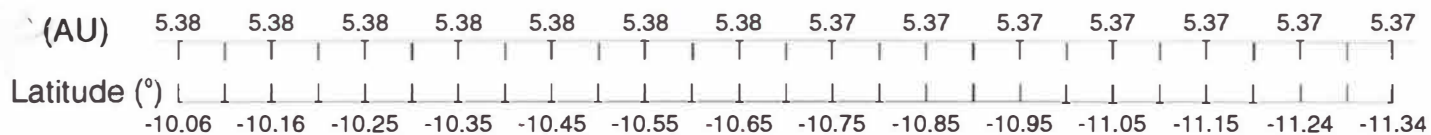
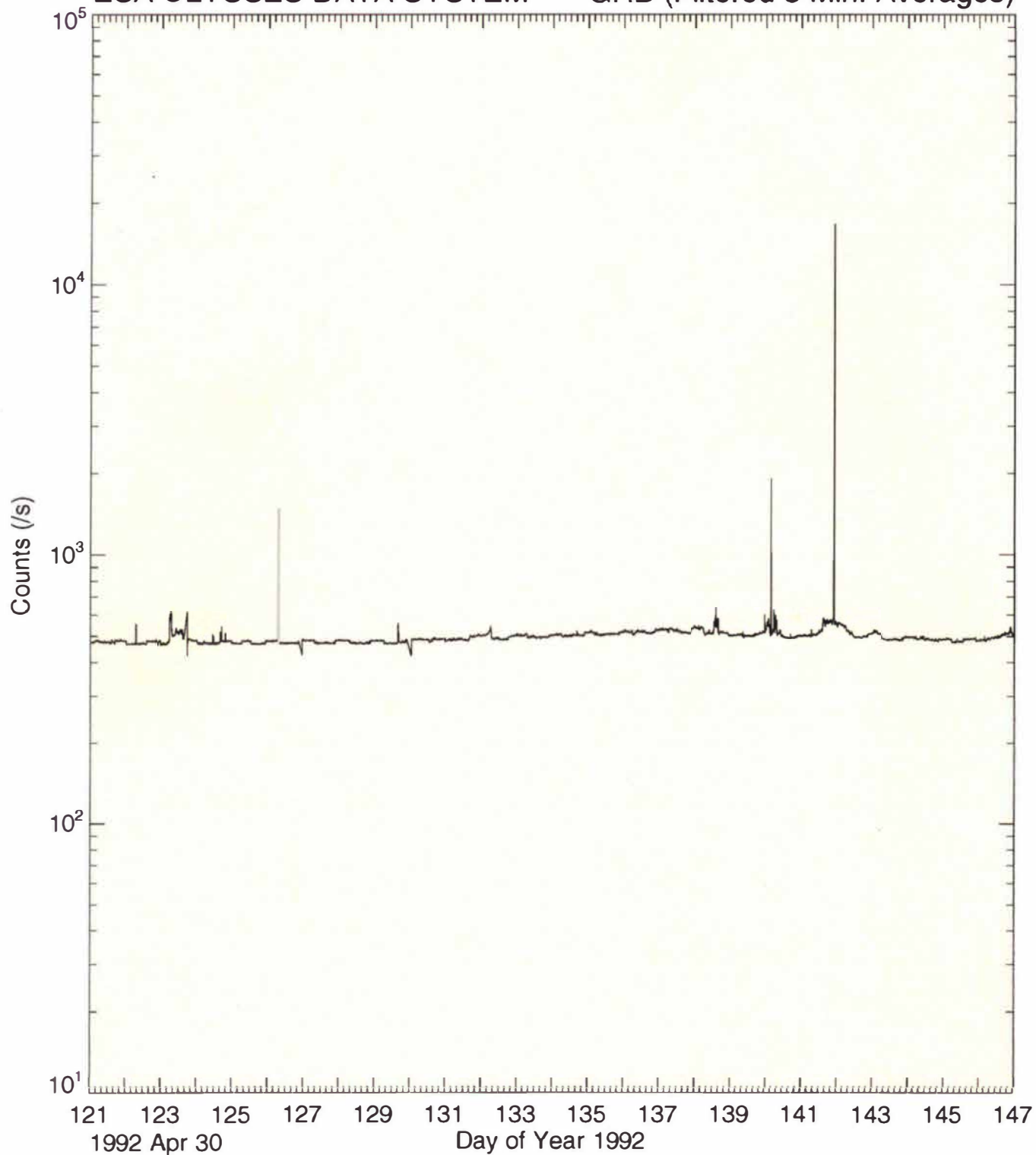
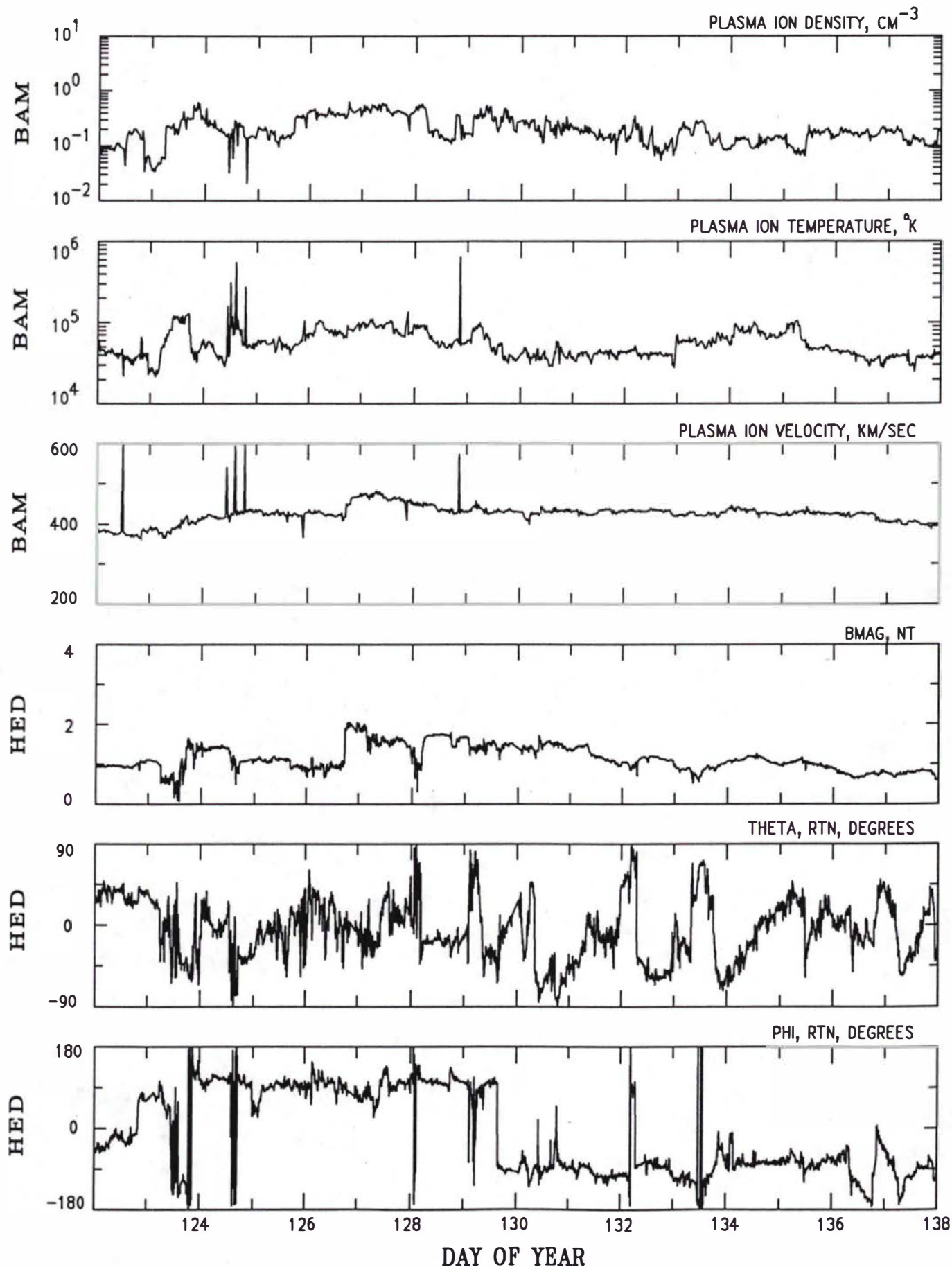


ESA ULYSSES DATA SYSTEM GRB (Filtered 5 Min. Averages)



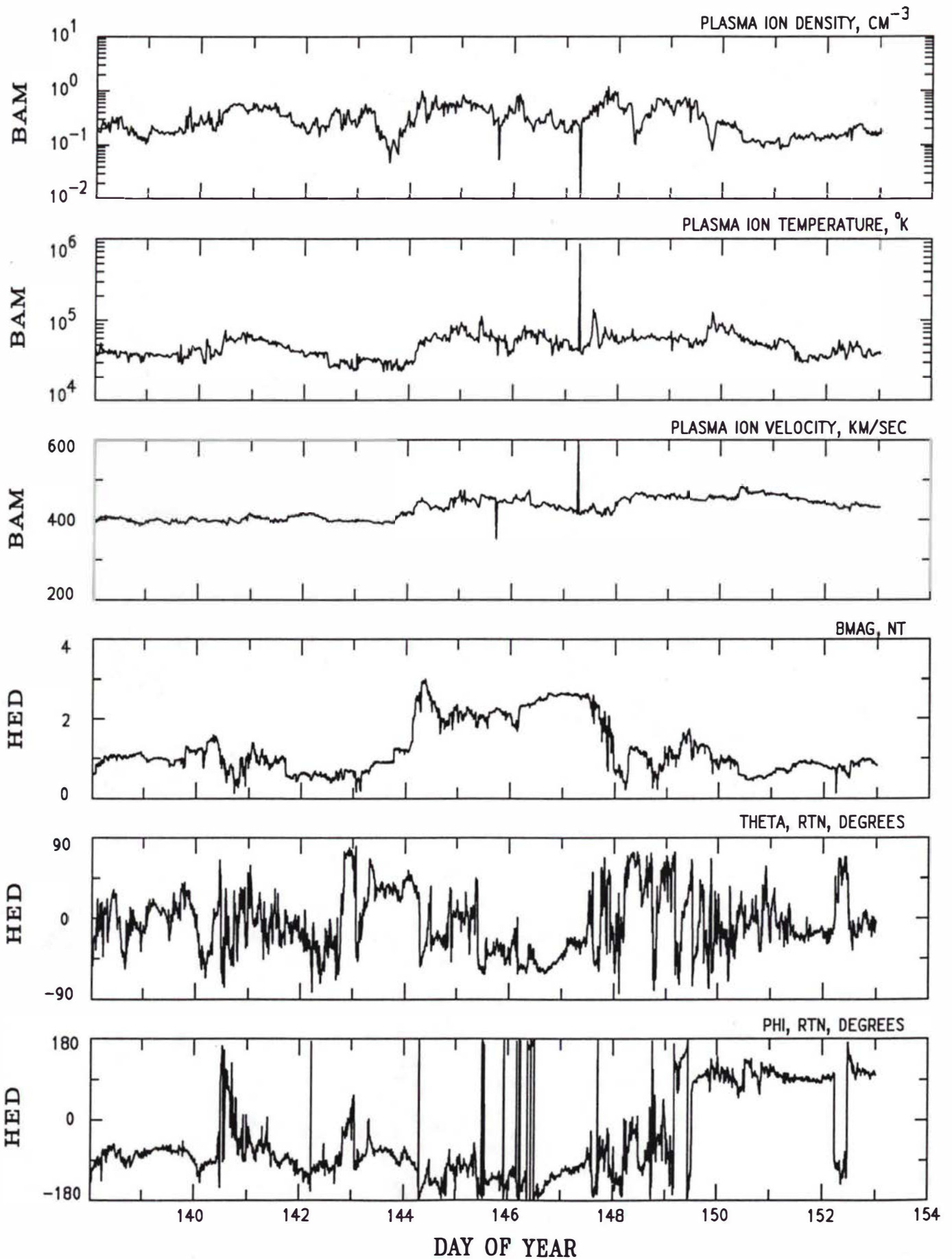
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

92 122 MAY 1 00:00:00.000 - 92 138 MAY 17 00:00:00.000



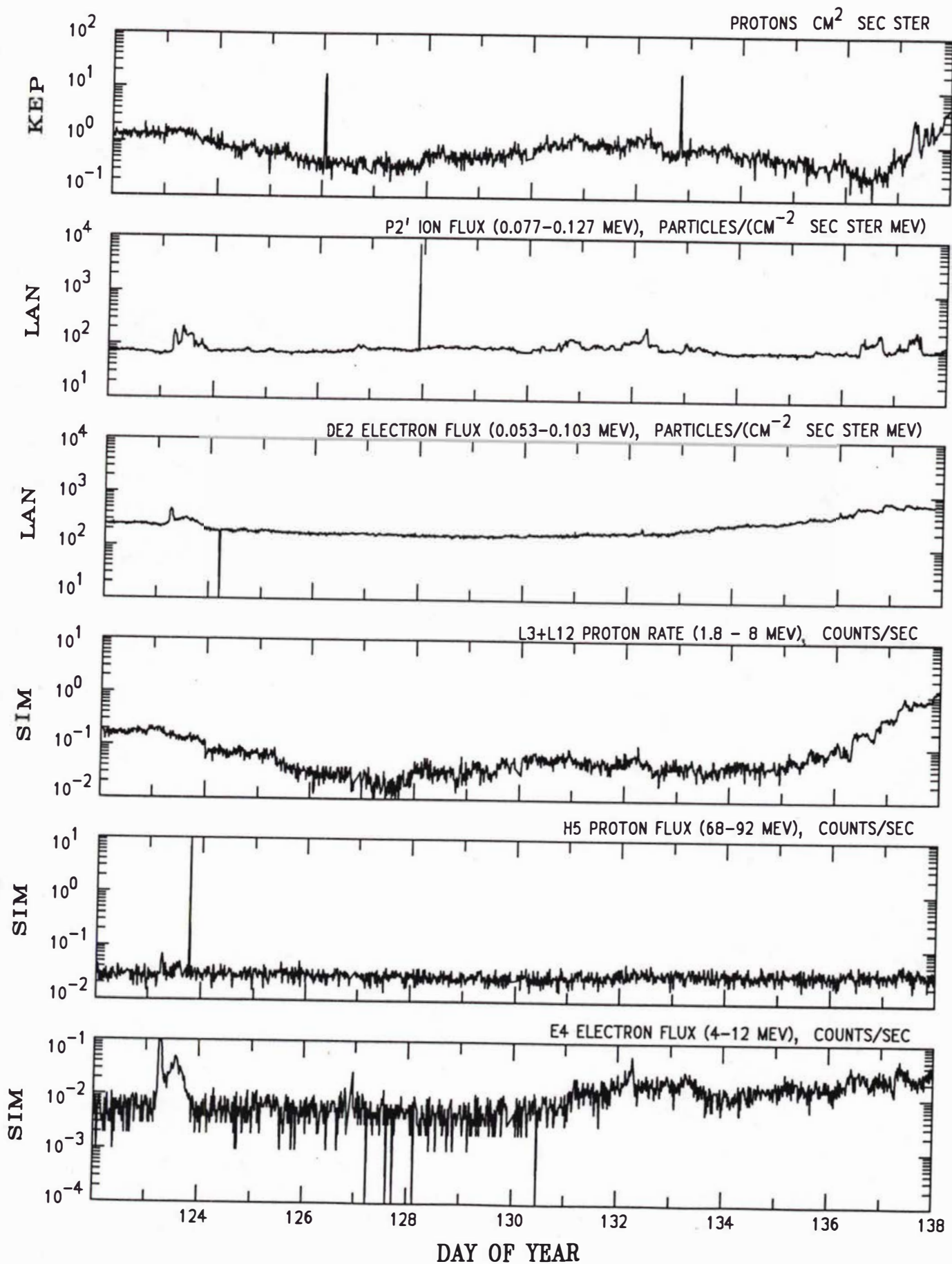
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

92 138 MAY 17 00:00:00.000 - 92 154 JUN 2 00:00:00.000



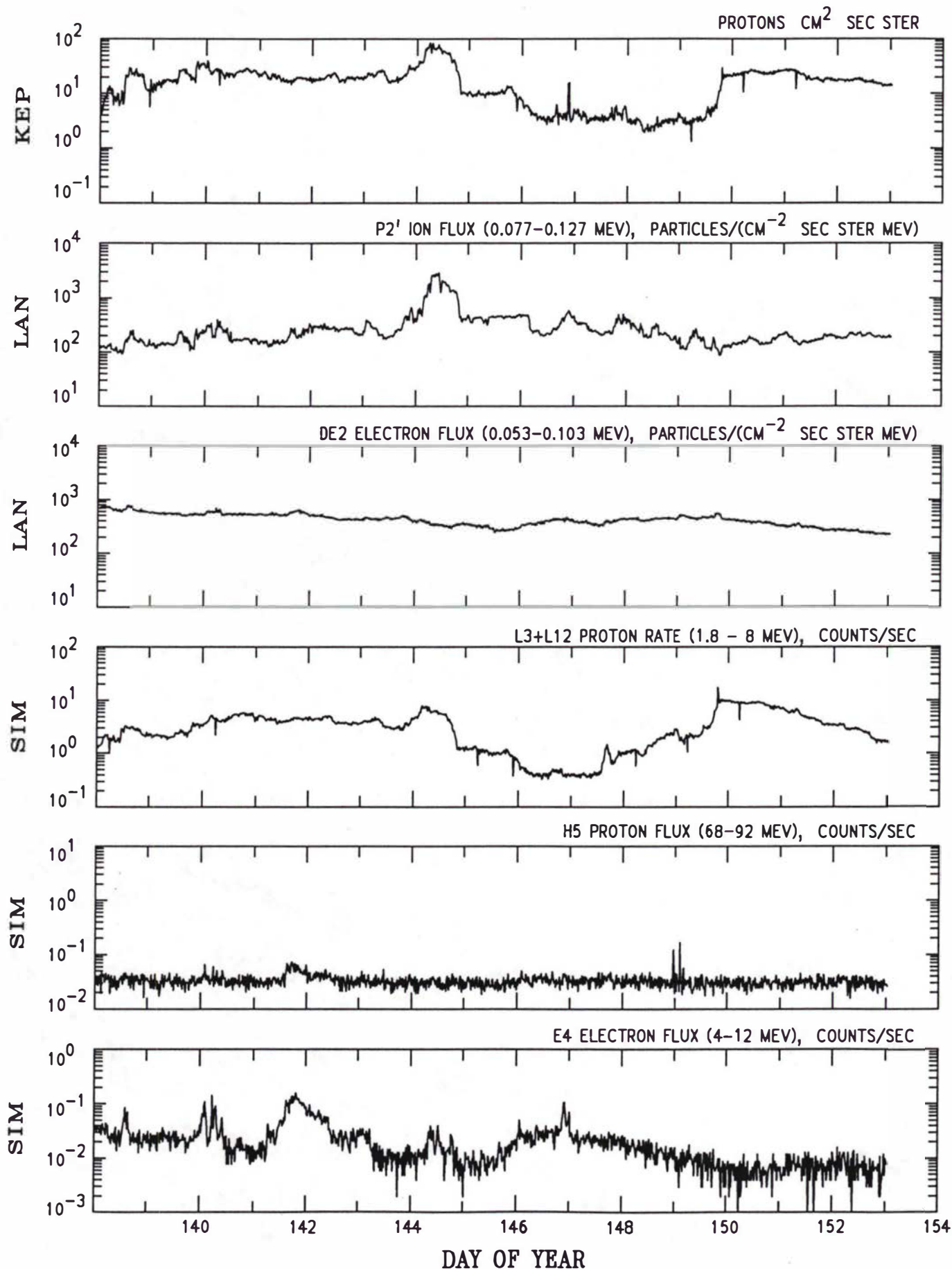
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

92 122 MAY 1 00:00:00.000 - 92 138 MAY 17 00:00:00.000



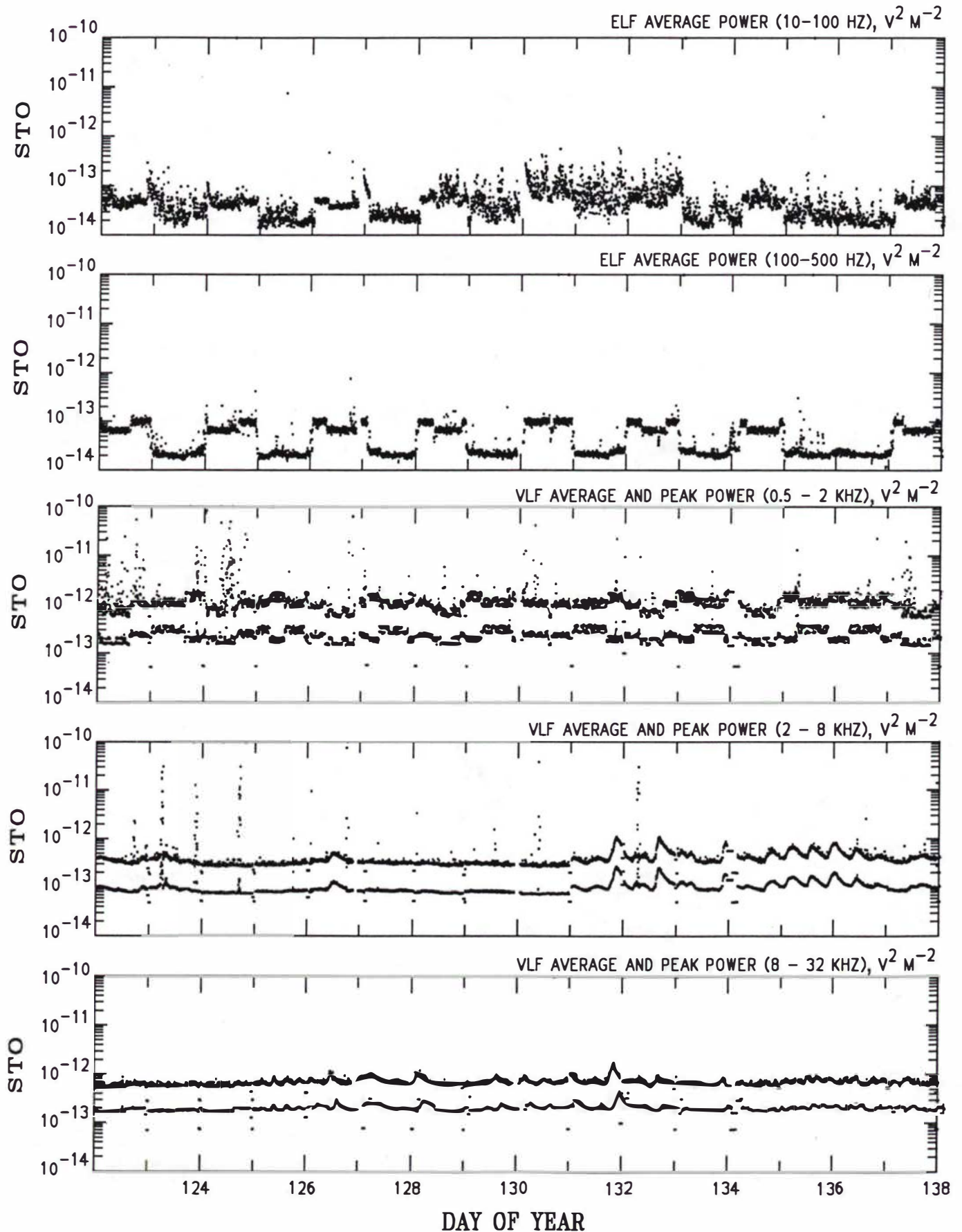
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

92 138 MAY 17 00:00:00.000 - 92 154 JUN 2 00:00:00.000



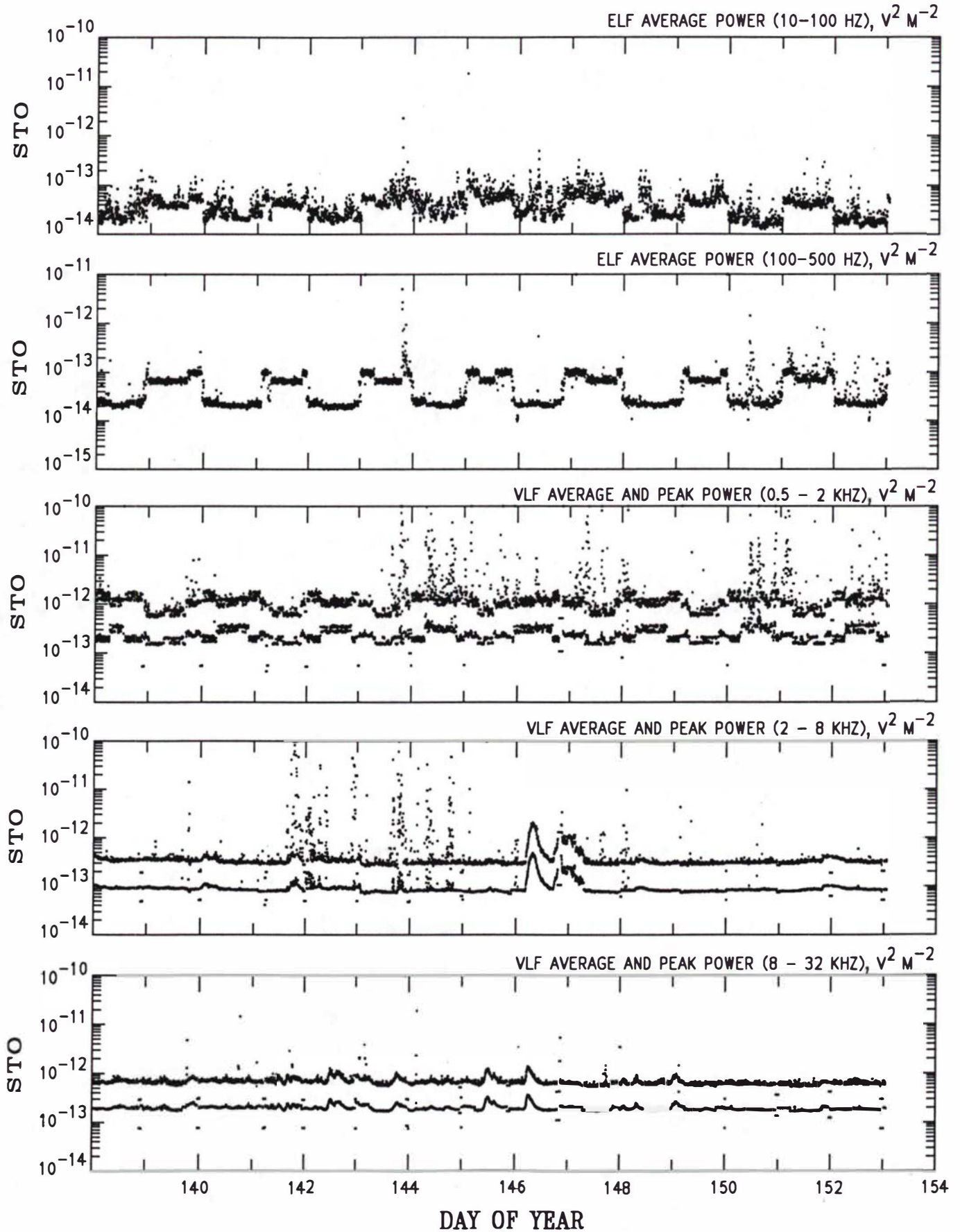
ULYSSES CDR - PLASMA WAVE

92 122 MAY 1 00:00:00.000 - 92 138 MAY 17 00:00:00.000



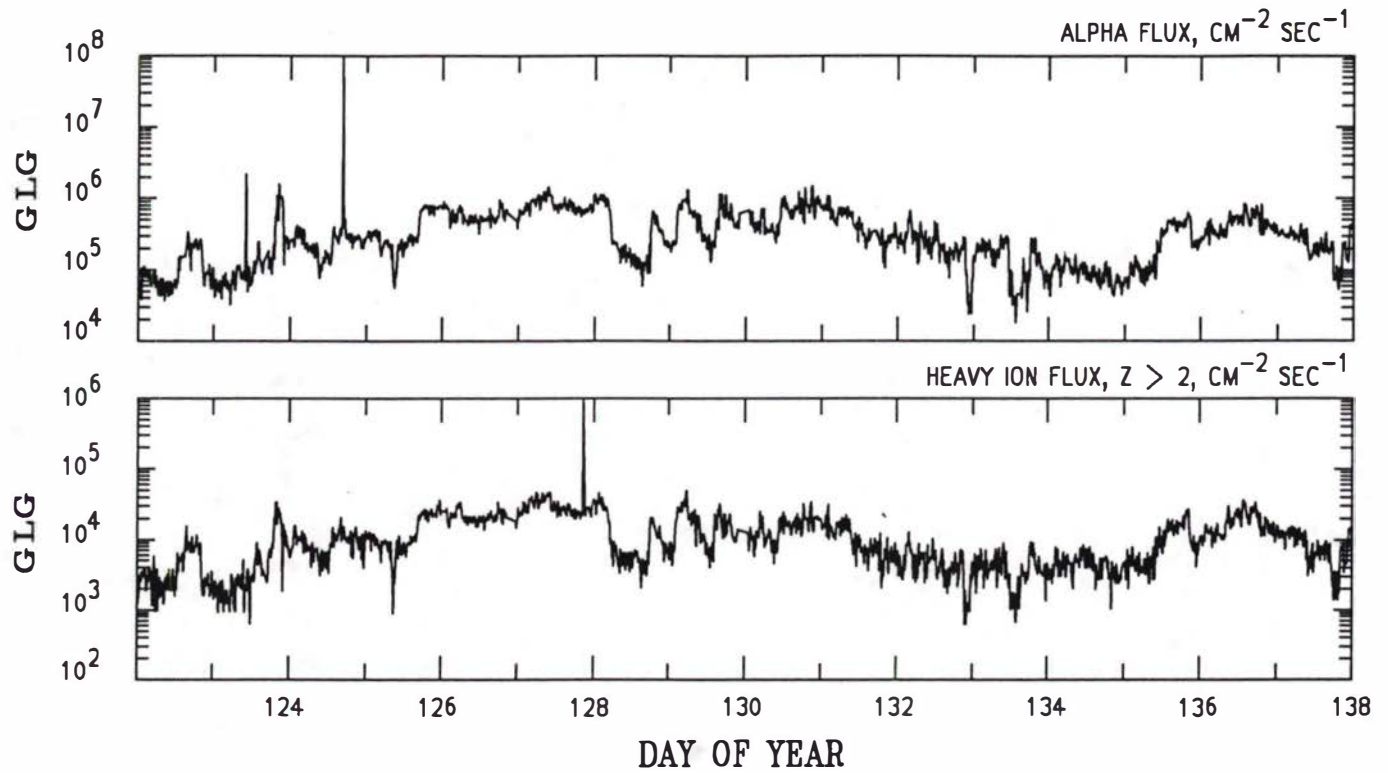
ULYSSES CDR - PLASMA WAVE

92 138 MAY 17 00:00:00.000 - 92 154 JUN 2 00:00:00.000



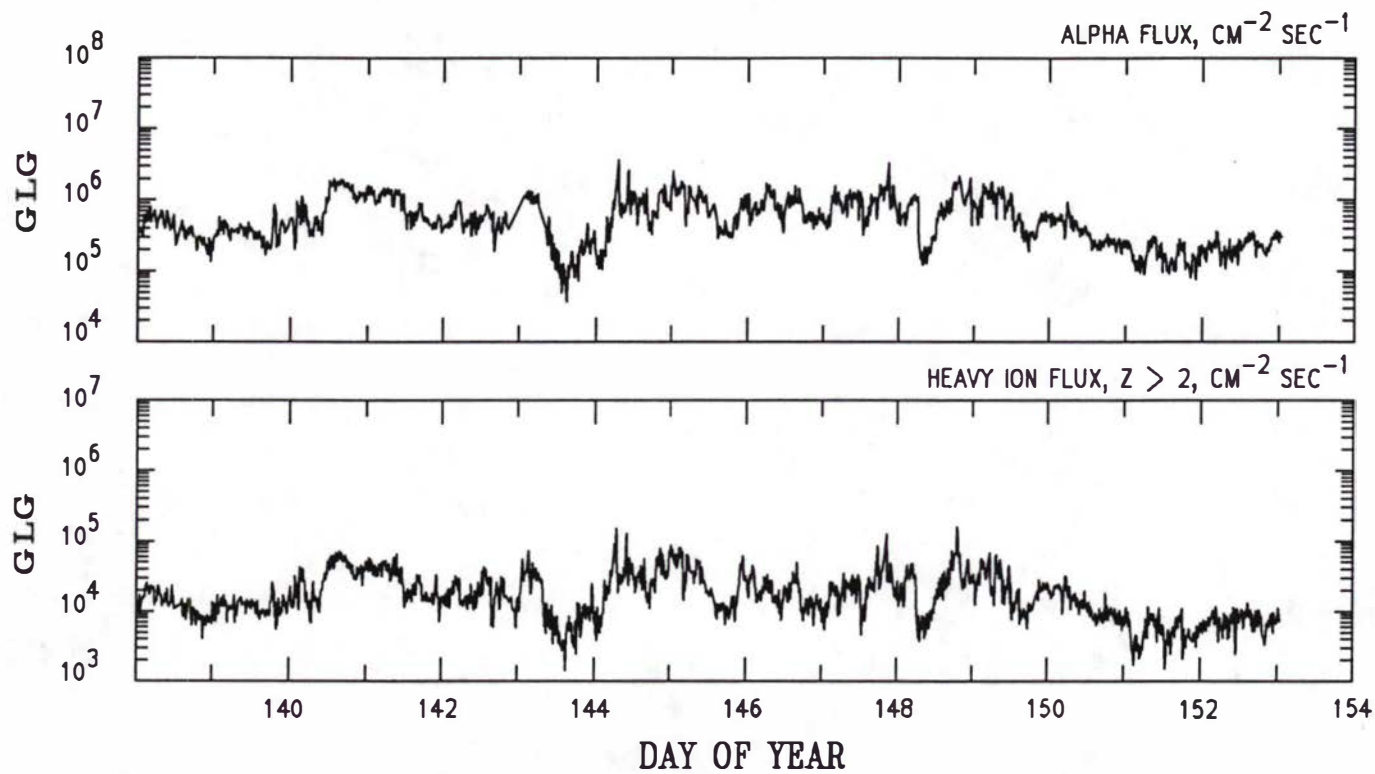
ULYSSES CDR - SOLAR WIND ION COMPOSITION

92 122 MAY 1 00:00:00.000 - 92 138 MAY 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

92 138 MAY 17 00:00:00.000 - 92 154 JUN 2 00:00:00.000



.92.122.00.10.57.003

HUS monthly long term thermal data

818

RET

E002 2ARADTMP S/C

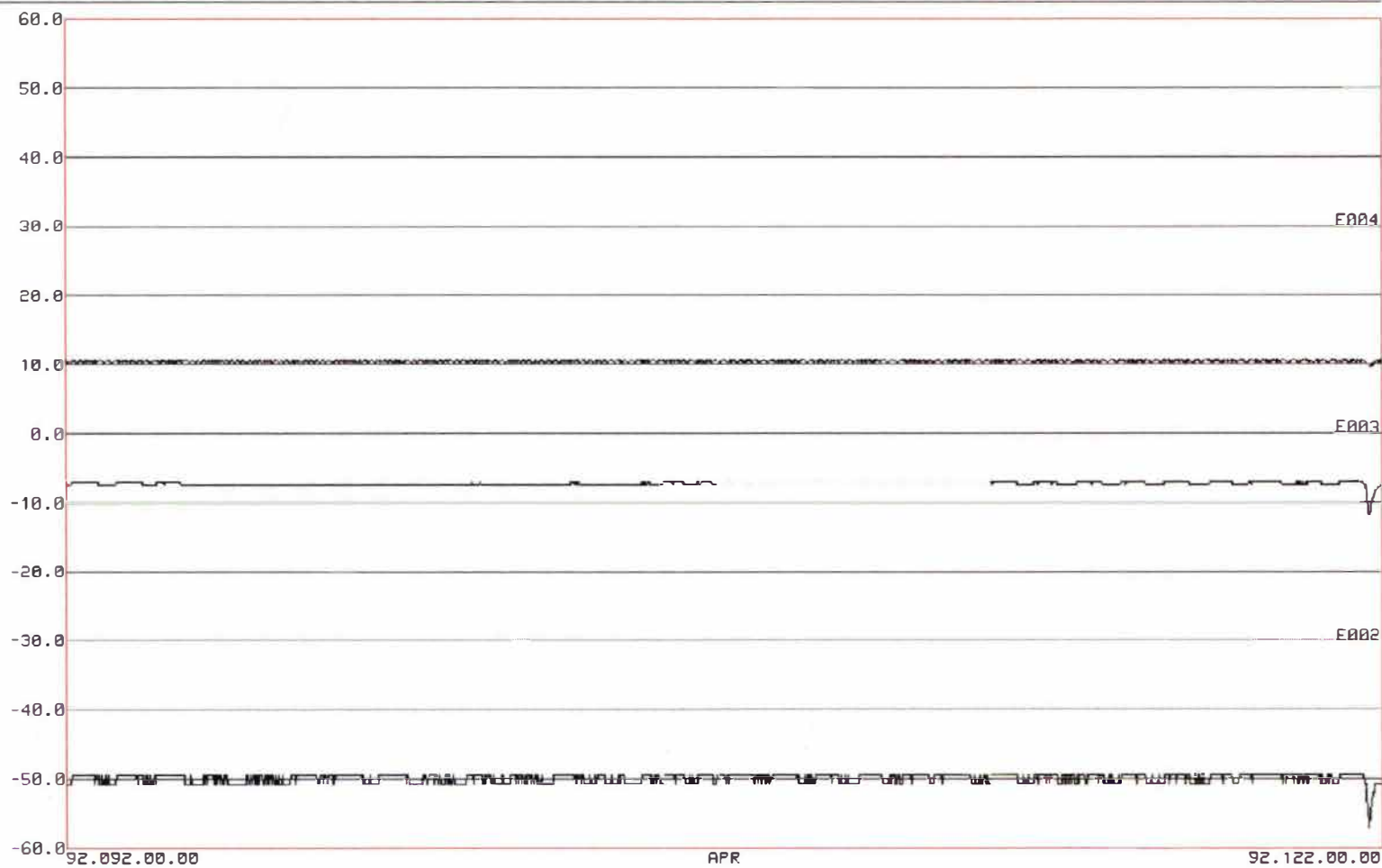
-7.5

E003 2BSENTMP S/C

-50.7

E004 2ASENSTMP EX

10.73



From khurley@omni:.dna_node.jplgp.span Thu Nov 26 00:33:22 1992
Date: Thu, 26 Nov 92 00:23:20 -0800
From: khurley@omni:.dna_node.jplgp.span
To: "khurley@sunspot.ssl.berkeley.edu"%jpldig.span@JPLDIG.jpl.nasa.gov
Content-Length: 3158

1st May	Routine operations.
2nd May	Conscan test manoeuvre. 1 hour at 1 kbps Eng.
3rd May	Routine operations.
4th May	KEP EPAC IFC.
5th May	Conscan test manoeuvre. 3 hours at 1 kbps Eng.
6th May	HED Calibration.
7th May	Routine operations.
8th May	Conscan test manoeuvre. 3 hours at 1 kbps Eng. 130.02.13.16 DSU block command rejected, retransmitted and then accepted.
9th May	Routine operations.
10th May	Routine operations.
11th May	KEP EPAC IFC
12th May	Routine operations. 133:23.54.41 STO command Q3023 rejected, retransmitted and then accepted. Anomaly ULY025 opened to investigate the command link quality.
13th May	Routine operations. ~135:03.20 7min data loss due to station power failure. => 7x3=21min playback data loss corresponding to ~134:09.10.
14th May	Routine operations. STO commands Q3022 & Q3023 rejected (1 hour between them) DSOM suspended the command link until a special validation test was conducted.
15th May	Special Telecommand Subcarrier Test including 73 commands and 3 Subcarrier/bitrate sets. No rejections occurred. Then routine operations were resumed by sending Q3022 & Q3023.
16th May	Routine operations.
17th May	Routine operations.
18th May	KEP EPAC IFC. 139:22.41 11min. not recoverable 140:00.04 7min. " " Corresponding 2*(7+11)min. playback loss due to Ground Station (TPA) problems.
19th May	Special checkout of a station configuration (CPA2) present in all the recently observed command rejections. 200 dummy commands sent, no rejection occurred. Routine operations continued on CPA2. After the light time delay the routine operations were not totally successful: Q3022 was rejected, Q3023 was accepted and also a 44 messages long block command for HED was accepted. DSOM advised to change to CPA1 and perform another checkout of 200 dummy

commands. After positive verification of them DSOM decided to continue with the routine STO commands but repeating 3 times the last one to ensure the reception of the final configuration before the end of track.
Anomaly investigation keeps open.
Goldston CPA #2 was prohibited by DSOM for Ulysses support until DSN has the opportunity to conduct a thorough diagnosis.

20th May	HED Calibration.
21st May	Routine operations.
22nd May	STO RAR reconfiguration.
23rd May	Routine operations.
24th May	Earth pointing manoeuvre.
25th May	KEP EPAC IFC
26th May	Routine operations.
27th May	SIM HET Calibration. New Command Rejections: STO Q3022 & Q3033. DSN had configured by mistake DSS 12 CPA #2. The commands were resent at 149:01.45 & 149:02.45 S/C time on a different CPA, and they were executed.
28th May	Routine operations.
29th May	Routine operations.
30th May	Routine operations.
31st May	Routine operations. SCET: 152:05.06 (18min) & 152:19.27 (7min) unrecoverable due to Symbol Synchronizer Assembly (SSA) failure on DSS 12.

CATSEARCH PROGRAM

BATSE BURST # 1576
EVENT OF 1992 MAY 1 DAY OF YEAR=122
EVENT CROSSING TIME AT BATSE : 76695. S. OR 21:18:14.6
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 127.600 -32.900 ← Close to Oct 9 '92 error box
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 1/ 5/ 92 IS:
RA= 148.858 DEC= 9.174 DIST= 4.992 AU
BATSE-ULYSSES DISTANCE = 746833120. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1708.64 SECS.
CROSSING TIME AT ULYSSES IS 74986. S. OR 20:49:46.0 +/- 338.79 SECONDS

Trigger

From KOSHUT@ssl.msfc.nasa.gov Tue May 5 07:02:31 1992
Date: Tue, 5 May 1992 9:03:16 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1458

BATSE BURST TRIGGER

NO.: 01576 May 1
TIME: TJD=8743 SECONDS=76696

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=79. AZIMUTH=241.5 ERROR= DEGREES

COMMENTS:

STRONG BURST OF ~45 SECOND DURATION. THE TIME HISTORY CONSISTS OF MULTIPLE
IMPULSIVE SPIKES BETWEEN THE TRIGGER TIME AND TRIGGER + 22 SECONDS.
WEAKER ACTIVITY FOLLOWS UNTIL A PULSE OF ~ 3 SECOND DURATION, PEAKING
AT ~ TRIGGER + 37 SECONDS. SIGNIFICANT EMISSION IS OBSERVED ABOVE 300 KEV.

From blaes@vela.ucsb.edu Tue Mar 18 09:37 PST 1997
Date: Tue, 18 Mar 97 09:33:11 PST
From: blaes@vela.physics.ucsb.edu (Omer Blaes)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Re: redshift of the galaxy

I have sent him a message with the details and am awaiting a reply. We'll see what he decides to do.

By the way, he DID get a spectrum of the galaxy in the X-ray error circle of GRB920501 - and guess what? It's an AGN!!!!

This is all preliminary, so don't tell anyone yet.

-Omer

Helio corr removed

Date: _____

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☐ Ephemeris calculated for start of record of real time data?
- ☐ Final ephemeris used?
- ☐ Does ULYTRIG program output contain trigger time, and not SOR? (Ditto for FILE.ult)
- ☒ Final, CDROM data used?
- ☒ Were data checked by Joe Springer for 0.5 s errors?

2. BATSE Data

- ☐ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? *N/A*
- ☐ Does T_0 in data file agree with T_0 in plot? *NO - TTS data*
- ☐ BATSE ephemeris for T_0 ?
- ☐ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included? *N/A*

3. PVO Data

- ☒ Ephemeris of PVO used (not Venus)?
- ☒ 2000 coordinates used?
- ☒ Geocentric time used?

Access data base updated

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

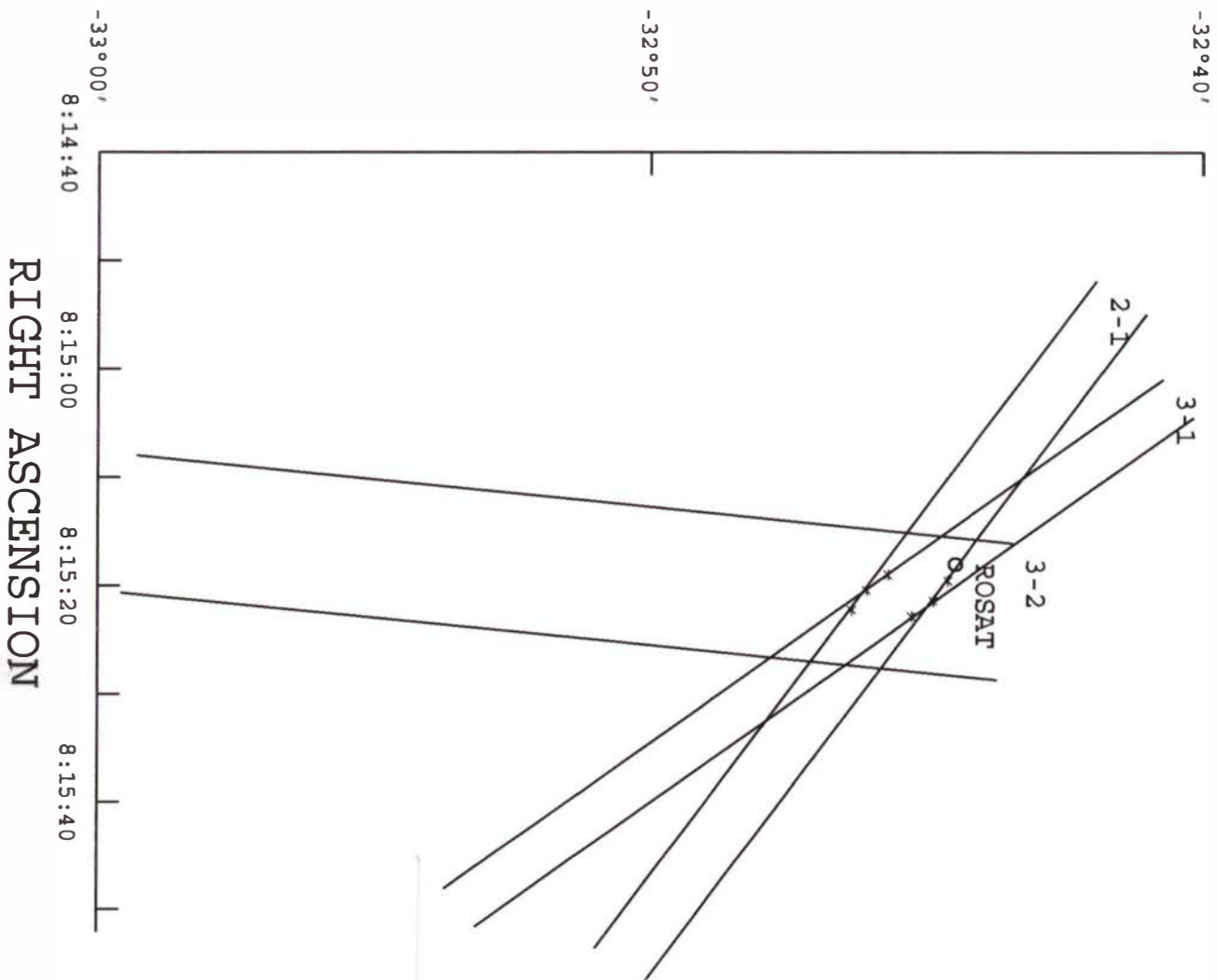
1 ULYSSES

2 BATSE

3 PVO

DECLINATION

EVENT OF MAY 1, 1992 20:50



9/10/97

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

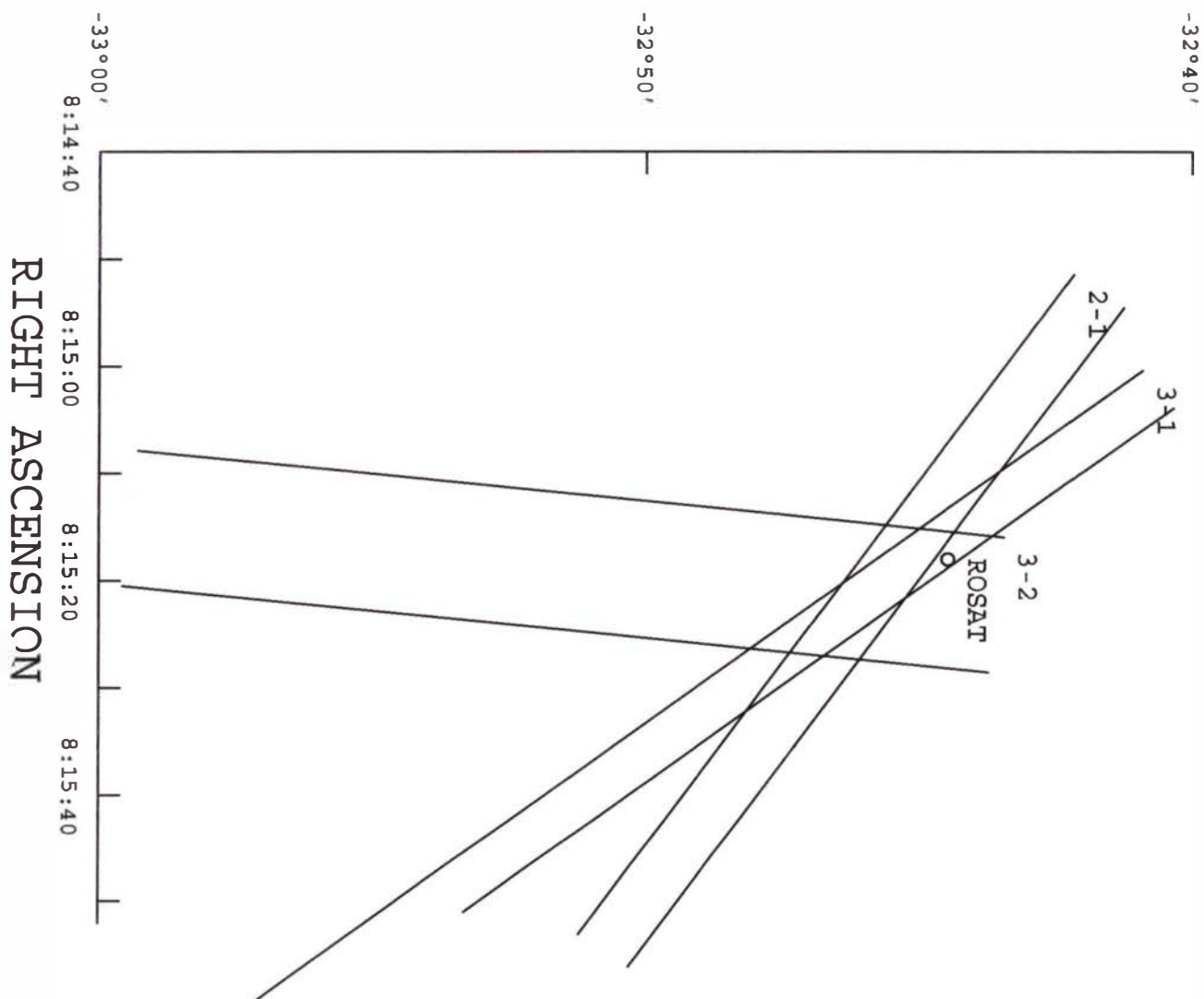
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

3 PVO

DECLINATION



EVENT OF MAY 1, 1992 20:50

24/12/96

BATSE

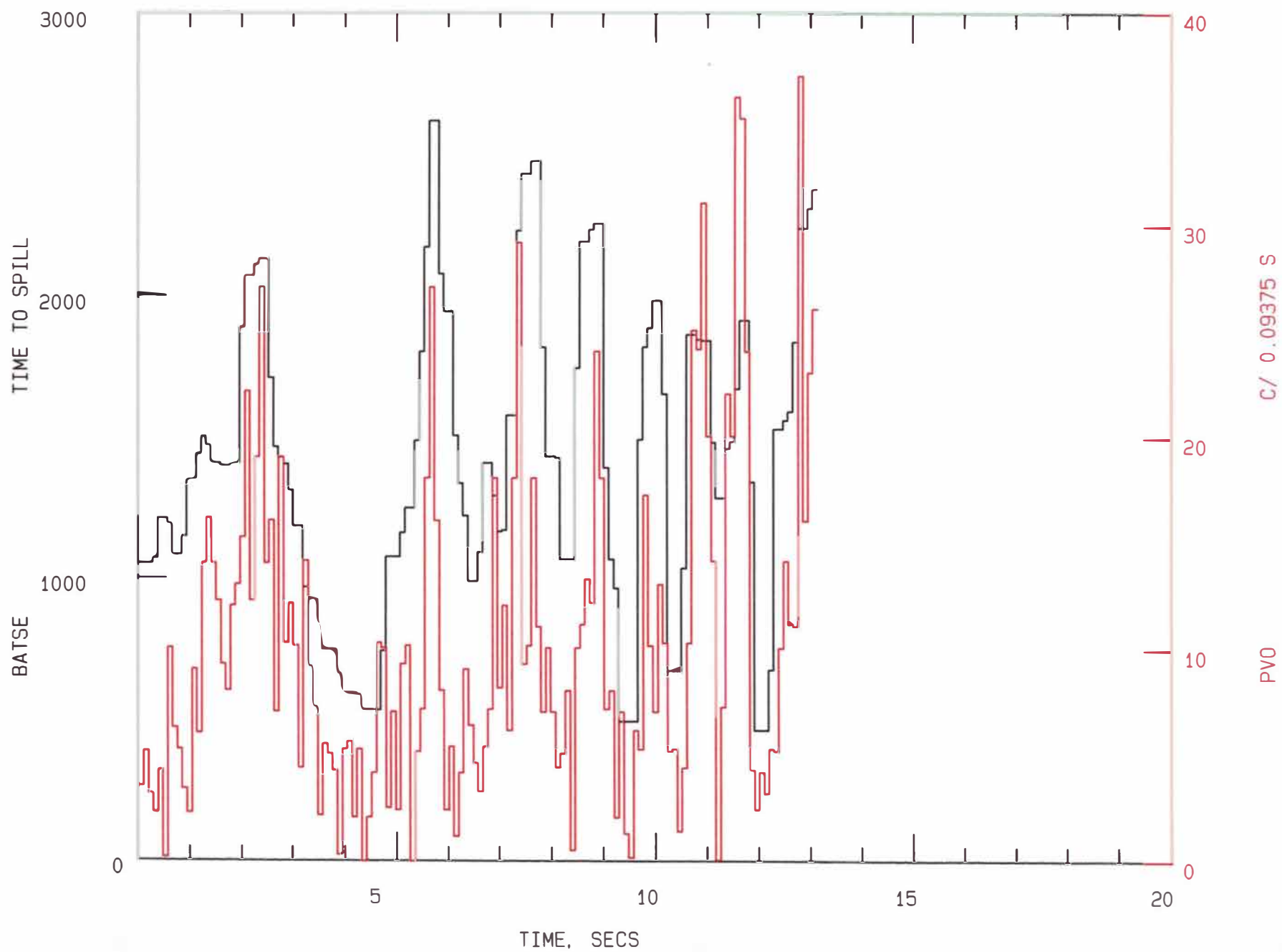
-PV0

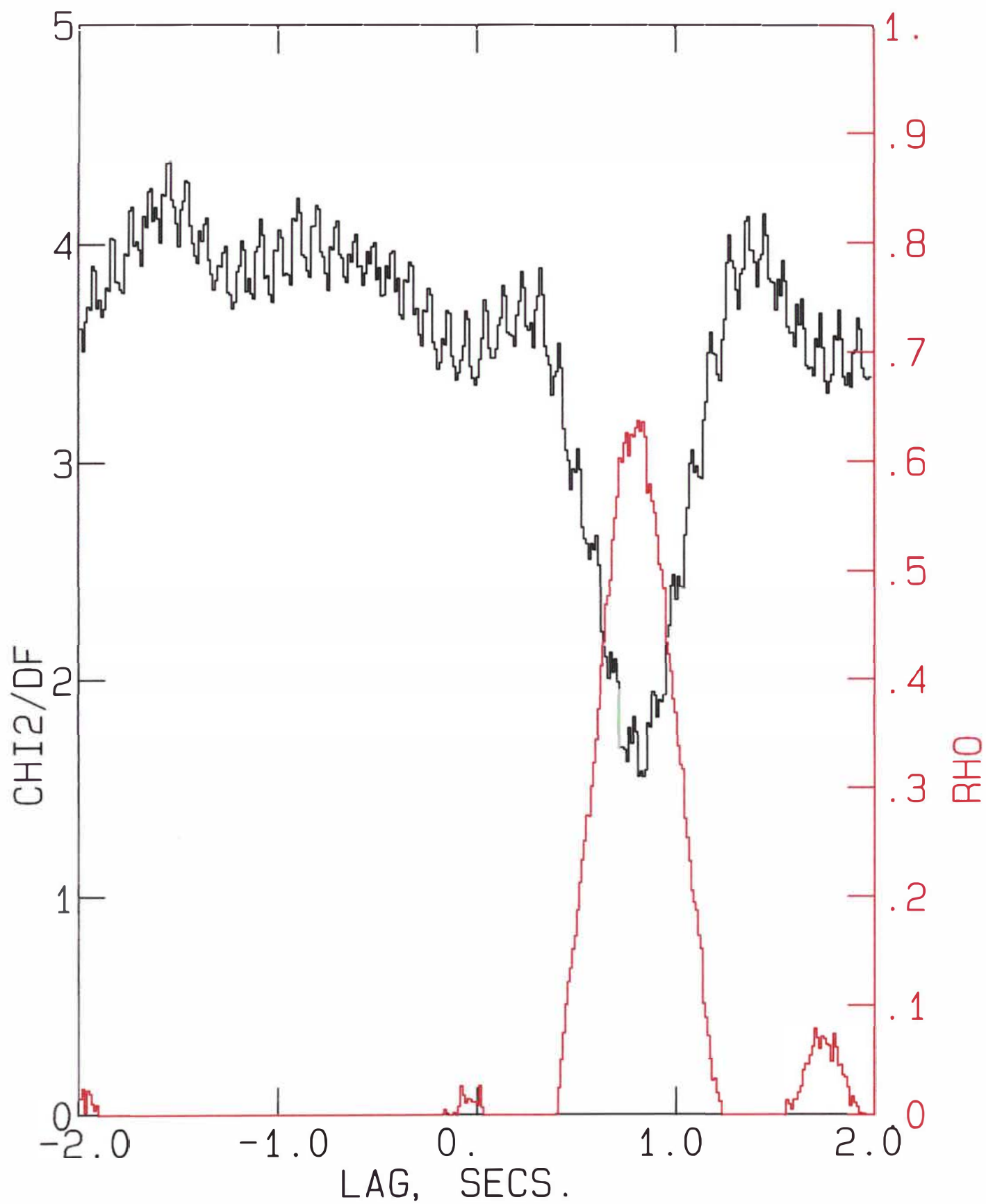
CORRELATION

1/ 5/92

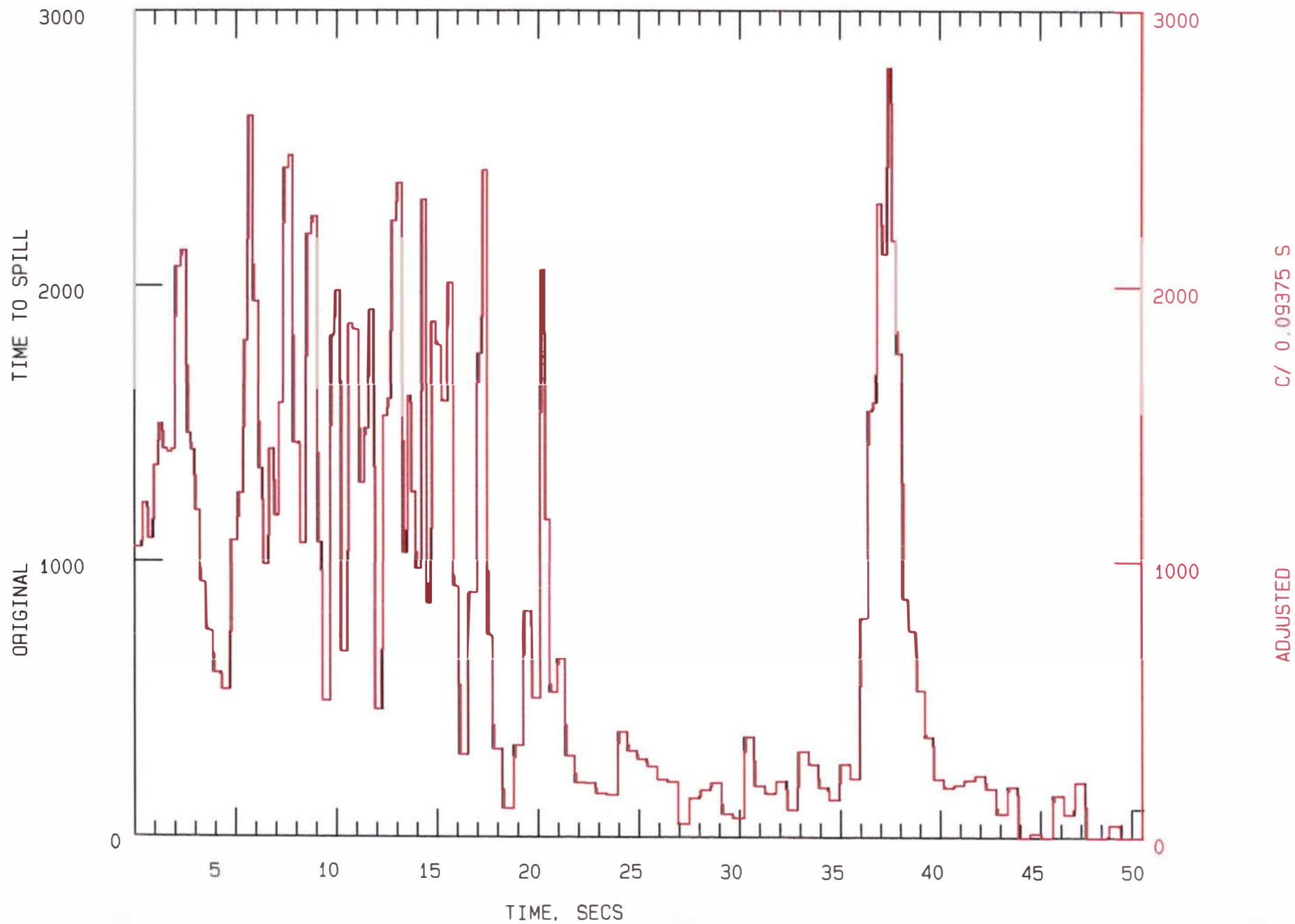
76694.661

24/12/96





24/12/96



PV0

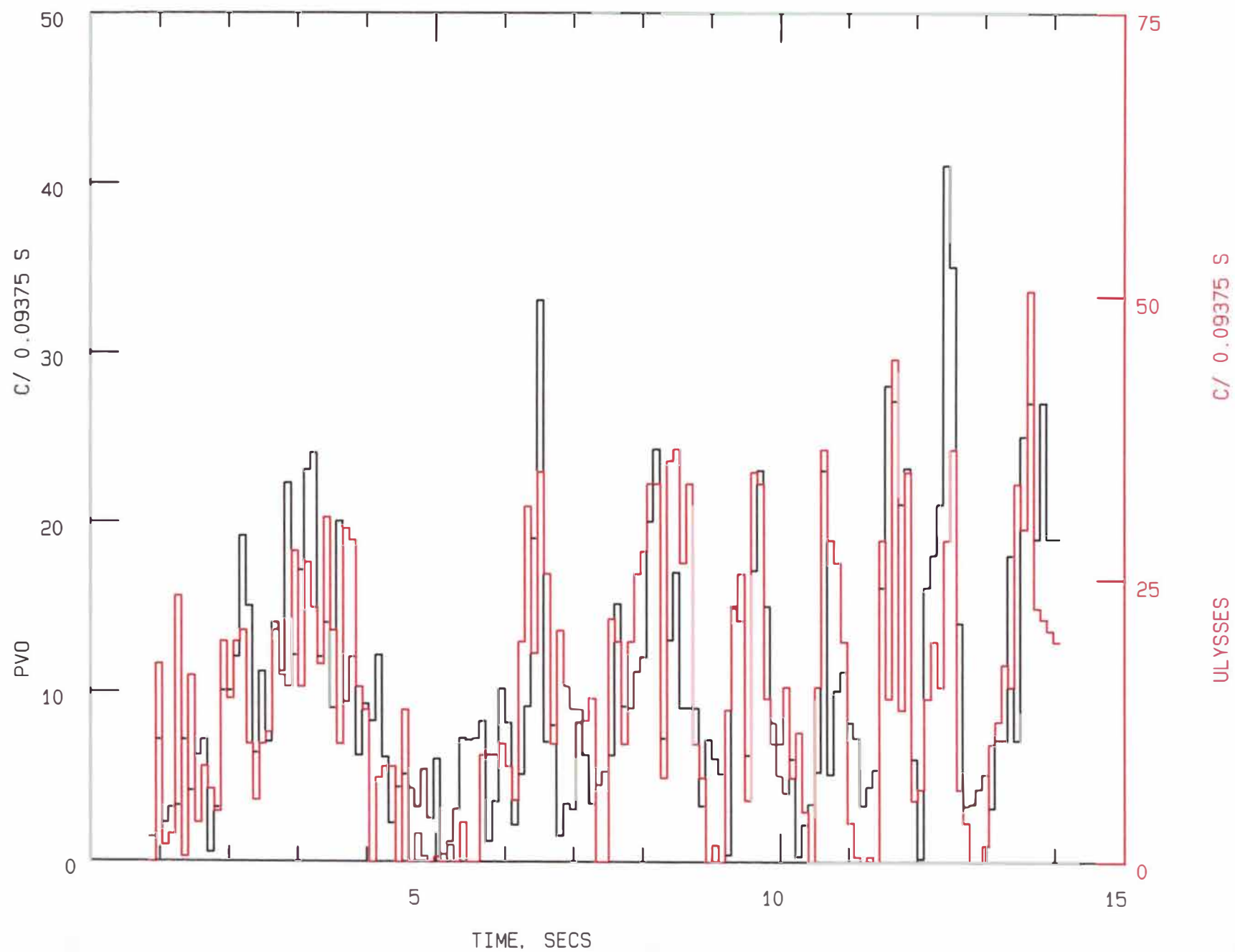
-ULYSSES

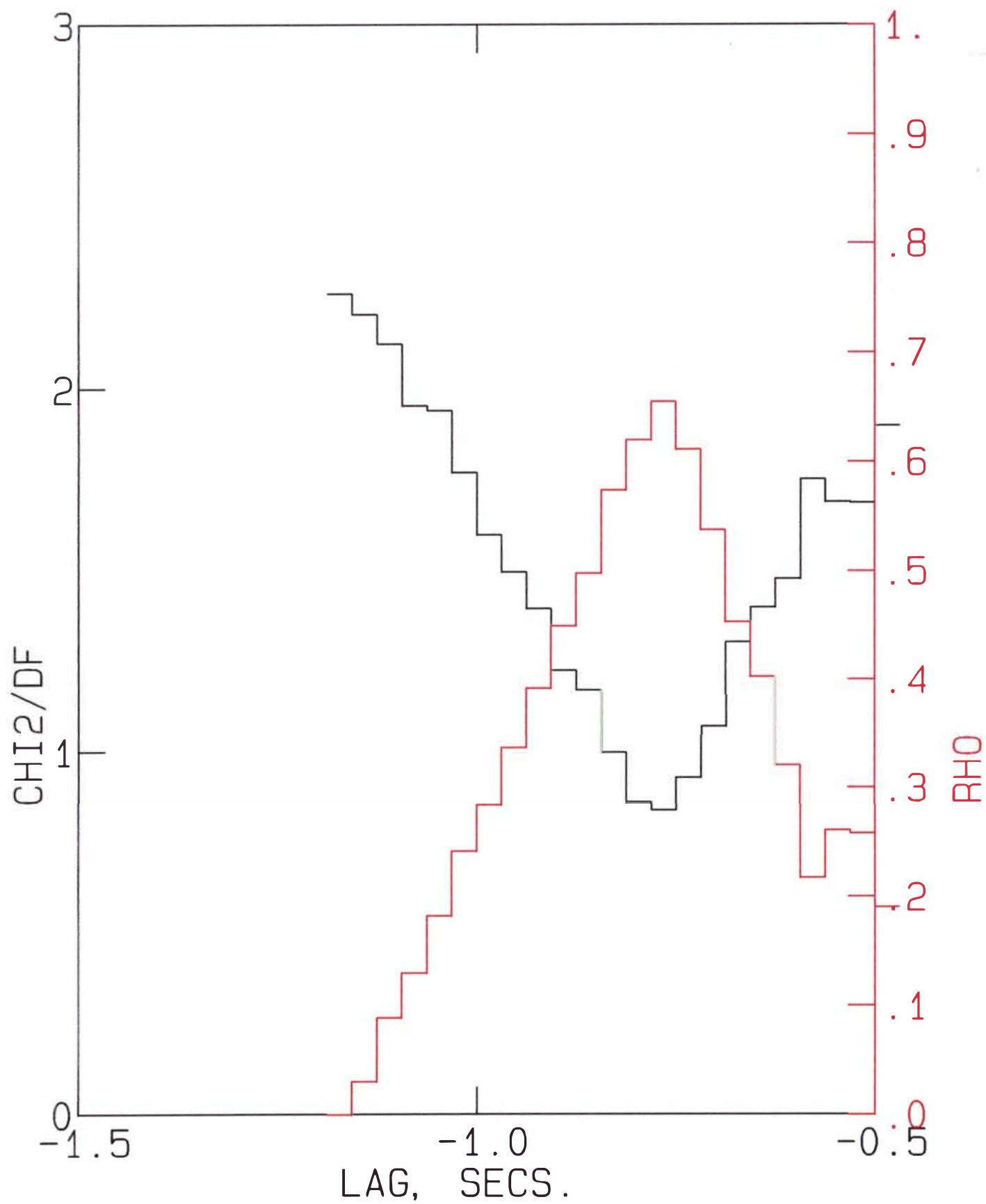
CORRELATION

01/05/92

76840.654

24/12/96





BATSE

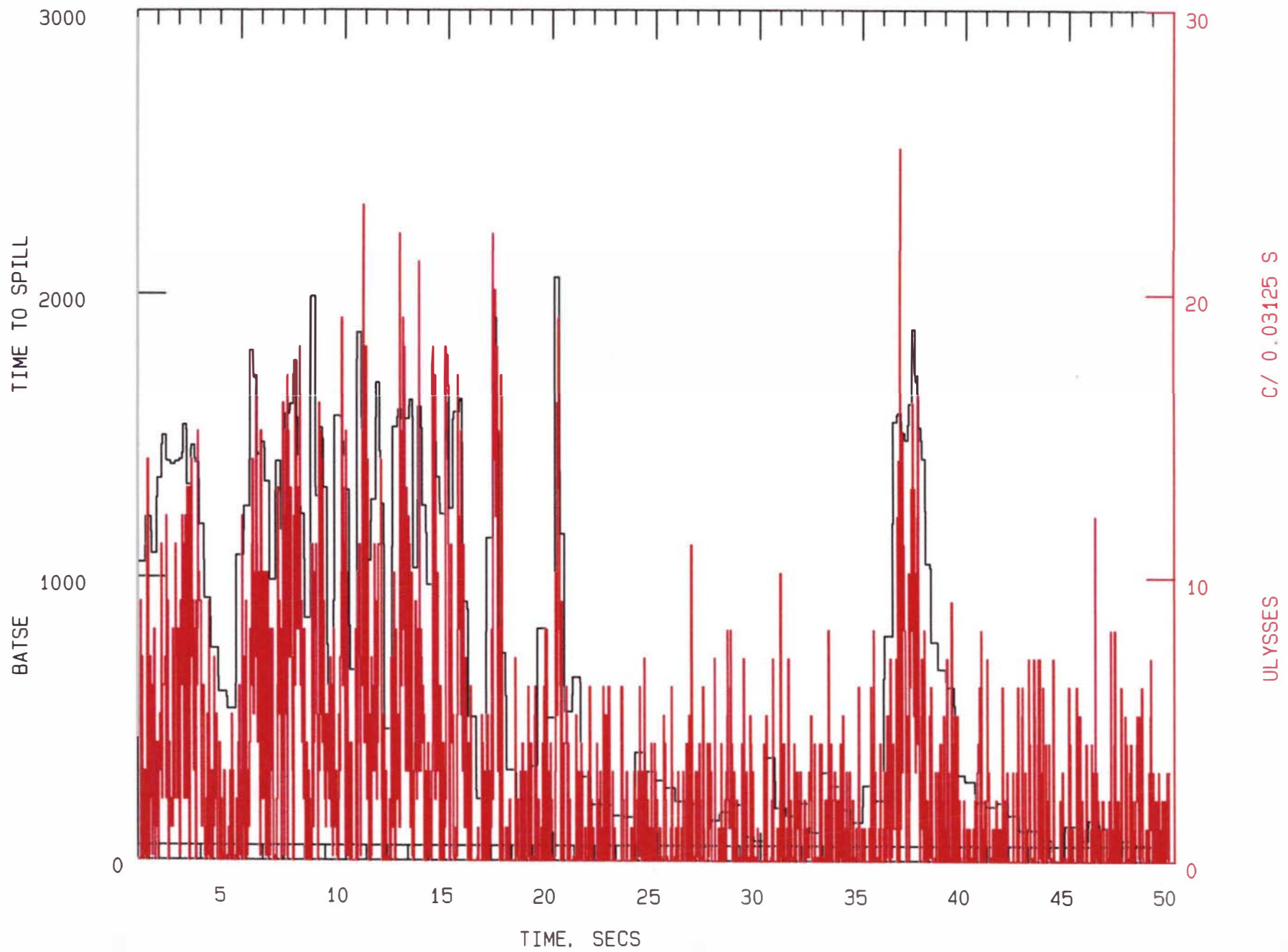
-ULYSSES

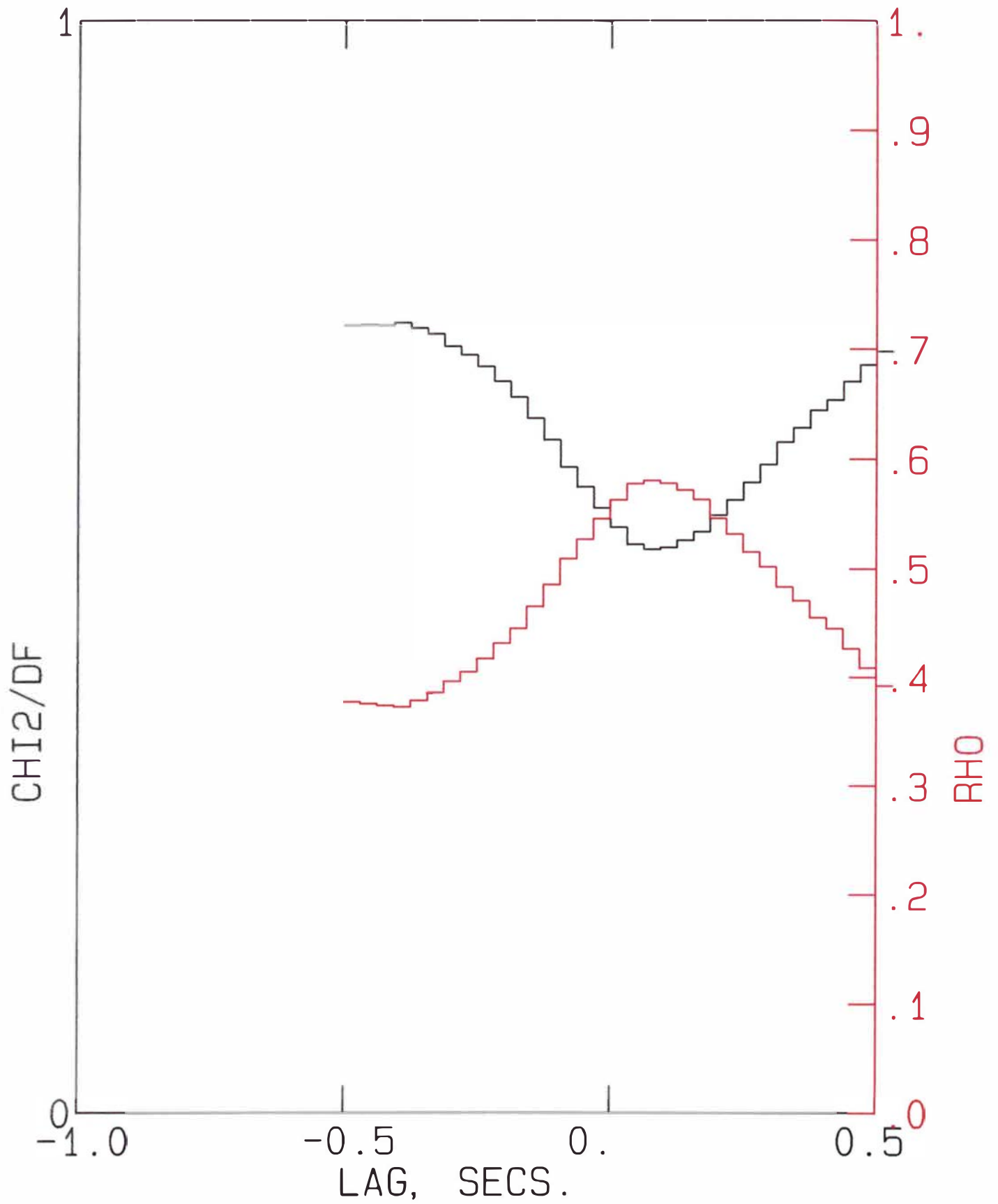
CORRELATION

1/ 5/92

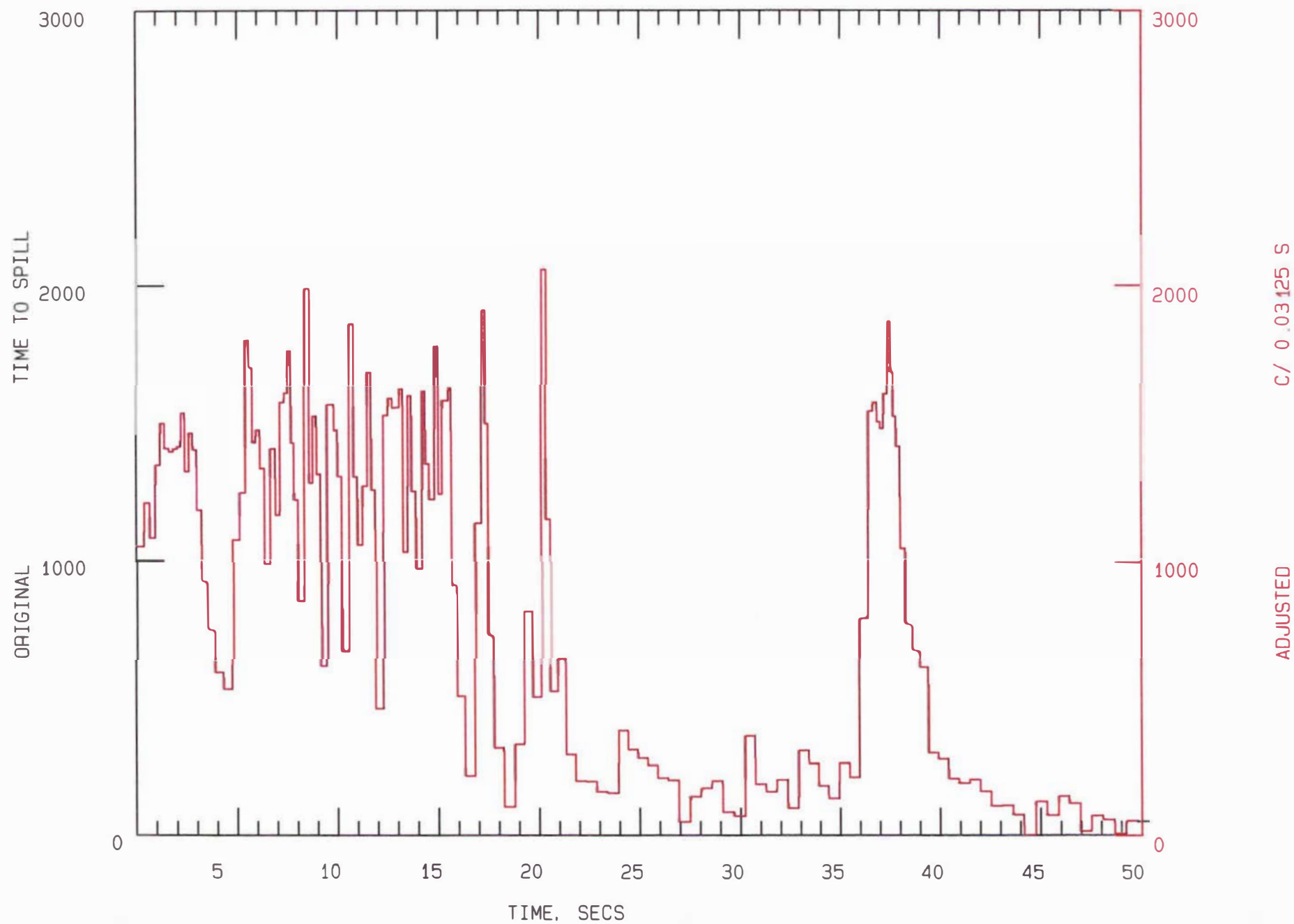
76694.661

24/12/96





24/12/96



BATSE

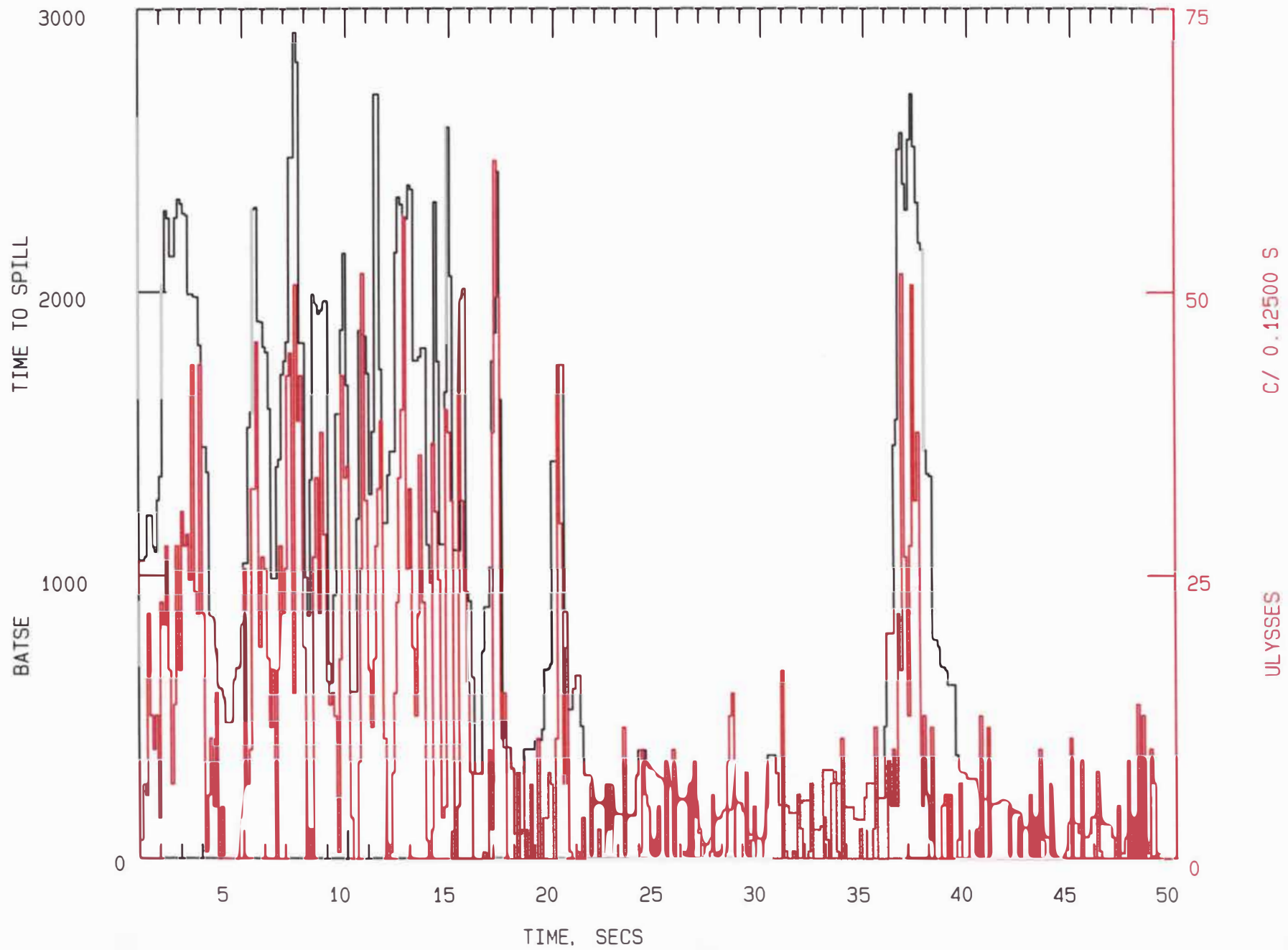
-ULYSSES

CORRELATION

1/ 5/92

76694.661

24/12/96



OLD

30/ 9/92

BATSE

-ULYSSES

CORRELATION

1/ 5/92

76694.661



OLD

BATSE

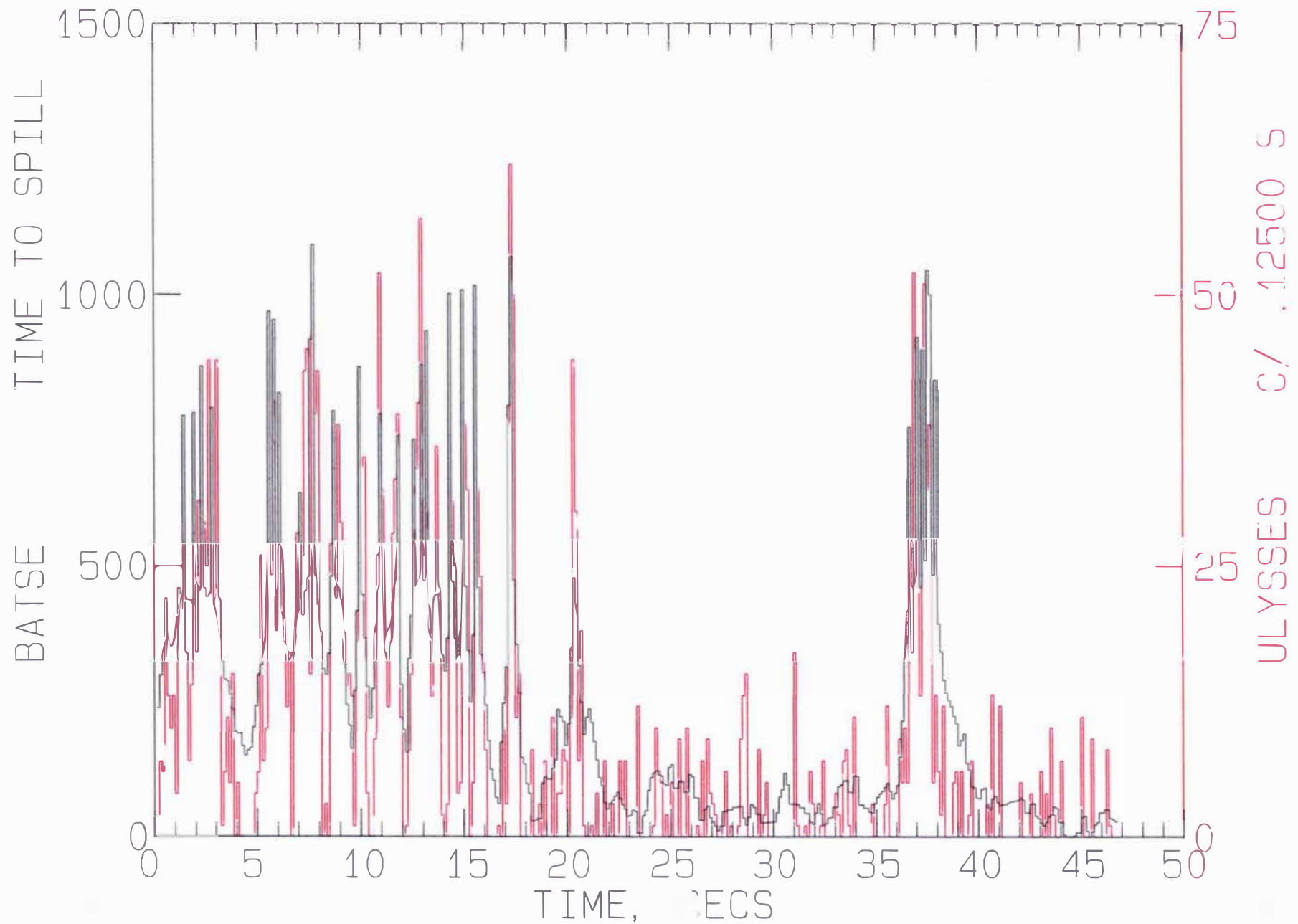
-ULYSSES

CORRELATION

1/ 5/92

76694.661

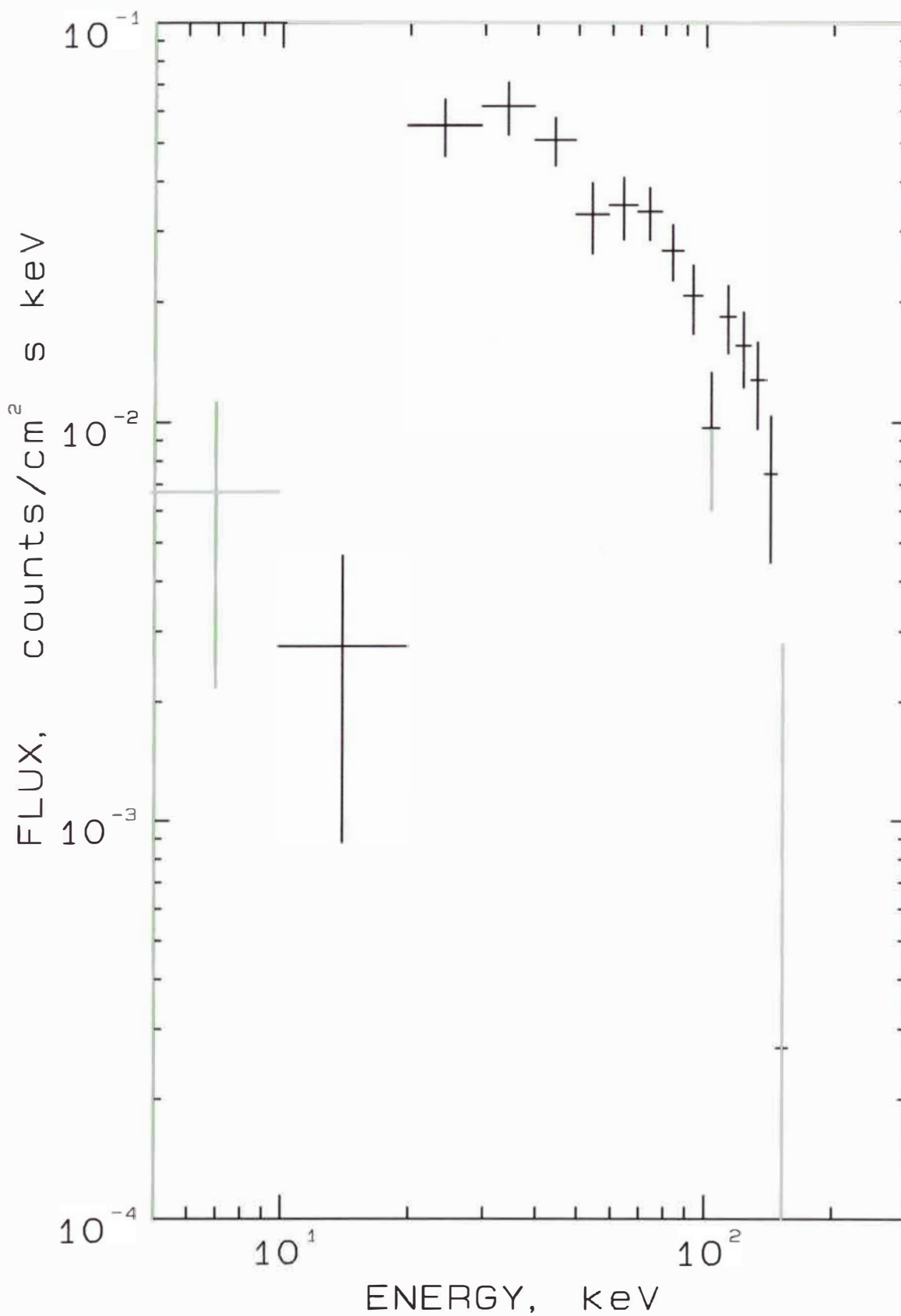
30/ 9/92



ULYSSES 01/05/92 75040.658

24/12/96

SPECTRUM INTEGRATED OVER 62.8 SECONDS, INTERVALS 2 TO 34



ULYSSES 01/05/92 75040.658 BURST SPECTRAL COUNT RATES

4- 19 keV

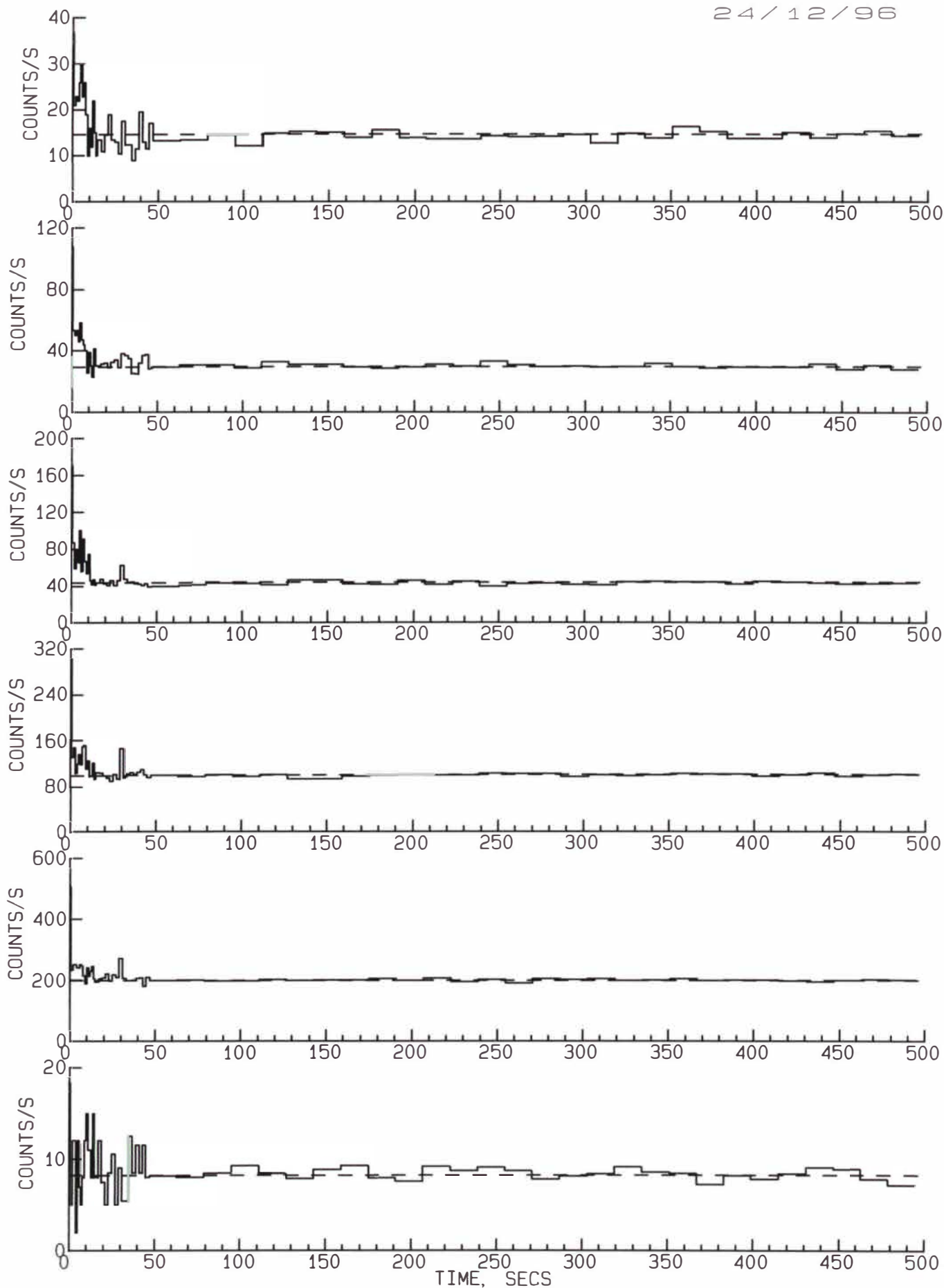
19- 49 keV

49- 78 keV

78-108 keV

108-137 keV

137-157 keV



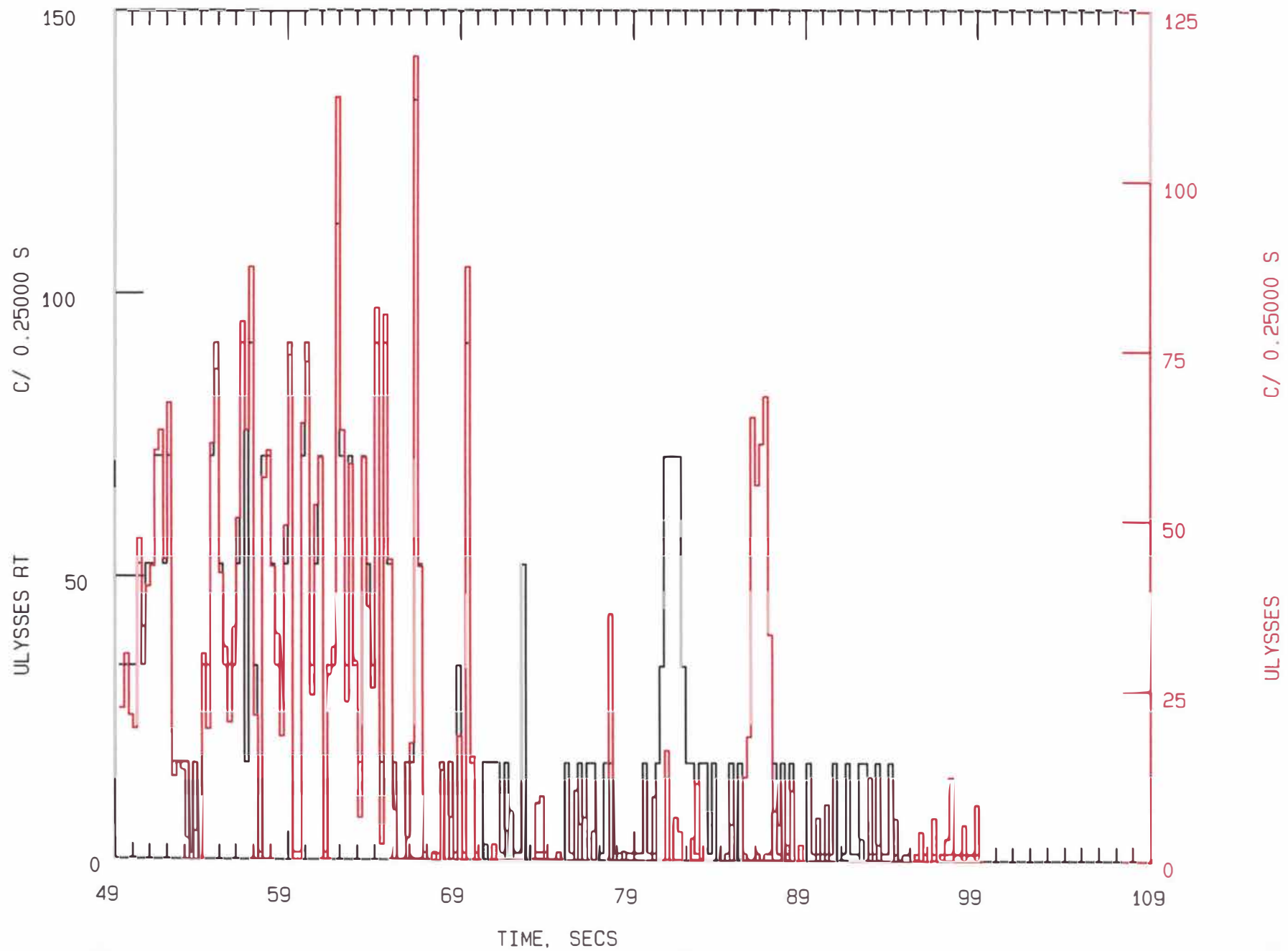
ULYSSES RT-ULYSSES

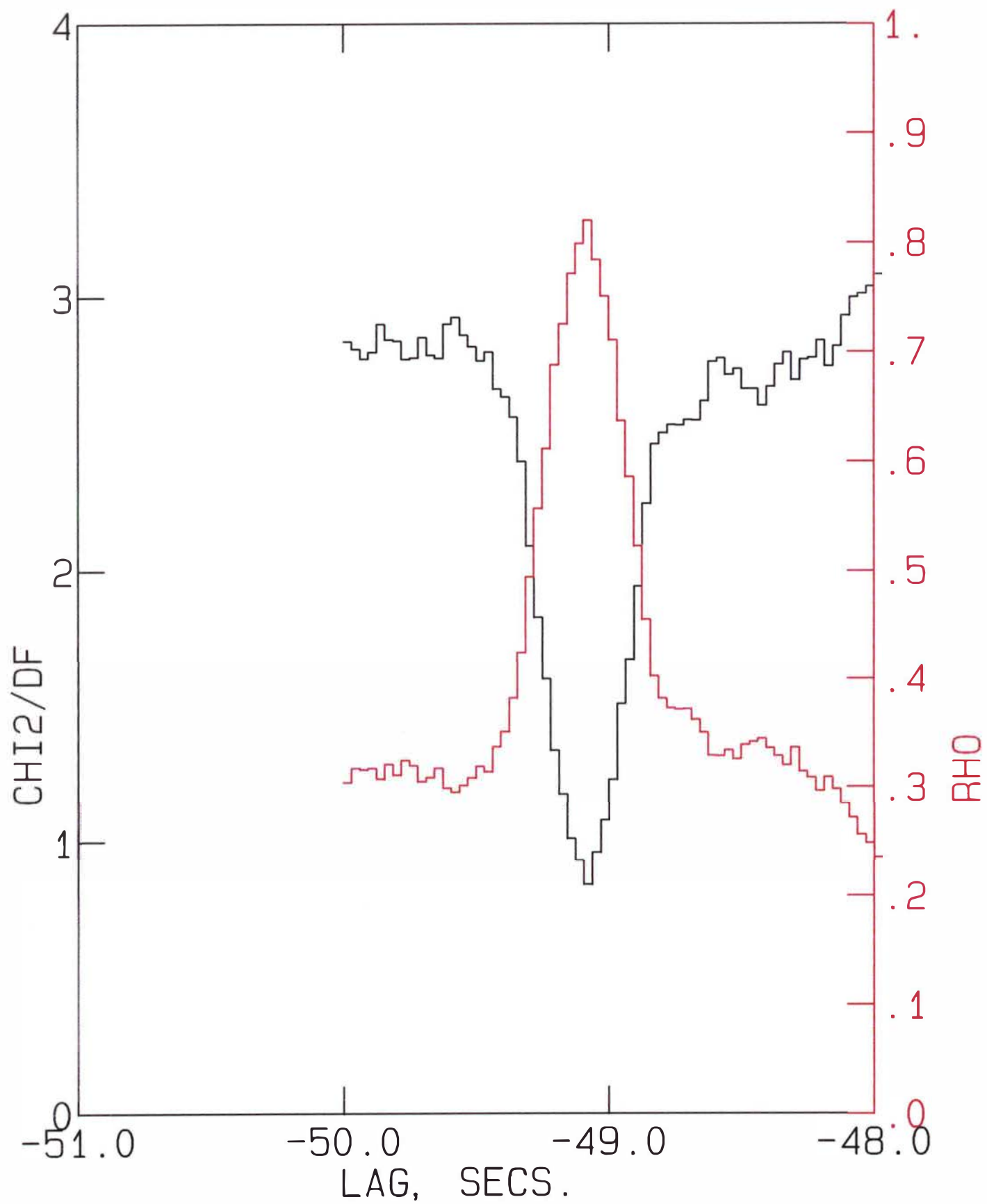
CORRELATION

1/ 5/92

74984.166

24/12/96





ULYSSES

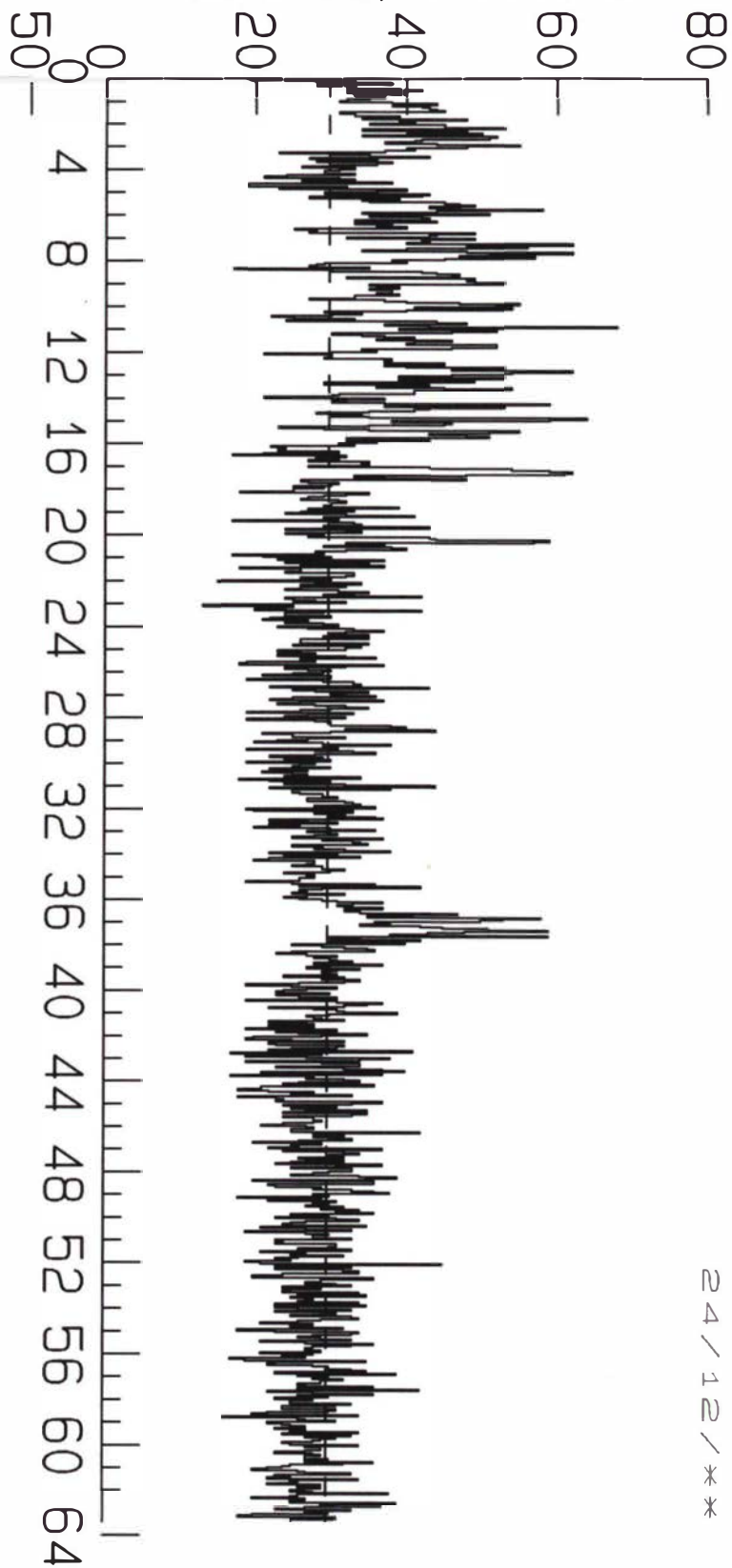
01/05/92

Ttrig=75040.671

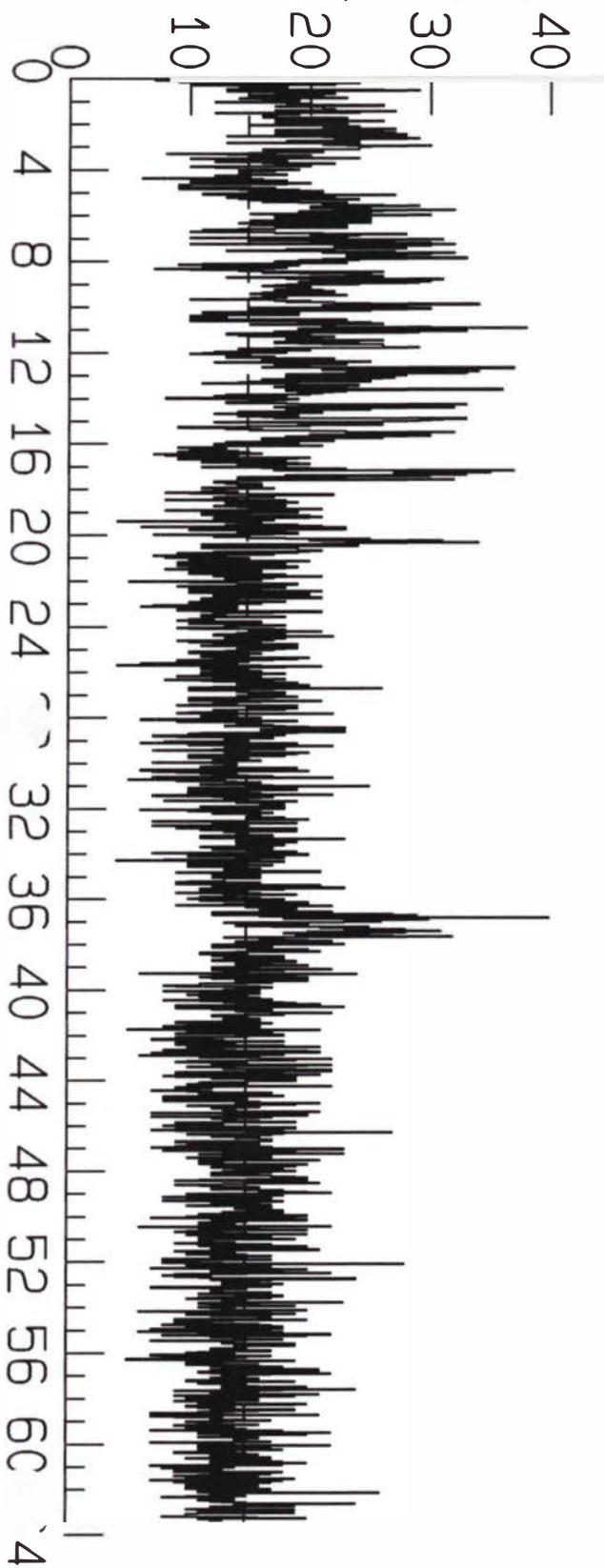
23- 158 keV

24/12/**

COUNTS/0.062 S



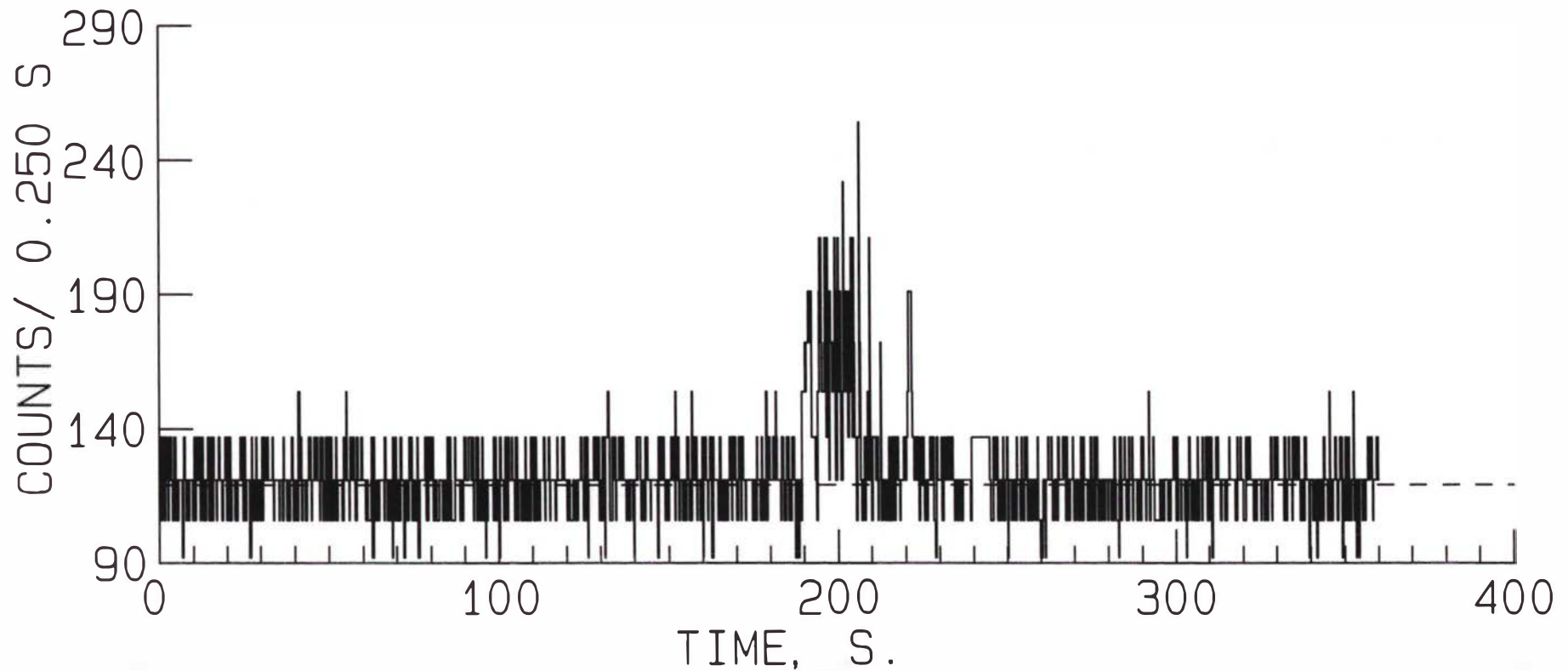
COUNTS/0.031 S



ULYSSES RT
1/ 5/92 74844.165 s
23- 158 keV

24/12/96

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From springer@pop.jpl.nasa.gov Mon Dec 9 06:37 PST 1996
From: Joe Springer <springer@pop.jpl.nasa.gov>
To: "'Kevin Hurley'" <khurley@sunspot.ssl.berkeley.edu>
Subject: RE: More times to check
>: Mon, 9 Dec 1996 06:37:26 -0800
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Kevin,

I checked a range ten minutes before to ten minutes after each of these points and found no timing errors.

How big is the 'big list'? You have previously provided one with 575 events. I shudder.

Joe

From: Kevin Hurley
Sent: Friday, December 06, 1996 5:53 PM
To: Joe.B.Springer@jpl.nasa.gov; khurley@sunspot.ssl.berkeley.edu
Cc: khurley@sunspot.ssl.berkeley.edu
Subject: More times to check

Dear Joe,

Before I hit you with the big list of events to check, I wanted to ask if you could check the following times. We are again writing paper on these, and need to get this straightened out quickly (i.e. within a couple of weeks).

Thanks

Kevin

Date	UT (secs)
January 22 1991	55142
February 19 1991	42204
April 21 1991	34040
April 30 1991	60428
May 07 1991	53768
May 11 1991	08090
May 22 1991	43556
June 19 1991	55254
June 27 1991	15335
July 17 1991	17265
July 18 1991	09076
August 14 1991	70996
October 05 1991	26852
October 16 1991	41542
October 31 1991	35550
November 04 1991	52695
November 09 1991	11321
November 18 1991	66112
November 26 1991	43717
December 02 1991	71640
February 18 1992	68388
February 20 1992	49020

February 26 1992 30348
March 08 1992 17470
March 11 1992 07038
March 20 1992 45256
March 25 1992 64261
March 31 1992 66408
April 04 1992 49443
April 06 1992 11150
April 14 1992 84300
May 01 1992 75040
May 17 1992 10549
May 17 1992 50706
May 19 1991 60996
May 25 1992 14411
July 11 1992 58470
July 14 1992 46275
July 20 1992 09807
July 20 1992 18344
July 23 1992 73955

From root Wed Sep 7 07:48 1994
 Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
 id AA06345; Wed, 7 Sep 94 07:48:09
 Received: from TGRS.GSFC.NASA.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
 id AA24196; Wed, 7 Sep 1994 07:59:00 +0800
 Date: Wed, 7 Sep 1994 07:59:00 +0800
 Message-Id: <9409071459.AA24196@sunspot.ssl.berkeley.edu>
 Received: from [128.183.8.198] ([128.183.8.198]) by TGRS.GSFC.NASA.GOV with SMTP;
 Wed, 7 Sep 1994 11:04:04 -0400 (EDT)
 Mime-Version: 1.0
 Content-Type: text/plain; charset="us-ascii"
 To: KHURLEY@space6.ssl.berkeley.edu
 From: cline@tgrs.gsfc.nasa.gov (T L Cline)
 Subject: Ulysses 3-spacecraft event input data
 Content-Length: 2811
 Status: R

KEVIN:

Here is the 2000-equinox and Sun-time conversion table for the data you sent,
 with accuracy to one second and/or light second. I am messing around with a
 few events, but still don't have Laros data, as you know, for the last few.
 No surprises or major errors have been uncovered. Question: Anything new
 or of breakthrough significance from the conferences? - TLC

```

-----
1991  4 21 113.2608 23.4971      34040.305
          114.0119 23.3855 -0.135 34040.170 1378.693
event
1991  4 30 116.1729 22.9446      60378.427
          116.9185 22.8202 -0.142 60378.285 1488.041
event
1991  5  3 116.9858 22.7835      24143.572
          117.7299 22.6556 -0.144 24143.428 1518.173
event
1991  5 22 123.0661 21.4768      43556.351
          123.7977 21.3234 -0.149 43556.202 1737.717
event
1991  6 27 134.1165 18.6189      15334.664
          134.8236 18.4239 -0.124 15334.540 2103.168
event
1991  7 17 140.0115 16.8382      17265.301
          140.7054 16.6238 -0.089 17265.212 2272.113
event
1991  8 14 147.8796 14.2022      70976.031
          148.5569 13.9655 -0.016 70976.015 2454.177
event
1991 11  4 164.7180  7.7939      52695.431
          165.3682  7.5249  0.217 52695.648 2527.808
event
1991 11  9 165.2888  7.5681      11321.862
          165.9383  7.2984  0.224 11322.086 2514.175
event
1991 11 18 166.3305  7.1593      66112.979
          166.9789  6.8884  0.236 66113.215 2480.950
event
1991 11 26 166.9834  6.9076      43717.172
          167.6312  6.6360  0.241 43717.413 2450.974
event
1992  3 11 156.4982  9.1383      7038.075
          157.1561  8.8824 -0.055 7038.020 2213.119
event

```

1992	3	25	153.5174	9.3668		64261.613	
			154.1779	9.1169	-0.118	64261.495	2260.354
event							
1992	4	6	151.5806	9.4338		11128.491	
			152.2426	9.1882	-0.162	11128.329	2318.519
event							
1992	5	1	148.8008	9.1566		75040.670	
			149.4640	8.9176	-0.234	75040.436	2497.670
event							
1992	5	17	148.2303	8.7103		10549.835	
			148.8928	8.4728	-0.257	10549.578	2619.504
event							
1992	5	25	148.2227	8.3959		14411.494	
			148.8844	8.1584	-0.261	14411.233	2684.313
event							
1992	7	11	151.3011	5.5653		58453.215	
			151.9542	5.3203	-0.197	58453.018	3009.551
event							
1992	7	18	152.1018	5.0060		79135.445	
			152.7533	4.7592	-0.175	79135.270	3043.801
event							
1992	7	20	152.2398	4.9105		9807.222	
			152.8911	4.6634	-0.171	9807.051	3048.967
event							
1993	7	6	145.7214	-11.6627		20275.572	
			146.3295	-11.8936	-0.171	20275.401	2546.013

-- T. L. Cline ----- LHEAVX::CLINE

From sammy@astro.ucla.edu Thu Dec 5 10:39 PST 1996
From: sammy@astro.ucla.edu
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Subject: Re: IPN3
Date: Thu, 05 Dec 96 10:39:35 -0800
X-Mts: smtp

Good idea about doing a final check. Here is my target list:

910122✓
910219✓
911118 *Re-do - JL's + my PVO times disagree by 1.4s ✓*
920325✓
920406✓
920501✓
920525✓
920711✓
920720✓
920723✓

I believe that 920406 was further reduced. You sent me the new, smaller box for that, but I decided to stick with the larger box because I want a consistent sample of boxes and the others weren't further reduced.

I'm glad I asked you about the aberration - I never would have thought of that!

Sammy

From root Fri Jul 16 15:29 1993
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA07838; Fri, 16 Jul 93 15:29:21
Received: from UCBSP.SSL.BERKELEY.EDU by sunspot.ssl.berkeley.edu (4.1/1.30.1)
id AA21891; Fri, 16 Jul 93 15:30:05 PDT
Message-Id: <9307162230.AA21891@sunspot.ssl.berkeley.edu>
Date: Fri 16 Jul 93 15:31:54-PST
From: SC <046369@essdp2.span.nasa.gov>
To: KHURLEY@sunspot.ssl.berkeley.edu
Subject: [Resent-MM Mail] DMSP GAMMA-RAY BURST DATA
Status: R

Received: from ESSDP2 by UCBSP.SSL.BERKELEY.EDU via MAIL-11 with
DECnet; Fri, 16 Jul 93 15:31:29-PST
Date: Fri 16 Jul 93 15:31:29-PST
From: 046369@ESSDP2.SPAN.NASA.GOV
Subject: DMSP GAMMA-RAY BURST DATA
To: "UCBSP::HURLEY"@ESSDP2.SPAN.NASA.GOV

FROM: ESSDP2::TERRELL (JAMES TERRELL, LOS ALAMOS NATL LAB)
TO: UCBSP::HURLEY (KEVIN HURLEY)
CC:
SUBJ: DMSP GAMMA-RAY BURST DATA, AS OF 16 JULY 1993

HERE ARE SOME NOTES CORRECTING DMSP PEAKTIMES FOR YOUR MASTER BURST LIST.
I HAVE MORE GRAPHS AND INFO TO SEND, BUT HAVE RUN OUT OF TIME.
I WILL SEND MORE INFO AFTER RETURNING 28 JULY--JIM.

27SEP91 84415 YES (8SAA, 9YES, 10SAA)
16OCT91 36696 YES (8SAA, 9YES, 10NR)
4NOV91 54286 YES (8SR, 9YES, 10YES)
27NOV91 15739 YES (8NO, 9NO, 10YES)
2DEC91 73733 YES (8YES, 9NO@144DEG, 10NR)
9DEC91 66959 N/O (8SR, 9SR, 10NR, 11ND)
21DEC91 22686 YES (8ND, 9NO, 10NO, 11YES)
10JAN92 33478 NA (BLANK) (8ND, 9NA, 10SAA, 11NA)
10FEB92 35633 YES (8NO, 9WEAK, 10SAA, 11SAA)
6APR92 9855 N/O (OBSCURED) (8NO@141, 10SR, 11NO@137DEG)
1MAY92 76696 N/O (OBSCURED) (8NO@127, 10NO@157, 11NO@147DEG)
22JUN92 25506 N/O (8SAA, 10NR, 11SA)
28JUN92 76452 YES (8ND, 10YES, 11NO)
29JUN92 75897 YES (ALL YES, SOFT)
14JUL92 47069 NA (BLANK) (8NA, 10SAA, 11SR)
16JUL92 60933 YES (9NO, 10YES, 11YES)
20JUL92 11524 N/O (OBSCURED) (8NA@130, 10NA@145, 11SR)
23JUL92 72188 N/O (OBSCURED) (8ND, 10NA@148, 11NR)
10AUG92 79599 YES? (8YES?, 10NA, 11NA) (LONG SOFT PEAK)
4OCT92 50421 YES (8YES, 10YES, 11SR)
23NOV92 22727 YES (8YES, 10YES, 1SR) (NOT AT 22712)
23NOV92 46542 YES (8NR, 10SR, 11YES) (NOT AT 46584, BATSE GRB)
7DEC92 57649 YES (8YES, 10YES, 11YES)
6JAN93 55260 YES (8SAA, 10YES, 11SR)
12JAN93 55082 YES (8YES, 10NO@138, 11VERYWEAK) (8:BIG PEAK AT 55202)
20JAN93 84779 YES (8YES, 10, YES, 11YES) (NO, AT 84700!)

From kouveliotou%batse.span@Sdsc.Edu Mon Mar 8 11:11:56 1993
Date: Mon, 8 Mar 93 19:13:09 GMT
From: kouveliotou%batse.span@Sdsc.Edu (Chryssa Kouveliotou NASA/MSFC (205) 544-7711)
Subject: can you please answer him?
To: khurley@sunspot.ssl.berkeley.edu
X-St-Vmsmail-To: HURLEY
Content-Length: 533

From: EAST::"bmcmamar@NMSU.Edu" 8-MAR-1993 13:02:05.16
To: batse::kouveliotou
CC:
Subj: Re: grb 930305

Chryssa

I have the following interplanetary network coordinates:

burst	a(2000)	dec(2000)	
	17.9	44 39.3	
grb920501	8 15 22.1	-32 45-54.0	(ROSA)
	33 16.22	-16 41 13	
grb920517	13 23 59.0	-21-53-25.1	
	03 29	42 31 23	
grb920525	20 09 46.1	-43 36-47.1	

These are the values I got while in Huntsville last summer. Has there been any change in the positions of these bursts?

best wishes

bernie mcnamara

From khurley@space6.ssl.berkeley.edu Wed Mar 10 09:11:35 1993
Date: Wed, 10 Mar 93 09:02:51
From: khurley@space6.ssl.berkeley.edu
Content-Length: 561
Status: RO
X-Lines: 18

Dear Bernie,

Chryssa has forwarded your question about the three May 92 events to me. There have been some substantial changes to the positions you quote. I'm not sure exactly how you got the old positions, but the new ones are:

	a(2000)	d(2000)
May 1 92	8 15 18	-32 44 39
May 17 92	13 33 16	-16 41 13
May 25 92	20 03 29	-42 34 23

It's always a good idea to check with me before you commit any telescope time to GRB error boxes, since positions are being updated more or less constantly as the data are refined.

Kevin

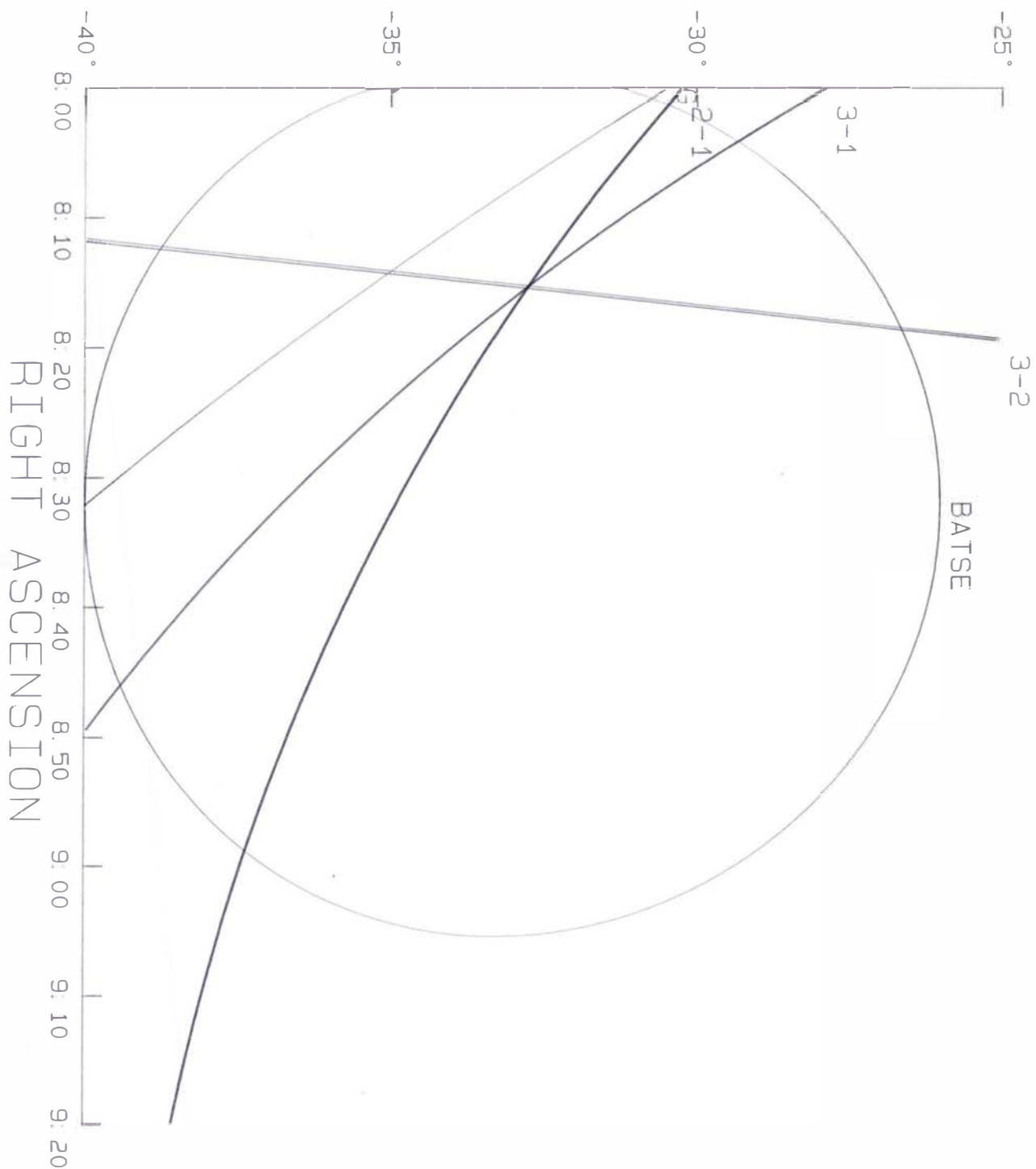
cc: C. Kouveliotou

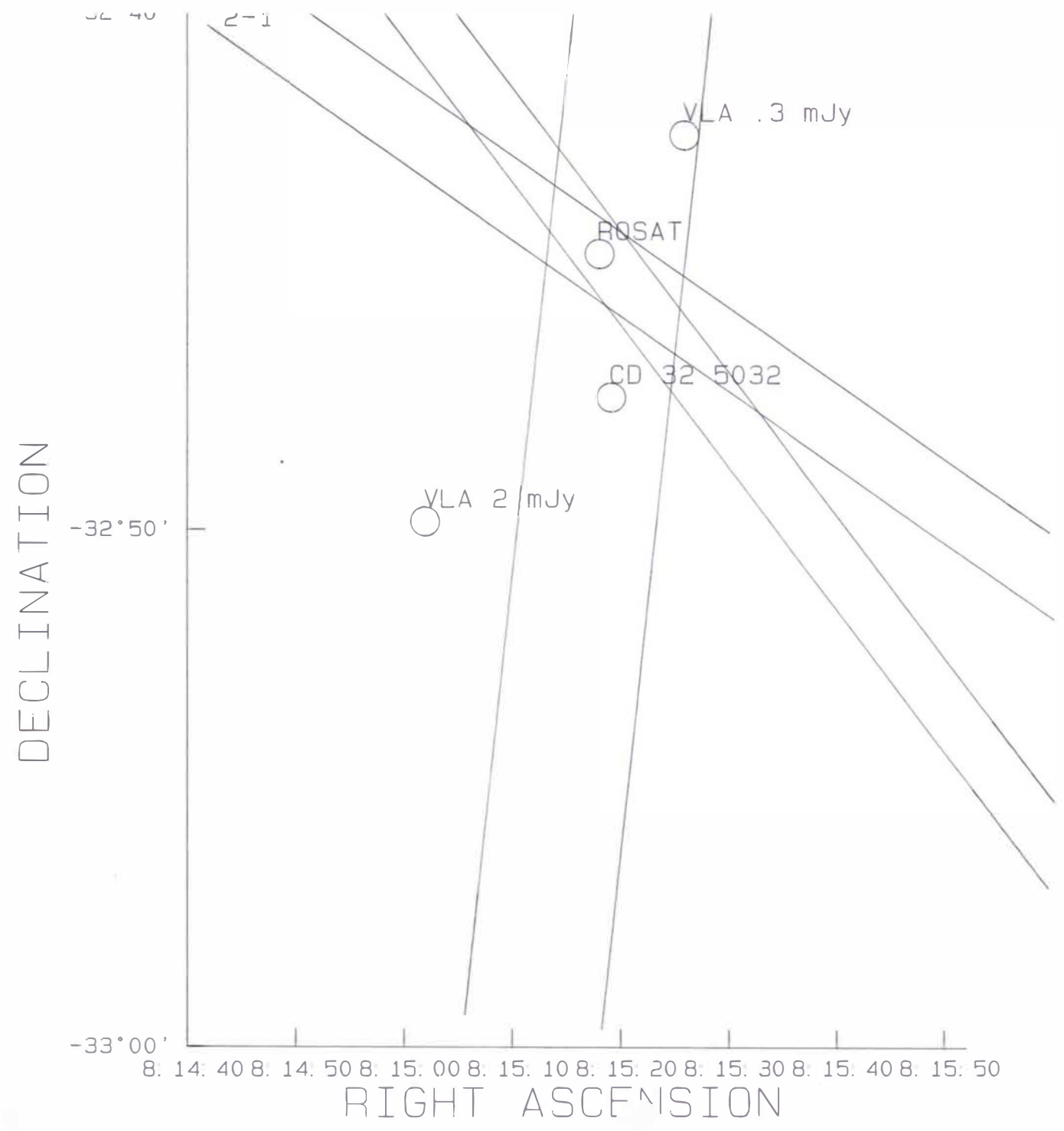
EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 BATSE 3 PVO

DECLINATION

EVENT OF MAY 1, 1992 20:50

20/ 1/93





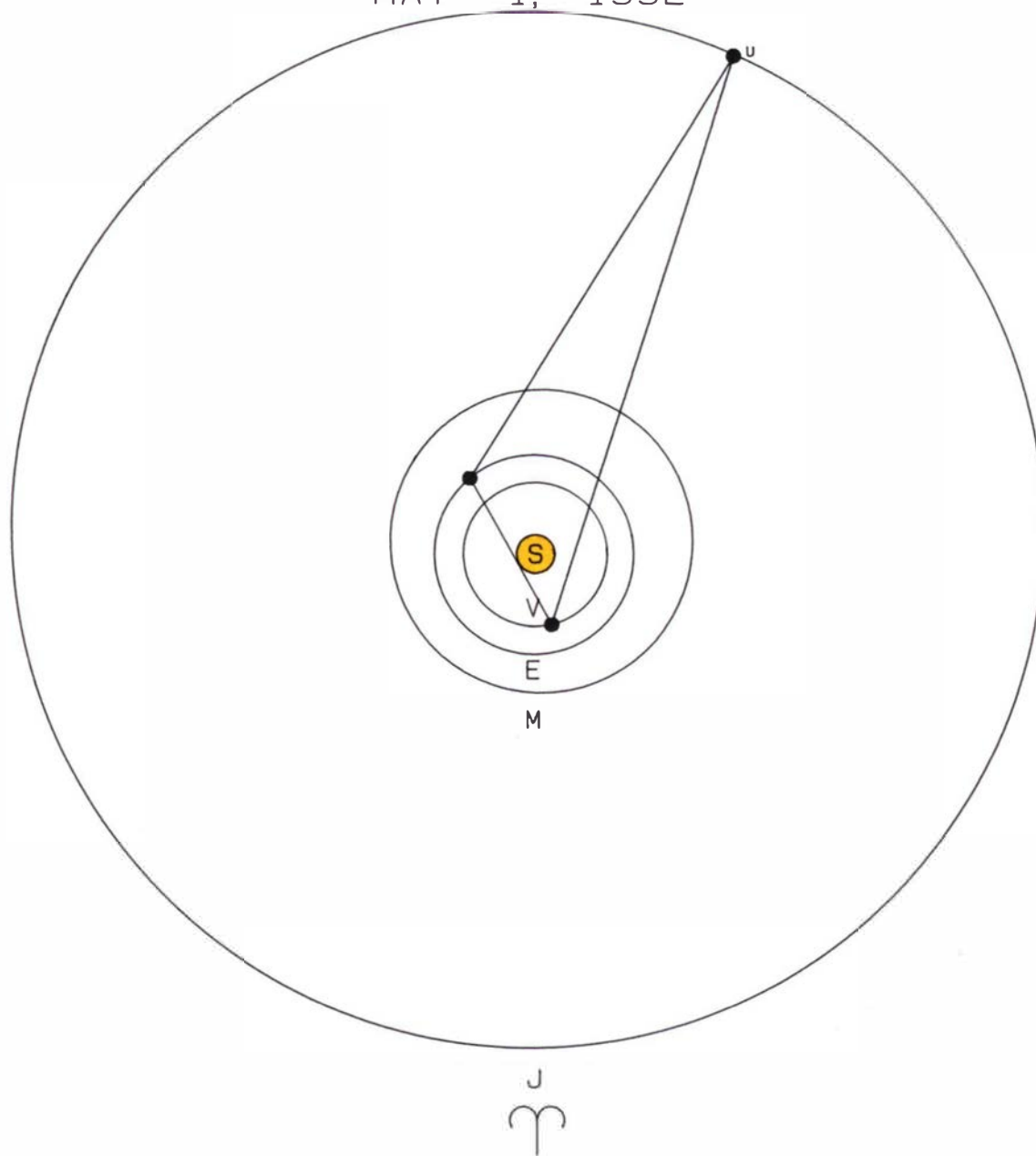
From @space6.ssl.berkeley.edu,@star.stanford.edu:068486@ESSDP2.SPAN Sat May 9 07:58:36 1992
Date: Sat 9 May 92 07:59:24-PST
From: 068486%ESSDP2.SPAN@star.stanford.edu
Subject: RE:
To: khurley@space6.ssl.berkeley.edu
Content-Length: 122

Kevin,

I calculate a trigger time of 76840.655 UTS for GB920501. That places the start-of-record at 76837.655 UTS.

Ray

ULYSSES ORBIT - ECLIPTIC PLANE PROJECTION
MAY 1, 1992



PV0

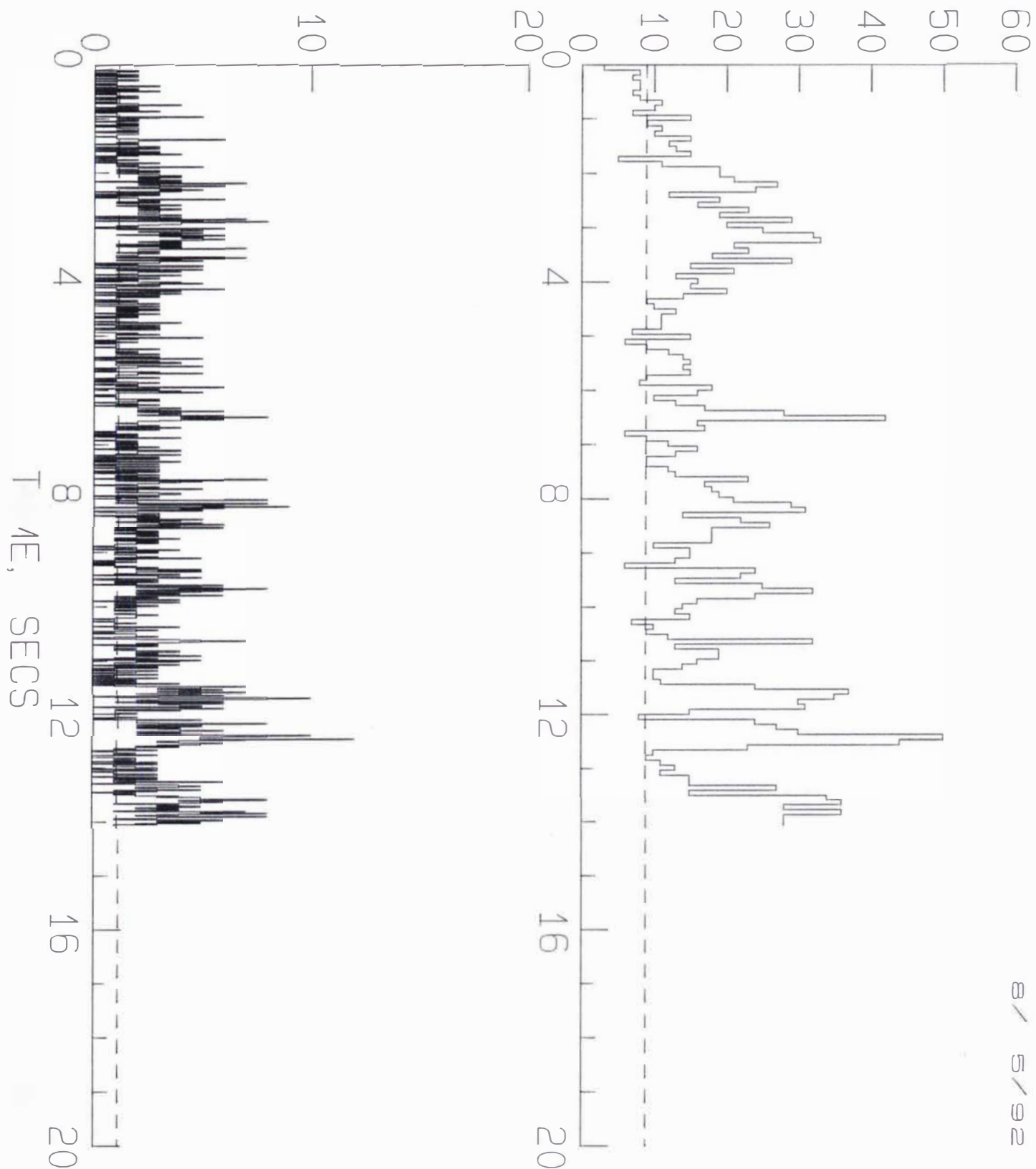
01/05/92

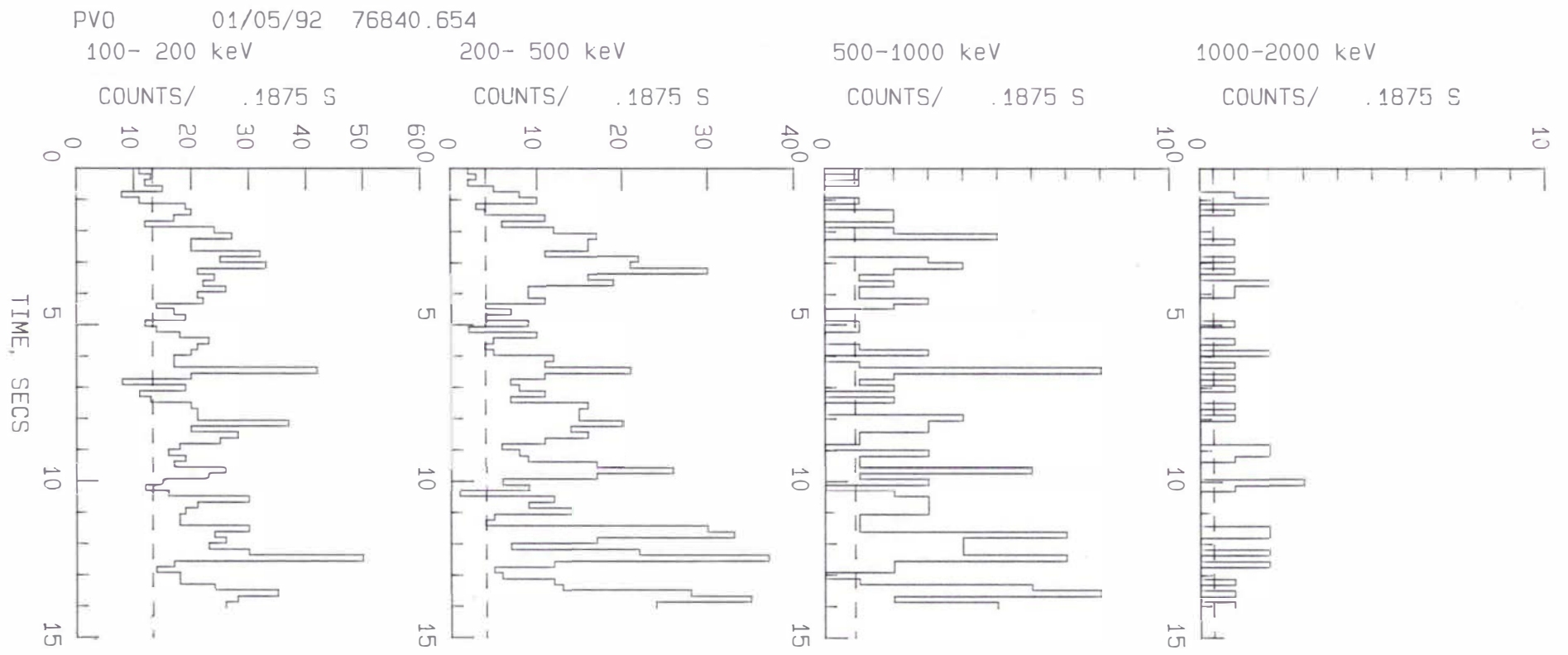
76840.654

100-2000 keV

COUNTS/ .012 S

COUNTS/ .094 S





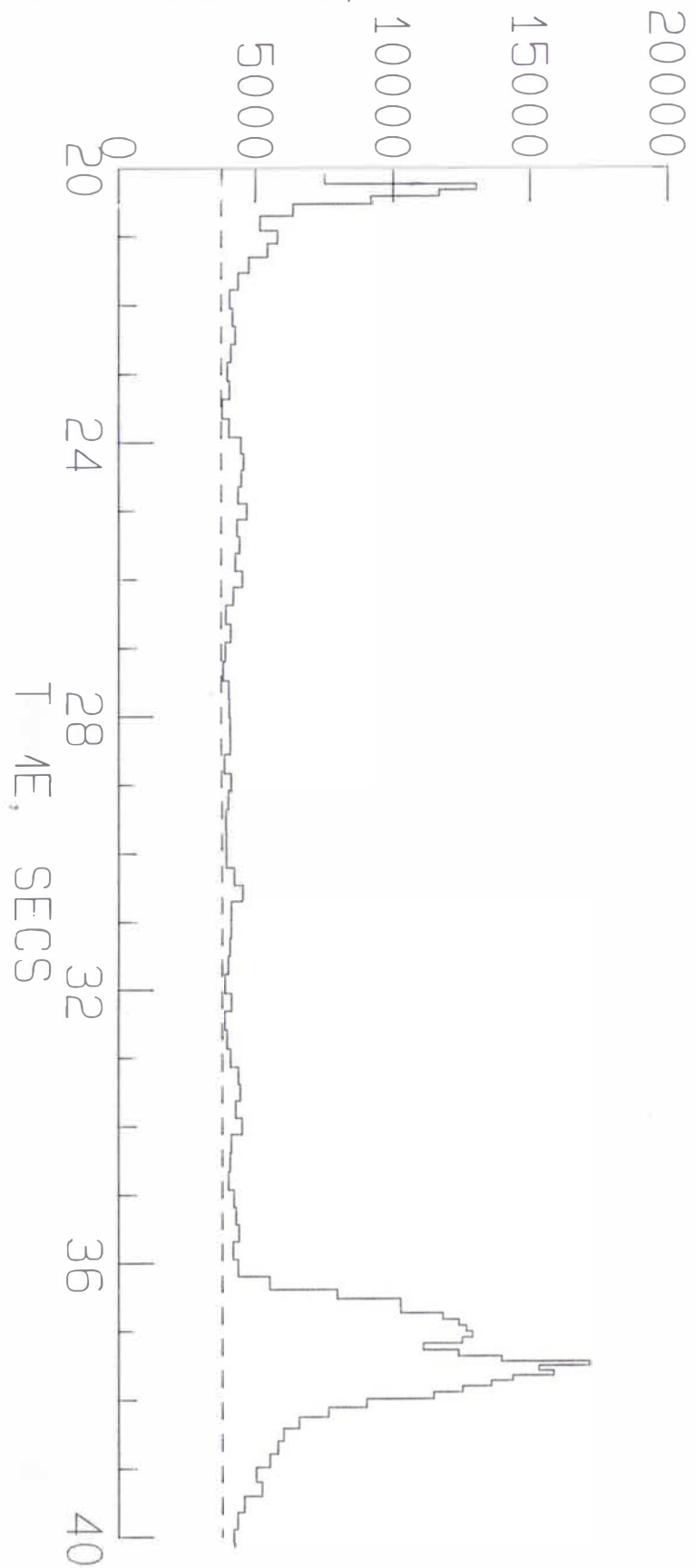
BATSE

01/05/92

76696.703

25- 50 keV

COUNTS/S TTS



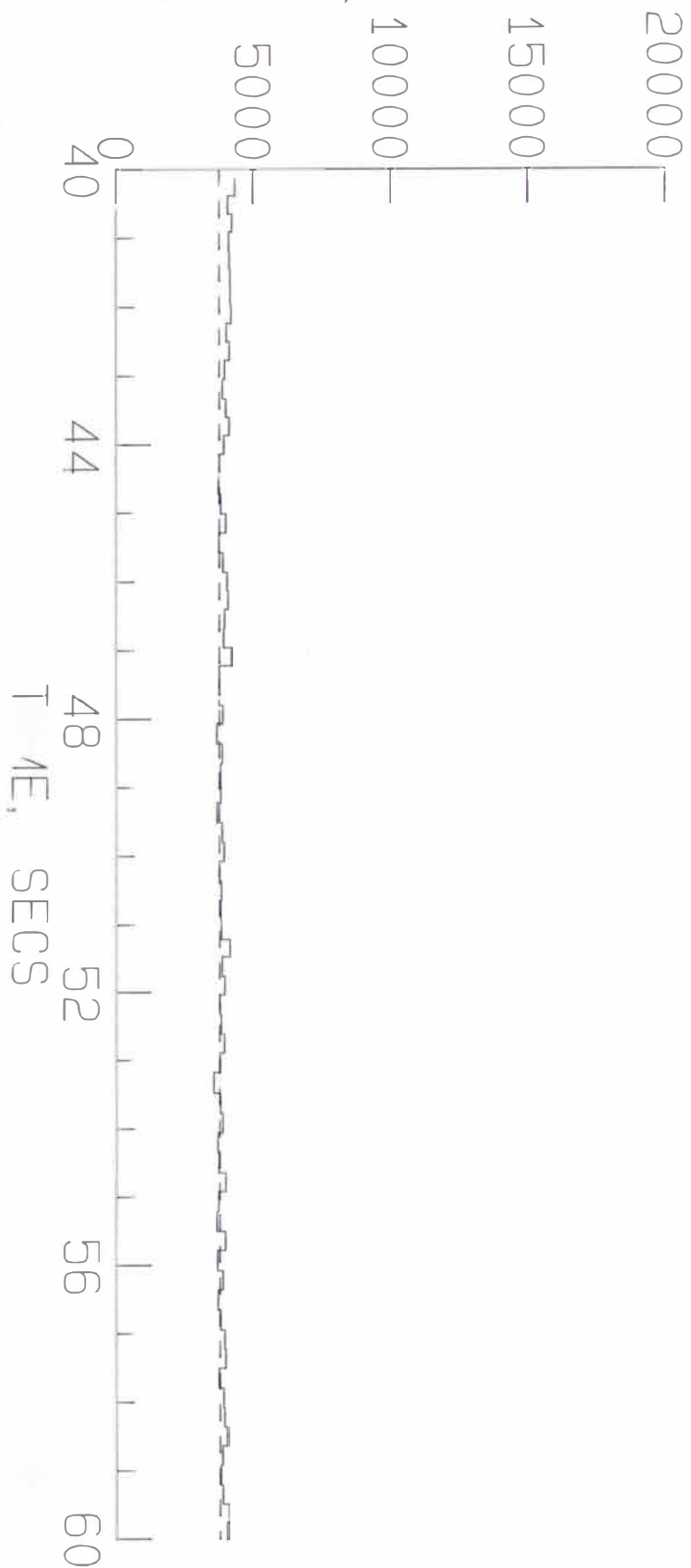
BATSE

01/05/92

76696.703

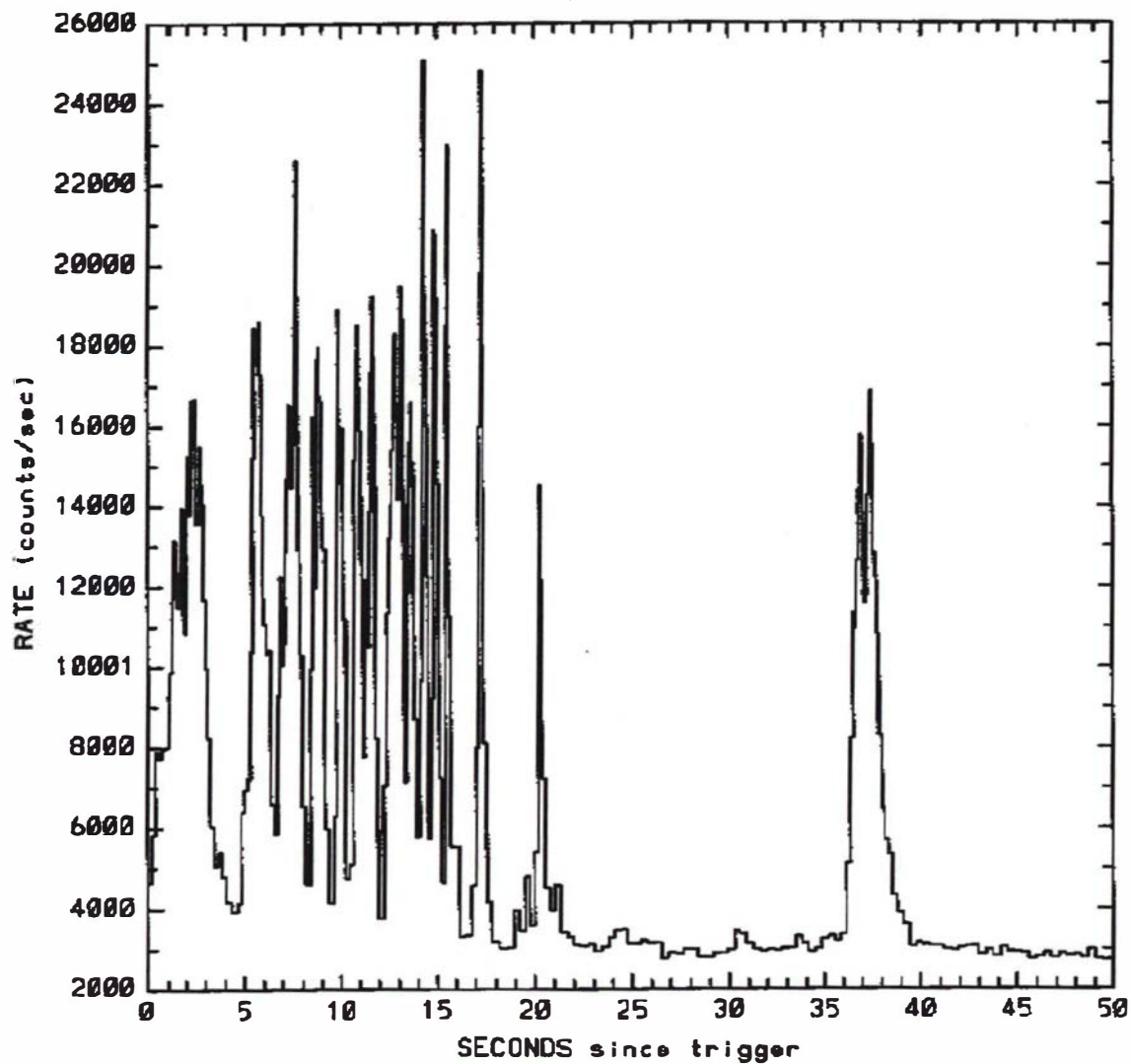
25- 50 keV

COUNTS/S TTS



7/5/92

Data for K. Hurley



6-MAY-1992 16:28:27

Created by MOPS 80
(Burst Display)
Version 2.11

Trigger # . 1576

Trigger Time:
8743 / 76696.783

Burst Data Type:
TTS

Time Corrected: N
Maximum Time Error:
13.8638 seconds

Deadtime
Corrected: N

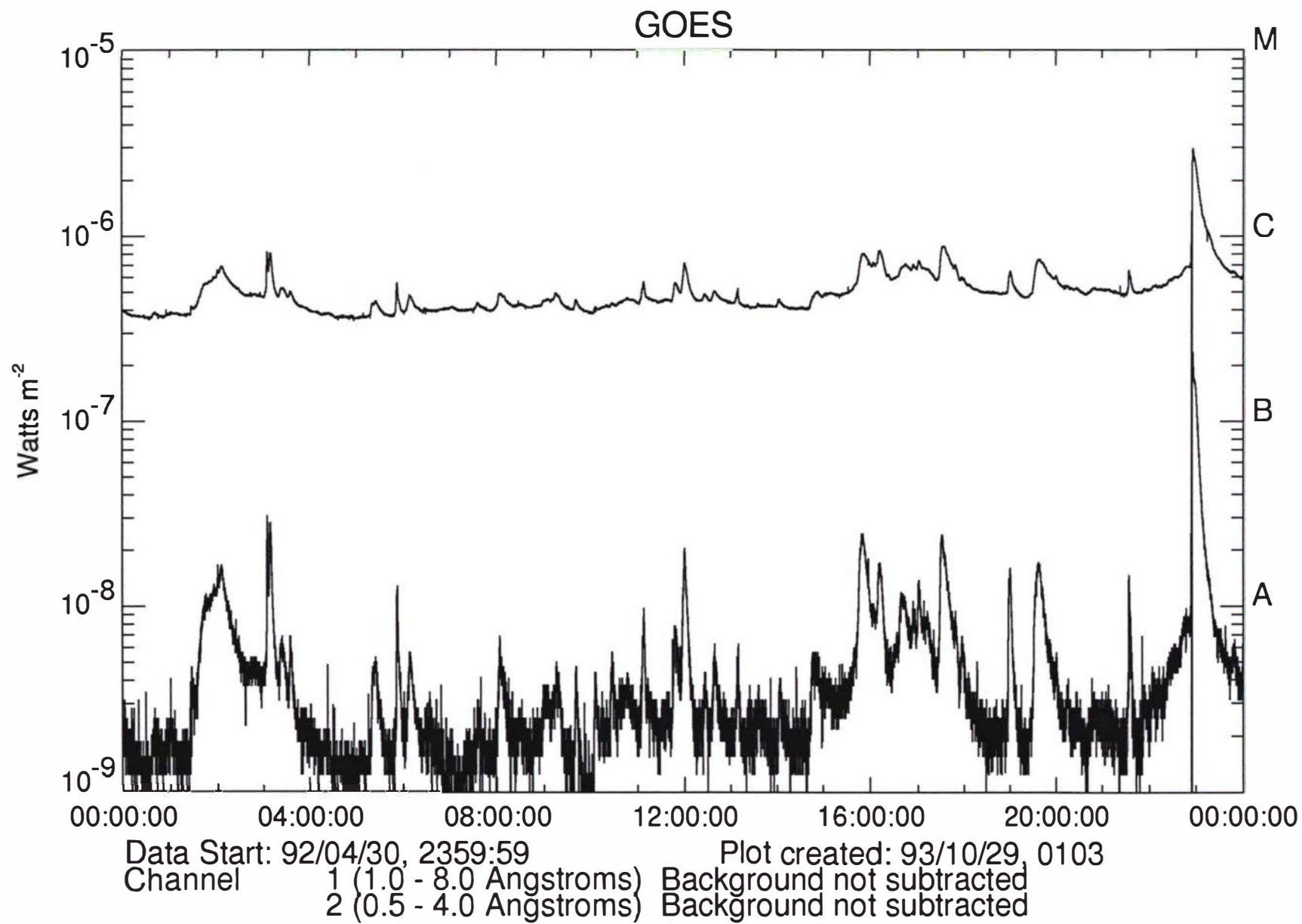
Background Data
Type: DISCLA

Bin Count: 16

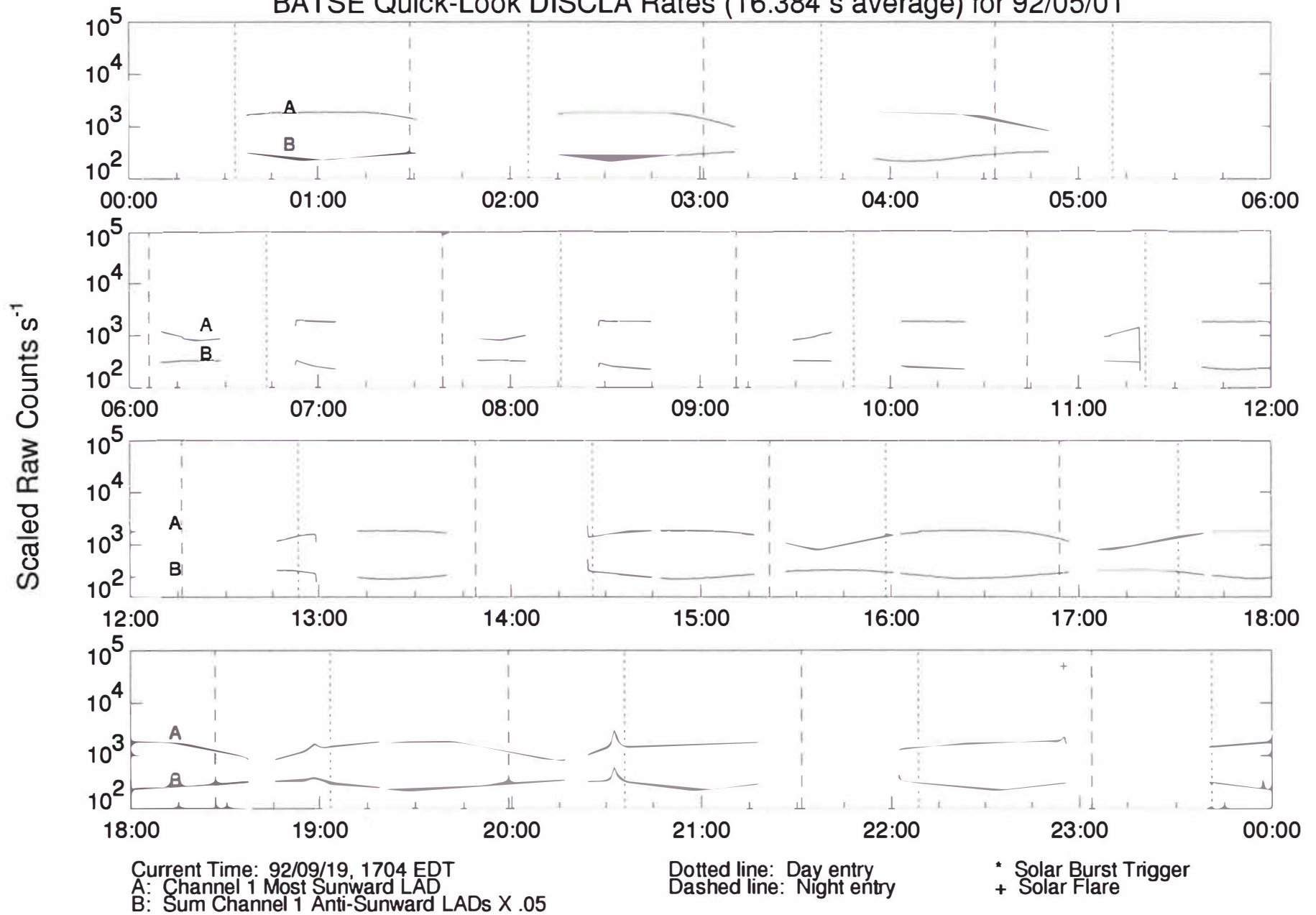
Detectors (7..8),
11000000

Discriminators:
(2..2)

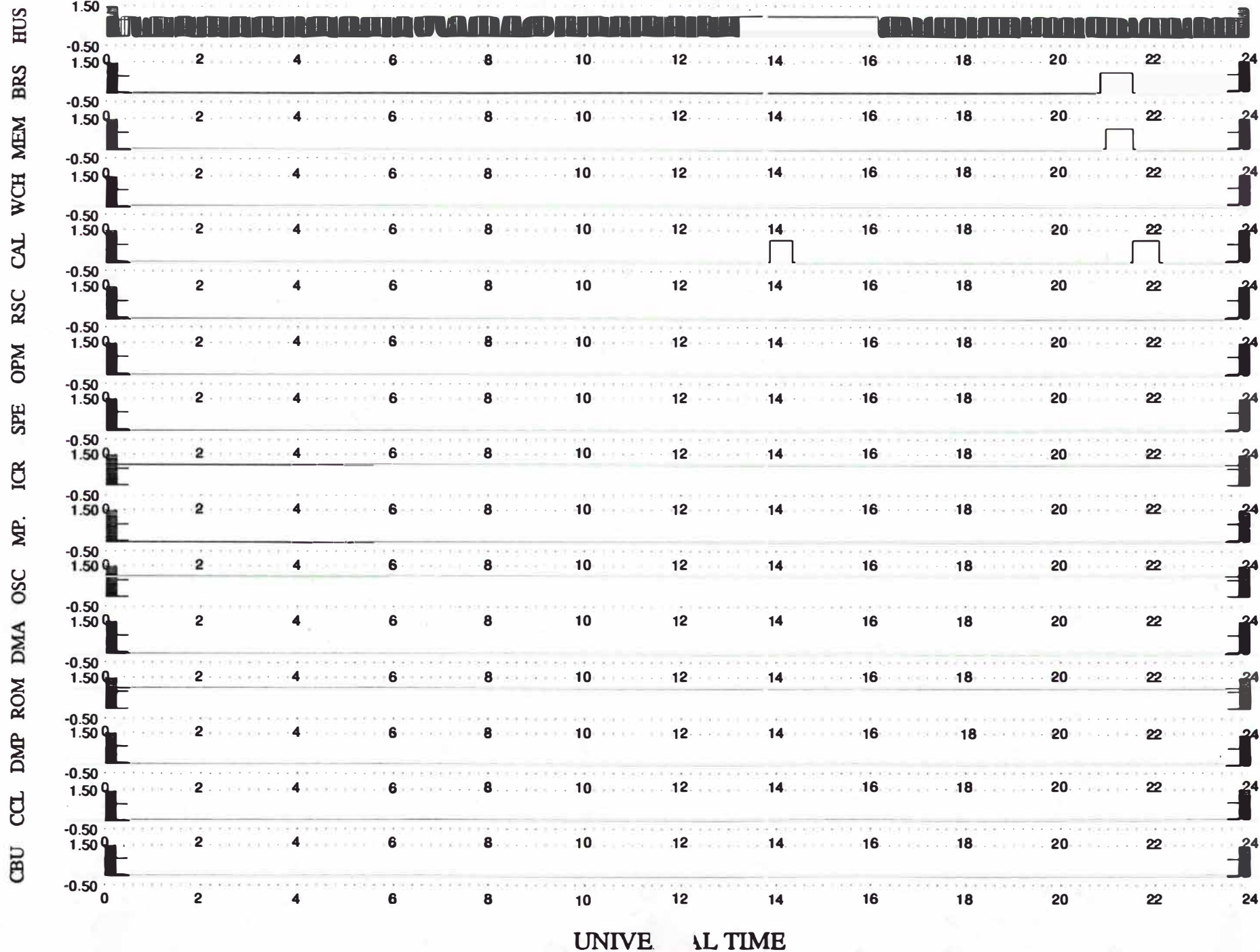
Quality Mask:
801SP0



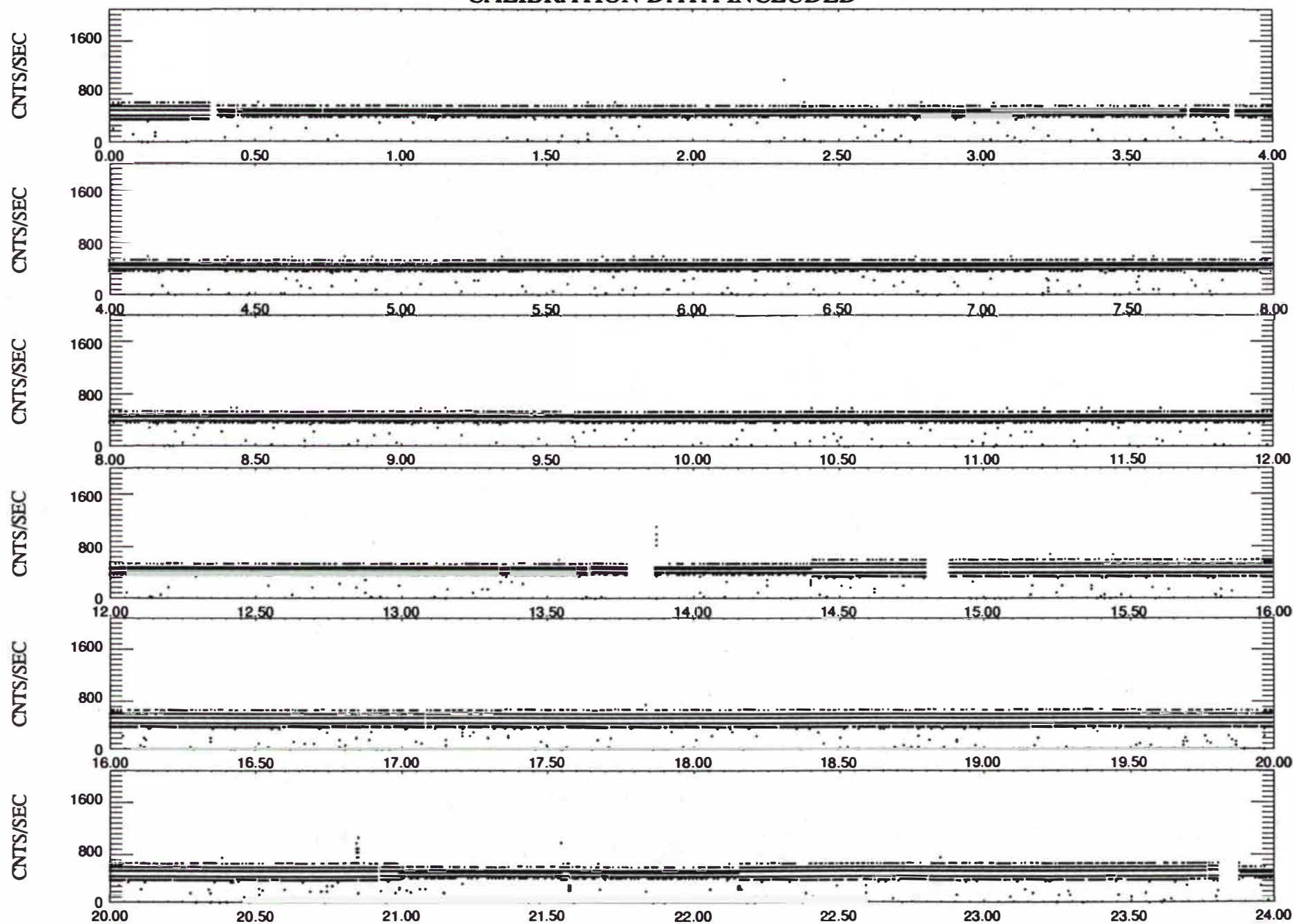
BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/01



BURST NUMBER 1



CALIBRATION DATA INCLUDED



UNIVE1 .L TIME

CATSEARCH PROGRAM

BATSE BURST # 1577

EVENT OF 1992 MAY 2 DAY OF YEAR=123

EVENT CROSSING TIME AT BATSE : 21779. S. OR 06:02:59.2

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 43.400 -18.700

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

POSITION OF ULYSSES ON 2/ 5/ 92 IS:

RA= 148.794 DEC= 9.152 DIST= 5.008 AU

BATSE-ULYSSES DISTANCE = 749163888. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.59 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH= 747.78 SECS.

CROSSING TIME AT ULYSSES IS 22527. S. OR 06:15:27.0 +/- 475.33 SECONDS

RI

From BRIGGS@ssl.msfc.nasa.gov Mon May 4 14:30:37 1992

Date: Mon, 4 May 1992 16:31:02 -0500 (CDT)

From: BRIGGS@ssl.msfc.nasa.gov (Michael S. Briggs, 205-544-7716, Code ES-62, MSFC)

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1467

BATSE BURST TRIGGER

NO.: 01577

TIME: TJD=8744 SECONDS=21781

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=110.4 AZIMUTH=311.0 ERROR= DEGREES

COMMENTS:

VERY INTENSE AND RATHER HARD EVENT OF TOTAL DURATION 1+ SECOND.

TIME HISTORY HAS THREE MAIN COMPLEXES, FROM 0 TO 0.1 SEC, 0.3 TO 0.6 SEC,
AND 0.8 TO 1.1 SECONDS. THE LAST COMPLEX IS SOFTER THAN THE FIRST TWO.

THE FIRST TWO COMPLEXES HAVE FAST TIME STRUCTURE AND ARE NARROWER
AT HIGHER ENERGIES.

100 000 c/s

Helios corr applied

Date: Nov 28 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

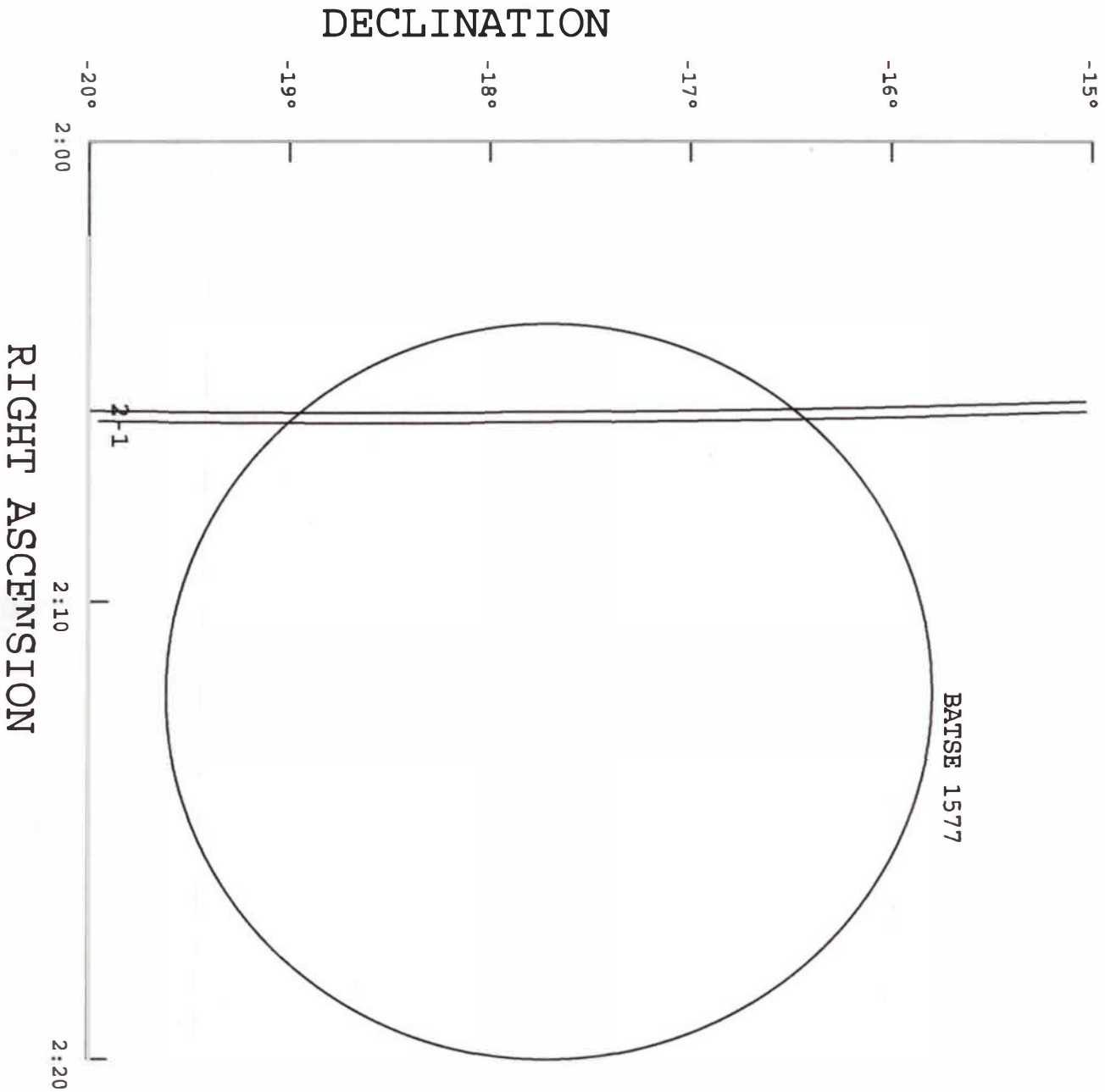
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 2, 1992 6:22

28/11/97



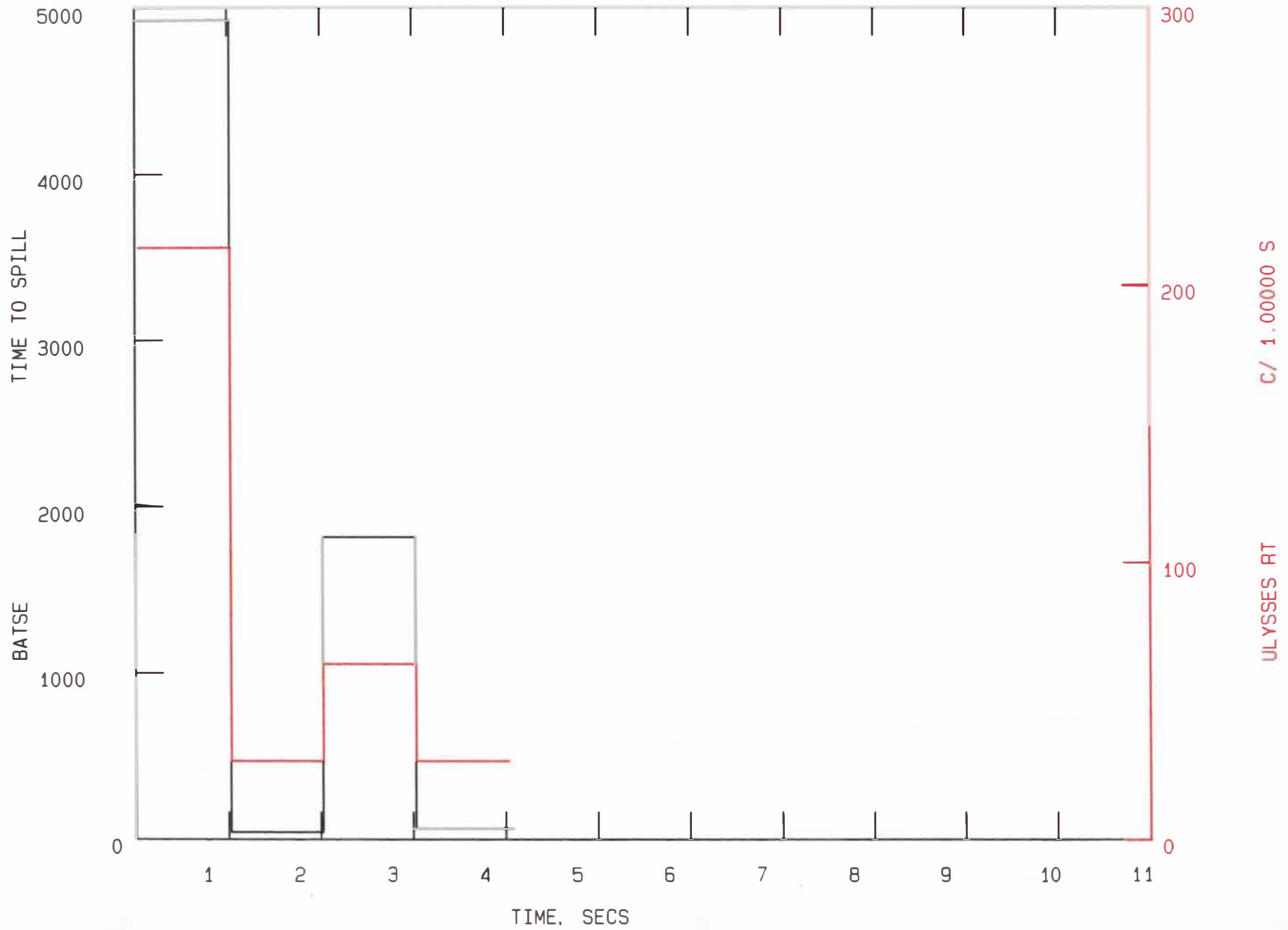
BATSE

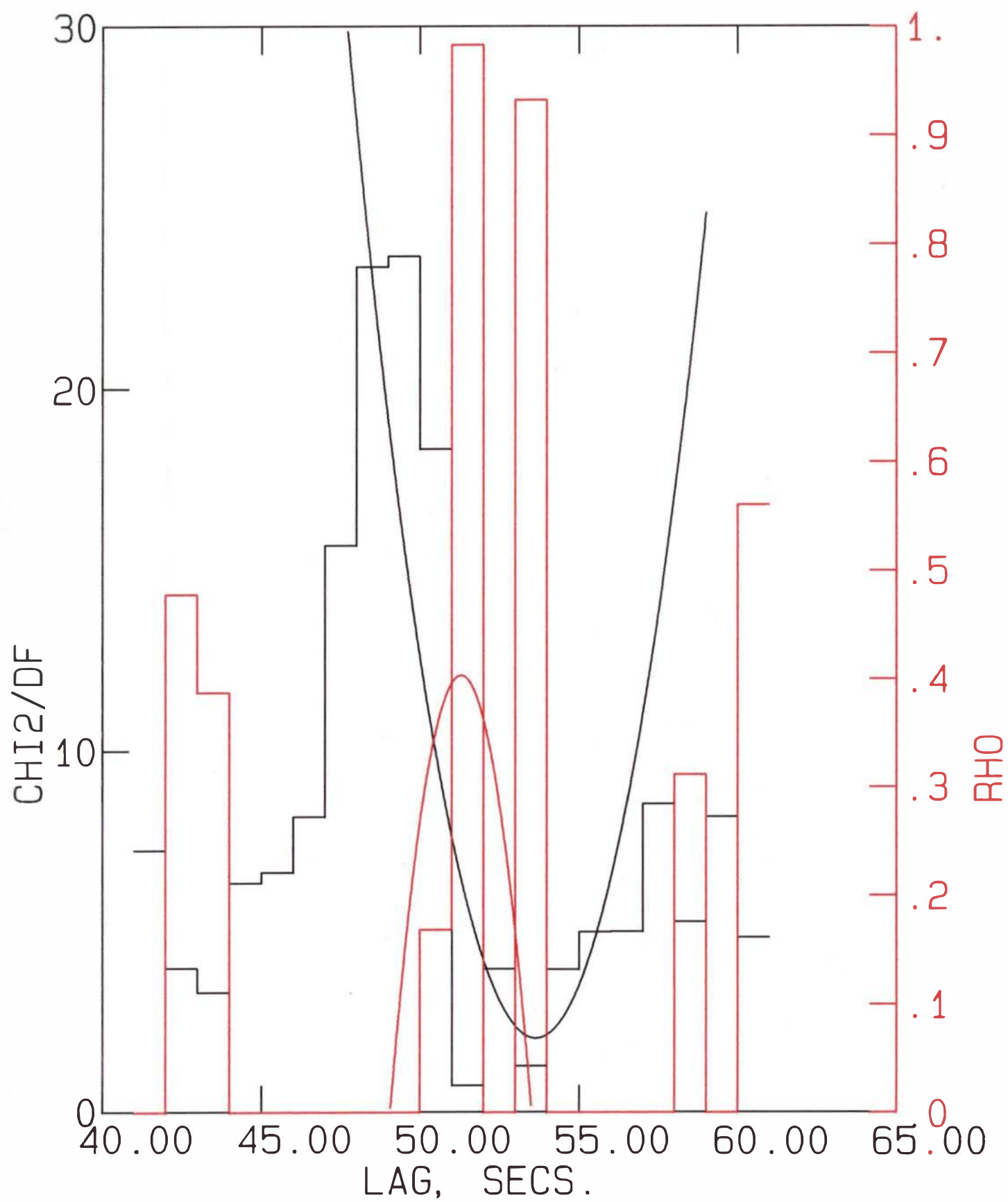
-ULYSSES RT CORRELATION

2/ 5/92

21779.241

28/11/97





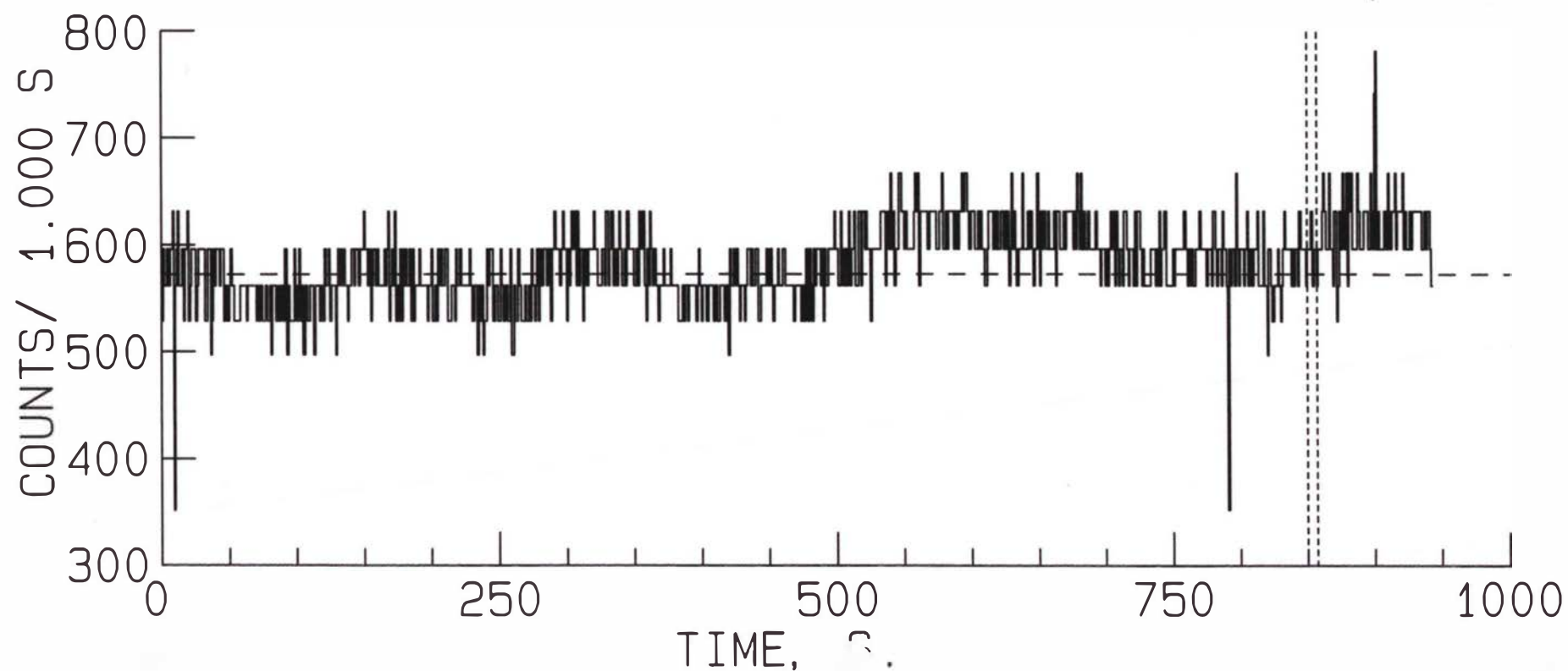
ULYSSES RT

28 / 11 / 97

2 / 5 / 92 22097.964 s

23- 157 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

02/05/92

21779.241

50- 100 keV

COUNTS/S TTS

20000

40000

60000

80000

0

4

8

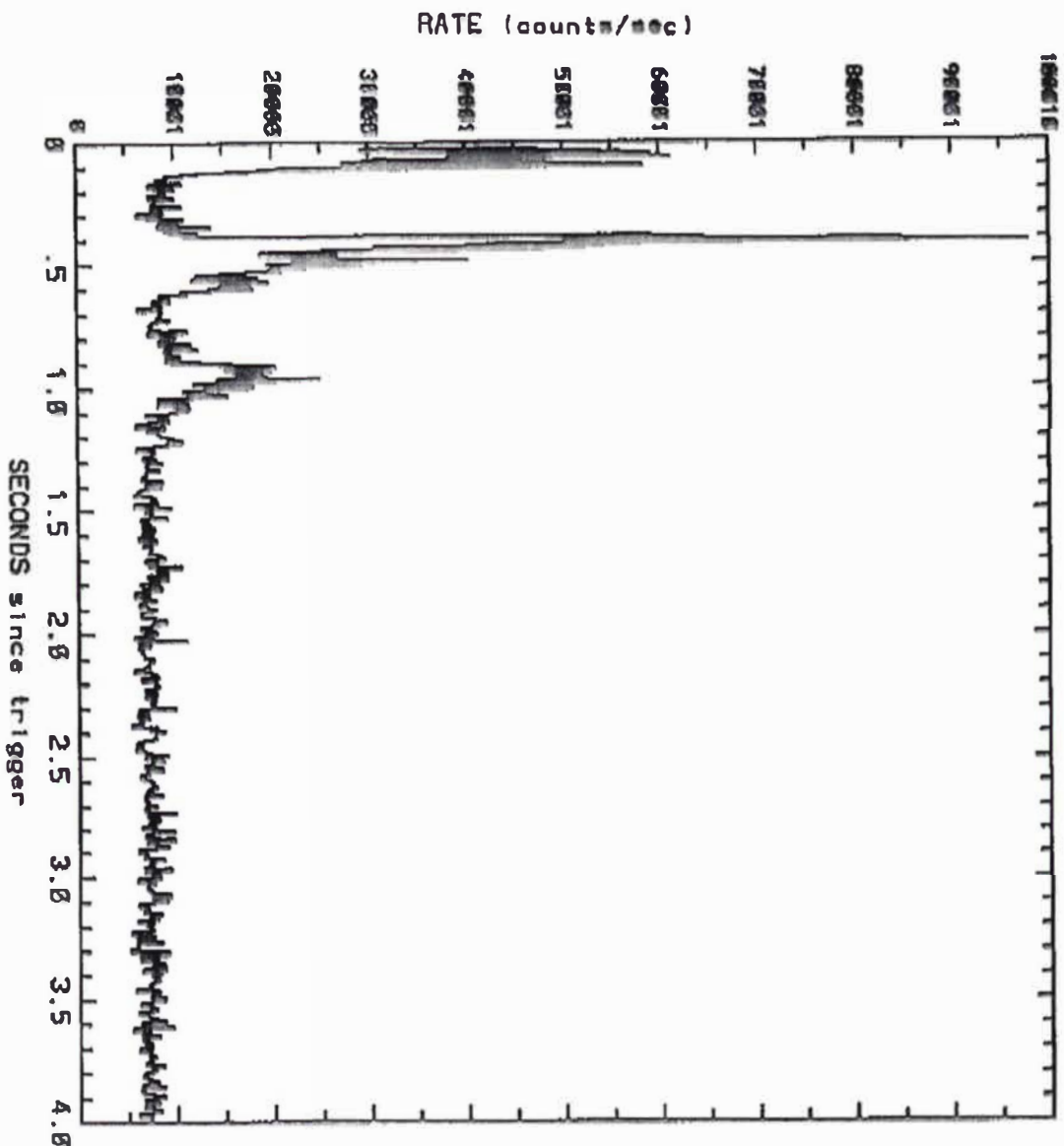
12

16

20

TIME, SECS

TTS Data for K. Hurley, No. 1577



28-DEC-1994 15:37:33

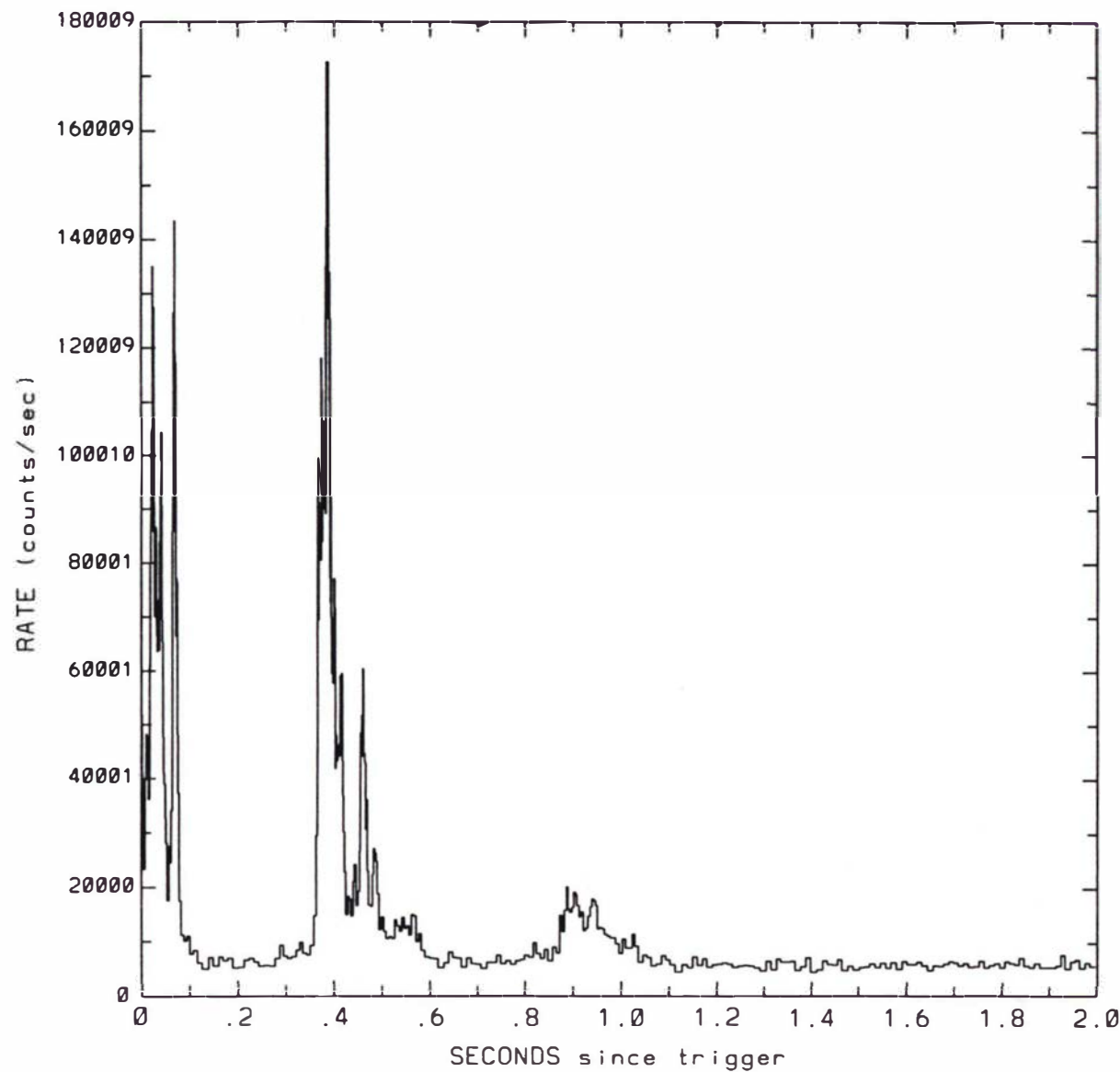
Created by KOPS BD
(Buret Display)
Version 2.22

Trigger = 1577

Trigger Time:
8744 / 21779.242Buret Date Type:
TTSTime Corrected: Y
Keystone Time Error:
0.0162 secondsBaseline
Corrected: N
Background Delay
Type: PREB + DISCLADetectors (7.0):
--543216Discriminators:
(2.2)Quality Mask:
BDISP1

May 2 '92
43.4, -18.7
 $7.9 \times 10^{-7} \text{ erg/cm}^2$

TRIGGER # 1577



3-MAY-1992 18:58:23

Created by MOPS BD
(Burst Display)
Version 2.11

Trigger # : 1577

Trigger Time:
8744 / 21781.308

Burst Data Type:
TTS

Time Corrected: N

Maximum Time Error:
0.0009 second(s)

Deadtime
Corrected: N

Background Data
Type: DISCLA

Bin Count: 1

Detectors [7..0],
00111111

Discriminators:
(3, 3)

Quality Mask:
DONT CARE

Added to MBL Fabio

From root Sat Feb 5 15:27 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA01731; Sat, 5 Feb 94 15:26:40
Received: from mx.nsi.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA05250; Sat, 5 Feb 1994 14:30:29 +0800
Received: Sat, 5 Feb 94 14:33:38 PST from ESSDP2.dnet by mx.nsi.nasa.gov (4.1/1.2)
Message-Id: <9402052233.AA15162@mx.nsi.nasa.gov>
Received: from ESSDP2.dnet by AMES.dnet with MAIL-11
(utk-maillld v1.7); Sat, 5 Feb 94 14:33:56 PST
Date: Sat, 5 Feb 94 14:33:56 PST
From: 068486@essdp2.span.nasa.gov
X-To: AMES::"KHURLEY@SPACE6.SSL.BERKELEY.EDU"
Subject: 64 S DATA SEARCH
To: KHURLEY@space6.ssl.berkeley.edu
Content-Length: 1442
Status: RO

KEVIN,

THESE ARE THE EVENTS FOR WHICH WE HAVE SCANNED THE DATA RECORDED AT 64 S
RESOLUTION. RESULTS ARE GIVEN BELOW.

DATE	TIME	
91/01/23	12:40	QUESTIONABLE RESPONSE-3.7 SIGMA IN THIRD C1 SAMPLE FROM THE FRAME AT 45047 S UT. C2@ 2.8 & C3@ 1.8 SIGMA.
91/06/19	14:14	YES-13.7 SIGMA IN 3RD AND 4TH C1 SAMPLES OF FRAME AT 51416 S UT, C2@ 6.5, C3@ 10.4, C4 & C5@ 3 SIGMA.
91/07/25	13:12	NO RESPONSE AT 3 SIGMA LEVEL. 2.9 SIGMA AT 20937 S UT
91/08/09	06:15	NO RESPONSE AT 3 SIGMA LEVEL. 2.8 SIGMA AT 22381 S UT
91/10/26	13:07	NO RESPONSE AT 3 SIGMA LEVEL. 2.0 SIGMA AT 47009 S UT
91/10/31	09:36	YES-6 SIGMA RESPONSE IN SUMMED C1 SAMPLES AT 34628 S UT. C2 PROBABLY SPILLED TWICE. C3@ 3.6 SIGMA, C4@ 3.3 SIGMA, C5@ 2.3 SIGMA. C3+4+5@ 5.1 SIGMA.
92/05/02	06:03	NO RESPONSE AT 3 SIGMA LEVEL. 2.7 SIGMA AT 20937 S UT

IN ALL CASES I SCANNED DATA IN THE RANGE OF POSSIBLE TIMES BASED UPON THE
DISTANCE BETWEEN THE EARTH AND VENUS, BUT I ALSO LOOKED AT DATA OUTSIDE THIS
WINDOW AS A REFERENCE. I WILL TRANSMIT TO YOU THE DATA FILES FOR THE MORE
LIKELY CANDIDATES. IT MAY BE THAT THE MORE QUESTIONABLE RESPONSE WOULD ALSO
BE USEFUL IF THE SOLUTION FOR A LOCATION IS CONSISTENT WITH ANOTHER SOLUTION.
I WOULD NOT ATTEMPT A DETERMINATION OF LOCATION, WITH THESE DATA, UNLESS THERE
IS ALREADY A BATSE LOCATION OR A CIRCLE OF POSITION.

REGARDS,

RAY

19 / 8 / 92

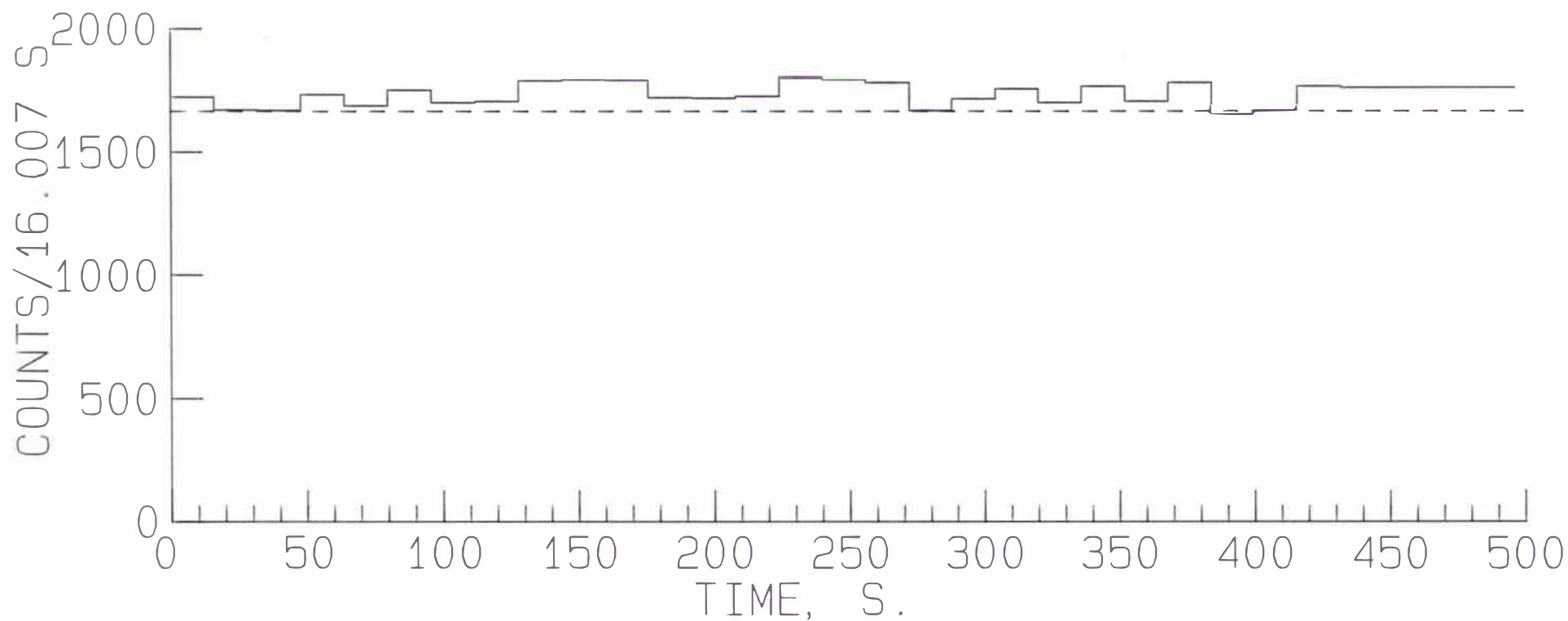
PV0-RT

2 / 5 / 92

20809.355 s.

16.007 S. INTERVALS REGROUPED BY 1

100-2000 keV



CATSEARCH PROGRAM

BATSE BURST # 1578
EVENT OF 1992 MAY 2 DAY OF YEAR=123
EVENT CROSSING TIME AT BATSE : 62801. S. OR 17:26:40.5
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 154.600 46.300
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 2/ 5/ 92 IS:
RA= 148.794 DEC= 9.152 DIST= 5.008 AU
BATSE-ULYSSES DISTANCE = 749163888. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1983.11 SECS.
CROSSING TIME AT ULYSSES IS 60817. S. OR 16:53:37.4 +/- 283.87 SECONDS

N/O

From BRIGGS@ssl.msfc.nasa.gov Sun May 3 15:07:38 1992
Date: Sun, 3 May 1992 17:08:18 -0500 (CDT)
From: BRIGGS@ssl.msfc.nasa.gov (Michael S. Briggs, 205-544-7716, Code ES-62, MSFC)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01578

TIME: TJD=8744 SECONDS=62802

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=123.9 AZIMUTH=169.2 ERROR= DEGREES

COMMENTS:

15 SECOND LONG GAMMA-RAY BURST. EVENT CONSISTS MOSTLY OF 3 PEAKS,
EACH WITH A FAST RISE AND A SLOWER FALL.

Ulysses off

CATSEARCH PROGRAM

BATSE BURST # 1579
EVENT OF 1992 MAY 2 DAY OF YEAR=123
EVENT CROSSING TIME AT BATSE : 68704. S. OR 19:05:03.8
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 155.200 -82.900
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 2/ 5/ 92 IS:
RA= 148.794 DEC= 9.152 DIST= 5.008 AU
BATSE-ULYSSES DISTANCE = 749163888. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 91.39 SECS.
CROSSING TIME AT ULYSSES IS 68795. S. OR 19:06:35.2 +/- 484.95 SECONDS

~~RI~~ No

From BRIGGS@ssl.msfc.nasa.gov Sun May 3 15:53:32 1992
Date: Sun, 3 May 1992 17:54:02 -0500 (CDT)
From: BRIGGS@ssl.msfc.nasa.gov (Michael S. Briggs, 205-544-7716, Code ES-62, MSFC)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1377

BATSE BURST TRIGGER

NO.: 01579

May 2

TIME: TJD=8744 SECONDS=68705

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=036.8 AZIMUTH=276.7 ERROR= DEGREES

COMMENTS:

A RATHER HARD EVENT OF TOTAL DURATION ABOUT 20 SEC.
FIRST GROUP OF NARROW SPIKES OCCURS FROM 2 TO 7 SECONDS AFTER TRIGGER,
THEN A SECOND, RELATIVELY SMOOTH PEAK OCCURS 17 TO 21 SECONDS AFTER TRIGGER.

20 000 c/s in 64 ms

No - too weak

91/12/21	06:17	N/O
91/12/21	22:03	N/O
91/12/27	15:56	N/O
92/01/05	17:41	N/O
92/01/13	20:52	N/O
92/01/25	08:57	N/O
92/01/30	00:29	N/O
92/01/30	22:50	N/O
92/02/18	18:42	N/O
92/02/21	06:14	N/O
92/02/26	18:15	YES TRIGGER AT 29336 S UT
92/02/27	06:00	N/O
92/02/27	08:45	N/O
92/03/02	06:16	N/O
92/03/04	14:34	N/O
92/03/07	00:18	N/O
92/03/21	12:50	(NO)
92/03/26	02:01	N/O
92/03/27	09:38	N/O
92/03/29	16:38	(NO)
92/04/04	22:37	N/O
92/04/08	12:05	N/O
92/04/20	02:12	N/O
92/04/29	18:59	N/O
92/05/02	19:05	N/O
92/06/01	THRU 92/06/29	TURNED OFF--N/O
92/07/01	19:39	N/O
92/07/07	06:33	N/O
92/07/17	01:15	N/O
92/07/23	00:59	N/O
92/07/23	01:00	N/O
92/07/23	21:48	N/O
92/07/25	19:30	N/O
92/07/25	22:49	N/O
92/07/26	00:34	N/O
92/07/31	17:07	N/O
92/08/10	21:35	N/O
92/08/14	06:10	N/O
92/08/16	12:36	N/O
92/08/22	22:39	N/O
92/08/30	01:45	N/O
92/09/04	04:41	N/O

THIS LIST IS NOT COMPLETE. IT INCLUDES EVENTS FOR WHICH NO REAL-TIME DATA ARE AVAILABLE BECAUSE OF INAPPROPRIATE MODE, NO TRACKING, OR THE EXPERIMENT WAS TURNED OFF. WHERE DATA HAVE BEEN CHECKED, SENSITIVITY DEPENDS UPON THE TIME RESOLUTION AVAILABLE IN THE DATA. I'LL BE SENDING ADDITIONAL RESULTS AS THEY BECOME AVAILABLE.

REGARDS,

RAY

From root Wed Dec 8 07:58 1993
 Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
 id AA08899; Wed, 8 Dec 93 07:57:44
 Received: from mx.nsi.nasa.gov by sunspot.ssl.berkeley.edu (4.1/1.30.1)
 id AA22497; Wed, 8 Dec 93 07:00:41 PST
 Received: Wed, 8 Dec 93 07:03:53 PST from ESSDP2.dnet by mx.nsi.nasa.gov (4.1/1.2)
 Message-Id: <9312081503.AA10272@mx.nsi.nasa.gov>
 Received: from ESSDP2.dnet by AMES.dnet with MAIL-11
 (utk-mail11d v1.7); Wed, 8 Dec 93 07:03:57 PST
 Date: Wed, 8 Dec 93 07:03:57 PST
 From: 068486@essdp2.span.nasa.gov
 X-To: AMES::"khurley@space6.ssl.berkeley.edu"
 Subject: RE:
 To: khurley@space6.ssl.berkeley.edu
 Status: R

KEVIN,
 HERE ARE THE RESULTS OF OUR SURVEY OF THE PVO REAL-TIME DATA FOR EVIDENCE OF
 RESPONSE TO EVENTS LISTED IN YOUR CATALOG.

DATE	TIME	PVO RESPONSE
90/11/11	21:49	N/O
90/11/12	14:57	N/O
90/11/16	01:42	N/O
90/11/19	18:08	N/O
90/11/21	00:04	N/O
90/11/21	18:09	N/O
90/12/02	13:45	N/O
90/12/21	00:30	N/O
90/12/25	05:50	N/O
91/01/17	00:57	N/O
91/01/24	11:50	N/O
91/02/04	08:58	N/O
91/02/04	14:19	N/O
91/02/04	14:58	N/O
91/02/17	02:59	N/O
91/03/14	22:56	N/O
91/03/15	22:55	N/O
91/04/04	17:17	(NO)
91/05/18	17:10	N/O
91/05/23	19:03	N/O
91/05/27	23:44	N/O
91/05/28	21:26	N/O
91/06/02	22:55	N/O
91/06/09	00:48	N/O
91/06/29	19:55	N/O
91/07/09	20:22	N/O
91/07/17	13:07	N/O
91/08/03	08:24	N/O
91/08/15	12:34	N/O
91/08/15	14:24	N/O
91/08/16	01:57	(NO)
91/09/05	23:48	N/O
91/09/16	21:58	N/O
91/09/25	03:35	N/O
91/09/26	18:25	N/O
91/09/30	11:55	N/O
91/10/03	00:39	N/O
91/10/04	01:27	N/O
91/10/06	09:01	(NO)
91/10/22	04:13	N/O
91/10/25	21:25	N/O
91/11/06	03:42	N/O
91/11/14	01:40	N/O
91/11/17	01:58	N/O
91/12/05	23:04	N/O

ULYSSES RT

25 / 5 / 96

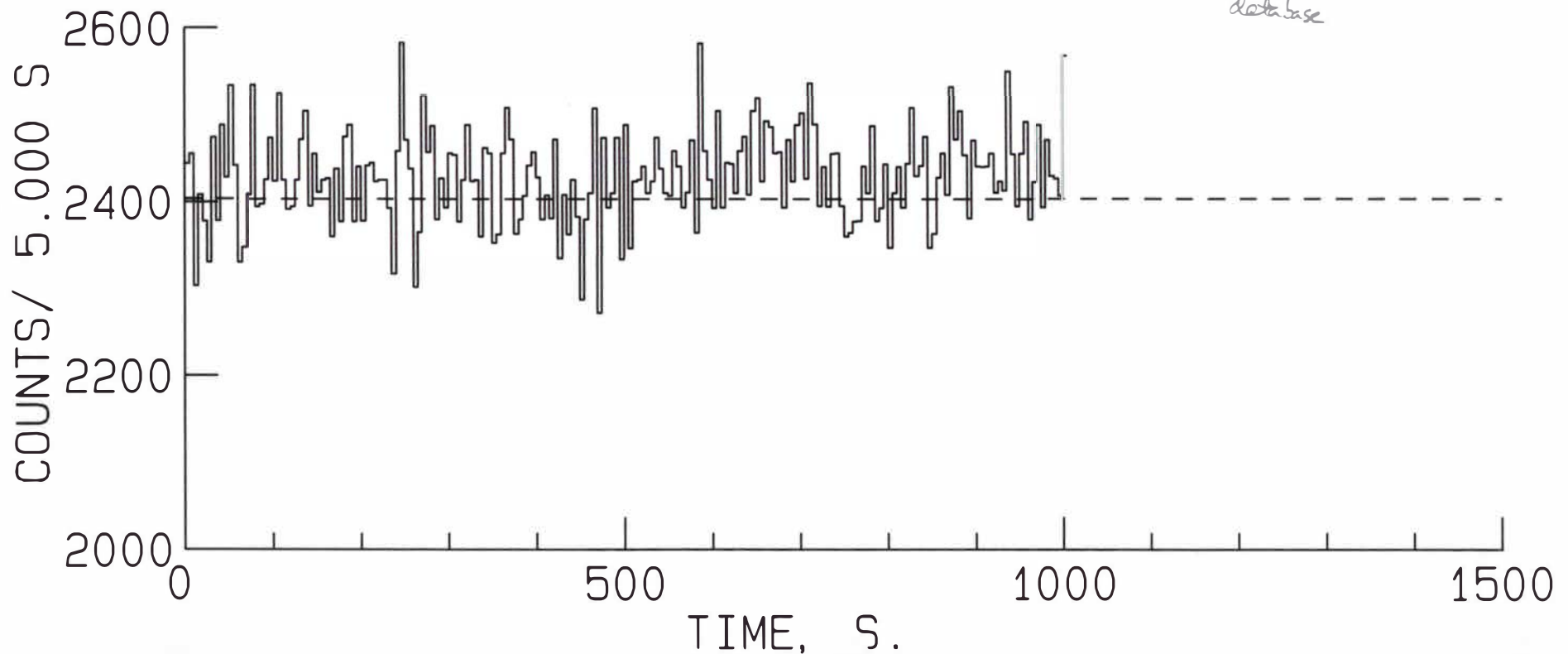
2 / 5 / 92 68184.214 s

0.250 S INTERVALS REGROUPED BY 20

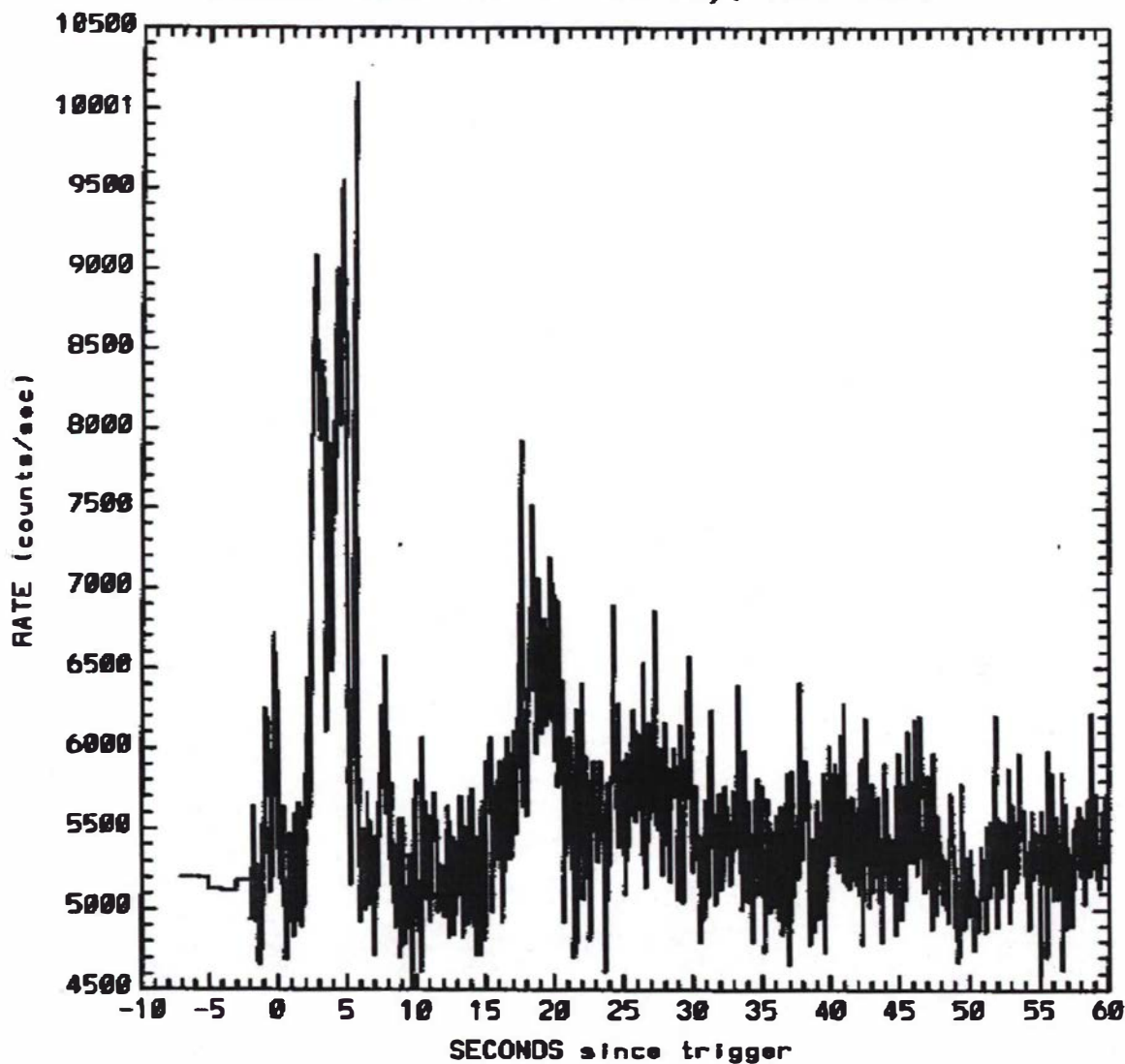
23- 157 keV

*This was triangulated,
then removed because it was
too weak - remove from
database*

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



DISCSC Data for K. Hurley, No. 1579



26-MAY-1995 10:23:02

Created by NOPS 80
(Burst Display)
Version 12.25

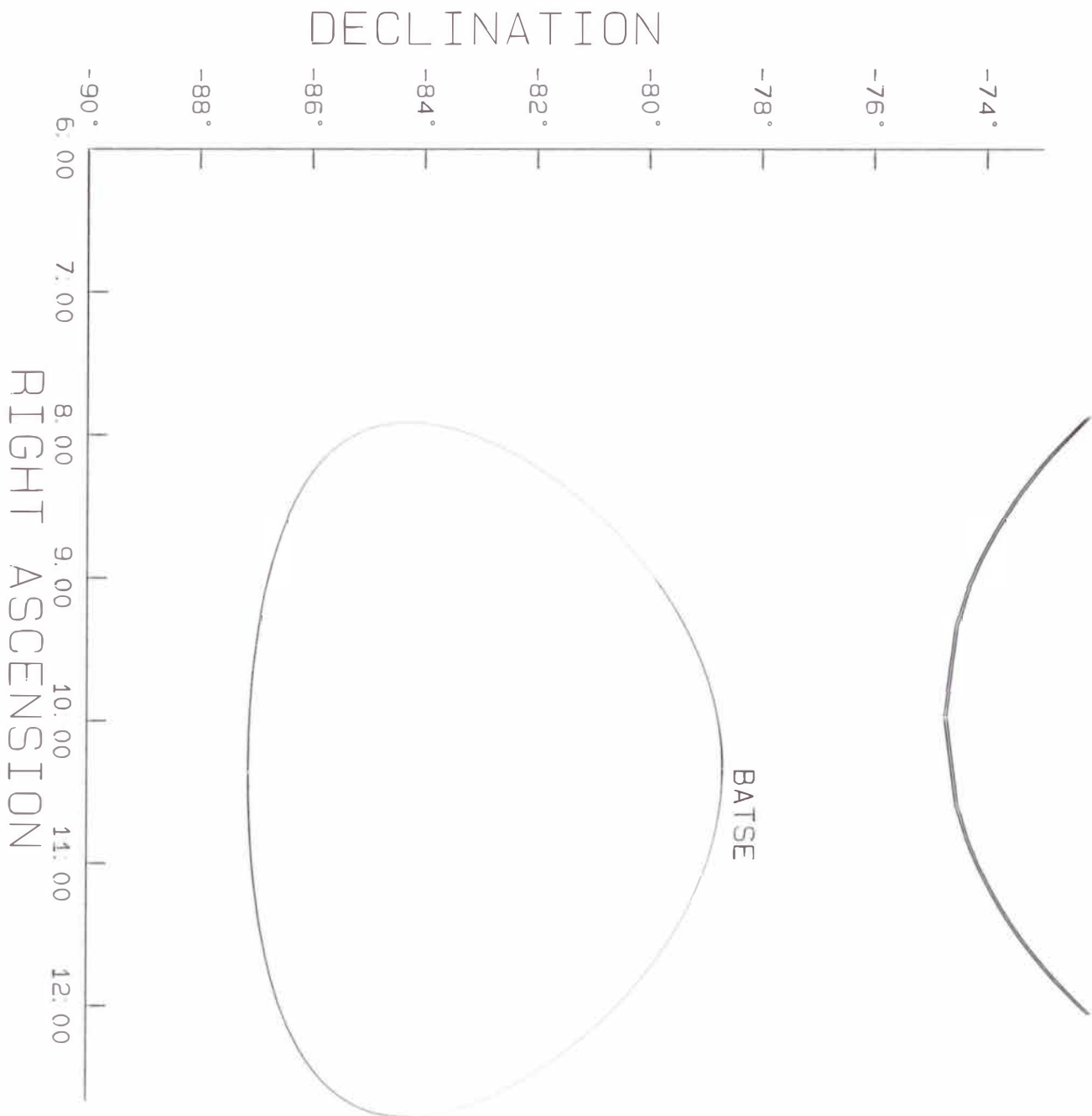
Trigger # : 1579

Trigger Time:
8744 / 60703.850Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: FRED + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..0],
-0---2--Discriminators:
(1..2)Quality Mask:
BDISP1

EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

EVENT OF MAY 2, 1992 18:59

26/ 5/95



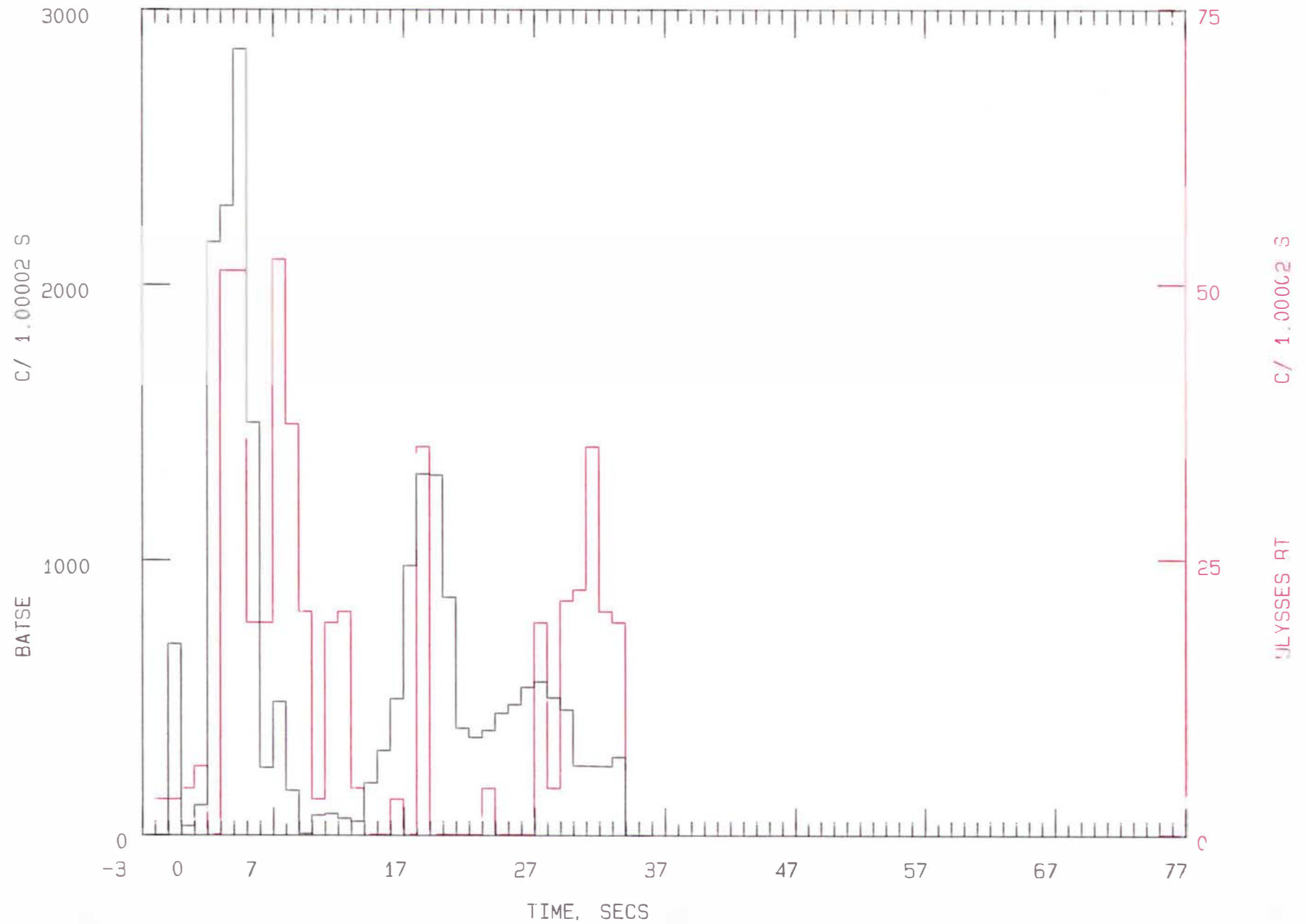
BATSE

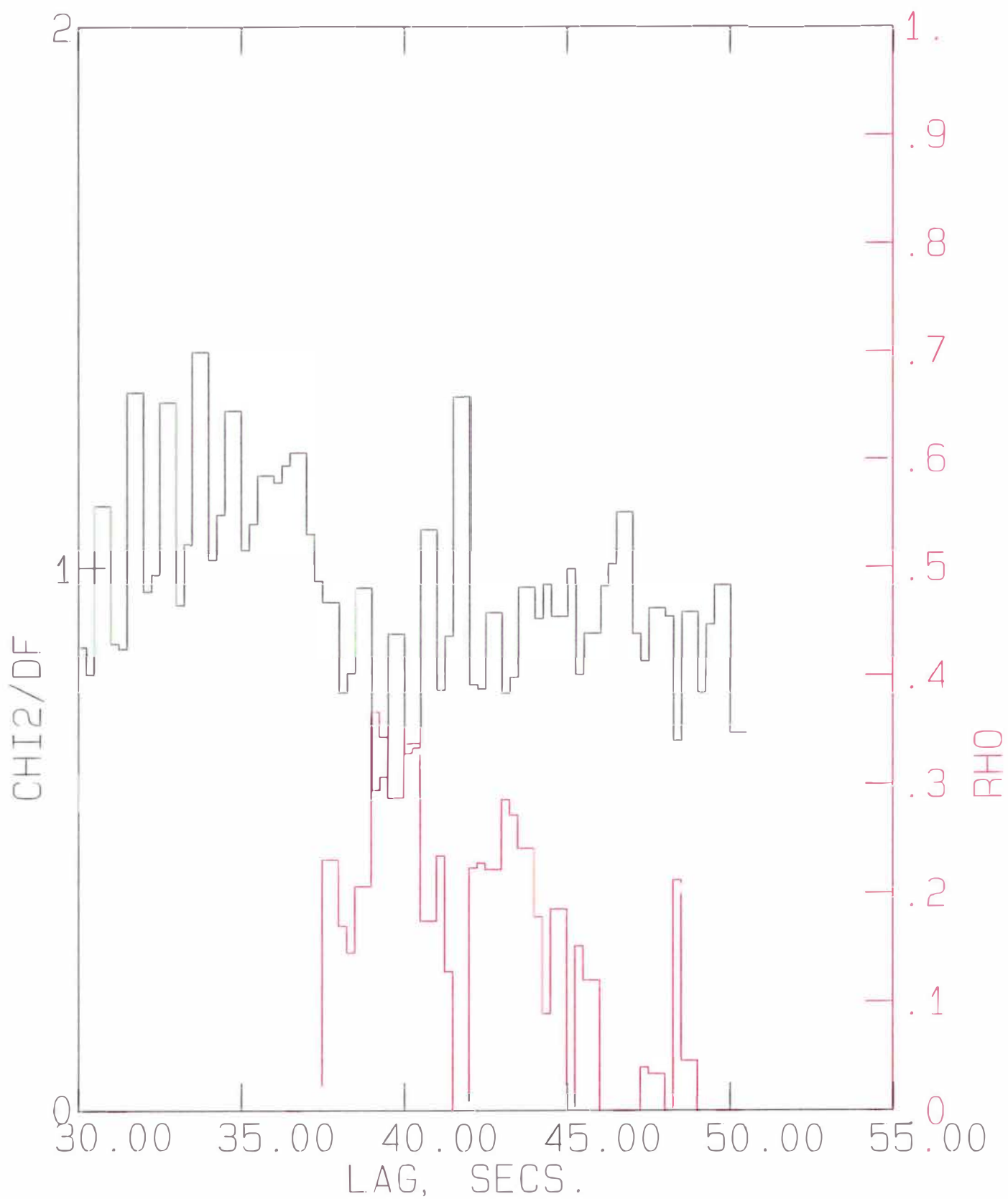
-ULYSSES RT CORRELATION

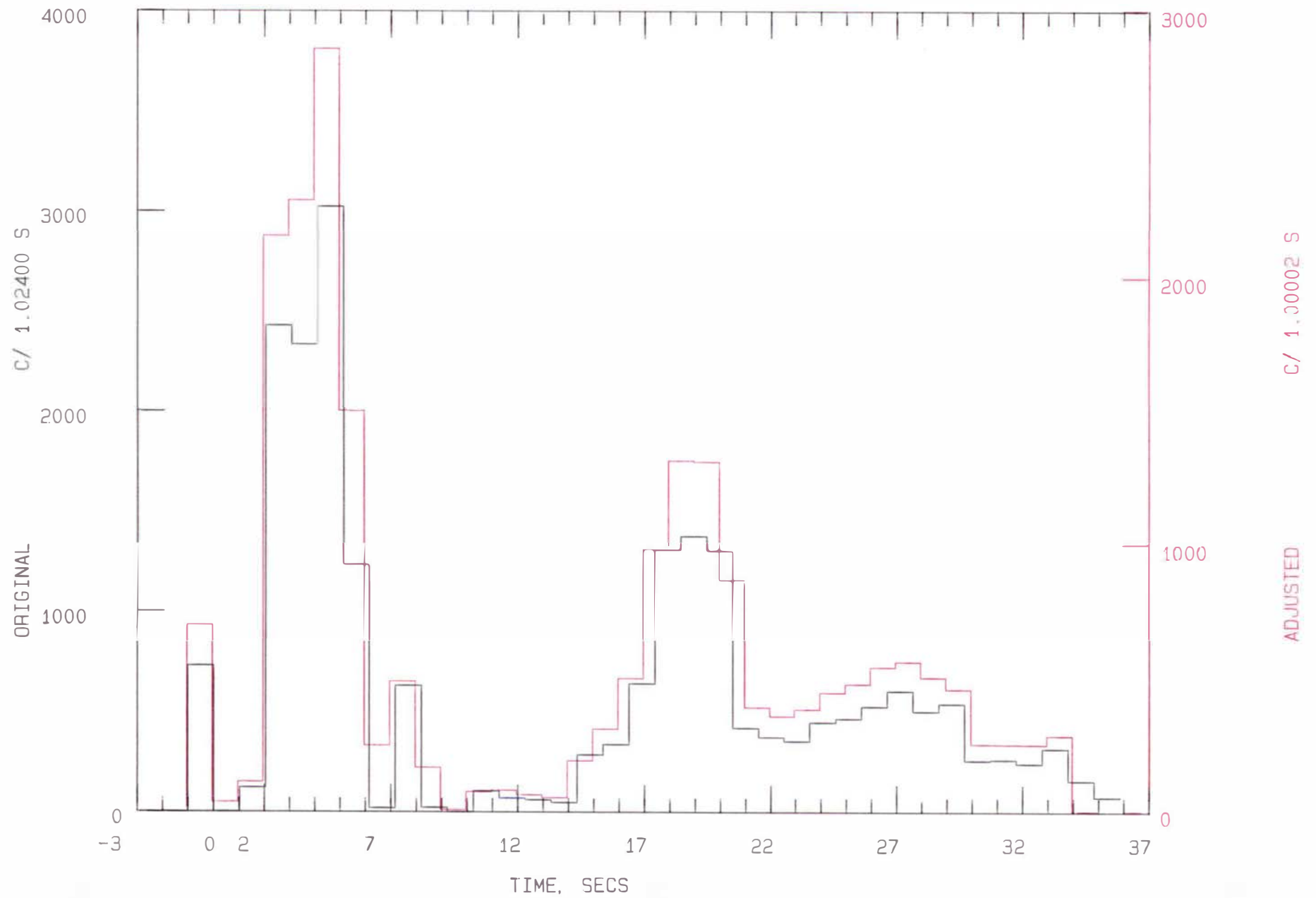
2/ 5/92

68703.850

26/ 5/95







ULYSSES RT

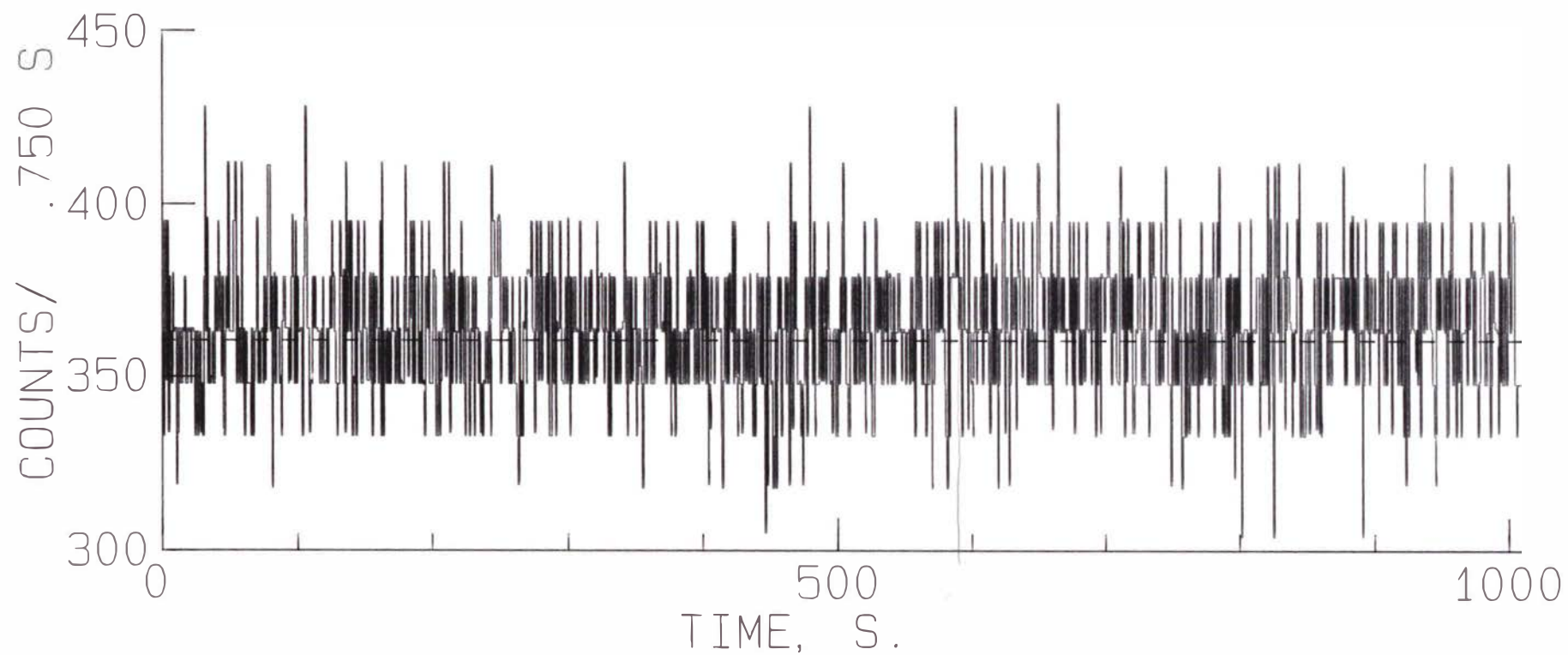
26 / 5 / 95

2 / 5 / 92 68184.219 s

.250 S INTERVALS REGROUPED BY 3

23- 157 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



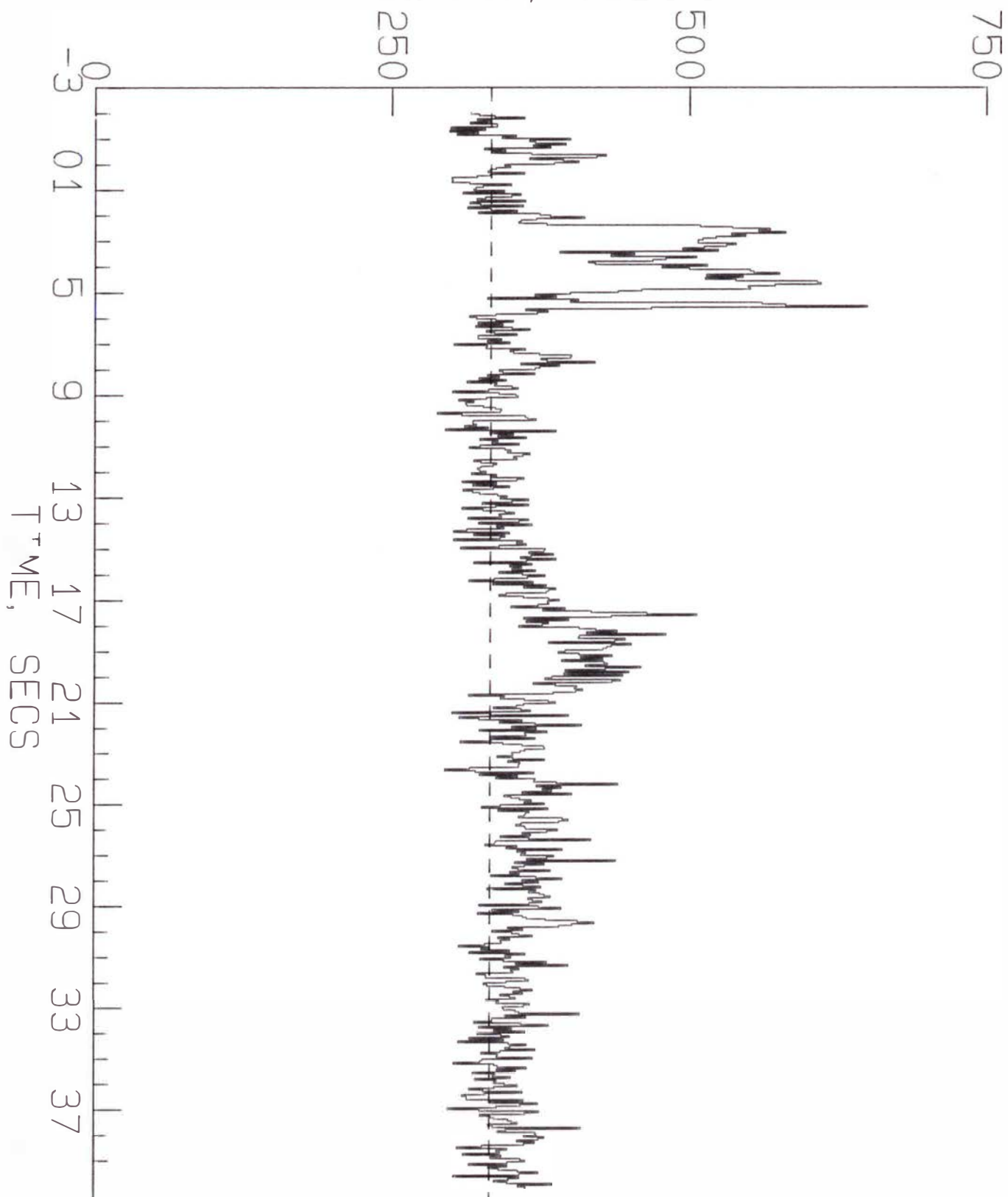
BATSE

02/05/92

68703.850

25- 100 keV

COUNTS/ .064 S



26 / 5 / 95

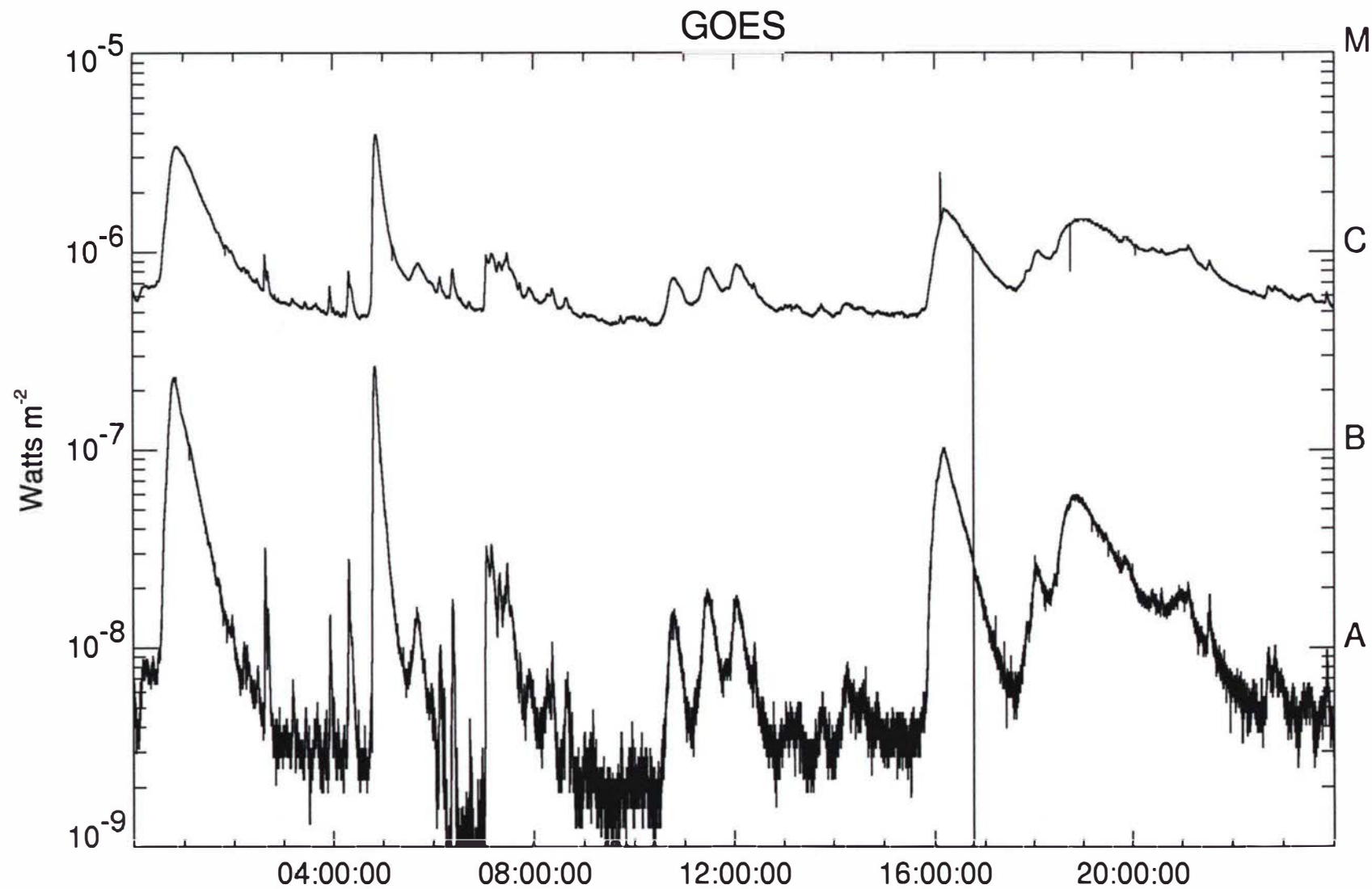
From ULSSCI@jplgp.span.nasa.gov Tue Apr 28 09:36:27 1992
Date: Tue, 28 Apr 92 09:38:32 PDT
From: ULSSCI@jplgp.span.nasa.gov
X-To: SBAME, BGOLDSTE, AGALVIN, GGLOECKL, EGRUEN, DLINKERT, ABALOGH, RFORSYTH, KHURLEY, EKEP
X-Cc: ULSSCI
Subject: Engineering Format during Conscan Testing.
To: KHURLEY@sunspot.ssl.berkeley.edu
Content-Length: 366

Following my note of 12 March 92, please note that the spacecraft will be in 1K Engineering format for Conscan testing during the following periods:

92.121.14:50 until 92.121.15:40 SCET
92.123.15:56 until 92.123.16:46 SCET
92.126.20:38 until 92.126.22:52 SCET
92.129.22:00 until 92.130.00:32 SCET

Regards,

Andy McGarry
Systems Engineer



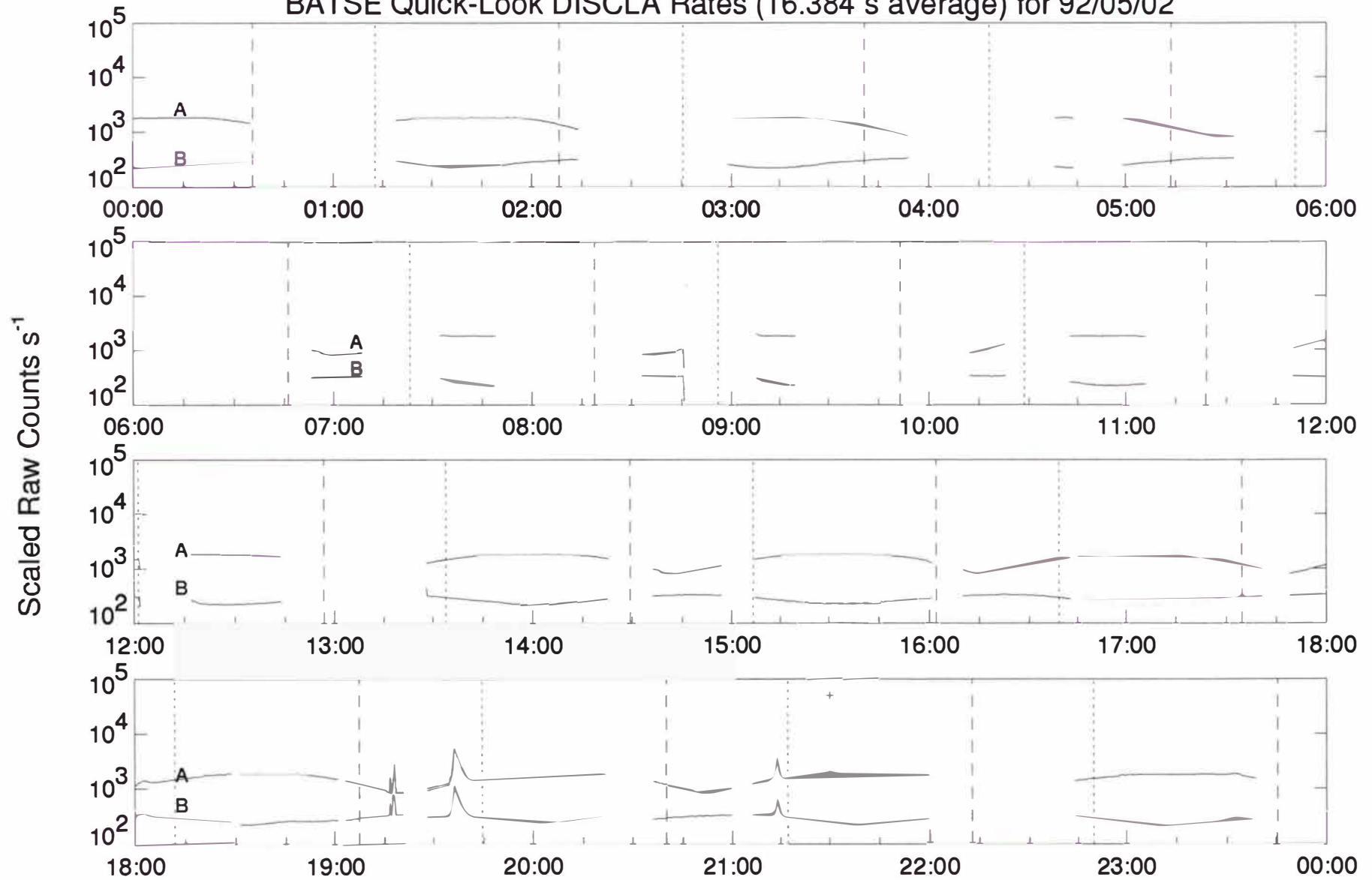
Data Start: 92/05/02, 0000:00

Plot created: 93/10/29, 0103

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/02

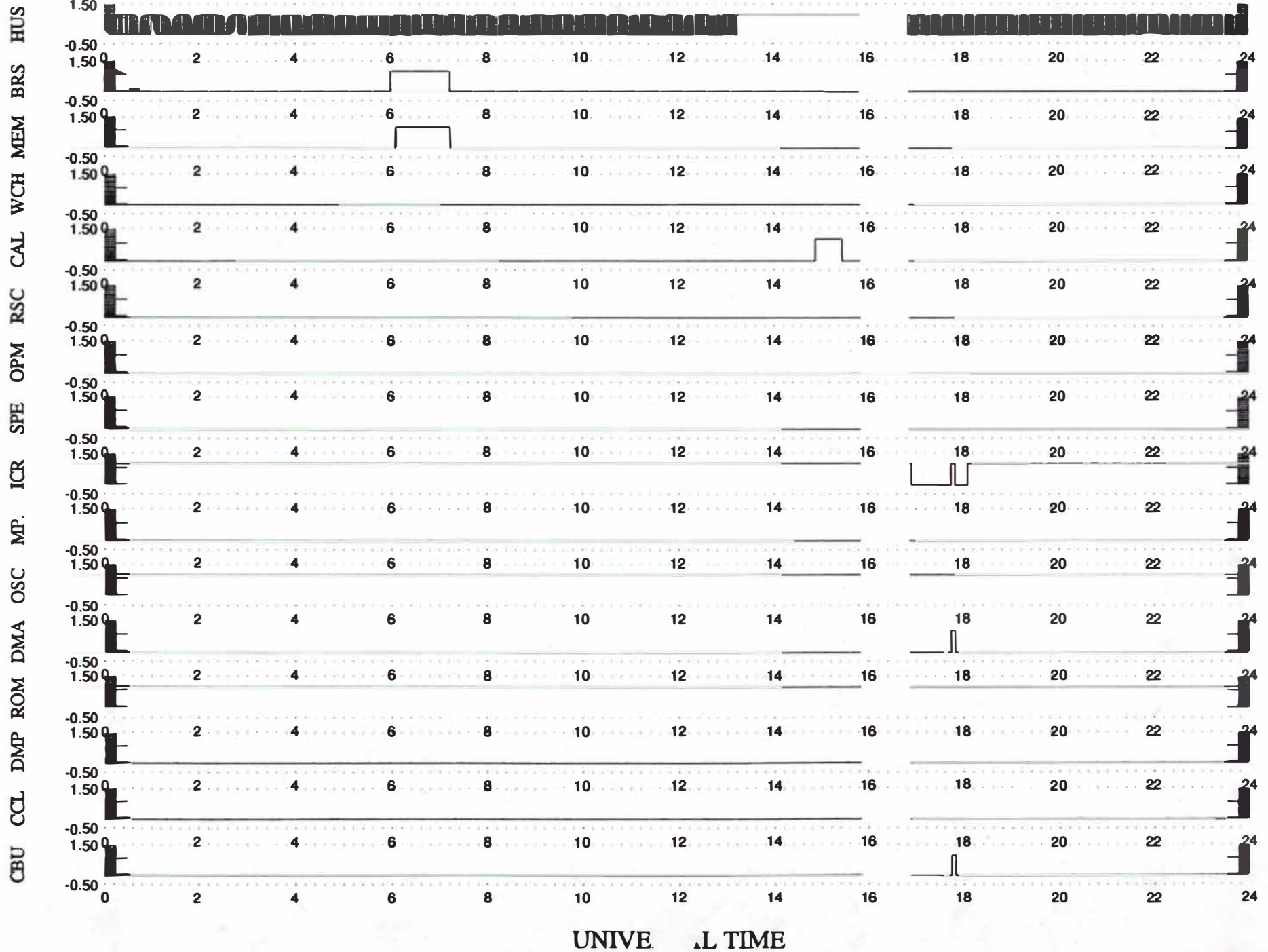


Current Time: 92/09/19, 1705 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

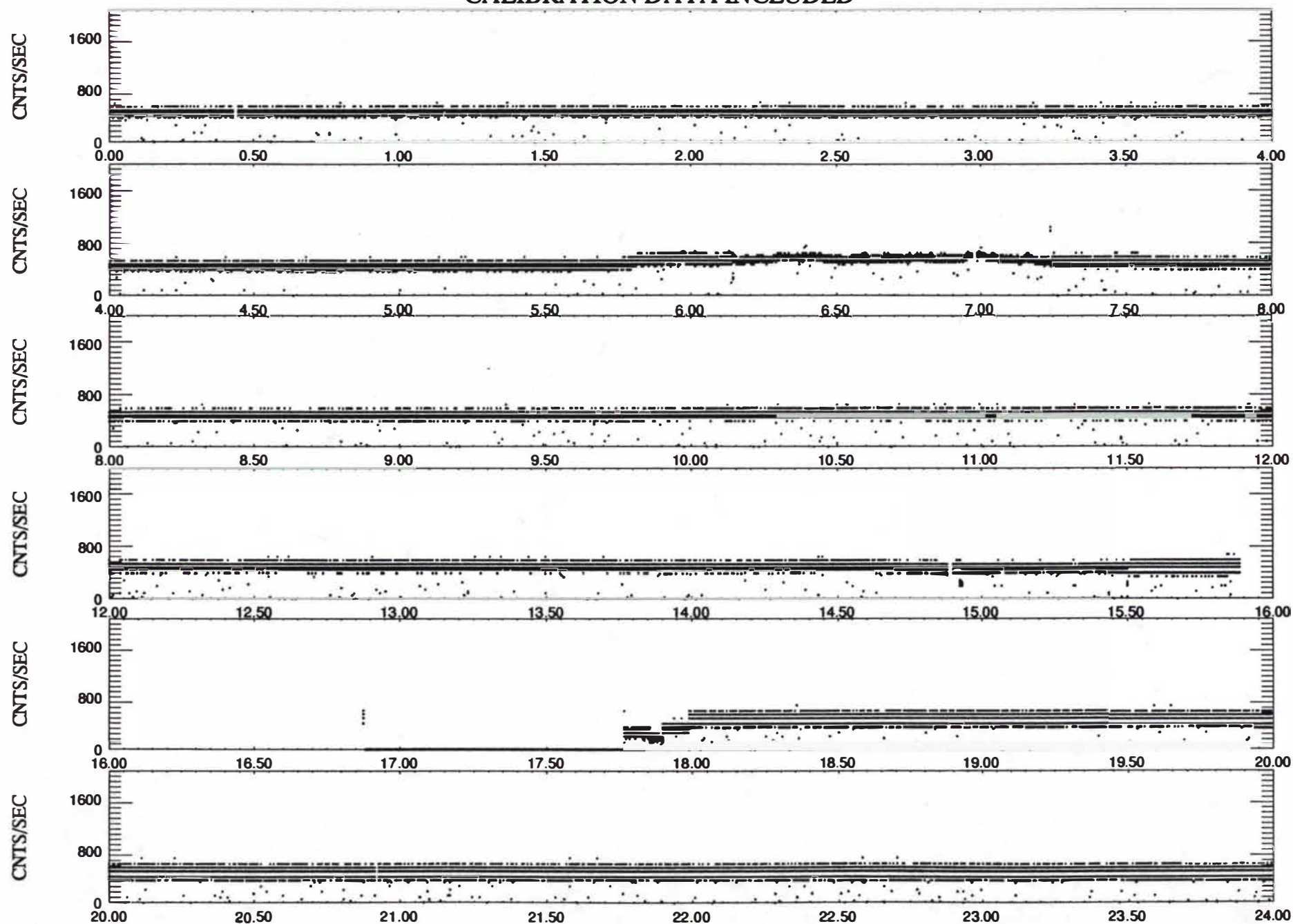
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 2, 0 - 1, 0

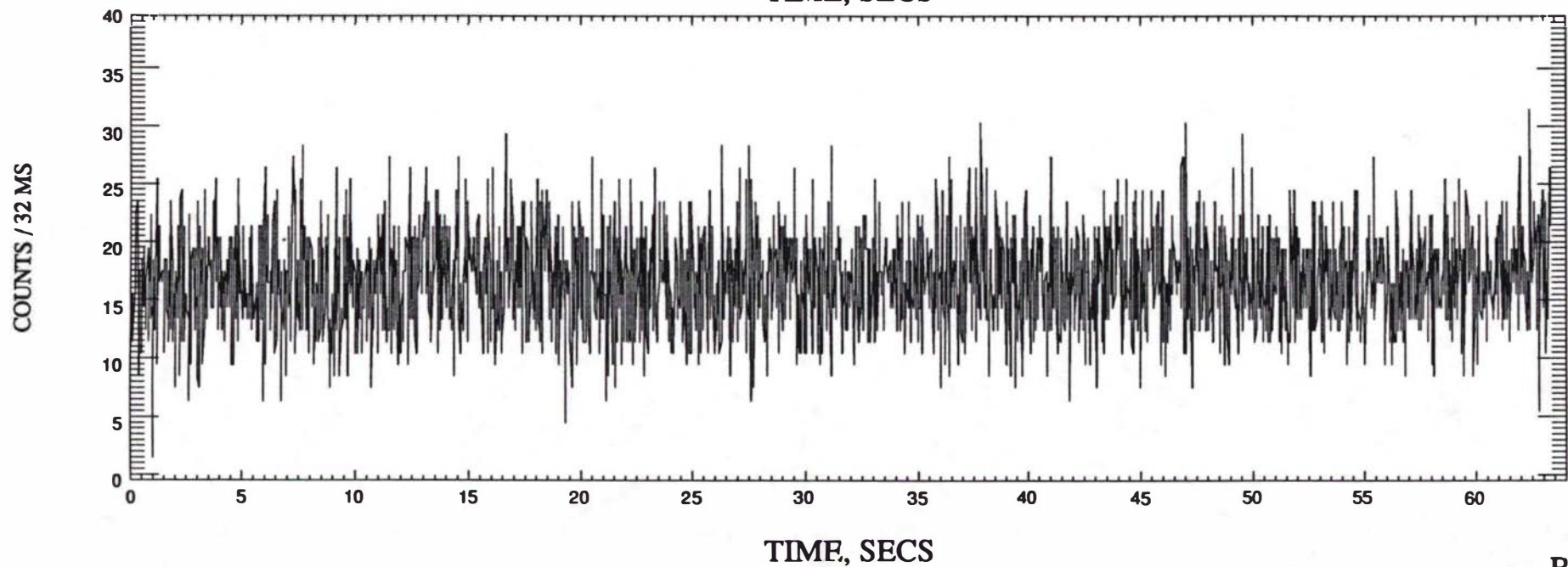
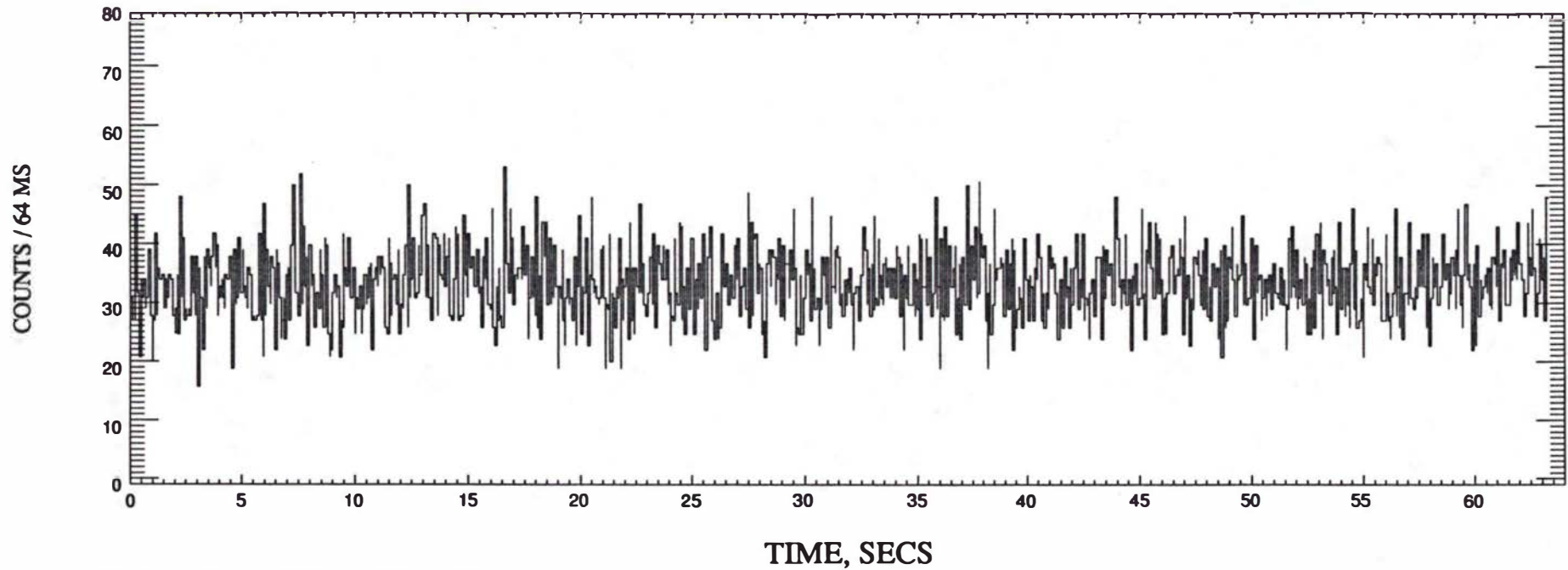


CALIBRATION DATA INCLUDED



UNIV. ΔL TIME

Burst Counter 2 at UT= 5.990781690809 h=21566.814 s



CATSEARCH PROGRAM

BATSE BURST # 1580

EVENT OF 1992 MAY 3 DAY OF YEAR=124

EVENT CROSSING TIME AT BATSE : 10229. S. OR 02:50:29.1

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 146.400 41.500

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

POSITION OF ULYSSES ON 3/ 5/ 92 IS:

RA= 148.733 DEC= 9.128 DIST= 5.023 AU

BATSE-ULYSSES DISTANCE = 751508120. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=147.56 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2115.64 SECS.

CROSSING TIME AT ULYSSES IS 8113. S. OR 02:15:13.4 +/- 251.31 SECONDS

No

From PENDLETON@ssl.msfc.nasa.gov Tue May 5 14:37:17 1992

Date: Tue, 5 May 1992 16:38:03 -0500 (CDT)

From: PENDLETON@ssl.msfc.nasa.gov

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1377

BATSE BURST TRIGGER

NO.: 01580

TIME: TJD=8745 ^{May 3} SECONDS=10231

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=127.3 AZIMUTH=175.5 ERROR= DEGREES

COMMENTS:

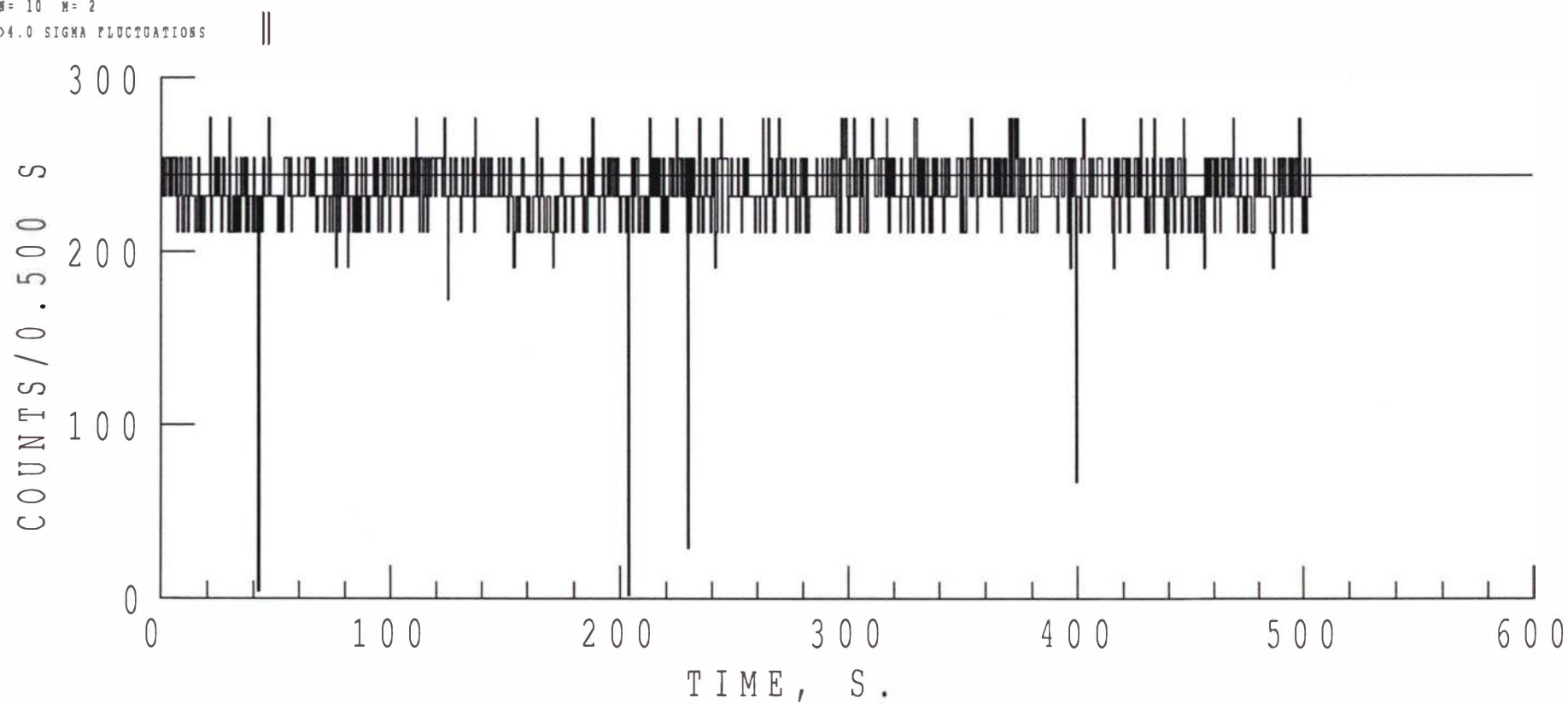
SHARP RISE, EXPONENTIAL DECAY BURST APPROX. 20 SEC LONG. RATHER HARD
SPECTRUM, SEEN ABOVE 300 KEV DURING PEAK. MODERATE TO WEAK INTENSITY.
FAIRLY SMOOTH TIME PROFILE.

No trigger

8 / 6 / 94

ULYSSES RT
3 / 5 / 92 7848.137 s
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



CATSEARCH PROGRAM

BATSE BURST # 1581

EVENT OF 1992 MAY 3 DAY OF YEAR=124

EVENT CROSSING TIME AT BATSE : 31589. S. OR 08:46:28.9

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 227.800 79.000

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

POSITION OF ULYSSES ON 3/ 5/ 92 IS:

RA= 148.733 DEC= 9.128 DIST= 5.023 AU

BATSE-ULYSSES DISTANCE = 751508120. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.04 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH= -479.93 SECS.

CROSSING TIME AT ULYSSES IS 31109. S. OR 08:38:29.0 +/- 469.87 SECONDS

No

From PENDLETON@ssl.msfc.nasa.gov Tue May 5 14:54:10 1992

Date: Tue, 5 May 1992 16:54:51 -0500 (CDT)

From: PENDLETON@ssl.msfc.nasa.gov

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,

khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01581

TIME: TJD=8745 SECONDS=31591

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=128.2 AZIMUTH=115.1 ERROR= DEGREES

COMMENTS:

SHORT SINGLE SPIKE EVENT APPROX. 24 MILLISECOND DURATION. STRONG
FLUX UP TO 300 KEV. NO SIGNIFICANT FLUX ABOVE 300 KEV. MODERATE INTENSITY.

No trigger

8 / 6 / 94

ULYSSES RT

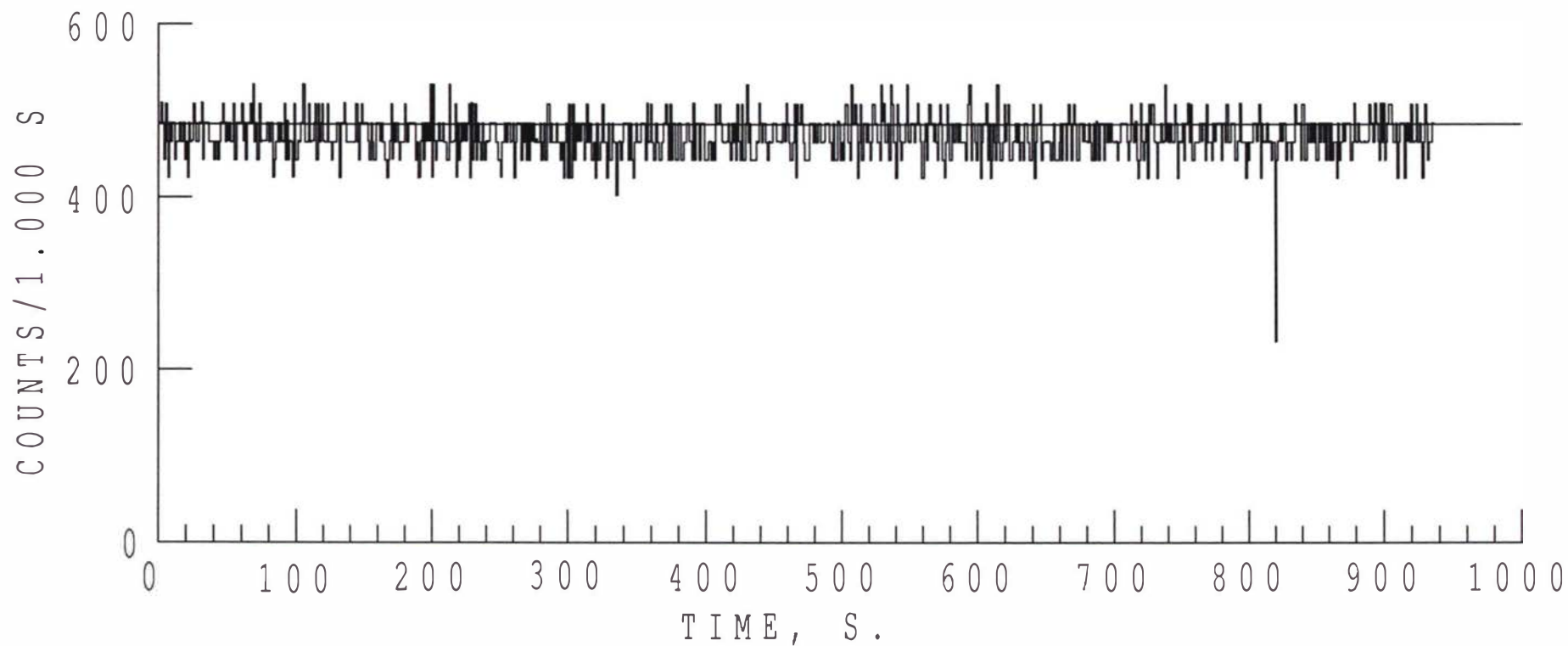
3 / 5 / 92 30636.004 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

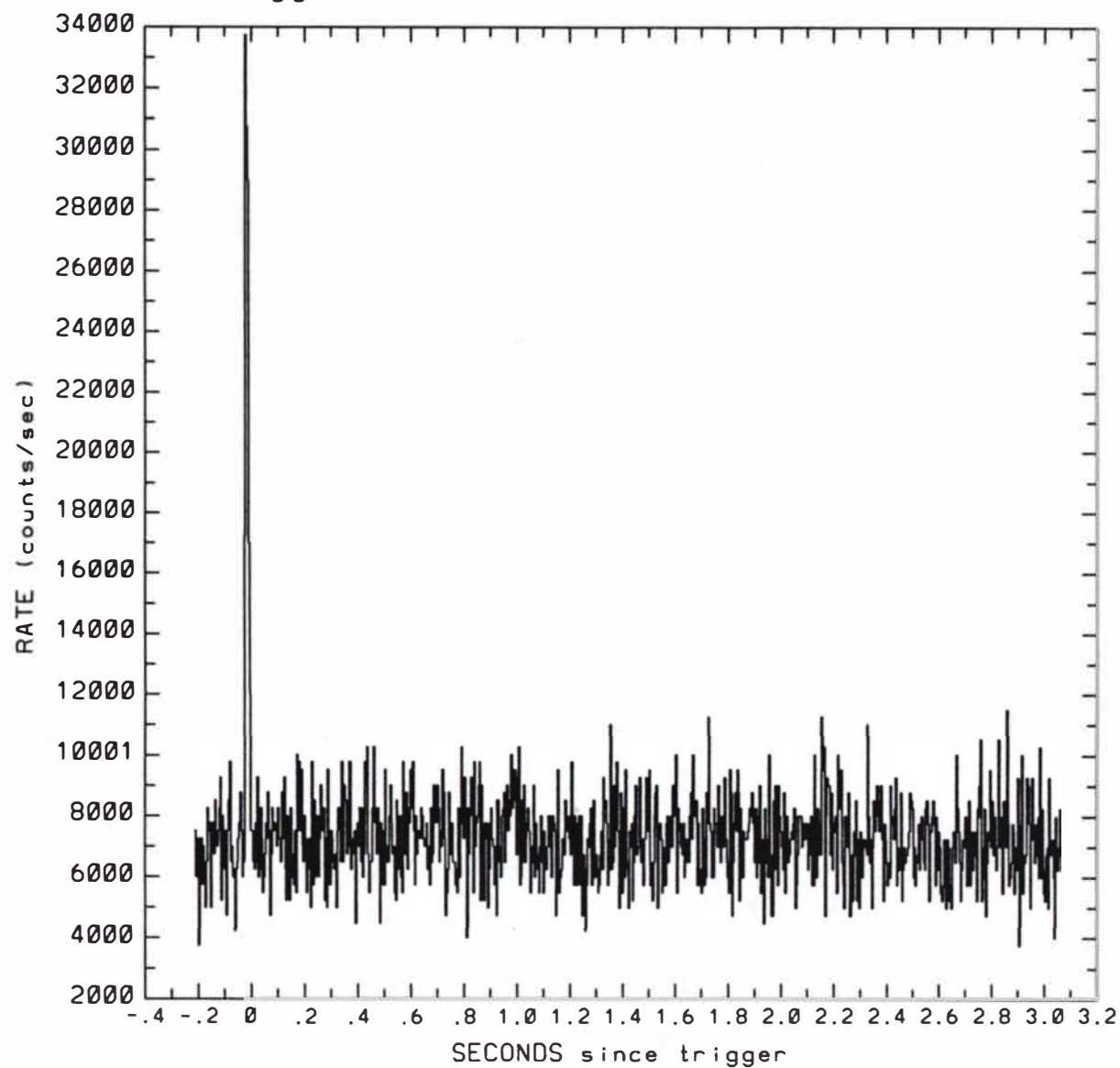
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



May 3 92
227.8, 79.0
 $1.2 \times 10^{-6} \text{ erg/cm}^2$

Trigger #1581



4-MAY-1992 18:57:17

Created by MOPS BD
(Burst Display)
Version 2.11

Trigger # : 1582

Trigger Time:
8745 / 31895.866

Burst Data Type:
TTE

Multiple Events
Ignored: 24

Deadtime
Corrected: N

Background Data
Type: DISCLA

Minimum Integ. Time:
0.004000 second(s)

Detectors [7..0]:
00100010

Discriminators:
(1. 4)

Quality Mask:
BDISP0

From PENDLETON@ssl.msfc.nasa.gov Tue May 5 15:04:10 1992
Date: Tue, 5 May 1992 17:05:01 -0500 (CDT)
From: PENDLETON@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1311

BATSE BURST TRIGGER

NO.: 01582

TIME: TJD=8745 SECONDS=31895

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

GOES M1.0 FLARE. SMOOTH TIME PROFILE APPROX. 40 SEC. LONG. SOME FLUX
ABOVE 300 KEV. FAIRLY INTENSE.

BATSE BURST TRIGGER

NO.: 01583

TIME: TJD=8745 SECONDS=67127

TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL:

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

ELECTRON PERCIPITATION EVENT

BATSE BURST TRIGGER

NO.: 01584

TIME: TJD=8745 SECONDS=72971

TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL: N

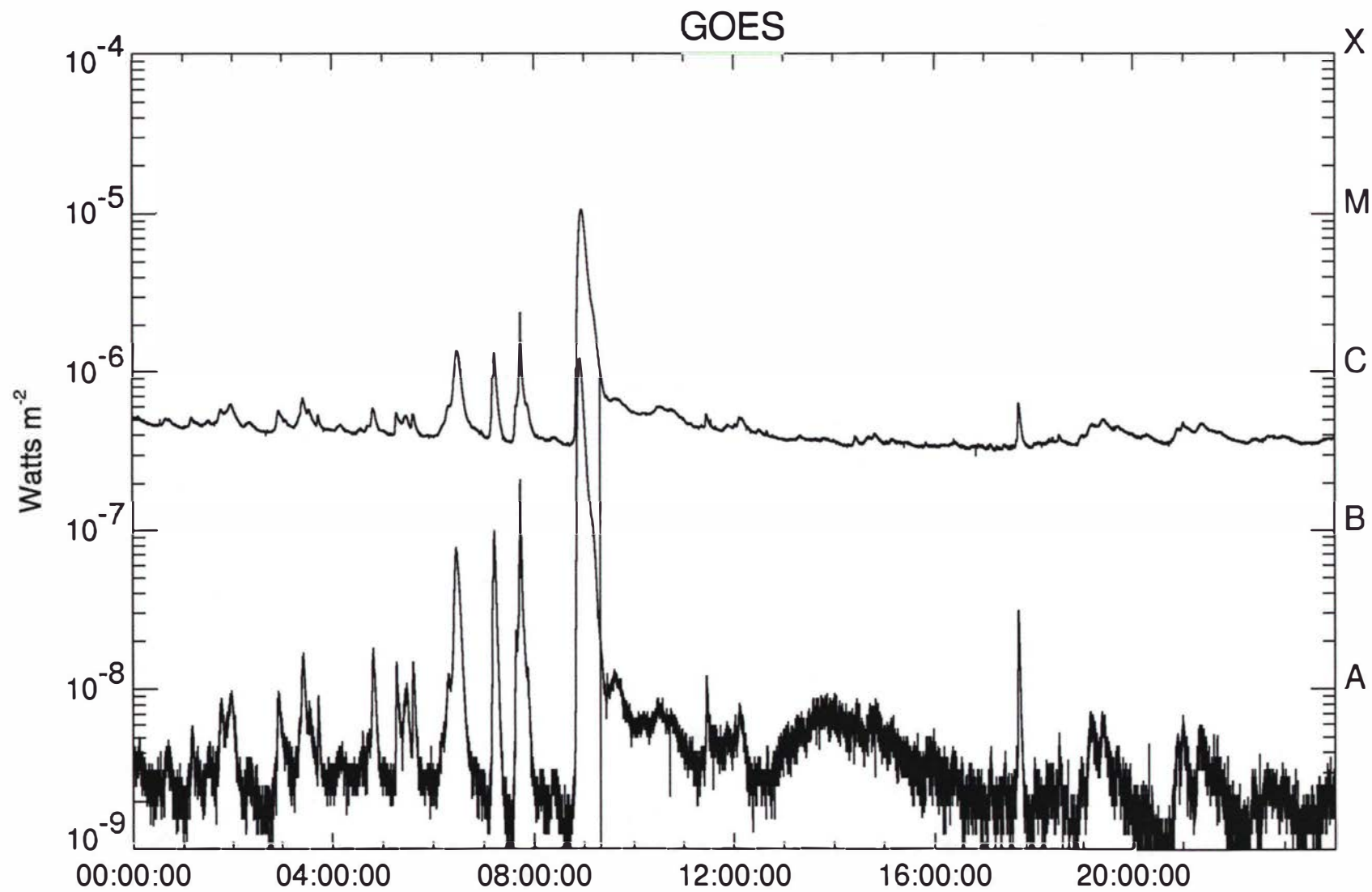
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

ELECTRON PRECIPITATION EVENT



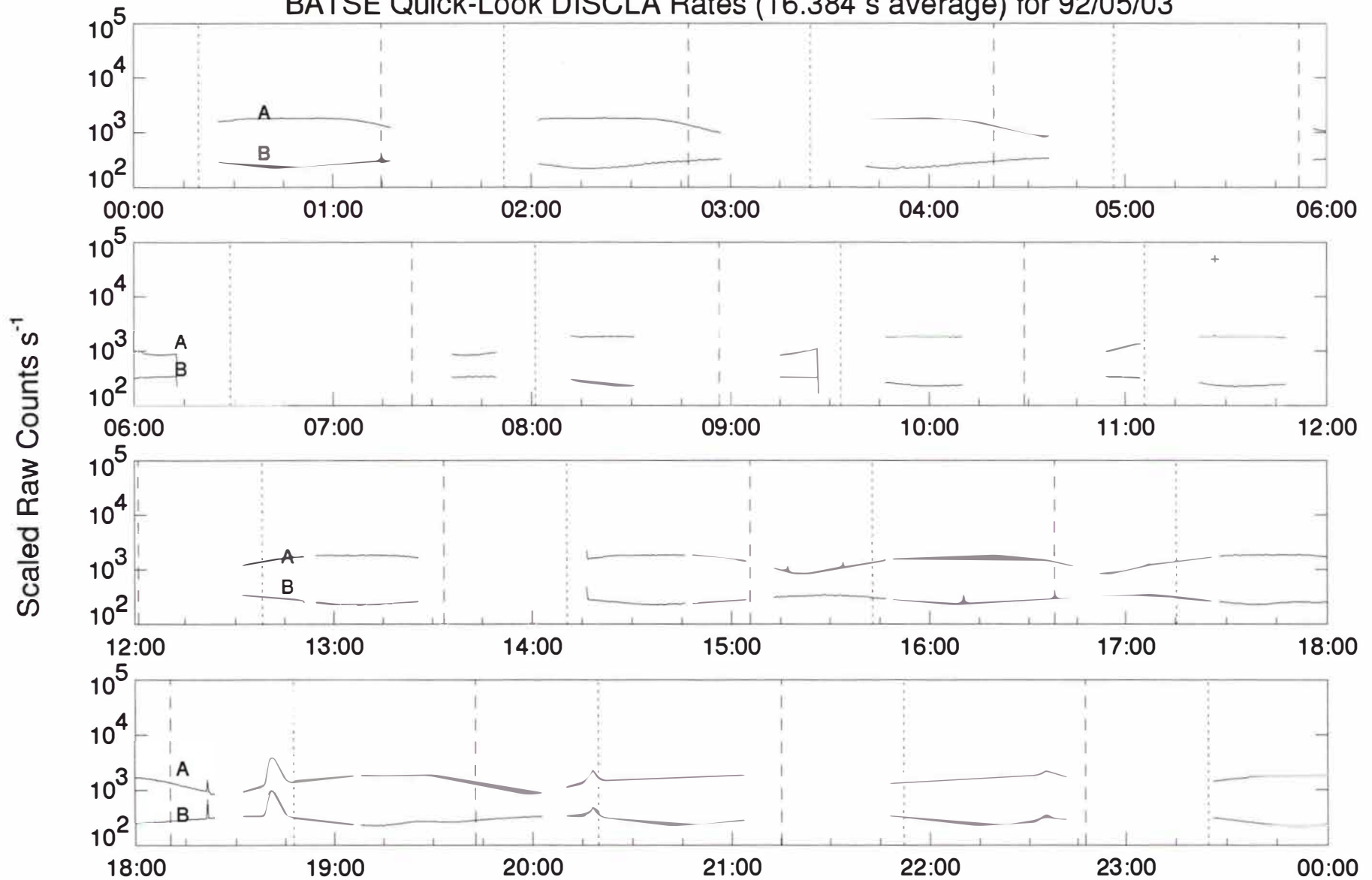
Data Start: 92/05/02, 2359:58

Plot created: 93/10/29, 0103

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/03

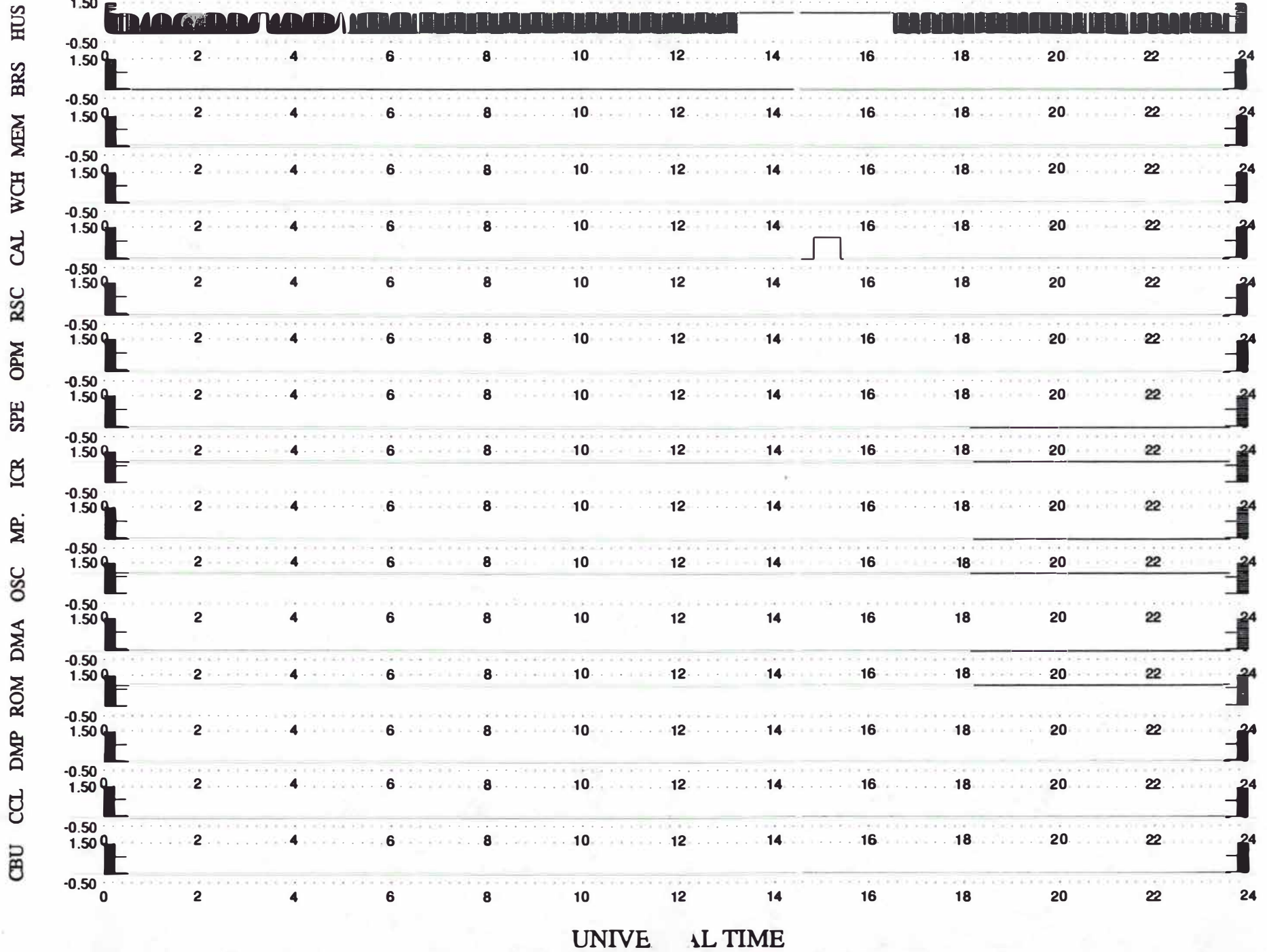


Current Time: 92/09/19, 1705 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

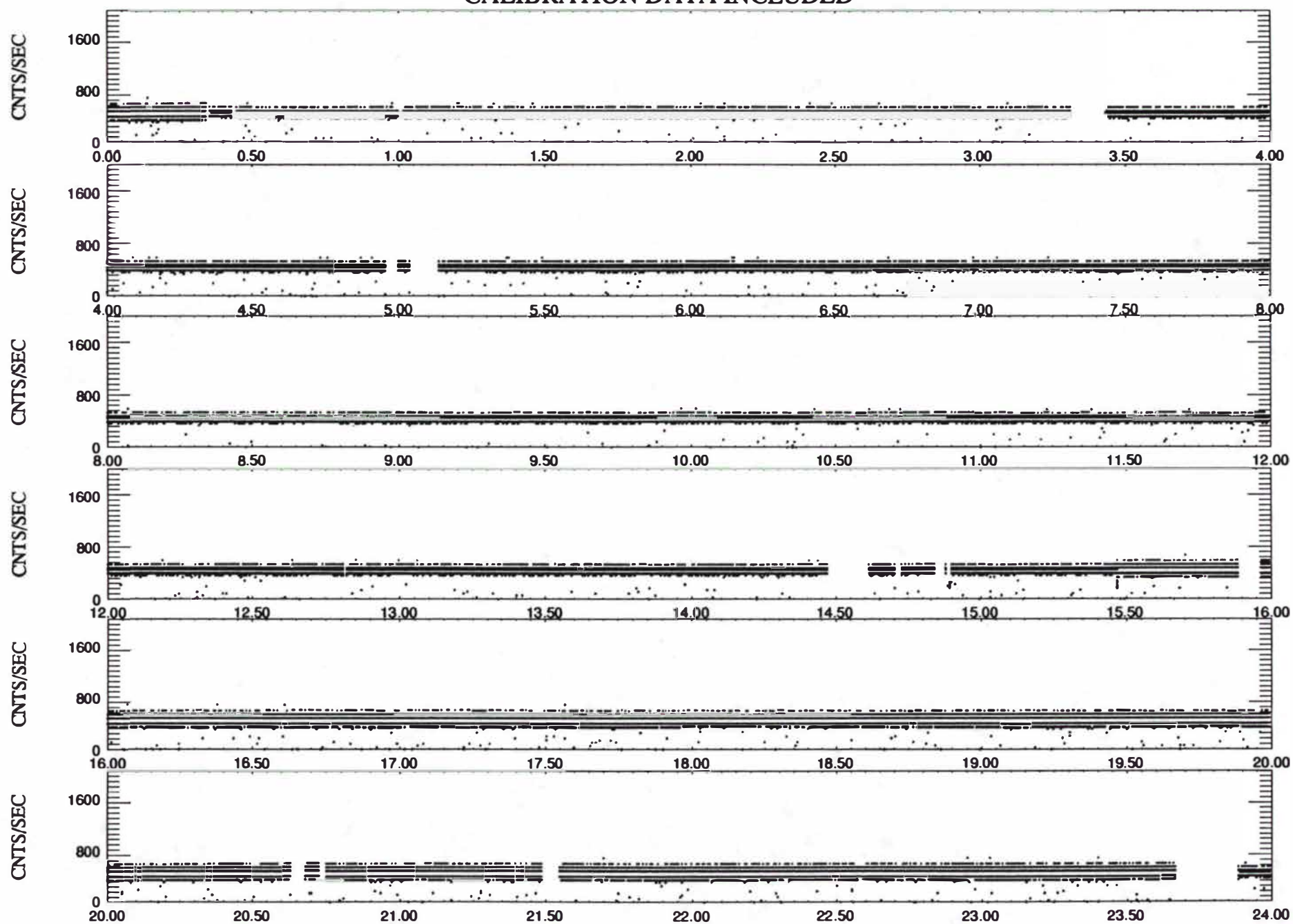
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

NO BURST (0)



CALIBRATION DATA INCLUDED



UNIVERSE TIME

From KOSHUT@ssl.msfc.nasa.gov Tue May 5 08:56:03 1992
Date: Tue, 5 May 1992 10:56:37 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01585

TIME: TJD=8746 *May 4* SECONDS=69627

TYPE: PARTICL

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:

SIGMA

INTENSITY:

COUNTS/CM2

LOCATION: ZENITH=

AZIMUTH=

ERROR=

DEGREES

COMMENTS:

PARTICLE PRECIPITATION EVENT

List of GRB's candidates detected by SIGMA

YEAR : 1992

<i>Time of trigger (UT)</i>	<i>Detector</i>	<i>UGB N°</i>	
1992/01/10 09:19:00.864	A.C.	386/d	YES - T2166ETZ
1992/01/25 08:57:27.162 322475	A.C./GCA	397/b	
1992/02/10 09:53:54.538	A.C.	404/d	NO - IN 2 MAGNETOSPHERE
1992/02/11 02:39:14.702	GCA	405/a	" " " "
1992/03/11 02:20:29.181	A.C./GCA	422/a	YES - TILIGETZ
1992/03/25 17:17:36.661	A.C./GCA	430/b	YES - TILIGETZ
1992/04/05 07:41:38.820 276995	A.C.	434/a	NO
1992/04/14 23:22:43.021	GCA	441/b	YES - RI
1992/06/22 07:05:06.782	A.C./GCA	468/a	YES - TRIGGERS
1992/07/07 06:33:35.201	GCA	477/b	MAYBE - VERY WEAK RI
1992/07/14 13:04:31.014	A.C./GCA	482/b	YES - RI
1992/07/16 16:55:34.196 60934	GCA	484/b	
1992/07/20 03:12:09.209	A.C./GCA	486/a	YES - RI
1992/07/23 20:03:08.323	A.C./GCA	489/b	YES - TRIGGERS

POSITION OF ULYSSES ON 5/ 4/1992 IS:

RA= 151.755 DEC= 9.430 DIST= 4.634 AU

THE DISTANCE BETWEEN TWO OBJECTS AT

.000 .000 .00 KM. AND

151.755 9.430 693182100.00 KM. IS

693182100.00 KM., OR 4.634 A.U., OR 2312.21 LIGHT-SECONDS

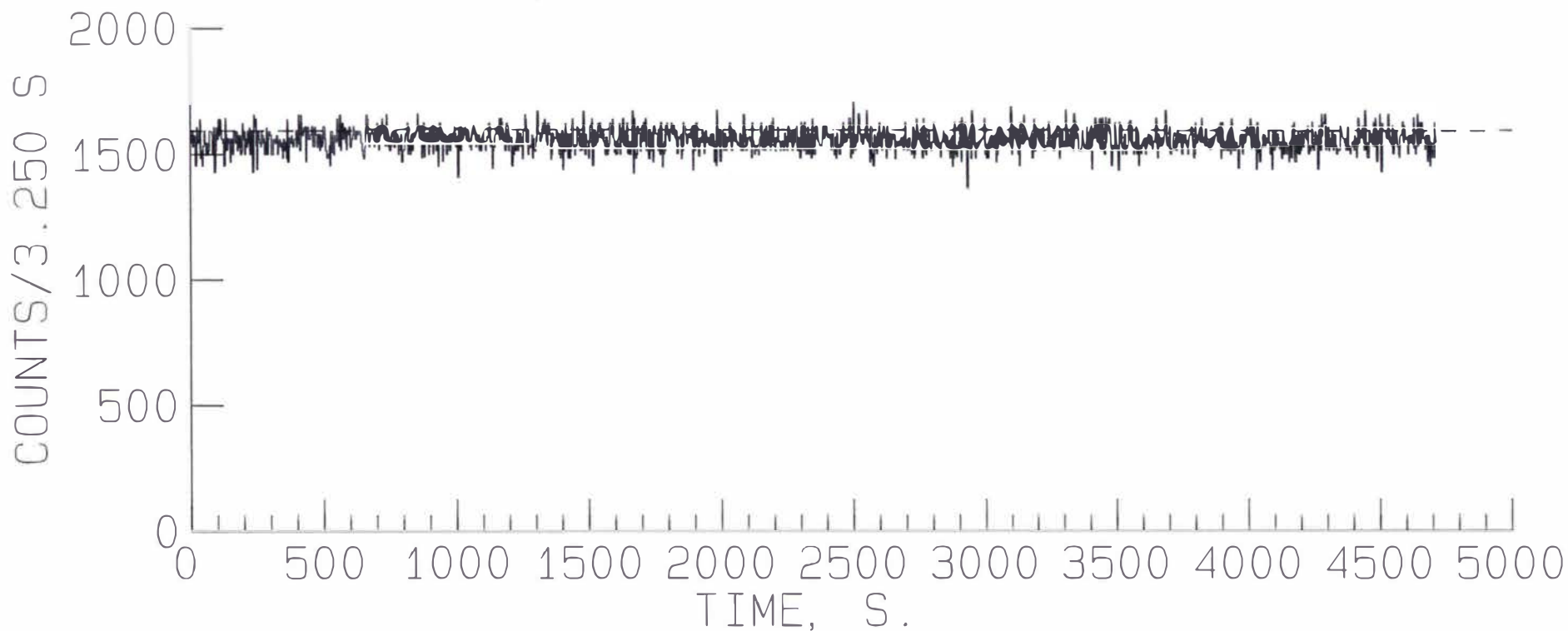
THE ANGLE BETWEEN THEM IS 150.346 DEGREES

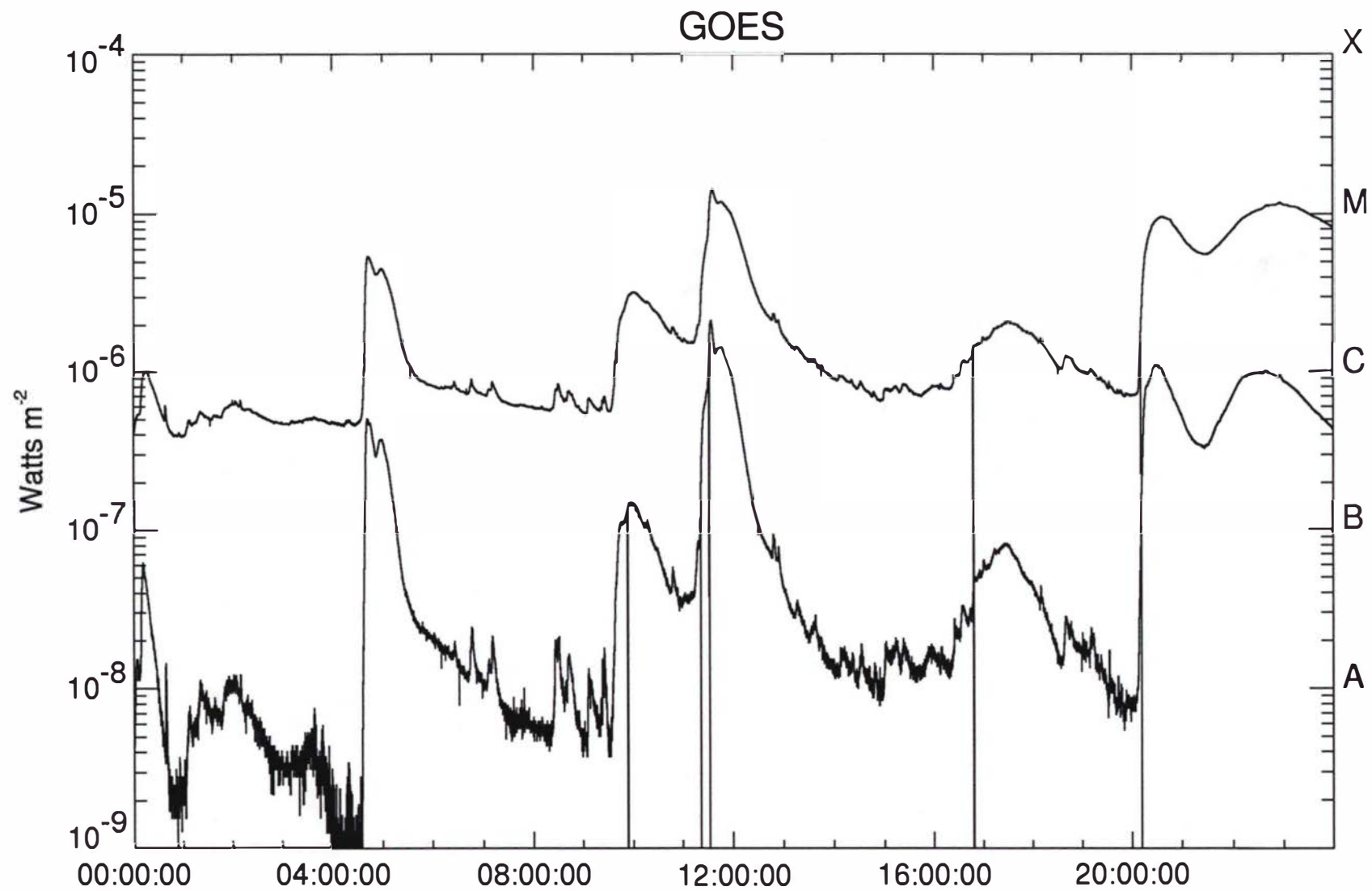
27699s

12/ 9/92

ULYSSES RT
4/ 5/92 25344.076 s
.250 S INTERVALS REGROUPED BY 13
0- 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





Data Start: 92/05/03, 2359:58

Plot created: 93/10/29, 0104

Channel

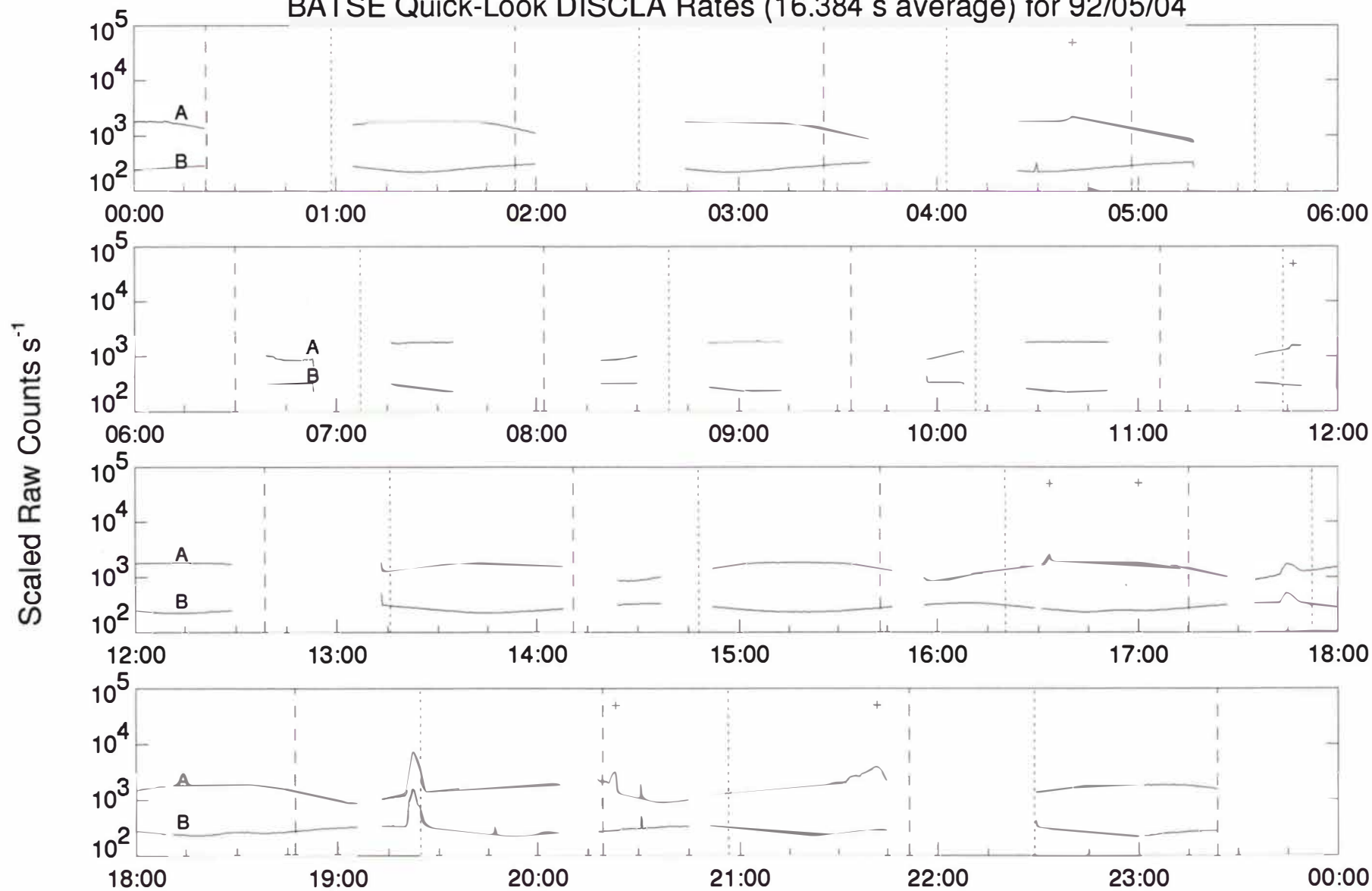
1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/04



Current Time: 92/09/19, 1706 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

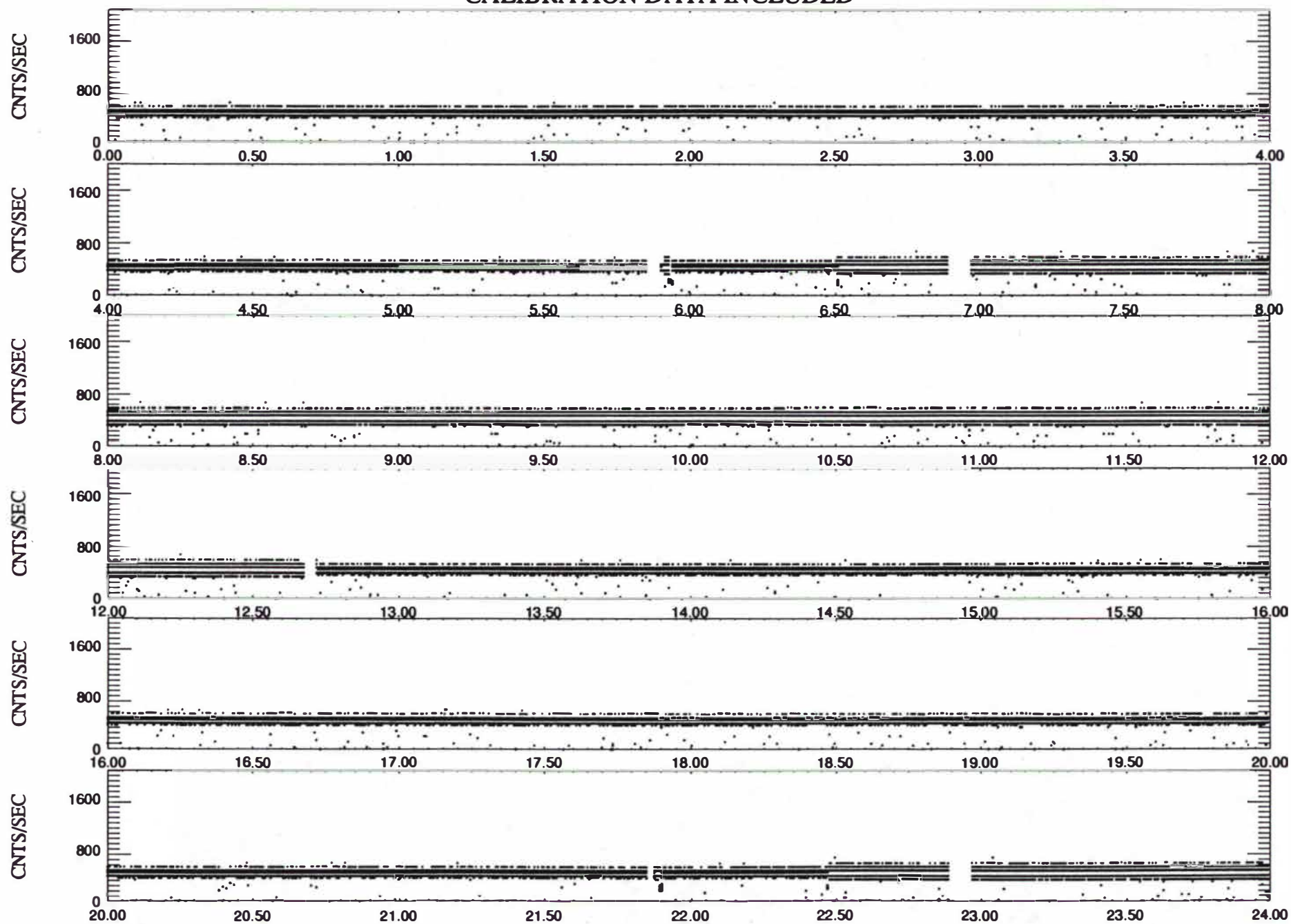
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

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



CALIBRATION DATA INCLUDED



UNIVEL .L TIME

CATSEARCH PROGRAM

BATSE BURST # 1586

EVENT OF 1992 MAY 5 DAY OF YEAR=126

EVENT CROSSING TIME AT BATSE : 78890. S. OR 21:54:49.6

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 65.000 72.800

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

POSITION OF ULYSSES ON 5/ 5/ 92 IS:

RA= 148.622 DEC= 9.079 DIST= 5.055 AU

BATSE-ULYSSES DISTANCE = 756228000. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.55 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH= -462.06 SECS.

CROSSING TIME AT ULYSSES IS 78428. S. OR 21:47:07.5 +/- 473.52 SECONDS

N/O

From MALLOZZI@ssl.msfc.nasa.gov Thu May 7 09:21:27 1992

Date: Thu, 7 May 1992 11:22:17 -0500 (CDT)

From: MALLOZZI@ssl.msfc.nasa.gov

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,

khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01586

TIME: TJD=8747 SECONDS=78891 *May 5 21:55*

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=154 AZIMUTH=101 ERROR= DEGREES

COMMENTS:

WEAK BURST WITH TWO DISTINCT PEAKS. TOTAL DURATION ~110 SEC.

EVENT NOT OBSERVED ABOVE ~300 KEV.

Has Ept off

From @space6.ssl.berkeley.edu,@cmsa.berkeley.edu:ASTMPH@CSEARN.BITNET Sun Aug 30 15:12:21 1992
Date: Mon, 31 Aug 92 00:12:33 MDT
From: Petr Pravec <ASTMPH@CSEARN.BITNET@cmsa.berkeley.edu>
Subject: msg from Rene Hudec
To: khurley@space6.ssl.berkeley.edu
Content-Length: 1712

to: Kevin Hurley <khurley@space6.ssl.berkeley.edu>

Dear Kevin:

we have found the following positional coincidences between BATSE
GRB and OT records:

GRB 920224 OT 910407 *In 4 mag, but count rates not too bad. Get BATSE data + check*
GRB 911228 OT 910719 *Get BATSE data*
GRB 920505 OT 910811 " " "
GRB 920121 OT 910917 " " "

i.e. these GRB and OT coincides positionally within the given
optical and gamma ray error boxes. However, the error boxes we
have for these GRB are large and so the coincidences may be
accidental only. Please let me know whether or not are the
positions of these GRBS known more accurately by triangulation
method. I have already asked Chryssa but she recommended to ask
you directly as owner of this information.

The same information would be also important for those GRBS we
have simultaneous plates :

911025, 911027, 911127, 911202, 911209, 911210, 920110, 910511, 910809
910505, 910829, 910902, 911129, 911228, 920121, 920209, 920224, 920227, 920305
and 920505 *Same as above*

For these GRB, we have between 1 and 9 Plates taken simultaneously
and covering the position. However, the BATSE errors are large (
14 deg dia) and hence the search for optical counterparts is very
laborious and difficult. If you would have a more precise position
determined by triangulation, then we could investigate this box
more carefully.

Naturally, I guarantee you that this information will not be given
to any other person and will be used for the proposed search only.
In the case of any discovery, publication etc. you will be
considered as co-author and asked for permission prior release.

Regarding the release of HCO plates, I have send an email message
to Martha Hazen . She will contact you when necessary . Thank you.

Kind regards Rene Hudec

911025 No
911027 No
911127 Yes ✓
911202 Yes ✓
911209 Yes ✓
911210 Maybe
920110 Yes ✓
910511 No ✓
910505 Yes No
910809 *Yes but wait - but see above*
910829 Get BATSE data + look
910902 " "
911129 " "
911228 " "

920121 *Get BATSE data + look*
920209 No - in 4 mag
920224 *See above comment*
920227 *Get BATSE data + look*
920305 " "

From @space6.ssl.berkeley.edu,@cmsa.berkeley.edu:ASTMPH@CSEARN.BITNET Thu Sep 3 22:10:38 199
Date: Fri, 04 Sep 92 07:10:41 MDT
From: "R.Hudec" <ASTMPH@CSEARN.BITNET@cmsa.berkeley.edu>
To: khurley@space6.ssl.berkeley.edu
Content-Length: 1333

to: Kevin Hurley <space6.ssl.berkeley.edu>

Dear Kevin,

thanks for your message from Aug 31.

Today, I got an e-mail message from Martha Hazen <martha@cfa3>. She is ready to prepare the HCO plates for the trip. So now Roland should contact Martha and give a concrete date when the plates should be released. The problem is that, although I have send him many messages and even letters in the last months, I never got answer from him. Could you please try to help here ? Martha is informed and kindly agrees to release and prepare the plates.

Regarding the GRB detected by BATSE, here is a list of events for which we have some hints for coincidences and/or simultaneous optical data:

GRB date	UT,s	
910511	79390	NO
910809 # 658	03507	Request BATSE α δ
911025	77116	NO
911027 # 342	06313	Request BATSE α δ
911127	15730	YES
911209	03410	NO
910505	72918	OT candidate NO
910823 # 717	75686	Get BATSE α δ
910829 # 741	81584	Get BATSE α δ
910902 # 752	82537	Get BATSE α δ
911129 # 1129	64793	Get BATSE α δ
911228 # 1244	62528	CC Get BATSE α δ
920121	79011	C Get BATSE α δ
920209	78046	Get BATSE α δ
920224	77882	C Get BATSE α δ
920227	75002	Get BATSE α δ
920305	3644	Get BATSE α δ
920505	78891	C Get BATSE α δ

C denotes that positional coincidence with previously mentioned OT has been found. CC denotes that 2 such coincidences were found.

Kinde regards, Rene Hudec

Requested Sep 9

From ULSSCI@jplgp.span.nasa.gov Tue Apr 28 09:36:27 1992

Date: Tue, 28 Apr 92 09:38:32 PDT

From: ULSSCI@jplgp.span.nasa.gov

X-To: SBAME, BGOLDSTE, AGALVIN, GGLOECKL, EGRUEN, DLINKERT, ABALOGH, RFORSYTH, KHURLEY, EKEP

X-Cc: ULSSCI

Subject: Engineering Format during Conscan Testing.

To: KHURLEY@sunspot.ssl.berkeley.edu

Content-Length: 366

Following my note of 12 March 92, please note that the spacecraft will be in 1K Engineering format for Conscan testing during the following periods:

92.121.14:50 until 92.121.15:40 SCET

92.123.15:56 until 92.123.16:46 SCET

92.126.20:38 until 92.126.22:52 SCET

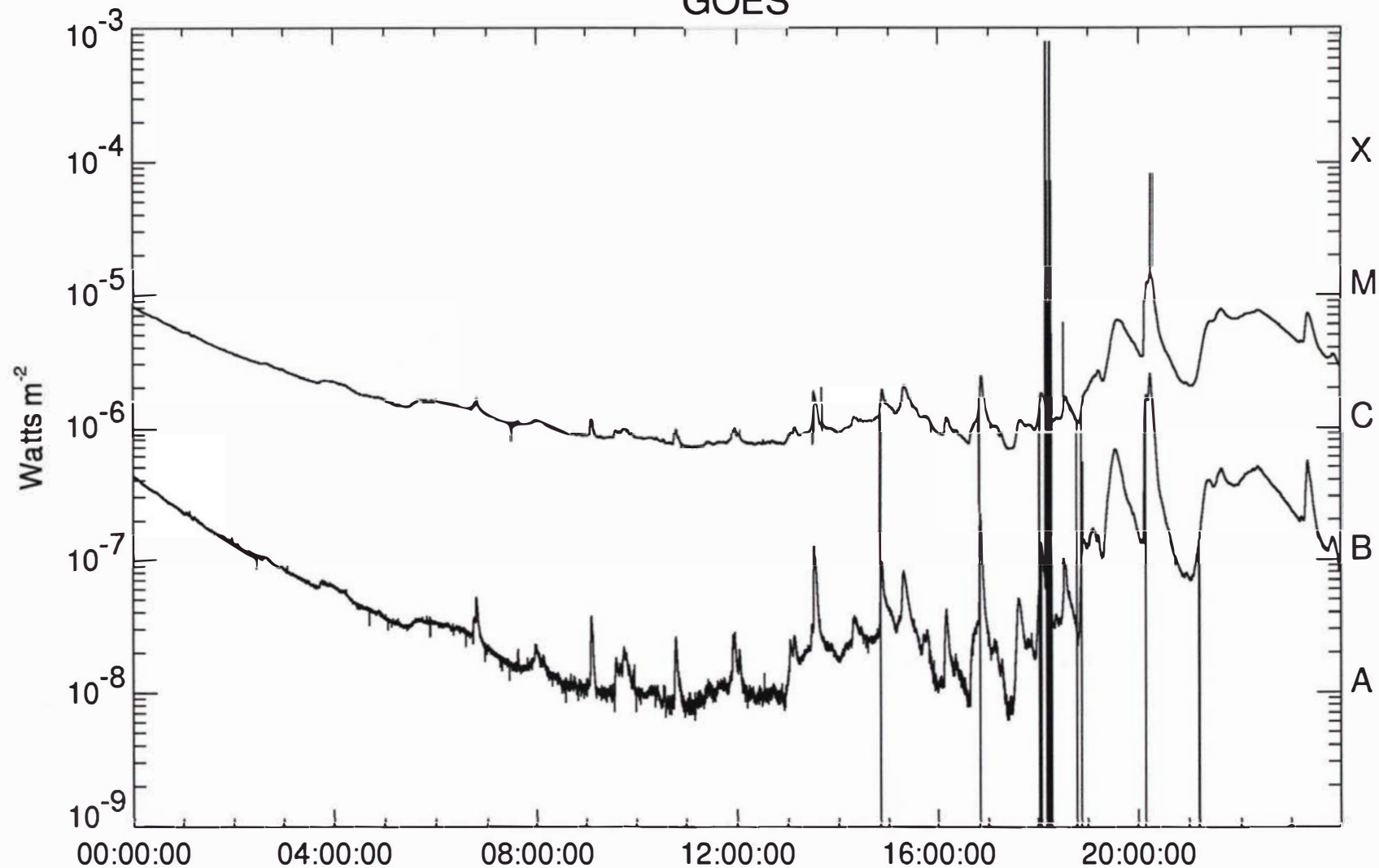
92.129.22:00 until 92.130.00:32 SCET

Regards,

Andy McGarry

Systems Engineer

GOES

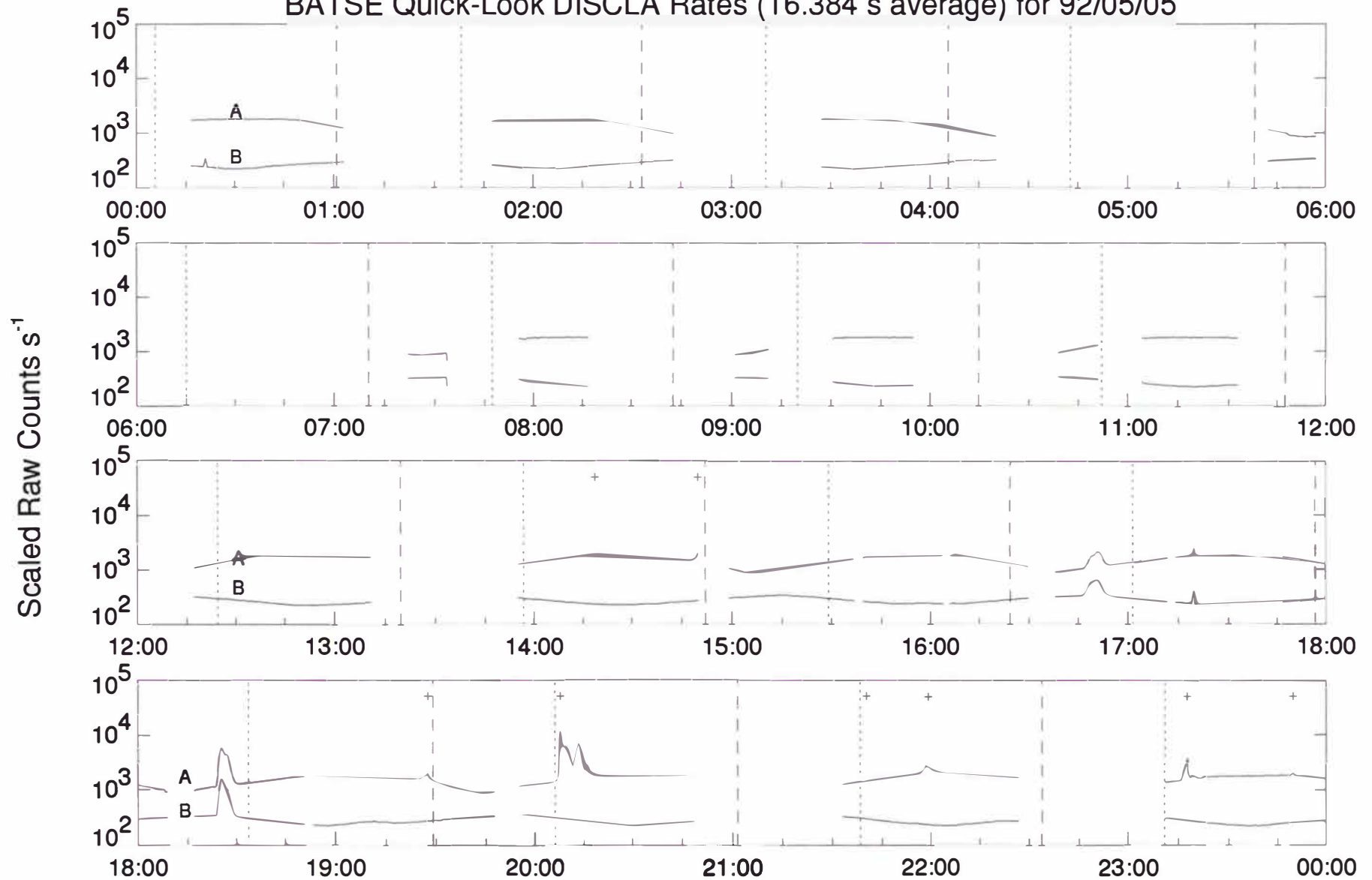


Data Start: 92/05/04, 2359:59

Plot created: 93/10/29, 0104

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

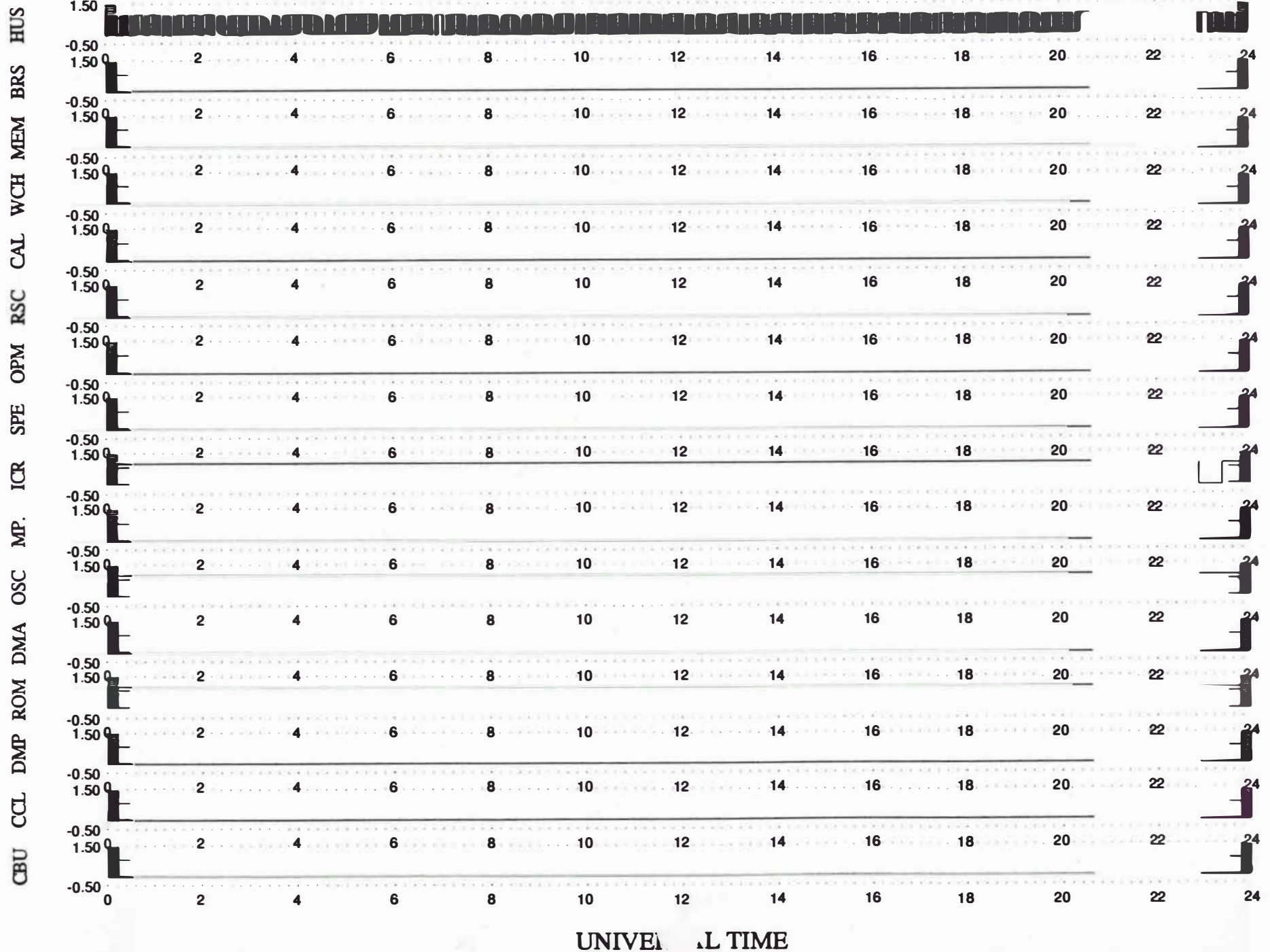
BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/05



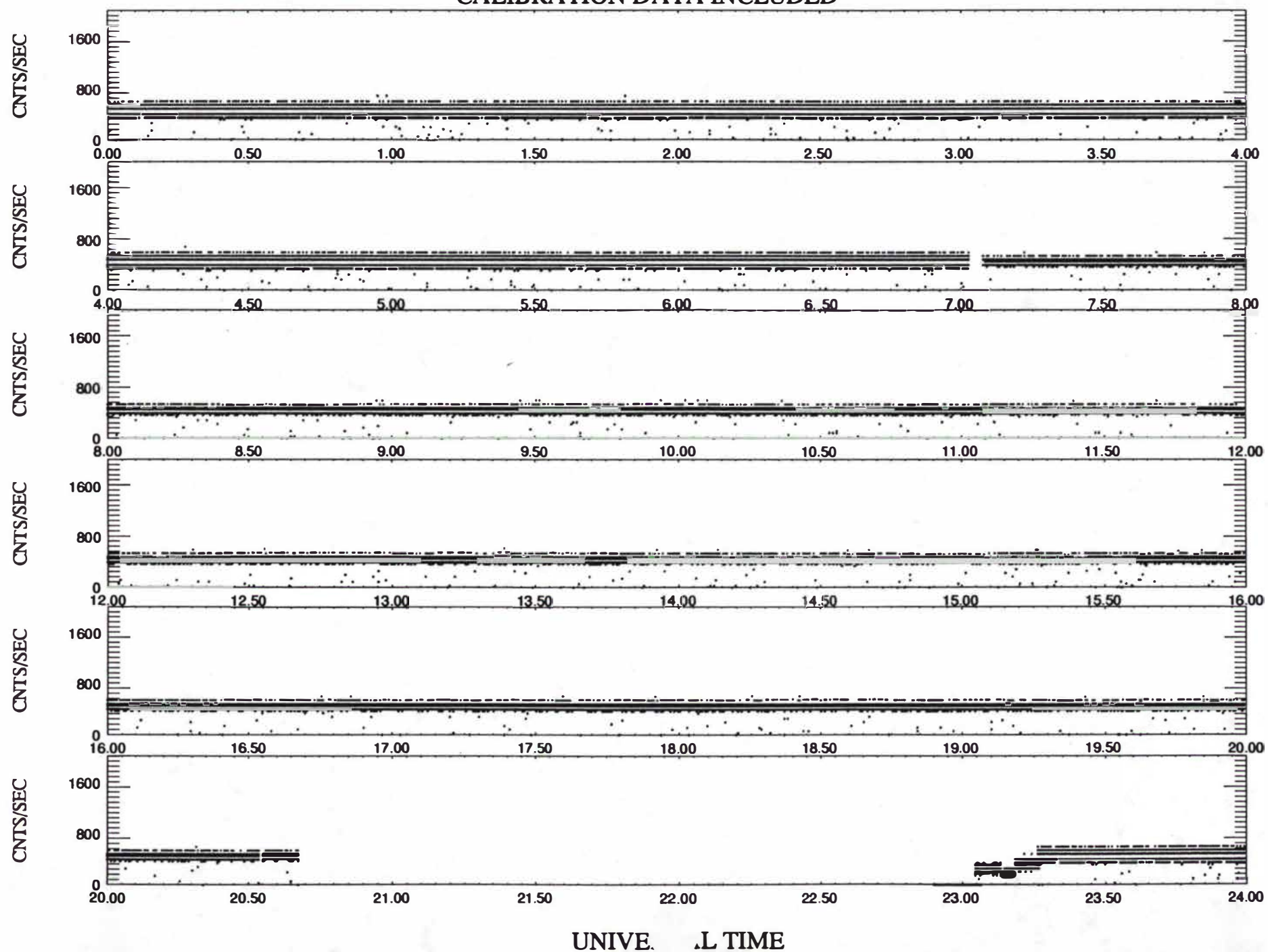
Current Time: 92/09/19, 1707 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

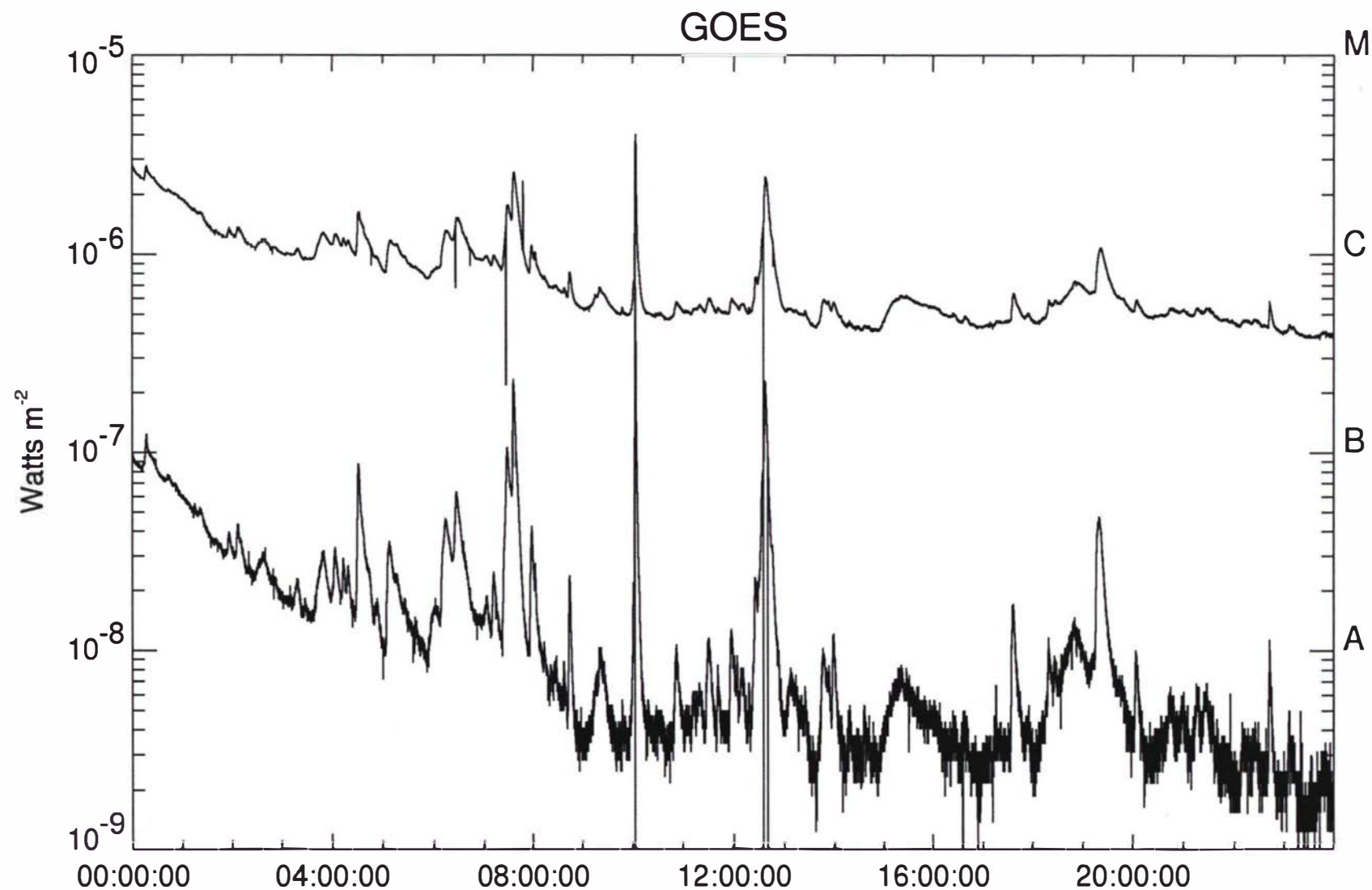
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



CALIBRATION DATA INCLUDED



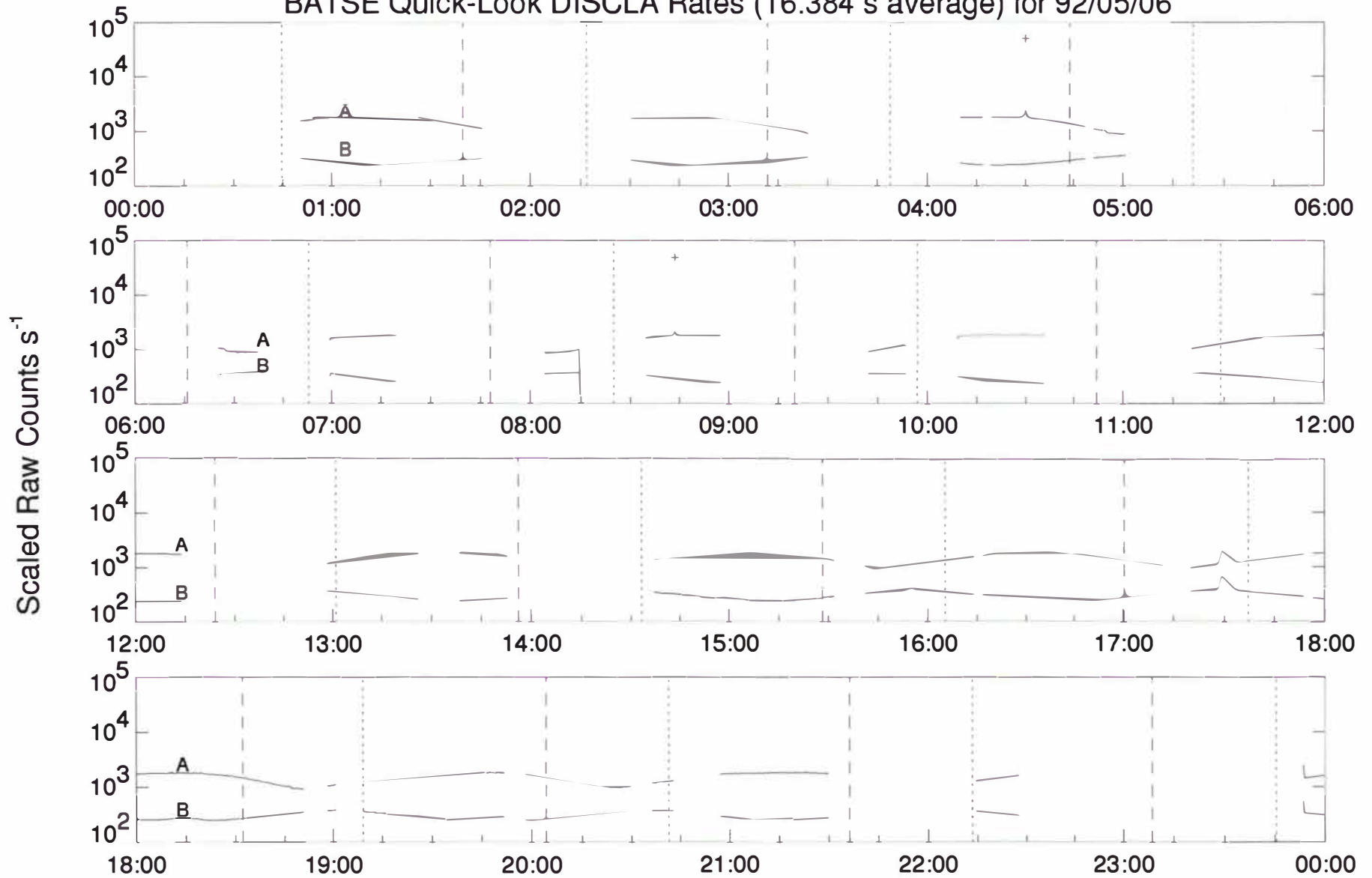


Data Start: 92/05/05, 2359:58

Plot created: 93/10/29, 0104

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

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/06

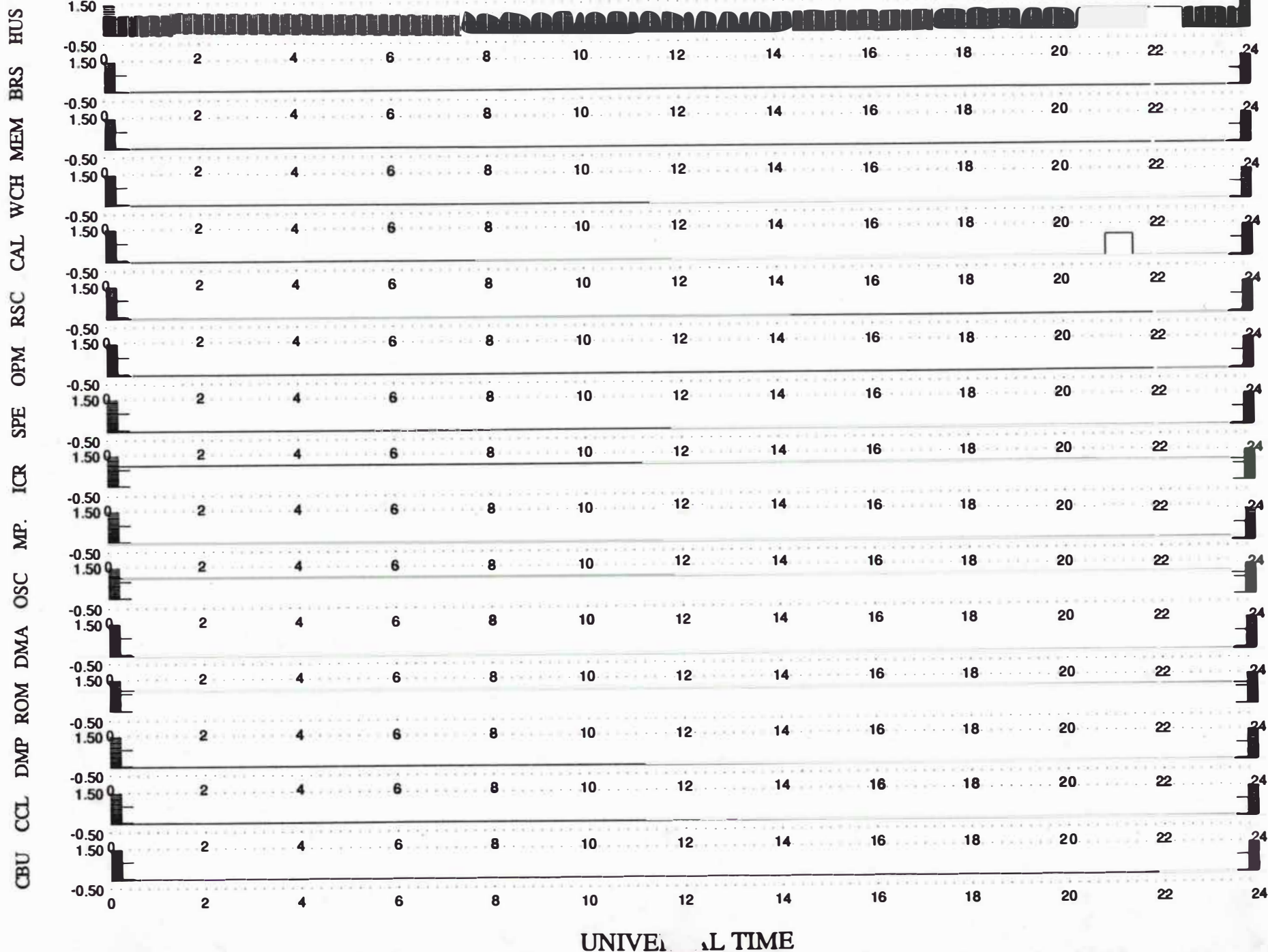


Current Time: 92/09/19, 1708 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

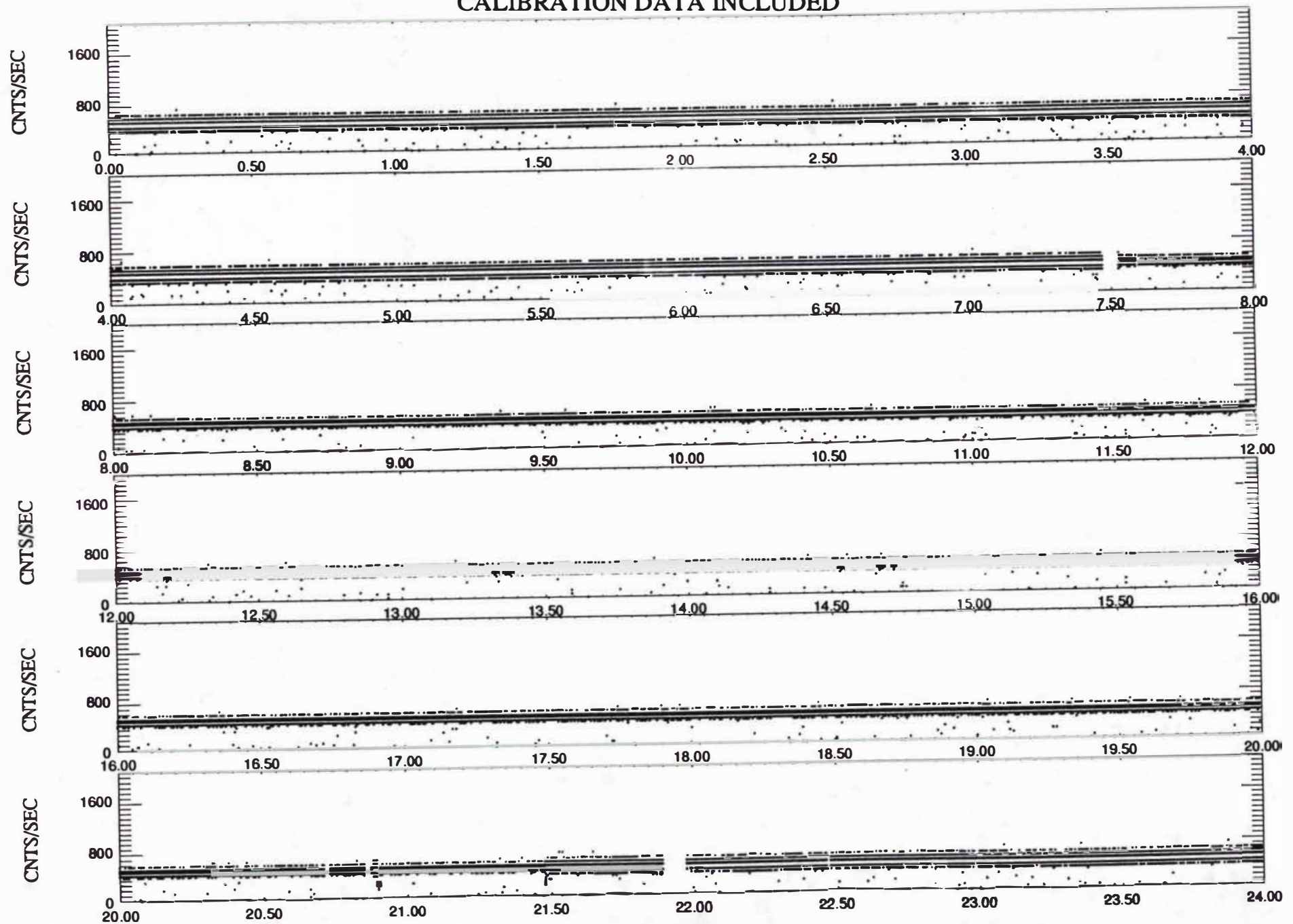
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

NO BURST (0)



CALIBRATION DATA INCLUDED



UNIVEL L TIME

CATSEARCH PROGRAM

BATSE BURST # 1587
EVENT OF 1992 MAY 7 DAY OF YEAR=128
EVENT CROSSING TIME AT BATSE : 5099. S. OR 01:24:58.6
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 270.900 -9.800
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 7/ 5/ 92 IS:
RA= 148.524 DEC= 9.027 DIST= 5.087 AU
BATSE-ULYSSES DISTANCE = 760985280. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 56.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1390.60 SECS.
CROSSING TIME AT ULYSSES IS 6489. S. OR 01:48:09.2 +/- 439.80 SECONDS

No

From WILSONB@ssl.msfc.nasa.gov Mon May 11 10:21:04 1992
Date: Mon, 11 May 1992 12:22:06 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER
NO.: 01587
TIME: TJD=8749 SECONDS=5100
TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N
SIGNIFICANCE: SIGMA
INTENSITY: COUNTS/CM2
LOCATION: ZENITH=38.3 AZIMUTH=77.1 ERROR=10 DEGREES
COMMENTS:
WEAK BURST OF DURATION ~8S. WITHIN 20 DEG. OF SUN, BUT HAD HARD SPECTRUM
AND NO GOES ACTIVITY OBSERVED AT TRIGGER TIME.

No Ulysses trigger

7 / 6 / 94

ULYSSES RT

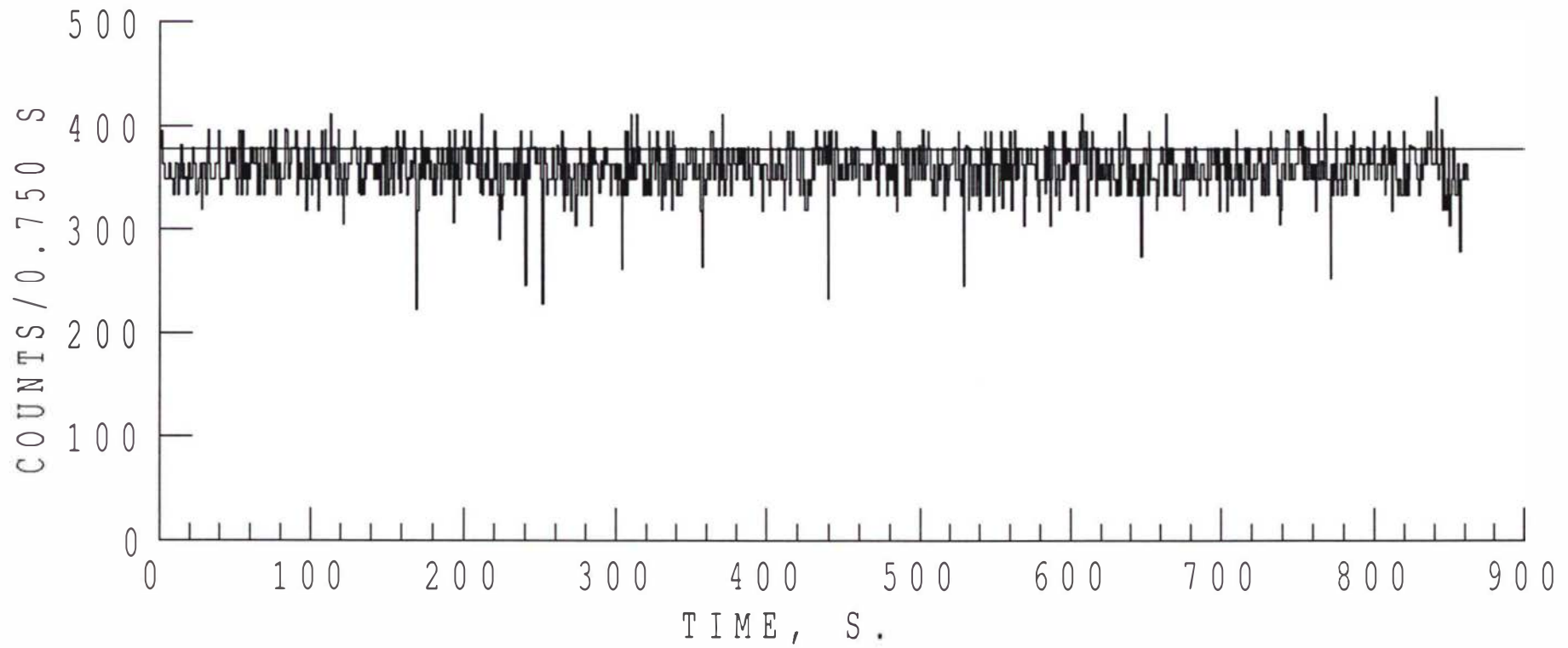
7 / 5 / 92 6048.239 s

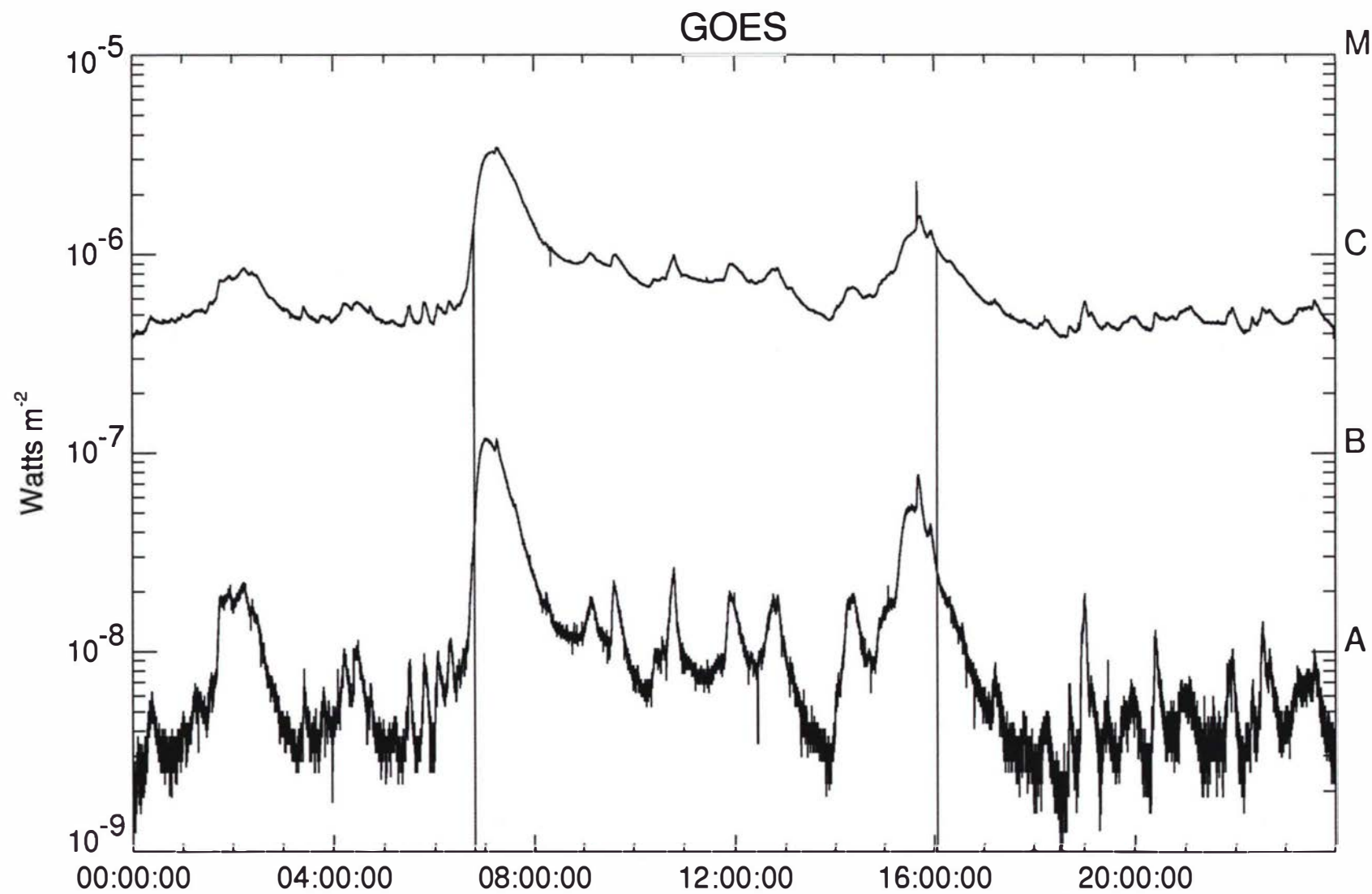
0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





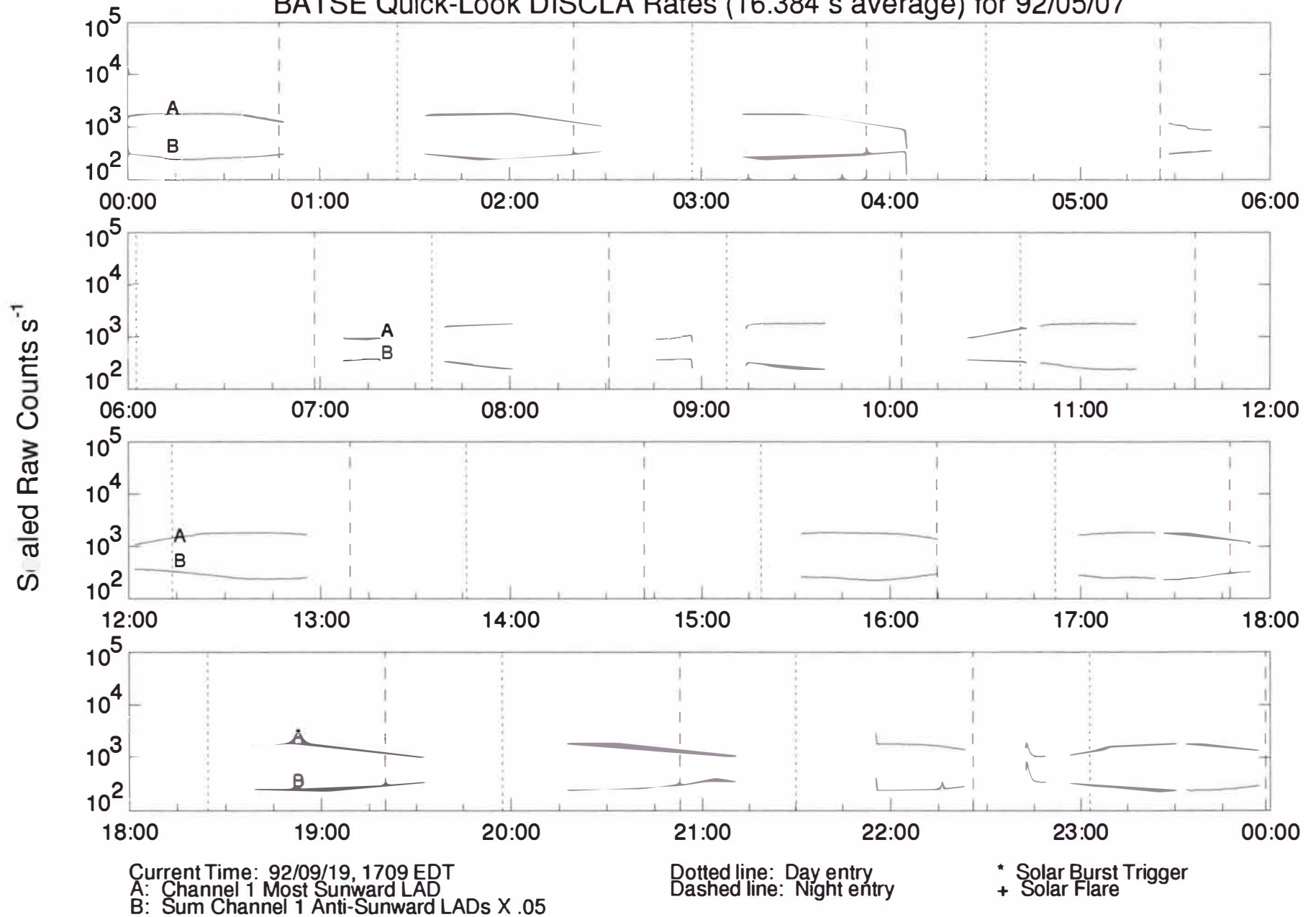
Data Start: 92/05/06, 2359:58

Plot created: 93/10/29, 0104

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

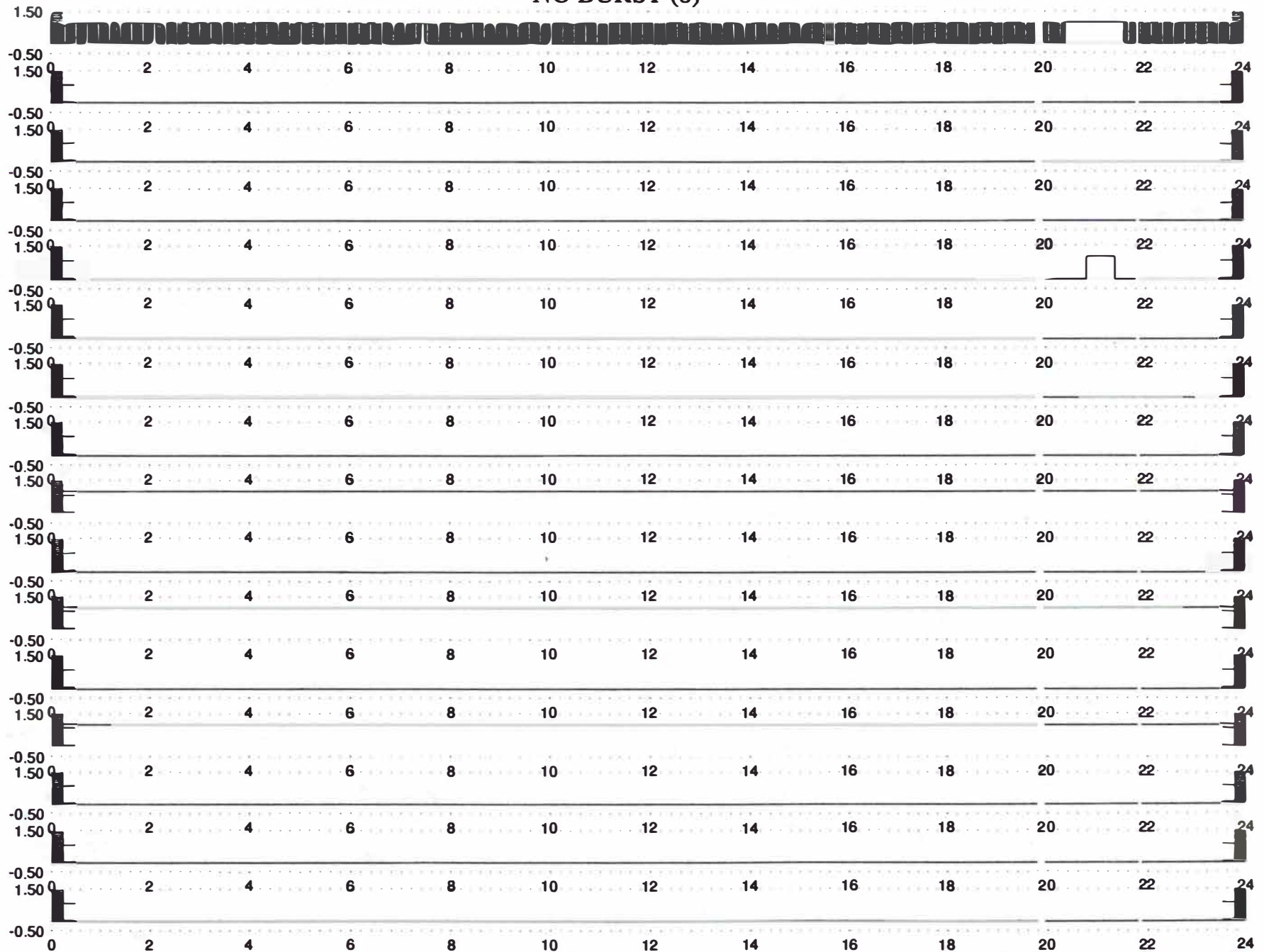
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/07



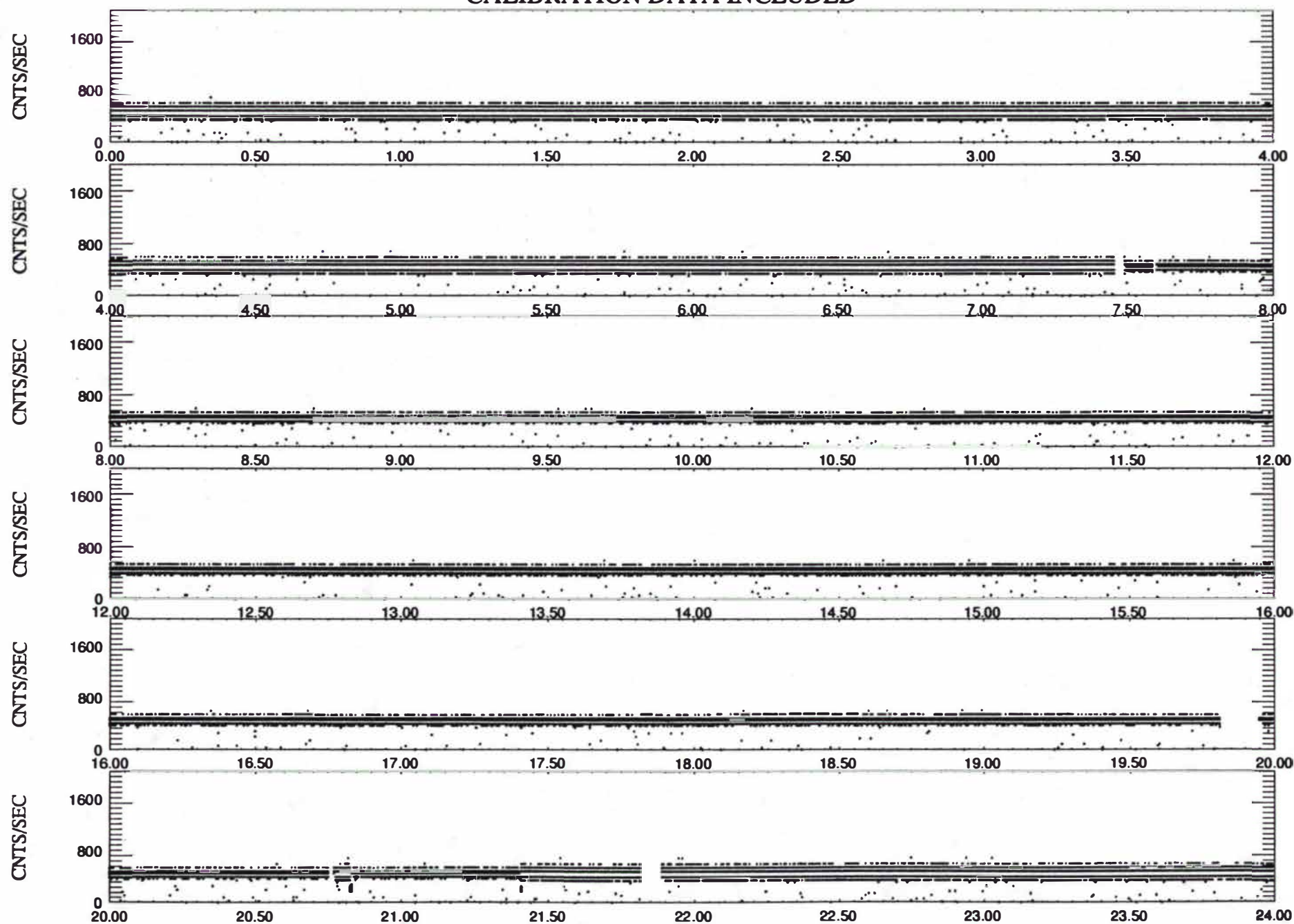
CPU CCL DMP ROM DMA OSC MP. ICR SPE OPM RSC CAL WCH MEM BRS HUS

NO BURST (0)



UNIVERSITY OF CALIFORNIA

CALIBRATION DATA INCLUDED



UNIVERSE TIME

CATSEARCH PROGRAM

BATSE BURST # 1588
EVENT OF 1992 MAY 8 DAY OF YEAR=129
EVENT CROSSING TIME AT BATSE : 14305. S. OR 03:58:24.8
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 5.100 -2.800
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 8/ 5/ 92 IS:
RA= 148.481 DEC= 8.999 DIST= 5.103 AU
BATSE-ULYSSES DISTANCE = 763375888. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 36.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2035.64 SECS.
CROSSING TIME AT ULYSSES IS 16340. S. OR 04:32:20.4 +/- 346.50 SECONDS

No

From MALLOZZI@ssl.msfc.nasa.gov Sun May 10 09:56:42 1992
Date: Sun, 10 May 1992 11:57:44 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1378

BATSE BURST TRIGGER
NO.: 01588
TIME: TJD=8570 SECONDS=14306
TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N
SIGNIFICANCE: SIGMA
INTENSITY: COUNTS/CM2
LOCATION: ZENITH=22.4 AZIMUTH=327.0 ERROR= DEGREES

COMMENTS:
SINGLE SPIKE EVENT; DURATION ~0.4 SEC. THIS BURST SHOULD BE IN
THE COMTEL FIELD OF VIEW.
HARD EVENT; CLEARLY OBSERVED ABOVE 300 KEV.

No Ulysses trigger

7 / 6 / 94

ULYSSES RT

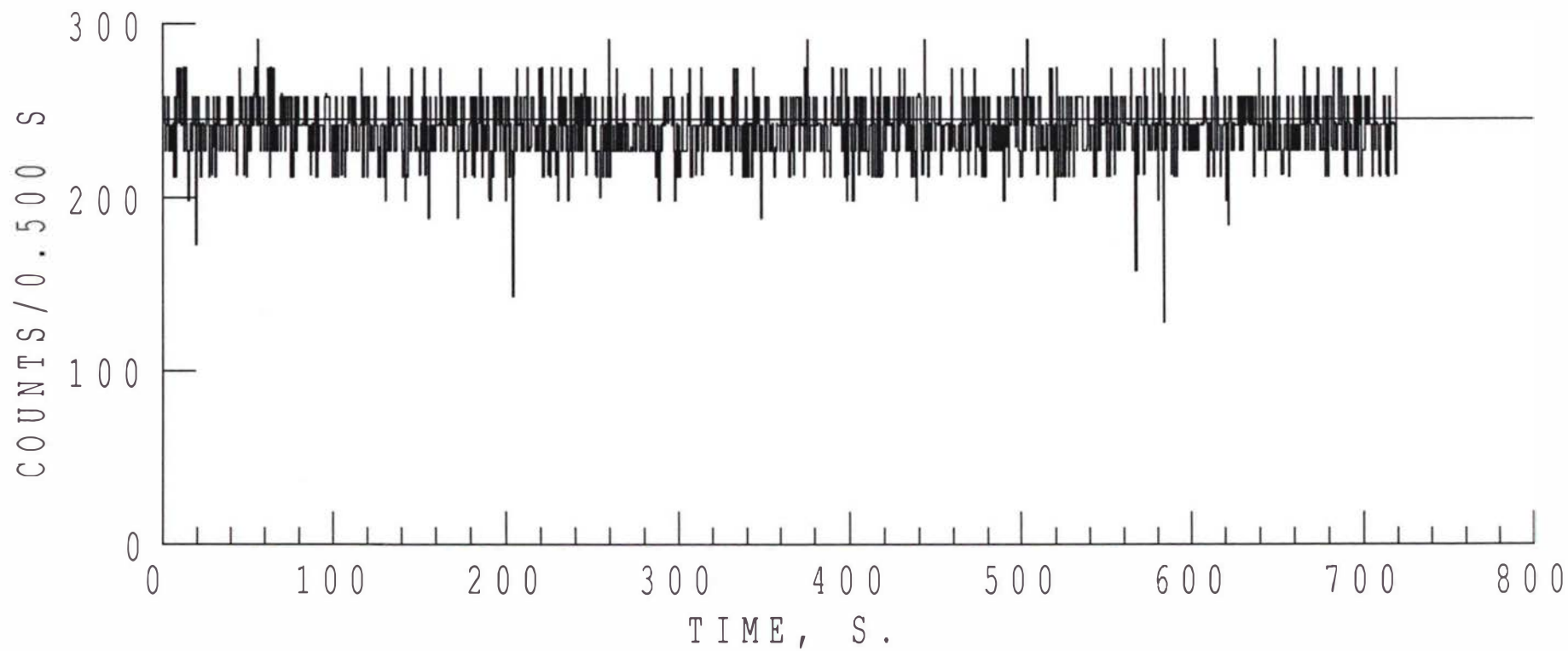
8 / 5 / 92 15984.059 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

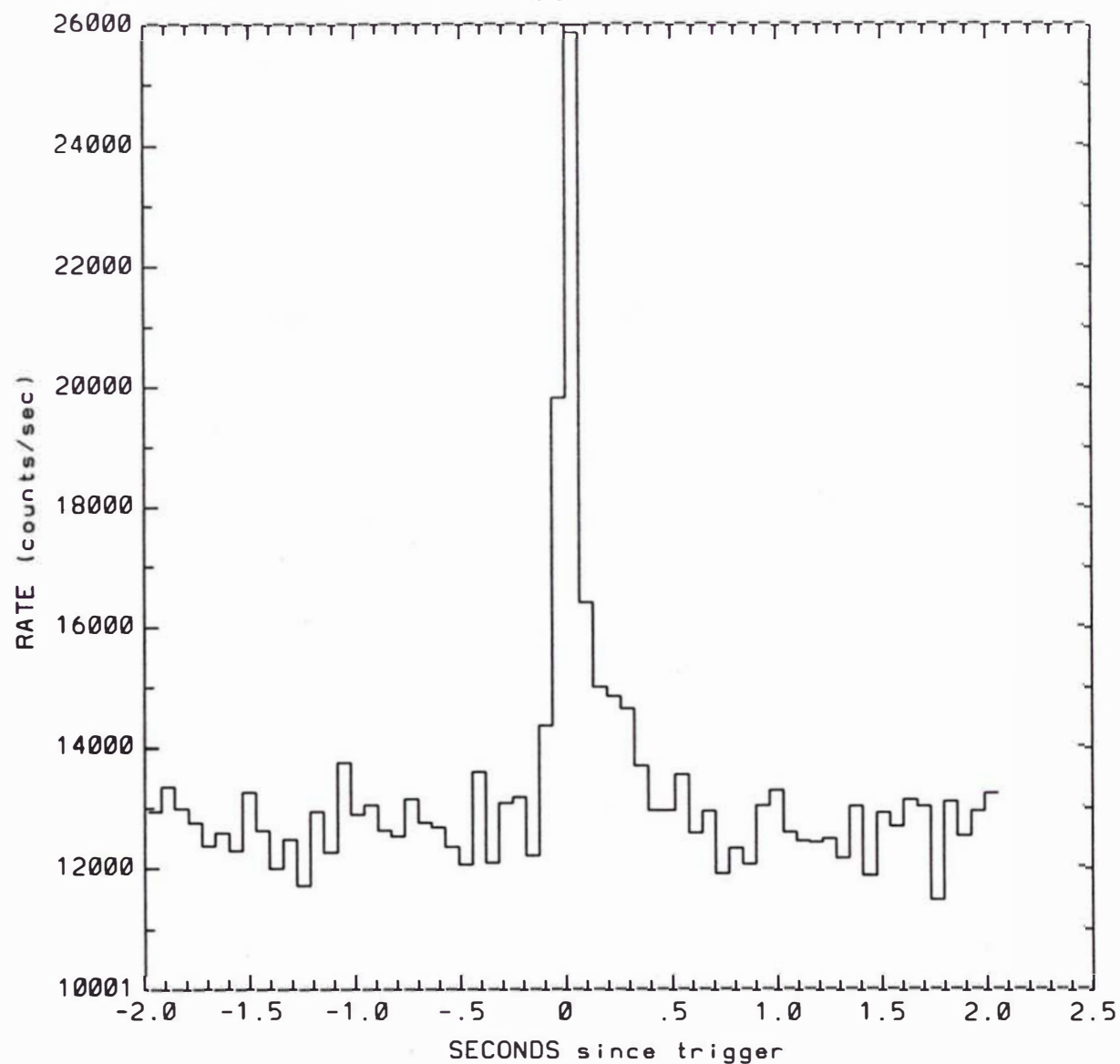
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



May 8 1992
6.9, -1.5
 $1 \times 10^{-7} \text{ erg/cm}^2$

DISCSC Data, Trigger No. 1588



10-MAY-1992 11.29.59

Created by MOPS 8D
(Burst Display)
Version 2.11

Trigger # : 1588

Trigger Time:
8750 / 14306.852

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors (7..0):
01000101

Discriminators:
(1. 4)

Quality Mask:
BDISP0

From MALLOZZI@ssl.msfc.nasa.gov Sun May 10 11:37:44 1992
Date: Sun, 10 May 1992 13:38:52 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01589

TIME: TJD=8750 SECONDS=57326

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SUNRISE DURING TAIL END OF A GOES M7.4 FLARE.

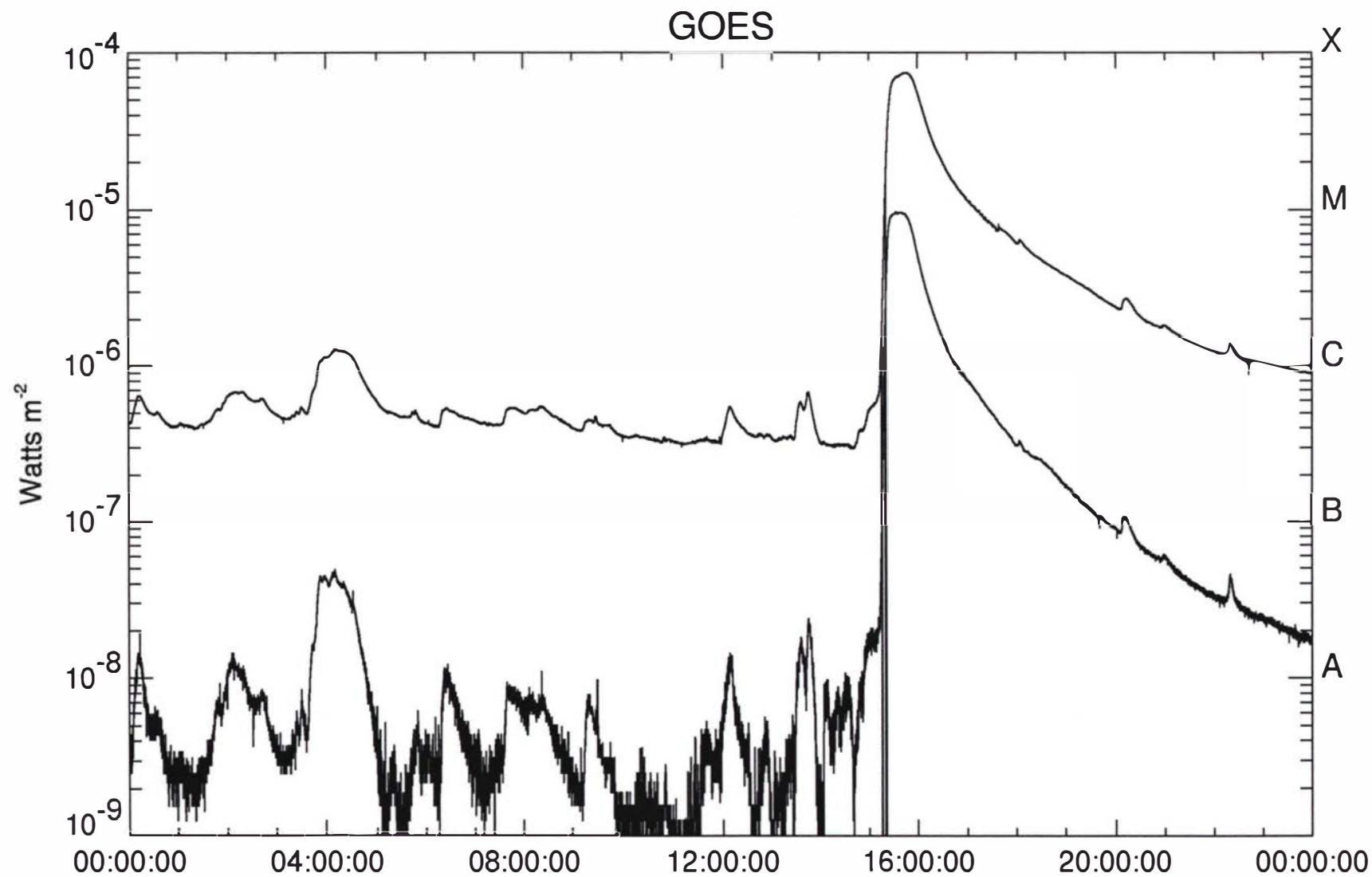
From ULSSCI@jplgp.span.nasa.gov Tue Apr 28 09:36:27 1992
Date: Tue, 28 Apr 92 09:38:32 PDT
From: ULSSCI@jplgp.span.nasa.gov
X-To: SBAME, BGOLDSTE, AGALVIN, GGLOECKL, EGRUEN, DLINKERT, ABALOGH, RFORSYTH, KHURLEY, EKEP
X-Cc: ULSSCI
Subject: Engineering Format during Conscan Testing.
To: KHURLEY@sunspot.ssl.berkeley.edu
Content-Length: 366

Following my note of 12 March 92, please note that the spacecraft will be in 1K Engineering format for Conscan testing during the following periods:

92.121.14:50 until 92.121.15:40 SCET
92.123.15:56 until 92.123.16:46 SCET
92.126.20:38 until 92.126.22:52 SCET
92.129.22:00 until 92.130.00:32 SCET

Regards,

Andy McGarry
Systems Engineer



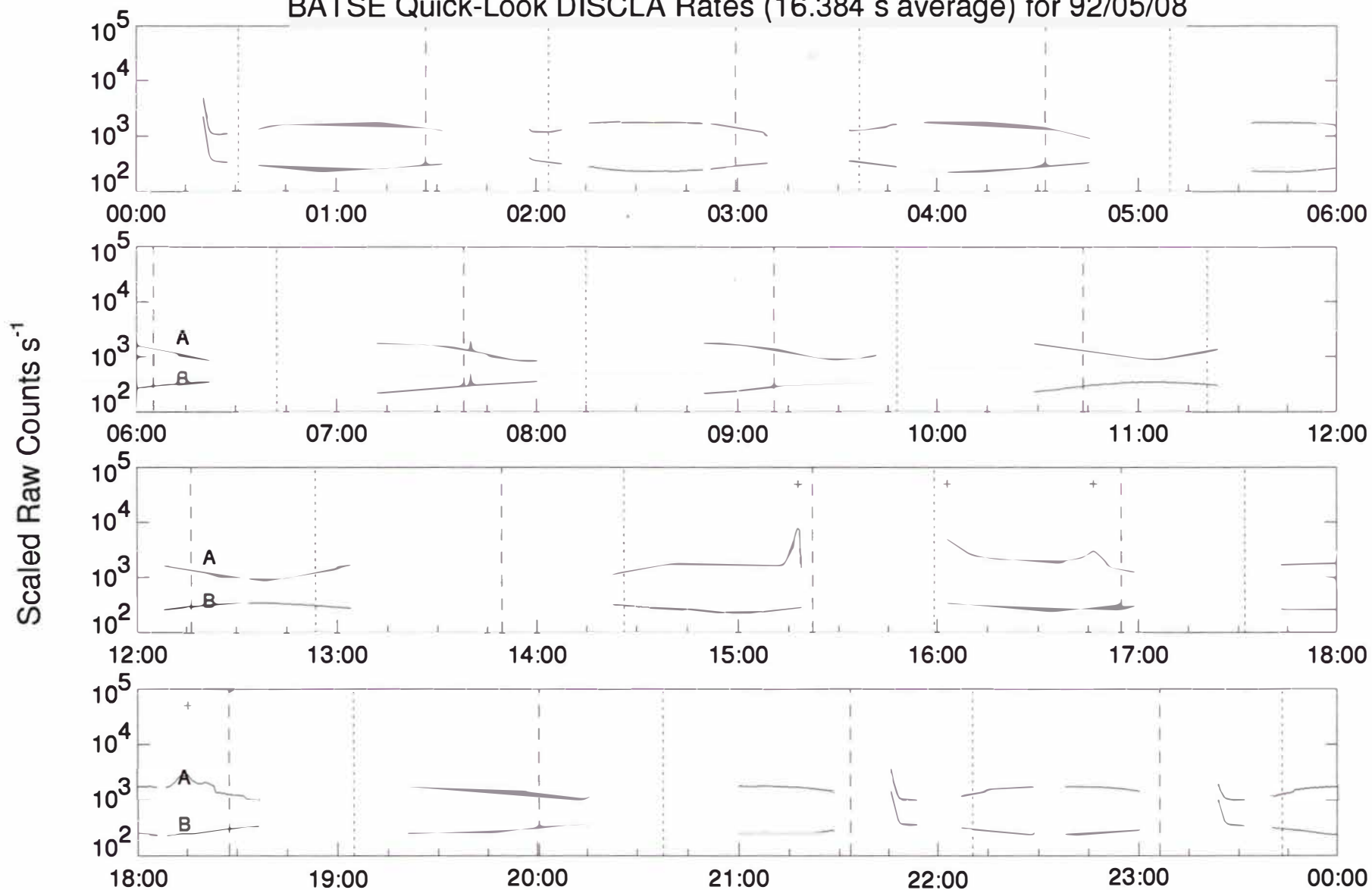
Data Start: 92/05/07, 2359:59

Plot created: 93/10/29, 0104

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/08



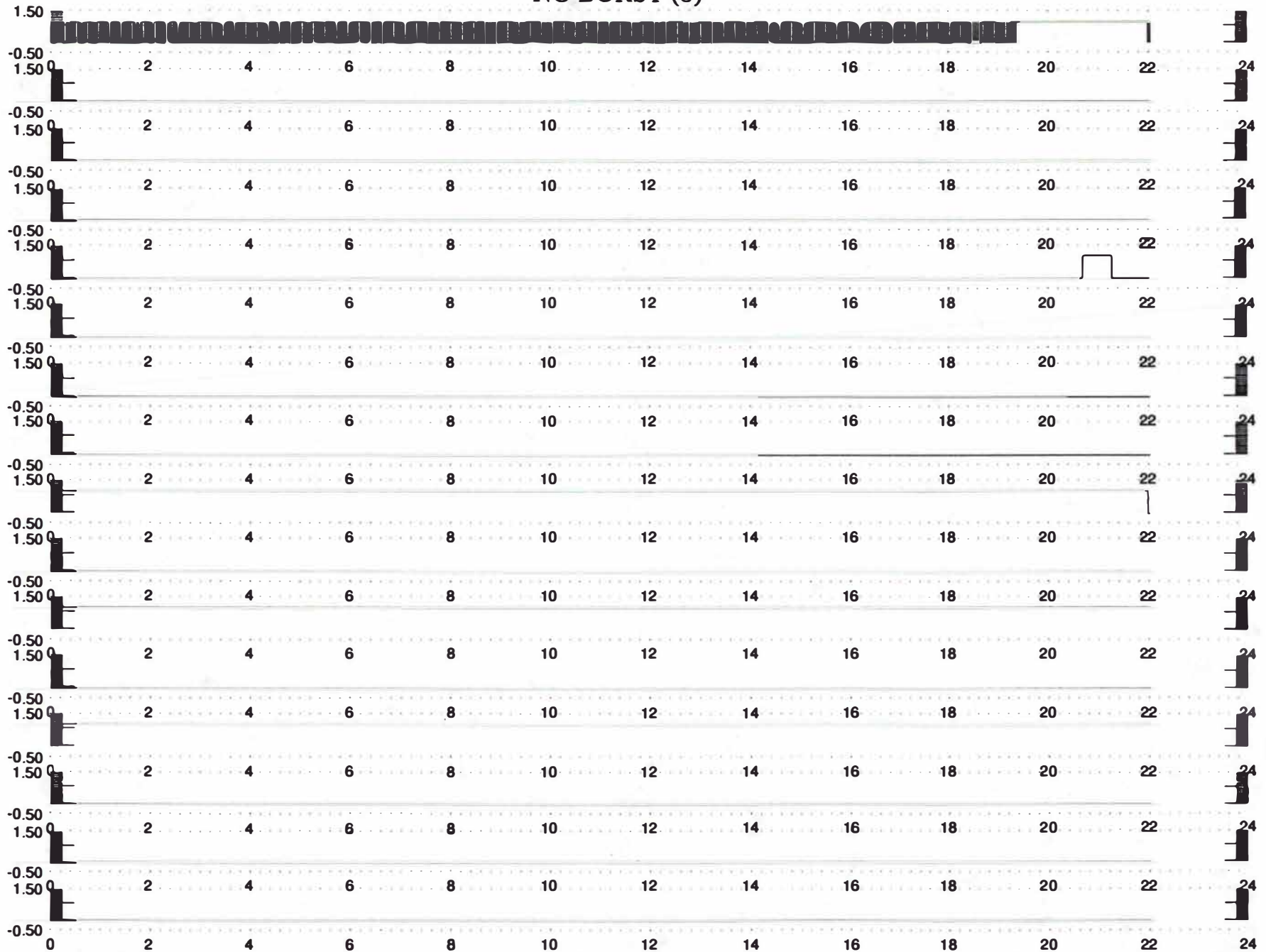
Current Time: 92/09/19, 1710 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

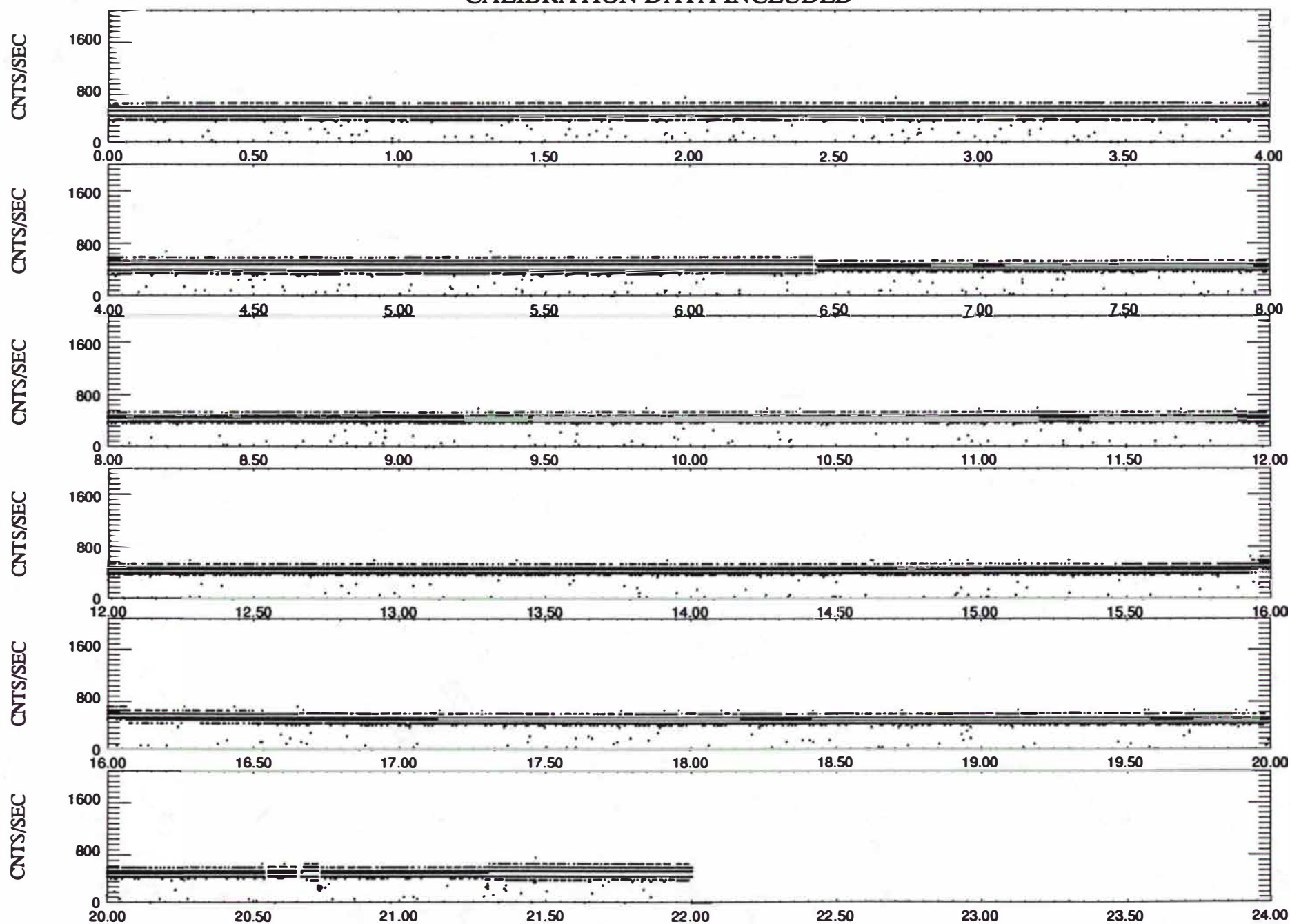
HUS
BRS
MEM
WCH
CAL
RSC
OPM
SPE
ICR
MP.
OSC
DMA
ROM
DMP
CCL
CBU

NO BURST (0)



UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

CATSEARCH PROGRAM

BATSE BURST # 1590
EVENT OF 1992 MAY 9 DAY OF YEAR=130
EVENT CROSSING TIME AT BATSE : 40755. S. OR 11:19:14.8
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 346.200 -82.400
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 9/ 5/ 92 IS:
RA= 148.440 DEC= 8.971 DIST= 5.119 AU
BATSE-ULYSSES DISTANCE = 765773976. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 712.61 SECS.
CROSSING TIME AT ULYSSES IS 41467. S. OR 11:31:07.4 +/- 486.69 SECONDS

No

From MALLOZZI@ssl.msfc.nasa.gov Mon May 11 09:35:57 1992
Date: Mon, 11 May 1992 11:36:57 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01590

TIME: TJD=8751 SECONDS=40756

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.4 AZIMUTH=311.3 ERROR= DEGREES

COMMENTS:

BURST OF DURATION ~90 SEC WITH TWO MAIN PEAKS. BOTH PEAKS OBSERVED ABOVE
100 KEV WITH POSSIBLE EMISSION FROM SECOND PEAK ABOVE 300 KEV.

No Ulysses trigger

7 / 6 / 94

ULYSSES RT

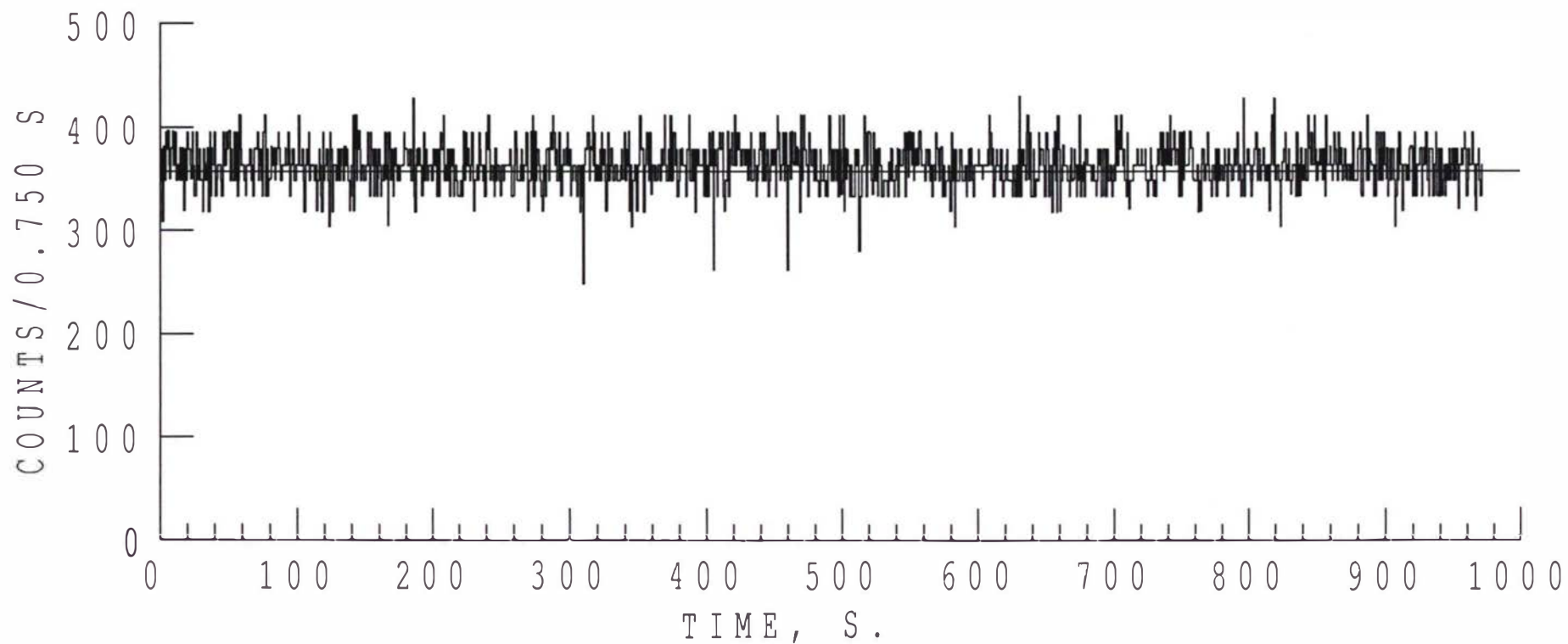
9 / 5 / 92 40968.121 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From MALLOZZI@ssl.msfc.nasa.gov Mon May 11 09:40:56 1992
Date: Mon, 11 May 1992 11:42:06 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01591

TIME: TJD=8571 SECONDS=58464

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

APPEARS TO BE PARTICLE PRECIPITATION EVENT.

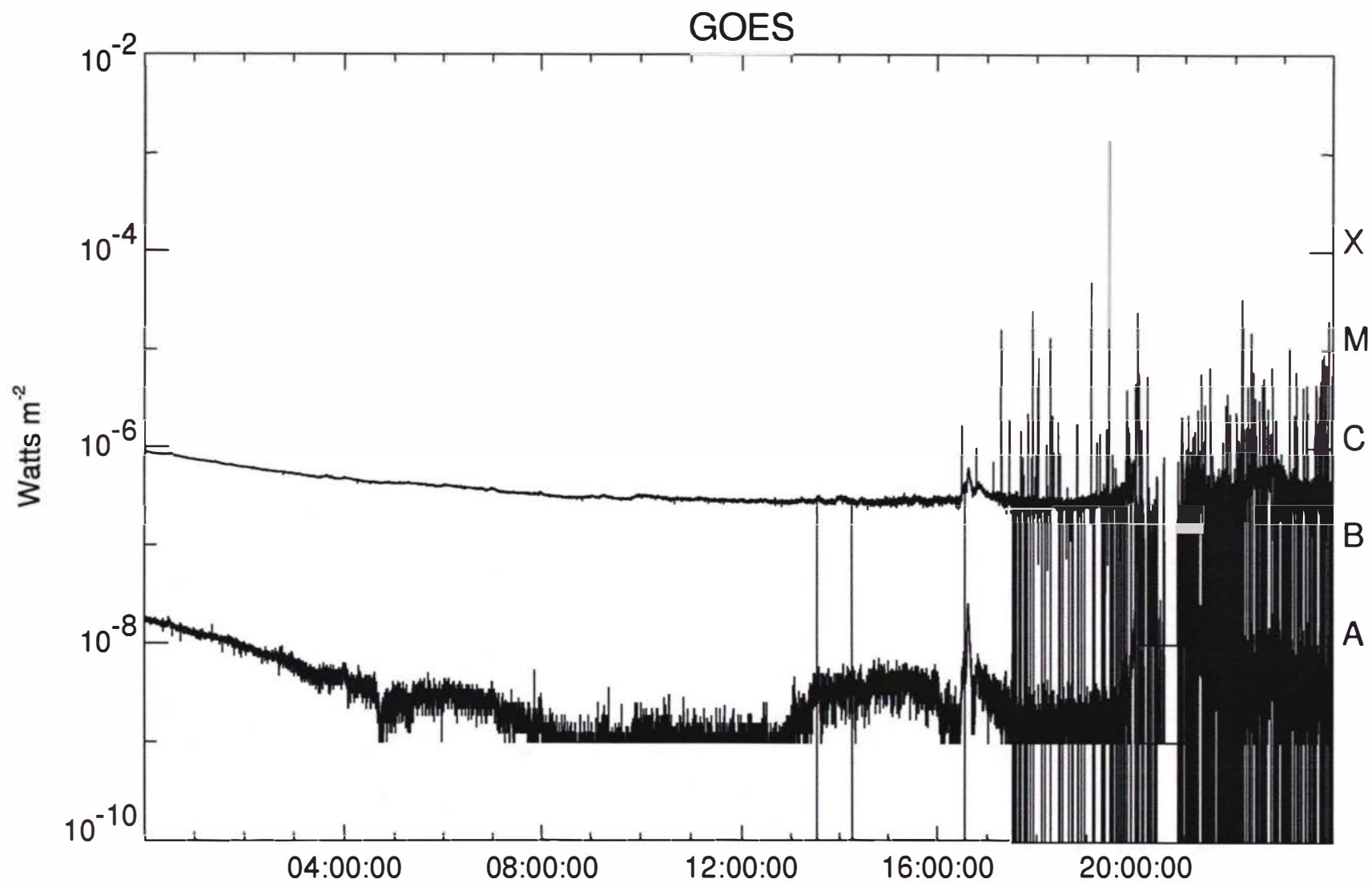
From ULSSCI@jplgp.span.nasa.gov Tue Apr 28 09:36:27 1992
Date: Tue, 28 Apr 92 09:38:32 PDT
From: ULSSCI@jplgp.span.nasa.gov
X-To: SBAME, BGOLDSTE, AGALVIN, GGLOECKL, EGRUEN, DLINKERT, ABALOGH, RFORSYTH, KHURLEY, EKEP
X-Cc: ULSSCI
Subject: Engineering Format during Conscon Testing.
To: KHURLEY@sunspot.ssl.berkeley.edu
Content-Length: 366

Following my note of 12 March 92, please note that the spacecraft will be in 1K Engineering format for Conscon testing during the following periods:

92.121.14:50 until 92.121.15:40 SCET
92.123.15:56 until 92.123.16:46 SCET
92.126.20:38 until 92.126.22:52 SCET
92.129.22:00 until 92.130.00:32 SCET

Regards,

Andy McGarry
Systems Engineer



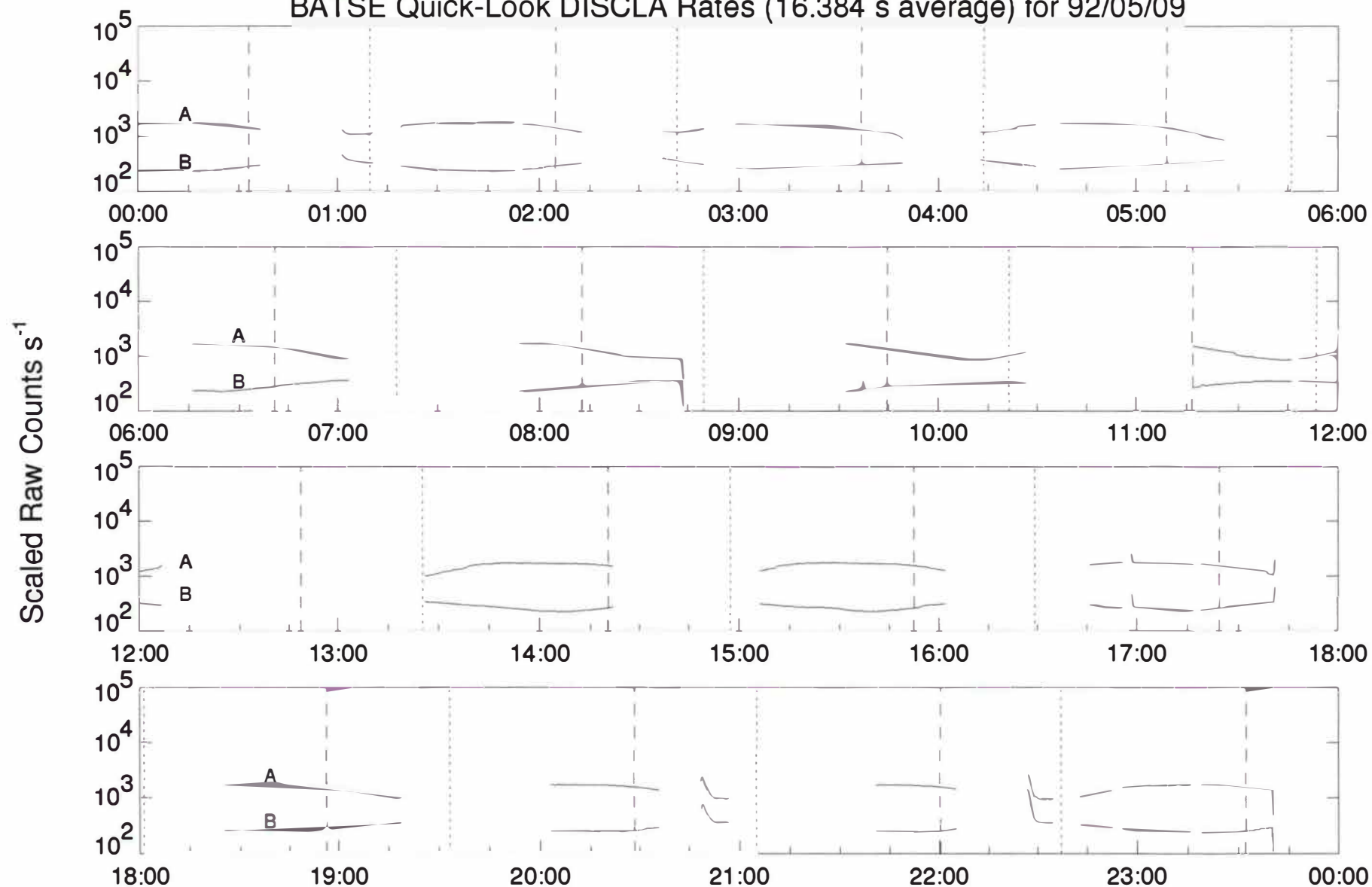
Data Start: 92/05/09, 0000:00

Plot created: 93/10/29, 0104

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/09



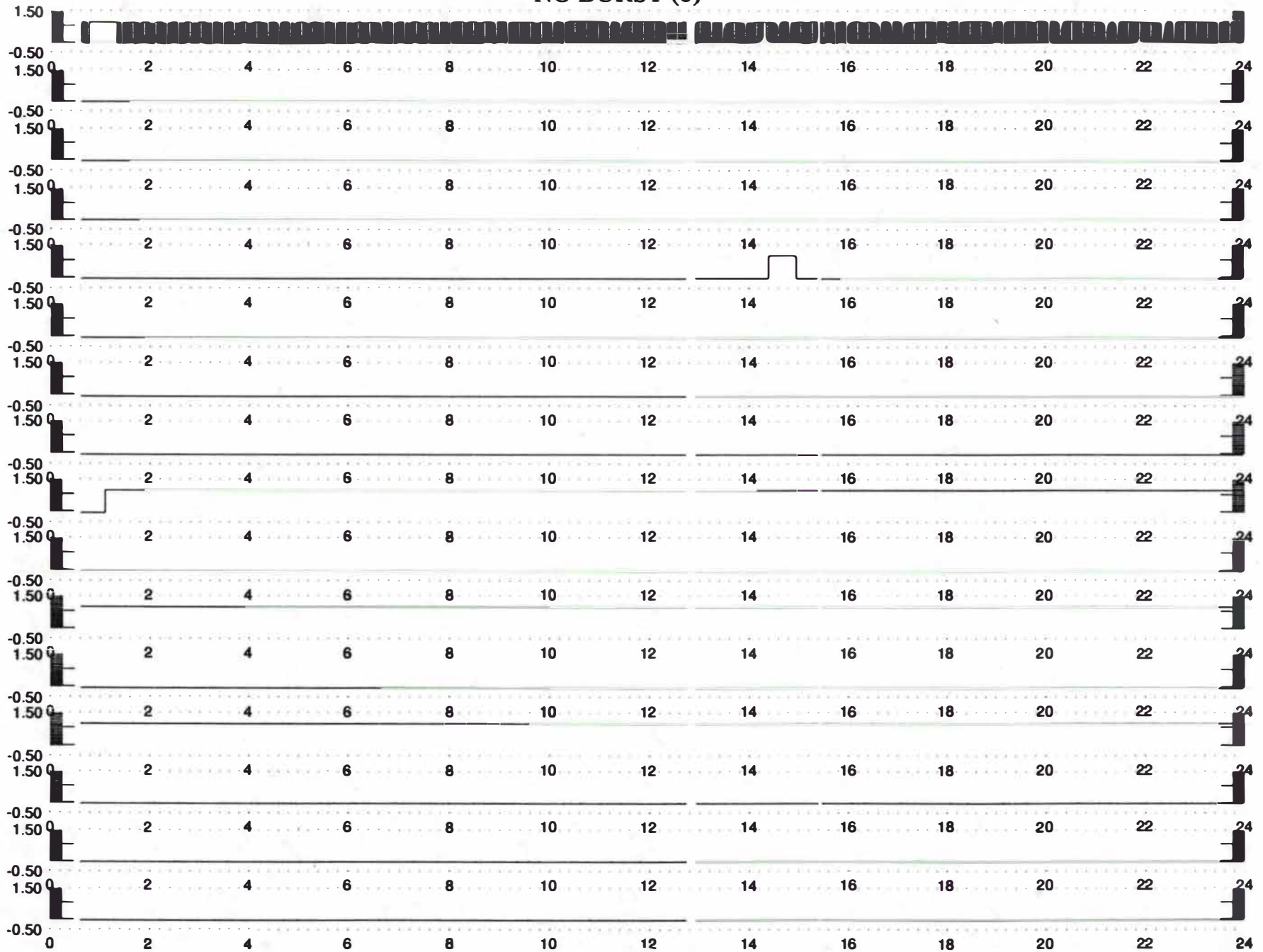
Current Time: 92/09/19, 1711 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

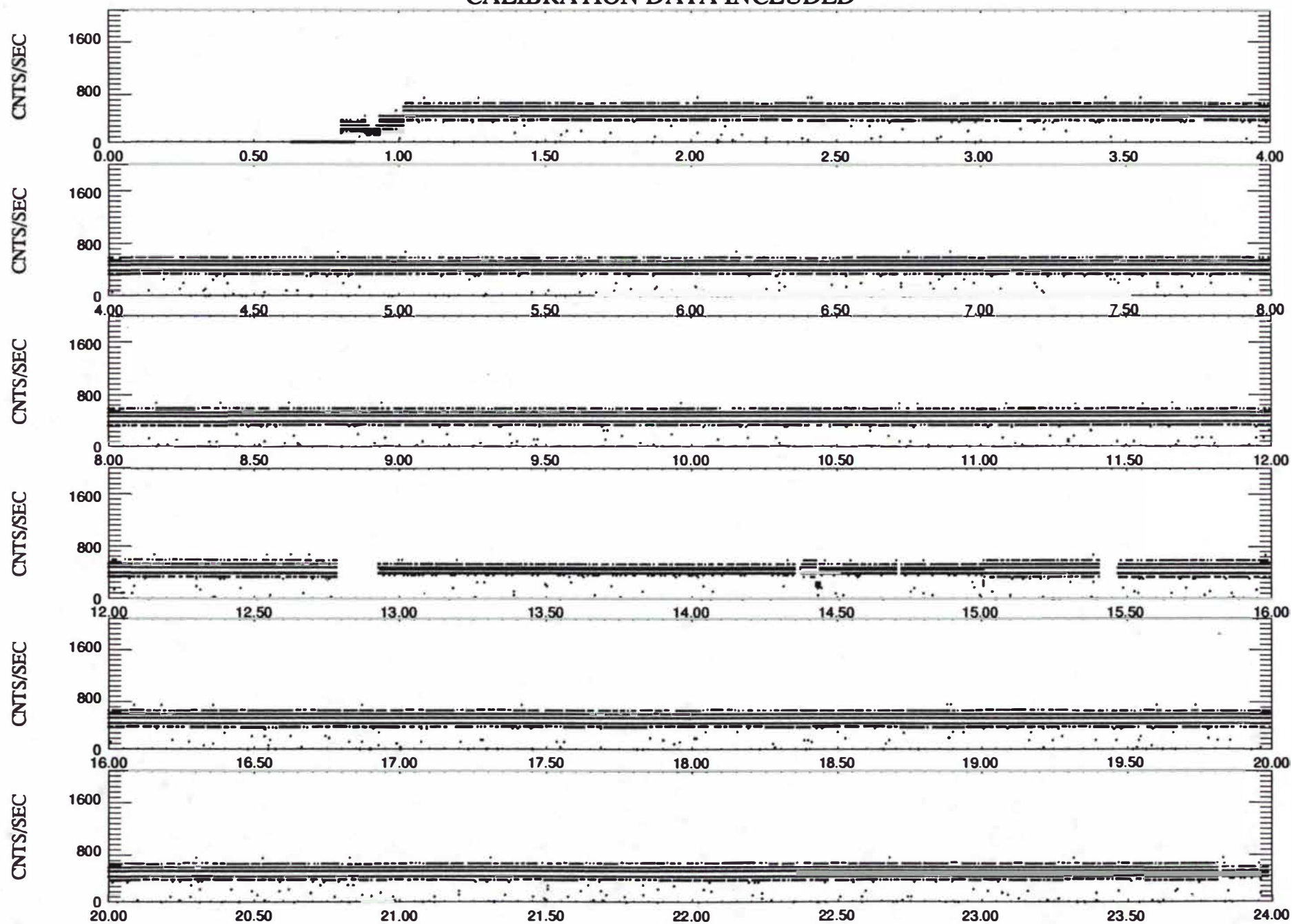
HUS
BRS
MEM
WCH
CAL
RSC
OPM
SPE
ICR
MP.
OSC
DMA
ROM
DMP
CCL
CBU

NO BURST (0)



UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVEL .L TIME

From WILSONB@ssl.msfc.nasa.gov Tue May 12 04:54:22 1992
Date: Tue, 12 May 1992 6:55:36 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01592 *Play ID*

TIME: TJD=8752 SECONDS=21859

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

TRIGGERED ON GRADUAL, LARGE RISE IN COUNTING RATE. OCCURRED NEAR SOUTHERN-
MOST LATITUDE OF ORBIT.

BATSE BURST TRIGGER

NO.: 01593

TIME: TJD=8752 SECONDS=27823

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

TRIGGERED ON GRADUAL, LARGE RISE IN COUNTING RATE. OCCURRED NEAR SOUTHERN-
MOST LATITUDE OF ORBIT.

BATSE BURST TRIGGER

NO.: 01594

TIME: TJD=8752 SECONDS=38375

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

EVENT LASTS FROM 38170 TO 38300 SEC. OF DAY. OCCURRED NEAR SOUTHERN-
MOST LATITUDE OF ORBIT.

From WILSONB@ssl.msfc.nasa.gov Tue May 12 05:29:29 1992
Date: Tue, 12 May 1992 7:30:35 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1284

BATSE BURST TRIGGER

NO.: 01596

TIME: TJD=8752 SECONDS=49684

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

EVENT LASTS FOR AT LEAST 160 S AFTER TRIGGER. OCCURRED NEAR SOUTHERN-
MOST LATITUDE OF ORBIT.

From WILSONB@ssl.msfc.nasa.gov Tue May 12 05:14:18 1992
Date: Tue, 12 May 1992 7:15:34 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1287

BATSE BURST TRIGGER

NO.: 01595

TIME: TJD=8752 SECONDS=43748

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

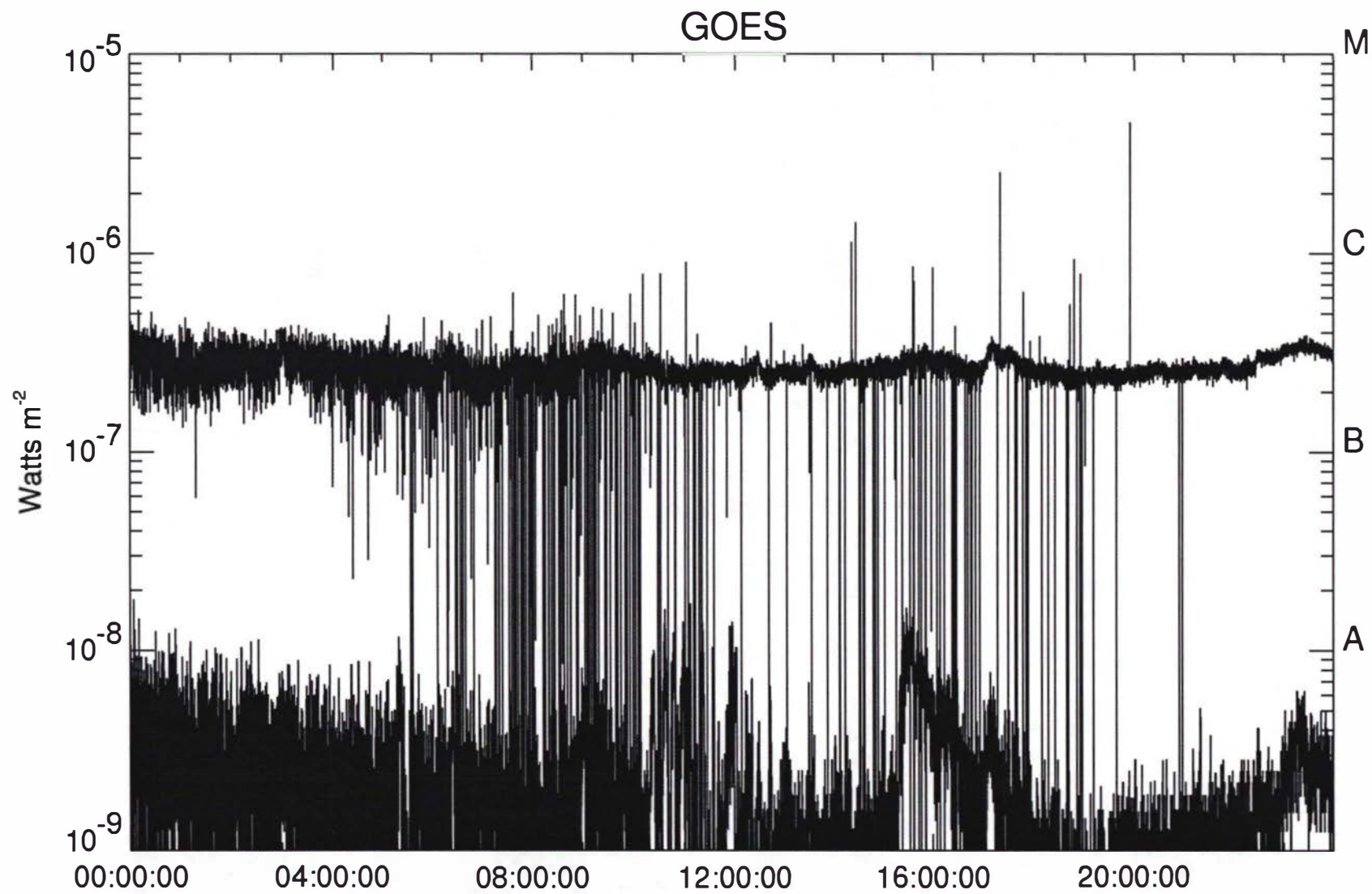
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

EVENT LASTS FROM 43690 TO 44500 SEC. OF DAY. OCCURRED NEAR SOUTHERN-
MOST LATITUDE OF ORBIT.



Data Start: 92/05/09, 2359:58

Plot created: 93/10/29, 0105

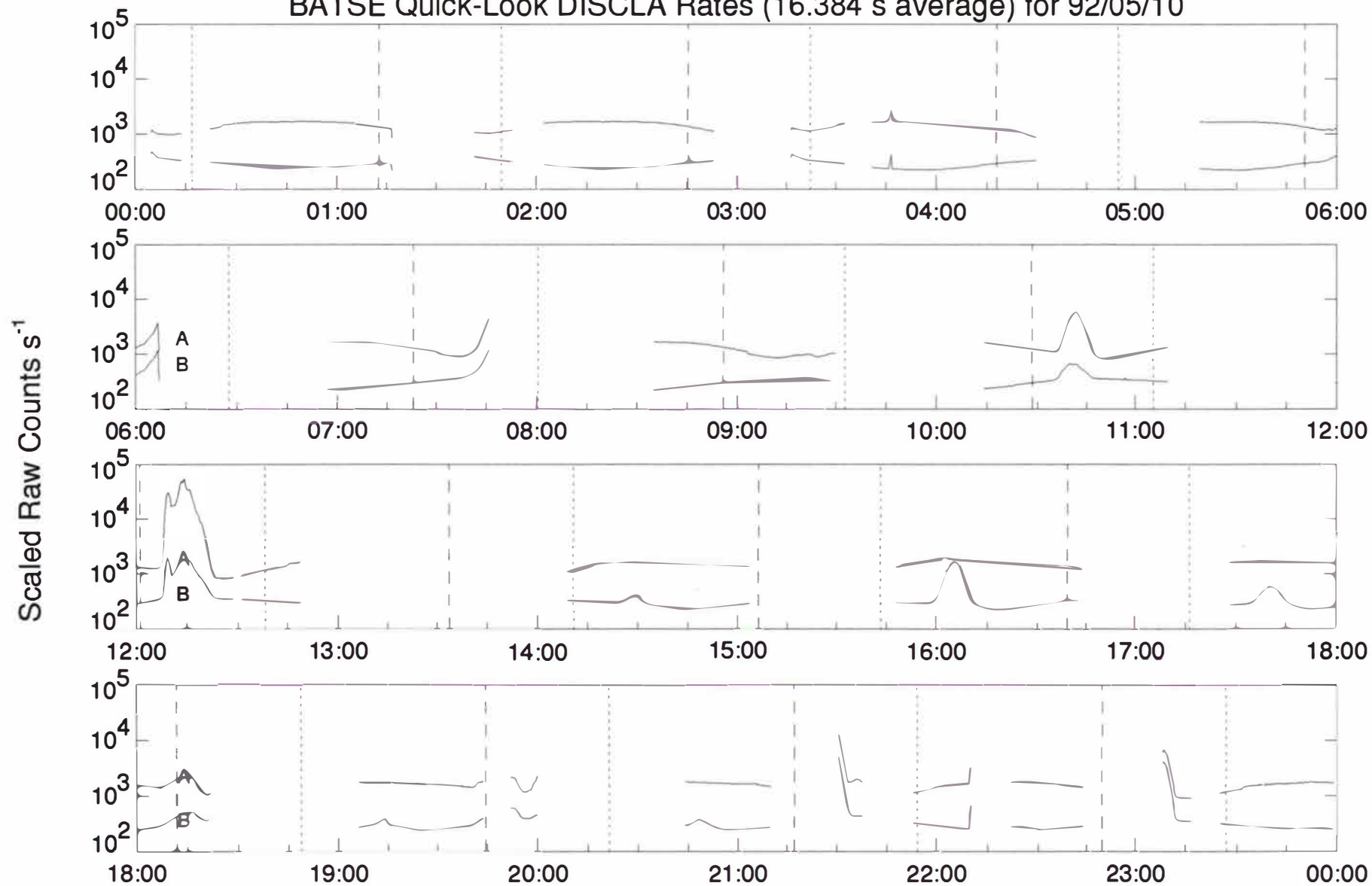
Channel 1 (1.0 - 8.0 Angstroms)

Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/10



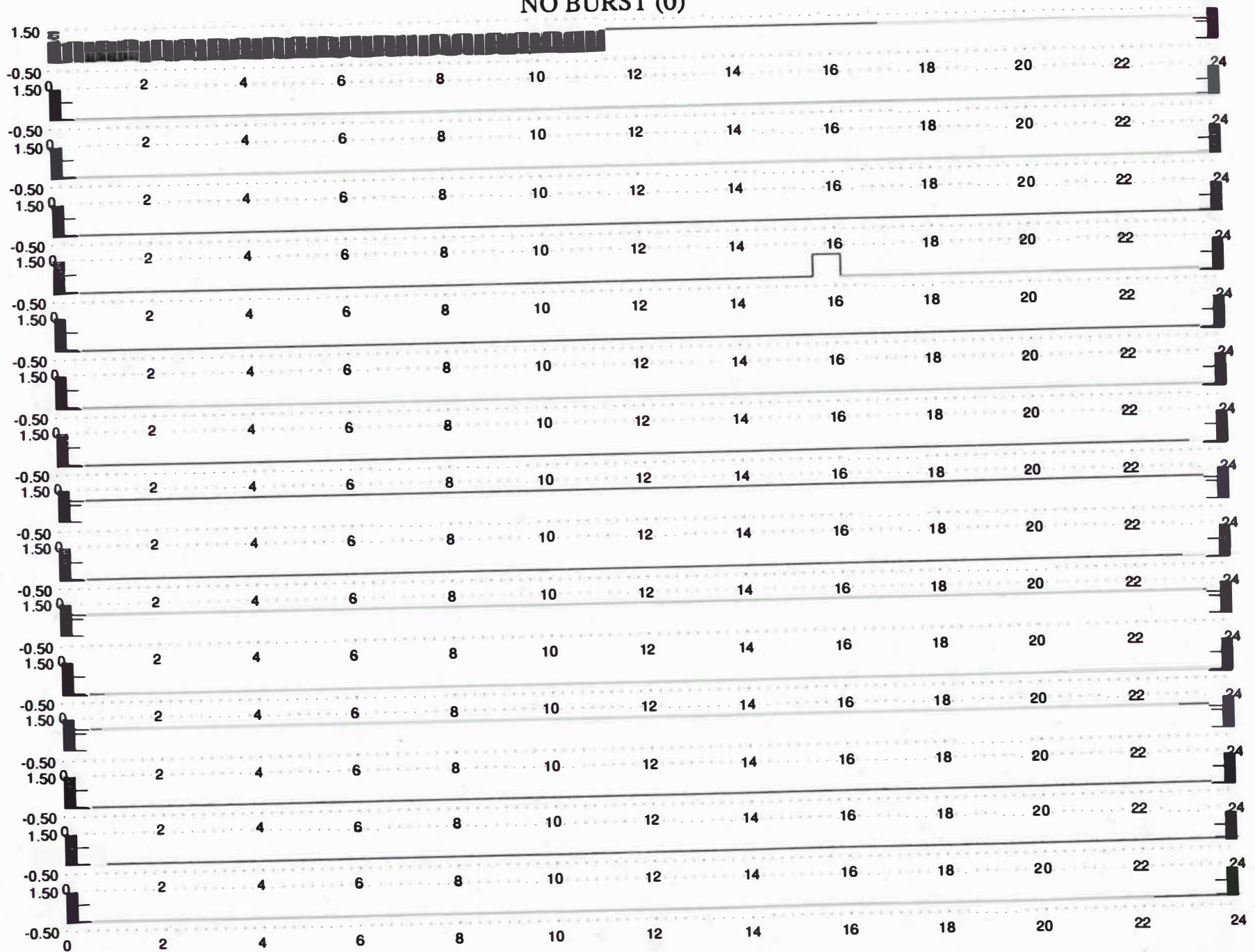
Current Time: 92/09/19, 1712 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

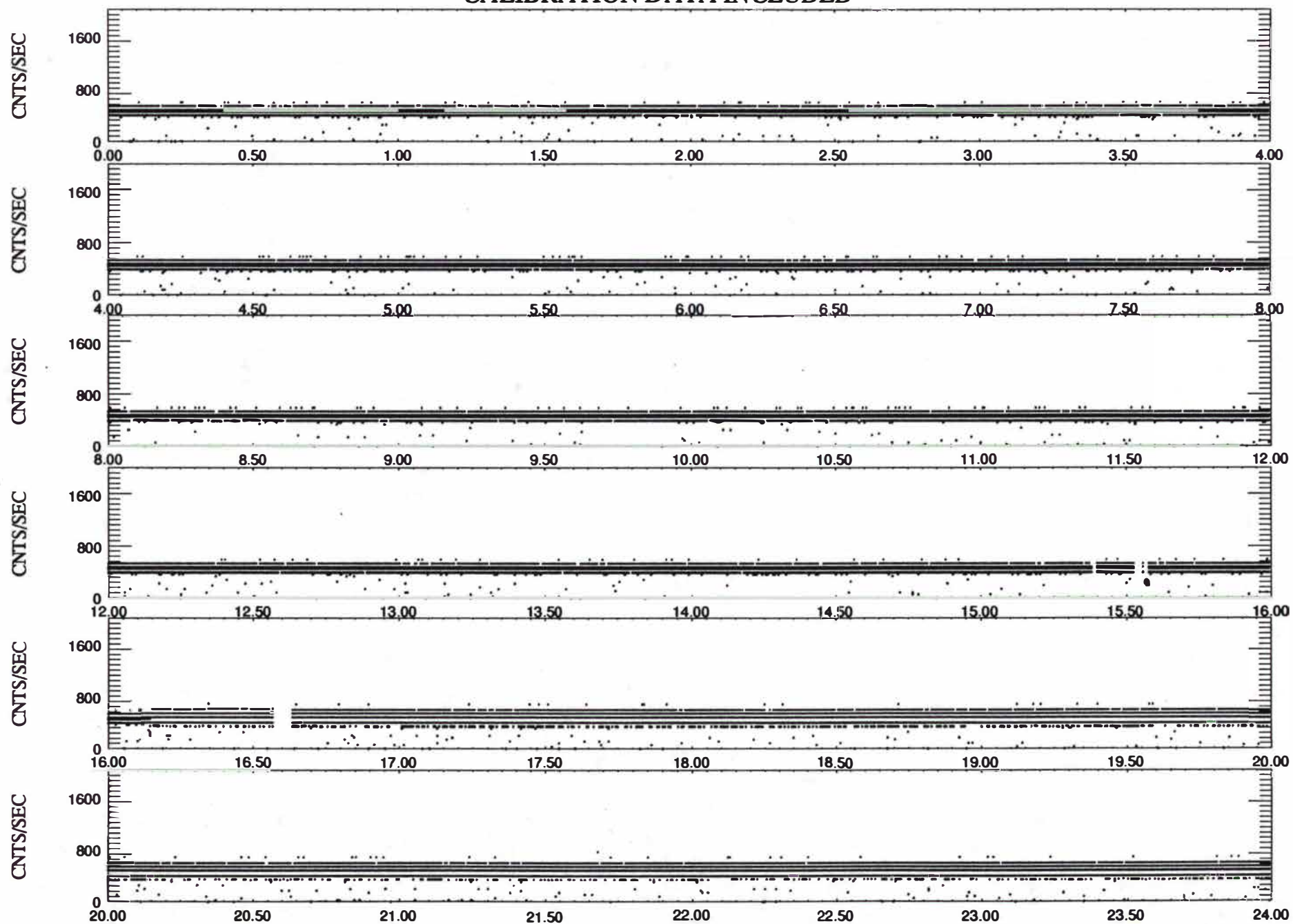
HUS
BRS
MEM
WCH
CAL
RSC
OPM
SPE
ICR
MP.
OSC
DMA
ROM
DMP
CCL
CHU

NO BURST (0)



UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVE AL TIME

CATSEARCH PROGRAM

BATSE BURST # 1601
EVENT OF 1992 MAY 11 DAY OF YEAR=132
EVENT CROSSING TIME AT BATSE : 23245. S. OR 06:27:25.0
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 137.300 -47.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 11/ 5/ 92 IS:
RA= 148.369 DEC= 8.911 DIST= 5.151 AU
BATSE-ULYSSES DISTANCE = 770585112. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1390.10 SECS.
CROSSING TIME AT ULYSSES IS 21855. S. OR 06:04:14.9 +/- 404.26 SECONDS

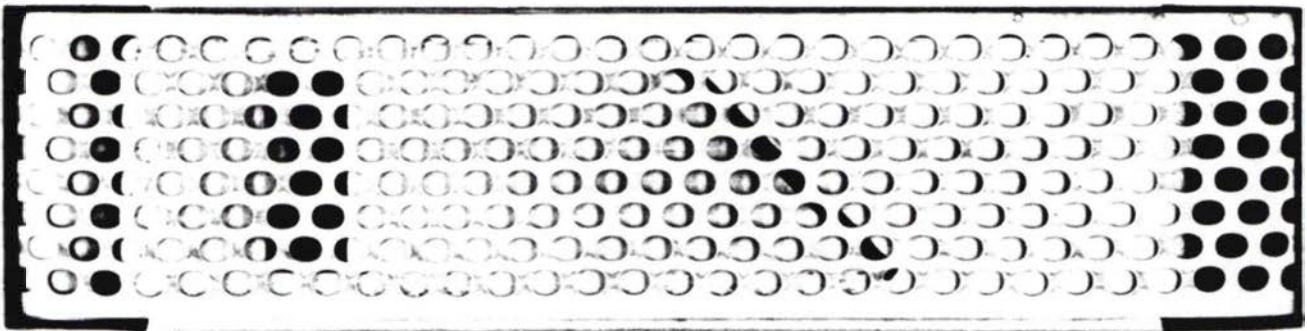
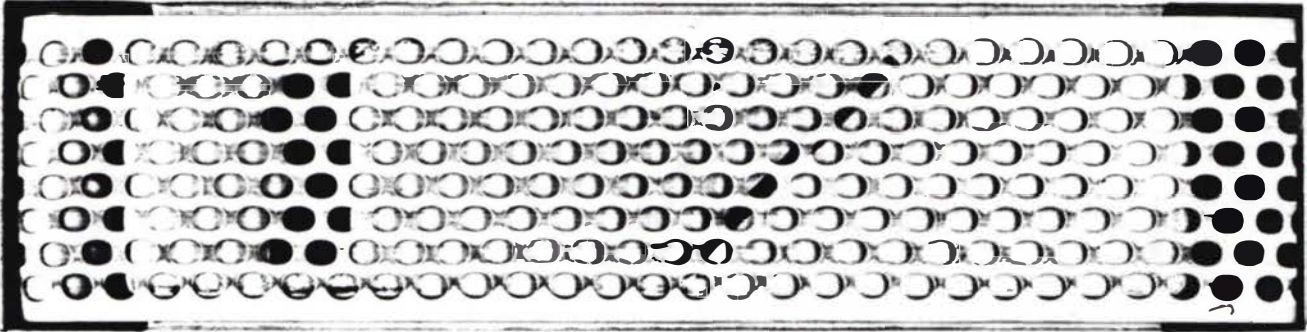
No

From KOUVELIOTOU@ssl.msfc.nasa.gov Wed May 13 14:00:19 1992
Date: Wed, 13 May 1992 16:01:09 -0500 (CDT)
From: KOUVELIOTOU@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER
NO.: 01601
TIME: TJD=8753 SECONDS=23247
TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N
SIGNIFICANCE: SIGMA
INTENSITY: COUNTS/CM2
LOCATION: ZENITH=130.1 AZIMUTH=001.9 ERROR= DEGREES

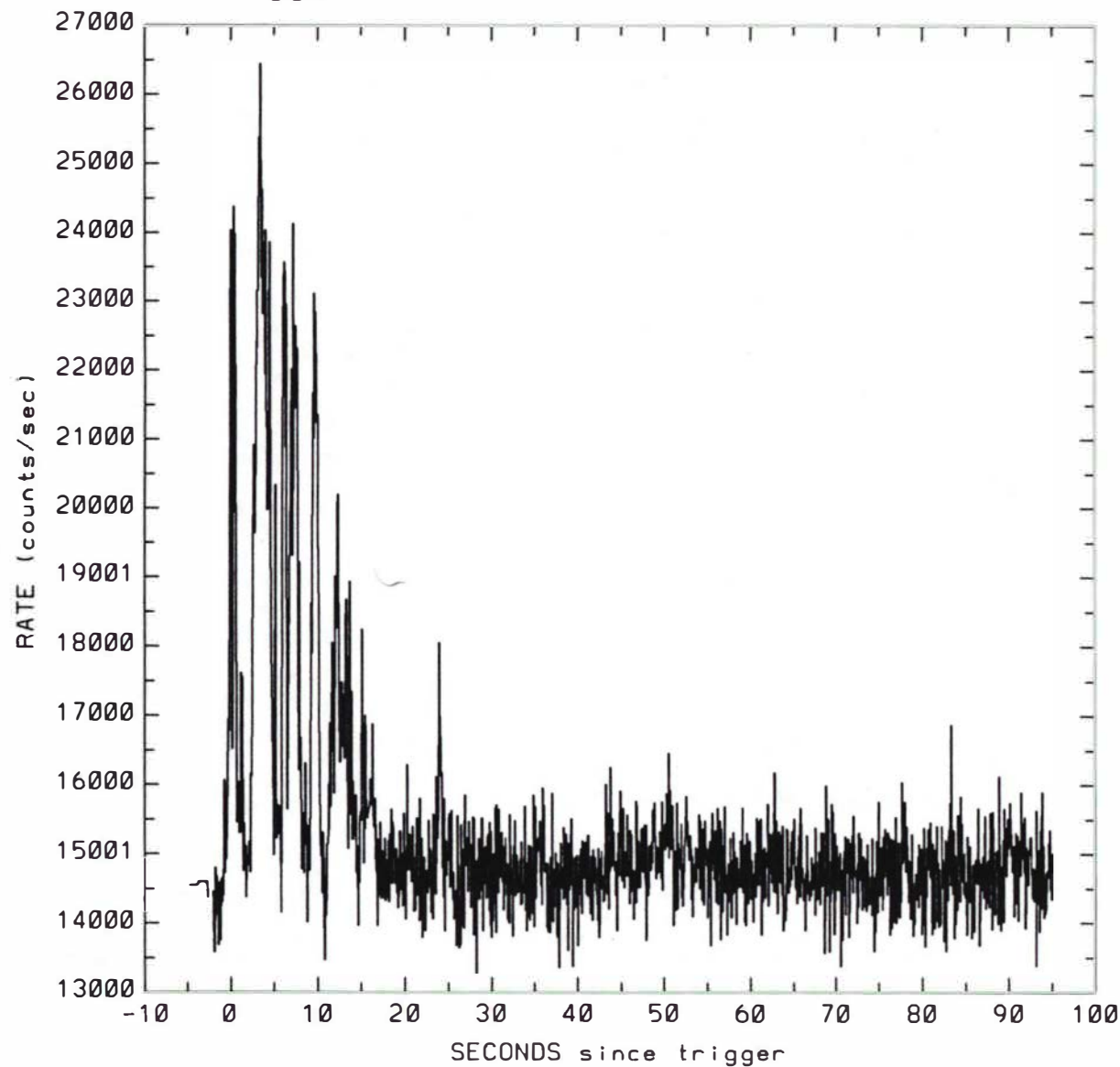
COMMENTS:
RELATIVELY INTENSE EVENT, RICH IN STRUCTURE. TOTAL DURATION IS ~ 25 S.
COMPLEX PROFILE WITH OVER 6 WELL-SEPARATED PEAKS. SEEN ABOVE 320 KEV.

Not observed by Ulysses



May 11 92
128.3, -43.8
 $2.1 \times 10^{-6} \text{ erg/cm}^2$

Trigger # 1601



7 / 6 / 94

ULYSSES RT

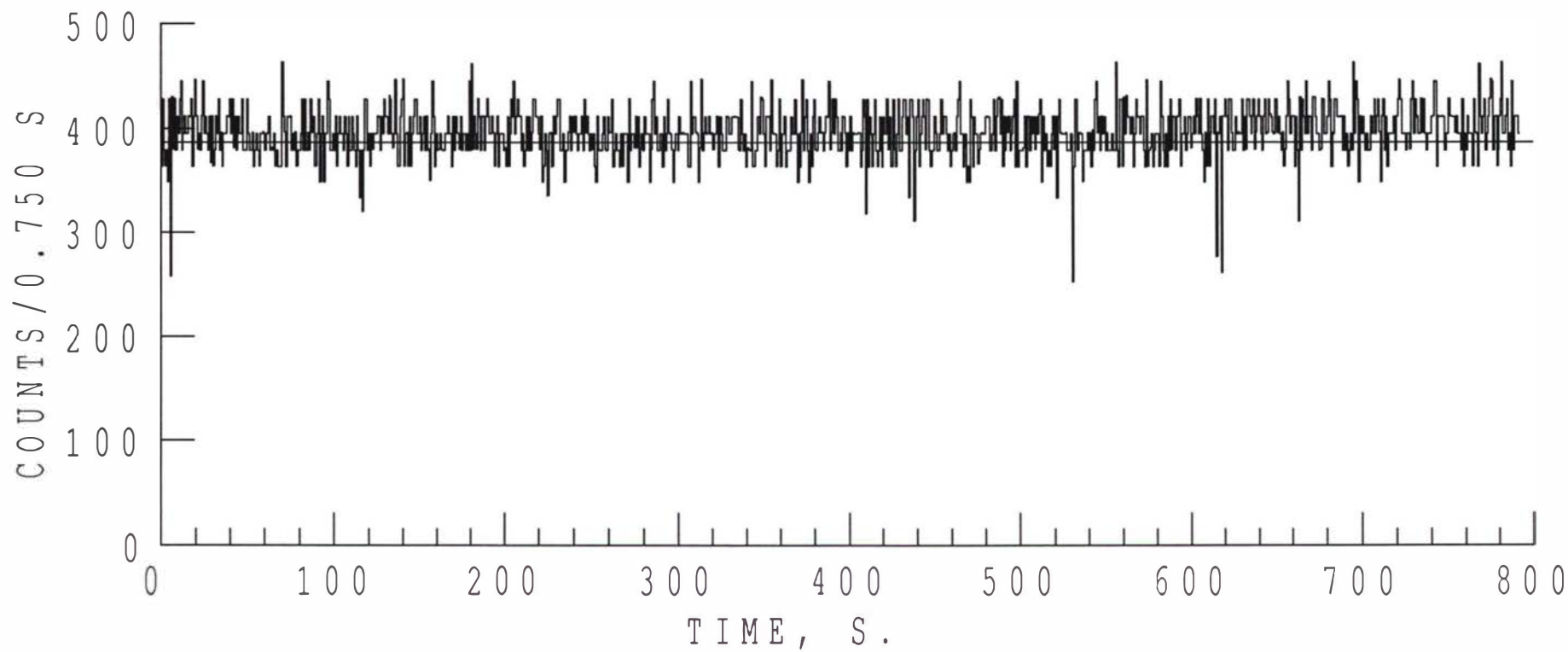
11 / 5 / 92 21456.119 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



15 / 5 / 92

ULYSSES RT

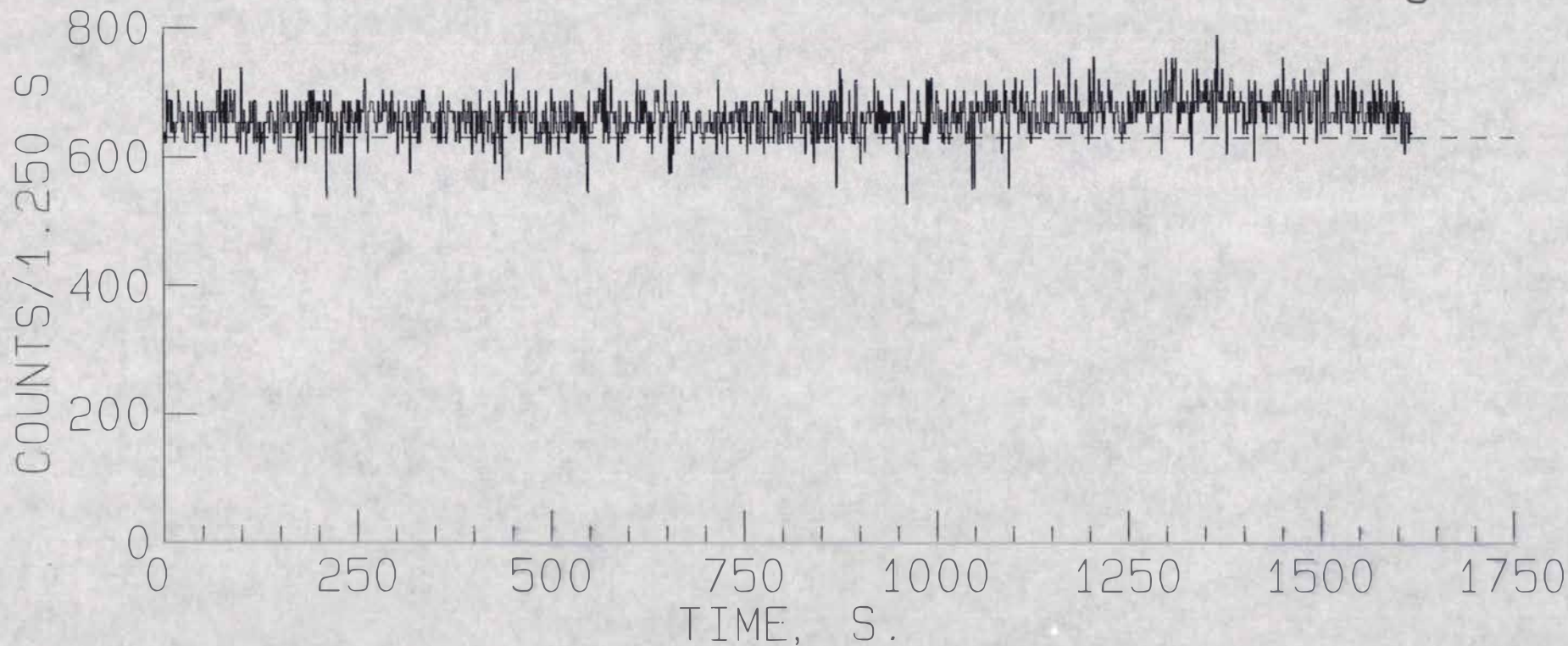
11 / 5 / 92 21024.109 s

.250 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M=10 12.5s long event
>4.0 SIGMA FLUCTUATIONS

Search expanded to ± 800 s, in
case BATSE location is wrong



From RUBIN@ssl.msfc.nasa.gov Thu May 14 14:18:42 1992
Date: Thu, 14 May 1992 16:19:51 -0500 (CDT)
From: RUBIN@ssl.msfc.nasa.gov
Subject: Ad Messages
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @MOPS\$SEND_MSG:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01602

TIME: TJD=8753 *May 11* SECONDS=60306

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PRECIPITATION EVENT.

CATSEARCH PROGRAM

BATSE BURST # 1603

EVENT OF 1992 MAY 11 DAY OF YEAR=132

EVENT CROSSING TIME AT BATSE : 74256. S. OR 20:37:36.0

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 50.600 -39.900

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

POSITION OF ULYSSES ON 11/ 5/ 92 IS:

RA= 148.369 DEC= 8.911 DIST= 5.151 AU

BATSE-ULYSSES DISTANCE = 770585112. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.36 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH= 518.75 SECS.

CROSSING TIME AT ULYSSES IS 74775. S. OR 20:46:14.7 +/- 494.96 SECONDS

No

From RUBIN@ssl.msfc.nasa.gov Thu May 14 13:32:02 1992

Date: Thu, 14 May 1992 15:33:04 -0500 (CDT)

From: RUBIN@ssl.msfc.nasa.gov

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1458

BATSE BURST TRIGGER

NO.: 01603

TIME: TJD=8753 SECONDS=74258

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=078.8 AZIMUTH=351.6 ERROR= DEGREES

COMMENTS:

SHORT WEAK, BURST ABOUT 8S IN DURATION. APPEARS SOON AFTER SPACECRAFT EXITS
THE SAA. NO SIGNAL PRESENT ABOVE 300 KEV. THE CONSENSUS AMONG BATSE TEAM
MEMBERS IS THAT THIS IS A BURST BUT THERE MAY BE A SMALL POSSIBILITY
THAT IT IS NOT.

No trigger

7 / 6 / 94

ULYSSES RT

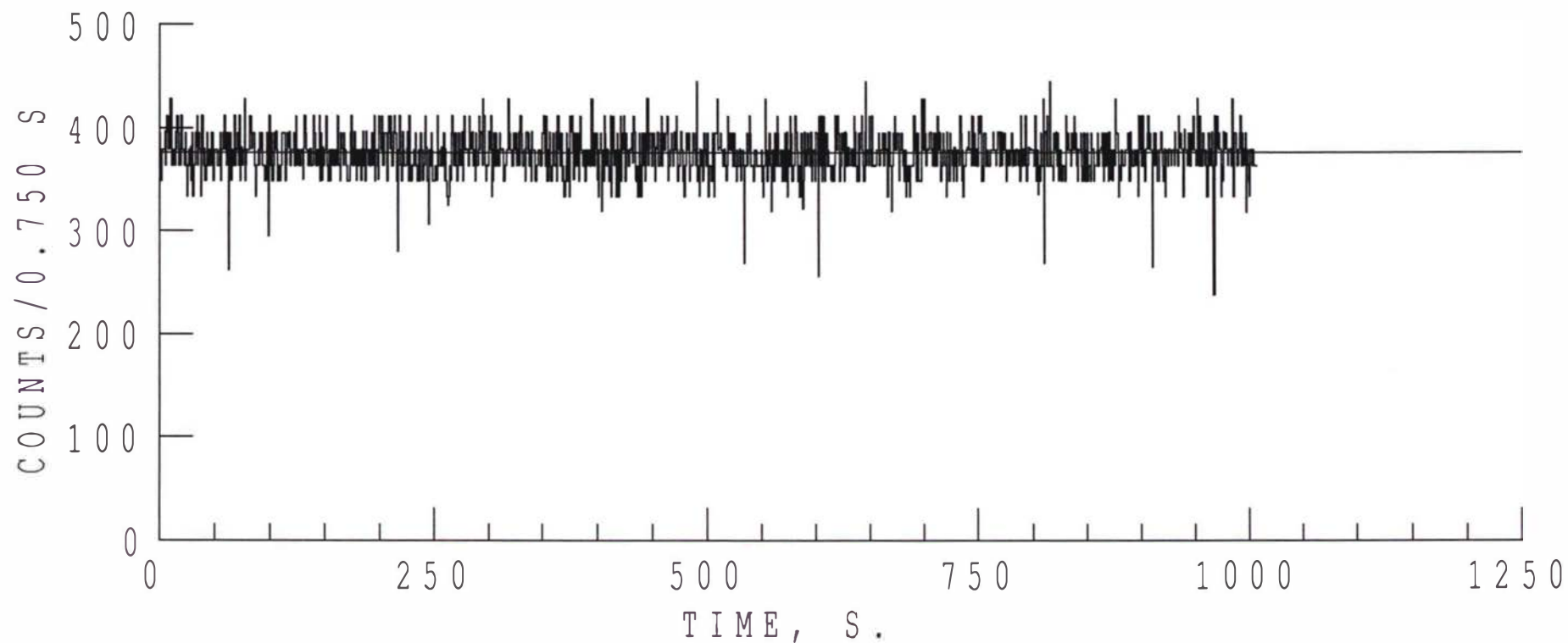
11 / 5 / 92 74268.227 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



CATSEARCH PROGRAM

Re do for May 11

BATSE BURST # 1604 1
EVENT OF 1992 MAY 12 DAY OF YEAR=133²
EVENT CROSSING TIME AT BATSE : 80912. S. OR 22:28:32.0
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 13.000 -36.900
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 12/ 5/ 92 IS:
RA= 148.339 DEC= 8.880 DIST= 5.167 AU
BATSE-ULYSSES DISTANCE = 772996664. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1688.02 SECS.
CROSSING TIME AT ULYSSES IS 82600. S. OR 22:56:40.0 +/- 414.03 SECONDS

NO

From RUBIN@ssl.msfc.nasa.gov Thu May 14 13:46:52 1992
Date: Thu, 14 May 1992 15:48:07 -0500 (CDT)
From: RUBIN@ssl.msfc.nasa.gov
Subject: Trigger 1603
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @MOPSS\$SEND_MSG:BURST_SPAN.DIS
Content-Length: 1292

BATSE BURST TRIGGER

NO.: 01604

TIME: TJD=8753^{NO-8753} SECONDS=80914

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=062.8 AZIMUTH=326.4 ERROR= DEGREES

COMMENTS:

WEAK, SHORT BURST ~ 7 S DURATION IN MAIN PEAK. THERE IS A SMALL SHORT SECOND
PEAK IN 100-300 KEV RANGE. SOME SIGNAL NEAR THE TRIGGER ABOVE 300 KEV.

No trigger

BATSEARCH PROGRAM

TSE BURST #1604

VENT OF 1992 MAY 11 DAY OF YEAR=132

EVENT CROSSING TIME AT BATSE : 80912. S. OR 22:28:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 24.000 -37.000
BATSE PEAK COUNTING RATE: 0 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 5/ 92 IS:
RA= 148.341 DEC= 8.882 DIST= 5.166 AU
BATSE-ULYSSES DISTANCE = 772842584. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1387.03 SECS.
CROSSING TIME AT ULYSSES IS 82299. S. OR 22:51:39 +/- 448.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 5/ 92 IS:
RA= 4.116 DEC= 0.323 DIST= 1.863 AU
MARS-BATSE DISTANCE = 278743904. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -695.13 SECS.
CROSSING TIME AT MARS IS 80217. S. OR 22:16:56 +/- 96.65 SECONDS

9 / 11 / 95

ULYSSES RT

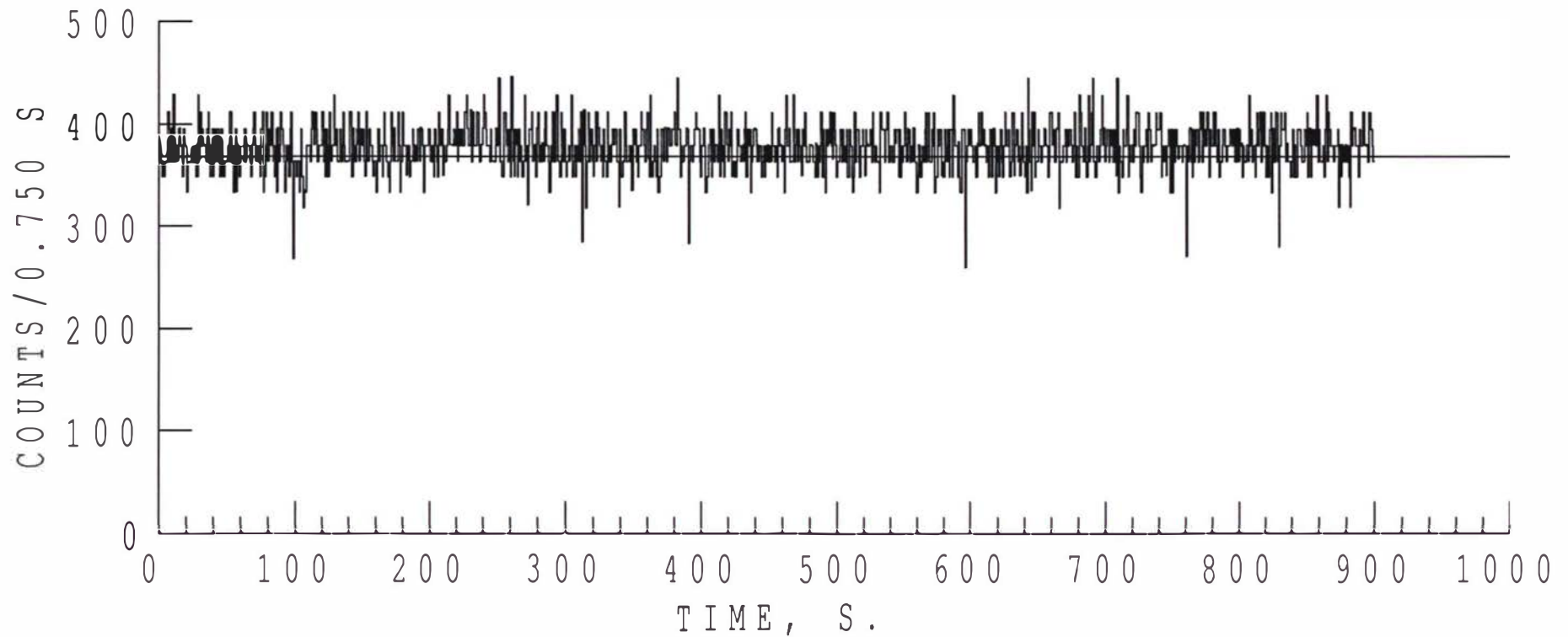
11 / 5 / 92 81864.102 s

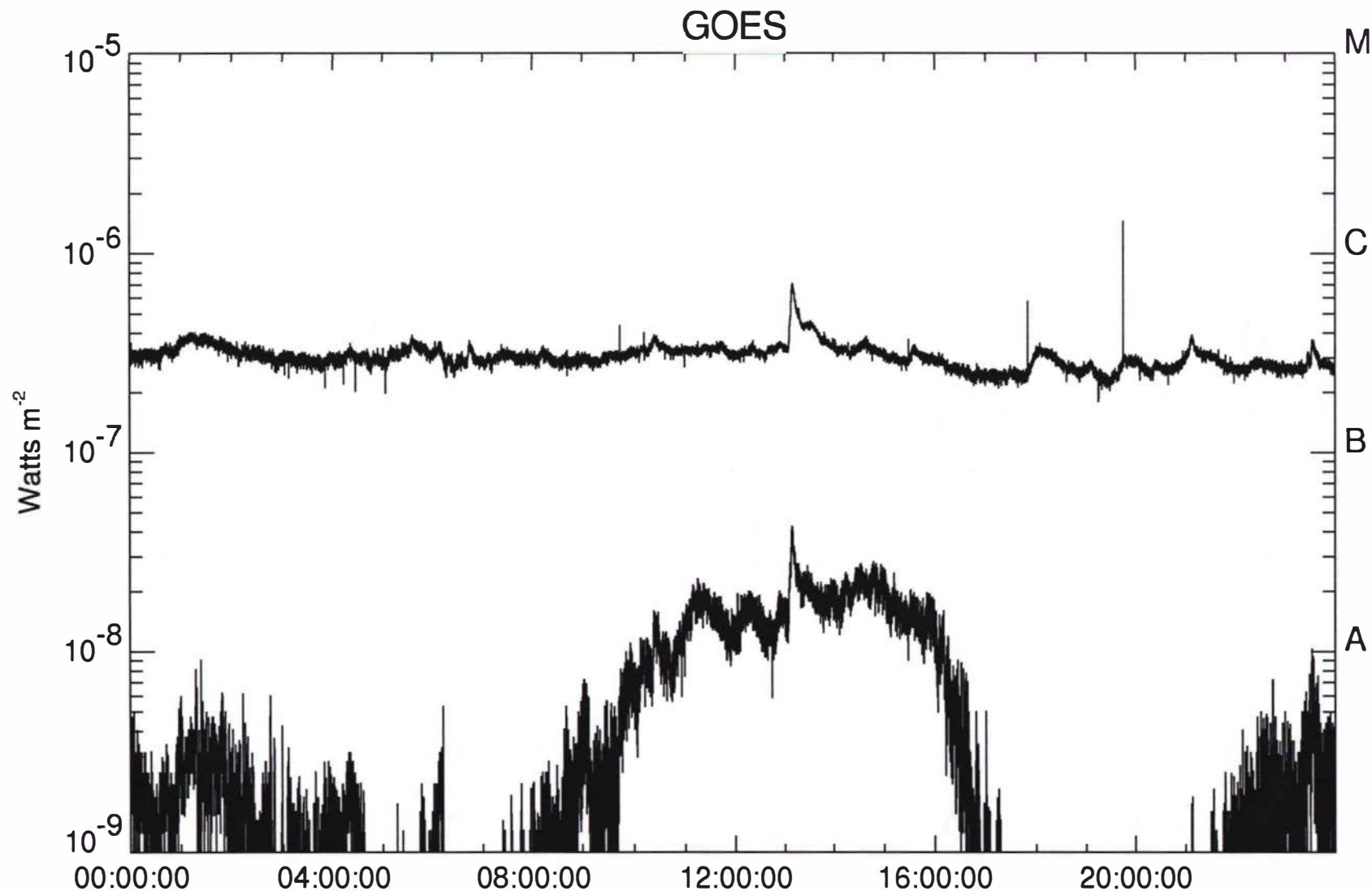
0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





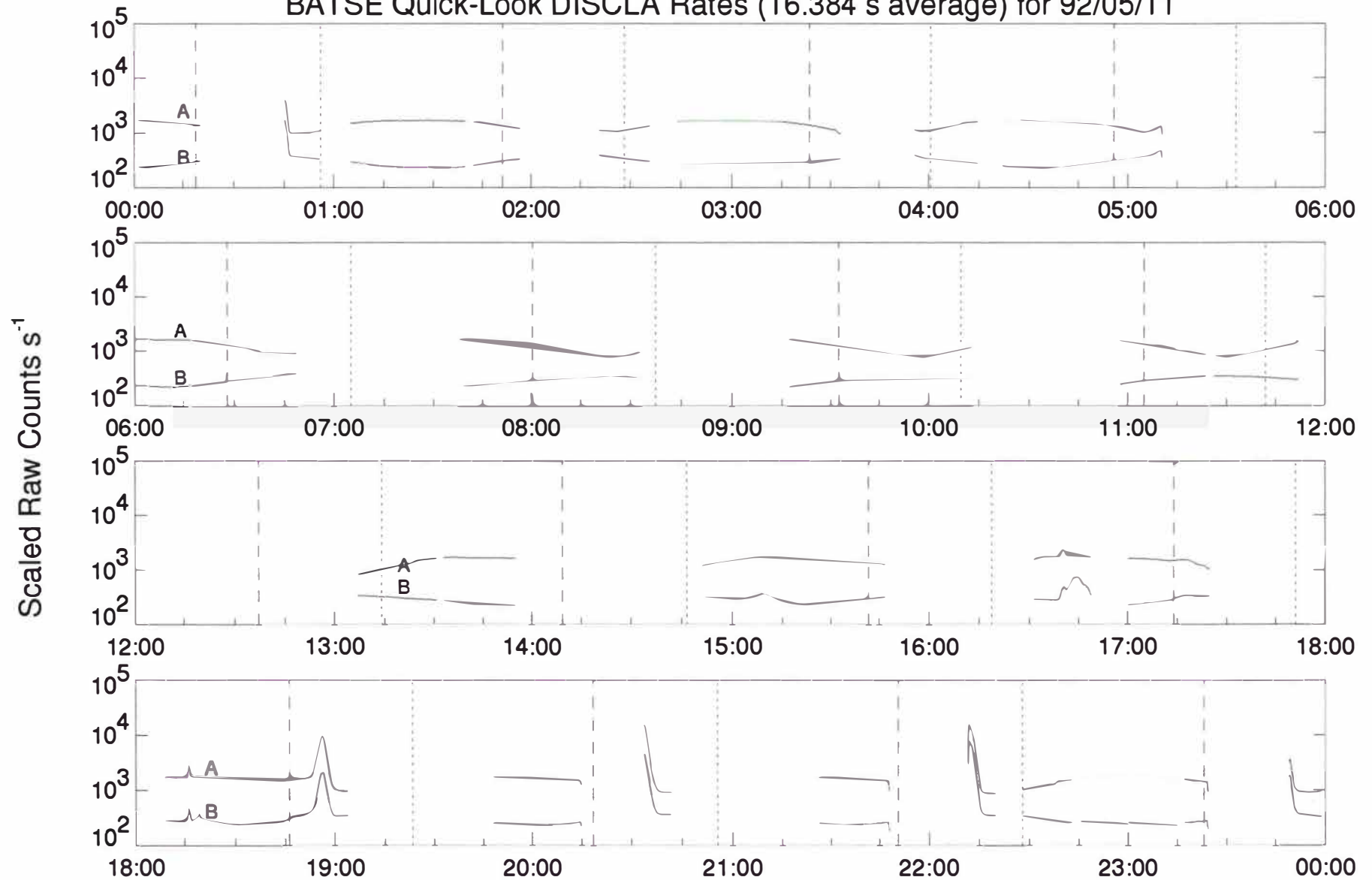
Data Start: 92/05/10, 2359:58

Plot created: 93/10/29, 0105

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/11



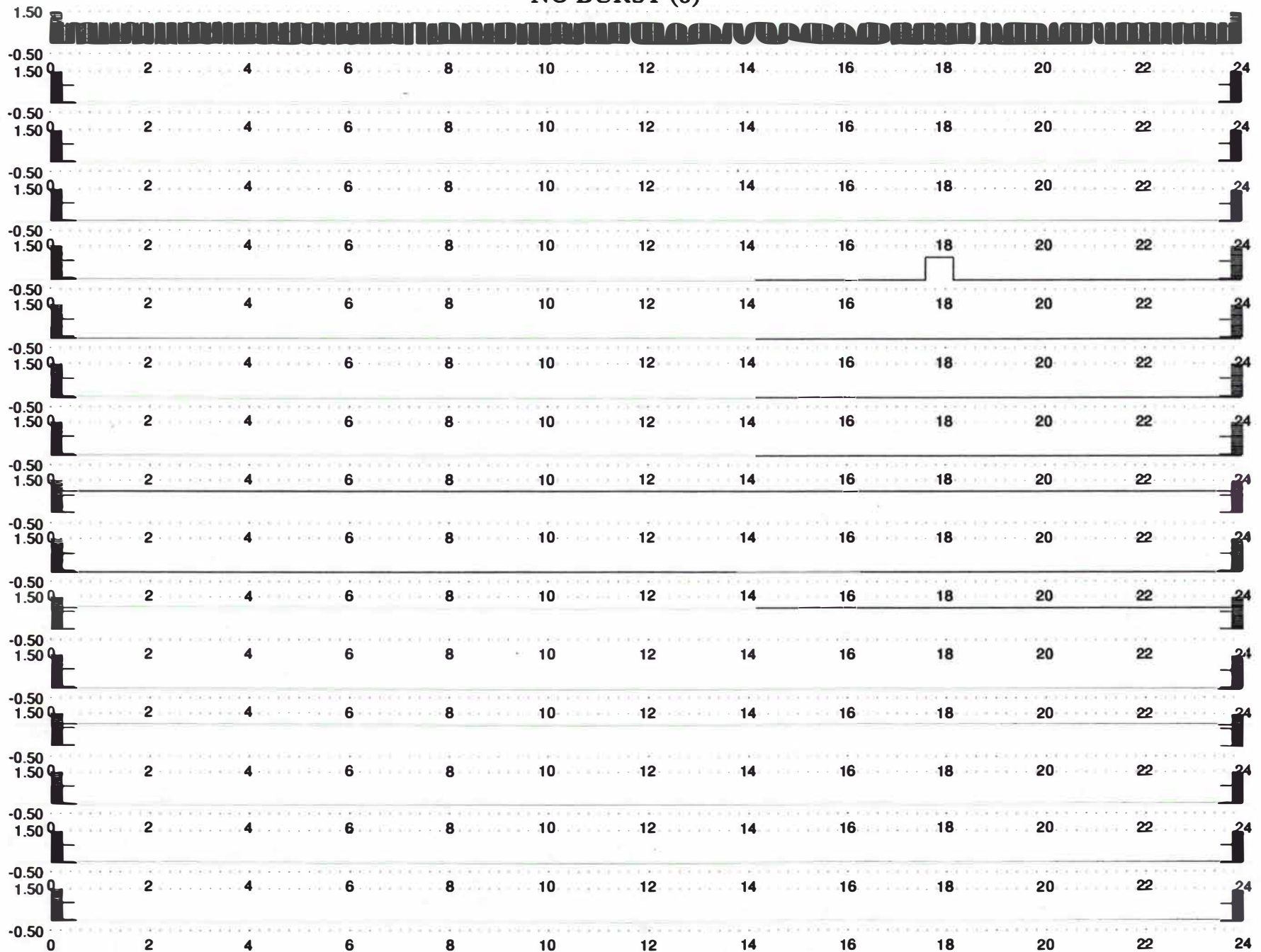
Current Time: 92/09/19, 1713 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

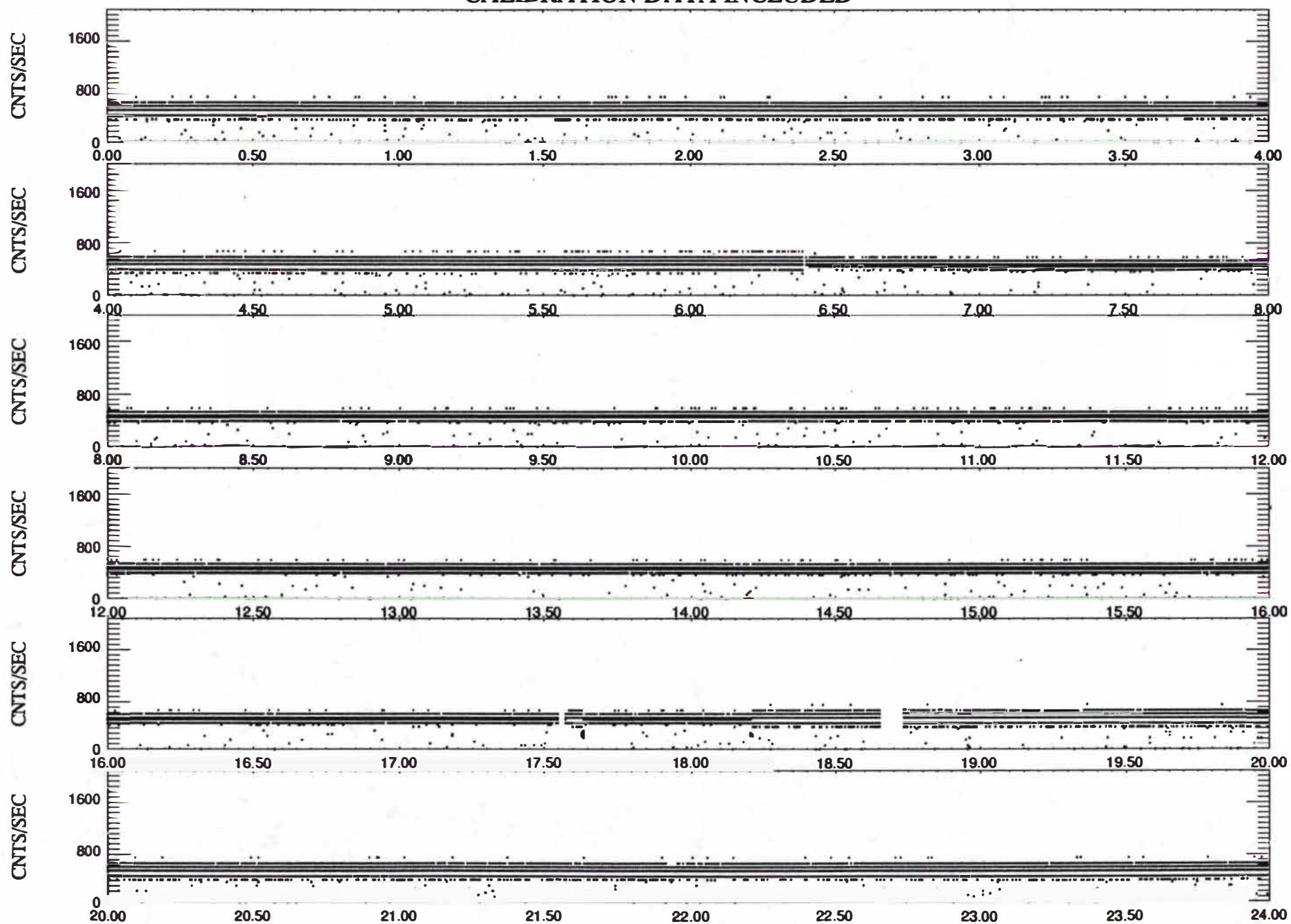
NO BURST (0)

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

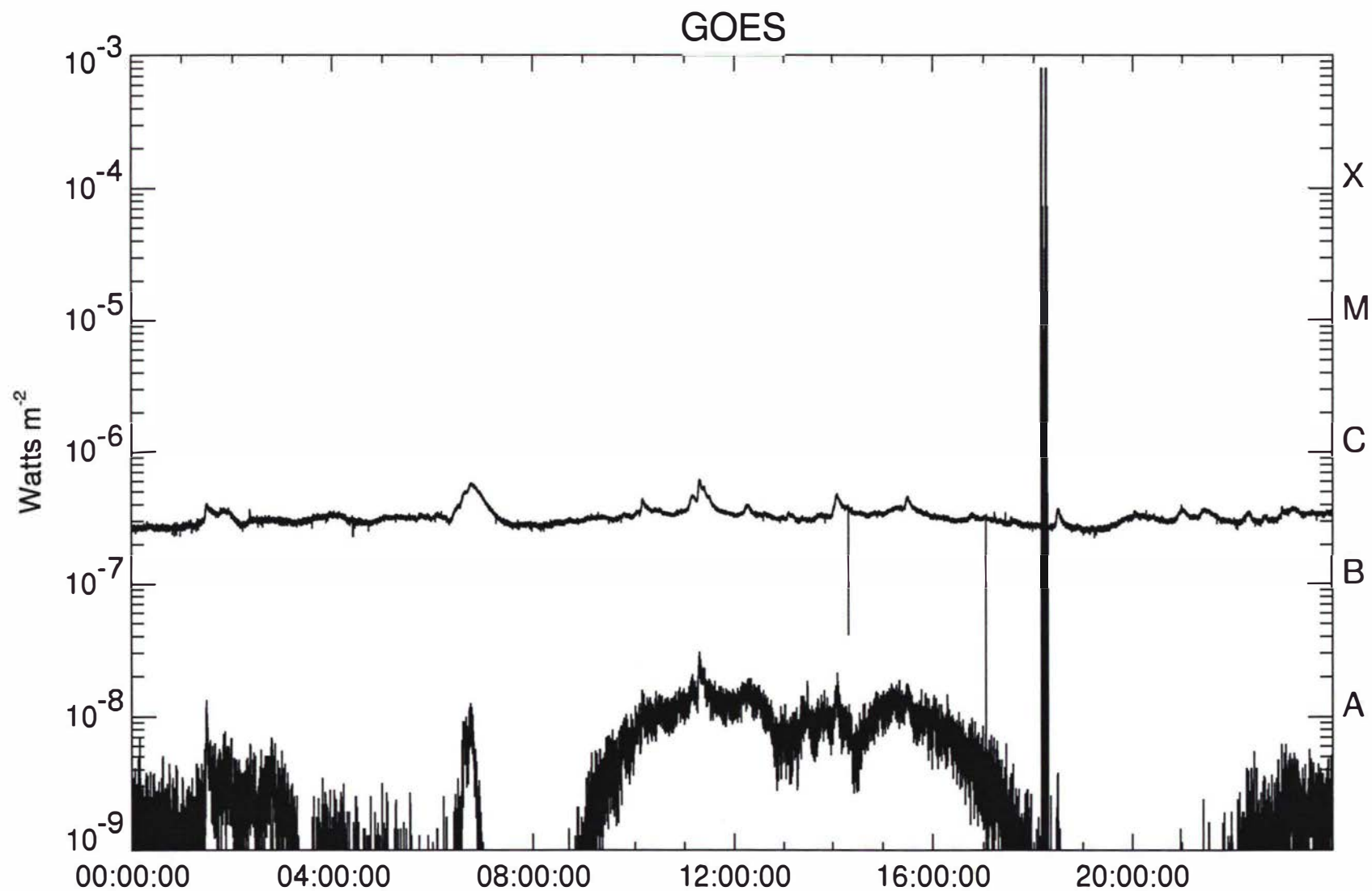


UNIVE. ΔL TIME

CALIBRATION DATA INCLUDED



UNIVERSE TIME

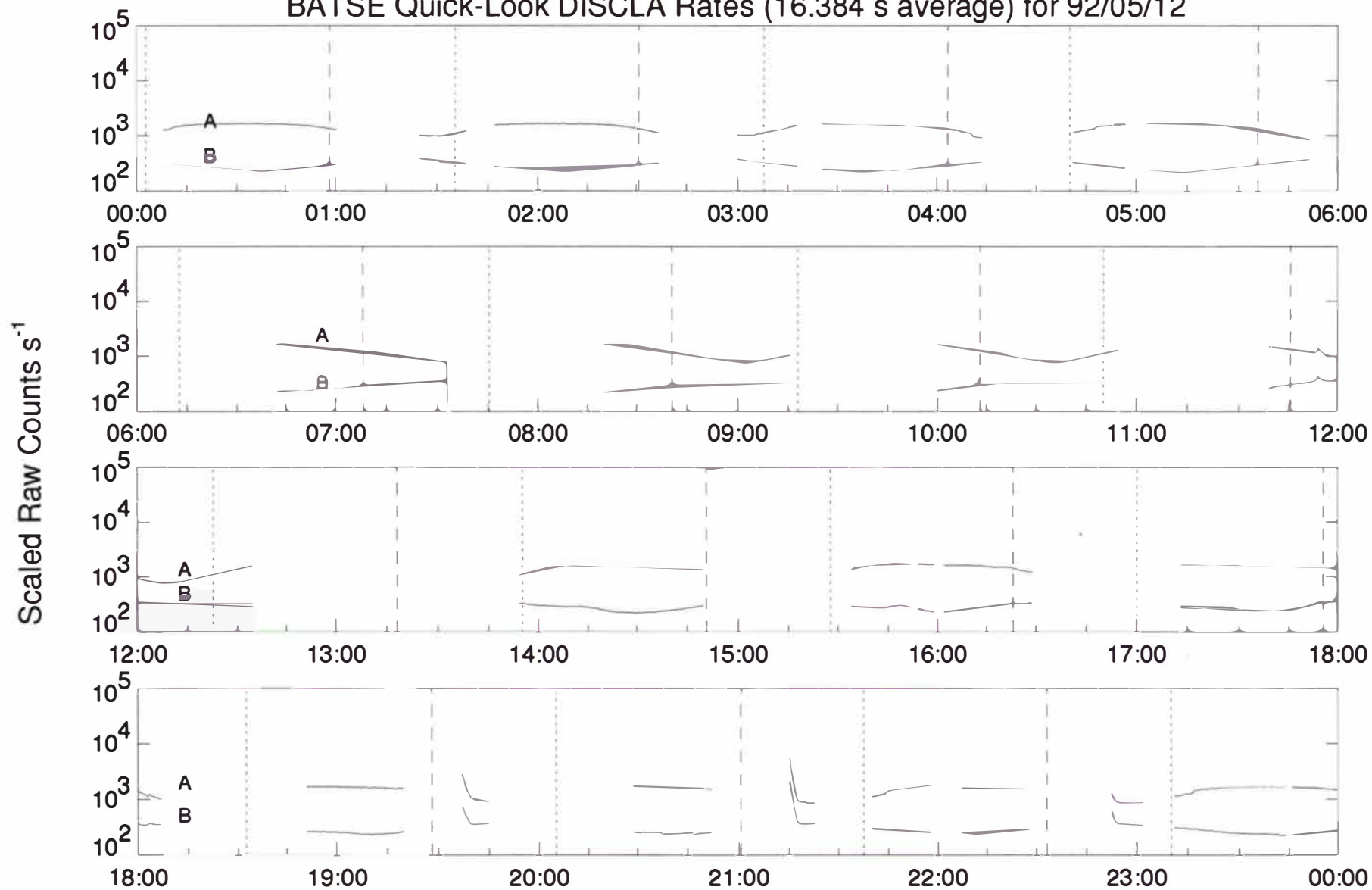


Data Start: 92/05/11, 2359:59

Plot created: 93/10/29, 0105

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

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/12



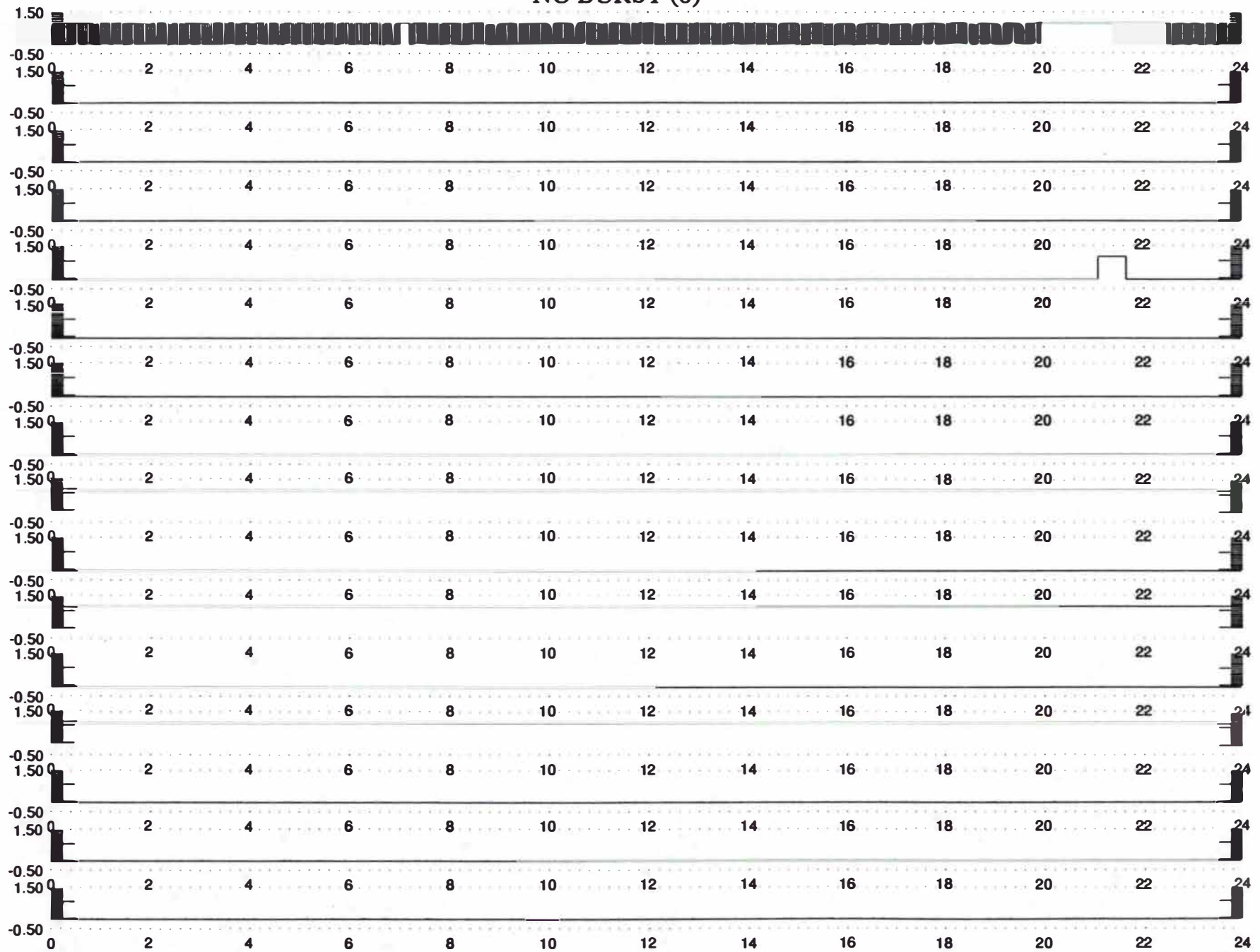
Current Time: 92/09/19, 1714 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

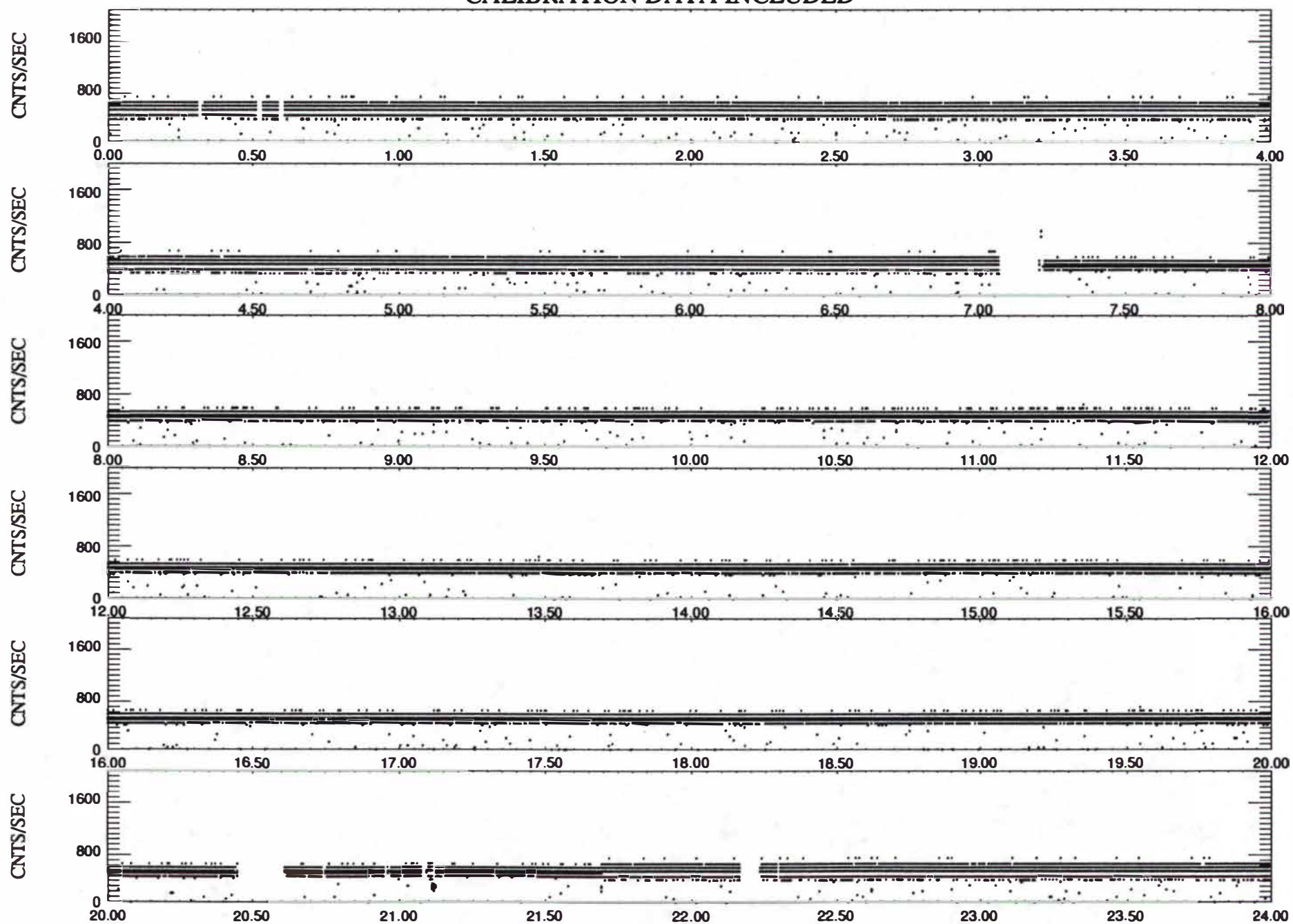
CUB CCL DMP ROM DMA OSC MP. ICR SPE OPM RSC CAL WCH MEM BRS HUS

NO BURST (0)



UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

From KOSHUT@ssl.msfc.nasa.gov Thu May 14 13:39:06 1992
Date: Thu, 14 May 1992 15:40:20 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01605

TIME: TJD=8755 SECONDS=53496

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE PRECIPITATION EVENT.

From KOSHUT@ssl.msfc.nasa.gov Thu May 14 14:44:40 1992
Date: Thu, 14 May 1992 16:45:54 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01605

TIME: TJD=8755 SECONDS=53496

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
THIS IS A CORRECTION TO A PREVIOUS MESSAGE CONCERNING THIS TRIGGER.
TRIGGER #1605 IS UNDOUBTEDLY A PARTICLE PRECIPITATION EVENT.

CATSEARCH PROGRAM

BATSE BURST # 1606
EVENT OF 1992 MAY 13 DAY OF YEAR=134
EVENT CROSSING TIME AT BATSE : 60779. S. OR 16:52:59.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 213.200 -44.600
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 13/ 5/ 92 IS:
RA= 148.311 DEC= 8.848 DIST= 5.183 AU
BATSE-ULYSSES DISTANCE = 775412704. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -492.90 SECS.
CROSSING TIME AT ULYSSES IS 60286. S. OR 16:44:46.2 +/- 483.34 SECONDS

RT

From KOSHUT@ssl.msfc.nasa.gov Thu May 14 14:56:18 1992
Date: Thu, 14 May 1992 16:57:40 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1458

BATSE BURST TRIGGER

NO.: 01606

TIME: TJD=8755 SECONDS=60781

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142 AZIMUTH=273 ERROR= DEGREES

COMMENTS:

BURST OF ~ 120 SECOND DURATION WITH EMISSION ABOVE 300 KEV OBSERVED.
TIME HISTORY CONSISTS OF MULTIPLE PULSES, WITH THE DURATIONS VARYING
BETWEEN 1 AND 5 SECONDS. PEAK COUNT RATES OCCUR AT ~ TRIGGER + 34
SECONDS AND AT ~ TRIGGER + 96 SECONDS.

, ,

BT

From kouveliotou%ssl.span@Sdsc.Edu Sun May 17 16:50:38 1992
Date: Sun, 17 May 92 23:52:06 GMT
From: kouveliotou%ssl.span@Sdsc.Edu
Subject: gro location for # 1606
To: khurley@sunspot.ssl.berkeley.edu
X-St-Vmsmail-To: KEVIN
Content-Length: 59

For UT : 60809.8278
X = - 3818.5
Y = 5531.25
Z = - 806.25

From khurley@space6.ssl.berkeley.edu Fri May 15 09:09:10 1992
Date: Fri, 15 May 92 08:05:13
From: khurley@space6.ssl.berkeley.edu
Content-Length: 217

John and Ray,

BATSE triggered on a relatively intense event May 13. Ulysses didn't trigger on it, but has a nice rate increase. I calculate the Venus crossing time to be 61510 seconds. Can we get PVO data?

Kevin

Answer from RK. No-PVO was off until 21:20

Helio corr removed

Date: Nov 4 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

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

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

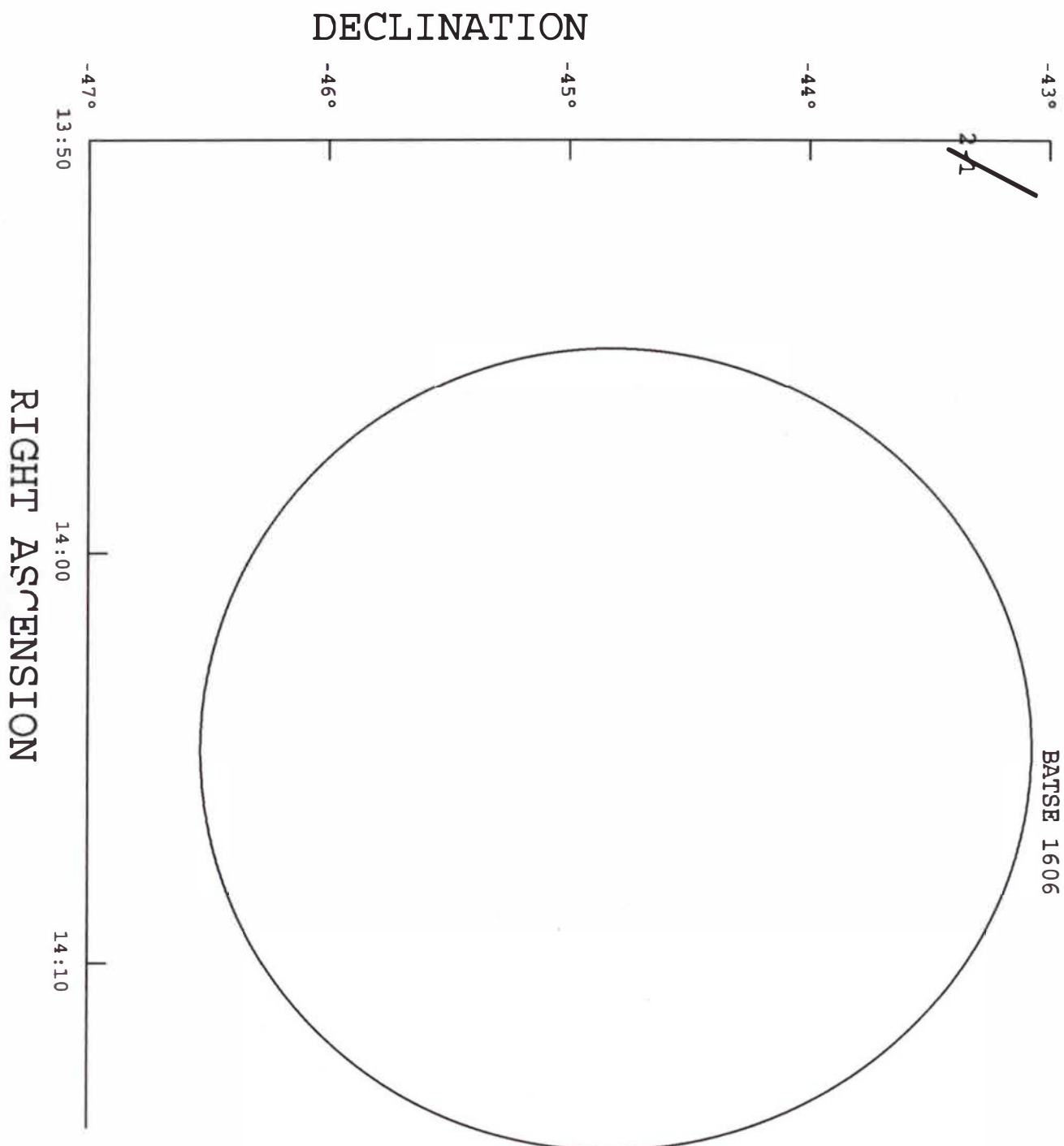
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 13, 1992 16:40

4/11/97



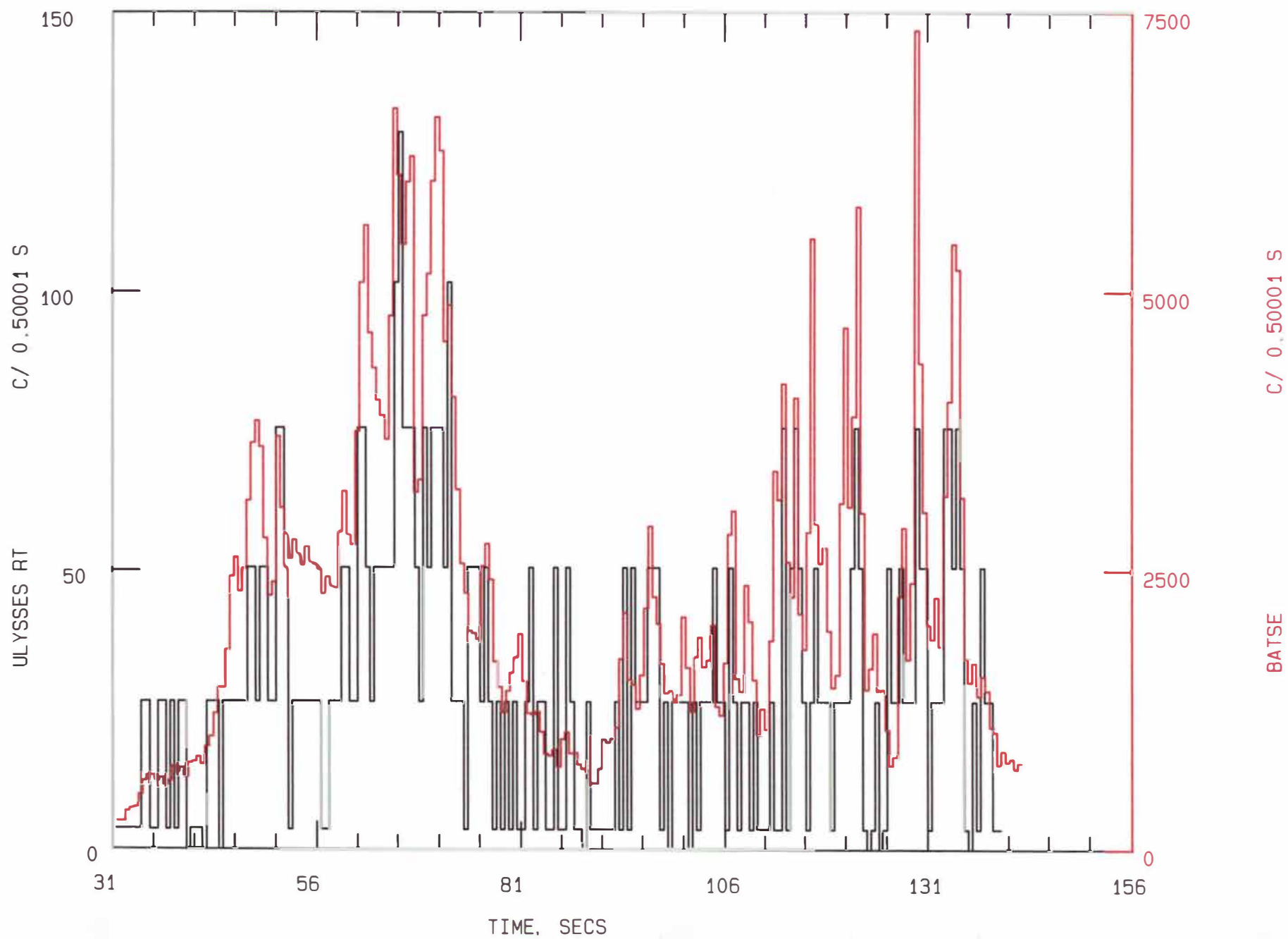
ULYSSES RT-BATSE

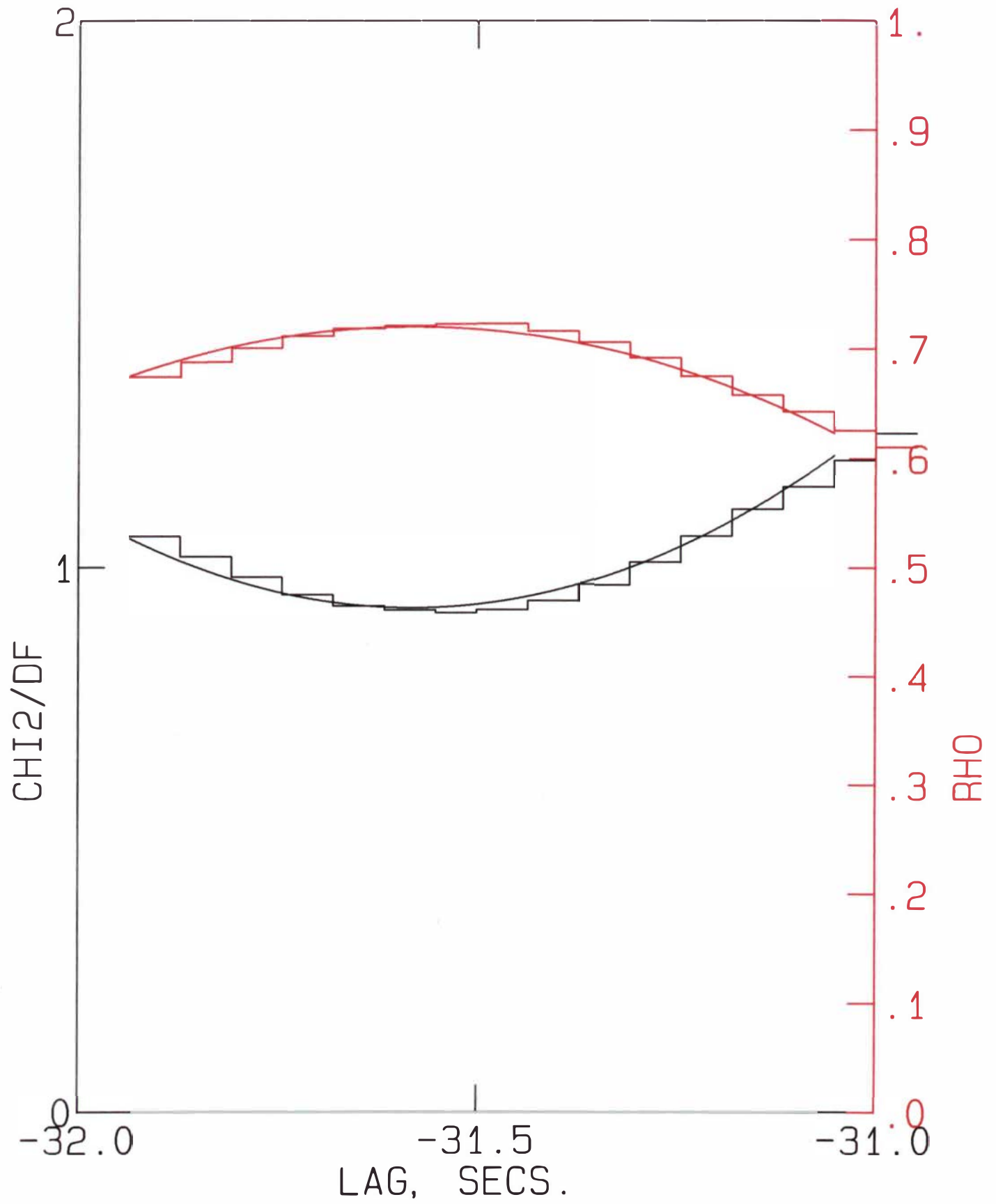
CORRELATION

13/ 5/92

60041.783

4/11/97





ULYSSES RT

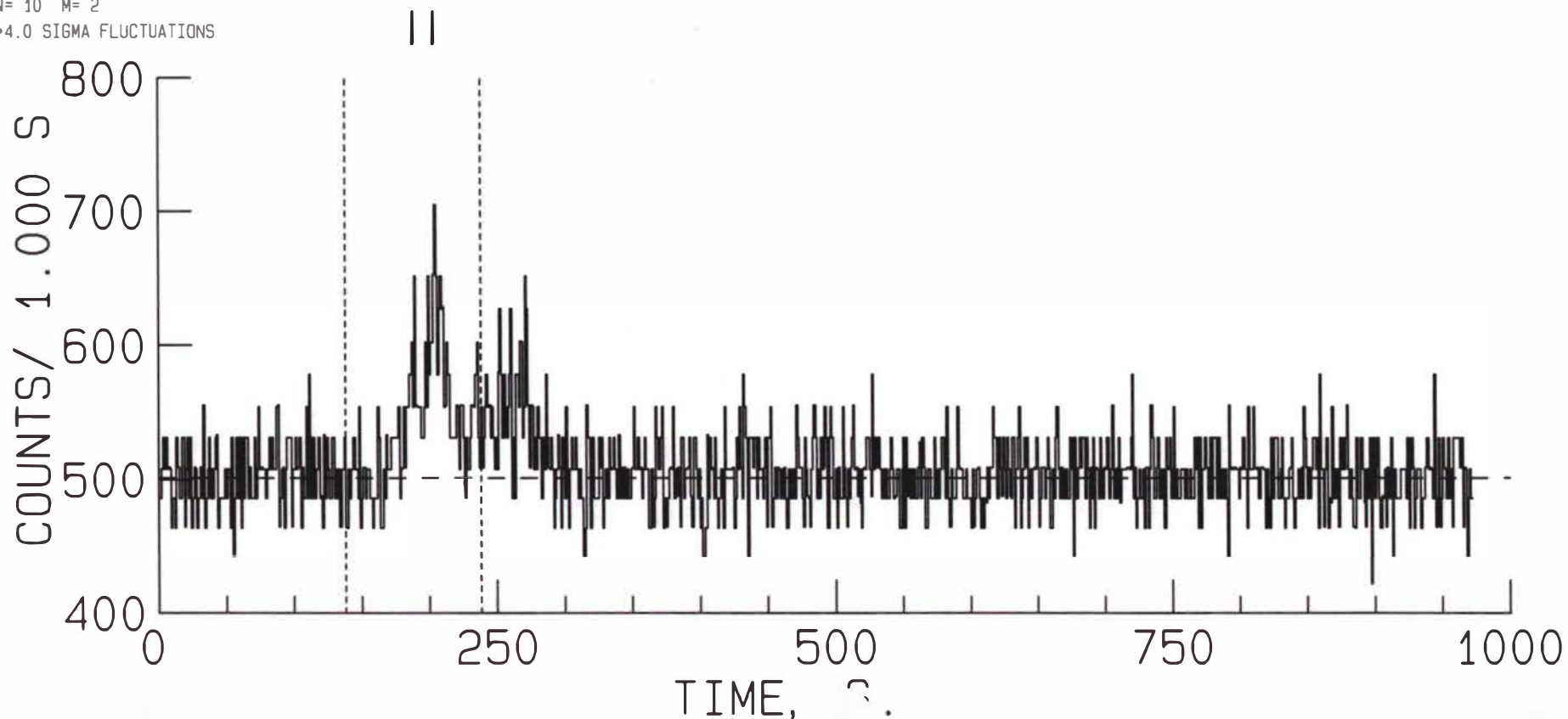
4 / 1 1 / 97

13/ 5/92 59904.056 s

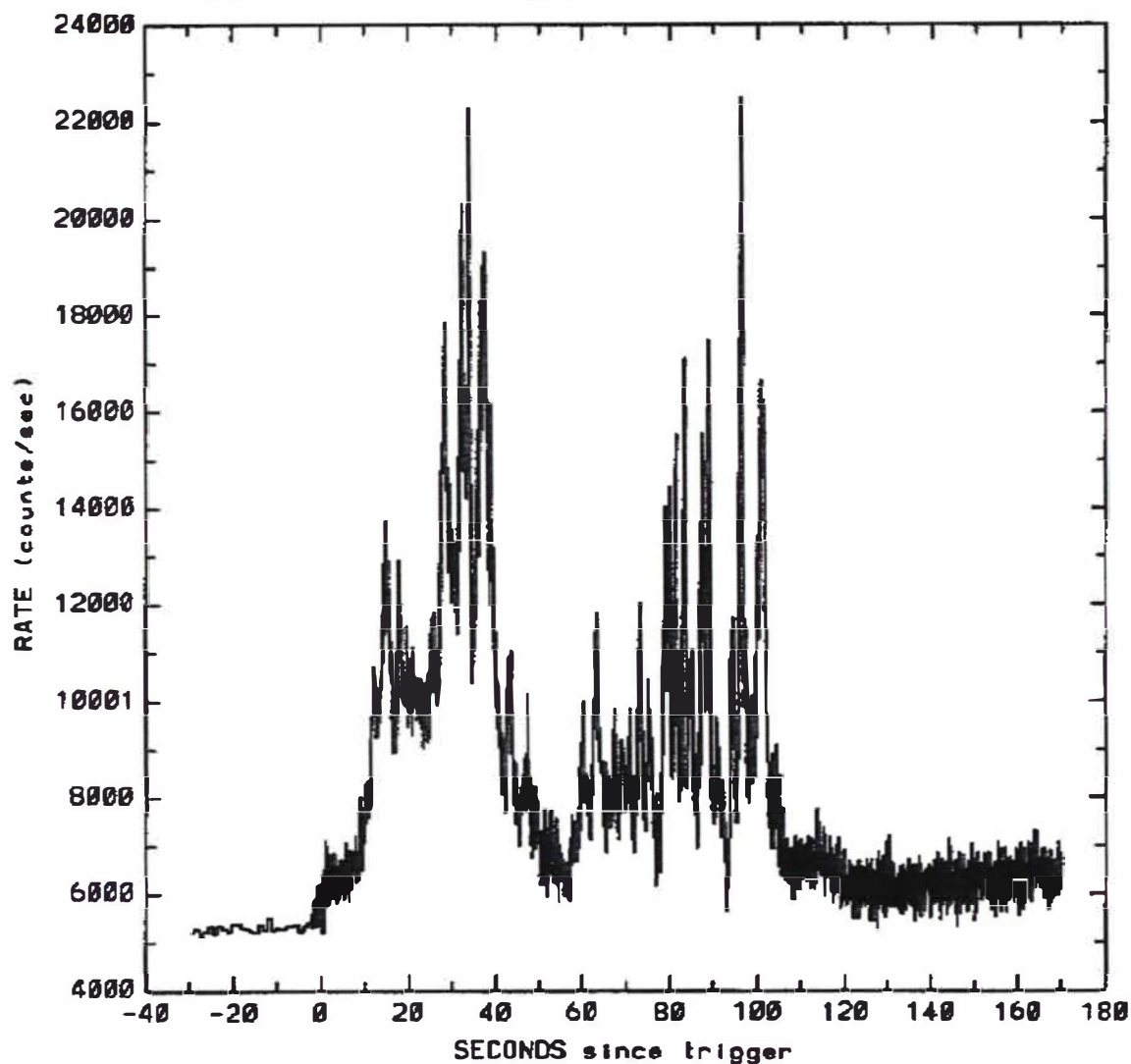
0.500 S INTERVALS REGROUPED BY 2

23- 156 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Data for K. Hurley



$7.3 \times 10^{-6} \text{ erg/cm}^2$

17-MAY-1992 18:45:31

Created by MOPS 80
(Burst Display)
Version 2.11

Trigger = . 1686

Trigger Time:
8755 / 68781.156

Burst Data Type:
DISCSC

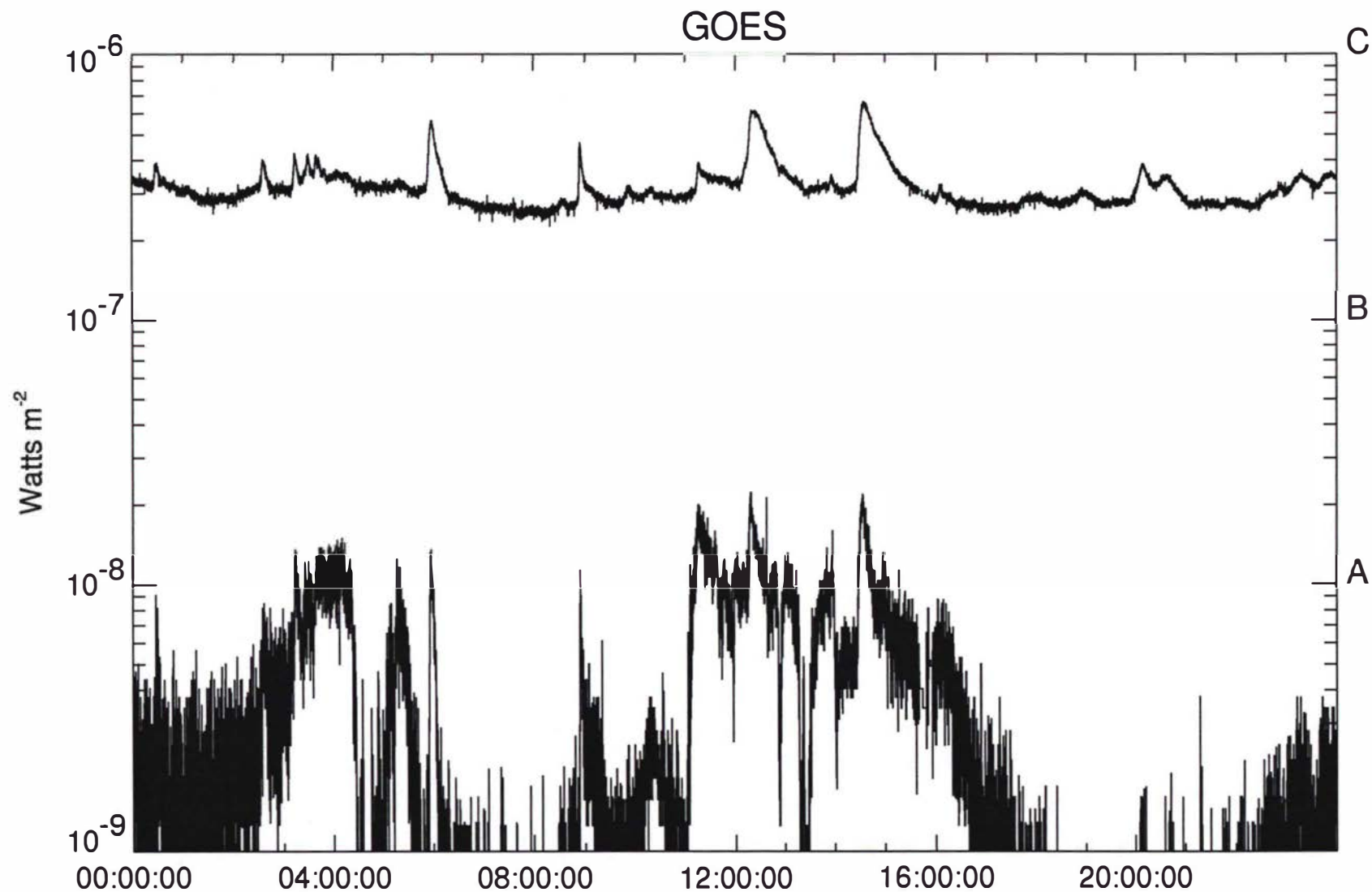
May 13
Got file
+ephem

Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds

Detectors [7..8],
16081600

Discriminators:
(1, 2)

Quality Mask:
BDISP0



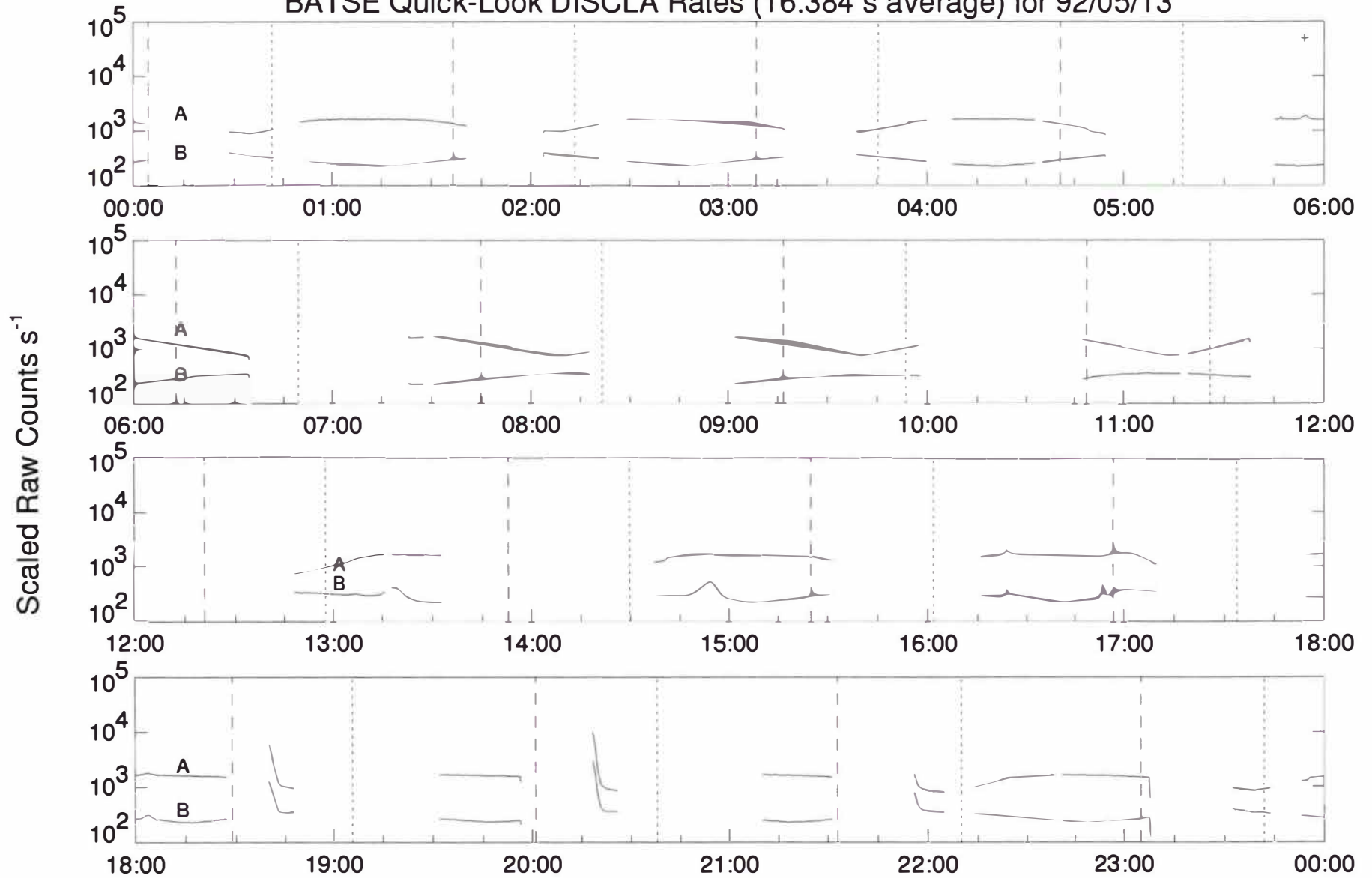
Data Start: 92/05/12, 2359:58

Plot created: 93/10/29, 0105

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/13

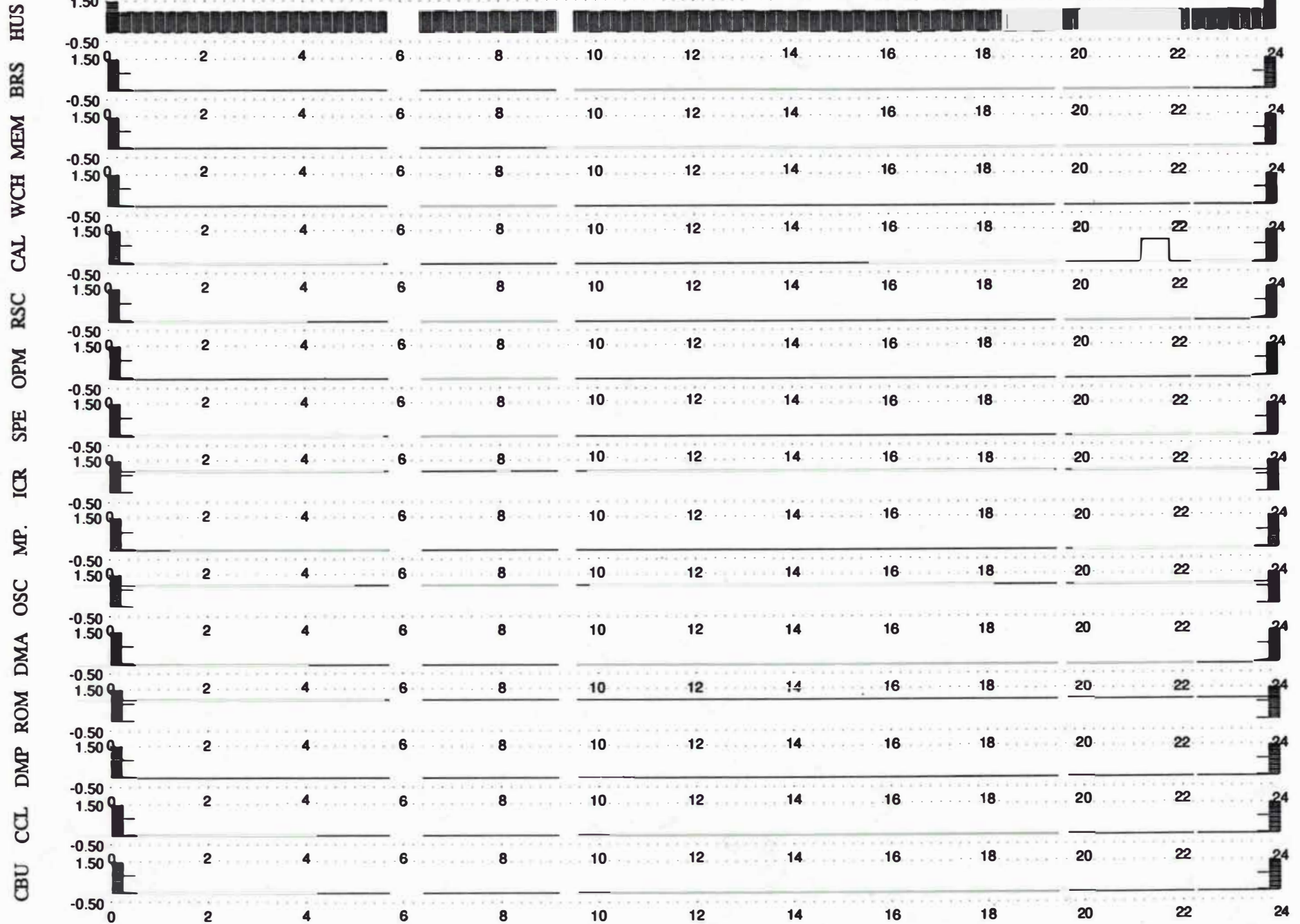


Current Time: 92/09/19, 1715 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

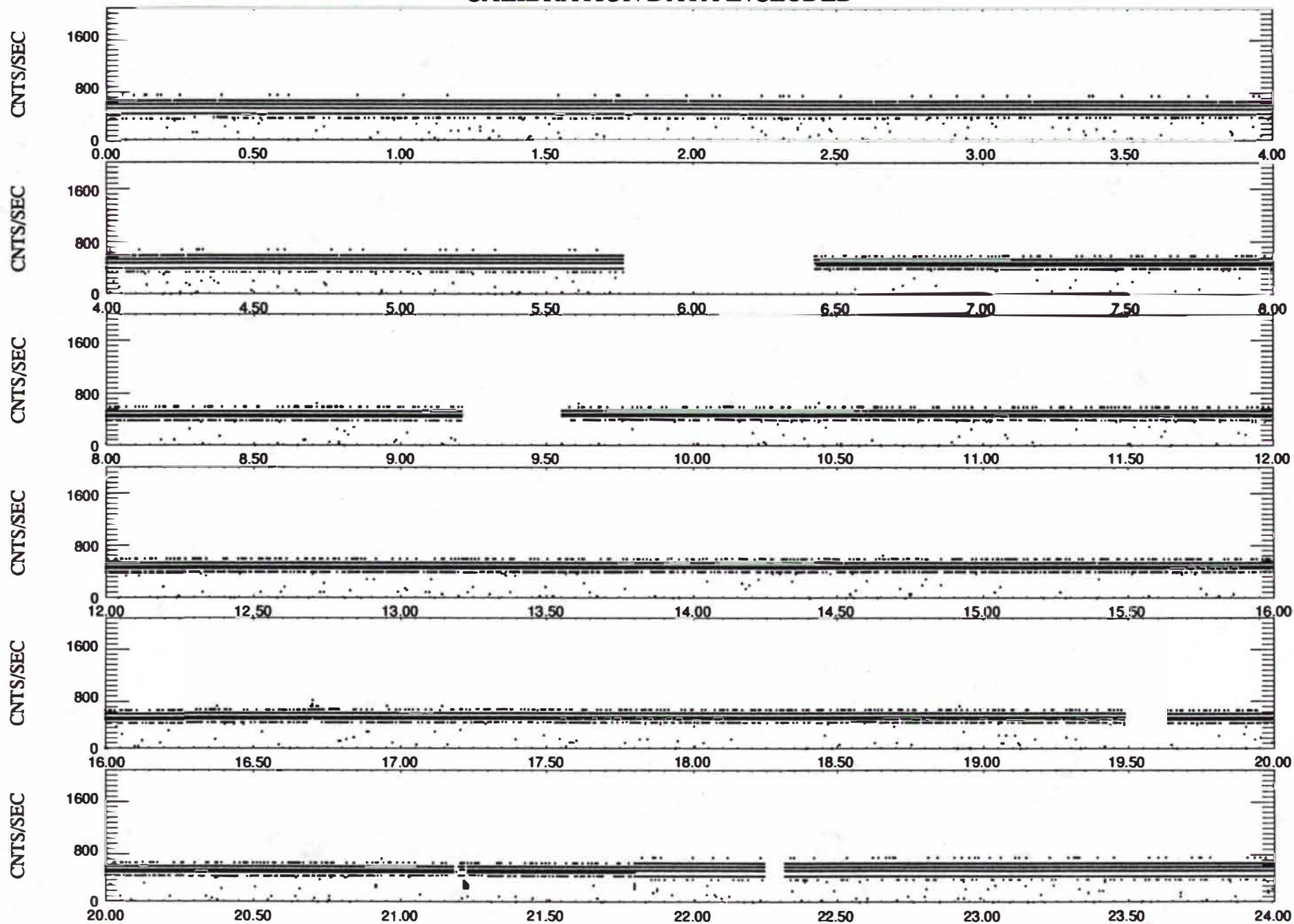
* Solar Burst Trigger
 + Solar Flare

NO BURST (0)



UNIVF AL TIME

CALIBRATION DATA INCLUDED



UNIVFICAL TIME

From HORACK@ssl.msfc.nasa.gov Fri May 15 13:37:51 1992
Date: Fri, 15 May 1992 15:39:13 -0500 (CDT)
From: HORACK@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1149

BATSE BURST TRIGGER

NO.: 01607

TIME: TJD=8756 SECONDS=63180.

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL: N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

Trigger on high rates entering SAA

List of GRB's candidates detected by SIGMA

YEAR : 1992

<i>Time of trigger (UT)</i>	<i>Detector</i>	<i>UGB N°</i>	
1992/01/10 09:19:00.864	A.C.	386/d	YES - TR 166 ET
1992/01/25 08:57:27.162 322475	A.C./GCA	397/b	
1992/02/10 09:53:54.538	A.C.	404/d	NO - IN 2 MAGNETOSPHERE
1992/02/11 02:39:14.702	GCA	405/a	" " " "
1992/03/11 02:20:29.181	A.C./GCA	422/a	YES - TR 166 ET
1992/03/25 17:17:36.661	A.C./GCA	430/b	YES - TR 166 ET
1992/04/05 07:41:38.820 276995	A.C.	434/a	
1992/04/14 23:22:43.021	GCA	441/b	YES - RI
1992/06/22 07:05:06.782	A.C./GCA	468/a	YES - TR 166 ET
1992/07/07 06:33:35.201	GCA	477/b	MAYBE - VERY WEAK RI
1992/07/14 13:04:31.014	A.C./GCA	482/b	YES - RI
1992/07/16 16:55:34.196 60934	GCA	484/b	
1992/07/20 03:12:09.209	A.C./GCA	486/a	YES - RI
1992/07/23 20:03:08.323	A.C./GCA	489/b	YES - TR 166 ET

From khurley@space6.ssl.berkeley.edu Fri May 15 13:35:48 1992
Date: Fri, 15 May 92 12:31:48
From: khurley@space6.ssl.berkeley.edu
Content-Length: 267

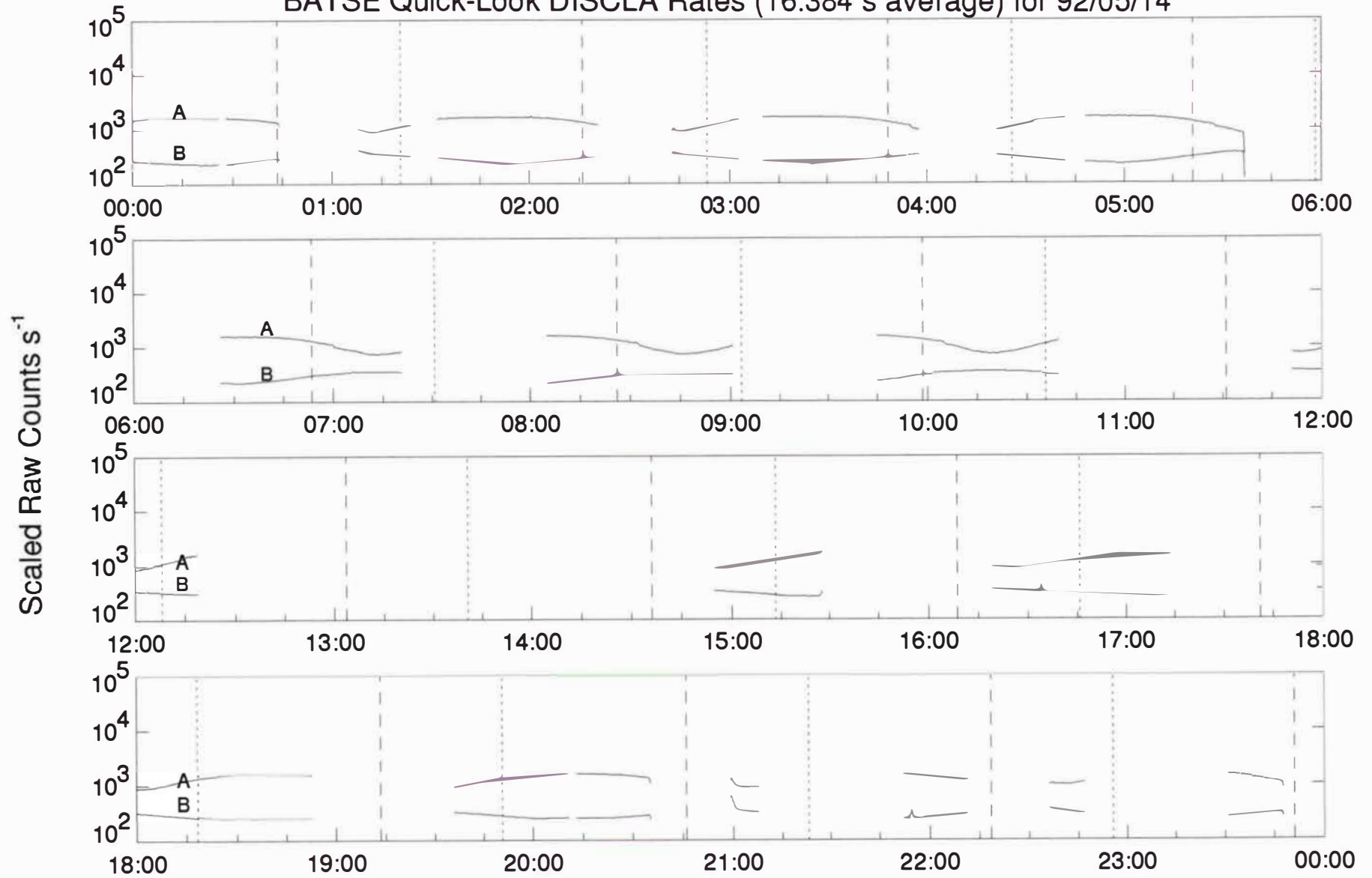
Dear Chryssa,

Ulysses triggered on a weak event May 14, around 15640 seconds. The burst was very short, less than 100 ms duration. It may actually have been particle-induced, but I thought I'd see whether you had it in the BATSE data before I threw it out.

Kevin

CK says no BATSE event at this time.

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/14

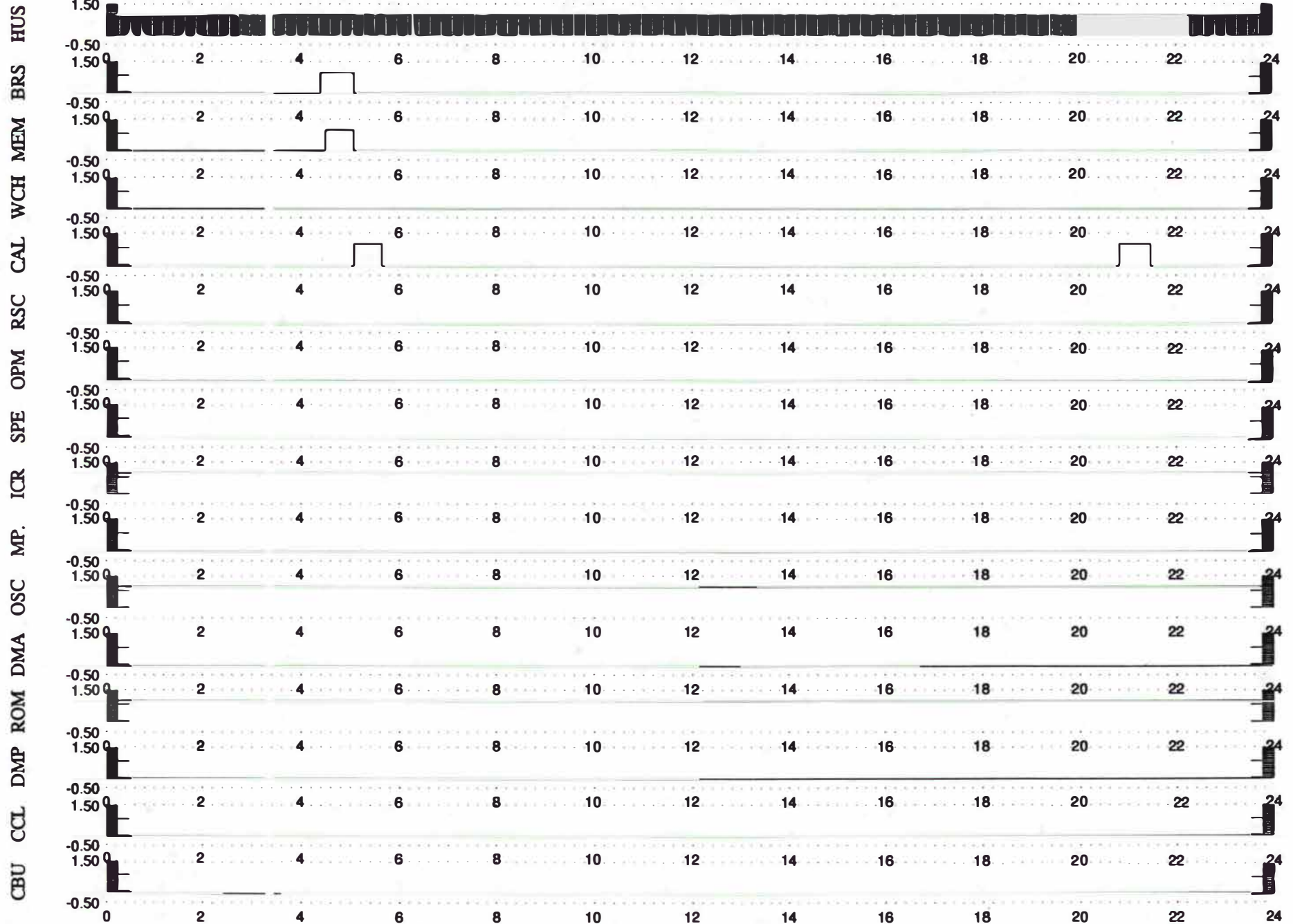


Current Time: 92/09/19, 1715 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

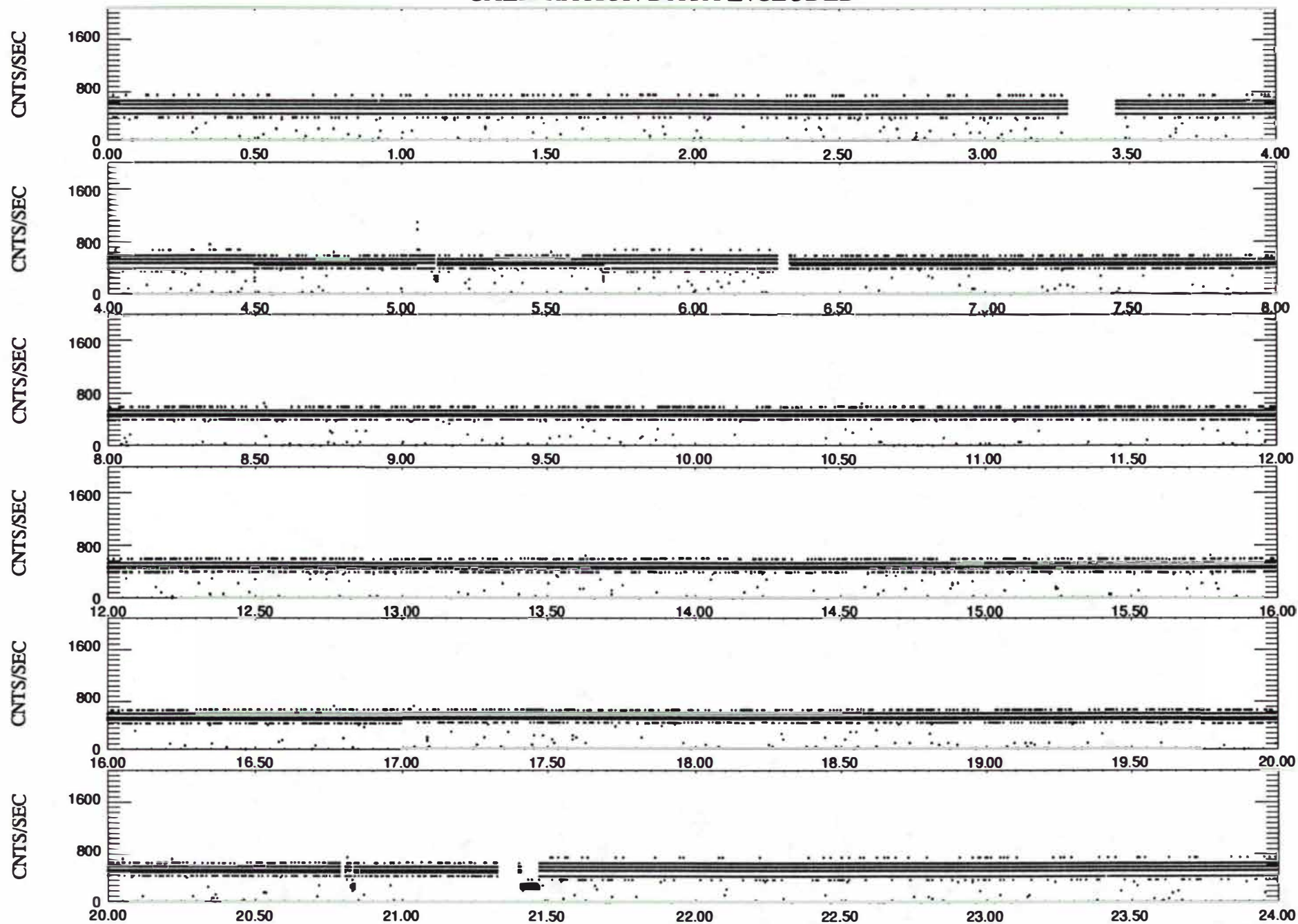
* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 1



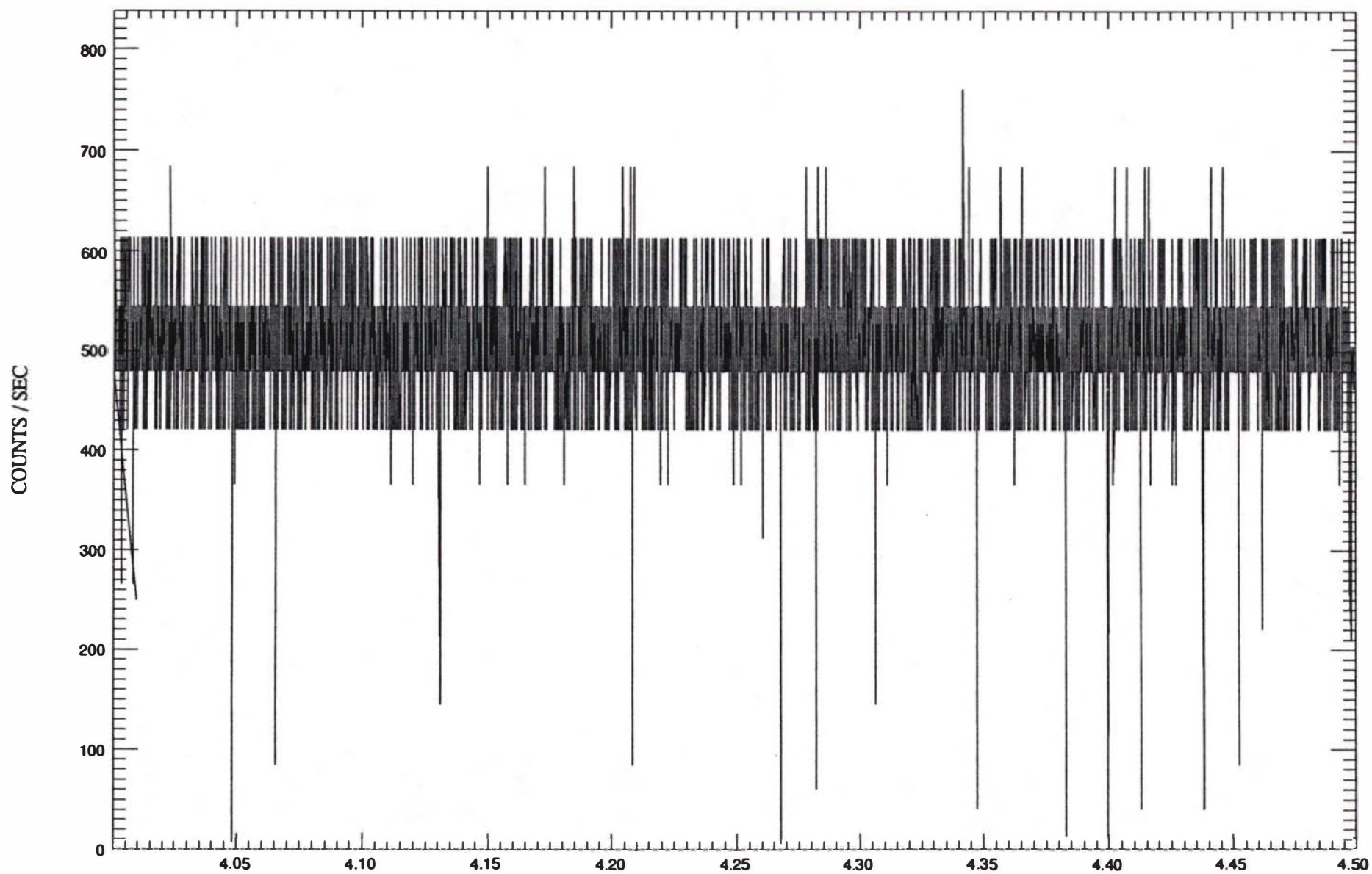
UNIVF AL TIME

CALIBRATION DATA INCLUDED

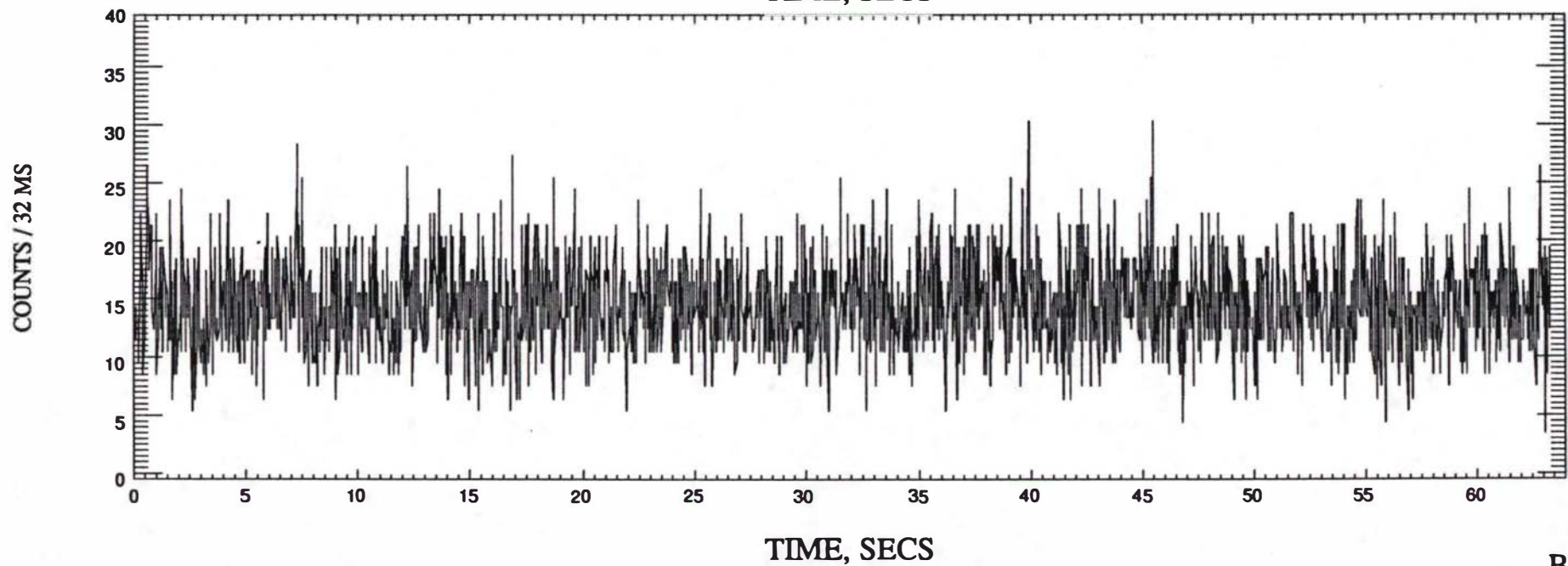
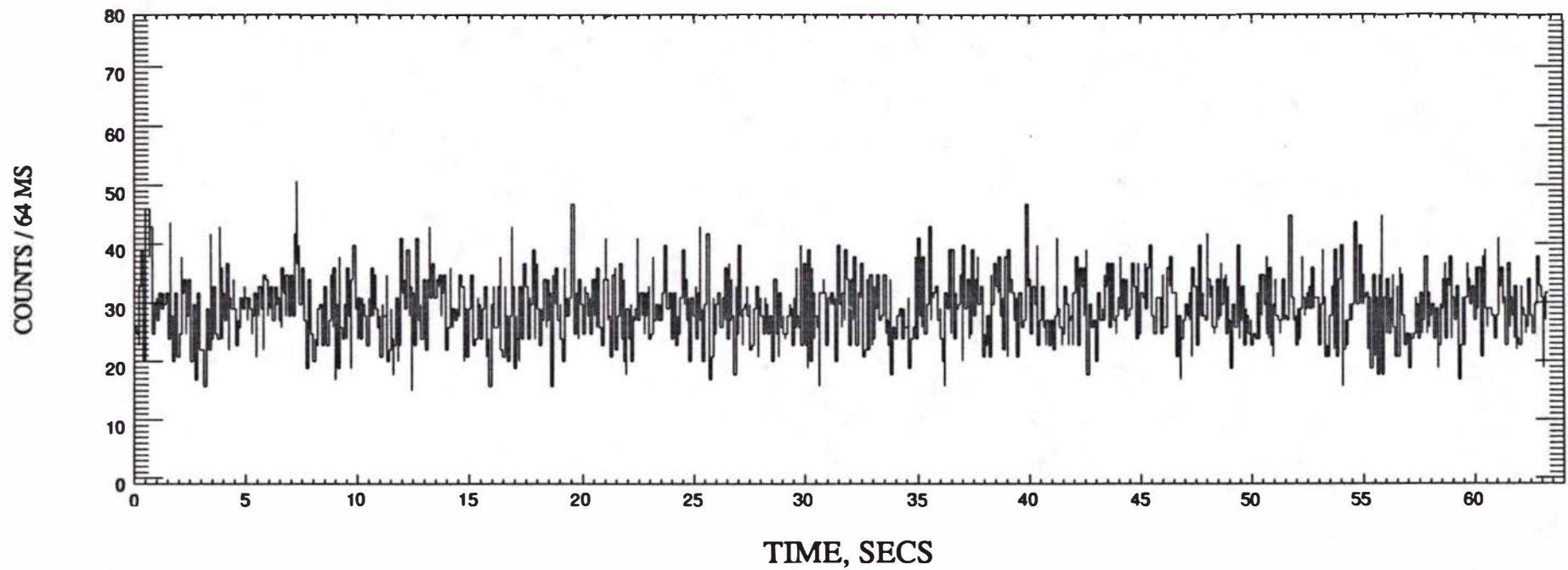


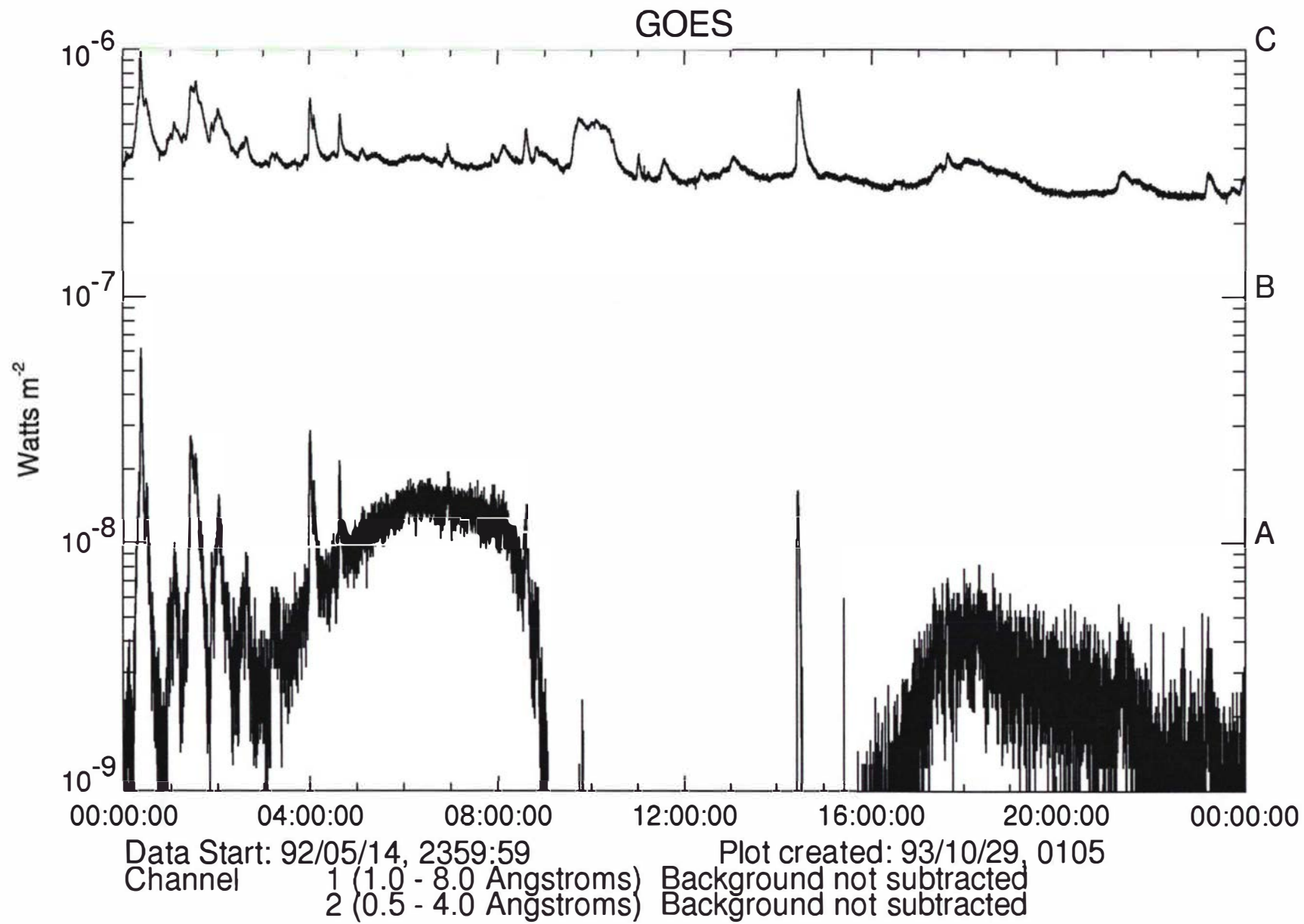
UNIFORM TIME

CALIBRATION DATA INCLUDED

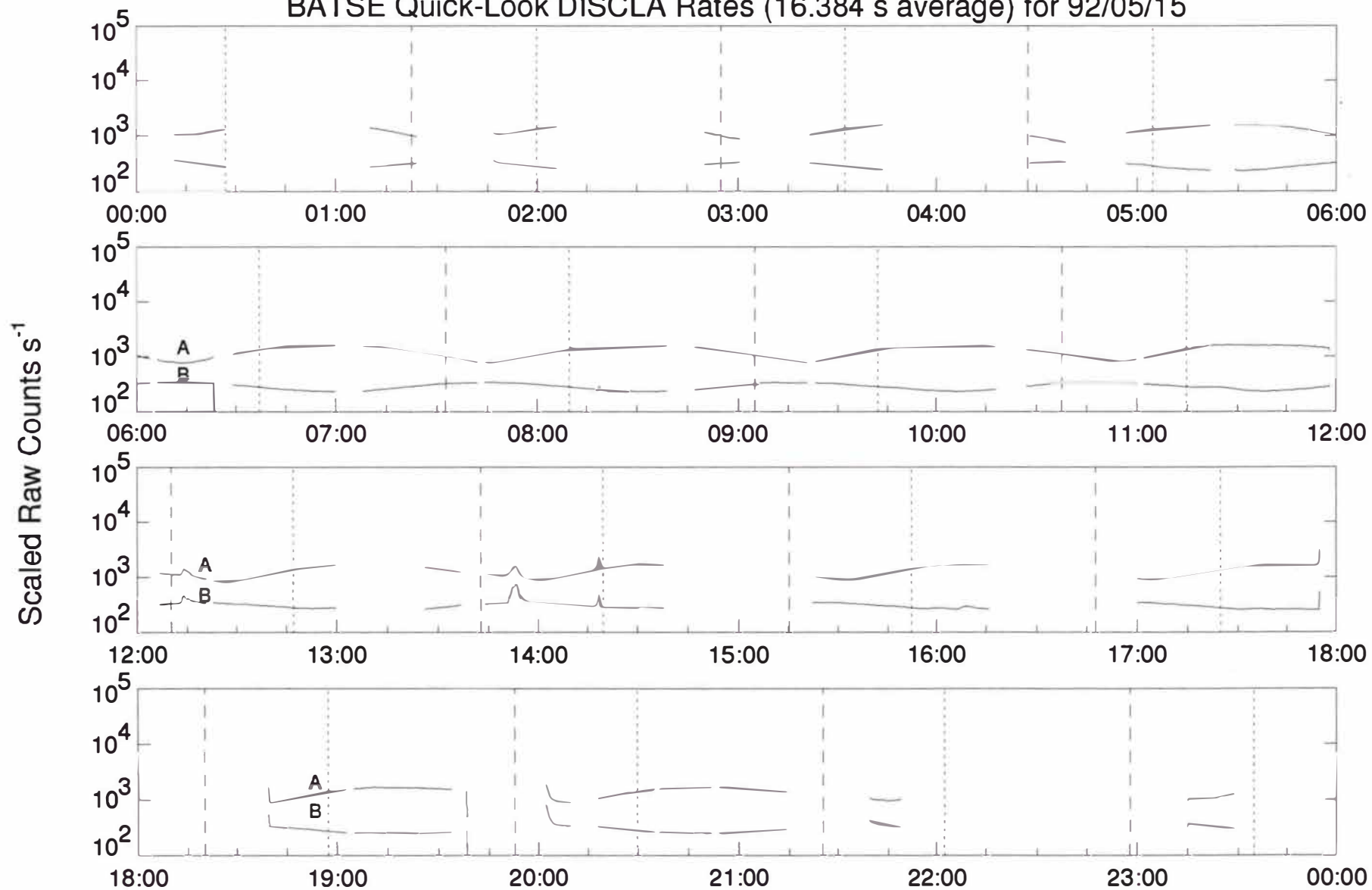


Burst Counter 1 at UT= 4.344649831984 h=15640.739 s





BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/15

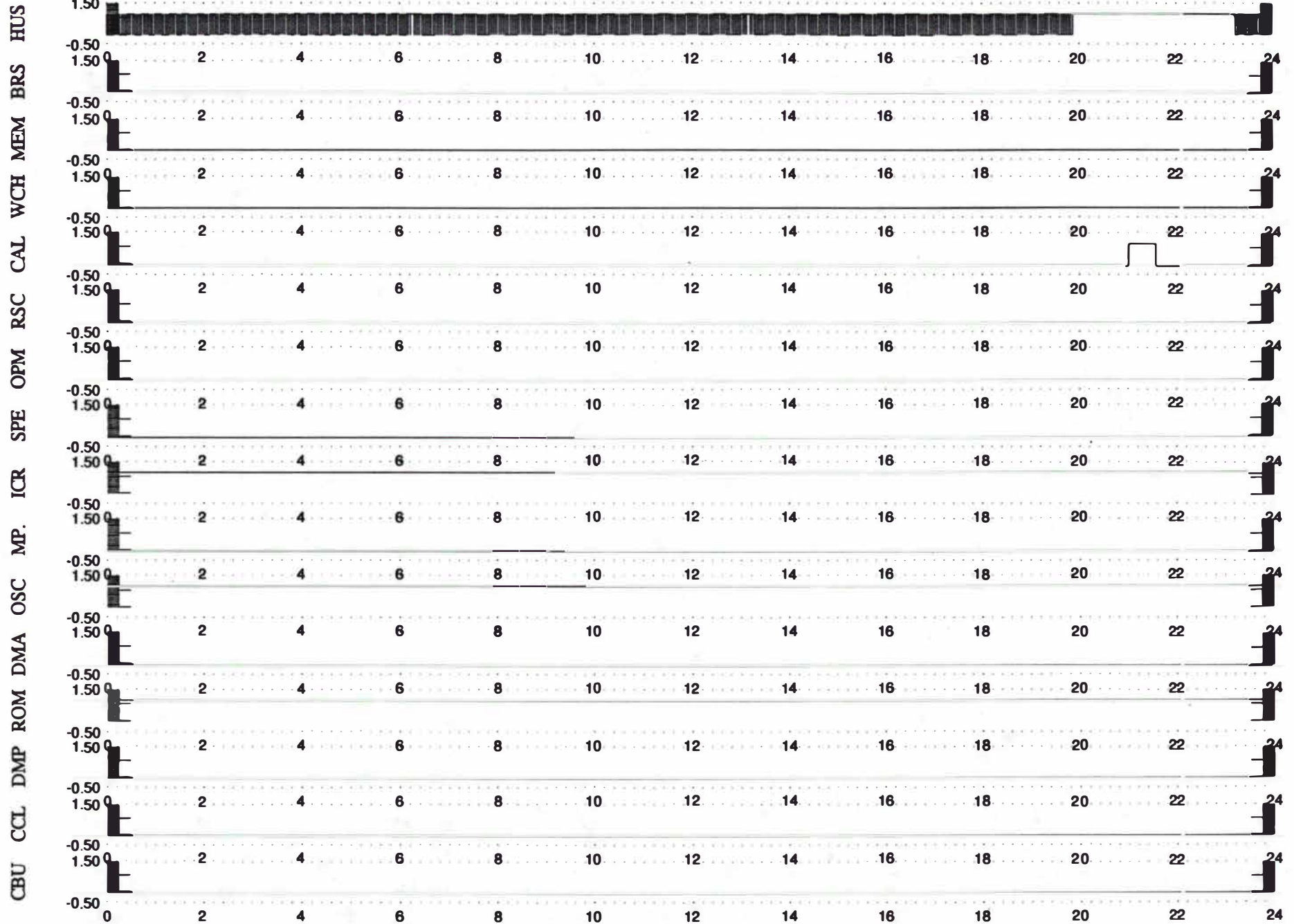


Current Time: 92/09/19, 1716 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

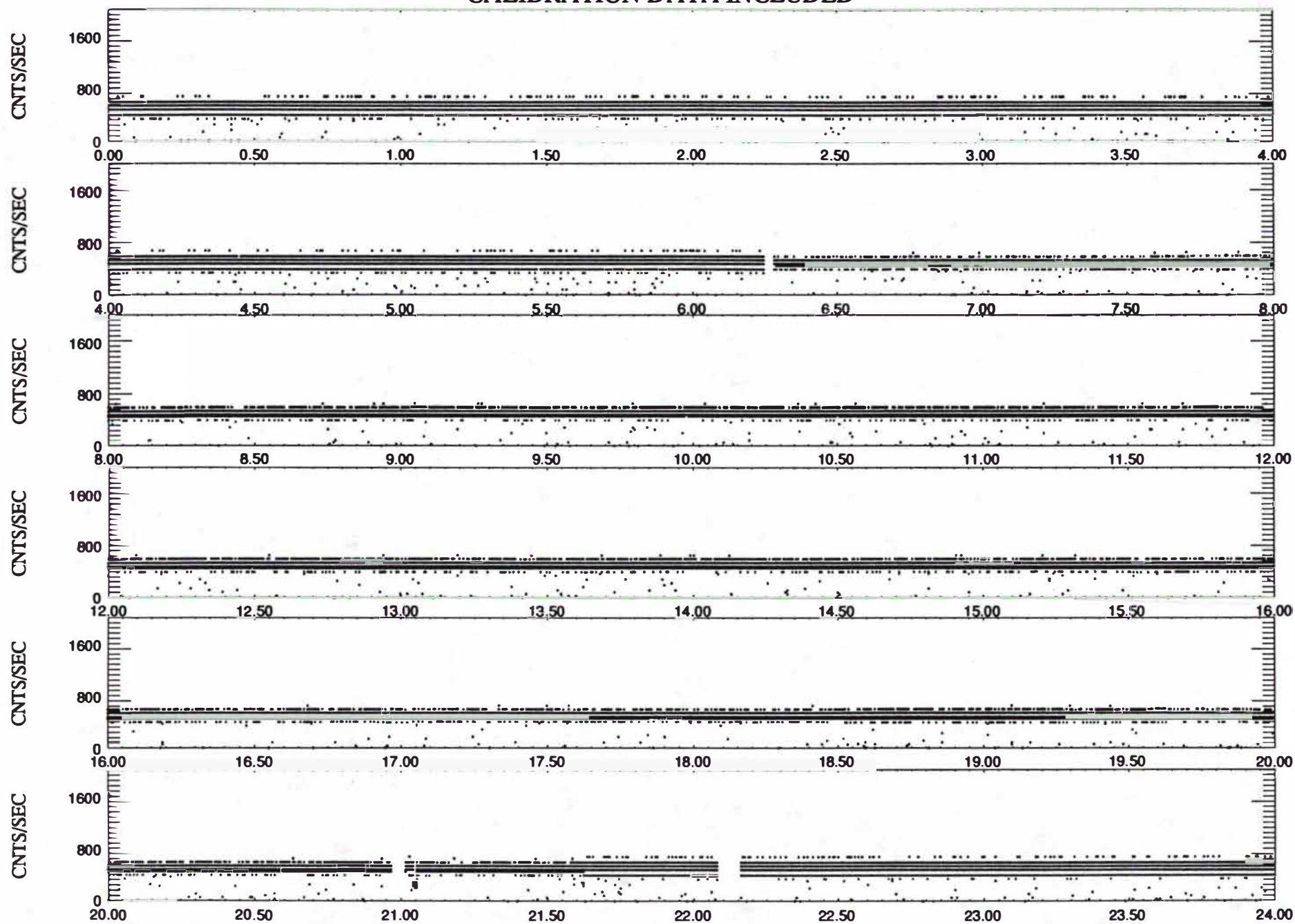
* Solar Burst Trigger
 + Solar Flare

NO BURST (1)

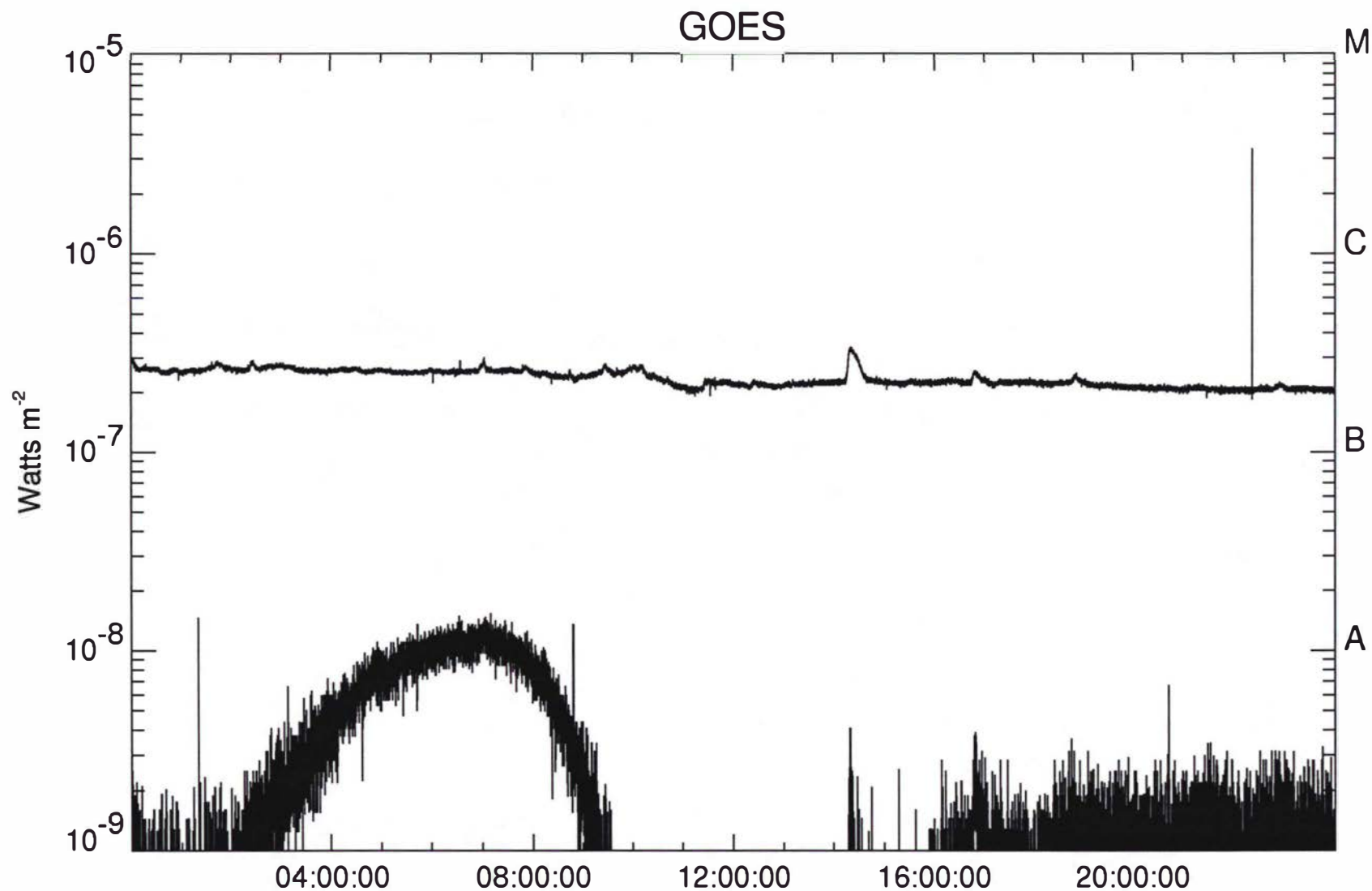


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



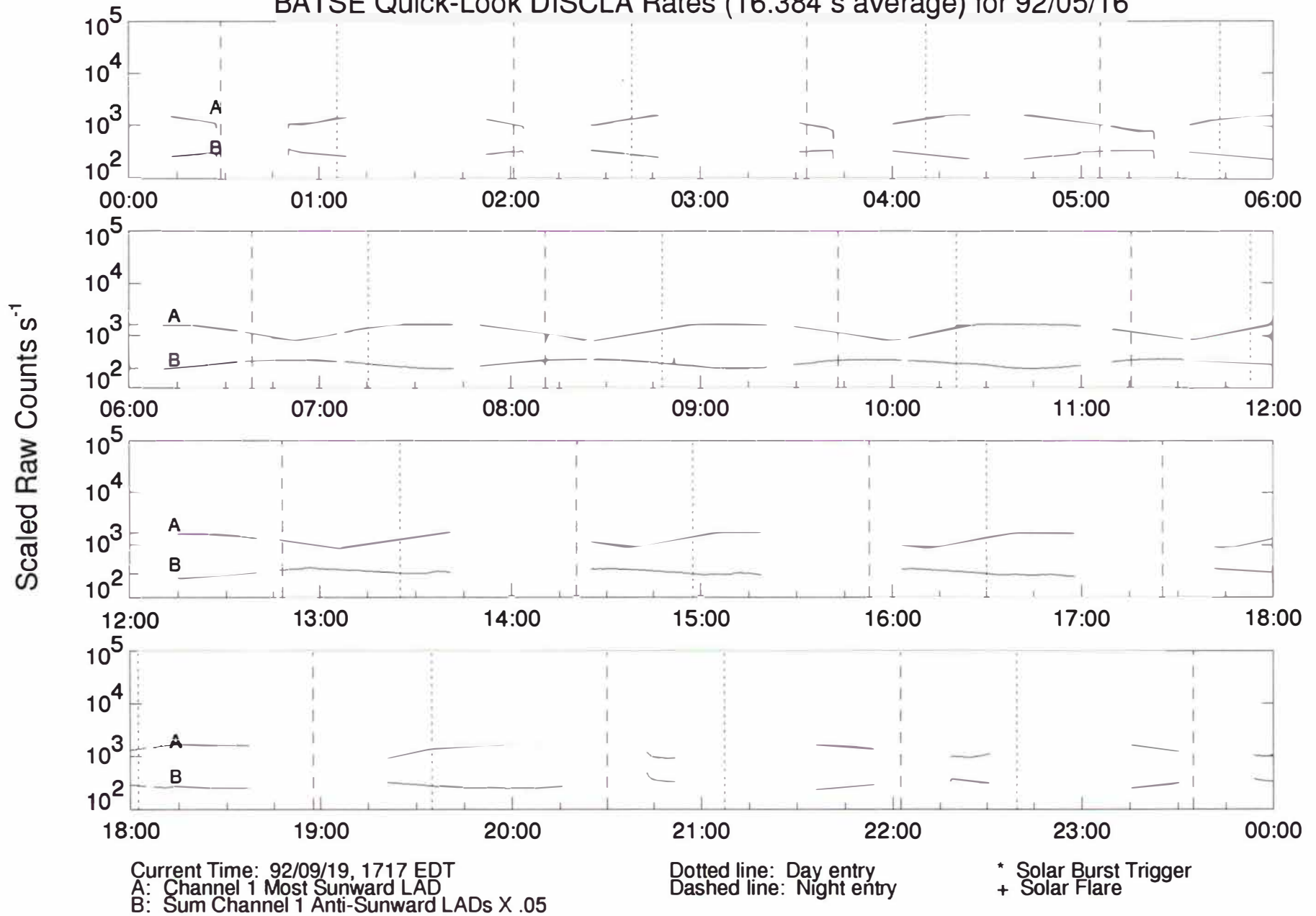
Data Start: 92/05/16, 0000:00

Plot created: 93/10/29, 0106

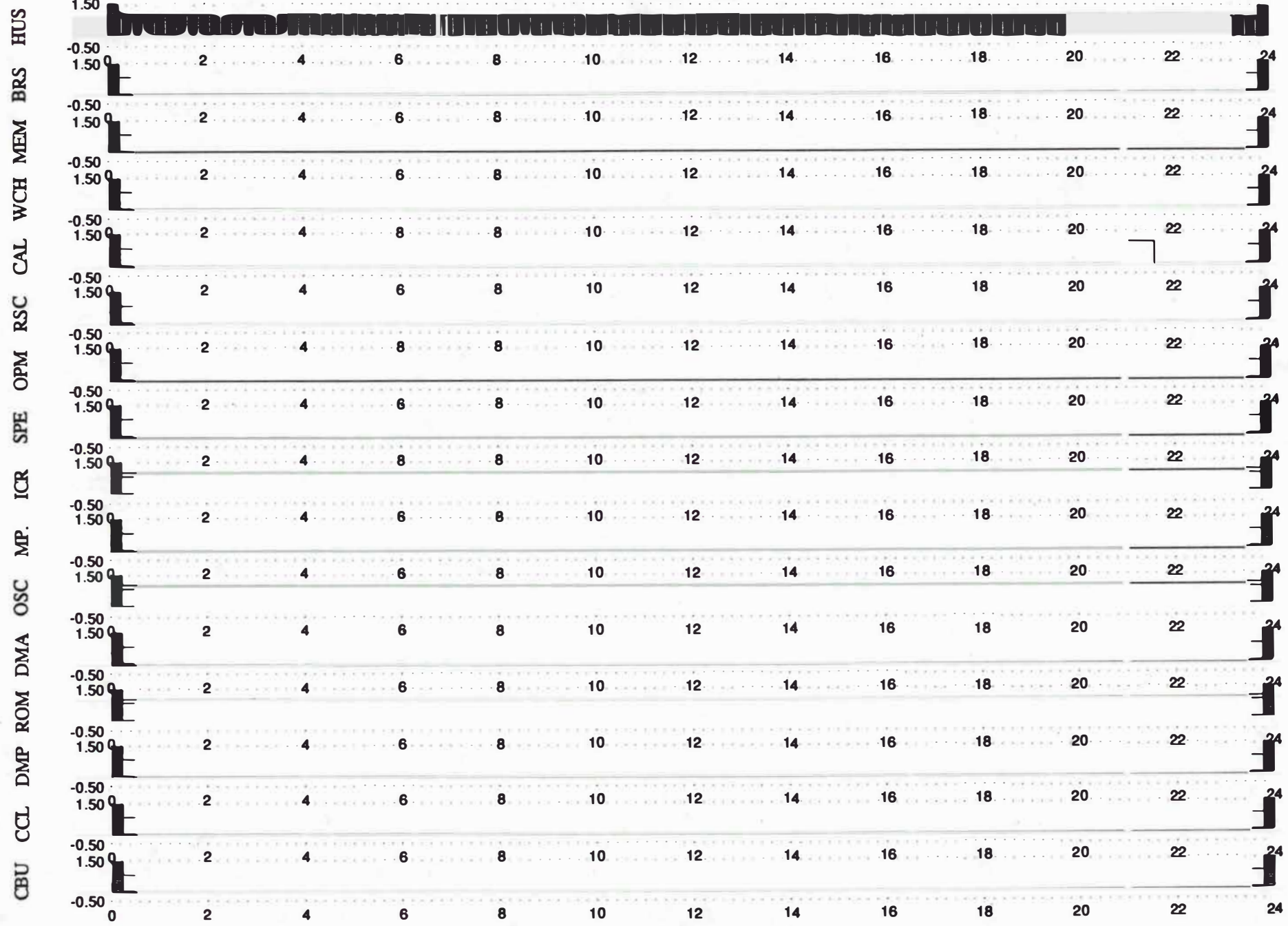
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/16

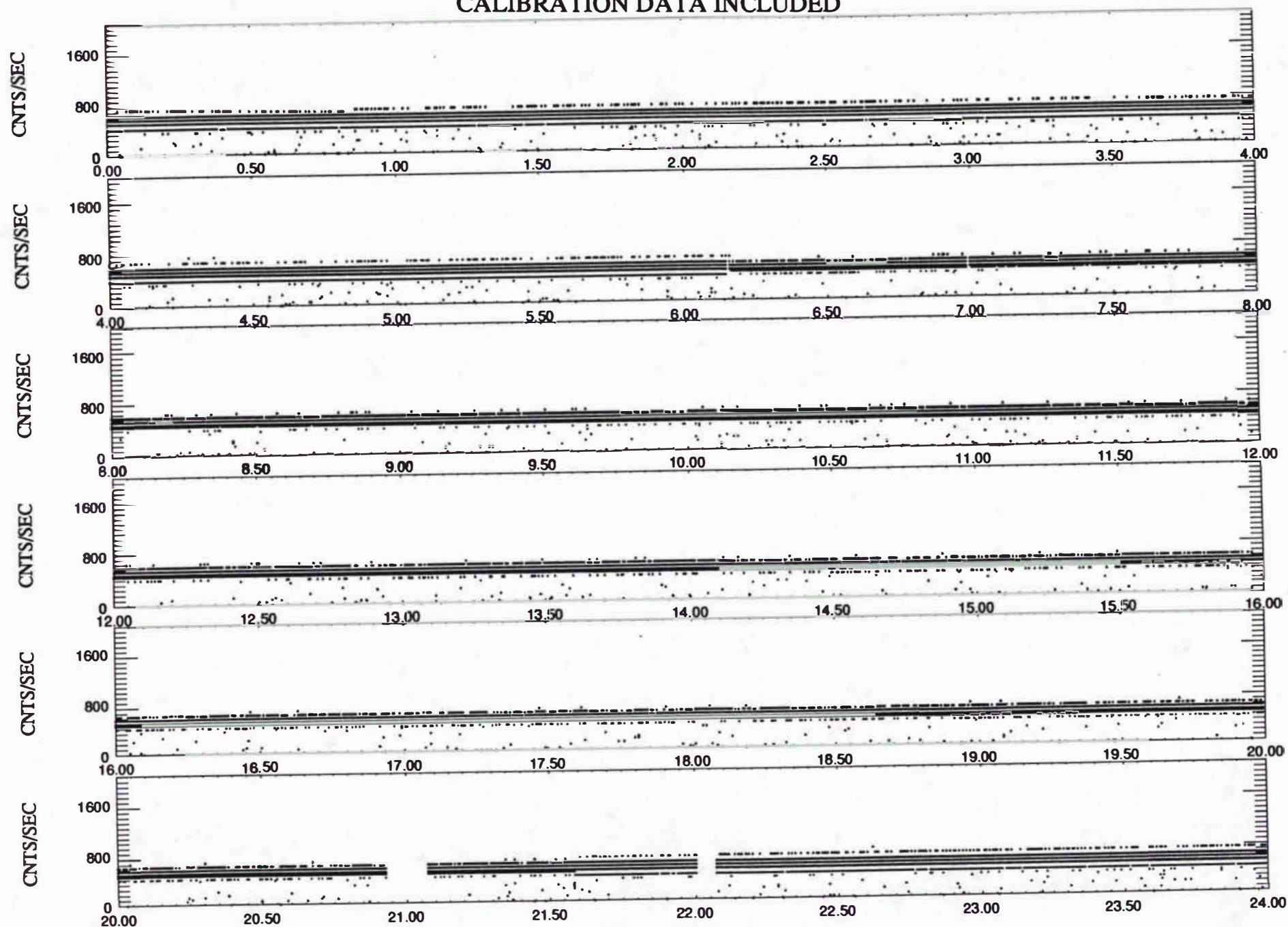


NO BURST (1)



UNIVERSAL TIME

CALIBRATION DATA INCLUDED



From: springer@pop.jpl.nasa.gov Mon Dec 9 06:37 PST 1996
From: Joe Springer <springer@pop.jpl.nasa.gov>
To: "'Kevin Hurley'" <khurley@sunspot.ssl.berkeley.edu>
Subject: RE: More times to check
Date: Mon, 9 Dec 1996 06:37:26 -0800
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Kevin,

I checked a range ten minutes before to ten minutes after each of these points and found no timing errors.

How big is the 'big list'? You have previously provided one with 575 events. I shudder.

Joe

From: Kevin Hurley
Sent: Friday, December 06, 1996 5:53 PM
To: Joe.B.Springer@jpl.nasa.gov; khurley@sunspot.ssl.berkeley.edu
Cc: khurley@sunspot.ssl.berkeley.edu
Subject: More times to check

Dear Joe,

Before I hit you with the big list of events to check, I wanted to ask if you could check the following times. We are again writing a paper on these, and need to get this straightened out quickly (i.e. within a couple of weeks).

Thanks

Kevin

Date	UT (secs)
January 22 1991	55142
February 19 1991	42204
April 21 1991	34040
April 30 1991	60428
May 07 1991	53768
May 11 1991	08090
May 22 1991	43556
June 19 1991	55254
June 27 1991	15335
July 17 1991	17265
July 18 1991	09076
August 14 1991	70996
October 05 1991	26852
October 16 1991	41542
October 31 1991	35550
November 04 1991	52695
November 09 1991	11321
November 18 1991	66112
November 26 1991	43717
December 02 1991	71640
February 18 1992	68388
February 20 1992	49020

February 26 1992 30348
March 08 1992 17470
March 11 1992 07038
March 20 1992 45256
March 25 1992 64261
March 31 1992 66408
April 04 1992 49443
April 06 1992 11150
April 14 1992 84300
May 01 1992 75040
May 17 1992 10549
May 17 1992 50706
May 19 1991 60996
May 25 1992 14411
July 11 1992 58470
July 14 1992 46275
July 20 1992 09807
July 20 1992 18344
July 23 1992 73955

CATSEARCH PROGRAM

BATSE BURST # 1608
EVENT OF 1992 MAY 17 DAY OF YEAR=138
EVENT CROSSING TIME AT BATSE : 2078. S. OR 00:34:37.6
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 52.200 -74.400
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 17/ 5/ 92 IS:
RA= 148.233 DEC= 8.712 DIST= 5.248 AU
BATSE-ULYSSES DISTANCE = 785097808. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 455.22 SECS.
CROSSING TIME AT ULYSSES IS 2533. S. OR 00:42:12.8 +/- 504.66 SECONDS

From BHAT@ssl.msfc.nasa.gov Mon May 18 14:34:43 1992
Date: Mon, 18 May 1992 16:35:46 -0500 (CDT)
From: BHAT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1377

BATSE BURST TRIGGER

NO.: 1608

TIME: TJD=8759 SECONDS=02080

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=50.1 AZIMUTH=167.3 ERROR= DEGREES

COMMENTS:

A SHORT BURST LASTING ATLEAST ABOUT 0.7 SEC. THE TIME HISTORY CONSISTS OF SINGLE
PEAK. SIGNIFICANT SIGNAL IS SEEN ABOVE 300 KEV.

7 / 6 / 94

ULYSSES RT

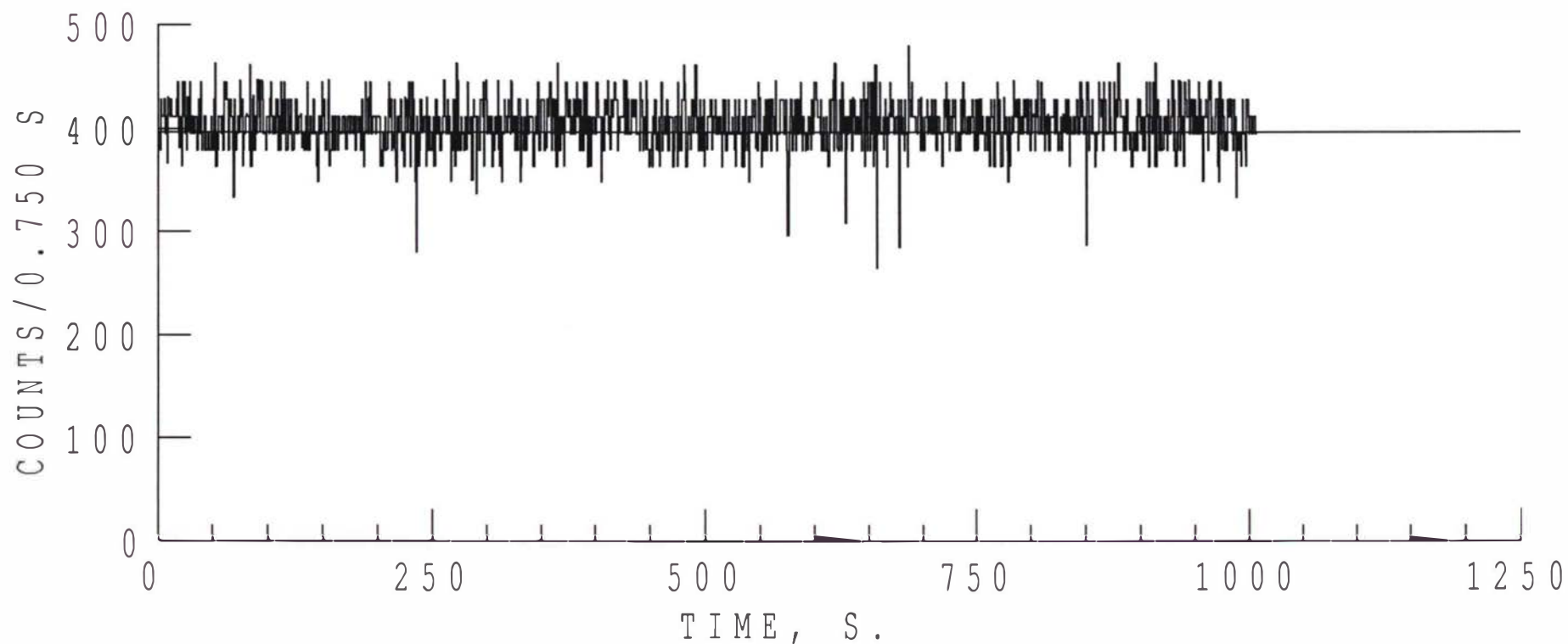
17 / 5 / 92 2016.203 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



CATSEARCH PROGRAM

BATSE BURST # 1609
EVENT OF 1992 MAY 17 DAY OF YEAR=138
EVENT CROSSING TIME AT BATSE : 11875. S. OR 03:17:54.9
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 203.900 -17.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 17/ 5/ 92 IS:
RA= 148.233 DEC= 8.712 DIST= 5.248 AU
BATSE-ULYSSES DISTANCE = 785097808. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1273.11 SECS.
CROSSING TIME AT ULYSSES IS 10602. S. OR 02:56:41.8 +/- 427.99 SECONDS

From BHAT@ssl.msfc.nasa.gov Mon May 18 14:49:52 1992
Date: Mon, 18 May 1992 16:50:58 -0500 (CDT)
From: BHAT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1506

BATSE BURST TRIGGER

NO.: 1609

TIME: TJD=8759 SECONDS=11877

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=108.0 AZIMUTH=224.1 ERROR= DEGREES

COMMENTS:

BY FAR THE MOST INTENSE BURST EVER OBSERVED BY BATSE! TIME PROFILE CONSISTS OF 3 PARTS: (I) RATHER INSIGNIFICANT PART THAT TRIGGERS (II) THE MOST INTENSE PART STARTS AFTER 4 SEC & CONSISTS OF 3 PEAKS IN INCREASING ORDER OF INTENSITY AND (III) SOFT SMOOTH SINGLE PEAK ABOUT 30 SEC AFTER TRIGGER. STRONG SIGNAL IS PRESENT EVEN ABOVE 300 KEV IN THE SECOND PART ONLY.

From kouveliotou%ssl.span@Sdsc.Edu Mon May 18 09:12:59 1992
Date: Mon, 18 May 92 16:14:31 GMT
From: kouveliotou%ssl.span@Sdsc.Edu
Subject: gro location for grb 920517
To: khurley@sunspot.ssl.berkeley.edu
X-St-Vmsmail-To: KEVIN
Content-Length: 50

For UT: 11887.2038

X = 3497
Y = - 5436
Z = 2027

Helio corr removed

Date: Nov 28 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

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

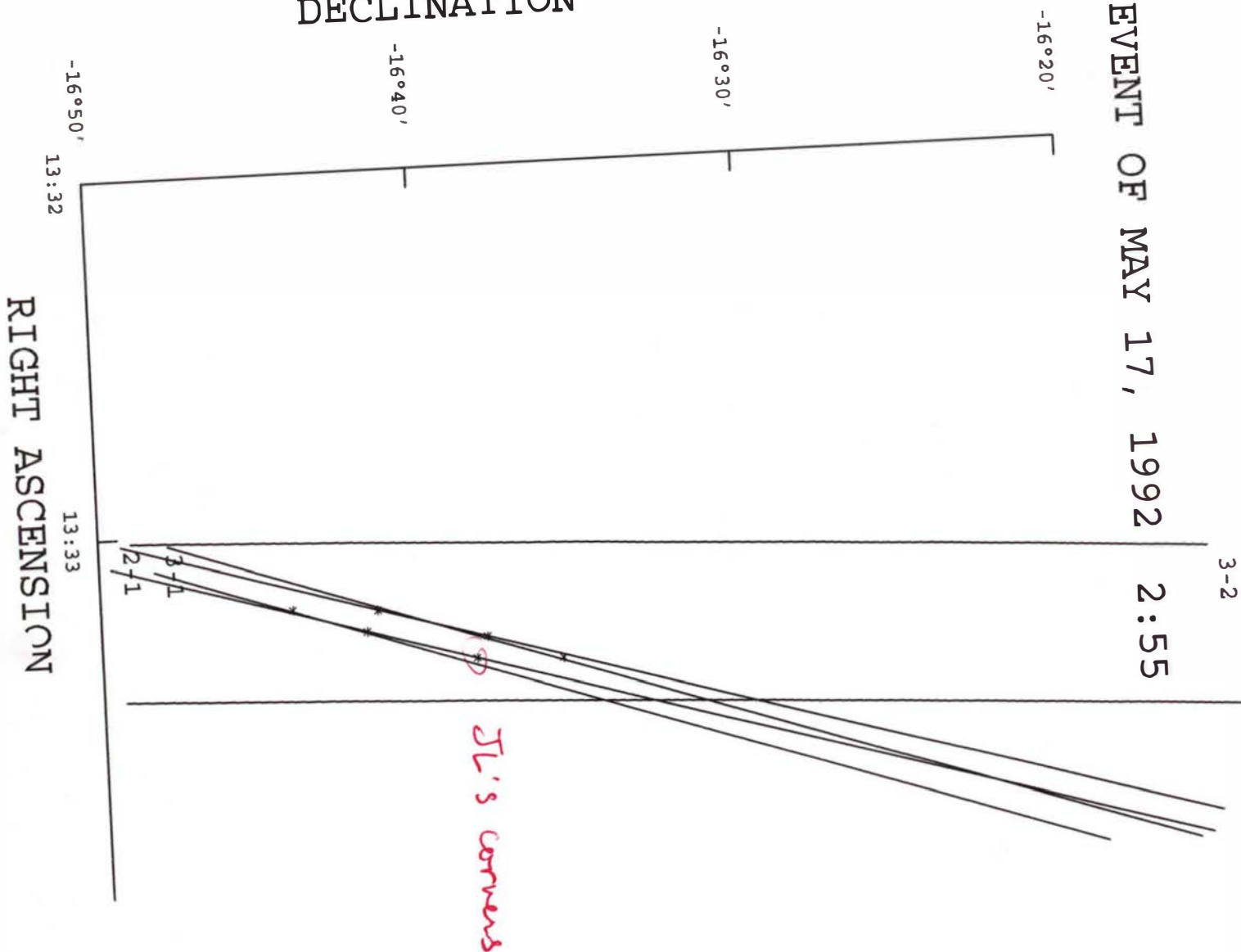
☒ ACCESS database updated?

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

DECLINATION

EVENT OF MAY 17, 1992 2:55

3-2



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

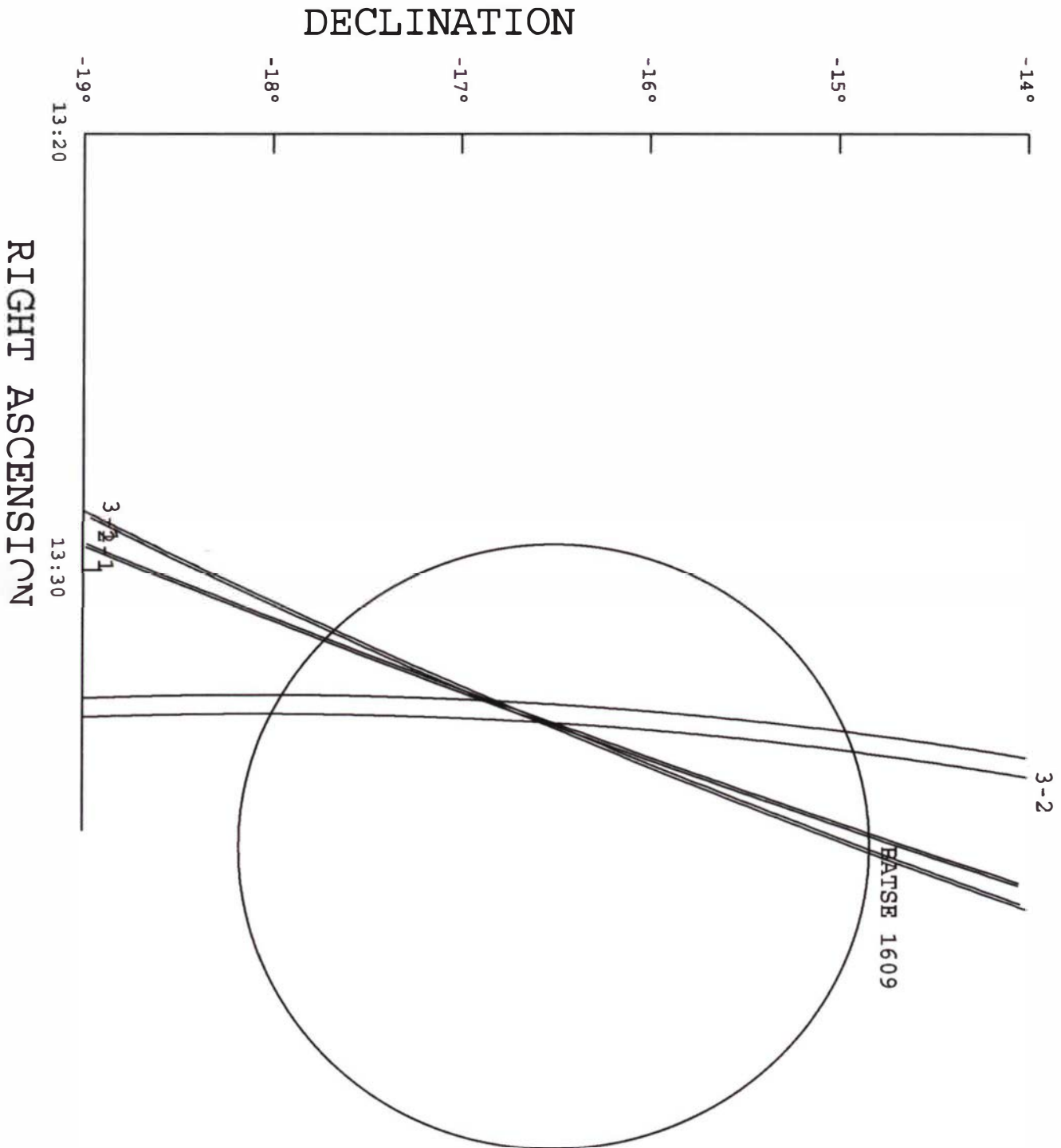
1 ULYSSES

2 BATSE

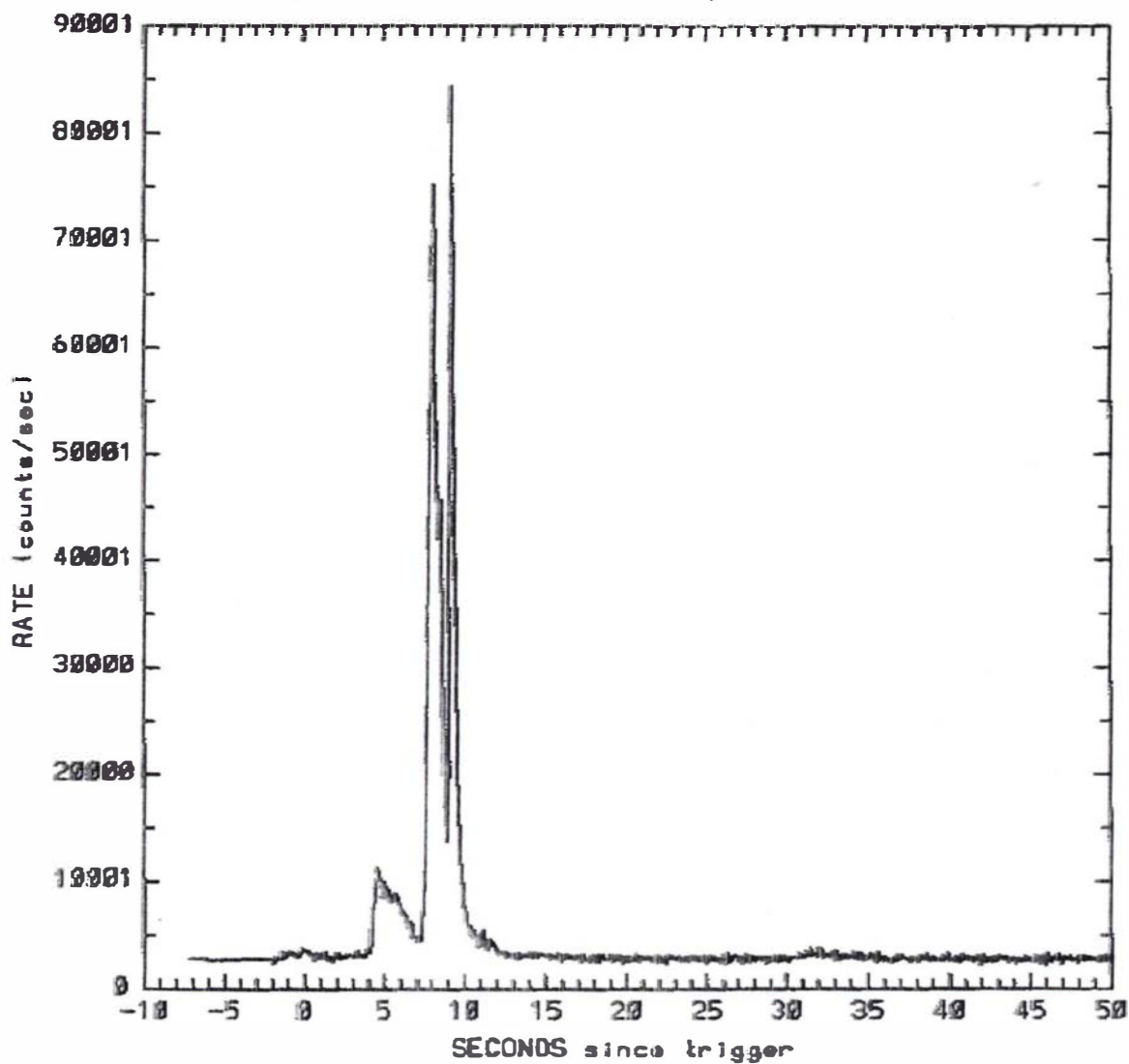
3 PVO

EVENT OF MAY 17, 1992 2:55

27 / 2/97



DISCSC Data for K. Hurley, No. 1609



28-JAN-1998 15:19:05

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger = 1609

Trigger Time:
8759 / 11874.922

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..8),
76-----

Discriminators:
1 3 . 4)

Quality Mask:
BDISP1

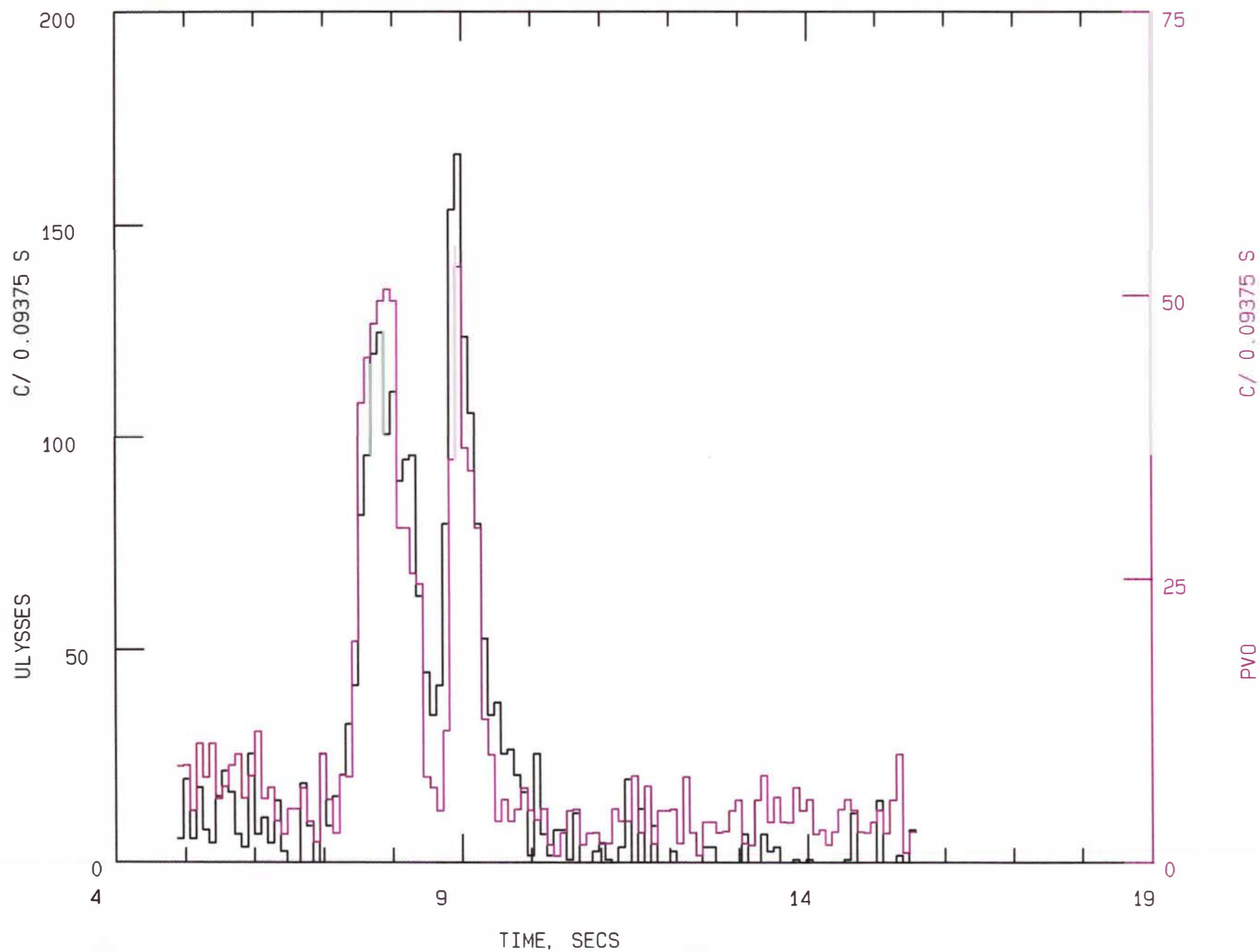
ULYSSES -PVO

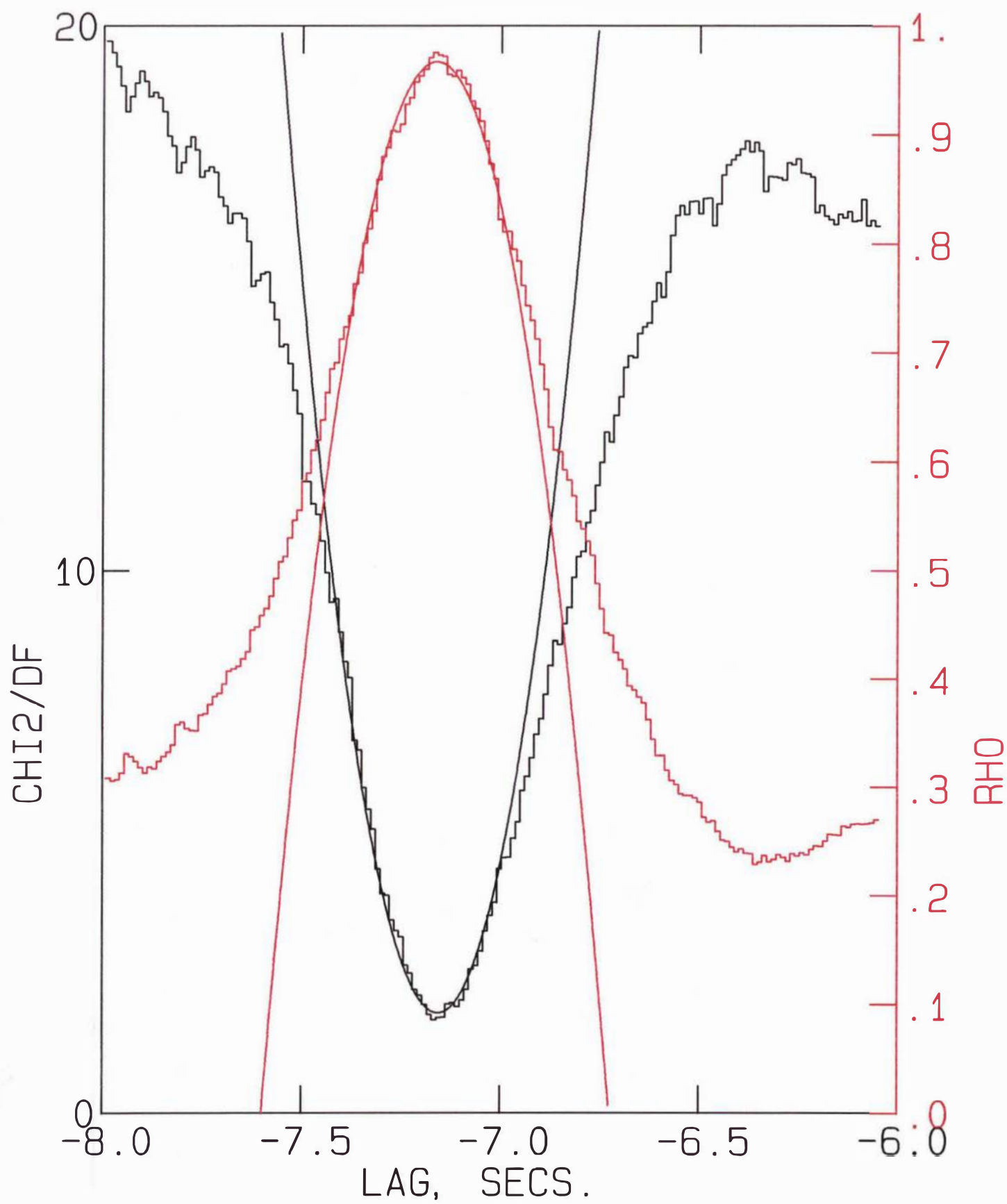
CORRELATION

17/05/92

10549.835

27/ 2/97



100 - 2000

BATSE

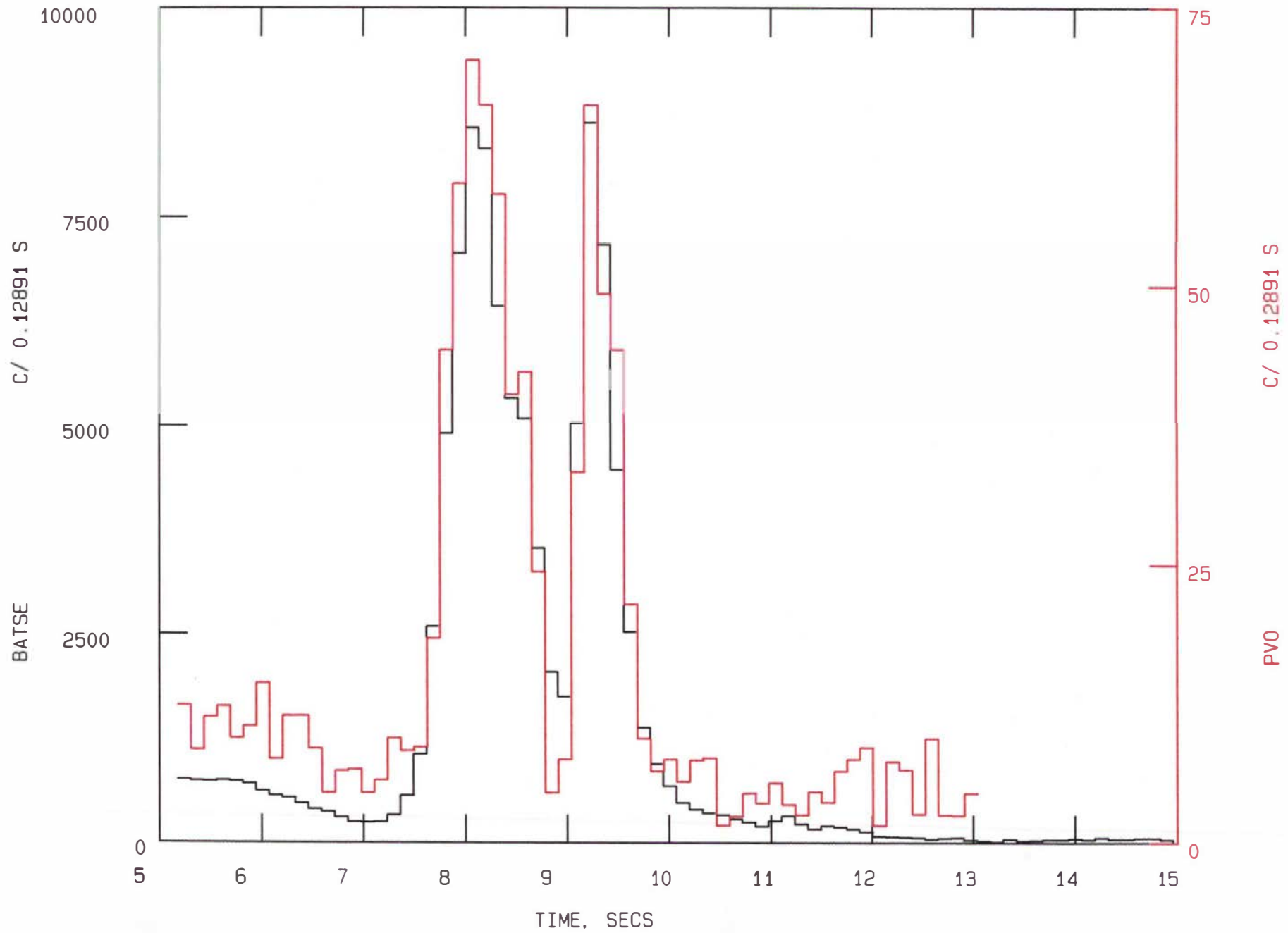
-PVO

CORRELATION

17/ 5/92

11874.922

28/ 1/98

100 - 2000

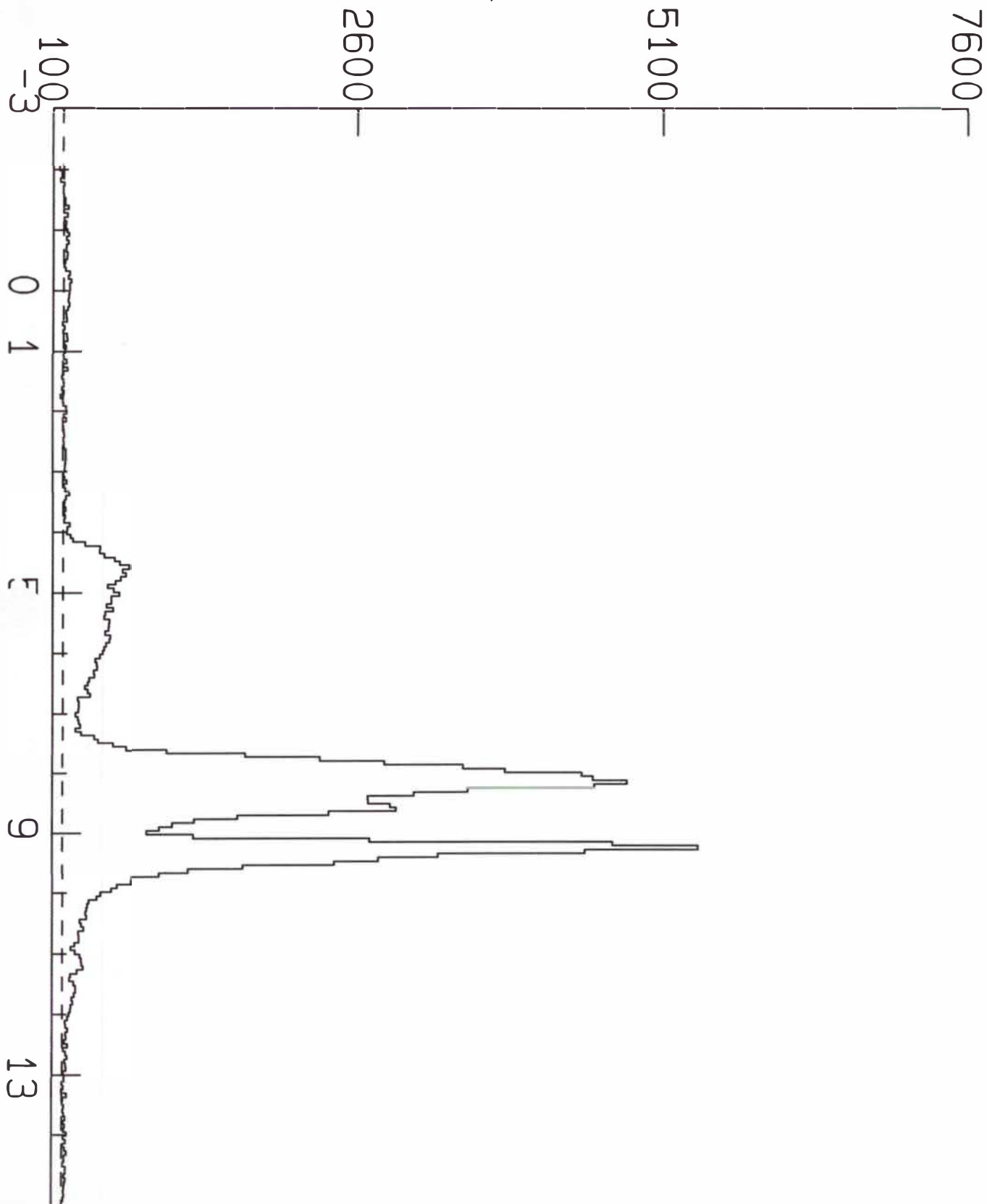
BATSE

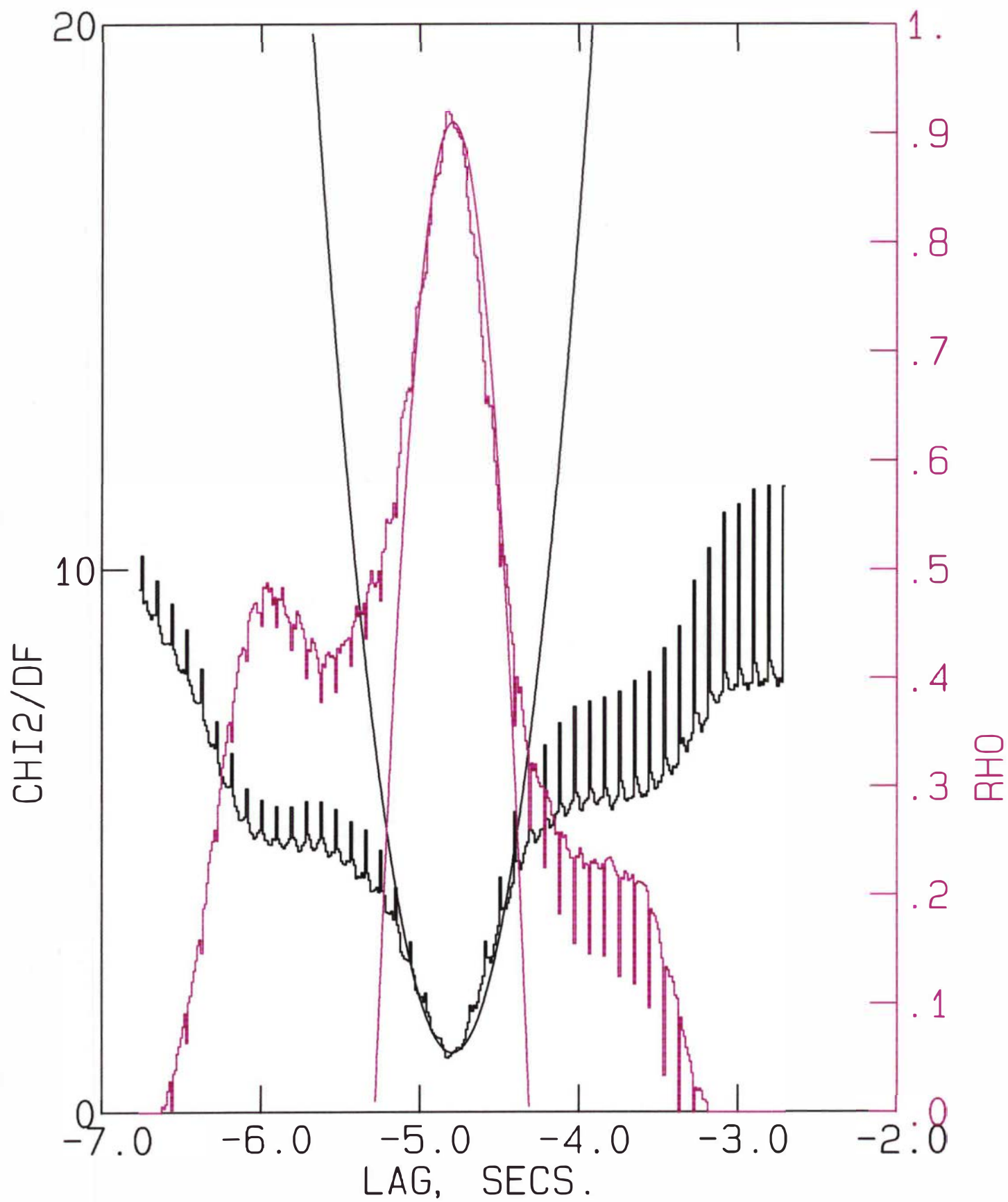
17/05/92

11874.922

~~25-100-keV~~ ¹⁰⁰⁻²⁰⁰⁰

COUNTS/0.064 S





BATSE

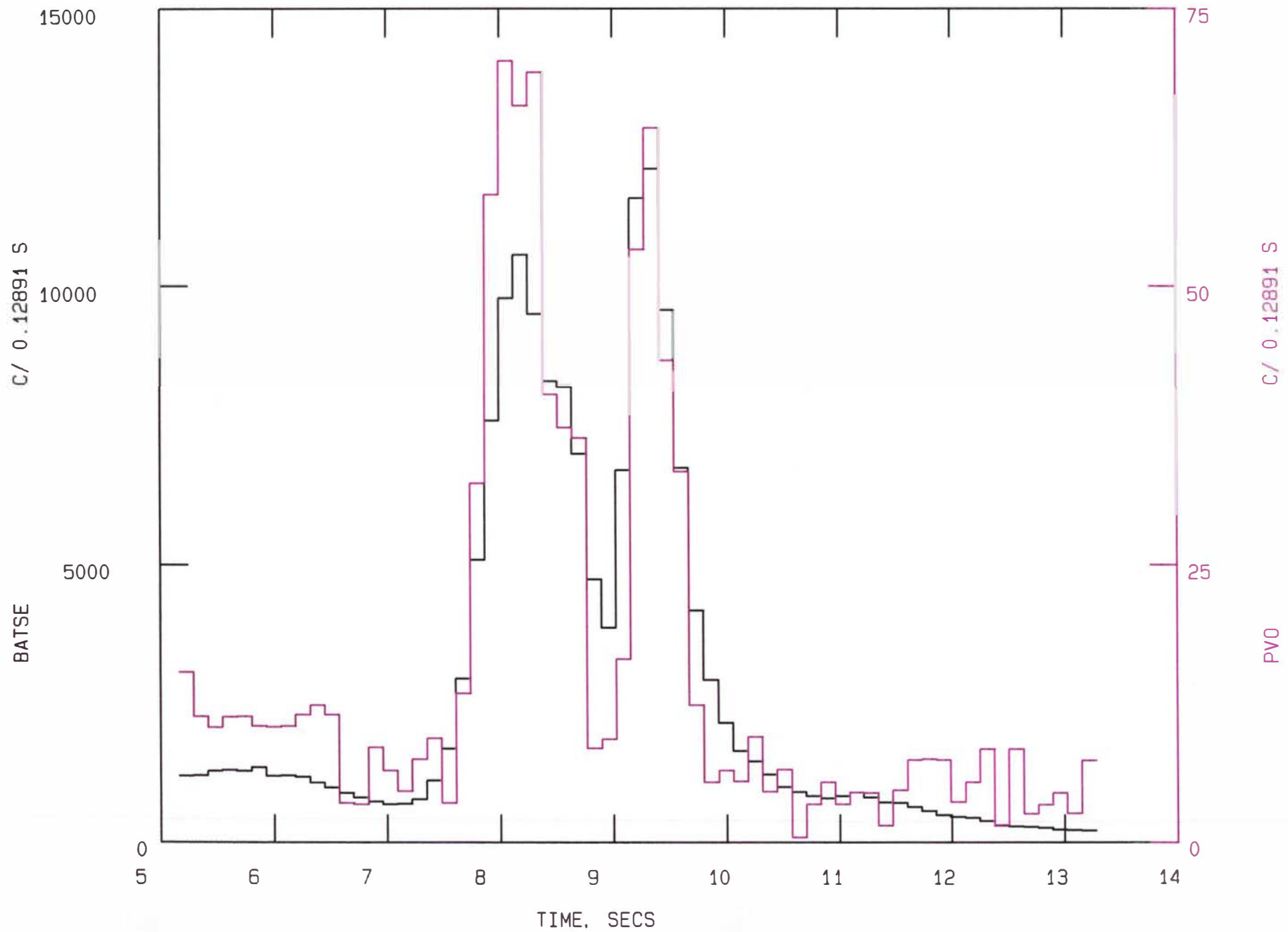
-PVO

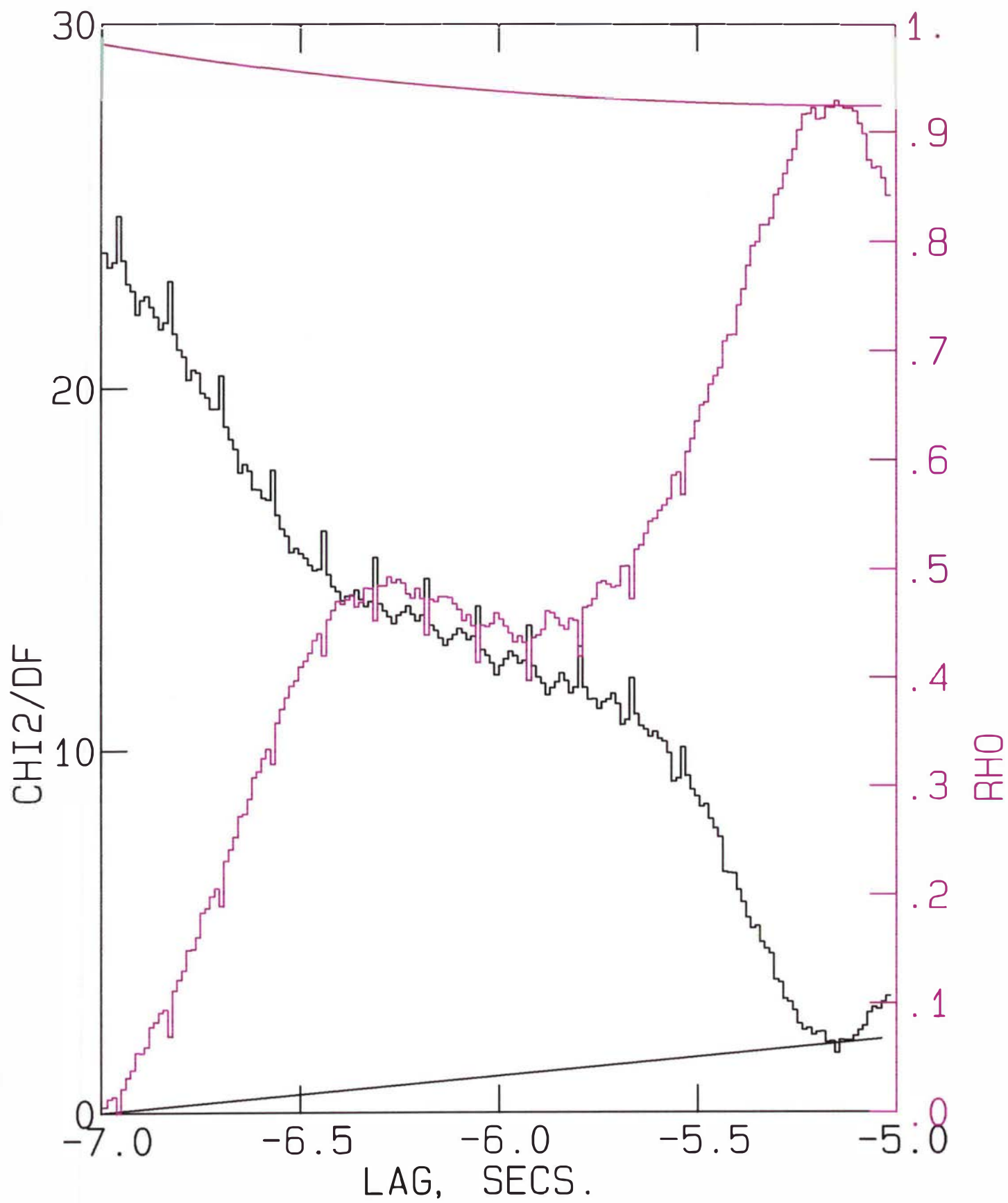
CORRELATION

17/ 5/92

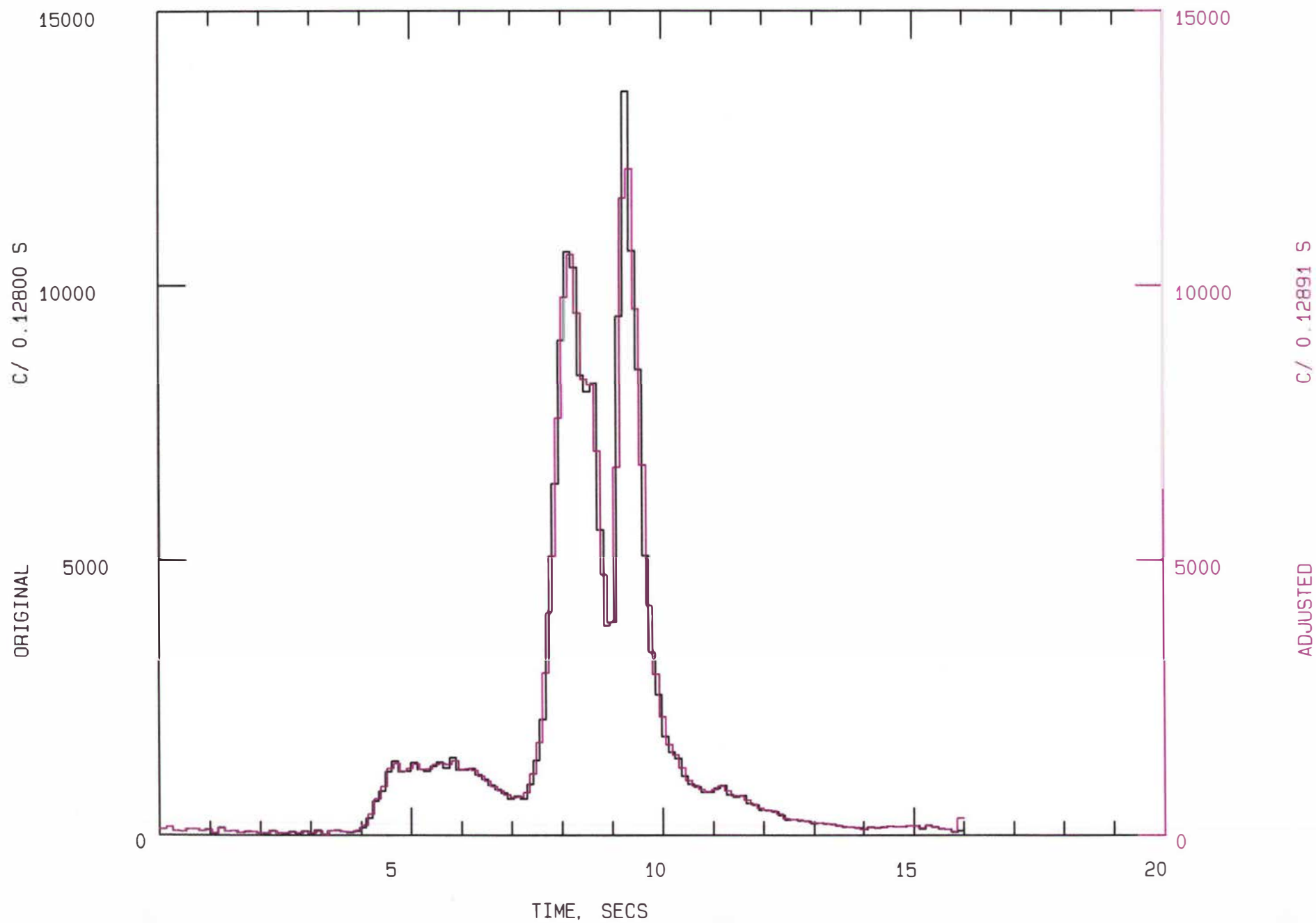
11874.922

27/ 2/97

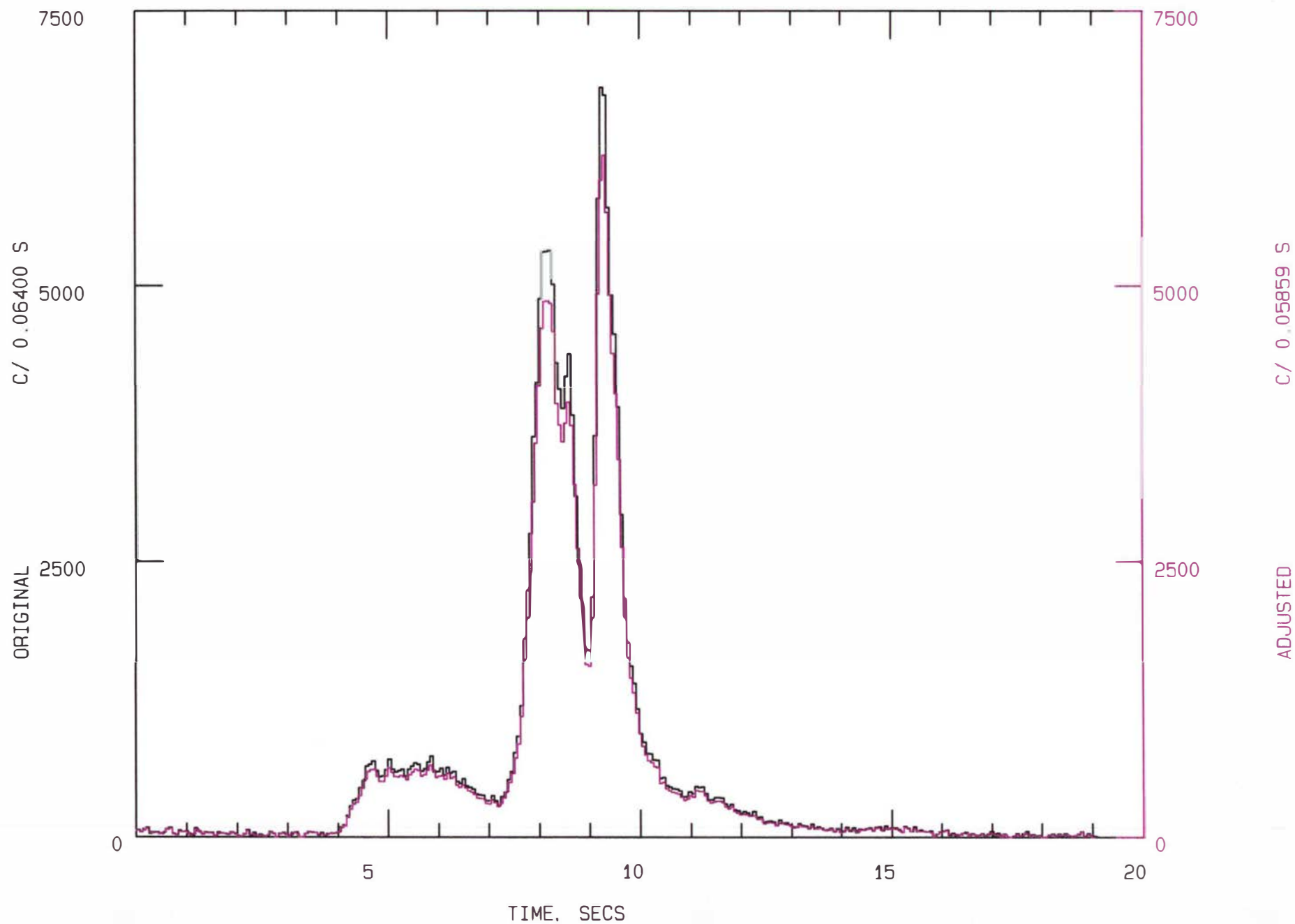




27/ 2/97



27/ 2/97



BATSE

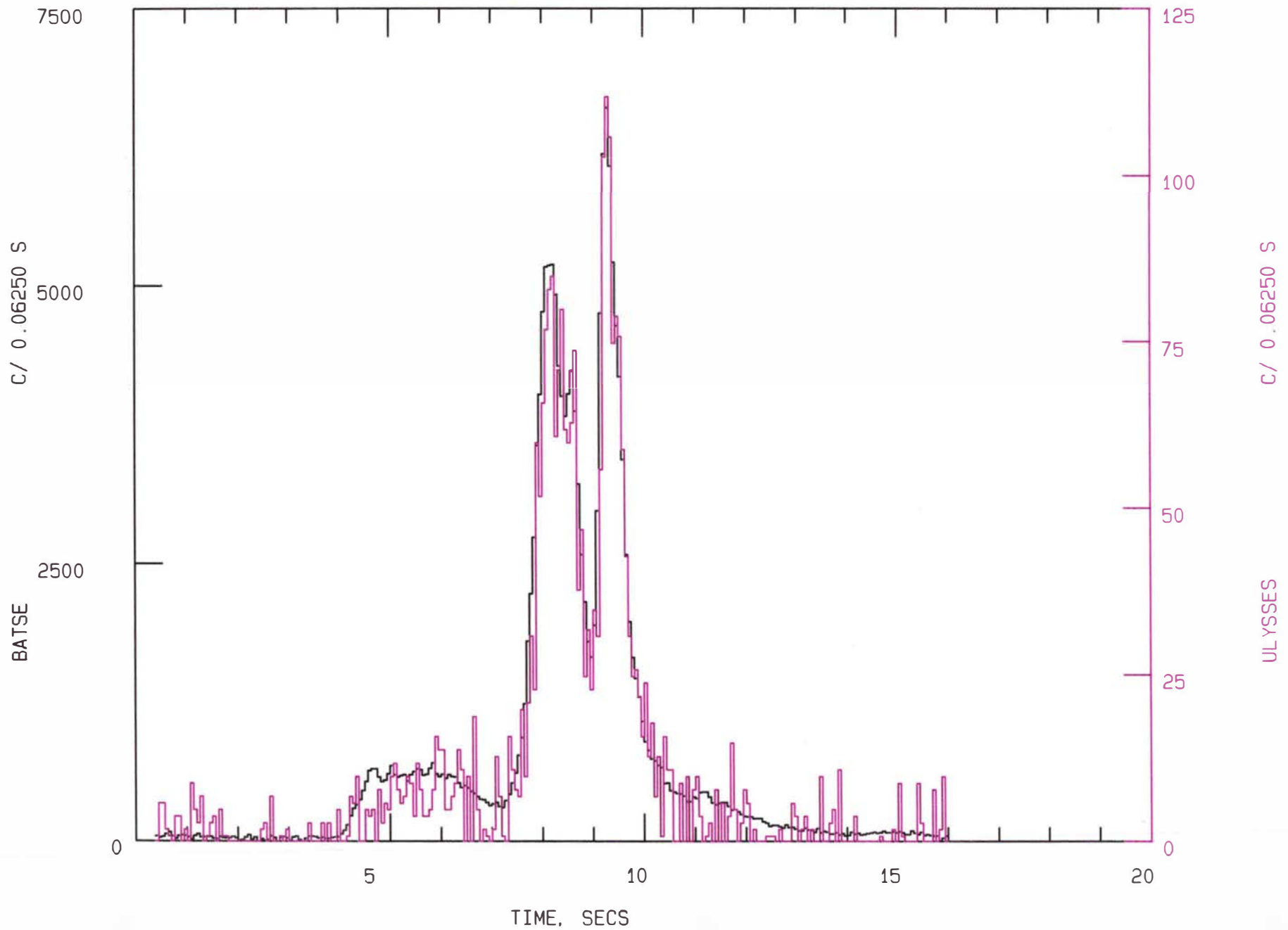
-ULYSSES

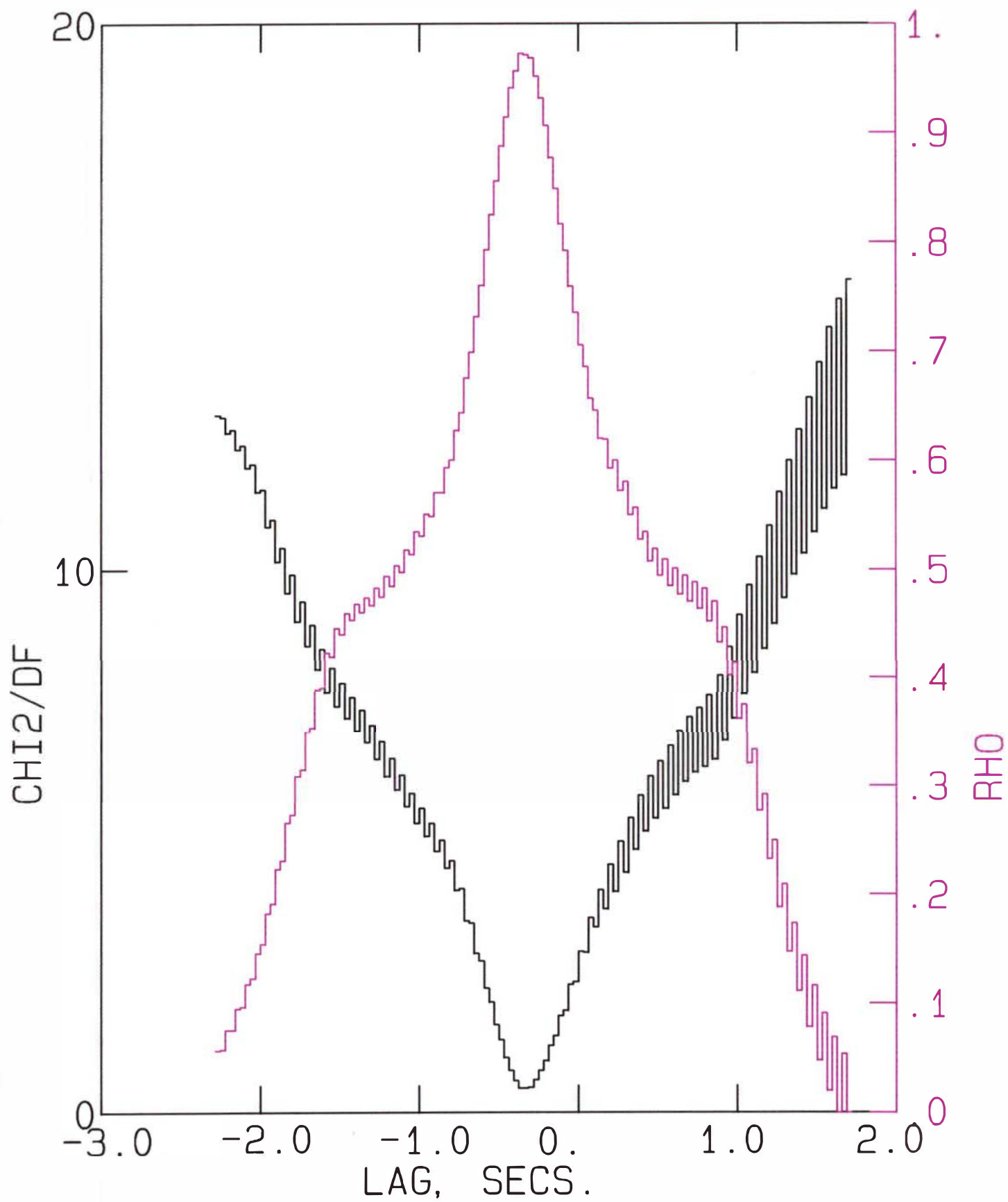
CORRELATION

17/ 5/92

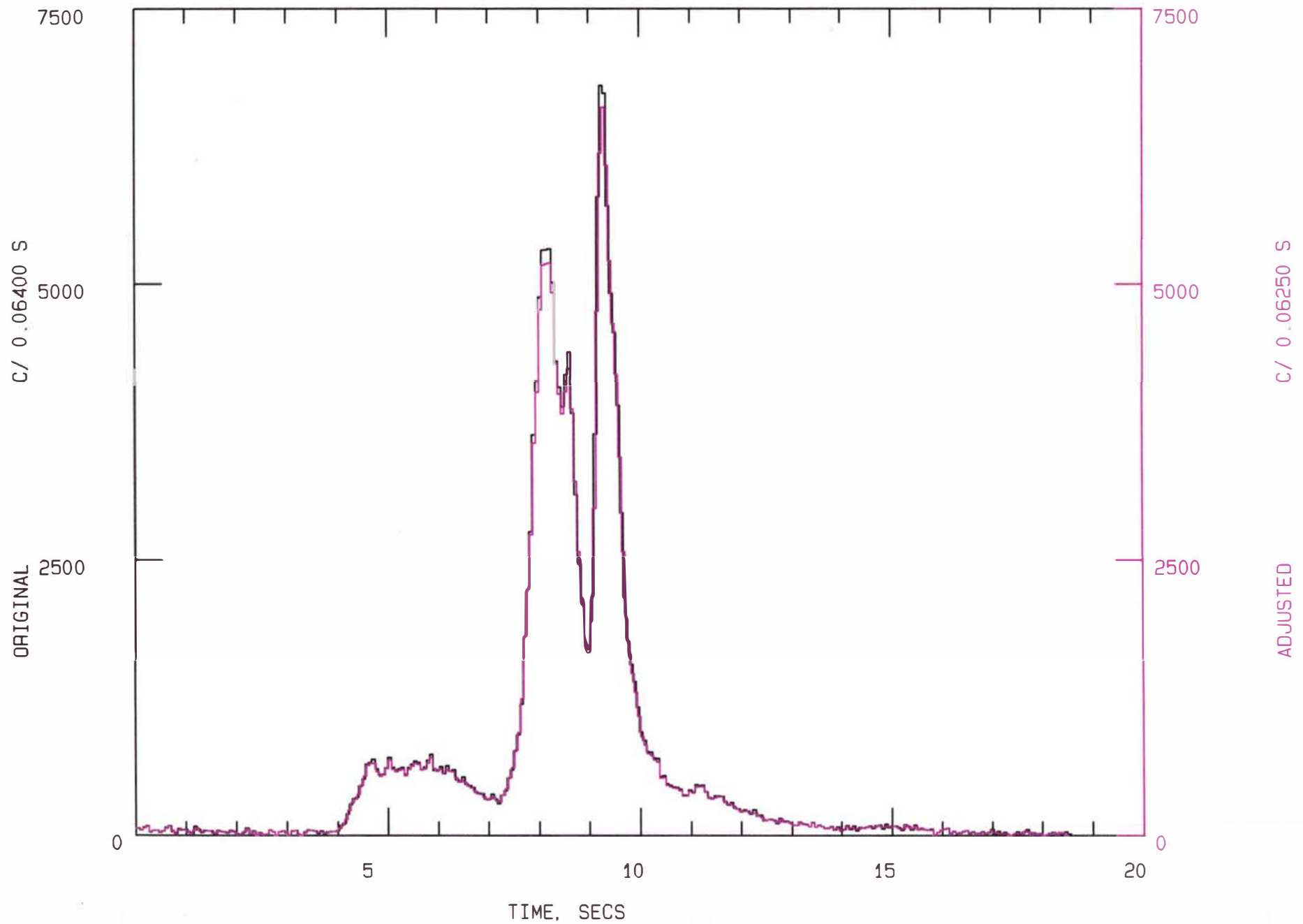
11874.922

27/ 2/97





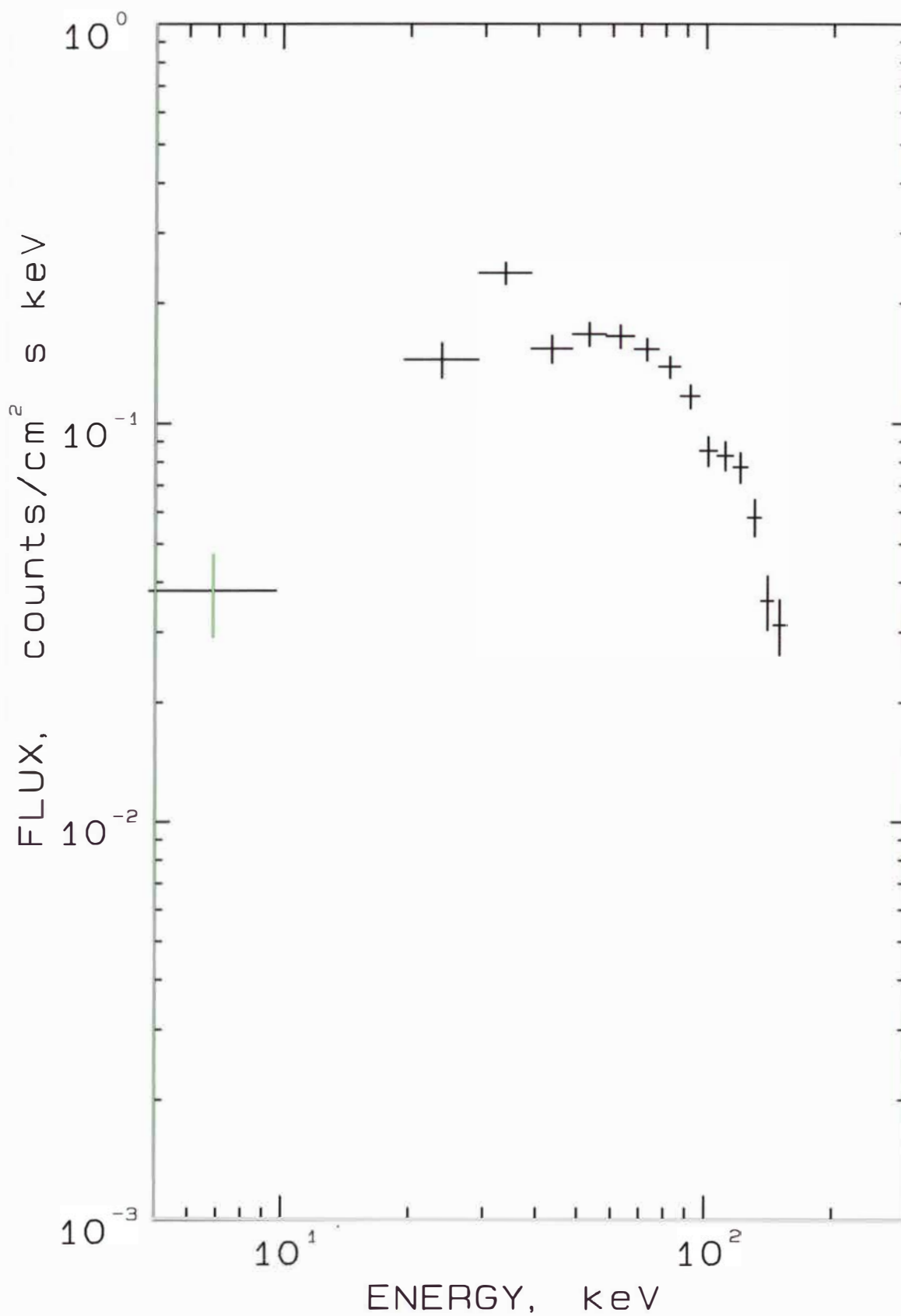
27/ 2/97



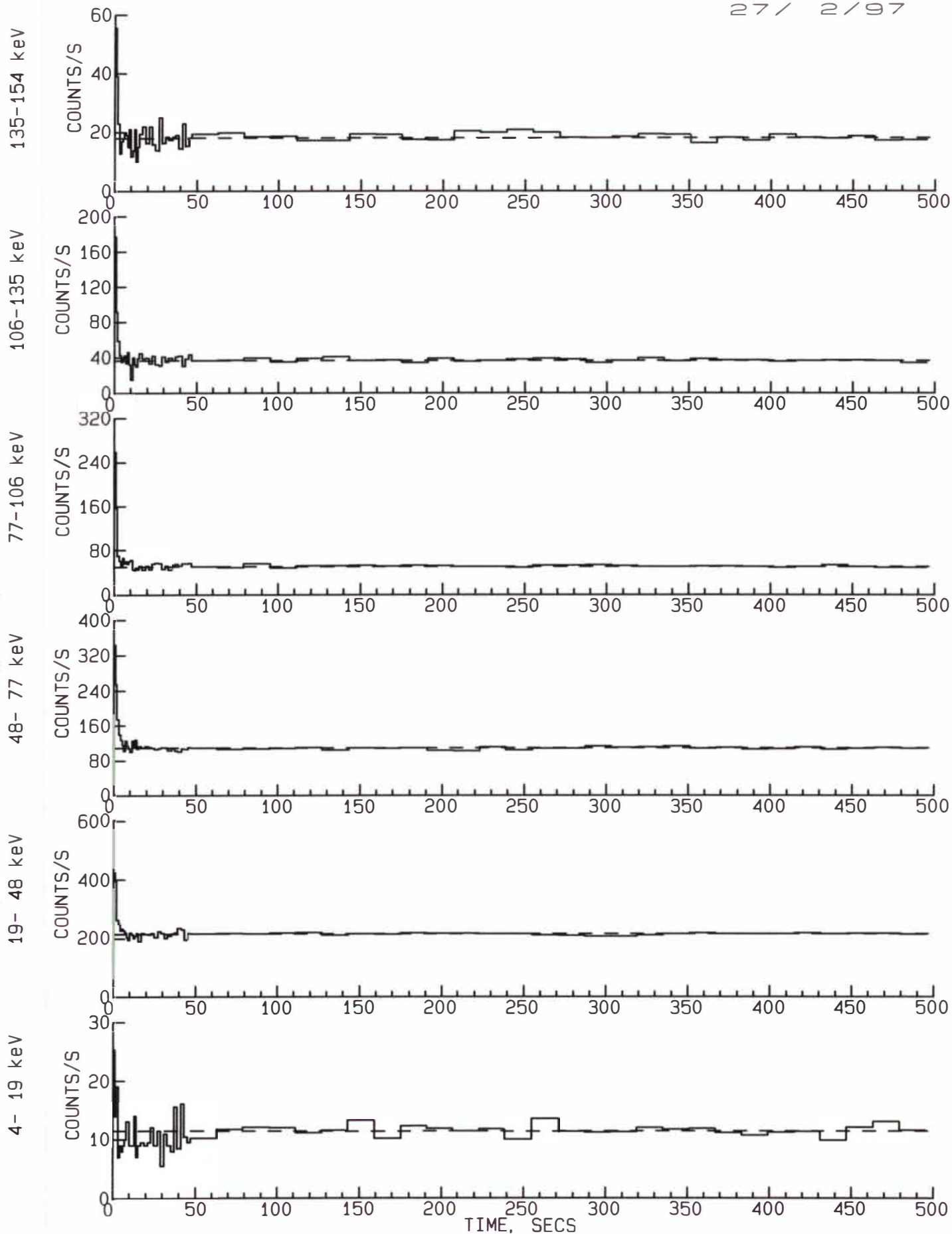
ULYSSES 17/05/92 10549.830

27/ 2/97

SPECTRUM INTEGRATED OVER 21.0 SECONDS, INTERVALS 2 TO 20



ULYS 17/05/92 10549.830 BURST SPECTRAL COUNT RATES



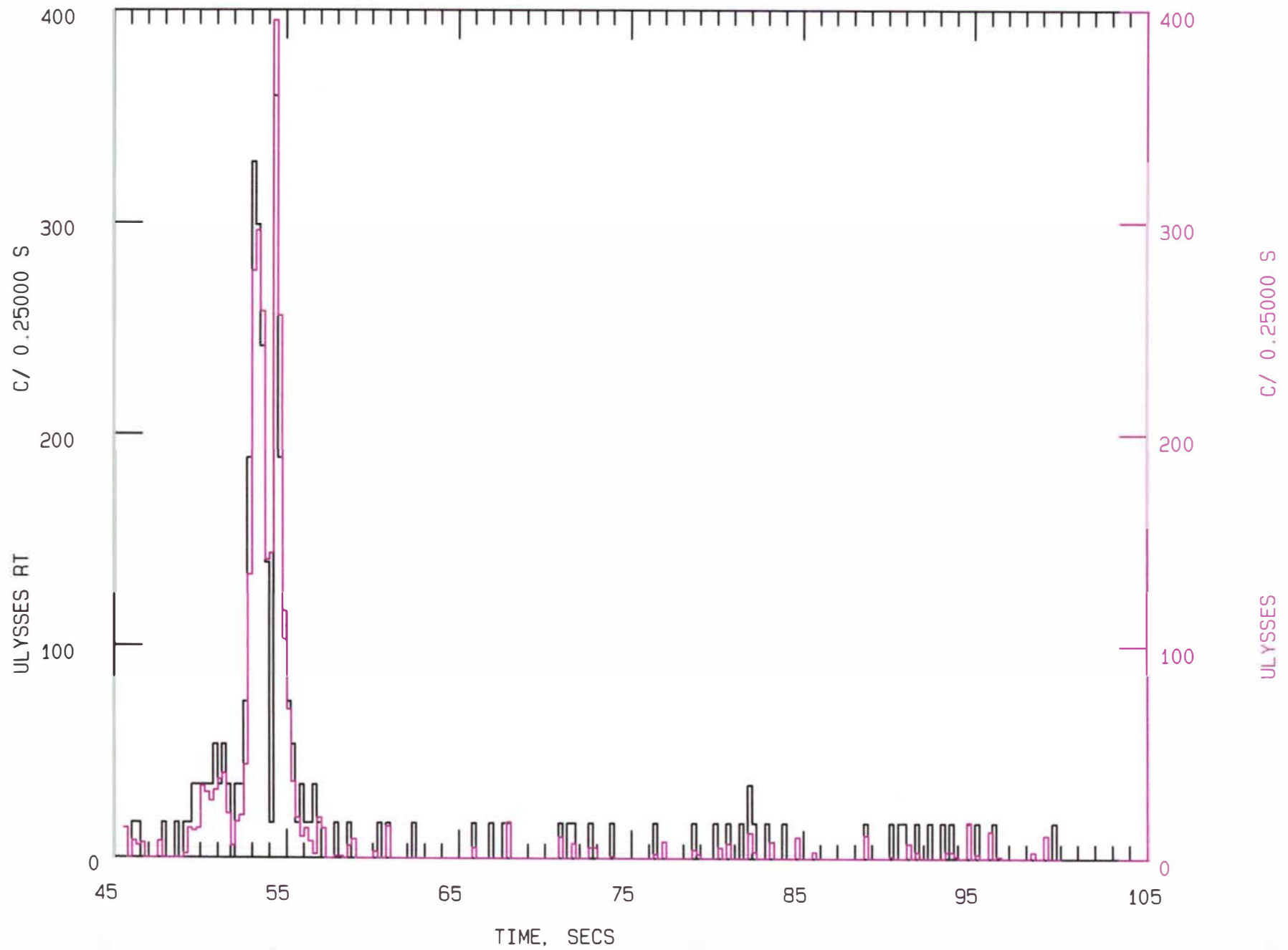
ULYSSES RT-ULYSSES

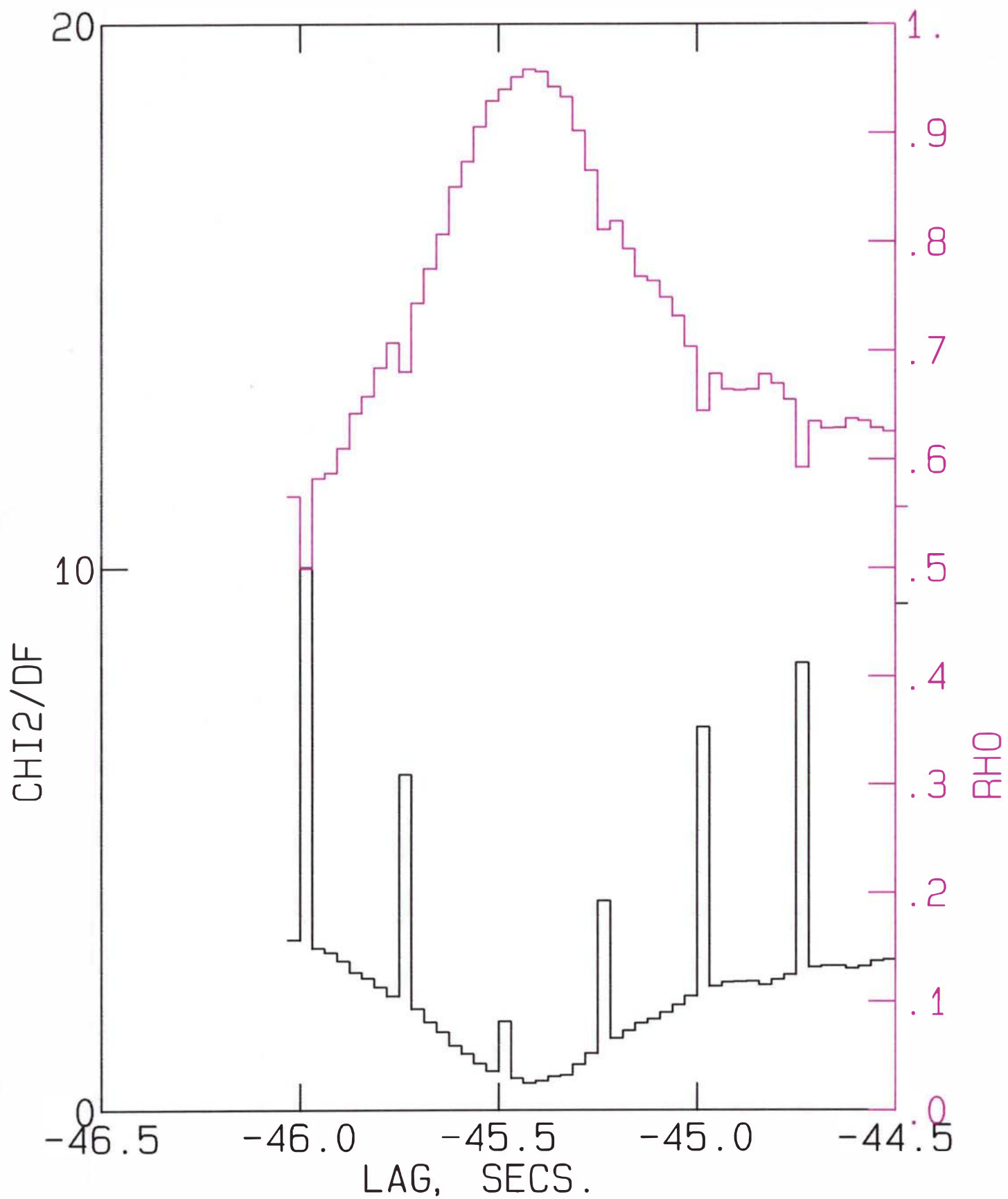
CORRELATION

17/ 5/92

10497.092

27/ 2/97





ULYSSES

17/05/92

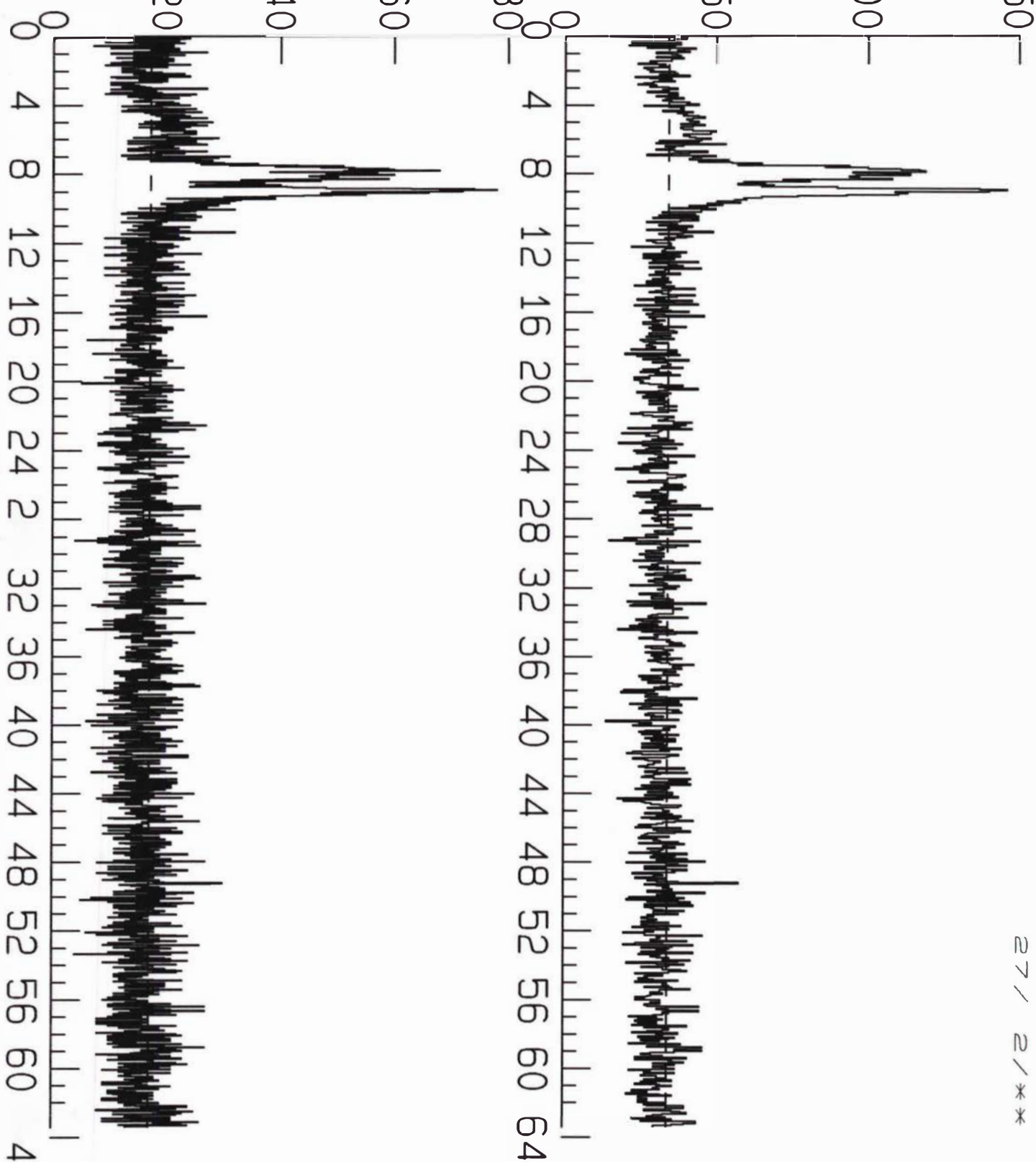
Ttrig=10549.835

23- 155 keV

27 / 2 / **

COUNTS/0.031 S

COUNTS/0.062 S



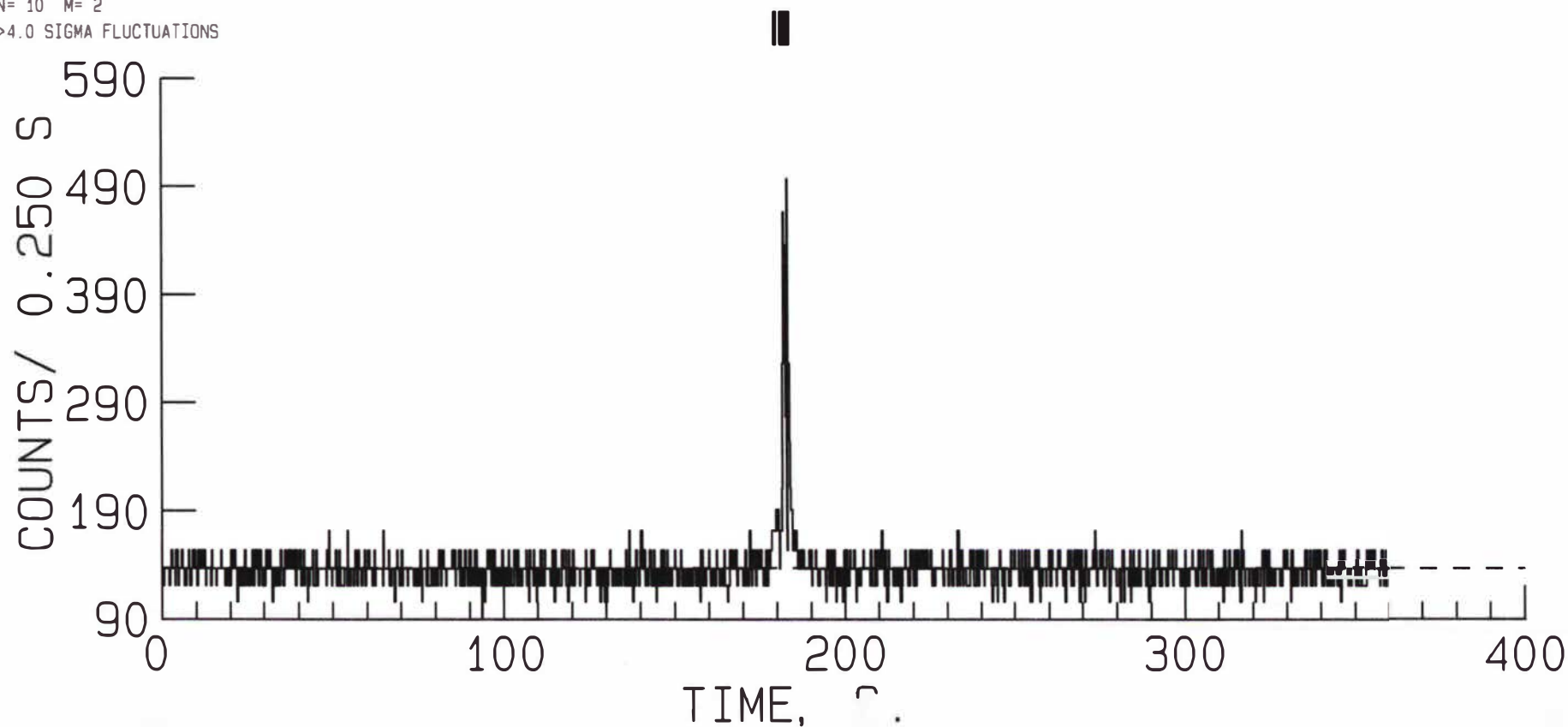
ULYSSES RT

27 / 2 / 97

17 / 5 / 92 10368.091 s

23- 155 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From root Thu Feb 3 13:55 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA00852; Thu, 3 Feb 94 13:55:12
Received: from SSTDP2.LANL.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA13978; Thu, 3 Feb 1994 12:59:12 +0800
Date: Thu, 3 Feb 1994 14:00:37 -0700 (MST)
From: 046369@SSTDP2.LANL.GOV
To: KHURLEY@space6.ssl.berkeley.edu
Message-Id: <940203140037.23c05074@SSTDP2.LANL.GOV>
Subject: DMSP OBSERVATIONS OF GRO GRB
Content-Length: 2739
Status: R

FROM: SMTP%"TERRELL@ESSDP2.LANL.GOV" (ESSDP2::TERRELL) (JAMES TERRELL 94/02/03)
TO: SSL::KOUVELIOTOU AND GIBSON::COLE (CHRYSSA KOUVELIOTOU AND STAYCE COLE)
CC: SMTP%"KHURLEY@SPACE6.SSL.BERKELEY.EDU" (KEVIN HURLEY)
SUBJ: DMSP OBSERVATIONS OF GRO GRB

Chryssa and Stayce:

Thanks very much for the listing of strong Batse bursts sent to me 11/1/93.
I have now managed to check all of them against DMSP data, and find that
many of them were also detected by DMSP8,9,10, or 11. Probably the higher percent
of detections in recent data is due to more extraction of full data. In many
cases such added effort would not be necessary if source direction
(and consequent obscuration of some DMSP satellites) were known to me.
I would appreciate data on more strong events. Here is the present list:

NOTES:

NA: Not apparent in 20-second averaged data (extracting the 2-sec data is
a more time-consuming task, not undertaken in every case).
NA?: Some slight indication of a peak in 20-second averaged data.
SA: South Atlantic Anomaly, obscuring data with high background rates.
SR: South Radiation Belt background.
NR: North Radiation Belt background.
ND: No data for this time.
YES: Burst definitely detected by one or more DMSP satellites (8,9,10,11).
NO: No evidence of a peak in 2-sec data. (NO/OBSC: Obscured by Earth)

DATE	UT	DMSP
910421	33245	8NO 9SR 10NR
910627	16159	8NA 9NR 10ND
910629	71750	8NA 9SR 10NA
910703	18225	8NA 9NA? 10SR
910717	16386	8NA 9SA 10SR
910718	76051	8NA 9SA 10SA
910802	2718	ND
910814	69275	ND
911024	76208	ND
911104	54283	YES--54286 PEAK
911109	12459	8NO 9NR 10NO
911118	68260	ND
911119	23343	YES--23342
911126	46129	8SR 9SR 10NO
911127	15730	YES--15739
911202	73731	YES--73733
911209	66959	8SR 9SR 10NR 11ND
920226	29730	8SA 9NA? 10SA 11SA
920229	69769	8SR 9ND 10NA 11NA
920311	8246	YES--8431
920315	15569	8NA 9NR 10NA 11NA
920325	62258	YES--62256
920404	47506	8NA 10NA? 11NR
920406	9855	8NO/OBSC 10SR 11SR/OBSC
920414	84163	NA
920517	11877	YES--11883
920525	12423	YES--12427

920622	25504	8SA 10NR 11SA
920627	46956	NA
920711	53140	YES--58157
920718	77563	8NA 10SA 11NA
920720	11524	8NA/OBSC 10NA/OBSC 11SR
920824	39183	YES--39186
920902	1736	YES--1743
921009	24070	YES--24073
921022	55259	8ND 10NA 11NA
921123	22711	YES--22727
921123	46583	YES--46542
921207	57647	YES--57649
921209	41738	8NR 10NA 11NR
930106	56259	YES--56260
930110	6698	8NA 10NR 11NA
930120	84700	YES--84779
930131	68231	YES--68231
930201	60115	YES--60129
930309	11269	NA
930329	11365	8NA 10SR 11NA
930405	32089	YES--32105
930406	26185	8NA 10NR 11NA
930428	04032	8NA 10NA 11SR
930506	53571	YES--53578
930506	65631	NA

From jcg@mpe.dnet.nasa.gov Tue Jan 19 12:53:47 1993
Date: Tue, 19 Jan 93 15:58:43 -0500
From: jcg@mpe.dnet.nasa.gov
To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
Subject: first error boxes
Content-Length: 1723

Dear Kevin,

I have completed the first 5 error boxes. So far there is no source within an error box. Details are given below. Note, that for GRB 920501 (your TOO target) I find really nothing, i.e. even no 1 sigma fluctuation (which is in contrast to what Michel thinks to see).

For the case of GRB 11_MAR_92 I just sent you a fax containing an image together with the detections in this field. The numbers on the circles are the likelihood values for the existence of a point source ($3.1 = 2 \text{ sigma}$, $5.9 = 3 \text{ sigma}$), so all three sources along the error box are strong sources. The distance of the pair and the lonely source is about 1 degree, so in principle they would fit into a PSPC FOV. Note that these sources have quit different spectra: the lonely one is rather soft, the other two hard.

I hope to analyze the remaining 10 fields within the next days. The extraction of the data out of the archive took a little longer, since the processing (including the FITS conversion which is needed for the extraction) was stopped over the two weeks holiday period.

Sincerely yours
Jochen

No.	GB_NAME	size of long axis	comments
1	19_FEB_91	10'	1sigma fluctuation (soft) 1' outside of box
2	21_APR_91		
3	22_MAY_91	35'	3 2.5sigma fluctuations in 4'-10' distance new SNR 20' away
4	17_JUL_91		
5	04_NOV_91		
6	09_NOV_91		
7	18_NOV_91		
8	26_NOV_91		
9	02_DEC_91		
10	11_MAR_92	2 degree	3 sources along the long axis in 5'-10' distance
11	25_MAR_92		
12	06_APR_92	30'	nothing
13	01_MAY_92	8'	nothing
14	17_MAY_92		
15	25_MAY_92		

From jcg@pe. .asa.gov Mon Jan 25 02:37:22 1993
 Date: Mon, 25 /3 05:35:57 -0500
 From: jcg@pe. .asa.gov
 To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
 Subject: next 5 error boxes
 Content-Length: 1639

Dear Kevin,

here are the next 5 error boxes. There is only one interesting case, namely GRB 920325. The position of the source is empty on the Palomar plates; the next star (about 17th mag.) is in 1' distance. Normally, the error in the X-ray positions are of the order of 20-30 arcsec. Though this X-ray source is quite faint, I would think that this 1' distant star is too far away from the X-ray position to be the optical counterpart.

The coordinates of the X-ray source are (please, do not circulate):

alpha (2000.0) = 23h 25m 10.7s

delta (2000.0) = 13d 20' 10"

The PSPC countrate is 0.023 cts/sec, and the survey exposure time was 450 sec. If you think of proposing this target for A04 then let me know.

Sincerely yours
 Jochen

No.	GB_NAME	size of long axis	comments
1	19_FEB_91	10'	1sigma fluctuation (soft) 1' outside of box
2	21_APR_91		
3	22_MAY_91	35'	3 2.5sigma fluctuations in 4'-10' distance new SNR 20' away
4	17_JUL_91		
5	04_NOV_91	30'	3 2-3sigma fluct. around box in 2'-5' distance
6	09_NOV_91	60'	2sigma and 1sigma fluct. in 8' and 5' distance
7	18_NOV_91		
8	26_NOV_91		
9	02_DEC_91	22'	2sigma fluct. 2' off the box
10	11_MAR_92	2 degree	3 sources along the long axis in 5'-10' distance
11	25_MAR_92	45'	5sigma source 2' off the box
12	06_APR_92	30'	nothing
13	01_MAY_92	8'	nothing
14	17_MAY_92	22'	nothing
15	25_MAY_92		

From jcg@pe.dnet.nasa.gov Mon Jan 25 10:11:55 1993
 Date: Mon, 25 Jan 93 13:10:31 -0500
 From: jcg@pe.dnet.nasa.gov
 To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
 Subject: remaining 5 error boxes
 Content-Length: 1433

Dear Kevin,

here is the final list of all 15 error boxes. There is no other interesting feature in addition to GRB 920325 (see last report). For the large error boxes one expects sources to be inside the error box.

M. Sommer told me that you possibly will visit MPE next week. I would be glad to show you the results and discuss further details.

Best regards
 Jochen

No.	GB_NAME	size of long axis	comments
1	19_FEB_91	10'	1sigma fluctuation (soft) 1' outside of box
2	21_APR_91	2.7 deg.	7sigma source 7' outside of box
3	22_MAY_91	35'	3 2.5sigma fluctuations in 4'-10' distance new SNR 20' away
4	17_JUL_91	2.6 deg.	2.5sigma fluctuation in box
5	04_NOV_91	30'	3 2-3sigma fluct. around box in 2'-5' distance
6	09_NOV_91	60'	2sigma and 1sigma fluct. in 8' and 5' distance
7	18_NOV_91	38'	bright source 13' outside of box
8	26_NOV_91	47'	2.5sigma fluctuation in box
9	02_DEC_91	22'	2sigma fluct. 2' off the box
10	11_MAR_92	2 deg.	3 sources along the long axis in 5'-10' distance
11	25_MAR_92	45'	5sigma source 2' off the box
12	06_APR_92	30'	nothing
13	01_MAY_92	8'	nothing
14	17_MAY_92	22'	nothing
15	25_MAY_92	8'	2sigma fluctuation at box boundary

From CLINE@lheavx.gsfc.nasa.gov Sun Jan 24 08:04:02 1993
Date: Sun, 24 Jan 1993 10:56:27 -0500 (EST)
From: CLINE@lheavx.gsfc.nasa.gov
Subject: copy of communication to D. Palmer.
To: khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: SMTP%"khurley@space6.ssl.berkeley.edu"
Content-Length: 2514

KEVIN:

I sent this to David Palmer Sunday morning (right now) - self-explanatory:

DAVID:

I WAS HERE YESTERDAY WITH BRAD AND SO FORTH, AS YOU CAN DEDUCE FROM OUR VARIOUS MAILINGS, BUT APPARENTLY MISSED YOUR QUESTIONS SENT IN THE PM, NAMELY ABOUT THE MAY 17 VS NOV 18 REGIONS. PERHAPS IT IS TOO LATE; I DON'T KNOW WHETHER THE FIRST AND SECOND NIGHTS ARE PRIOR TO OR FOLLOWING THE 'DAYS' SCHEDULED. AT ANY RATE, I SHALL REPLY (ONLY BY CHANCE DID I FIND OUT THAT YOU EVEN SENT ME ELECTRONIC MAIL, VIA REUVEN RAMATY AT HIS HOME) AND PERHAPS KEVIN HURLEY HAS ANSWERED YOUR QUESTIONS. I SHALL PHONE HIM AT HOME THIS MORNING, BUT IT IS NOT YET 8 AM SUNDAY IN BERKELEY RIGHT NOW SO I HAVEN'T YET. WHAT A MESS. I DO NOT LIKE HURLEY'S 92 MAY 17 REGION, SINCE HE IS USING THE PLANET VENUS - A TRICK I HAVE RESORTED TO IN THE ABSENCE OF PVO EPHEMERIDES - BUT THE ERRORS MUST NECESSARILY BE GREATER. I HAVE REDUCED HIS 12 CORNERS TO THESE 6:

KH'S RE-REVISED CORNERS OF ERROR BOXES FOR 92 MAY 17:

203.310056=13.H33.M14.41S -16.750260=-16.D-45.M -.94S

203.325334=13.H33.M18.08S -16.623049=-16.D-37.M-22.98S

203.383972=13.H33.M32.15S -16.564018=-16.D-33.M-50.46S

203.251993=13.H33.M .48S -16.807199=-16.D-48.M-25.92S

203.247733=13.H32.M59.46S -16.884746=-16.D-53.M -5.08S

203.389594=13.H33.M33.50S -16.482071=-16.D-28.M-55.46S

SO FOR WHATEVER THEY MAY BE WORTH, THAT'S IT. OF COURSE, YOU KNOW MY PHILOSOPHY SO FAR, AND THAT IS TO MOSAIC WHAT WE BELIEVE IN AND/OR DO DEEPER EFFORTS ON ONLY THOSE REGIONS THAT CAN BE PIN-POINTED, SUCH AS X-RAY OR EARLIER VLA SOURCES, WHICH, AS YOU POINT OUT, ARE NOT YOUR PRIMARY OBJECTIVES. IT IS TOO BAD IN RETROSPECTIVE THAT YOU TWO SEEM TO HAVE BEEN MISLED INTO BELIEVING THAT WE COULD PROVIDE SQUARE BOXES OF 1 ARC MINUTE ON A SIDE: THE GEOMETRY IS SUCH THAT 1 ARC MINUTE SQUARE AREAS MAY BE FORTHCOMING, BUT IN THE NEAR FUTURE THEY WILL BE SEVERAL MINUTES BY SEVERAL TENS OF SECONDS AT BEST. I GUESS THAT KEVIN HAS TRIED TO POINT THAT OUT AS WELL. ANYWAY, WE MUST DO BETTER ALONG THE LINES OF COMMUNICATION AND UNDERSTANDING IN THE FUTURE. GOOD LUCK. BELIEVE ME. TLC.

Kevin, of course, reread that with '5 arc minutes' for '1 ..' etc, but the sense is the same. I got your phone message about your home number, but I may not bother you today unless something new comes up. Maybe Guido could find an old friend from the old country to do something about Schaefer. TLC

BATSE

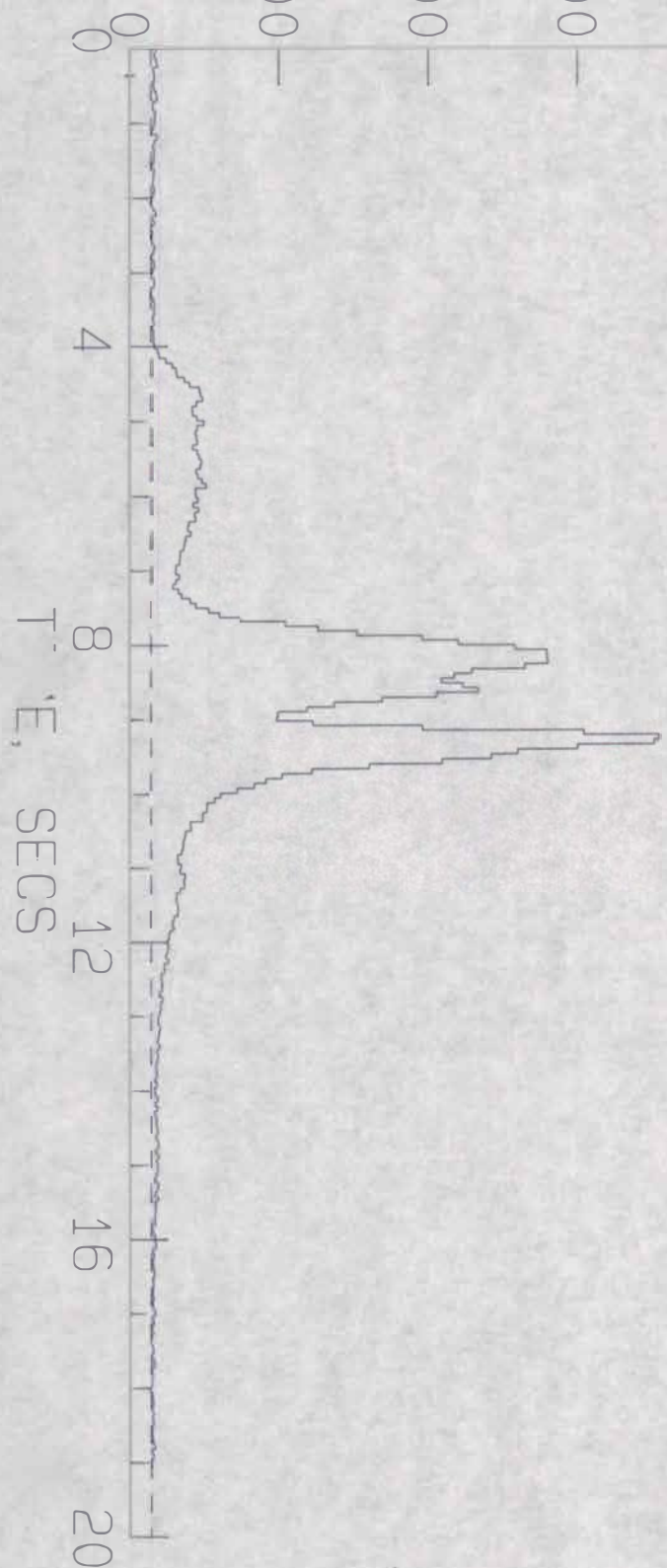
17/05/92

11876.964

25- 100 keV

COUNTS/ .064 S

8000
6000
4000
2000
0



PV0

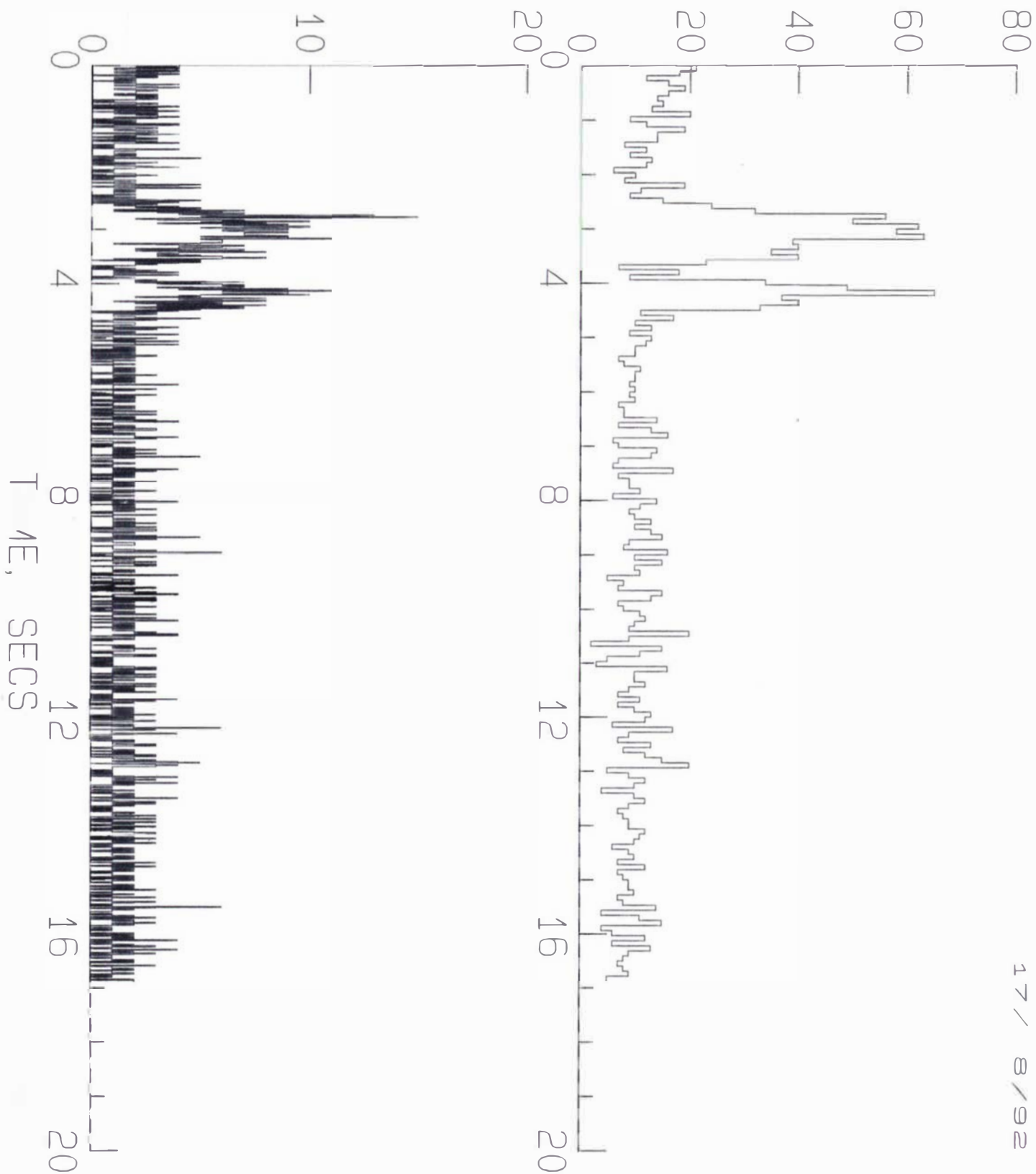
17/05/92

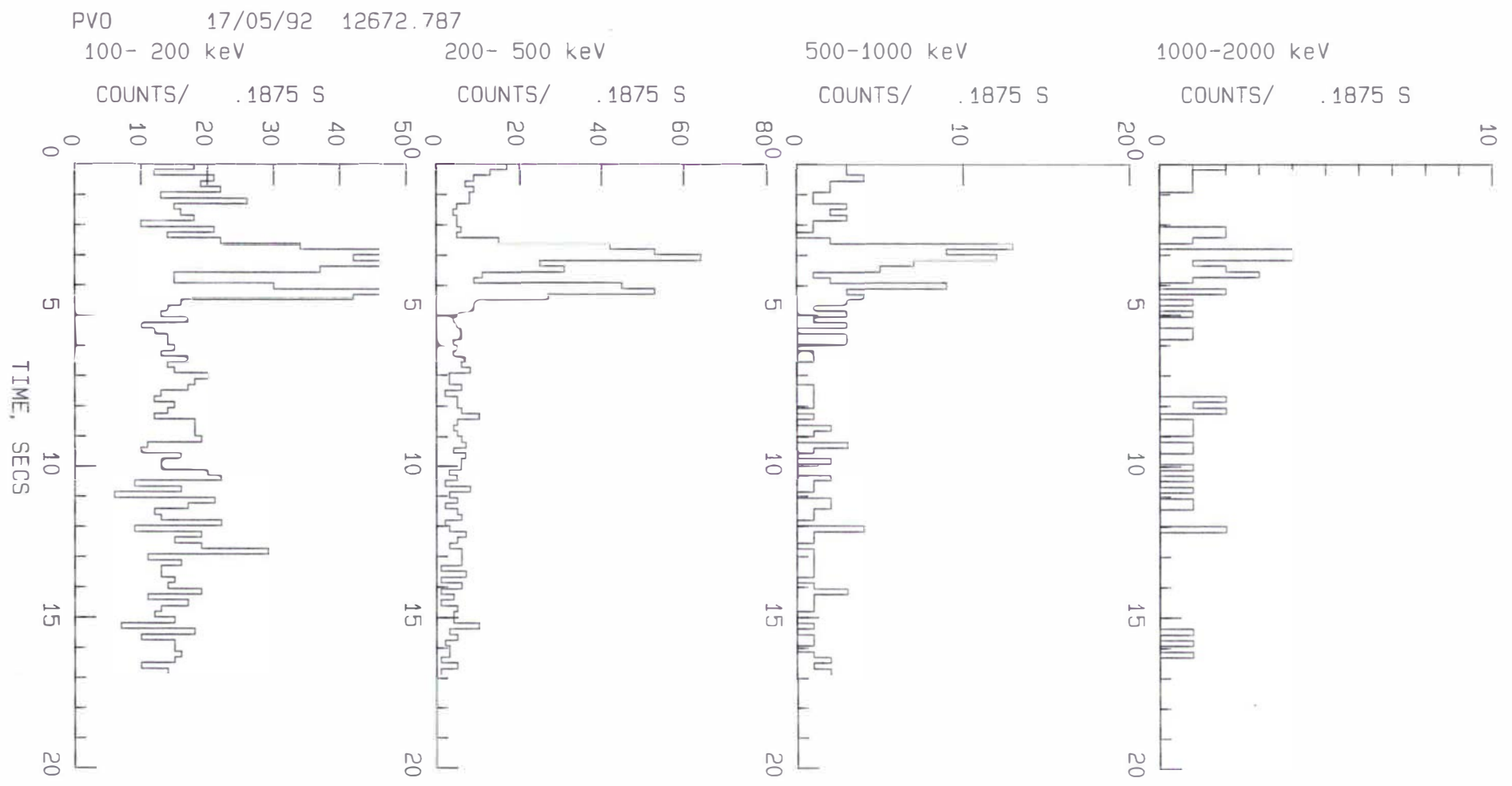
12672.787

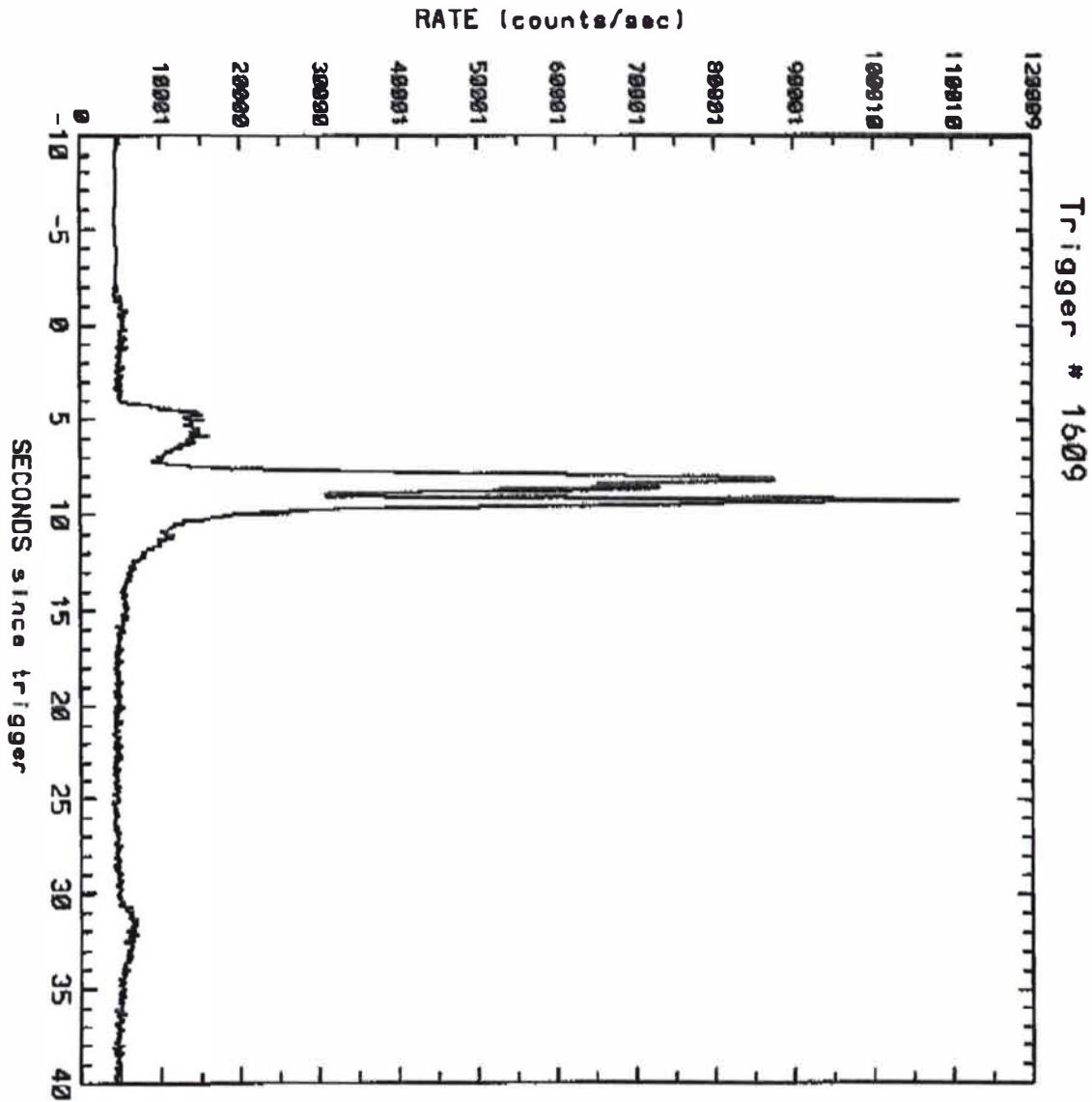
100-2000 keV

COUNTS/ .012 S

COUNTS/ .094 S







Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
(0.064 seconds)
Detectors (7.0):
11000000
Discriminators:
(1, 2)
Quality Mask:
801SP0

18-MAY-1992 10:52:16
Created by MOPS BD
(Burst Display)
Version 2.11
Trigger # : 1609
Trigger Time:
8759 / 11876.964 -
Burst Data Type: **11874.922**
DISCSC

May 17
3rd file
display

1992 May 17

Ulysses:

Trigger time is taken at the center of the 236th rate (or at 235.5 rate) of the 2028 bins: 1 bin is (32/1024)sec=1/32-sec=31.25-msec wide, thus T_0 is 7.350375 s into the data.

ULY: 02/05/17 T-zero = 10540.020 (the +/- half-bin uncertainty gives 16-msec error).

Ulysses ephemerides are given in 1950 JPL coordinates

trigger date: 02 05 17

trigger hour: 02.00

	date	hrs	RA(d)	Dec(d)	Range E/SC(km)	S/SC/E(d)
P	92 05 16	24.00	140.2333	0.7123	785007400.0000	10.04544
P	92 05 17	3.00	140.2317	0.7070	785390330.0000	10.04051
P	92 05 17	0.00	140.2301	0.7034	785093440.0000	10.04754
P	92 05 17	0.00	140.2200	0.6900	780000200.0000	10.04051

From which RA = 140.2316, dec = 0.7000, dist = 2519.7503 lt-s (1950 eqx.)

Compton-GRO-MATSE:

GRO Trigger time (must subtr 2.042 s) = date onset. THIS event has 32-msec-wide bins:

GRO 17/ 5/92 : 11070.004-2.042 = 11074.022 = T-zero

Header: +2.500000E+01 +1.000000E+02 +4.430404E+03 200

XYZ are GRO earth-centered cartesian eqx. 2000 coordinates of the spacecraft:

DATE UT X Y Z RA DEC (Source Test-point)

92 05 17 11007.2 3407. -5436. 2027. 202.5 -10.0 (202.5, -15.0)

From which RA = 302.75, dec = 17.41, dist = 0.023 lt-s (2000 eqx)

Planck-Venus-Orbiter:

Trigger time is taken at 250 bins (of 12/1024 s each) or 3.000 sec into the data.

There are 1440 bins, with NO 'time-to-spill' data in this case (with 'P' in the header).

T-zero = 12072.707

Header:

+1.20727060140100E+004 +1.0E+02 +2.00E+03 +0.007000E+01

'Blue-Book' ephemerides (real-time, for planet Venus):

RA: 46.0505, dec: 10.0301, dist: 1.17142700 AU = 055.4323 lt-sec (real-time)

Supplied Ephemeris, at wrong time: at 11070 s, or 13 minutes off (about 15 lt-sec off?)

provides : RA = 040.25200, dec = +10.40000, dist = 055.5457 lt-s (1950 Eqx)

TIME HISTORY PHASING PHILOSOPHY:

old rough: Ulysses triggered on the onset of the first pulse at its t-zero.

old rough: PVO time given is for peak 2, or, 1.50 sec after equivalent onset position.

old rough: GRO equivalent position is 7.7 seconds after its t-zero, which is -2.04 sec.

new rough: 2nd pk: GRO:11074.022+0.25, Uly:10540.020+1.00, PVO:12072.707+1.15.

RESULTS:

RA=203.20 (13 33 27), dec=-15.50 (-10 35.5), 2000 eqx, with bll = 44.7

region has 0.05 deg, or 3 arc-min var in RA, but large, ± 10 arc-min var in dec.

CATSEARCH PROGRAM

BATSE BURST # 1610
EVENT OF 1992 MAY 17 DAY OF YEAR=138
EVENT CROSSING TIME AT BATSE : 51849. S. OR 14:24:08.8
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 201.000 59.700
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 17/ 5/ 92 IS:
RA= 148.233 DEC= 8.712 DIST= 5.248 AU
BATSE-ULYSSES DISTANCE = 785097808. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1132.69 SECS.
CROSSING TIME AT ULYSSES IS 50716. S. OR 14:05:16.1 +/- 442.74 SECONDS

RI

From BHAT@ssl.msfc.nasa.gov Mon May 18 14:54:58 1992
Date: Mon, 18 May 1992 16:56:31 -0500 (CDT)
From: BHAT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 1610

TIME: TJD=8759 SECONDS=51851

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=133.3 AZIMUTH=322.7 ERROR= DEGREES

COMMENTS:

A WEAK BURST LASTING FOR ABOUT 40 SEC CONSISTS OF 5 PEAKS IN THE TIME PROFILE.
ALMOST NO SIGNAL IS SEEN ABOVE 300 KEV.

From springer@pop.jpl.nasa.gov Mon Dec 9 06:37 PST 1996
From: Joe Springer <springer@pop.jpl.nasa.gov>
To: "'Kevin Hurley'" <khurley@sunspot.ssl.berkeley.edu>
Subject: RE: More times to check
Date: Mon, 9 Dec 1996 06:37:26 -0800
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Kevin,

I checked a range ten minutes before to ten minutes after each of these points and found no timing errors.

How big is the 'big list'? You have previously provided one with 575 events. I shudder.

Joe

From: Kevin Hurley
Sent: Friday, December 06, 1996 5:53 PM
To: Joe.B.Springer@jpl.nasa.gov; khurley@sunspot.ssl.berkeley.edu
Cc: khurley@sunspot.ssl.berkeley.edu
Subject: More times to check

Dear Joe,

Before I hit you with the big list of events to check, I wanted to ask if you could check the following times. We are again writing a paper on these, and need to get this straightened out quickly (i.e. within a couple of weeks).

Thanks

Kevin

Date UT (secs)

January 22 1991 55142
February 19 1991 42204
April 21 1991 34040
April 30 1991 60428
May 07 1991 53768
May 11 1991 08090
May 22 1991 43556
June 19 1991 55254
June 27 1991 15335
July 17 1991 17265
July 18 1991 09076
August 14 1991 70996
October 05 1991 26852
October 16 1991 41542
October 31 1991 35550
November 04 1991 52695
November 09 1991 11321
November 18 1991 66112
November 26 1991 43717
December 02 1991 71640
February 18 1992 68388
February 20 1992 49020

February 26 1992 30348
March 08 1992 17470
March 11 1992 07038
March 20 1992 45256
March 25 1992 64261
March 31 1992 66408
April 04 1992 49443
April 06 1992 11150
April 14 1992 84300
May 01 1992 75040
May 17 1992 10549
May 17 1992 50706
May 19 1991 60996
May 25 1992 14411
July 11 1992 58470
July 14 1992 46275
July 20 1992 09807
July 20 1992 18344
July 23 1992 73955

Helio corr removed
Date: Apr 3 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

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

3. PVO Data

- ☒ Ephemeris of PVO used (not Venus)?
- ☒ 2000 coordinates used?
- ☒ Geocentric time used?

Access database updated

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

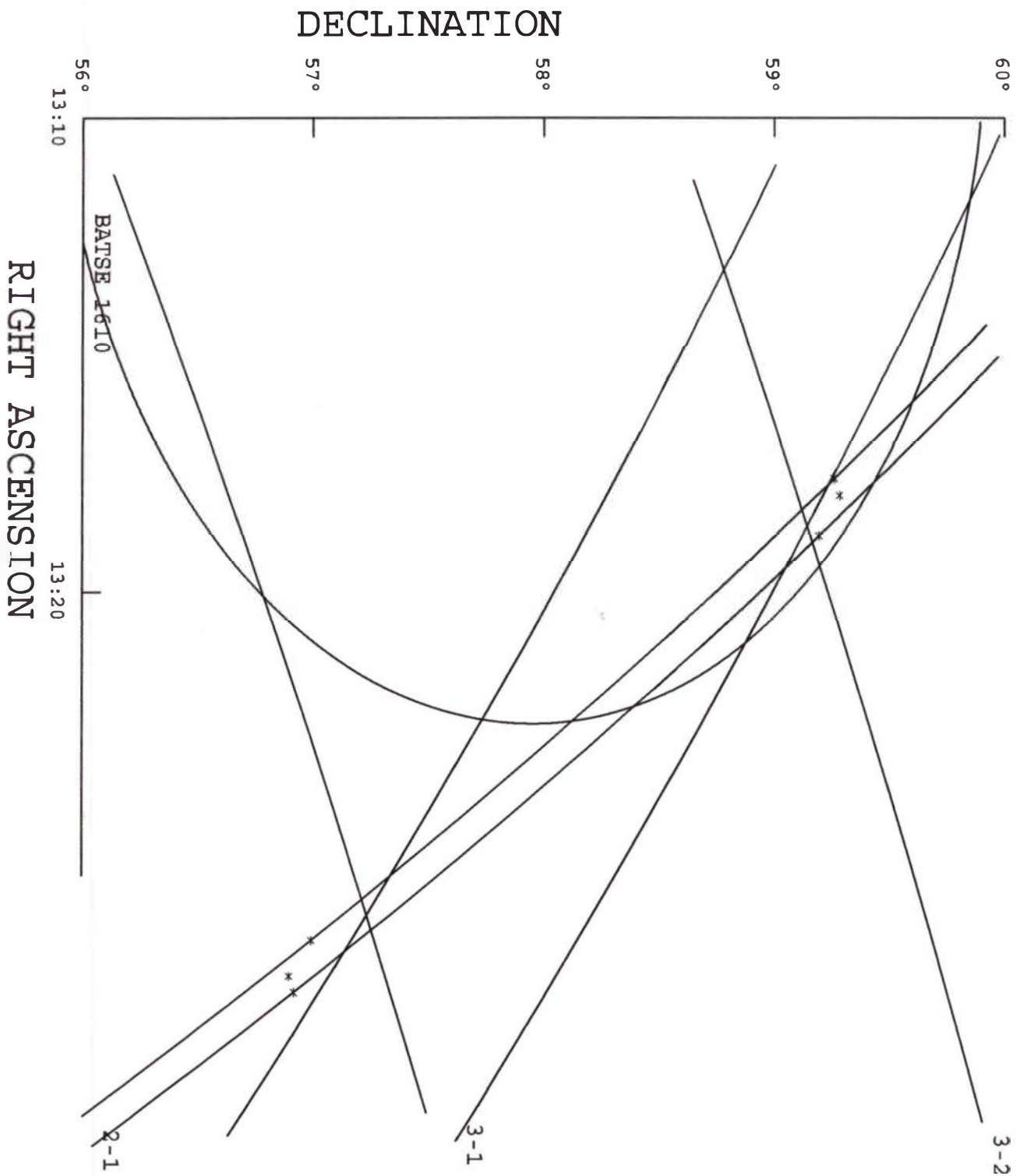
1 ULYSSES

2 BATSE

3 PVO

EVENT OF MAY 17, 1992 14:03

9/10/97



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

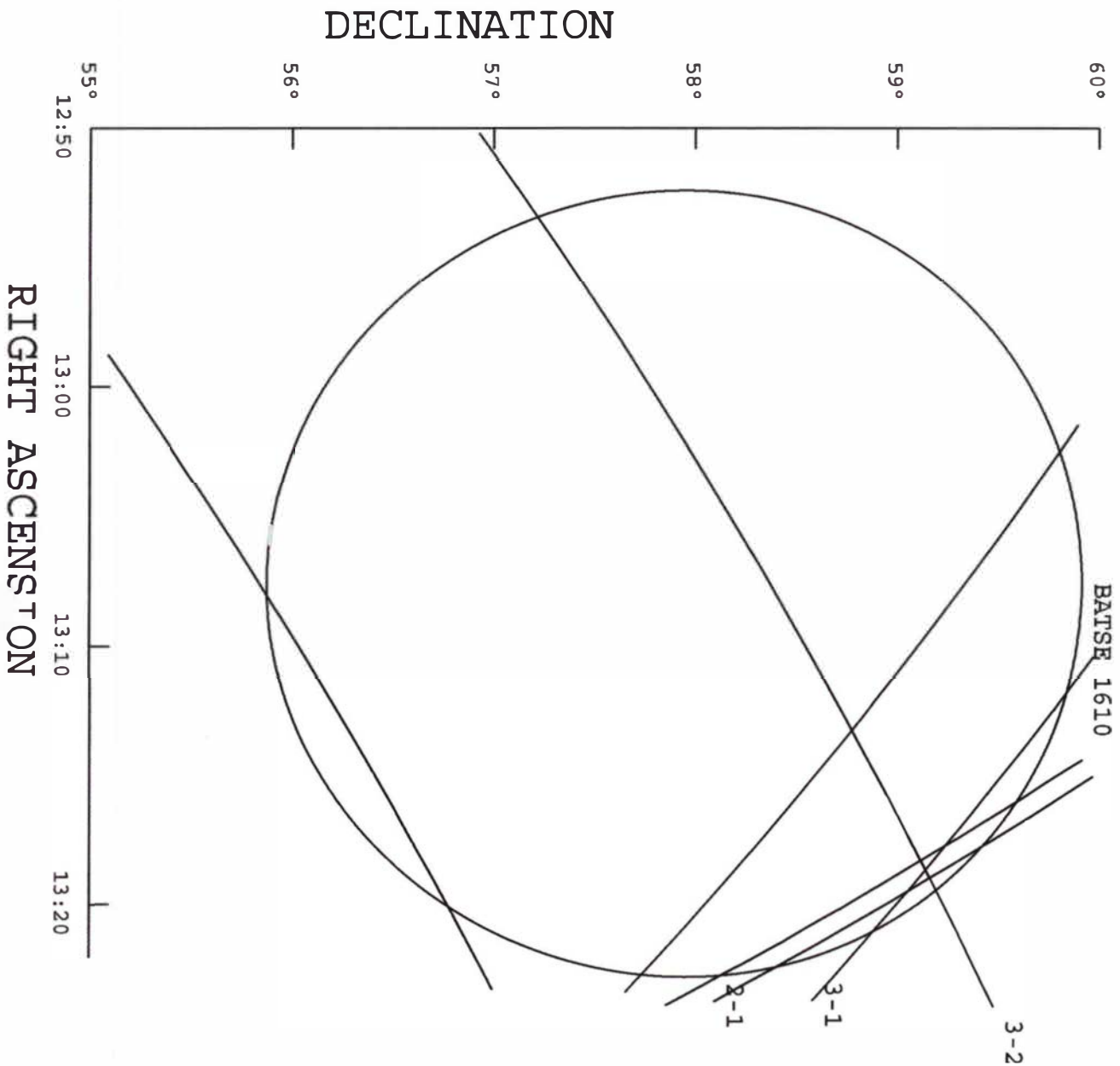
1 ULYSSES

2 BATSE

3 PVO

EVENT OF MAY 17, 1992 14:03

3 / 4 / 97



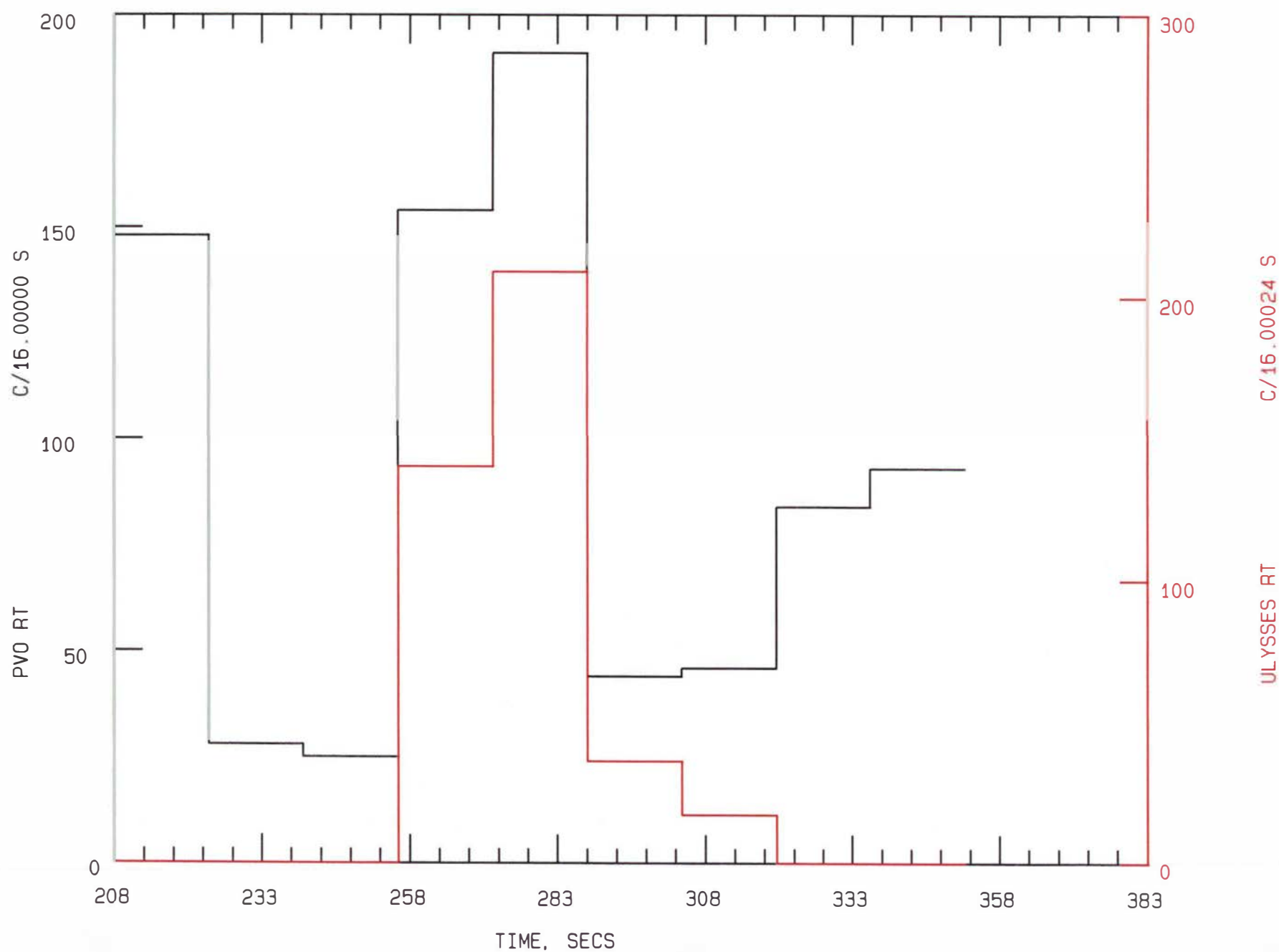
PV0 RT

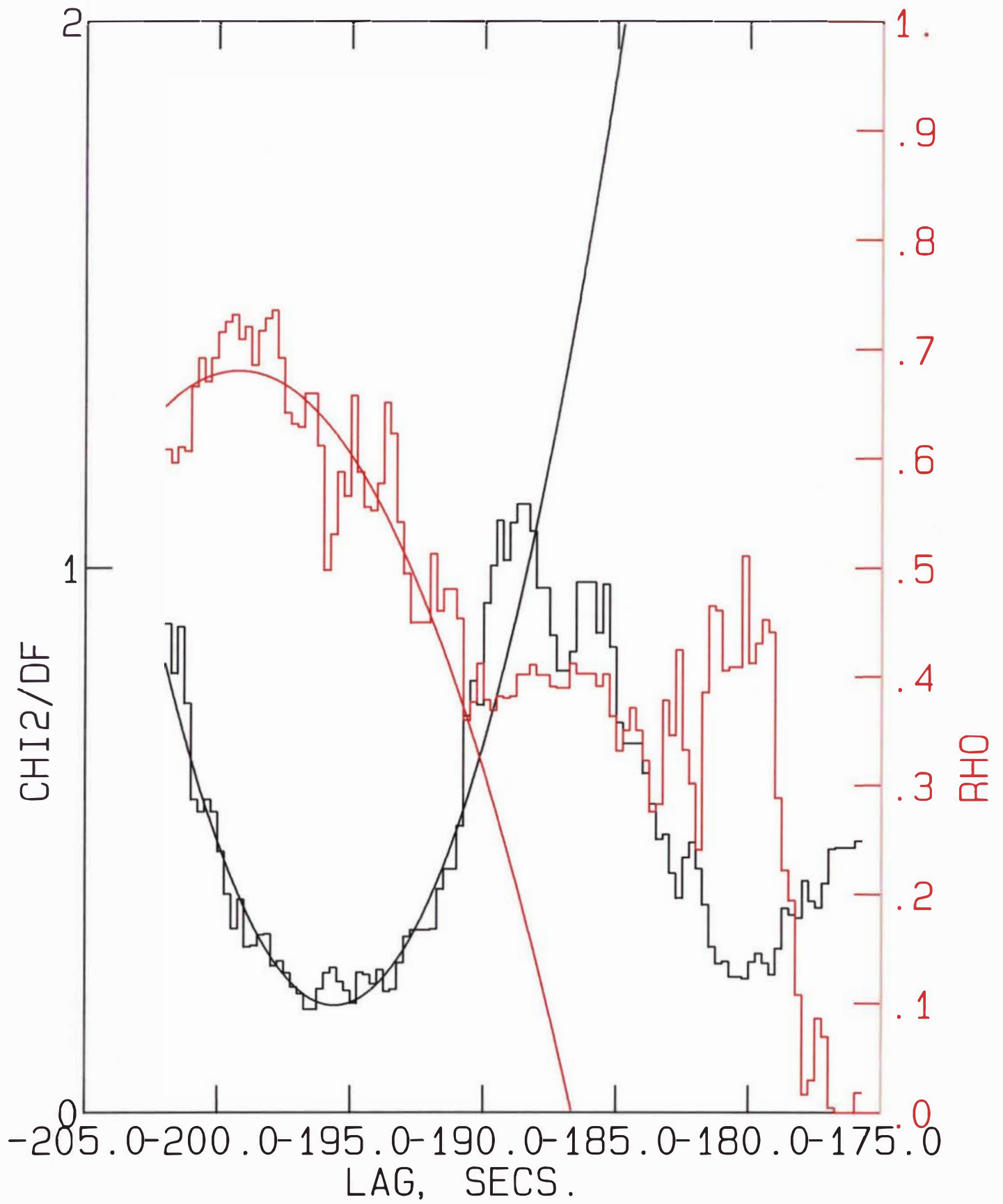
-ULYSSES RT CORRELATION

17/ 5/92

51781.729

3/ 4/97





BATSE

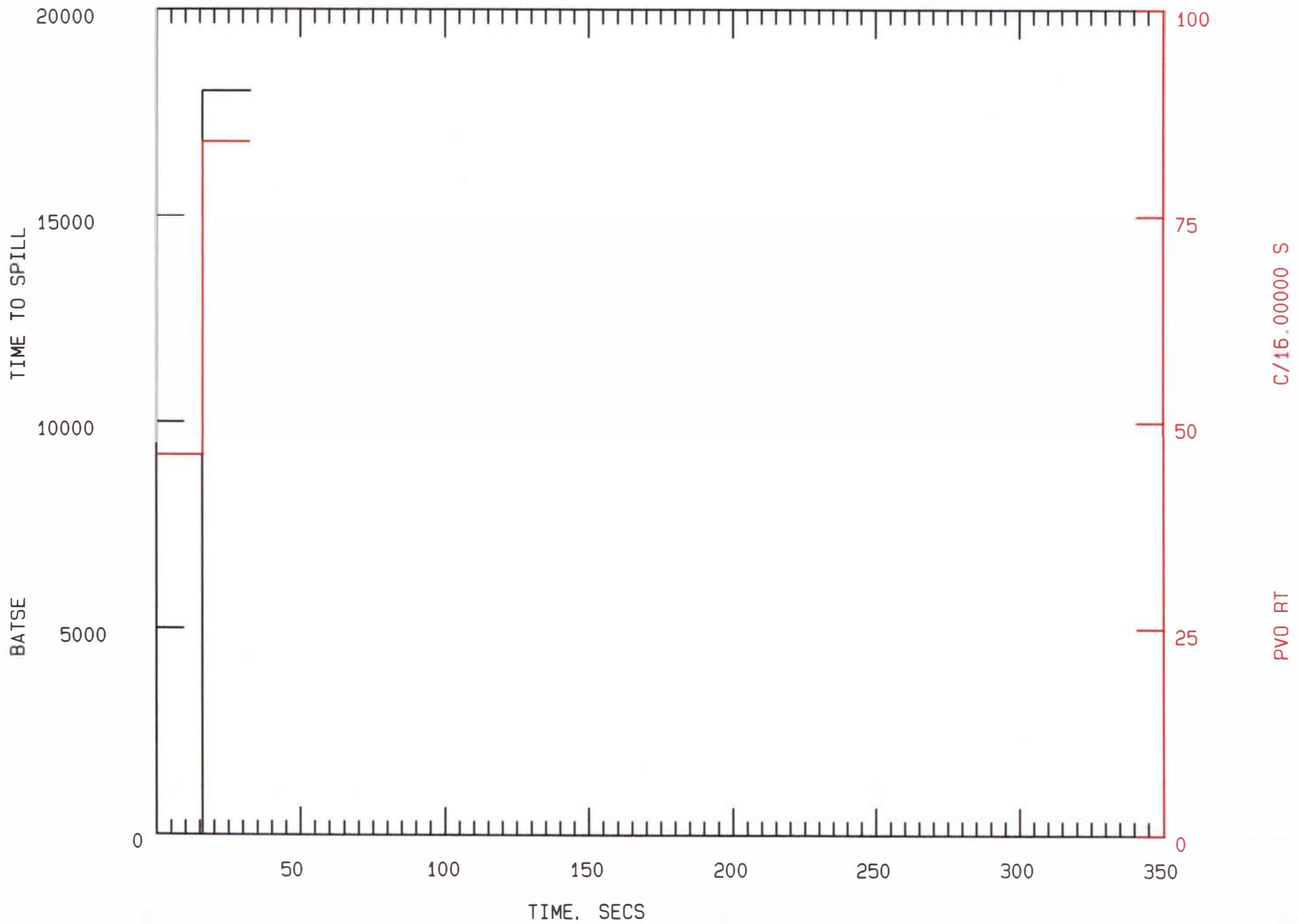
-PVO RT

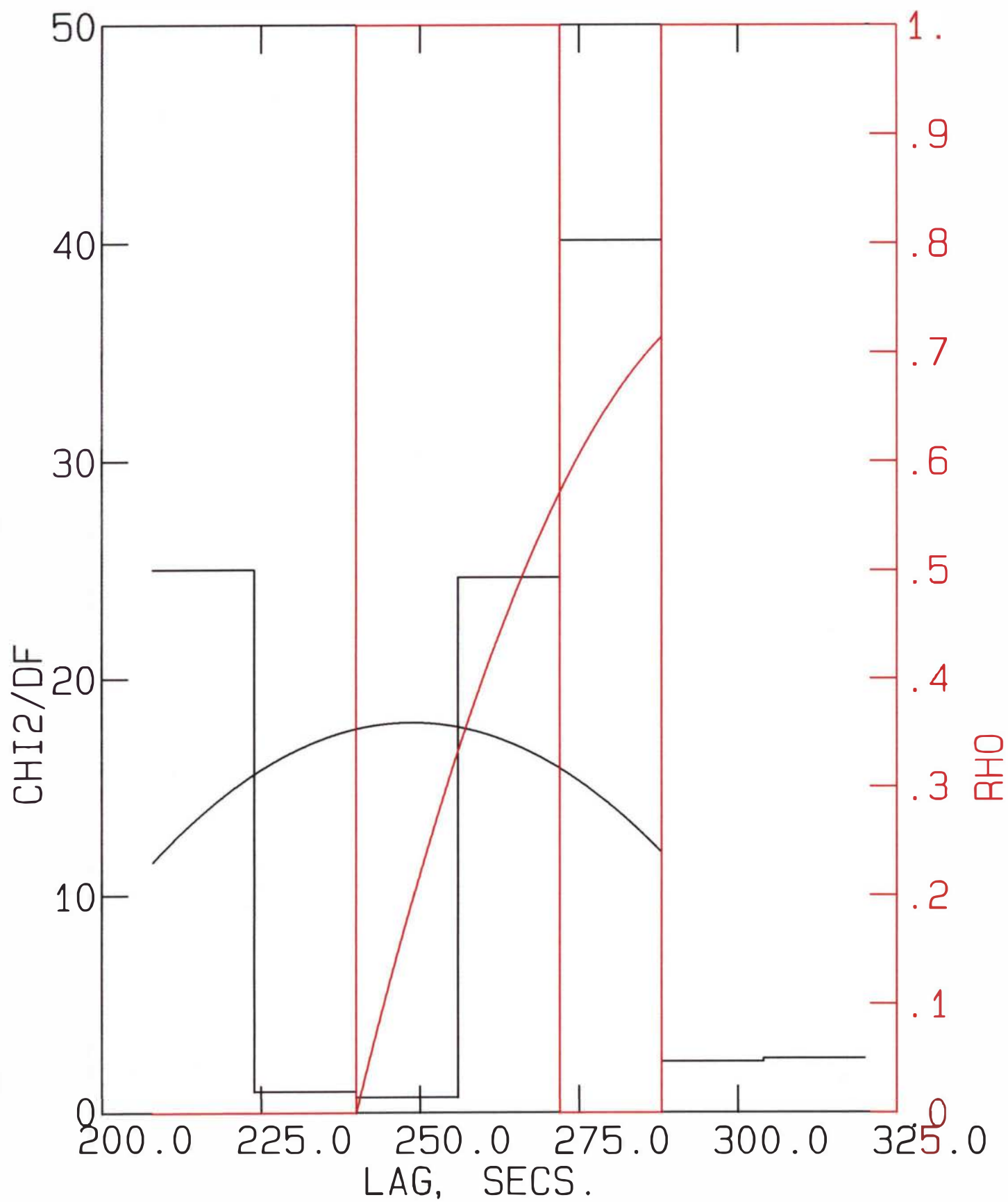
CORRELATION

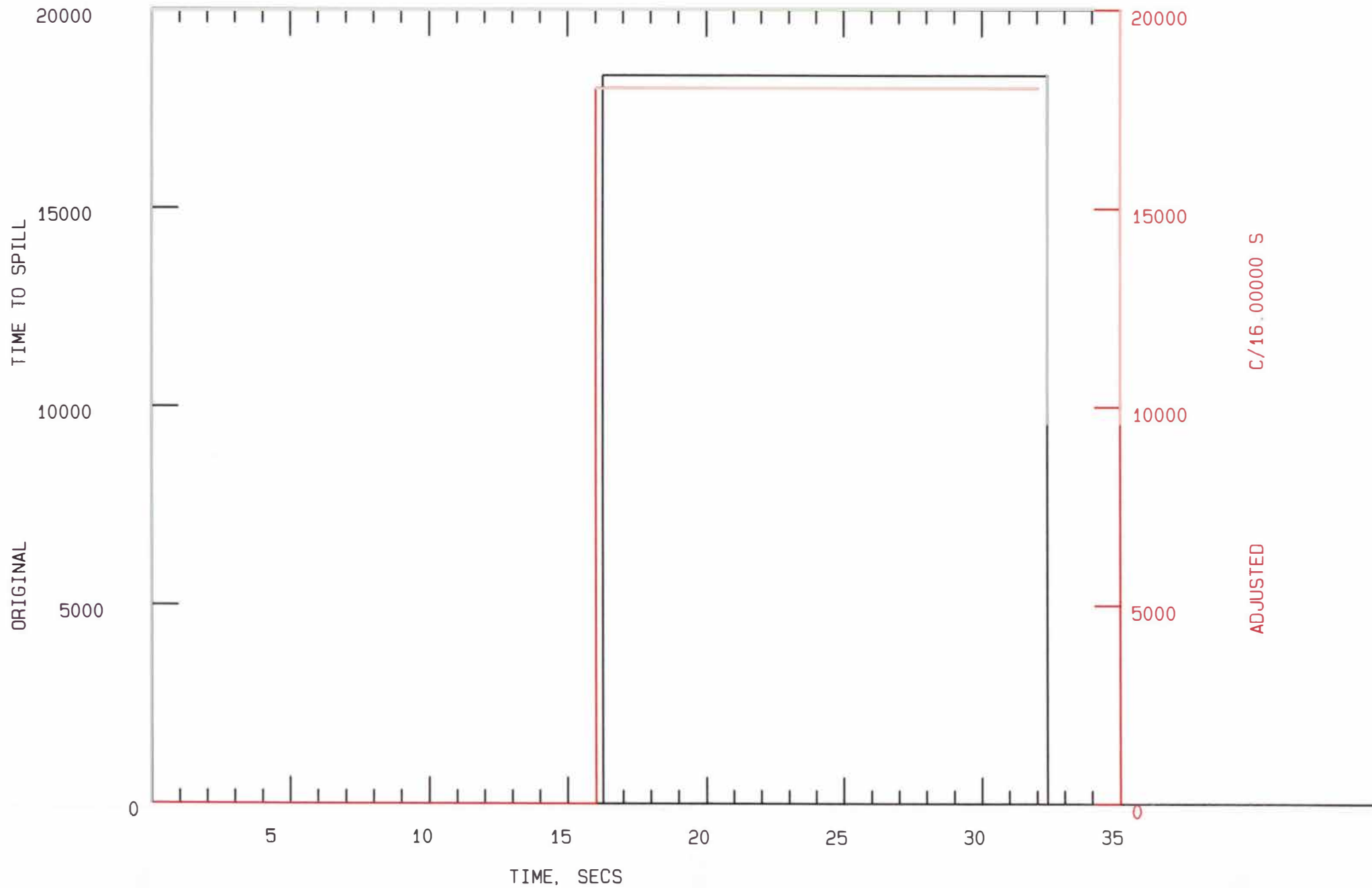
17/ 5/92

51848.810

3/ 4/97







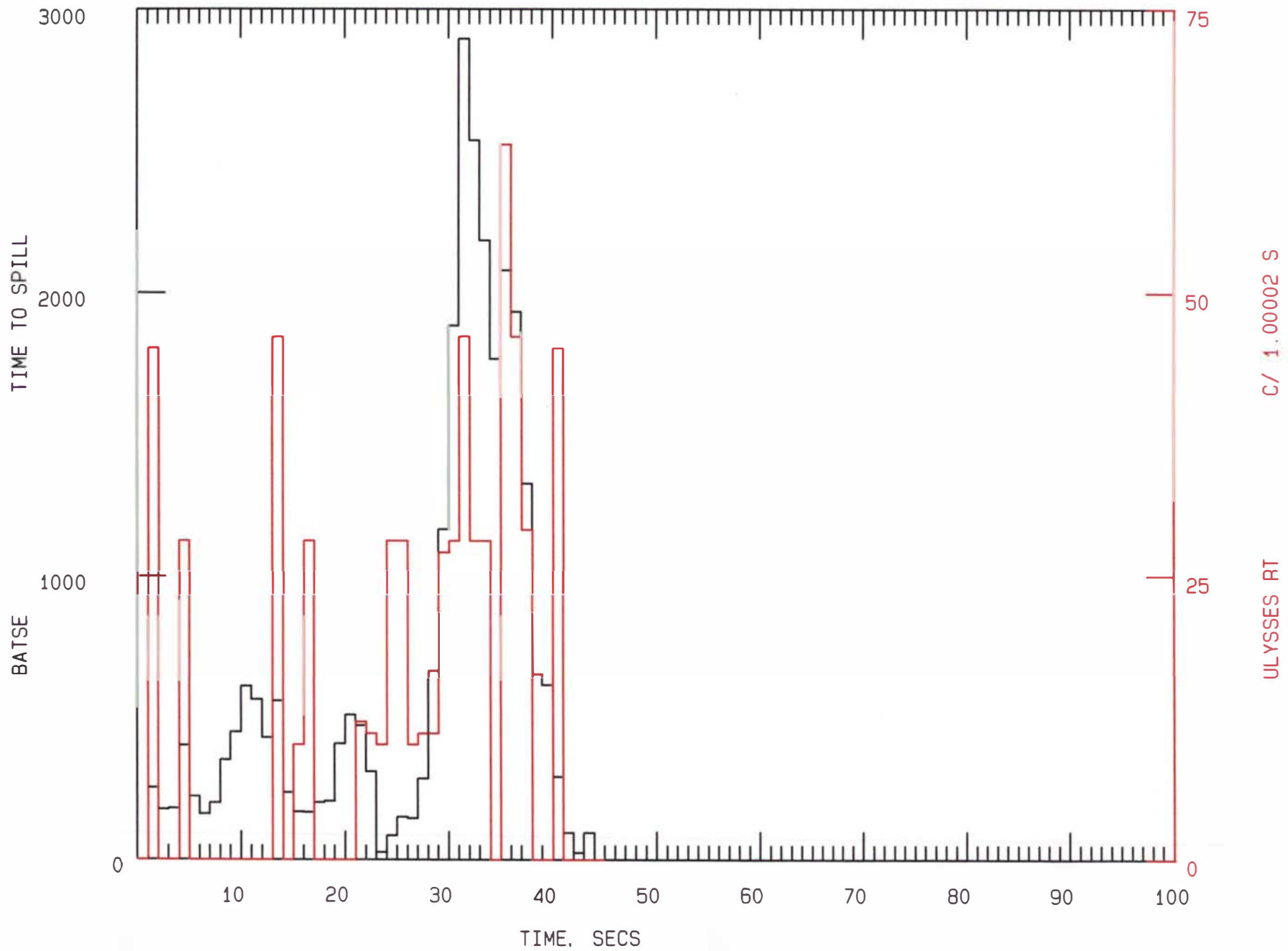
BATSE

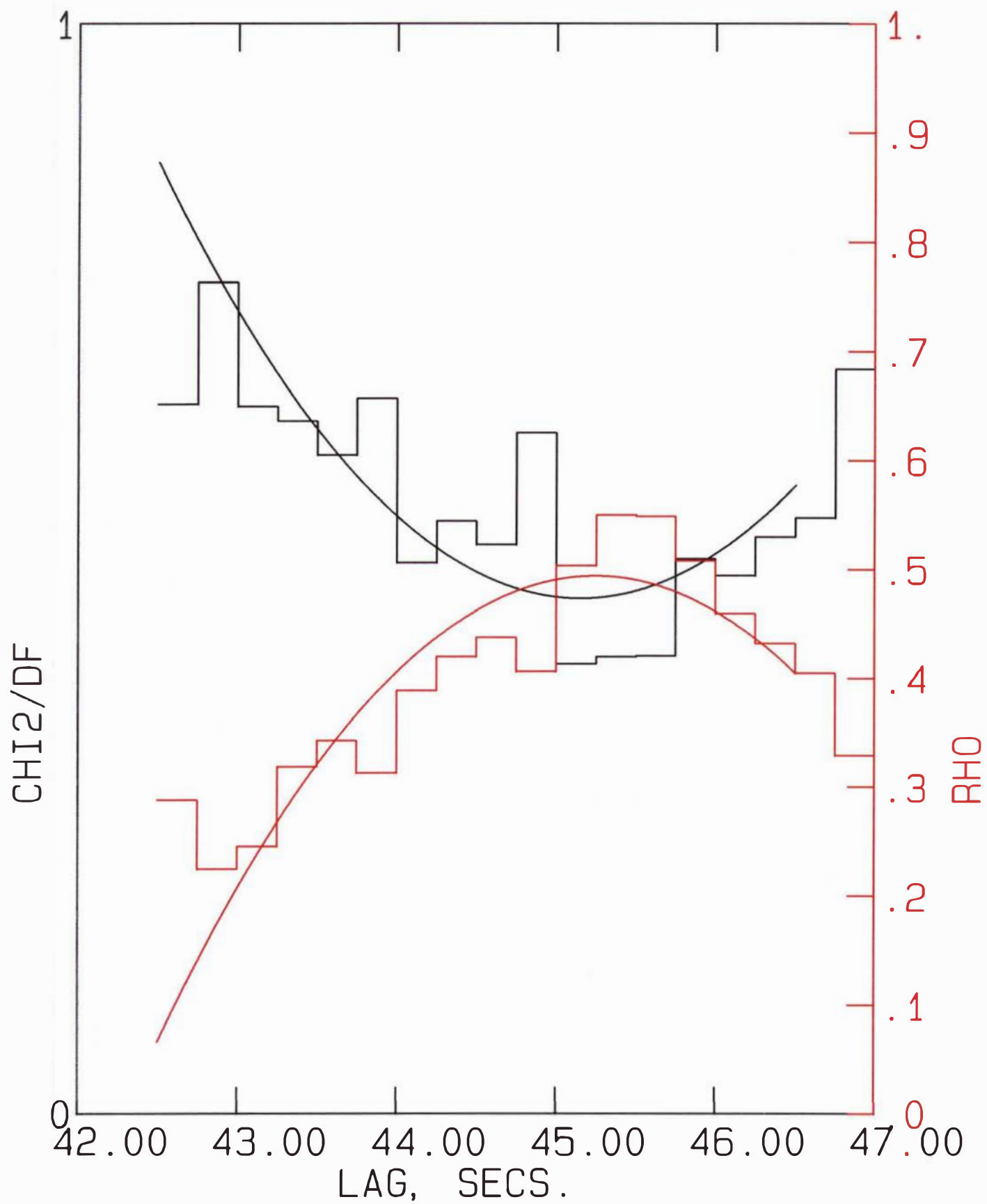
-ULYSSES RT CORRELATION

17/ 5/92

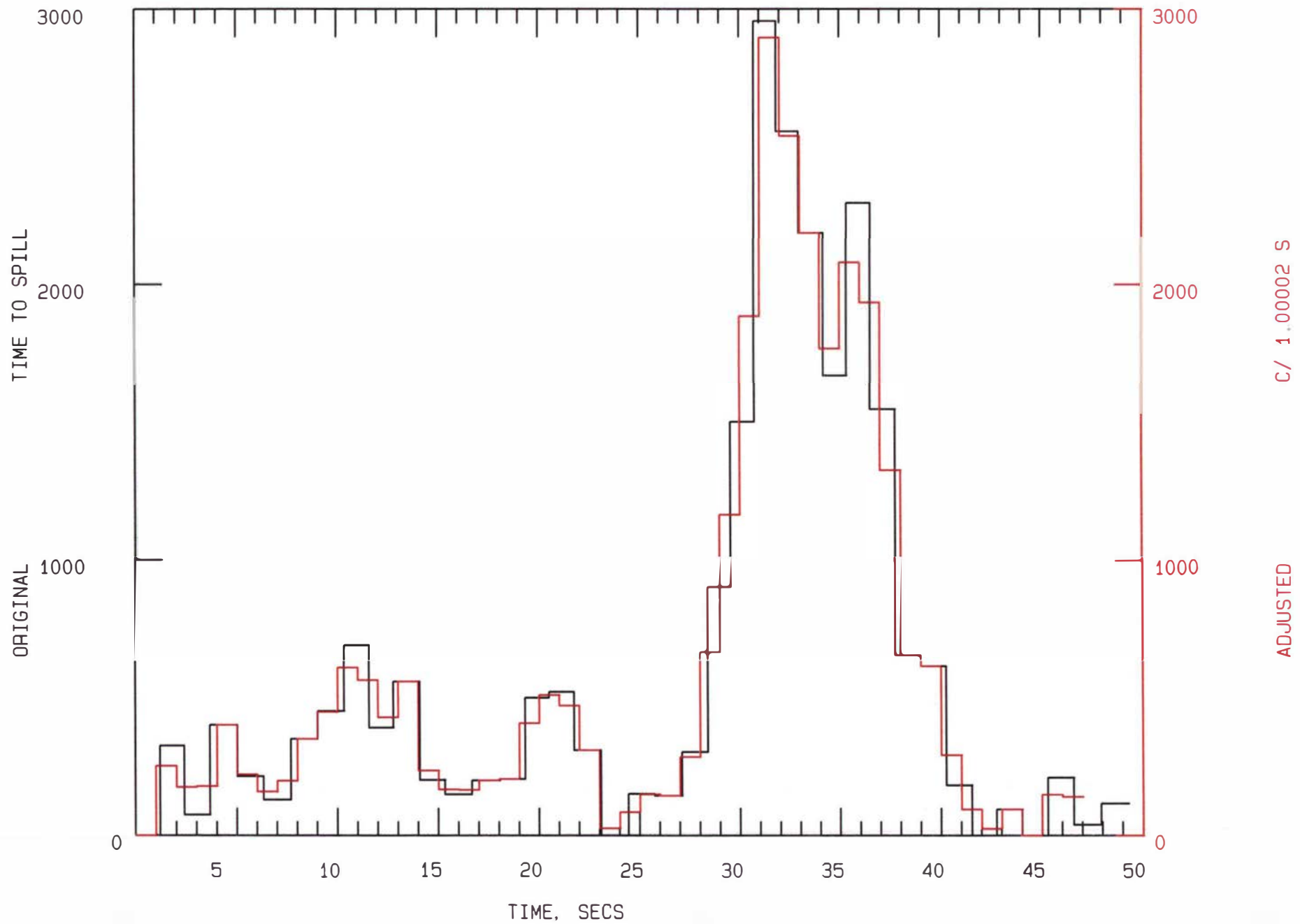
51848.810

3/ 4/97





3/ 4/97



ULYSSES RT

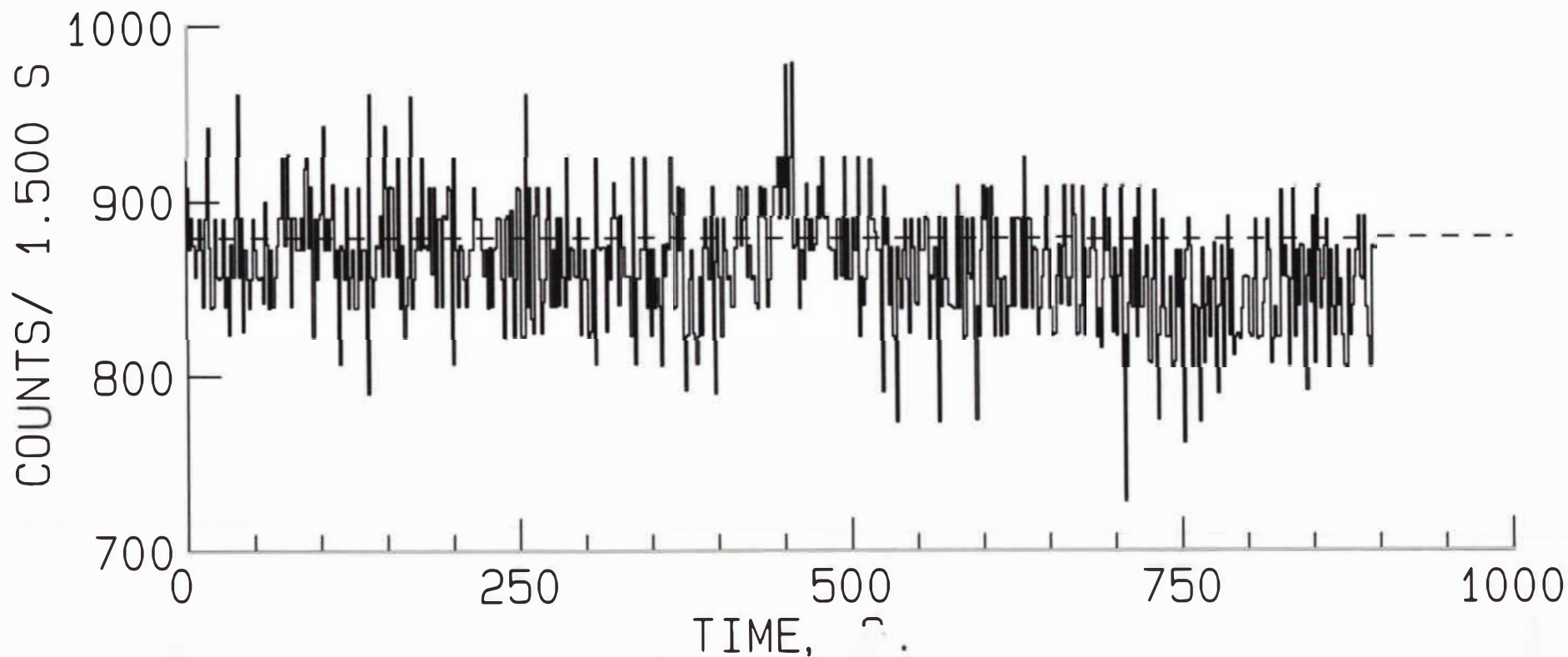
3 / 4 / 97

17 / 5 / 92 50256.237 s

0.250 S INTERVALS REGROUPED BY 6

23- 155 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



PVO-RT

17 / 5 / 92

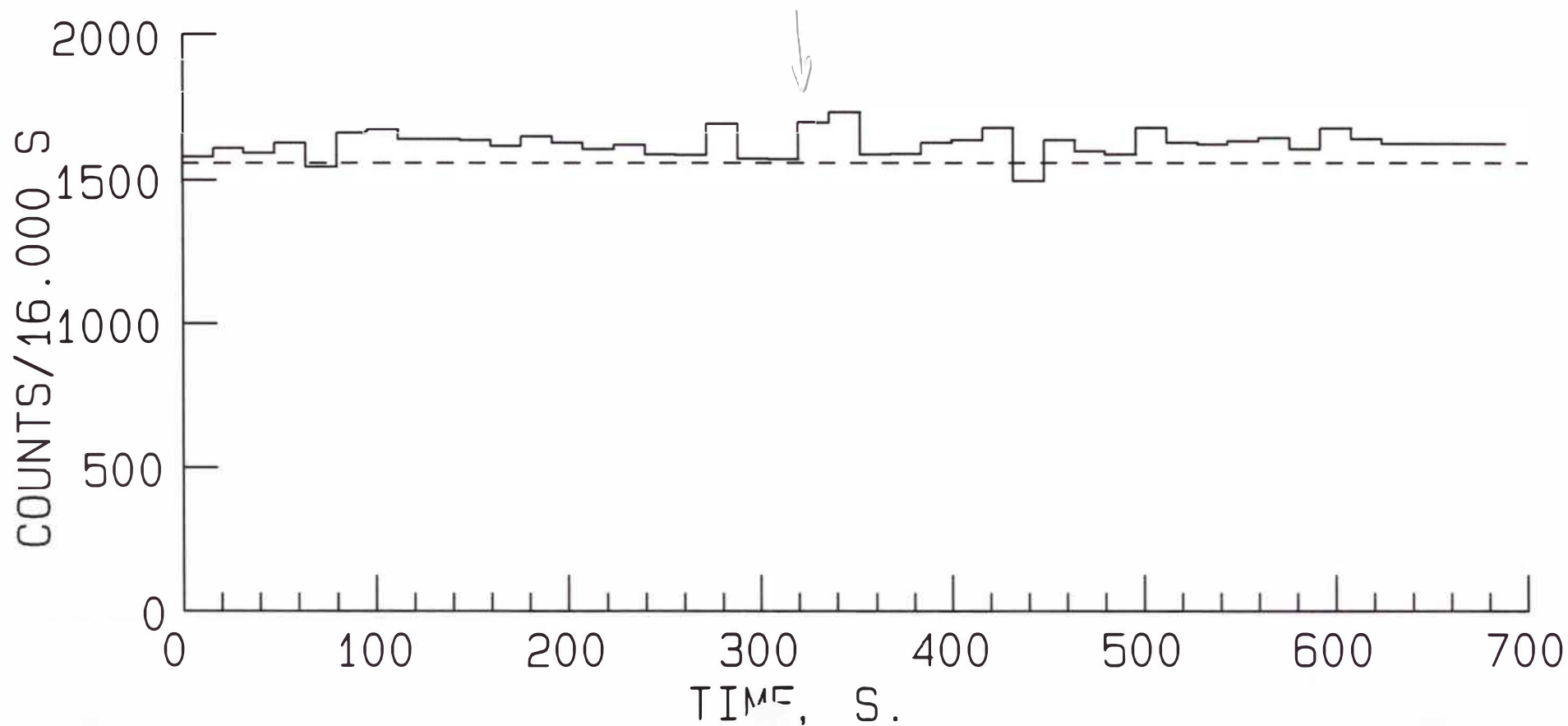
51717.729 s.

16.000 S. INTERVALS REGROUPED BY 1

100-2000 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



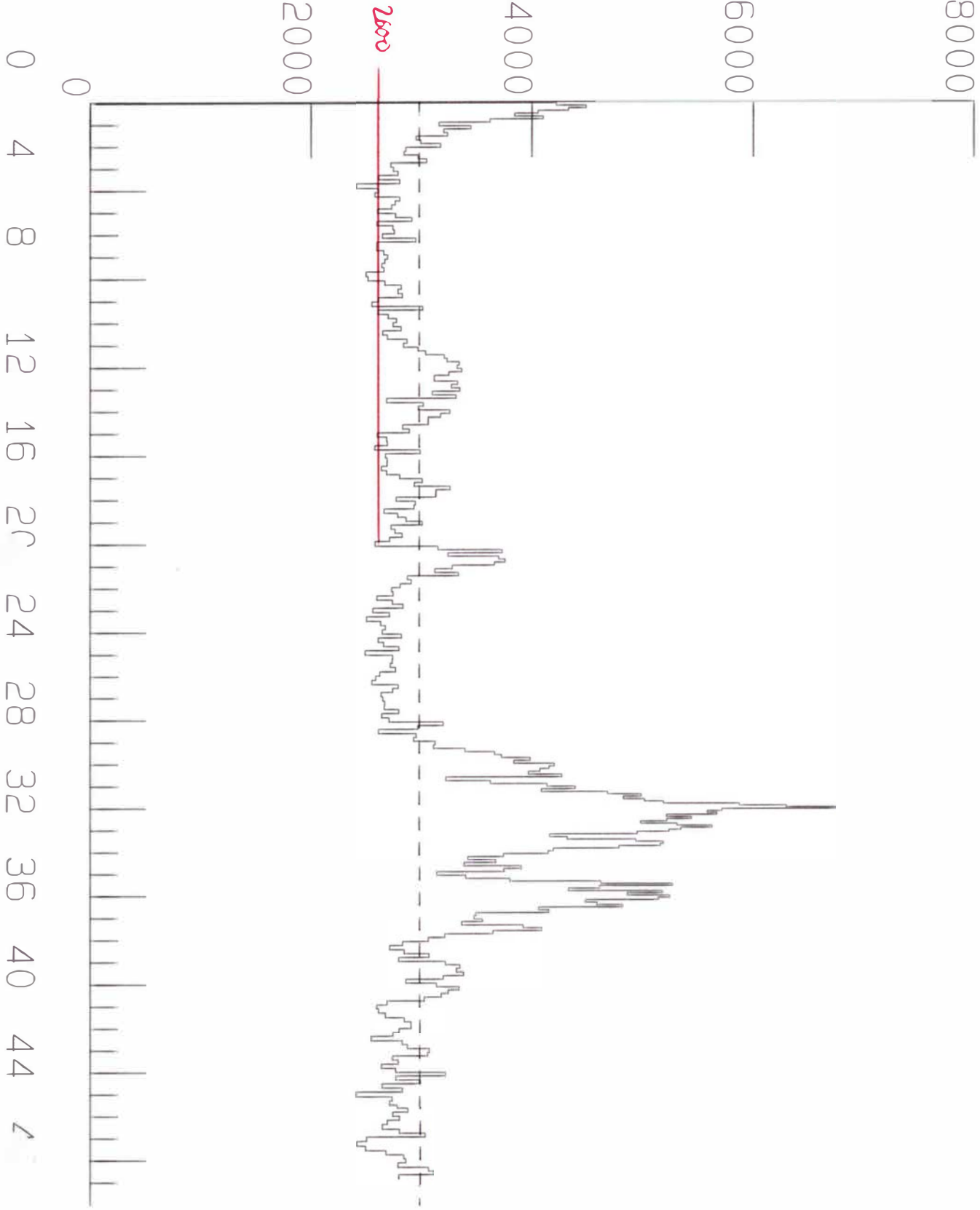
BATSE

17/05/92

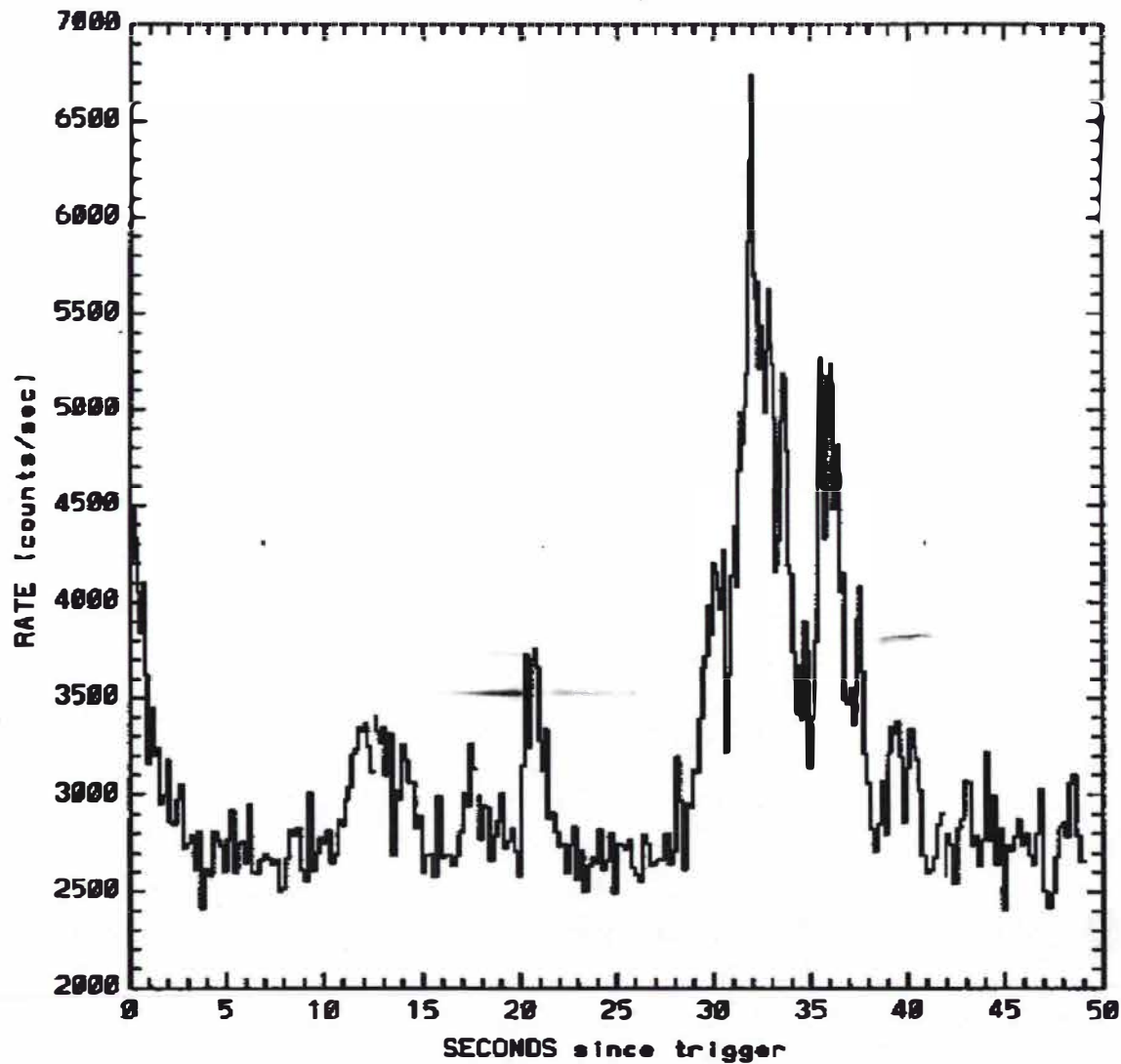
51848.810

25- 100 keV

COUNTS/S TTS



TTS Data for K. Hurley, No. 1610



26-MAY-1995 19:38.19

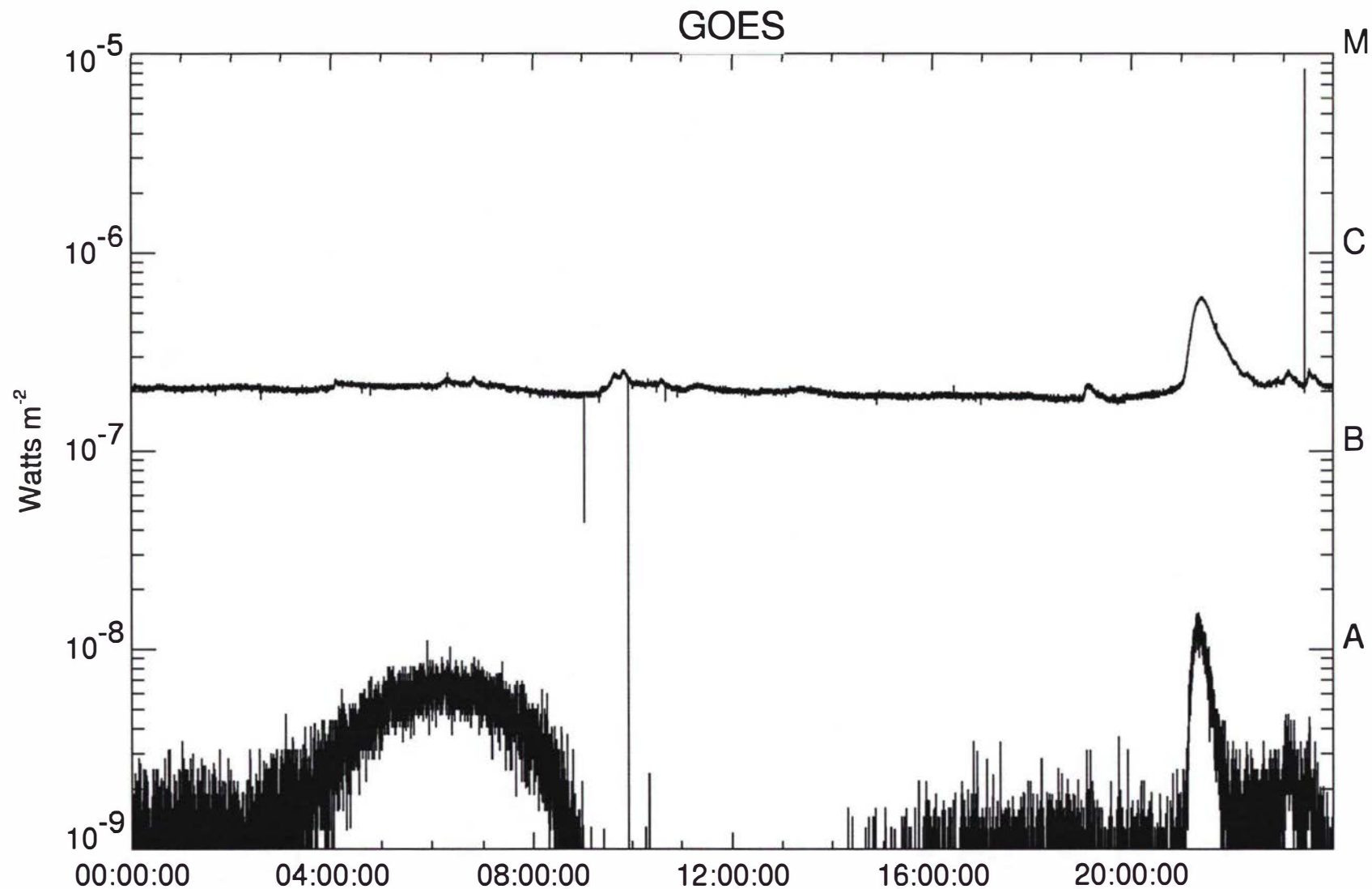
Created by SDPS BD
(Burst Display)
Version t2.25

Trigger # : 1610

Trigger Time:
8759 / 51848.810Burst Data Type:
TTSTime Corrected: Y
Maximum Time Error:
0.00670 second(s)Deadtime
Corrected: NBackground Data
Type: PREB + DISCLA

Bin Count: 8

Detectors [7..8],
----3-1-Discriminators:
1 2 . 2 1Quality Mask:
BDISP1



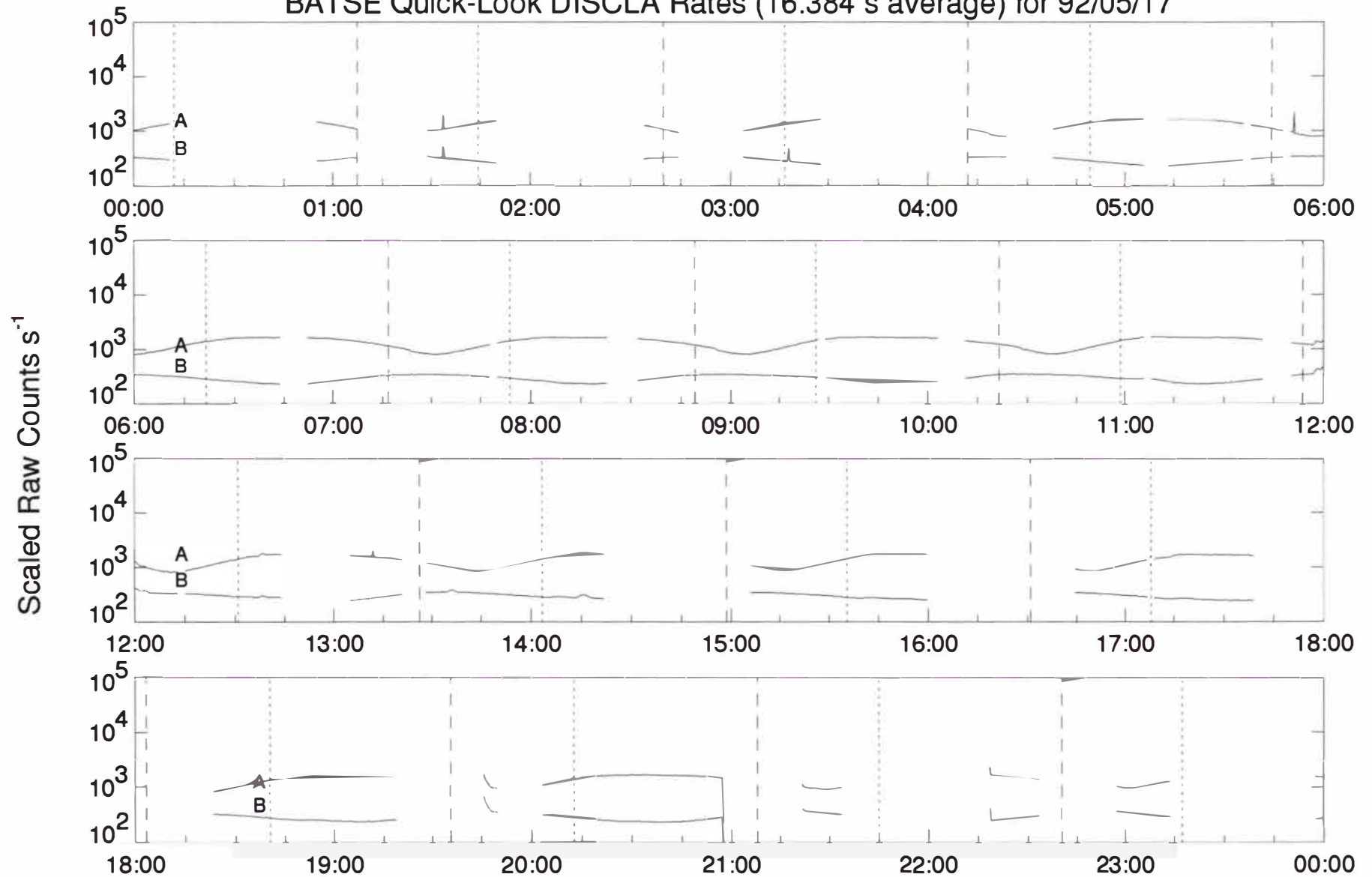
Data Start: 92/05/16, 2359:58

Plot created: 93/10/29, 0106

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/17

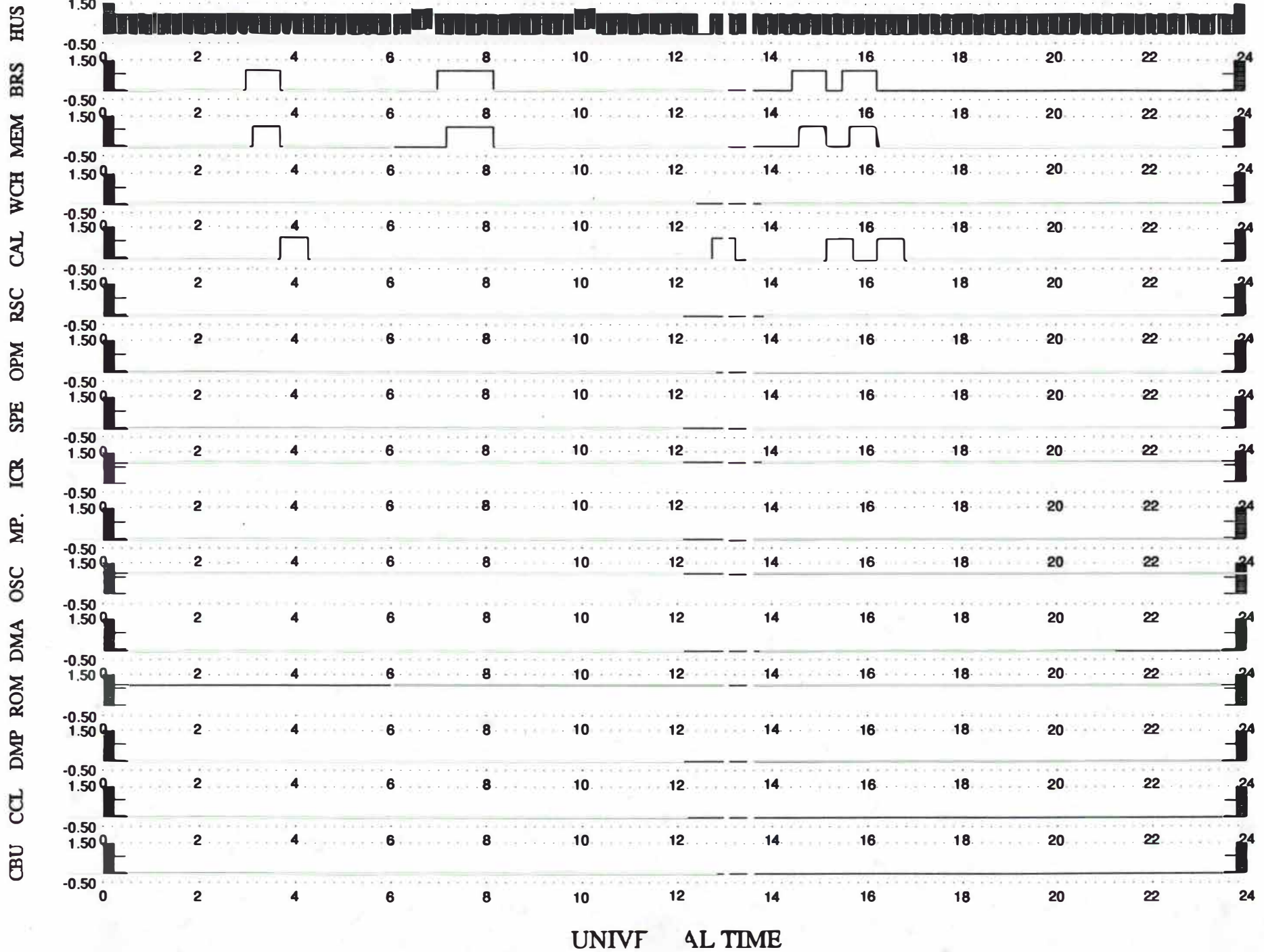


Current Time: 92/09/19, 1718 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

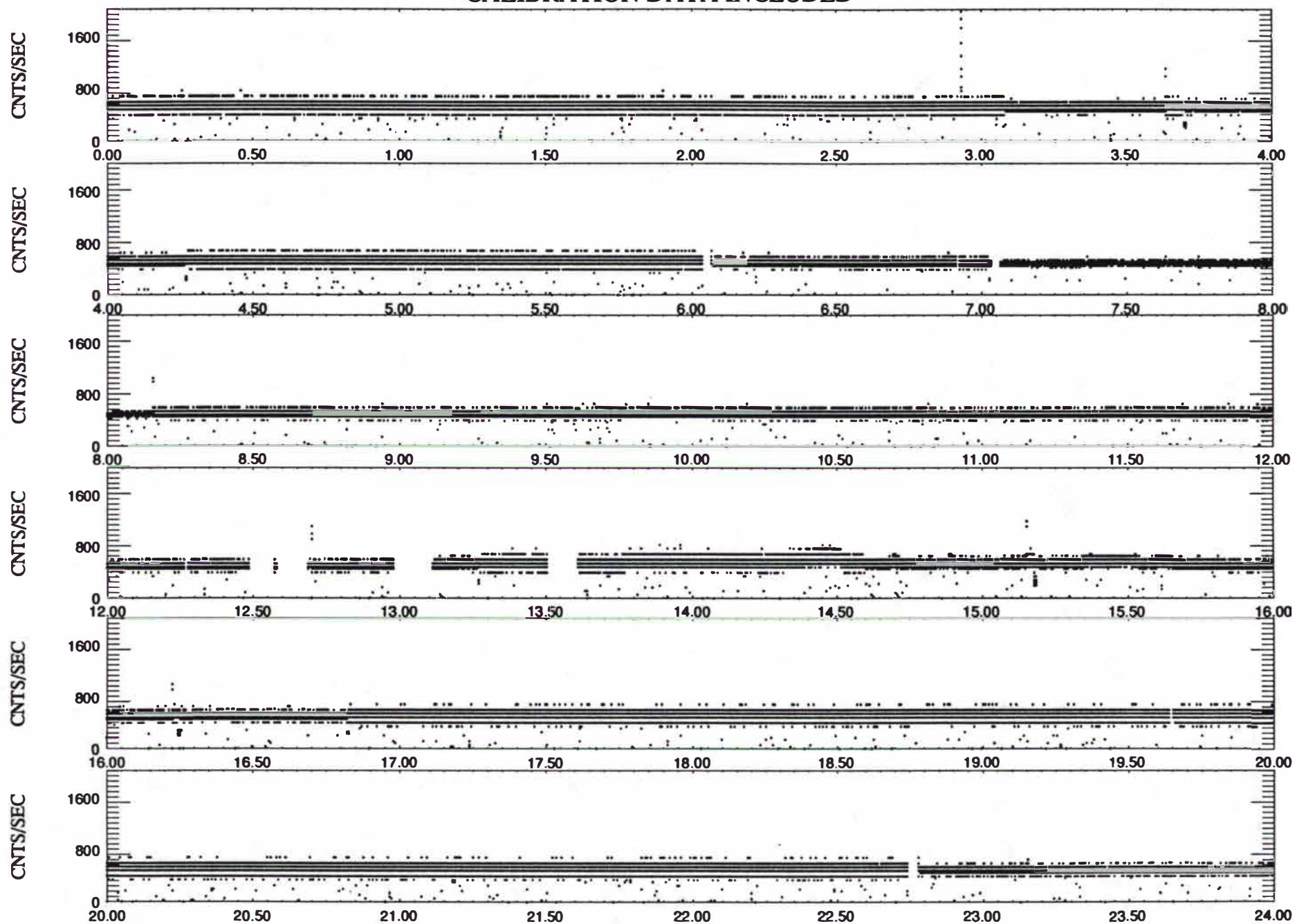
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 2 - 5

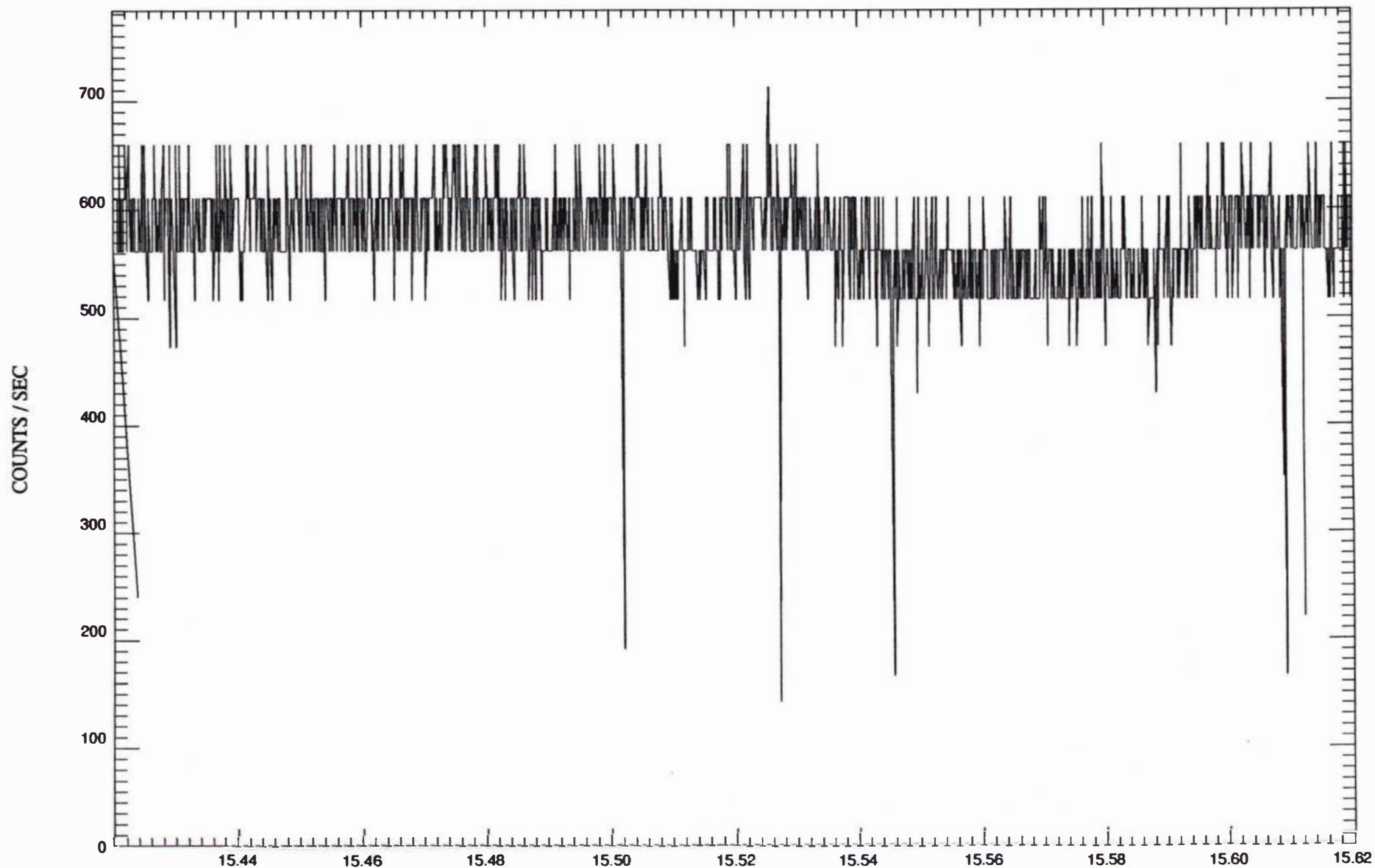


CALIBRATION DATA INCLUDED

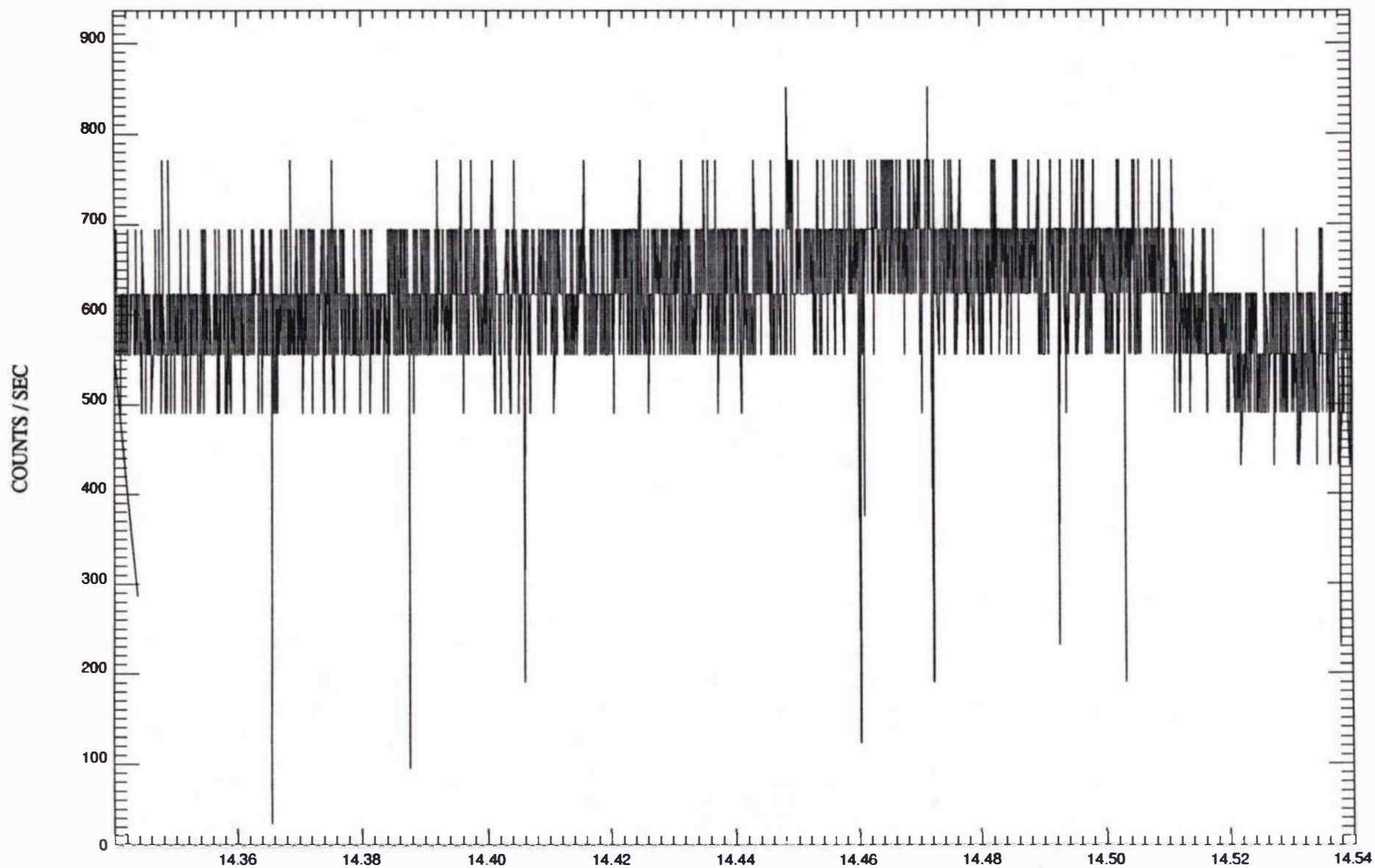


UNIVERSAL TIME

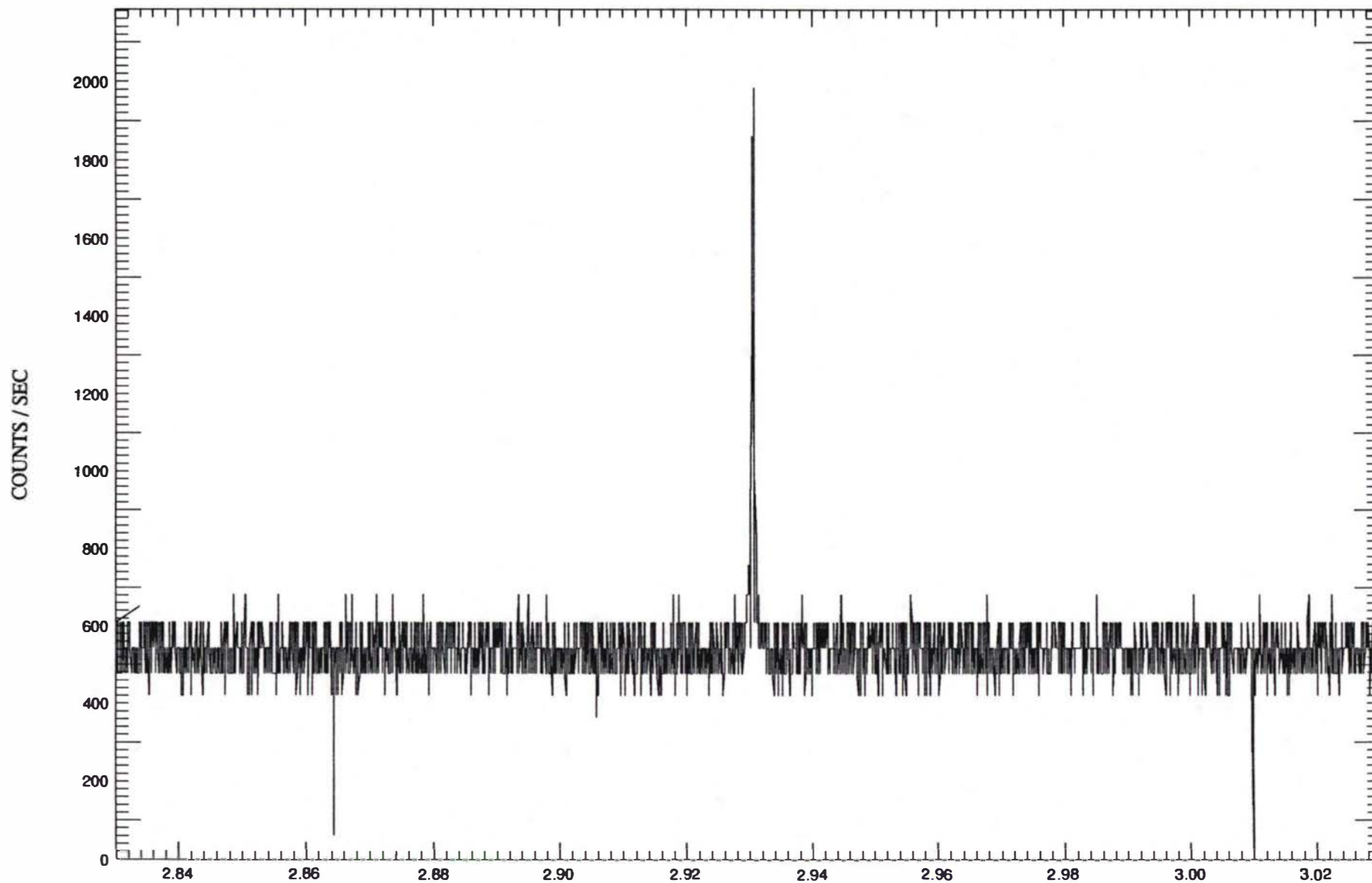
CALIBRATION DATA INCLUDED



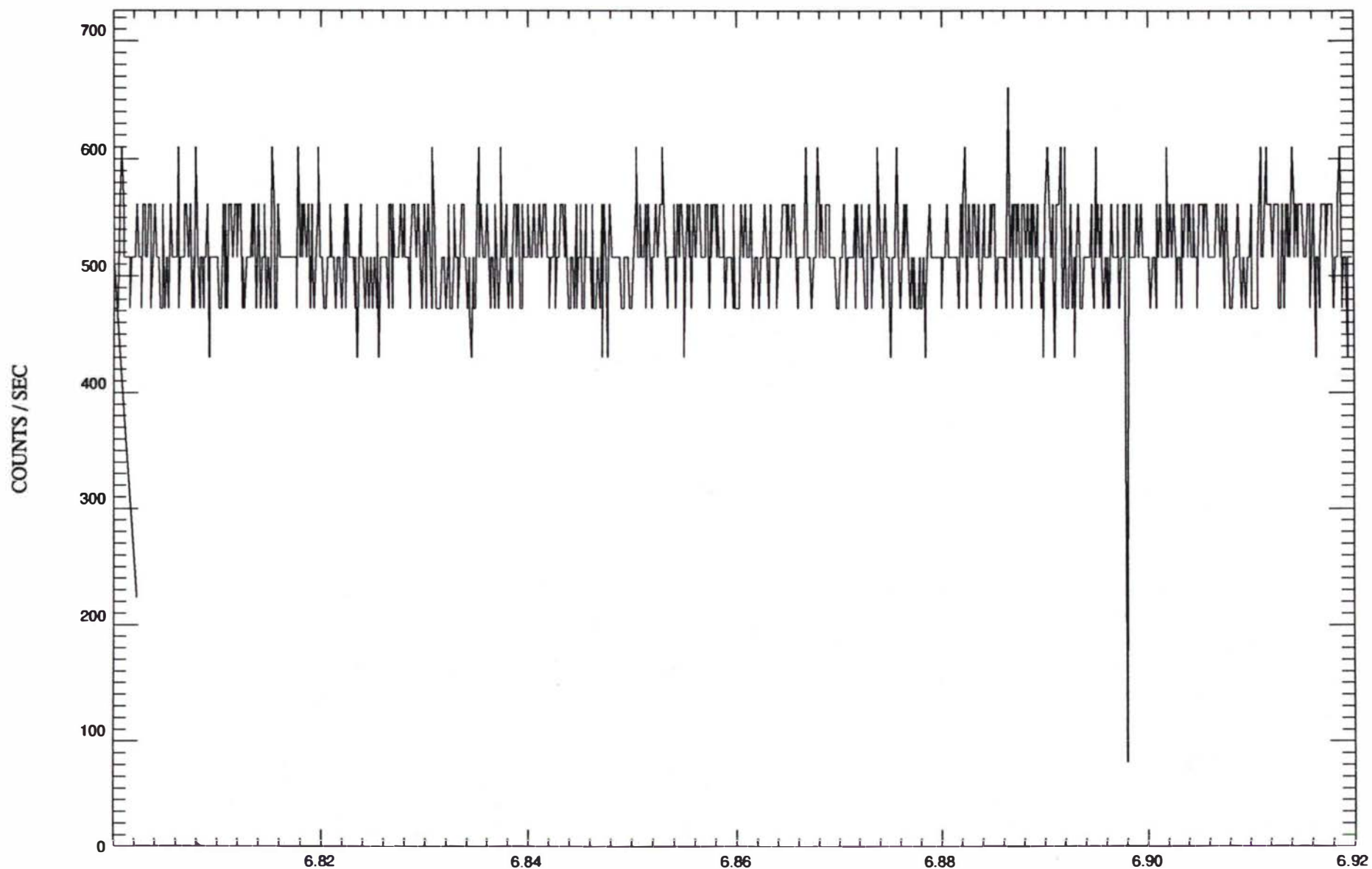
CALIBRATION DATA INCLUDED



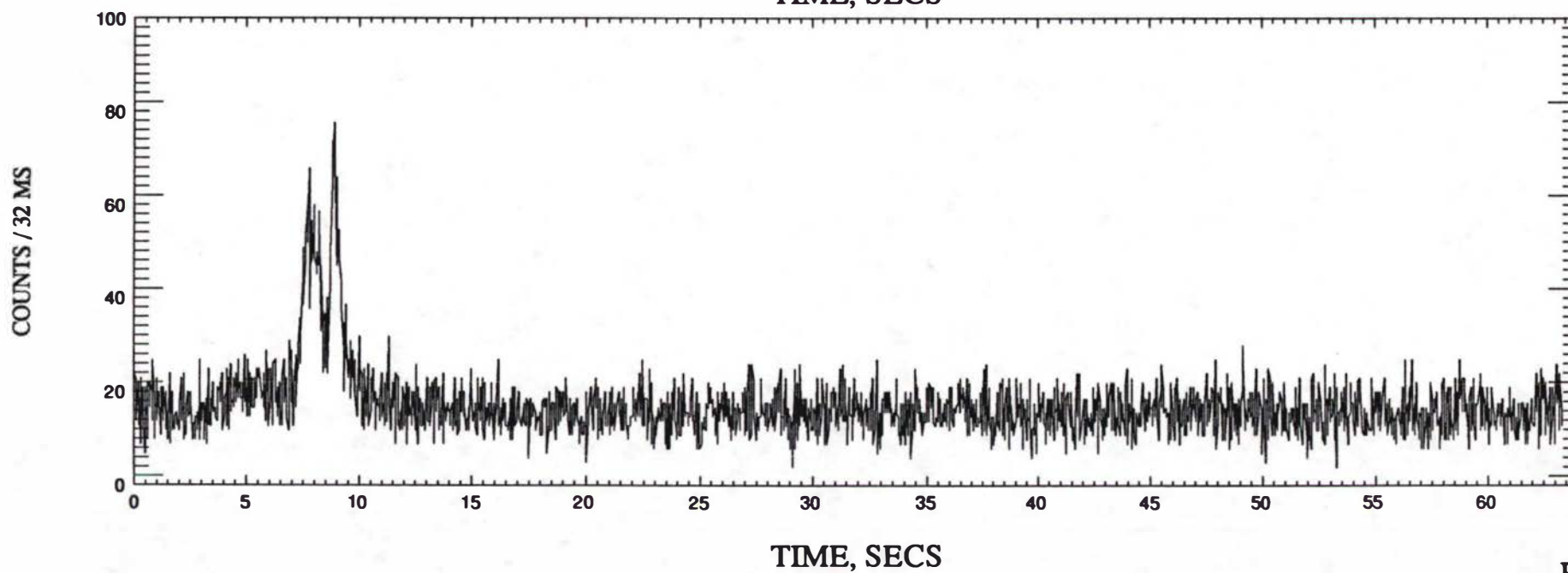
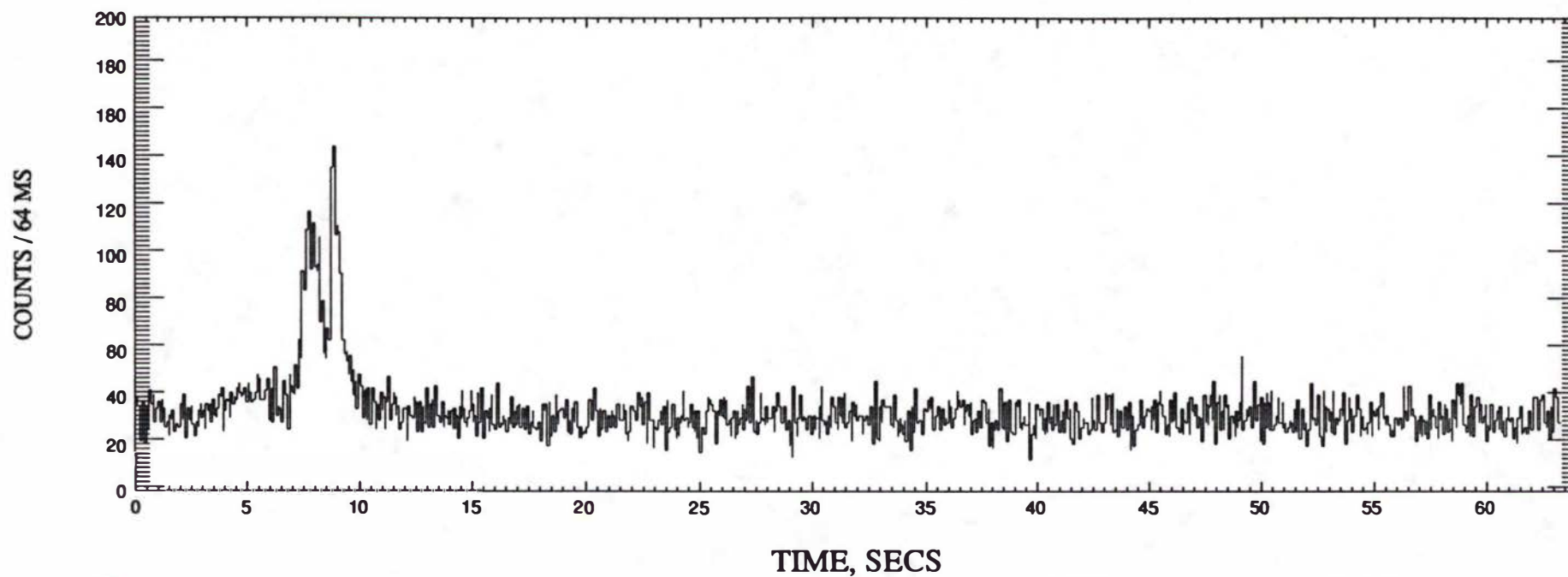
CALIBRATION DATA INCLUDED



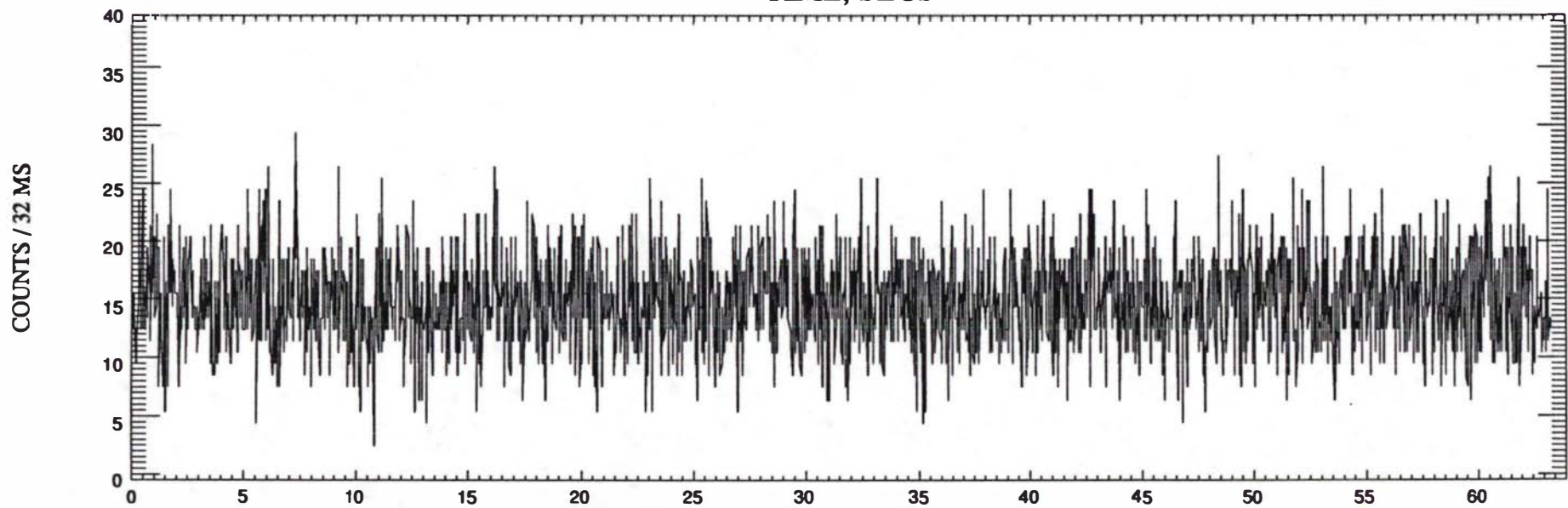
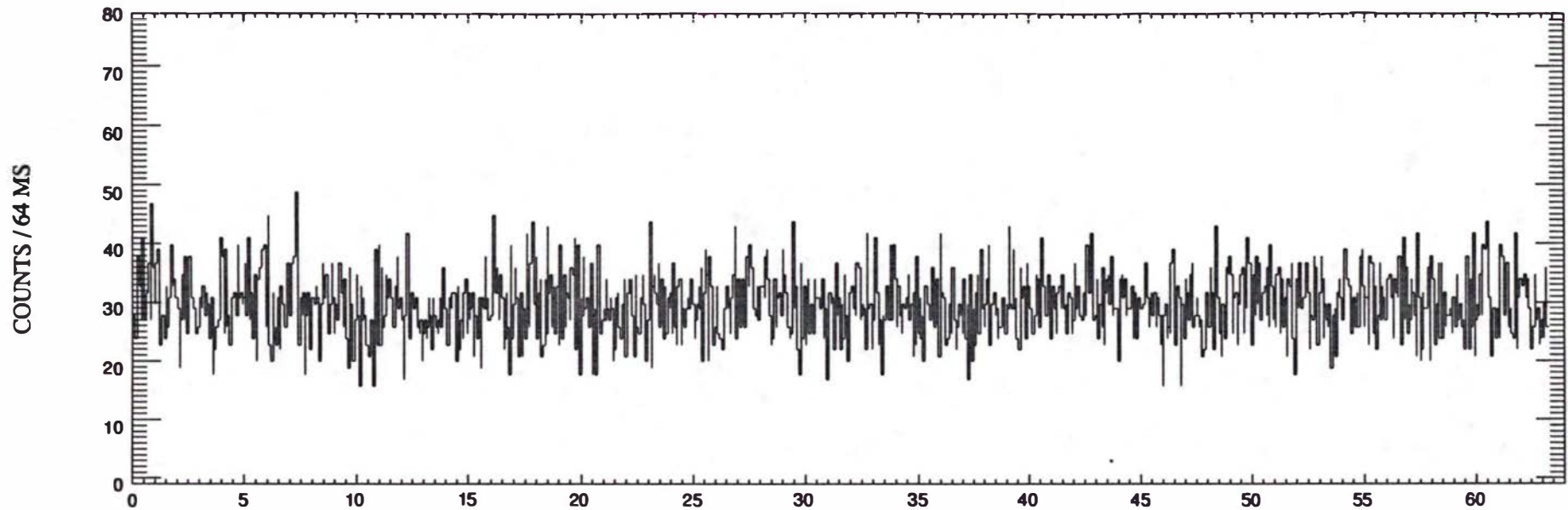
CALIBRATION DATA INCLUDED



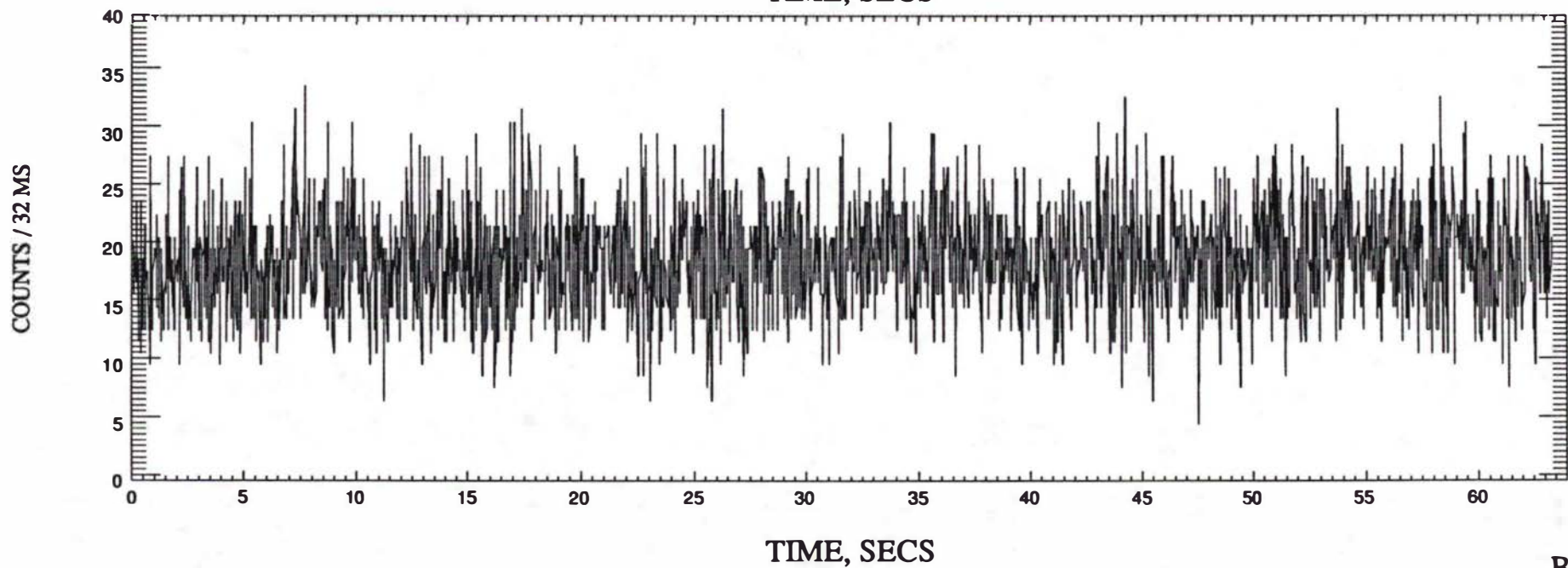
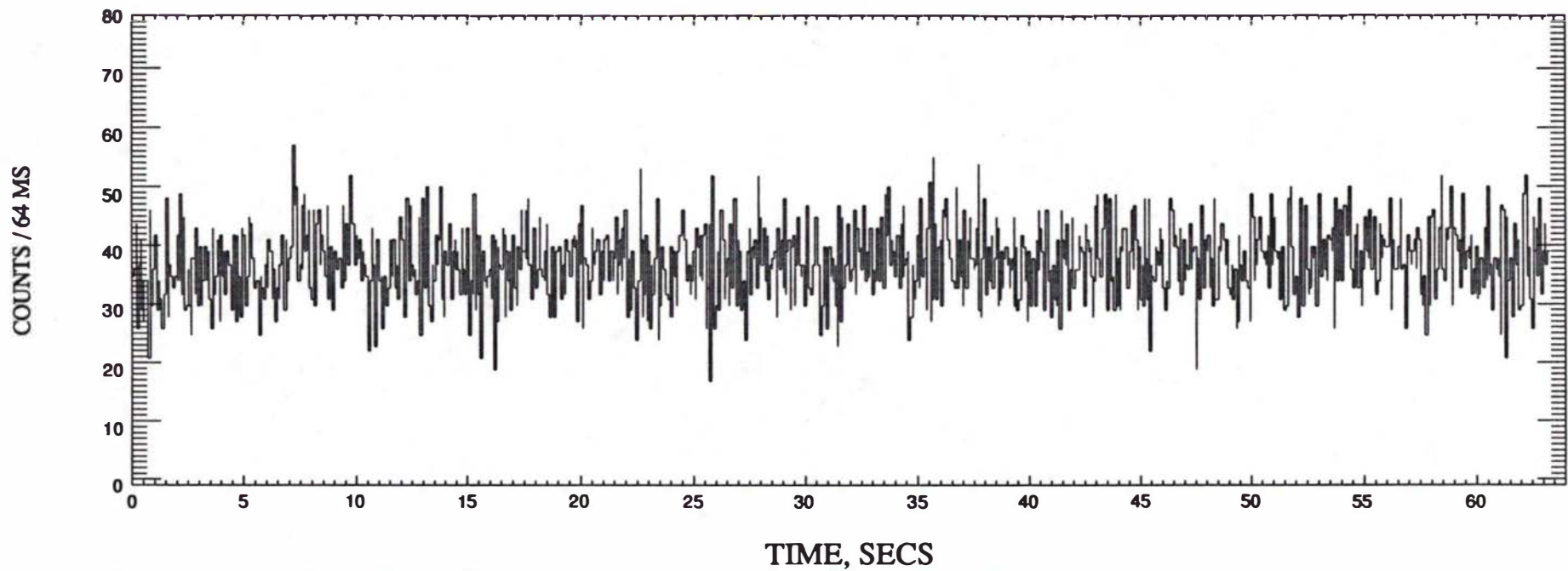
Burst Counter 2 at UT= 2.930508075290 h=10549.829 s



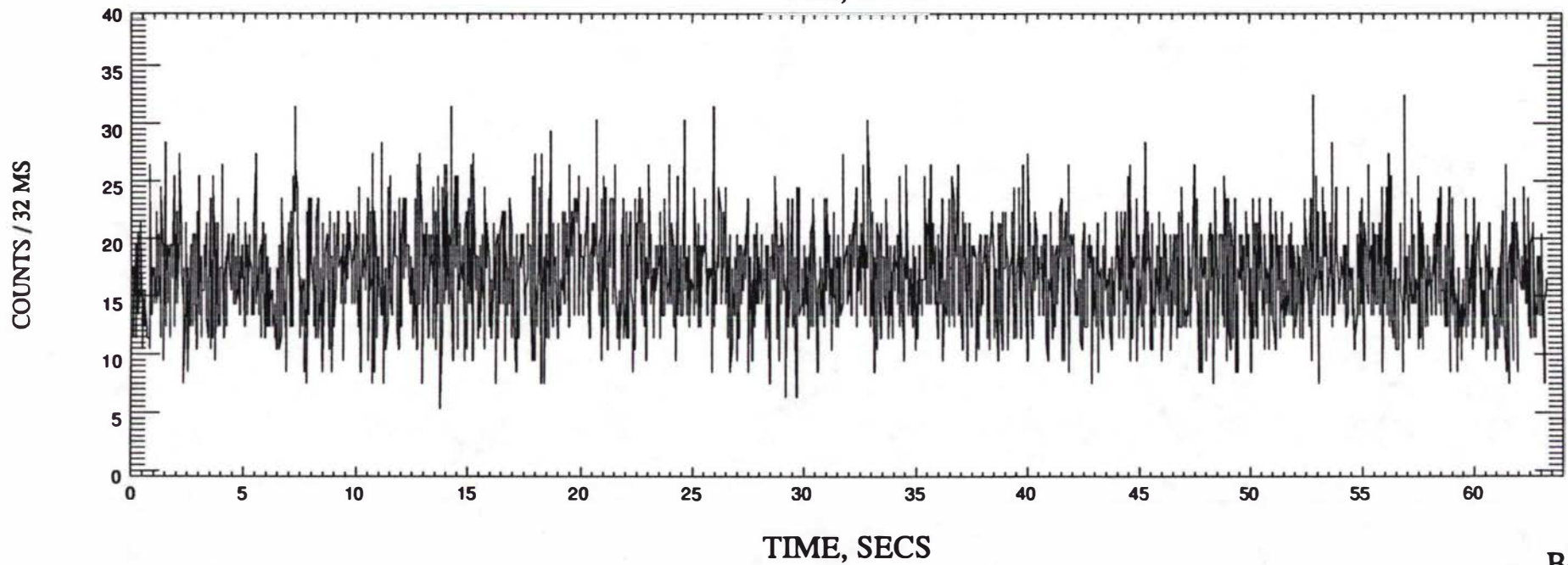
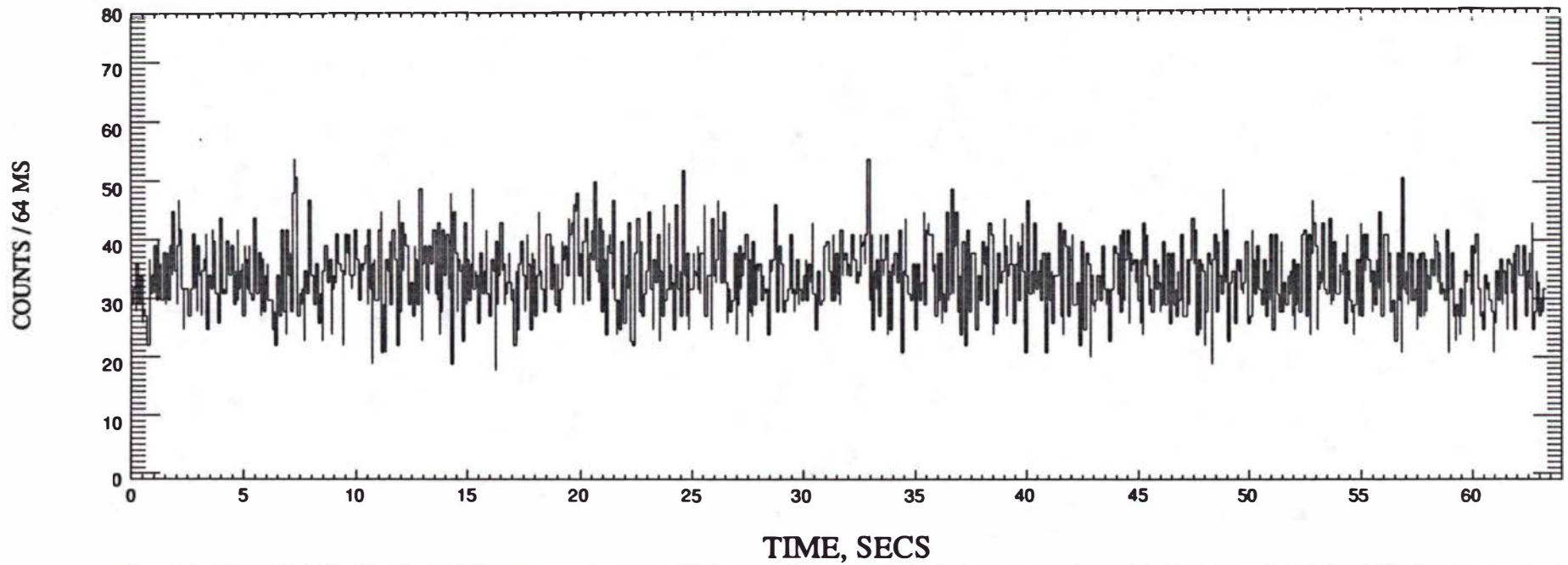
Burst Counter 3 at UT= 6.892207298279 h=24811.946 s



Burst Counter 4 at UT=14.448752301534 h=52015.508 s



Burst Counter 5 at UT=15.522172402276 h=55879.821 s



CATSEARCH PROGRAM

BATSE BURST # 1611

EVENT OF 1992 MAY 18 DAY OF YEAR=139

EVENT CROSSING TIME AT BATSE : 18961. S. OR 05:16:00.7

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 245.400 34.500

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

POSITION OF ULYSSES ON 18/ 5/ 92 IS:

RA= 148.222 DEC= 8.676 DIST= 5.264 AU

BATSE-ULYSSES DISTANCE = 787521328. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 89.06 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH= 42.97 SECS.

CROSSING TIME AT ULYSSES IS 19004. S. OR 05:16:43.7 +/- 506.66 SECONDS

No

From HORACK@ssl.msfc.nasa.gov Wed May 20 10:21:12 1992

Date: Wed, 20 May 1992 12:22:47 -0500 (CDT)

From: HORACK@ssl.msfc.nasa.gov

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1458

BATSE BURST TRIGGER

NO.: 01611

TIME: TJD=8760 SECONDS=18962

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=166 AZIMUTH=330. ERROR= DEGREES

COMMENTS:

WEAK BURST WITH TWO MAIN EMISSION REGIONS. FIRST REGION IS SHORTER (~7 SEC) AND FAIRLY HARD. INSPECTION OF HIGH TIME RESOLUTION DATA SHOWS SOME DETAILED STRUCTURE. SECOND REGION IS APPROXIMATELY 30 SECONDS AFTER TRIGGER, AND IS LESS INTENSE THAN THE FIRST. SECOND REGION IS APPROX. 10 SECONDS IN DURATION

7 / 6 / 94

ULYSSES RT

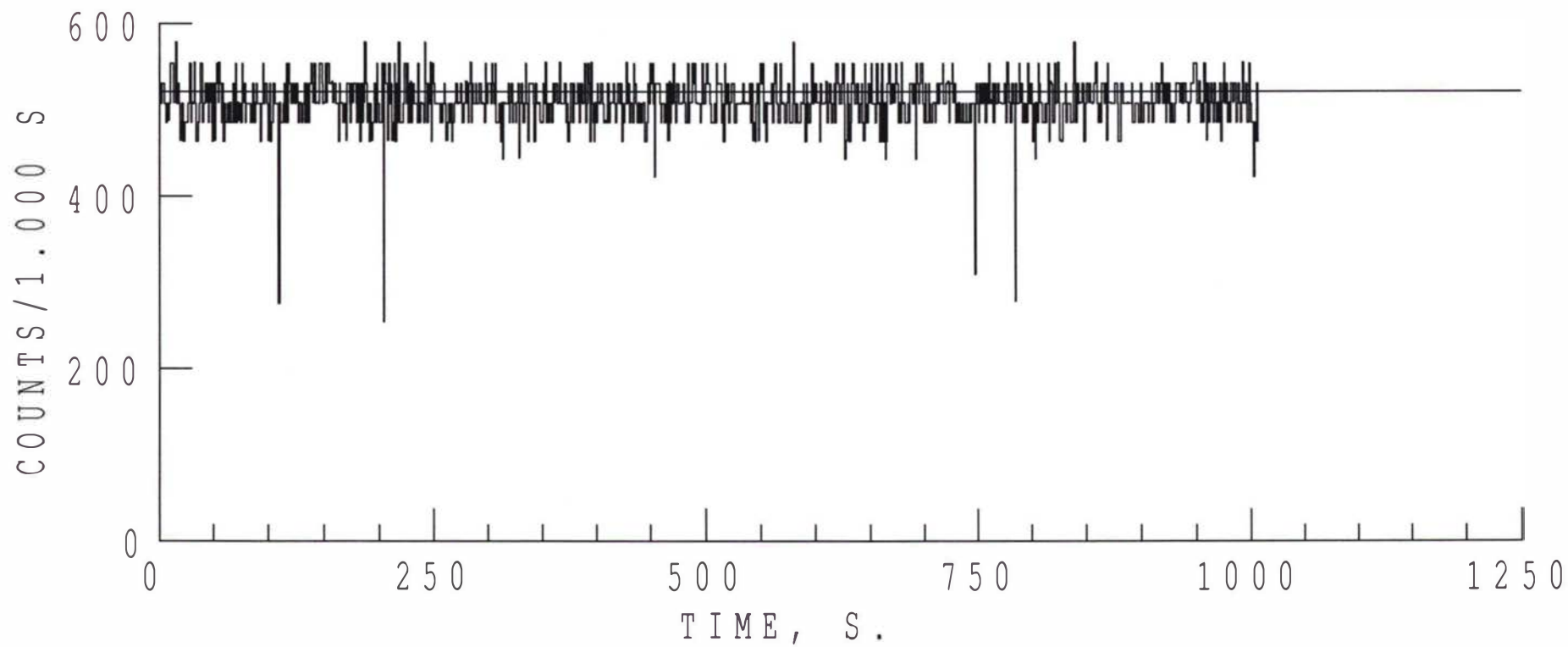
18 / 5 / 92 18504.377 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From khurley@space6.ssl.berkeley.edu Tue May 19 13:42:51 1992
Date: Tue, 19 May 92 12:39:03
From: khurley@space6.ssl.berkeley.edu
Content-Length: 496

Dear Chryssa,

I think I finally got all the data and ephemeris files sorted out, and I have everything, EXCEPT... For the following bursts, I never got the BATSE arrival directions: #764 (Sept. 7), #824 (~~Sept.~~ 26), and #1550 (Apr 19).

On another subject, Ulysses triggered on something May 18, around 0800 hours. A large part of the triggered data were lost due to a TM dropout, and I'm trying to access the real time data. But in the meantime, can you tell me if BATSE saw anything? —

Kevin

No - no burst; experiment was working

9 071 8432 GRB, PEAKS 8431.7,8437.4 @102DEG 8430-448
 11 071 8429 GRB, VERY WEAK PEAKS 8429.2,8433.2 @38 (10NR@162) 8433-441
 920325 085 62258 BATSE GRB, STRONG, SPIKY, RA6.5,DEC-8.5 (BNEWS17)
 085 61525 PVO TRIG 61525.5 @1.57A.U.
 8 085 62228 GRB, PEAKS 62228.2WEAK,256.2,282.2WEAK @107DEG 62230-284
 9 085 62256 GRB, PEAKS 62256.1,62278.1 @100 (10NA@60,11NRAD) 62258-282
 920331 091 65750 BATSE GRB, INTENSE,110SEC, RA256,DEC33 (BNEWS18)
 10 091 65848 SOFT PEAKS 65805.9VW,847.9 @108 (GLIT65866)8SR,9SR 65811-859
 11 091 65750 PEAKS 65749.7,755.7,GAP781-831,843.7,849.7 @90DEG 65747-855
 920403 094 86400 END OF DMSP-9 DATA
 920406 097 9855 BATSE GRB,V.INTENSE,RA293,D-60(BN19) PVOTRIG9756.4
 8 097 9855 NO DET @141DEG (10SR,11NO @137DEG)
 920408 8 099~37700 BURST? (10SRAD,11NA) (BATSE OFF)
 920423 8 114~78600 HIGH SOFT BURST? (10NR,11NA) (BATSE OFF)
 920501 122 76695 BATSE GRB,CMLPX,HARD.ULYS,PVO 123.84,-32.76(2000.0)
 122 76695 BATSE GRB: IAU5547,BN20 (123.35,-32.61(1950))
 8 122 76695 NO BURST@127(10NO@157,NO@147) (PVO TRIG 76840.7)
 920517 138 11875 BATSE GRB,EX.INT.,RA201.0,DEC-21.9(2000.0) +PVO,UL
 138 11875 BATSE GRB:IAU5547(200.9,-21.8(1992)) (PVO 12672.8)
 8 138 11882 GRB, PEAK 11882.0(1000C/S) @54.6 JUST BEFORE SRAD 11878-888
 10 138 11885 GRB, PEAK 1184.6 (700C/S) @78.8 (11SRAD) 11886-892
 920518 8 139~82100 BURST?, ALSO ~82400 (10NA,11NA) (BATSE OFF)
 920519 10 140~59400 GRB (8SR,11NA) (PVO TRIGGER 59211.9) PHOEBUS/GRAN

 TERRELL/DMSP.GAM 930505
 920525 146 12427 BATSE GRB,V.INT.,RA302.4,D-43.6(2000.0) +PVO,ULYS
 146 12427 BATSE GRB:IAU5547(302.2,-43.6(1992)) (PVO 12882.0)
 11 146 12427 GRB, STR PEAKS 12426.9,434.9,440.9UNRES(8SR,10NR) 12432-446
 920615 10 167 GLITCHES END ON DMSP10 UNTIL 6/22 (MODE CYCLES)
 11 171~64666 WEAK BURST @96DEG (8NO @75, 10NA @68) (IAU5567)
 920619 171 64666 BATSE SOFTREPEATER SGR,RA287,D11(1950?) (8,10,11NO)
 920622 174 25506 BATSE HARD GRB, L172,B51 (GRONEWS #73,TRIG 1663)
 8 174~25506 NO DMSP DETECTION (8SAA,10NR,11SAA)
 920623 175 3634 BATSE GRB (LAROS) (8NA,10YES?,11NA)
 920625 8 177 HIGH POLAR COUNTS (ALSO DMSP10,11)
 920628 10 180 76452 GRB PEAK 76452.3(250/S),464.3(350/S) (8ND,11NO)
 180 76453 GRB, PHOEBUS/GRANAT, GRO N/O
 920629 10 181 GLITCHES END (MODE CHANGE)
 920629 10 181 75897 SOFT BURST, PEAKS 75897.4,907.4 SUN@108(BATSE OFF) 75891-921
 11 181 75896 SOFT BURST, PEAKS 75896.0,906.0 ANGUSUN=124 (8NA) 75888-920
 920630 11 182 21781 GLITCH, RECURRING TO 920707 (MODE)
 920630 182 86400 LEAP SECOND INTERCALATED HERE
 920708 190 18957 BATSE SOFT REPEATER AGAIN (SEE 920619) (B1908+11)
 8 190~18957 NO DMSP BURST (8NO@70,10NO@52,11SAA)
 920711 193 58157 BATSE GRB+PVO+ULY RA281.9,D73.0(2000.0) (IAU5565)
 8 193 58157 GRB PKS 58157.9(300/S),63.9,221.9,225.9,235.9@56.1 58160-238
 10 193 58157 GRB PKS157.8(550/S),65.8,73.8,81.8,221.8,25.8 @101 58159-249
 11 193 58157 NOT USEFUL (N.RAD)
 920714 196 47071 GRANAT GRB(219.8,-29.9(1950)) IAU5579(8,11NA,10SAA)
 920716 10 198 60933 SOFT BURST/PKS 60933.4(200/S),949.4(200),SUN@58.1
 11 198 60933 SOFT(1DET)PKS60933.4(150/S),949.4(200),SUN85.9,8NA
 198 60934 GRB,SIGMA/GRANAT
 920720 202 11524 GRB BAT,ULY (PVO 11155)(202.94,36.74,J) (8,10,11NA)
 920723 205 72188 GRANAT GRB(285.7,26.8(1950)) IAU5579(8ND,10NA,11NR)
 205 72694 PVO TRIGGER, 72694.1
 920805 218 ? BATSE HARD X-RAY TRANSIENT,RA66,D32,VAR., IAU5580

May 5 14:26 1993 standard input Page 1

From @UCBSP.SSL.BERKELEY.EDU:046369@ESSDP2.SPAN.NASA.GOV Wed May 5 13:41:17 1993
Date: Tue 5 May 92 13:42:27-PST
From: \$C <046369@ESSDP2.SPAN.NASA.GOV>
To: KHURLEY@sunspot.ssl.berkeley.edu
Subject: [Resent-MM Mail] DMSP GRB DATA
Content-Length: 8912

Received: from ESSDP2 by UCBSP.SSL.BERKELEY.EDU via MAIL-11 with
DECnet; Tue, 5 May 92 13:40:33-PST
Date: Tue 5 May 92 13:40:33-PST
From: 046369@ESSDP2.SPAN.NASA.GOV
Subject: DMSP GRB DATA
To: "UCBSP::KHURLEY"@ESSDP2.SPAN.NASA.GOV

FROM: ESSDP2::TERRELL 93/05/05
TO: UCBSP::KHURLEY
CC: BATSE::KOUVELIOTOU
SUBJ: DMSP GRB DATA

HERE IS A PARTIAL LIST OF 1992 DMSP GAMMA-RAY-BURST DATA, AS OF TODAY.
OTHER DATA APPEARING TO CONFIRM UNCONFIRMED EVENTS IN YOUR LISTING IS
BEING EXTRACTED, AND I WILL CHECK IT OUT WHEN I RETURN FROM HOUSTON.
THANKS FOR YOUR CONTINUING HELP--JIM TERRELL

DMSP GAMMA PEAKS 90281-92305 CHECKED, 2-SEC CTS, TERRELL/DMSP.GAM 930505
ORBITAL PERIODS FOR 8, 9, 10: 6110, 6080, 6040SEC. ALT=800KM. INCLIN=99DEG
GRB PEAK TIMES CORRECTED (8, 9, 10=11) FOR AVG DELAYS: 1.82, 1.98, 5.50SEC
CHANS: (8)50, 100, 200, 420 (9)50, 100 (10, 11)20, 100, 200, 430, 550 (-1000KEV)

DATE	FL	DAY	TIME	NOTES----- (ND=NO DATA, NA=NOT APPARENT) ----	NOTES	DATATIMES
920101		001	0	JD8622.5		
920110		010	33480	BATSE GRB (16XMIN) (8ND, 9NA, 10SAA, 11NA) ✓		
920122		022		NO DMSP TAPES, DAYS 22-25 (92022-25) ✓		
920126	9	026	55714	BURST? WIDE SOFT PEAK 55714.0 (4KC/S) (8SRAD, 11SAA) ✓	55646-768	
	10	026	55704	STR SOFT BURST, COMPLEX PEAKS 55704.2, 714.2 (3KC/S) ✓	55624-748	
		026	55667	PVO TRIGGER (BURST?) AT 55666.9		
920210		041	35625	BATSE GRB, MOD STRONG RA154, DEC49 8NO, 10SAA, 11SAA ✓		
	9	041	35633	VERY WEAK SOFT BURST, PEAKS 35632.6, 636.6	35635-639	
920211	8	042	15773	STRONG HARD BURST (+CHG), PEAKS 15772.7-4.7 (2500C/S) ✓	15765-783	
	9	042	15775	STRONG HARD BURST, PEAK 15774.7 (7KC/S) (BATSE OFF)	15761-791	
	10	042	15776	STRONG HARD BURST, PEAK 15775.6 (1700C/S) +SOFT BASE	15775-785	
	11	042	15776	STRONG HARD BURST, PEAK 15775.8 (12KC/S), ASYMM RESP	15765-799	
		042	15631	PVO TRIGGER 15630.7 (0.7 HARDNESS RATIO)		
920214	9	045	83249	SHARP SOFT BURST, PEAK 83249.4 (8ND=NO DATA)	83243-273	
	10	045	83250	SHARP SOFT BURST, PEAK 83250.1 (1000C/S), 254.1	83244-280	
	11	045	83250	SHARP SOFT BURST PEAKS 83249.8 (8KC/S), 265.8	83237-295	
		045	83066	BATSE SOLAR FLARE#2721, PEAK 83252 (70K/S) &~83267		
920216	8	047	45219	STRONG SOFT BURST, PEAKS 45219.3, 223.3 (1KC/S) (10NO)	45177-239	
	9	047	45220	STRONG SOFT BURST, PEAK 45219.7 (2KC/S) ✓	45214-236	
	11	047	45220	STRONG SOFT BURST, PEAKS 45184.2, 196.2, 220.2 (8KC/S)	45180-252	
		047	45052	PVO TRIGGER (BURST?) 45052.5		
920311		071	8426	BATSE GRB, VERY INTENSE, 2PEAKS, RA129, D-40 (BNEWS16)		
	8	071	8431	GRB, PEAKS 8431.4, 8437.4 @63DEG (PVO TRIG 8887.3) ✓	8429-443	

2 6 / 9 / 9 5

ULYSSES RT

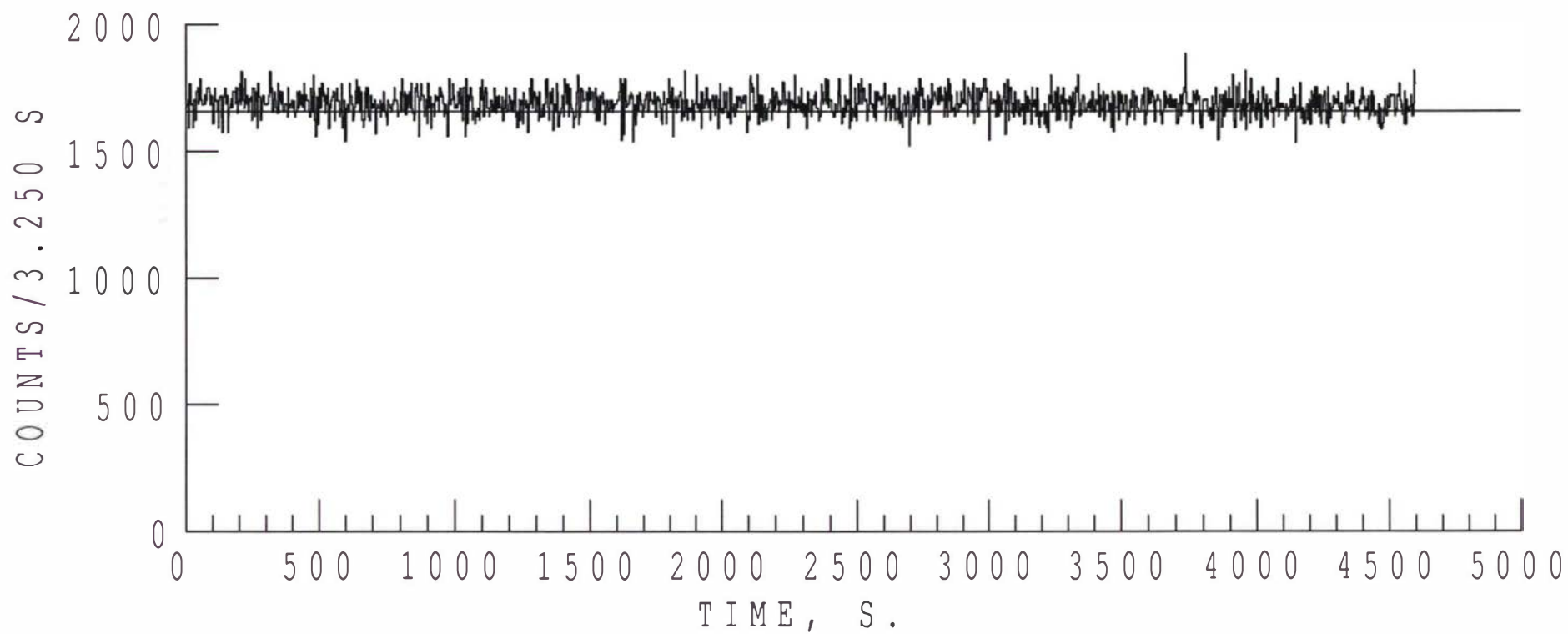
18 / 5 / 92 79452.109 s

0.250 S INTERVALS REGROUPED BY 13

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



2 6 / 9 / 9 5

ULYSSES RT

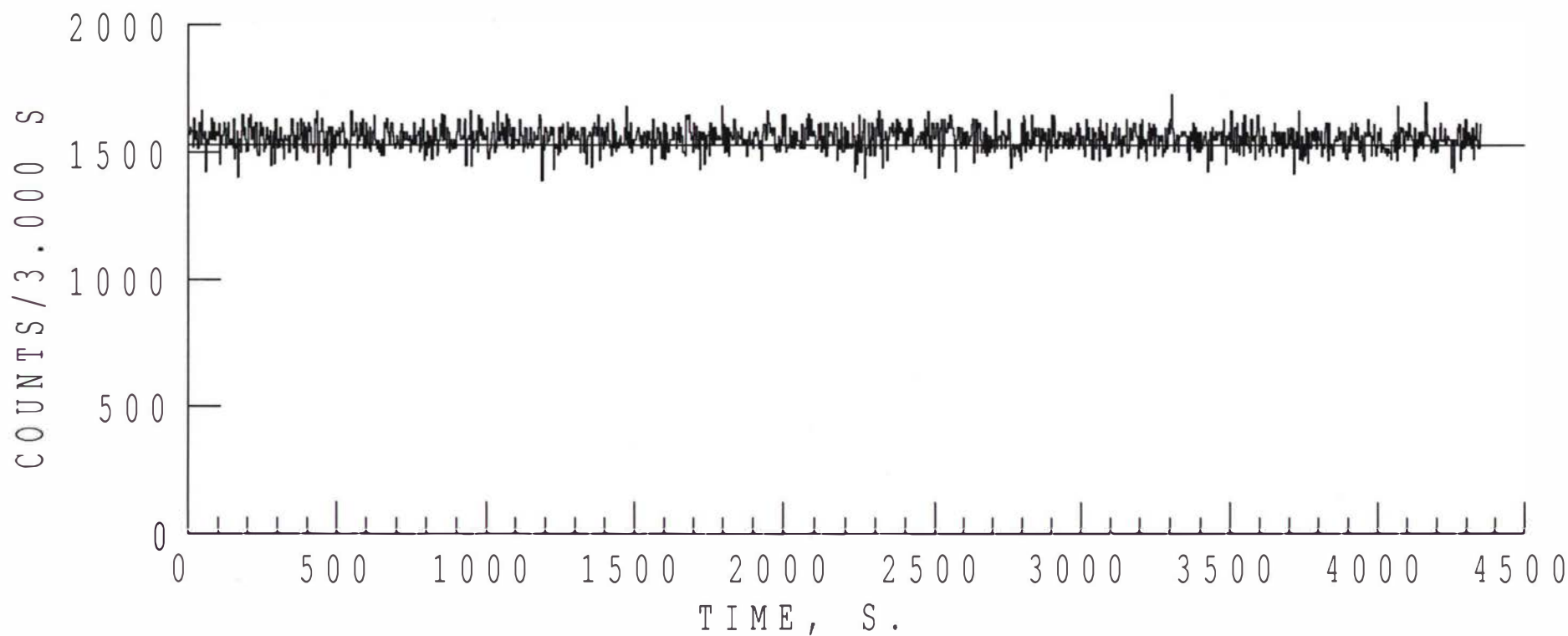
18 / 5 / 92 79884.125 s

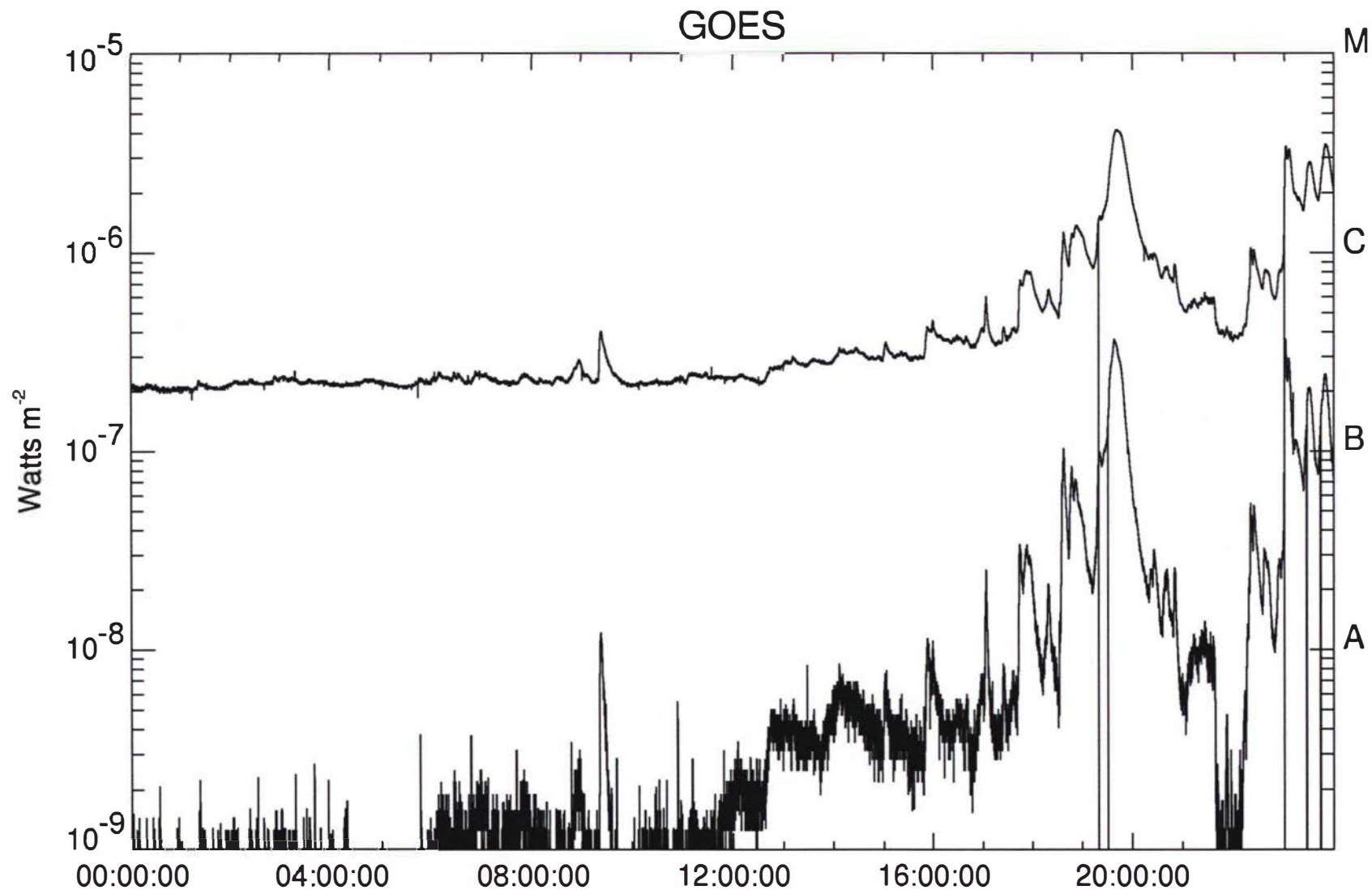
0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





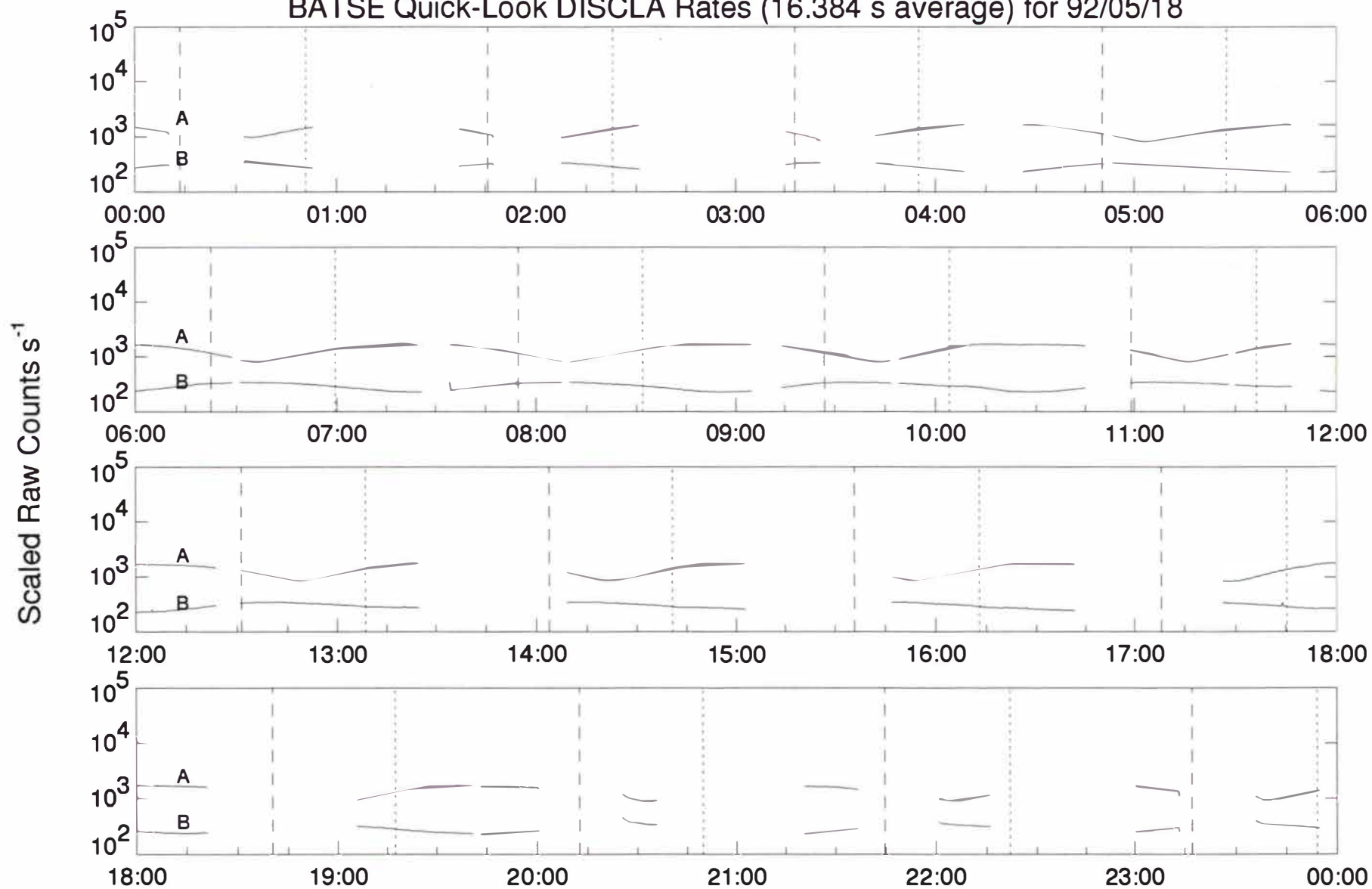
Data Start: 92/05/17, 2359:59

Plot created: 93/10/29, 0106

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/18



Current Time: 92/09/19, 1719 EDT

A: Channel 1 Most Sunward LAD

B: Sum Channel 1 Anti-Sunward LADs X .05

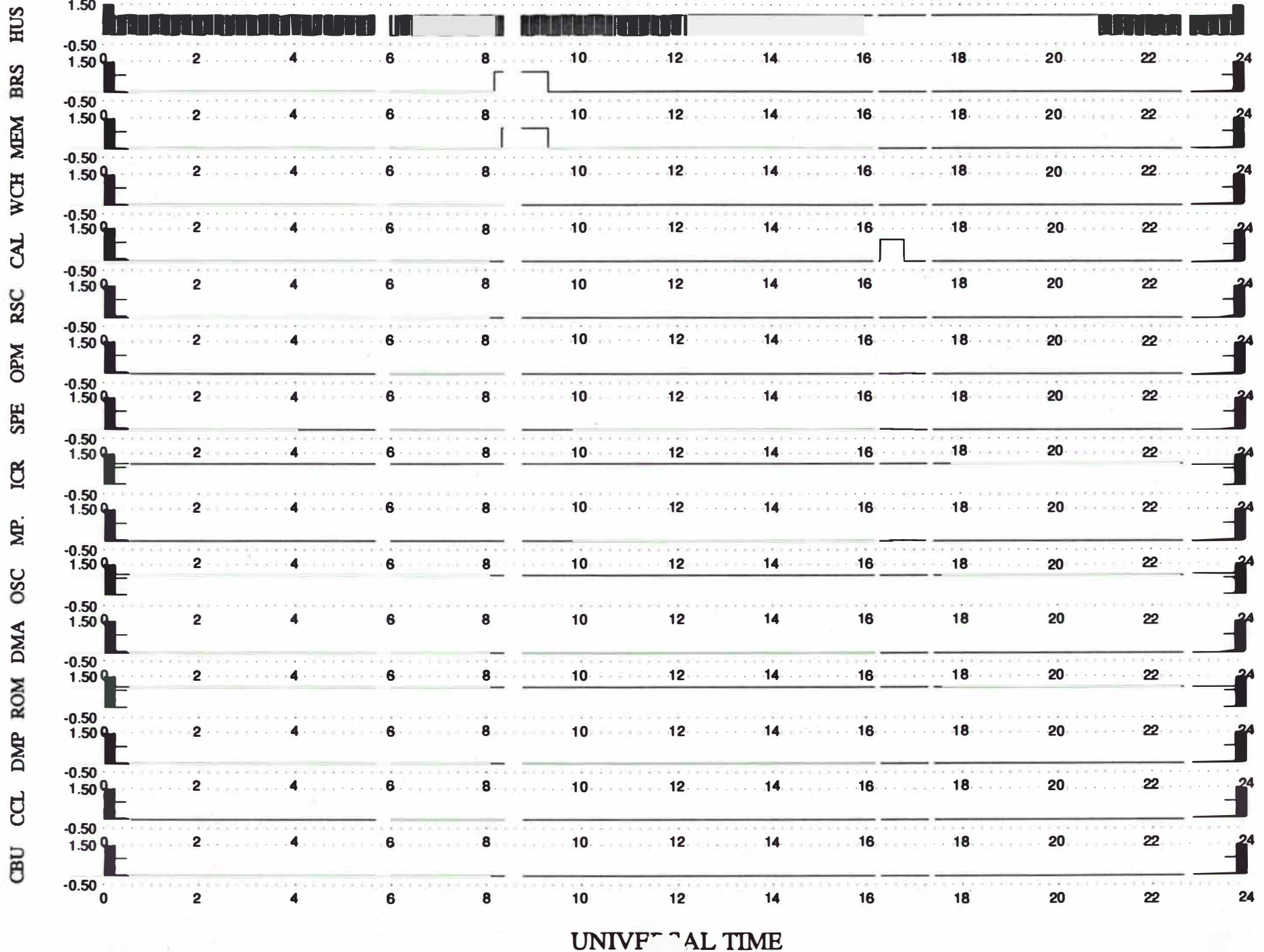
Dotted line: Day entry

Dashed line: Night entry

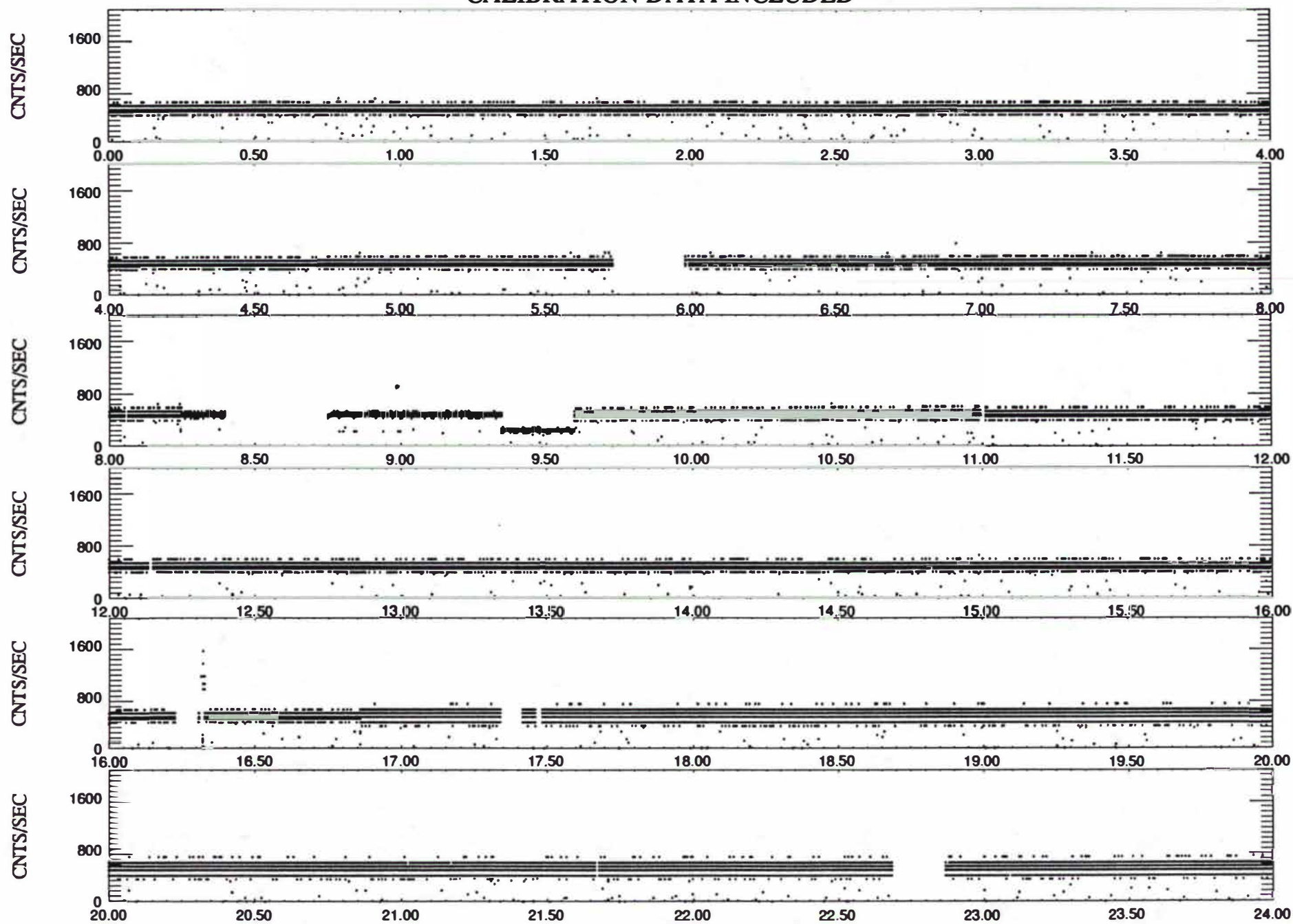
* Solar Burst Trigger

+ Solar Flare

BURST NUMBER 6

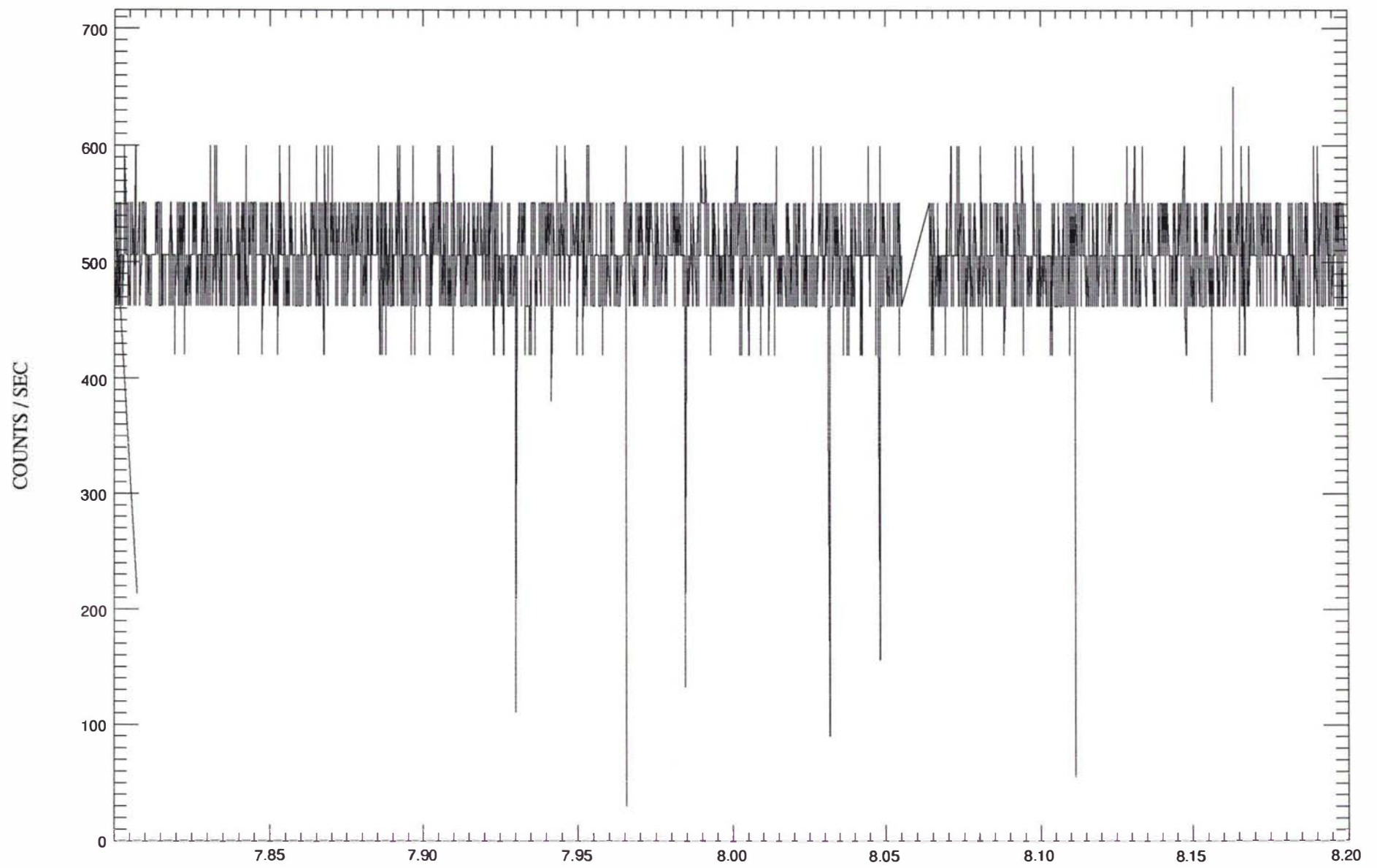


CALIBRATION DATA INCLUDED



UNIVP SAL TIME

CALIBRATION DATA INCLUDED



21 / 5 / 92

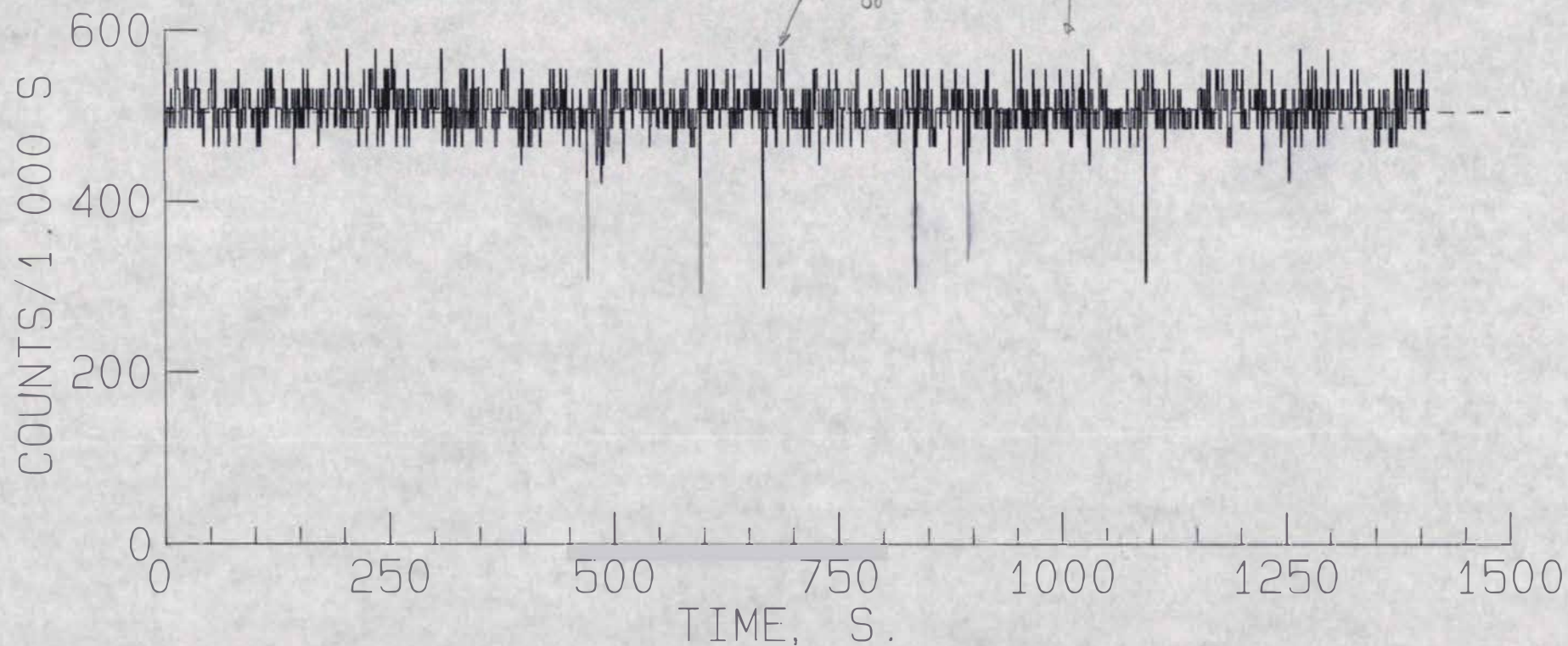
ULYSSES RT

18 / 5 / 92 28080.031 s

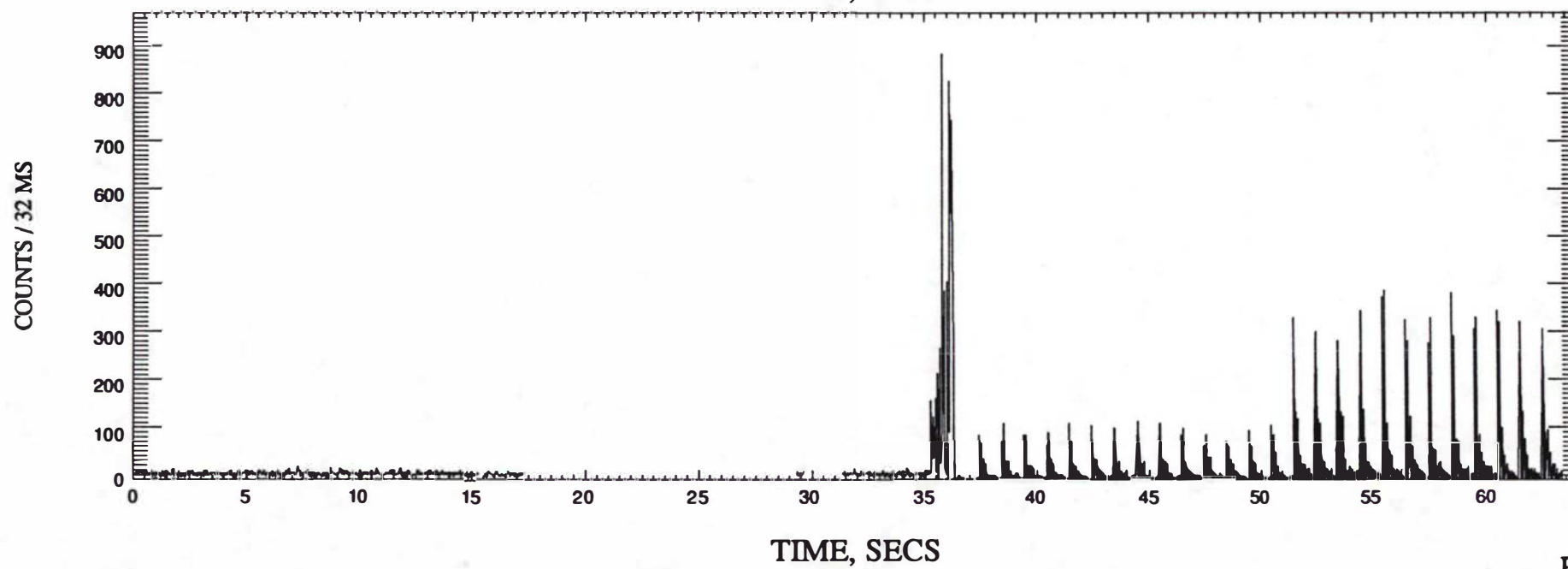
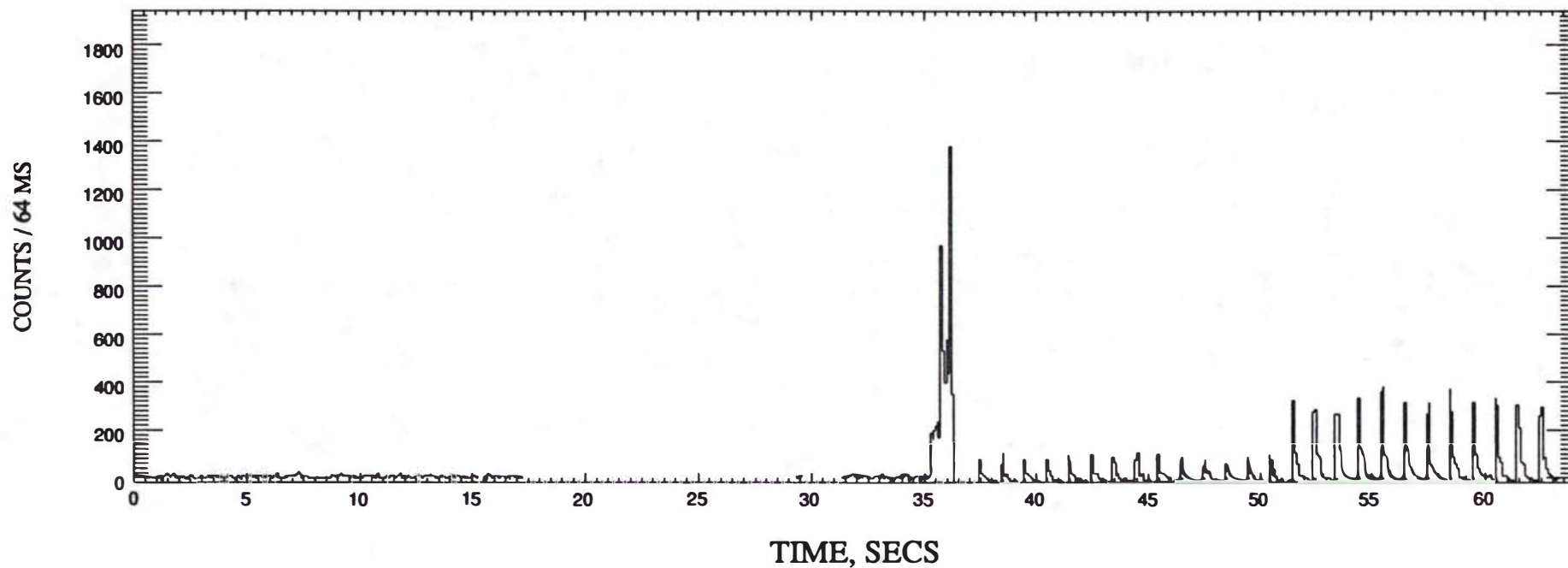
.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Burst Counter 6 at UT= 8.081226772732 h=29092.416 s



CATSEARCH PROGRAM

BATSE BURST # 1612
EVENT OF 1992 MAY 19 DAY OF YEAR=140
EVENT CROSSING TIME AT BATSE : 2121. S. OR 00:35:21.0
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 352.300 -30.300
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 19/ 5/ 92 IS:
RA= 148.213 DEC= 8.639 DIST= 5.280 AU
BATSE-ULYSSES DISTANCE = 789943352. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 31.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2253.06 SECS.
CROSSING TIME AT ULYSSES IS 4374. S. OR 01:12:54.1 +/- 321.43 SECONDS

NO

From MALLOZZI@ssl.msfc.nasa.gov Fri May 22 09:32:00 1992
Date: Fri, 22 May 1992 11:33:39 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1269

BATSE BURST TRIGGER

NO.: 01612 *May 19*
TIME: TJD=8761 SECONDS=02123

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=66.8 AZIMUTH=107.1 ERROR= DEGREES

COMMENTS:
WEAK BURST; DURATION ~2 SEC.
EVENT OBSERVED ABOVE 100 KeV, BUT NOT ABOVE 300 KeV.
SINGLE MAIN PULSE WITH SMOOTH STRUCTURE.

No trigger

7 / 6 / 94

ULYSSES RT

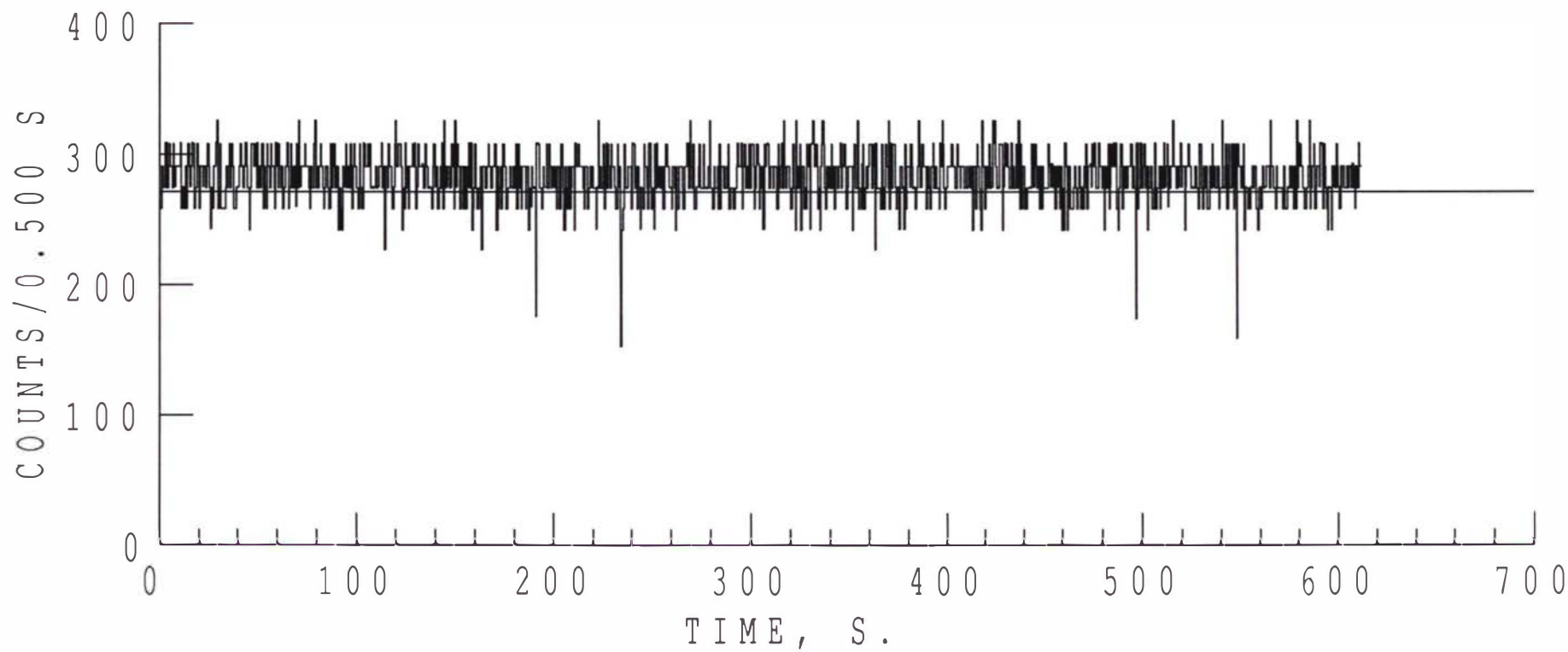
19 / 5 / 92 4068.042 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



CATSEARCH PROGRAM

BATSE BURST # 1613
EVENT OF 1992 MAY 19 DAY OF YEAR=140
EVENT CROSSING TIME AT BATSE : 59514. S. OR 16:31:53.9
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 321.700 44.500
BATSE PEAK COUNTING RATE: 0000 C/S

WAY OFF!

Earth occulted GRB

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 19/ 5/ 92 IS:
RA= 148.213 DEC= 8.639 DIST= 5.280 AU
BATSE-ULYSSES DISTANCE = 789943352. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1568.67 SECS.
CROSSING TIME AT ULYSSES IS 61083. S. OR 16:58:02.6 +/- 441.39 SECONDS

RI

From MALLOZZI@ssl.msfc.nasa.gov Thu May 21 12:48:19 1992
Date: Thu, 21 May 1992 14:49:48 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01613

TIME: TJD=8761 SECONDS=59516 16:31:56

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=119.3 AZIMUTH=044.4 ERROR= DEGREES

COMMENTS:

BURST OF DURATION ~22 SEC WITH SINGLE PEAK AND EXPONENTIAL DECAY.
EVENT CLEARLY OBSERVED ABOVE 100 KEV, WITH POSSIBLE EMISSION ABOVE 300 KEV.

Helio corr removed

Date: Mar 17 1997

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

3. PVO Data

- ☒ Ephemeris of PVO used (not Venus)?
- ☒ 2000 coordinates used?
- ☒ Geocentric time used?

Access database updated

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

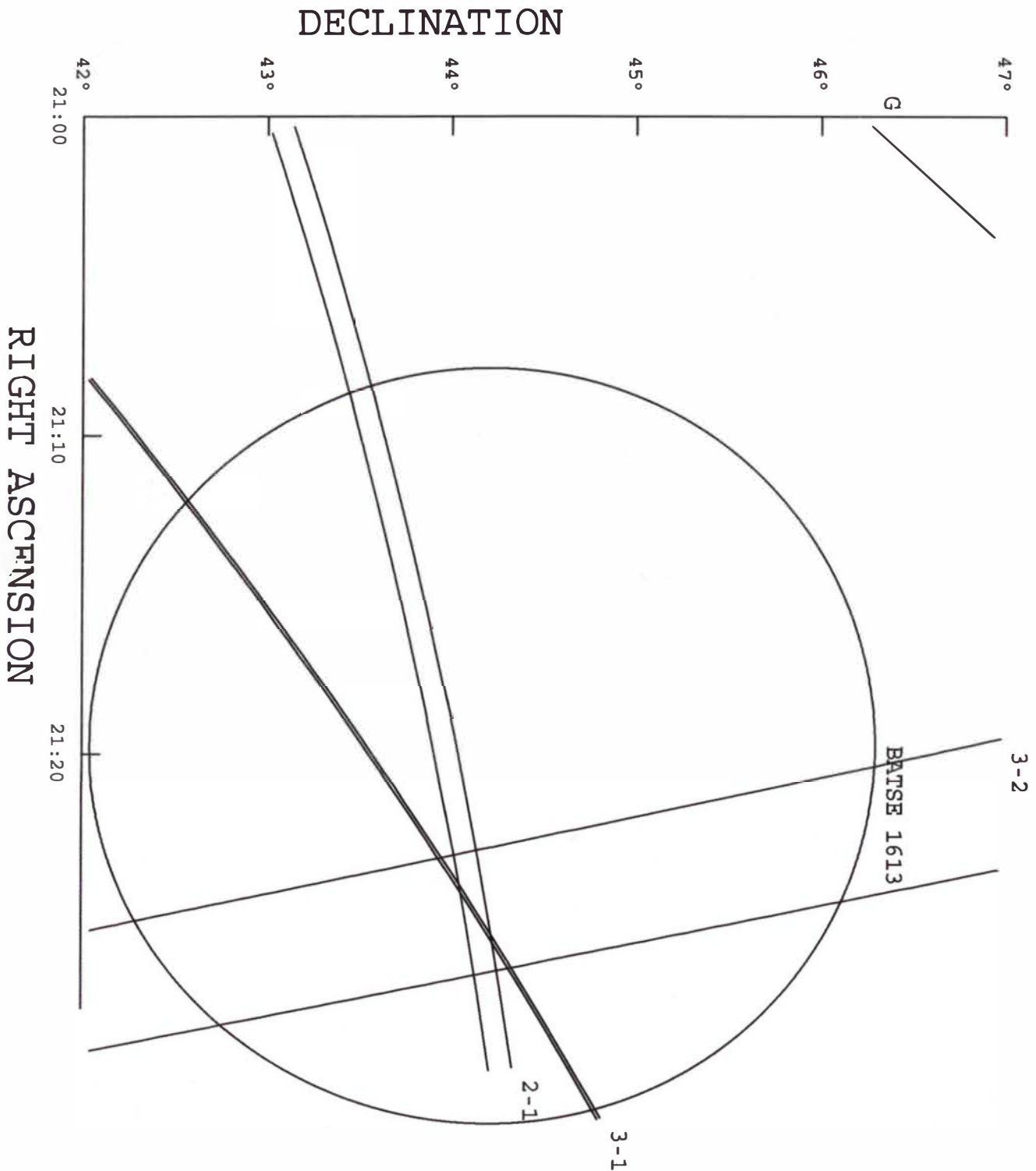
1 ULYSSES

2 PHEBUS

3 PVO

EVENT OF MAY 19, 1992 16:54

3 / 6 / 98



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

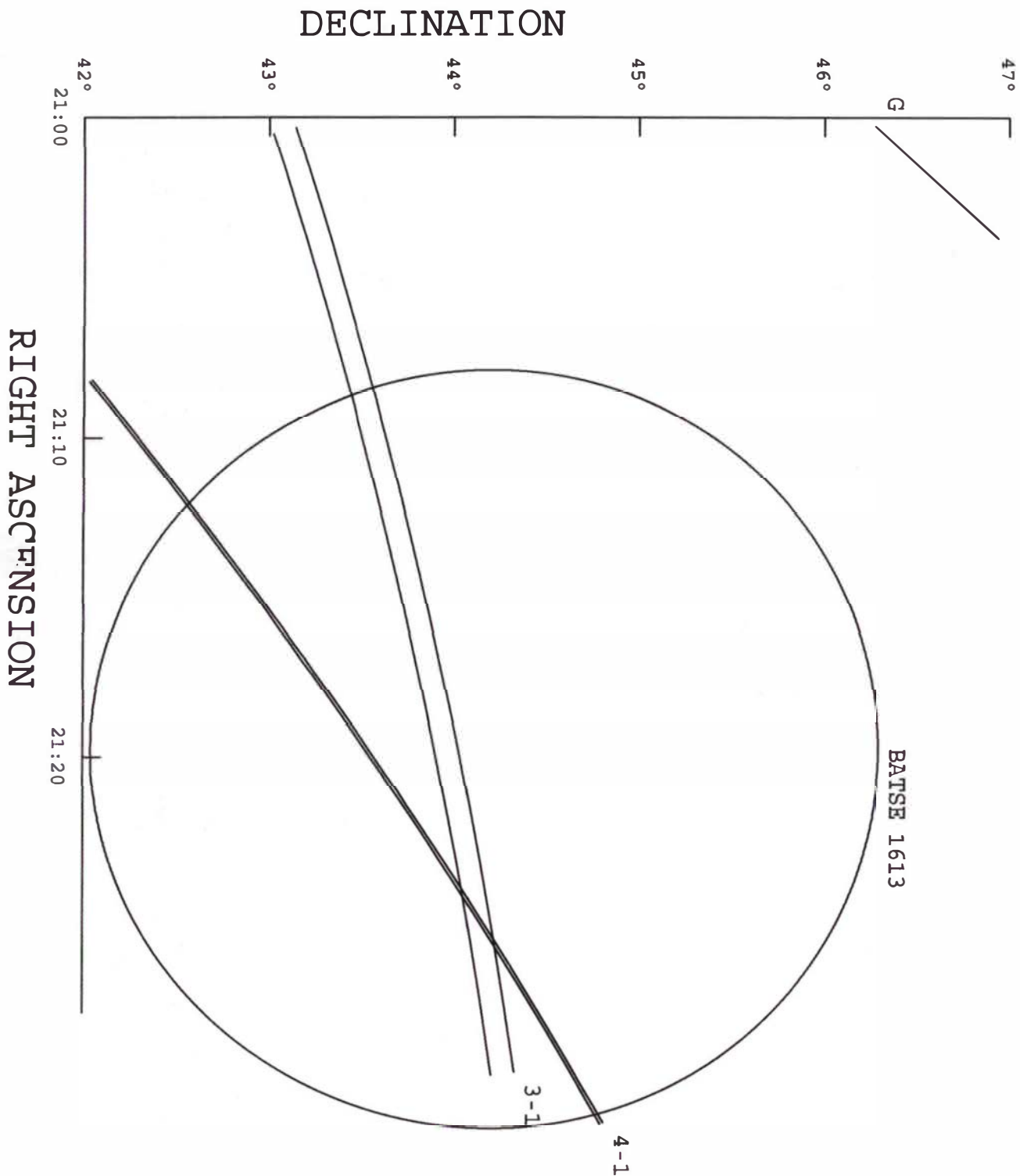
2 BATSE

3 PHEBUS

4 PVO

EVENT OF MAY 19, 1992 16:54

3/ 6/98



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

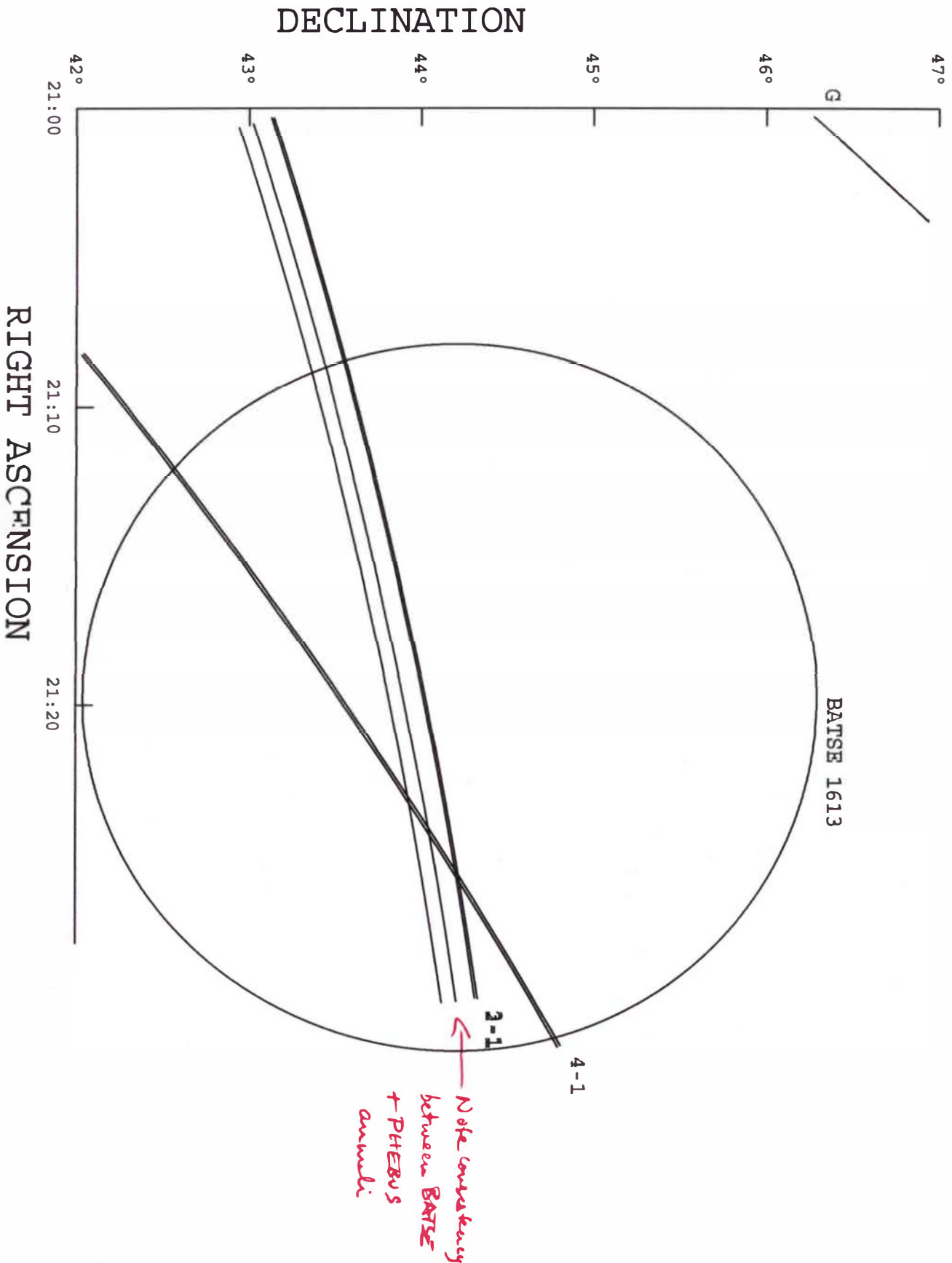
2 BATSE

3 PHEBUS

4 PVO

EVENT OF MAY 19, 1992 16:54

3 / 6/98



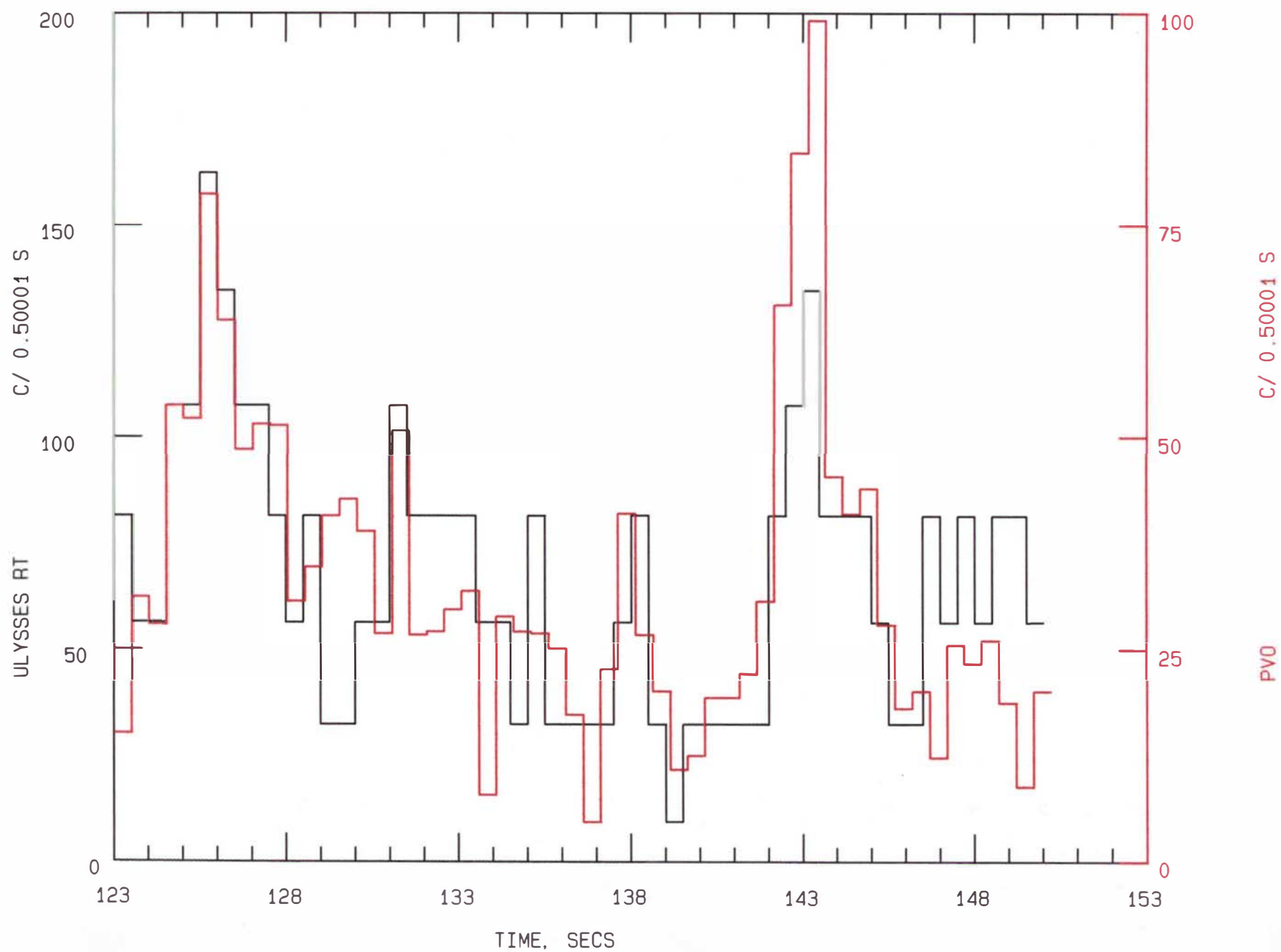
ULYSSES RT-PVO

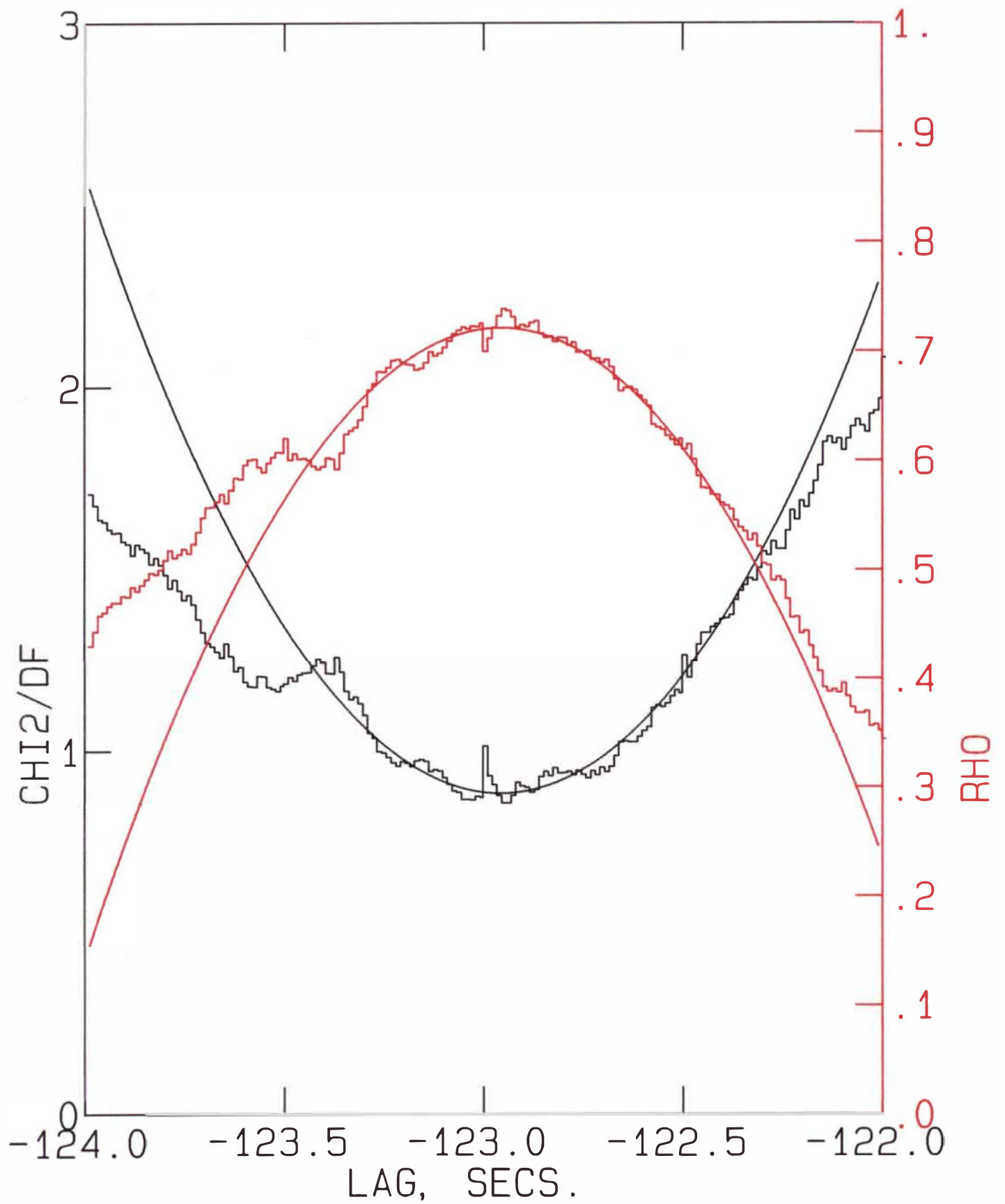
CORRELATION

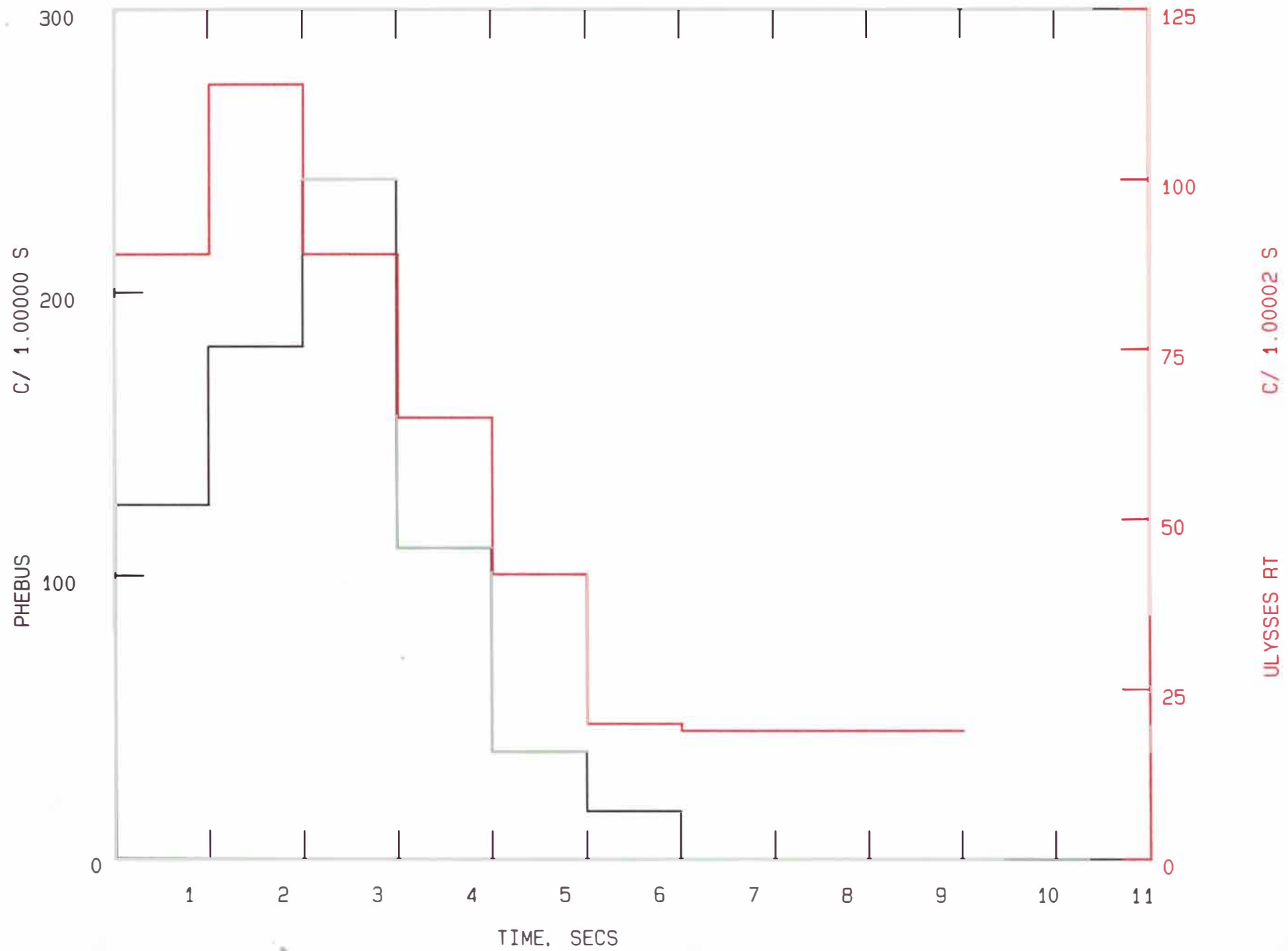
19/ 5/92

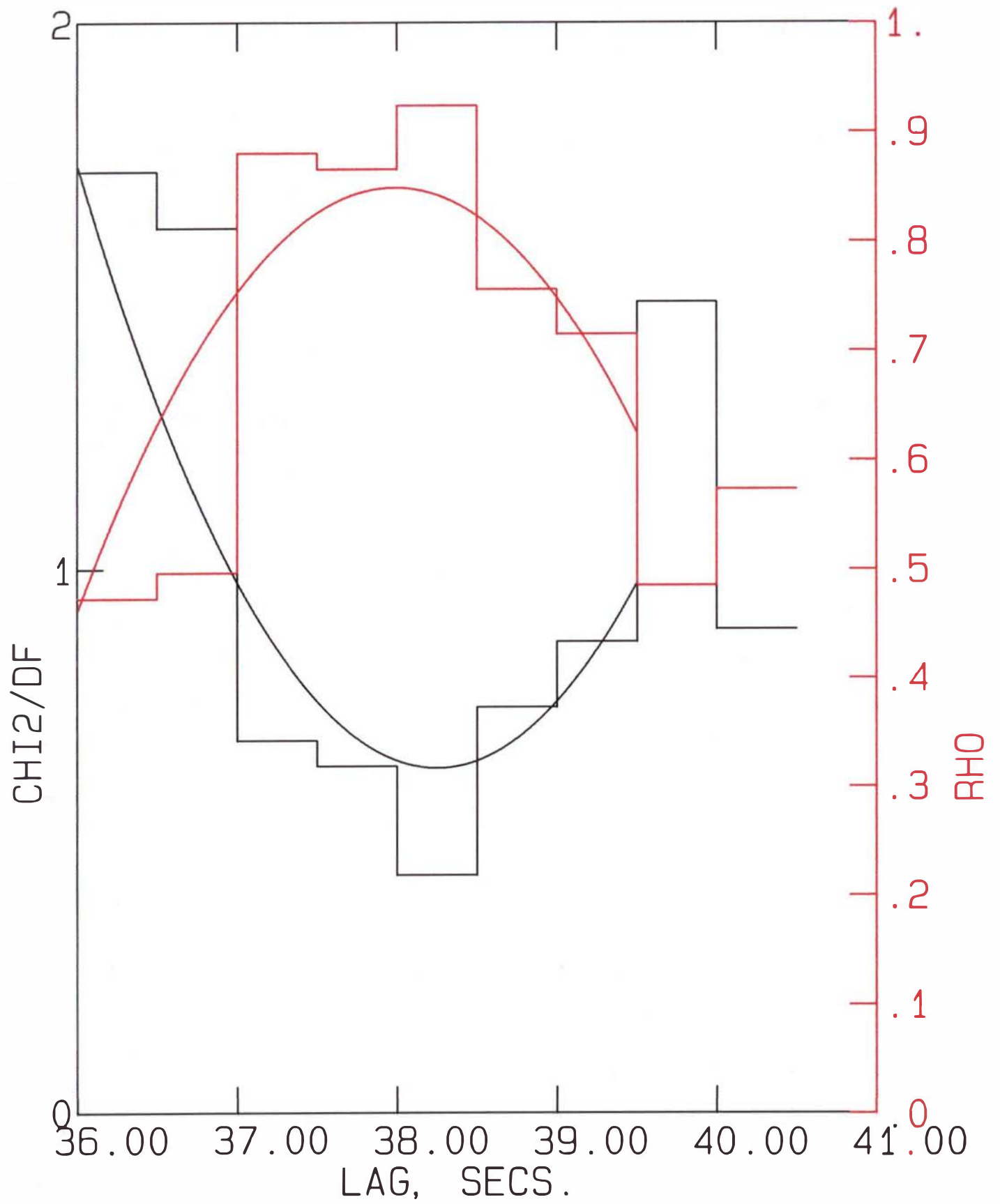
60868.461

3/ 6/98









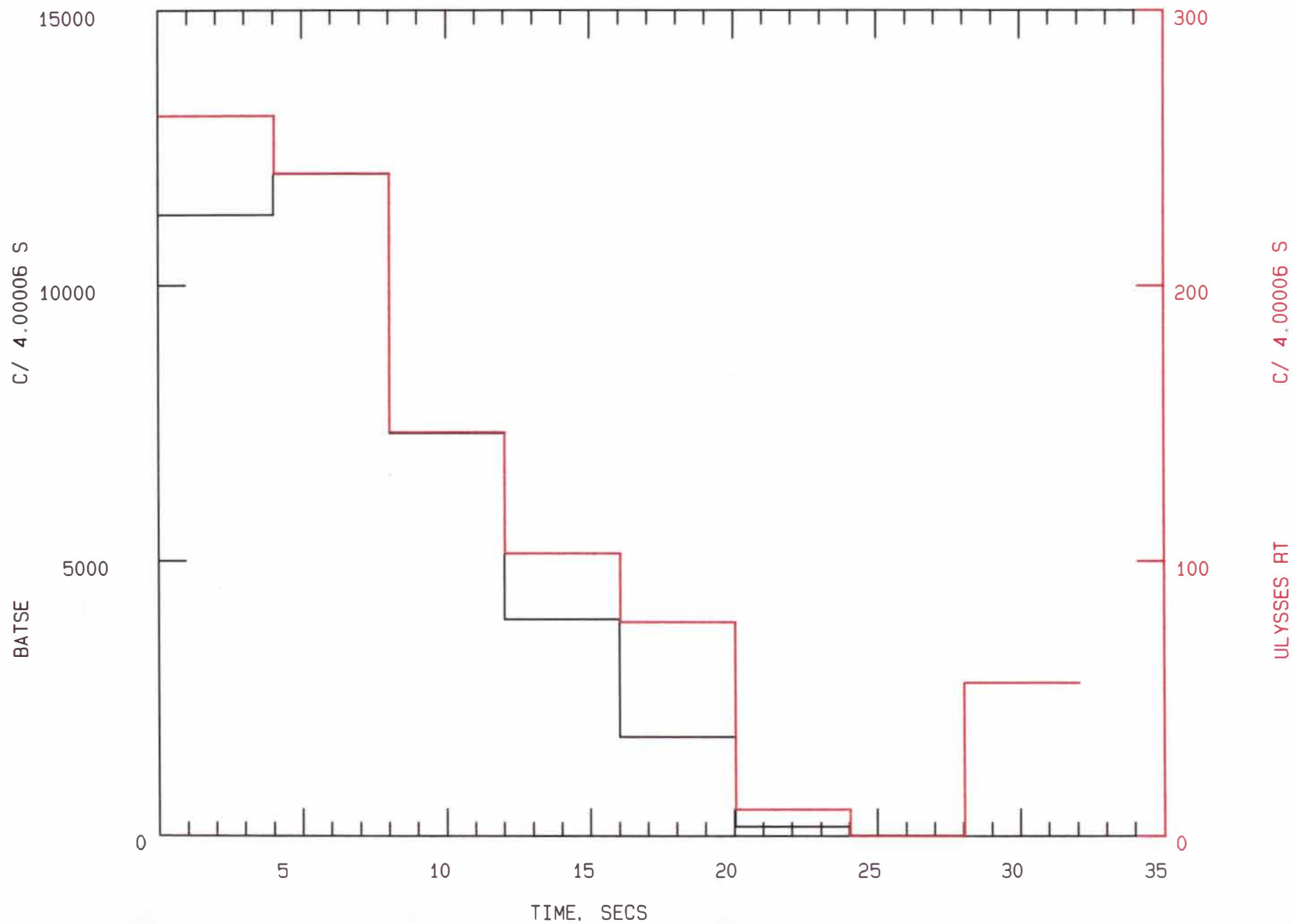
BATSE

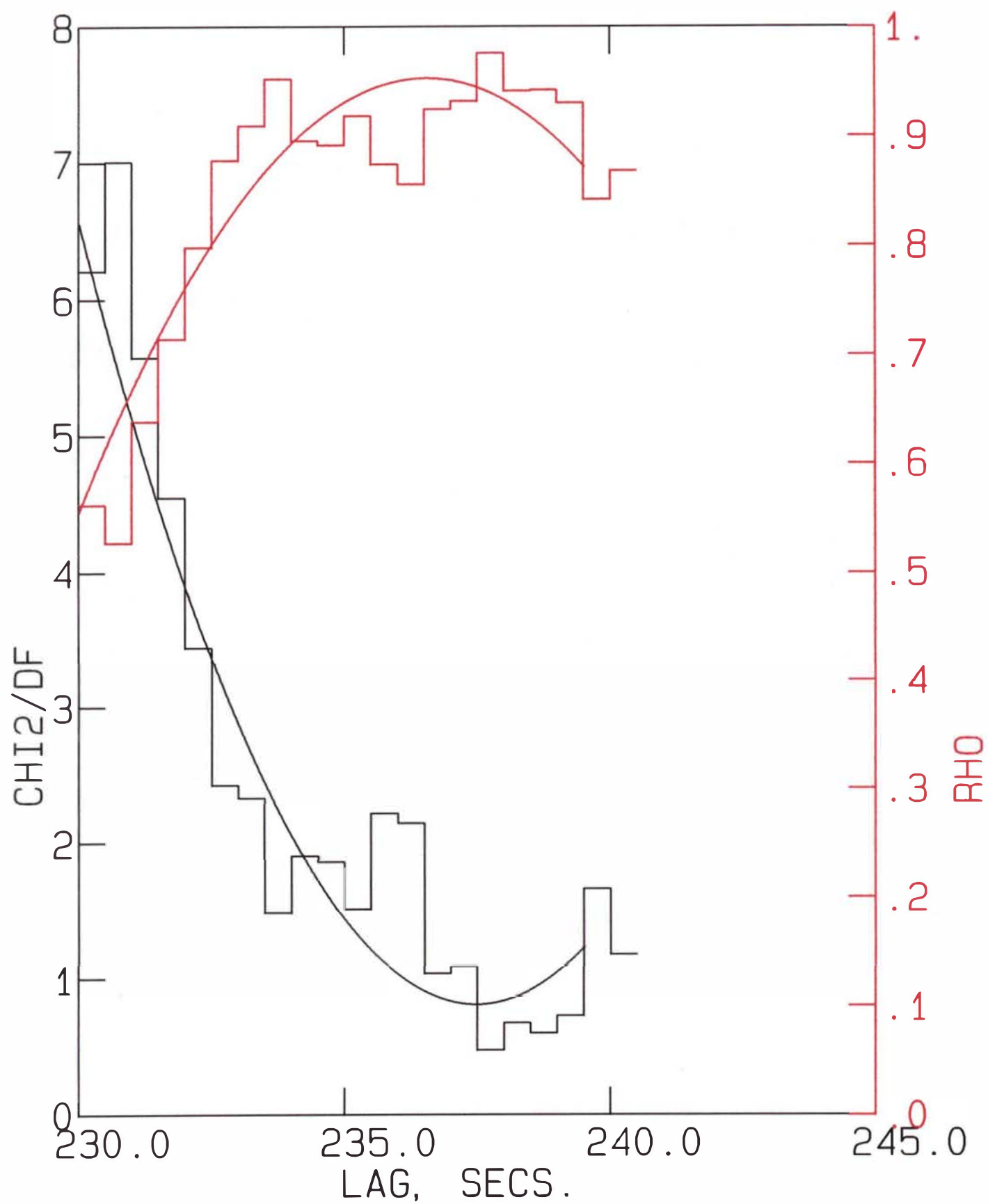
-ULYSSES RT CORRELATION

19/ 5/92

59513.962

3/ 6/98





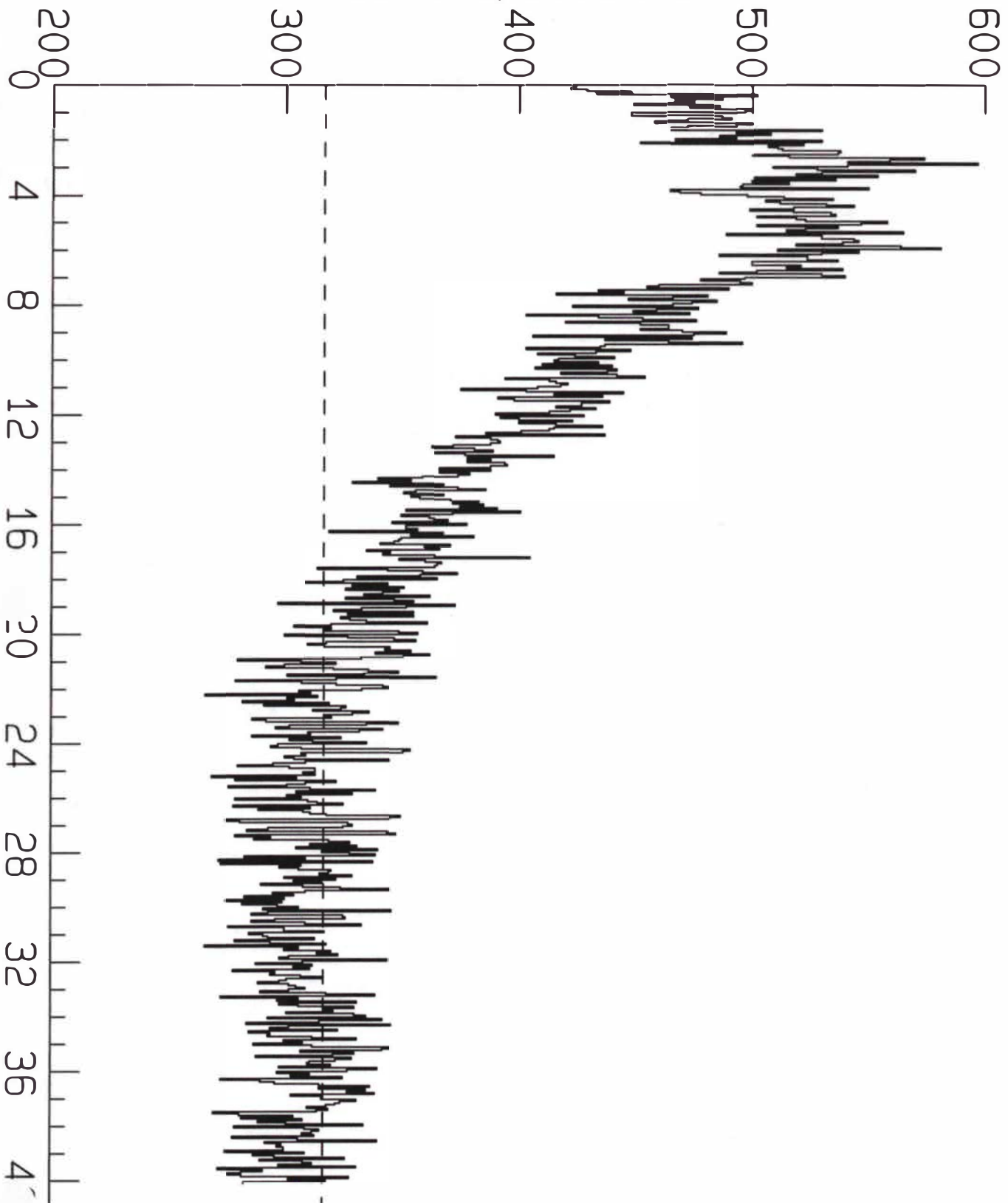
BATSE

19/05/92

59513.962

25- 100 keV

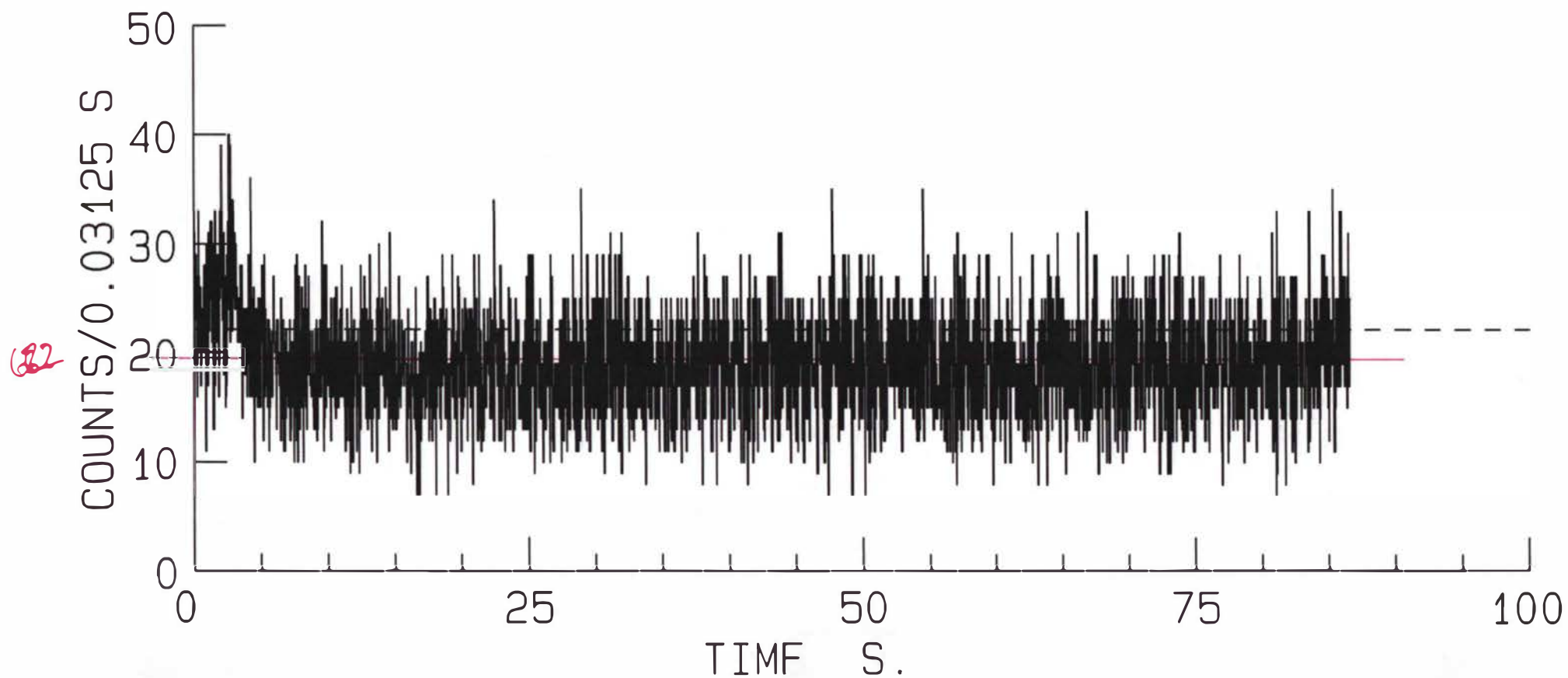
COUNTS/0.064 S



PHEBUS

19/ 5/92 59316.423 s

100- 1600 keV



Suppose 3rd Ulysses peak, at 61112.462s, corresponds to BATSE TTS peak,
at $59513.922 + 5.65s = 59519.572$. Then $\Delta t = 1592.890s \pm 10s$ (?)

For a Ulysses fiducial 60868.461 (start of RT record) the BATSE time
is $59275.571 = 16:27:55.571$

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

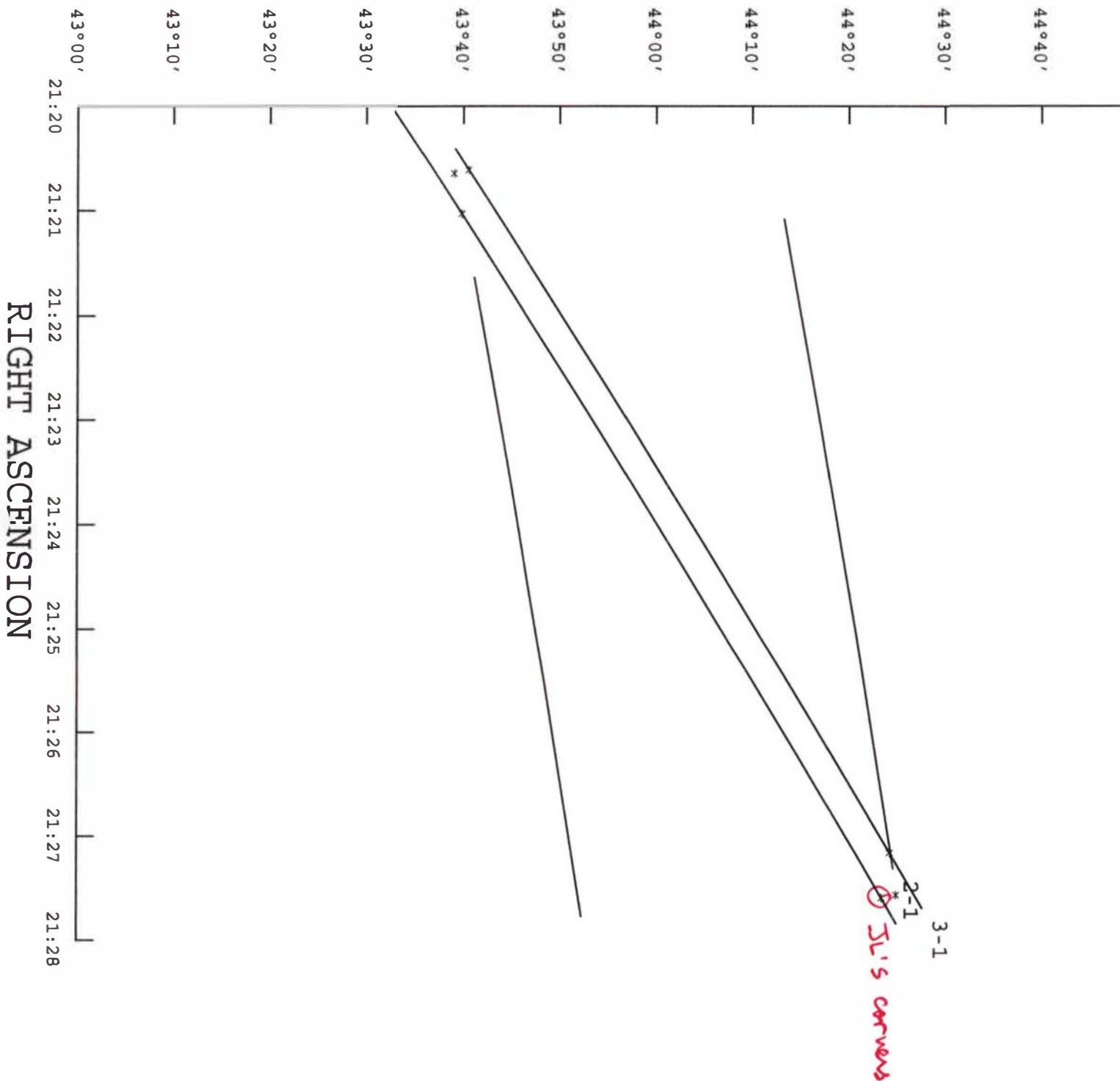
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

3 PVO

DECLINATION



10/10/97

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

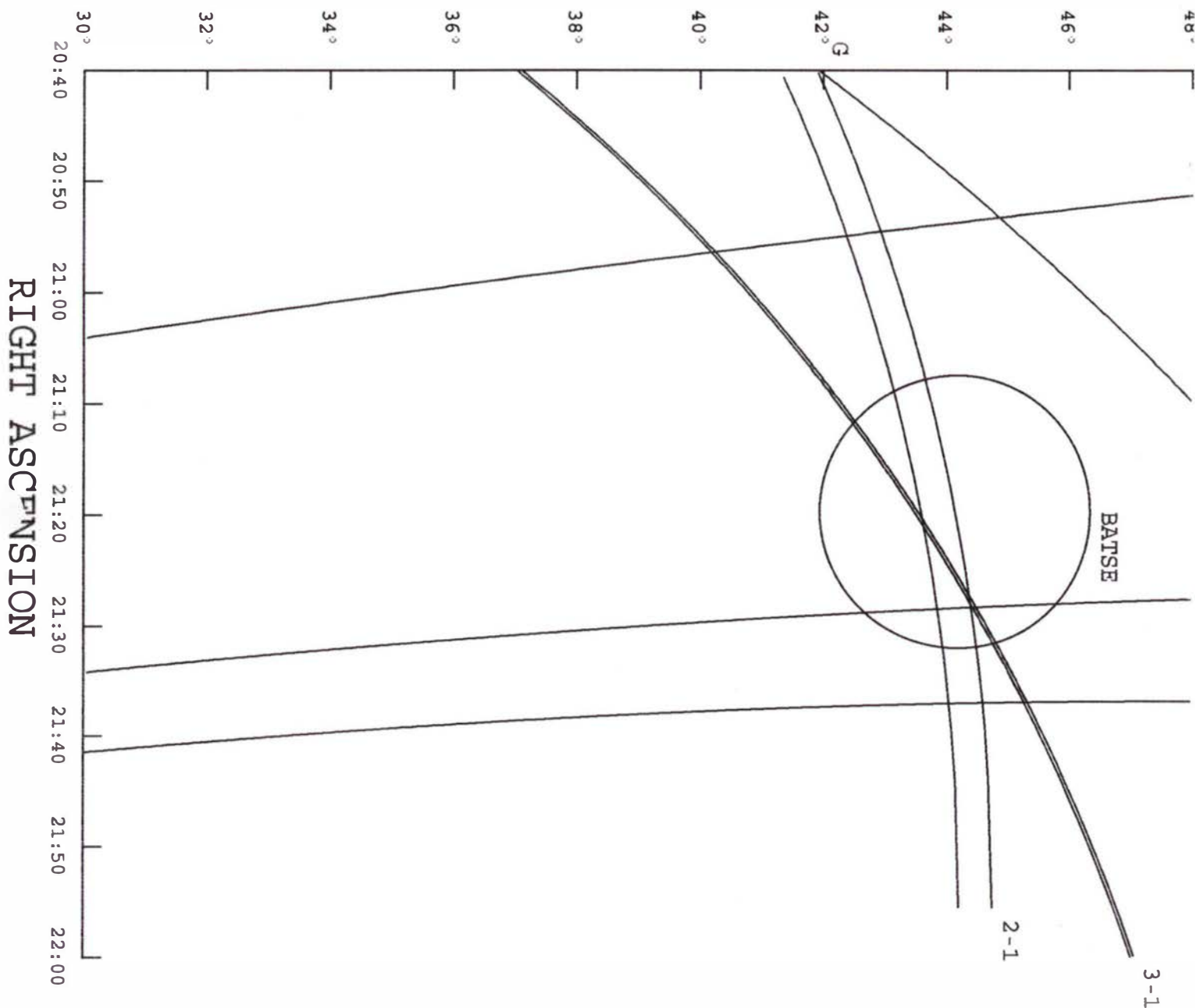
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

3 PVO

DECLINATION



ULYSSES RT

27 / 2 / 97

19 / 5 / 92 60818.462 s

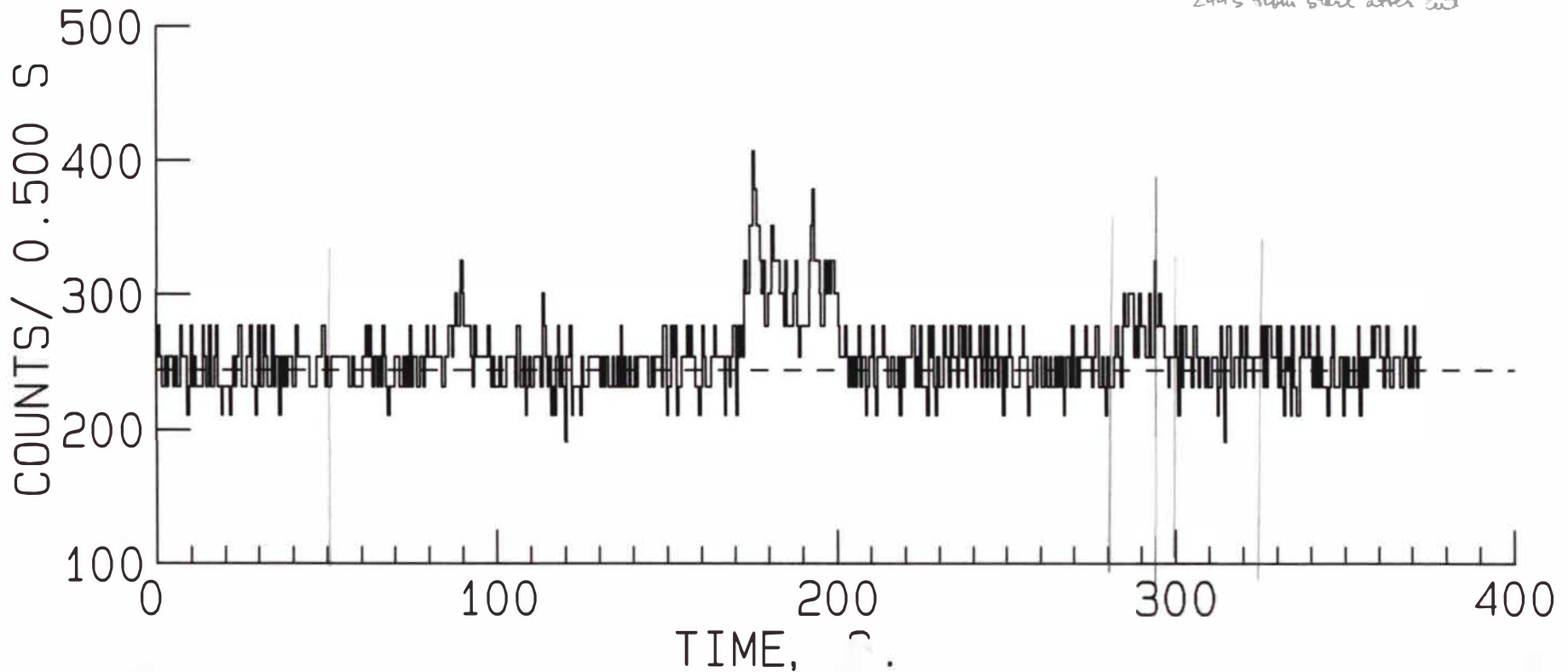
23- 158 keV

*Probus tagged
here*

234s, 02 61112.462s

244s from start after cut

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



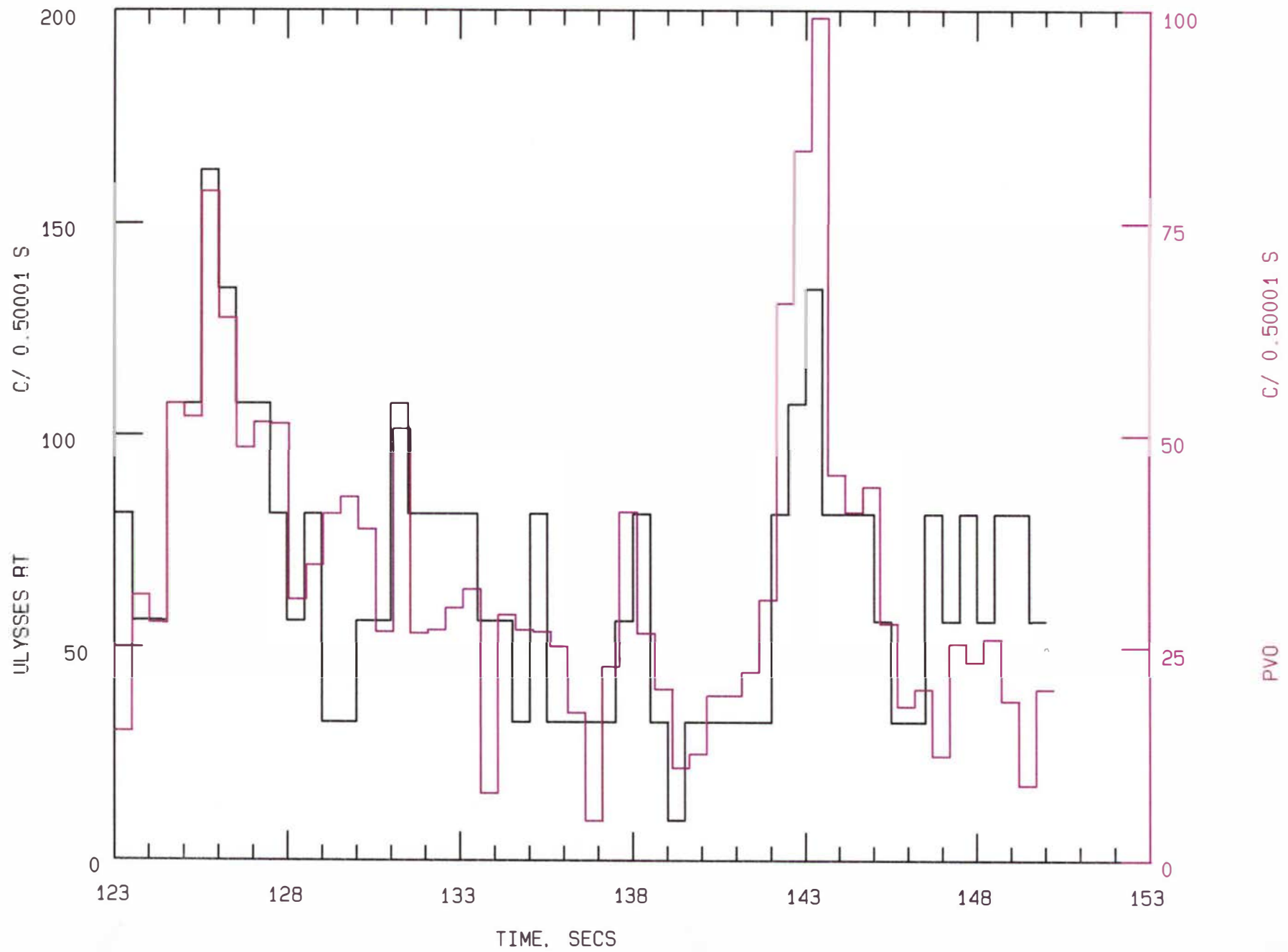
ULYSSES RT-PV0

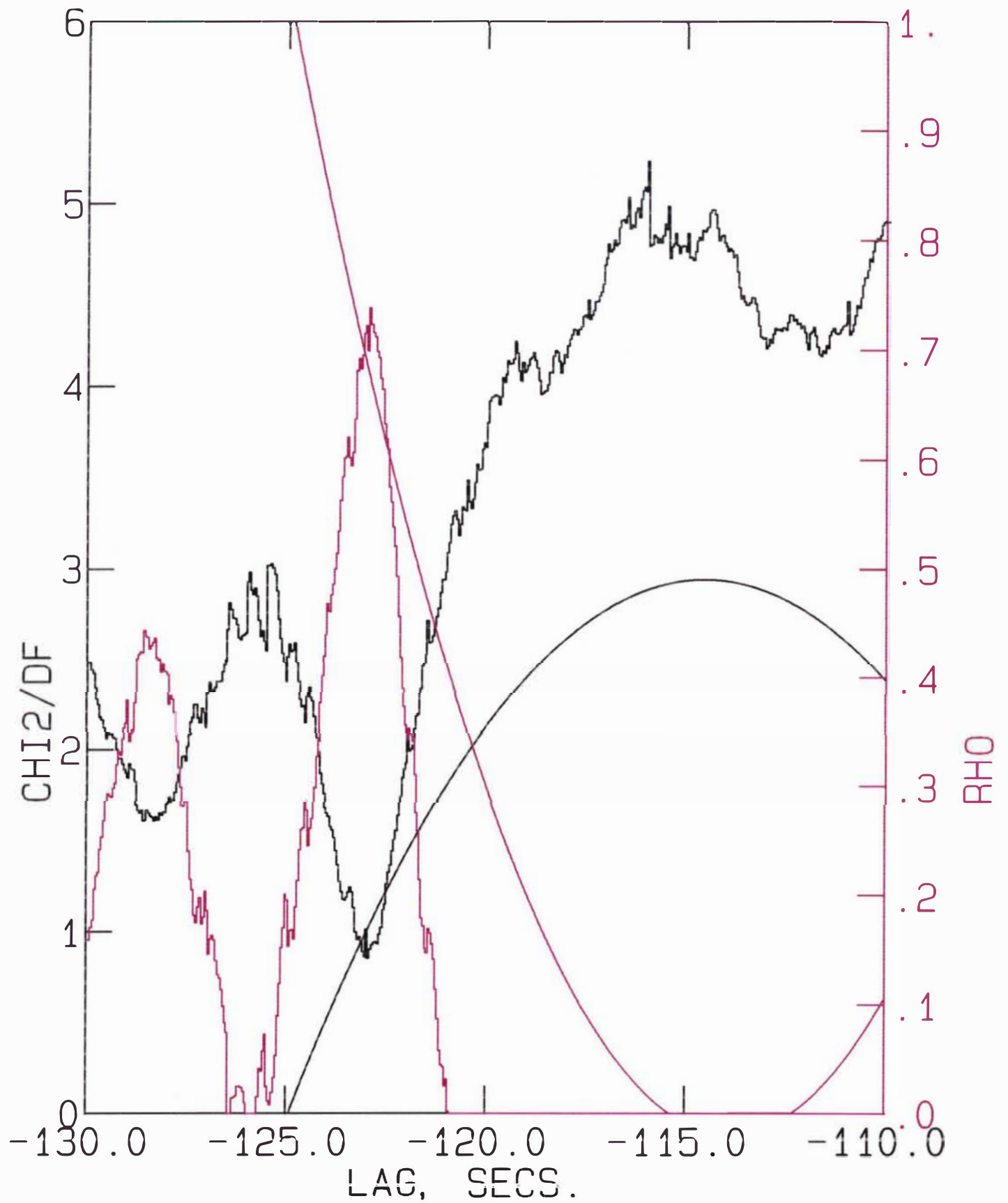
CORRELATION

19/ 5/92

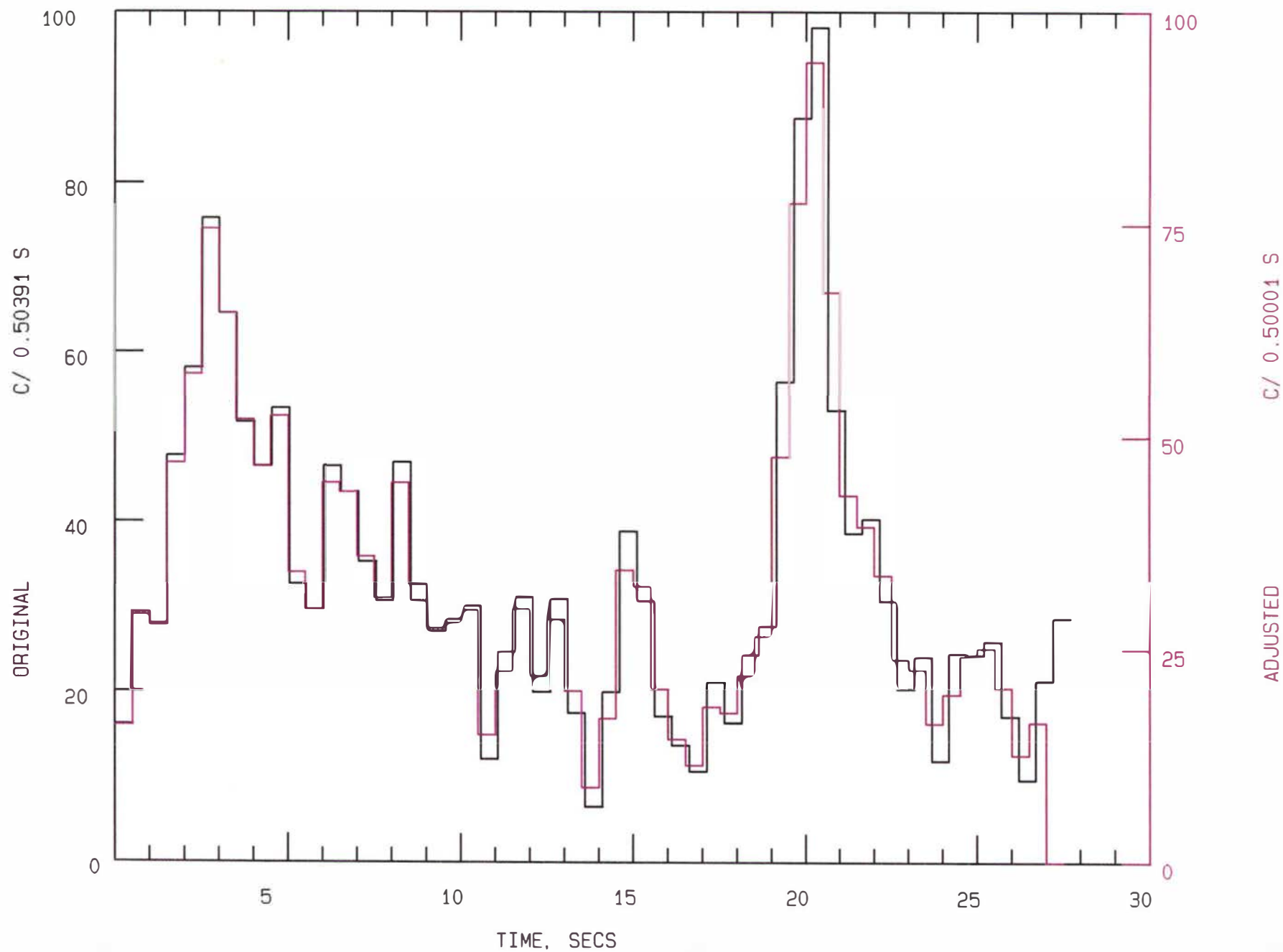
60868.461

27/ 2/97





27/ 2/97



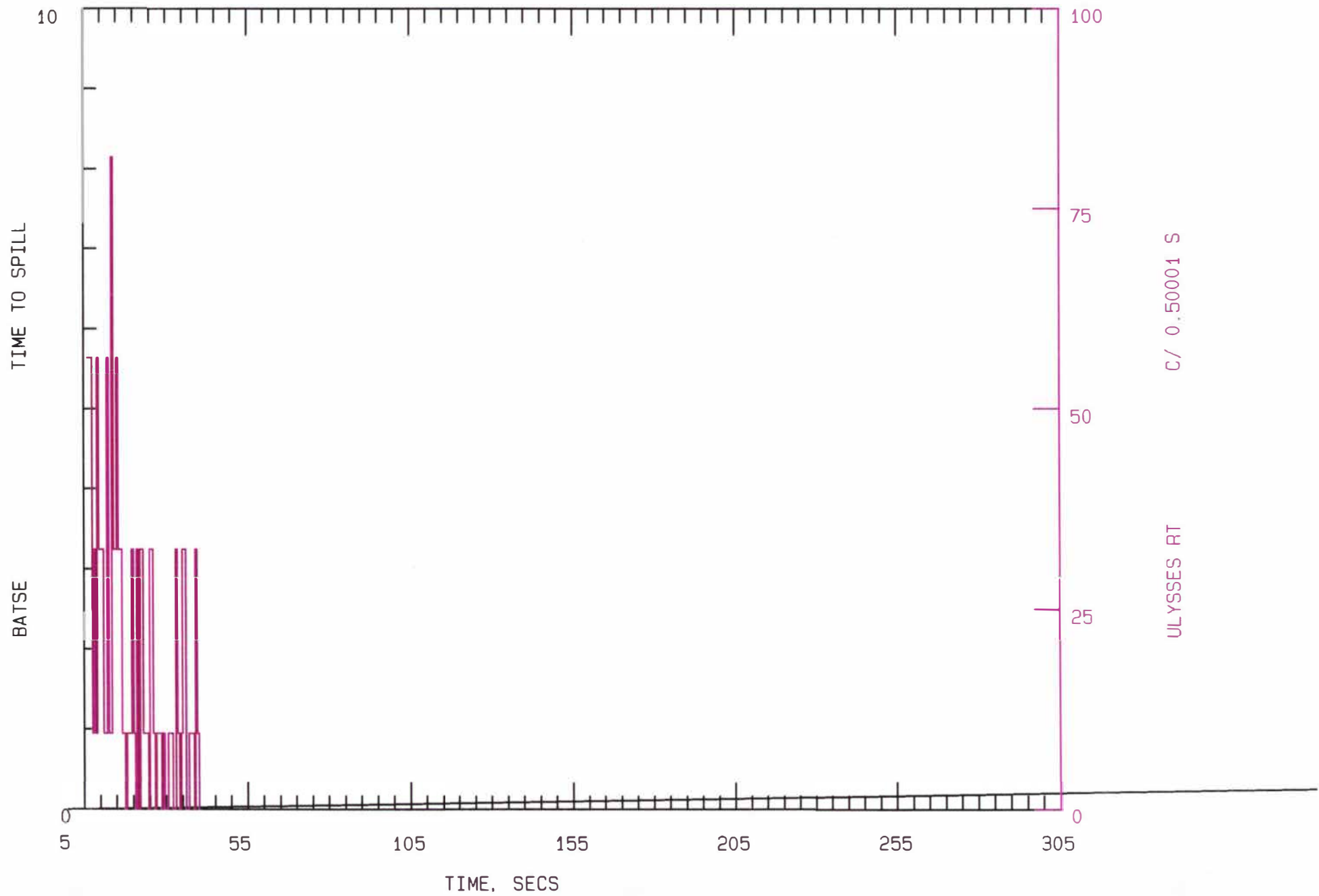
BATSE

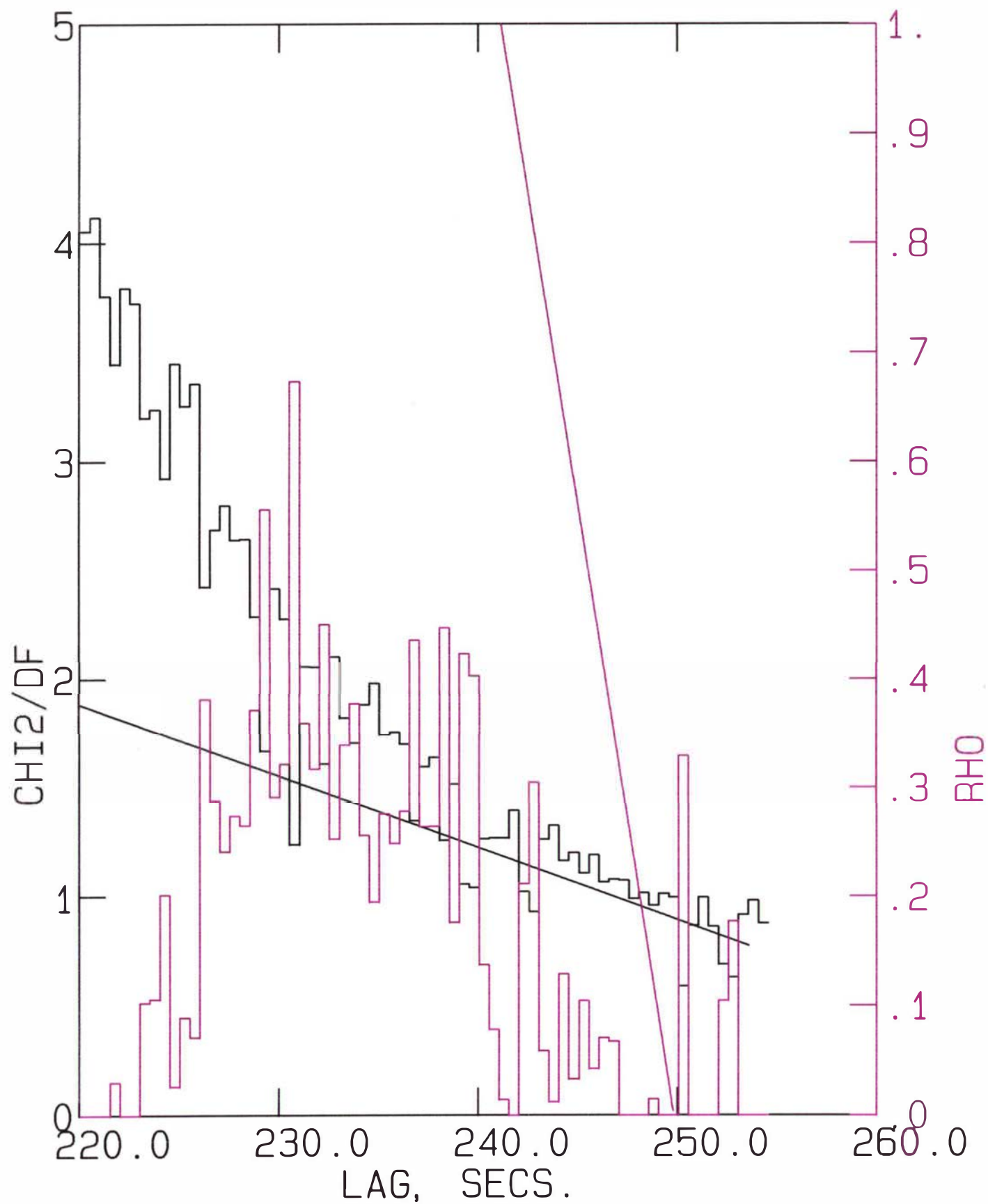
-ULYSSES RT CORRELATION

19/ 5/92

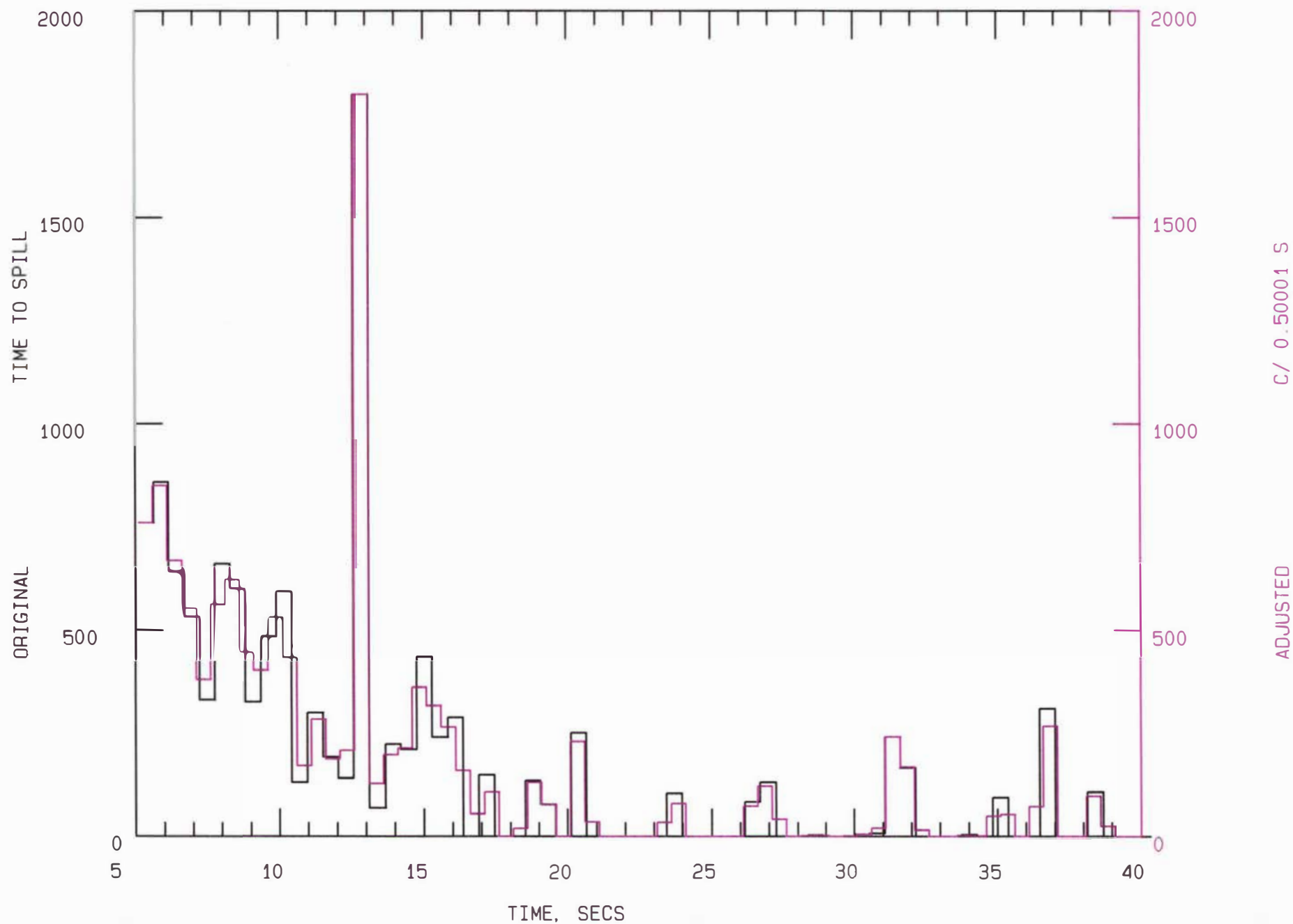
59513.962

27/ 2/97

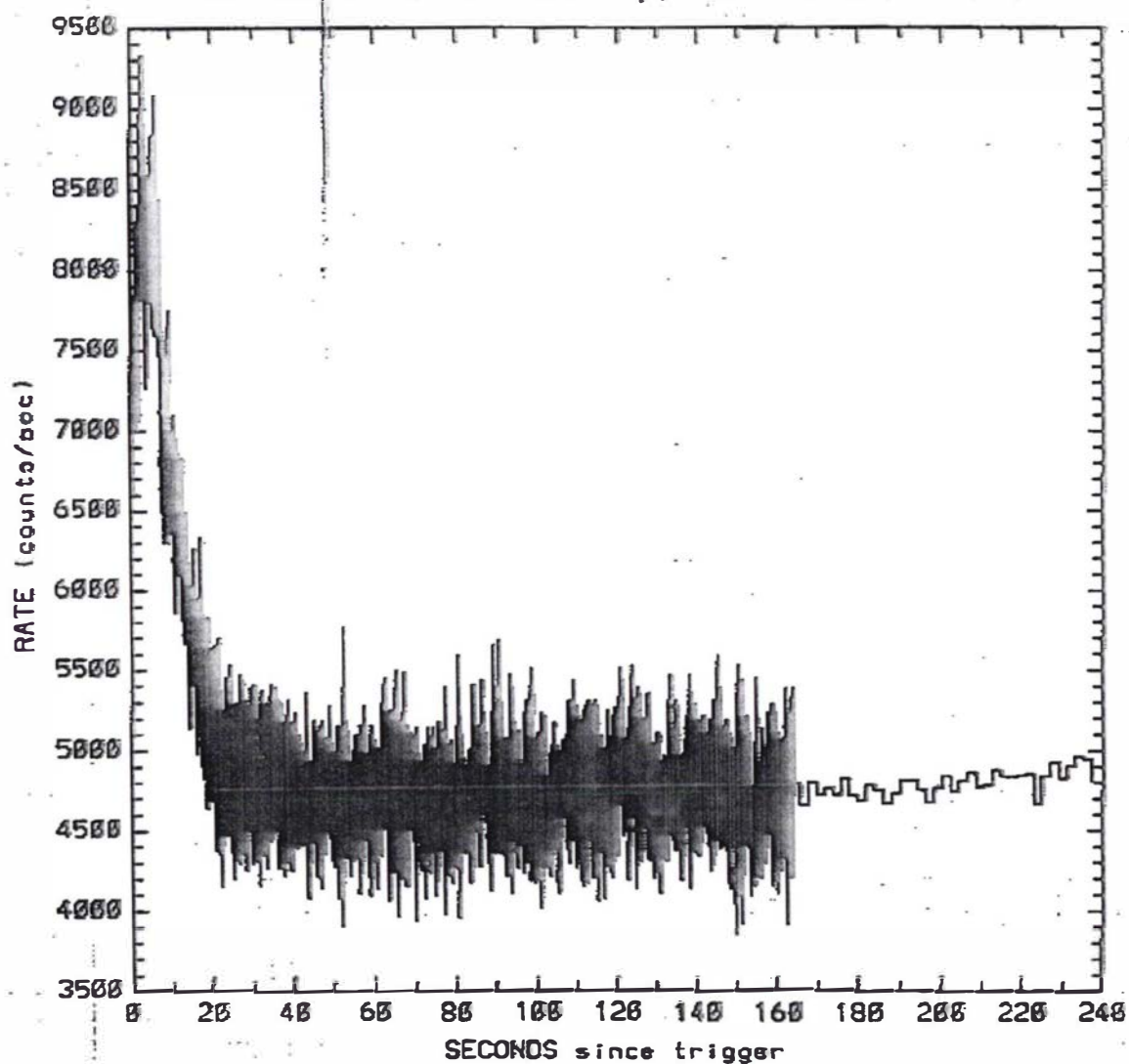




27/ 2/97



MER Data for K. Hurley, No. 1613



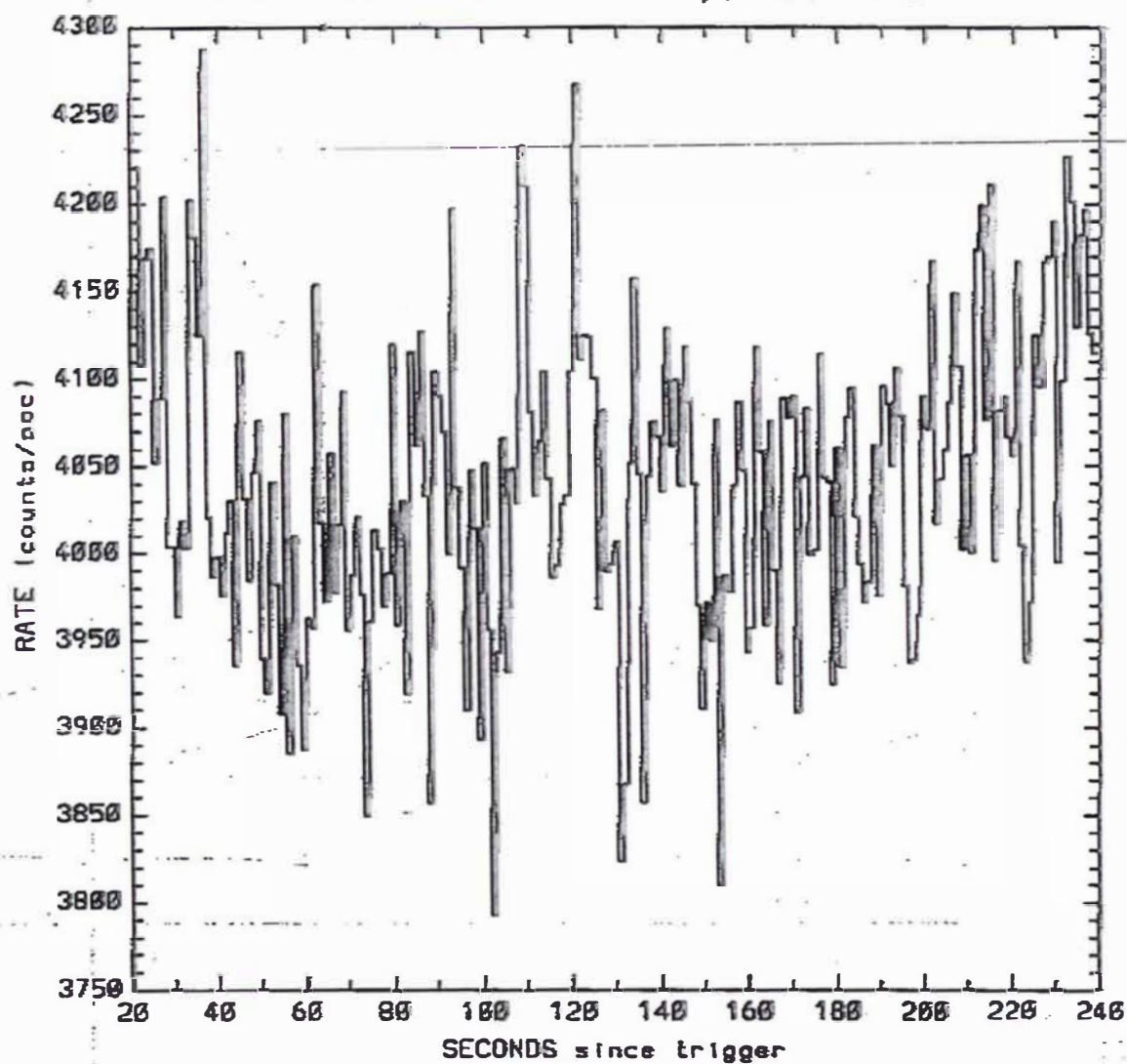
17-MAR-1997 09:49:18

Created by MOPS 80
(Burst Display)
Version 42.25

Trigger # : 1613

Trigger Time:
8761 / 59513.962Burst Data Type:
MERDeadtime
Corrected: KBackground Data
Type: CONTMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
-----10Channels:
(0..6)Quality Mask:
BD[92]

DISCLA Data for K. Hurley, No. 1613



17-MAR-1997 10:52:27

Created by NOPS 80
 (Burst Display)
 Version 12.25

User Input Time:
 8761 / 59513.961

Data Type: DISCLA

Deadtime
 Corrected: N

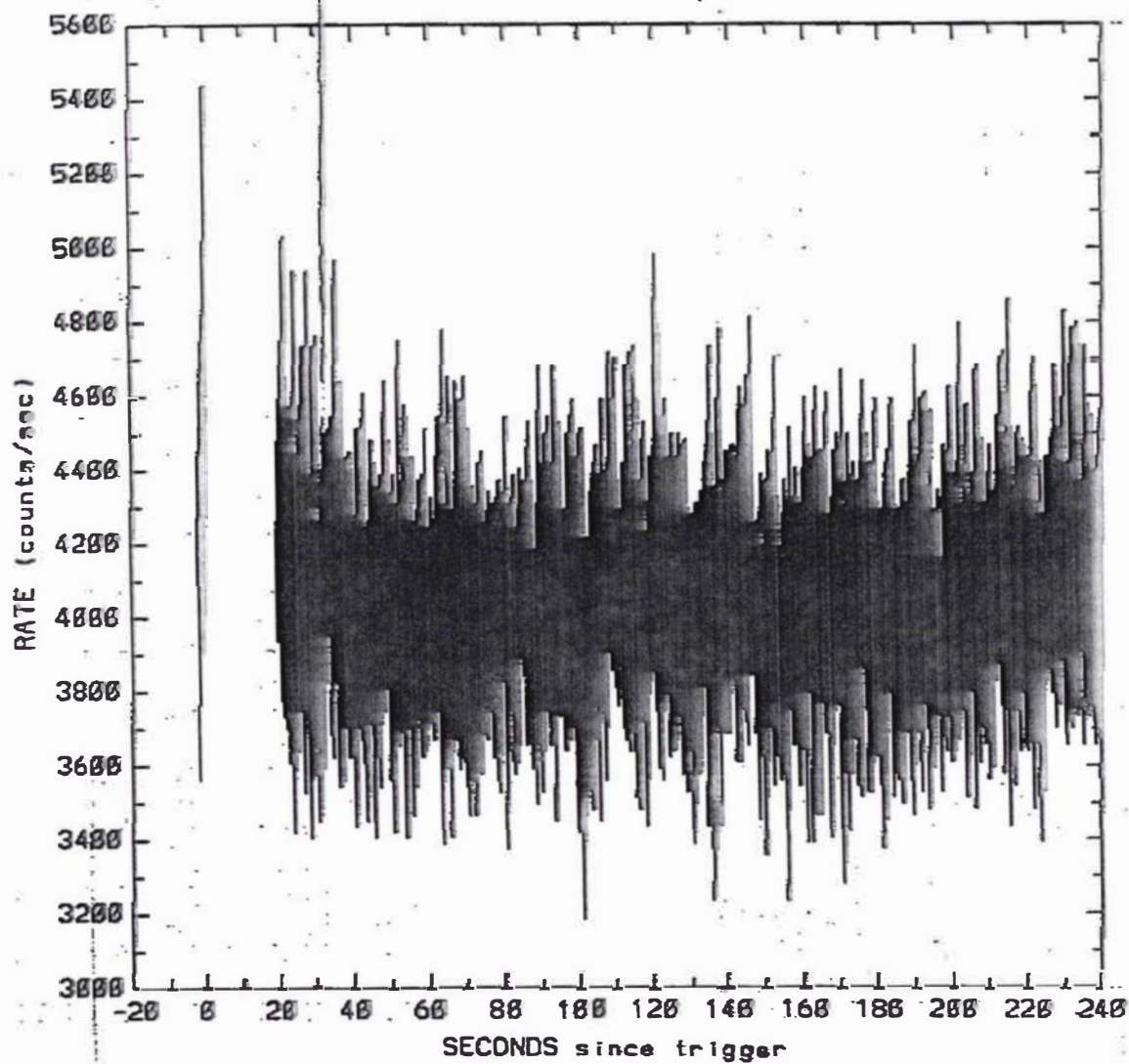
Integration Time:
 1.624 seconds

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

Discriminators:
 [1 , 2]

Quality Mask:
 BDTSP1

DISCSC Data for K. Hurley, No. 1613



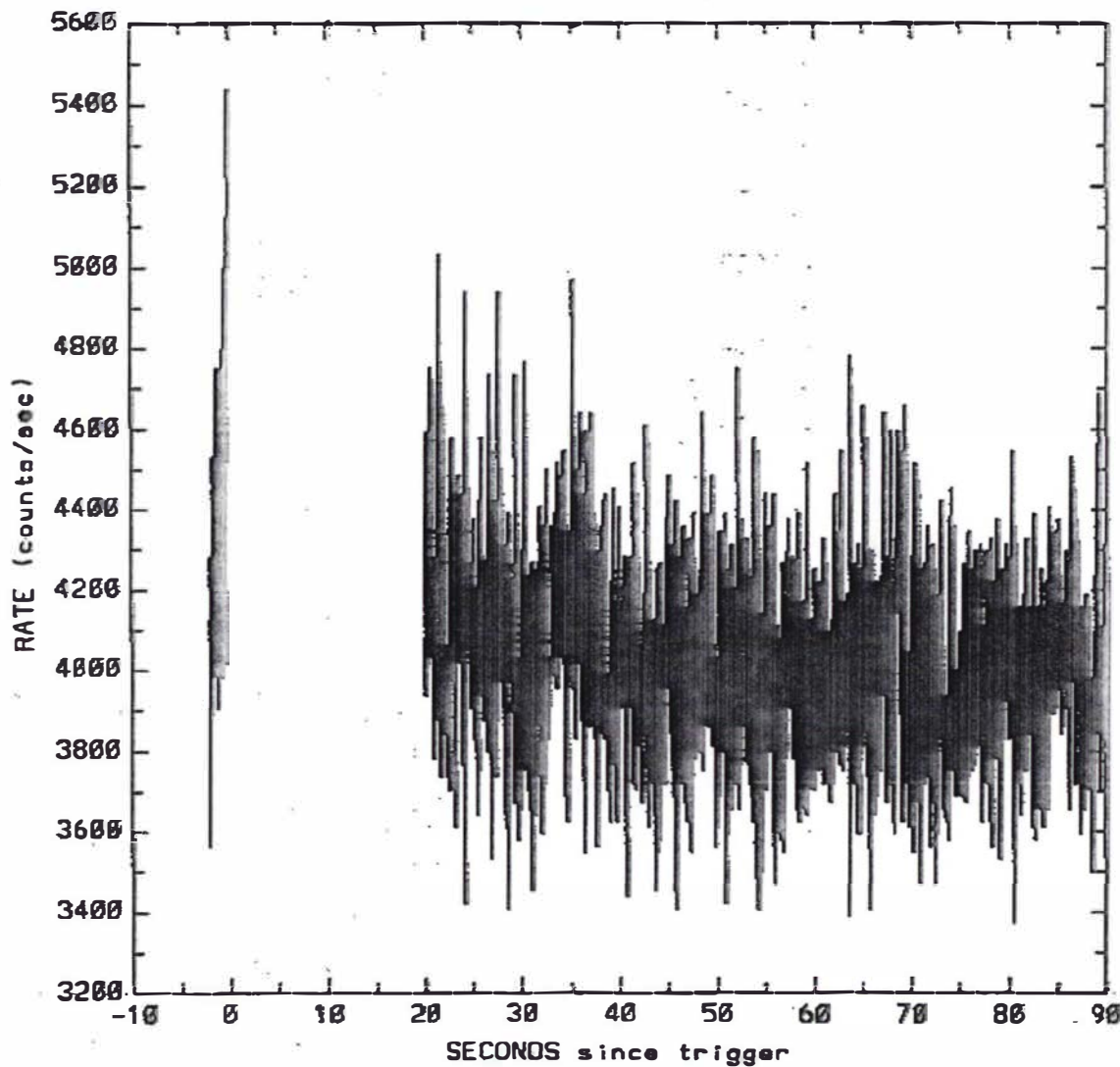
17-KUR-1997 09.44.26

Created by KOPS BD
(Burst Display)
Version 12.25

Trigger # = 1613

Trigger Time:
8761 / 59513.962Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.066 secondsDetectors (7..8):
-----10Discriminators:
11, 21Quality Mask:
BDISP1

DISCSC: Data for K. Hurley, No. 1613



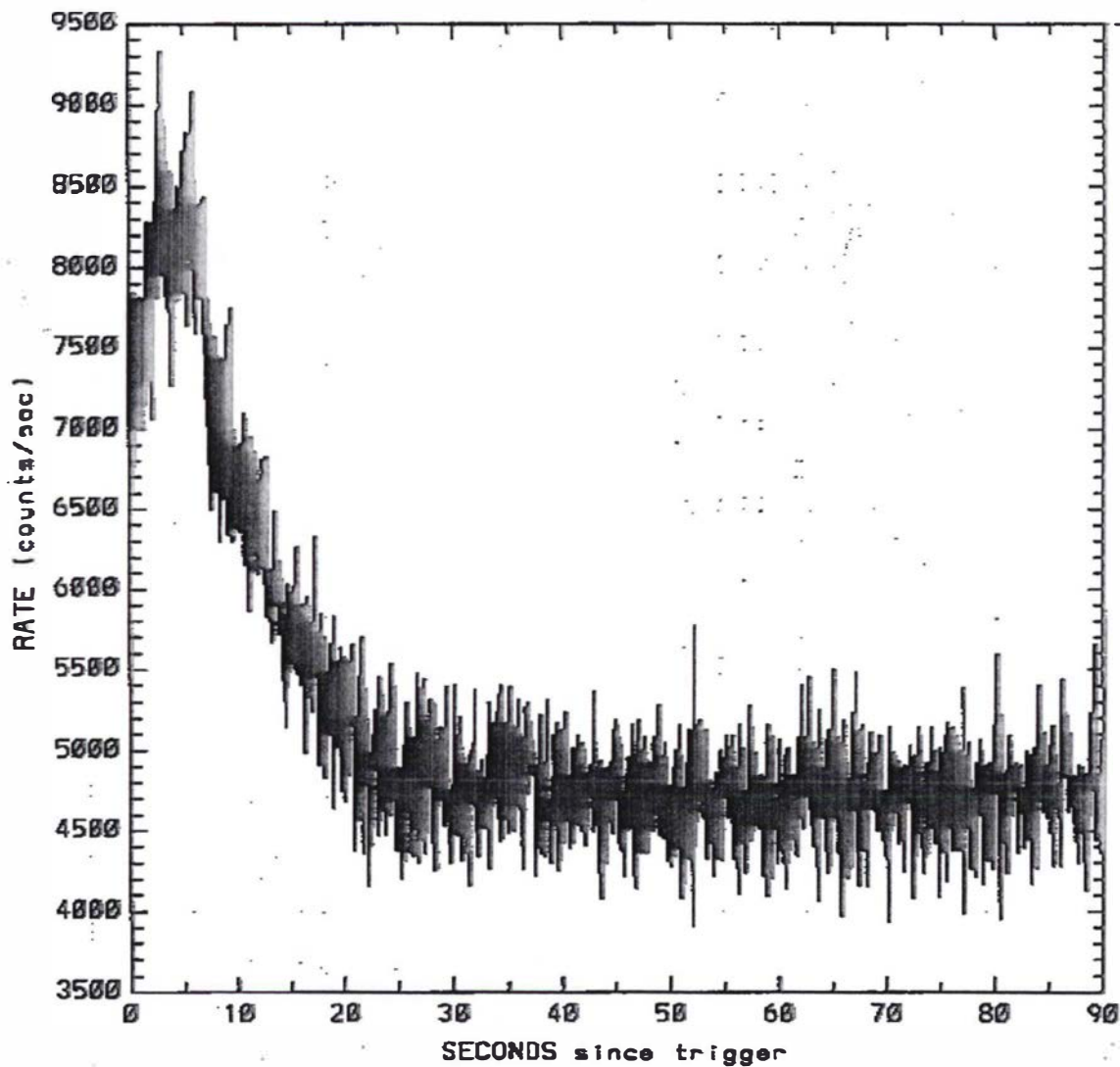
14-MAR-1997 11:51:51

Created by WOPS 80
(Burst Display)
Version 12.25

Trigger # : 1613

Trigger Time:
8761 / 59513.962Burst Data Type:
DISCSCDeadtime
Corrected: RBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..8).
-----10Discriminators:
(1 , 2)Quality Mask:
B0ISP1

MER Data for K. Hurley, No. 1613



14-KER-1997 11:02:12

Created by ROPS BO
(Burst Display)
Version 12.25

Trigger # : 1613

Trigger Time:
8761 / 59513.962

Burst Data Type:
KER

Deadtime:
Corrected: K

Background Data
Type: CONT

Minimum Integ. Time:
0.064 seconds

Detectors [7..8].
-----10

Channels:
[8 : 6]

Quality Mask:
.BDISP1

From: springer@pop.jpl.nasa.gov Mon Dec 9 06:37 PST 1996
From: Joe Springer <springer@pop.jpl.nasa.gov>
To: "'Kevin Hurley'" <khurley@sunspot.ssl.berkeley.edu>
Subject: RE: More times to check
Date: Mon, 9 Dec 1996 06:37:26 -0800
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Kevin,

I checked a range ten minutes before to ten minutes after each of these points and found no timing errors.

How big is the 'big list'? You have previously provided one with 575 events. I shudder.

Joe

From: Kevin Hurley
Sent: Friday, December 06, 1996 5:53 PM
To: Joe.B.Springer@jpl.nasa.gov; khurley@sunspot.ssl.berkeley.edu
Cc: khurley@sunspot.ssl.berkeley.edu
Subject: More times to check

Dear Joe,

Before I hit you with the big list of events to check, I wanted to ask if you could check the following times. We are again writing a paper on these, and need to get this straightened out quickly (i.e. within a couple of weeks).

Thanks

Kevin

Date UT (secs)

January 22 1991 55142
February 19 1991 42204
April 21 1991 34040
April 30 1991 60428
May 07 1991 53768
May 11 1991 08090
May 22 1991 43556
June 19 1991 55254
June 27 1991 15335
July 17 1991 17265
July 18 1991 09076
August 14 1991 70996
October 05 1991 26852
October 16 1991 41542
October 31 1991 35550
November 04 1991 52695
November 09 1991 11321
November 18 1991 66112
November 26 1991 43717
December 02 1991 71640
February 18 1992 68388
February 20 1992 49020

February 26 1992 30348
March 08 1992 17470
March 11 1992 07038
March 20 1992 45256
March 25 1992 64261
March 31 1992 66408
April 04 1992 49443
April 06 1992 11150
April 14 1992 84300
May 01 1992 75040
May 17 1992 10549
May 17 1992 50706
May 19 1991 60996
May 25 1992 14411
July 11 1992 58470
July 14 1992 46275
July 20 1992 09807
July 20 1992 18344
July 23 1992 73955

Jim,

I've double-checked the May 19 1992 event, and I think that the confusion was caused by a misprint in an e-mail somewhere. I used Ulysses, Sigma, and PVO to triangulate this burst, and came up with two possible positions: RA(2000)=8.12, dec(2000)=-50.15 and 321.14, 44.09. I then asked the sigma people whether they could help me resolve the ambiguity. Using the directional response of the Phebus detector, they rule out the first position. So I think that we have consistency with the non-observation by DMSP 11. I am not sure from your map whether we have consistency with the observation by DMSP10. What do you think?

Kevin

From root Fri Oct 15 14:04 1993

Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)

id AA15676; Fri, 15 Oct 93 14:04:44

Received: from SSTDP2.LANL.GOV by sunspot.ssl.berkeley.edu (4.1/1.30.1)

id AA00326; Fri, 15 Oct 93 14:09:41 PDT

Date: Fri, 15 Oct 1993 15:08:56 -0600 (MDT)

From: 046369@sstdp2.lanl.gov

To: KHURLEY@space6.ssl.berkeley.edu

Message-Id: <931015150856.21003a30@SSTDP2.LANL.GOV>

Subject: DMSP GRB RESULTS (REVISED)

Status: R

FROM: ESSDP2:TERRELL (TERRELL@ESSDP2.LANL.GOV) 93/10/15

TO: SMTP%"KHURLEY@SPACE6.SSL.BERKELEY.EDU"

CC:

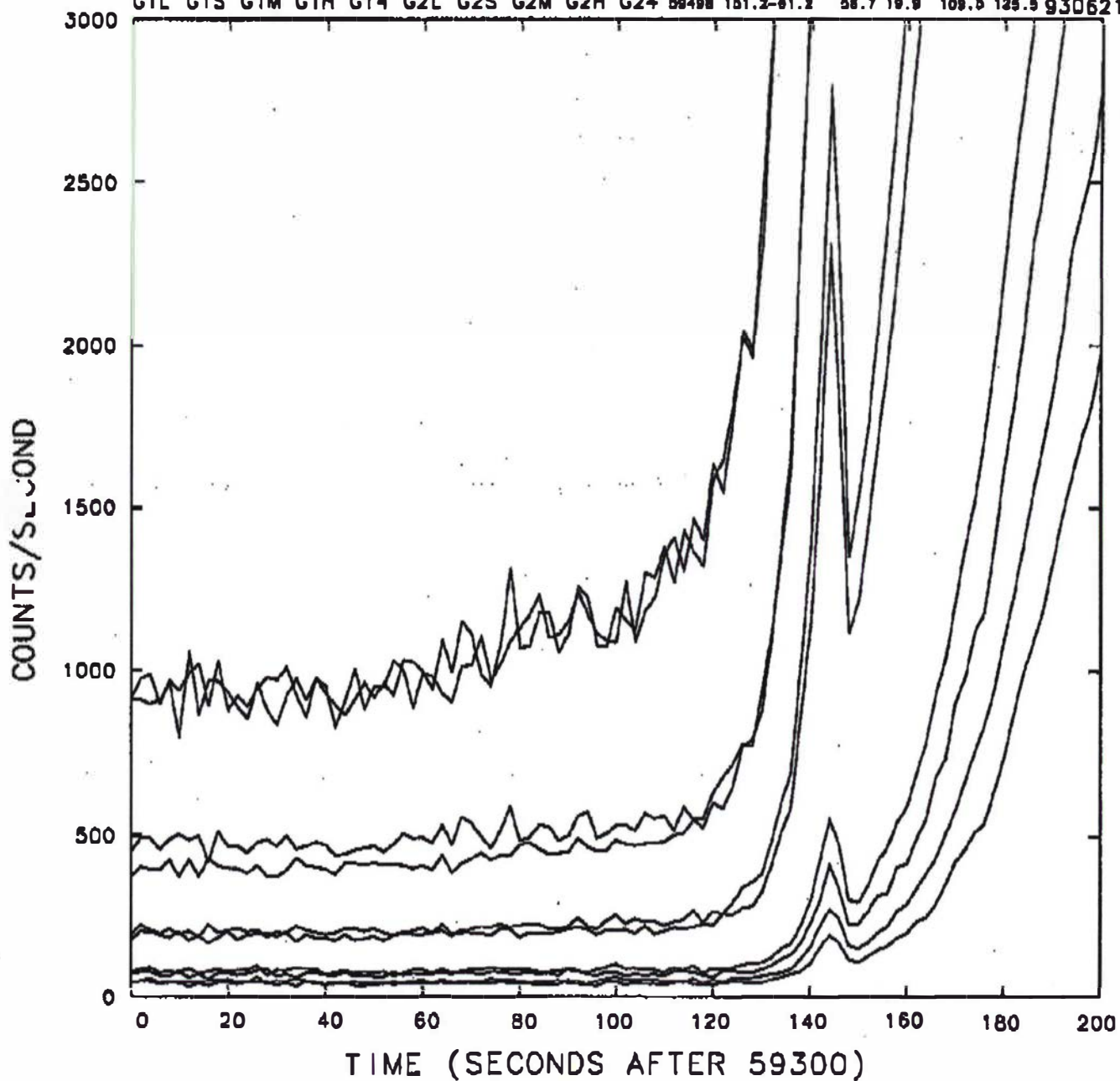
SUBJ: DMSP GRB RESULTS (REVISED)

KEVIN: YOUR LOCATION FOR THE 920519 EVENT CHECKS PERFECTLY WITH OBSERVATION BY DMSP10 AND NON-OBSERVATION BY DMSP11. THE OTHER LOCATION, VETOED BY PHEBUS, IS EXACTLY WRONG FOR DMSP ALSO. I WILL SHOW A LOCATION GRAPH FOR DMSP AND THIS EVENT IN MY POSTER PAPER, IF YOU DO NOT MIND. DO YOU MIND REVEALING THE LOCATION ON THE GRAPH?--THANKS, JIM TERRELL.

P.S.: THE GRB EVENT OF 930929 WAS NOT OBSERVED BY DMSP AT OR NEAR 31801 UT, AS JOHN LAROS MAY HAVE ALREADY TOLD YOU.--JIM.

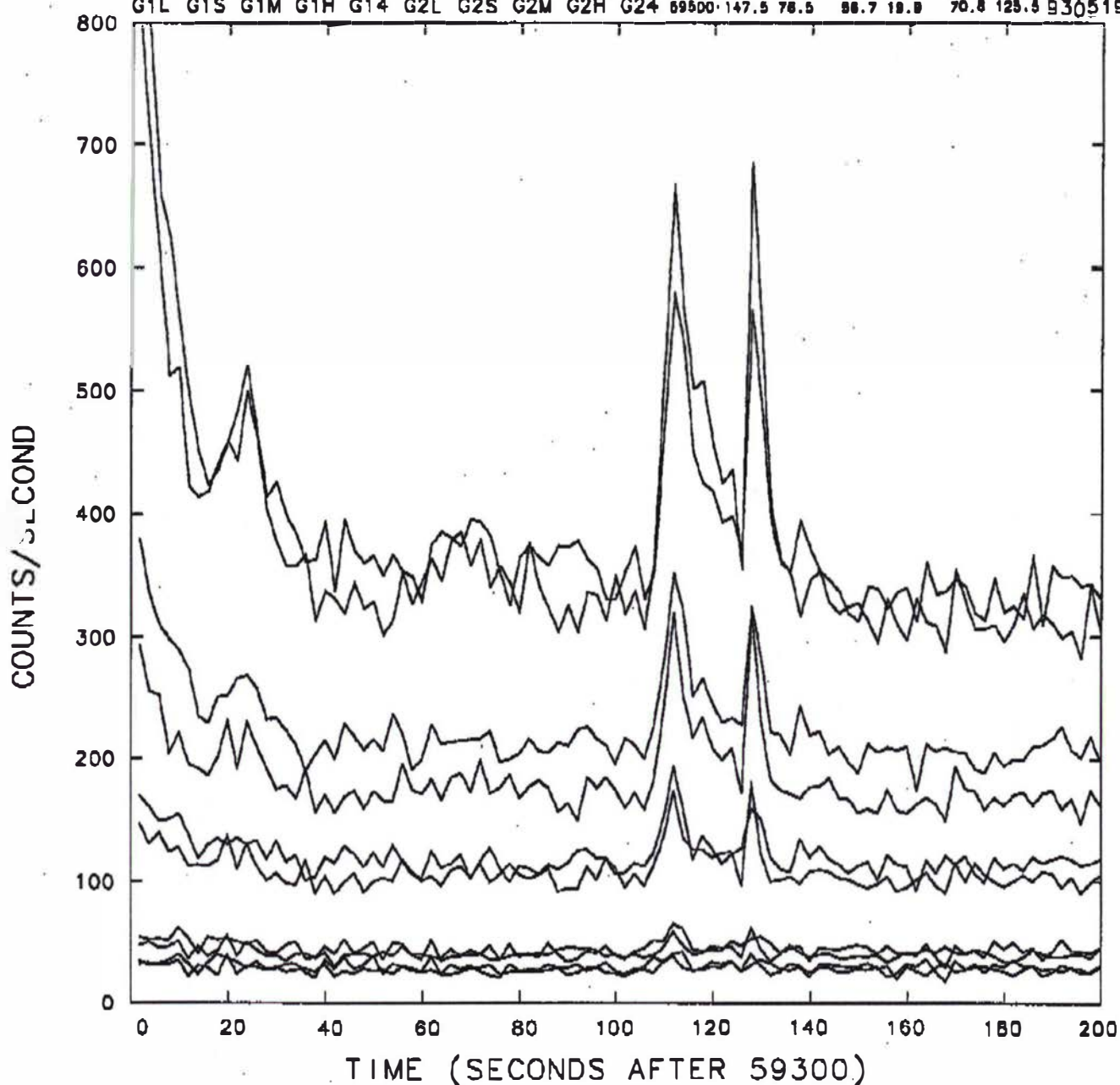
DMSP11 1992 MAY 19 92140

UT	SCRA	DEC	SUNRA	DEC	ANGSUN	CHAA
59300	183.3-71.0	56.7	19.0	114.0	124.7	8205198
59498	181.2-81.2	58.7	19.0	109.5	125.9	930621

(GRB
NOT
OBS.)

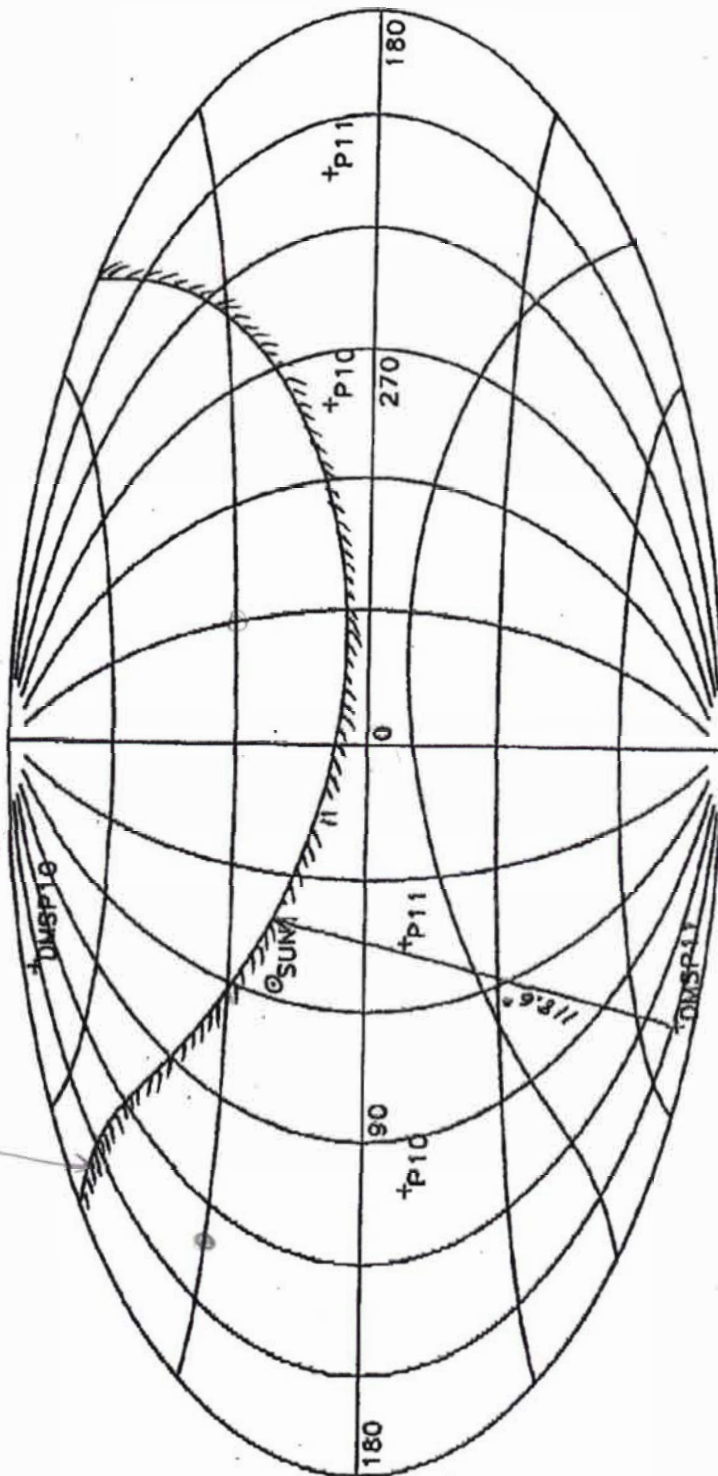
DMSP10 1992 MAY 19 92140

UT	SCRA	DEC	SUNRA	DEC	ANGSUN	GHAA	
59302	188.6	88.5	58.7	18.8	78.4	124.7	520518B
59500	147.5	78.5	58.7	18.8	70.8	123.5	530518B



59406.3
PEAK
59422.3

This is the DMSP II allowed portion - but DMSP II didn't detect it



DMSP POSITIONS+VIEW, 92/05/19 59406 UT
EQUATORIAL COORDINATES

930622

CENTRE d'ETUDE SPATIALE DES RAYONNEMENTS
9 Avenue du Colonel Roche BP 4346
31029 Toulouse Cedex.

Tel : (16) 61 55 66 44
Fax : (16) 61 55 67 01

Date : 22/07/1993

From : J-P. Dezalay

To : K. Hurley

Number of pages (including this one) :3

Kevin,

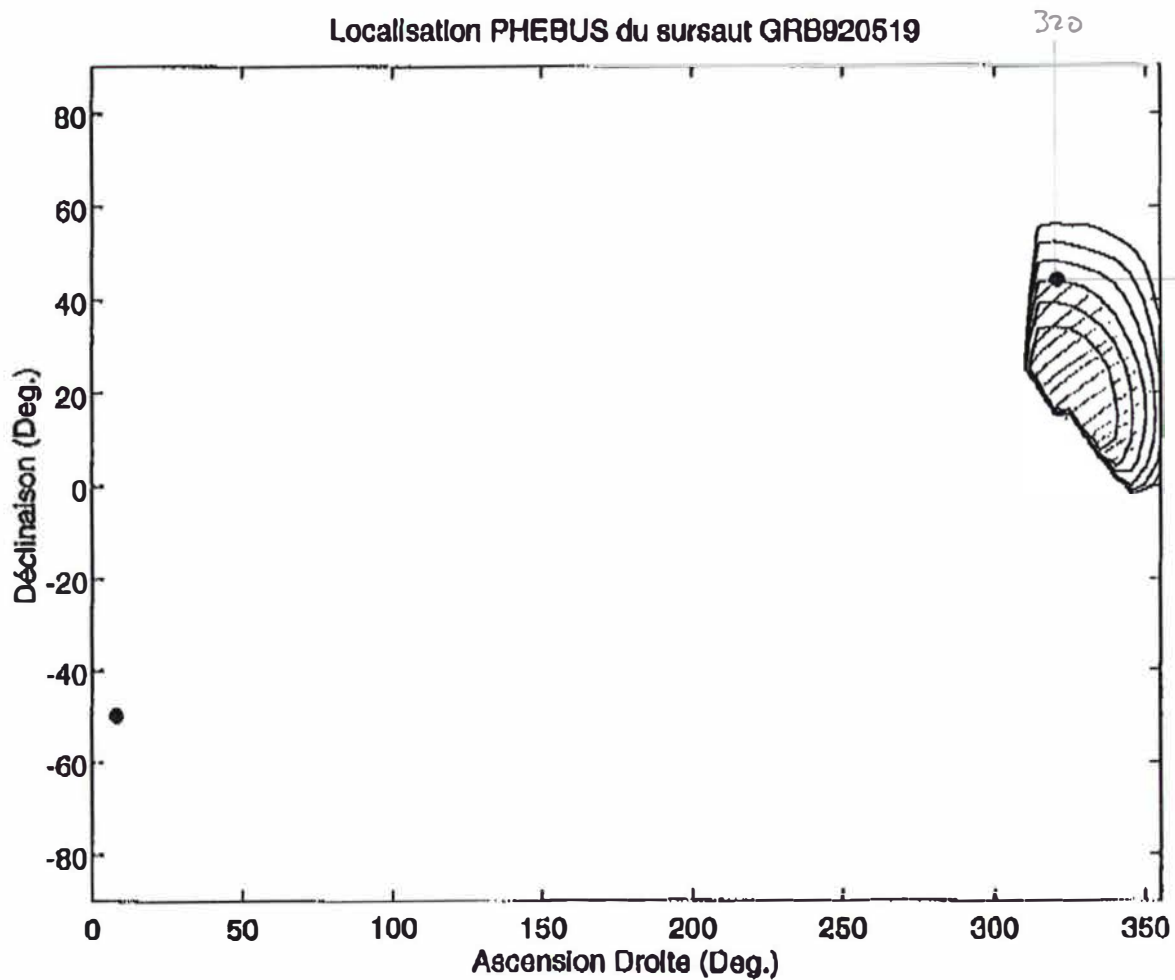
Le Dr. François Pelaez m'a dit que tu cherches des informations sur les sursauts 910402 et 920519! PHEBUS a aussi détecté ces événements et comme ils sont assez intenses, j'ai essayé de les localiser. Le résultat présenté sur les figures qui suivent ne sont pas de réelles boîtes d'erreur, mais des zones de χ^2 minimum pour mon modèle des cartes d'absorption extérieures aux détecteurs. S'il m'est très difficile de donner un intervalle de confiance avec PHEBUS, c'est peut-être suffisant pour toi.

Sur les 2 figures, j'ai représenté avec des cercles pleins les positions données par la triangulation. Dans les 2 cas, il semble que les données de PHEBUS permettent de trancher entre les 2 boîtes d'erreur. Une dernière indication, la zone de forte probabilité forme un anneau pour le 910402 et au centre la valeur du χ^2 est très élevée.

Sur les conseils de Jean-Luc, j'ai hachuré les zones où le χ^2 est minimum!! N'hésites pas si tu veux un renseignement et dis-moi si ce type de localisations imprécises te sont utiles.

A bientôt

J-P. Dezalay



From khurley@space6.ssl.berkeley.edu Mon Jun 14 17:39:13 1993
Date: Mon, 14 Jun 93 17:37:09
From: khurley@space6.ssl.berkeley.edu
Content-Length: 330

Bonjour Francois,

J'ai triangule les deux evenements qui restaient - 910402 et 920519. Pour les deux, j'ai deux intersections d'anneaux possibles.

Pour 910402 j'ai RA=77 degres, dec=12 ou RA=74,dec=36
Pour 920519 j'ai RA=8 degres, dec=-50 ou RA=321,dec=44

Est-ce que les donnees SIGMA permettent de trancher?

Amities,

Kevin

From root Thu Jun 17 08:33 1993
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA11609; Thu, 17 Jun 93 08:33:23
Received: from mx.nsi.nasa.gov by sunspot.ssl.berkeley.edu (4.1/1.30.1)
id AA02856; Thu, 17 Jun 93 08:35:11 PDT
Received: Thu, 17 Jun 93 08:24:01 PDT from CNESTA.dnet by mx.nsi.nasa.gov (4.1/1.2)
Message-Id: <9306171524.AA21521@mx.nsi.nasa.gov>
Received: from CNESTA.dnet by AMES.dnet with MAIL-11
(utk-mail11d v1.7); Thu, 17 Jun 93 08:35:59 PDT
Date: Thu, 17 Jun 93 08:35:59 PDT
From: PELAEZ@cnesta.span.nasa.gov
X-To: AMES::"khurley@space6.ssl.berkeley.edu"
Subject: RE:
To: khurley@space6.ssl.berkeley.edu
Status: R

Salut Kevin,
pour GB910402, les deux positions sont compatibles avec les donnees
de SIGMA et de PHEBUS, donc on ne peut pas trancher entre les deux
pour GB920519, la premiere position se trouve a environ 25 degres de
la direction visee par SIGMA alors que la seconde se trouve a environ
125 degres de cette direction. C'est donc cette seconde position qui
semble etre la bonne puisque ce sursaut est tres faible dans la
Gamma-Camera et de plus Claude Barat m'a confirme que PHEBUS "voyait"
arriver ce sursaut par la partie arriere du satellite.
Donc : rien de neuf pour GB910402 et RA=321 ; dec=44 pour GB920519
A bientot

Amities,

Francois

May 20 08:23 1993 standard input Page 1

From pelaez@cnesta.span.cnes.fr Thu May 20 07:08:57 1993
X400-Received: by mta mhs-relay.cs.wisc.edu in /PRMD=XNREN/ADMD= /C=US/;
Relayed; Thu, 20 May 1993 09:10:19 +0000
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/; Relayed;
Thu, 20 May 1993 09:10:16 +0000
X400-Received: by /PRMD=cnes/ADMD=atlas/C=fr/; Relayed;
Thu, 20 May 1993 09:09:03 +0000
Date: Thu, 20 May 1993 09:09:03 +0000
X400-Originator: pelaez@cnesta.span.cnes.fr
X400-Recipients: khurley@sunspot.ssl.berkeley.edu
X400-Mts-Identifier: [/PRMD=cnes/ADMD=atlas/C=fr/;737906945@eliot.cnes.fr]
X400-Content-Type: P2-1984 (2)
Content-Idenfier: Bandes d'ener...
From: "" <pelaez@cnesta.span.cnes.fr>
To: khurley <khurley@sunspot.ssl.berkeley.edu>
Subject: Bandes d'energie des profils temporels
Content-Length: 353

Kevin,
j'ai oublie de preciser les gammes d'energie utilisees :
pour le

02/04/91 il s'agit de la bande de declenchement de l'anticoincidence:
280 keV - 2 MeV.
pour les trois suivants il s'agit des canaux 0 a 40 du mode sursaut camera:
30 keV - environ 230 keV
pour le 19/05/92 il s'agit des 2 premieres bandes VL: 40-160 keV environ.
Salut.
Francois

From pelaez@cnesta.span.cnes.fr Thu May 20 06:05:27 1993

X400-Received: by /PRMD=cicb/ADMD=atlas/C=FR/;

Relayed; 20 May 93 14:45:48+0200

X400-Received: by /PRMD=cnes/ADMD=atlas/C=fr/;

Relayed; 20 May 93 12:45:26+0000

Date: 20 May 93 12:45:26+0000

From: " " <pelaez@cnesta.span.cnes.fr>

Subject: Profil GB920519

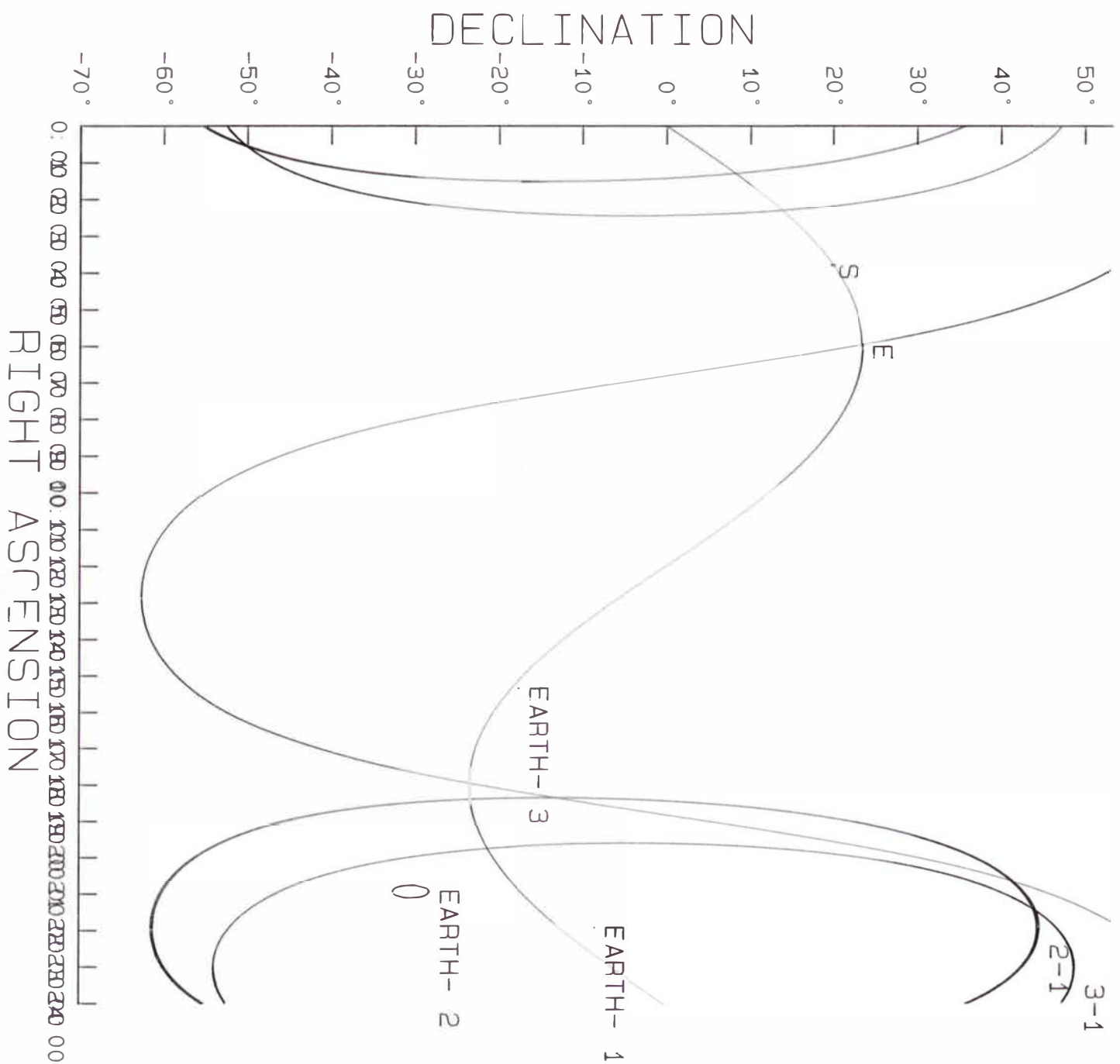
To: khurley <khurley@sunspot.ssl.berkeley.edu>

Content-Length: 12399

Courbe de lumiere du sursaut VL de la seance 449

t1 (h,UT)	t2 (h,UT)	y (cps/s)
.1637309E+02	.1637420E+02	.2065782E+03
.1637420E+02	.1637531E+02	.2057126E+03
.1637531E+02	.1637642E+02	.1998848E+03
.1637642E+02	.1637753E+02	.1834016E+03
.1637753E+02	.1637864E+02	.2083093E+03
.1637864E+02	.1637975E+02	.2019619E+03
.1637975E+02	.1638086E+02	.2088134E+03
.1638086E+02	.1638197E+02	.1935484E+03
.1638197E+02	.1638308E+02	.1981567E+03
.1638308E+02	.1638420E+02	.2073733E+03
.1638420E+02	.1638531E+02	.1935484E+03
.1638531E+02	.1638642E+02	.2019009E+03
.1638642E+02	.1638753E+02	.1917769E+03
.1638753E+02	.1638864E+02	.2060012E+03
.1638864E+02	.1638975E+02	.1958525E+03
.1638975E+02	.1639086E+02	.1926843E+03
.1639086E+02	.1639198E+02	.1993087E+03
.1639198E+02	.1639309E+02	.1909562E+03
.1639309E+02	.1639420E+02	.1938364E+03
.1639420E+02	.1639531E+02	.1938364E+03
.1639531E+02	.1639642E+02	.1987882E+03
.1639642E+02	.1639753E+02	.1984447E+03
.1639753E+02	.1639864E+02	.1993087E+03
.1639864E+02	.1639975E+02	.1926843E+03
.1639975E+02	.1640086E+02	.2089595E+03
.1640086E+02	.1640197E+02	.1952765E+03
.1640197E+02	.1640308E+02	.2083093E+03
.1640308E+02	.1640420E+02	.2083093E+03
.1640420E+02	.1640531E+02	.2001728E+03
.1640531E+02	.1640642E+02	.2111175E+03
.1640642E+02	.1640753E+02	.2067972E+03
.1640753E+02	.1640864E+02	.1903802E+03
.1640864E+02	.1640975E+02	.2085253E+03
.1640975E+02	.1641086E+02	.2158107E+03
.1641086E+02	.1641197E+02	.2030530E+03
.1641197E+02	.1641309E+02	.2076613E+03
.1641309E+02	.1641420E+02	.2137911E+03
.1641420E+02	.1641531E+02	.1921083E+03
.1641531E+02	.1641642E+02	.2034045E+03
.1641642E+02	.1641753E+02	.2102534E+03
.1641753E+02	.1641864E+02	.2022504E+03
.1641864E+02	.1641975E+02	.1984447E+03
.1641975E+02	.1642086E+02	.1964286E+03

EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 SIGMA 3 PVO



May 20 08:20 1993 standard input Page 1

From pelaez@cnesta.span.cnes.fr Thu May 20 05:48:20 1993
X400-Received: by mta mhs-relay.cs.wisc.edu in /PRMD=XNREN/ADMD= /C=US/;
Relayed; Thu, 20 May 1993 07:49:41 +0000
X400-Received: by /PRMD=uninett/ADMD= /C=no/; Relayed;
Thu, 20 May 1993 07:49:03 +0000
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/; Relayed;
Thu, 20 May 1993 07:46:25 +0000
X400-Received: by /PRMD=cnes/ADMD=atlas/C=fr/; Relayed;
Thu, 20 May 1993 07:43:49 +0000
Date: Thu, 20 May 1993 07:43:49 +0000
X400-Originator: pelaez@cnesta.span.cnes.fr
X400-Recipients: khurley@sunspot.ssl.berkeley.edu
X400-Mts-Identifier: [/PRMD=cnes/ADMD=atlas/C=fr/;737901834@eliot.cnes.fr]
X400-Content-Type: P2-1984 (2)
Content-Identifier: Positions GRA...
From: "" <pelaez@cnesta.span.cnes.fr>
To: khurley <khurley@sunspot.ssl.berkeley.edu>
Subject: Positions GRANAT
Content-Length: 1305

CESR/SIGMA/F.PELAEZ

TOULOUSE, 20/05/1993

Kevin,
voici les positions de GRANAT pour GB910402, GB910417, GB910517,
GB920414 et GB920519 :

GB910402 : t0 = 14h 28mn 15s 137ms ----> profil AC
r = 141999.7937 km
R.A.(2000) = 09h 32mn 31.68s
Decl(2000) = 24d 59' 18"

GB910417 : t0 = 20h 07mn 32s 490ms ----> profil GC
r = 195435.2016 km
R.A.(2000) = 09h 01mn 17.09s
Decl(2000) = 46d 22' 19.2"

GB910517 : t0 = 05h 02mn 44s 490ms ----> profil GC
r = 172965.8481 km
R.A.(2000) = 09h 16mn 41.77s
Decl(2000) = 34d 35' 13"

GB920414 : t0 = 23h 22mn 43s 021ms ----> profil GC
r = 116687.6609 km
R.A.(2000) = 03h 00mn 43.03s
Decl(2000) = 84d 15' 50.4"

GB920519 : t0 = 16h 30mn 03s 103ms ----> profil VL
r = 166606.1708 km
R.A.(2000) = 08h 55mn 17.80s = 133.824
Decl(2000) = 30d 18' 58.5" = 30.316

Les courbes de lumiere suivront dans 5 fichiers separes. Elles sont
donnees sous forme d'histogramme (t1, t2, y). Pour les quatre
premiers sursauts, t1 et t2 sont donnees en secondes depuis t0. Pour le
dernier, t1 et t2 sont donnees en heures T.U. (t0 correspond ici au pic).

BATSE

19/05/92

59513.962

25- 50 keV

COUNTS/S TTS

5000
4000
3000
2000
1000
0

0 4 8 12 16 20 24 28 32 36 40

17/10/94

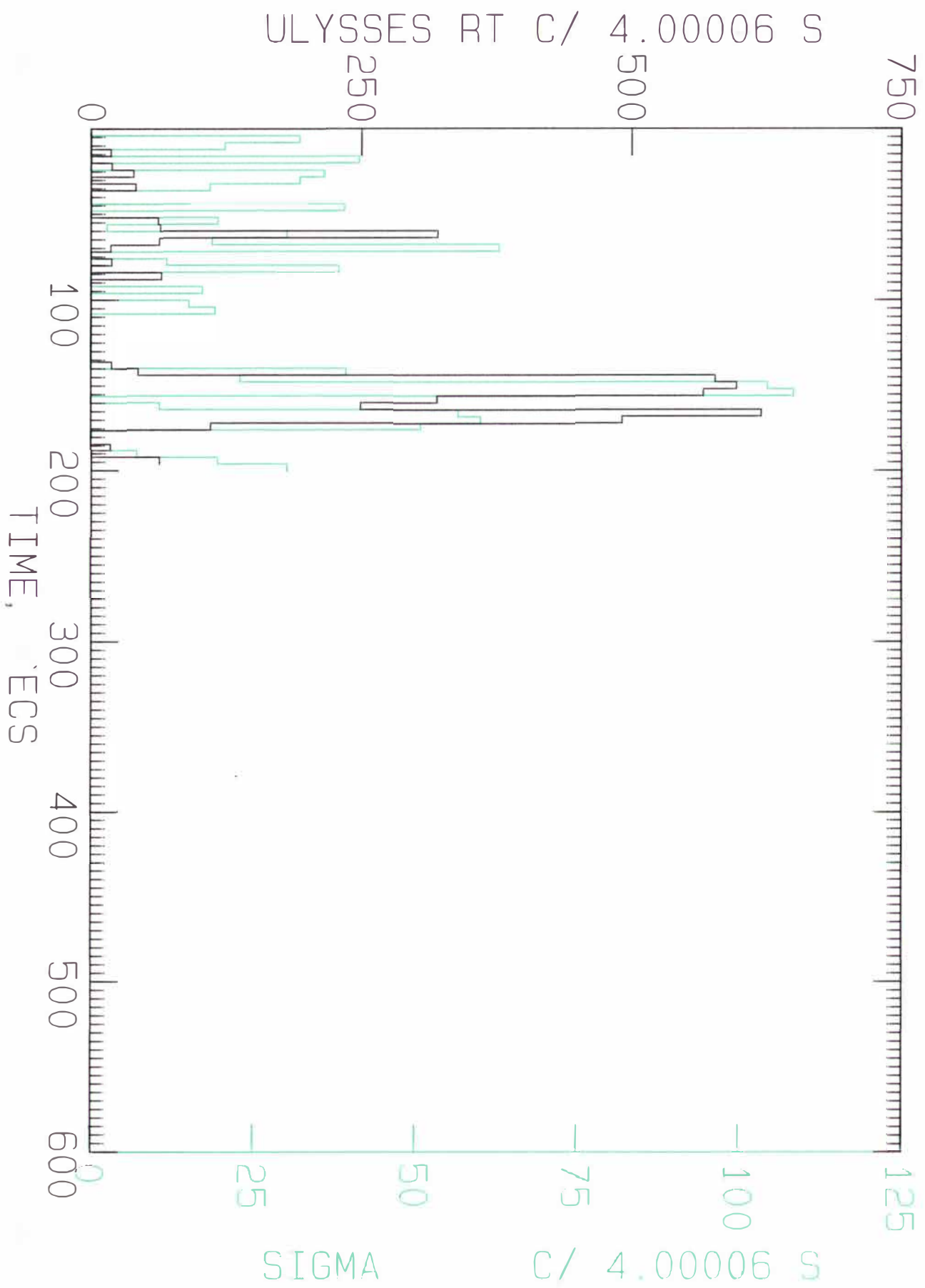
ULYSSES RT-SIGMA

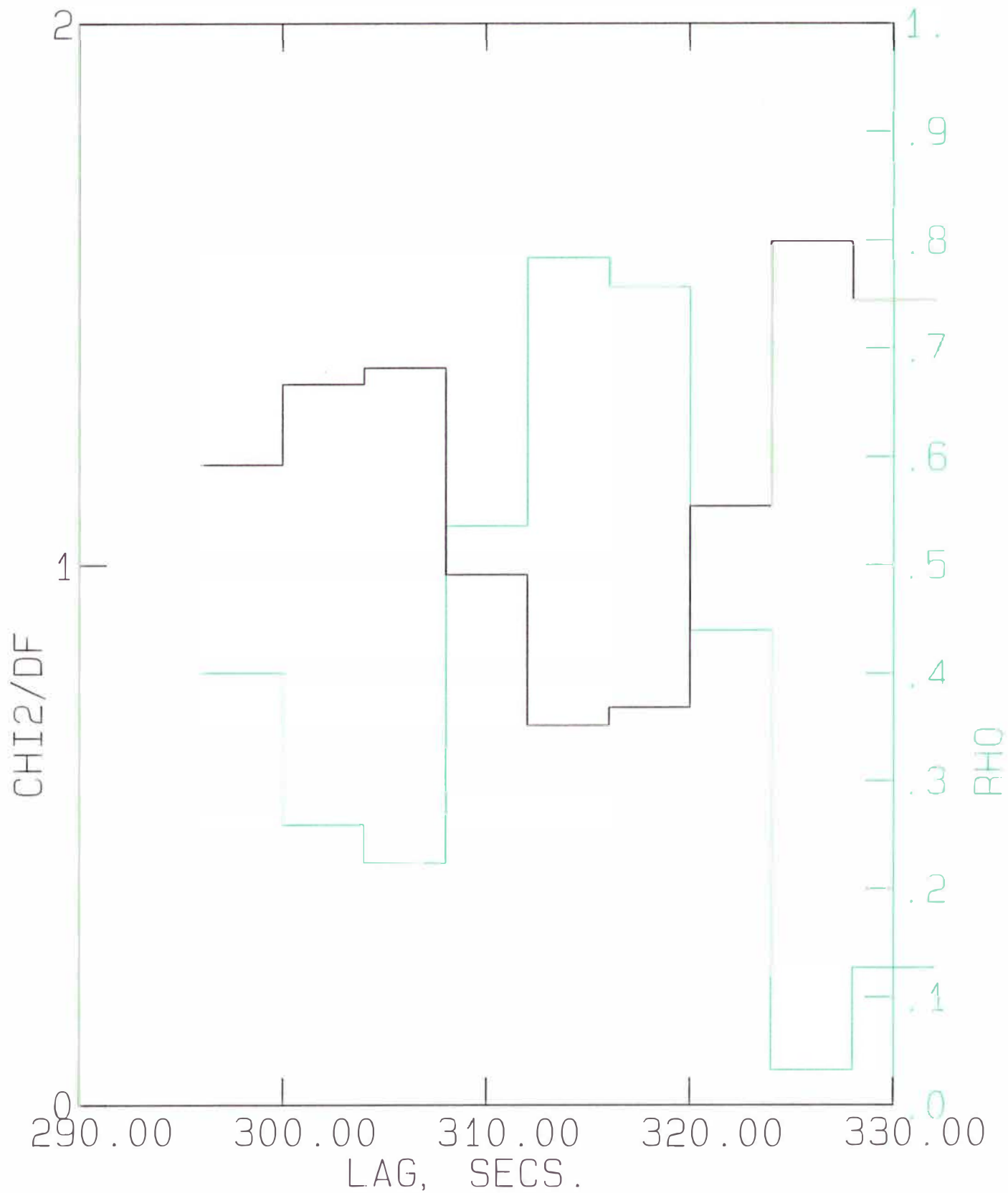
CORRELATION

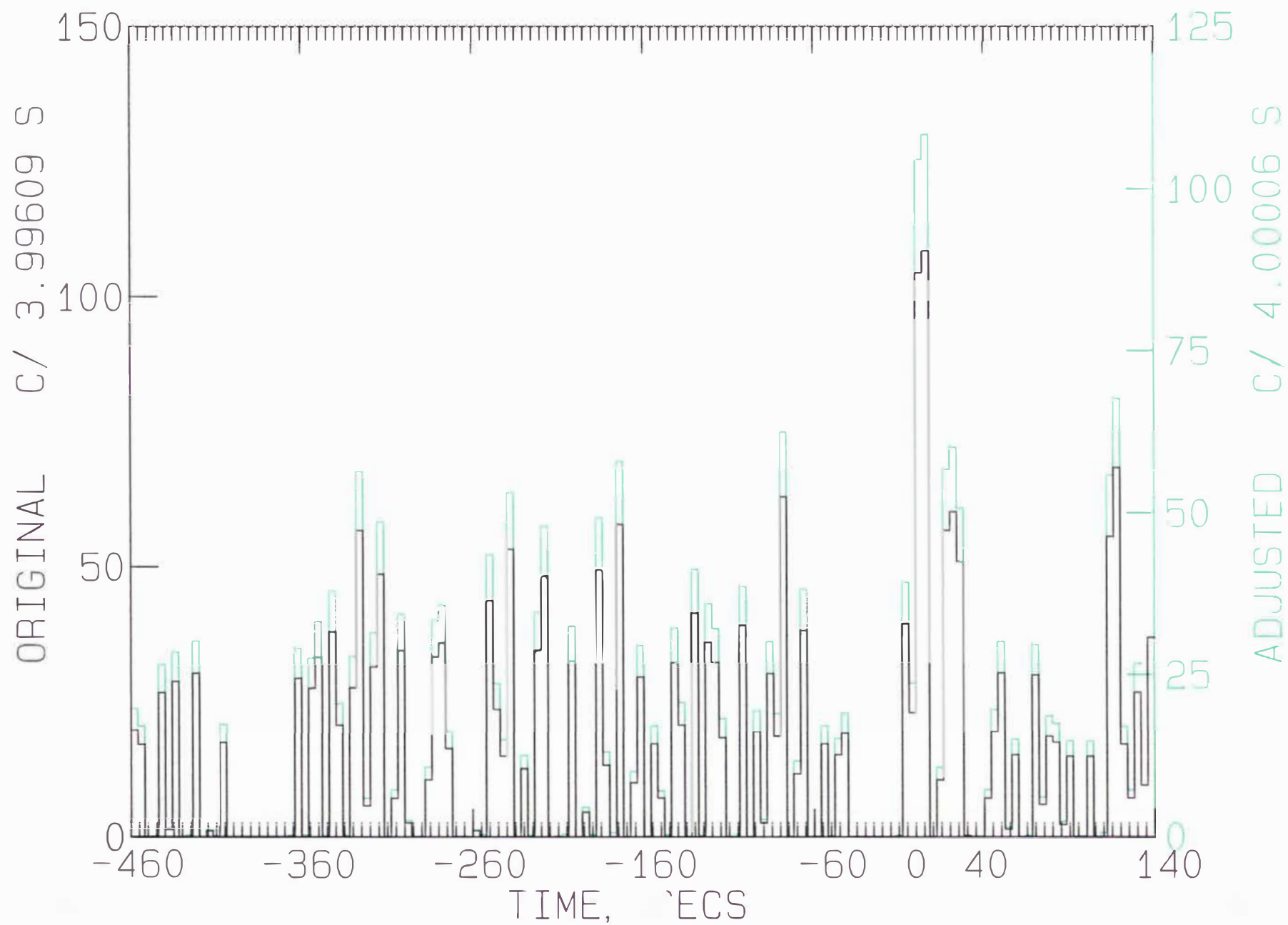
19/ 5/92

60846.462

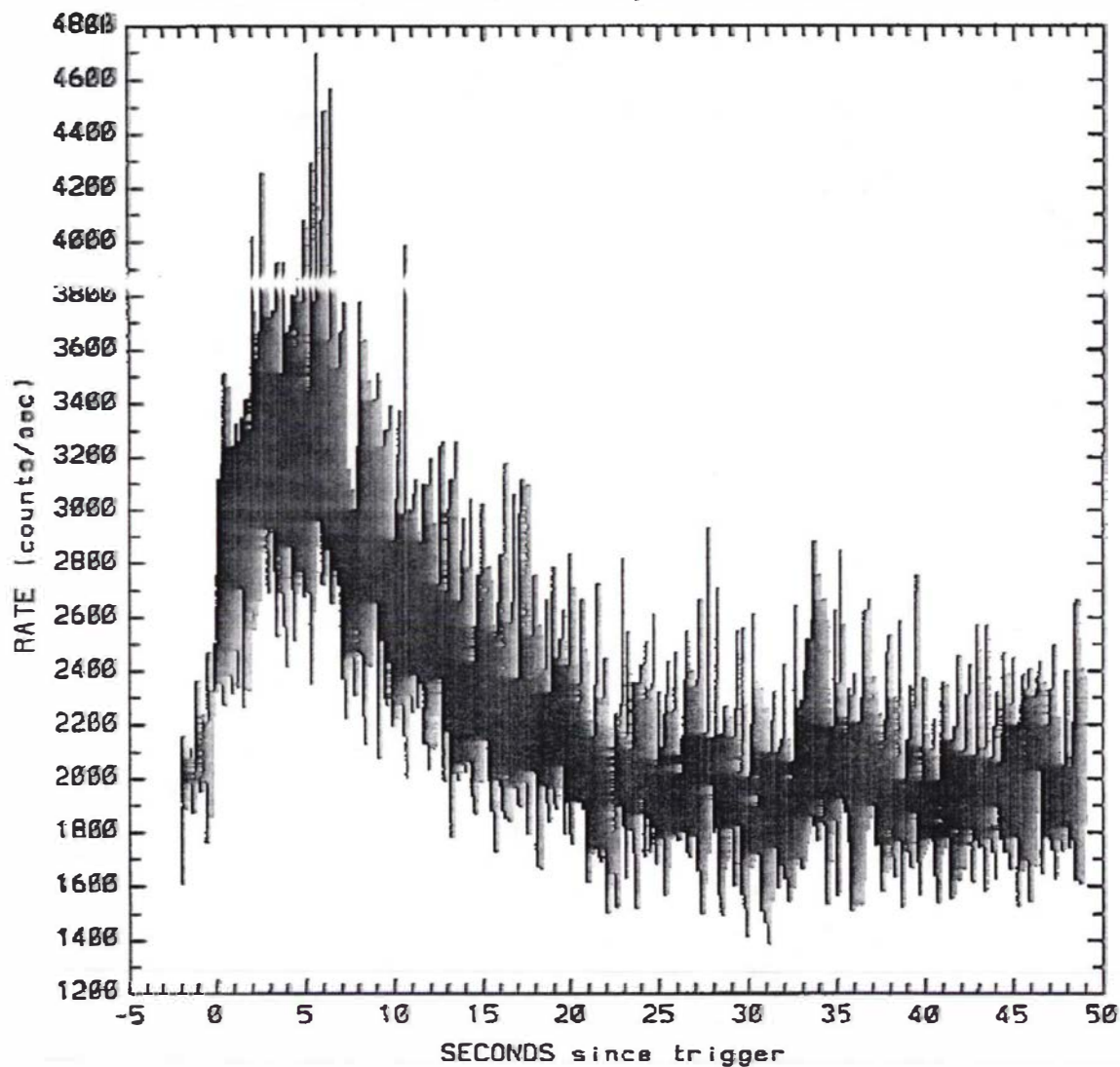
14/ 6/93







TTS Data for K. Hurley, No. 1613



29-SEP-1994 13:51.13

Created by KOPS BD
(Burst Display)
Version 2.22

Trigger #: 1613

Trigger Time:
8761 / 59513.962Burst Data Type:
115Time Corrected: Y
Maximum Time Error:
0.82643 secondsDeadtime:
Corrected: N
Background Data
Type: PREB + DISCLADetectors [7..0],
-----16Discriminators:
1 1 11Quality Mask:
BDISP1

SIGMA VL

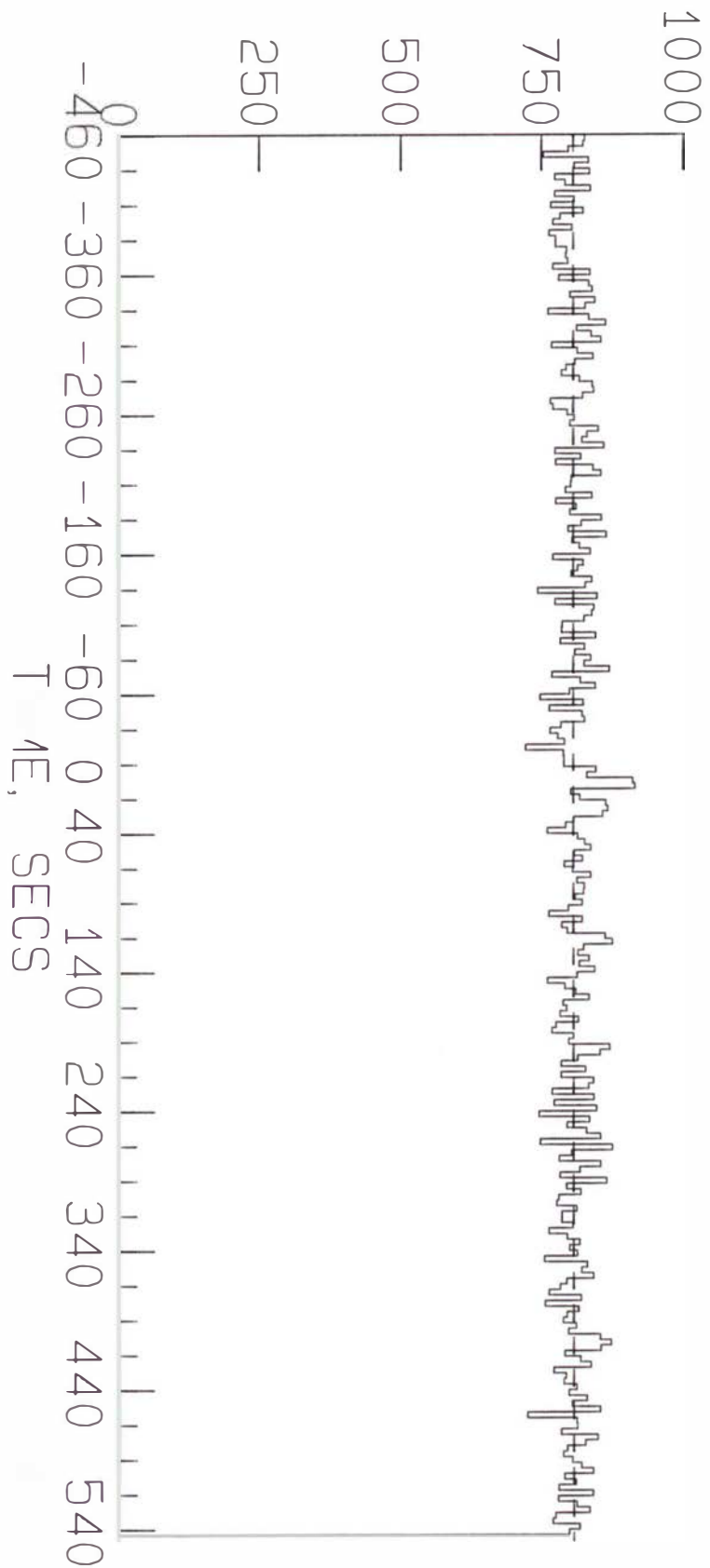
19/05/92

59403.103

40-300 keV

30-230

COUNTS/3.996 S



PV0

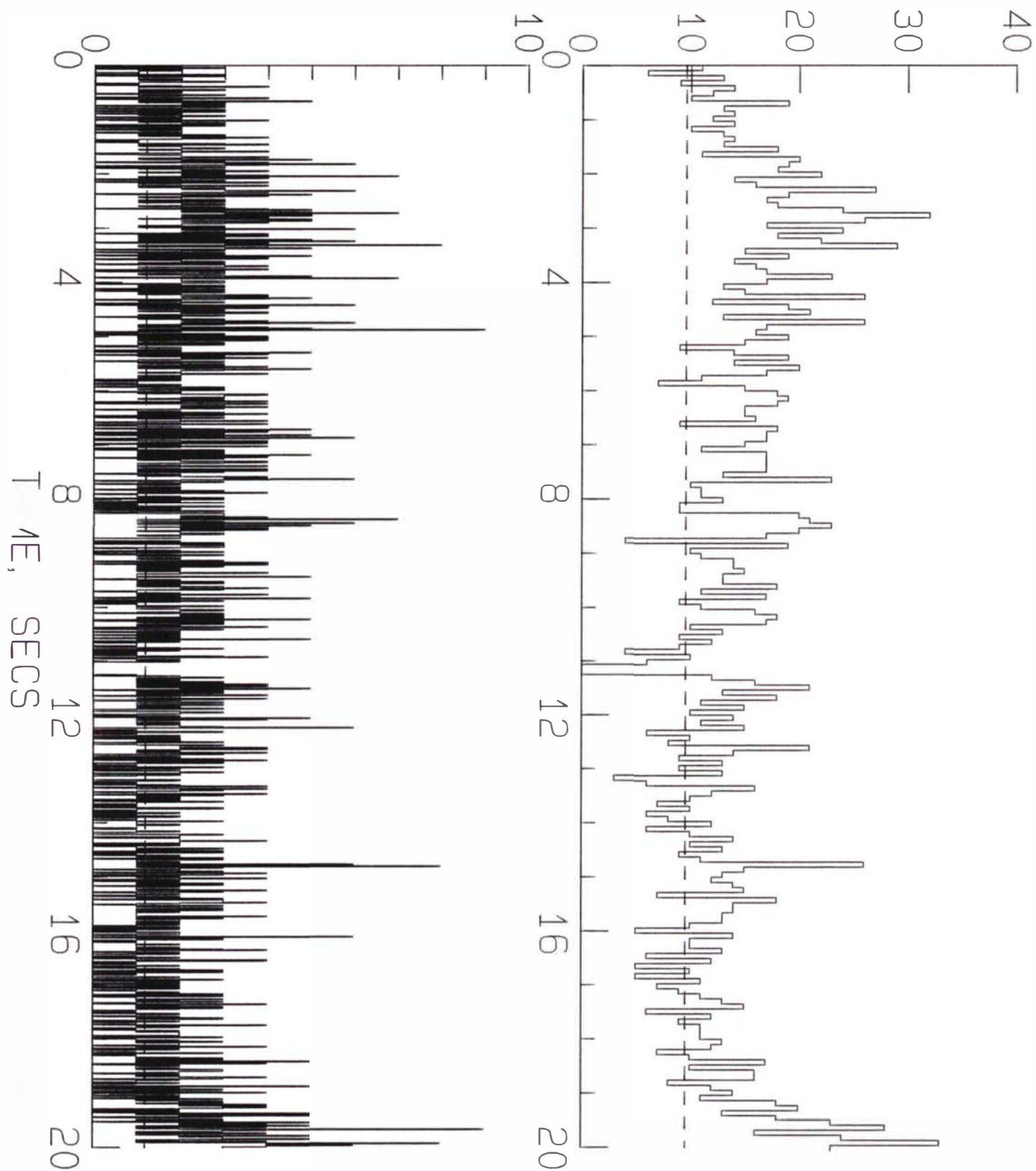
19/05/92

59211.945

100-2000 keV

COUNTS/ .012 S

COUNTS/ .094 S



PV0

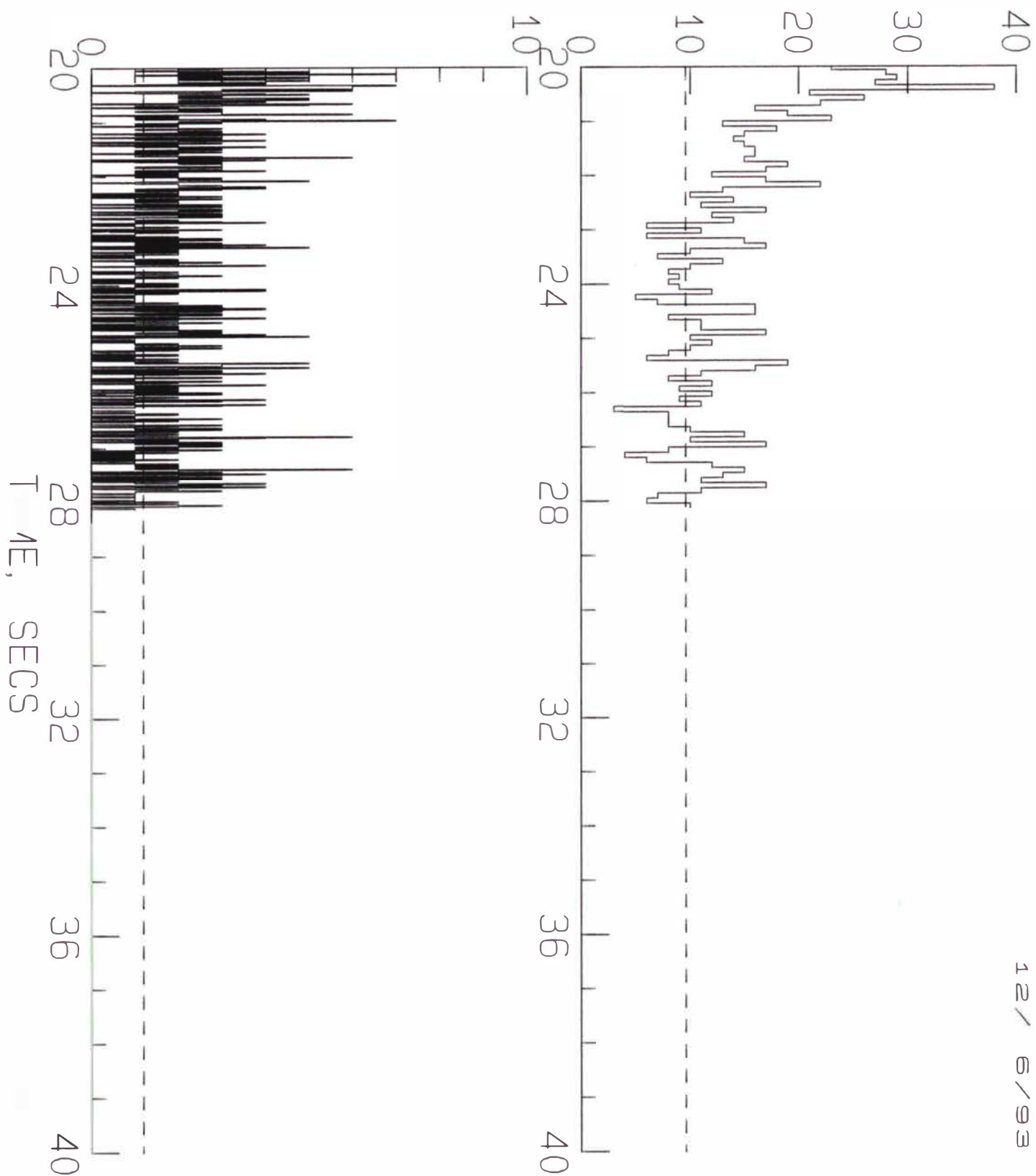
19/05/92

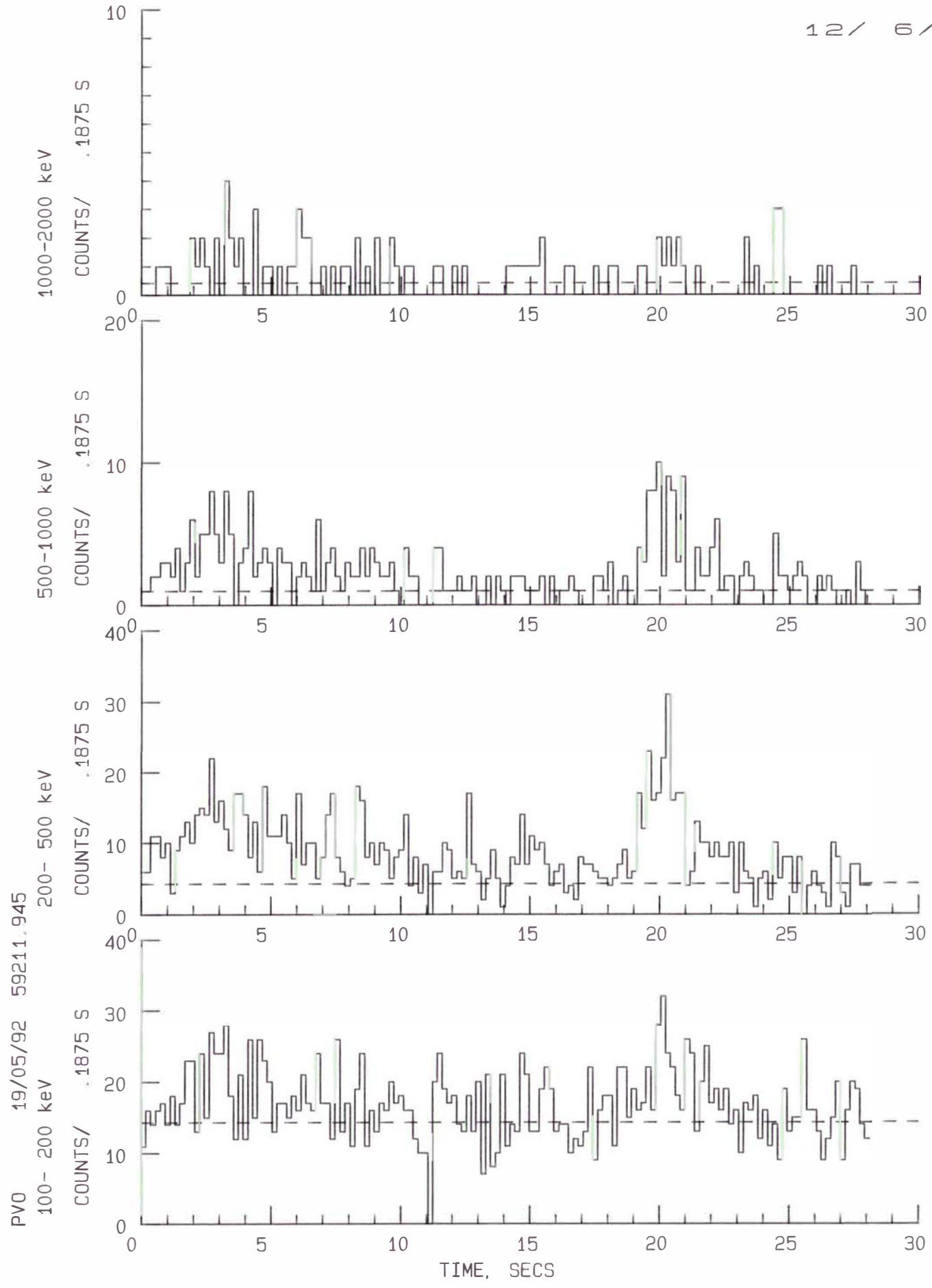
59211.945

100-2000 keV

COUNTS/ .012 S

COUNTS/ .094 S





From @space6.ssl.berkeley.edu,@cmsa.berkeley.edu:X024862@JPNRKY00.BITNET Thu Nov 26 03:41:24 J
Date: 26 NOV 1992 18:19:41 JST
From: <X024862@JPNRKY00.BITNET@cmsa.berkeley.edu>
Subject: YOHKOH GRB Event List
To: <khurley@space6.ssl.berkeley.edu>
Content-Length: 1674

To: Dr. K. Hurley (SSL/UCB)
Fr. Masato Yoshimori (Rikkyo Univ.)
Date: Thu. 26 Nov. 1992

Dear Dr. Hurley:

I am sending the YOHKOH GRB event list. YOHKOH has two GRB detectors, hard X-ray spectrometer (HXS) and radiation belt monitor (RBM). HXS is a NaI detector (3 in. dia x 1 in. thick) which provides a 32 channel energy spectrum (20 - 600 keV) every 2 sec and a time profile every 31 ms. RBM is a NaI detector (2 in. dia x 1 cm thick) which provides a 32 channel energy spectrum (10 - 300 keV) every 2 sec and a time profile every 31 ms.

YOHKOH GRB Event List (1991 Oct. 1 - 1992 Sept.3)

Date (Day/Month/Year)	UT (hh:mm)	Comment
27/11/91* U B	04:22	HXS 17:20 + 50
✓09/12/91	18:36	HXS/RBM
21/12/91* No J N.B.	06:17	HXS/RBM
18/02/92* U-BE N.B.	18:44	HXS
✓06/04/92	02:45	HXS/RBM
19/04/92* TJS HOU N.B.	01:22	HXS/RBM
19/05/92* U-BE N.B.	16:30	HXS/RBM
17/06/92* B U-BE	05:29	HXS
✓22/06/92	07:05	HXS/RBM
01/07/92* N.B. N.B.	19:39	HXS
11/07/92 U	16:09	HXS/RBM
✓31/07/92	17:07	HXS/RBM
16/08/92 N.B. N.B.	12:36	HXS
✓24/08/92	10:56	HXS/RBM
✓03/09/92	23:29	HXS

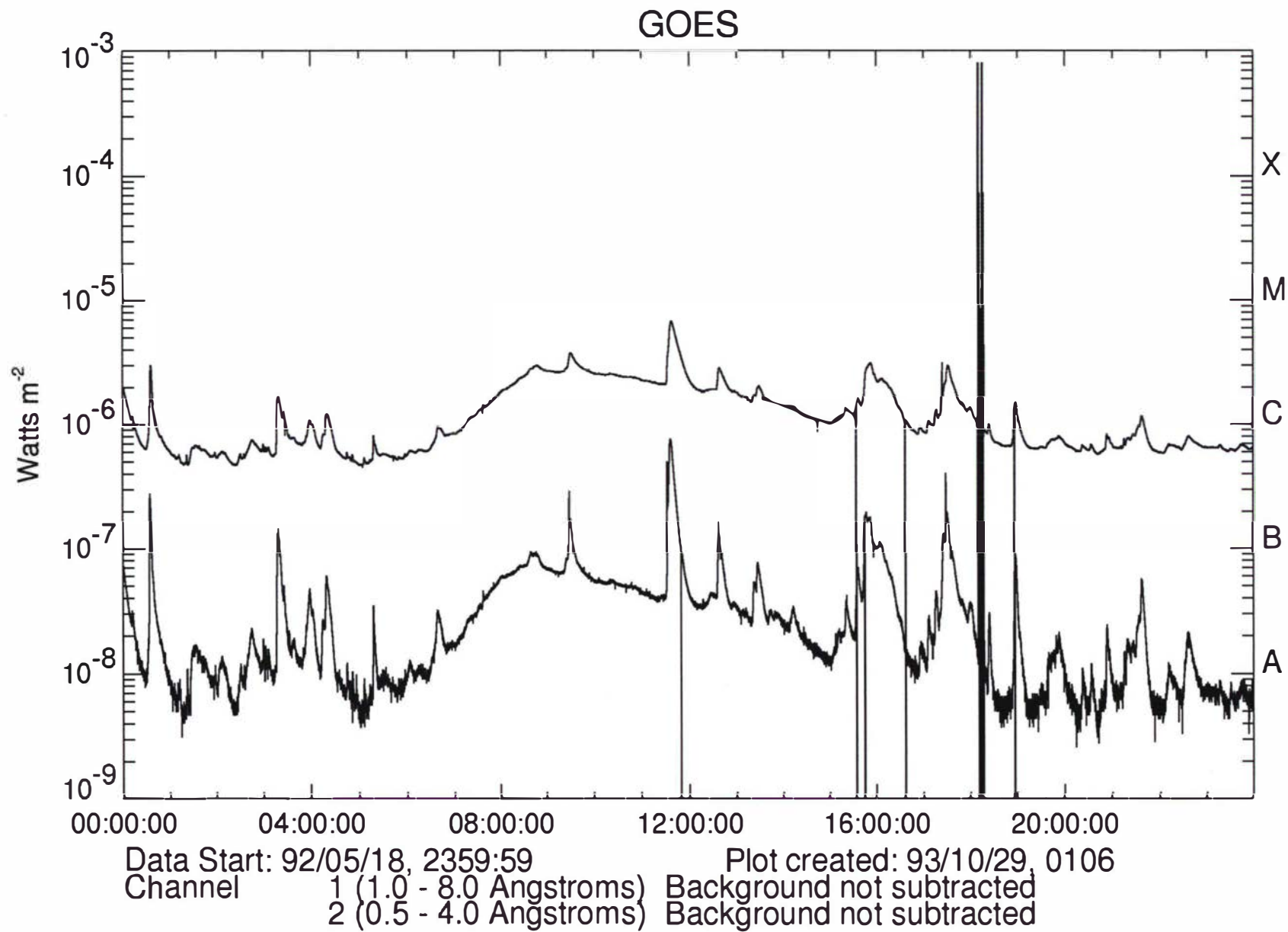
* Recorded with time resolution of 0.25 or 2 sec.
Accurate burst times (hh:mm:ss) are available shortly.

We hope the YOHKOH GRB event list is helpful to you.

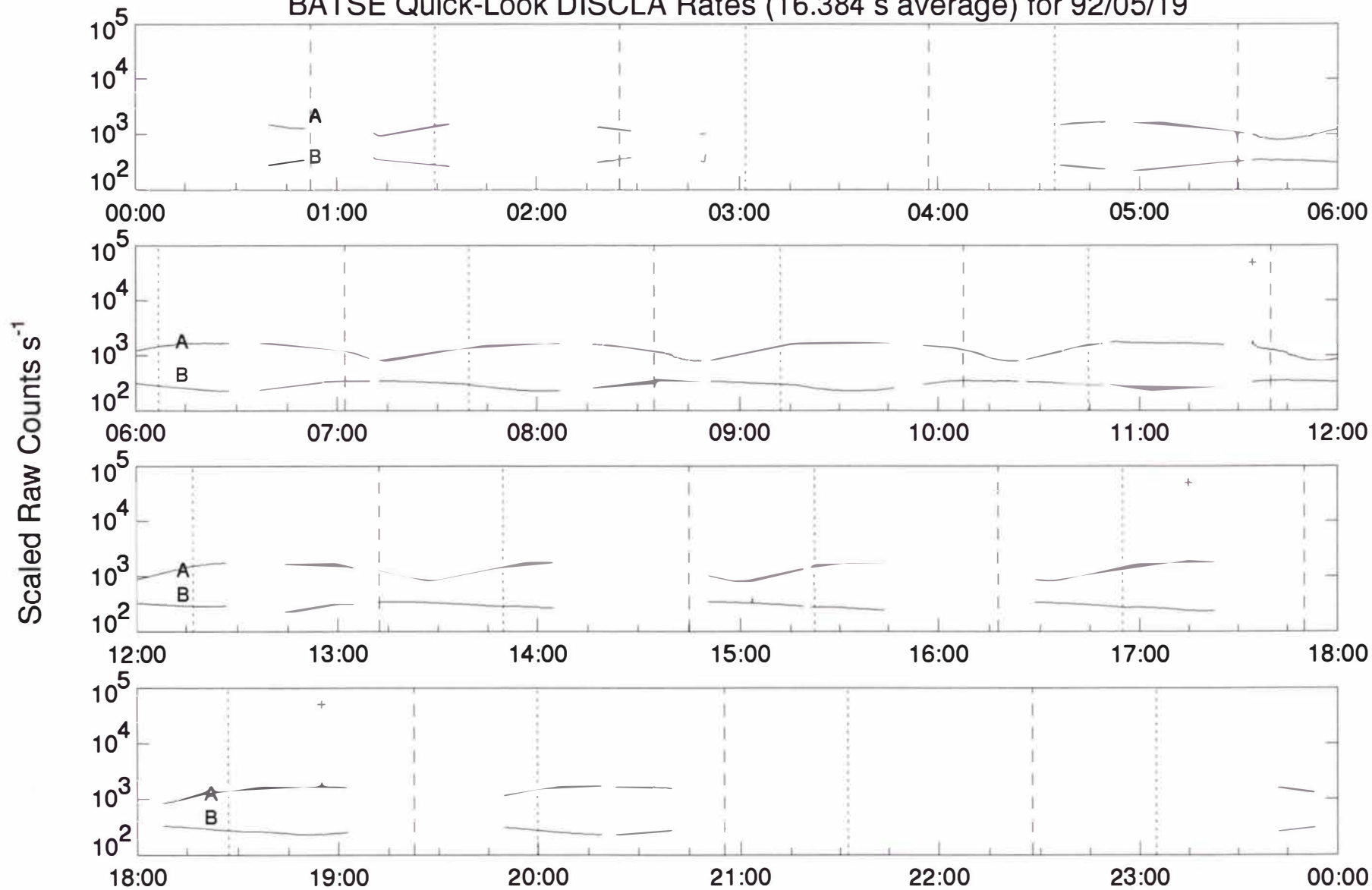
With best regards,

Masato Yoshimori

Acknowledge-To: <X024862@JPNRKY00>



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/19

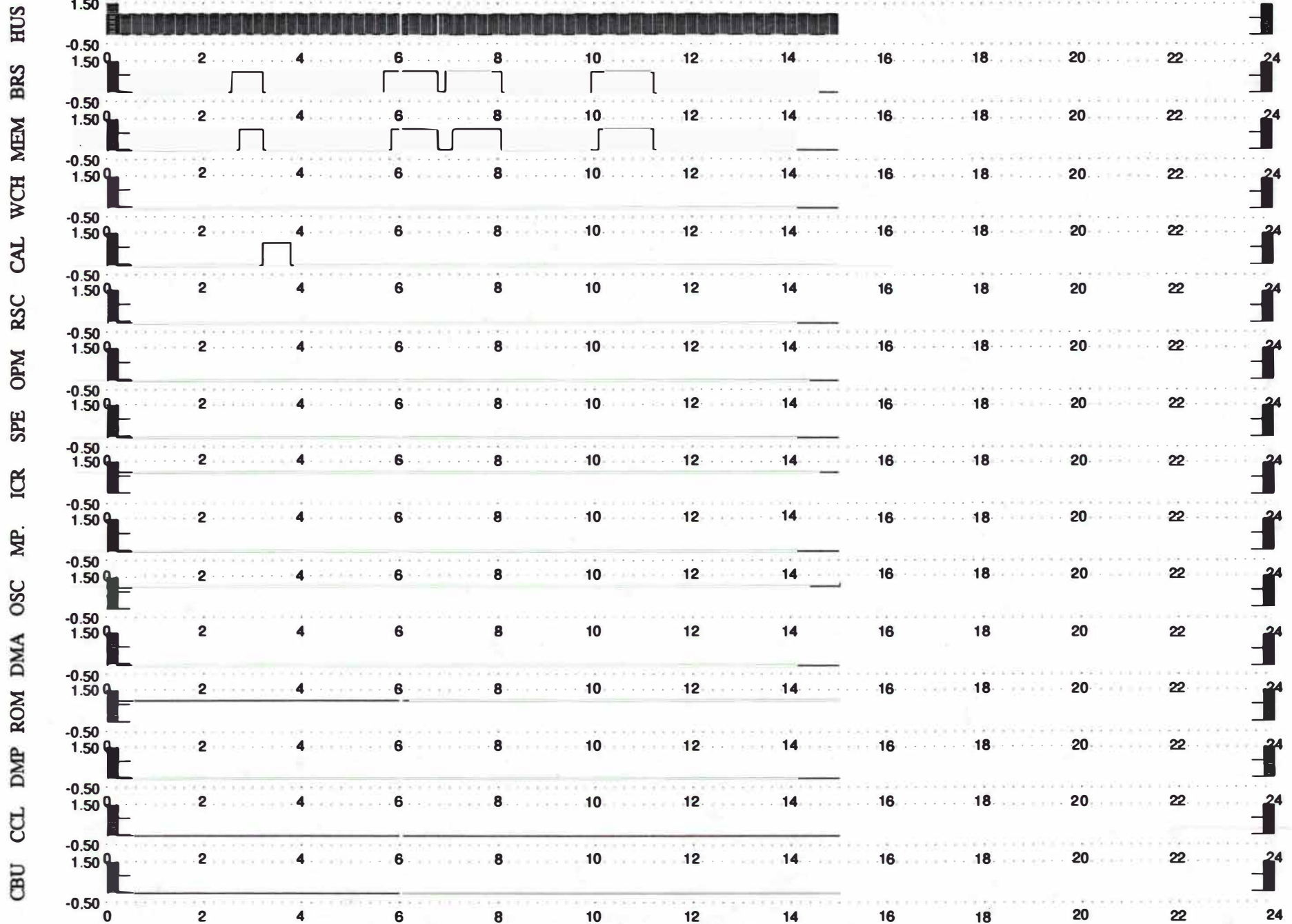


Current Time: 92/09/19, 1720 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

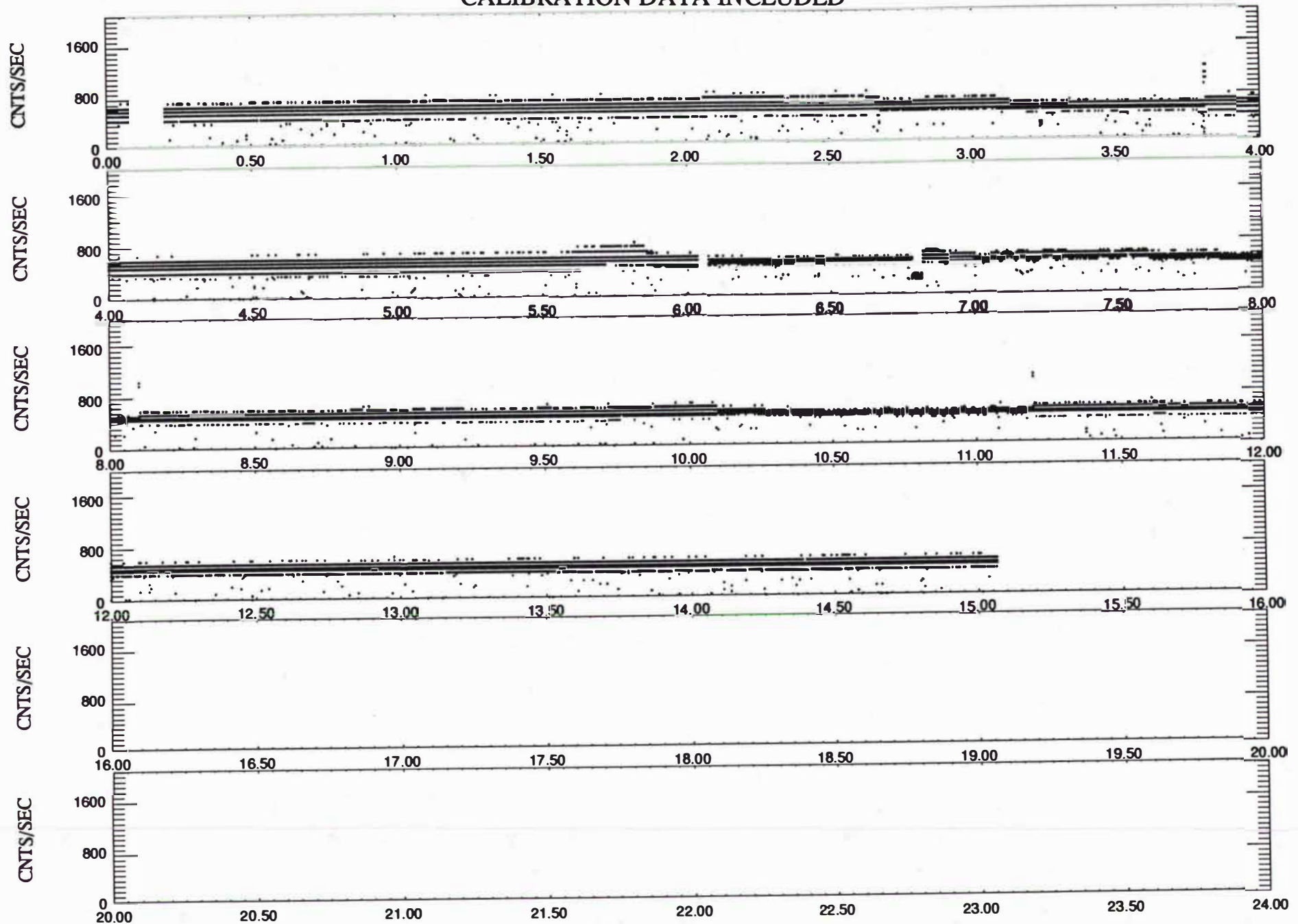
* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 7 - 10



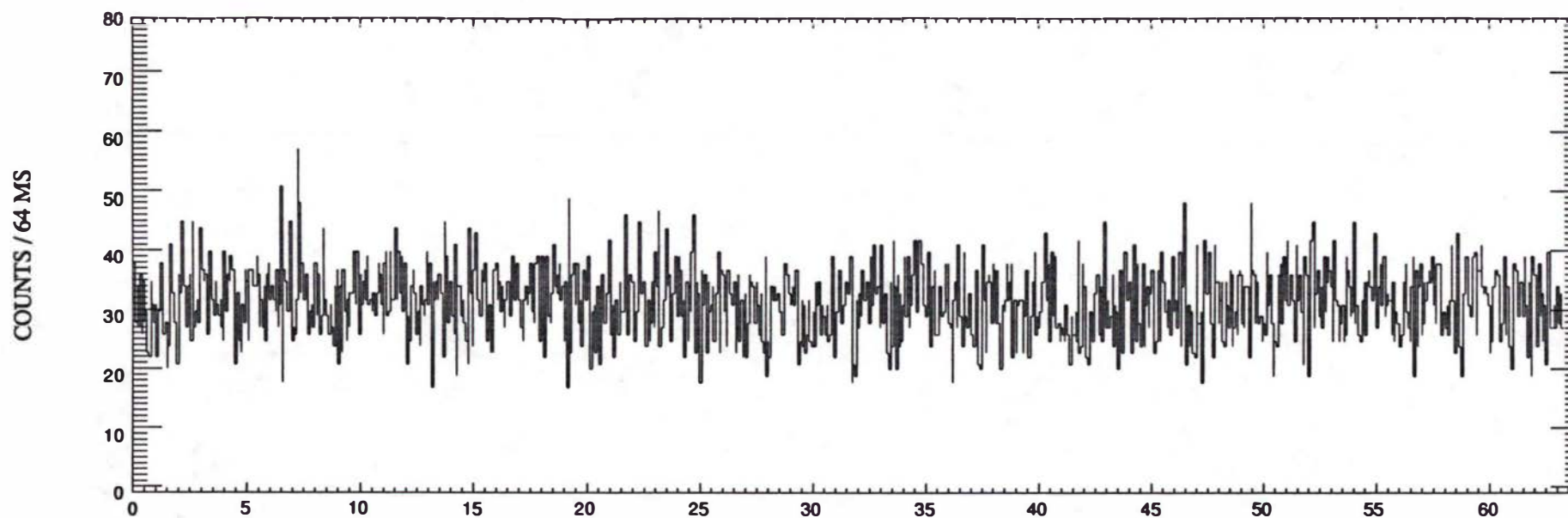
UNIVF AL TIME

CALIBRATION DATA INCLUDED

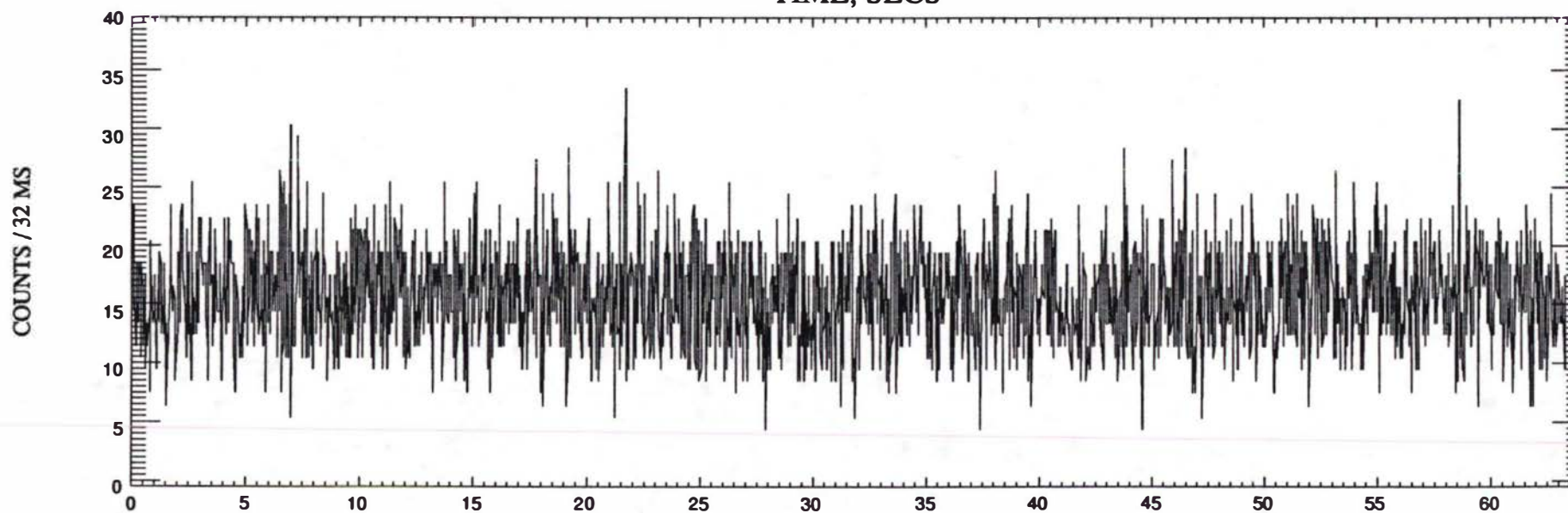


UNIVERSAL TIME

Burst Counter 7 at UT= 2.527220310635 h= 9097.993 s

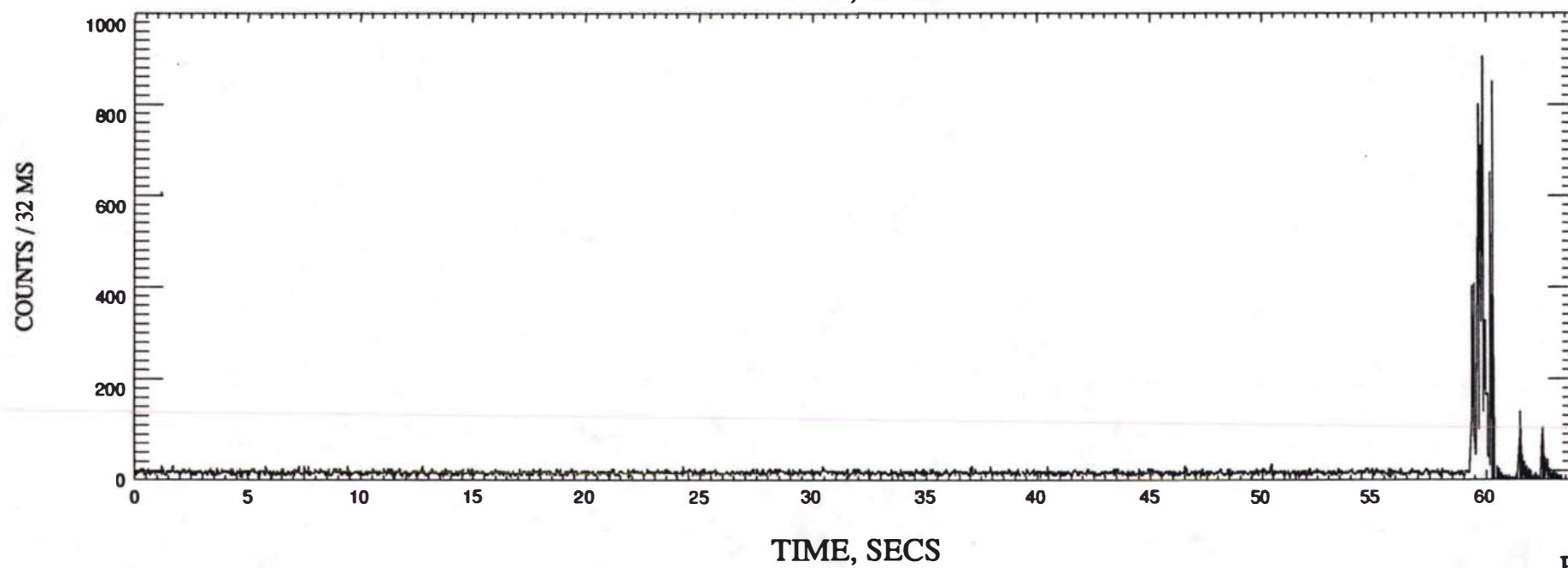
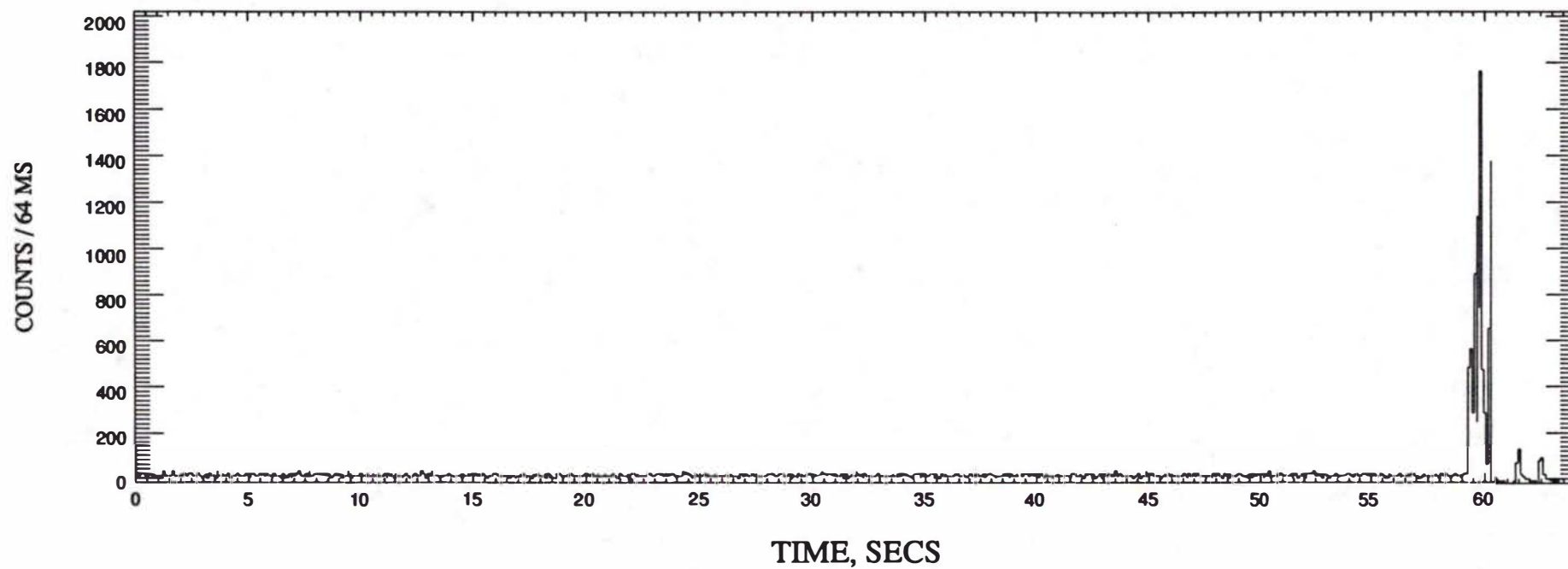


TIME, SECS

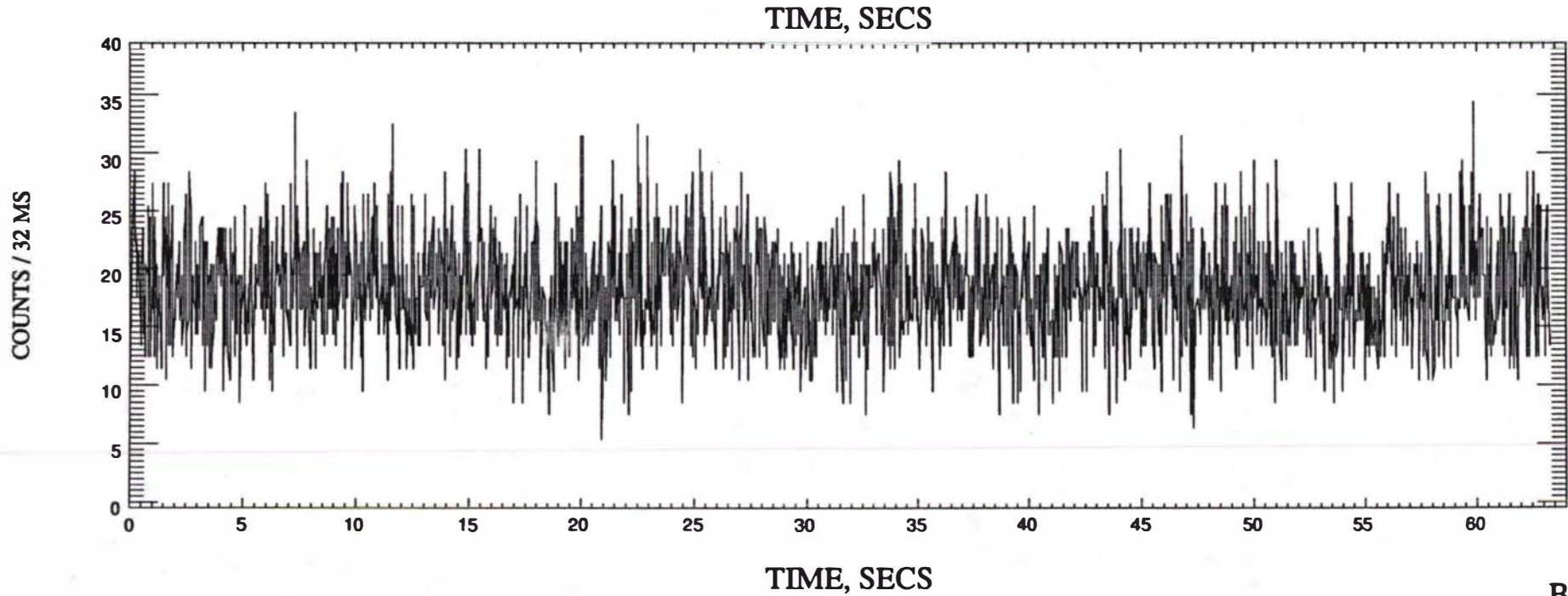
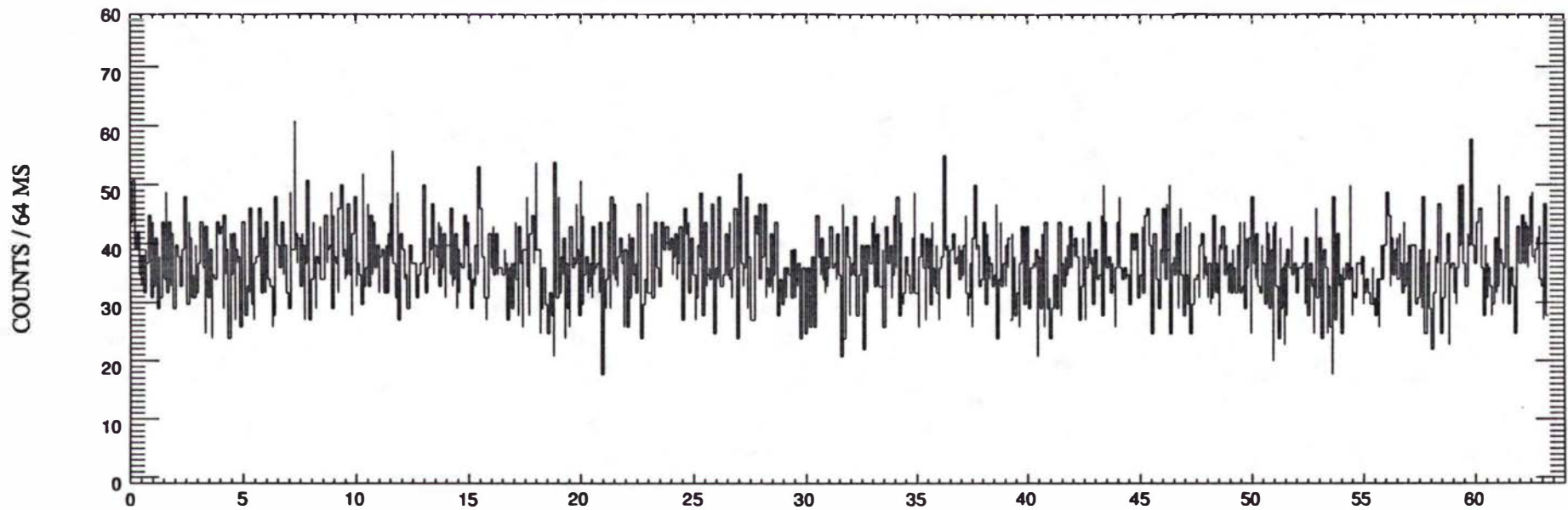


TIME, SECS

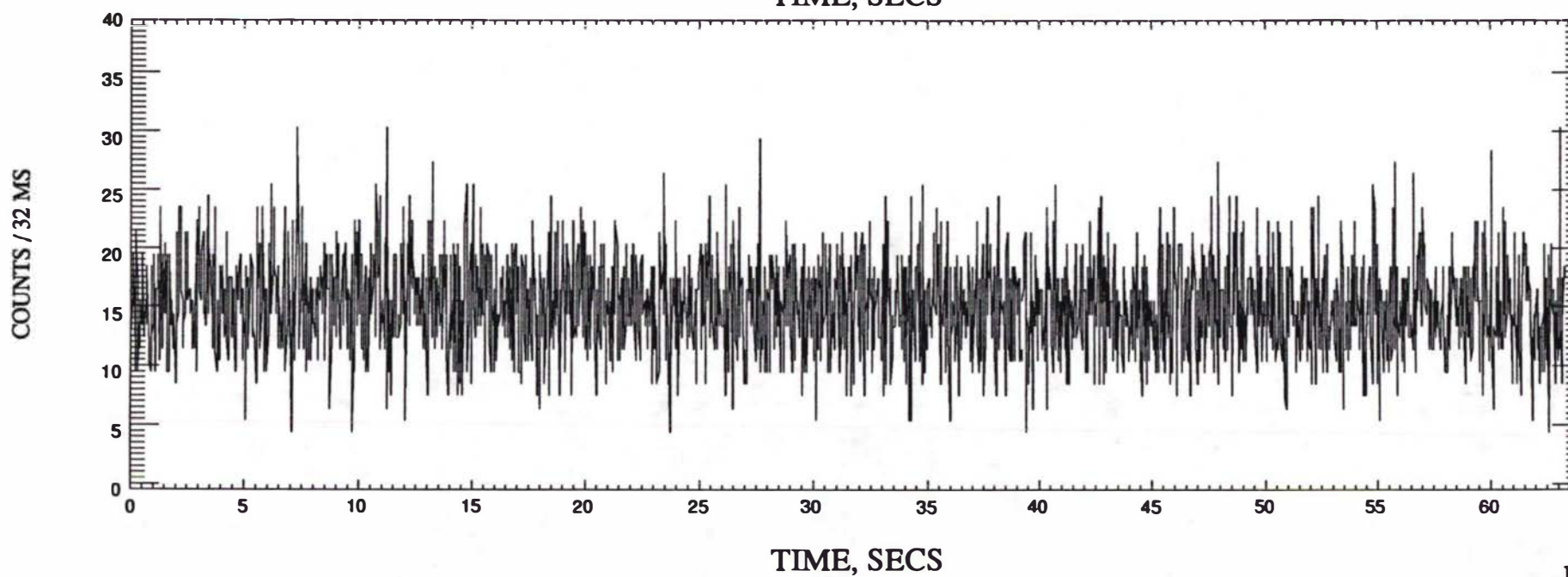
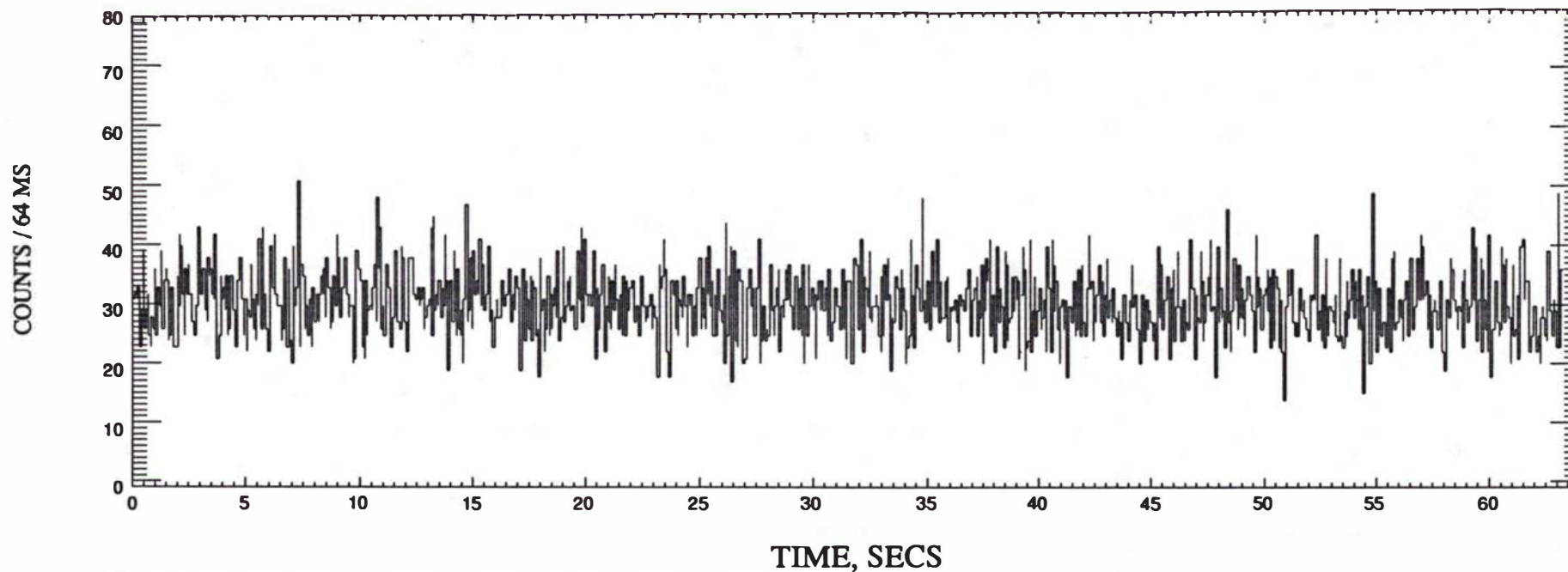
Burst Counter 8 at UT= 5.713173900180 h=20567.426 s



Burst Counter 9 at UT= 6.850101085239 h=24660.364 s



Burst Counter 10 at UT= 9.927929534912 h=35740.546 s



CATSEARCH PROGRAM

BATSE BURST # 1614
EVENT OF 1992 MAY 20 DAY OF YEAR=141
EVENT CROSSING TIME AT BATSE : 27658. S. OR 07:40:58.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 175.800 -58.300
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 20/ 5/ 92 IS:
RA= 148.207 DEC= 8.602 DIST= 5.297 AU
BATSE-ULYSSES DISTANCE = 792365376. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -880.69 SECS.
CROSSING TIME AT ULYSSES IS 26777. S. OR 07:26:17.4 +/- 469.28 SECONDS

NO

From WILSONB@ssl.msfc.nasa.gov Fri May 22 14:06:48 1992
Date: Fri, 22 May 1992 16:08:17 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01614

TIME: TJD=8762 SECONDS=27660

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=077.3 AZIMUTH=204.1 ERROR=010.0 DEGREES

COMMENTS:

SERIES OF FEATURES WITH DURATIONS OF ~20S, IRREGULARLY SPACED, SEEN UNTIL
AT LEAST 220S AFTER TRIGGER (ABOUT 6 SUCH PEAKS)

No Ulysses trigger

7 / 6 / 94

ULYSSES RT

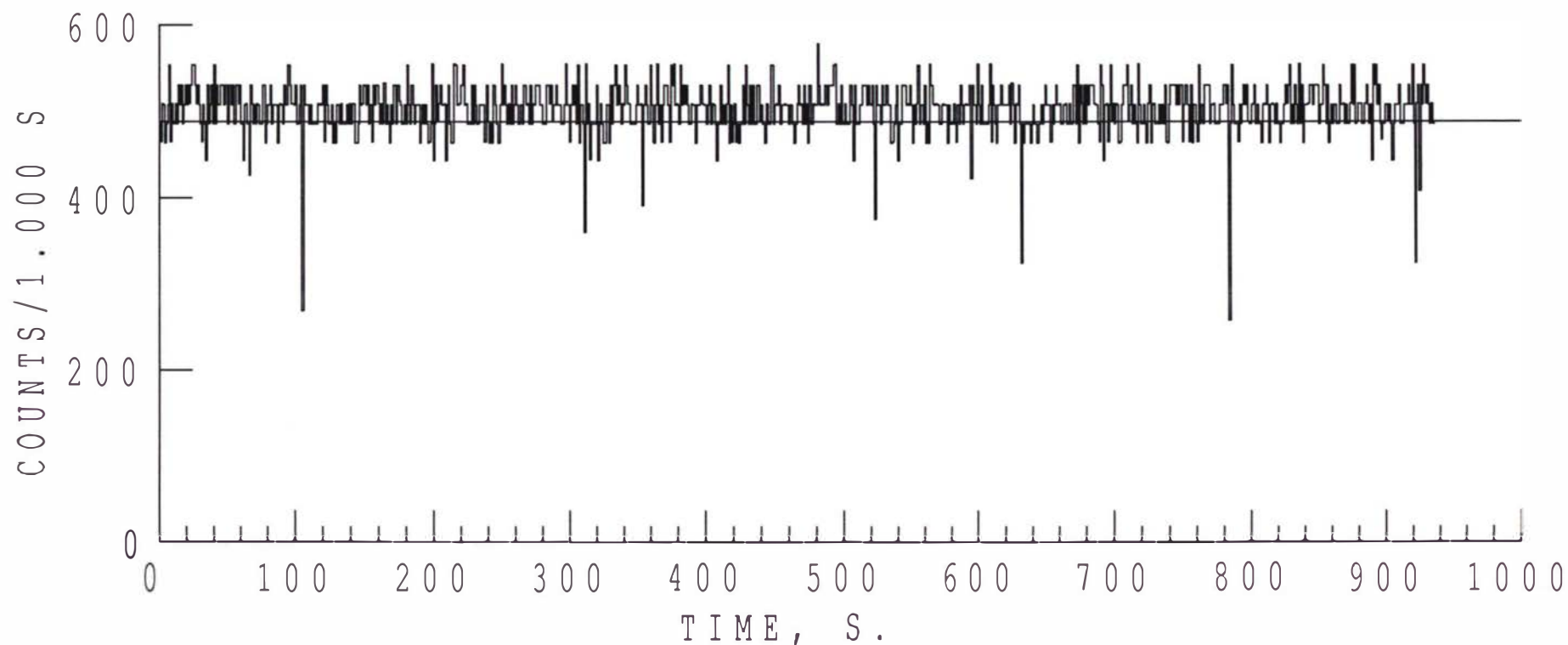
20 / 5 / 92 26316.305 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



CATSEARCH PROGRAM

BATSE BURST # 1615
EVENT OF 1992 MAY 20 DAY OF YEAR=141
EVENT CROSSING TIME AT BATSE : 34272. S. OR 09:31:11.8
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 304.500 -7.700
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 20/ 5/ 92 IS:
RA= 148.207 DEC= 8.602 DIST= 5.297 AU
BATSE-ULYSSES DISTANCE = 792365376. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 23.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2424.18 SECS.
CROSSING TIME AT ULYSSES IS 36696. S. OR 10:11:36.0 +/- 269.65 SECONDS

NO

From WILSONB@ssl.msfc.nasa.gov Fri May 22 14:13:58 1992
Date: Fri, 22 May 1992 16:14:55 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1230

BATSE BURST TRIGGER

NO.: 01615

TIME: TJD=8762 SECONDS=34273

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.8 AZIMUTH=106.9 ERROR=010.0 DEGREES

COMMENTS:

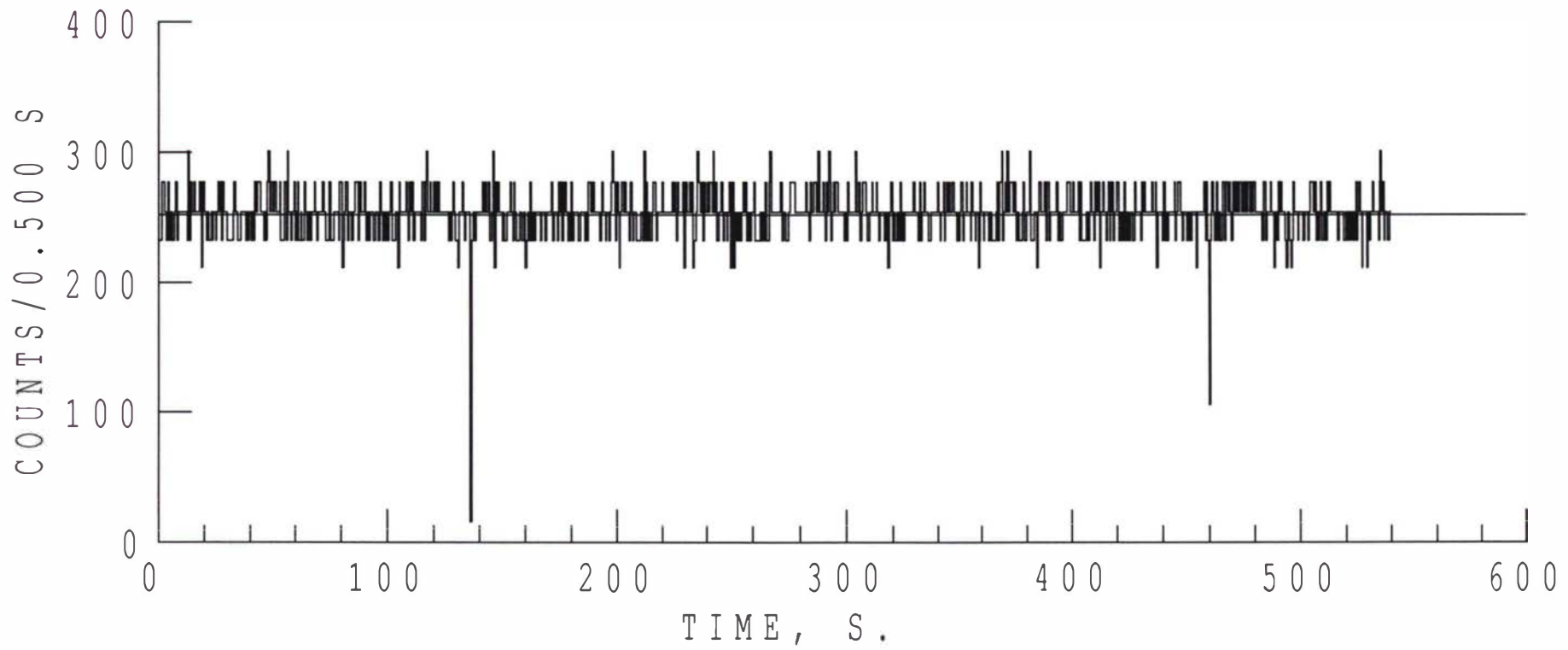
WEAK FEATURE EXTENDING UNTIL 5S AFTER TRIGGER. ANOTHER, STRONGER EVENT
OCCURS 37S AFTER TRIGGER.

No Ulysses trigger

7 / 6 / 94

ULYSSES RT
20 / 5 / 92 36432.469 s
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From khurley@space6.ssl.berkeley.edu Thu May 21 17:45:15 1992
Date: Thu, 21 May 92 16:41:30
From: khurley@space6.ssl.berkeley.edu
Content-Length: 190

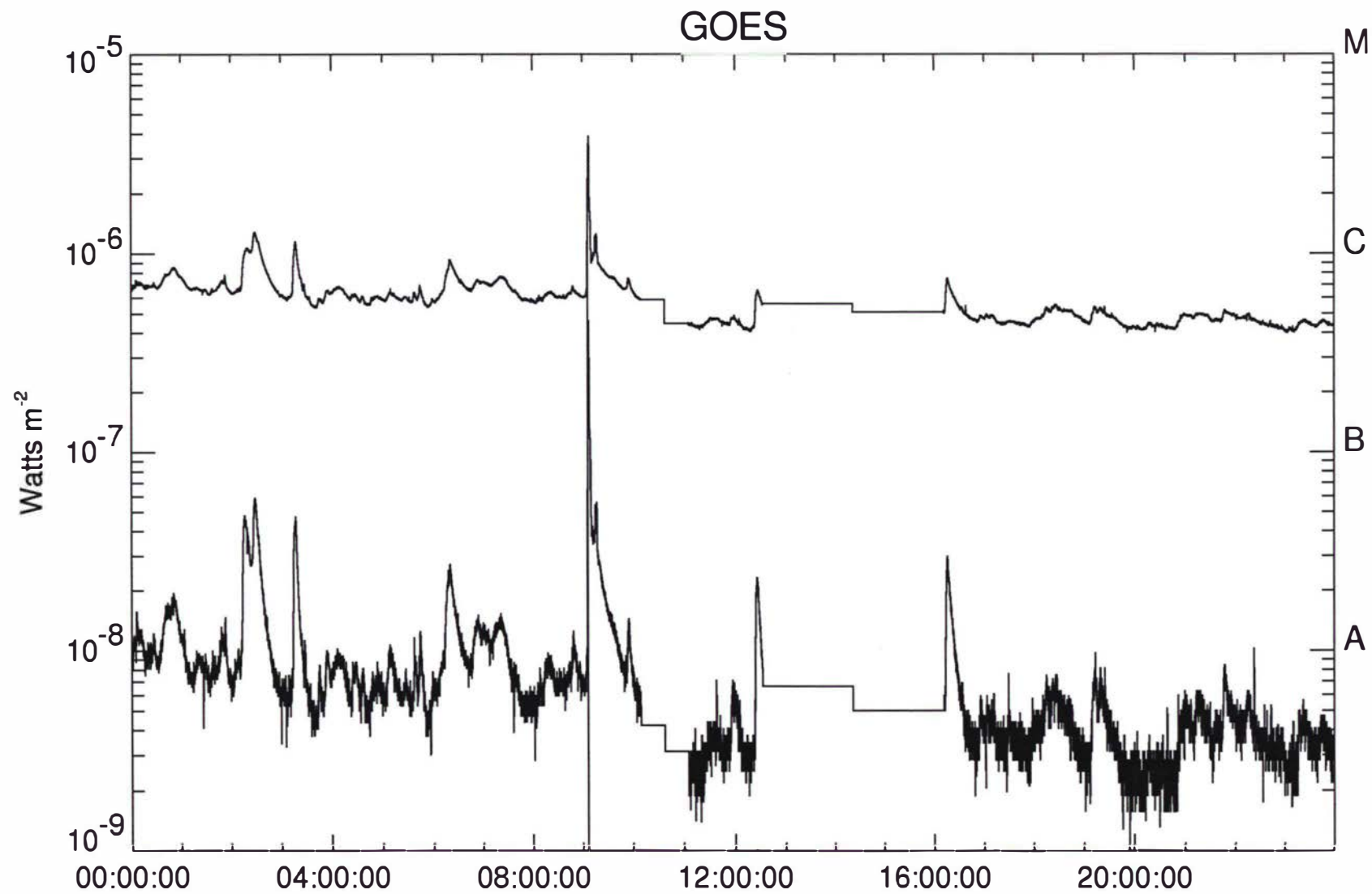
Dear Chryssa,

We got another four triggers on Ulysses yesterday (May 20), which I suspect are just noise. They were around 57000, 63801, 71613, and 77988 seconds. Anything on BATSE?

Kevin

From kouveliotou%ssl.span@Sdsc.Edu Thu May 21 18:21:45 1992
Date: Fri, 22 May 92 01:23:33 GMT
From: kouveliotou%ssl.span@Sdsc.Edu
Subject: batse triggers
To: khurley@sunspot.ssl.berkeley.edu
X-St-Vmsmail-To: KEVIN
Content-Length: 246

Dear Kevin,
looking at the data summary, I see that we had 2 triggers on May 20th. One was at UT = 27660 and the next at UT = 34274. Nothing triggered after this time (but that could also mean that we did not have real time data). Too bad !
CK



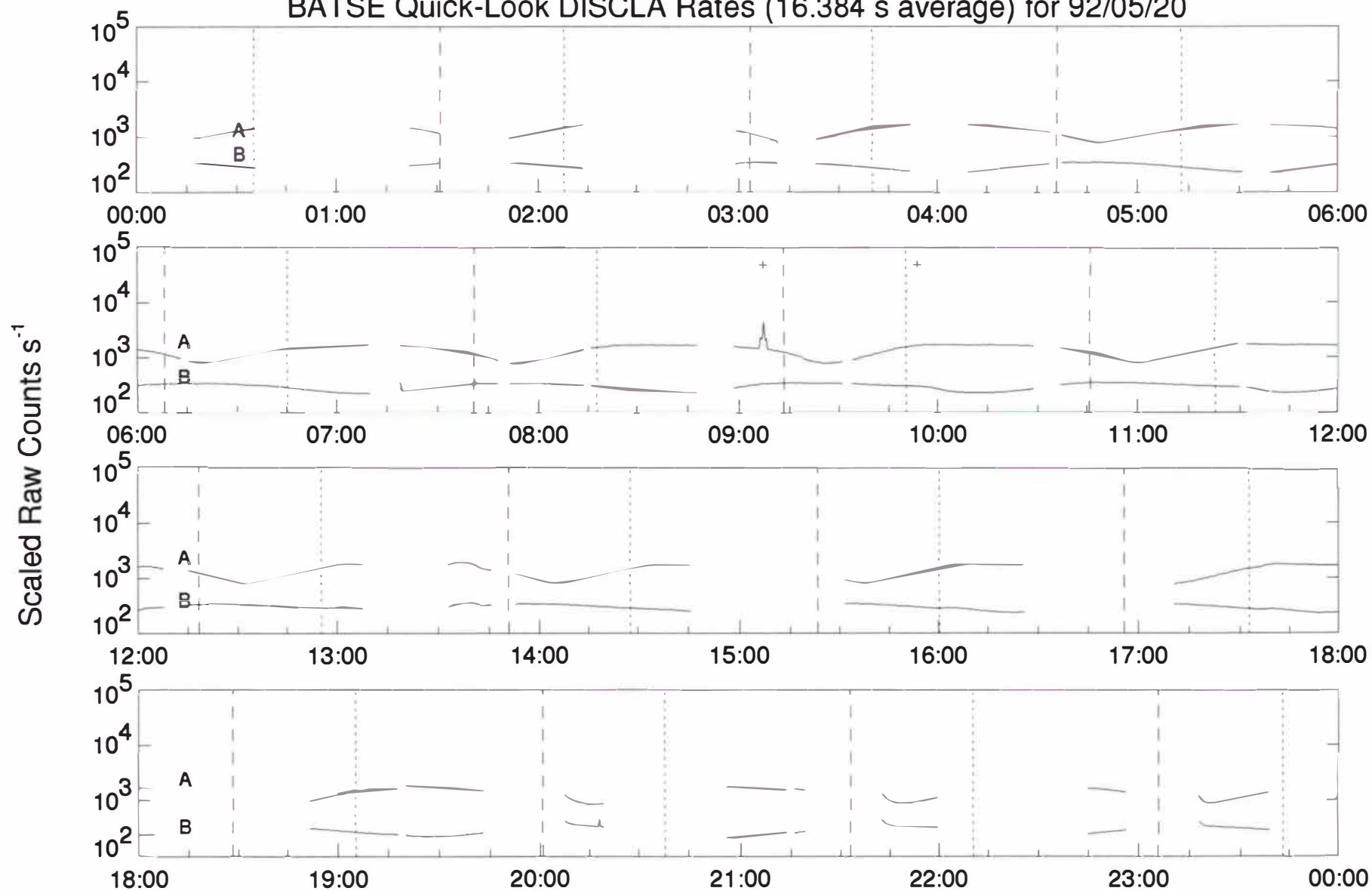
Data Start: 92/05/19, 2359:58

Plot created: 93/10/29, 0106

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/20

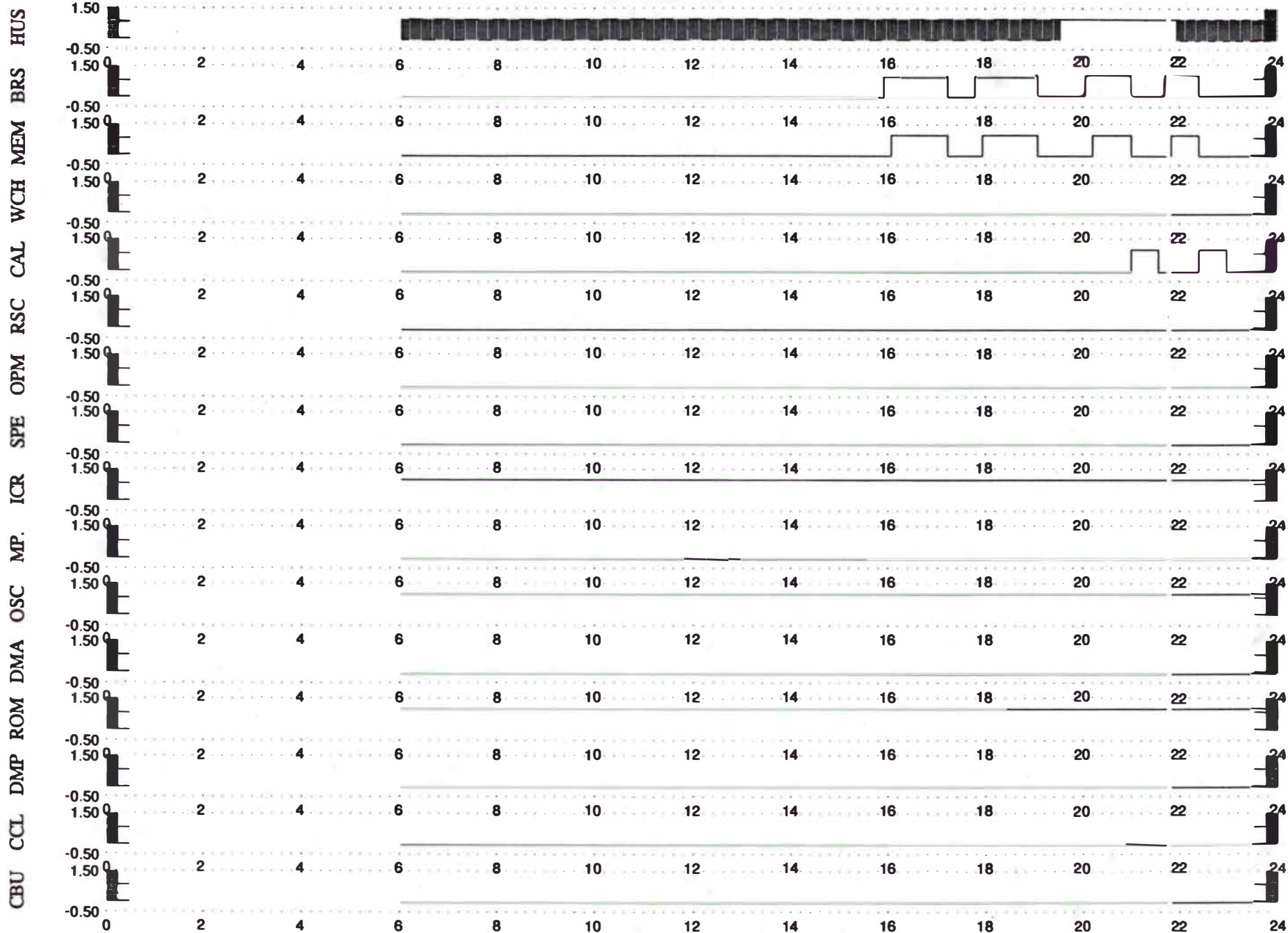


Current Time: 92/09/19, 1721 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

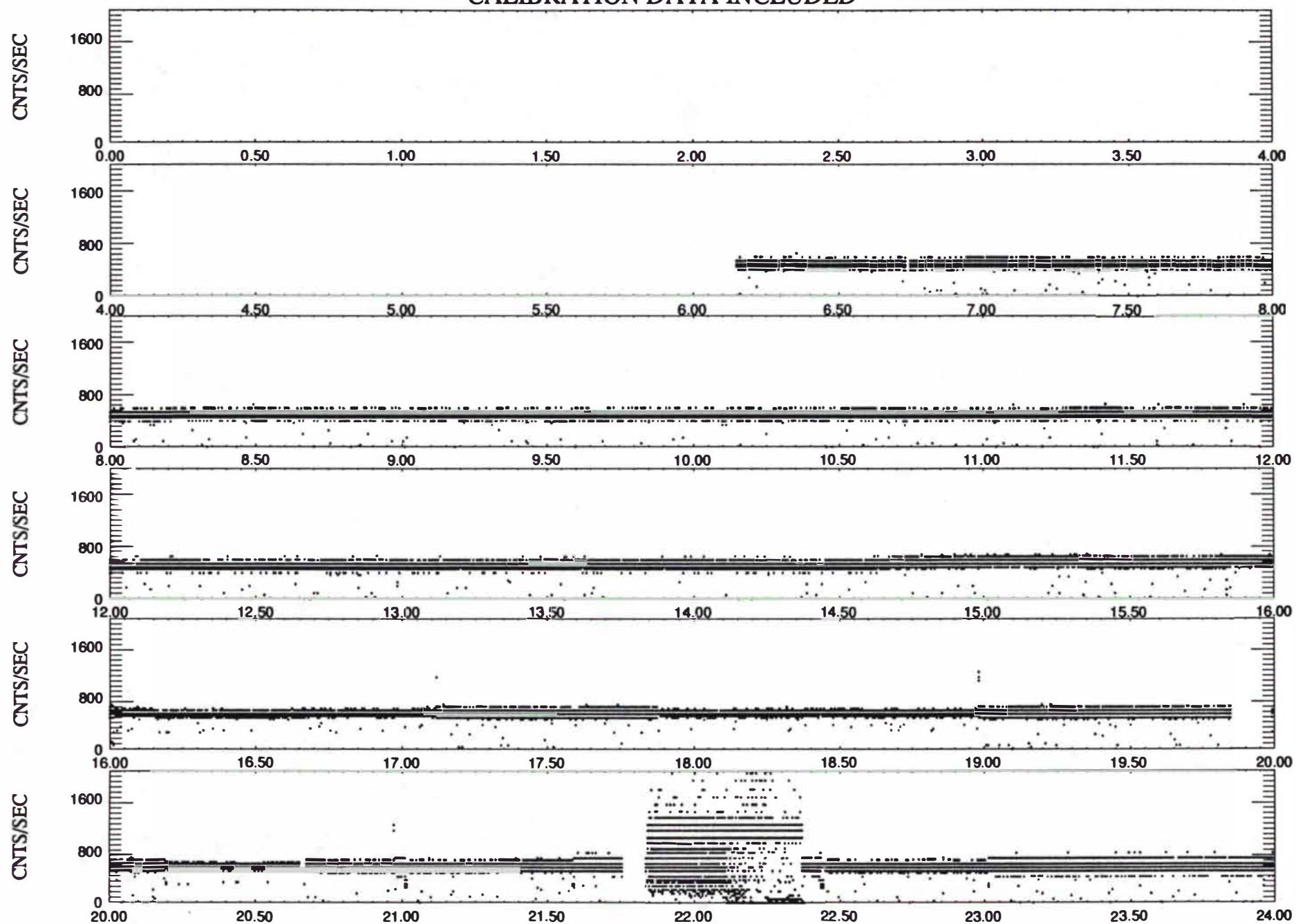
* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 11 - 14



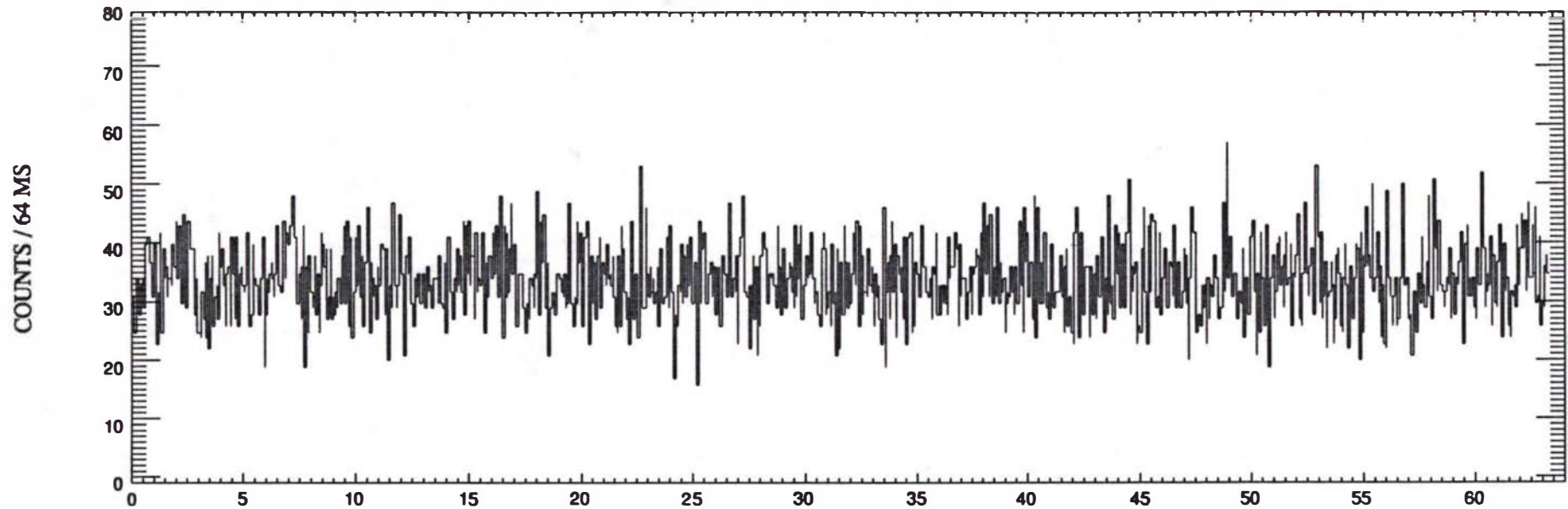
UNIVF AL TIME

CALIBRATION DATA INCLUDED

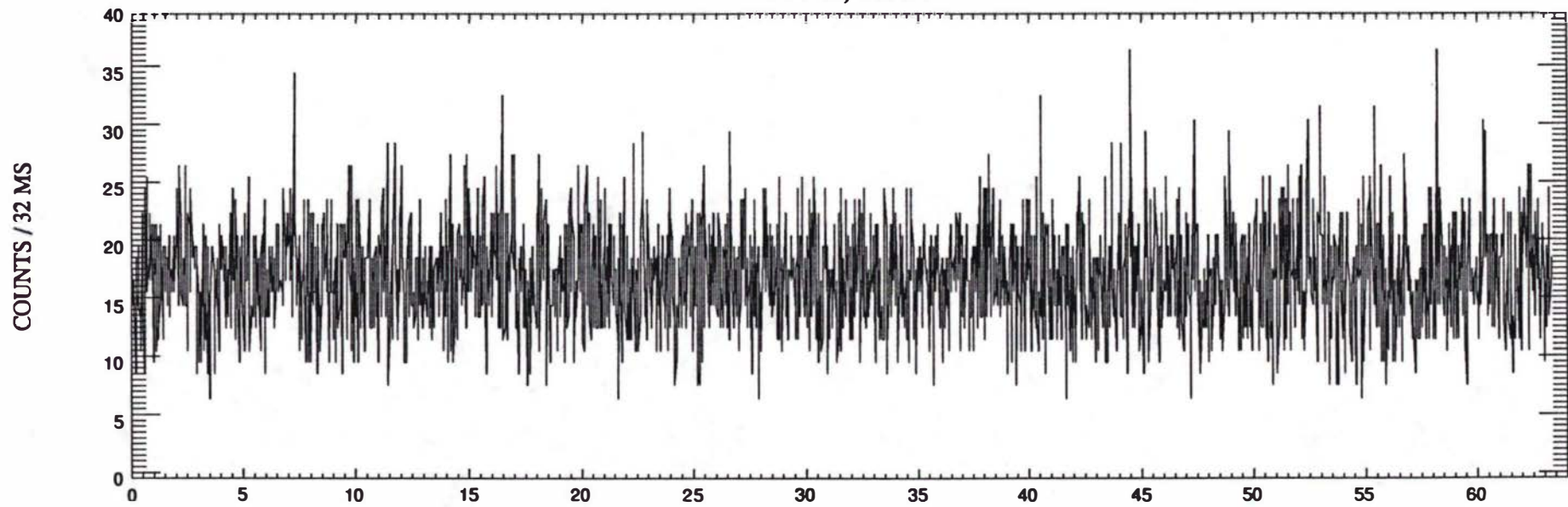


UNIVERSAL TIME

Burst Counter 11 at UT=15.852060966492 h=57067.419 s

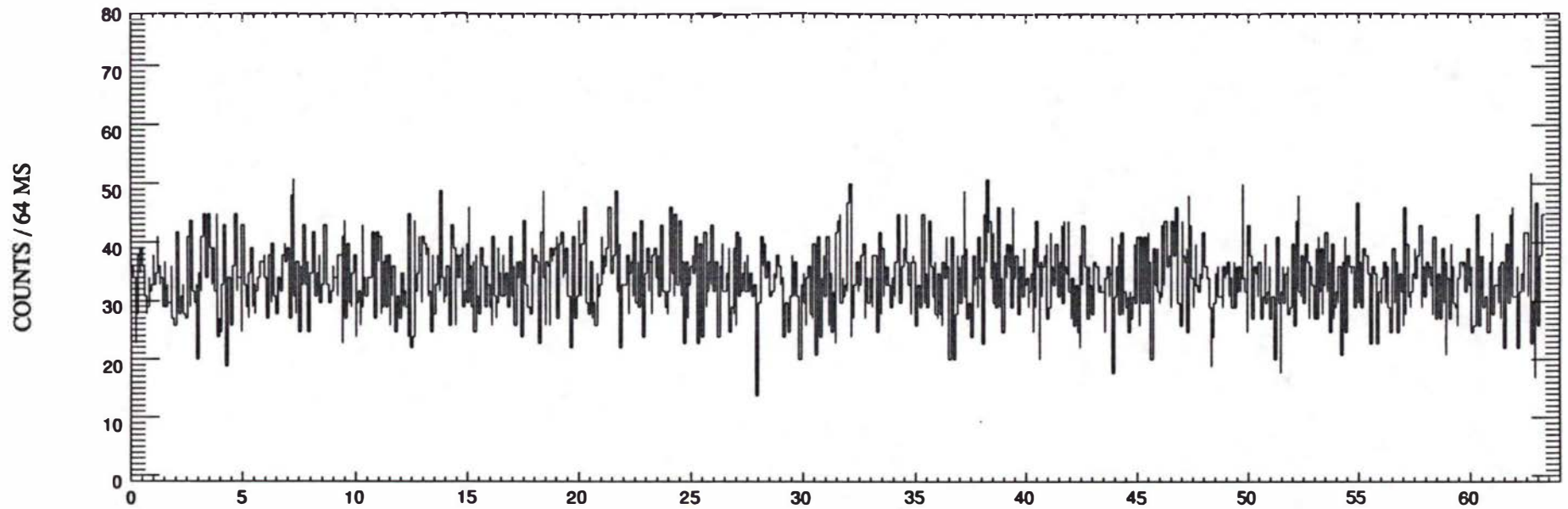


TIME, SECS

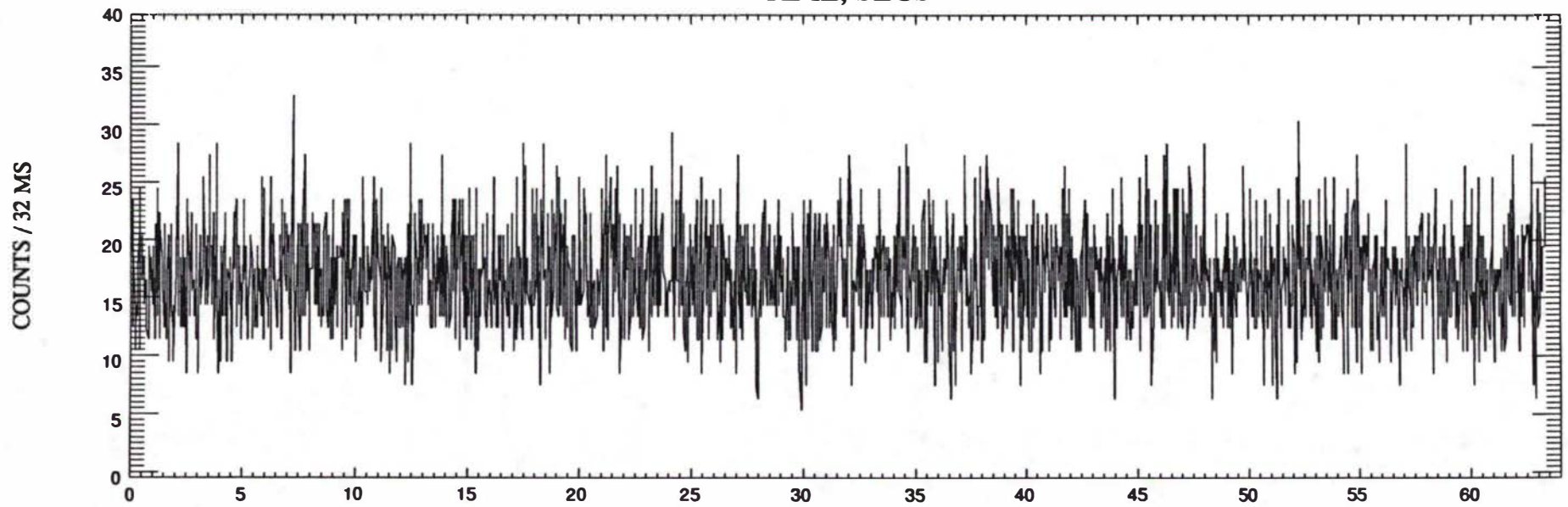


TIME, SECS

Burst Counter 12 at UT=17.722577103509 h=63801.278 s

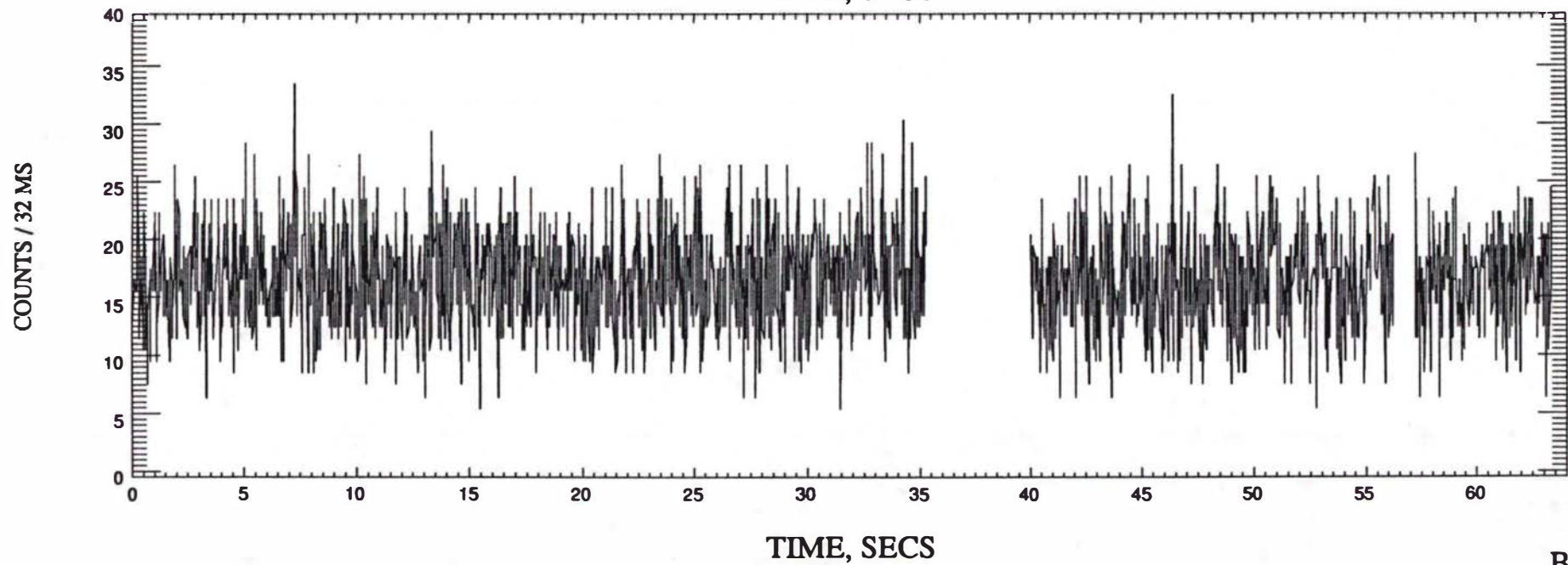
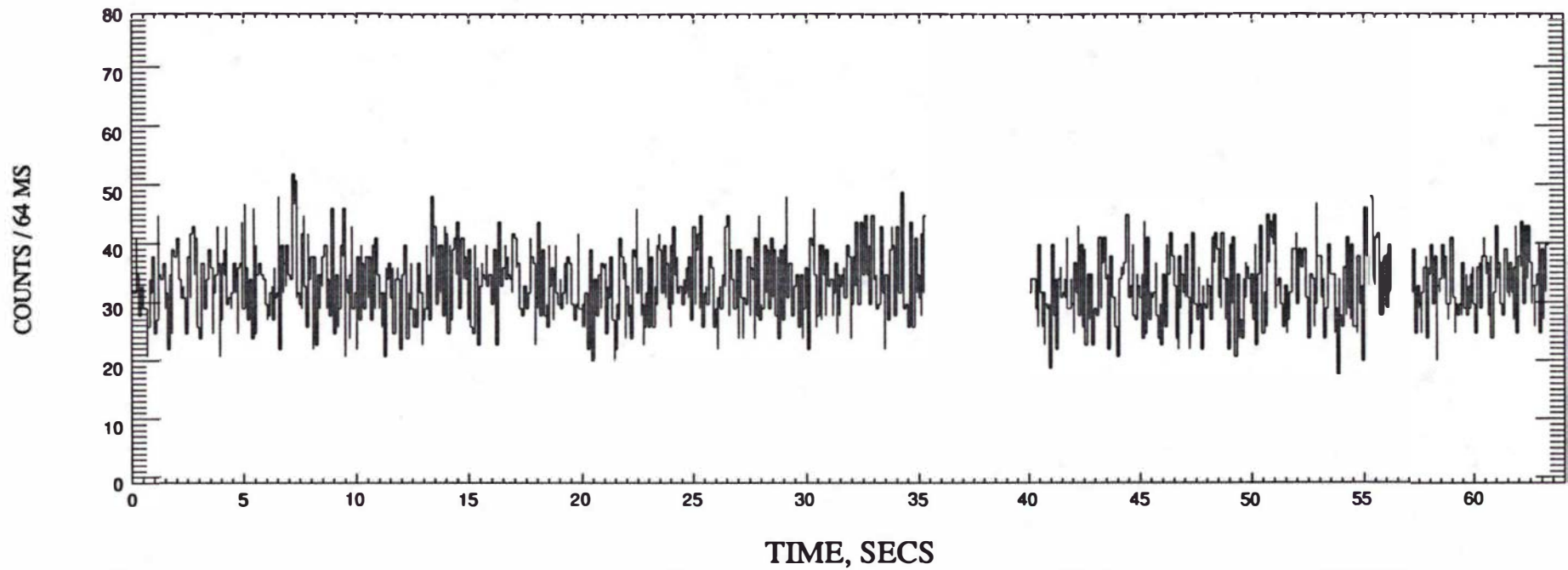


TIME, SECS

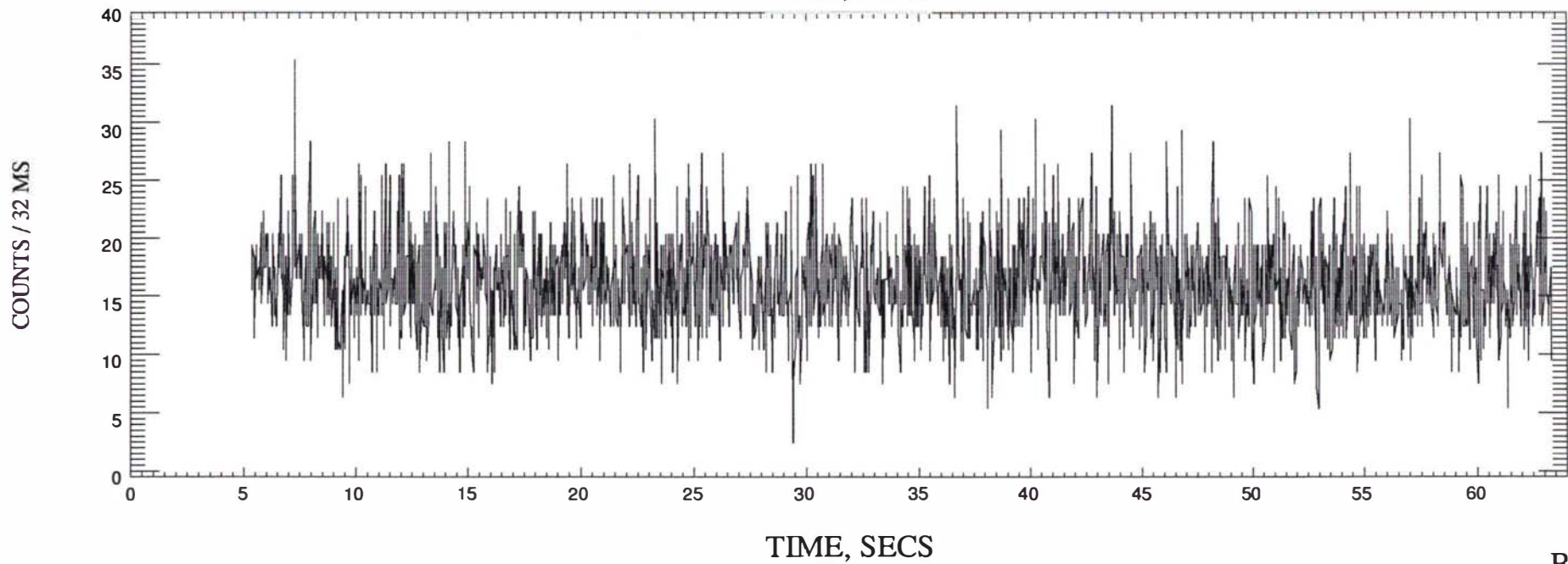
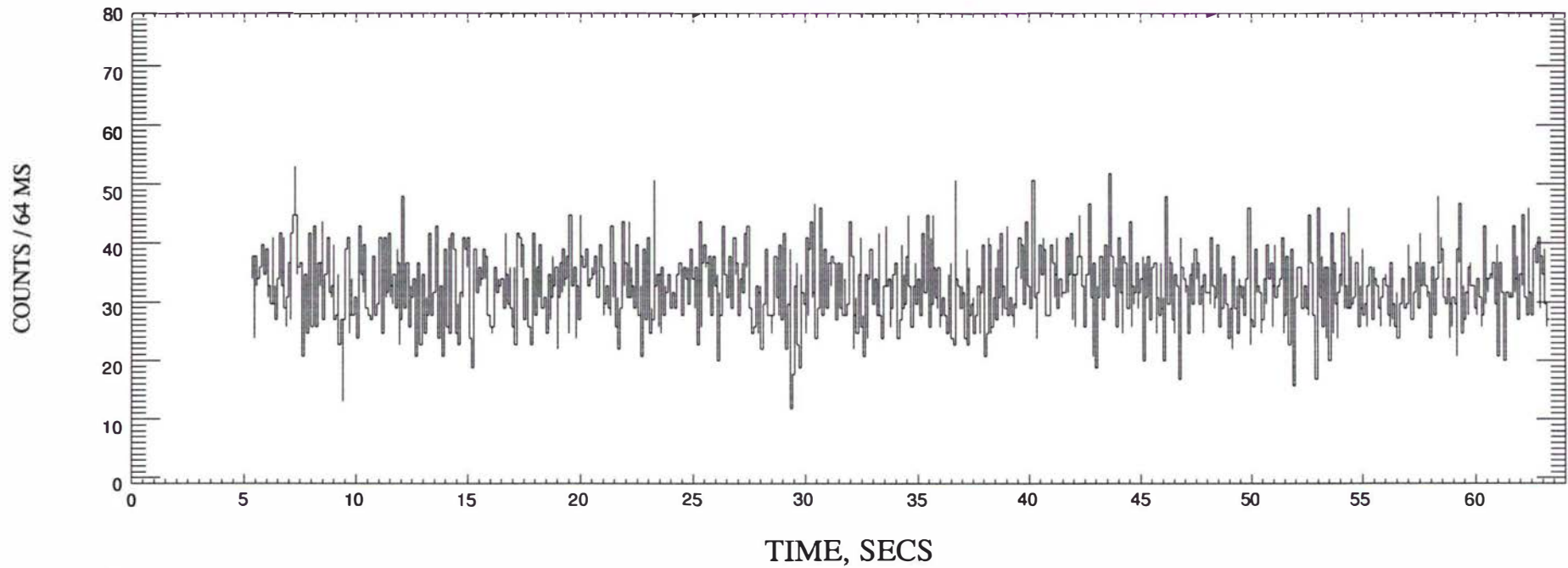


TIME, SECS

Burst Counter 13 at UT=19.892611745199 h=71613.402 s



Burst Counter 14 at UT=21.663371802436 h=77988.138 s



From PREECE@ssl.msfc.nasa.gov Tue May 26 08:30:55 1992
Date: Tue, 26 May 1992 10:32:18 -0500 (CDT)
From: PREECE@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01616

May 21
TIME: TJD=8763 SECONDS=02433

TYPE: OTHER SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

INADVERTANT TRIGGER DUE TO COMMANDS TO ADJUST HIGH VOLTAGE BEING SENT IN SAA.

CATSEARCH PROGRAM

BATSE BURST # 1617
EVENT OF 1992 MAY 21 DAY OF YEAR=142
EVENT CROSSING TIME AT BATSE : 11497. S. OR 03:11:37.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 135.700 40.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 21/ 5/ 92 IS:
RA= 148.204 DEC= 8.563 DIST= 5.313 AU
BATSE-ULYSSES DISTANCE = 794784408. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=146.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2214.33 SECS.
CROSSING TIME AT ULYSSES IS 9283. S. OR 02:34:42.7 +/- 269.47 SECONDS

NO

From PREECE@ssl.msfc.nasa.gov Tue May 26 08:38:20 1992
Date: Tue, 26 May 1992 10:40:15 -0500 (CDT)
From: PREECE@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 01617

TIME: TJD=8763 SECONDS=11499

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=089.9 AZIMUTH=308.4 ERROR= DEGREES

COMMENTS:

GRB, 50 SEC. LONG, SEEN ABOVE 300 KEV.

No trigger

ULYSSES RT

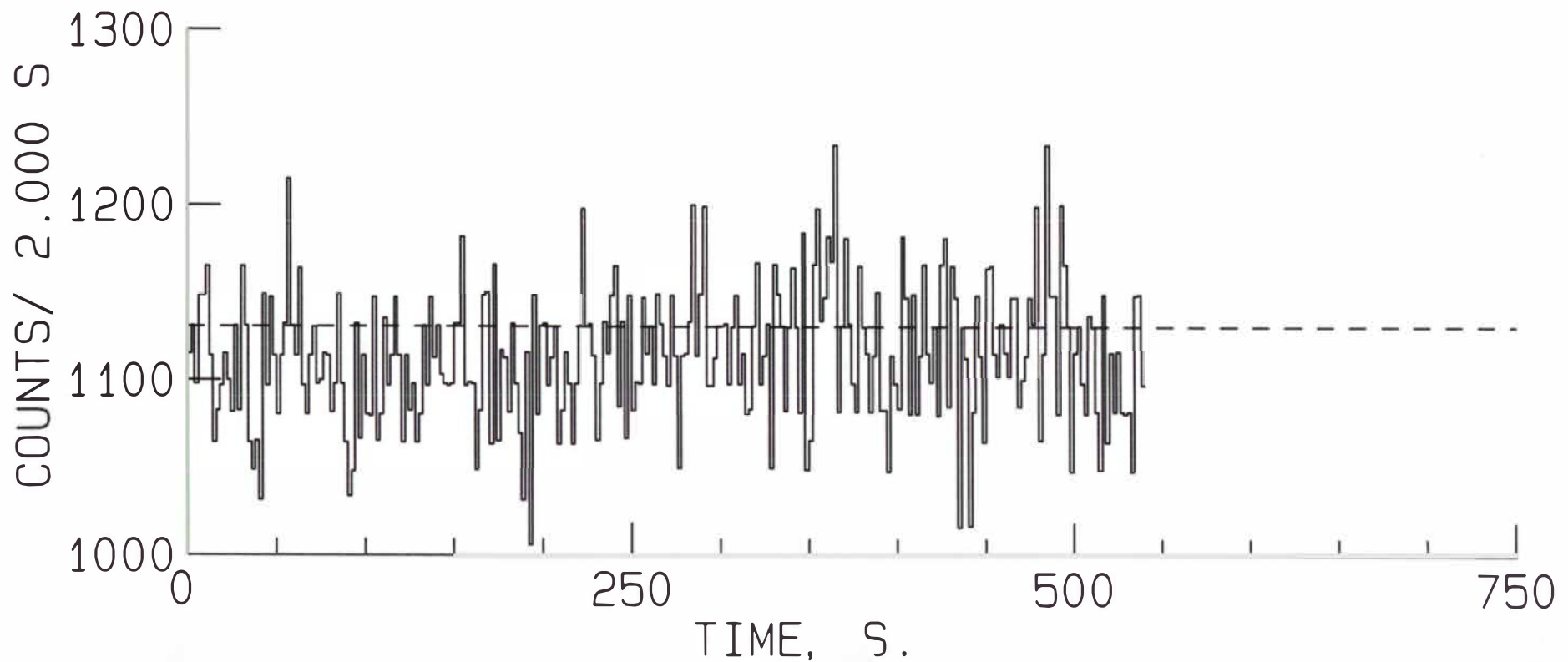
23 / 8 / 96

21 / 5 / 92 9000.181 s

0.250 S INTERVALS REGROUPED BY 8

23- 157 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



7 / 6 / 94

ULYSSES RT

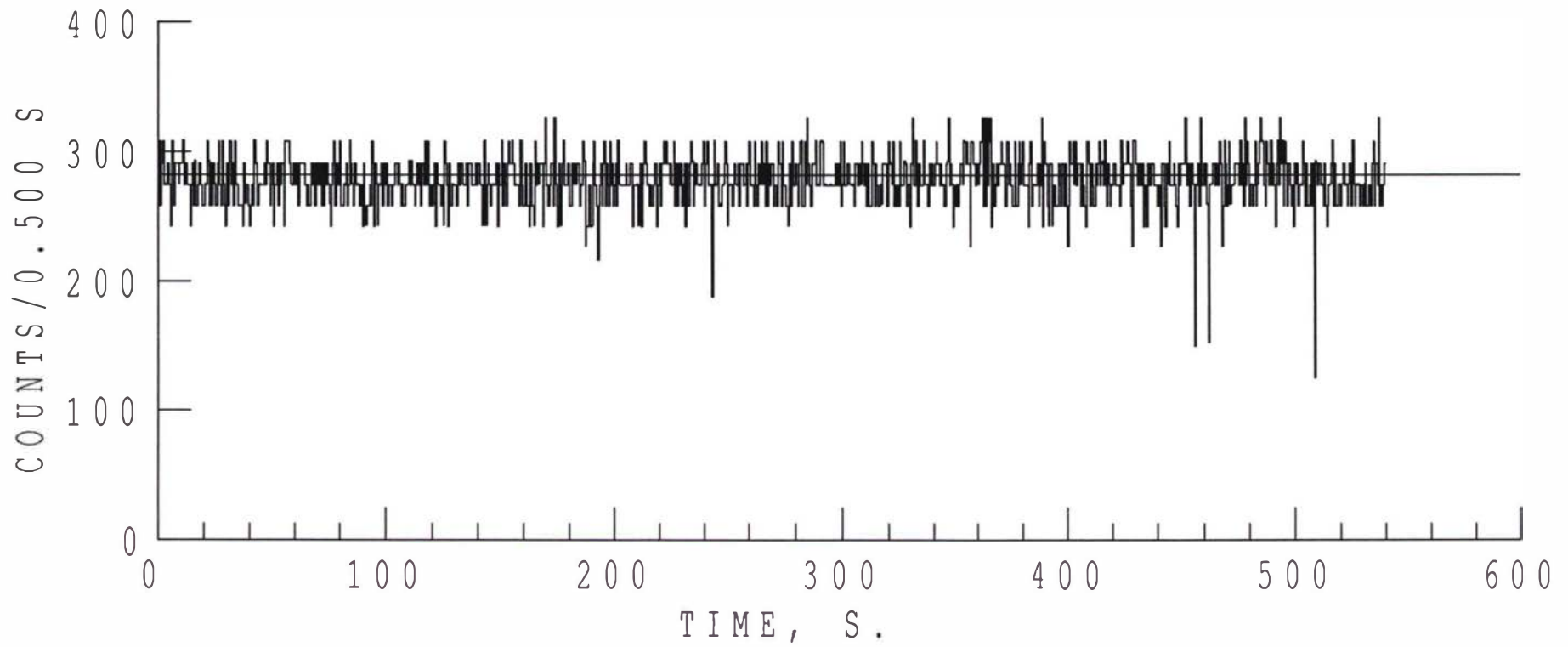
21 / 5 / 92 9000.181 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From PREECE@ssl.msfc.nasa.gov Tue May 26 08:43:50 1992
Date: Tue, 26 May 1992 10:45:43 -0500 (CDT)
From: PREECE@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01618

TIME: TJD=8763 SECONDS=77799

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=041.5 AZIMUTH=011.1 ERROR= DEGREES

COMMENTS:

UNCLASSIFIED GOES SOLAR FLARE. 14 SEC. LONG, NOT SEEN ABOVE 160 KEV. SINGLE
PEAK OF EMISSION.

No.

From PREECE@ssl.msfc.nasa.gov Tue May 26 08:48:01 1992
Date: Tue, 26 May 1992 10:49:49 -0500 (CDT)
From: PREECE@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01619

TIME: TJD=8763 SECONDS=82536

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

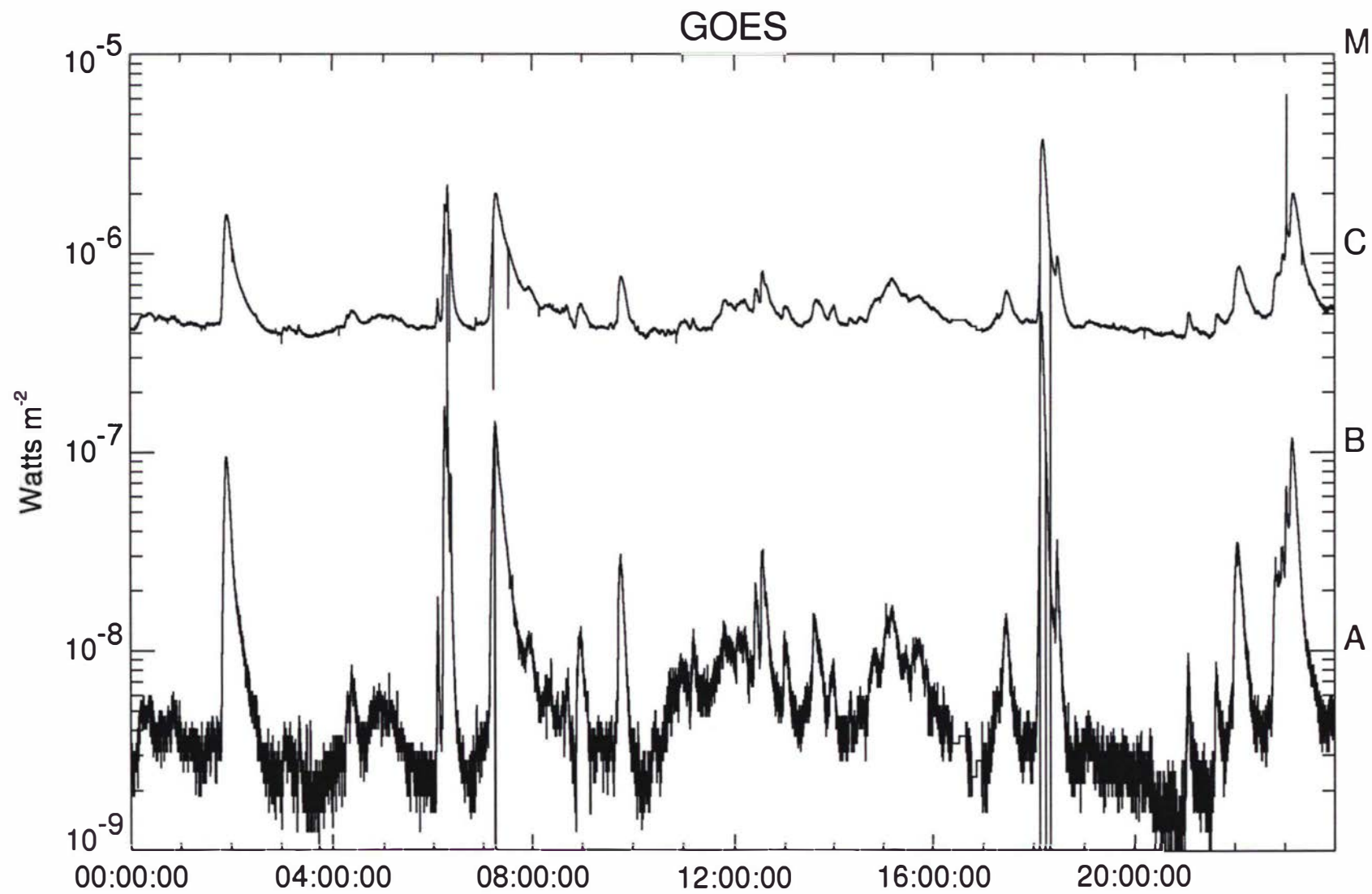
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=041.7 AZIMUTH=359.0 ERROR= DEGREES

COMMENTS:

UNCLASSIFIED GOES C-TYPE SOLAR FLARE. DURATION, HARDNESS UNKNOWN DUE TO
PAUCITY OF USABLE DATA.

No.



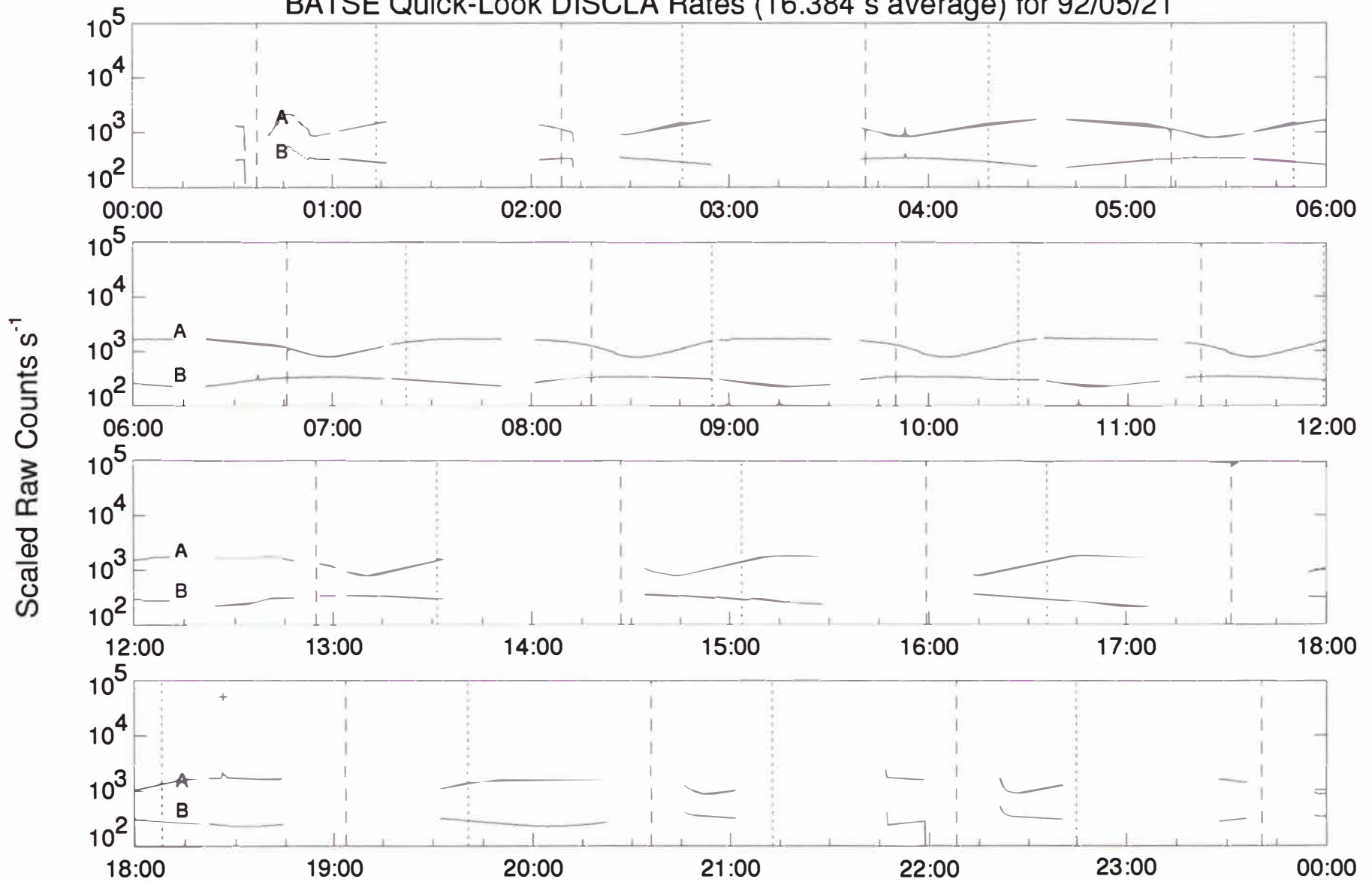
Data Start: 92/05/20, 2359:58

Plot created: 93/10/29, 0106

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/21

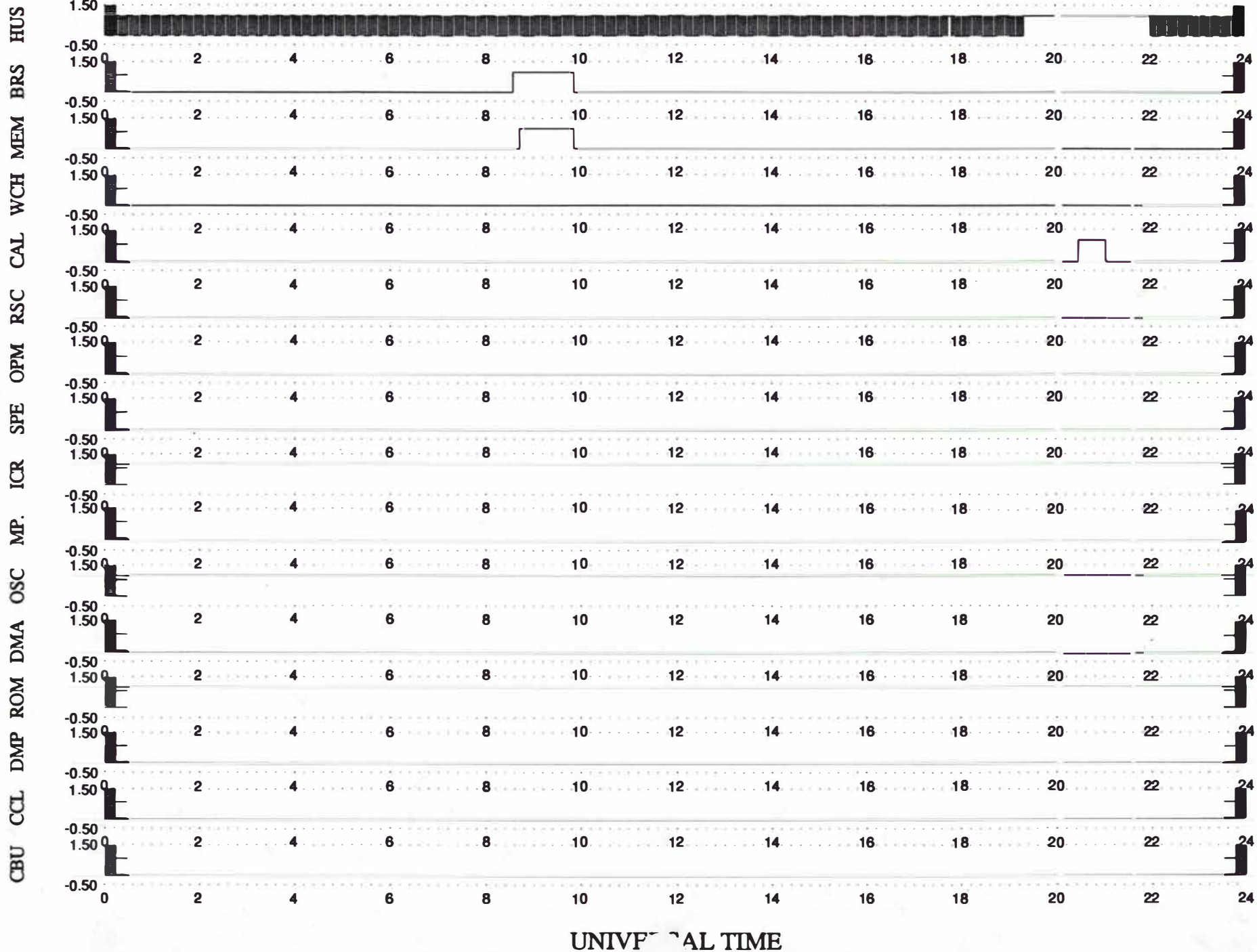


Current Time: 92/09/19, 1722 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

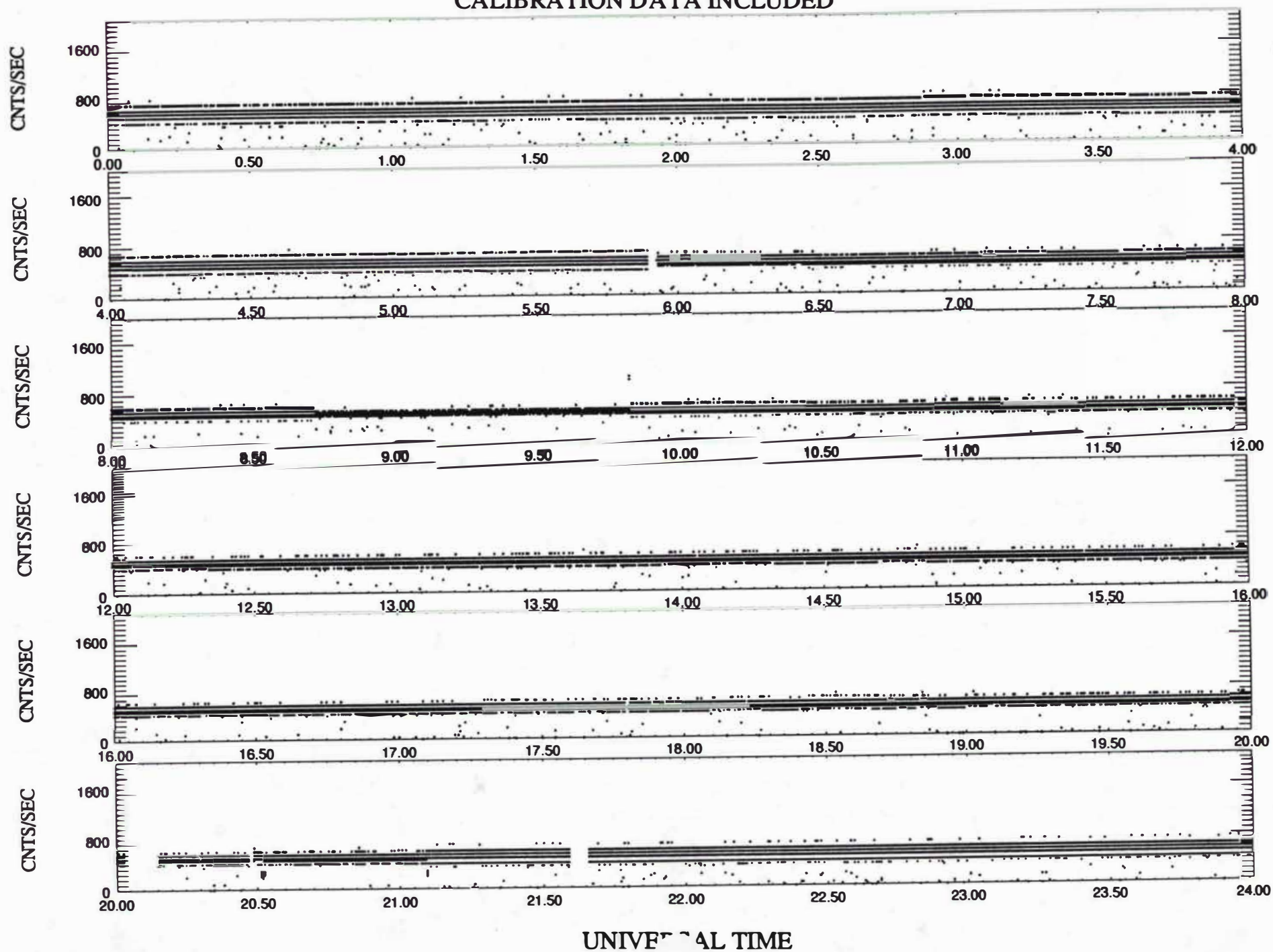
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

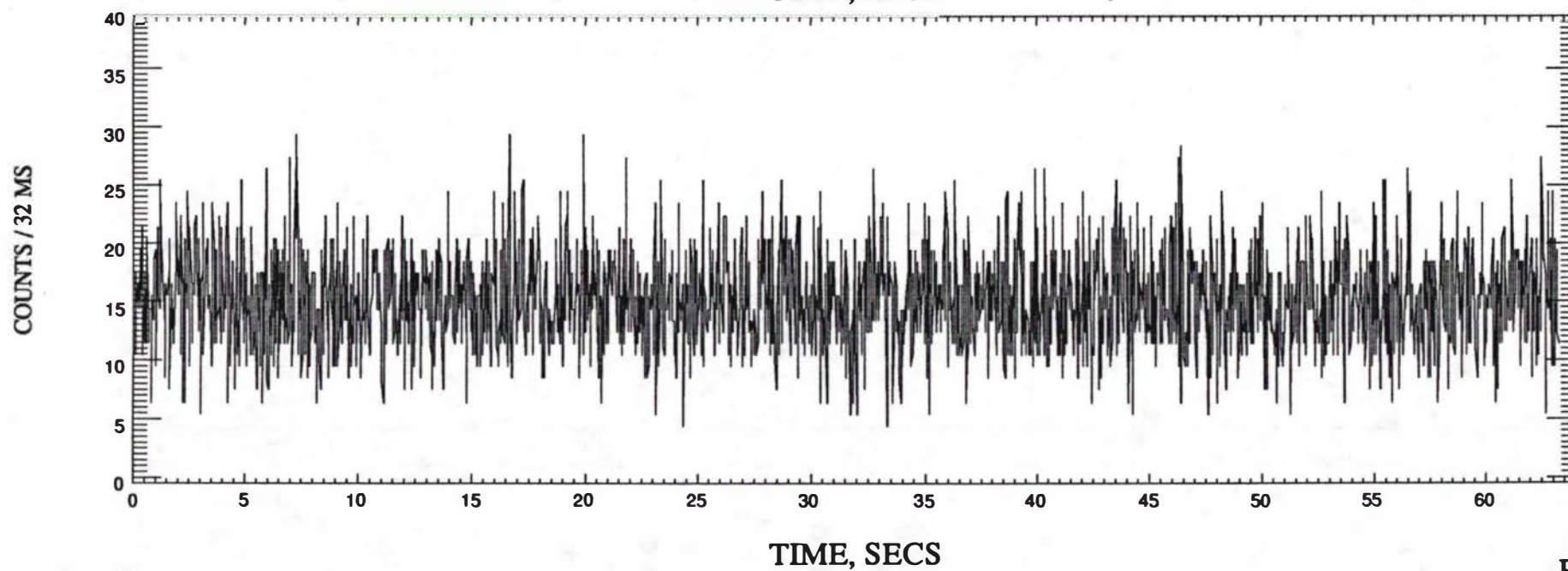
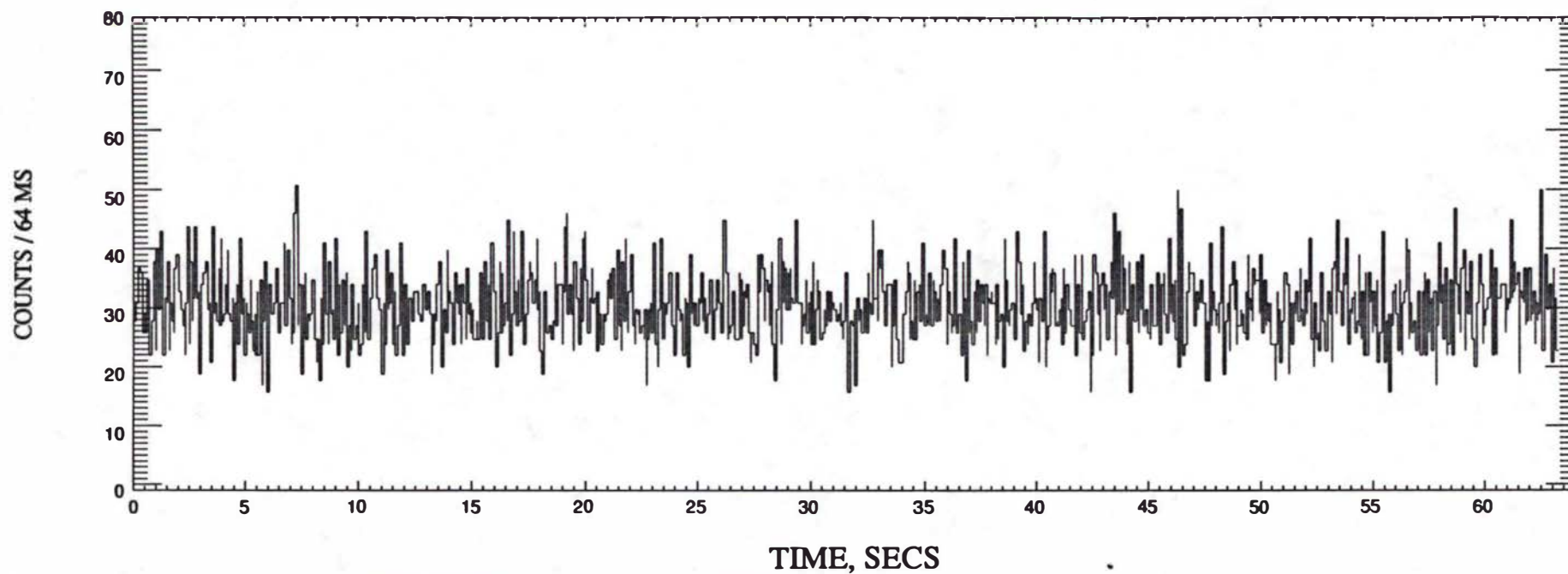
BURST NUMBER 15



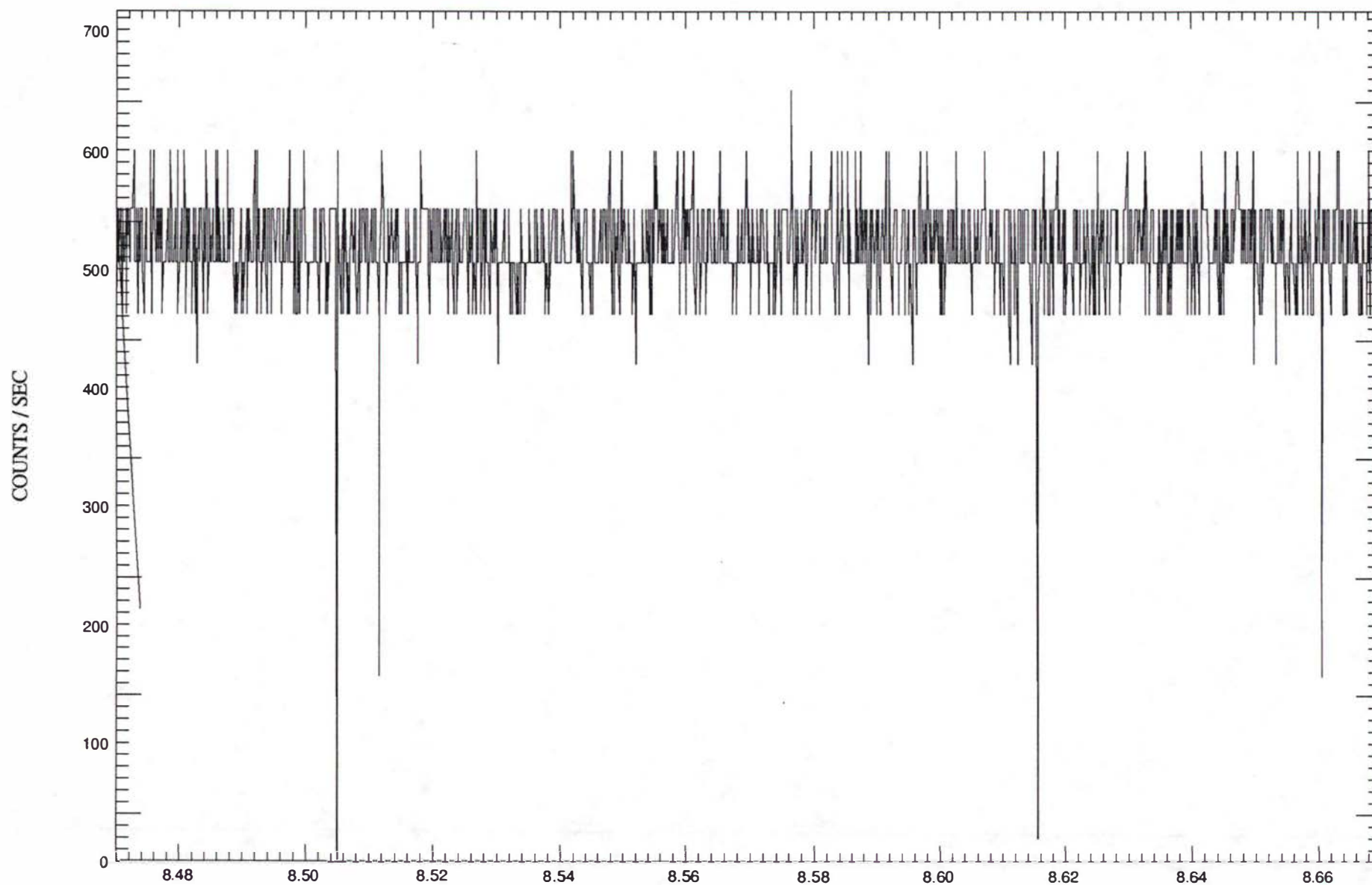
CALIBRATION DATA INCLUDED



Burst Counter 15 at UT= 8.576846232944 h=30876.646 s



CALIBRATION DATA INCLUDED



From PACIESAS@ssl.msfc.nasa.gov Fri Jun 5 12:10:49 1992
Date: Fri, 5 Jun 1992 14:11:44 -0500 (CDT)
From: PACIESAS@ssl.msfc.nasa.gov (BILL PACIESAS (205) 544-7712)
Subject: Burst message retransmission (some people didn't receive the first one)
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @BURST_SPAN
Content-Length: 1207

BATSE TRIGGER

NO.: 01620

TIME: TJD=8764 SECONDS=26284

TYPE: SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PRECIPITATION EVENT.

BATSE BURST TRIGGER

NO.: 01621

TIME: TJD=8764 SECONDS=47556

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGER ON SMALL PASSAGE THROUGH SAA

BATSE BURST TRIGGER

NO.: 01622

TIME: TJD=8764 SECONDS=54309

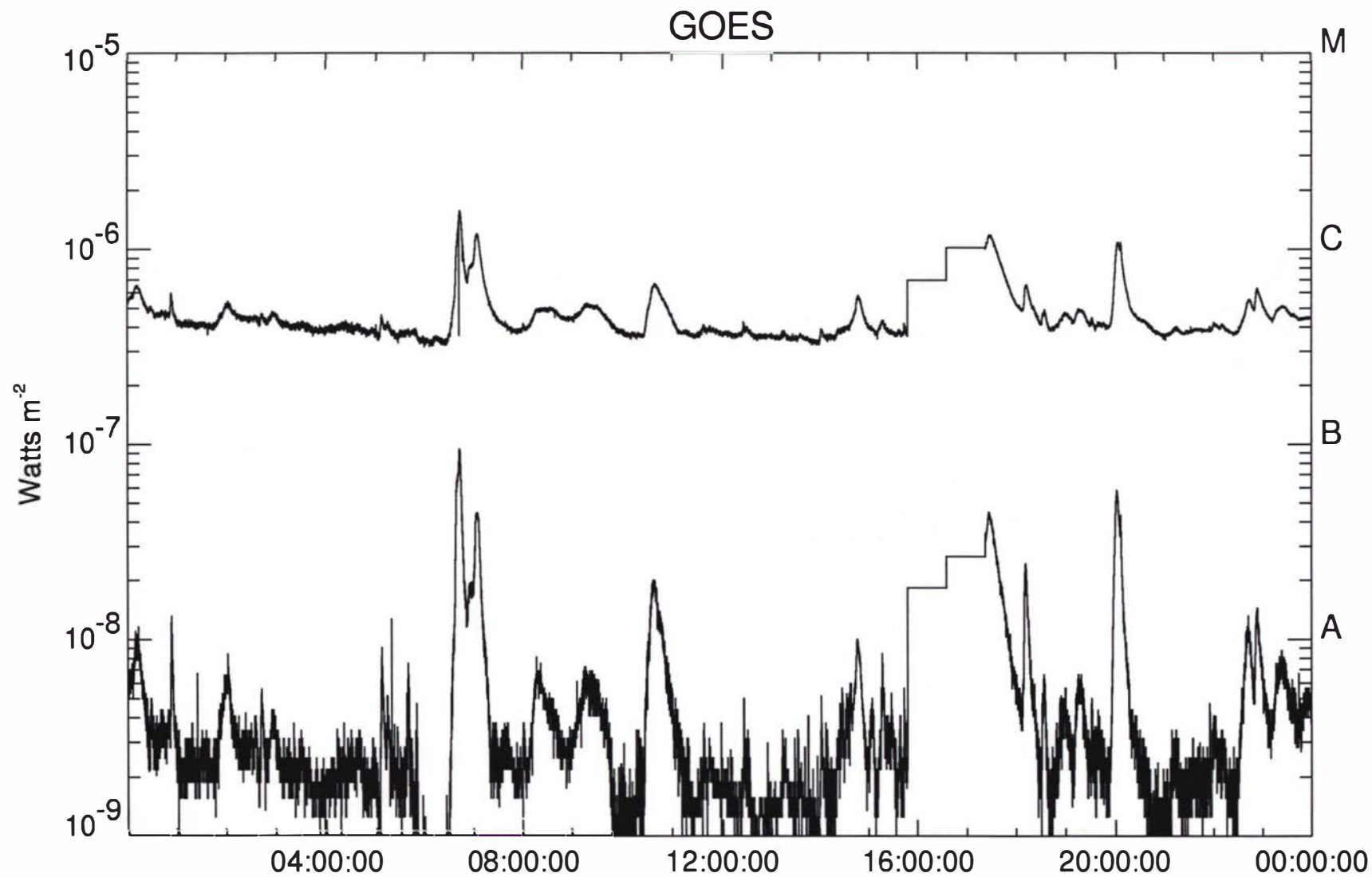
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PRECIPITATION EVENT.



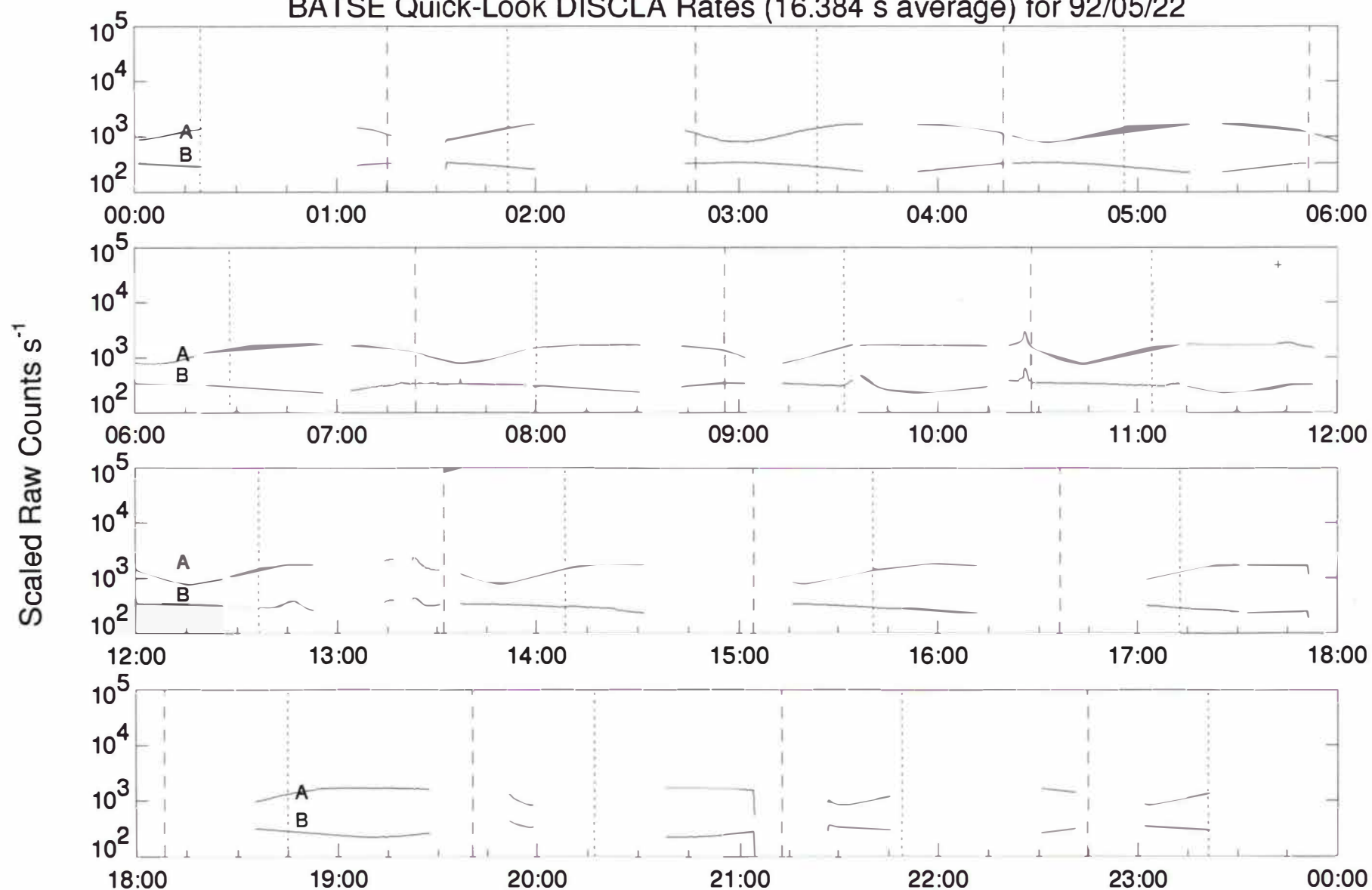
Data Start: 92/05/22, 0000:08

Plot created: 93/10/29, 0106

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/22

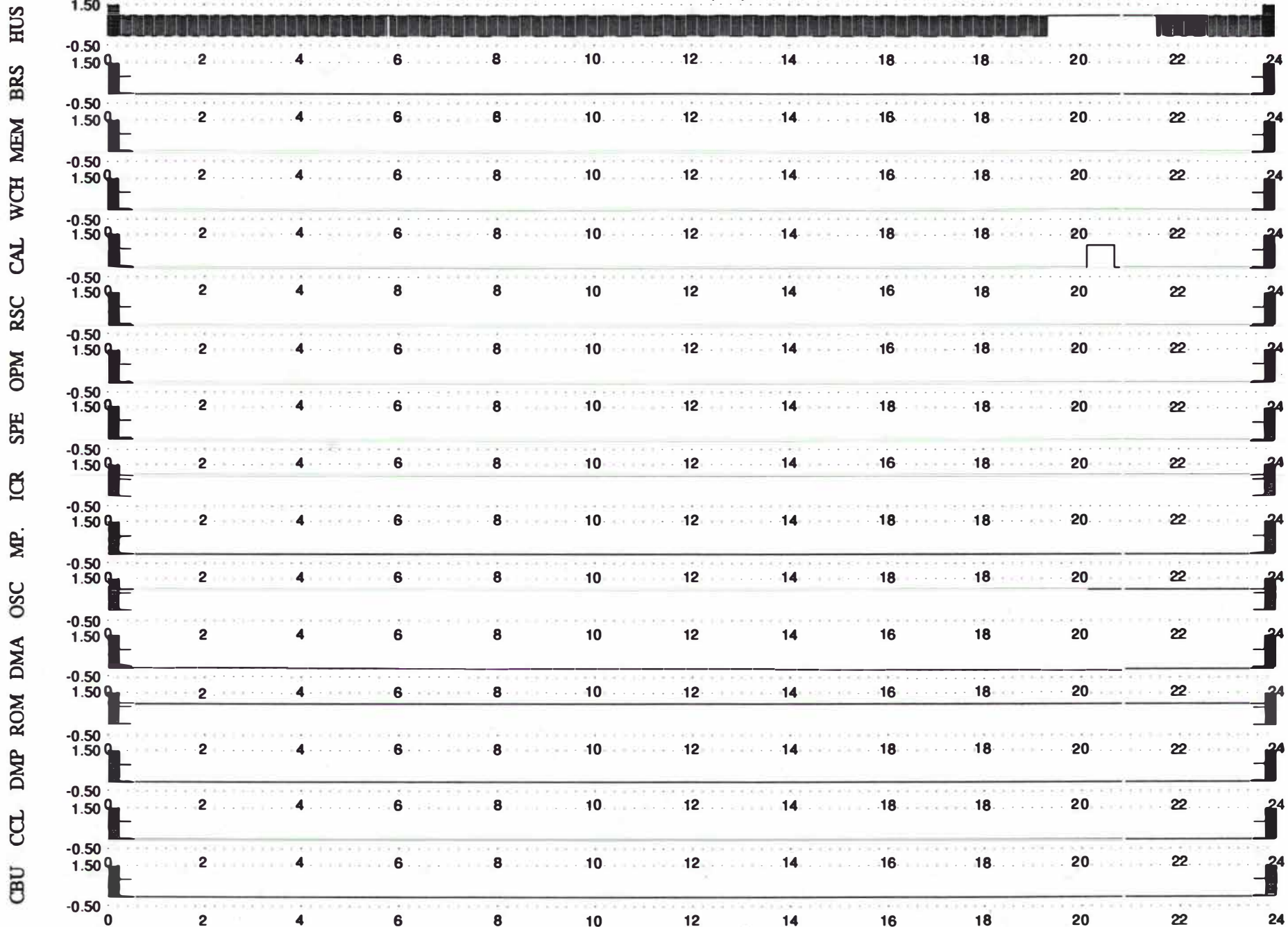


Current Time: 92/09/19, 1723 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

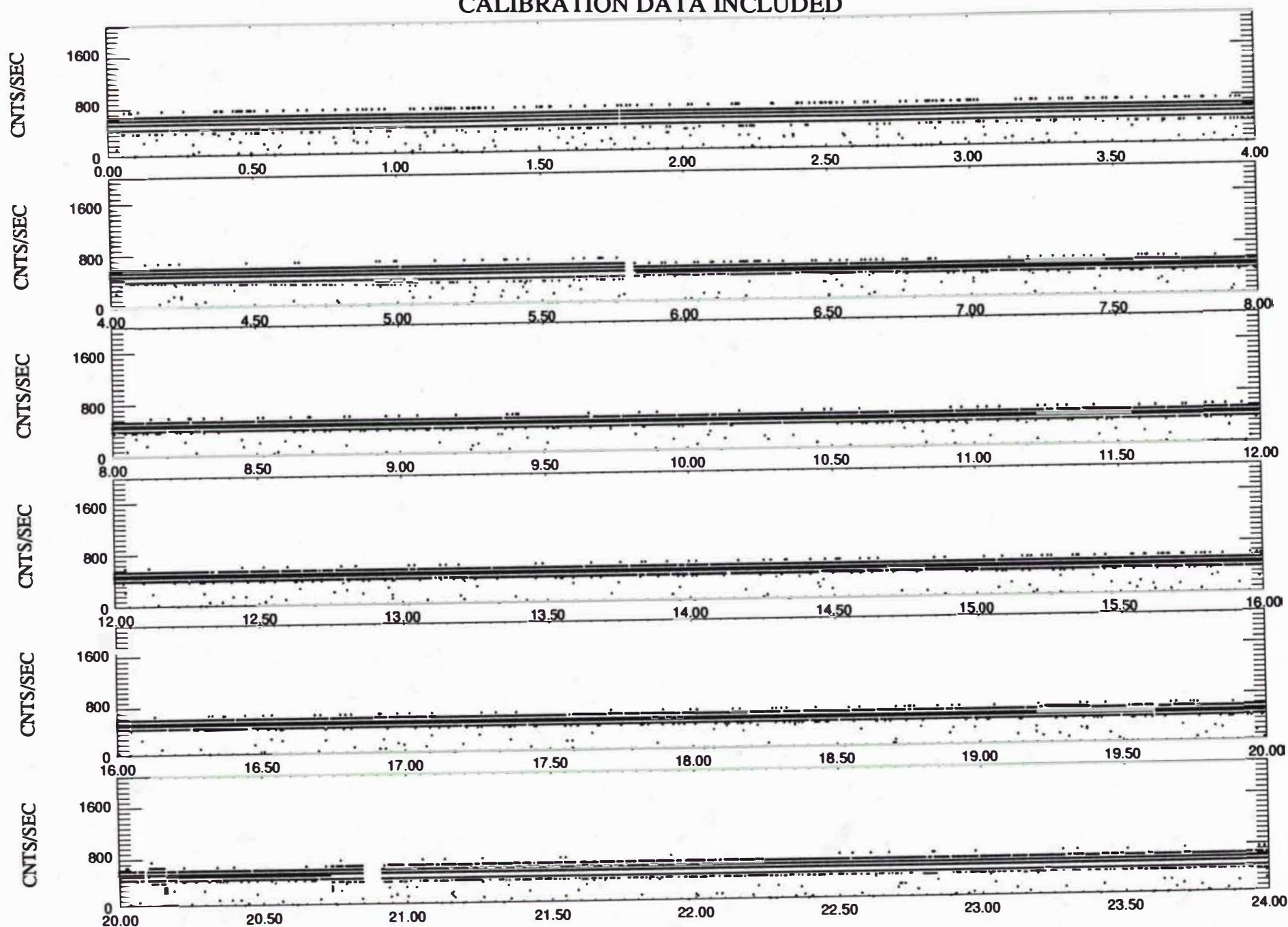
* Solar Burst Trigger
 + Solar Flare

NO BURST (15)

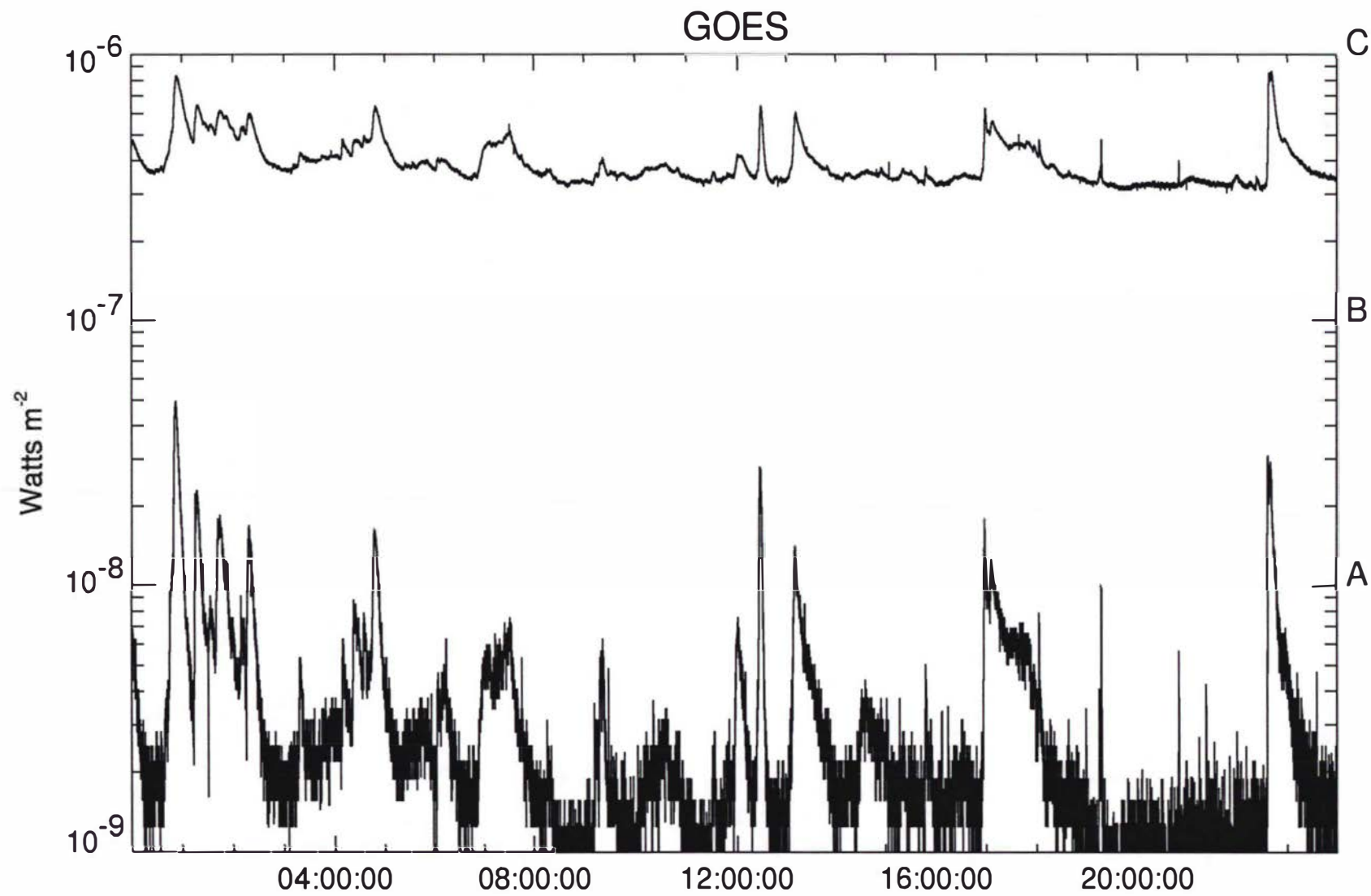


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIFORM TIME



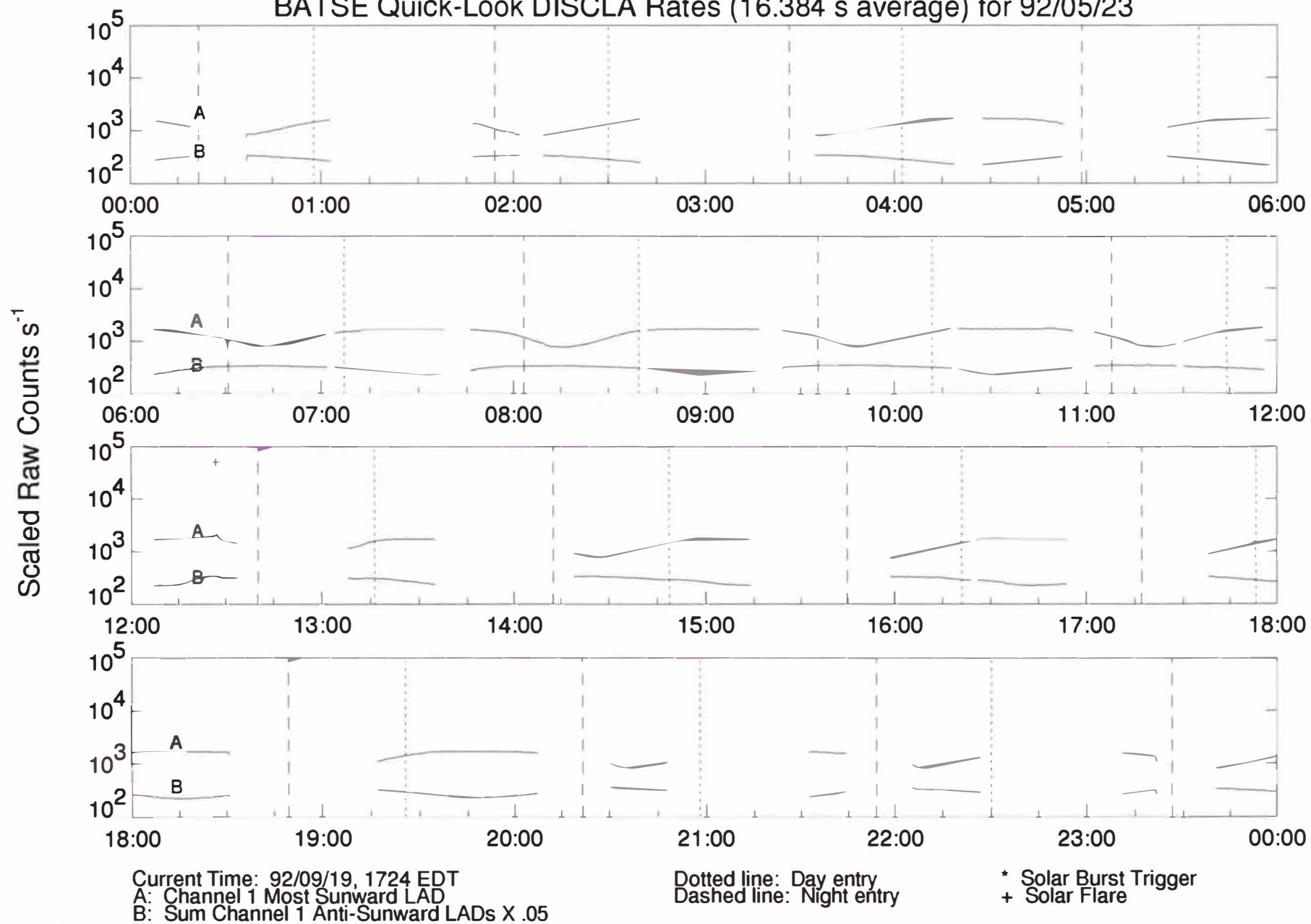
Data Start: 92/05/23, 0000:00

Plot created: 93/10/29, 0107

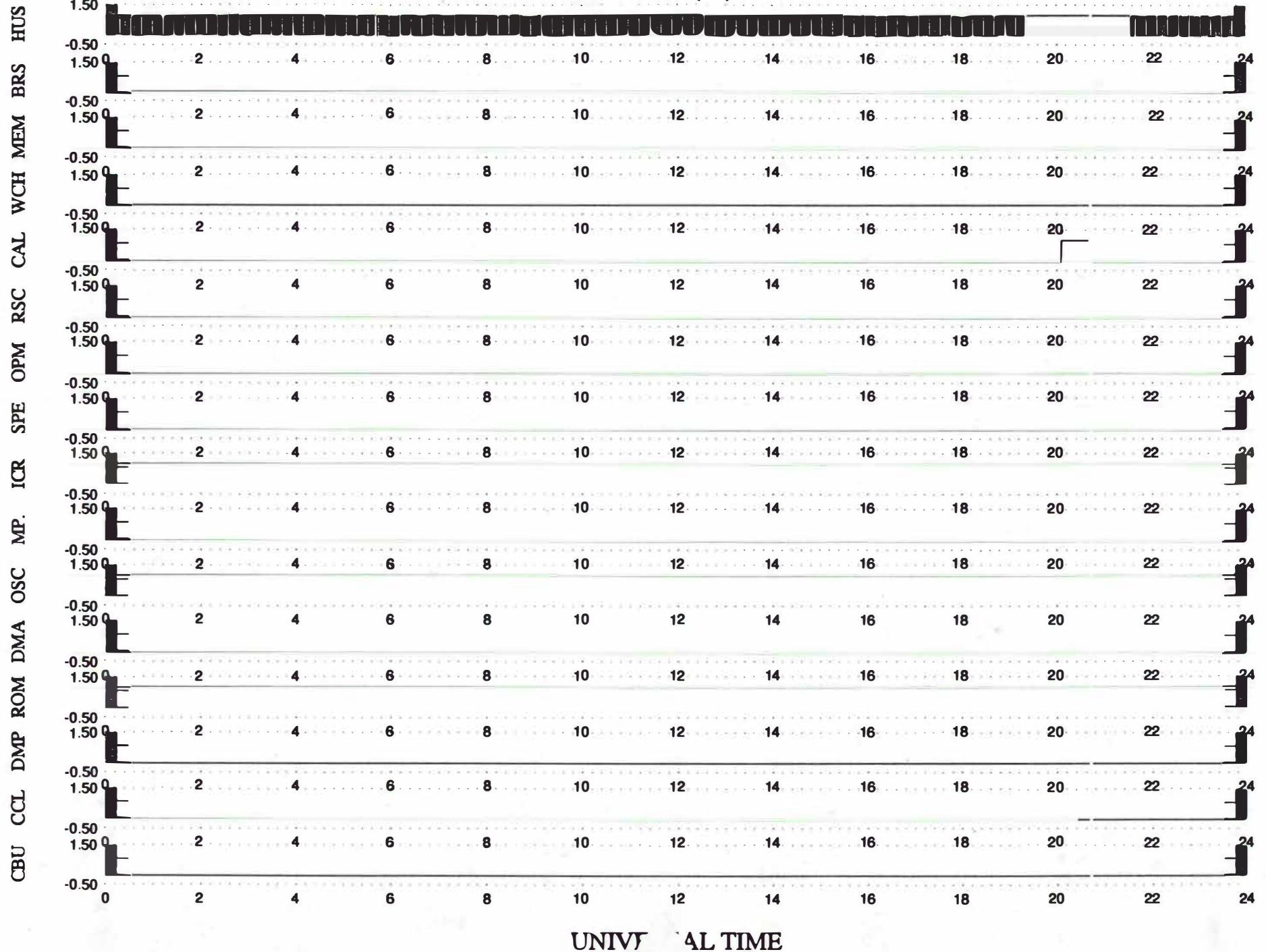
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

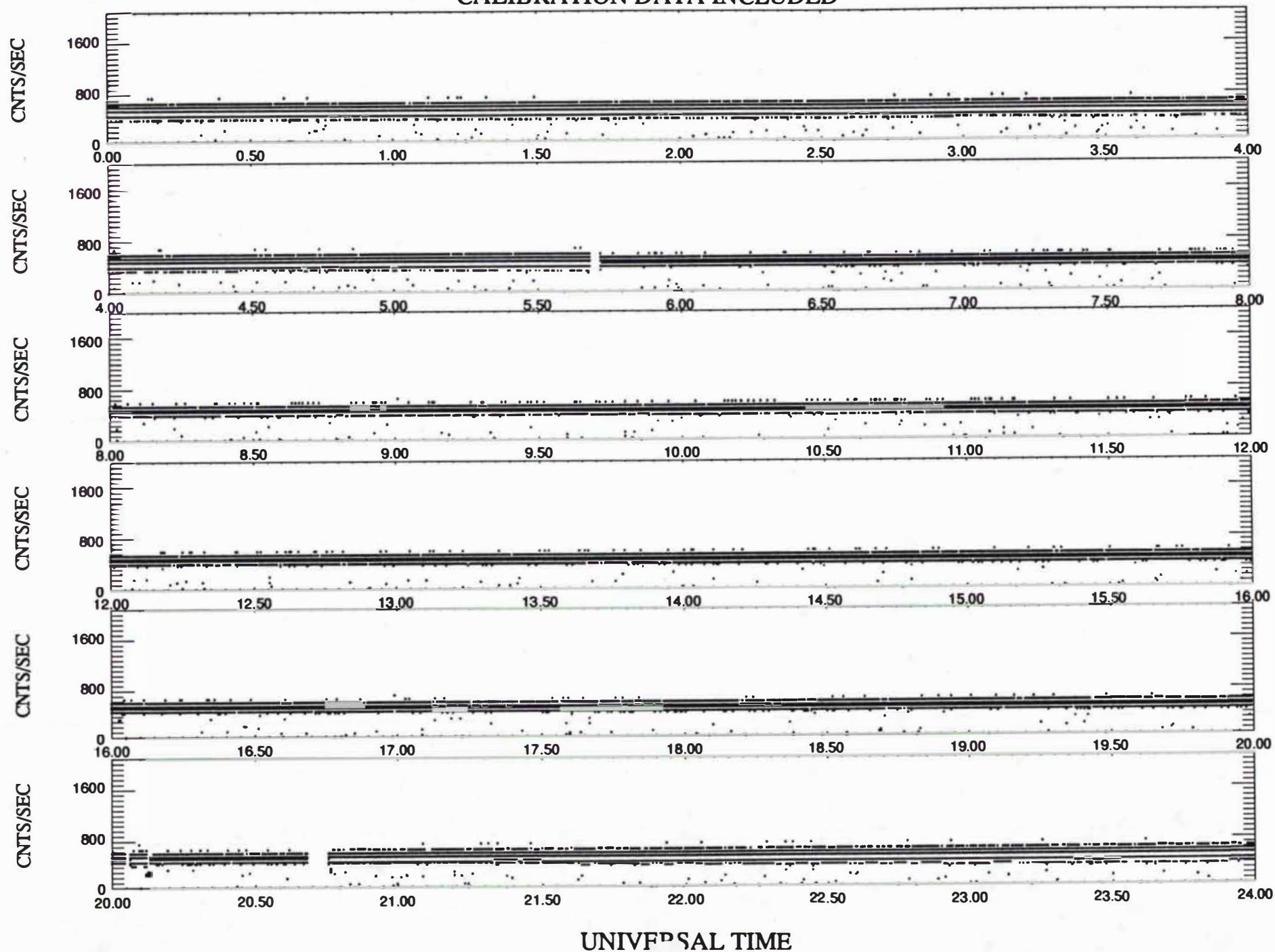
BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/23



NO BURST (15)



CALIBRATION DATA INCLUDED



CATSEARCH PROGRAM

BATSE BURST # 1623
EVENT OF 1992 MAY 24 DAY OF YEAR=145
EVENT CROSSING TIME AT BATSE : 13902. S. OR 03:51:42.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 162.500 32.300
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 24/ 5/ 92 IS:
RA= 148.214 DEC= 8.442 DIST= 5.361 AU
BATSE-ULYSSES DISTANCE = 802023552. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=152.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2377.49 SECS.
CROSSING TIME AT ULYSSES IS 11525. S. OR 03:12:04.6 +/- 226.85 SECONDS

NO

From MEEGAN@ssl.msfc.nasa.gov Tue May 26 07:12:00 1992
Date: Tue, 26 May 1992 9:13:53 -0500 (CDT)
From: MEEGAN@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01623

TIME: TJD=8766 SECONDS=13904

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104. AZIMUTH=293. ERROR= DEGREES

COMMENTS:

ABOUT 50 SECONDS LONG WITH A LOT OF STRUCTURE ON SUB-SECOND TIME
SCALE. SEEN ABOVE 320 KEV.

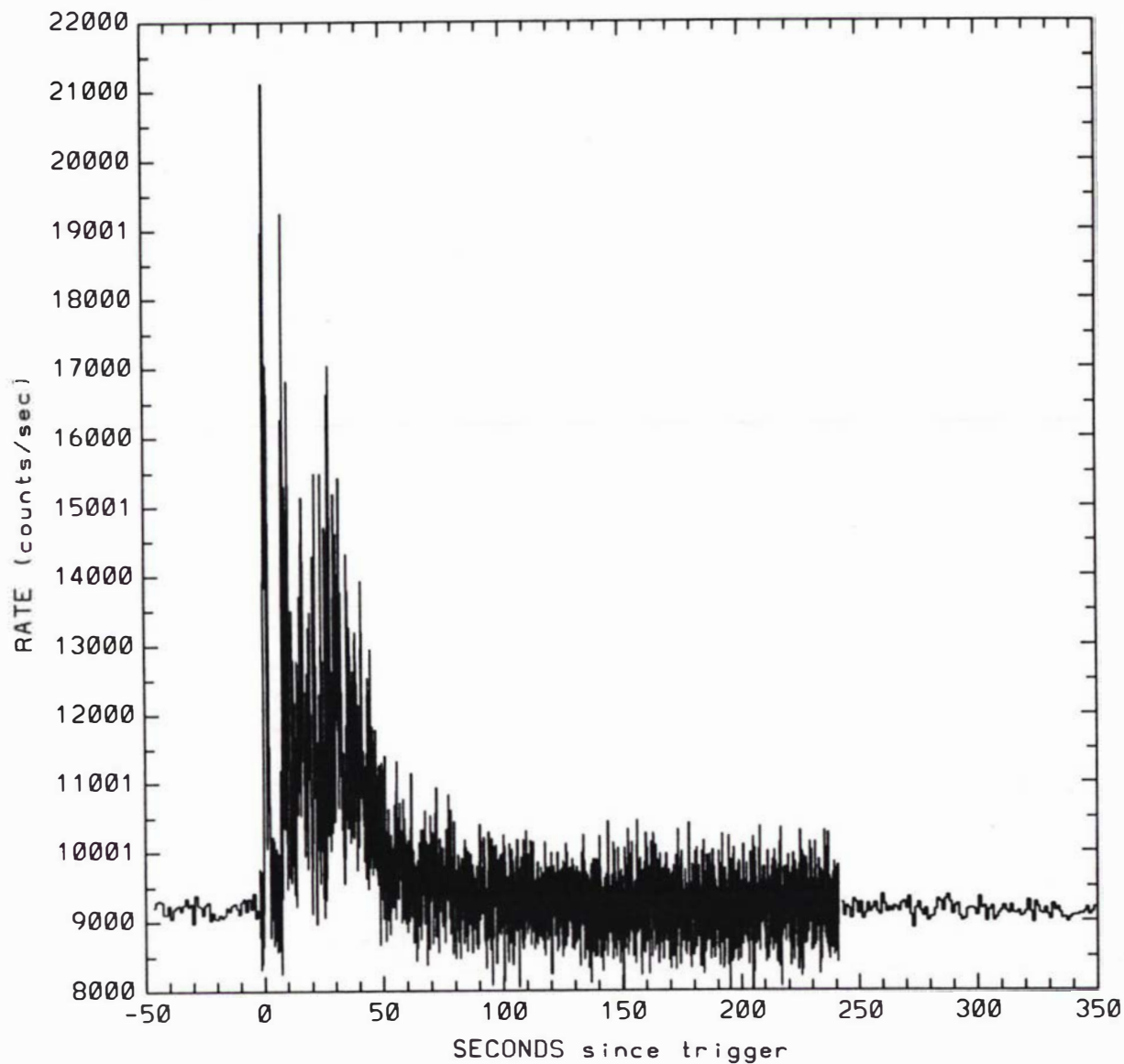
No trigger

May 24 '92

159.9, 33.6

$6.7 \times 10^{-6} \text{ erg/cm}^2$

DISCSC Data, Trigger No. 1623



ULYSSES RT

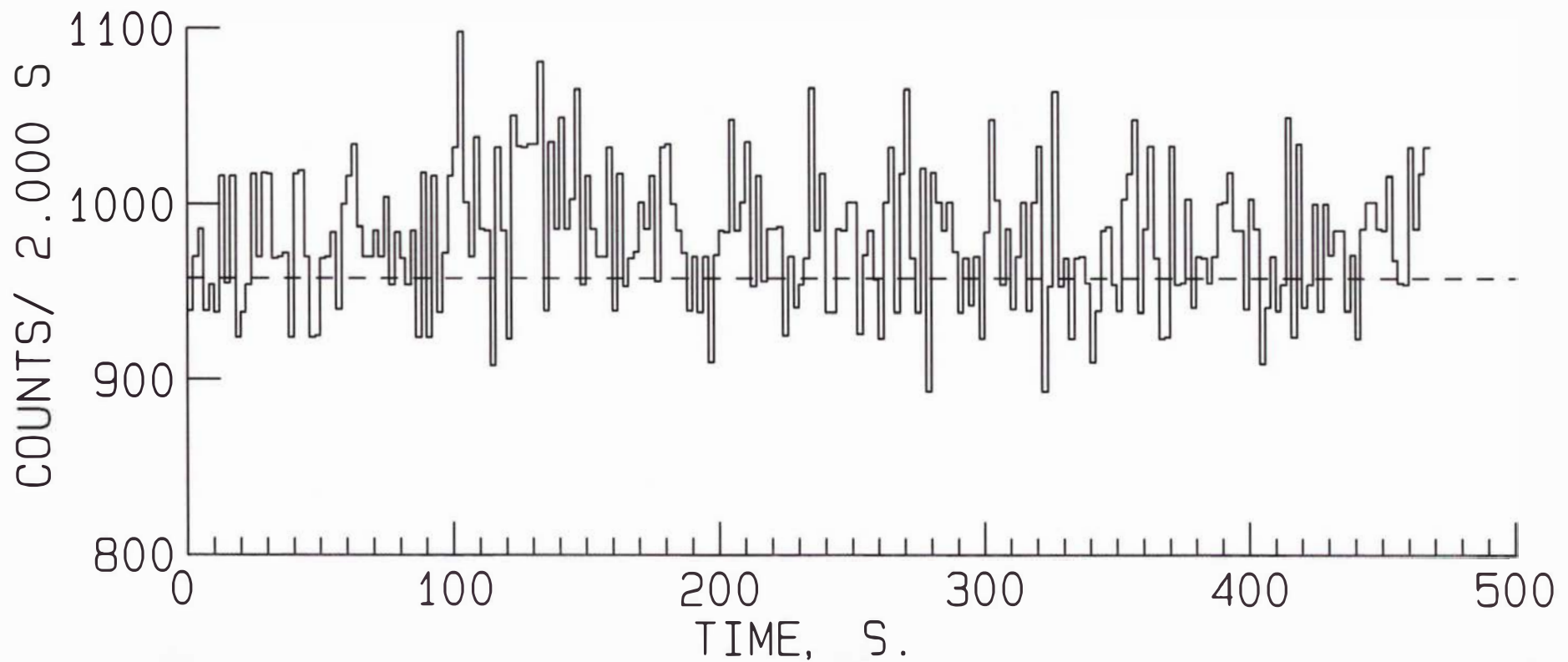
23 / 8 / 96

24 / 5 / 92 11304.176 s

0.250 S INTERVALS REGROUPED BY 8

23- 156 keV

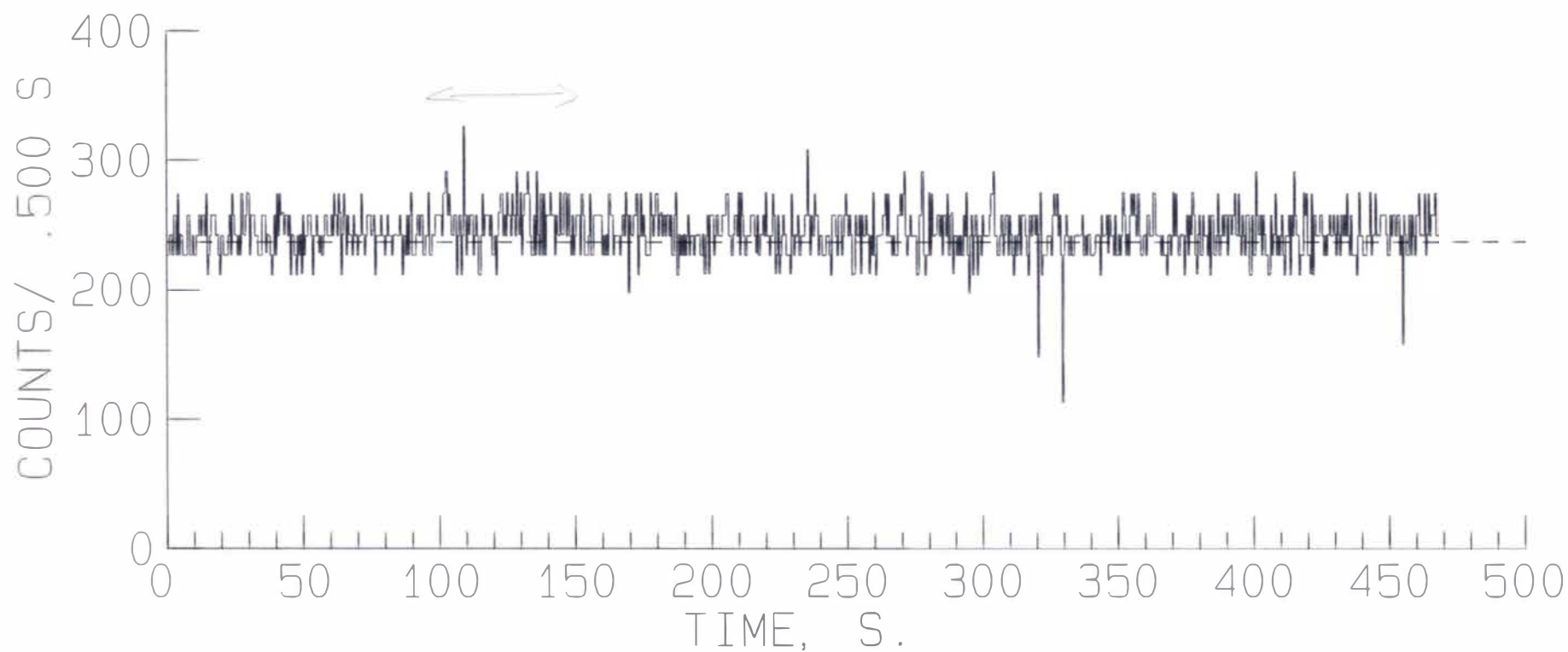
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

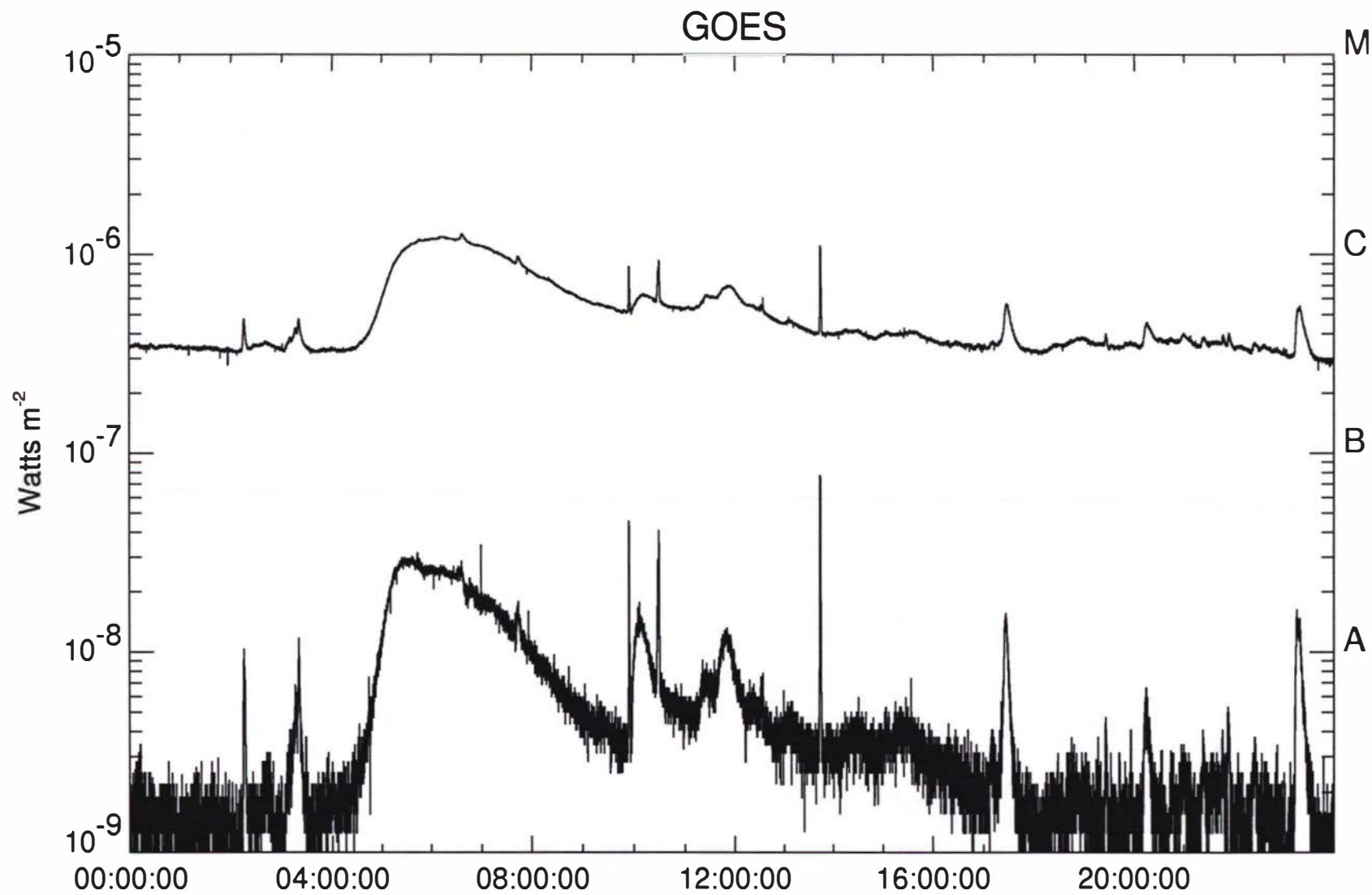


18/ 8/92

ULYSSES RT
24/ 5/92 11304.176 s
.250 S INTERVALS REGROUPED BY 2
0- 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





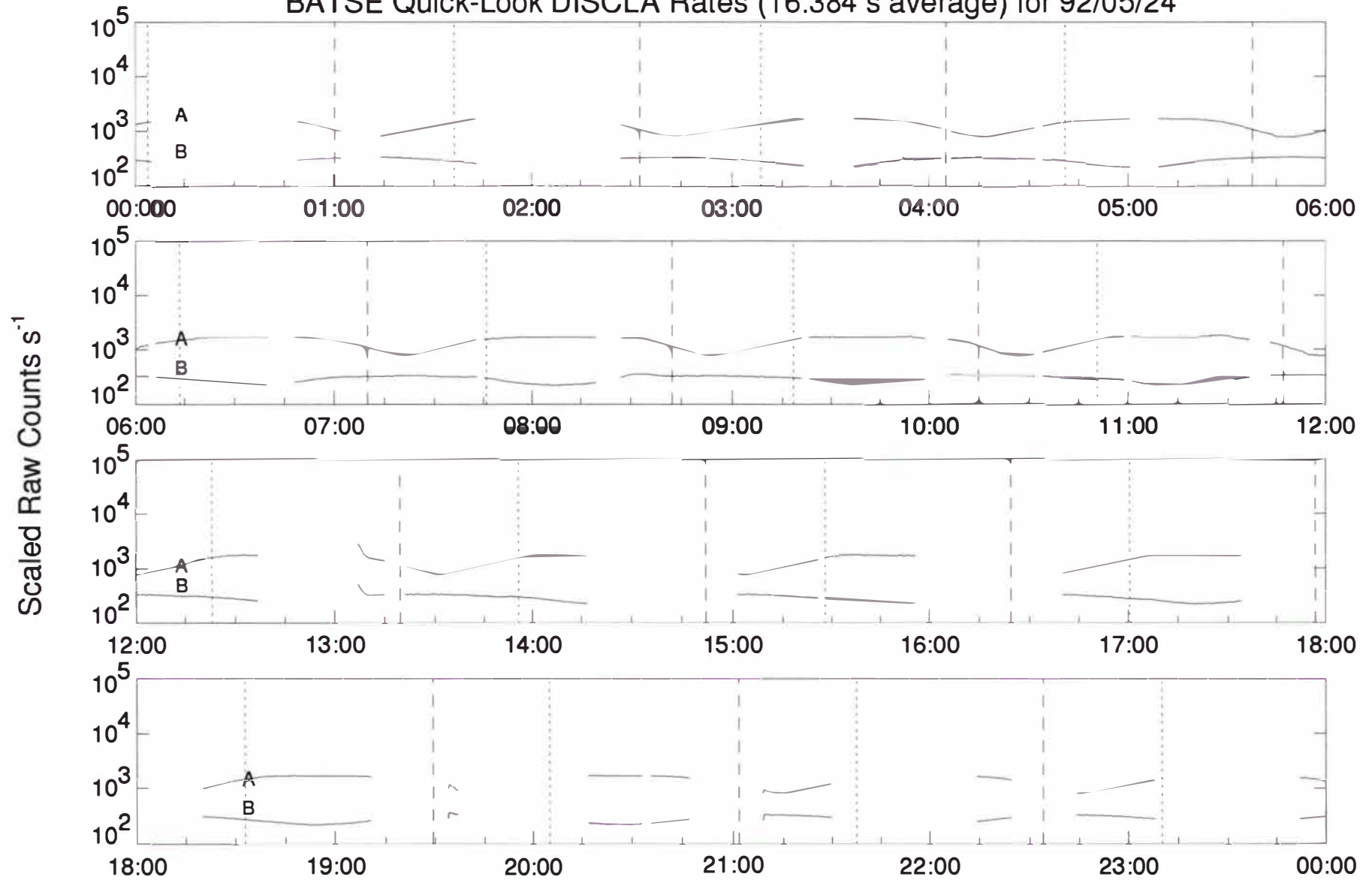
Data Start: 92/05/23, 2359:58

Plot created: 93/10/29, 0107

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/24

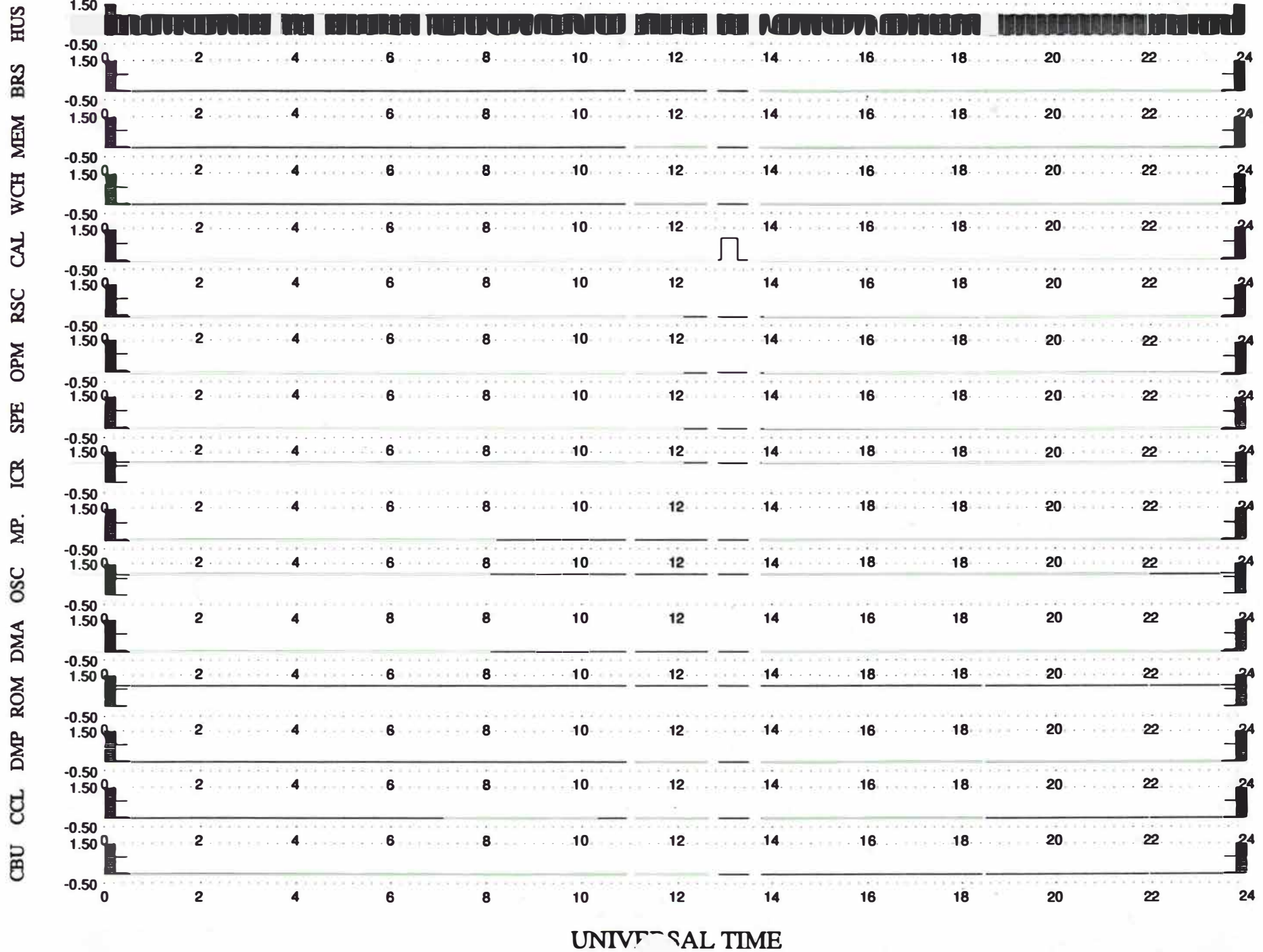


Current Time: 92/09/19, 1725 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

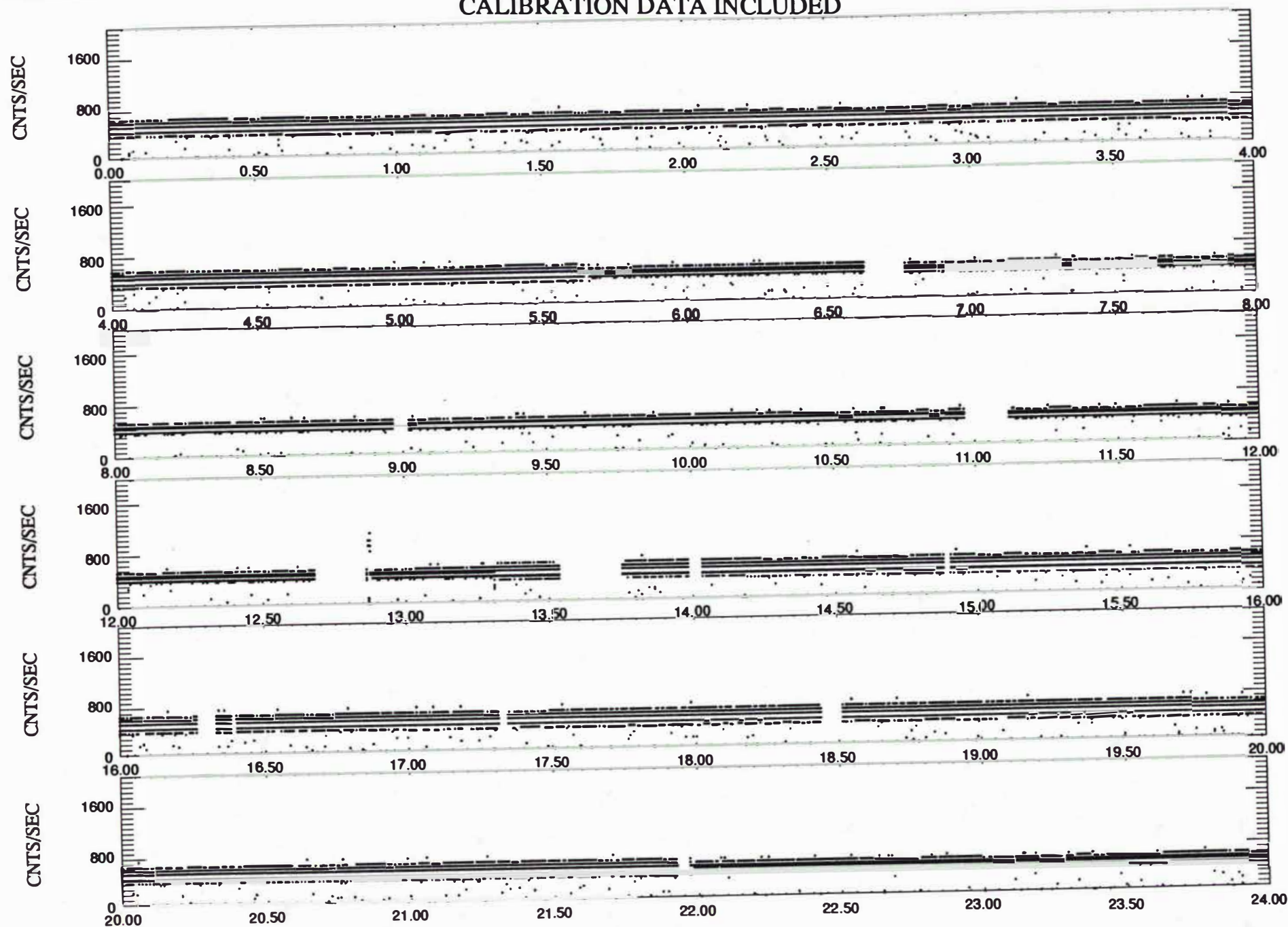
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

NO BURST (15)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME

CATSEARCH PROGRAM

BATSE BURST # 1624
EVENT OF 1992 MAY 25 DAY OF YEAR=146
EVENT CROSSING TIME AT BATSE : 2504. S. OR 00:41:44.3
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 233.700 32.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 25/ 5/ 92 IS:
RA= 148.222 DEC= 8.401 DIST= 5.377 AU
BATSE-ULYSSES DISTANCE = 804429120. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -387.14 SECS.
CROSSING TIME AT ULYSSES IS 2117. S. OR 00:35:17.1 +/- 505.11 SECONDS

NO

From WILSONB@ssl.msfc.nasa.gov Wed May 27 07:35:49 1992
Date: Wed, 27 May 1992 9:37:43 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER
NO.: 01624 *May 25*
TIME: TJD=8767 SECONDS=02506
TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N
SIGNIFICANCE: SIGMA
INTENSITY: COUNTS/CM2
LOCATION: ZENITH=157.1 AZIMUTH=289.4 ERROR=010.0 DEGREES

COMMENTS:
WEAK EVENT, WITH HARD SPECTRUM. MANY ~5S DURATION PEAKS, WITH INTERSPERSED
INTERVALS NEAR BACKGROUND RATES, LASTING UNTIL ~106S AFTER TRIGGER.

No sig

7 / 6 / 94

ULYSSES RT

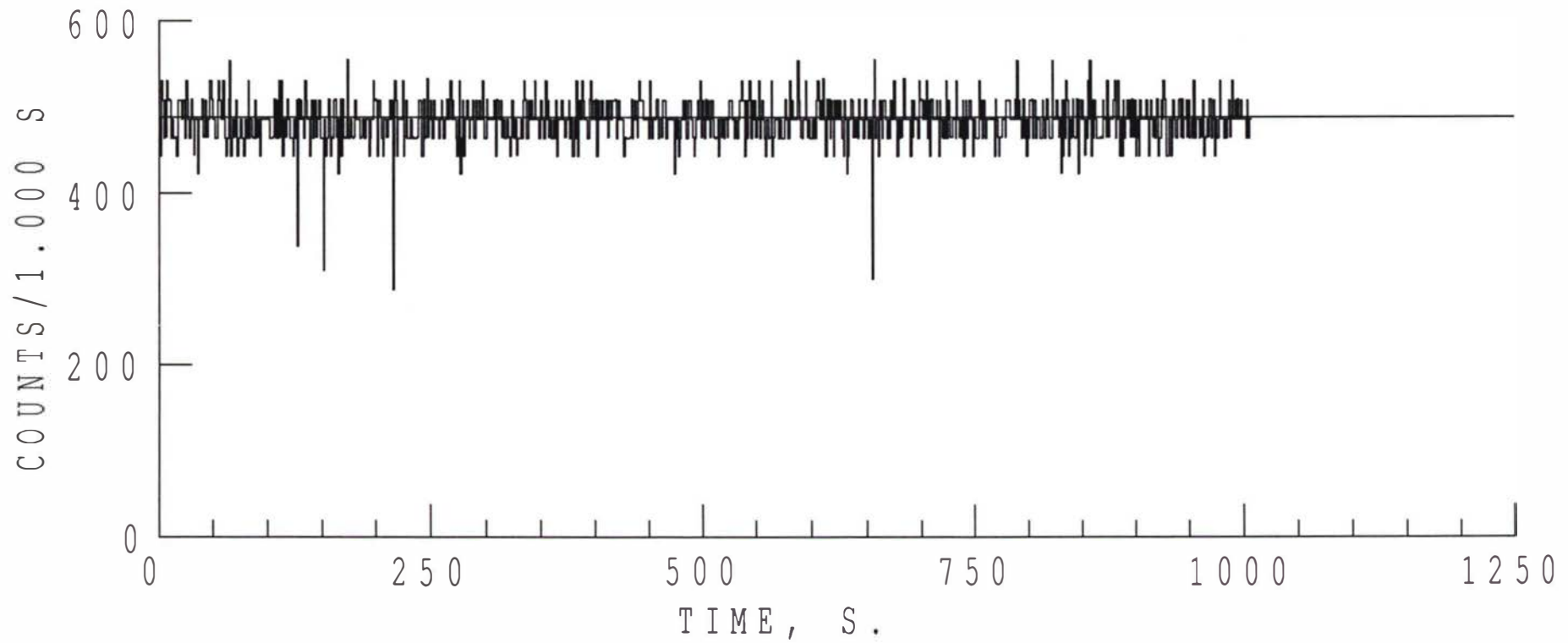
25 / 5 / 92 1620.419 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



CATSEARCH PROGRAM

BATSE BURST # 1625
EVENT OF 1992 MAY 25 DAY OF YEAR=146
EVENT CROSSING TIME AT BATSE : 12422. S. OR 03:27:01.7
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 300.400 -41.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 25/ 5/ 92 IS:
RA= 148.222 DEC= 8.401 DIST= 5.377 AU
BATSE-ULYSSES DISTANCE = 804429120. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2018.05 SECS.
CROSSING TIME AT ULYSSES IS 14440. S. OR 04:00:39.8 +/- 387.68 SECONDS

Trigger

From WILSONB@ssl.msfc.nasa.gov Wed May 27 07:57:48 1992
Date: Wed, 27 May 1992 9:59:53 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1458

BATSE BURST TRIGGER

NO.: 01625

TIME: TJD=8767 SECONDS=12423

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=096.1 AZIMUTH=120.9 ERROR=010.0 DEGREES

COMMENTS:

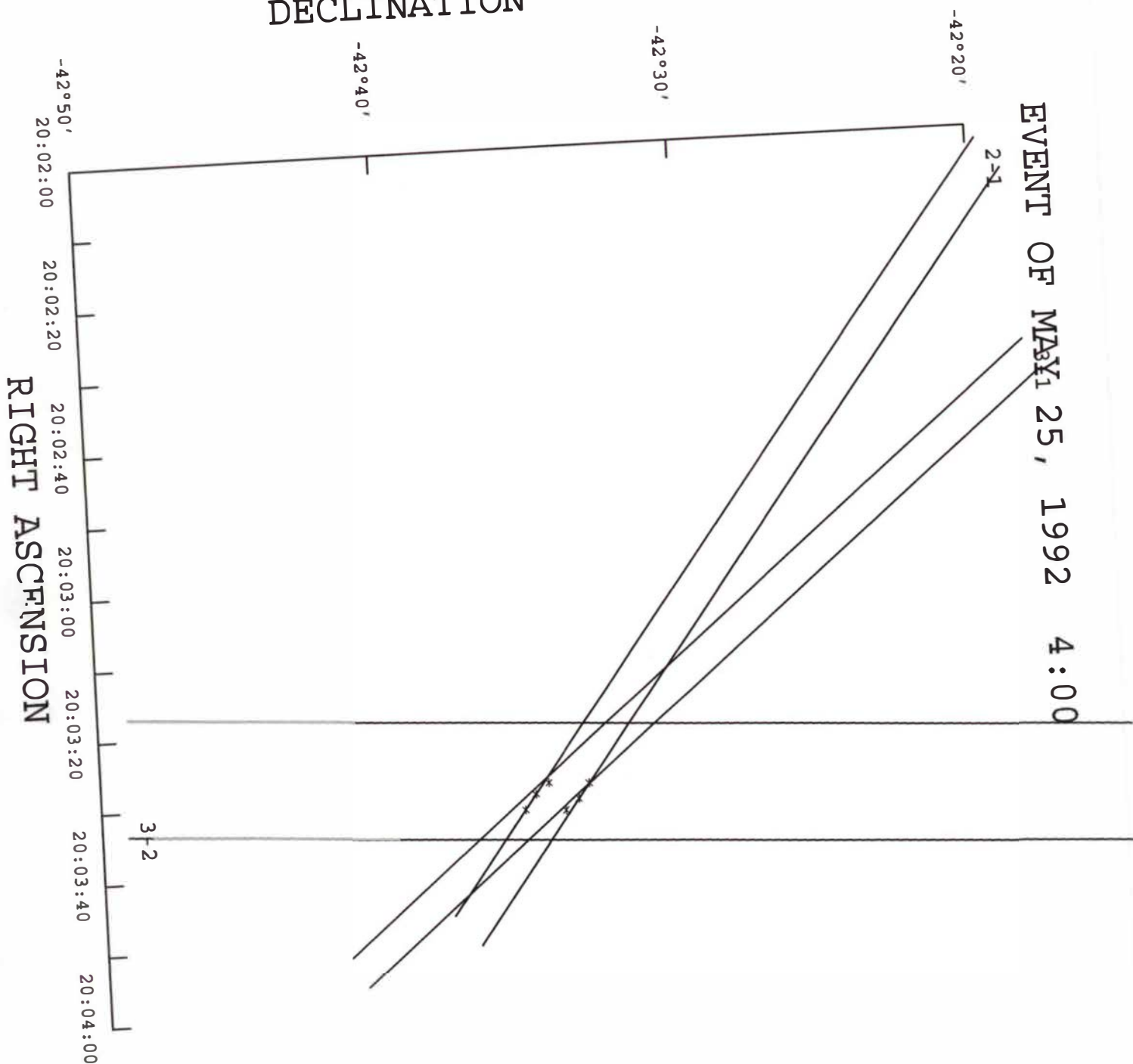
STRONG EVENT (107K C/S ABOVE 25 KEV), WITH PRINCIPAL FEATURE LASTING
ABOUT 25S AFTER TRIGGER, CONTAINING 5 PEAKS WITH DURATIONS OF 3-5S.
PRECURSOR EMISSION SEEN ~30S BEFORE TRIGGER. WEAK EVENT ALSO OCCURS ~45S
AFTER TRIGGER.

Yes

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

1 ULYSSES 2 BATSE 3 PVO

DECLINATION



10/10/97

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

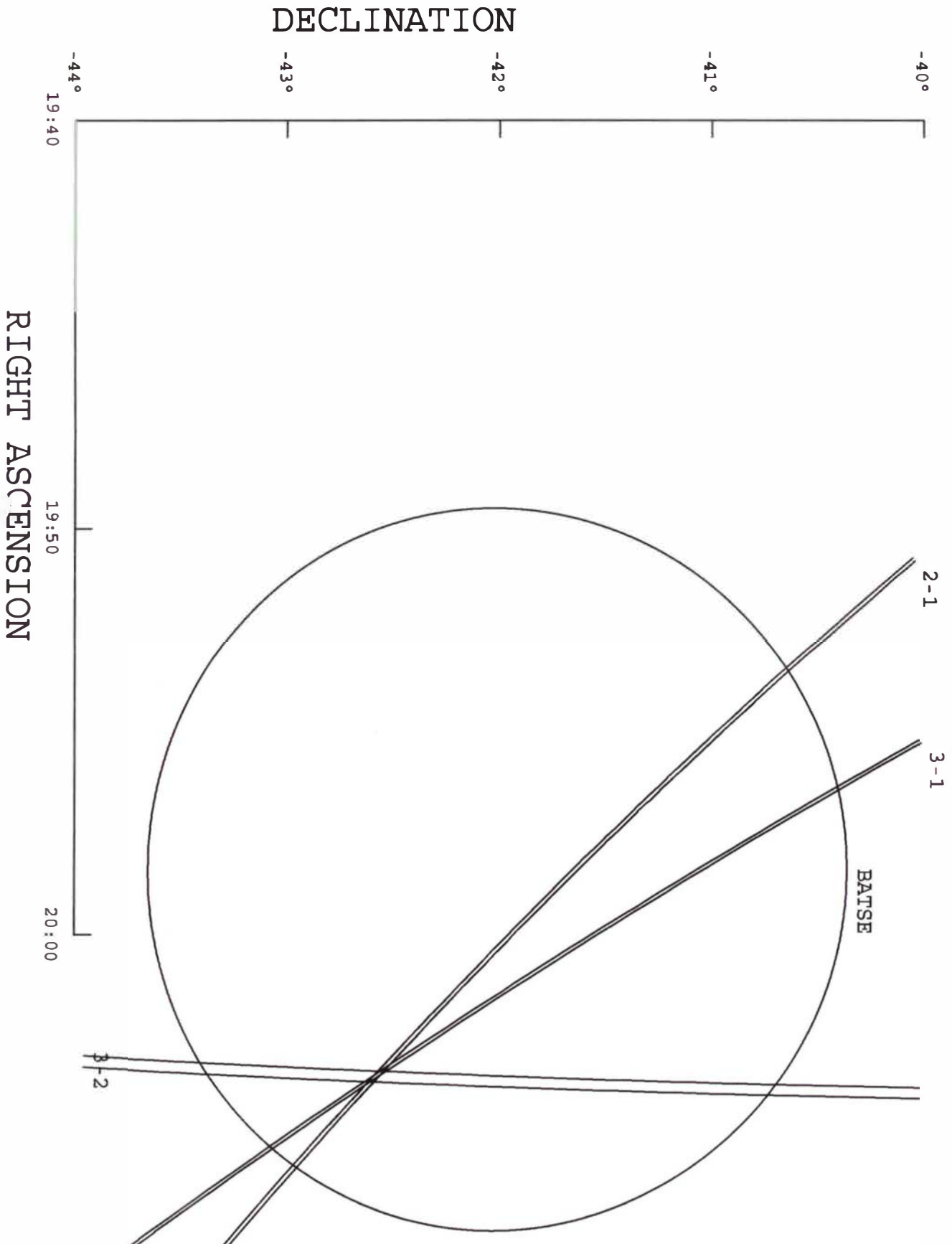
1 ULYSSES

2 BATSE

3 PVO

EVENT OF MAY 25, 1992 4:00

26/12/96



Helio corr removed

Date: Dec 26 1996

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☐ Ephemeris calculated for start of record of real time data? *N/A*
- ☒ Final ephemeris used?
- ☒ Does ULYTRIG program output contain trigger time, and not SOR? (Ditto for FILE.ult)
- ☒ Final, CDROM data used?
- ☒ Were data checked by Joe Springer for 0.5 s errors?

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

3. PVO Data

- ☒ Ephemeris of PVO used (not Venus)?
- ☒ 2000 coordinates used?
- ☒ Geocentric time used?

Access database updated

BATSE

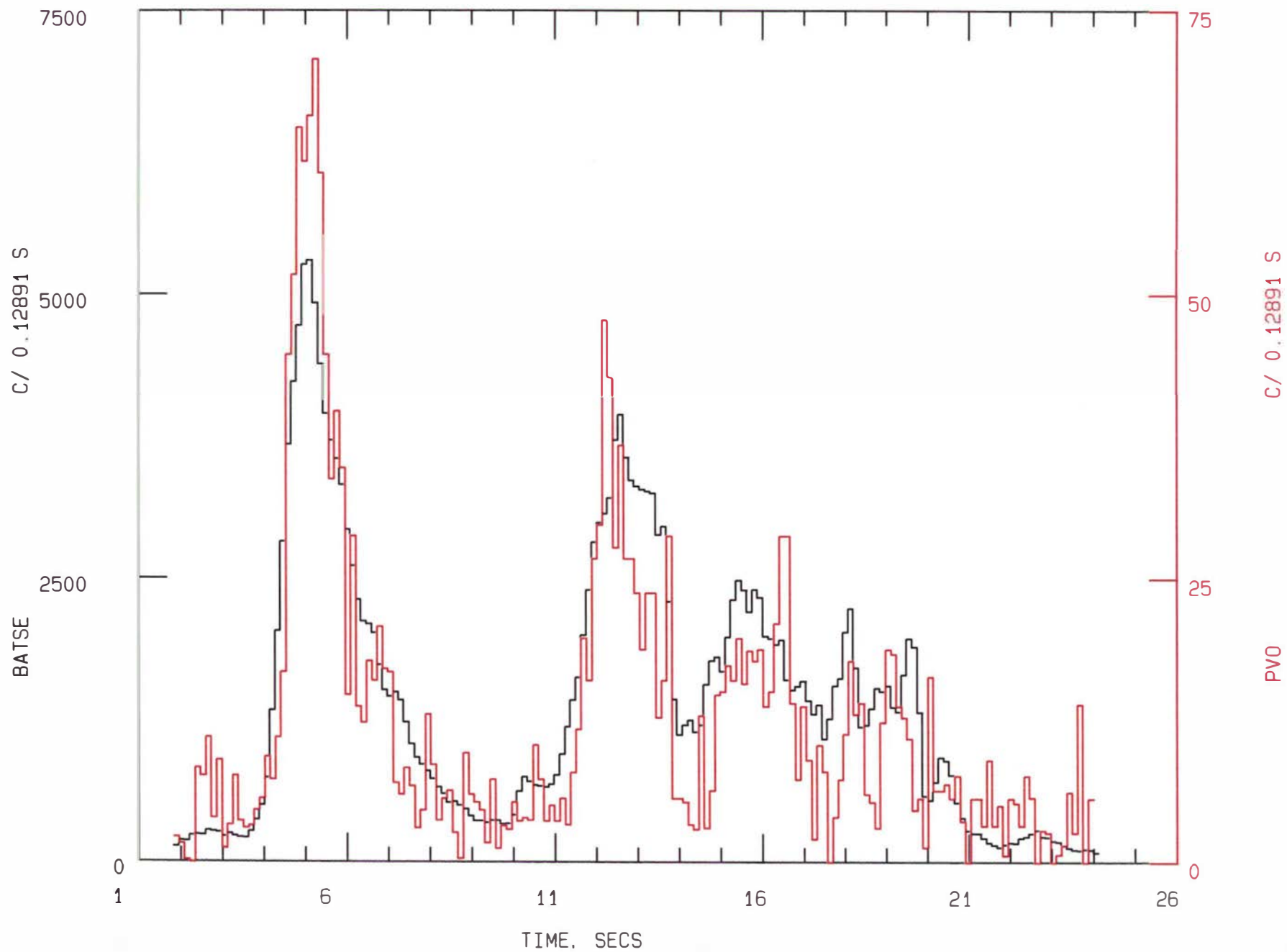
-PVO

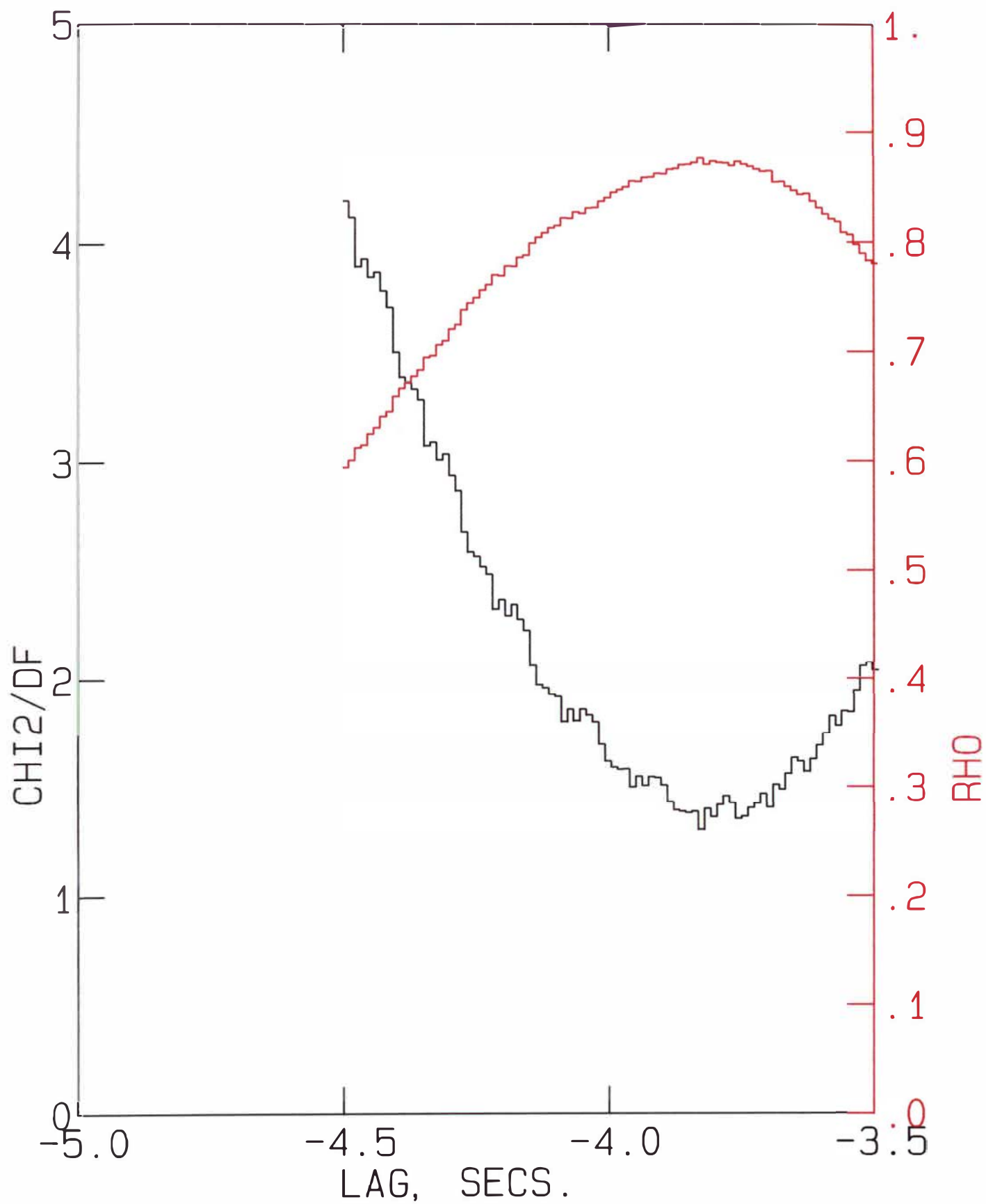
CORRELATION

25/ 5/92

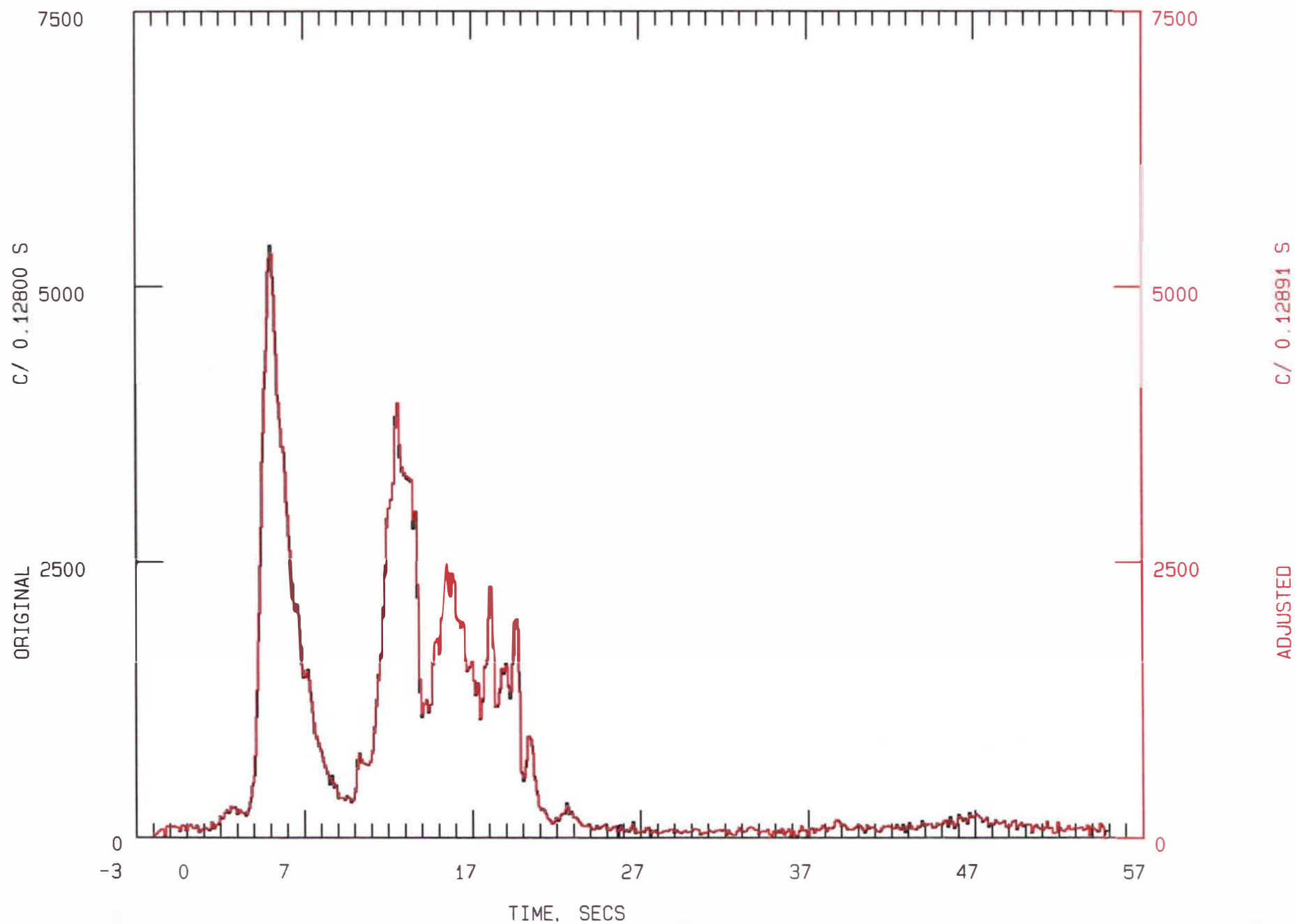
12421.738

26/12/96





26/12/96



PV0

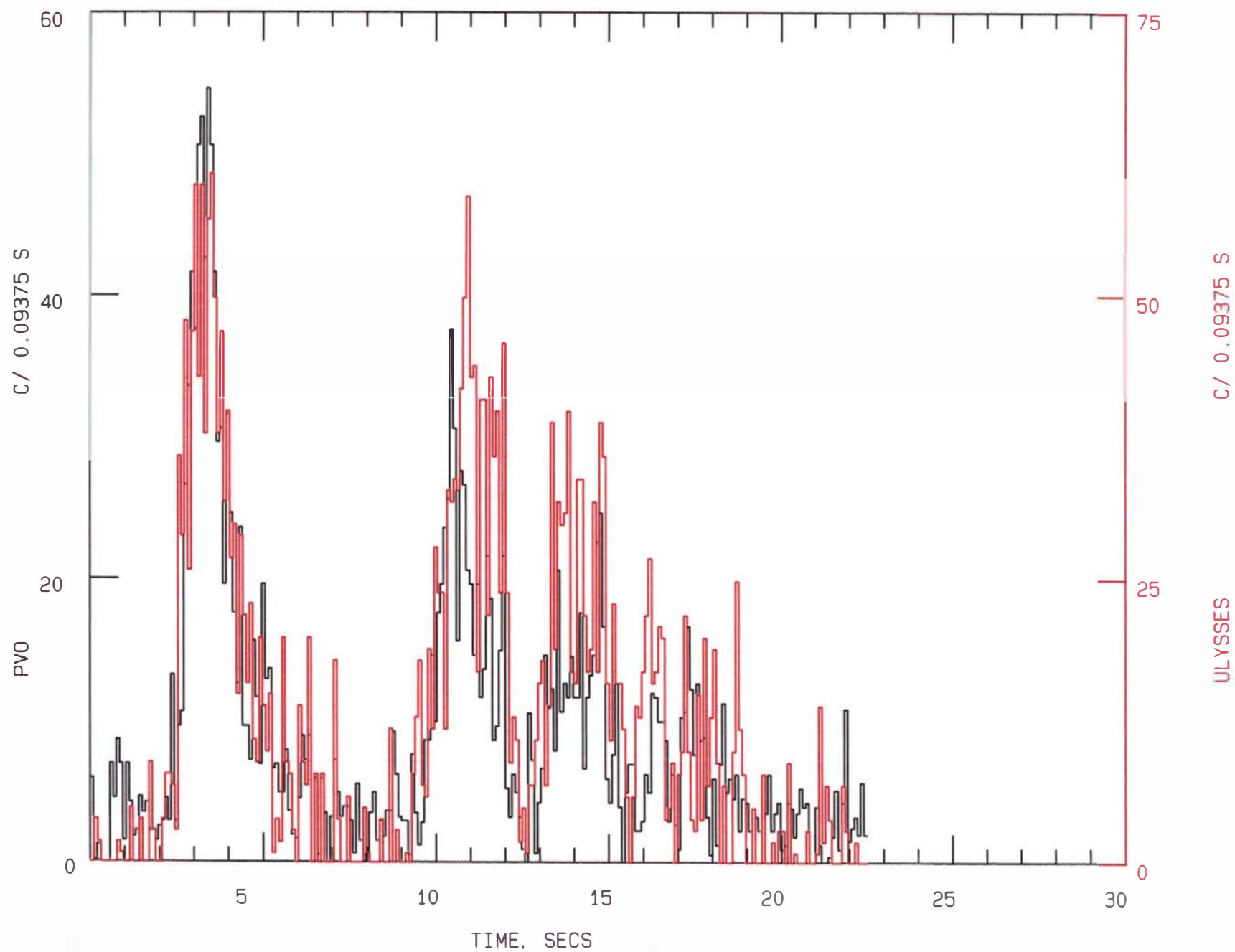
-ULYSSES

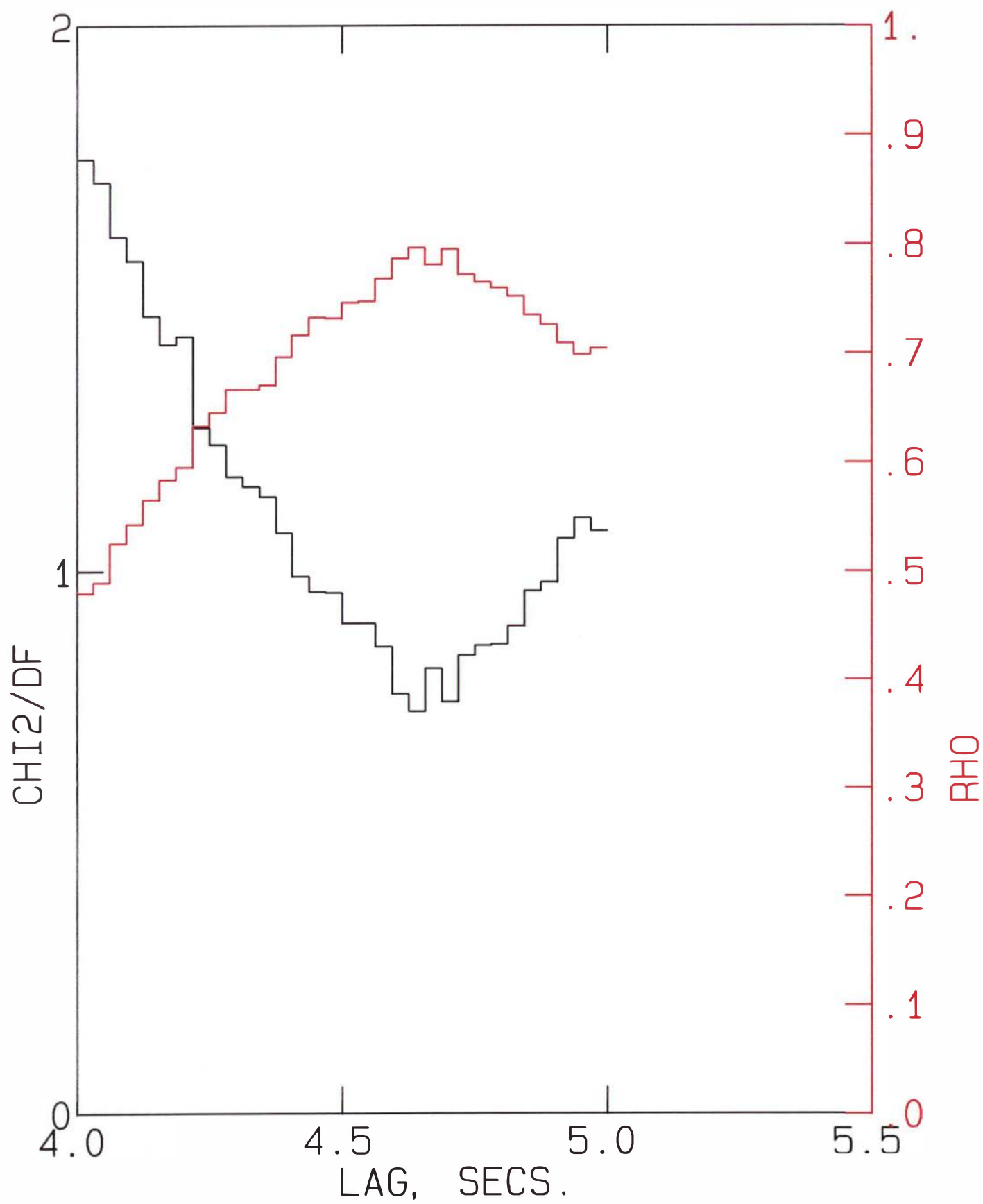
CORRELATION

25/05/92

12881.962

26/12/96





BATSE

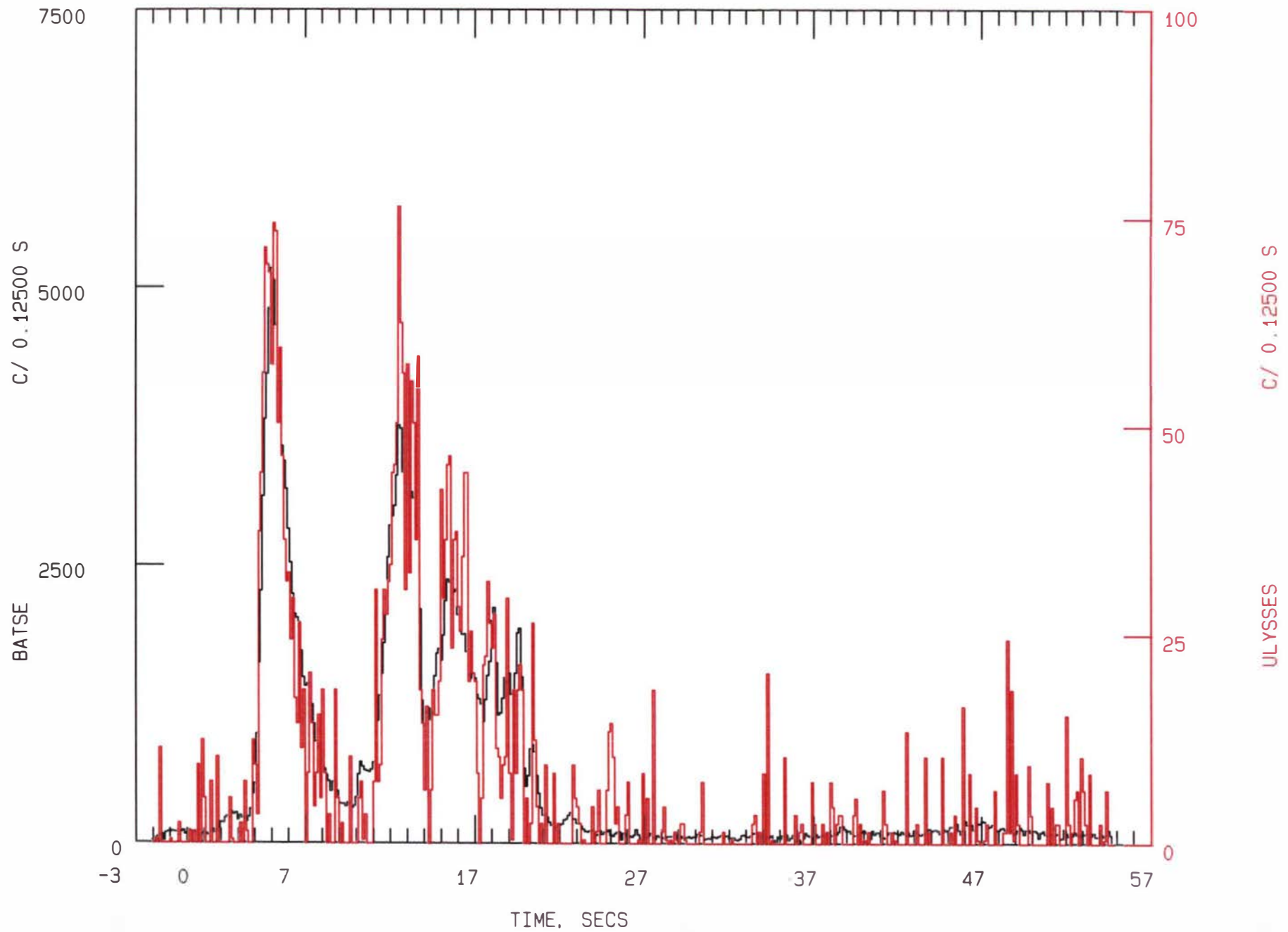
-ULYSSES

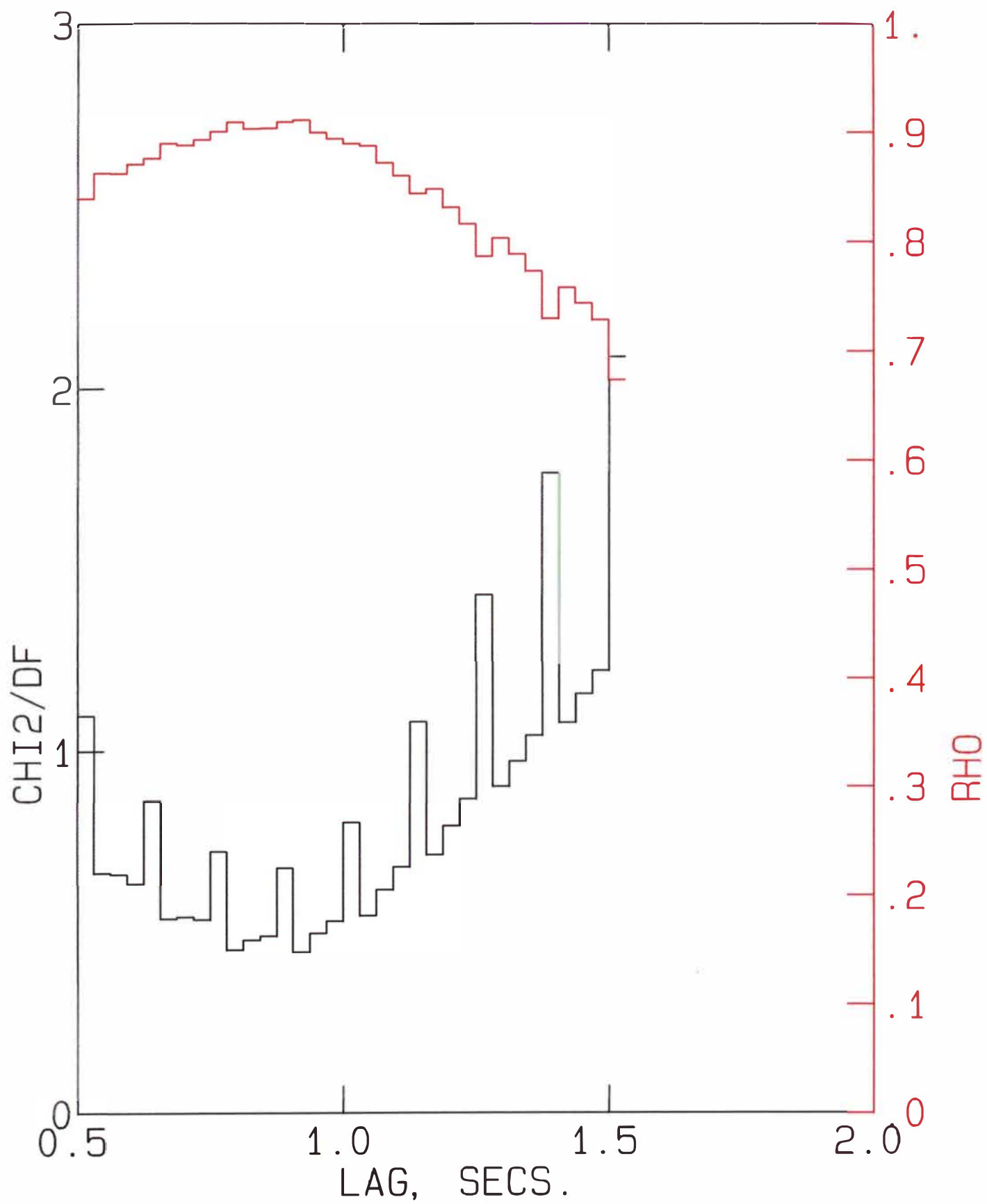
CORRELATION

25/ 5/92

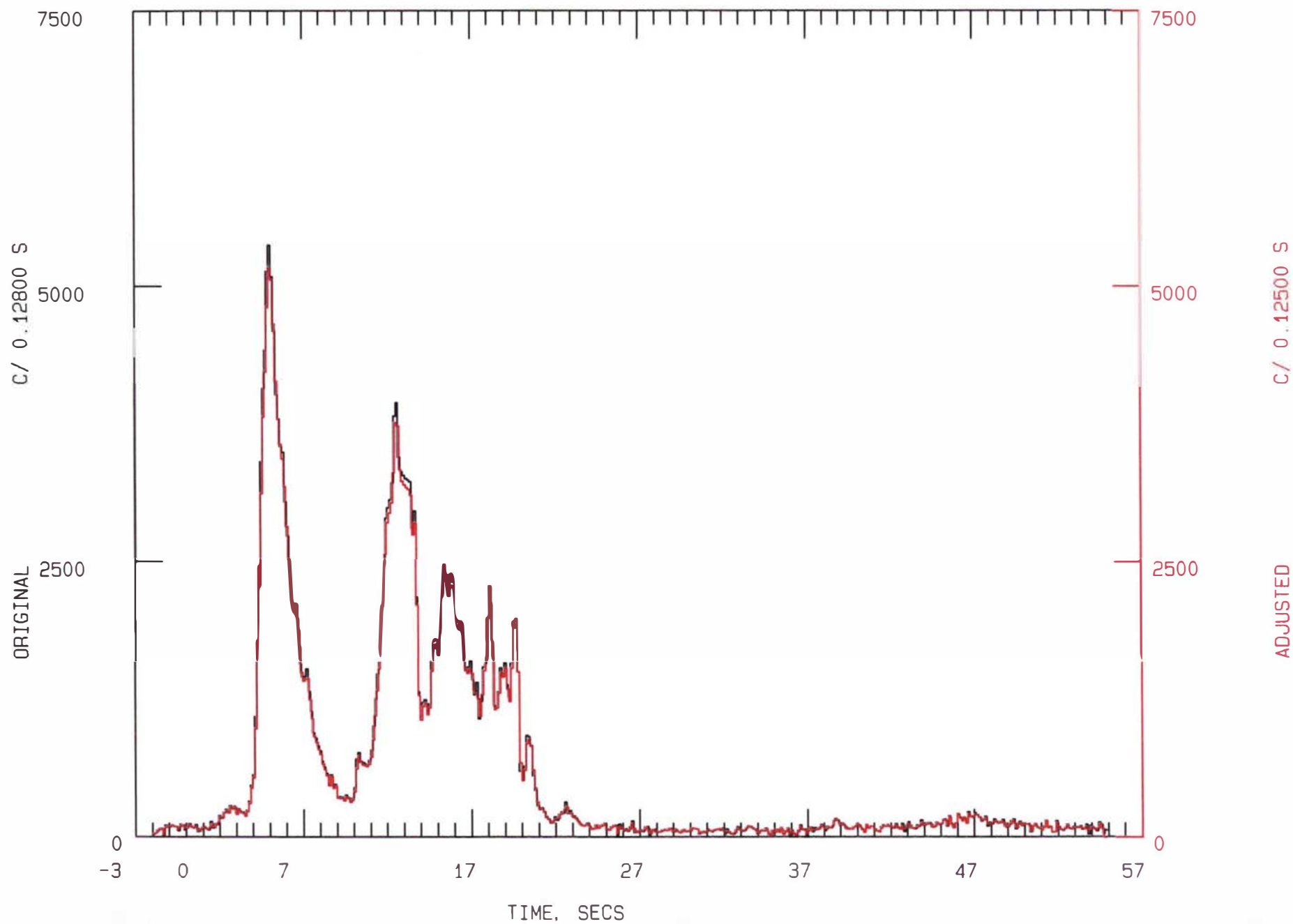
12421.738

26/12/96





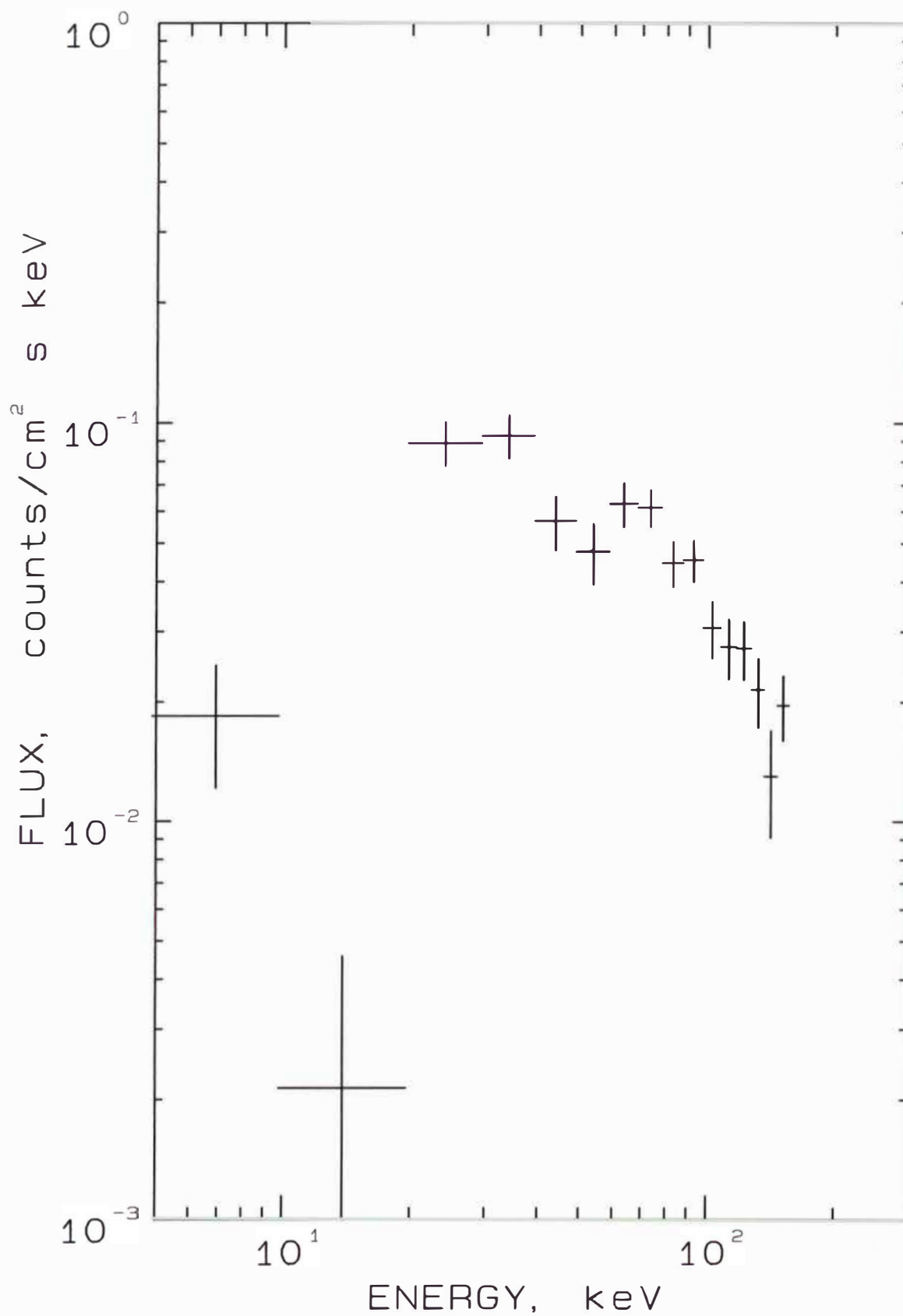
26/12/96



ULYSSES 25/05/92 14412.170

26/12/96

SPECTRUM INTEGRATED OVER 30.0 SECONDS, INTERVALS 2 TO 24



ULYSSES 25/05/92 14412.170 BURST SPECTRAL COUNT RATES

4- 19 keV

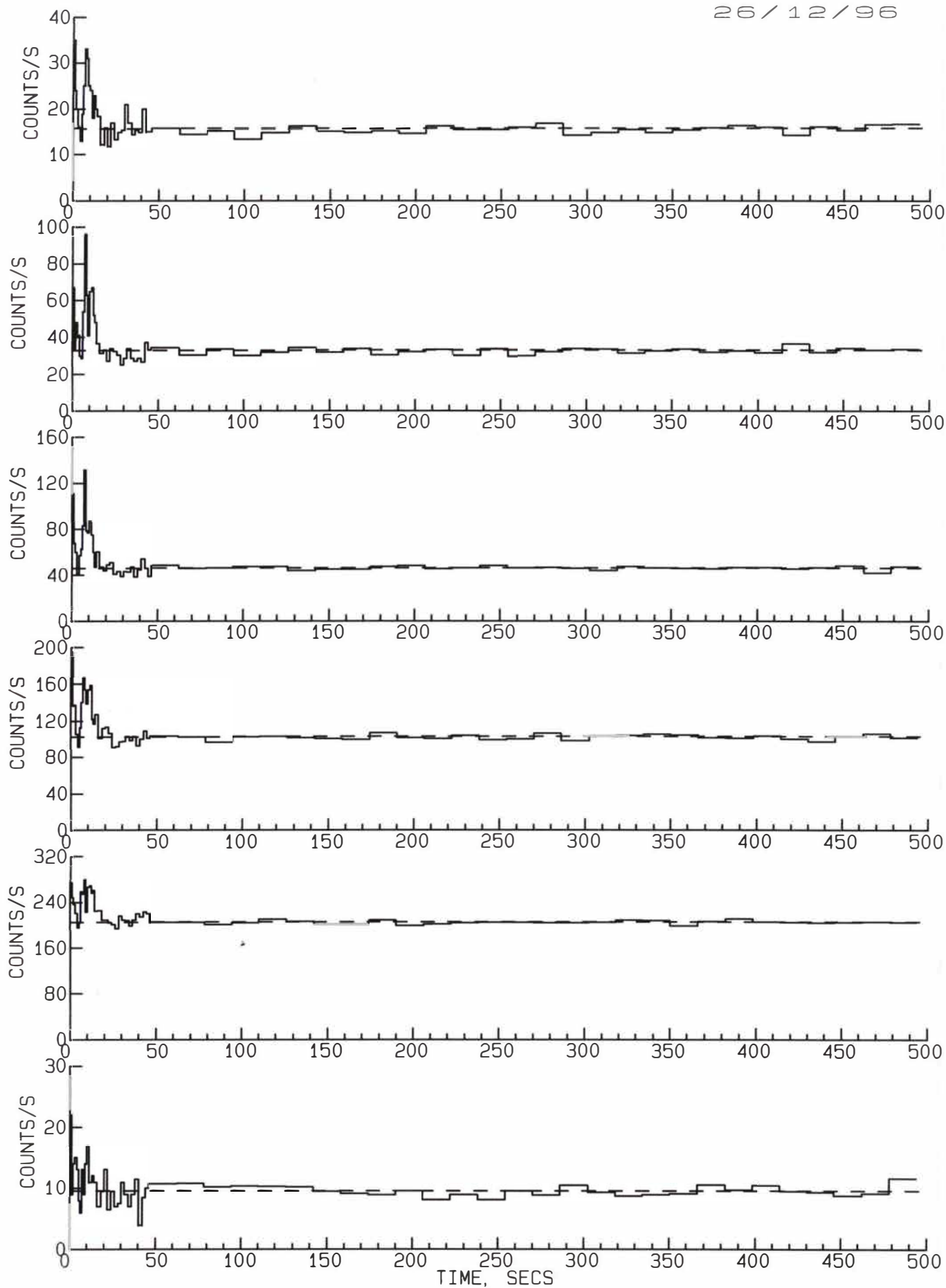
19- 48 keV

48- 78 keV

78-107 keV

107-137 keV

137-156 keV



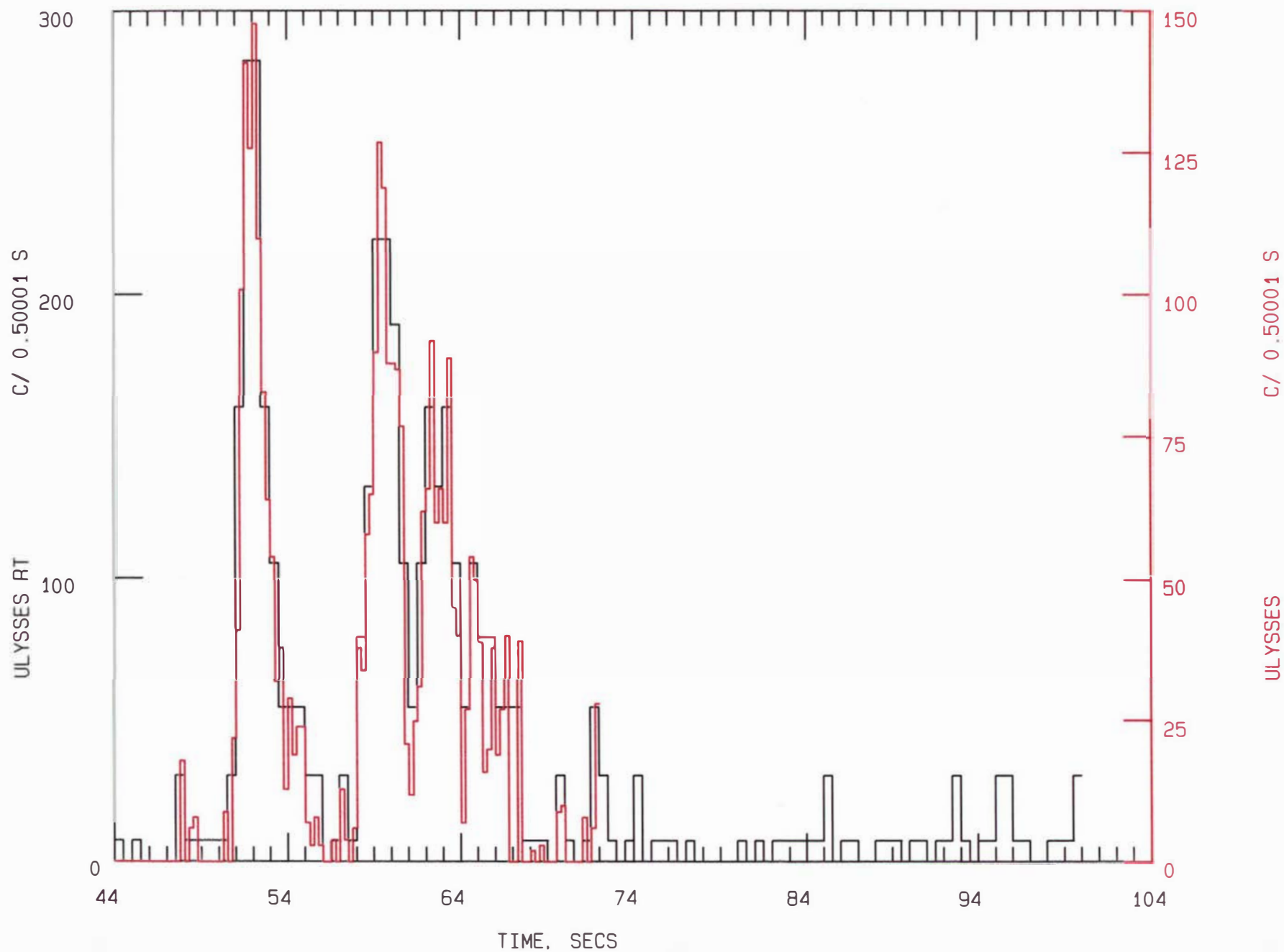
ULYSSES RT-ULYSSES

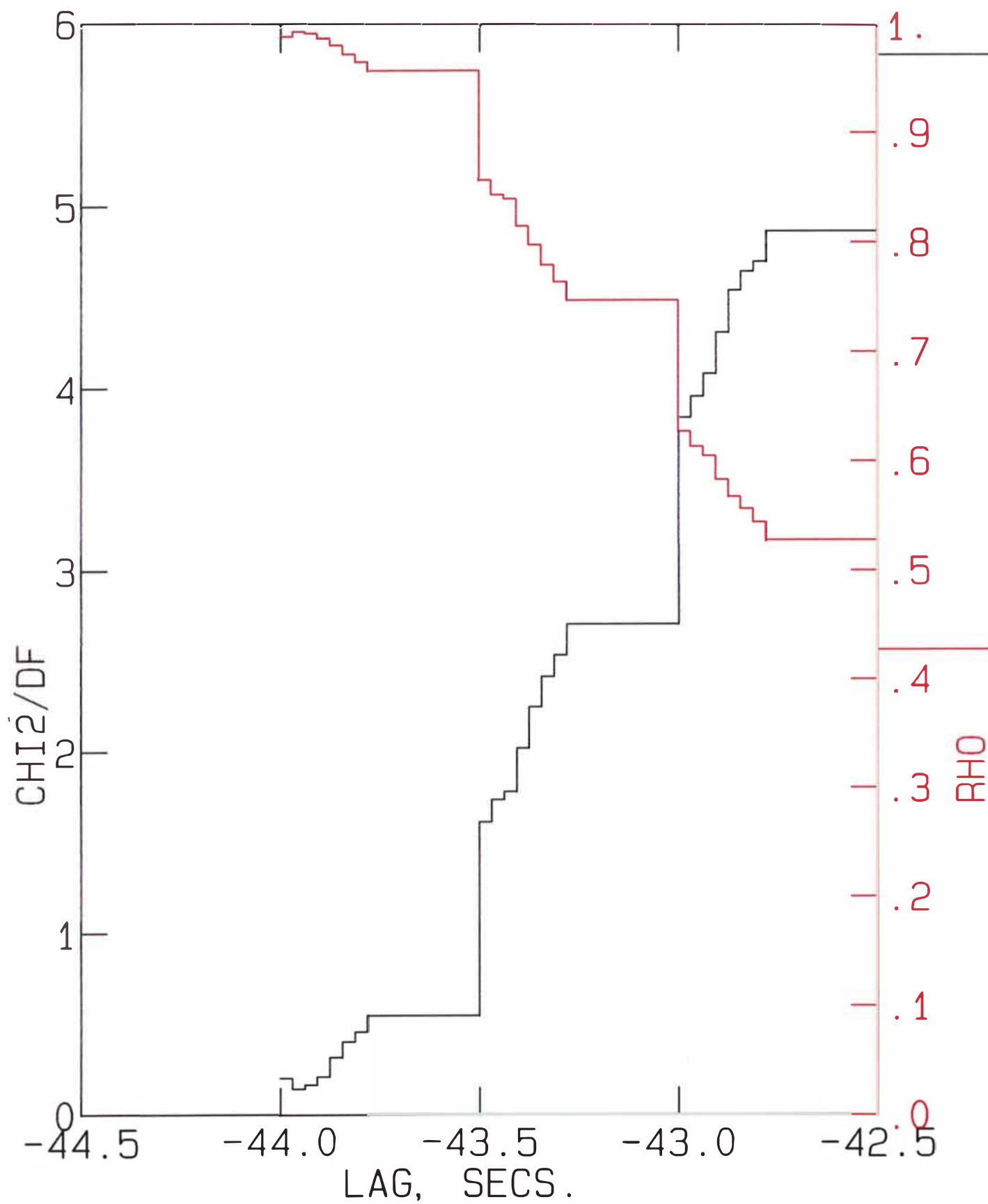
CORRELATION

25/ 5/92

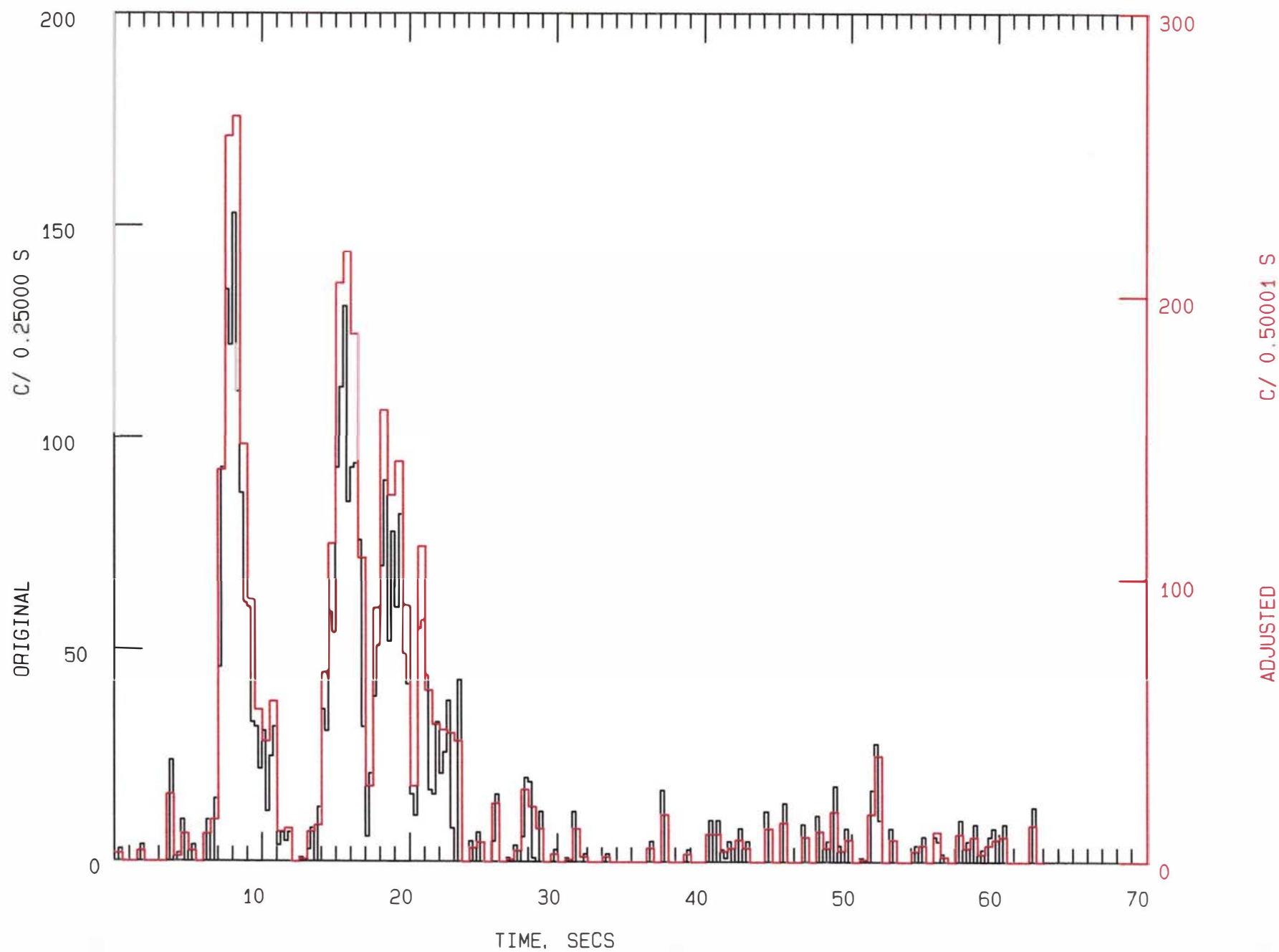
14360.106

26/12/96





26/12/96



ULYSSES

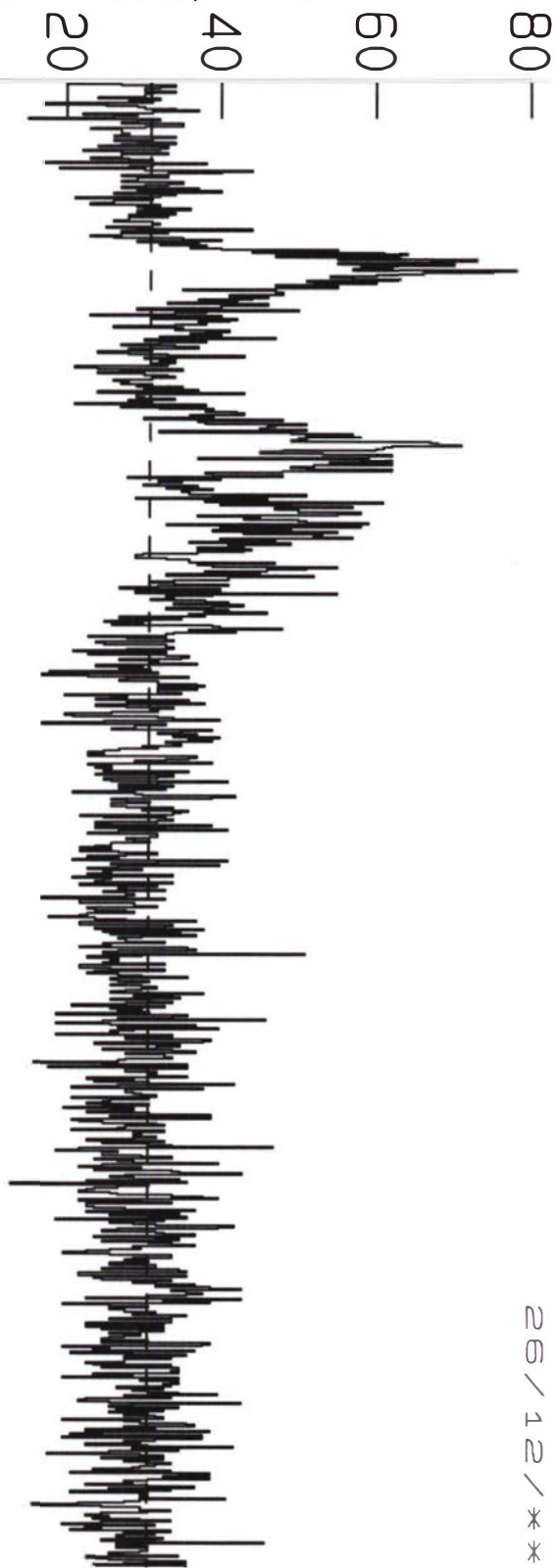
25/05/92

Ttrig=14411.481

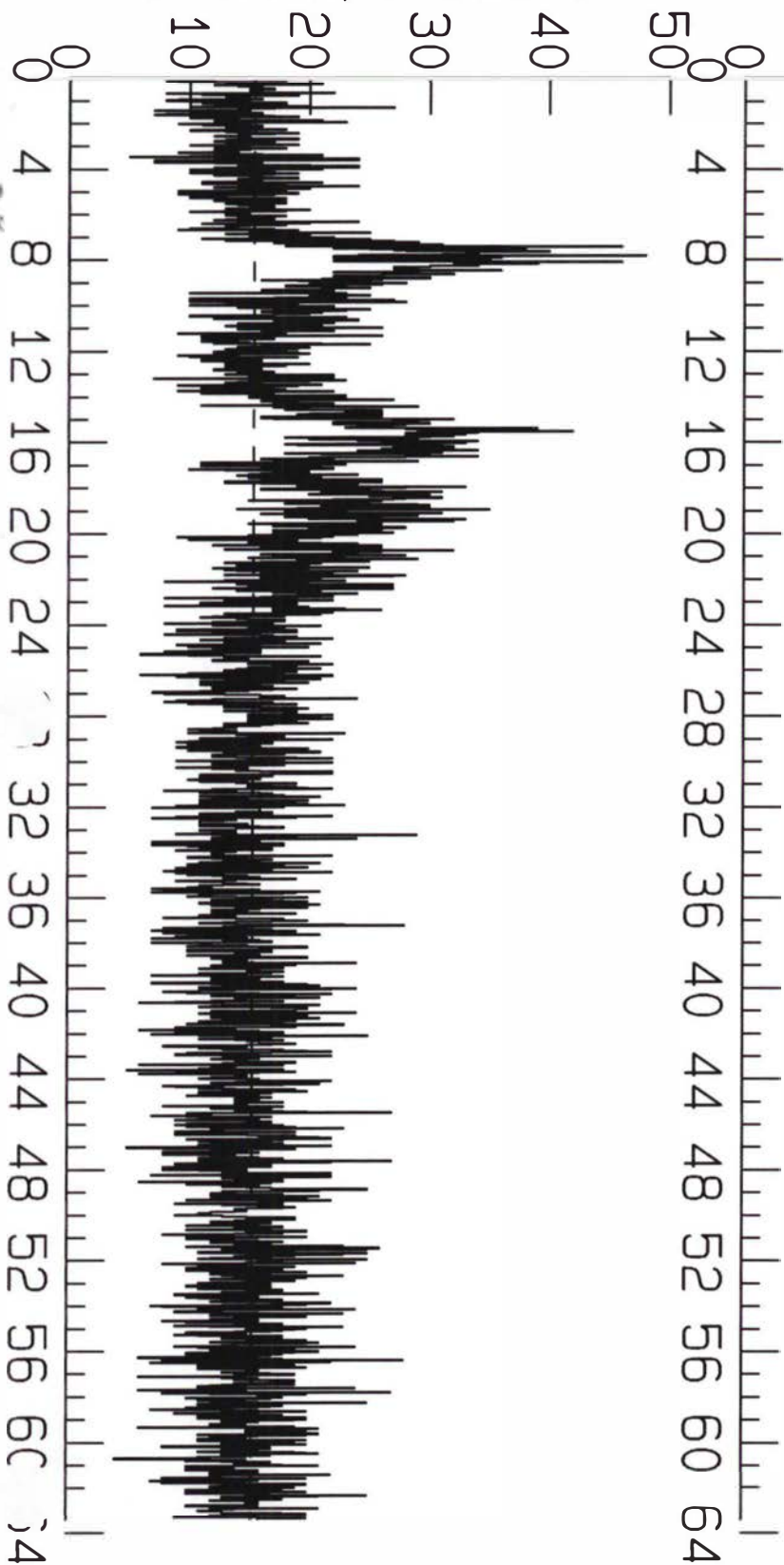
23- 157 keV

26 / 12 / **

COUNTS/0.062 S



COUNTS/0.031 S



ULYSSES RT

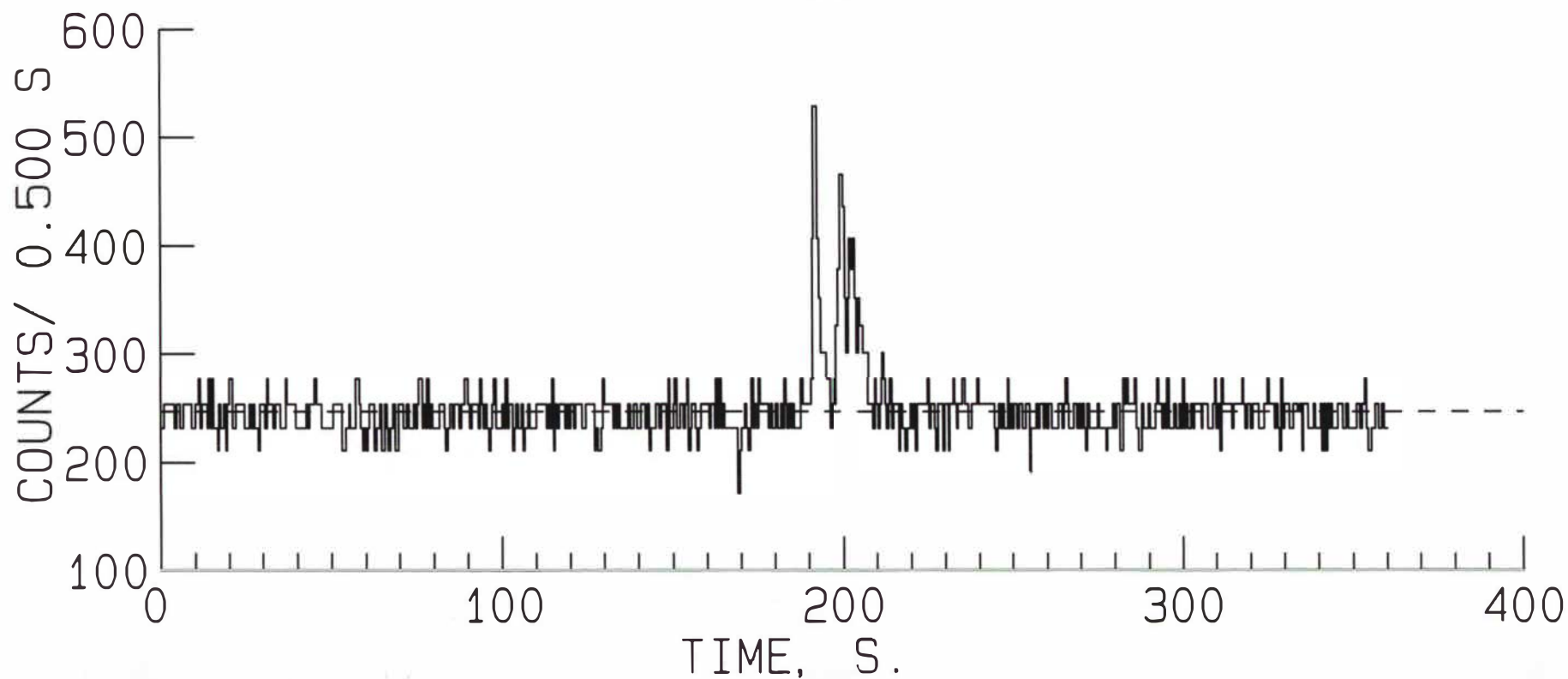
26 / 12 / 96

25/ 5/92 14220.128 s

23- 157 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From sammy@astro.ucla.edu Thu Dec 5 10:39 PST 1996
From: sammy@astro.ucla.edu
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Subject: Re: IPN3
Date: Thu, 05 Dec 96 10:39:35 -0800
MIME: smtp

Good idea about doing a final check. Here is my target list:

910122 ✓
910219 ✓
911118 *Re-do - JL's + my PVO times disagree by 1.4s ✓*
920325 ✓
920406 ✓
920501 ✓
920525 ✓
920711 ✓
920720 ✓
920723 ✓

I believe that 920406 was further reduced. You sent me the new, smaller box for that, but I decided to stick with the larger box because I want a consistent sample of boxes and the others weren't further reduced.

I'm glad I asked you about the aberration - I never would have thought of that!

Sammy

From: springer@pop.jpl.nasa.gov Mon Dec 9 06:37 PST 1996
From: Joe Springer <springer@pop.jpl.nasa.gov>
To: "'Kevin Hurley'" <khurley@sunspot.ssl.berkeley.edu>
Subject: RE: More times to check
Date: Mon, 9 Dec 1996 06:37:26 -0800
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Kevin,

I checked a range ten minutes before to ten minutes after each of these points and found no timing errors.

How big is the 'big list'? You have previously provided one with 575 events. I shudder.

Joe

From: Kevin Hurley
Sent: Friday, December 06, 1996 5:53 PM
To: Joe.B.Springer@jpl.nasa.gov; khurley@sunspot.ssl.berkeley.edu
Cc: khurley@sunspot.ssl.berkeley.edu
Subject: More times to check

Dear Joe,

Before I hit you with the big list of events to check, I wanted to ask if you could check the following times. We are again writing a paper on these, and need to get this straightened out quickly (i.e. within a couple of weeks).

Thanks

Kevin

Date	UT (secs)
January 22 1991	55142
February 19 1991	42204
April 21 1991	34040
April 30 1991	60428
May 07 1991	53768
May 11 1991	08090
May 22 1991	43556
June 19 1991	55254
June 27 1991	15335
July 17 1991	17265
July 18 1991	09076
August 14 1991	70996
October 05 1991	26852
October 16 1991	41542
October 31 1991	35550
November 04 1991	52695
November 09 1991	11321
November 18 1991	66112
November 26 1991	43717
December 02 1991	71640
February 18 1992	68388
February 20 1992	49020

February 26 1992 30348
March 08 1992 17470
March 11 1992 07038
March 20 1992 45256
March 25 1992 64261
March 31 1992 66408
April 04 1992 49443
April 06 1992 11150
April 14 1992 84300
May 01 1992 75040
May 17 1992 10549
May 17 1992 50706
May 19 1991 60996
May 25 1992 14411
July 11 1992 58470
July 14 1992 46275
July 20 1992 09807
July 20 1992 18344
July 23 1992 73955

From root Wed Sep 7 07:48 1994
 Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
 id AA06345; Wed, 7 Sep 94 07:48:09
 Received: from TGRS.GSFC.NASA.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
 id AA24196; Wed, 7 Sep 1994 07:59:00 +0800
 Date: Wed, 7 Sep 1994 07:59:00 +0800
 Message-Id: <9409071459.AA24196@sunspot.ssl.berkeley.edu>
 Received: from [128.183.8.198] ([128.183.8.198]) by TGRS.GSFC.NASA.GOV with SMTP;
 Wed, 7 Sep 1994 11:04:04 -0400 (EDT)
 Mime-Version: 1.0
 Content-Type: text/plain; charset="us-ascii"
 To: KHURLEY@space6.ssl.berkeley.edu
 From: cline@tgrs.gsfc.nasa.gov (T L Cline)
 Subject: Ulysses 3-spacecraft event input data
 Content-Length: 2811
 Status: R

KEVIN:

Here is the 2000-equinox and Sun-time conversion table for the data you sent, with accuracy to one second and/or light second. I am messing around with a few events, but still don't have Laros data, as you know, for the last few. No surprises or major errors have been uncovered. Question: Anything new or of breakthrough significance from the conferences? - TLC

```

-----
1991  4 21 113.2608 23.4971      34040.305
          114.0119 23.3855 -0.135 34040.170 1378.693
event
1991  4 30 116.1729 22.9446      60378.427
          116.9185 22.8202 -0.142 60378.285 1488.041
event
1991  5  3 116.9858 22.7835      24143.572
          117.7299 22.6556 -0.144 24143.428 1518.173
event
1991  5 22 123.0661 21.4768      43556.351
          123.7977 21.3234 -0.149 43556.202 1737.717
event
1991  6 27 134.1165 18.6189      15334.664
          134.8236 18.4239 -0.124 15334.540 2103.168
event
1991  7 17 140.0115 16.8382      17265.301
          140.7054 16.6238 -0.089 17265.212 2272.113
event
1991  8 14 147.8796 14.2022      70976.031
          148.5569 13.9655 -0.016 70976.015 2454.177
event
1991 11  4 164.7180  7.7939      52695.431
          165.3682  7.5249  0.217 52695.648 2527.808
event
1991 11  9 165.2888  7.5681      11321.862
          165.9383  7.2984  0.224 11322.086 2514.175
event
1991 11 18 166.3305  7.1593      66112.979
          166.9789  6.8884  0.236 66113.215 2480.950
event
1991 11 26 166.9834  6.9076      43717.172
          167.6312  6.6360  0.241 43717.413 2450.974
event
1992  3 11 156.4982  9.1383      7038.075
          157.1561  8.8824 -0.055 7038.020 2213.119
event

```

1992	3	25	153.5174	9.3668		64261.613	
			154.1779	9.1169	-0.118	64261.495	2260.354
event							
1992	4	6	151.5806	9.4338		11128.491	
			152.2426	9.1882	-0.162	11128.329	2318.519
event							
1992	5	1	148.8008	9.1566		75040.670	
			149.4640	8.9176	-0.234	75040.436	2497.670
event							
1992	5	17	148.2303	8.7103		10549.835	
			148.8928	8.4728	-0.257	10549.578	2619.504
event							
1992	5	25	148.2227	8.3959		14411.494	
			148.8844	8.1584	-0.261	14411.233	2684.313
event							
1992	7	11	151.3011	5.5653		58453.215	
			151.9542	5.3203	-0.197	58453.018	3009.551
event							
1992	7	18	152.1018	5.0060		79135.445	
			152.7533	4.7592	-0.175	79135.270	3043.801
event							
1992	7	20	152.2398	4.9105		9807.222	
			152.8911	4.6634	-0.171	9807.051	3048.967
event							
1993	7	6	145.7214	-11.6627		20275.572	
			146.3295	-11.8936	-0.171	20275.401	2546.013

-- T. L. Cline ----- LHEAVX::CLINE

From jcg@epe.dnet.nasa.gov Tue Jan 19 12:53:47 1993
Date: Tue, 19 Jan 93 15:58:43 -0500
From: jcg@epe.dnet.nasa.gov
To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
Subject: first error boxes
Content-Length: 1723

Dear Kevin,

I have completed the first 5 error boxes. So far there is no source within an error box. Details are given below. Note, that for GRB 920501 (your TOO target) I find really nothing, i.e. even no 1 sigma fluctuation (which is in contrast to what Michel thinks to see). For the case of GRB 11_MAR_92 I just sent you a fax containing an image together with the detections in this field. The numbers on the circles are the likelihood values for the existence of a point source ($3.1 = 2$ sigma, $5.9 = 3$ sigma), so all three sources along the error box are strong sources. The distance of the pair and the lonely source is about 1 degree, so in principle they would fit into a PSPC FOV. Note that these sources have quite different spectra: the lonely one is rather soft, the other two hard.

I hope to analyze the remaining 10 fields within the next days. The extraction of the data out of the archive took a little longer, since the processing (including the FITS conversion which is needed for the extraction) was stopped over the two weeks holiday period.

Sincerely yours
Jochen

No.	GB_NAME	size of long axis	comments
1	19_FEB_91	10'	1sigma fluctuation (soft) 1' outside of box
2	21_APR_91		
3	22_MAY_91	35'	3 2.5sigma fluctuations in 4'-10' distance new SNR 20' away
4	17_JUL_91		
5	04_NOV_91		
6	09_NOV_91		
7	18_NOV_91		
8	26_NOV_91		
9	02_DEC_91		
10	11_MAR_92	2 degree	3 sources along the long axis in 5'-10' distance
11	25_MAR_92		
12	06_APR_92	30'	nothing
13	01_MAY_92	8'	nothing
14	17_MAY_92		
15	25_MAY_92		

From jcg@mpc.asa.gov Mon Jan 25 02:37:22 1993
 Date: Mon, 25 Jan 93 05:35:57 -0500
 From: jcg@mpc.dnet.nasa.gov
 To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
 Subject: next 5 error boxes
 Content-Length: 1639

Dear Kevin,

here are the next 5 error boxes. There is only one interesting case, namely GRB 920325. The position of the source is empty on the Palomar plates; the next star (about 17th mag.) is in 1' distance. Normally, the error in the X-ray positions are of the order of 20-30 arcsec. Though this X-ray source is quite faint, I would think that this 1' distant star is too far away from the X-ray position to be the optical counterpart.

The coordinates of the X-ray source are (please, do not circulate):

alpha (2000.0) = 23h 25m 10.7s

delta (2000.0) = 13d 20' 10"

The PSPC countrate is 0.023 cts/sec, and the survey exposure time was 450 sec. If you think of proposing this target for A04 then let me know.

Sincerely yours
 Jochen

No.	GB_NAME	size of long axis	comments
1	19_FEB_91	10'	1sigma fluctuation (soft) 1' outside of box
2	21_APR_91		
3	22_MAY_91	35'	3 2.5sigma fluctuations in 4'-10' distance new SNR 20' away
4	17_JUL_91		
5	04_NOV_91	30'	3 2-3sigma fluct. around box in 2'-5' distance
6	09_NOV_91	60'	2sigma and 1sigma fluct. in 8' and 5' distance
7	18_NOV_91		
8	26_NOV_91		
9	02_DEC_91	22'	2sigma fluct. 2' off the box
10	11_MAR_92	2 degree	3 sources along the long axis in 5'-10' distance
11	25_MAR_92	45'	5sigma source 2' off the box
12	06_APR_92	30'	nothing
13	01_MAY_92	8'	nothing
14	17_MAY_92	22'	nothing
15	25_MAY_92		

From jcg@mpc.dnet.nasa.gov Mon Jan 25 10:11:55 1993
 Date: Mon, 25 Jan 93 13:10:31 -0500
 From: jcg@mpc.dnet.nasa.gov
 To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
 Subject: remaining 5 error boxes
 Content-Length: 1433

Dear Kevin,

here is the final list of all 15 error boxes. There is no other interesting feature in addition to GRB 920325 (see last report). For the large error boxes one expects sources to be inside the error box.

M. Sommer told me that you possibly will visit MPE next week. I would be glad to show you the results and discuss further details.

Best regards
 Jochen

No.	GB_NAME	size of long axis	comments
1	19_FEB_91	10'	1sigma fluctuation (soft) 1' outside of box
2	21_APR_91	2.7 deg.	7sigma source 7' outside of box
3	22_MAY_91	35'	3 2.5sigma fluctuations in 4'-10' distance new SNR 20' away
4	17_JUL_91	2.6 deg.	2.5sigma fluctuation in box
5	04_NOV_91	30'	3 2-3sigma fluct. around box in 2'-5' distance
6	09_NOV_91	60'	2sigma and 1sigma fluct. in 8' and 5' distance
7	18_NOV_91	38'	bright source 13' outside of box
8	26_NOV_91	47'	2.5sigma fluctuation in box
9	02_DEC_91	22'	2sigma fluct. 2' off the box
10	11_MAR_92	2 deg.	3 sources along the long axis in 5'-10' distance
11	25_MAR_92	45'	5sigma source 2' off the box
12	06_APR_92	30'	nothing
13	01_MAY_92	8'	nothing
14	17_MAY_92	22'	nothing
15	25_MAY_92	8'	2sigma fluctuation at box boundary

From root Thu Feb 3 13:55 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA00852; Thu, 3 Feb 94 13:55:12
Received: from SSTDP2.LANL.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA13978; Thu, 3 Feb 1994 12:59:12 +0800
Date: Thu, 3 Feb 1994 14:00:37 -0700 (MST)
From: 046369@SSTDP2.LANL.GOV
To: KHURLEY@space6.ssl.berkeley.edu
Message-Id: <940203140037.23c05074@SSTDP2.LANL.GOV>
Subject: DMSP OBSERVATIONS OF GRO GRB
Content-Length: 2739
Status: R

FROM: SMTP%"TERRELL@ESSDP2.LANL.GOV" (ESSDP2::TERRELL) (JAMES TERRELL 94/02/03)
TO: SSL::KOUVELIOTOU AND GIBSON::COLE (CHRYSSA KOUVELIOTOU AND STAYCE COLE)
CC: SMTP%"KHURLEY@SPACE6.SSL.BERKELEY.EDU" (KEVIN HURLEY)
SUBJ: DMSP OBSERVATIONS OF GRO GRB

Chryssa and Stayce:

Thanks very much for the listing of strong Batse bursts sent to me 11/1/93.
I have now managed to check all of them against DMSP data, and find that
many of them were also detected by DMSP8,9,10, or 11. Probably the higher percent
of detections in recent data is due to more extraction of full data. In many
cases such added effort would not be necessary if source direction
(and consequent obscuration of some DMSP satellites) were known to me.
I would appreciate data on more strong events. Here is the present list:

NOTES:

NA: Not apparent in 20-second averaged data (extracting the 2-sec data is
a more time-consuming task, not undertaken in every case).

NA?: Some slight indication of a peak in 20-second averaged data.

SA: South Atlantic Anomaly, obscuring data with high background rates.

SR: South Radiation Belt background.

NR: North Radiation Belt background.

ND: No data for this time.

YES: Burst definitely detected by one or more DMSP satellites (8,9,10,11).

NO: No evidence of a peak in 2-sec data. (NO/OBSC: Obscured by Earth)

DATE	UT	DMSP
910421	33245	8NO 9SR 10NR
910627	16159	8NA 9NR 10ND
910629	71750	8NA 9SR 10NA
910703	18225	8NA 9NA? 10SR
910717	16386	8NA 9SA 10SR
910718	76051	8NA 9SA 10SA
910802	2718	ND
910814	69275	ND
911024	76208	ND
911104	54283	YES--54286 PEAK
911109	12459	8NO 9NR 10NO
911118	68260	ND
911119	23343	YES--23342
911126	46129	8SR 9SR 10NO
911127	15730	YES--15739
911202	73731	YES--73733
911209	66959	8SR 9SR 10NR 11ND
920226	29730	8SA 9NA? 10SA 11SA
920229	69769	8SR 9ND 10NA 11NA
920311	8246	YES--8431
920315	15569	8NA 9NR 10NA 11NA
920325	62258	YES--62256
920404	47506	8NA 10NA? 11NR
920406	9855	8NO/OBSC 10SR 11SR/OBSC
920414	84163	NA
920517	11877	YES--11883
920525	12423	YES--12427

920622	25504	8SA 10NR 11SA
920627	46956	NA
920711	53140	YES--58157
920718	77563	8NA 10SA 11NA
920720	11524	8NA/OBSC 10NA/OBSC 11SR
920824	39183	YES--39186
920902	1736	YES--1743
921009	24070	YES--24073
921022	55259	8ND 10NA 11NA
921123	22711	YES--22727
921123	46583	YES--46542
921207	57647	YES--57649
921209	41738	8NR 10NA 11NR
930106	56259	YES--56260
930110	6698	8NA 10NR 11NA
930120	84700	YES--84779
930131	68231	YES--68231
930201	60115	YES--60129
930309	11269	NA
930329	11365	8NA 10SR 11NA
930405	32089	YES--32105
930406	26185	8NA 10NR 11NA
930428	04032	8NA 10NA 11SR
930506	53571	YES--53578
930506	65631	NA

Apr 13 07:31 1993 standard input Page 1

From @space6.ssl.berkeley.edu,@cmsa.berkeley.edu:ASTMPH@CSEARN.BITNET Mon Apr 12 23:42:44 199
Date: Tue, 13 Apr 93 08:44:08 MDT
From: "R.Hudec" <ASTMPH@CSEARN.BITNET@cmsa.berkeley.edu>
To: khurley@space6.ssl.berkeley.edu
Content-Length: 514

to: Kevin Hurley
<khurley@space6.ssl.berkeley.edu>

Dear Kevin:

we have found possible optical activity consistent with the large error box of GRB 920525. The analysis is not yet complete so we still cannot exclude possibility of a false trigger. However it would be very valuable to have better position of this GRB. Could you please check whether you have a better (IPN) position for this burst? At moment, we have only the BATSE position with very large error box for this event.

Regards Rene Hudec

Apr 15 14:07 1993 standard input Page 1

From khurley@space6.ssl.berkeley.edu Thu Apr 15 10:40:17 1993
Date: Thu, 15 Apr 93 09:32:53
From: khurley@space6.ssl.berkeley.edu
Content-Length: 209

MESSAGE FOR RENE HUDEC

Dear Rene,

For May 25 1992, the preliminary IPN location is RA(2000)=300.869, Dec=-42.573. The error box will be quite small eventually, but for now, take a radius of 5'.

Kevin

From khurley@space6.ssl.berkeley.edu Wed Mar 10 09:11:35 1993
Date: Wed, 10 Mar 93 09:02:51
From: khurley@space6.ssl.berkeley.edu
Content-Length: 561
Status: RO
X-Lines: 18

Dear Bernie,

Chryssa has forwarded your question about the three May 92 events to me. There have been some substantial changes to the positions you quote. I'm not sure exactly how you got the old positions, but the new ones are:

	a(2000)	d(2000)
May 1 92	8 15 18	-32 44 39
May 17 92	13 33 16	-16 41 13
May 25 92	20 03 29	-42 34 23

It's always a good idea to check with me before you commit any telescope time to GRB error boxes, since positions are being updated more or less constantly as the data are refined.

Kevin

cc: C. Kouveliotou

1992 May 25

.....
Ulysses:

Trigger time is taken at the center of the 236th rate (or at 235.5 rate) of the 2020 bins: 1 bin is (32/1024)sec=1/32-sec=31.25-msec wide, thus T_0 is 7.359375 s into the data. ULY 92-05-25 T-zero = 14411.494 (the +/- half-bin uncertainty gives 16-me error). Ulysses ephemerides are given in 1950 JPL coordinates

trigger date: 92 05 25

trigger hour: 04.00

	date	hrs	RA(d)	Dec(d)	Range E/SC(km)	S/SC/E(d)
P	92 05 24	24.00	148.2225	8.4006	804418304.0000	10.91835
P	92 05 25	03.00	148.2238	8.3953	804718592.0000	10.91643
P	92 05 25	08.00	148.2251	8.3900	805018824.0000	10.91448

From which, at 4.0002 hrs:

RA = 148.2238, dec = 8.3952, dist = 804718.911 kkm = 2884.2630 lt-sec (1950 eqx)

.....
Gemstone-GRO-BATSE:

GRO Trigger time (must subtr 2.042 s) = data onset. THIS event has 32-me-wide bins: GRO 92/05/26 : 12423.790 - 2.042 = 12421.738 = T-zero

Header:

+2.800000E+01 +1.00000E+02 +4.528037E+03 893
 Supplied Ephemerides, eqx 2000, for 12427.8 UT: x,y,z = -5205.2, -4289.0, +585.5,
 From which: RA=216.498, dec=4.801, dist = 0.023 lt-s (eqx 2000).

.....
Pioneer-Venus-Orbiter:

Trigger time is 256 bins (of 12/1024 s each) or 3.000 sec into the data.

There are 1920 bins, with NO 'time-to-spill' data in this case (with 'F' in the header).

T-zero = 12881.982

Header:

1920 F 12881.982 100.00 2000.0 +1.107000E+02

'Blue-book' (real-time eph. for planet Venus) at 12887.8 s:

RA=56.8021, dec=18.3208, dist=860.7548 lt-sec

Supplied eph. for day 148, 12882 sec:

RA = 056.19562, dec = +18.18982, dist = 860.8748 lt-s (1950 eqx)

.....
Time History Phasing Philosophy:

old rough, 1st peak: ULY:14411.494+0.51, GRO:12421.738+7.1, PVO: 12881.982+0.25
 results:

RA=301.087 (20 4 20.8), dec= -42.823 (-42 49.4), 2000 eqx, with bjj = -31.8

with at least 4 arc-min variation in each, (about same, since angled at 45 degrees)

2nd peak: ULY:14411.494+8.15, GRO:12421.738+18.95, PVO: 12881.982+7.50

This does not quite match, as exact fit with program needs to be done.

From kroll@nova.tat.physik.uni-tuebingen.de Thu Oct 22 10:50:46 1992
From: kroll@nova.tat.physik.uni-tuebingen.de (Peter Kroll)
Subject: forwarded message from Rene Hudec
To: khurley@space6.ssl.berkeley.edu
Date: Thu, 22 Oct 92 18:50:46 MEZ
X-Mailer: ELM [version 2.3 PL8]
Content-Length: 786

to: Kevin Hurley < khurley@space6.ssl.berkeley.edu >

Dear Kevin:

I have found optical activity (variable object) at 1950.0 R.A. 20 h 05 m 45 s and delta = - 43 deg 47 ' which is consistent with the error box of GRB 920525 mentioned in IAUC 5547. You have mentioned that finer box will be available in the future. Do you already have finer position? Please let me know immediately in the positive case- I am just working on the object. It can a be a chance coincidence, hence I would like know the finer GRB position if already available.

I am at the Sonneberg Observatory till Oct 30, without an e-mail connection, hence it is necessary to use the fax 0049-3675-2836.

Best regards, Rene Hudec

May 17, 25 PVO times off due to clock shut off + startup

June times will also be off until data tapes rec'd

PV0

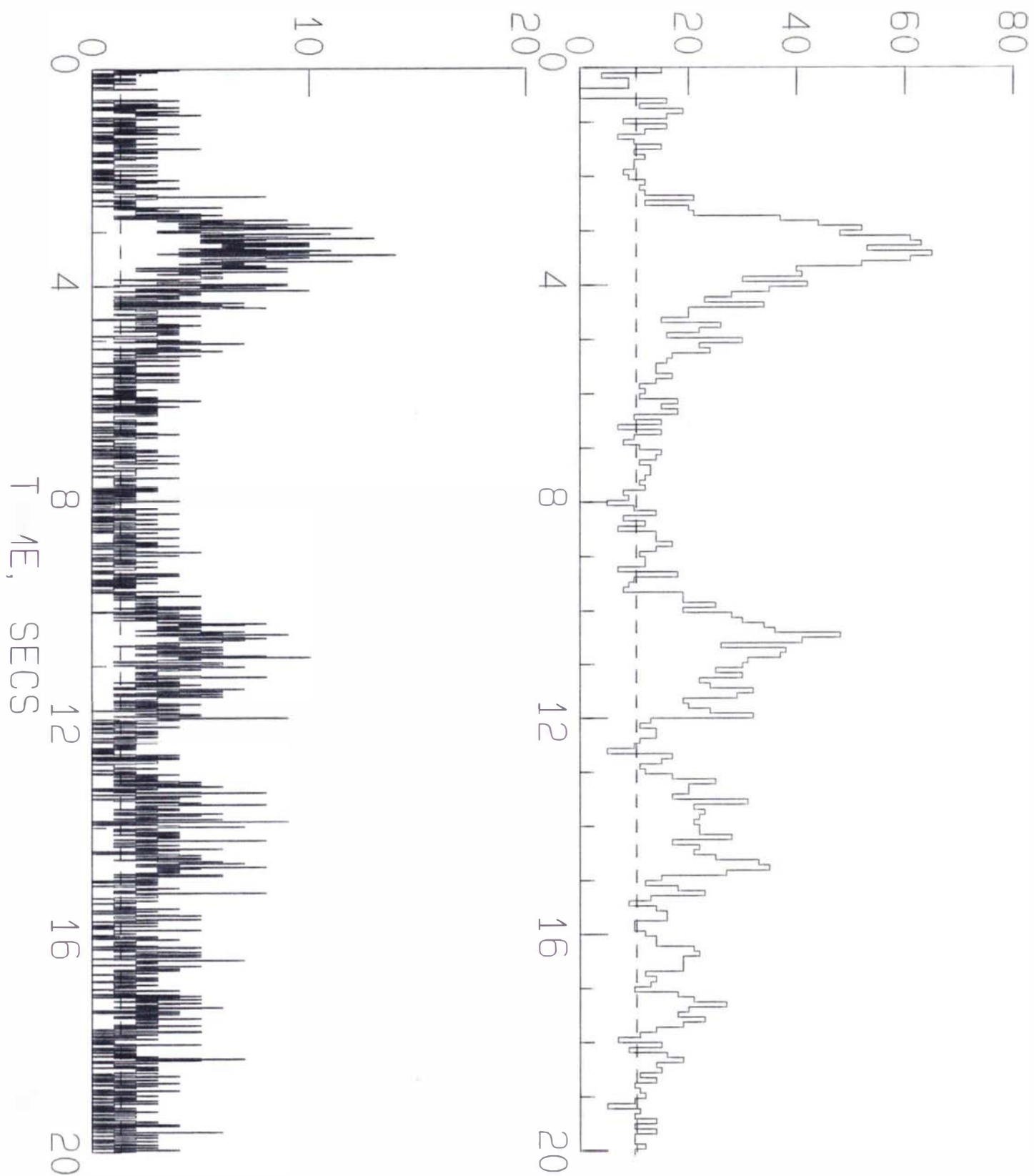
25/05/92

12881.962

100-2000 keV

COUNTS/ .012 S

COUNTS/ .094 S



PV0

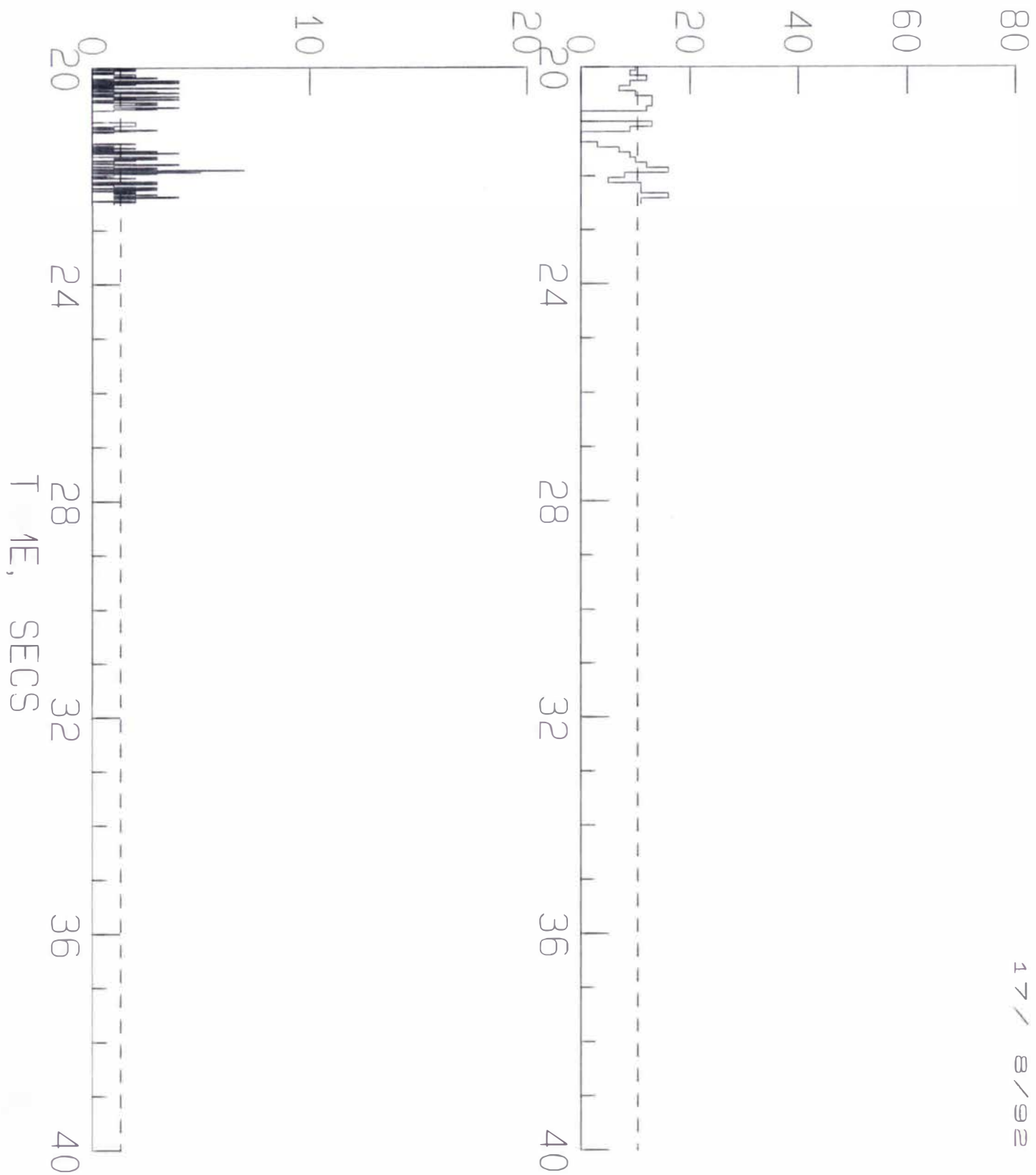
25/05/92

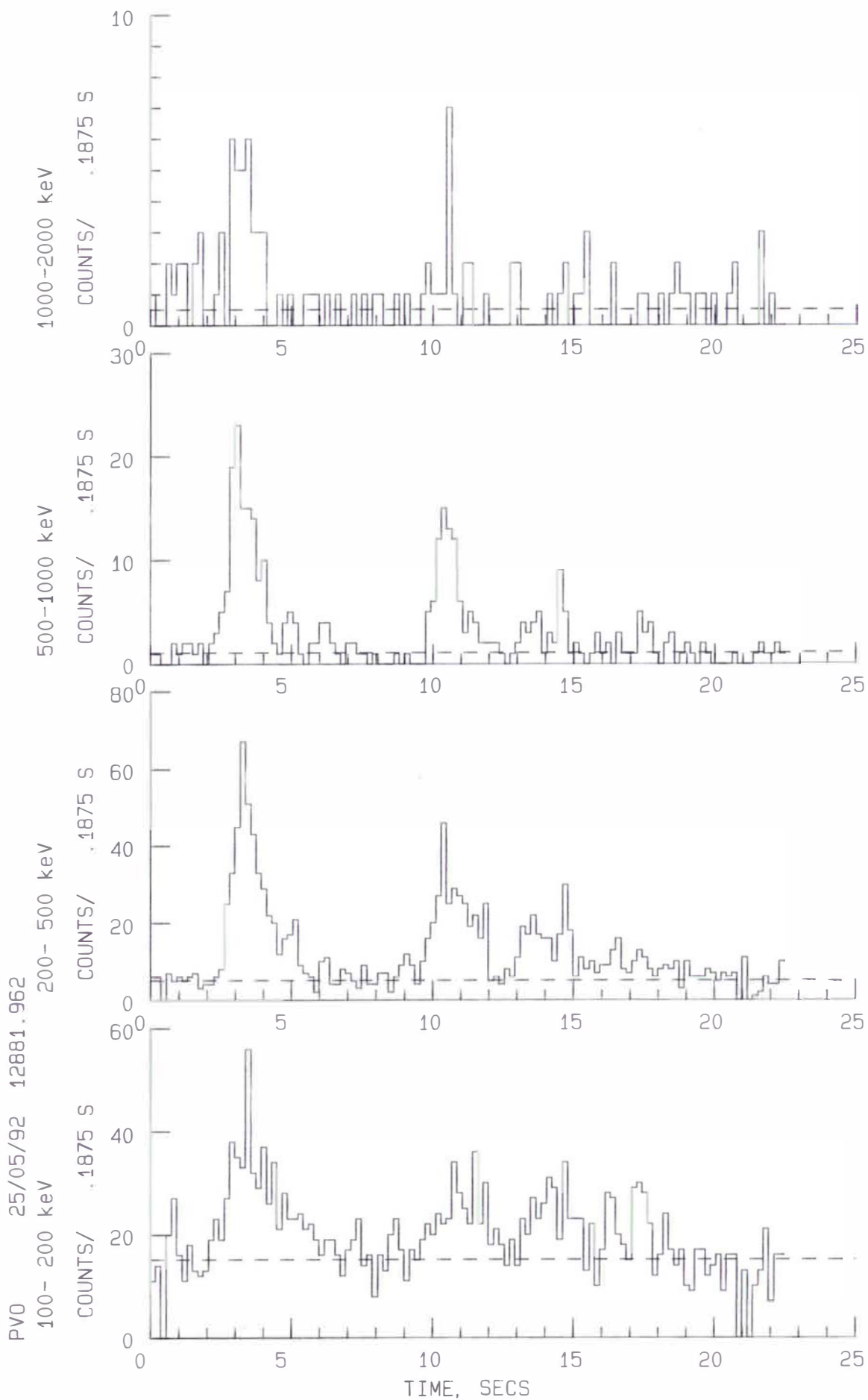
12881.962

100-2000 keV

COUNTS/ .012 S

COUNTS/ .094 S





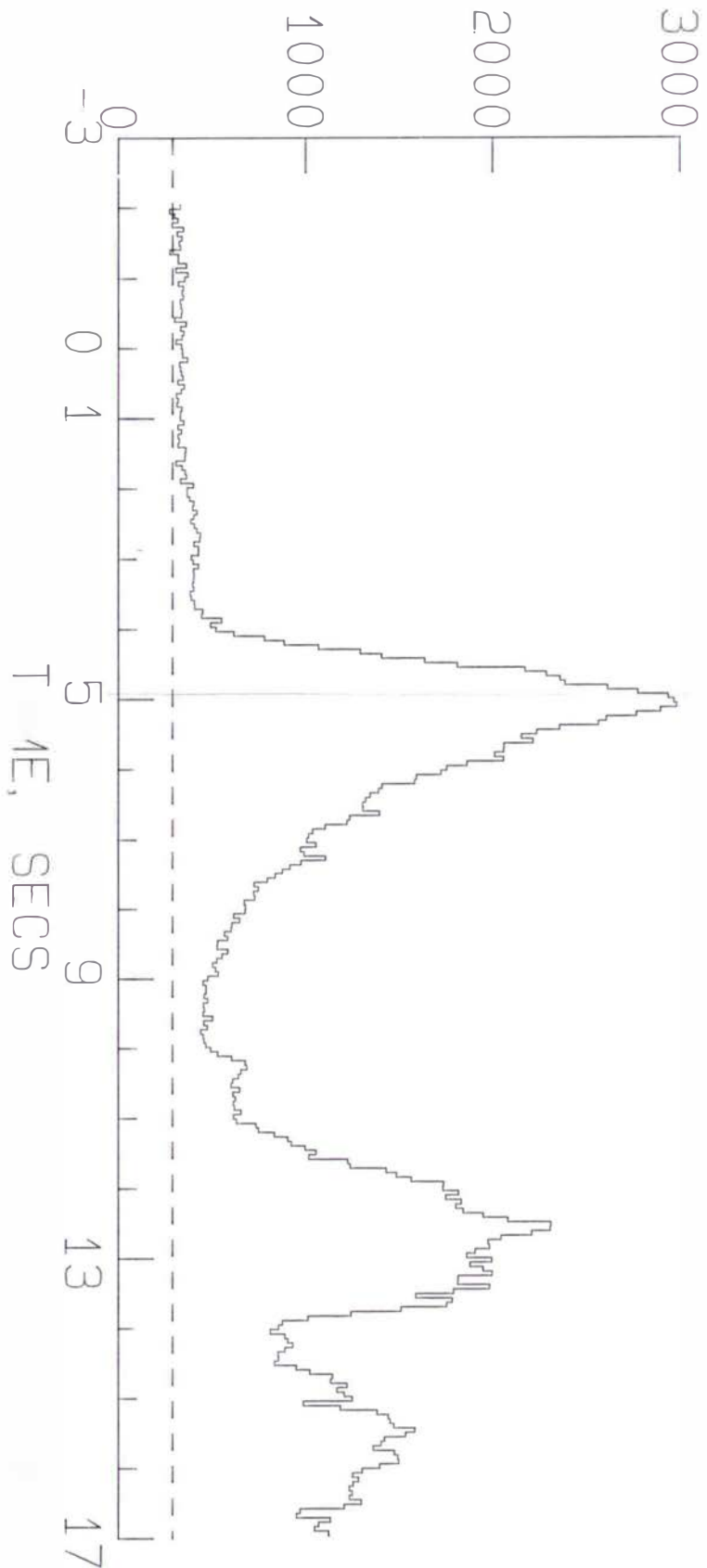
BATSE

25/05/92

12423.780

25- 100 keV

COUNTS/ .064 S



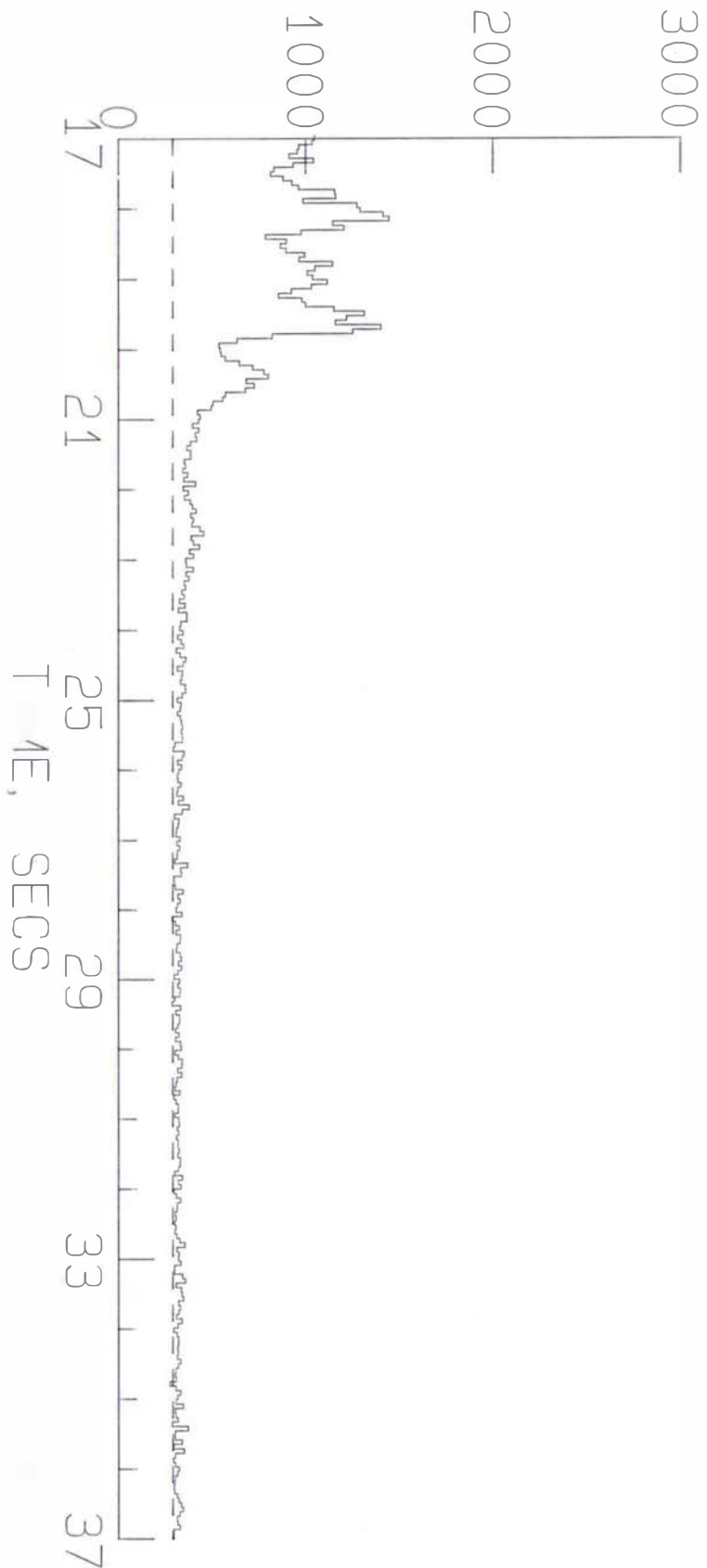
BATSE

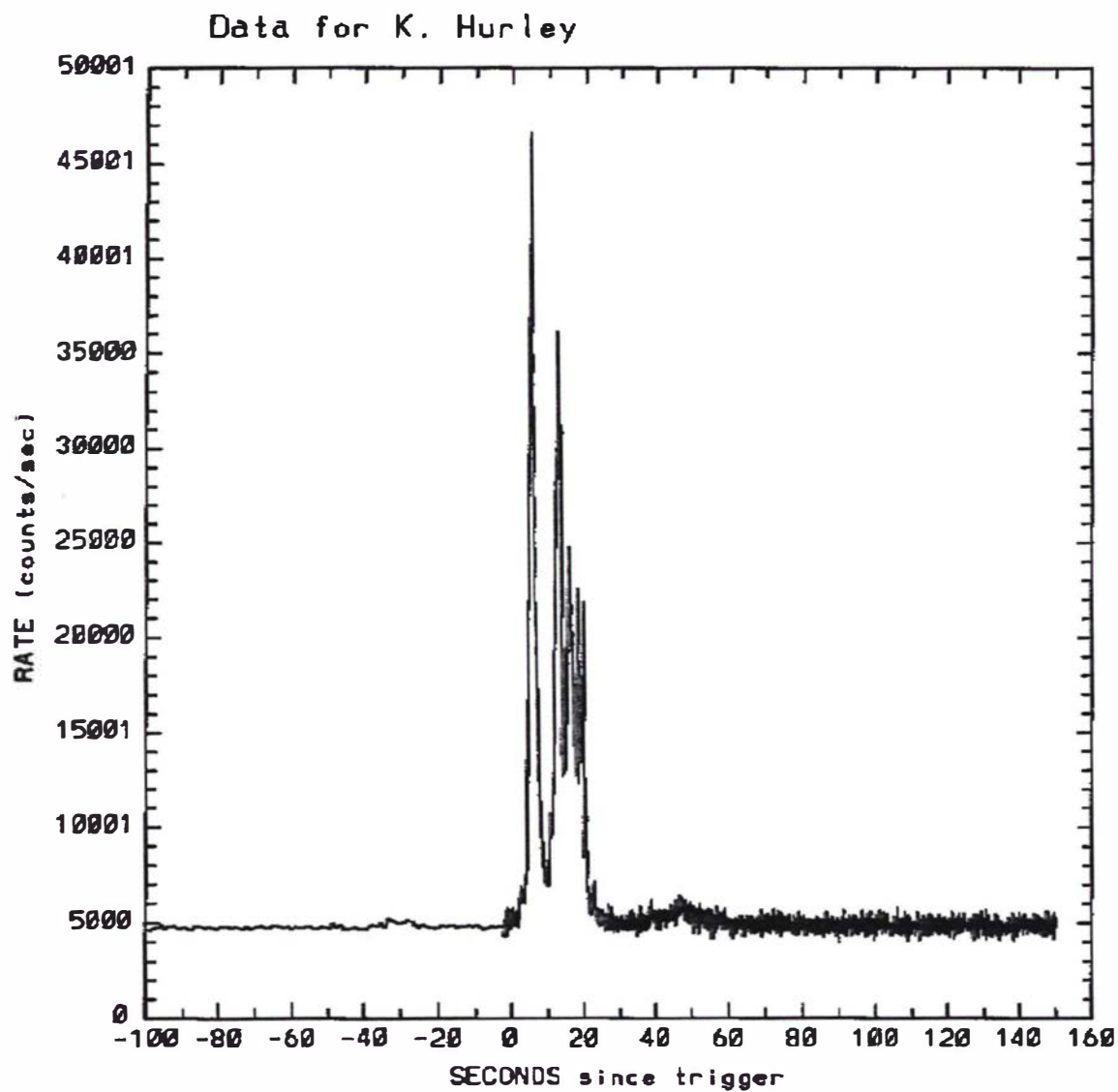
25/05/92

12423.780

25- 100 keV

COUNTS/ .064 S





28-MAY-1992 18:17:21

Created by MOPS 80
(Burst Display)
Version 2.12

Trigger # : 1625

Trigger Time:
8767 / 12423.789 - 2.042Burst Data Type:
DISCSC

12421.738

Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum (Integ. Time:
0.064 seconds)Detectors [7..8]:
00110000Discriminators:
[1, 2]Quality Mask:
80ISPB

CATSEARCH PROGRAM

BATSE BURST # 1626
EVENT OF 1992 MAY 25 DAY OF YEAR=146
EVENT CROSSING TIME AT BATSE : 26152. S. OR 07:15:51.7
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 10.900 -65.100
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 25/ 5/ 92 IS:
RA= 148.222 DEC= 8.401 DIST= 5.377 AU
BATSE-ULYSSES DISTANCE = 804429120. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 63.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1177.25 SECS.
CROSSING TIME AT ULYSSES IS 27329. S. OR 07:35:29.0 +/- 486.51 SECONDS

From WILSONB@ssl.msfc.nasa.gov Wed May 27 11:44:55 1992
Date: Wed, 27 May 1992 13:46:47 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1377

BATSE BURST TRIGGER

NO.: 01626

TIME: TJD=8767 SECONDS=26153

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=054.0 AZIMUTH=150.8 ERROR=010.0 DEGREES

COMMENTS:

~1S DURATION SPIKE, WITH LITTLE SUBSTRUCTURE. SOME POSSIBLE ASSOCIATED
EMISSION FOR 30S AFTER MAIN FEATURE. ABOUT 10K C/S ABOVE 25 KEV, TRIGGERED
DETECTORS.

No trig

7 / 6 / 94

ULYSSES RT

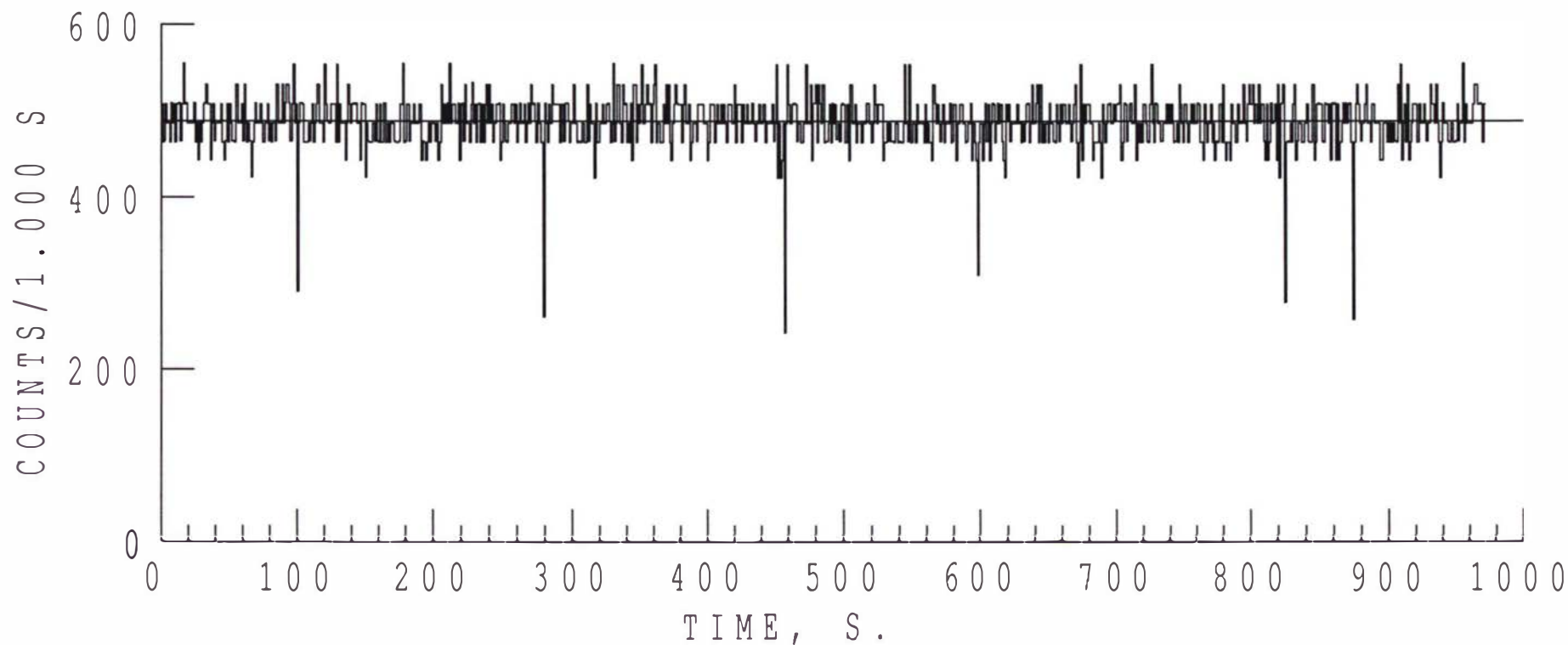
25 / 5 / 92 26856.328 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

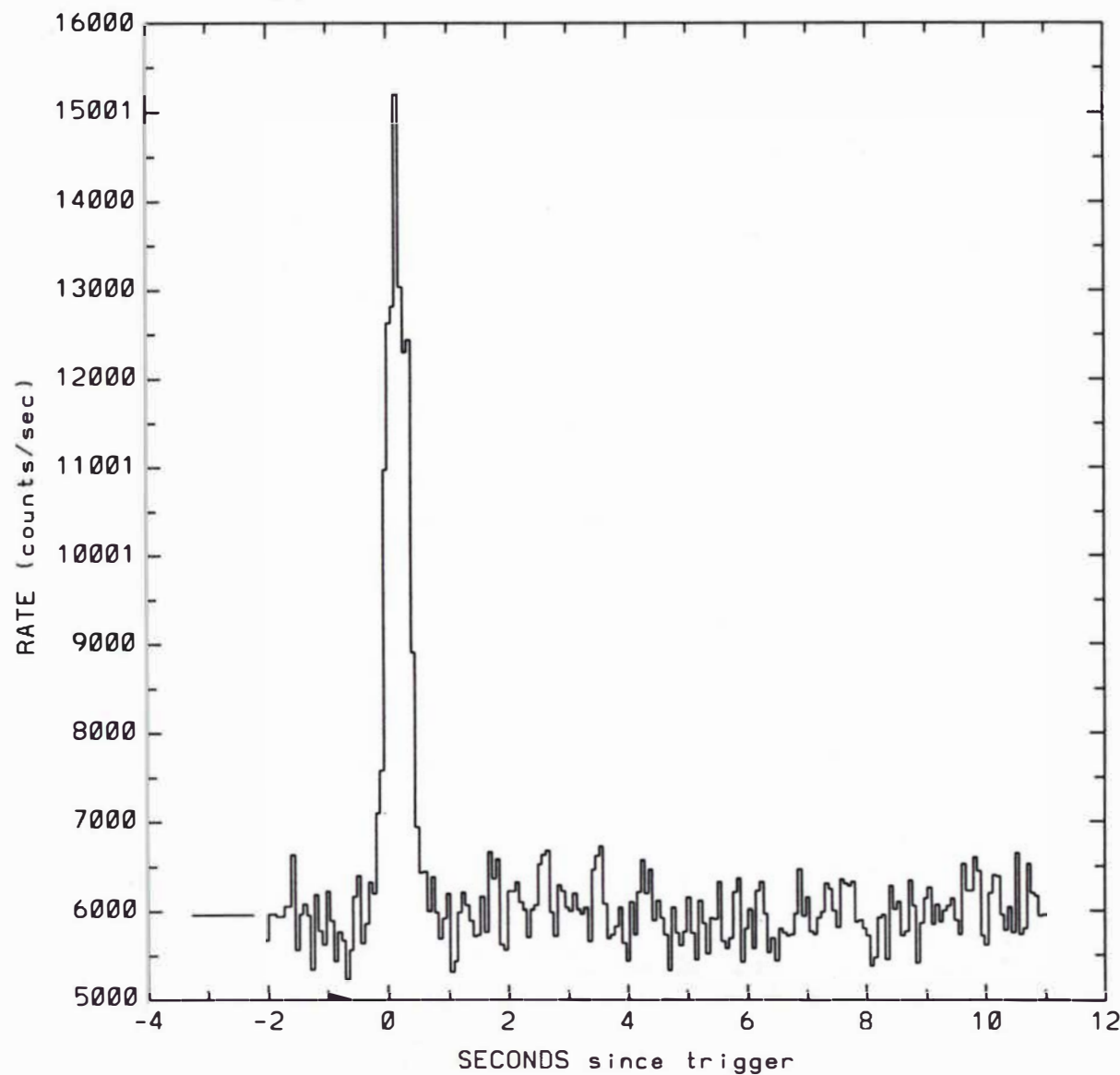


May 25 '92

13.9, -68.0

$2.3 \times 10^{-7} \text{ erg/cm}^2$

Trigger 1626



27-MAY-1992 10.05.00

Created by MOPS BD
(Burst Display)
Version t2.13

Trigger # : 1626

Trigger Time:
8767 / 26153.764

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..0]:
01110000

Discriminators:
(2, 3)

Quality Mask:
BDISP0

From WILSONB@ssl.msfc.nasa.gov Wed May 27 15:01:15 1992
Date: Wed, 27 May 1992 17:03:03 -0500 (CDT)
From: WILSONB@ssl.msfc.nasa.gov (Robert B. Wilson (205)-544-7695)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

May 25
NO.: 01627 BATSE BURST TRIGGER

TIME: TJD=8767 SECONDS=47453

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

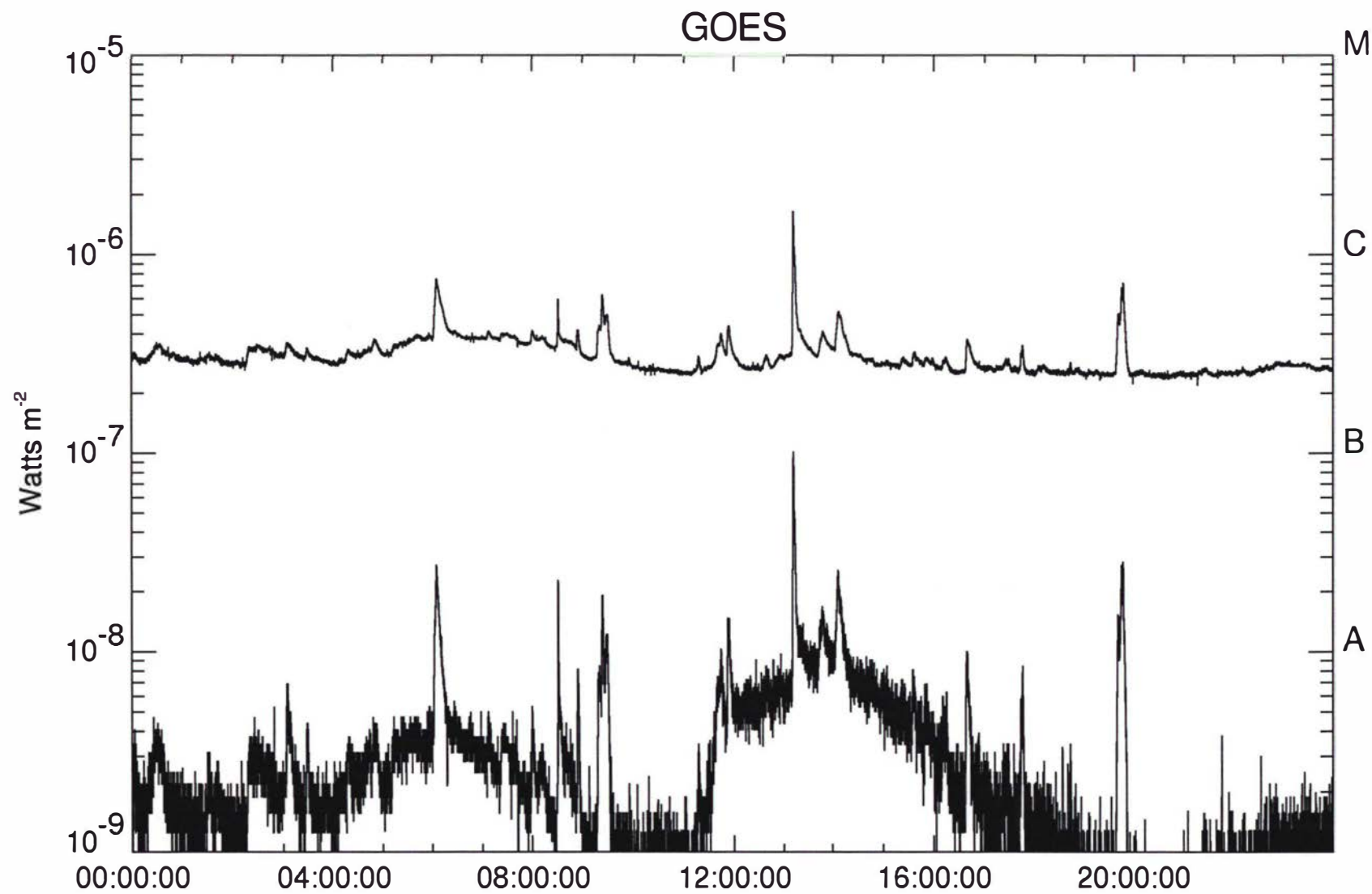
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

GOES C1.3 FLARE, ABOUT 7K C/S ABOVE 25 KEV, DURATION ABOUT 70S
(50S BEFORE TRIG, 20S AFTER)

No trig



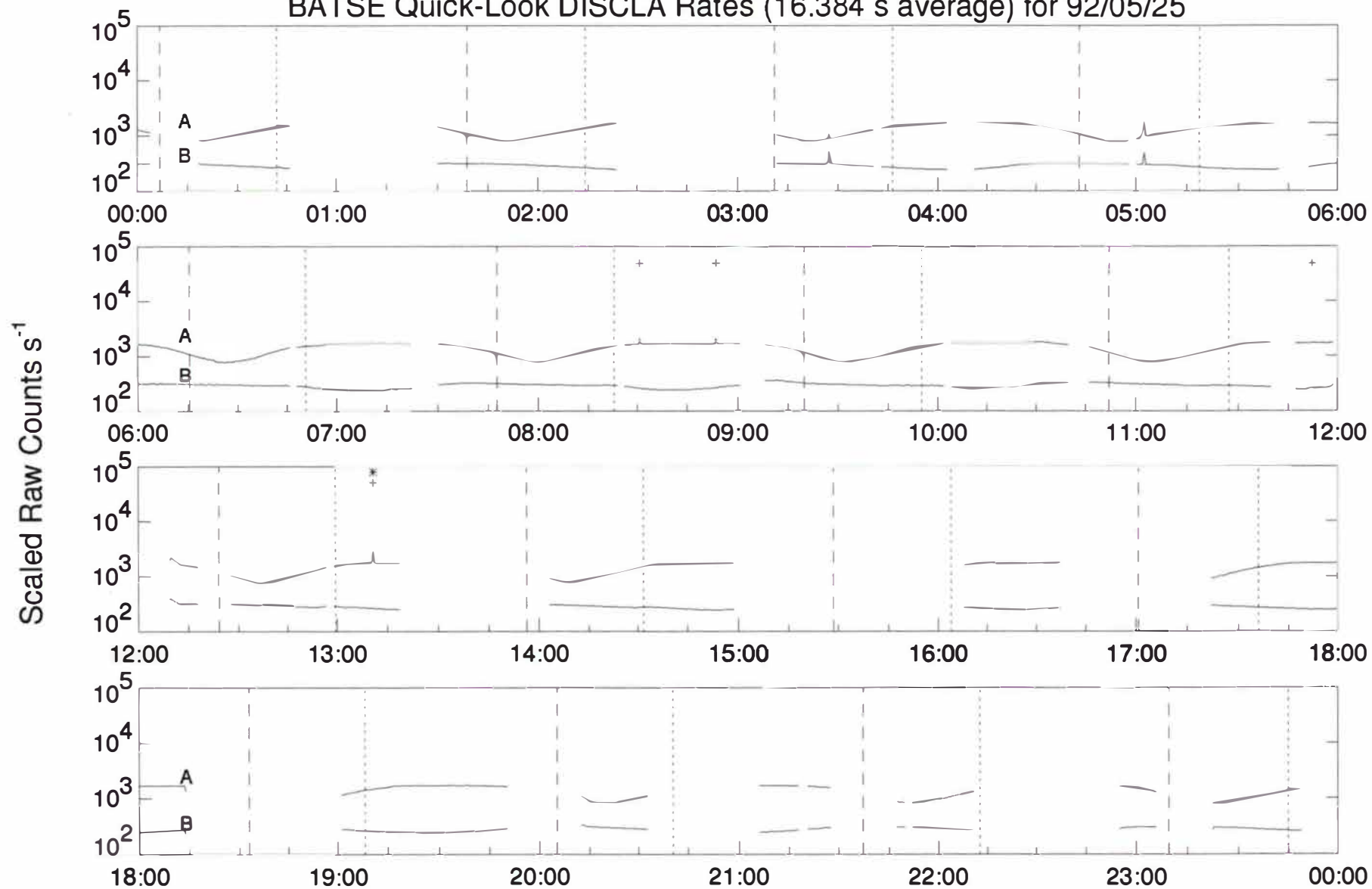
Data Start: 92/05/24, 2359:58

Plot created: 93/10/29, 0107

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/25

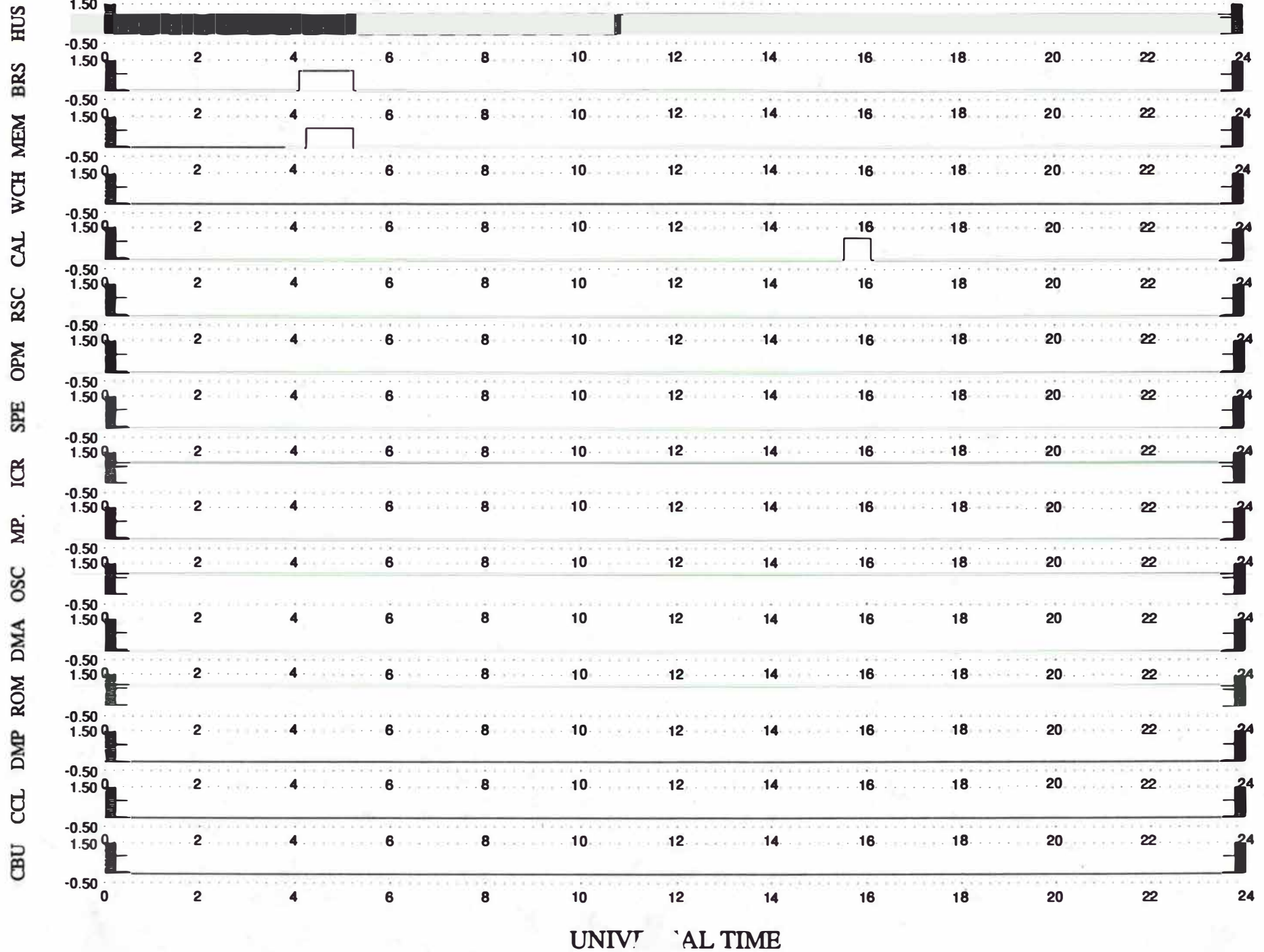


Current Time: 92/09/19, 1726 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

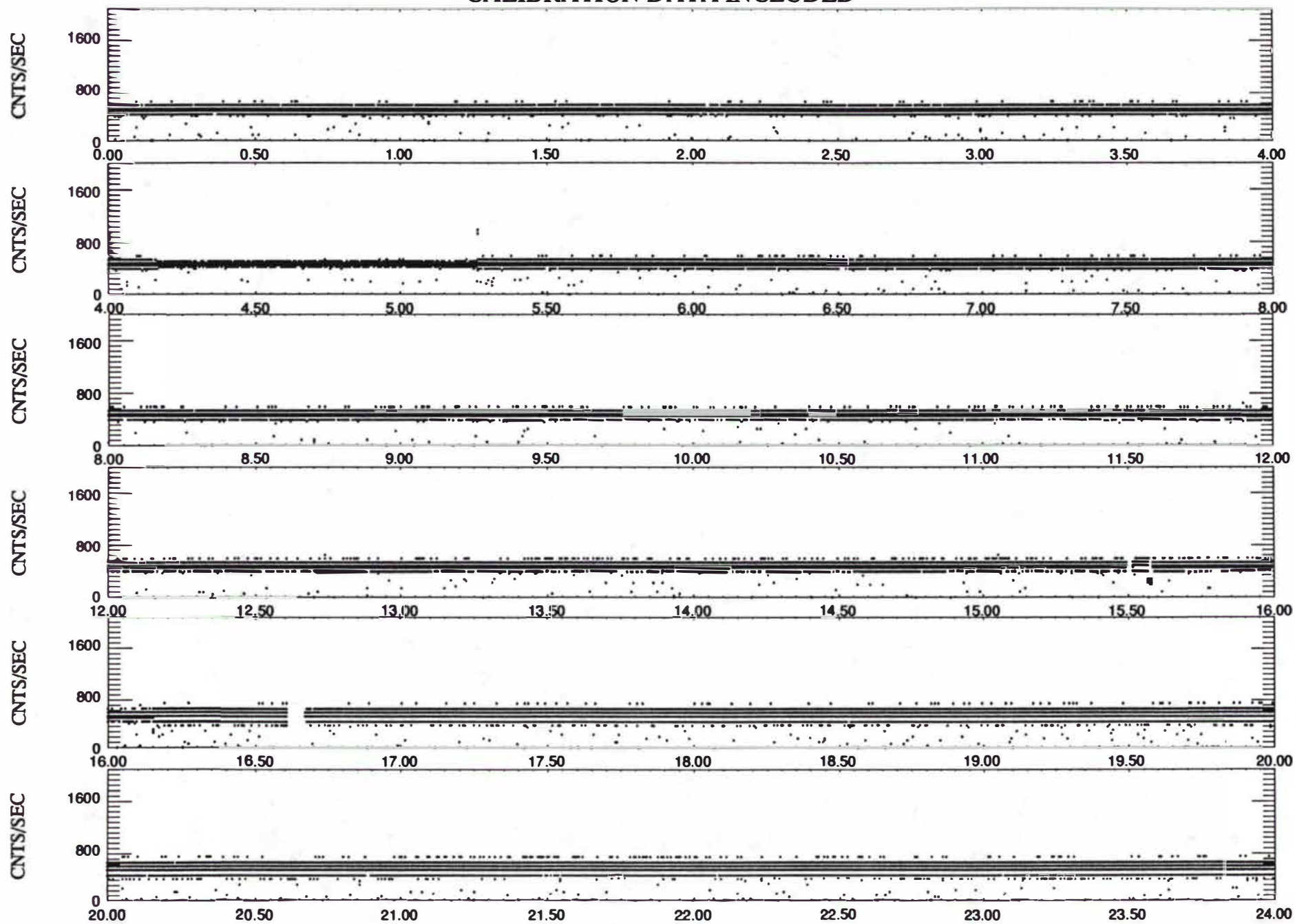
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 0



CALIBRATION DATA INCLUDED



UNIVERSAL TIME

CATSEARCH PROGRAM

BATSE BURST # 1628
EVENT OF 1992 MAY 26 DAY OF YEAR=147
EVENT CROSSING TIME AT BATSE : 8536. S. OR 02:22:16.4
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 100.900 42.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 26/ 5/ 92 IS:
RA= 148.234 DEC= 8.358 DIST= 5.393 AU
BATSE-ULYSSES DISTANCE = 806828704. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1594.76 SECS.
CROSSING TIME AT ULYSSES IS 6942. S. OR 01:55:41.6 +/- 402.16 SECONDS

NO

From HORACK@ssl.msfc.nasa.gov Wed May 27 08:44:27 1992
Date: Wed, 27 May 1992 10:46:17 -0500 (CDT)
From: HORACK@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1458

BATSE BURST TRIGGER

NO.: 01628

May 26

TIME: TJD=8768 SECONDS=08538

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=75. AZIMUTH=323. ERROR= DEGREES

COMMENTS:

MODERATE BUT COMPLEX EVENT LASTING APPROXIMATELY 40 SECONDS WITH TWO MAIN
EMISSION REGIONS. FIRST REGION FROM T=0 TO T=15 HAS AT LEAST THREE SUB-PEAKS.
SECOND REGION FROM 20-40 SECONDS AFTER TRIGGER IS LESS INTENSE, AND HAS SOME
DETAILED STRUCTURE, WHICH IS LESS RESOLVED THAN THE FIRST REGION.

No trig

7 / 6 / 94

ULYSSES RT

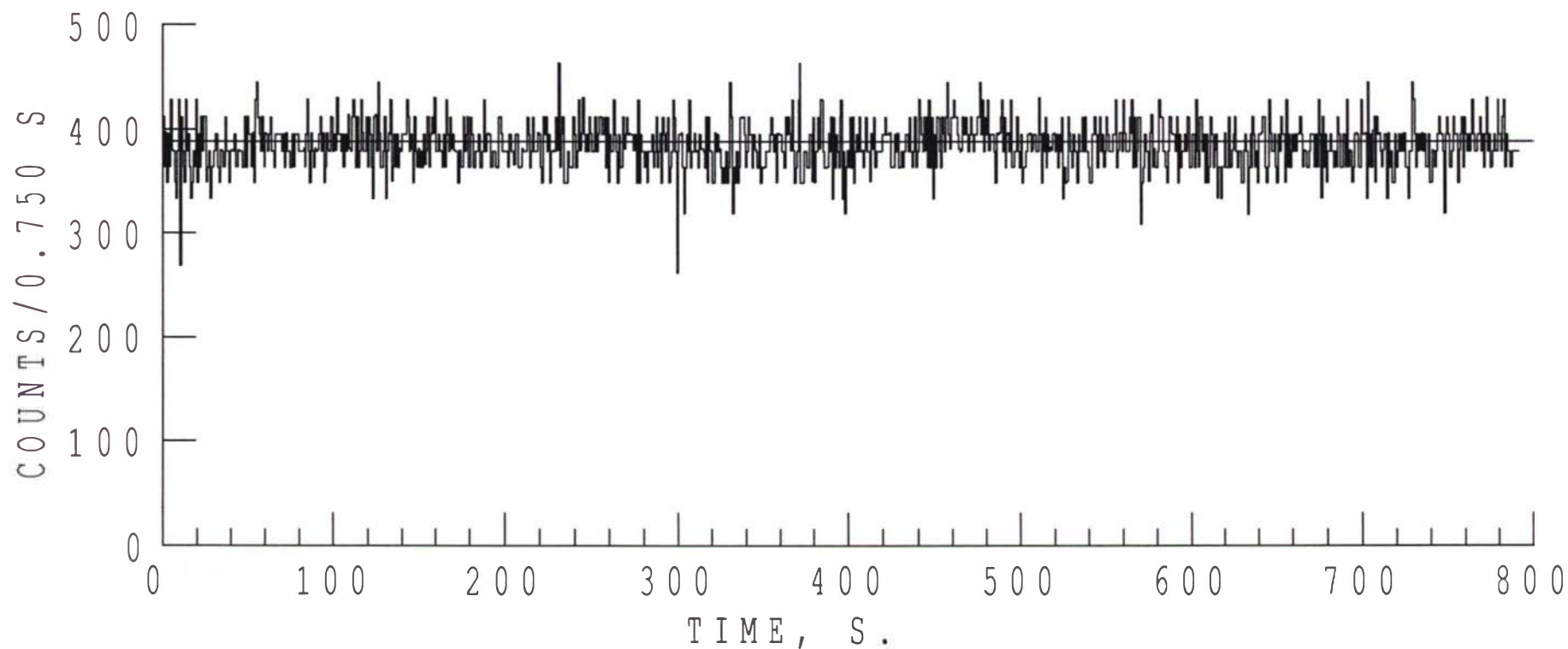
26 / 5 / 92 6552.154 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

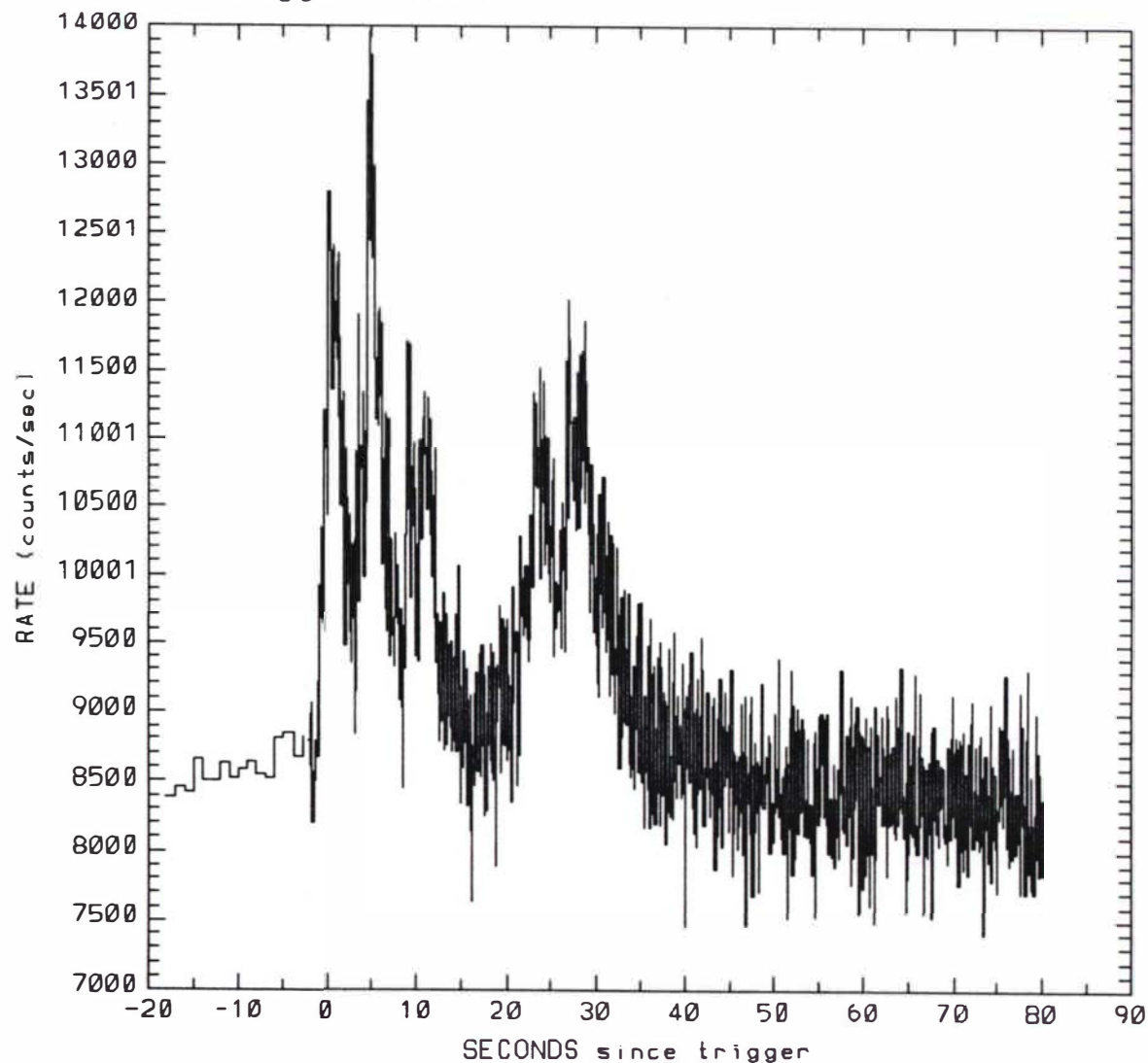


May 26 '92

107.7, 39.9

$1 \times 10^{-6} \text{ erg/cm}^2$

Trigger #1628



27-MAY-1992 10:18:53

Created by MOPS BD
(Burst Display)
Version 2.12

Trigger # 1628

Trigger Time:
8768 / 8538.468

Burst Data Type:
DISCSC

Deadtime
Corrected: N

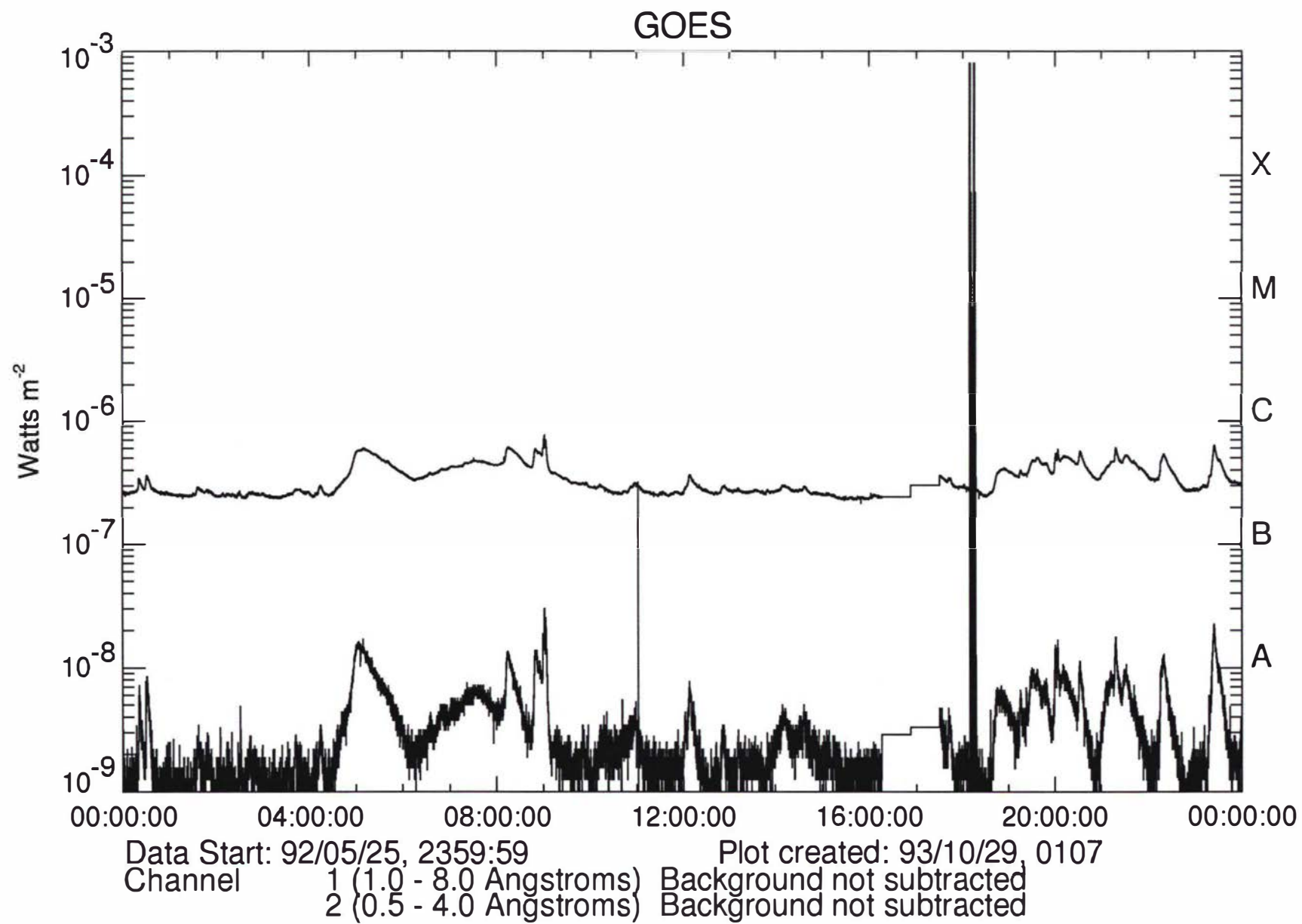
Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

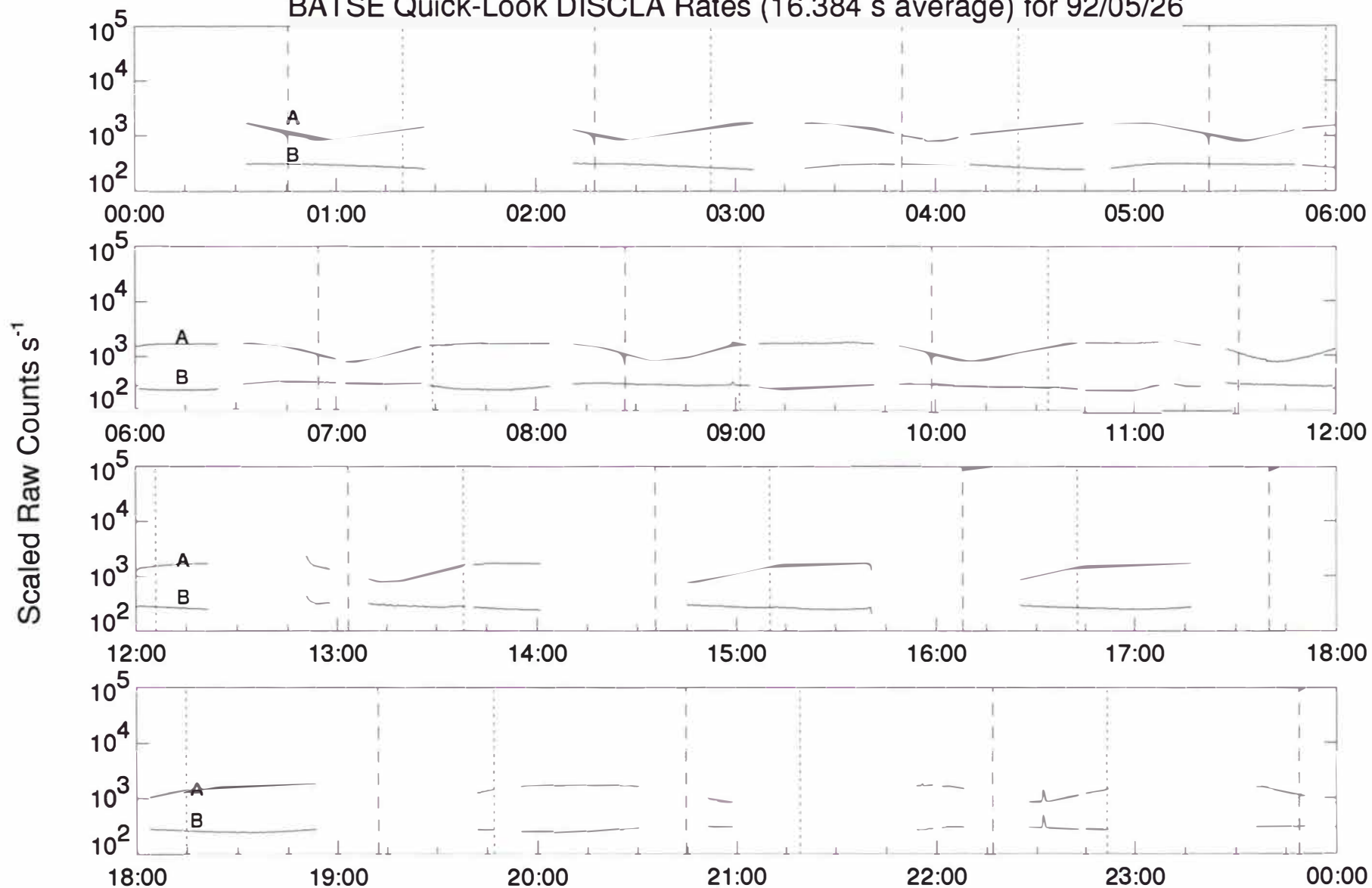
Detectors [7..0].
00001100

Discriminators:
(1..4)

Quality Mask:
BDISP0



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/26



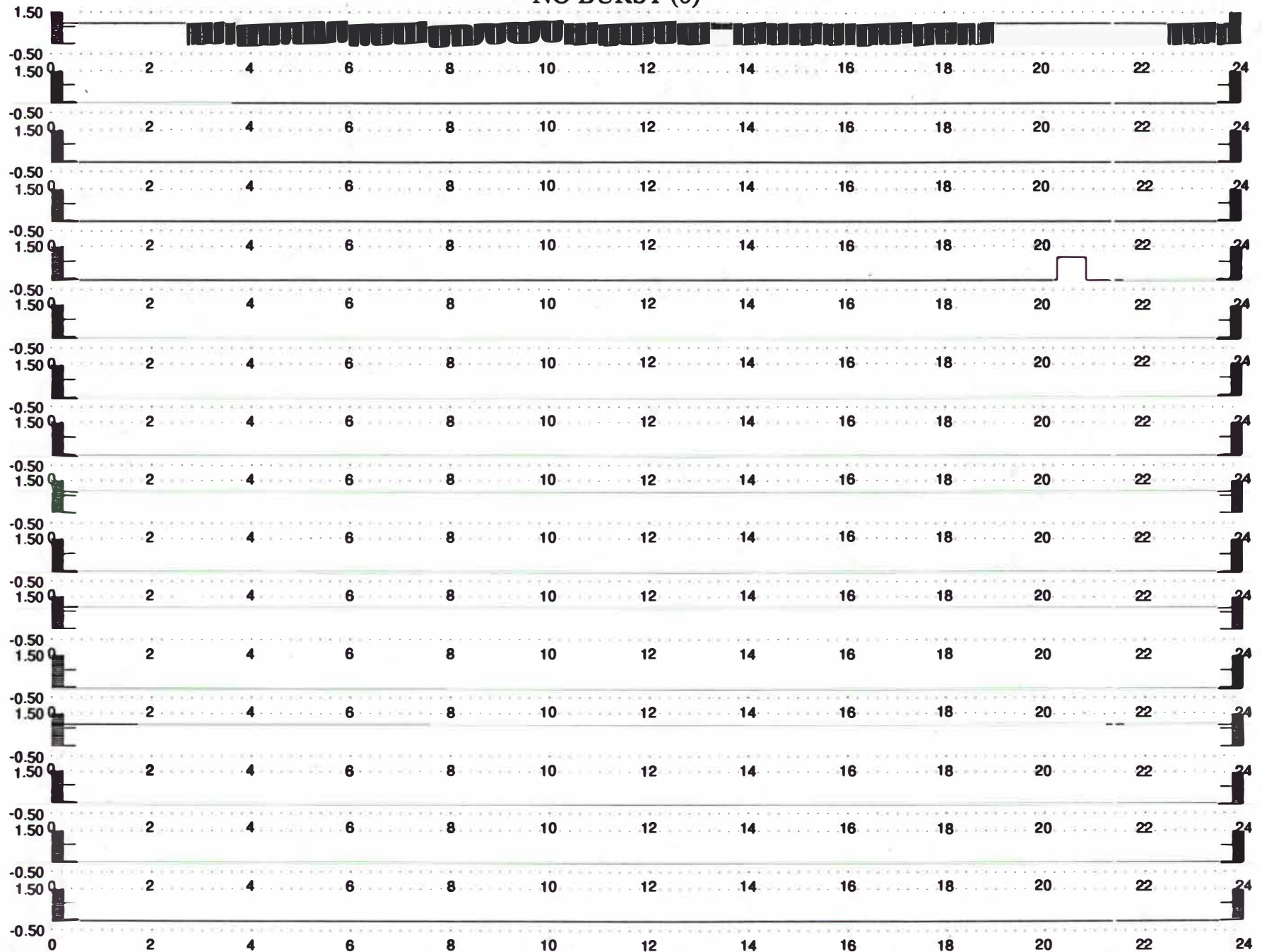
Current Time: 92/09/19, 1727 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

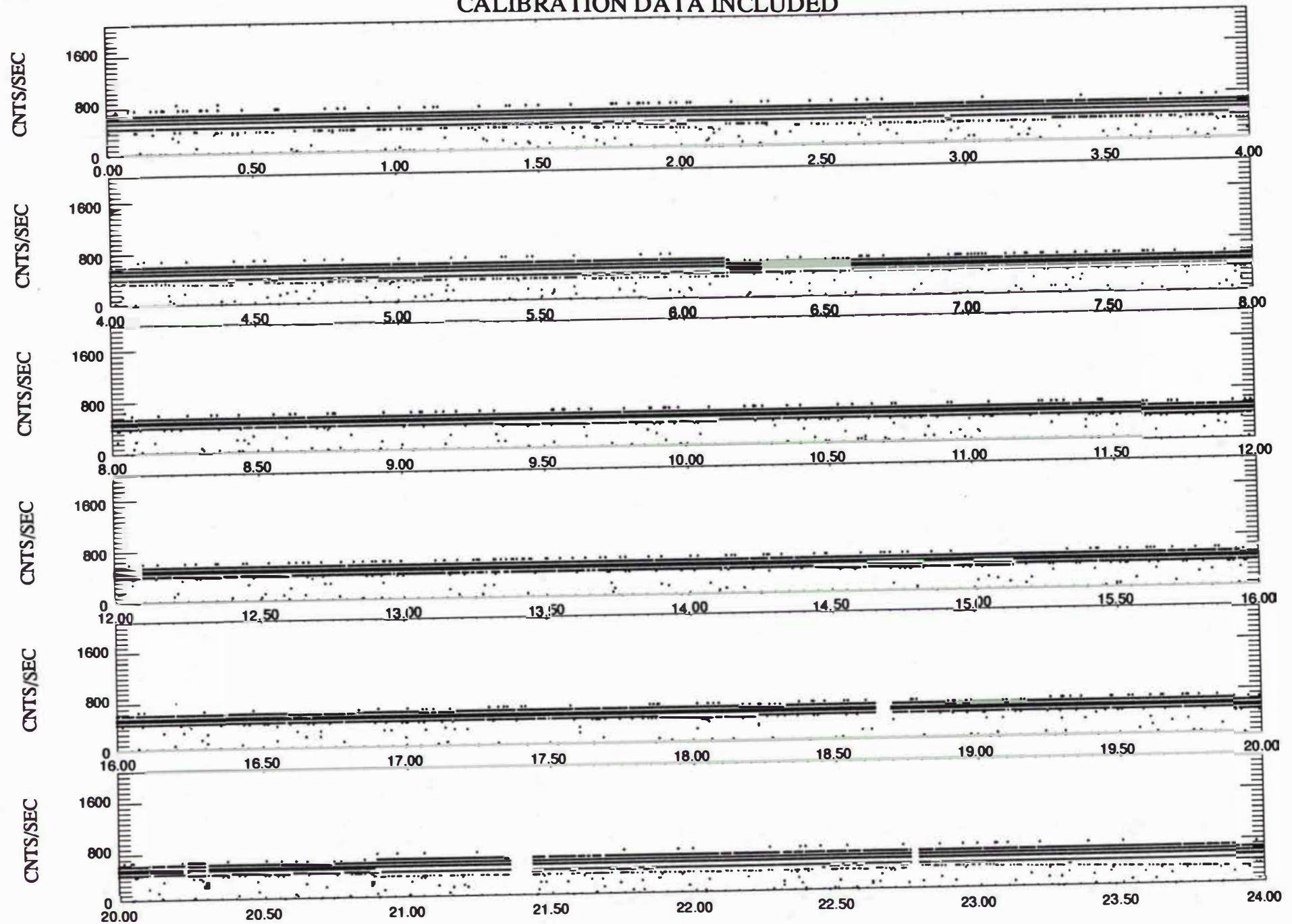
CUB CCL DMP ROM DMA OSC MP. ICR SPE OPM RSC CAL WCH MEM BRS HUS

NO BURST (0)



UNIV' AL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

From MALLOZZI@ssl.msfc.nasa.gov Fri May 29 09:33:15 1992
Date: Fri, 29 May 1992 10:17:12 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@estec.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1377

BATSE BURST TRIGGER

NO.: 01629

TIME: TJD=8769 SECONDS=52608

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:N

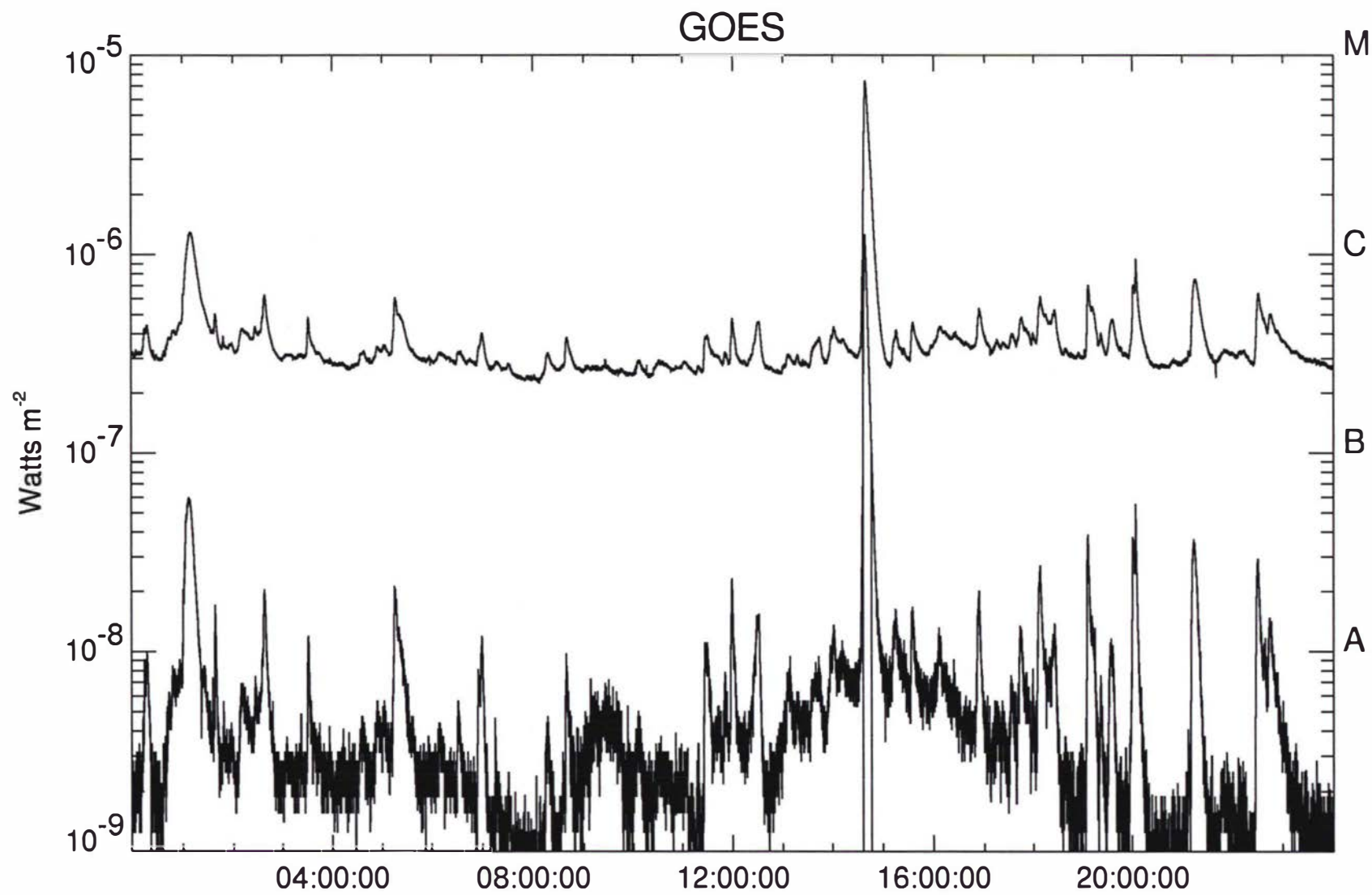
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

GOES C7.1 FLARE. SINGLE MAIN PEAK OF DURATION ~30 SEC AFTER TRIGGER.
OBSERVED ABOVE 100 KEV, BUT NOT ABOVE 300 KEV.
POSSIBLE EMISSION UP TO ~120 SEC AFTER TRIGGER.



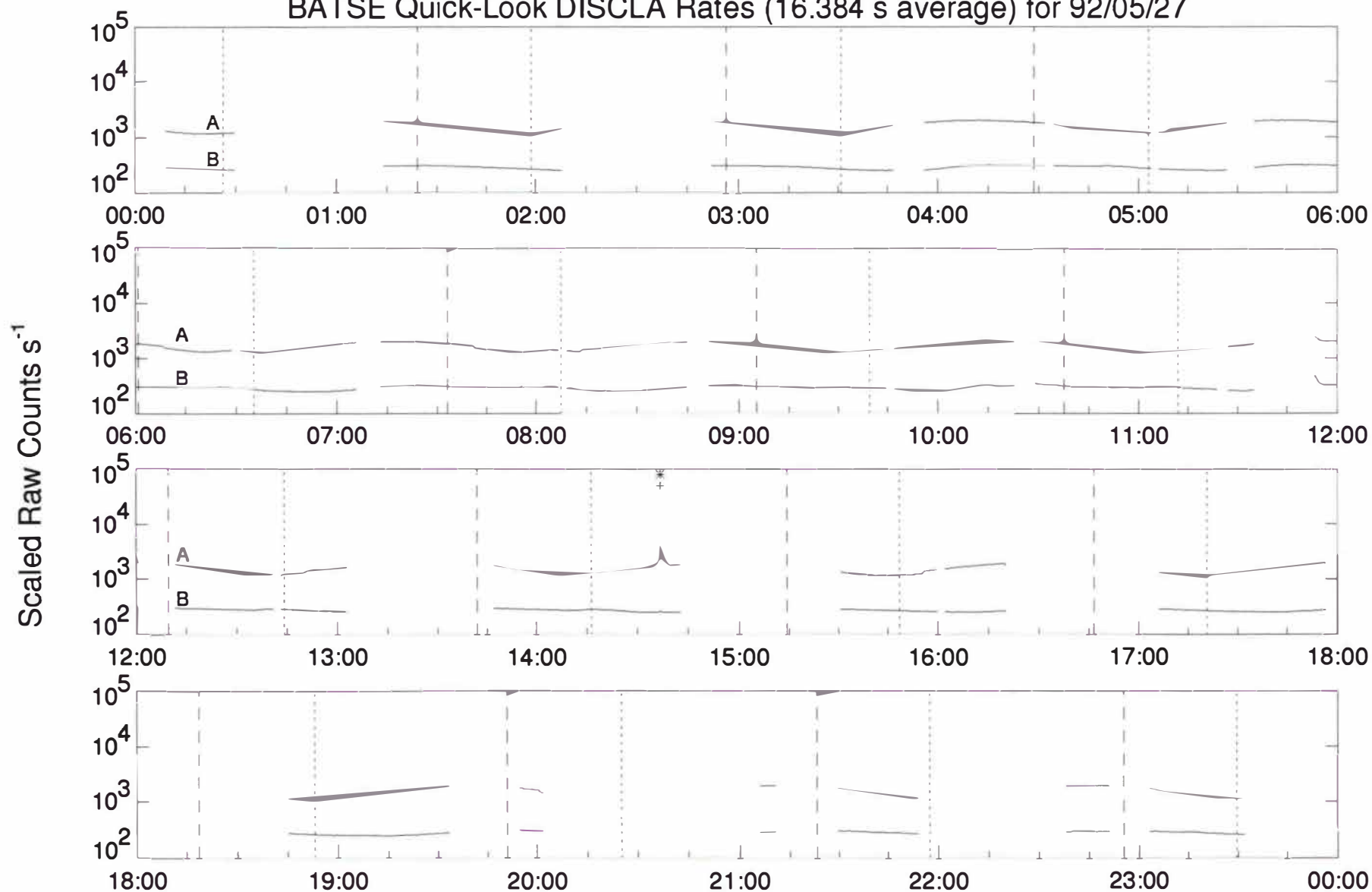
Data Start: 92/05/27, 0000:00

Plot created: 93/10/29, 0107

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/27

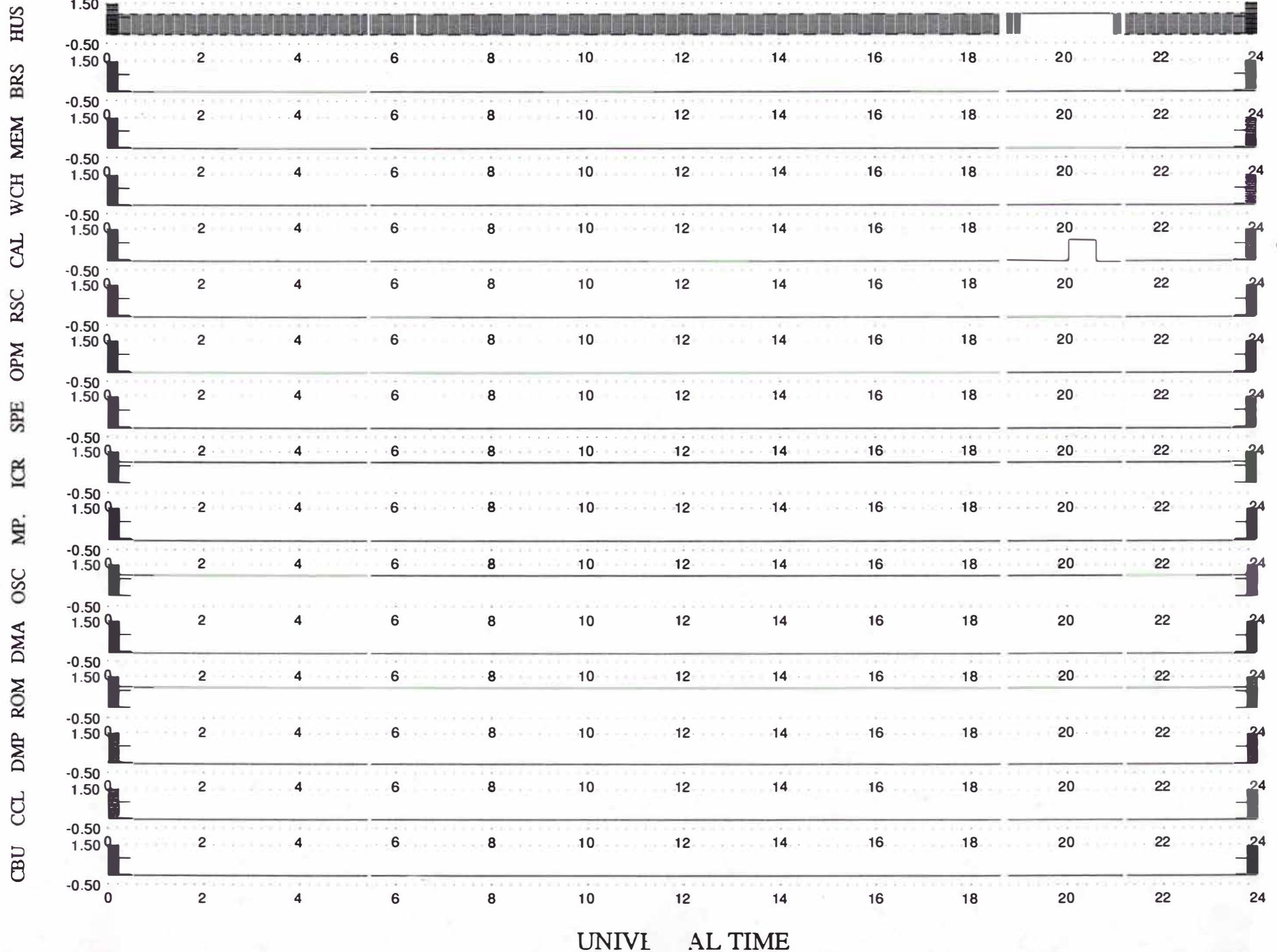


Current Time: 92/09/19, 1728 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

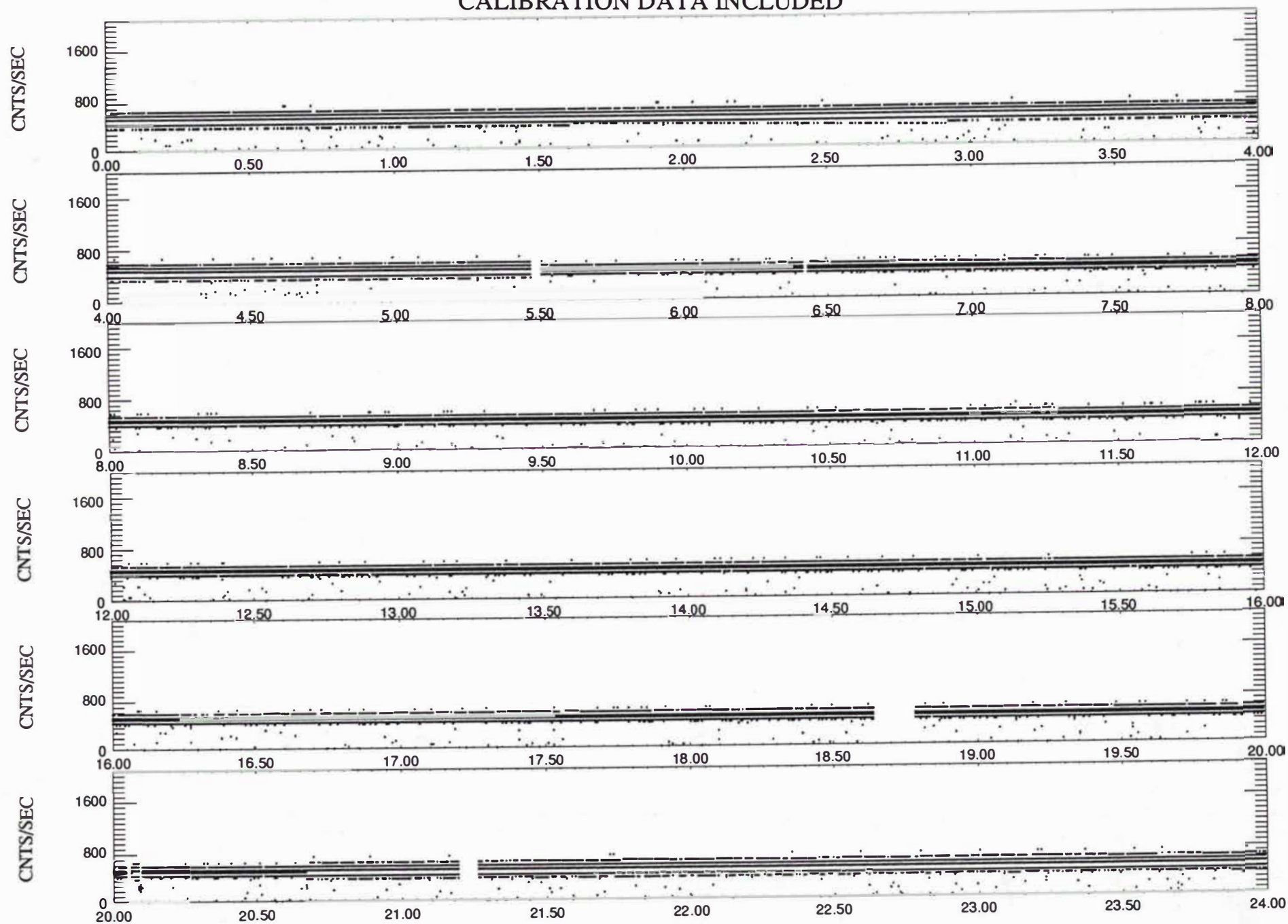
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

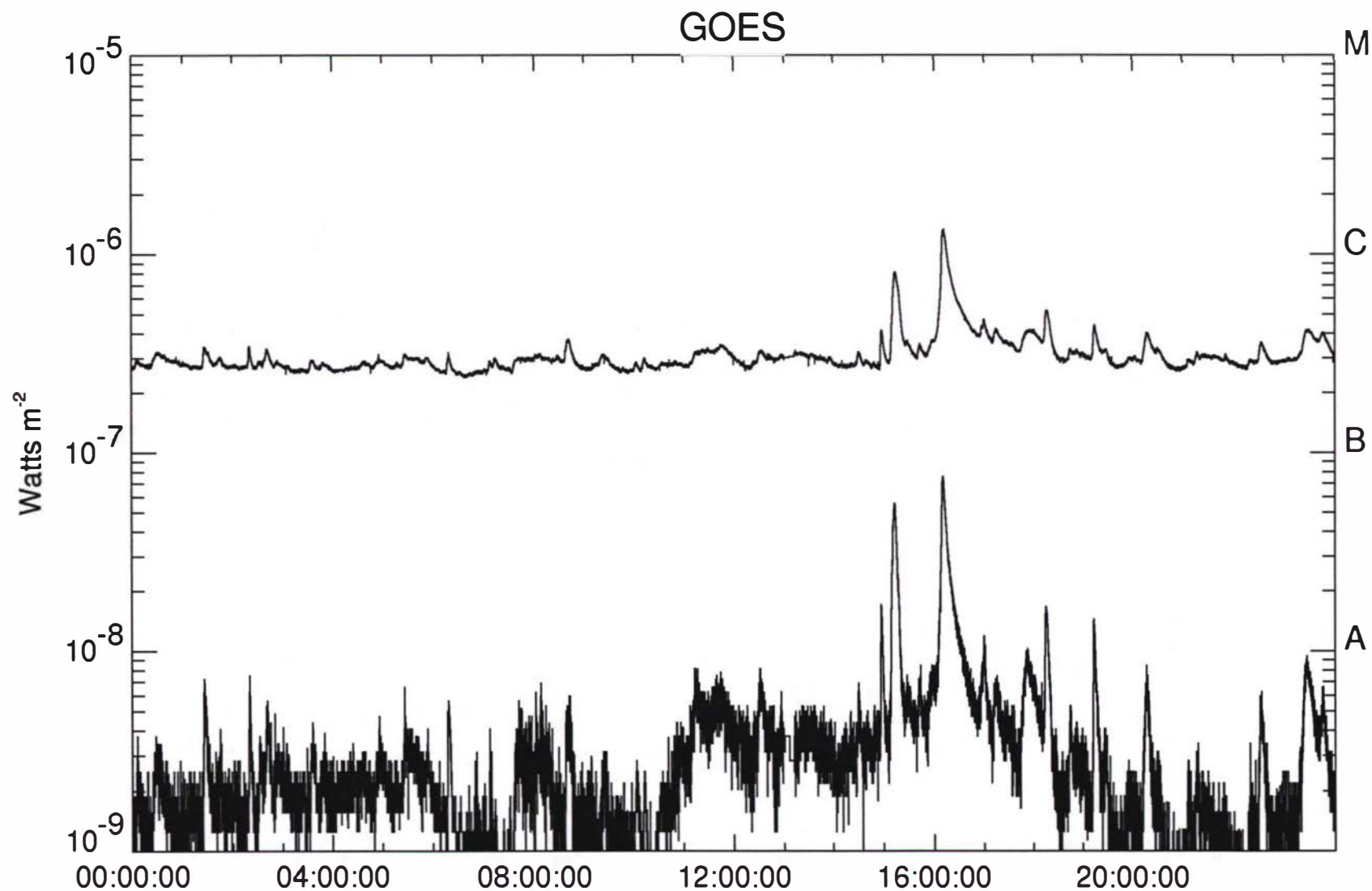
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIVE AL TIME



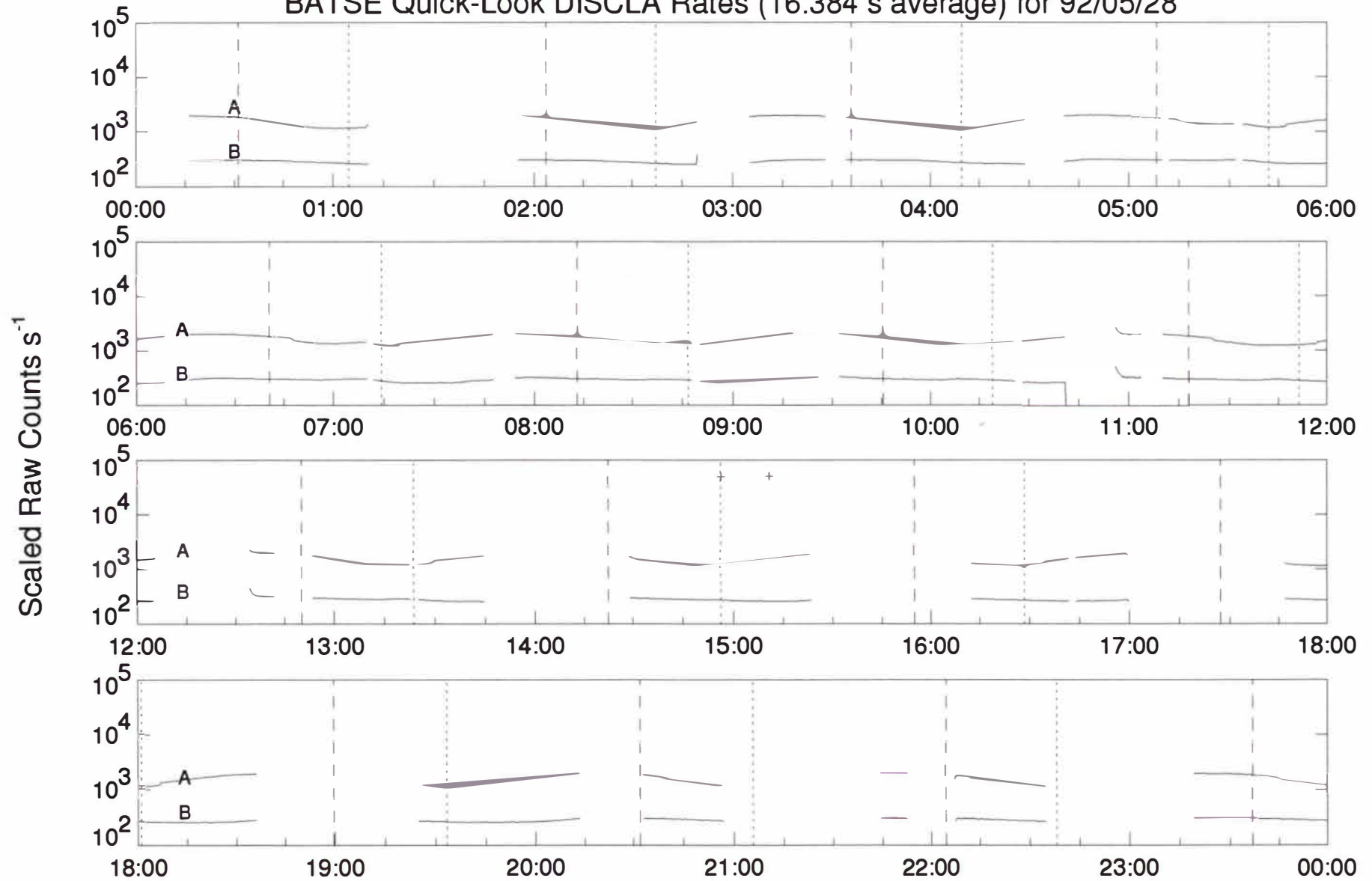
Data Start: 92/05/27, 2359:58

Plot created: 93/10/29, 0107

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/28



Current Time: 92/09/19, 1729 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

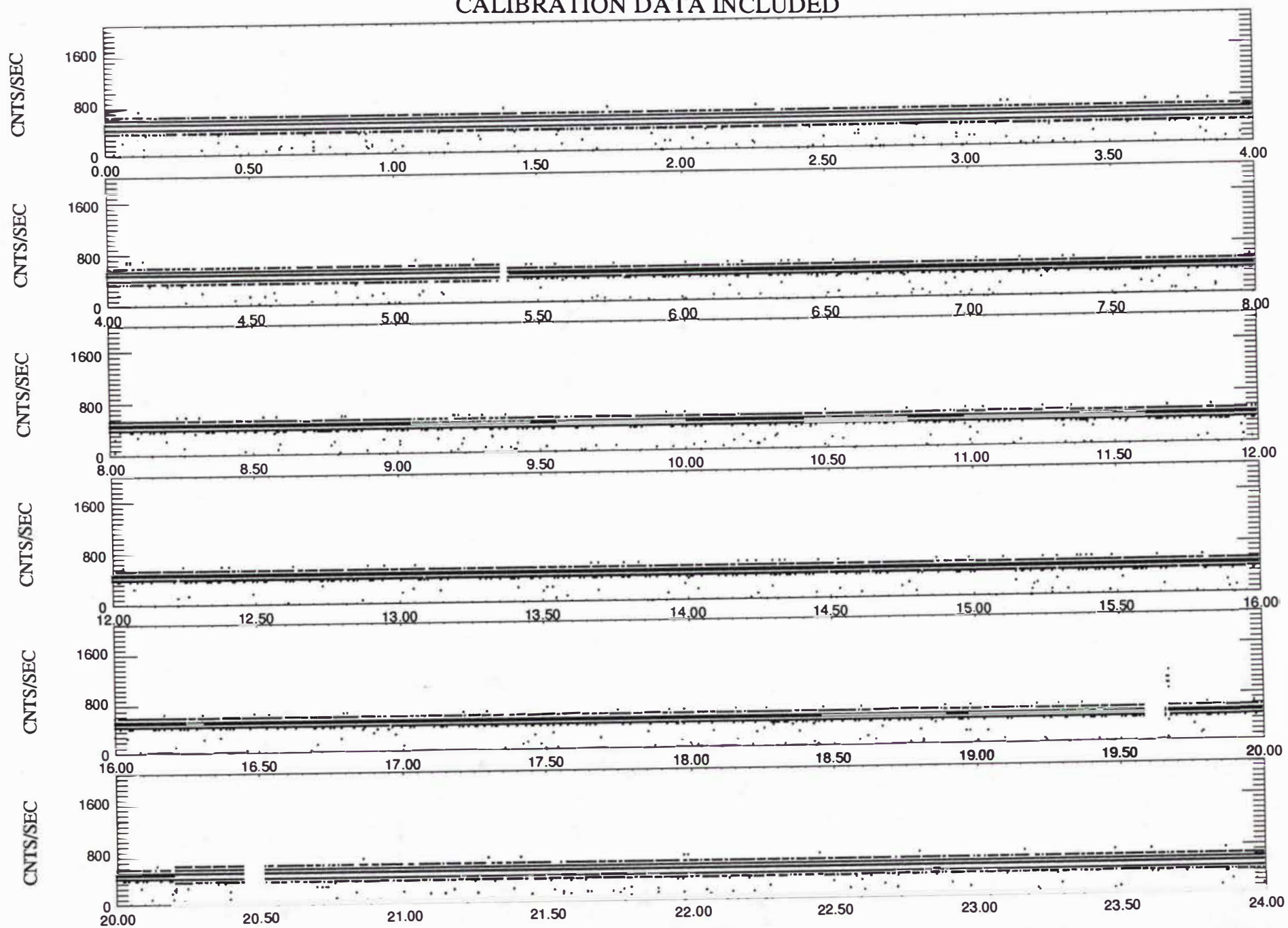
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

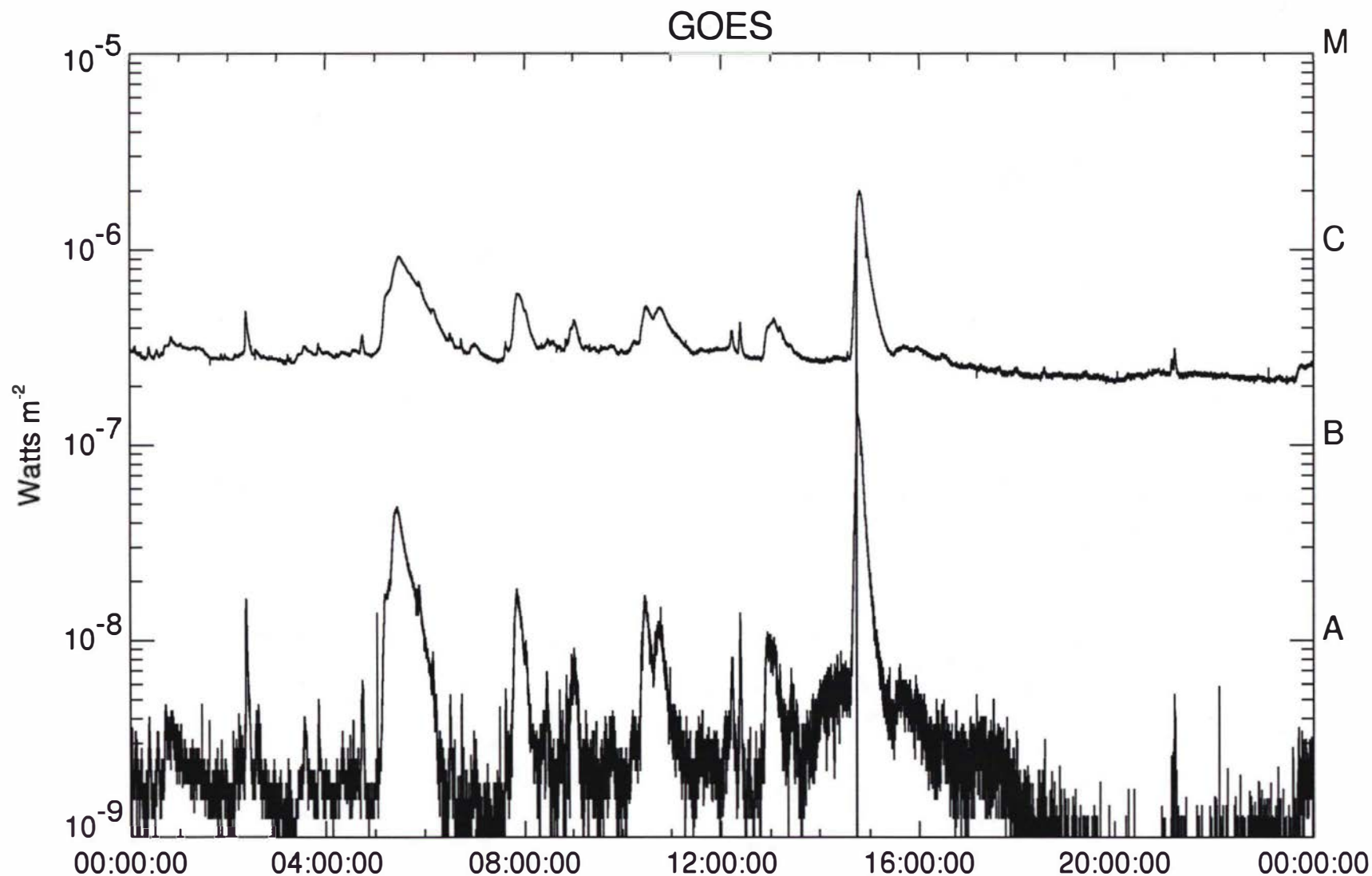
Country	Year	WCH	MEM	BRS	HUS
Algeria	1990	0.00	0.00	0.00	0.00
Algeria	1991	0.00	0.00	0.00	0.00
Algeria	1992	0.00	0.00	0.00	0.00
Algeria	1993	0.00	0.00	0.00	0.00
Algeria	1994	0.00	0.00	0.00	0.00
Algeria	1995	0.00	0.00	0.00	0.00
Algeria	1996	0.00	0.00	0.00	0.00
Algeria	1997	0.00	0.00	0.00	0.00
Algeria	1998	0.00	0.00	0.00	0.00
Algeria	1999	0.00	0.00	0.00	0.00
Algeria	2000	0.00	0.00	0.00	0.00
Algeria	2001	0.00	0.00	0.00	0.00
Algeria	2002	0.00	0.00	0.00	0.00
Algeria	2003	0.00	0.00	0.00	0.00
Algeria	2004	0.00	0.00	0.00	0.00
Algeria	2005	0.00	0.00	0.00	0.00
Algeria	2006	0.00	0.00	0.00	0.00
Algeria	2007	0.00	0.00	0.00	0.00
Algeria	2008	0.00	0.00	0.00	0.00
Algeria	2009	0.00	0.00	0.00	0.00
Algeria	2010	0.00	0.00	0.00	0.00
Algeria	2011	0.00	0.00	0.00	0.00
Algeria	2012	0.00	0.00	0.00	0.00
Algeria	2013	0.00	0.00	0.00	0.00
Algeria	2014	0.00	0.00	0.00	0.00
Algeria	2015	0.00	0.00	0.00	0.00
Algeria	2016	0.00	0.00	0.00	0.00
Algeria	2017	0.00	0.00	0.00	0.00
Algeria	2018	0.00	0.00	0.00	0.00
Algeria	2019	0.00	0.00	0.00	0.00
Algeria	2020	0.00	0.00	0.00	0.00
Algeria	2021	0.00	0.00	0.00	0.00
Algeria	2022	0.00	0.00	0.00	0.00
Algeria	2023	0.00	0.00	0.00	0.00
Algeria	2024	0.00	0.00	0.00	0.00
Algeria	2025	0.00	0.00	0.00	0.00
Algeria	2026	0.00	0.00	0.00	0.00
Algeria	2027	0.00	0.00	0.00	0.00
Algeria	2028	0.00	0.00	0.00	0.00
Algeria	2029	0.00	0.00	0.00	0.00
Algeria	2030	0.00	0.00	0.00	0.00
Algeria	2031	0.00	0.00	0.00	0.00
Algeria	2032	0.00	0.00	0.00	0.00
Algeria	2033	0.00	0.00	0.00	0.00
Algeria	2034	0.00	0.00	0.00	0.00
Algeria	2035	0.00	0.00	0.00	0.00
Algeria	2036	0.00	0.00	0.00	0.00
Algeria	2037	0.00	0.00	0.00	0.00
Algeria	2038	0.00	0.00	0.00	0.00
Algeria	2039	0.00	0.00	0.00	0.00
Algeria	2040	0.00	0.00	0.00	0.00
Algeria	2041	0.00	0.00	0.00	0.00
Algeria	2042	0.00	0.00	0.00	0.00
Algeria	2043	0.00	0.00	0.00	0.00
Algeria	2044	0.00	0.00	0.00	0.00
Algeria	2045	0.00	0.00	0.00	0.00
Algeria	2046	0.00	0.00	0.00	0.00
Algeria	2047	0.00	0.00	0.00	0.00
Algeria	2048	0.00	0.00	0.00	0.00
Algeria	2049	0.00	0.00	0.00	0.00
Algeria	2050	0.00	0.00	0.00	0.00



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Data Start: 92/05/28, 2359:59

Plot created: 93/10/29, 0107

Channel

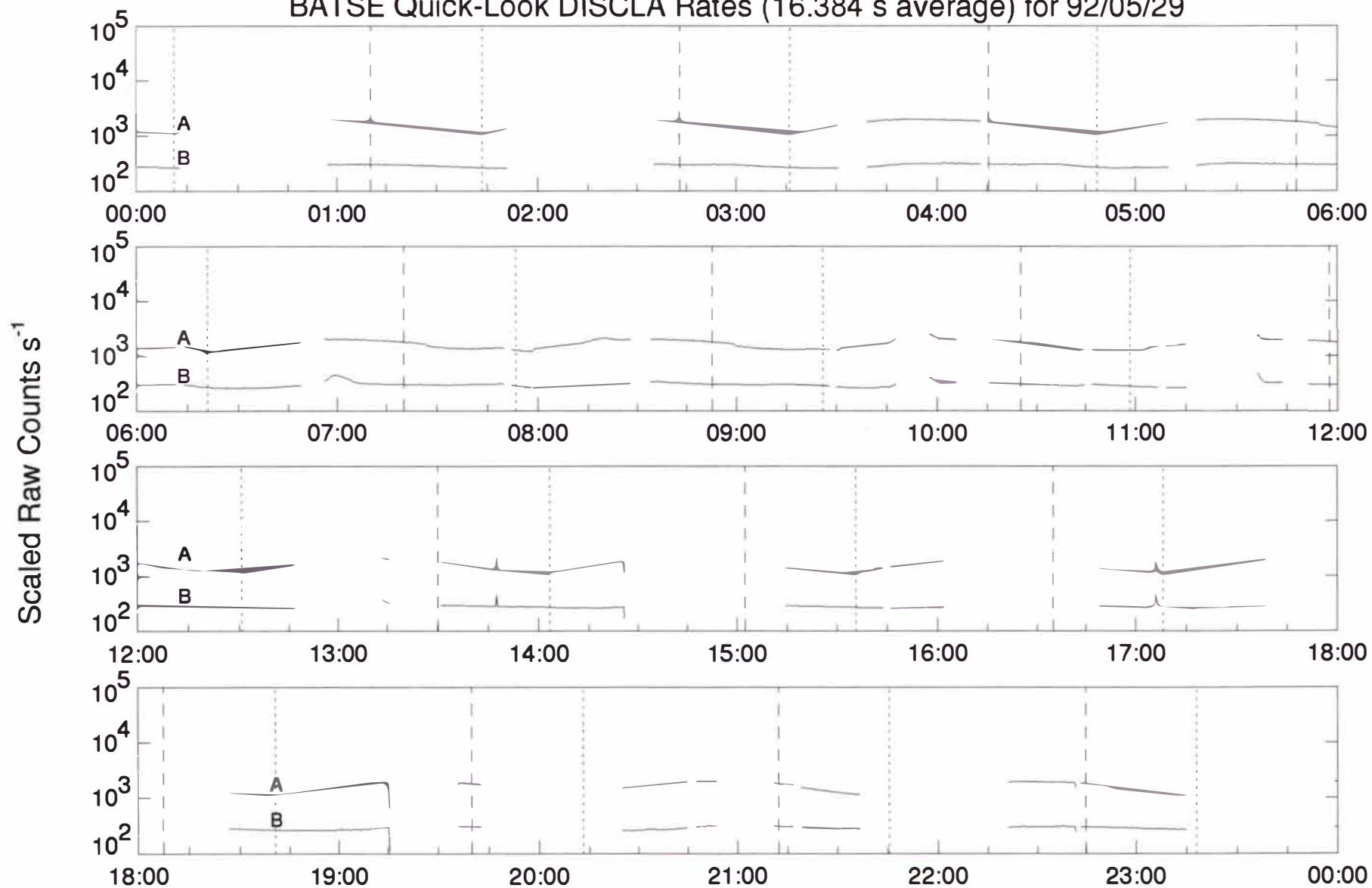
1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/29

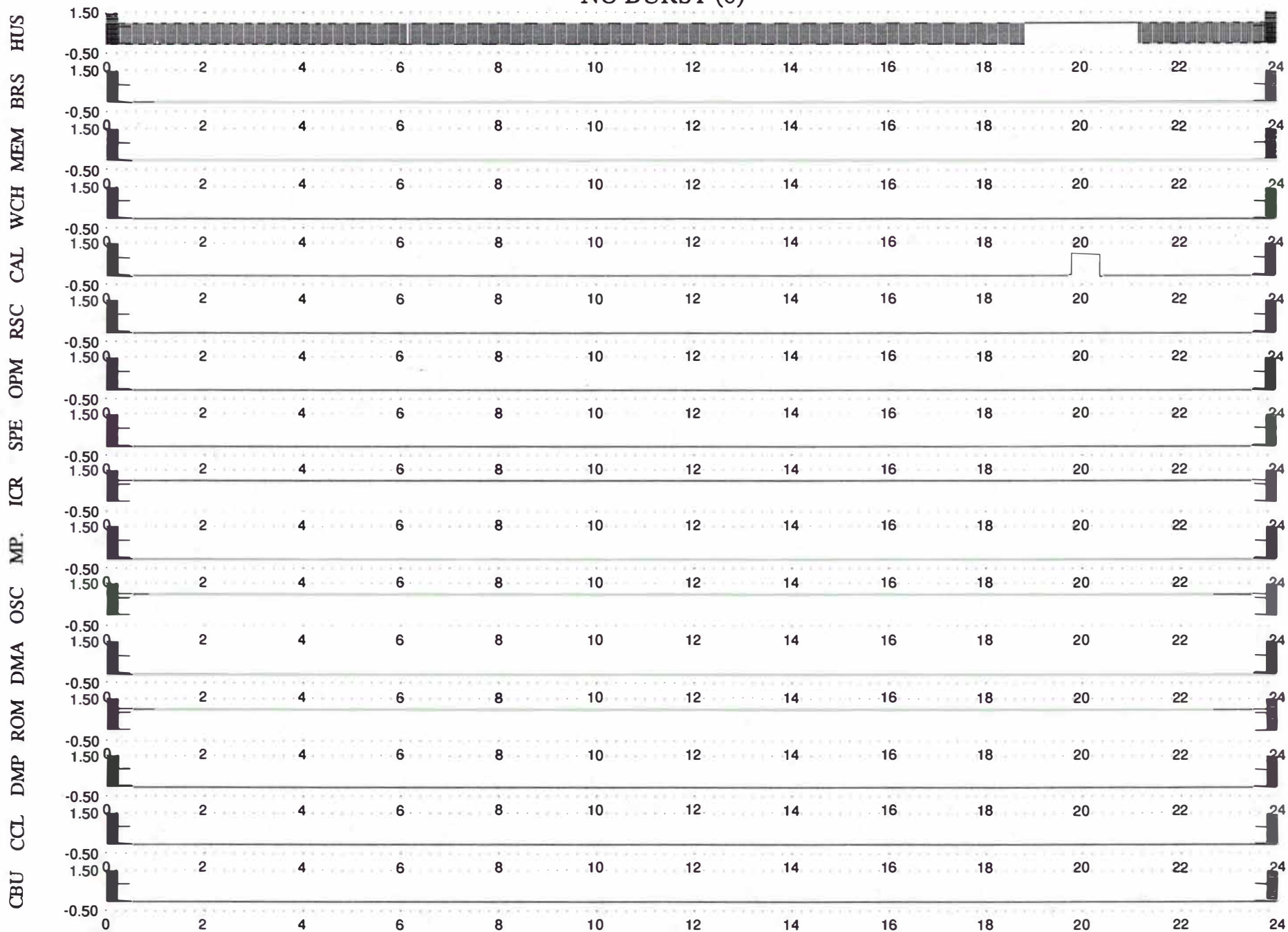


Current Time: 92/09/19, 1730 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

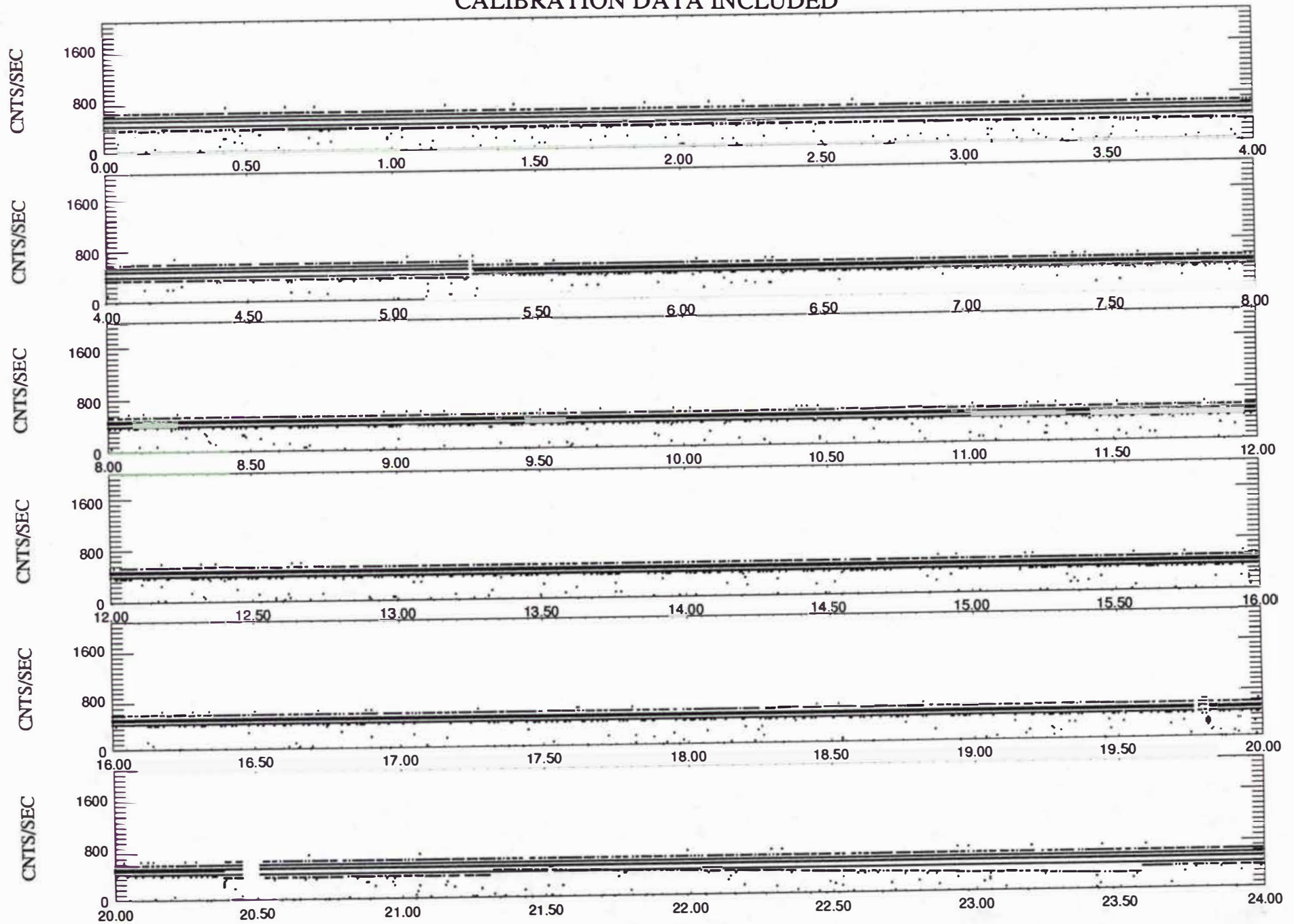
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

UNIVERSAL TIME



CALIBRATION DATA INCLUDED



UNIV AL TIME

CATSEARCH PROGRAM

BATSE BURST # 1630
EVENT OF 1992 MAY 30 DAY OF YEAR=151
EVENT CROSSING TIME AT BATSE : 82795. S. OR 22:59:55.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 164.900 20.800
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 30/ 5/ 92 IS:
RA= 148.308 DEC= 8.180 DIST= 5.457 AU
BATSE-ULYSSES DISTANCE = 816359720. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=159.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2552.38 SECS.
CROSSING TIME AT ULYSSES IS 80243. S. OR 22:17:22.7 +/- 175.99 SECONDS

RI

From BRIGGS@ssl.msfc.nasa.gov Tue Jun 2 19:52:33 1992
Date: Tue, 2 Jun 1992 21:54:55 -0500 (CDT)
From: BRIGGS@ssl.msfc.nasa.gov (Michael S. Briggs, 205-544-7716, Code ES-62, MSFC)
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 01630

TIME: TJD=8772 ^{May 30} SECONDS=82797

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: 21.8 SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=103.8 AZIMUTH=279.9 ERROR= DEGREES

COMMENTS:

TOTAL DURATION ABOUT 2.5 SEC. RELATIVELY SIMPLE TIME HISTORY:
FAST RISE AND SLOWER DECAY

Date:

Nov 28 '97

Helio corr applied
removed

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

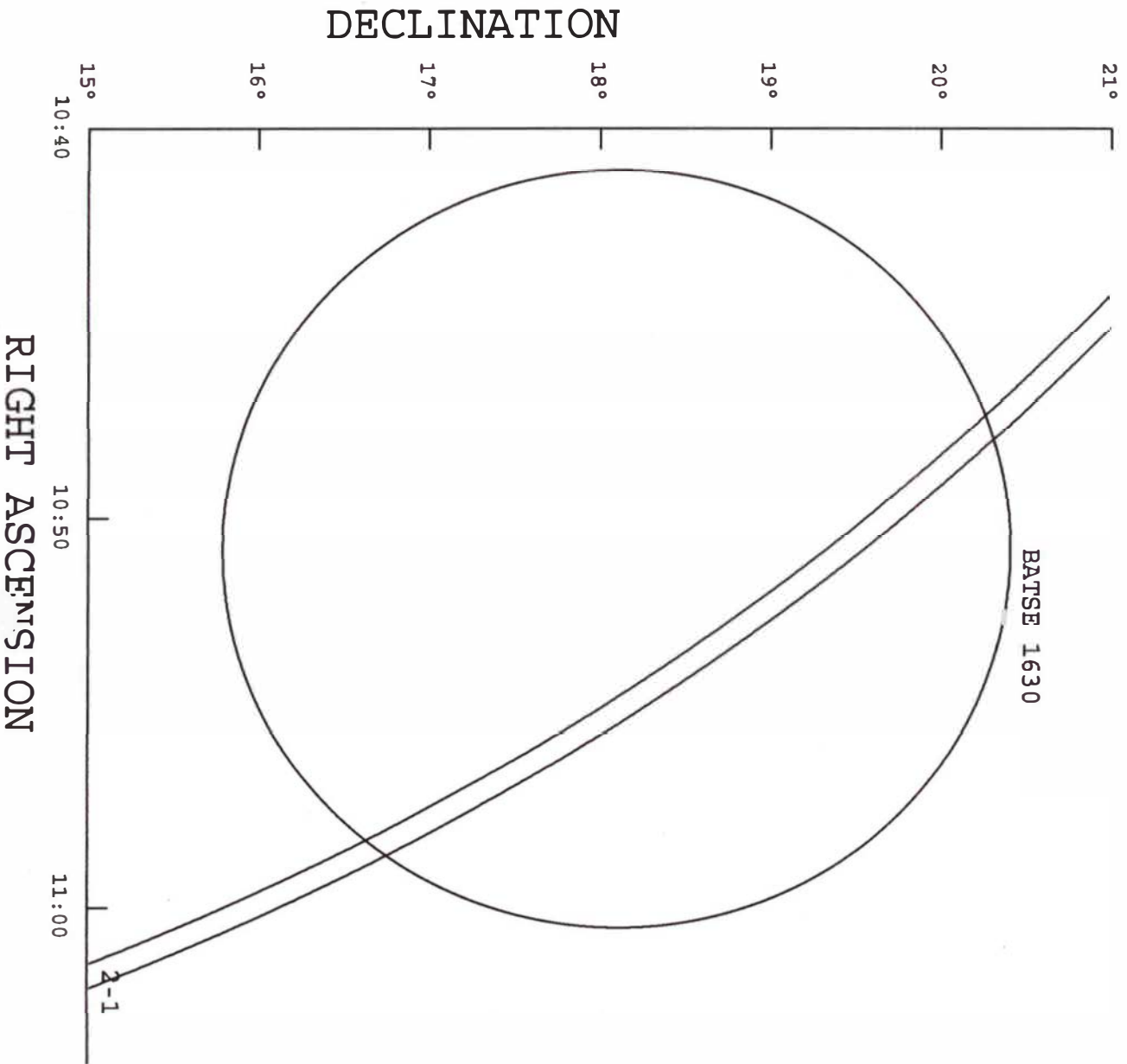
3. PVO Data

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

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

EVENT OF MAY 30, 1992 22:15

28/11/97



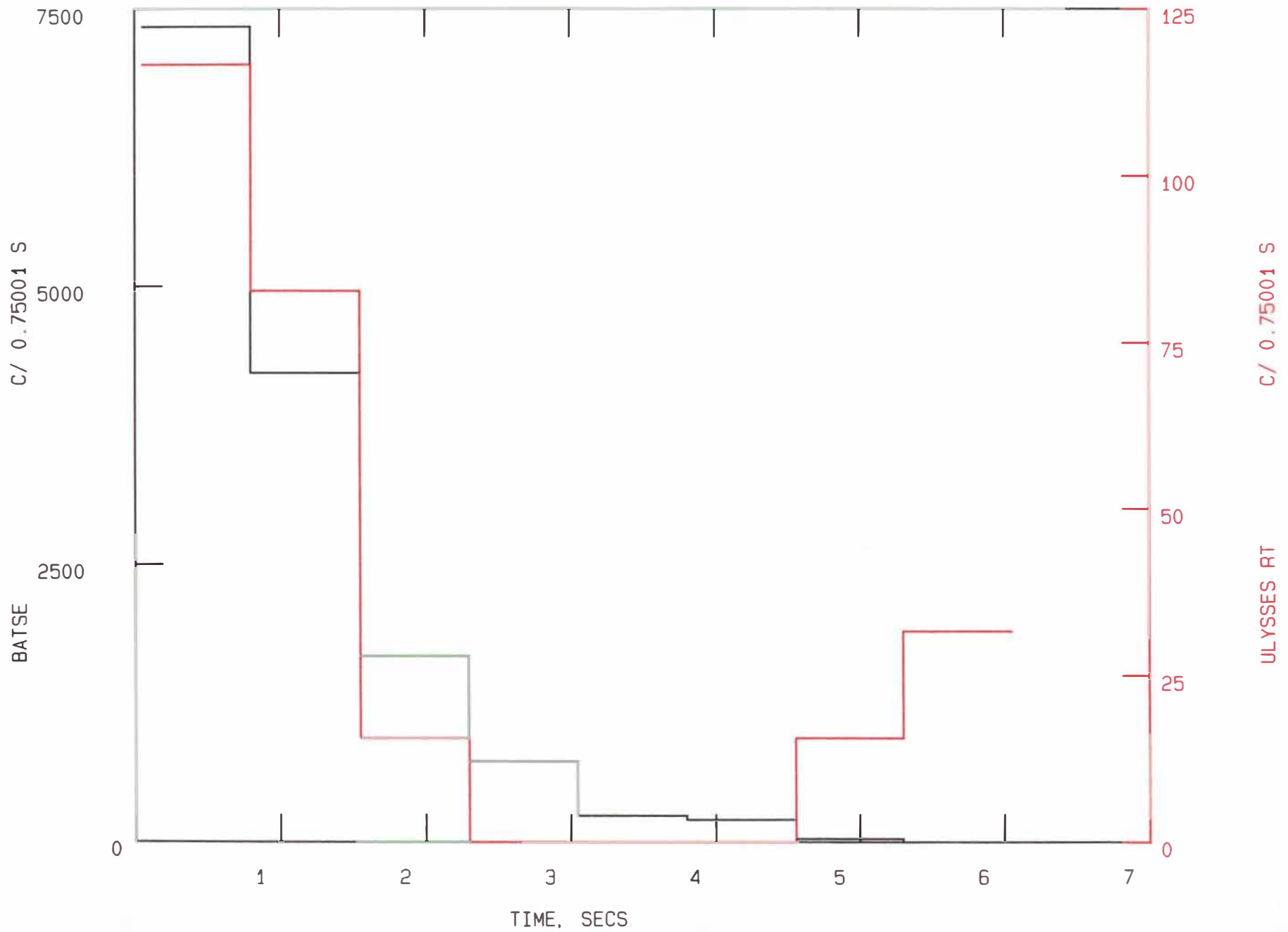
BATSE

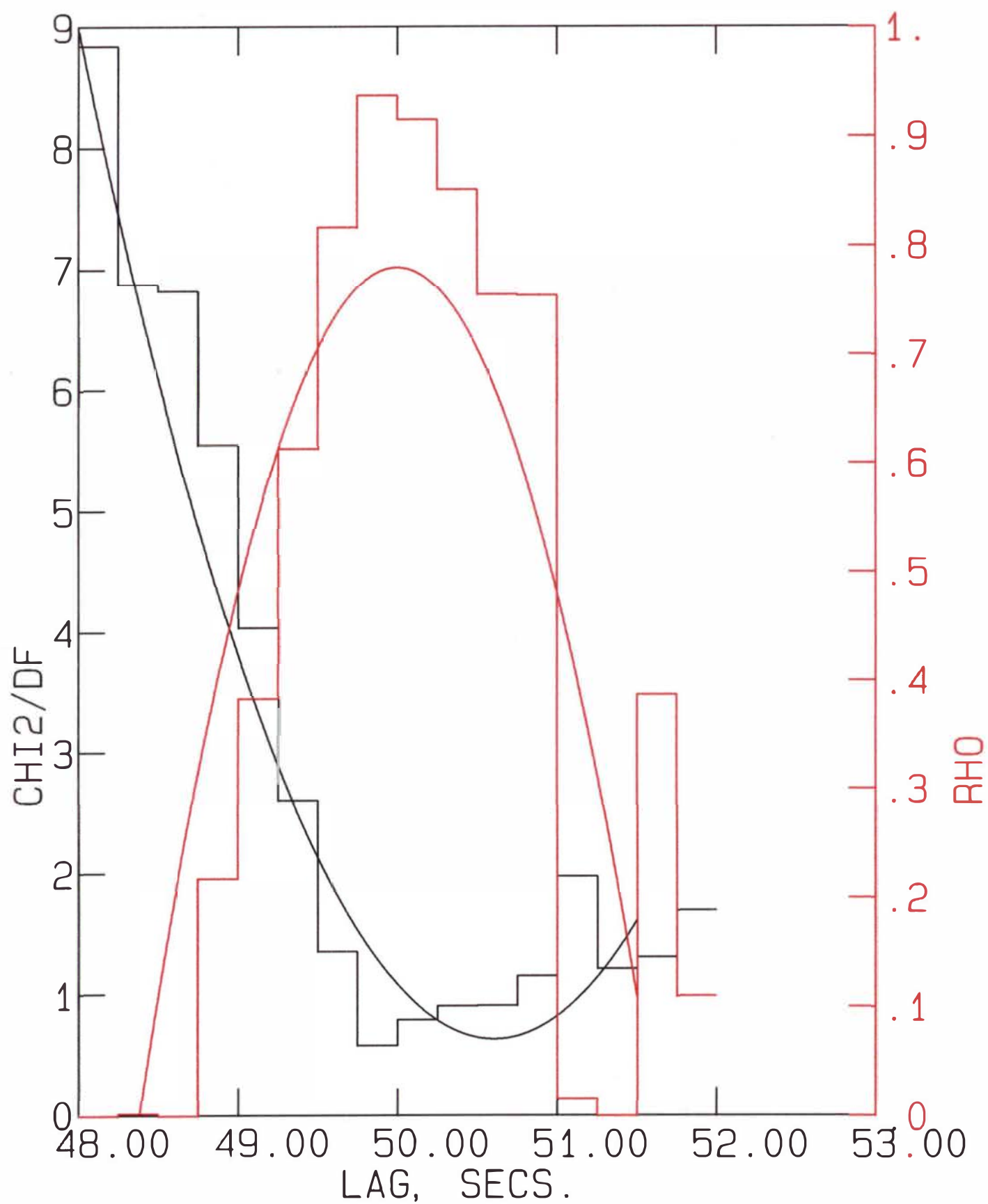
-ULYSSES RT CORRELATION

92/ 5/30

82795.114

28/11/97





ULYSSES RT

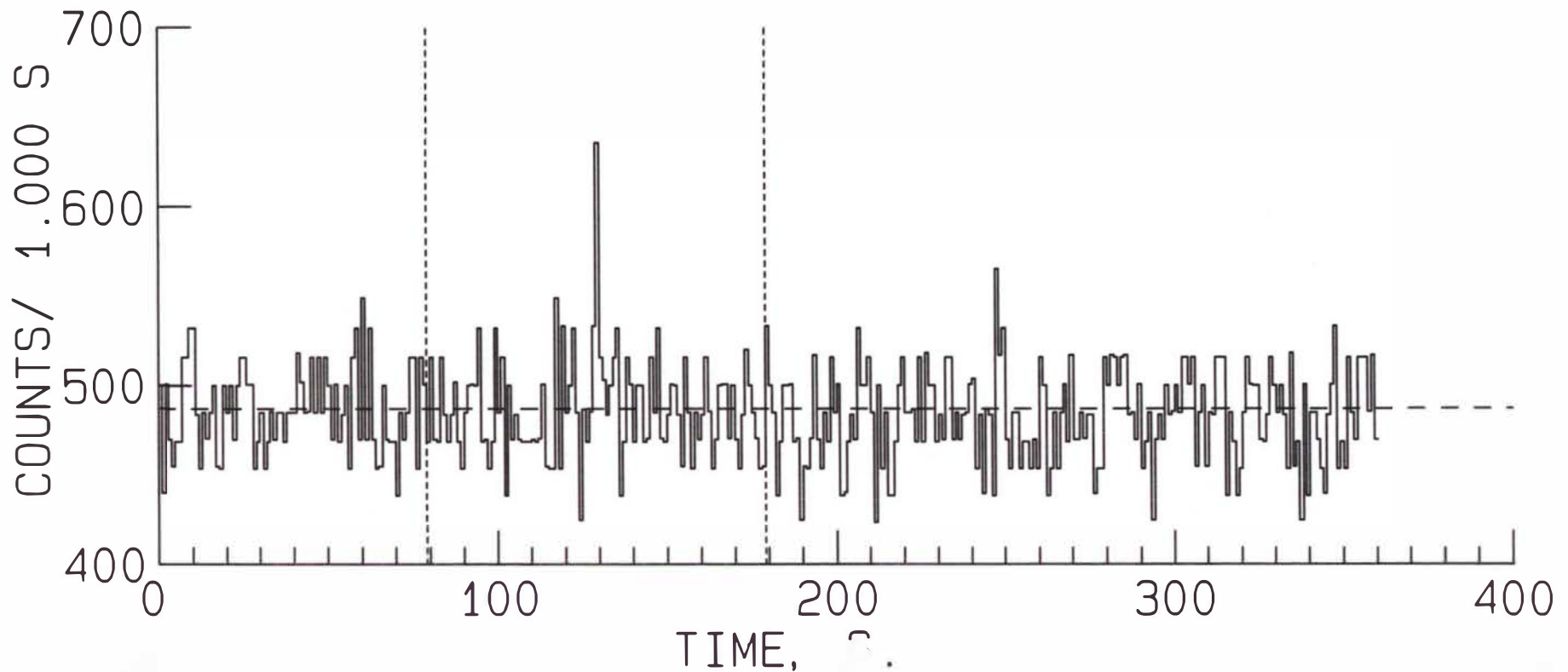
28 / 11 / 97

30 / 5 / 92 80064.159 s

0.250 S INTERVALS REGROUPED BY 4

23- 156 keV

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS



BATSE

92/05/30

82795.114

25- 100 keV

COUNTS/ .064 S

1500
1000
500
0

0

4

8

12

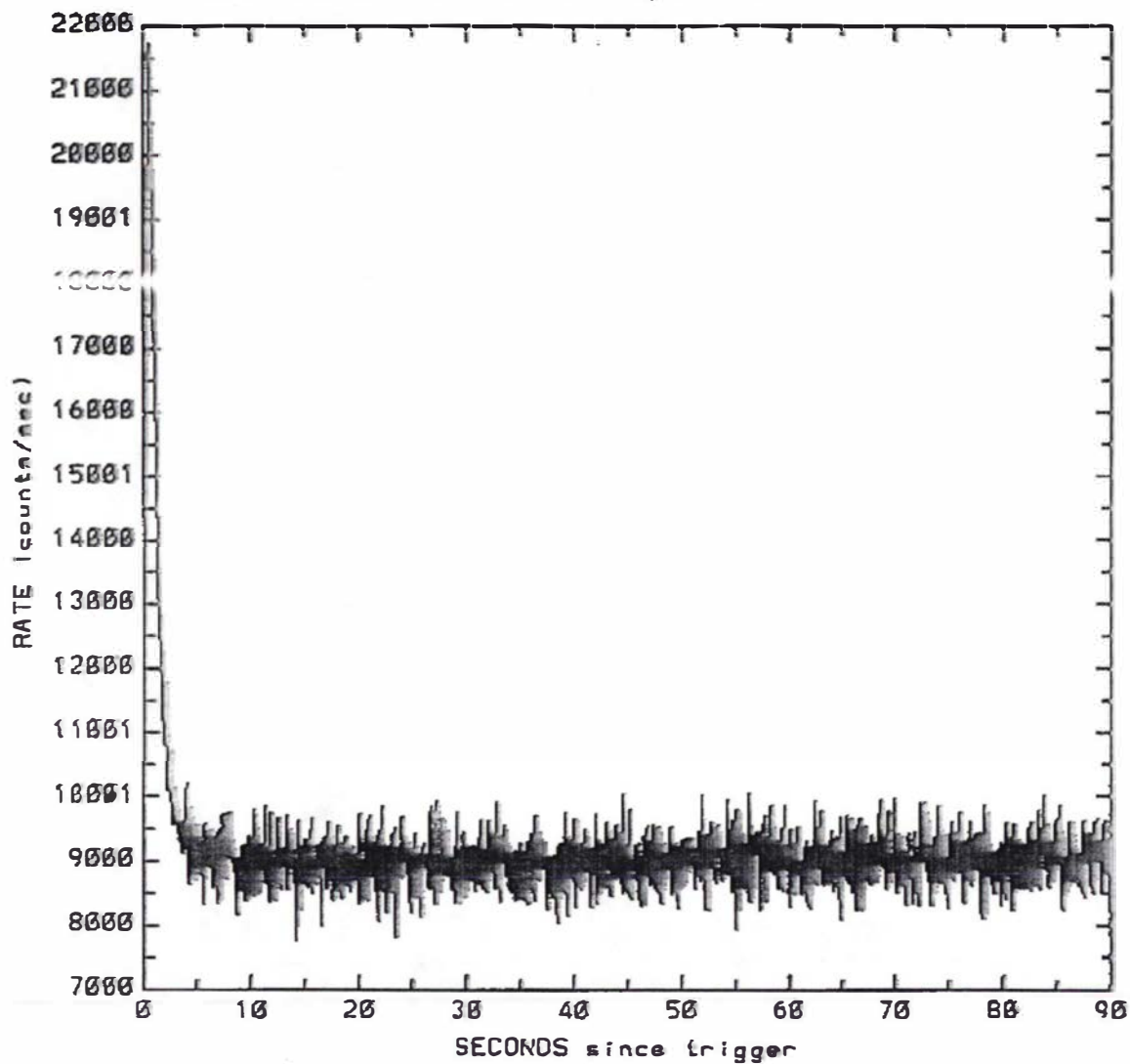
16

20

T AE, SECS

15/10/94

MER Data for K. Hurley, No. 1630

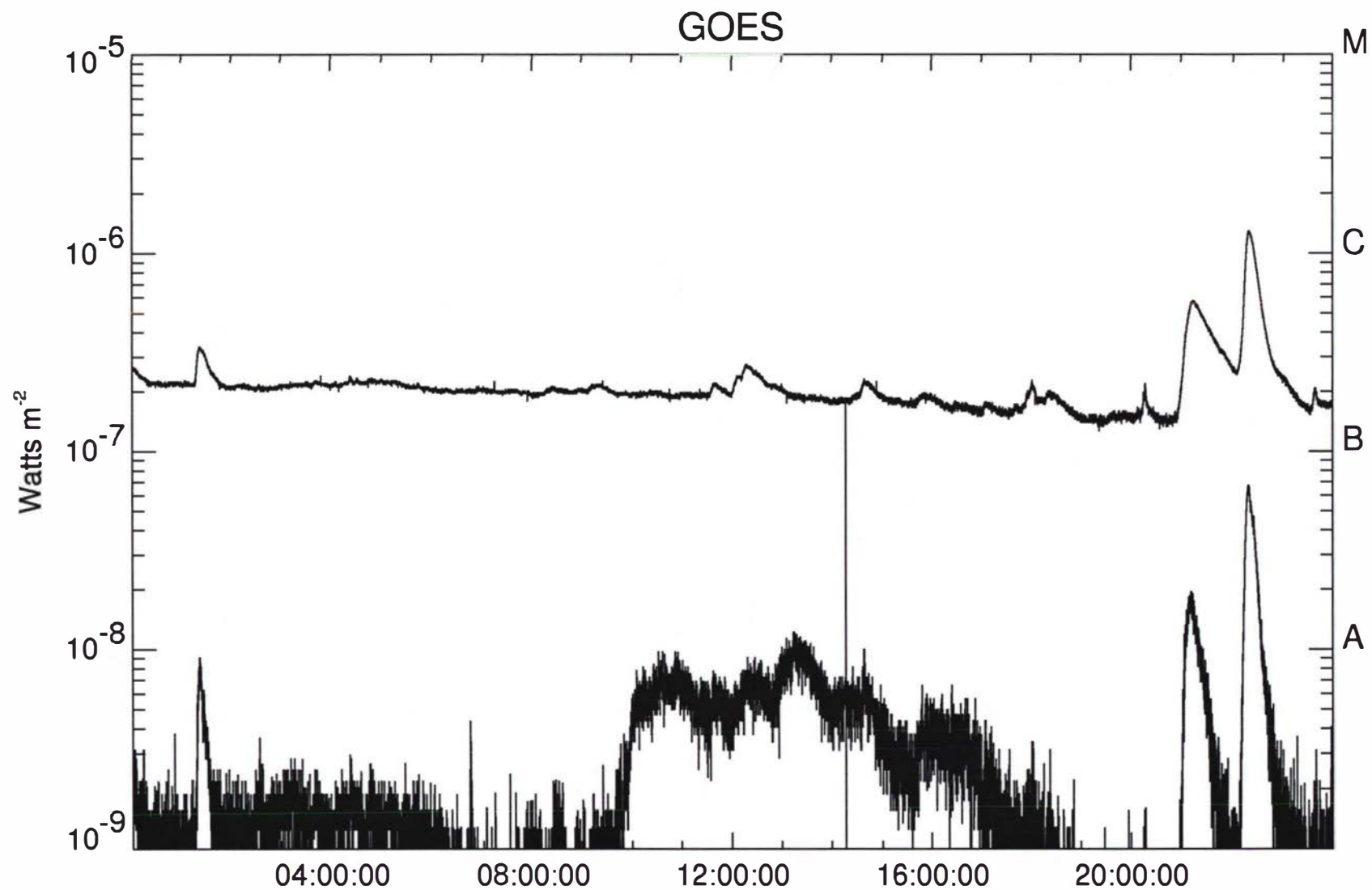


29-SEP-1994 13:57:29

Created by KOPS 80
(Burnt Display)
Version 2.22

Trigger # : 1630

Trigger Time:
8772 / 82705.114Burnt Data Type:
NEWDeadline
Corrected: KBackground Data
Type: CONTKinetic Integ. Time:
0.064 secondsDetectors [7..8]:
7---32--Channels:
1 E. 61Quality Mask:
BDISE1



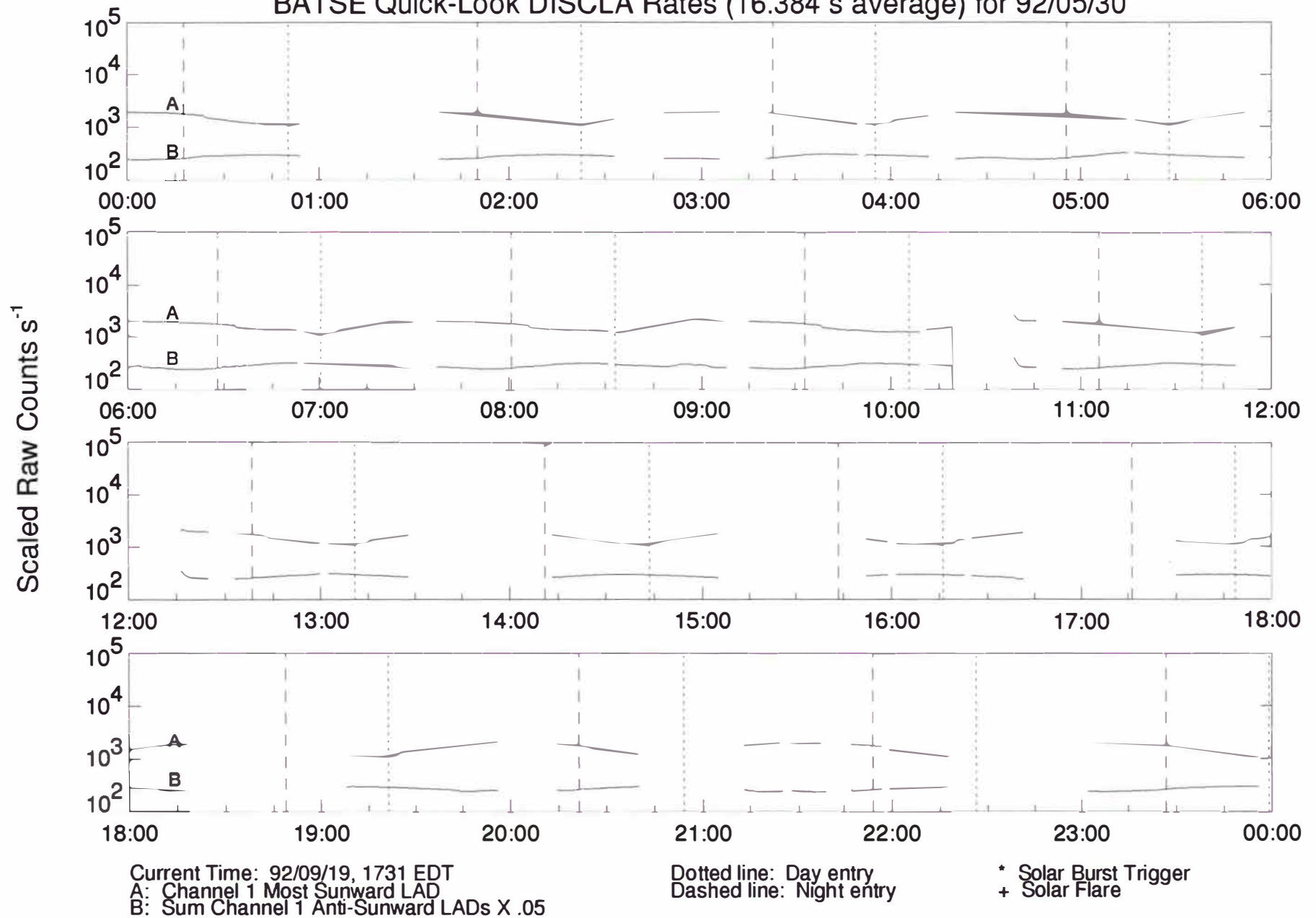
Data Start: 92/05/30, 0000:00

Plot created: 93/10/29, 0108

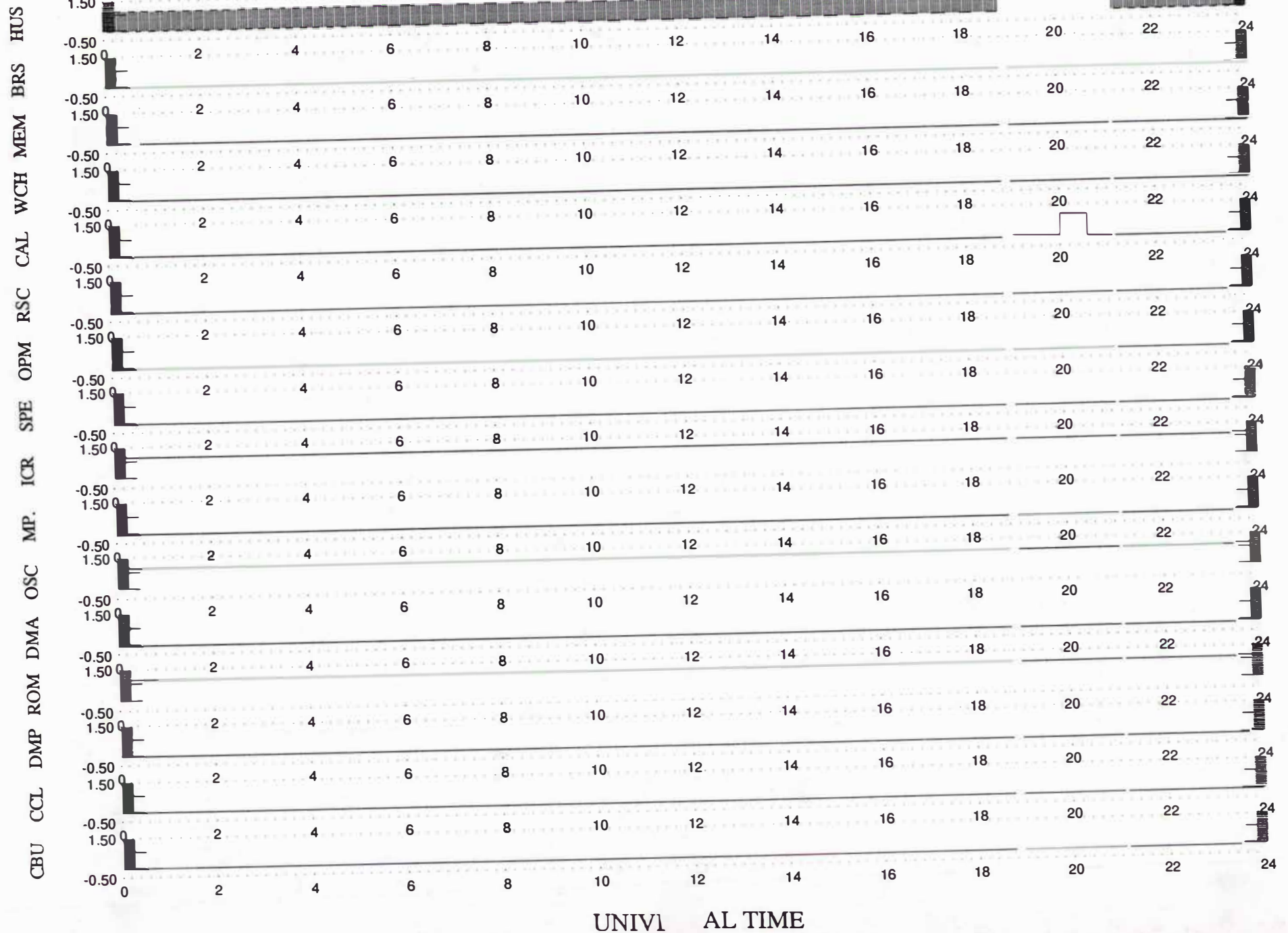
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

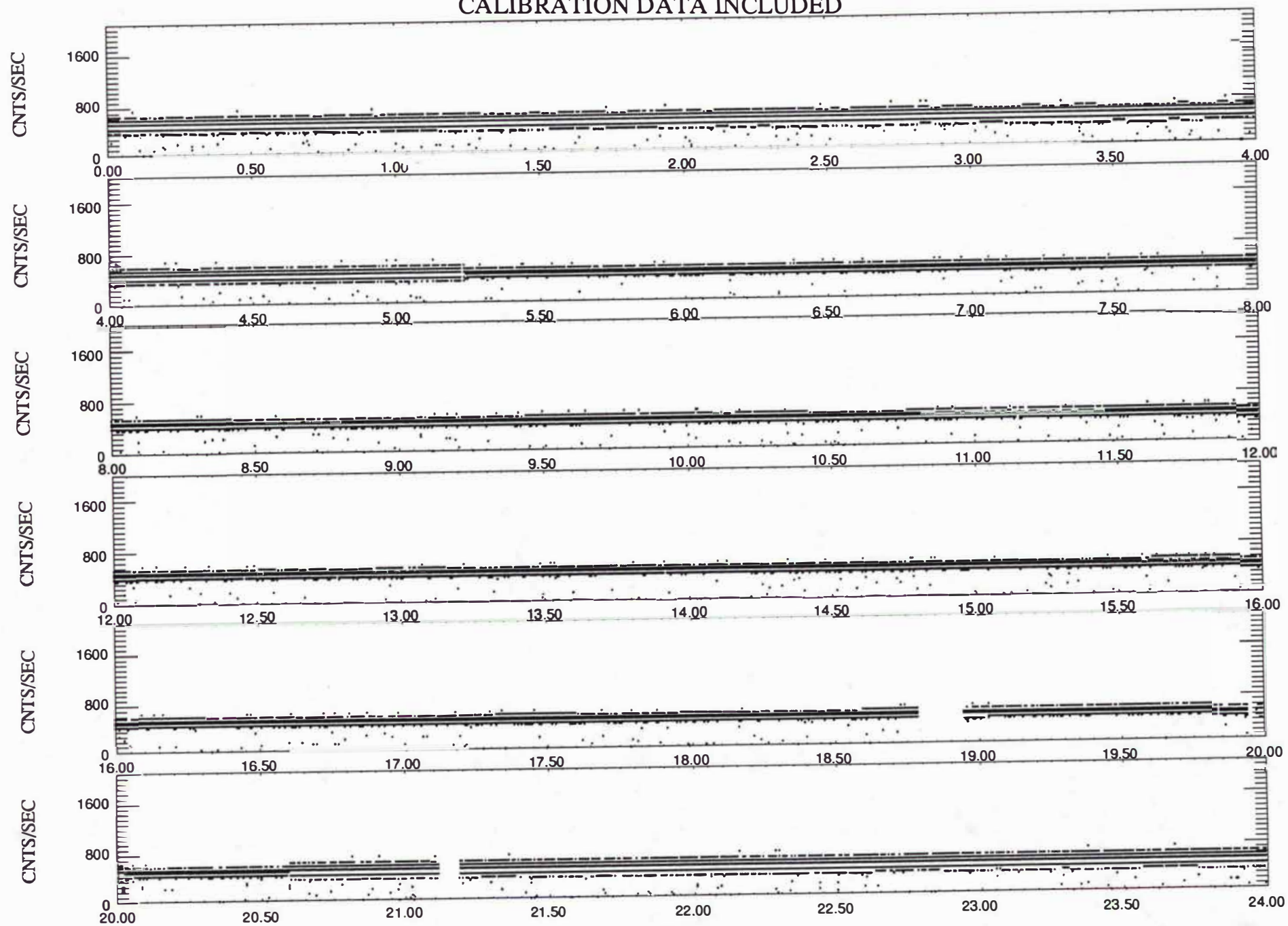
BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/30



NO BURST (0)



CALIBRATION DATA INCLUDED



UNIF AL TIME

CATSEARCH PROGRAM

BATSE BURST # 1631

EVENT OF 1992 MAY 31 DAY OF YEAR=152

EVENT CROSSING TIME AT BATSE : 58222. S. OR 16:10:21.8

COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)

BURST ARRIVAL DIRECTION: 92.100 -23.500

BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND

INTERPOLATED POSITION OF ULYSSES ON 31/ 5/ 92 IS:

RA= 148.334 DEC= 8.133 DIST= 5.473 AU

BATSE-ULYSSES DISTANCE = 818739122. KM.

ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.63 DEG.

LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1223.95 SECS.

CROSSING TIME AT ULYSSES IS 56998. S. OR 15:49:57.9 +/- 455.28 SECONDS

No

From BHAT@ssl.msfc.nasa.gov Tue Jun 2 14:45:17 1992

Date: Tue, 2 Jun 1992 16:47:32 -0500 (CDT)

From: BHAT@ssl.msfc.nasa.gov

Subject: Burst Trigger Message

To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu

X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS

Content-Length: 1296

BATSE BURST TRIGGER

NO.: 1631 May 31

TIME: TJD=8773 SECONDS=58223

TYPE: BURST

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=21.1 AZIMUTH=262.6 ERROR= DEGREES

COMMENTS:

THIS IS A SHORT BURST LASTING ABOUT 0.4 S AND SHOWS 3-4 NARROW PULSES IN THE
LIGHT CURVE. THERE IS SIGNIFICANT SIGNAL ABOVE 300 KEV

No trig

7 / 6 / 94

ULYSSES RT

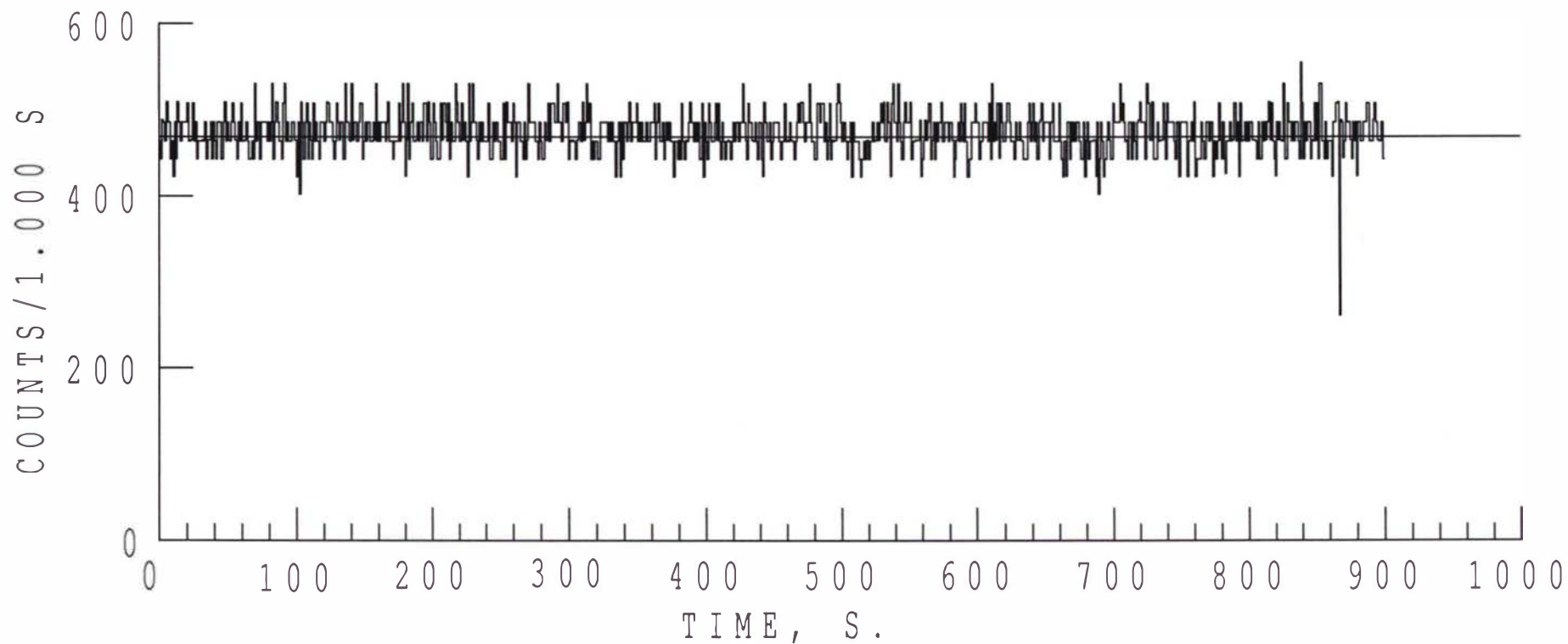
31 / 5 / 92 56556.172 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From BHAT@ssl.msfc.nasa.gov Tue Jun 2 14:51:47 1992
Date: Tue, 2 Jun 1992 16:54:14 -0500 (CDT)
From: BHAT@ssl.msfc.nasa.gov
Subject: Burst Trigger Message
To: igse@unhrcc.unh.edu, jryan@unhrcc.unh.edu, GROBAD@ESTEC.BITNET,
khurley@space6.ssl.berkeley.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Content-Length: 1377

NO.: 1632 *May 31* BATSE BURST TRIGGER

TIME: TJD=8773 SECONDS=86089

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 43.1 AZIMUTH=335.6 ERROR= DEGREES

COMMENTS:

THIS SOFT SOLAR FLARE IS CLASSIFIED AS C1.5 IN GOES CATALOG. IT LASTS FOR ABOUT 15 S AND HAS A SHARP RISE AND A SLOW DECAY PROFILE. SIGNAL IS HARDLY SEEN ABOVE 100 KEV.

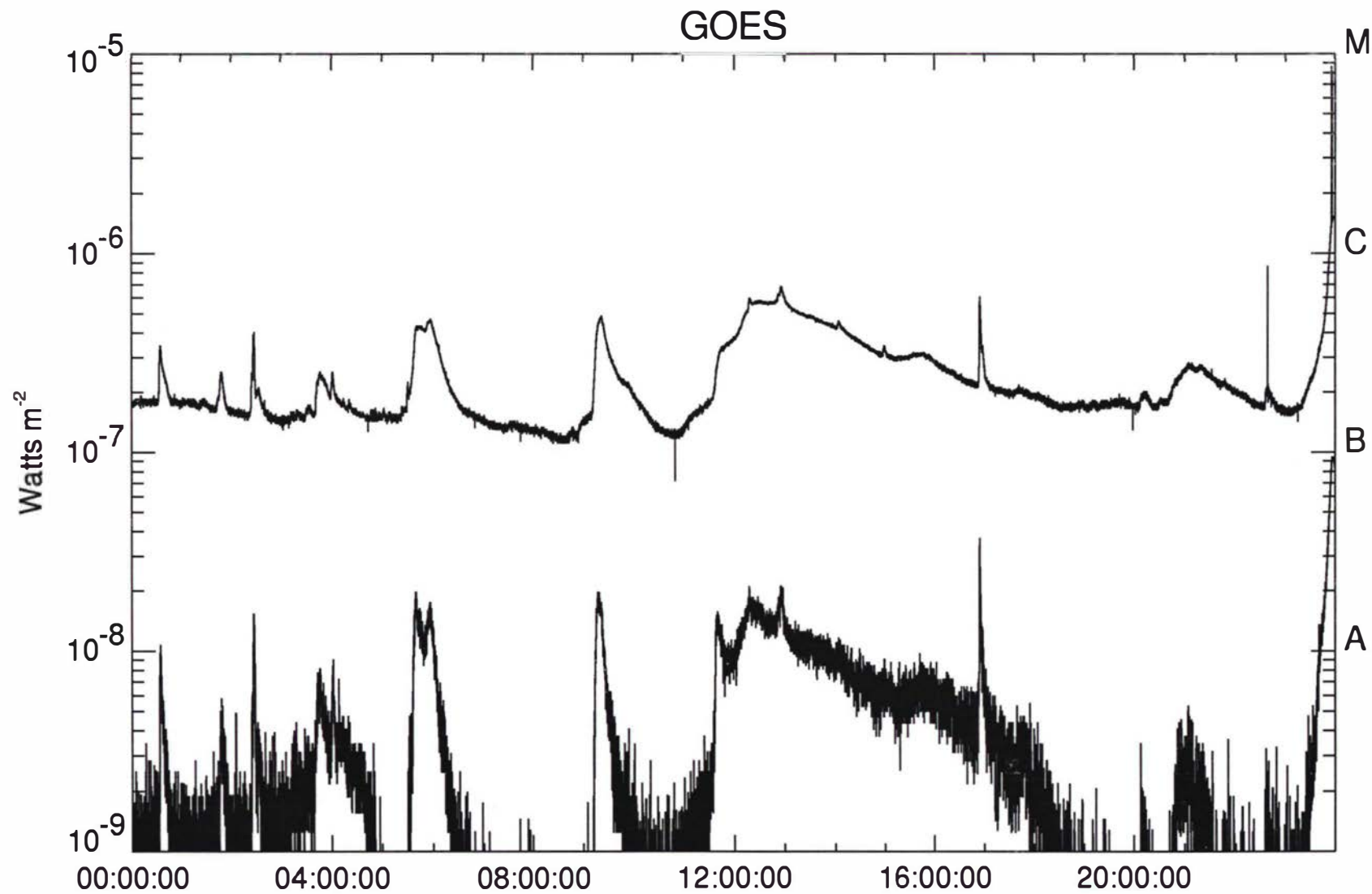
Noting

1885

11

1885

1885



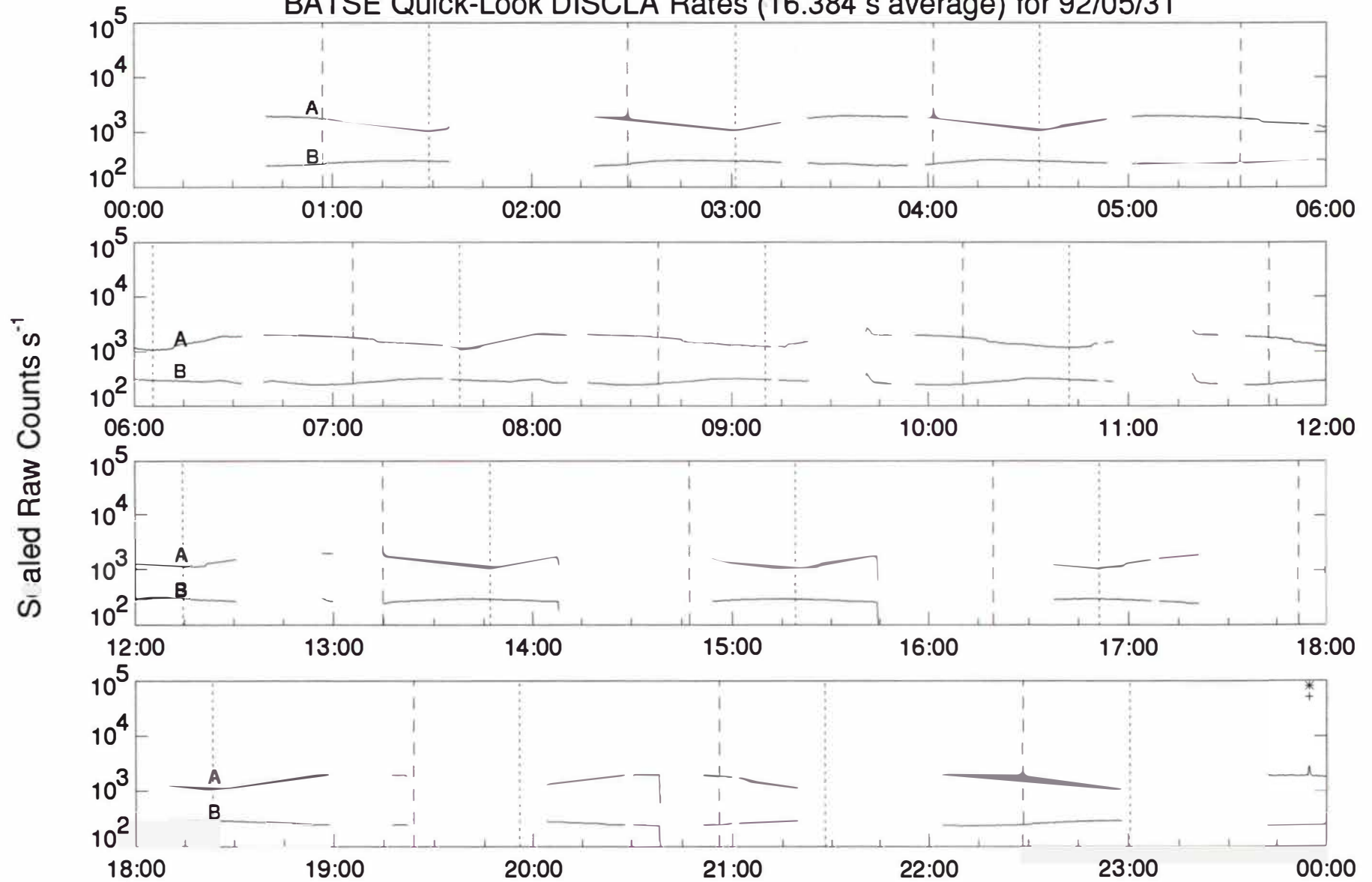
Data Start: 92/05/30, 2359:58

Plot created: 93/10/29, 0108

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/05/31



Current Time: 92/09/19, 1732 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

100-443887-1000

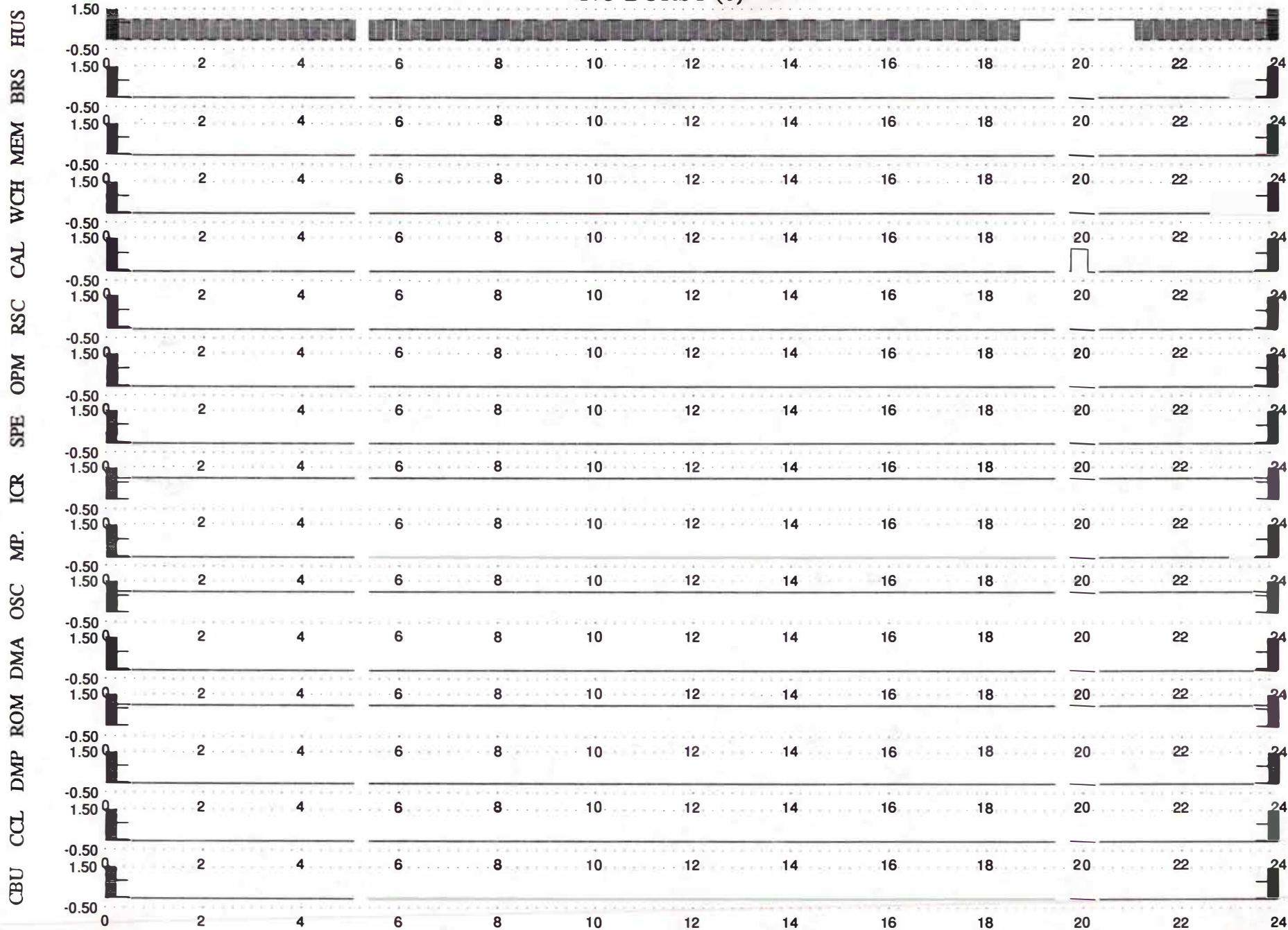
|--|

NO BUST

HUTZ MODELS EDDX 99A 125 Year 1990 K 98A 125 Year 1990

6/13/65

UNIVERSAL TIME

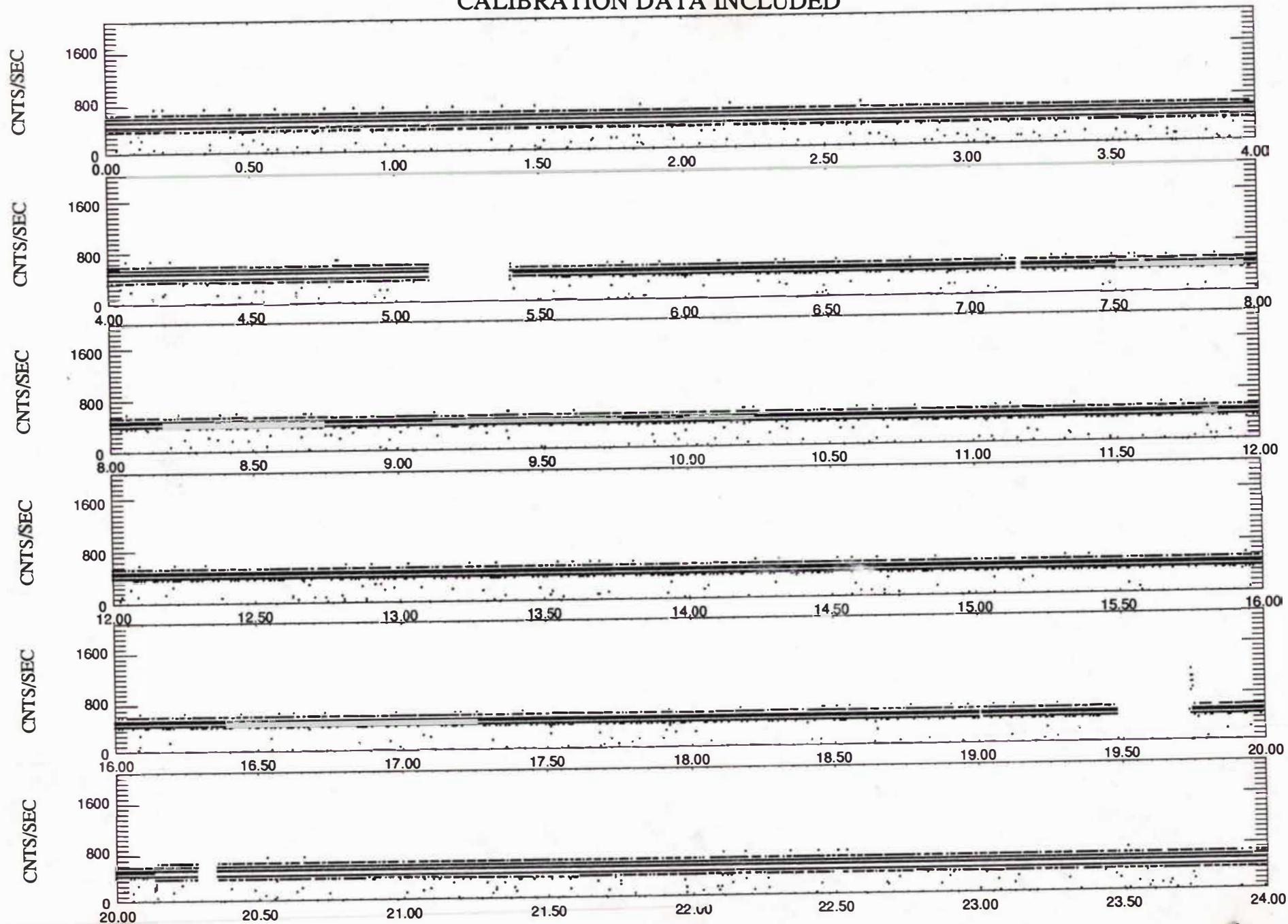


50	51	52	53	54	55	56
12.00	12.20	12.40	12.60	12.80	13.00	13.20
13.00	13.20	13.40	13.60	13.80	14.00	14.20
14.00	14.20	14.40	14.60	14.80	15.00	15.20
15.00	15.20	15.40	15.60	15.80	16.00	16.20
16.00	16.20	16.40	16.60	16.80	17.00	17.20
17.00	17.20	17.40	17.60	17.80	18.00	18.20
18.00	18.20	18.40	18.60	18.80	19.00	19.20
19.00	19.20	19.40	19.60	19.80	20.00	20.20
20.00	20.20	20.40	20.60	20.80	21.00	21.20
21.00	21.20	21.40	21.60	21.80	22.00	22.20
22.00	22.20	22.40	22.60	22.80	23.00	23.20
23.00	23.20	23.40	23.60	23.80	24.00	24.20
24.00	24.20	24.40	24.60	24.80	25.00	25.20
25.00	25.20	25.40	25.60	25.80	26.00	26.20
26.00	26.20	26.40	26.60	26.80	27.00	27.20
27.00	27.20	27.40	27.60	27.80	28.00	28.20
28.00	28.20	28.40	28.60	28.80	29.00	29.20
29.00	29.20	29.40	29.60	29.80	30.00	30.20
30.00	30.20	30.40	30.60	30.80	31.00	31.20
31.00	31.20	31.40	31.60	31.80	32.00	32.20
32.00	32.20	32.40	32.60	32.80	33.00	33.20
33.00	33.20	33.40	33.60	33.80	34.00	34.20
34.00	34.20	34.40	34.60	34.80	35.00	35.20
35.00	35.20	35.40	35.60	35.80	36.00	36.20
36.00	36.20	36.40	36.60	36.80	37.00	37.20
37.00	37.20	37.40	37.60	37.80	38.00	38.20
38.00	38.20	38.40	38.60	38.80	39.00	39.20
39.00	39.20	39.40	39.60	39.80	40.00	40.20
40.00	40.20	40.40	40.60	40.80	41.00	41.20
41.00	41.20	41.40	41.60	41.80	42.00	42.20
42.00	42.20	42.40	42.60	42.80	43.00	43.20
43.00	43.20	43.40	43.60	43.80	44.00	44.20
44.00	44.20	44.40	44.60	44.80	45.00	45.20
45.00	45.20	45.40	45.60	45.80	46.00	46.20
46.00	46.20	46.40	46.60	46.80	47.00	47.20
47.00	47.20	47.40	47.60	47.80	48.00	48.20
48.00	48.20	48.40	48.60	48.80	49.00	49.20
49.00	49.20	49.40	49.60	49.80	50.00	50.20
50.00	50.20	50.40	50.60	50.80	51.00	51.20
51.00	51.20	51.40	51.60	51.80	52.00	52.20
52.00	52.20	52.40	52.60	52.80	53.00	53.20
53.00	53.20	53.40	53.60	53.80	54.00	54.20
54.00	54.20	54.40	54.60	54.80	55.00	55.20
55.00	55.20	55.40	55.60	55.80	56.00	56.20
56.00	56.20	56.40	56.60	56.80	57.00	57.20
57.00	57.20	57.40	57.60	57.80	58.00	58.20
58.00	58.20	58.40	58.60	58.80	59.00	59.20
59.00	59.20	59.40	59.60	59.80	60.00	

CALIBRATION DATA INCLUDED

HQ25V MODEL 1 NOT VALUED BID: \$111,750.00 TO \$74,125.00 APR 1983 01/23/83

CALIBRATION DATA INCLUDED



UNIVI AL TIME