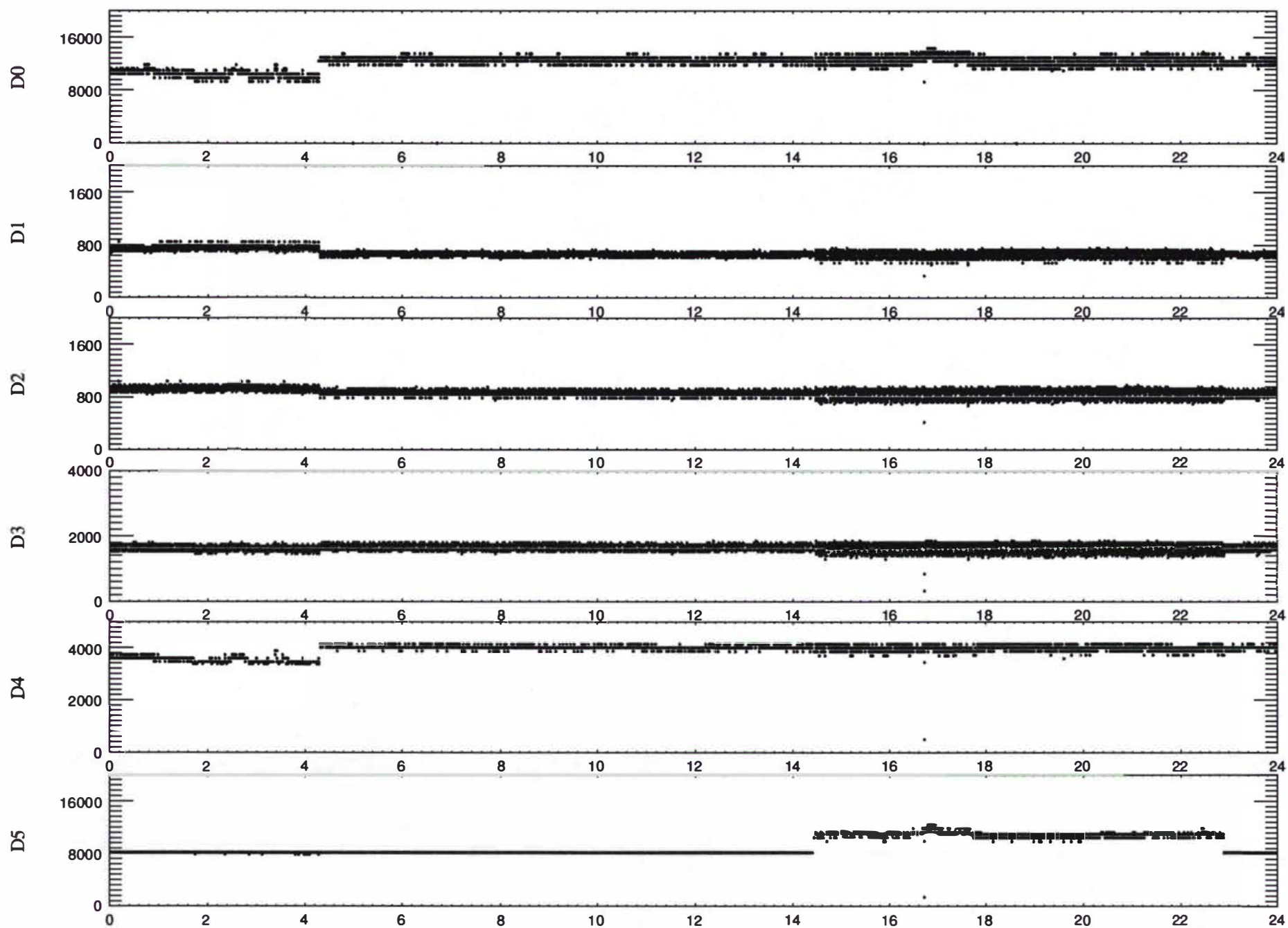
Burst Counter 9 at UT=18.541609933641 h=66749.796 s 18:32:29.796



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From SAHI@ssl.msfc.nasa.gov Tue Apr 23 08:42 PDT 1996
From: SAHI@ssl.msfc.nasa.gov
Date: Tue, 23 Apr 1996 10:40:56 -0500 (CDT)
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5437

TIME: TJD=0192 SECONDS=57885

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES, SAA EXIT.

From SAHI@SSLLES.MSFC.NASA.GOV Tue Apr 23 09:04 PDT 1996
Date: Tue, 23 Apr 1996 11:03:10 -0500 (CDT)
From: SAHI@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5438

TIME: TJD=0192 SECONDS=63805

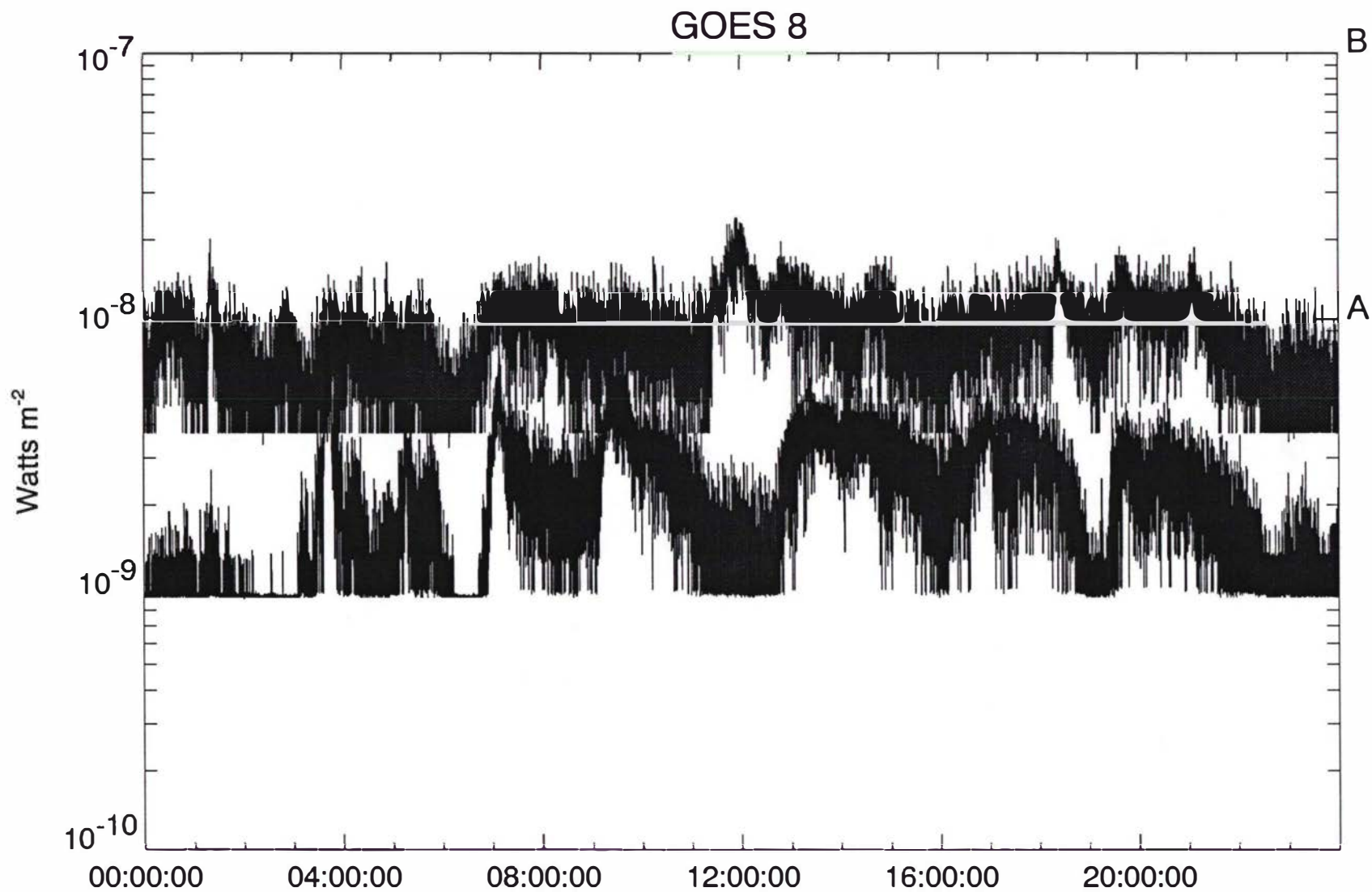
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES, SAA EXIT.



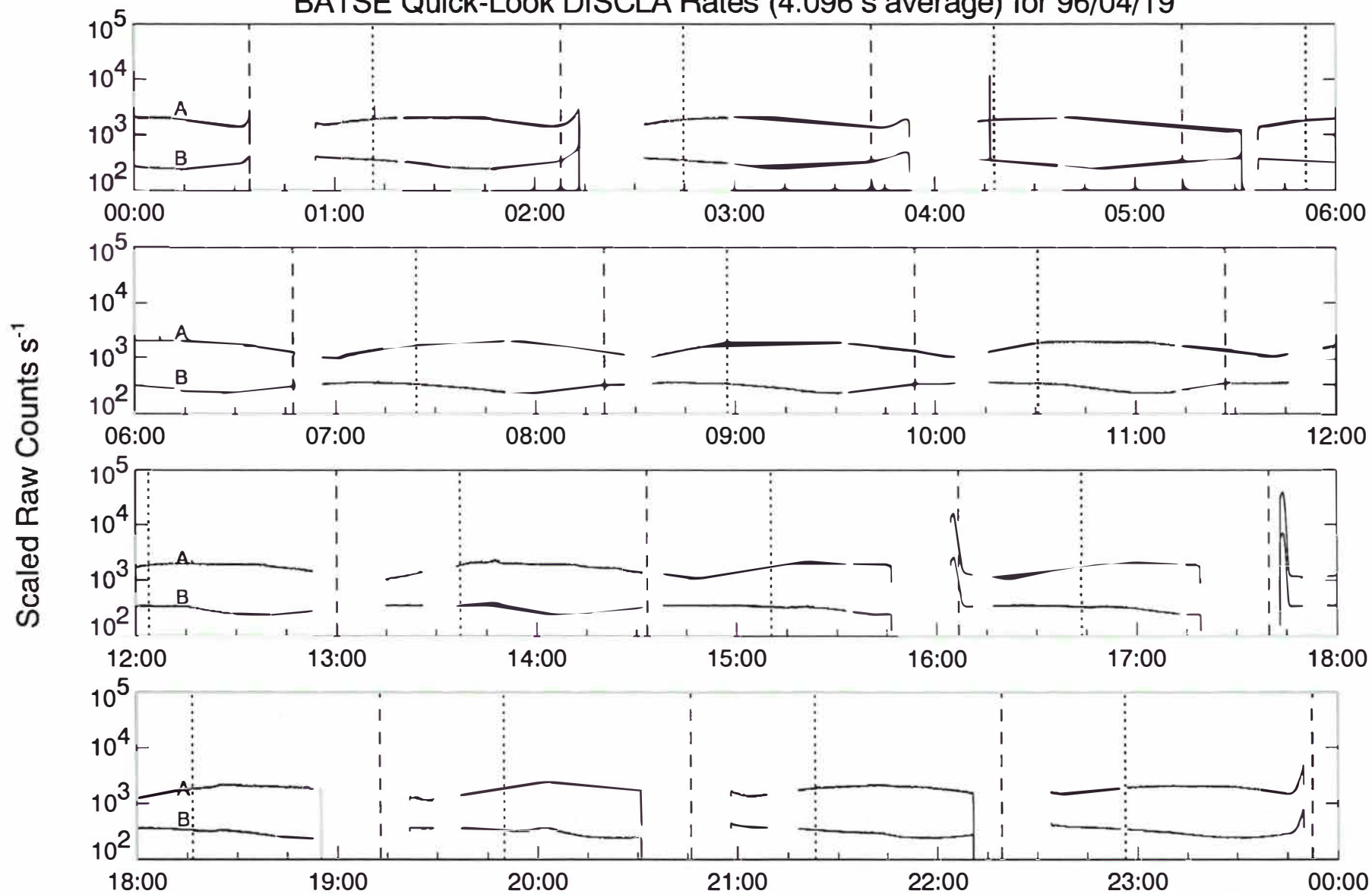
Data Start: 96/04/19, 0000:00

Plot created: 96/04/24, 1732

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/19



Current Time: 96/04/24, 1733 EDT

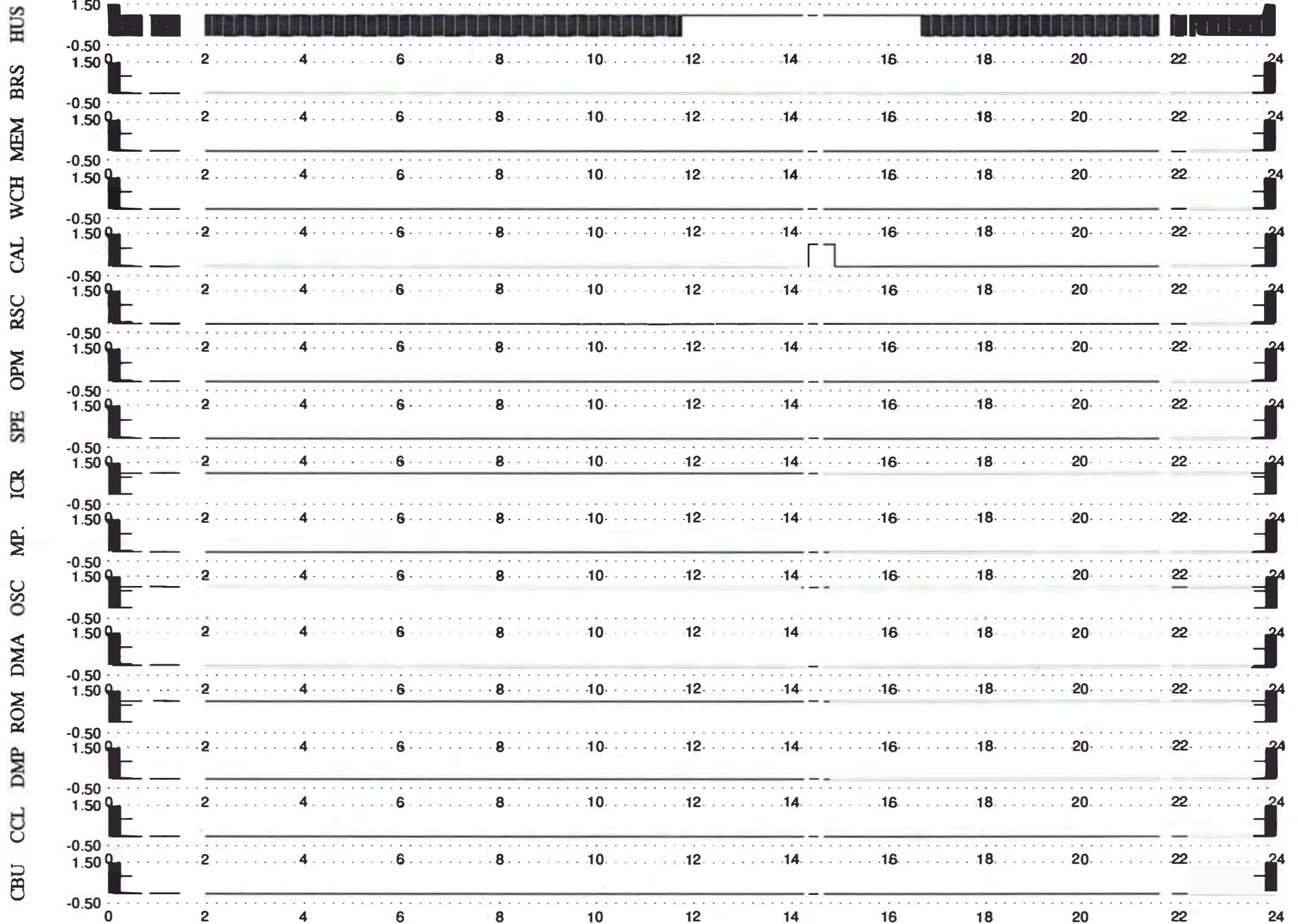
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

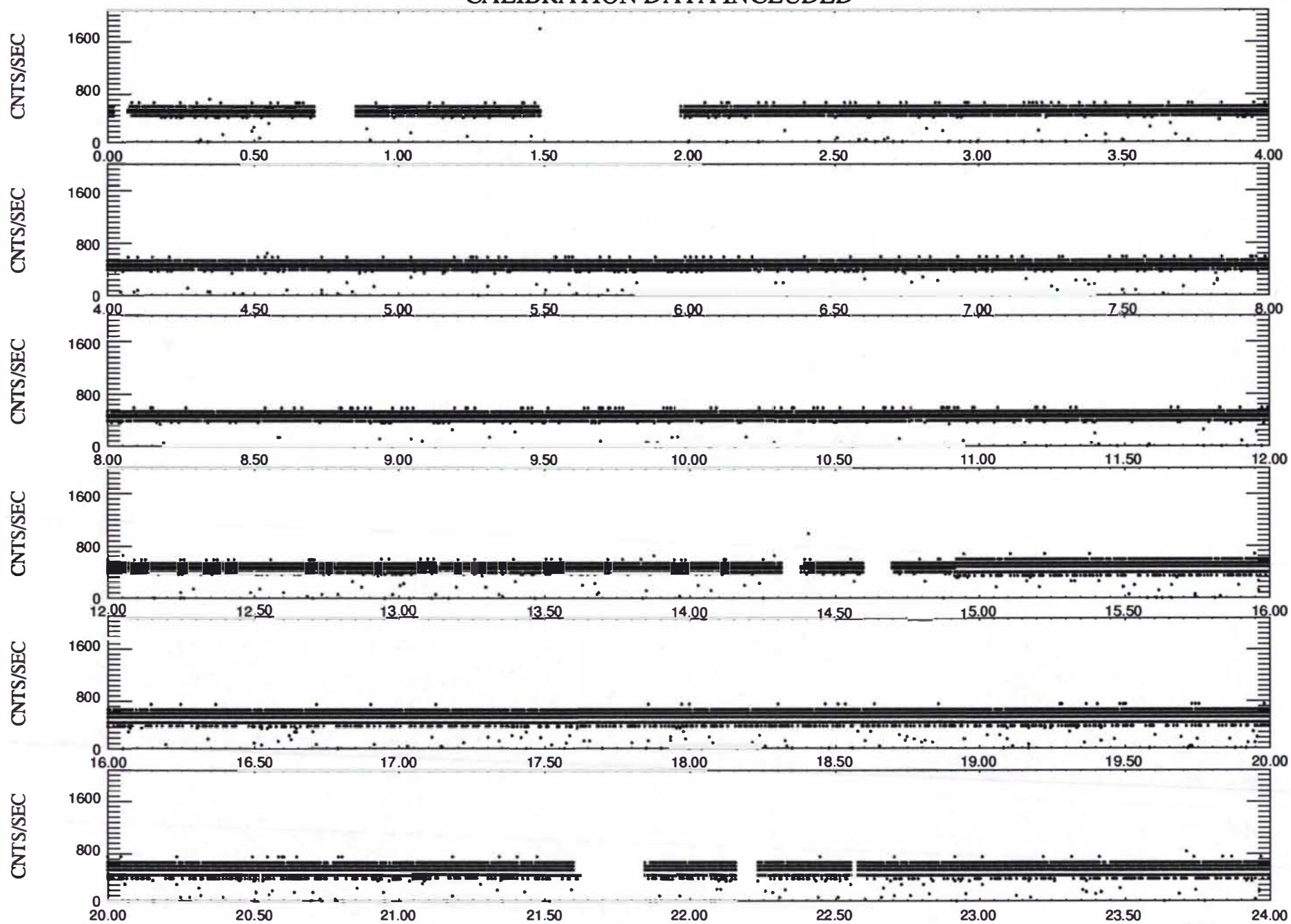
* Solar Burst Trigger
+ Solar Flare

NO BURST (9)

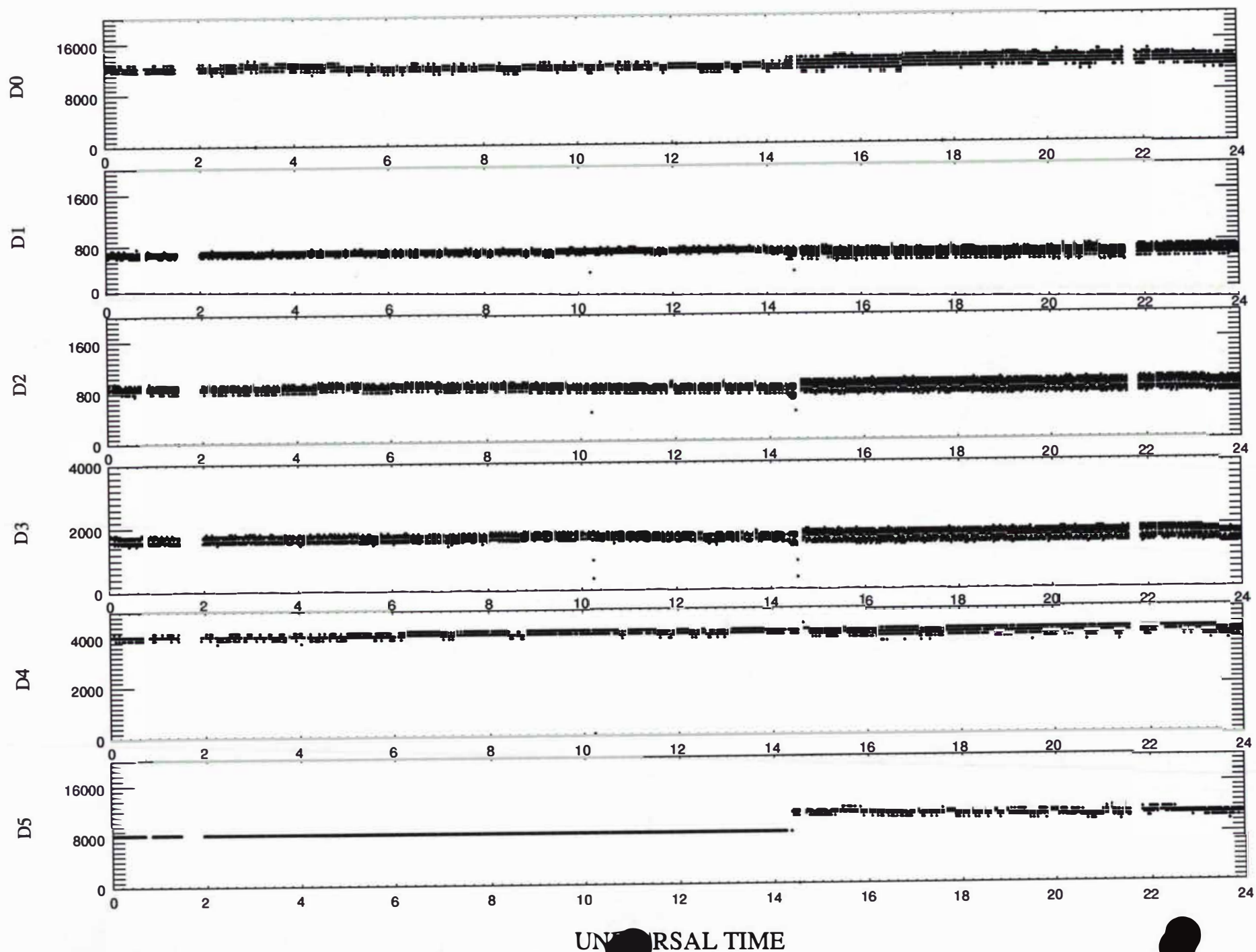


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Tue Apr 23 10:24 PDT 1996
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 23 Apr 1996 12:24:15 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5439

ND

BATSEARCH PROGRAM

BATSE BURST # 5439
EVENT OF 1996 APR 20 DAY OF YEAR=111
EVENT CROSSING TIME AT BATSE : 16844. S. OR 04:40:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 234.000 -27.000
BATSE PEAK COUNTING RATE: 50000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 4/ 96 IS:
RA= 149.859 DEC= 65.898 DIST= 3.519 AU
BATSE-ULYSSES DISTANCE = 526421507. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 662.47 SECS.
CROSSING TIME AT ULYSSES IS 17506. S. OR 04:51:46 +/- 342.39 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 4/ 96 IS:
RA= 19.029 DEC= 7.351 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356843872. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 38.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 931.08 SECS.
CROSSING TIME AT MARS IS 17775. S. OR 04:56:15 +/- 142.89 SECONDS

BATSE BURST TRIGGER

NO.: 5439

TIME: TJD=0193 SECONDS=16844

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=126.3 AZIMUTH=-27.2 ERROR=2.4 DEGREES

COMMENTS:

BURST, MULIPLE SPIKE, TOTAL DUR.~6 SEC. MAIN SPIKE HAS DUR.~0.1 SEC.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5439	960420	10193	16844	50000	234	-27	6

BATSE #

5439

24 / 4 / 96

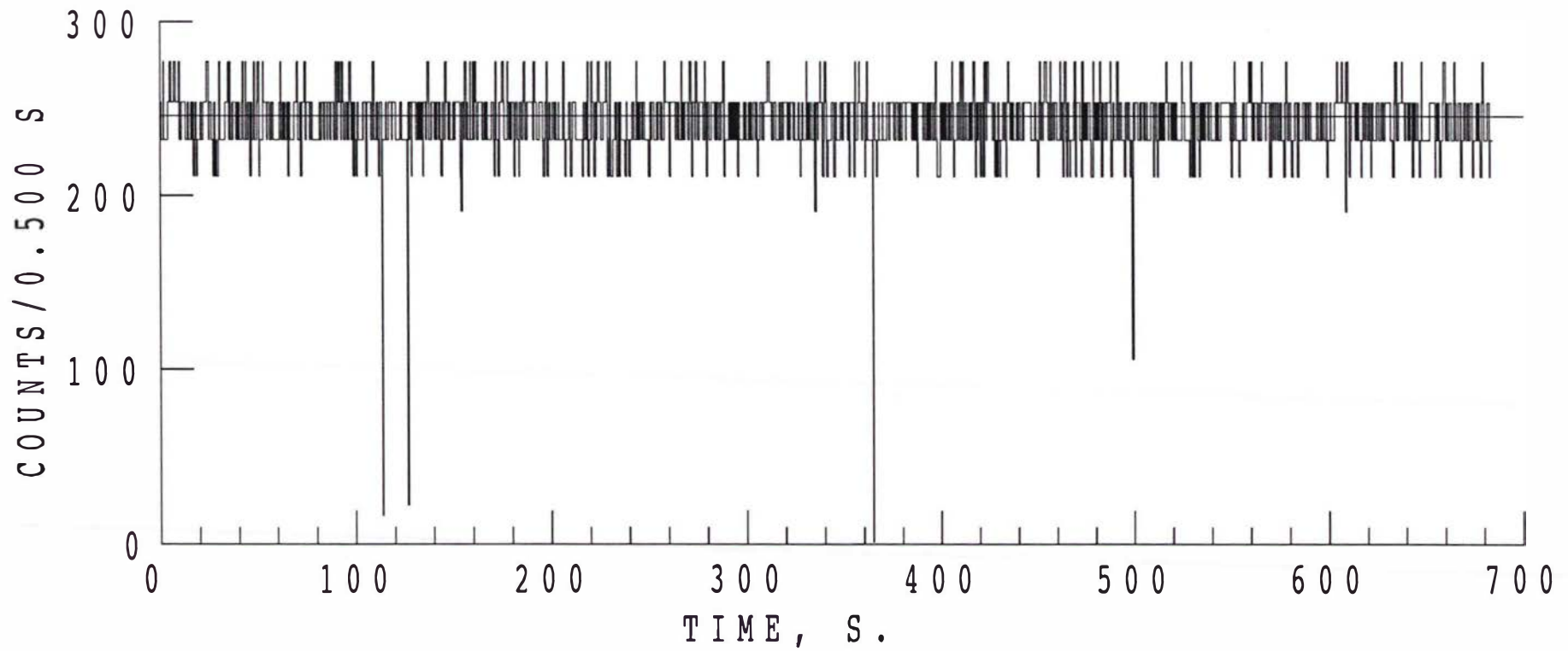
ULYSSES RT

20 / 4 / 96 17172.117 s

0 - 0 keV

N= 10 M= 2

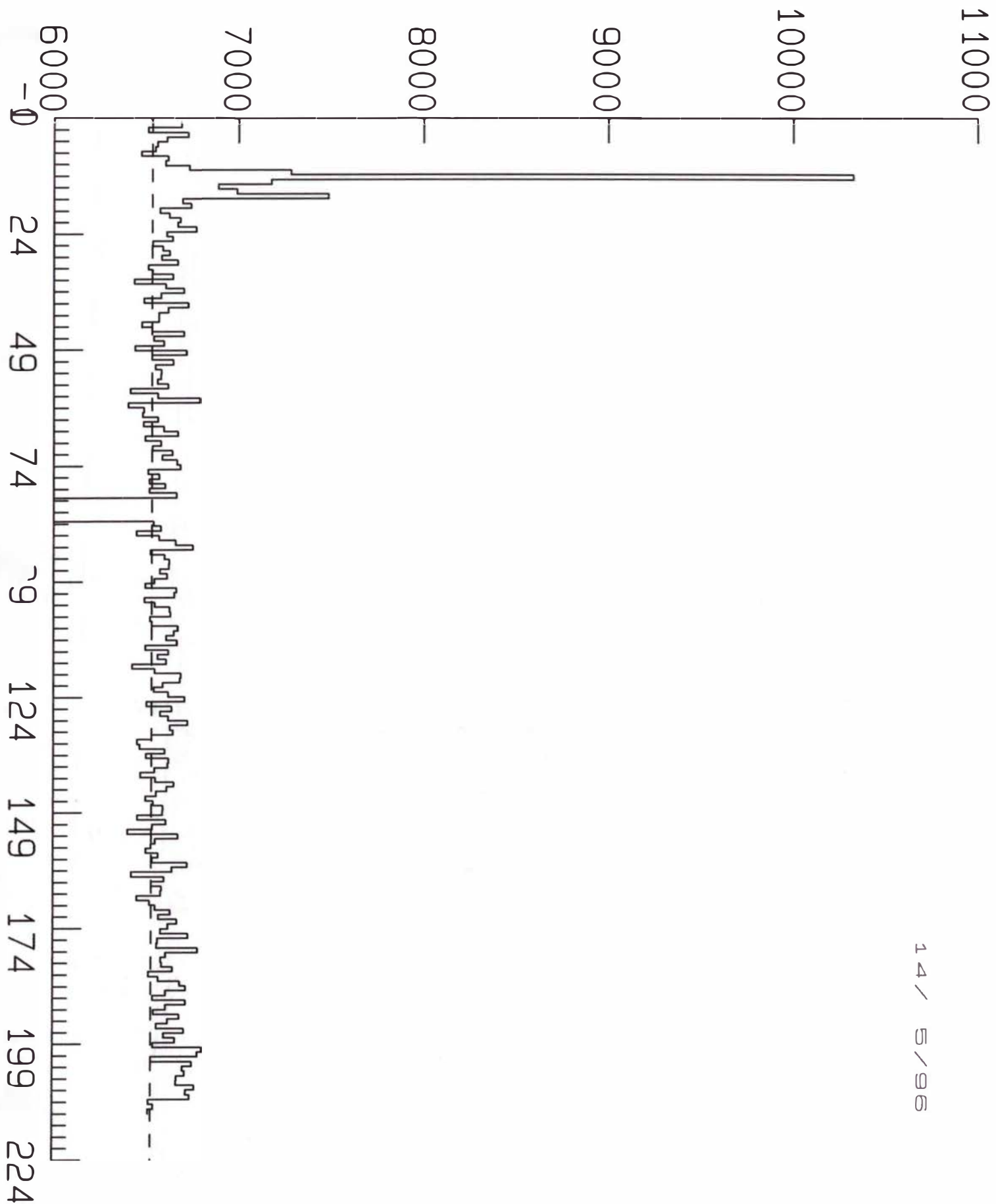
>4.0 SIGMA FLUCTUATIONS



BACODINE 5439 20/04/96 16833.225

25- 100 keV

COUNTS/1.024 S



96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search ± 1750	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5419
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search ± 1750	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA ± 1750	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search ± 1750 RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA ± 1750	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search ± 2050	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search ± 2050	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search ± 2050	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search ± 2050	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search ± 2050	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search ± 2050	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search ± 2050	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search ± 2100	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search ± 2100	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search ± 2100	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search ± 2100	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search ± 2100	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search ± 2300	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search ± 2300	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search ± 2300	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search ± 2300	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

(BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 search	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 search	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 Search	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

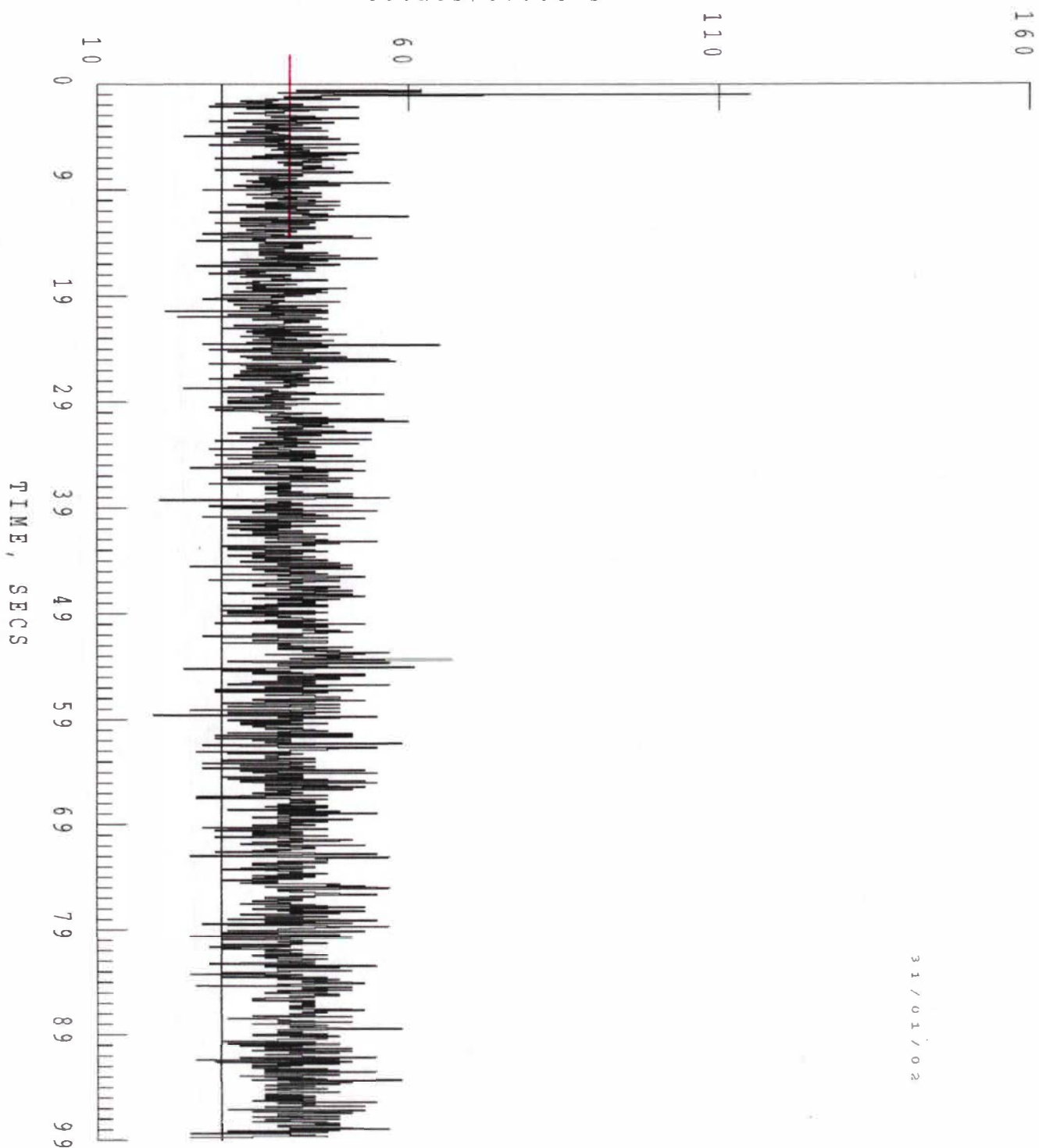
KONUS2

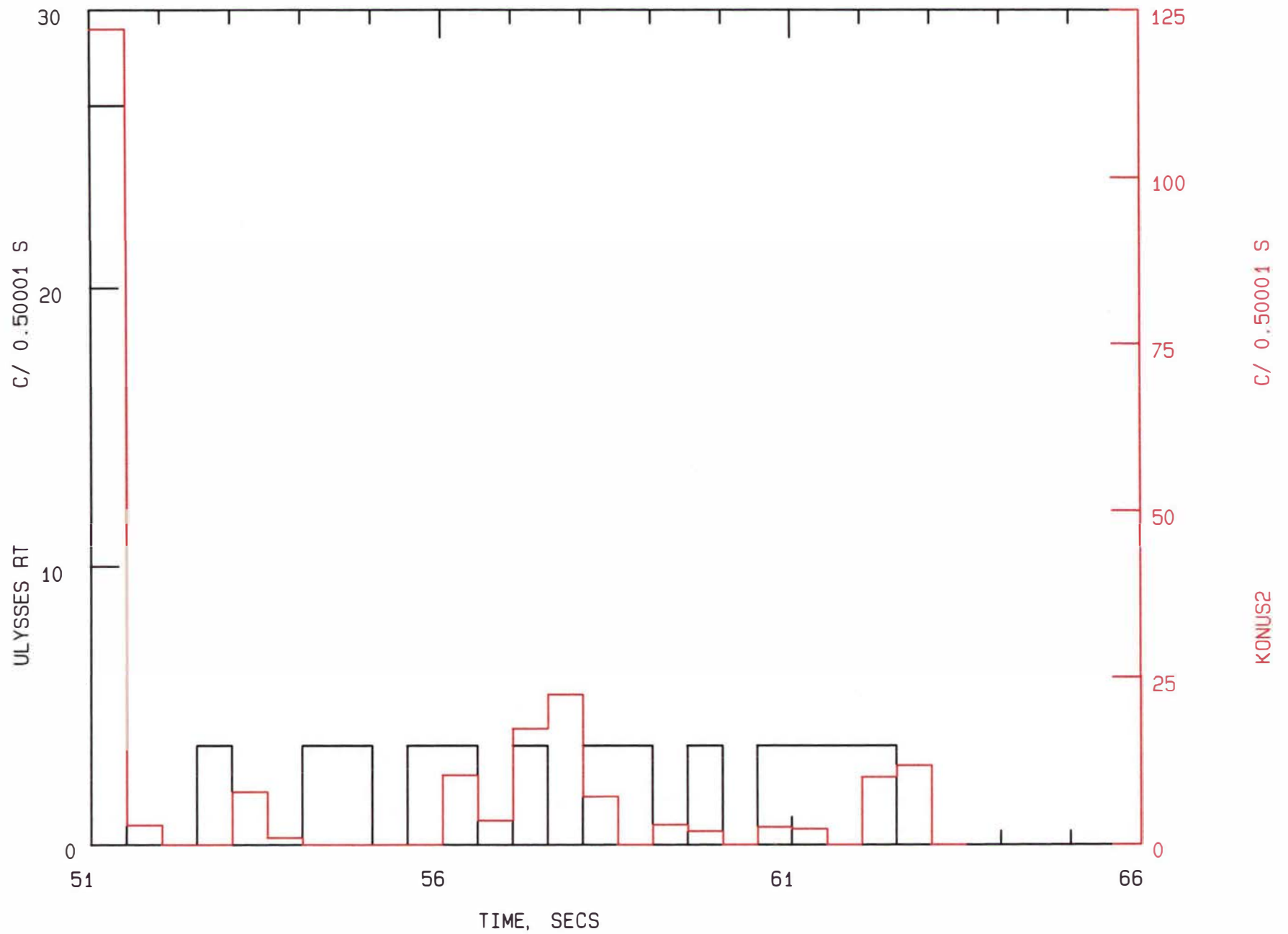
20/04/96

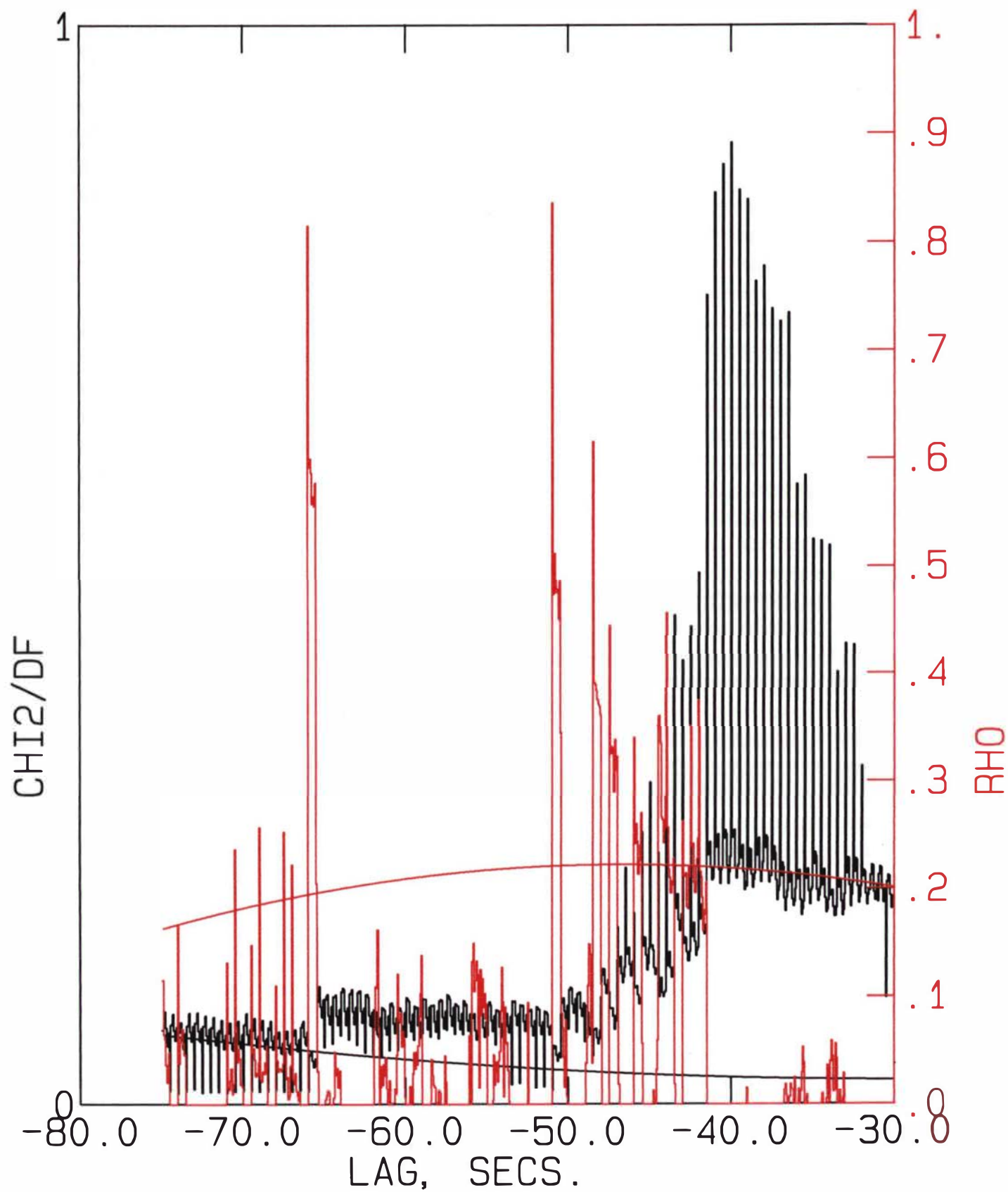
16844.809

50 200 keV

COUNTS/0.064 S

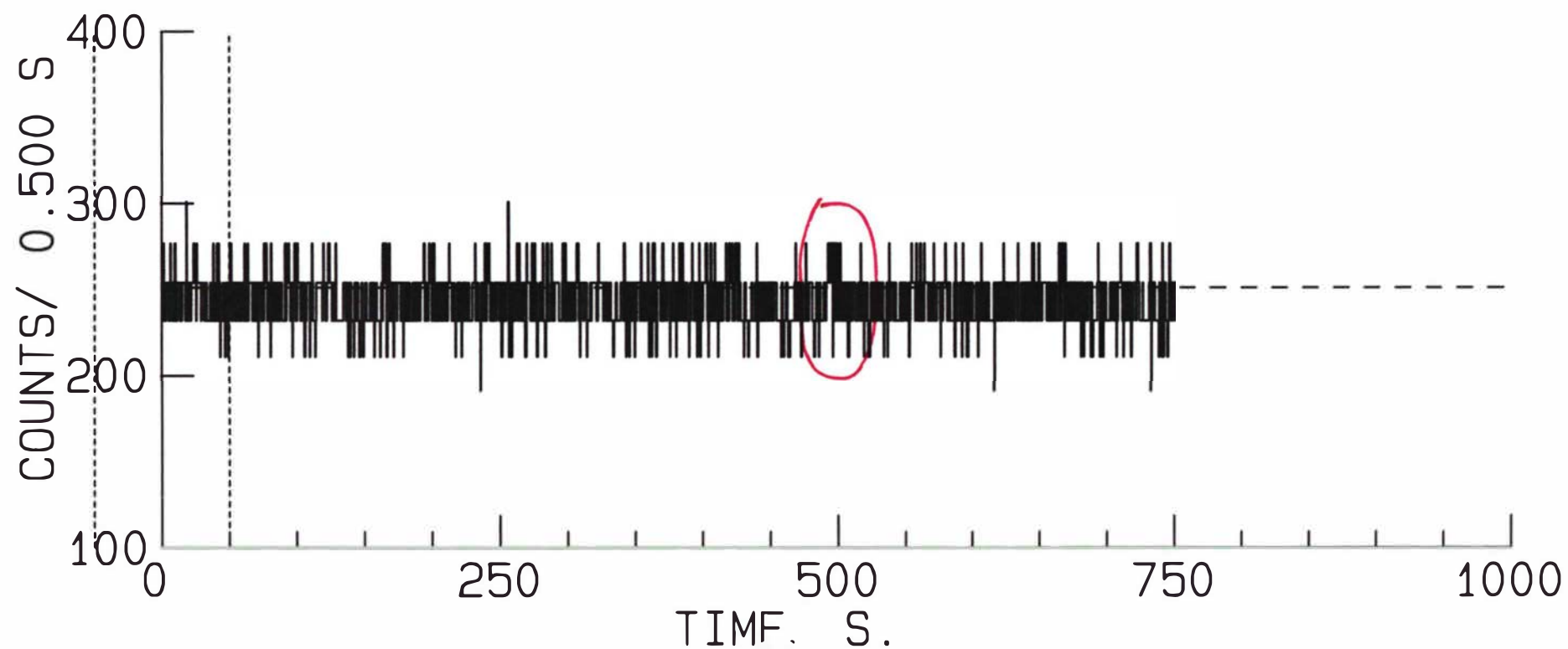






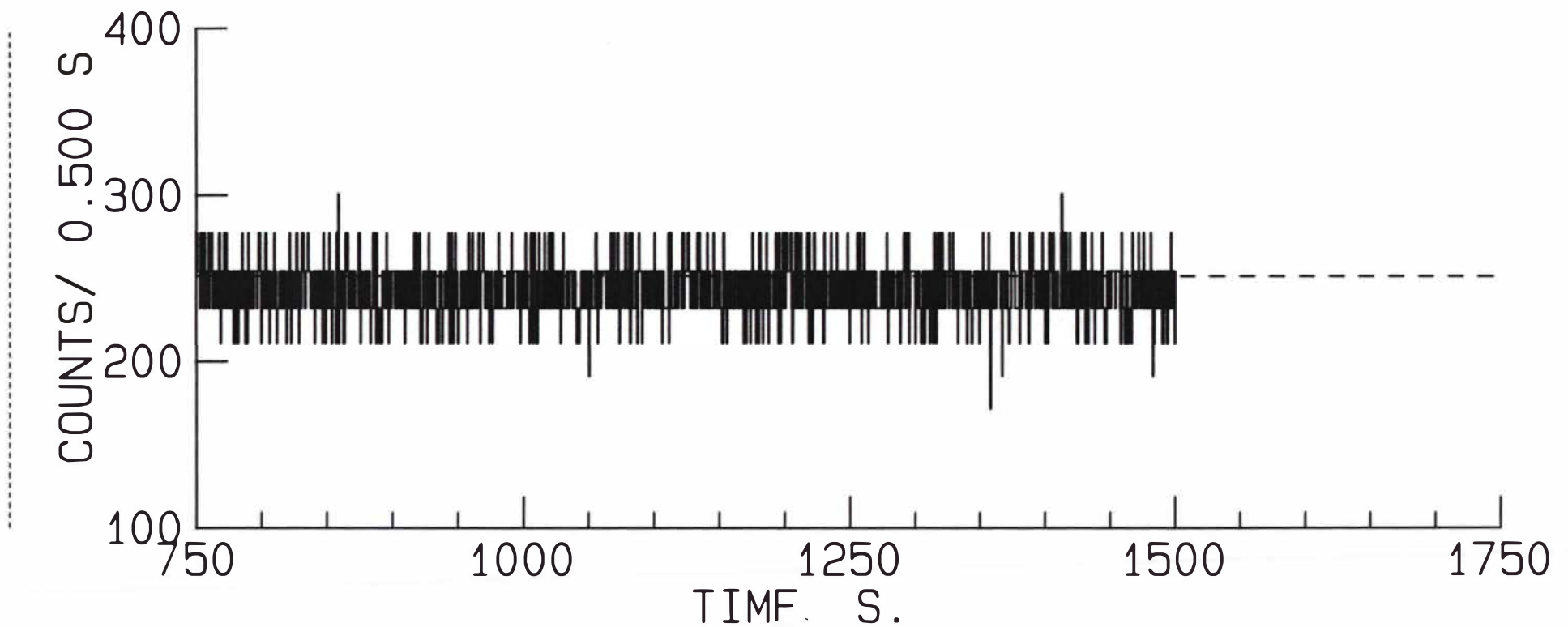
ULYSSES RT
20/ 4/96 15048.039 s
21- 145 keV

13 / 8 / 8



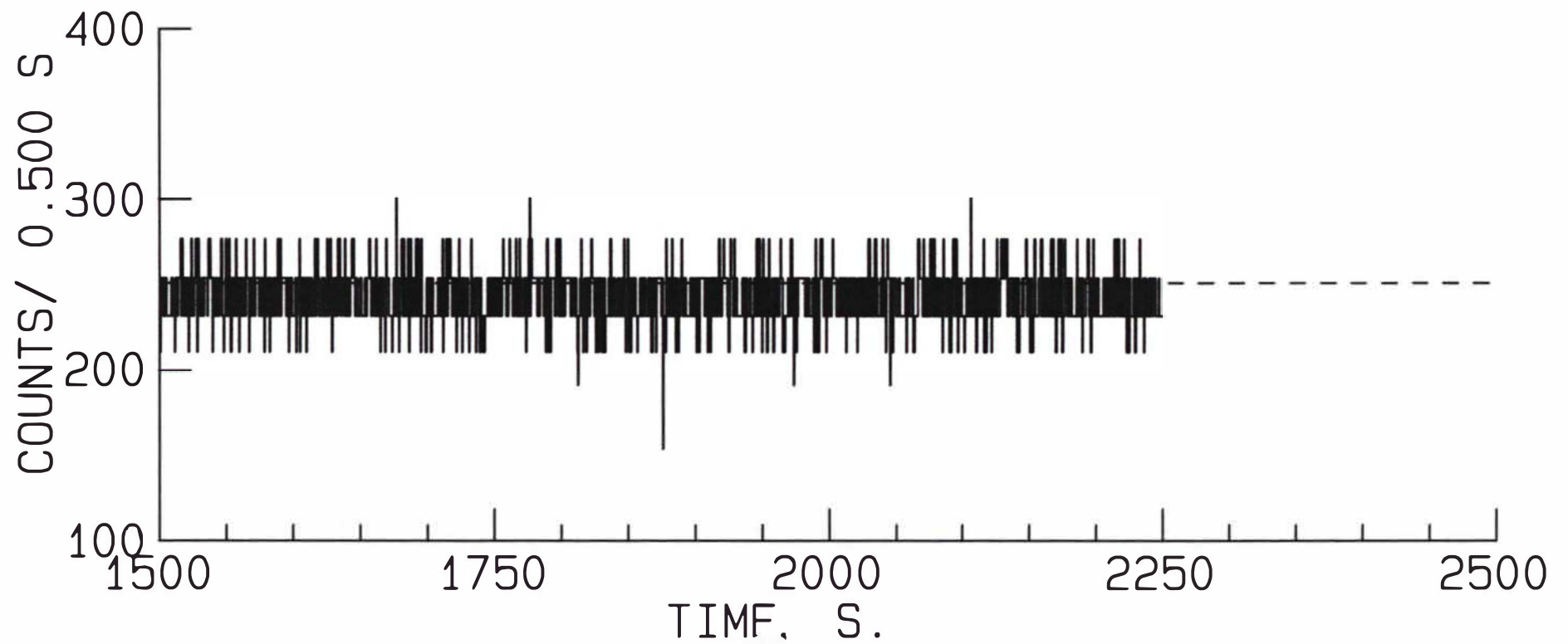
ULYSSES RT
20/ 4/96 15048.039 s
21- 145 keV

13 / 8 / 8



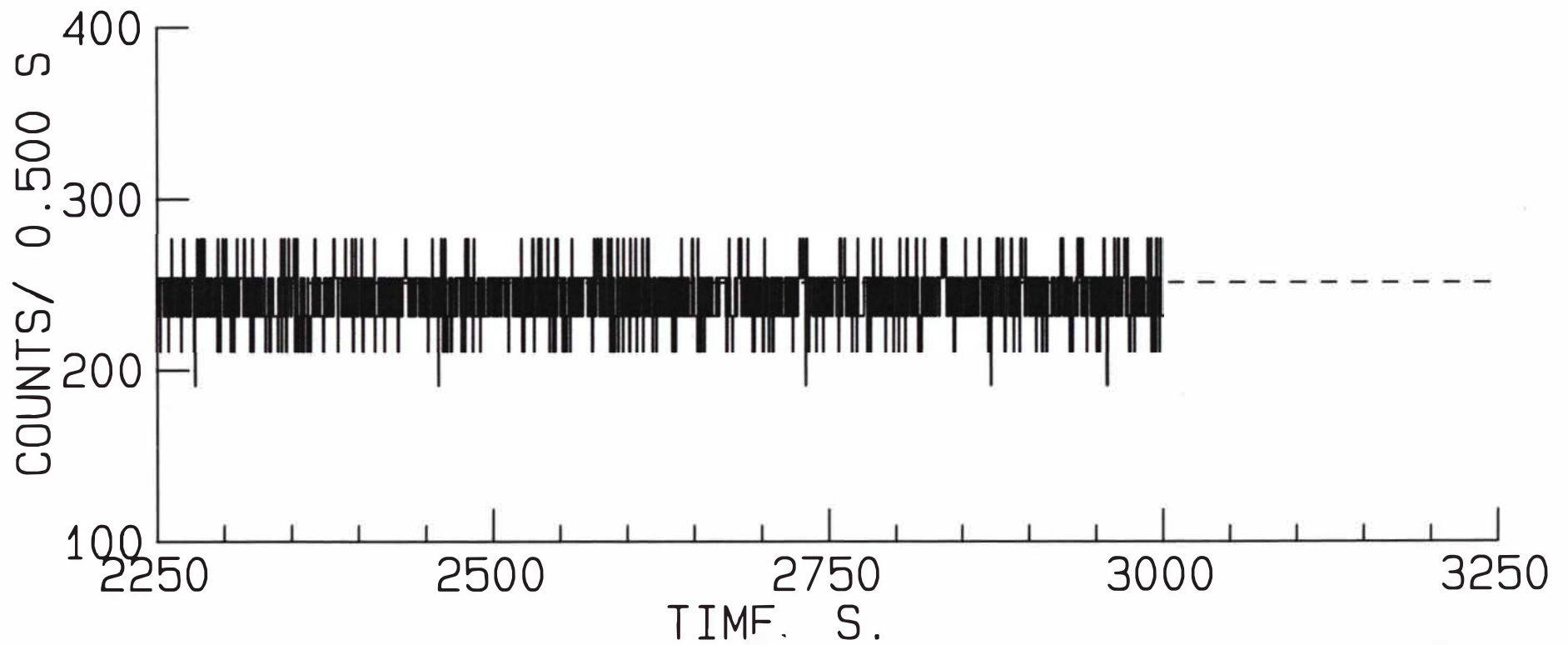
ULYSSES RT
20/ 4/96 15048.039 s
21- 145 keV

13 / 8 / 8



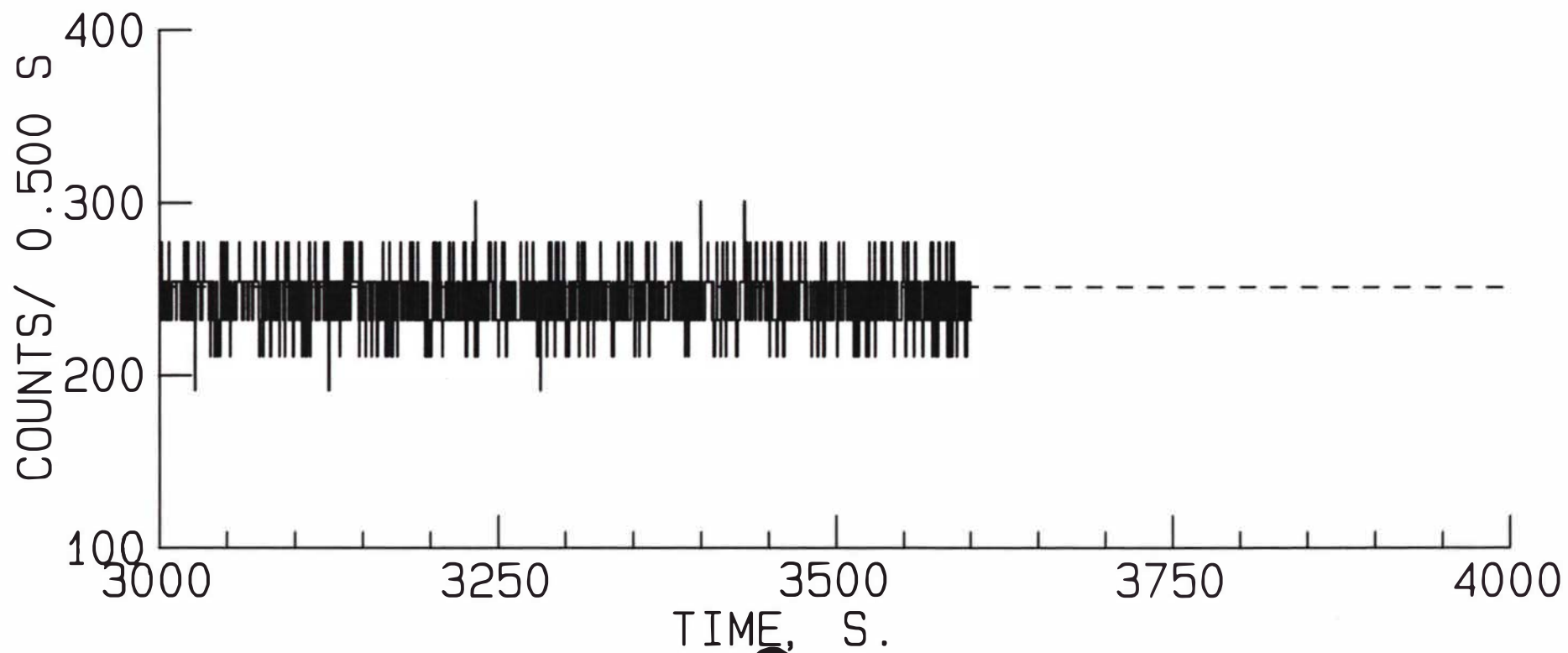
ULYSSES RT
20/ 4/96 15048.039 s
21- 145 keV

13 / 8 / 8



ULYSSES RT
20/ 4/96 15048.039 s
21- 145 keV

13/ 8/ 8



KONUS2 19960420 16844

ULYSSES RT

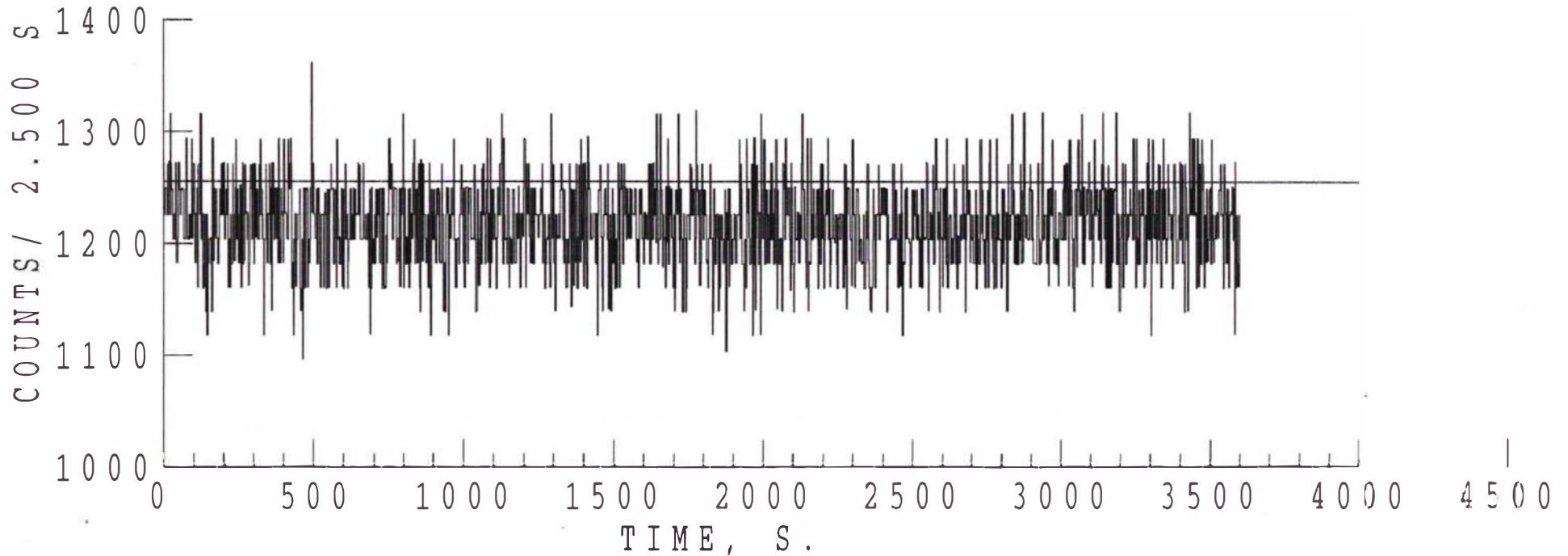
31 / 01 / 02

20/04/96 15048.039 s

0.500 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@SSLLES.MSFC.NASA.GOV Tue Apr 23 10:11 PDT 1996
Date: Tue, 23 Apr 1996 12:10:29 -0500 (CDT)
From: SAHI@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5440

TIME: TJD=0193 SECONDS=46911

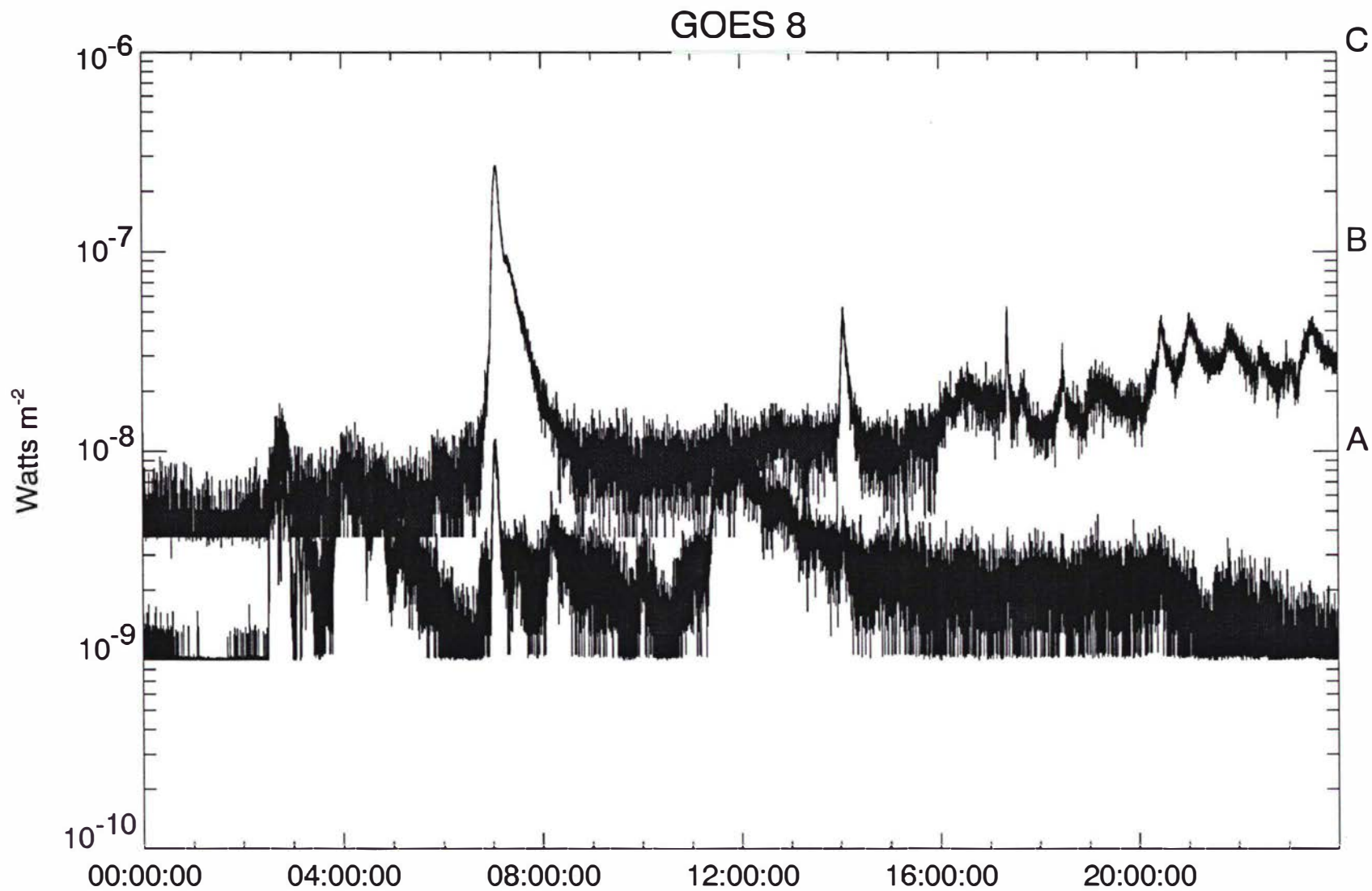
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES.



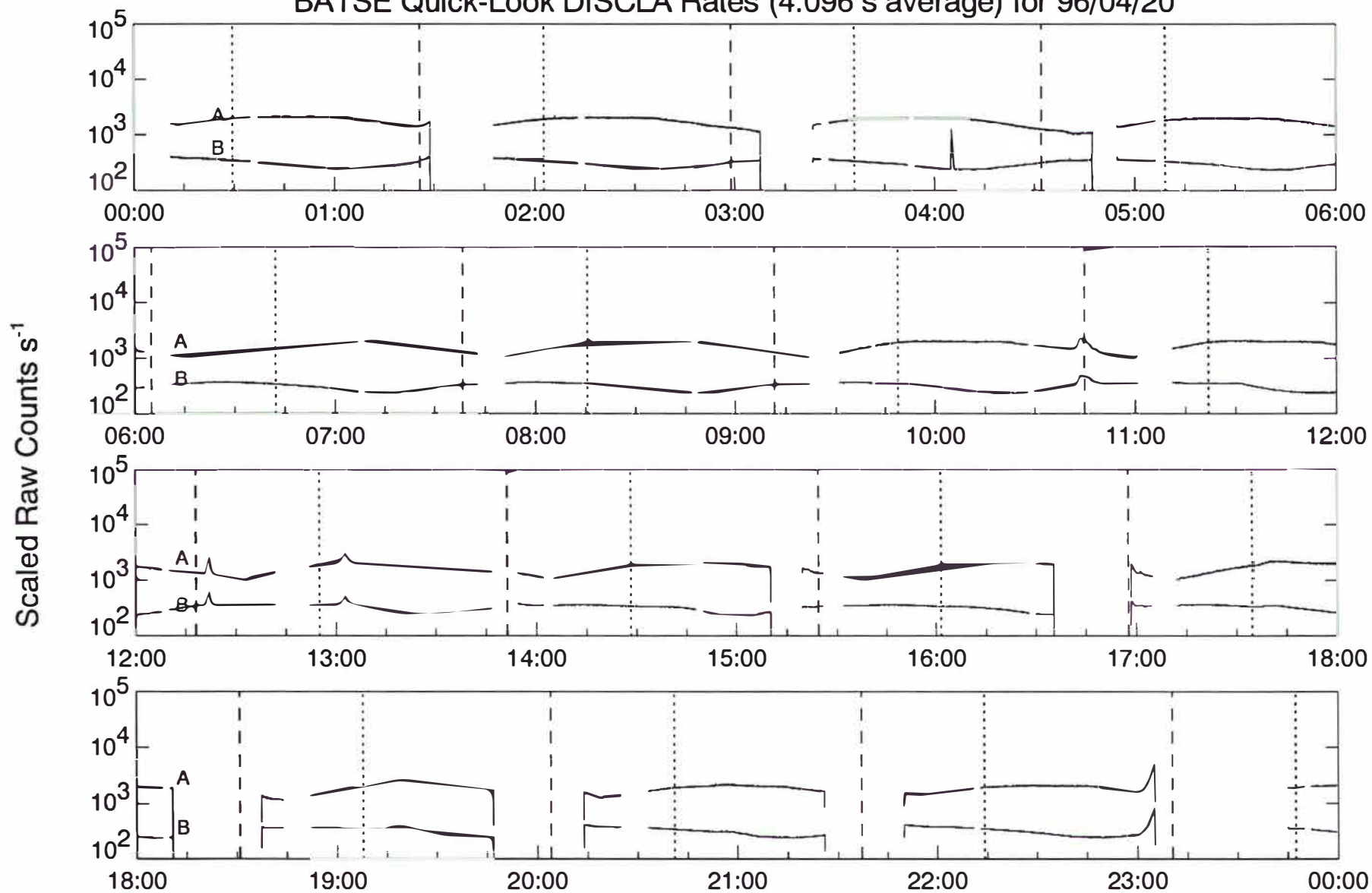
Data Start: 96/04/20, 0000:00

Plot created: 96/04/24, 1837

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/20

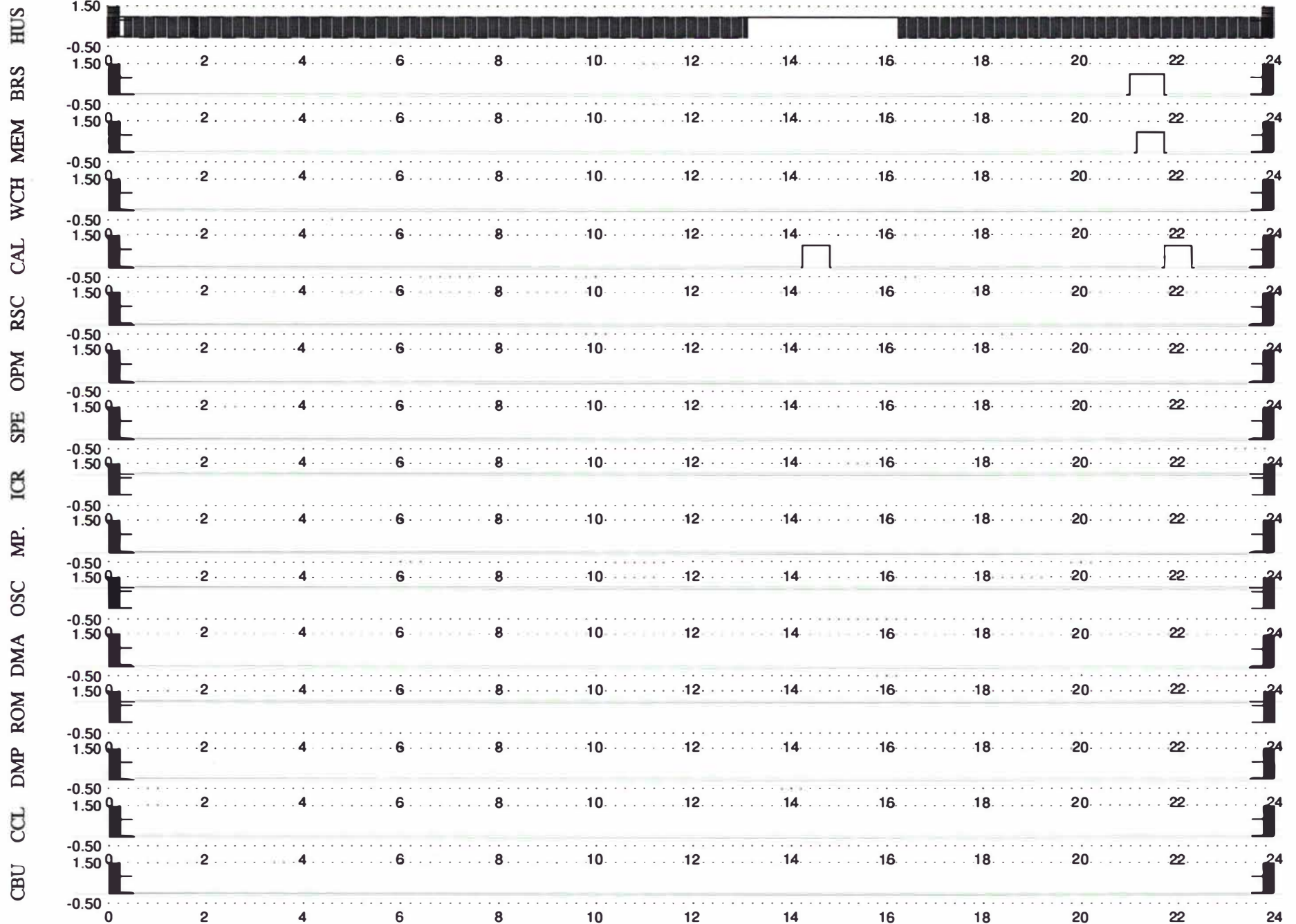


Current Time: 96/04/24, 1837 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

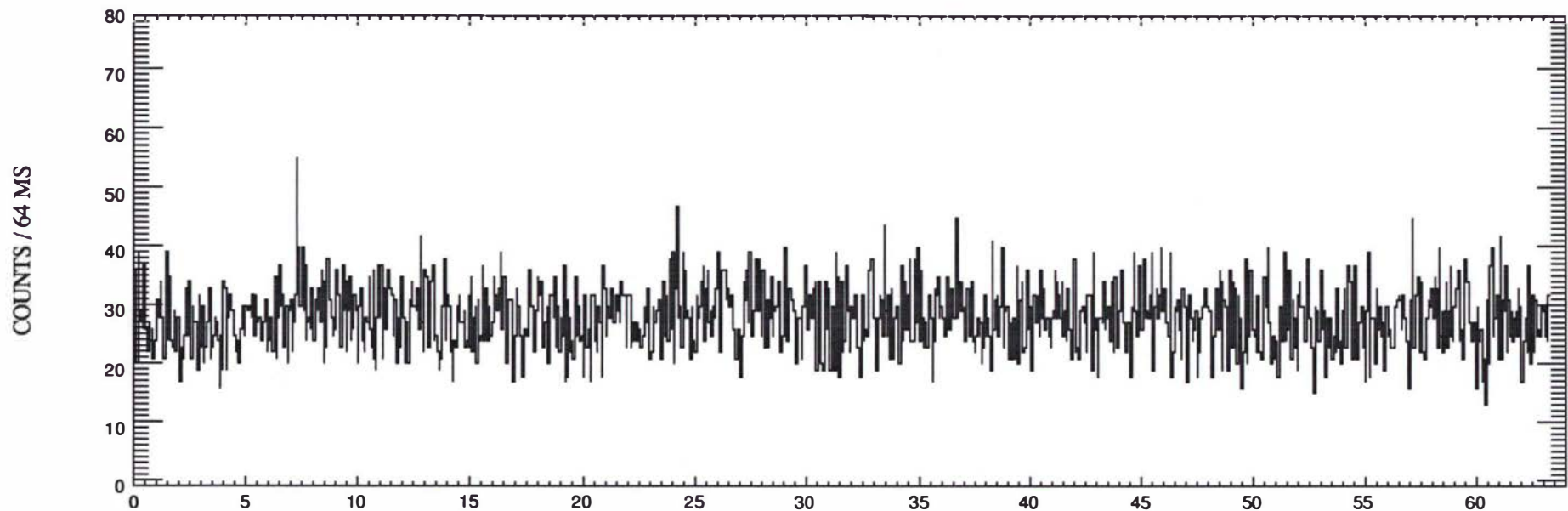
* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 10

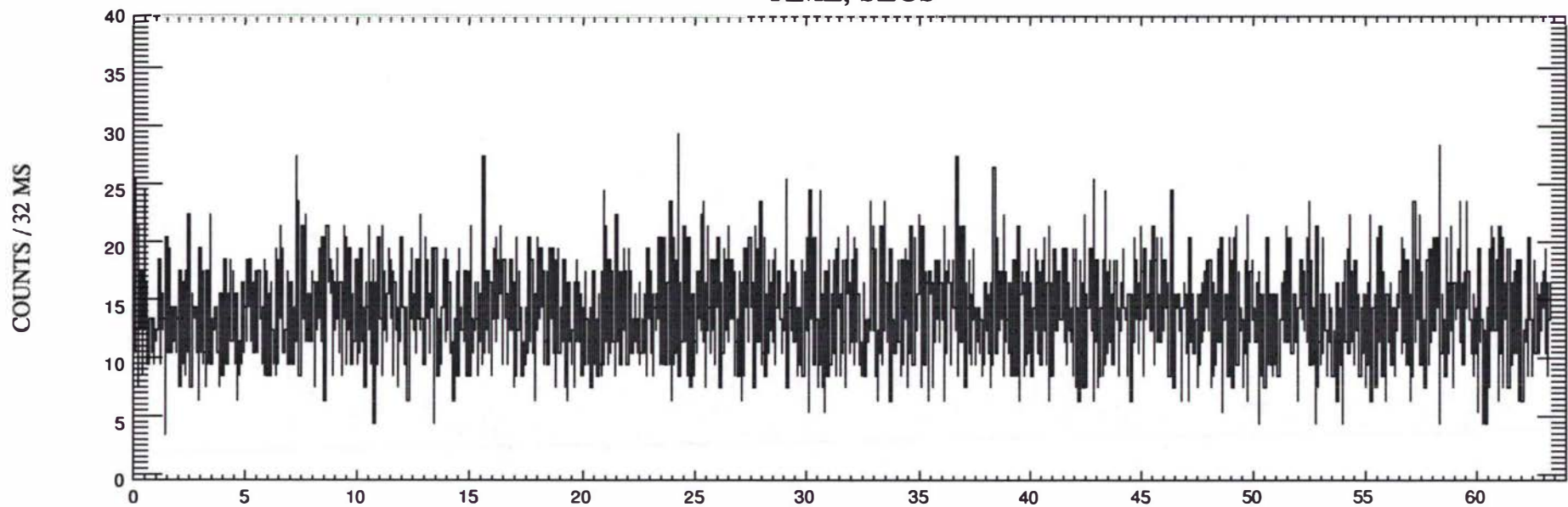


UNIVERSAL TIME

Burst Counter 10 at UT=20.981730550130 h=75534.230 s 20:58:54.230



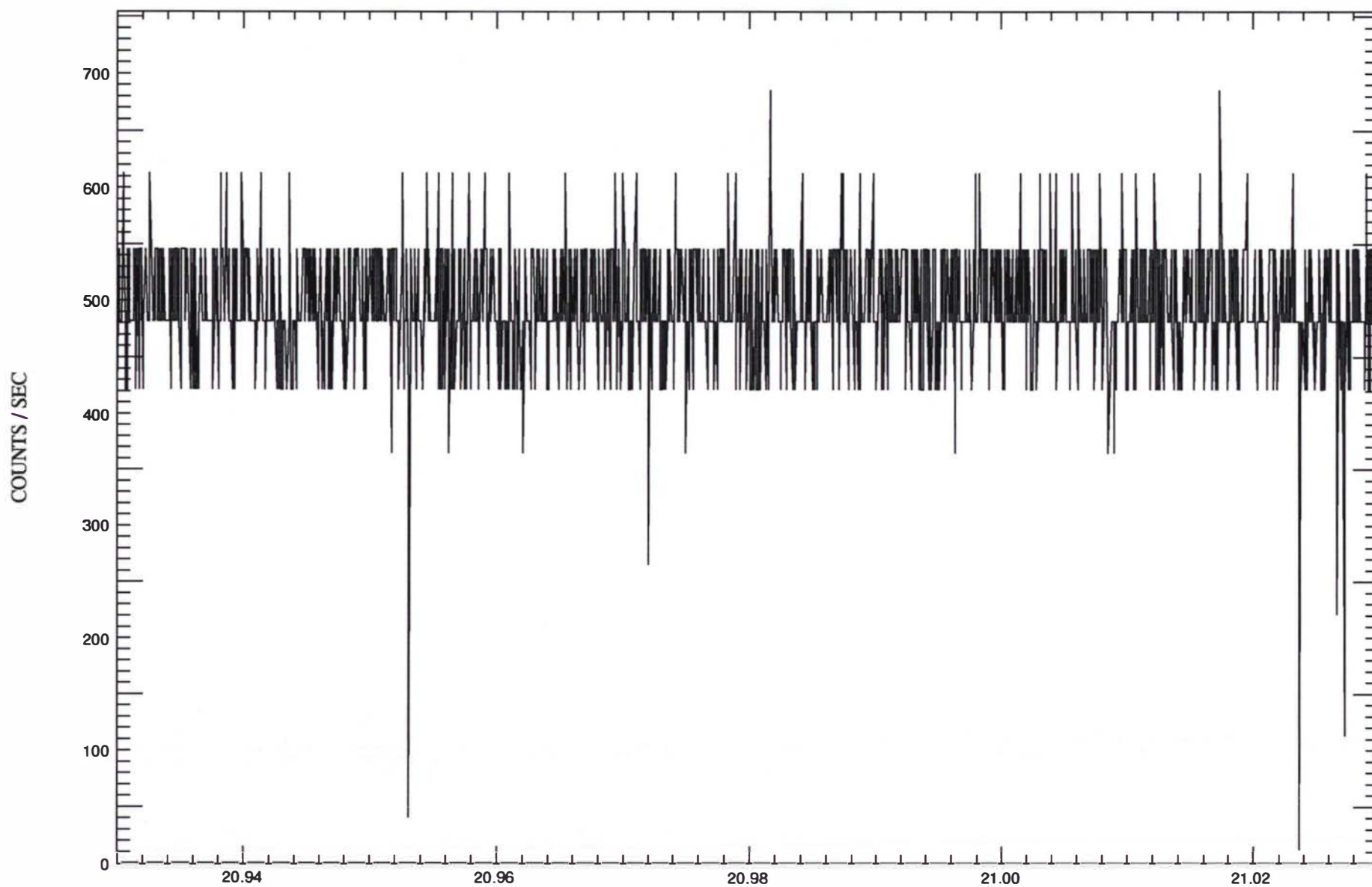
TIME, SECS



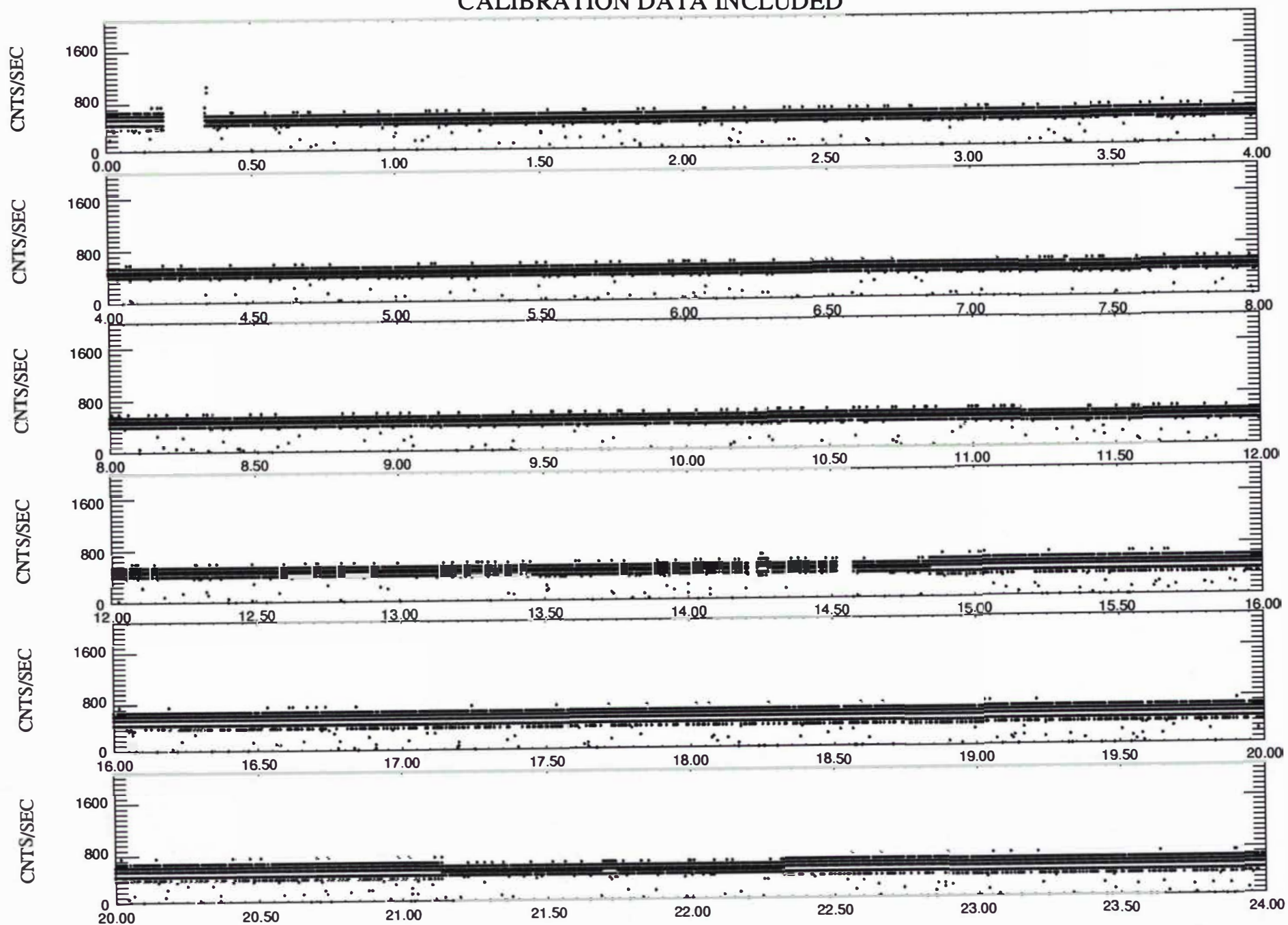
TIME, SECS



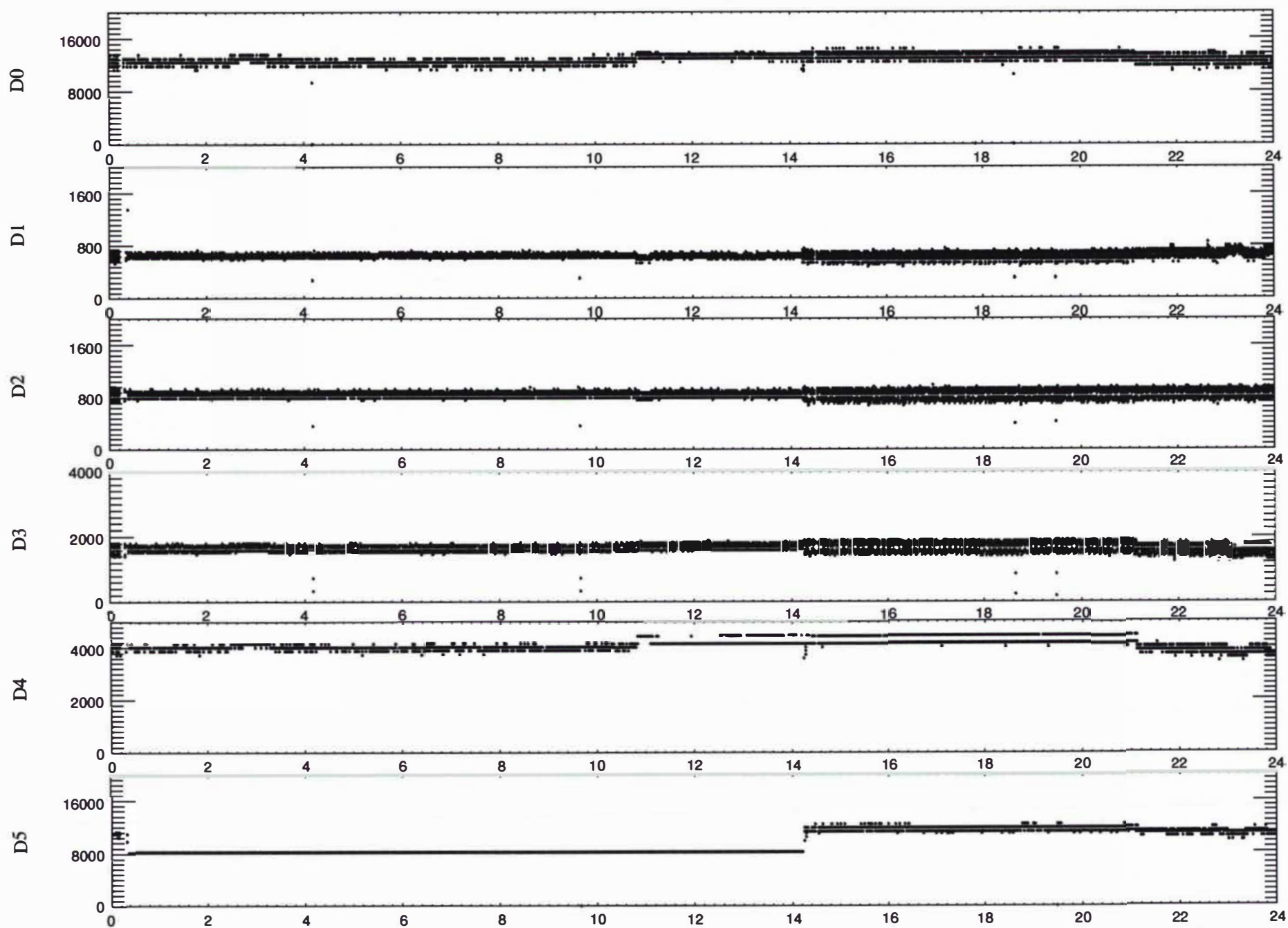
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From HENZE@ssl.msfc.nasa.gov Tue Apr 23 09:30 PDT 1996
From: HENZE@ssl.msfc.nasa.gov
Date: Tue, 23 Apr 1996 11:29:26 -0500 (CDT)
To: burst@compTEL.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 05441

TIME: TJD=0194 SECONDS=42062

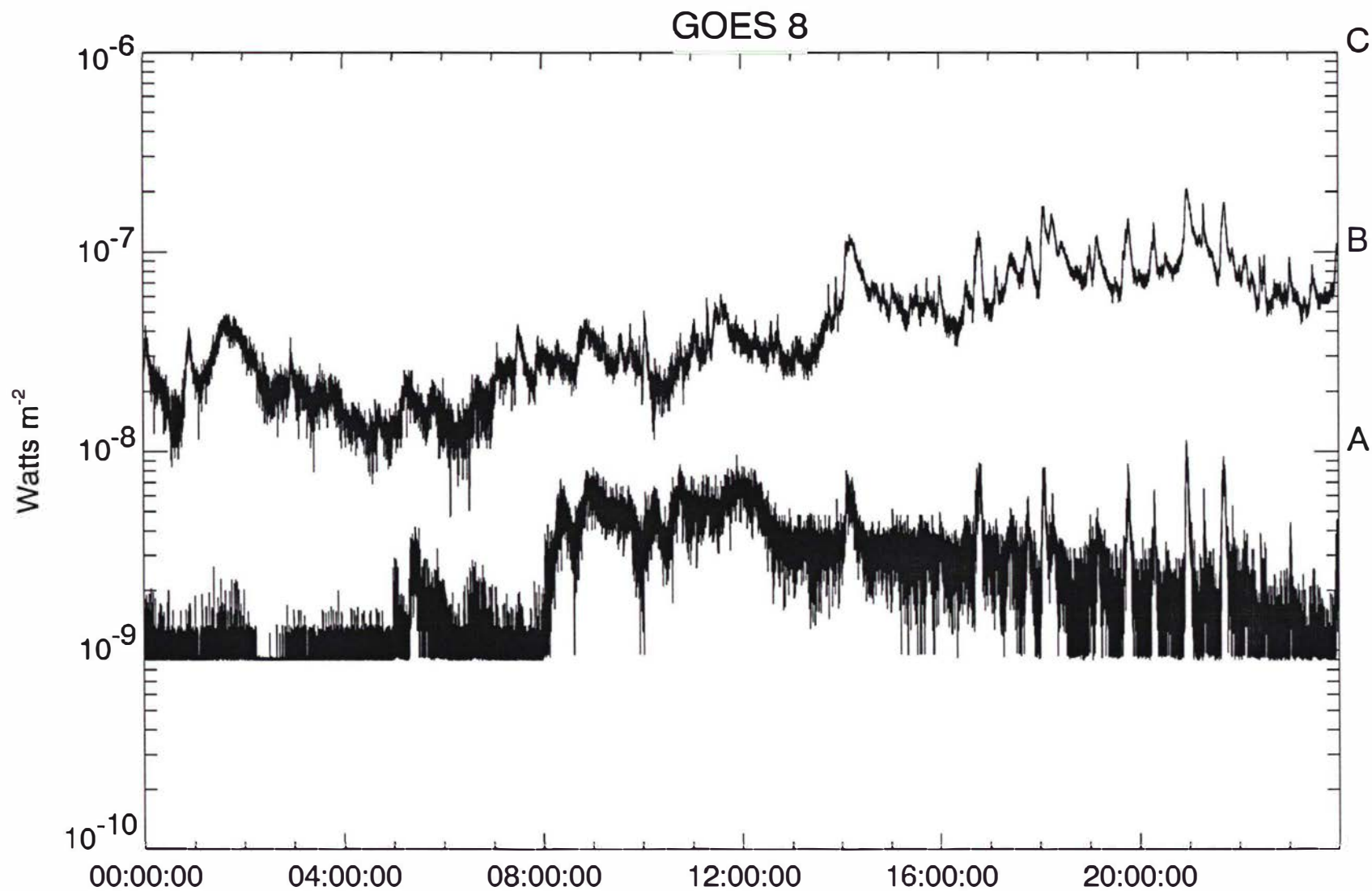
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT



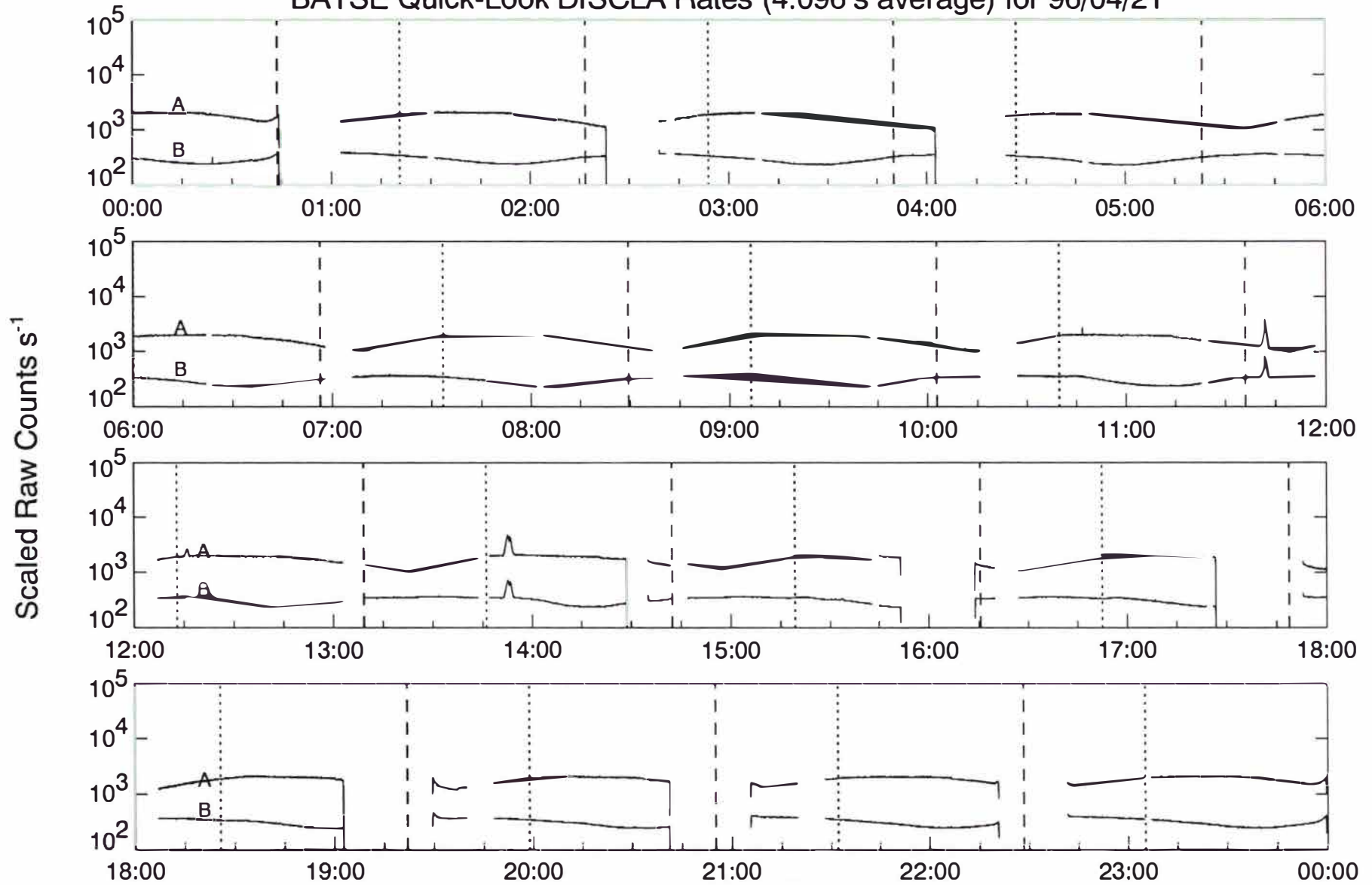
Data Start: 96/04/21, 0000:00

Plot created: 96/04/24, 1842

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/21

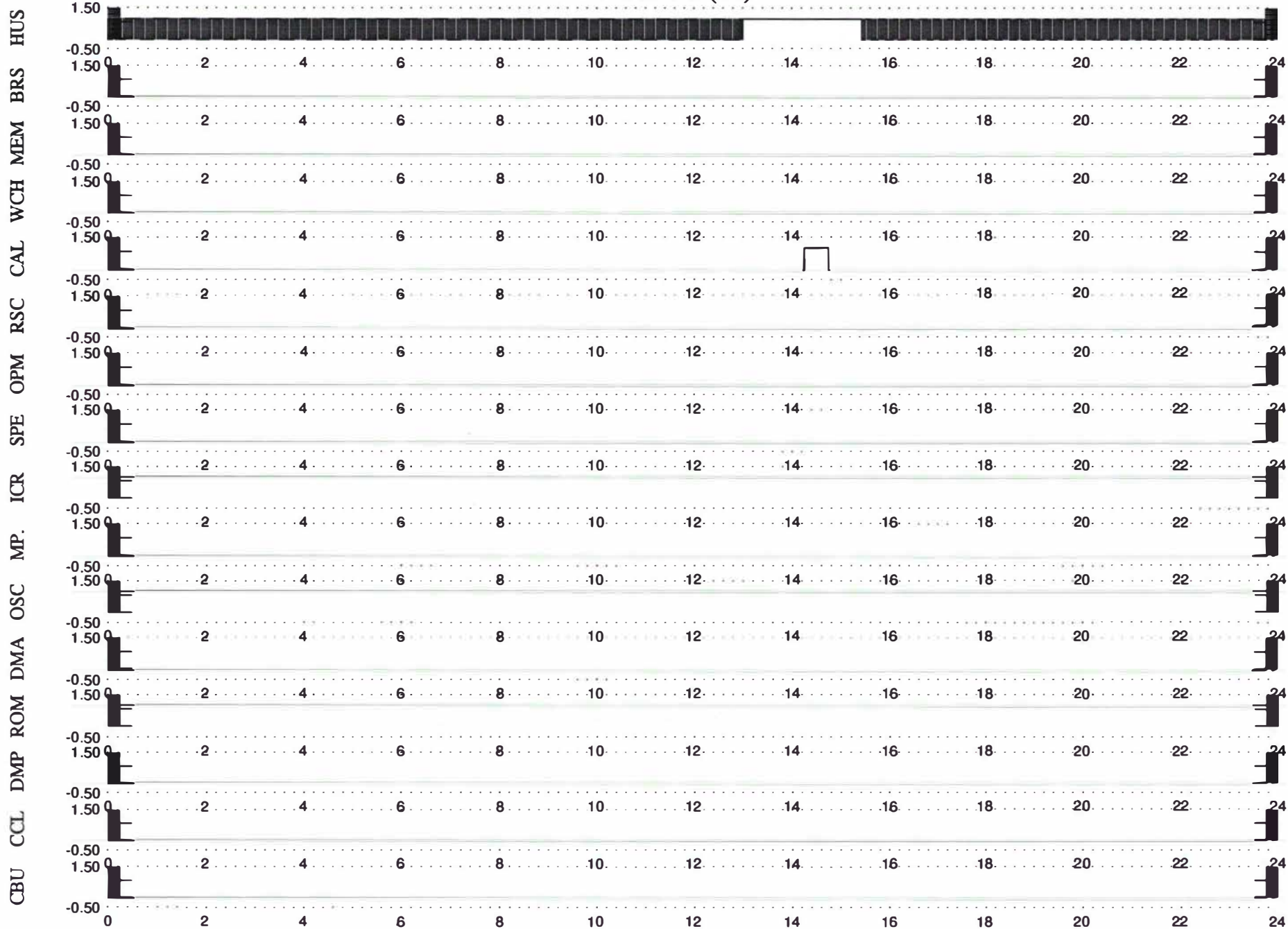


Current Time: 96/04/24, 1843 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

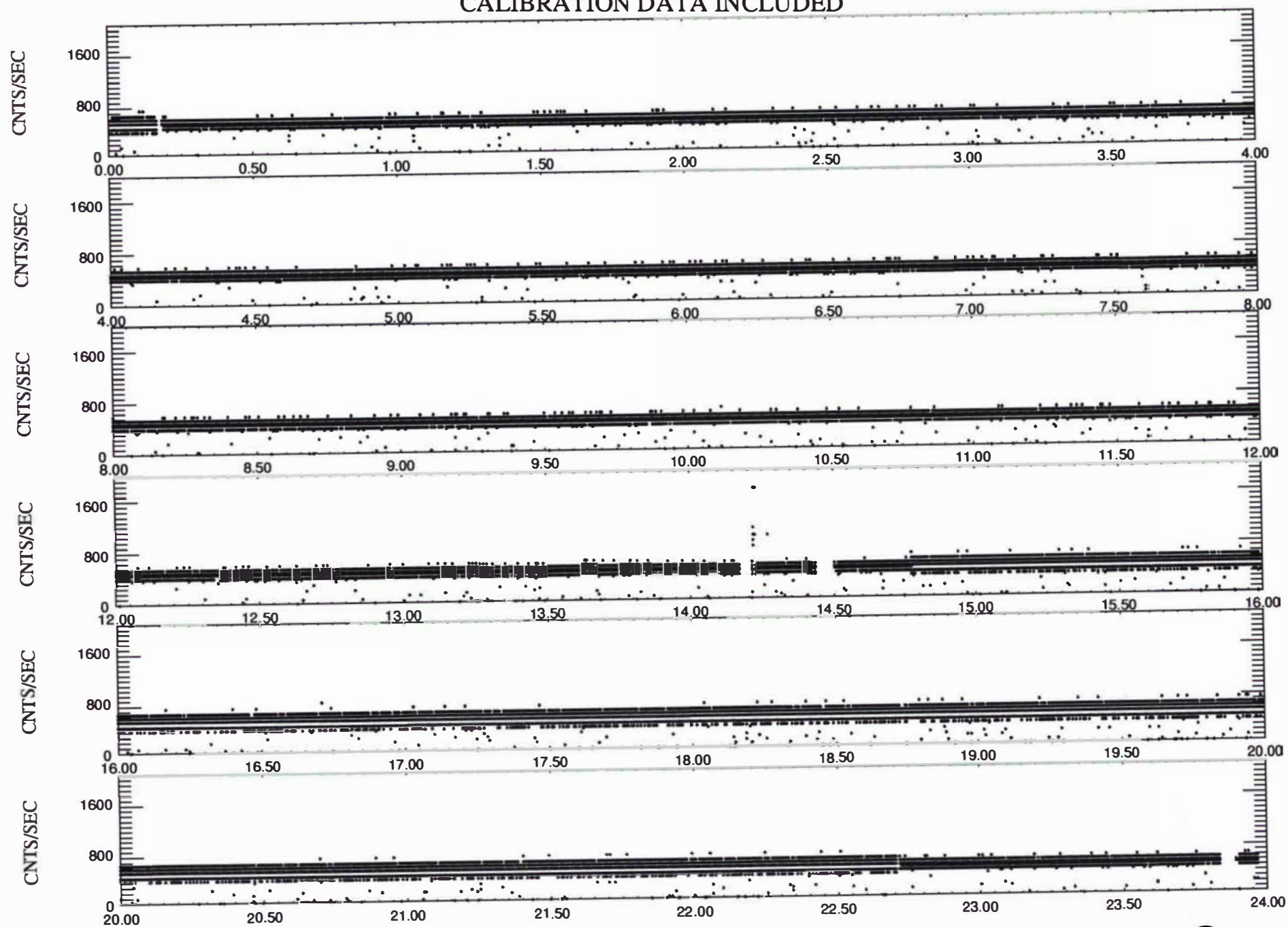
* Solar Burst Trigger
 + Solar Flare

NO BURST (10)



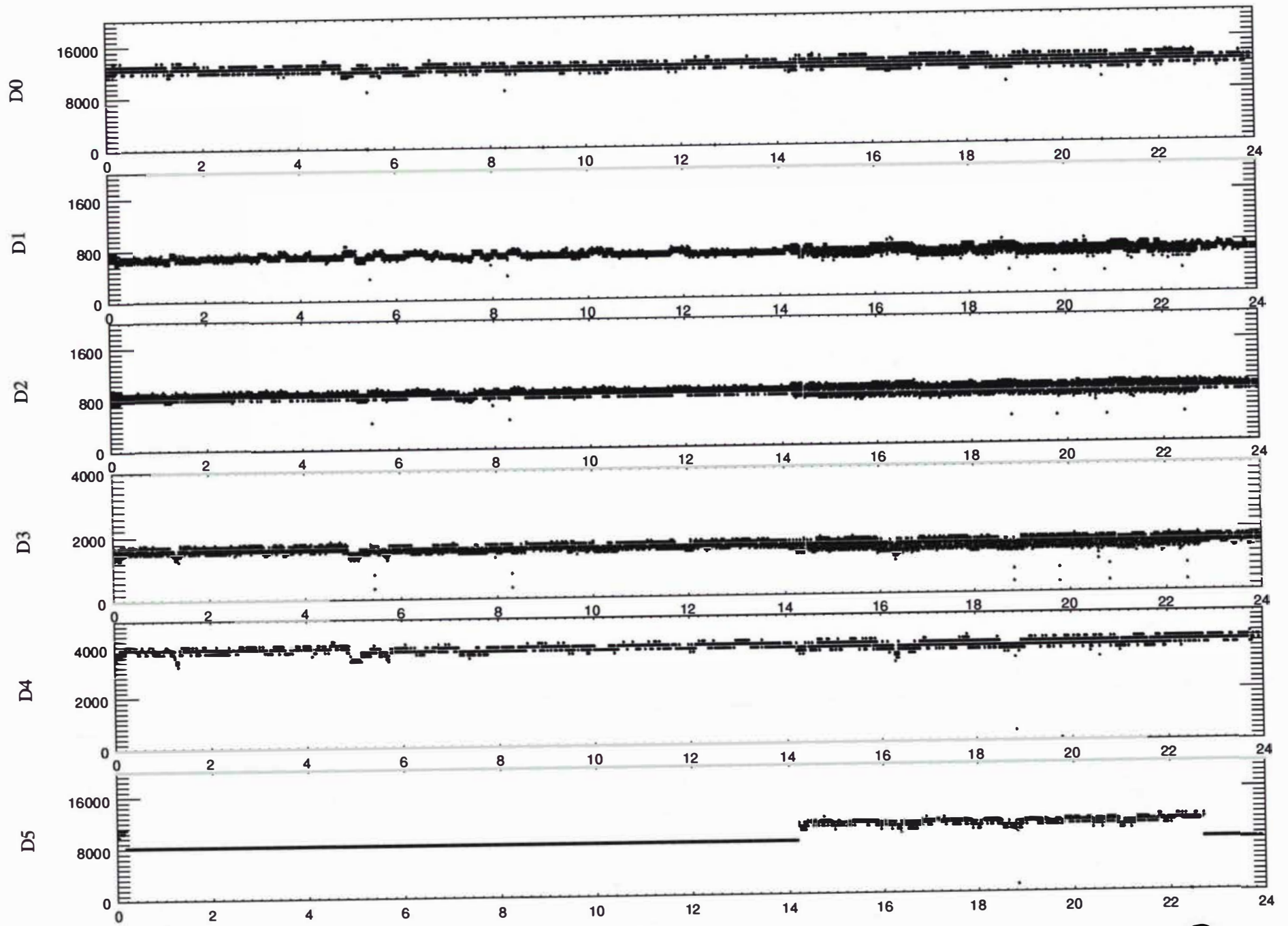
UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNRSAL TIME





UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Wed Apr 24 06:46 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 24 Apr 1996 8:44:31 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5442

TIME: TJD=0195 SECONDS=41622

TYPE: SAA ENT SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

From DEAL@fender.msfc.nasa.gov Thu Apr 25 09:35 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Thu, 25 Apr 1996 11:34:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5443

BATSEARCH PROGRAM

BATSE BURST # 5443
EVENT OF 1996 APR 22 DAY OF YEAR=113
EVENT CROSSING TIME AT BATSE : 59975. S. OR 16:39:35.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 135.000 27.000
BATSE PEAK COUNTING RATE: 12500 C/S

RT?

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 4/ 96 IS:
RA= 149.286 DEC= 65.161 DIST= 3.557 AU
BATSE-ULYSSES DISTANCE = 532089381. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1374.98 SECS.
CROSSING TIME AT ULYSSES IS 58600. S. OR 16:16:40 +/- 223.97 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 4/ 96 IS:
RA= 20.447 DEC= 7.938 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356828480. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 361.83 SECS.
CROSSING TIME AT MARS IS 60337. S. OR 16:45:36 +/- 202.36 SECONDS

BATSE BURST TRIGGER

NO.: 5443

TIME: TJD=1019 SECONDS=59975

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=46.2 AZIMUTH=107.7 ERROR=1.5 DEGREES

COMMENTS:

BURST WITH TWO PULSES LASTING A TOTAL OF ~ 150 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5443	960422	10195	59975	12500	135	+27	150

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search RI	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search NO	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 <i>scribble</i>	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 <i>scribble</i>	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 <i>scribble</i>	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

Helio corr removed

Date: Mar 6 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

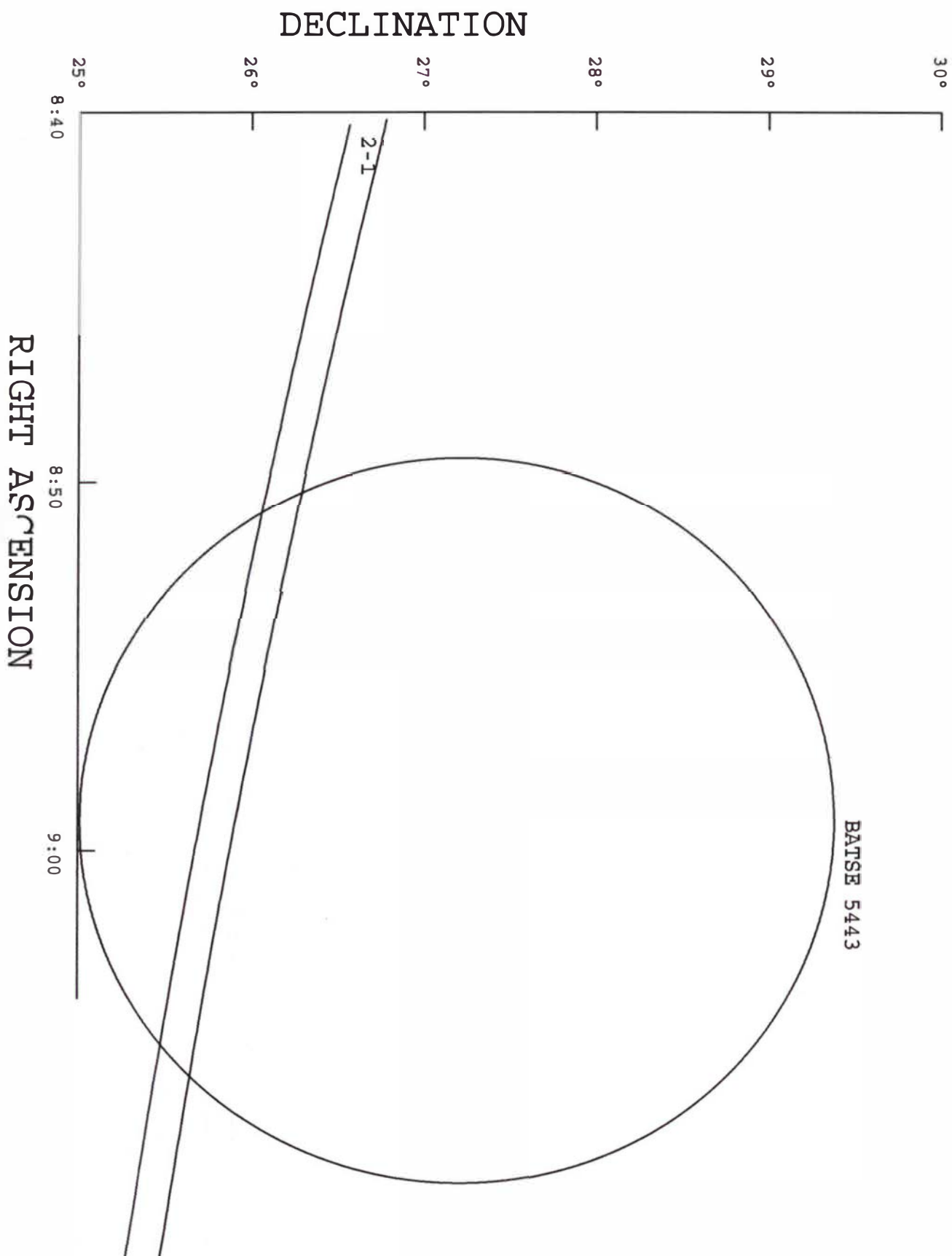
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 22, 1996 16:16

6 / 3/98



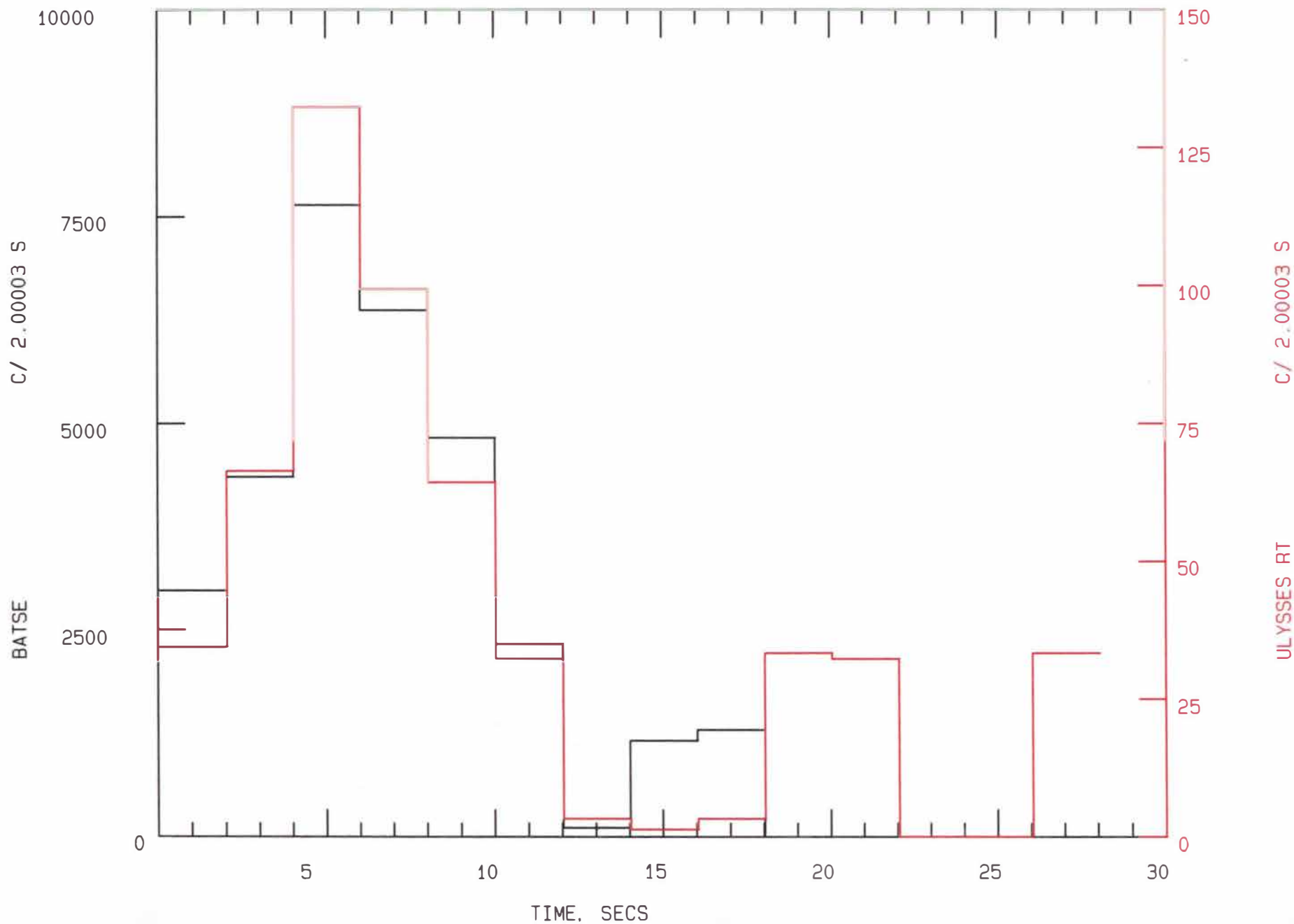
BATSE

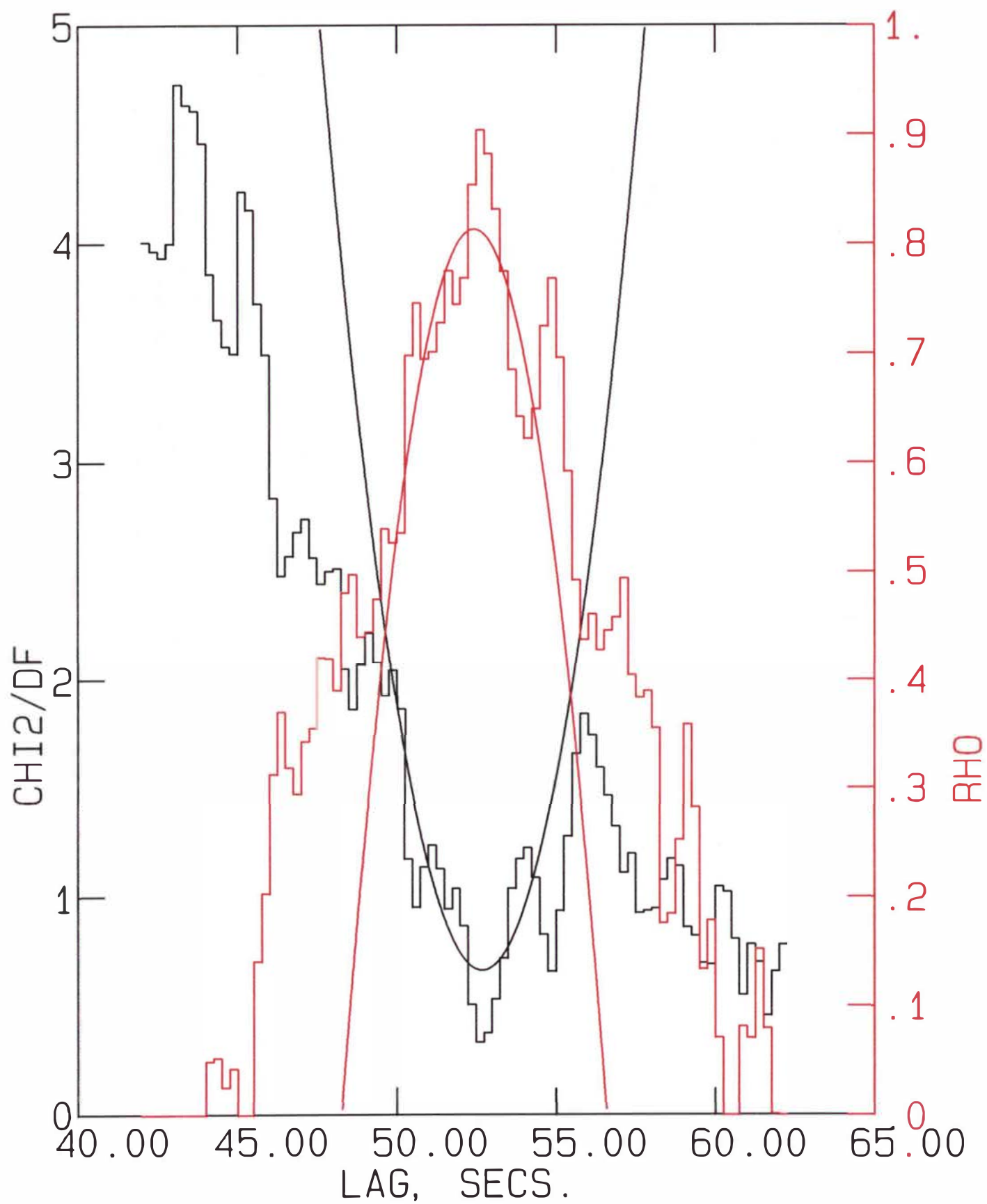
-ULYSSES RT CORRELATION

22/ 4/96

59975.370

6/ 3/98





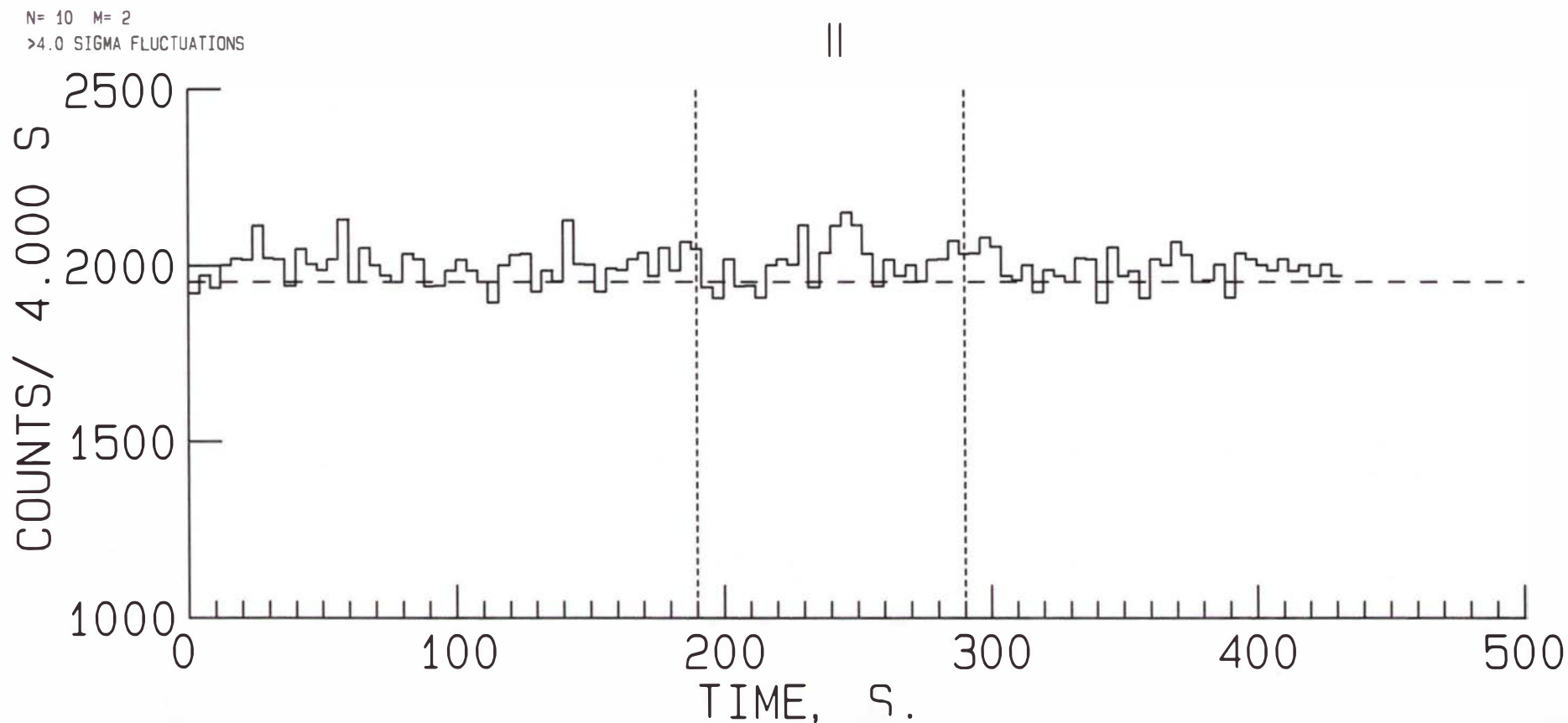
ULYSSES RT

6 / 3 / 98

22 / 4 / 96 58392.223 s

0.250 S INTERVALS REGROUPED BY 16

21- 144 keV



BATSE

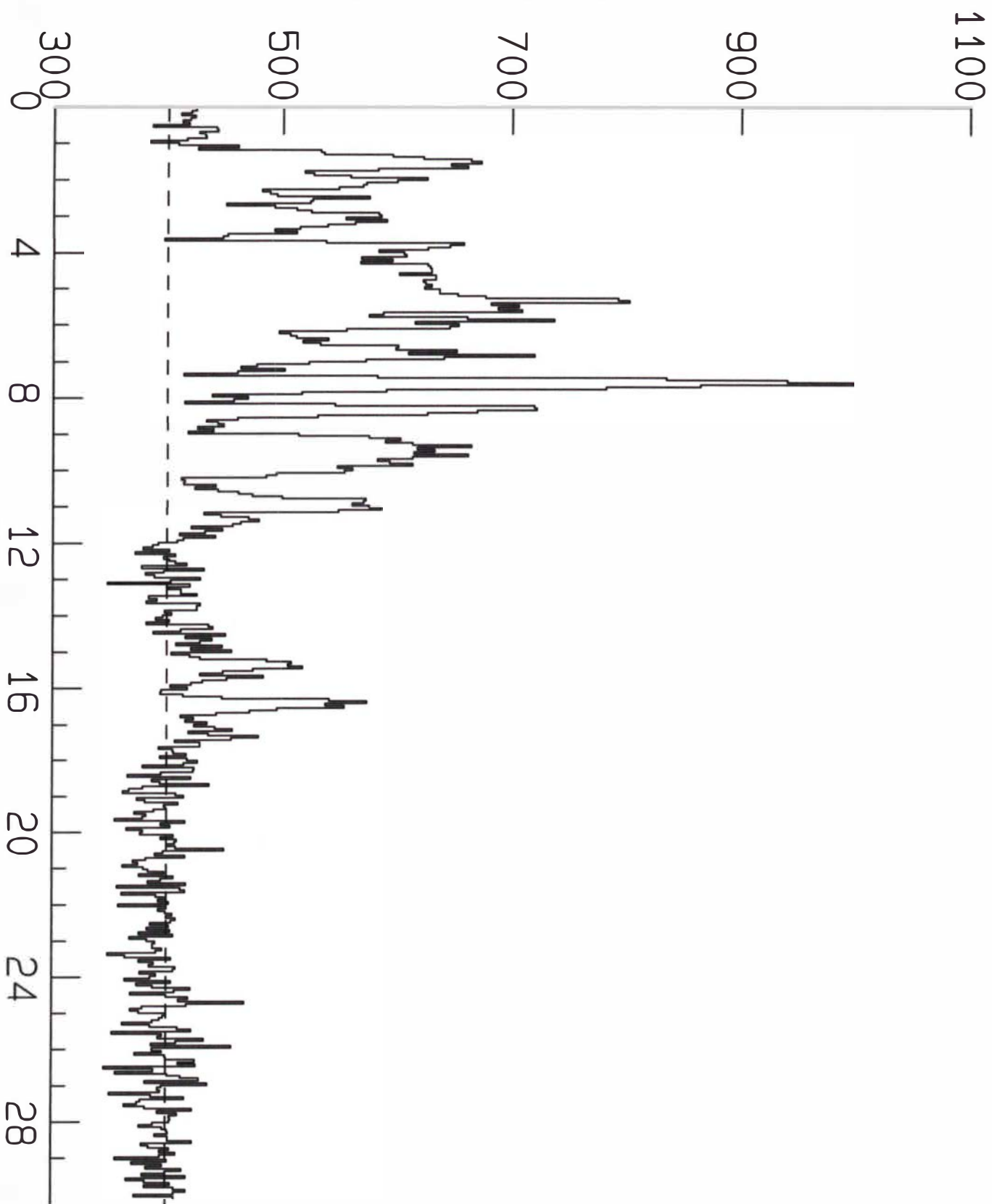
22/04/96

59975.370

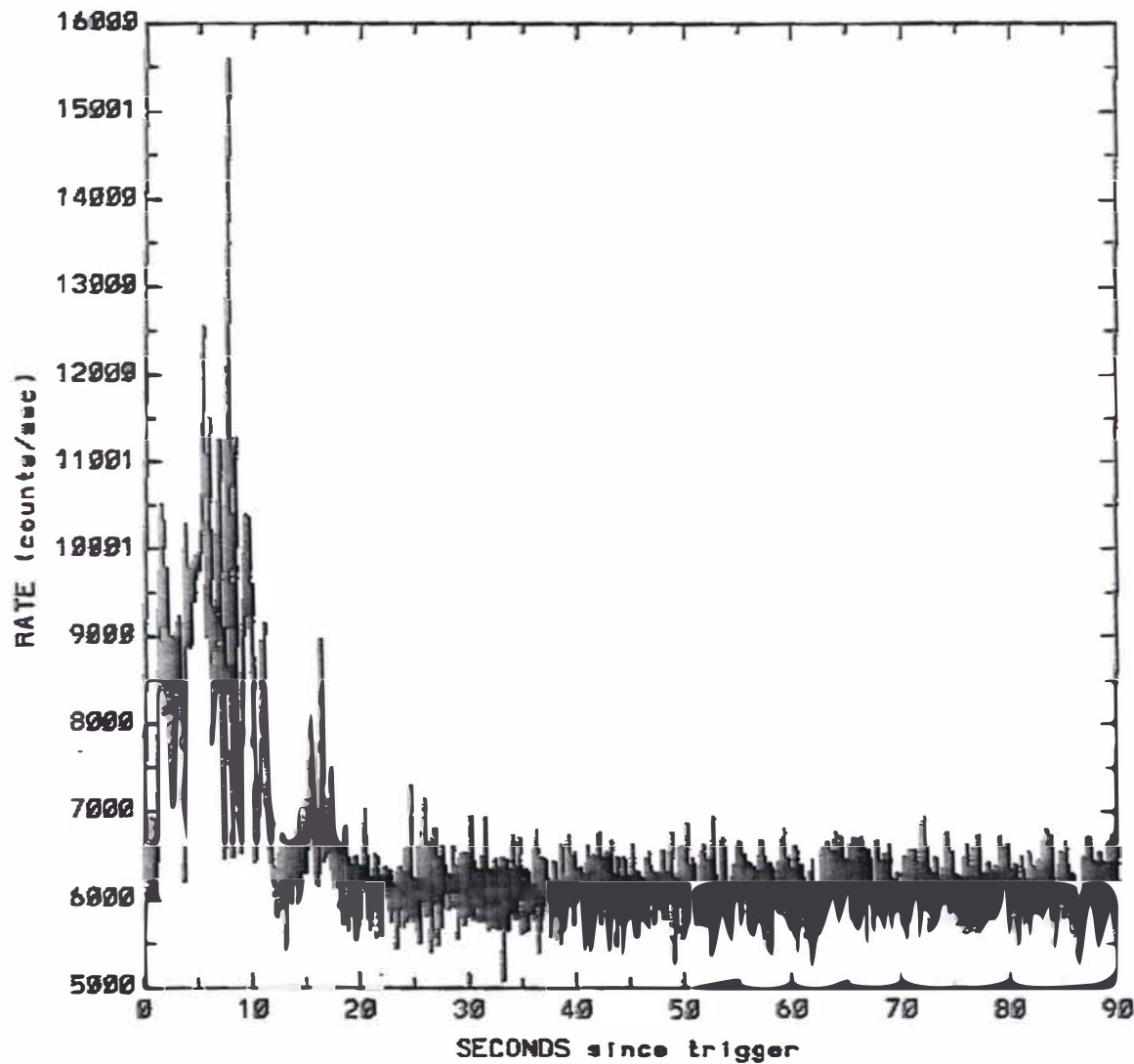
25- 100 keV

COUNTS/0.064 S

26 / 4 / 96



MER Data for K. Hurley, No. 5443



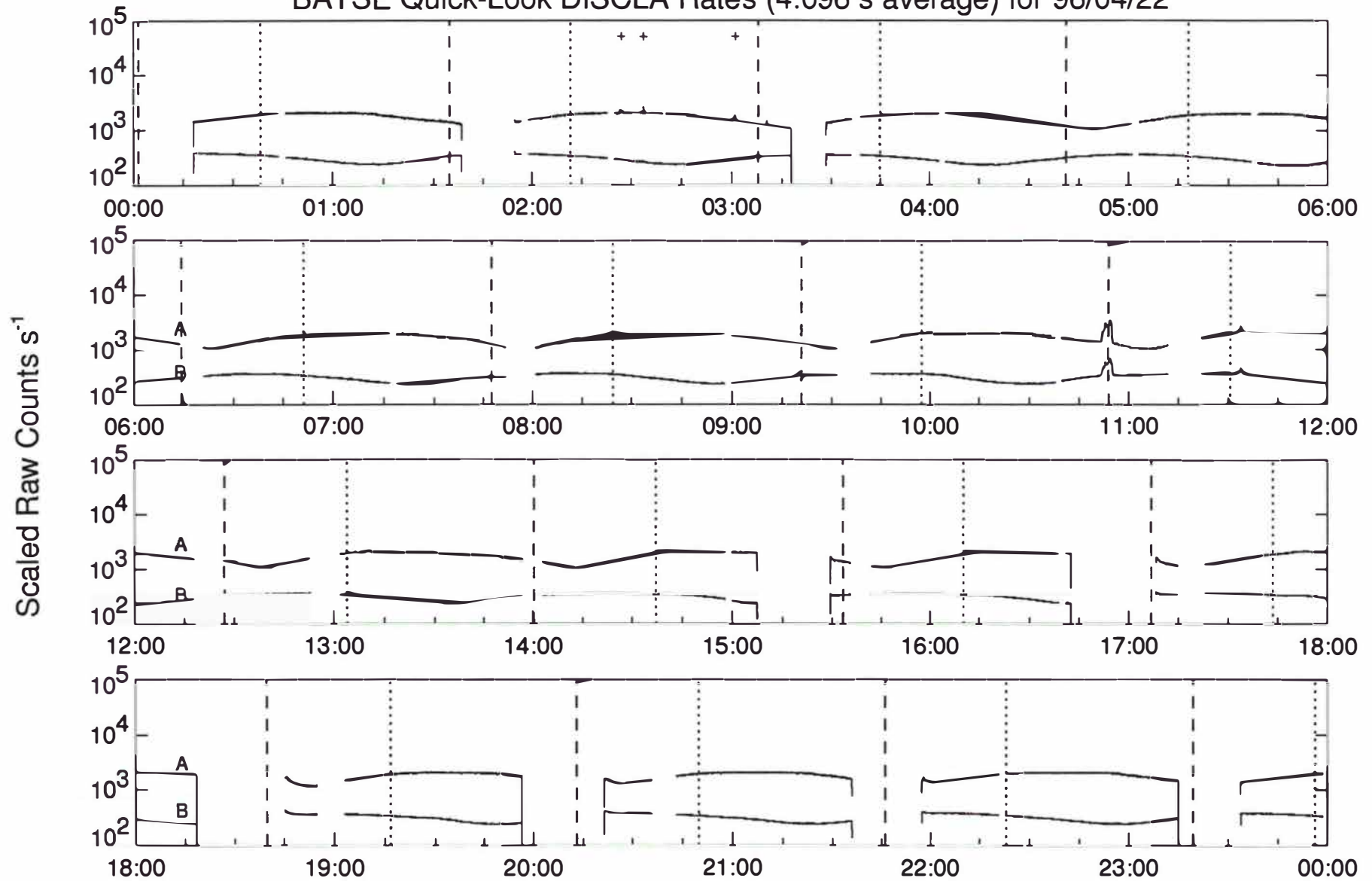
26-APR-1996 11:39:18

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger # : 5443

Trigger Time:
19195 / 59975.378Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CCNTMinimum Integ. Time:
0.004 secondsDetectors (7..8):
---4---8Channels:
(8 . 6)Quality Mask:
B0ISP1

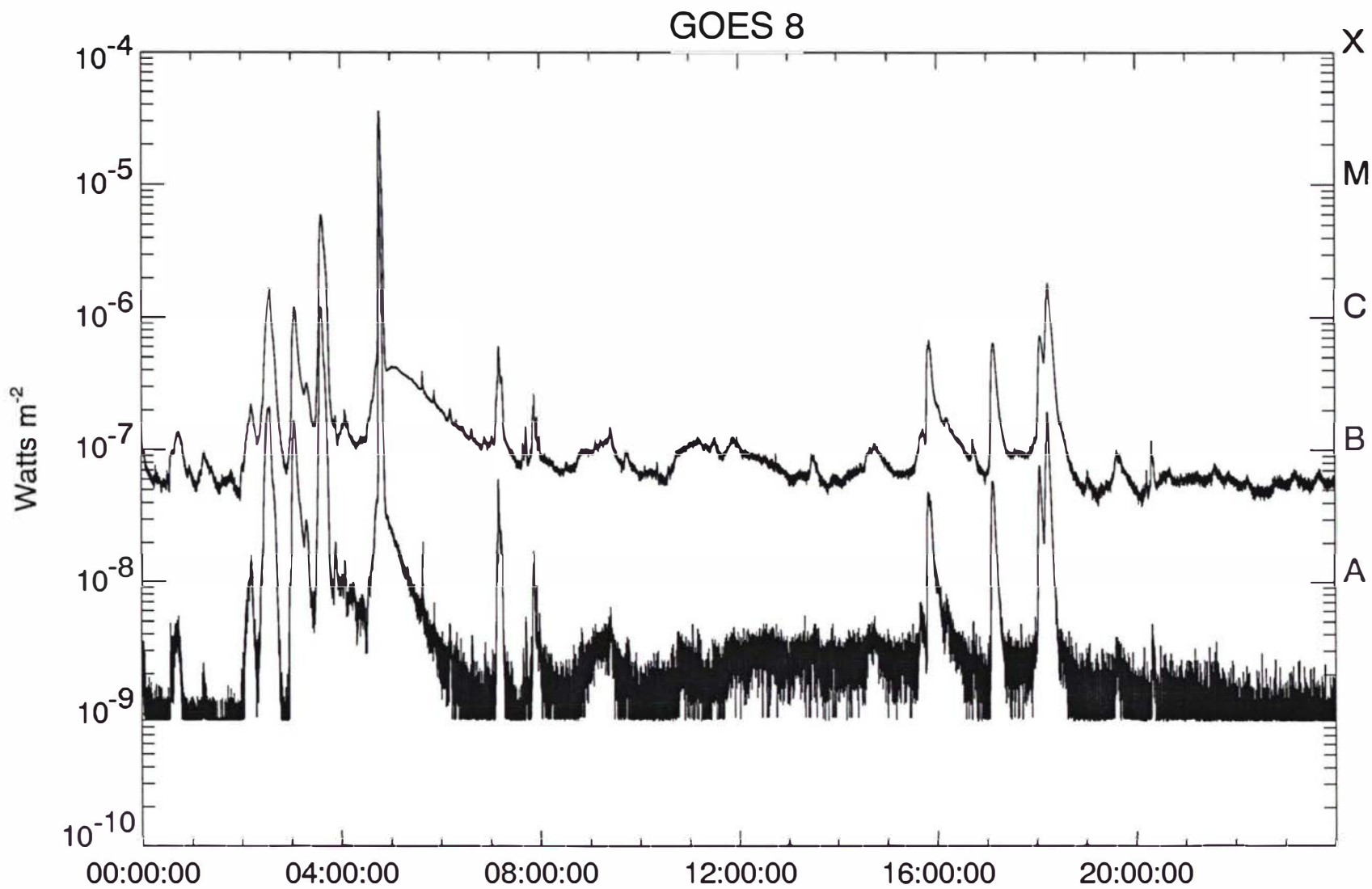
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/22



Current Time: 96/04/30, 1312 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: 96/04/22, 0000:00

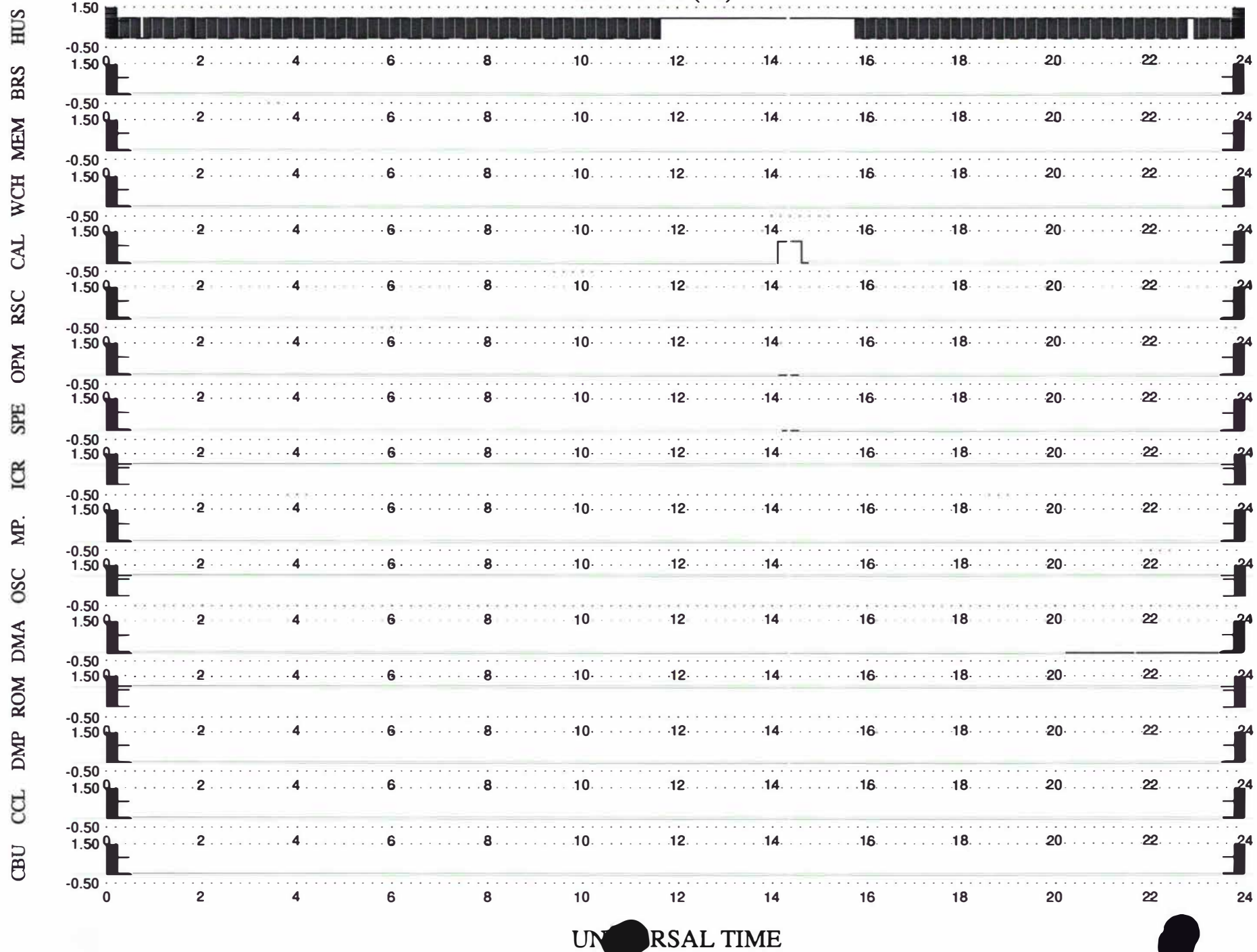
Plot created: 96/04/24, 1003

Channel

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

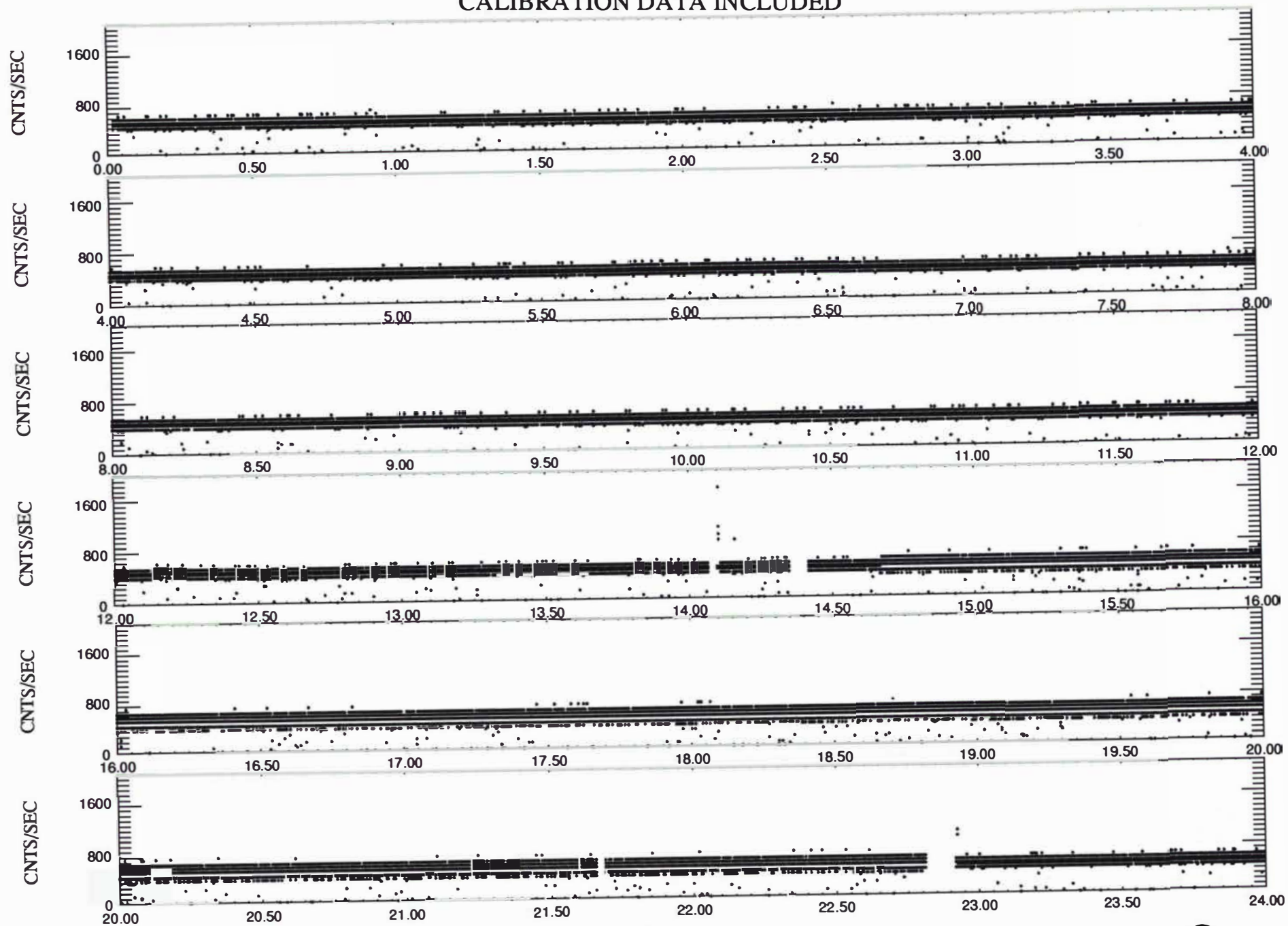
Background not subtracted
Background not subtracted

NO BURST (10)



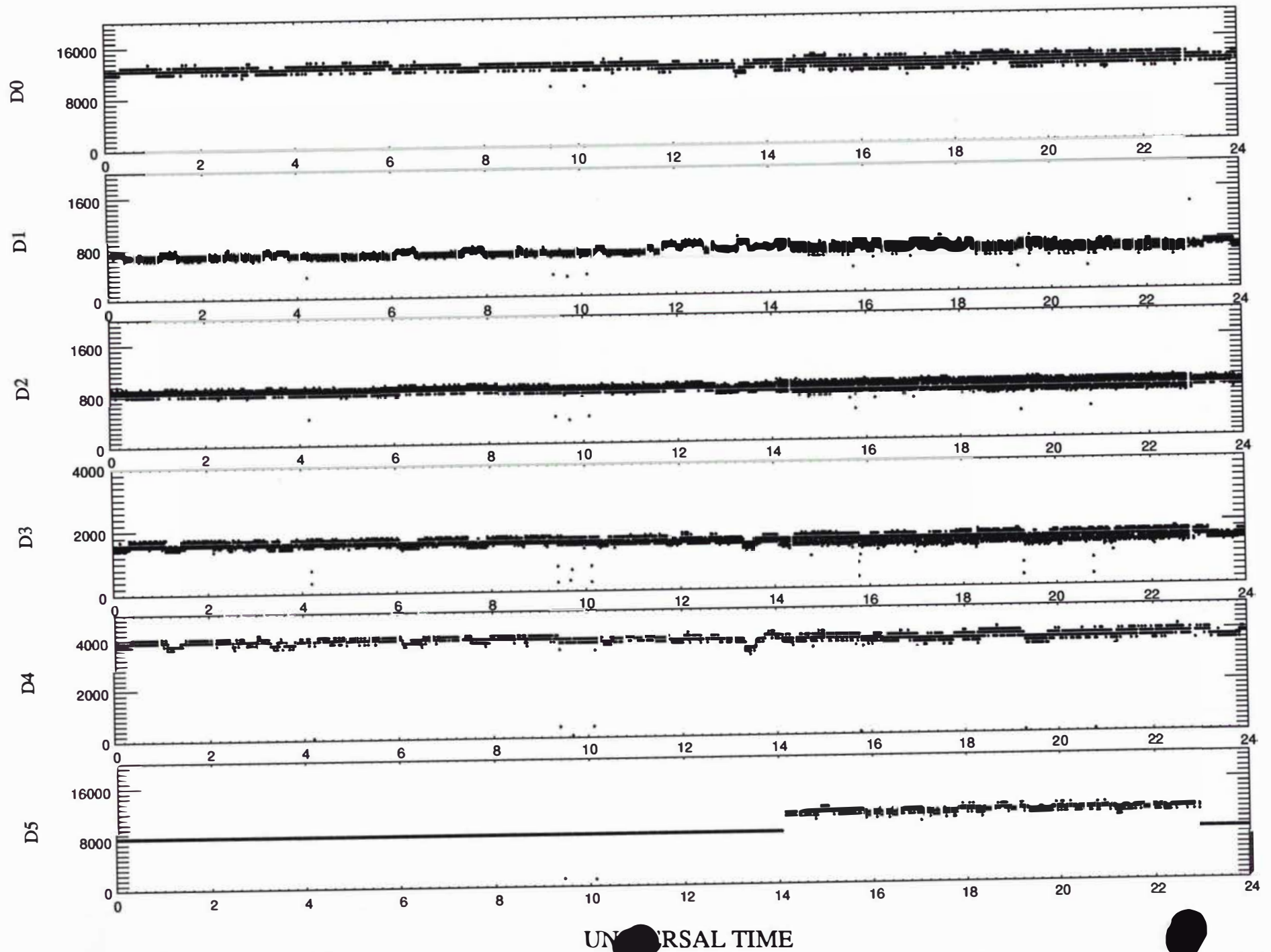


CALIBRATION DATA INCLUDED



UT RSAL TIME





From RICHARDSON@ssl.msfc.nasa.gov Fri Apr 26 09:53 PDT 1996
Date: Fri, 26 Apr 1996 11:52:53 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5444

BATSEARCH PROGRAM

BATSE BURST # 5444
EVENT OF 1996 APR 23 DAY OF YEAR=114
EVENT CROSSING TIME AT BATSE : 43964. S. OR 12:12:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 199.000 -32.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND *RI NO*
INTERPOLATED POSITION OF ULYSSES ON 23/ 4/ 96 IS:
RA= 149.121 DEC= 64.921 DIST= 3.569 AU
BATSE-ULYSSES DISTANCE = 533957462. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 442.28 SECS.
CROSSING TIME AT ULYSSES IS 44406. S. OR 12:20:06 +/- 356.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 4/ 96 IS:
RA= 21.157 DEC= 8.229 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356817088. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 23.85 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1088.54 SECS.
CROSSING TIME AT MARS IS 45053. S. OR 12:30:52 +/- 100.10 SECONDS

BATSE BURST TRIGGER

NO.: 5444

TIME: TJD=0196 SECONDS=43964

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=119.4 AZIMUTH=155.1 ERROR=5.8 DEGREES

COMMENTS:

GRB. SHORT SPIKE. DUR.~0.1 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5444	960423	10196	43964	6000	199	-32	.1

BATSE #

5 4 4 4

2 6 / 4 / 9 6

ULYSSES RT

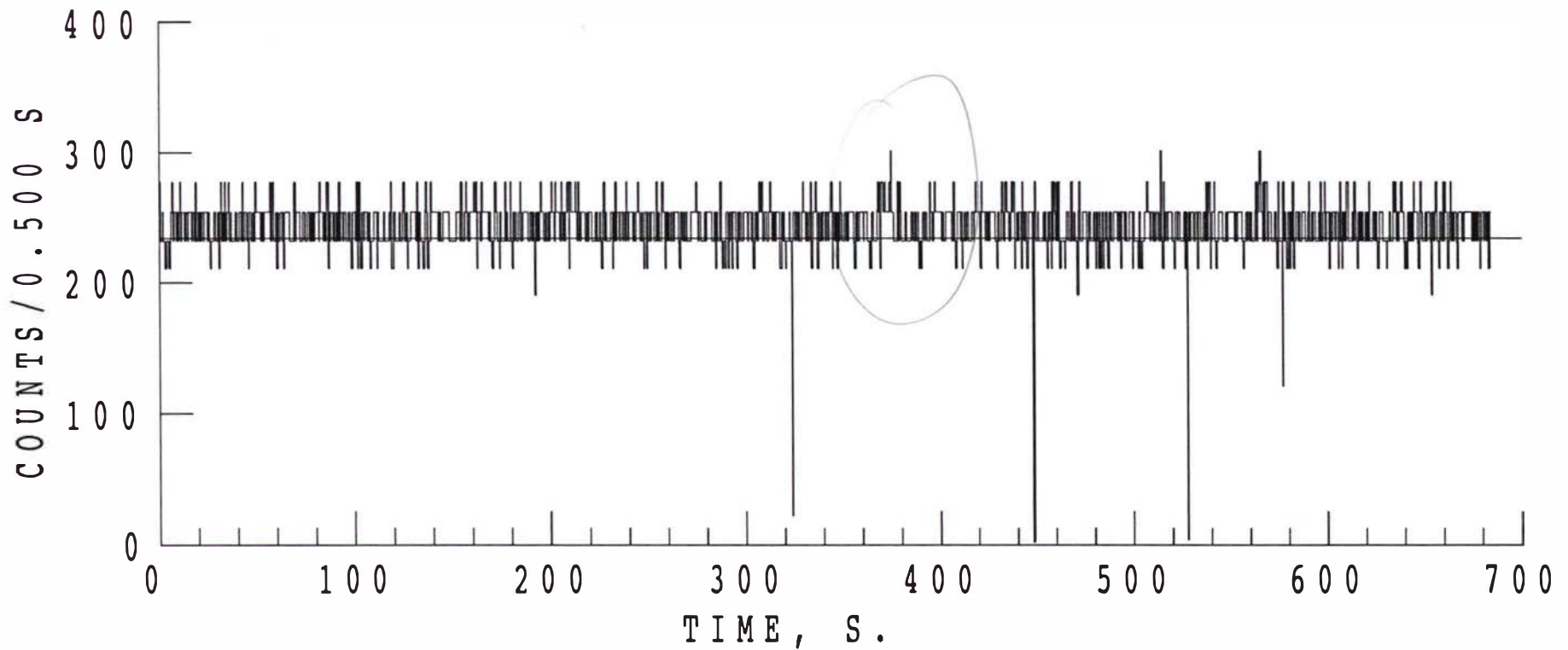
23 / 4 / 96 44064.449 s

0 - 0 keV

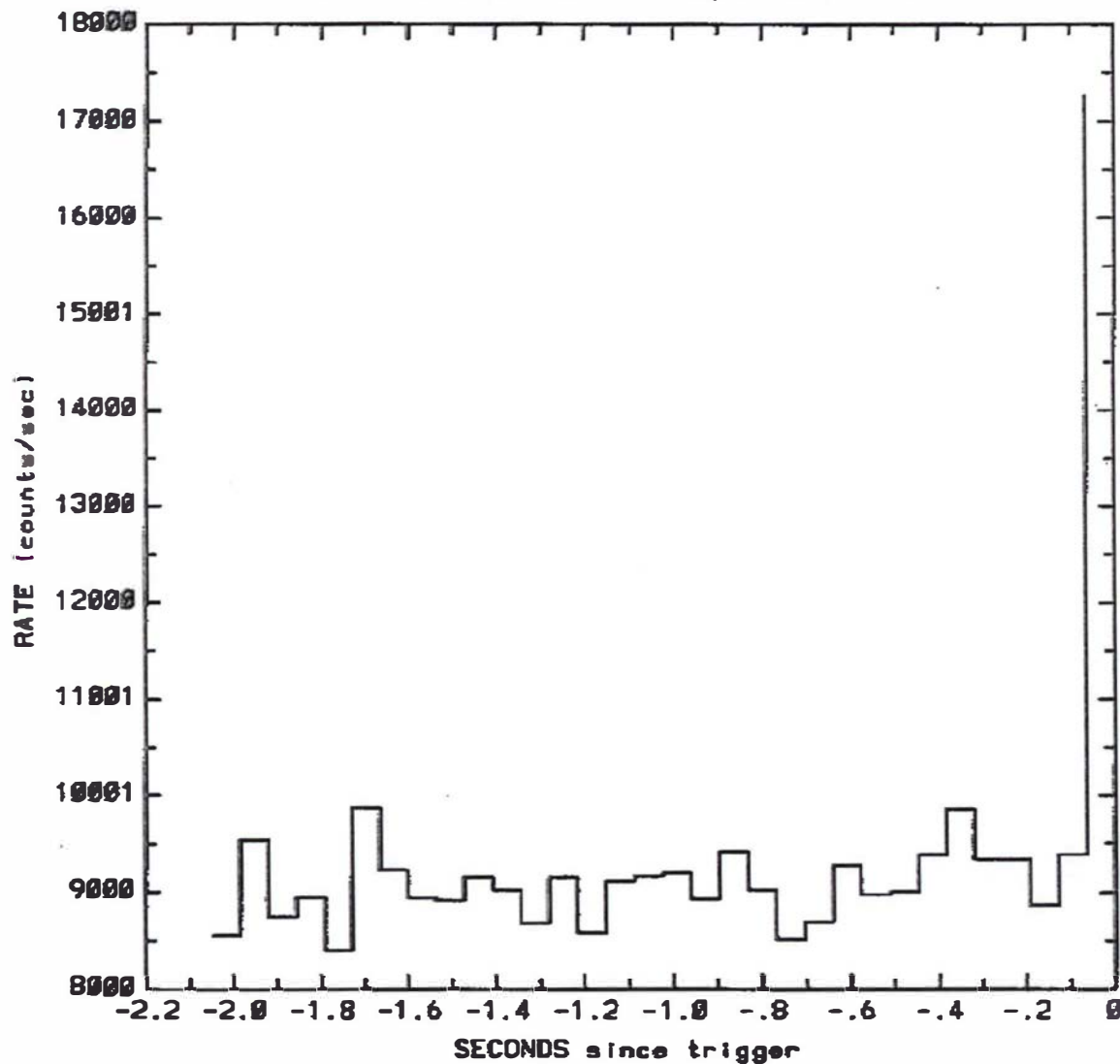
*BATSE event had ~600 c
in 0.1 s $\Rightarrow$ 6-12 c in Ulysses*

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



DISCSC Data for K. Hurley. No. 5444



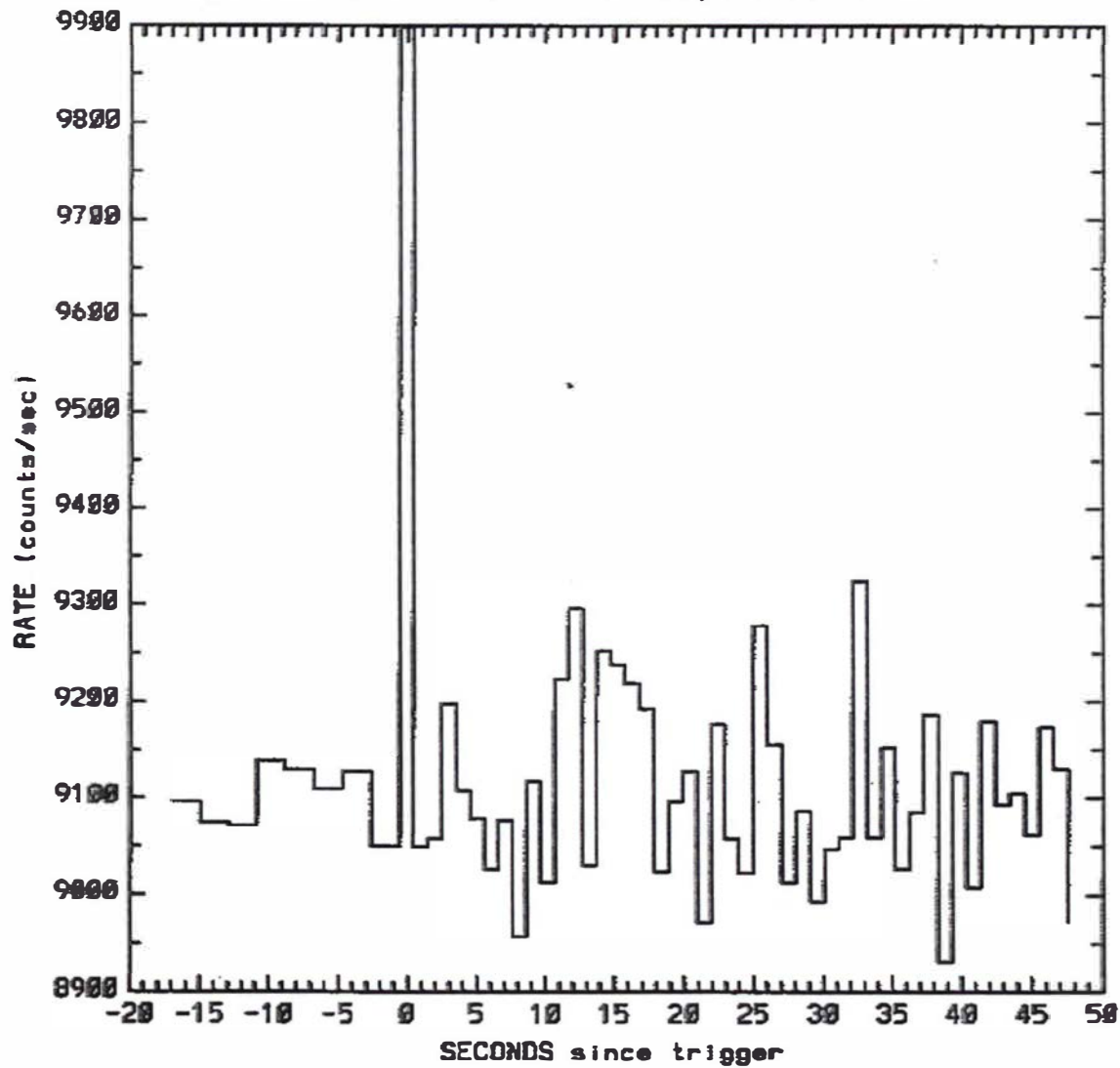
3-MAY-1996 13:31:49

Created by MDPS BD
(Burst Display)
Version 12.25

Trigger # : 5444

Trigger Time:
19196 / 43964.682Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 secondsDetectors [7..8]:
7-54----Discriminators:
(1, 2)Quality Mask:
801SP1

DISCLB Data for K. Hurley, No. 5444



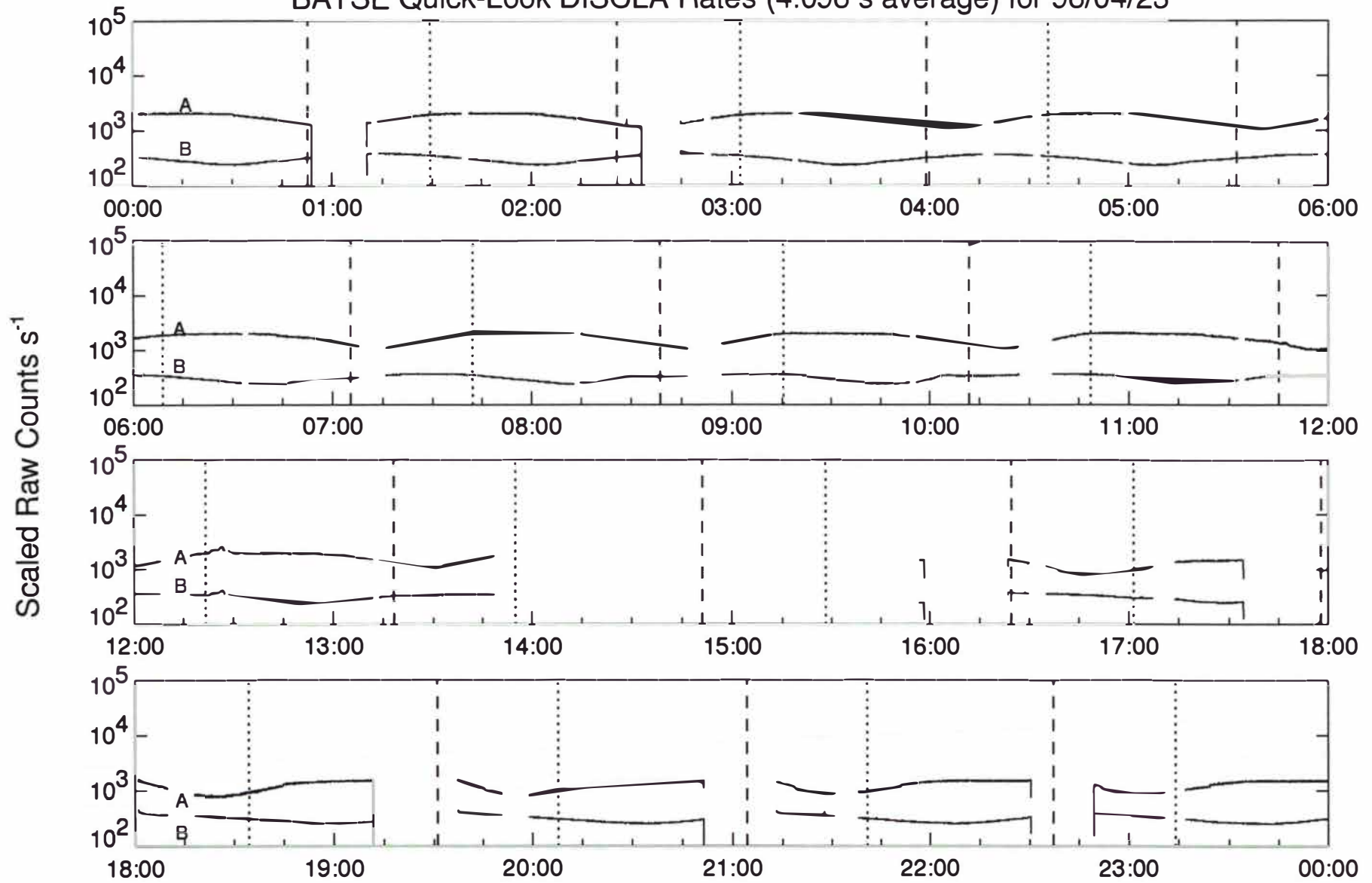
3-MAY-1996 13:33:33

Created by HQPS BD
(Burst Display)
Version 12.25

Trigger # : 5444

Trigger Time:
18196 / 43964.682Burst Data Type:
DISCLBDeadtime
Corrected: NBackground Data
Type: NoneMinimum Integ. Time:
1.924 secondsDetectors [7..8].
7-54----Discriminators:
[1 . 2]Quality Mask:
BDISP1

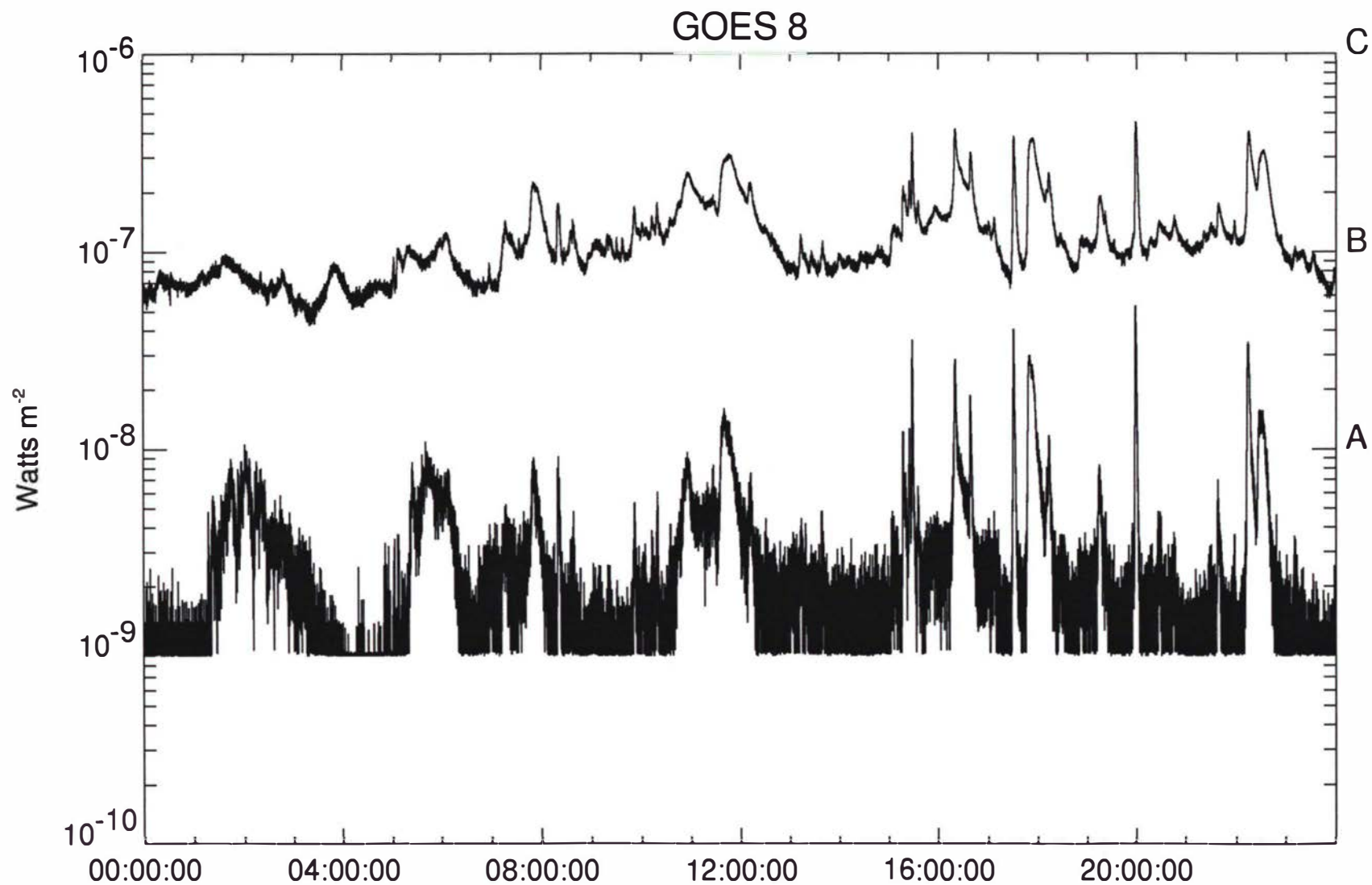
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/23



Current Time: 96/04/30, 1318 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



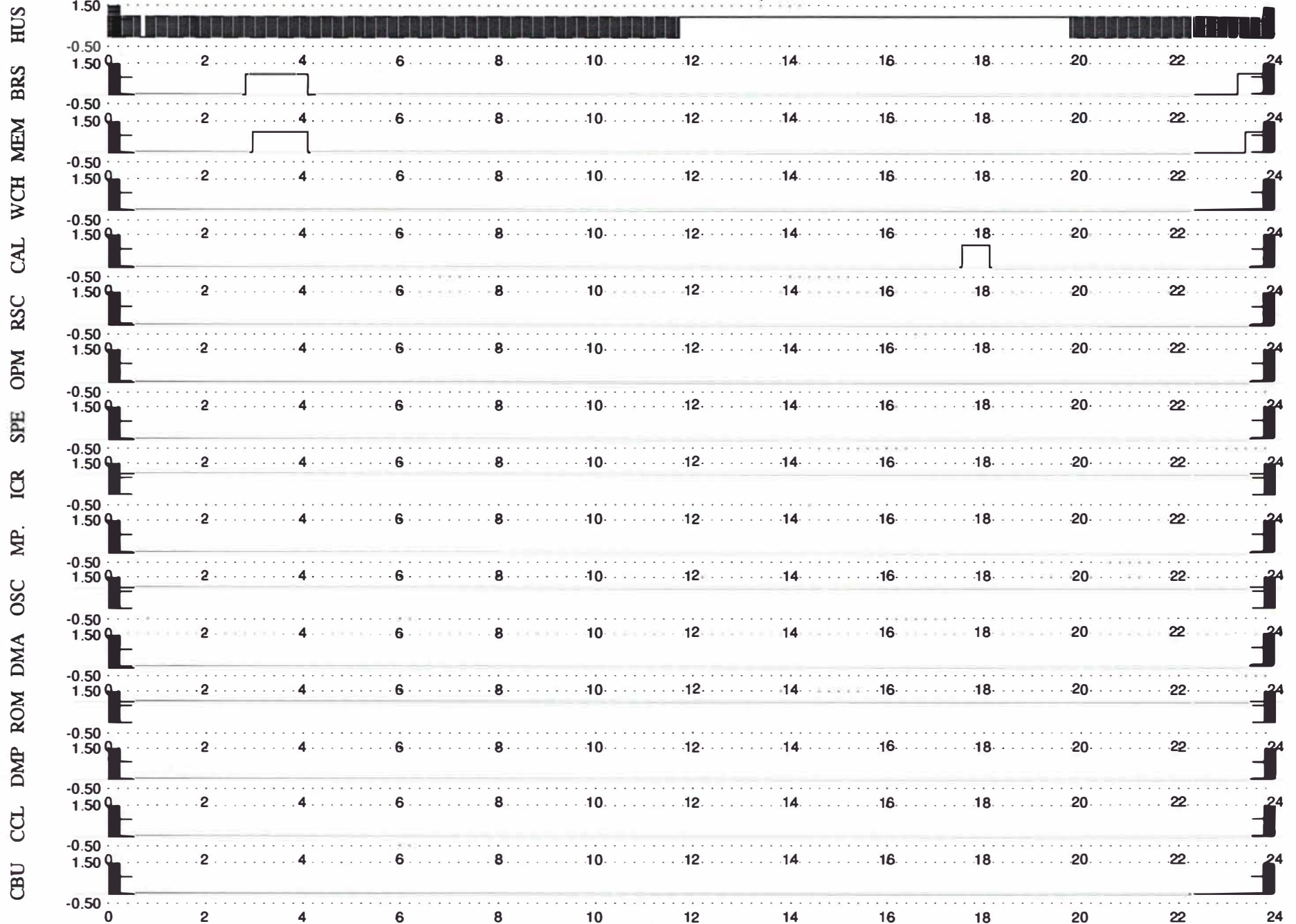
Data Start: 96/04/23, 0000:00

Plot created: 96/04/30, 1318

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

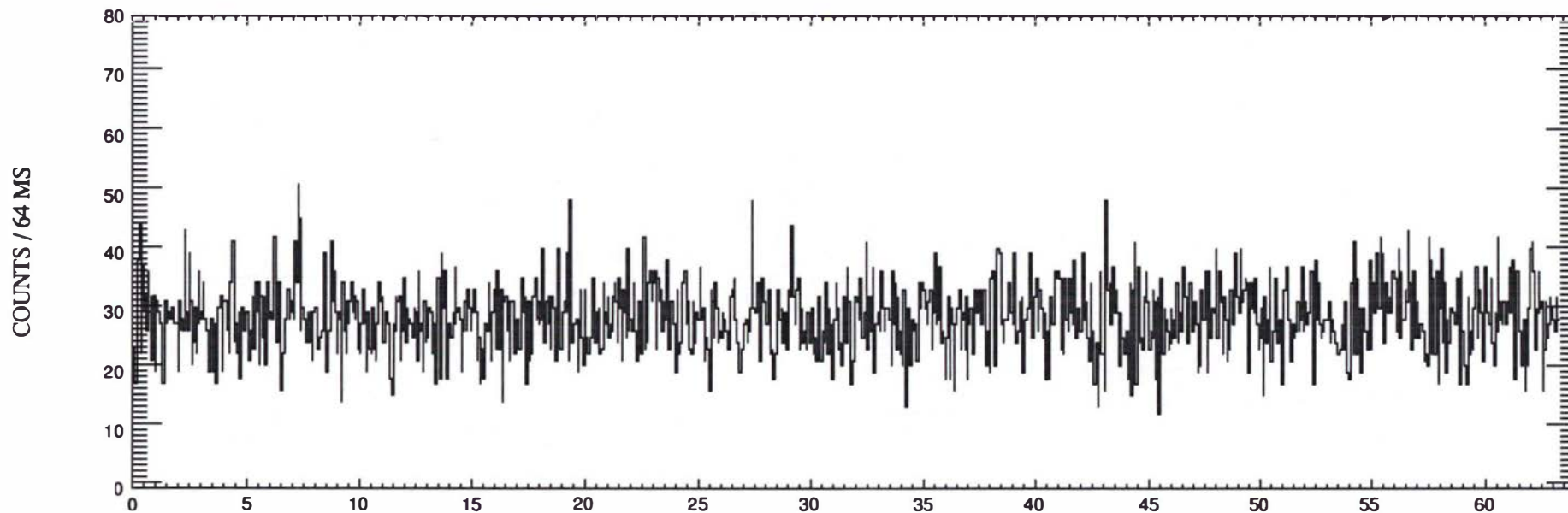
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BURST NUMBER 11, 12

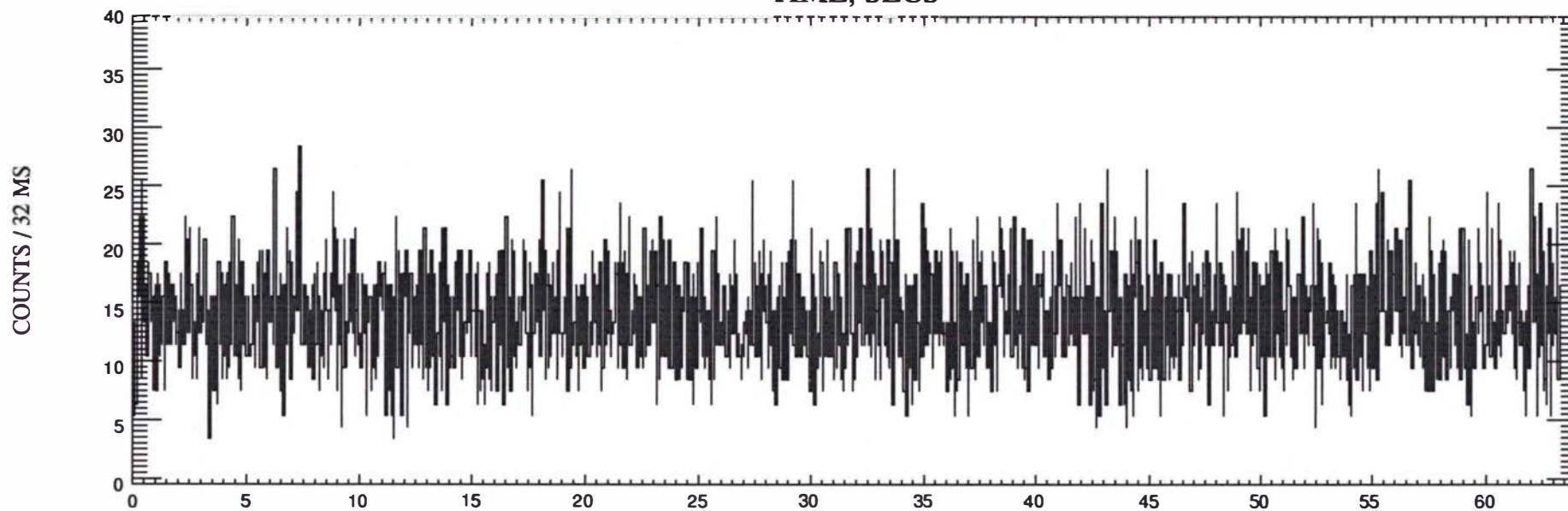


UNIVERSAL TIME

Burst Counter 11 at UT= 2.763187442356 h= 9947.475 s 02:45:47.475

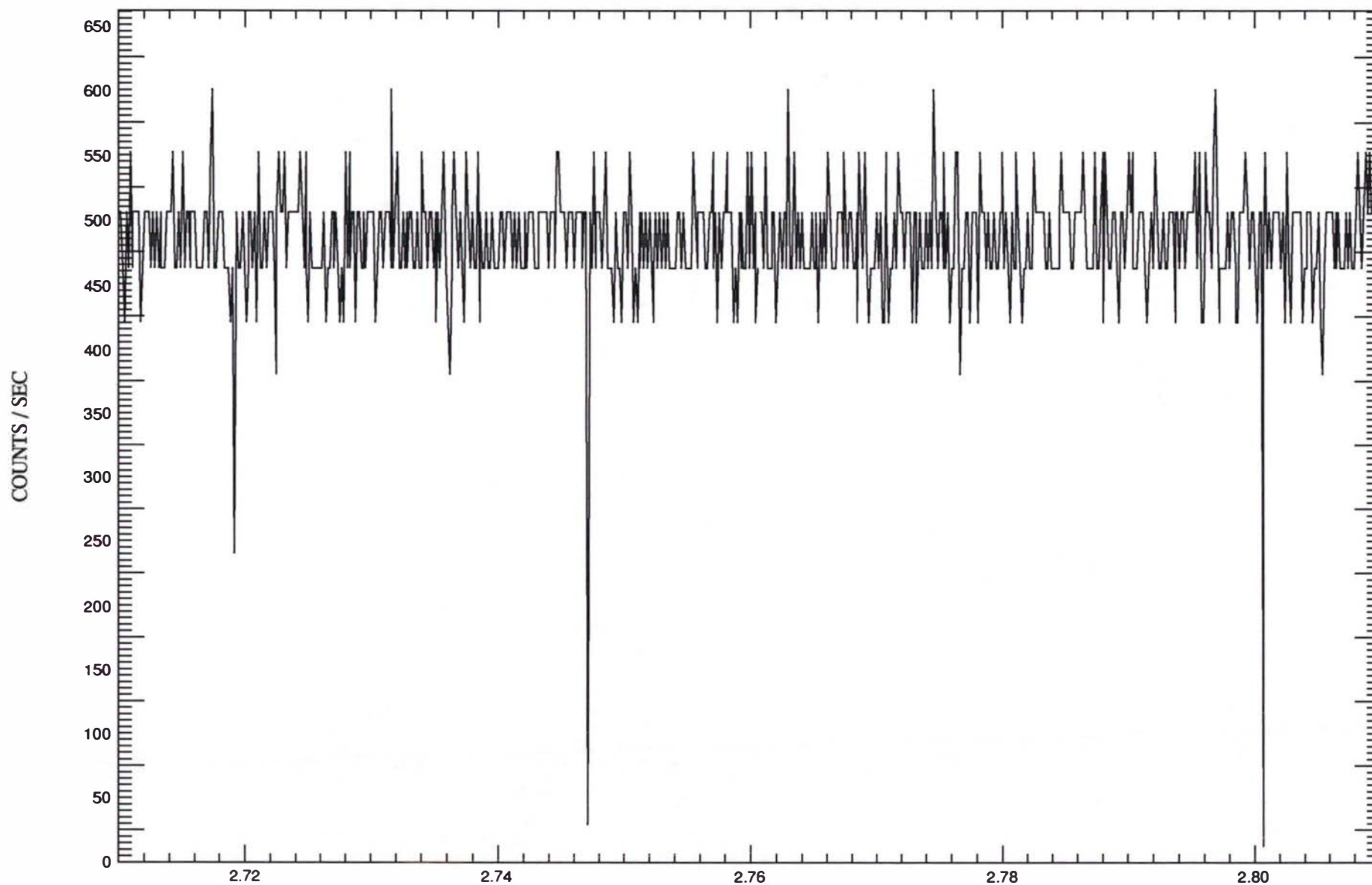


TIME, SECS

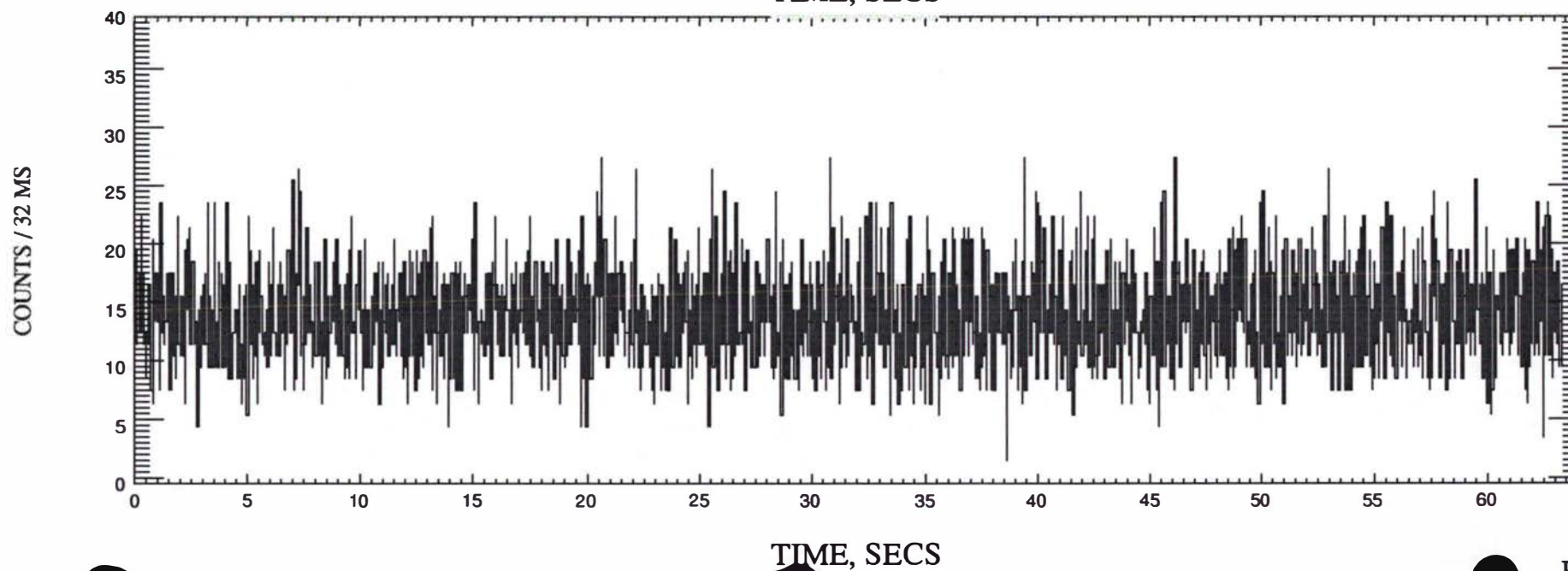
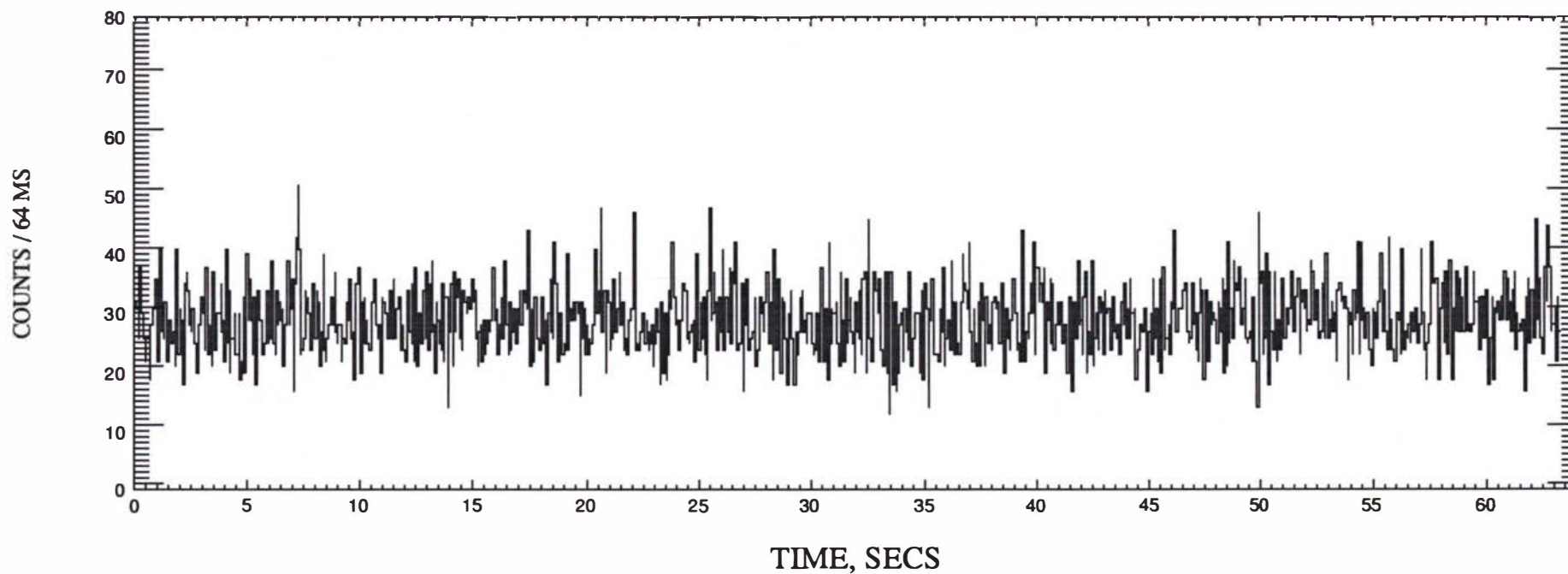


TIME, SECS

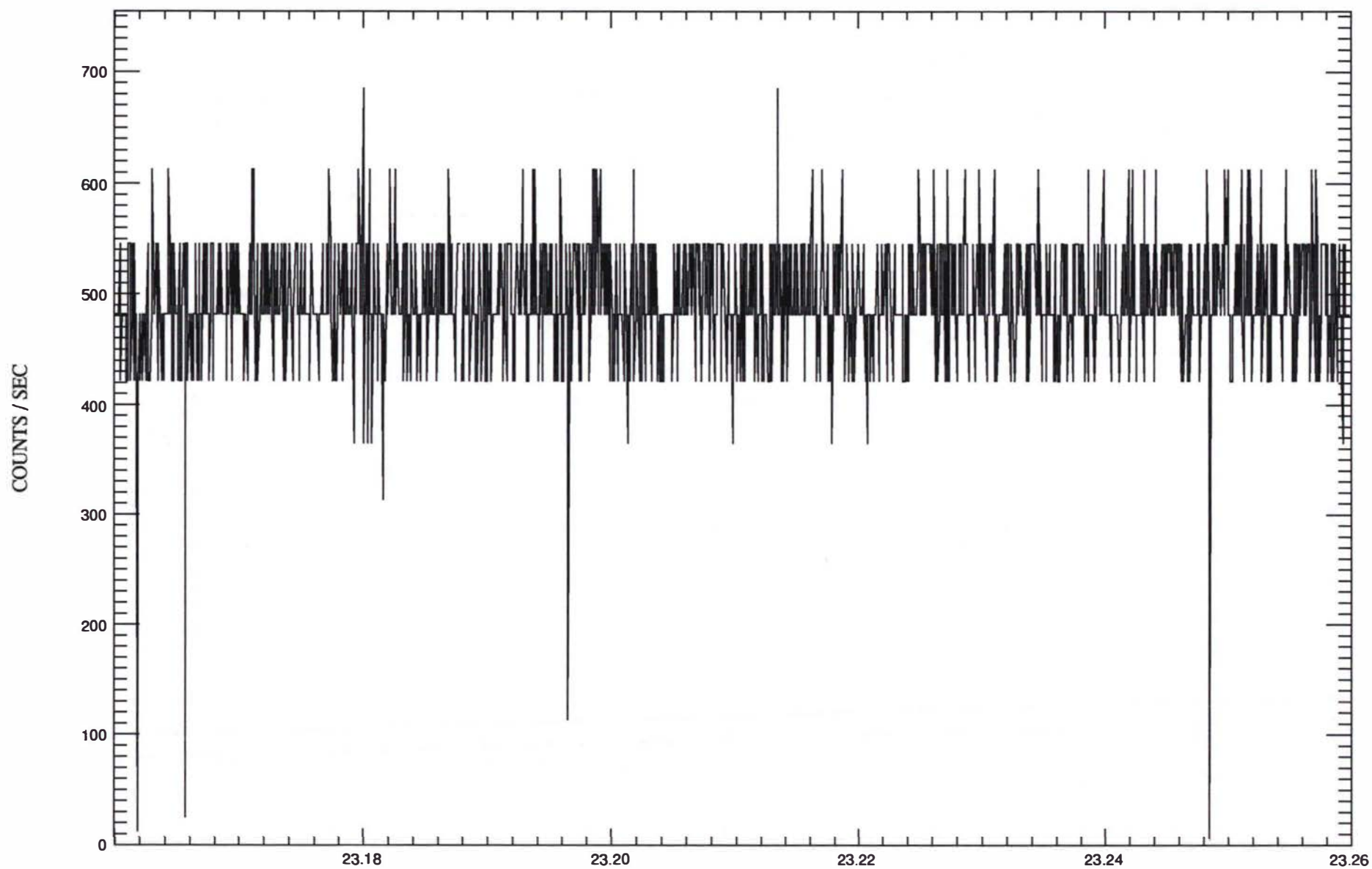
CALIBRATION DATA INCLUDED



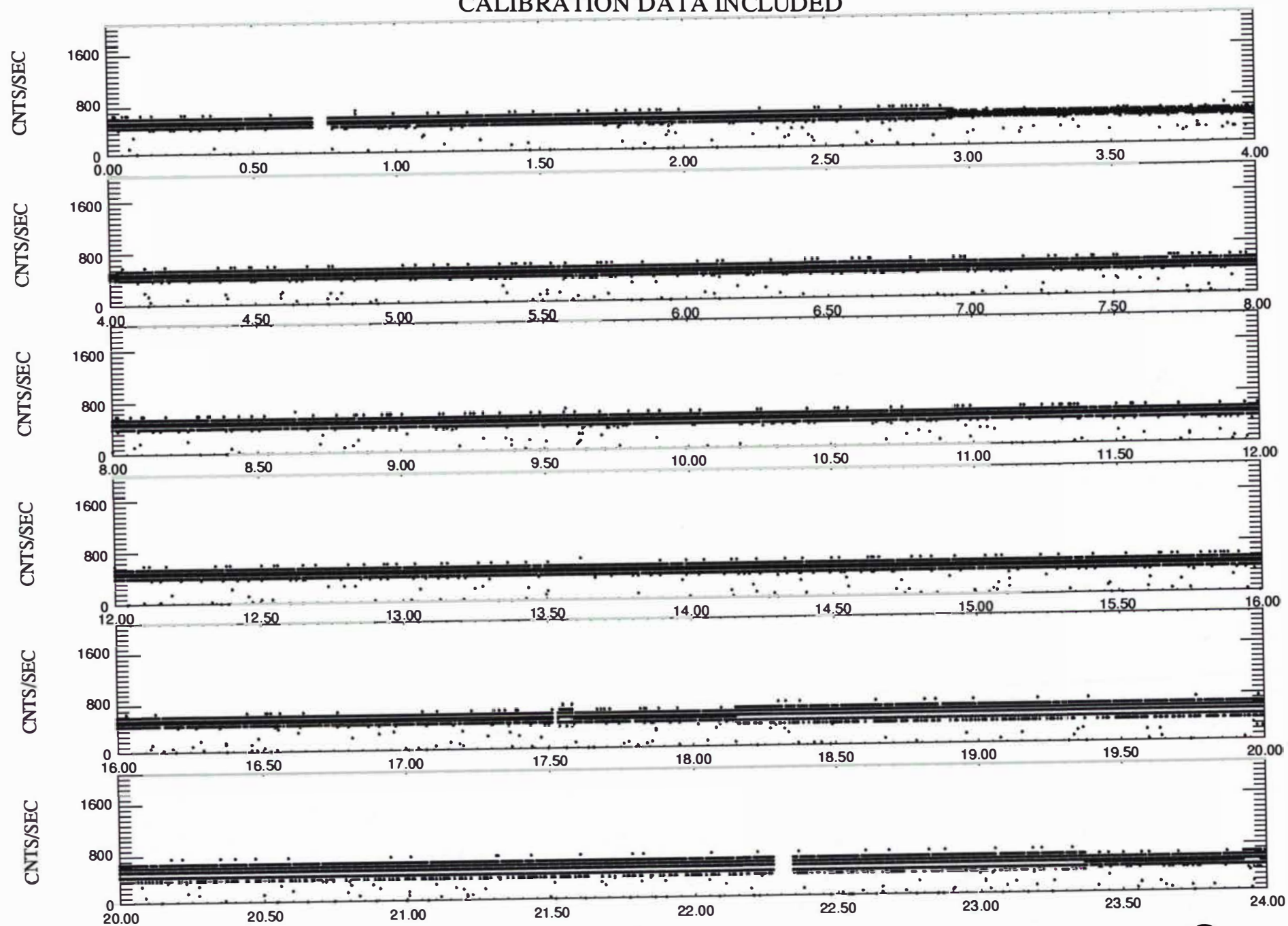
Burst Counter 12 at UT=23.213500870599 h=83568.603 s 23:12:48.603



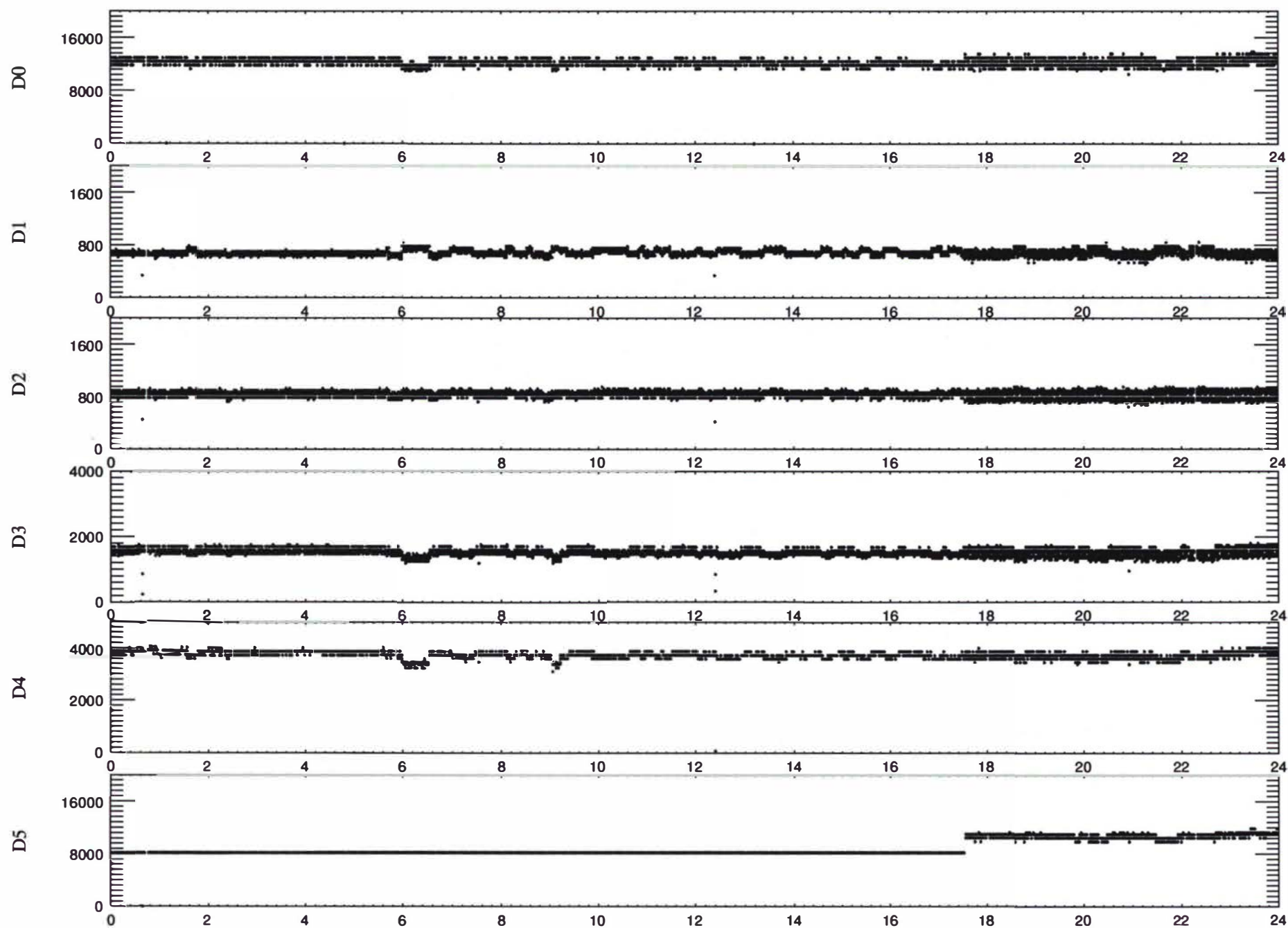
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME



KONUS

ULYSSES RT

28 / 01 / 00

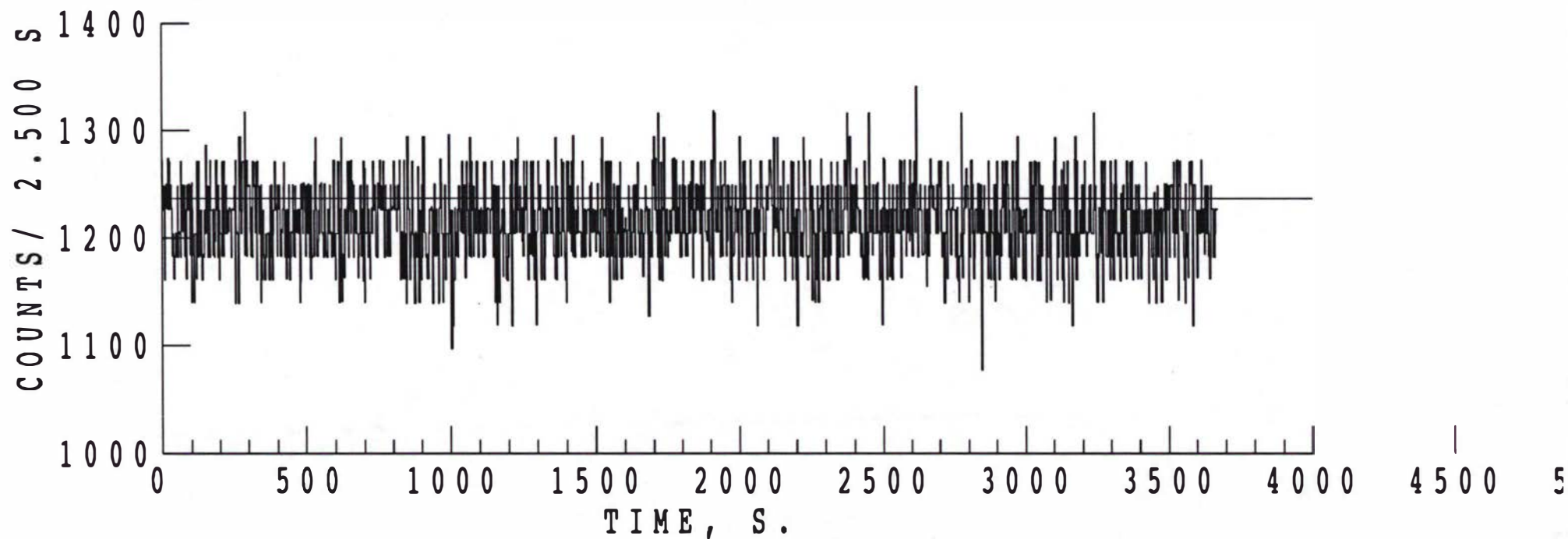
24 / 04 / 96 8892.141 s

0.500 S INTERVALS REGROUPED BY 5

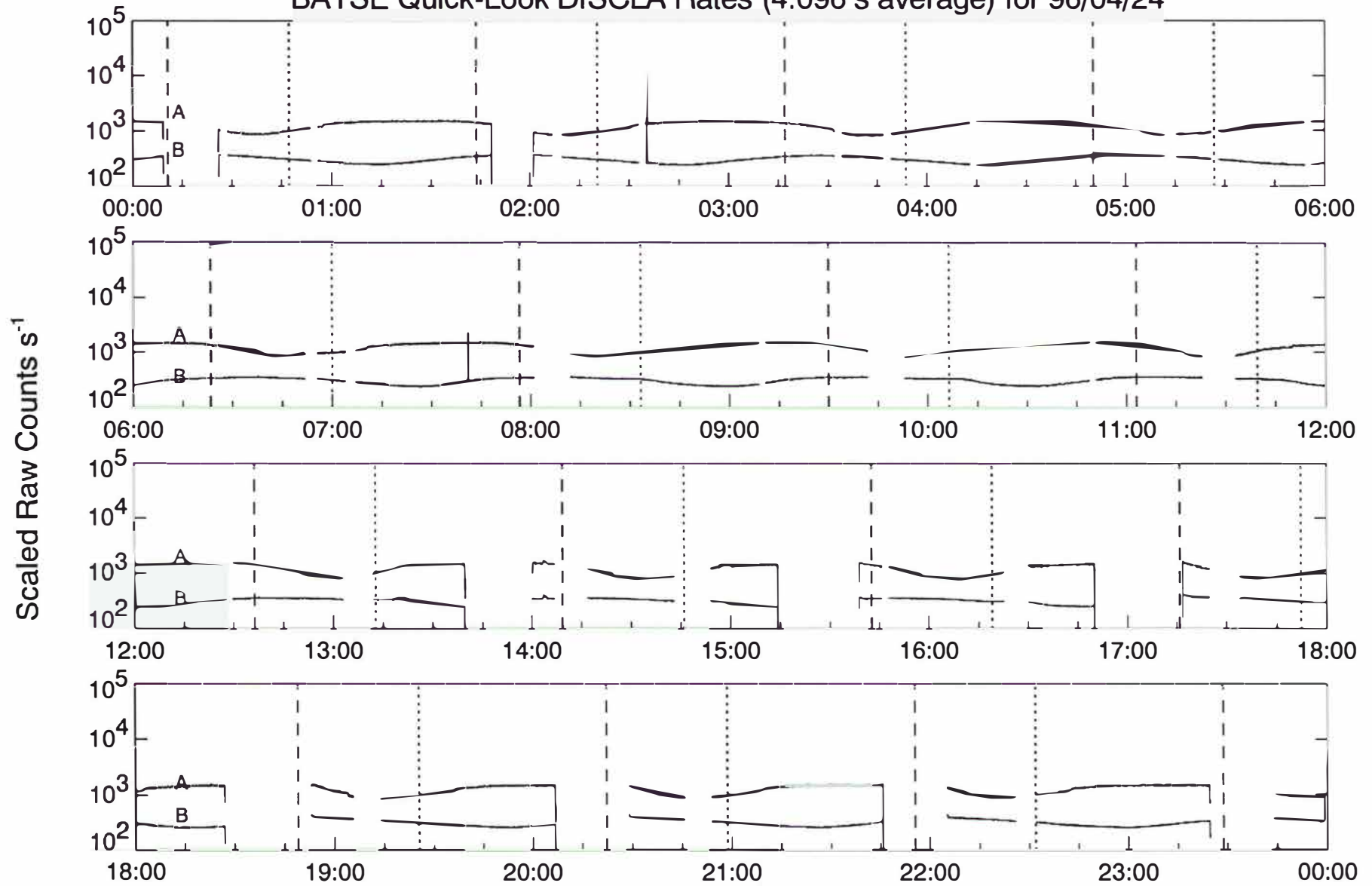
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/24



Current Time: 96/04/26, 1004 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

From SURASAK@ssl.msfc.nasa.gov Fri Apr 26 07:45 PDT 1996
From: SURASAK@ssl.msfc.nasa.gov
Date: Fri, 26 Apr 1996 9:43:50 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 05445

TIME: TJD=0197 SECONDS=50617

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

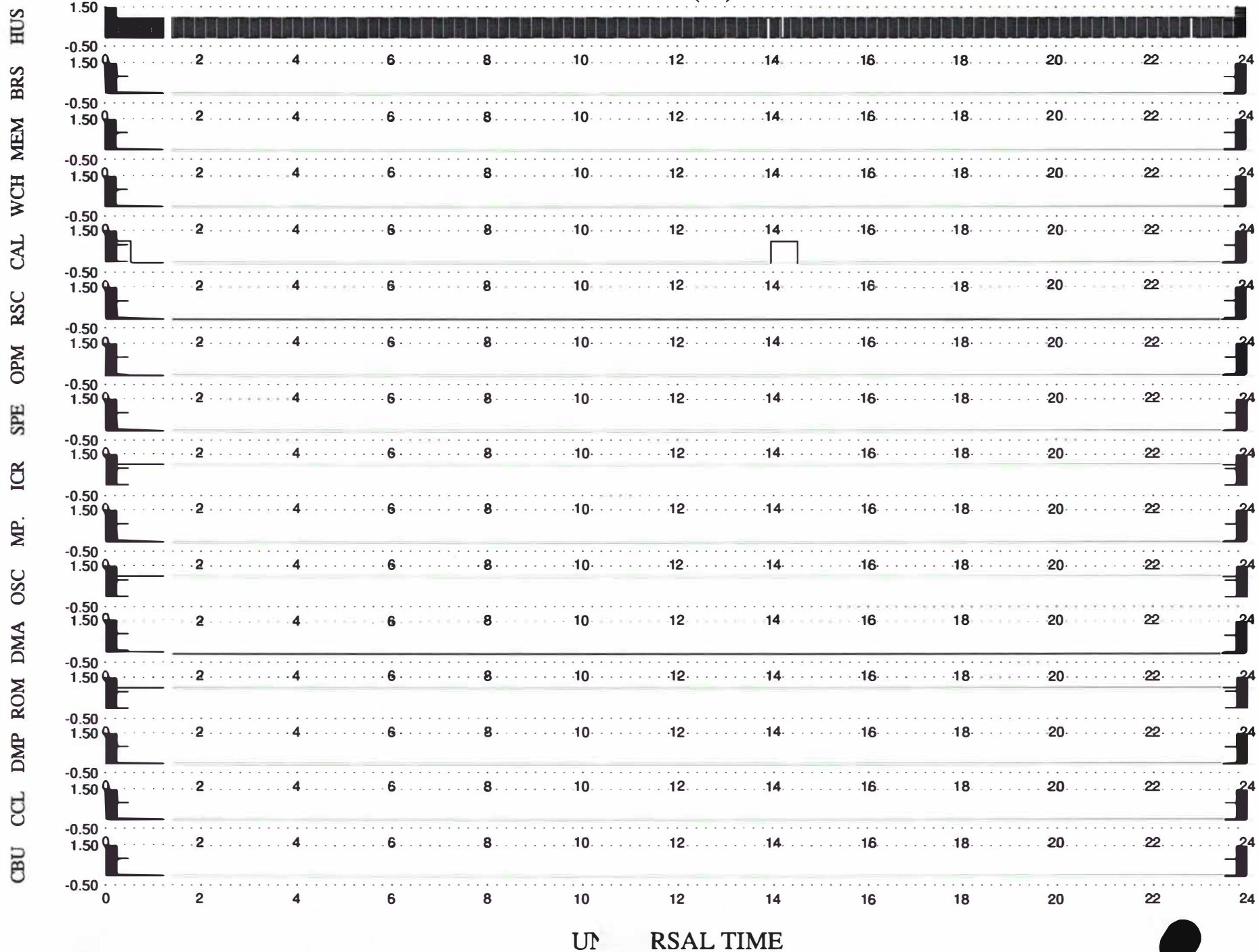
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

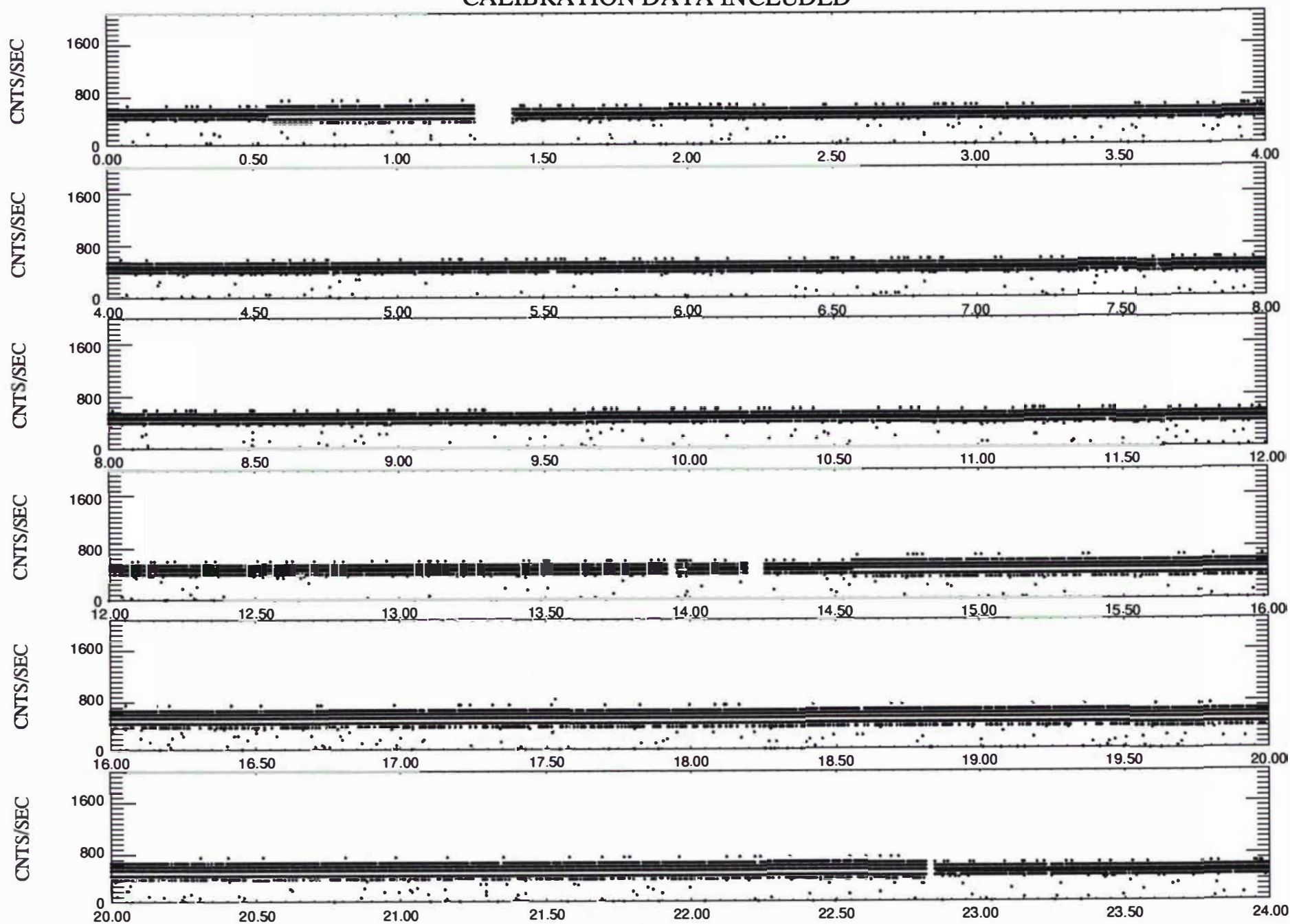
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

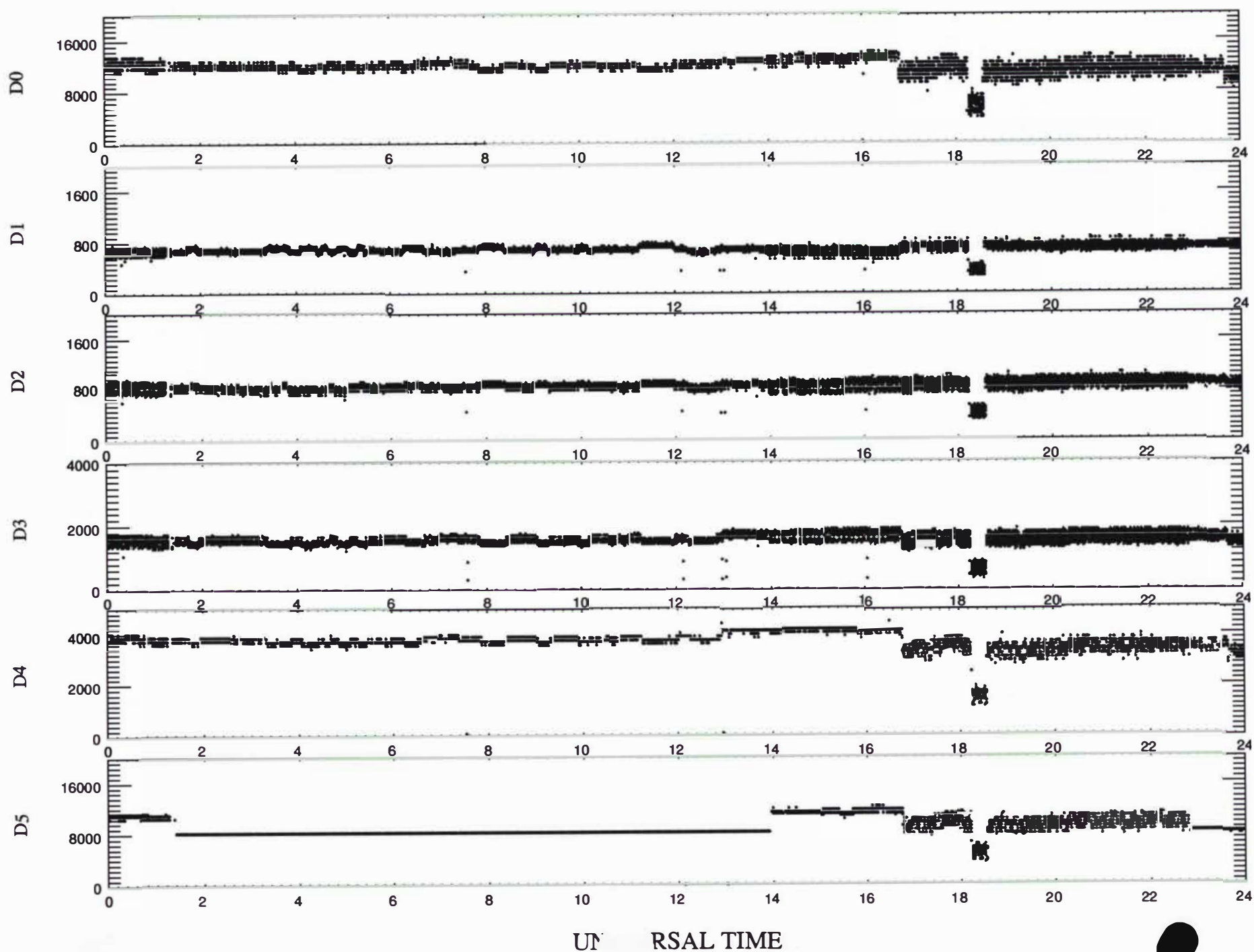
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@ssl.msfc.nasa.gov Mon Apr 29 10:42 PDT 1996
From: SAHI@ssl.msfc.nasa.gov
Date: Mon, 29 Apr 1996 12:07:36 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5446

BATSEARCH PROGRAM

No

BATSE BURST # 5446
EVENT OF 1996 APR 25 DAY OF YEAR=116
EVENT CROSSING TIME AT BATSE : 1112. S. OR 00:18:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 60.000 42.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 4/ 96 IS:
RA= 148.841 DEC= 64.477 DIST= 3.592 AU
BATSE-ULYSSES DISTANCE = 537419377. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=127.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1094.06 SECS.
CROSSING TIME AT ULYSSES IS 18. S. OR 00:00:17 +/- 279.93 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 4/ 96 IS:
RA= 22.577 DEC= 8.807 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356786912. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -816.03 SECS.
CROSSING TIME AT MARS IS 296. S. OR 00:04:55 +/- 138.01 SECONDS

BATSE BURST TRIGGER

NO.: 5446

TIME: TJD=0198 SECONDS=1112

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=99.1 AZIMUTH=41.7 ERROR=5.1 DEGREES

COMMENTS:

BURST, MULTIPLE SPIKES, DUR.~600 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5446	960425	10198	01112	2000	060	+42	600

BATSE BURST# 5446

ULYSSES RT

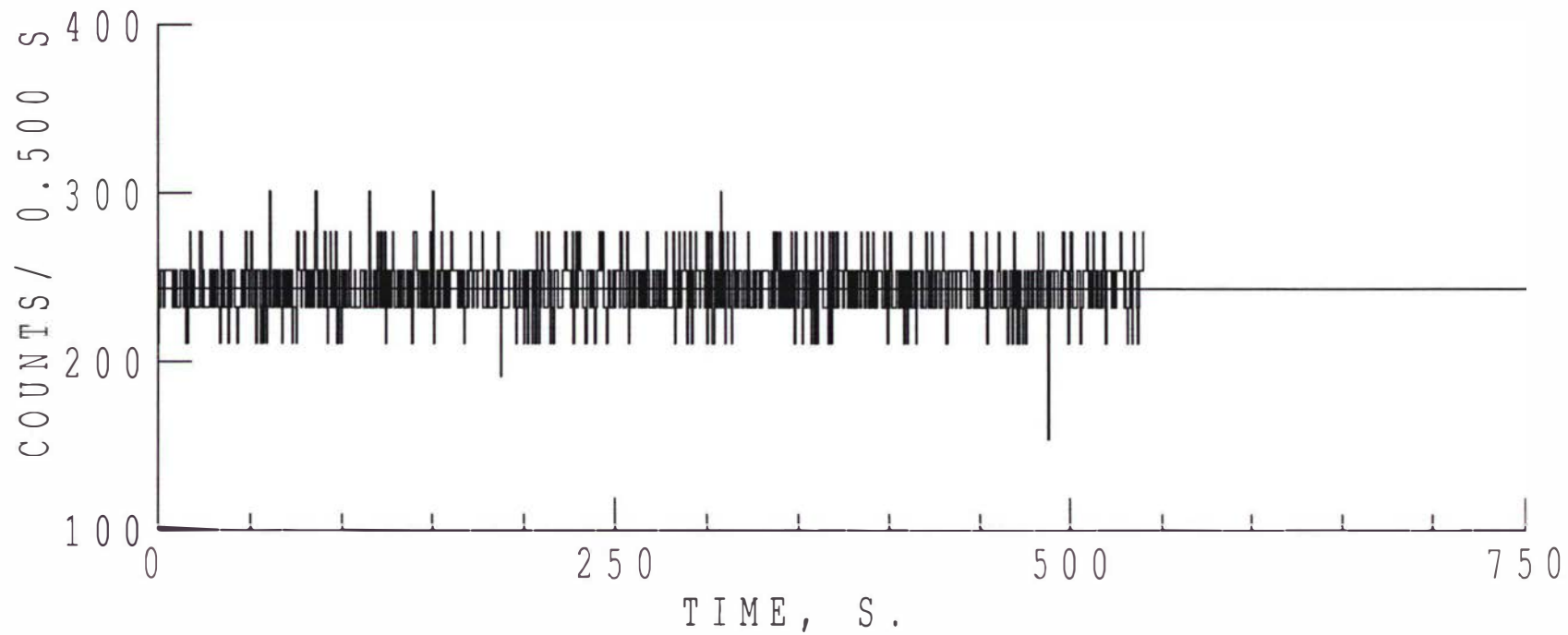
20 / 12 / 96

24 / 4 / 96 86148.188 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SAHI@SSLLES.MSFC.NASA.GOV Tue Apr 30 10:16 PDT 1996
Date: Tue, 30 Apr 1996 12:15:50 -0500 (CDT)
From: SAHI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5447

BATSEARCH PROGRAM

RI Trig

BATSE BURST # 5447
EVENT OF 1996 APR 25 DAY OF YEAR=116
EVENT CROSSING TIME AT BATSE : 86391. S. OR 23:59:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 10.000 57.000
BATSE PEAK COUNTING RATE: 16000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 25/ 4/ 96 IS:
RA= 148.676 DEC= 64.186 DIST= 3.608 AU
BATSE-ULYSSES DISTANCE = 539701448. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=125.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1038.51 SECS.
CROSSING TIME AT ULYSSES IS 85352. S. OR 23:42:32 +/- 289.53 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 4/ 96 IS:
RA= 22.577 DEC= 8.807 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356786912. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -777.99 SECS.
CROSSING TIME AT MARS IS 85613. S. OR 23:46:53 +/- 144.55 SECONDS

BATSE BURST TRIGGER

NO.: 5447

TIME: TJD=0198 SECONDS=86391

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=70.7 AZIMUTH=19.7 ERROR=1.5 DEGREES

COMMENTS:

BURST, SINGLE PULSE WITH SUBSTRUCTURE, DUR.~70 SECS, MAX. AT ~T+7 SECS.
PROBABLE PRECURSOR EMISSION AT ~T-75 TO ~T-58 SECS. NOT VISIBLE ABOVE 300
KEV. BRIGHT SOURCE OCCULTATION SET AT ~T-190 SECS.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5447	960425	10198	86391	16000	010	+57	70

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search ± 1750	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search ± 1750	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA ± 1750	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search ± 1750	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA ± 1750 RI Trig	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search ± 2050	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search ± 2050	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search ± 2050	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search ± 2050	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search ± 2050	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search ± 2050	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search ± 2050	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search ± 2100	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search ± 2100	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search ± 2100	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search ± 2100	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search ± 2100	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search ± 2350	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search ± 2350	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search ± 2350	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search ± 2350	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 search	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 search	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 Search	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

Helio corr removed

Date: *Mar 6 '98*

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

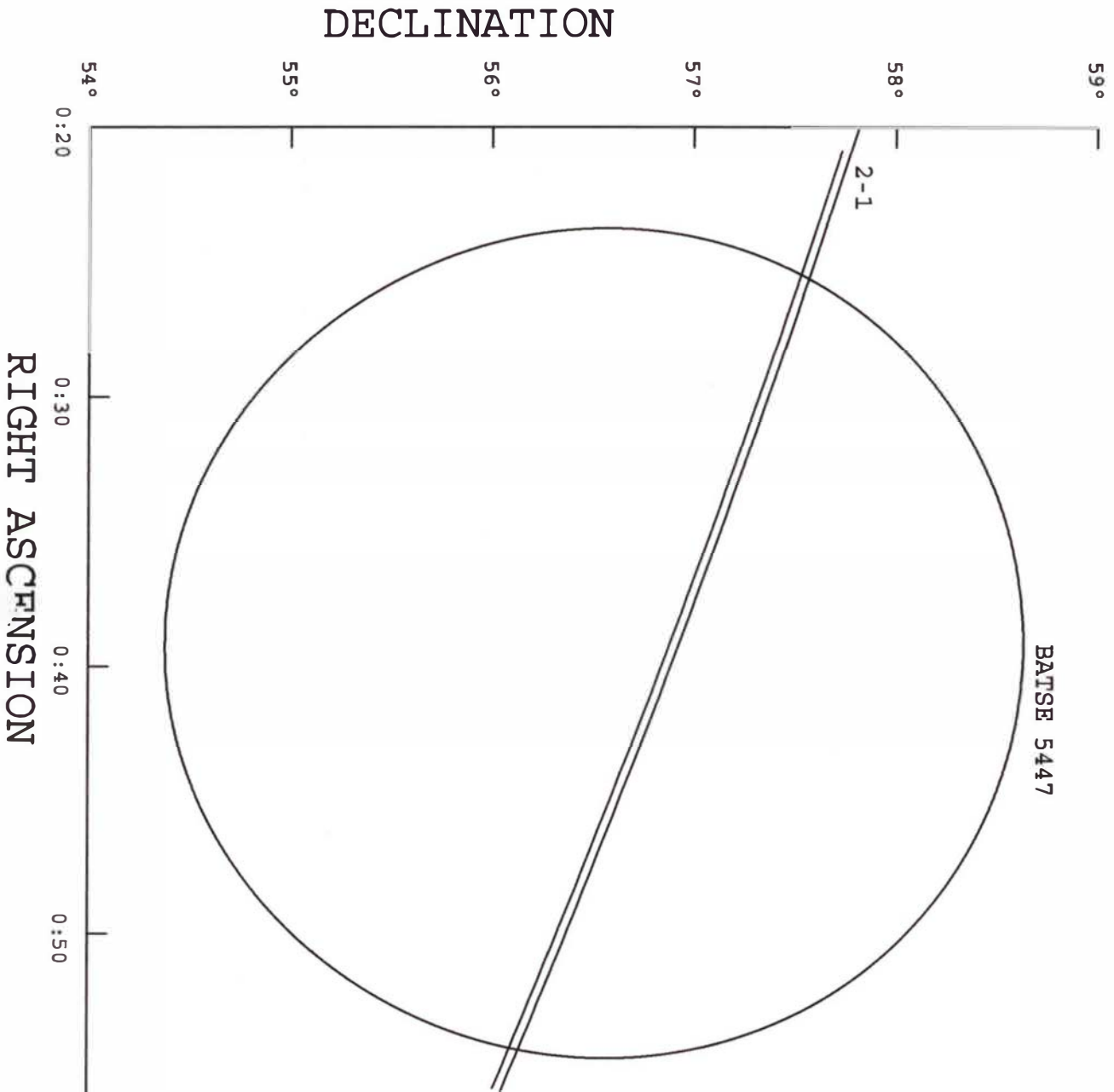
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 25, 1996 23:42

6 / 3/98



ULYSSES

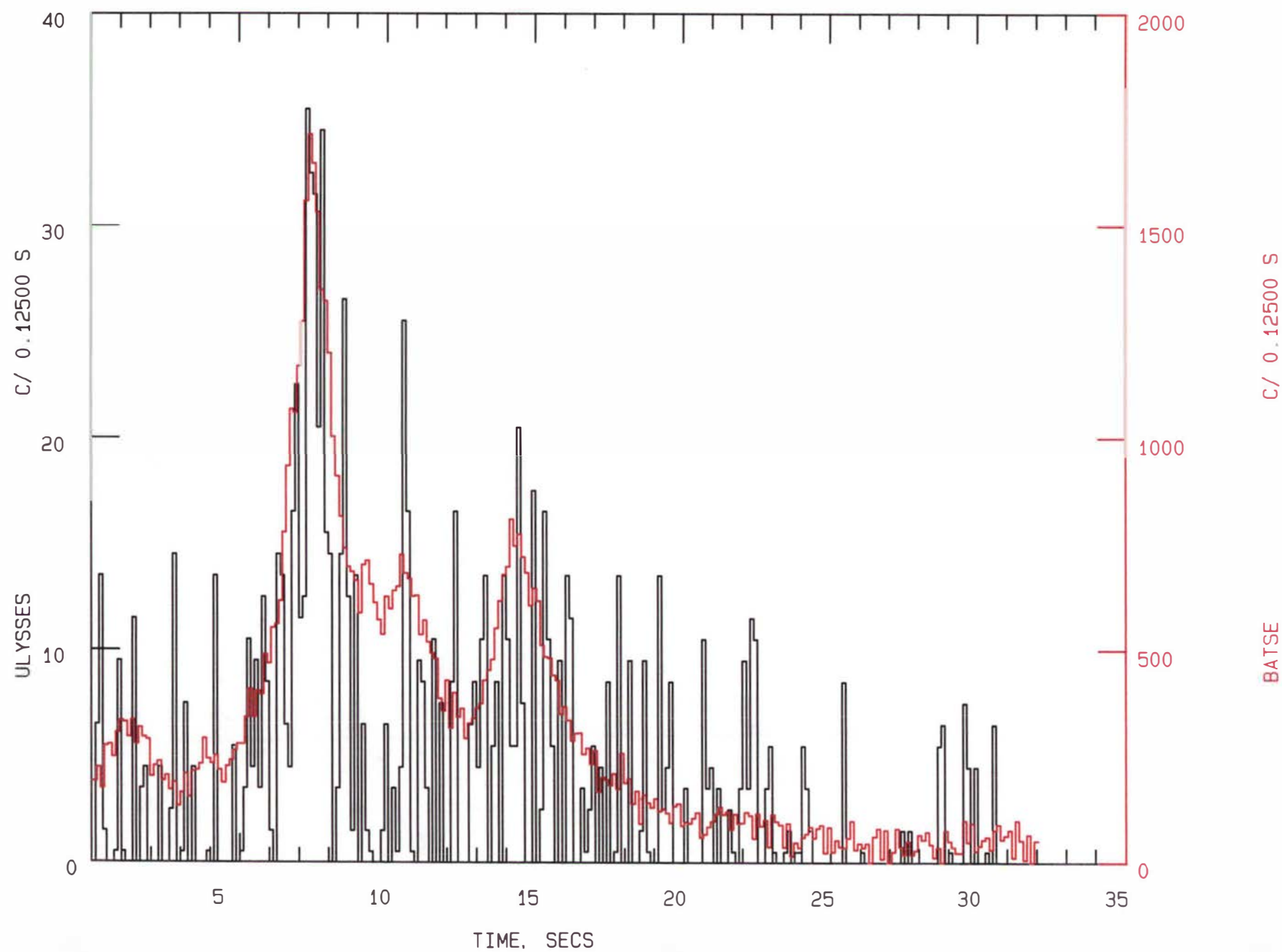
-BATSE

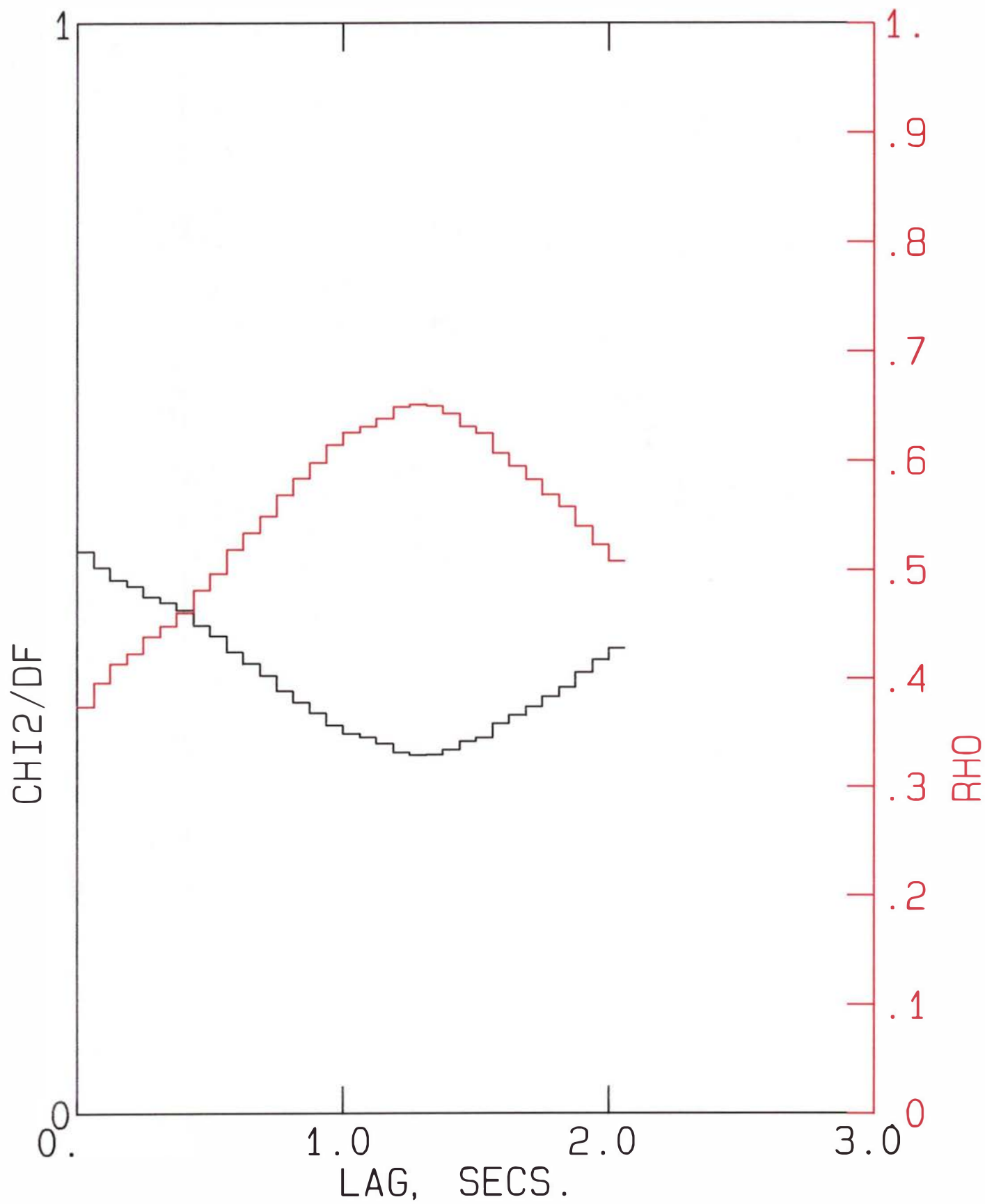
CORRELATION

25/04/96

85370.759

6/ 3/98





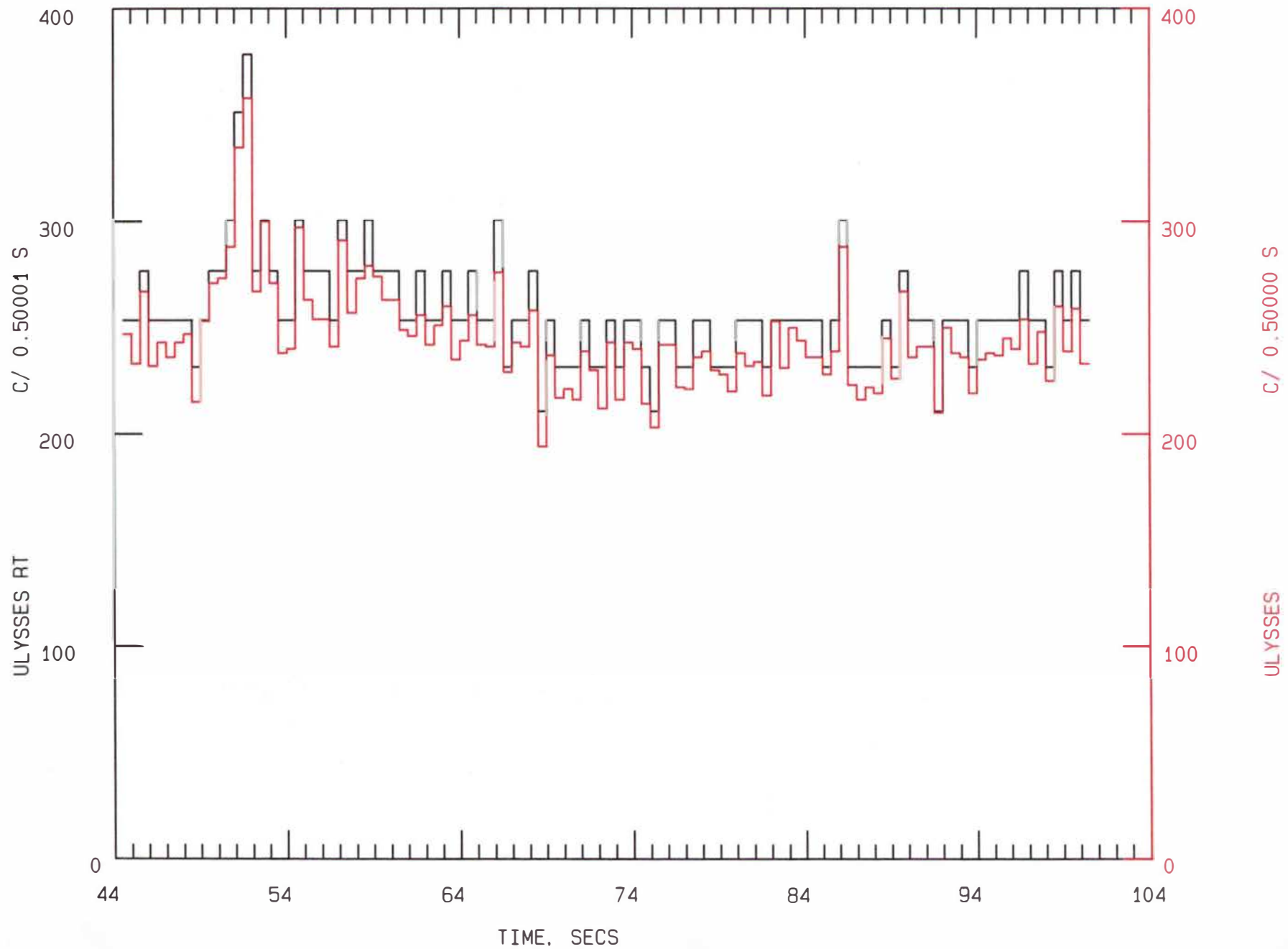
ULYSSES RT-ULYSSES

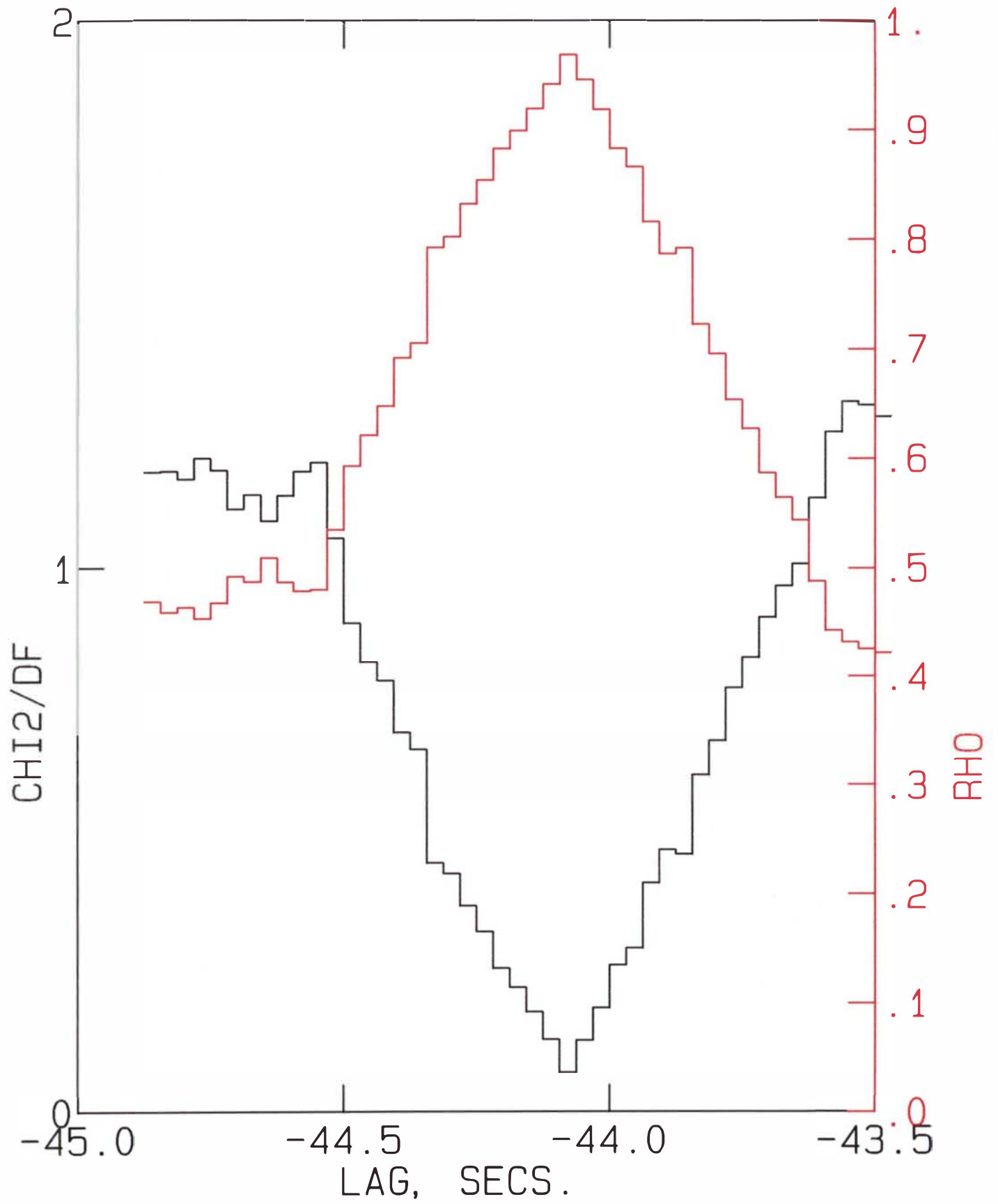
CORRELATION

25/ 4/96

85319.254

6/ 3/98

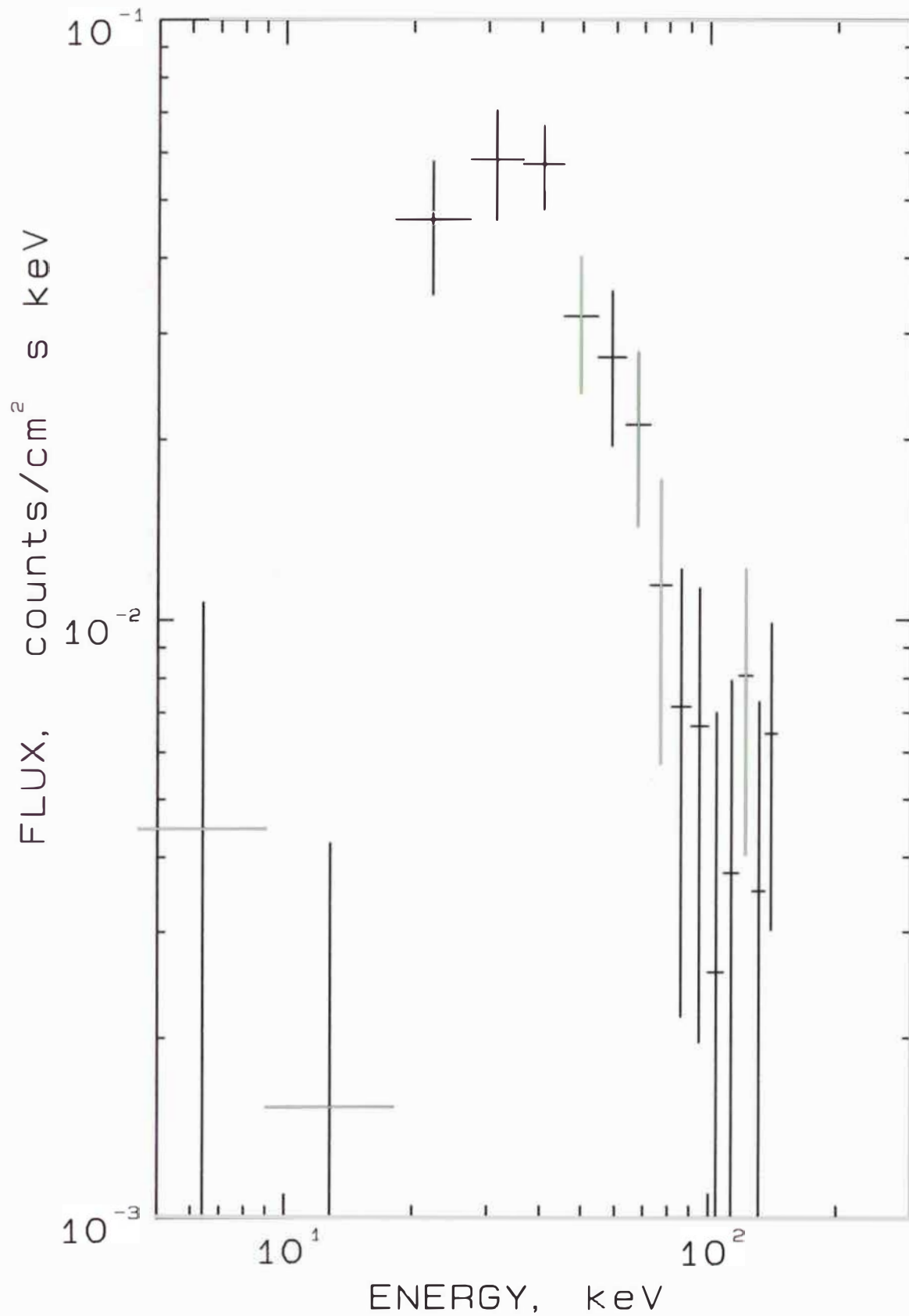




ULYSSES 25/04/96 85370.838

6/ 3/98

SPECTRUM INTEGRATED OVER 31.1 SECONDS, INTERVALS 2 TO 25



ULYSSES 25/04/96 85370.838 BURST SPECTRAL COUNT RATES

4- 18 keV

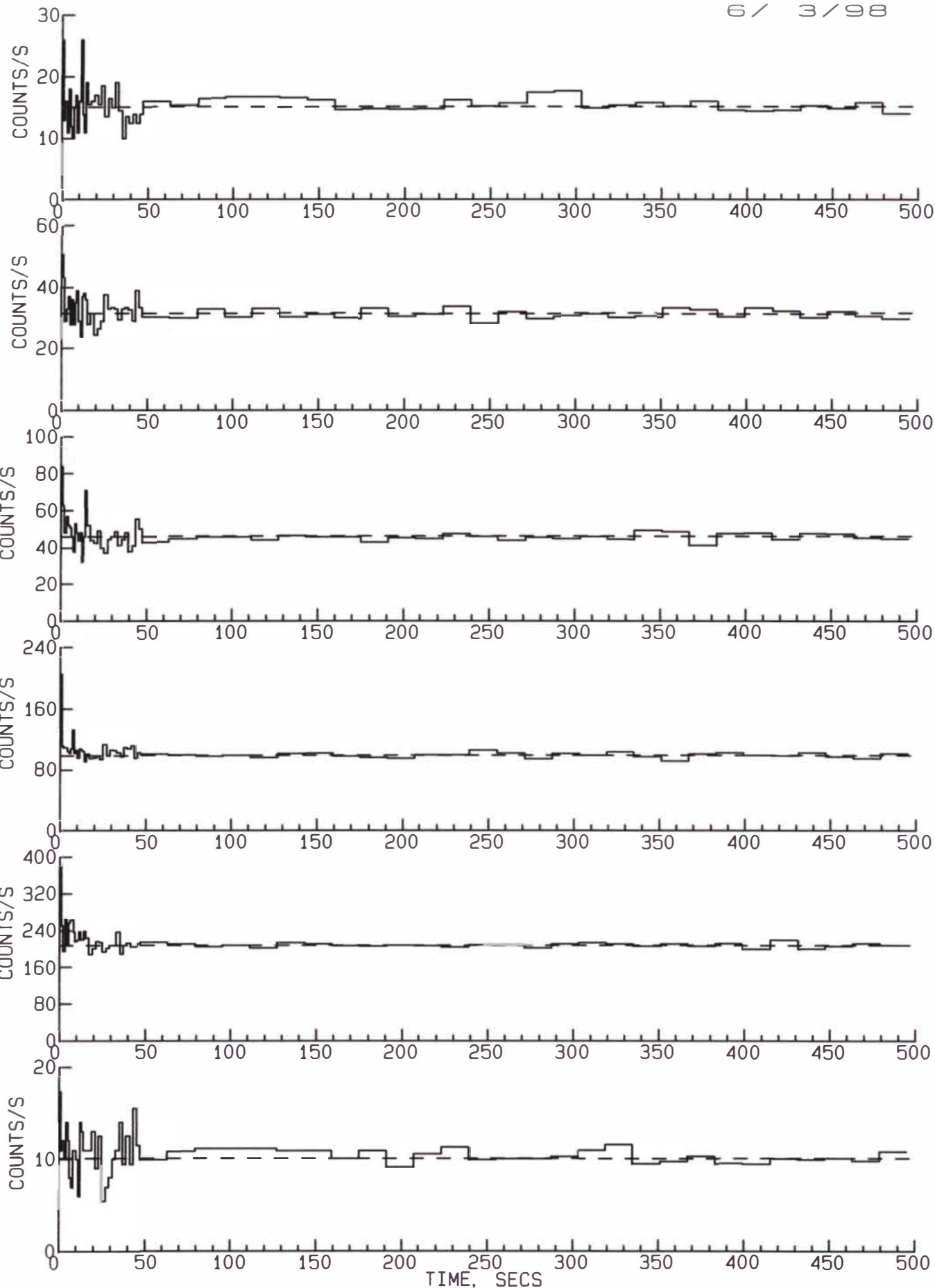
18- 45 keV

45- 72 keV

72- 99 keV

99-126 keV

126-144 keV



6 / 3 / 98

ULYSSES

25/04/96

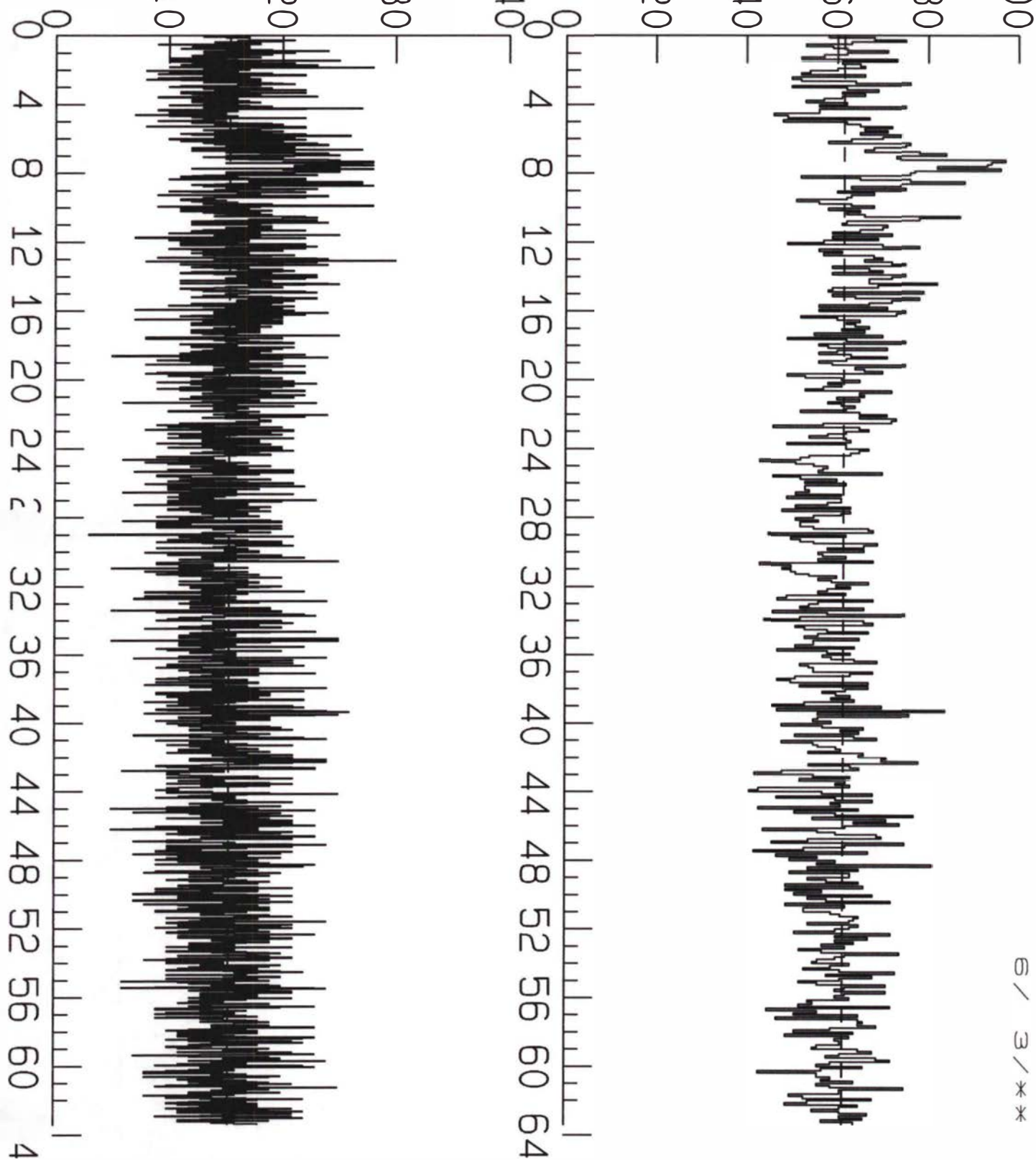
Ttrig=85370.759

0- 0 keV

COUNTS/0.031 S

COUNTS/0.125 S

6 / 3 / **



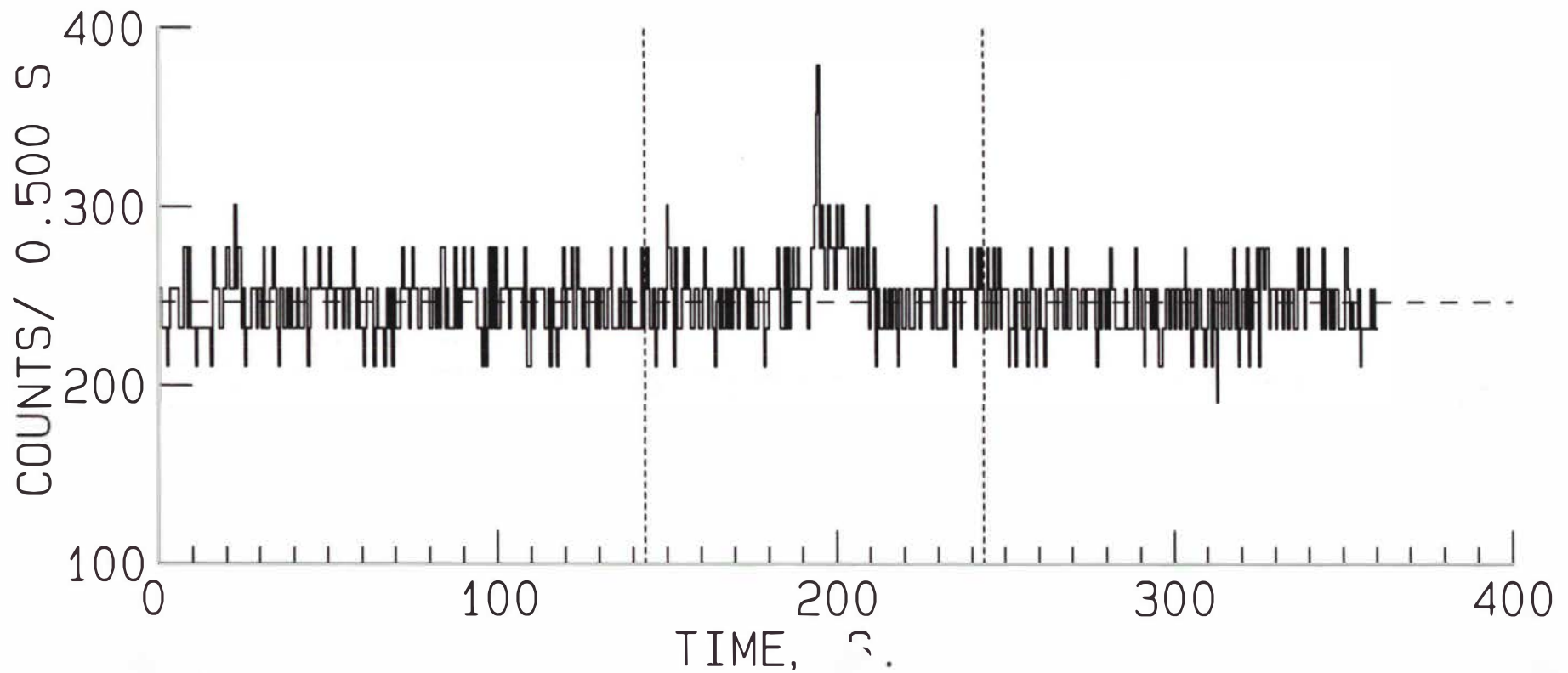
ULYSSES RT

6 / 3 / 98

25 / 4 / 96 85176.345 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



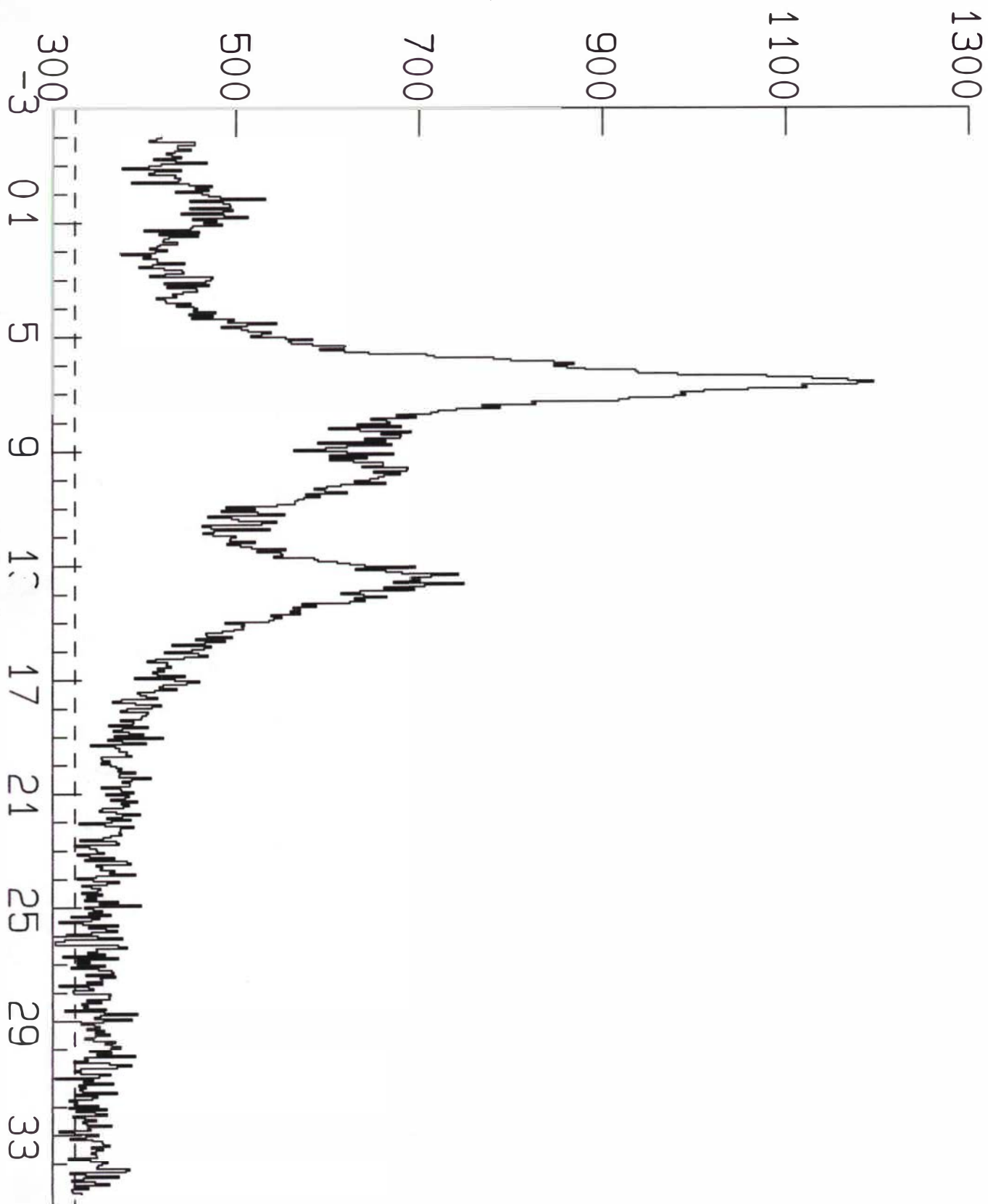
BATSE

25/04/96

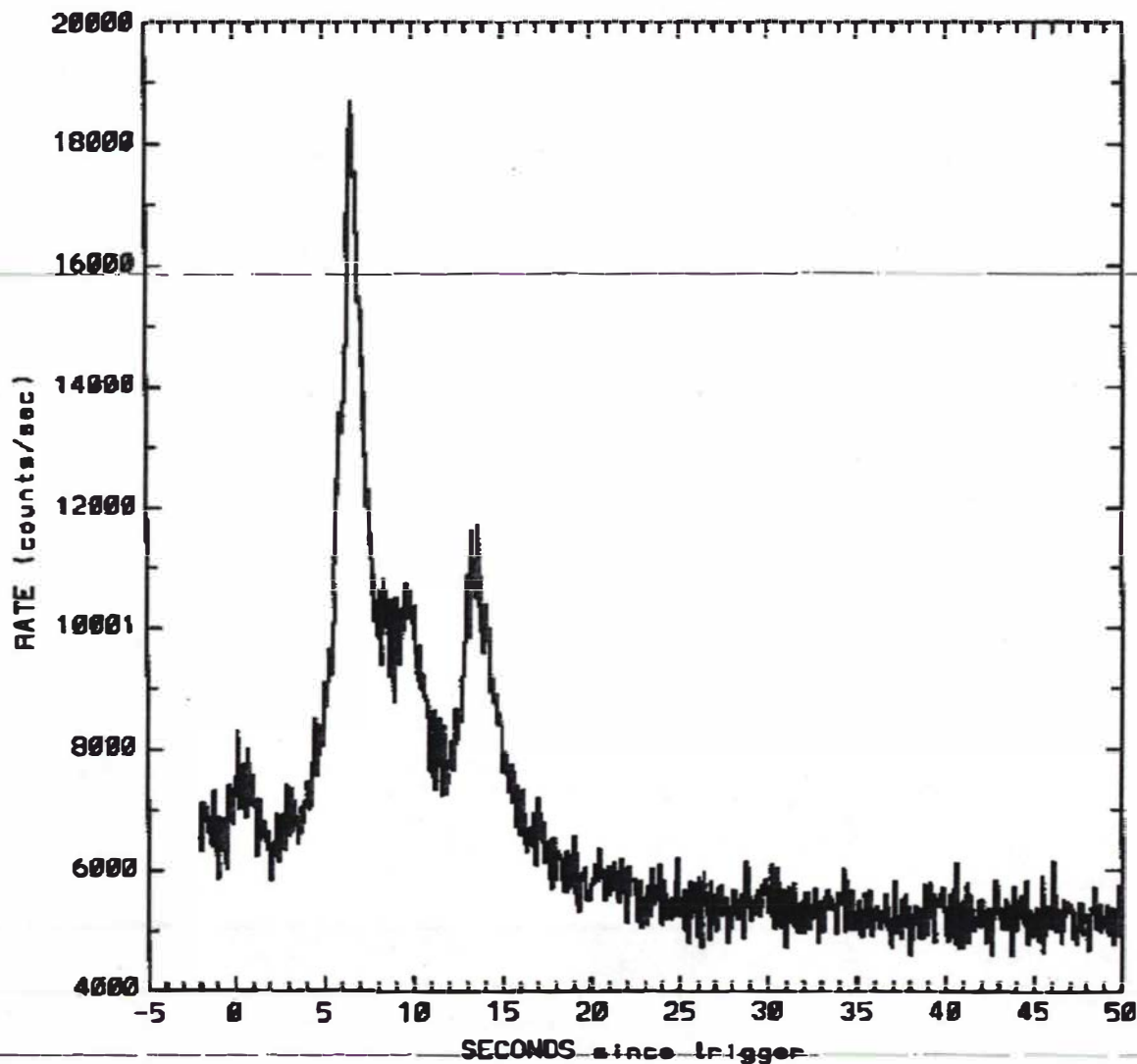
86390.986

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5447



16-DEC-1996 09:28:29

Created by BOPS 80
(Burst Display)
Version 12.25

Trigger # : 5447

Trigger Time:
18198 / 86398.986Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)Detectors [7..0].
-----2-0Discriminators:
1 1 . 2)Quality Mask:
BDISP1

KONUS 12

25 / 11 / 96

ULYSSES RT

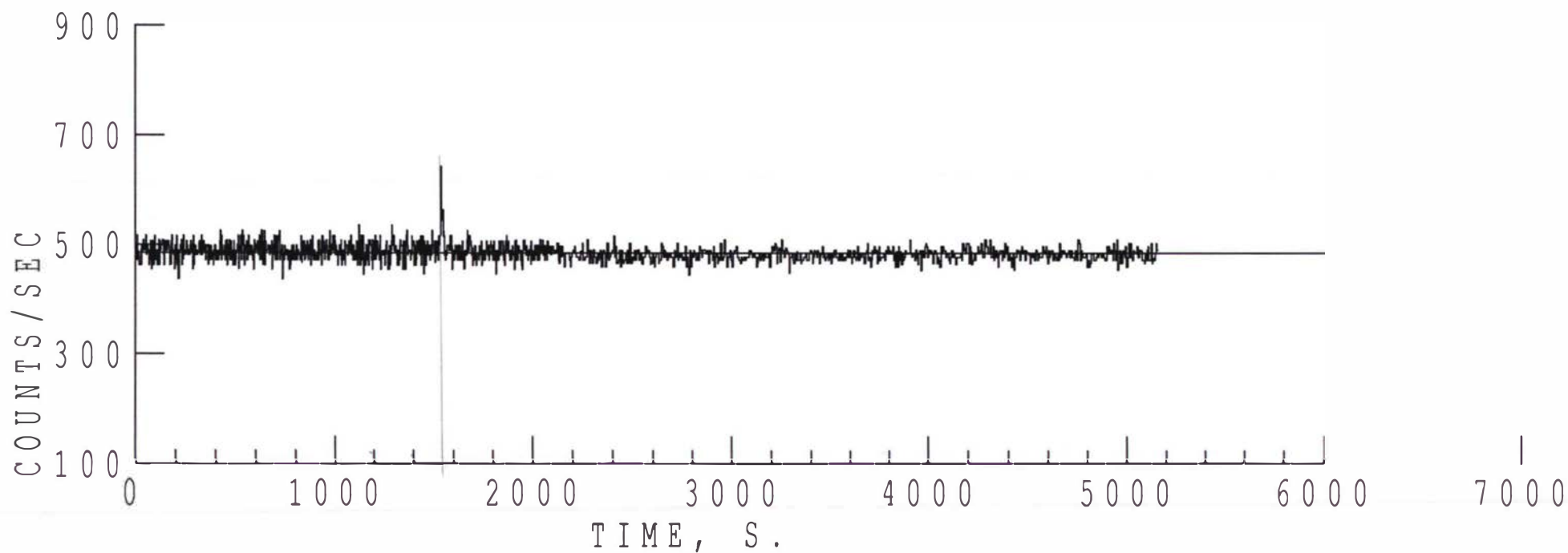
25 / 4 / 96 83832.336 s

INTERVALS REGROUPED BY 5

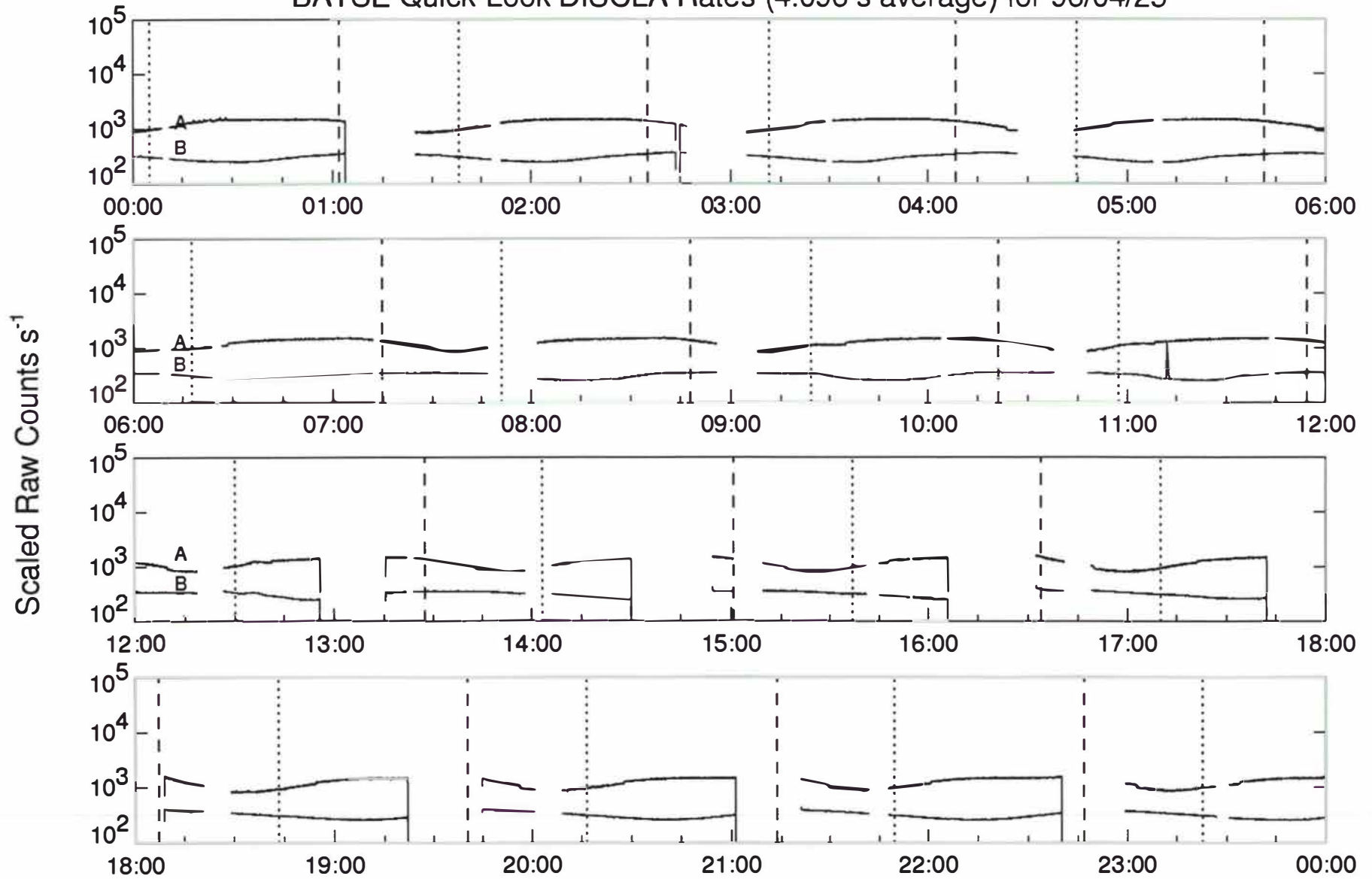
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/25

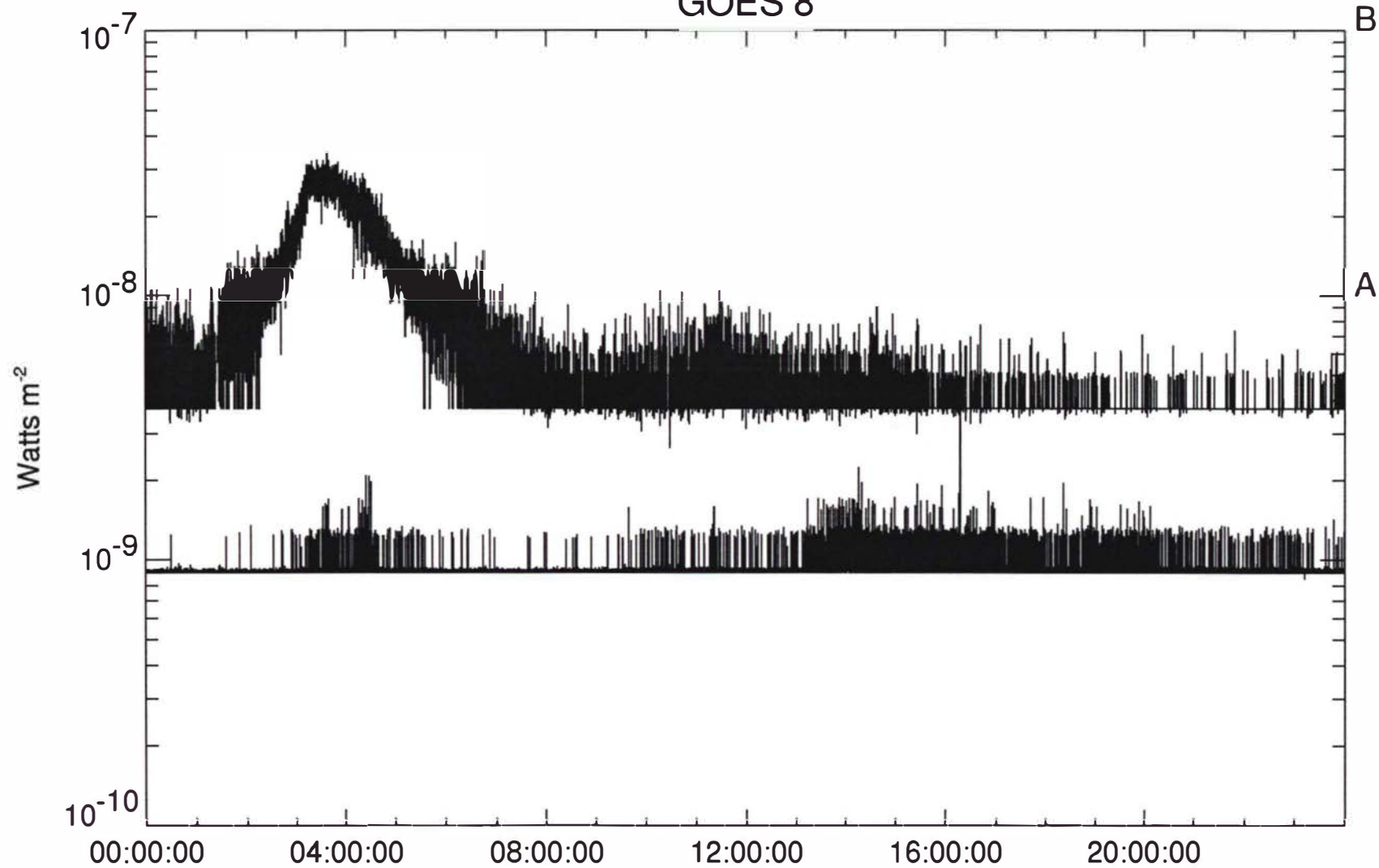


Current Time: 96/04/30, 1329 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



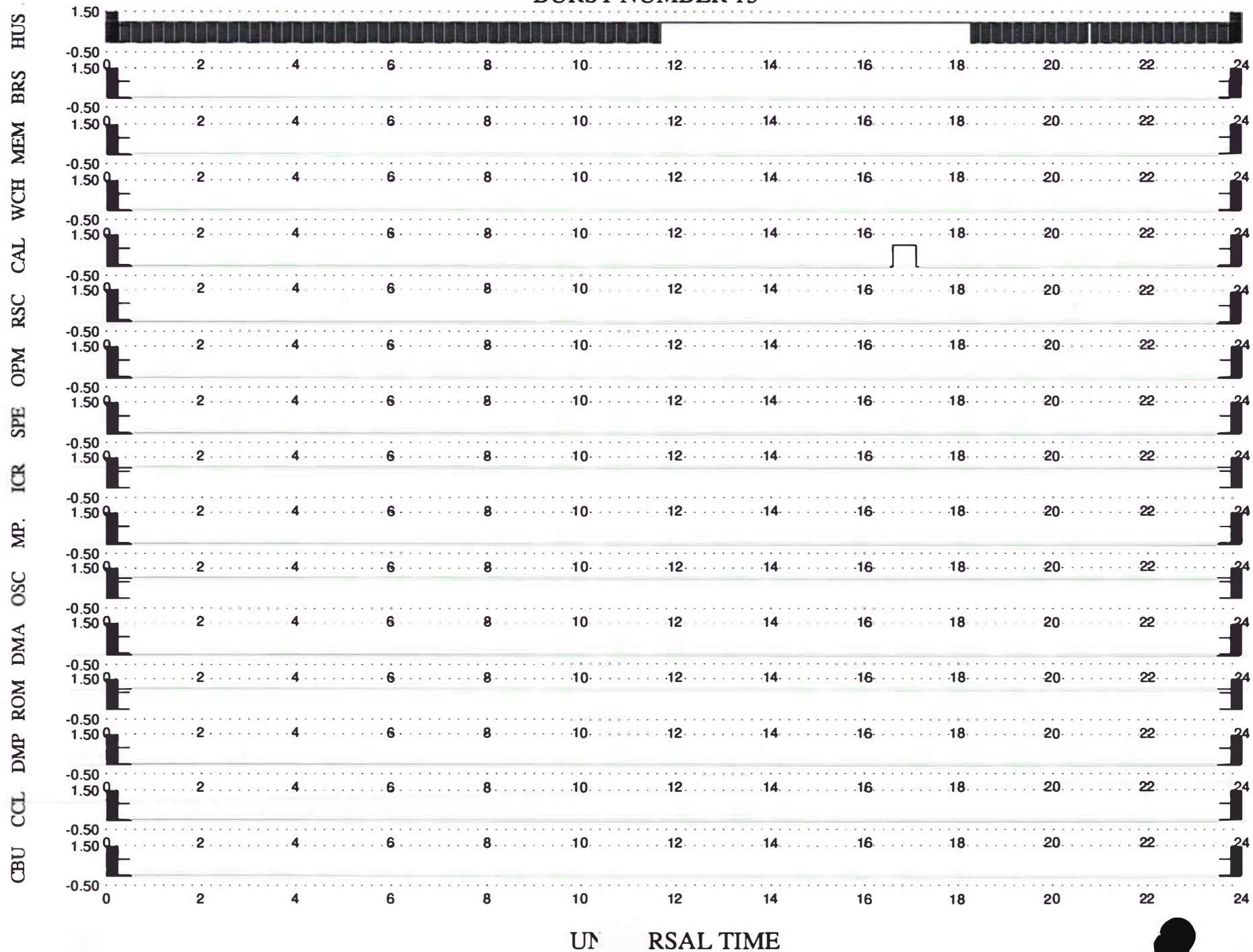
Data Start: 96/04/25, 0000:00

Plot created: 96/04/30, 1329

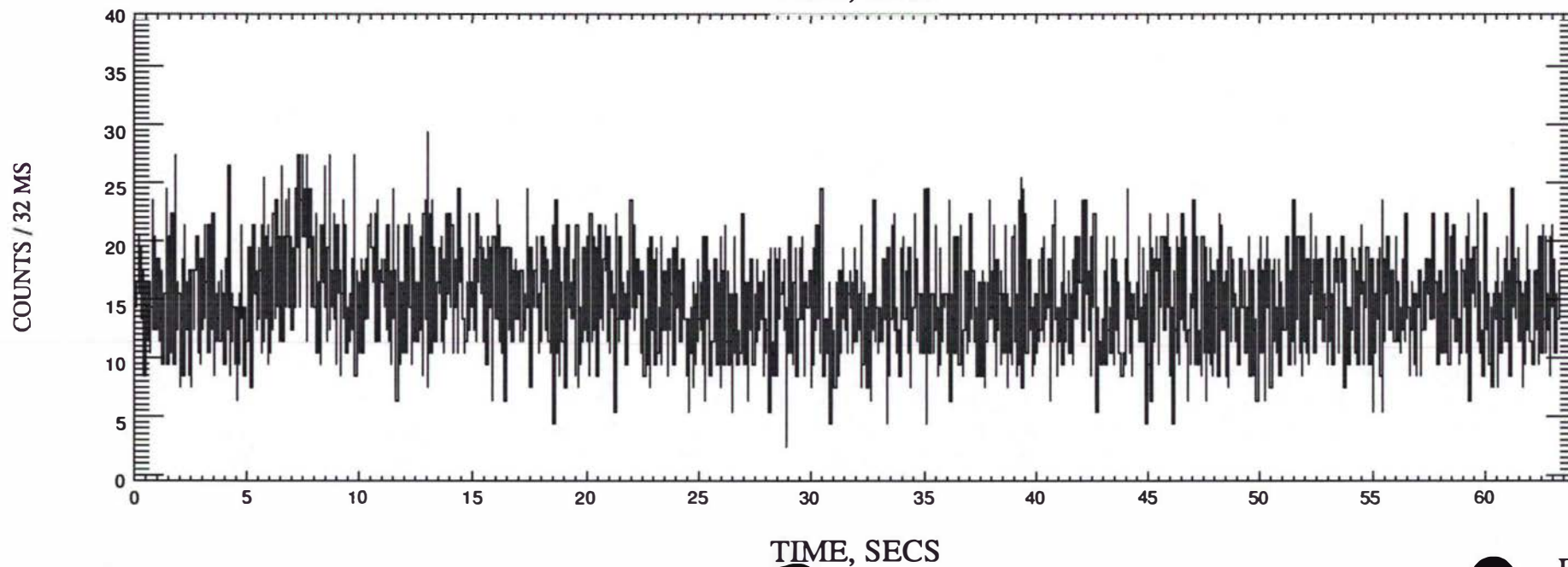
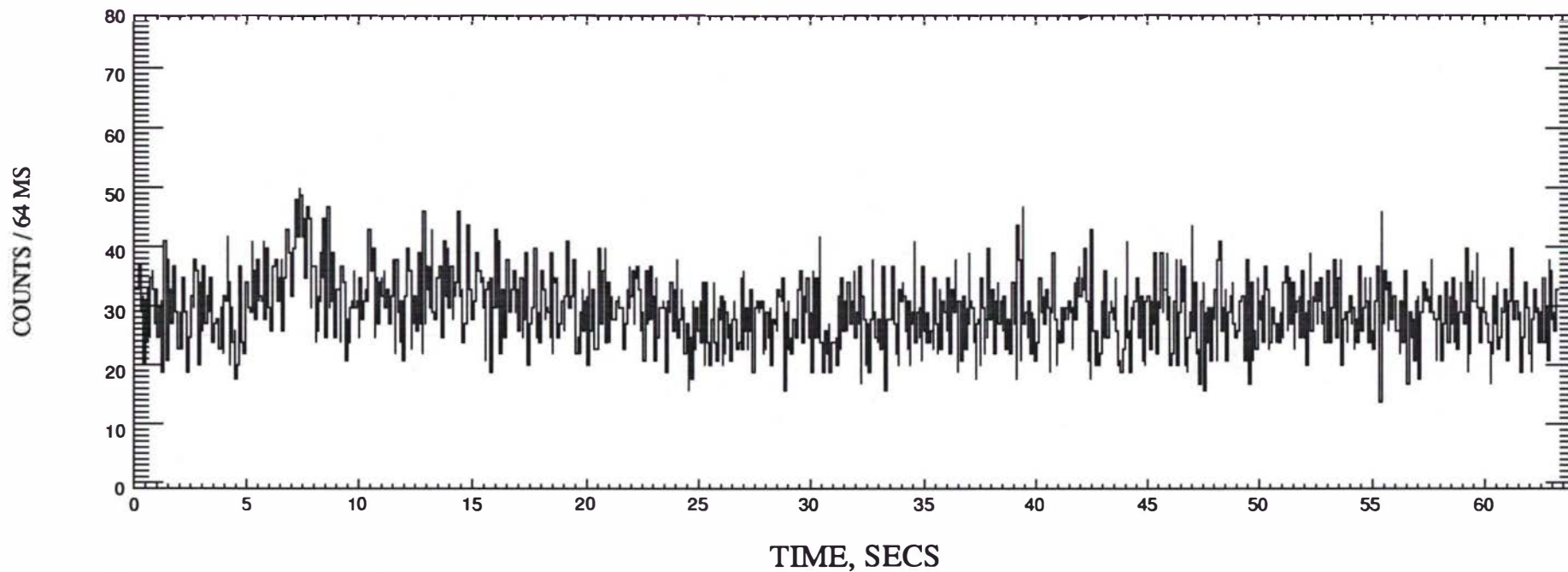
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

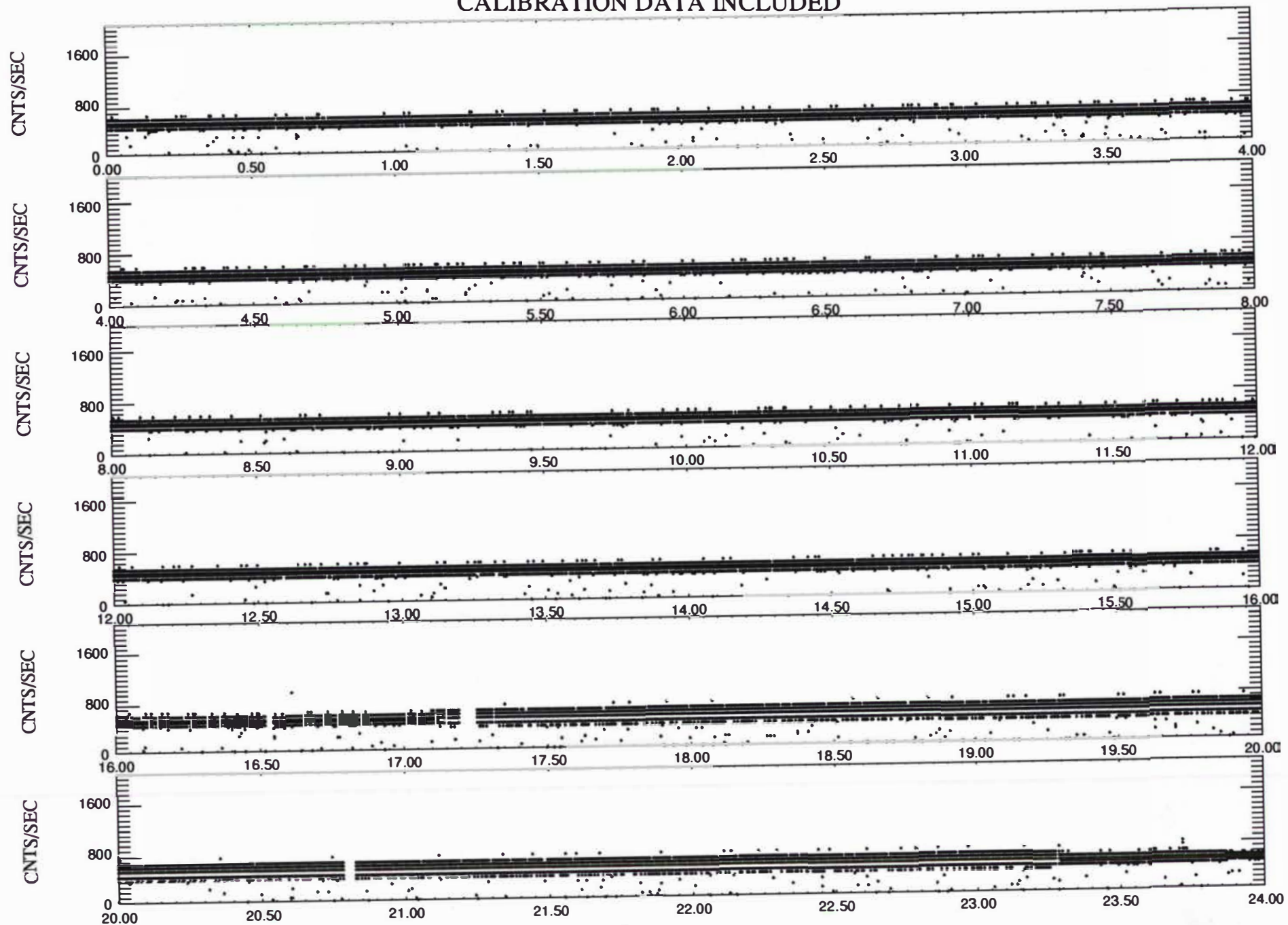
BURST NUMBER 13



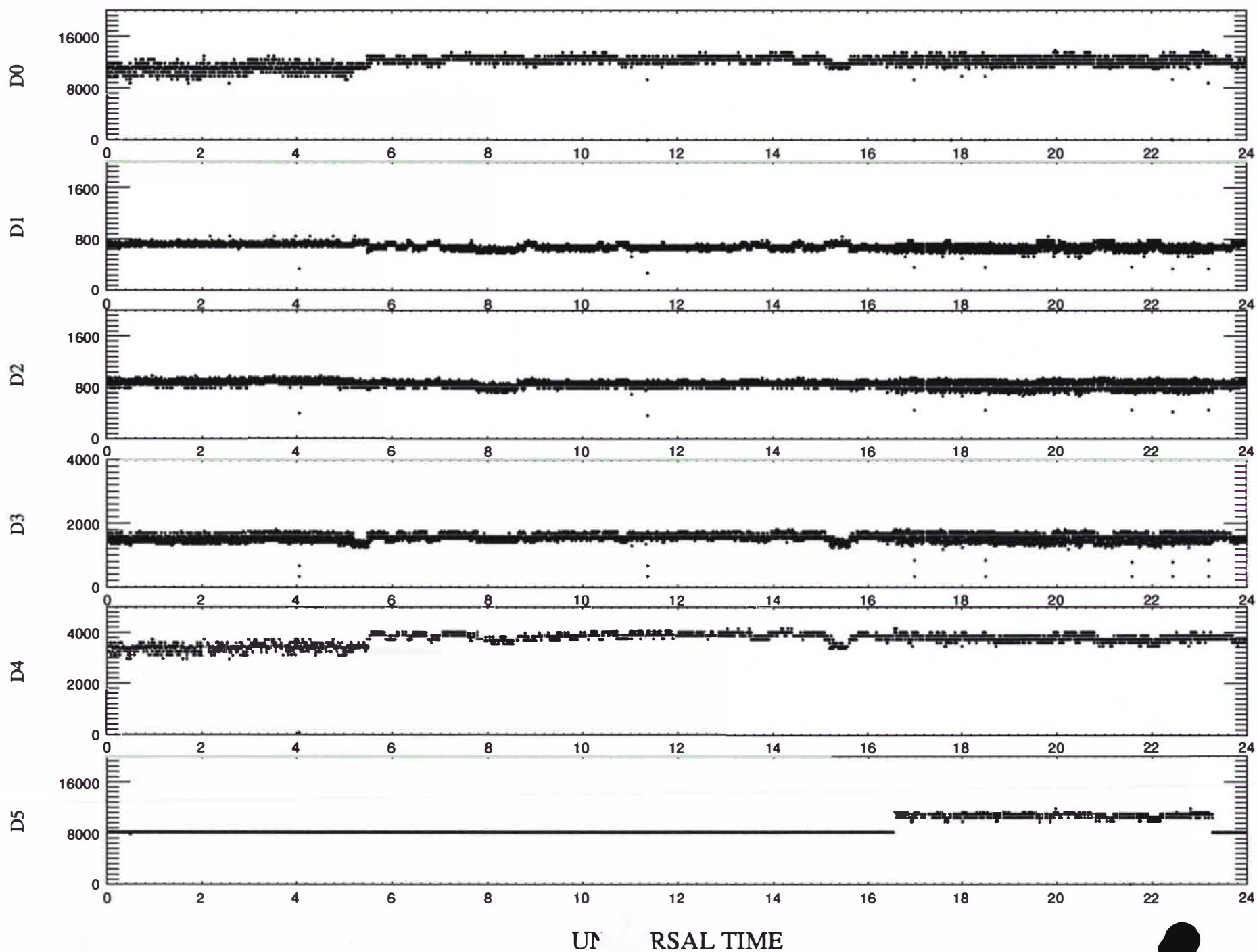
Burst Counter 13 at UT=23.714121606615 h=85370.838 s 23:42:50.838



CALIBRATION DATA INCLUDED



UT RSAL TIME



From SURASAK@ssl.msfc.nasa.gov Wed May 1 08:53 PDT 1996
Date: Wed, 1 May 1996 10:53:35 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5448

BATSEARCH PROGRAM

BATSE BURST # 5448
EVENT OF 1996 APR 26 DAY OF YEAR=117
EVENT CROSSING TIME AT BATSE : 23878. S. OR 06:37:58.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 248.000 -46.000
BATSE PEAK COUNTING RATE: 3100 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 4/ 96 IS:
RA= 148.633 DEC= 64.104 DIST= 3.612 AU
BATSE-ULYSSES DISTANCE = 540349420. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 45.85 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1255.35 SECS.
CROSSING TIME AT ULYSSES IS 25133. S. OR 06:58:53 +/- 293.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 4/ 96 IS:
RA= 23.288 DEC= 9.094 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356768128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 715.40 SECS.
CROSSING TIME AT MARS IS 24593. S. OR 06:49:53 +/- 175.98 SECONDS

BATSE BURST TRIGGER

NO.: 05448

TIME: TJD=0199 SECONDS=23878

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.4 AZIMUTH=228.4 ERROR=8.56 DEGREES

COMMENTS:

GRB. WEAK SINGLE PULSE. DUR~1 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5448	960426	10199	23878	3100	248	-46	1

B A T S E #

5 4 4 8

1 / 5 / 9 6

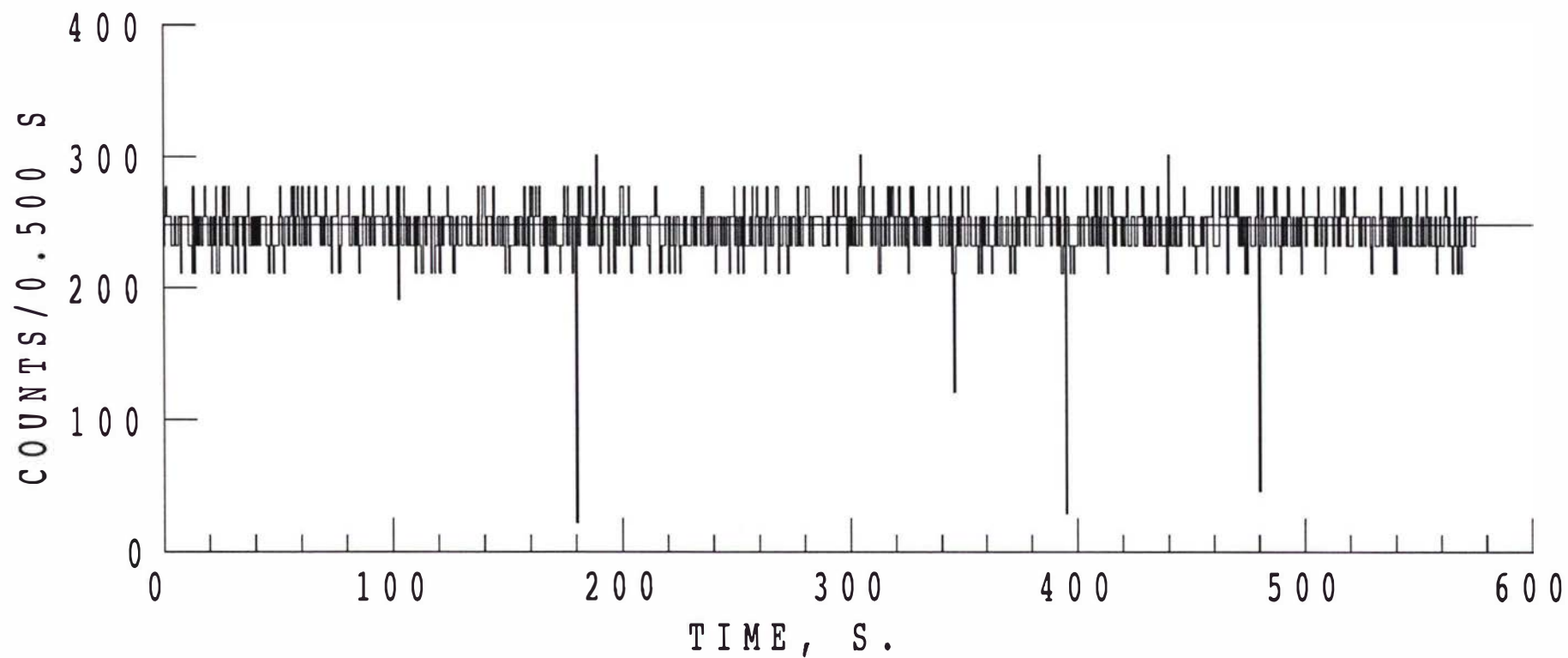
U L Y S S E S R T

2 6 / 4 / 9 6 2 4 8 4 0 . 1 9 9 s

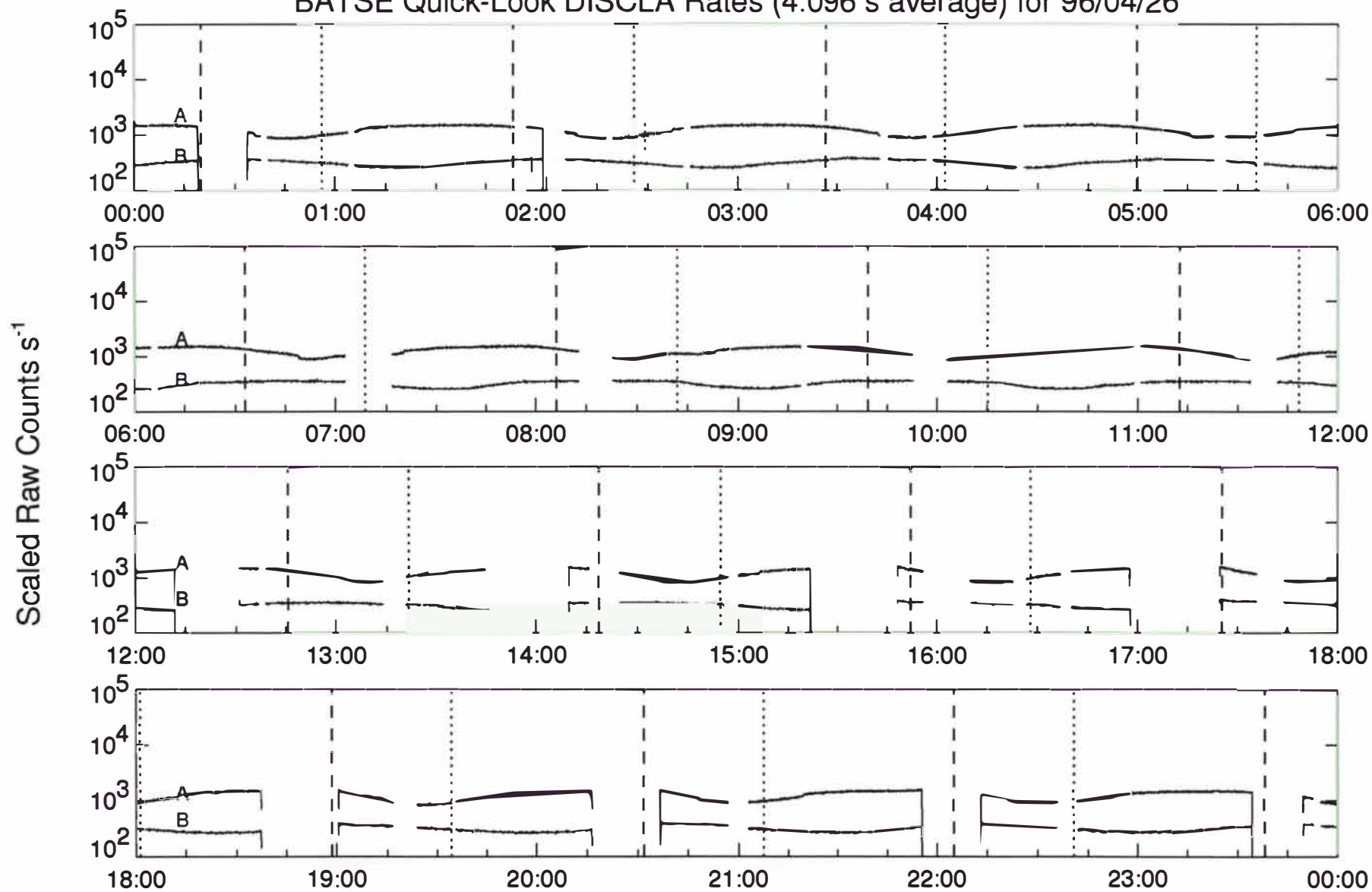
0 - 0 k e V

N = 10 M = 2

> 4.0 SIGMA FLUCTUATIONS



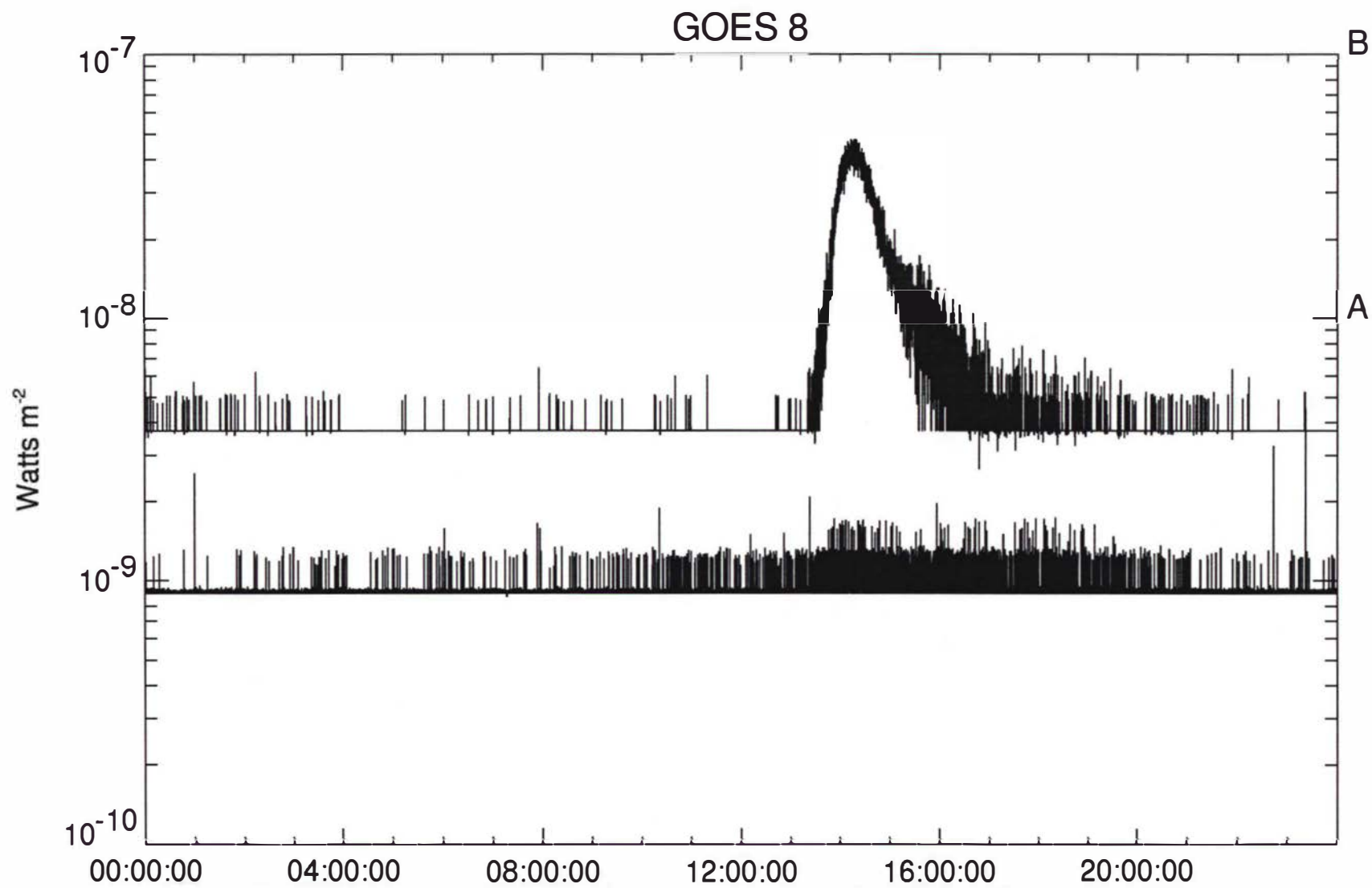
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/26



Current Time: 96/04/30, 1428 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

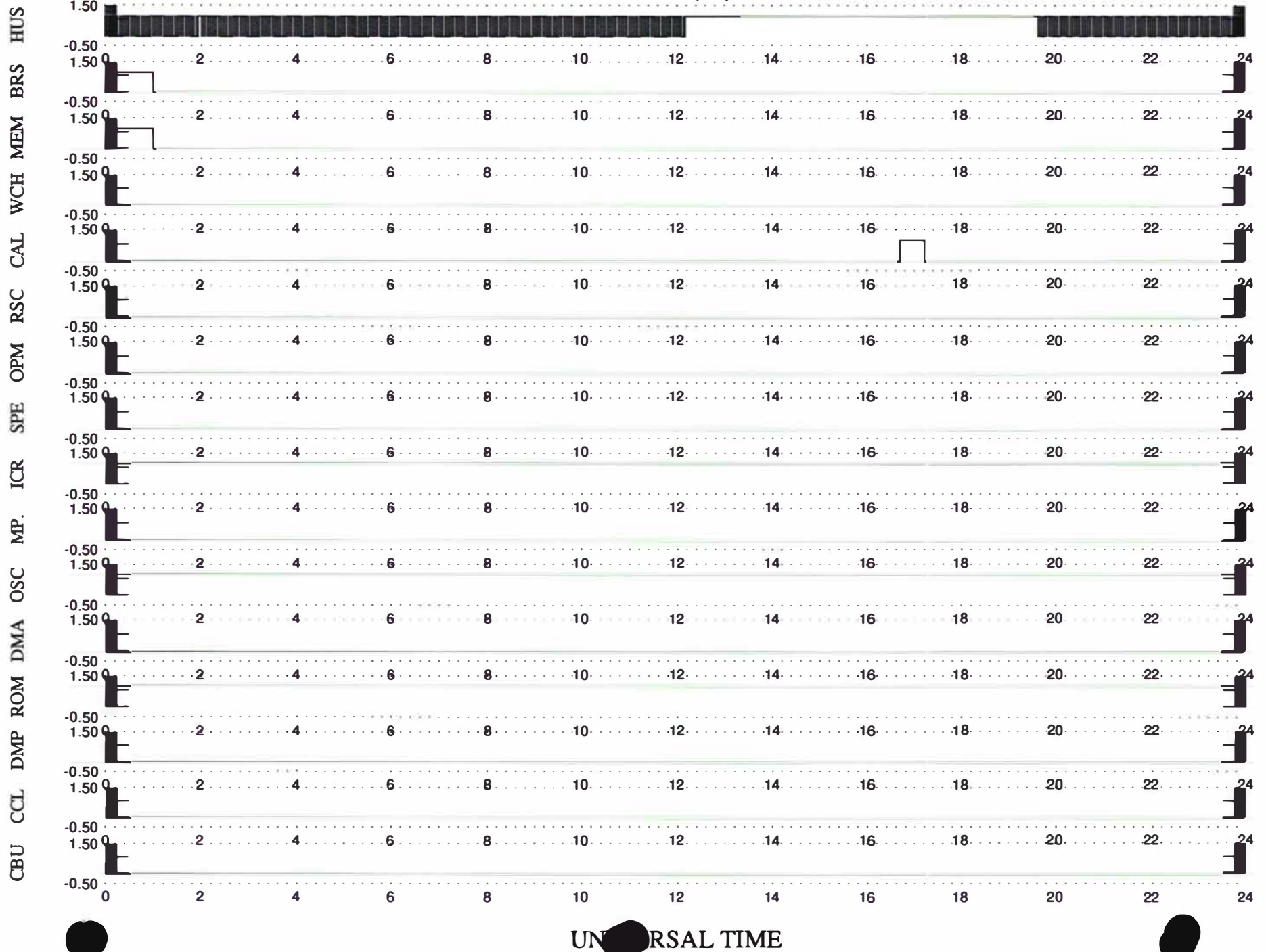
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

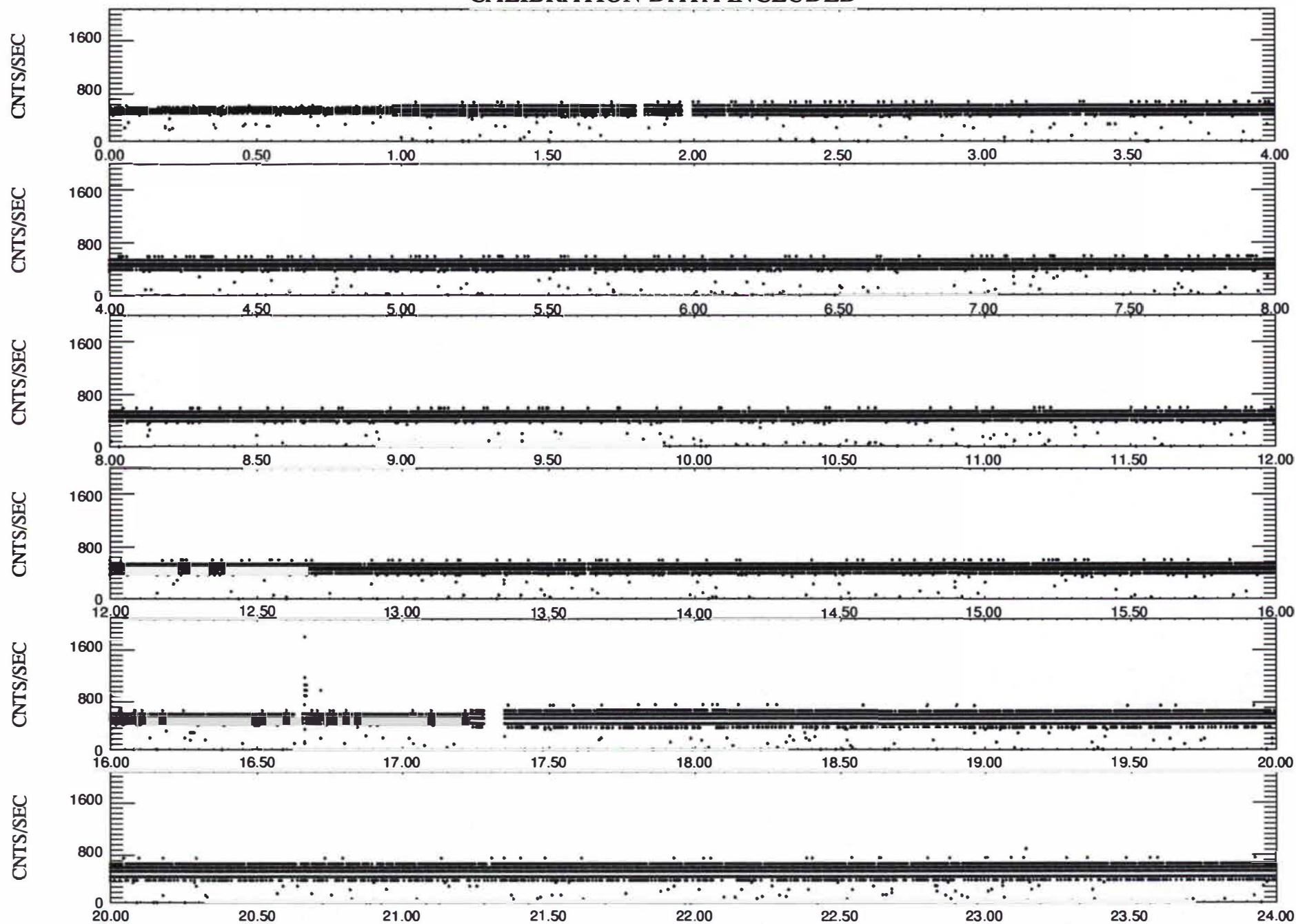


Data Start: 96/04/26, 0000:00 Plot created: 96/04/30, 1427
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 2 (0.5 - 4.0 Angstroms) Background not subtracted

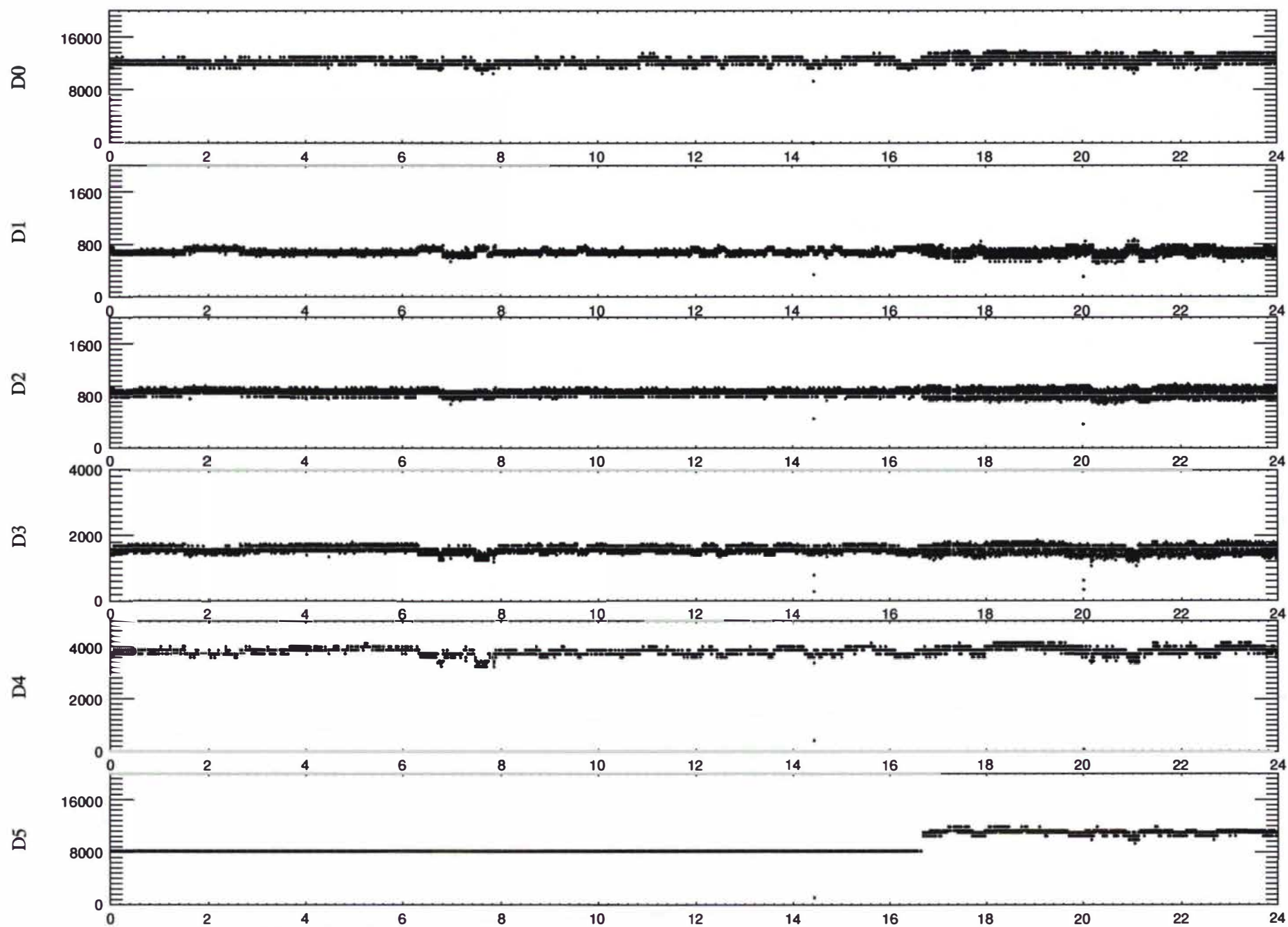
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From SURASAK@ssl.msfc.nasa.gov Wed May 1 08:39 PDT 1996
Date: Wed, 1 May 1996 10:32:21 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@compTEL.sr.unh.edu, grobad@vmprofs.estec.esa.nl,
"LHEAVX::CLINE"@SSLLES.MSFC.NASA.GOV,
"LHEAVX::BARTHELMY"@SSLLES.MSFC.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.: 05449

TIME: TJD=0199 SECONDS=42355

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

KONUS

ULYSSES RT

28 / 01 / 00

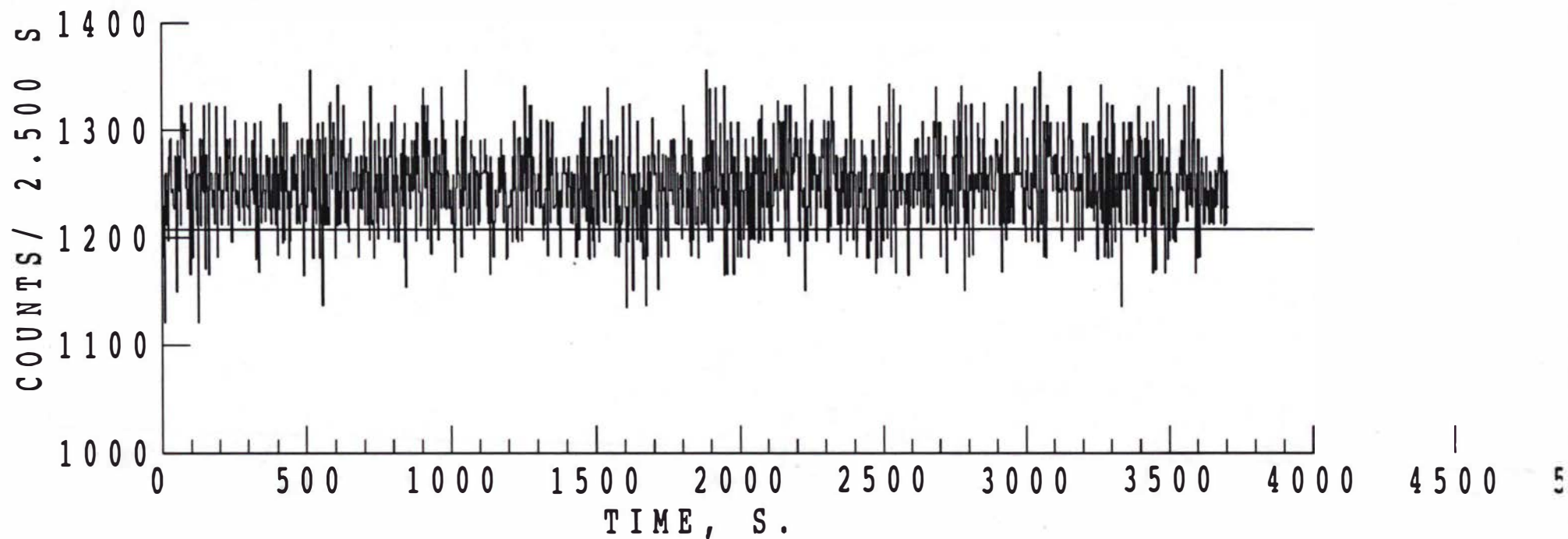
27/04/96 67104.195 s

0.250 S INTERVALS REGROUPED BY 10

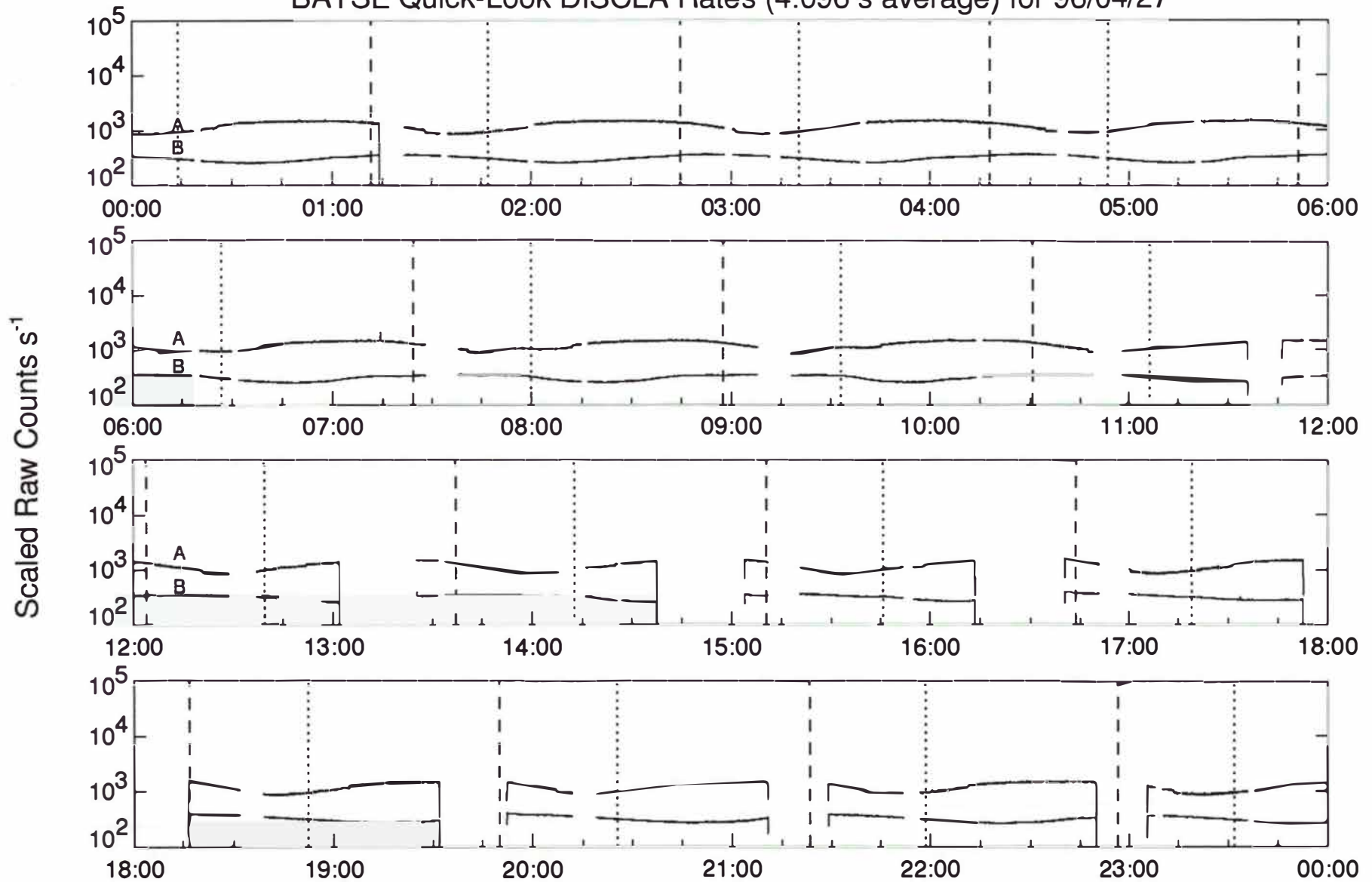
0 - 0 keV

B= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

B= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



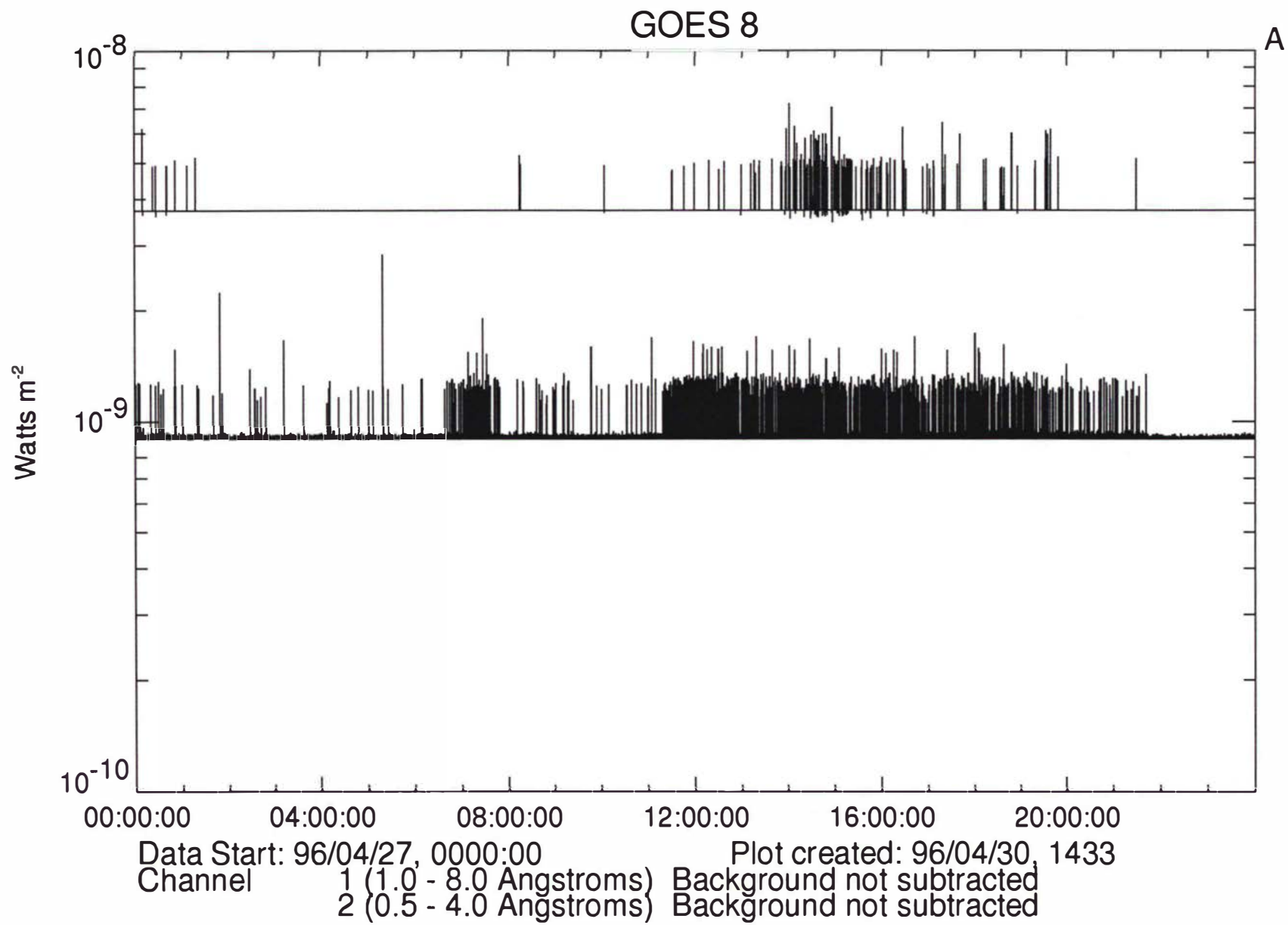
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/27



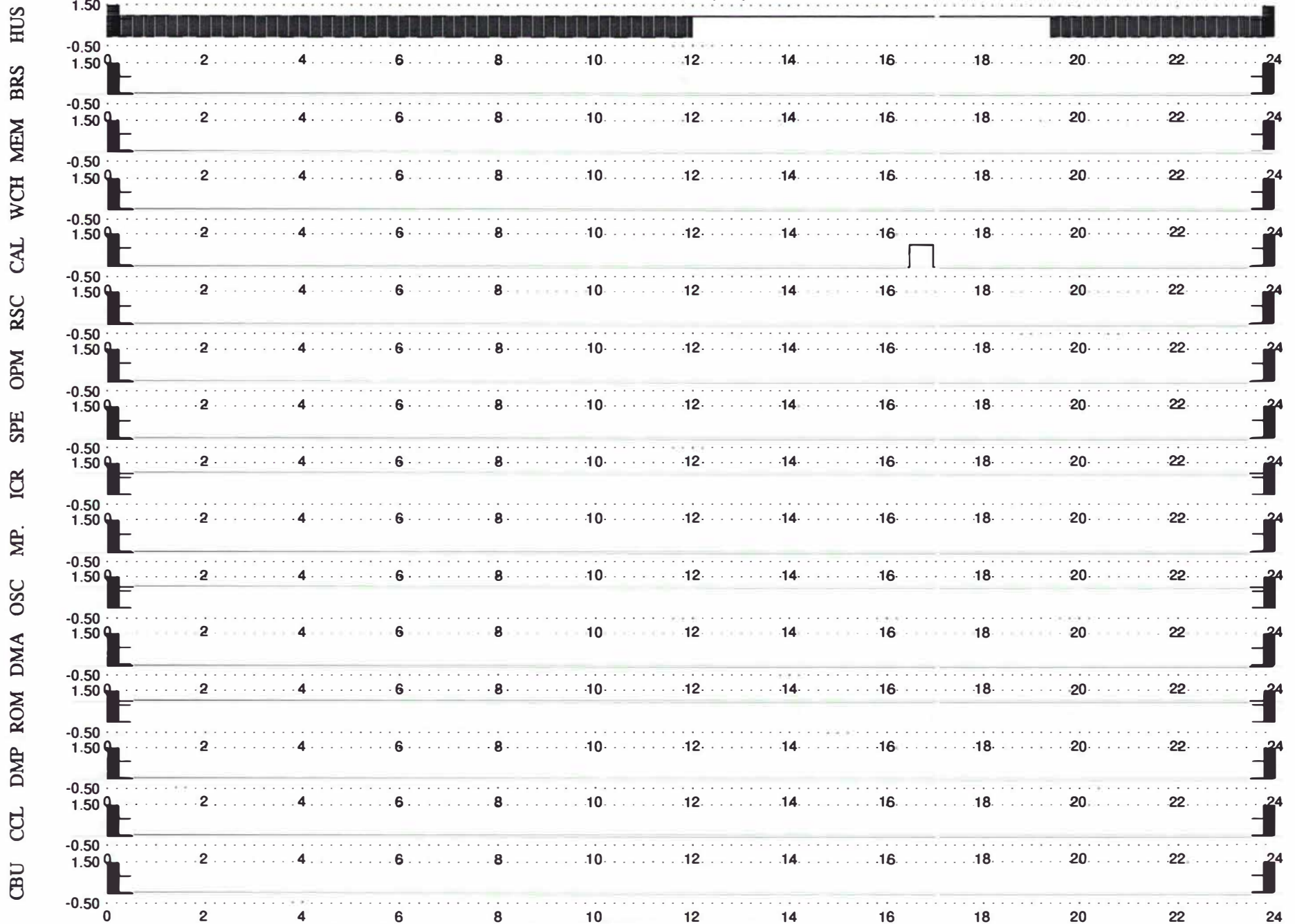
Current Time: 96/04/30, 1433 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

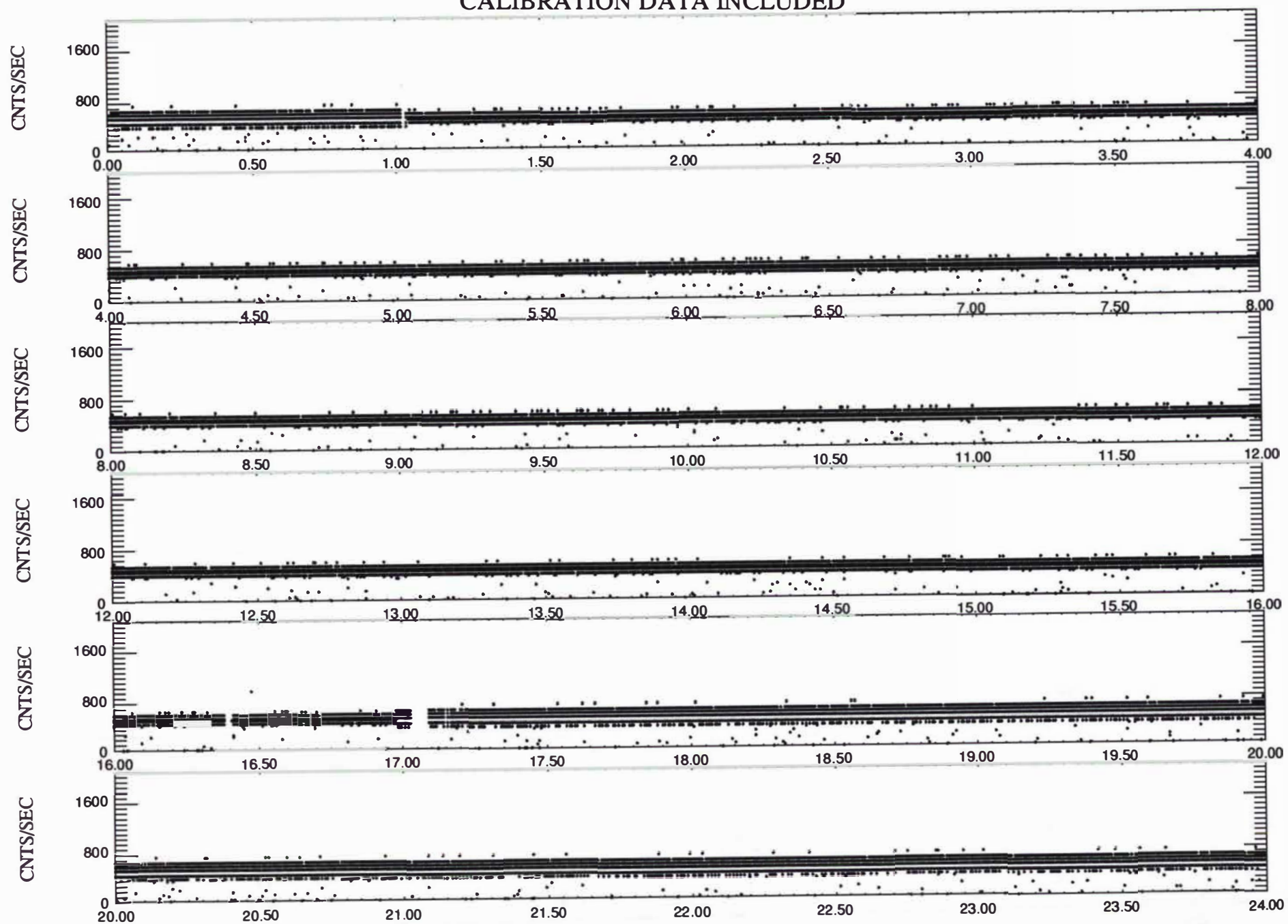


NO BURST (13)

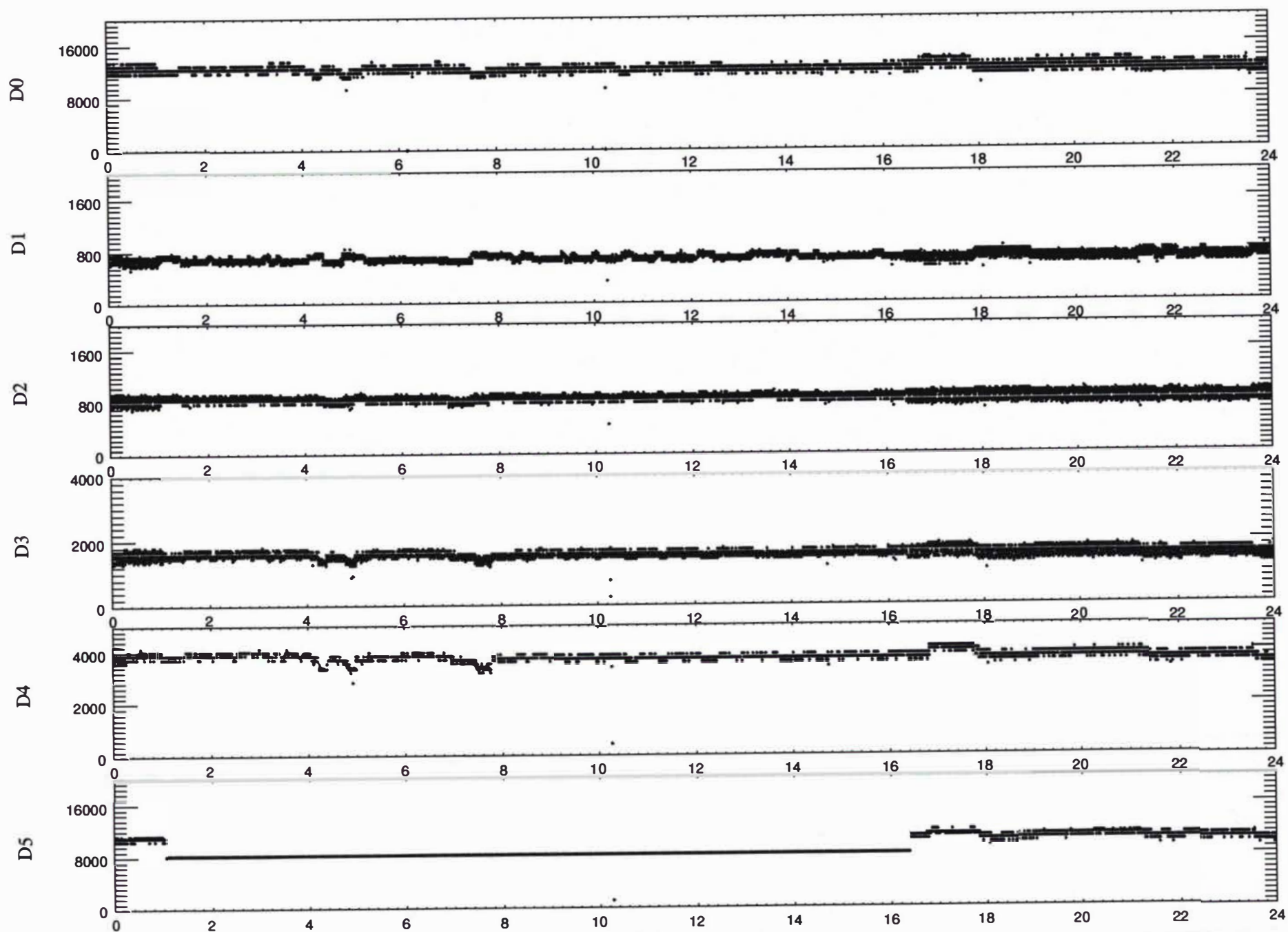


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From WOODSP@ssl.msfc.nasa.gov Tue Apr 30 11:35 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 30 Apr 1996 13:35:00 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5450

BATSEARCH PROGRAM

BATSE BURST # 5450
EVENT OF 1996 APR 28 DAY OF YEAR=119
EVENT CROSSING TIME AT BATSE : 47552. S. OR 13:12:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 306.000 34.000
BATSE PEAK COUNTING RATE: 15000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 4/ 96 IS:
RA= 148.315 DEC= 63.436 DIST= 3.647 AU
BATSE-ULYSSES DISTANCE = 545650169. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -286.07 SECS.
CROSSING TIME AT ULYSSES IS 47266. S. OR 13:07:45 +/- 357.72 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 4/ 96 IS:
RA= 24.710 DEC= 9.661 DIST= 2.385 AU
MARS-BATSE DISTANCE = 356723200. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -302.05 SECS.
CROSSING TIME AT MARS IS 47250. S. OR 13:07:29 +/- 195.23 SECONDS

BATSE BURST TRIGGER

NO.: 5450

TIME: TJD=0201 SECONDS=47552

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=43.1 AZIMUTH=330.5 ERROR=1.2 DEGREES

COMMENTS:

GRB LASTING 190SEC. TWO MAIN EPISODES. ONE STARTING AT T-2SEC LASTING 20SEC AND THE SECOND STARTING AT T+155SEC LASTING 30SEC. THE FIRST EVENT SHOWS STRONG MODULATIONS AND A HARDER SPECTRUM THAN THE SECOND EVENT. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5450	960428	10201	47552	15000	306	+34	190

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
6	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	scribble	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	scribble	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	scribble	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

BATSE

Helio corr removed

Date: *Oct 22 '97*

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*
- ☒ Does T_0 in data file agree with T_0 in plot?
- ☒ 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)?
- ☐ 2(XX) 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

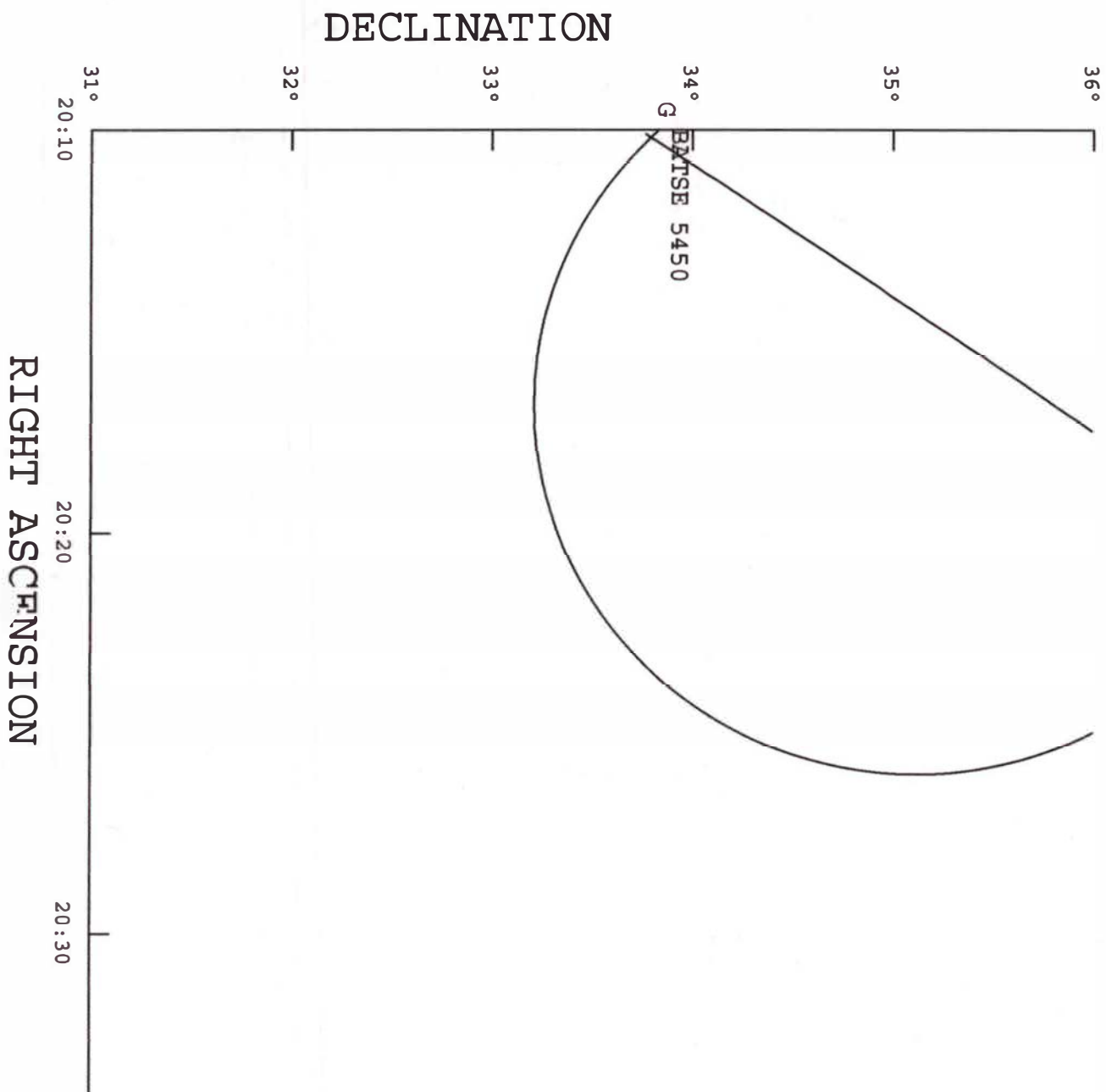
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF APR 28, 1996 13:05

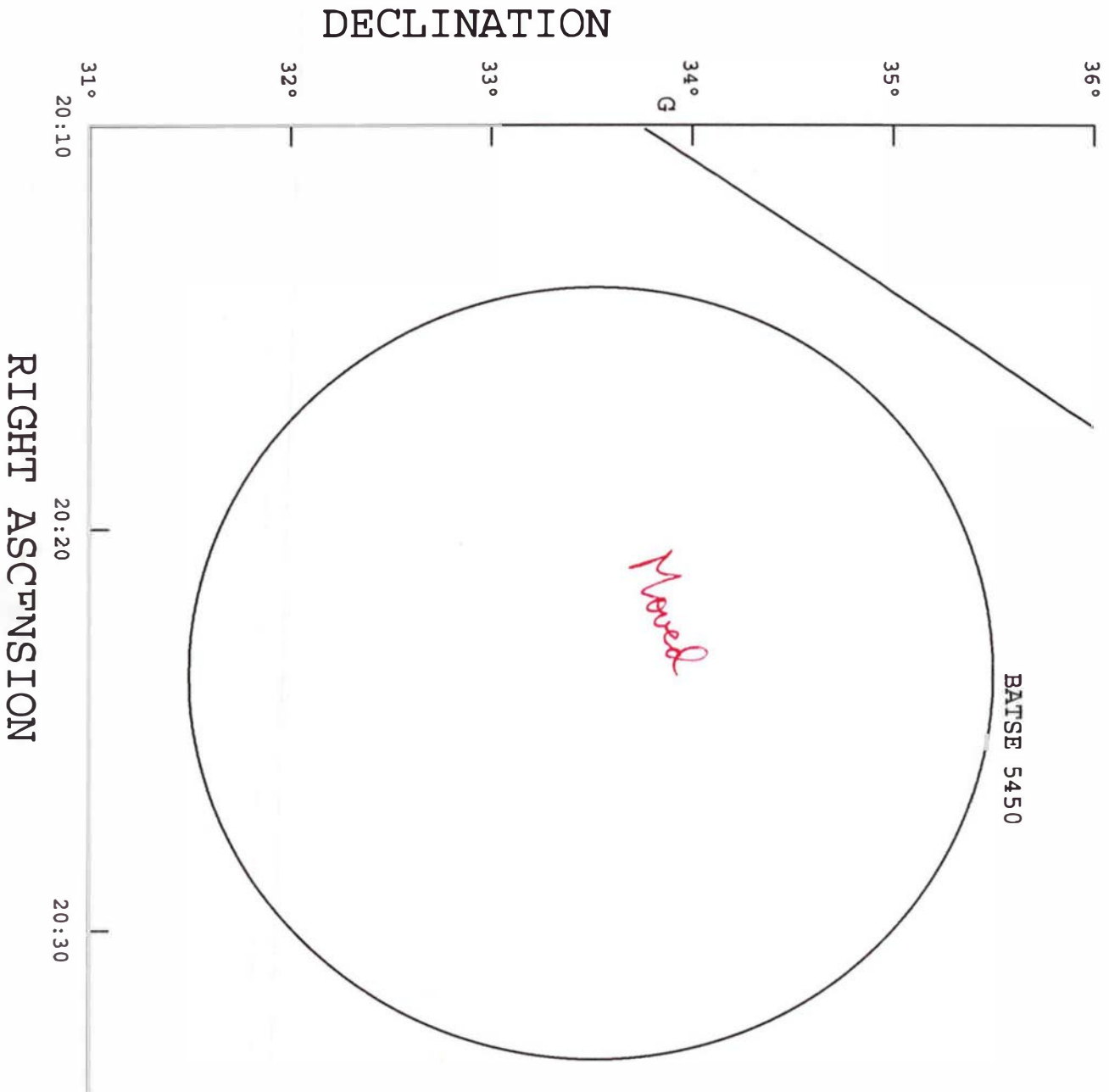
7/ 3/98



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 APR 28, 1996 13:05

29/10/97



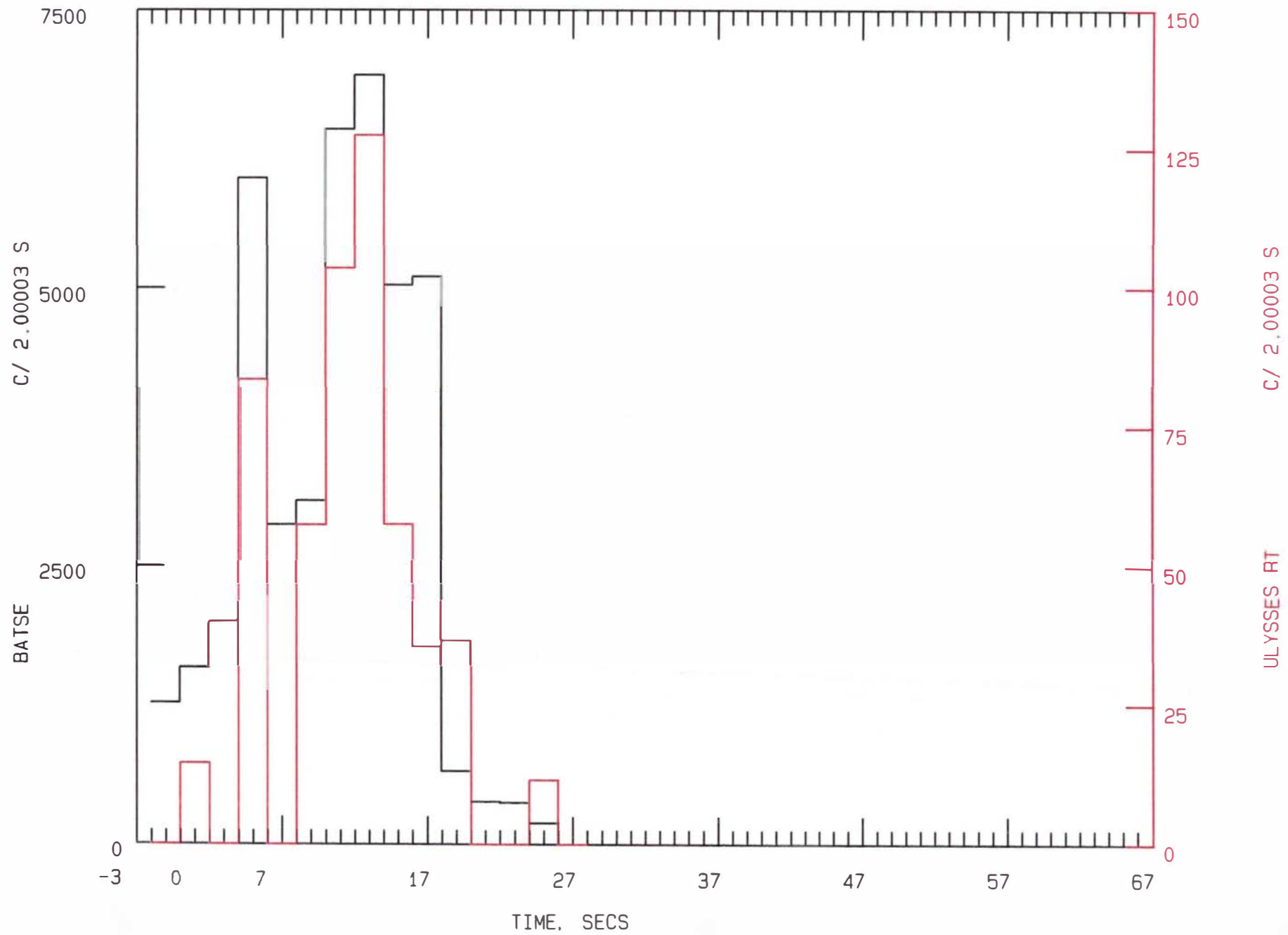
BATSE

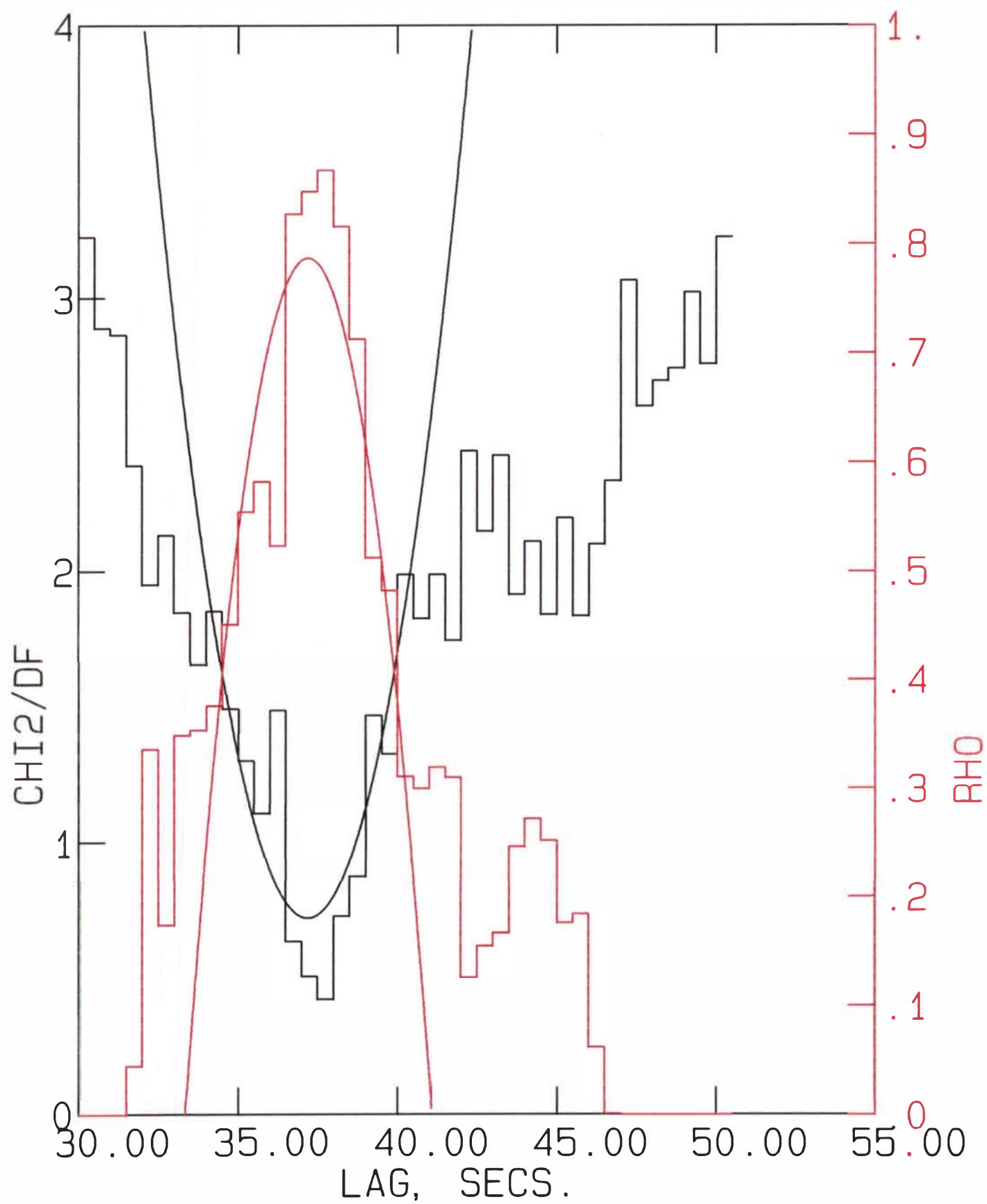
-ULYSSES RT CORRELATION

28/ 4/96

47552.202

29/10/97





ULYSSES RT

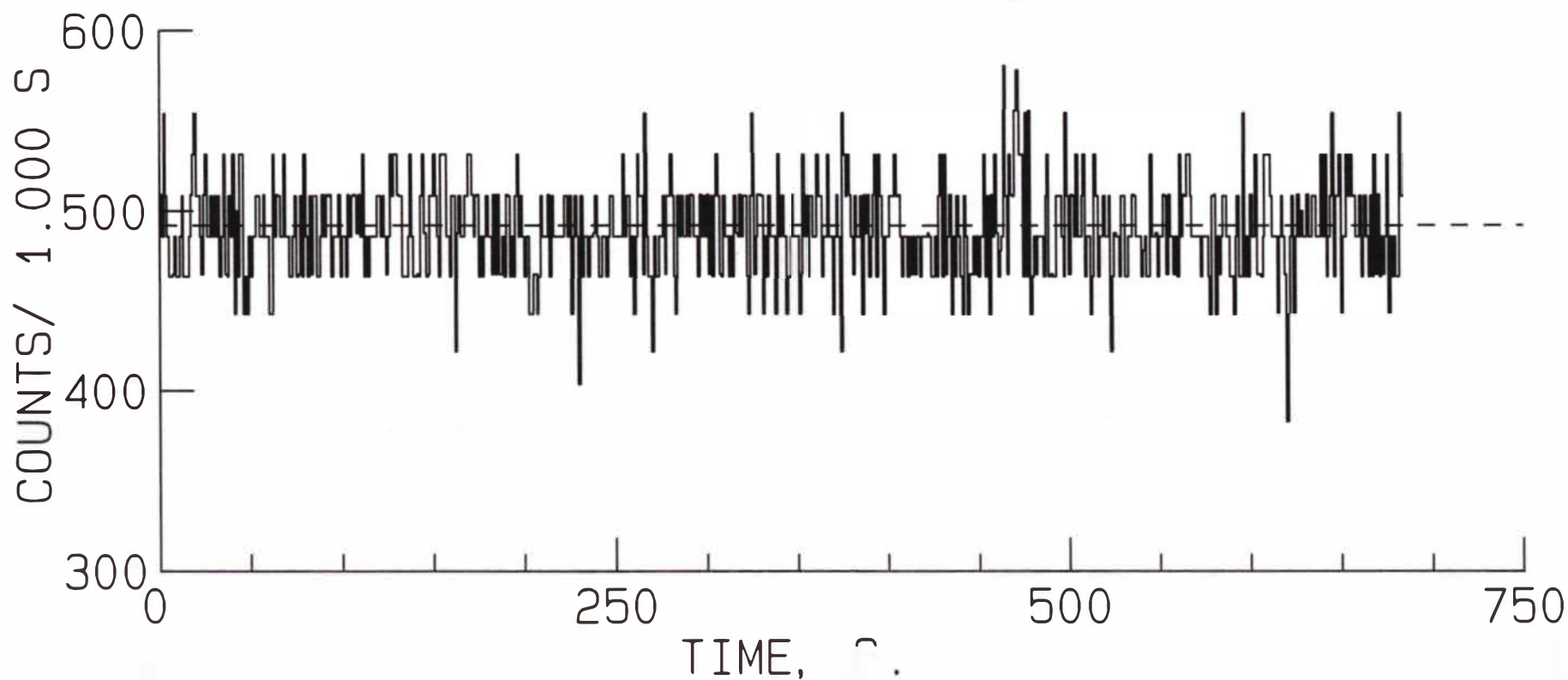
29/10/97

28/ 4/96 46692.335 s

0.500 S INTERVALS REGROUPED BY 2

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



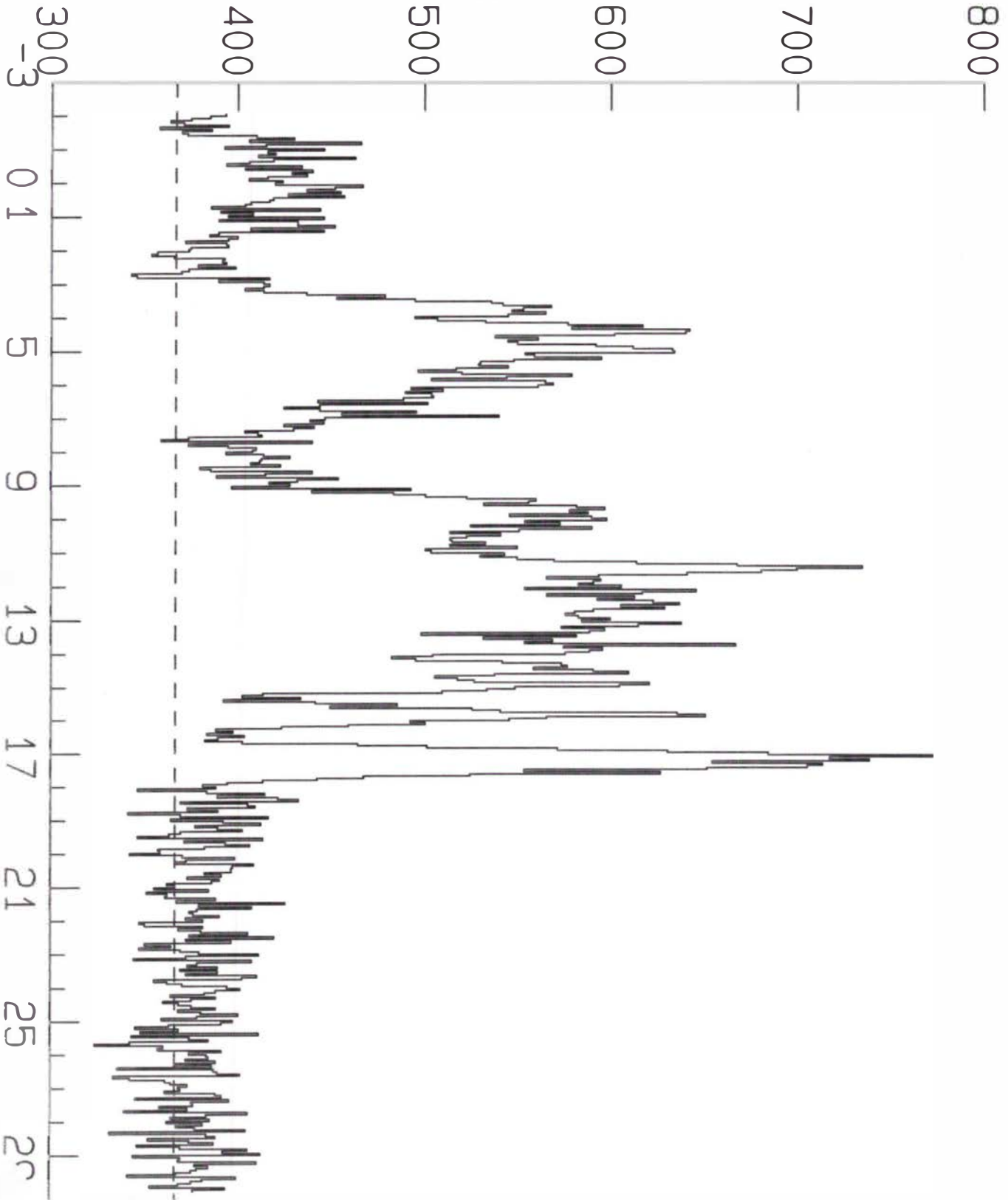
BATSE

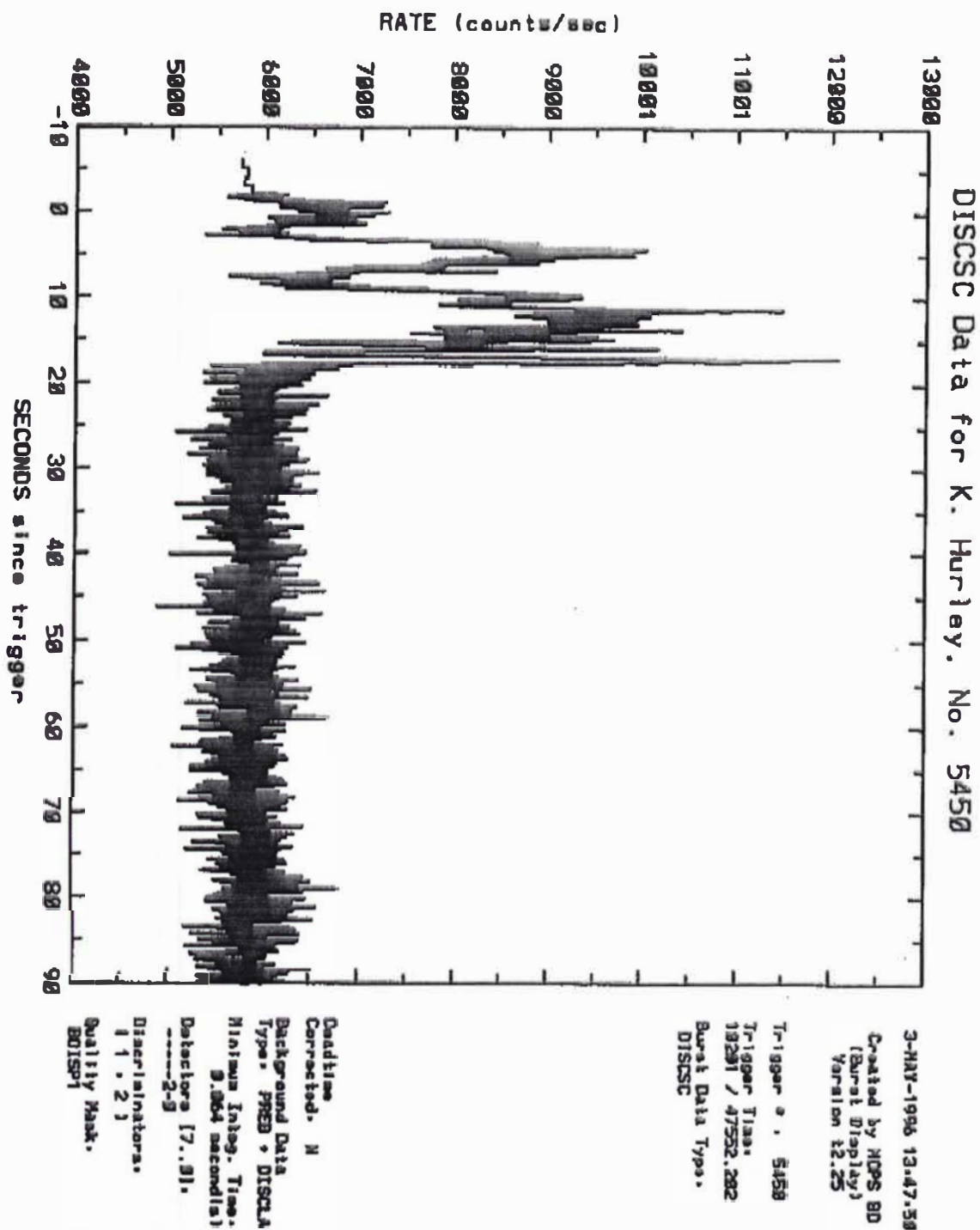
28/04/96

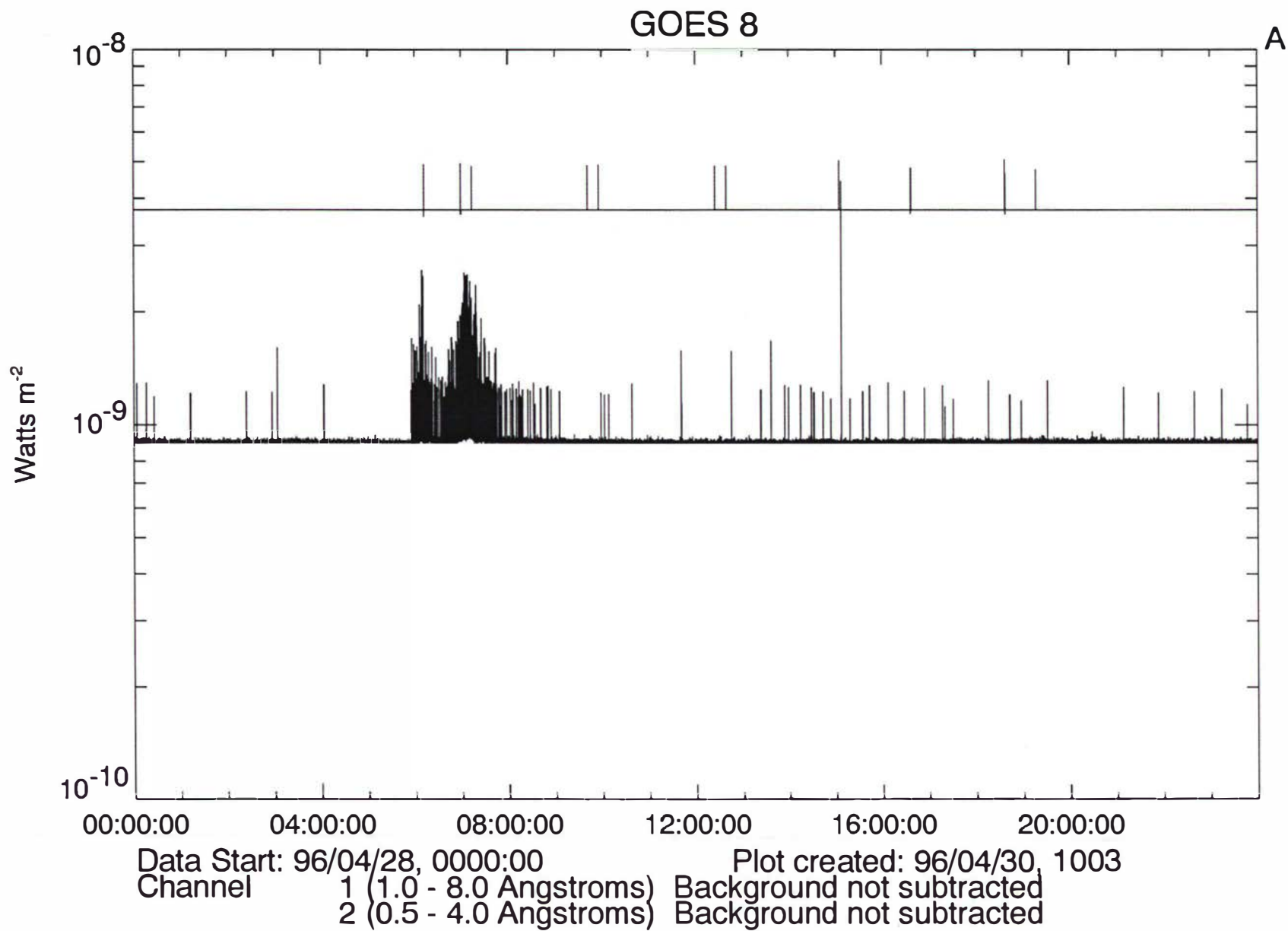
47552.202

25- 100 keV

COUNTS/0.064 S



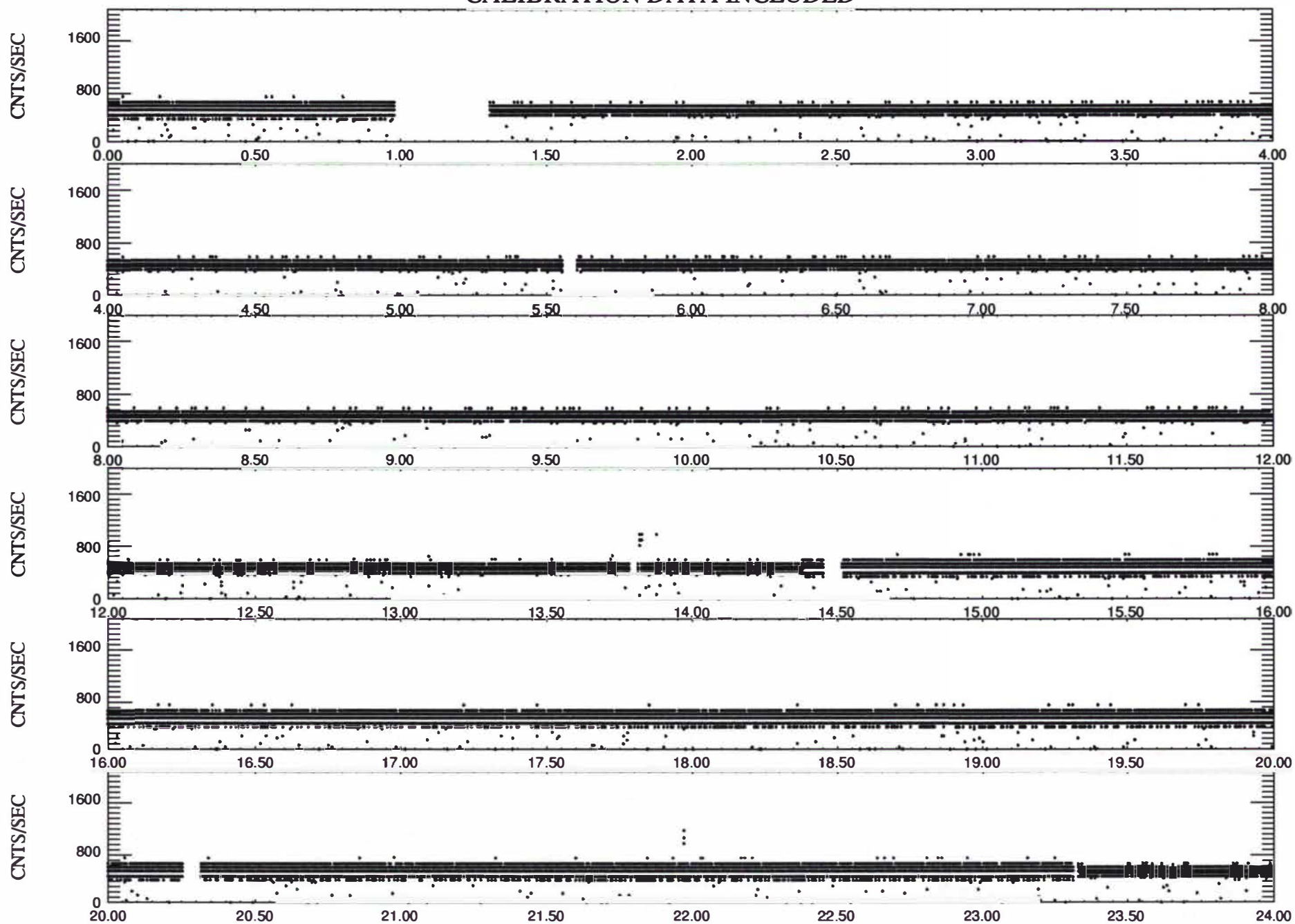




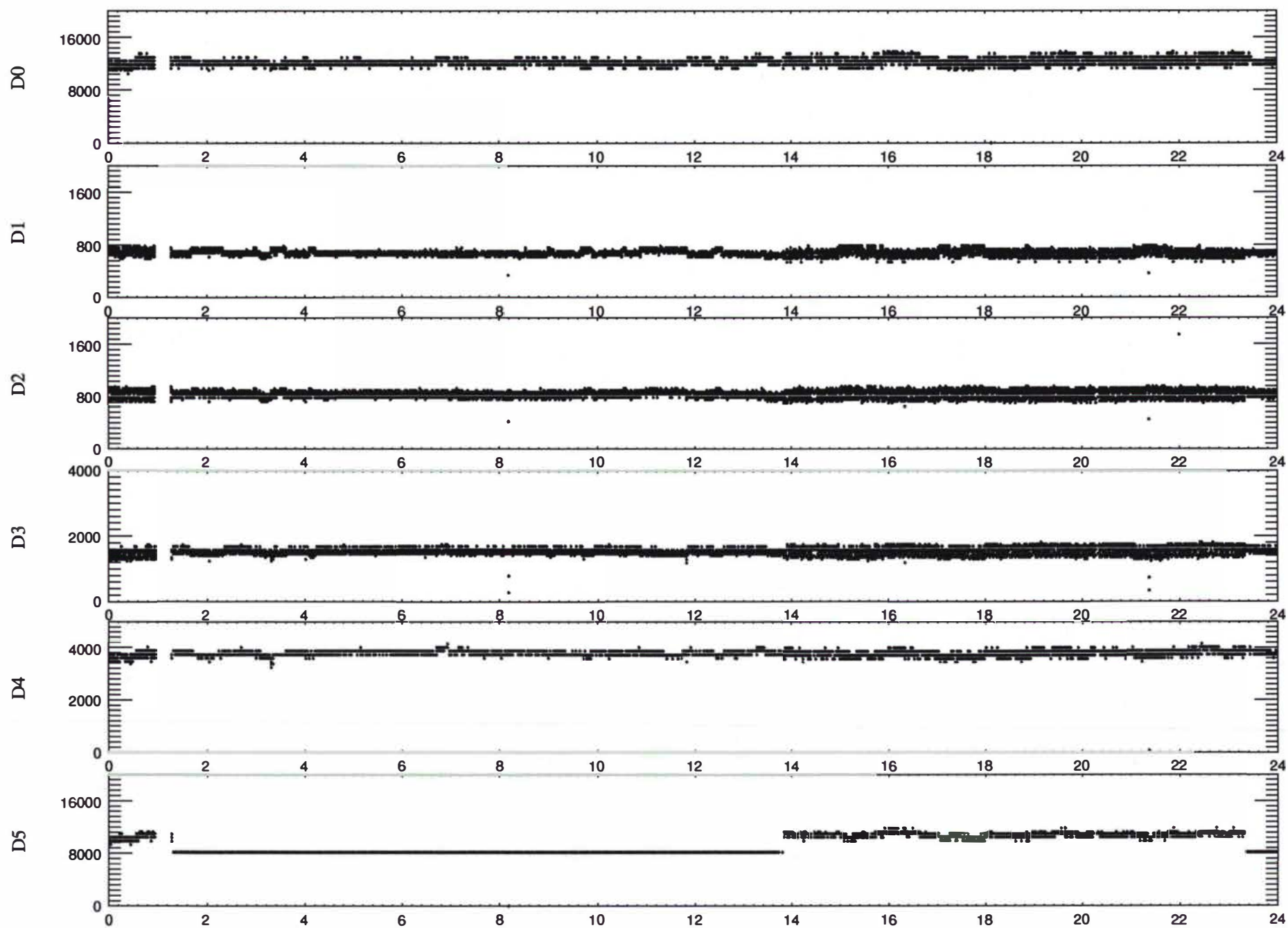
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



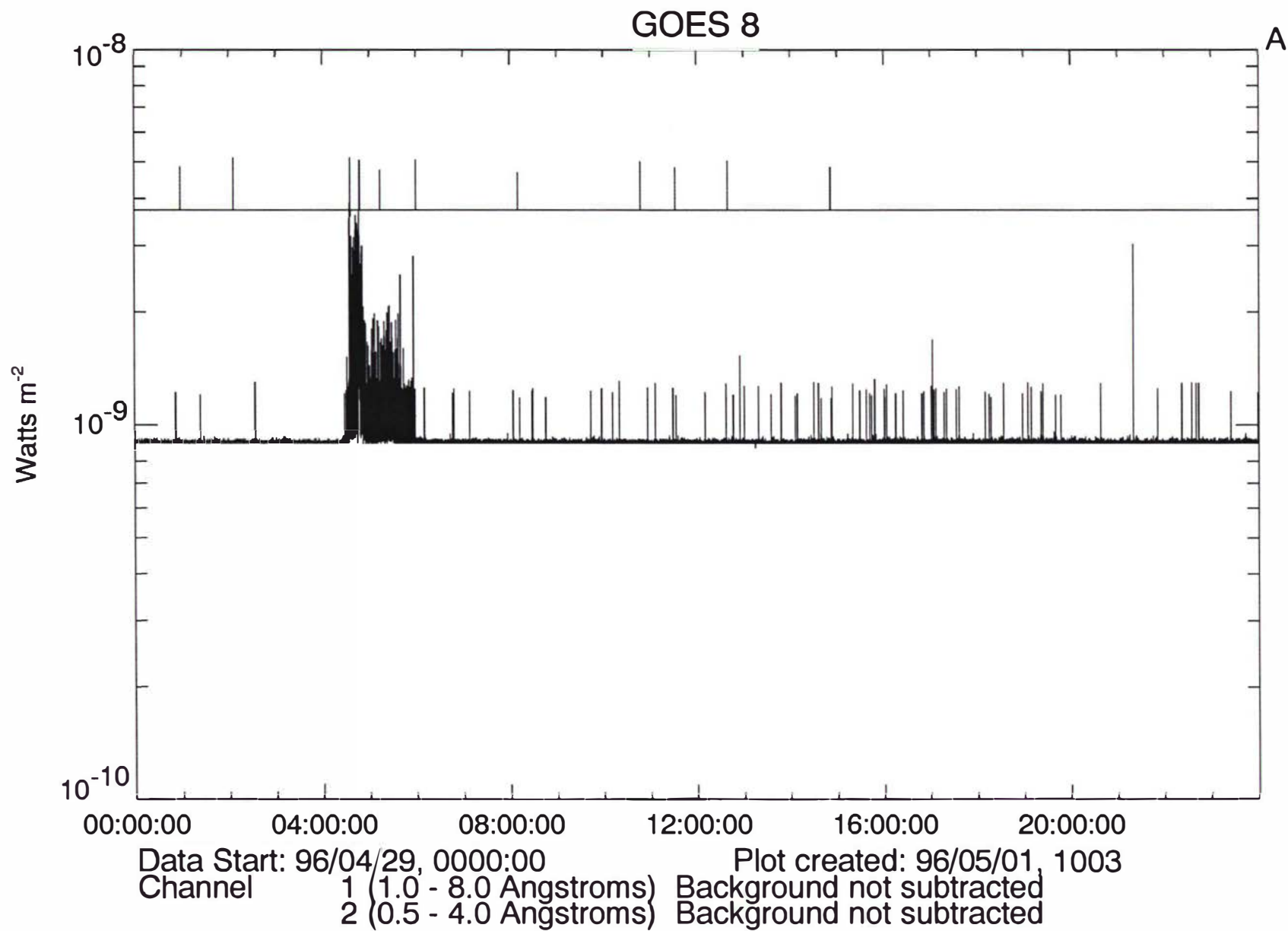
CALIBRATION DATA INCLUDED



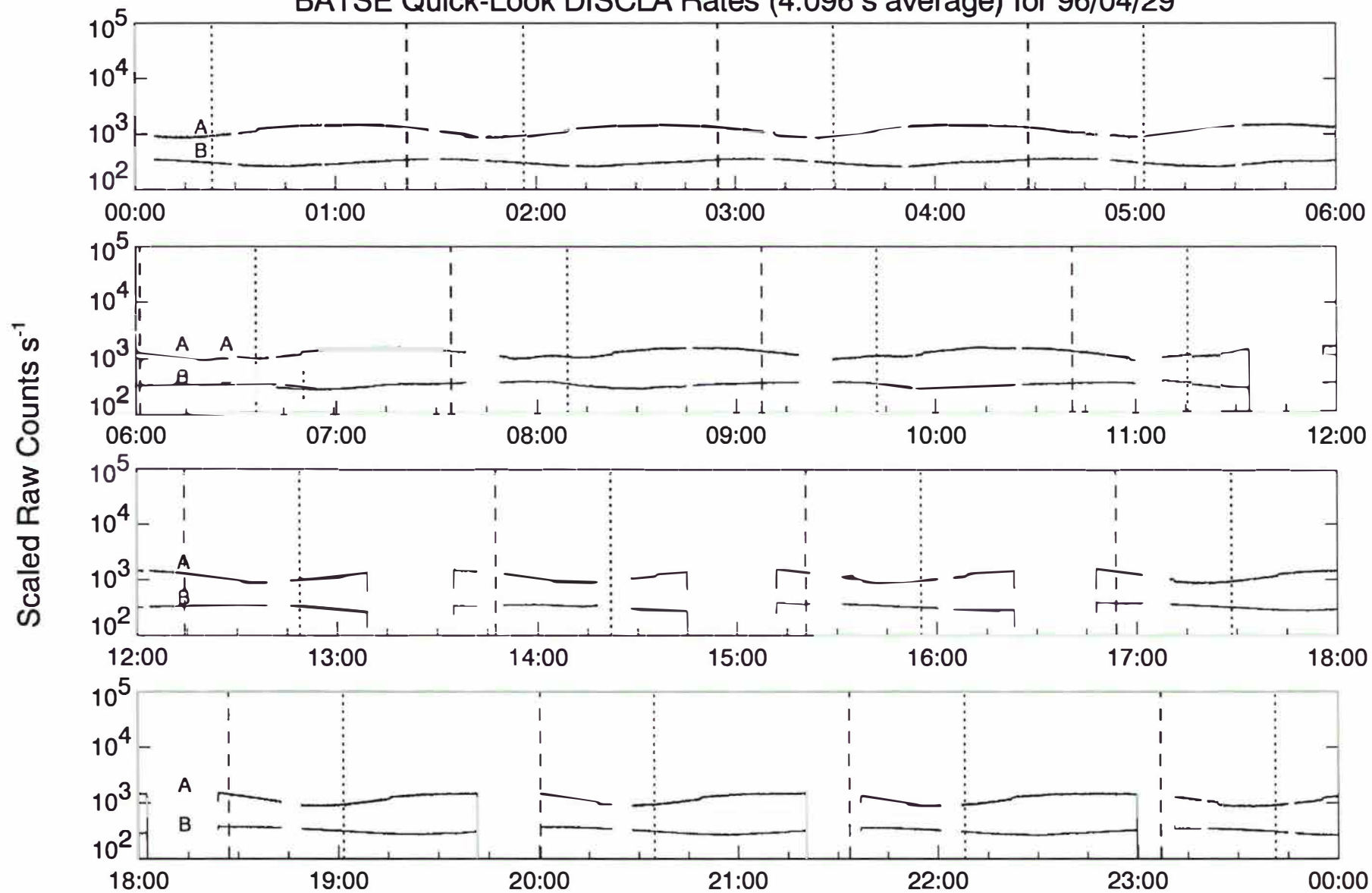
UNIVERSAL TIME



UNIVERSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/29

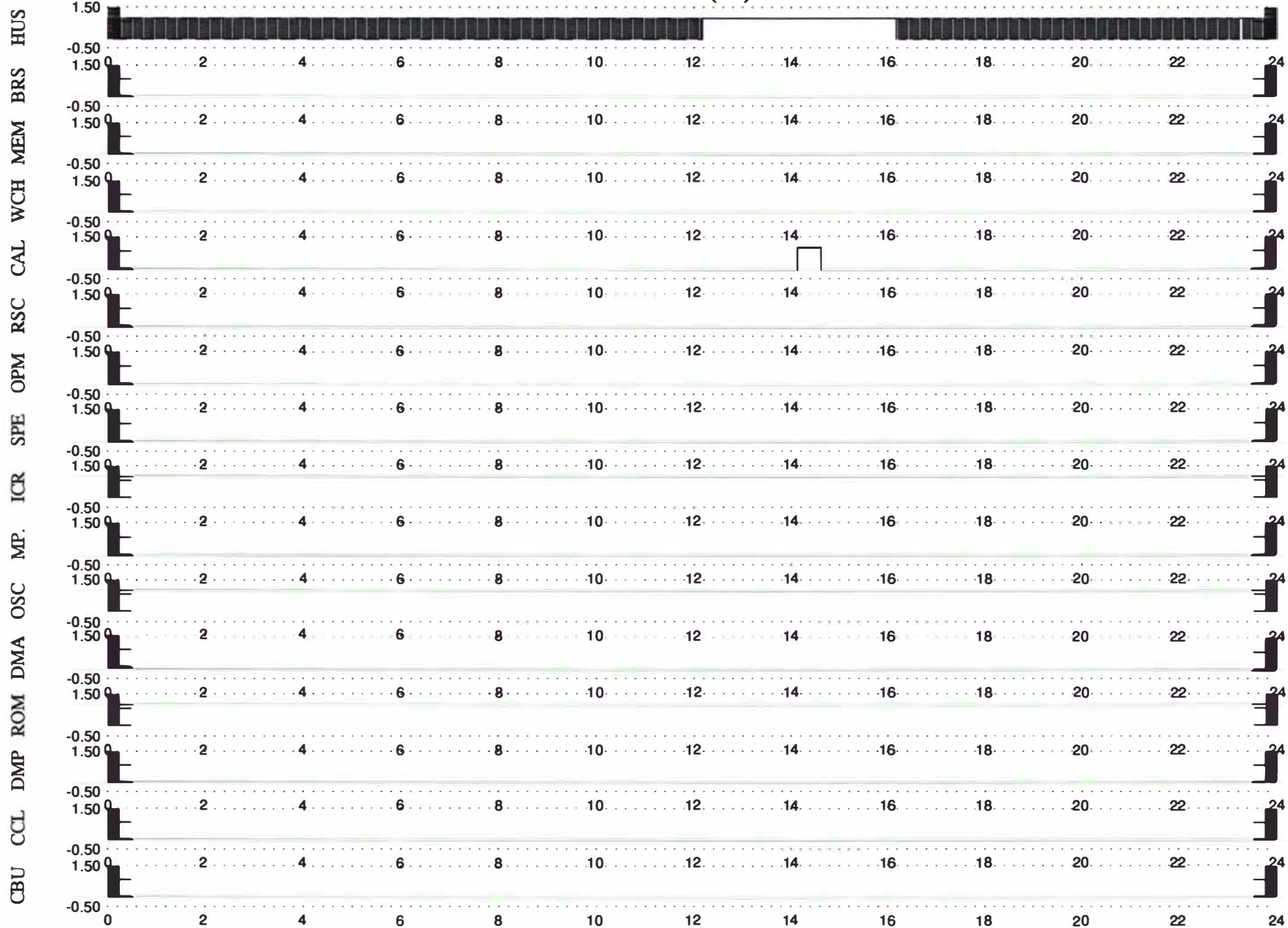


Current Time: 96/05/01, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

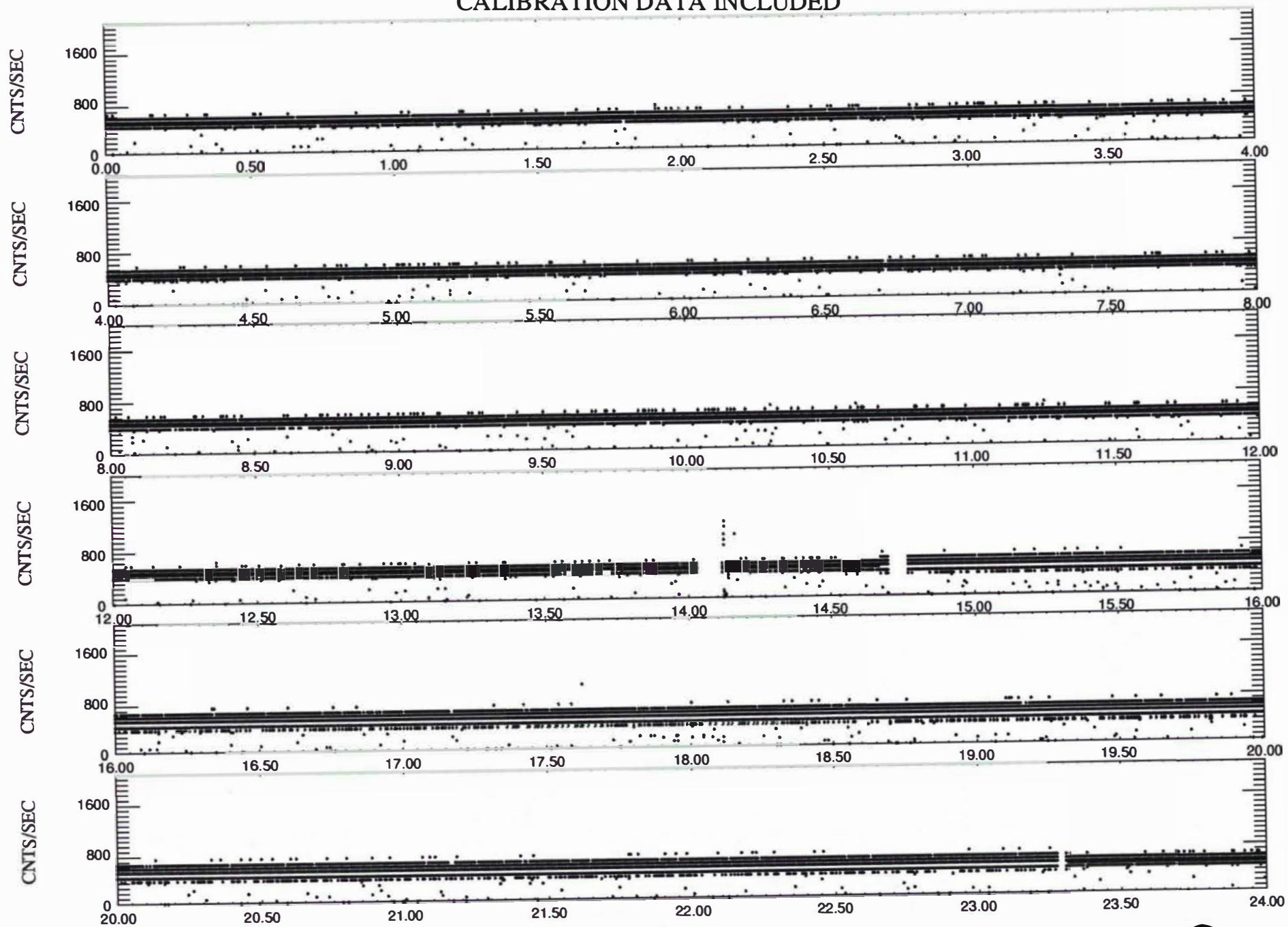
* Solar Burst Trigger
 + Solar Flare

NO BURST (13)

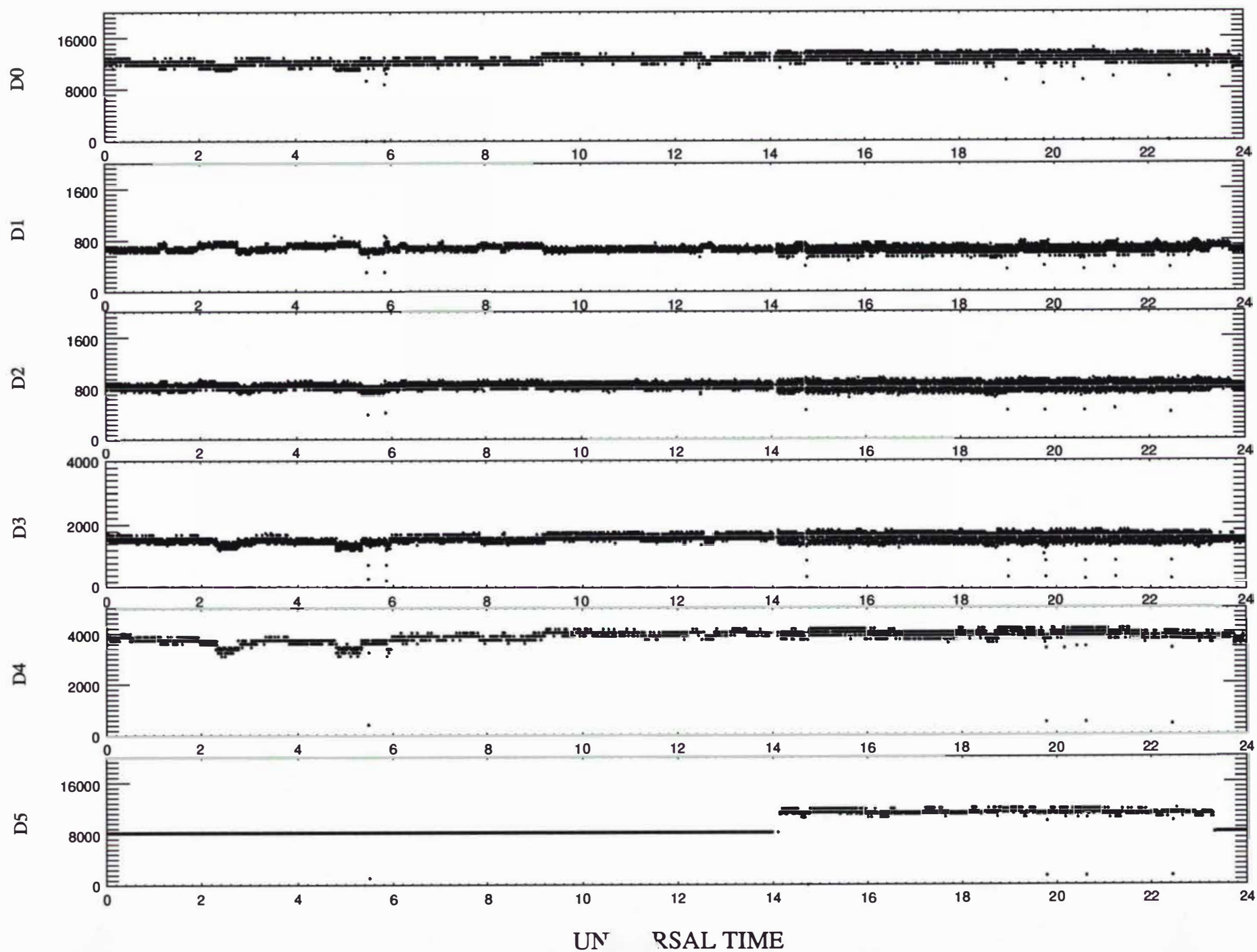


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SURASAK@ssl.msfc.nasa.gov Wed May 1 09:23 PDT 1996
Date: Wed, 1 May 1996 11:23:46 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5451

BATSEARCH PROGRAM

BATSE BURST # 5451
EVENT OF 1996 APR 30 DAY OF YEAR=121
EVENT CROSSING TIME AT BATSE : 49886. S. OR 13:51:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 12.000 -52.000
BATSE PEAK COUNTING RATE: 15500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 4/ 96 IS:
RA= 148.102 DEC= 62.890 DIST= 3.677 AU
BATSE-ULYSSES DISTANCE = 550024493. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1657.82 SECS.
CROSSING TIME AT ULYSSES IS 51544. S. OR 14:19:03 +/- 211.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 4/ 96 IS:
RA= 26.134 DEC= 10.222 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356668416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -532.64 SECS.
CROSSING TIME AT MARS IS 49353. S. OR 13:42:33 +/- 176.61 SECONDS

BATSE BURST TRIGGER

NO.: 5451

TIME: TJD=0203 SECONDS=49886

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=137.4 AZIMUTH=238.8 ERROR=1.1 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR~40S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5451	960430	10203	49886	15500	012	-52	40

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
6	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5419
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
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95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	scribble	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	scribble	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	scribble RI	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

Helio corr removed

Date: Oct 30 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

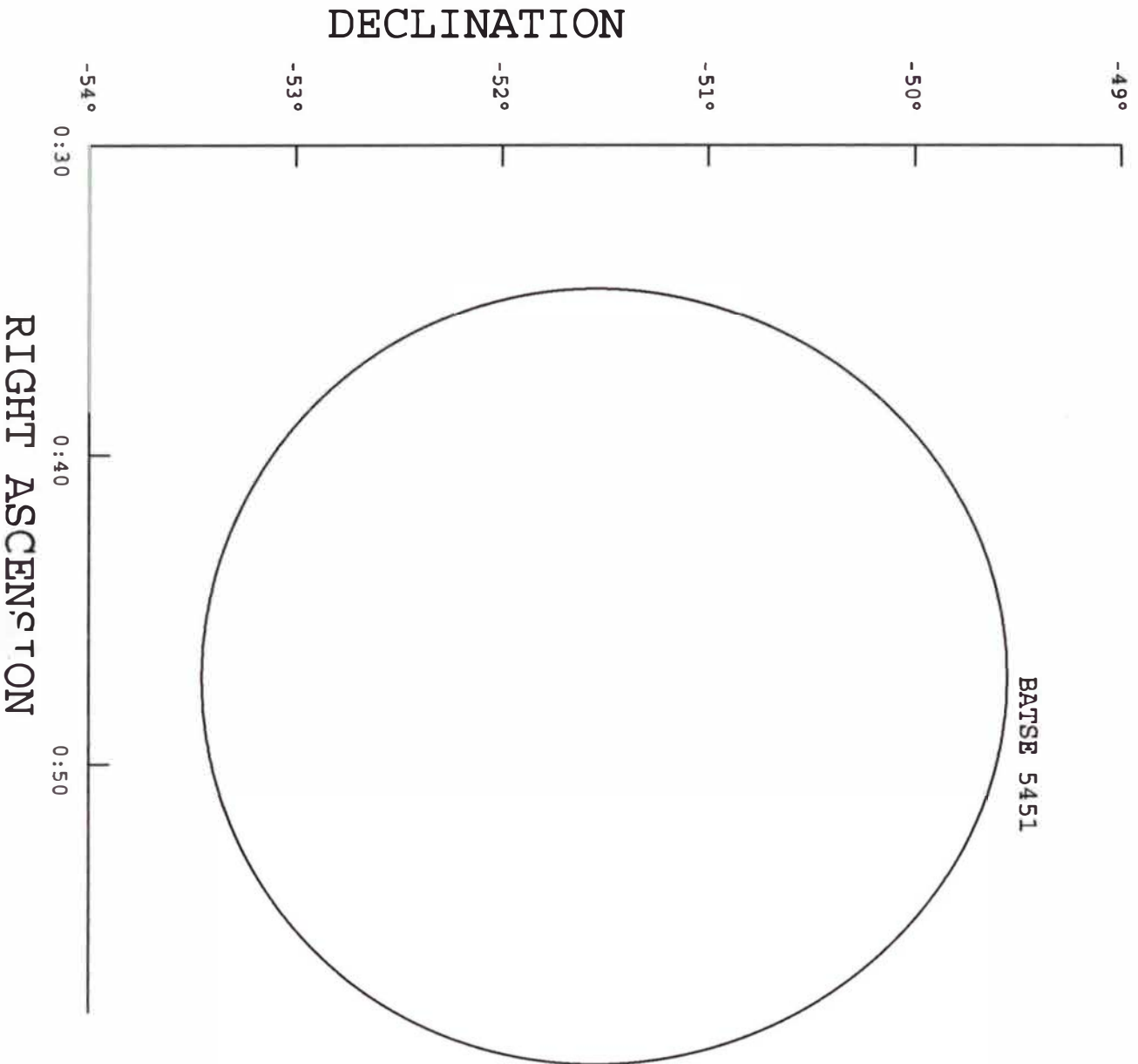
3. PVO Data

- ☐ 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 APR 30, 1996 14:17

30/10/97



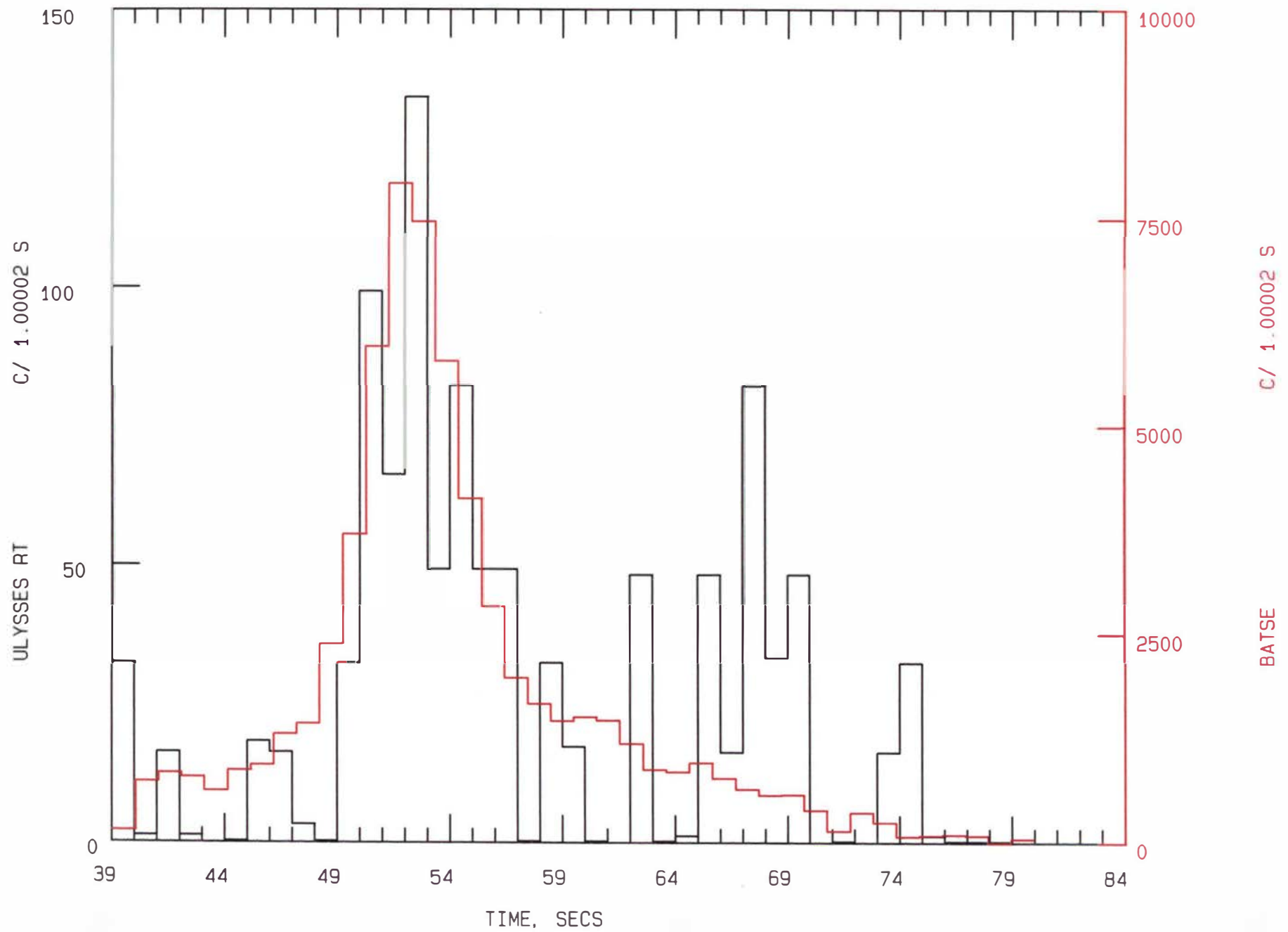
ULYSSES RT-BATSE

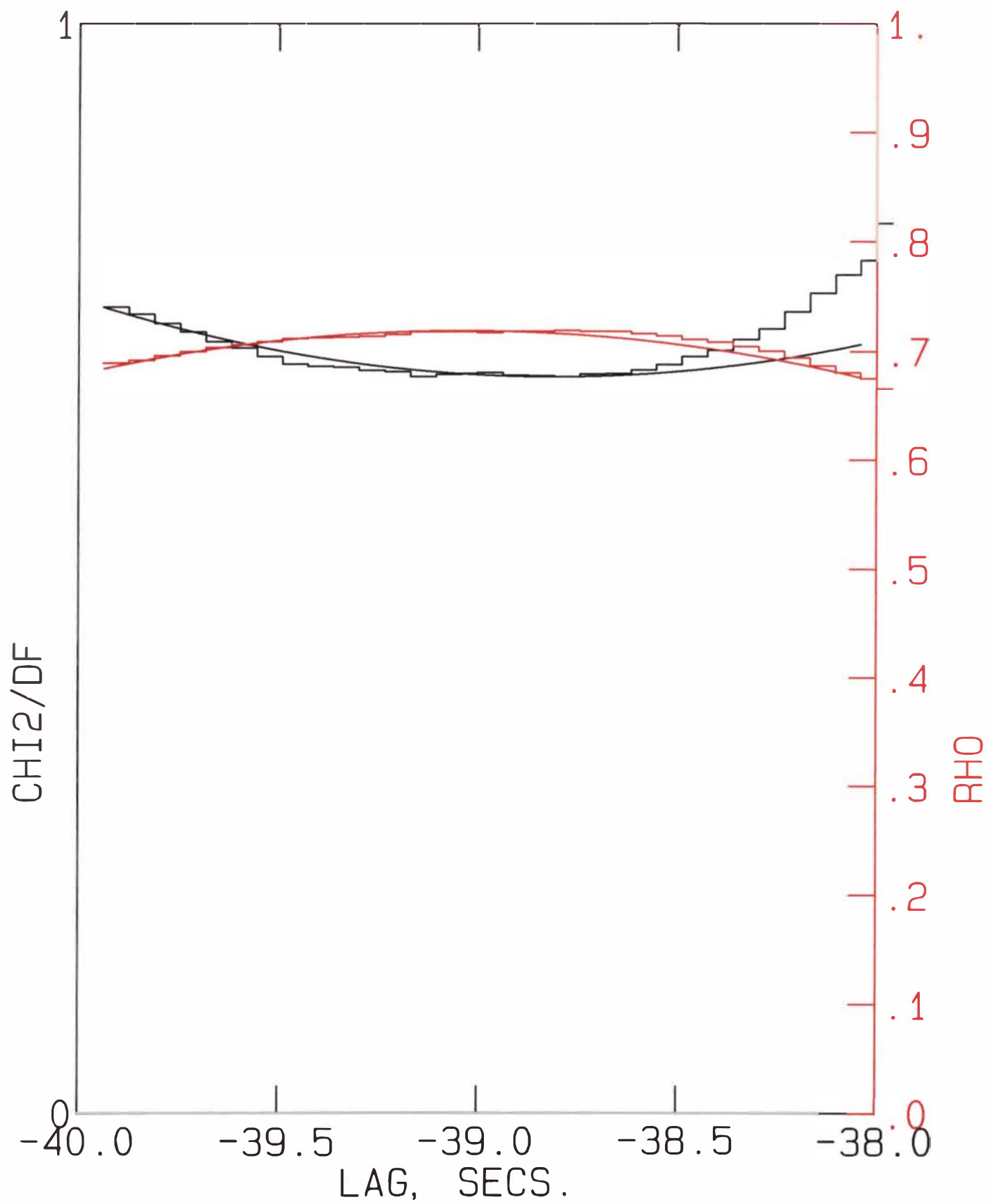
CORRELATION

30/ 4/96

51447.161

30/10/97





ULYSSES RT

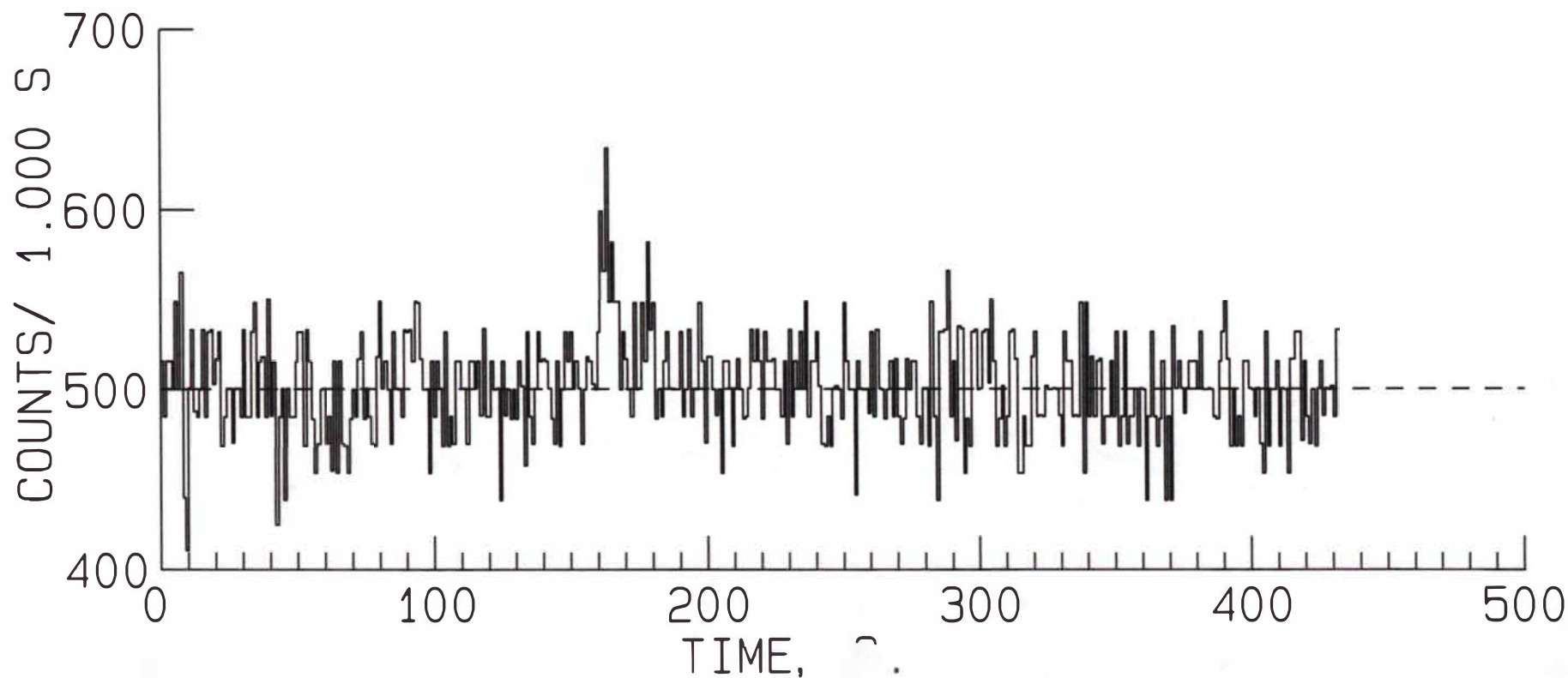
30/10/97

30/ 4/96 51336.243 s

0.250 S INTERVALS REGROUPED BY 4

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

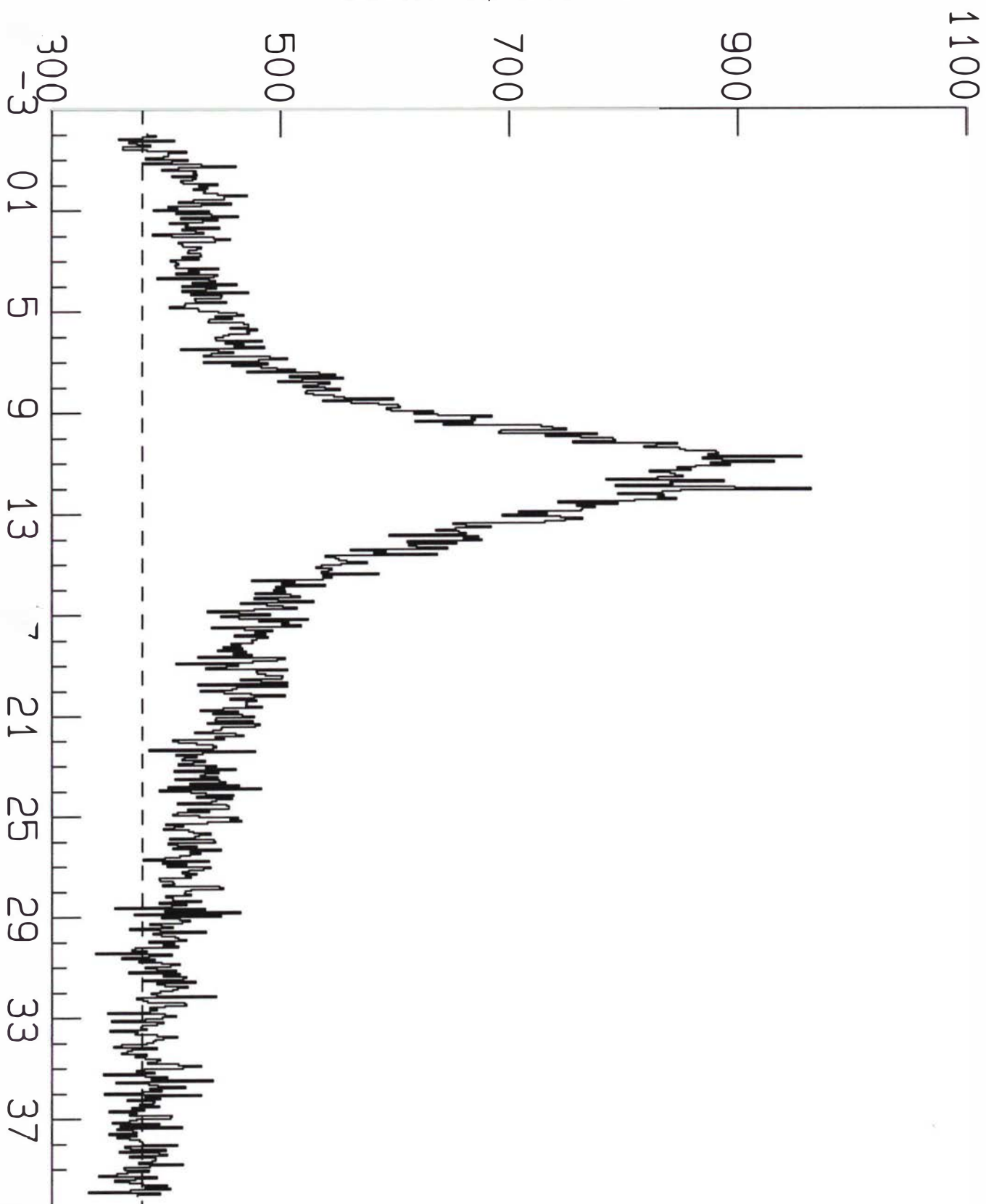
30/04/96

49886.922

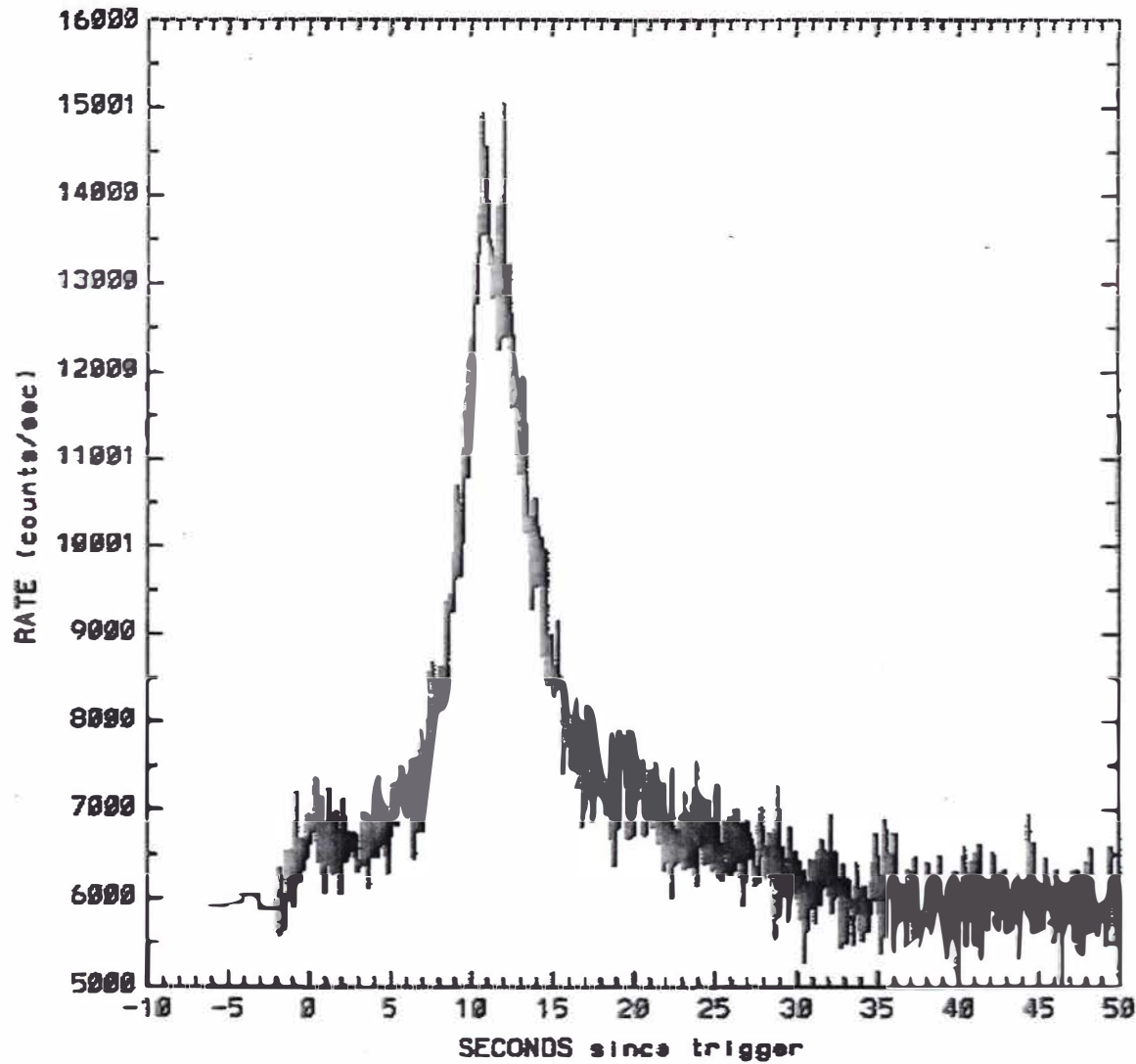
25- 100 keV

COUNTS/0.064 S

21 / 5 / 96



DISCSC Data for K. Hurley, No. 5451



29-MAY-1996 13:28:26

Created by MCPS 80
(Burst Display)
Version 12.25

Trigger #: 5451

Trigger Time:
19283 / 49888.922

Burst Data Type:
DISCSC

Deadtime
Corrected: N

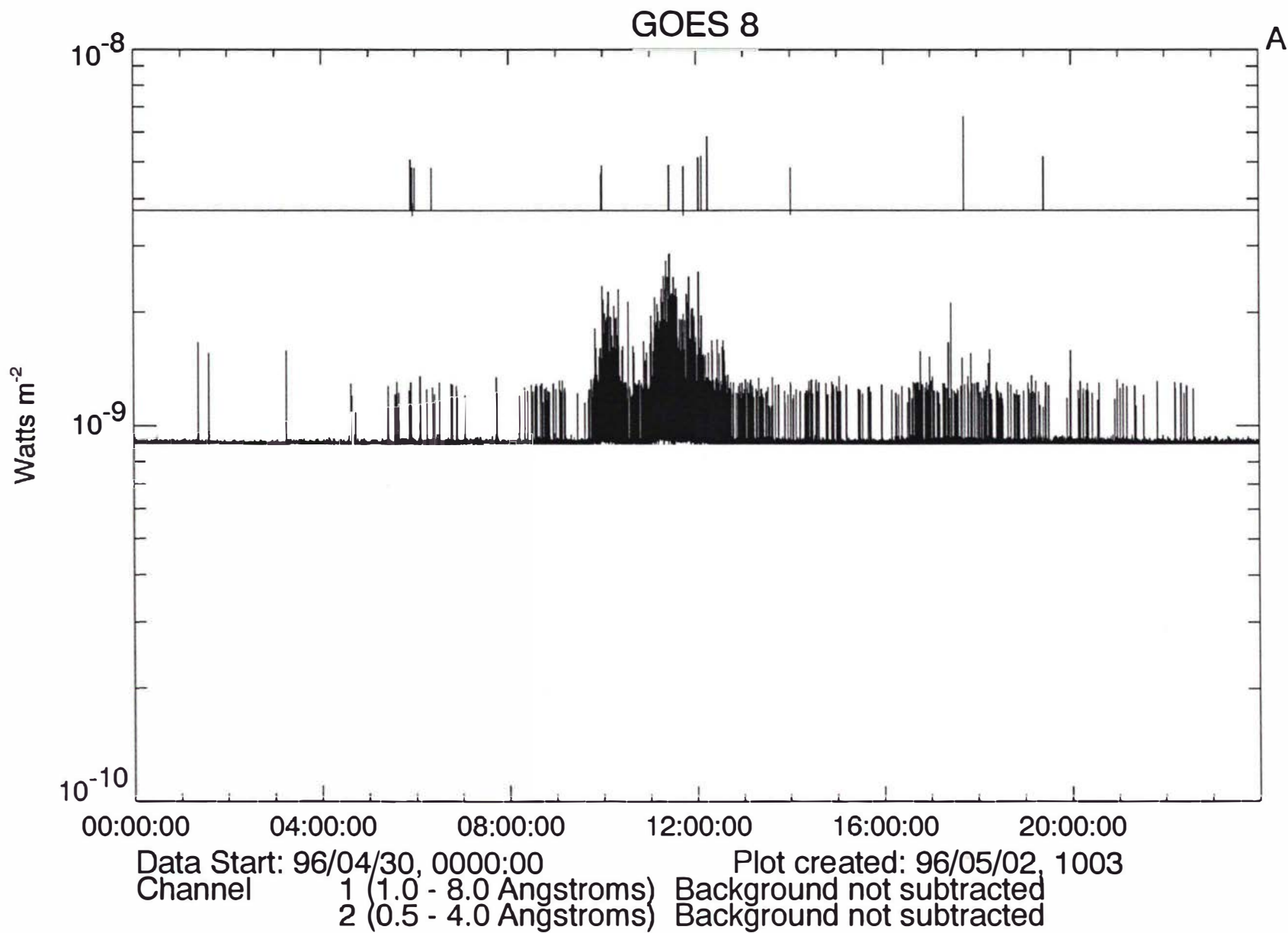
Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

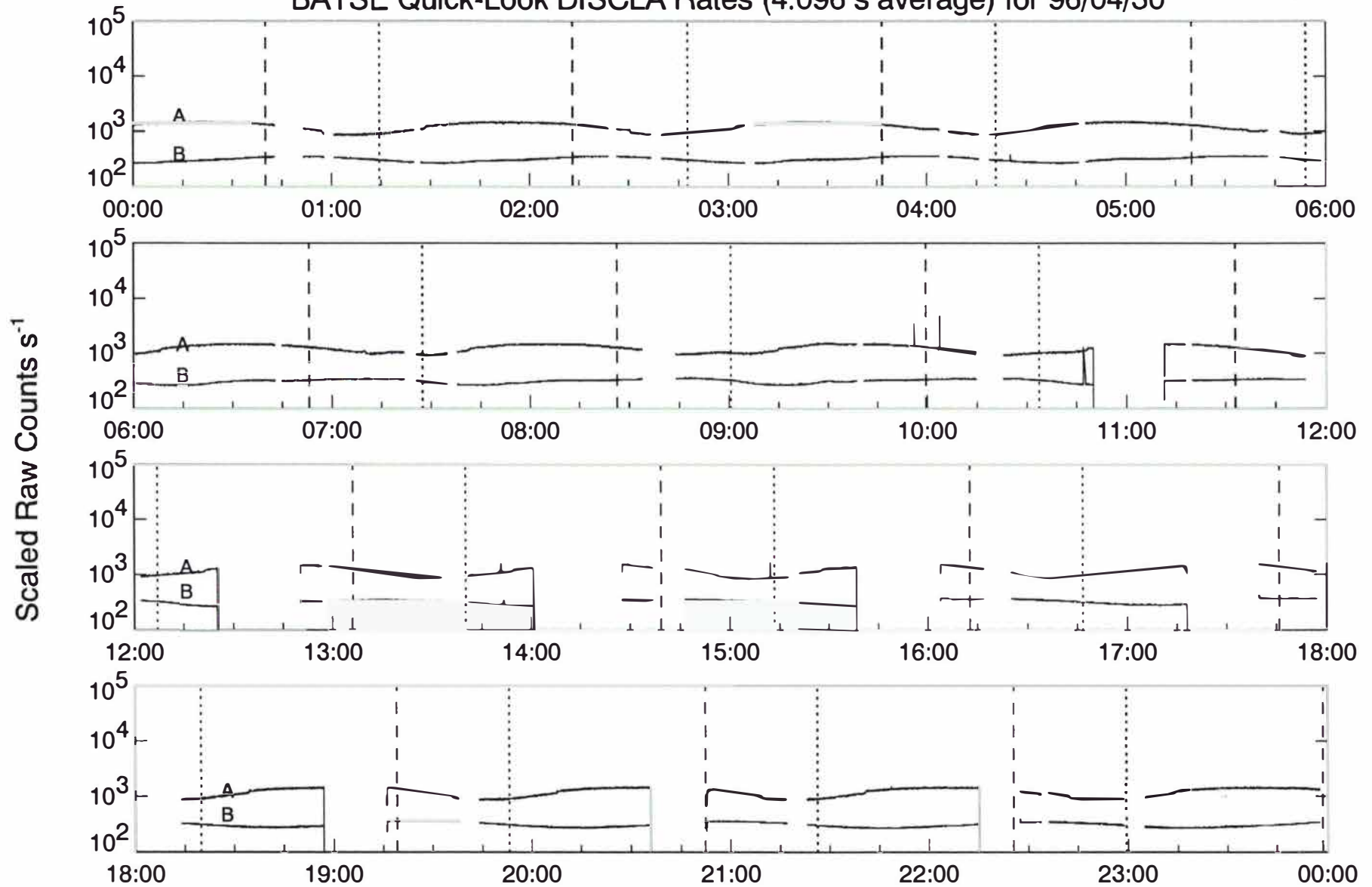
Detectors (7..0):
7---3---

Discriminators:
1 1 . 2 1

Quality Mask:
80ISP1



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/04/30



Current Time: 96/05/02, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

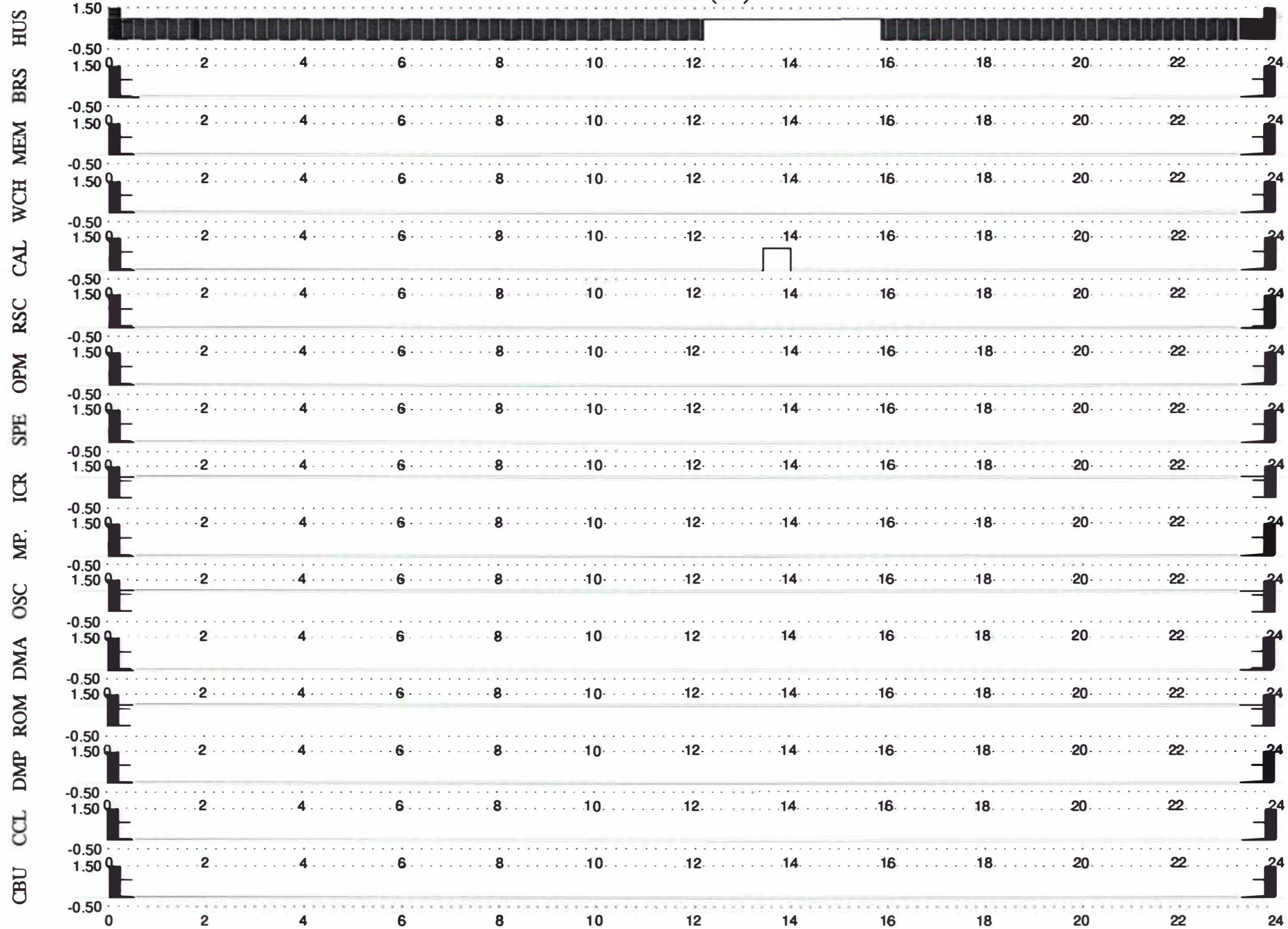
* Solar Burst Trigger
 + Solar Flare

11/15/19

11/15/19

11/15/19

NO BURST (13)



UNIVERSAL TIME

100

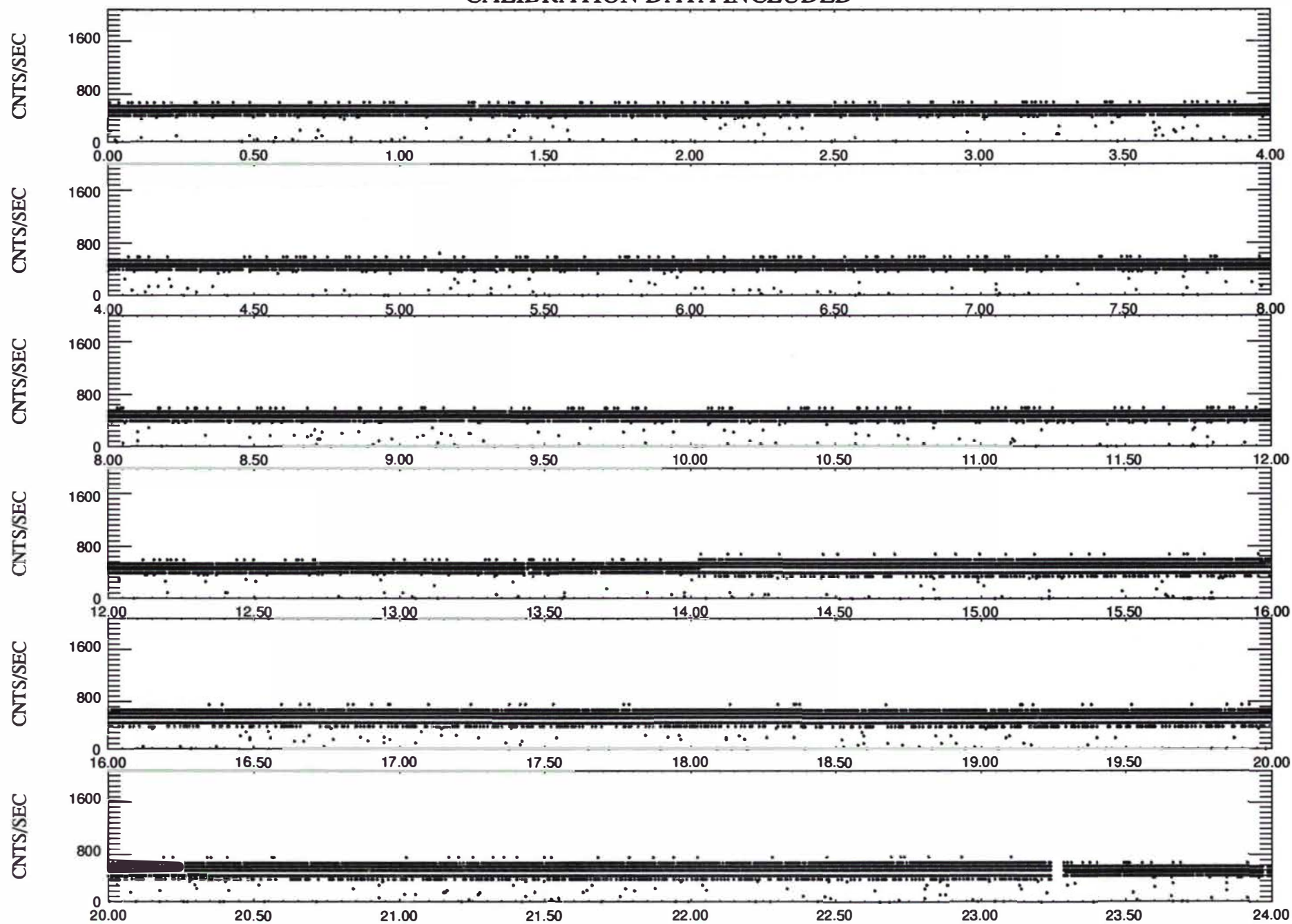
100

100

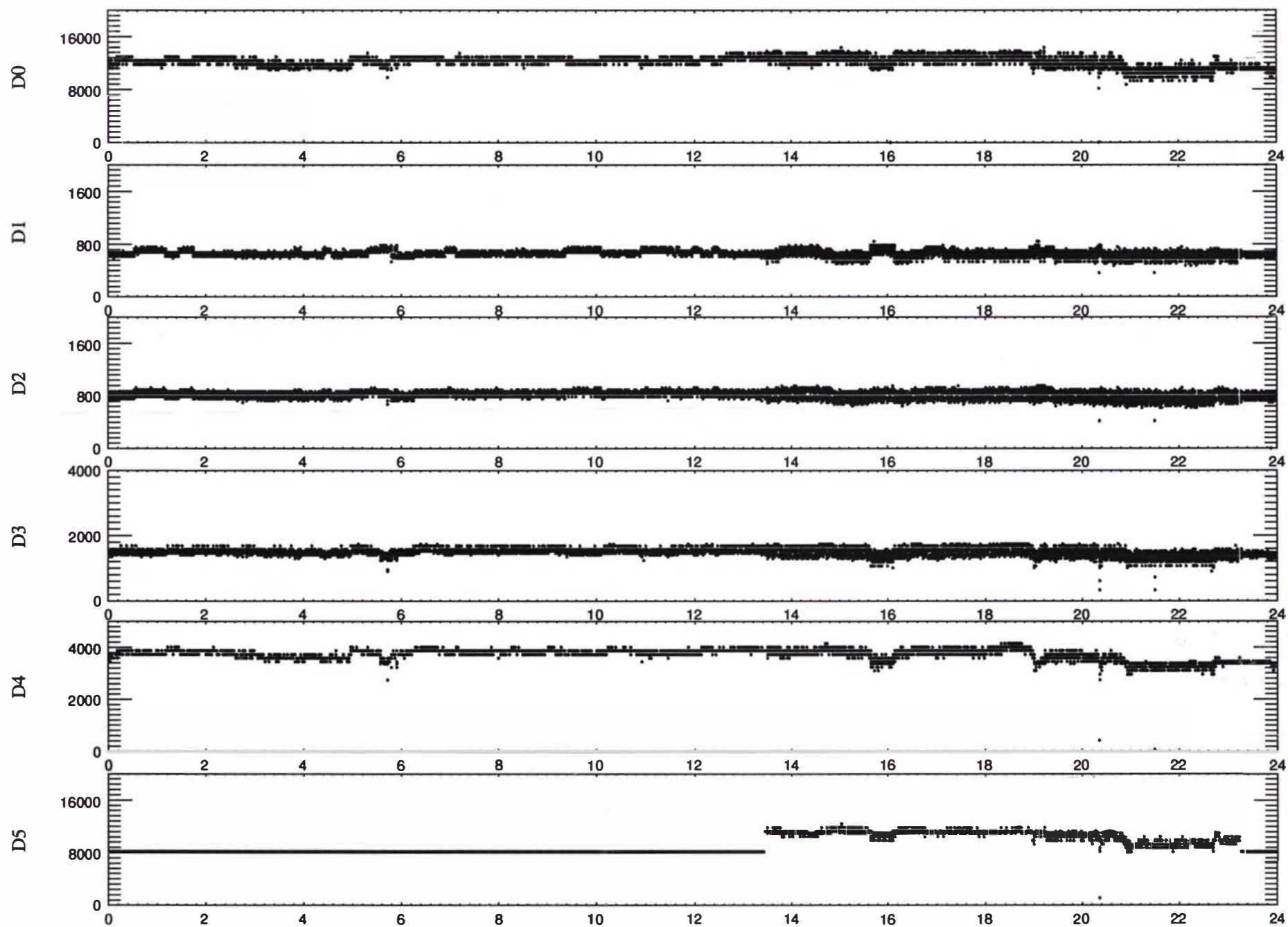
100

100

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME