From springer@pop.jpl.nasa.gov Thu Jan 29 14:24 PST 1998
From: "Joe Springer" <springer@pop.jpl.nasa.gov>
To: "SIM Jim Connell" <connell@odysseus.uchicago.edu>,
"GLG Toni Galvin" <galvin@umdsp.umd.edu>,
"HUS Roger Williams" <williams@sunspot.ssl.berkeley.edu>,
"LAN Gene Holland" <ULYSSES@KUSPA1.PHSX.UKANS.EDU>,
"STO Tiajuana Perry" <perry@urap.gsfc.nasa.gov>,
"STO Bob Macdowall" <macd@leprjm.gsfc.nasa.gov>,
"SIM Richard Marsden" <rmarsden@estec.esa.nl>,
"SIM Bruce McKibben" <mckibben@odysseus.uchicago.edu>,
"SCT Nigel Angold" <nangold@pop.jpl.nasa.gov>,
"KEP Manfred Witte" <witte@linax1.dnet.gwdg.de>,
"KEP Holger Boll" <boll@ifkkv.kernphysik.uni-kiel.de>,
"HED Bob Forsyth" <r.forsyth@ic.ac.uk>,
"GRU Steve Kortenkamp" <kortenka@astro.ufl.edu>,
"SIM Gene Murphy" <murphy@odysseus.uchicago.edu>,
"BAM Dave McComas" <dmccomas@lanl.gov>,
"BAM Bruce Goldstein" <bgoldstein@jplsp2.jpl.nasa.gov>
Cc: "SIM Richard Marsden" <rmarsden@estec.esa.nl>,
"BAM Bruce Goldstein" <bgoldstein@jplsp2.jpl.nasa.gov>,
"BAM Dave McComas" <dmccomas@lanl.gov>,
"Ed B. Massey" <Ed.B.Massey@jpl.nasa.gov>,
"Edward J Smith" <edward.j.smith@jpl.nasa.gov>,
"GLG George Gloeckler" <gloeckler@umdsp.umd.edu>,
"GLG Johannes Geiss" <geiss@phim.unibe.ch>,
"GLG R Von Steiger" <vsteiger@phim.unibe.ch>,
"GRU E Gruen" <gruen@kosmo.mpi-hd.mpg.de>,
"GRU Gudrun Linkert" <glinkert@dirty.mpi-hd.mpg.de>,
"HED Andre Balogh" <a.balogh@ic.ac.uk>,
"HED Bob Forsyth" <r.forsyth@ic.ac.uk>,
"HUS Kevin Hurley" <khurley@space6.ssl.berkeley.edu>,
"KEP E Keppler" <keppler@linax1.dnet.gwdg.de>,
"LAN L Lanzerotti" <ljl@bell-labs.com>,
"SIM Bob Connell" <connell@odysseus.uchicago.edu>,
"SIM Bruce McKibben" <mckibben@odysseus.uchicago.edu>,
"STO Bob Macdowall" <macd@leprjm.gsfc.nasa.gov>
Subject: Replacement for March 97 SEDRs
Date: Thu, 29 Jan 1998 14:24:29 -0800
MIME-Version: 1.0
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
X-Priority: 3
X-MSMail-Priority: Normal
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.2106.4

Greetings,

As reported at the Fall 1997 SWT, SEDRGEN made errors in the March 1997 SEDRs. Specifically, during the last four days of the months, several fields contained bogus values.

The Diagnosis

An attitude history file used as an input to the [redacted]DR generation process ended four days before the [redacted] the month. The SEDR generation program had no case to 'handle' such an event, so it continued to produce records.

The Fix

The program was altered to cause it to stop processing if either of the input files ends naturely. It then issues an error message to DMT as part of the production summary file.

The Damage

No data was impacted by this bug with the exception of the March 1997 SEDRs.

And so . . .

You may replace the errant files with new March 1997 SEDRs which are available on JPLSP. The files are:

DISKULSDMT:[ULSDMT.SEDR]SEDR9703.FLT;2 and
DISKULSDMT:[ULSDMT.SEDR]SEDR9703.FIX;2

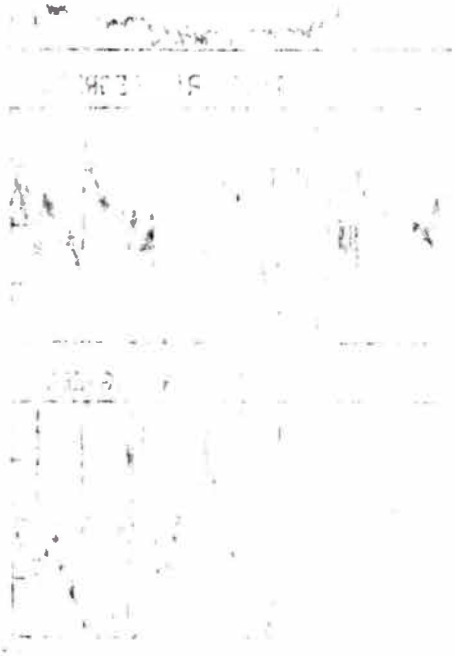
Please let me know if you have a problem acquiring the files.

Regards,

Joe

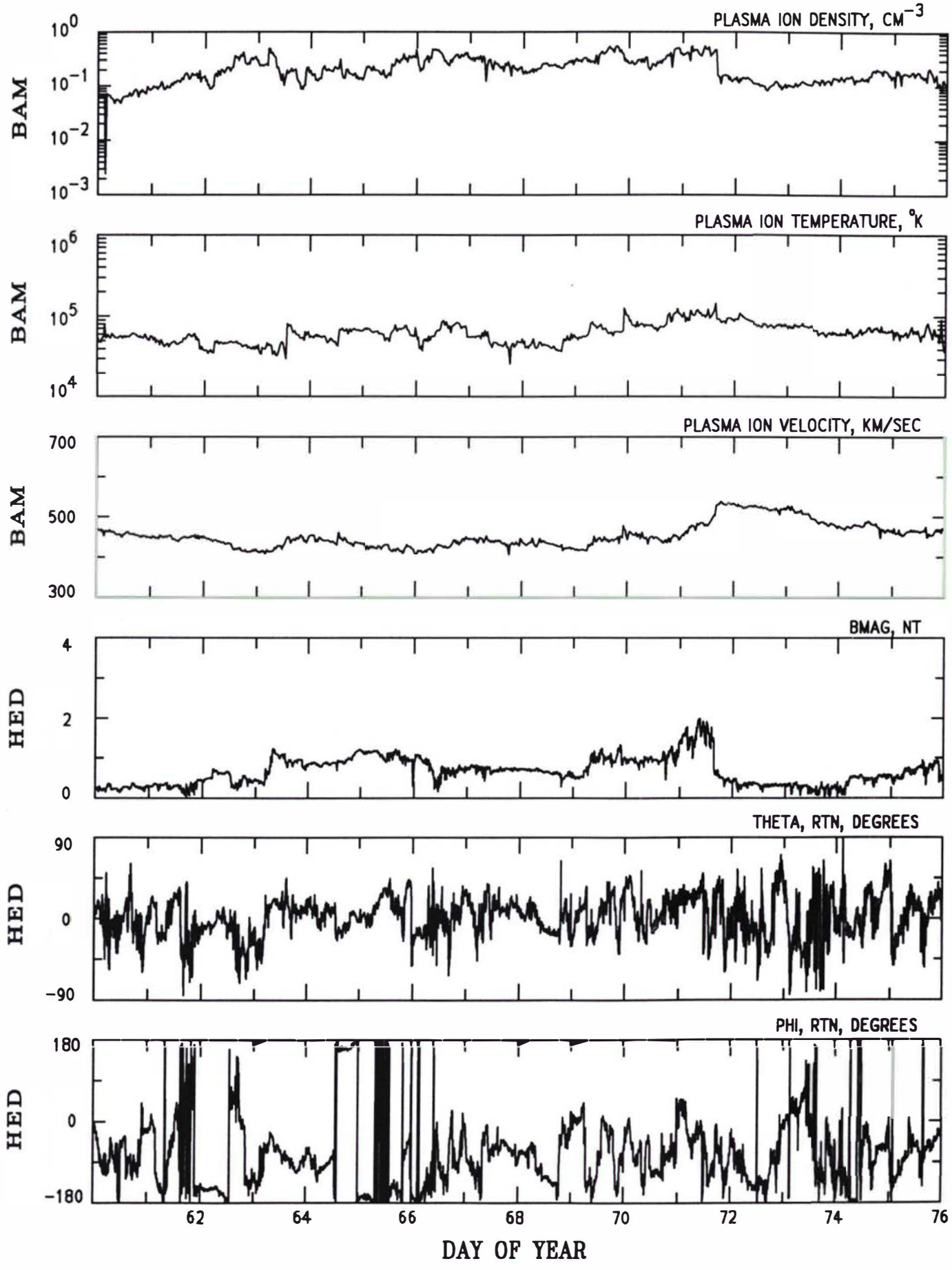
From vnp@isac.ernet.in Tue Aug 12 01:44 PDT 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
          id AA19869; Tue, 12 Aug 1997 11:48:17 GMT
Date: Tue, 12 Aug 1997 11:48:17 +0000 (CUT)
Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: march 97 grbs
Mime-Version: 1.0

SROSS-C2 has not recorded any GRBs in the month of March



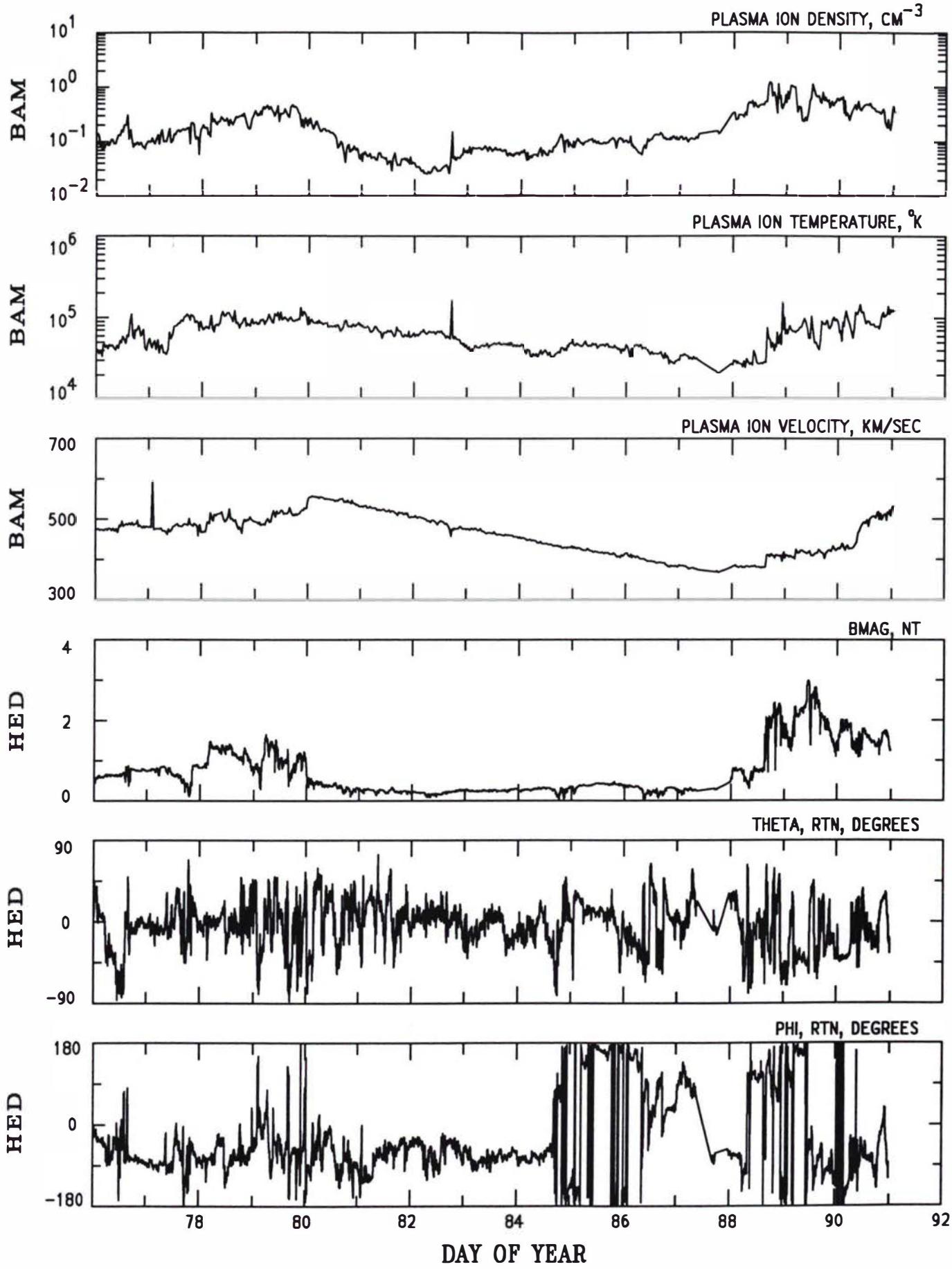
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 060 MAR 1 00:00:00.000 – 97 076 MAR 17 00:00:00.000



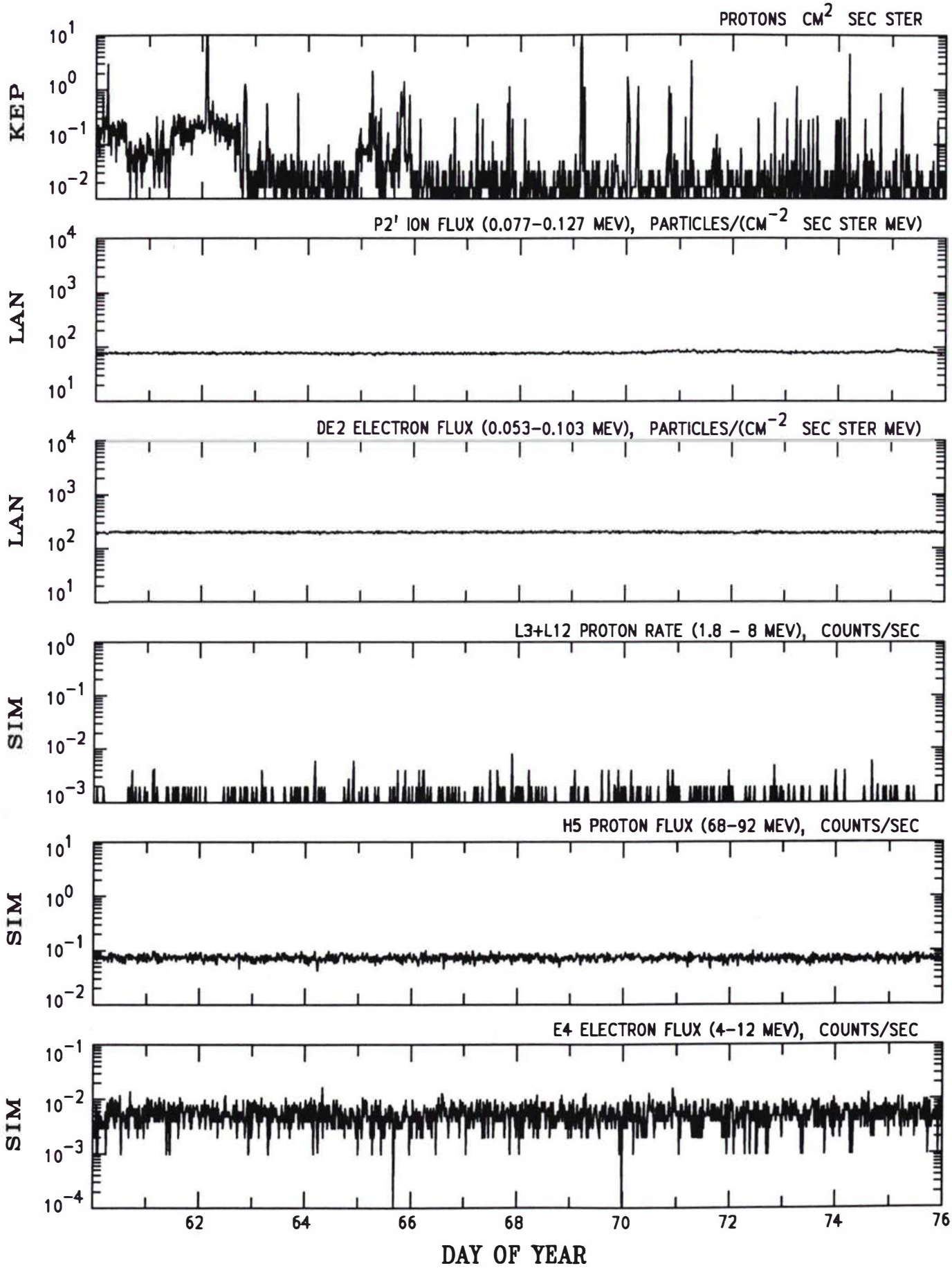
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 076 MAR 17 00:00:00.000 – 97 092 APR 2 00:00:00.000



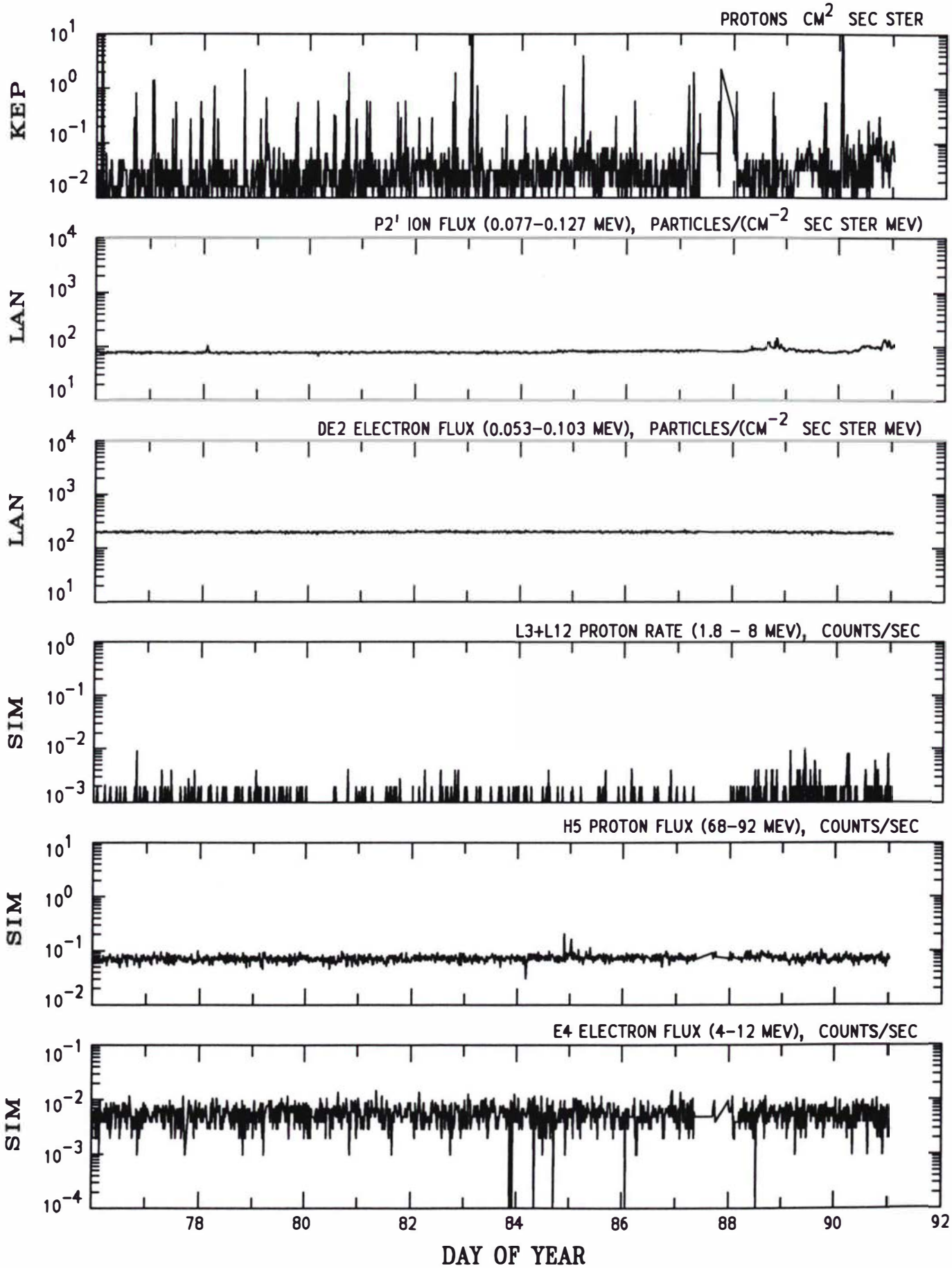
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 060 MAR 1 00:00:00.000 – 97 076 MAR 17 00:00:00.000



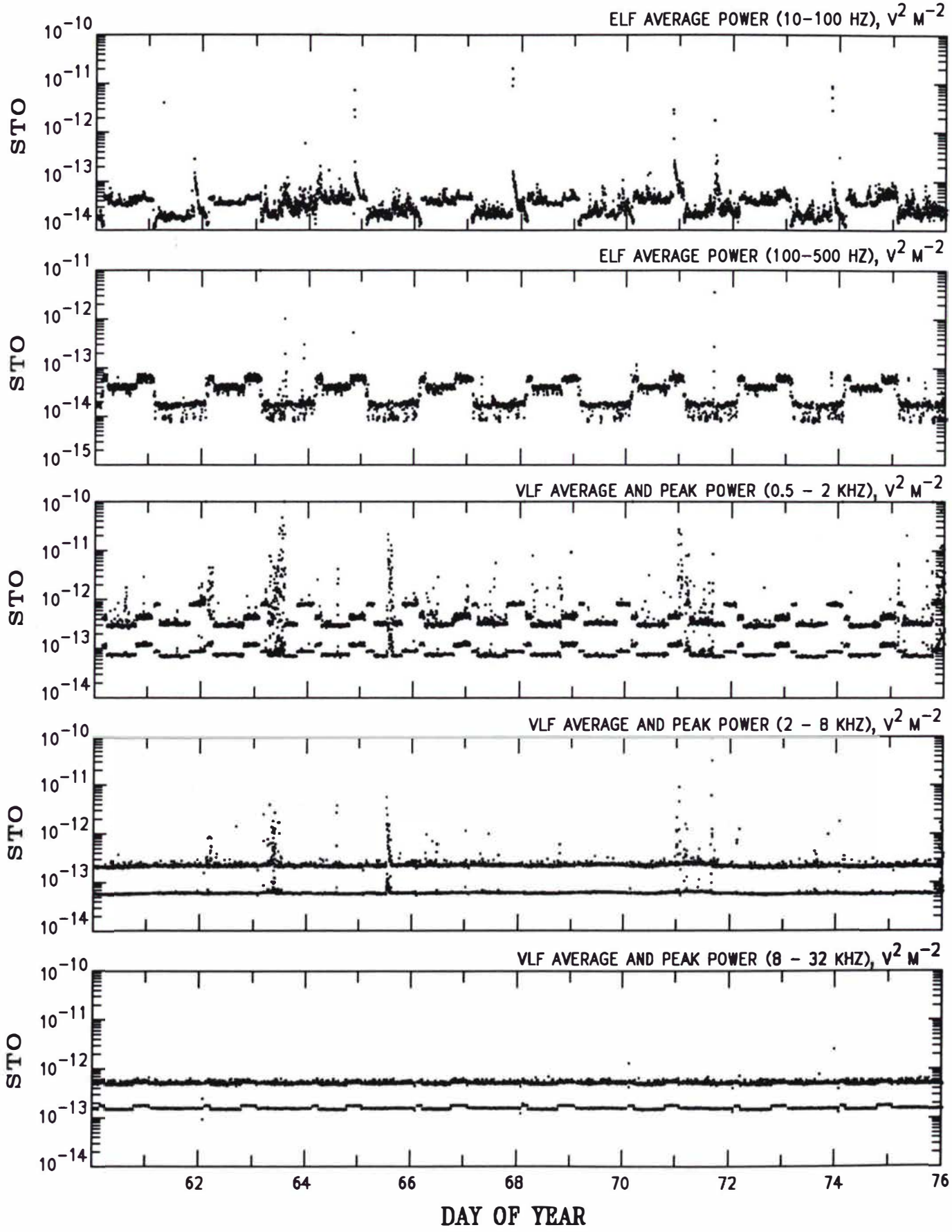
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 076 MAR 17 00:00:00.000 – 97 092 APR 2 00:00:00.000



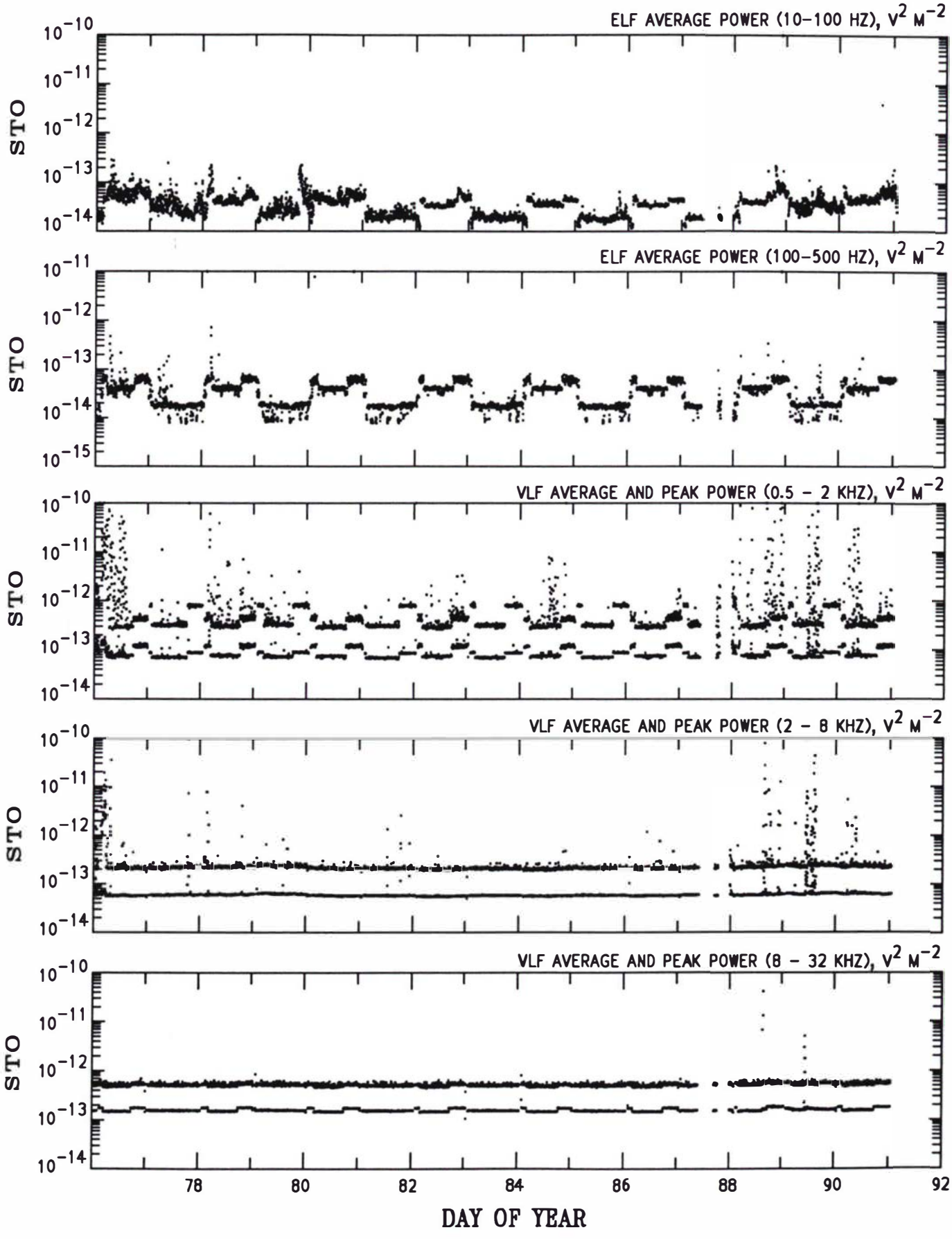
ULYSSES CDR - PLASMA WAVE

97 060 MAR 1 00:00:00.000 - 97 076 MAR 17 00:00:00.000



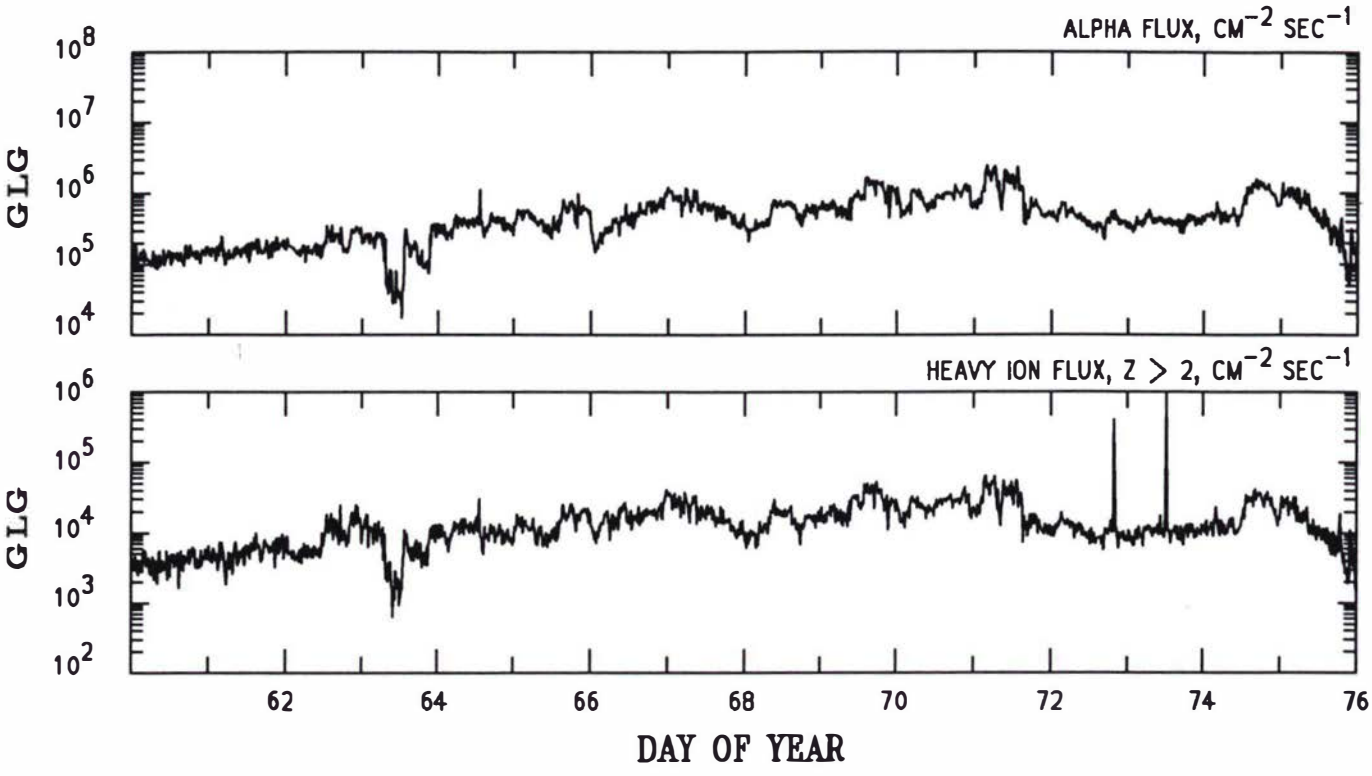
ULYSSES CDR - PLASMA WAVE

97 076 MAR 17 00:00:00.000 - 97 092 APR 2 00:00:00.000



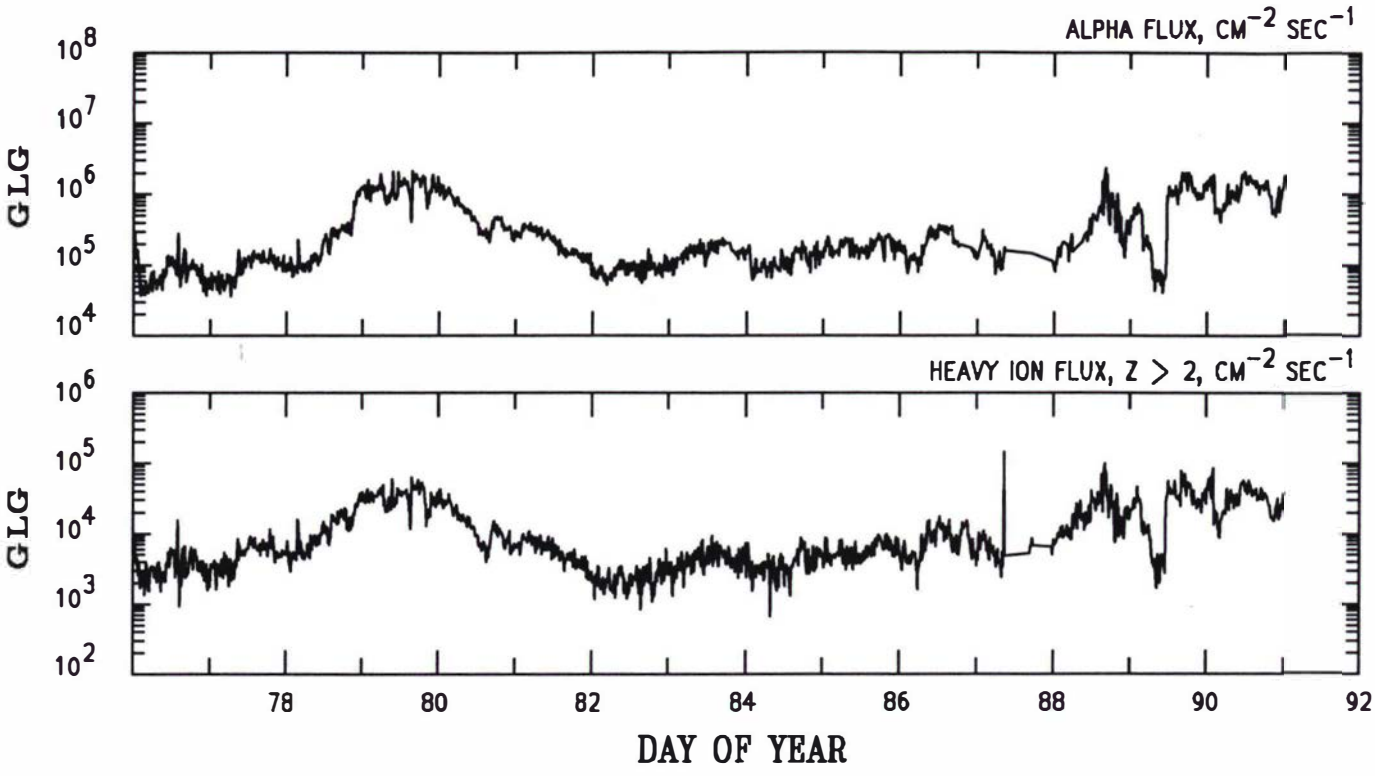
ULYSSES CDR – SOLAR WIND ION COMPOSITION

97 060 MAR 1 00:00:00.000 – 97 076 MAR 17 00:00:00.000

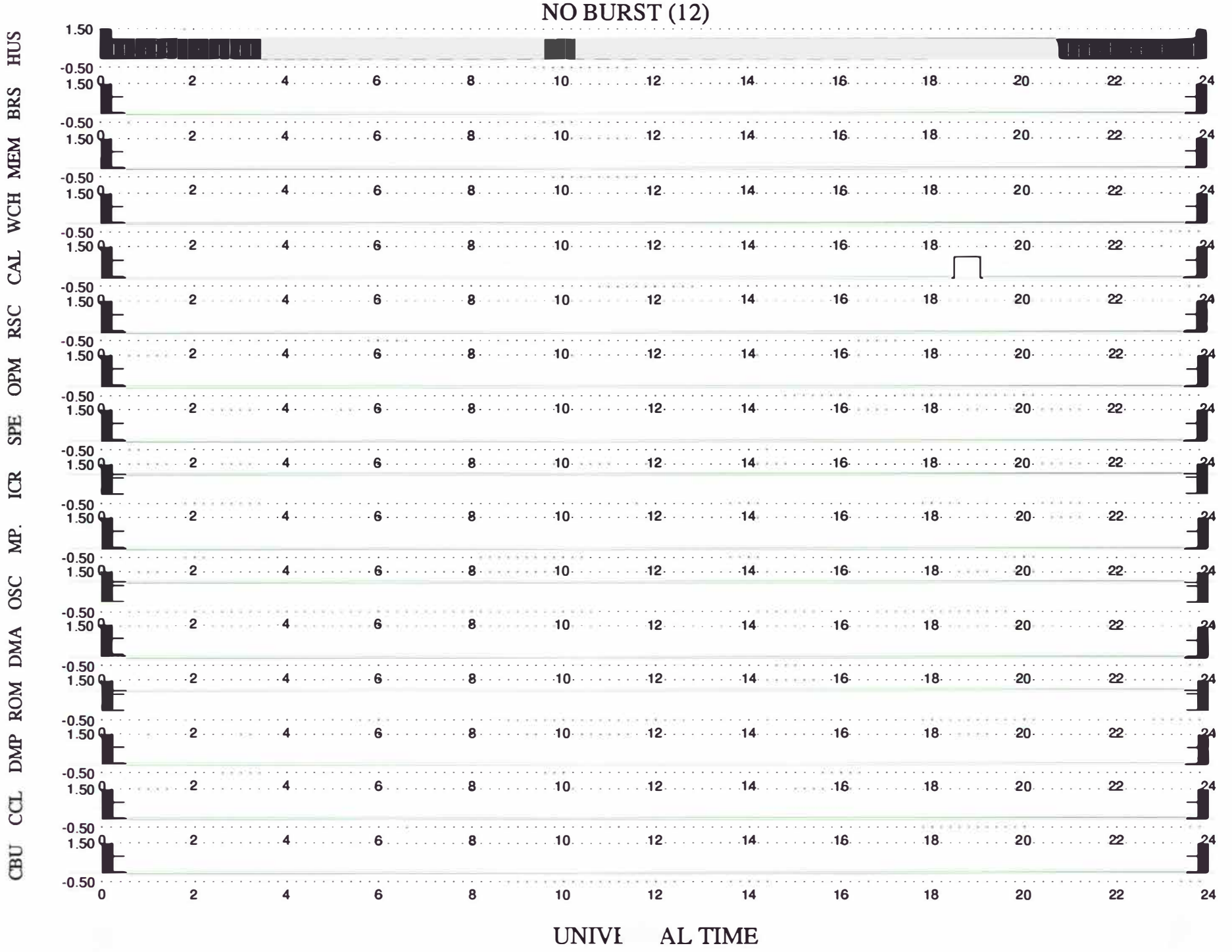


ULYSSES CDR – SOLAR WIND ION COMPOSITION

97 076 MAR 17 00:00:00.000 – 97 092 APR 2 00:00:00.000

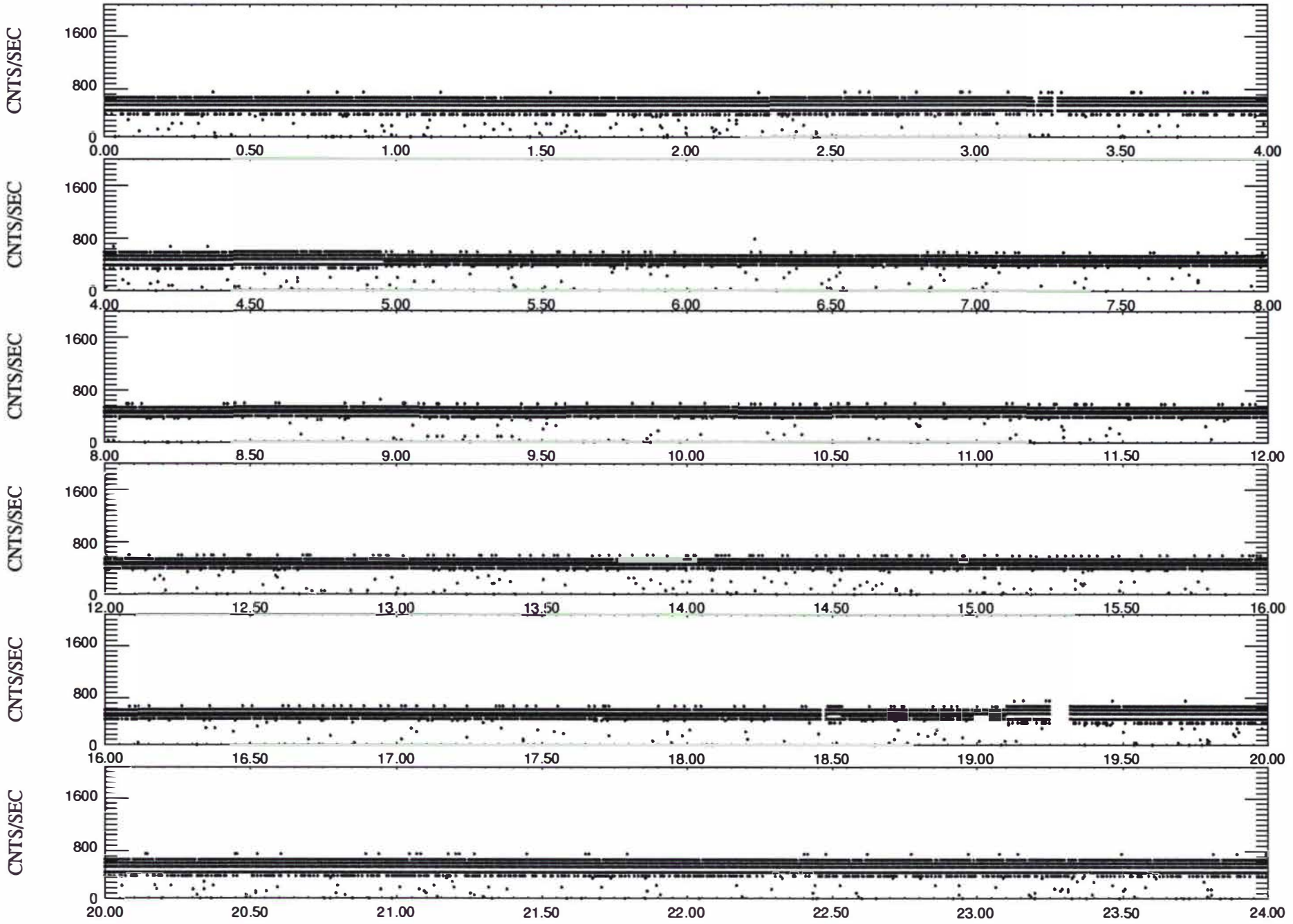


HUS MODES EDR day 60, year 1997 to day 60, year 1997 7/21/97



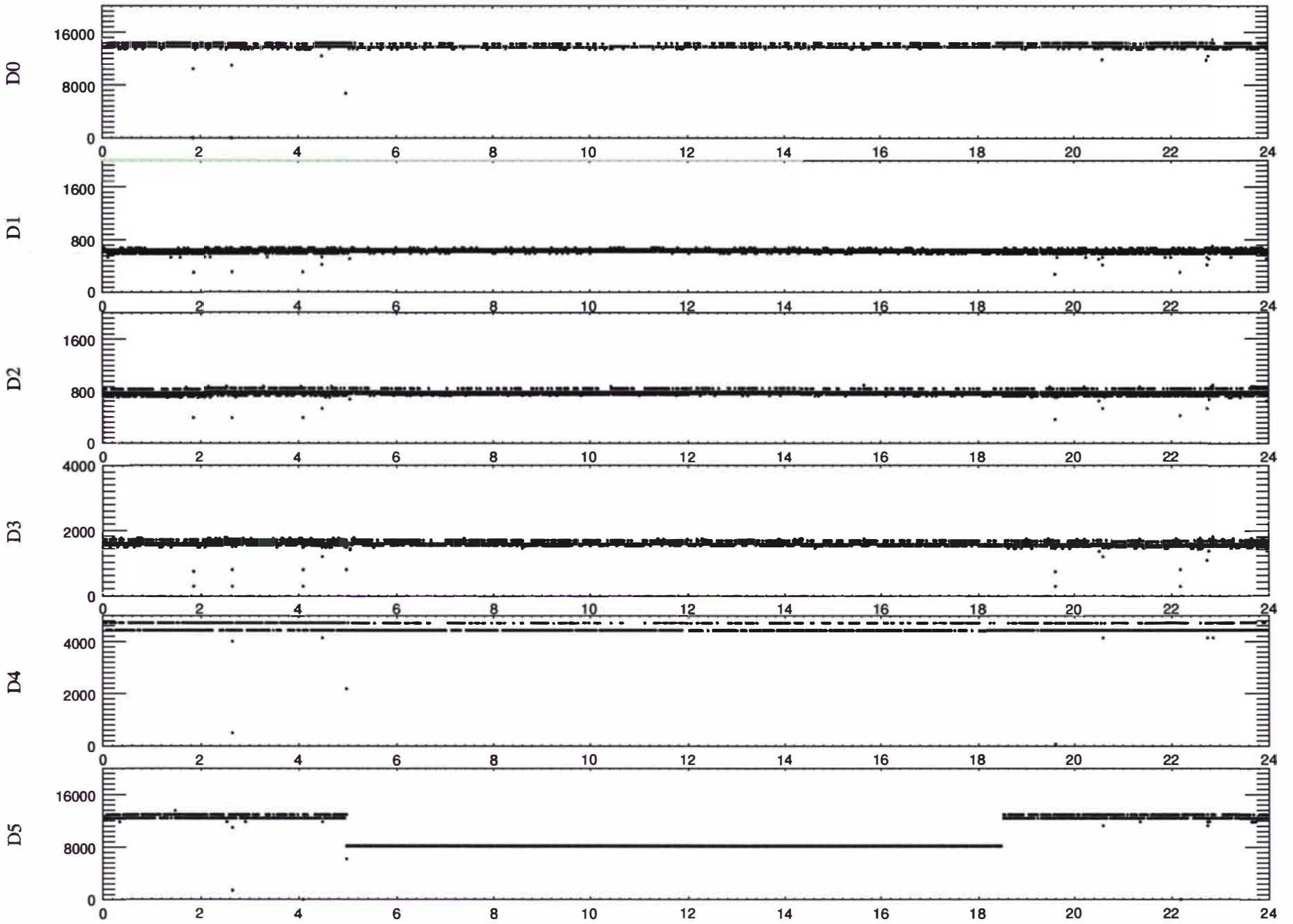
HUS 2A, MODE 1, NOT AVERAGED EDR day 60, year 1997 to day 60, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 60, year 1997 to day 60, year 1997 7/21/97



From DEAL@fender.msfc.nasa.gov Wed Mar 5 07:16 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA11458; Wed, 5 Mar 1997 07:16:11 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 5 Mar 1997 9:15:50 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970305091550.20c00b1f@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6109
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6109
EVENT OF 1997 MAR 2 DAY OF YEAR= 61
EVENT CROSSING TIME AT BATSE : 46577. S. OR 12:56:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 8.000 -55.000
BATSE PEAK COUNTING RATE: 1800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 3/ 97 IS:
RA= 164.200 DEC= 36.845 DIST= 4.000 AU
BATSE-ULYSSES DISTANCE = 598422328. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 24.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1818.83 SECS.
CROSSING TIME AT ULYSSES IS 48396. S. OR 13:26:35 +/- 220.40 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 3/ 97 IS:
RA= 183.584 DEC= 2.586 DIST= 0.698 AU
MARS-BATSE DISTANCE = 104360968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 211.74 SECS.
CROSSING TIME AT MARS IS 46789. S. OR 12:59:48 +/- 51.19 SECONDS

BATSE BURST TRIGGER

NO.: 6109

TIME: TJD=0509 SECONDS=46577

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=92.5 AZIMUTH=32.6 ERROR=4.2 DEGREES

COMMENTS:
GRB LASTING ~ 70 S. WEAK, NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6109	970302	10509	46577	1800	008	-55	70

BATSE# 6109

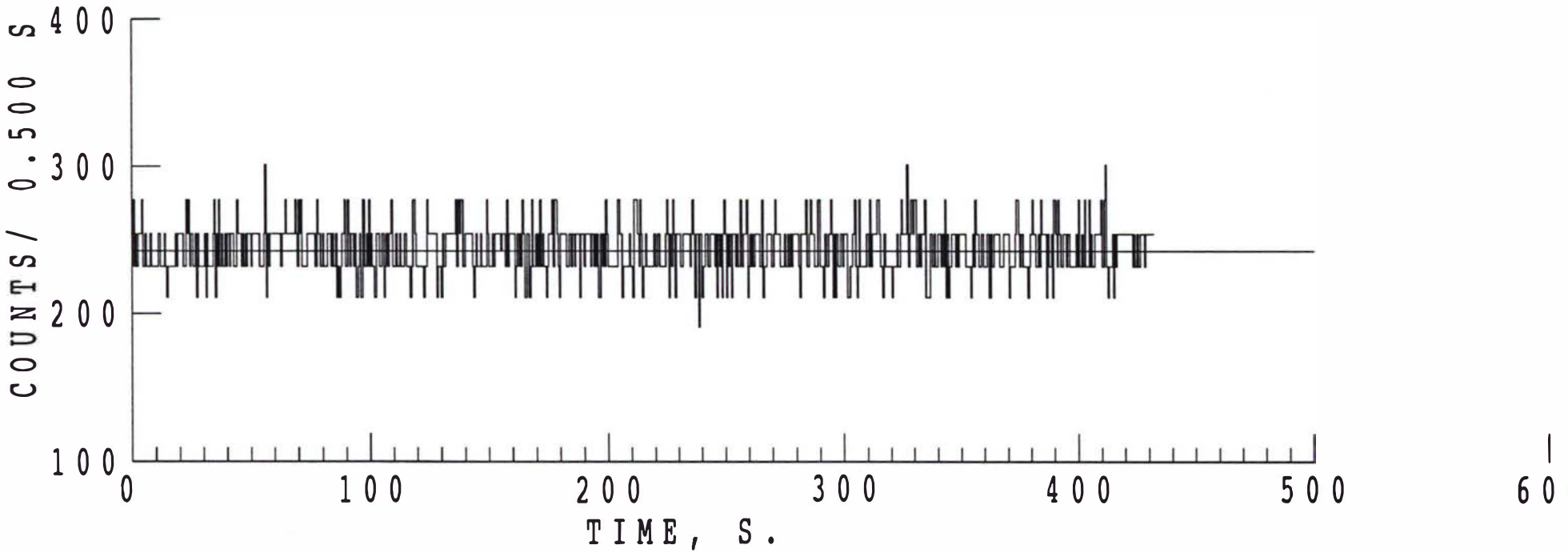
ULYSSES RT 5/ 3/97

2/ 3/97 48168.141 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

02/02/00

ULYSSES RT

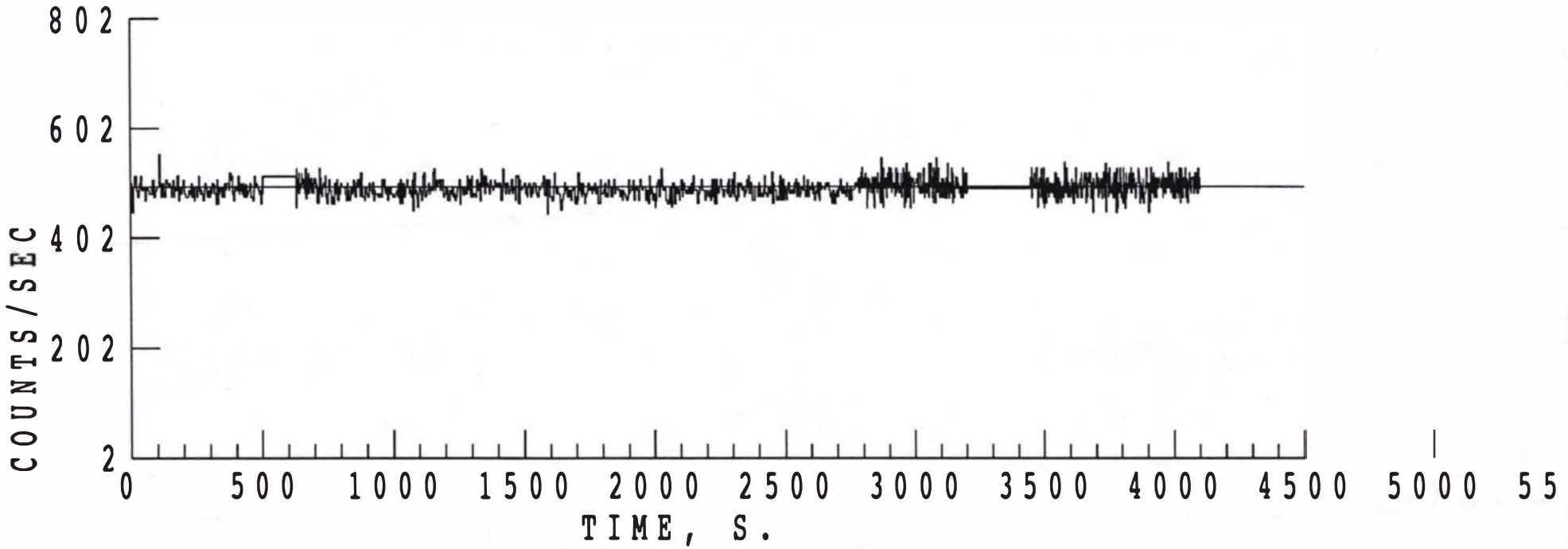
02/03/97 66096.359 s

INTERVALS REGROUPED BY 7

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Tue Mar 4 08:58 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 4 Mar 1997 10:58:11 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
band@cass09.ucsd.edu, gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6110

TIME: TJD=0509 SECONDS=51328

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

From DEAL@fender.msfc.nasa.gov Tue Mar 4 14:54 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA06813; Tue, 4 Mar 1997 14:54:18 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 4 Mar 1997 16:53:52 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970304165352.20c00a9d@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6111
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6111
EVENT OF 1997 MAR 2 DAY OF YEAR= 61
EVENT CROSSING TIME AT BATSE : 67345. S. OR 18:42:25.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 276.000 21.000
BATSE PEAK COUNTING RATE: 4400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 3/ 97 IS:
RA= 164.127 DEC= 36.847 DIST= 4.001 AU
BATSE-ULYSSES DISTANCE = 598603304. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 126.65 SECS.
CROSSING TIME AT ULYSSES IS 67472. S. OR 18:44:31 +/- 397.89 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 3/ 97 IS:
RA= 183.584 DEC= 2.586 DIST= 0.698 AU
MARS-BATSE DISTANCE = 104360968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 8.05 SECS.
CROSSING TIME AT MARS IS 67353. S. OR 18:42:33 +/- 60.54 SECONDS

BATSE BURST TRIGGER
NO.: 6111

TIME: TJD=0509 SECONDS=67345

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=143.1 AZIMUTH=267.4 ERROR=2.9 DEGREES

COMMENTS:
GRB. FRED LASTING ~ 40 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6111	970302	10509	67345	4400	276	+21	40

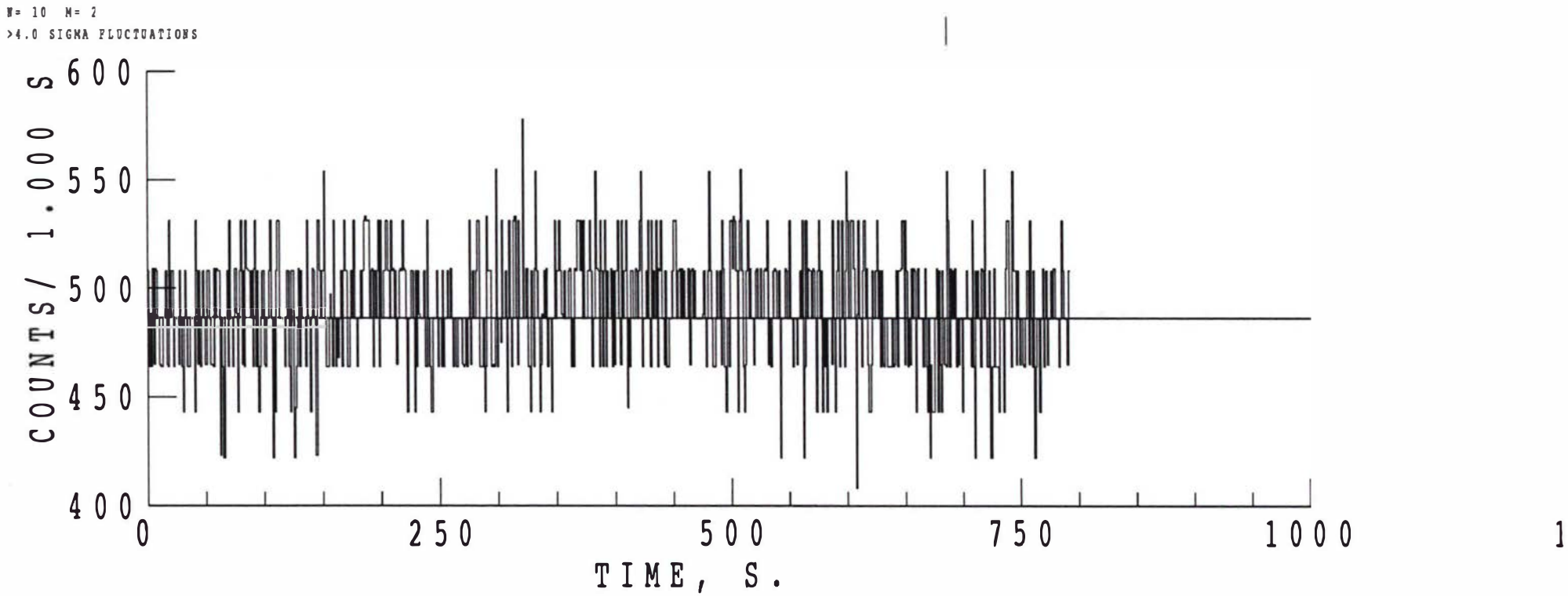
BATSE# 6111

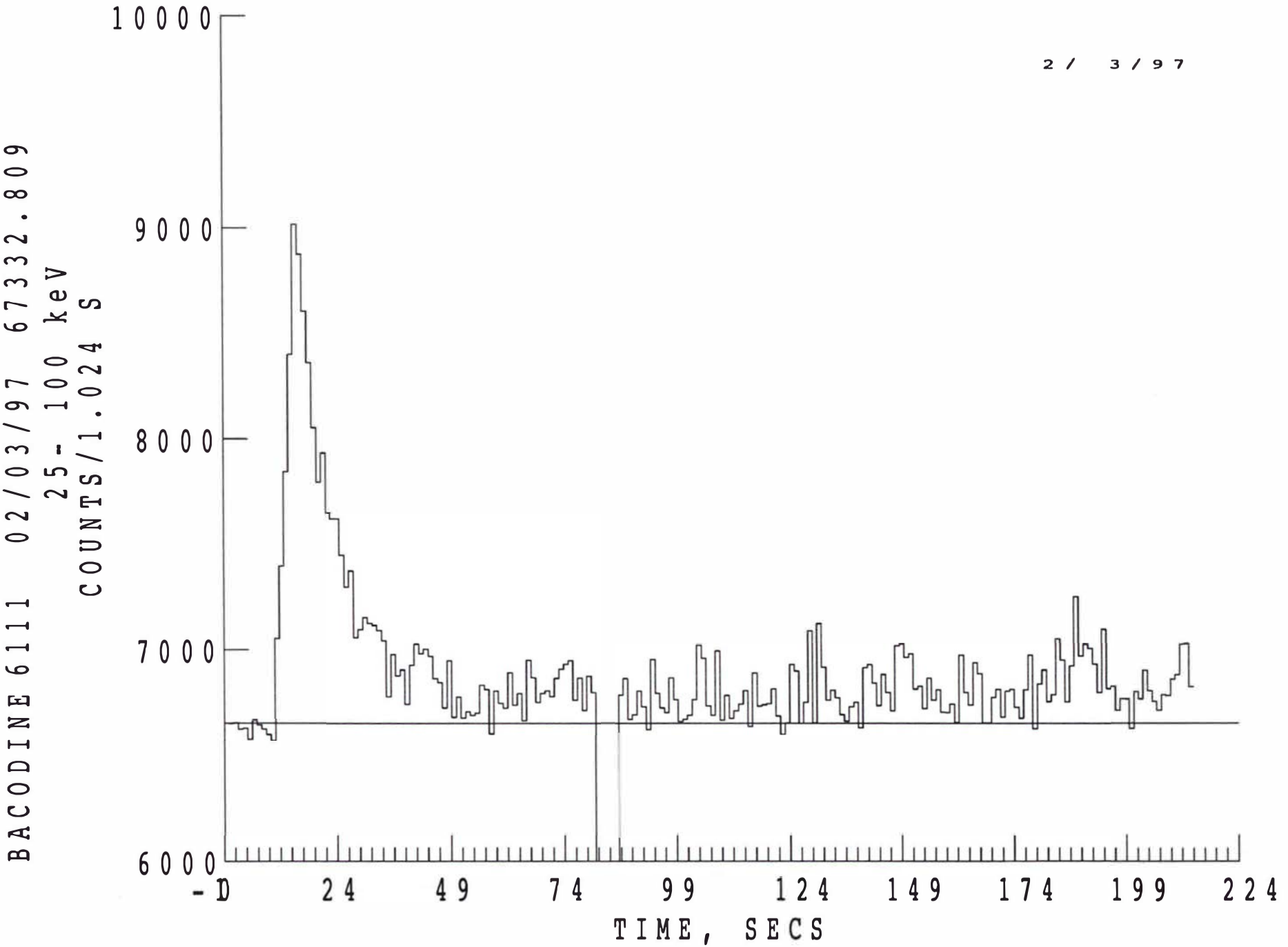
ULYSSES RT 4/ 3/97

2/ 3/97 67068.367 s

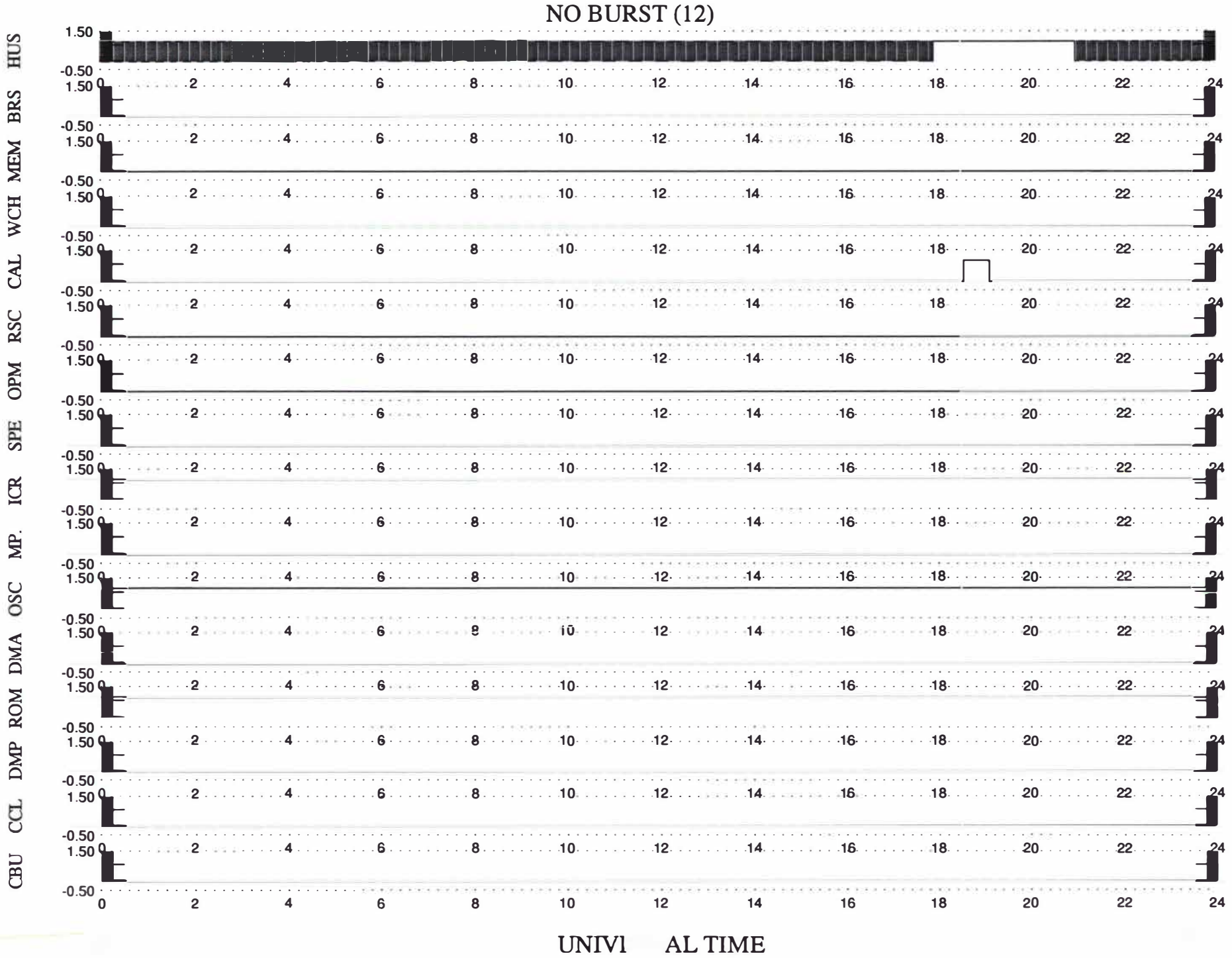
0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



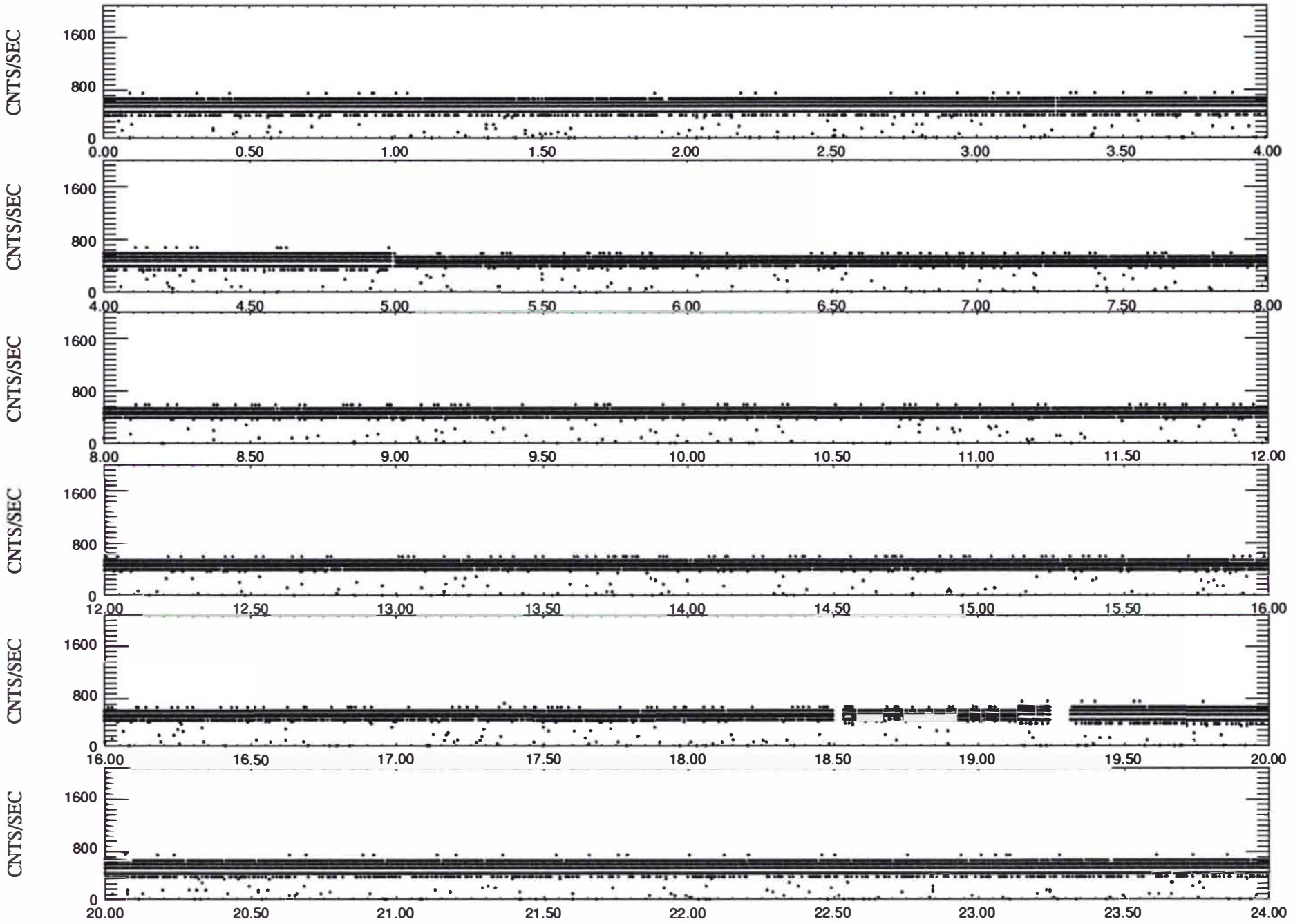

BACODINE 6111 02/03/97 67332.809
25- 100 keV
COUNTS/1.024 S
10000
9000
8000
7000
6000
2 / 3 / 97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

HUS MODES EDR day 61, year 1997 to day 61, year 1997 7/21/97



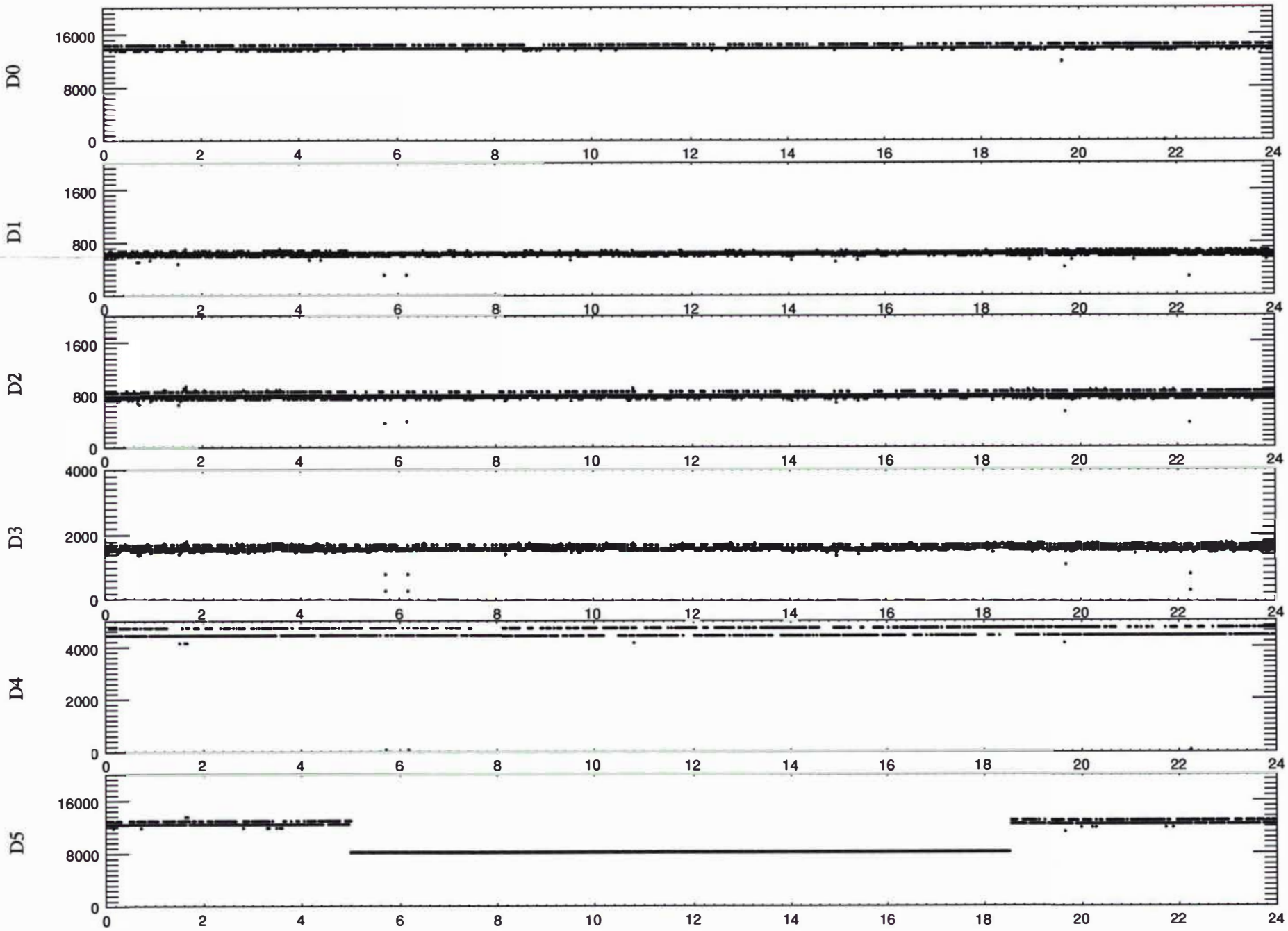
HUS 2A, MODE 1, NOT AVERAGED EDR day 61, year 1997 to day 61, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 61, year 1997 to day 61, year 1997 7/21/97



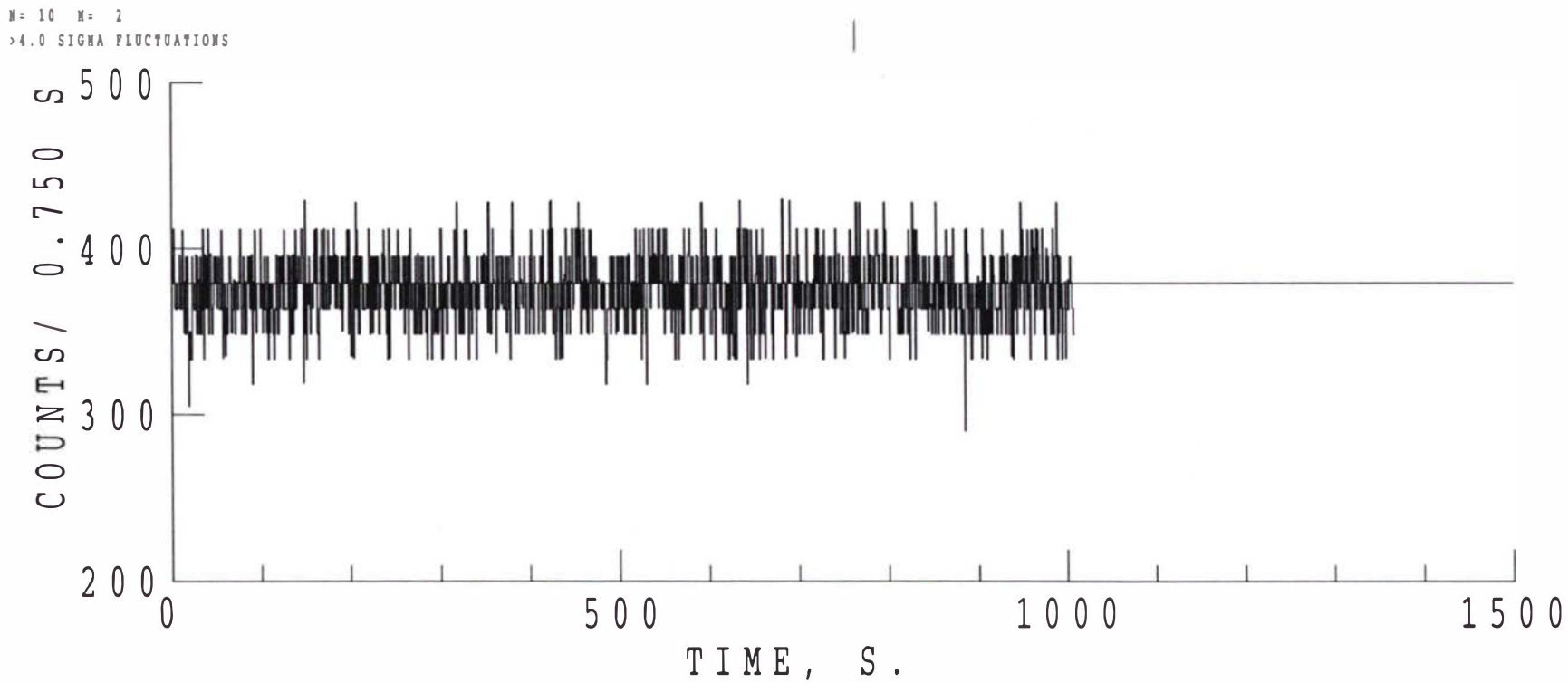
GRBM 19970303 00964

ULYSSES RT 05/02/07

03/03/97 468.104 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



SAX

HUS DATA

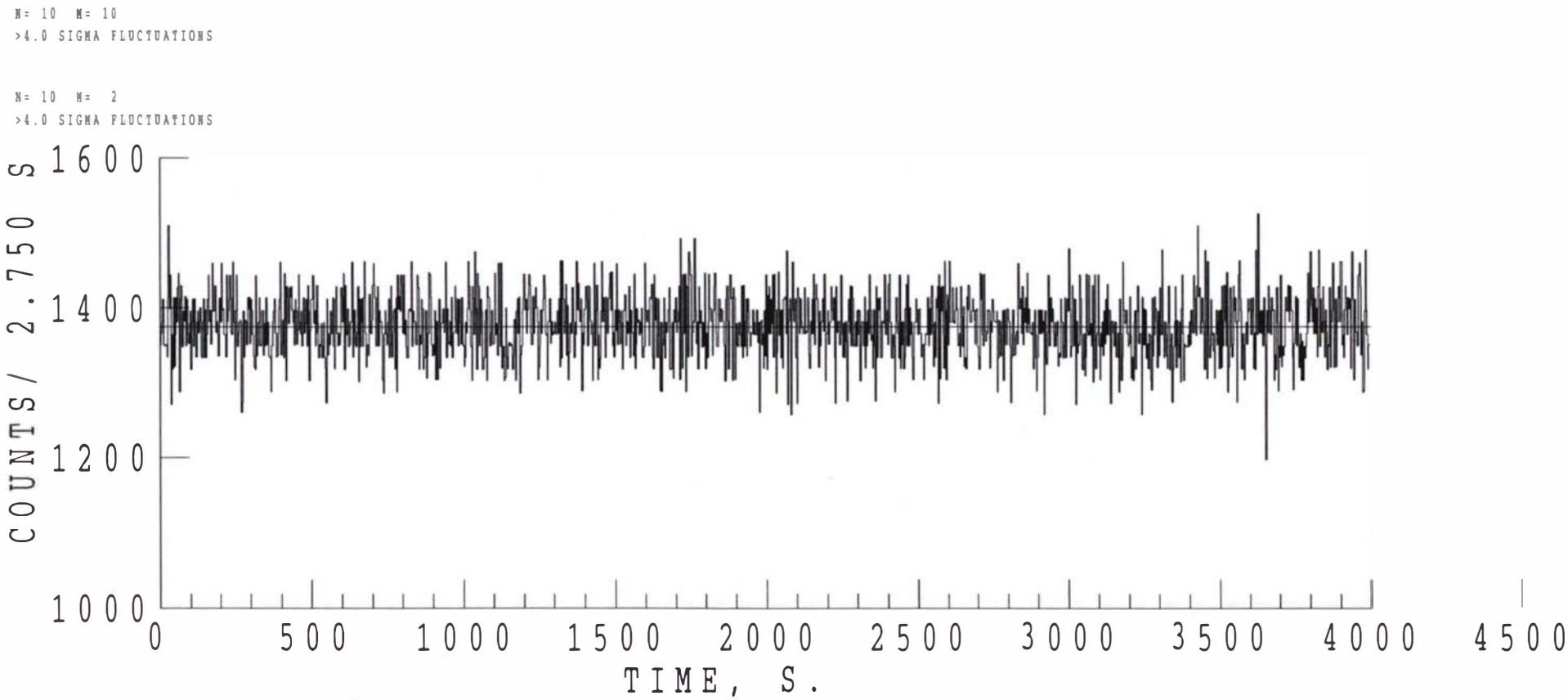
ULYSSES RT

19/07/05

03/03/97 216.101 s

0.250 S INTERVALS REGROUPED BY 11

0- 0 keV



Date: Dec 2 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

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

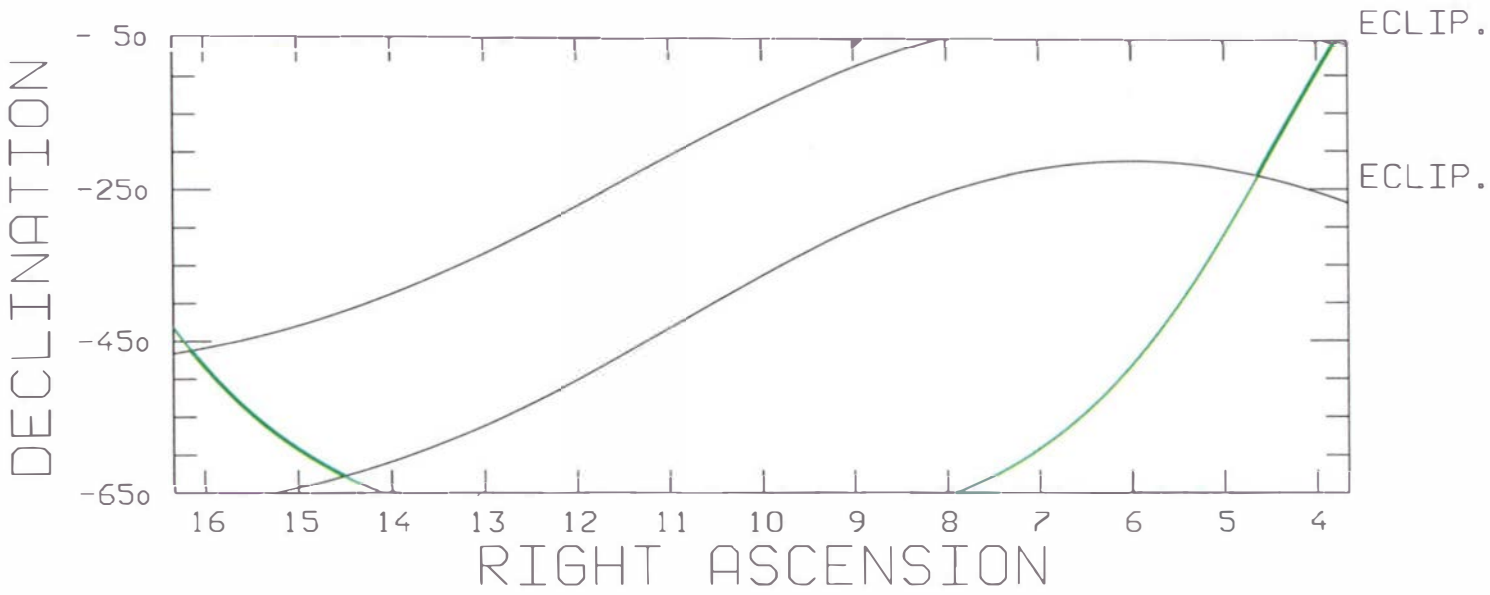
3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

☐ Updated ephemeris used for bursts prior to September 30, 2003?

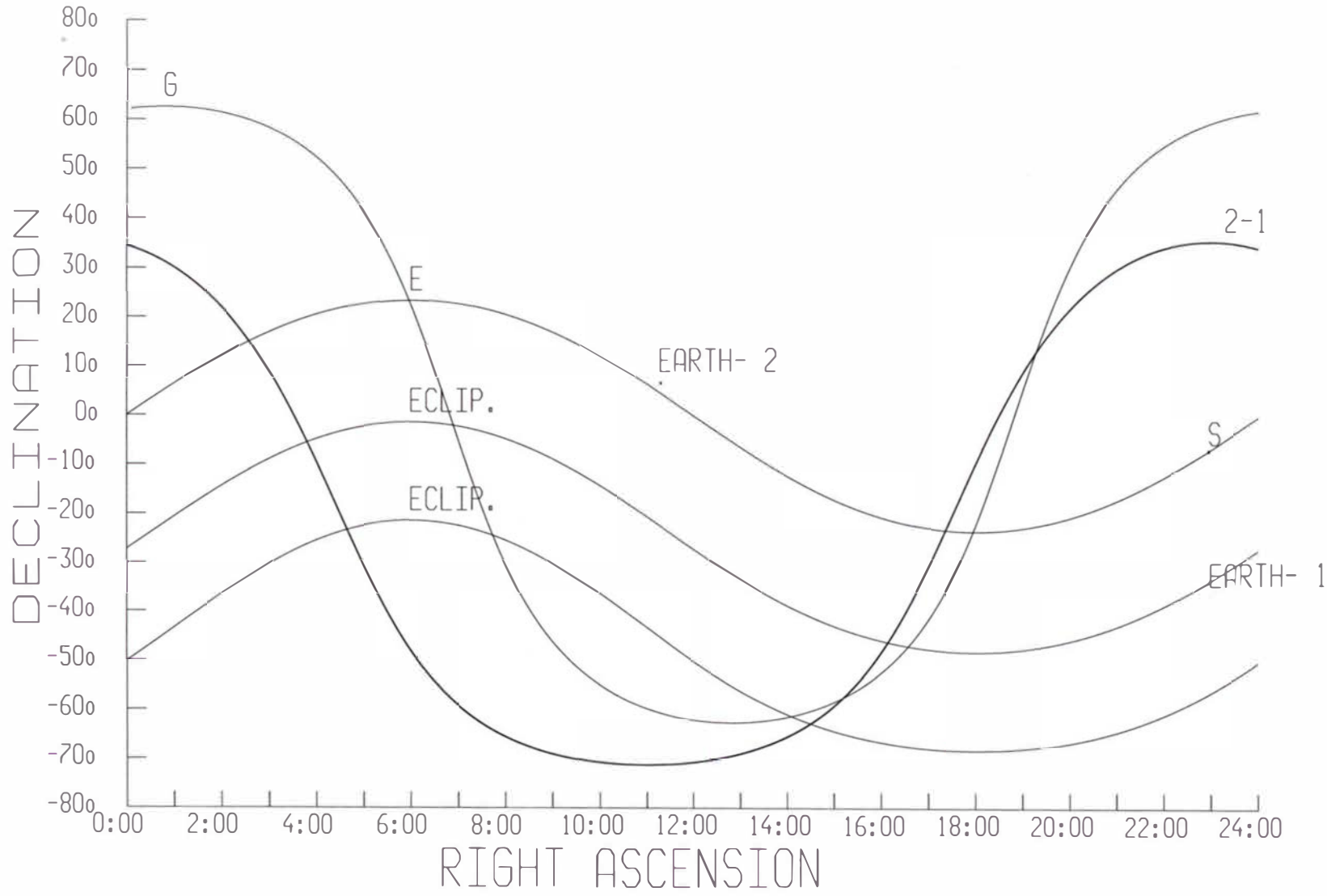
☑ ACCESS and MBL4 databases updated with identical times?


ECLIP.
ECLIP.
- 5o
-25o
-45o
-65o
DECLINATION
16 15 14 13 12 11 10 9 8 7 6 5 4
RIGHT ASCENSION

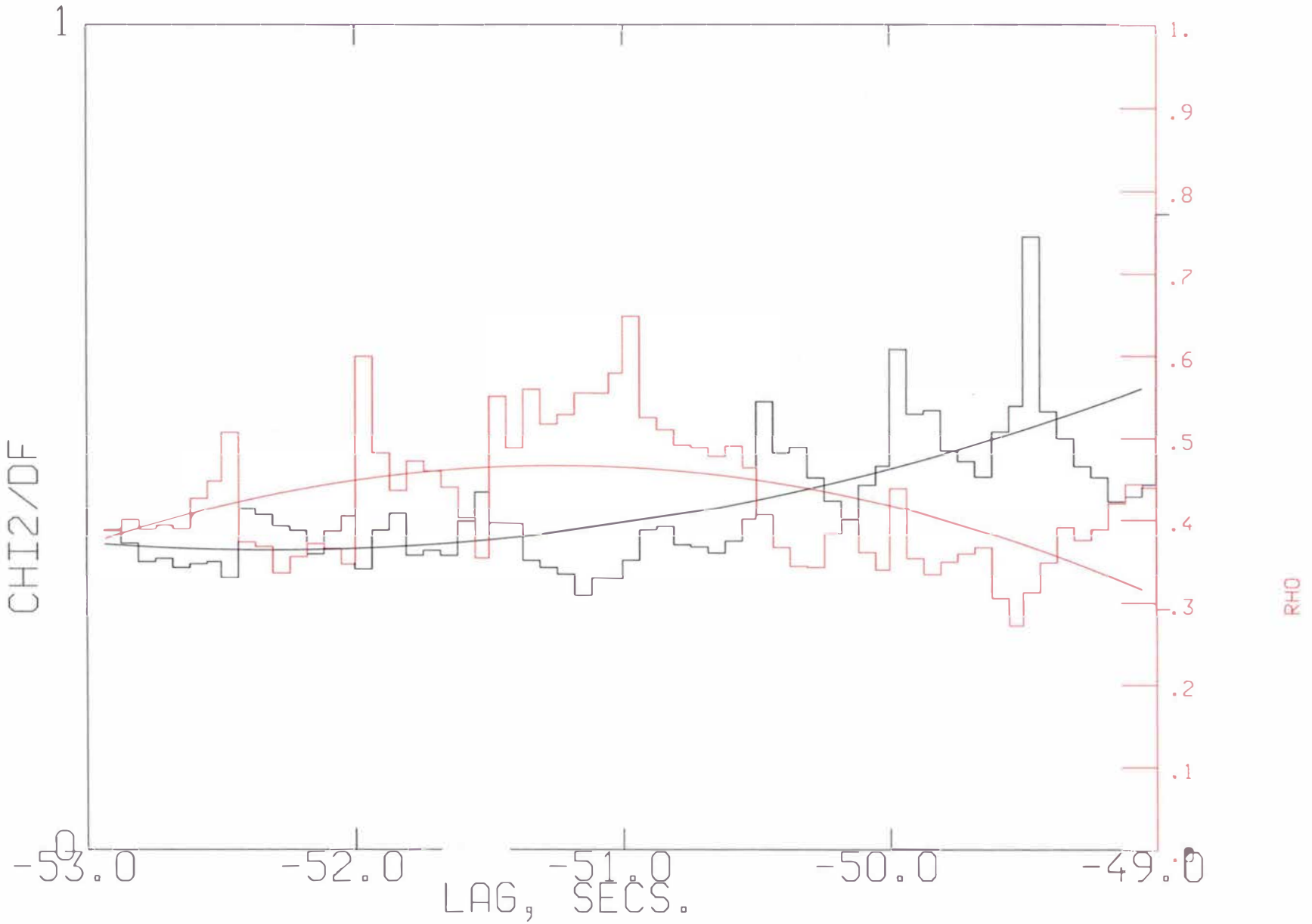
EVENT OF MAR 3, 1997 6:01

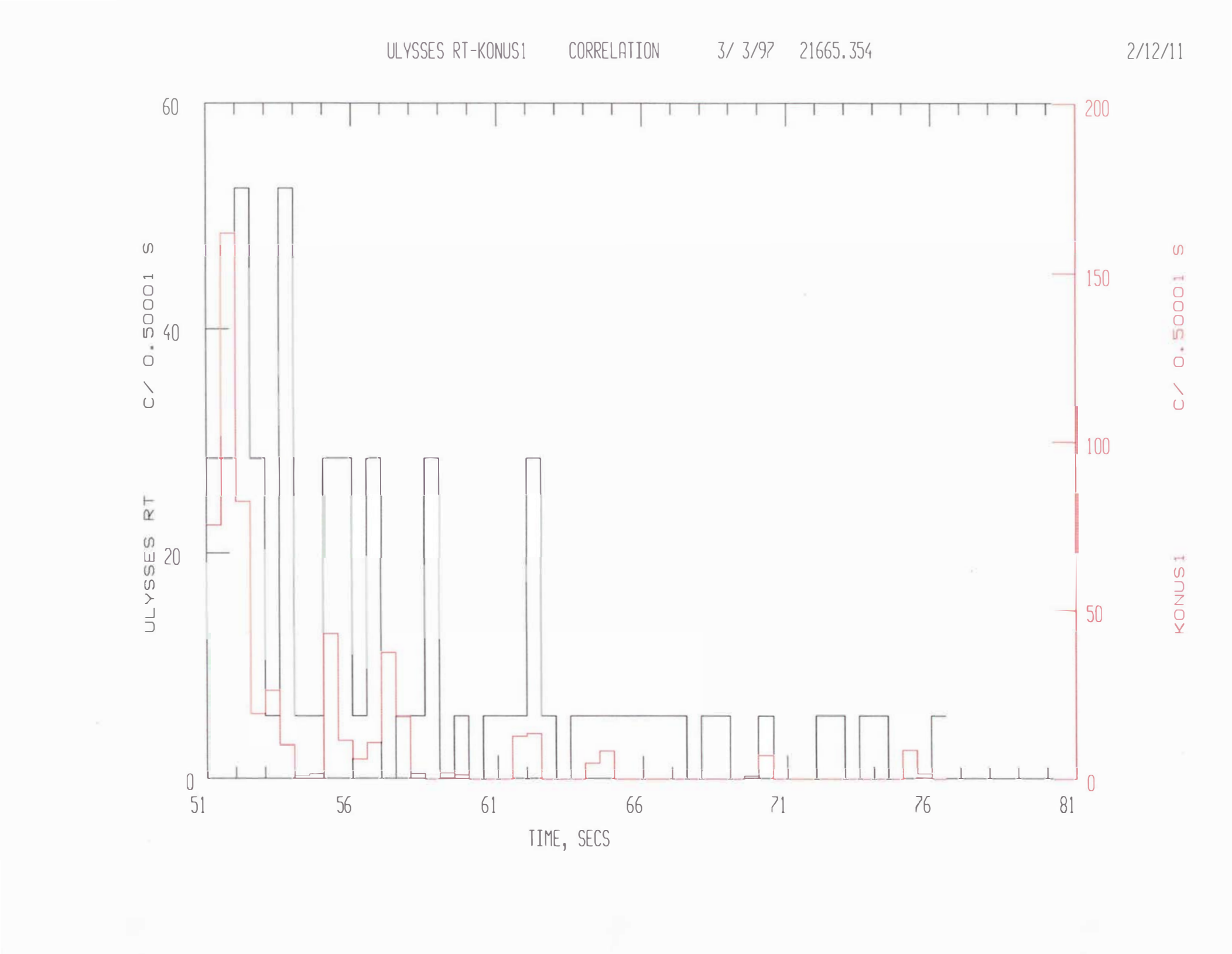
02/12/2011

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 KONUS1



ULYSSES RT-KONUS1 CORRELATION 3/ 3/97 21665.354




ULYSSES RT-KONUS1 CORRELATION 3/ 3/97 21665.354
2/12/11
60
40
20
0
200
150
100
50
0
51
56
61
66
71
76
81
C/ 0.50001 S
ULYSSES RT
C/ 0.50001 S
KONUS1
TIME, SECS

konus 19970303 21744

ULYSSES RT

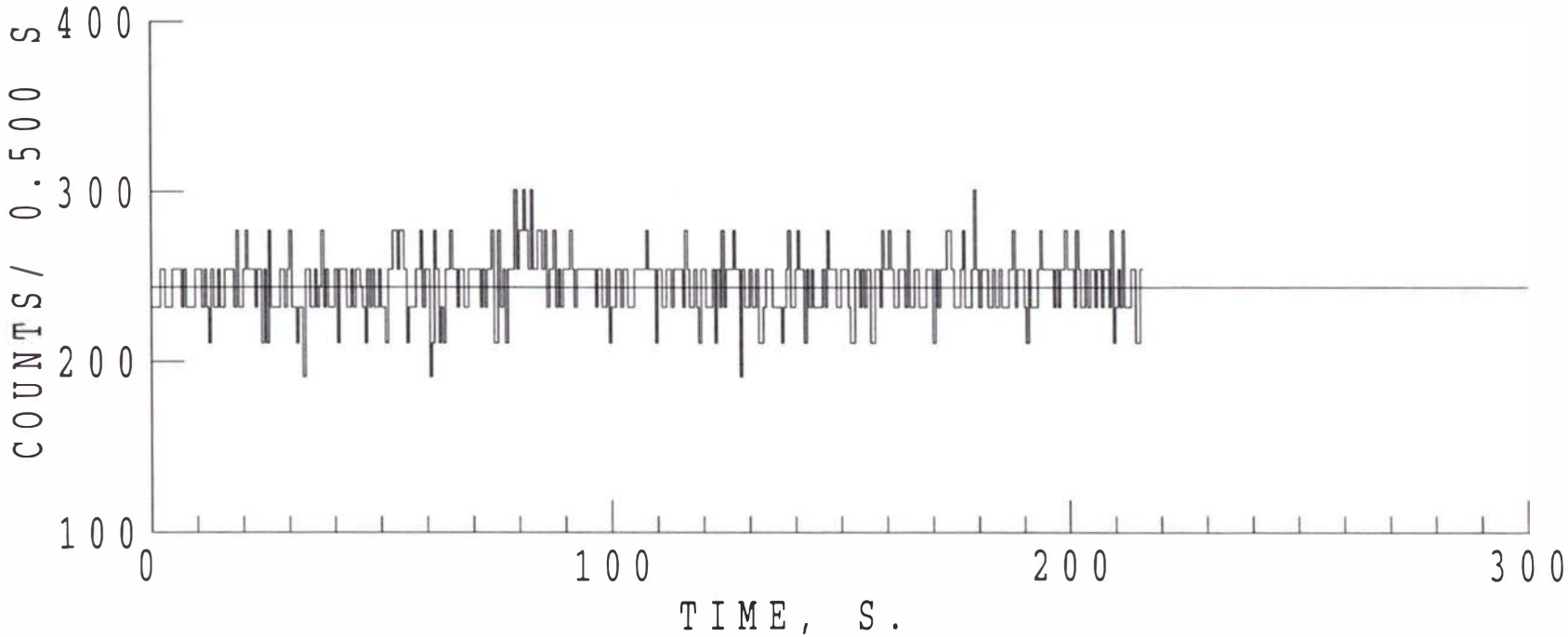
22/11/11

03/03/97 21636.355 s

0- 0 keV

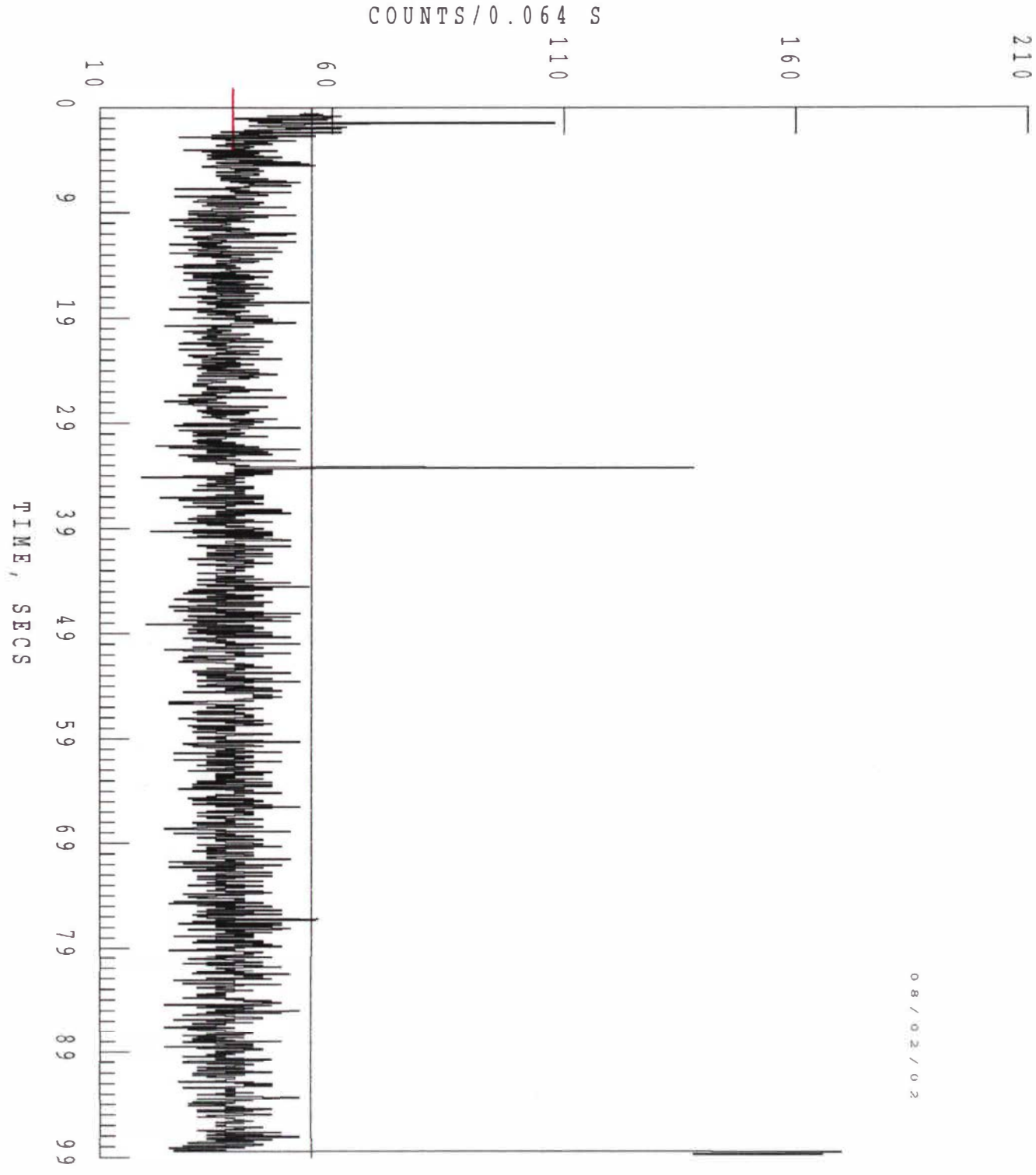
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS1 03/03/97 21107.915

50- 200 keV



From WOODSP@ssl.msfc.nasa.gov Wed Mar 5 09:38 PST 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 5 Mar 1997 11:38:00 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.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.: 6112

TIME: TJD=0510 SECONDS=41877

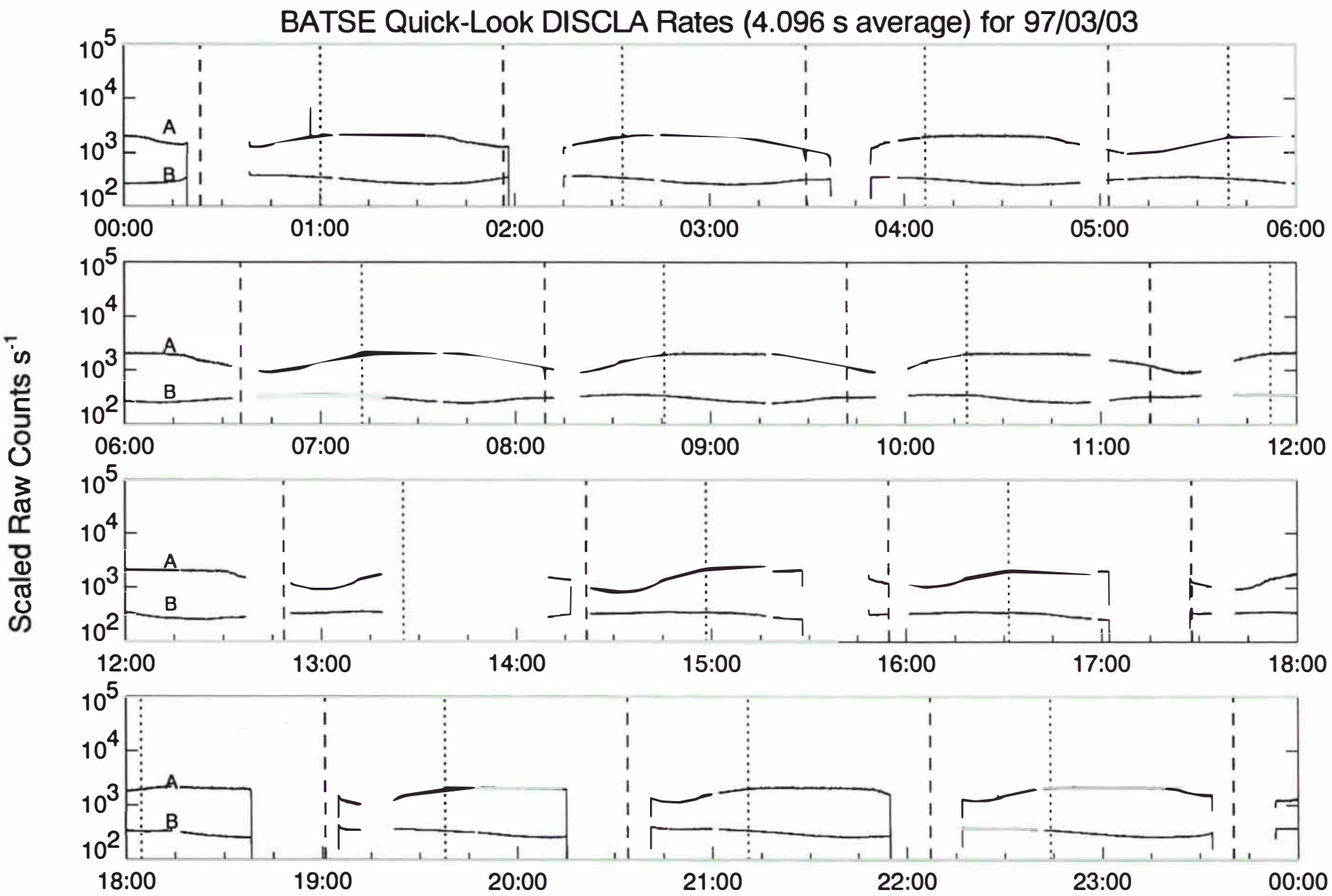
TYPE: CYG X-1 SOLAR FLARE TRIGGER SIGNAL:N

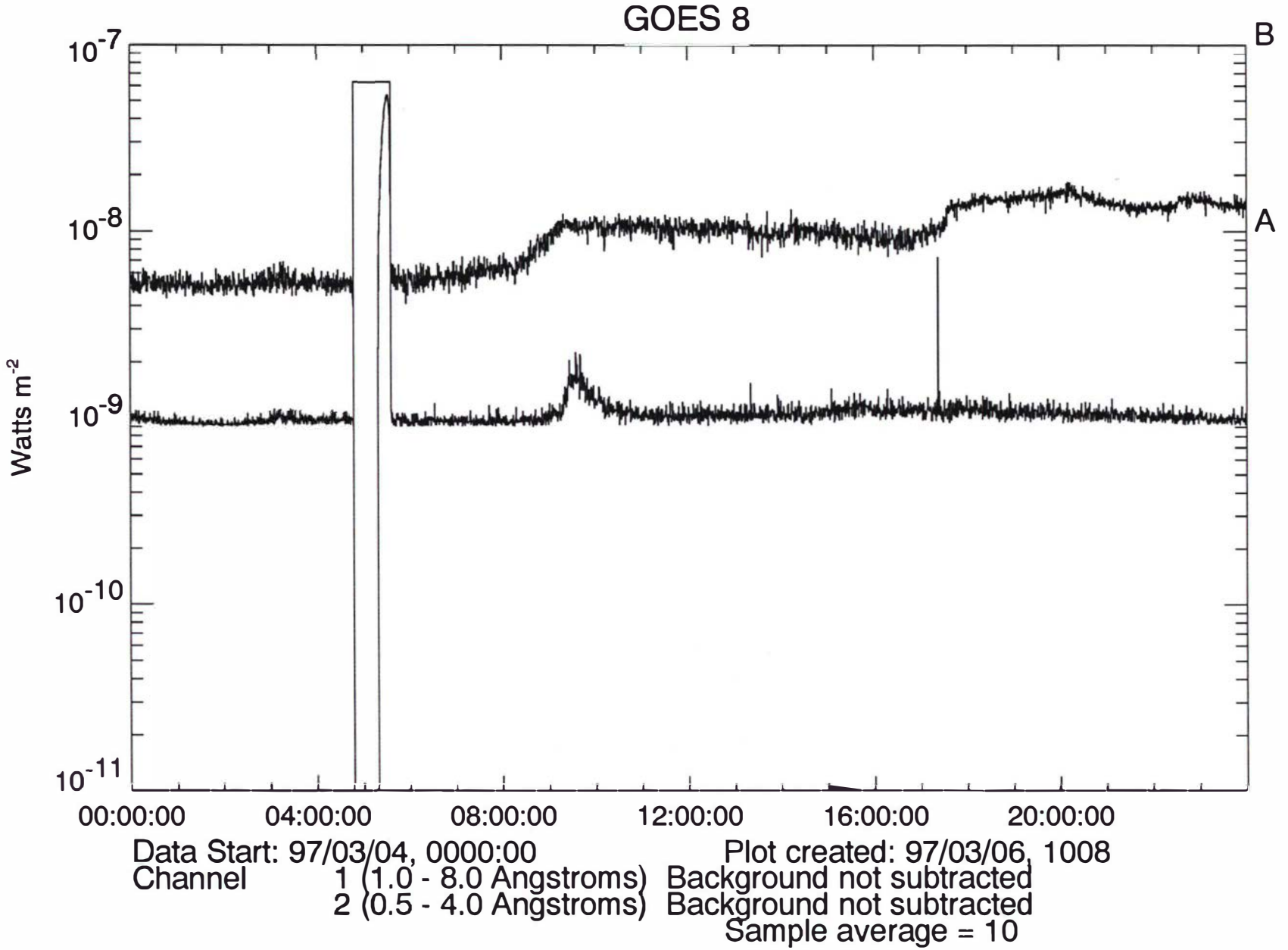
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

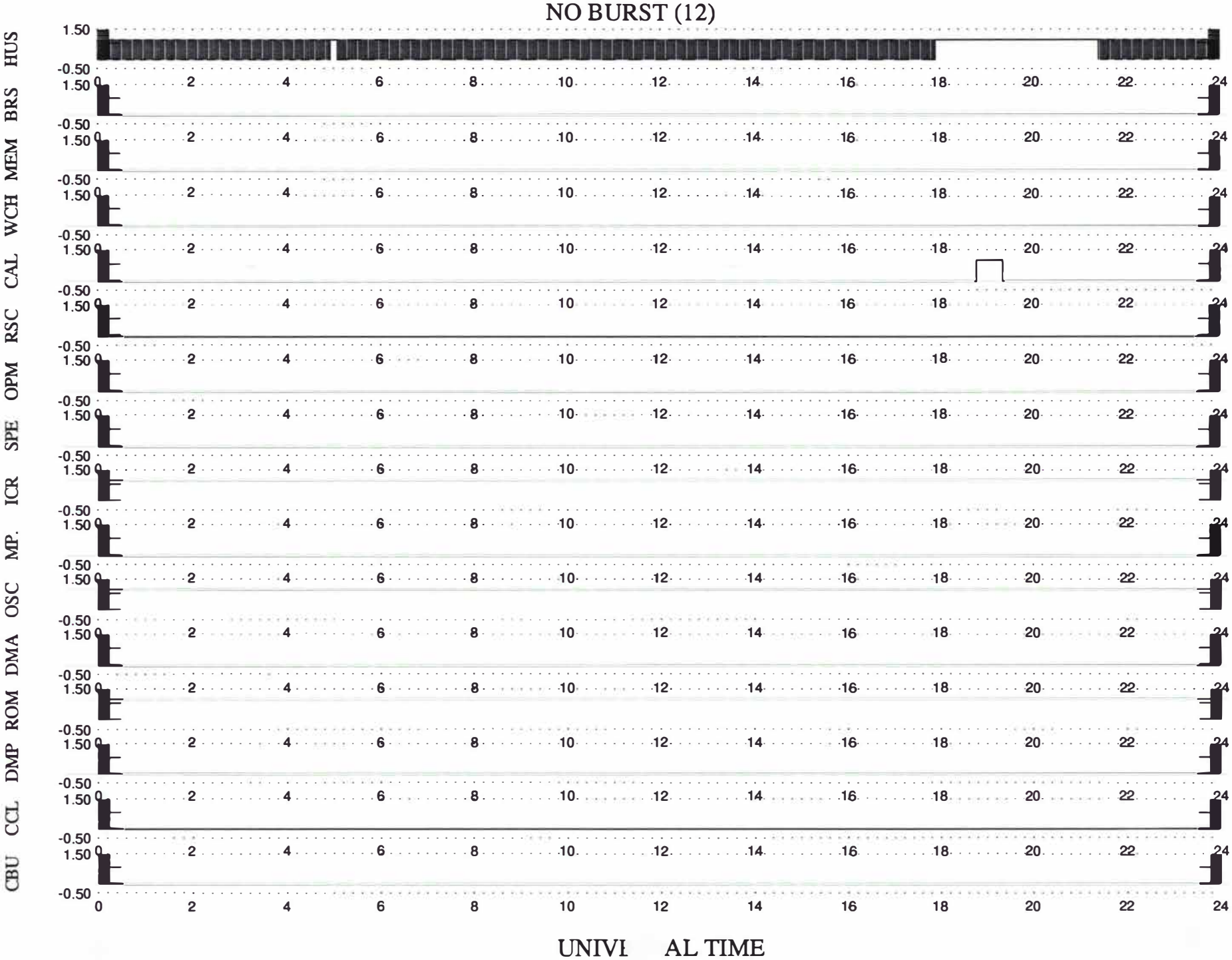
LOCATION: ZENITH=103.3 AZIMUTH=277.5 ERROR=17 DEGREES

COMMENTS:
CYG X-1 FLUCTUATION SHORTLY AFTER AN OCCULTATION RISE.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/03/03
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/03/05, 1626 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

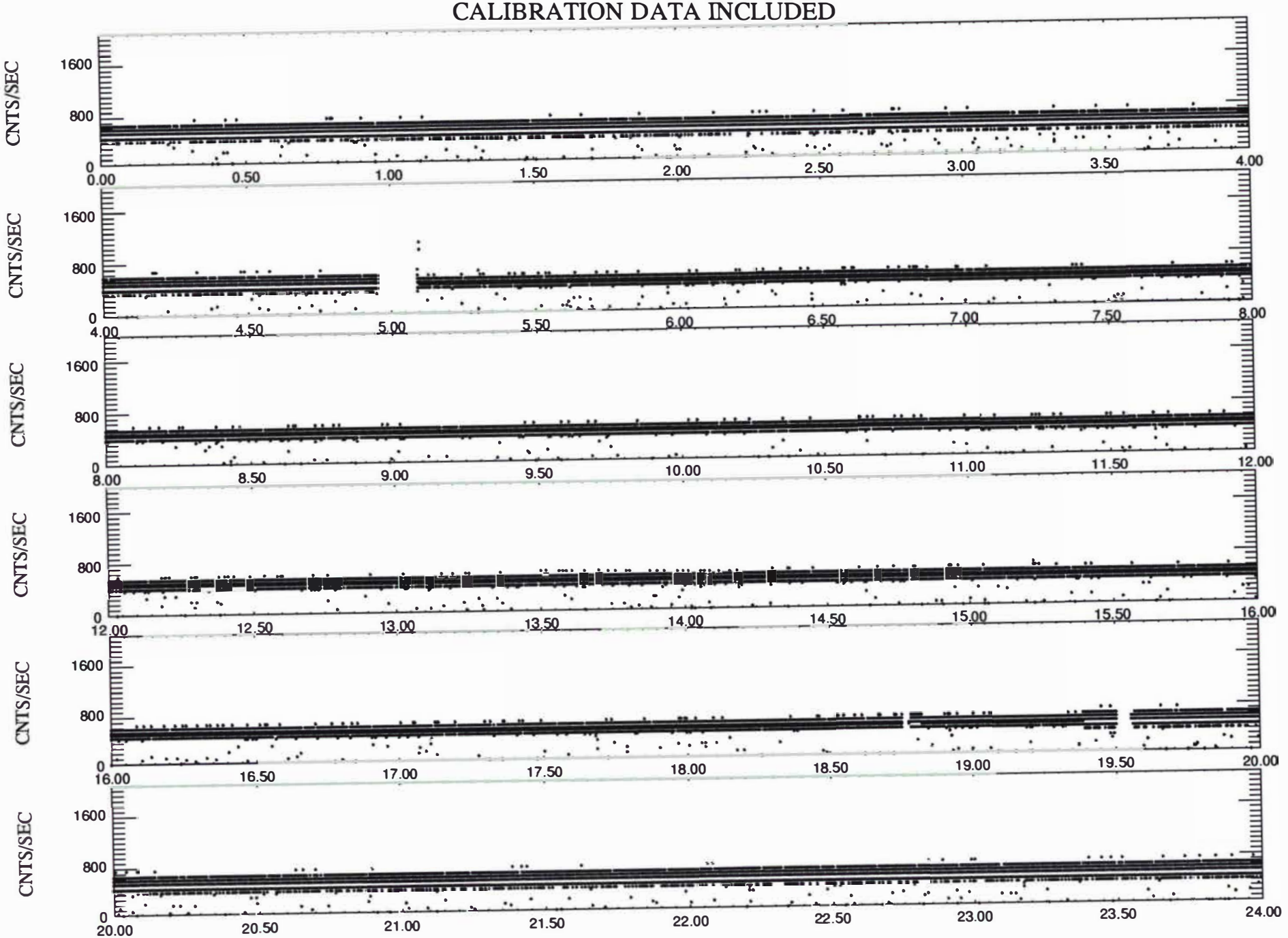

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/04, 0000:00
Plot created: 97/03/06, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 62, year 1997 to day 62, year 1997 7/21/97



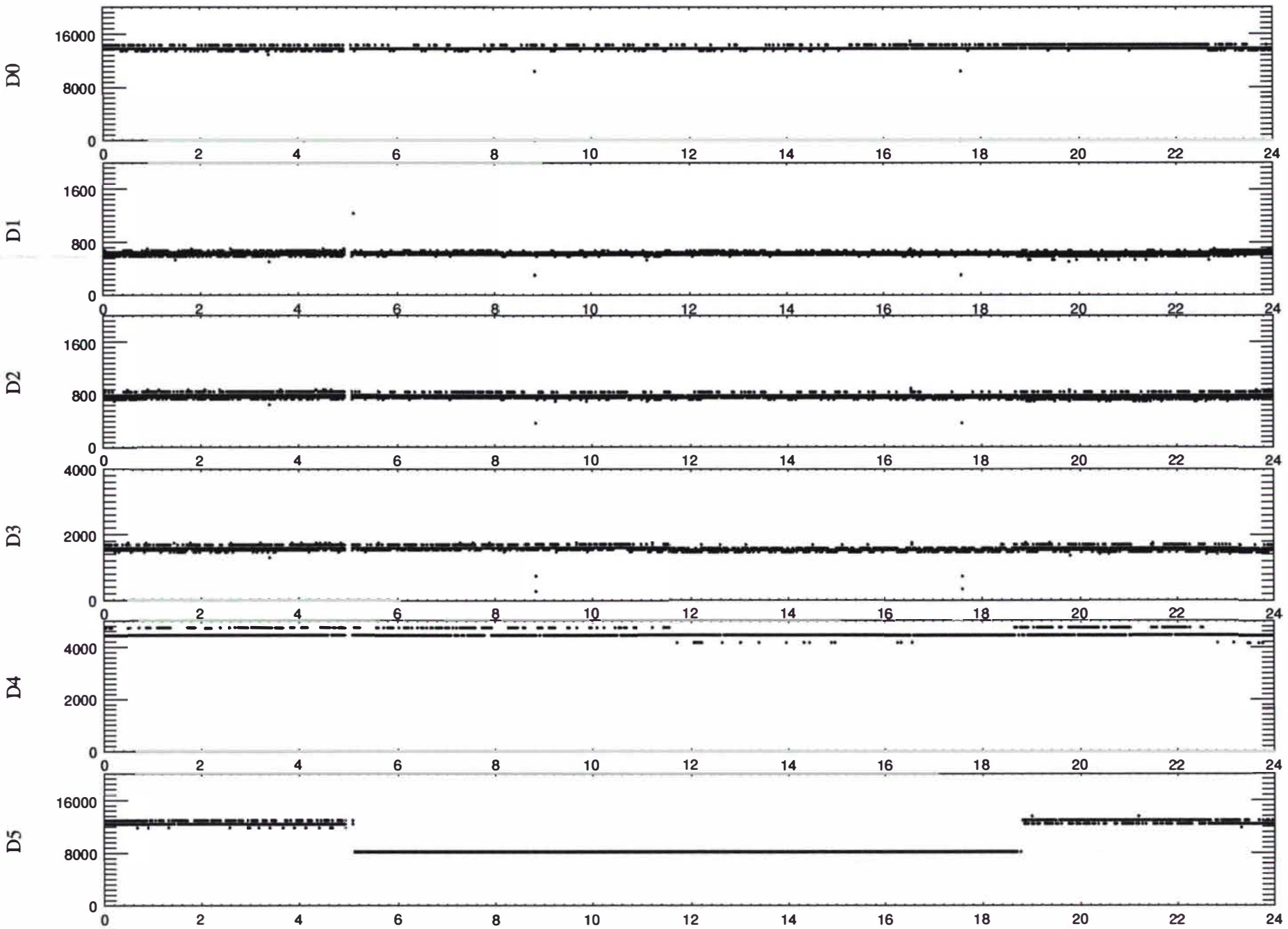
HUS 2A, MODE 1, NOT AVERAGED EDR day 62, year 1997 to day 62, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 62, year 1997 to day 62, year 1997 7/21/97



From RICHARDSON@ssl.msfc.nasa.gov Wed Mar 5 09:21 PST 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA12135; Wed, 5 Mar 1997 09:21:46 -0800
Date: Wed, 5 Mar 1997 11:21:31 -0600 (CST)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970305112131.20a01c3f@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6113
Content-Type: text
Content-Length: 1135
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST # 6113
EVENT OF 1997 MAR 4 DAY OF YEAR= 63
EVENT CROSSING TIME AT BATSE : 29045. S. OR 08:04:05.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 220.000 -9.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 3/ 97 IS:
RA= 163.649 DEC= 36.857 DIST= 4.010 AU
BATSE-ULYSSES DISTANCE = 599858441. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=110.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -688.44 SECS.
CROSSING TIME AT ULYSSES IS 28357. S. OR 07:52:36 +/- 365.73 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 3/ 97 IS:
RA= 183.020 DEC= 2.837 DIST= 0.690 AU
MARS-BATSE DISTANCE = 103219752. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -268.66 SECS.
CROSSING TIME AT MARS IS 28776. S. OR 07:59:36 +/- 33.30 SECONDS

BATSE BURST TRIGGER

NO.: 6113

TIME: TJD=0511 SECONDS=29045

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=137.9 AZIMUTH=157.6 ERROR=1.2 DEGREES

COMMENTS:
GRB. STRONG WITH LOTS OF STRUCTURE. DUR.~ 11 SEC. POSSIBLE EMISSION AT
~T+35 SEC. WITH DUR.~10SEC. MAIN EVENT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6113	970304	10511	29045	30000	220	-09	46

Helio corr removed 17/2/00

Date: Mar 26 '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)? 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?

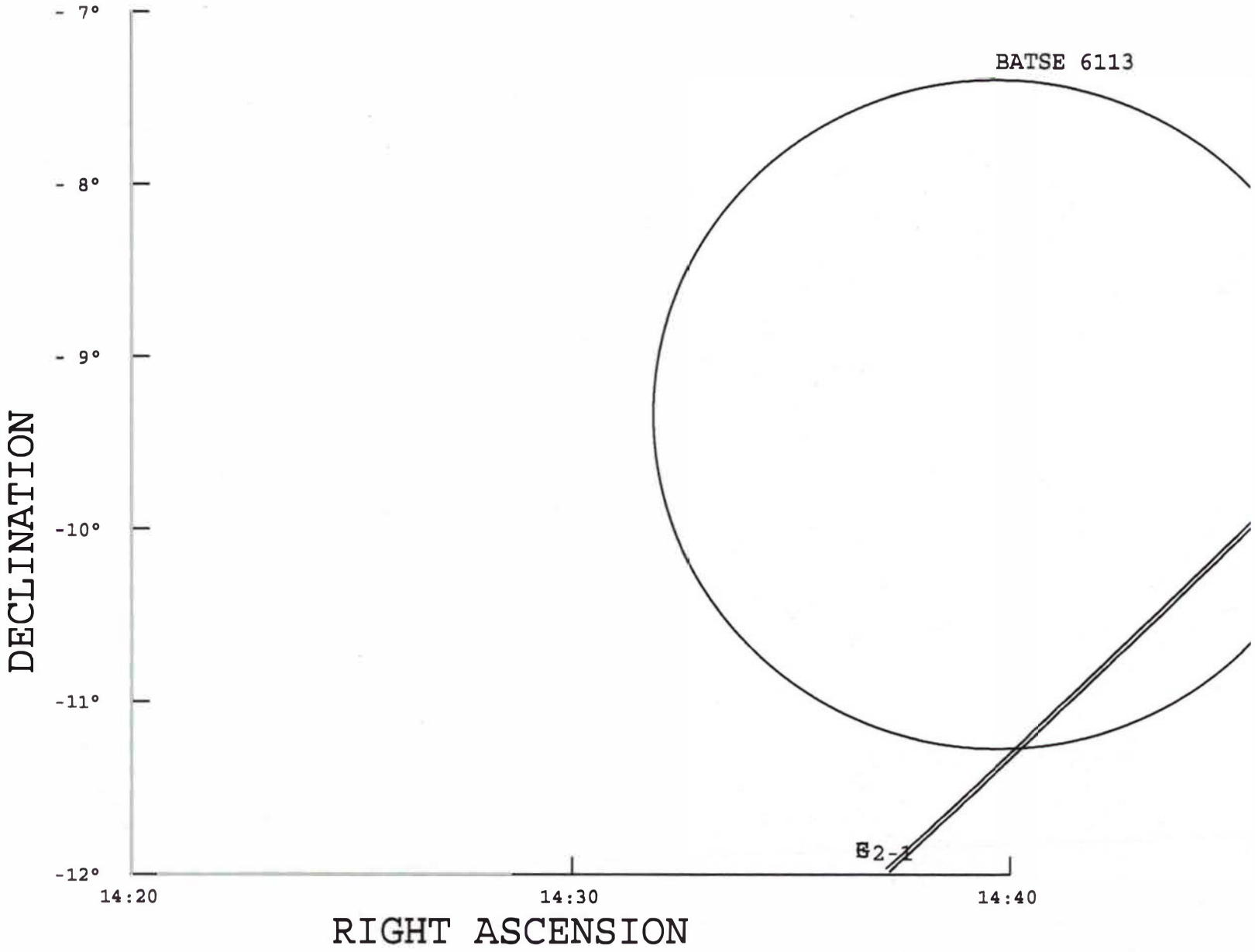
☐ Geocentric time used?

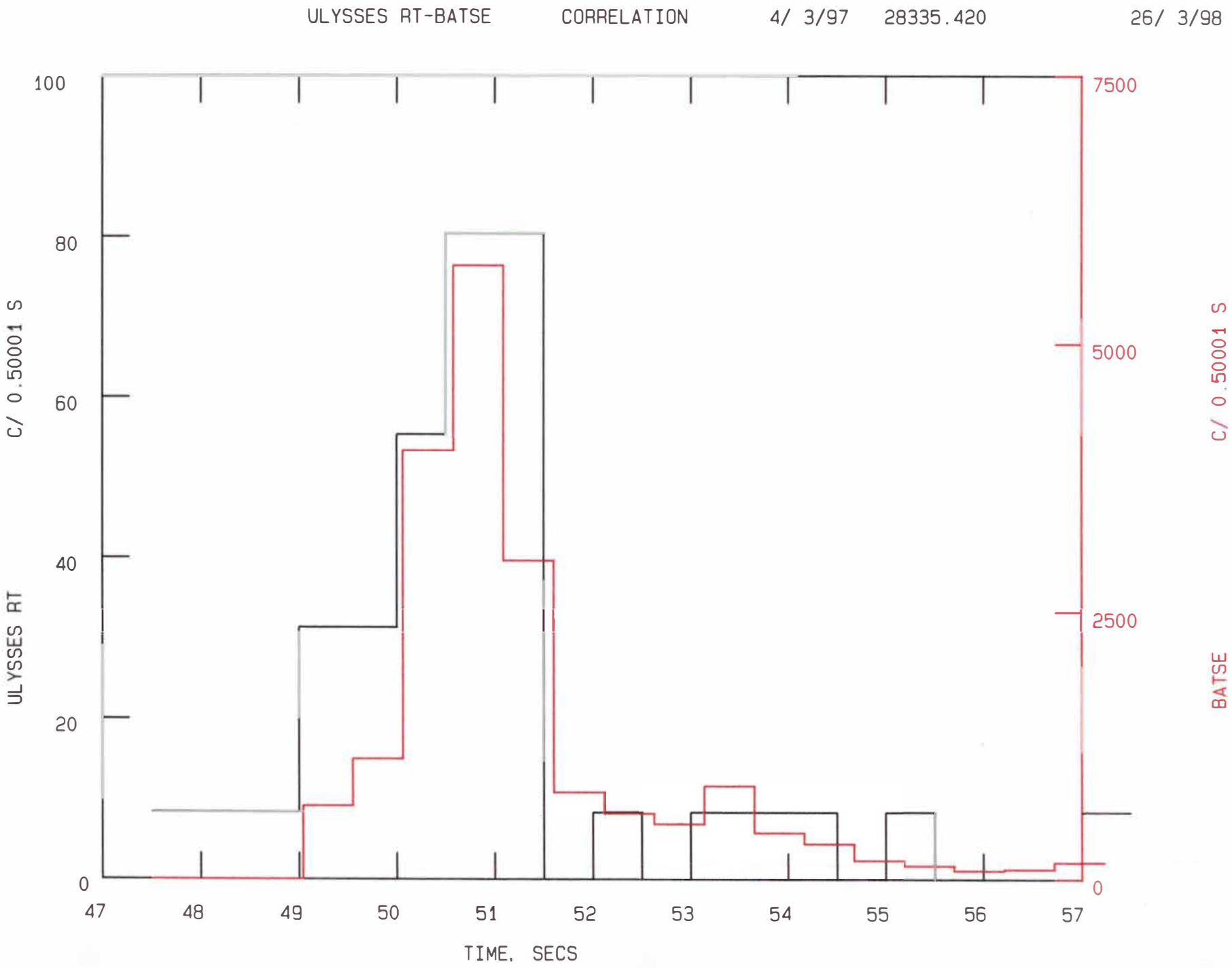
☑ ACCESS database updated?

EVENT OF MAR 4, 1997 7:52

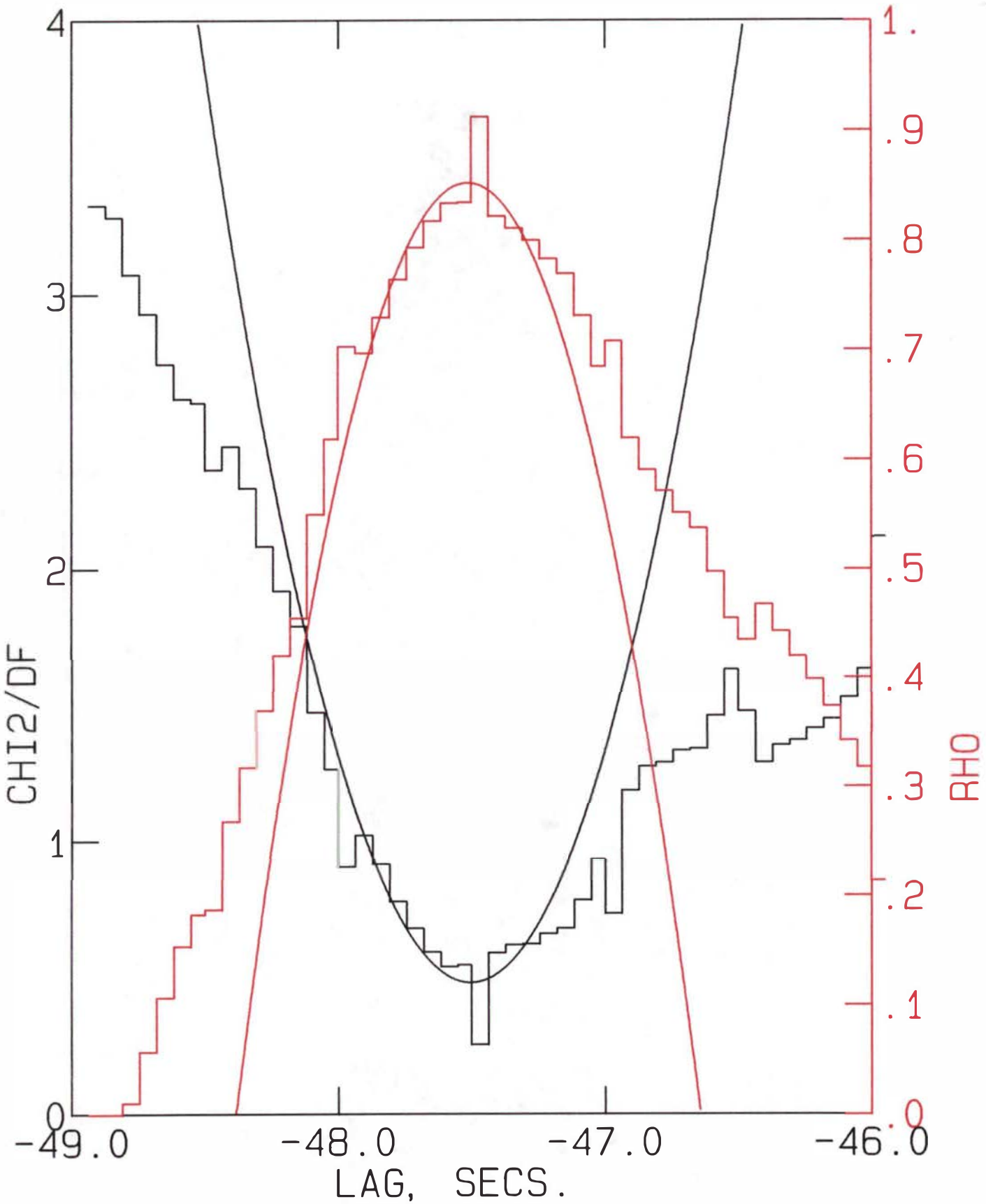
17/ 2/ 0

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




ULYSSES RT-BATSE CORRELATION 4/ 3/97 28335.420 26/ 3/98
100
80
60
40
20
0
C/ 0.50001 S
ULYSSES RT
7500
5000
2500
0
C/ 0.50001 S
BATSE
47
48
49
50
51
52
53
54
55
56
57
TIME, SECS

ULYSSES RT-BATSE CORRELATION 4/ 3/97 28335.420

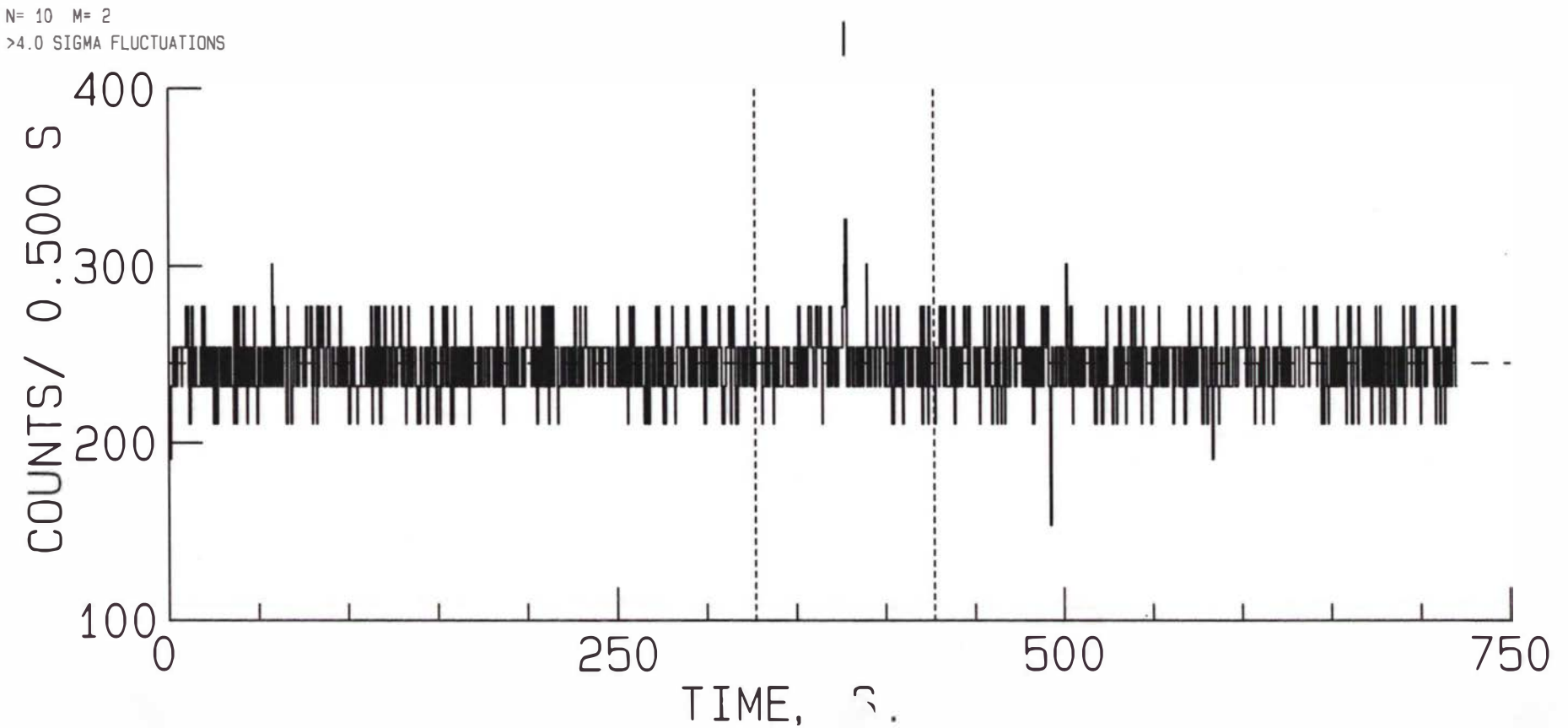


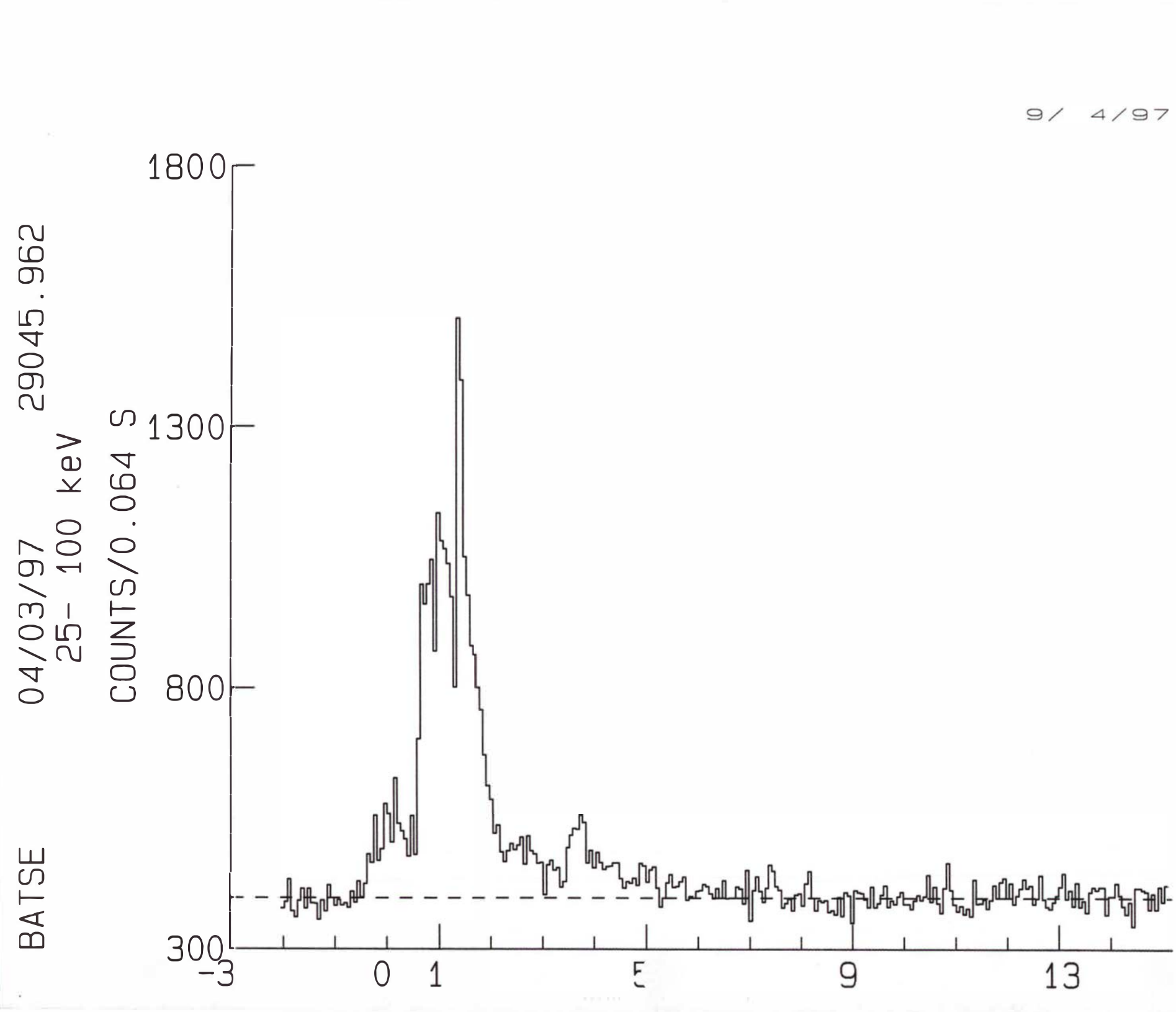
ULYSSES RT

26/ 3/98

4/ 3/97 28008.465 s

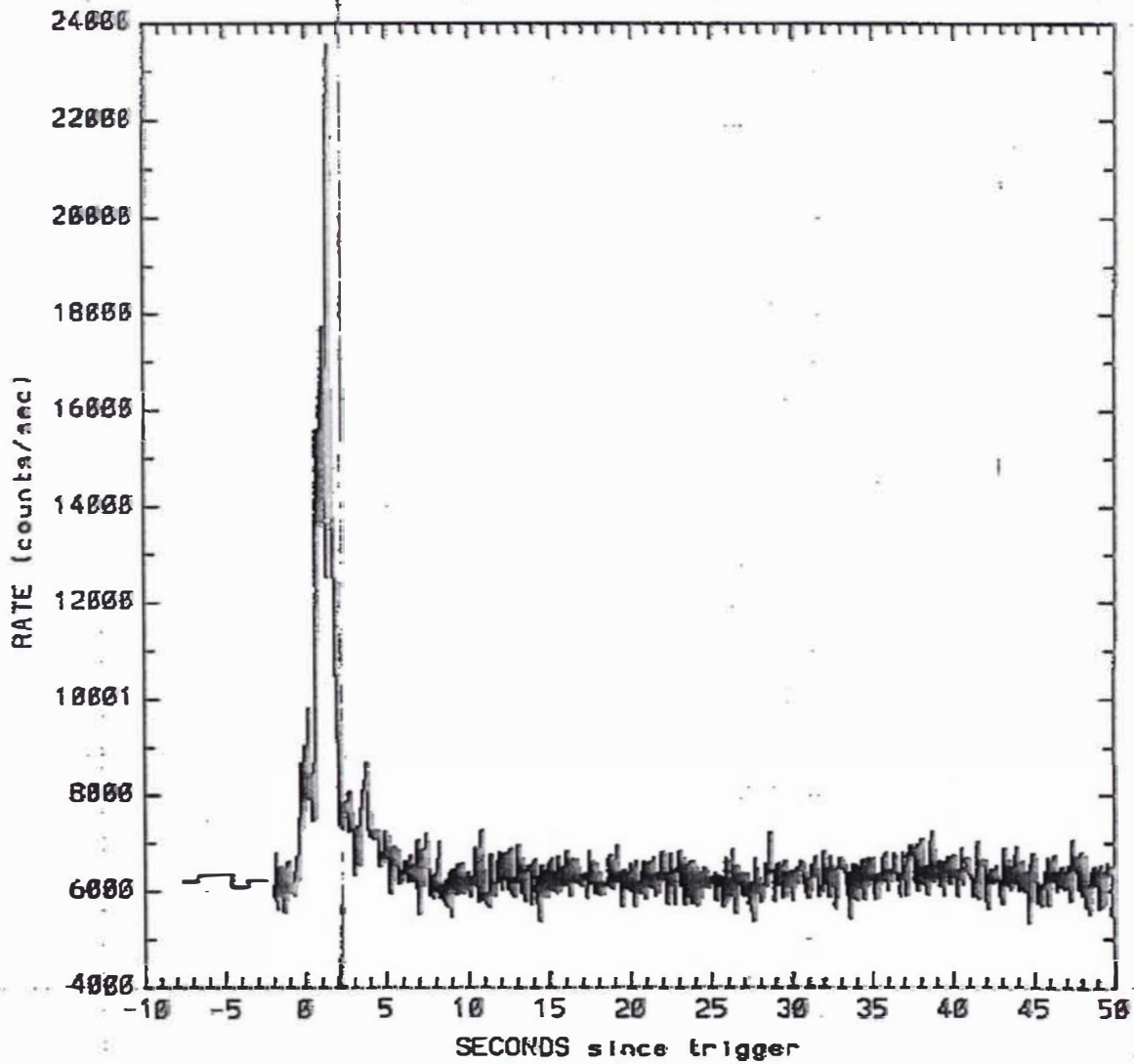
21- 146 keV




9/ 4/97
BATSE 04/03/97 29045.962
25- 100 keV
COUNTS/0.064 S
1800
1300
800
300
-3
0
1
5
9
13

970304

DISCSC Data for K. Hurley, No. 6113



28-MAR-1997 13:38:48

Created by MOPS BD
(Burst Display)
Version 02.25

Trigger # : 6113

Trigger Time:
18511 / 29805.961

Burst Data Type:
DISCSC

Deadtime
Corrected: N

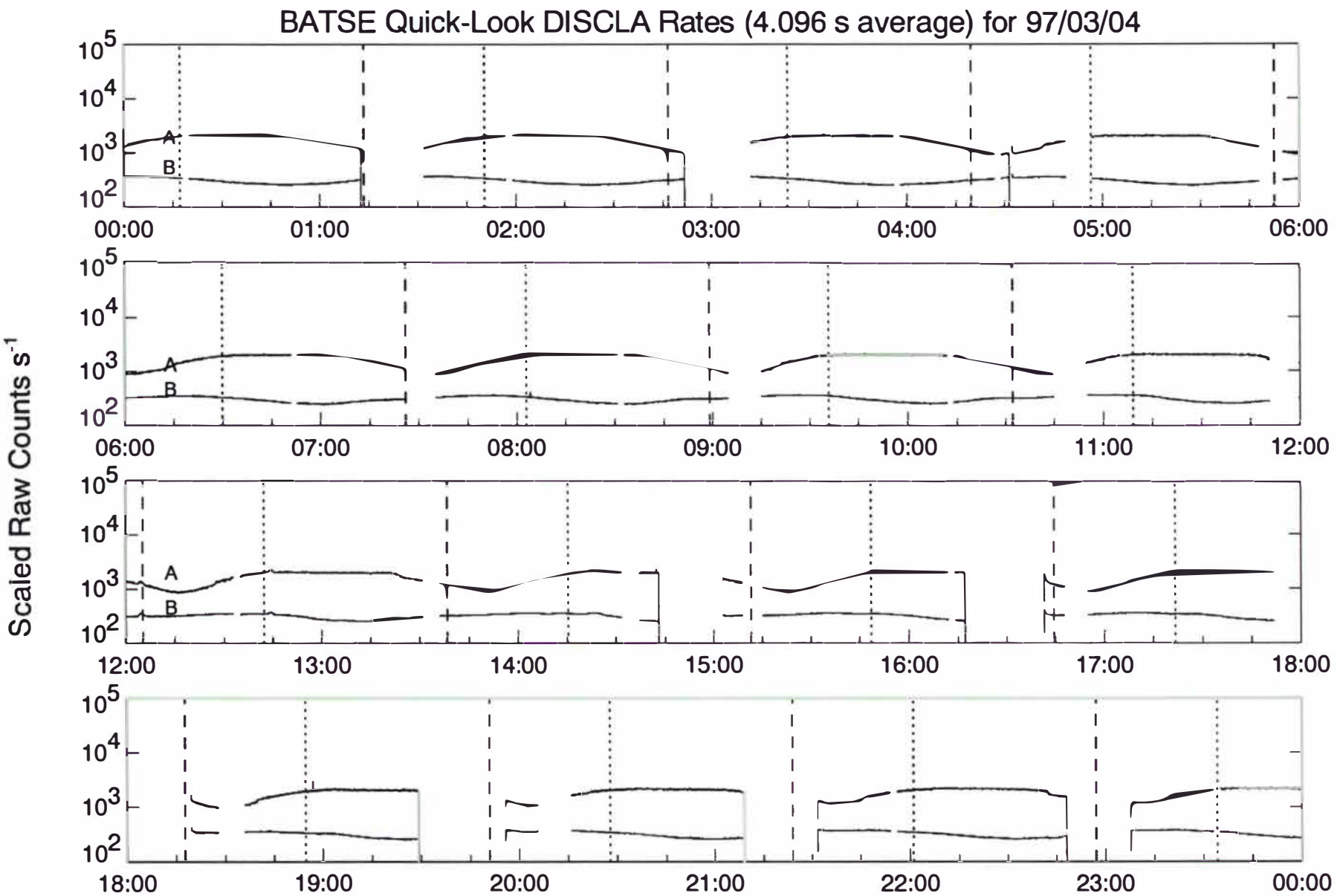
Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..0]:
7-5-----

Discriminators:
(1 , 2)

Quality Mask:
BDISP1

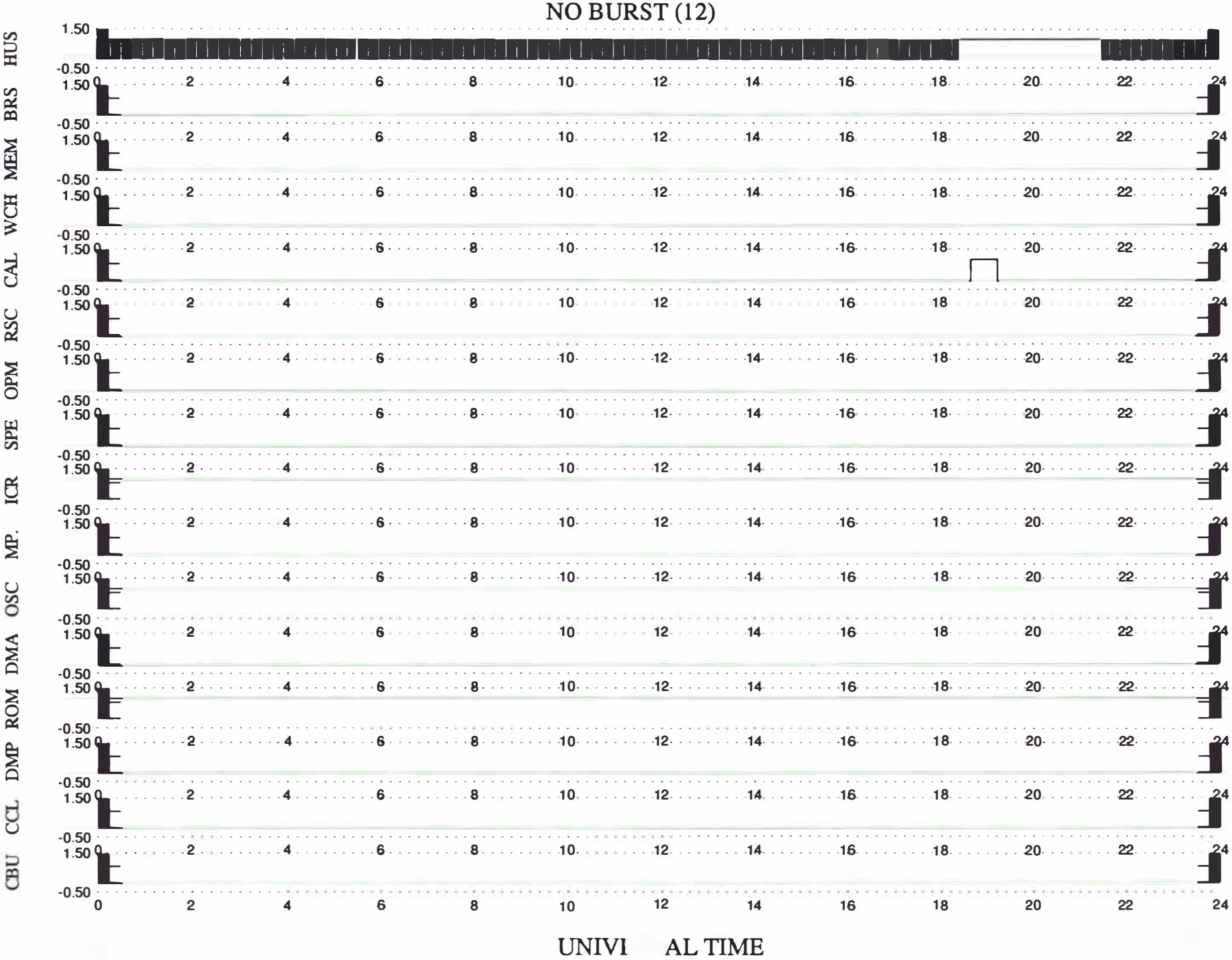


Current Time: 97/03/06, 1009 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

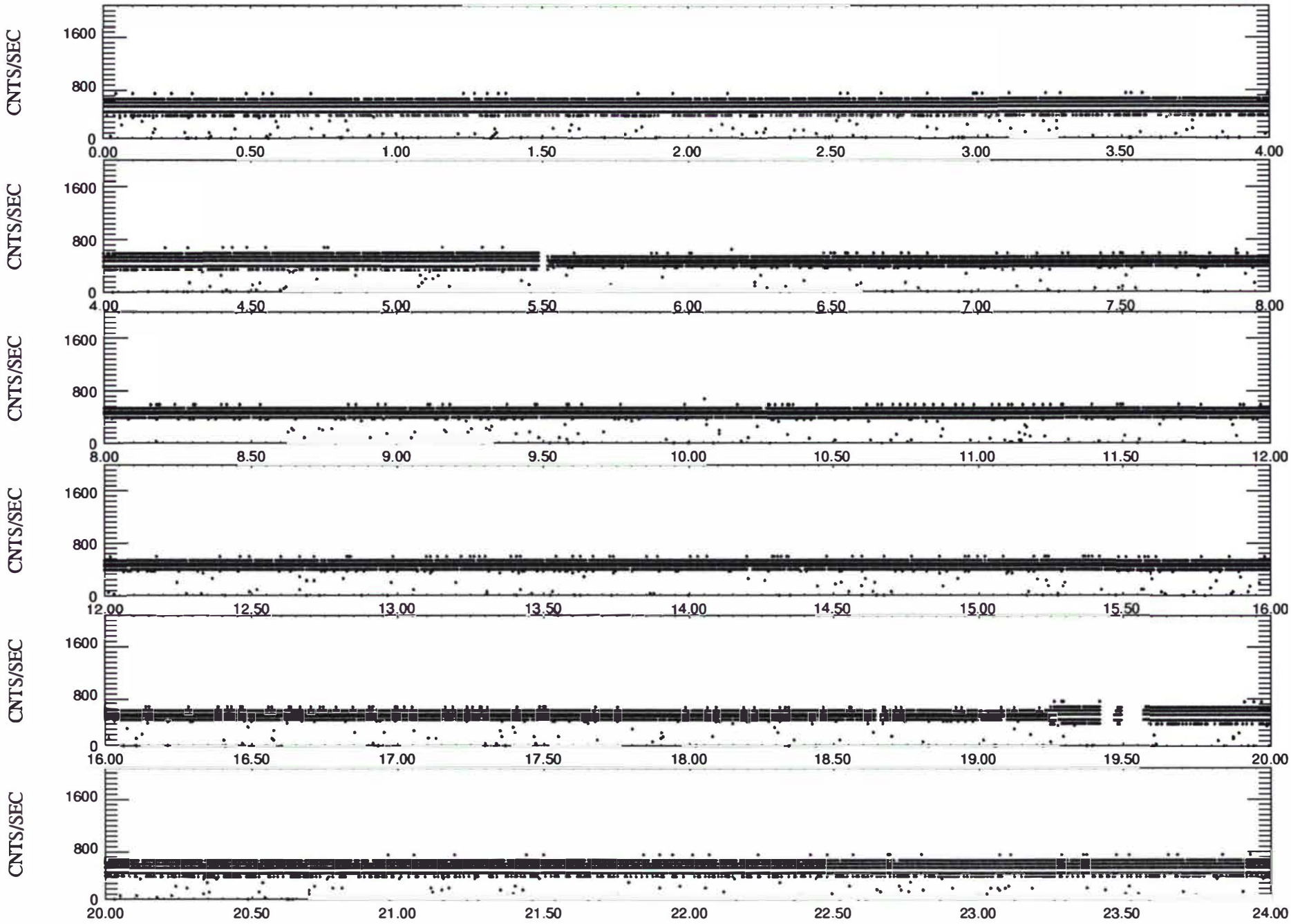
* Solar Burst Trigger
\+ Solar Flare

HUS MODES EDR day 63, year 1997 to day 63, year 1997 7/21/97



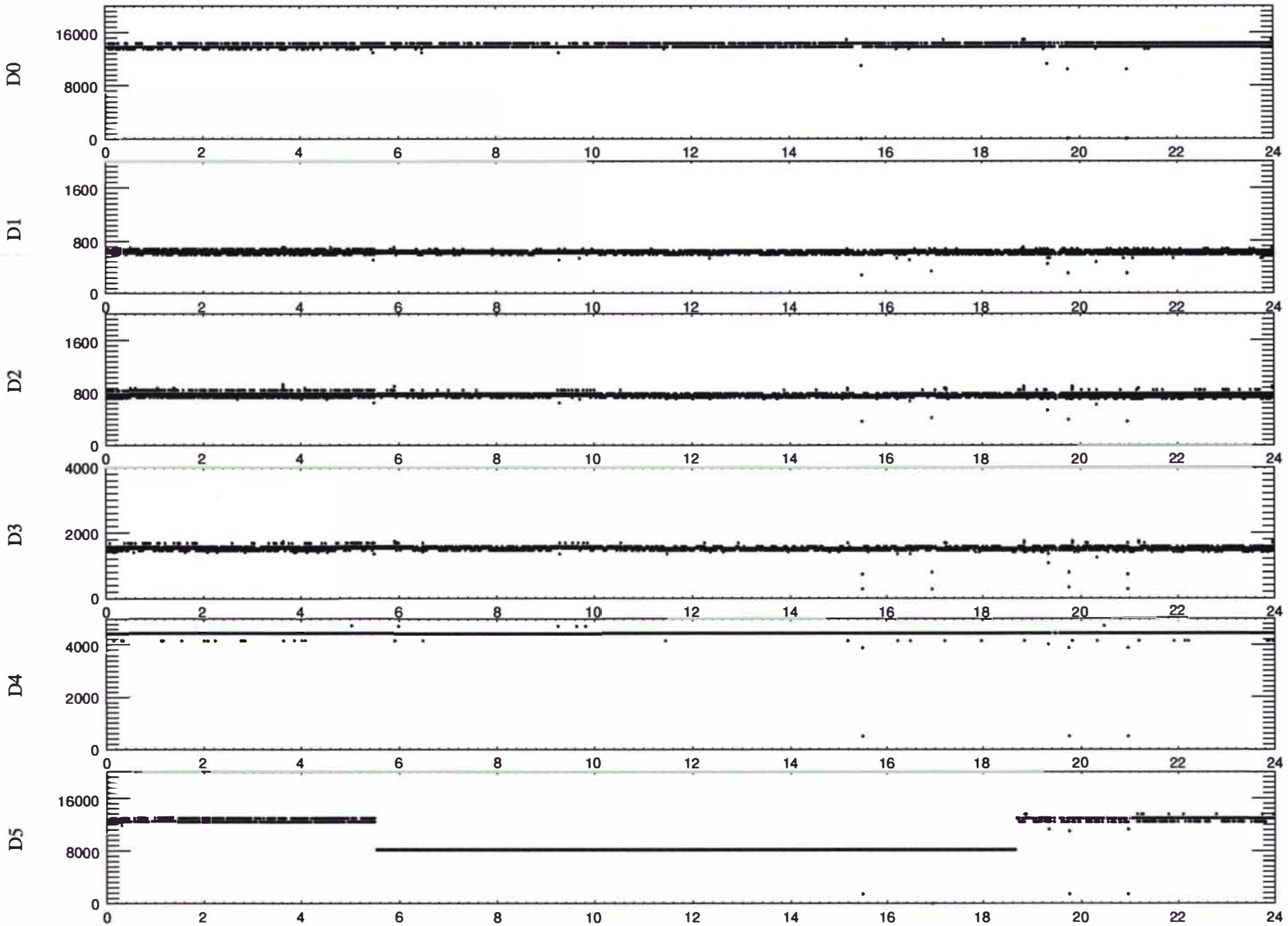
HUS 2A, MODE 1, NOT AVERAGED EDR day 63, year 1997 to day 63, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 63, year 1997 to day 63, year 1997 7/21/97



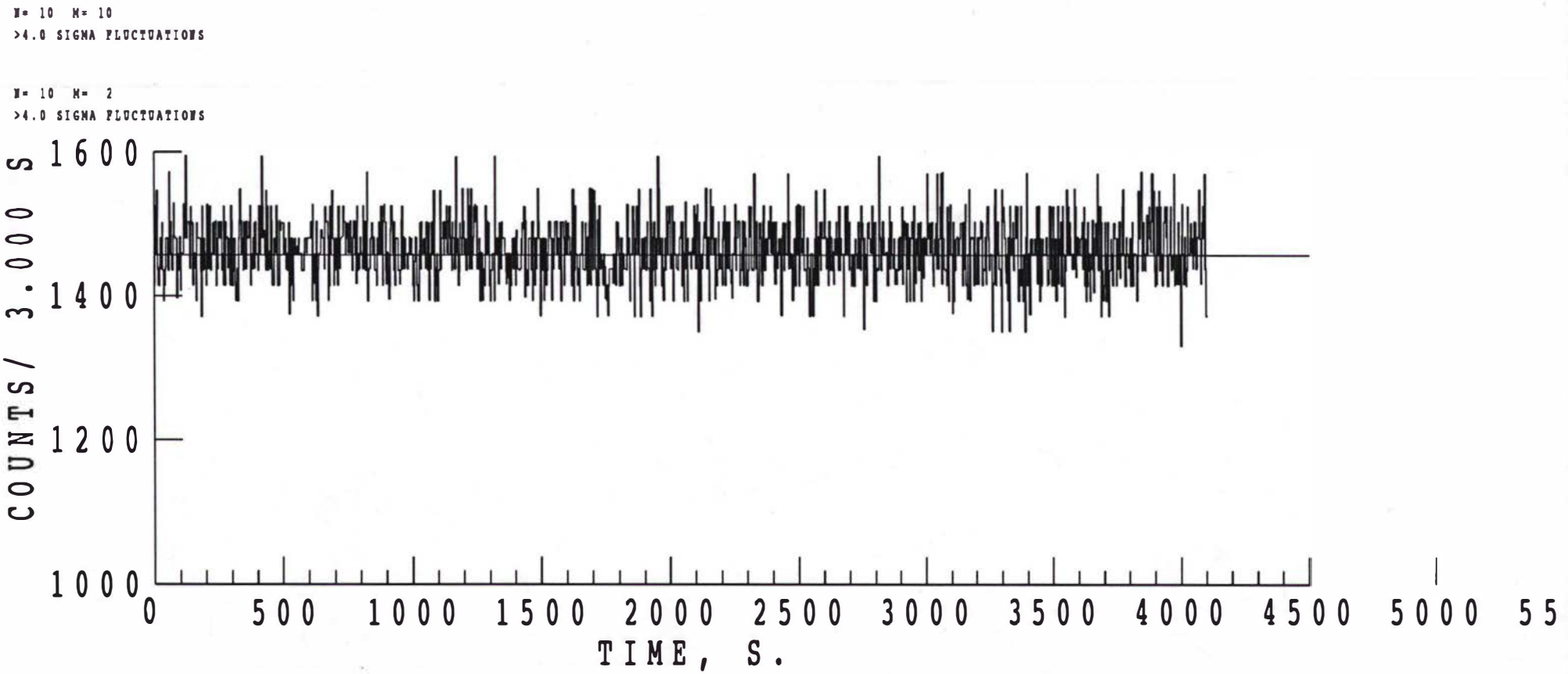
KONUS

ULYSSES RT 02/02/00

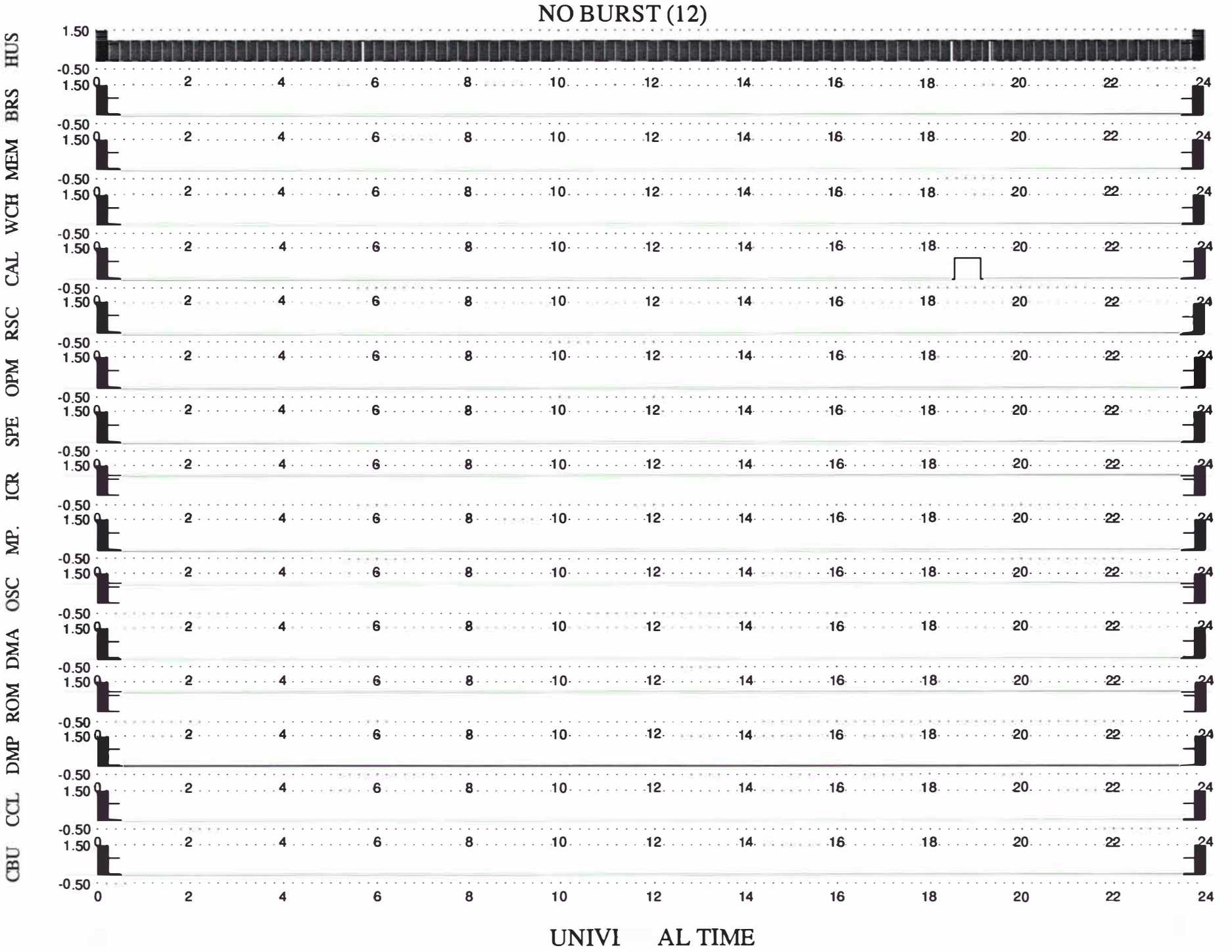
05/03/97 27936.492 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV

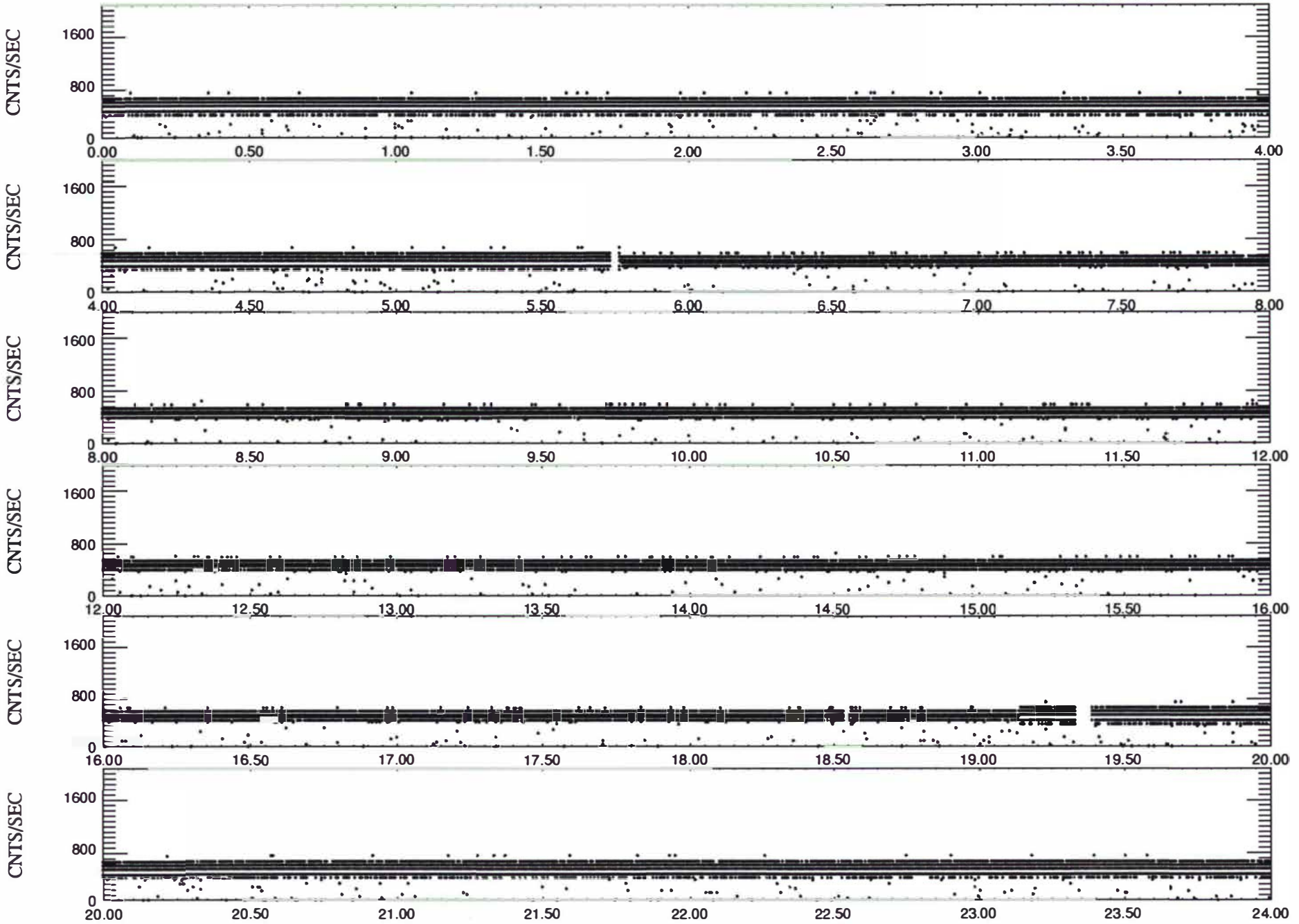


HUS MODES EDR day 64, year 1997 to day 64, year 1997 7/21/97



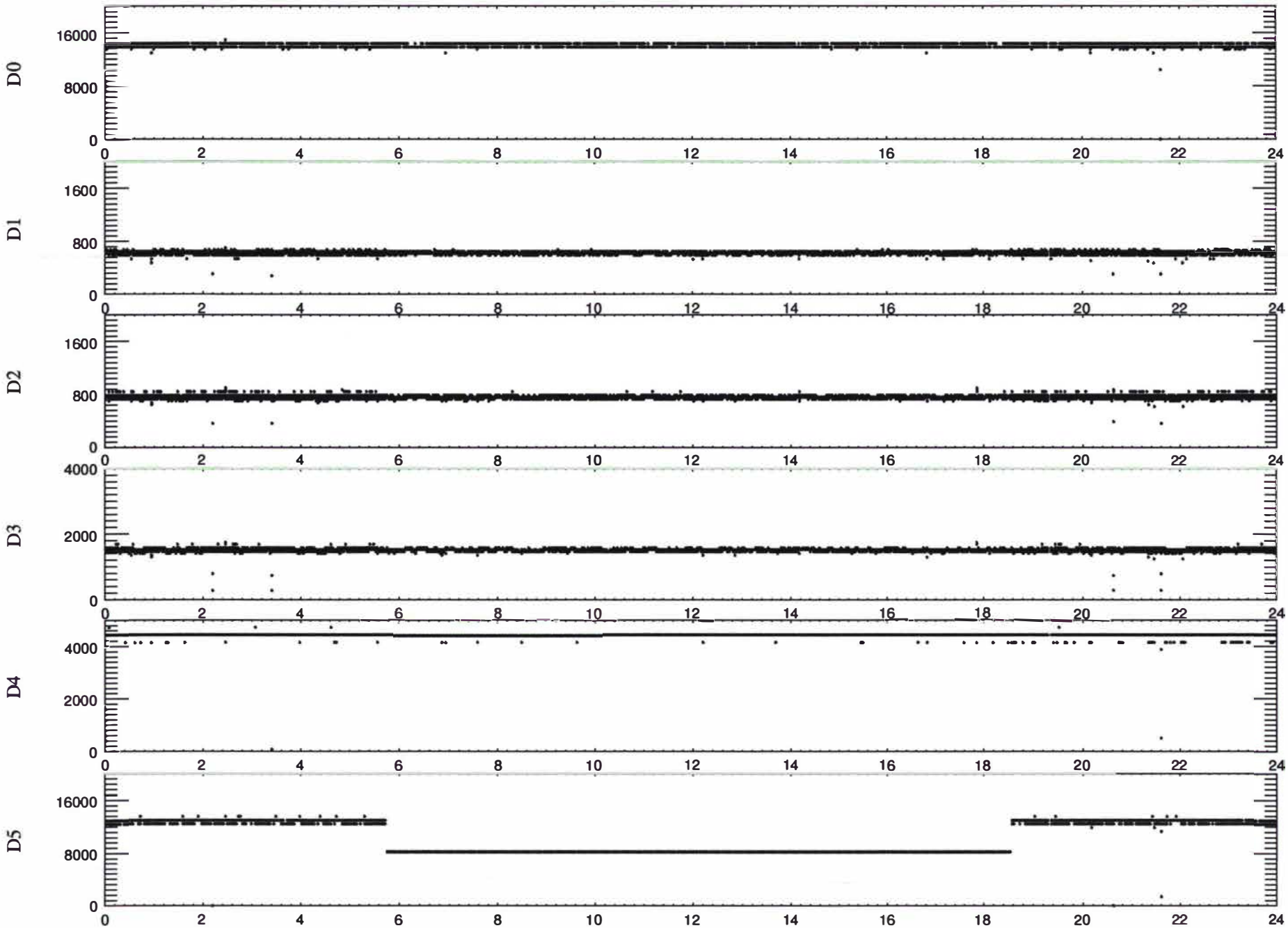
HUS 2A, MODE 1, NOT AVERAGED EDR day 64, year 1997 to day 64, year 1997 7/21/97

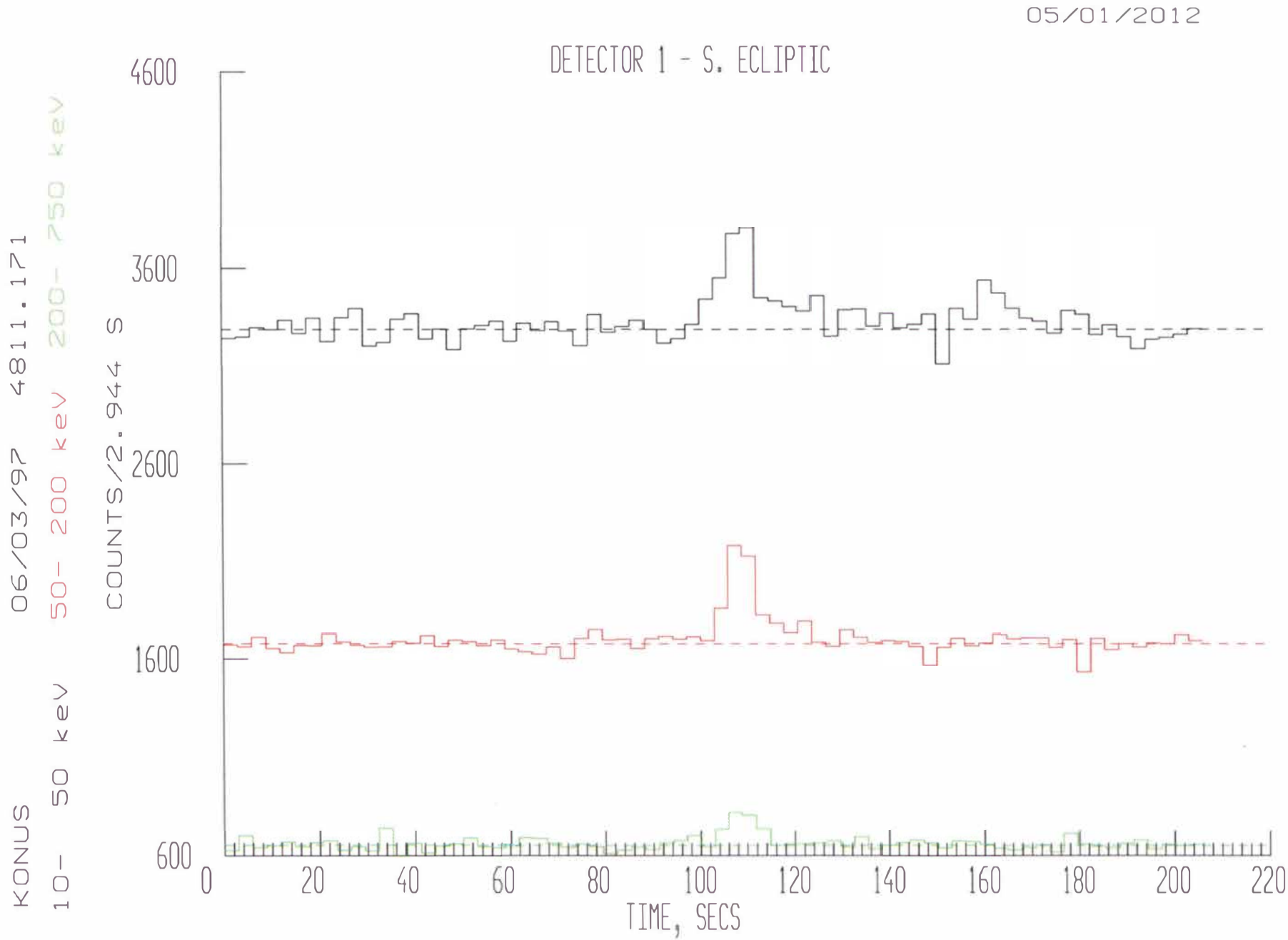
CALIBRATION DATA INCLUDED

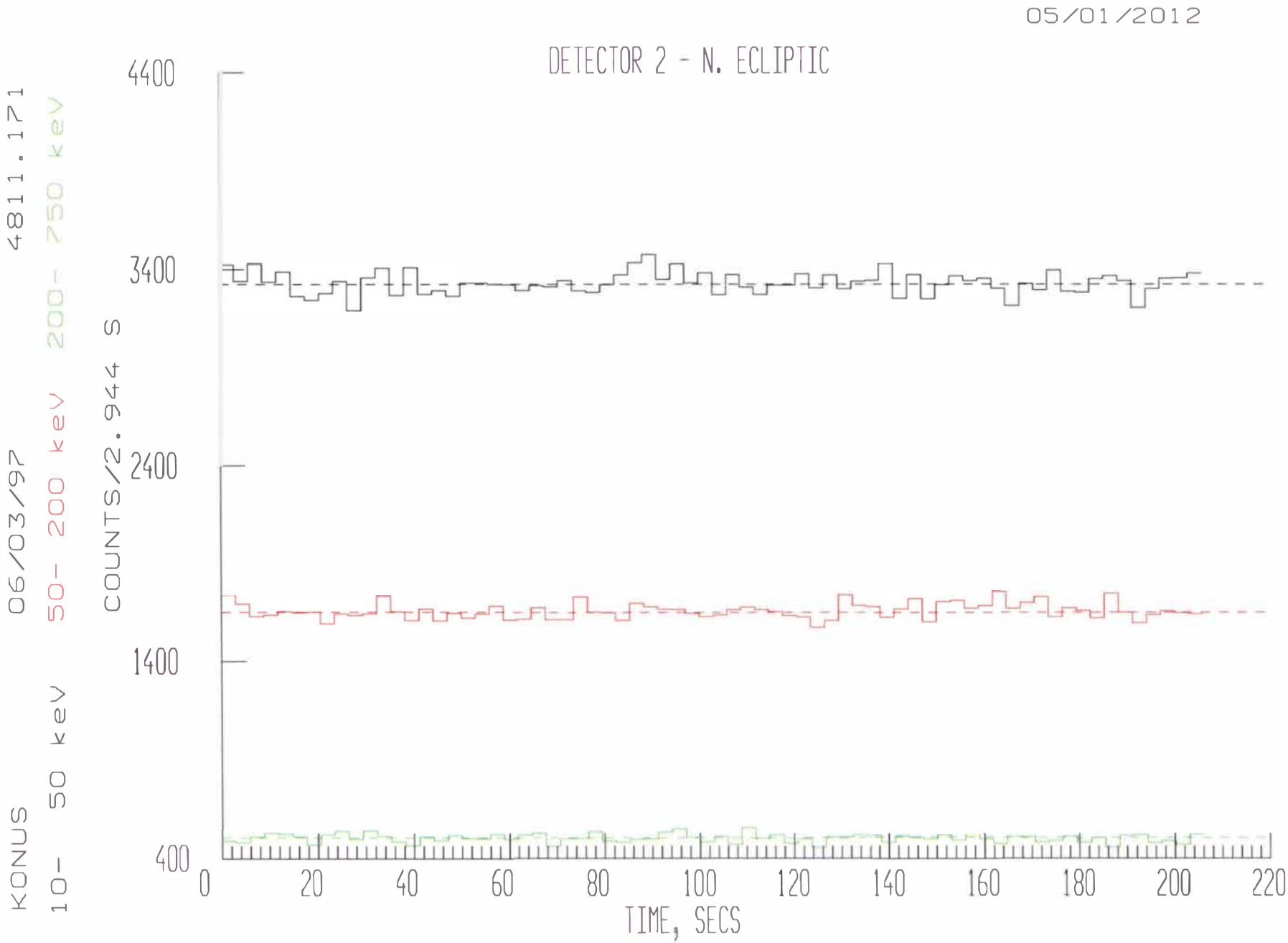


UNIVI AL TIME

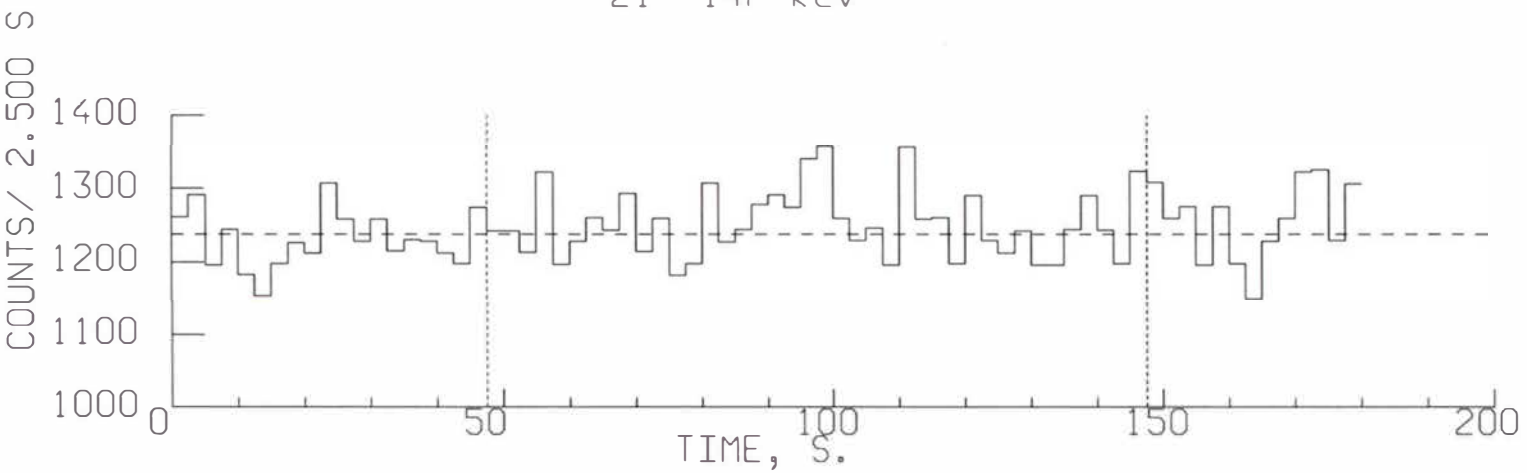
HUS 2B COUNTS / SEC EDR day 64, year 1997 to day 64, year 1997 7/21/97



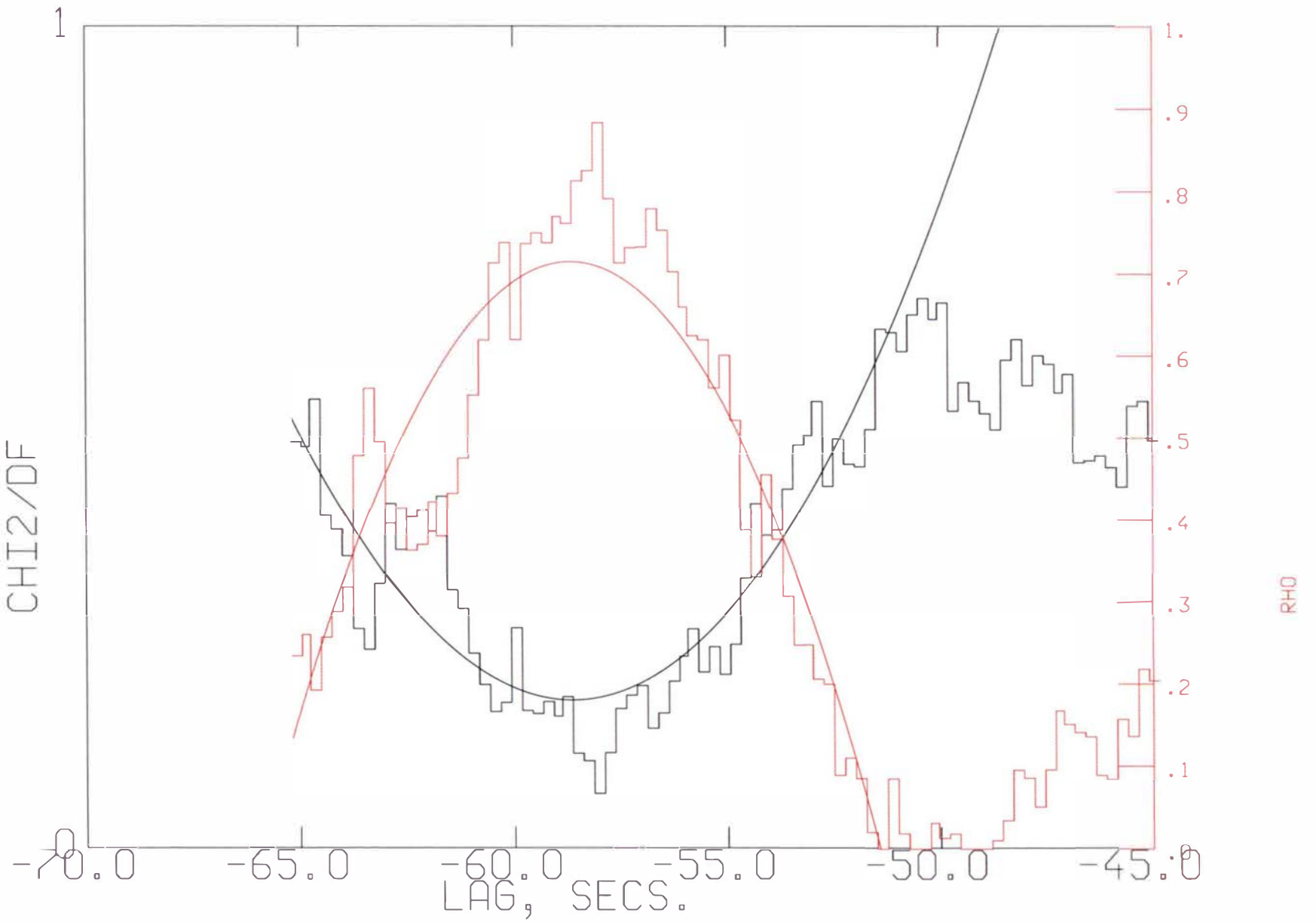

05/01/2012
DETECTOR 1 - S. ECLIPTIC
KONUS 06/03/97 4811.171
10- 50 keV 50- 200 keV 200- 750 keV
COUNTS/2.944 S
4600
3600
2600
1600
600
0
20
40
60
80
100
120
140
160
180
200
220
TIME, SECS

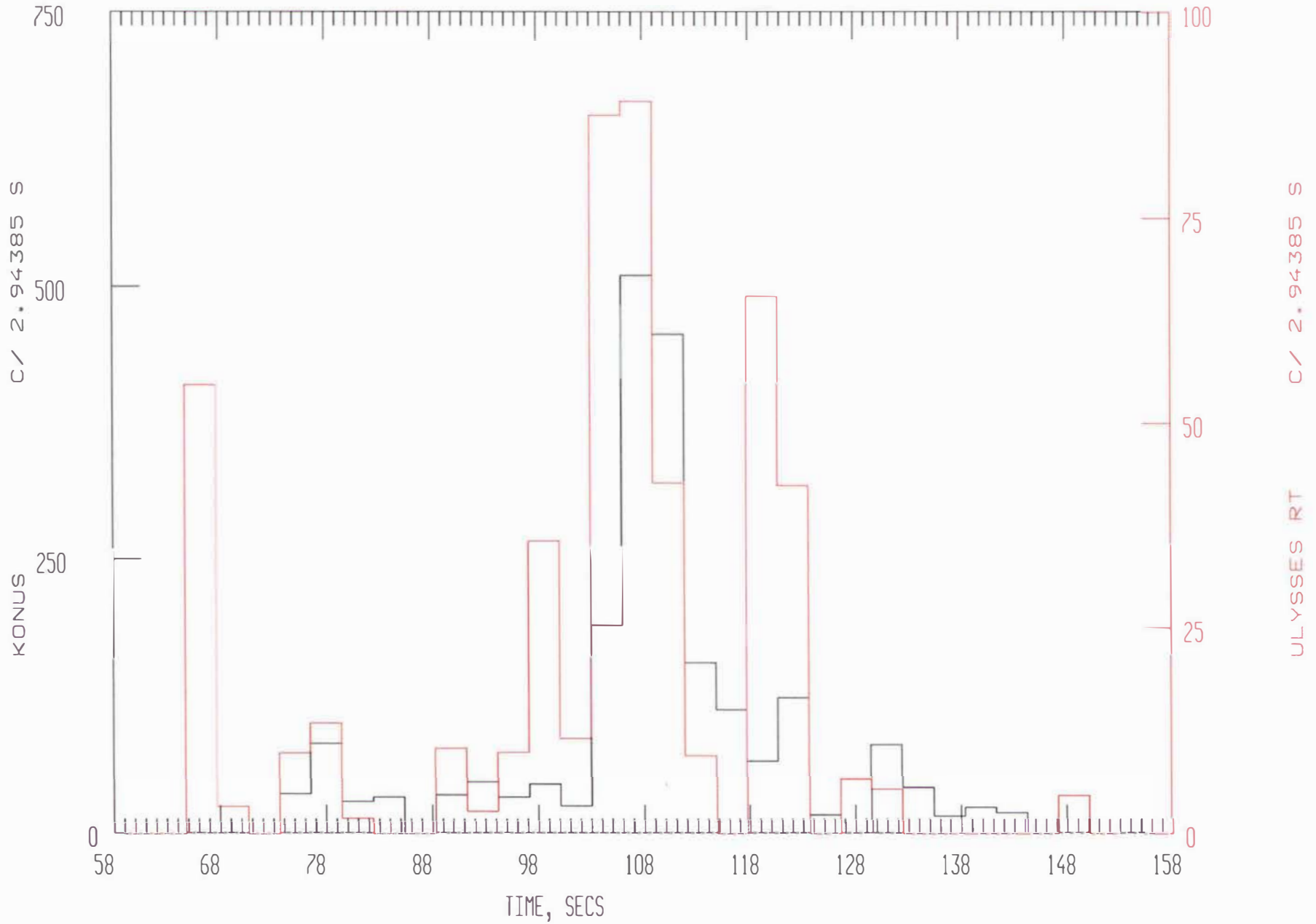

05/01/2012
DETECTOR 2 - N. ECLIPTIC
4811.171
06/03/97
KONUS
10- 50 keV
50- 200 keV
200- 250 keV
COUNTS/2.944 S
4400
3400
2400
1400
400
0
20
40
60
80
100
120
140
160
180
200
220
TIME, SECS

ULYSSES RT
6/ 3/97 5184.003 s
0.250 S INTERVALS REGROUPED BY 10
21- 147 keV



KONUS -ULYSSES RT CORRELATION 06/03/97 4811.171




750
500
250
0
KONUS
C/ 2.94385 S
100
75
50
25
0
ULYSSES RT
C/ 2.94385 S
58
68
78
88
98
108
118
128
138
148
158
TIME, SECS

KONUS 19970306 05280

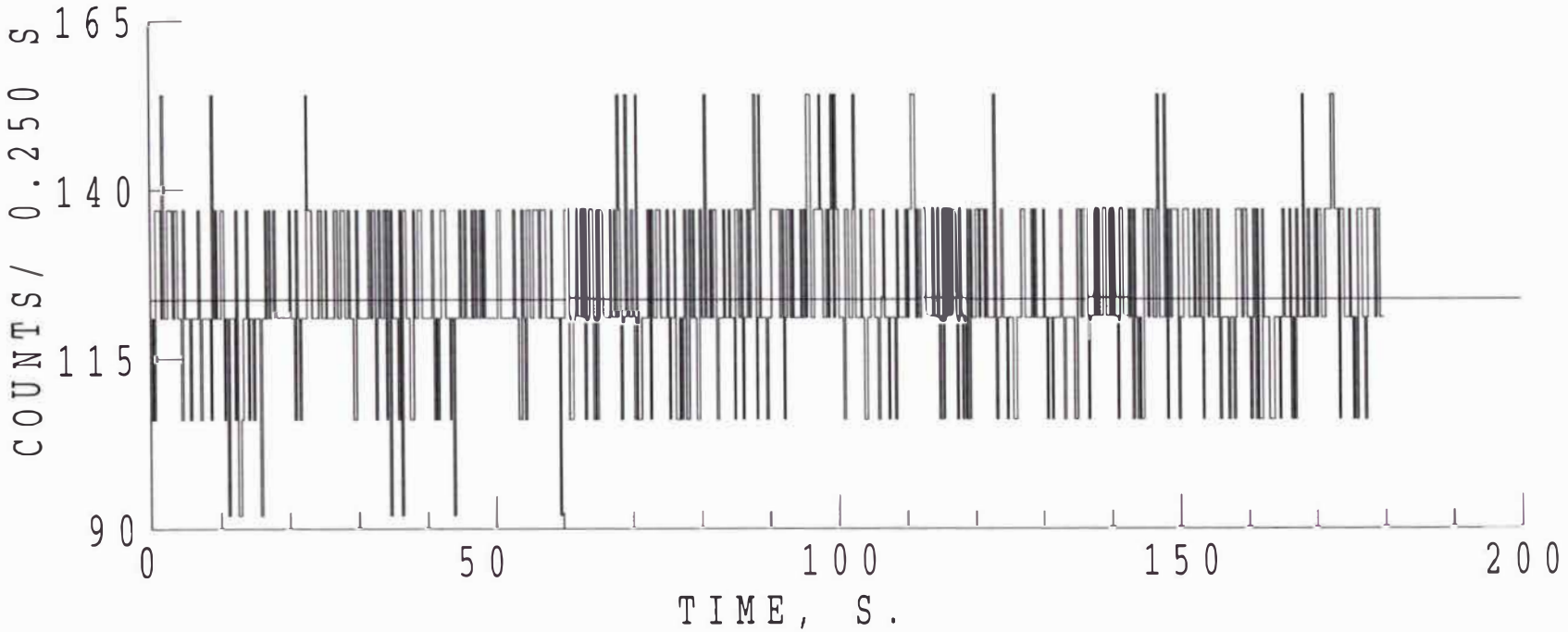
ULYSSES RT 22/11/11

06/03/97 5184.003 s

0- 0 keV

M= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

M= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



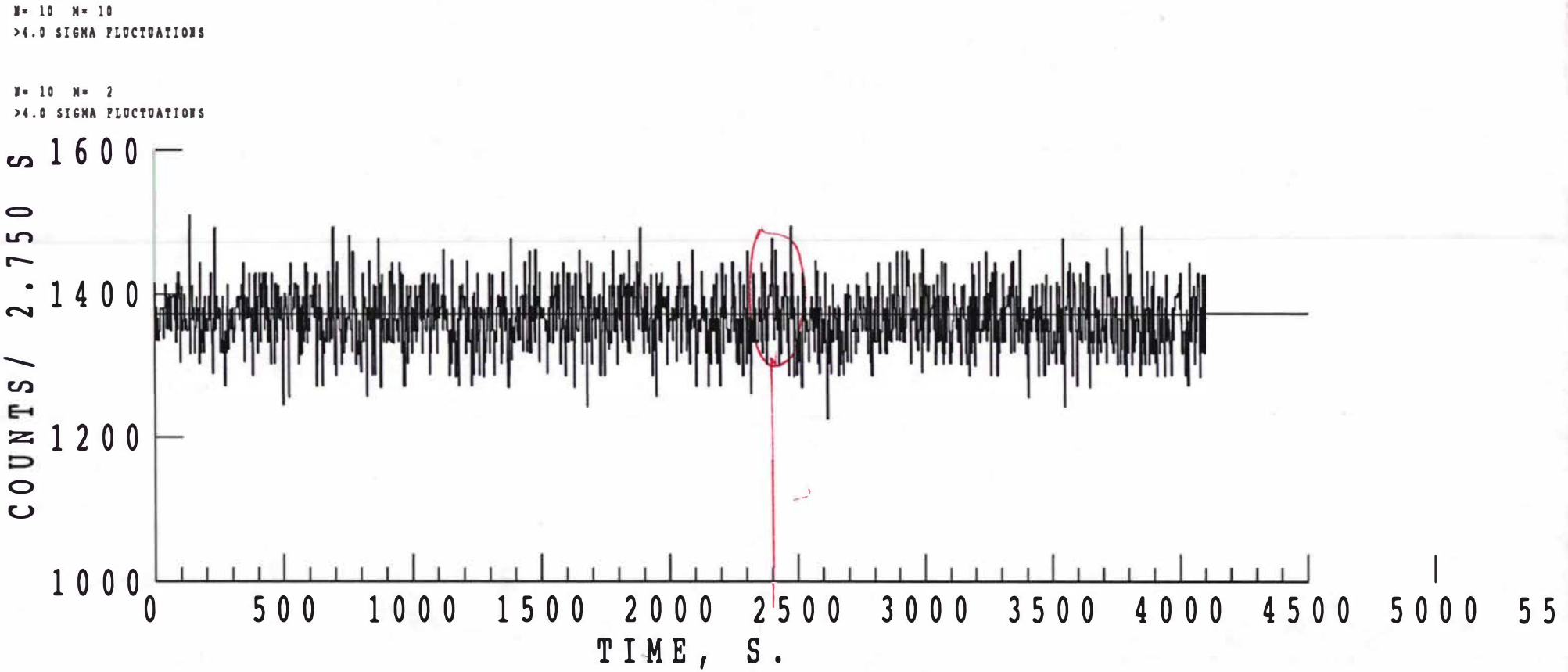
KONUS

ULYSSES RT 02/02/00

06/03/97 2880.226 s

0.250 S INTERVALS REGROUPED BY 11

0- 0 keV



From DEAL@fender.msfc.nasa.gov Fri Mar 7 11:36 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA03225; Fri, 7 Mar 1997 11:36:19 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Fri, 7 Mar 1997 13:33:27 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970307133327.20c00d3a@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6115
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6115
EVENT OF 1997 MAR 6 DAY OF YEAR= 65
EVENT CROSSING TIME AT BATSE : 10059. S. OR 02:47:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 18.000 21.000
BATSE PEAK COUNTING RATE: 7000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 3/ 97 IS:
RA= 163.107 DEC= 36.861 DIST= 4.020 AU
BATSE-ULYSSES DISTANCE = 601429805. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.57 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 797.84 SECS.
CROSSING TIME AT ULYSSES IS 10857. S. OR 03:00:56 +/- 381.69 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 3/ 97 IS:
RA= 182.419 DEC= 3.097 DIST= 0.683 AU
MARS-BATSE DISTANCE = 102199032. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 28.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 299.51 SECS.
CROSSING TIME AT MARS IS 10359. S. OR 02:52:38 +/- 32.81 SECONDS

BATSE BURST TRIGGER

NO.: 6115

TIME: TJD=0513 SECONDS=10059

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.5 AZIMUTH=319.4 ERROR=0.7 DEGREES

COMMENTS:
MULTI PULSED GRB LASTING ~ 190 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6115	970306	10513	10059	7000	018	+21	190

Helio corr removed

Date: Mar 26 '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?

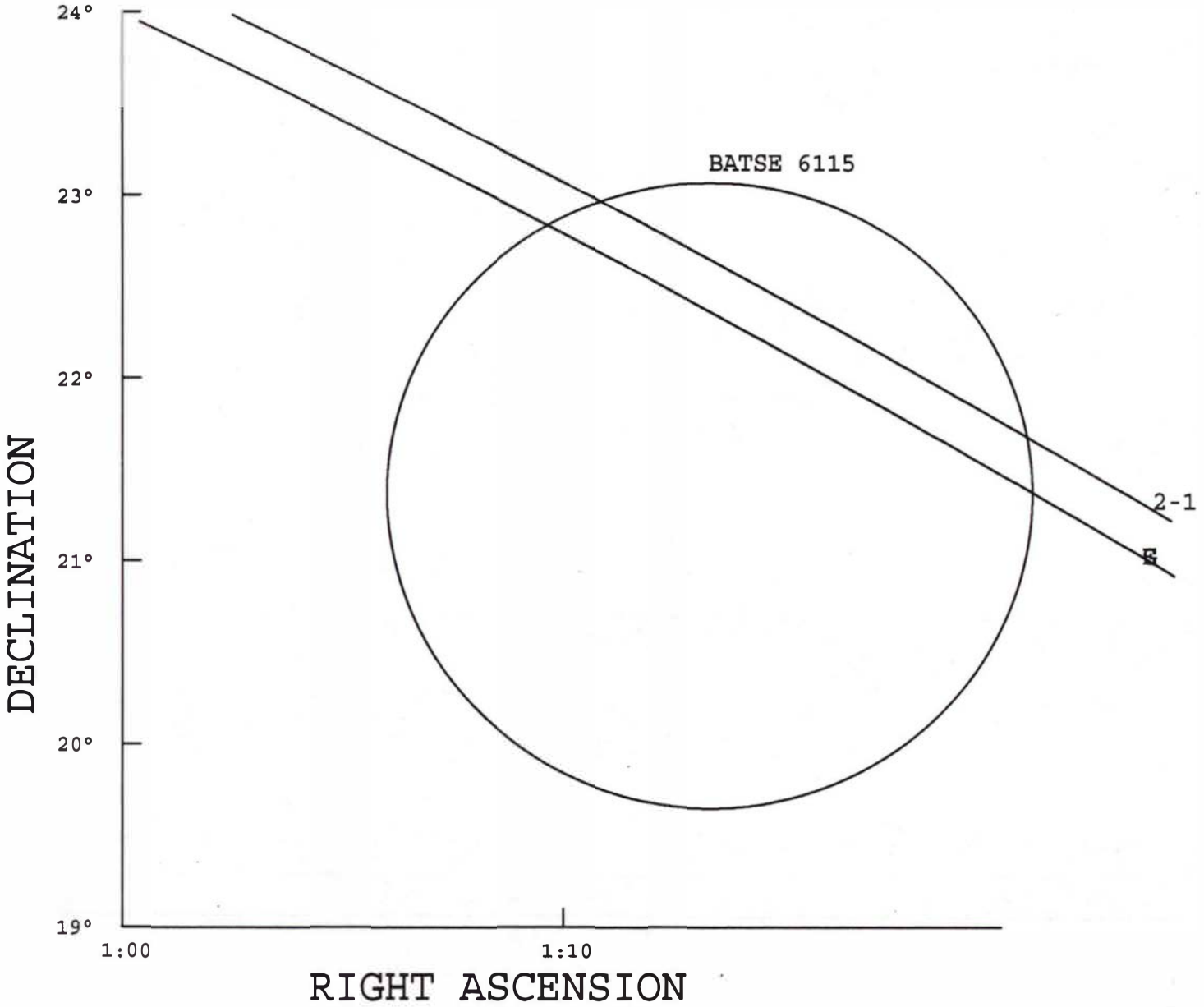
☐ Geocentric time used?

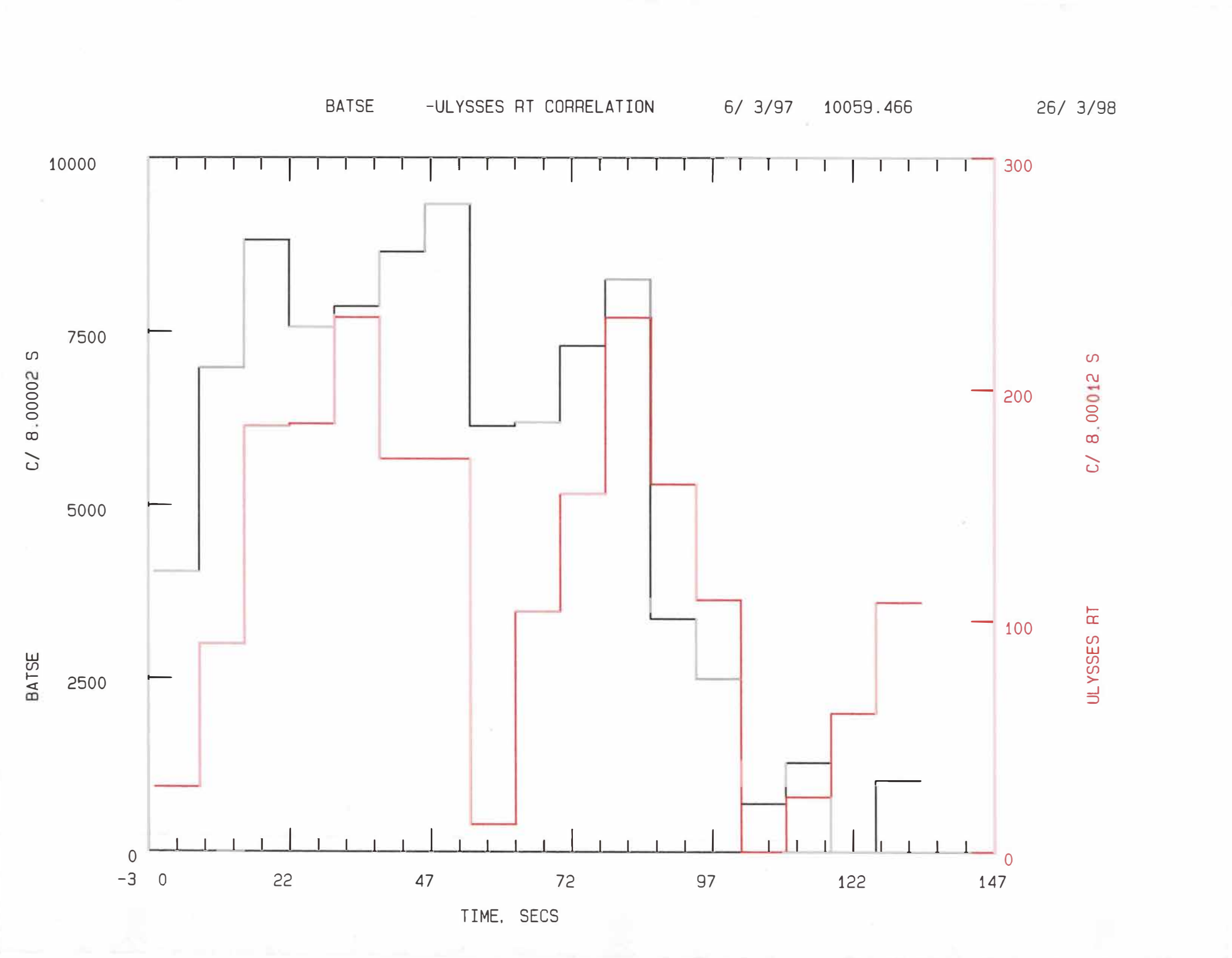
☑ ACCESS database updated?

EVENT OF MAR 6, 1997 2:59

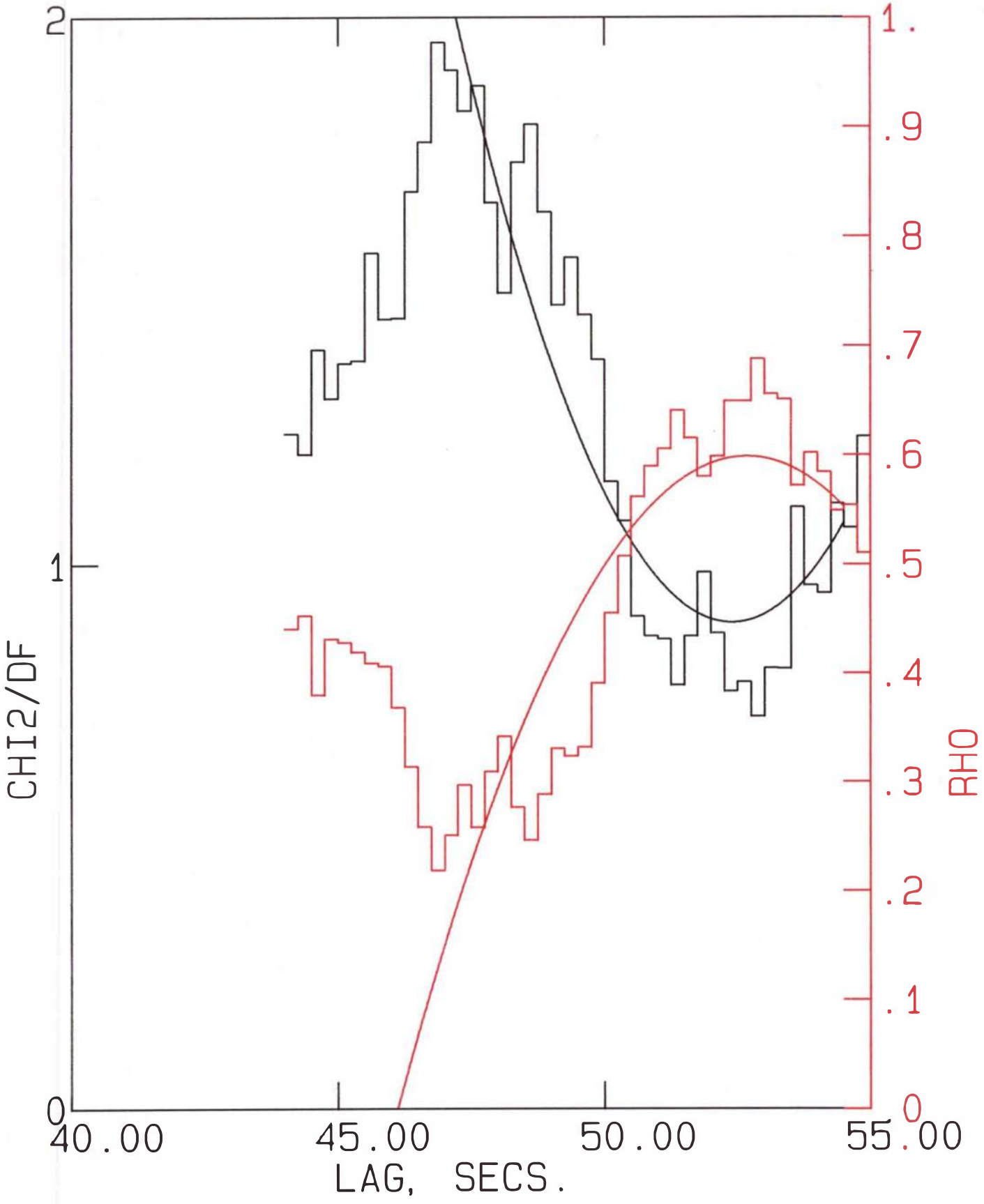
17/ 2/ 0

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




BATSE -ULYSSES RT CORRELATION 6/ 3/97 10059.466 26/ 3/98
10000
7500
5000
2500
0
BATSE
C/ 8.00002 S
300
200
100
0
ULYSSES RT
C/ 8.00012 S
-3
0
22
47
72
97
122
147
TIME, SECS

BATSE -ULYSSES RT CORRELATION 6/ 3/97 10059.466

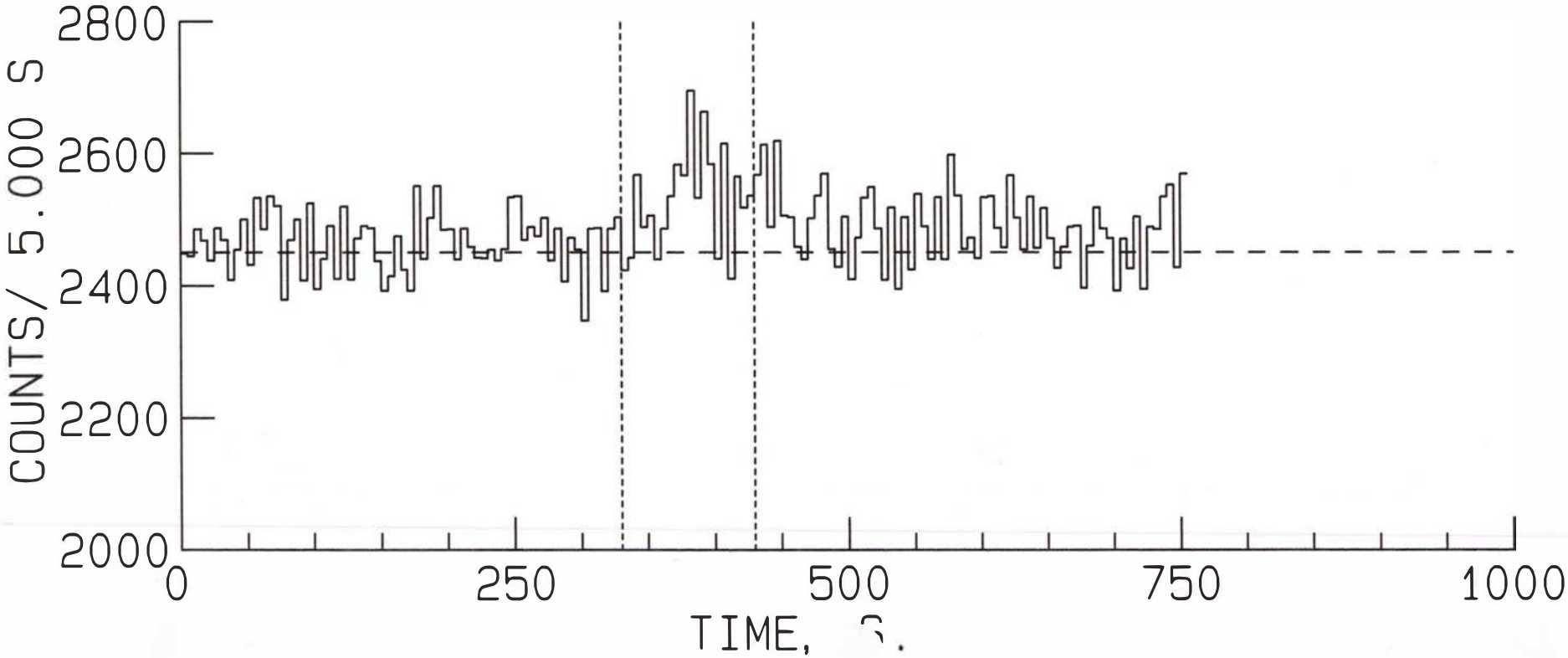


ULYSSES RT 26/ 3/98

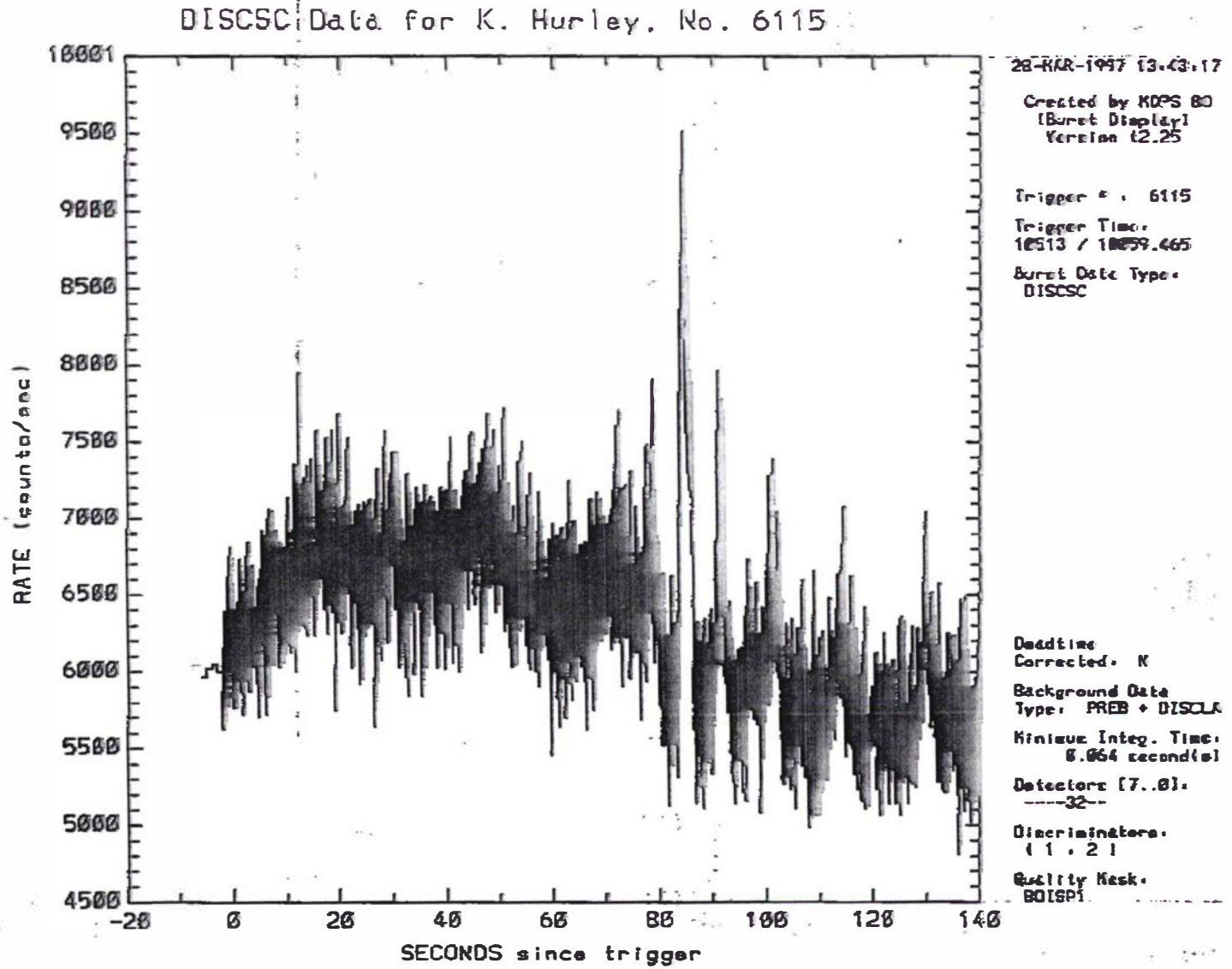
6/ 3/97 10476.065 s

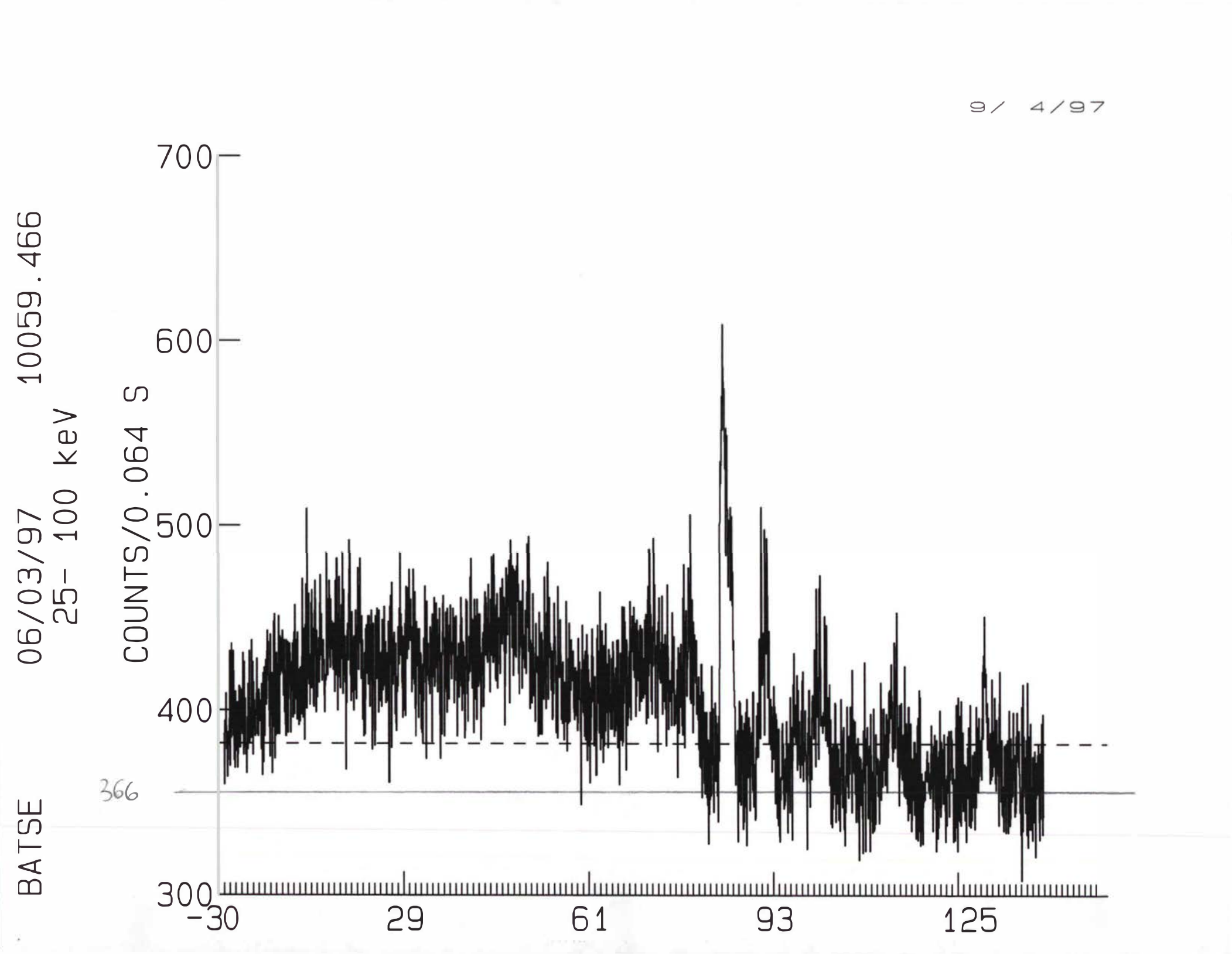
0.250 S INTERVALS REGROUPED BY 20

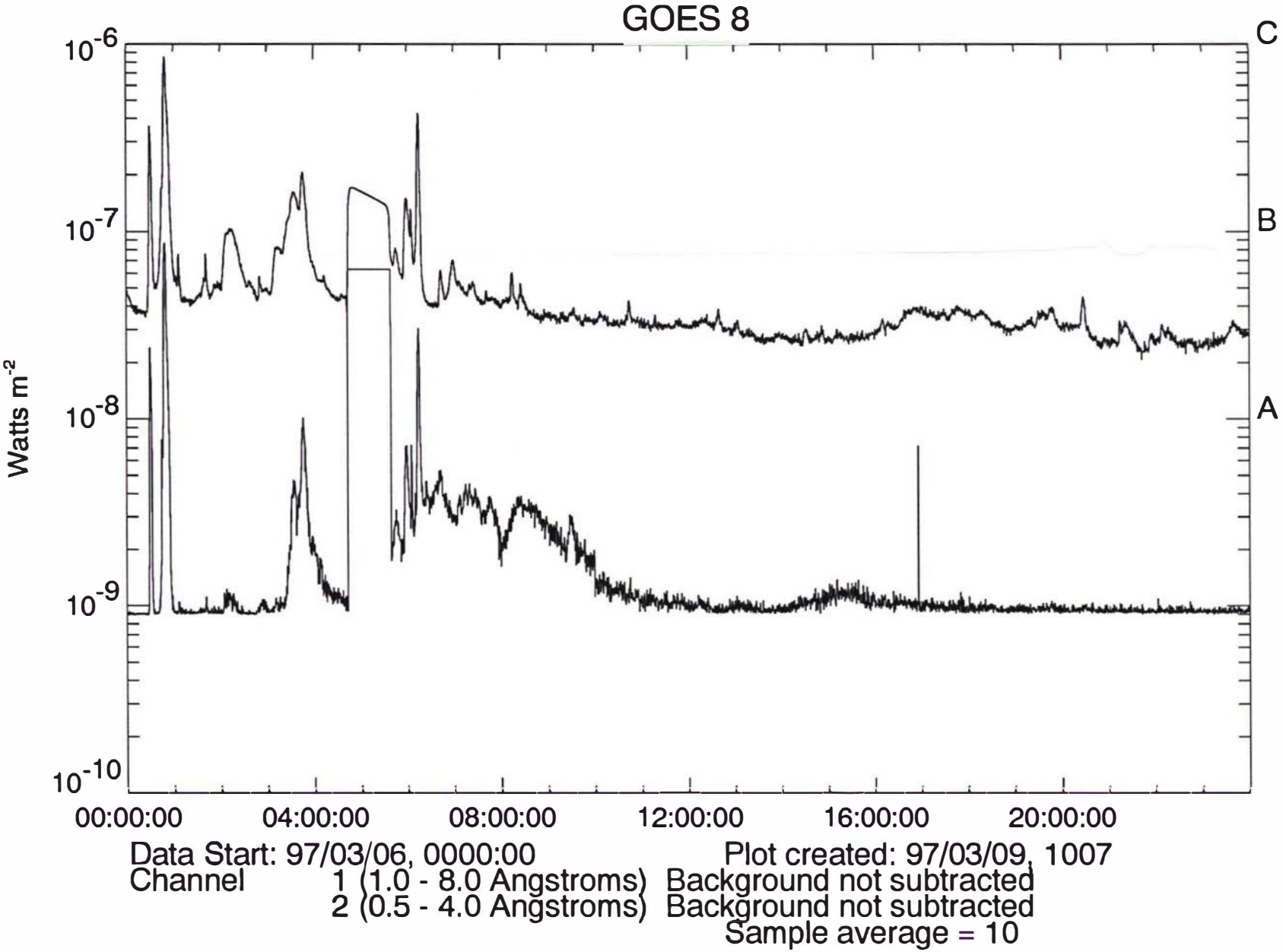
21- 147 keV

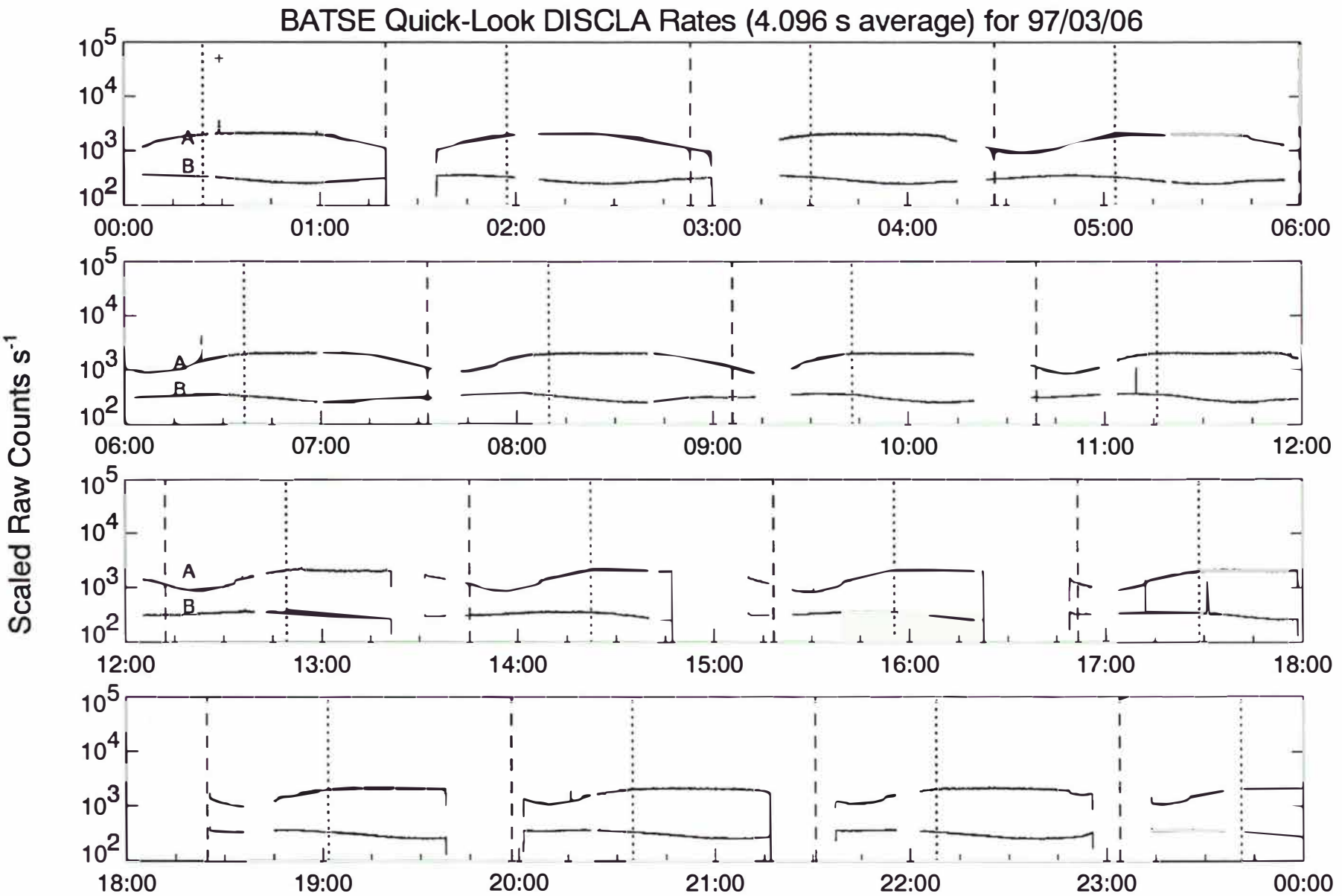


970306


DISCSC Data for K. Hurley, No. 6115
RATE (counts/sec)
SECONDS since trigger
10001
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
-20
0
20
40
60
80
100
120
140
28-MAR-1997 13:43:17
Created by KDPS 80
[Burst Display]
Version 12.25
Trigger # : 6115
Trigger Time:
10513 / 10859.465
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
----32--
Discriminators:
[1 , 2]
Quality Mask:
BDISP1


9/ 4/97
BATSE 06/03/97 10059.466
25- 100 keV
COUNTS/0.064 S
700
600
500
400
300
366
-30
29
61
93
125


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/06, 0000:00
Plot created: 97/03/09, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

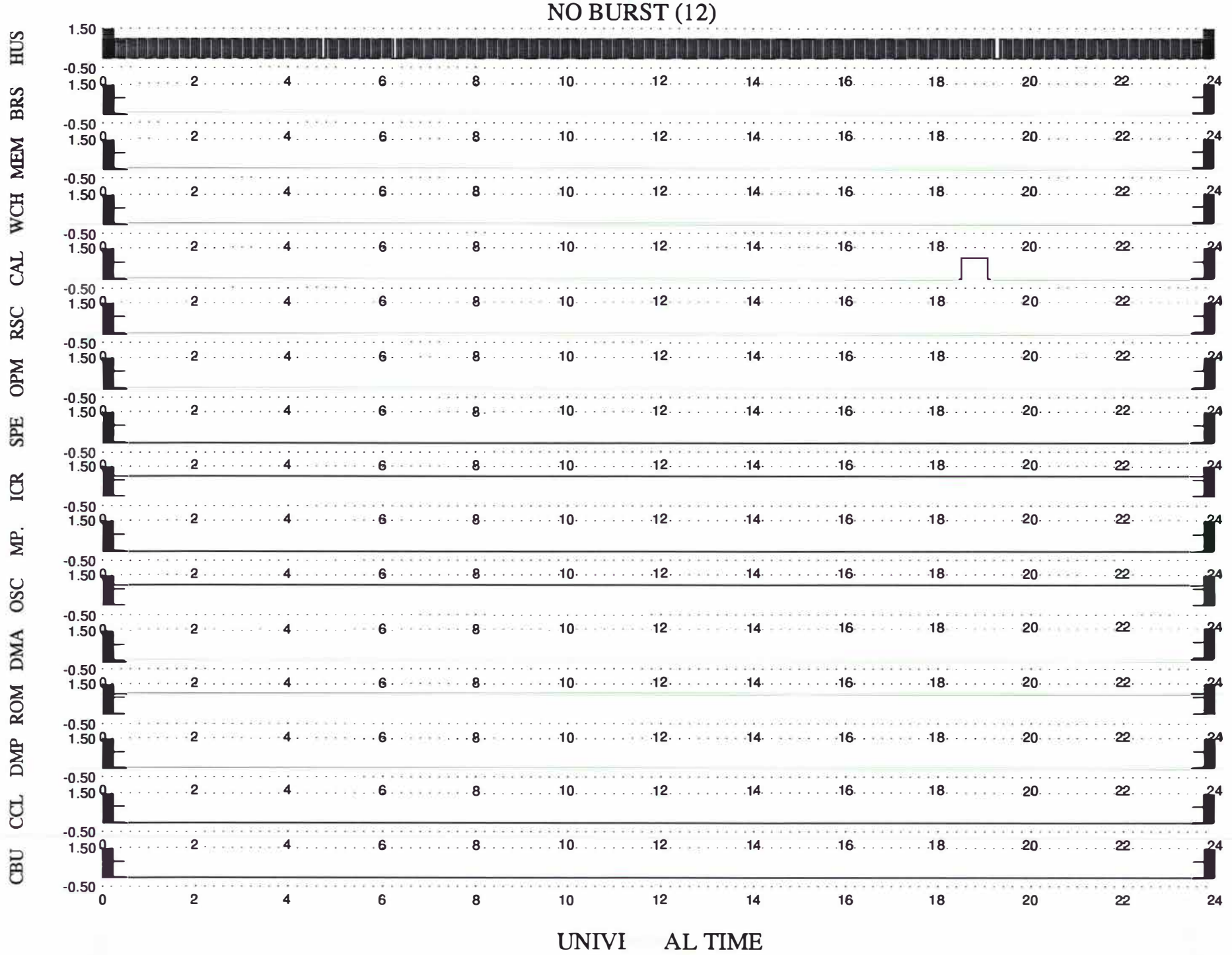


Current Time: 97/03/10, 1618 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

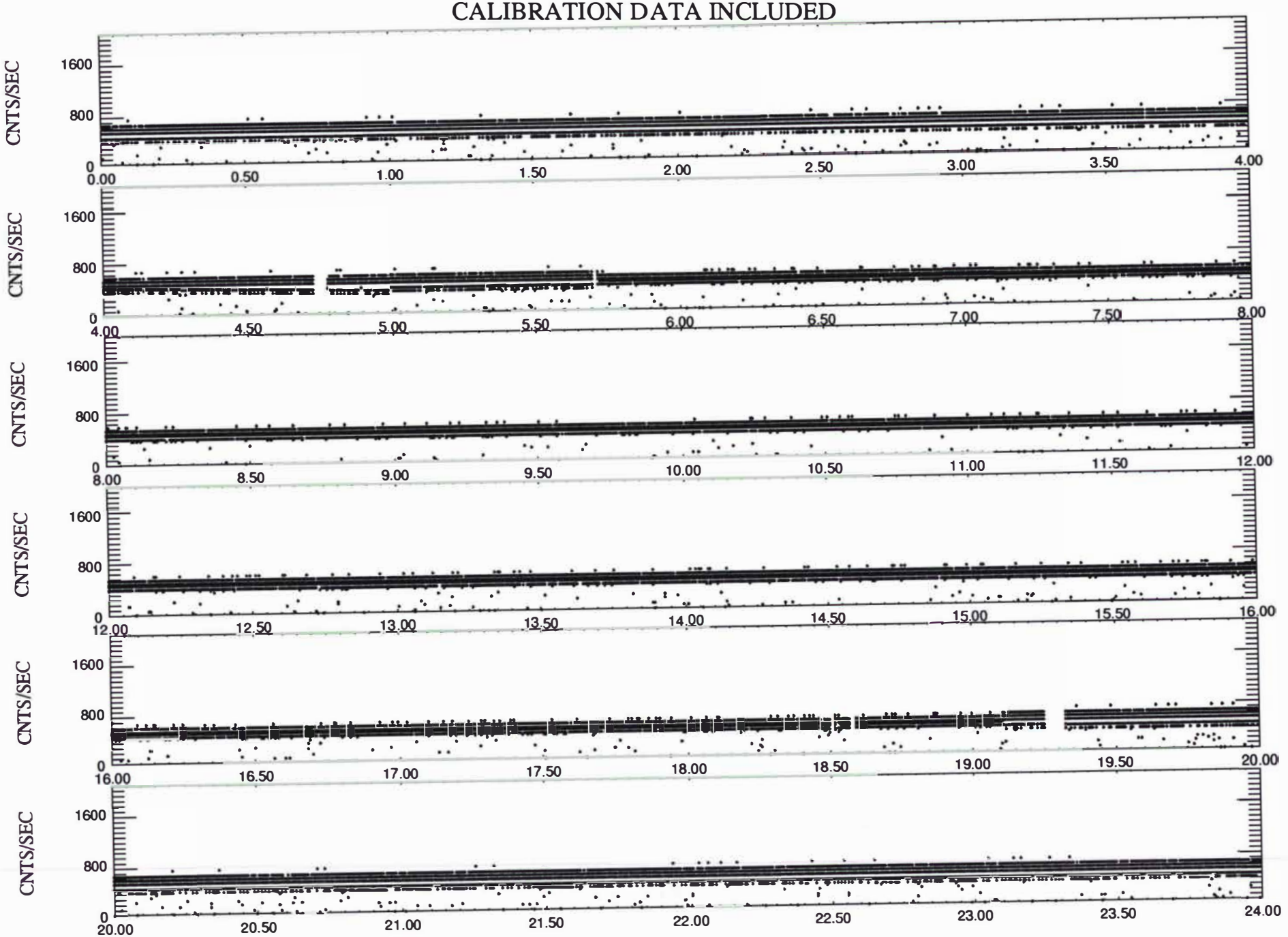
* Solar Burst Trigger
\+ Solar Flare

HUS MODES EDR day 65, year 1997 to day 65, year 1997 7/21/97



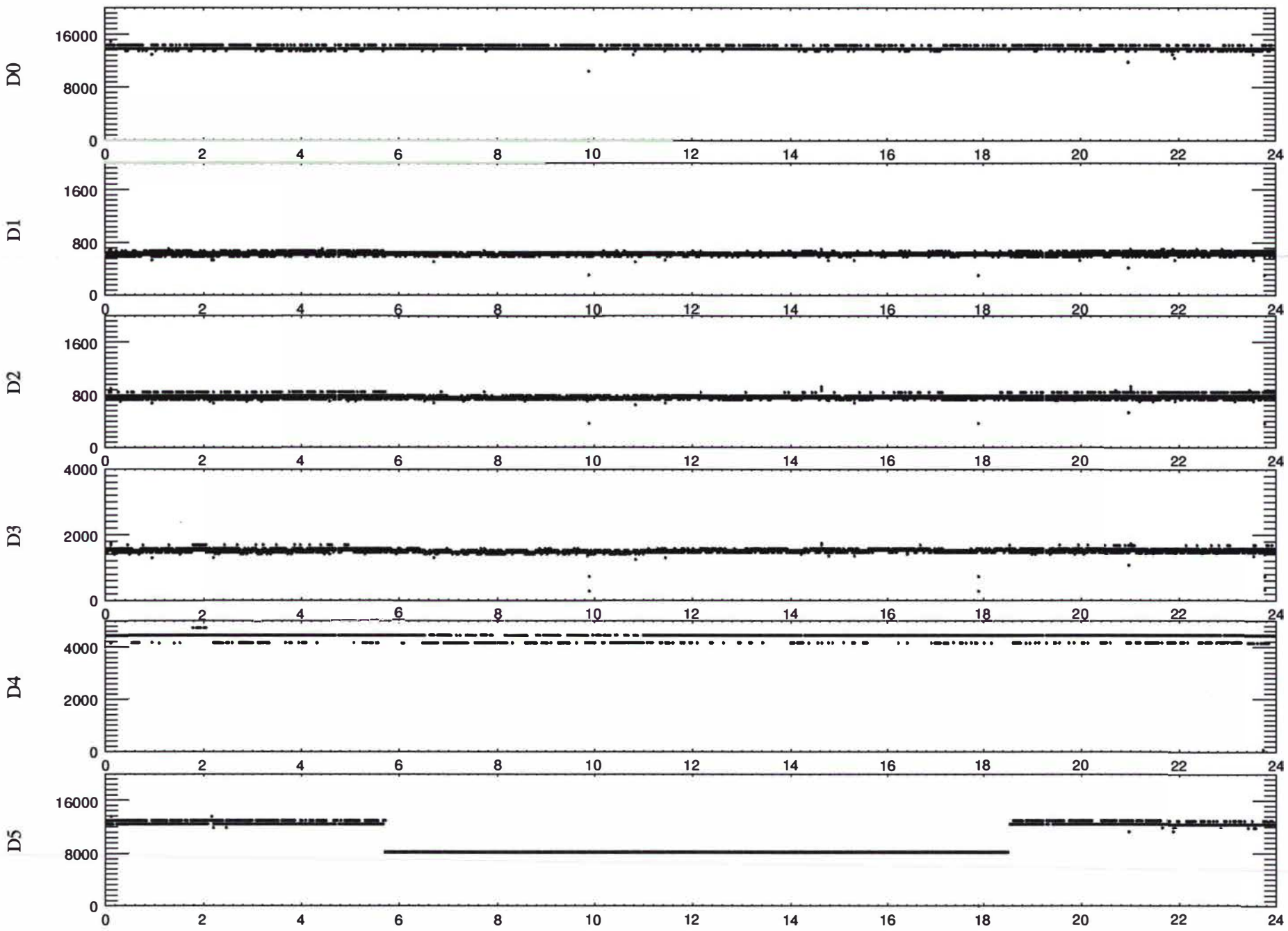
HUS 2A, MODE 1, NOT AVERAGED EDR day 65, year 1997 to day 65, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 65, year 1997 to day 65, year 1997 7/21/97



Date: Feb 6 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events N/A

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☑ 3Δt's calculated, and/or BMAPSUM executed?

3. For INTEGRAL events N/A

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

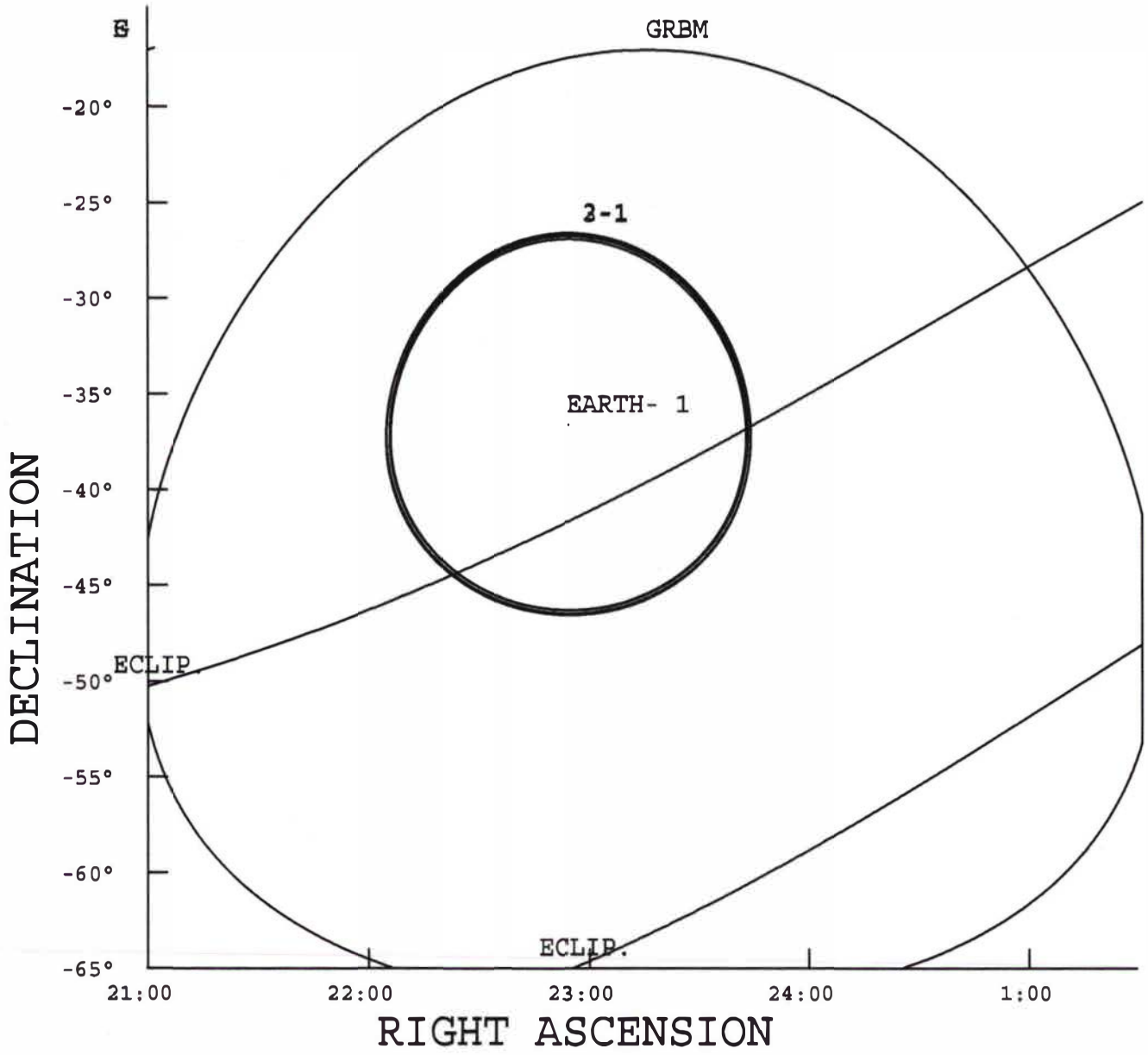
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

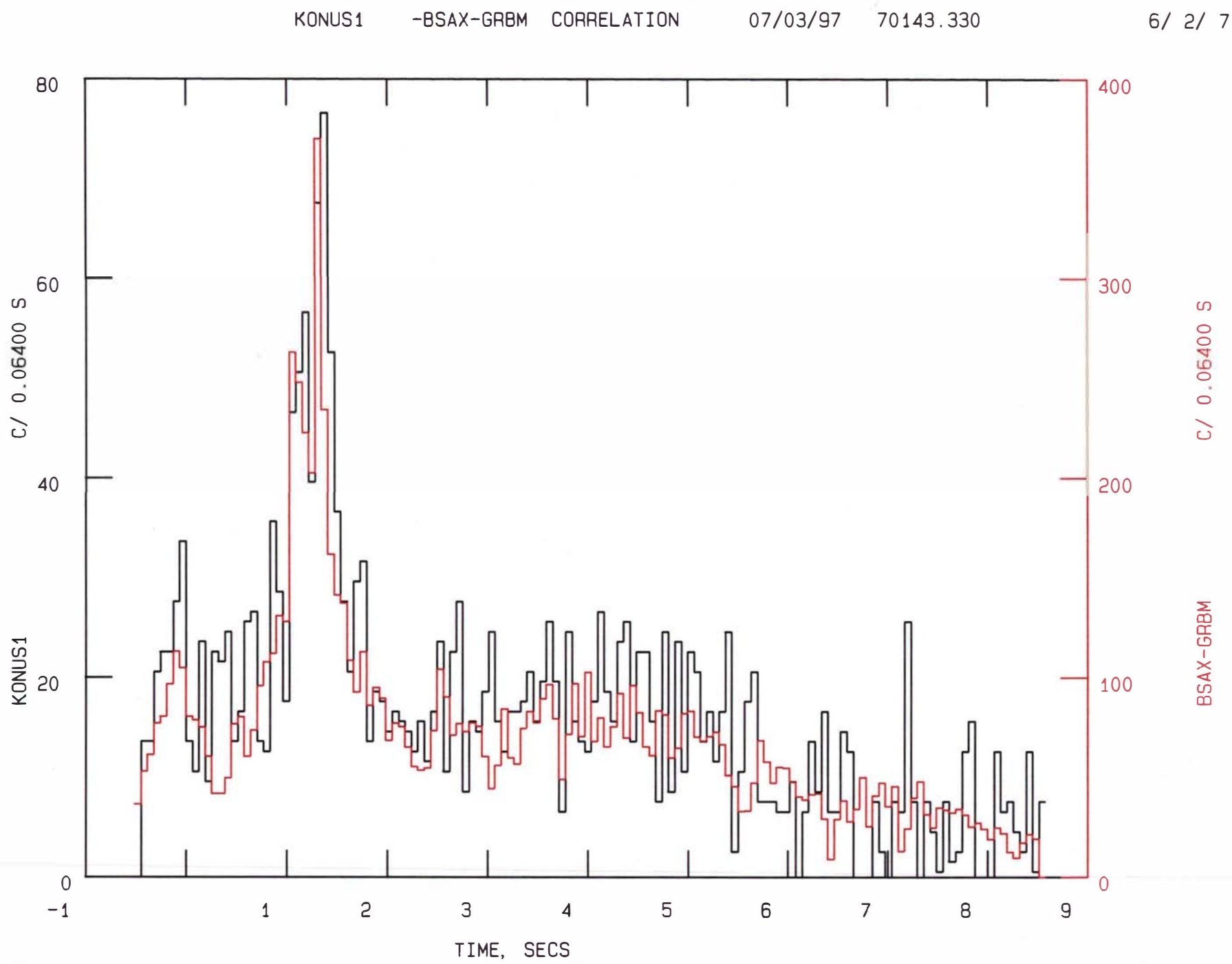
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

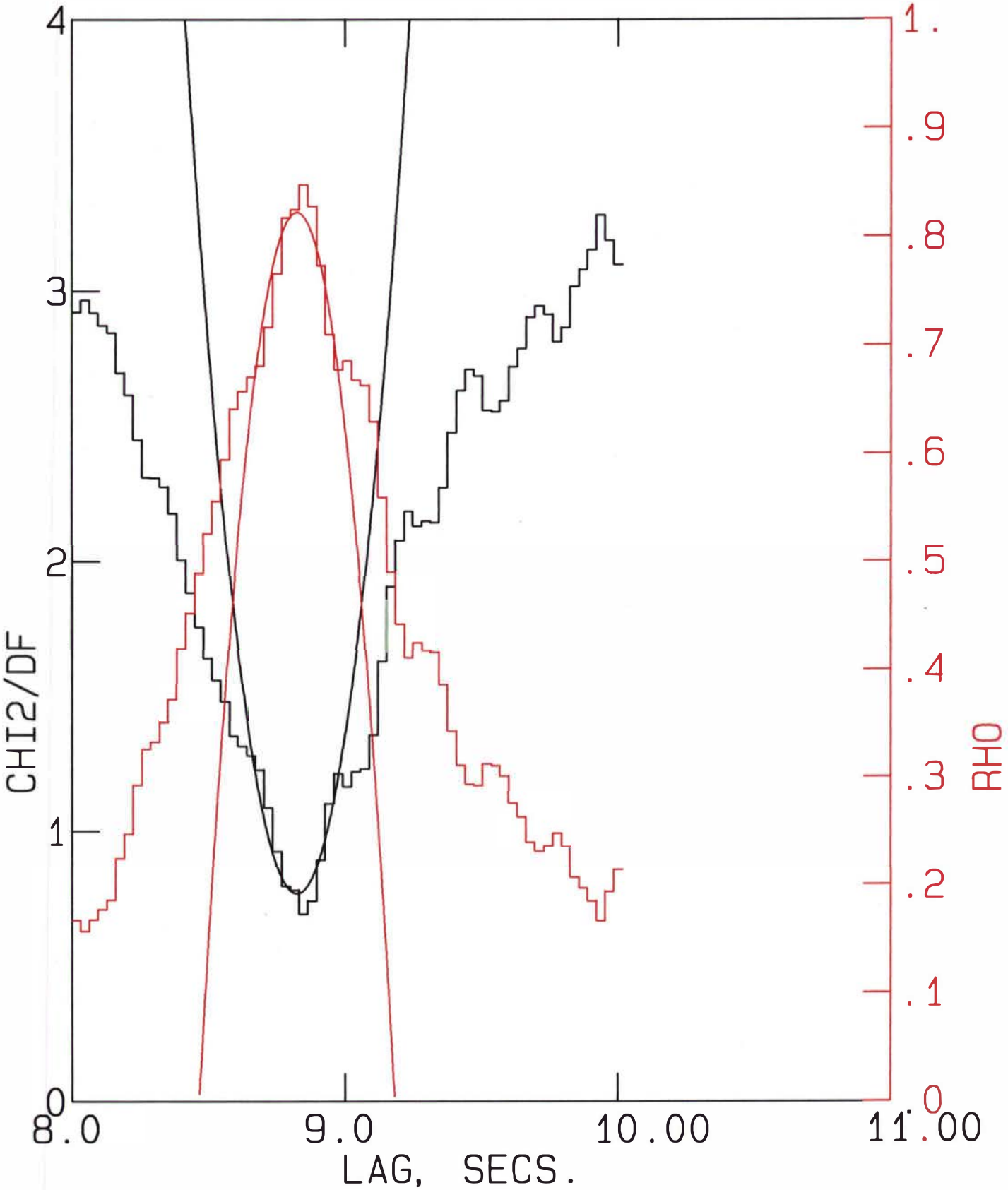
EVENT OF MAR 7, 1997 20:01

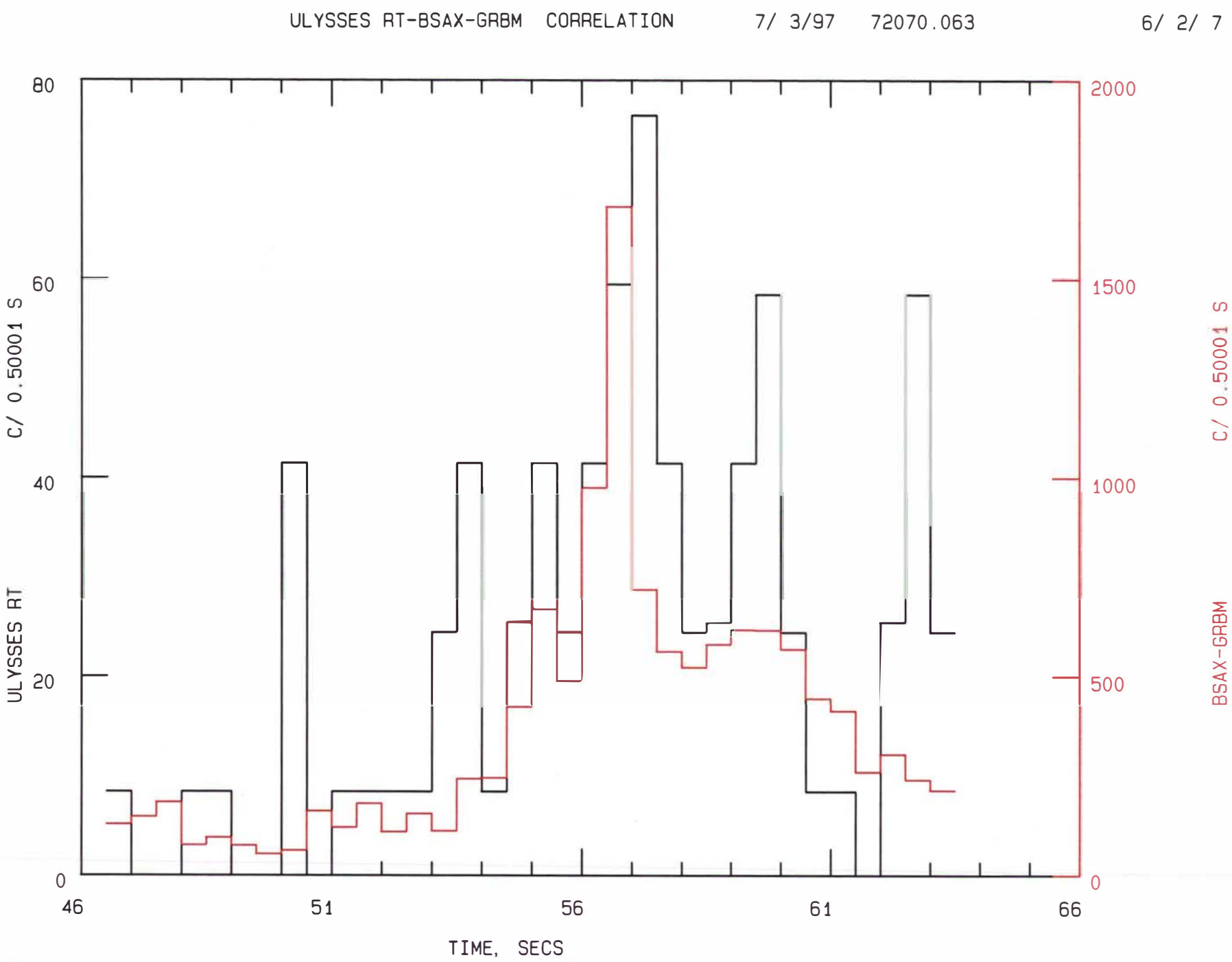
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1 3 SAX



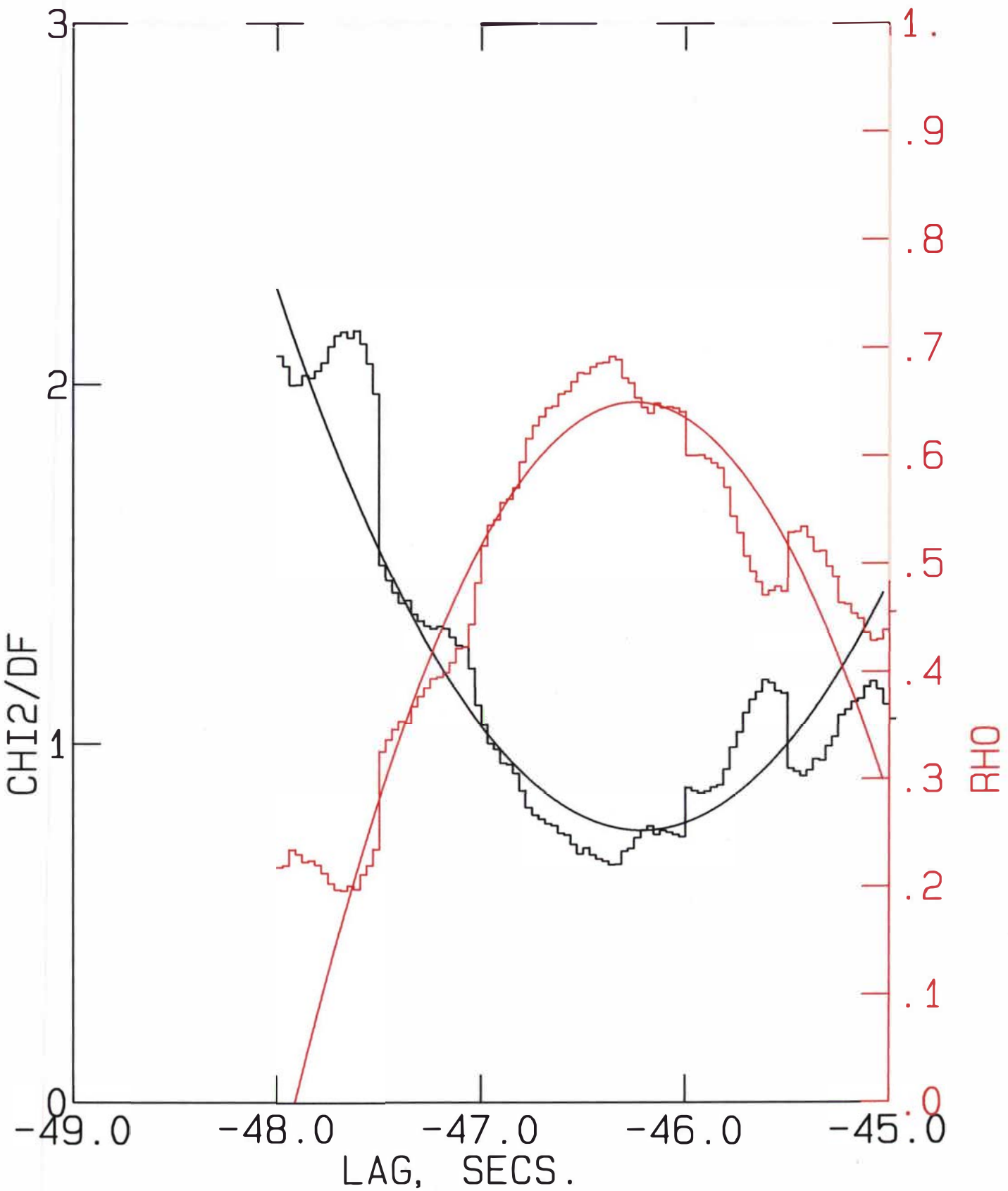

KONUS1 -BSAX-GRBM CORRELATION 07/03/97 70143.330 6/ 2/ 7
80
60
40
20
0
C/ 0.06400 S
KONUS1
400
300
200
100
0
C/ 0.06400 S
BSAX-GRBM
-1
1
2
3
4
5
6
7
8
9
TIME, SECS

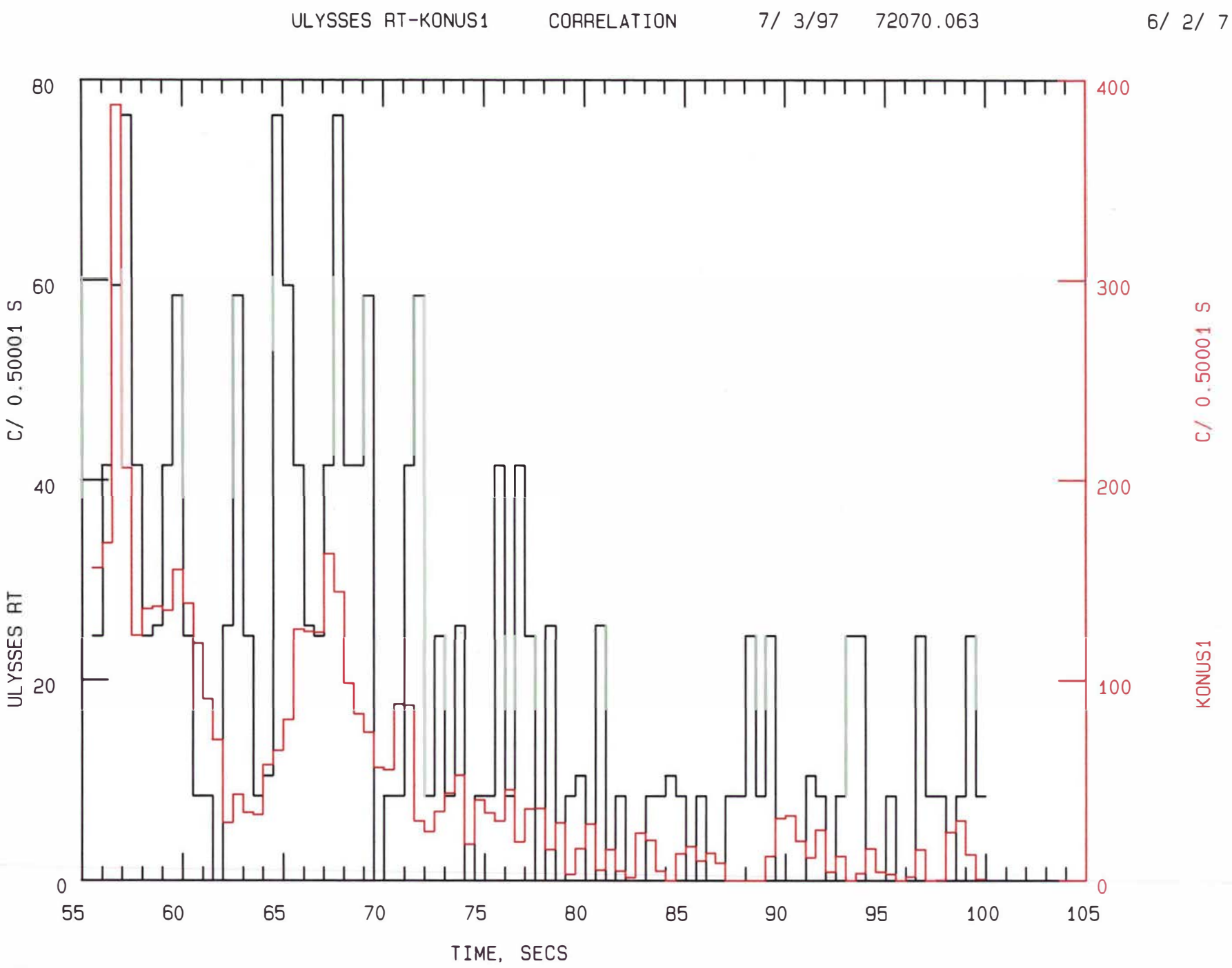
KONUS1 -BSAX-GRBM CORRELATION 07/03/97 70143.330



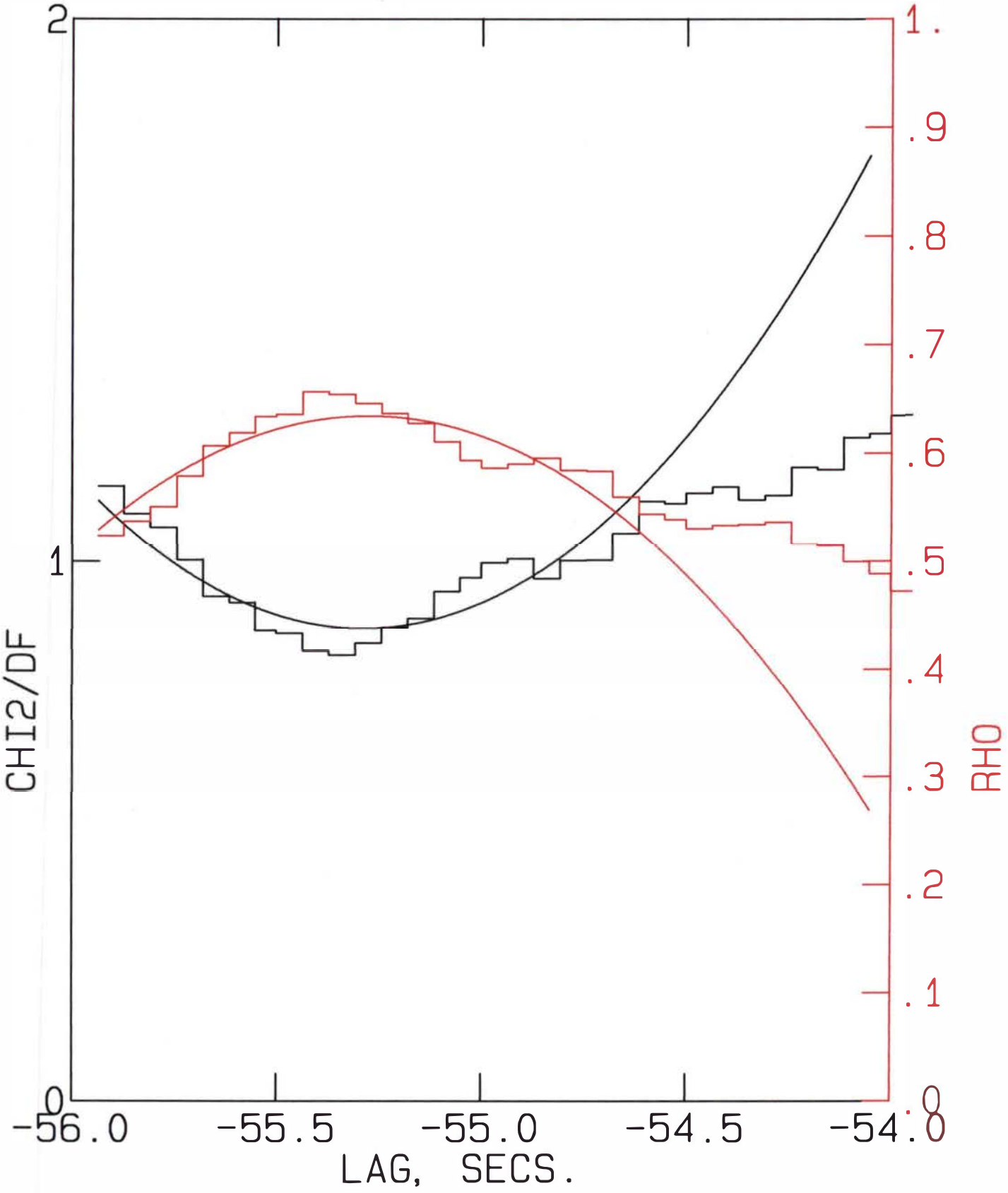

ULYSSES RT-BSAX-GRBM CORRELATION 7/ 3/97 72070.063 6/ 2/ 7
80
60
40
20
0
ULYSSES RT
C/ 0.50001 S
2000
1500
1000
500
0
BSAX-GRBM
C/ 0.50001 S
46
51
56
61
66
TIME, SECS

ULYSSES RT-BSAX-GRBM CORRELATION 7/ 3/97 72070.063




ULYSSES RT-KONUS1 CORRELATION 7/ 3/97 72070.063 6/ 2/ 7
ULYSSES RT
C/ 0.50001 S
KONUS1
C/ 0.50001 S
TIME, SECS
0
20
40
60
80
0
100
200
300
400
55
60
65
70
75
80
85
90
95
100
105

ULYSSES RT-KONUS1 CORRELATION 7/ 3/97 72070.063



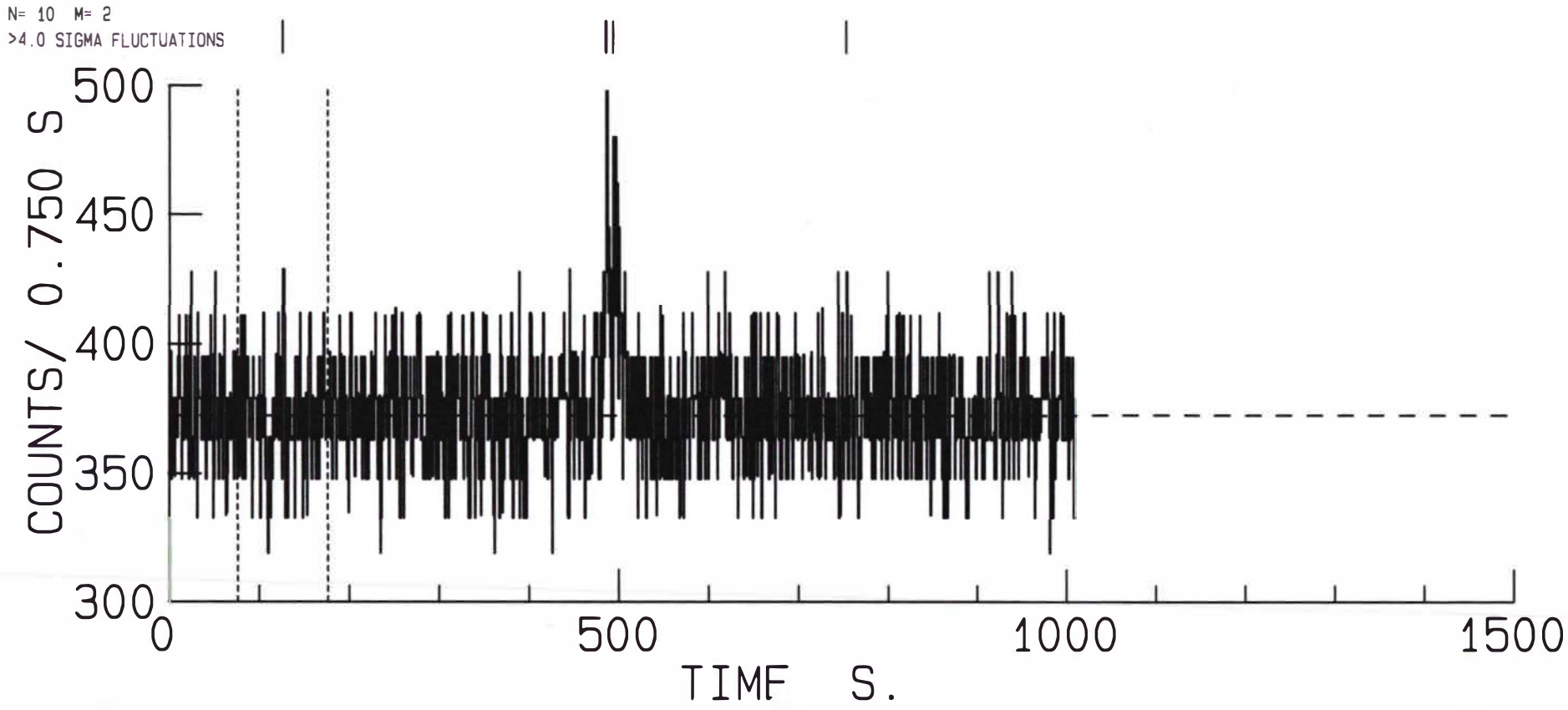
ULYSSES RT

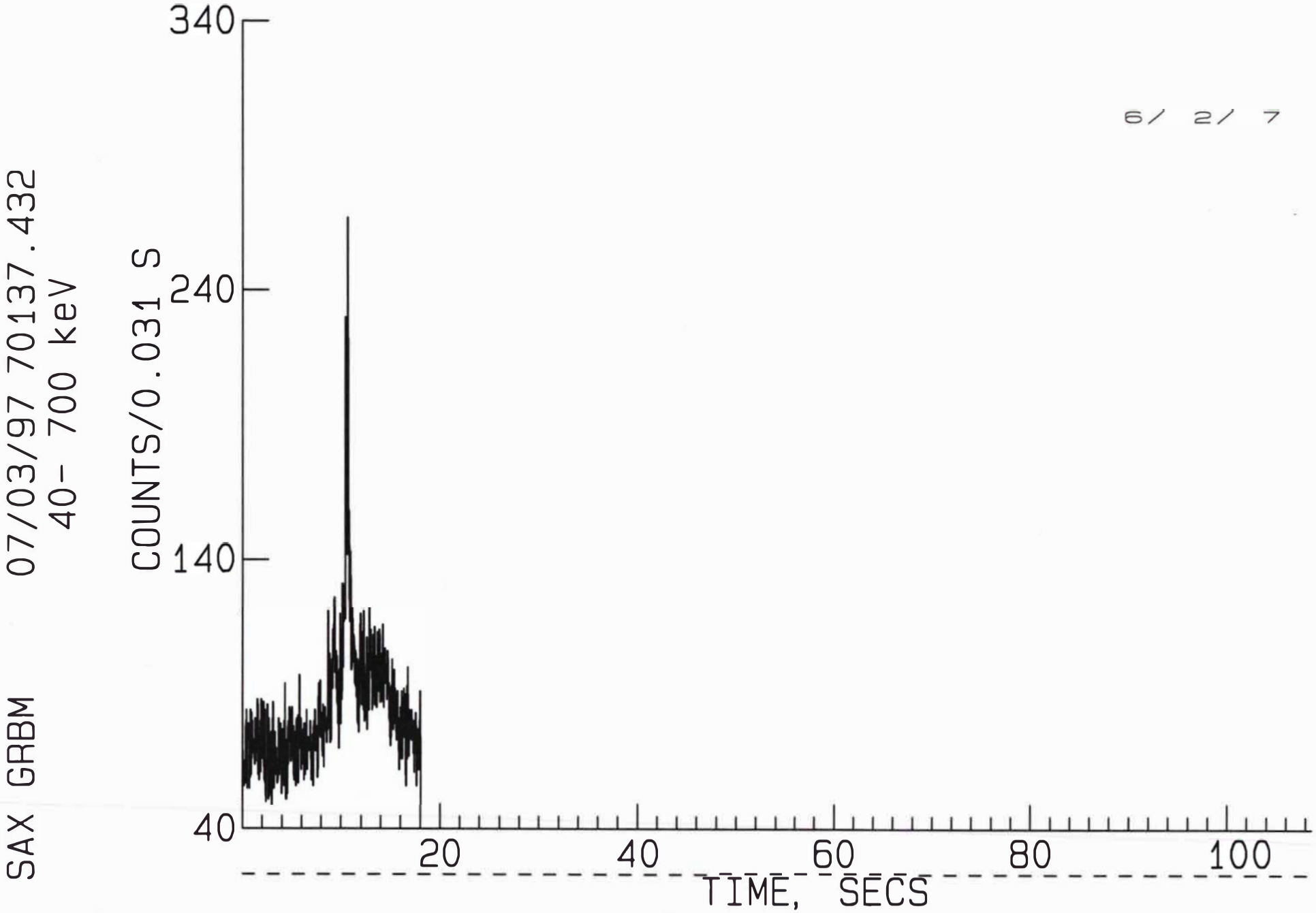
6/ 2/ 7

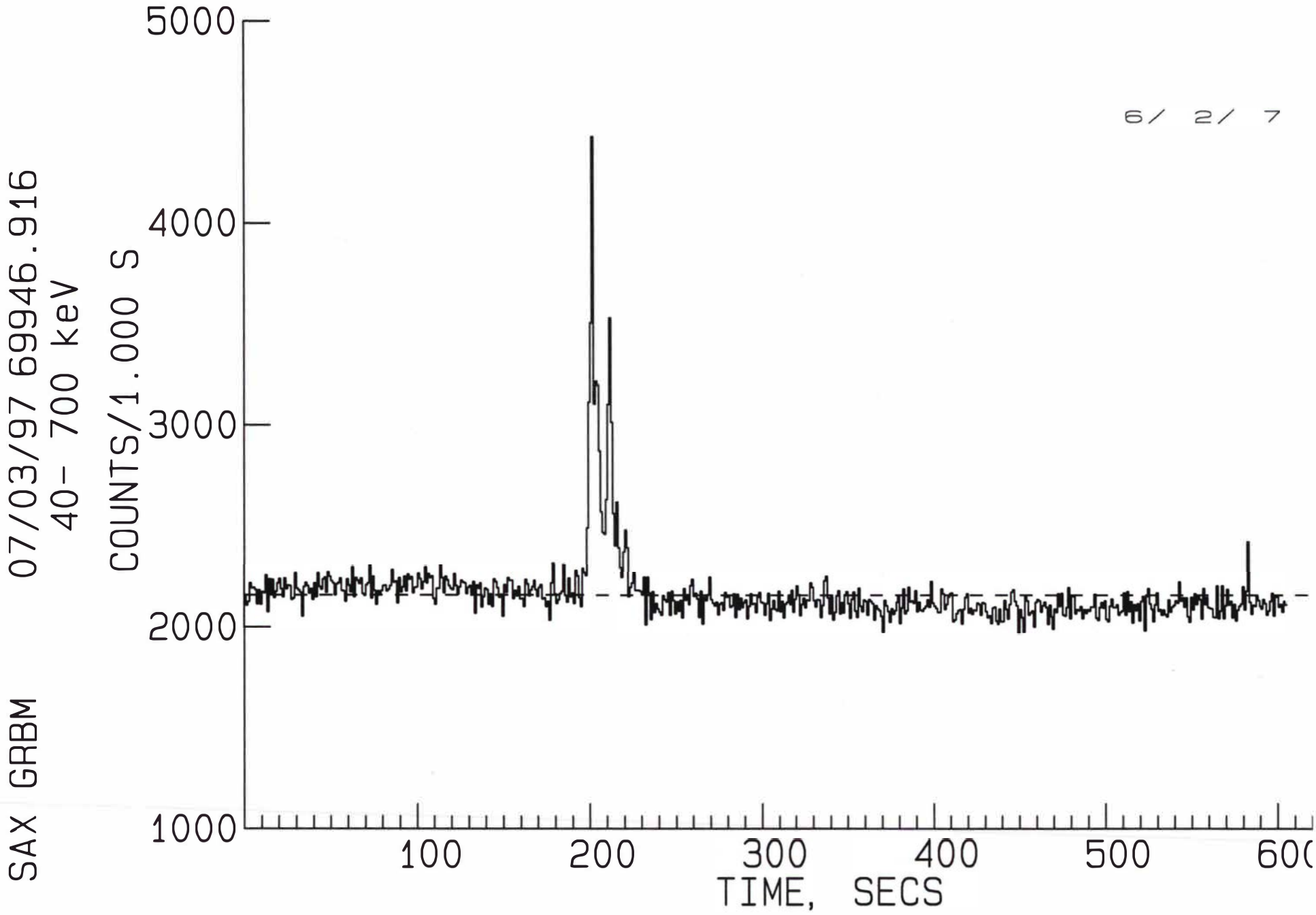
7/ 3/97 71640.070 s

0.250 S INTERVALS REGROUPED BY 3

22- 147 keV

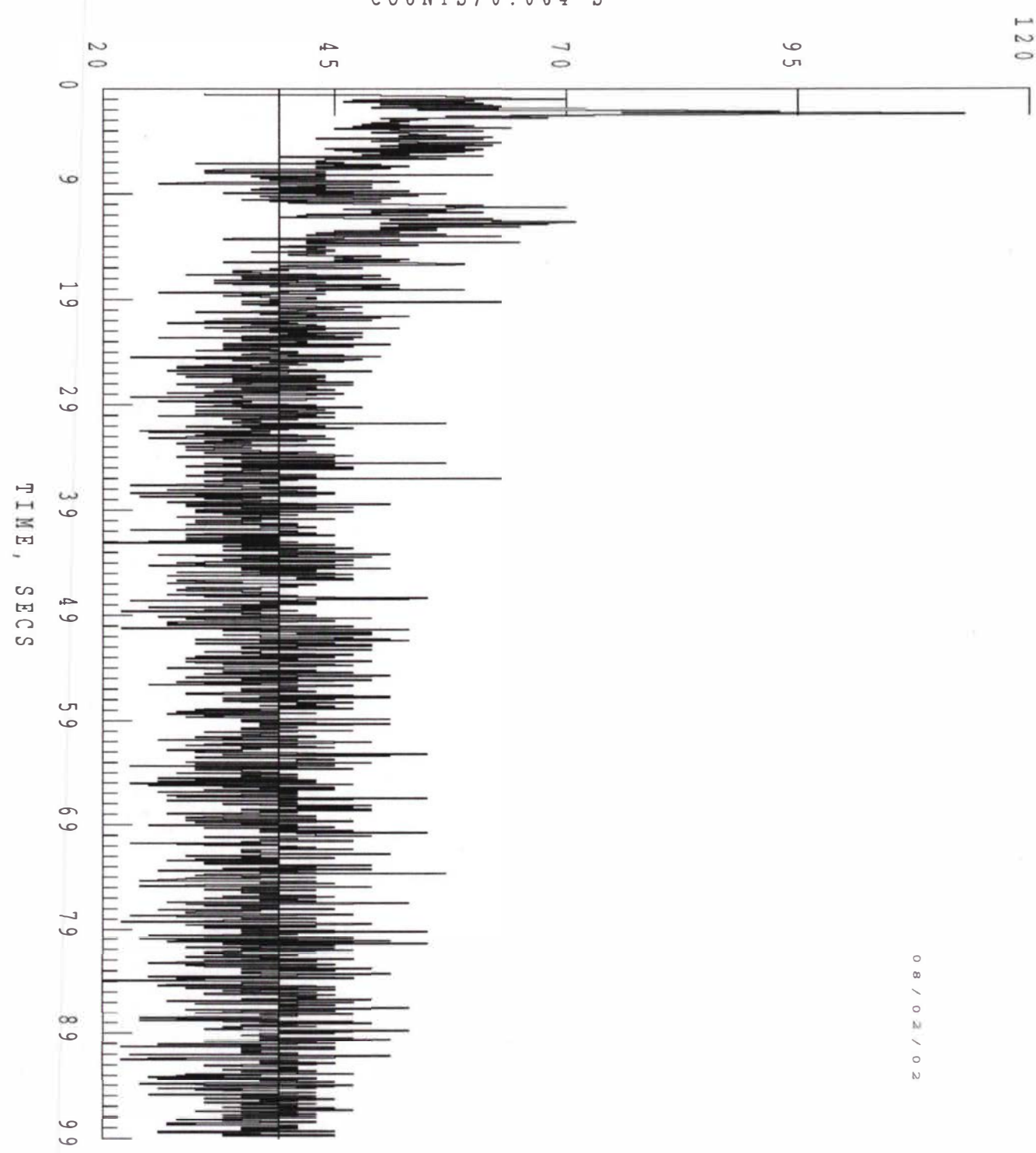


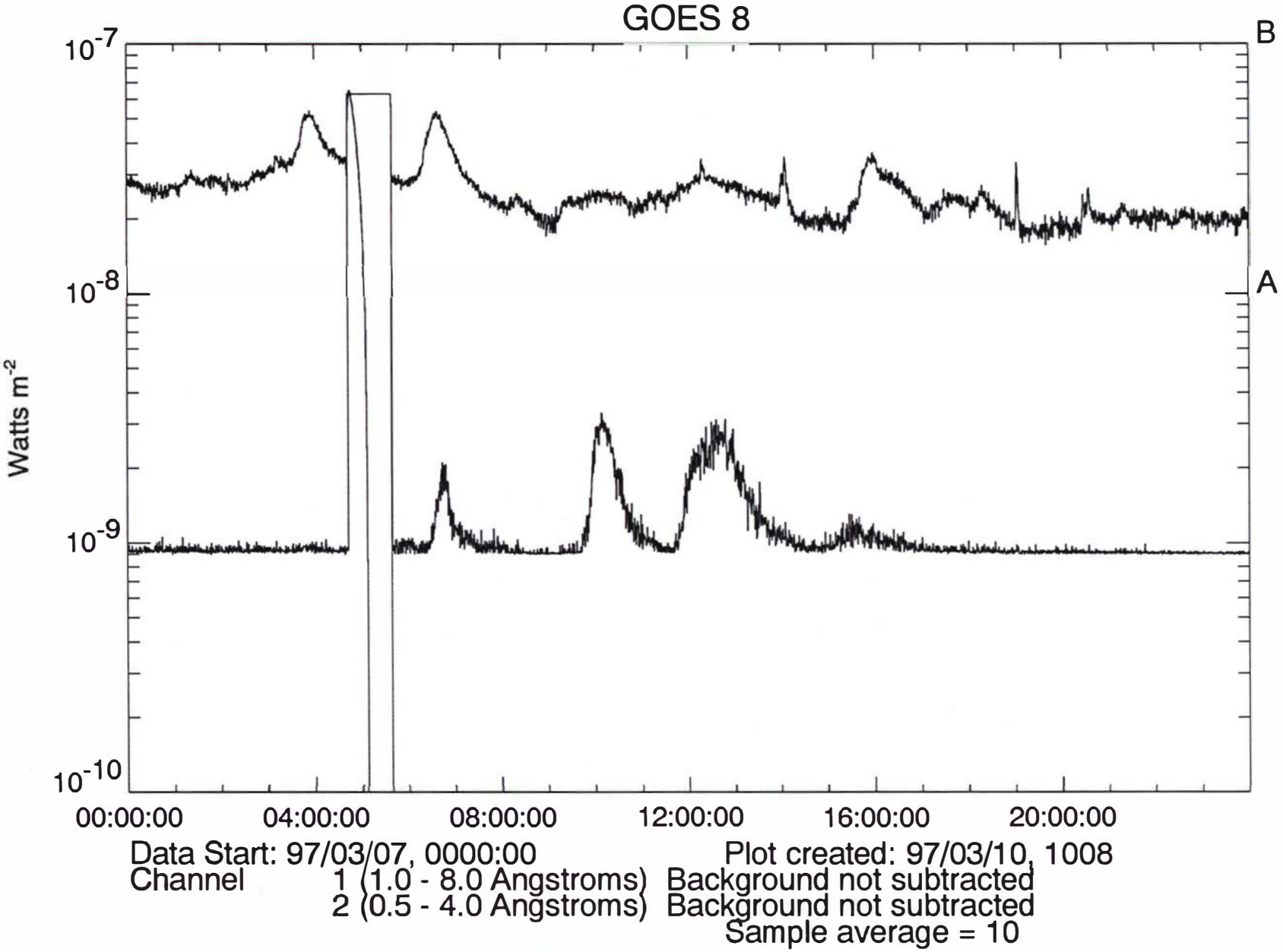

SAX GRBM
07/03/97 70137.432
40- 700 keV
COUNTS/0.031 S
340
240
140
40
20
40
60
80
100
TIME, SECS
6/ 2/ 7

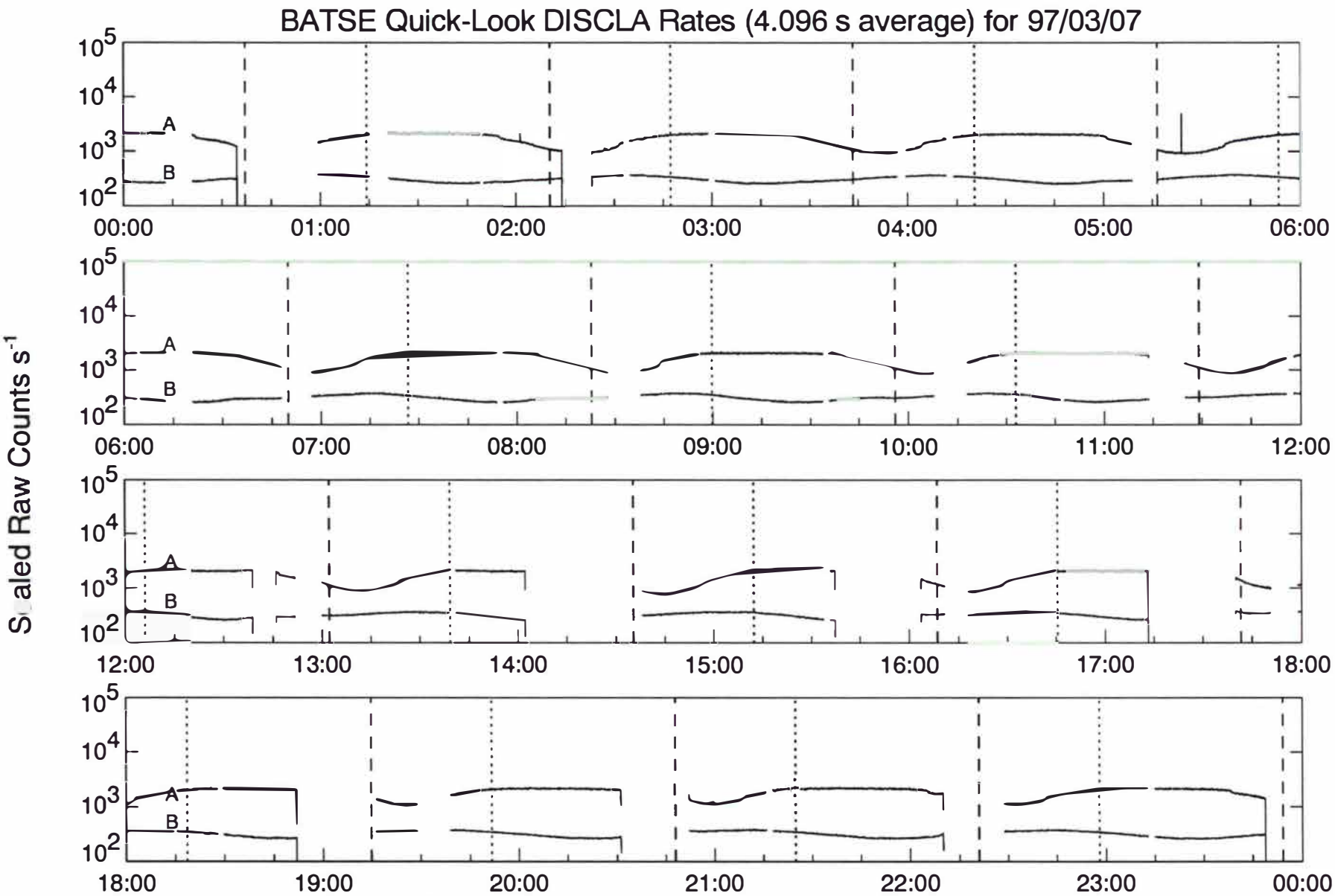

SAX GRBM
07/03/97 69946.916
40- 700 keV
COUNTS/1.000 S
5000
4000
3000
2000
1000
100
200
300
400
500
600
TIME, SECS
6/ 2/ 7

KONUS1 07/03/97 70143.330

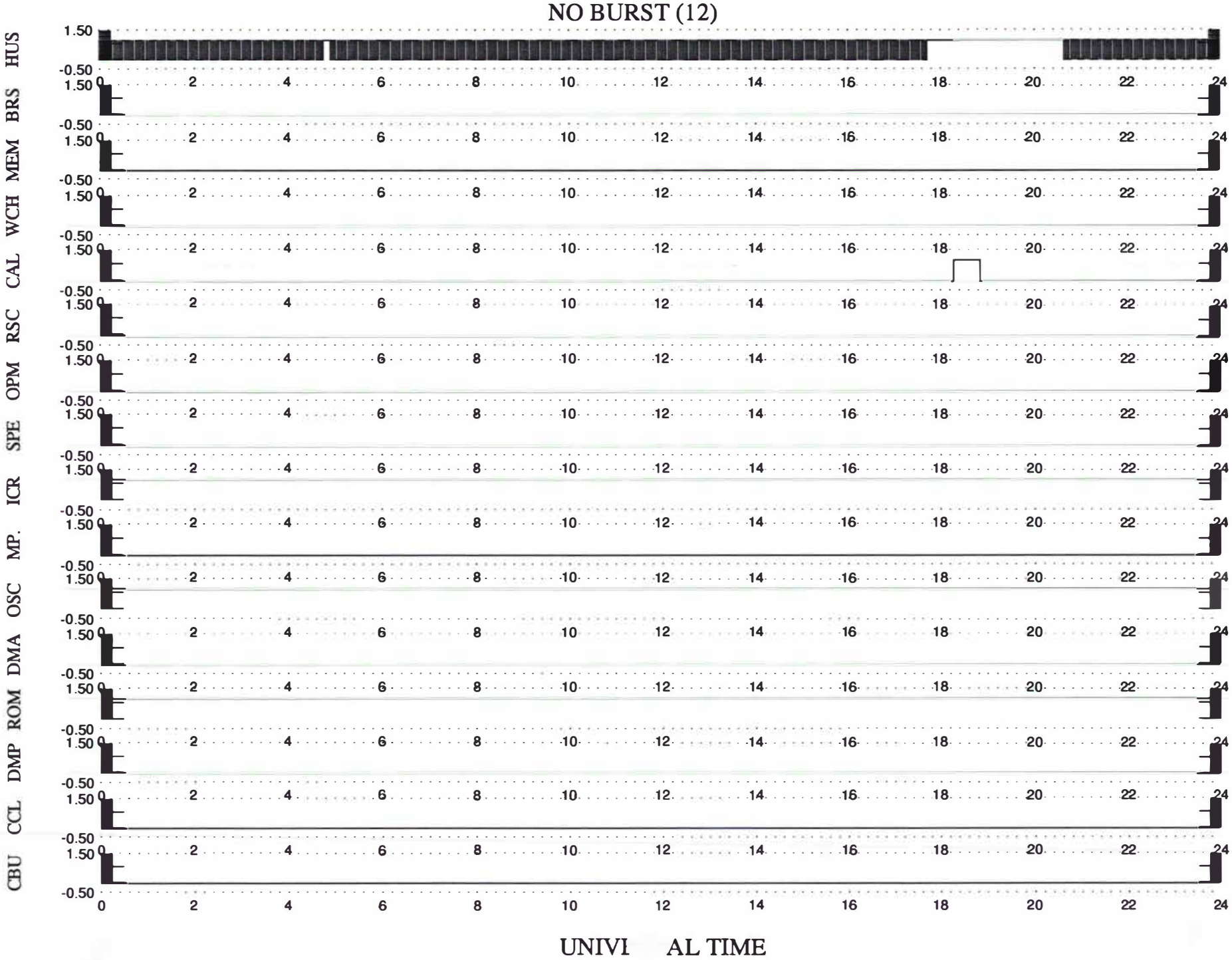
50- 200 keV




GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/07, 0000:00
Plot created: 97/03/10, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

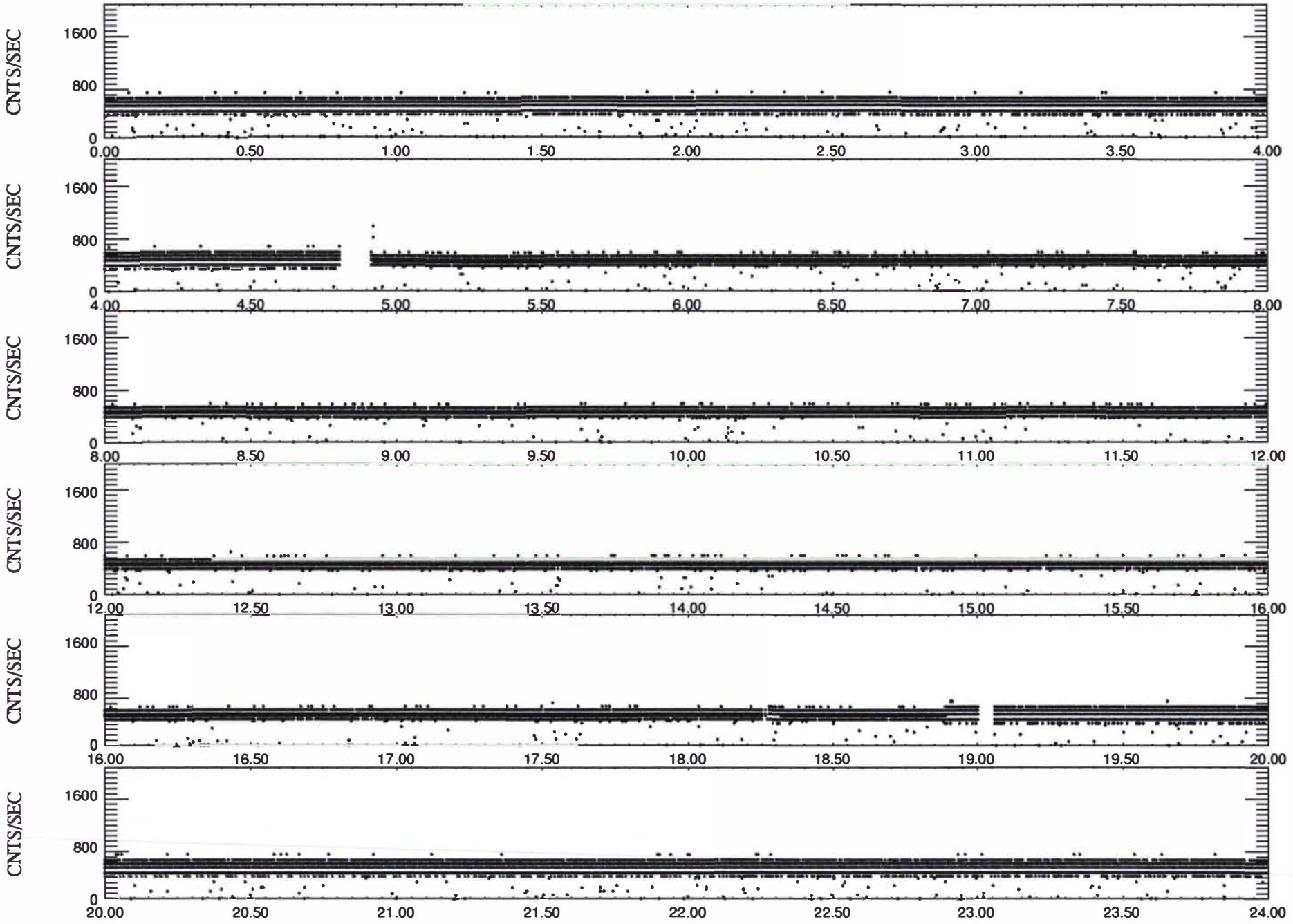

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/03/07
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/03/10, 1623 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

HUS MODES EDR day 66, year 1997 to day 66, year 1997 7/21/97



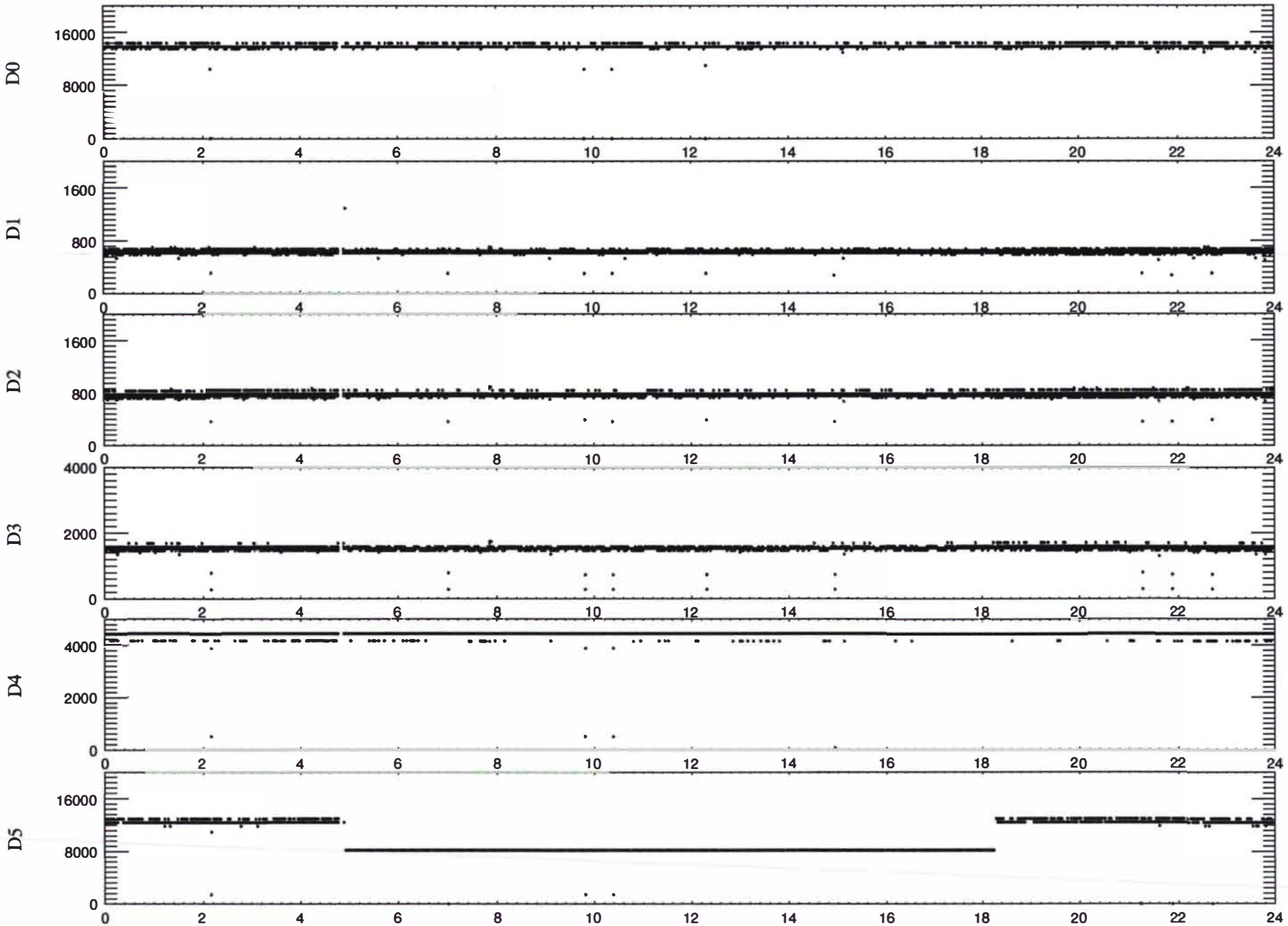
HUS 2A, MODE 1, NOT AVERAGED EDR day 66, year 1997 to day 66, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 66, year 1997 to day 66, year 1997 7/21/97



From HENZE@ssl.msfc.nasa.gov Wed Mar 12 09:50 PST 1997
Return-Path: <HENZE@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA07196; Wed, 12 Mar 1997 09:50:14 -0800
From: HENZE@ssl.msfc.nasa.gov
Date: Wed, 12 Mar 1997 11:50:09 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970312115009.2020b892@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6117
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6117
EVENT OF 1997 MAR 8 DAY OF YEAR= 67
EVENT CROSSING TIME AT BATSE : 16760. S. OR 04:39:20.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 166.000 11.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 3/ 97 IS:
RA= 162.479 DEC= 36.852 DIST= 4.034 AU
BATSE-ULYSSES DISTANCE = 603462134. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=153.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1808.49 SECS.
CROSSING TIME AT ULYSSES IS 14952. S. OR 04:09:11 +/- 175.99 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 3/ 97 IS:
RA= 181.784 DEC= 3.367 DIST= 0.677 AU
MARS-BATSE DISTANCE = 101302488. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=162.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -322.43 SECS.
CROSSING TIME AT MARS IS 16438. S. OR 04:33:57 +/- 12.66 SECONDS

BATSE BURST TRIGGER

NO.: 6117

TIME: TJD=0515 SECONDS=16760

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

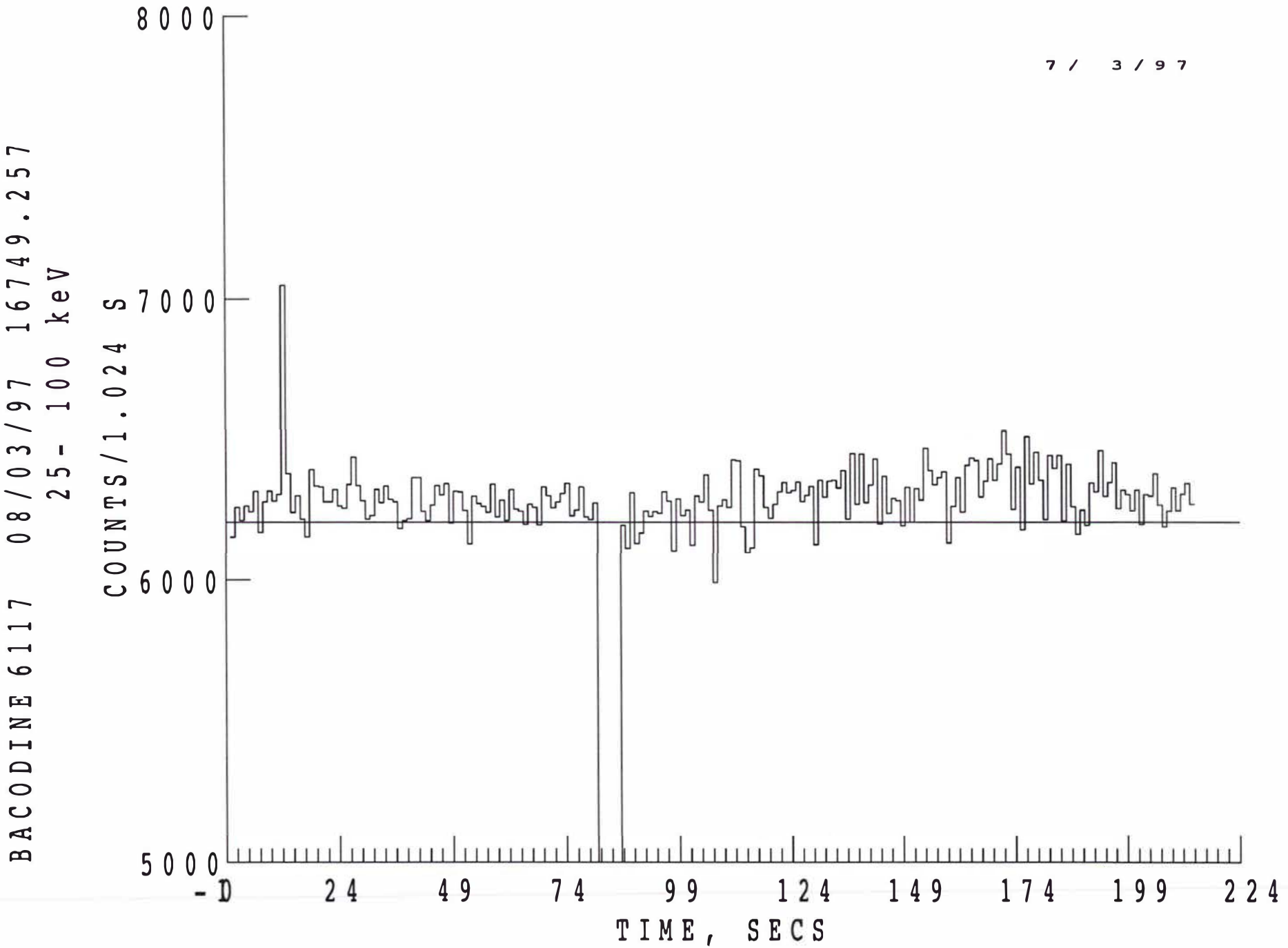
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=081.6 AZIMUTH=165.7 ERROR=005.8 DEGREES

COMMENTS:
DOUBLE SPIKE WITH SUBSTRUCTURE, TOTAL DUR. ~2 S.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6117	970308	10515	16760	6000	166	+11	2


BACODINE 6117 08/03/97 16749.257
25- 100 keV
COUNTS/1.024 S
8000
7000
6000
5000
7/ 3/97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

BATSE# 6117

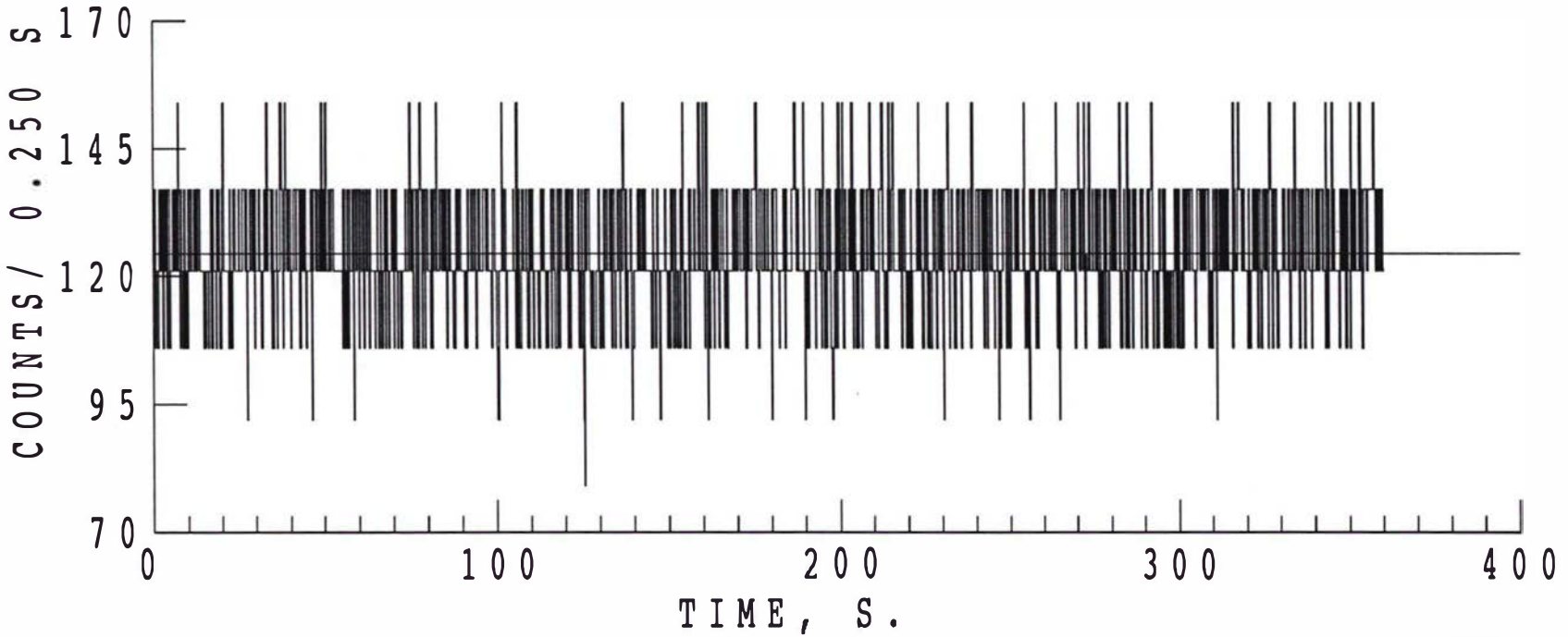
ULYSSES RT 12/ 3/97

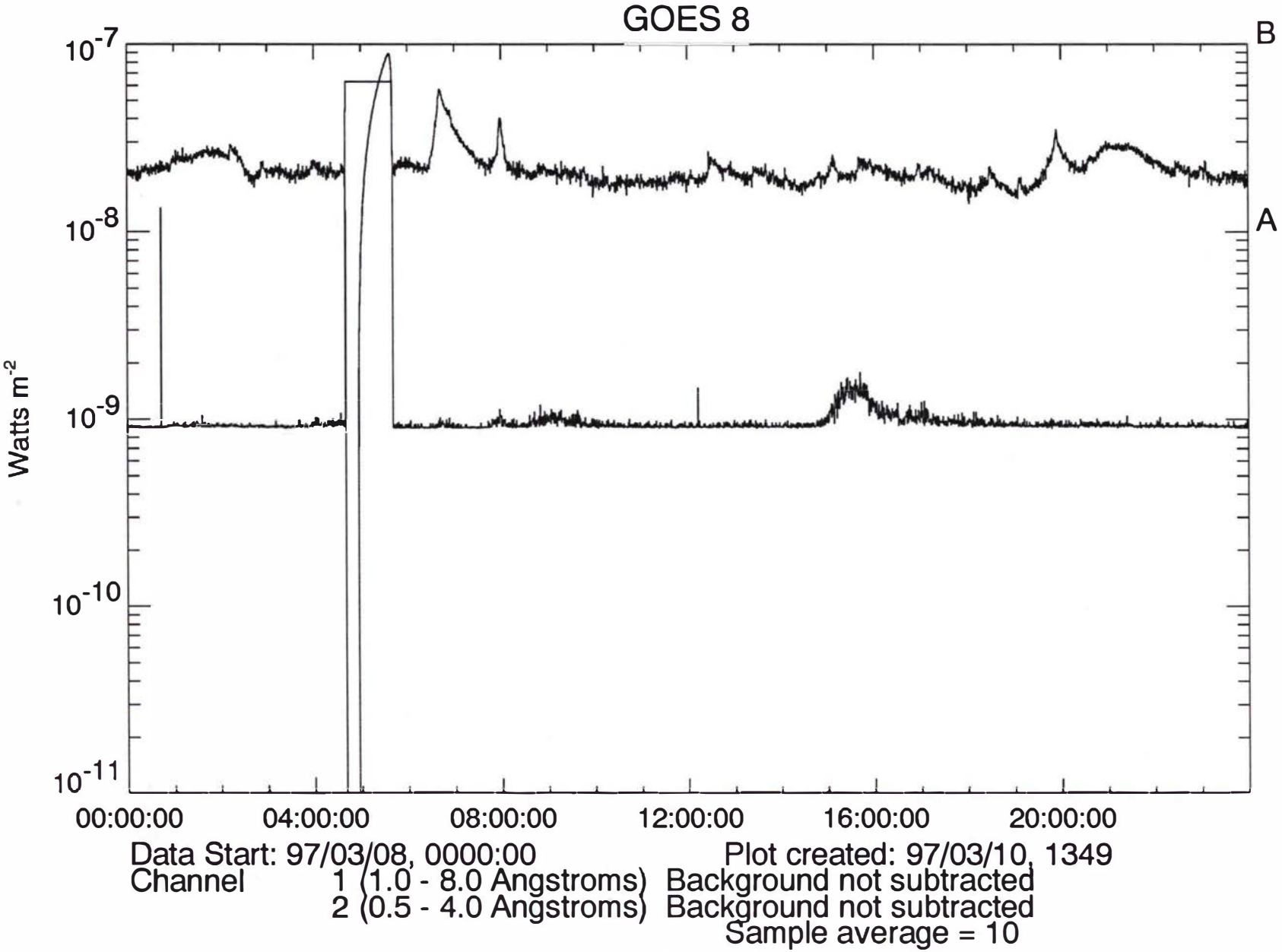
8/ 3/97 14760.178 s

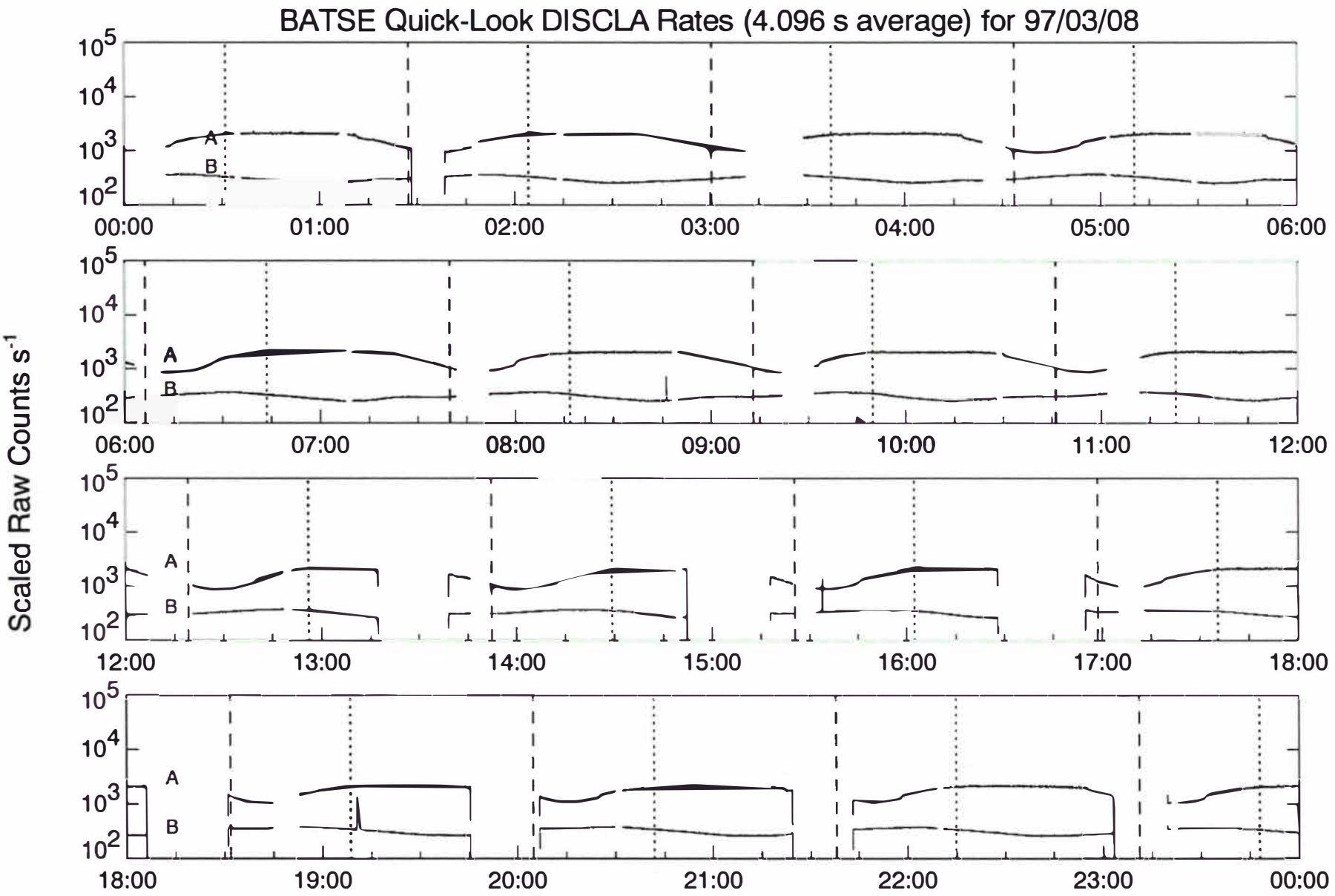
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

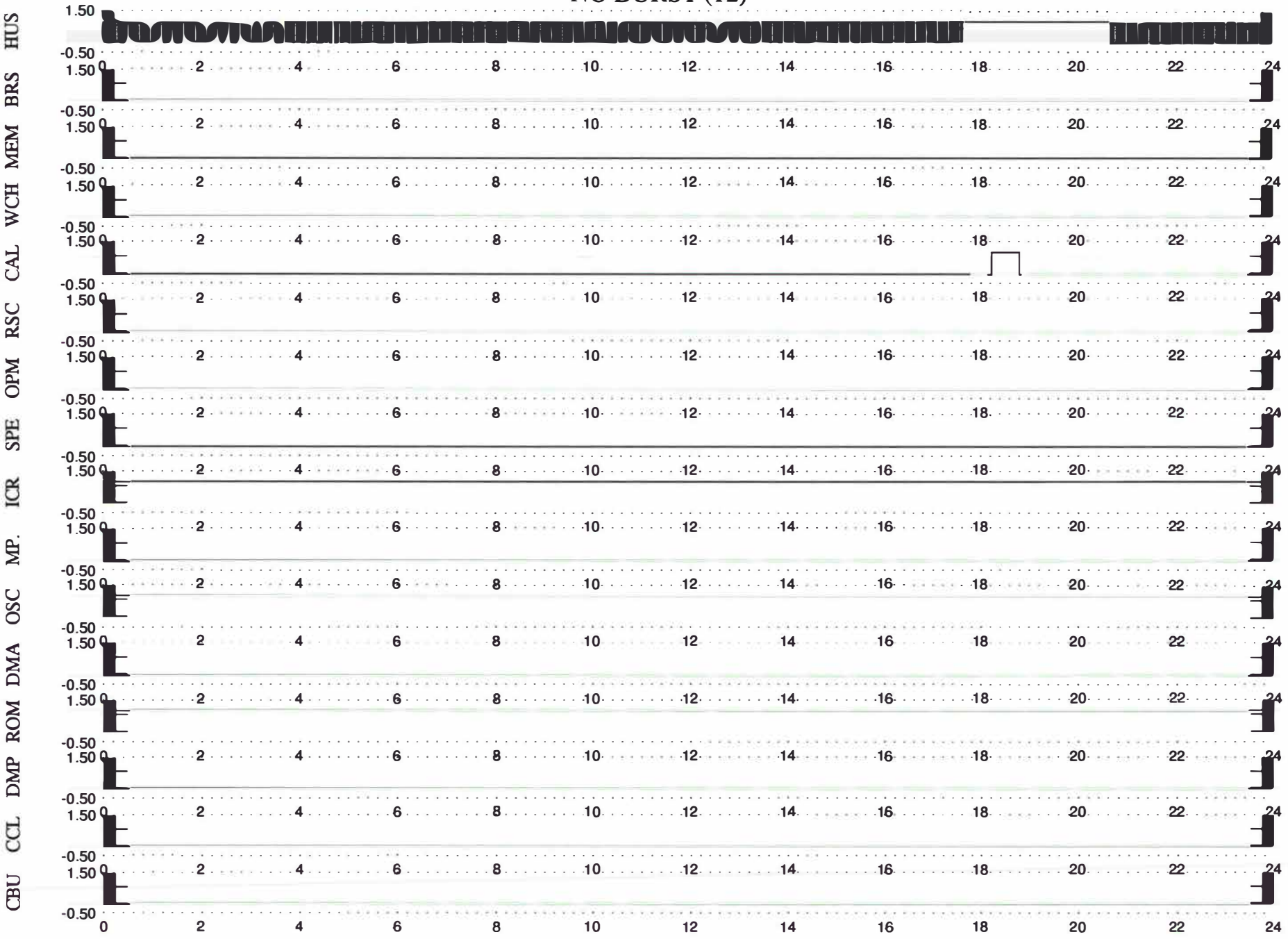



GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/08, 0000:00
Plot created: 97/03/10, 1349
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/03/08
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/03/10, 1641 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

HUS MODES EDR day 67, year 1997 to day 67, year 1997 7/21/97

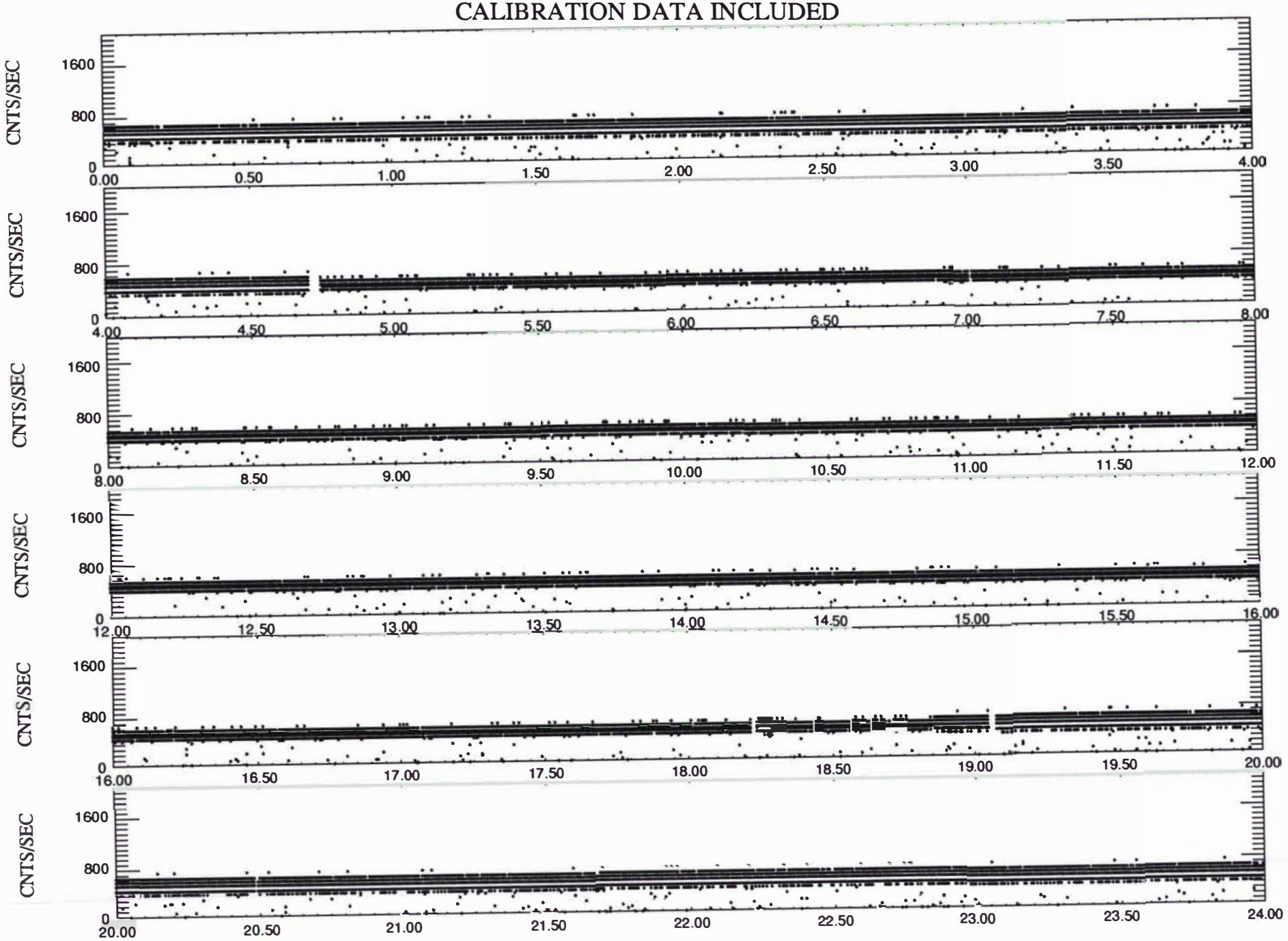
NO BURST (12)



UNIVI AL TIME

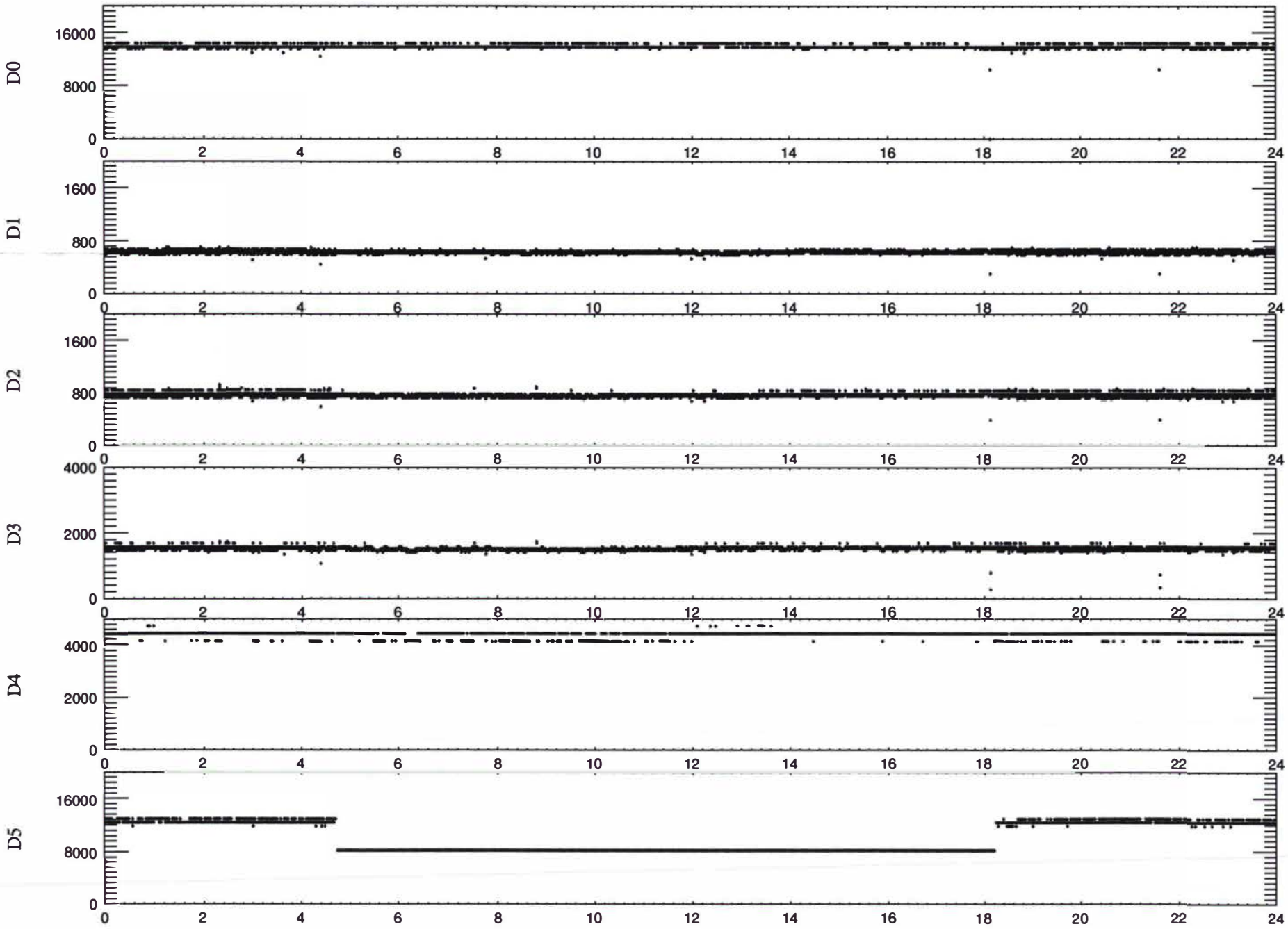
HUS 2A, MODE 1, NOT AVERAGED EDR day 67, year 1997 to day 67, year 1997 7/21/97

CALIBRATION DATA INCLUDED

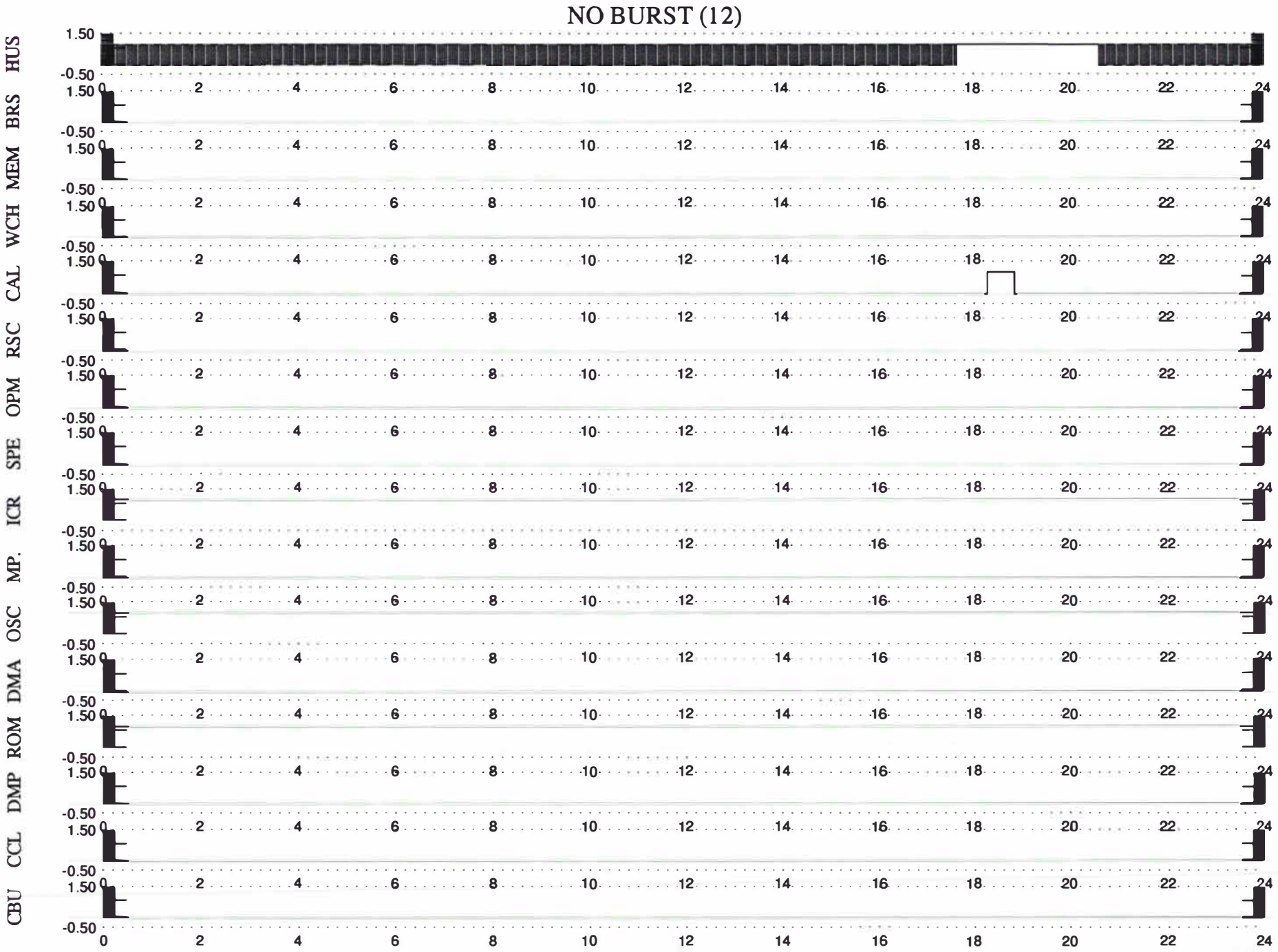


UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 67, year 1997 to day 67, year 1997 7/21/97

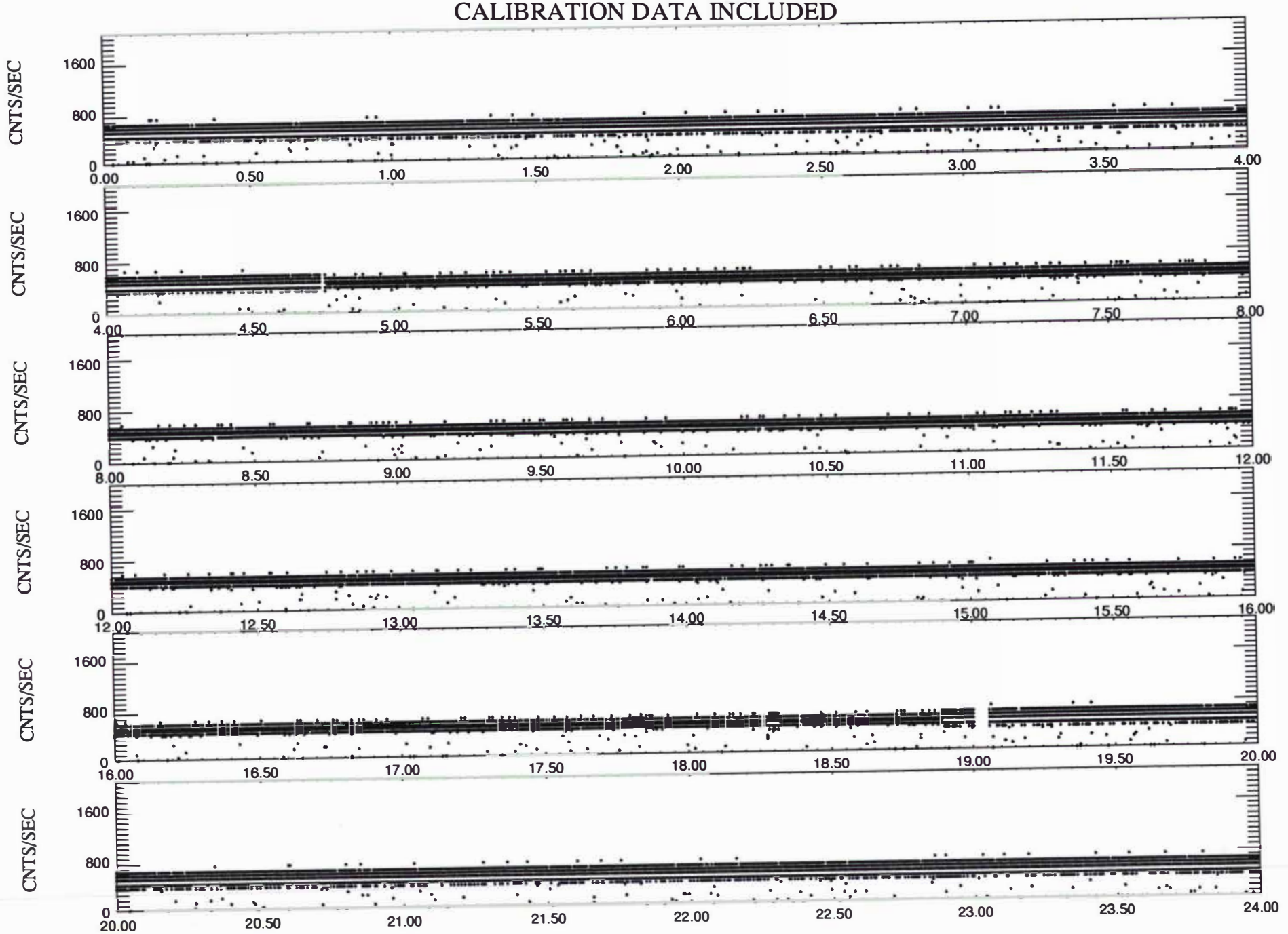


HUS MODES EDR day 68, year 1997 to day 68, year 1997 7/21/97



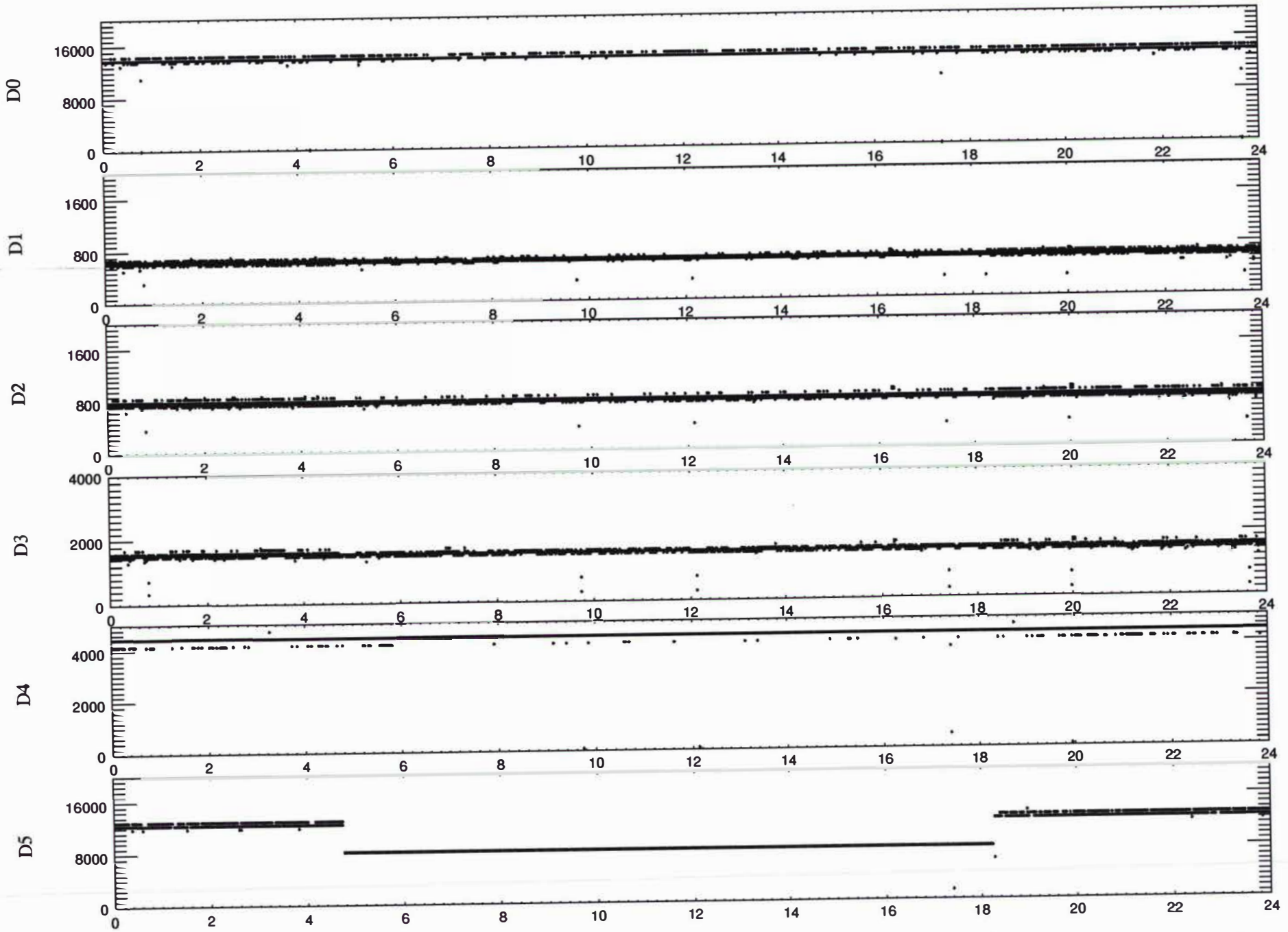
HUS 2A, MODE 1, NOT AVERAGED EDR day 68, year 1997 to day 68, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 68, year 1997 to day 68, year 1997 7/21/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
T khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

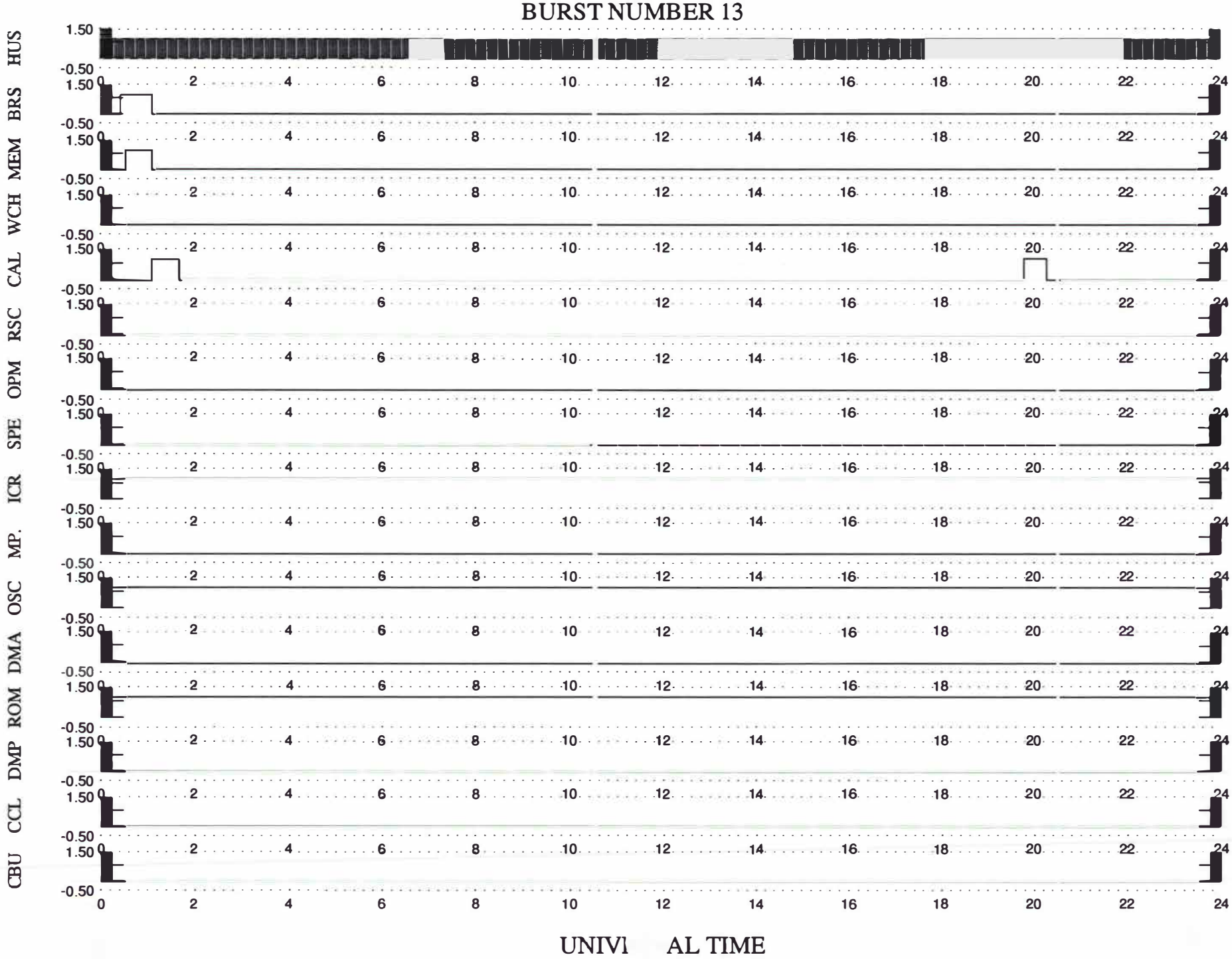
Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
`113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

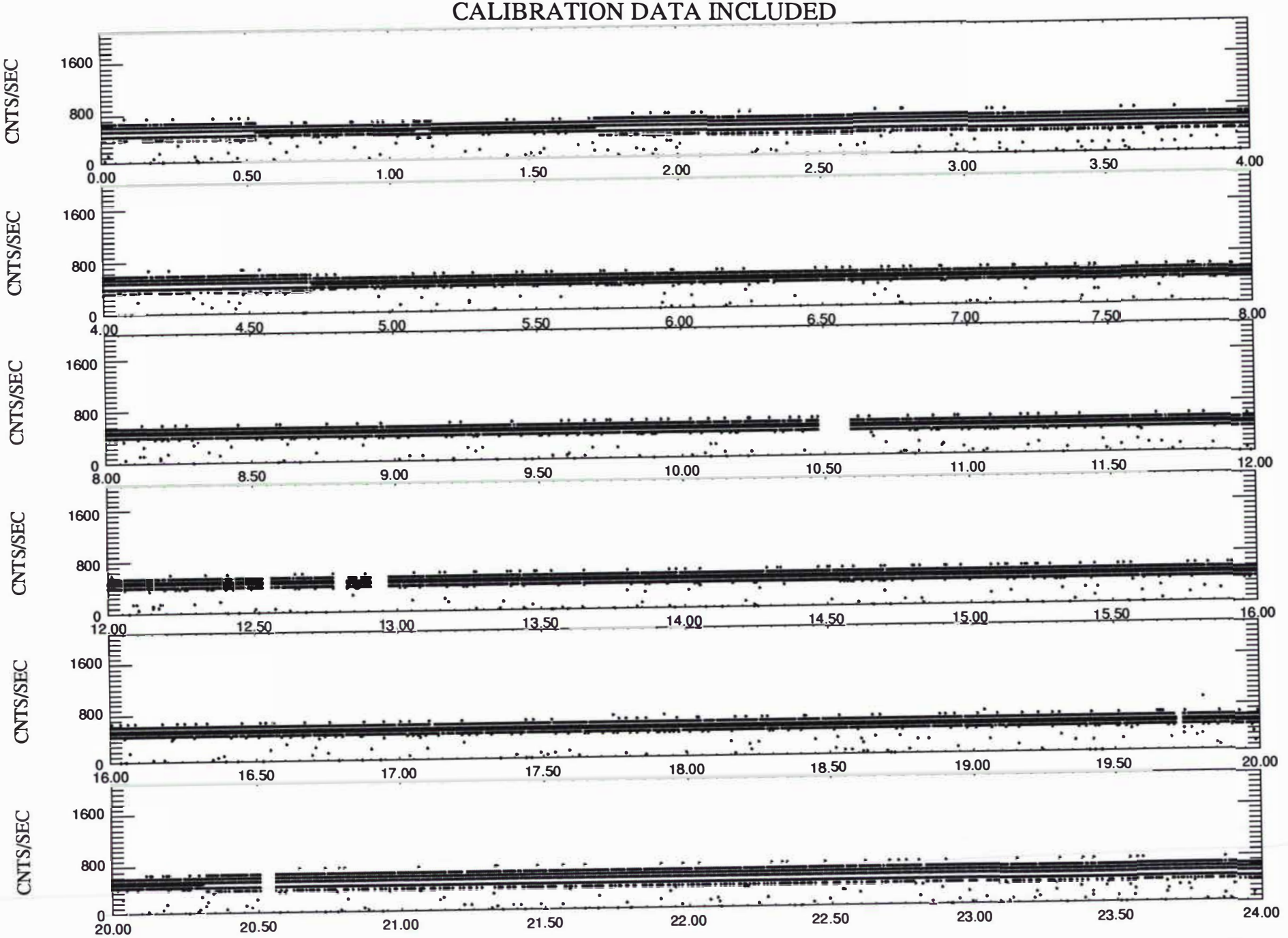
970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

HUS MODES EDR day 69, year 1997 to day 69, year 1997 7/21/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 69, year 1997 to day 69, year 1997 7/21/97

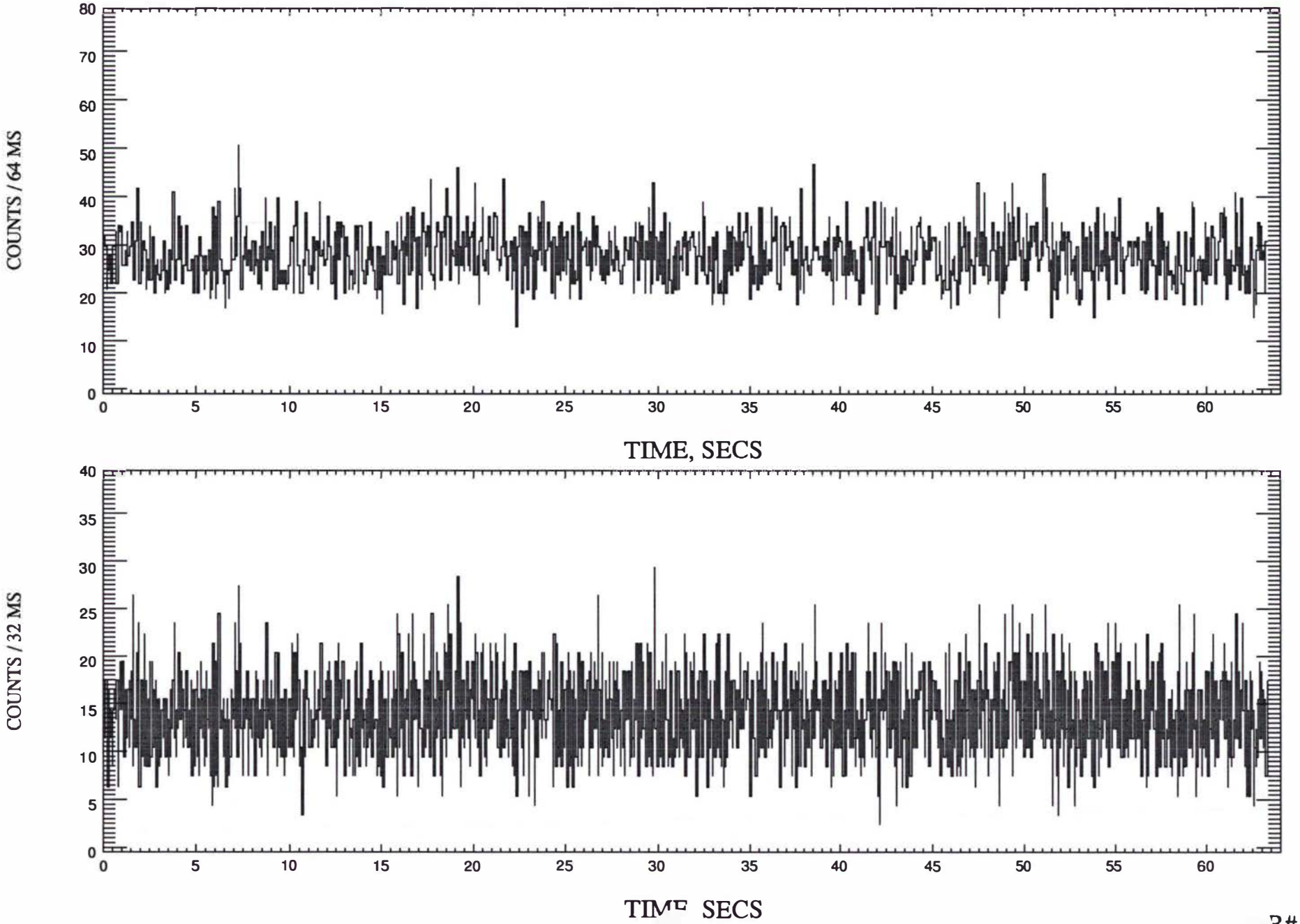
CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 69, year 1997 7/21/97

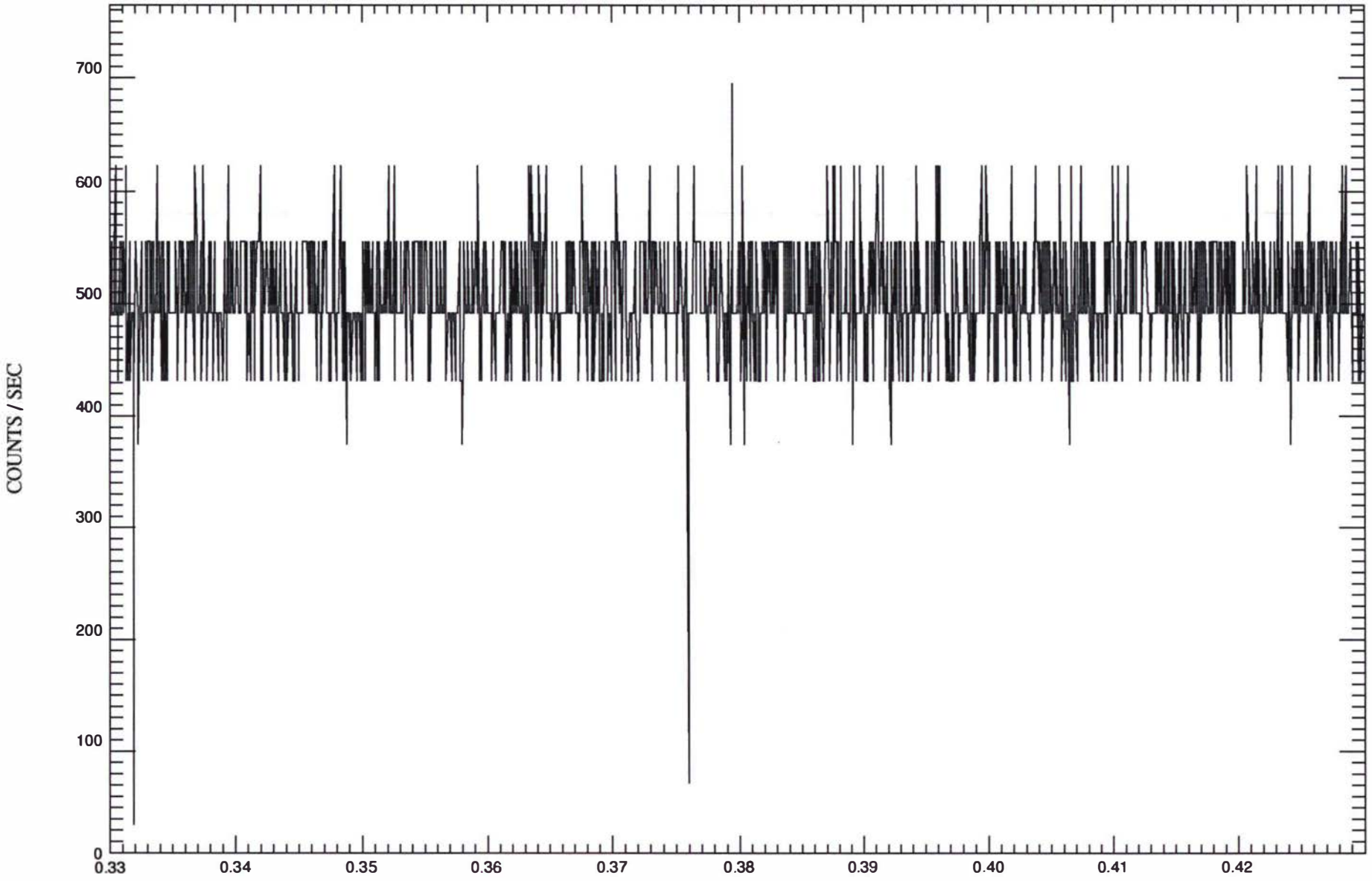
Burst Counter 13 at UT= 0.379567871094 h= 1366.444 s 00:22:46.444



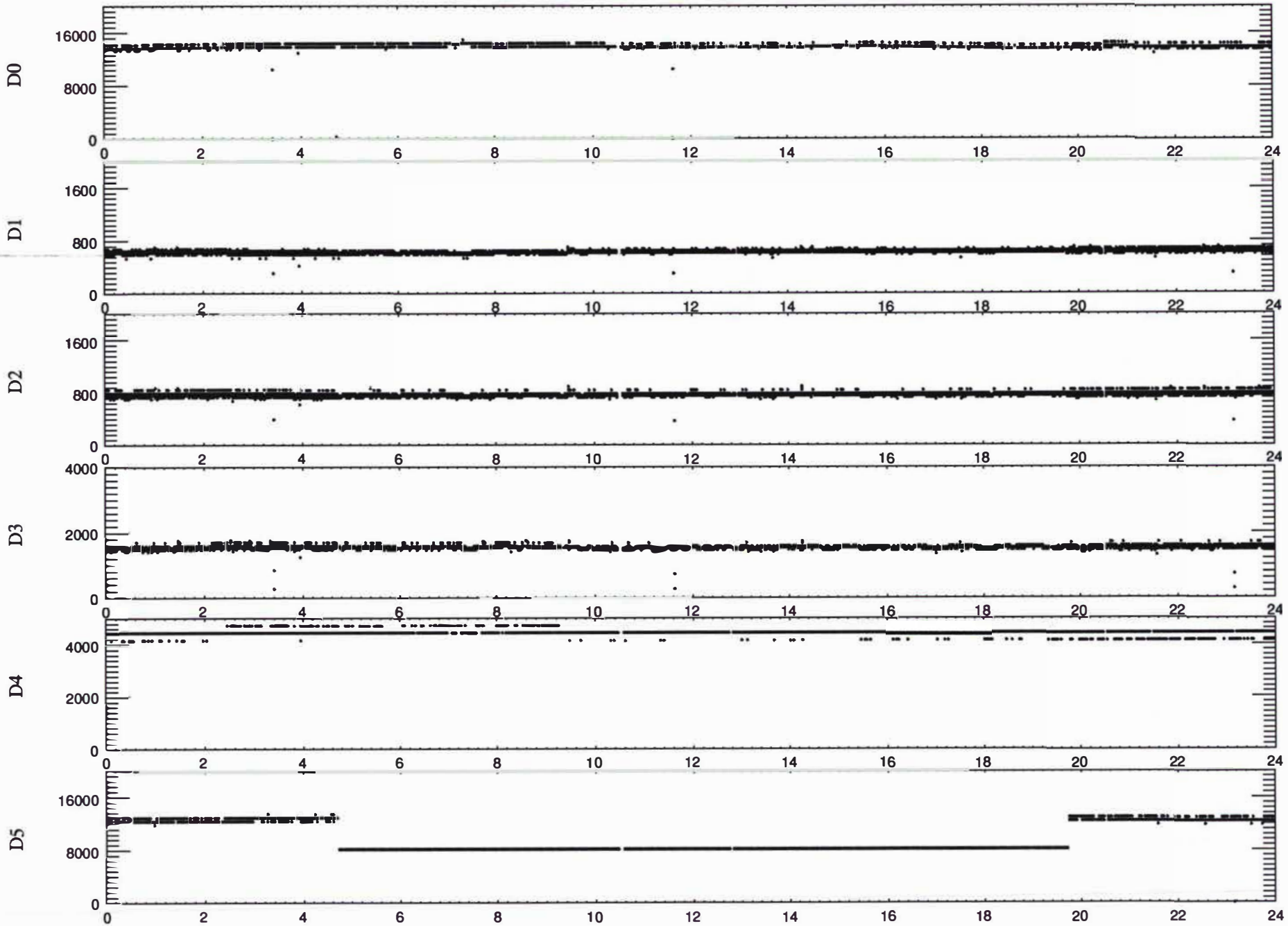
3# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 69, year 1997 to day 69, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 69, year 1997 to day 69, year 1997 7/21/97



From DEAL@fender.msfc.nasa.gov Wed Mar 12 10:51 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id KAA07887; Wed, 12 Mar 1997 10:51:51 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 12 Mar 1997 12:51:39 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970312125139.20c010f5@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6118
Content-Type: text
Content-Length: 1135
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST # 6118
EVENT OF 1997 MAR 11 DAY OF YEAR= 70
EVENT CROSSING TIME AT BATSE : 6495. S. OR 01:48:15.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 229.000 -9.000
BATSE PEAK COUNTING RATE: 3350 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 3/ 97 IS:
RA= 161.619 DEC= 36.820 DIST= 4.055 AU
BATSE-ULYSSES DISTANCE = 606611924. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -425.61 SECS.
CROSSING TIME AT ULYSSES IS 6069. S. OR 01:41:09 +/- 386.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 3/ 97 IS:
RA= 180.777 DEC= 3.782 DIST= 0.670 AU
MARS-BATSE DISTANCE = 100197056. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.26 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -216.00 SECS.
CROSSING TIME AT MARS IS 6279. S. OR 01:44:39 +/- 41.00 SECONDS

BATSE BURST TRIGGER
NO.: 6118

TIME: TJD=0518 SECONDS=6495

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=146.5 AZIMUTH=161.1 ERROR=4.0 DEGREES

COMMENTS:
GRB LASTING ~ 60 S. WEAK SINGLE PULSE. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6118	970311	10518	06495	3350	229	-09	60

BATSE# 6118

ULYSSES RT 12/ 3/97

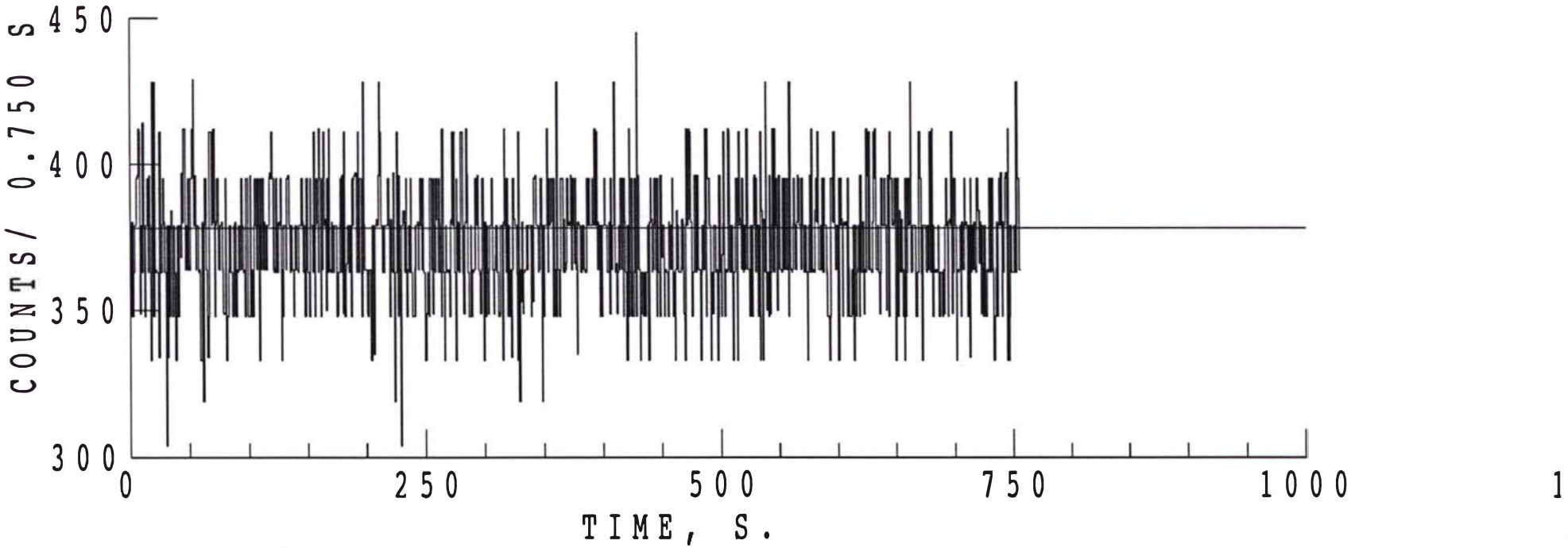
11/ 3/97 5688.161 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



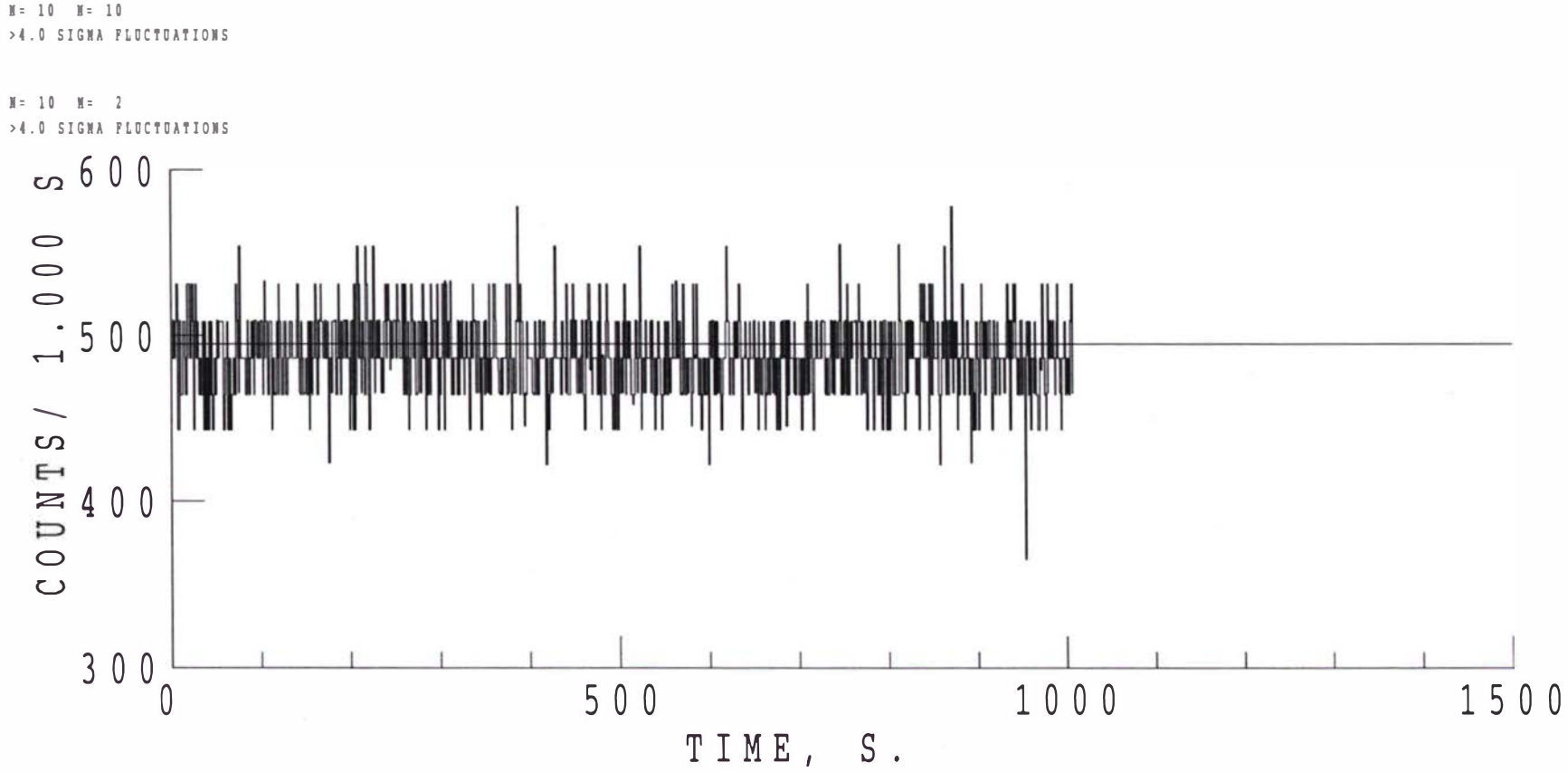
GRBM 19970311 31565

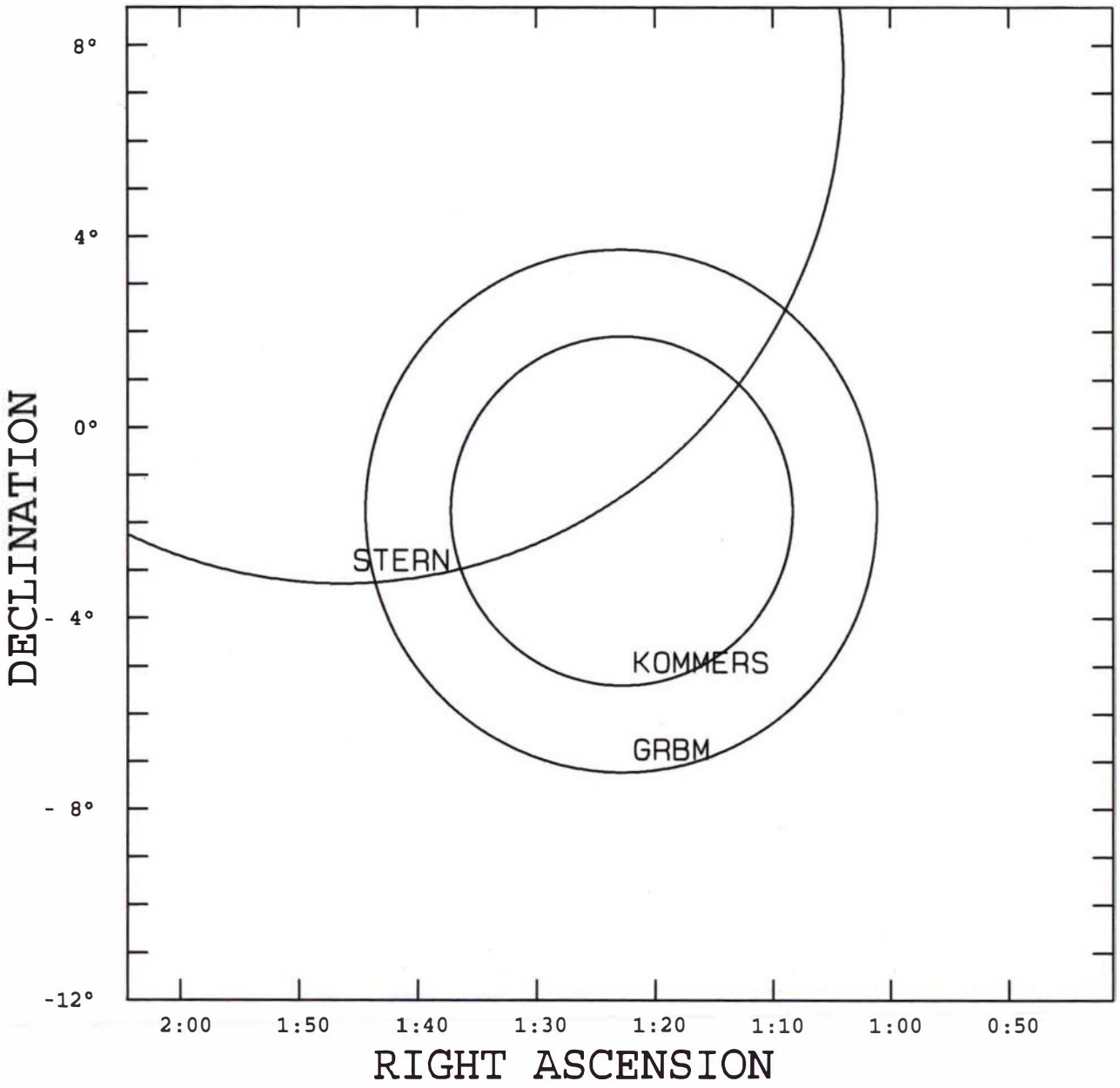
ULYSSES RT 05/02/07

11/03/97 31068.207 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV




8°
4°
0°
- 4°
- 8°
-12°
DECLINATION
STERN
KOMMERS
GRBM
2:00
1:50
1:40
1:30
1:20
1:10
1:00
0:50
RIGHT ASCENSION

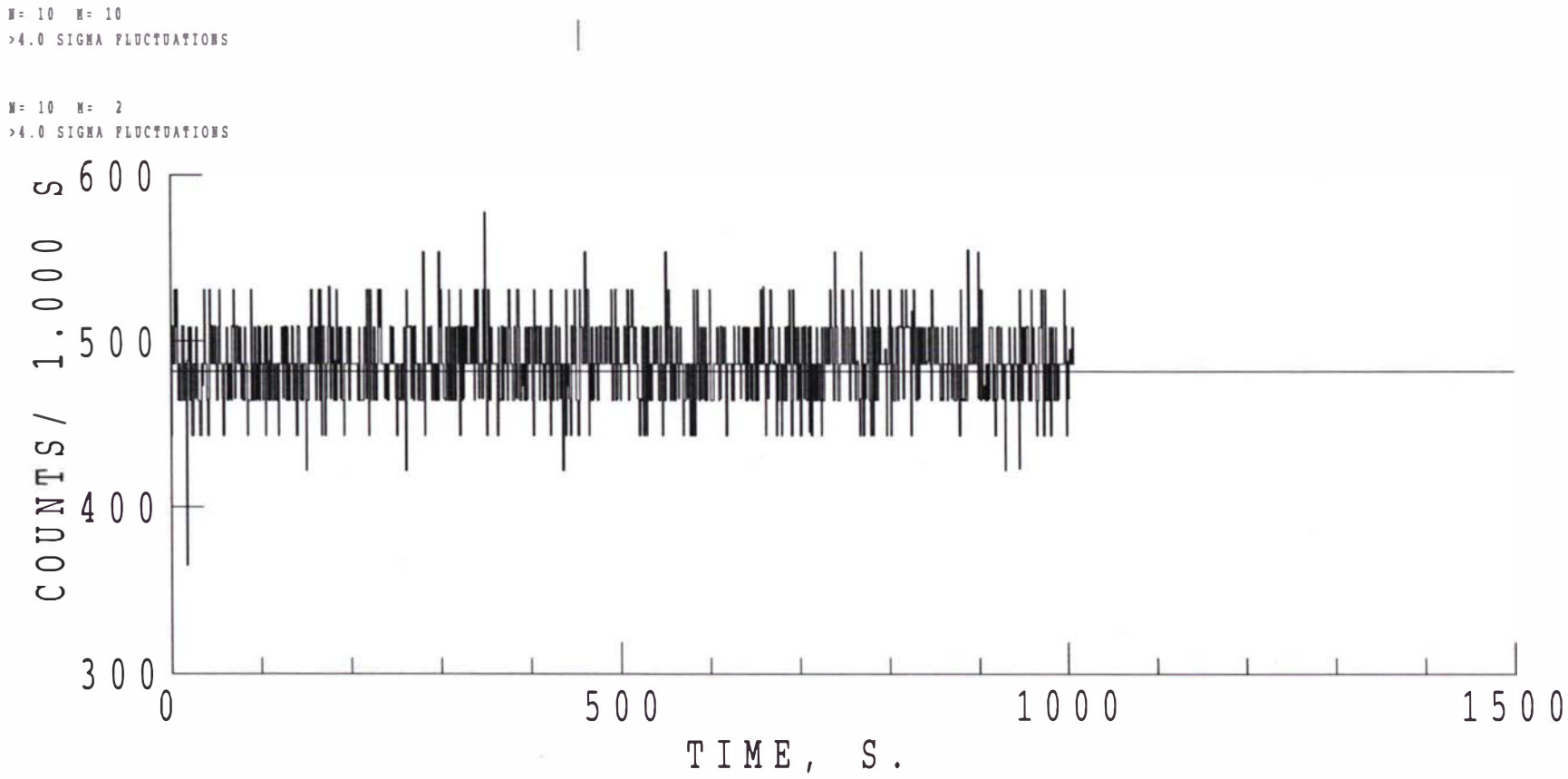
GRBM 19970311 32501

ULYSSES RT 05/02/07

11/03/97 32004.221 s

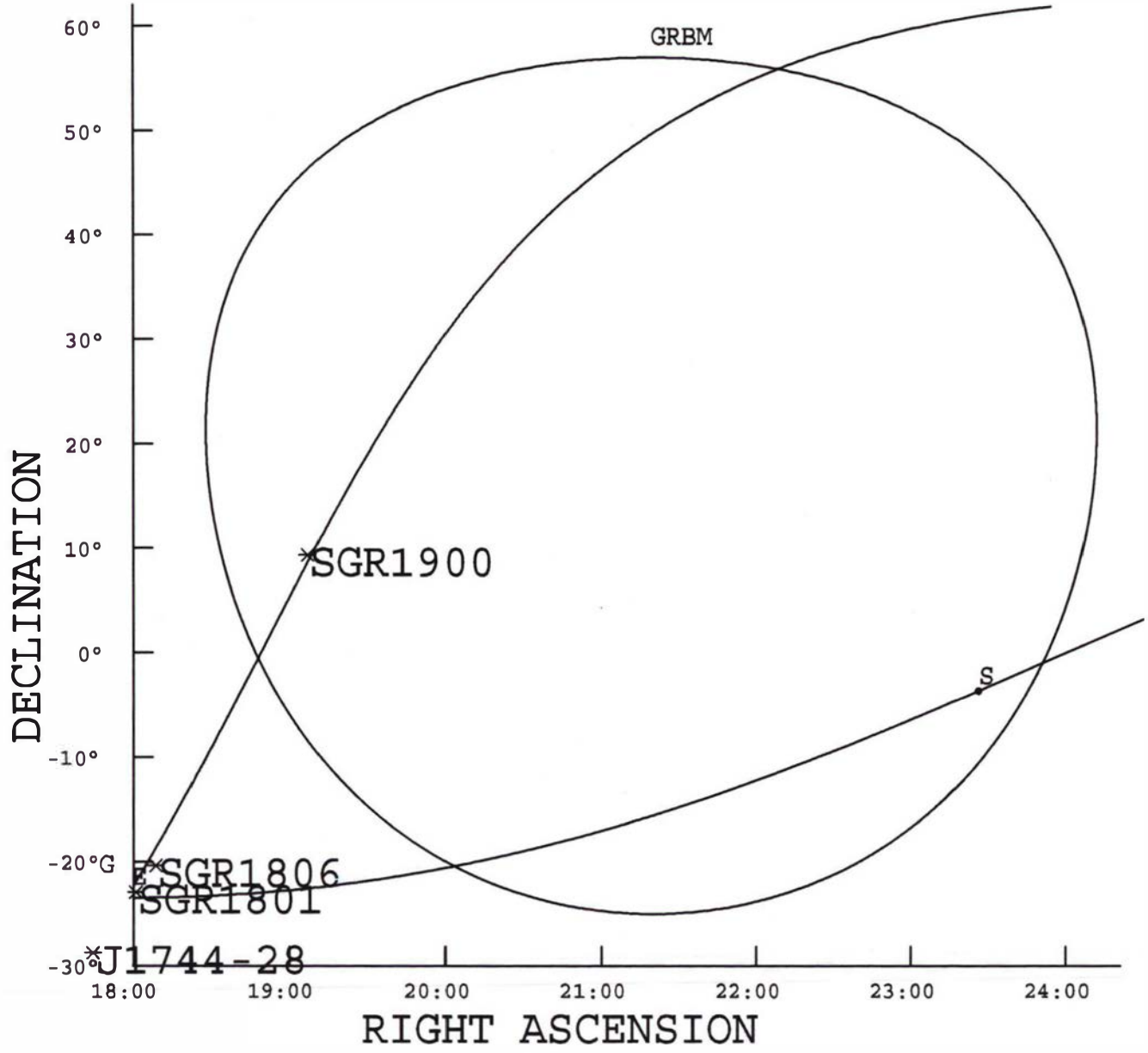
0.500 S INTERVALS REGROUPED BY 2

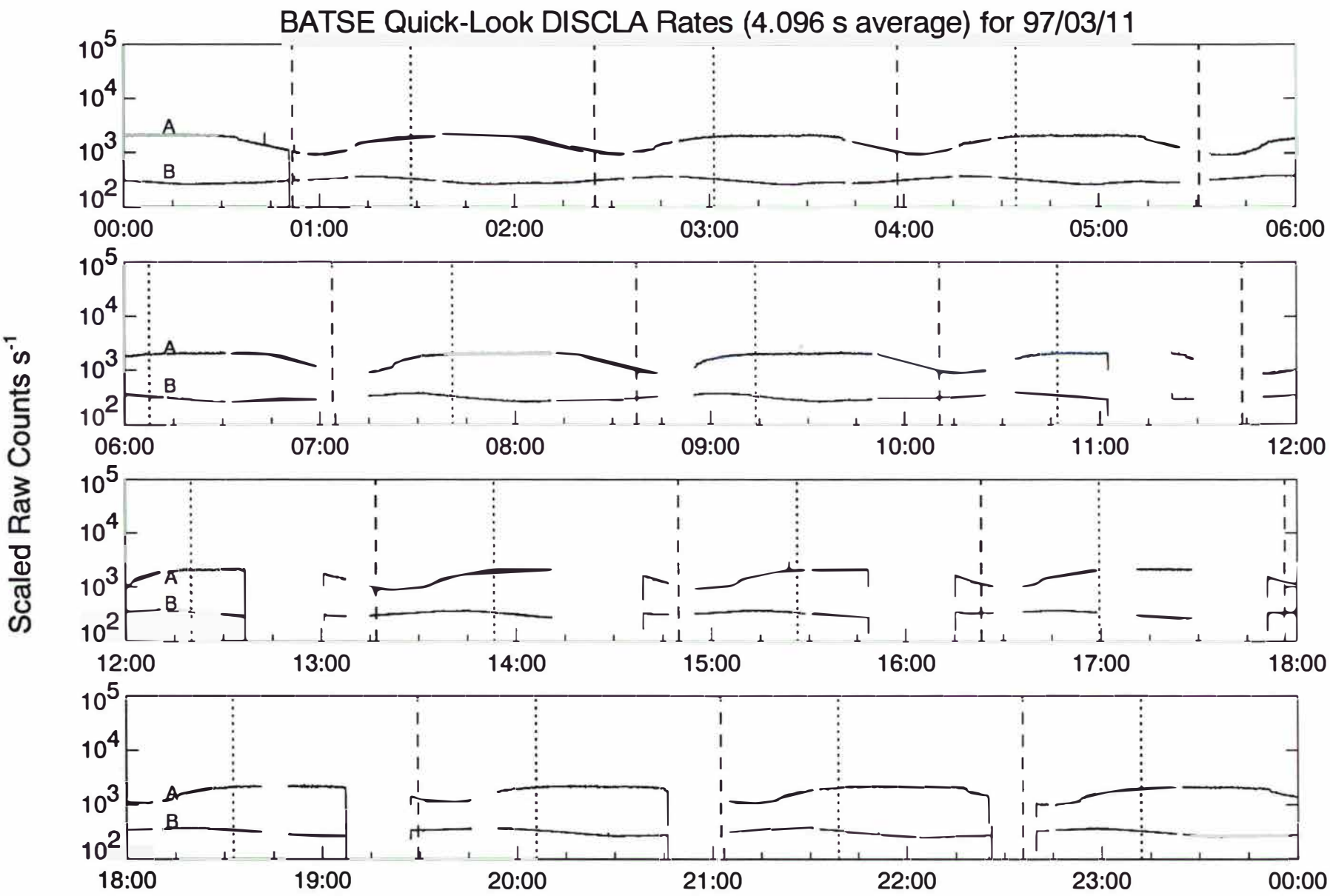
0- 0 keV



EVENT OF MAR 11, 1997 8:43

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

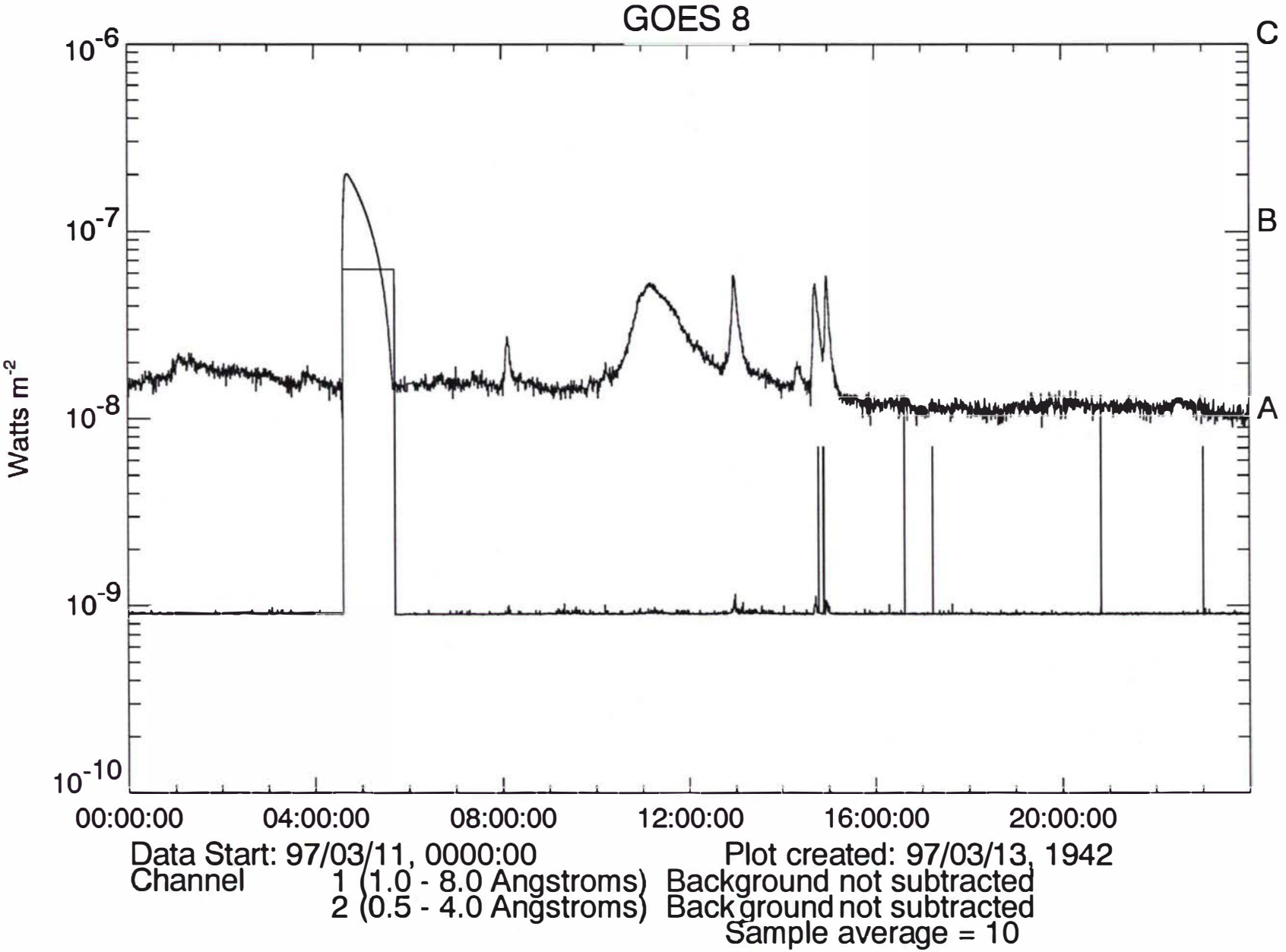




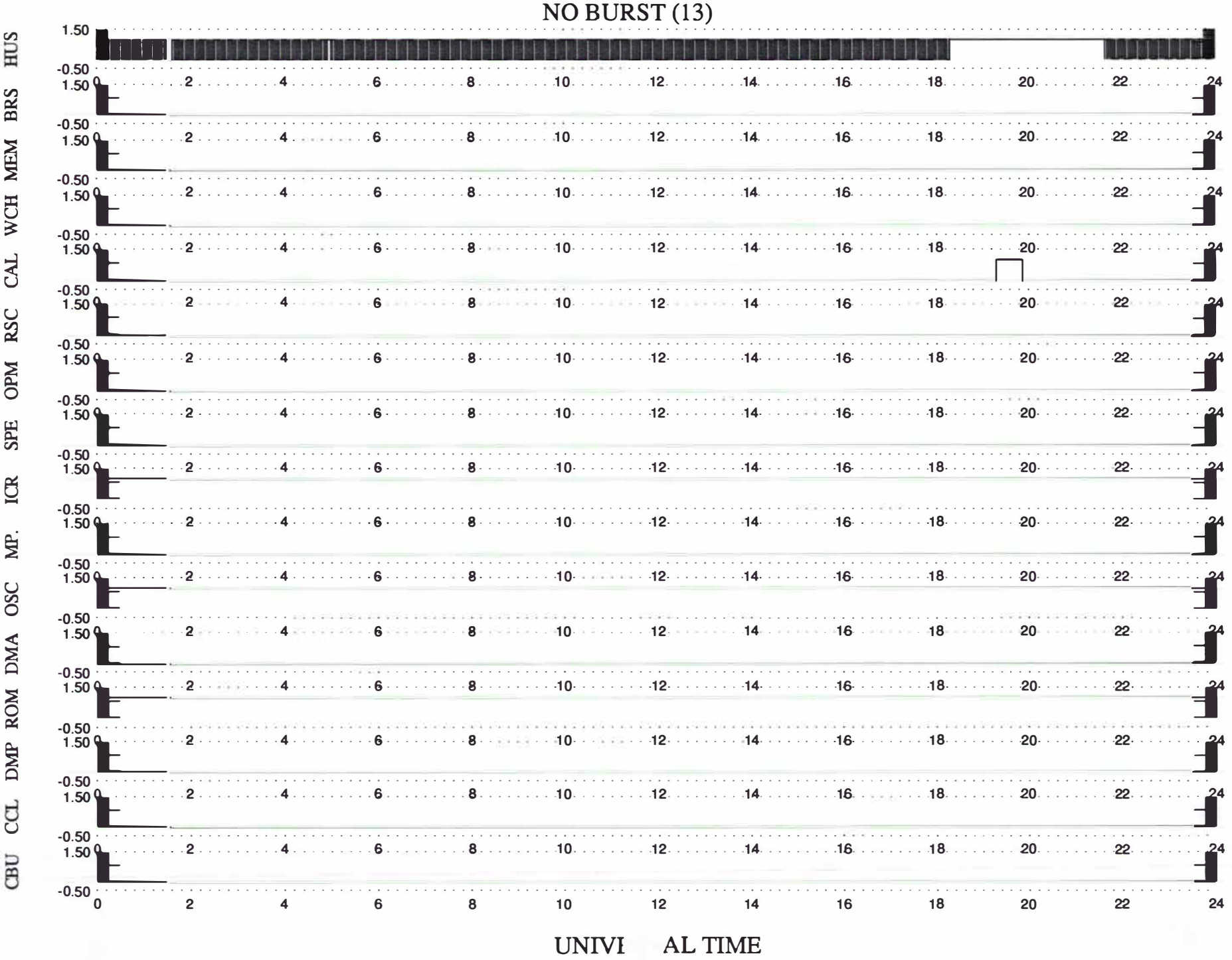
Current Time: 97/03/13, 1943 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare

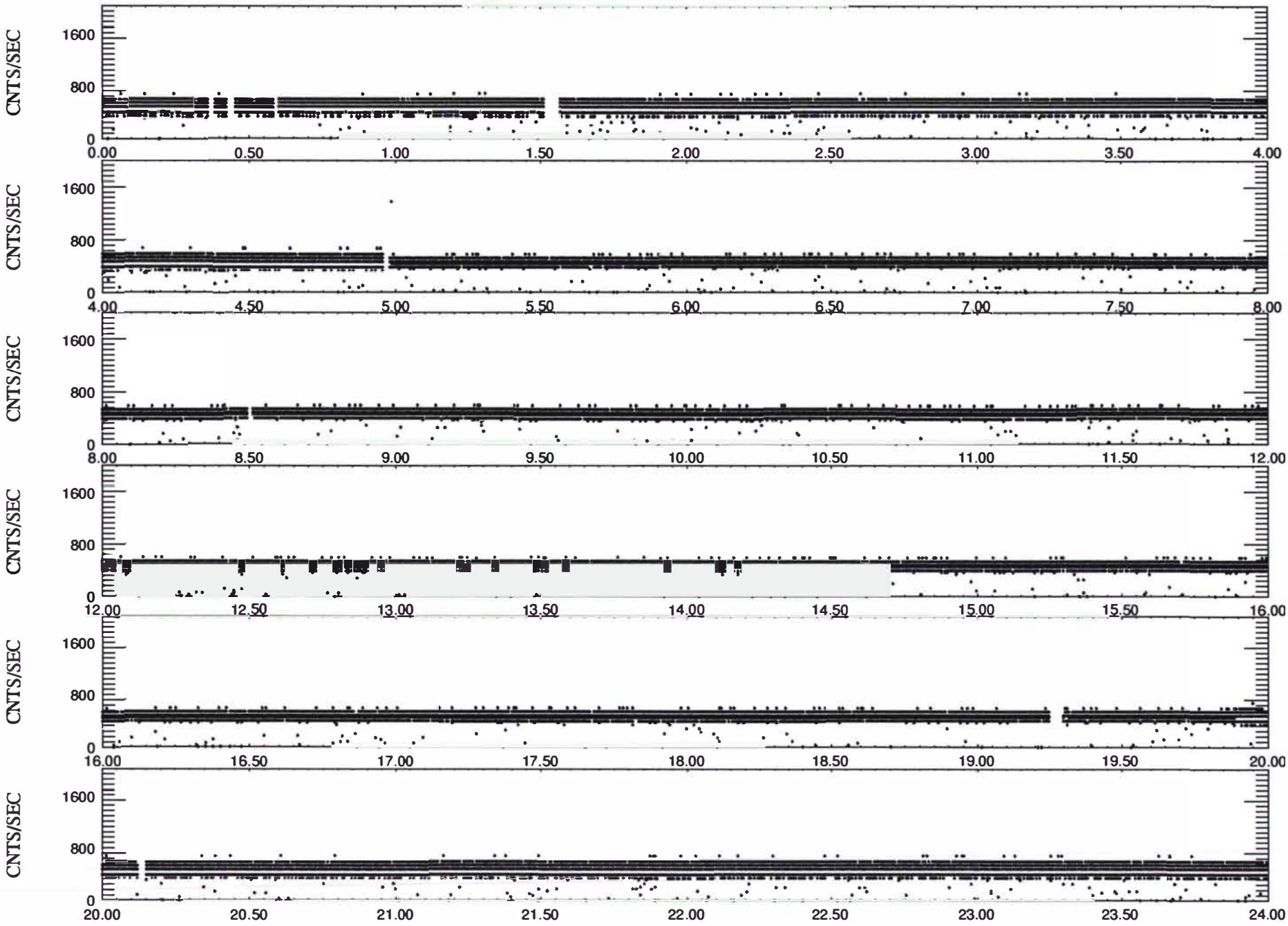

GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/11, 0000:00
Plot created: 97/03/13, 1942
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 70, year 1997 to day 70, year 1997 7/21/97



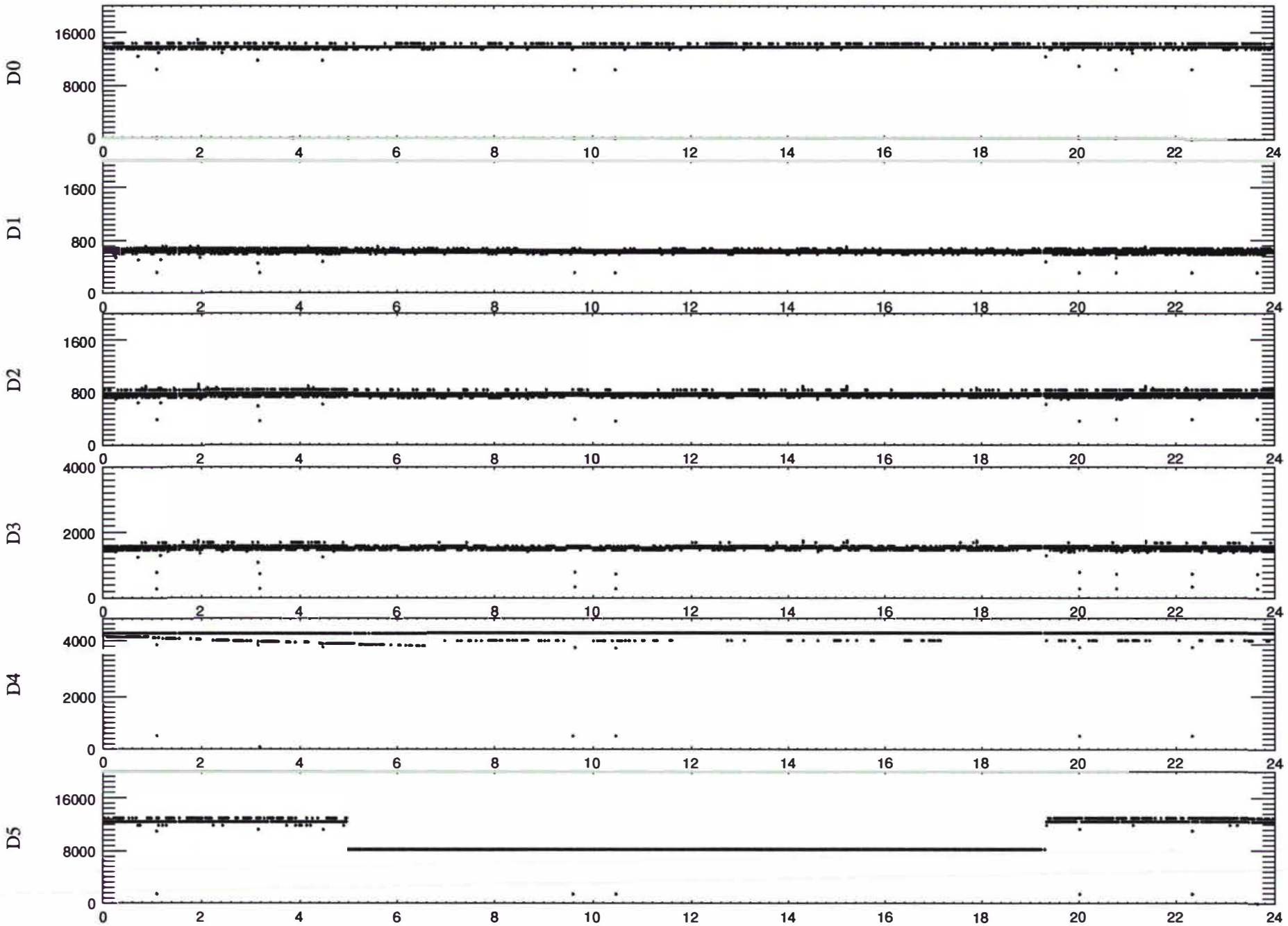
HUS 2A, MODE 1, NOT AVERAGED EDR day 70, year 1997 to day 70, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 70, year 1997 to day 70, year 1997 7/21/97



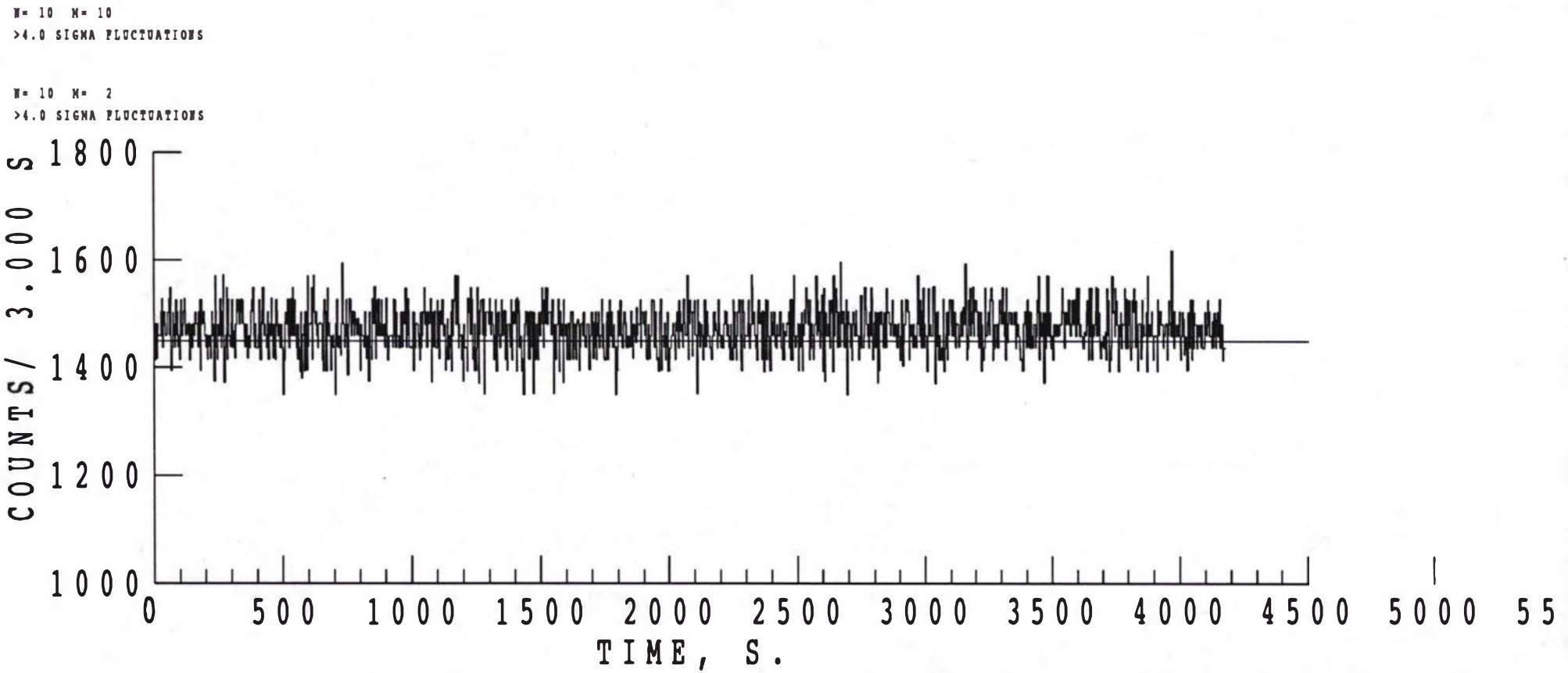
KONUS

ULYSSES RT 02/02/00

12/03/97 40428.309 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



From WOODSP@ssl.msfc.nasa.gov Fri Mar 14 09:15 PST 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA28501; Fri, 14 Mar 1997 09:15:50 -0800
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 14 Mar 1997 11:15:44 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970314111544.2020f2f5@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6119
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6119
EVENT OF 1997 MAR 12 DAY OF YEAR= 71
EVENT CROSSING TIME AT BATSE : 42041. S. OR 11:40:41.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 355.000 34.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 3/ 97 IS:
RA= 161.205 DEC= 36.795 DIST= 4.066 AU
BATSE-ULYSSES DISTANCE = 608299421. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 71.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 628.60 SECS.
CROSSING TIME AT ULYSSES IS 42670. S. OR 11:51:09 +/- 394.49 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 3/ 97 IS:
RA= 180.429 DEC= 3.923 DIST= 0.668 AU
MARS-BATSE DISTANCE = 99893568. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 38.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 261.61 SECS.
CROSSING TIME AT MARS IS 42303. S. OR 11:45:02 +/- 39.80 SECONDS

BATSE BURST TRIGGER

NO.: 6119

TIME: TJD=0519 SECONDS=42041

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

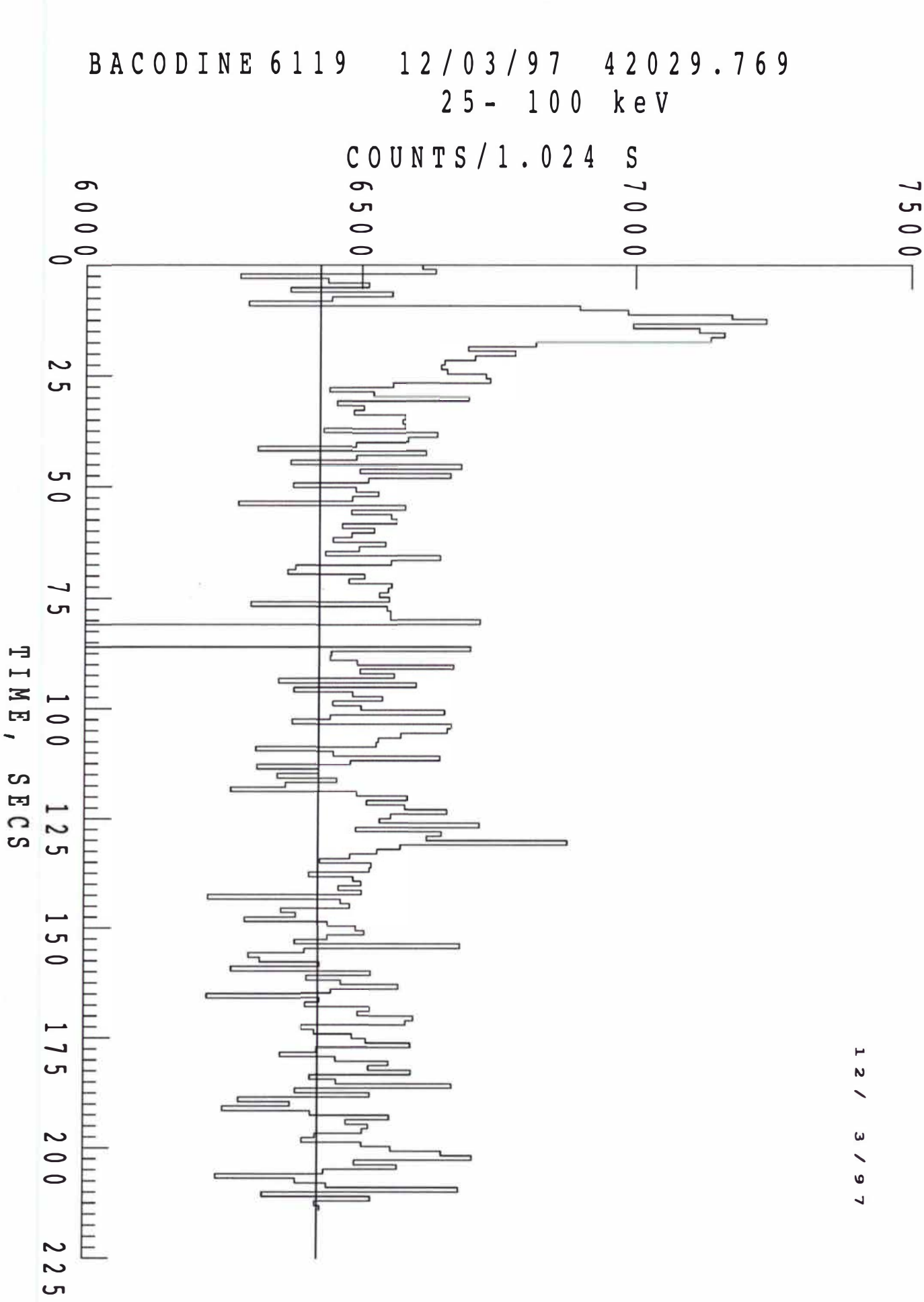
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.1 AZIMUTH=303.8 ERROR=3.3 DEGREES

COMMENTS:
GRB LASTING ~ 20 SEC. SINGLE PULSE WITH WEAK TAIL. VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6119	970312	10519	42041	3000	355	+34	20


BACODINE 6119 12/03/97 42029.769
25- 100 keV
COUNTS/1.024 S
6000
6500
7000
7500
0
25
50
75
100
125
150
175
200
225
TIME, SECS
12/ 3/97

BATSE BURST# 6119

ULYSSES RT 8/ 9/97

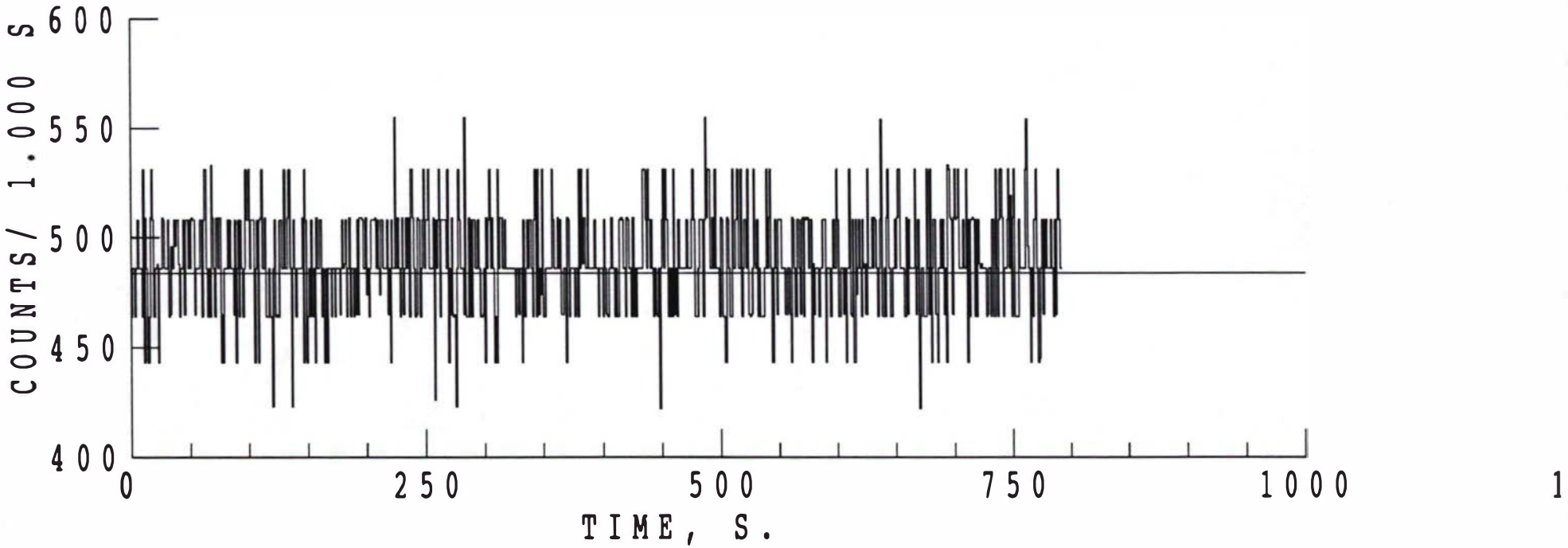
12/ 3/97 42264.332 s

0.500 S INTERVALS REGROUPED BY 2

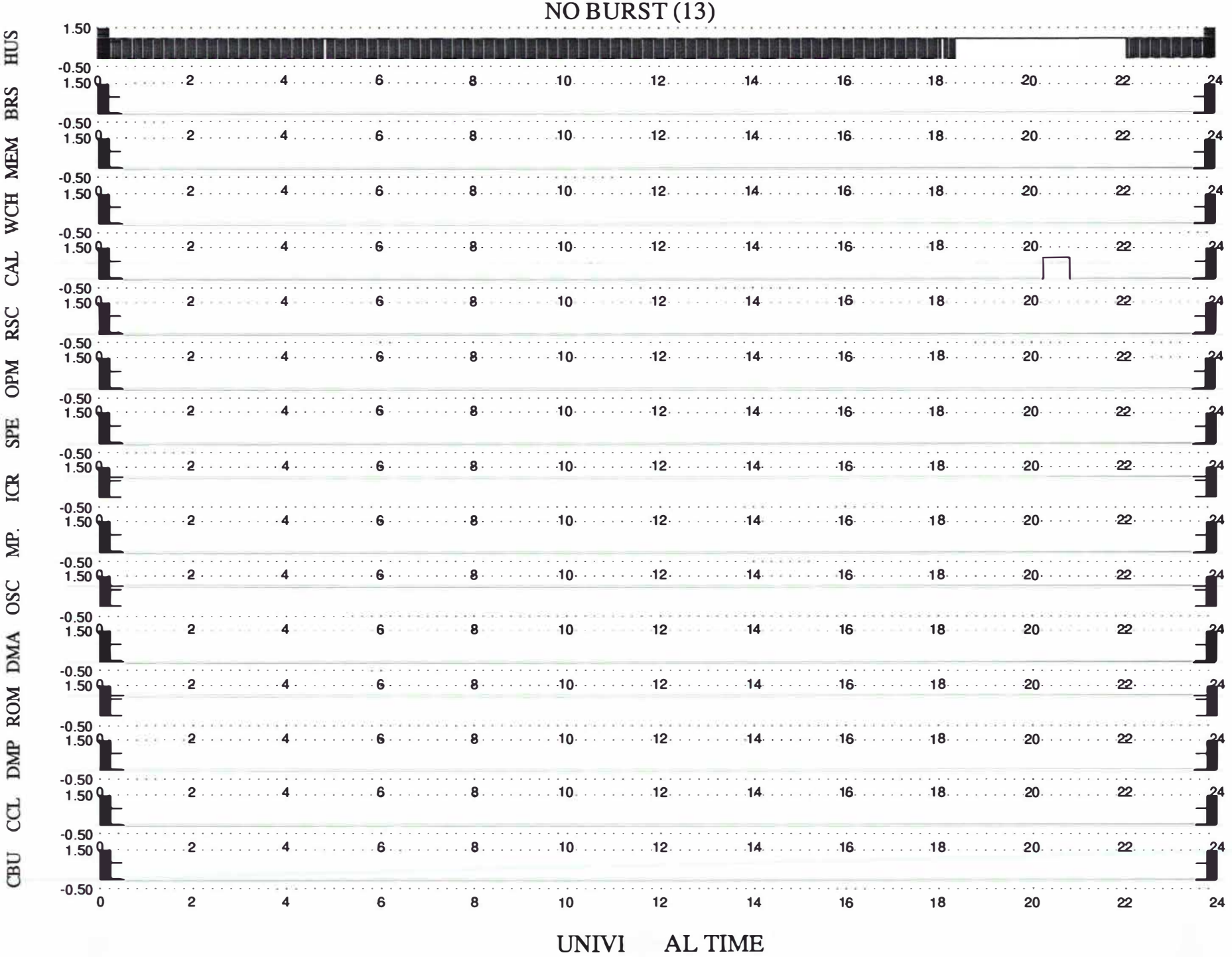
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

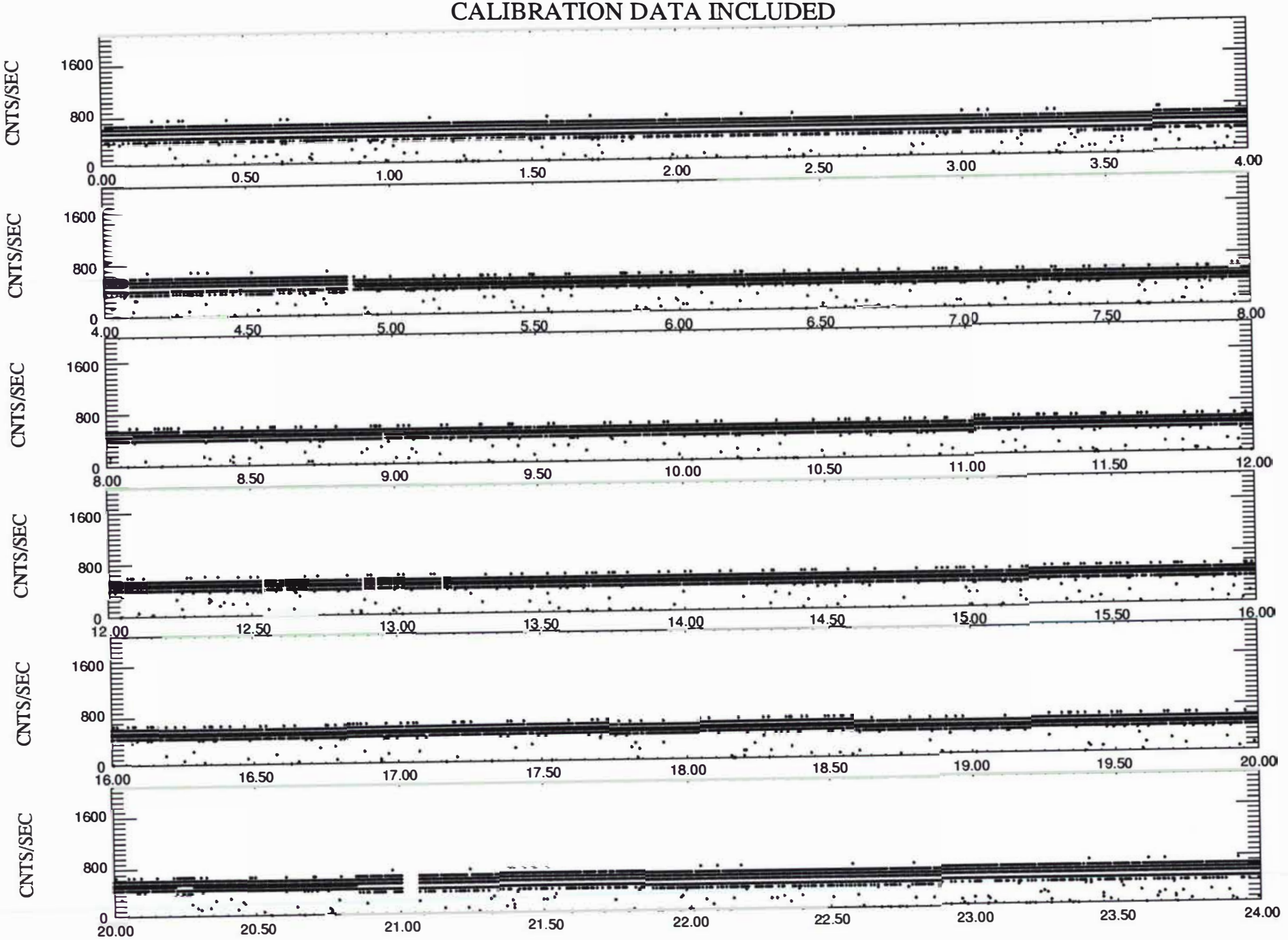


HUS MODES EDR day 71, year 1997 to day 71, year 1997 7/21/97



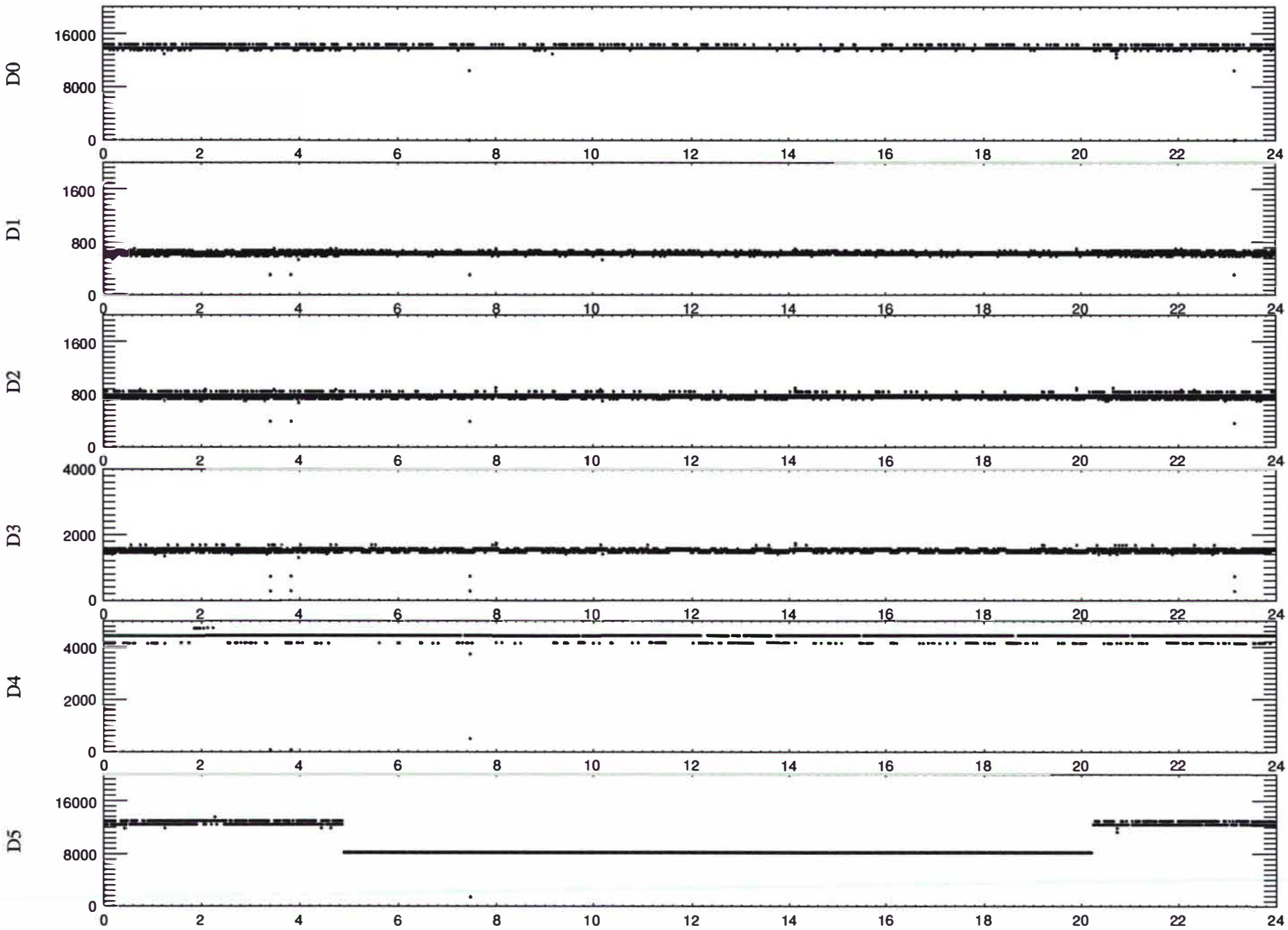
HUS 2A, MODE 1, NOT AVERAGED EDR day 71, year 1997 to day 71, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 71, year 1997 to day 71, year 1997 7/21/97



Date: Dec 2 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☐ Σ 3Δt's calculated, and/or BMAPSUM executed?

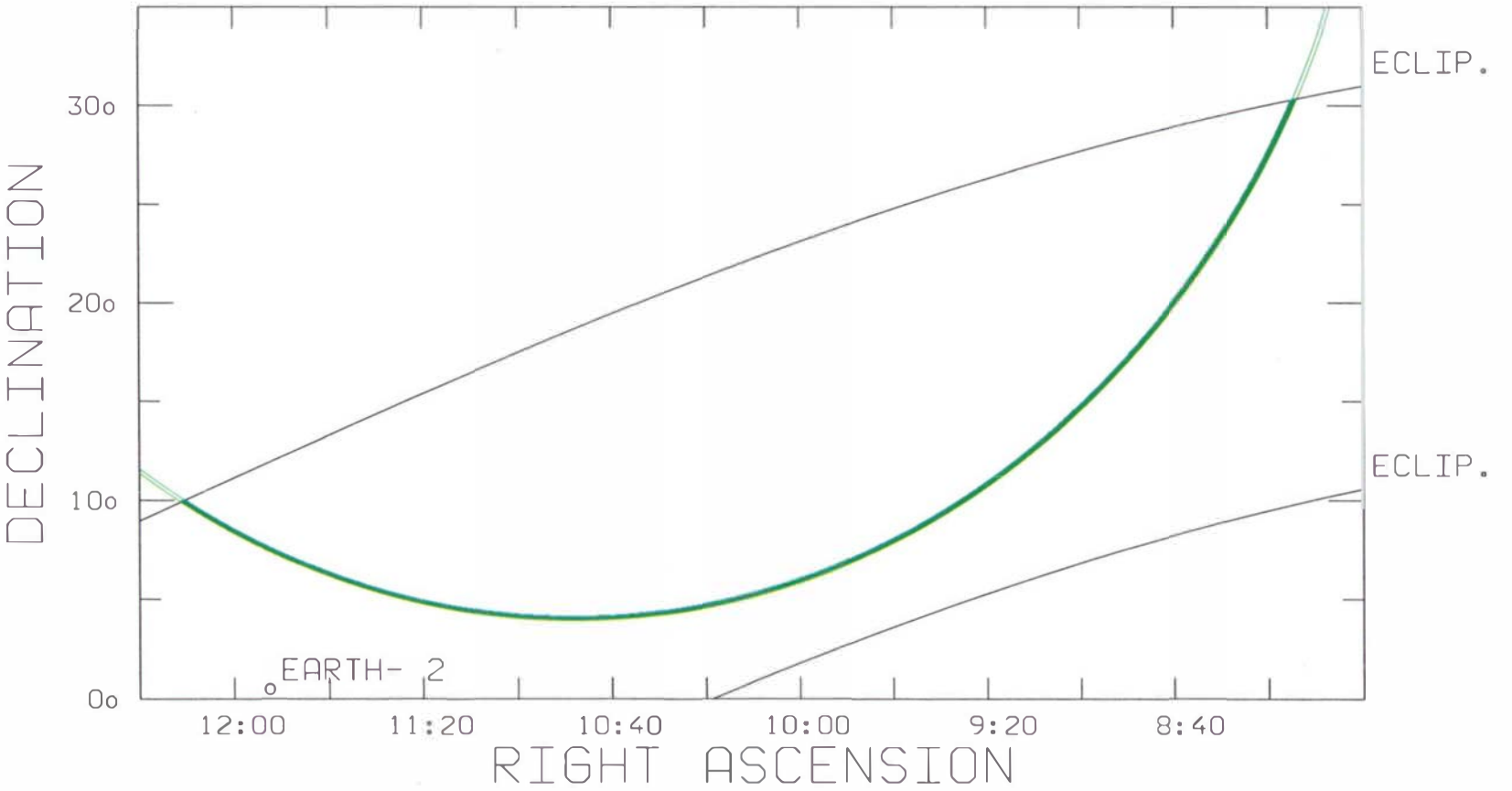
3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

☐ Updated ephemeris used for bursts prior to September 30, 2003?

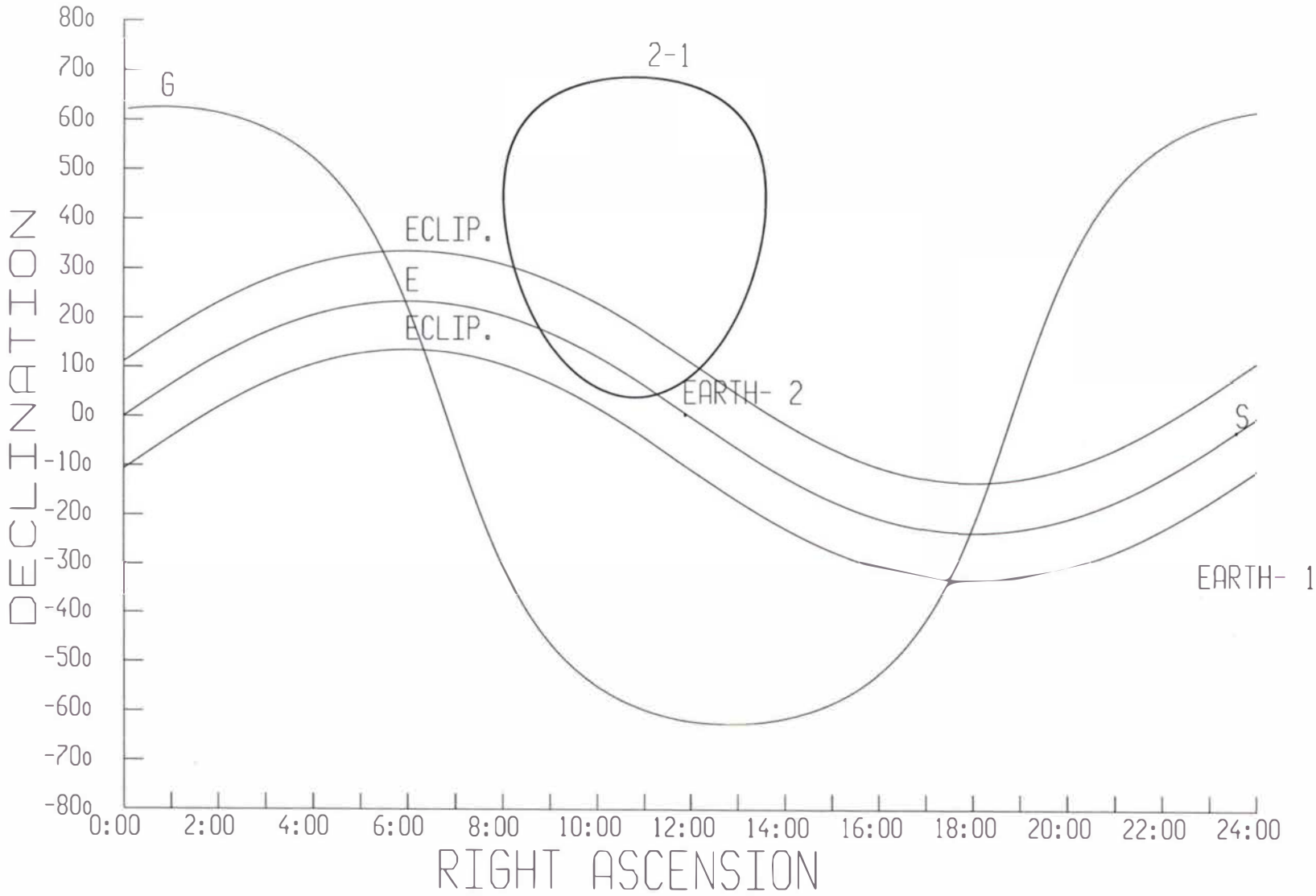
☑ ACCESS and MBL4 databases updated with identical times?


ECLIP.
ECLIP.
30o
20o
10o
0o
DECLINATION
EARTH- 2
12:00
11:20
10:40
10:00
9:20
8:40
RIGHT ASCENSION

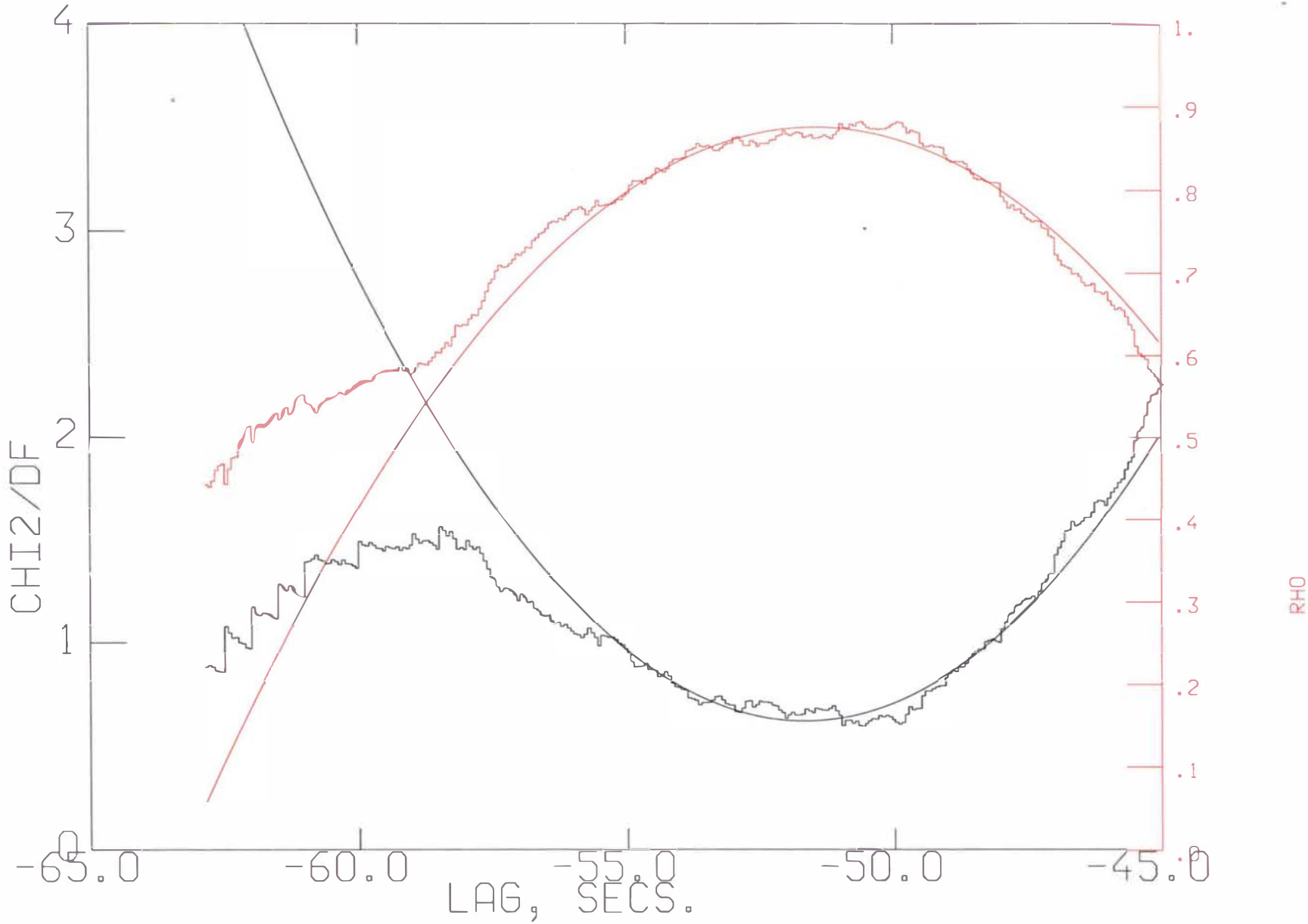
EVENT OF MAR 13, 1997 7:52

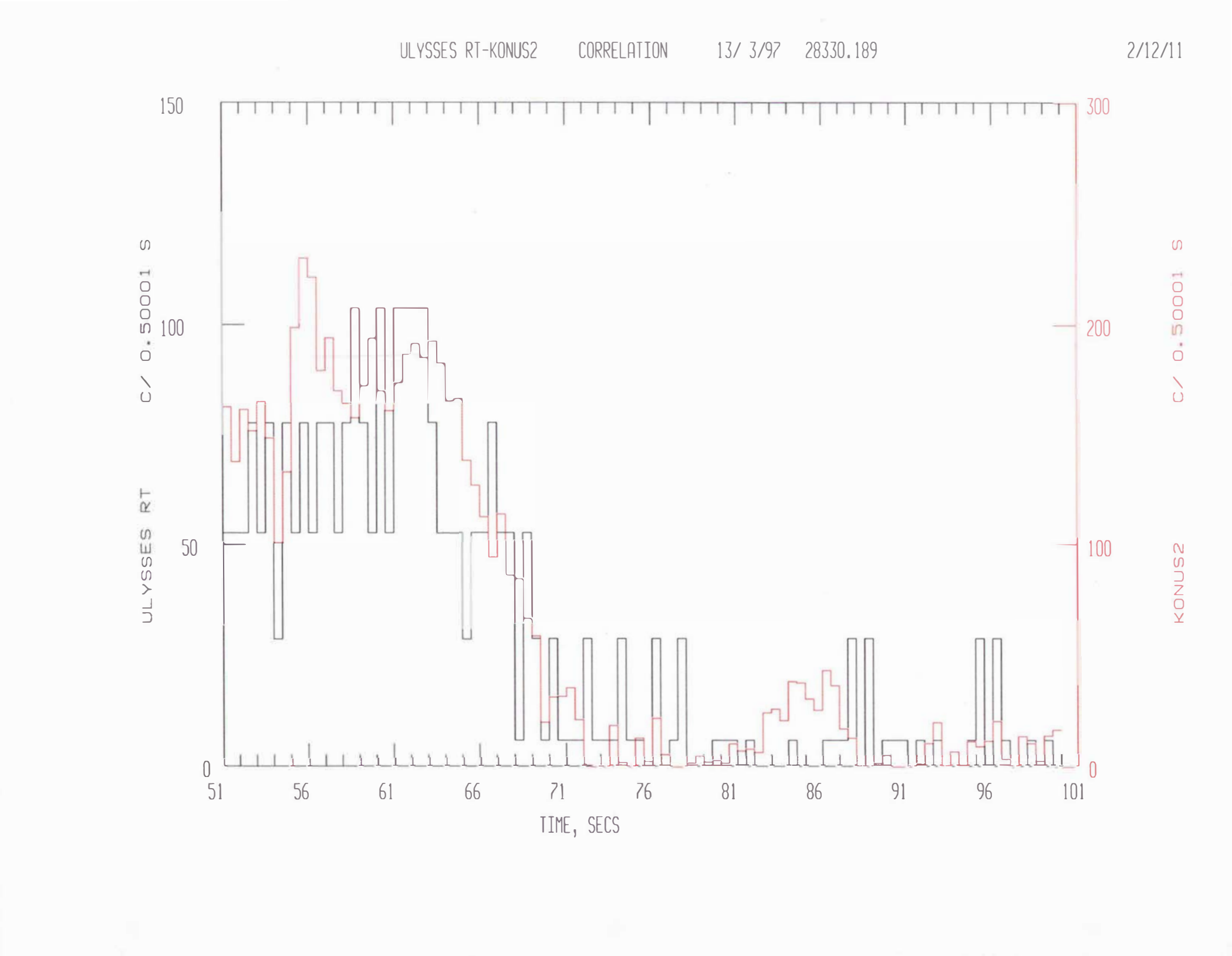
02/12/2011

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-KONUS2 CORRELATION 13/ 3/97 28330.189




ULYSSES RT-KONUS2 CORRELATION 13/ 3/97 28330.189 2/12/11
150
100
50
0
300
200
100
0
C/ 0.50001 S
ULYSSES RT
KONUS2
51
56
61
66
71
76
81
86
91
96
101
TIME, SECS

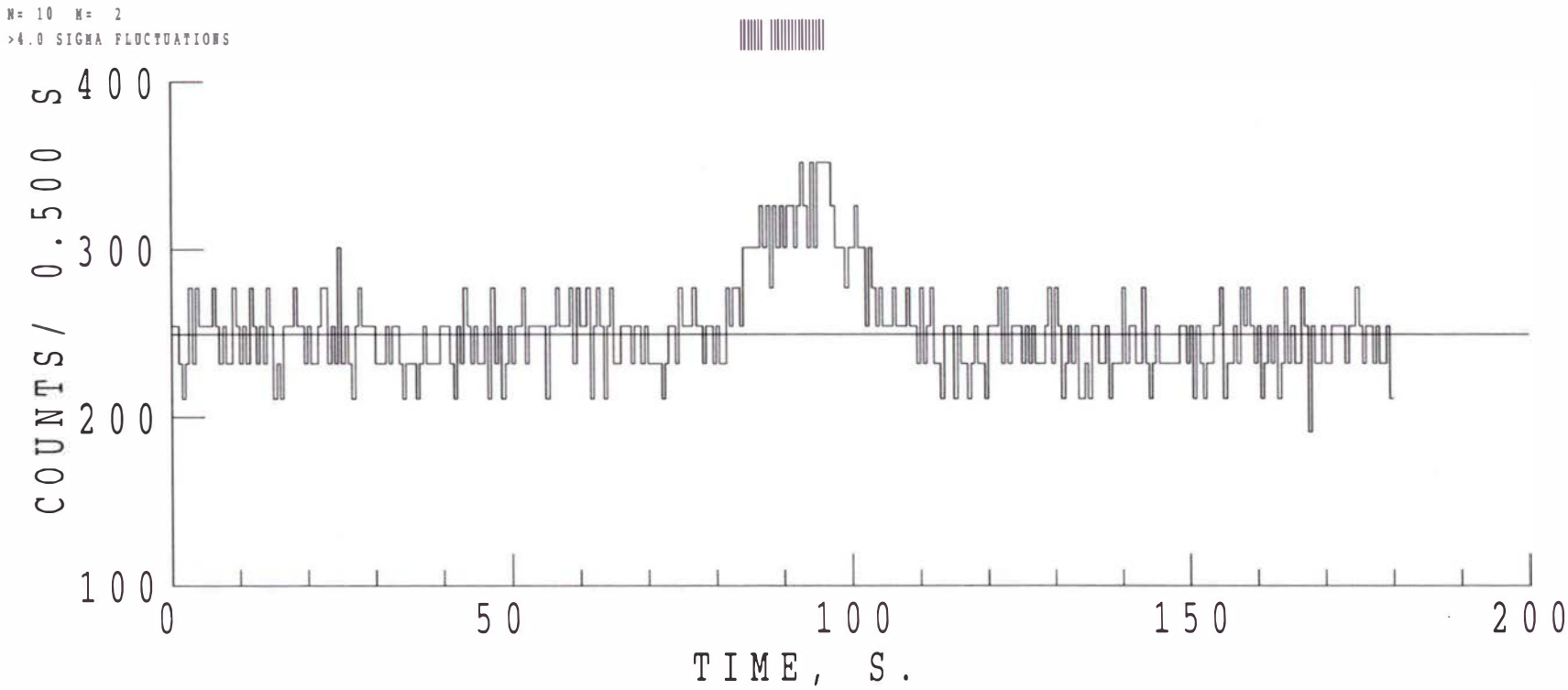
KONUS 19970313 28392

ULYSSES RT

22/11/11

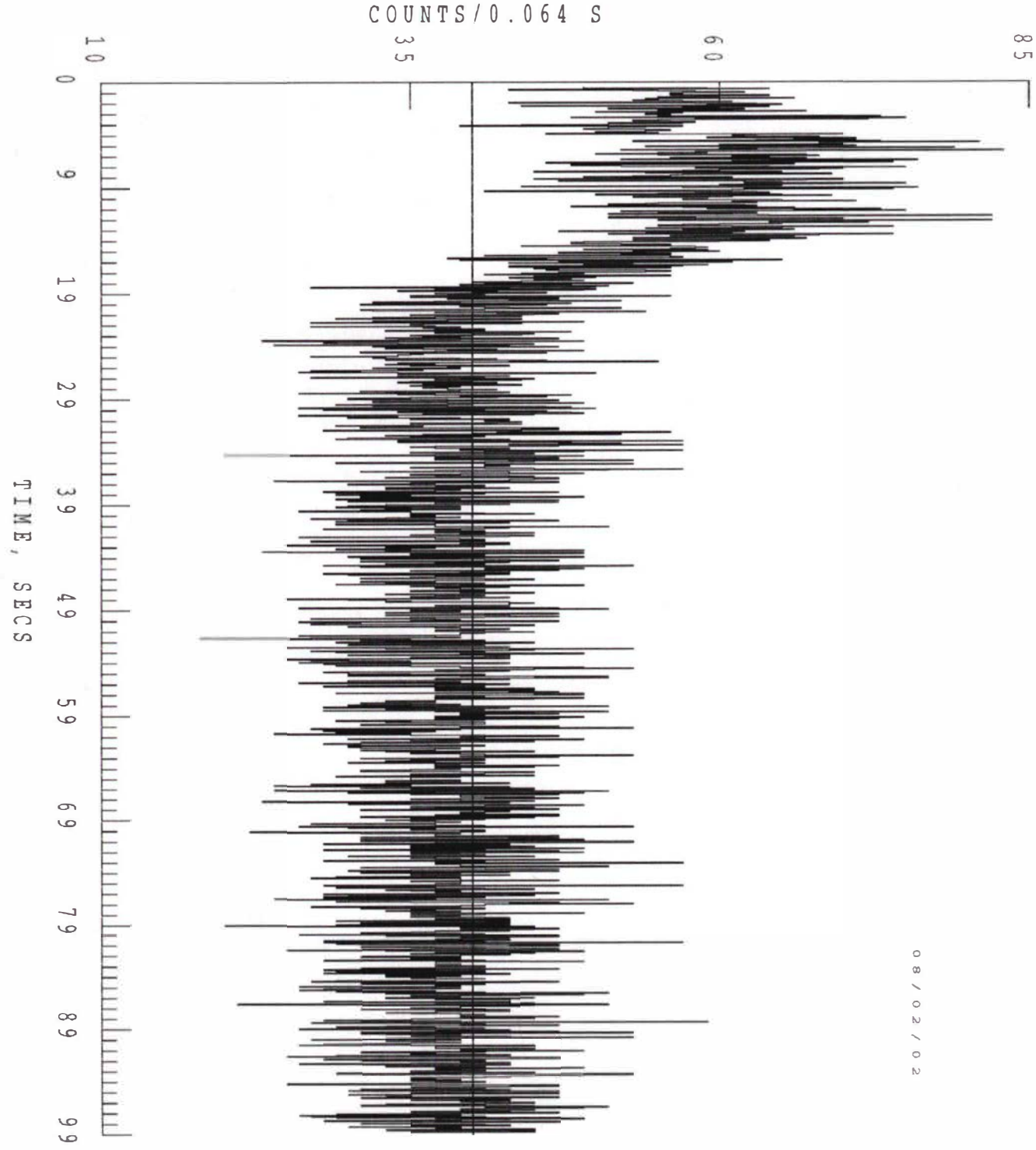
13/03/97 28296.188 s

0- 0 keV



KONUS2 13/03/97 30096.505

50- 200 keV



Date: 16 mar 07

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events N/A

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

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

N/A 3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

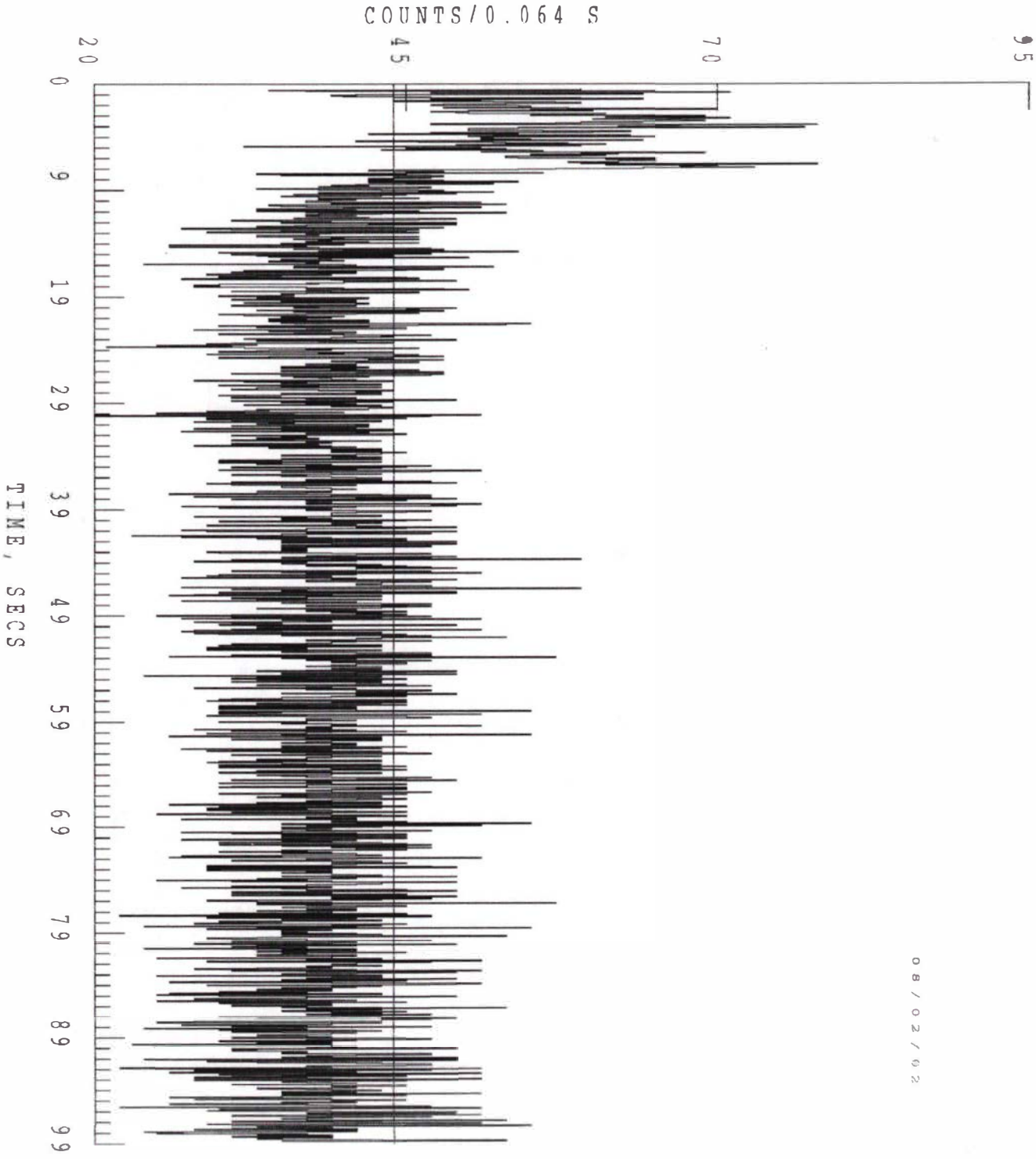
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

KONUS2 13/03/97 35173.865

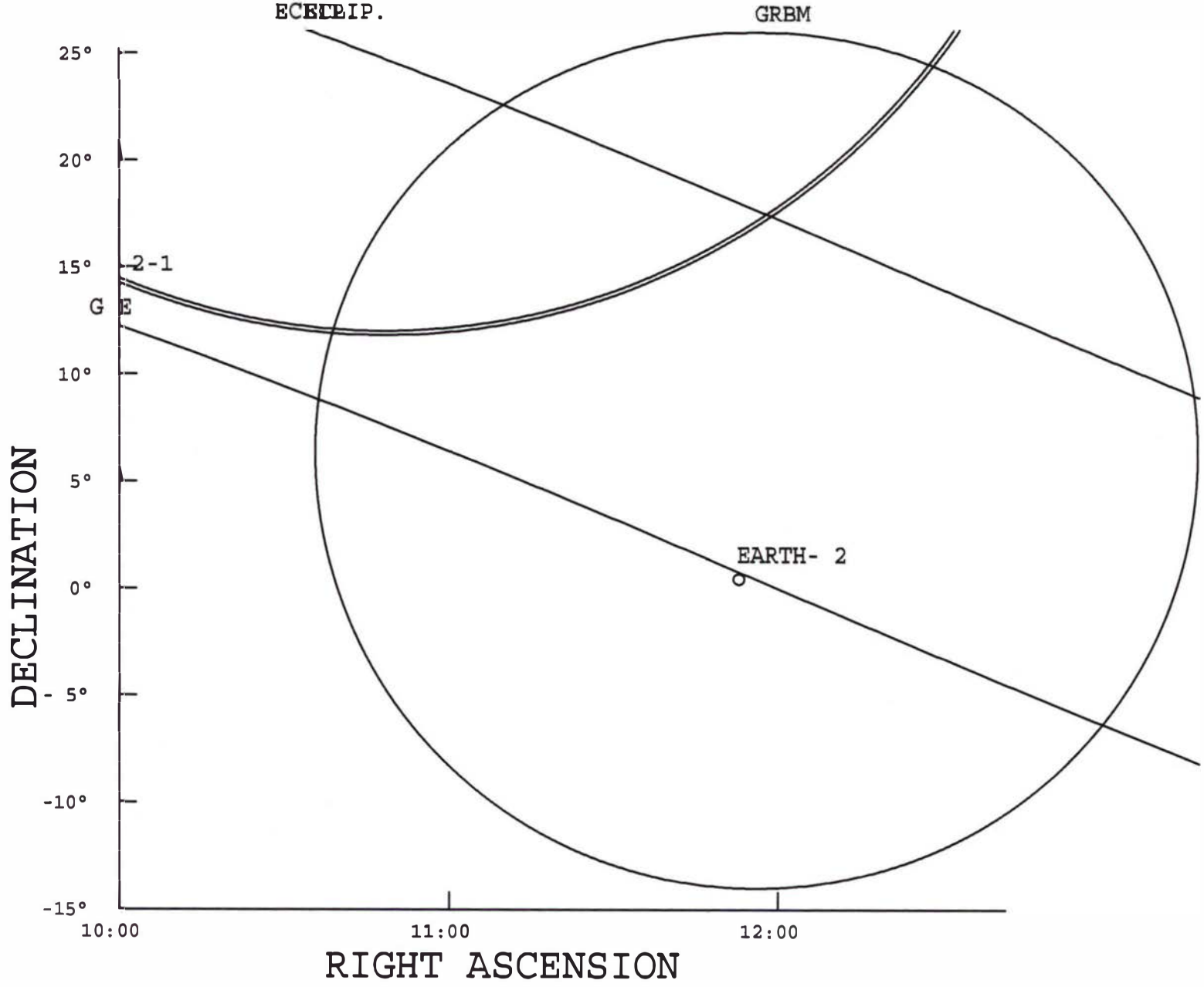
50- 200 keV



08/02/02

EVENT OF MAR 13, 1997 9:14

16/ 3/ 7



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

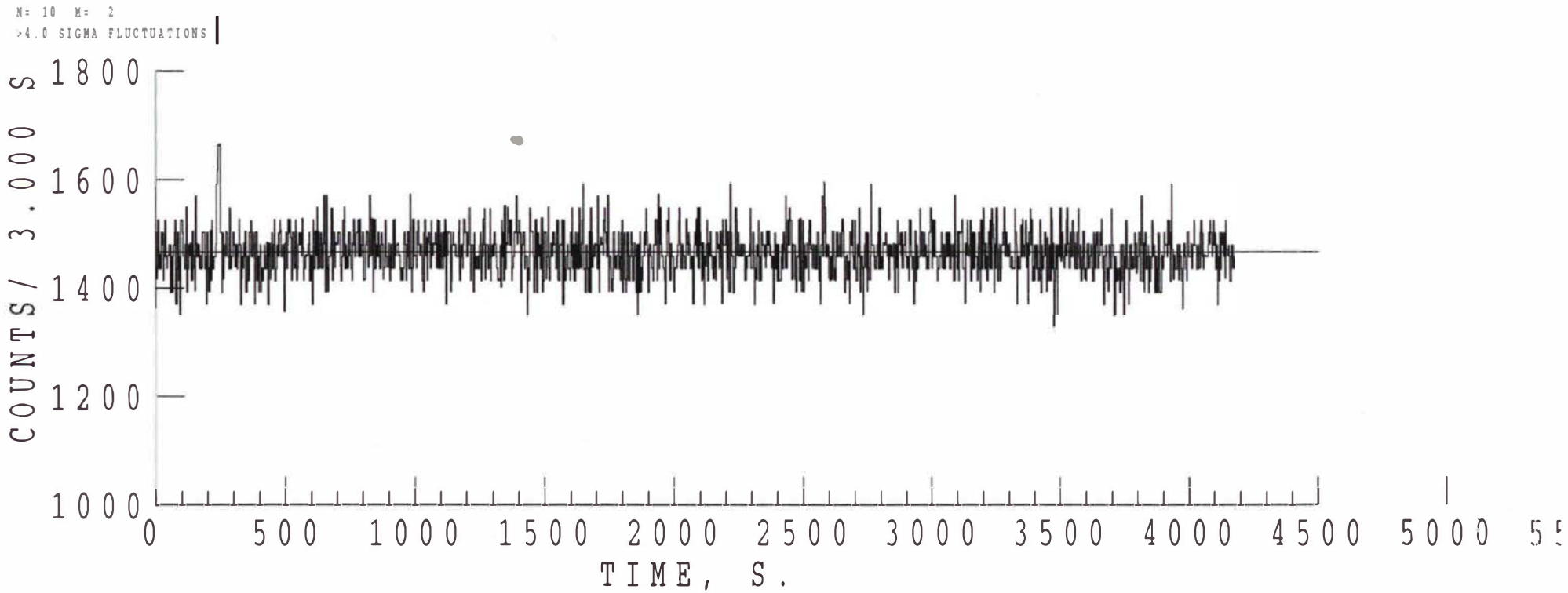
KONUS2 19970313 35173

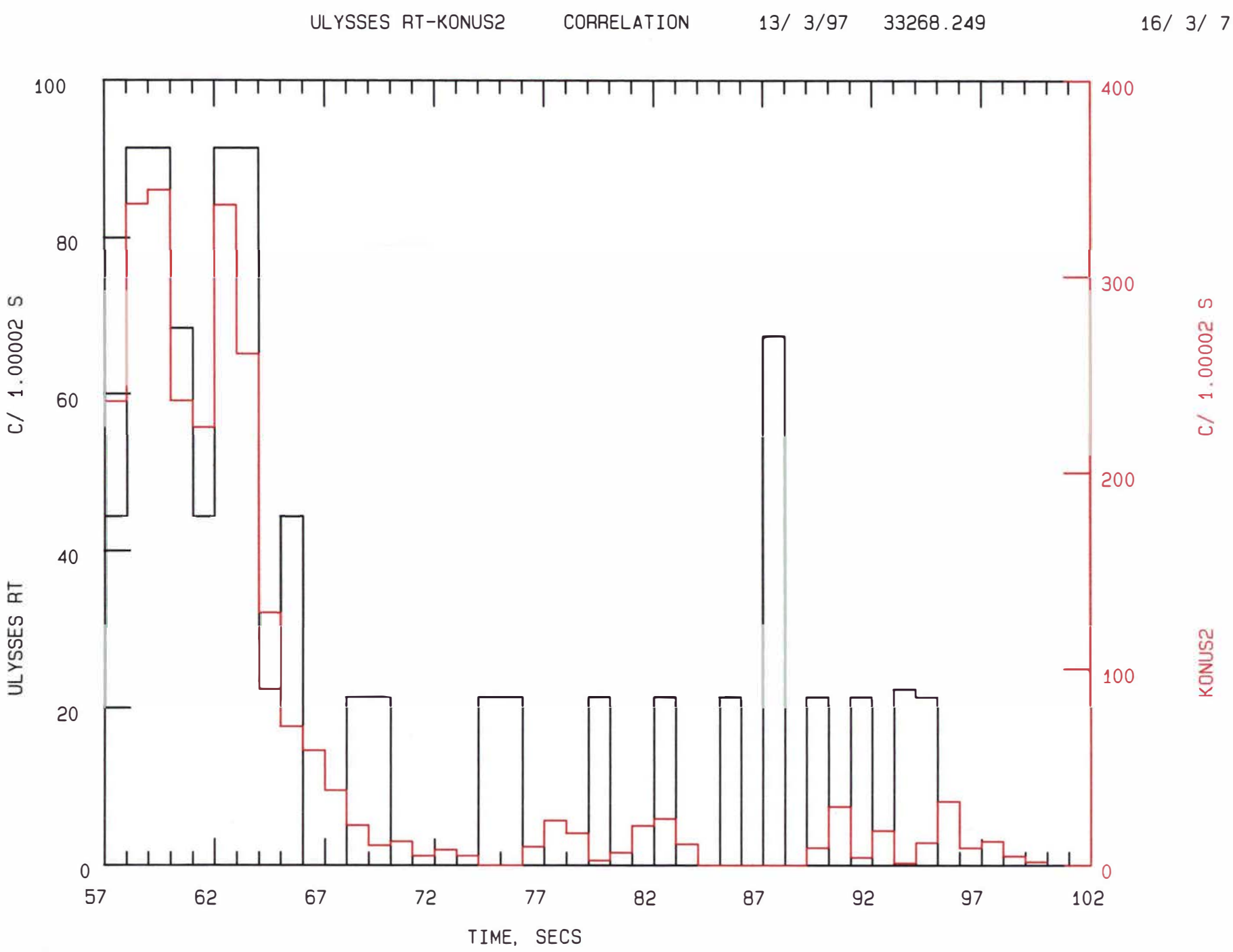
ULYSSES RT 08/02/02

13/03/97 33084.246 s

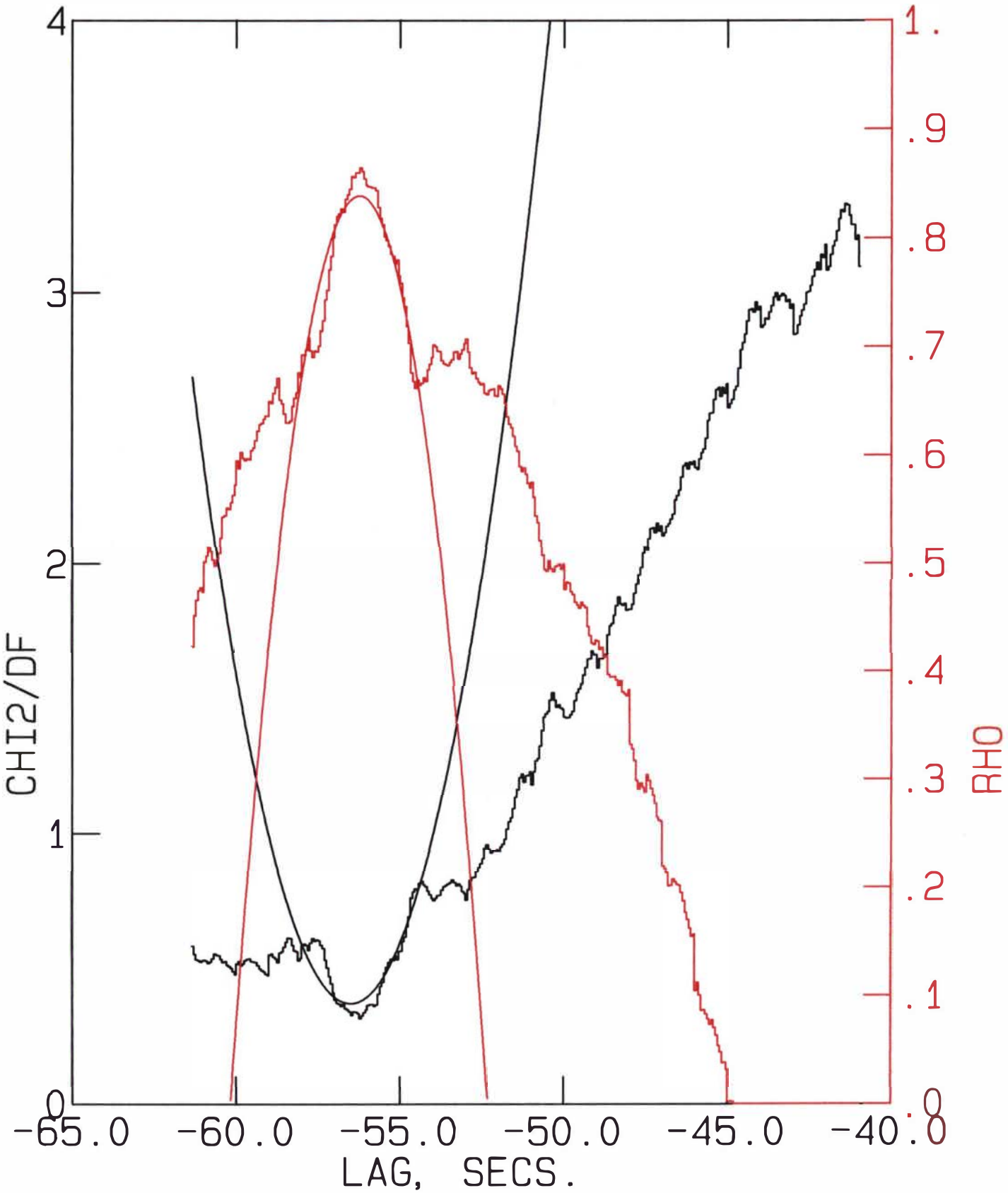
0.500 S INTERVALS REGROUPED BY 6

0- 0 keV




ULYSSES RT-KONUS2 CORRELATION 13/ 3/97 33268.249 16/ 3/ 7
100
80
60
40
20
0
C/ 1.00002 S
ULYSSES RT
400
300
200
100
0
C/ 1.00002 S
KONUS2
57
62
67
72
77
82
87
92
97
102
TIME, SECS

ULYSSES RT-KONUS2 CORRELATION 13/ 3/97 33268.249



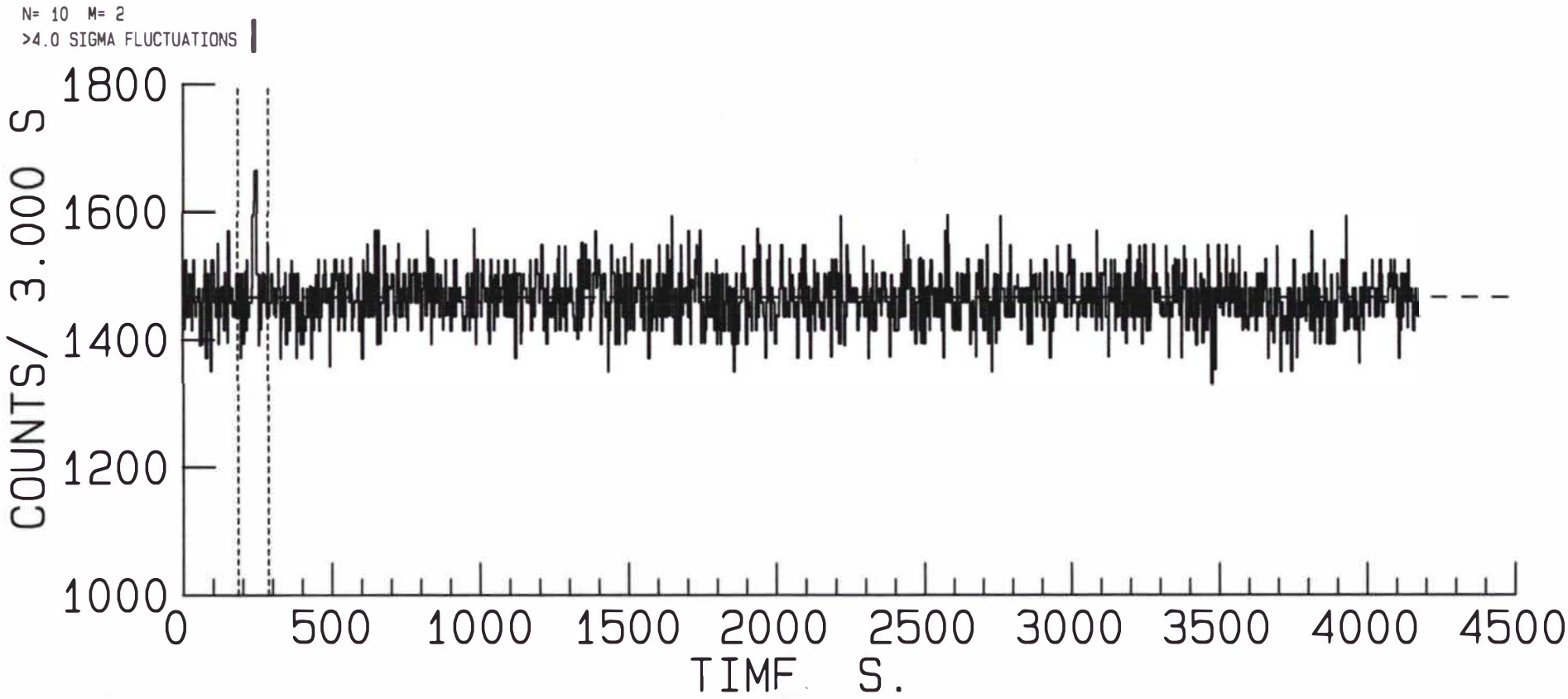
ULYSSES RT

16/ 3/ 7

13/ 3/97 33084.246 s

0.500 S INTERVALS REGROUPED BY 6

21- 146 keV



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

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

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

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

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

From TERRELL@nisdp0.lanl.gov Fri May 2 14:14 PDT 1997
From: TERRELL@nisdp0.lanl.gov
Date: Fri, 2 May 1997 15:14:24 -0600
To: khurley@sunspot.ssl.berkeley.edu, bonnard@rosserv.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, chryssa.kouveliotou@msfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, henze@fender.msfc.nasa.gov
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: dmsp grb detections: GRB 970313

From: jterrell@lanl.gov (James Terrell) 970501
To: khurley@sunspot.ssl.berkeley.edu,butterworth@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it,cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in,scott@rosserv.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov,yosimori@rikkyo.ac.jp,
bonnard@rosserv.gsfc.nasa.gov,chryssa.kouveliotou@msfc.nasa.gov,
henze@fender.msfc.nasa.gov
Subj: DMSP GRB detections: GRB 970313

DMSP 13 detected a GRB event on 13 March 1997, apparently the event reported from Ulysses data (28380 UT), at 28355.8 UT (center of the 2-sec count box). The event lasted for no more than 2 sec, and was soft (not over 150 keV).

It has been found that the delay time correction previously used for DMSP 13 data was in error, and previously reported times should be shifted earlier by 1.0 sec.
--- Jim

From kraken@rosserv.gsfc.nasa.gov Thu Mar 20 07:01 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 20 Mar 1997 10:01:51 -0500
    khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: GRB970313, GRB970316, GRB970114
Cc: bonnard@iolanthe.gsfc.nasa.gov (Bonnard Teegarden),
        kraken@rosserv.gsfc.nasa.gov,
        David Palmer <David.M.Palmer.1@gsfc.nasa.gov>

Hi Kevin,

Bonnard has forwarded your email about the above bursts which occurred recently, and David Palmer has given me the one from January. TGRS has seen events on March 3 and March 16 (as triggered events), but in neither case did the events come within 2000 seconds of the Ulysses reported time. The January event was not a triggered event, nor could I find it in waiting mode data. I wonder if the March 3 and 16 events correspond to some solar charged particle activity?

Pete

Ulysses Observation	TGRS detection
313 7:53 10 sec long	NO BUT: TGRS #542 at 970313 35181 sec. ~10 sec long 100 counts/sec peak intens. NOTE: this is about 7000 sec after the Ulysses observation, so I attribute it to a different event.
970316 13:16 64 msec long	NO BUT: TGRS #546 at 970316 62785 secs. ~4 sec long. 150 counts/sec peak intens. NOTE: this is about 15200 sec after the Ulysses observation.
970114 5:17 100 msec long	NO triggered or untriggered events; although there is a data drop out between 970114 18400-18500 sec. which is close to -500 sec from Ulysses observation

From SURASAK@SSLLES.MSFC.NASA.GOV Fri Mar 14 09:27 PST 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA28724; Fri, 14 Mar 1997 09:27:26 -0800
Date: Fri, 14 Mar 1997 11:26:51 -0600 (CST)
From: SURASAK@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970314112651.2020f906@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6120
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6120
EVENT OF 1997 MAR 13 DAY OF YEAR= 72
EVENT CROSSING TIME AT BATSE : 64760. S. OR 17:59:20.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 133.000 69.000
BATSE PEAK COUNTING RATE: 7300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 3/ 97 IS:
RA= 160.838 DEC= 36.768 DIST= 4.077 AU
BATSE-ULYSSES DISTANCE = 609877918. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=144.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1653.24 SECS.
CROSSING TIME AT ULYSSES IS 63107. S. OR 17:31:46 +/- 230.71 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 3/ 97 IS:
RA= 180.076 DEC= 4.063 DIST= 0.666 AU
MARS-BATSE DISTANCE = 99622912. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -102.88 SECS.
CROSSING TIME AT MARS IS 64657. S. OR 17:57:37 +/- 53.30 SECONDS

BATSE BURST TRIGGER

NO.: 06120

TIME: TJD=0520 SECONDS=64760

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=63.6 AZIMUTH=228.4 ERROR=4.036 DEGREES

COMMENTS:
GRB. DOUBLE PEAKS. DUR~0.17. VISIBLES ABOVE 300 KEV.

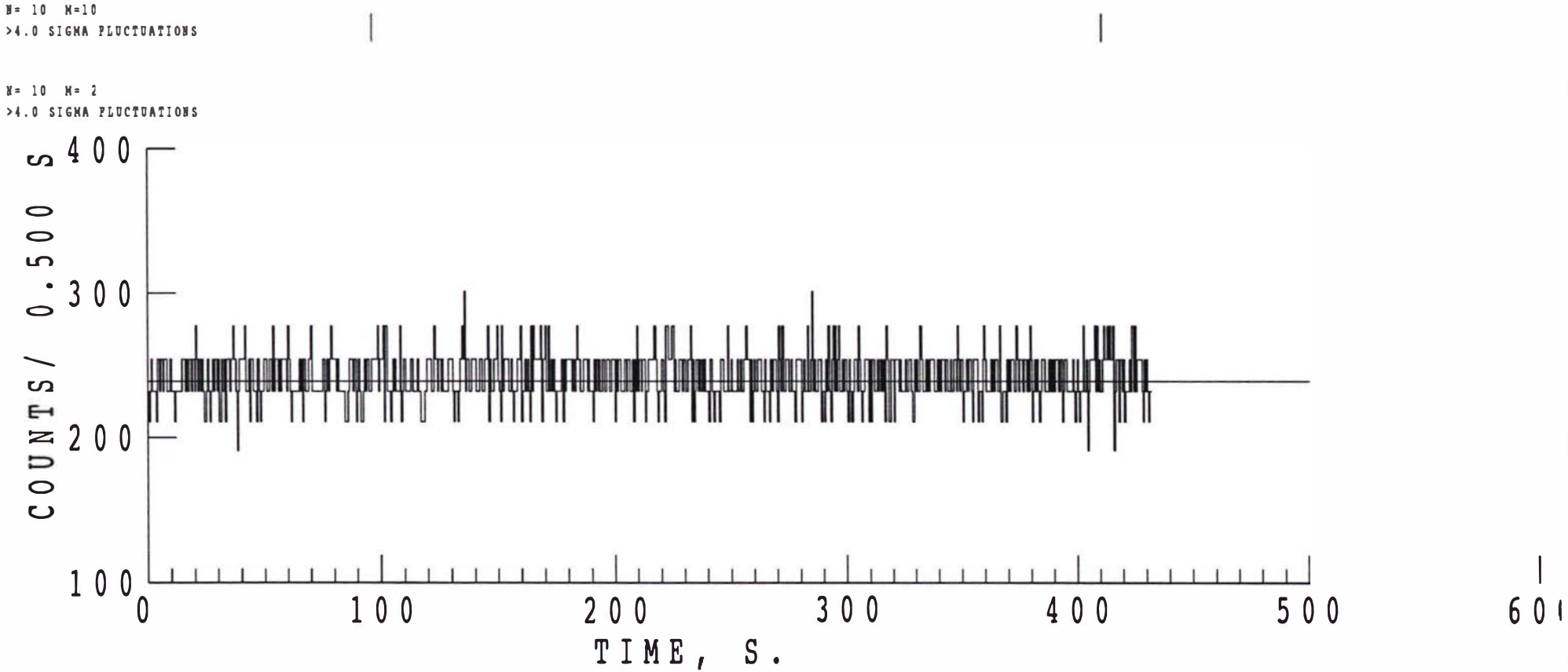
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6120	970313	10520	64760	7300	133	+69	.17

BATSE# 6120

ULYSSES RT 14/ 3/97

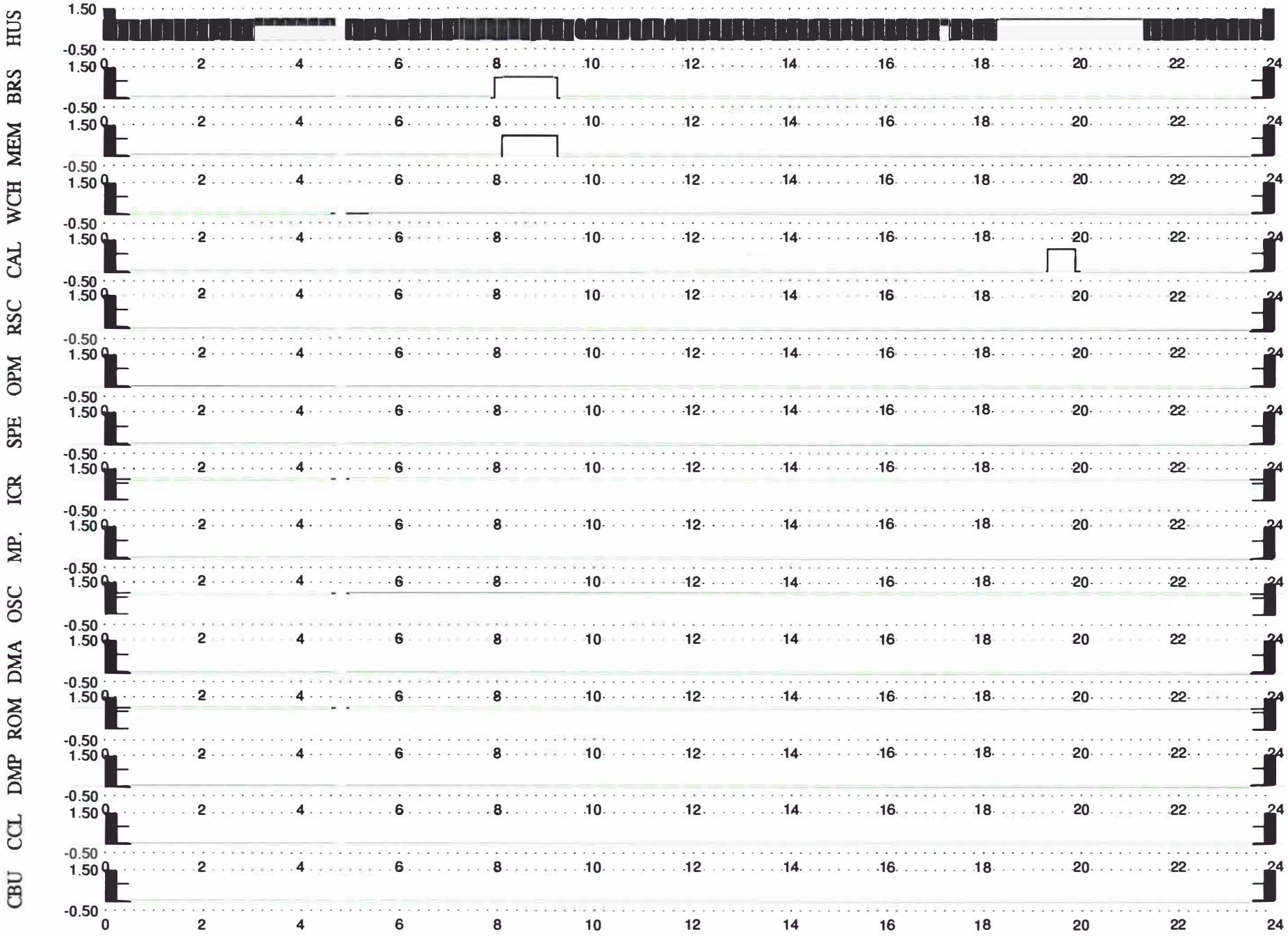
13/ 3/97 62892.098 s

0- 0 keV



HUS MODES EDR day 72, year 1997 to day 72, year 1997 7/21/97

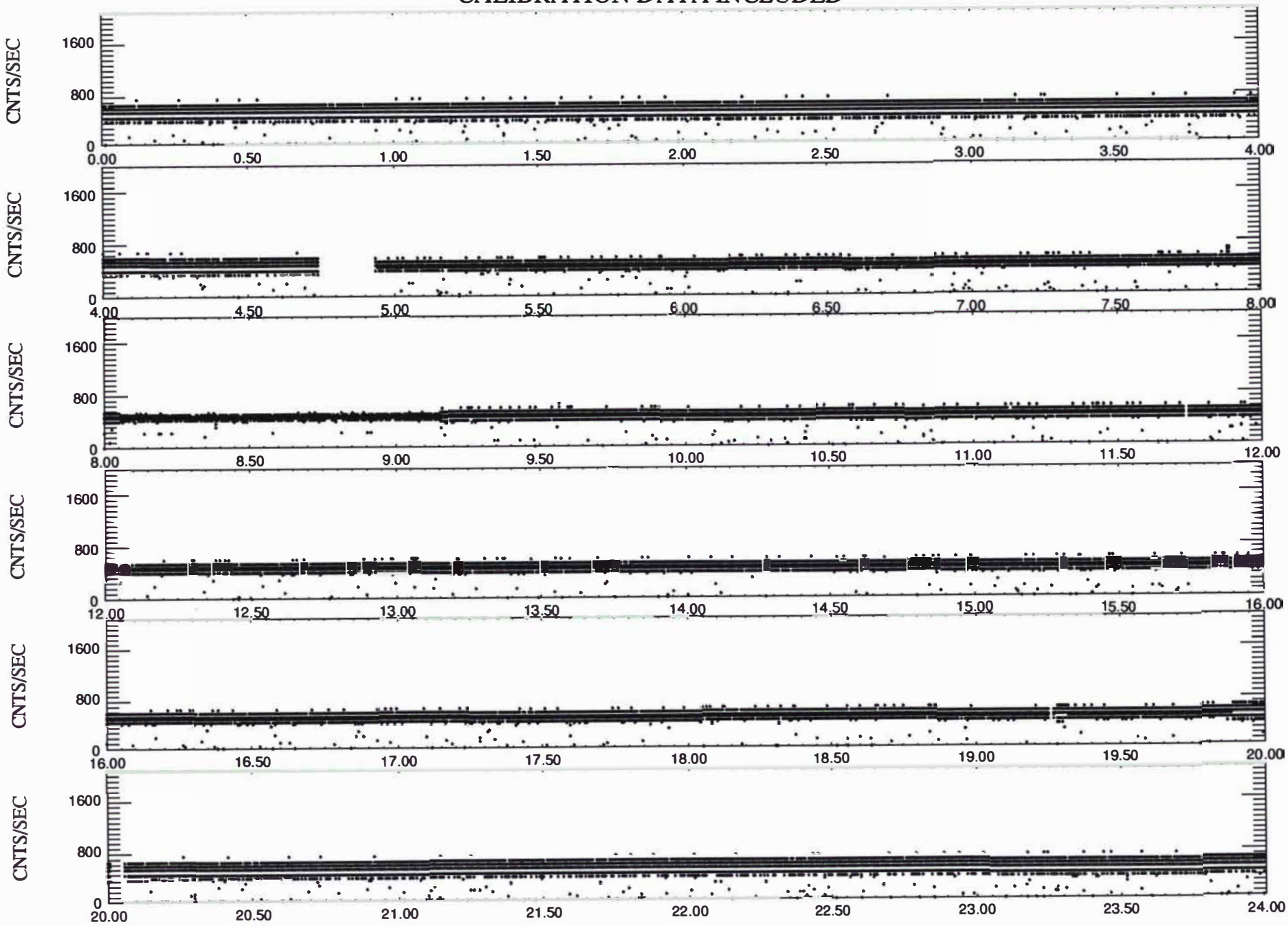
BURST NUMBER 14



UNIVERSAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 72, year 1997 to day 72, year 1997 7/21/97

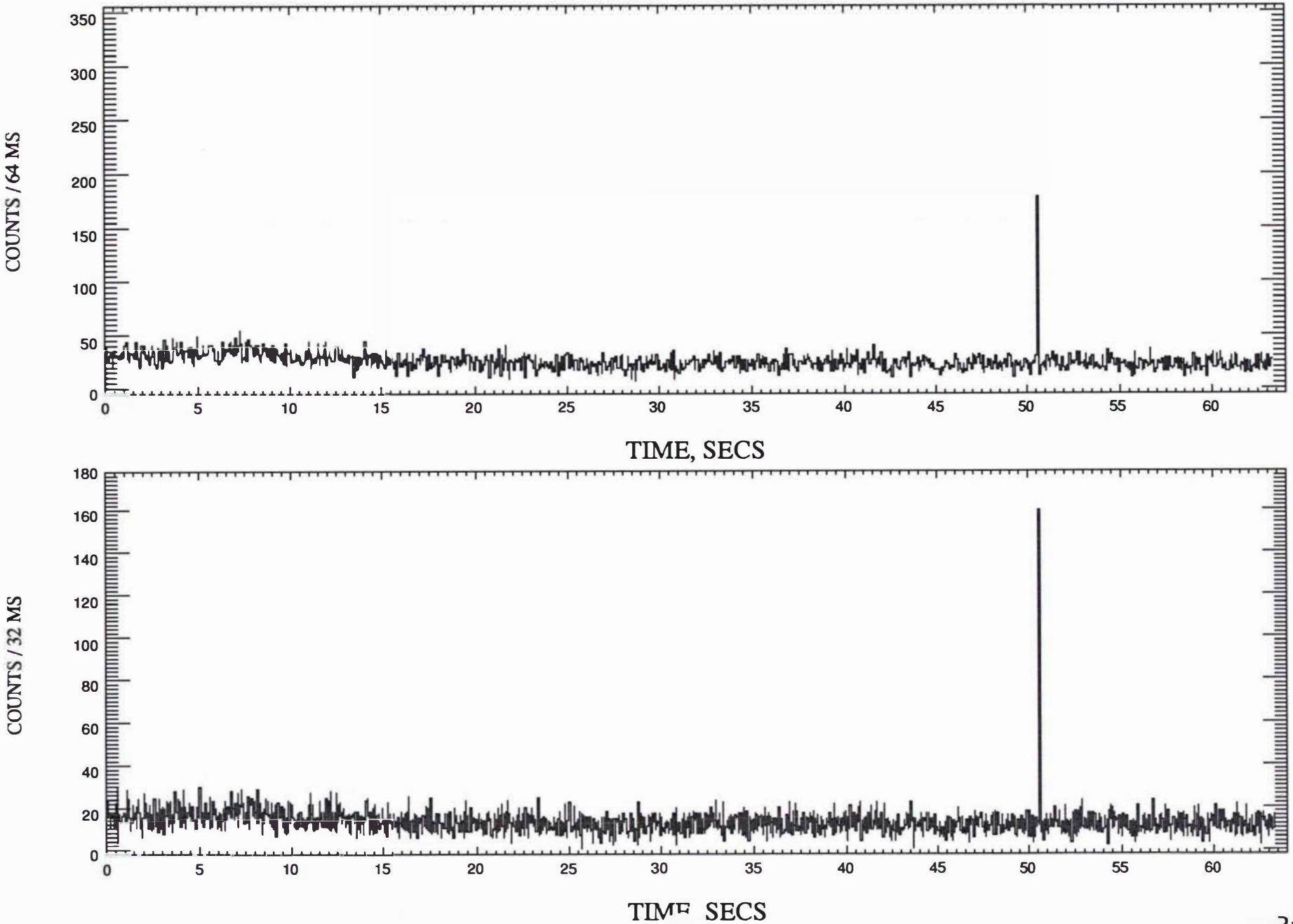
CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 72, year 1997 7/21/97

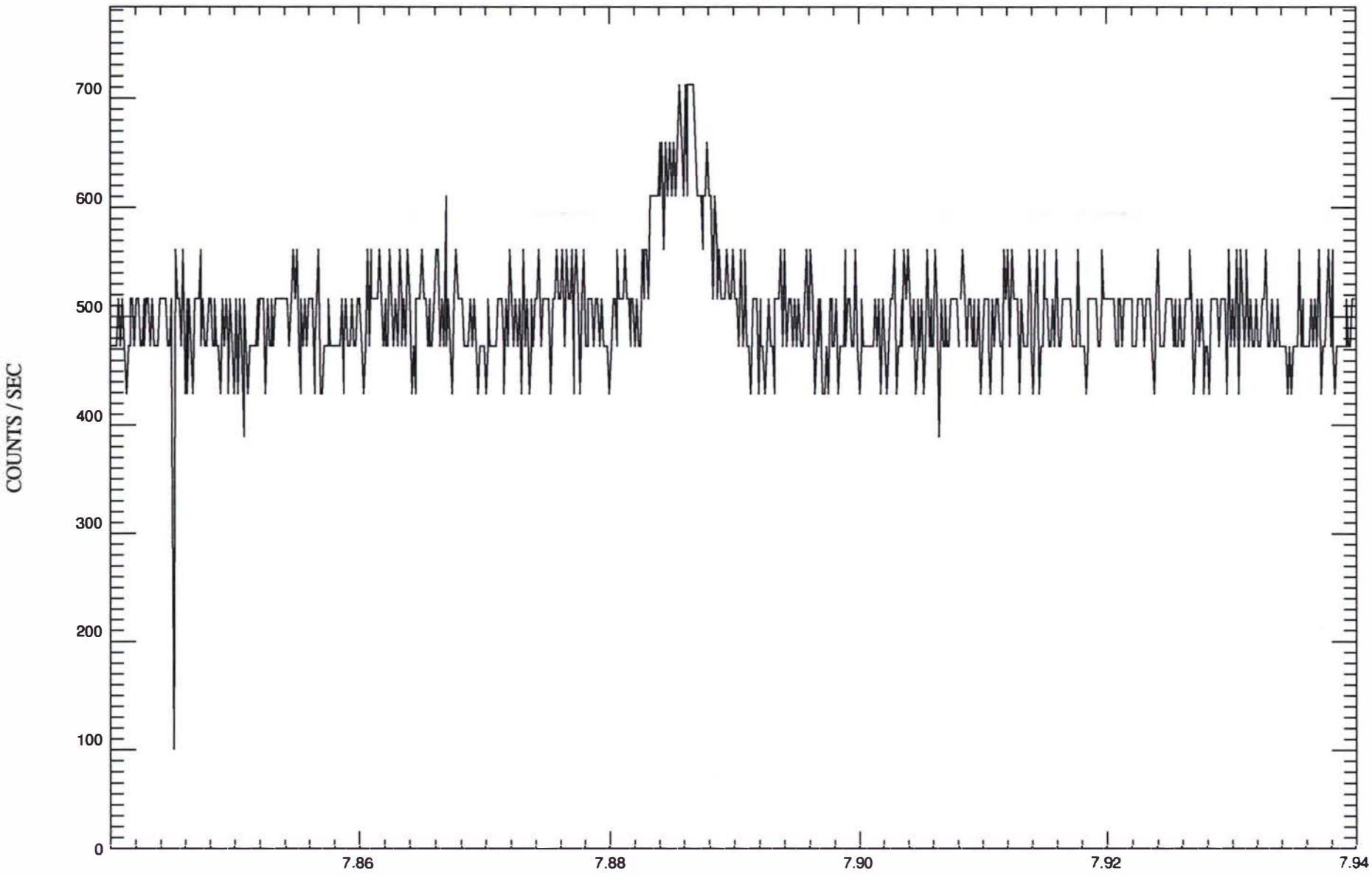
Burst Counter 14 at UT= 7.886749267578 h=28392.297 s 07:53:12.297



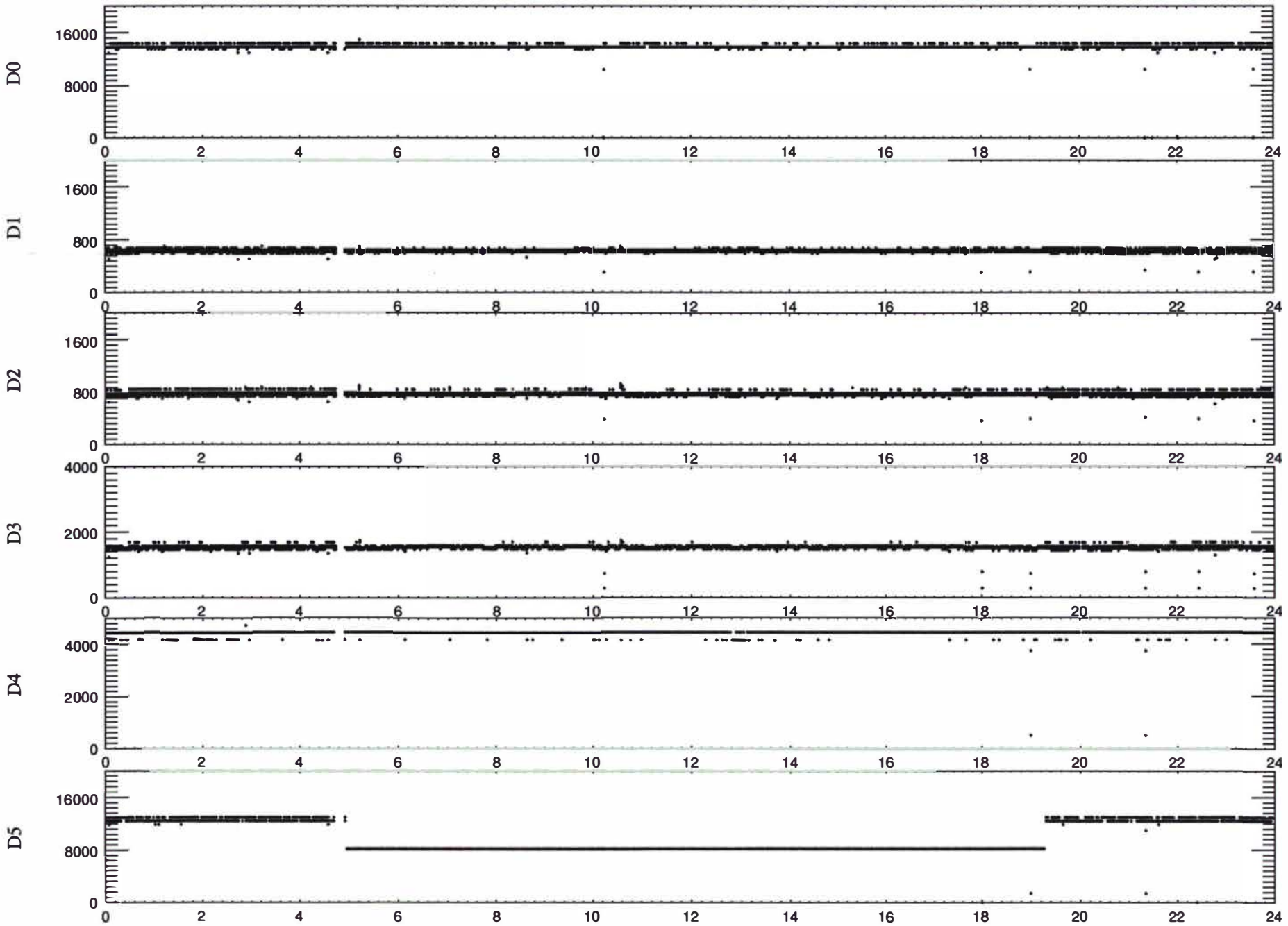
3# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 72, year 1997 to day 72, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 72, year 1997 to day 72, year 1997 7/21/97



From DEAL@fender.msfc.nasa.gov Mon Mar 17 14:16 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 17 Mar 1997 16:15:18 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
band@cass09.ucsd.edu, gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6121

TIME: TJD=0521 SECONDS=1951

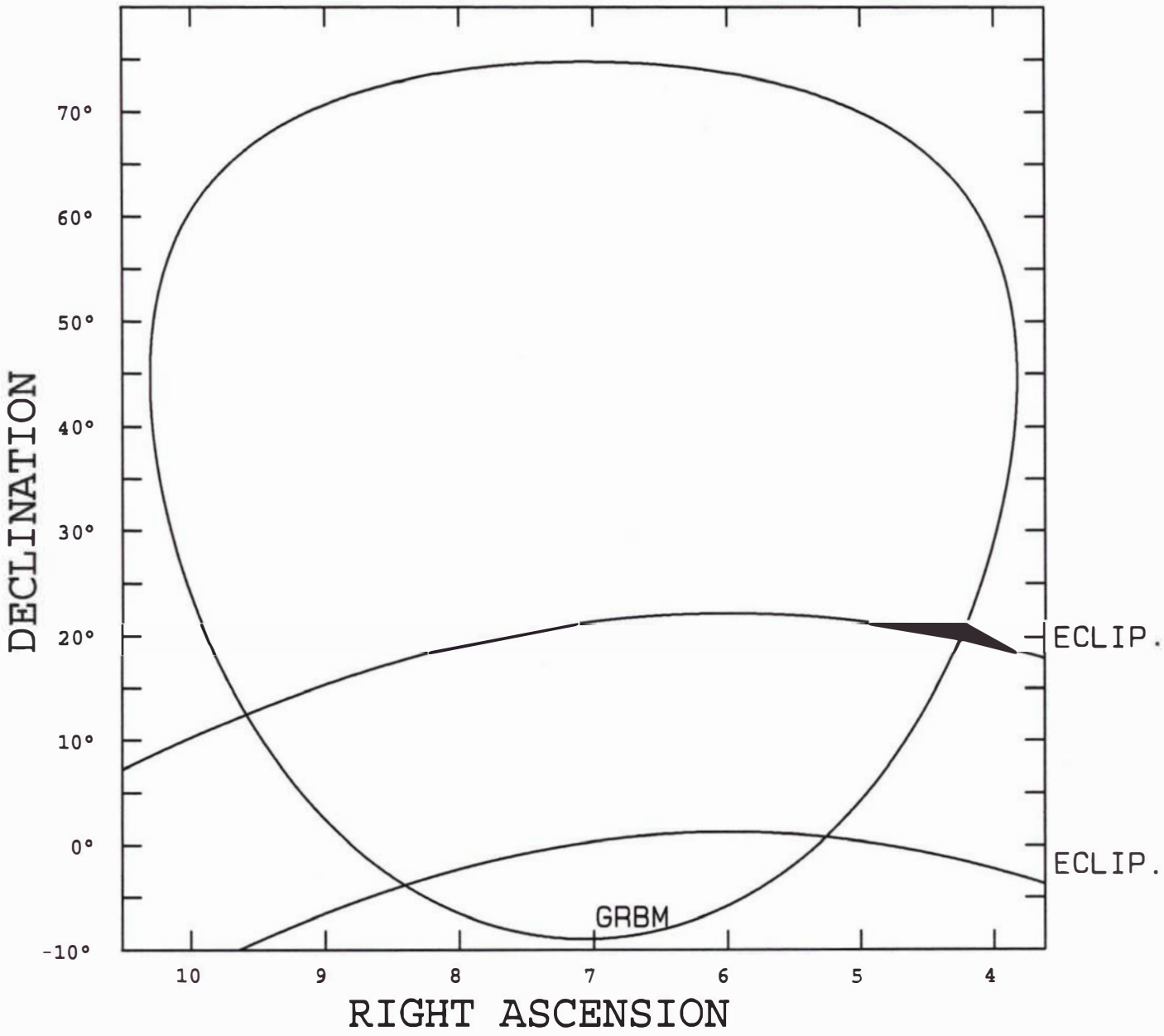
TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYGX-1 OCCULTATION STEP.


70°
60°
50°
40°
30°
20°
10°
0°
-10°
DECLINATION
10
9
8
7
6
5
4
RIGHT ASCENSION
ECLIP.
ECLIP.
GRBM

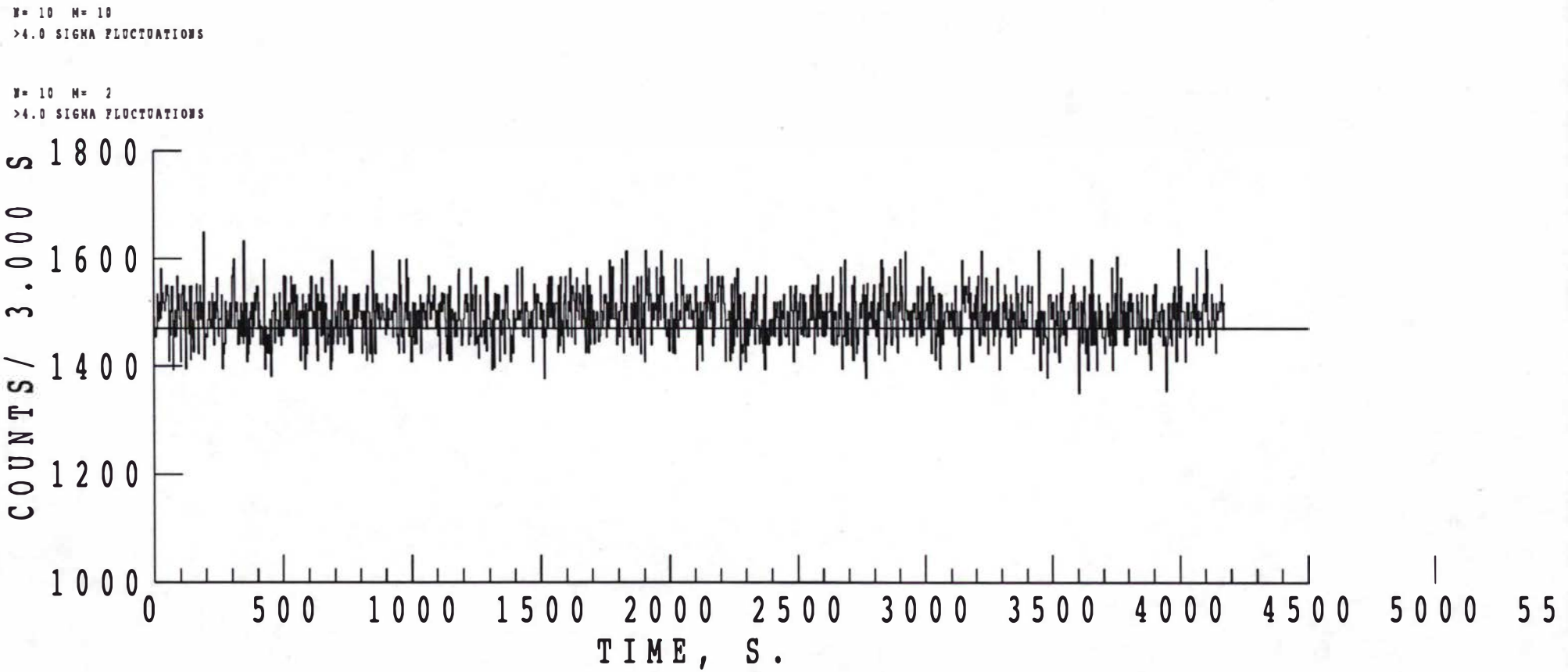
KONUS

ULYSSES RT 02/02/00

14/03/97 12384.022 s

0.250 S INTERVALS REGROUPED BY 12

0- 0 keV



From DEAL@fender.msfc.nasa.gov Mon Mar 17 14:18 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 17 Mar 1997 16:17:44 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
band@cass09.ucsd.edu, gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6122

TIME: TJD=0521 SECONDS=57814

TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

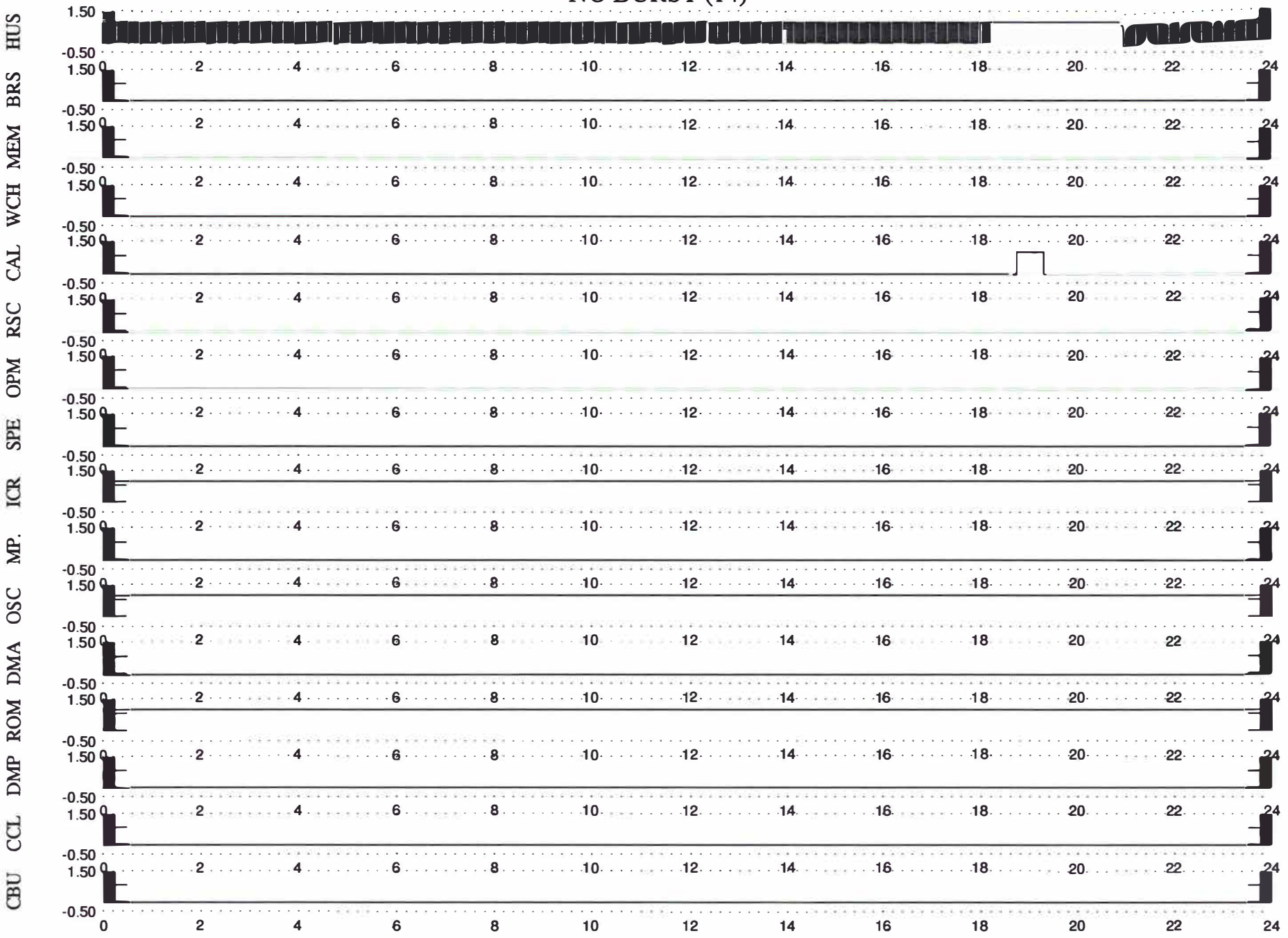
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYGX-1 OCCULTATION STEP

HUS MODES EDR day 73, year 1997 to day 73, year 1997 7/21/97

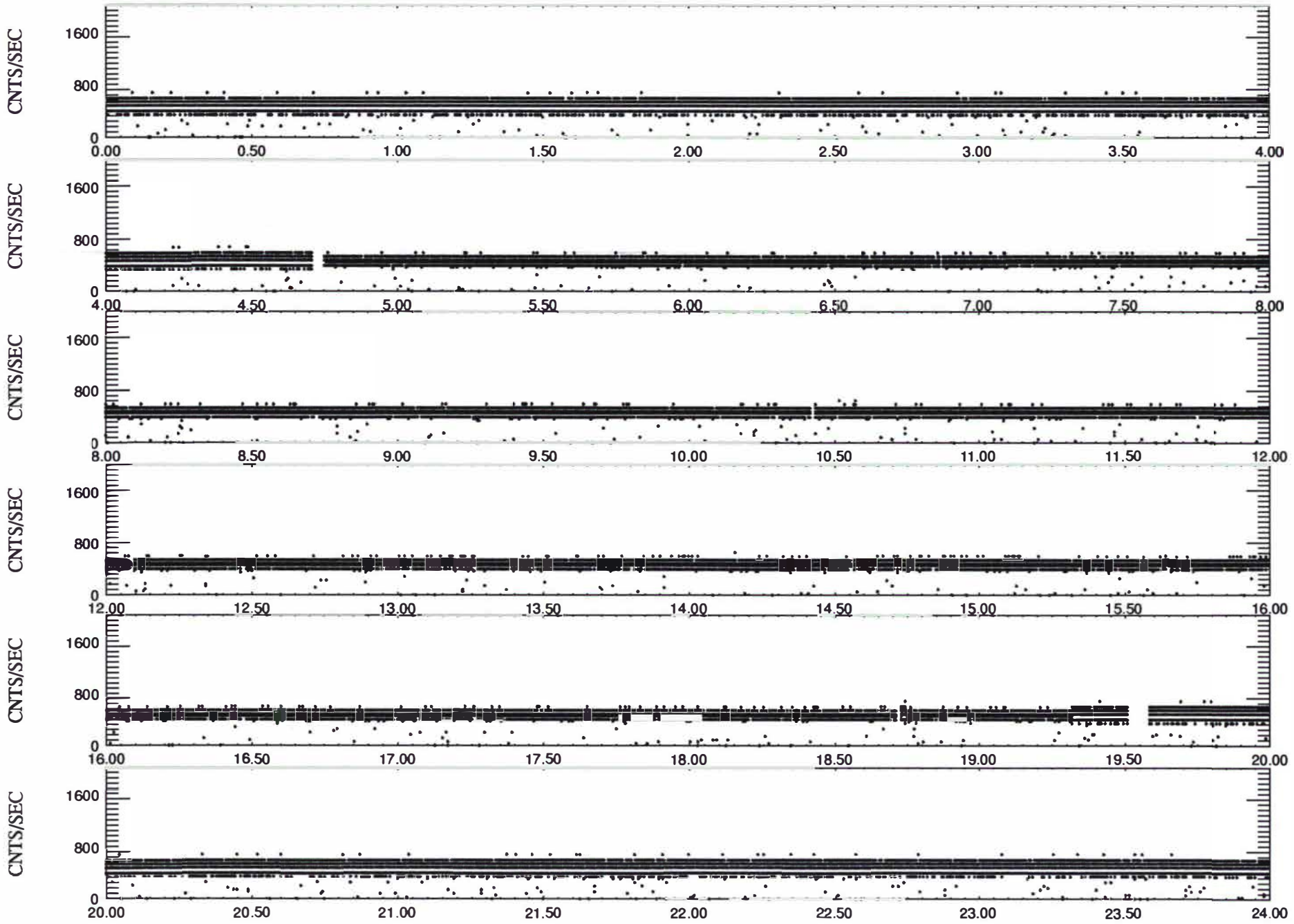
NO BURST (14)



UNIV AL TIME

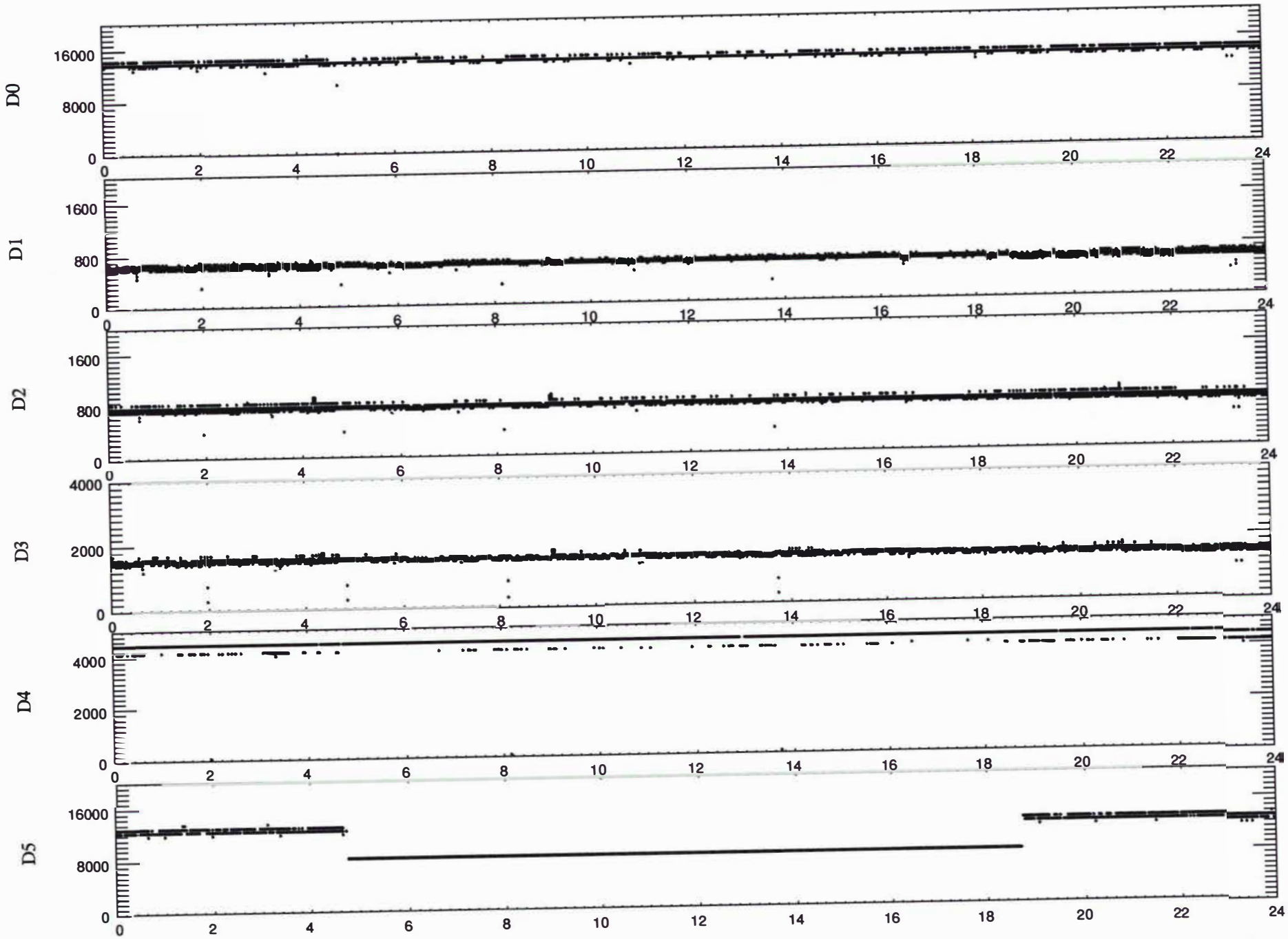
HUS 2A, MODE 1, NOT AVERAGED EDR day 73, year 1997 to day 73, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 73, year 1997 to day 73, year 1997 7/21/97



Date: Dec 2 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☐ Σ 3Δt's calculated, and/or BMAPSUM executed?

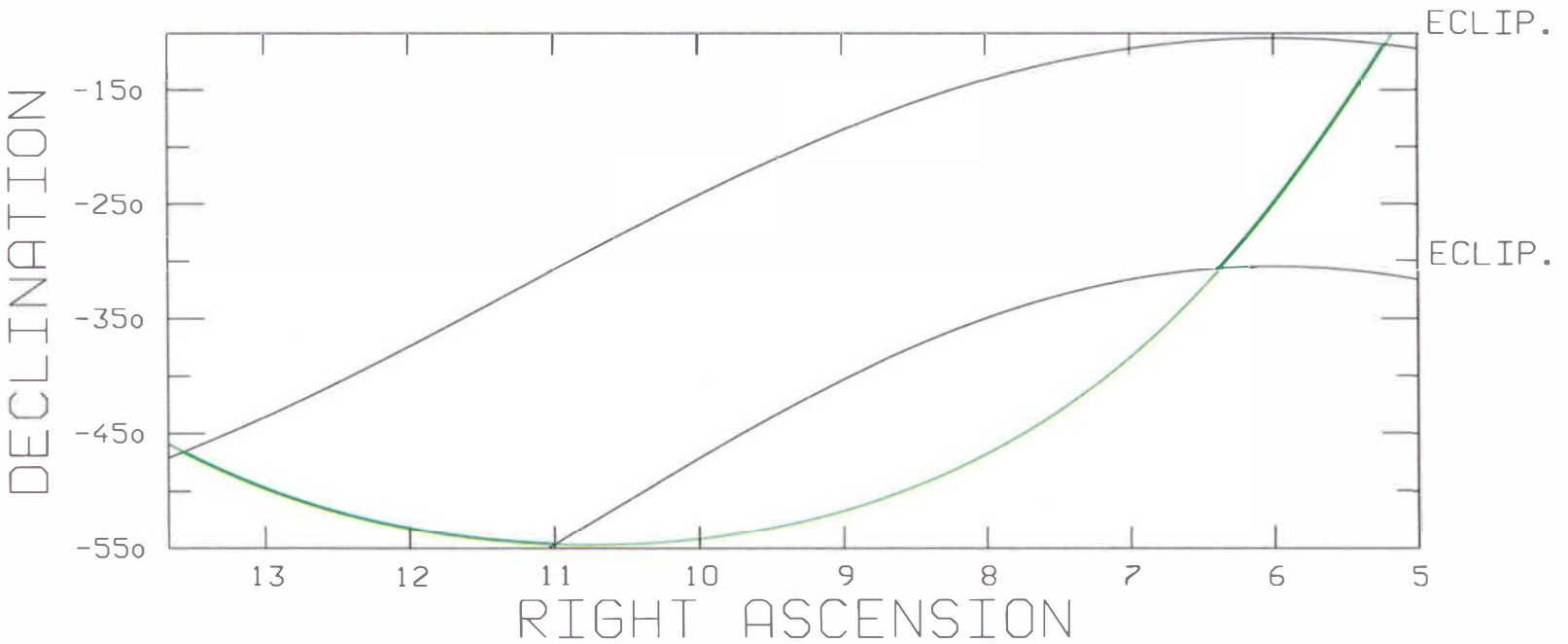
3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

☐ Updated ephemeris used for bursts prior to September 30, 2003?

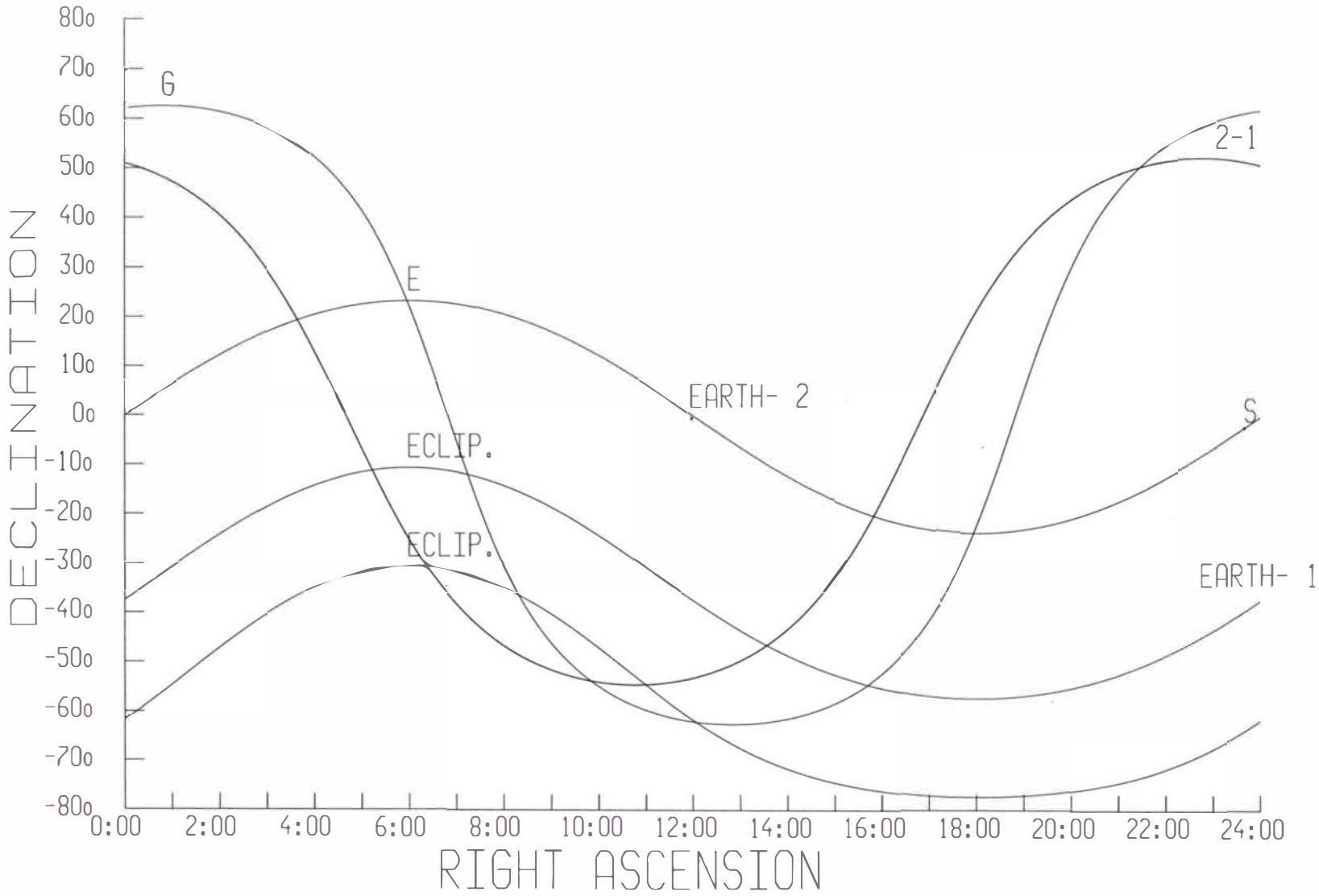
☑ ACCESS and MBL4 databases updated with identical times?


ECLIP.
ECLIP.
DECLINATION
-15o
-25o
-35o
-45o
-55o
13
12
11
10
9
8
7
6
5
RIGHT ASCENSION

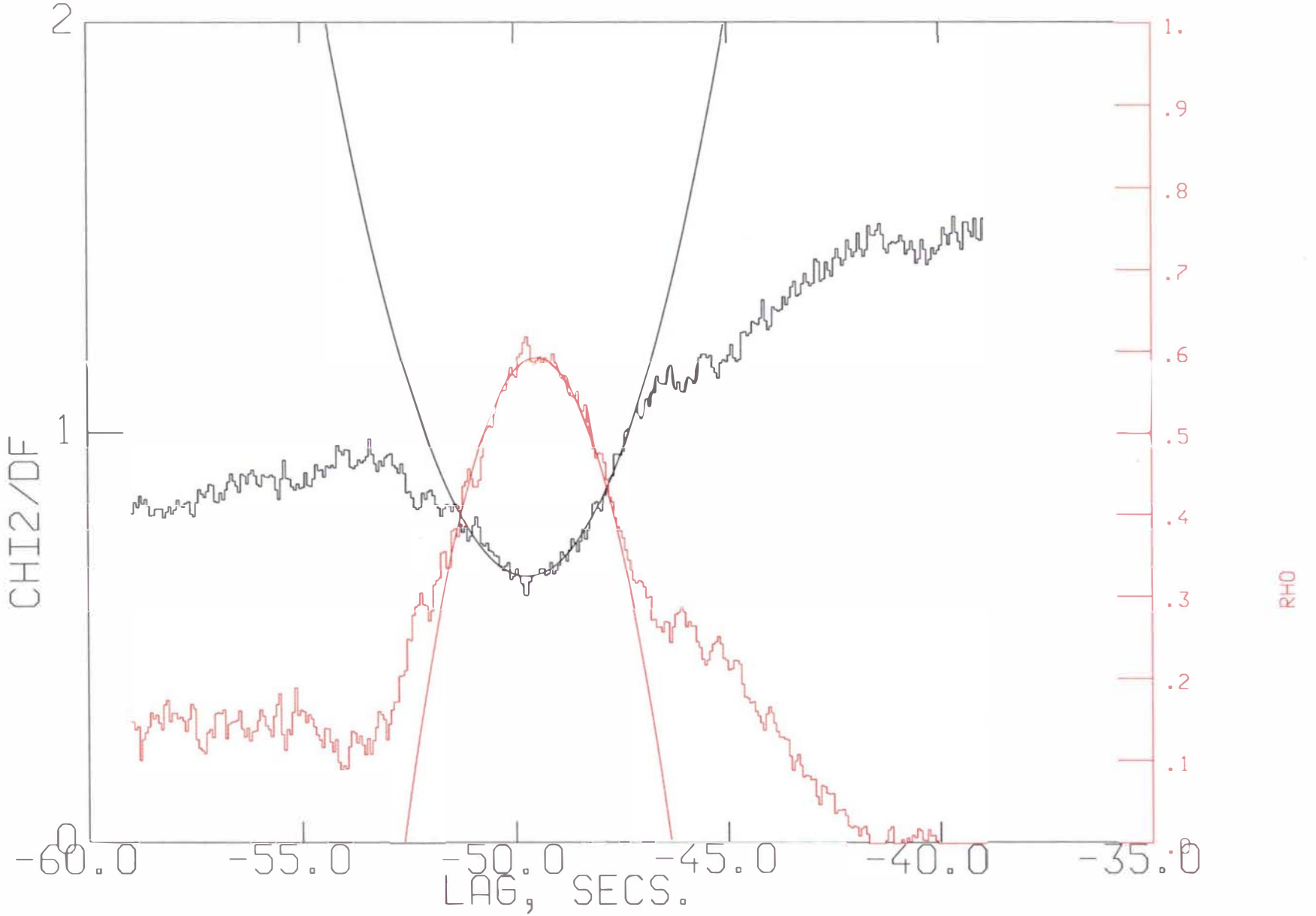
EVENT OF MAR 15, 1997 1:36

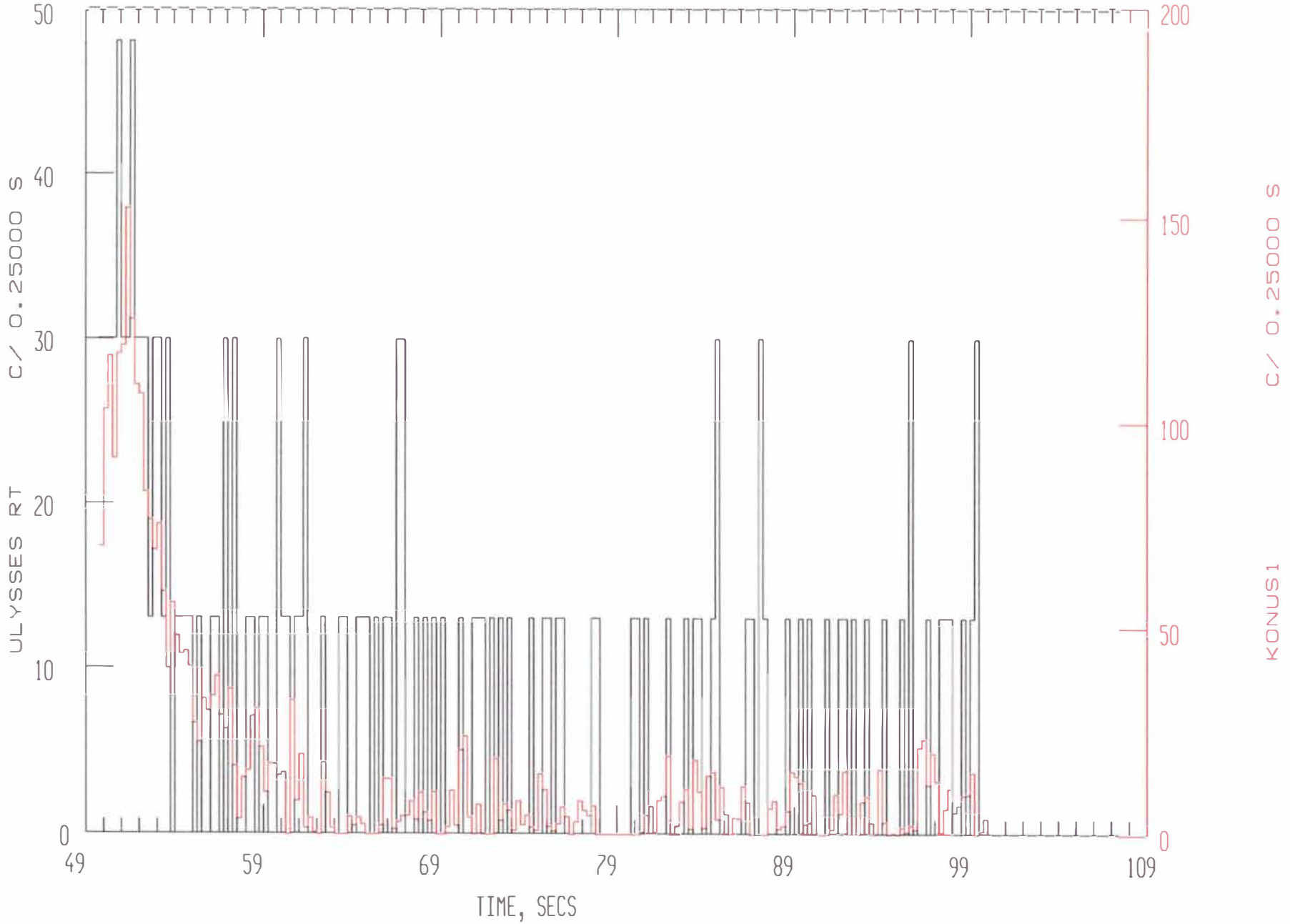
02/12/2011

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 KONUS1



ULYSSES RT-KONUS1 CORRELATION 15/ 3/97 5790.218




ULYSSES RT
C/ 0.25000 S
KONUS1
C/ 0.25000 S
TIME, SECS
0
10
20
30
40
50
0
50
100
150
200
49
59
69
79
89
99
109

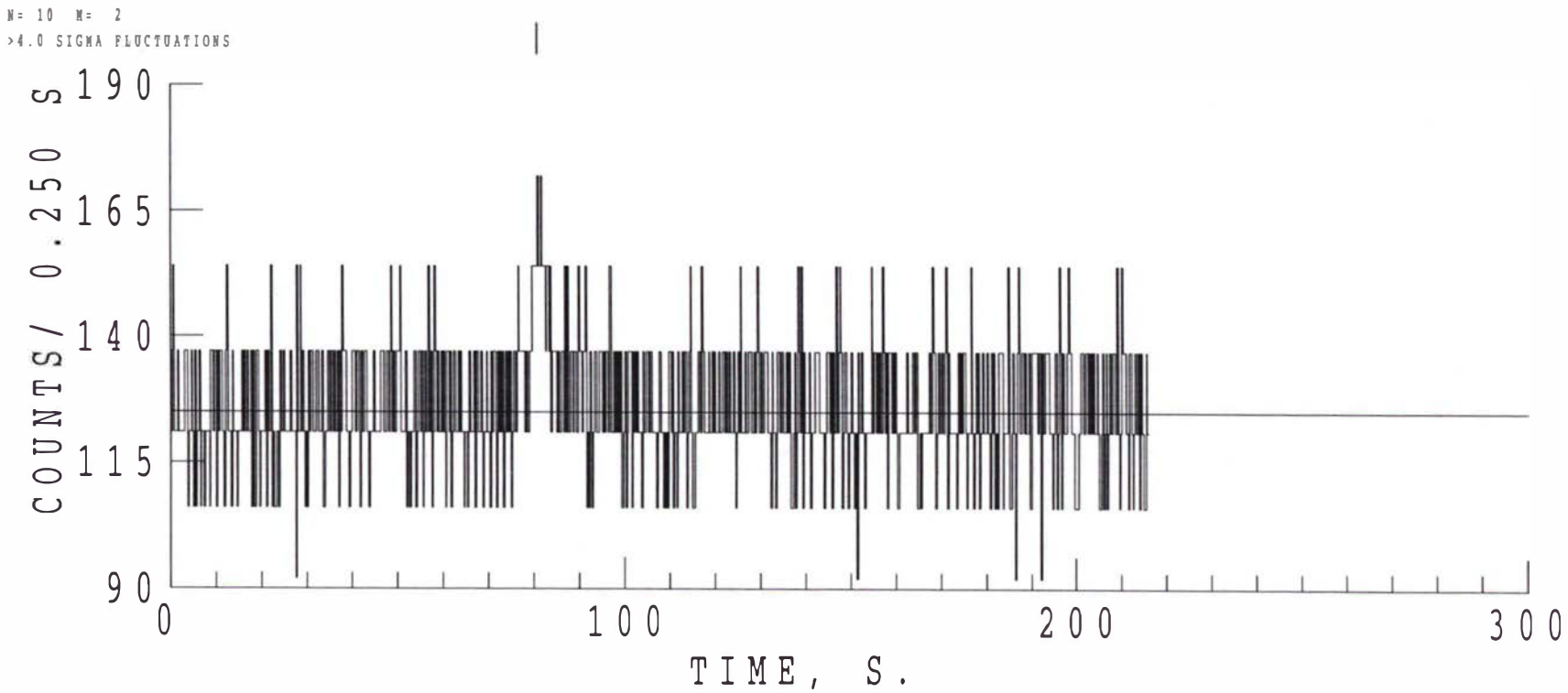
KONUS 19970315 05858

ULYSSES RT

22/11/11

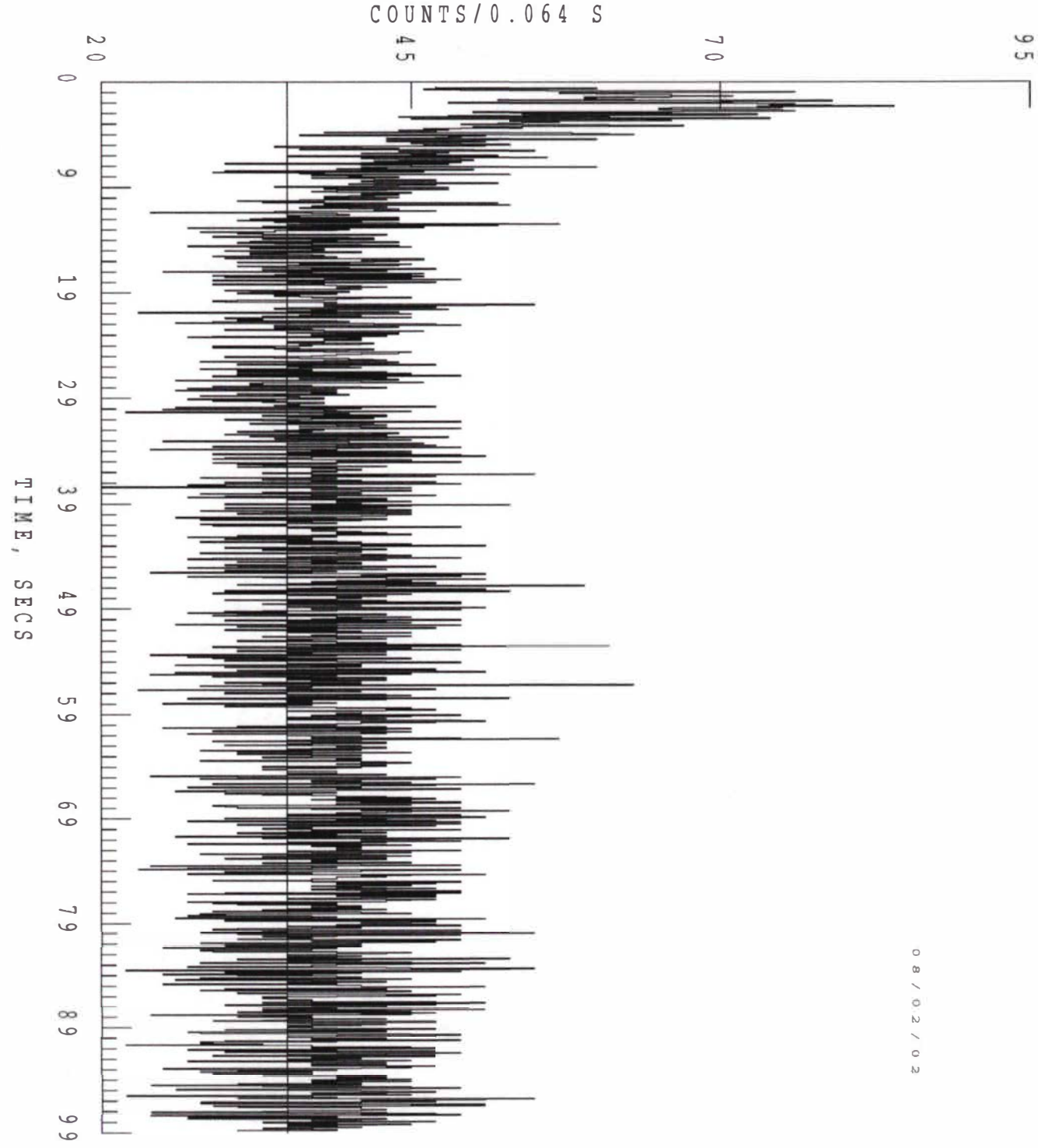
15/03/97 5760.216 s

0- 0 keV



KONUS1 15/03/97 5801.242

50- 200 keV



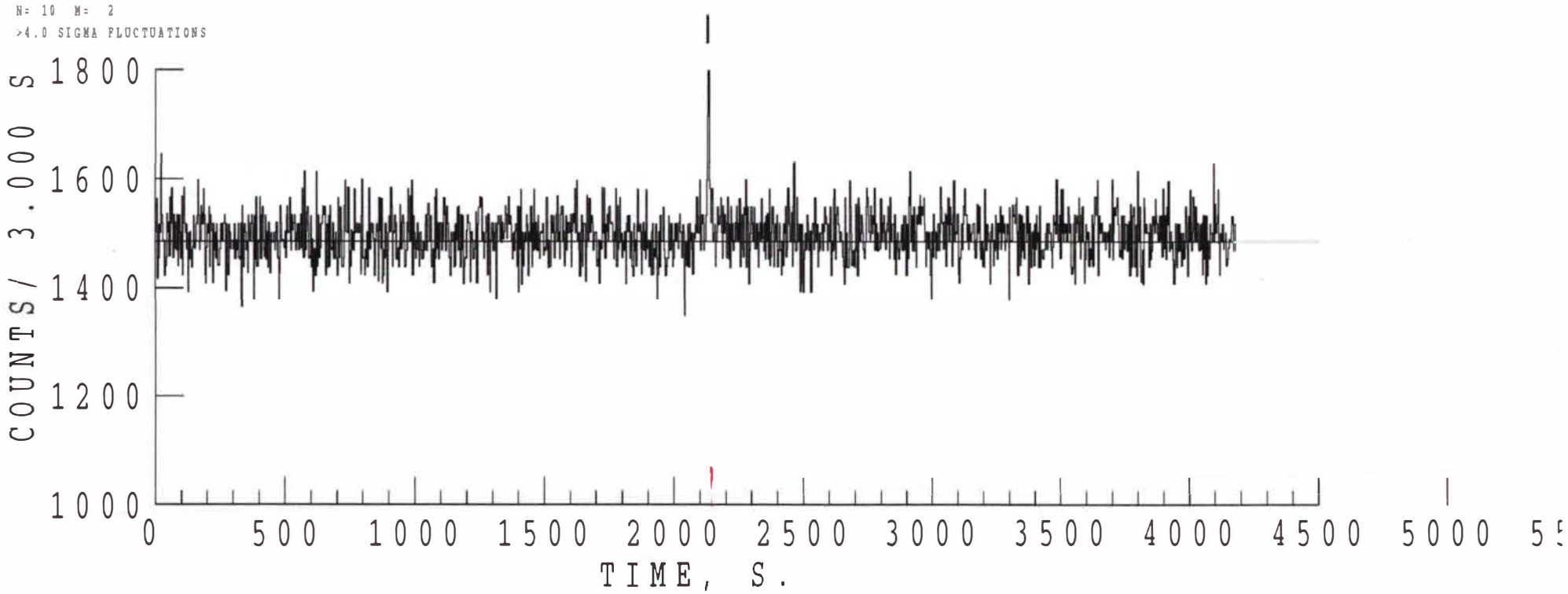
KONUS1 19970315 05801

ULYSSES RT 08/02/02

15/03/97 3708.192 s

0.250 S INTERVALS REGROUPED BY 12

0- 0 keV



From RICHARDSON@SSLLES.MSFC.NASA.GOV Wed Mar 19 09:29 PST 1997
Return-Path: <RICHARDSON@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA12780; Wed, 19 Mar 1997 09:29:09 -0800
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Wed, 19 Mar 1997 11:27:58 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970319112758.20a0423b@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6123
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

```
         ********************
         *BATSEARCH PROGRAM*
         ********************

 BATSE BURST #     6123
 EVENT OF 1997 MAR 15 DAY OF YEAR= 74
 EVENT CROSSING TIME AT BATSE      : 30068. S. OR 08:21:08.0
 COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 353.000  -42.000
 BATSE PEAK COUNTING RATE:  70000    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 15/ 3/  97 IS:
 RA=  160.381 DEC=   36.726 DIST=    4.091 AU
 BATSE-ULYSSES DISTANCE =  611977588. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 11.07 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2003.33 SECS.
 CROSSING TIME AT ULYSSES    IS 32071. S. OR   08:54:31 +/-  148.50 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 15/ 3/  97 IS:
 RA=  179.359 DEC=    4.345 DIST=    0.663 AU
 MARS-BATSE DISTANCE =   99180616. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 38.08 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  260.41 SECS.
 CROSSING TIME AT MARS       IS 30328. S. OR   08:25:28 +/-   39.38 SECONDS


                BATSE BURST TRIGGER
NO.: 6123

TIME: TJD=0522 SECONDS=30068

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=99.1   AZIMUTH=17.5   ERROR=2.2   DEGREES

COMMENTS:
GRB SHORT SINGLE PULSE WITH STRUCTURE. DUR.~0.3 SEC. VISIBLE ABOVE 300KEV.

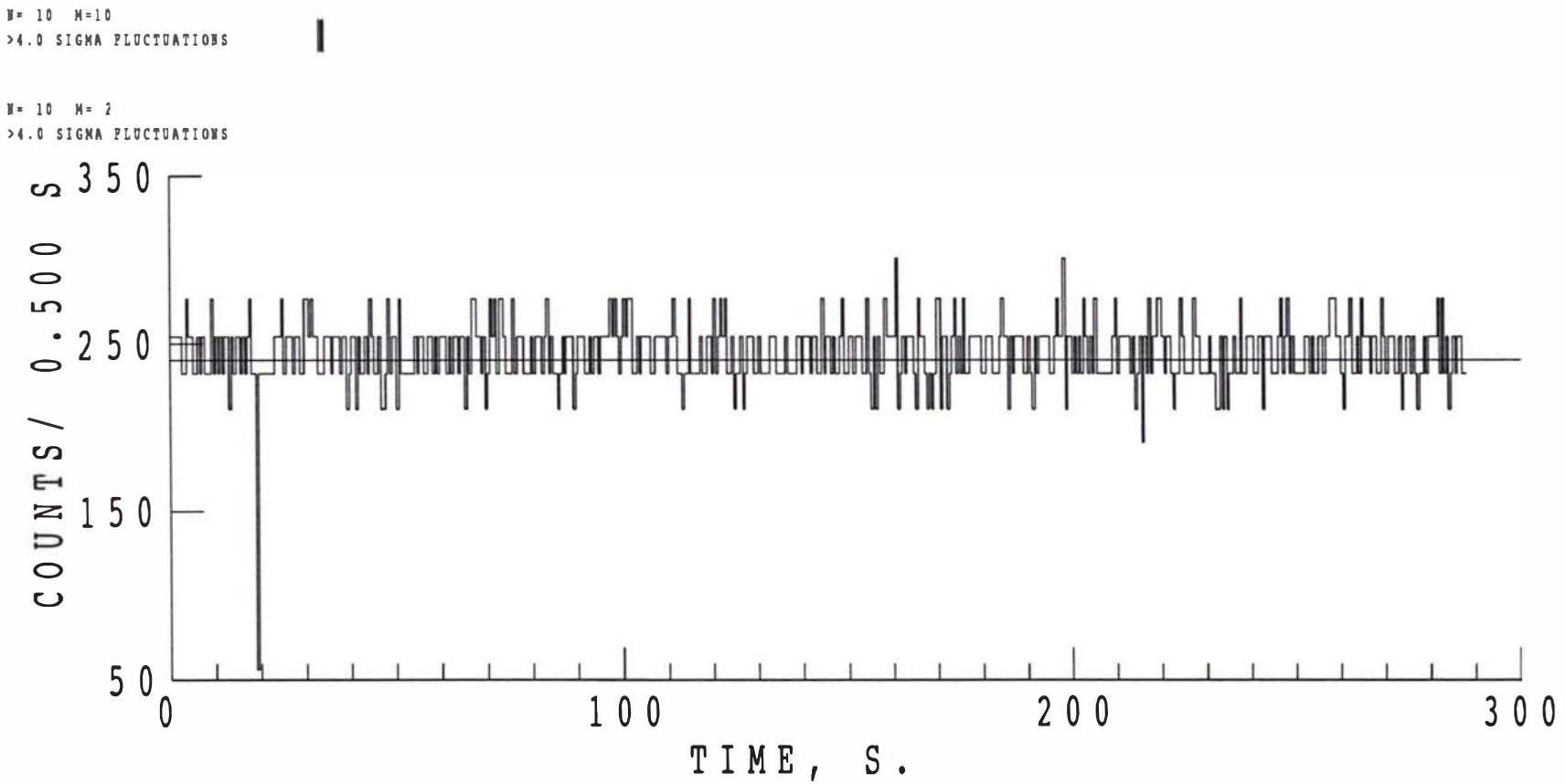

 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6123   970315   10522   30068    70000   353   -42    .3
```

BATSE# 6123

ULYSSES RT 19/ 3/97

15/ 3/97 31932.271 s

0- 0 keV



From RICHARDSON@ssl.msfc.nasa.gov Mon Mar 17 11:35 PST 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA17855; Mon, 17 Mar 1997 11:35:39 -0800
Date: Mon, 17 Mar 1997 13:35:00 -0600 (CST)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970317133500.20a03ae5@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6124
Content-Type: text
Content-Length: 1135
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST # 6124
EVENT OF 1997 MAR 15 DAY OF YEAR= 74
EVENT CROSSING TIME AT BATSE : 56454. S. OR 15:40:54.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 2.000 61.000
BATSE PEAK COUNTING RATE: 123000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 3/ 97 IS:
RA= 160.294 DEC= 36.718 DIST= 4.094 AU
BATSE-ULYSSES DISTANCE = 612392899. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -330.61 SECS.
CROSSING TIME AT ULYSSES IS 56123. S. OR 15:35:23 +/- 394.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 3/ 97 IS:
RA= 179.359 DEC= 4.345 DIST= 0.663 AU
MARS-BATSE DISTANCE = 99180616. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 137.84 SECS.
CROSSING TIME AT MARS IS 56592. S. OR 15:43:11 +/- 54.31 SECONDS

BATSE BURST TRIGGER
NO.: 6124

TIME: TJD=0522 SECONDS=56454

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=73.6 AZIMUTH=276.8 ERROR=0.2 DEGREES

COMMENTS:
GRB. VERY STRONG!!! WITH LOTS OF STRUCTURE. DUR.~60SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6124	970315	10522	56454	123000	002	+61	60

```
970315    074 56454.2 BATSE GRB#6124 (4264/S)  (5.69,62.18J)  (+UL)
      13 074 56454.9 PKS,462.9(50/S,90/S,<16S) (@85DEG)

970325    084 63382.8 KONUS(+UL@64176,MOD,15S),2 PEAKS(UL REPORT 8/9/97) (13SR)

970405    095U85440   UL@23:44@2200LS,MOD BURST, 5SEC (SEE NEXT LINE)
970406    096  1060.9 KONUS (MOD.STRONG,MULT.PKS,15S) (13:NR, SECONDARY PEAKS?)

970411    101 35565.2 KONUS(25SEC,35556?)+UL@35040,2200LS(MOD,10S) +TGR (13NR)

970420    110 72842.2 BATSE GRB#6198 (7316/S) (209.08,-21.09J) (+UL)
      13 110 72847.8 PEAK (740/S,<12S,HARD) @85 DEG

970421    111U24420   UL@06:47@2250LS INT BURST, 20SEC
      13 111 25691.6 PEAKS (60/S),711.6(60),721.6(40),<30SEC                  REP0624

970428 14 118          FIRST DATA, DMSP14 (LAUNCHED 970404;DELAY CORR=5.87S)

970506    126 56503.3 KONUS (+UL@57300,2400LS,MOD,10S) (13NO,14NO,NOTRIG)

970506A14 126 45619.1 STRONGPKS45619.1(7700/S,<6S,SOFT),633.1,655.1,NOTRIG;13NO    ??

970602    153 58855.7 KONUS>150S,COMPLEX,PK58953(+UL@56580,MOD,60S)(+TGRS/WIND)
      14 153 58917.0 PK(150/S),953.0(950,>58S,VERY HARD, INTENSE (13 NO)      REP0624
      14 153 58916.7 TRIGGER PK, +58944.3,58952.0

970607    158 33384.7 KONUS, HARD PEAK FOR 7SEC (+UL@33360,MOD,10S)
      13 158 33388.6 PEAK(180/S,<6S)                                          REP0723
      14 158 33388.7 PEAK(200/S,<6S, NOTRIG)                                  REP0723

 J616    167 65390.3 BATSE#6274 STRONG,MULTIPEAK.X-RAY AFTER,IAU6683(13NO@127)
         167 65390.3 BATSE(20.46,-7.16J),X-RAY(19.72,-5.50J) (14NO@112,NOTRIG)
         167 65390.3 BATSE (X-RAY DUBIOUS,IAU6722. NO OPT VARIABLE, IAU6723)

970625    176 43993.7 KONUS (UL@46200,2900LS,MOD,15SEC,REPORTED 10/30/97)
      13 178 44002.0 PEAK(80/S,<4S) (14SA)

970627    178 79608.8 KONUS STRONG, MULTIPEAK, 20SEC (+UL@77340,STRONG,20S)
         178 79610   BEPPOSAX (13SR,14NO,NO TRIG)

970629    180 14424.  KONUS VERY SOFT(+UL@15960,STRONG. NEW SGR (SEE 970912)
      13 180 14429.0 PEAK(50/S,<2S,SOFT) (14NR)                               REP0903

970715    196 51674.3 KONUS STRONG,HARD PK@+20(+UL@54060,MOD,5S)
      13 196 51693.6 PEAK(190/S,<4S)  (14NR,NOTRIG)                           REP0903

970721    202 84667.1 KONUS(+UL@81720,MOD,10S,@3000LS)
      13 202 84671.9 PEAKS(HARD,1-SIDE,200/S,<8S),691.9(1-SIDE,240/S,<10S)    REP0903
      14 202 84672.1 PEAK (HARD,1-SIDE,470/S,<10S),692.1(1-SIDE,240/S,<10S)   REP0903
      14 202 84671.5 TRIGGER PEAK (EVT14)(84671.46)                           REP0903

970802    214 12328.2 BATSE GRB#6322,5750/2S    (13NO@32,14NO@40,GAP,NOTRIG)

970815    227 43624.4 BATSE GRB#6335,10395/2S (IAU6718 XRAYS;6721+NOOPT)
         227 43624.4 CONTINUED: 13NO@160DEG, 14NO@146DEG

  J915    258 32870.9 KONUS 25S,HARD (+UL@30900,3100LS,MOD,10S)
      14 258 32873.2 PEAK (200/S,<2S,NO TRIG) (13NO)

970919    262 65669.5 BATSE#6389 (8048/S)
```

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

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

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

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

Helio corr removed 17/2/00

Date: Mar 26 '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)? 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)?

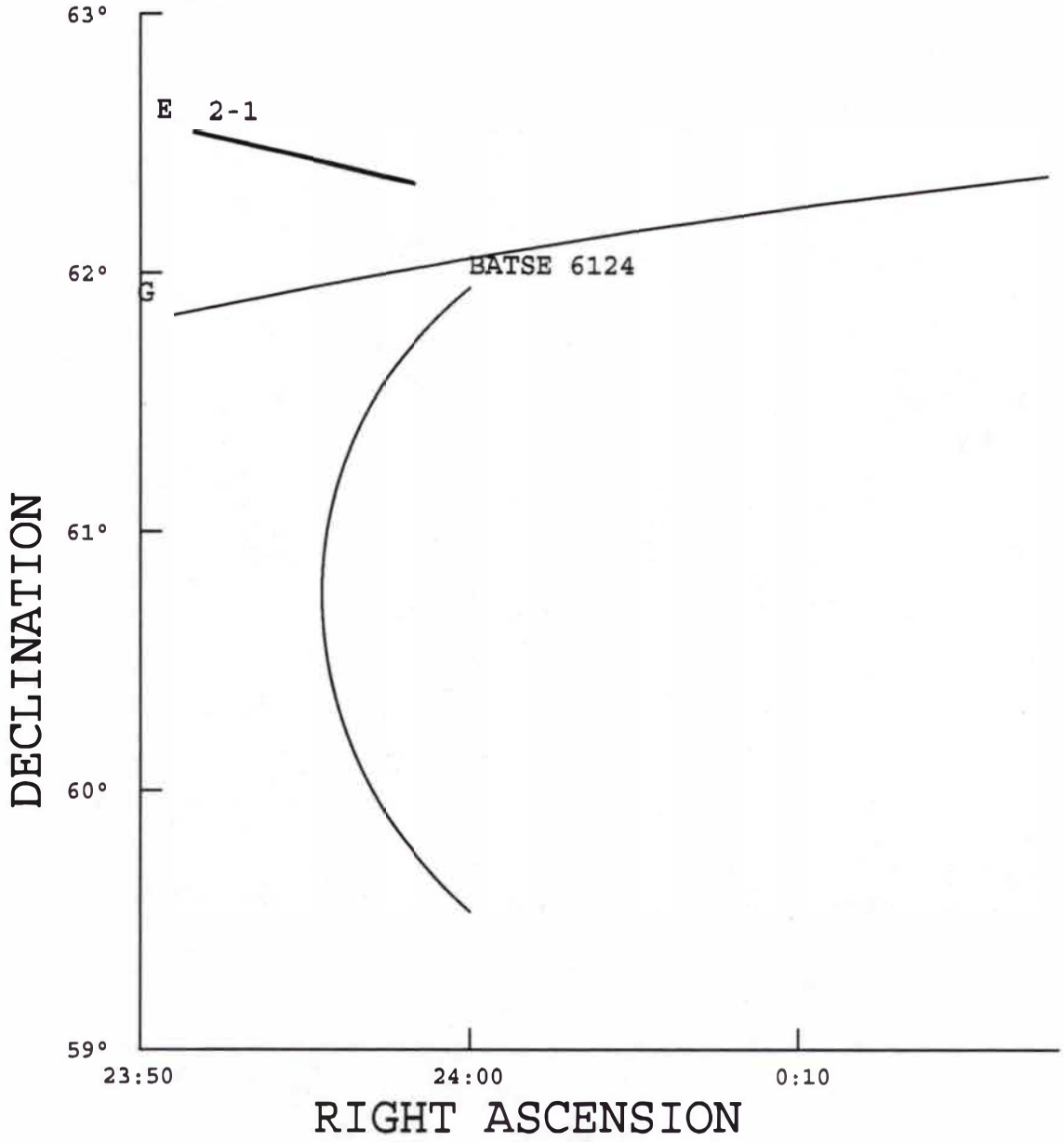
☐ 2000 coordinates used?

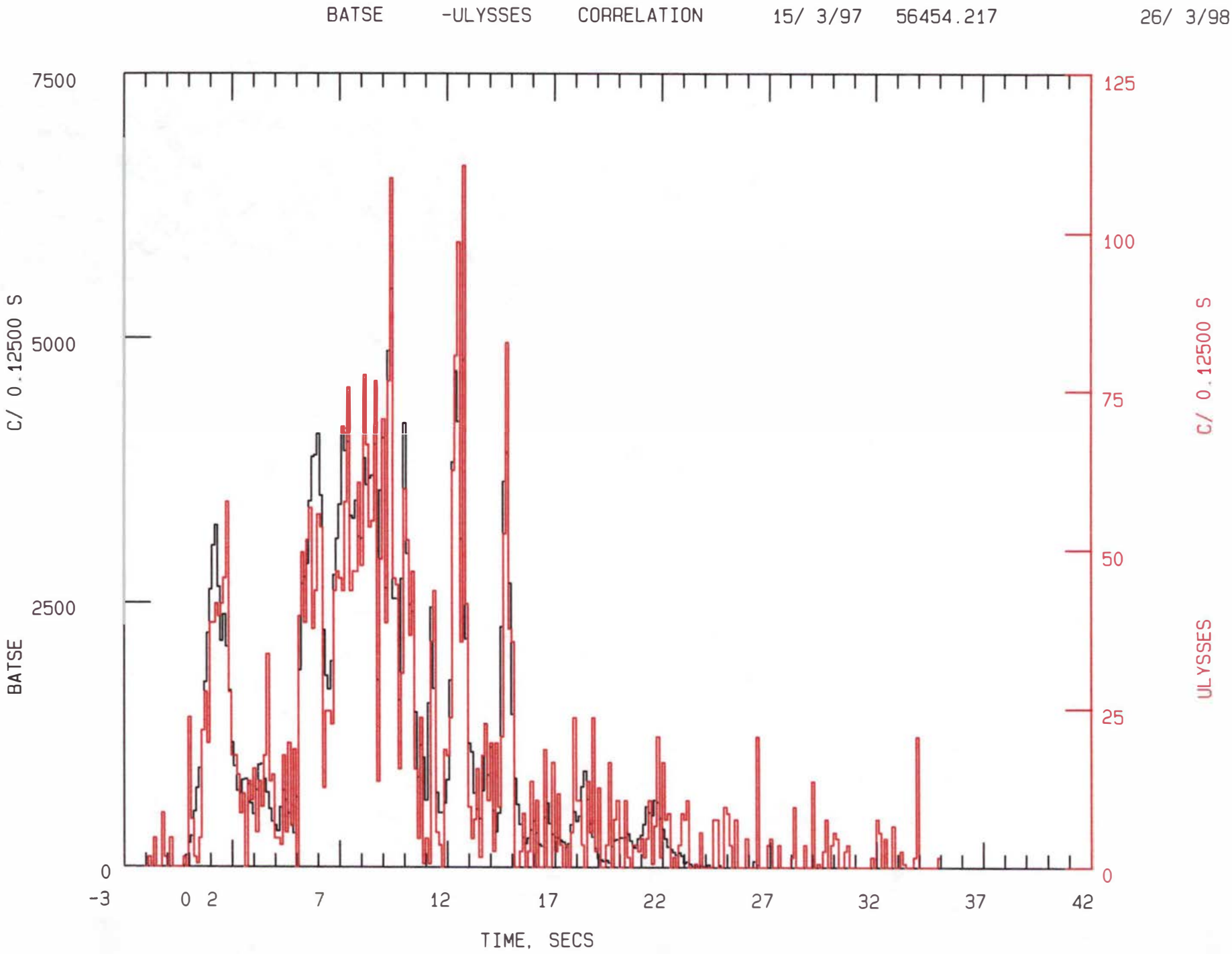
☐ Geocentric time used?

☑ ACCESS database updated?

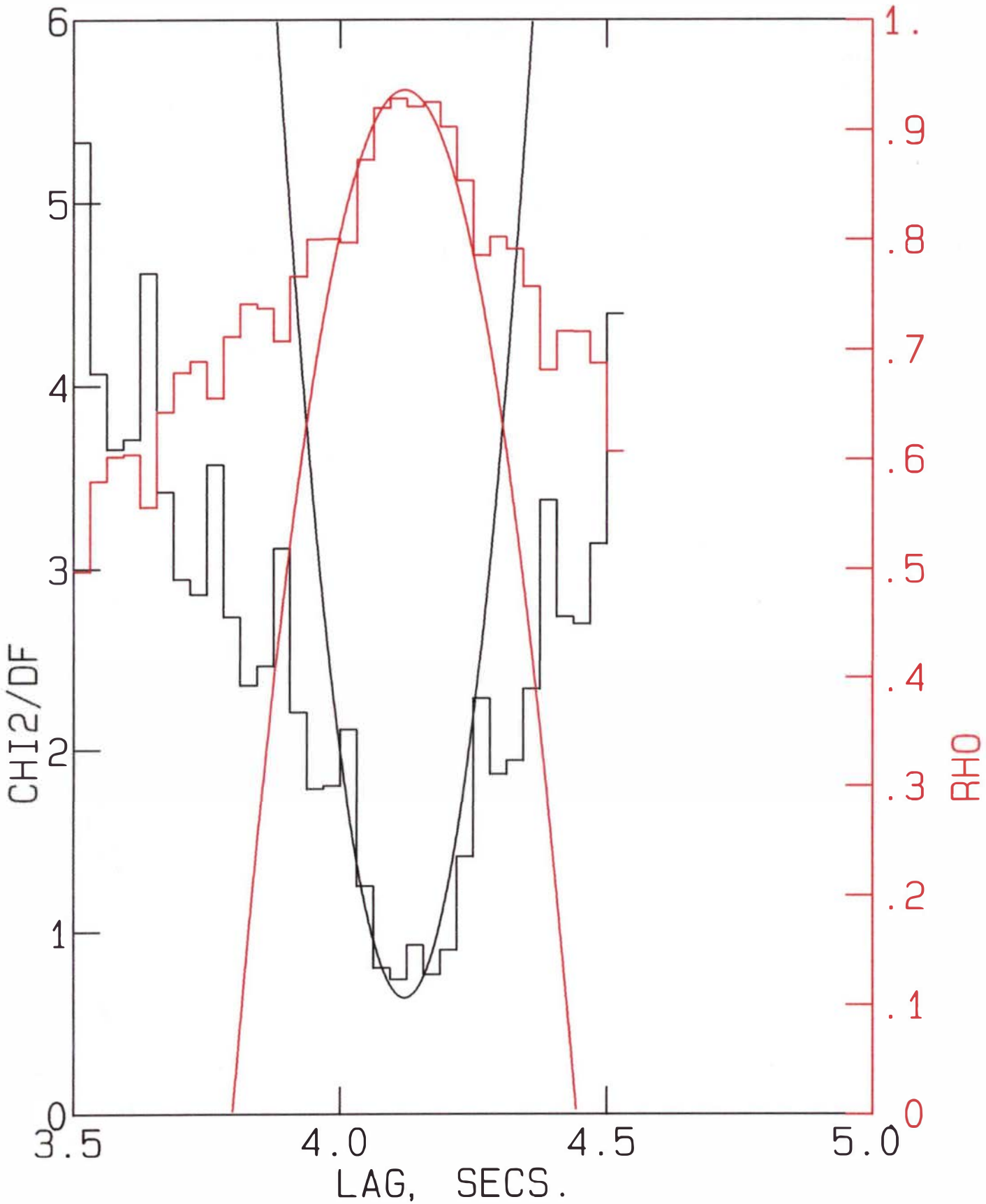
EVENT OF MAR 15, 1997 15:35

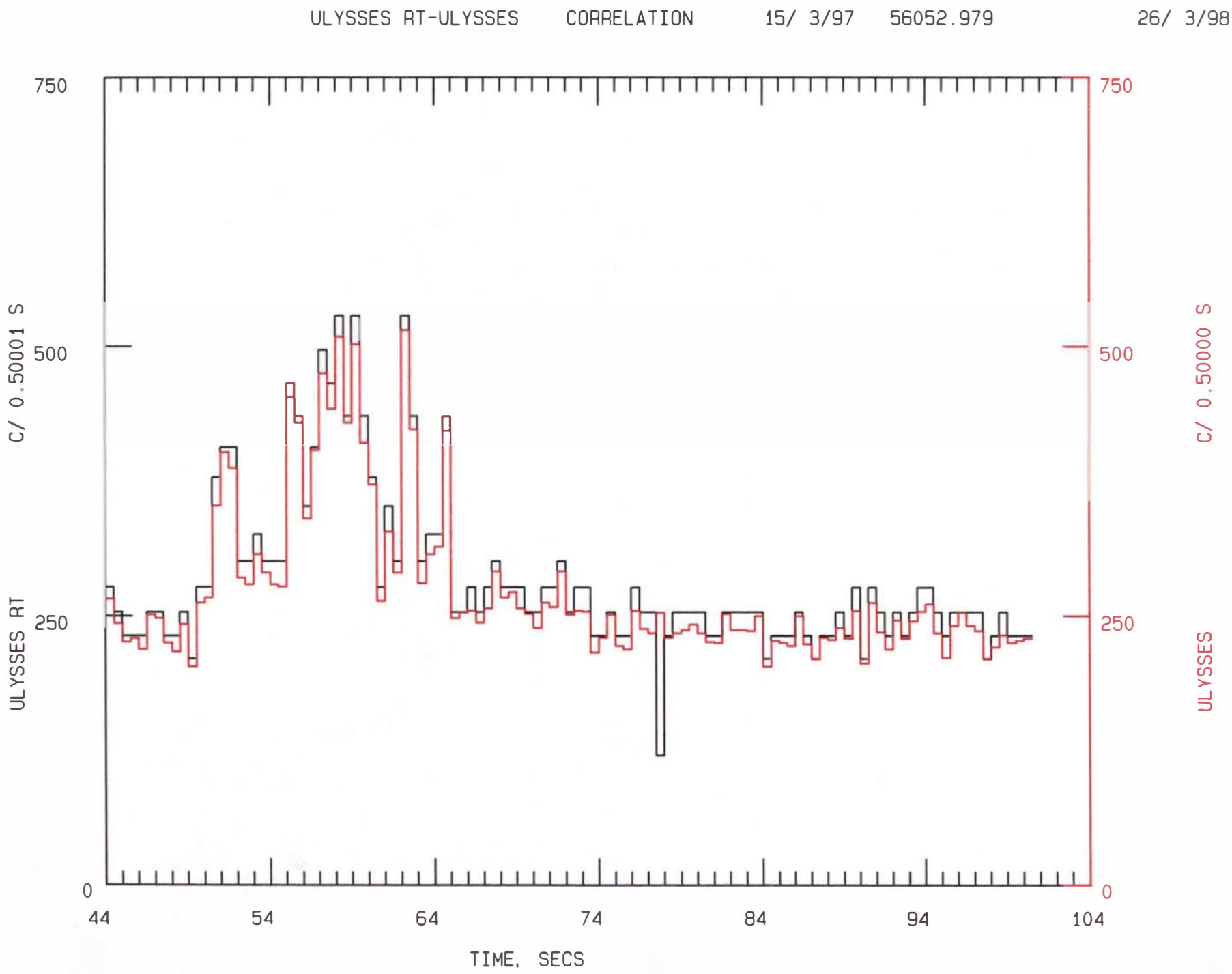
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE



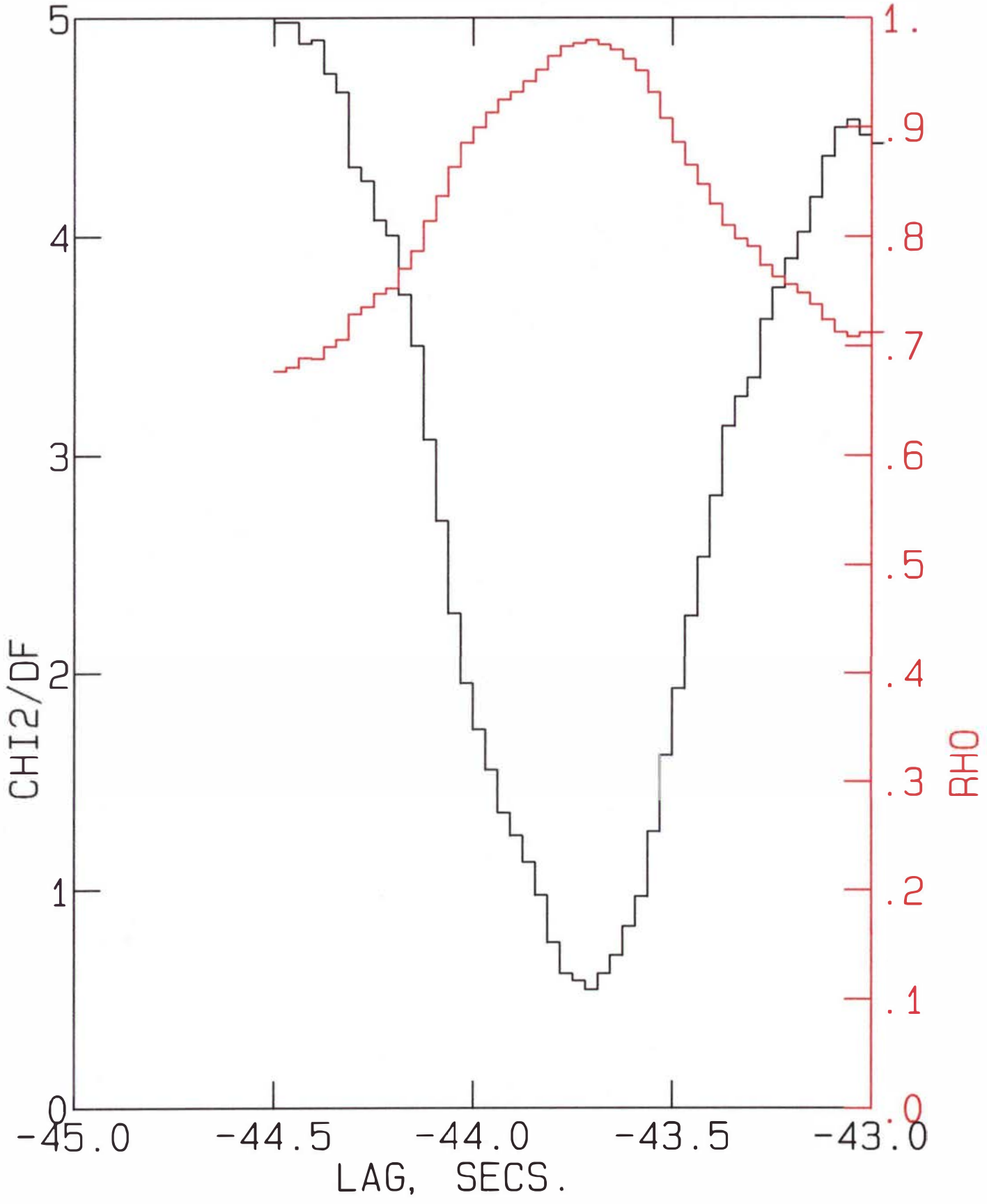

BATSE -ULYSSES CORRELATION 15/ 3/97 56454.217 26/ 3/98
7500
5000
2500
0
C/ 0.12500 S
BATSE
125
100
75
50
25
0
C/ 0.12500 S
ULYSSES
-3
0 2
7
12
17
22
27
32
37
42
TIME, SECS

BATSE -ULYSSES CORRELATION 15/ 3/97 56454.217




ULYSSES RT-ULYSSES CORRELATION 15/ 3/97 56052.979 26/ 3/98
750
500
250
0
C/ 0.50001 S
ULYSSES RT
750
500
250
0
C/ 0.50000 S
ULYSSES
44
54
64
74
84
94
104
TIME, SECS

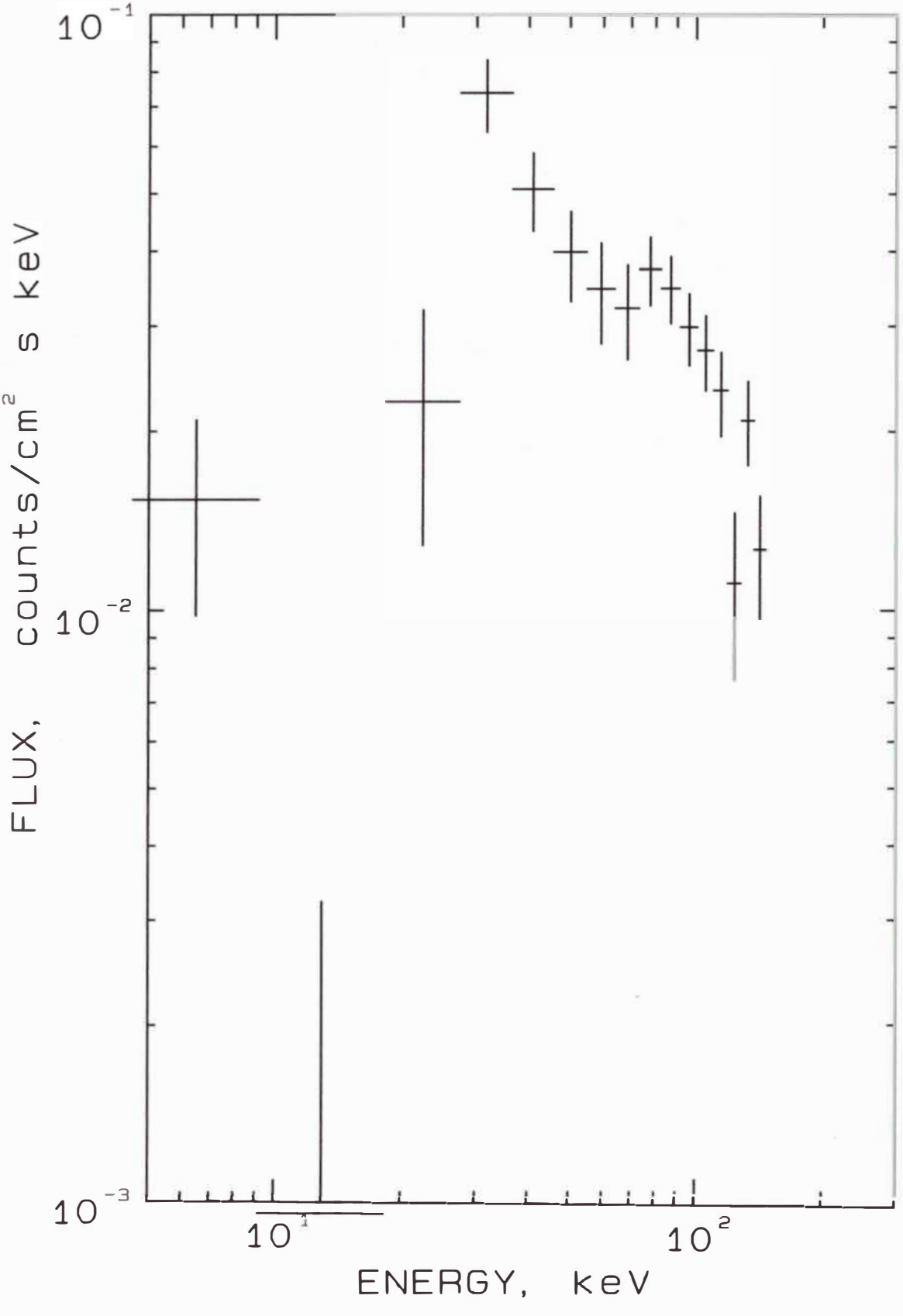
ULYSSES RT-ULYSSES CORRELATION 15/ 3/97 56052.979

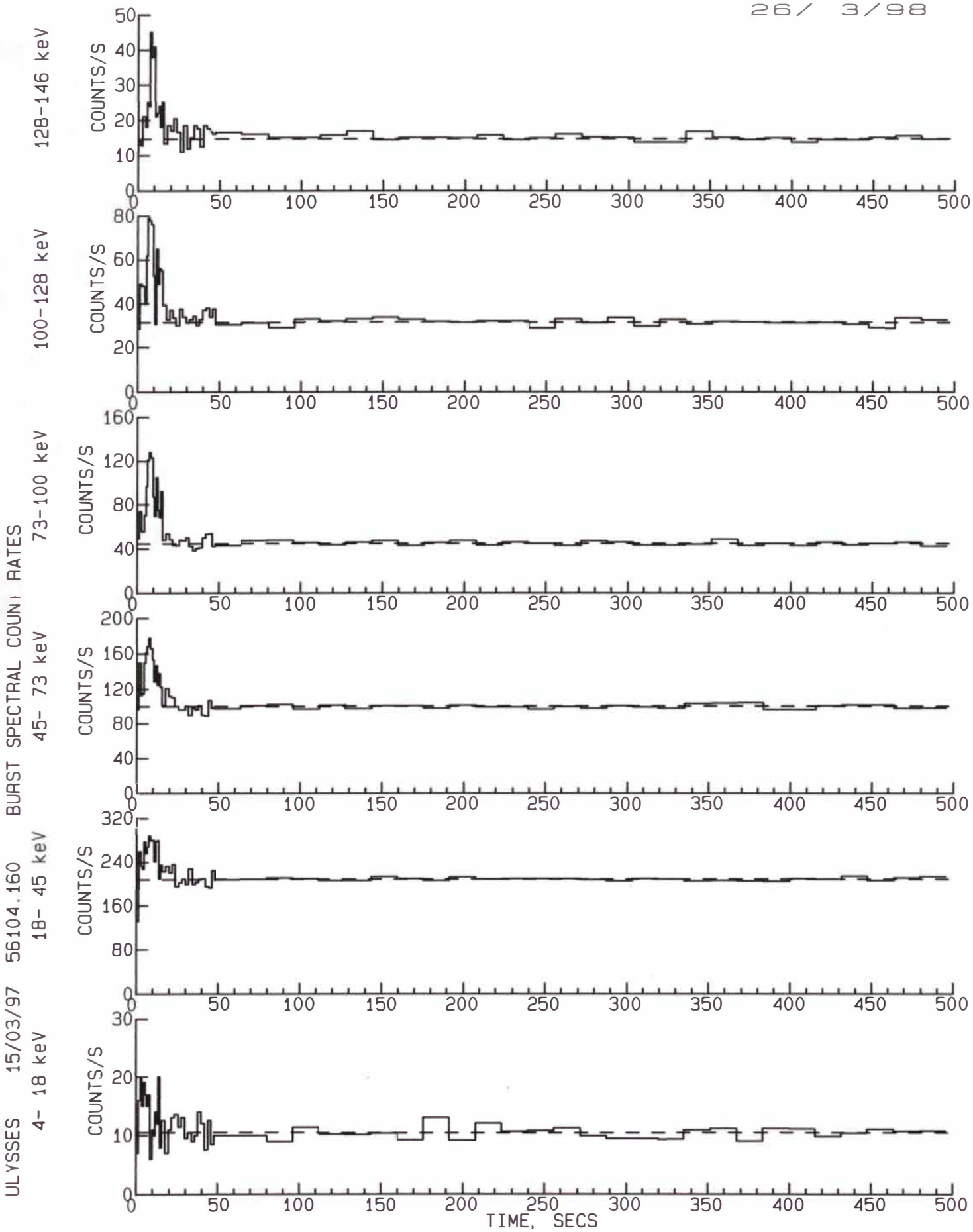


ULYSSES 15/03/97 56104.160

26/ 3/98

SPECTRUM INTEGRATED OVER 63.4 SECONDS, INTERVALS 2 TO 34




26/ 3/98
ULYSSES 15/03/97 56104.160 BURST SPECTRAL COUNT RATES
4- 18 keV
18- 45 keV
45- 73 keV
73-100 keV
100-128 keV
128-146 keV
COUNTS/S
TIME, SECS

ULYSSES 15/03/97 Ttrig=56104.092

22- 147 keV

COUNTS/0.031 S

COUNTS/0.125 S

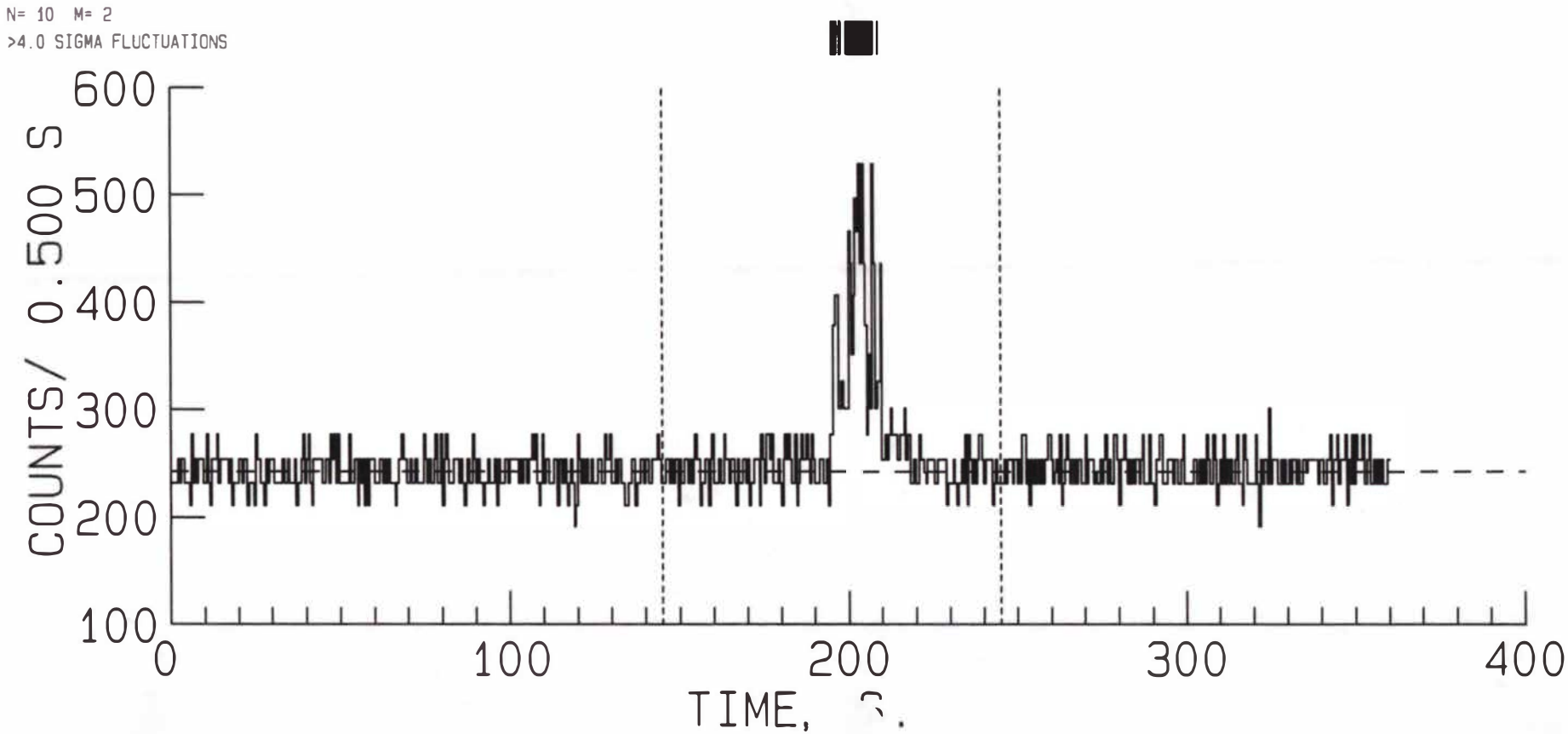
26/ 3/**

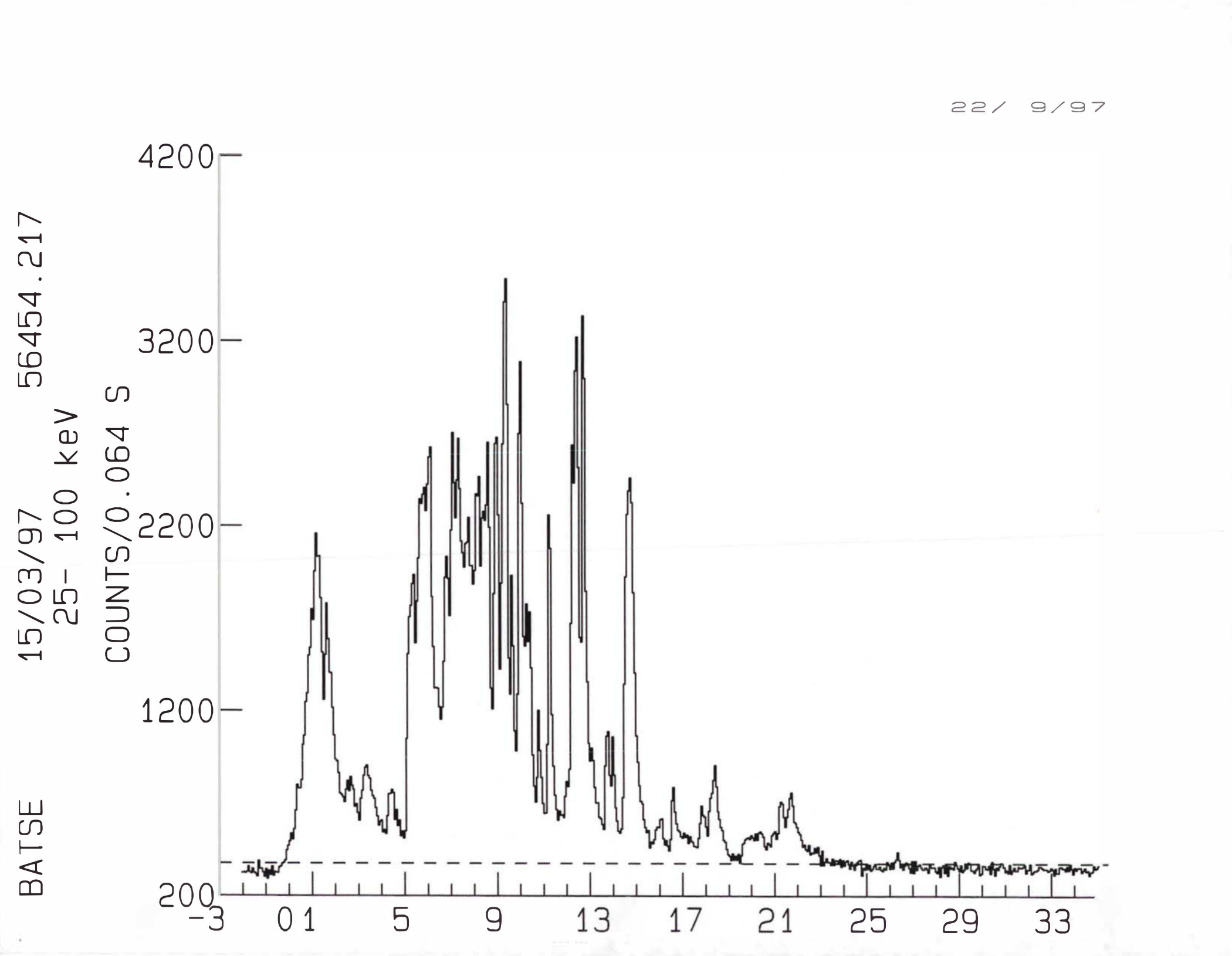
ULYSSES RT

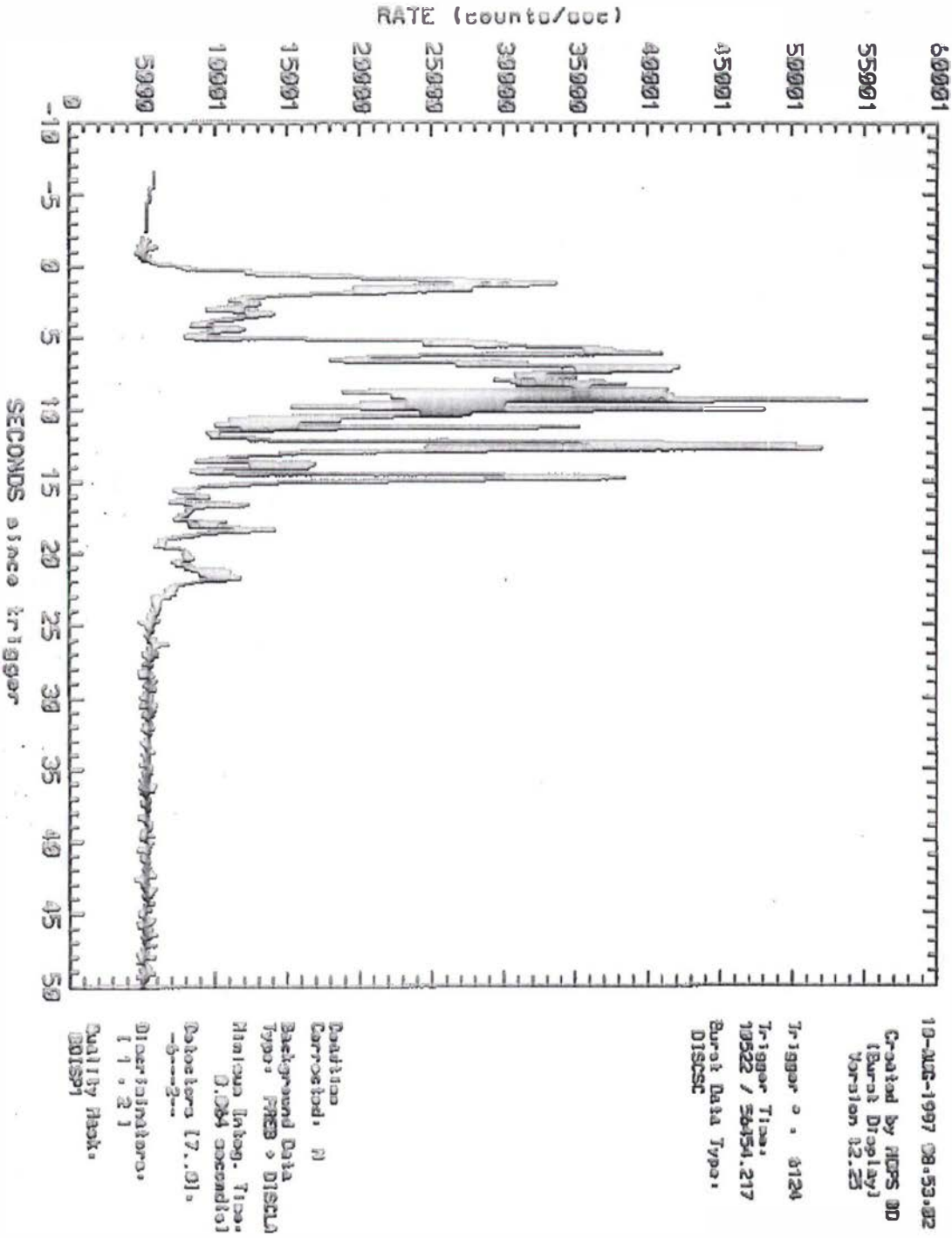
26/ 3/98

15/ 3/97 55908.058 s

22- 147 keV




22/ 9/97
BATSE 15/03/97 56454.217
25- 100 keV
COUNTS/0.064 S
4200
3200
2200
1200
200
-3
01
5
9
13
17
21
25
29
33


DISCSC Data for K. Hurley, No. 6124
RATE (counts/sec)
60001
55001
50001
45001
40001
35000
30000
25000
20000
15001
10001
5000
0
-10 -5 0 5 10 15 20 25 30 35 40 45 50
SECONDS since trigger
10-AUG-1997 08:53:02
Created by RDPS UD
(Burst Display)
Version 12.23
Trigger # : 6124
Trigger Time:
19522 / 56454.217
Burst Data Type:
DISCSC
Position
Corrected: N
Background Data
Type: PREB > DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
-6---2--
Discriminators:
[1 . 2]
Quality Mask:
0010P1

KONUS

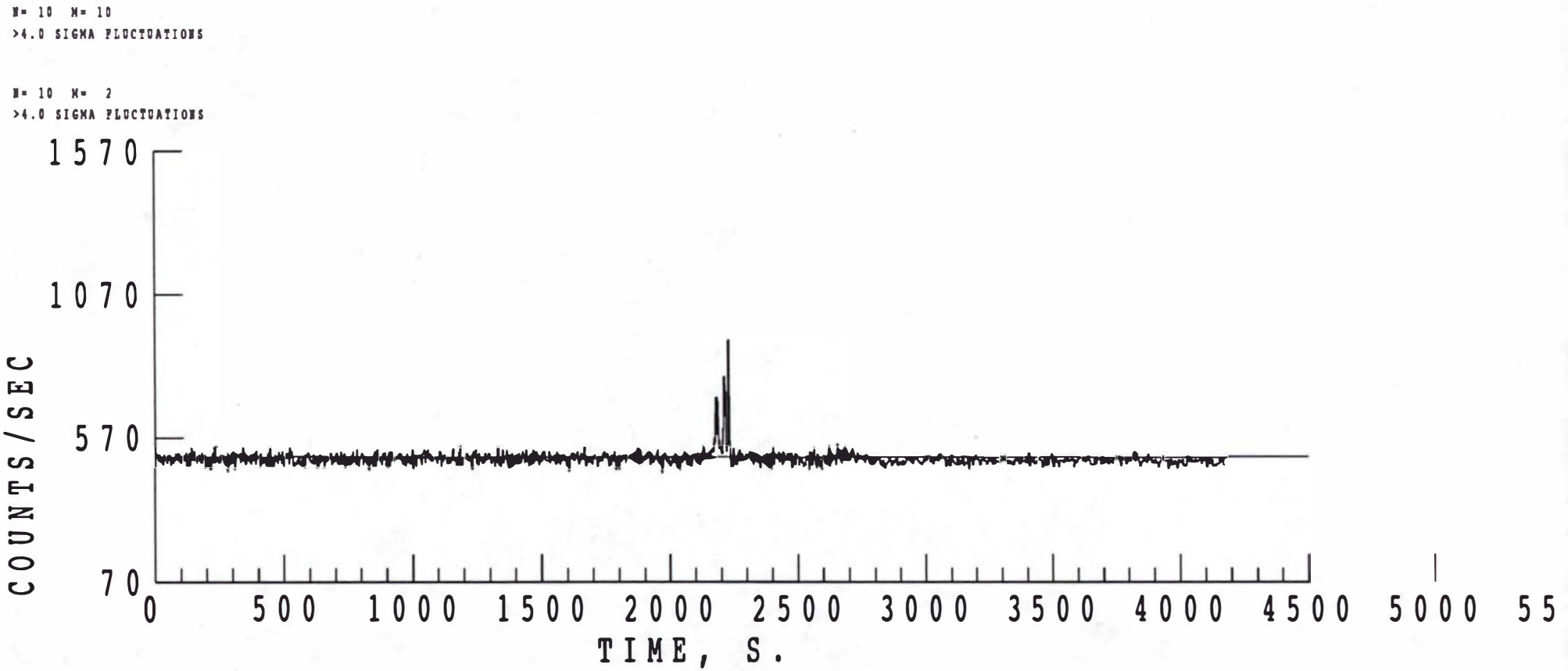
ULYSSES RT

04/02/00

15/03/97 77688.062 s

INTERVALS REGROUPED BY 10

0- 0 keV



Date: Jan 7 '10

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

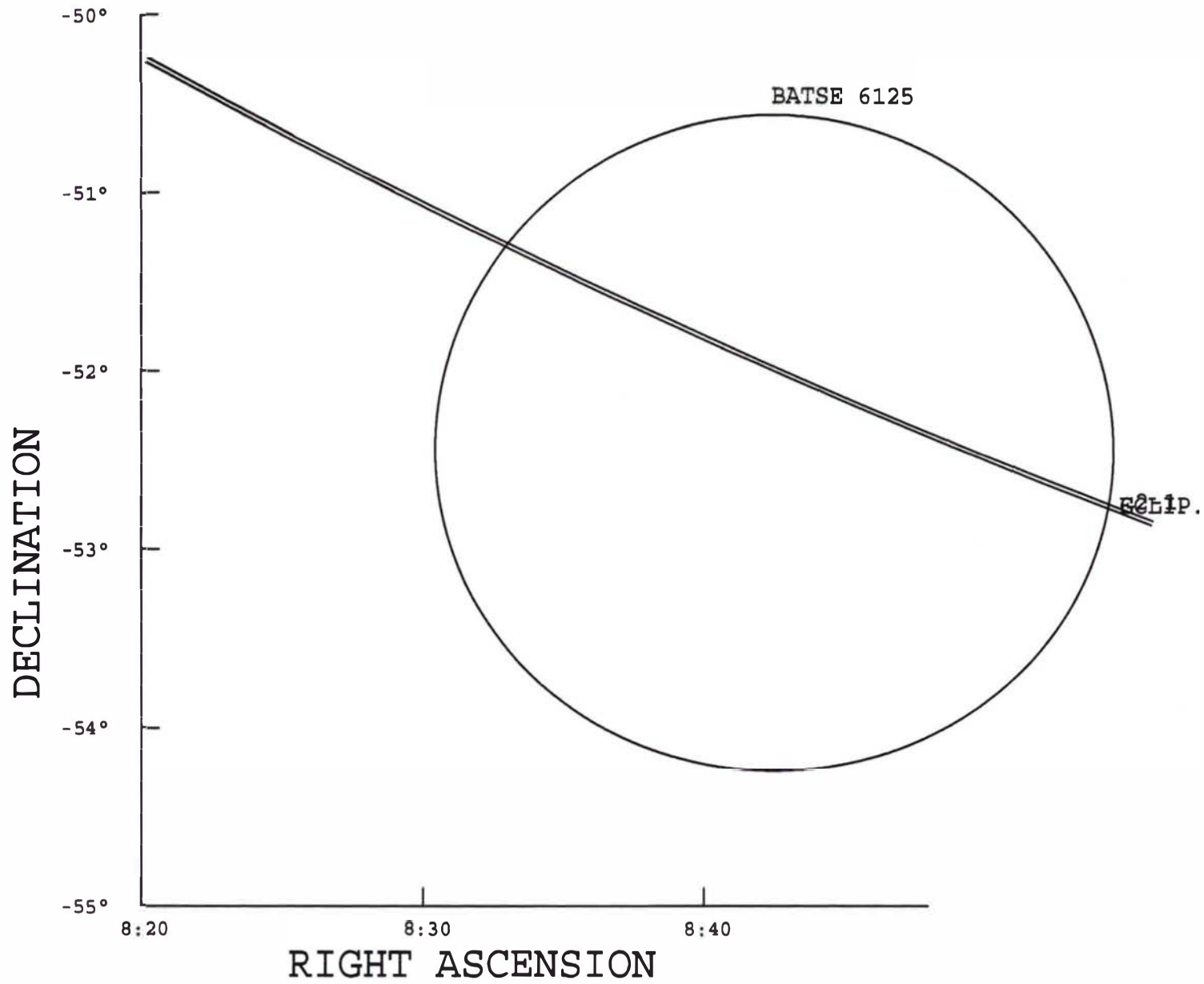
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

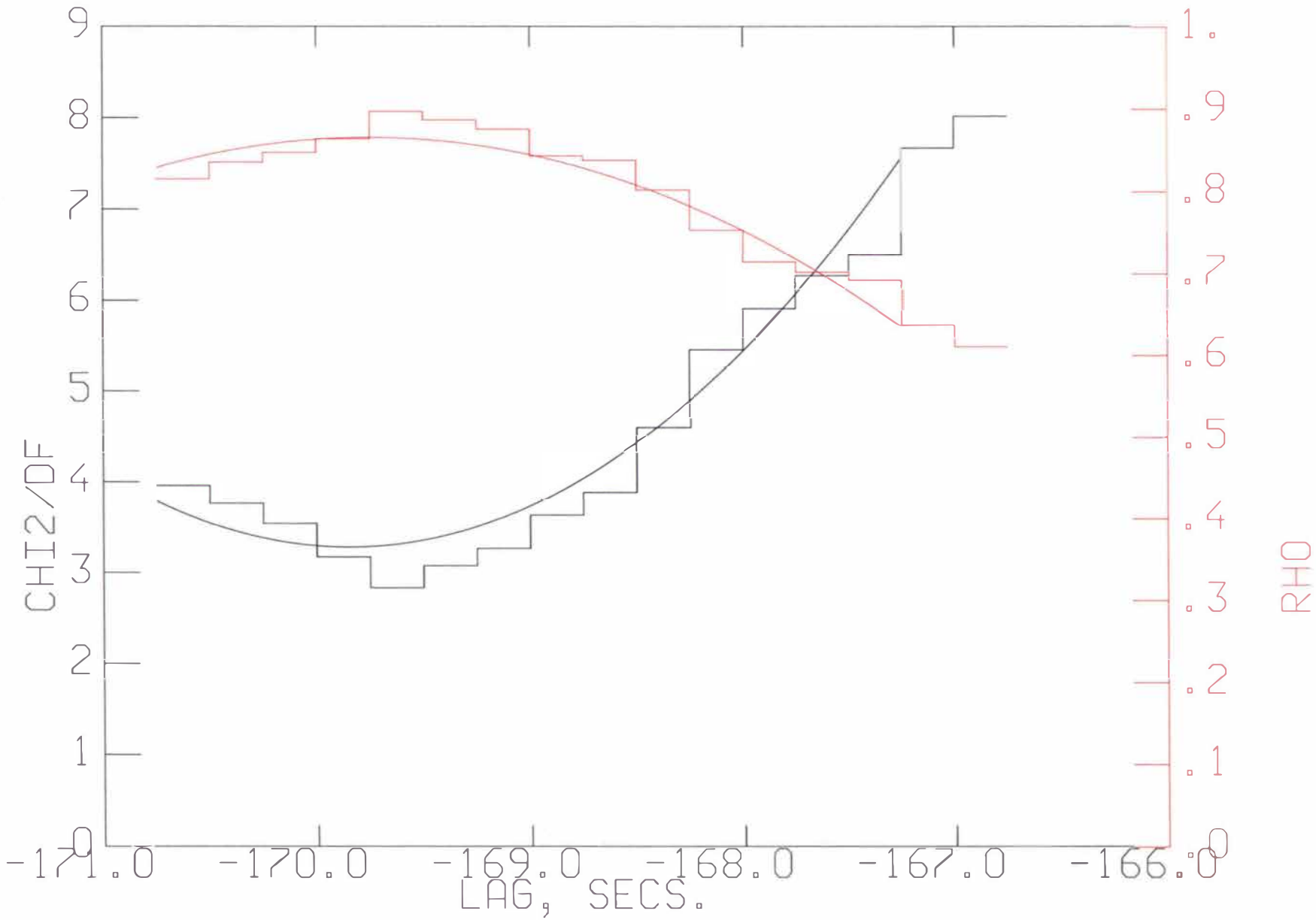
EVENT OF MAR 15, 1997 22:10

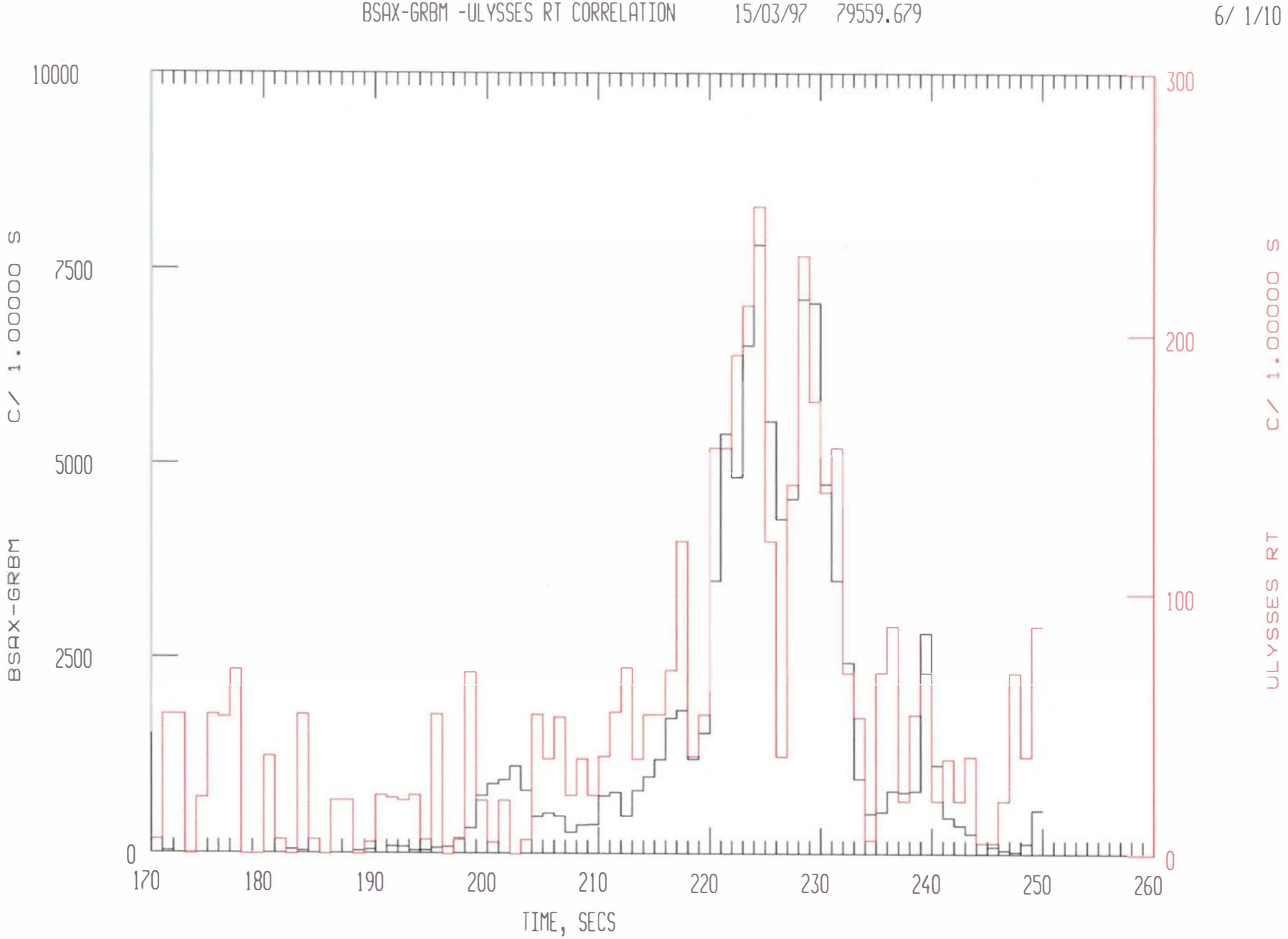
6/ 1/10

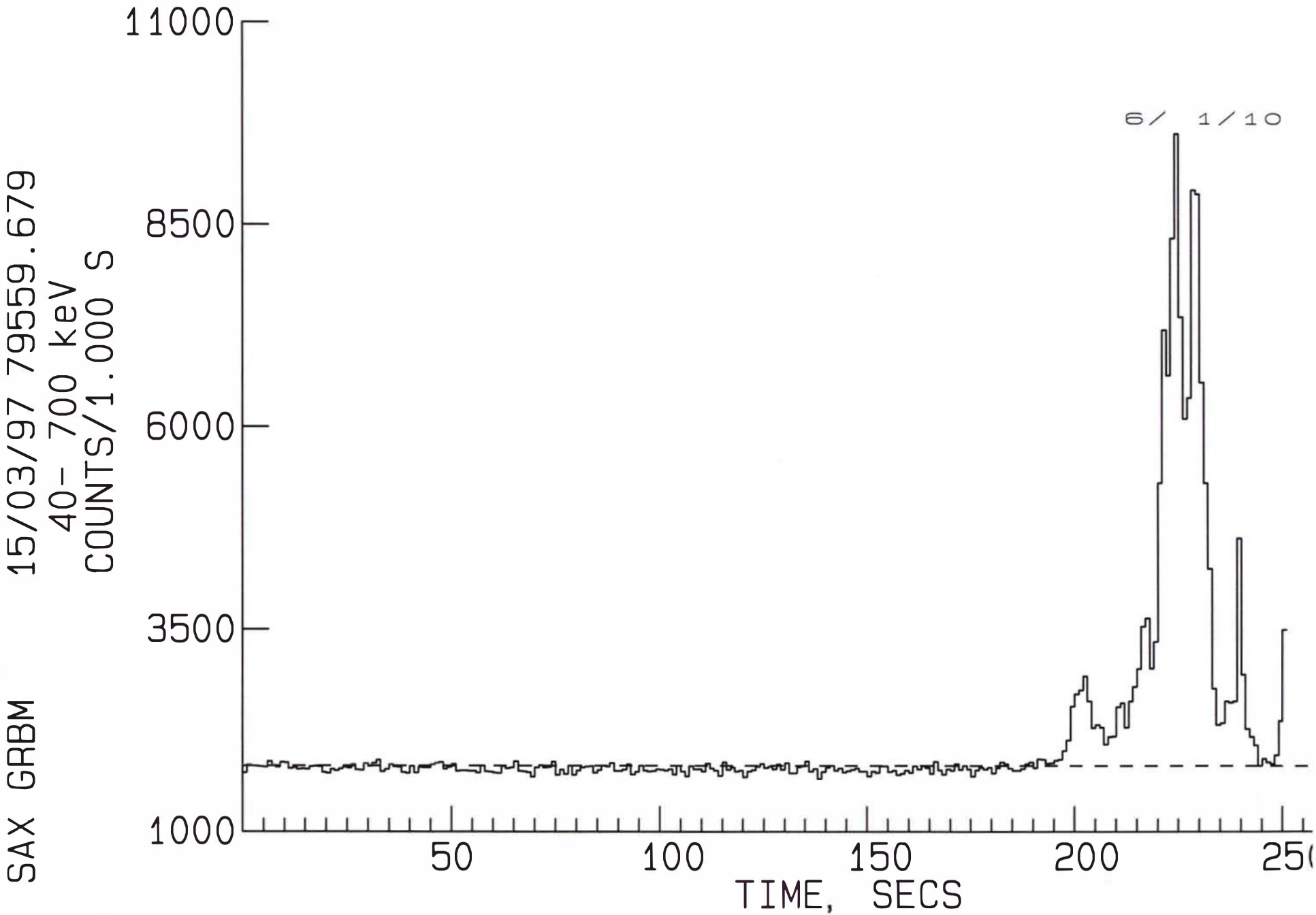
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 SAX



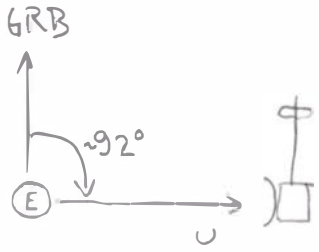
BSAX-GRBM -ULYSSES RT CORRELATION 15/03/97 79559.679




BSAX-GRBM -ULYSSES RT CORRELATION 15/03/97 79559.679
BSAX-GRBM
C/ 1.00000 S
ULYSSES RT
C/ 1.00000 S
10000
7500
5000
2500
0
300
200
100
0
170
180
190
200
210
220
230
240
250
260
TIME, SECS


SAX GRBM
15/03/97 79559.679
40- 700 keV
COUNTS/1.000 S
11000
8500
6000
3500
1000
6/ 1/10
50
100
150
200
TIME, SECS

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Mar 18 06:59 PST 1997
Return-Path: <RICHARDSON@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id GAA03252; Tue, 18 Mar 1997 06:59:27 -0800
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Tue, 18 Mar 1997 8:58:37 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970318085837.20a03f07@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6125
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO



Probably S/C occulted

****
BATSEARCH PROGRAM
****

BATSE BURST # 6125
EVENT OF 1997 MAR 15 DAY OF YEAR= 74
EVENT CROSSING TIME AT BATSE : 80022. S. OR 22:13:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 131.000 -52.000 130.62, -52.4
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 3/ 97 IS:
RA= 160.216 DEC= 36.710 DIST= 4.096 AU
BATSE-ULYSSES DISTANCE = 612762913. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.69 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 82.33 SECS.
CROSSING TIME AT ULYSSES IS 80104. S. OR 22:15:04 +/- 405.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 3/ 97 IS:
RA= 179.359 DEC= 4.345 DIST= 0.663 AU
MARS-BATSE DISTANCE = 99180616. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=110.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -115.20 SECS.
CROSSING TIME AT MARS IS 79907. S. OR 22:11:46 +/- 52.09 SECONDS

BATSE BURST TRIGGER
NO.: 6125

TIME: TJD=0522 SECONDS=80022

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=77.7 AZIMUTH=94.2 ERROR=1.0 DEGREES

COMMENTS:
GRB. FOUR PULSES. FIRST AT ~T WITH DUR.~120SEC. SECOND AT ~T+230SEC. WITH DUR~
200SEC. THIRD AT ~T+480SEC. WITH DUR.~70SEC. FOURTH AT ~T+1230SEC. WITH DUR.~
120SEC. TOTAL DUR.~ 1350SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6125	970315	10522	80022	4000	131	-52	1350

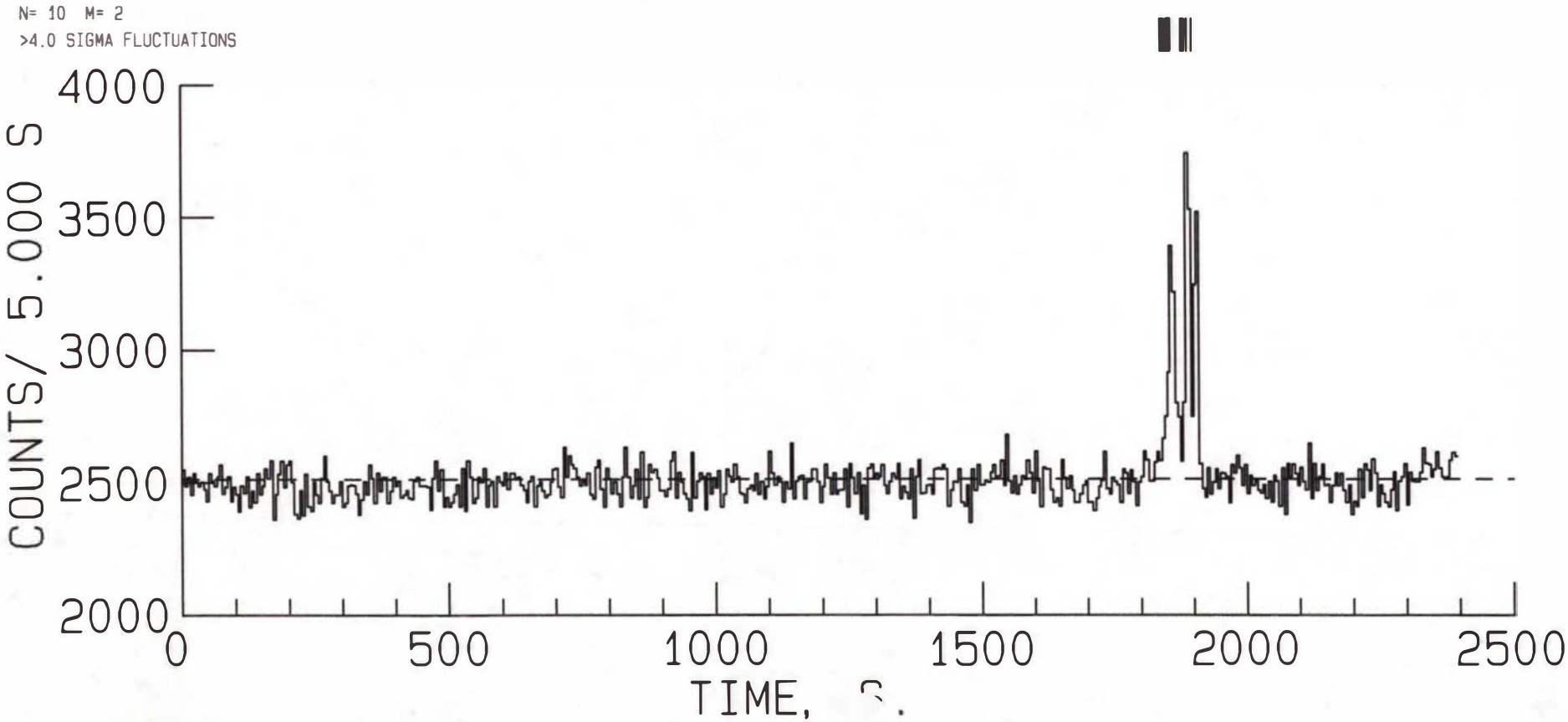
ULYSSES RT

10/10/97

15/ 3/97 78012.071 s

0.250 S INTERVALS REGROUPED BY 20

22- 147 keV



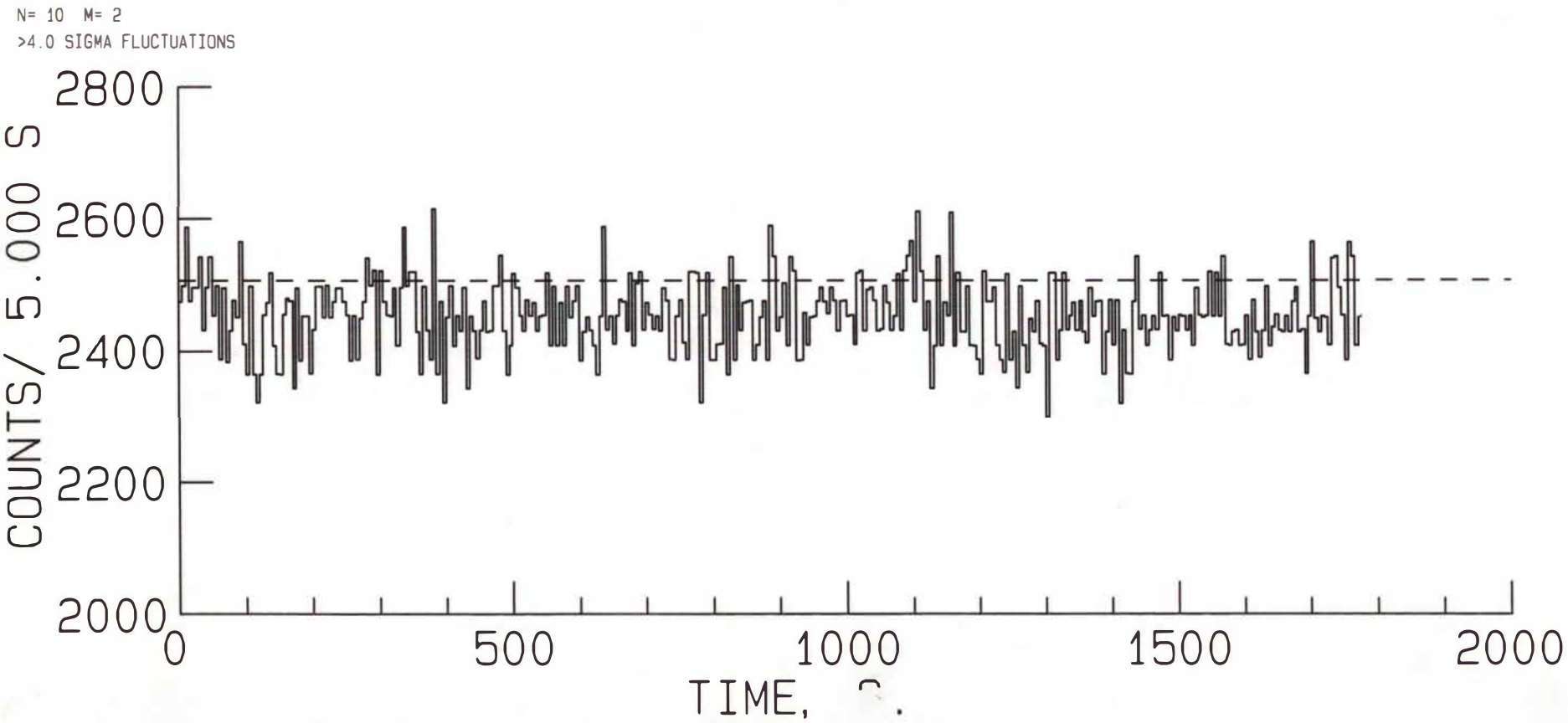
ULYSSES RT

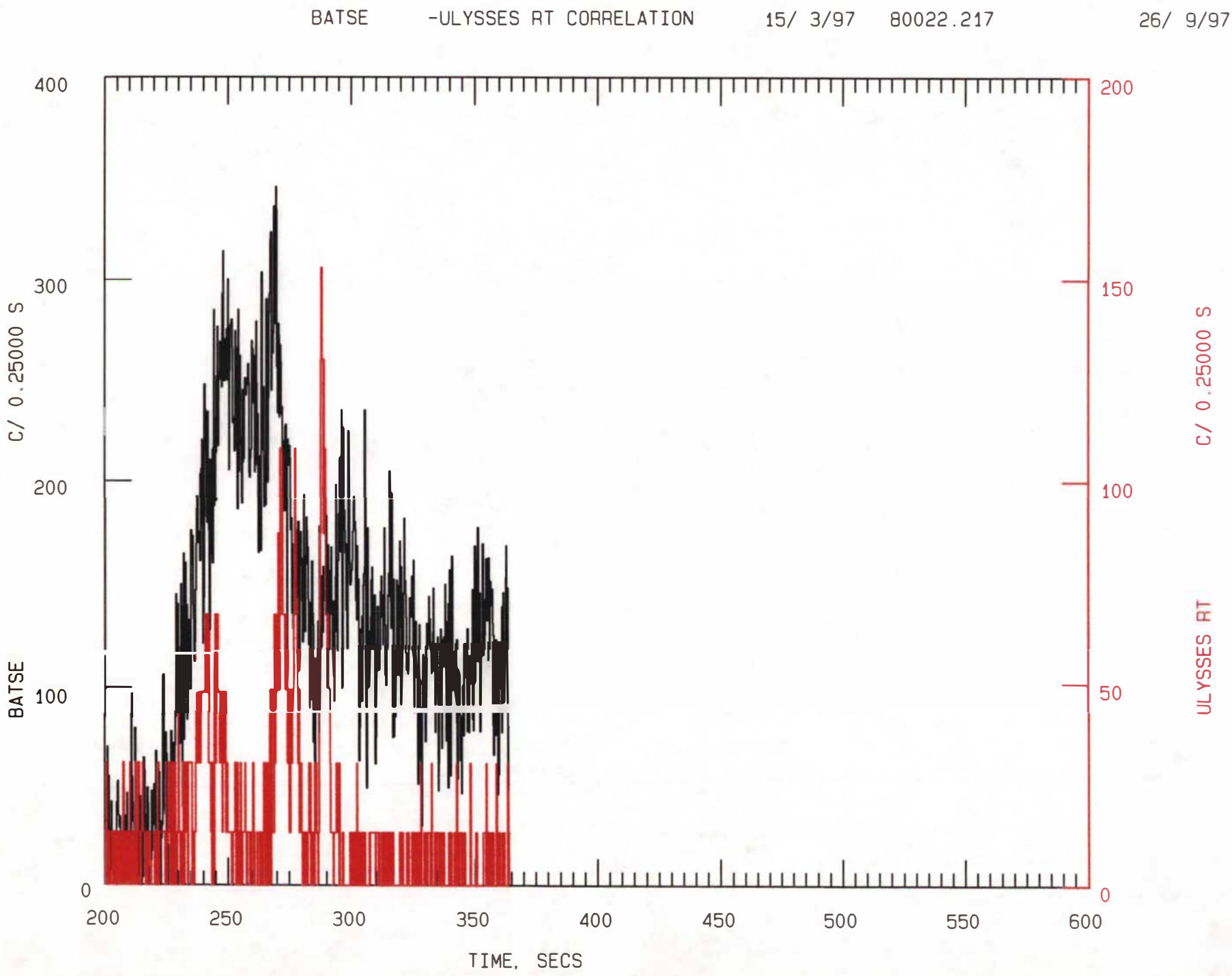
10/10/97

15/ 3/97 80409.848 s

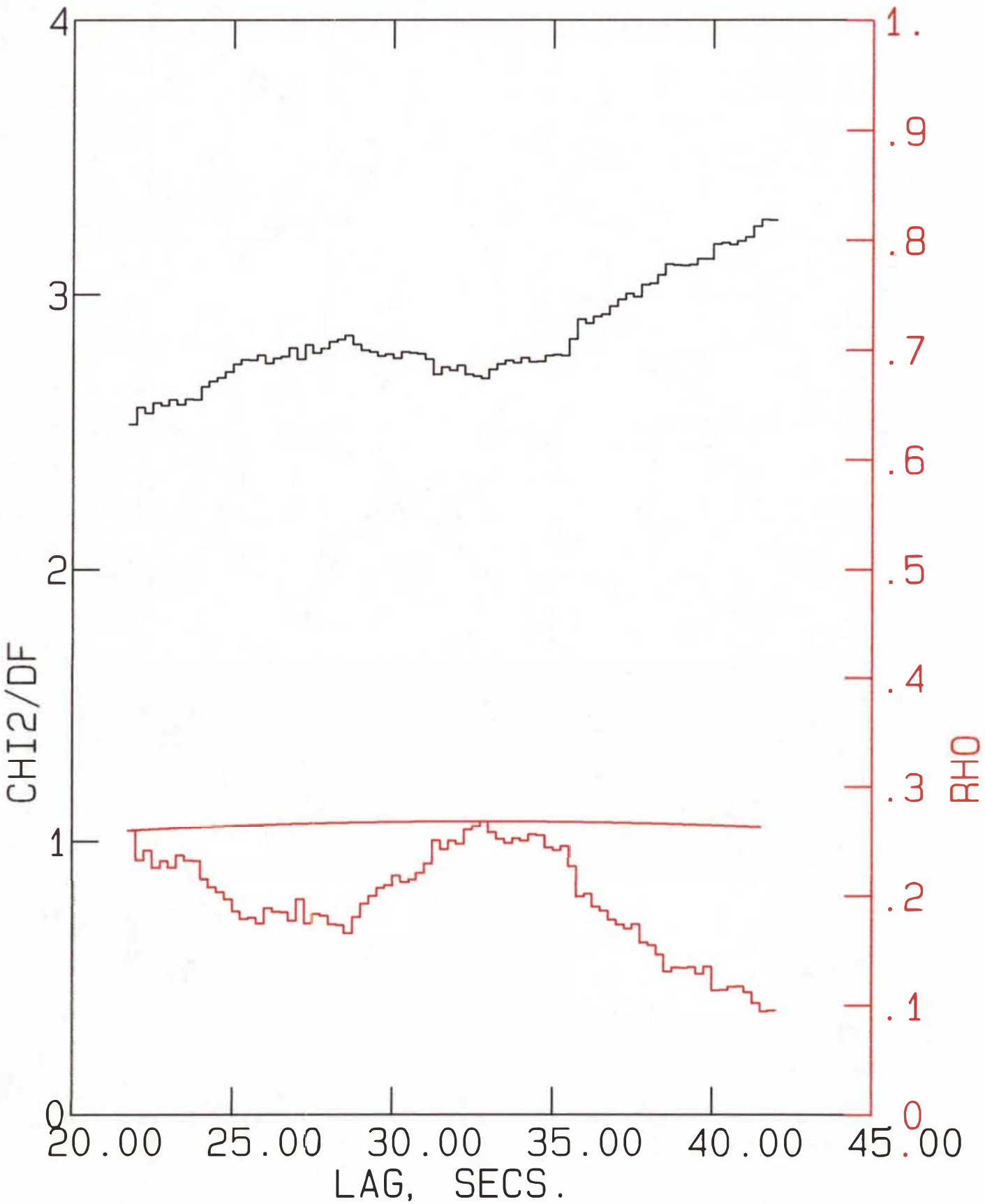
0.500 S INTERVALS REGROUPED BY 10

22- 147 keV

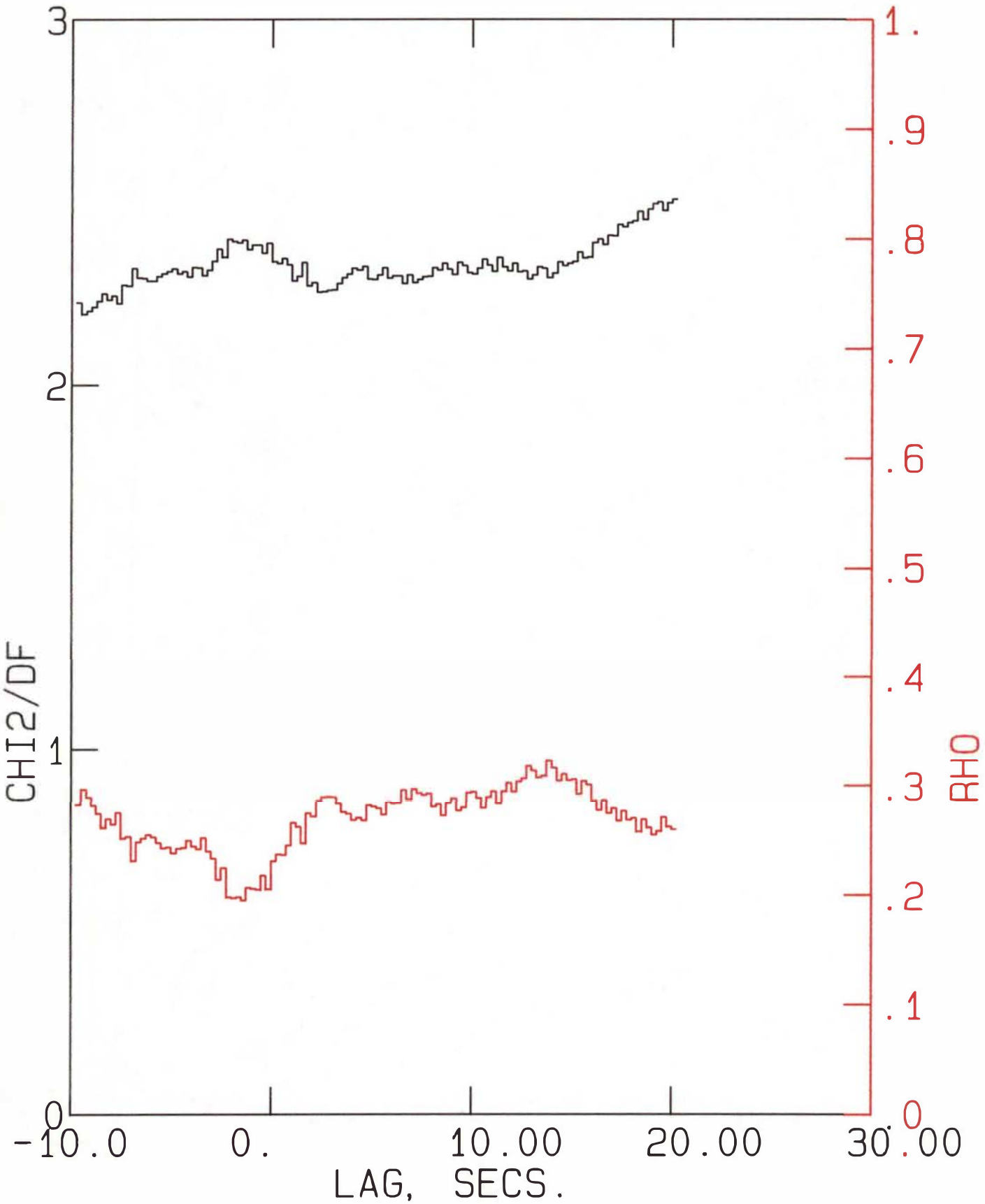


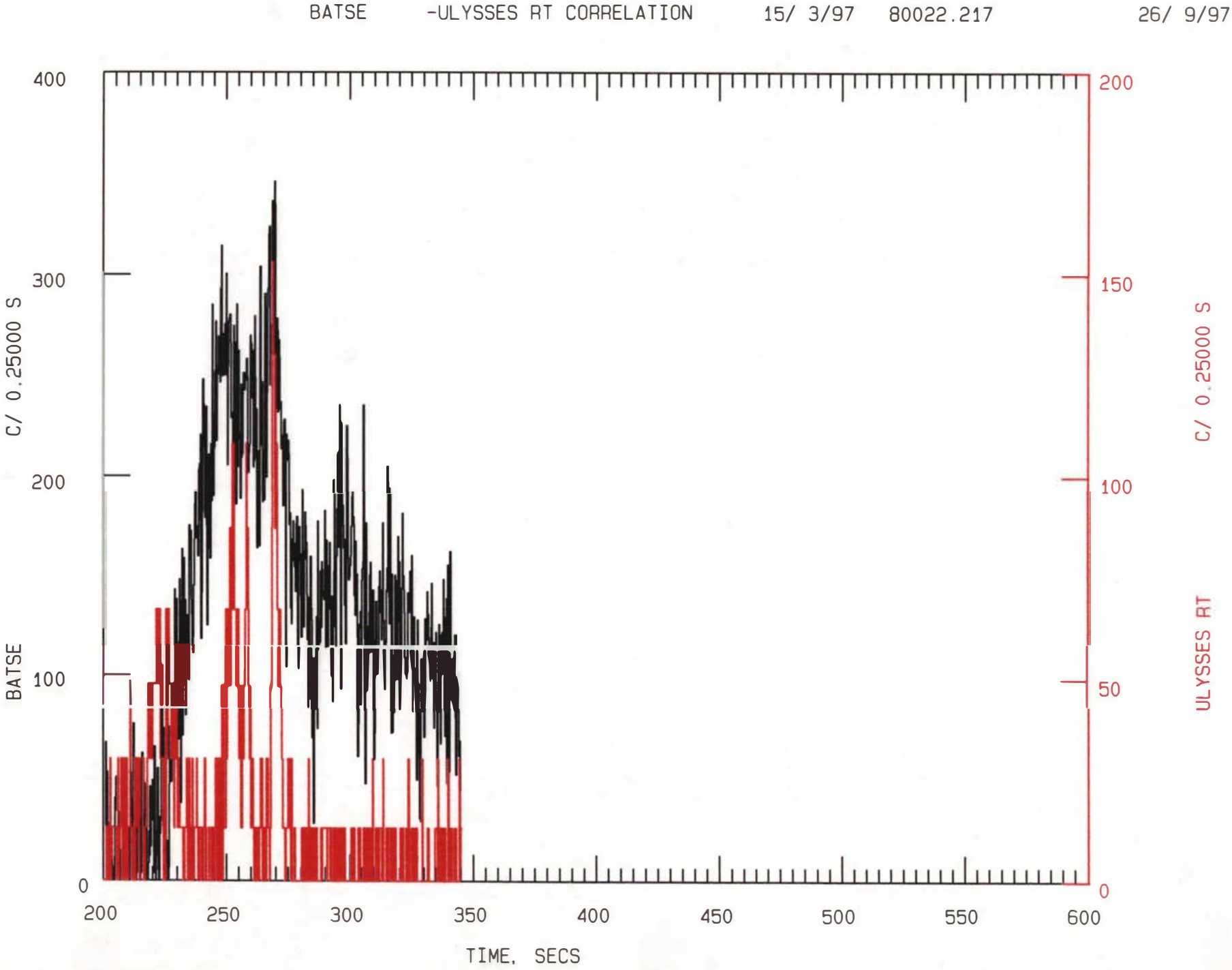

BATSE -ULYSSES RT CORRELATION 15/ 3/97 80022.217 26/ 9/97
400
300
200
100
0
C/ 0.25000 S
BATSE
200
150
100
50
0
C/ 0.25000 S
ULYSSES RT
200
250
300
350
400
450
500
550
600
TIME, SECS

BATSE -ULYSSES RT CORRELATION 15/ 3/97 80022.217



BATSE -ULYSSES RT CORRELATION 15/ 3/97 80022.217



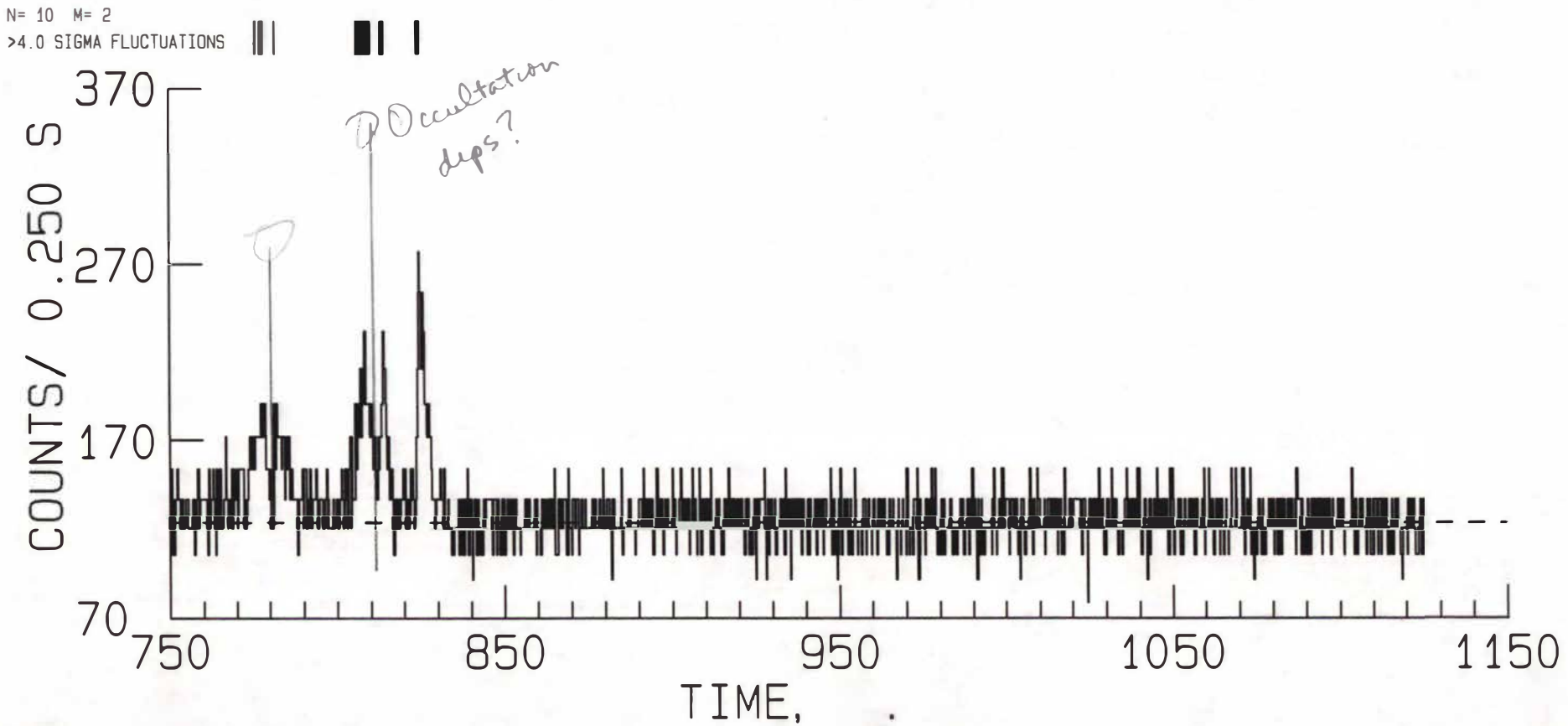

BATSE -ULYSSES RT CORRELATION 15/ 3/97 80022.217 26/ 9/97
400
300
200
100
0
C/ 0.25000 S
BATSE
200
150
100
50
0
C/ 0.25000 S
ULYSSES RT
200
250
300
350
400
450
500
550
600
TIME, SECS

ULYSSES RT

9/10/97

15/ 3/97 79092.083 s

22- 147 keV

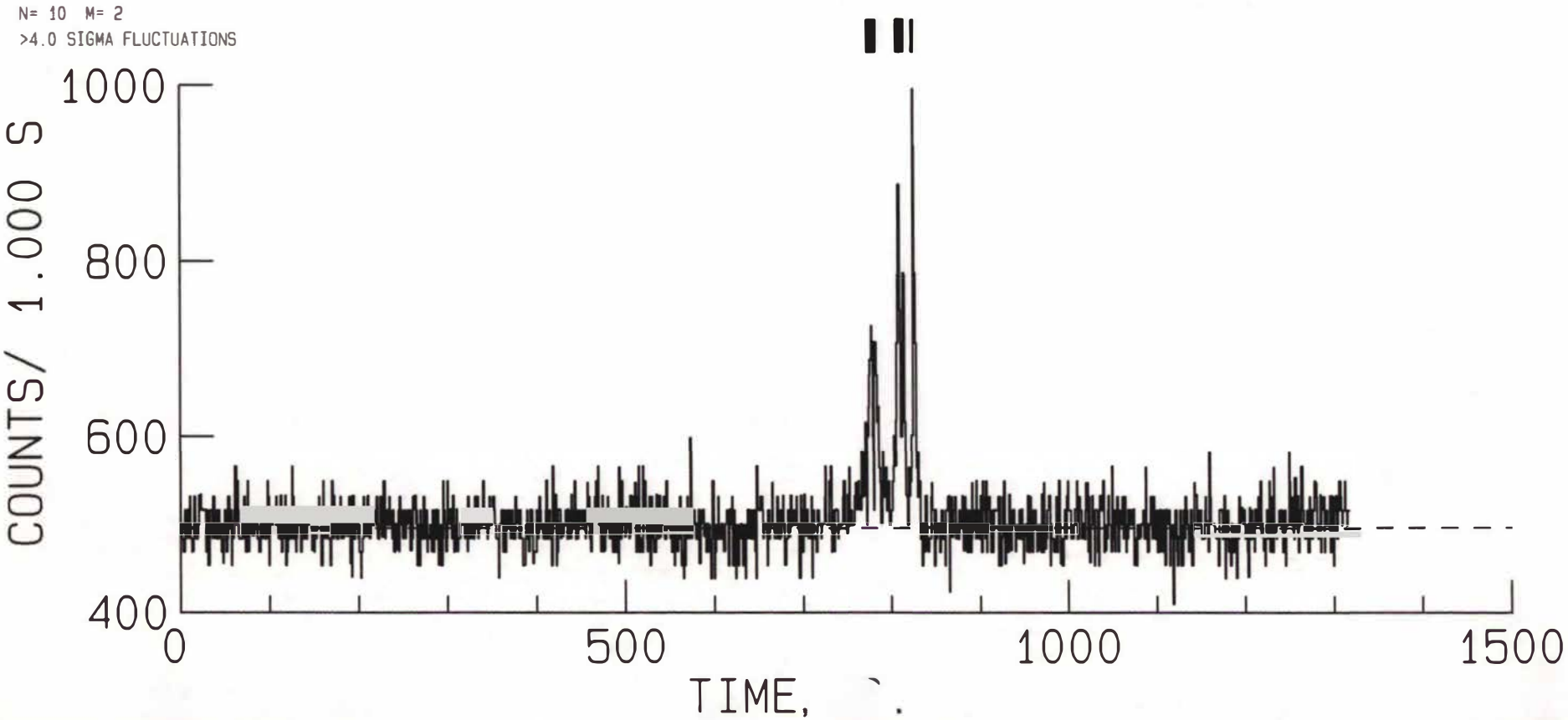


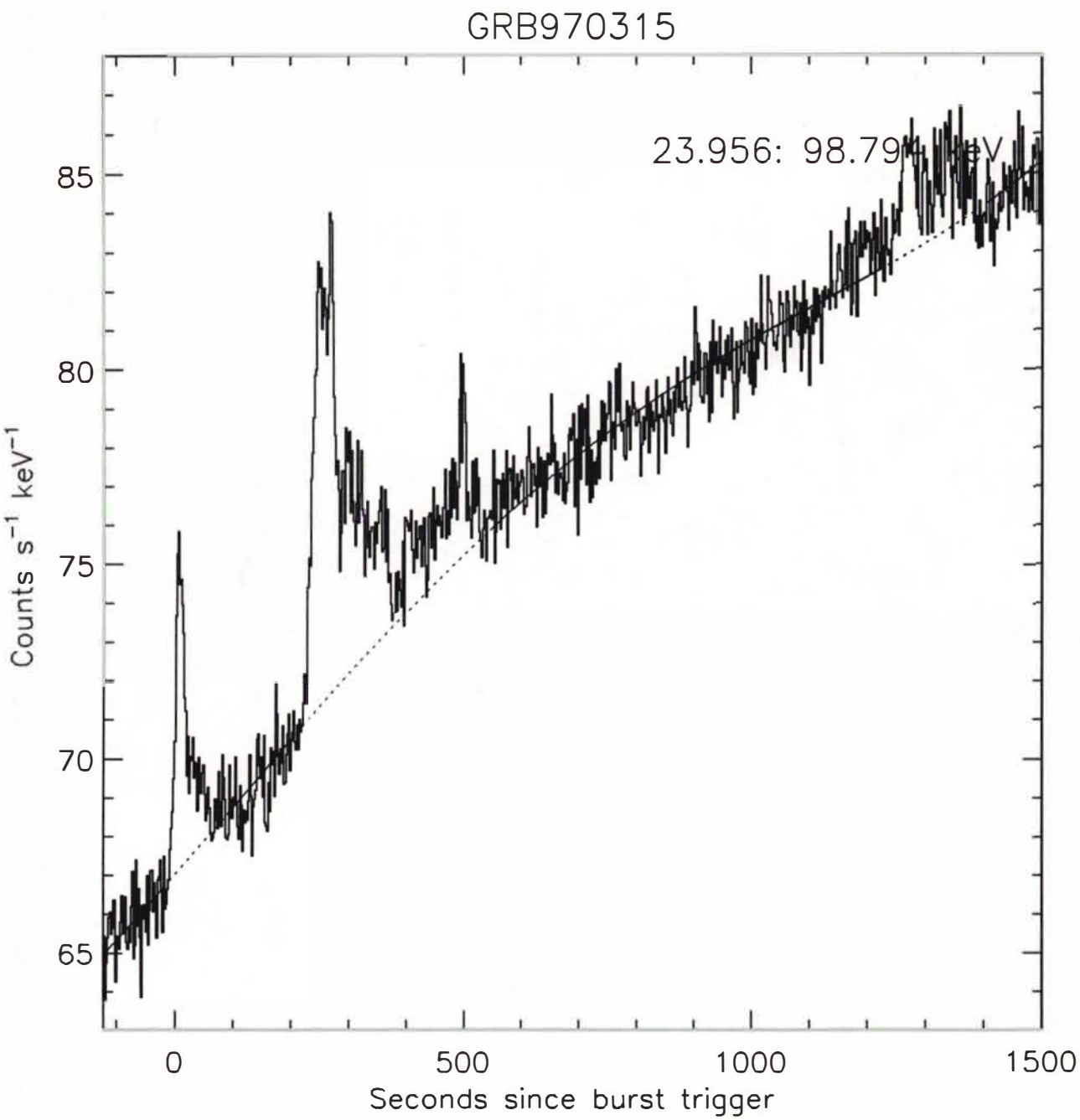
ULYSSES RT 26/ 9/97

15/ 3/97 79092.083 s

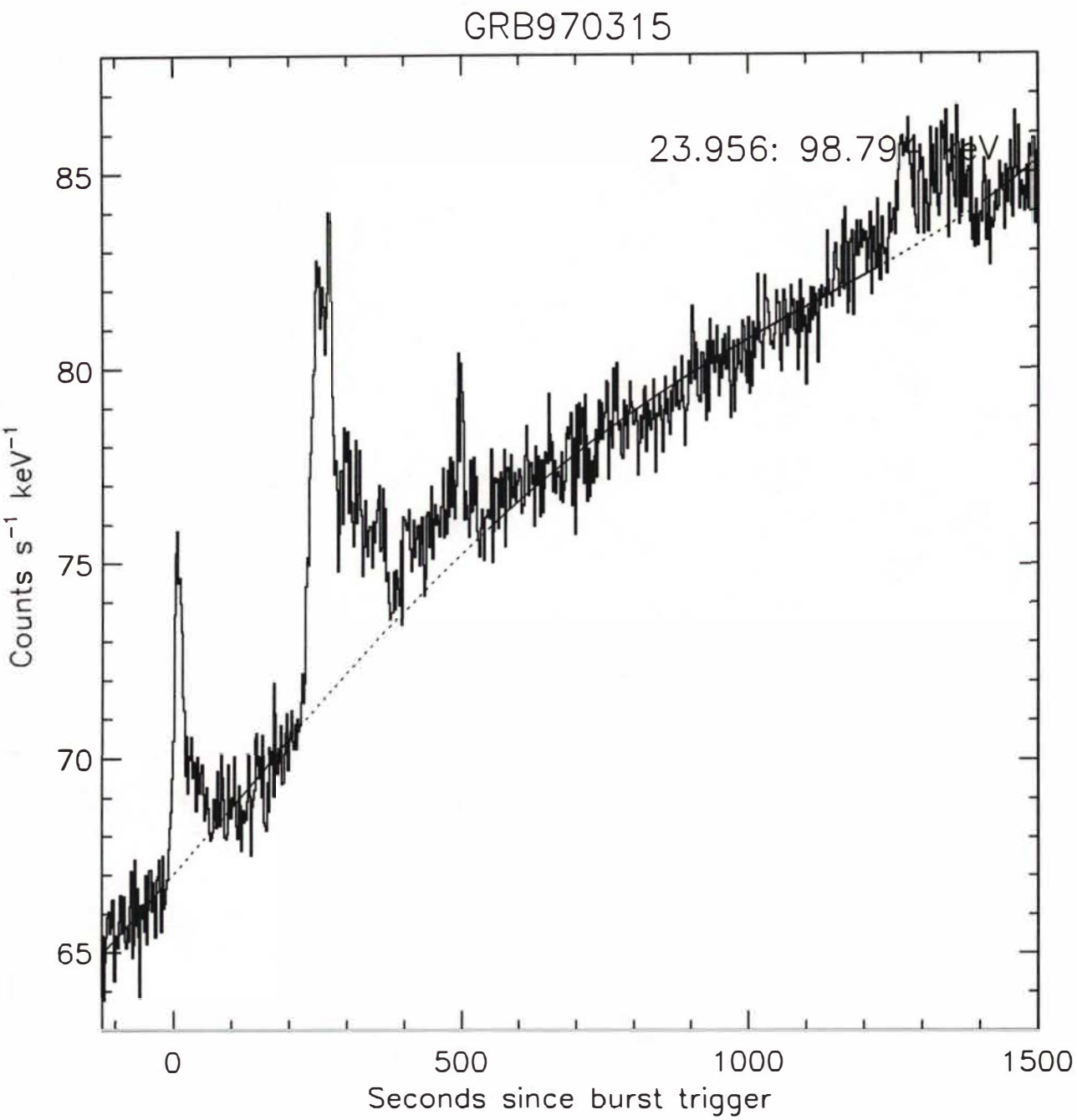
0.250 S INTERVALS REGROUPED BY 4

22- 147 keV





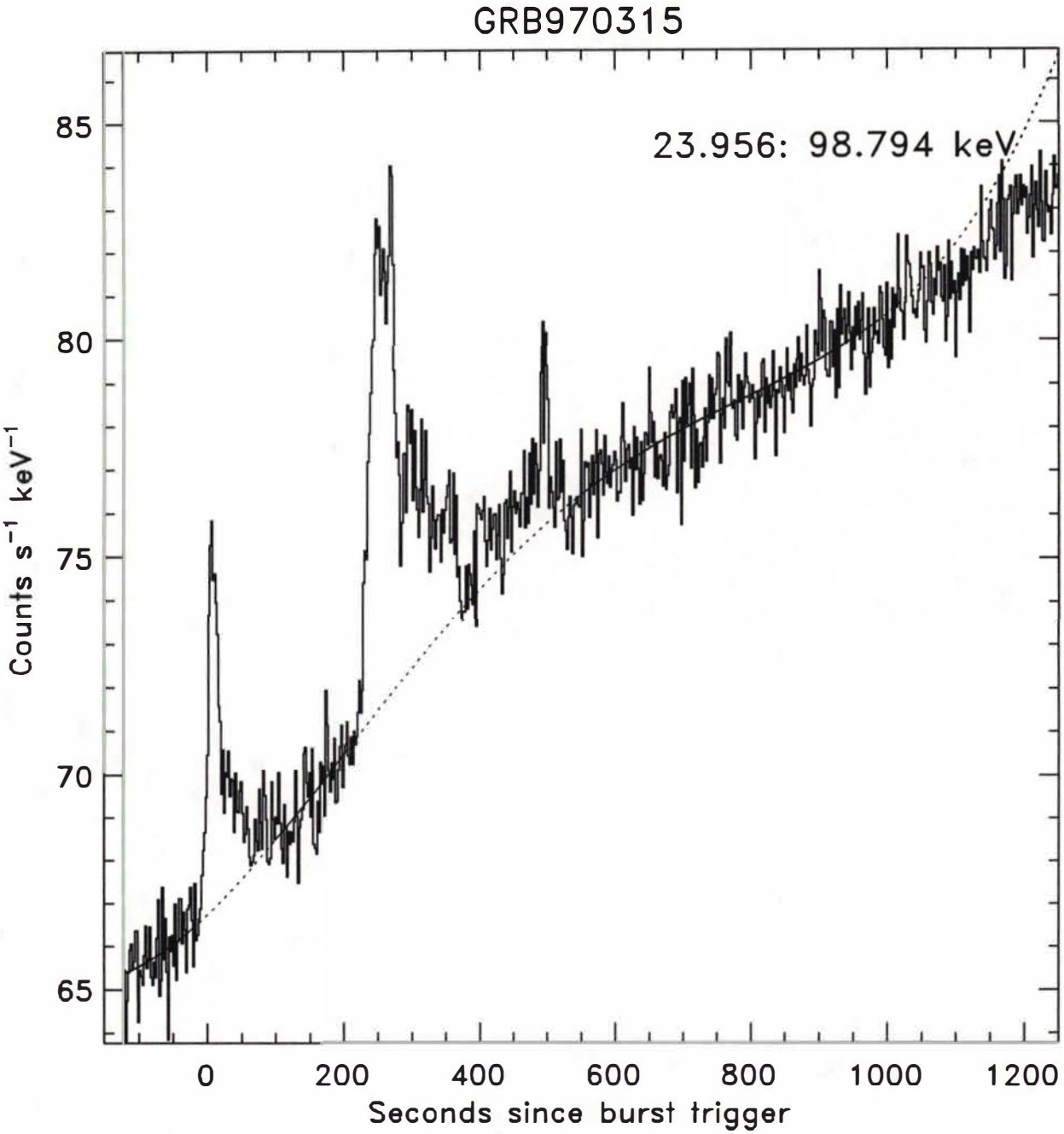
Burst number: 6125
Detectors: 04
Data types: CONT
Start day: 10522
Start sec: 80022.219
Min. Resolution (s): 0.010000
Creation time: 29-SEP-1997 17:48:24.05



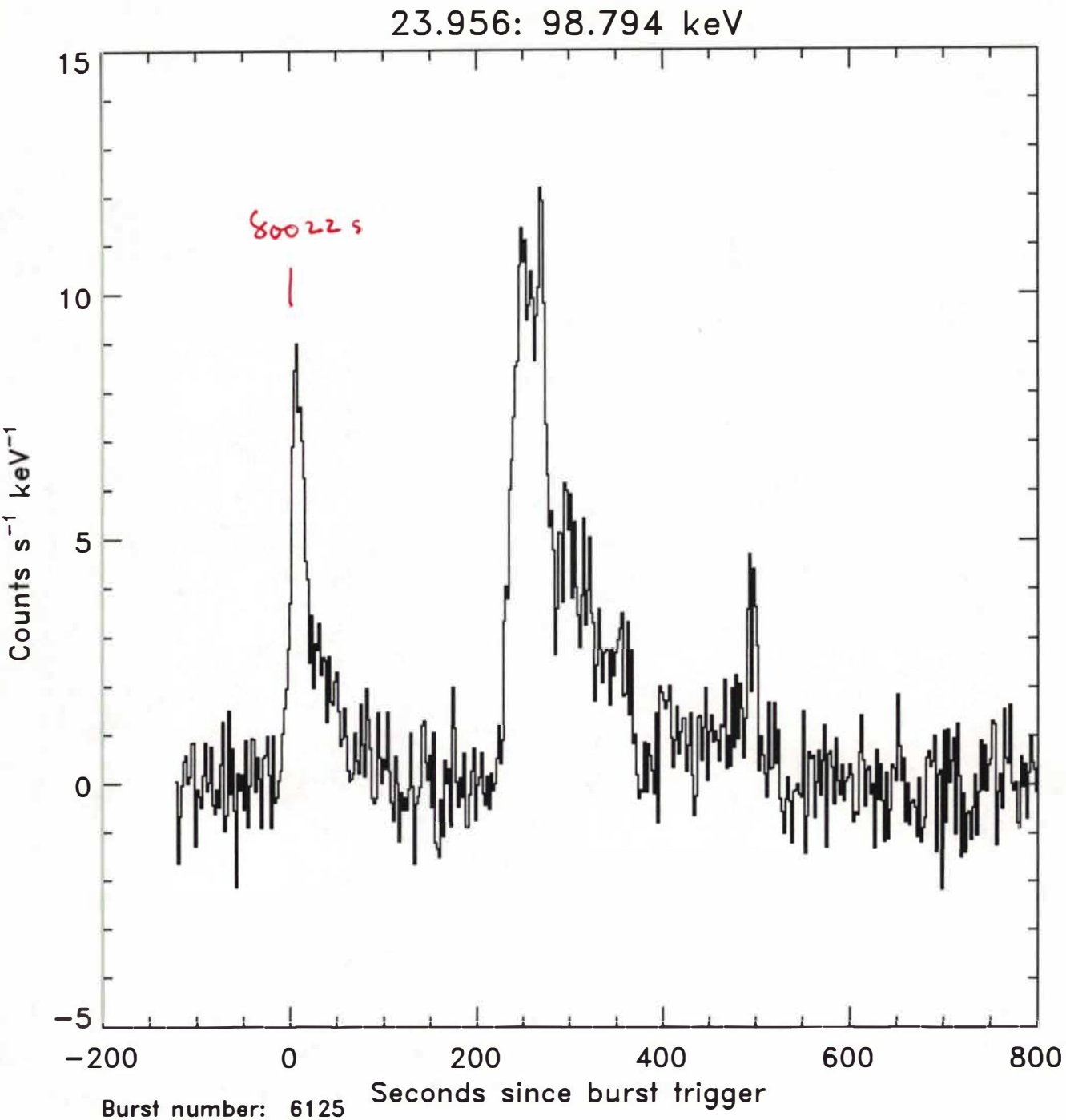
Burst number: 6125
Detectors: 04
Data types: CONT
Start day: 10522
Start sec: 80022.219
Min. Resolution (s): 0.010000
Creation time: 29-SEP-1997 17:48:24.05

From BRIGGS@gibson.msfc.nasa.gov Mon Sep 29 16:15:15 1997
Date: Mon, 29 Sep 1997 18:18:34 -0500 (CDT)
From: BRIGGS@gibson.msfc.nasa.gov (Michael S. Briggs, (205) 544-7716)
Subject: 6125
To: khurley@sunspot.ssl.berkeley.edu
X-Vmsmail-To: SMTP%"khurley@sunspot.ssl.berkeley.edu"

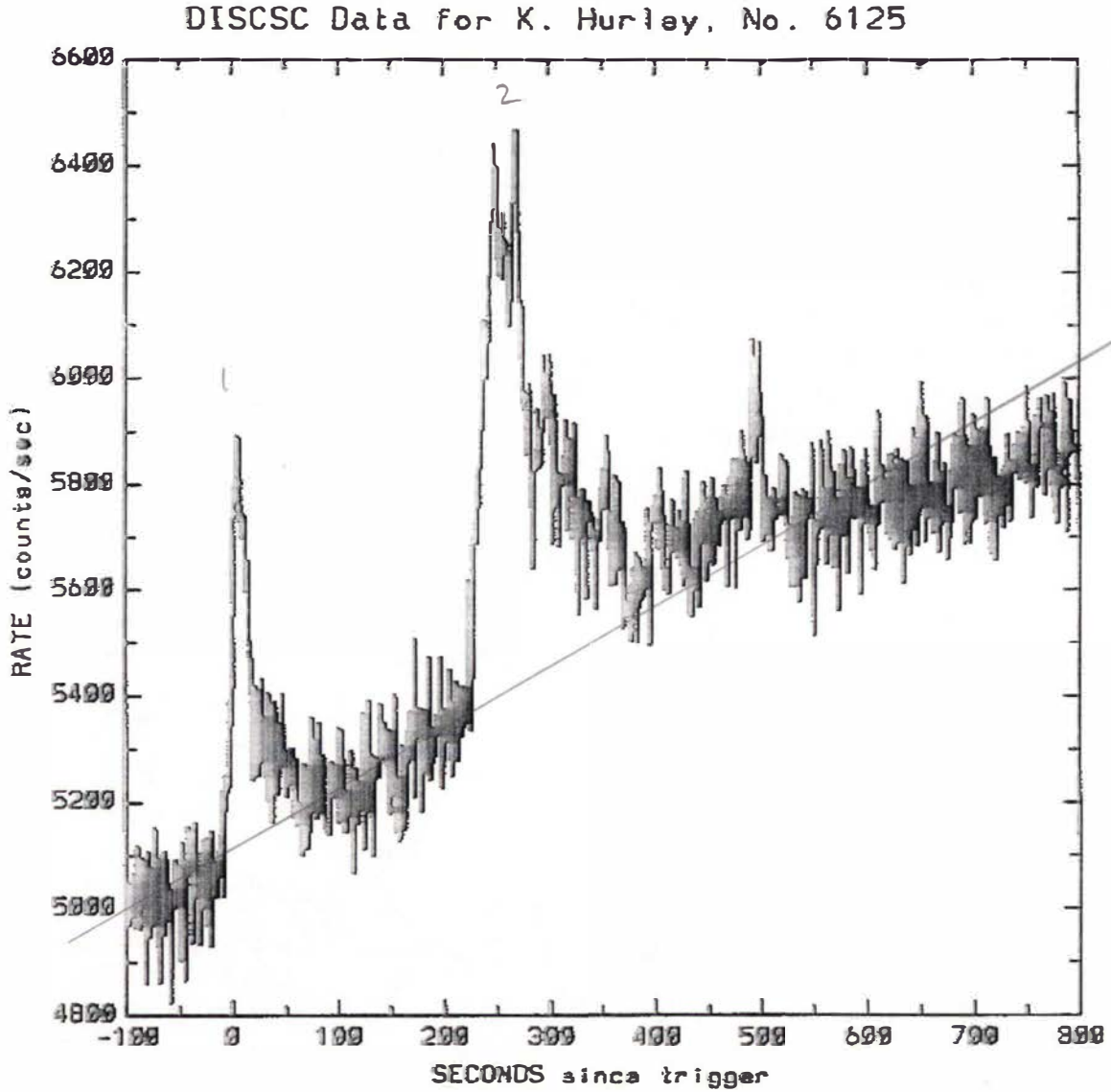
Hello Kevin,
Do the two PS figures help? Is there anything else I can send that might help? --Michael



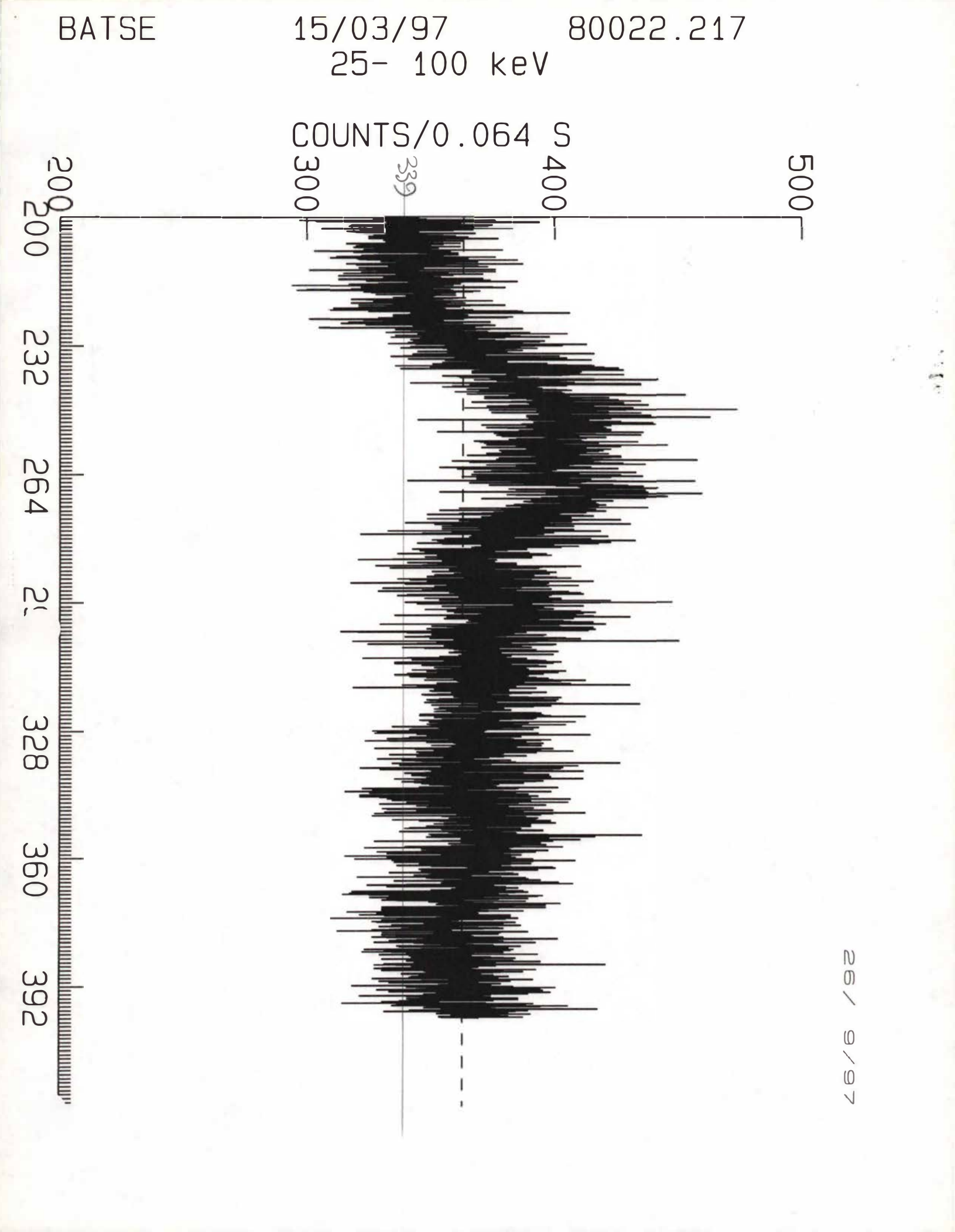
Burst number: 6125
Detectors: 04
Data types: CONT
Start day: 10522
Start sec: 80022.219
Min. Resolution (s): 0.010000
Creation time: 29-SEP-1997 17:48:24.05

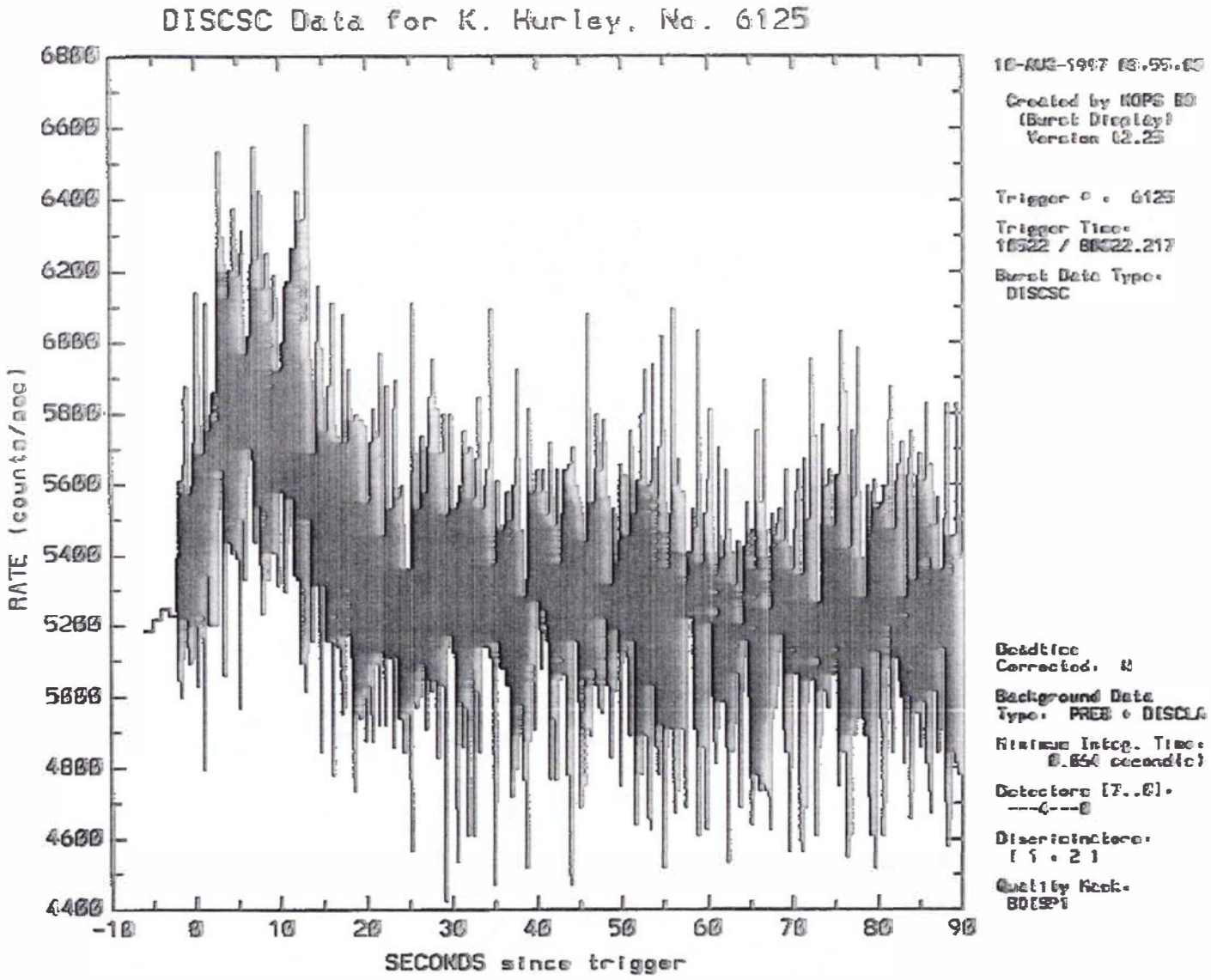


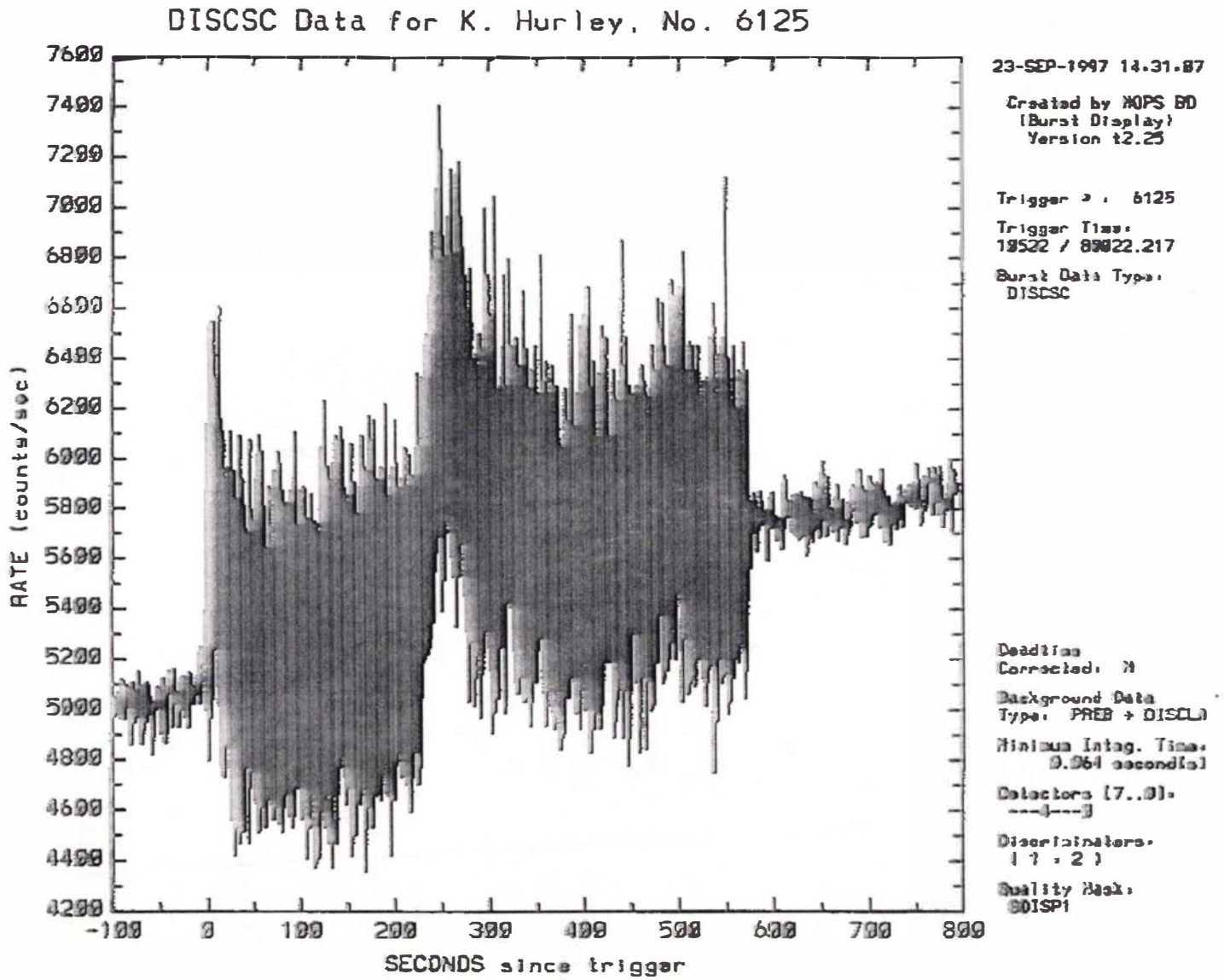
Burst number: 6125
Detectors: 04
Data types: CONT
Start day: 10522
Start sec: 80022.219
Min. Resolution (s): 0.010000
Creation time: 29−SEP−1997 17:48:24.05

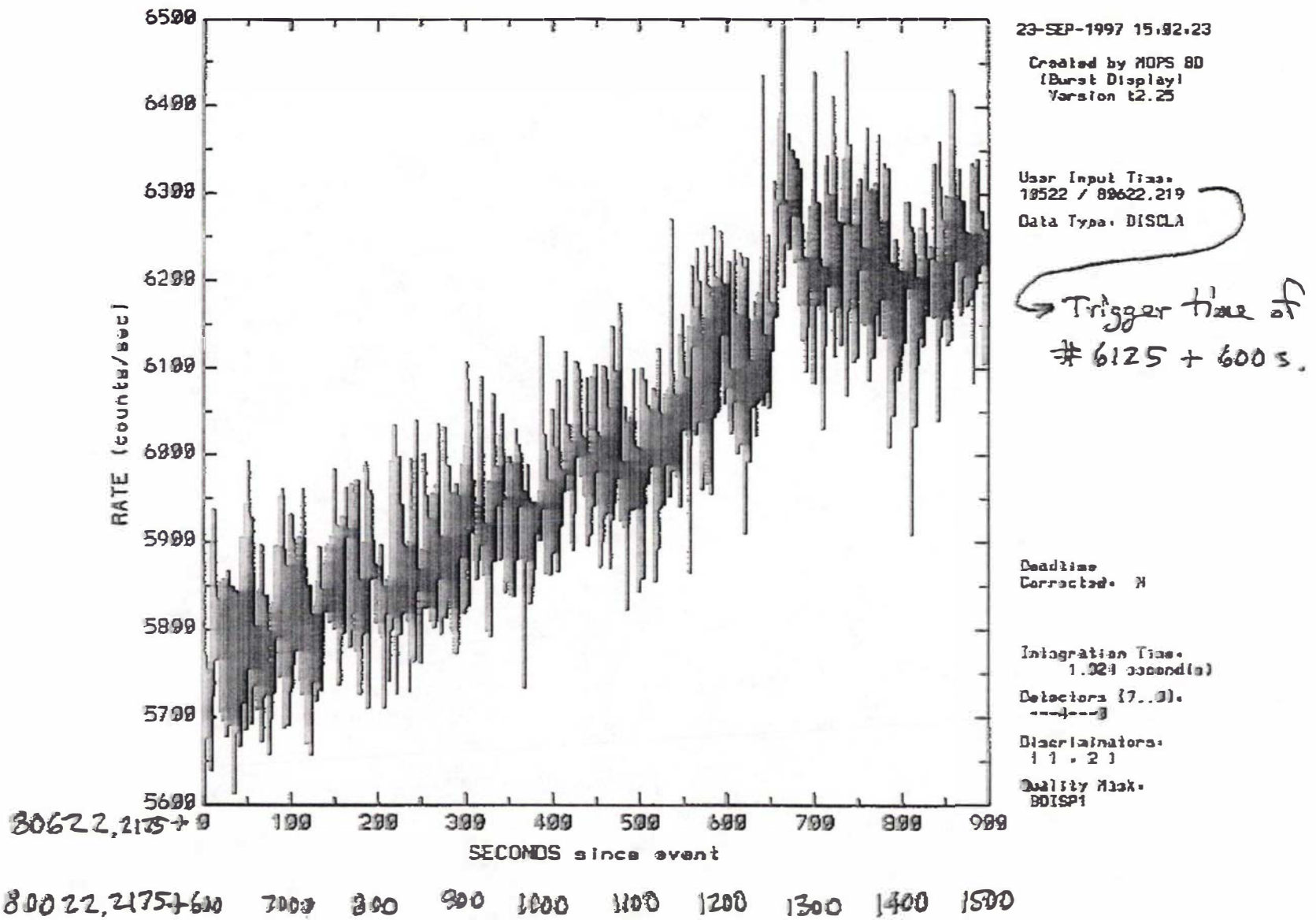


If a time-dependent background were subtracted, peak 2 would probably look like the Ulysses time history


BATSE
15/03/97
80022.217
25- 100 keV
COUNTS/0.064 S
200
300
339
400
500
200
232
264
328
360
392
26/ 9/97


DISCSC Data for K. Hurley, No. 6125
RATE (counts/sec)
SECONDS since trigger
6800
6600
6400
6200
6000
5800
5600
5400
5200
5000
4800
4600
4400
-10
0
10
20
30
40
50
60
70
80
90
10-AUG-1997 03:55:57
Created by KOPS BD
(Burst Display)
Version 02.25
Trigger # : 6125
Trigger Time:
16522 / 86522.217
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors [7..0]:
---4---0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1


DISCSC Data for K. Hurley, No. 6125
RATE (counts/sec)
7600
7400
7200
7000
6800
6600
6400
6200
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
-100
0
100
200
300
400
500
600
700
800
SECONDS since trigger
23-SEP-1997 14.31.87
Created by MOPS BD
(Burst Display)
Version t2.25
Trigger # : 6125
Trigger Time:
19522 / 89022.217
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors (7..0):
---1---3
Discriminators:
(1 : 2)
Quality Mask:
BDISP1

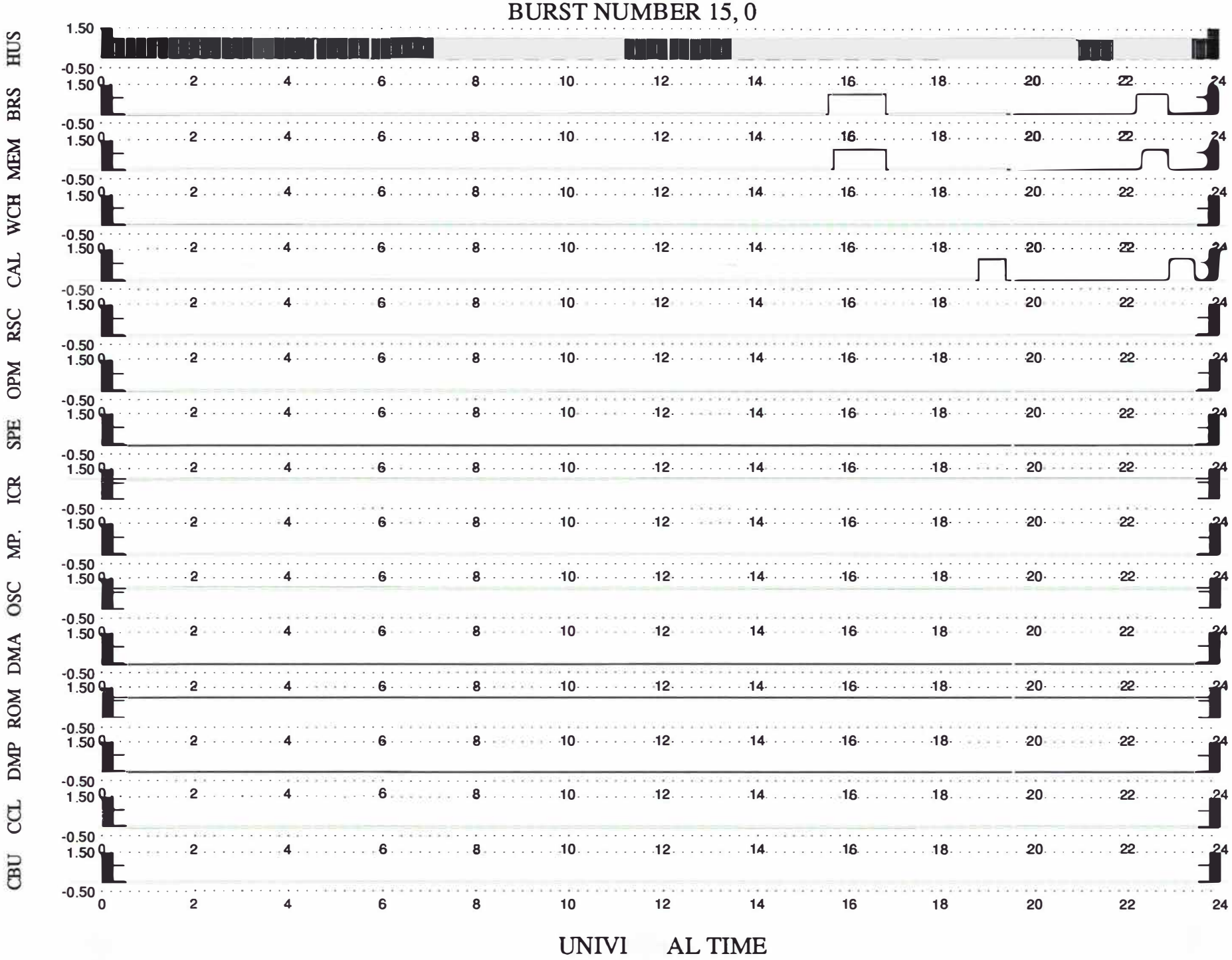


Trigger time at #6125 + 600 s.

89622.2175 + 0 100 200 300 400 500 600 700 800 900

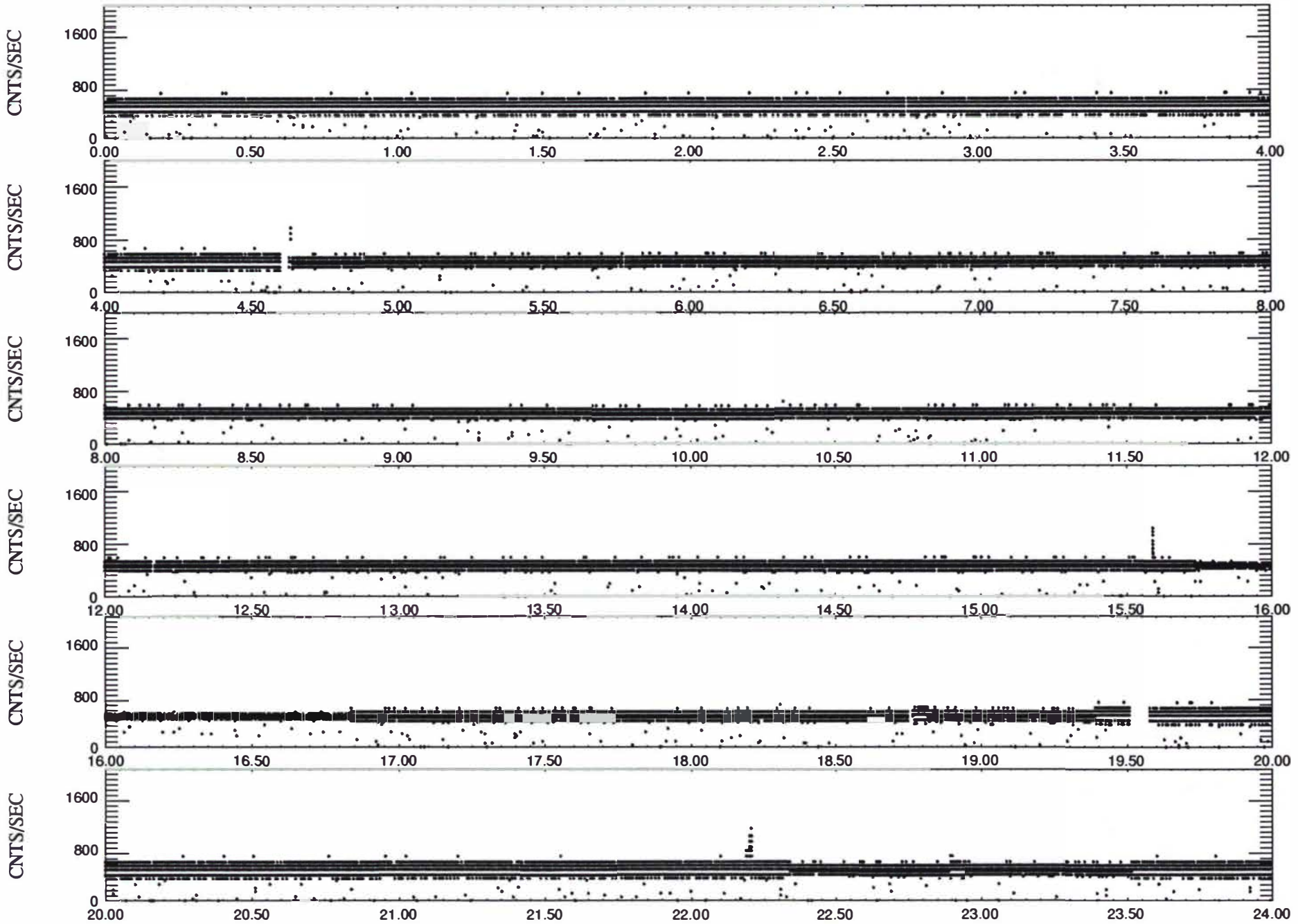
= 89022.2175+600 700 800 900 1000 1100 1200 1300 1400 1500

HUS MODES EDR day 74, year 1997 to day 74, year 1997 7/21/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 74, year 1997 to day 74, year 1997 7/21/97

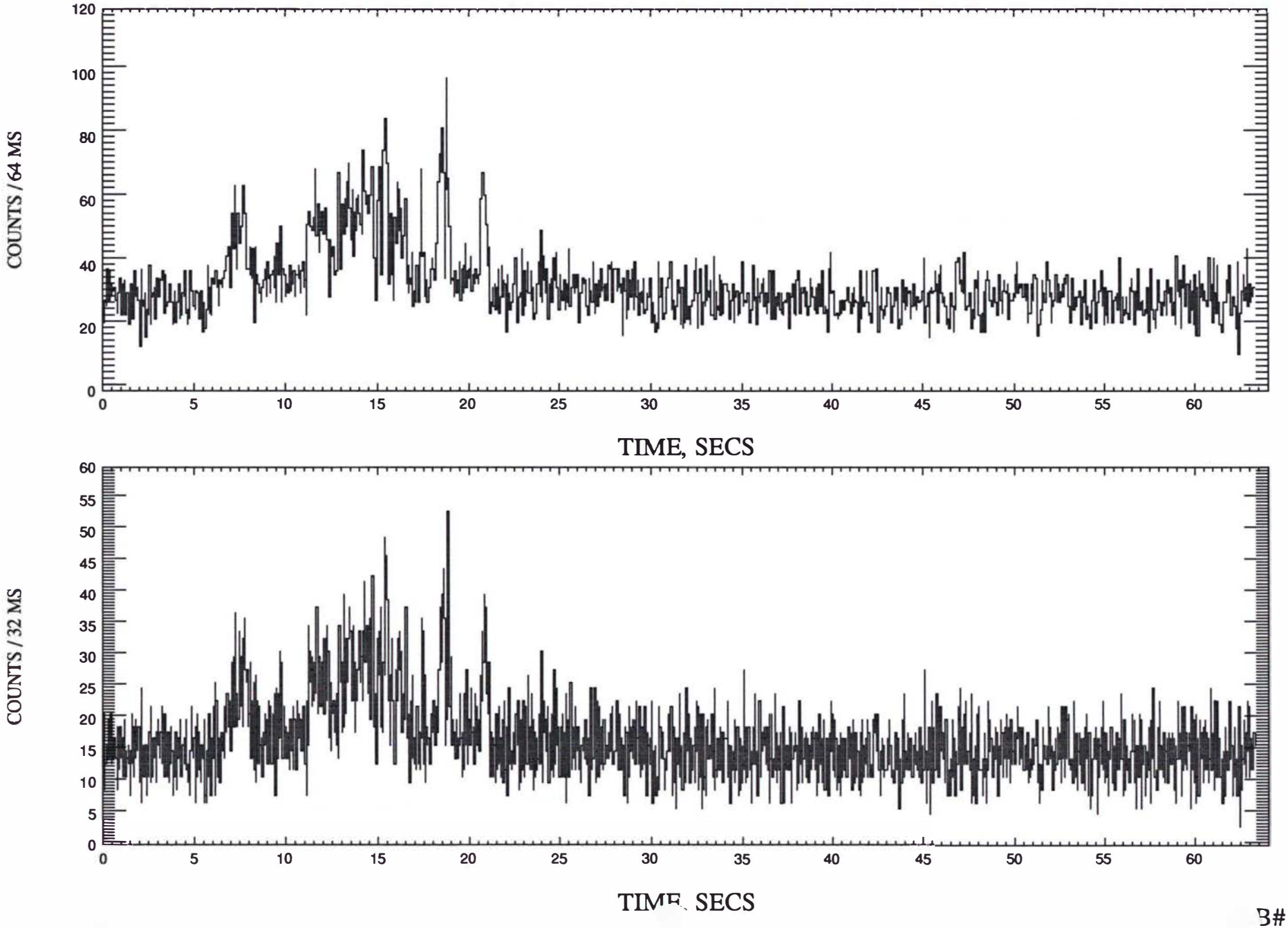
CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 74, year 1997 7/21/97

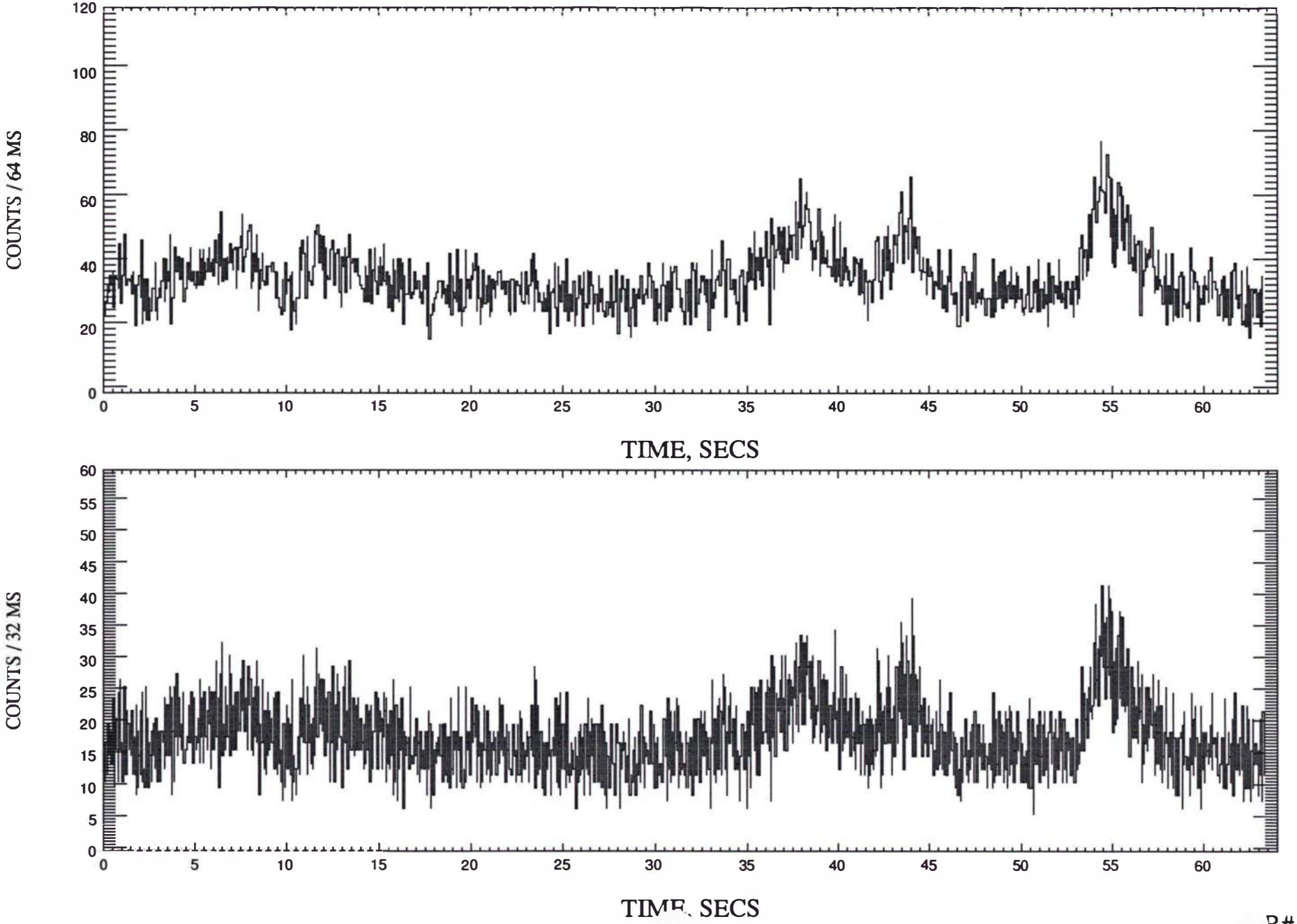
Burst Counter 15 at UT=15.584488843282 h=56104.160 s 15:35:04.160



B# 1

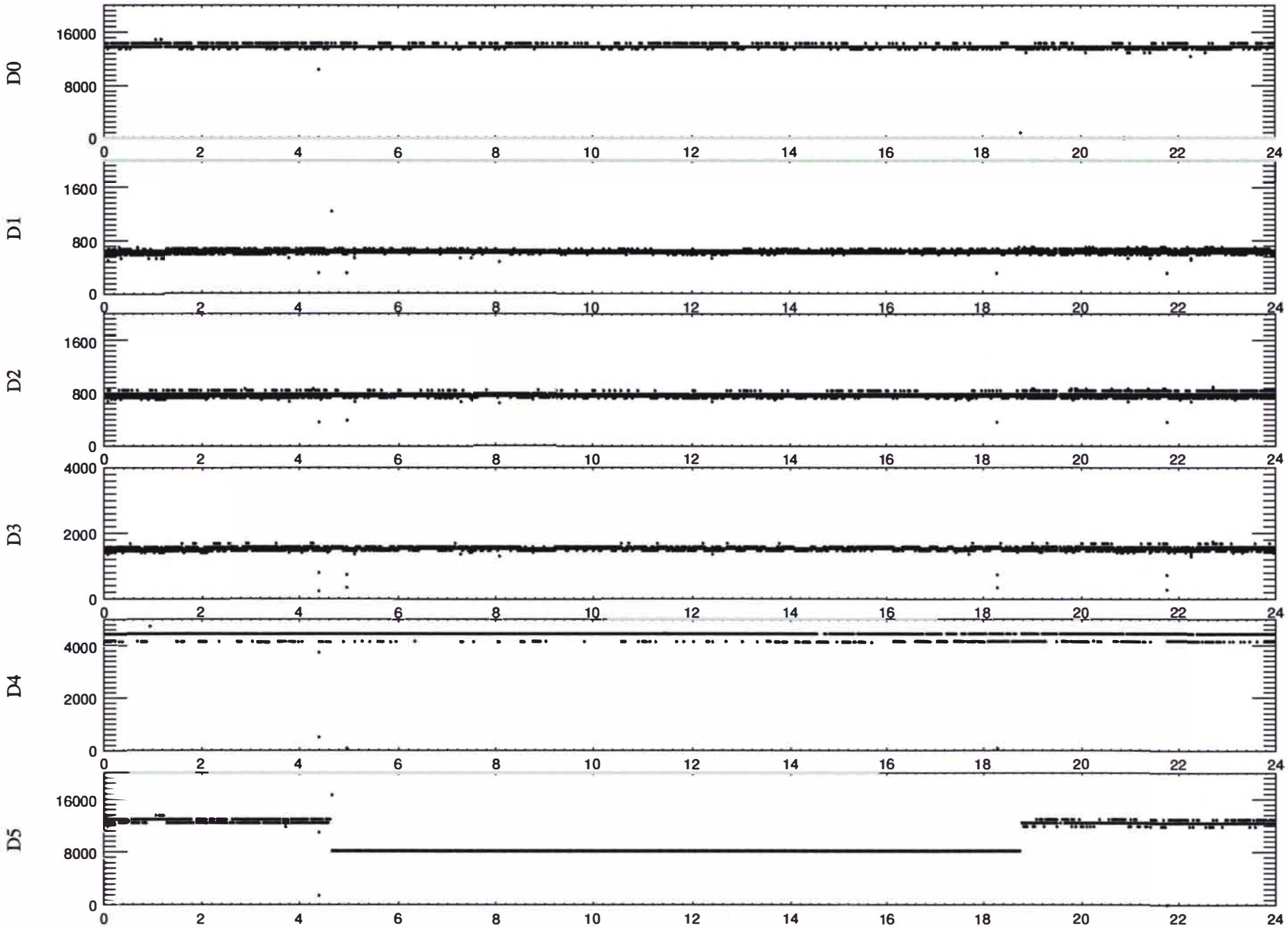
HUS 2A TRIGGERED DATA EDR day 74, year 1997 7/21/97

Burst Counter 0 at UT=22.186026221381 h=79869.694 s 22:11:09.694



B# 2

HUS 2B COUNTS / SEC EDR day 74, year 1997 to day 74, year 1997 7/21/97



Date: Dec 2 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☐ Σ 3Δt's calculated, and/or BMAPSUM executed?

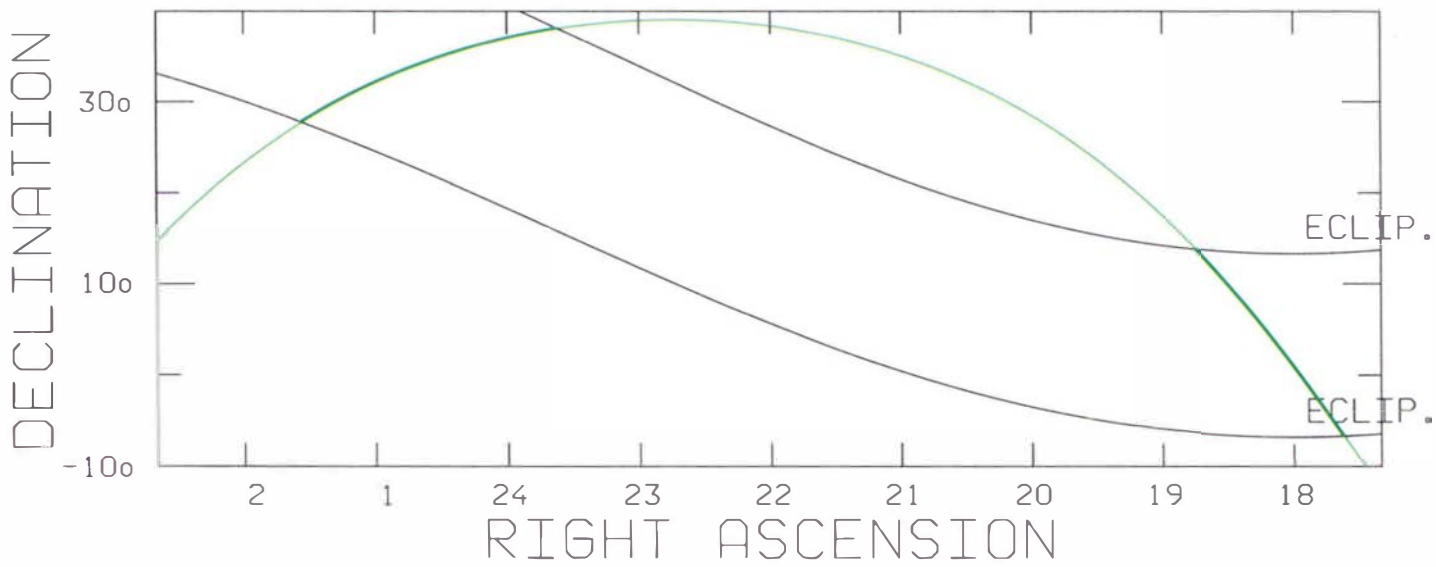
3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

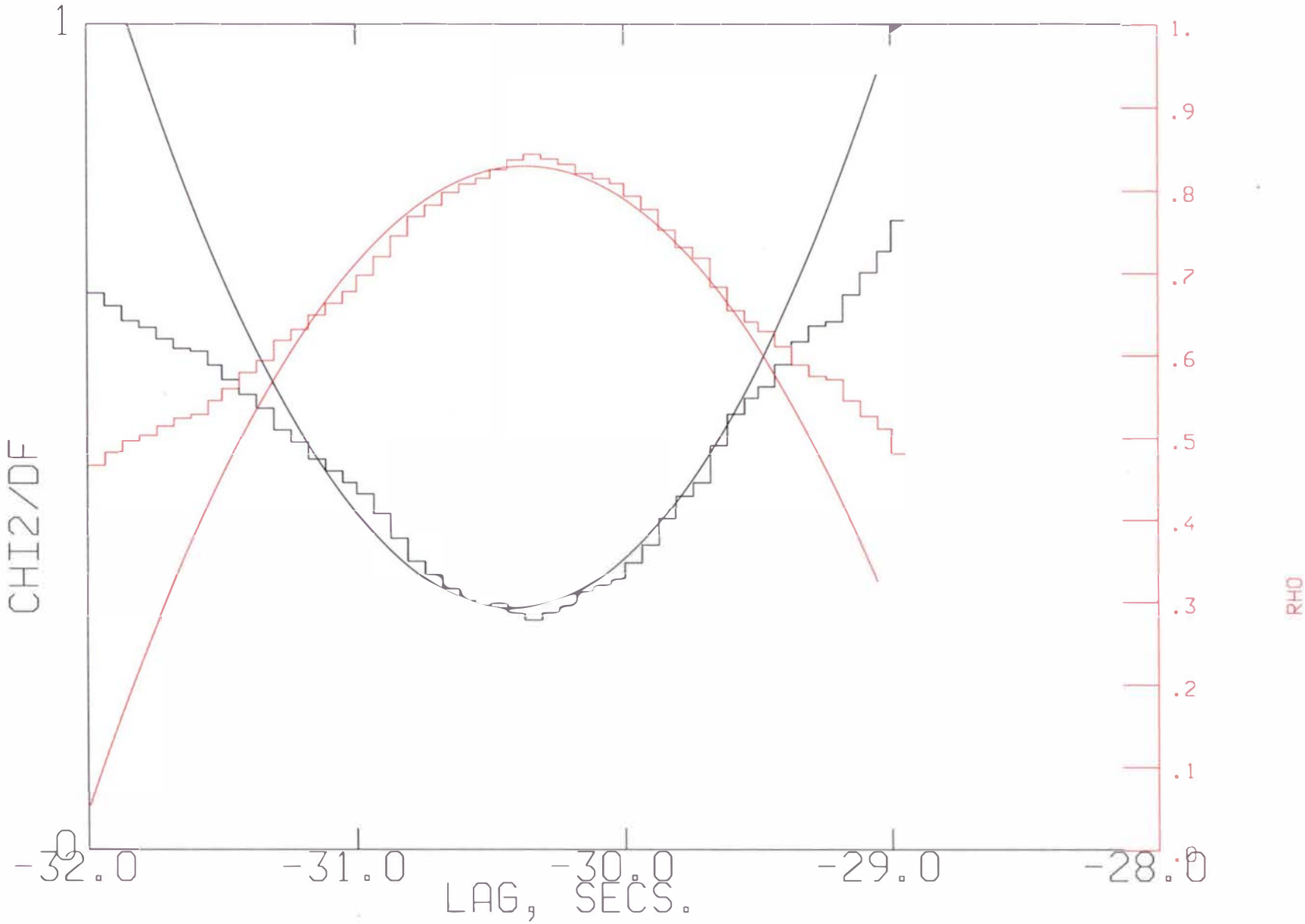
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

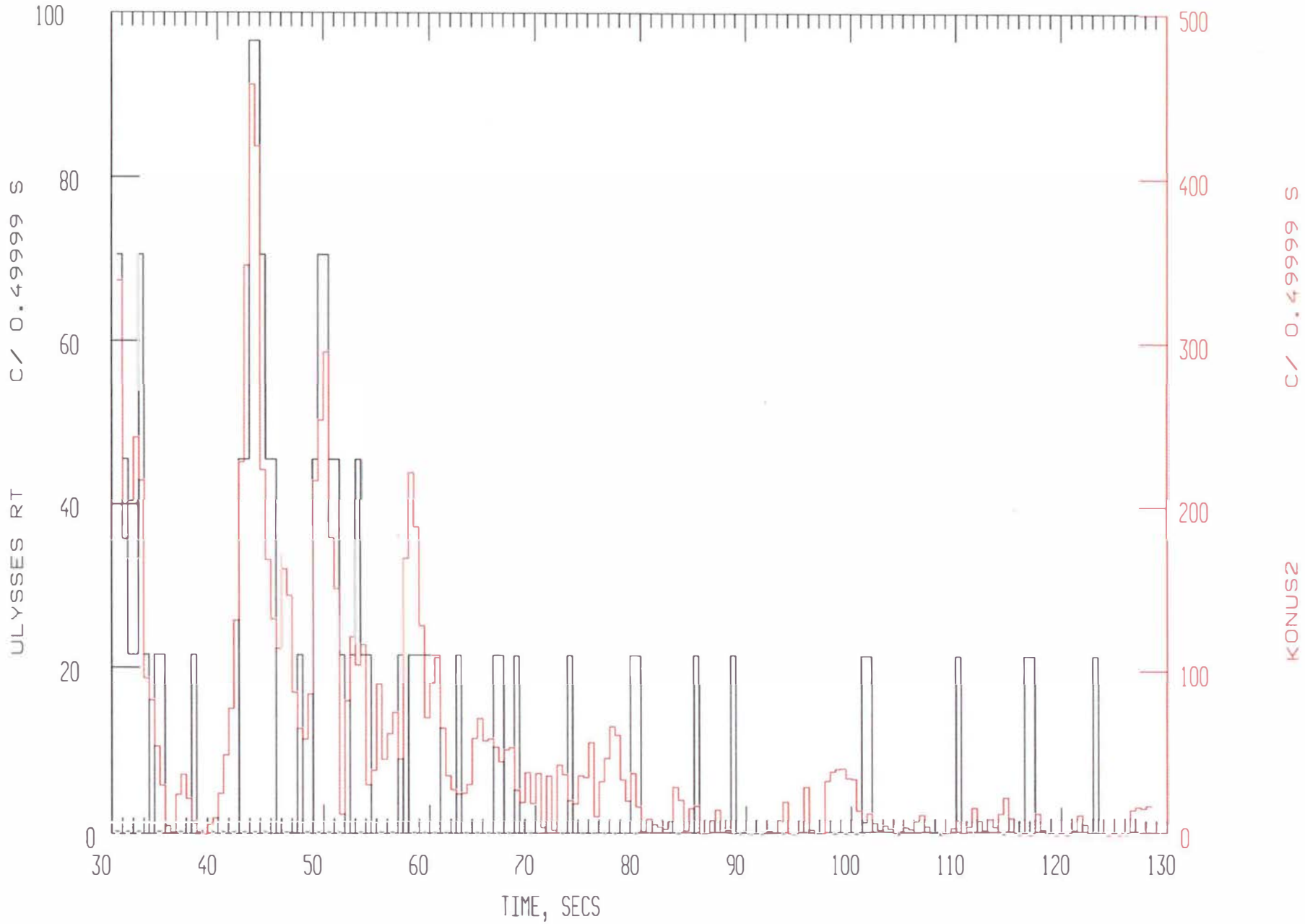
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated with identical times?


DECLINATION
30o
10o
-10o
2
1
24
23
22
21
20
19
18
RIGHT ASCENSION
ECLIP.
ECLIP.

ULYSSES RT-KONUS2 CORRELATION 16/ 3/97 63252.671



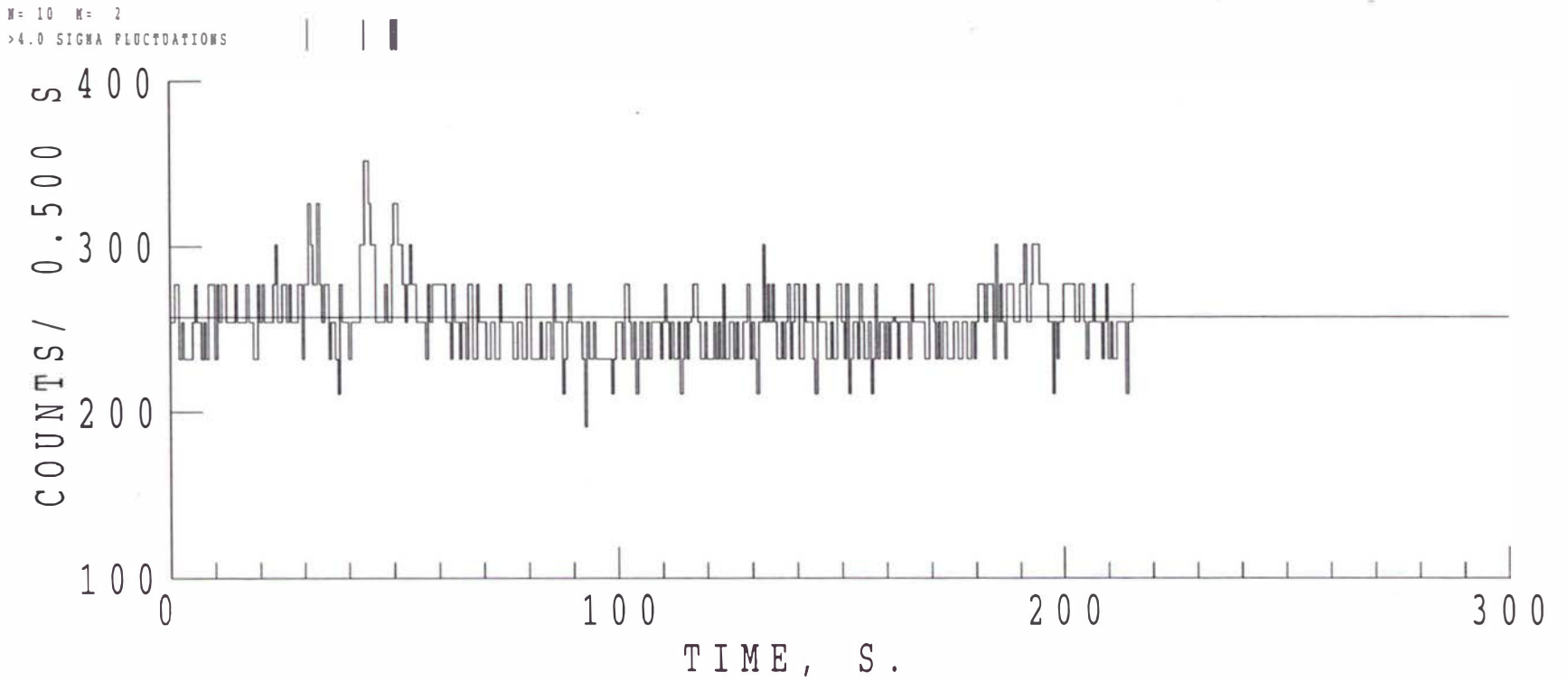

ULYSSES RT-KONUS2 CORRELATION 16/ 3/97 63252.671
ULYSSES RT C/ 0.49999 S
KONUS2 C/ 0.49999 S
TIME, SECS
0
20
40
60
80
100
0
100
200
300
400
500
30
40
50
60
70
80
90
100
110
120
130

KONUS 19970316 63360

ULYSSES RT 02/12/11

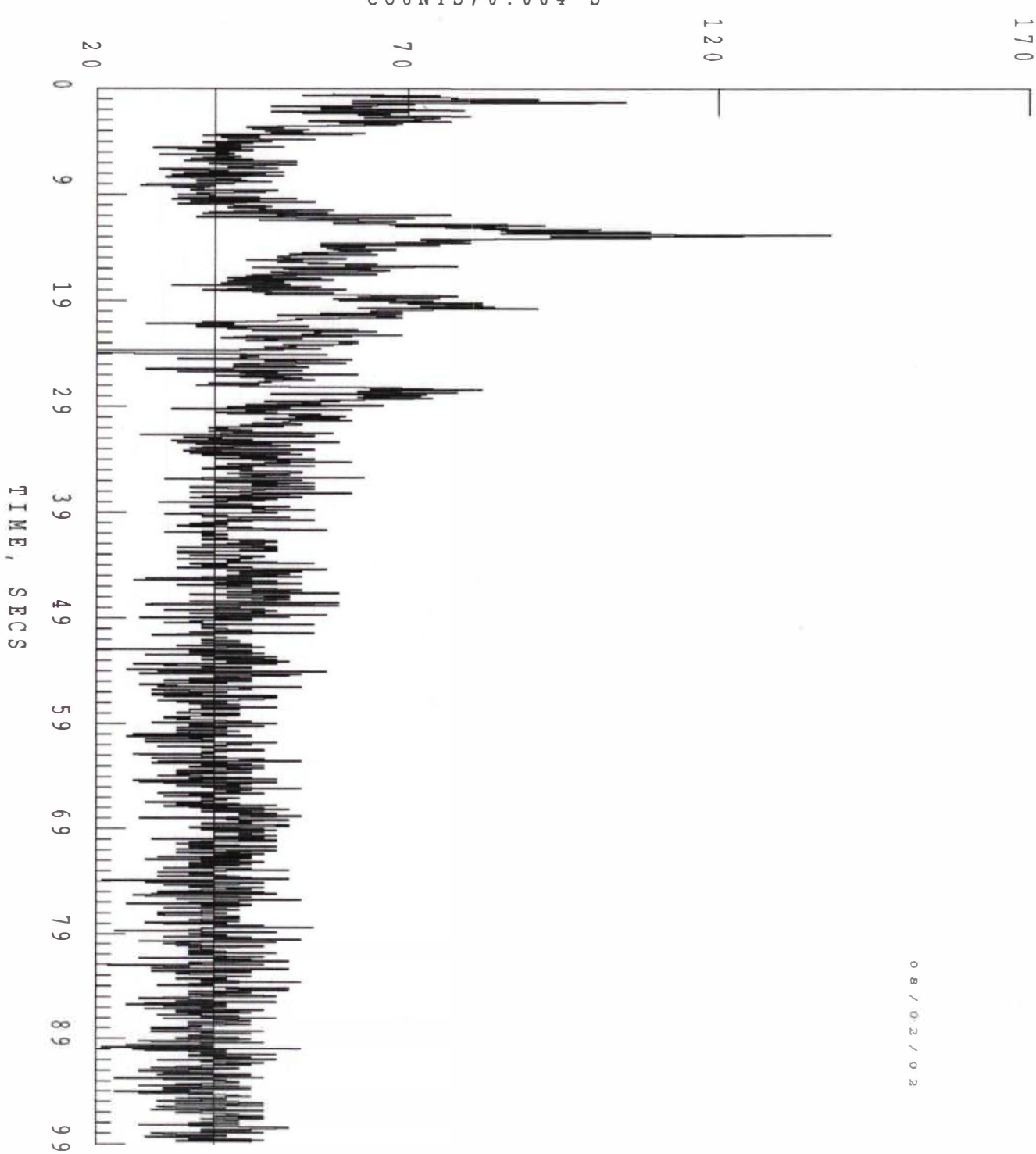
16/03/97 63252.164 s

0- 0 keV



KONUS2 16/03/97 62770.833

50- 200 keV



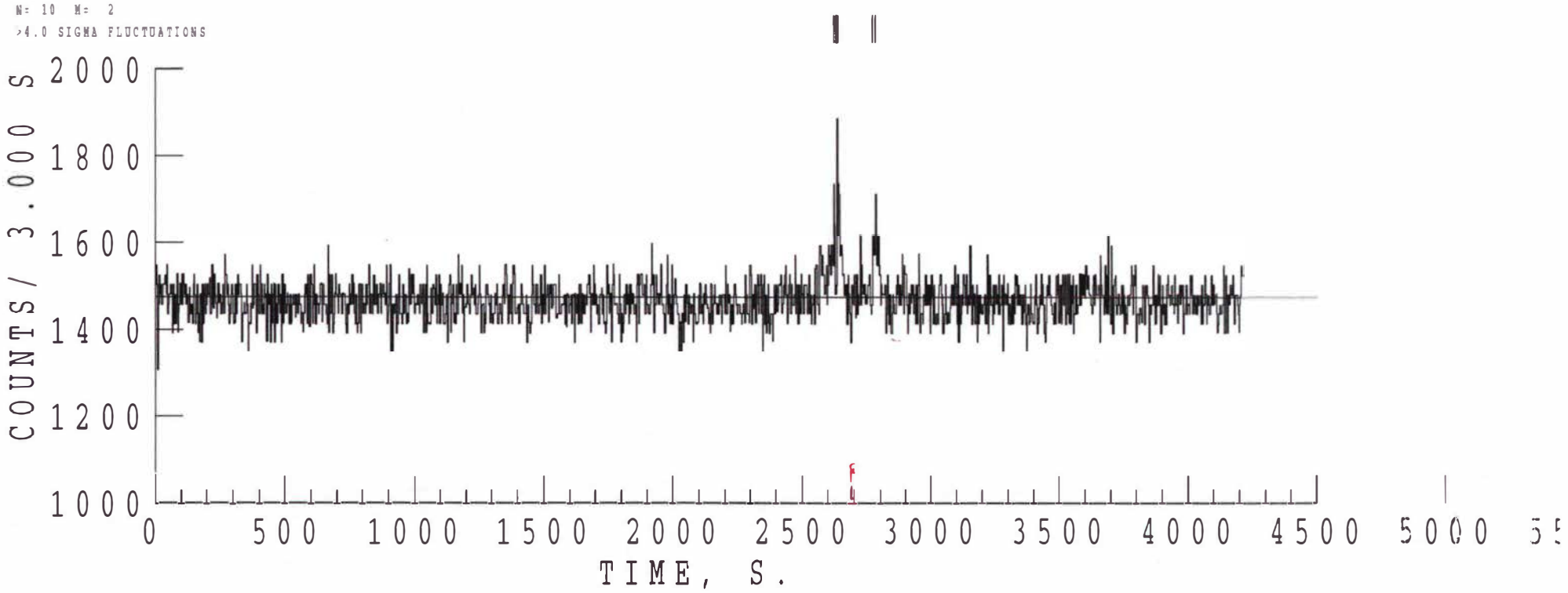
KONUS2 19970316 62770

ULYSSES RT 08/02/02

16/03/97 60660.137 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From kraken@rosserv.gsfc.nasa.gov Thu Mar 20 07:01 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 20 Mar 1997 10:01:51 -0500
    khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: GRB970313, GRB970316, GRB970114
Cc: bonnard@iolanthe.gsfc.nasa.gov (Bonnard Teegarden),
        kraken@rosserv.gsfc.nasa.gov,
        David Palmer <David.M.Palmer.1@gsfc.nasa.gov>

Hi Kevin,

Bonnard has forwarded your email about the above bursts which occurred recently, and David Palmer has given me the one from January. TGRS has seen events on March 3 and March 16 (as triggered events), but in neither case did the events come within 2000 seconds of the Ulysses reported time. The January event was not a triggered event, nor could I find it in waiting mode data. I wonder if the March 3 and 16 events correspond to some solar charged particle activity?

Pete

Ulysses Observation	TGRS detection
313 7:53 10 sec long	NO BUT: TGRS #542 at 970313 35181 sec. ~10 sec long 100 counts/sec peak intens. NOTE: this is about 7000 sec after the Ulysses observation, so I attribute it to a different event.
970316 13:16 64 msec long	NO BUT: TGRS #546 at 970316 62785 secs. ~4 sec long. 150 counts/sec peak intens. NOTE: this is about 15200 sec after the Ulysses observation.
970114 5:17 100 msec long	NO triggered or untriggered events; although there is a data drop out between 970114 18400-18500 sec. which is close to -500 sec from Ulysses observation

From HENZE@fender.msfc.nasa.gov Tue Mar 18 11:05 PST 1997
Date: Tue, 18 Mar 1997 13:04:31 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
band@cass09.ucsd.edu, gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6126

TIME: TJD=0523 SECONDS=59379

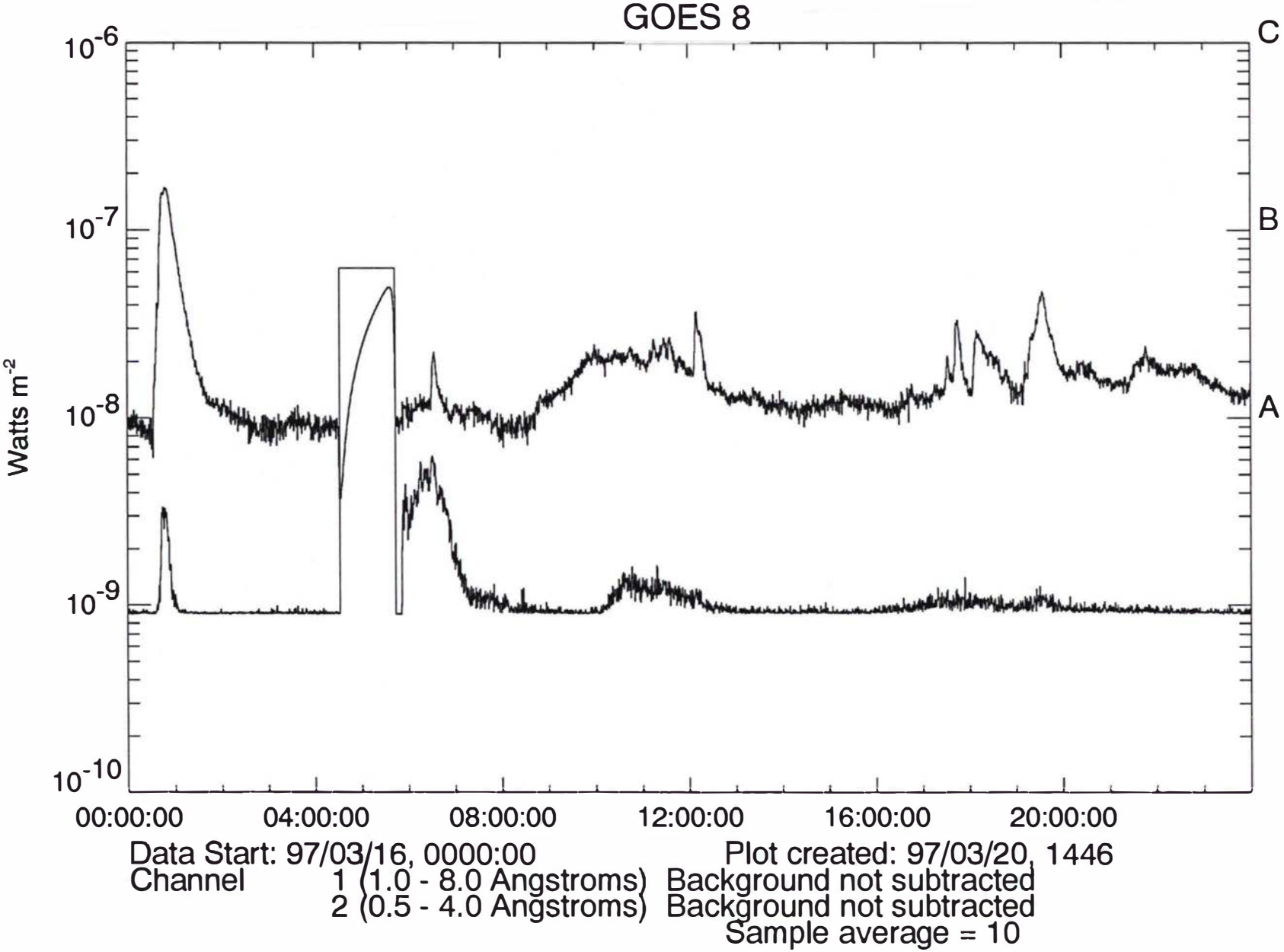
TYPE: CYG X-1 SOLAR FLARE TRIGGER SIGNAL:N

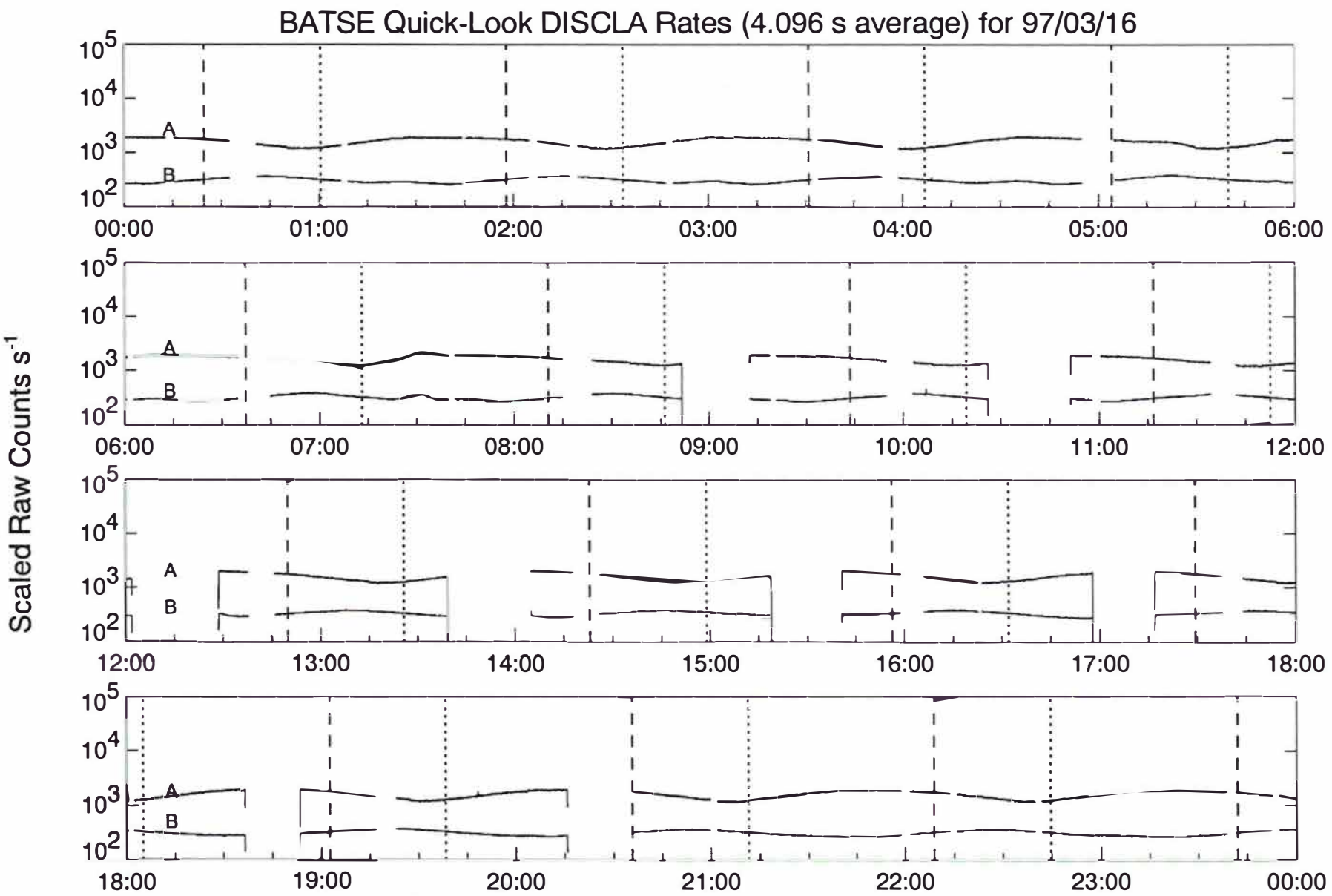
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

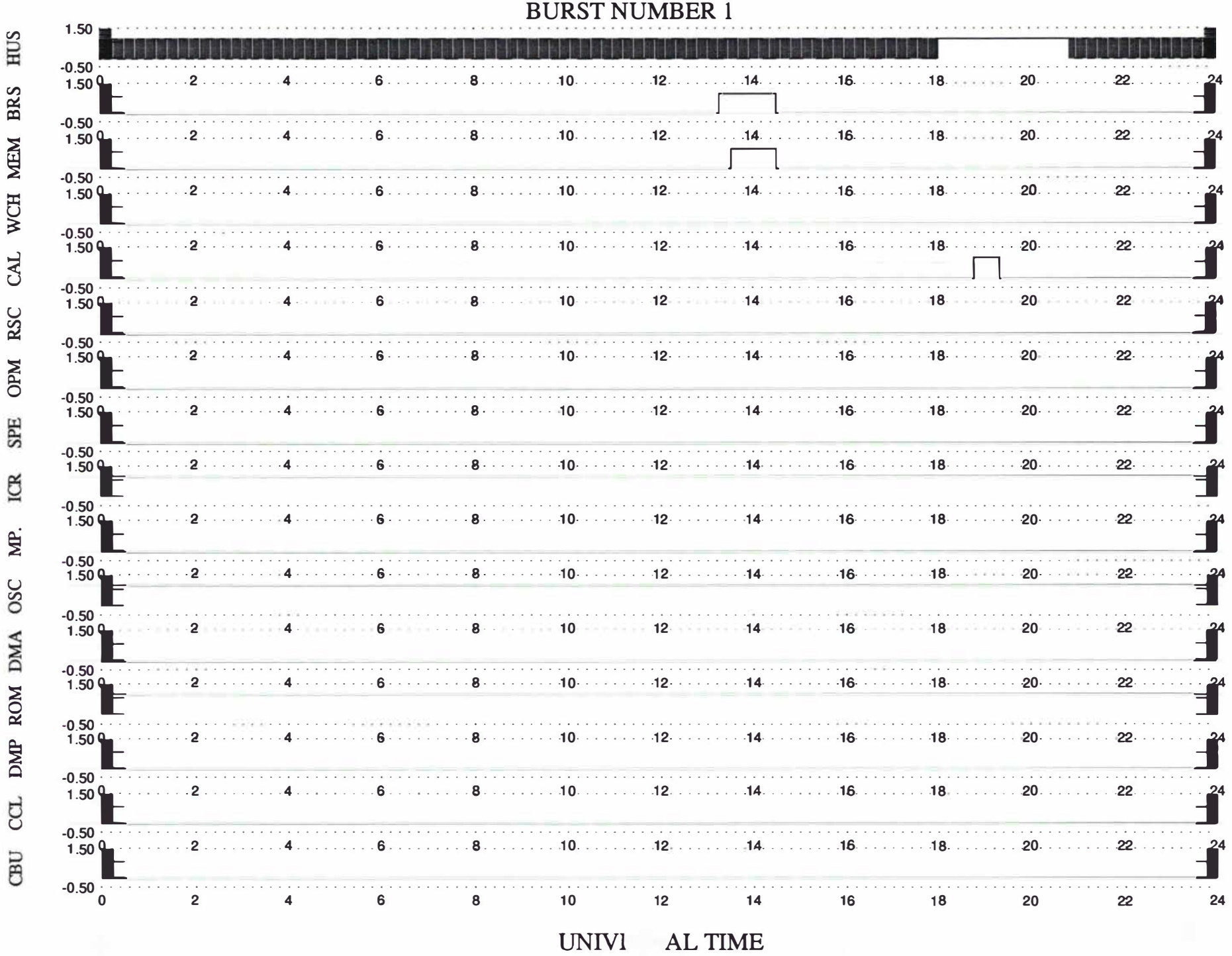
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYG X-1 FLUCTUATION


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/16, 0000:00
Plot created: 97/03/20, 1446
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

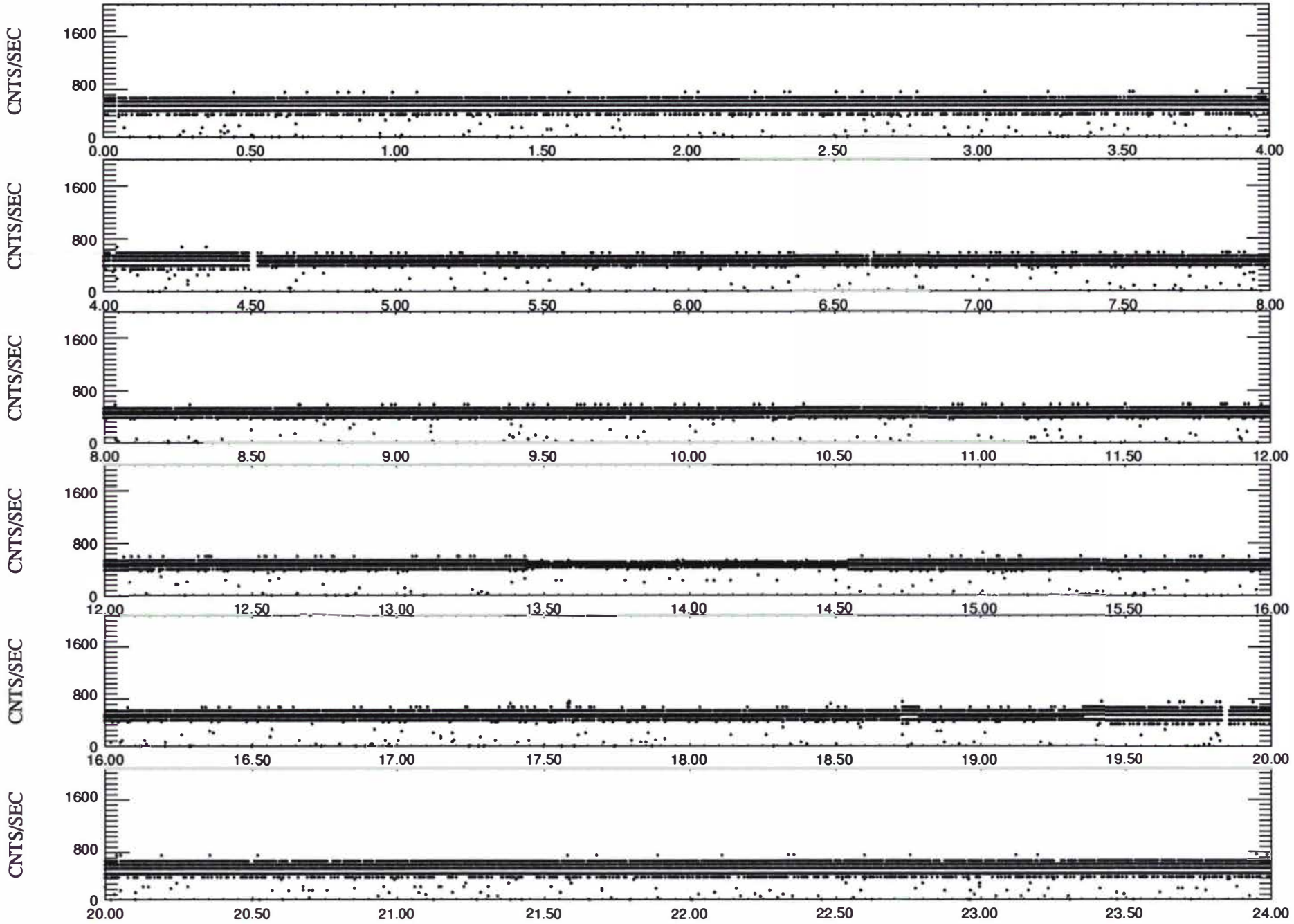

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/03/16
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/03/20, 1447 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

HUS MODES EDR day 75, year 1997 to day 75, year 1997 7/21/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 75, year 1997 to day 75, year 1997 7/21/97

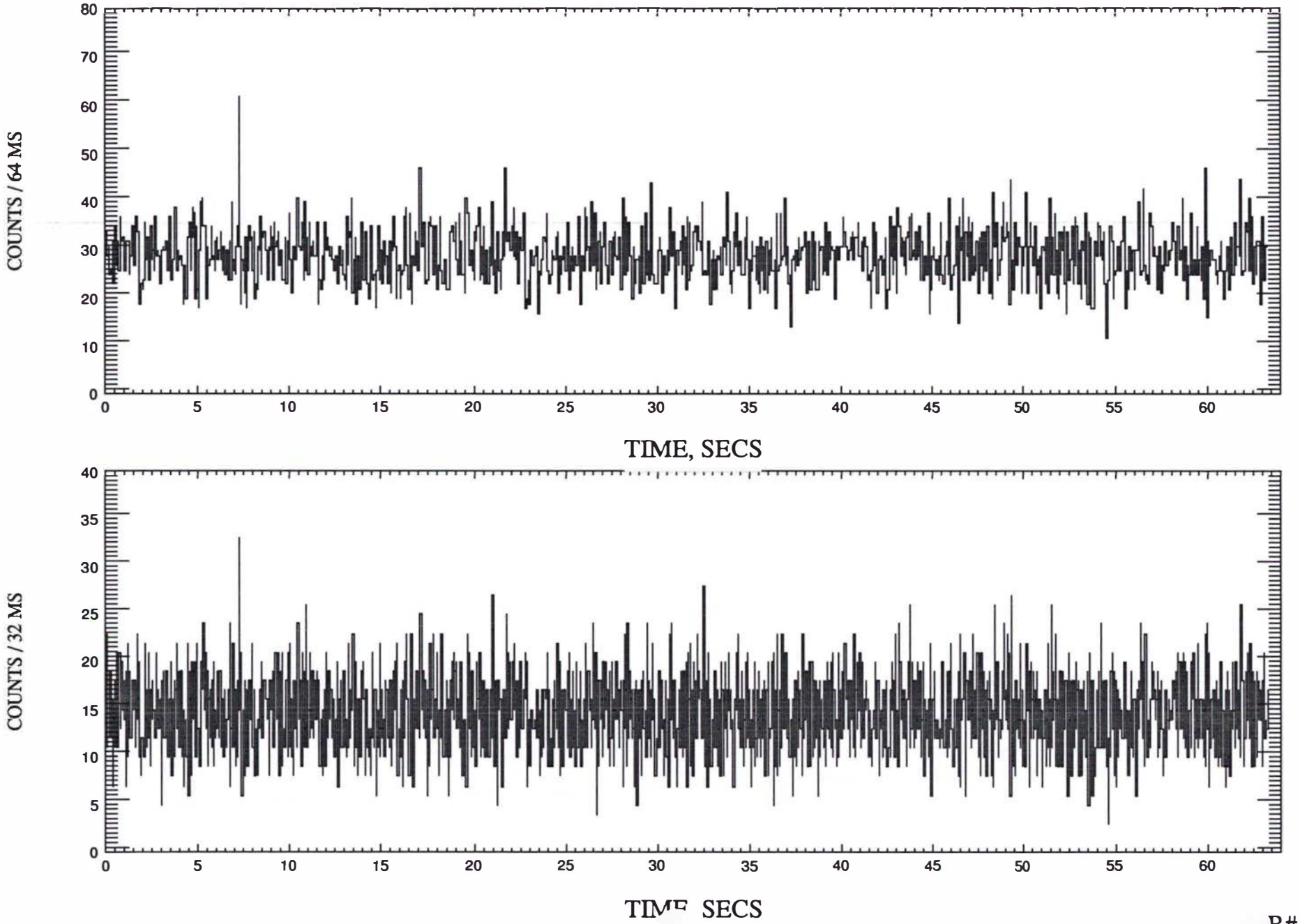
CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 75, year 1997 7/21/97

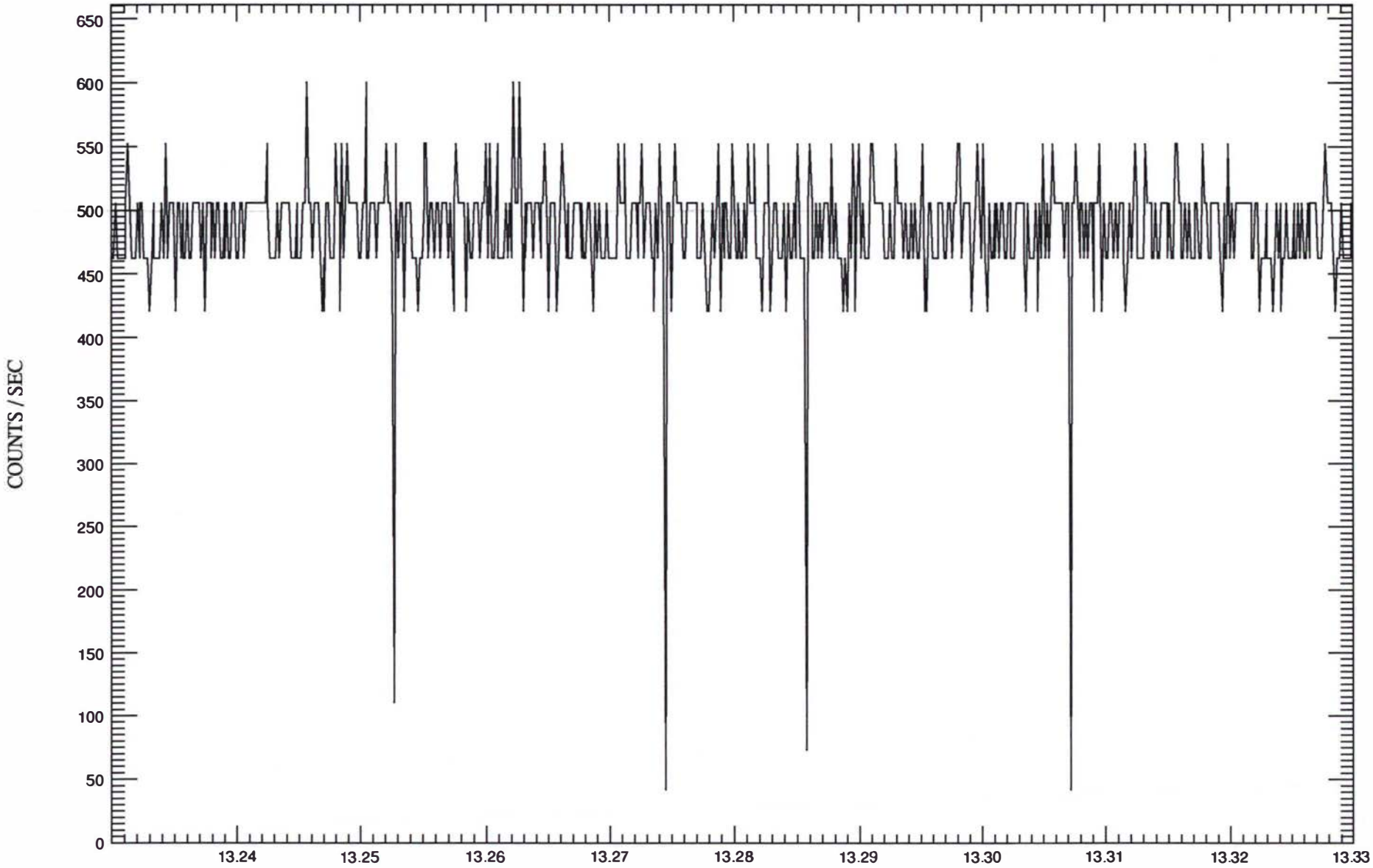
Burst Counter 1 at UT=13.276030947367 h=47793.711 s 13:16:33.711



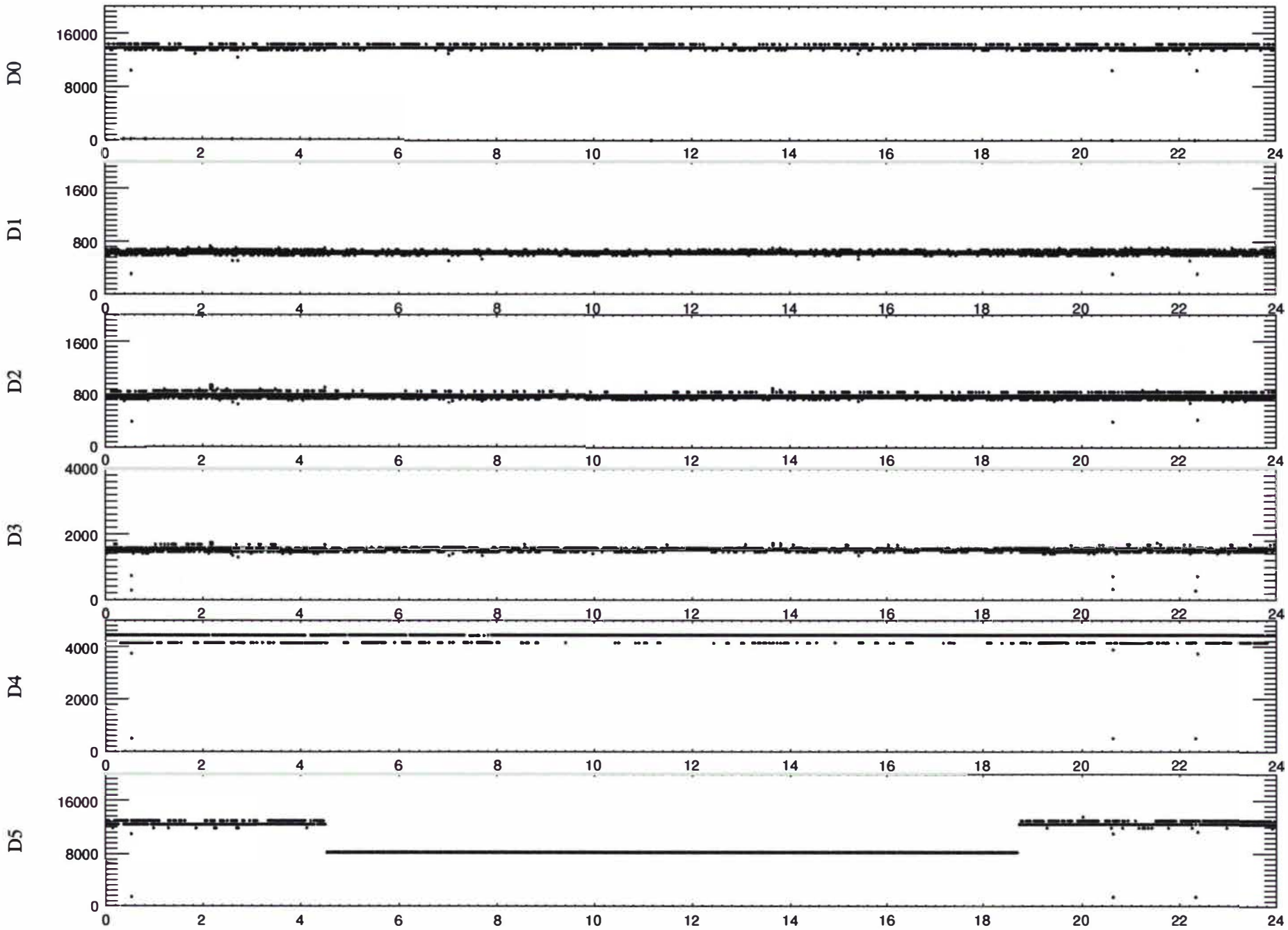
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 75, year 1997 to day 75, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 75, year 1997 to day 75, year 1997 7/21/97



From DEAL@fender.msfc.nasa.gov Fri Mar 21 06:01 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id GAA29971; Fri, 21 Mar 1997 06:01:49 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Fri, 21 Mar 1997 8:01:36 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970321080136.20c01775@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6127
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6127
EVENT OF 1997 MAR 17 DAY OF YEAR= 76
EVENT CROSSING TIME AT BATSE : 1759. S. OR 00:29:19.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 340.000 -23.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 3/ 97 IS:
RA= 159.909 DEC= 36.676 DIST= 4.106 AU
BATSE-ULYSSES DISTANCE = 614293188. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 13.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1990.96 SECS.
CROSSING TIME AT ULYSSES IS 3750. S. OR 01:02:29 +/- 164.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 3/ 97 IS:
RA= 178.629 DEC= 4.625 DIST= 0.661 AU
MARS-BATSE DISTANCE = 98870656. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 297.13 SECS.
CROSSING TIME AT MARS IS 2056. S. OR 00:34:16 +/- 29.36 SECONDS

BATSE BURST TRIGGER
NO.: 6127

TIME: TJD=0524 SECONDS=1759

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=107.0 AZIMUTH=357.0 ERROR=3.9 DEGREES

COMMENTS:
GRB LASTING ~ 50 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6127	970317	10524	01759	2500	340	-23	50

BATSE# 6127

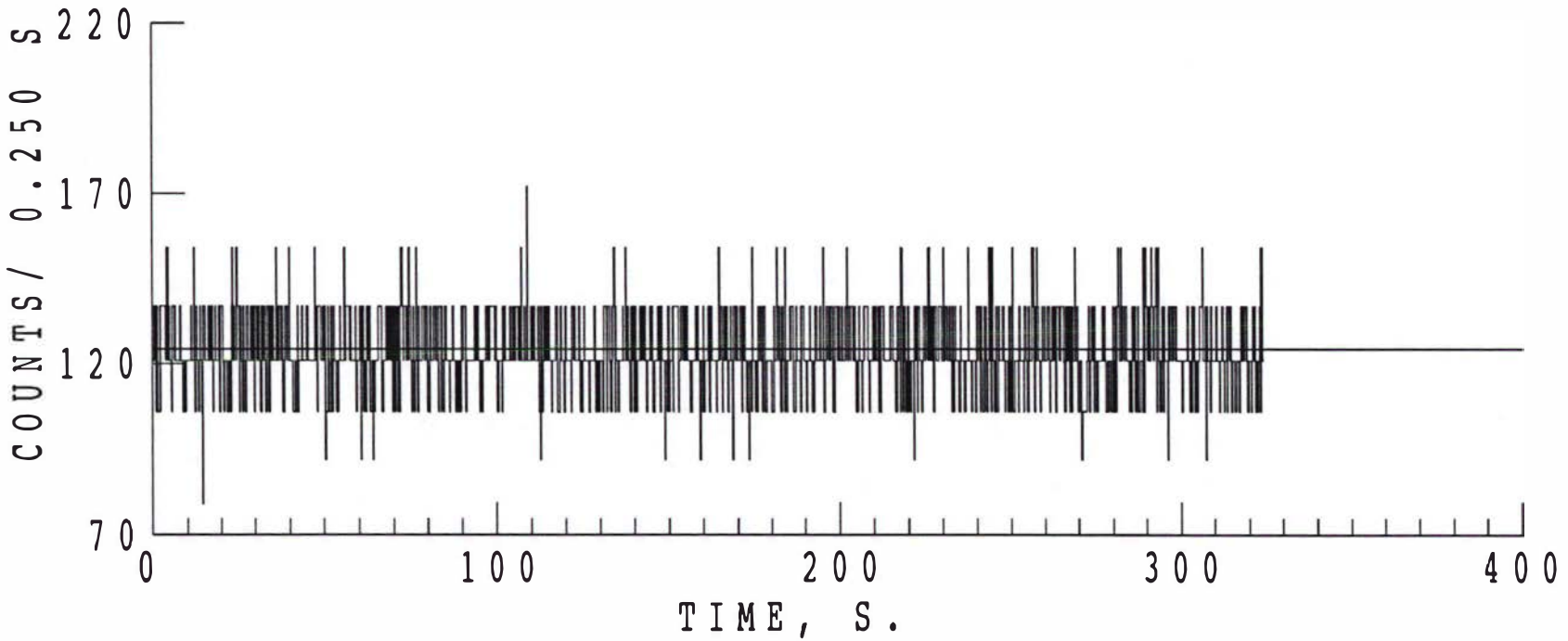
ULYSSES RT 21/ 3/97

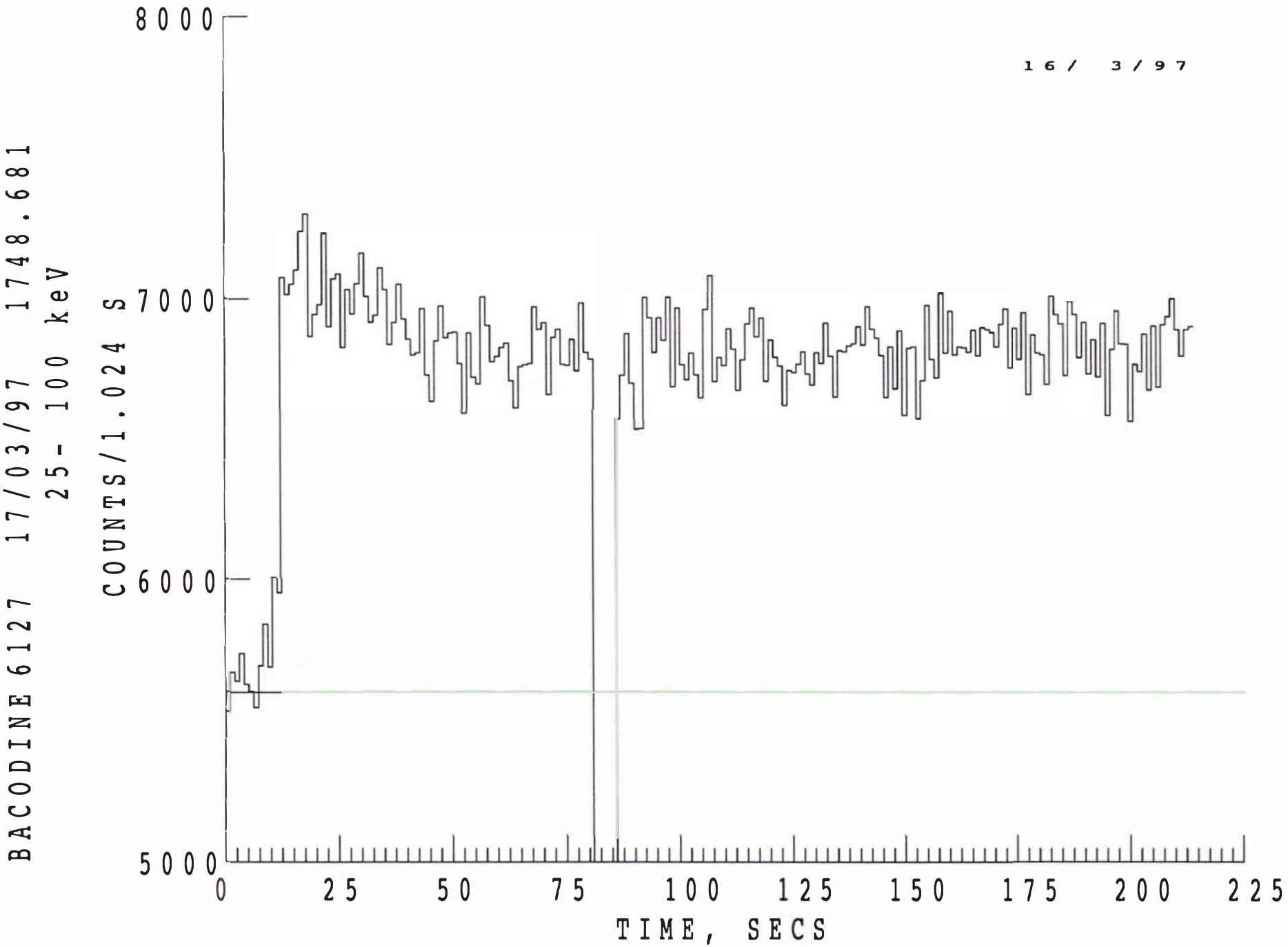
17/ 3/97 3600.235 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6127 17/03/97 1748.681
25- 100 keV
COUNTS/1.024 S
8000
7000
6000
5000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
16/ 3/97

From DEAL@fender.msfc.nasa.gov Wed Mar 19 09:37 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA12866; Wed, 19 Mar 1997 09:37:13 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 19 Mar 1997 11:36:43 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970319113643.20c0187a@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6128
Content-Type: text
Content-Length: 1135
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST # 6128
EVENT OF 1997 MAR 17 DAY OF YEAR= 76
EVENT CROSSING TIME AT BATSE : 84027. S. OR 23:20:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 112.000 69.000
BATSE PEAK COUNTING RATE: 3400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 3/ 97 IS:
RA= 159.644 DEC= 36.644 DIST= 4.115 AU
BATSE-ULYSSES DISTANCE = 615667097. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1542.13 SECS.
CROSSING TIME AT ULYSSES IS 82485. S. OR 22:54:44 +/- 262.04 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 3/ 97 IS:
RA= 178.629 DEC= 4.625 DIST= 0.661 AU
MARS-BATSE DISTANCE = 98870656. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -71.56 SECS.
CROSSING TIME AT MARS IS 83955. S. OR 23:19:15 +/- 54.81 SECONDS

BATSE BURST TRIGGER
NO.: 6128

TIME: TJD=0524 SECONDS=84027

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=58.3 AZIMUTH=234.8 ERROR=2.1 DEGREES

COMMENTS:
GRB DOUBLE PEAKED. TOTAL DURATION ~ 75 S. VISIBLE ABOVE 300 KEV. CRAB OCCULTATIO
N STEP @ 84197 SOD.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6128	970317	10524	84027	3400	112	+69	75

BATSE BURST# 6128

ULYSSES RT 11/ 8/97

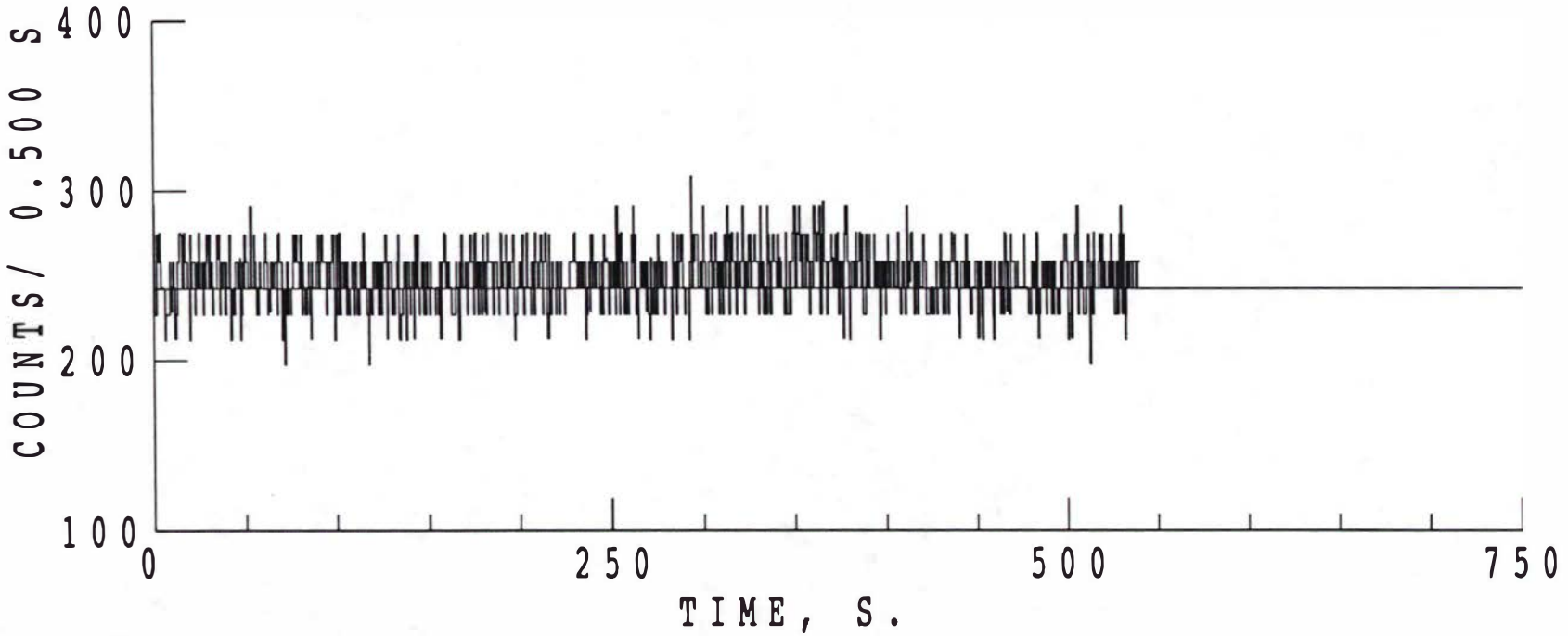
17/ 3/97 82224.156 s

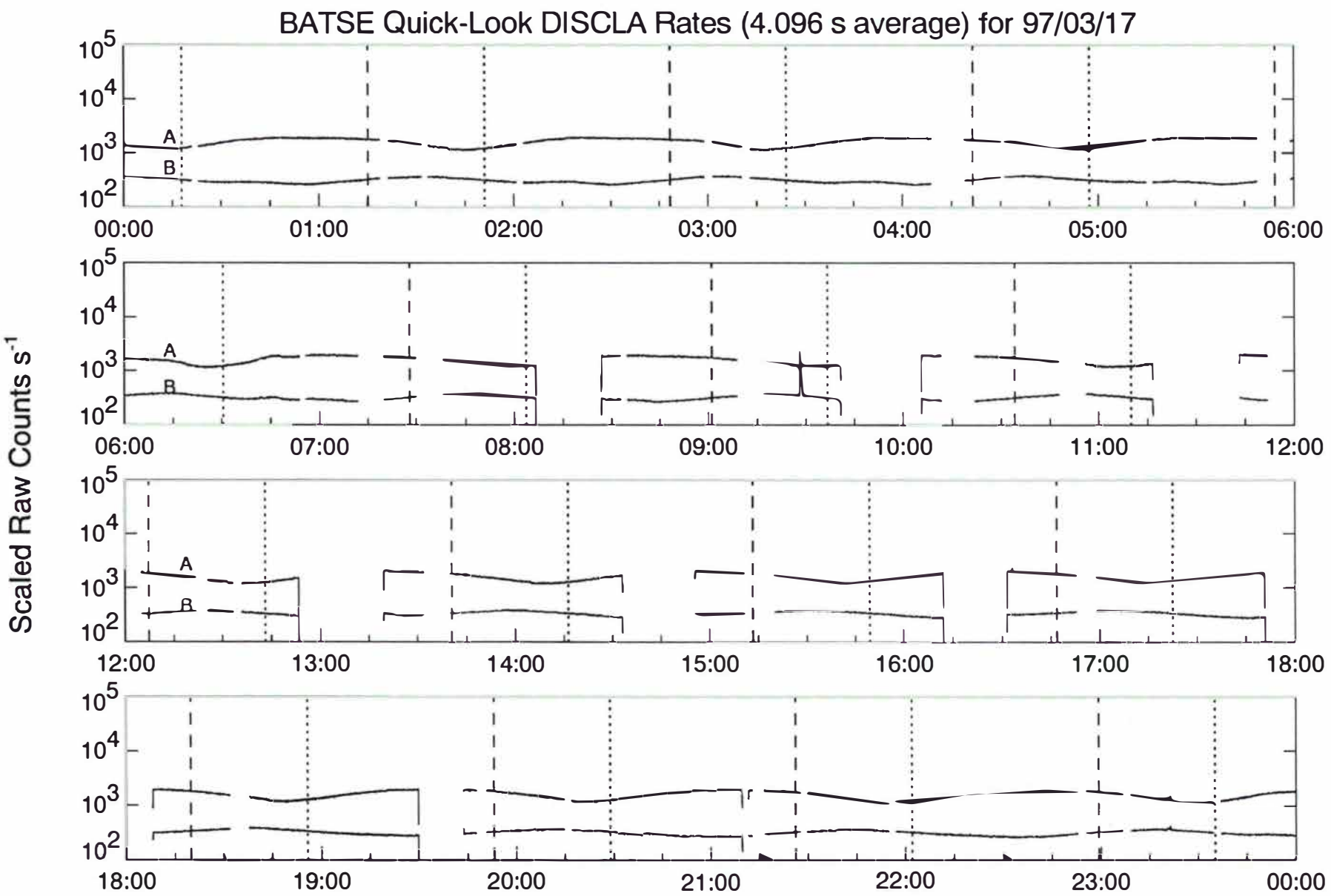
0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

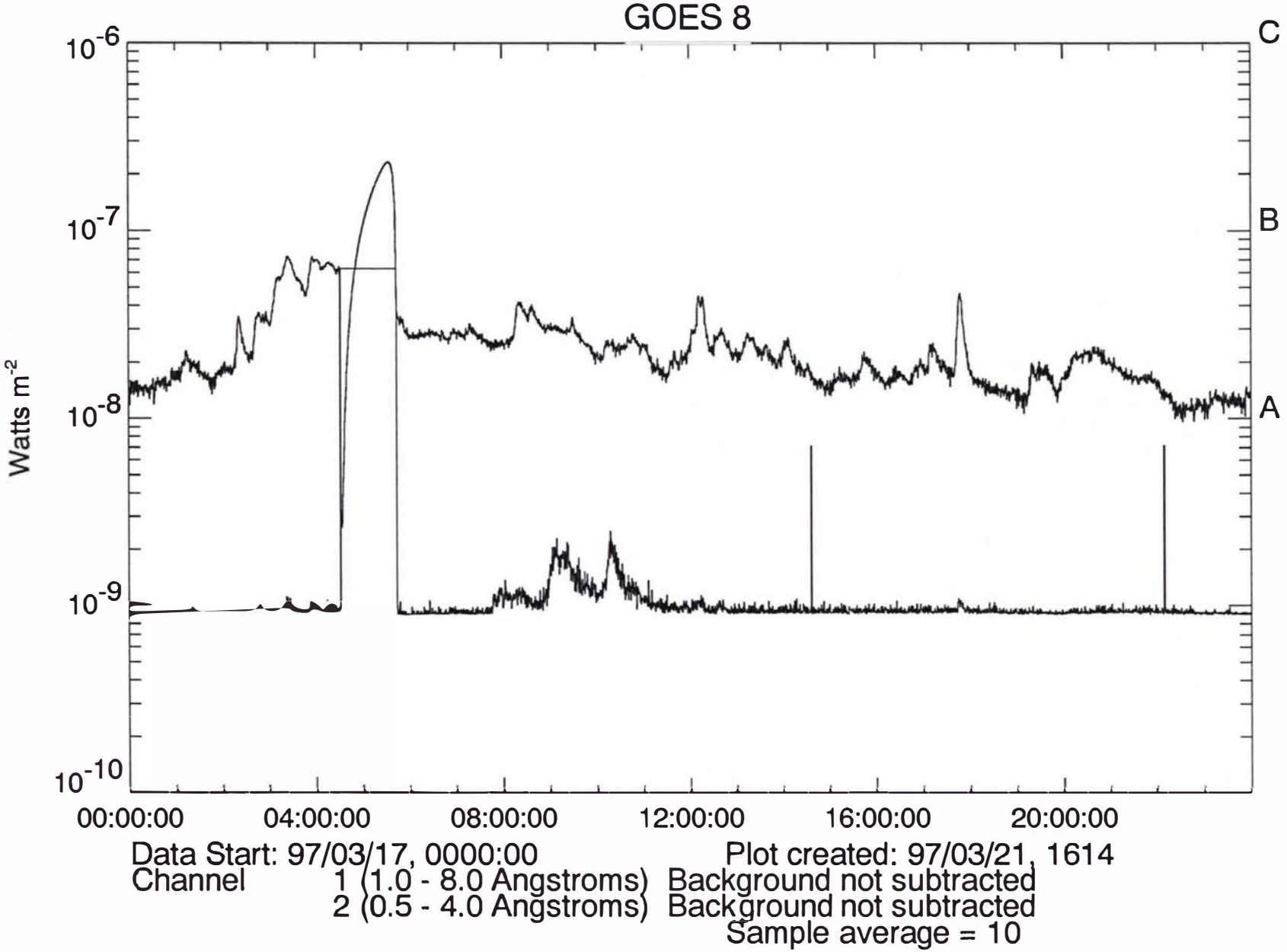




Current Time: 97/03/21, 1614 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

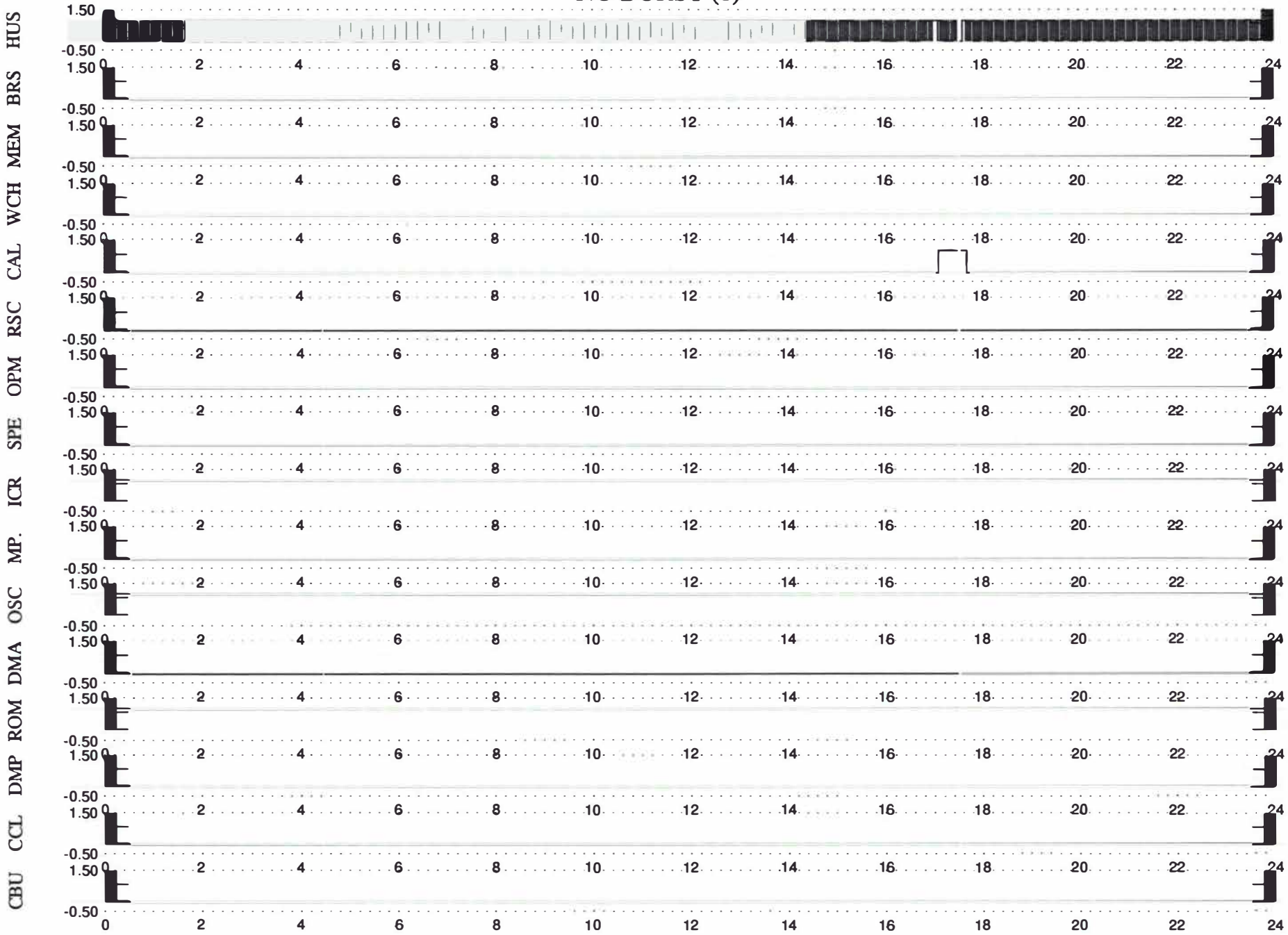
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/17, 0000:00
Plot created: 97/03/21, 1614
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 76, year 1997 to day 76, year 1997 7/21/97

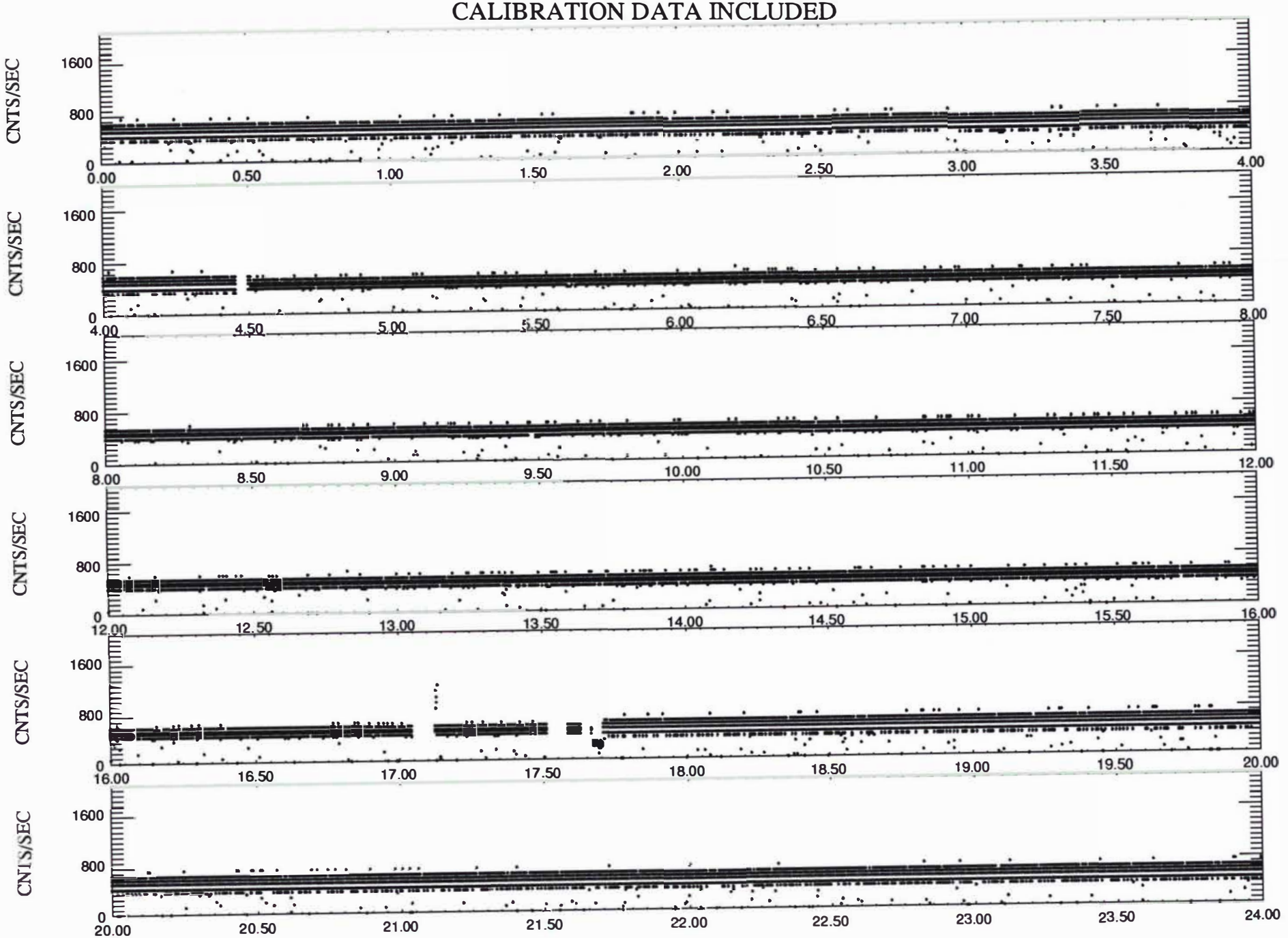
NO BURST (1)



UNIVI AL TIME

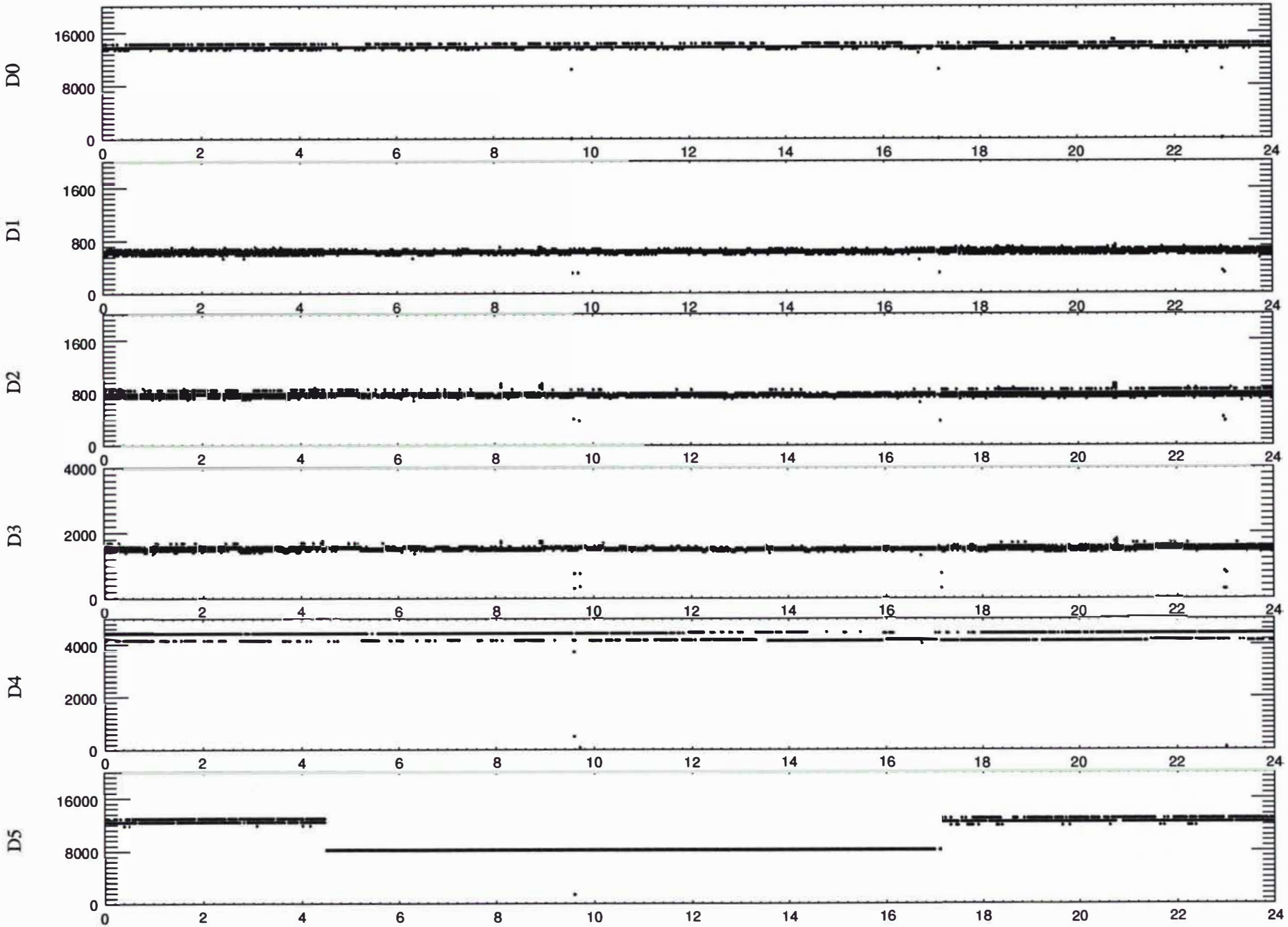
HUS 2A, MODE 1, NOT AVERAGED EDR day 76, year 1997 to day 76, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 76, year 1997 to day 76, year 1997 7/21/97



From WOODSP@SSLLES.MSFC.NASA.GOV Thu Mar 20 09:41 PST 1997
Return-Path: <WOODSP@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA22319; Thu, 20 Mar 1997 09:41:04 -0800
Date: Thu, 20 Mar 1997 11:39:38 -0600 (CST)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970320113938.2021390a@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6129
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: O

****
BATSEARCH PROGRAM
****

BATSE BURST # 6129
EVENT OF 1997 MAR 18 DAY OF YEAR= 77
EVENT CROSSING TIME AT BATSE : 30240. S. OR 08:24:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 135.000 56.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 3/ 97 IS:
RA= 159.539 DEC= 36.630 DIST= 4.119 AU
BATSE-ULYSSES DISTANCE = 616228074. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=154.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1855.85 SECS.
CROSSING TIME AT ULYSSES IS 28384. S. OR 07:53:04 +/- 175.25 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 3/ 97 IS:
RA= 178.261 DEC= 4.764 DIST= 0.660 AU
MARS-BATSE DISTANCE = 98765272. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=118.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -156.38 SECS.
CROSSING TIME AT MARS IS 30084. S. OR 08:21:23 +/- 47.97 SECONDS

BATSE BURST TRIGGER
NO.: 6129

TIME: TJD=0525 SECONDS=30240

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=58.4 AZIMUTH=215.5 ERROR=6.8 DEGREES

COMMENTS:
GRB LASTING ~ 0.1 SEC. SINGLE PULSE WITH A HARD SPECTRUM. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6129	970318	10525	30240	3500	135	+56	.1

BATSE# 6129

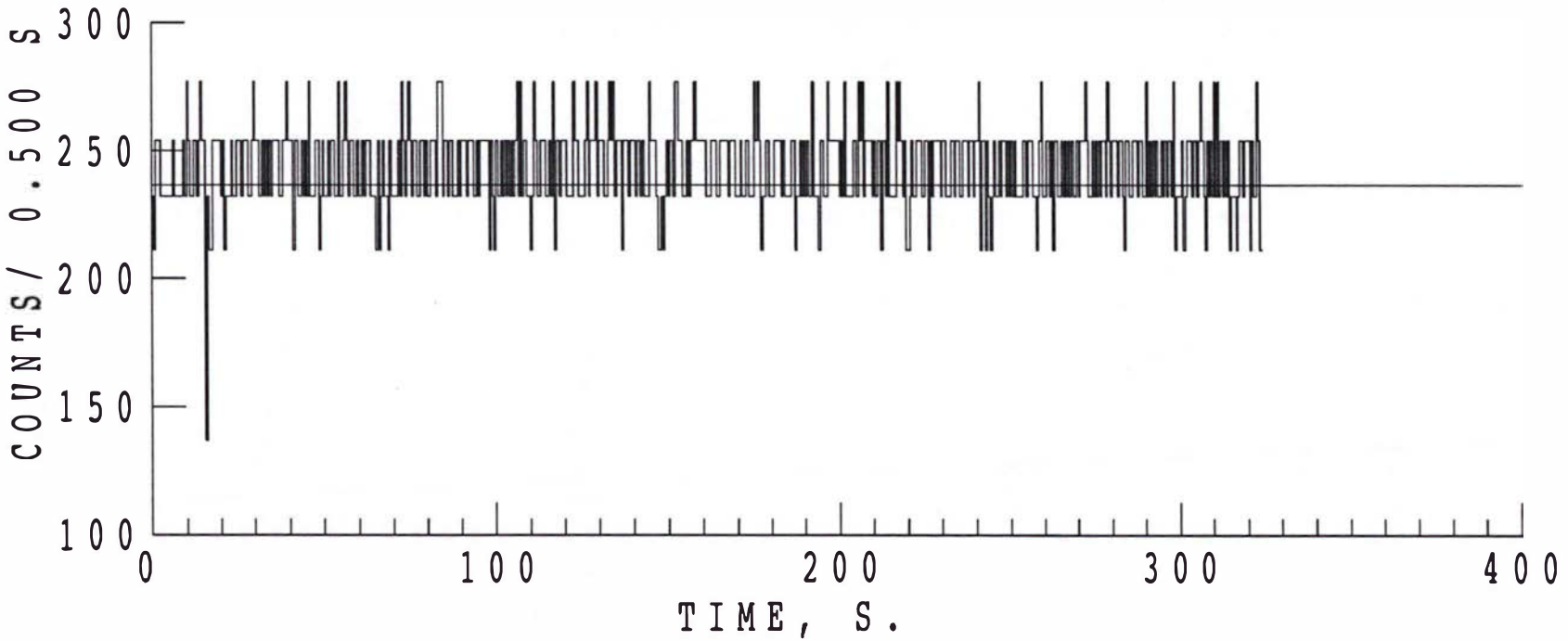
ULYSSES RT 20/ 3/97

18/ 3/97 28224.297 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@ssl.msfc.nasa.gov Thu Mar 20 09:46 PST 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 20 Mar 1997 11:45:38 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.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.: 6130

TIME: TJD=0525 SECONDS=52942

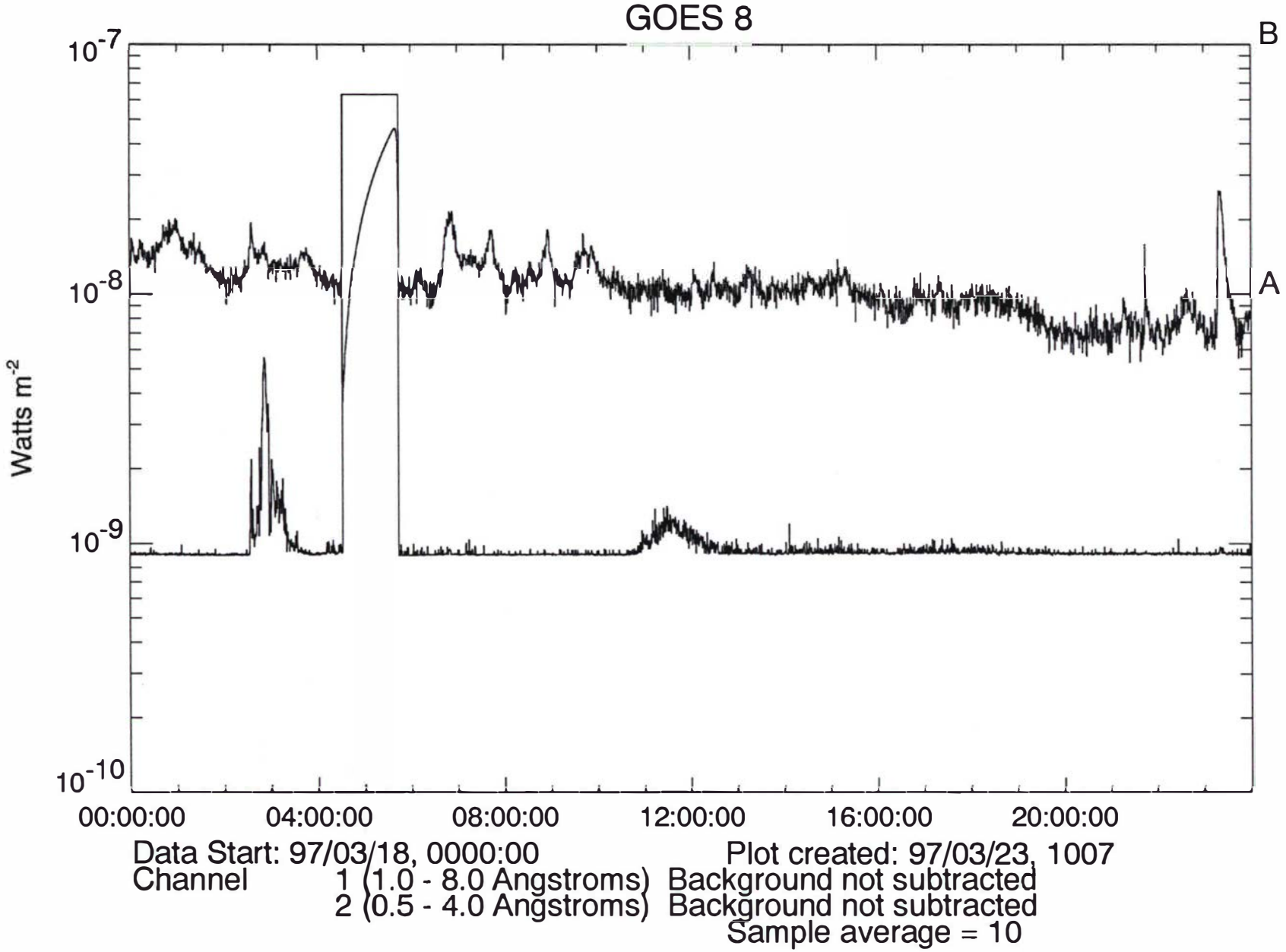
TYPE: CYG X-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

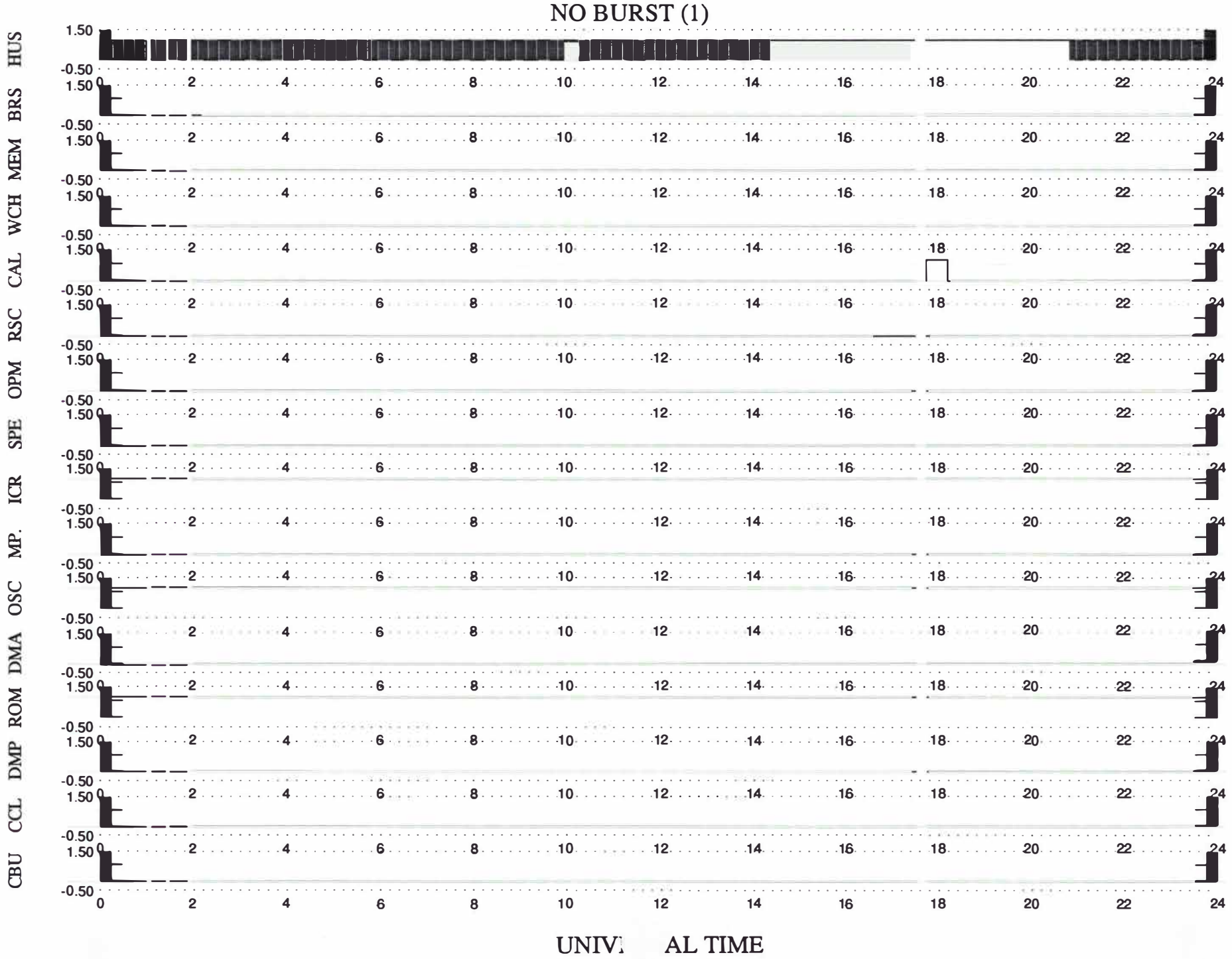
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.3 AZIMUTH=273.9 ERROR=6 DEGREES

COMMENTS:
BRIGHT CYG X-1 FLUCTUATION. CYG X-1 RISE AT T - 13 SEC.

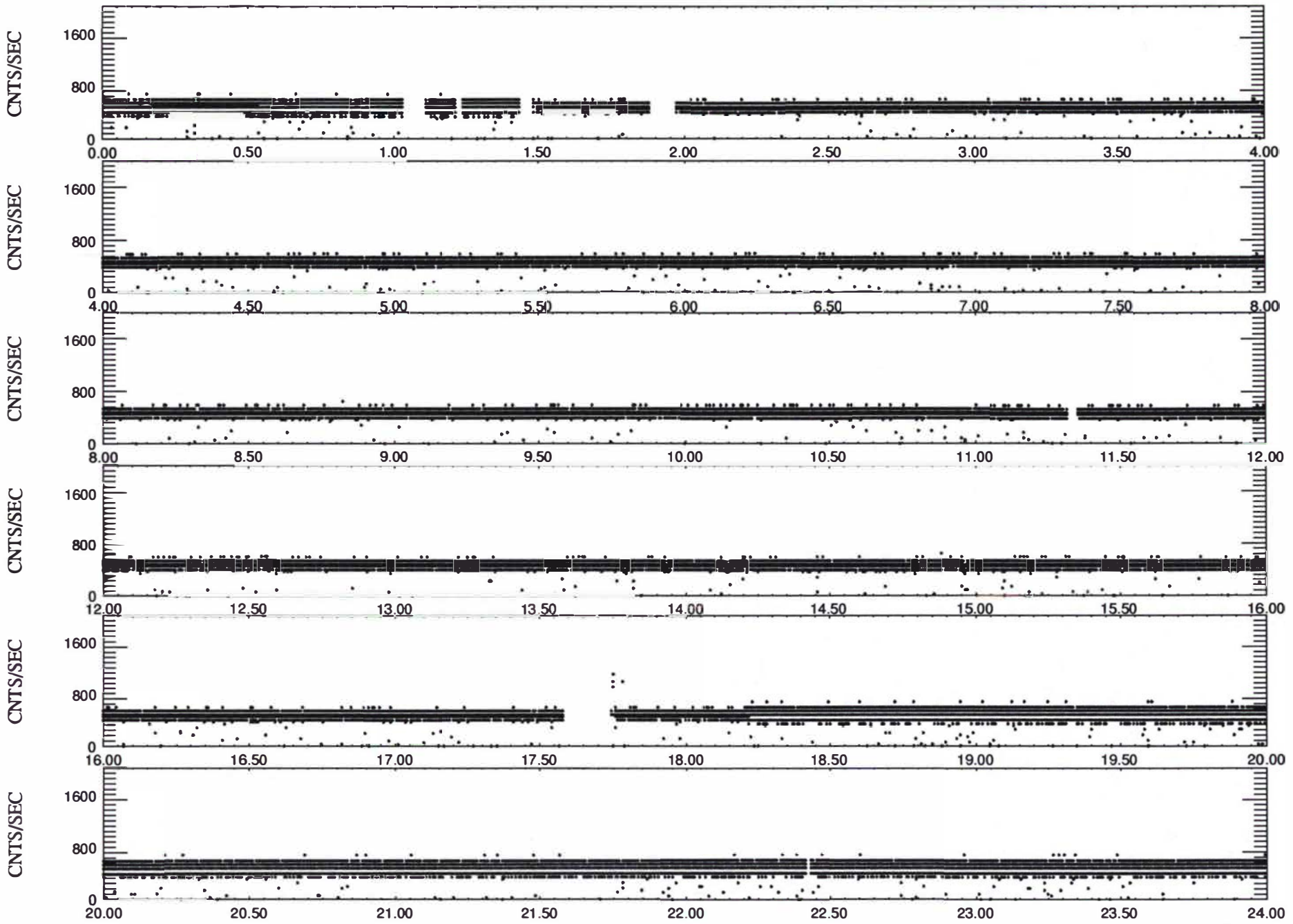

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/18, 0000:00
Plot created: 97/03/23, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 77, year 1997 to day 77, year 1997 7/21/97



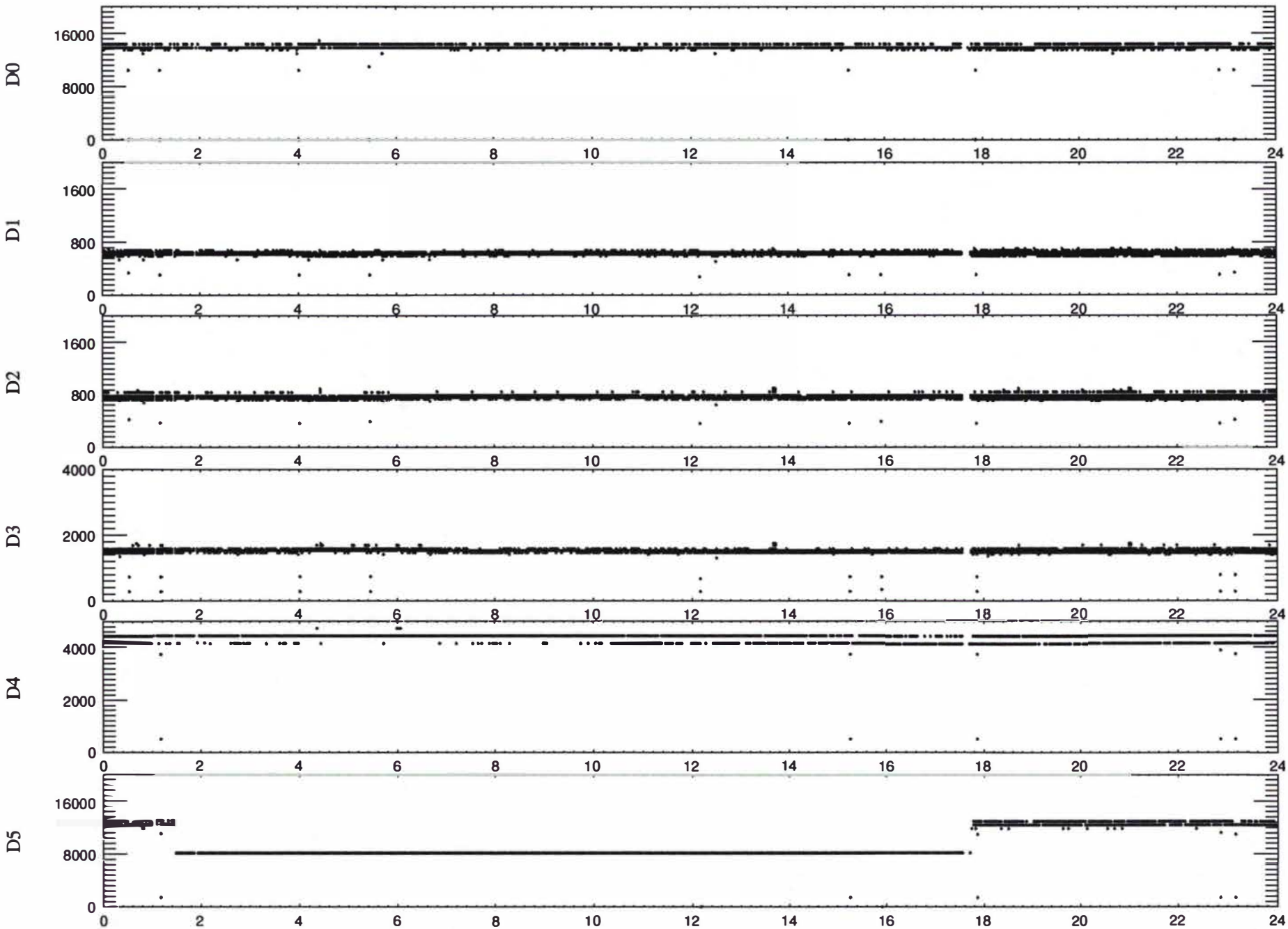
HUS 2A, MODE 1, NOT AVERAGED EDR day 77, year 1997 to day 77, year 1997 7/21/97

CALIBRATION DATA INCLUDED

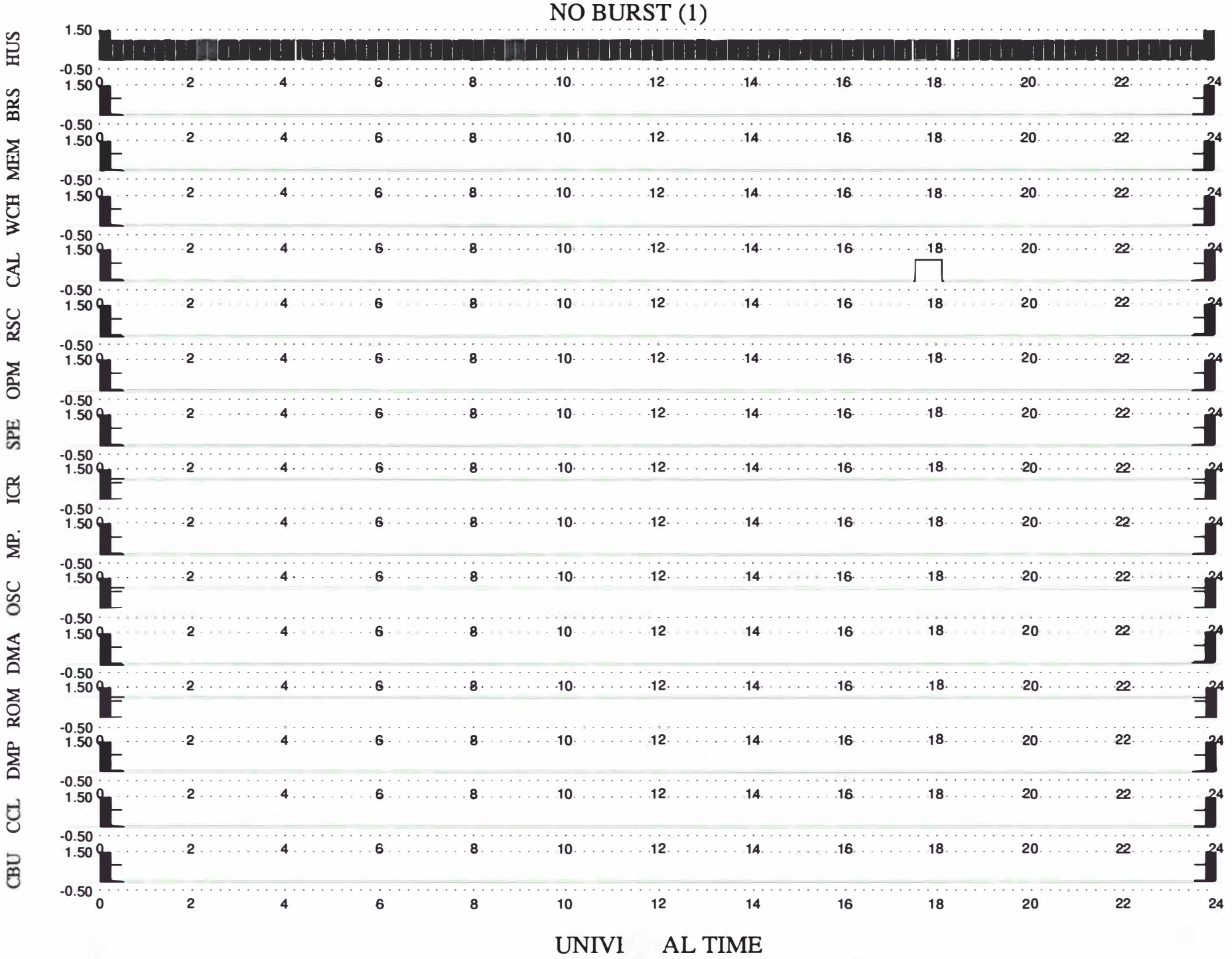


UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 77, year 1997 to day 77, year 1997 7/21/97

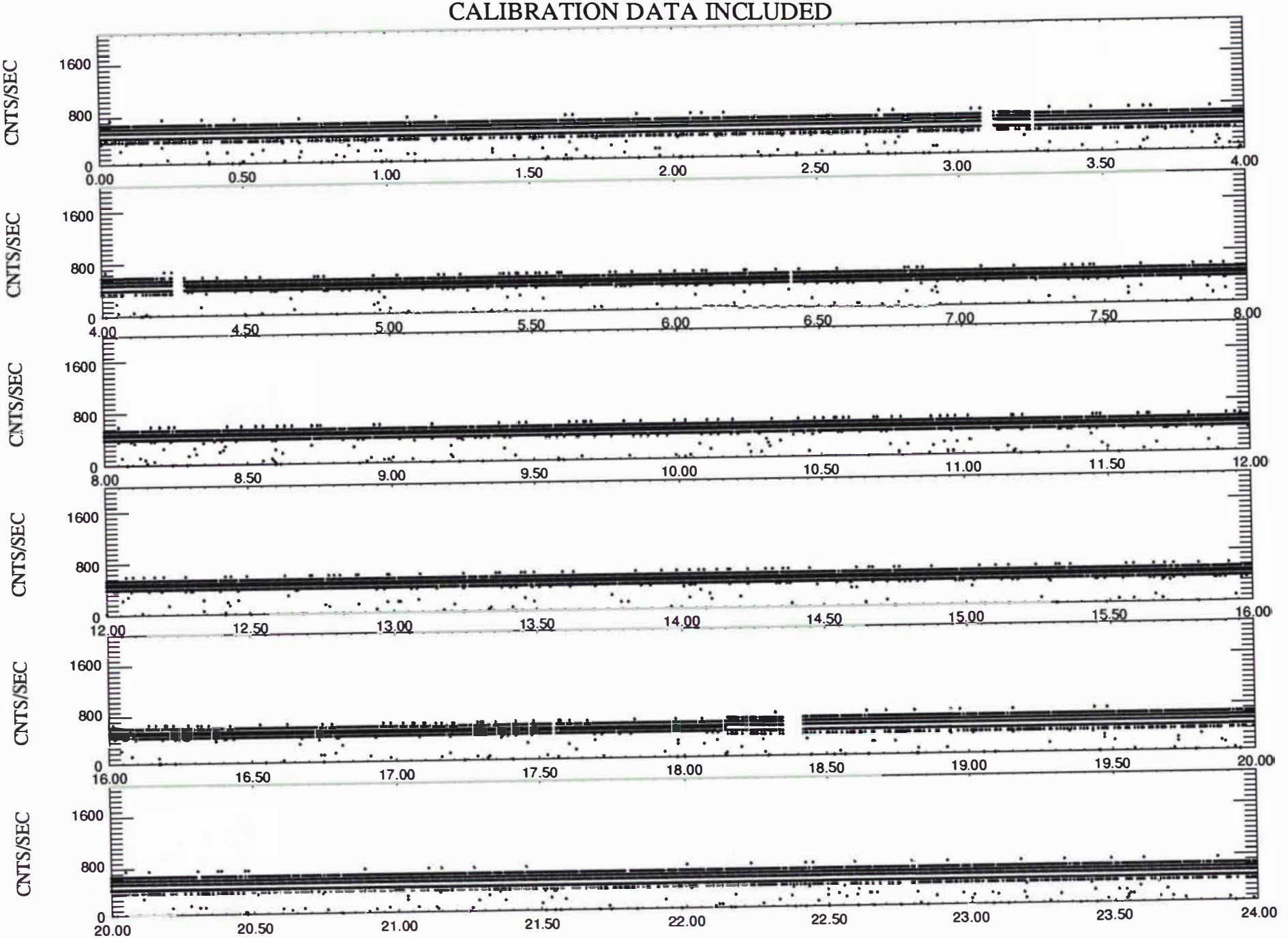


HUS MODES EDR day 78, year 1997 to day 78, year 1997 7/21/97



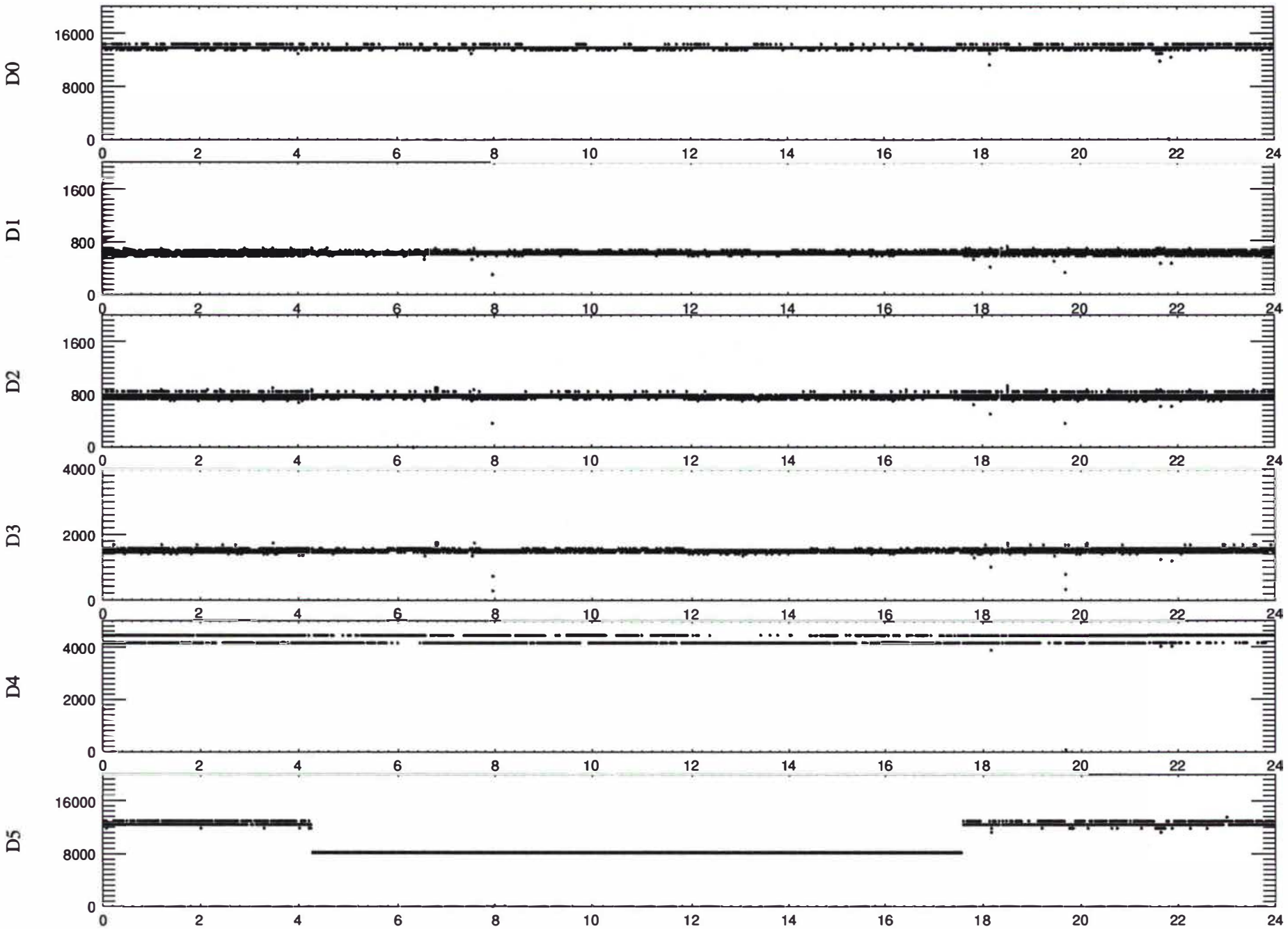
HUS 2A, MODE 1, NOT AVERAGED EDR day 78, year 1997 to day 78, year 1997 7/21/97

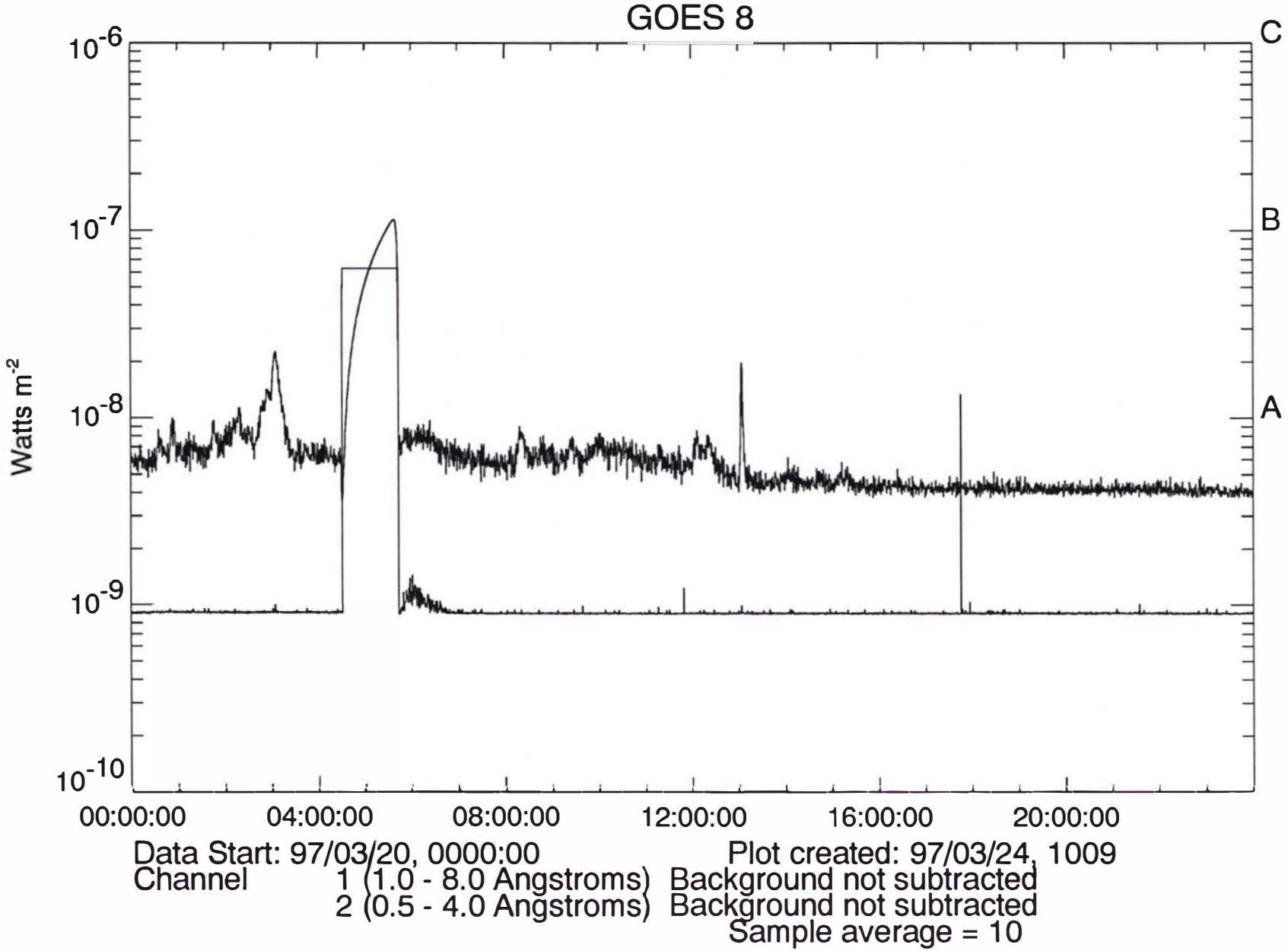
CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 78, year 1997 to day 78, year 1997 7/21/97




GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/20, 0000:00
Plot created: 97/03/24, 1009
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 79, year 1997 to day 79, year 1997 7/21/97

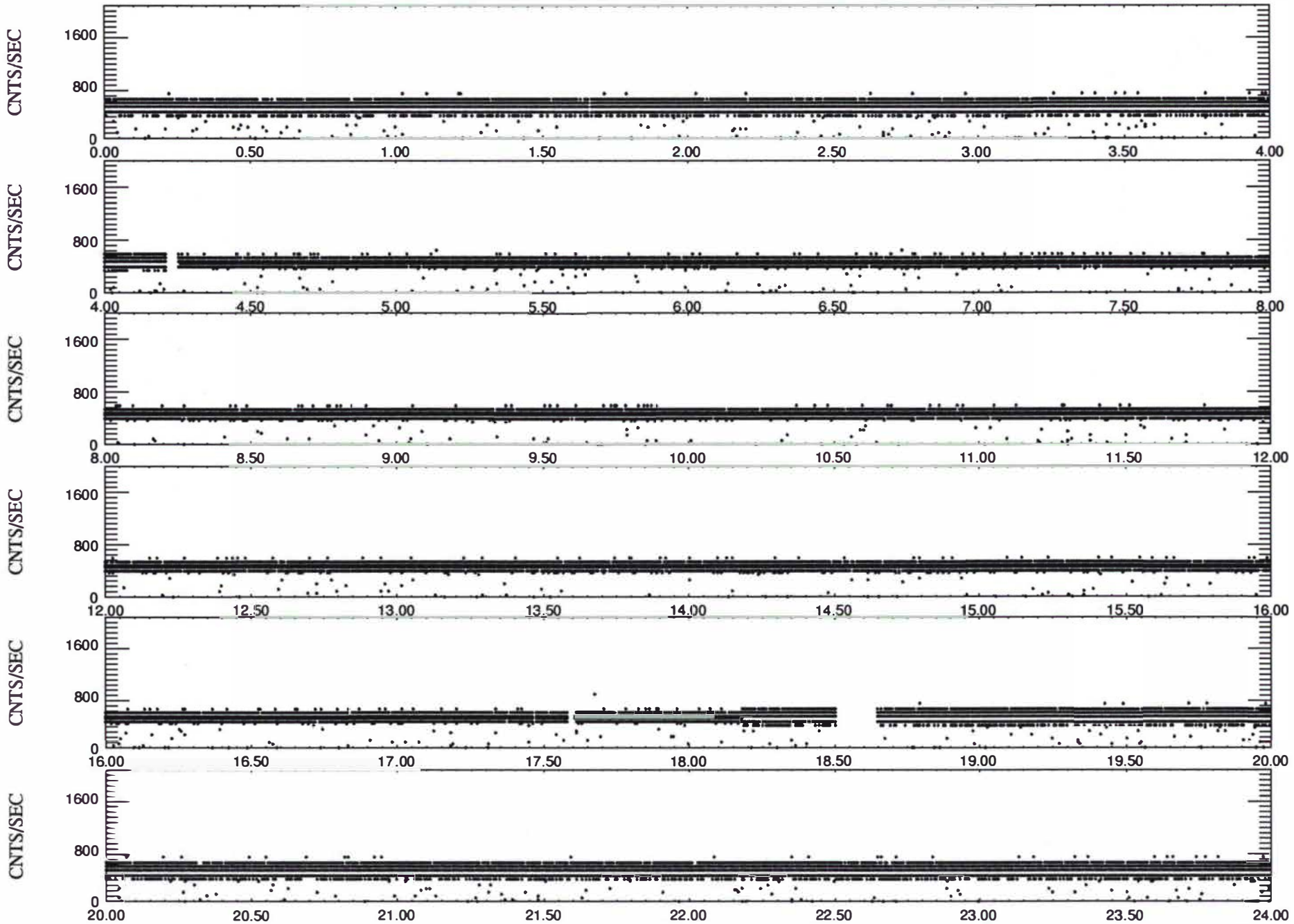
NO BURST (1)



UNIV. AL TIME

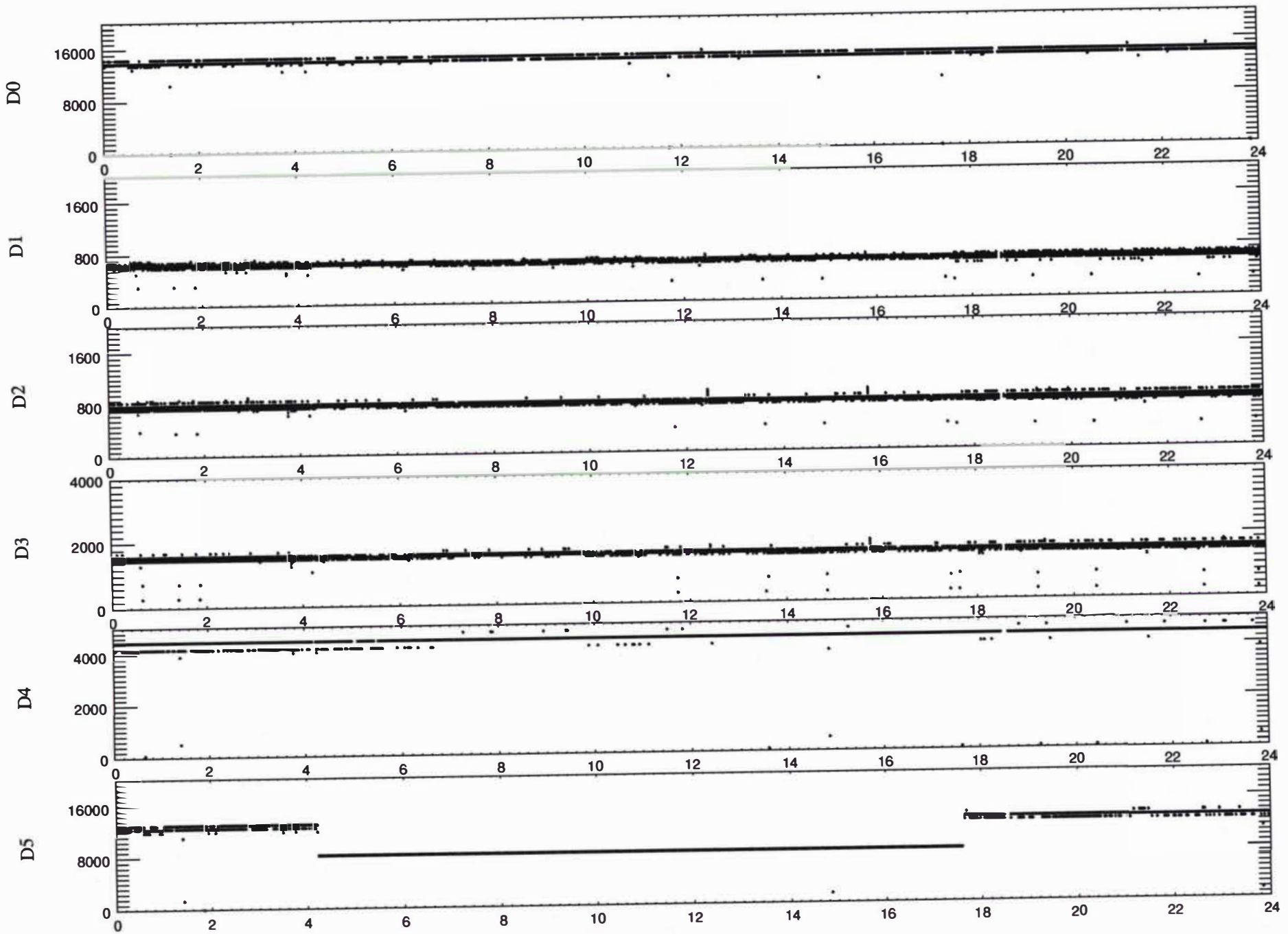
HUS 2A, MODE 1, NOT AVERAGED EDR day 79, year 1997 to day 79, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 79, year 1997 to day 79, year 1997 7/21/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From DEAL@fender.msfc.nasa.gov Mon Mar 24 10:37 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id KAA11357; Mon, 24 Mar 1997 10:37:04 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 24 Mar 1997 12:35:35 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970324123535.20c01aa7@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6131
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: O

****
BATSEARCH PROGRAM
****

BATSE BURST # 6131
EVENT OF 1997 MAR 21 DAY OF YEAR= 80
EVENT CROSSING TIME AT BATSE : 60574. S. OR 16:49:34.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 95.000 51.000
BATSE PEAK COUNTING RATE: 5100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 3/ 97 IS:
RA= 158.636 DEC= 36.493 DIST= 4.154 AU
BATSE-ULYSSES DISTANCE = 621409837. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1423.72 SECS.
CROSSING TIME AT ULYSSES IS 59150. S. OR 16:25:50 +/- 289.93 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 3/ 97 IS:
RA= 177.156 DEC= 5.171 DIST= 0.659 AU
MARS-BATSE DISTANCE = 98646432. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -51.19 SECS.
CROSSING TIME AT MARS IS 60523. S. OR 16:48:42 +/- 55.66 SECONDS

BATSE BURST TRIGGER

NO.: 6131

TIME: TJD=0528 SECONDS=60574

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=60.2 AZIMUTH=296.3 ERROR=5.8 DEGREES

COMMENTS:
BURST LASTING ~ 12 S. VISIBLE ABOVE 300 KEV.
OCCULTATION STEP @ 60436 SOD. CYGX-1.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6131	970321	10528	60574	5100	095	+51	12

BACODINE# 6131

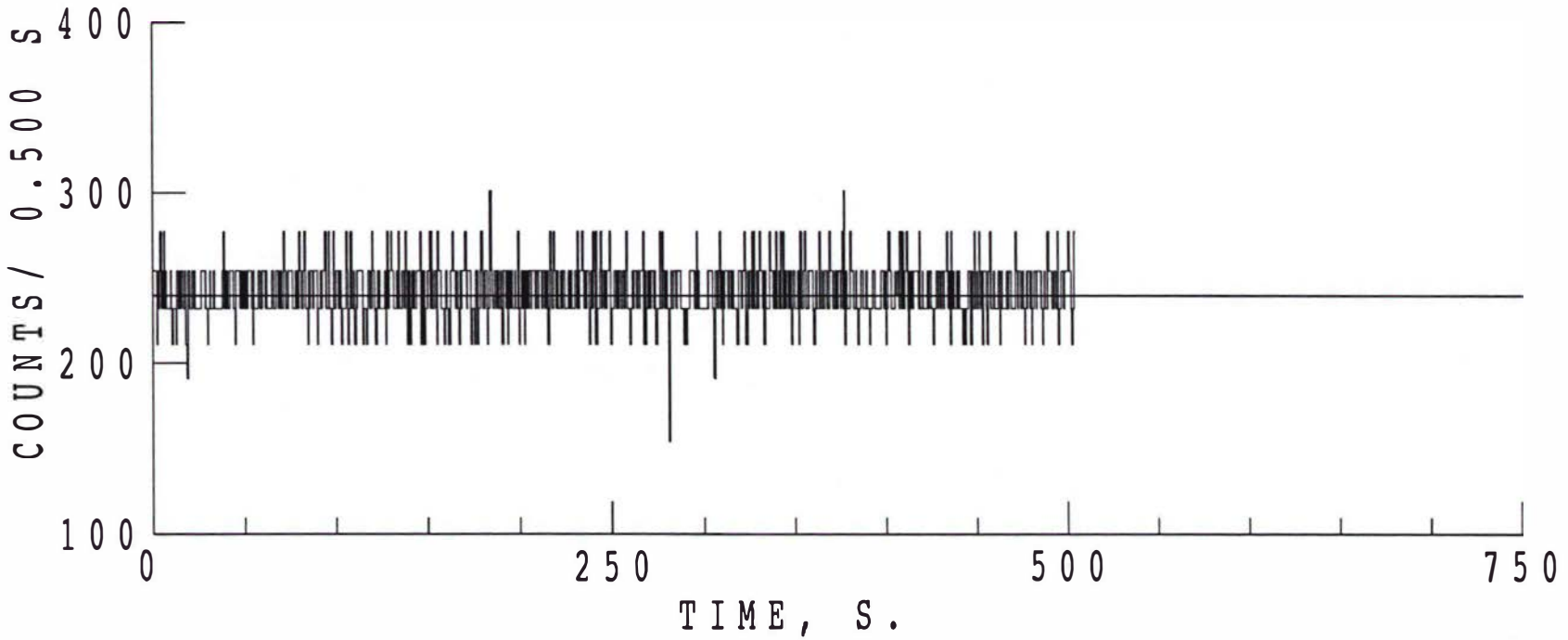
ULYSSES RT 24/ 3/97

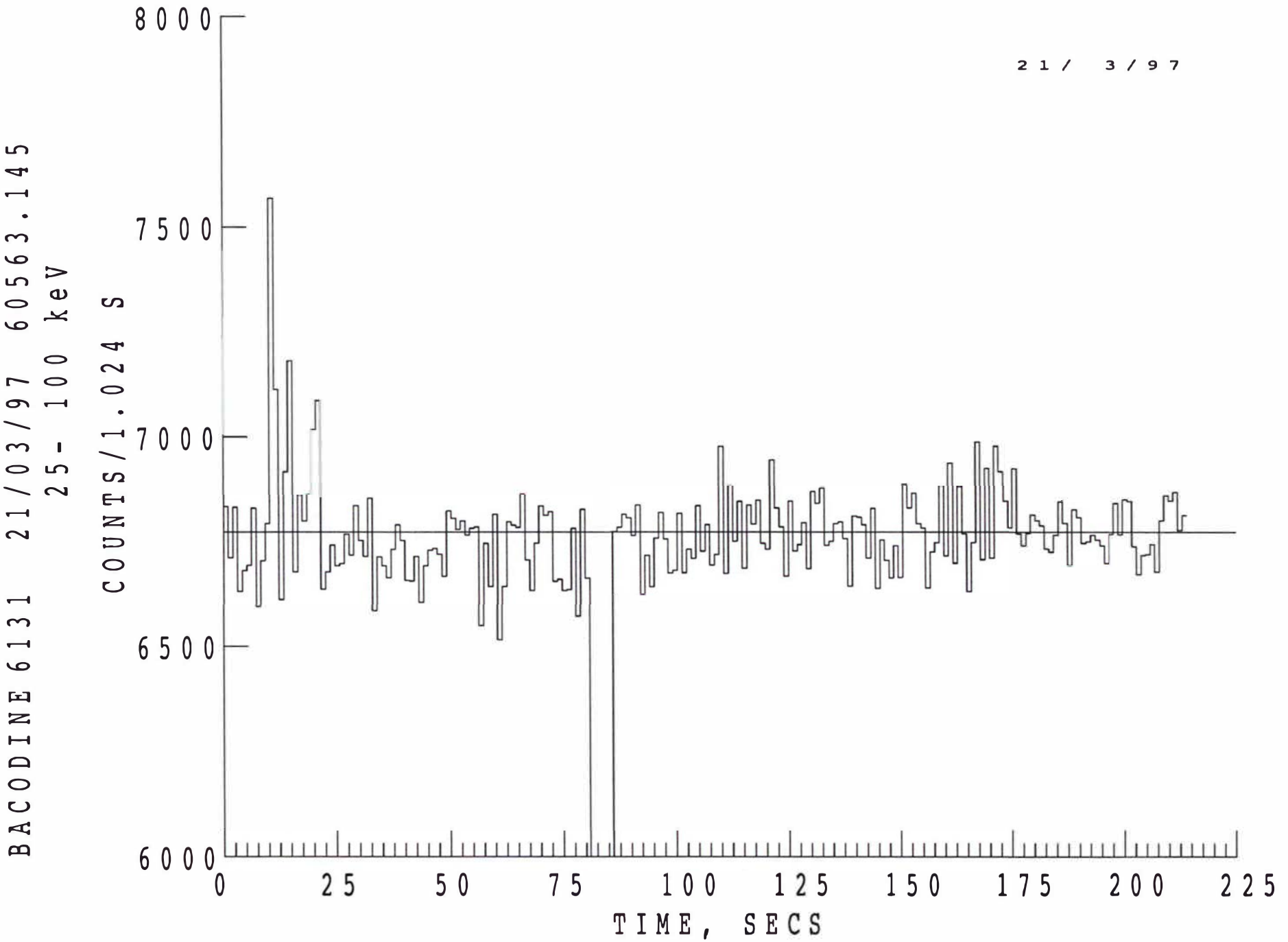
20/ 3/97 58716.199 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6131 21/03/97 60563.145
25- 100 keV
COUNTS/1.024 S
8000
7500
7000
6500
6000
21/ 3/97
0
25
50
75
100
125
150
175
200
225
TIME, SECS

From DEAL@fender.msfc.nasa.gov Mon Mar 24 10:38 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 24 Mar 1997 12:38:32 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
band@cass09.ucsd.edu, gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6132

TIME: TJD=0528 SECONDS=64819

TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYGX-1 FLUCTUATION

From DEAL@fender.msfc.nasa.gov Mon Mar 24 10:31 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 24 Mar 1997 12:31:20 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
band@cass09.ucsd.edu, gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6133

TIME: TJD=0528 SECONDS=73869

TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

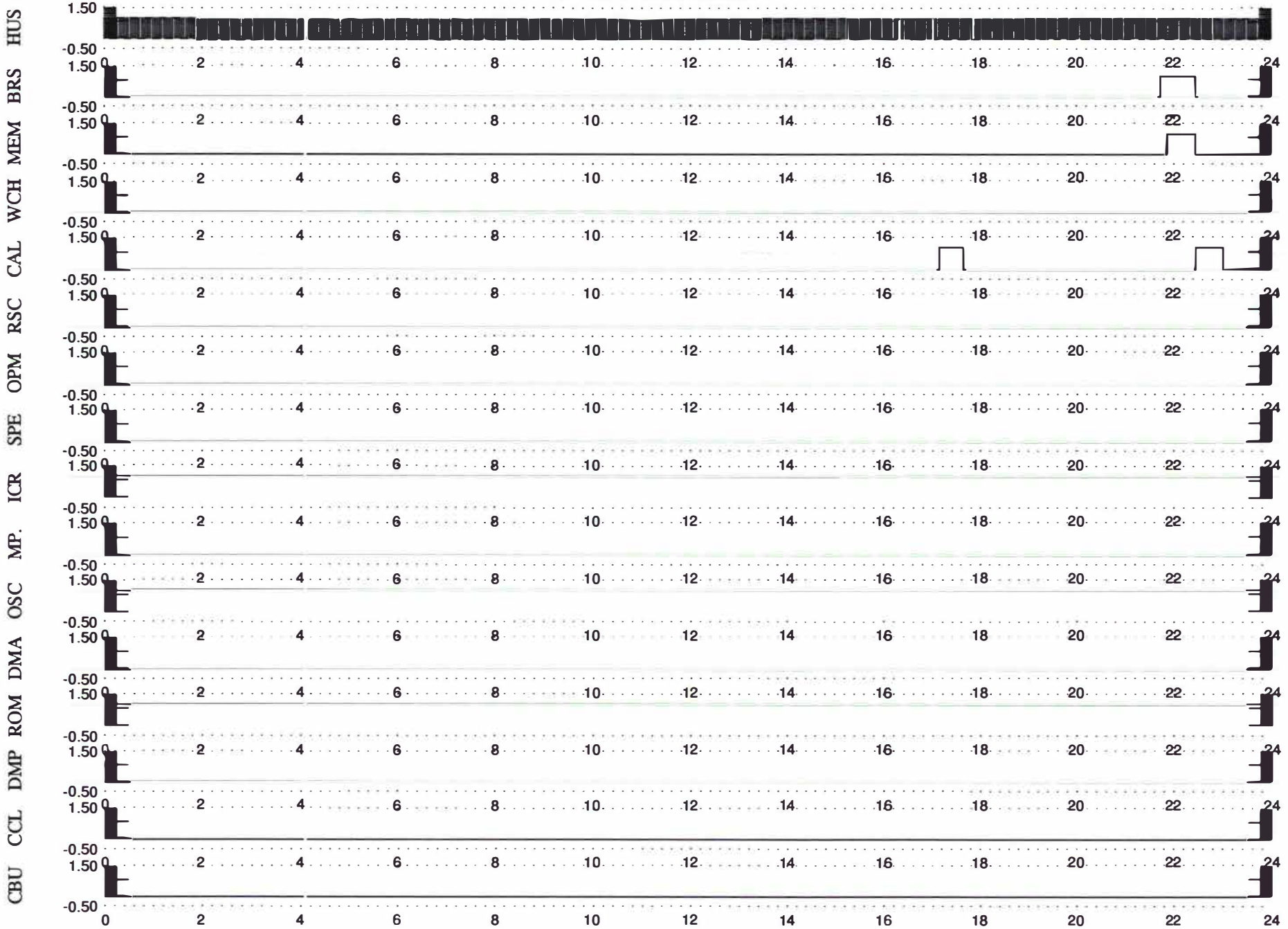
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYGX-1 FLUCTUATION.

HUS MODES EDR day 80, year 1997 to day 80, year 1997 7/21/97

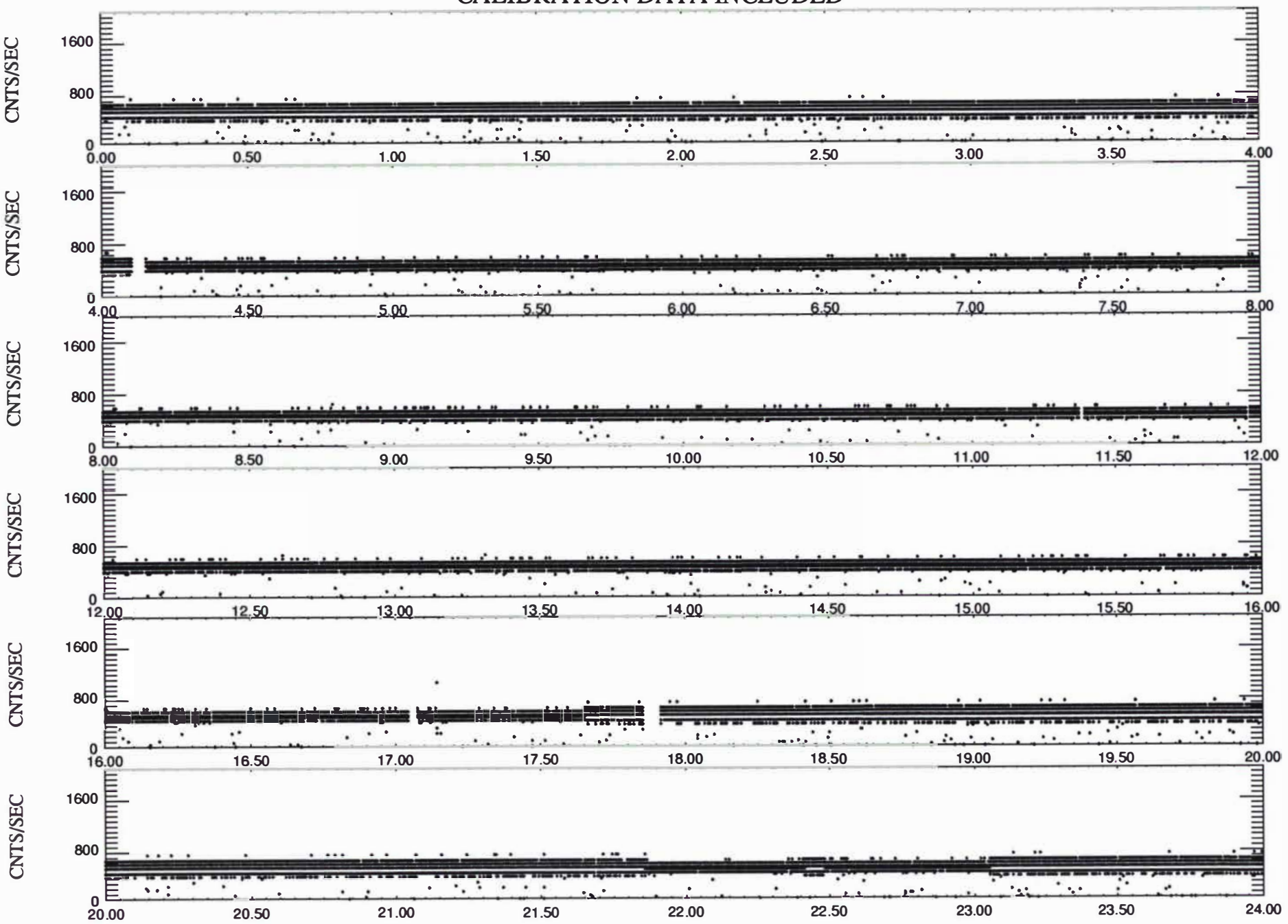
BURST NUMBER 2



UNIV. AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 80, year 1997 to day 80, year 1997 7/21/97

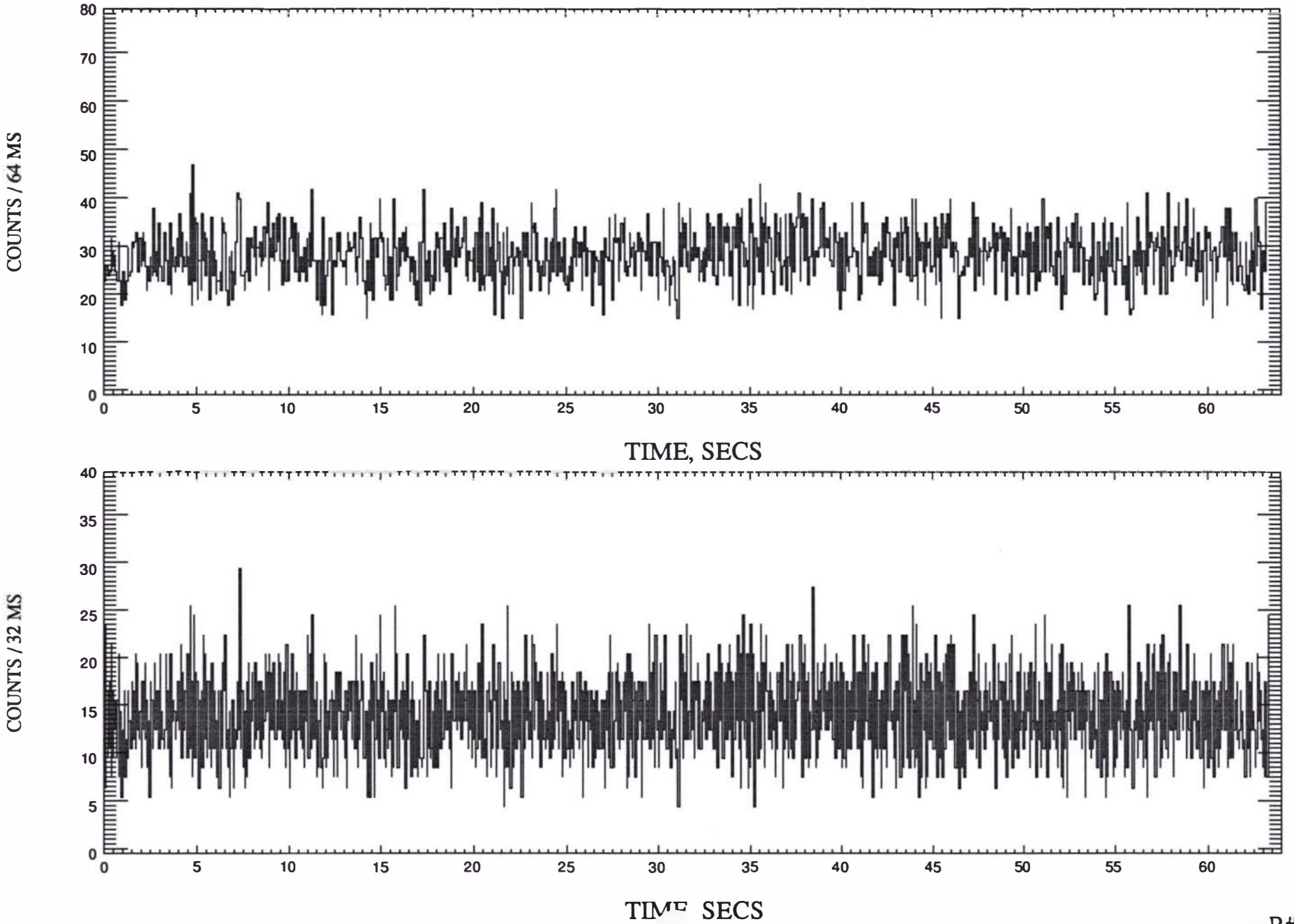
CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2A TRIGGERED DATA EDR day 80, year 1997 7/21/97

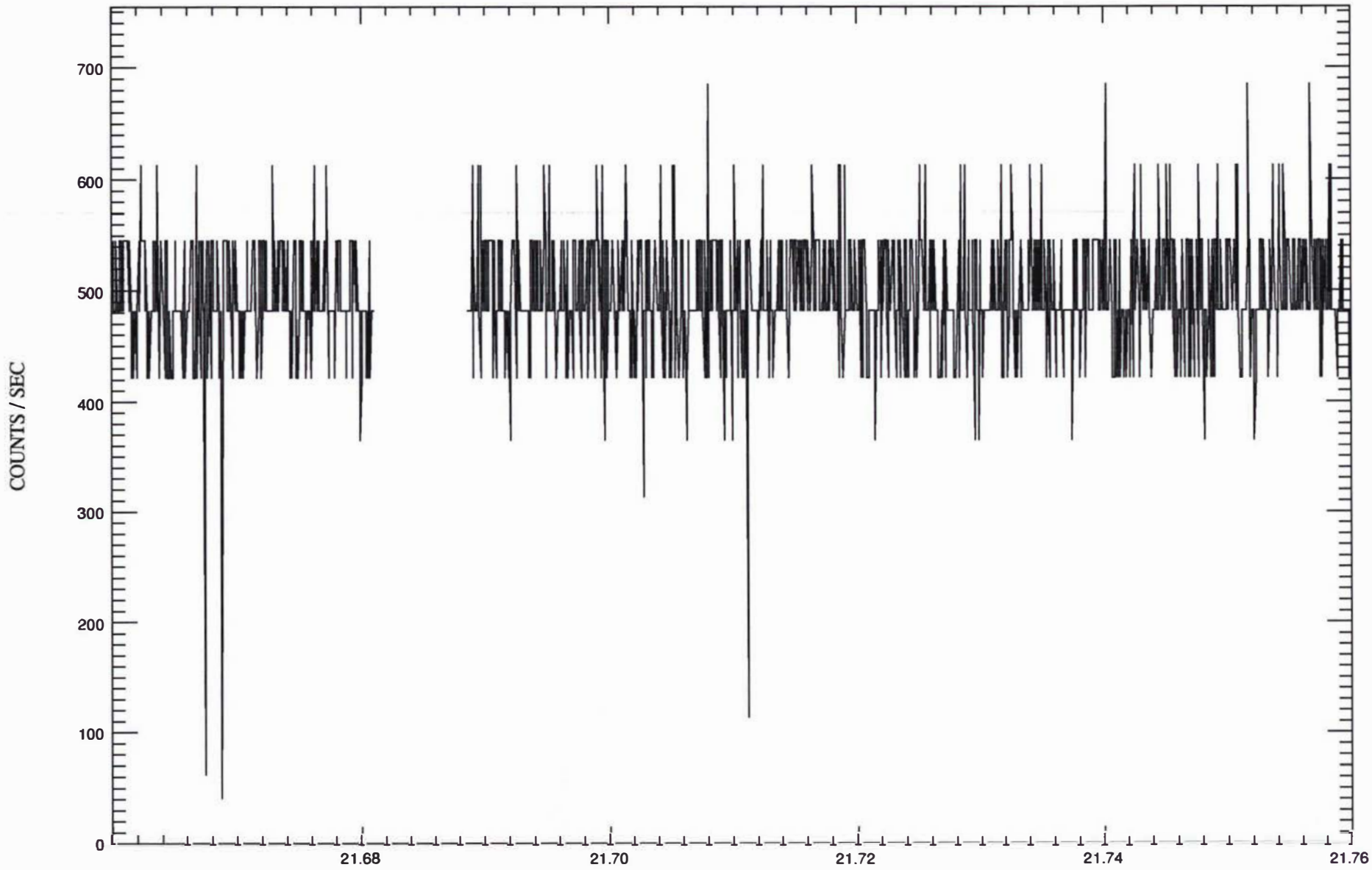
Burst Counter 2 at UT=21.708110050625 h=78149.196 s 21:42:29.196



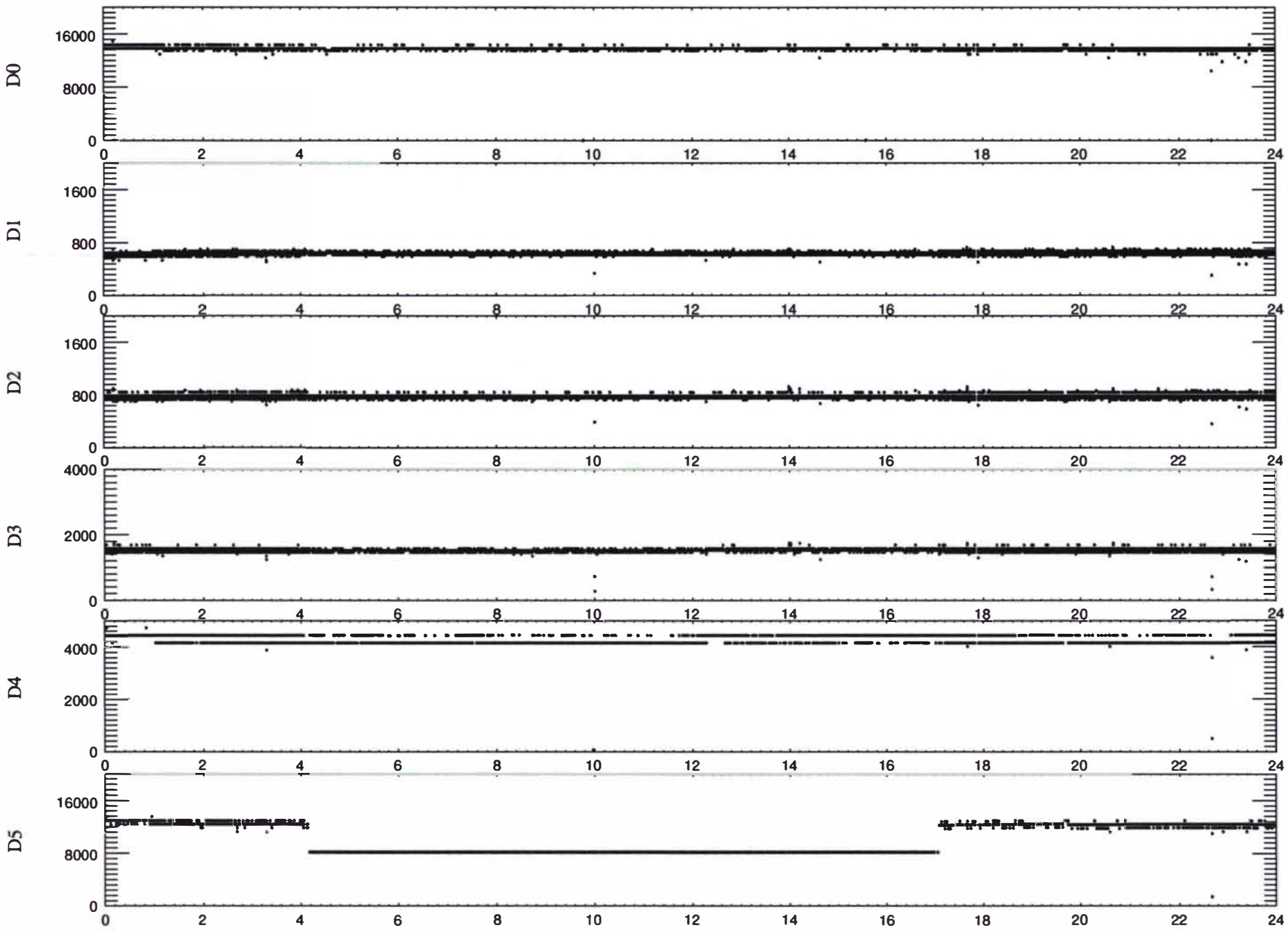
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 80, year 1997 to day 80, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 80, year 1997 to day 80, year 1997 7/21/97



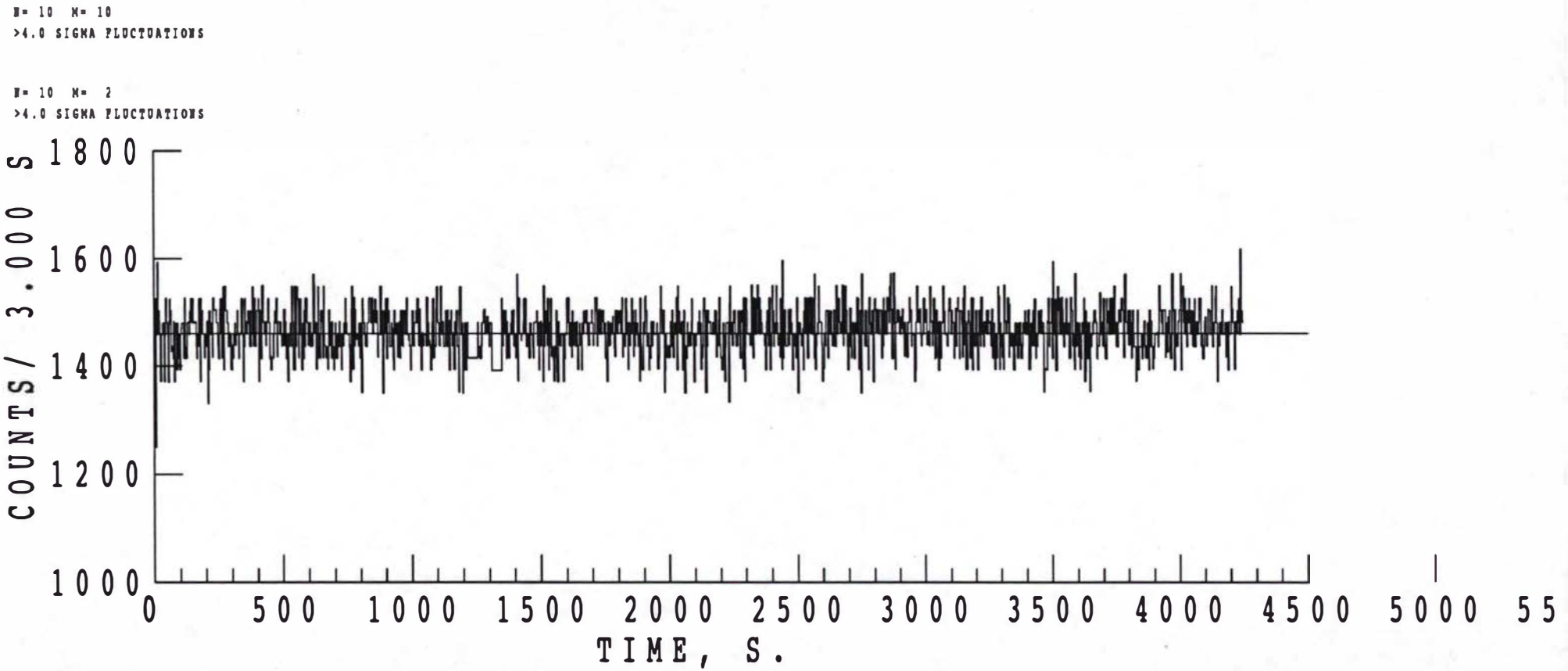
KONUS

ULYSSES RT 02/02/00

22/03/97 10620.172 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
T khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
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113 14:31	not detected
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970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
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970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

HUS MODES EDR day 81, year 1997 to day 81, year 1997 7/21/97

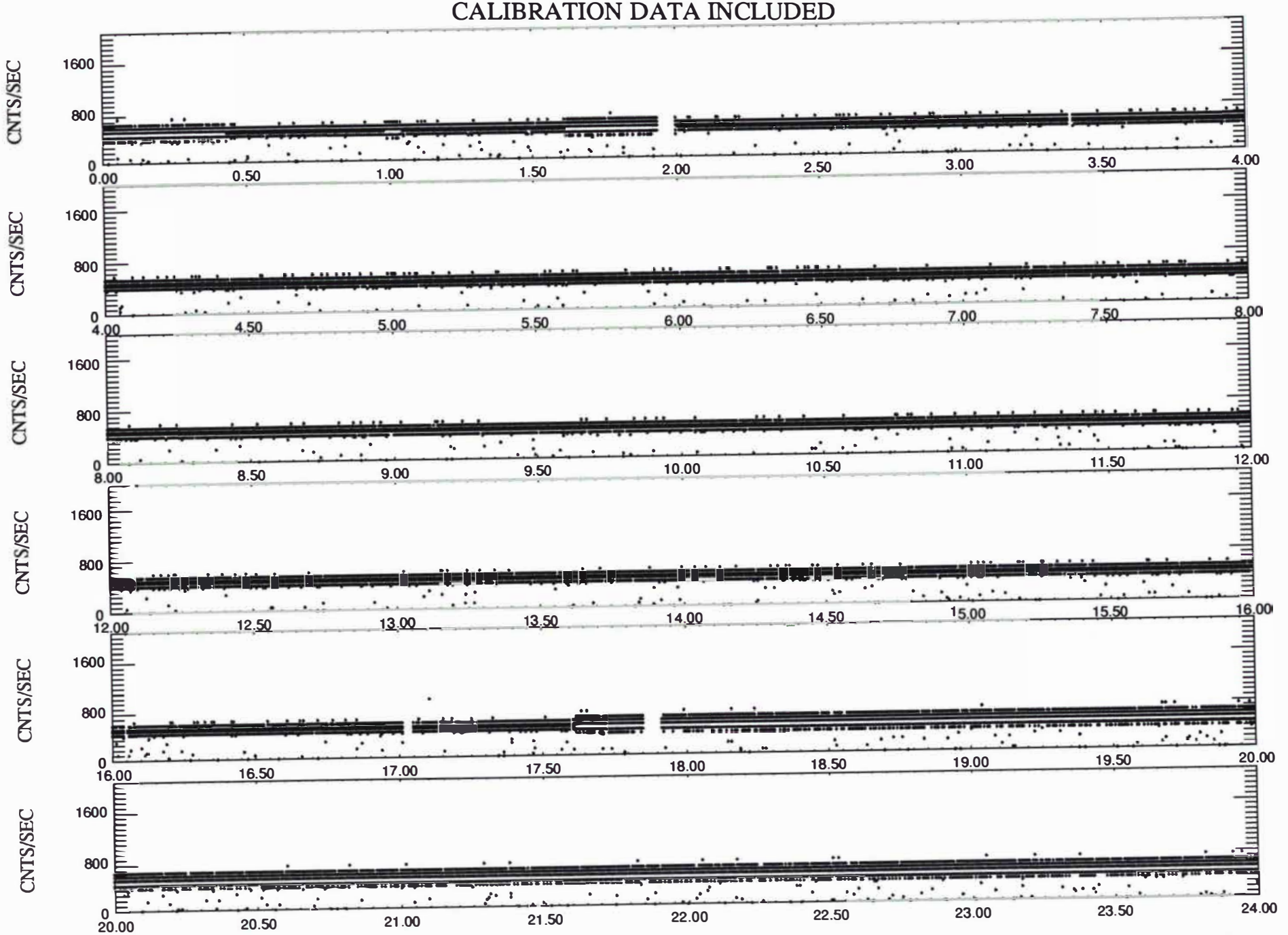
BURST NUMBER 3



UNIVERSAL TIME

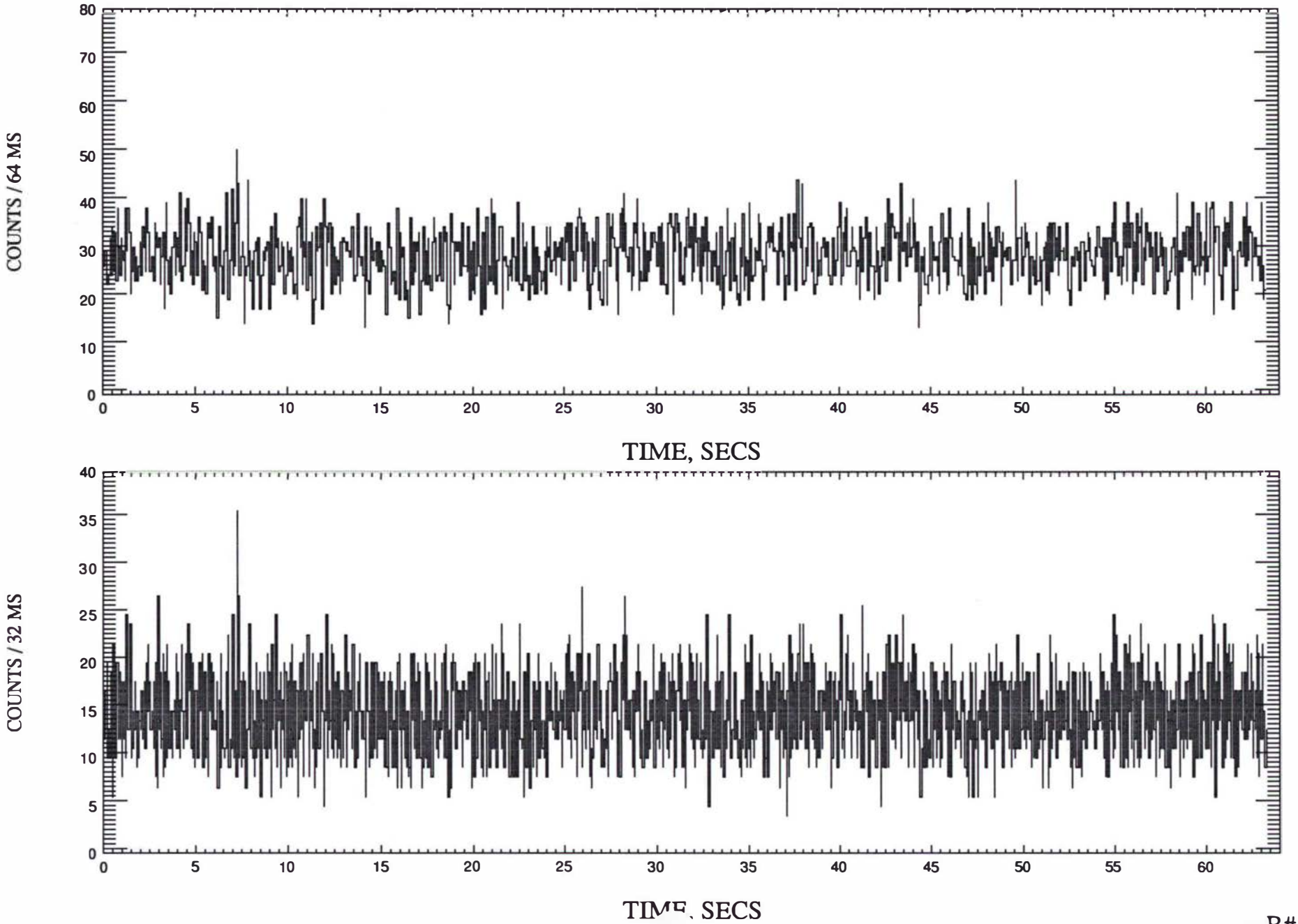
HUS 2A, MODE 1, NOT AVERAGED EDR day 81, year 1997 to day 81, year 1997 7/21/97

CALIBRATION DATA INCLUDED



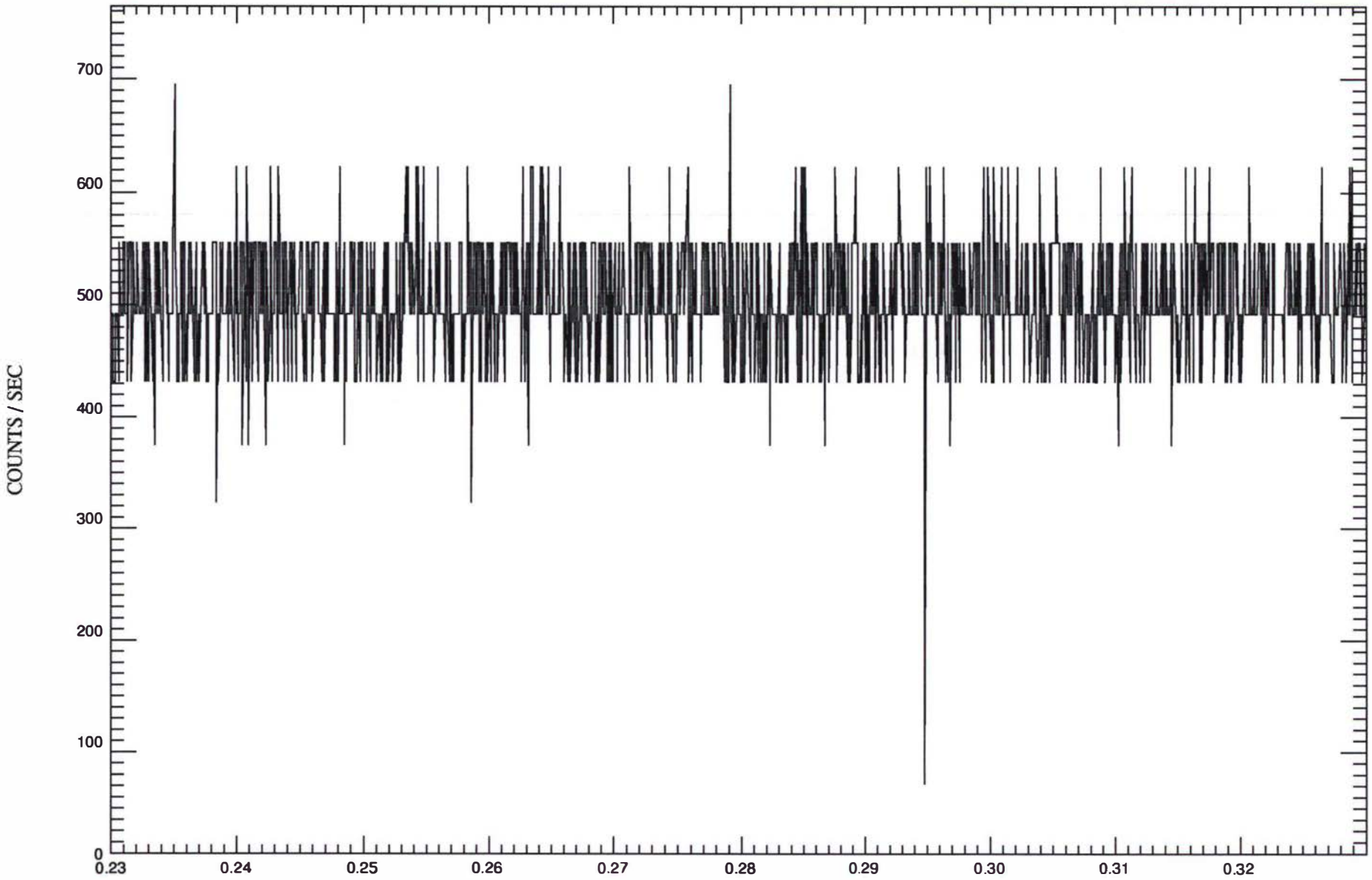
UNIVI AL TIME

Burst Counter 3 at UT= 0.279249263340 h= 1005.297 s 00:16:45.297

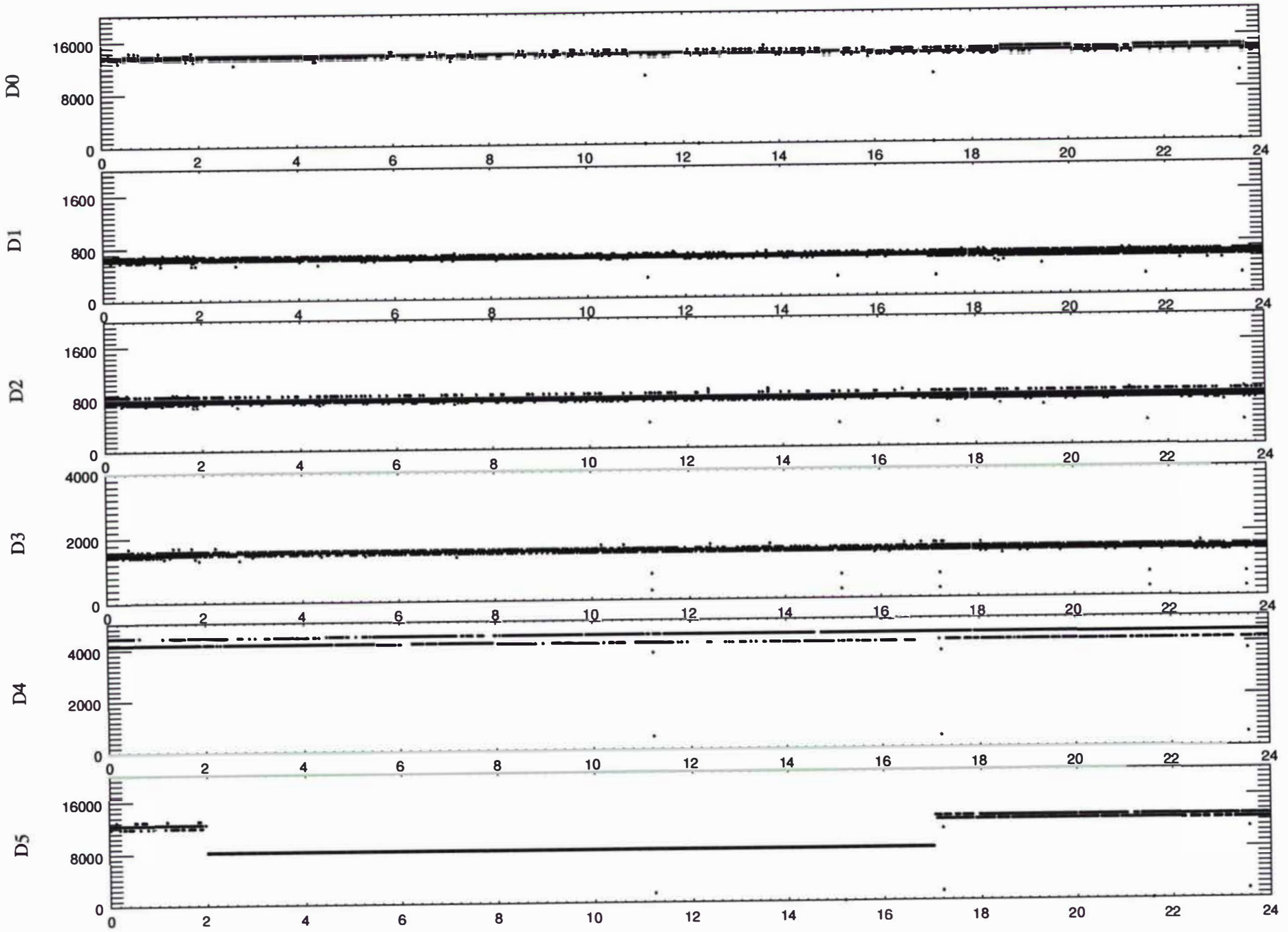


HUS 2A, MODE 1, NOT AVERAGED EDR day 81, year 1997 to day 81, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 81, year 1997 to day 81, year 1997 7/21/97



From SURASAK@SSLLES.MSFC.NASA.GOV Thu Mar 27 07:12 PST 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id HAA07251; Thu, 27 Mar 1997 07:11:58 -0800
Date: Thu, 27 Mar 1997 9:11:50 -0600 (CST)
From: SURASAK@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970327091150.20217f3f@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6134
Content-Type: text
Content-Length: 1135
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST # 6134
EVENT OF 1997 MAR 23 DAY OF YEAR= 82
EVENT CROSSING TIME AT BATSE : 27431. S. OR 07:37:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 308.000 24.000
BATSE PEAK COUNTING RATE: 3700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 3/ 97 IS:
RA= 158.214 DEC= 36.416 DIST= 4.172 AU
BATSE-ULYSSES DISTANCE = 624069200. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.81 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 819.82 SECS.
CROSSING TIME AT ULYSSES IS 28251. S. OR 07:50:50 +/- 394.65 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 3/ 97 IS:
RA= 176.424 DEC= 5.432 DIST= 0.660 AU
MARS-BATSE DISTANCE = 98730120. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 55.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 186.08 SECS.
CROSSING TIME AT MARS IS 27617. S. OR 07:40:17 +/- 50.00 SECONDS

BATSE BURST TRIGGER

NO.: 6134

TIME: TJD=0530 SECONDS=27431

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=150.7 AZIMUTH=347.4 ERROR=7.69 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR~1SEC. BARELY VISIBLE ABOVE
300 KEV. THIS ONE LOOKS LIKE CYG-X.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6134	970323	10530	27431	3700	308	+24	1.0

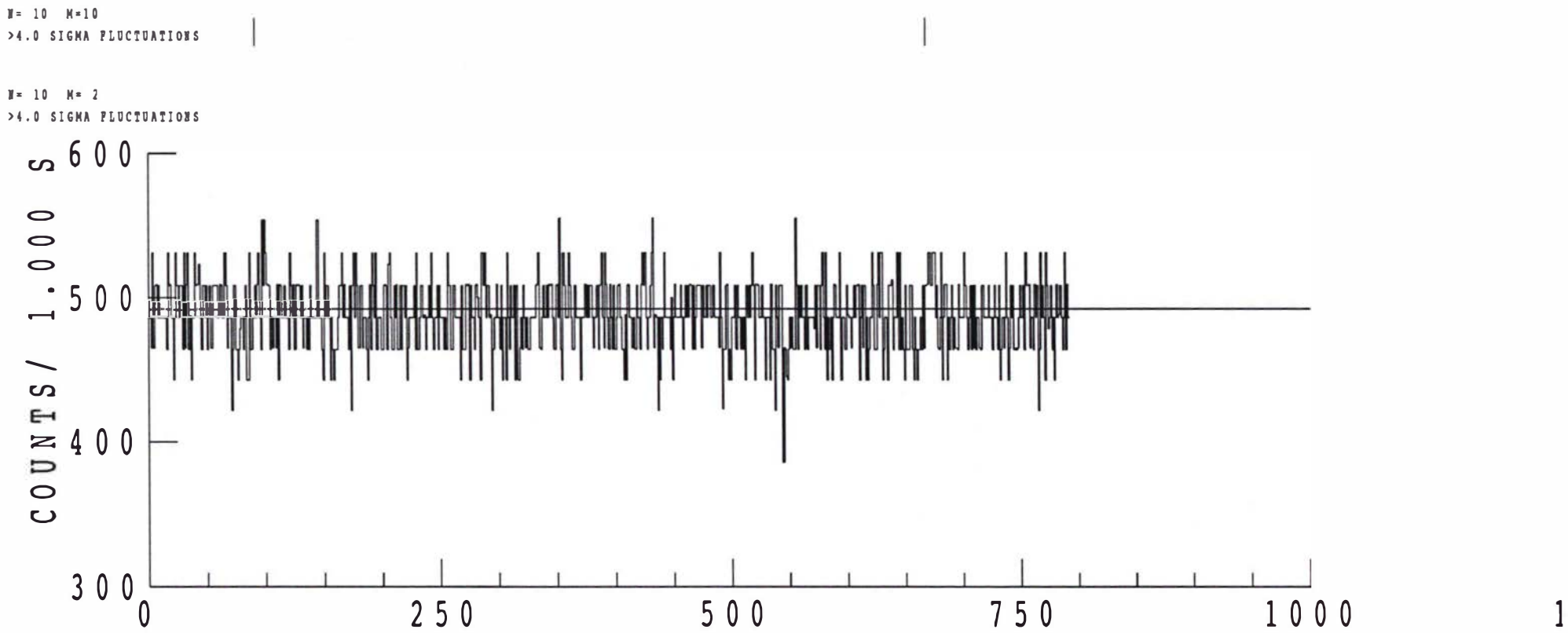
BATSE# 6134

ULYSSES RT 27/ 3/97

23/ 3/97 27864.400 s

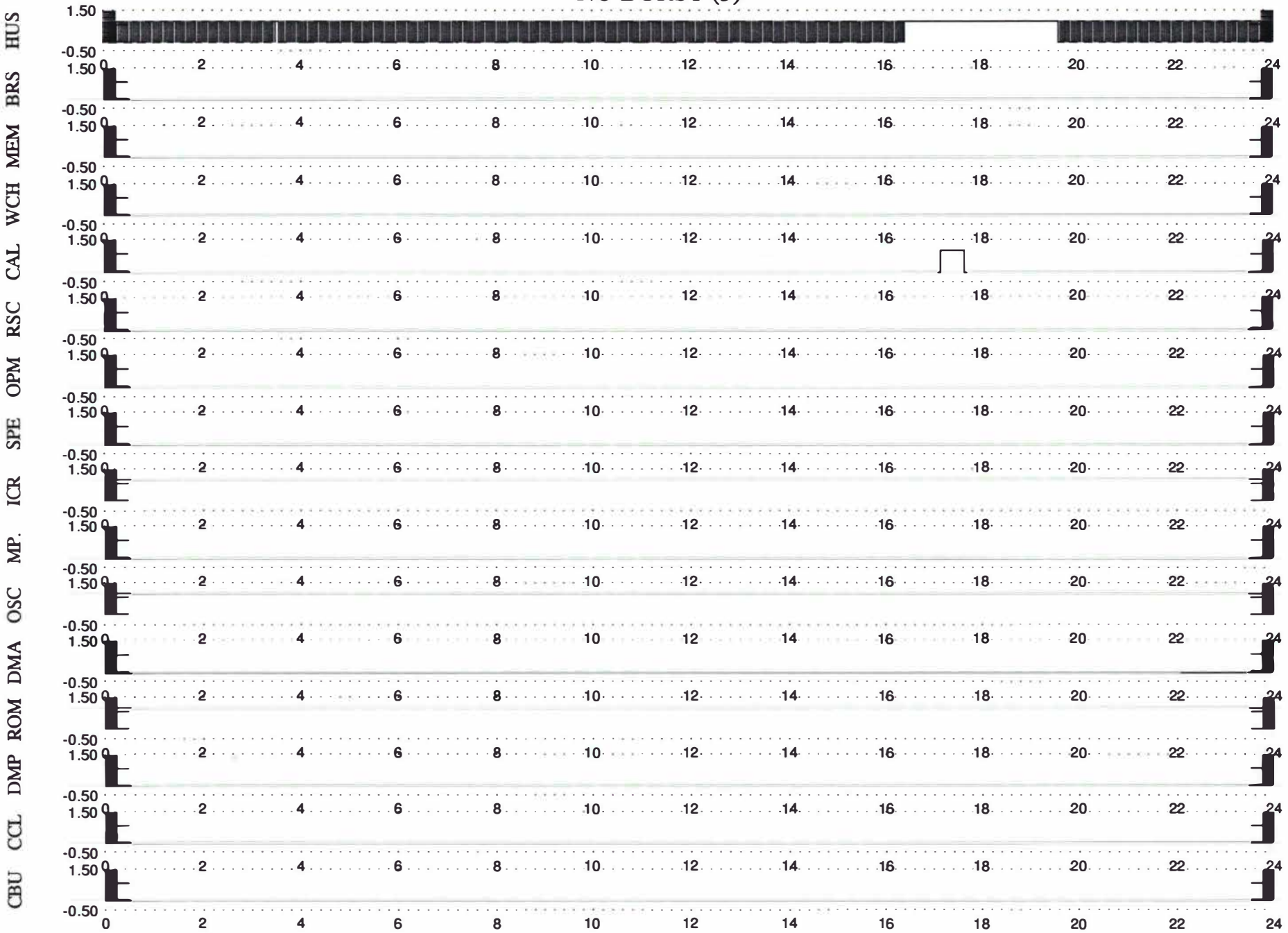
0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



HUS MODES EDR day 82, year 1997 to day 82, year 1997 7/21/97

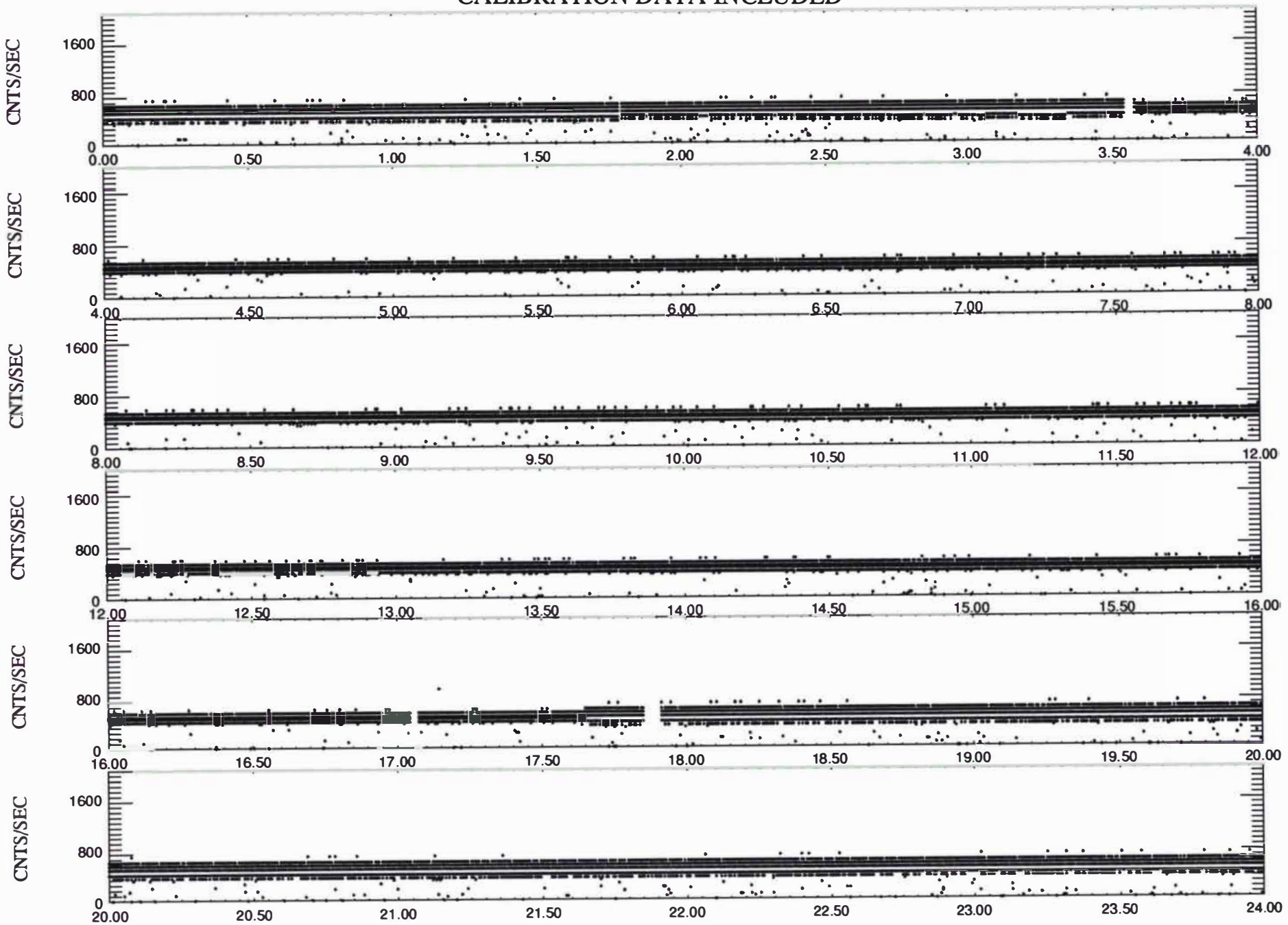
NO BURST (3)



UNIV. AL TIME

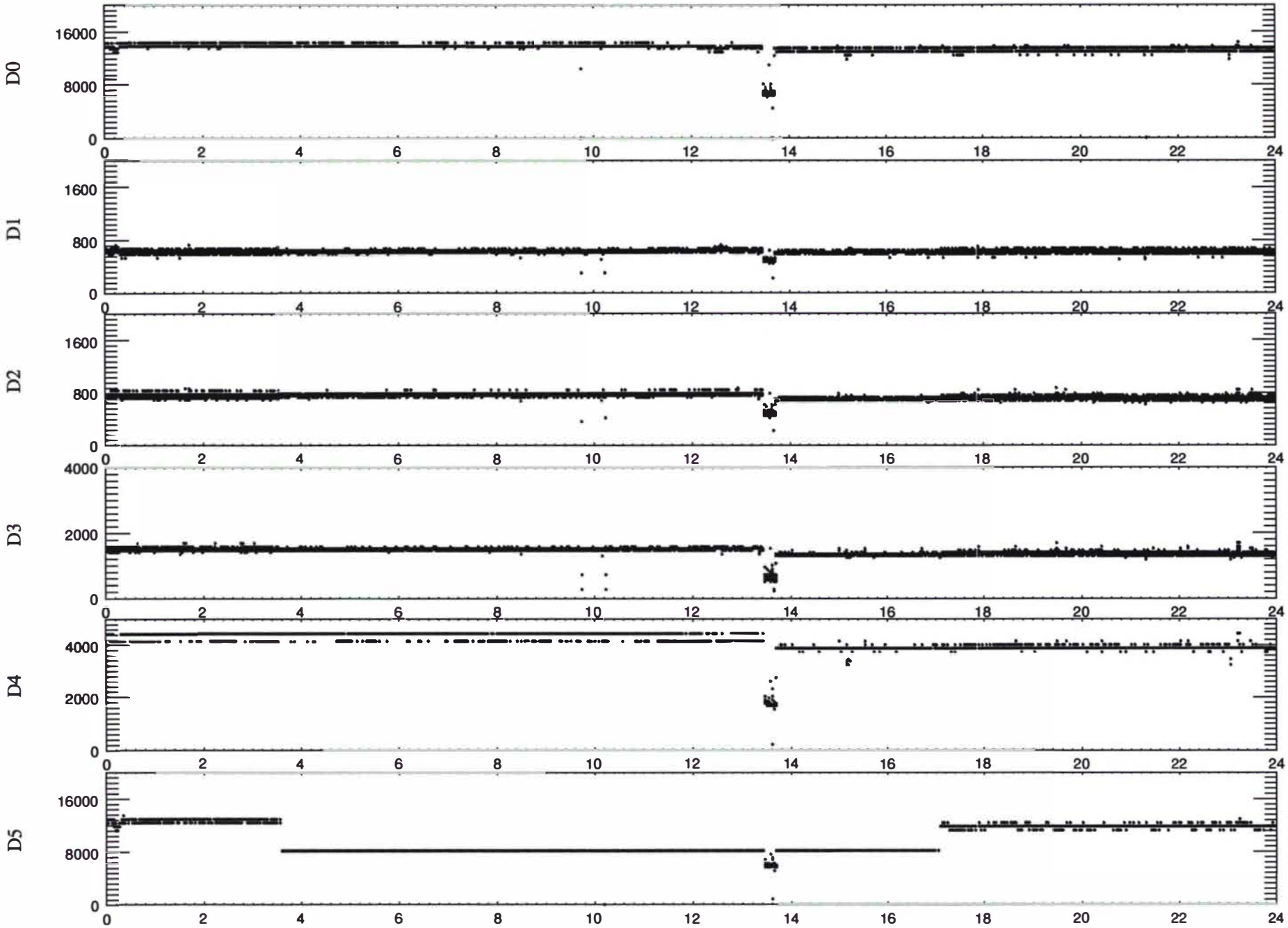
HUS 2A, MODE 1, NOT AVERAGED EDR day 82, year 1997 to day 82, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 82, year 1997 to day 82, year 1997 7/21/97



From DEAL@fender.msfc.nasa.gov Wed Mar 26 06:14 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id GAA26984; Wed, 26 Mar 1997 06:14:30 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 26 Mar 1997 8:14:17 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970326081417.20c01638@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6135
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6135
EVENT OF 1997 MAR 24 DAY OF YEAR= 83
EVENT CROSSING TIME AT BATSE : 8543. S. OR 02:22:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 9.000 -23.000
BATSE PEAK COUNTING RATE: 2300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 3/ 97 IS:
RA= 158.014 DEC= 36.377 DIST= 4.180 AU
BATSE-ULYSSES DISTANCE = 625391106. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 29.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1808.85 SECS.
CROSSING TIME AT ULYSSES IS 10352. S. OR 02:52:31 +/- 257.88 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 3/ 97 IS:
RA= 176.061 DEC= 5.559 DIST= 0.661 AU
MARS-BATSE DISTANCE = 98820240. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 21.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 306.81 SECS.
CROSSING TIME AT MARS IS 8850. S. OR 02:27:29 +/- 25.58 SECONDS

BATSE BURST TRIGGER

NO.: 6135

TIME: TJD=0531 SECONDS=8543

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=89.0 AZIMUTH=44.5 ERROR=8.8 DEGREES

COMMENTS:
GRB LASTING ~ 10 S. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6135	970324	10531	08543	2300	009	-23	10

BATSE# 6135

ULYSSES RT 26/ 3/97

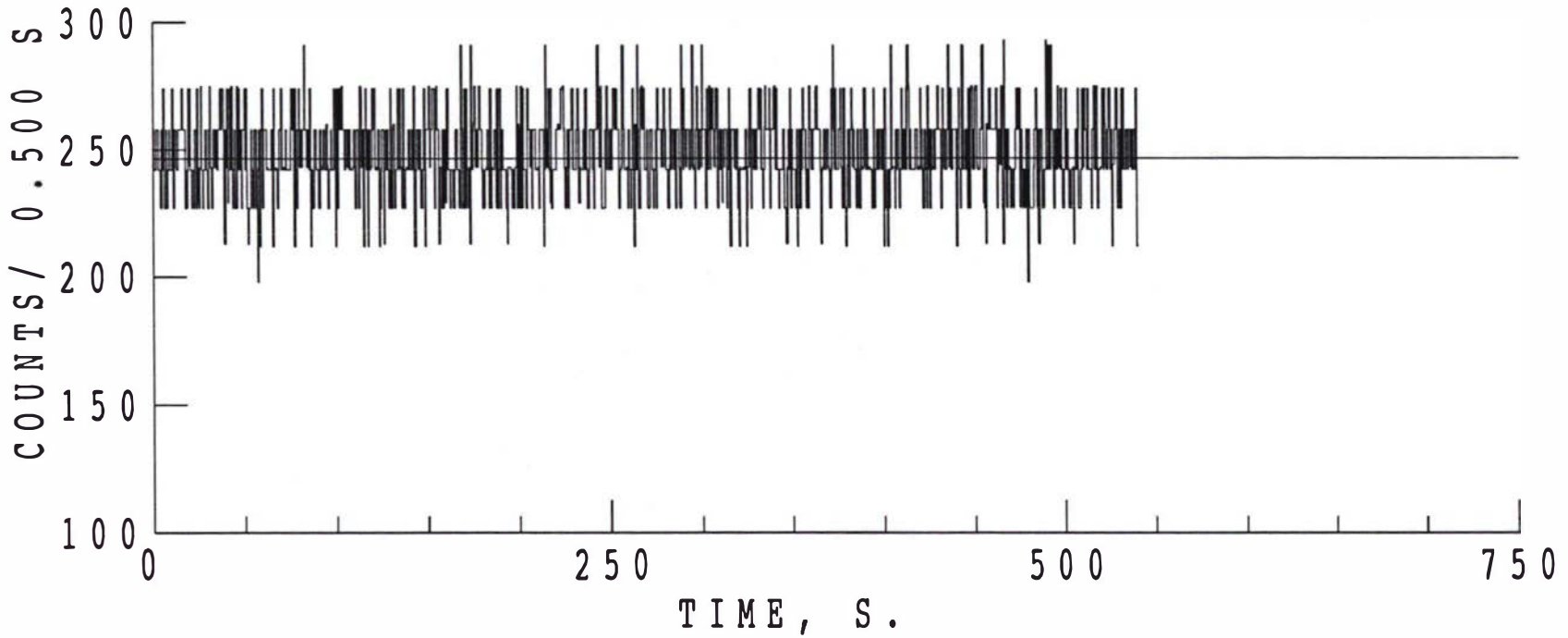
24/ 3/97 10080.212 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: Dec 2 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☐ Final ephemeris used?

☐ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☐ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data…")

☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

☐ Σ 3Δt's calculated, and/or BMAPSUM executed?

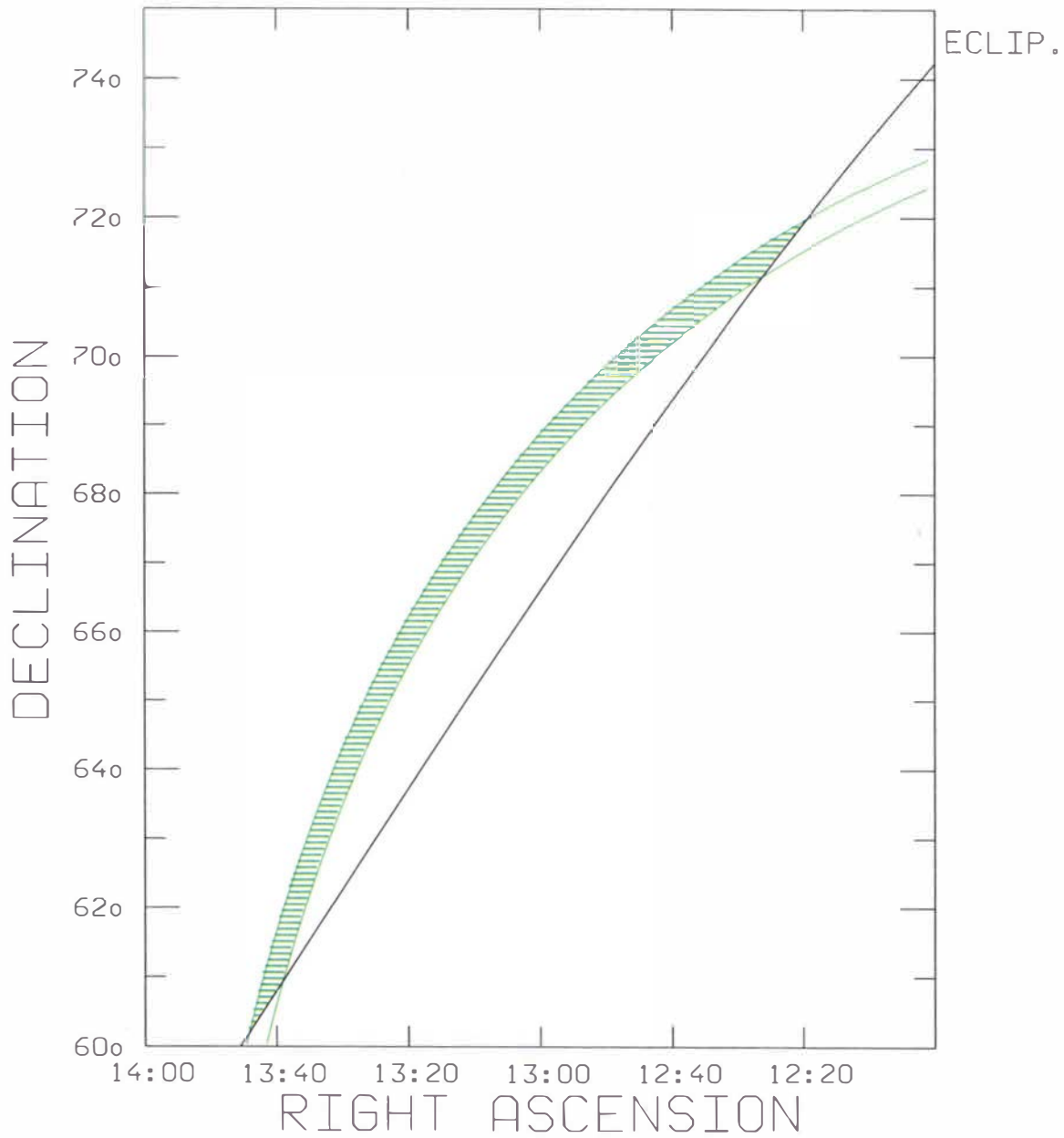
3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated with identical times?


ECLIP.
74o
72o
70o
68o
66o
64o
62o
60o
DECLINATION
14:00
13:40
13:20
13:00
12:40
12:20
RIGHT ASCENSION

EVENT OF MAR 24, 1997 4:34

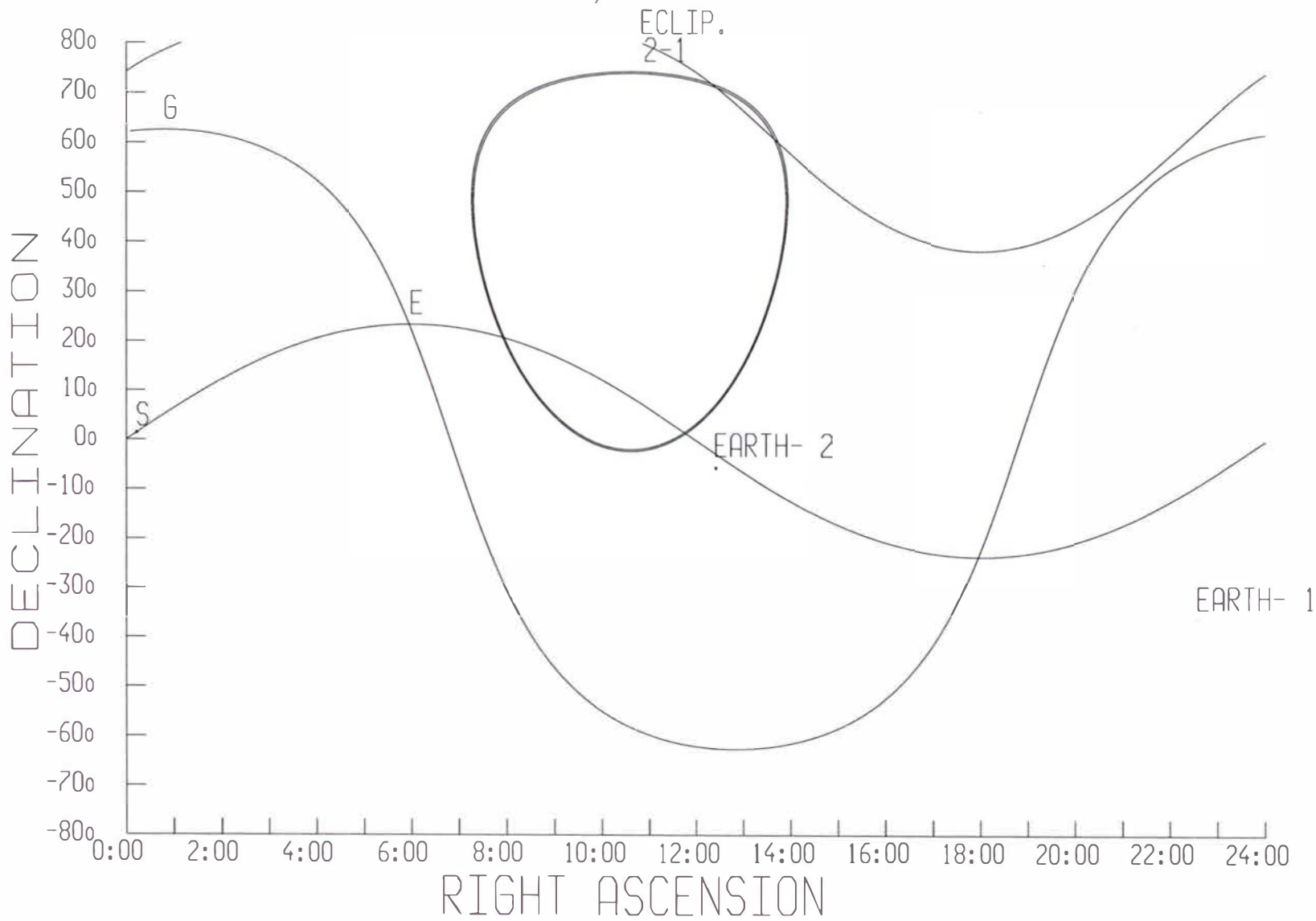
02/12/2011

N-M = CORRELATION BETWEEN SATELLITES N AND M

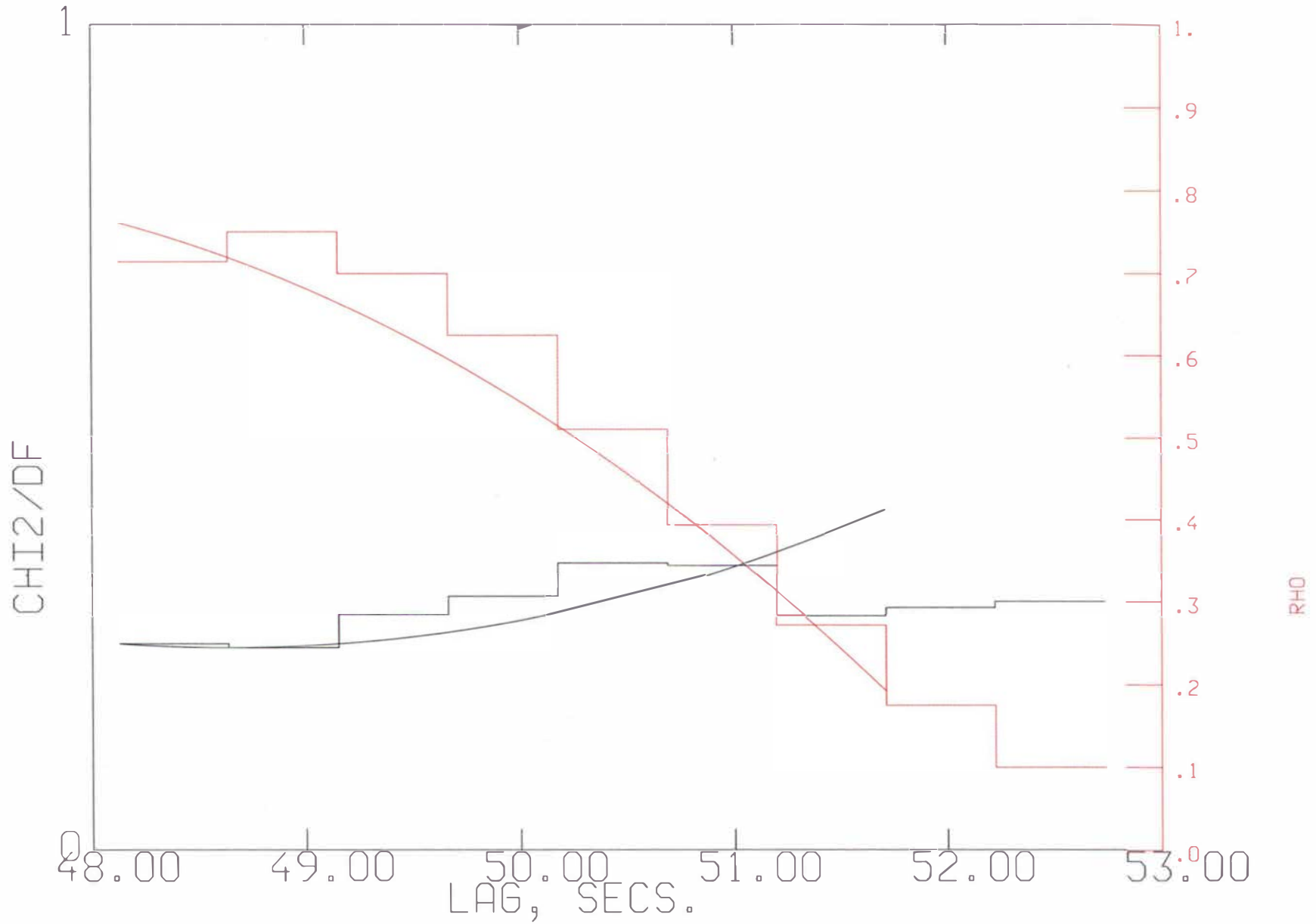
EARTH-N = EARTH AS SEEN FROM SATELLITE N

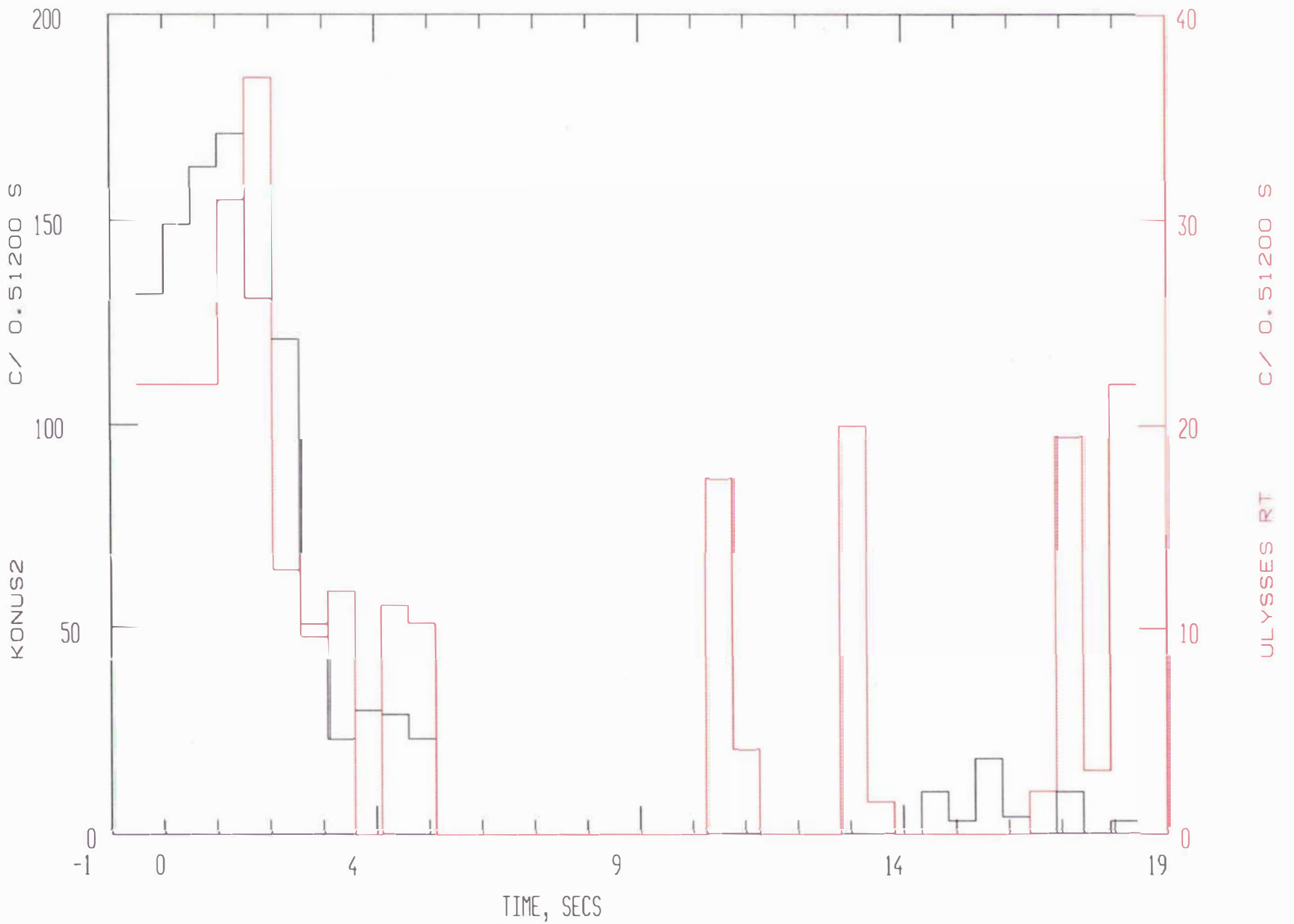
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR

1 ULYSSES 2 KONUS2



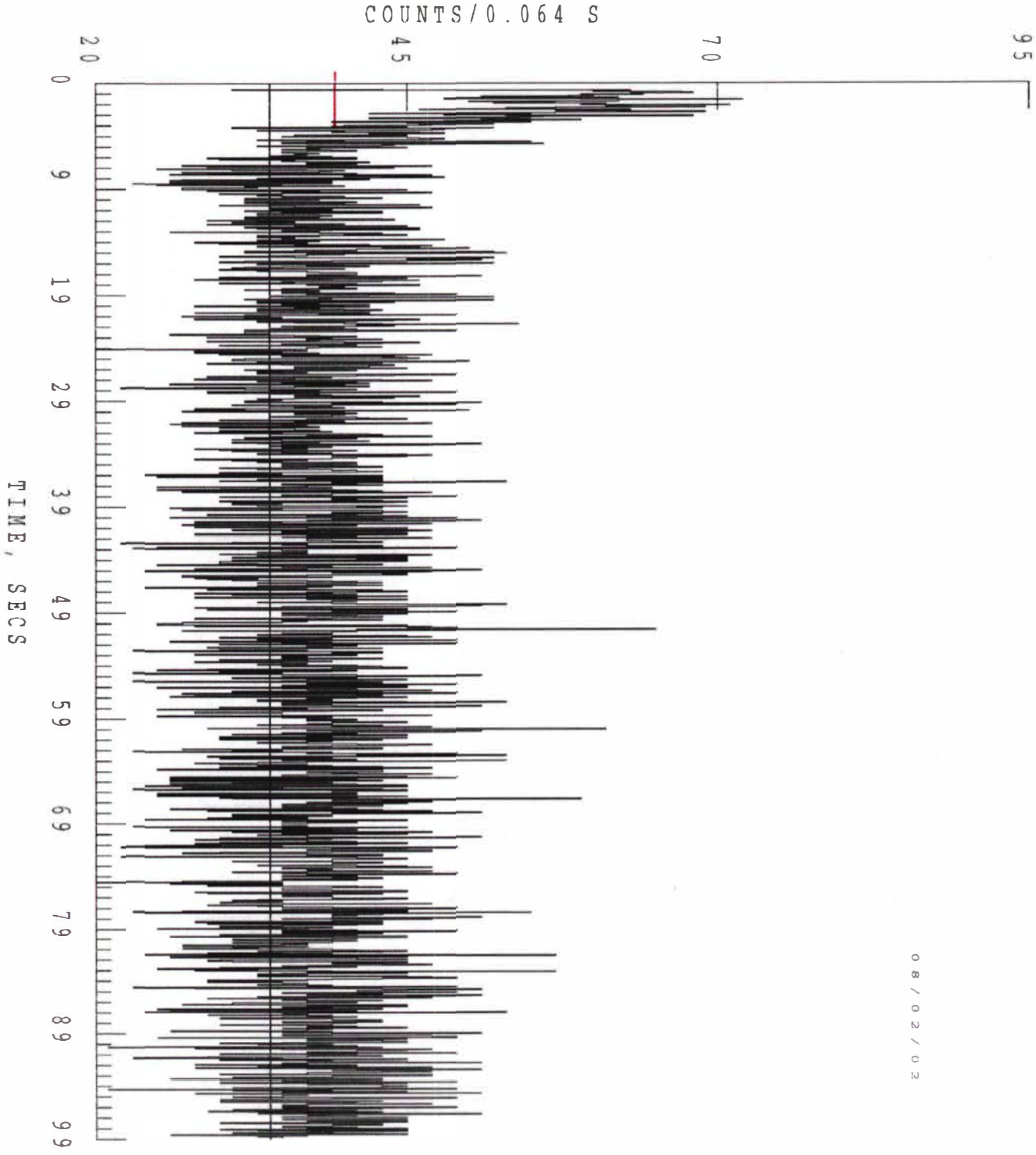
KONUS2 -ULYSSES RT CORRELATION 24/03/97 18164.527




KONUS2 -ULYSSES RT CORRELATION 24/03/97 18164.527 2/12/11
200
150
100
50
0
C/ 0.51200 S
KONUS2
40
30
20
10
0
C/ 0.51200 S
ULYSSES RT
-1
0
4
9
14
19
TIME, SECS

KONUS2 24/03/97 18164.527

50- 200 keV



KONUS 19970324 16520

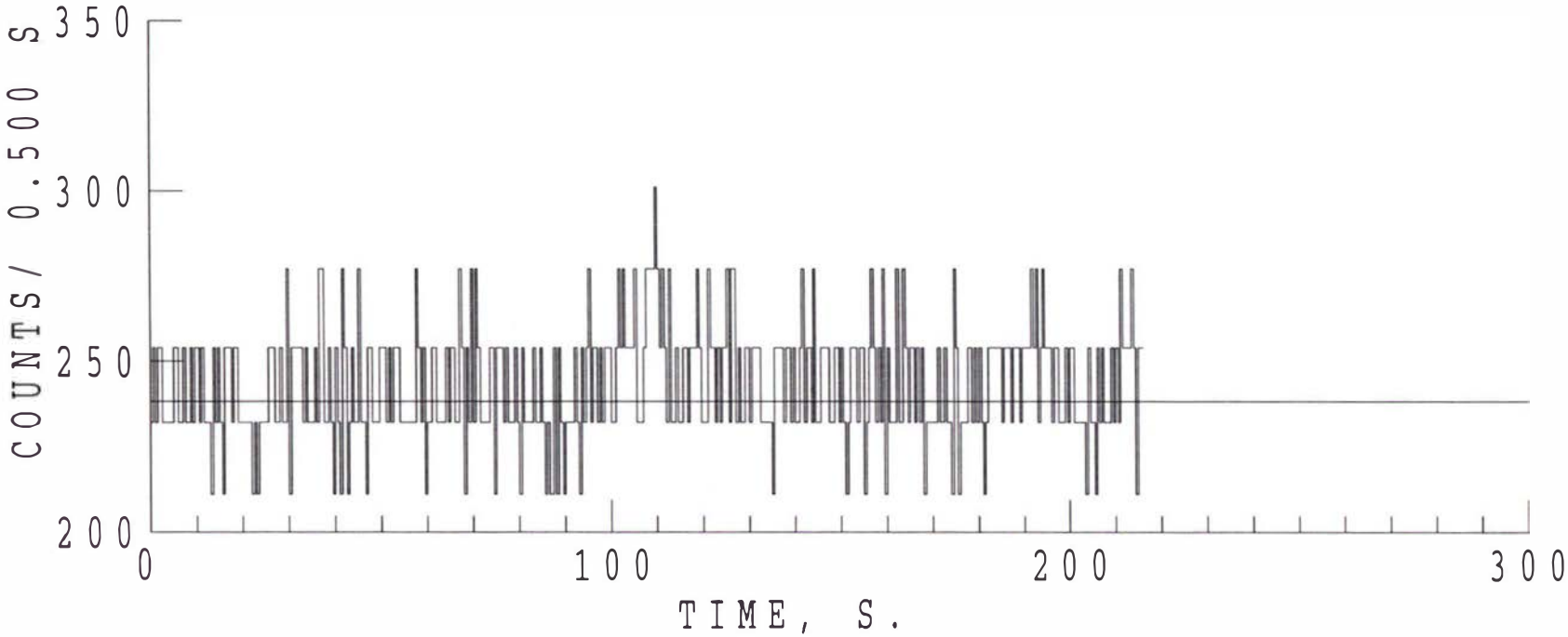
ULYSSES RT 22/11/11

24/03/97 16416.287 s

0- 0 keV

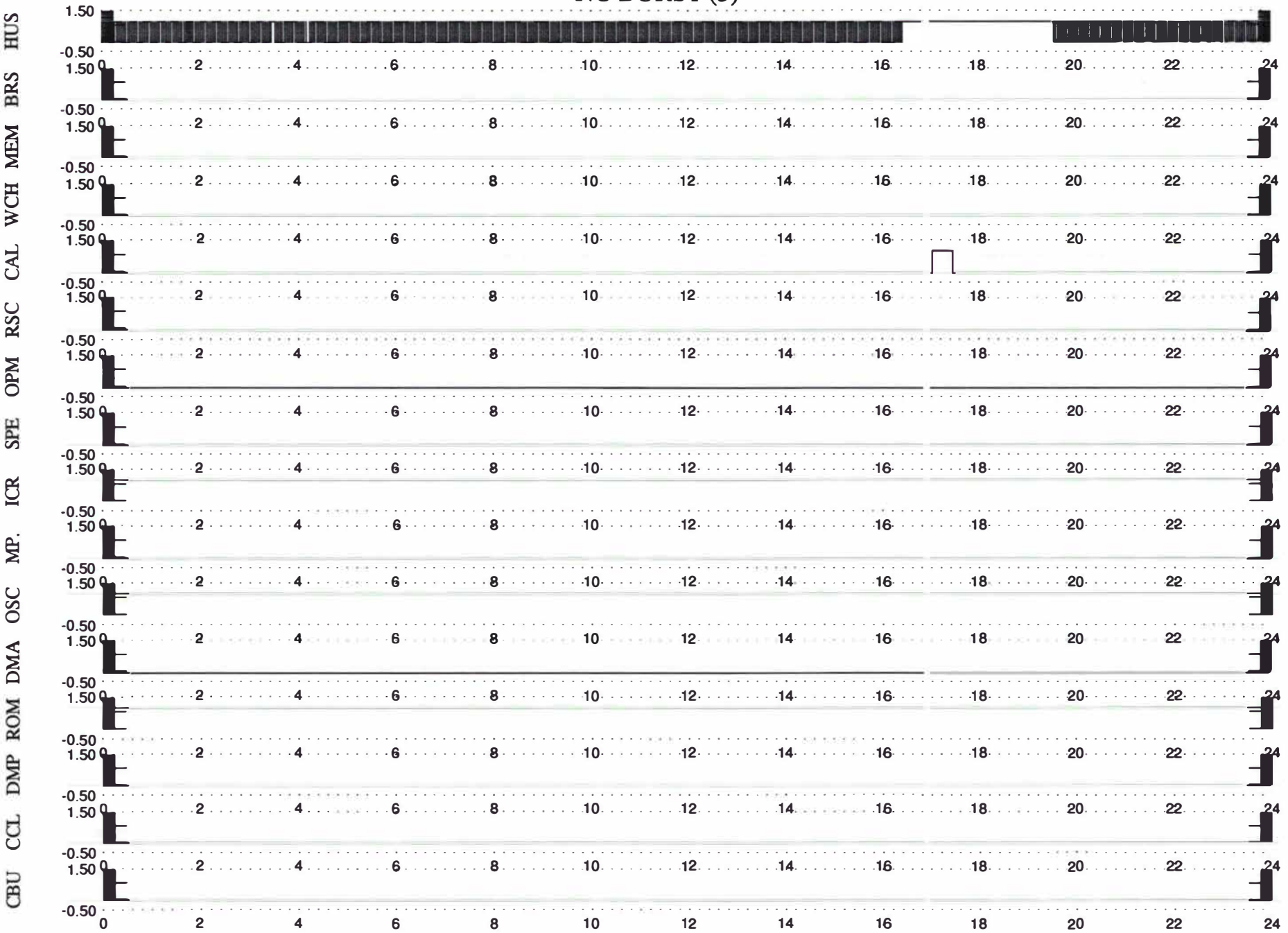
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



HUS MODES EDR day 83, year 1997 to day 83, year 1997 7/21/97

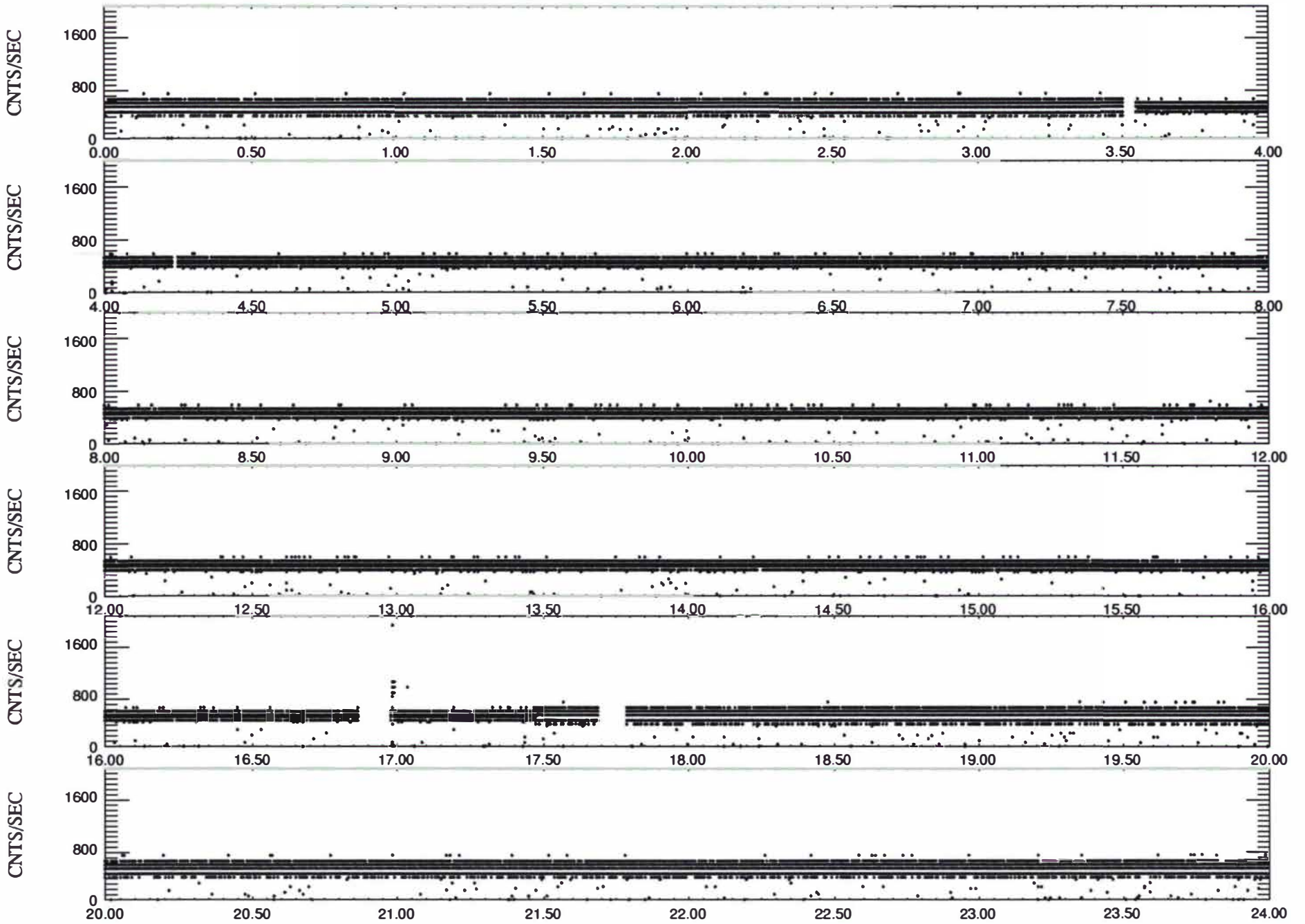
NO BURST (3)



UNIV. AL TIME

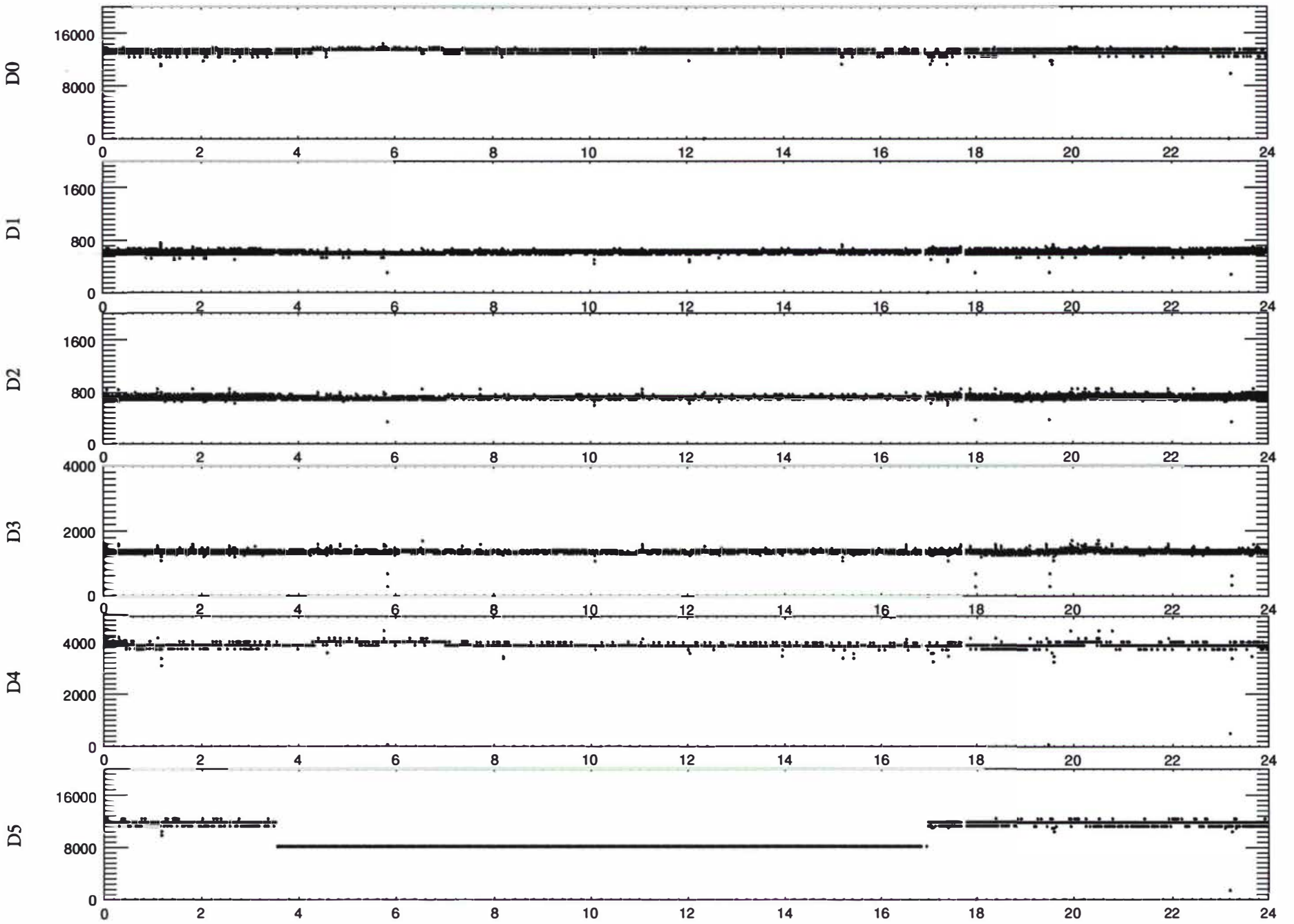
HUS 2A, MODE 1, NOT AVERAGED EDR day 83, year 1997 to day 83, year 1997 7/21/97

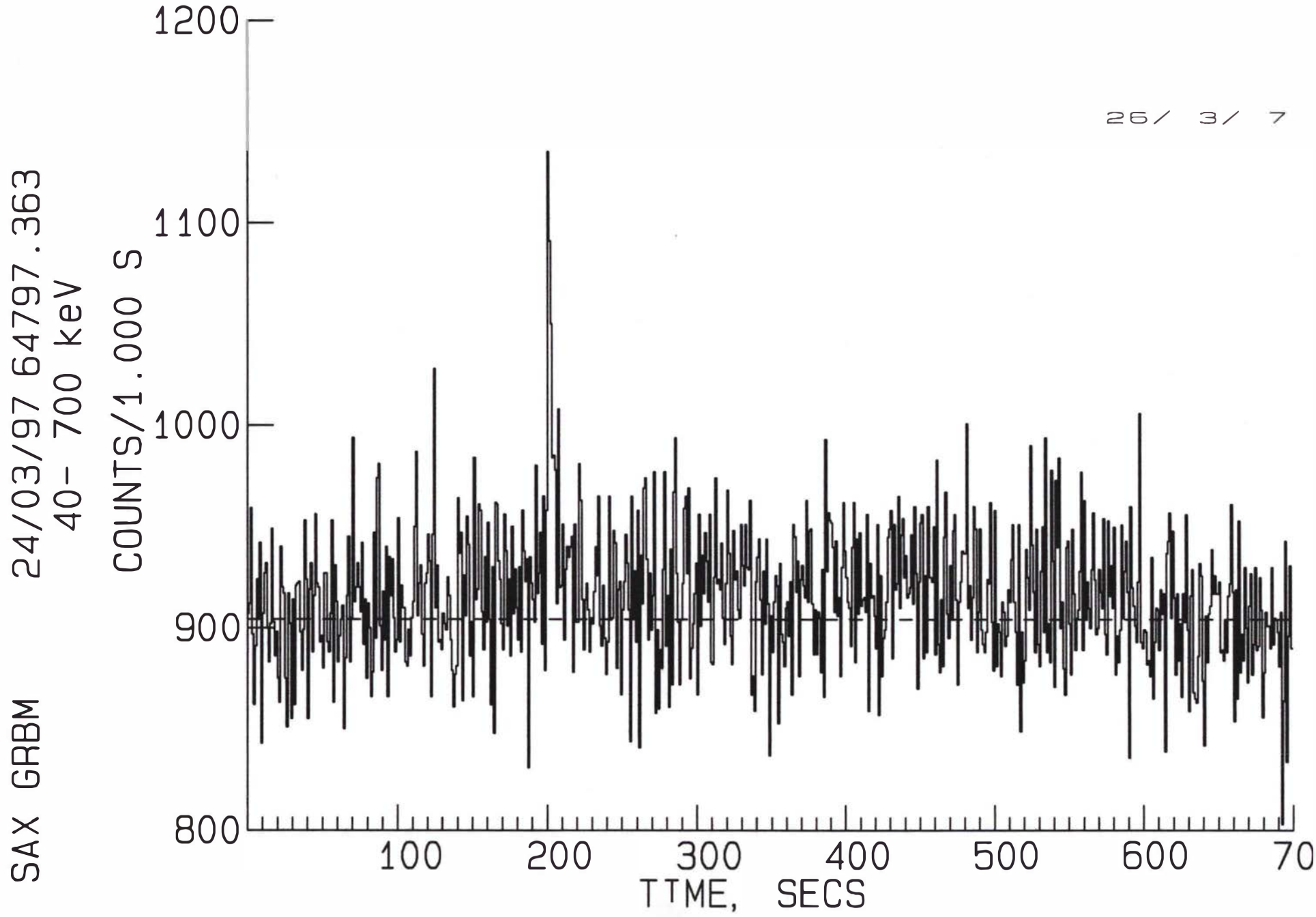
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 83, year 1997 to day 83, year 1997 7/21/97




SAX GRBM
24/03/97 64797.363
40- 700 keV
COUNTS/1.000 S
1200
1100
1000
900
800
100
200
300
400
500
600
70
TTME, SECS
26/ 3/ 7

SAX

HUS DATA

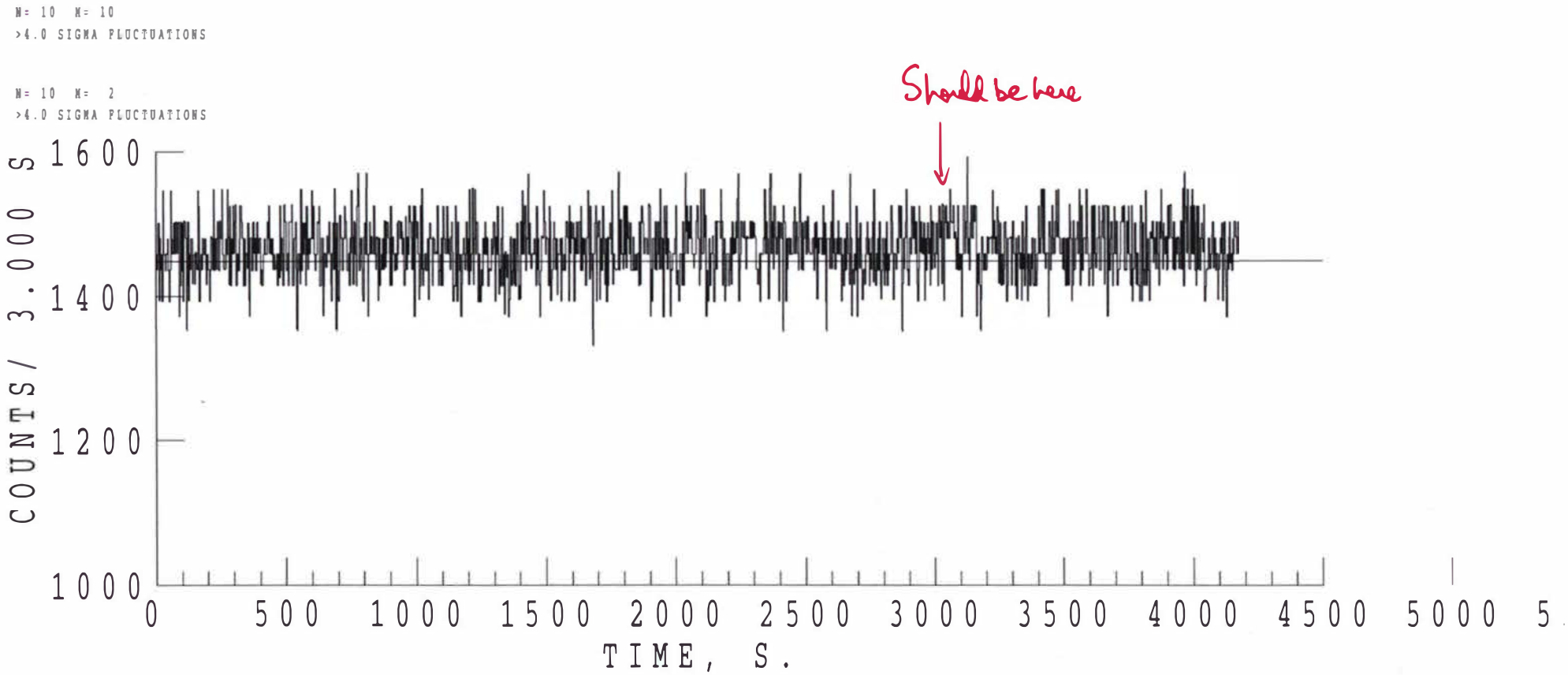
19/07/05

ULYSSES RT

25/03/97 43452.125 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



Date: Dec 5 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☑ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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☐ Was Mars-blocking used?

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

☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).

☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

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

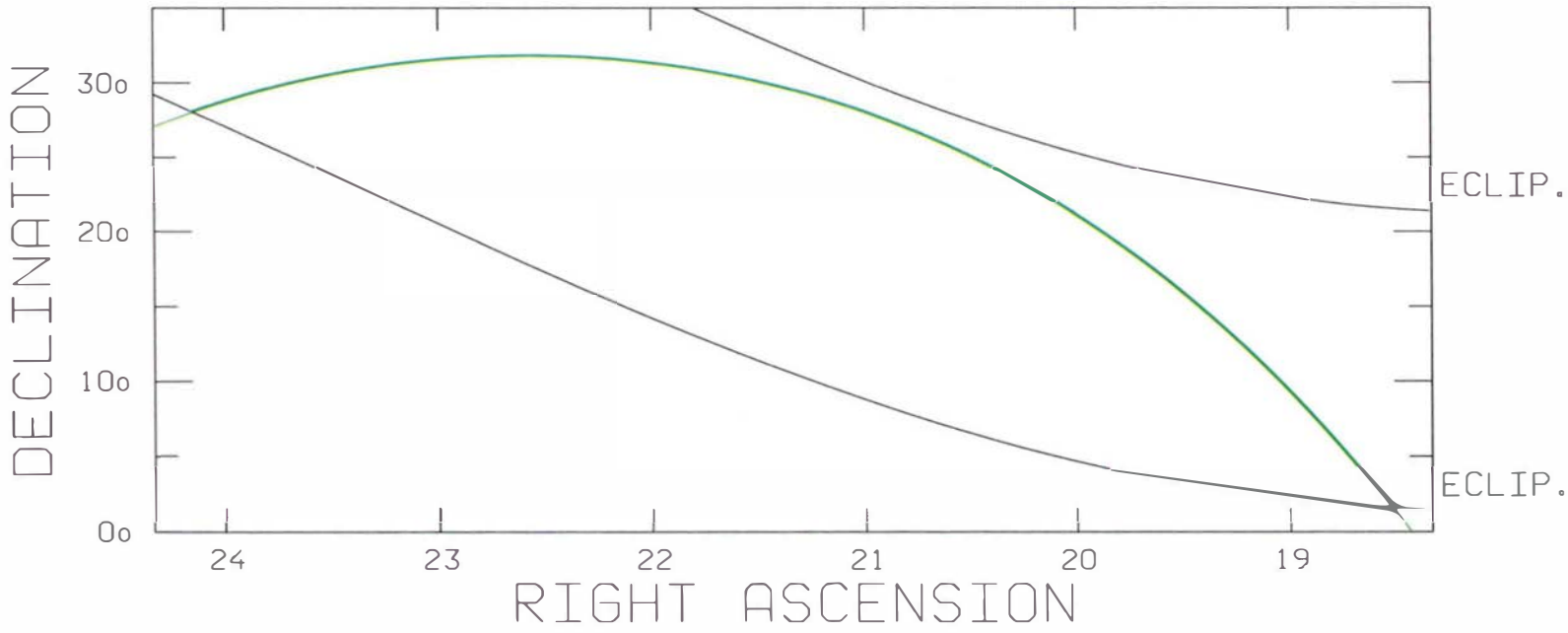
3. For INTEGRAL events

☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

☐ Updated ephemeris used for bursts prior to September 30, 2003?

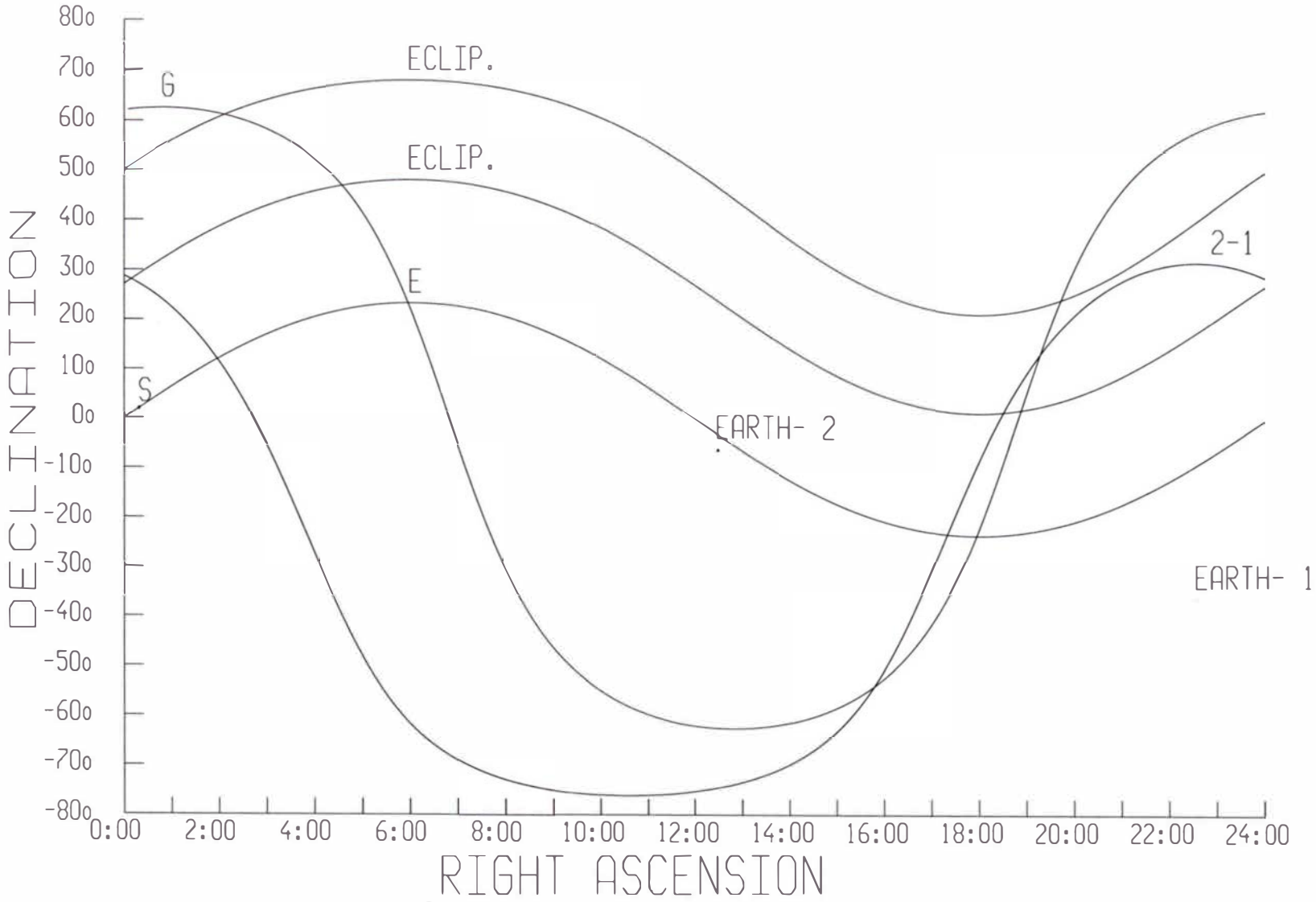
☑ ACCESS and MBL4 databases updated with identical times?


DECLINATION
30o
20o
10o
0o
24
23
22
21
20
19
RIGHT ASCENSION
ECLIP.
ECLIP.

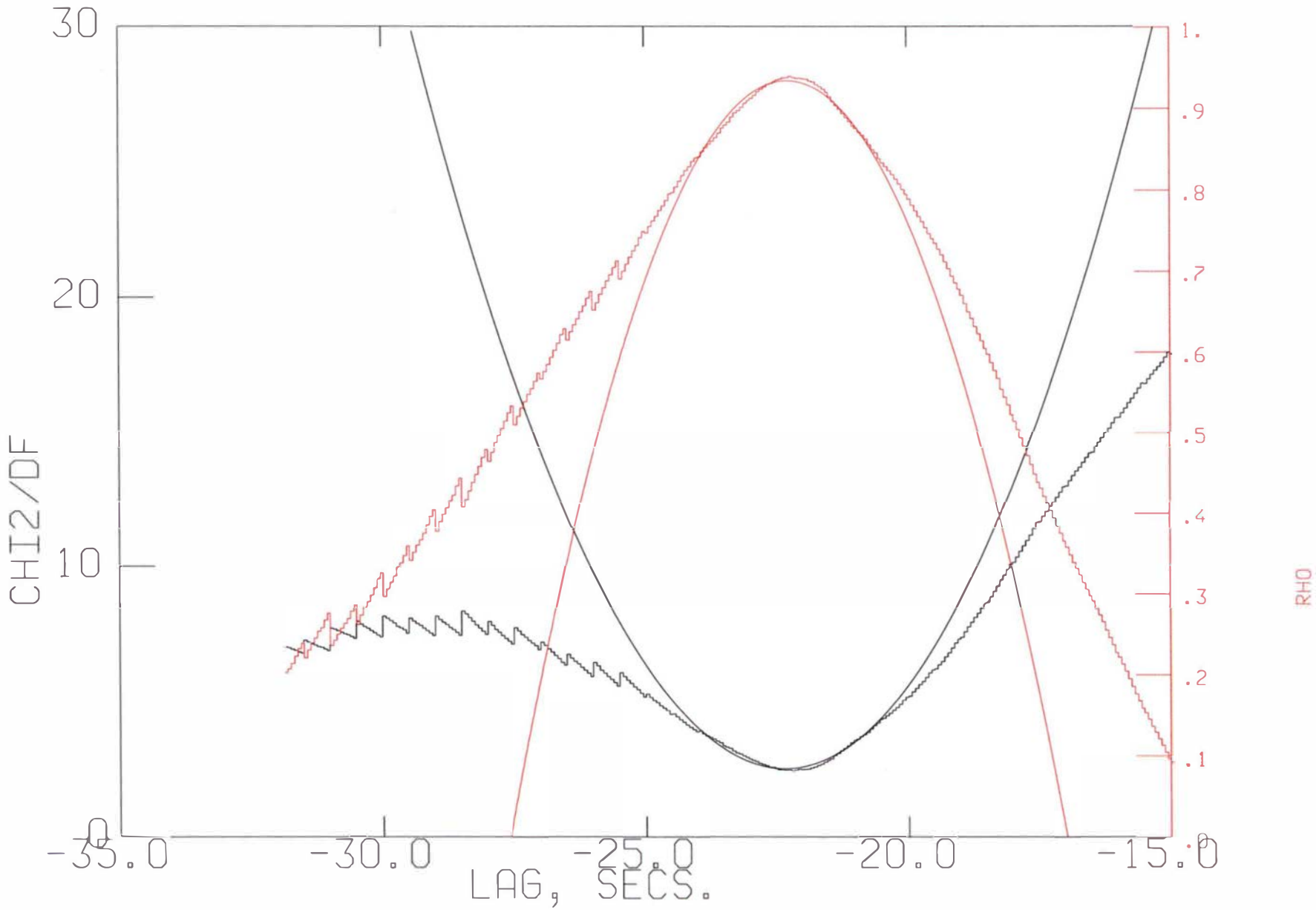
EVENT OF MAR 25, 1997 17:49

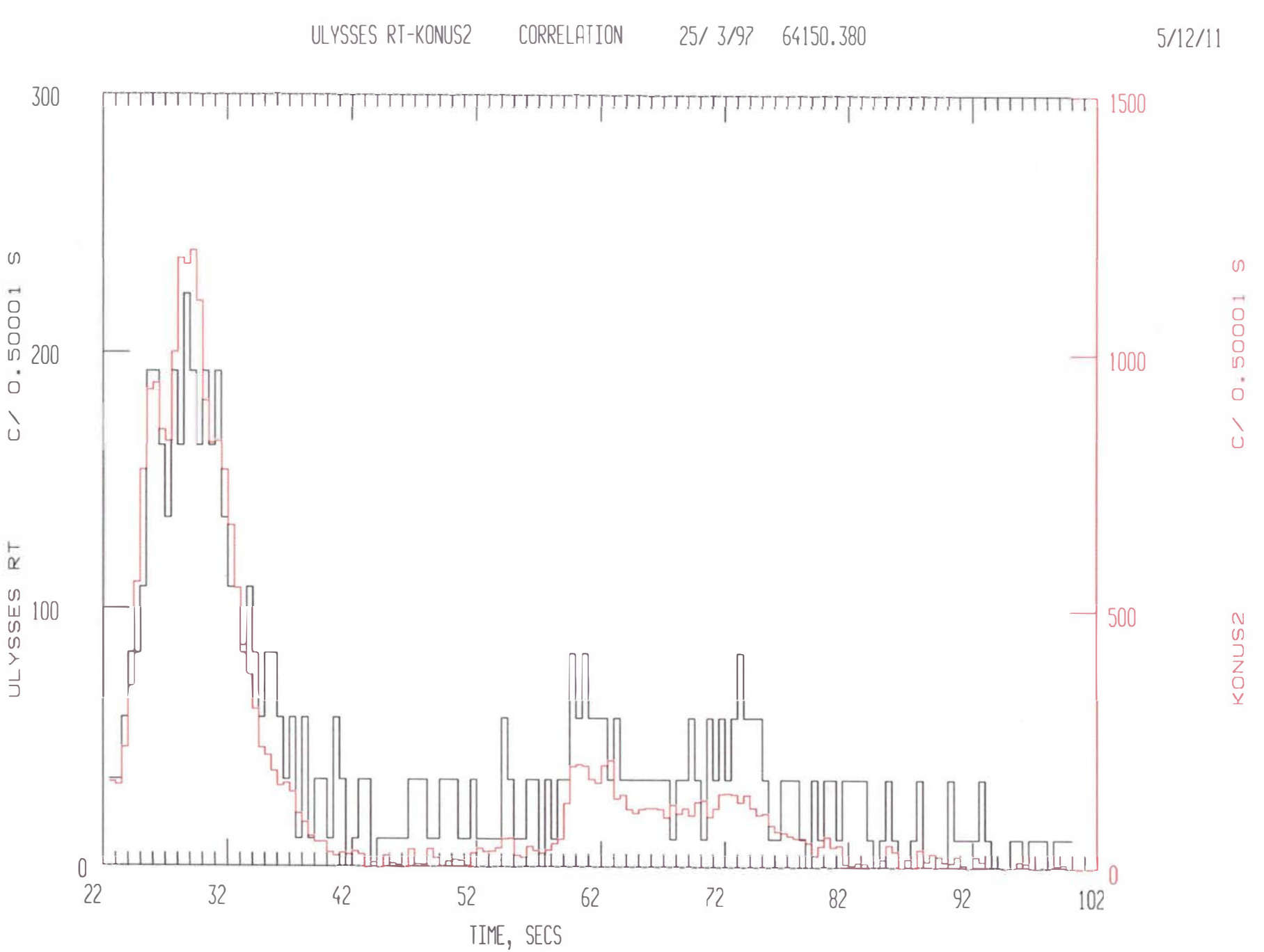
05/12/2011

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



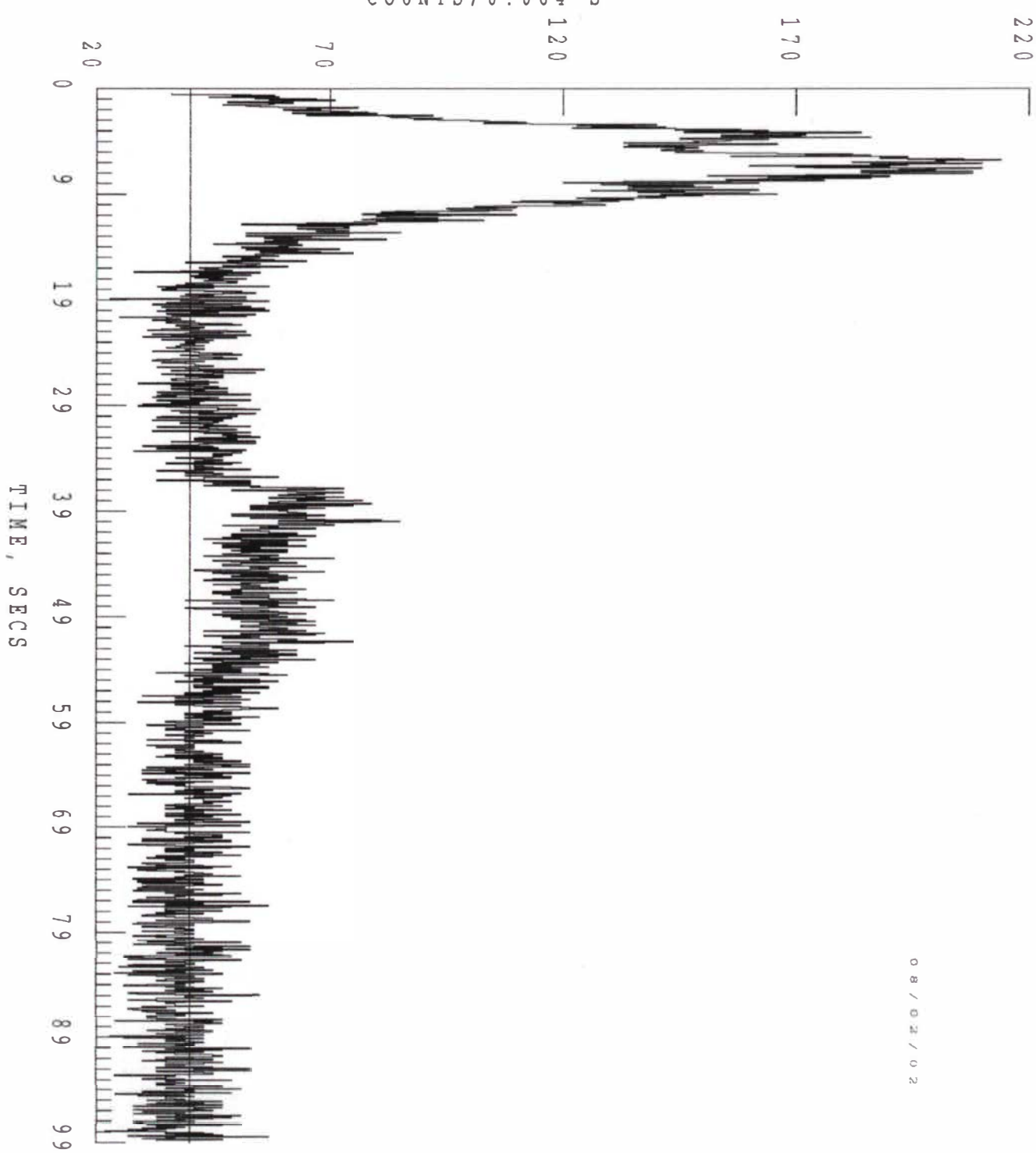
ULYSSES RT-KONUS2 CORRELATION 25/ 3/97 64150.380




ULYSSES RT-KONUS2 CORRELATION 25/ 3/97 64150.380
5/12/11
300
200
100
0
C/ 0.50001 S
ULYSSES RT
1500
1000
500
0
C/ 0.50001 S
KONUS2
22
32
42
52
62
72
82
92
102
TIME, SECS

KONUS2 25/03/97 63382.800

50- 200 keV



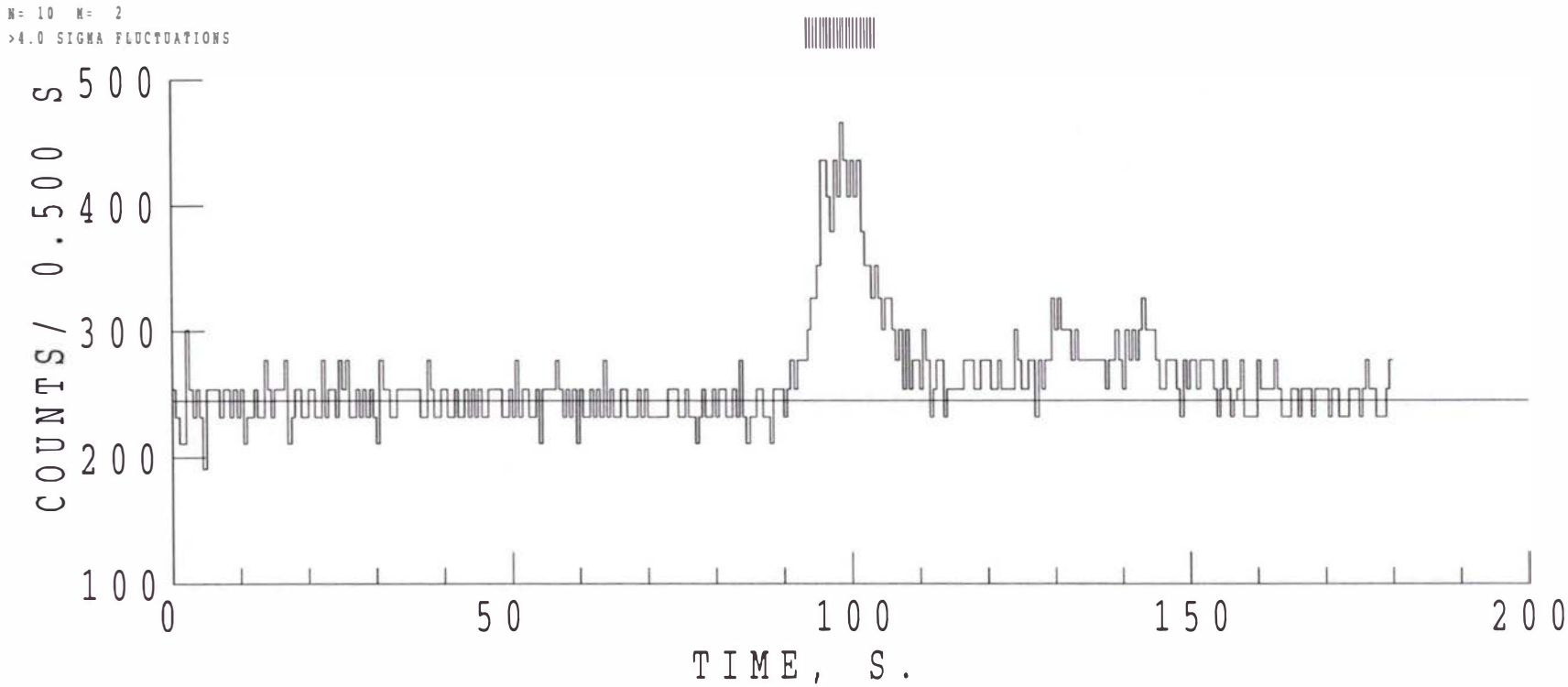
08/02/02

KONUS 19970325 64176

ULYSSES RT 22/11/11

25/03/97 64080.371 s

0- 0 keV



From BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

Ulysses event (1997)		Konus observation
Mar 25 17:49	moderate 15 s long	trigger at 17:36:22.800 North detector two peaks, with the first stronger and harder. each peak lasted 20 s, separated by 20 s without emission
Mar 29 12:23	weak 100 ms long	not detected
May 21 15:23	weak 100 ms long	not detected
June 1 00:17	weak 100 ms long	not detected
June 1 19:33	moderate 25 s long	trigger at 19:19:30.567 North detector two strong peaks, 20 s apart first peak much harder event lasted 50 seconds in total
June 2 15:43	moderate 60 s long	trigger at 16:20:55.684 South detector complex, with strongest peak at 16:22:33 event lasted over 150 s
June 4 19:23	weak 100 ms long	trigger at 19:49:05.369 South detector weak, hard FRED lasting about 1 s
June 7 09:16	moderate 10 s long	trigger at 09:16:24.688 South detector strong, hard peak lasting 7 s, followed by softer, weaker emission for 10 s
June 8 01:44	weak 2 s long	not detected
June 18 19:51	weak 100 ms long	not detected
June 26 04:28	weak 100 ms long	not detected
June 27 21:29	strong 20 s long	trigger at 22:06:48.806 North detector strong, multi-peaked event lasting 20 s strongest peak 7.1 s after trigger
J 29 04:26	strong 100 ms long	visible in waiting-mode data at 04:00:24 very soft, near ecliptic
July 2 11:49	weak 100 ms long	not detected

July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
July 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 22:42	moderate 10 s long	trigger at 23:31:07.124 North detector two peaks, with the first stronger, harder. each peak lasted 10 s separated by 10 without emission
July 23 02:29	weak 100 ms long	instrument off
July 29 18:14	weak 100 ms long	not detected
Aug 1 17:34	weak 100 ms long	not detected
Aug 9 18:46	weak 100 ms long	not detected

From kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
D[illegible]e: Fri, 22 Aug 1997 17:22:32 -0400
[illegible]:hurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
F[illegible]m: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hi Kevin,

Here are the results of a search through TGRS data for various Ulysses bursts that you've emailed Bonnard about. In summary, out of the 12 Ulysses bursts you mentioned, 3 were found as TGRS triggered events, and 1 was a triggered event but should be considered a questionable one since it was not detected in 35-100 keV data we usually require for a definate detection. No bursts were found in waiting mode (untriggered) data.

Here are the details.

Pete

Ulysses burst	TGRS sees?	TGRS characteristics
3/25/97 17:49 15s	YES! TGRS #547	63384 s. 300 cts/s peak dur. (100-300 keV) 100 cts/s peak 15s dur. (35-100 keV)
3/29/97 12:23	NO	
7/2/97 11:49	YES BUT TGRS #582	40631 s. 175 cts/s peak 1s dur. 100-300 keV NOT SEEN in 35-100 keV
7/5/97 15:31	NO	
7/9/97 10:56	NO	
7/14/97 03:48	NO	
7/15/97 15:01	YES! TGRS #595	51694s 400 cts/s peak 3s dur. (100-300 keV): 100 cts/s peak 20 s dur. (35-100 keV)
7/21/97 22:42	YES! TGRS #601	84667s. 300 cts/s peak 8s dur. (100-300 keV): 100 cts/s peak 10 s dur. (35-100 keV)
7/23/97 02:29	NO	
[illegible]/97 18:14	NO	
08/01/97 17:34	NO	
08/09/97 18:46	NO	

```
970315    074 56454.2 BATSE GRB#6124 (4264/S)  (5.69,62.18J)  (+UL)
      13 074 56454.9 PKS,462.9(50/S,90/S,<16S) (@85DEG)

970325    084 63382.8 KONUS(+UL@64176,MOD,15S),2 PEAKS(UL REPORT 8/9/97) (13SR)

970405    095U85440   UL@23:44@2200LS,MOD BURST, 5SEC (SEE NEXT LINE)
970406    096  1060.9 KONUS (MOD.STRONG,MULT.PKS,15S) (13:NR, SECONDARY PEAKS?)

970411    101 35565.2 KONUS(25SEC,35556?)+UL@35040,2200LS(MOD,10S) +TGR (13NR)

970420    110 72842.2 BATSE GRB#6198 (7316/S) (209.08,-21.09J) (+UL)
      13 110 72847.8 PEAK (740/S,<12S,HARD) @85 DEG

970421    111U24420   UL@06:47@2250LS INT BURST, 20SEC
      13 111 25691.6 PEAKS (60/S),711.6(60),721.6(40),<30SEC                  REP0624

970428 14 118          FIRST DATA, DMSP14 (LAUNCHED 970404;DELAY CORR=5.87S)

970506    126 56503.3 KONUS (+UL@57300,2400LS,MOD,10S) (13NO,14NO,NOTRIG)

970506A14 126 45619.1 STRONGPKS45619.1(7700/S,<6S,SOFT),633.1,655.1,NOTRIG;13NO    ??

970602    153 58855.7 KONUS>150S,COMPLEX,PK58953(+UL@56580,MOD,60S)(+TGRS/WIND)
      14 153 58917.0 PK(150/S),953.0(950,>58S,VERY HARD, INTENSE (13 NO)      REP0624
      14 153 58916.7 TRIGGER PK, +58944.3,58952.0

970607    158 33384.7 KONUS, HARD PEAK FOR 7SEC (+UL@33360,MOD,10S)
      13 158 33388.6 PEAK(180/S,<6S)                                          REP0723
      14 158 33388.7 PEAK(200/S,<6S, NOTRIG)                                  REP0723

  0616    167 65390.3 BATSE#6274 STRONG,MULTIPEAK.X-RAY AFTER,IAU6683(13NO@127)
          167 65390.3 BATSE(20.46,-7.16J),X-RAY(19.72,-5.50J) (14NO@112,NOTRIG)
          167 65390.3 BATSE (X-RAY DUBIOUS,IAU6722. NO OPT VARIABLE, IAU6723)

970625    176 43993.7 KONUS (UL@46200,2900LS,MOD,15SEC,REPORTED 10/30/97)
      13 178 44002.0 PEAK(80/S,<4S) (14SA)

970627    178 79608.8 KONUS STRONG, MULTIPEAK, 20SEC (+UL@77340,STRONG,20S)
          178 79610   BEPPOSAX (13SR,14NO,NO TRIG)

970629    180 14424.  KONUS VERY SOFT(+UL@15960,STRONG. NEW SGR (SEE 970912)
      13 180 14429.0 PEAK(50/S,<2S,SOFT) (14NR)                               REP0903

970715    196 51674.3 KONUS STRONG,HARD PK@+20(+UL@54060,MOD,5S)
      13 196 51693.6 PEAK(190/S,<4S)  (14NR,NOTRIG)                           REP0903

970721    202 84667.1 KONUS(+UL@81720,MOD,10S,@3000LS)
      13 202 84671.9 PEAKS(HARD,1-SIDE,200/S,<8S),691.9(1-SIDE,240/S,<10S)    REP0903
      14 202 84672.1 PEAK (HARD,1-SIDE,470/S,<10S),692.1(1-SIDE,240/S,<10S)   REP0903
      14 202 84671.5 TRIGGER PEAK (EVT14)(84671.46)                           REP0903

970802    214 12328.2 BATSE GRB#6322,5750/2S    (13NO@32,14NO@40,GAP,NOTRIG)

970815    227 43624.4 BATSE GRB#6335,10395/2S (IAU6718 XRAYS;6721+NOOPT)
          227 43624.4 CONTINUED: 13NO@160DEG, 14NO@146DEG

  0915    258 32870.9 KONUS 25S,HARD (+UL@30900,3100LS,MOD,10S)
      14 258 32873.2 PEAK (200/S,<2S,NO TRIG) (13NO)

970919    262 65669.5 BATSE#6389 (8048/S)
```

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

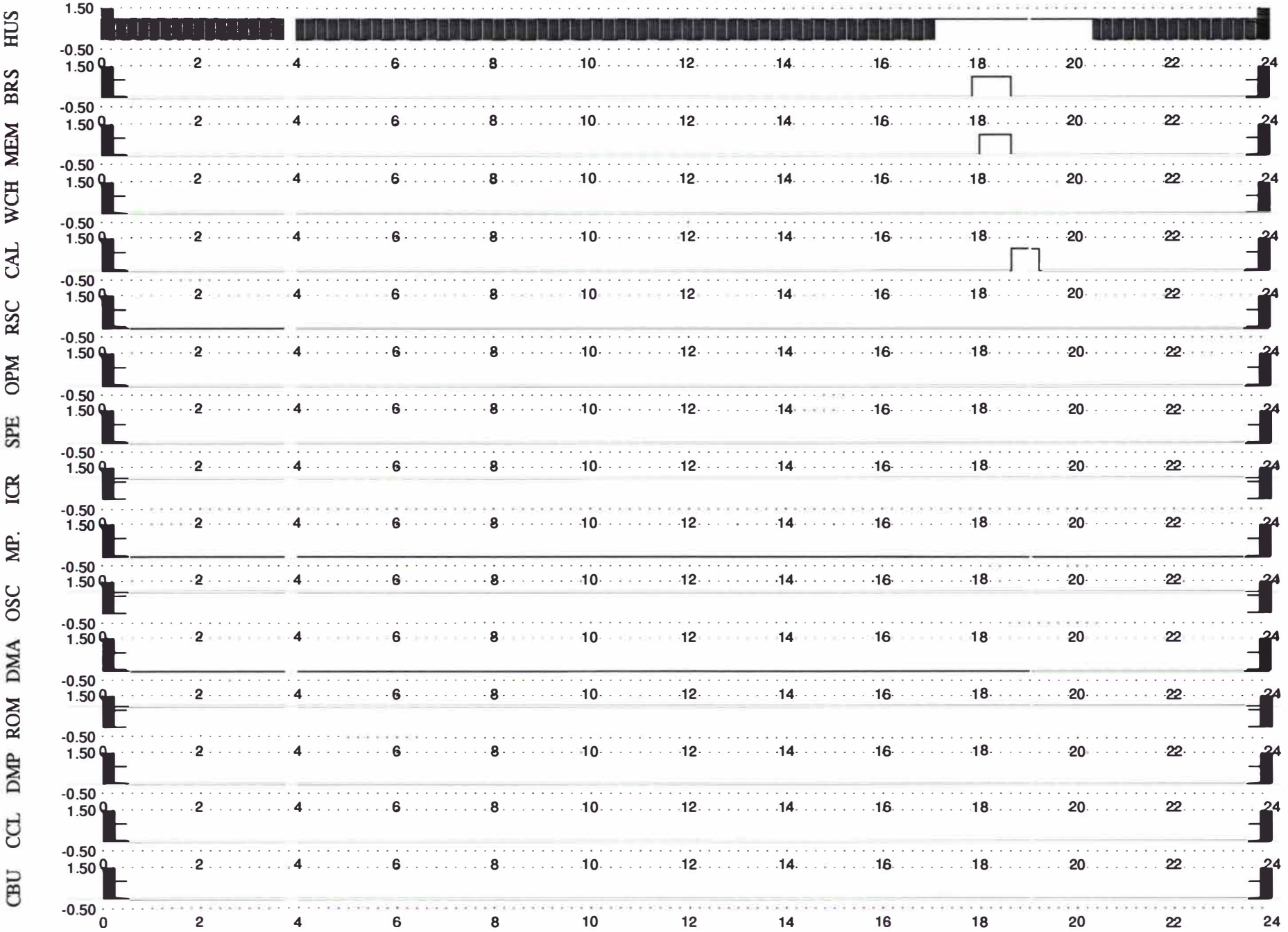
From: jterrell@lanl.gov (James Terrell) 980227
To: khurley@sunspot.ssl.berkeley.edu, bonnard@milkyway.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kmarar@isac.ernet.in, kraken@rosserv.gsfc.nasa.gov,
scott@milkyway.gsfc.nasa.gov,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

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

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

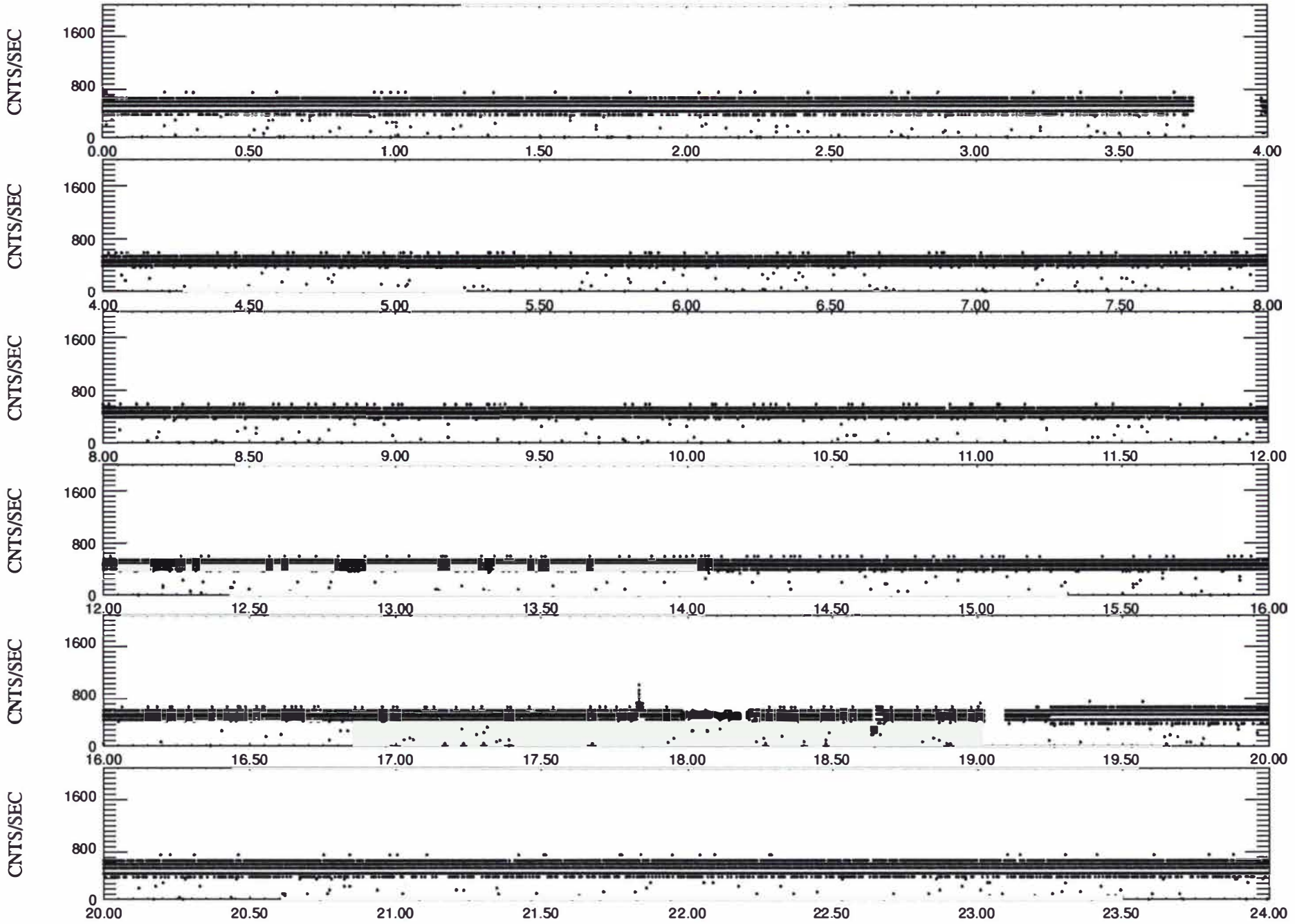
HUS MODES EDR day 84, year 1997 to day 84, year 1997 7/21/97

BURST NUMBER 4



HUS 2A, MODE 1, NOT AVERAGED EDR day 84, year 1997 to day 84, year 1997 7/21/97

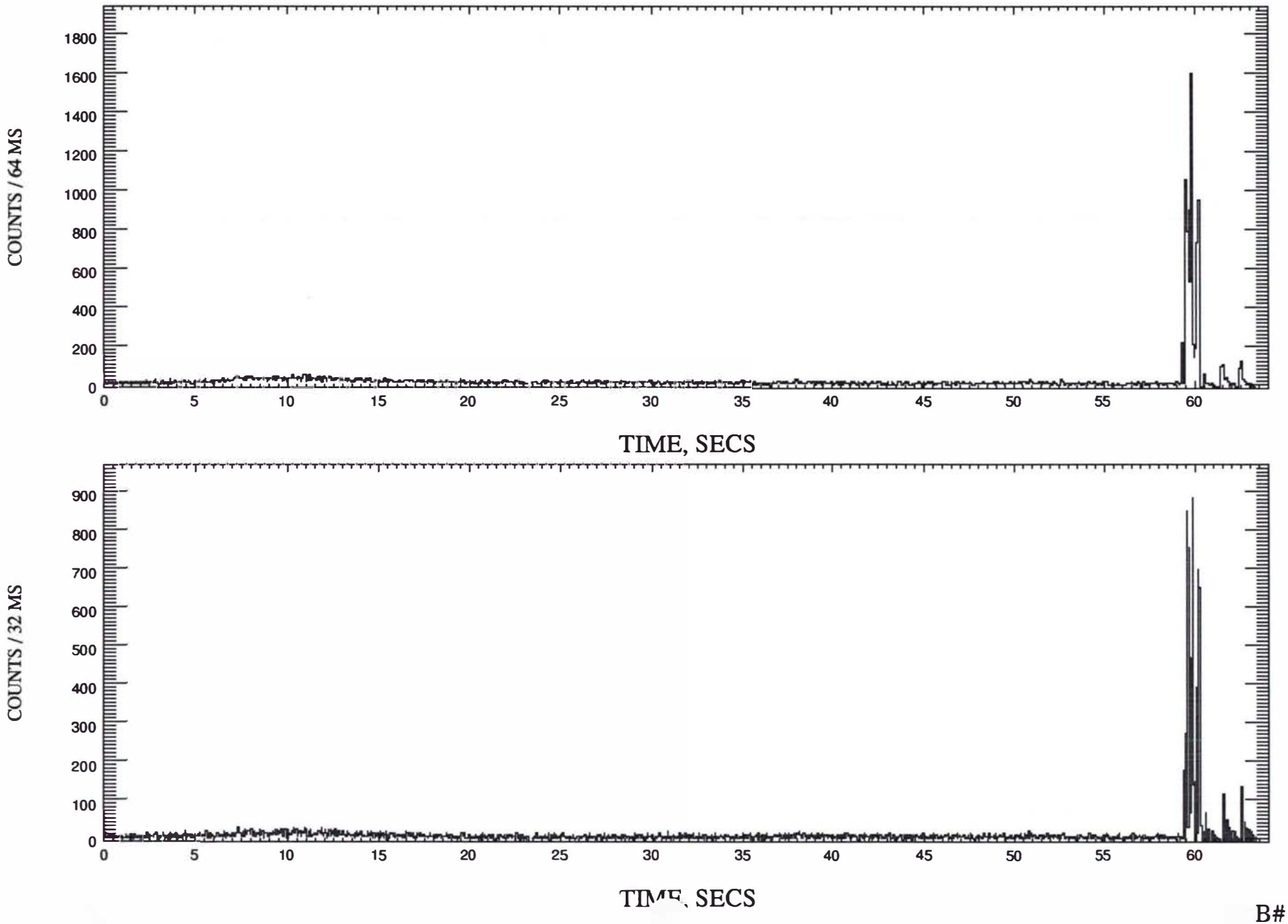
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 84, year 1997 7/21/97

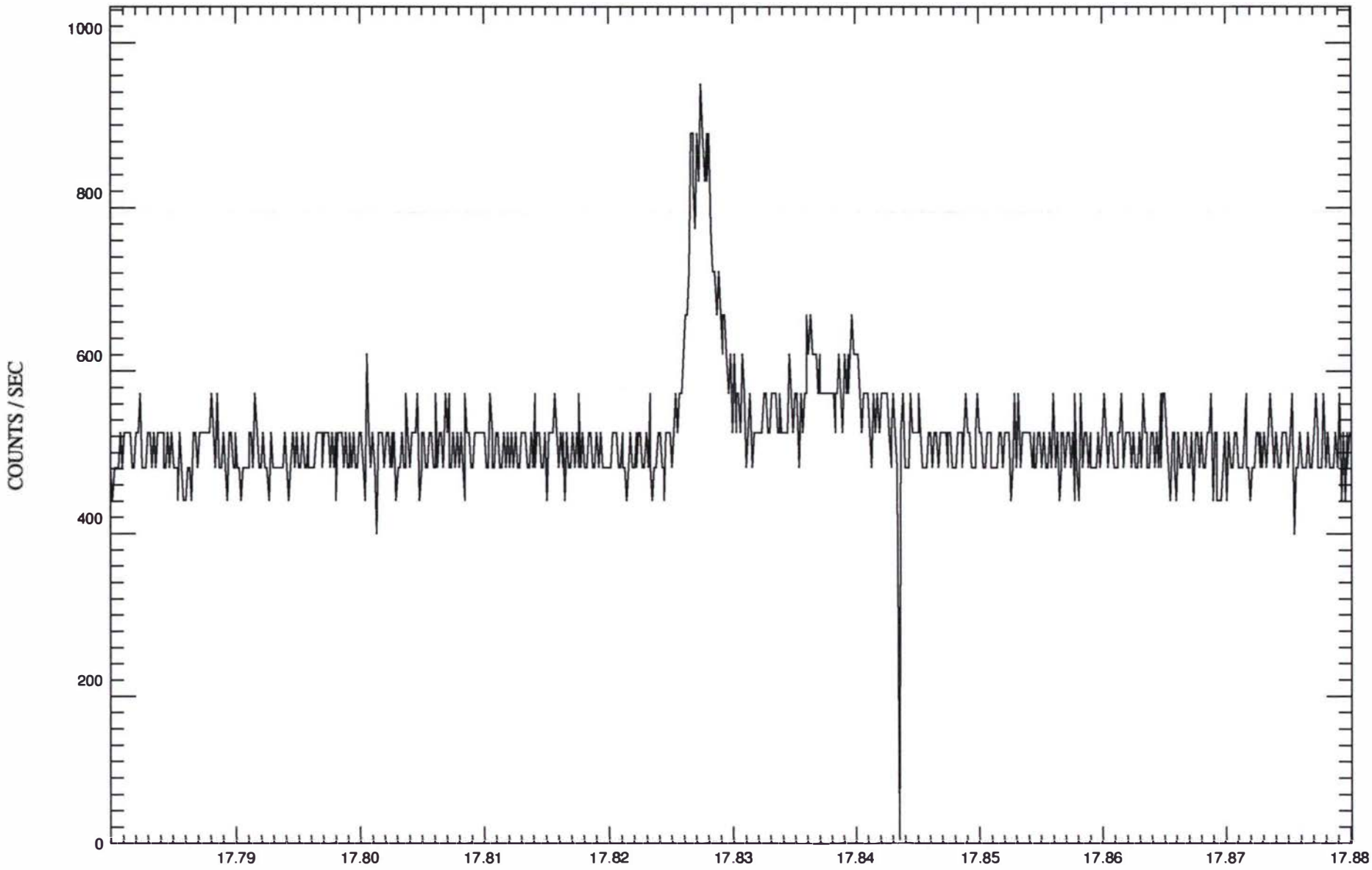
Burst Counter 4 at UT=17.826727489895 h=64176.219 s 17:49:36.219



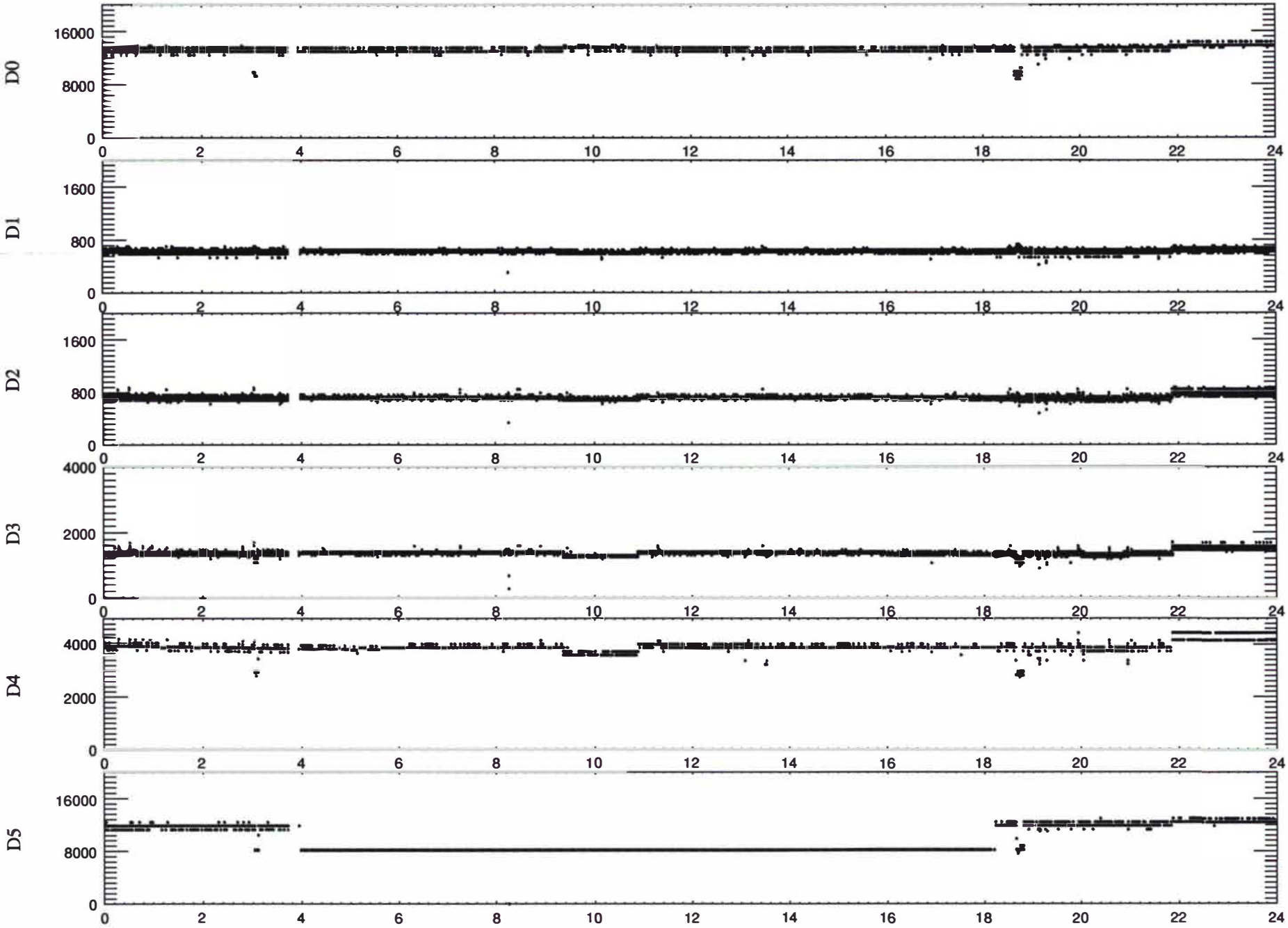
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 84, year 1997 to day 84, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 84, year 1997 to day 84, year 1997 7/21/97



From WOODSP@ssl.msfc.nasa.gov Fri Mar 28 11:33 PST 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id LAA00371; Fri, 28 Mar 1997 11:33:04 -0800
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 28 Mar 1997 13:33:05 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970328133305.2021790d@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6136
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6136
EVENT OF 1997 MAR 26 DAY OF YEAR= 85
EVENT CROSSING TIME AT BATSE : 29773. S. OR 08:16:13.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 359.000 -68.000
BATSE PEAK COUNTING RATE: 6500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 3/ 97 IS:
RA= 157.453 DEC= 36.255 DIST= 4.207 AU
BATSE-ULYSSES DISTANCE = 629317589. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1740.84 SECS.
CROSSING TIME AT ULYSSES IS 31514. S. OR 08:45:13 +/- 280.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 3/ 97 IS:
RA= 175.345 DEC= 5.803 DIST= 0.662 AU
MARS-BATSE DISTANCE = 99095808. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 153.93 SECS.
CROSSING TIME AT MARS IS 29927. S. OR 08:18:46 +/- 53.12 SECONDS

BATSE BURST TRIGGER

NO.: 6136

TIME: TJD=0533 SECONDS=29773

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=86.7 AZIMUTH=89.7 ERROR=3.4 DEGREES

COMMENTS:
GRB LASTING ~ 2 SEC WITH POSSIBLE PRECURSOR @ T - 16 SEC.
TRIGGERED PORTION OF THE BURST IS DOUBLE PEAKED. NOT VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6136	970326	10533	29773	6500	359	-68	2

BATSE# 6136

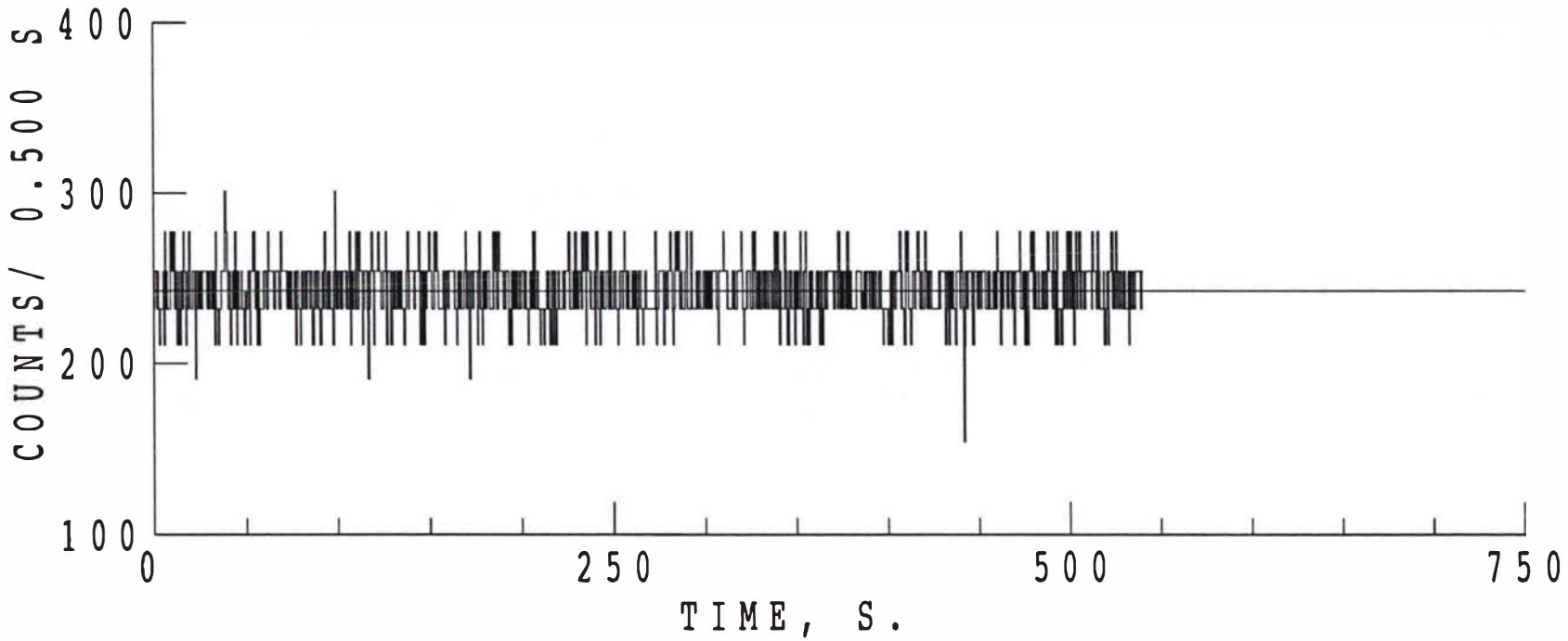
ULYSSES RT 28/ 3/97

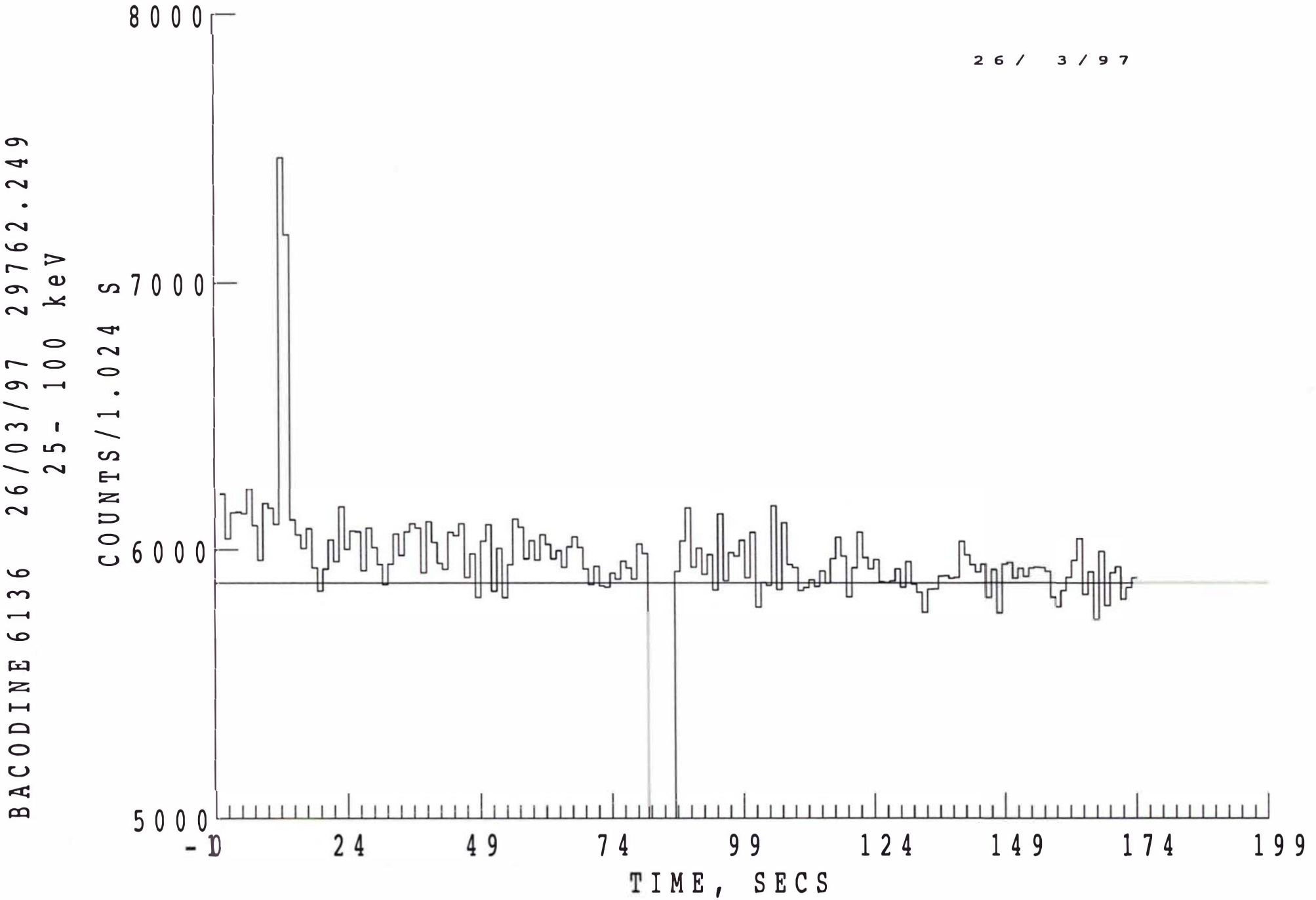
26/ 3/97 31248.004 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6136 26/03/97 29762.249
25- 100 keV
COUNTS/1.024 S
8000
7000
6000
5000
26/ 3/97
-1
24
49
74
99
124
149
174
199
TIME, SECS

From WOODSP@ssl.msfc.nasa.gov Fri Mar 28 11:37 PST 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA00438; Fri, 28 Mar 1997 11:37:19 -0800
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 28 Mar 1997 13:37:20 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970328133720.2021790d@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6137
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6137
EVENT OF 1997 MAR 26 DAY OF YEAR= 85
EVENT CROSSING TIME AT BATSE : 50317. S. OR 13:58:37.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 134.000 -24.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 3/ 97 IS:
RA= 157.394 DEC= 36.242 DIST= 4.210 AU
BATSE-ULYSSES DISTANCE = 629748309. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.83 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -915.38 SECS.
CROSSING TIME AT ULYSSES IS 49402. S. OR 13:43:21 +/- 364.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 3/ 97 IS:
RA= 175.345 DEC= 5.803 DIST= 0.662 AU
MARS-BATSE DISTANCE = 99095808. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -211.95 SECS.
CROSSING TIME AT MARS IS 50105. S. OR 13:55:05 +/- 40.82 SECONDS

BATSE BURST TRIGGER

NO.: 6137

TIME: TJD=0533 SECONDS=50317

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=63.4 AZIMUTH=140.9 ERROR=6.6 DEGREES

COMMENTS:
GRB LASTING ~ 5.5 SEC. DOUBLE PEAKED EVENT. FIRST PULSE HARDER
THAN THE NEXT. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6137	970326	10533	50317	2500	134	-24	5.5

BATSE# 6137

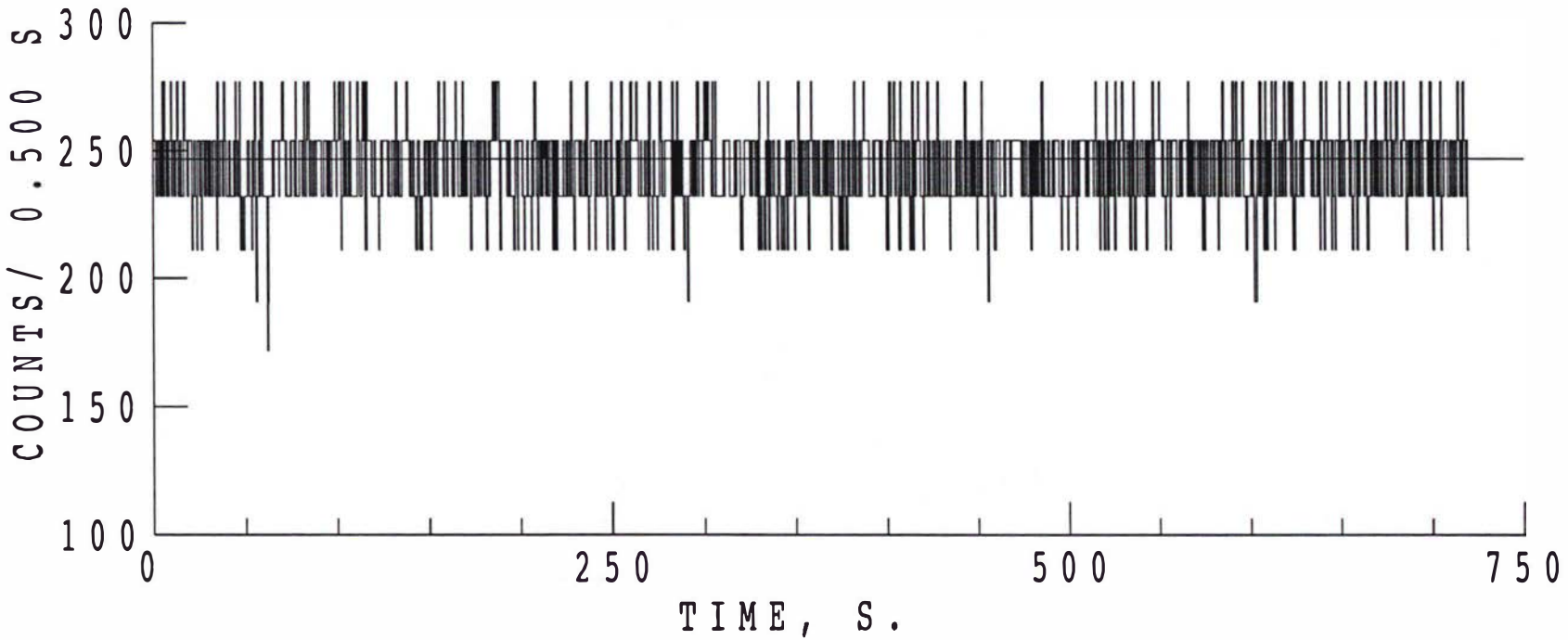
ULYSSES RT 28/ 3/97

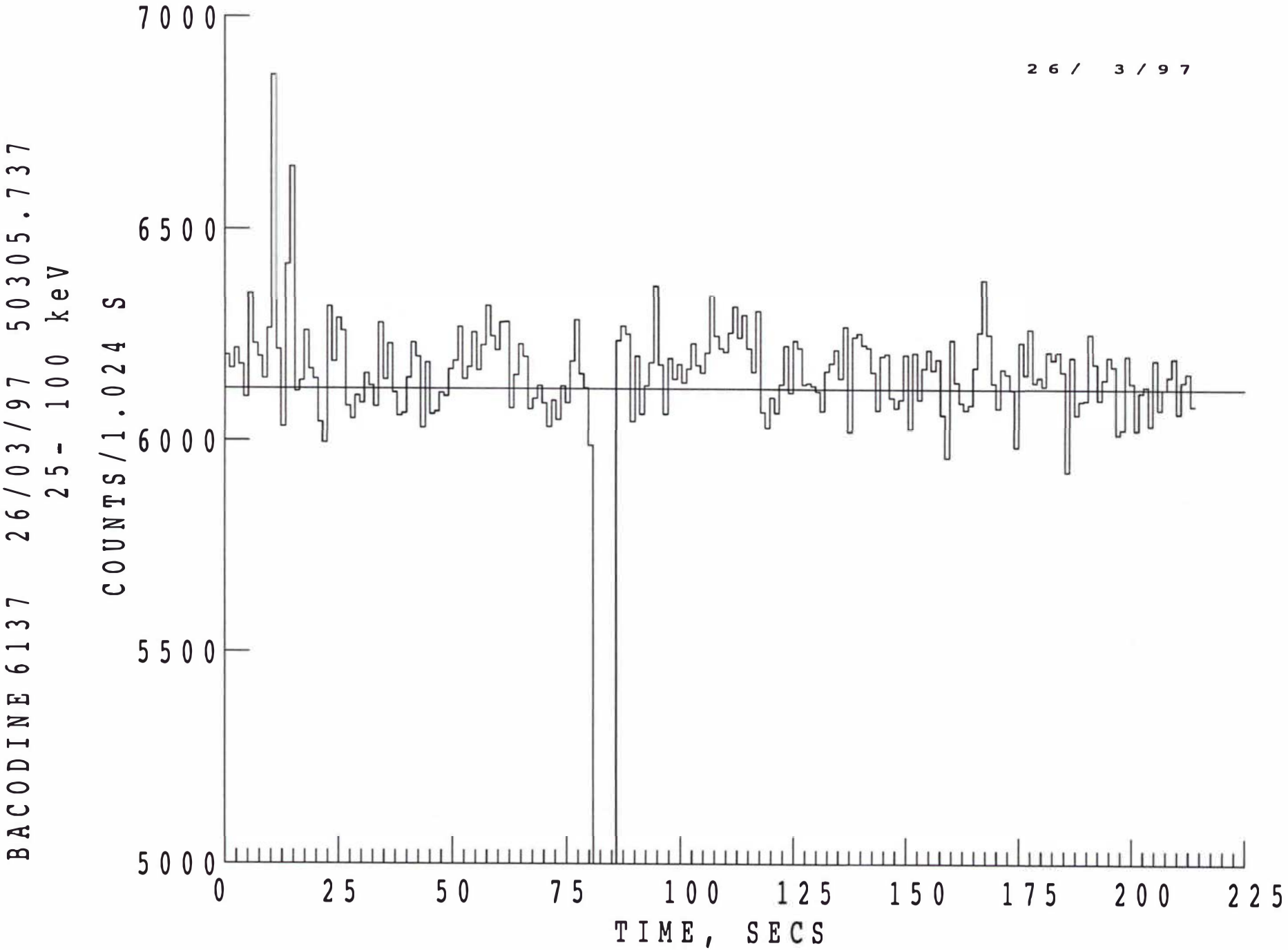
26/ 3/97 49032.215 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



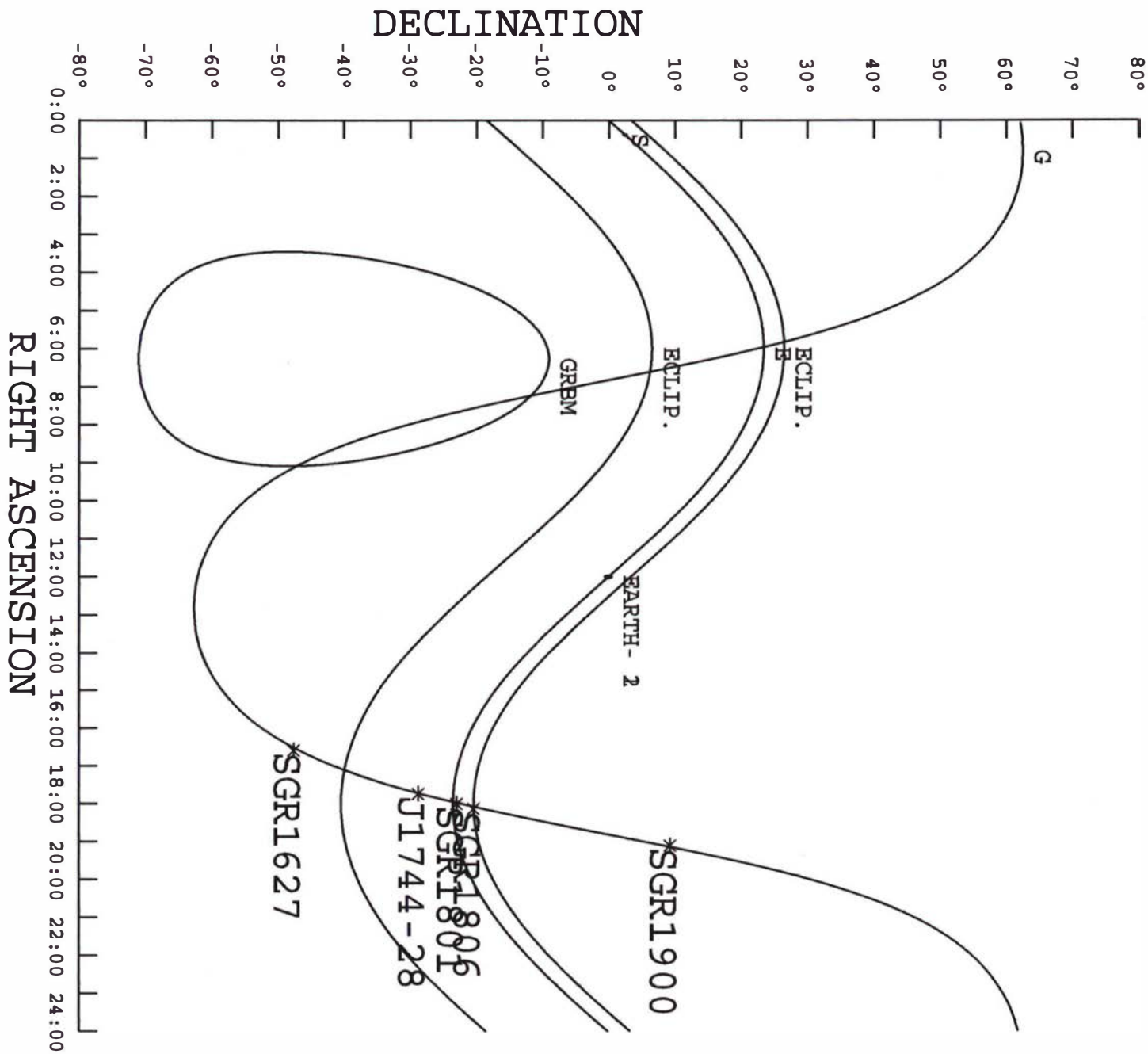

BACODINE 6137 26/03/97 50305.737
25- 100 keV
COUNTS/1.024 S
7000
6500
6000
5500
5000
26/ 3/97
0
25
50
75
100
125
150
175
200
225
TIME, SECS

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN E=ECLIPTIC G=GALACTIC EQUATOR

1 SAX GRBM 2 KONUS



26/ 3/ 7

KONUS

ULYSSES RT

02/02/00

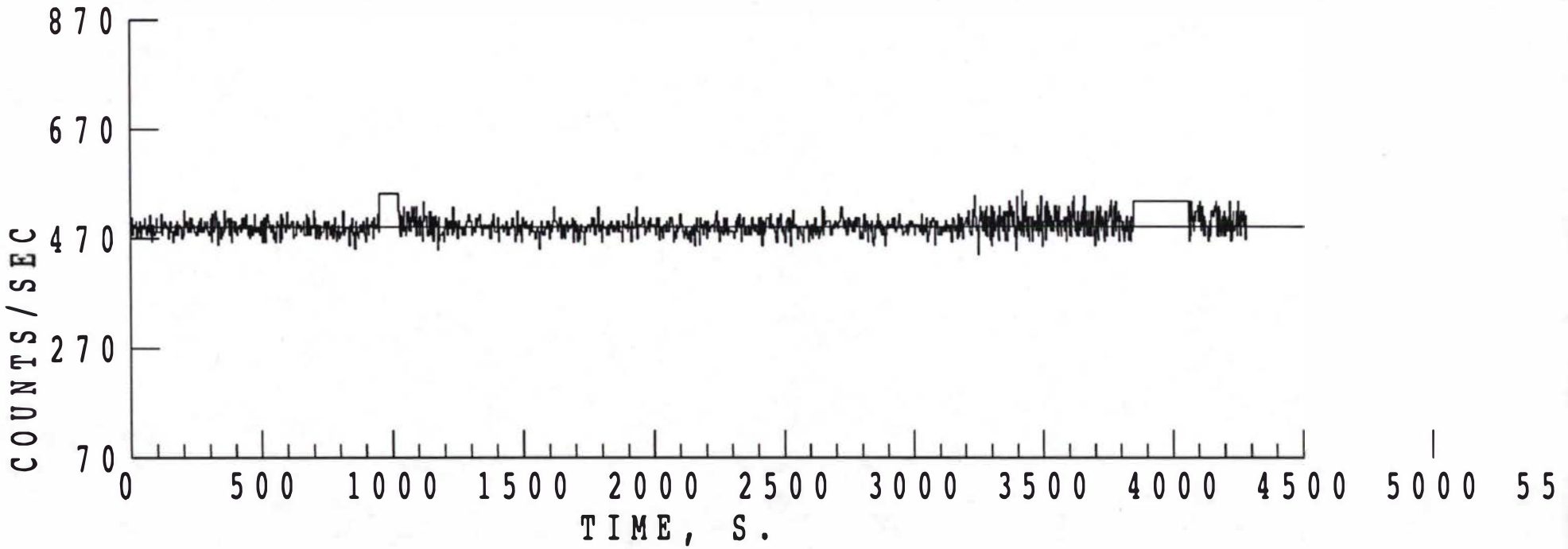
26/03/97 62856.379 s

INTERVALS REGROUPED BY 7

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@ssl.msfc.nasa.gov Fri Mar 28 11:31 PST 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 28 Mar 1997 13:30:42 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6138

TIME: TJD=0533 SECONDS=81982

TYPE: ACCIDEN SOLAR FLARE TRIGGER SIGNAL:

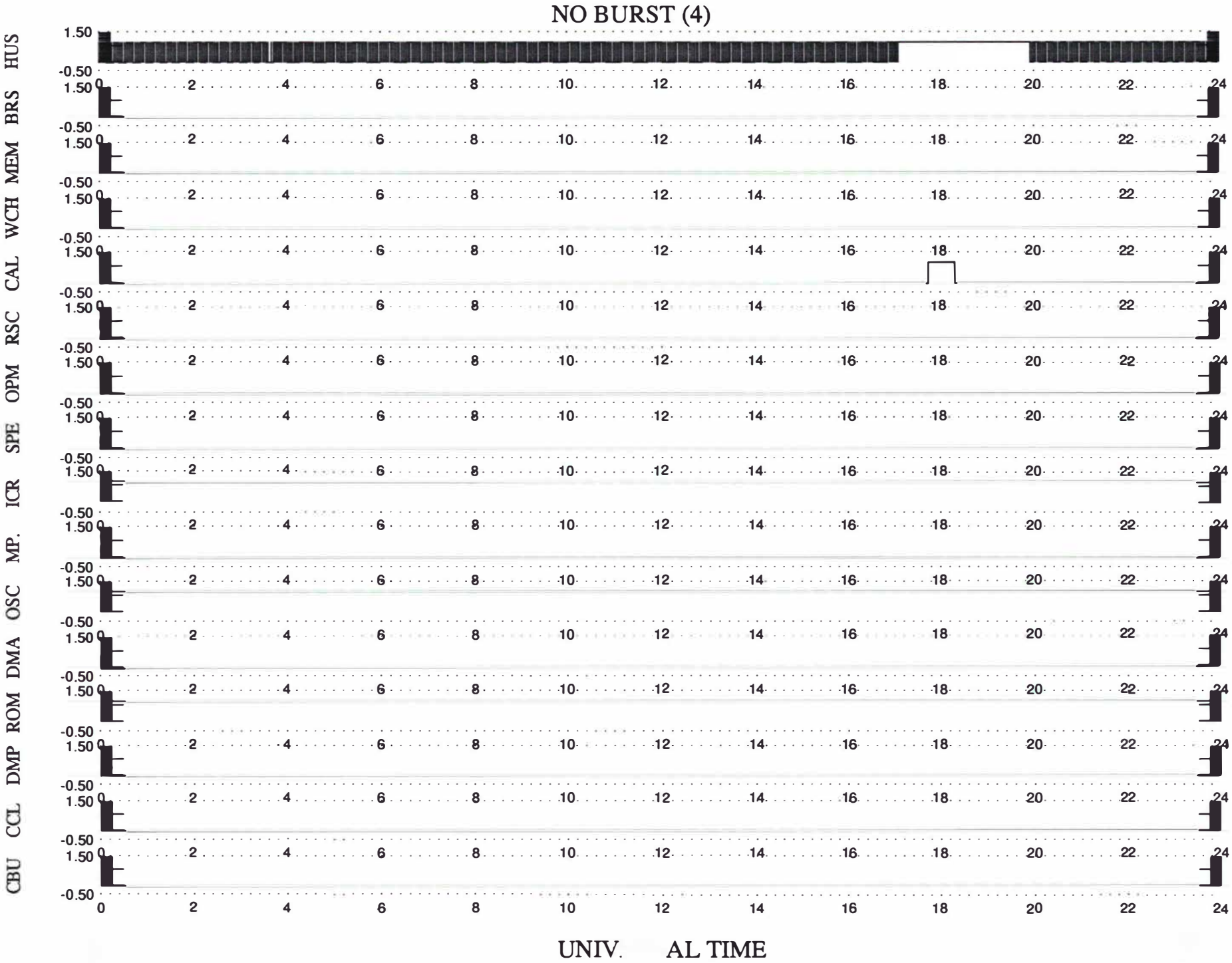
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

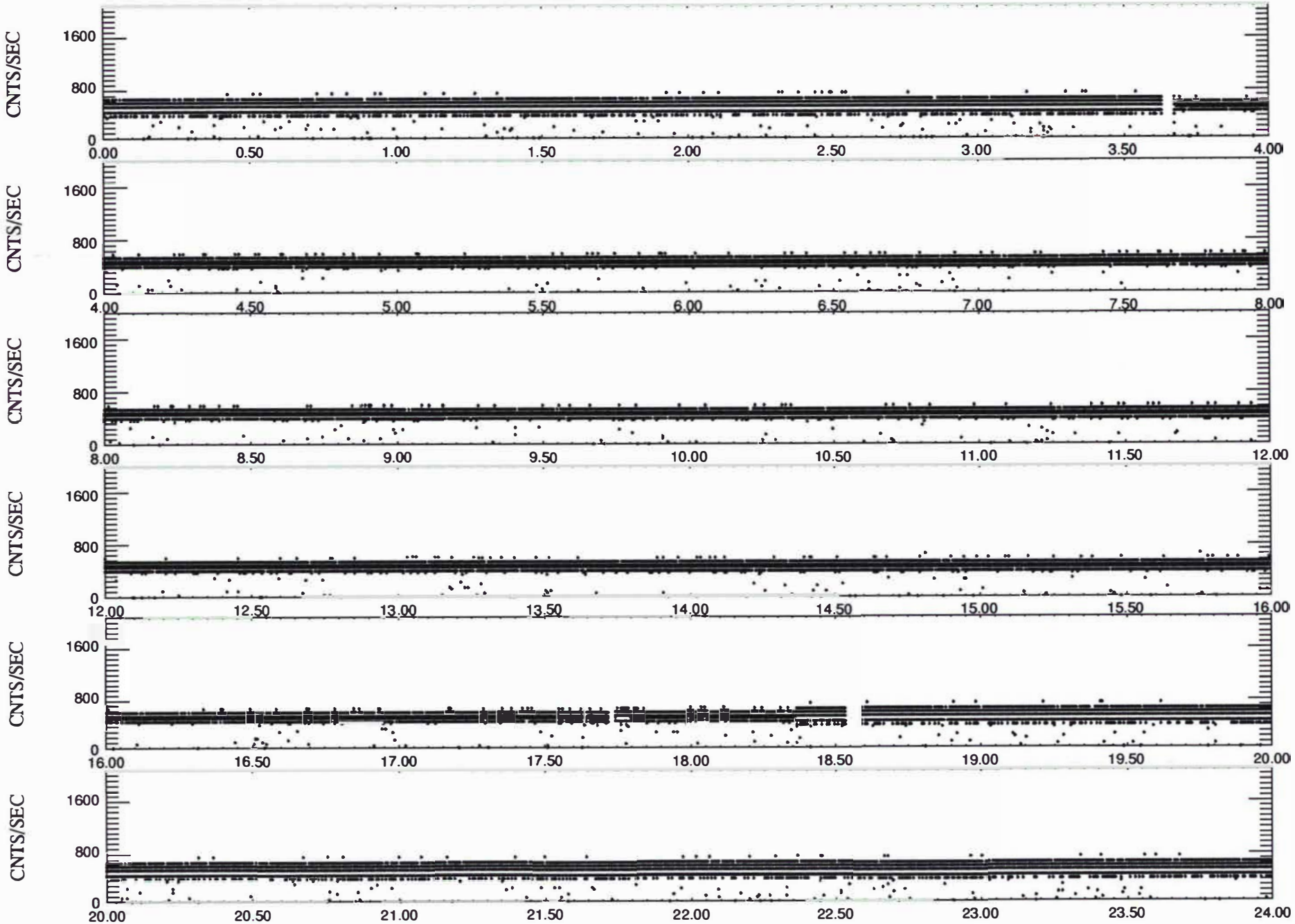
COMMENTS:
ACCIDENTAL TRIGGER CAUSED BY HIGH VOLTAGE TURN ON. COMMANDS SENT
UP TO GRO FROM FOT WERE OUT OF ORDER AND THE TRIGGER ENABLED
BEFORE THE HIGH VOLTAGE WAS TURNED ON.

HUS MODES EDR day 85, year 1997 to day 85, year 1997 7/21/97



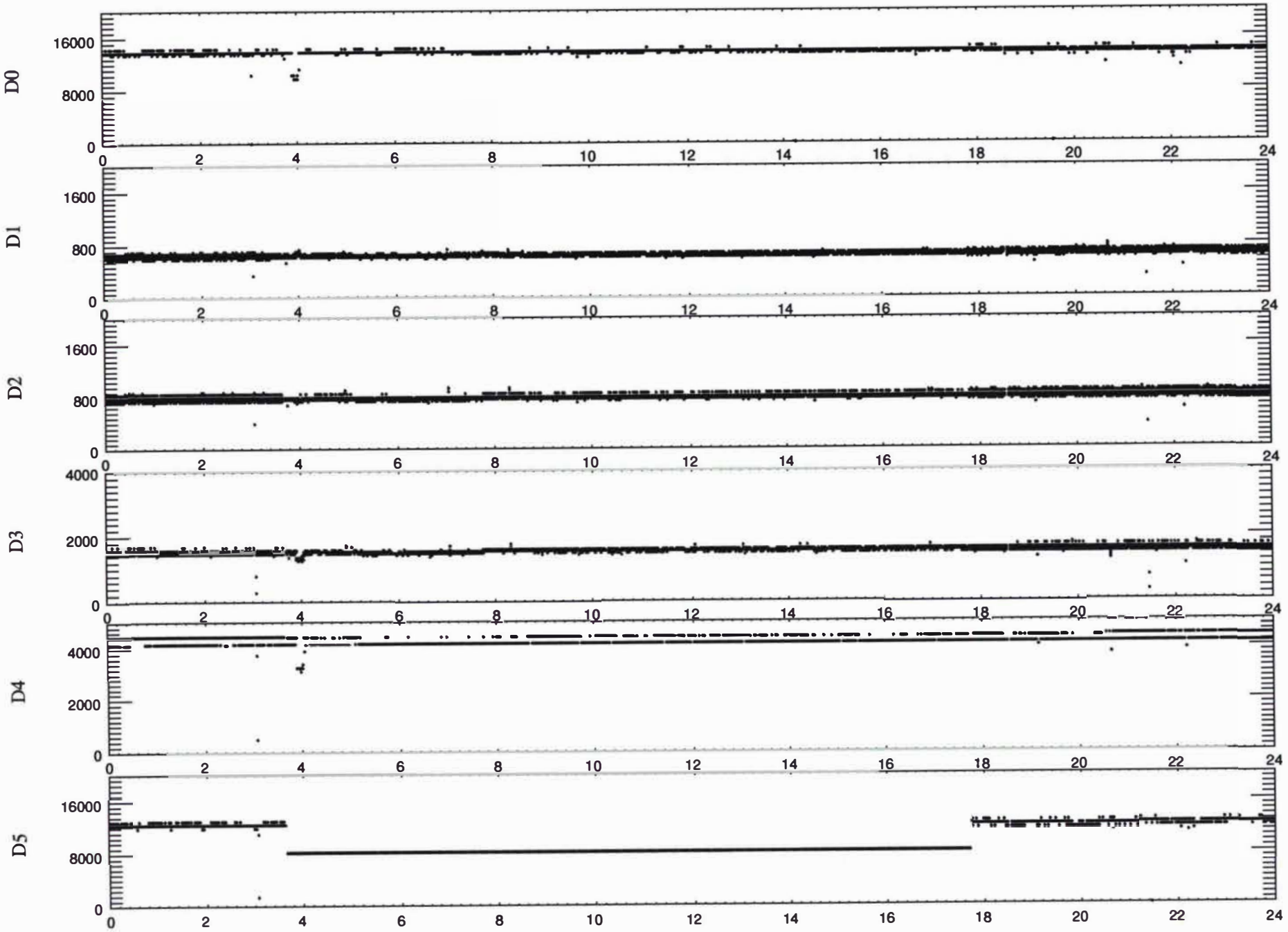
HUS 2A, MODE 1, NOT AVERAGED EDR day 85, year 1997 to day 85, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 85, year 1997 to day 85, year 1997 7/21/97



From SURASAK@ssl.msfc.nasa.gov Mon Mar 31 15:55 PST 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id PAA16649; Mon, 31 Mar 1997 15:55:41 -0800
Date: Mon, 31 Mar 1997 17:55:37 -0600 (CST)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970331175537.210028d8@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6139
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6139
EVENT OF 1997 MAR 27 DAY OF YEAR= 86
EVENT CROSSING TIME AT BATSE : 11995. S. OR 03:19:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 349.000 15.000
BATSE PEAK COUNTING RATE: 2150 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 3/ 97 IS:
RA= 157.258 DEC= 36.210 DIST= 4.216 AU
BATSE-ULYSSES DISTANCE = 630755129. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1283.78 SECS.
CROSSING TIME AT ULYSSES IS 13279. S. OR 03:41:18 +/- 358.90 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 3/ 97 IS:
RA= 174.993 DEC= 5.920 DIST= 0.664 AU
MARS-BATSE DISTANCE = 99280712. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 21.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 307.59 SECS.
CROSSING TIME AT MARS IS 12303. S. OR 03:25:02 +/- 25.97 SECONDS

BATSE BURST TRIGGER

NO.: 6139

TIME: TJD=0534 SECONDS=11995

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=97.7 AZIMUTH=350.5 ERROR=5.1 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR~ 45S. NOT VISIBLE ABOVE 300 KEV.

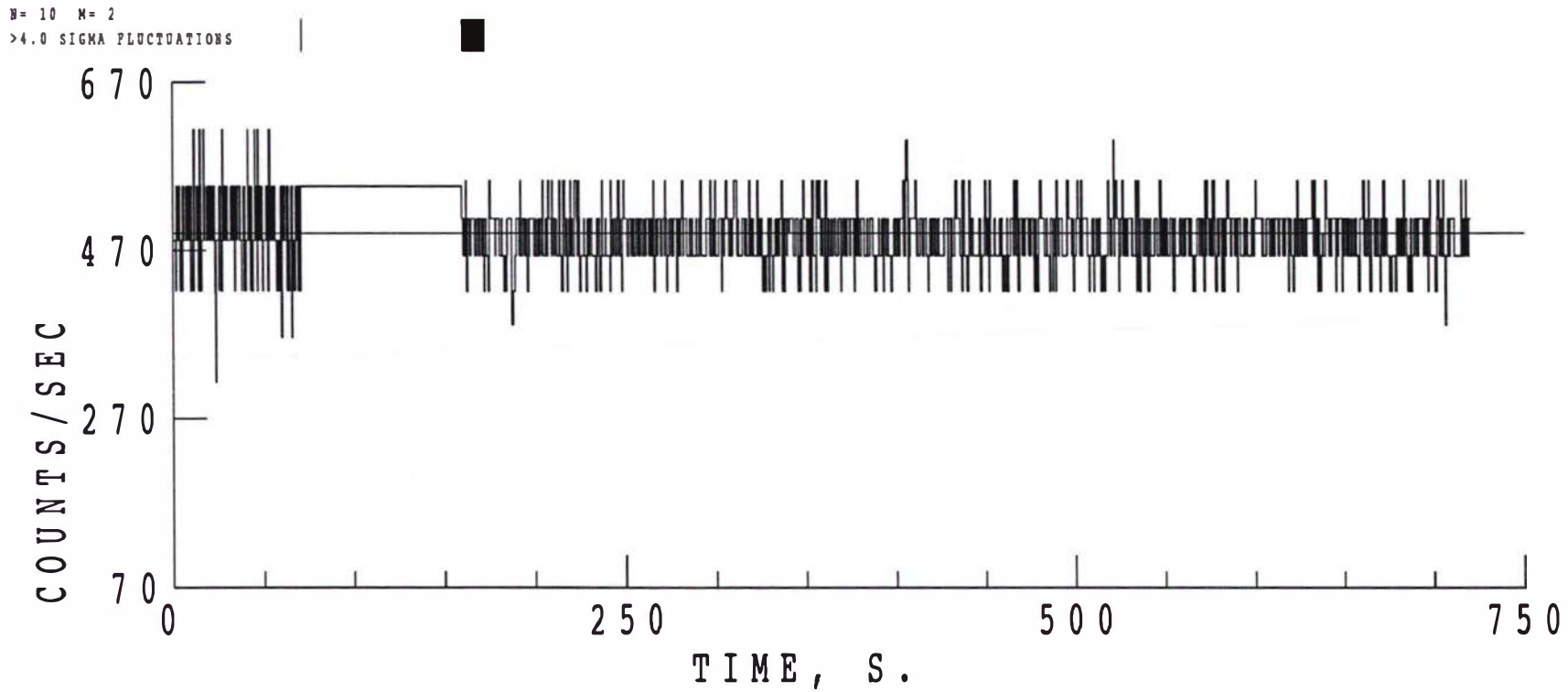
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6139	970327	10534	11995	2150	349	+15	45

BATSE# 6139

ULYSSES RT 31/ 3/97

27/ 3/97 12924.062 s

0- 0 keV



From SURASAK@ssl.msfc.nasa.gov Tue Apr 1 09:28 PST 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA23563; Tue, 1 Apr 1997 09:28:44 -0800
From: SURASAK@ssl.msfc.nasa.gov
Date: Tue, 1 Apr 1997 11:28:54 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970401112854.2021b4f3@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6140
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6140
EVENT OF 1997 MAR 27 DAY OF YEAR= 86
EVENT CROSSING TIME AT BATSE : 56965. S. OR 15:49:25.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 28.000 40.000
BATSE PEAK COUNTING RATE: 15000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 3/ 97 IS:
RA= 157.134 DEC= 36.179 DIST= 4.223 AU
BATSE-ULYSSES DISTANCE = 631705380. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 89.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 22.79 SECS.
CROSSING TIME AT ULYSSES IS 56988. S. OR 15:49:47 +/- 416.16 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 3/ 97 IS:
RA= 174.993 DEC= 5.920 DIST= 0.664 AU
MARS-BATSE DISTANCE = 99280712. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 55.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 189.65 SECS.
CROSSING TIME AT MARS IS 57155. S. OR 15:52:34 +/- 50.01 SECONDS

BATSE BURST TRIGGER

NO.: 6140

TIME: TJD=0534 SECONDS=56965

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.3 AZIMUTH=339.4 ERROR=5.5 DEGREES

COMMENTS:
GRB. DOUBLE PEAKS. DUR~0.35S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6140	970327	10534	56965	15000	028	+40	.35

BATSE# 6140

ULYSSES RT 1/ 4/97

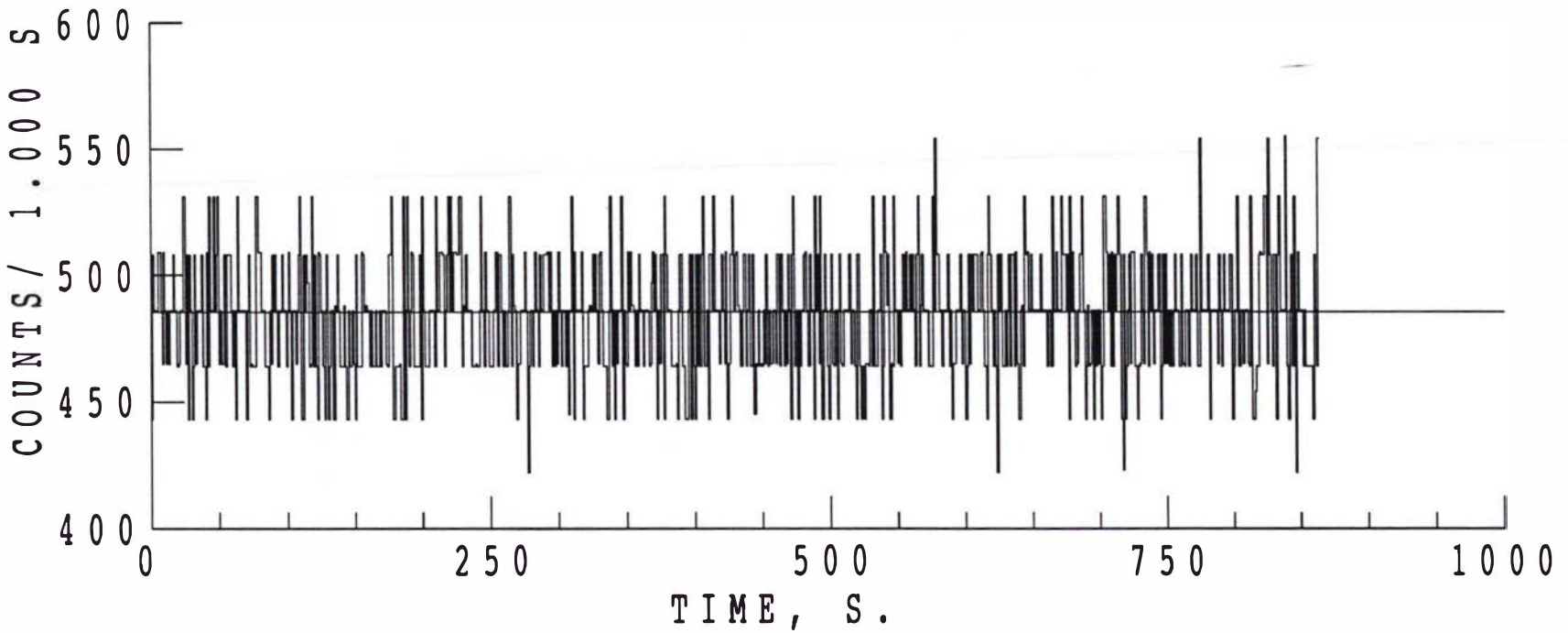
27/ 3/97 56556.328 s

0.500 S INTERVALS REGROUPED BY 2

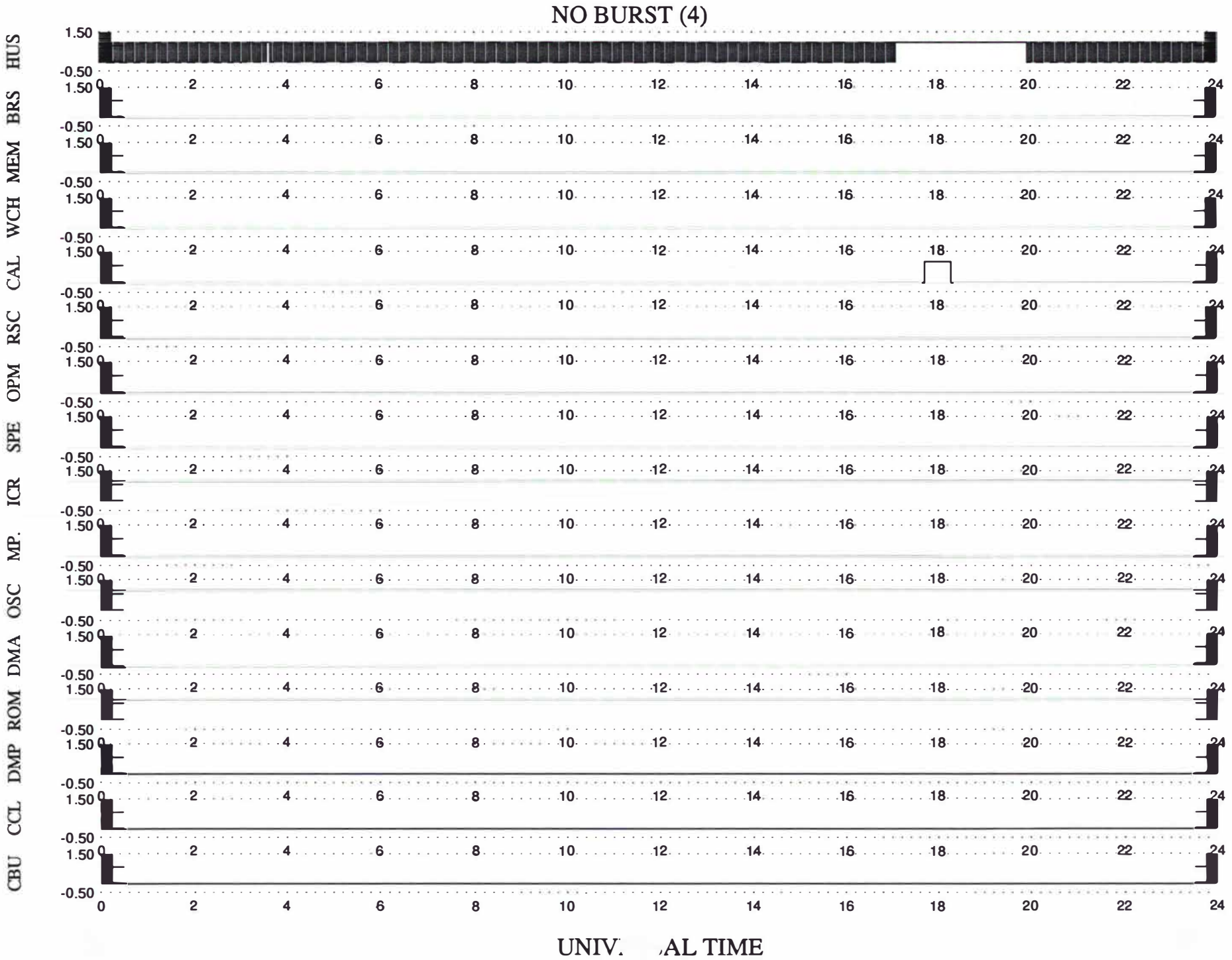
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

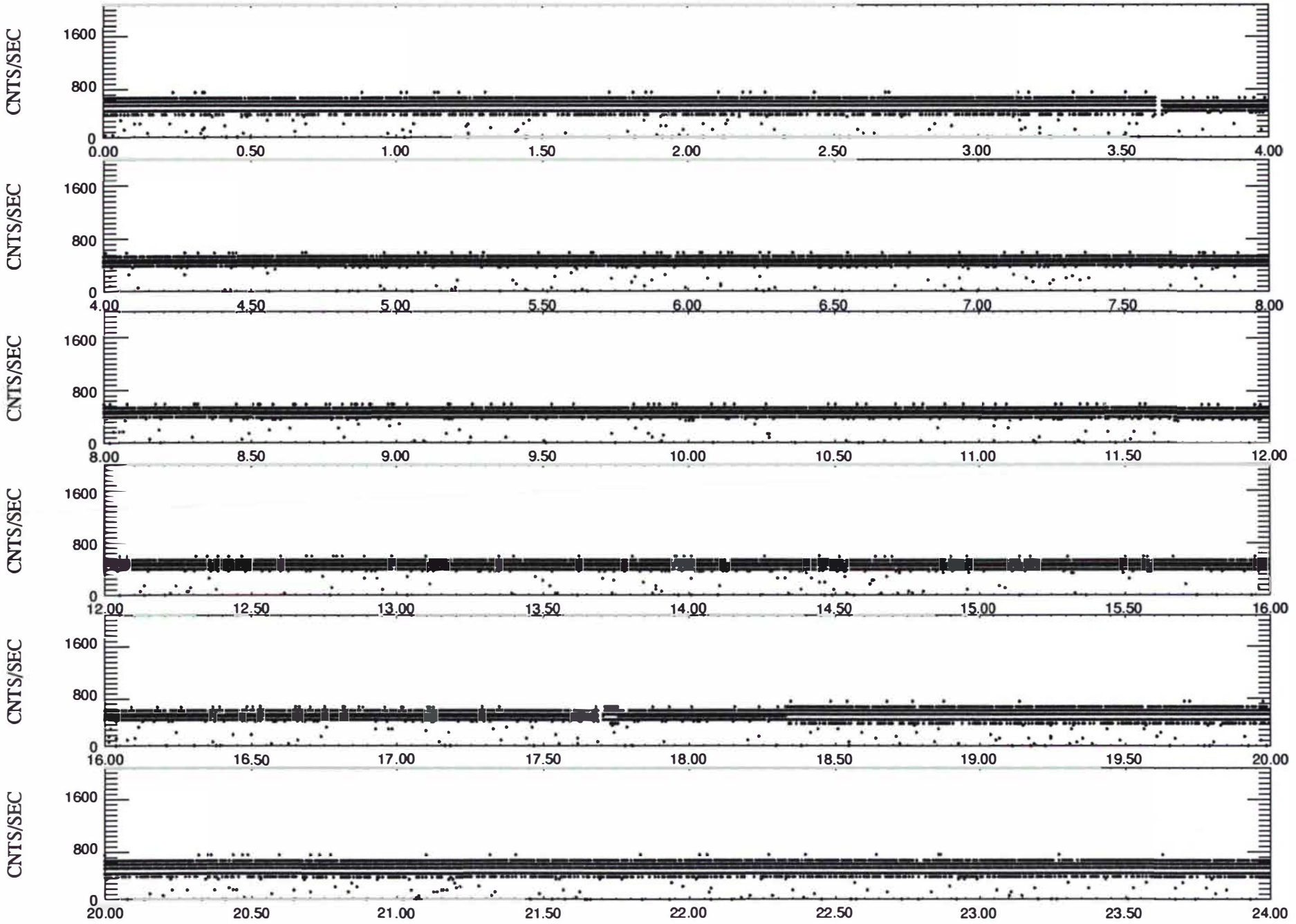


HUS MODES EDR day 86, year 1997 to day 86, year 1997 7/21/97



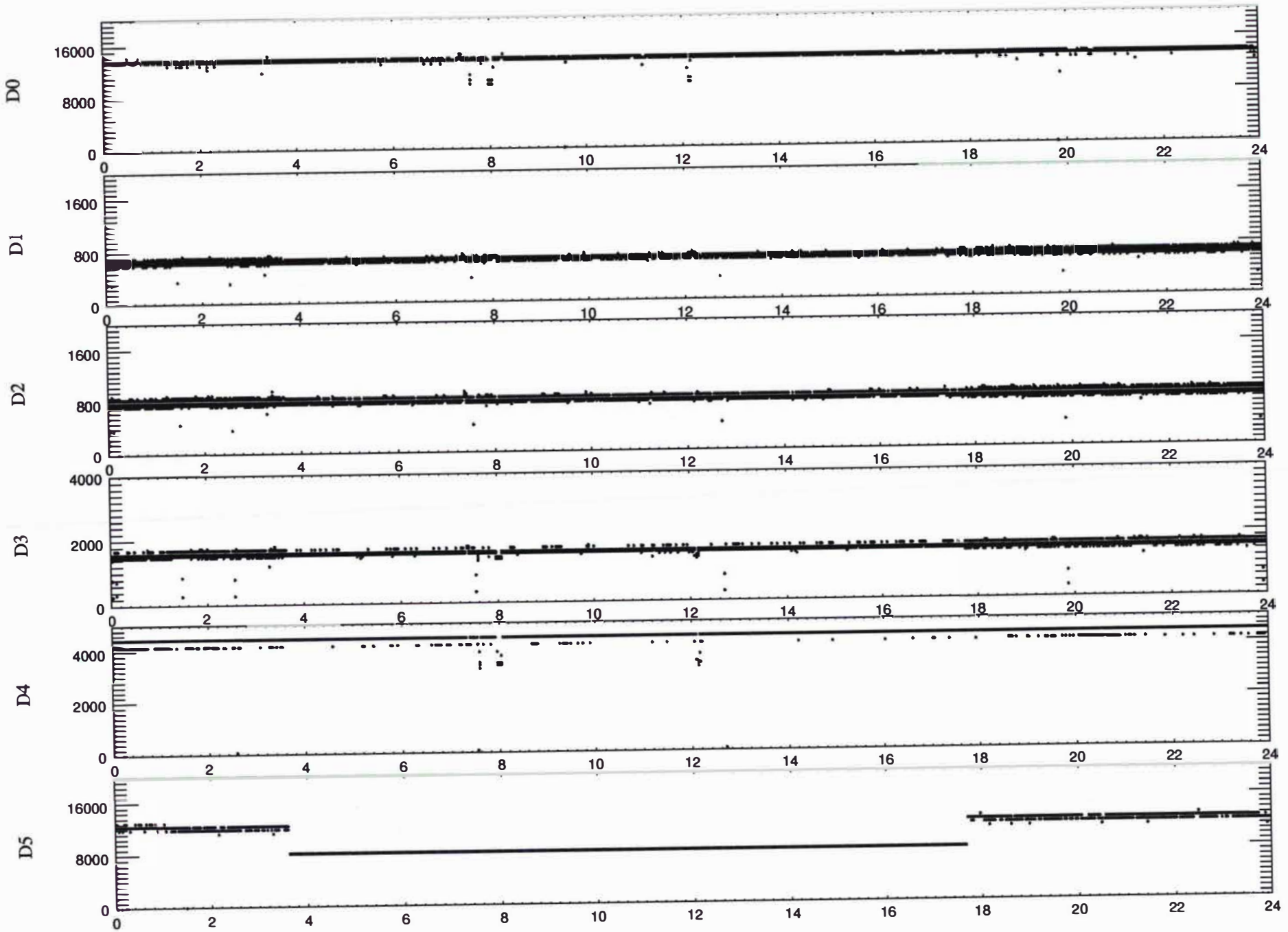
HUS 2A, MODE 1, NOT AVERAGED EDR day 86, year 1997 to day 86, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 86, year 1997 to day 86, year 1997 7/21/97



From SURASAK@ssl.msfc.nasa.gov Mon Mar 31 16:30 PST 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id QAA16962; Mon, 31 Mar 1997 16:30:18 -0800
From: SURASAK@ssl.msfc.nasa.gov
Date: Mon, 31 Mar 1997 18:30:28 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970331183028.2021a738@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6141
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6141
EVENT OF 1997 MAR 28 DAY OF YEAR= 87
EVENT CROSSING TIME AT BATSE : 14216. S. OR 03:56:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 2.000 20.000
BATSE PEAK COUNTING RATE: 5100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 3/ 97 IS:
RA= 157.012 DEC= 36.148 DIST= 4.229 AU
BATSE-ULYSSES DISTANCE = 632640865. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1025.65 SECS.
CROSSING TIME AT ULYSSES IS 15242. S. OR 04:14:01 +/- 385.77 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 3/ 97 IS:
RA= 174.646 DEC= 6.034 DIST= 0.665 AU
MARS-BATSE DISTANCE = 99496616. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 27.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 295.66 SECS.
CROSSING TIME AT MARS IS 14512. S. OR 04:01:51 +/- 30.67 SECONDS

BATSE BURST TRIGGER

NO.: 6141

TIME: TJD=0535 SECONDS=14216

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=101.8 AZIMUTH=3.2 ERROR=2.2 DEGREES

COMMENTS:
GRB. SINGLE PULSE WITH SUBSTRUCTURE. DUR~6S. POSSIBLE REPEATING AT ~ T+40S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6141	970328	10535	14216	5100	002	+20	6

BATSE# 6141

ULYSSES RT 31/ 3/97

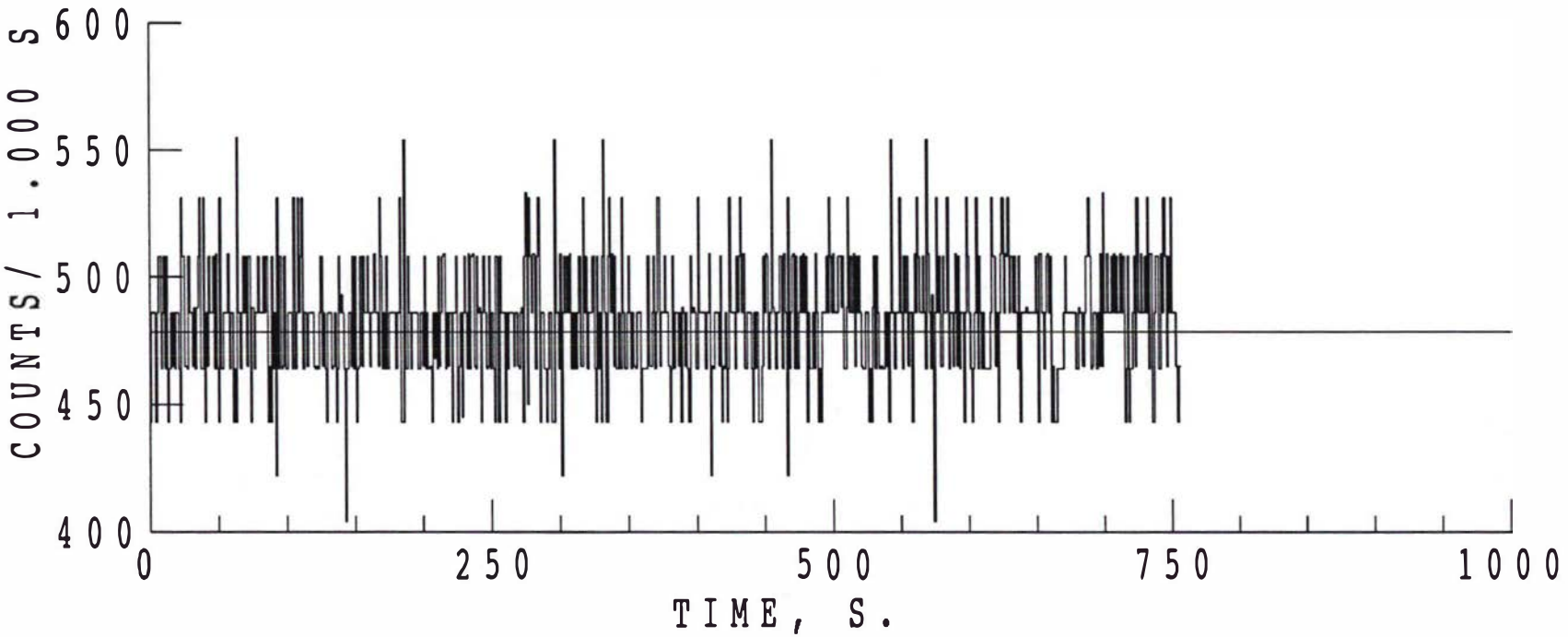
28/ 3/97 14868.355 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@ssl.msfc.nasa.gov Tue Apr 1 09:19 PST 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA23465; Tue, 1 Apr 1997 09:19:56 -0800
From: SURASAK@ssl.msfc.nasa.gov
Date: Tue, 1 Apr 1997 11:20:05 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970401112006.2021b4f3@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6142
Content-Type: text
Content-Length: 1135
Status: RO
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST #   6142
EVENT OF 1997 MAR 28 DAY OF YEAR= 87
EVENT CROSSING TIME AT BATSE   : 38642. S. OR 10:44:02.0
COORDINATES ARE   0.000   0.000   6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 117.000   42.000
BATSE PEAK COUNTING RATE: 6200   C/S

EVENT CROSSING TIME AT ULYSSES   WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 3/ 97 IS:
RA= 156.945 DEC=   36.130 DIST=   4.232 AU
BATSE-ULYSSES DISTANCE = 633166532. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=148.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1805.14 SECS.
CROSSING TIME AT ULYSSES   IS 36837. S. OR   10:13:56 +/- 212.94 SECONDS

EVENT CROSSING TIME AT MARS   WILL BE FOUND
POSITION OF MARS ON 28/ 3/ 97 IS:
RA= 174.646 DEC=   6.034 DIST=   0.665 AU
MARS-BATSE DISTANCE =   99496616. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -154.60 SECS.
CROSSING TIME AT MARS   IS 38487. S. OR   10:41:27 +/-   48.64 SECONDS

BATSE BURST TRIGGER

NO.: 6142

TIME: TJD=0535 SECONDS=38642

TYPE: BURST   SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=52.3   AZIMUTH=277.3 ERROR=2.04 DEGREES

COMMENTS:
GRB. DOUBLE PULSES. DUR~70S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6142	970328	10535	38642	6200	117	+42	70

From SURASAK@ssl.msfc.nasa.gov Mon Mar 31 16:19 PST 1997
From: SURASAK@ssl.msfc.nasa.gov
Date: Mon, 31 Mar 1997 18:19:22 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6143

TIME: TJD=0535 SECONDS=73373

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

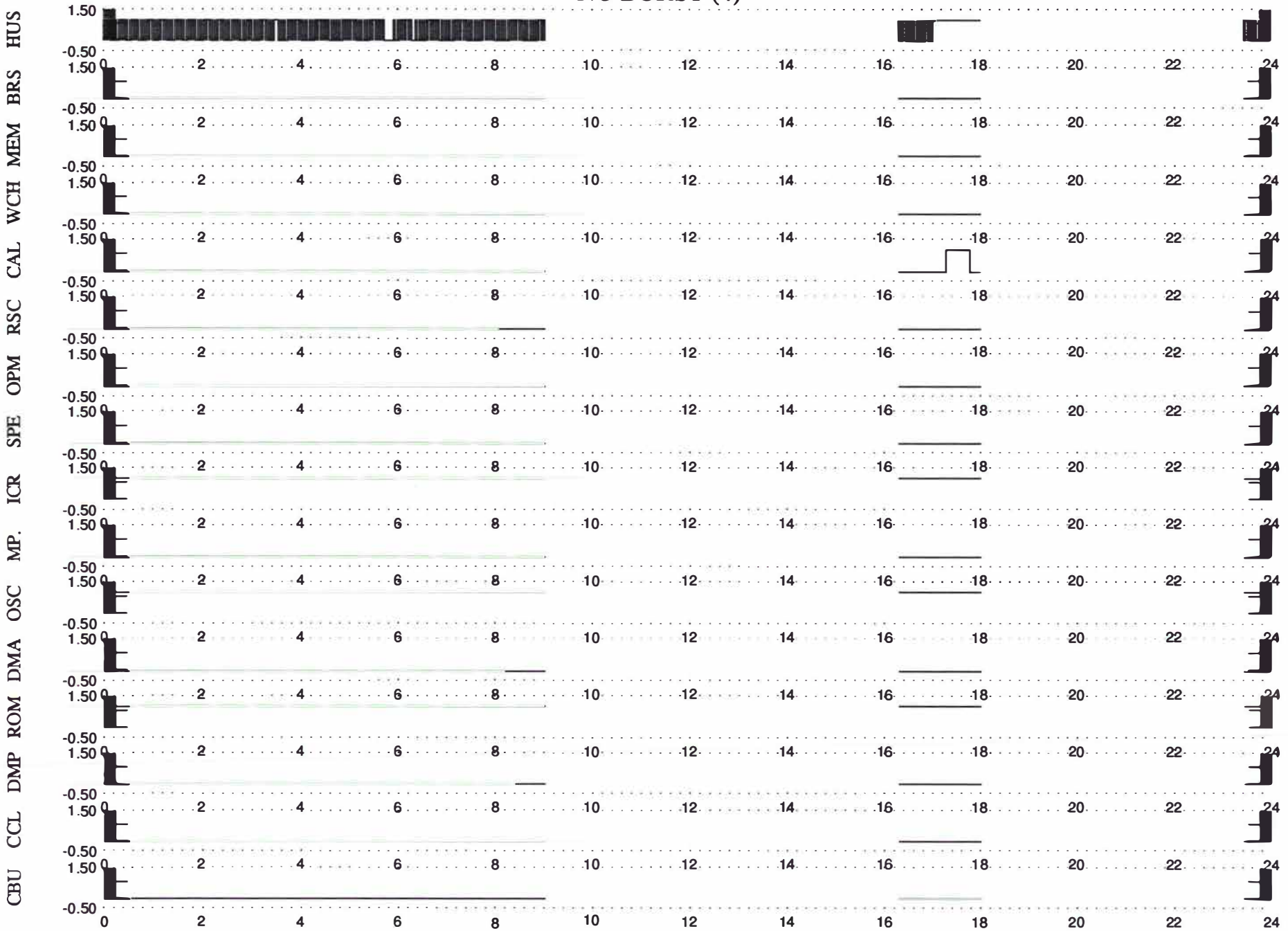
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

HUS MODES EDR day 87, year 1997 to day 87, year 1997 7/21/97

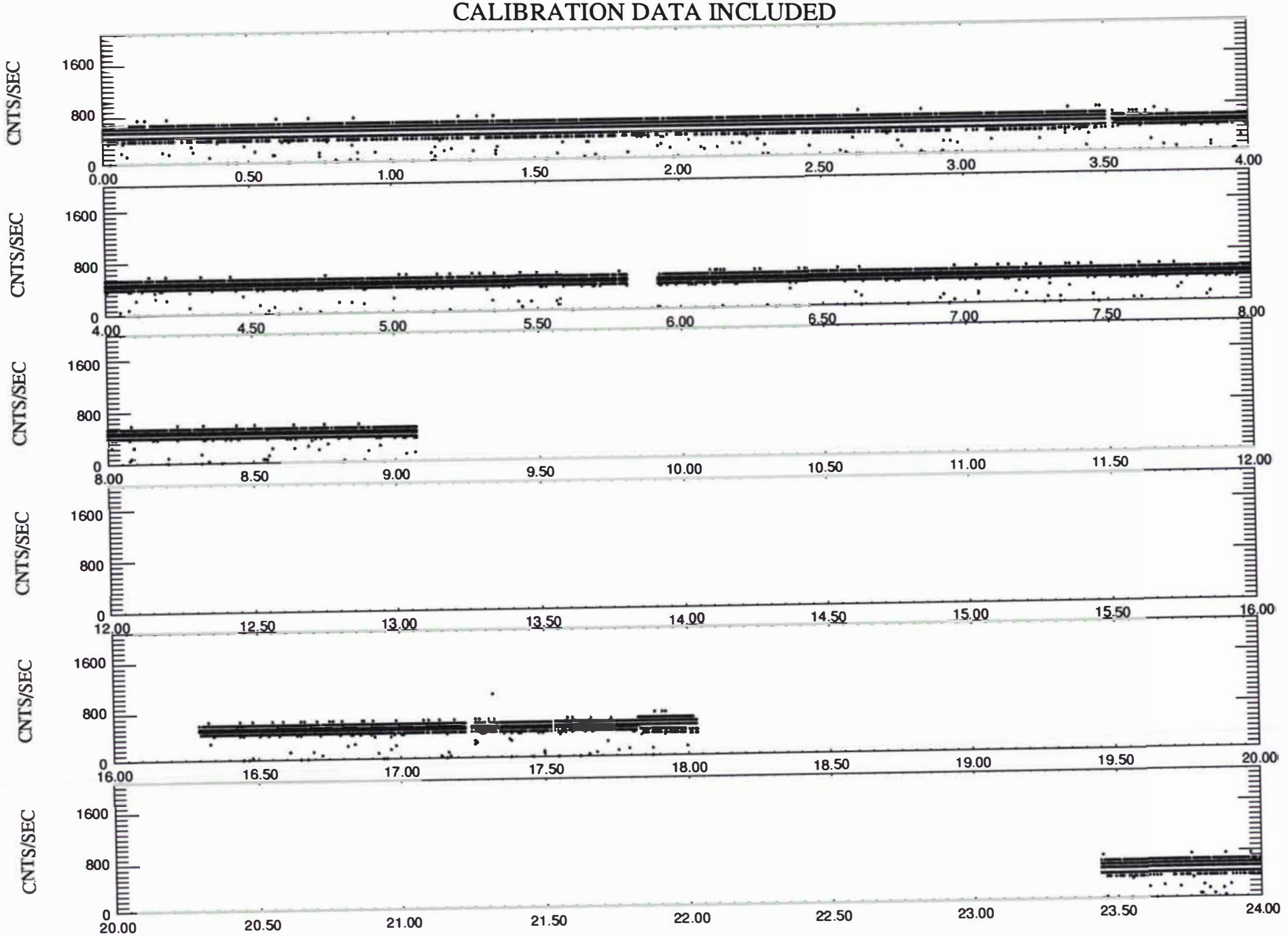
NO BURST (4)



UNIV. AL TIME

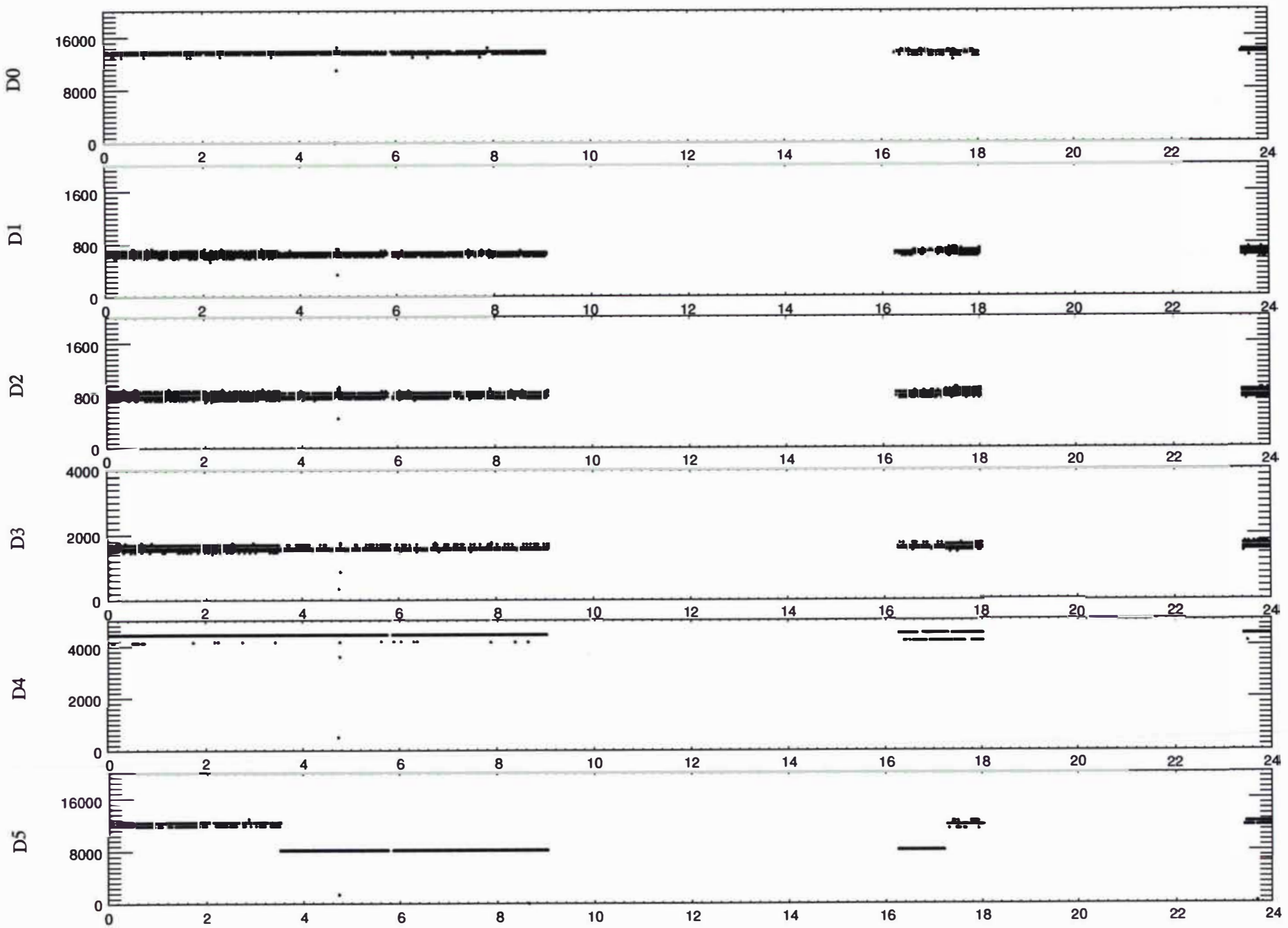
HUS 2A, MODE 1, NOT AVERAGED EDR day 87, year 1997 to day 87, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 87, year 1997 to day 87, year 1997 7/21/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

Ulysses event (1997)		Konus observation
Mar 25 17:49	moderate 15 s long	trigger at 17:36:22.800 North detector two peaks, with the first stronger and harder. each peak lasted 20 s, separated by 20 s without emission
Mar 29 12:23	weak 100 ms long	not detected
May 21 15:23	weak 100 ms long	not detected
June 1 00:17	weak 100 ms long	not detected
J[illegible] 1 19:33	moderate 25 s long	trigger at 19:19:30.567 North detector two strong peaks, 20 s apart first peak much harder event lasted 50 seconds in total
June 2 15:43	moderate 60 s long	trigger at 16:20:55.684 South detector complex, with strongest peak at 16:22:33 event lasted over 150 s
June 4 19:23	weak 100 ms long	trigger at 19:49:05.369 South detector weak, hard FRED lasting about 1 s
June 7 09:16	moderate 10 s long	trigger at 09:16:24.688 South detector strong, hard peak lasting 7 s, followed by softer, weaker emission for 10 s
June 8 01:44	weak 2 s long	not detected
June 18 19:51	weak 100 ms long	not detected
June 26 04:28	weak 100 ms long	not detected
June 27 21:29	strong 20 s long	trigger at 22:06:48.806 North detector strong, multi-peaked event lasting 20 s strongest peak 7.1 s after trigger
J[illegible] 29 04:26	strong 100 ms long	visible in waiting-mode data at 04:00:24 very soft, near ecliptic
July 2 11:49	weak 100 ms long	not detected

July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
July 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 22:42	moderate 10 s long	trigger at 23:31:07.124 North detector two peaks, with the first stronger, harder. each peak lasted 10 s separated by 10 without emission
July 23 02:29	weak 100 ms long	instrument off
July 29 18:14	weak 100 ms long	not detected
Aug 1 17:34	weak 100 ms long	not detected
Aug 9 18:46	weak 100 ms long	not detected

From kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 22 Aug 1997 17:22:32 -0400
[illegible]:hurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
[illegible]: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hi Kevin,

Here are the results of a search through TGRS data for various Ulysses bursts that you've emailed Bonnard about. In summary, out of the 12 Ulysses bursts you mentioned, 3 were found as TGRS triggered events, and 1 was a triggered event but should be considered a questionable one since it was not detected in 35-100 keV data we usually require for a definate detection. No bursts were found in waiting mode (untriggered) data.

Here are the details.

Pete

Ulysses burst	TGRS sees?	TGRS characteristics
3/25/97 17:49 15s	YES! TGRS #547	63384 s. 300 cts/s peak dur. (100-300 keV) 100 cts/s peak 15s dur. (35-100 keV)
3/29/97 12:23	NO	
7/2/97 11:49	YES BUT TGRS #582	40631 s. 175 cts/s peak 1s dur. 100-300 keV NOT SEEN in 35-100 keV
7/5/97 15:31	NO	
7/9/97 10:56	NO	
7/14/97 03:48	NO	
7/15/97 15:01	YES! TGRS #595	51694s 400 cts/s peak 3s dur. (100-300 keV): 100 cts/s peak 20 s dur. (35-100 keV)
7/21/97 22:42	YES! TGRS #601	84667s. 300 cts/s peak 8s dur. (100-300 keV): 100 cts/s peak 10 s dur. (35-100 keV)
7/23/97 02:29	NO	
7[illegible]/97 18:14	NO	
08/01/97 17:34	NO	
08/09/97 18:46	NO	

From WOODSP@ssl.msfc.nasa.gov Tue Apr 1 09:24 PST 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA23512; Tue, 1 Apr 1997 09:24:12 -0800
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 1 Apr 1997 11:24:22 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970401112422.20219b62@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6144
Content-Type: text
Content-Length: 1135
Status: RO
X-Lines: 26

****
BATSEARCH PROGRAM
****

BATSE BURST # 6144
EVENT OF 1997 MAR 29 DAY OF YEAR= 88
EVENT CROSSING TIME AT BATSE : 3638. S. OR 01:00:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 174.000 31.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 3/ 97 IS:
RA= 156.804 DEC= 36.093 DIST= 4.240 AU
BATSE-ULYSSES DISTANCE = 634281852. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=164.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2041.88 SECS.
CROSSING TIME AT ULYSSES IS 1596. S. OR 00:26:36 +/- 115.20 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 3/ 97 IS:
RA= 174.305 DEC= 6.144 DIST= 0.667 AU
MARS-BATSE DISTANCE = 99743200. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=155.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -301.88 SECS.
CROSSING TIME AT MARS IS 3336. S. OR 00:55:36 +/- 19.70 SECONDS

BATSE BURST TRIGGER
NO.: 6144

TIME: TJD=0536 SECONDS=3638

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=79.3 AZIMUTH=235.6 ERROR=7.4 DEGREES

COMMENTS:
GRB LASTING ~ 0.7 SEC. SOME SUBSTRUCTURE. VISIBLE ABOVE 300 KEV.

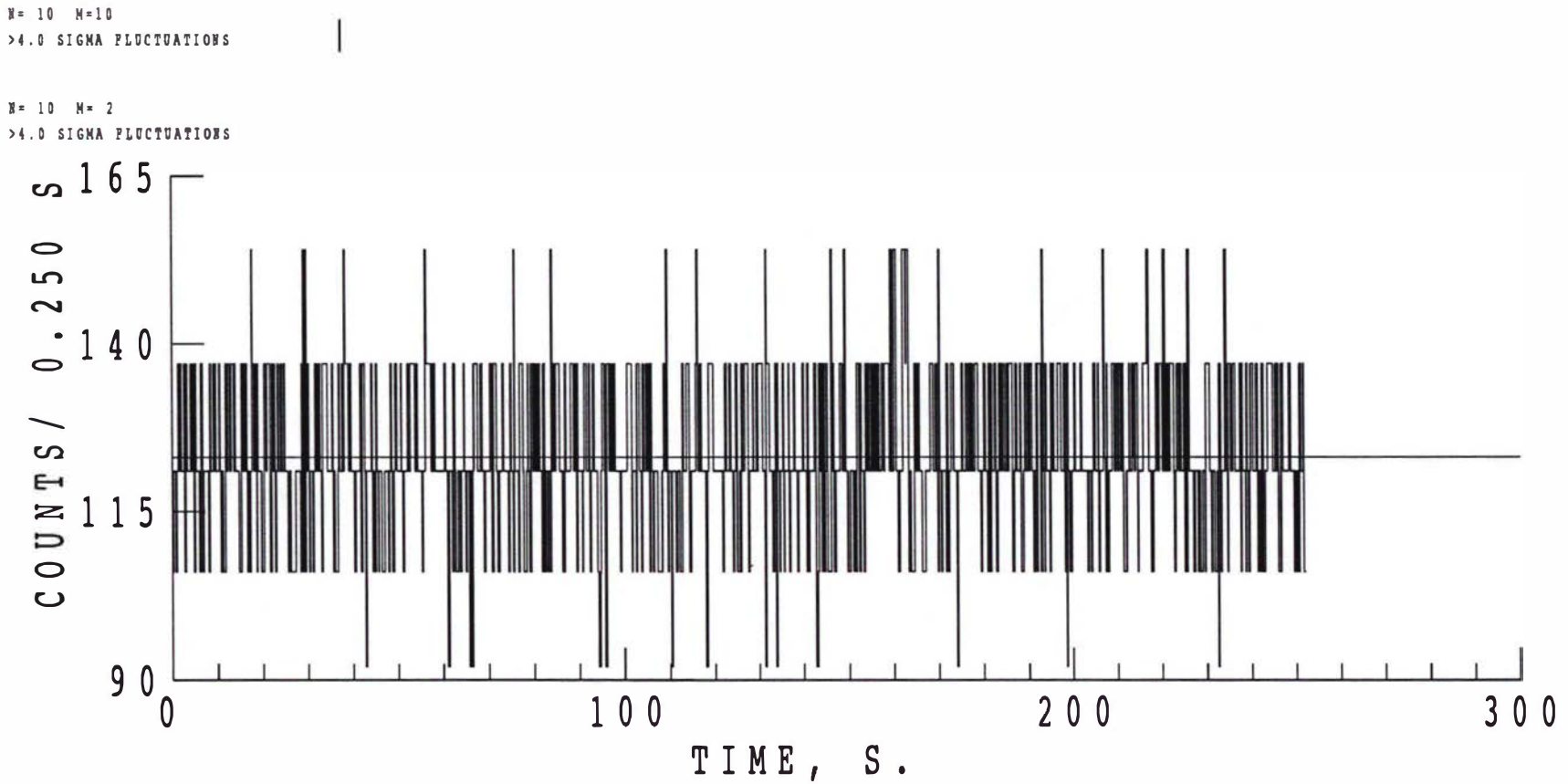
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6144	970329	10536	03638	7500	174	+31	.7

BATSE# 6144

ULYSSES RT 1/ 4/97

29/ 3/97 1476.219 s

0- 0 keV



From WOODSP@ssl.msfc.nasa.gov Mon Mar 31 12:03 PST 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA14123; Mon, 31 Mar 1997 12:03:24 -0800
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 31 Mar 1997 14:03:33 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970331140333.20219ef0@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6145
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6145
EVENT OF 1997 MAR 29 DAY OF YEAR= 88
EVENT CROSSING TIME AT BATSE : 47141. S. OR 13:05:41.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 170.000 9.000
BATSE PEAK COUNTING RATE: 9400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 3/ 97 IS:
RA= 156.687 DEC= 36.061 DIST= 4.246 AU
BATSE-ULYSSES DISTANCE = 635242804. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=150.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1841.50 SECS.
CROSSING TIME AT ULYSSES IS 45300. S. OR 12:34:59 +/- 204.03 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 3/ 97 IS:
RA= 174.305 DEC= 6.144 DIST= 0.667 AU
MARS-BATSE DISTANCE = 99743200. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=174.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -331.37 SECS.
CROSSING TIME AT MARS IS 46810. S. OR 13:00:09 +/- 0.14 SECONDS

BATSE BURST TRIGGER
NO.: 6145

TIME: TJD=0536 SECONDS=47141

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

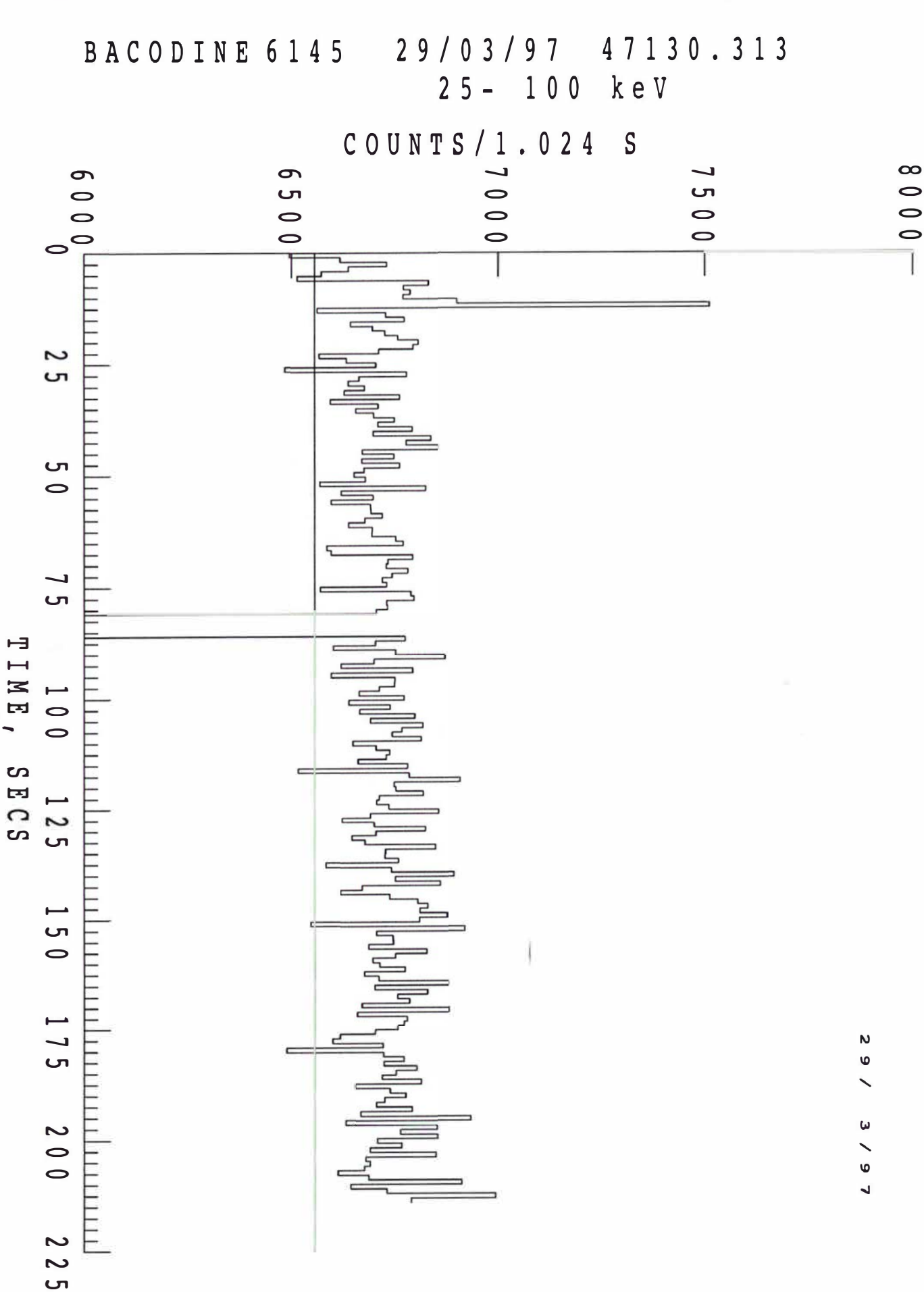
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=70.1 AZIMUTH=214.2 ERROR=4.7 DEGREES

COMMENTS:
GRB LASTING ~ 0.5 SEC. SINGLE PULSE. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6145	970329	10536	47141	9400	170	+09	.5

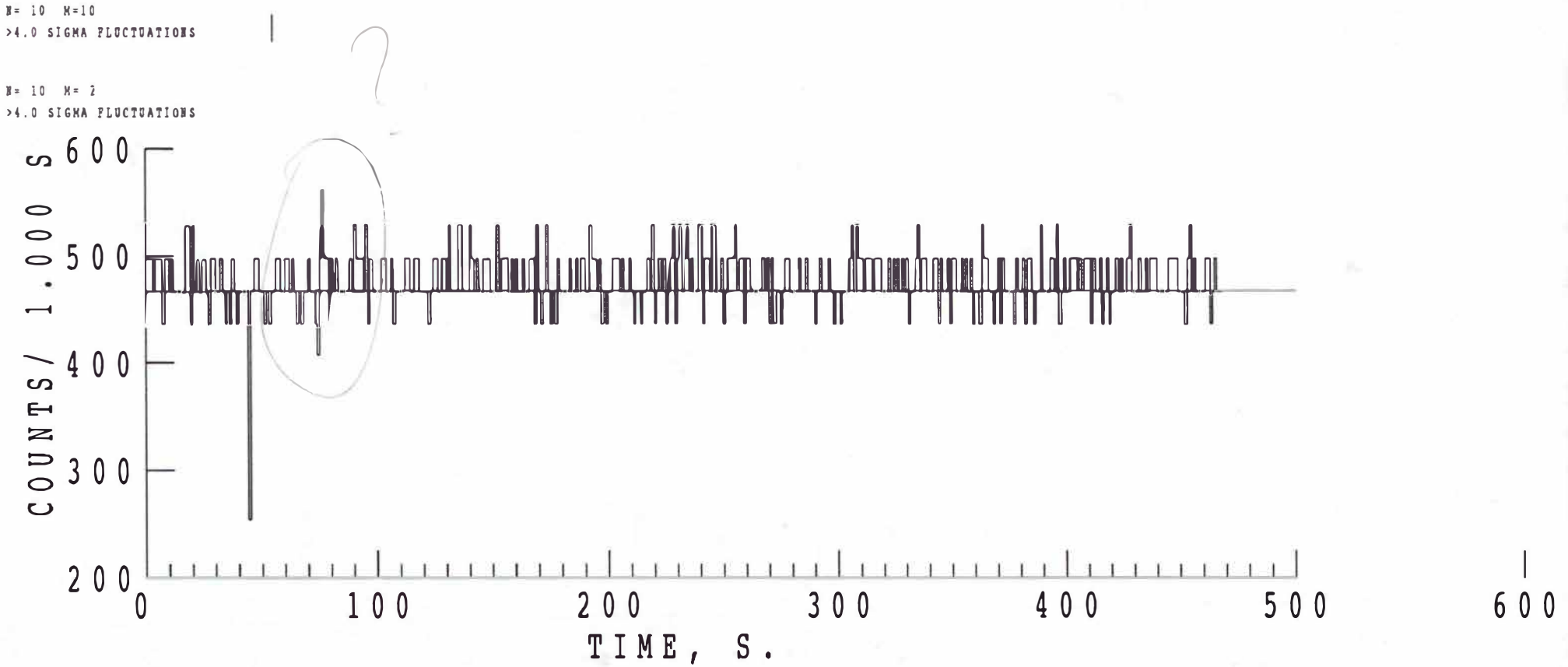

BACODINE 6145 29/03/97 47130.313
25- 100 keV
COUNTS/1.024 S
6000
6500
7000
7500
8000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
29/ 3/97

BACODINE# 6145

ULYSSES RT 21/ 7/97

29/ 3/97 45180.734 s

0- 0 keV



From WOODSP@ssl.msfc.nasa.gov Mon Mar 31 12:01 PST 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 31 Mar 1997 14:01:36 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6146

TIME: TJD=0536 SECONDS=65320

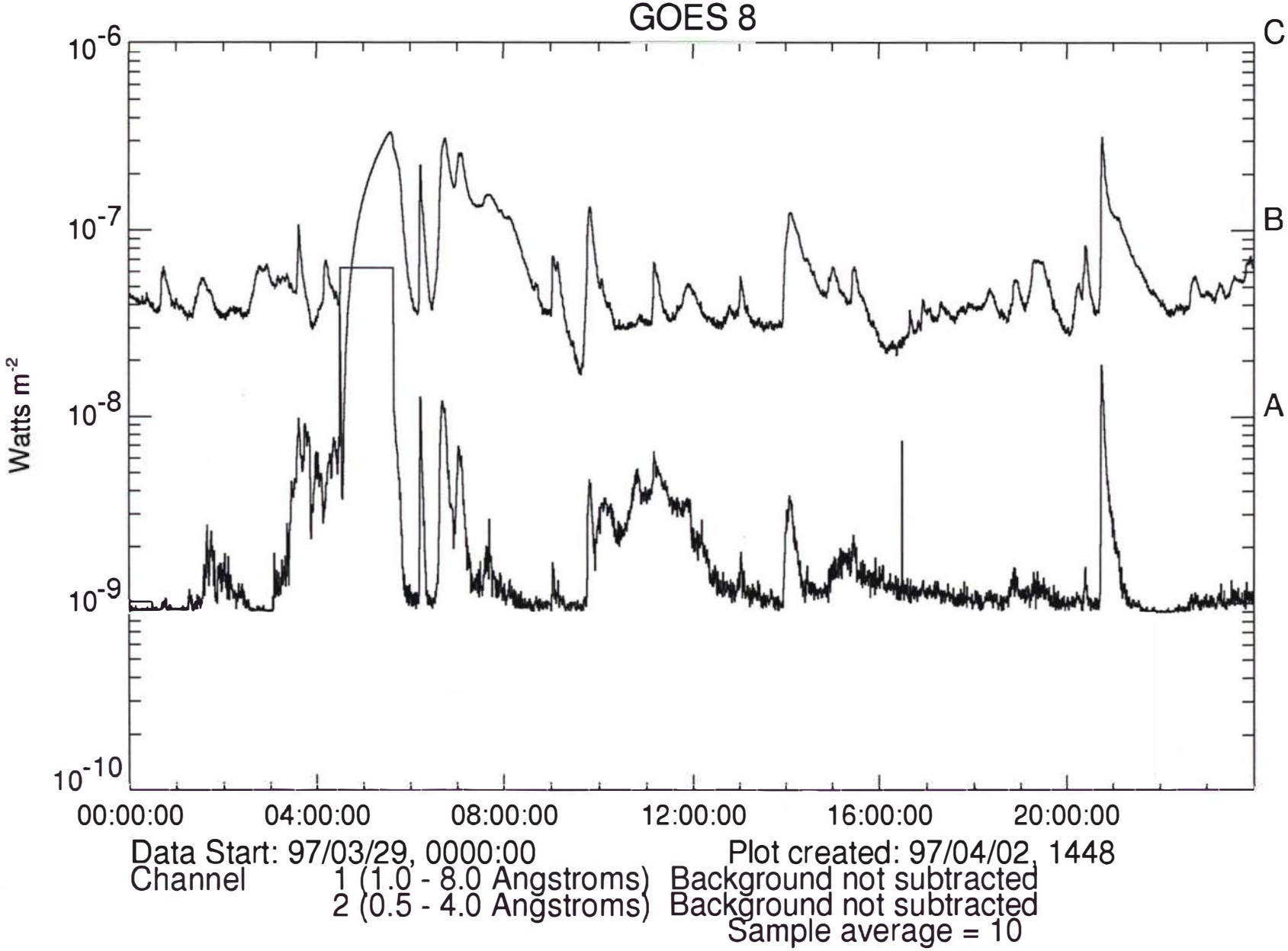
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

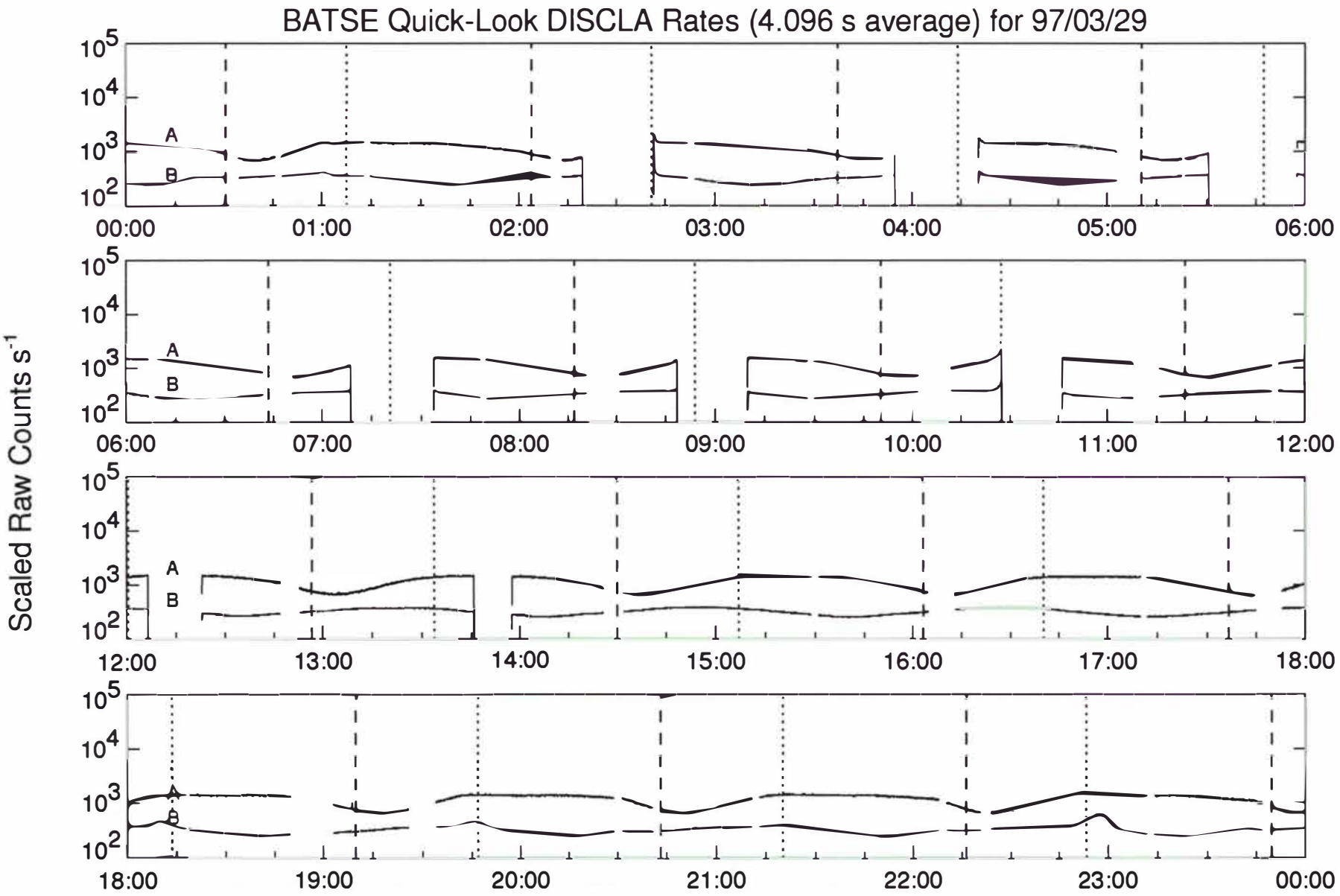
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

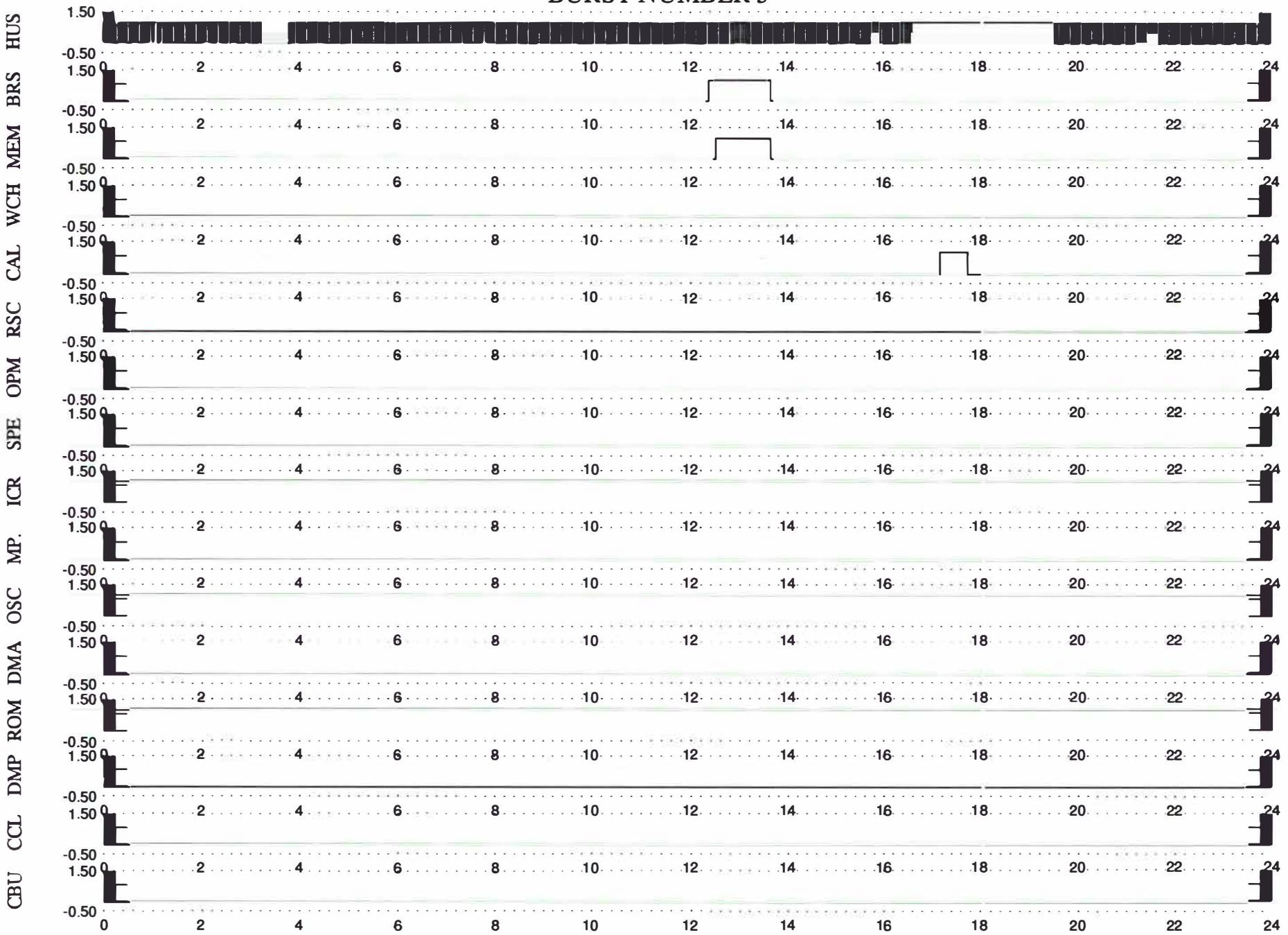
COMMENTS:
PARTICLE EVENT.


GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/29, 0000:00
Plot created: 97/04/02, 1448
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/03/29
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/04/02, 1449 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

HUS MODES EDR day 88, year 1997 to day 88, year 1997 7/21/97

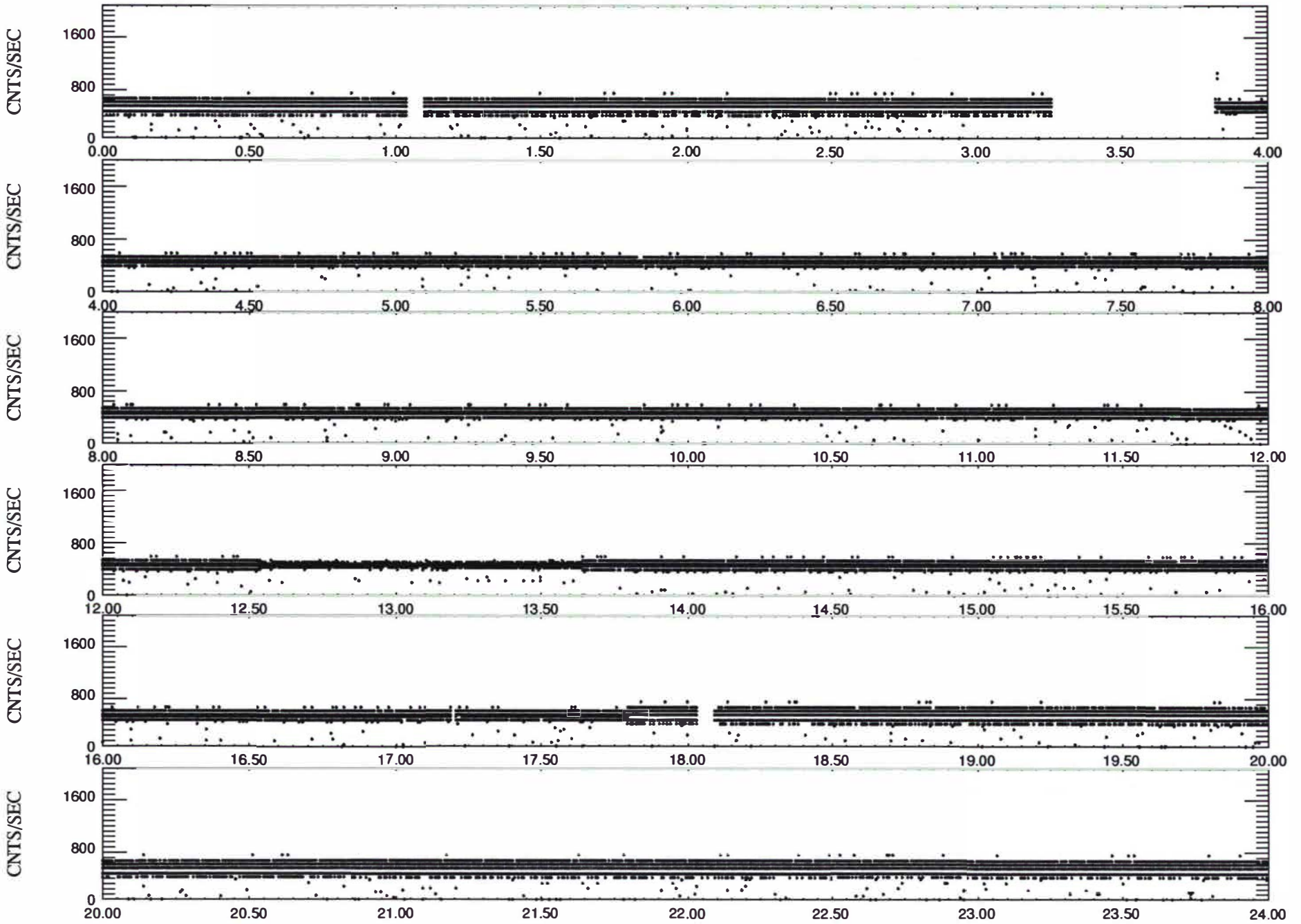
BURST NUMBER 5



UNIV. AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 88, year 1997 to day 88, year 1997 7/21/97

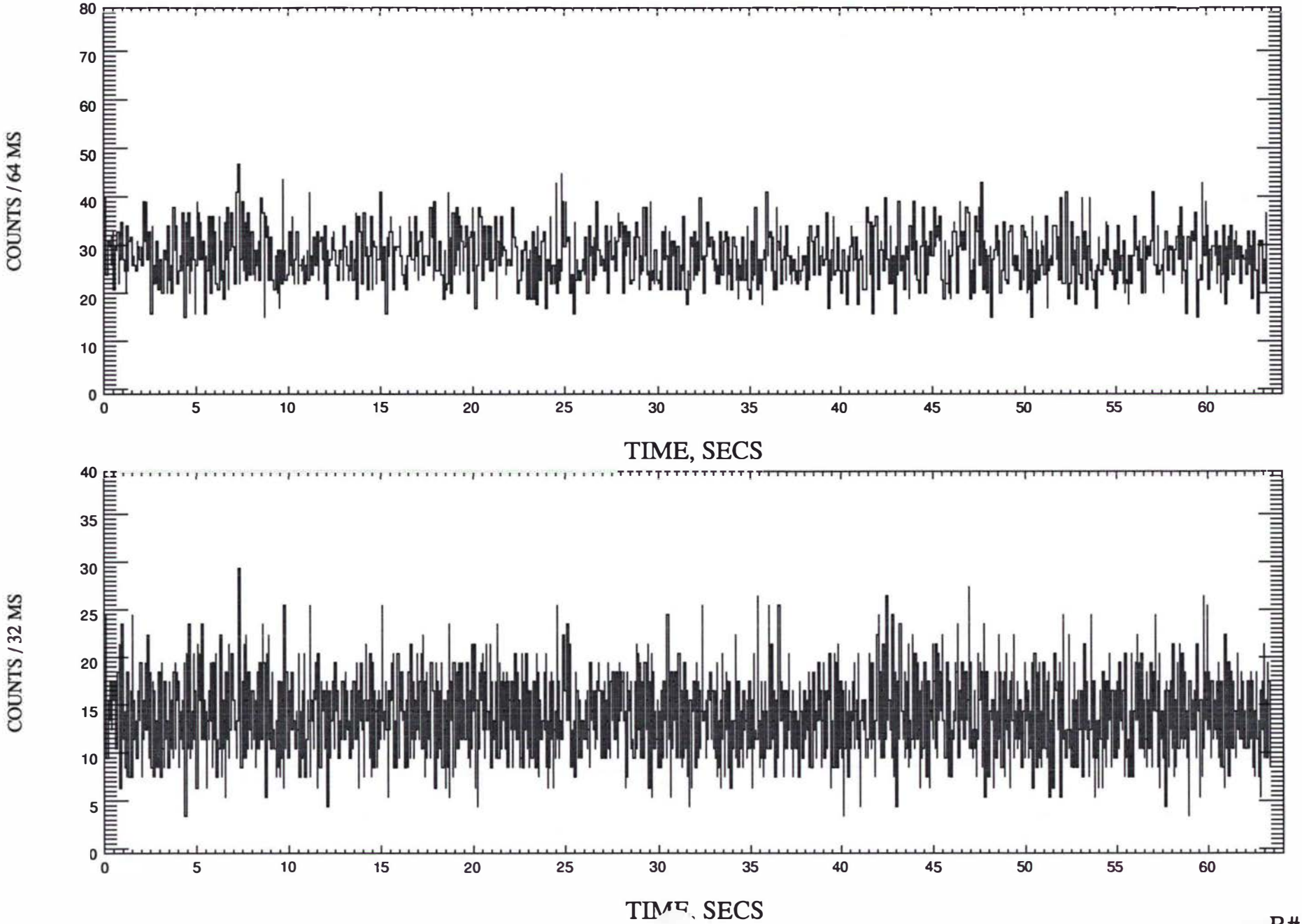
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 88, year 1997 7/21/97

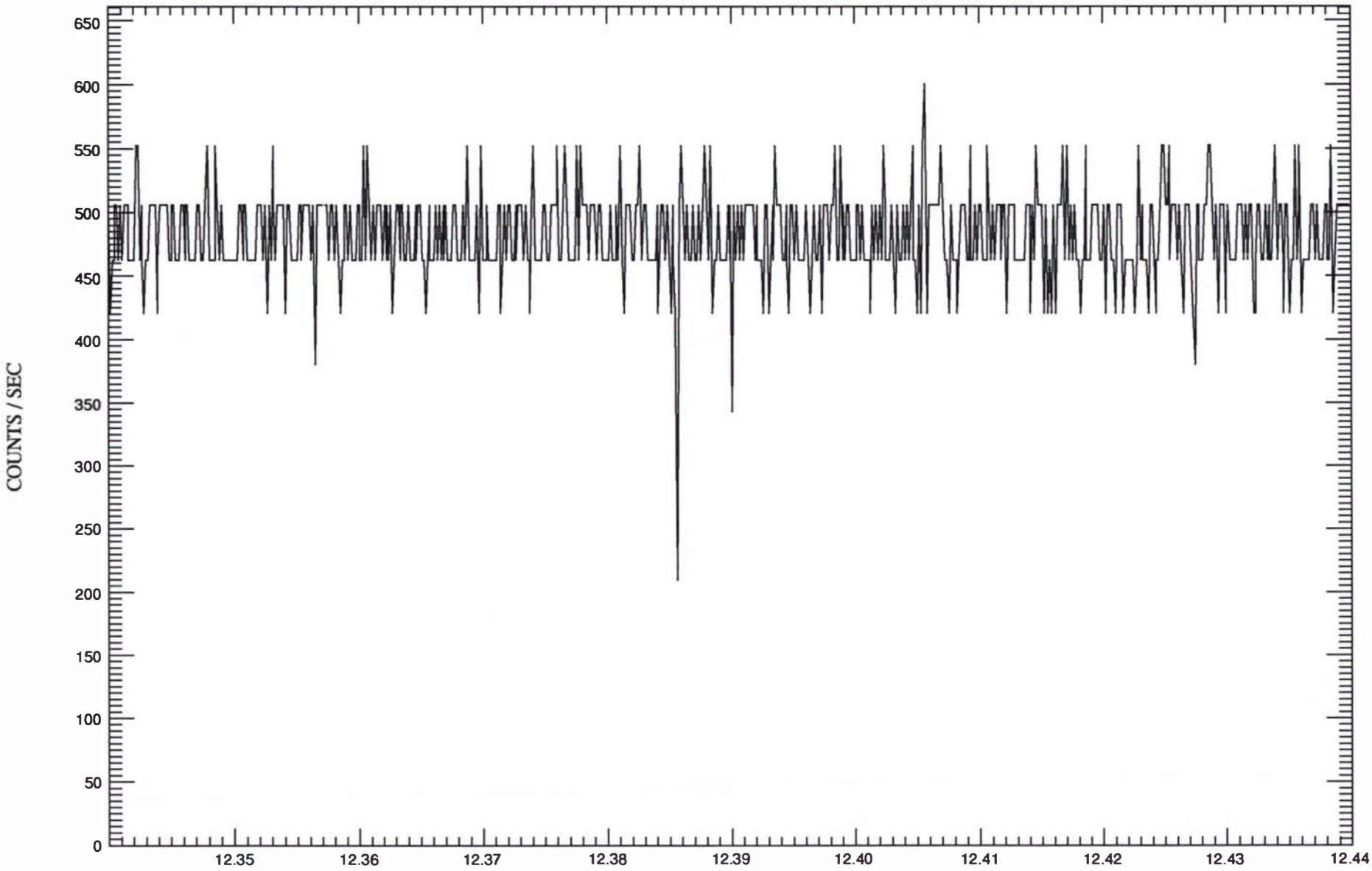
Burst Counter 5 at UT=12.388080902100 h=44597.091 s 12:23:17.091



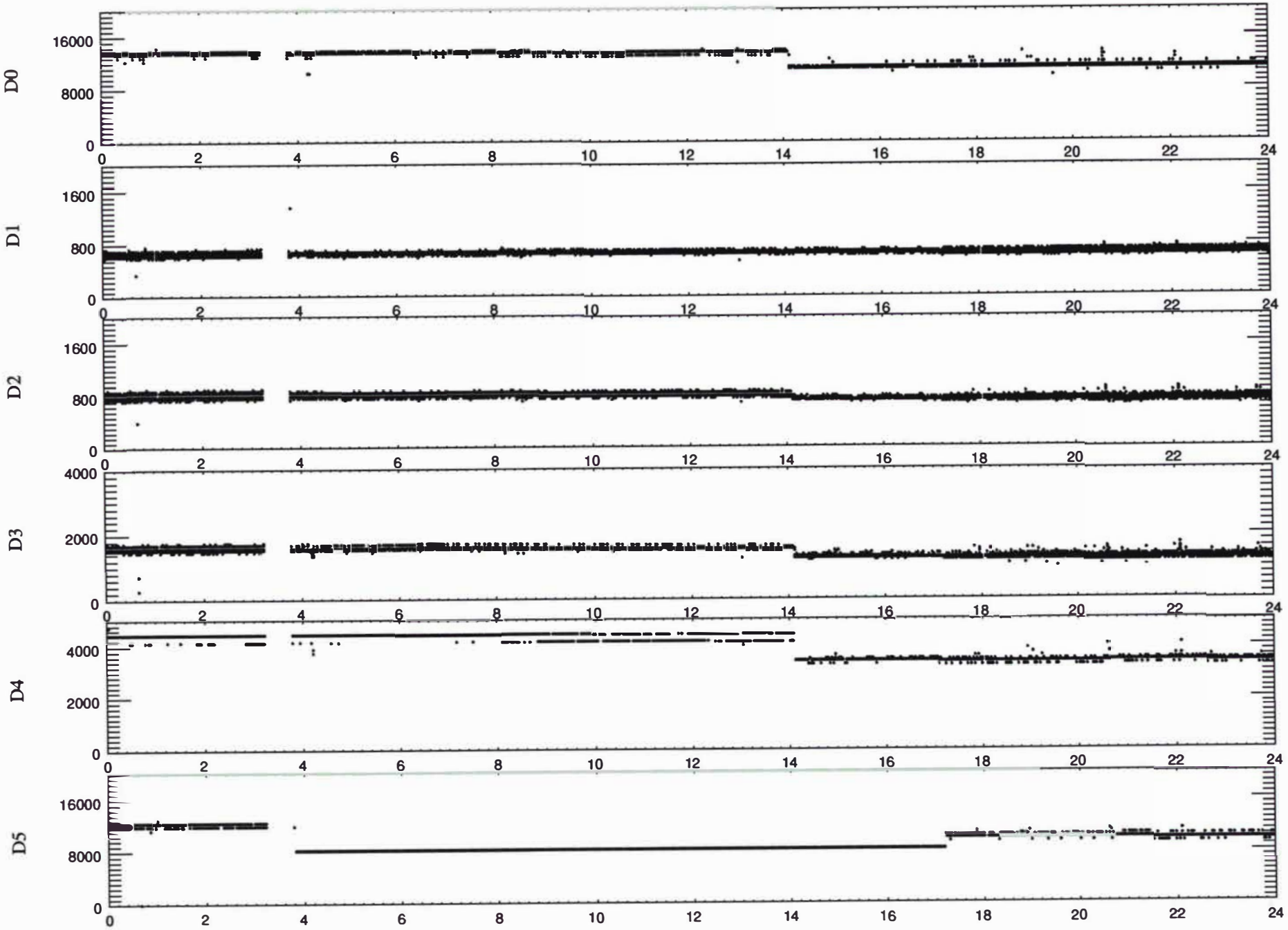
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 88, year 1997 to day 88, year 1997 7/21/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 88, year 1997 to day 88, year 1997 7/21/97



From RICHARDSON@ssl.msfc.nasa.gov Wed Apr 2 09:34 PST 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA04474; Wed, 2 Apr 1997 09:34:13 -0800
Date: Wed, 2 Apr 1997 11:34:11 -0600 (CST)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970402113411.21002c50@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6147
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6147
EVENT OF 1997 MAR 30 DAY OF YEAR= 89
EVENT CROSSING TIME AT BATSE : 32332. S. OR 08:58:52.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 348.000 -19.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 3/ 97 IS:
RA= 156.496 DEC= 36.007 DIST= 4.257 AU
BATSE-ULYSSES DISTANCE = 636831858. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 19.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1998.71 SECS.
CROSSING TIME AT ULYSSES IS 34331. S. OR 09:32:10 +/- 205.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 3/ 97 IS:
RA= 173.970 DEC= 6.250 DIST= 0.669 AU
MARS-BATSE DISTANCE = 100020104. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 14.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 323.70 SECS.
CROSSING TIME AT MARS IS 32656. S. OR 09:04:15 +/- 18.94 SECONDS

BATSE BURST TRIGGER

NO.: 6147

TIME: TJD=0537 SECONDS=32332

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=109.2 AZIMUTH=45.4 ERROR=1.6 DEGREES

COMMENTS:
GRB. STRONG PULSE WITH SLOW DECAY. DUR.~130SEC. SLIGHTLY VISIBLE ABOVE
300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6147	970330	10537	32332	4000	348	-19	130

Helio corr removed 17/2/00

Date: Mar 26 '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)?

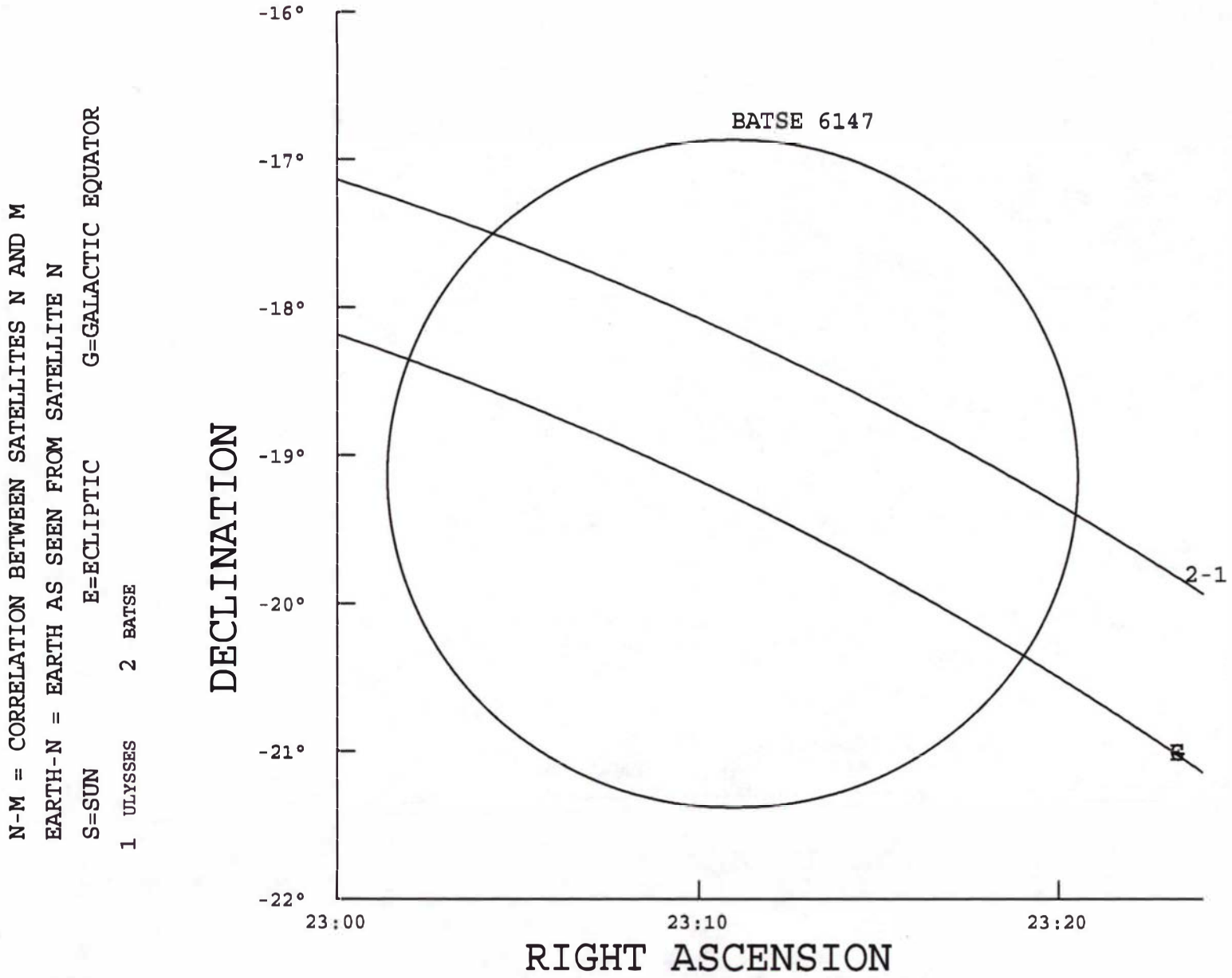
☐ 2000 coordinates used?

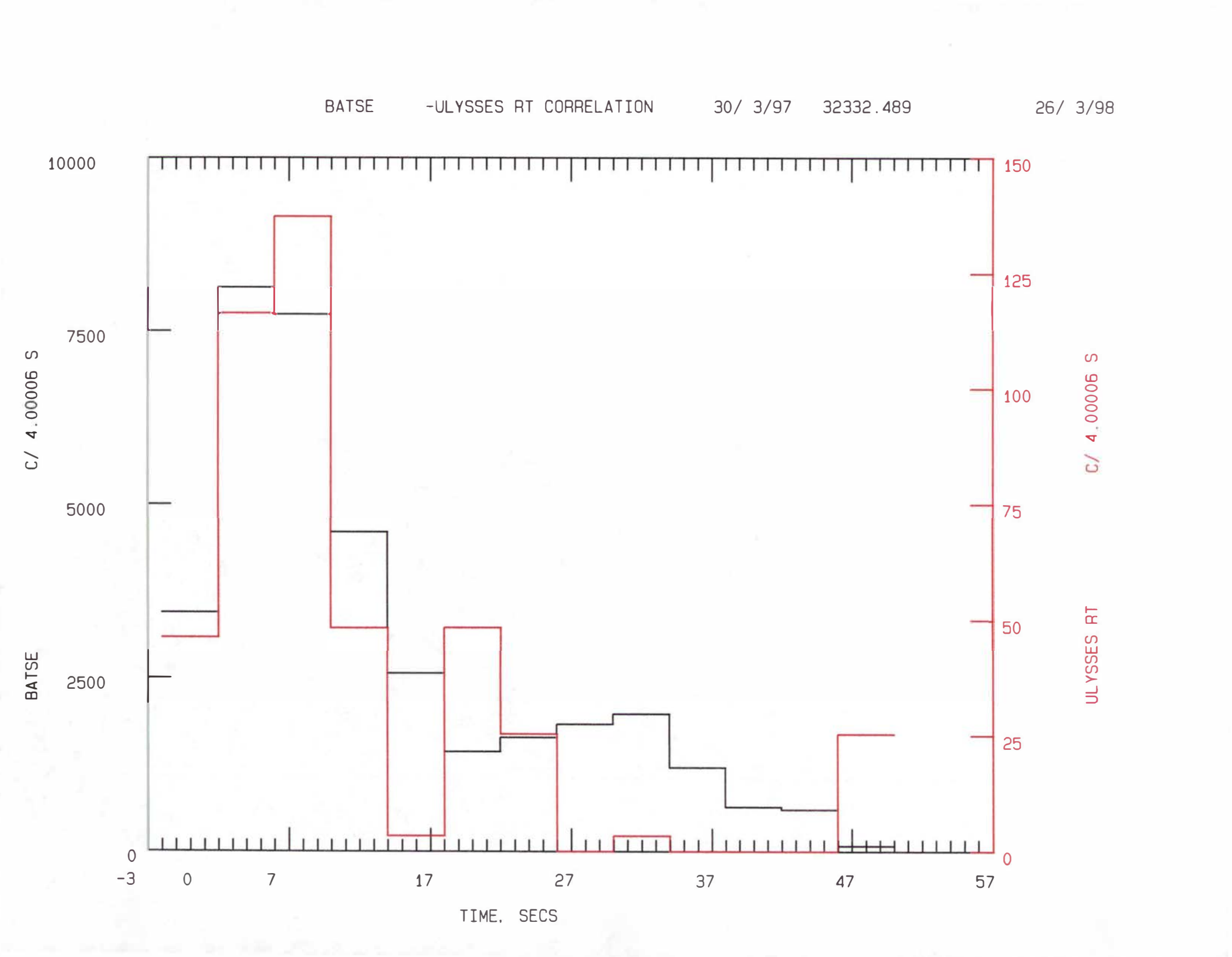
☐ Geocentric time used?

☑ ACCESS database updated?

EVENT OF MAR 30, 1997 9:31

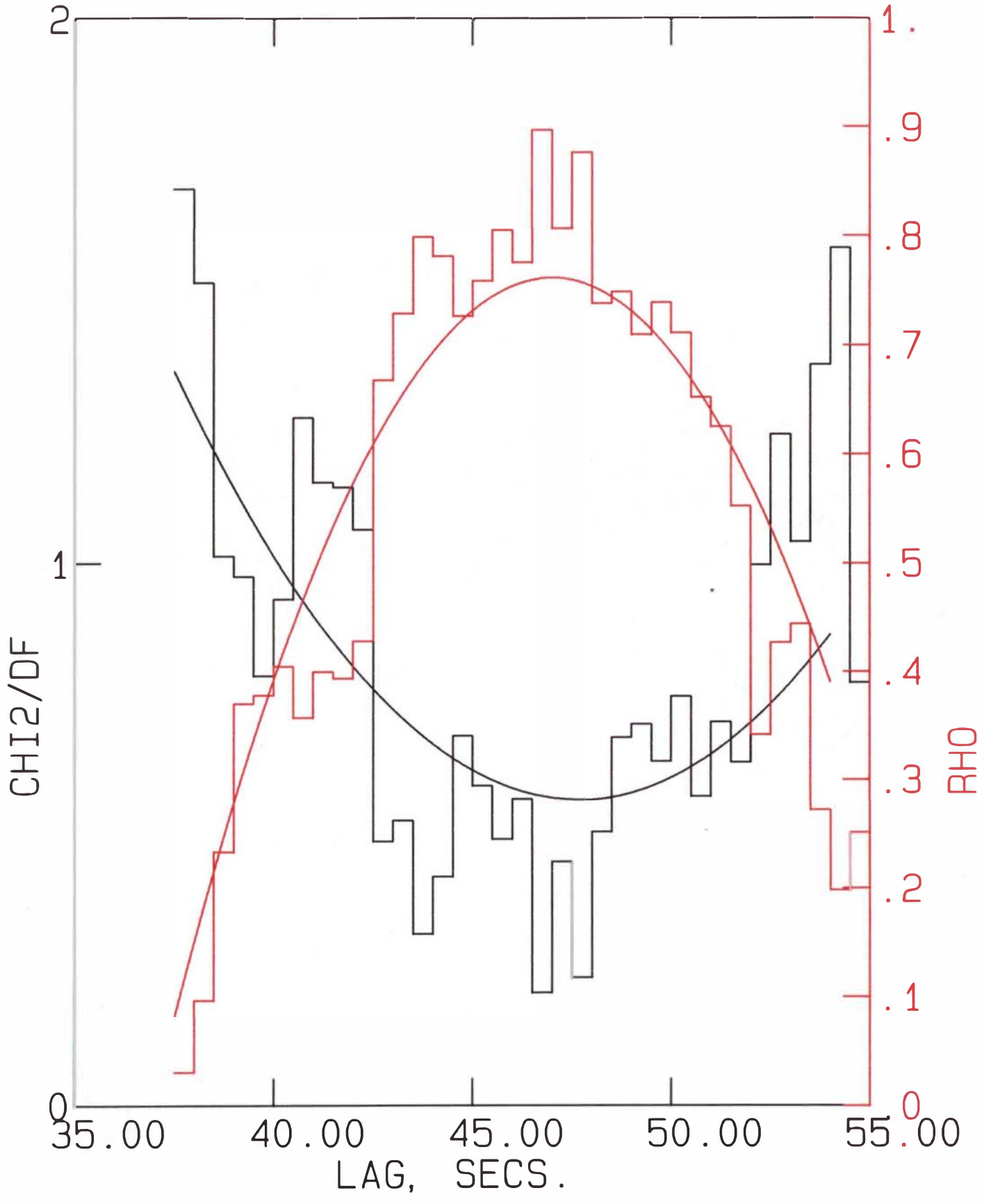
17/ 2/ 0




BATSE -ULYSSES RT CORRELATION 30/ 3/97 32332.489 26/ 3/98
10000
7500
5000
2500
0
C/ 4.00006 S
BATSE
150
125
100
75
50
25
0
C/ 4.00006 S
ULYSSES RT
-3
0
7
17
27
37
47
57
TIME. SECS

26/ 3/98

BATSE -ULYSSES RT CORRELATION 30/ 3/97 32332.489

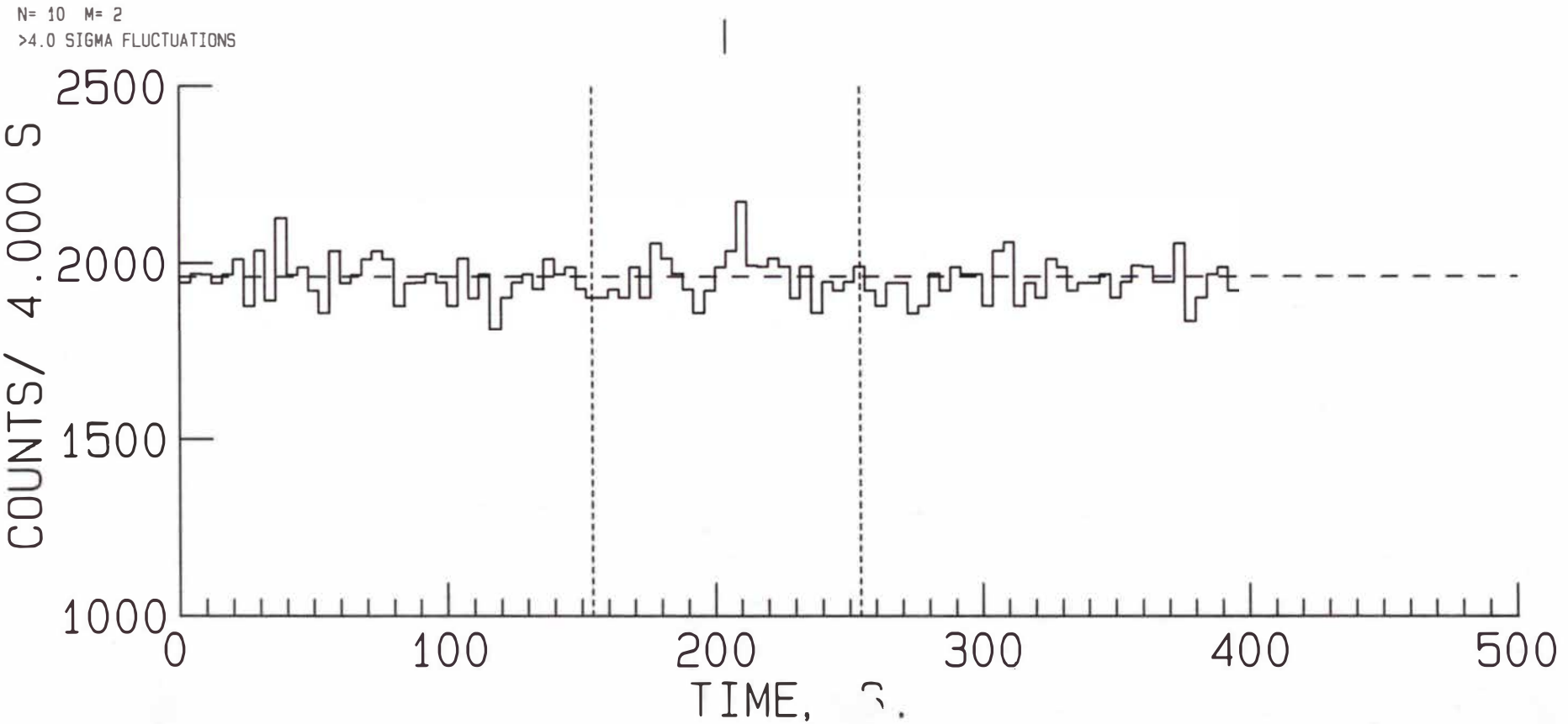


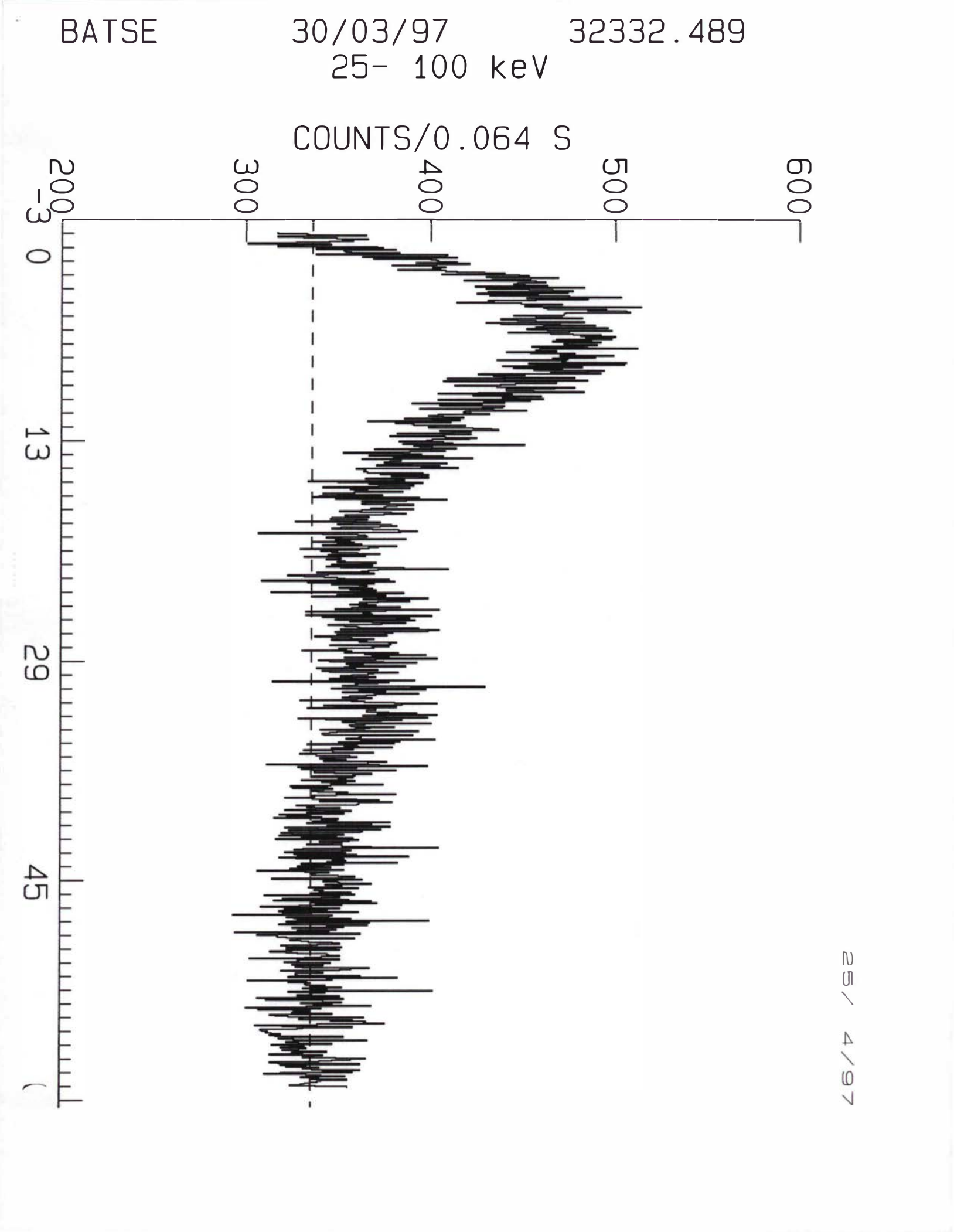
ULYSSES RT 26/ 3/98

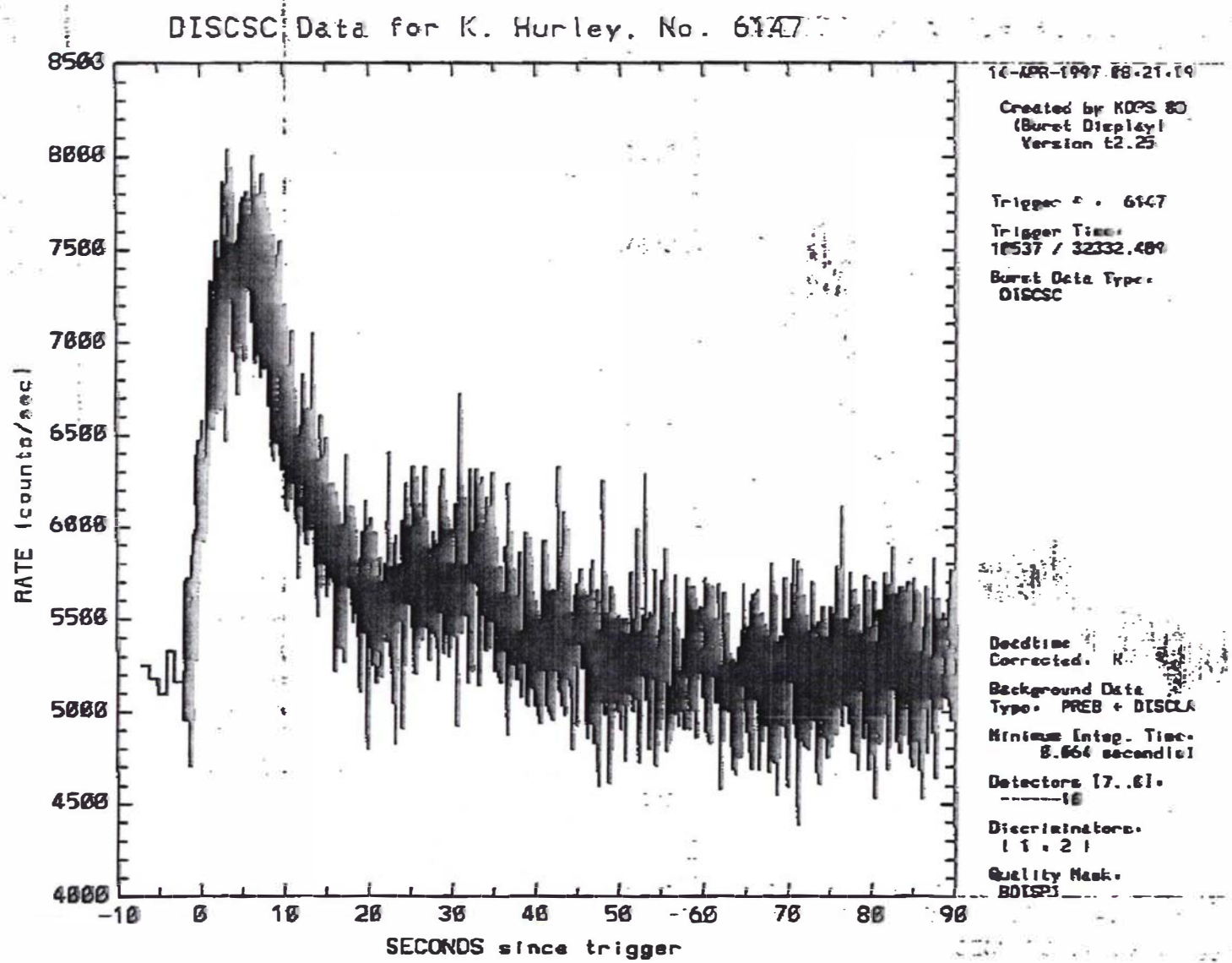
30/ 3/97 34128.129 s

0.500 S INTERVALS REGROUPED BY 8

21- 146 keV



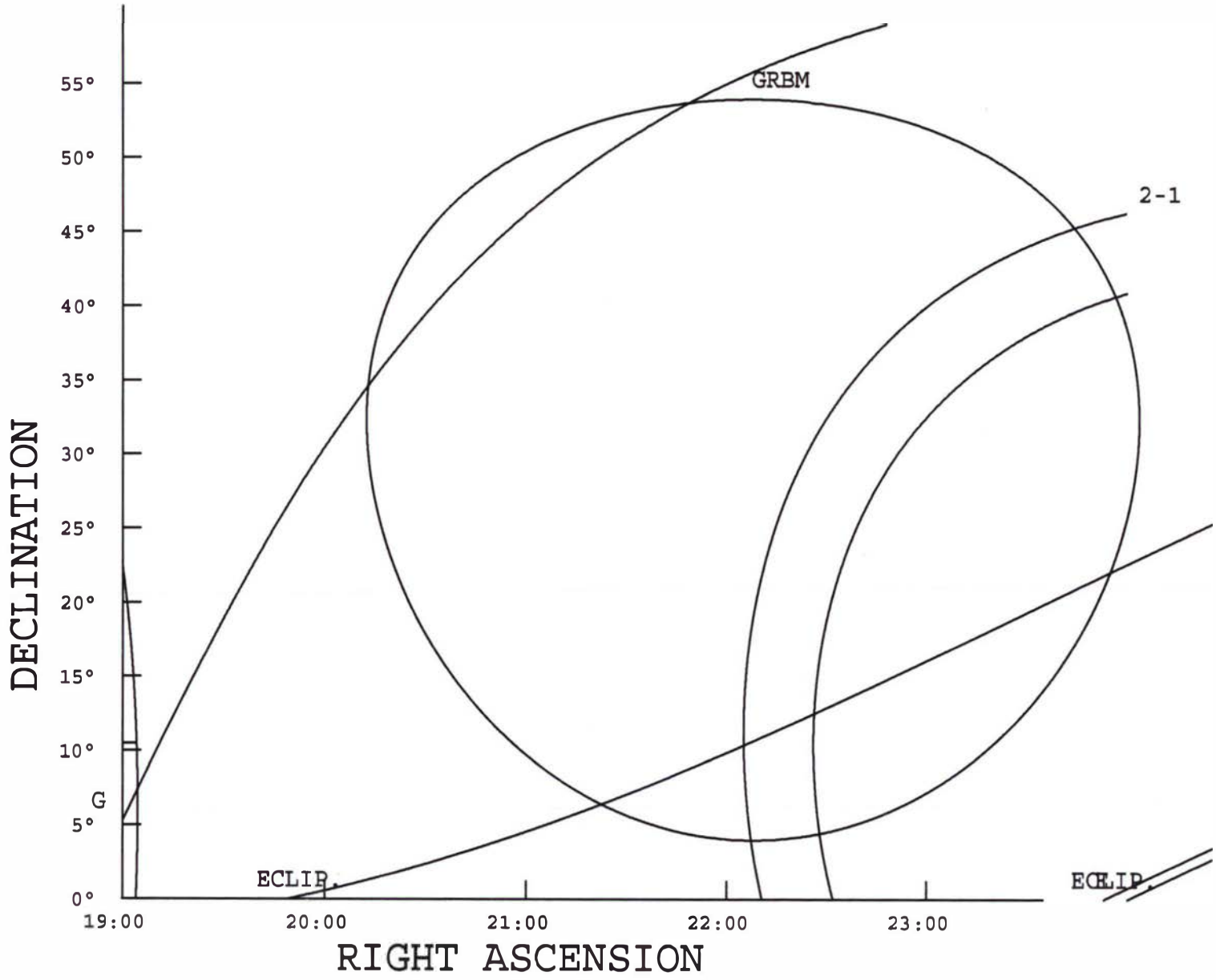

BATSE 30/03/97 32332.489
25- 100 keV
COUNTS/0.064 S
200
300
400
500
600
-3
0
13
29
45
)
25/ 4/97

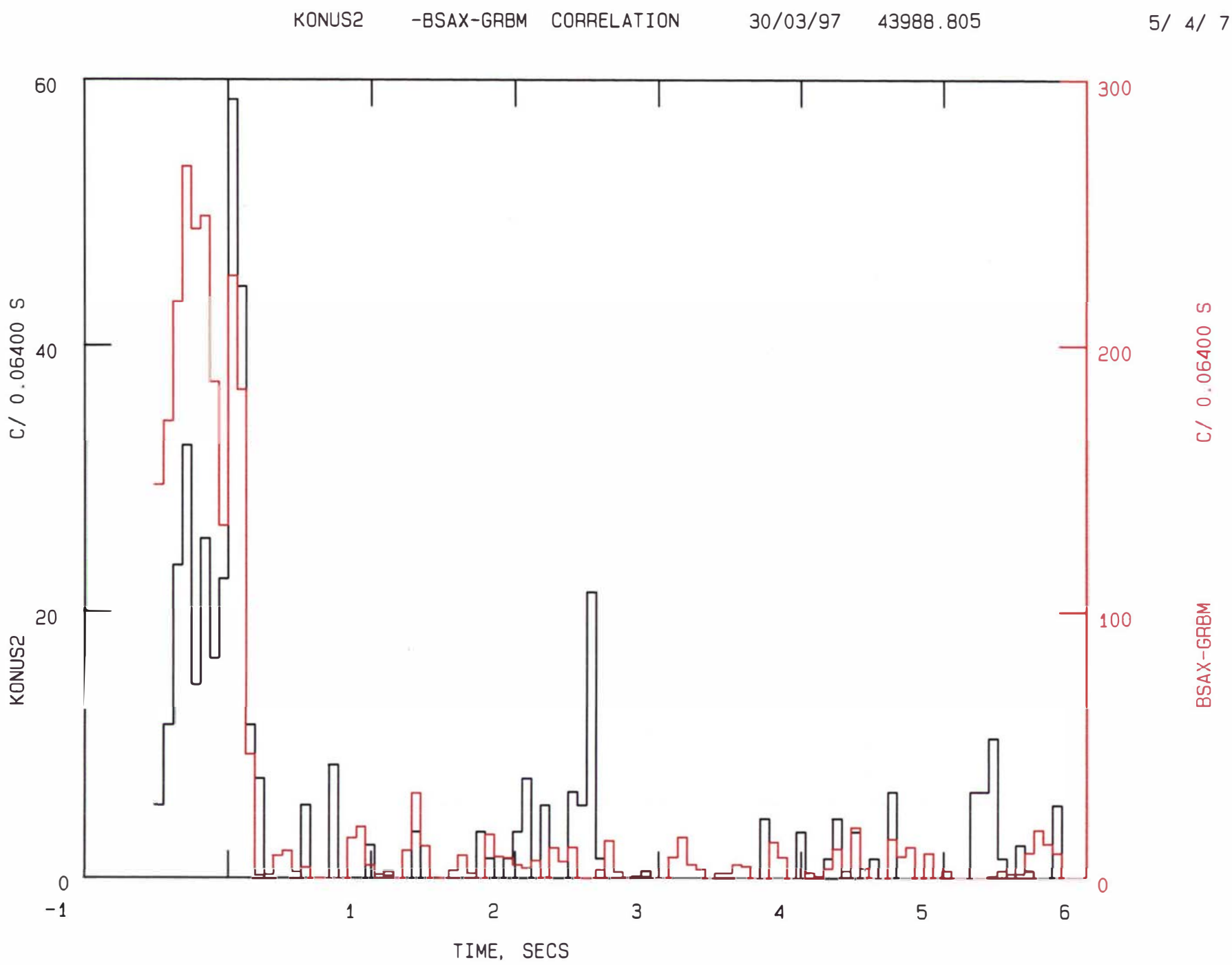

DISCSC Data for K. Hurley, No. 6147
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
RATE (counts/sec)
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
14-APR-1997 08:21:19
Created by KOPS 80
(Burst Display)
Version t2.25
Trigger # : 6147
Trigger Time:
18537 / 32332.489
Burst Data Type:
DISCSC
Deadtime
Corrected: K
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors [7..0]:
Discriminators:
[1 , 2]
Quality Mask:
BDISP3

EVENT OF MAR 30, 1997 12:13

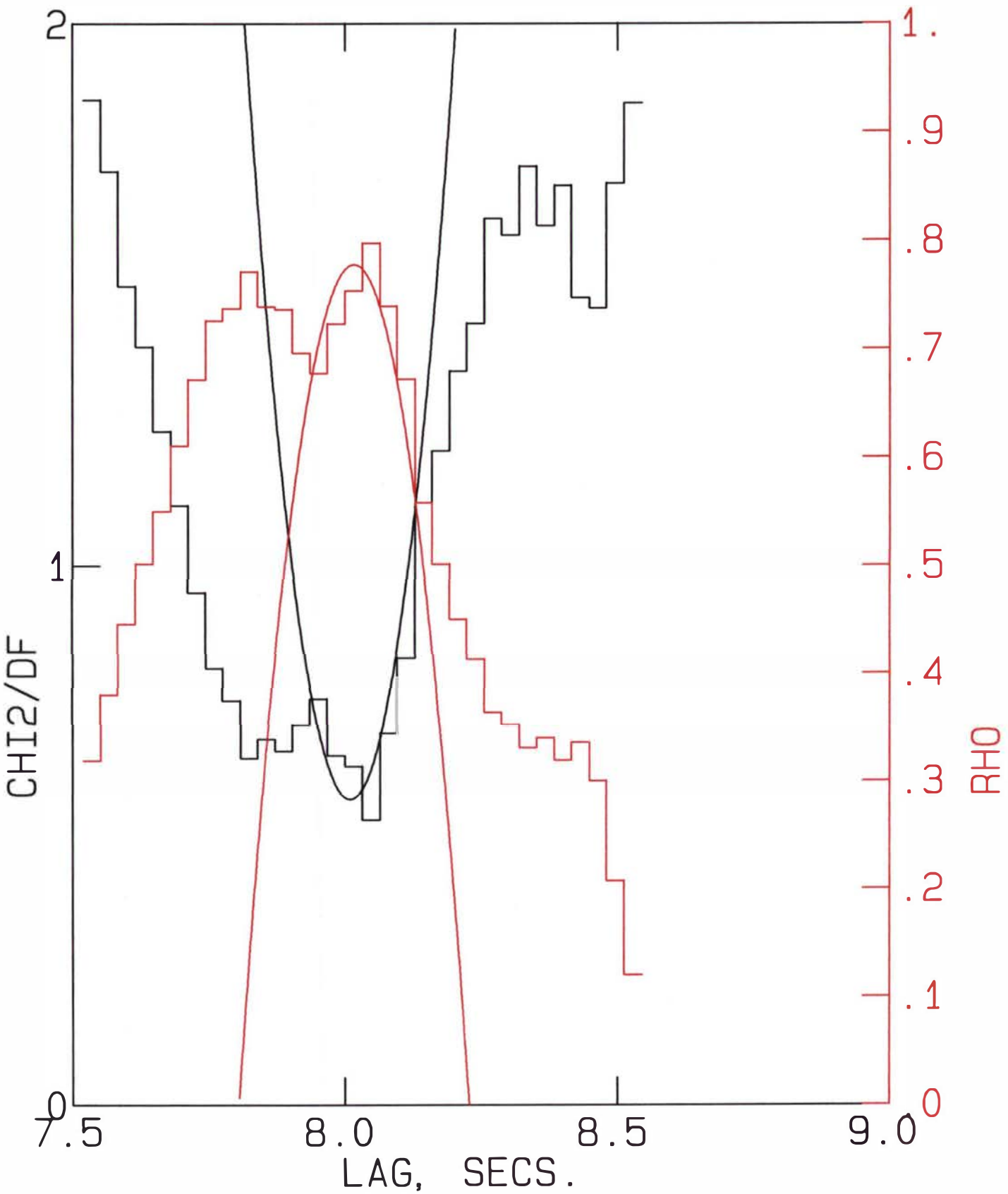
5/ 4/ 7

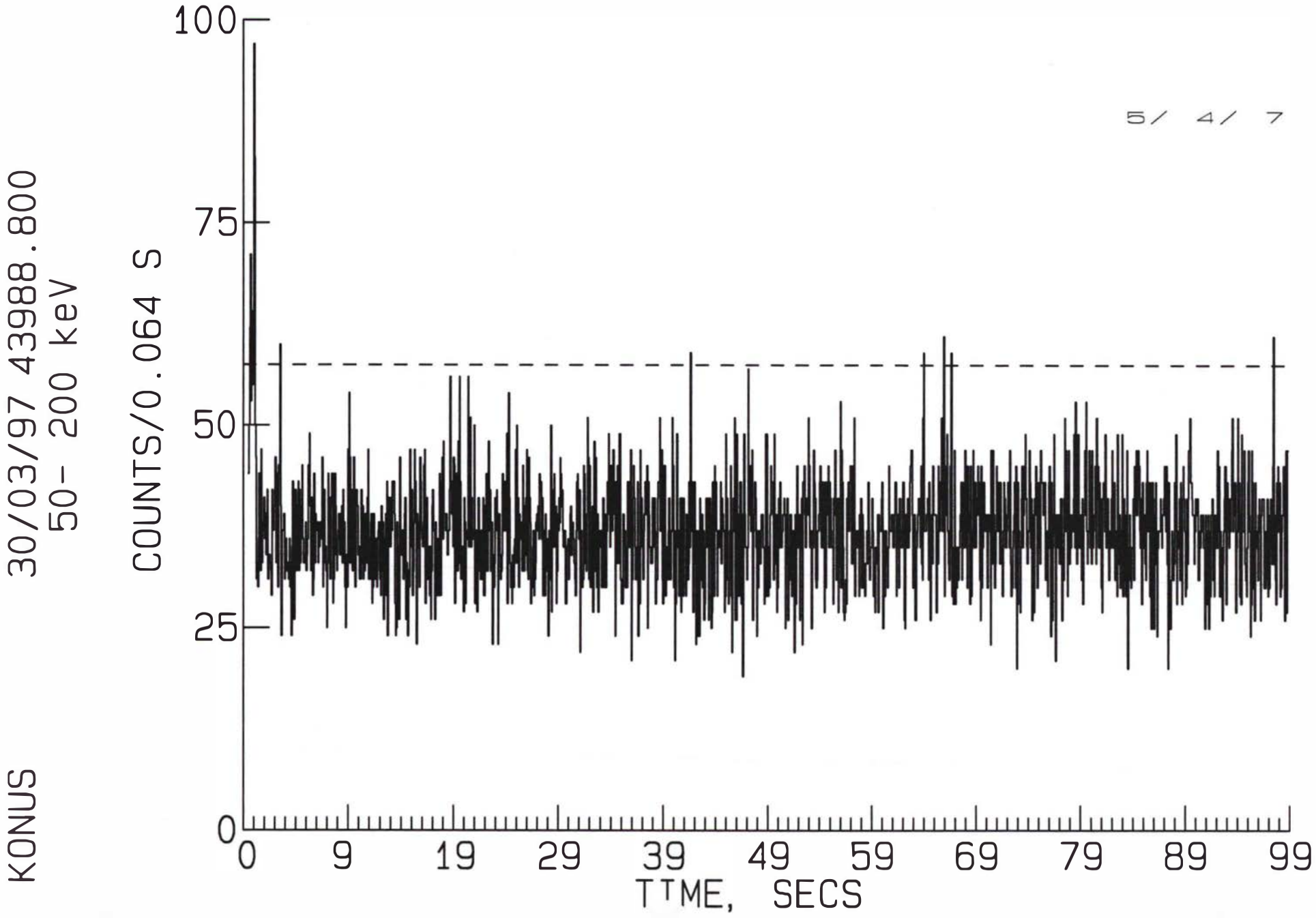
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS2 2 SAX

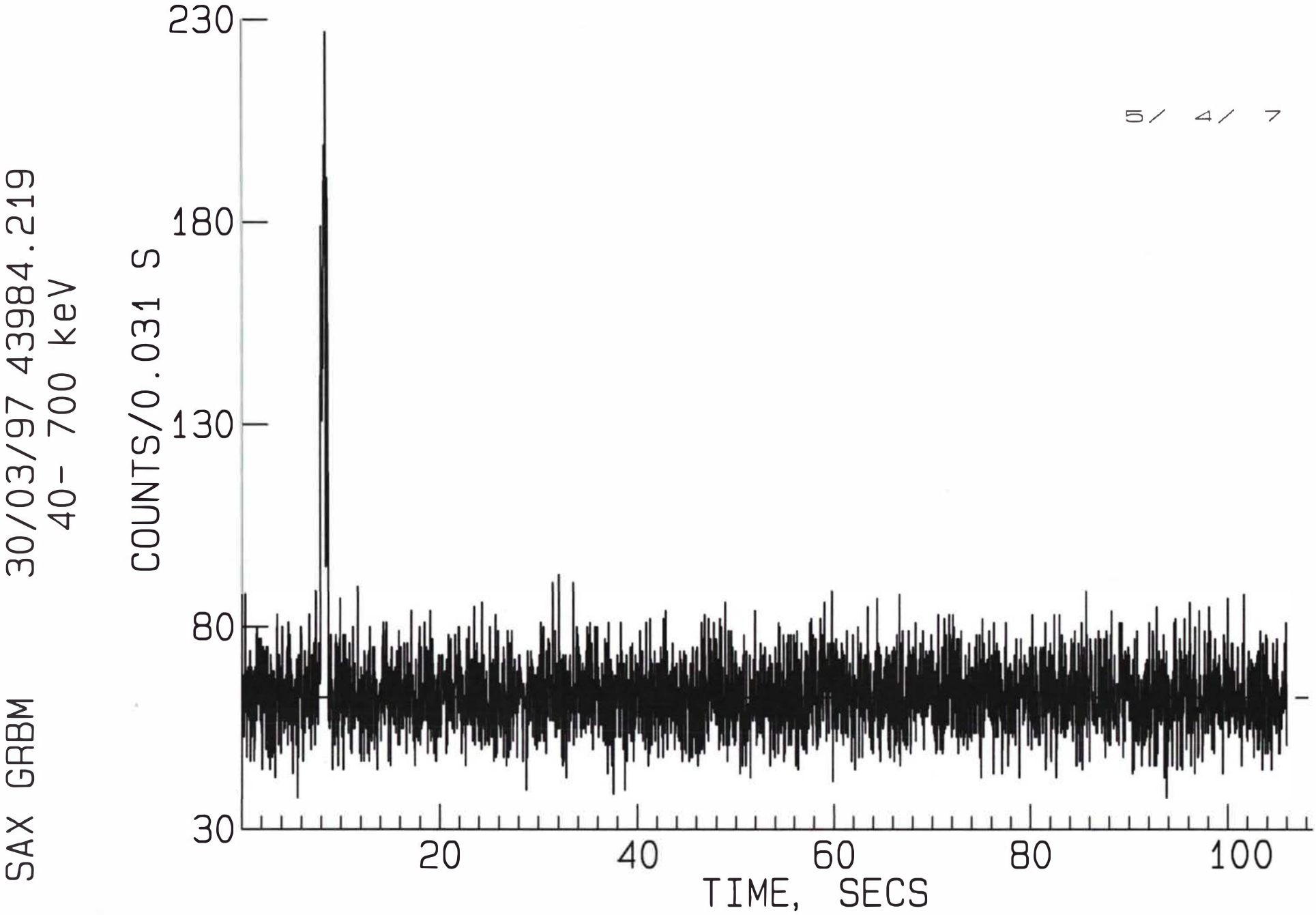



KONUS2 -BSAX-GRBM CORRELATION 30/03/97 43988.805 5/ 4/ 7
60
40
20
0
-1
1
2
3
4
5
6
300
200
100
0
C/ 0.06400 S
KONUS2
C/ 0.06400 S
BSAX-GRBM
TIME, SECS

KONUS2 -BSAX-GRBM CORRELATION 30/03/97 43988.805




KONUS
30/03/97 43988.800
50- 200 keV
COUNTS/0.064 S
100
75
50
25
0
0
9
19
29
39
49
59
69
79
89
99
TTME, SECS
5/ 4/ 7


SAX GRBM
30/03/97 43984.219
40- 700 keV
COUNTS/0.031 S
230
180
130
80
30
20
40
60
80
100
TIME, SECS
5/ 4/ 7

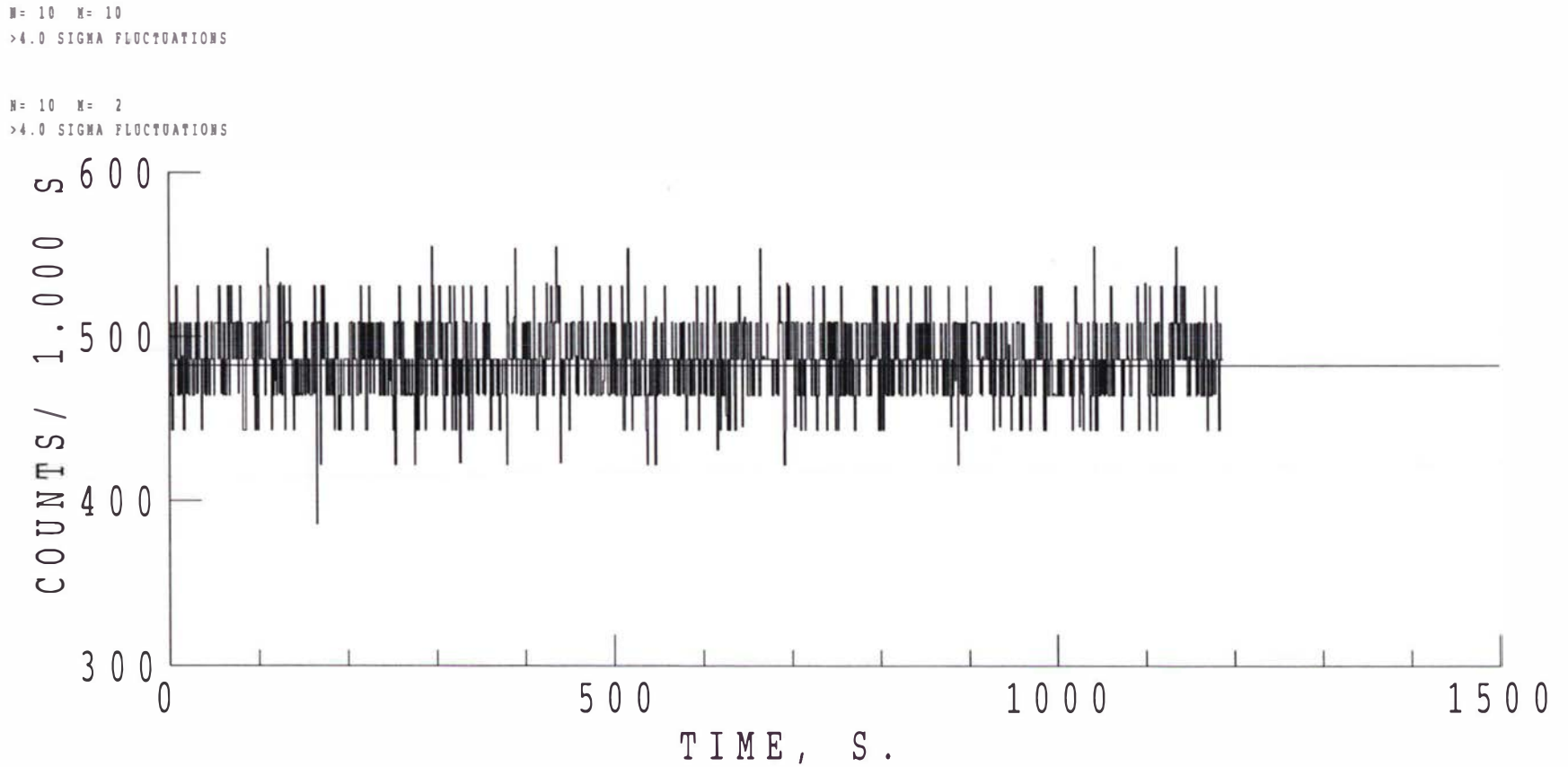
sax 19970330 45458

ULYSSES RT 26/03/07

30/03/97 44856.246 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



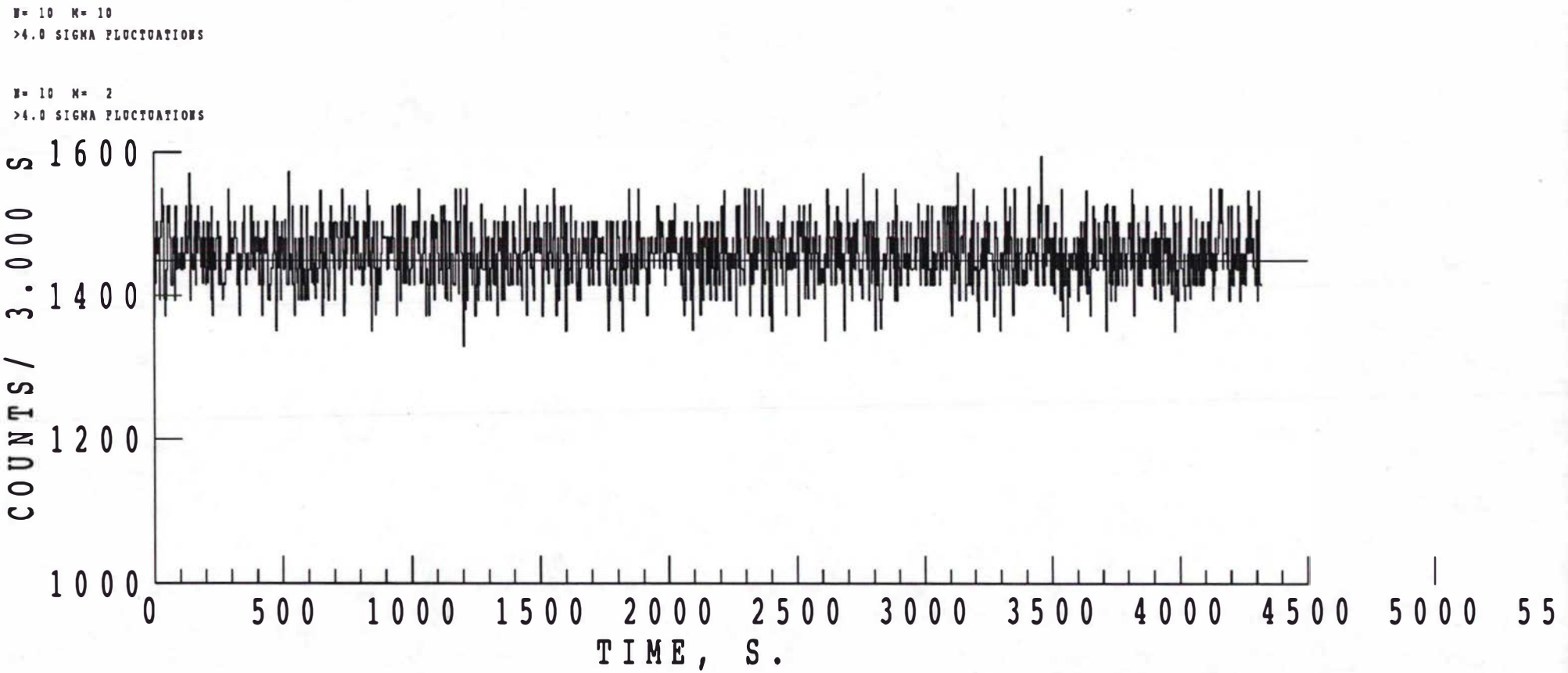
KONUS

ULYSSES RT 02/02/00

30/03/97 41832.219 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



From RICHARDSON@ssl.msfc.nasa.gov Tue Apr 1 14:20 PST 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA27086; Tue, 1 Apr 1997 14:20:38 -0800
Date: Tue, 1 Apr 1997 16:20:36 -0600 (CST)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970401162036.21002a77@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6148
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6148
EVENT OF 1997 MAR 30 DAY OF YEAR= 89
EVENT CROSSING TIME AT BATSE : 51074. S. OR 14:11:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 305.000 2.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 3/ 97 IS:
RA= 156.446 DEC= 35.992 DIST= 4.260 AU
BATSE-ULYSSES DISTANCE = 637253091. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1422.77 SECS.
CROSSING TIME AT ULYSSES IS 52497. S. OR 14:34:56 +/- 345.79 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 3/ 97 IS:
RA= 173.970 DEC= 6.250 DIST= 0.669 AU
MARS-BATSE DISTANCE = 100020104. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 216.31 SECS.
CROSSING TIME AT MARS IS 51290. S. OR 14:14:50 +/- 47.38 SECONDS

BATSE BURST TRIGGER

NO.: 6148

TIME: TJD=0537 SECONDS=51074

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=156.4 AZIMUTH=36.0 ERROR=3.1 DEGREES

COMMENTS:
GRB. ~73 SEC. AFTER CYG X-1 RISE. BACKGOUND VERY NOISY DUE TO CYG X-1
FLUCTUATIONS. DOUBLE PULSE WITH DUR.~ 13 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6148	970330	10537	51074	3000	305	+02	13

BATSE# 6148

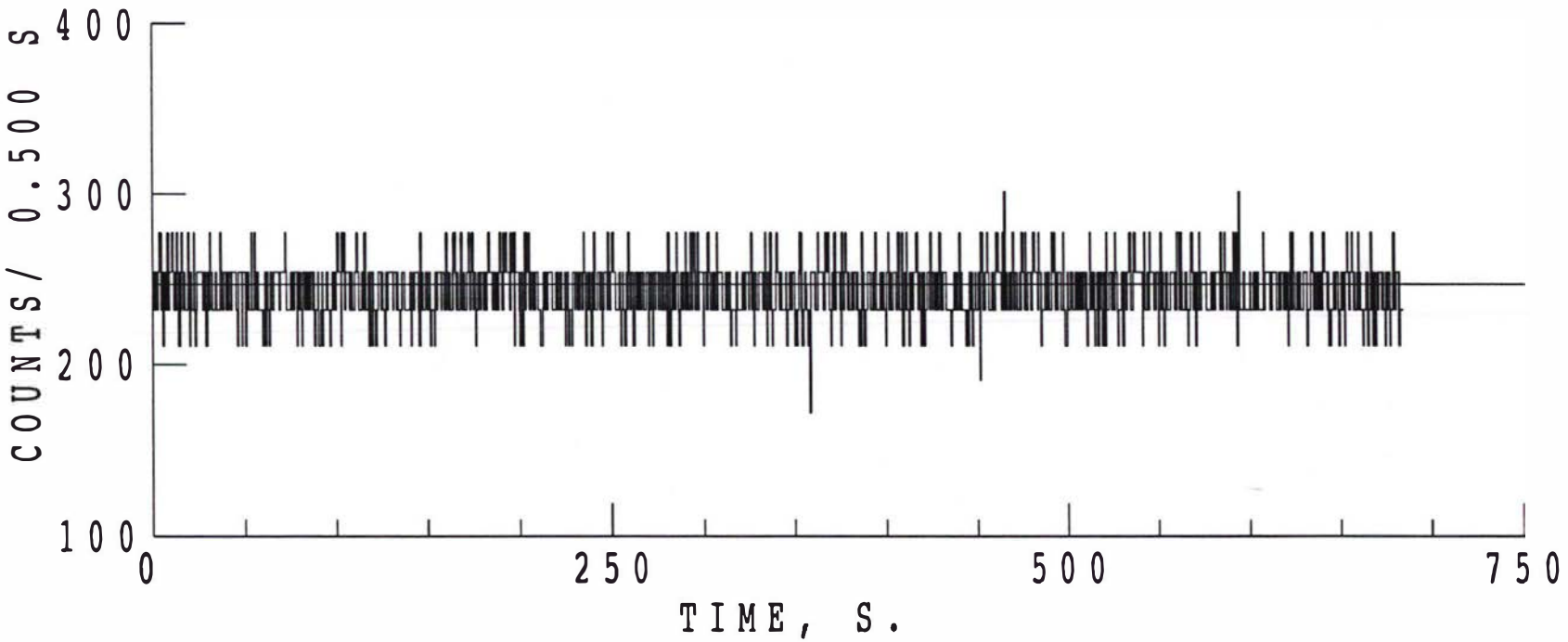
ULYSSES RT 1/ 4/97

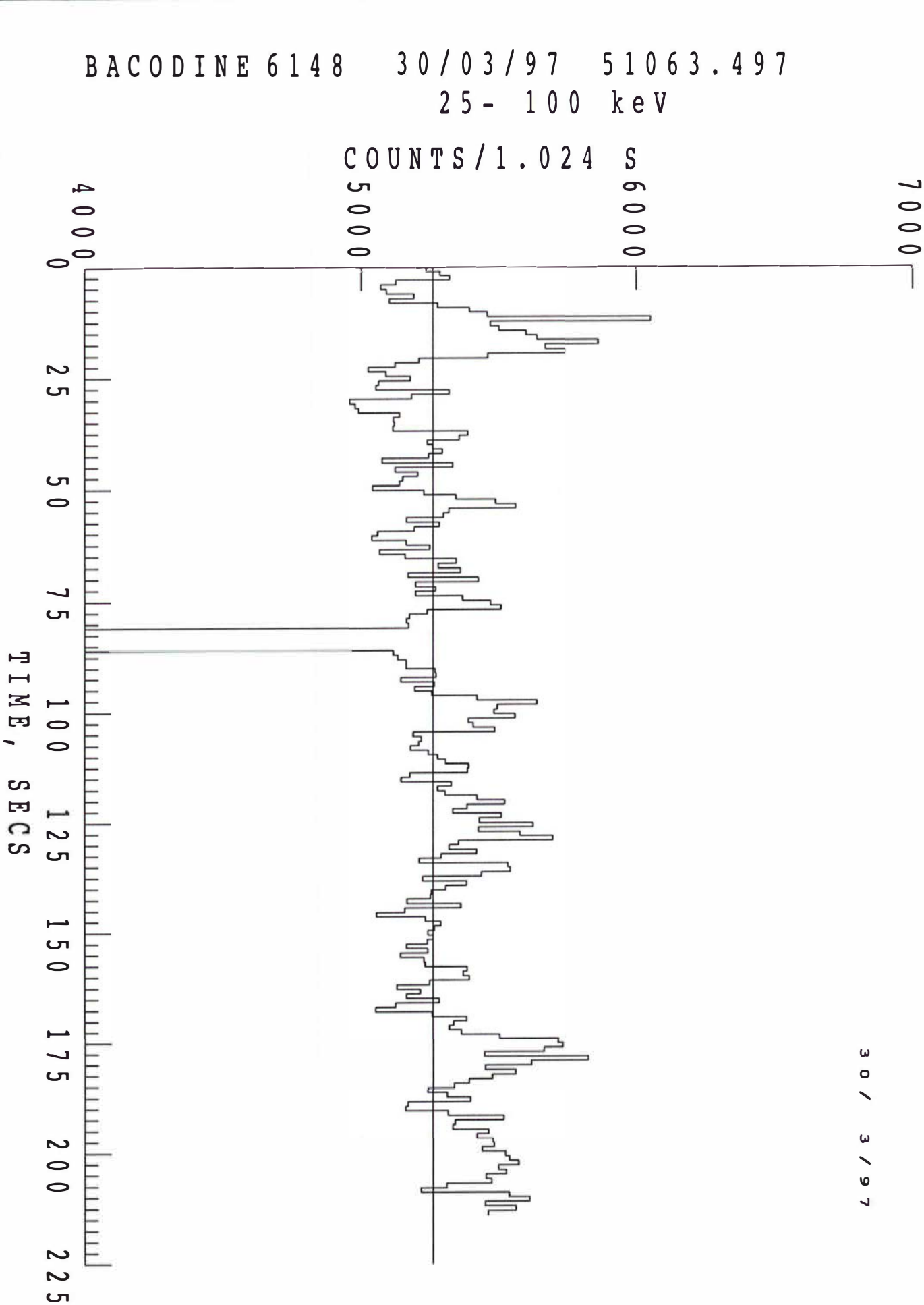
30/ 3/97 52164.340 s

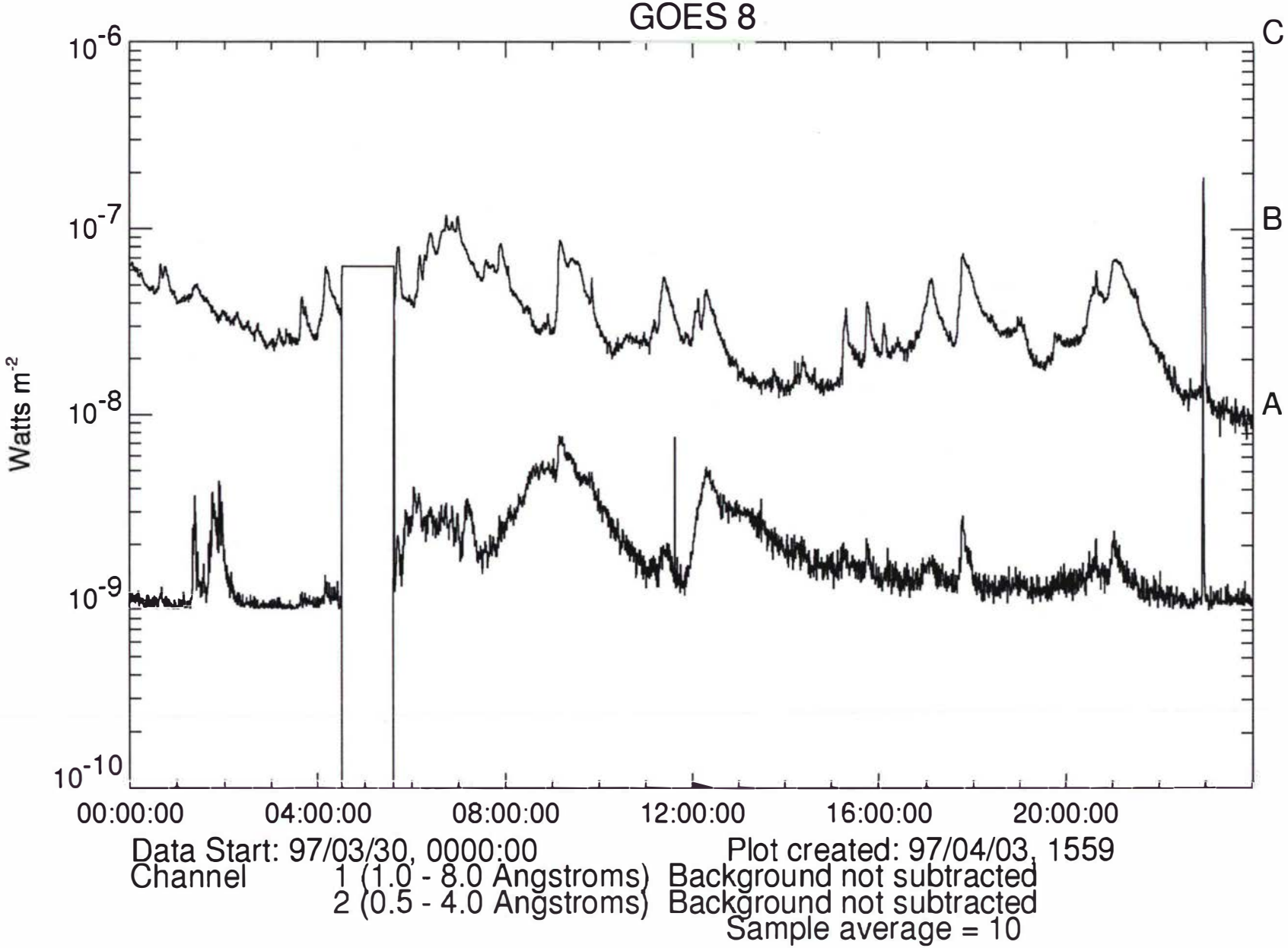
0- 0 keV

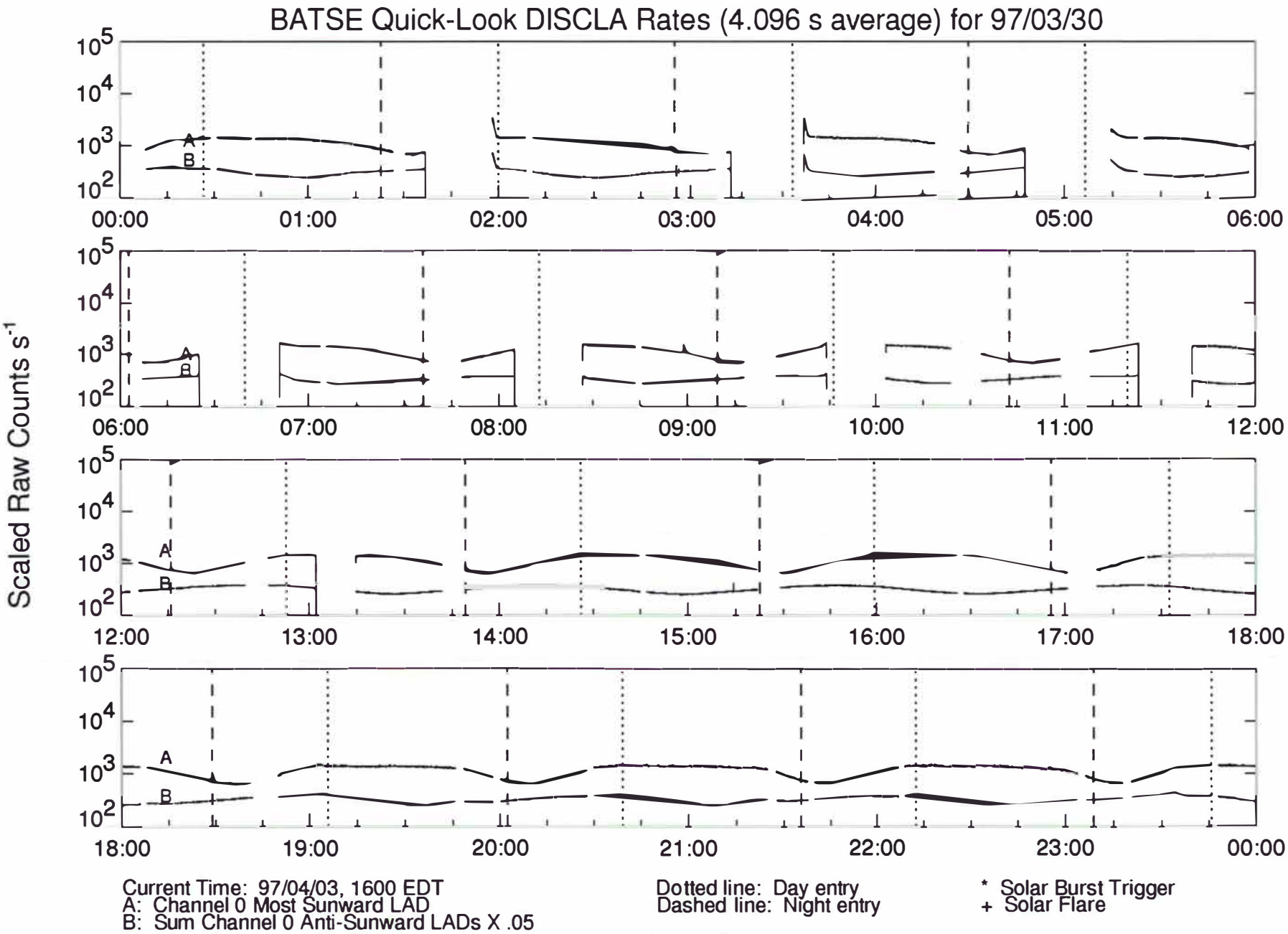
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

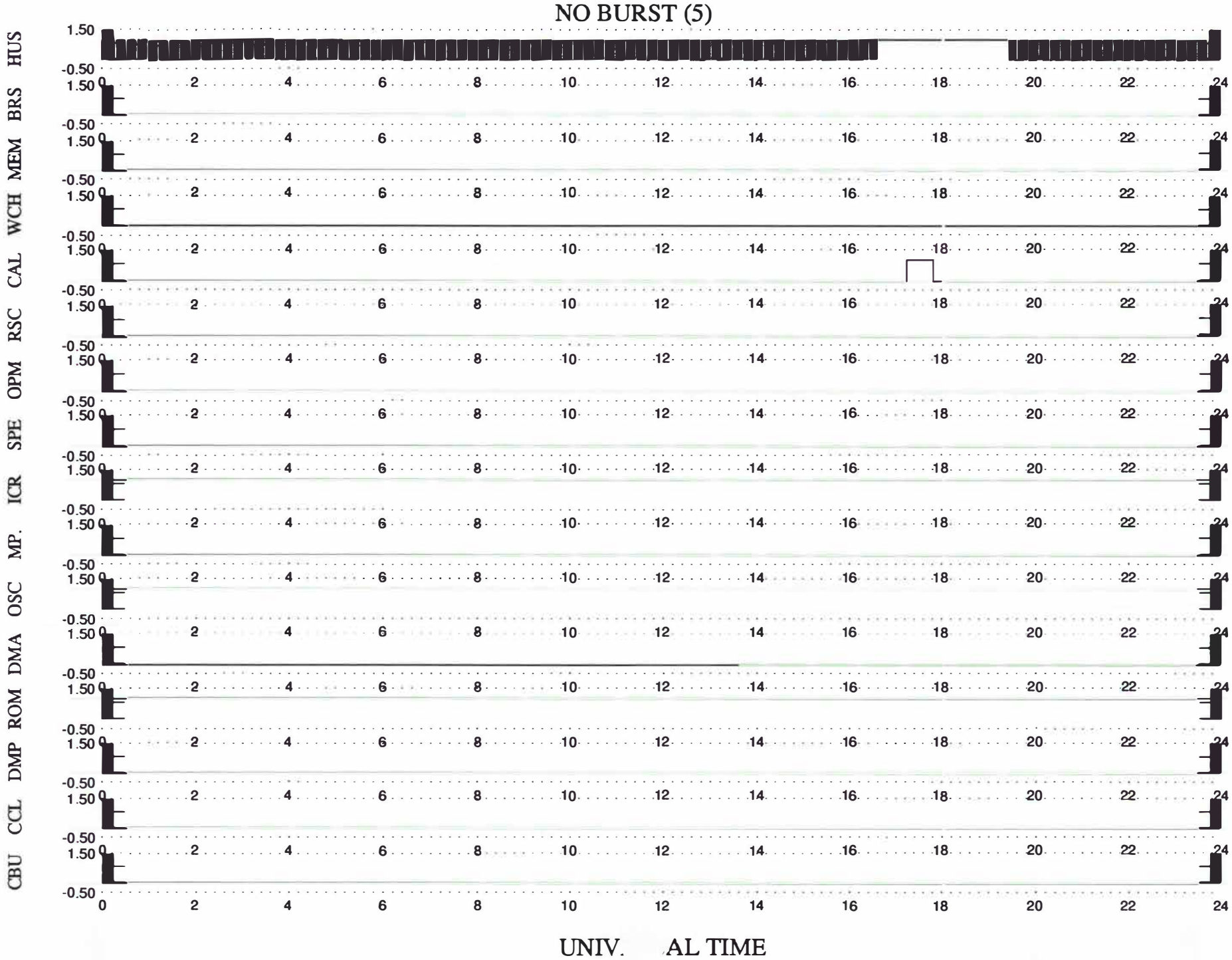



BACODINE 6148 30/03/97 51063.497
25- 100 keV
COUNTS/1.024 S
4000
5000
6000
7000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
30/ 3/97


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/03/30, 0000:00
Plot created: 97/04/03, 1559
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

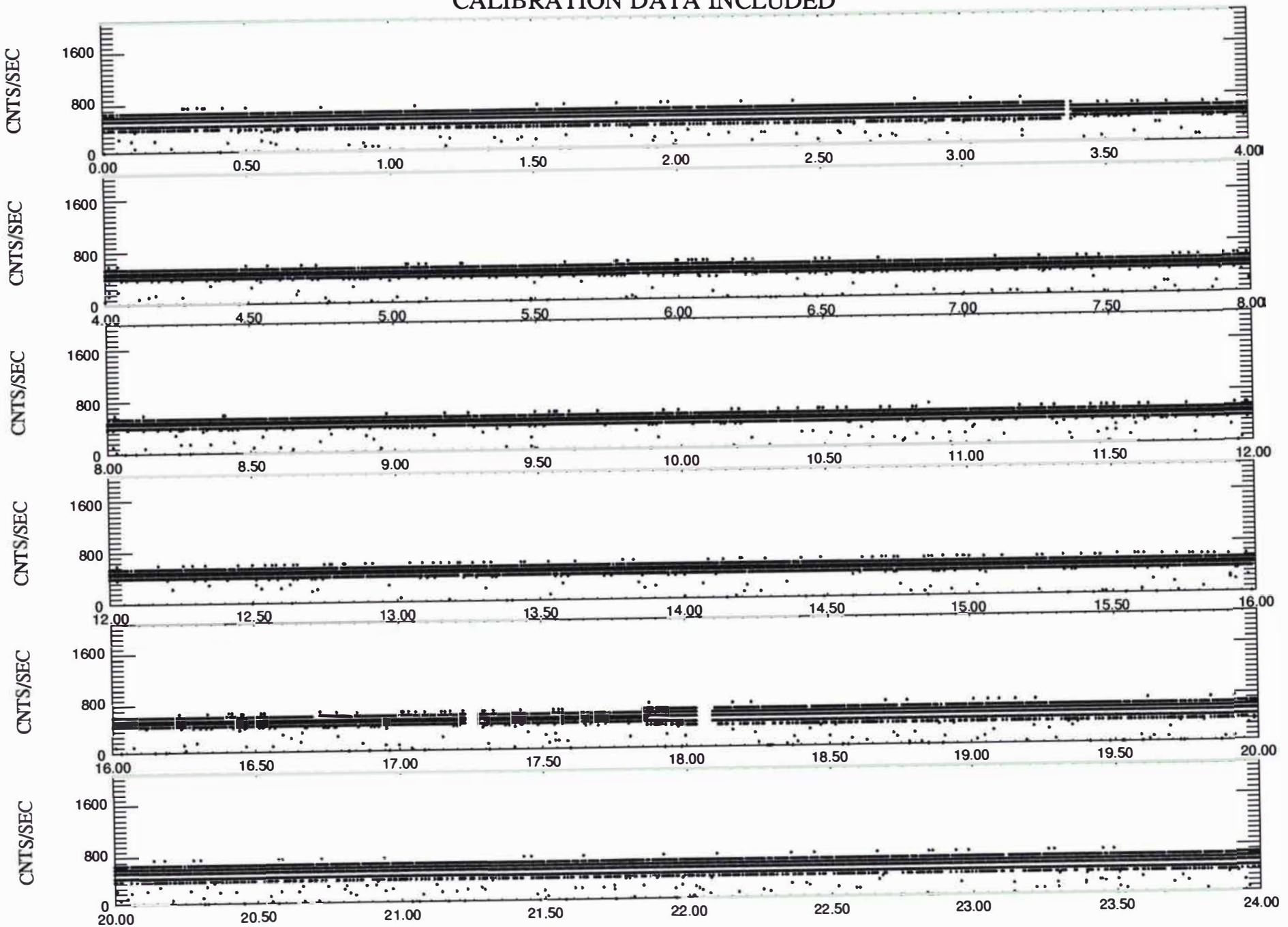

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/03/30
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/04/03, 1600 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 89, year 1997 to day 89, year 1997 7/21/97



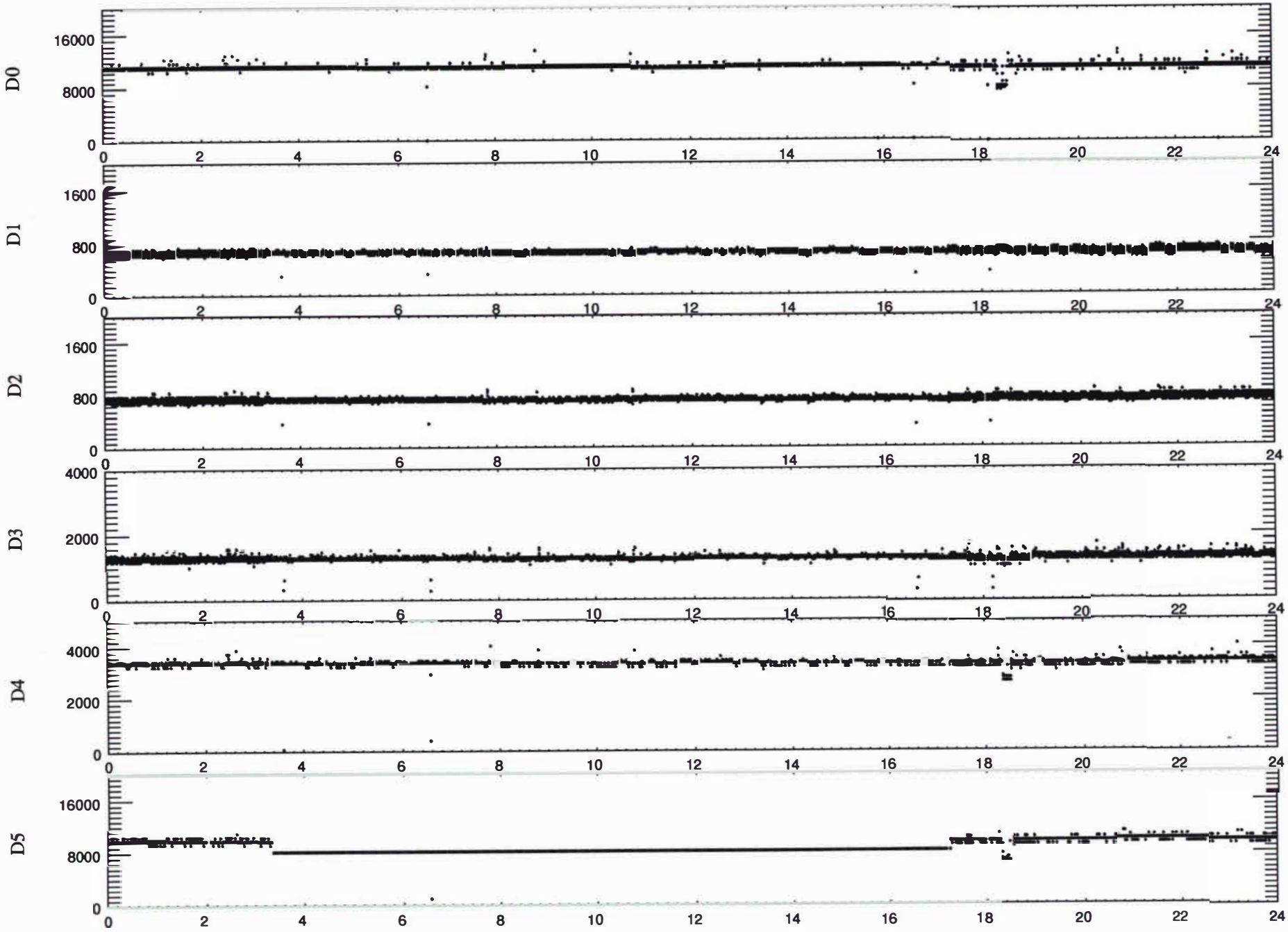
HUS 2A, MODE 1, NOT AVERAGED EDR day 89, year 1997 to day 89, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 89, year 1997 to day 89, year 1997 7/21/97



From DEAL@fender.msfc.nasa.gov Wed Apr 2 13:57 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA07033; Wed, 2 Apr 1997 13:57:52 -0800
'rom: DEAL@fender.msfc.nasa.gov
Date: Wed, 2 Apr 1997 15:57:37 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970402155737.20c02270@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6149
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6149
EVENT OF 1997 MAR 31 DAY OF YEAR= 90
EVENT CROSSING TIME AT BATSE : 77119. S. OR 21:25:19.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 212.000 86.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 3/ 97 IS:
RA= 156.025 DEC= 35.863 DIST= 4.285 AU
BATSE-ULYSSES DISTANCE = 640975057. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1317.16 SECS.
CROSSING TIME AT ULYSSES IS 75802. S. OR 21:03:21 +/- 322.39 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 3/ 97 IS:
RA= 173.641 DEC= 6.352 DIST= 0.671 AU
MARS-BATSE DISTANCE = 100326944. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -55.13 SECS.
CROSSING TIME AT MARS IS 77064. S. OR 21:24:23 +/- 56.47 SECONDS

BATSE BURST TRIGGER
NO.: 6149

TIME: TJD=0538 SECONDS=77119

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.1 AZIMUTH=287.5 ERROR=11.3 DEGREES

COMMENTS:
GRB LASTING ~ 1 S. WEAK. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6149	970331	10538	77119	2000	212	+86	1

BATSE# 6149

ULYSSES RT 2/ 4/97

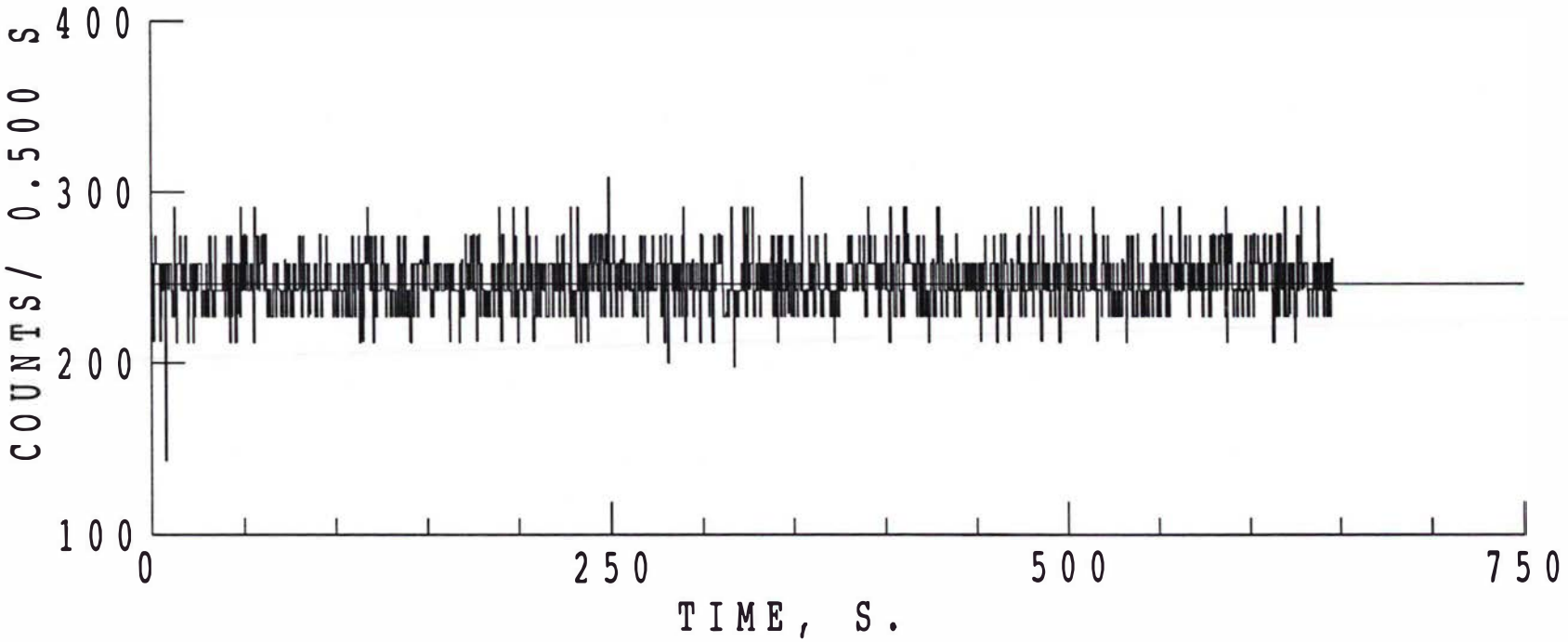
31/ 3/97 75492.133 s

0.250 S INTERVALS REGROUPED BY 2

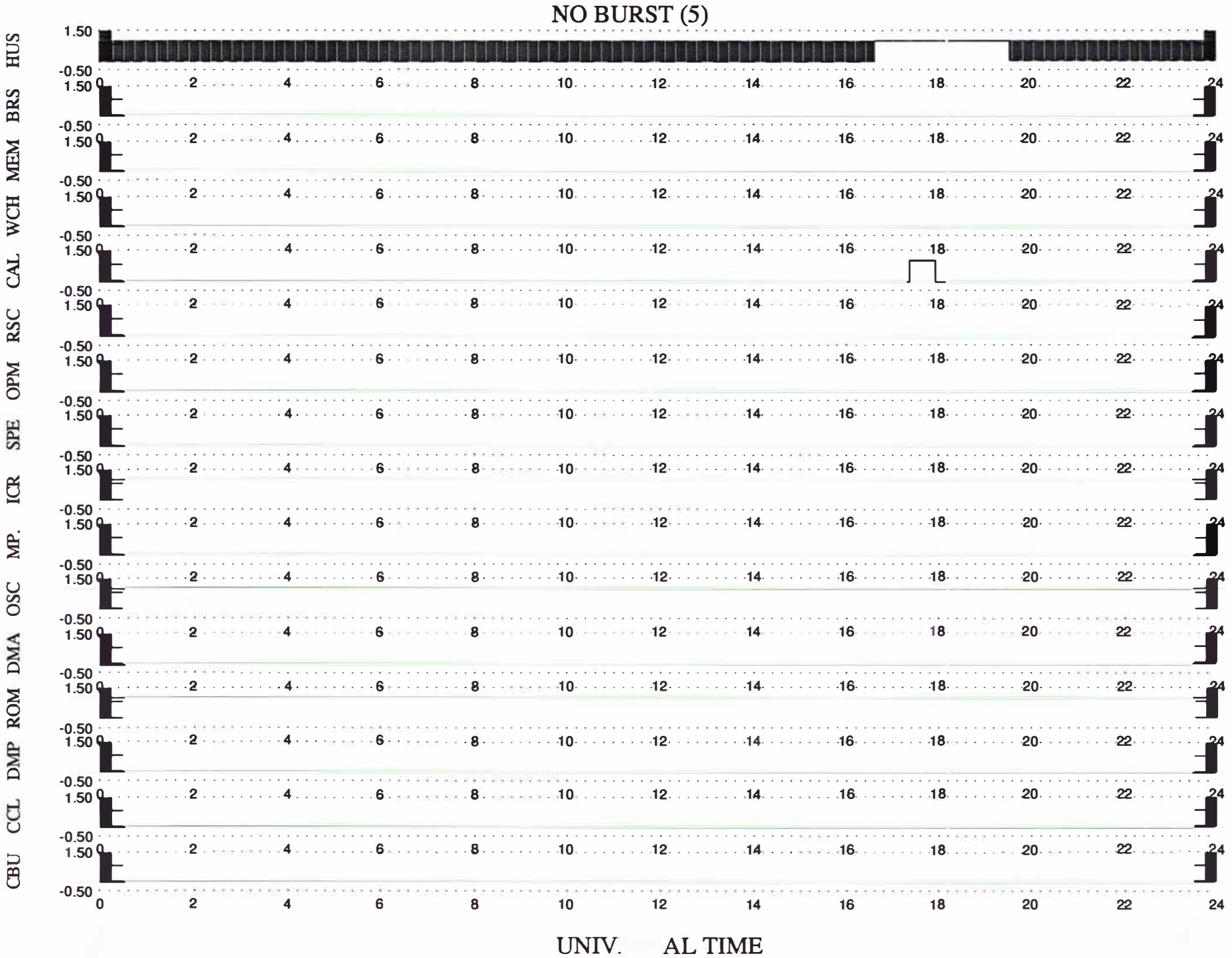
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

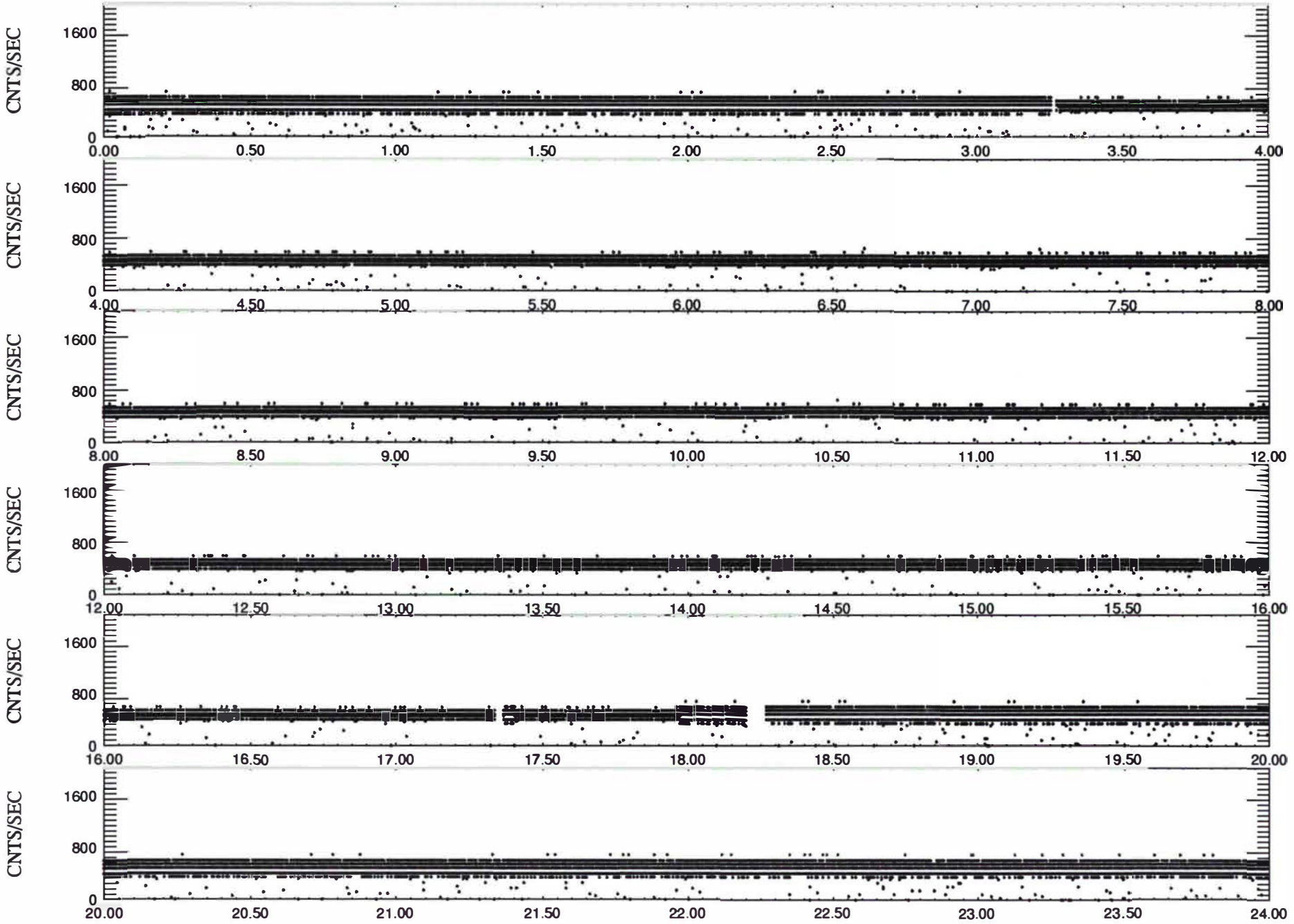


HUS MODES EDR day 90, year 1997 to day 90, year 1997 7/21/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 90, year 1997 to day 90, year 1997 7/21/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 90, year 1997 to day 90, year 1997 7/21/97

