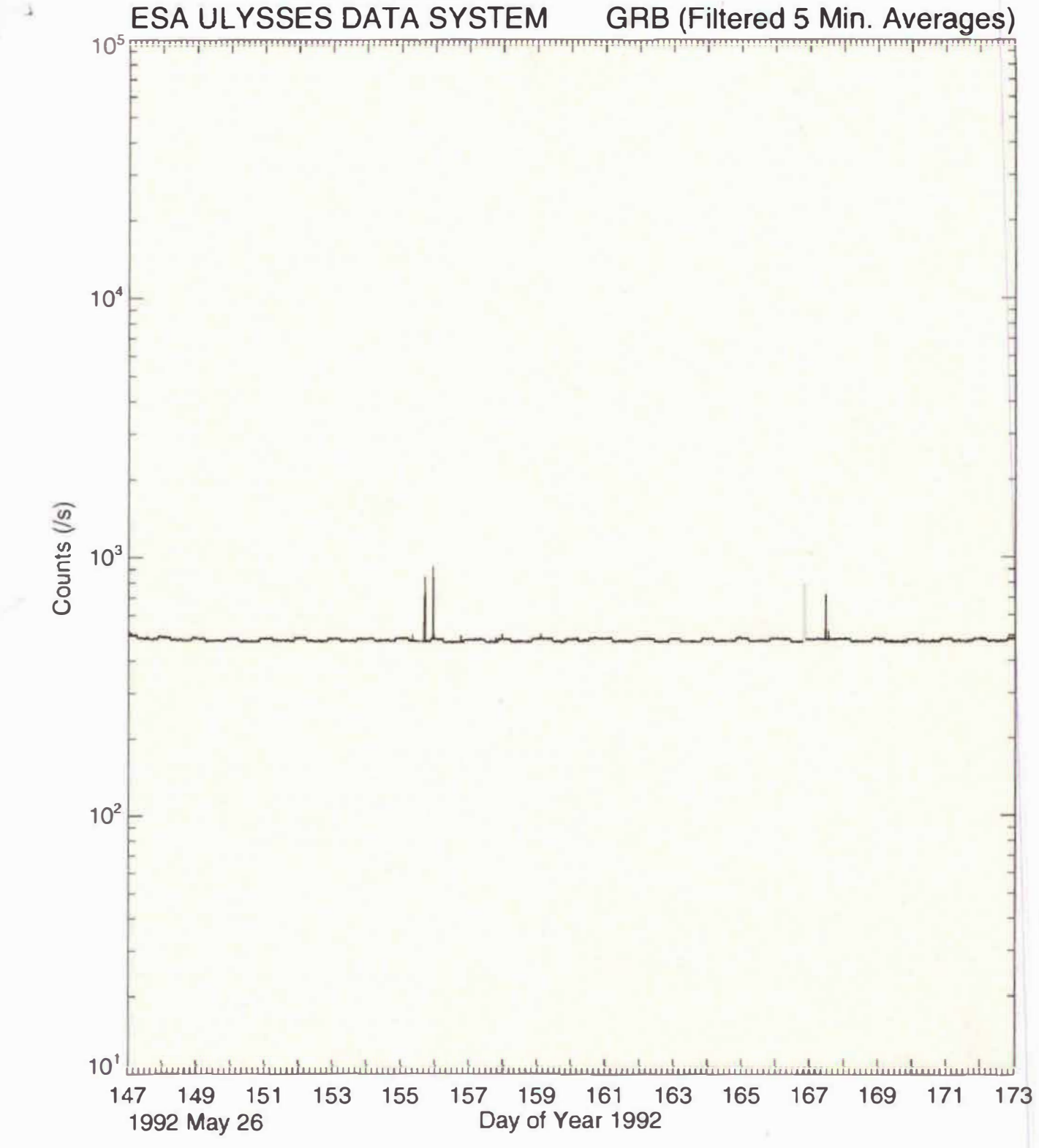
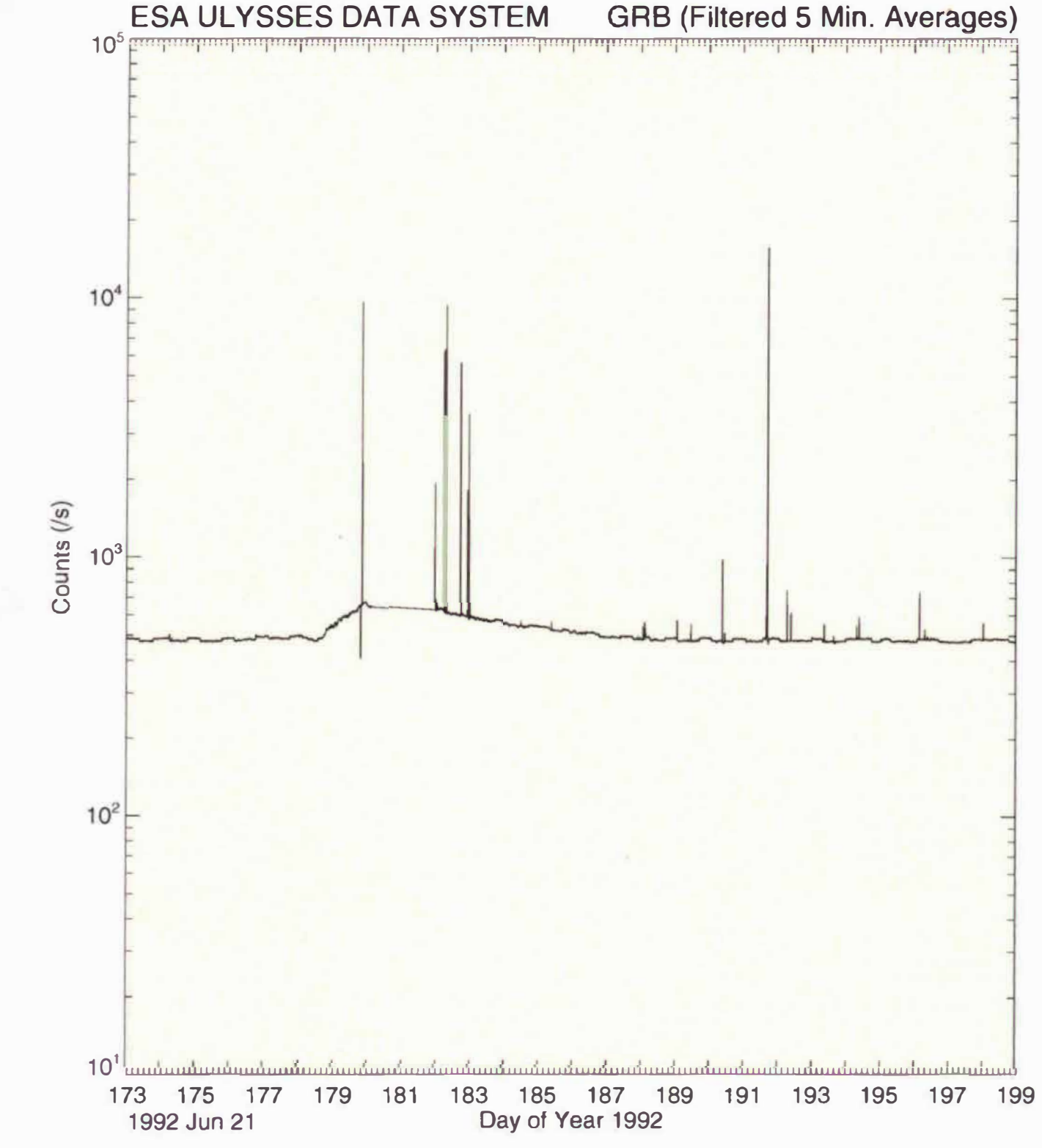


(AU) 5.37 5.37 5.36 5.36 5.36 5.36 5.36 5.36 5.35 5.35 5.35 5.35 5.35 5.35

Latitude (°) -11.34 -11.44 -11.54 -11.64 -11.74 -11.84 -11.94 -12.04 -12.14 -12.24 -12.34 -12.44 -12.54 -12.64

Generated from IDL by Ulysses Data System on Thu Oct 16 13:31:12 1997



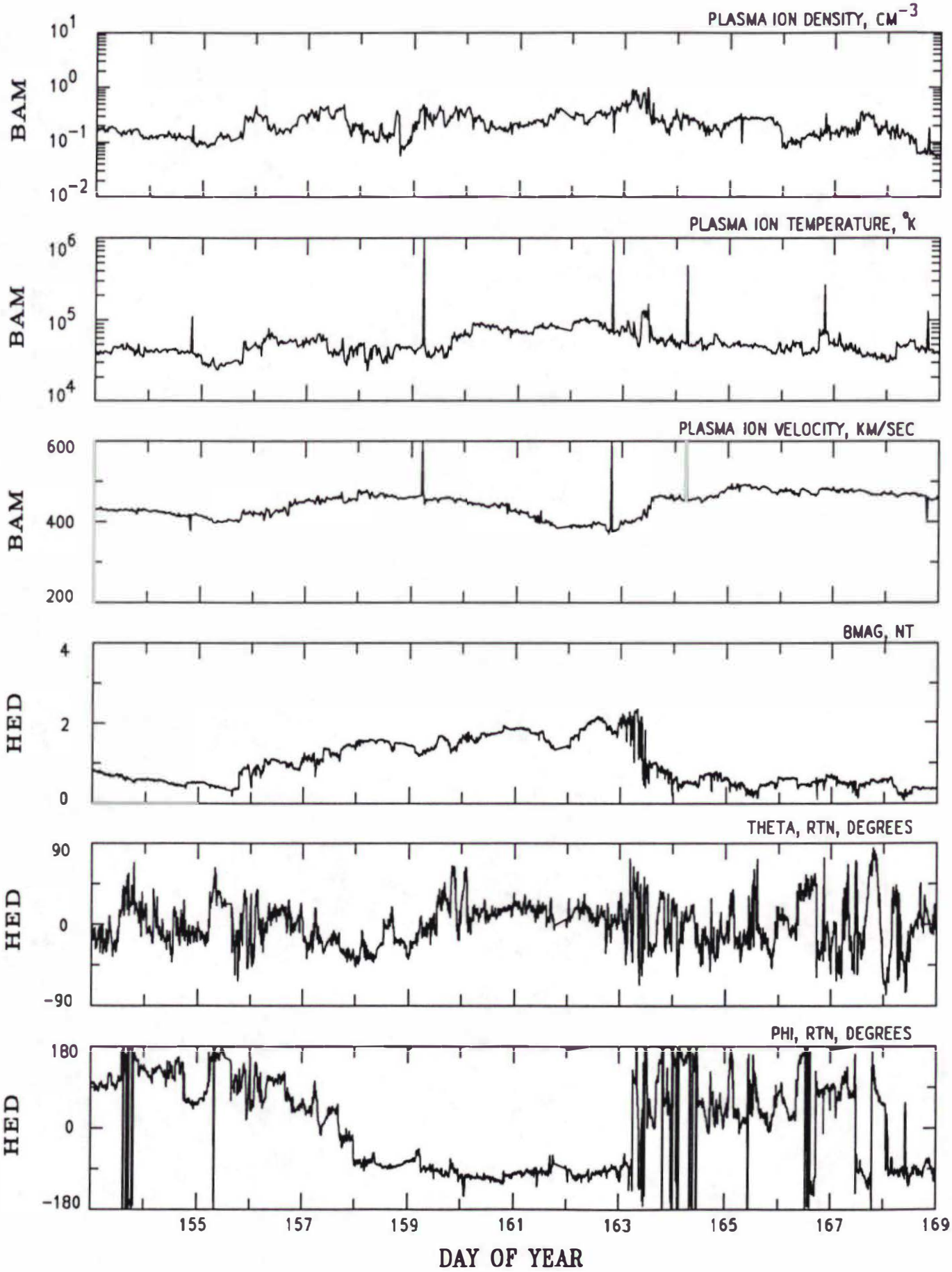
(AU) 5.35 5.35 5.34 5.34 5.34 5.34 5.34 5.33 5.33 5.33 5.33 5.33 5.33 5.32

Latitude (°) -12.64 -12.74 -12.84 -12.94 -13.04 -13.14 -13.24 -13.34 -13.44 -13.54 -13.64 -13.74 -13.84 -13.94

Generated from IDL by Ulysses Data System on Thu Oct 16 13:33 14 1997

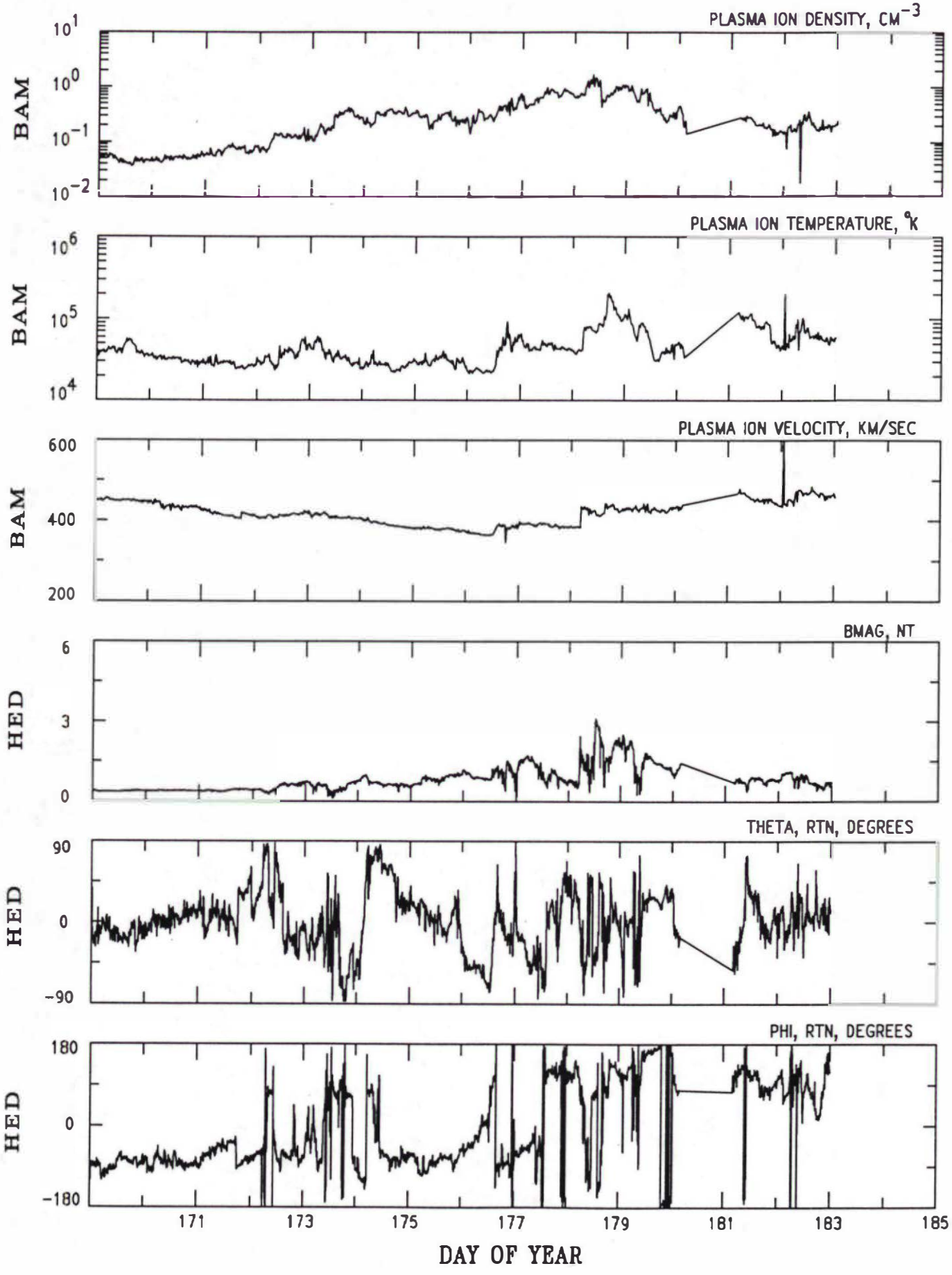
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

92 153 JUN 1 00:00:00.000 – 92 169 JUN 17 00:00:00.000



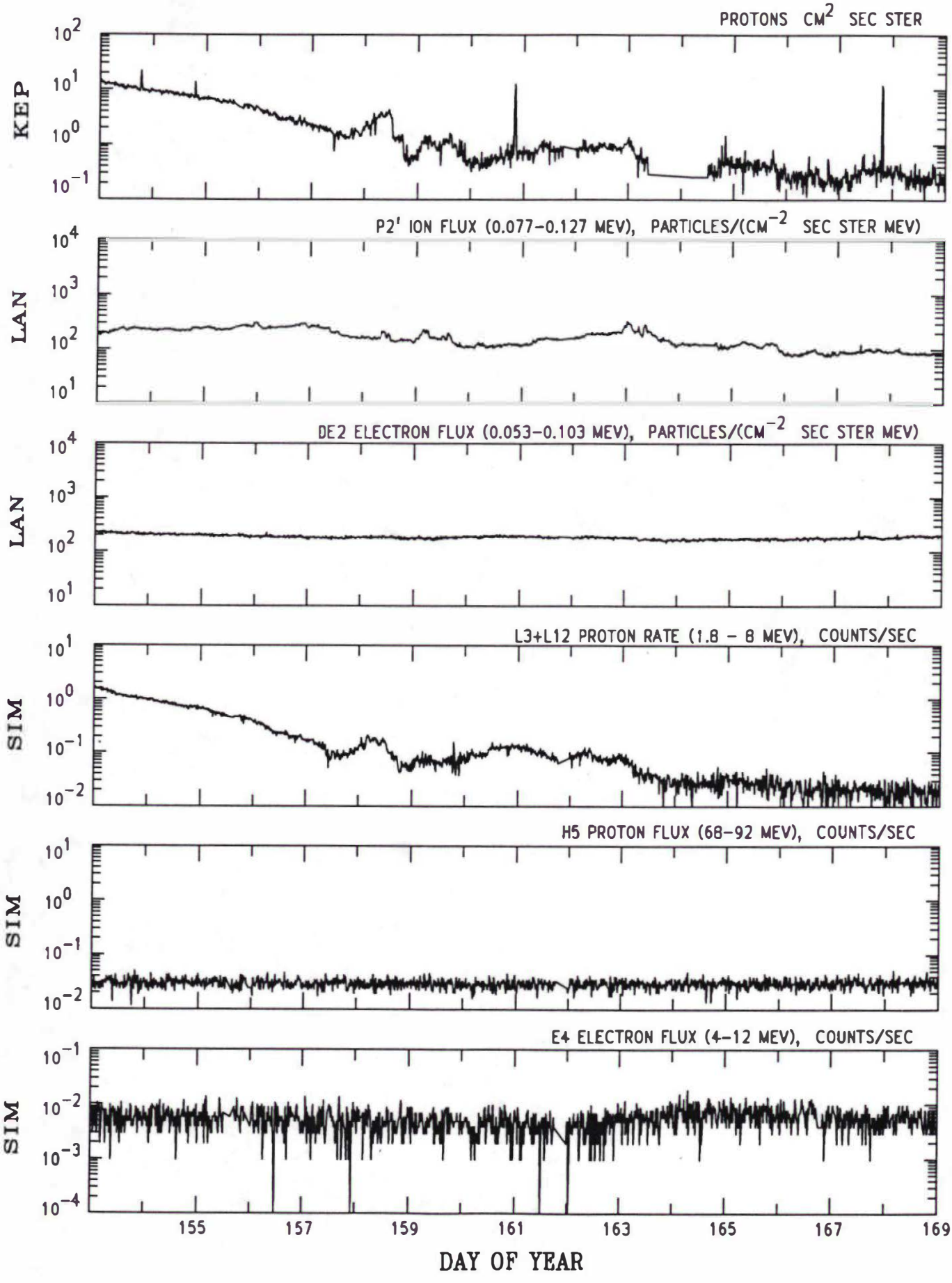
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

92 169 JUN 17 00:00:00.000 – 92 185 JUL 3 00:00:00.000



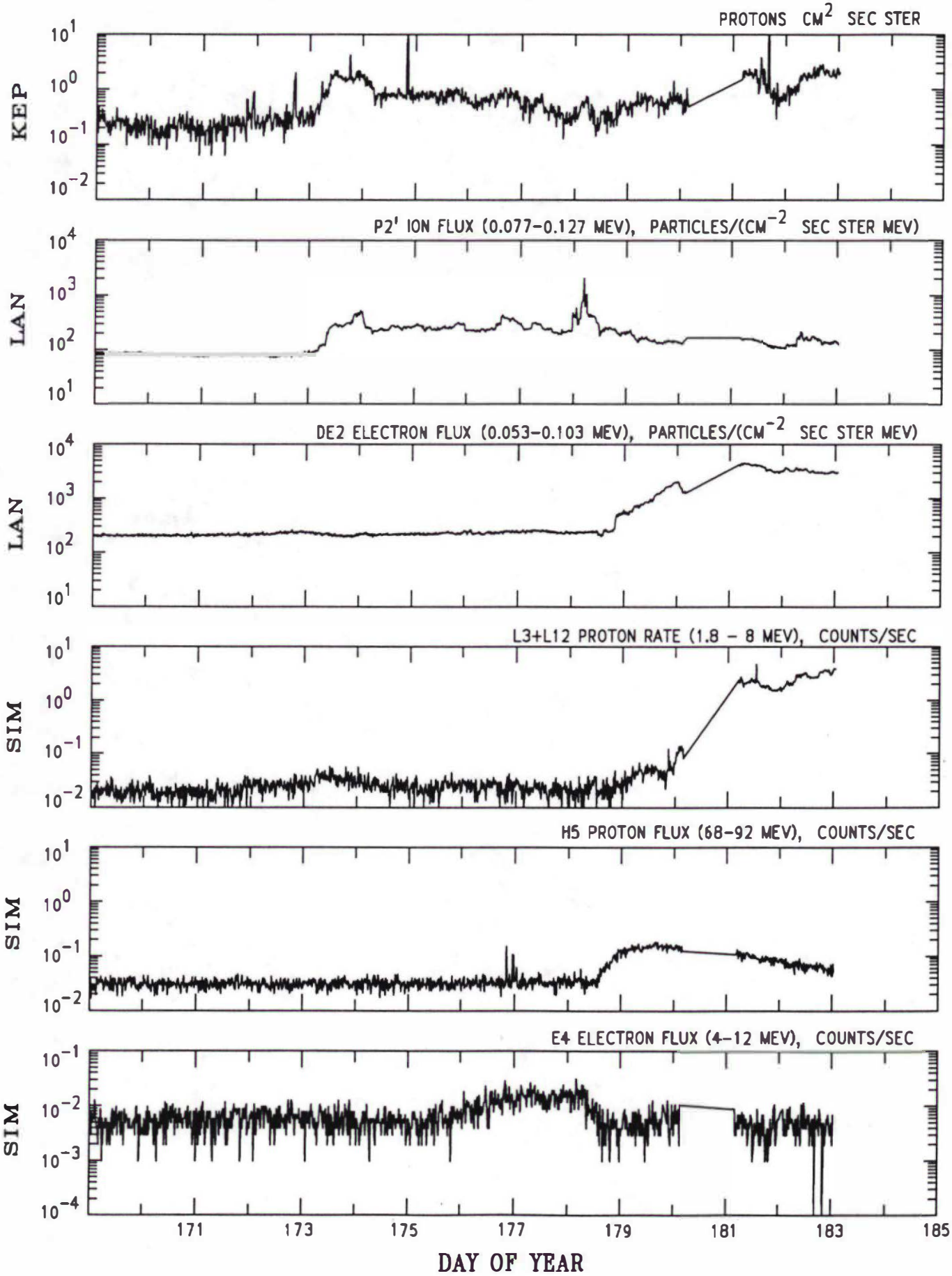
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

92 153 JUN 1 00:00:00.000 – 92 169 JUN 17 00:00:00.000



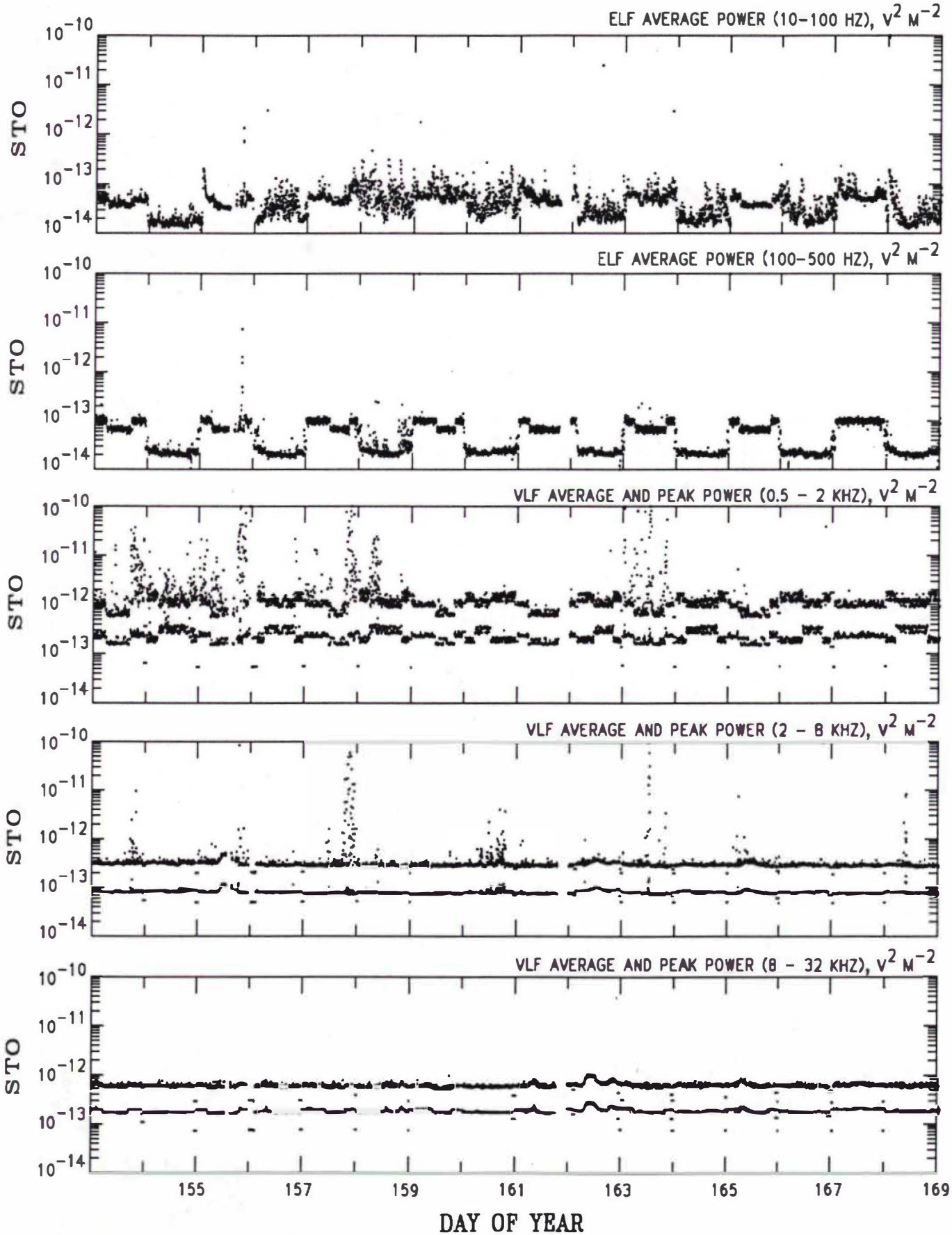
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

92 169 JUN 17 00:00:00.000 - 92 185 JUL 3 00:00:00.000



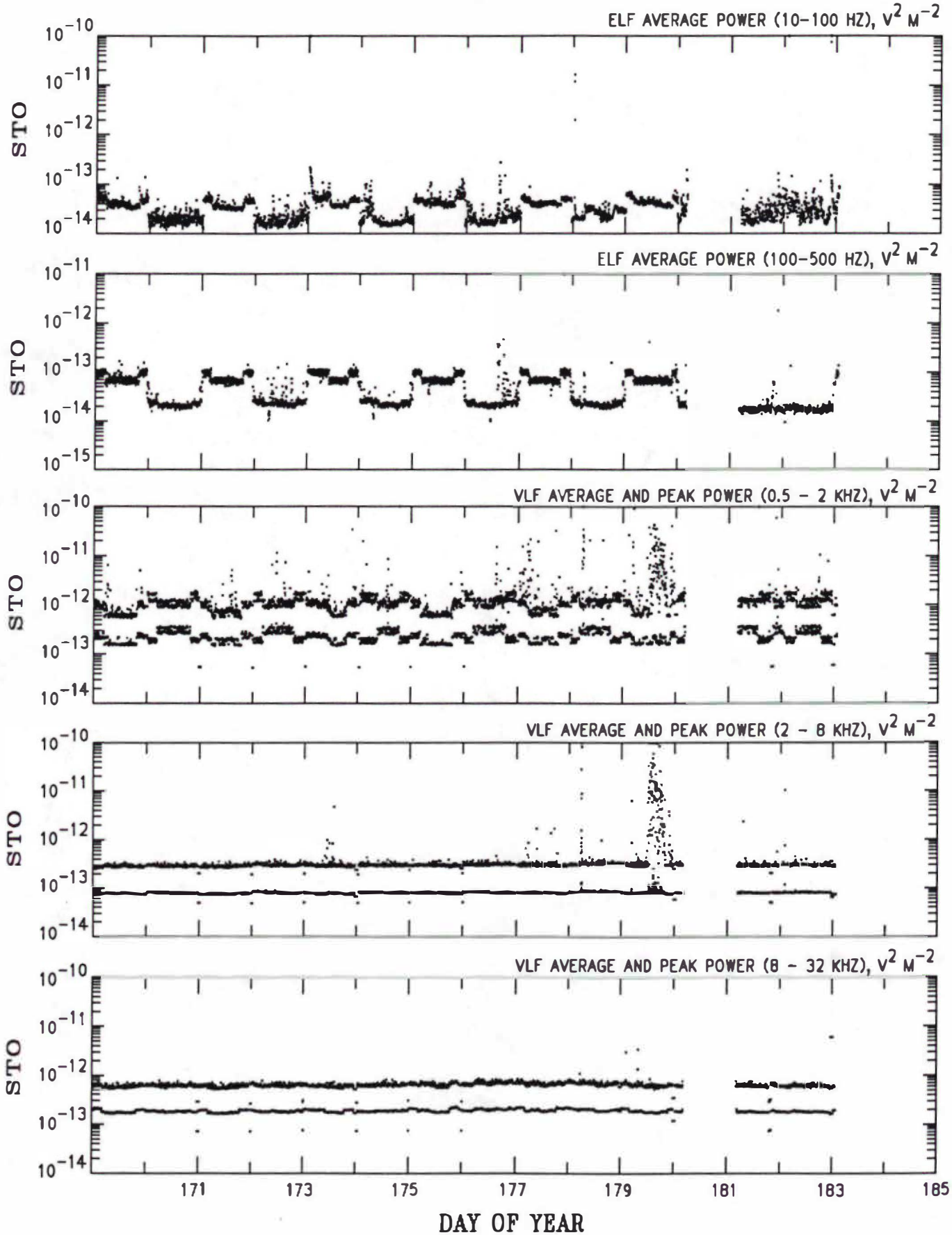
ULYSSES CDR - PLASMA WAVE

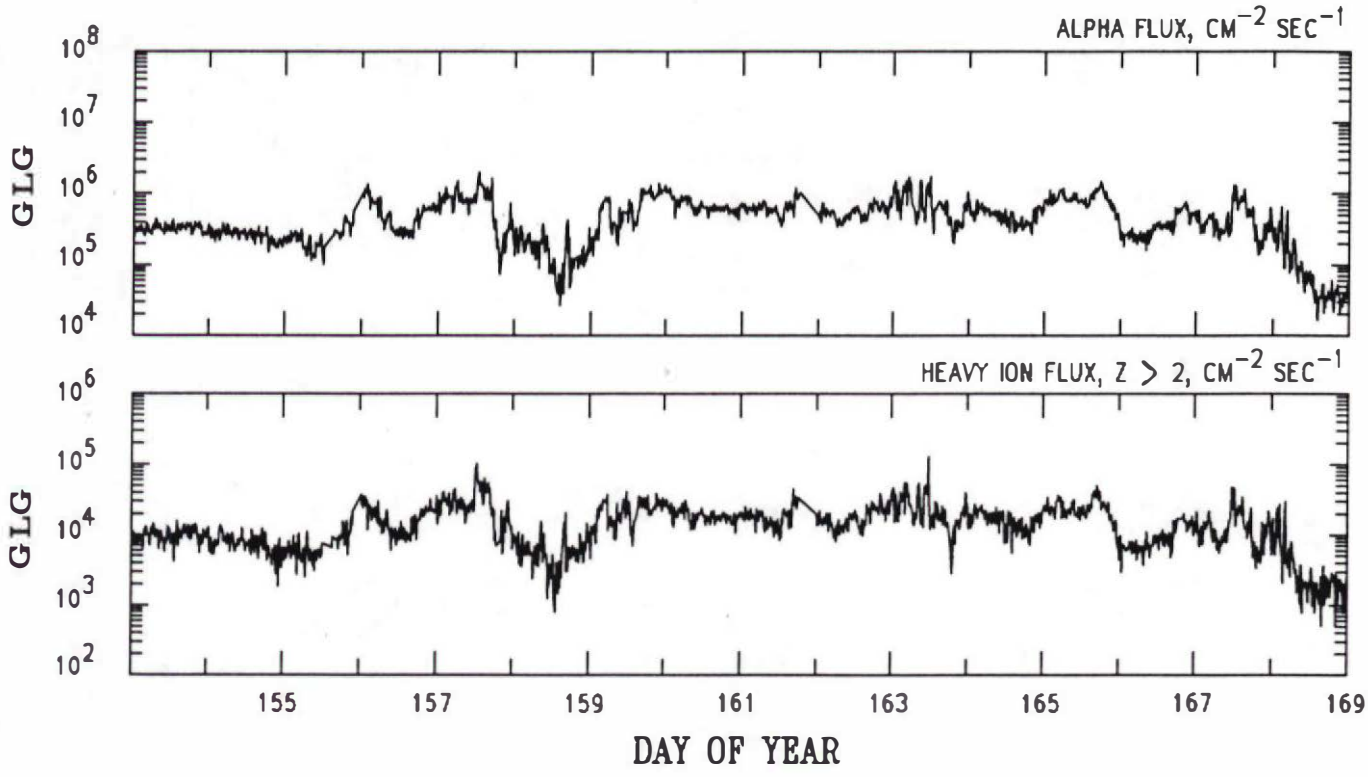
92 153 JUN 1 00:00:00.000 - 92 169 JUN 17 00:00:00.000

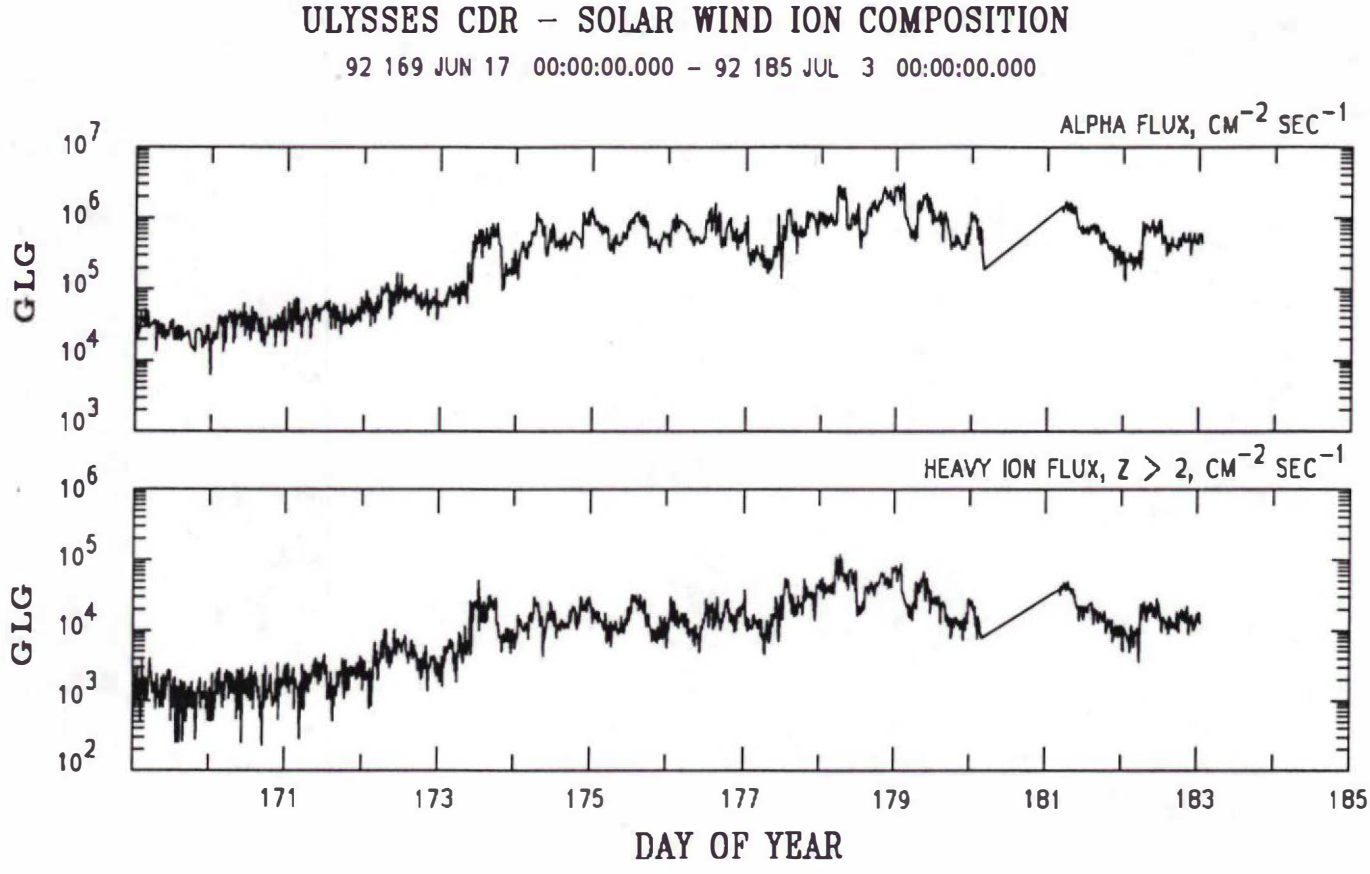


ULYSSES CDR - PLASMA WAVE

92 169 JUN 17 00:00:00.000 - 92 185 JUL 3 00:00:00.000

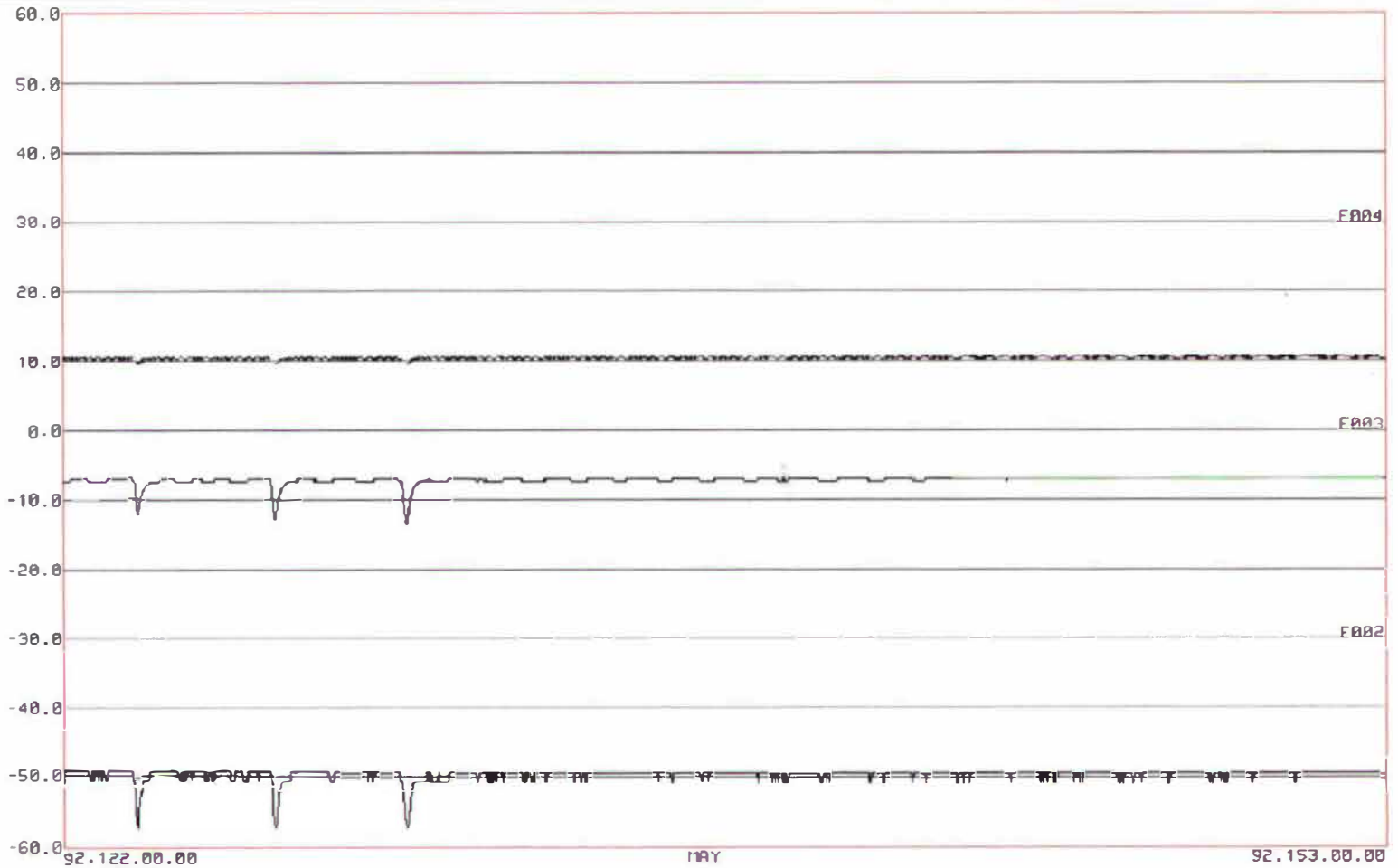



ULYSSES CDR – SOLAR WIND ION COMPOSITION
92 153 JUN 1 00:00:00.000 – 92 169 JUN 17 00:00:00.000
ALPHA FLUX, CM^{-2} SEC^{-1}
GLG
10^8
10^7
10^6
10^5
10^4
HEAVY ION FLUX, Z > 2, CM^{-2} SEC^{-1}
GLG
10^6
10^5
10^4
10^3
10^2
155
157
159
161
163
165
167
169
DAY OF YEAR


ULYSSES CDR – SOLAR WIND ION COMPOSITION
92 169 JUN 17 00:00:00.000 – 92 185 JUL 3 00:00:00.000
ALPHA FLUX, CM^{-2} SEC^{-1}
GLG
10^7
10^6
10^5
10^4
10^3
HEAVY ION FLUX, Z > 2, CM^{-2} SEC^{-1}
GLG
10^6
10^5
10^4
10^3
10^2
171
173
175
177
179
181
183
185
DAY OF YEAR

.92.153.00.11.08.421 HUS monthly long term thermal data 818 RET

E002 2ARADTMP S/C	-7.1	E003 2BSENTMP S/C	-49.3	E004 2ASENSTMP EX	10.18



From khurley@omni:.dna_node.jplgp.span Thu Nov 26 00:04:32 1992
Date: Wed, 25 Nov 92 23:54:28 -0800
From: khurley@omni:.dna_node.jplgp.span
To: "khurley@sunspot.ssl.berkeley.edu"%jpldig.span@JPLDIG.jpl.nasa.gov
Content-Length: 4026

1st Jun	Routine operations. Bad data for about 90 minutes during DSS 12 pass. Some playback data affected. Cause unknown. Investigation under way to see if data are recoverable.
2nd Jun	Earth pointing manoeuvre. DSS 61 pass shortened by 2 hours due to ESA satellite Olympus spacecraft emergency. Record and playback rescheduled over next 2 passes to maintain data continuity. All real-time 1024 bps data lost for both passes. The 2 hours relinquished were not used by Olympus so the operations team (ESA & JPL) wasted a lot of time on Friday night and you lost data. I am looking into why we seemed to be the last to find out that the time was no longer needed by Olympus.
3rd Jun	KEP EPAC IFC. GRU heater 1 on. DSS 12 antenna pointing problems. Antenna switched to "brake" i.e. stopped tracking 3 times during pass. About 2 hours of data (rt + pb) lost. No STO daily commanding performed because of antenna problem.
4th Jun	Routine operations.
5th Jun	Earth pointing manoeuvre.
6th Jun	Routine operations.
7th Jun	Earth pointing manoeuvre.
8th Jun	Routine operations.
9th Jun	Earth pointing manoeuvre. KEP GAS full sky scan.
10th Jun	KEP EPAC IFC.
11th Jun	HUS interference test.
12th Jun	Earth pointing manoeuvre. KEP GAS data off.
13th Jun	Routine operations.
14th Jun	Earth pointing manoeuvre. Disconnect non-essential loads occurred at 165:14:20:39 SET. Main switch open. All experiments off. On-board reconfiguration caused loss of tm modulation. Downlink carrier only. Tm re-established 165:16:27:35 SET. GRU 1 heater off. STO 6 heater off. About 3hours 30 mins playback data lost. 2101 MAIN SWITCH ON transmitted 165:19:01:36 2111 GLG HEAT ON transmitted 165:20:17:20 2115 GRU 1 HEAT ON transmitted 165:20:17:36 2147 STO HEAT ON transmitted 165:20:17:51

AOCS reconfigured to prime units.
STO converters 1 & 2 switched on.

15th Jun — HUS switched on and configured.

16th Jun — GLG low voltage and heaters switch-on.
SIM switched on and configured.
LAN switched on and configured.
KEP switched on and GAS data on.

17th Jun — Earth pointing manoeuvre.
BAM-E & BAM-I switched on and configured.
HED switched on.
GLG detectors on and DPPS on.

18th Jun — GRU switched on and configured.
GLG MCP level 1 and PAPS switched to 11.5 kV.
HED configured.
STO configured and FES RAM load performed.
KEP GAS data off and EPAC configured. EPAC RAM dump.

All experiments reconfigured with the exception of GLG.

19th Jun — Earth pointing manoeuvre.
GLG PAPS to 17.9 kV, then to 20 kV.

20th Jun — Routine ????? operations.
GLG 2W heater switching test.

21st Jun — Earth pointing manoeuvre.
GLG PAPS to 23 kV.

22nd Jun — Routine operations.

23rd Jun — Earth pointing manoeuvre.

24th Jun — Routine operations.

25th Jun — Earth pointing manoeuvre.

26th Jun — Routine operations.

27th Jun — Earth pointing manoeuvre.
SIM HET calibration.
STO XDC fixed andle = 90 deg.

28th Jun — STO FES/PFR daily commanding restarted.

At 14:44 UTC, a 6.0 earthquake occurred, epicentre about 15 miles north-east of JPL. There was no damage to the Ulysses ground segment but buildings were closed to non-essential staff as engineers checked for structural damage and hazards such as asbestos dust.

As a result, some tape recorder and bit rate change time-tag commands were not transmitted. This results in a no 1024 bps data for passes on Monday 1st July (doy 182) - i.e. all data at 512 bps. The will also be a data gap of 35 minutes from 182:15:40 to 16:15 UTC. The earth pointing manoeuvre scheduled for 30th June will now take place on 1 July.

No BAM-I 'H' mode commanding.

29th Jun — No commanding.

30th Jun — No commanding.

Earth pointing manoeuvre delayed.

From khurley@omni:.dna_node.jplgp.span Thu Nov 26 00:29:50 1992
Date: Thu, 26 Nov 92 00:19:48 -0800
From: khurley@omni:.dna_node.jplgp.span
To: "khurley@sunspot.ssl.berkeley.edu"%jpldig.span@JPLDIG.jpl.nasa.gov
Content-Length: 2741

1st June	KEP EPAC IFC
2nd June	Routine operations.
154:04.50-04.59 SCET	Unrecoverable due to Telemetry Processing Assembly (TPA) failure.
3rd June	Earth pointing manoeuvre. HED Calibration.
155:22.07-22.38 22.57-156:00.13 SCET	Unrecoverable due to DSS12 antenna azimuth encoder power supply failure (antenna off-pointing).
155:12.46-15.10 155:15.46-16.39 SCET	Loss of playback data because of antenna offpointing.
4th June	Routine operations.
5th June	Routine operations.
6th June	Routine operations.
7th June	Routine operations.
159:20.09-20.37 SCET	Unrecoverable due to Goldstone power failure. DSS12 went to "Brake" (antenna stopped tracking).
8th June	KEP EPAC IFC
9th June	Routine operations.
	DSS12 complete pass lost due to maser failure. DSS14 time gained from Pioneer and maintenance to minimise the impact and to monitor manoeuvre. Fortunately there was no playback during the period of lost data.
161:18.22-23.26 SCET	Unrecoverable data loss.
10th June	Earth pointing manoeuvre. KEP RAM Dump.
11th June	KEP GAS MONTHLY Health check.
12th June	Routine operations.
13th June	Routine operations.
14th June	Routine operations.
166:18.45-19.45	Intermitent data due to Goldstone DSS12 high winds.
15th June	KEP EPAC IFC
167:10.20-10.40	DSS 61 heavy rain. Unrecoverable data.
16th June	Earth pointing manoeuvre.
17th June	HED Calibration.

18th June — Routine operations.

19th June — Routine operations.

20th June — Routine operations.

21st June — Earth pointing manoeuvre.

22nd June — KEP EPAC IFC.

23rd June — Routine operations.

24th June — HET Calibration.

25th June — HET Reset.

26th June — Earth pointing manoeuvre.

27th June — Routine operations.

28th June — Due to Earthquake, Maser at DSS 12 was not funtional.

180:16.46 -181:04.16 SCET — Pass lost.

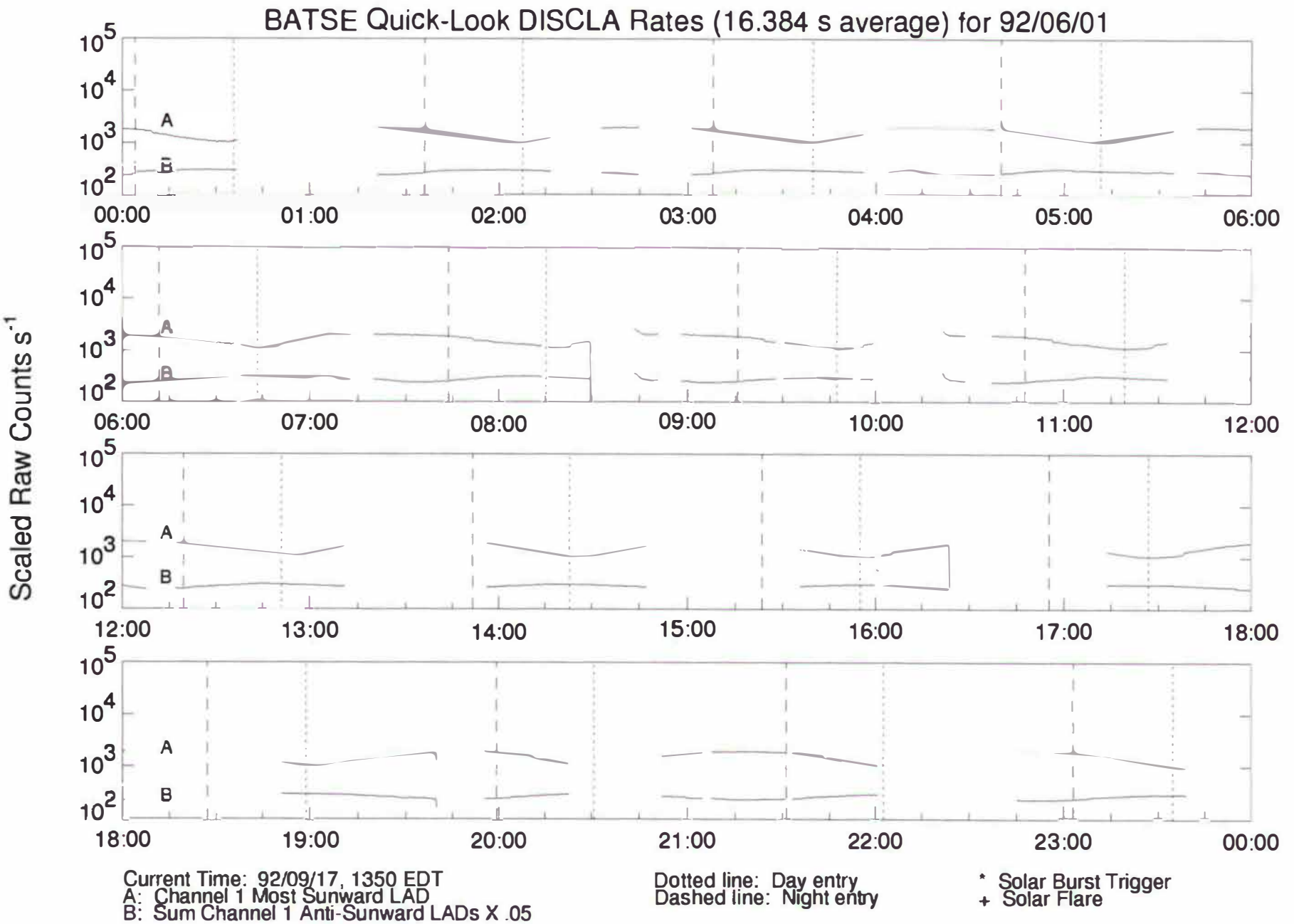
180:03.56 -181:16.46 SCET — Playback data lost.

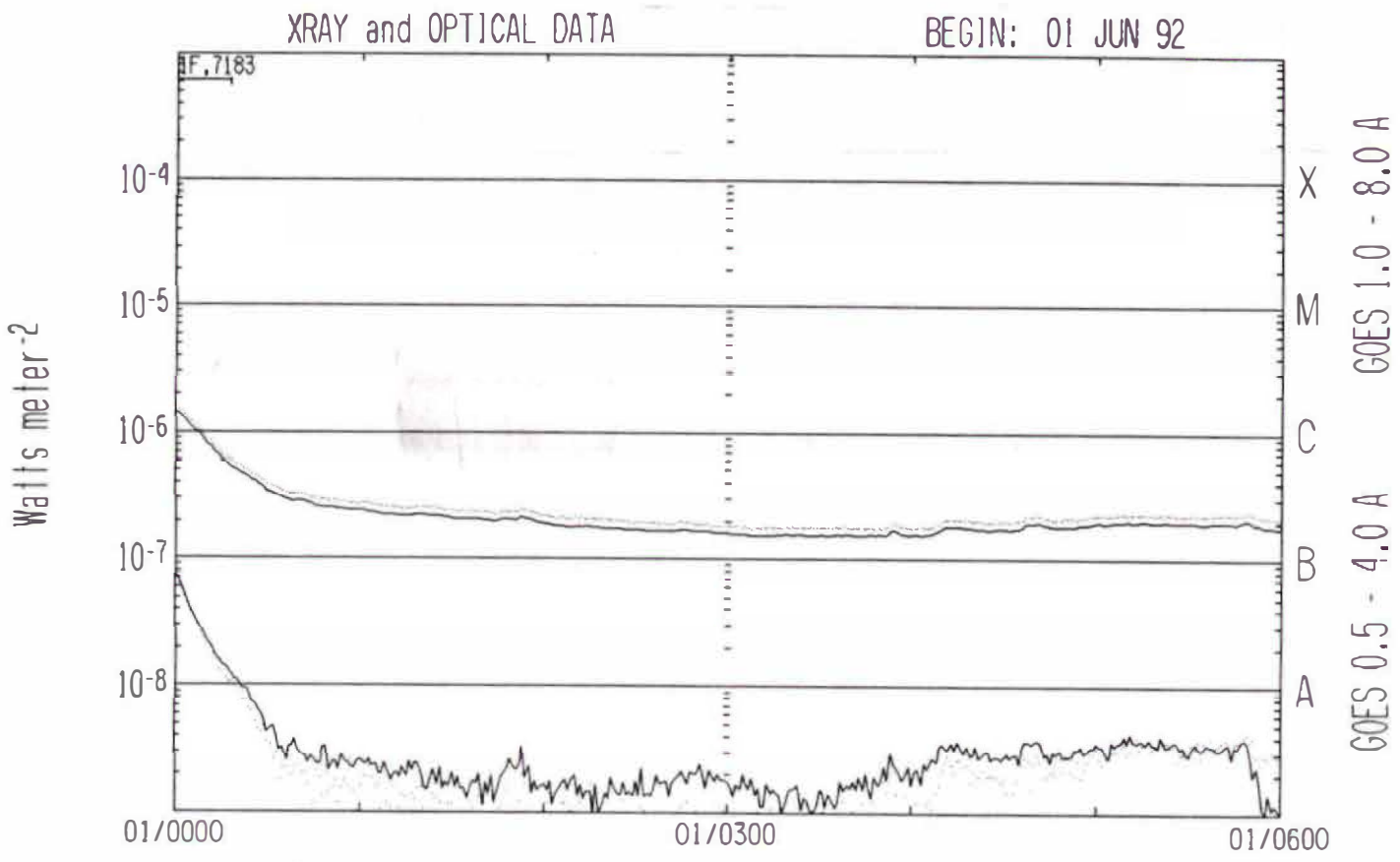
Stone commanding was lost.

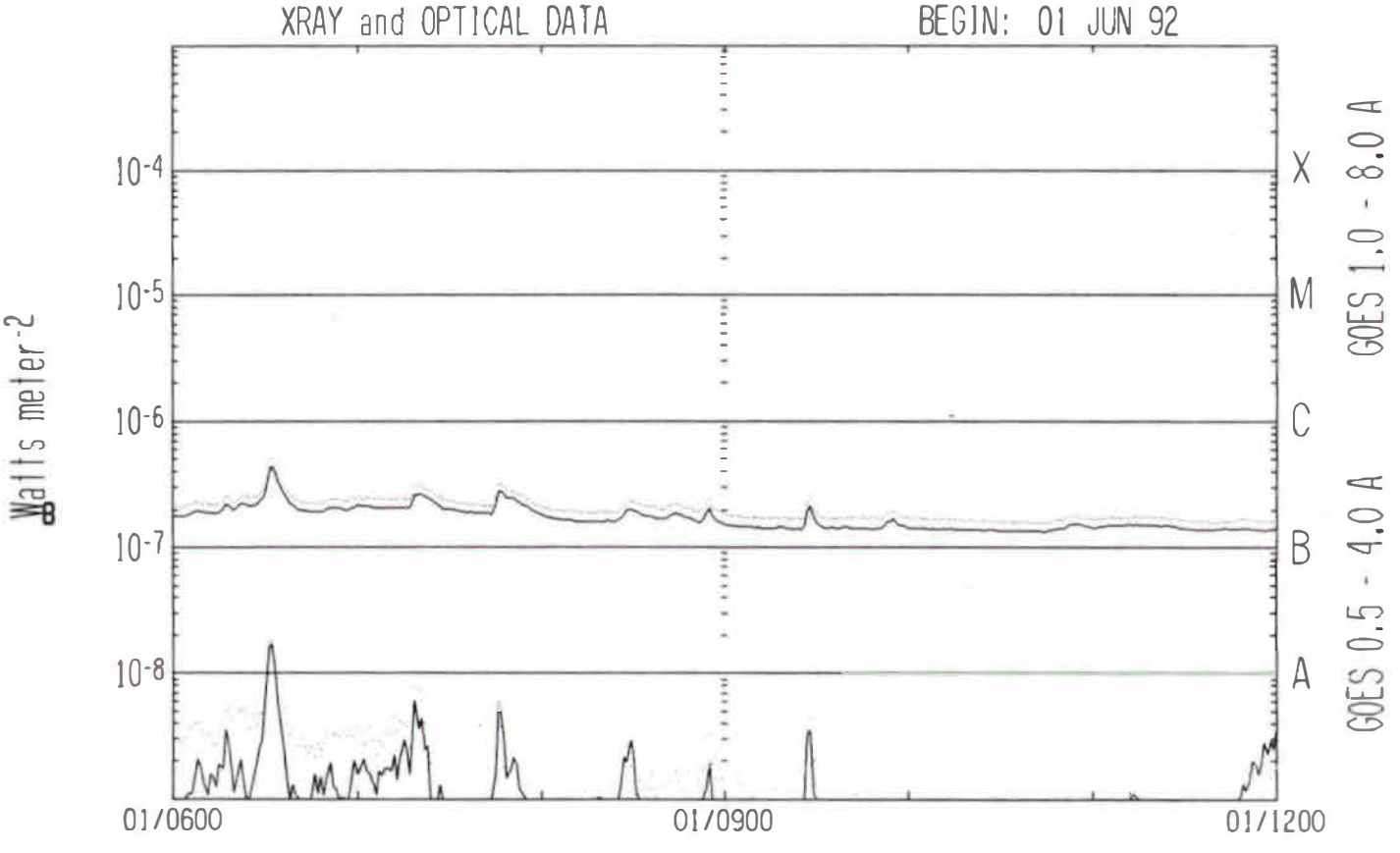
DSS 14 had structural damage to subreflector mounts. Will take at least 3 weeks to repair. Delta Dor scheduled for 3 July will not be available. No other Ulysses passes using DSS 14 are scheduled in the near future.
There will be some impact as other projects, scheduled to use DSS 14 for their passes, look for other station time. The Ulysses project will try to accomodate some of these requests which means that the percentage of 1024 bps data will drop, but no data outages should arise.

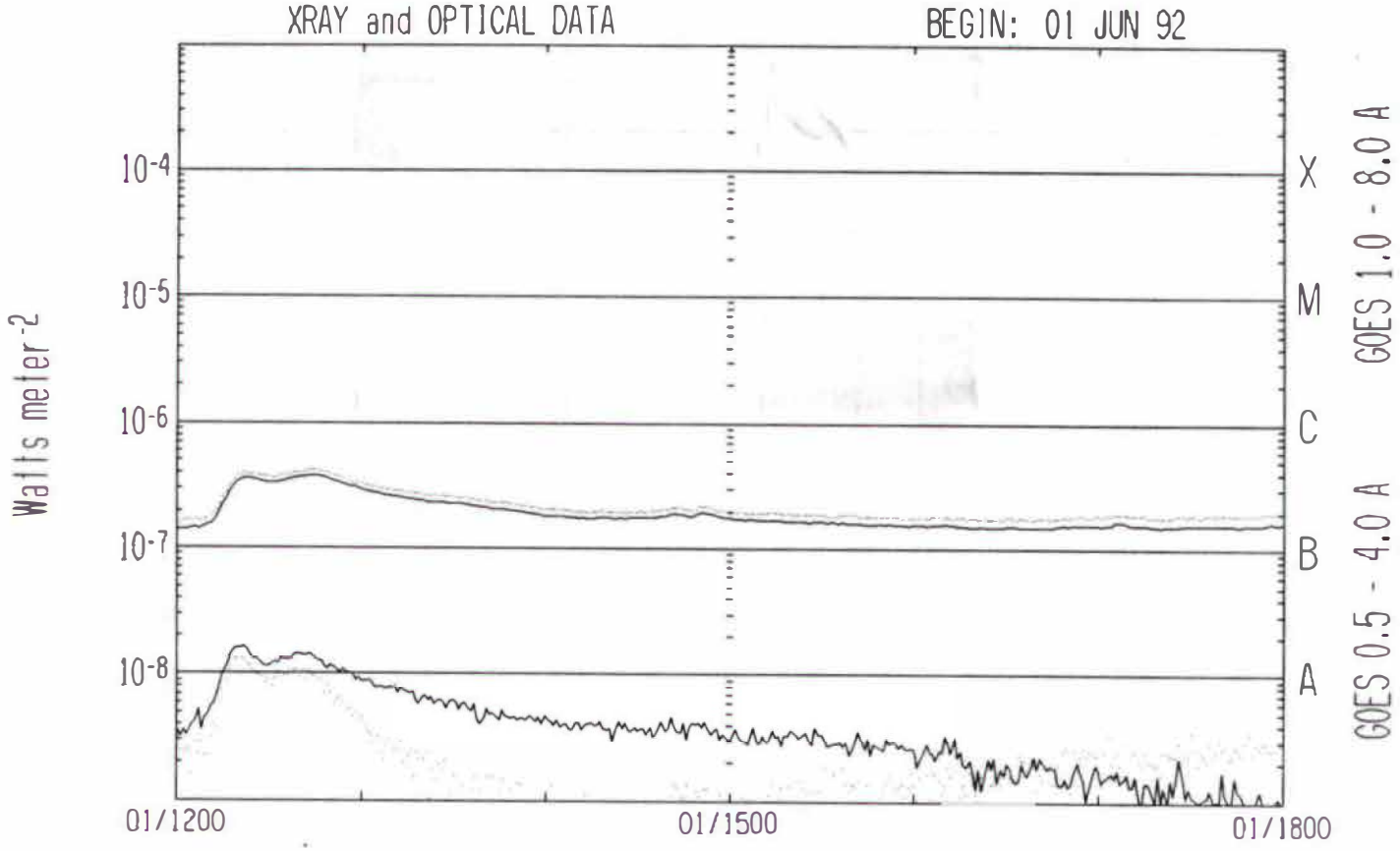
29th June — KEP EPAC IFC

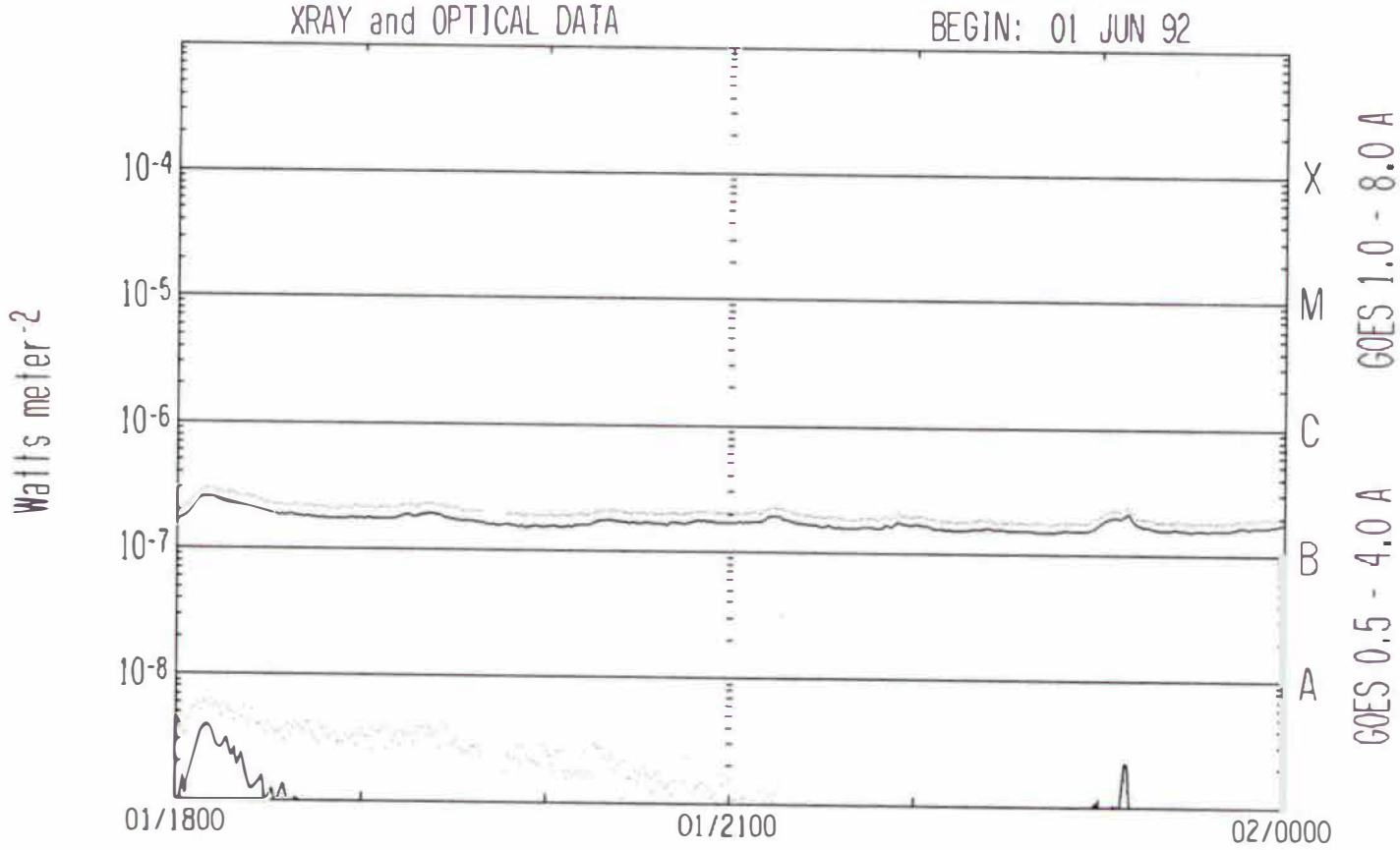
30th June — Earth pointing manoeuvre.


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/01
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1350 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

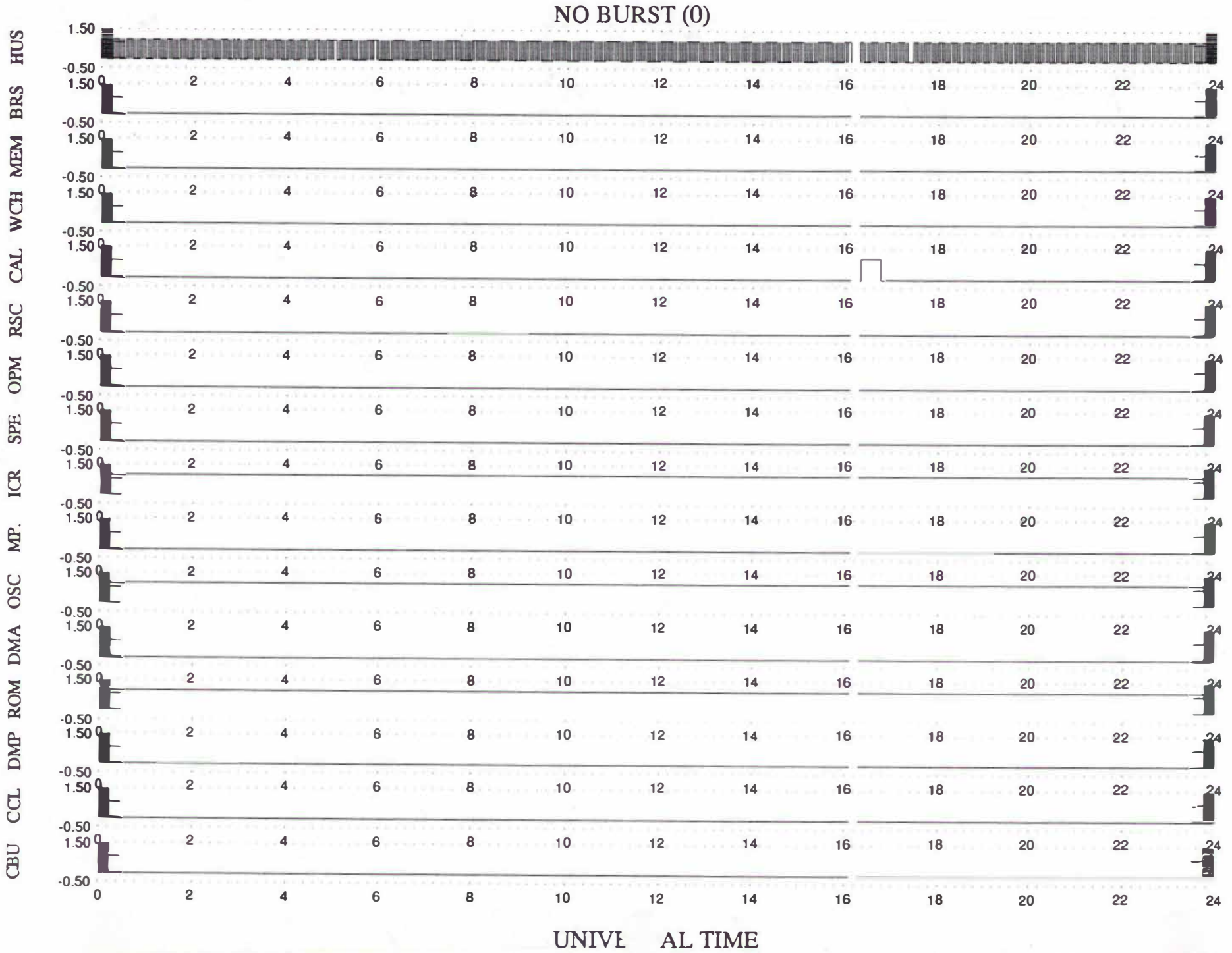

XRAY and OPTICAL DATA
BEGIN: 01 JUN 92
F,7183
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
01/0000
01/0300
01/0600


XRAY and OPTICAL DATA
BEGIN: 01 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
01/0600
01/0900
01/1200


XRAY and OPTICAL DATA
BEGIN: 01 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
01/1200
01/1500
01/1800

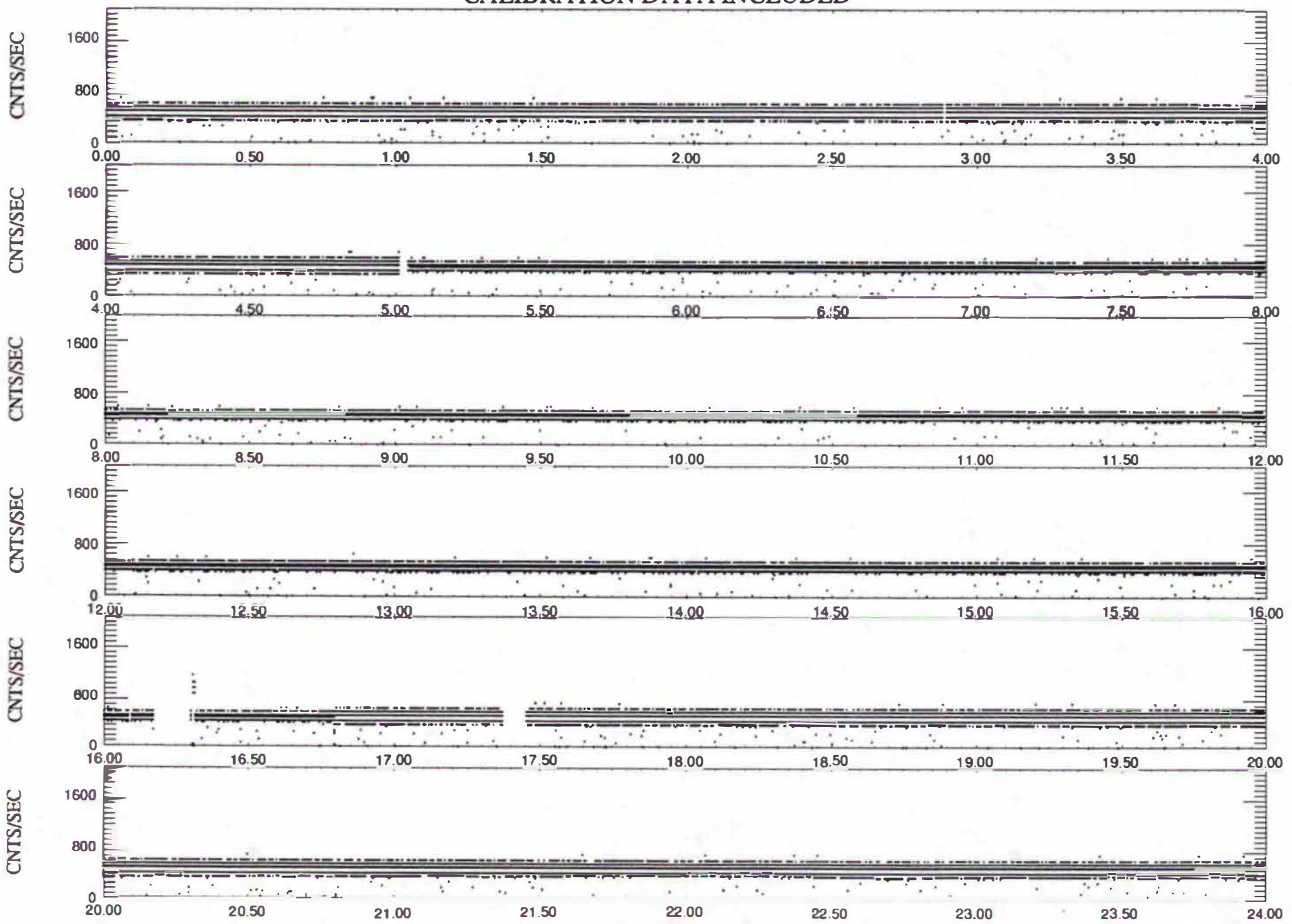

XRAY and OPTICAL DATA
BEGIN: 01 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
01/1800
01/2100
02/0000

HUS MODES EDR day 153, year 1992 to day 153, year 1992 6/23/92

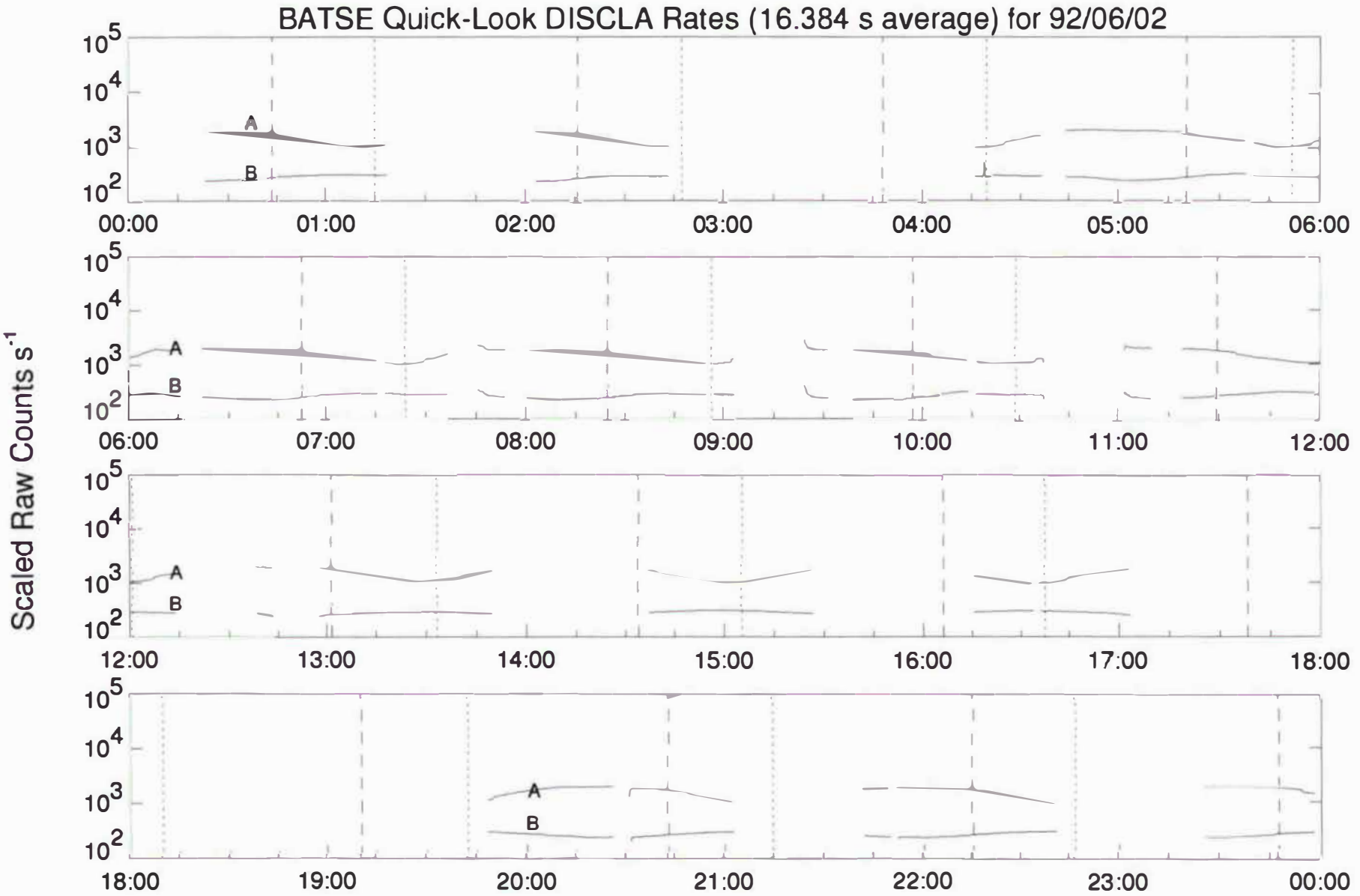


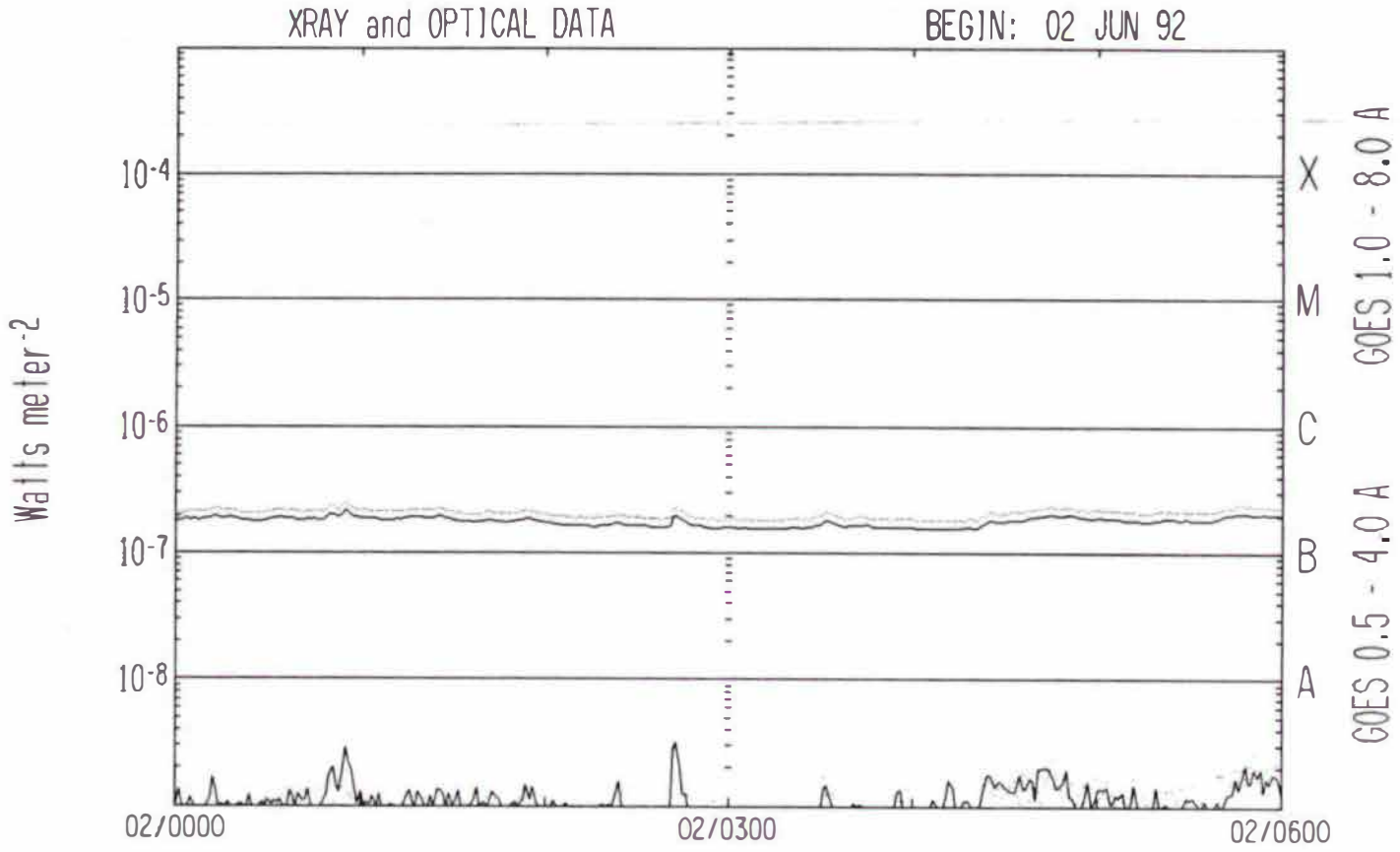
HUS 2A, MODE 1, NOT AVERAGED EDR day 153, year 1992 to day 153, year 1992 6/23/92

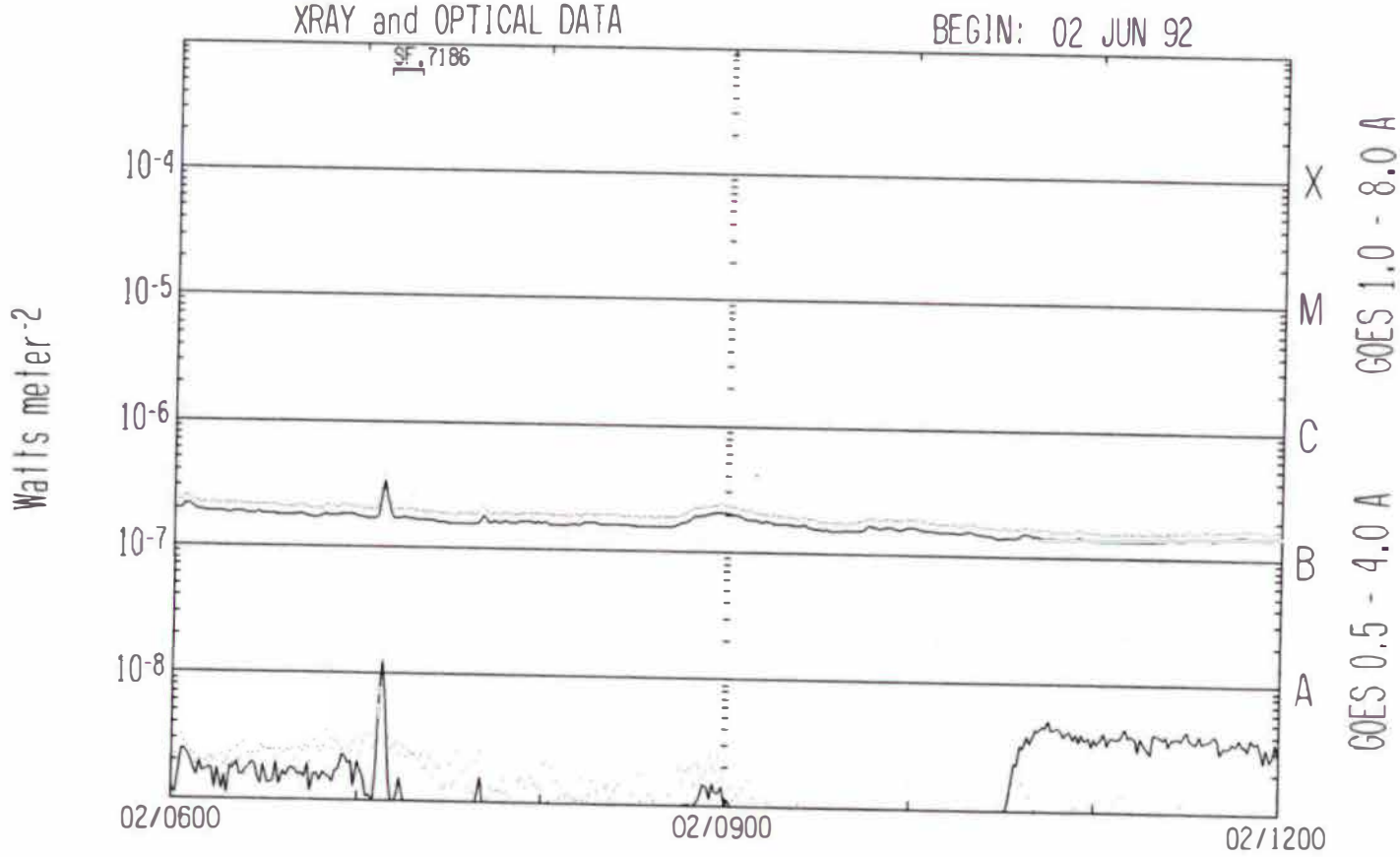
CALIBRATION DATA INCLUDED

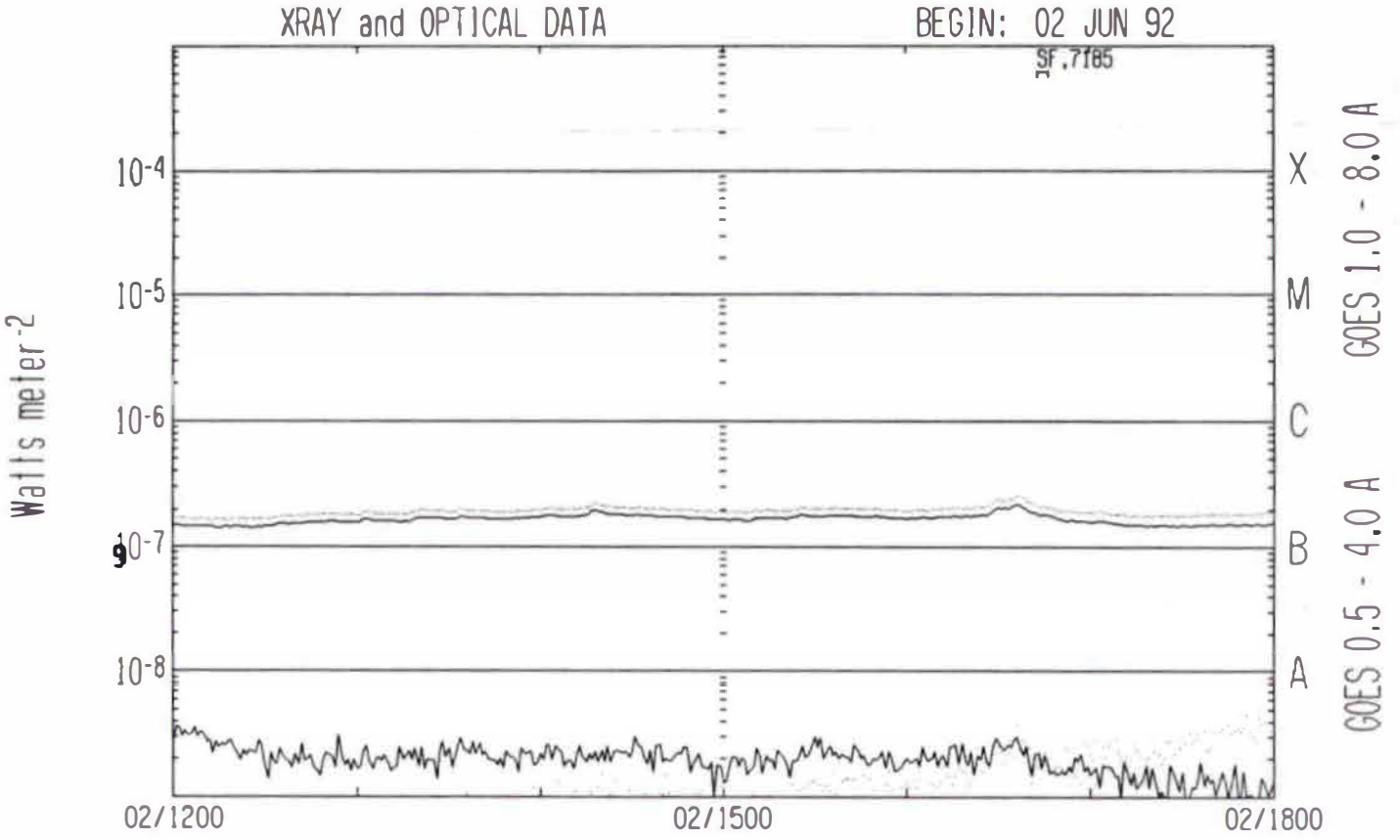


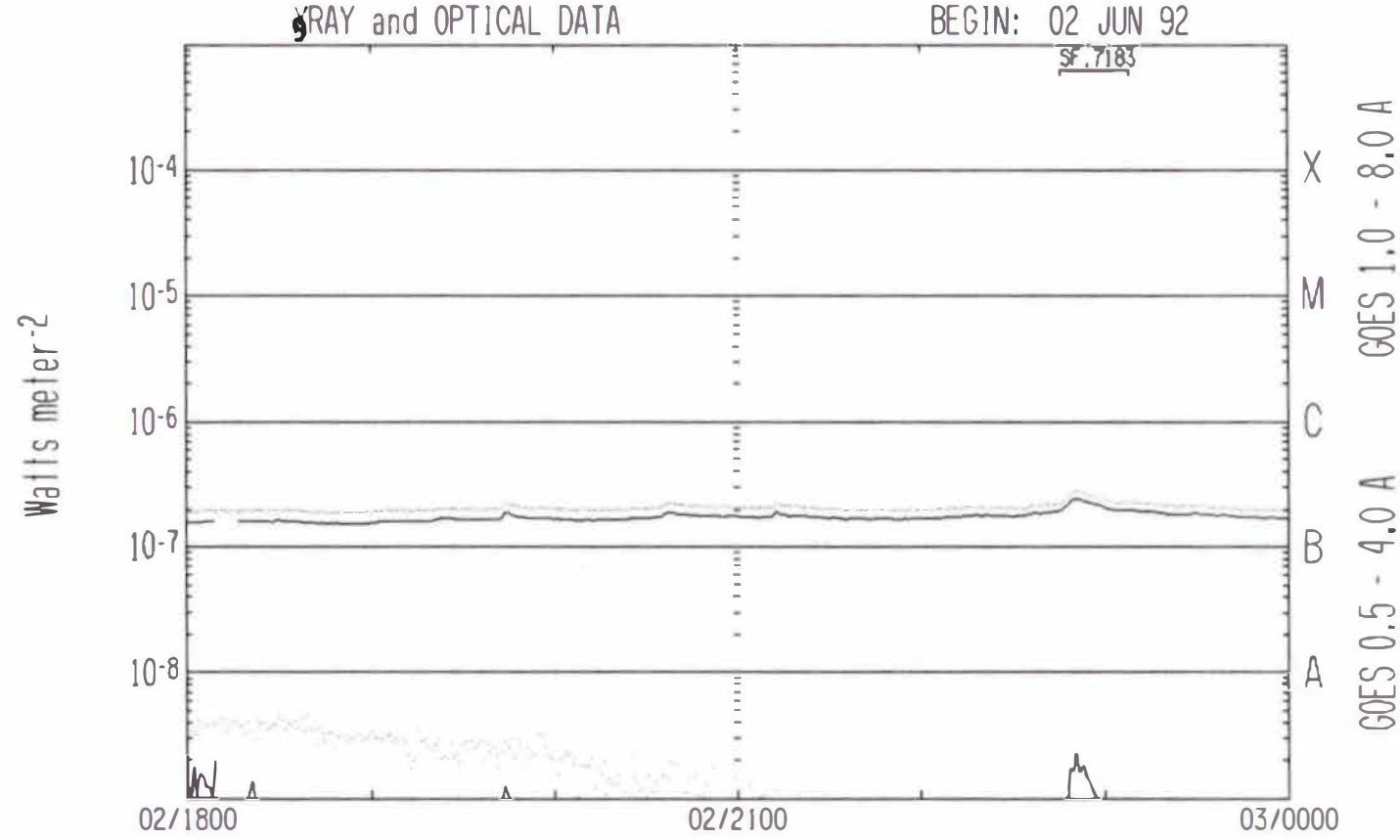
UNIVE AL TIME


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/02
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1351 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

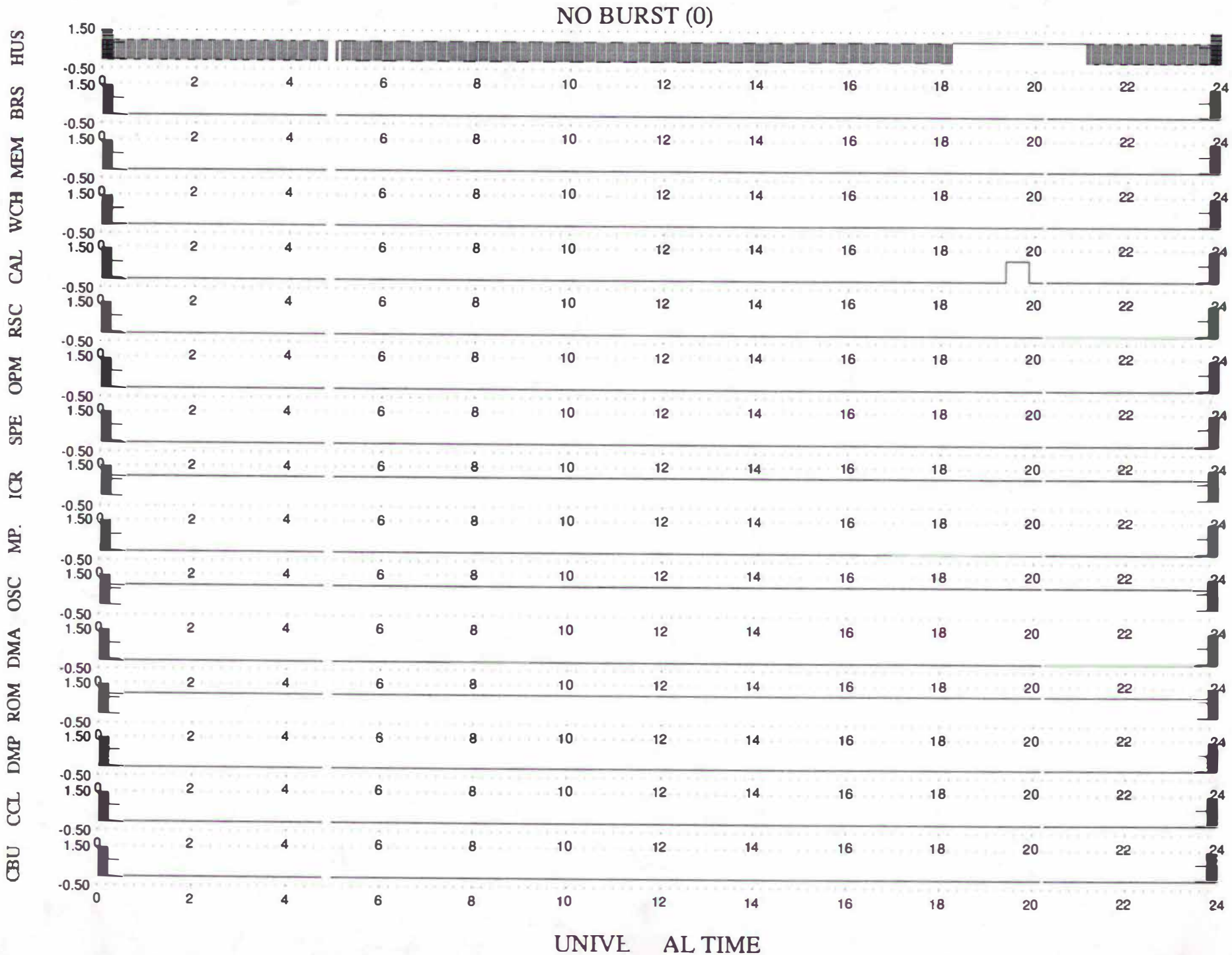

XRAY and OPTICAL DATA
BEGIN: 02 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
02/0000
02/0300
02/0600


XRAY and OPTICAL DATA
BEGIN: 02 JUN 92
SF 7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
02/0600
02/0900
02/1200


XRAY and OPTICAL DATA
BEGIN: 02 JUN 92
SF.7185
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
02/1200
02/1500
02/1800

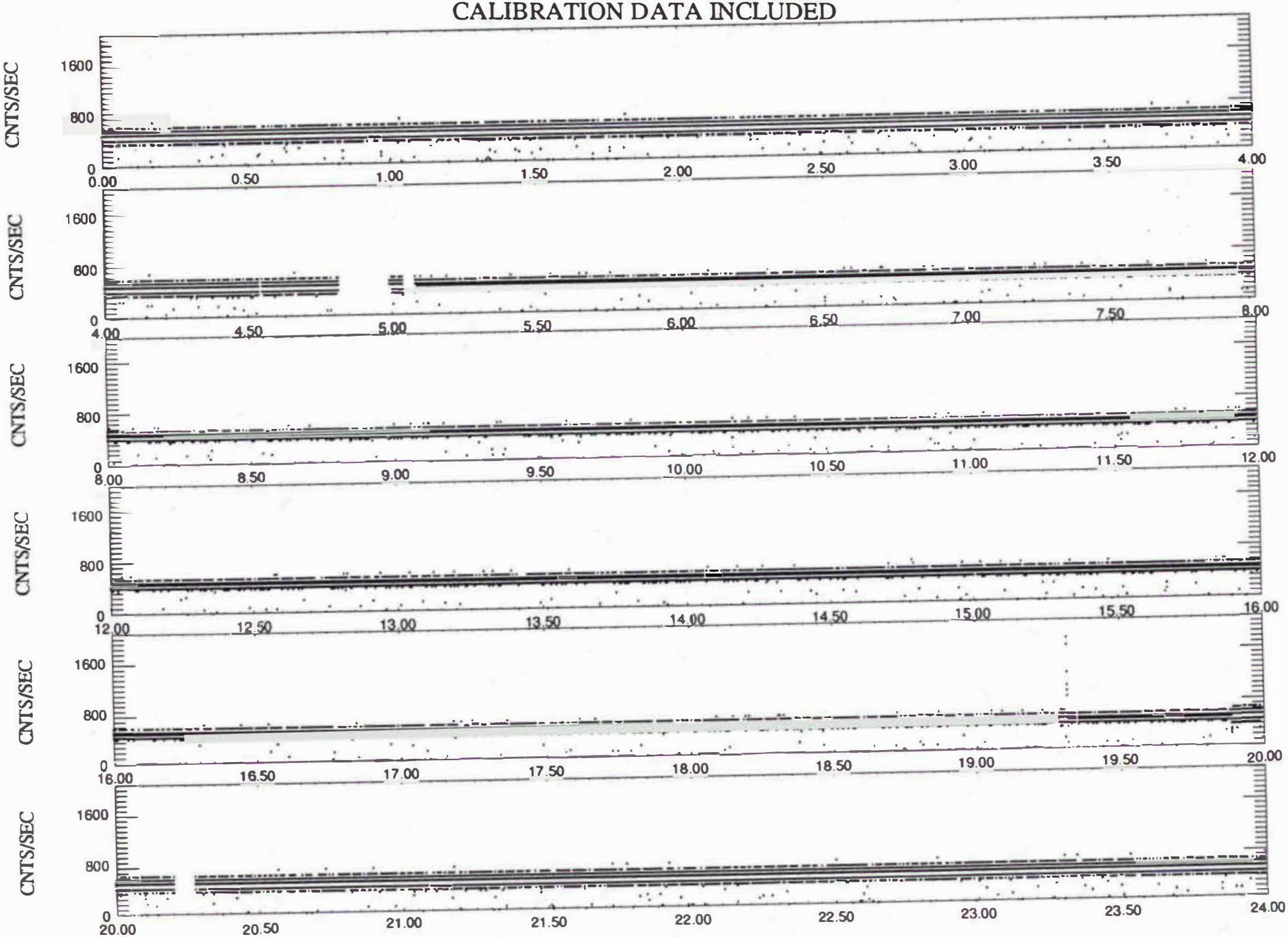

XRAY and OPTICAL DATA
BEGIN: 02 JUN 92
SF.7183
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
02/1800
02/2100
03/0000

HUS MODES EDR day 154, year 1992 to day 154, year 1992 6/23/92

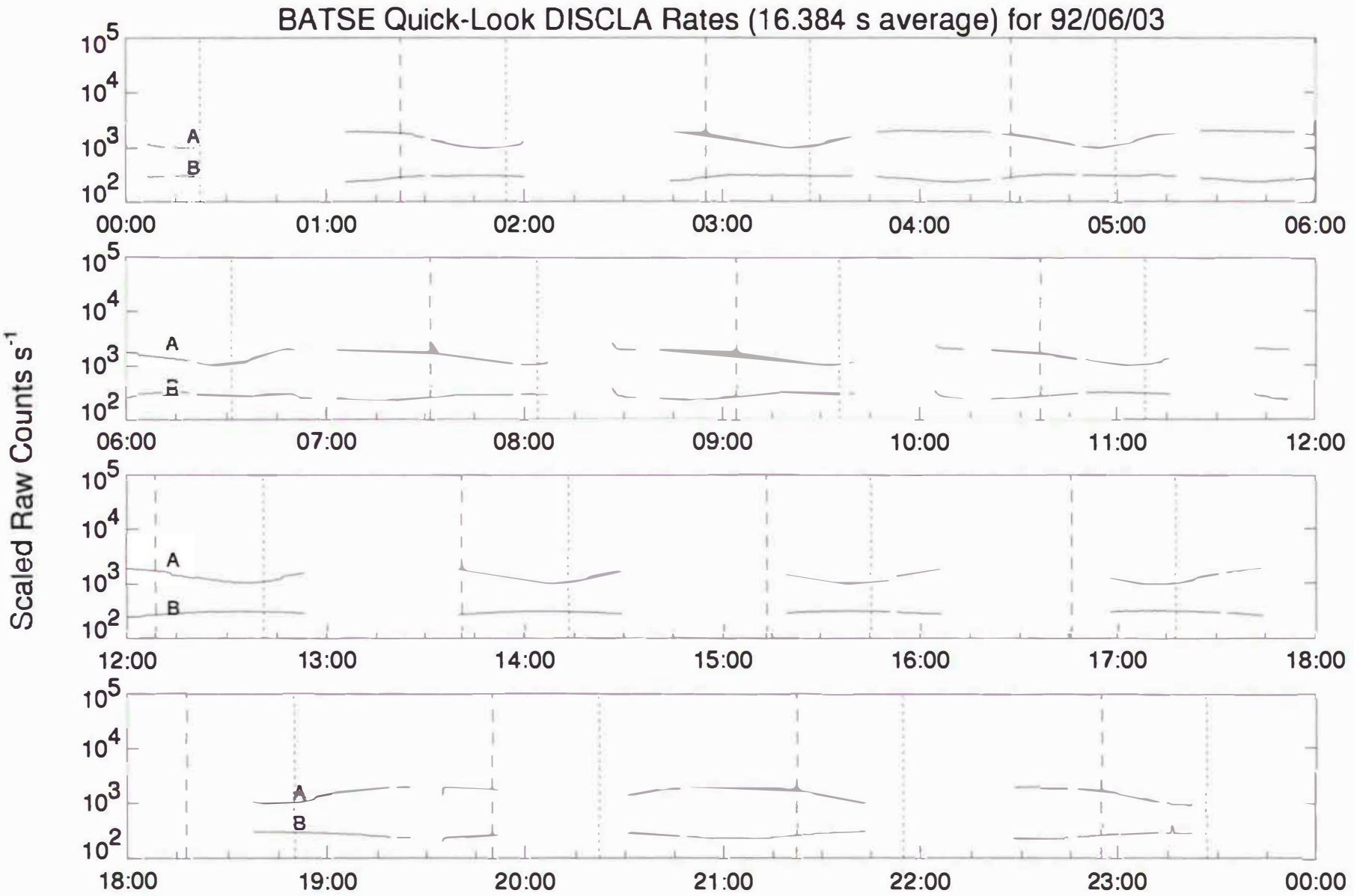


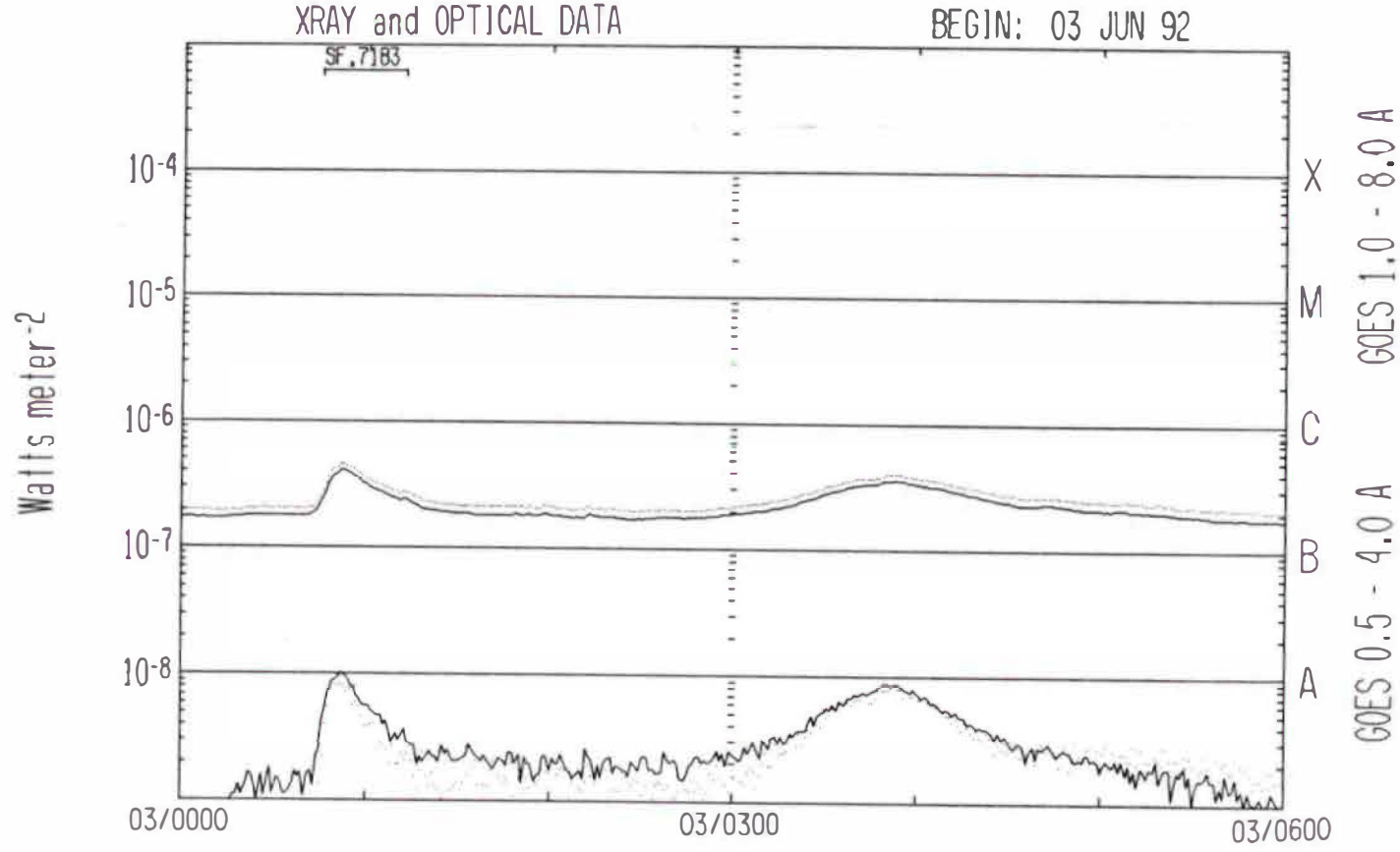
HUS 2A, MODE 1, NOT AVERAGED EDR day 154, year 1992 to day 154, year 1992 6/23/92

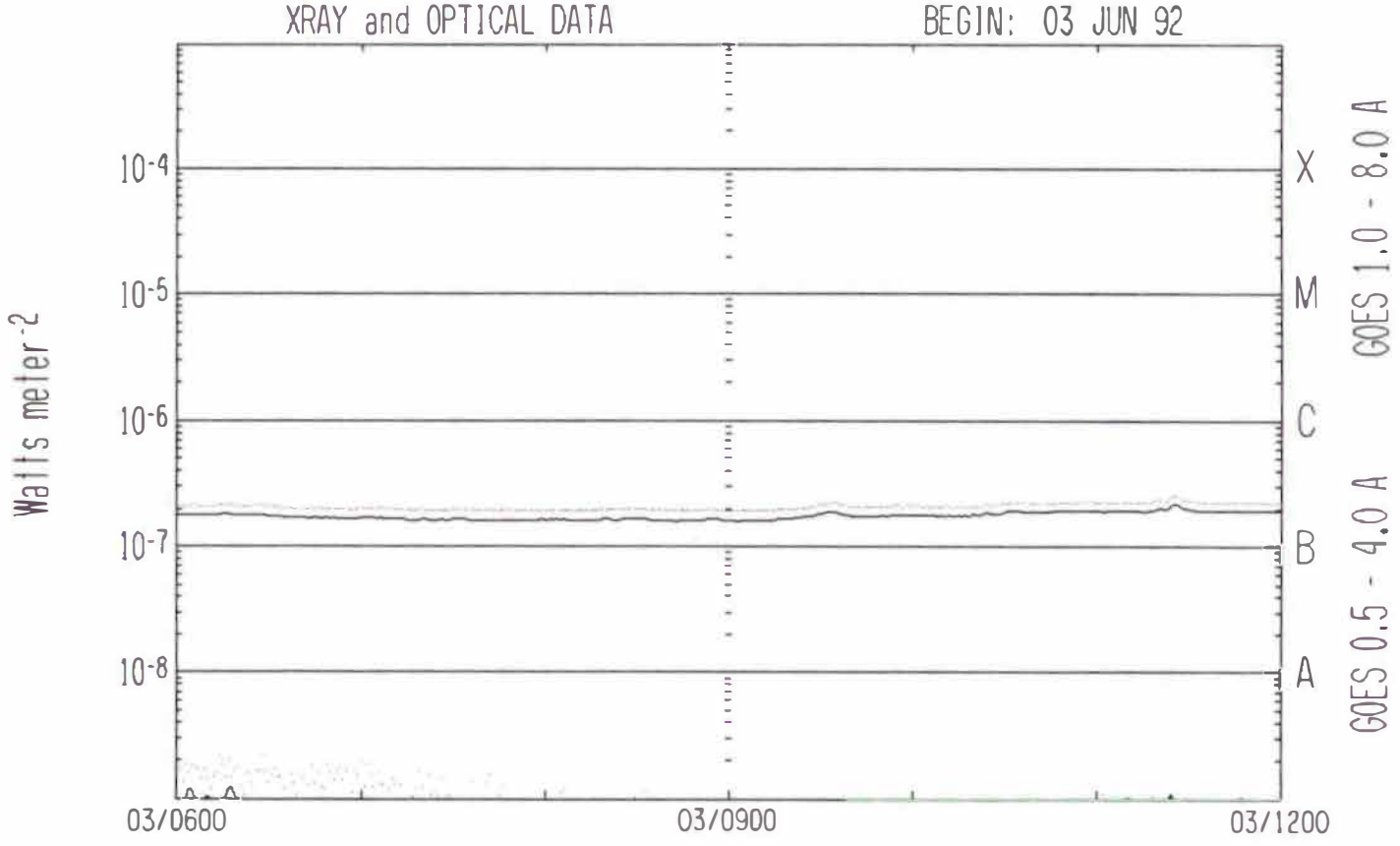
CALIBRATION DATA INCLUDED

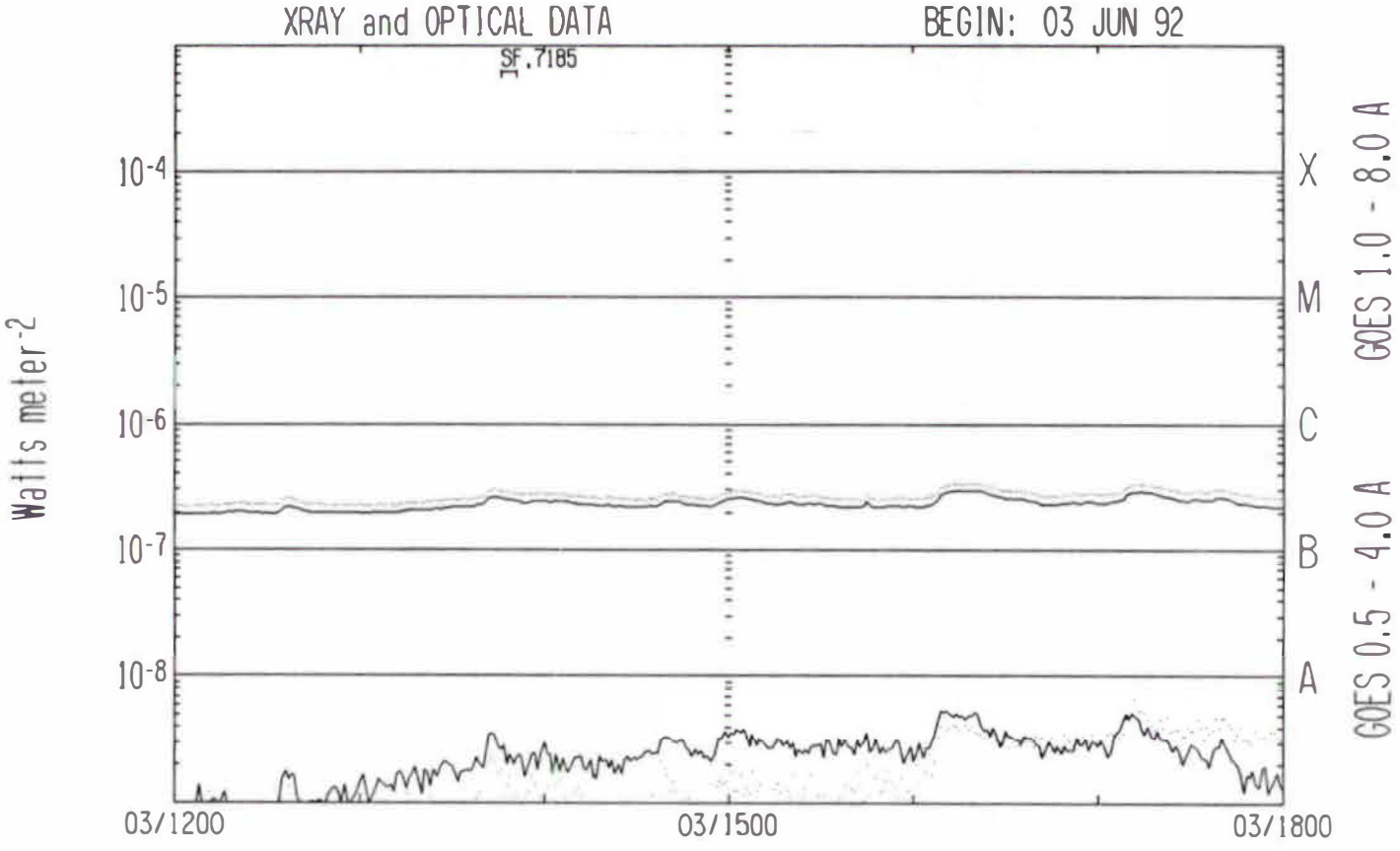


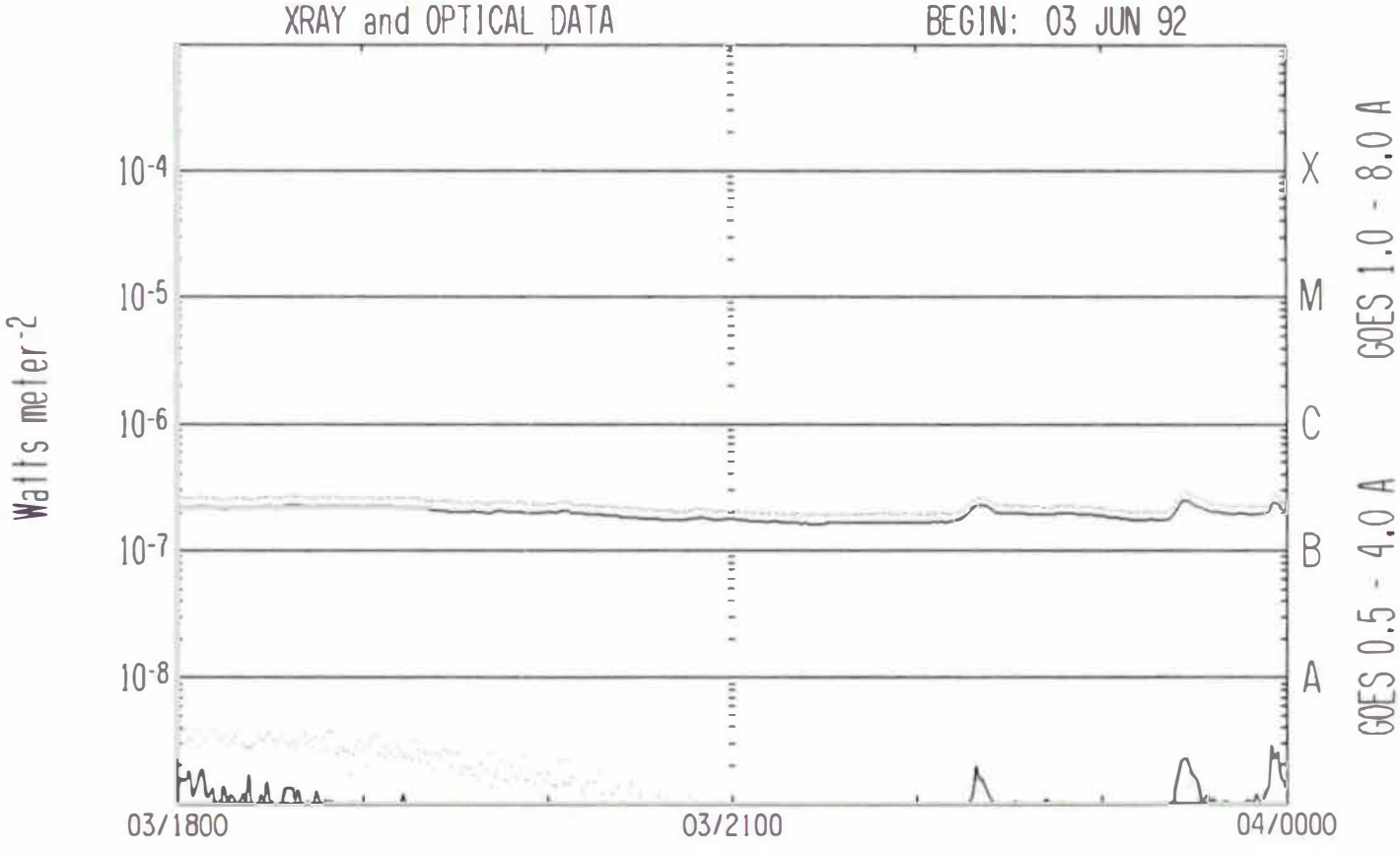
UNIVE AL TIME


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/03
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1353 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

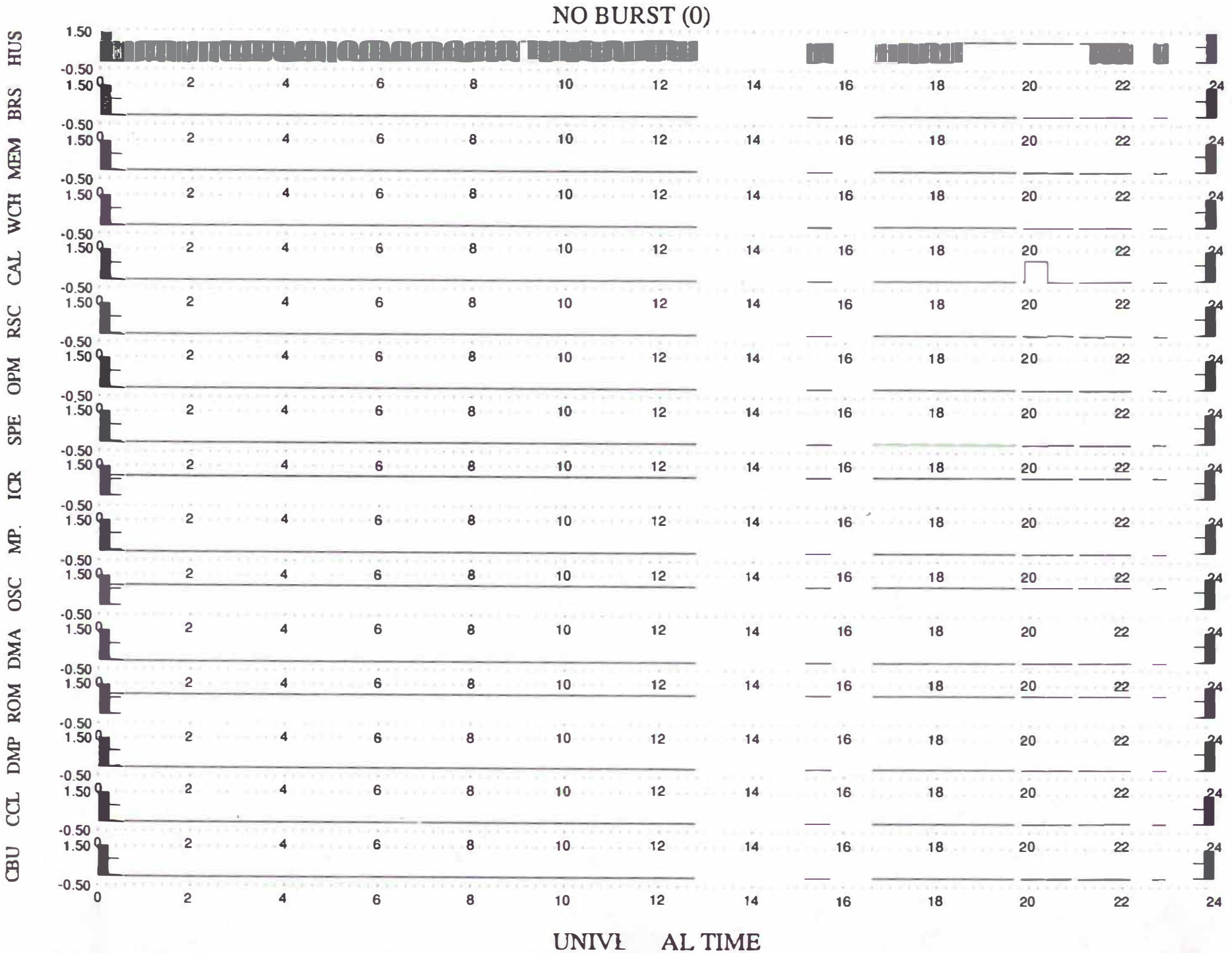

XRAY and OPTICAL DATA
BEGIN: 03 JUN 92
SF.7183
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
03/0000
03/0300
03/0600


XRAY and OPTICAL DATA
BEGIN: 03 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
03/0600
03/0900
03/1200


XRAY and OPTICAL DATA
BEGIN: 03 JUN 92
SF.7185
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
03/1200
03/1500
03/1800

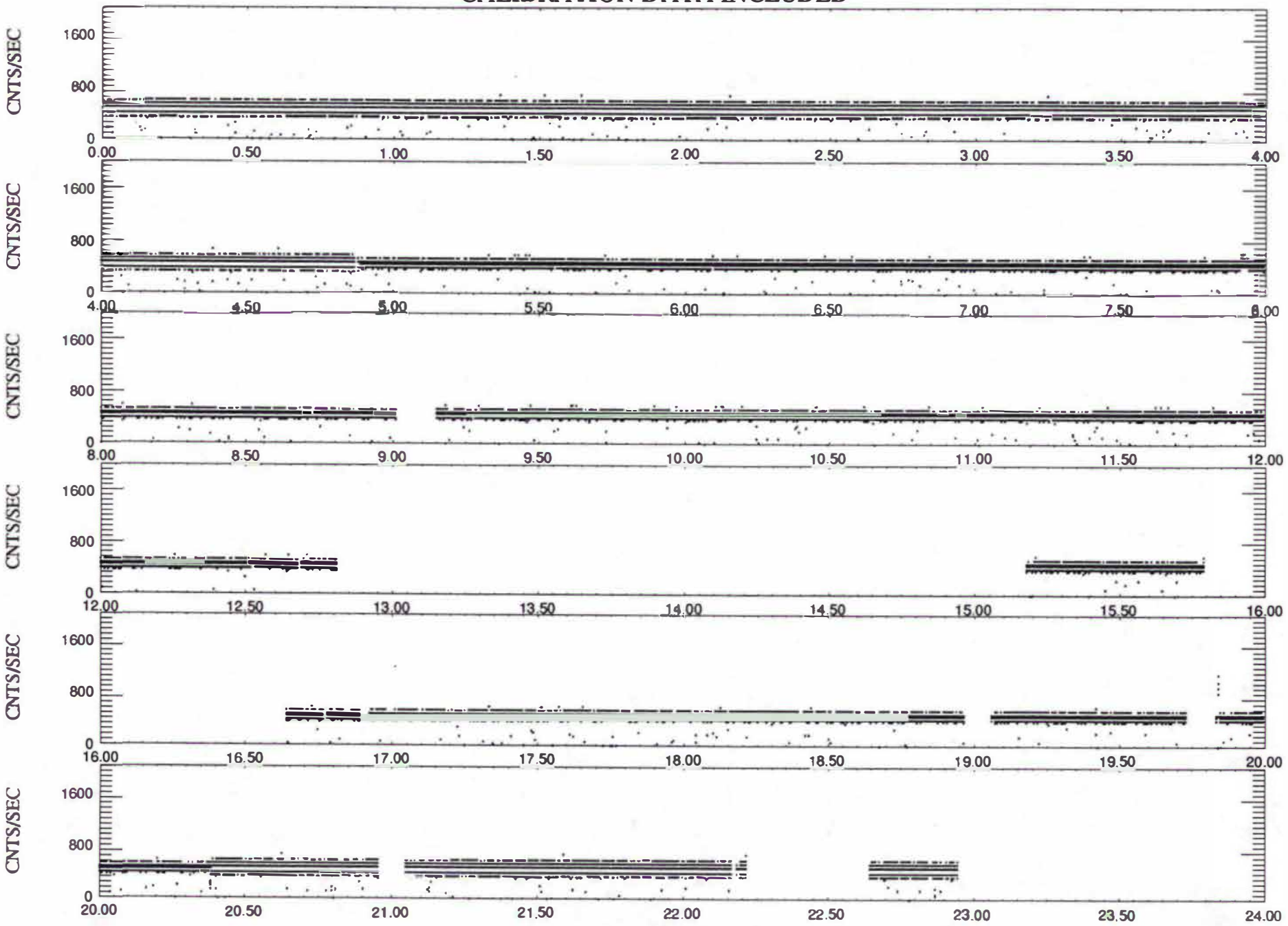

XRAY and OPTICAL DATA
BEGIN: 03 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
03/1800
03/2100
04/0000

HUS MODES EDR day 155, year 1992 to day 155, year 1992 6/23/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 155, year 1992 to day 155, year 1992 6/23/92

CALIBRATION DATA INCLUDED



UNIVE AL TIME

From PREECE@ssl.msfc.nasa.gov Fri Jun 5 12:48:02 1992
Date: Fri, 5 Jun 1992 14:49:08 -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.: 01633

TIME: TJD=8777 SECONDS=14819

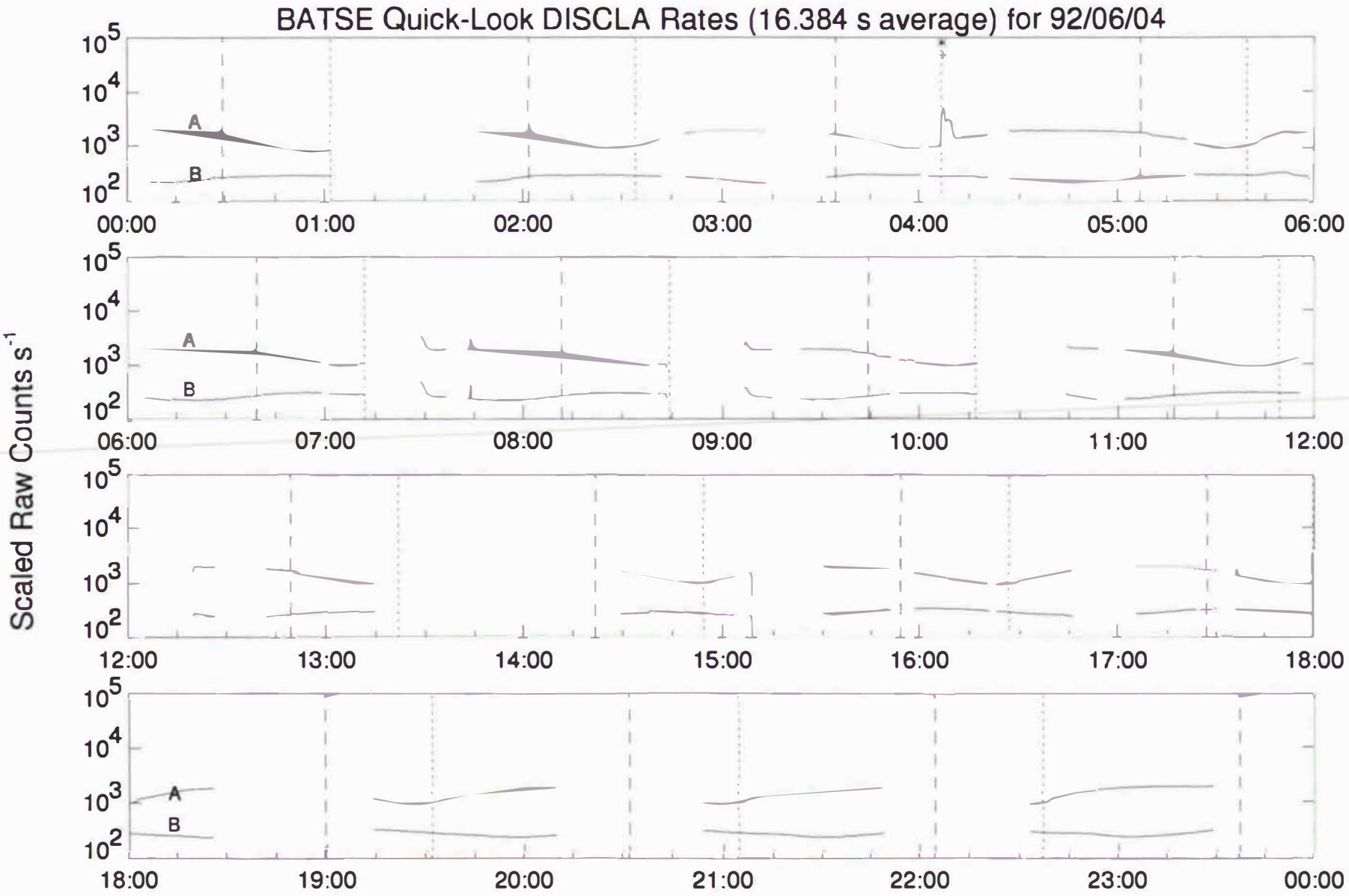
TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

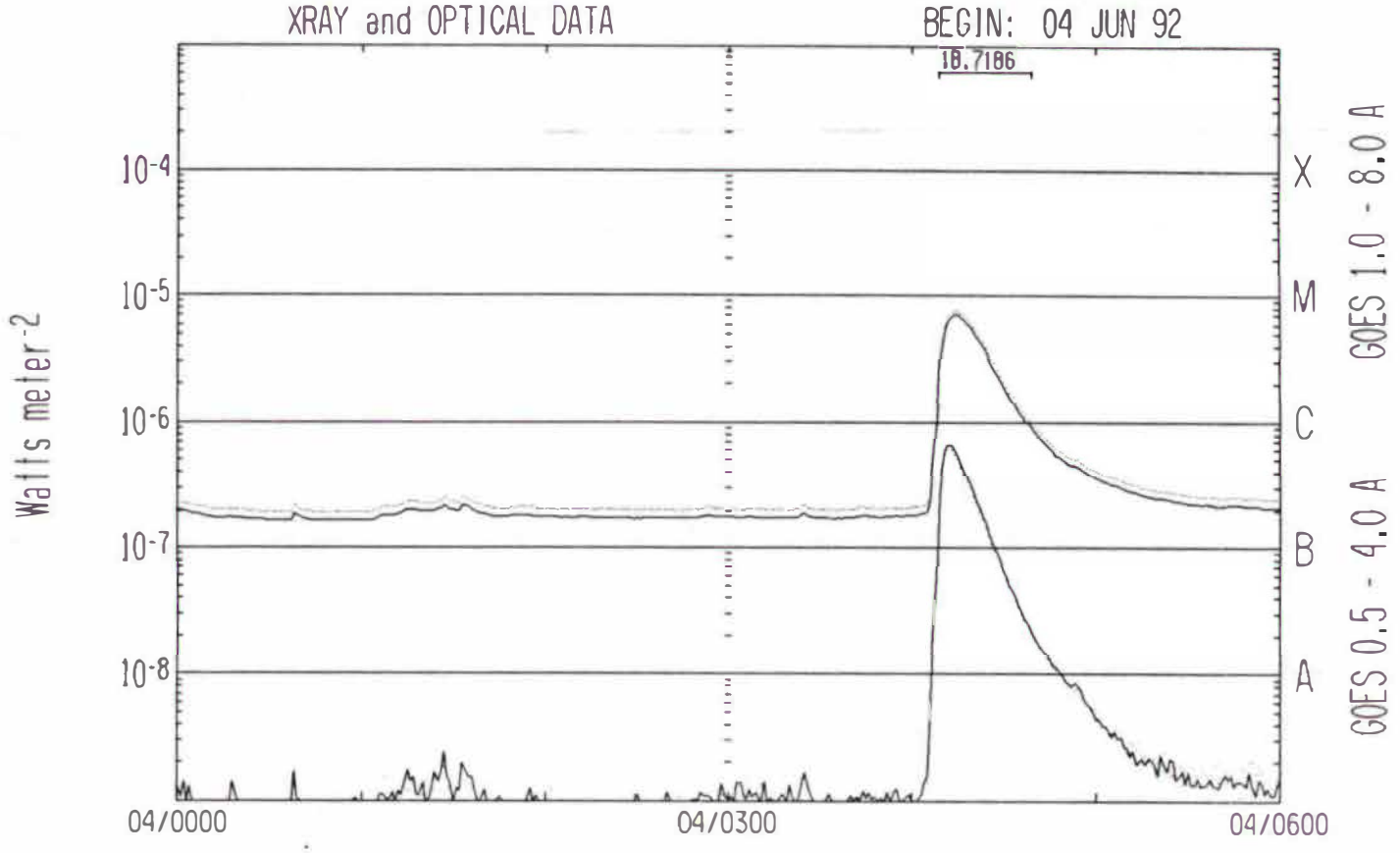
SIGNIFICANCE: SIGMA

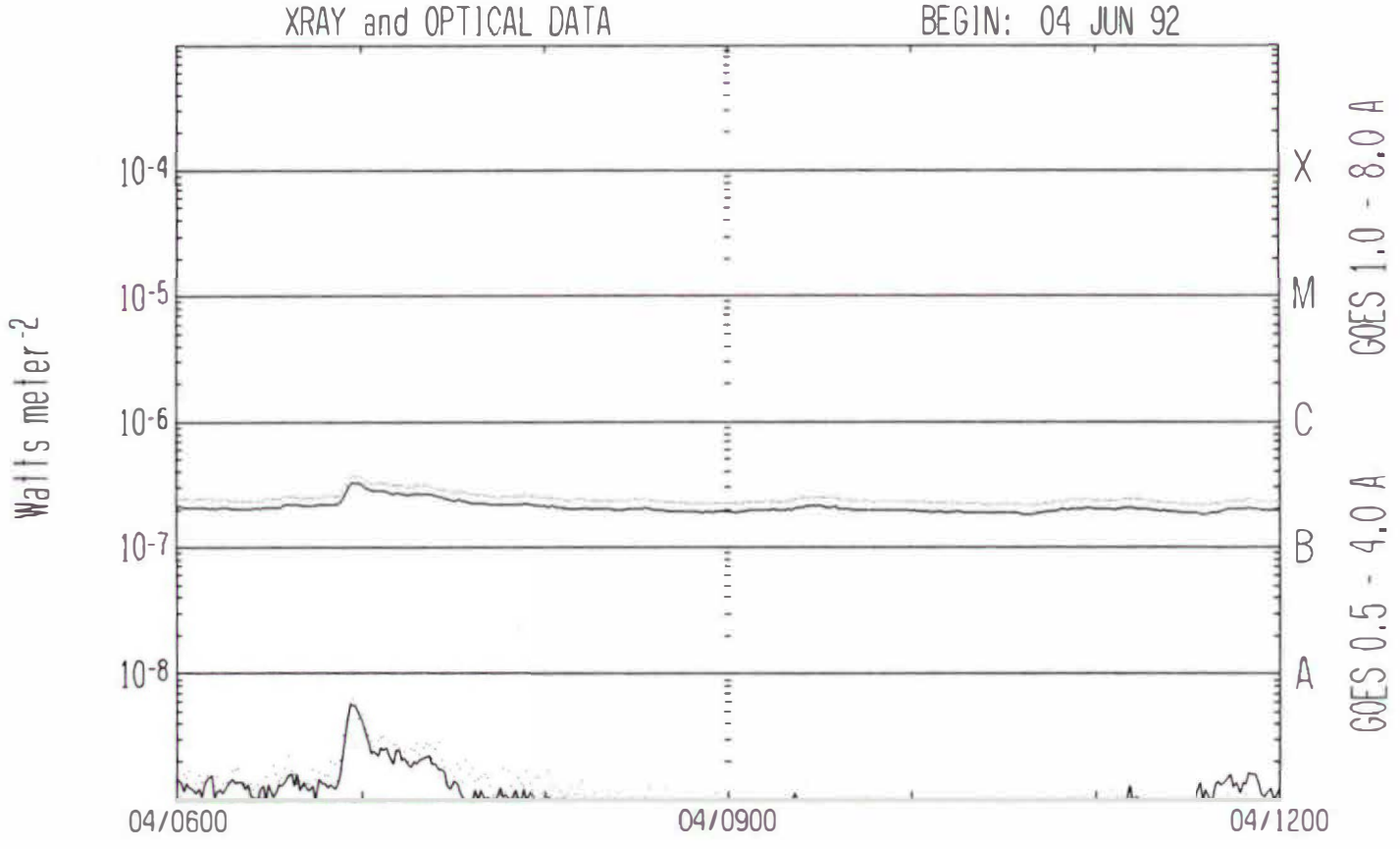
INTENSITY: COUNTS/CM2

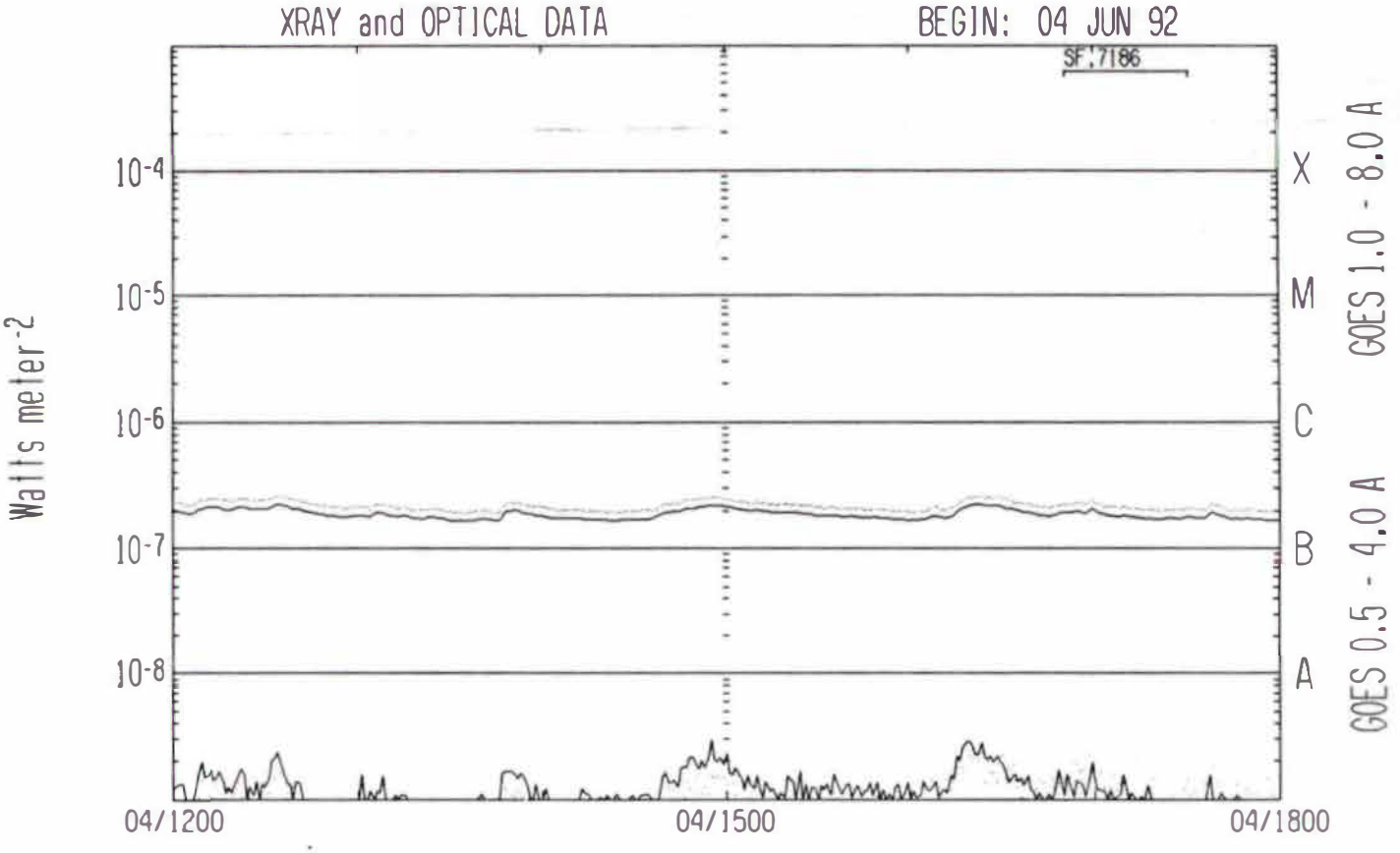
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

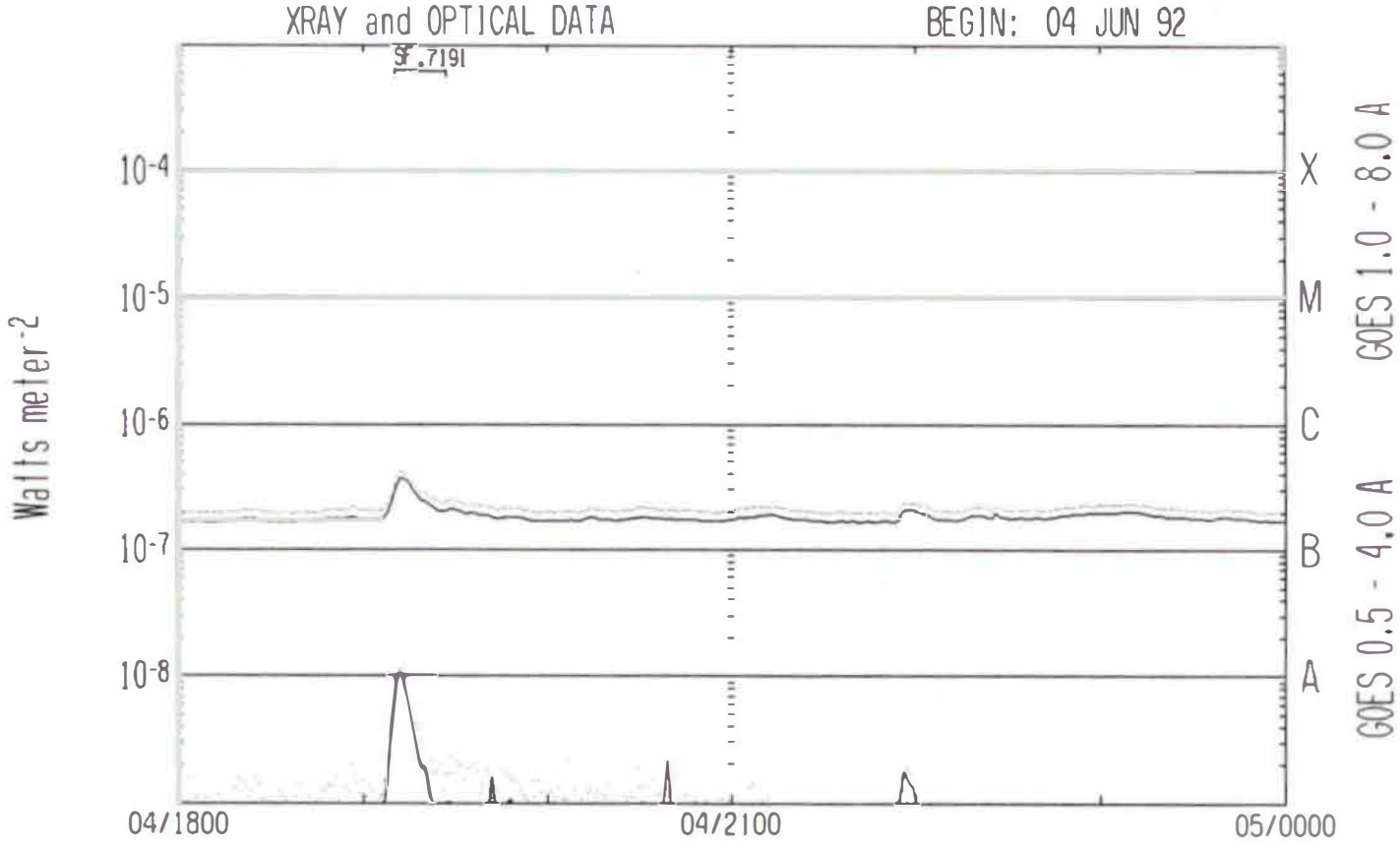
COMMENTS:
GOES C7.1 SOLAR FLARE, 250 SEC. IN DURATION. SEEN ABOVE 150 KEV.
OCCURS JUST BEFORE SPACECRAFT DAY.


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/04
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1354 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

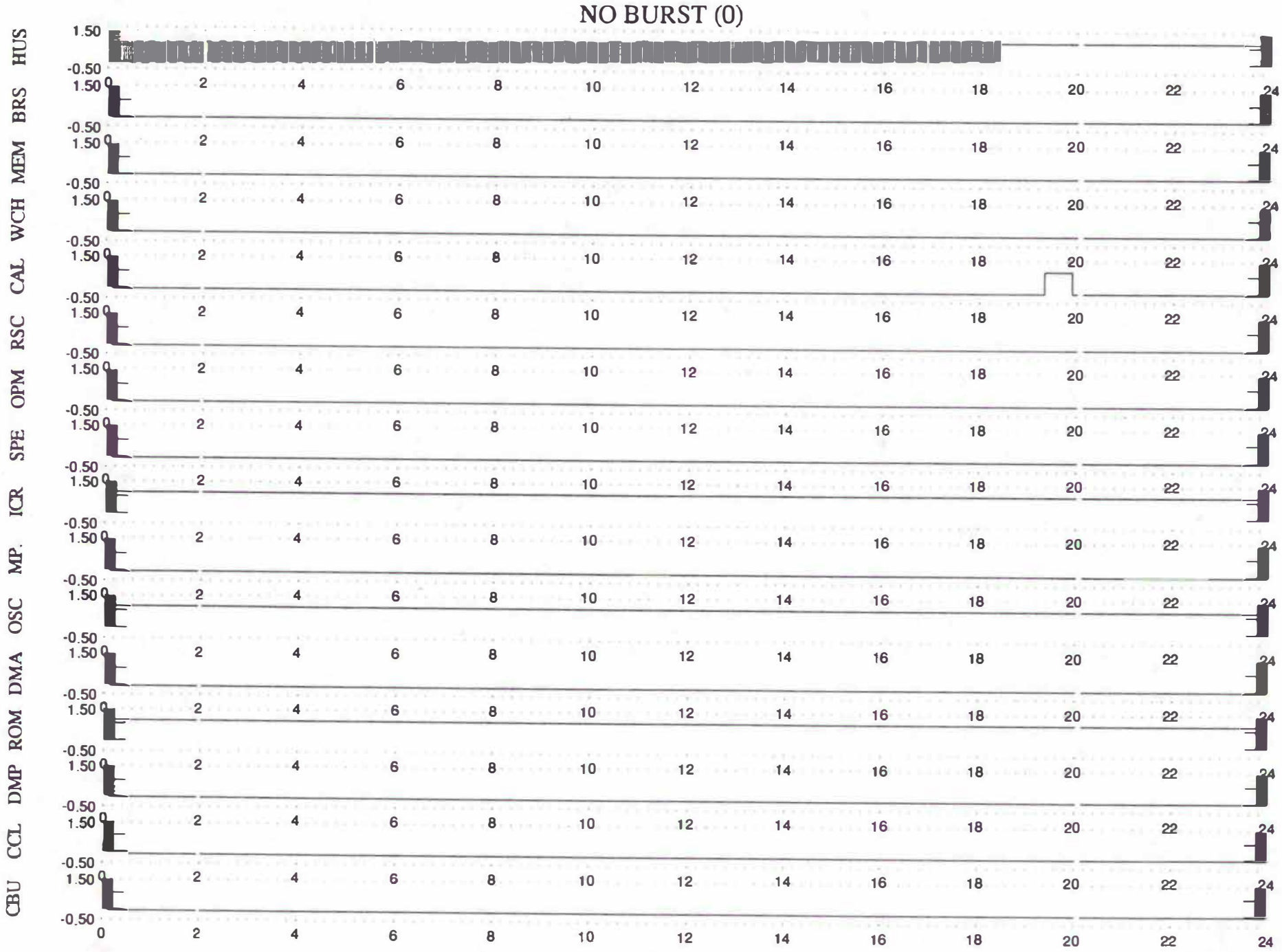

XRAY and OPTICAL DATA
BEGIN: 04 JUN 92
18.7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
04/0000
04/0300
04/0600


XRAY and OPTICAL DATA
BEGIN: 04 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
04/0600
04/0900
04/1200


XRAY and OPTICAL DATA
BEGIN: 04 JUN 92
SF:7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
04/1200
04/1500
04/1800

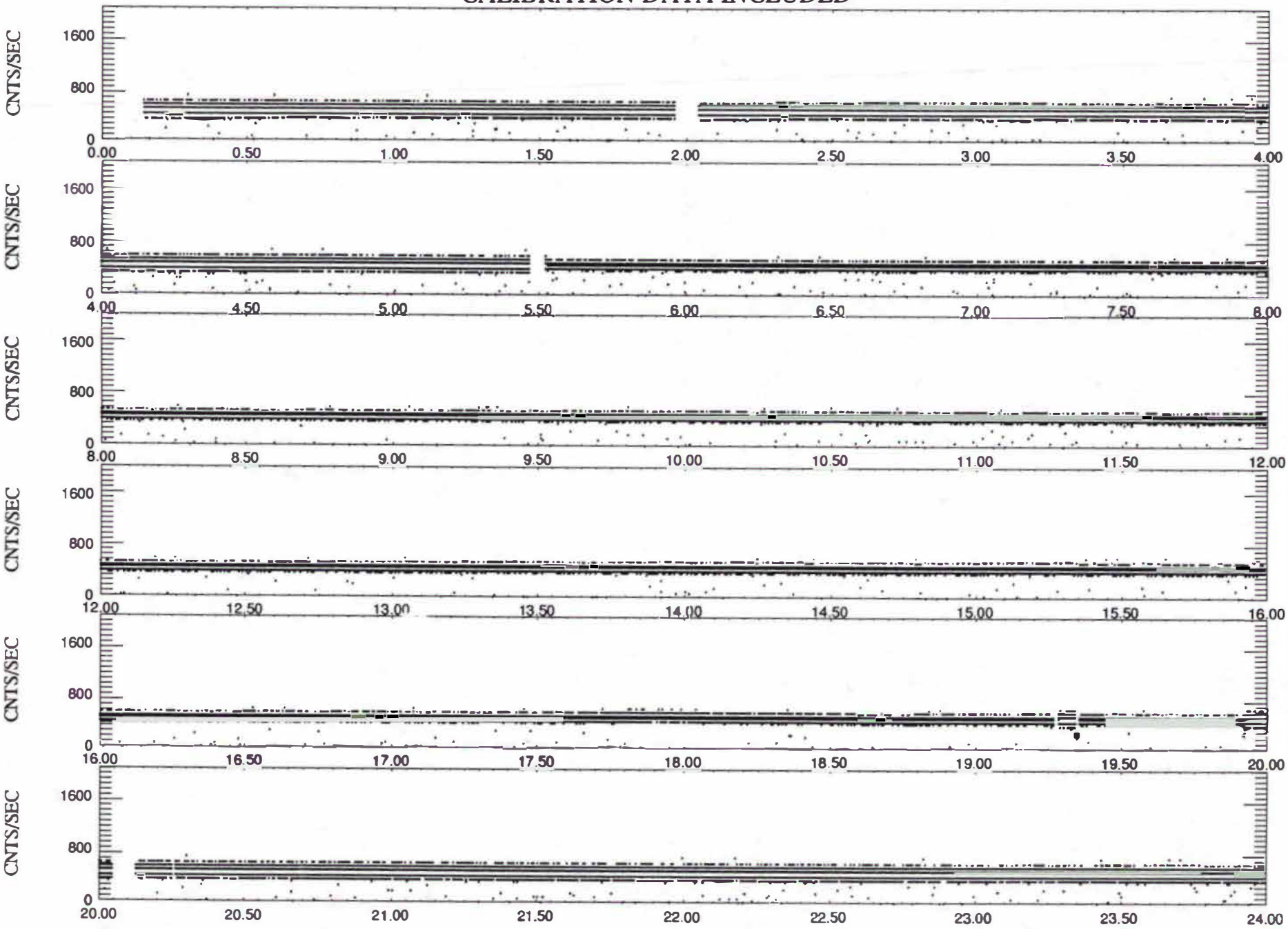

XRAY and OPTICAL DATA
BEGIN: 04 JUN 92
SF:7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
04/1800
04/2100
05/0000

HUS MODES EDR day 156, year 1992 to day 156, year 1992 6/23/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 156, year 1992 to day 156, year 1992 6/23/92

CALIBRATION DATA INCLUDED



UNIVE AL TIME

```
          ********************
          *CATSEARCH PROGRAM*
          ********************

BATSE BURST # 1634
EVENT OF 1992 JUN  5 DAY OF YEAR=157
EVENT CROSSING TIME AT BATSE      : 61550. S. OR 17:05:49.5
COORDINATES ARE     .000     .000        6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 285.600  -45.400
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON  5/ 6/  92 IS:
RA=  148.499 DEC=     7.889 DIST=     5.551 AU
BATSE-ULYSSES DISTANCE =  830384720. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1681.94 SECS.
CROSSING TIME AT ULYSSES     IS 63232. S. OR 17:33:51.5 +/-  457.62 SECONDS
```

NO

```
From MEEGAN@ssl.msfc.nasa.gov Sat Jun  6 13:25:27 1992
Date:     Sat, 6 Jun 1992 15:28:05 -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: 1215

                BATSE BURST TRIGGER
NO.: 01634      June 5
TIME: TJD=8778 SECONDS=61551

TYPE: BURST                       SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:  20.  SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=109.   AZIMUTH=127.   ERROR=       DEGREES

COMMENTS:
WEAK, SINGLE PULSE ABOUT 2 SECONDS LONG.  HARD SPECTRUM.
```

1 to 4 trigs

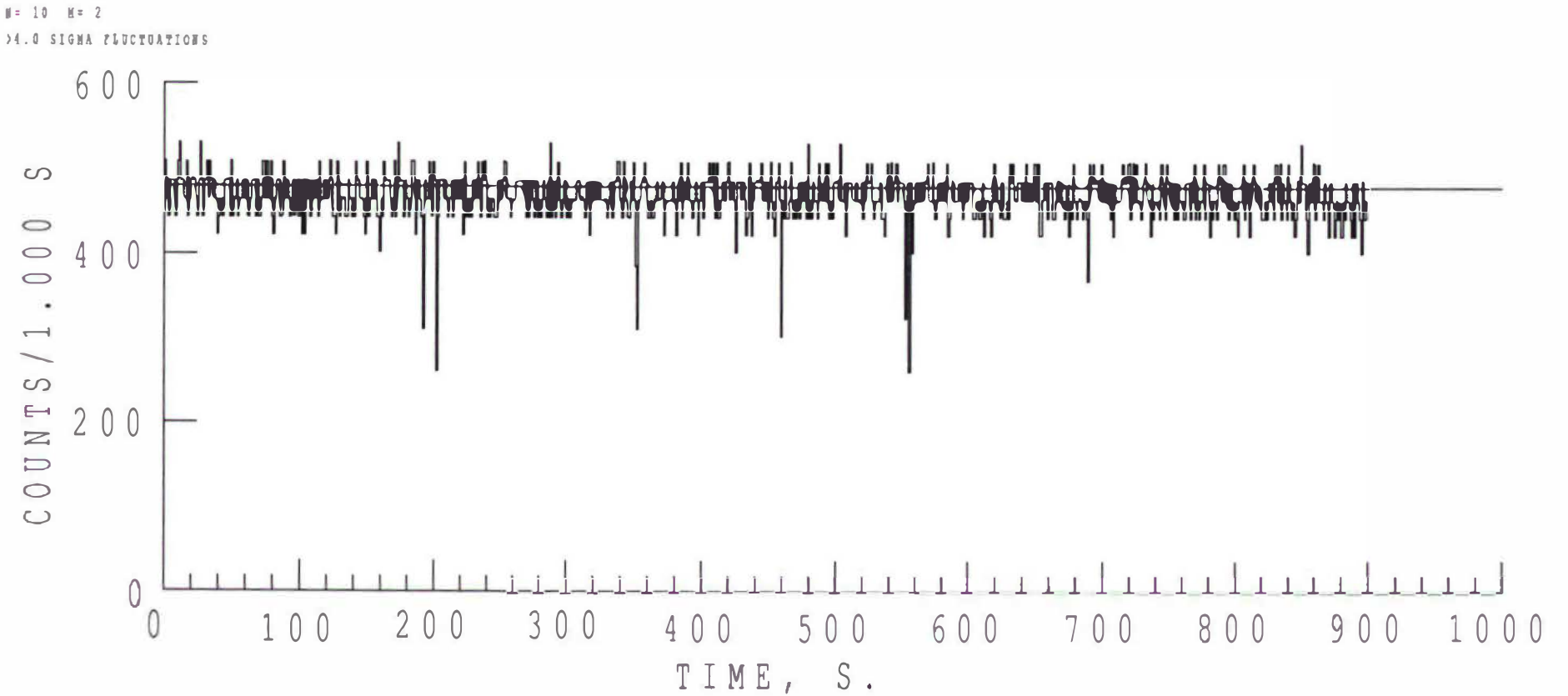
7/ 6/94

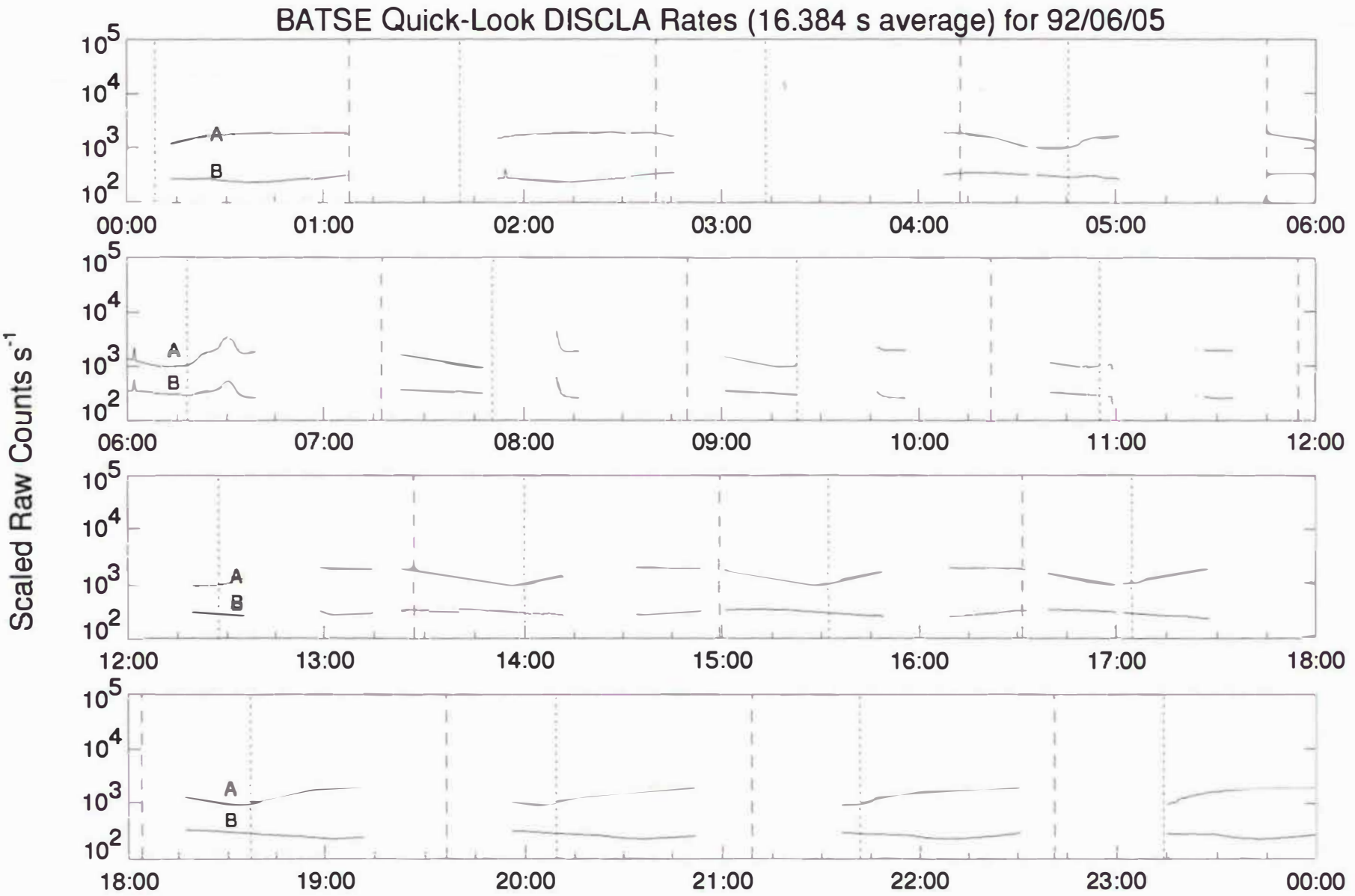
ULYSSES RT

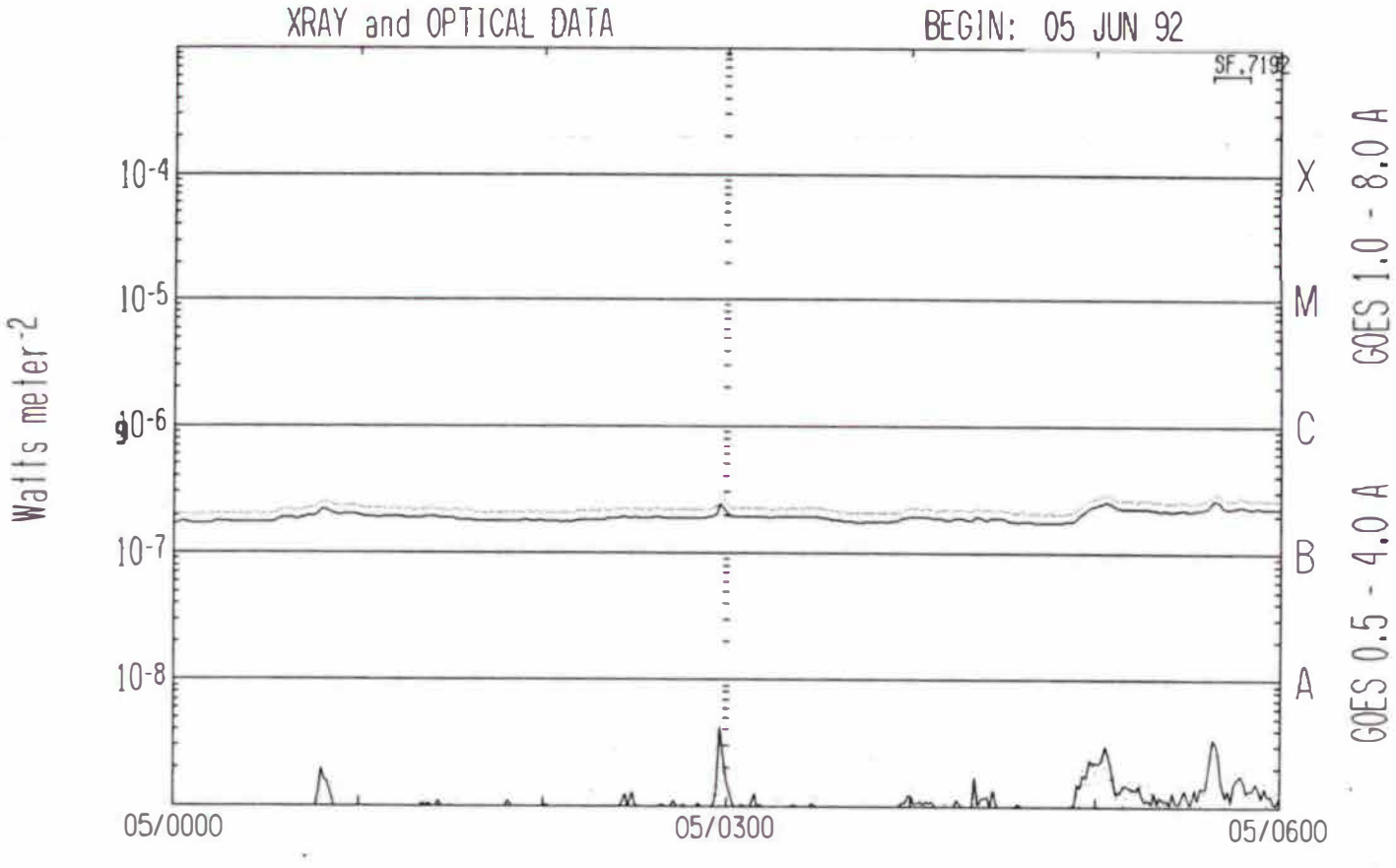
5/ 6/92 62784.266 s

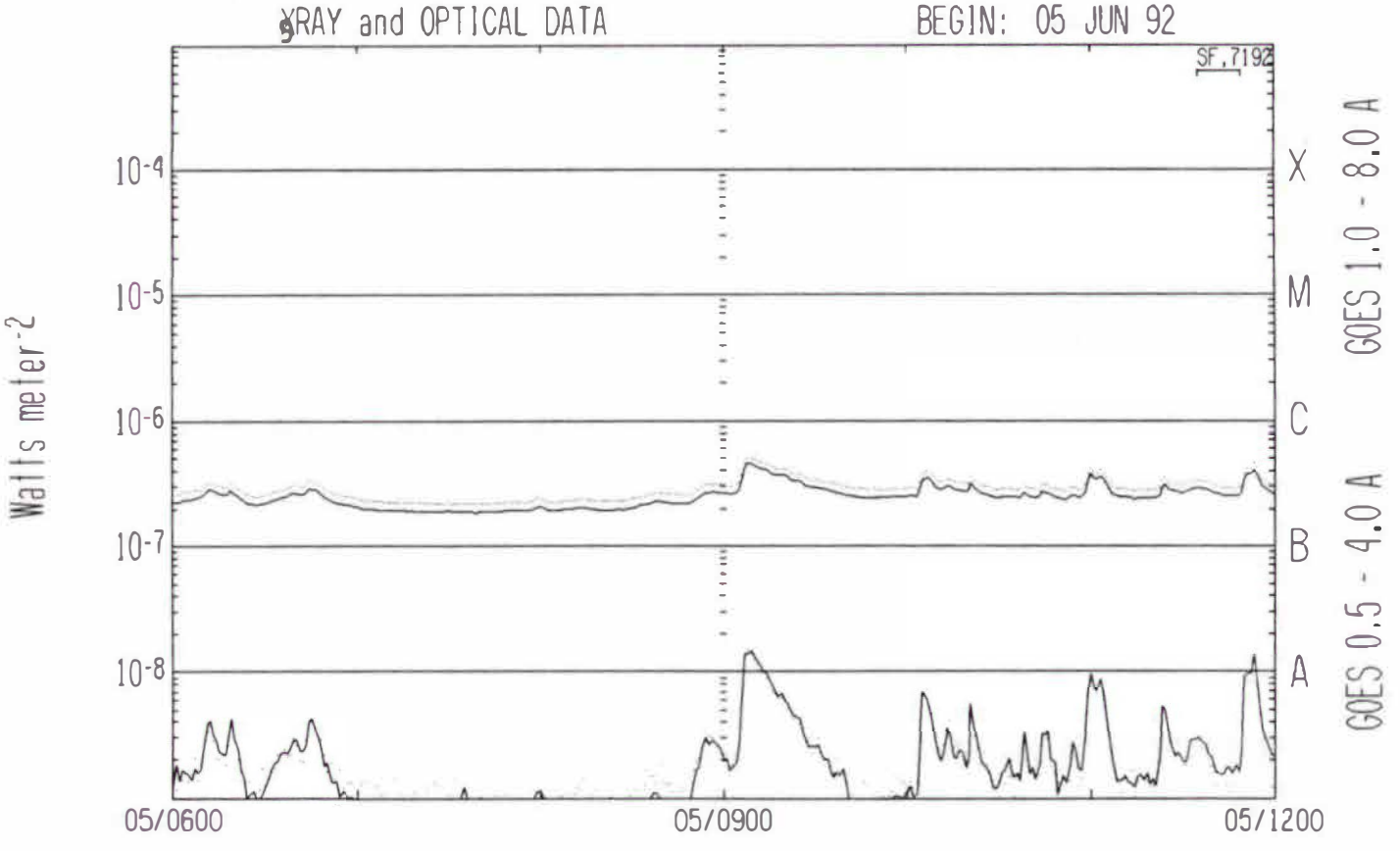
0.500 S INTERVALS REGROUPED BY 2

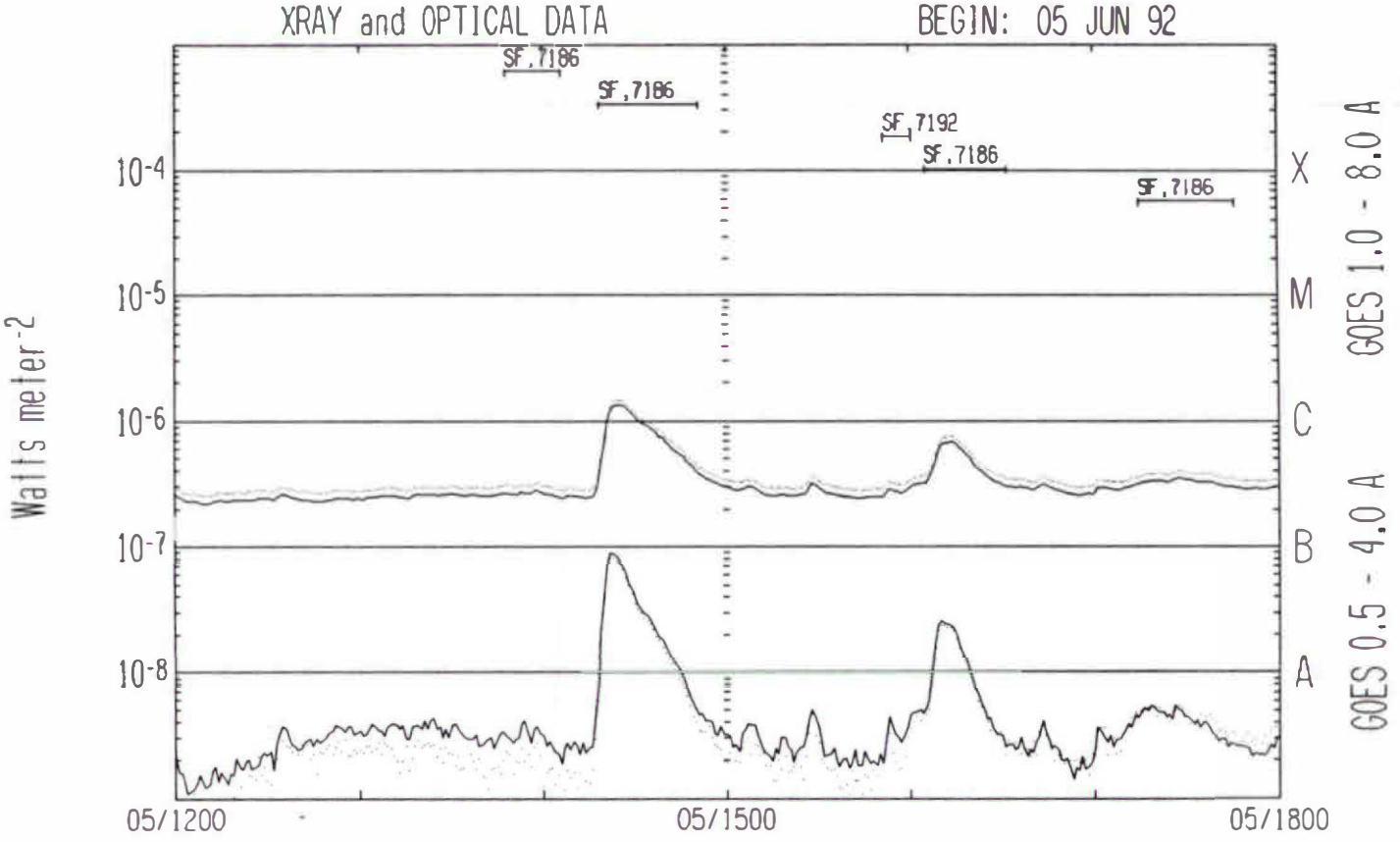
0- 0 keV

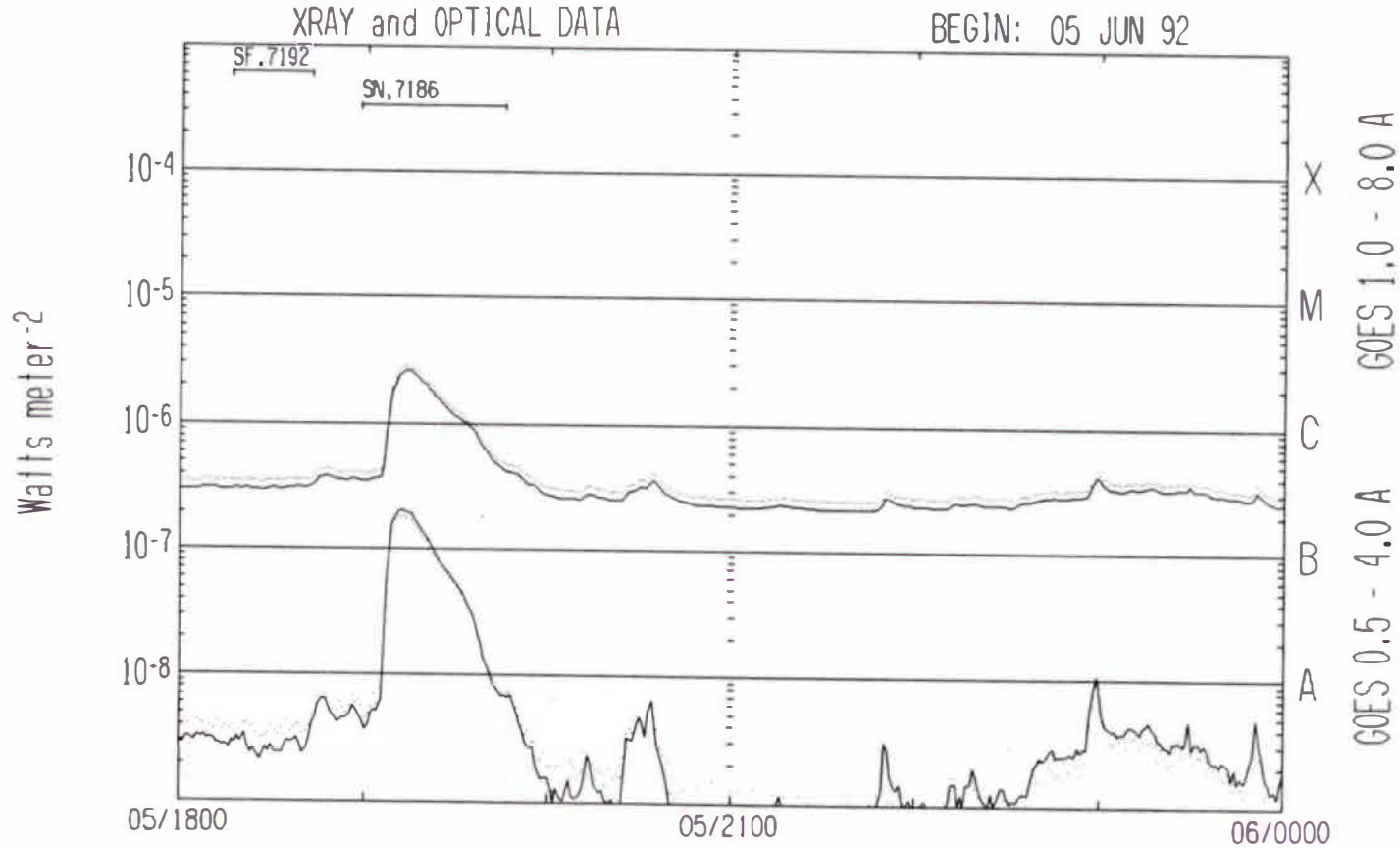



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/05
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1355 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

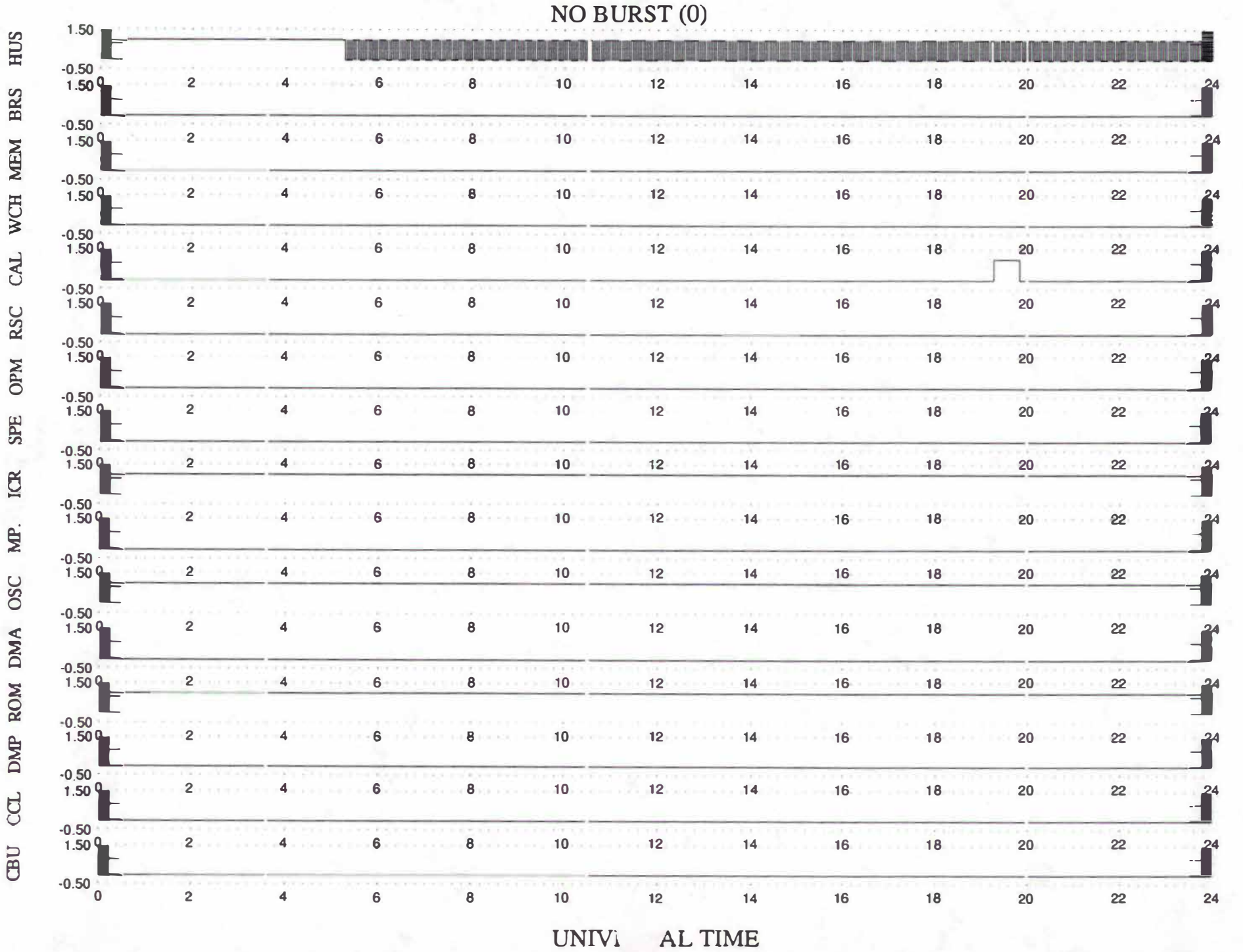

XRAY and OPTICAL DATA
BEGIN: 05 JUN 92
SF,7192
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
05/0000
05/0300
05/0600


XRAY and OPTICAL DATA
BEGIN: 05 JUN 92
SF,7192
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
05/0600
05/0900
05/1200


XRAY and OPTICAL DATA
BEGIN: 05 JUN 92
SF,7186
SF,7186
SF,7192
SF,7186
SF,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
05/1200
05/1500
05/1800

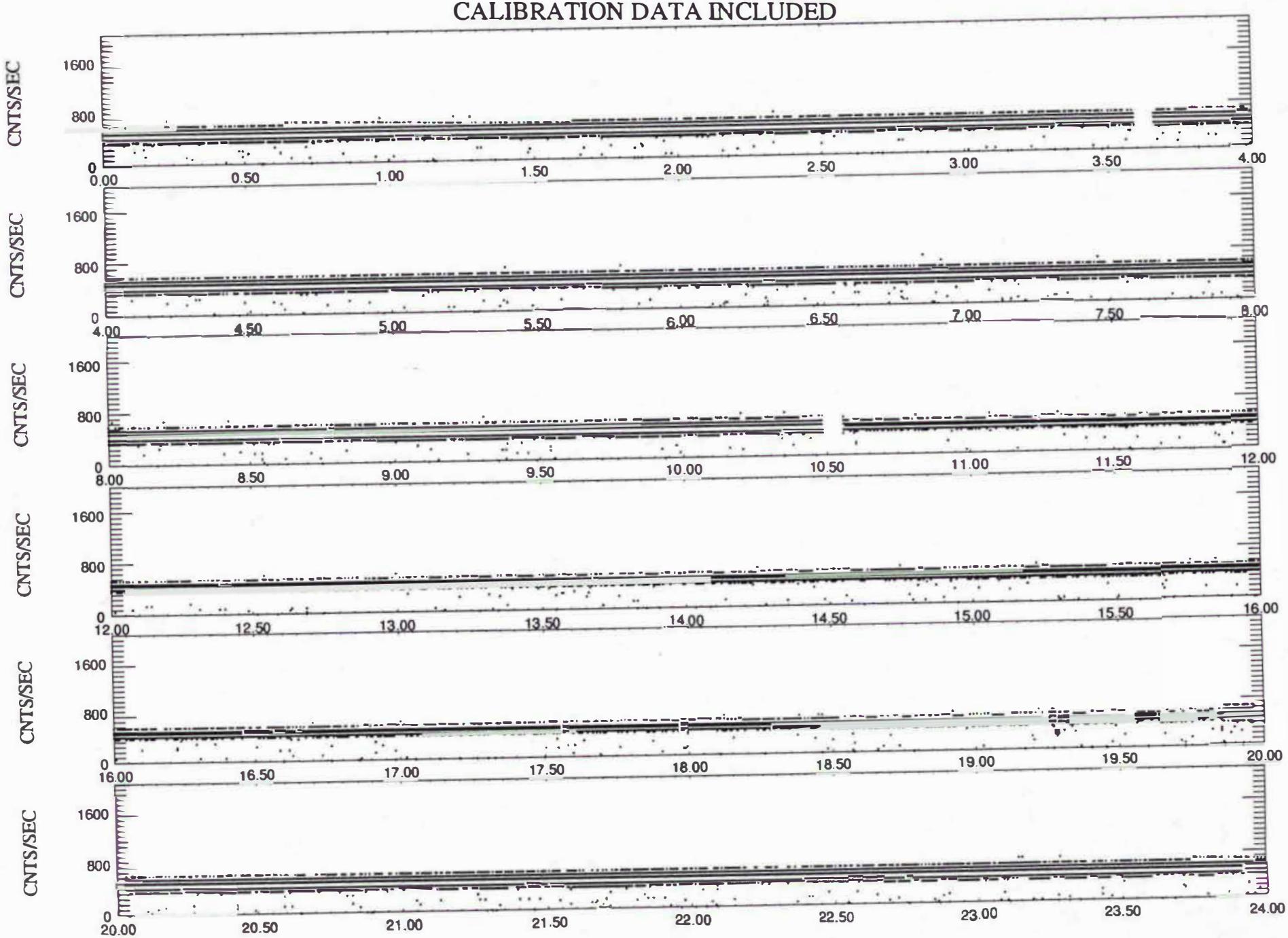

XRAY and OPTICAL DATA
BEGIN: 05 JUN 92
SF,7192
SN,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
05/1800
05/2100
06/0000

HUS MODES EDR day 157, year 1992 to day 157, year 1992 6/23/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 157, year 1992 to day 157, year 1992 6/23/92

CALIBRATION DATA INCLUDED



UNIVI AL TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1635
EVENT OF 1992 JUN 6 DAY OF YEAR=158
EVENT CROSSING TIME AT BATSE : 75140. S. OR 20:52:19.7
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 337.400 -74.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 6/ 6/ 92 IS:
RA= 148.539 DEC= 7.838 DIST= 5.566 AU
BATSE-ULYSSES DISTANCE = 832681080. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.37 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1113.50 SECS.
CROSSING TIME AT ULYSSES IS 76253. S. OR 21:10:53.2 +/- 508.69 SECONDS

ND

From MALLOZZI@ssl.msfc.nasa.gov Mon Jun 8 07:39:32 1992
Date: Sun, 7 Jun 1992 13:28:52 -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: 1296

BATSE BURST TRIGGER

NO.: 01635 June 6

TIME: TJD=8779 SECONDS=75141

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

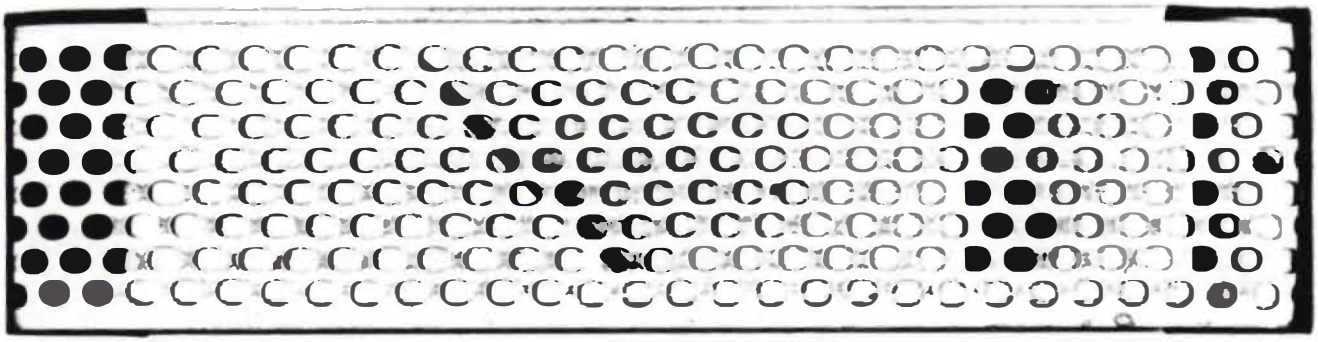
SIGNIFICANCE: SIGMA

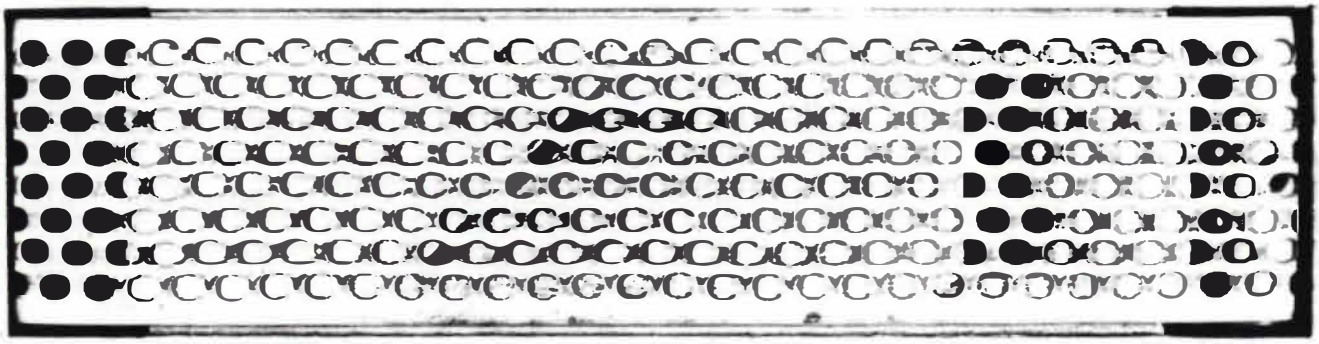
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=92.8 AZIMUTH=95.6 ERROR= DEGREES

COMMENTS:
SHORT, SINGLE SPIKE EVENT. OBSERVED ABOVE 100 KEV, BUT NOT ABOVE 300 KEV
DURATION ~1 SEC.

No trigger





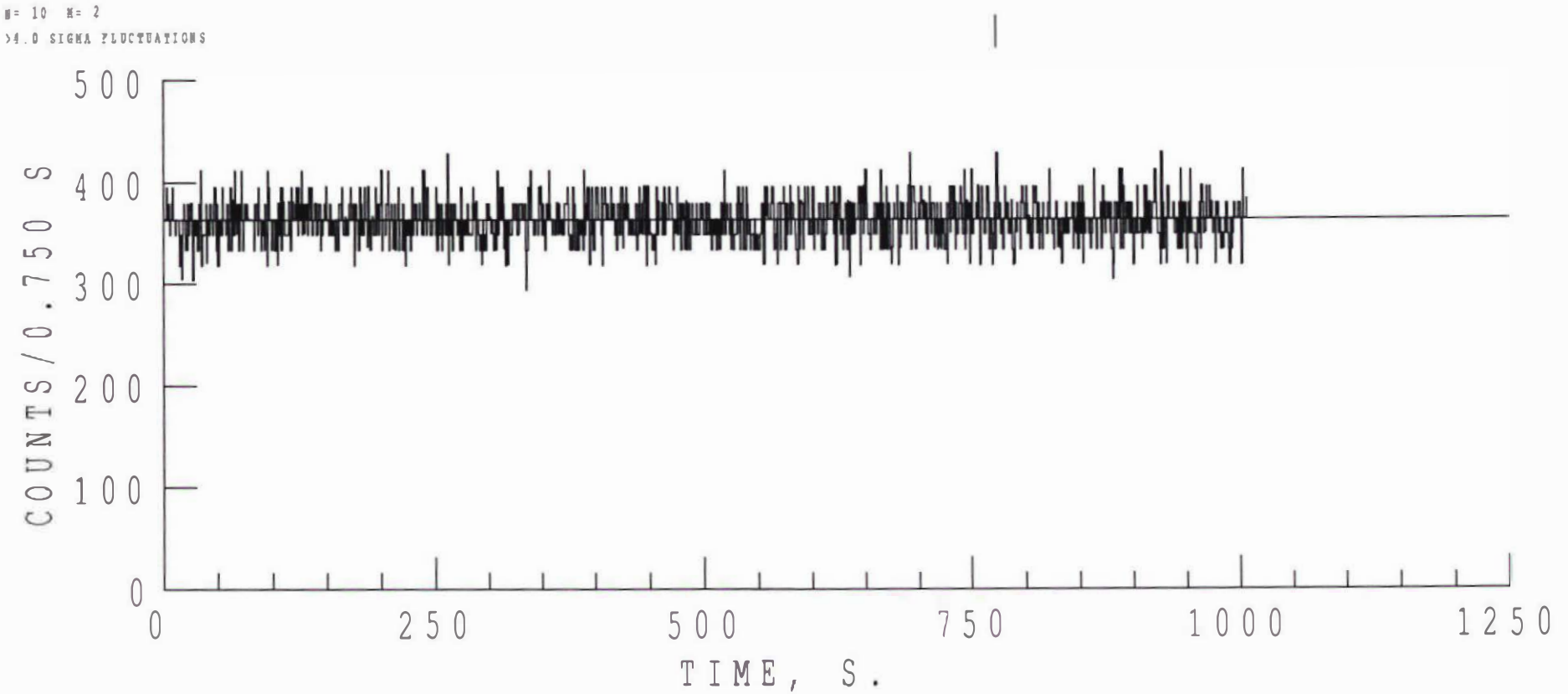
7/ 6/94

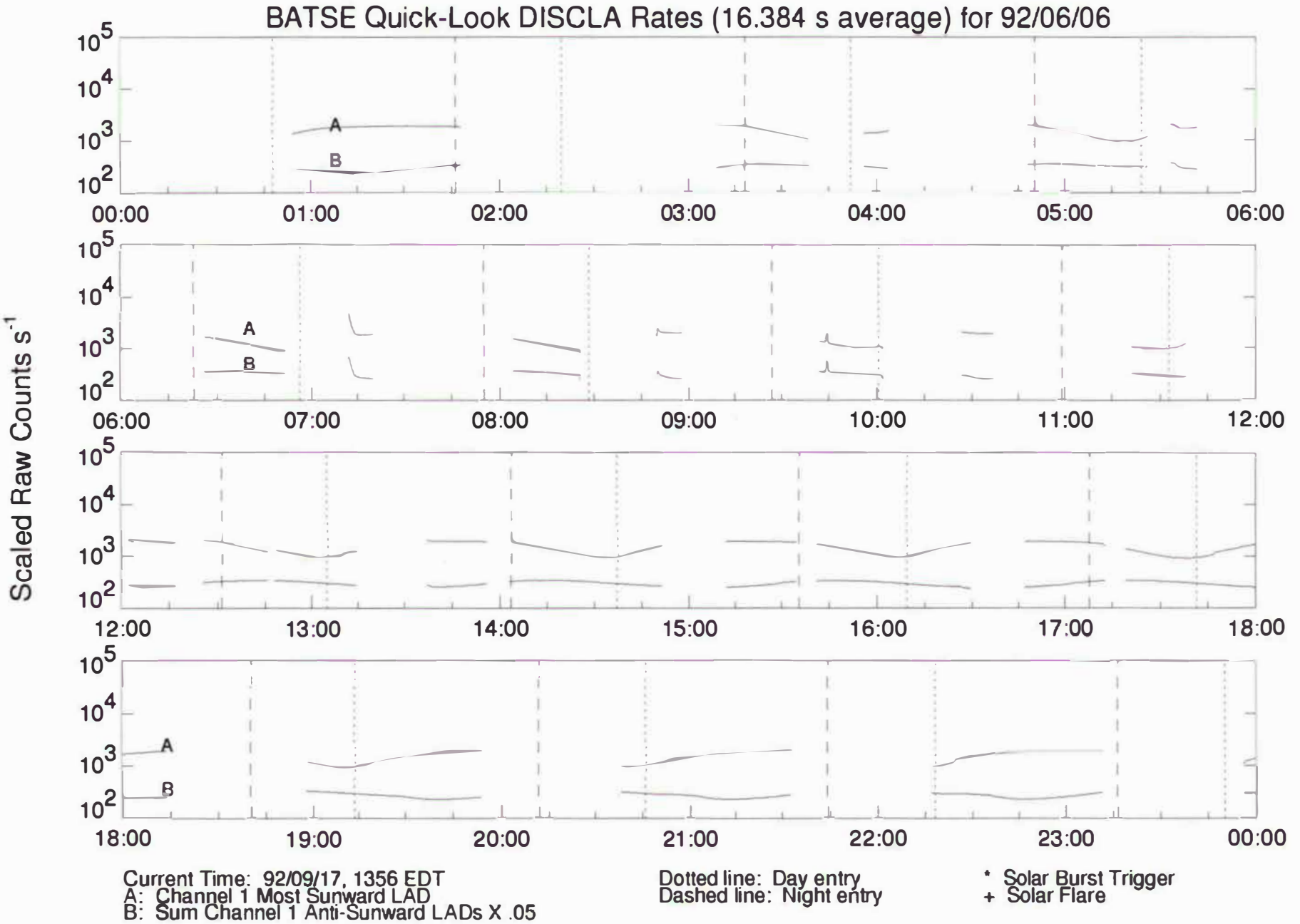
ULYSSES RT

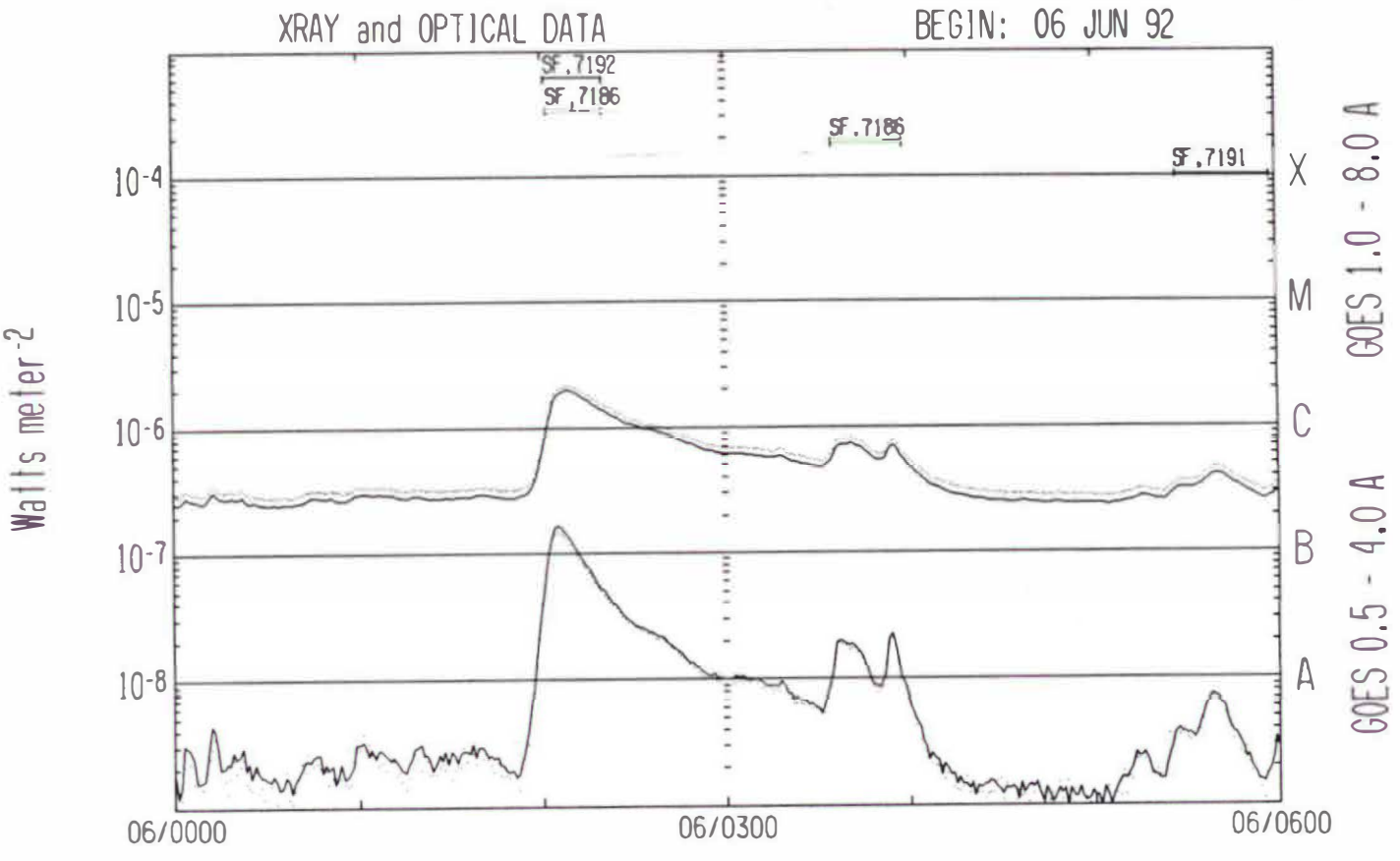
6/ 6/92 75744.125 s

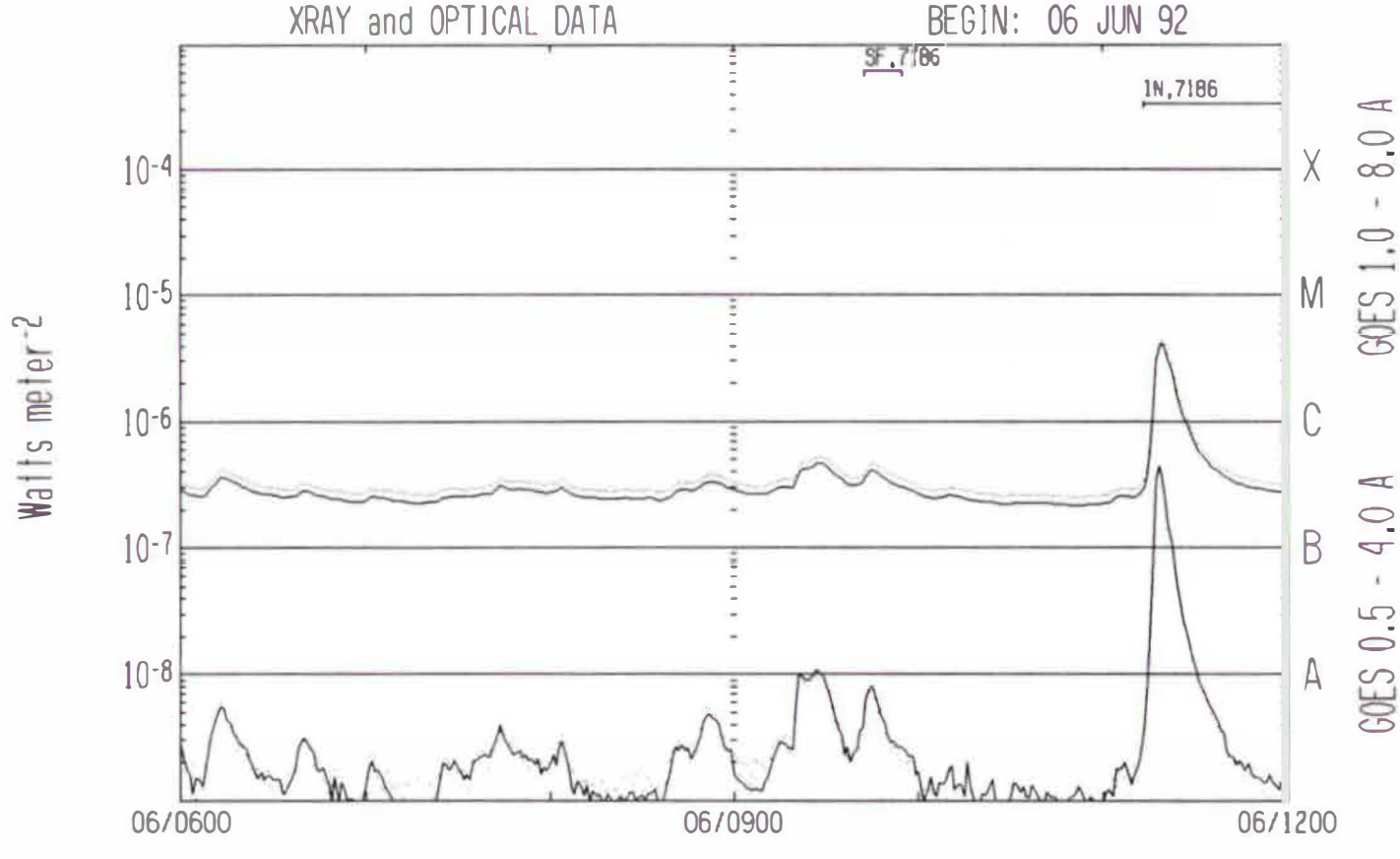
0.250 S INTERVALS REGROUPED BY 3

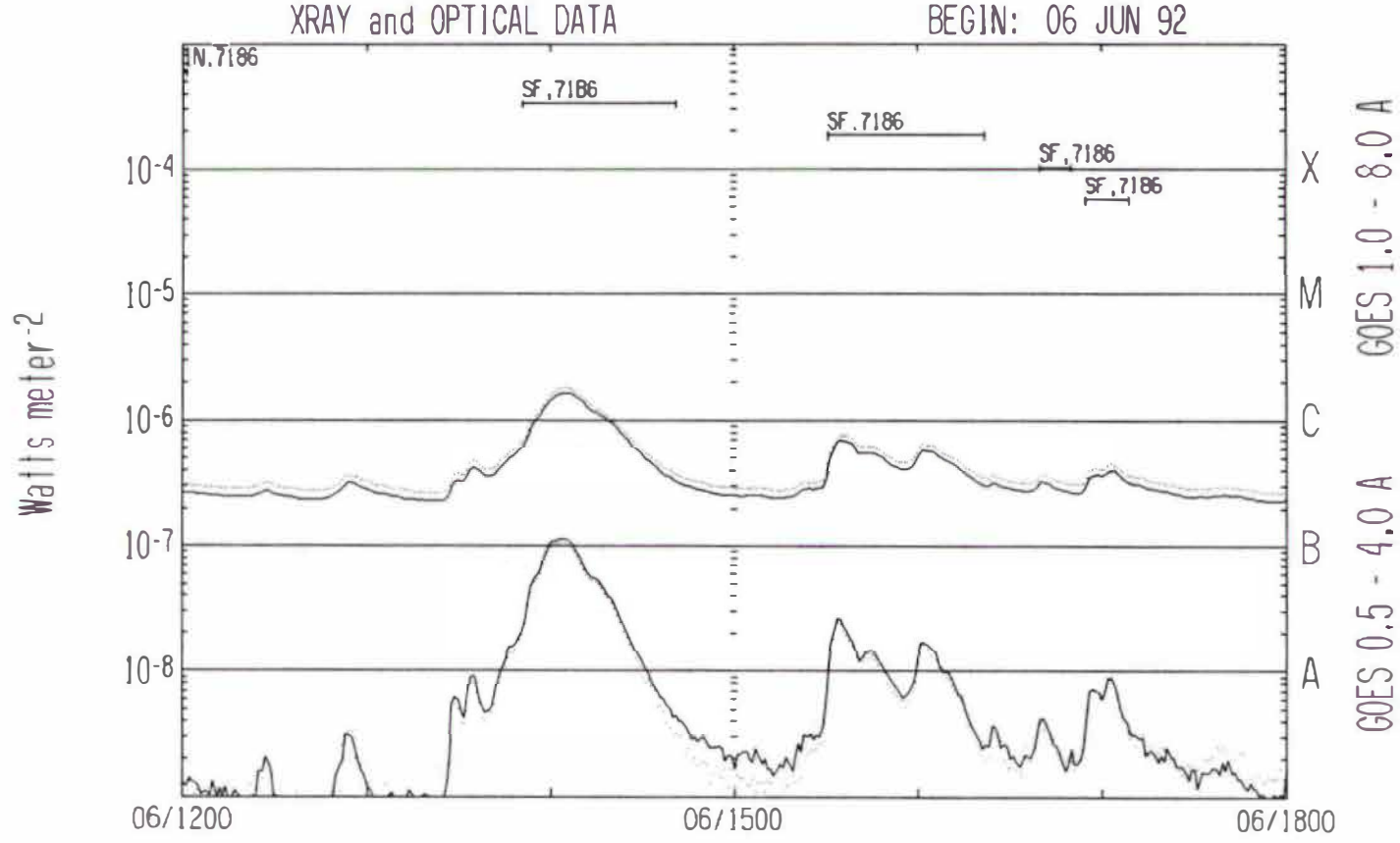
0- 0 keV

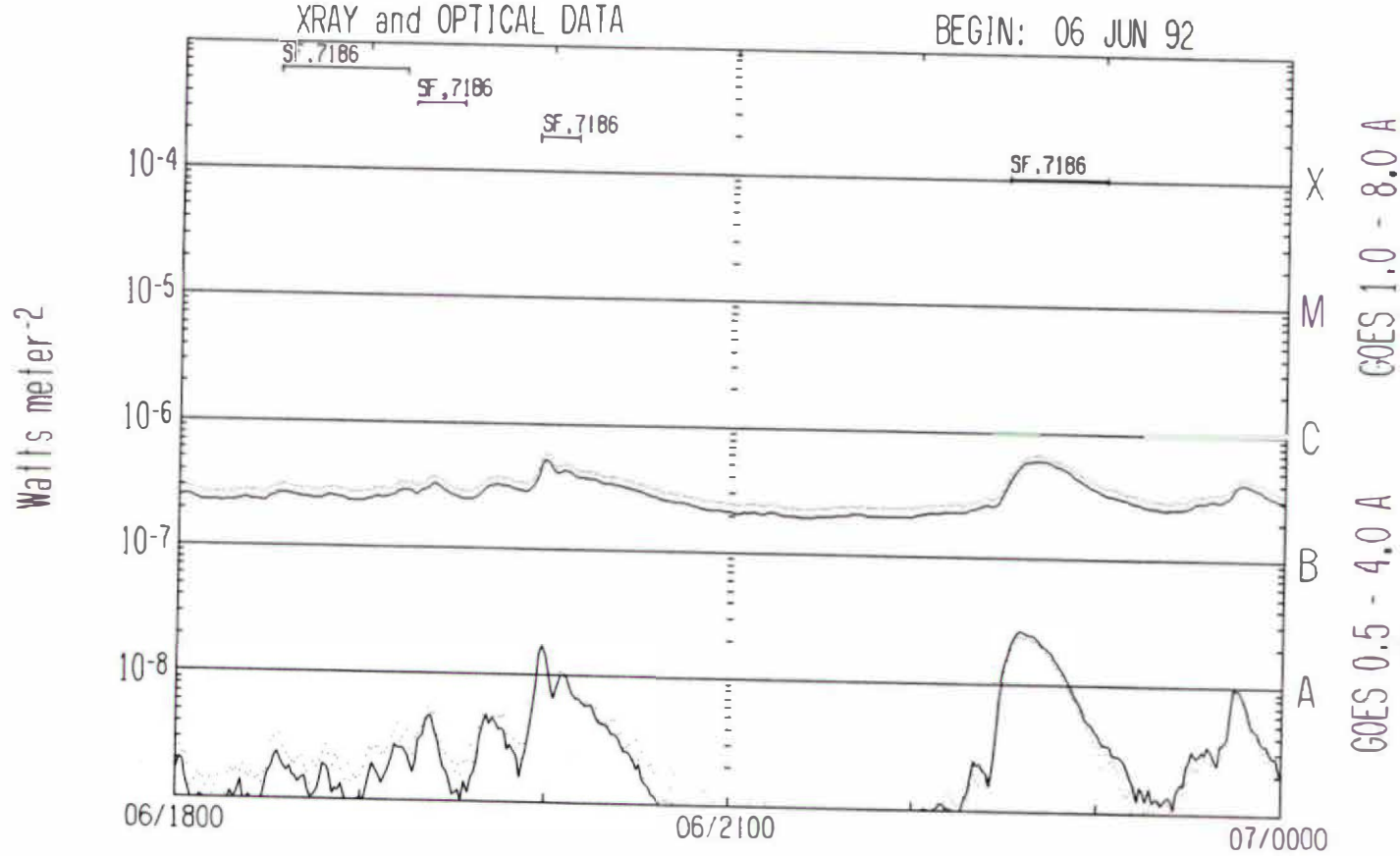



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/06
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1356 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

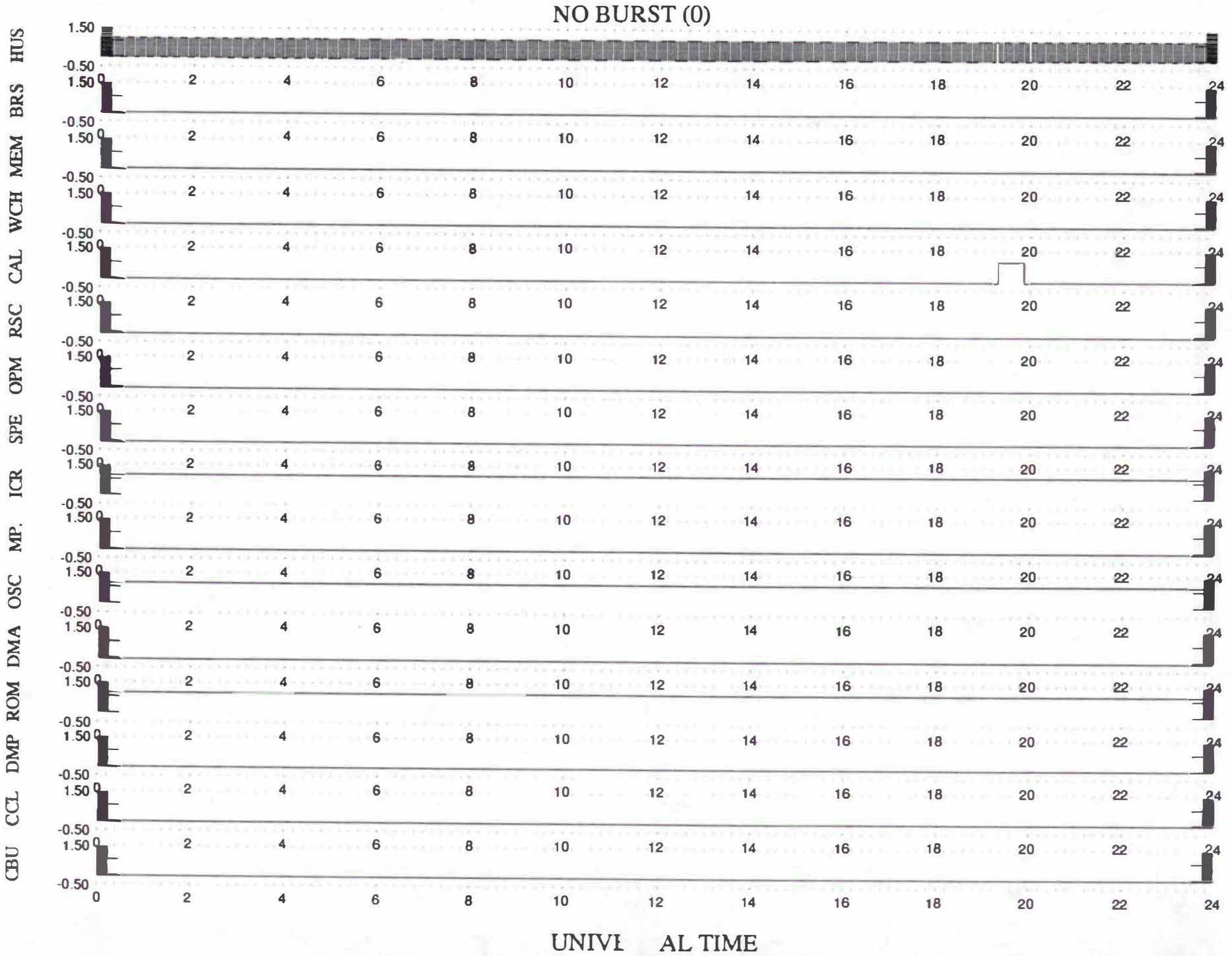

XRAY and OPTICAL DATA
BEGIN: 06 JUN 92
SF,7192
SF,7186
SF,7186
SF,7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
06/0000
06/0300
06/0600


XRAY and OPTICAL DATA
BEGIN: 06 JUN 92
SF,7186
1N,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
06/0600
06/0900
06/1200


XRAY and OPTICAL DATA
BEGIN: 06 JUN 92
IN.7186
SF,7186
SF.7186
SF,7186
SF,7186
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
06/1200
06/1500
06/1800

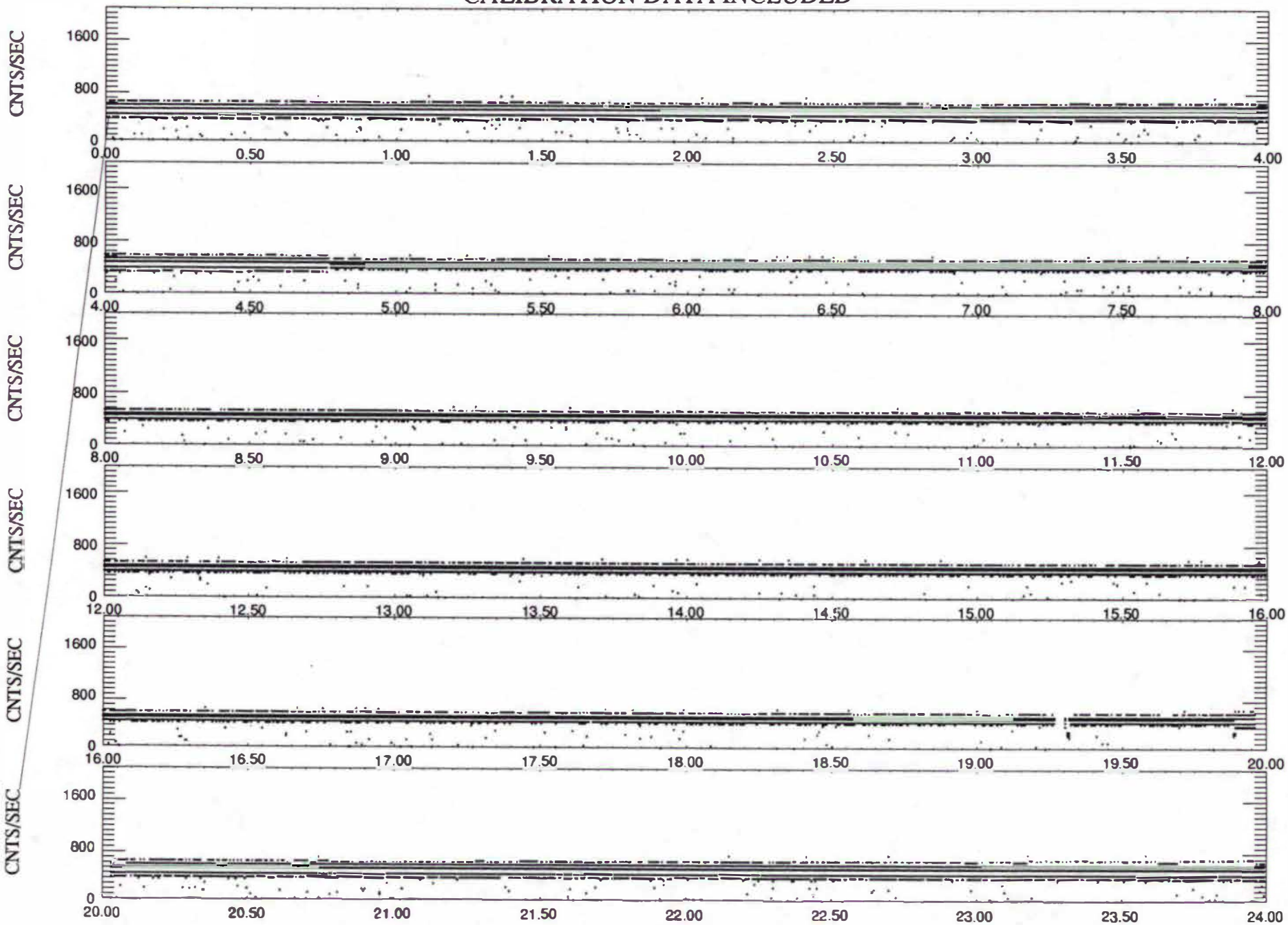

XRAY and OPTICAL DATA
BEGIN: 06 JUN 92
SF.7186
SF,7186
SF.7186
SF.7186
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
06/1800
06/2100
07/0000

HUS MODES EDR day 158, year 1992 to day 158, year 1992 6/23/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 158, year 1992 to day 158, year 1992 6/23/92

CALIBRATION DATA INCLUDED



UNIVI AL TIME

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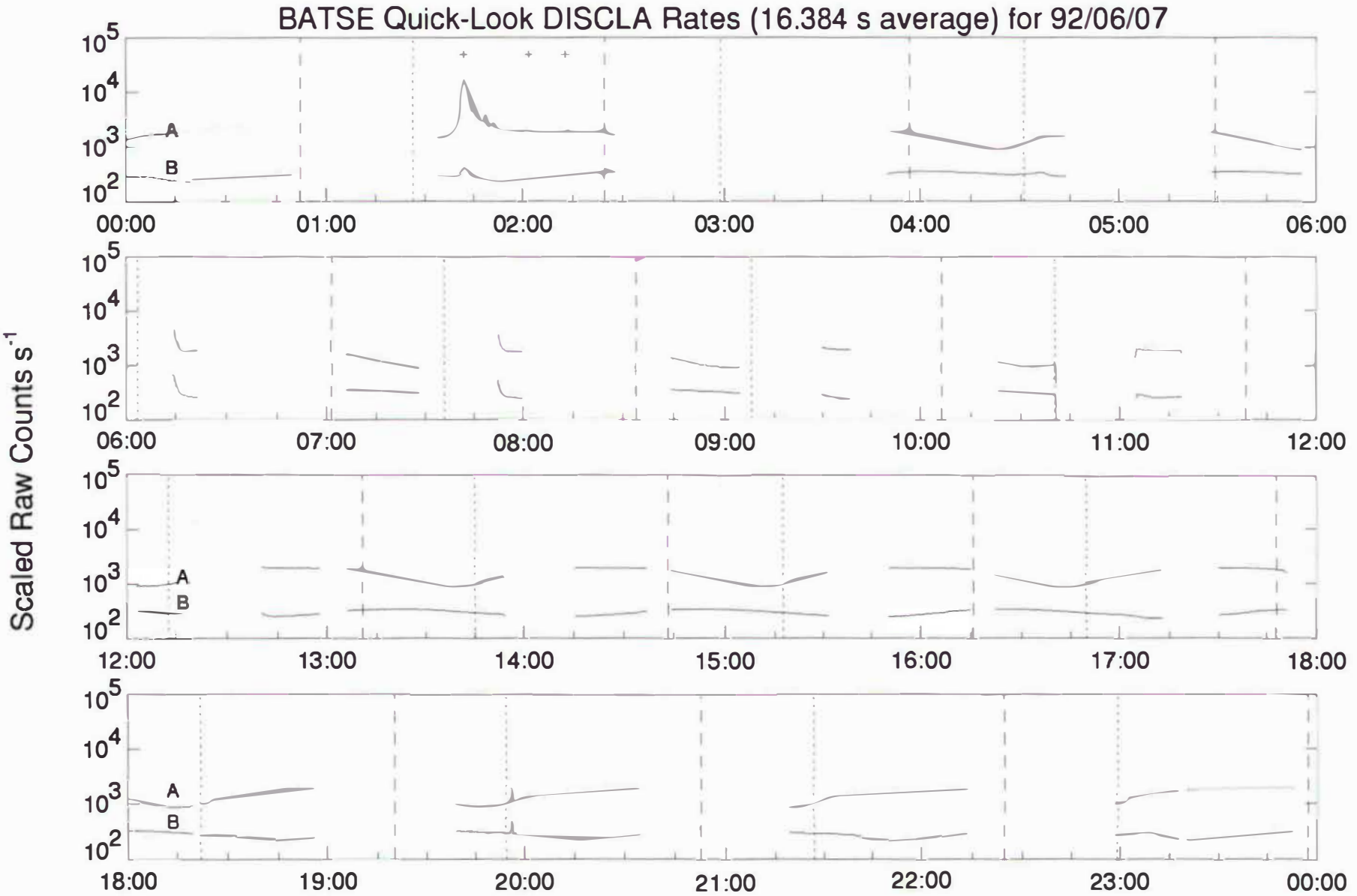
          ********************
          *CATSEARCH PROGRAM*
          ********************

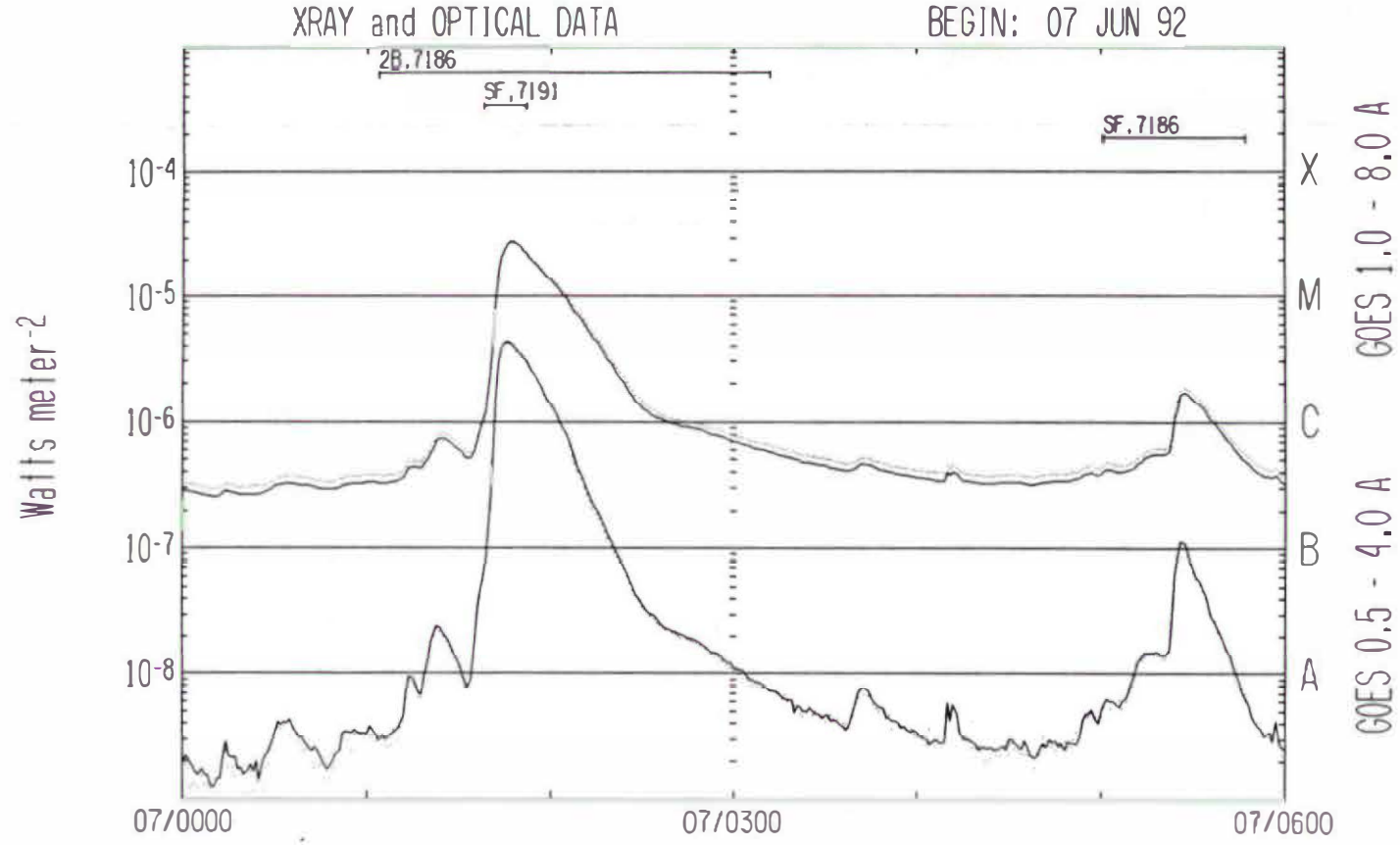
BATSE BURST # 1636
EVENT OF 1992 JUN  7 DAY OF YEAR=159
EVENT CROSSING TIME AT BATSE      : 71675. S. OR 19:54:35.0
COORDINATES ARE     .000     .000        6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 286.500   13.800
BATSE PEAK COUNTING RATE:  0000   C/S

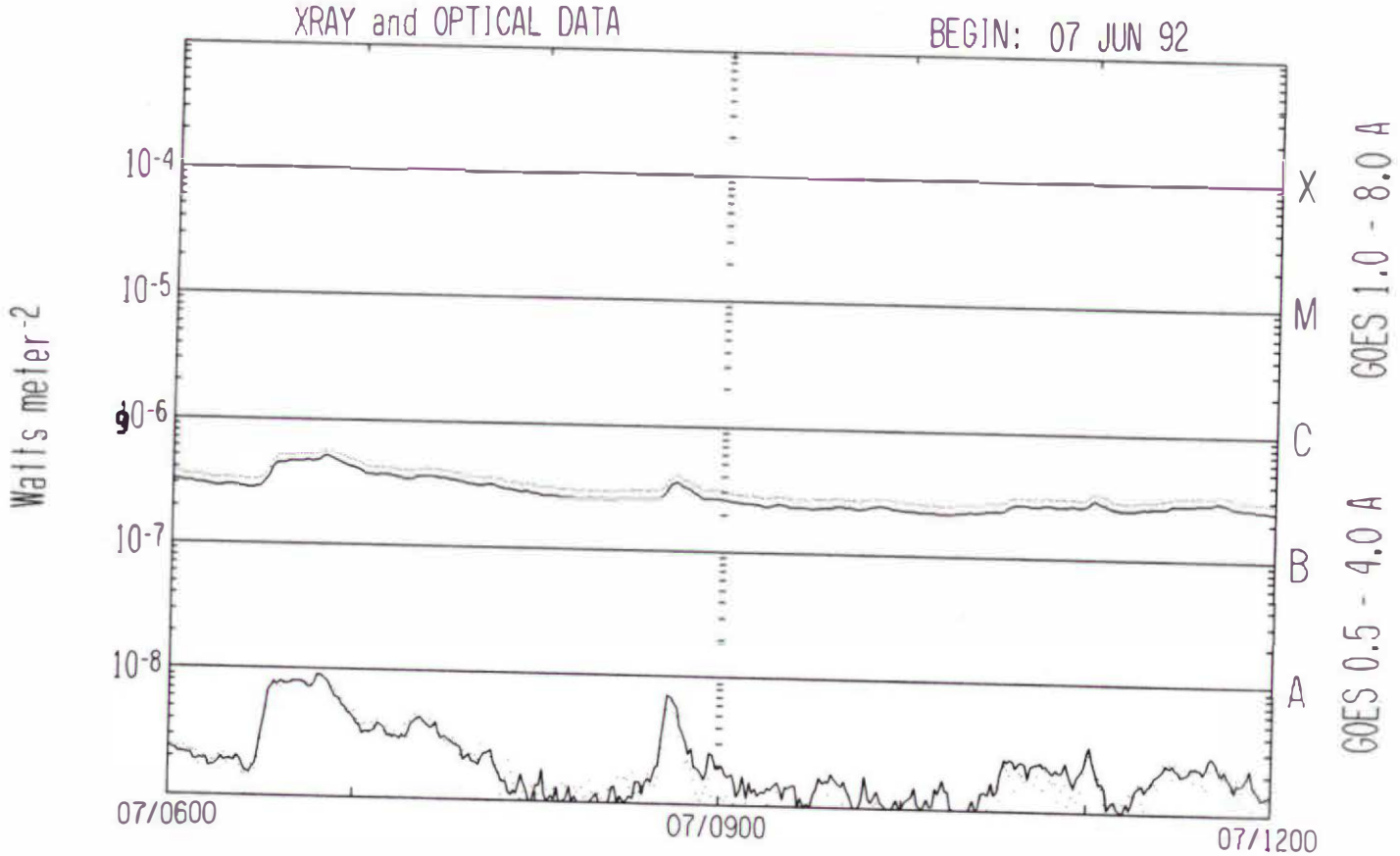
EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON  7/ 6/  92 IS:
RA=  148.582 DEC=     7.786 DIST=     5.581 AU
BATSE-ULYSSES DISTANCE =  834963976. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1898.92 SECS.
CROSSING TIME AT ULYSSES     IS 73574. S. OR 20:26:13.9 +/-  432.57 SECONDS
```

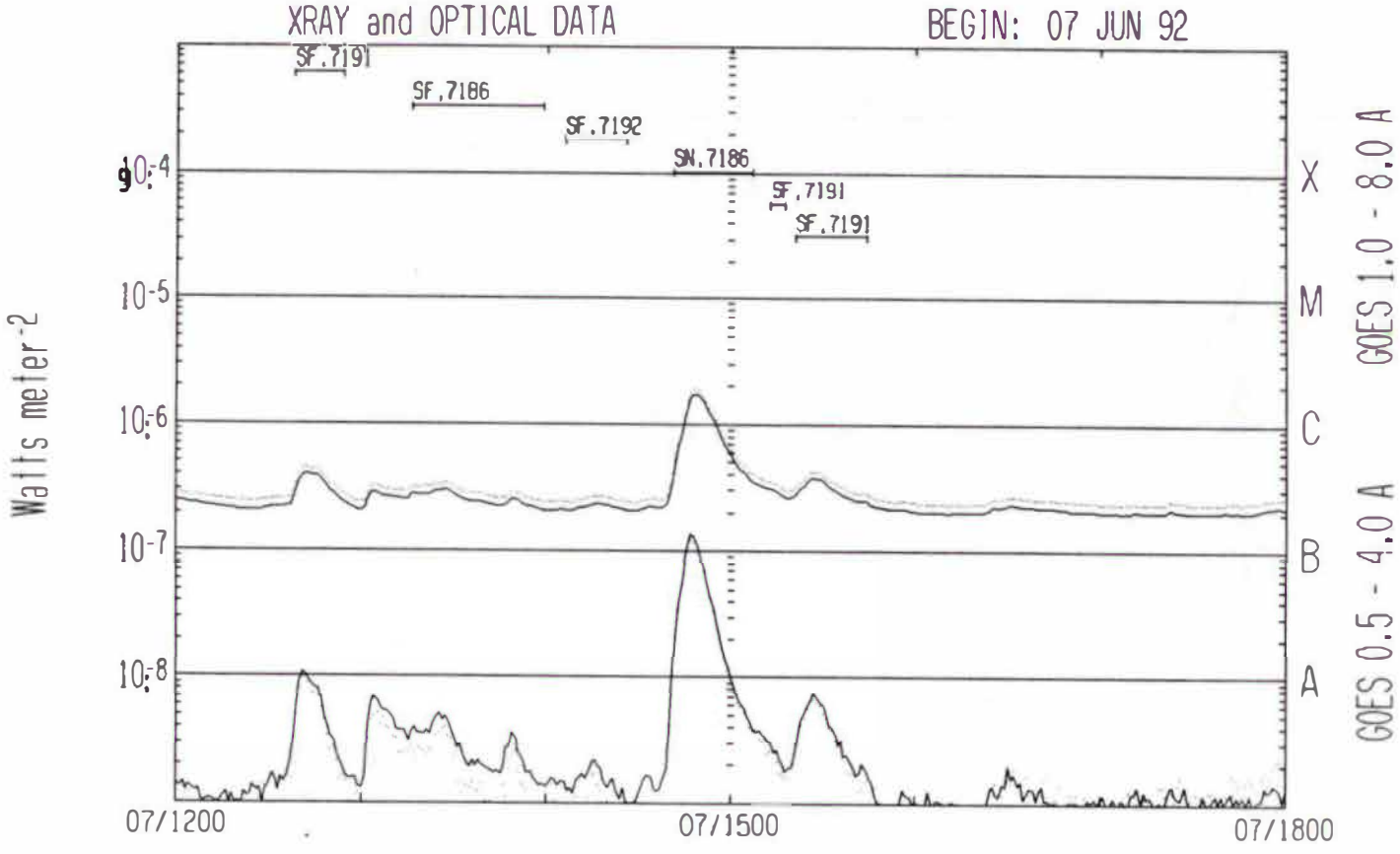
No

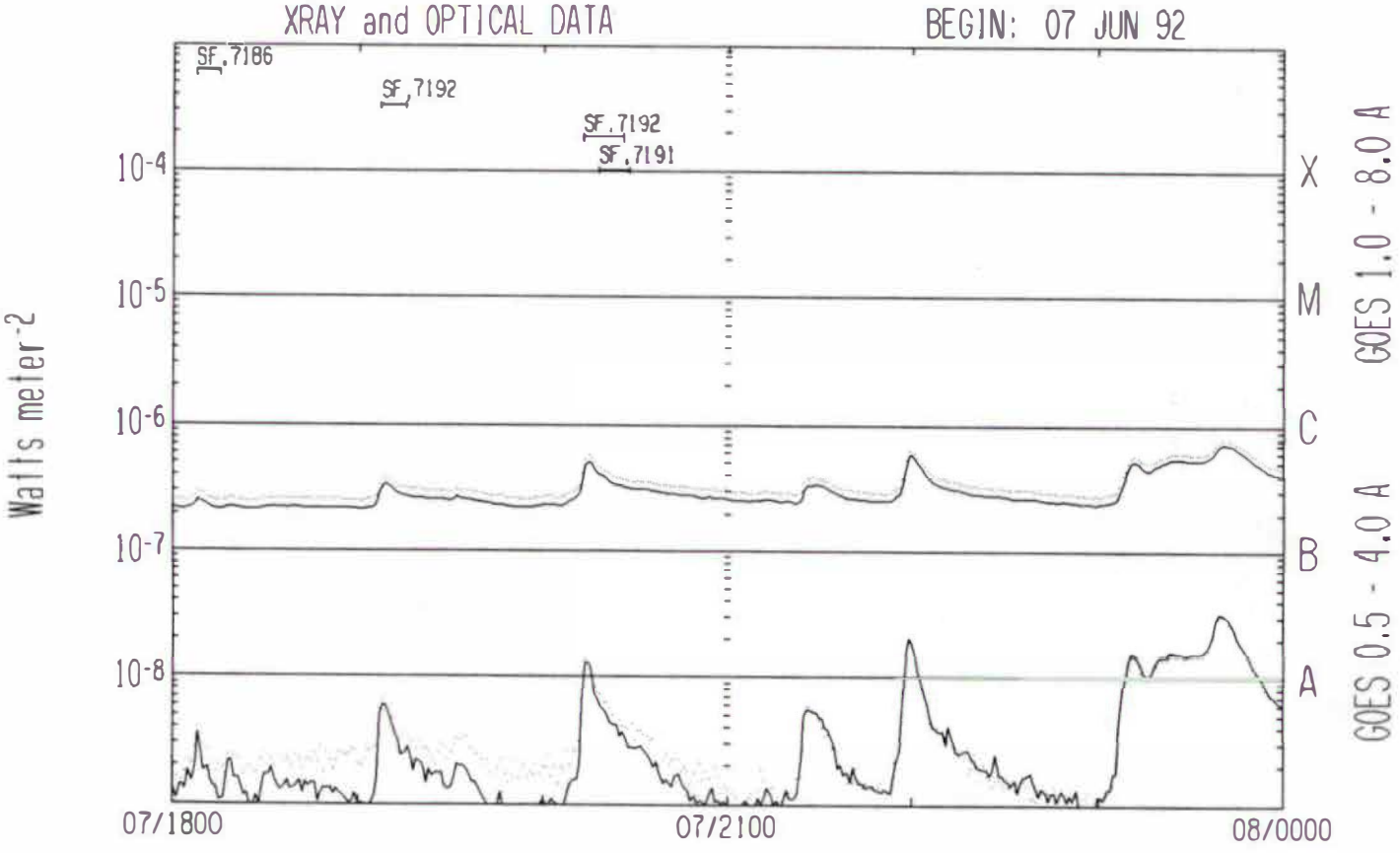
~.7s long


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/07
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1357 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

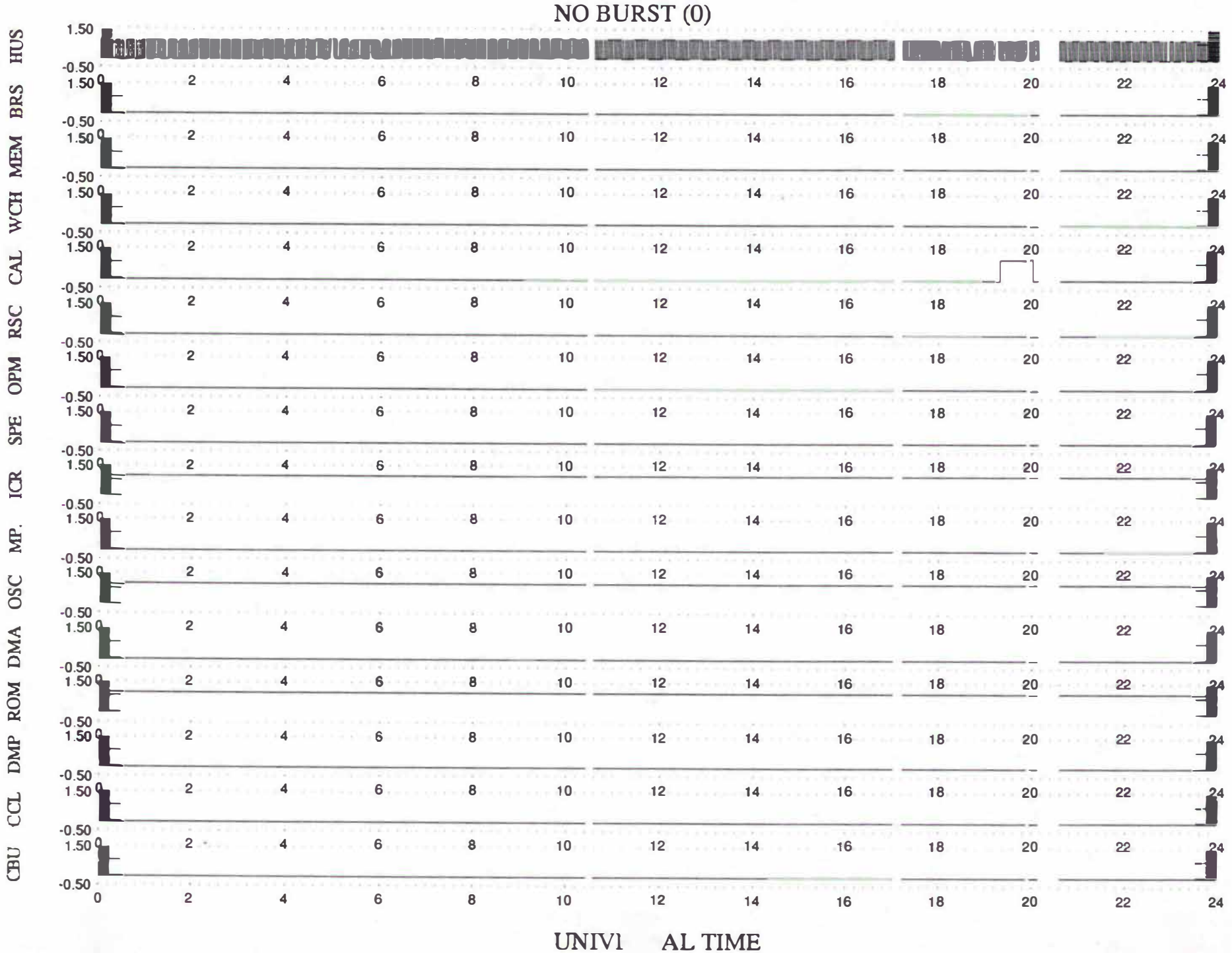

XRAY and OPTICAL DATA
BEGIN: 07 JUN 92
2B,7186
SF,7191
SF,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
07/0000
07/0300
07/0600


XRAY and OPTICAL DATA
BEGIN: 07 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
07/0600
07/0900
07/1200


XRAY and OPTICAL DATA
BEGIN: 07 JUN 92
SF,7191
SF,7186
SF,7192
SN,7186
SF,7191
SF,7191
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
07/1200
07/1500
07/1800

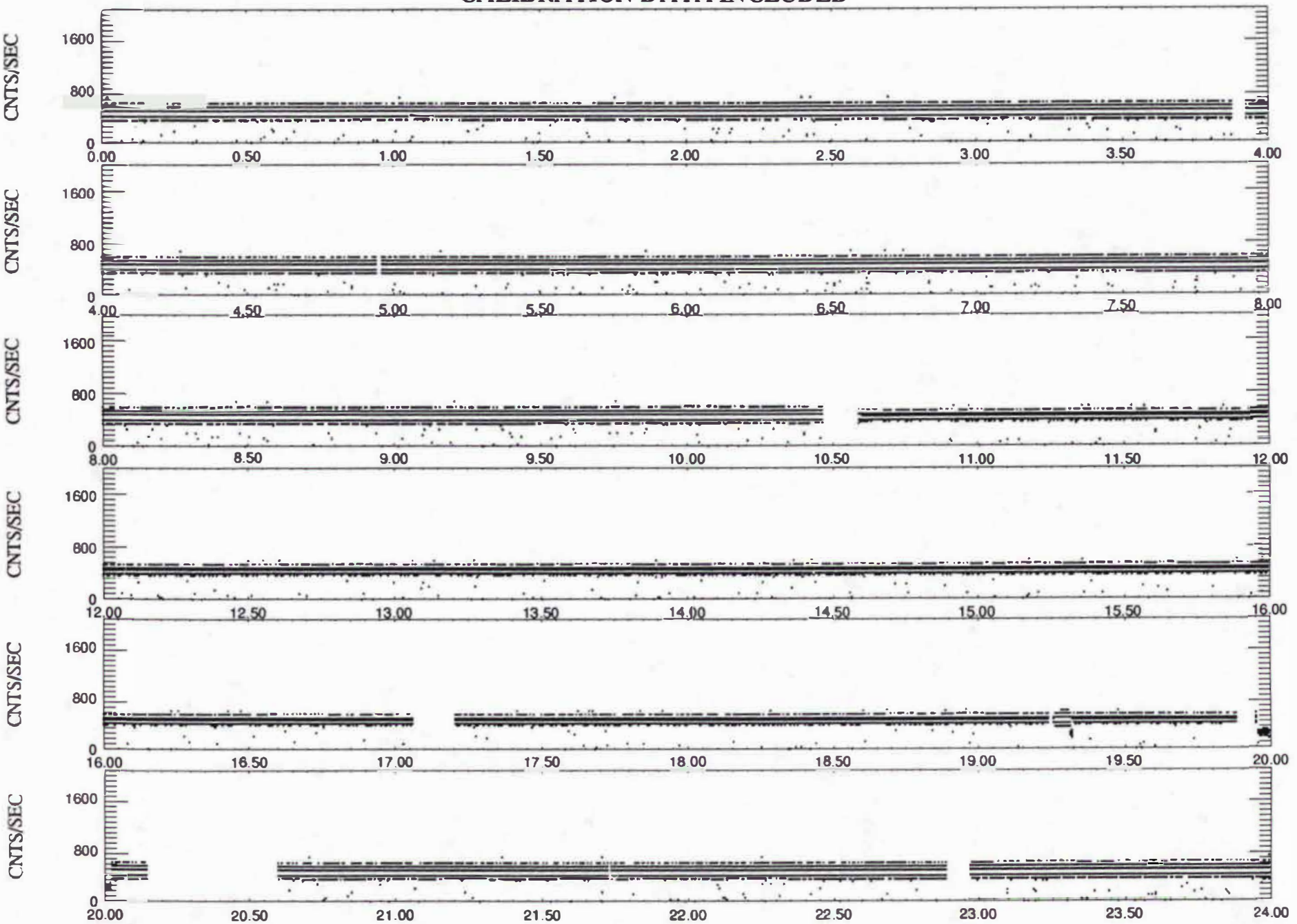

XRAY and OPTICAL DATA
BEGIN: 07 JUN 92
SF,7186
SF,7192
SF,7192
SF,7191
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
07/1800
07/2100
08/0000

HUS MODES EDR day 159, year 1992 to day 159, year 1992 6/23/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 159, year 1992 to day 159, year 1992 6/23/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

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**********
*CATSEARCH PROGRAM*
**********

BATSE BURST # 1637
EVENT OF 1992 JUN  8 DAY OF YEAR=160
EVENT CROSSING TIME AT BATSE      : 51969. S. OR 14:26:08.8
COORDINATES ARE     .000     .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION:  32.600     4.700
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON  8/ 6/  92 IS:
RA=  148.628 DEC=     7.733 DIST=     5.596 AU
BATSE-ULYSSES DISTANCE =  837234904. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1179.46 SECS.
CROSSING TIME AT ULYSSES    IS 53148. S. OR 14:45:48.3 +/-  507.41 SECONDS
```

ND

```
From KOUVELIOTOU@ssl.msfc.nasa.gov Wed Jun 10 09:14:33 1992
Date:    Wed, 10 Jun 1992 11:17:03 -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.: 01637

TIME: TJD=8781 SECONDS=51790

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=133.1  AZIMUTH=022.1  ERROR=      DEGREES

COMMENTS:
VERY WEAK, SHORT EVENT, LASTING ~ 6 S. SINGLE PEAK WITHOUT ANY
SUBSTRUCTURE.  NOT SEEN ABOVE 320 KEV.
```

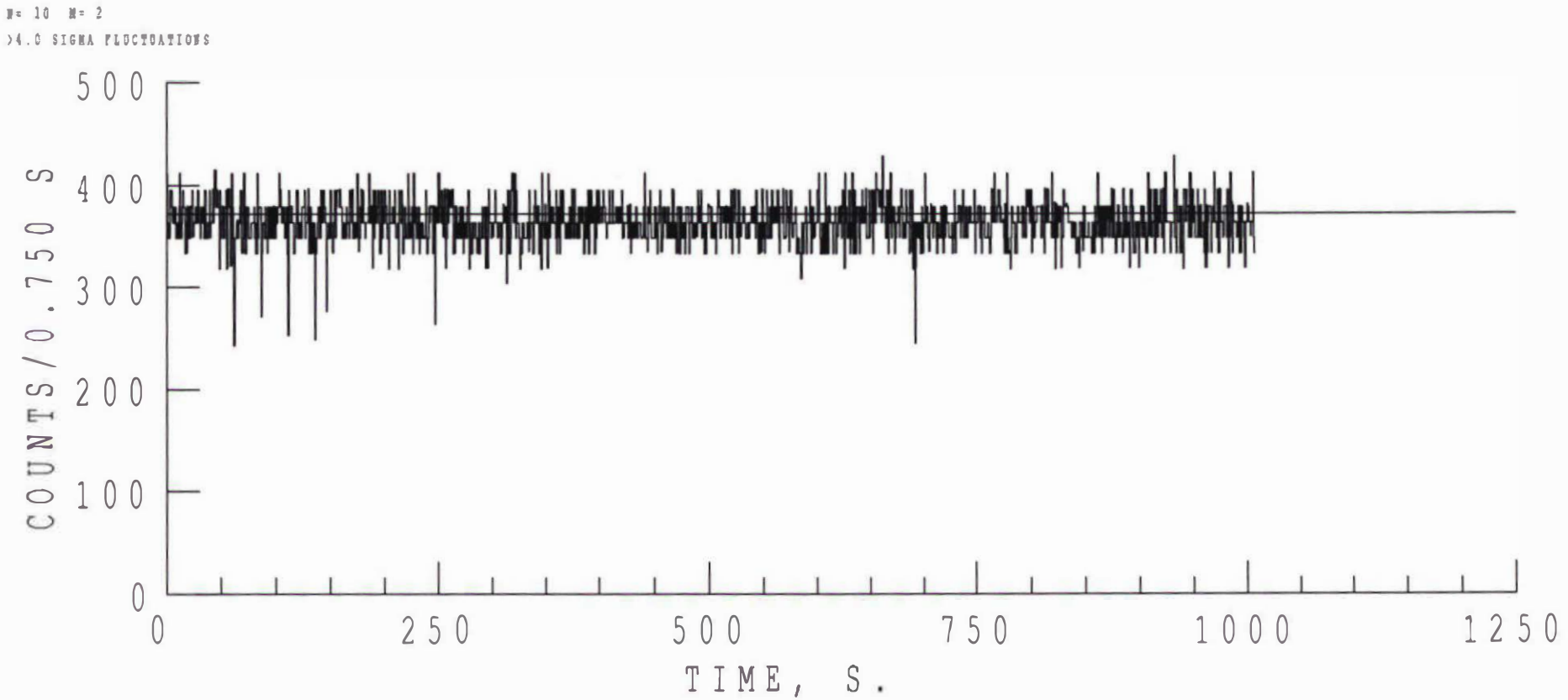
8/ 6/94

ULYSSES RT

8/ 6/92 52632.039 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



From KOUVELIOTOU@ssl.msfc.nasa.gov Tue Jun 9 15:58:33 1992
Date: Tue, 9 Jun 1992 18:01:07 -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: 1215

BATSE BURST TRIGGER

NO.: 01638

TIME: TJD=8781 SECONDS=85239

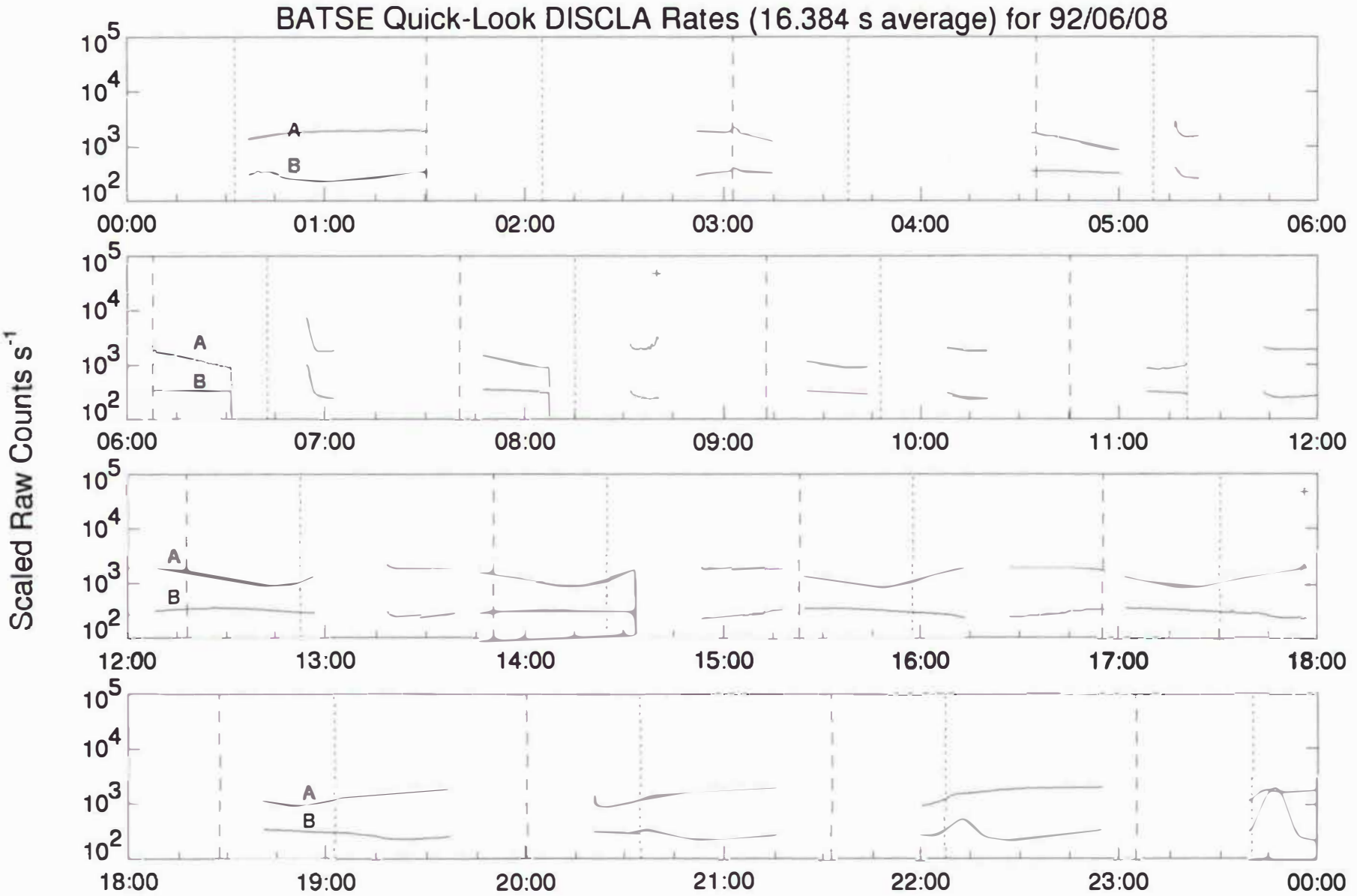
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:

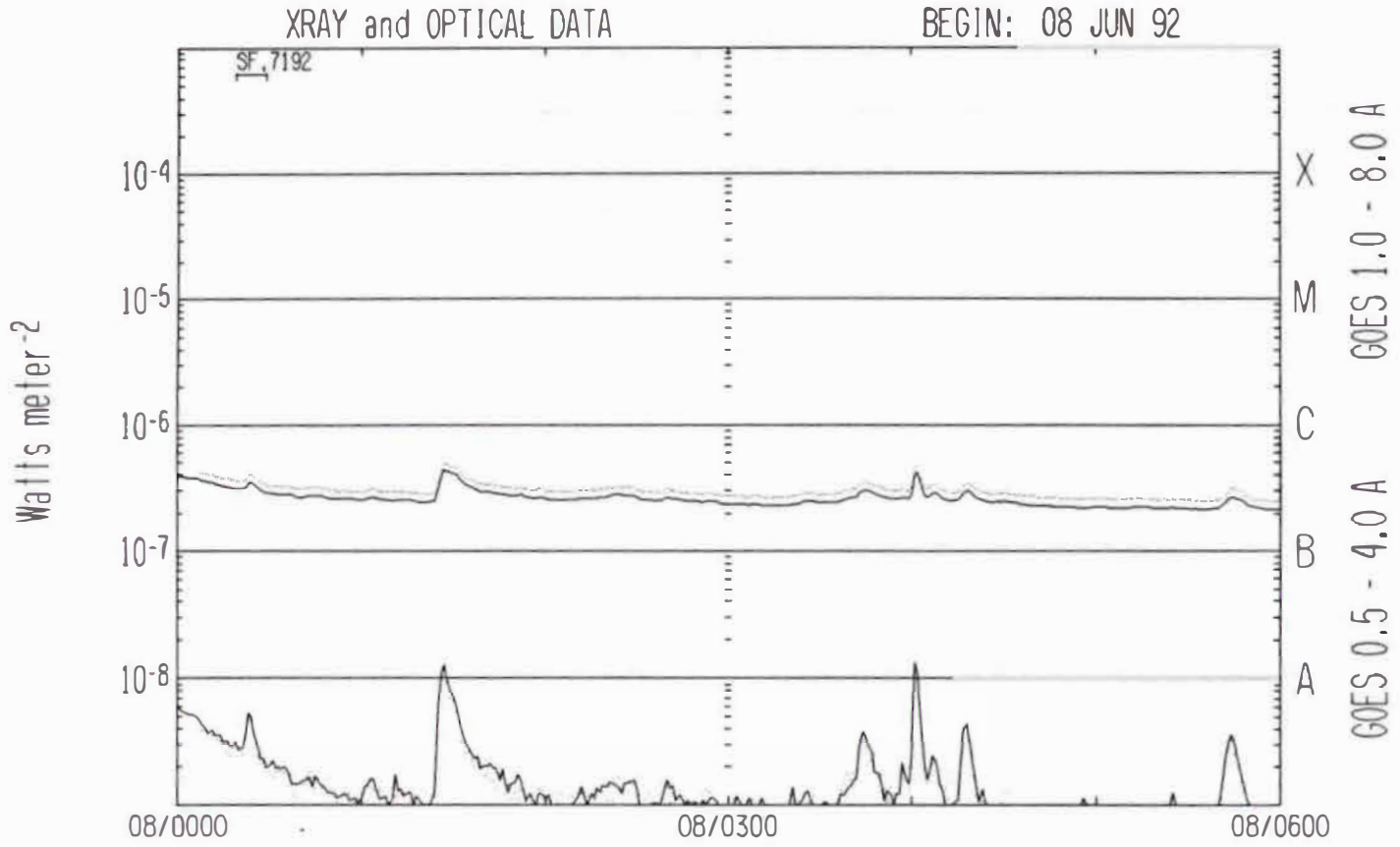
SIGNIFICANCE: SIGMA

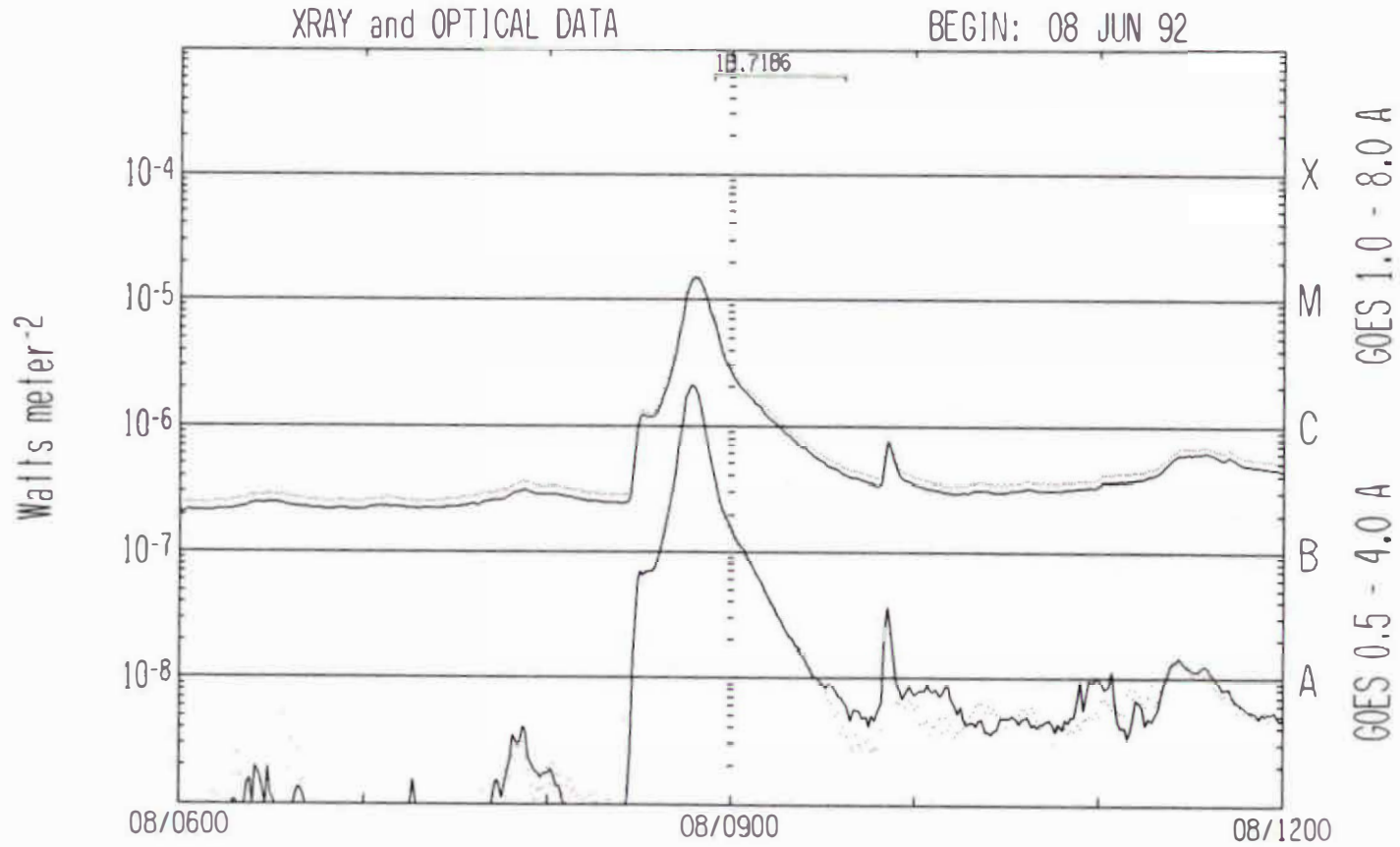
INTENSITY: COUNTS/CM2

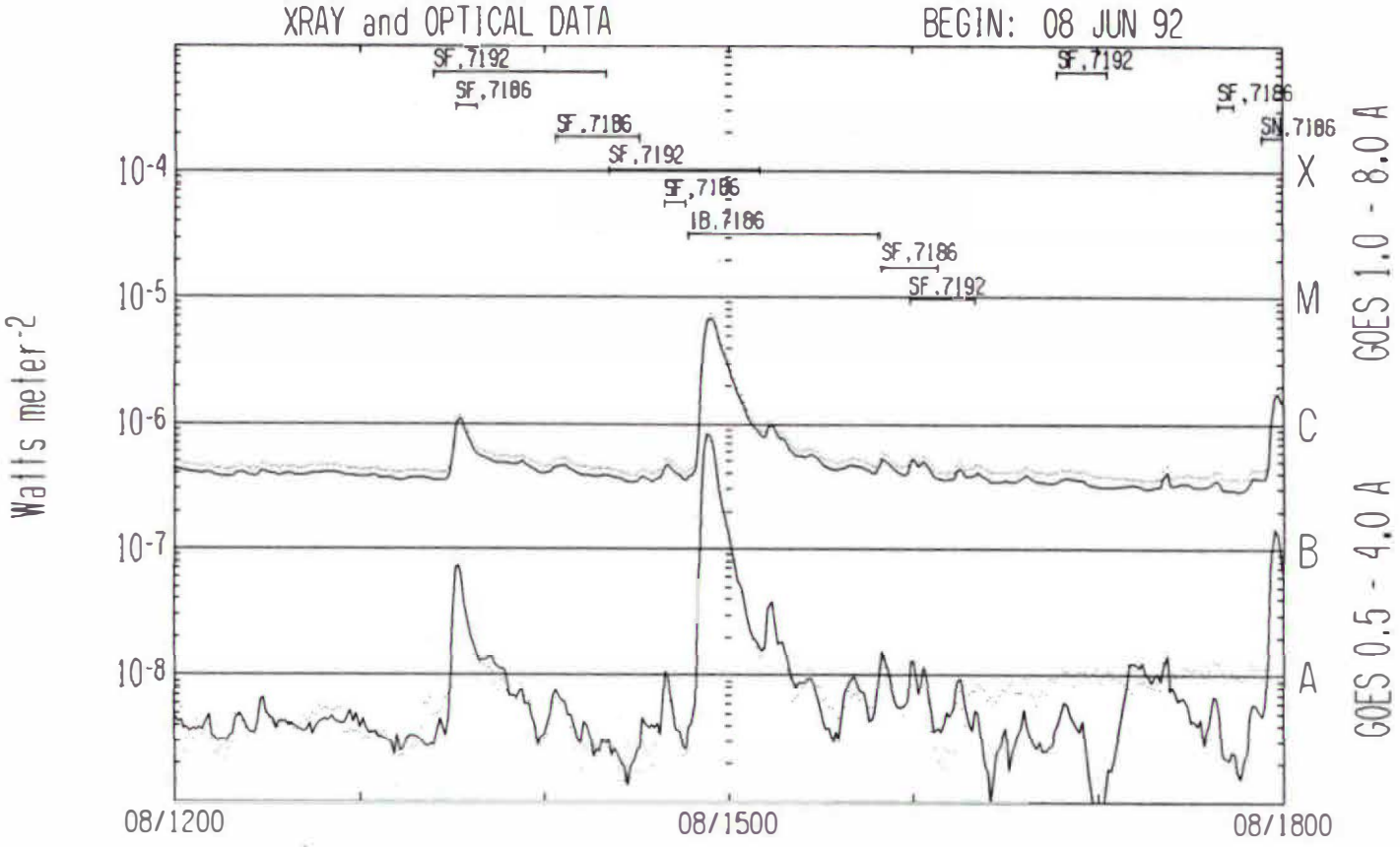
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

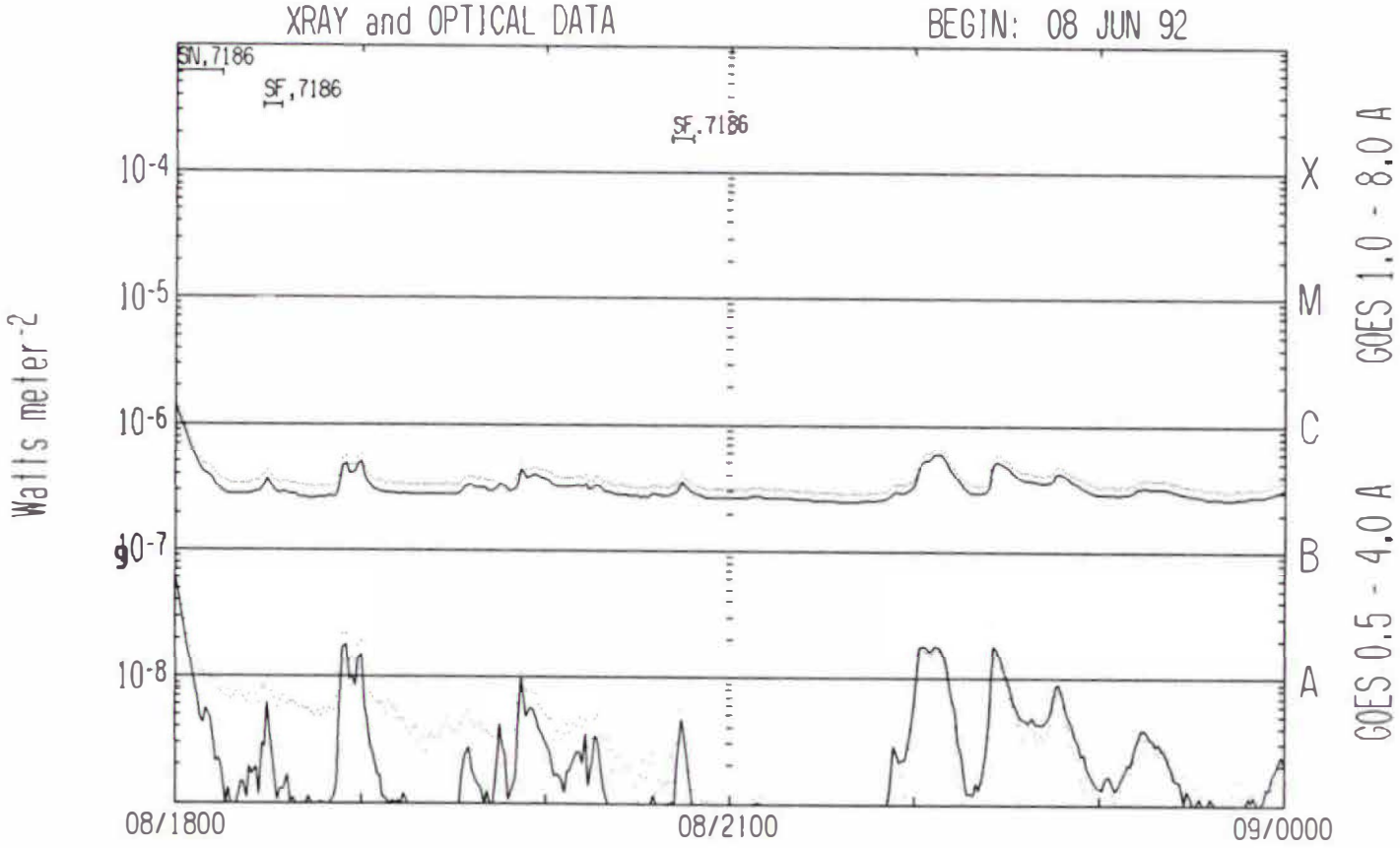
COMMENTS:
ELECTRON EVENT.


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/08
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1357 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

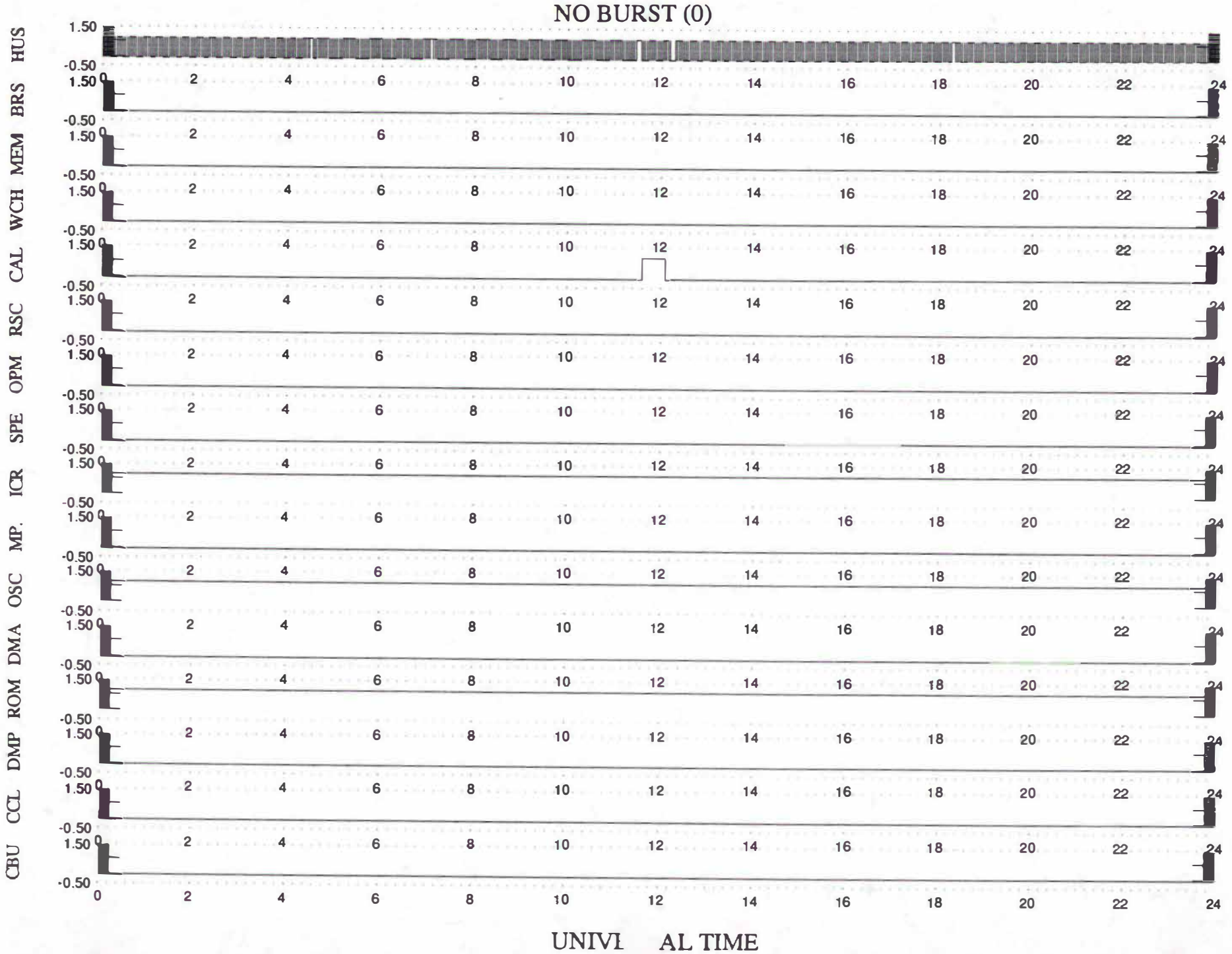

XRAY and OPTICAL DATA
BEGIN: 08 JUN 92
SF.7192
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
08/0000
08/0300
08/0600


XRAY and OPTICAL DATA
BEGIN: 08 JUN 92
18.7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
08/0600
08/0900
08/1200


XRAY and OPTICAL DATA
BEGIN: 08 JUN 92
SF,7192
SF,7186
SF,7186
SF,7192
SF,7186
1B,7186
SF,7186
SF,7192
SF,7192
SF,7186
SN,7186
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
08/1200
08/1500
08/1800

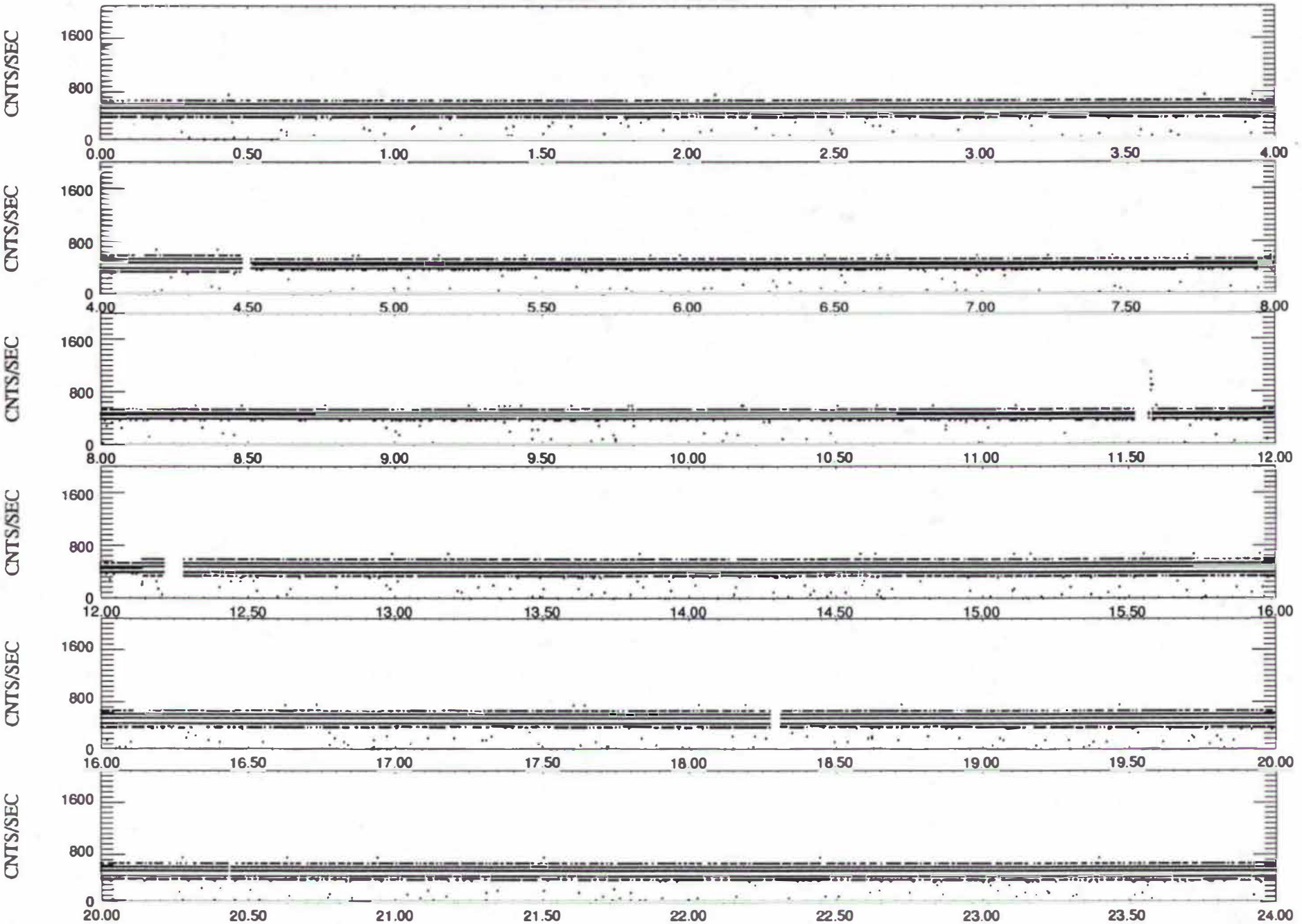

XRAY and OPTICAL DATA
BEGIN: 08 JUN 92
SN,7186
SF,7186
SF,7186
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
08/1800
08/2100
09/0000

HUS MODES EDR day 160, year 1992 to day 160, year 1992 6/23/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 160, year 1992 to day 160, year 1992 6/23/92

CALIBRATION DATA INCLUDED



UNIVE AL TIME

From MALLOZZI@ssl.msfc.nasa.gov Wed Jun 10 12:47:49 1992
Date: Wed, 10 Jun 1992 14:50:42 -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.: 01639

TIME: TJD=8782 SECONDS=04546

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGERED ON SPACECRAFT EXIT FROM SAA.

From MALLOZZI@ssl.msfc.nasa.gov Thu Jun 11 12:07:07 1992
Date: Thu, 11 Jun 1992 14:09:48 -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: 1294

BATSE BURST TRIGGER
NO.: 01639

TIME: TJD=8782 SECONDS=04546

TYPE: PARTICLES SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CORRECTION: Trigger No. 1639 is a particle event.
GRO was not leaving SAA as stated in previous message...

From MALLOZZI@ssl.msfc.nasa.gov Wed Jun 10 12:56:49 1992
Date: Wed, 10 Jun 1992 14:59:39 -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: 1258

BATSE BURST TRIGGER

NO.: 01640

TIME: TJD=8782 SECONDS=23167

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
GOES C4.6 FLARE. DURATION AT LEAST 240 SEC AFTER TRIGGER.

****
CATSEARCH PROGRAM
****

BATSE BURST # 1641
EVENT OF 1992 JUN 9 DAY OF YEAR=161
EVENT CROSSING TIME AT BATSE : 30370. S. OR 08:26:10.4
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 185.700 -2.800
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 9/ 6/ 92 IS:
RA= 148.675 DEC= 7.680 DIST= 5.612 AU
BATSE-ULYSSES DISTANCE = 839490872. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2194.65 SECS.
CROSSING TIME AT ULYSSES IS 28176. S. OR 07:49:35.7 +/- 318.62 SECONDS

NO

From MALLOZZI@ssl.msfc.nasa.gov Wed Jun 10 13:00:25 1992
Date: Wed, 10 Jun 1992 15:03:20 -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: 1264

BATSE BURST TRIGGER
NO.: 01641

TIME: TJD=8782 SECONDS=30372

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=31.8 AZIMUTH=201.5 ERROR= DEGREES

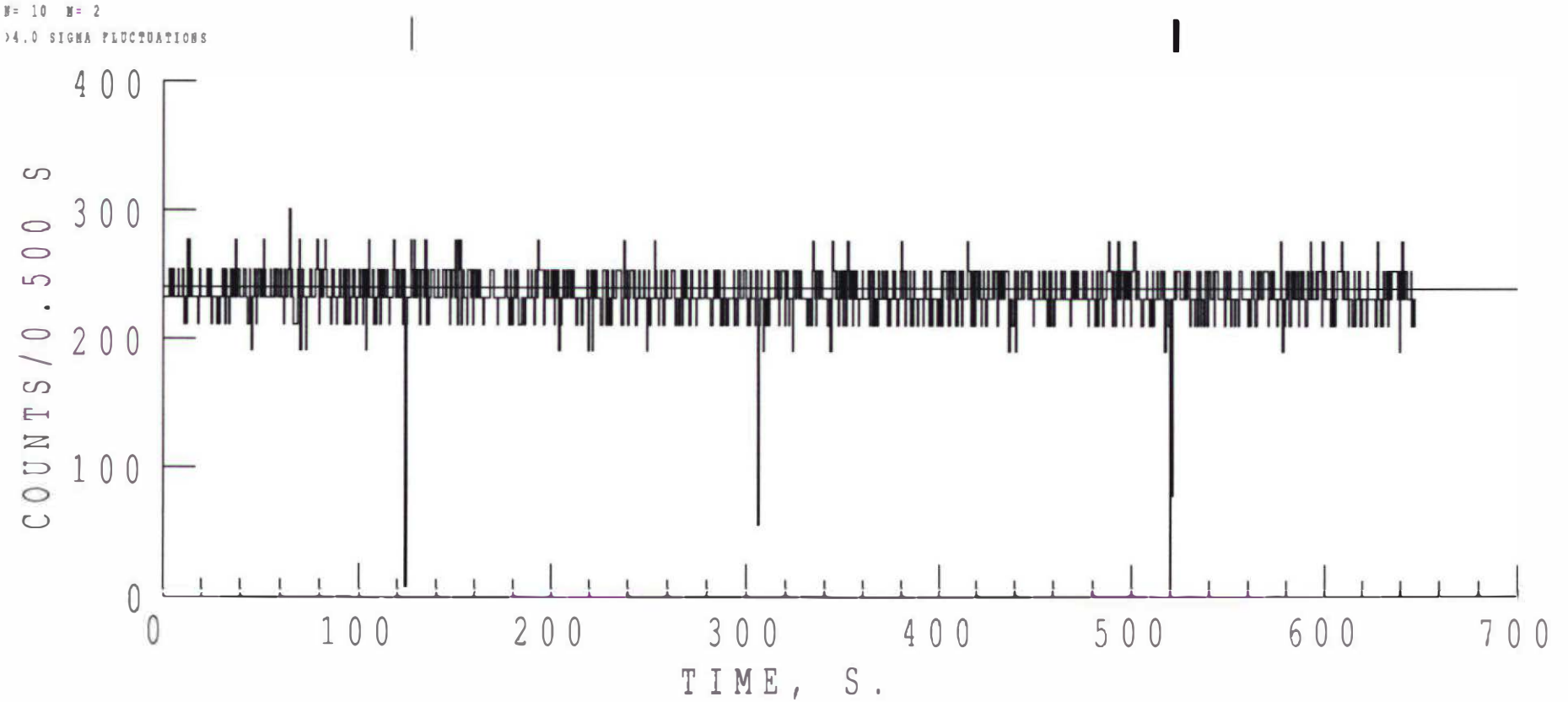
COMMENTS:
BURST OF DURATION ~11 SEC. SINGLE MAIN PEAK WITH SOME STRUCTURE.
OBSERVED ABOVE ~100 KEV, BUT NOT ABOVE ~300 KEV.

8/ 6/94

ULYSSES RT

9/ 6/92 27864.318 s

0- 0 keV



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**********
*CATSEARCH PROGRAM*
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BATSE BURST # 1642
EVENT OF 1992 JUN  9 DAY OF YEAR=161
EVENT CROSSING TIME AT BATSE     : 65512. S. OR 18:11:52.0
COORDINATES ARE    .000    .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 243.600  -74.400
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON  9/ 6/  92 IS:
RA=  148.675 DEC=    7.680 DIST=    5.612 AU
BATSE-ULYSSES DISTANCE =  839490872. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=  424.52 SECS.
CROSSING TIME AT ULYSSES    IS 65937. S. OR 18:18:56.5 +/-  536.99 SECONDS
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NO

```
From MALLOZZI@ssl.msfc.nasa.gov Wed Jun 10 13:03:56 1992
Date:    Wed, 10 Jun 1992 15:06:44 -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: 1246

                BATSE BURST TRIGGER
NO.: 01642
```

June 9

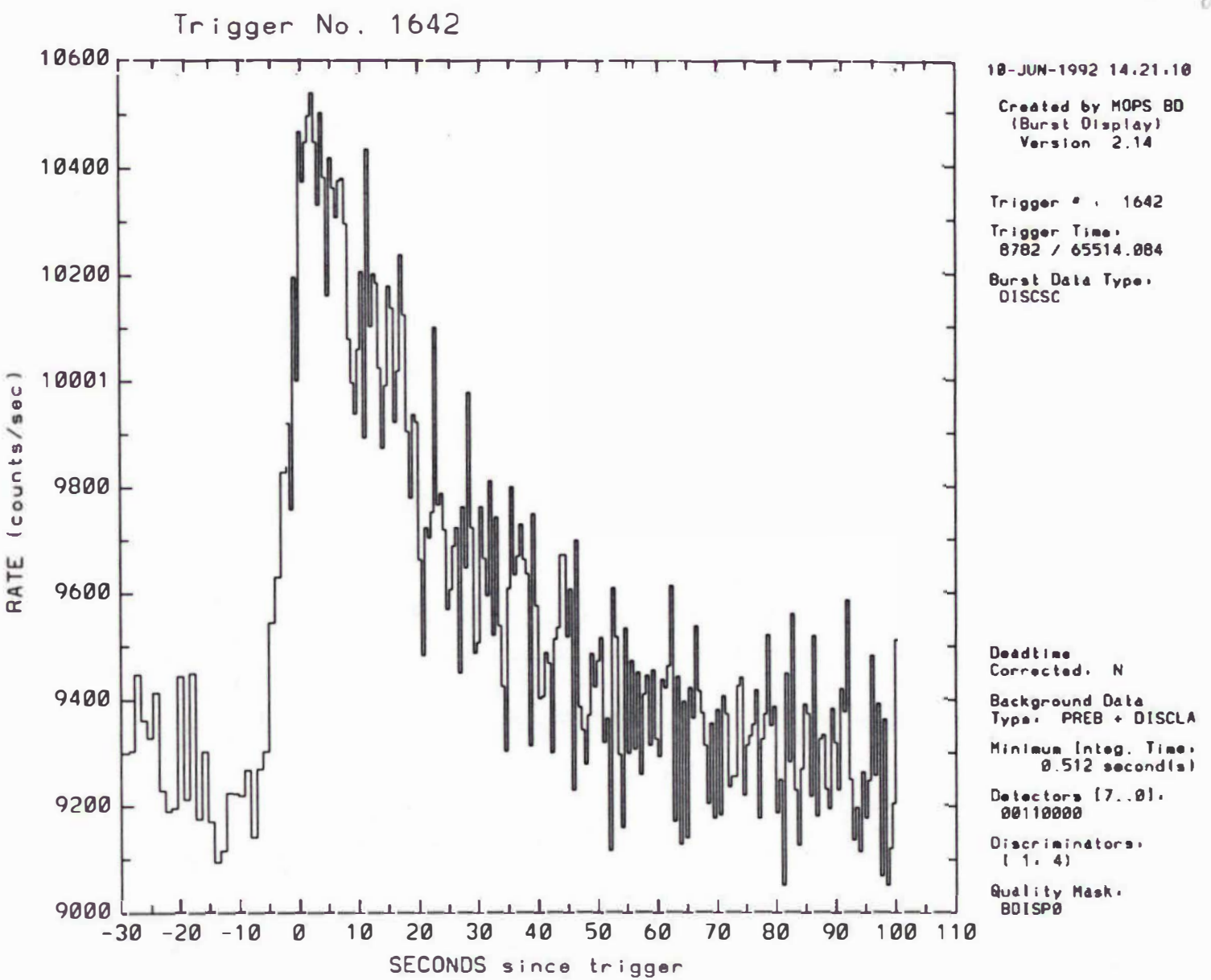
```
TIME: TJD=8782 SECONDS=65514

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=81.0   AZIMUTH=118.7  ERROR=      DEGREES

COMMENTS:
BURST OF ~55 SEC DURATION.  OBSERVED ABOVE 100 KEV; NOT ABOVE 300 KEV.
```

No trigger

June 9 92

252.6, -68.4

7.3×10⁻⁸ Kerg/cm²



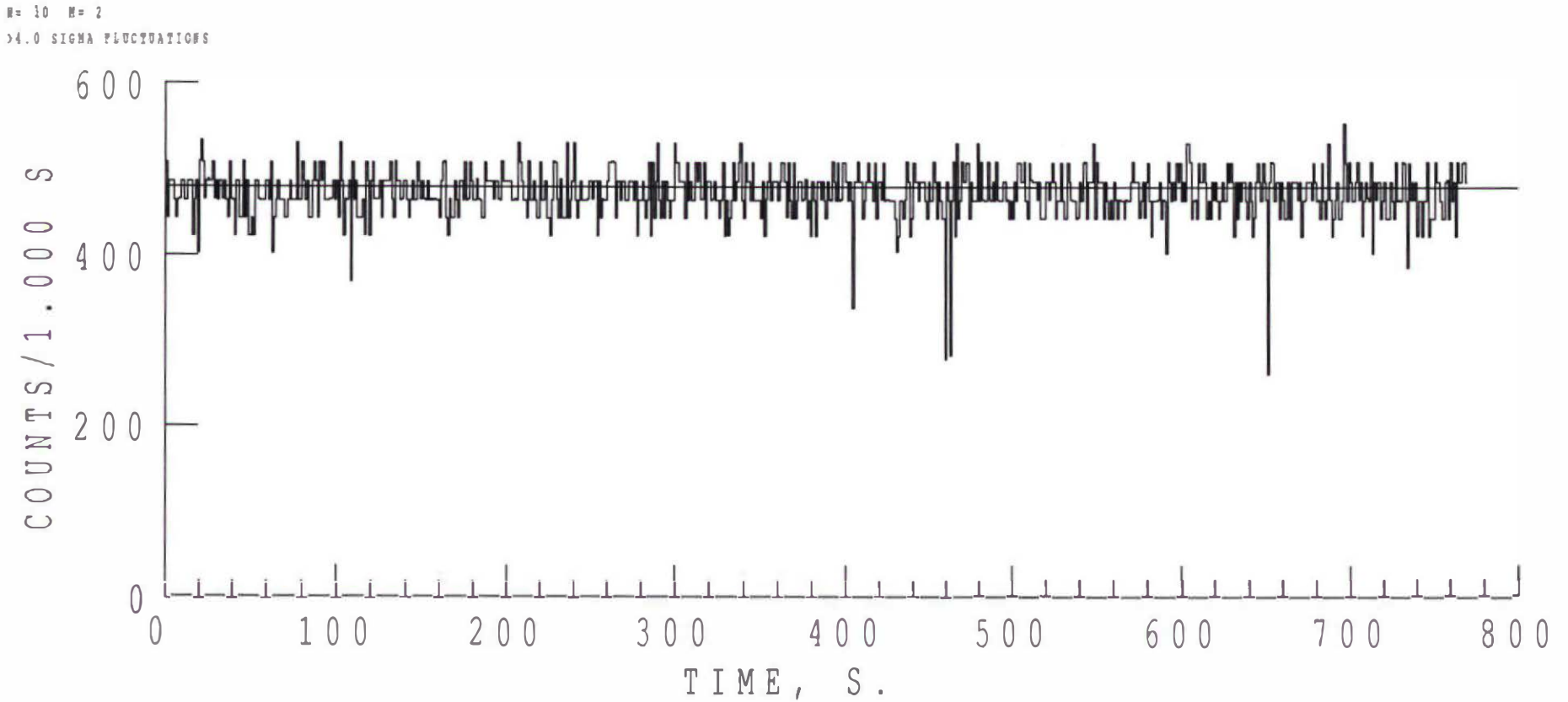
8/ 6/94

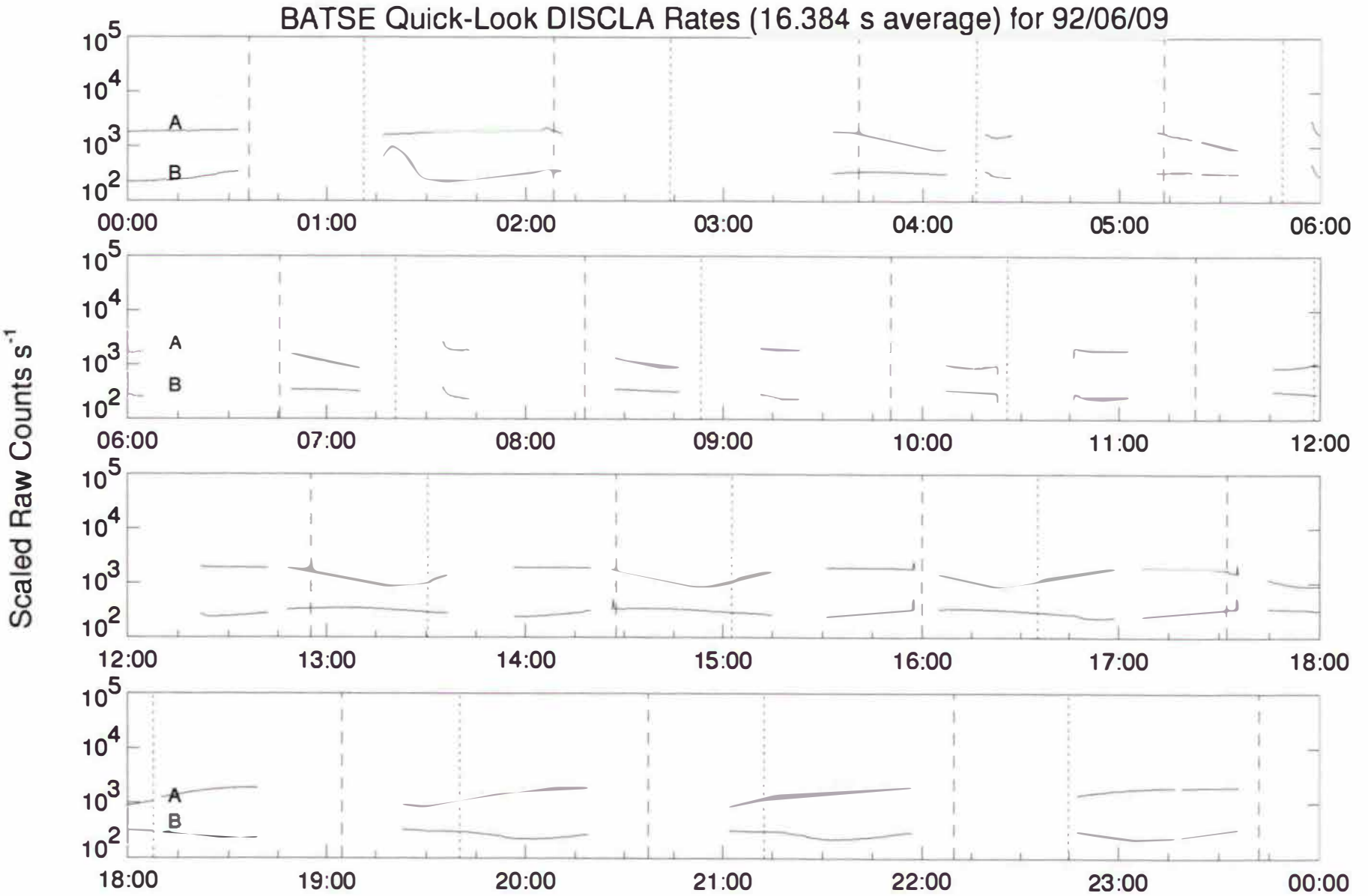
ULYSSES RT

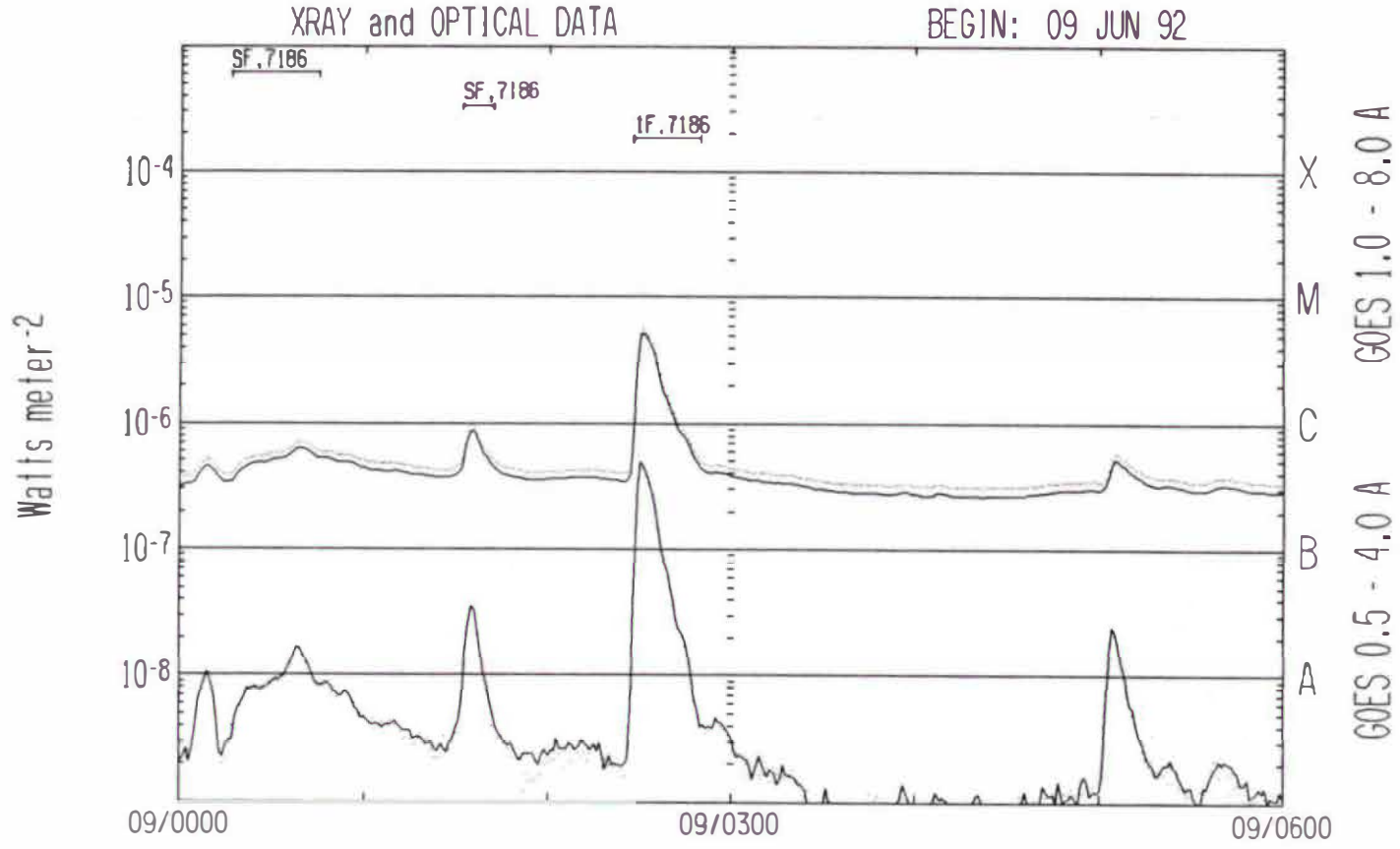
9/ 6/92 65412.430 s

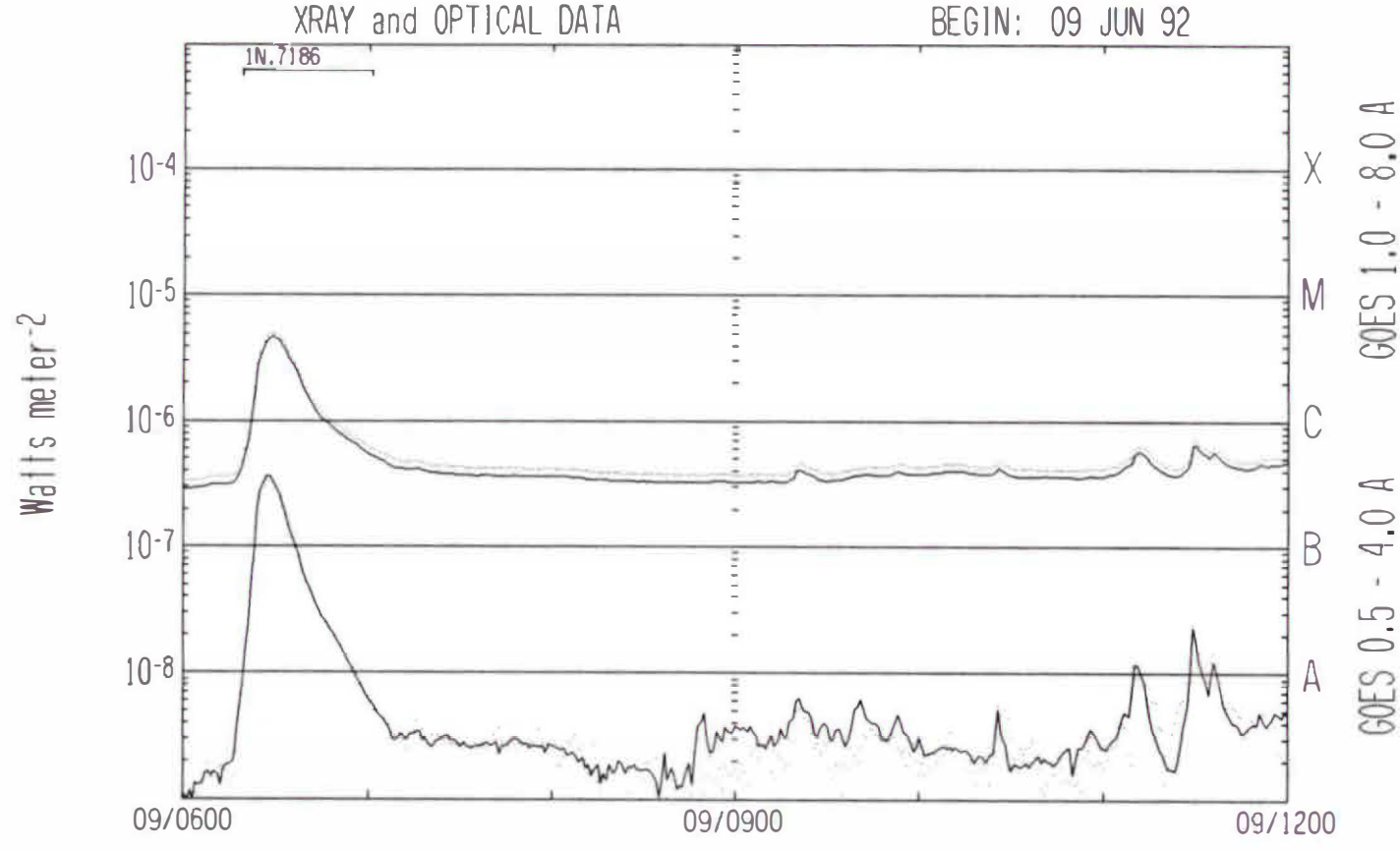
0.500 S INTERVALS REGROUPED BY 2

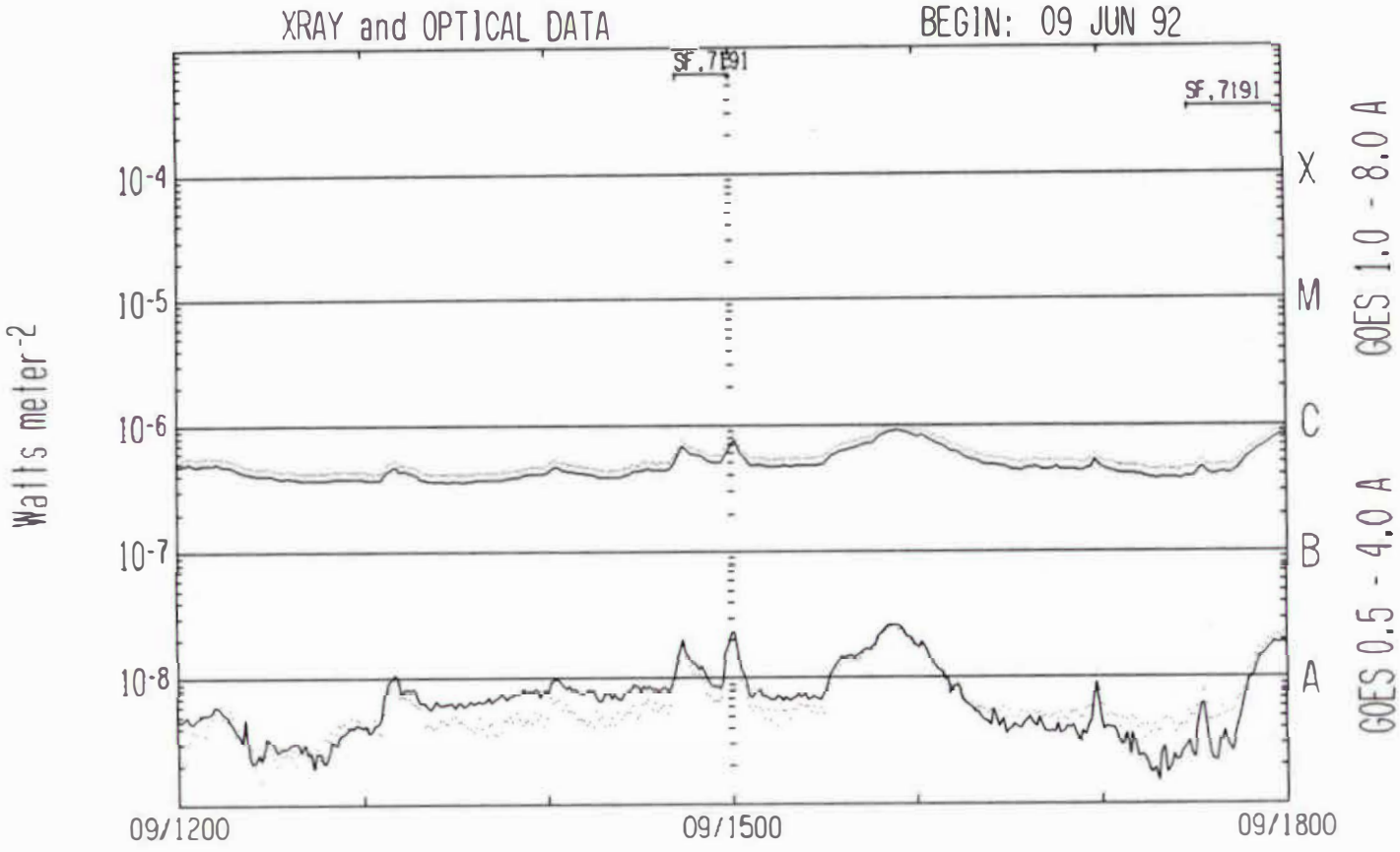
0- 0 keV




BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/09
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1358 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


XRAY and OPTICAL DATA
BEGIN: 09 JUN 92
SF,7186
SF,7186
1F,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
09/0000
09/0300
09/0600


XRAY and OPTICAL DATA
BEGIN: 09 JUN 92
1N,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
09/0600
09/0900
09/1200


XRAY and OPTICAL DATA
BEGIN: 09 JUN 92
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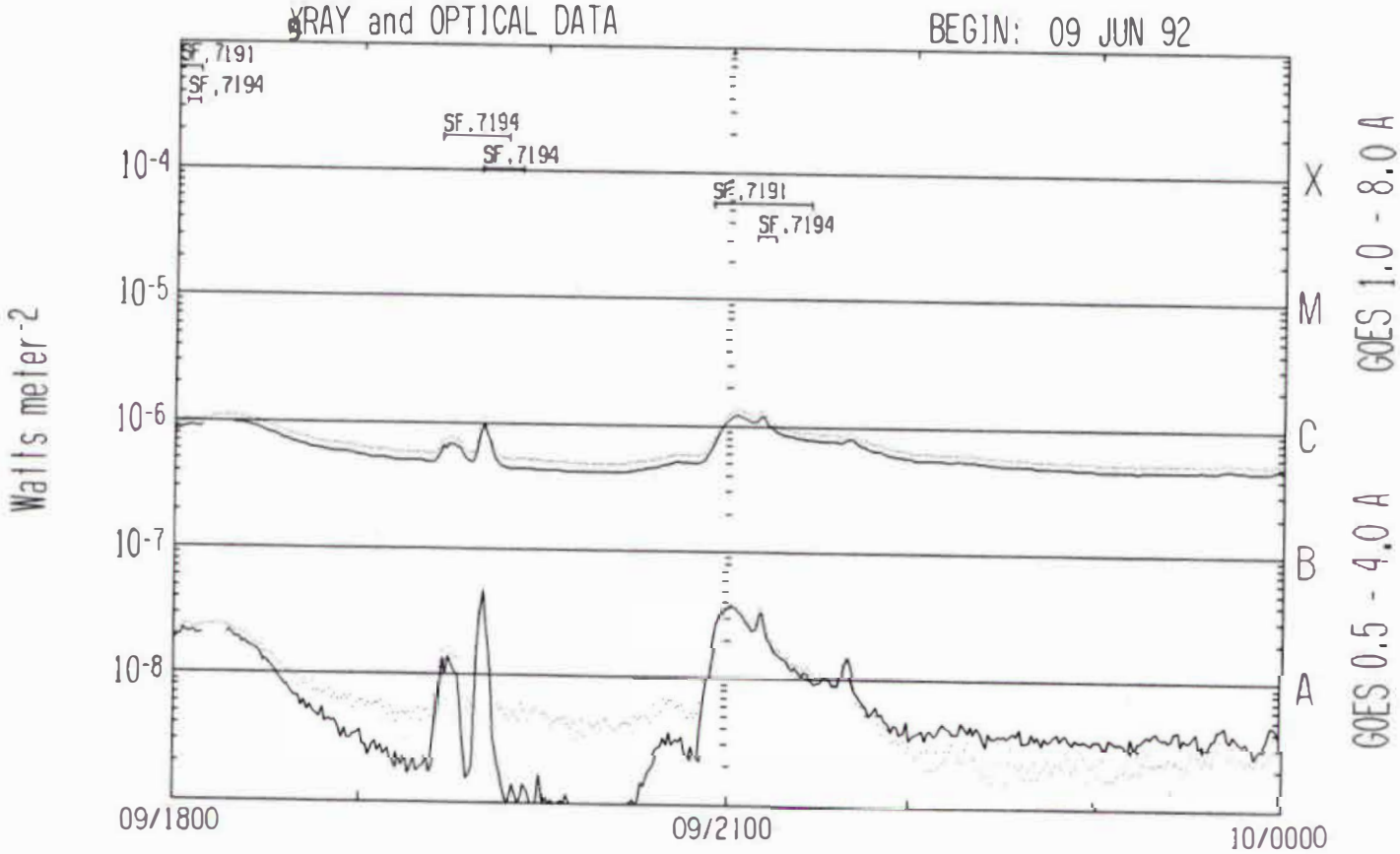
SF,7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
09/1200
09/1500
09/1800


XRAY and OPTICAL DATA
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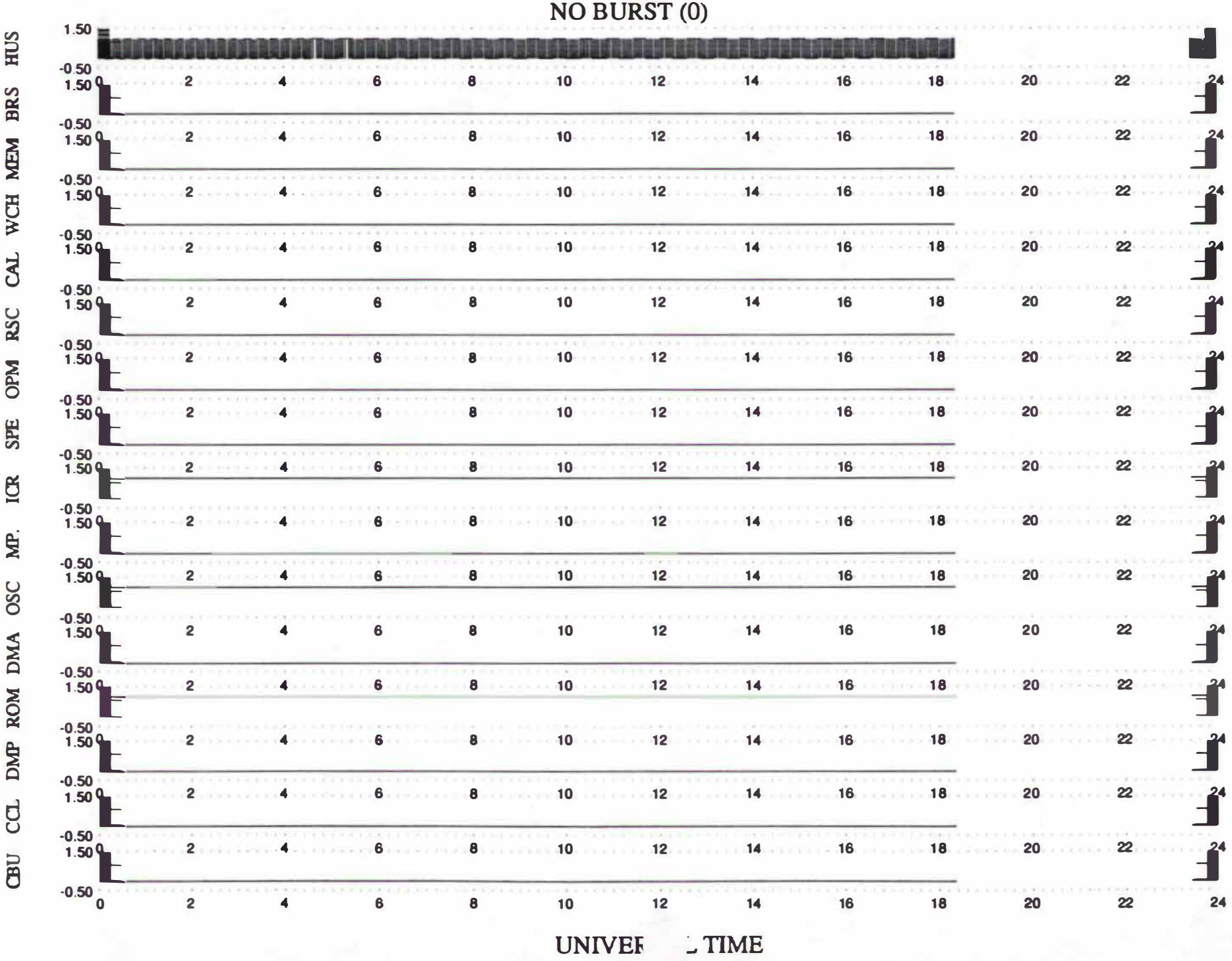
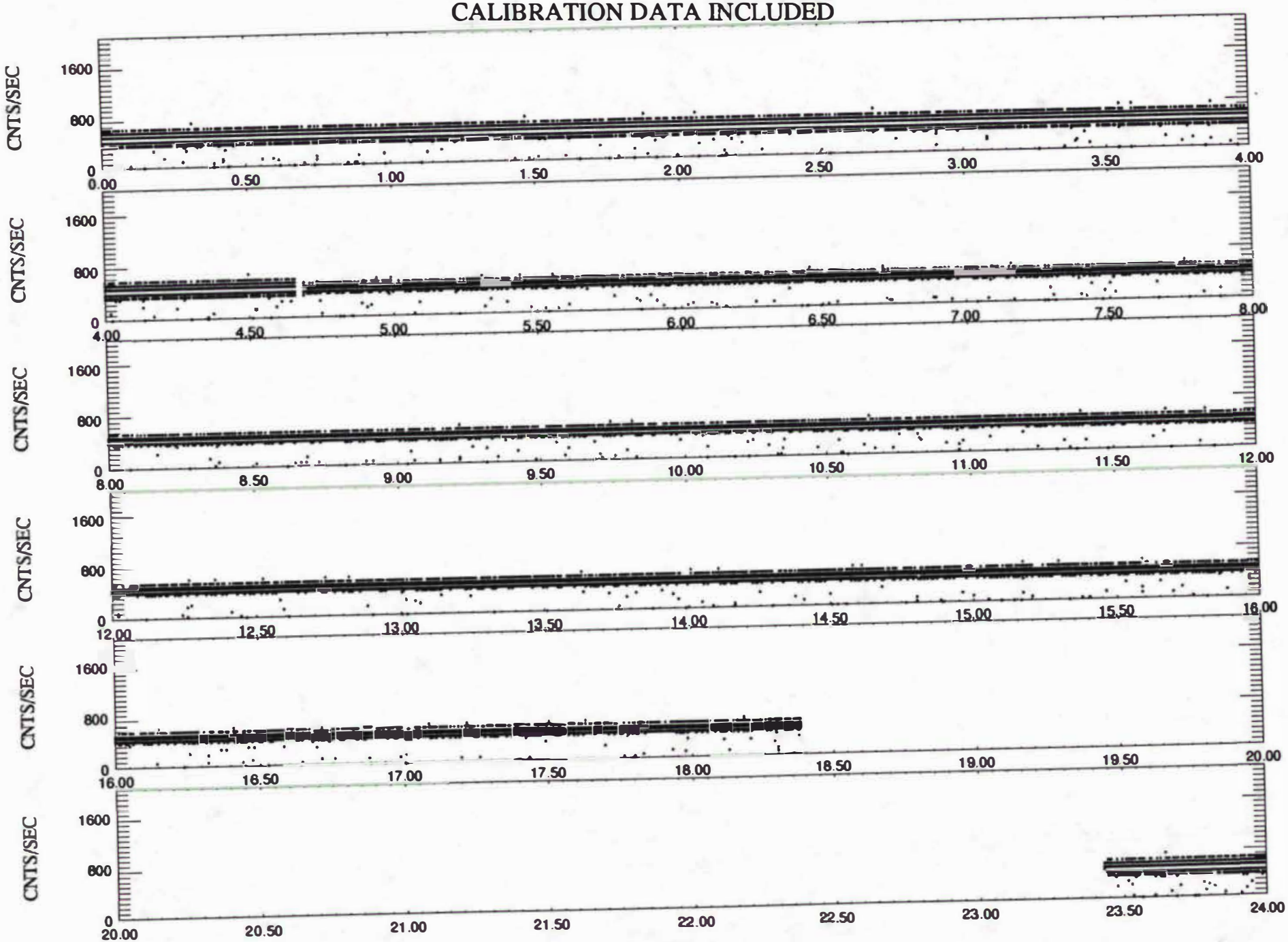
SF,7194
SF,7194
SF,7194
SF,7191
SF,7194
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
09/1800
09/2100
10/0000

HUS MODES EDR day 161, year 1992 to day 161, year 1992 6/25/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 161, year 1992 to day 161, year 1992 6/25/92

CALIBRATION DATA INCLUDED



UNIV AL TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1643
EVENT OF 1992 JUN 10 DAY OF YEAR=162
EVENT CROSSING TIME AT BATSE : 4314. S. OR 01:11:53.7
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 239.200 -13.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 10/ 6/ 92 IS:
RA= 148.725 DEC= 7.626 DIST= 5.627 AU
BATSE-ULYSSES DISTANCE = 841730384. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 109.42 SECS.
CROSSING TIME AT ULYSSES IS 4423. S. OR 01:13:43.1 +/- 538.75 SECONDS

No

From HORACK@ssl.msfc.nasa.gov Thu Jun 11 12:51:45 1992
Date: Thu, 11 Jun 1992 14:54:30 -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.: 01643

TIME: TJD=8783 SECONDS=4315

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 94. AZIMUTH= 175. ERROR= DEGREES

COMMENTS:
PERHAPS THE WEAKEST BURST EVER SEEN BY THIS INSTRUMENT. COMPLETELY UNREMARKABLE EVENT LASTING APPROXIMATELY 2-3 SECONDS. DATA FOR THIS EVENT IS SEVERELY INCOMPLETE. RISE TIME OF EVENT IS NOT RESOLVED DUE TO LACK OF HIGH-TIME RES. DATA. TOO WEAK TO DETERMINE ANY STRUCTURE IN THE "MAIN" EMISSION REGION.

```
          ********************
          *CATSEARCH PROGRAM*
          ********************
```

NO

```
 ATSE BURST # 1643
EVENT OF 1992 JUN 10 DAY OF YEAR=162
EVENT CROSSING TIME AT BATSE      :  4314. S. OR 01:11:53.7
COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 147.830  -17.810
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON 10/ 6/  92 IS:
RA=  148.725 DEC=    7.626 DIST=    5.627 AU
BATSE-ULYSSES DISTANCE =  841730384. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL    DIRECTION=154.55 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2535.22 SECS.
CROSSING TIME AT ULYSSES    IS  1778. S. OR 00:29:38.4 +/-  220.98 SECONDS
```

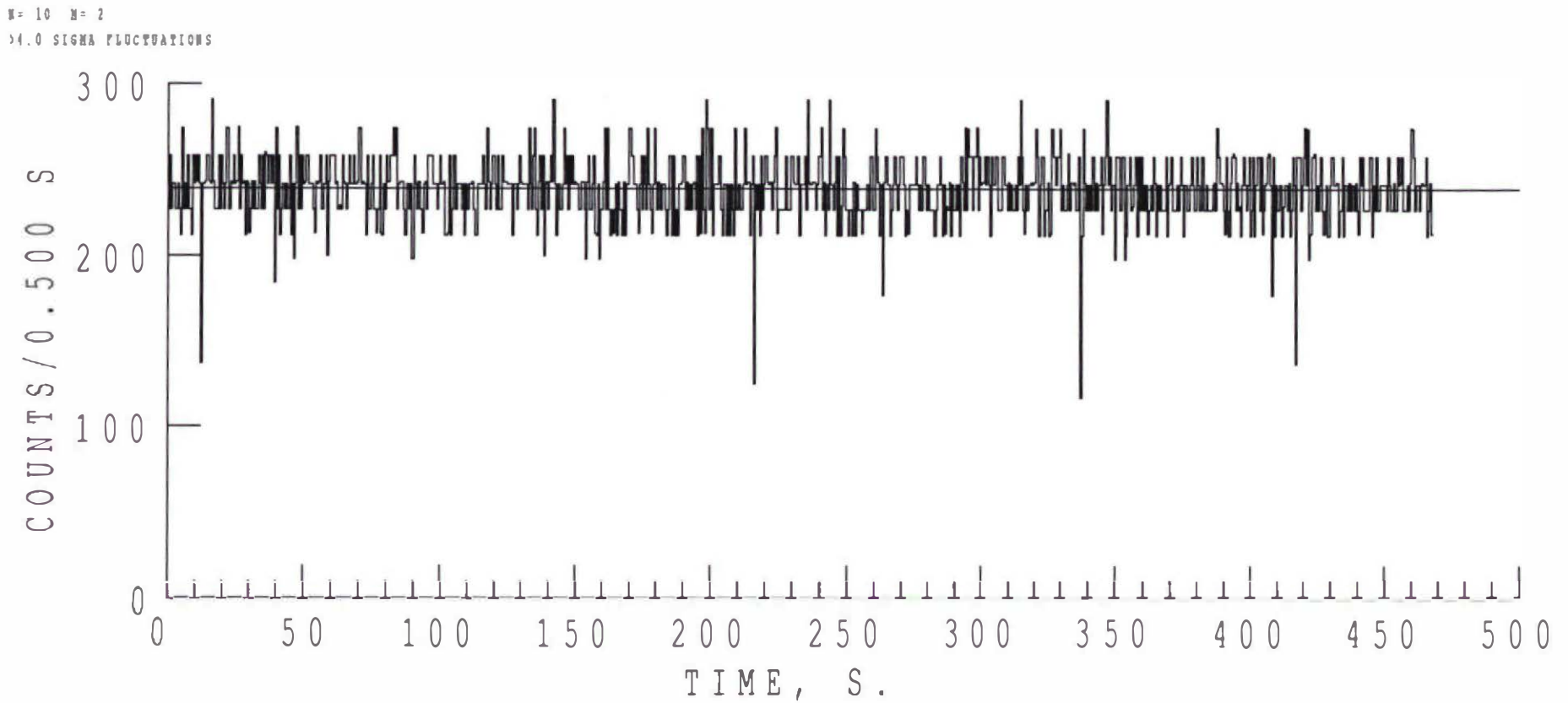
9/11/95

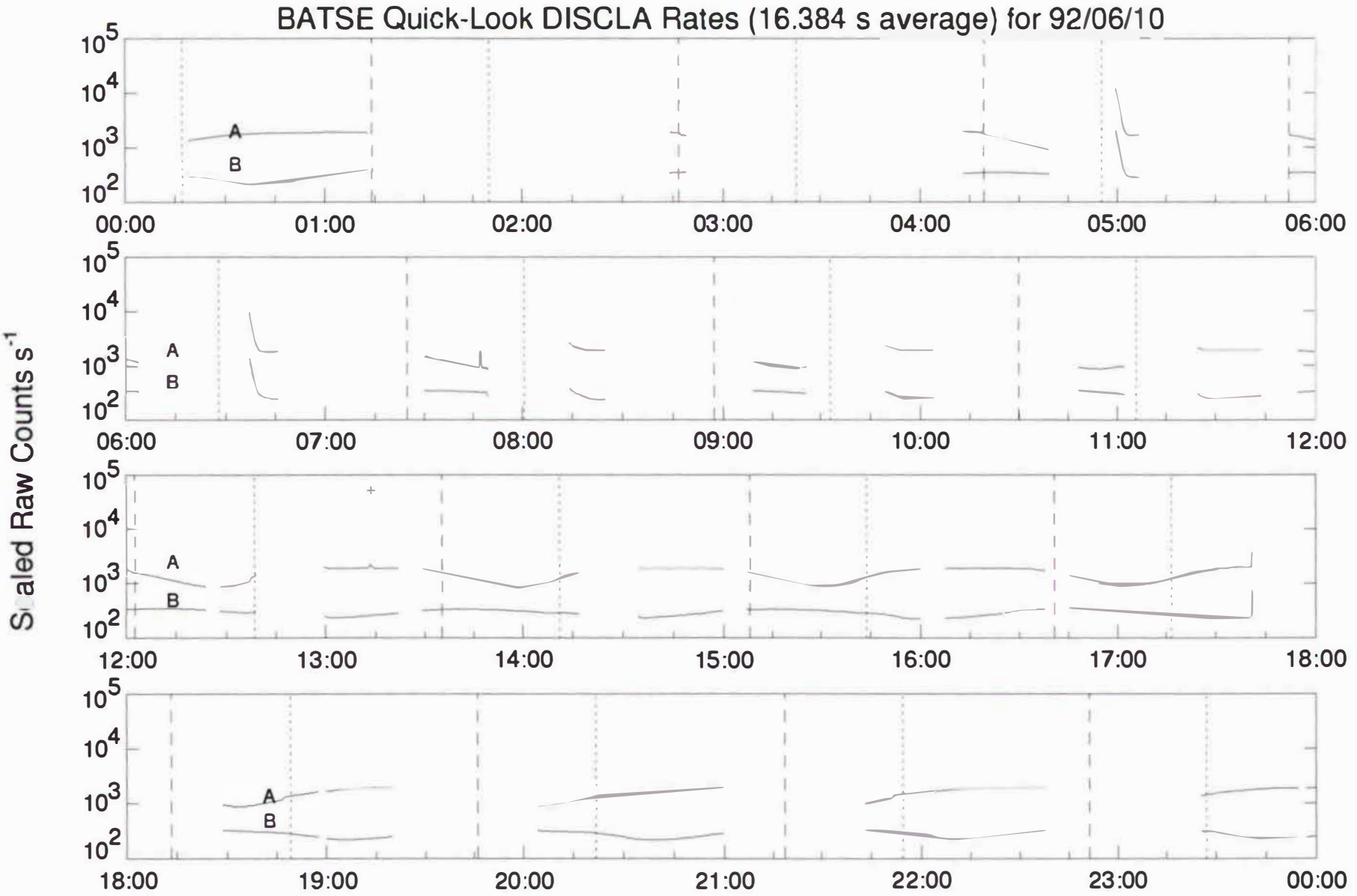
ULYSSES RT

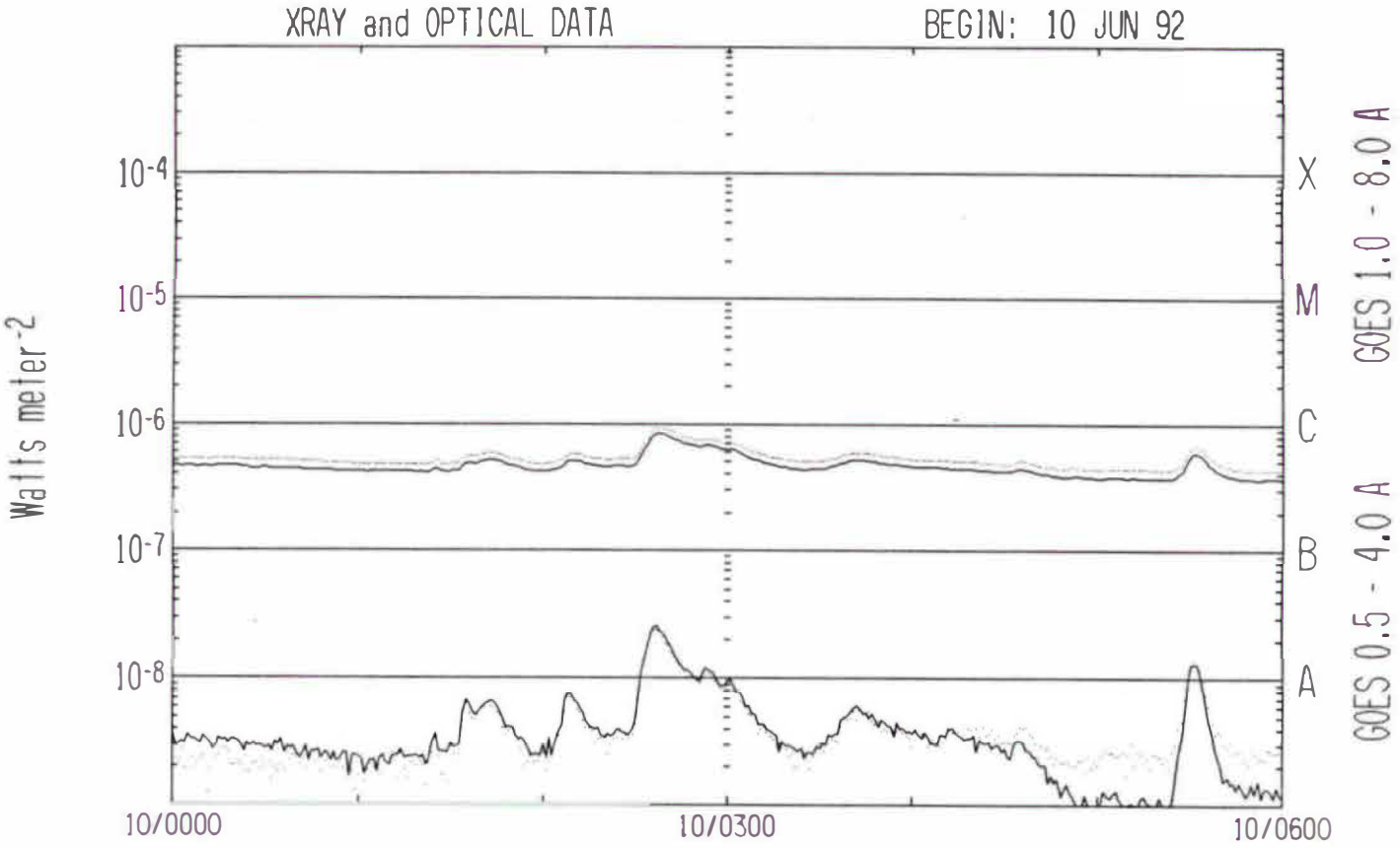
10/ 6/92 1548.054 s

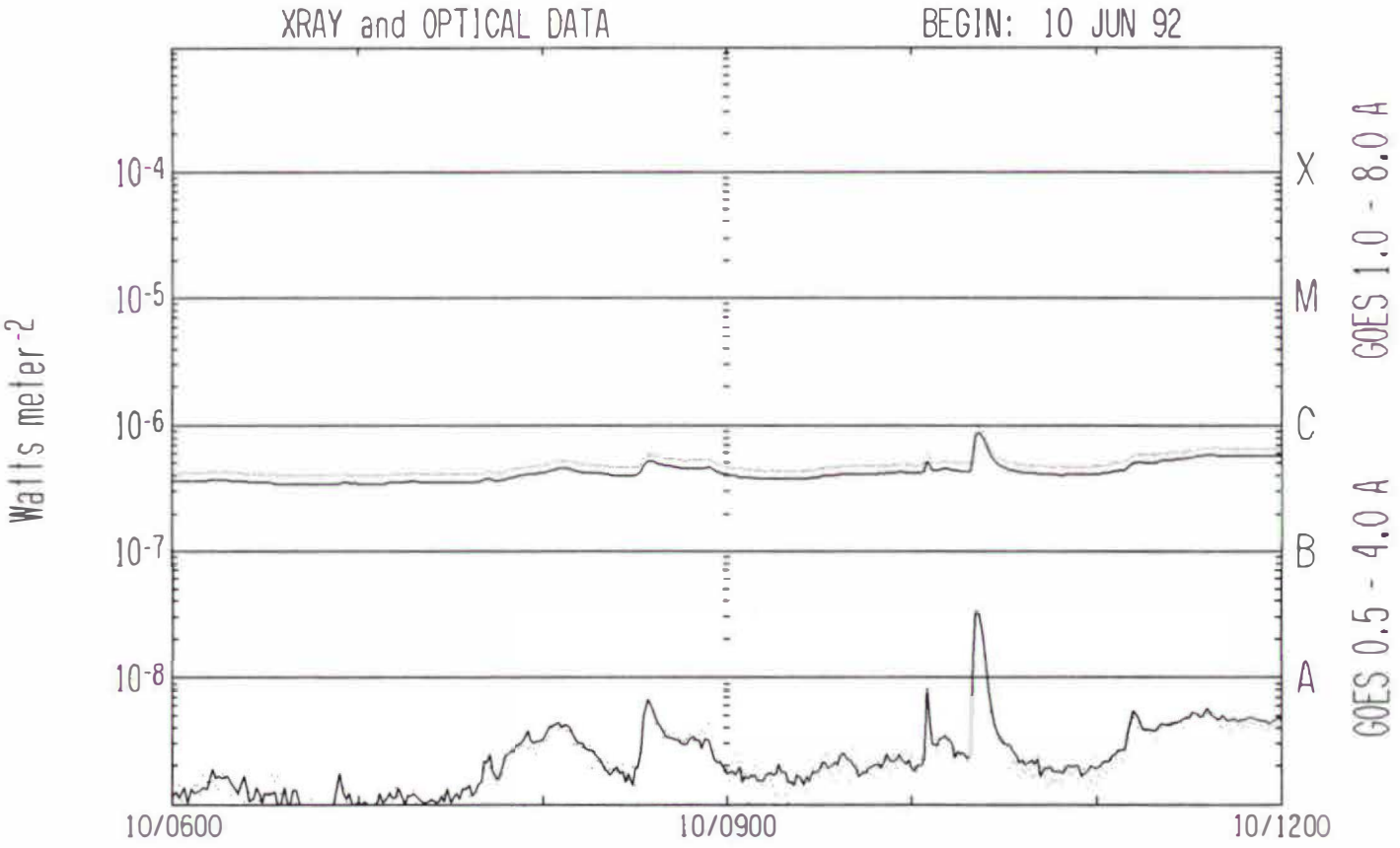
0.250 S INTERVALS REGROUPED BY 2

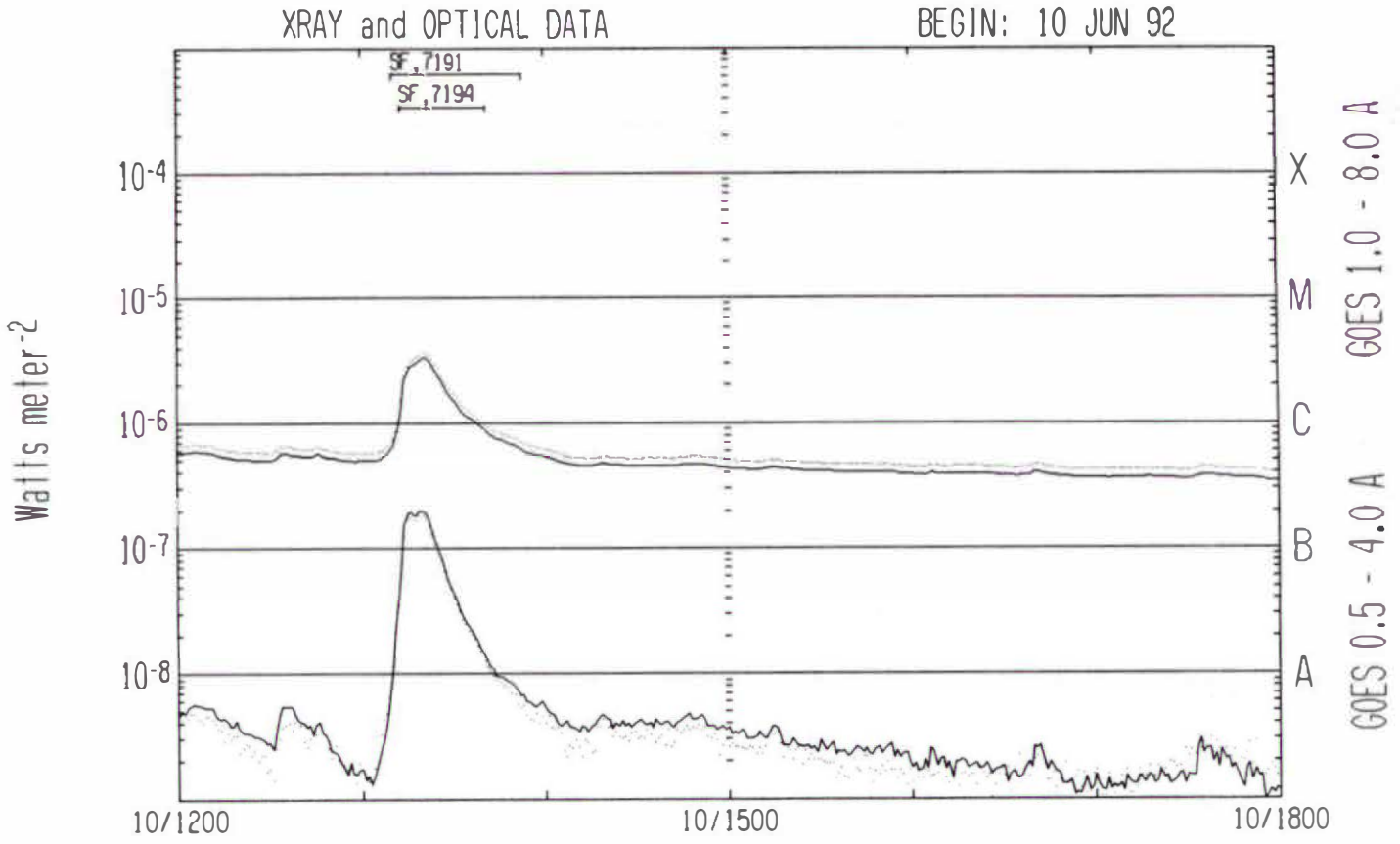
0- 0 keV

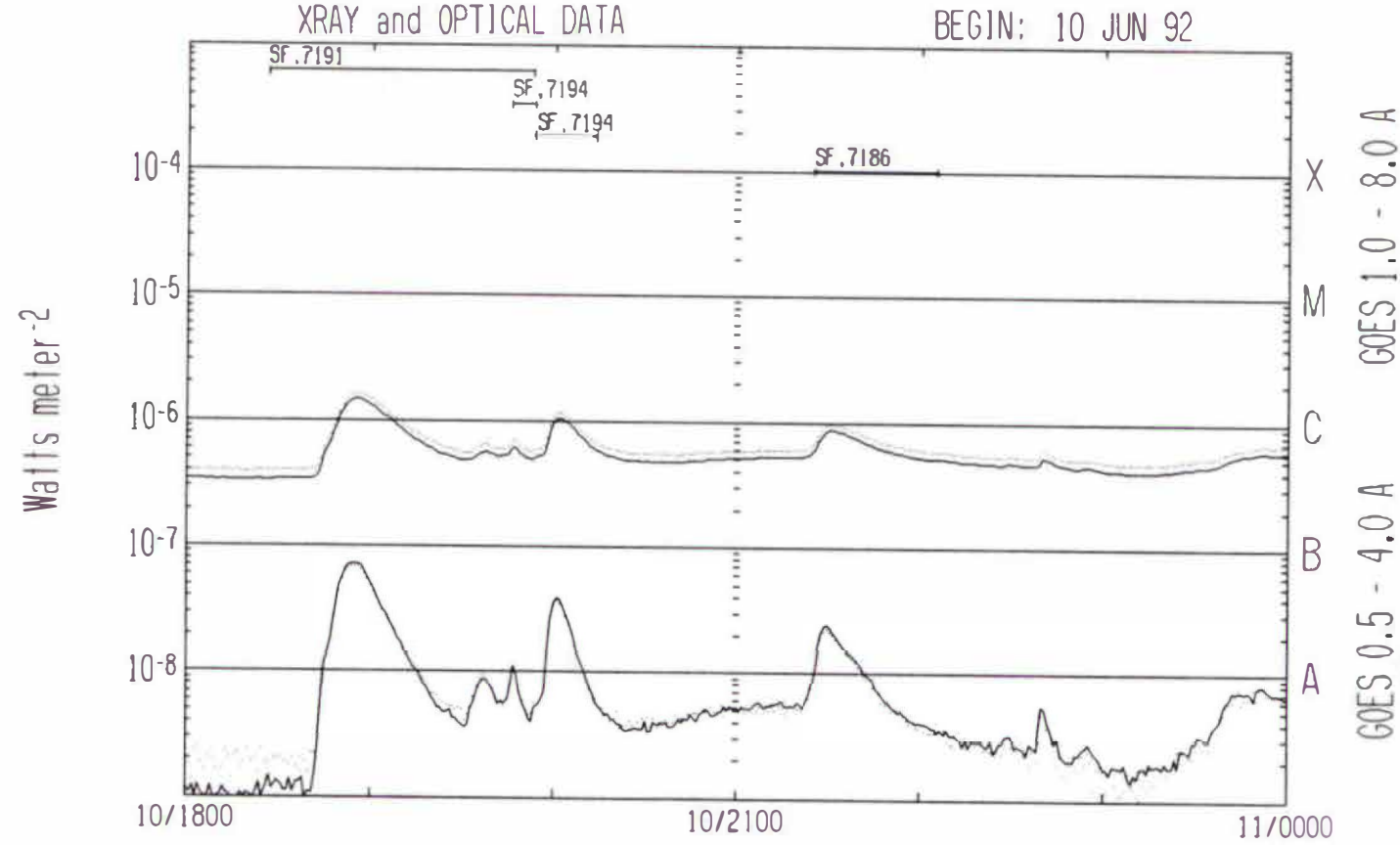



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/10
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1359 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


XRAY and OPTICAL DATA
BEGIN: 10 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
10/0000
10/0300
10/0600


XRAY and OPTICAL DATA
BEGIN: 10 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
10/0600
10/0900
10/1200


XRAY and OPTICAL DATA
BEGIN: 10 JUN 92
SF,7191
SF,7194
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
10/1200
10/1500
10/1800


XRAY and OPTICAL DATA
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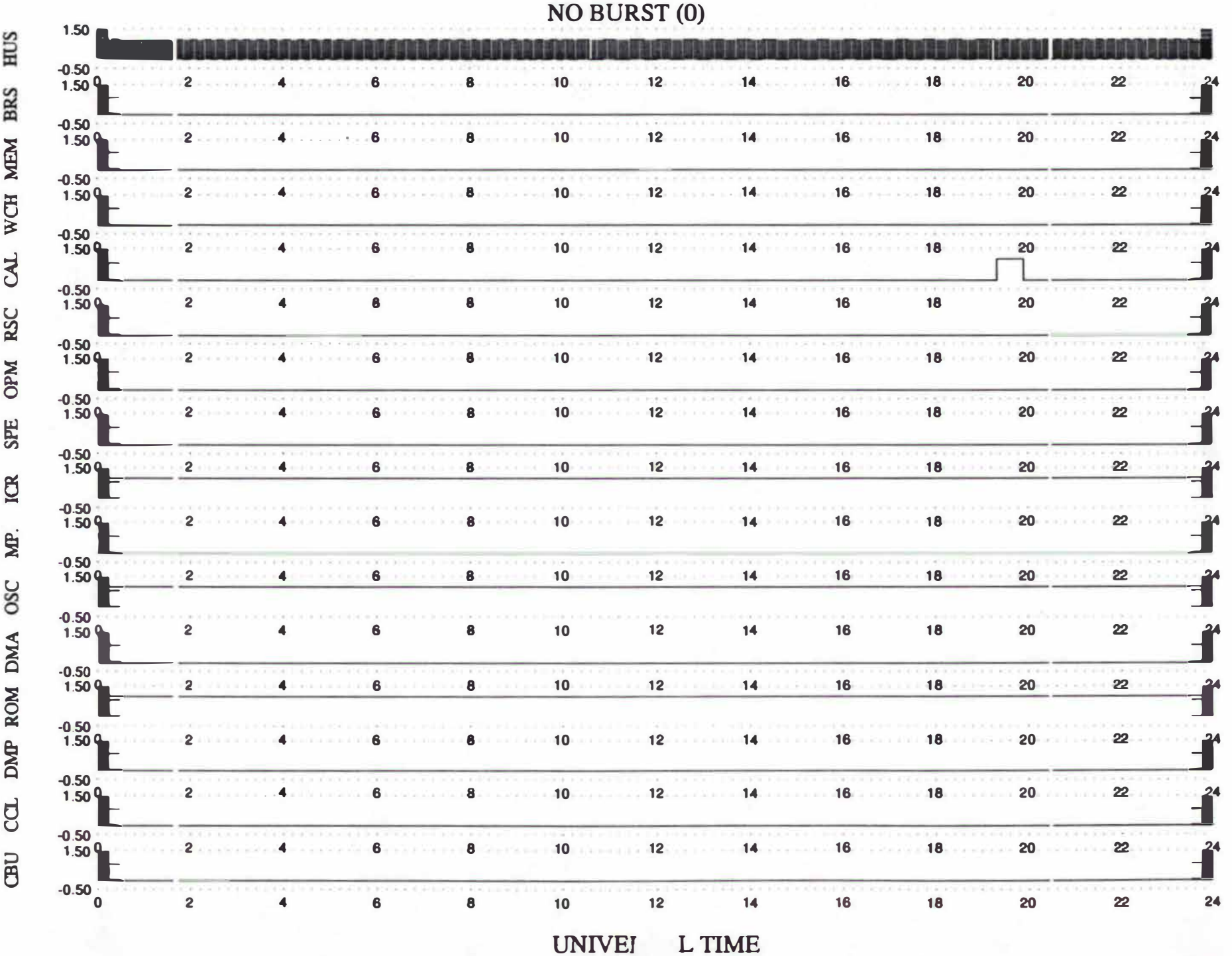
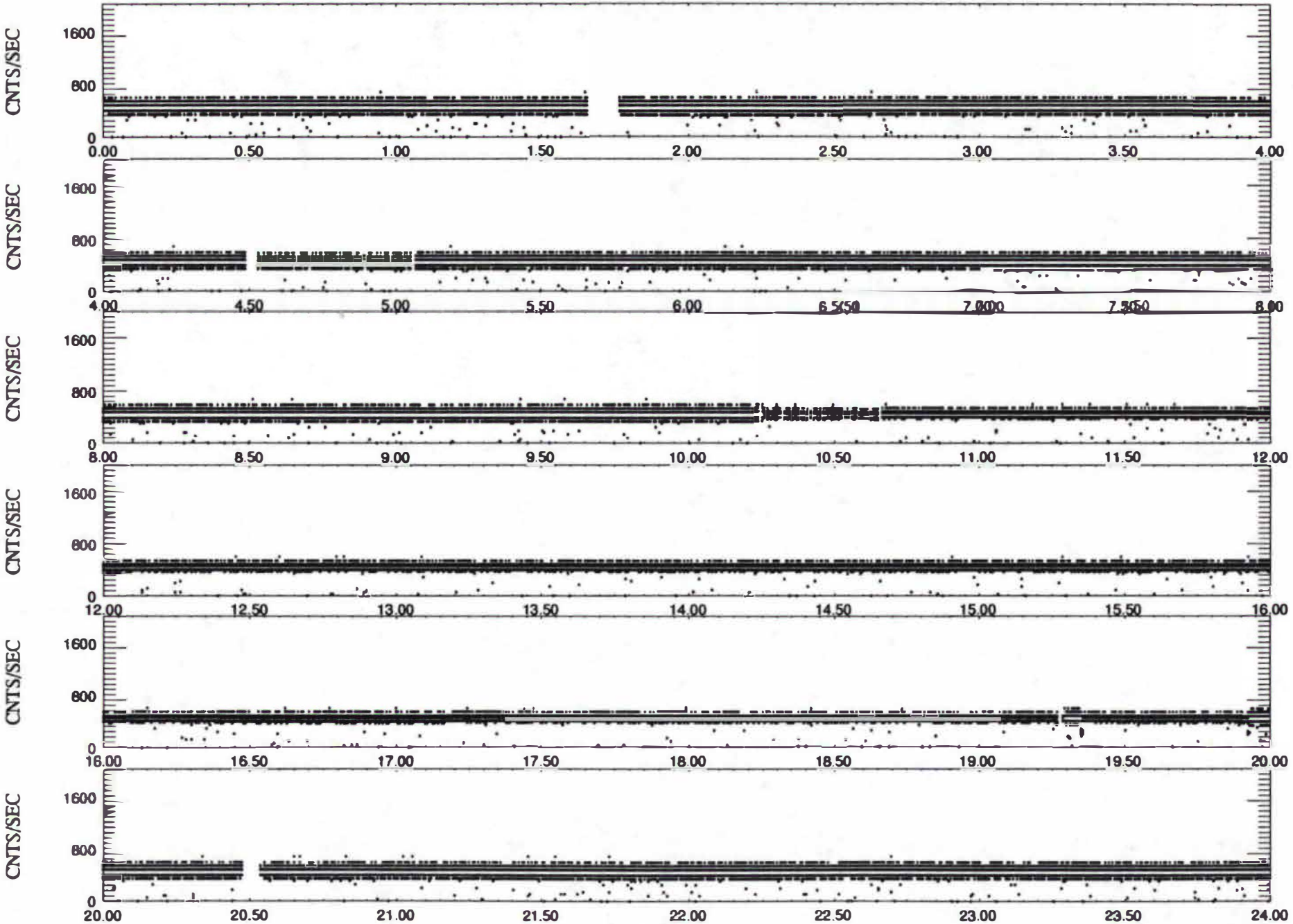
SF,7191
SF,7194
SF,7194
SF,7186
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
10/1800
10/2100
11/0000

HUS MODES EDR day 162, year 1992 to day 162, year 1992 6/25/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 162, year 1992 to day 162, year 1992 6/25/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

From PENDLETON@ssl.msfc.nasa.gov Fri Jun 12 11:07:49 1992
Date: Fri, 12 Jun 1992 13:10:28 -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: 1215

BATSE BURST TRIGGER

NO.: 01644

TIME: TJD=8784 SECONDS=80867

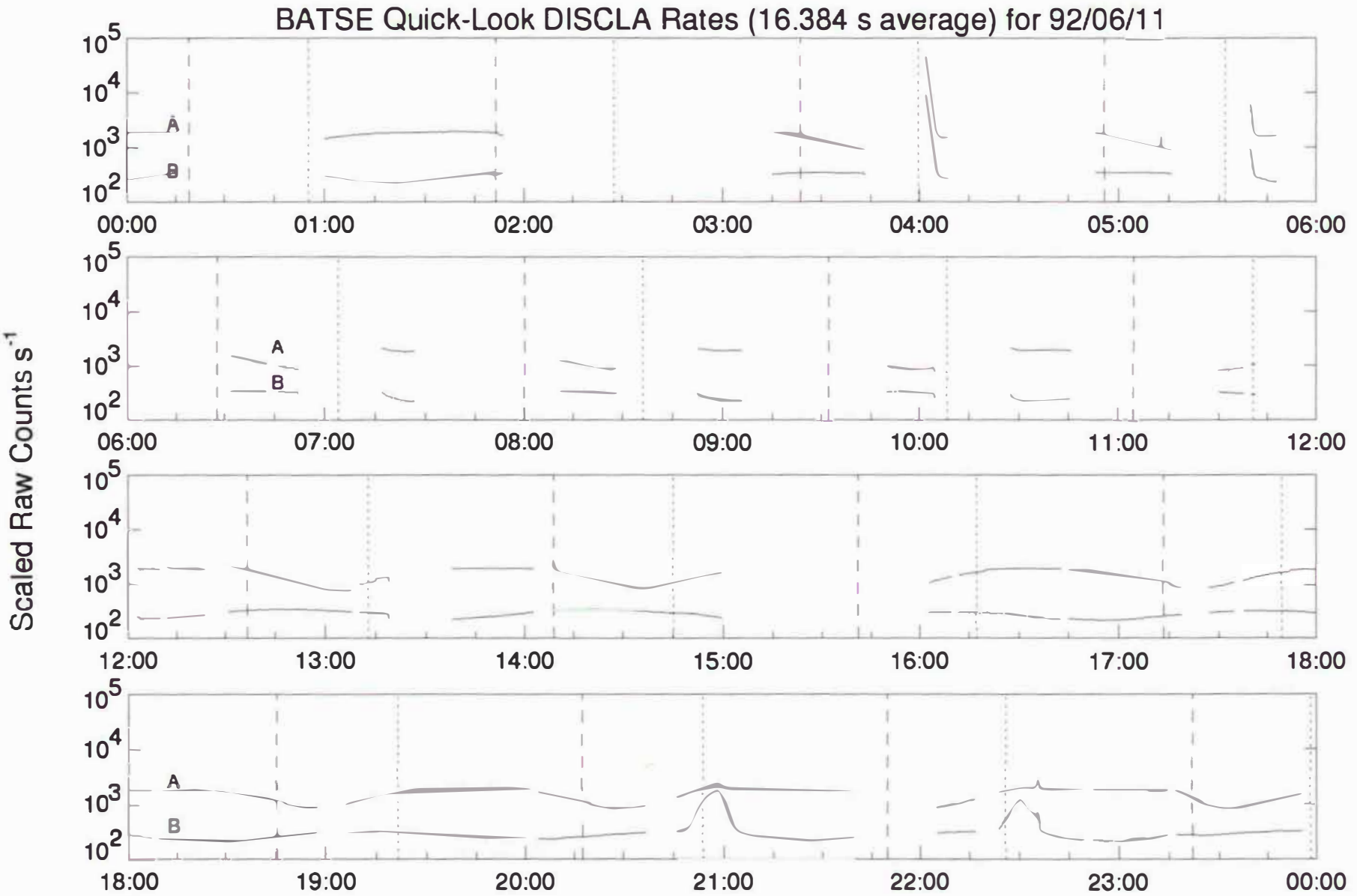
TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL:N

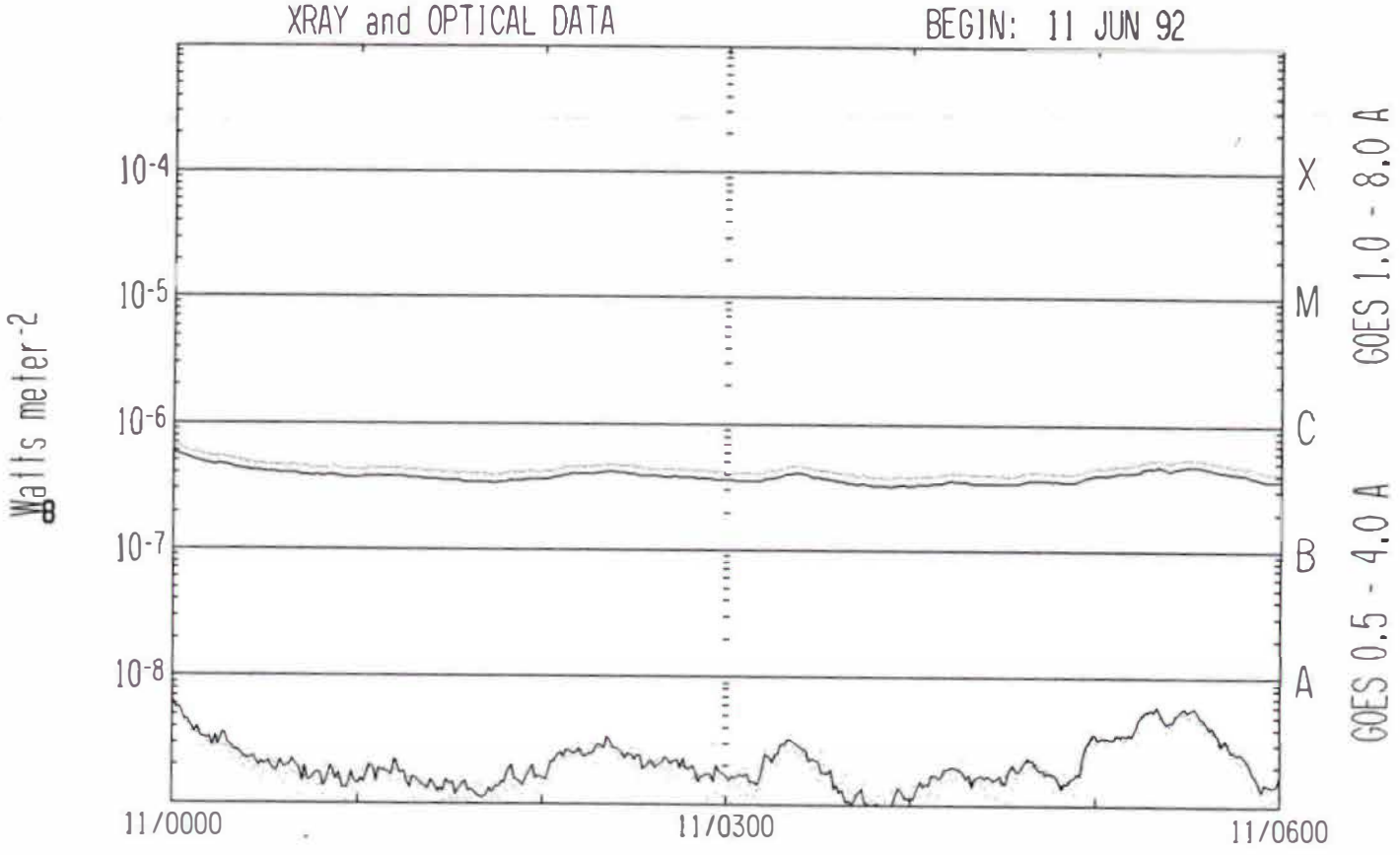
SIGNIFICANCE: SIGMA

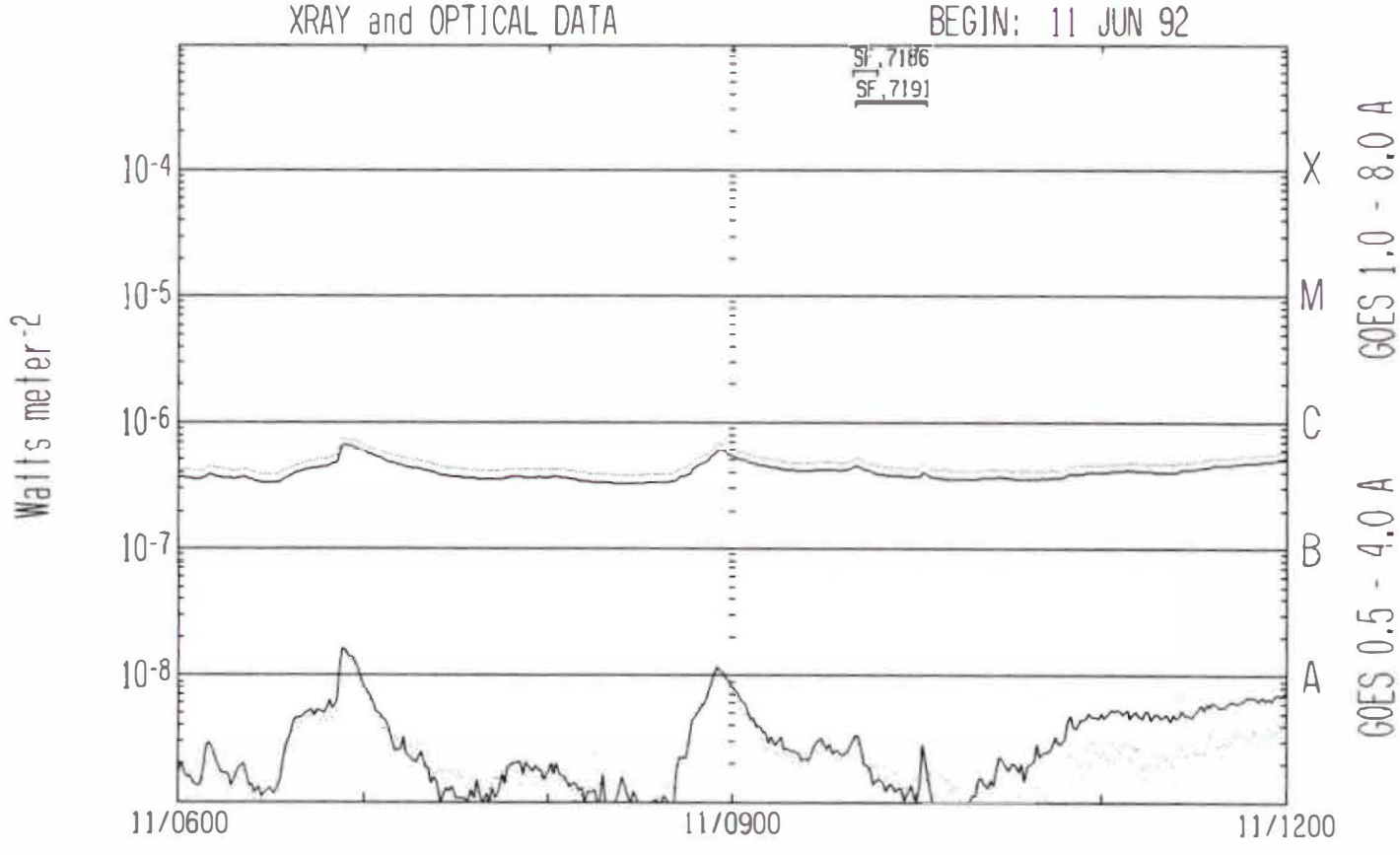
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PRECIPITATION EVENT


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/11
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1400 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


XRAY and OPTICAL DATA
BEGIN: 11 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
11/0000
11/0300
11/0600


XRAY and OPTICAL DATA
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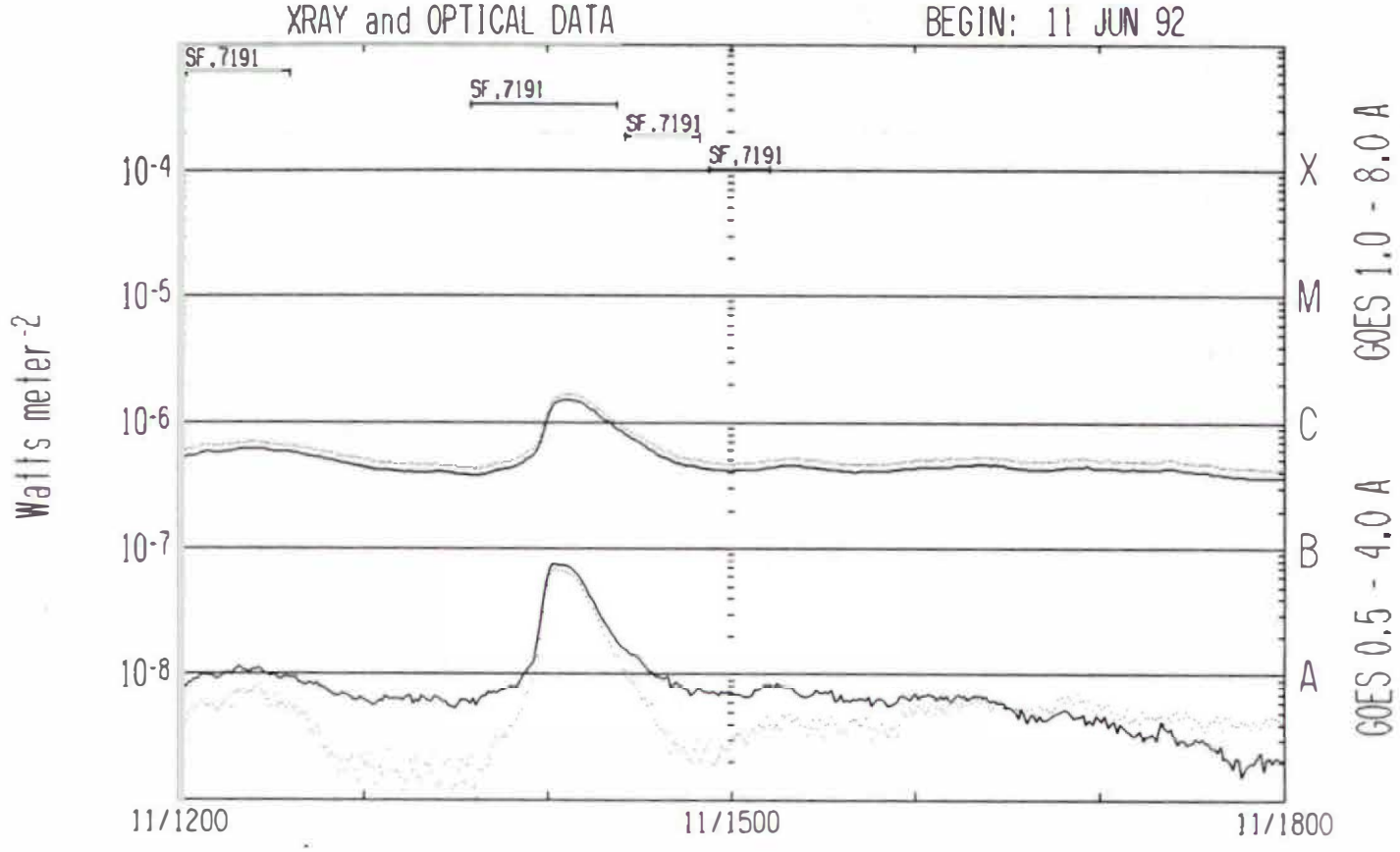
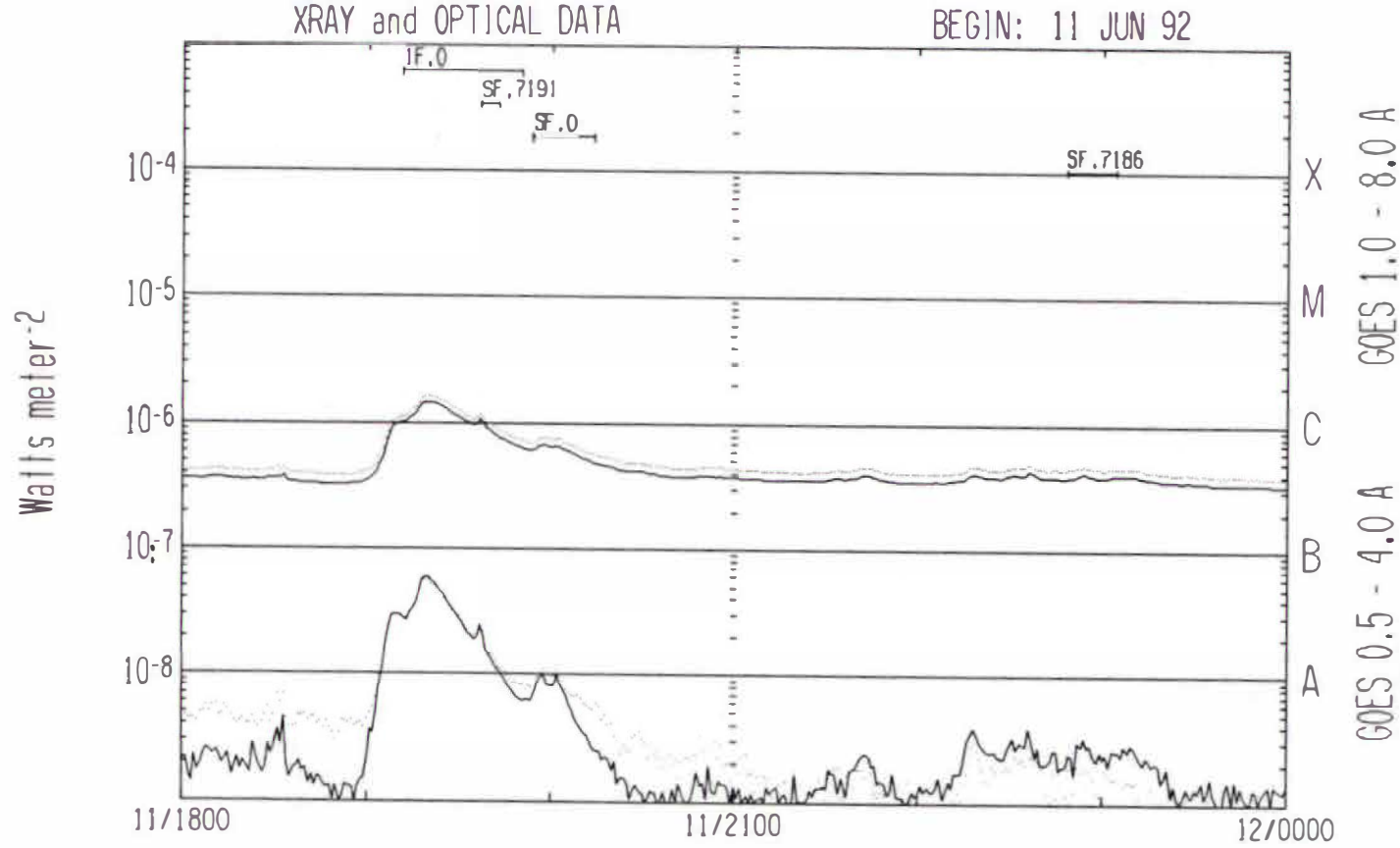
SF,7186
SF,7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
11/0600
11/0900
11/1200


XRAY and OPTICAL DATA
BEGIN: 11 JUN 92
SF,7191
SF,7191
SF,7191
SF,7191
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
11/1200
11/1500
11/1800


XRAY and OPTICAL DATA
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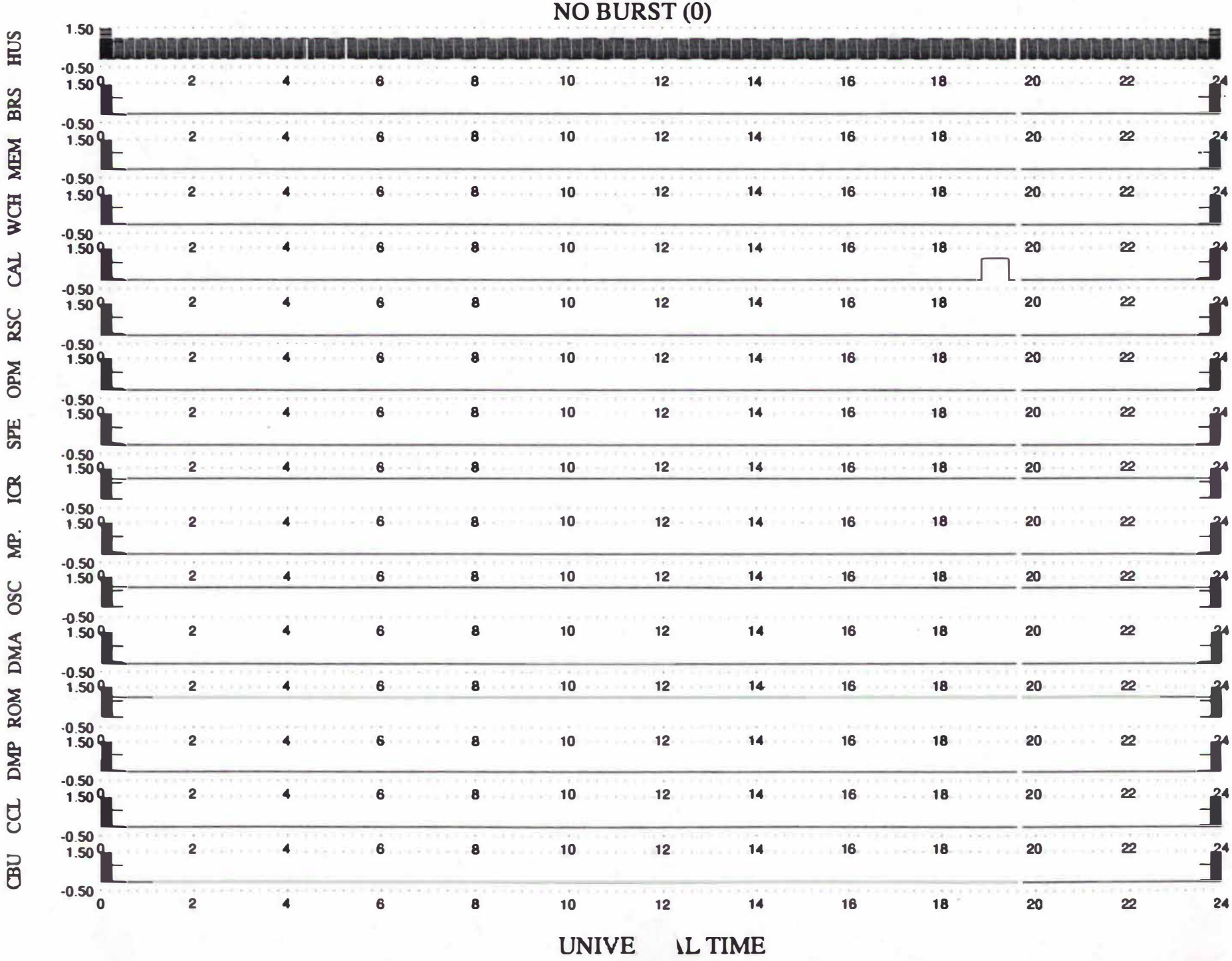
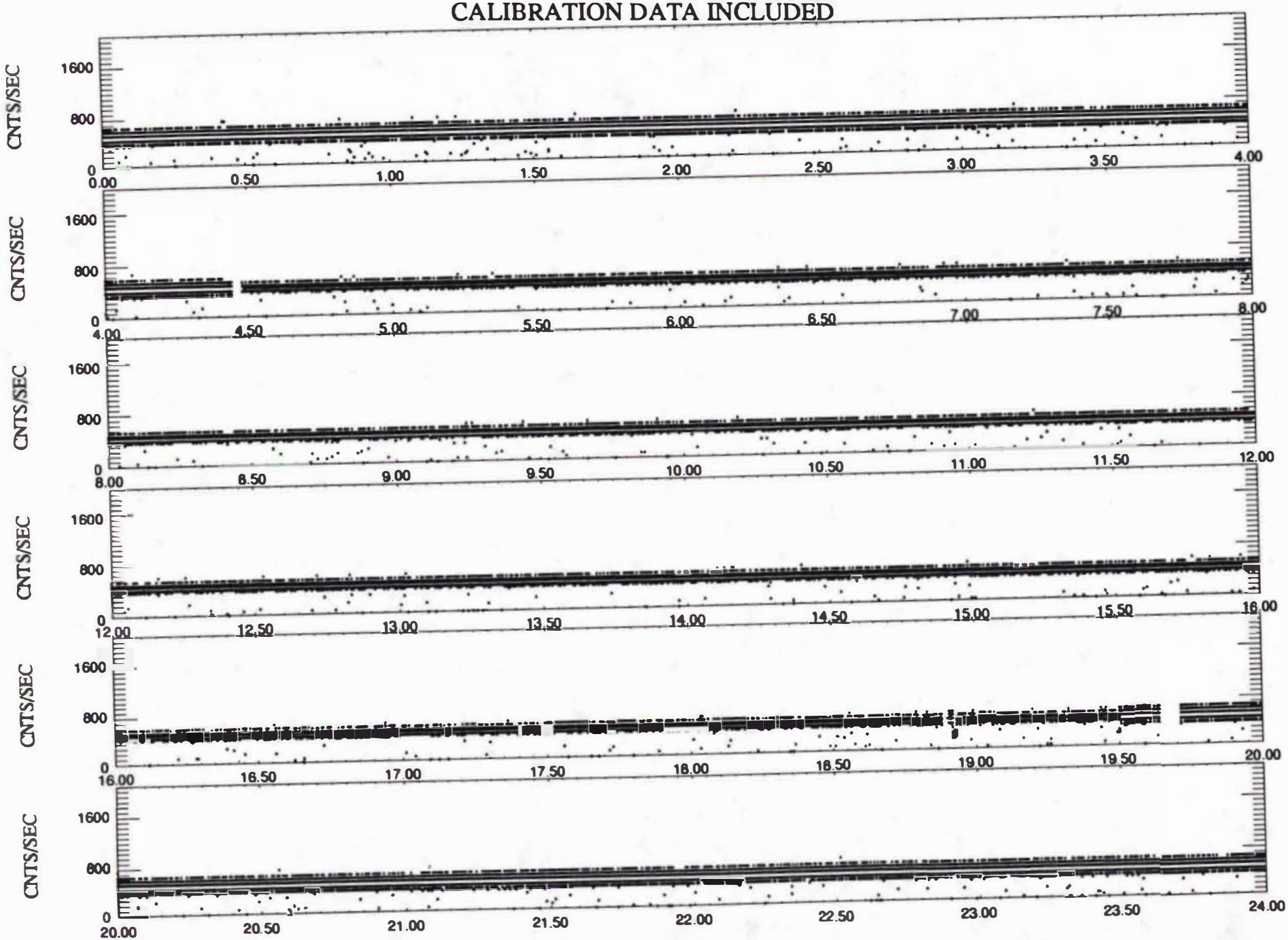
SF,7191
SF,0
SF,7186
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
11/1800
11/2100
12/0000

HUS MODES EDR day 163, year 1992 to day 163, year 1992 6/25/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 163, year 1992 to day 163, year 1992 6/25/92

CALIBRATION DATA INCLUDED



UNIVE AL TIME

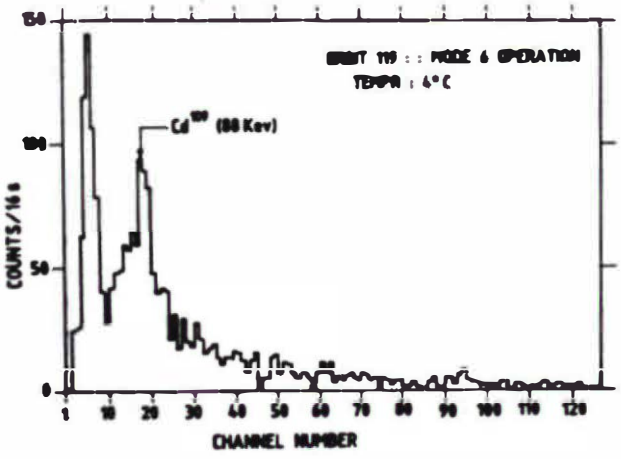


Fig. 9. Spectrum of Cd^{109} obtained in orbit

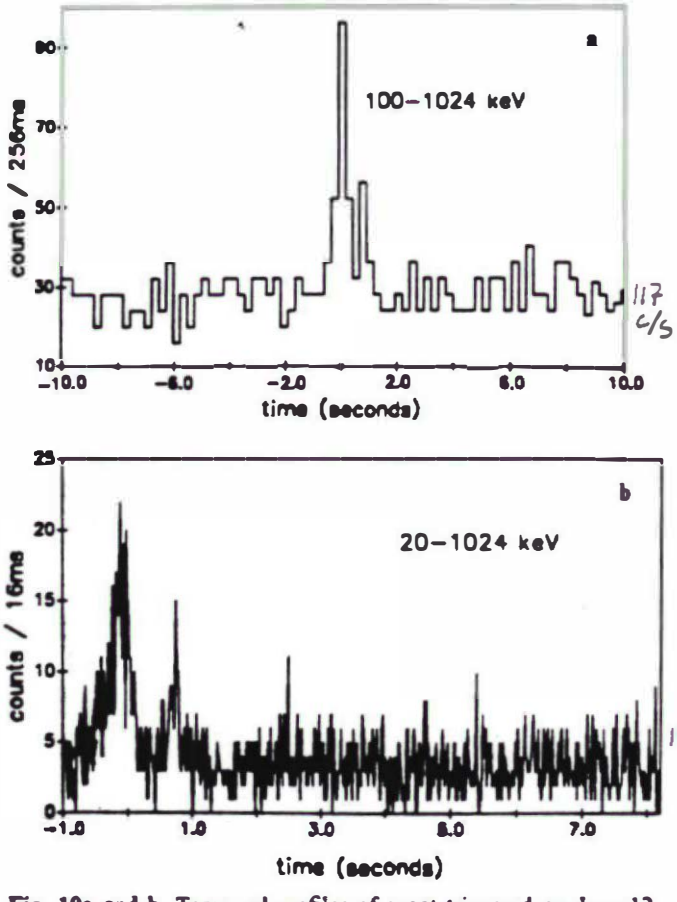


Fig. 10a and b. Temporal profiles of event triggered on June 12, 1992 at 18:06:48 UT. a With a resolution of 256 ms. b With a resolution of 16 ms

3.2. Event triggers

Since SROSS-C satellite had an inclination of 45.6°, during the passage of the satellite over the north and south pacific regions as well as over the eastern tail of the SAA located over the Indian ocean region, repeated false triggers were observed. The triggering frequency was about 1–2 per day. Most of these events, judging from their temporal profiles (which increase gradually and remain more or less saturated after trigger) have been rejected as charged particle events due to precipitating electrons from the trapped radiation belts. However about 8 events have been found to have profiles that looked different from those of definite false triggers. These were analysed in greater detail as possible GRB candidate events and three of them are discussed in another paper (Kasturirangan et al. 1993).

The trigger registered in orbit 377 on June 12 at 18:06:48 UT is unique in many respects and is shown in Figs. 10a and b. This near symmetric event had a rise time of about 512 ms and a duration of about 2.5 s. The initial burst followed by three spikes of decreasing intensity is characteristic of many celestial gamma ray bursts. The counting rate in the energy range 20–1024 keV at the peak of the burst is $\sim 400\,c\,s^{-1}$. Based on the measured fluence of this event, the trigger sensitivity of the instrument is estimated to be about $5\,10^{-6}$ erg cm^{-2}.

4. Conclusion

The characteristics of the gamma ray burst detection system and the processing electronics onboard the Indian SROSS-C satellite are presented in this paper. The satellite had a lifespan of 55 d during which the GRB detector performed very well, recording in all 53 event triggers. Out of eight candidate events, time history of one interesting likely candidate is presented. In addition, the experiment has also enabled a partial mapping of the radiation environment in near earth space.

Acknowledgements. The authors thank the SROSS project team, mission operations group of ISRO Satellite Center as well as the ground station operation staff of ISRO telemetry, tracking and command network for their excellent support throughout the payload qualification and mission operations. They also specifically thank Mr. V.C. Babu and Mr. V. Sundararajan for their invaluable contributions towards the payload development and Ms. Padmavathy for her cheerful secretarial assistance. The authors also thank the anonymous referee for many useful suggestions that helped improve the paper.

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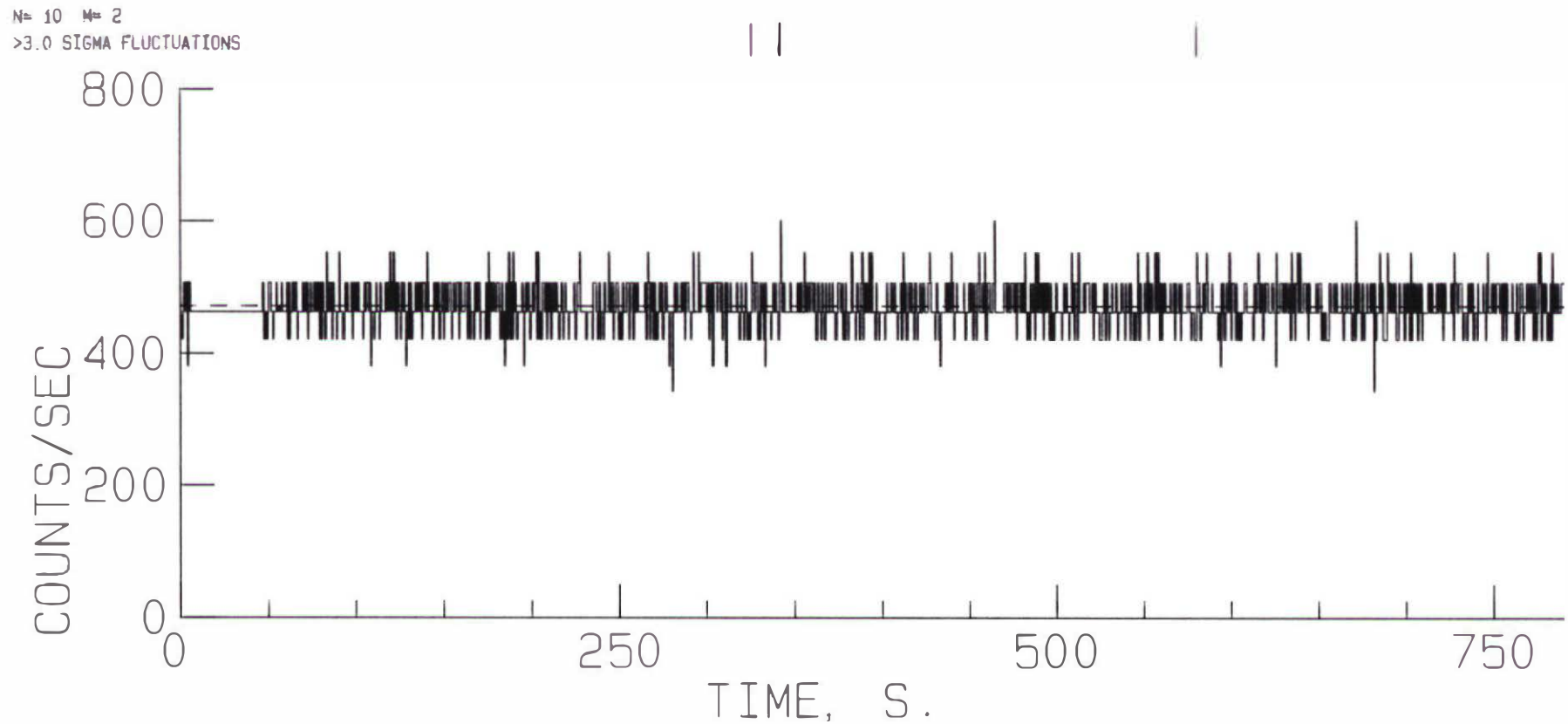
ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

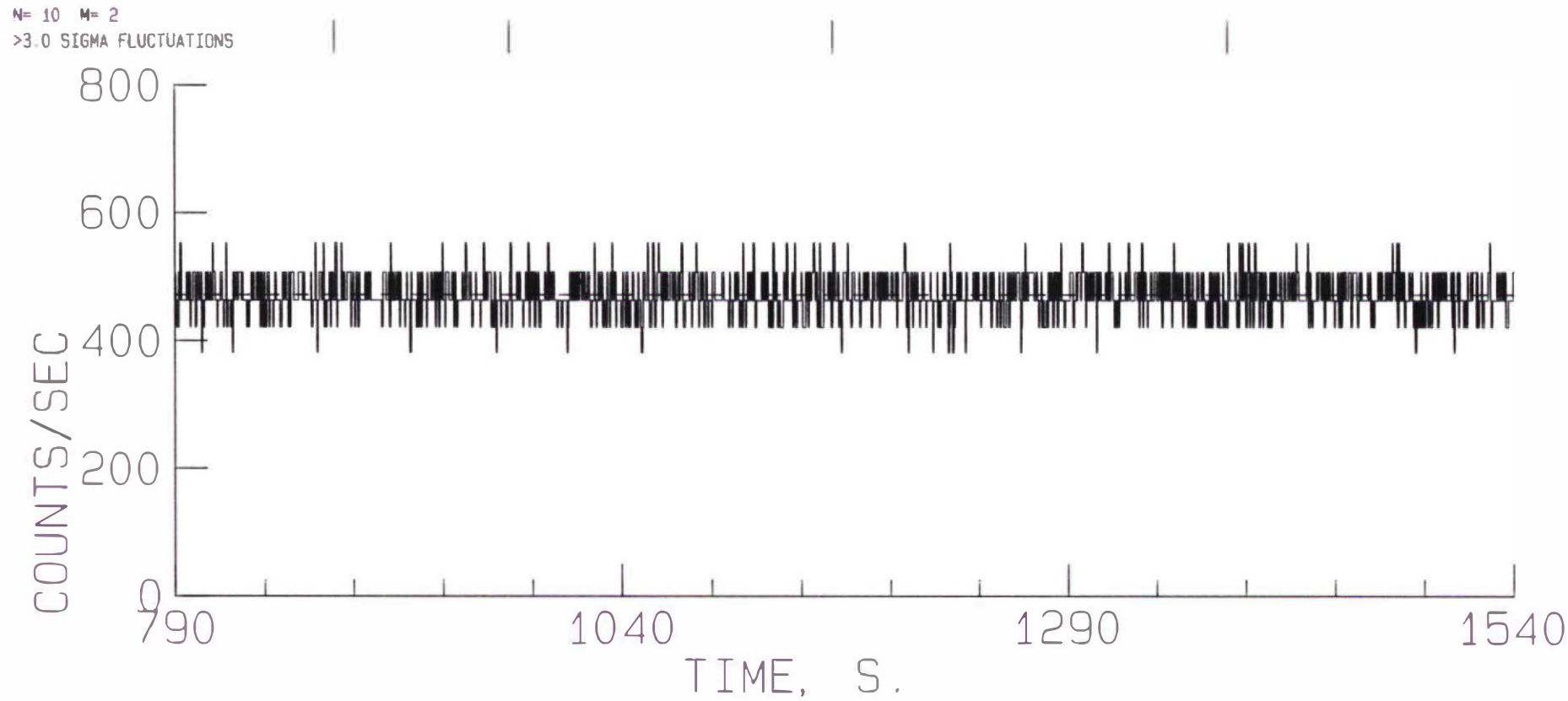


ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

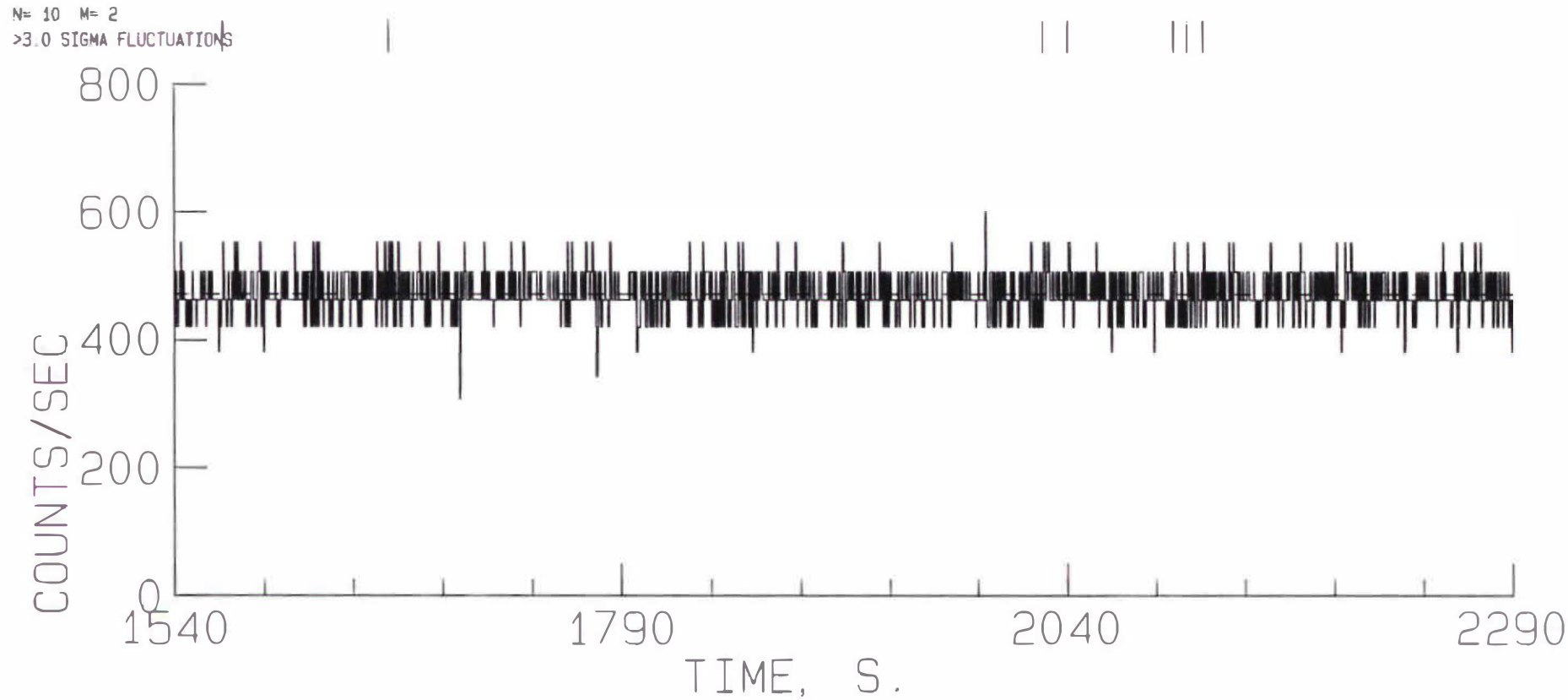


ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

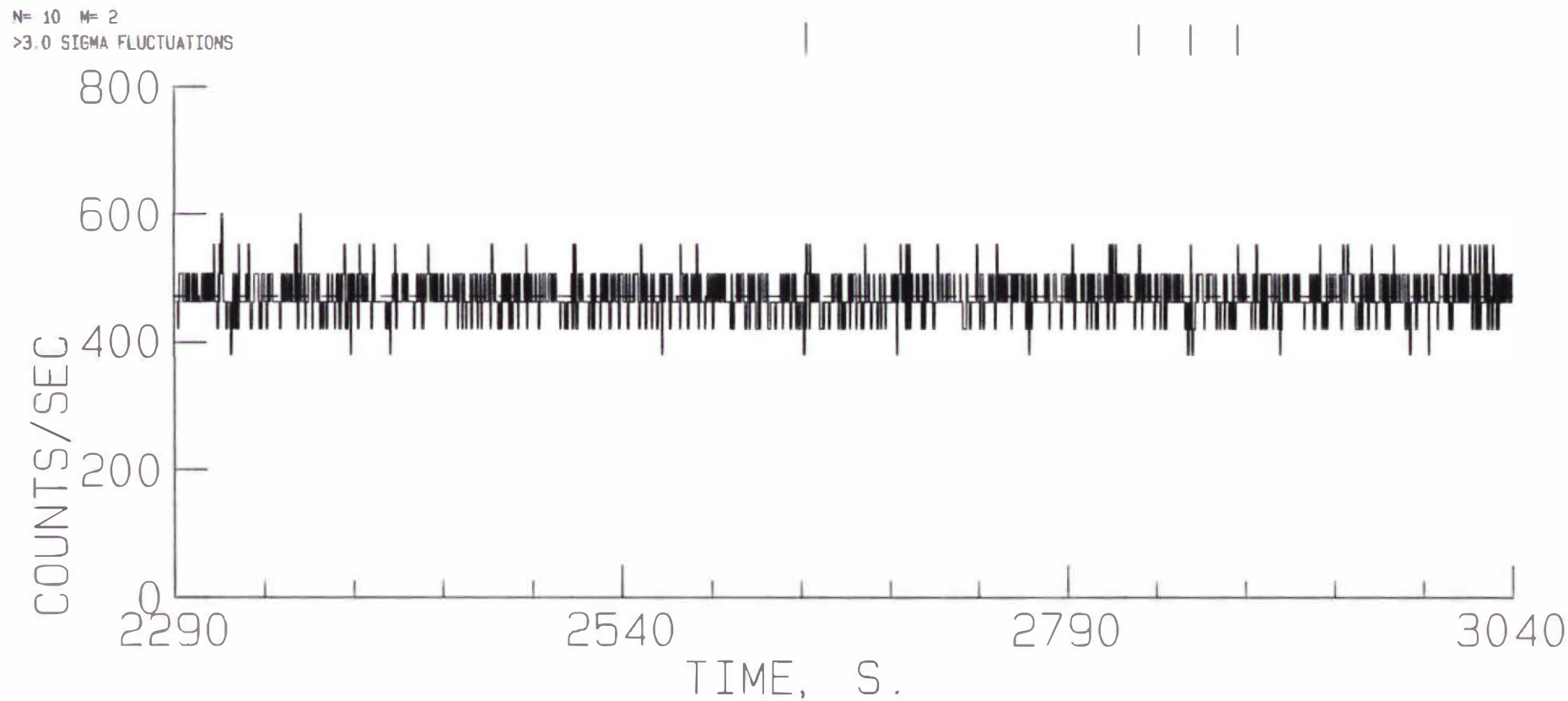


ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

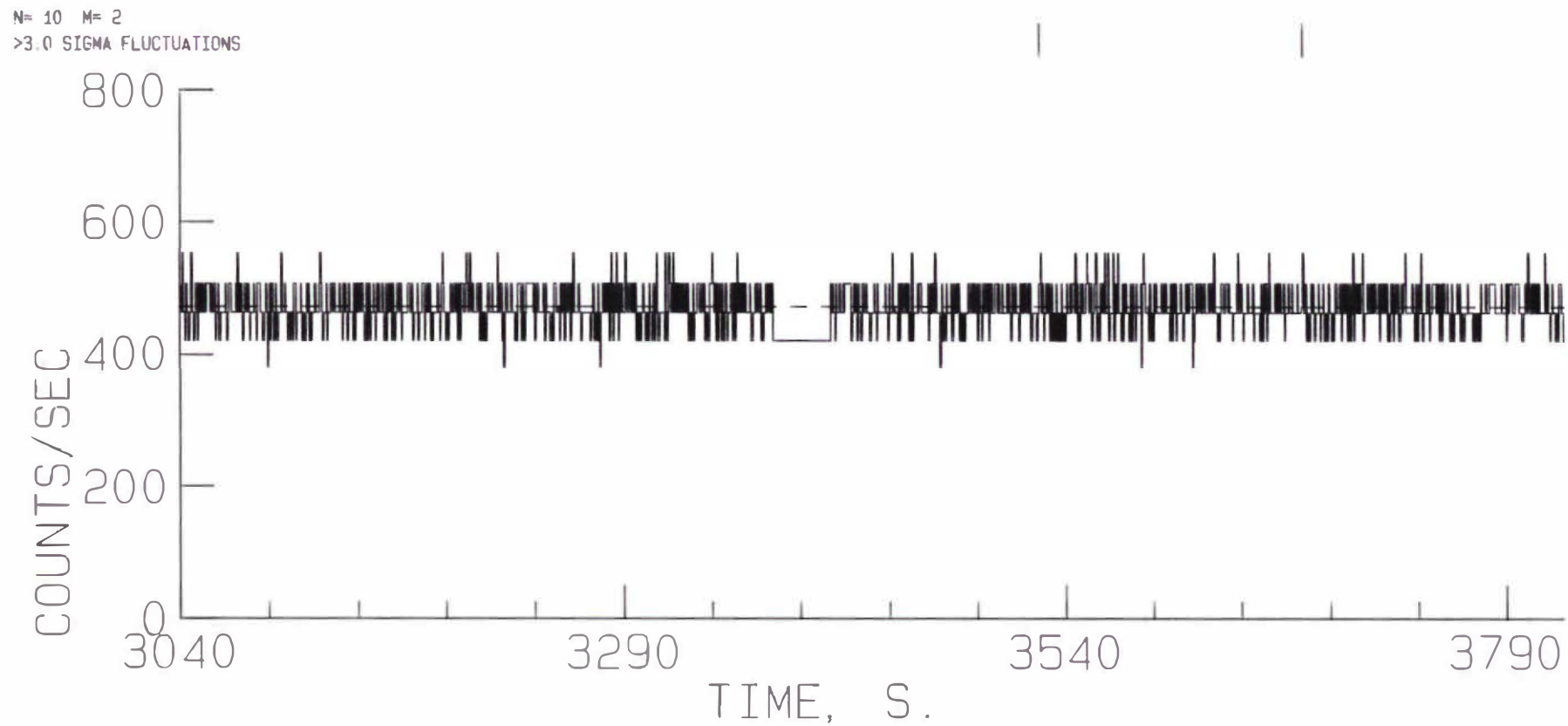


ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

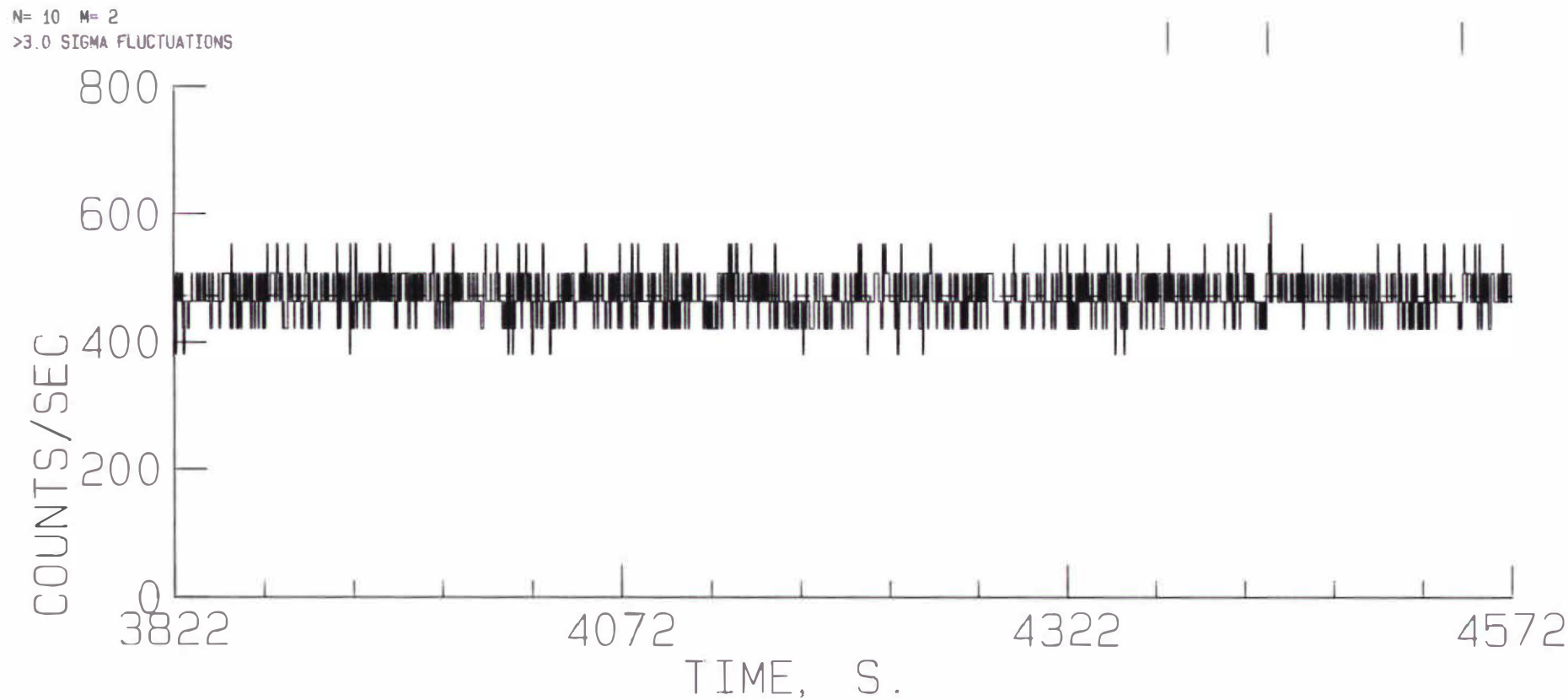


ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

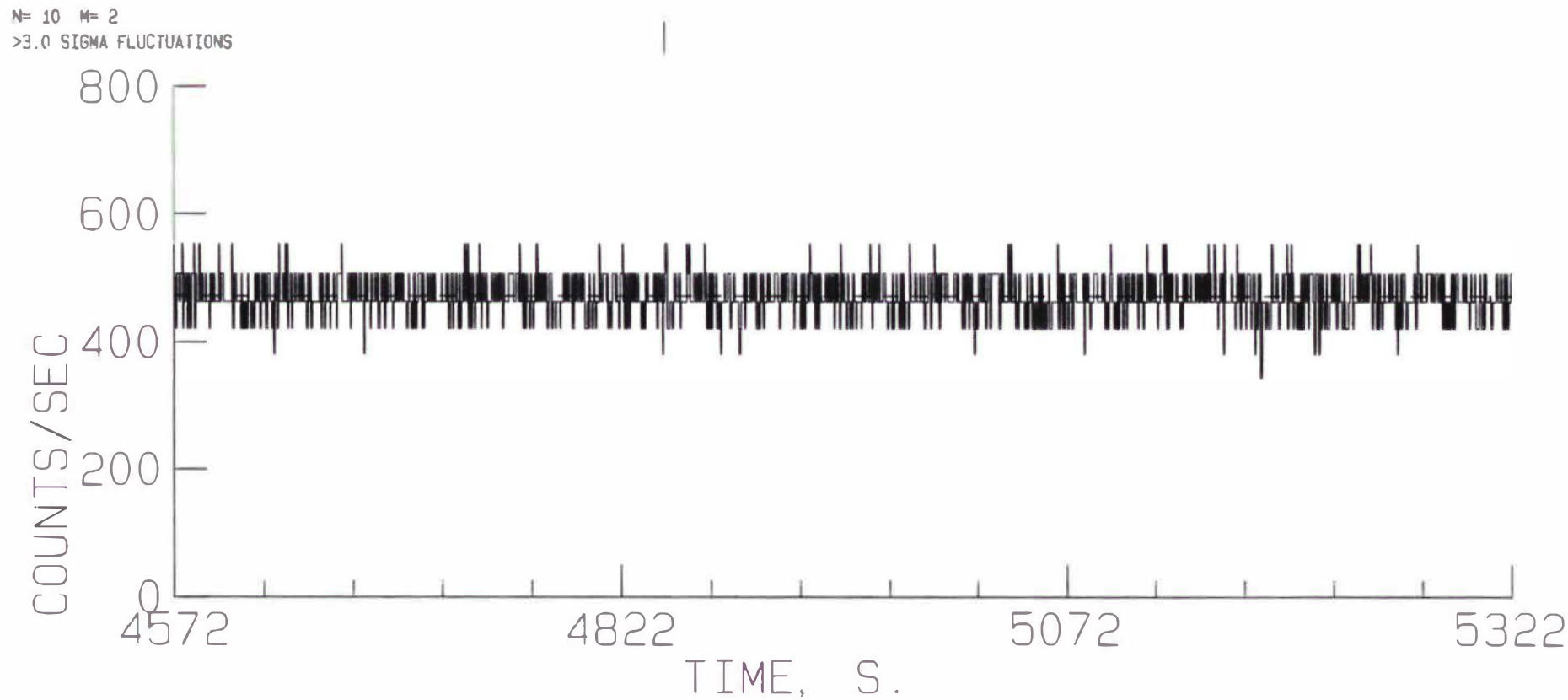


ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV



ULYSSES RT

17/ 5/94

12/ 6/92 62172.070 s

23- 155 keV

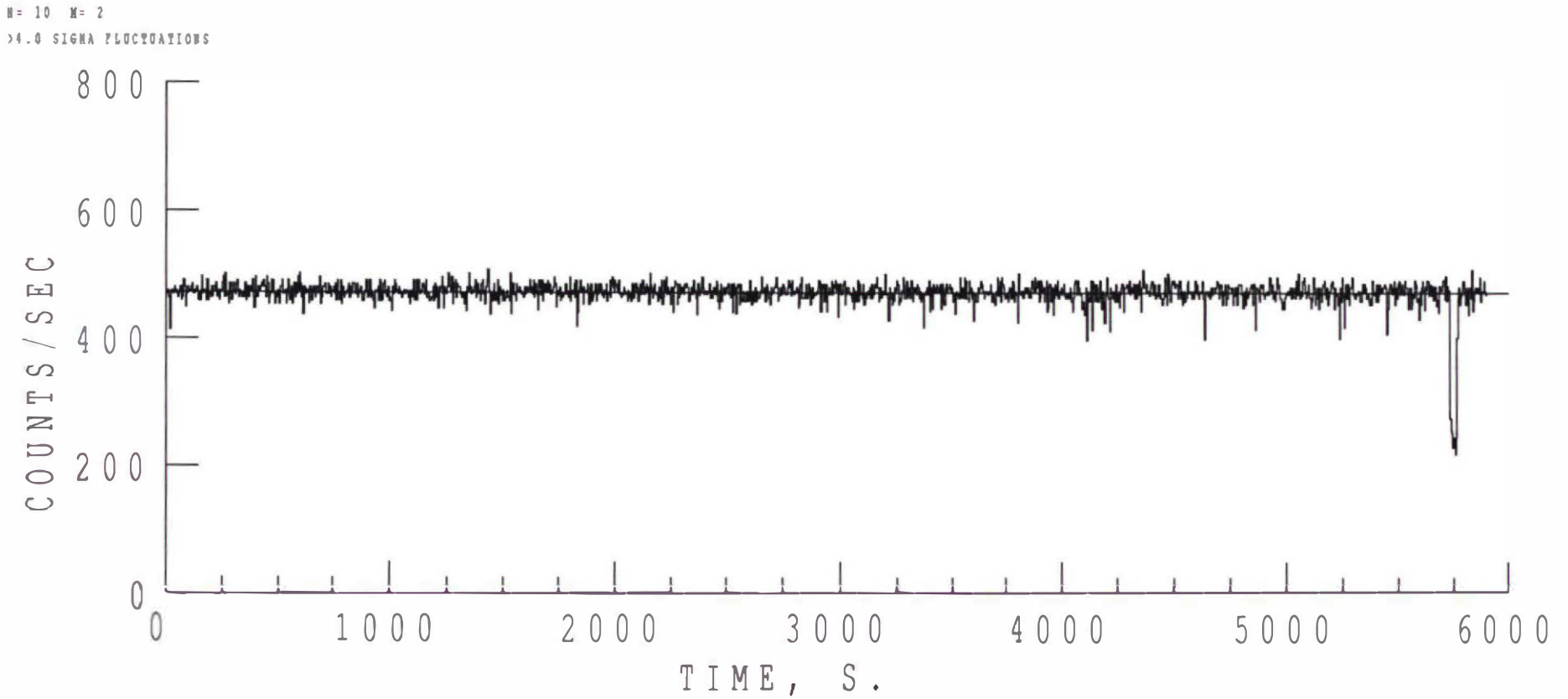
16/ 5/94

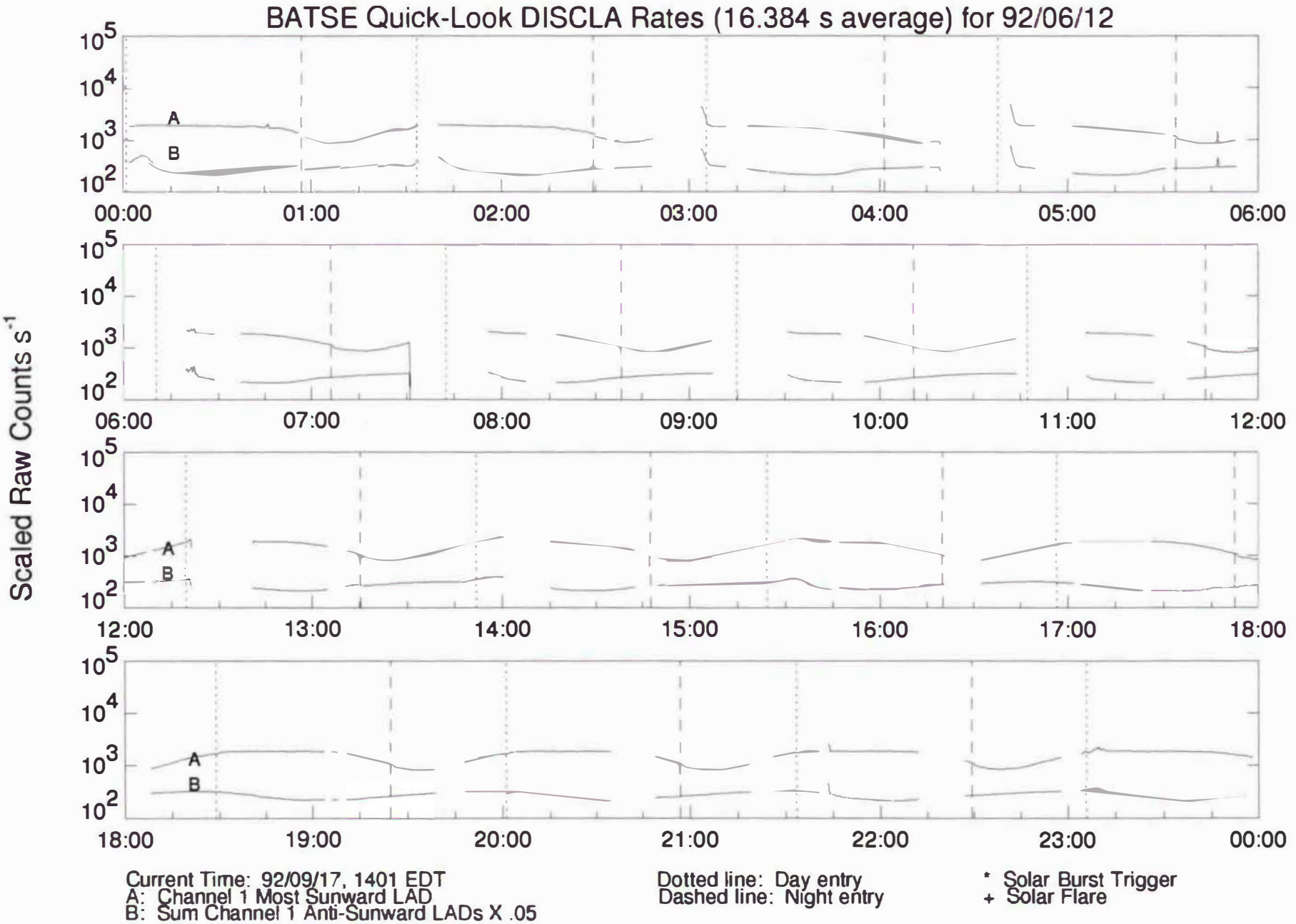
ULYSSES RT

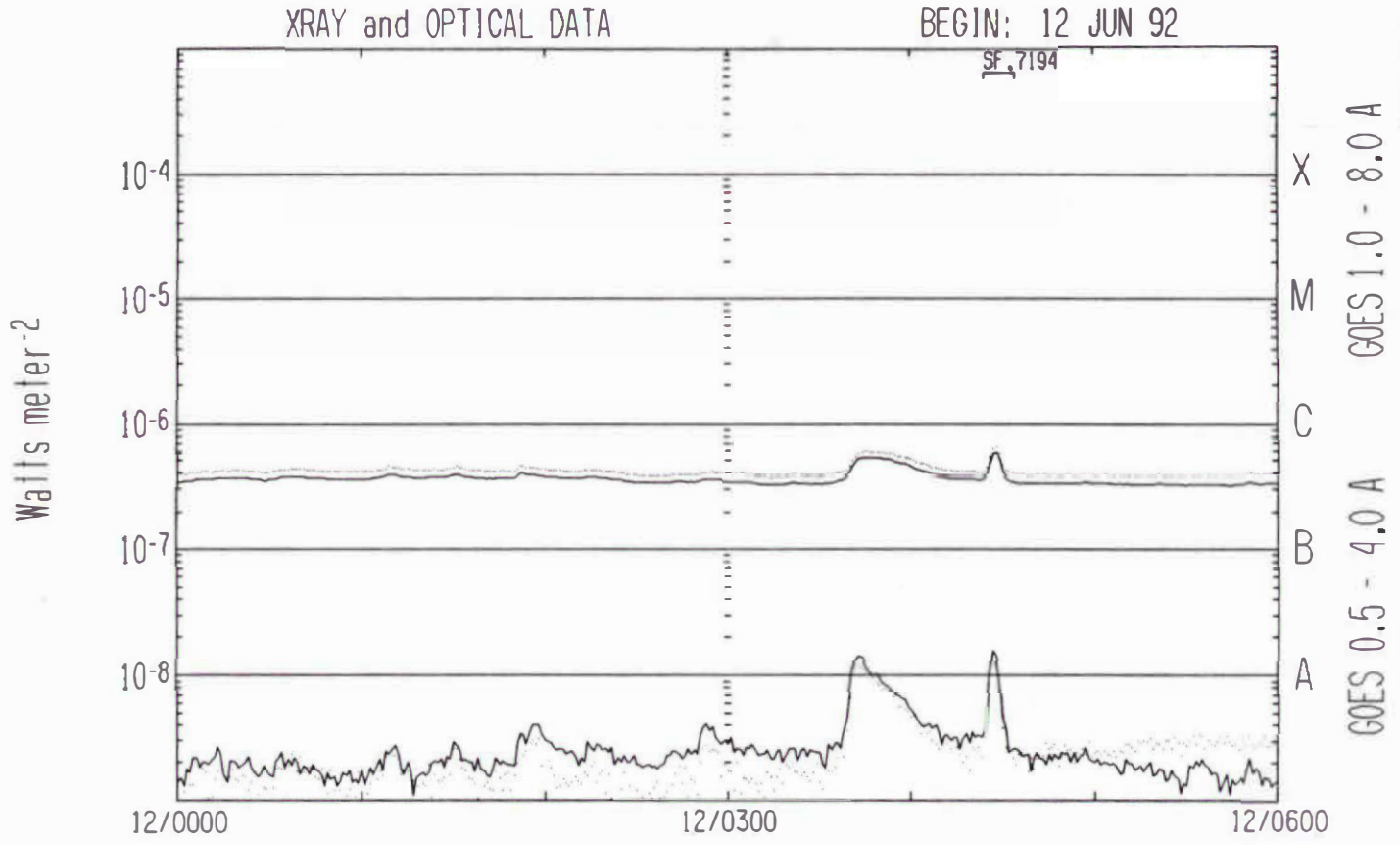
12/ 6/92 62172.070 s

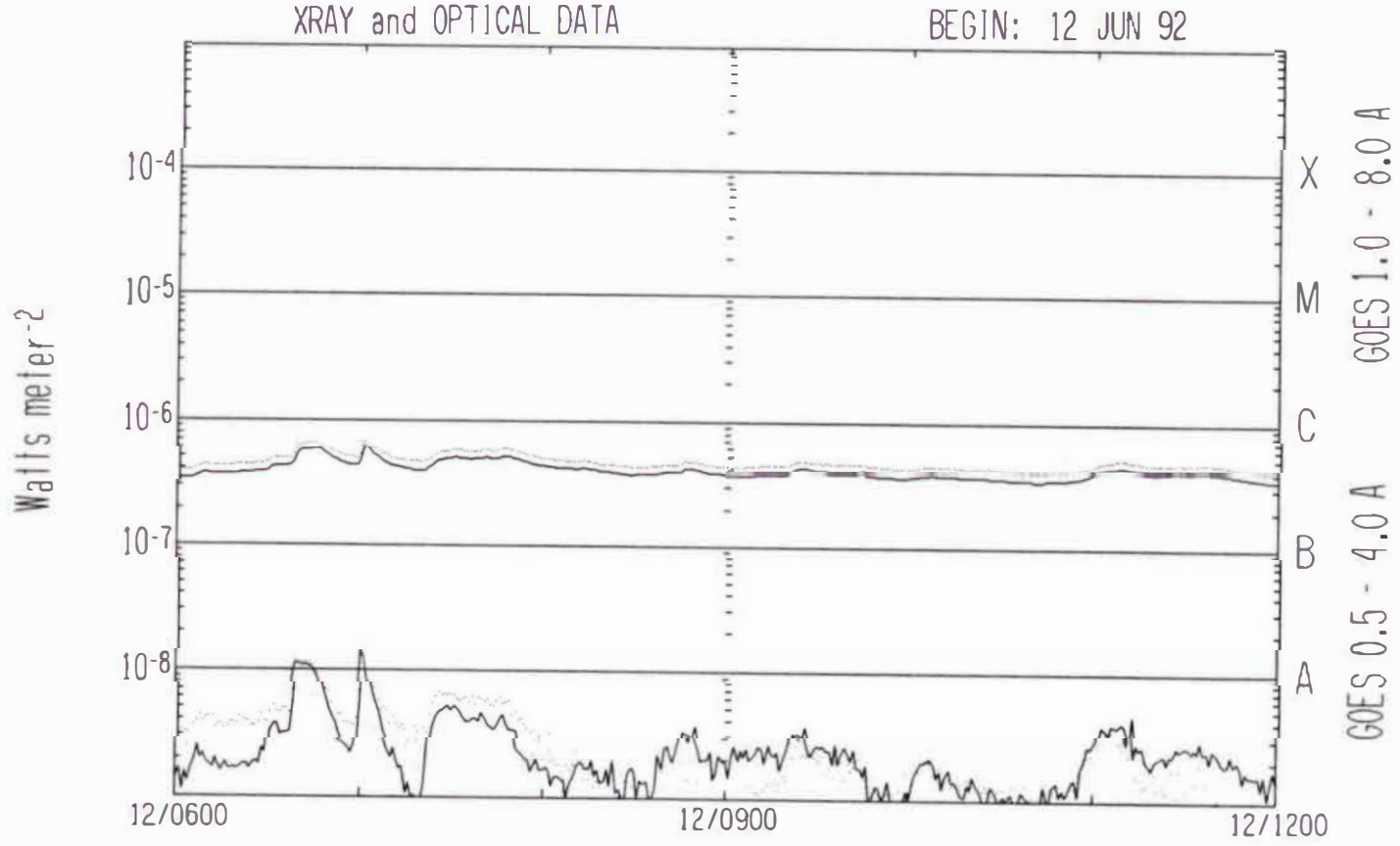
0.500 S INTERVALS REGROUPED BY 8

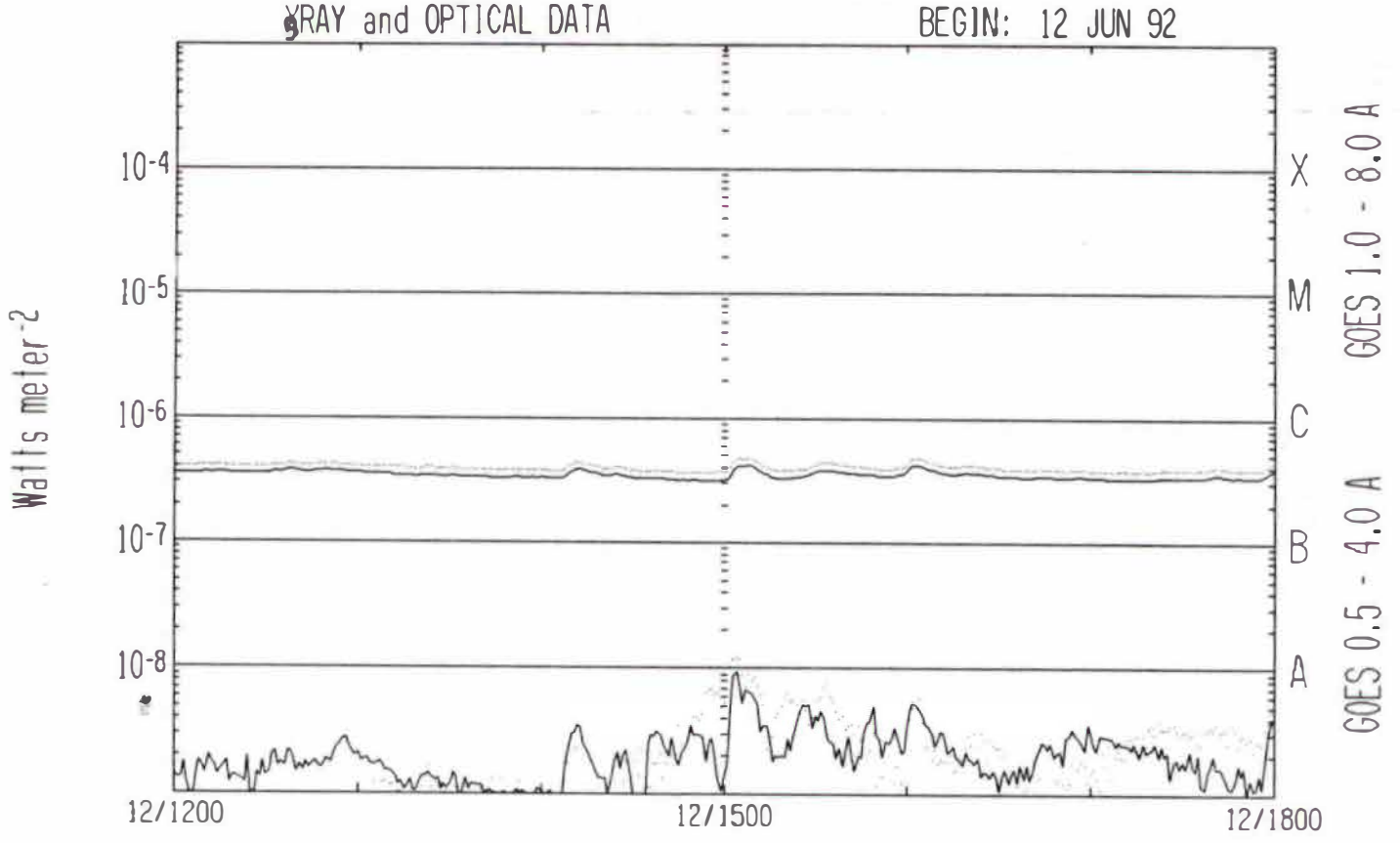
0- 0 keV

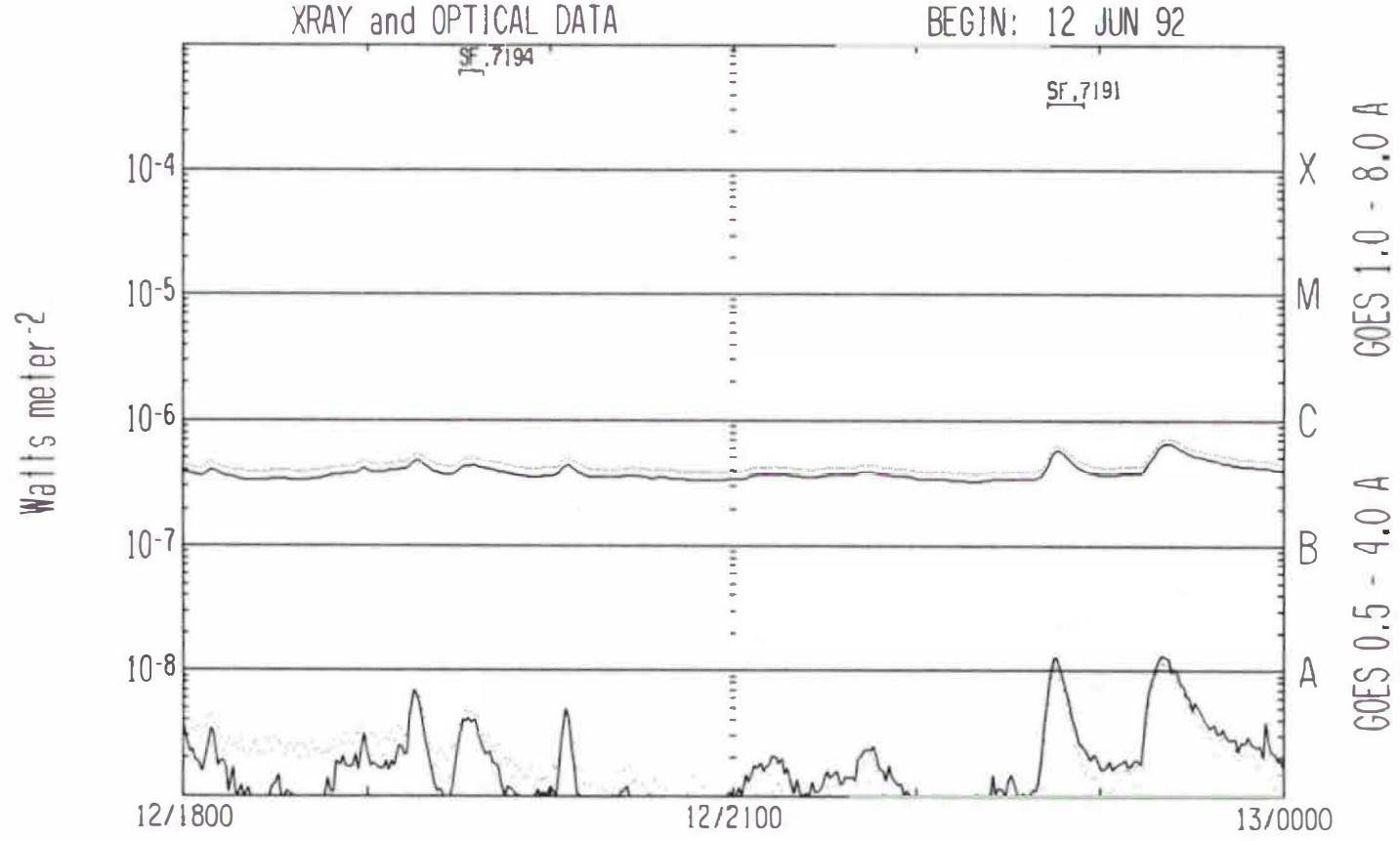



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/12
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1401 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

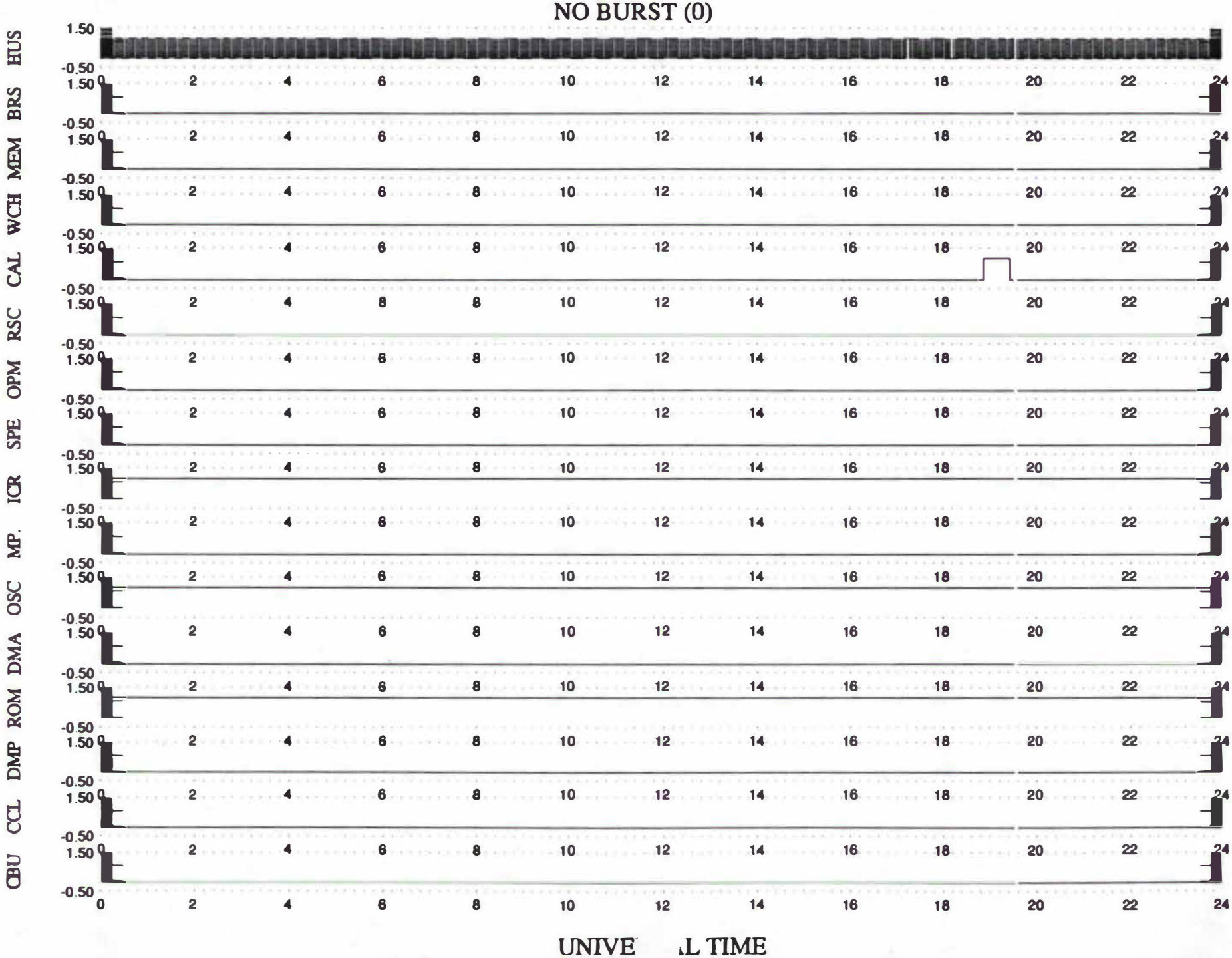

XRAY and OPTICAL DATA
BEGIN: 12 JUN 92
SF,7194
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
12/0000
12/0300
12/0600


XRAY and OPTICAL DATA
BEGIN: 12 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
12/0600
12/0900
12/1200


XRAY and OPTICAL DATA
BEGIN: 12 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
12/1200
12/1500
12/1800

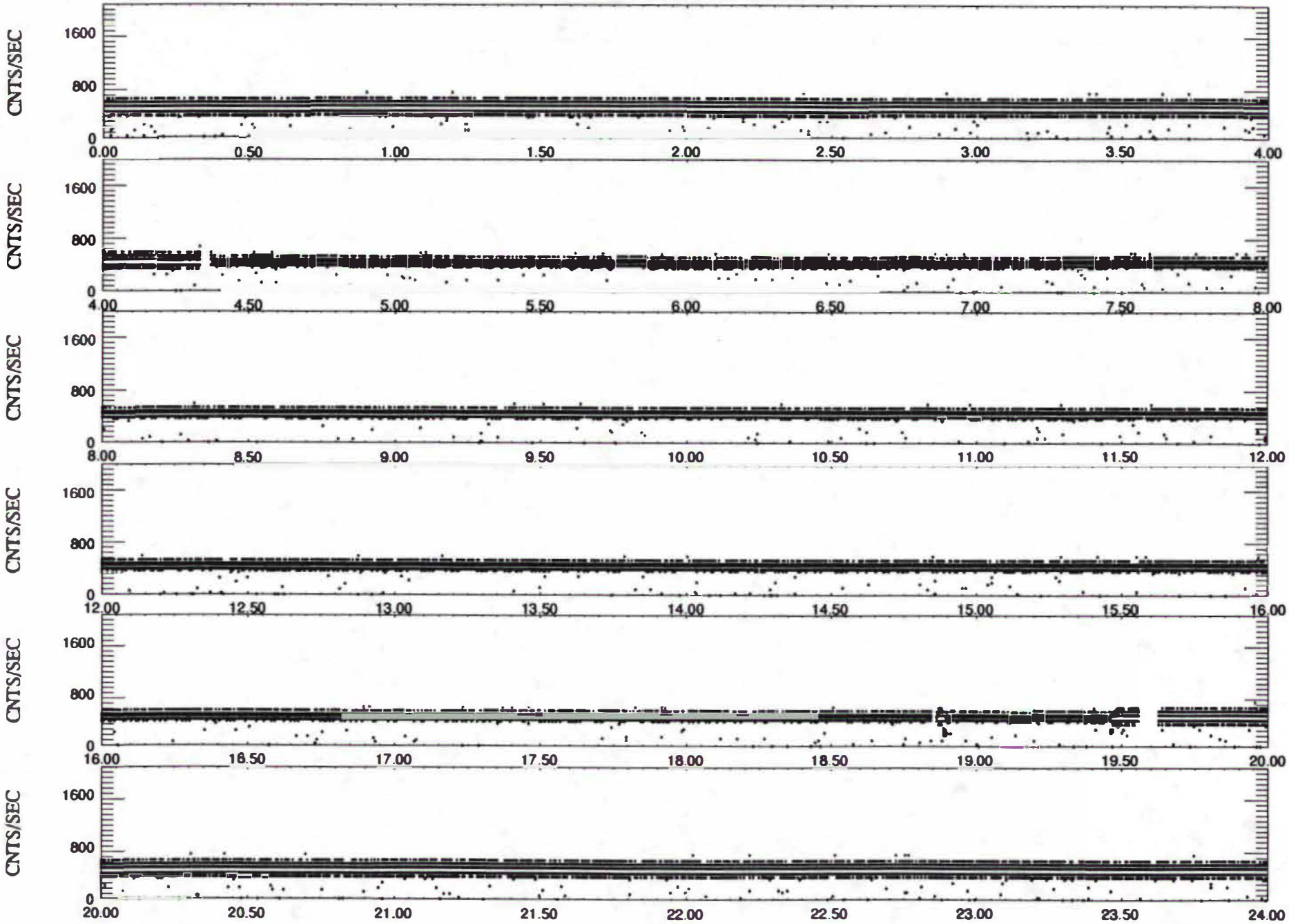

XRAY and OPTICAL DATA
BEGIN: 12 JUN 92
SF,7194
SF,7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
12/1800
12/2100
13/0000

HUS MODES EDR day 164, year 1992 to day 164, year 1992 6/25/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 164, year 1992 to day 164, year 1992 6/25/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1646
EVENT OF 1992 JUN 13 DAY OF YEAR=165
EVENT CROSSING TIME AT BATSE : 52303. S. OR 14:31:43.5
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 297.500 -31.200
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 13/ 6/ 92 IS:
RA= 148.888 DEC= 7.459 DIST= 5.671 AU
BATSE-ULYSSES DISTANCE = 848359160. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2239.13 SECS.
CROSSING TIME AT ULYSSES IS 54543. S. OR 15:09:02.6 +/- 384.43 SECONDS

No

From BRIGGS@ssl.msfc.nasa.gov Sun Jun 14 16:33:16 1992
Date: Sun, 14 Jun 1992 18:36:16 -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.: 01646 June 13

TIME: TJD=8786 SECONDS=52035

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: 006.9 SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=156.5 AZIMUTH=292.6 ERROR= DEGREES

COMMENTS:
WEAK, SOFT BURST. NOT SEEN ABOVE 320 KEV. TOTAL DURATION ABOUT 140 SEC.
ONE COMPLEX OF PEAKS FROM -20 TO +20 SECONDS RELATIVE TO THE TRIGGER TIME,
A SECOND COMPLEX FROM +100 TO +120 SECONDS.

No trig

```
          ********************
          *CATSEARCH PROGRAM*
          ********************

 ATSE BURST # 1646
EVENT OF 1992 JUN 13 DAY OF YEAR=165
EVENT CROSSING TIME AT BATSE      : 52303. S. OR 14:31:43.4
COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 312.910   -55.640
BATSE PEAK COUNTING RATE:  0000    C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 13/ 6/  92 IS:
RA=  148.888 DEC=     7.459 DIST=     5.671 AU
BATSE-ULYSSES DISTANCE =  848359160. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL     DIRECTION= 49.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1825.69 SECS.
CROSSING TIME AT ULYSSES     IS 54129. S. OR 15:02:09.1 +/-  453.10 SECONDS
```

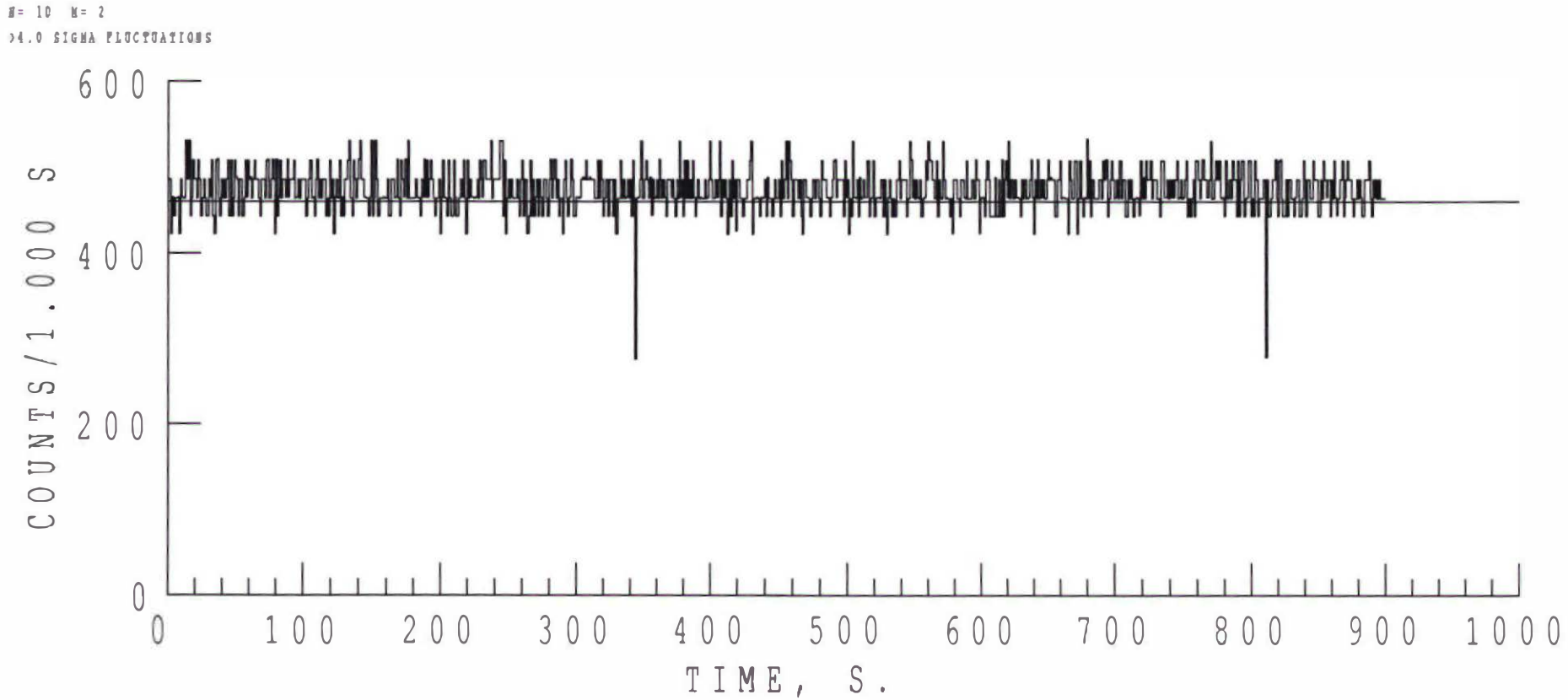
9/11/95

ULYSSES RT

13/ 6/92 53676.340 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



****
CATSEARCH PROGRAM
****

BATSE BURST # 1647
EVENT OF 1992 JUN 13 DAY OF YEAR=165
EVENT CROSSING TIME AT BATSE : 73639. S. OR 20:27:18.5
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 351.900 -65.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 13/ 6/ 92 IS:
RA= 148.888 DEC= 7.459 DIST= 5.671 AU
BATSE-ULYSSES DISTANCE = 848359160. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1424.40 SECS.
CROSSING TIME AT ULYSSES IS 75063. S. OR 20:51:02.9 +/- 496.16 SECONDS

NO

BATSE BURST TRIGGER

NO.: 01647

June 13

TIME: TJD=8786 SECONDS=73640

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: 010.0 SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=136.2 AZIMUTH=324.8 ERROR= DEGREES

COMMENTS:
WEAK, SOFT BURST NOT SEEN ABOVE 300 KEV. TOTAL DURATION ABOUT 70 SECONDS. MAIN PORTION OF BURST RISES IN A FEW SECONDS, THEN DECLINES OVER ABOUT 30 SECONDS. AT 70 SECONDS THERE IS A 2 SEC DURATION SOFT SPIKE, WHICH IS NOT SEEN ABOVE 50 KEV.

No trig

BATSE BURST TRIGGER

NO.: 01647

June 13

TIME: TJD=8786 SECONDS=73640

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: 010.0 SIGMA

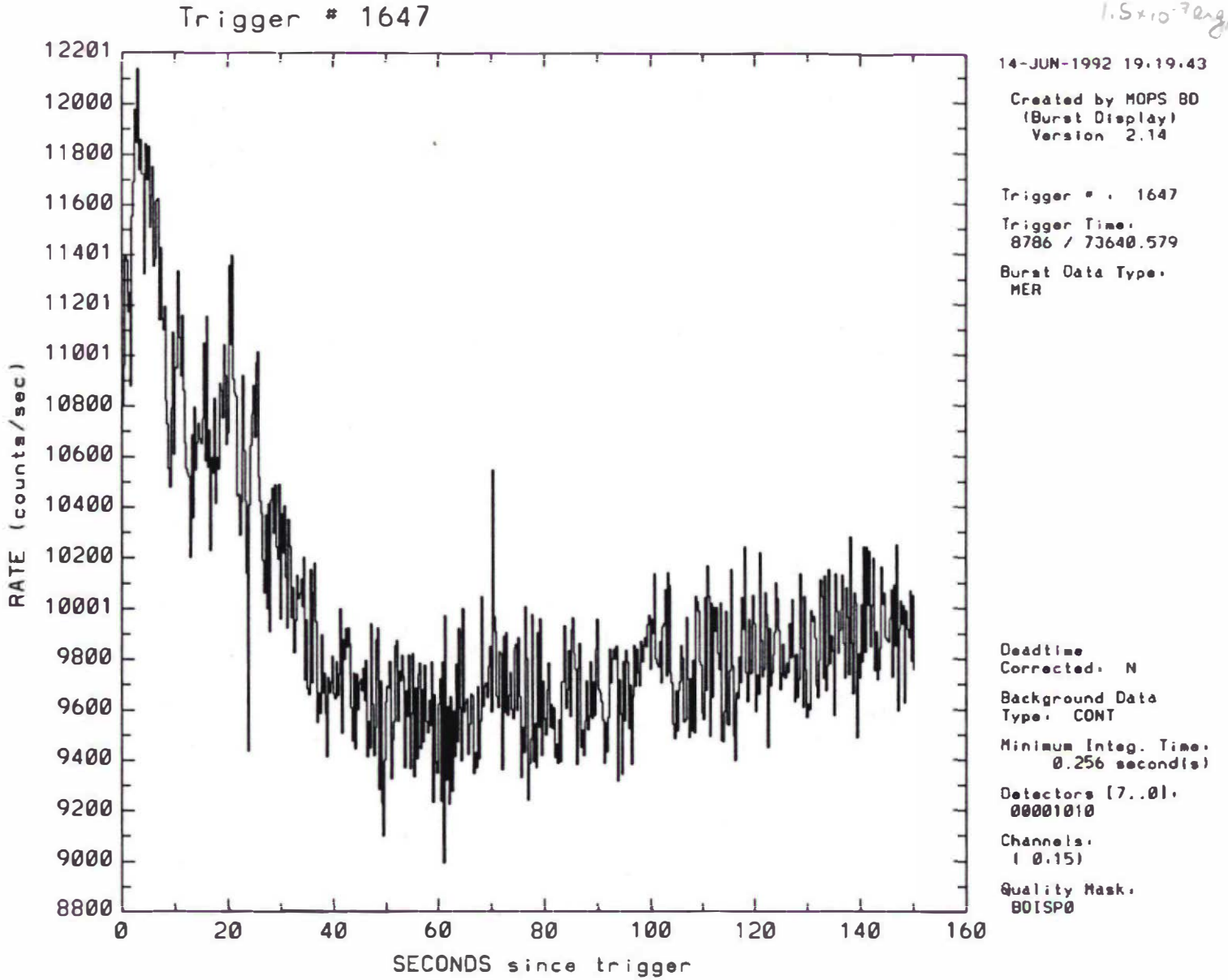
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=324.8 AZIMUTH=136.2 ERROR= DEGREES

COMMENTS:
WEAK, SOFT BURST NOT SEEN ABOVE 300 KEV. TOTAL DURATION ABOUT 70 SECONDS. MAIN PORTION OF BURST RISES IN A FEW SECONDS, THEN DECLINES OVER ABOUT 30 SECONDS. AT 70 SECONDS THERE IS A 2 SEC DURATION SOFT SPIKE, WHICH IS NOT SEEN ABOVE 50 KEV.

No trig

Jun 13
351.9, -65.0
1.5×10^{-7} erg/cm²



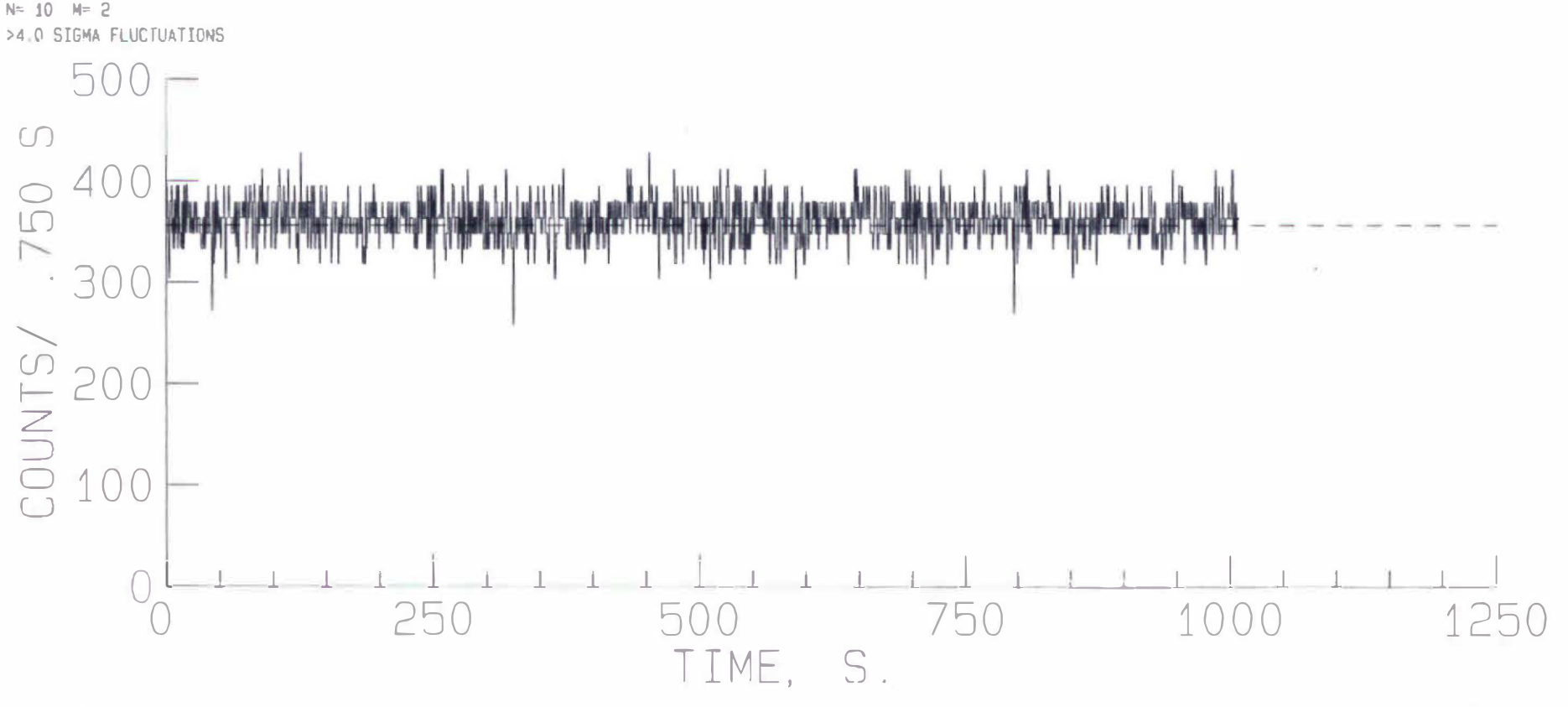
18/ 8/92

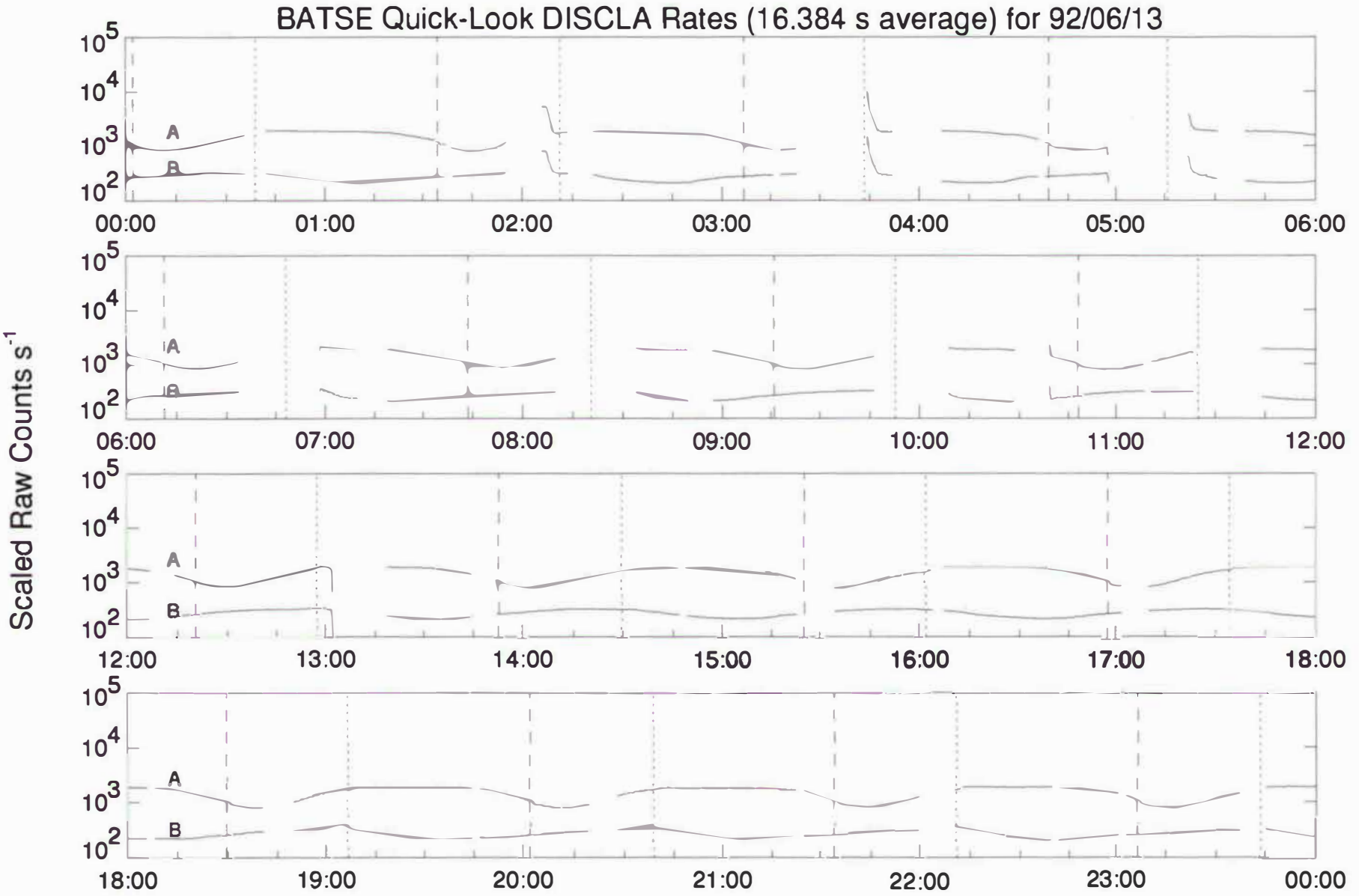
ULYSSES RT

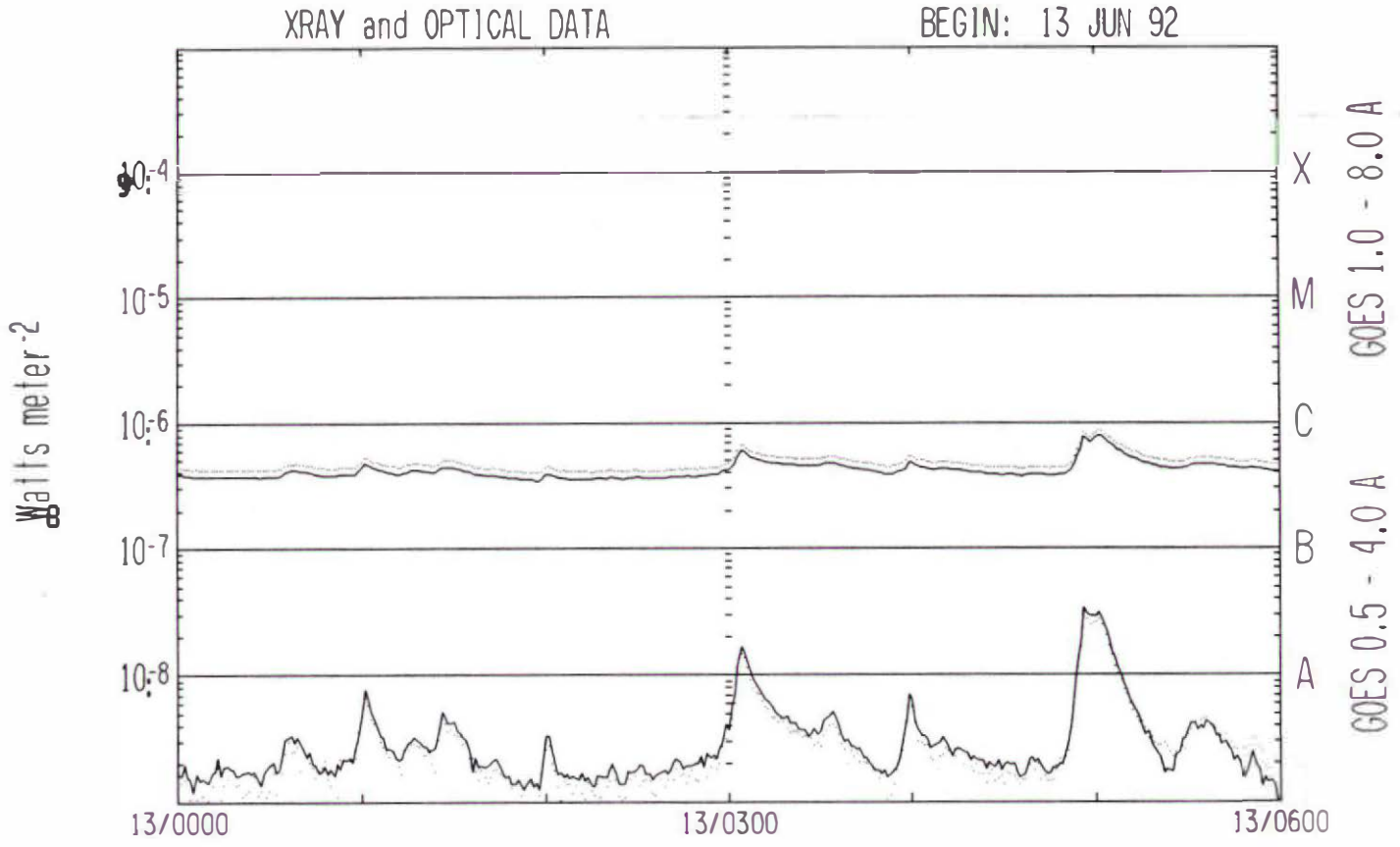
13/ 6/92 74556.180 s

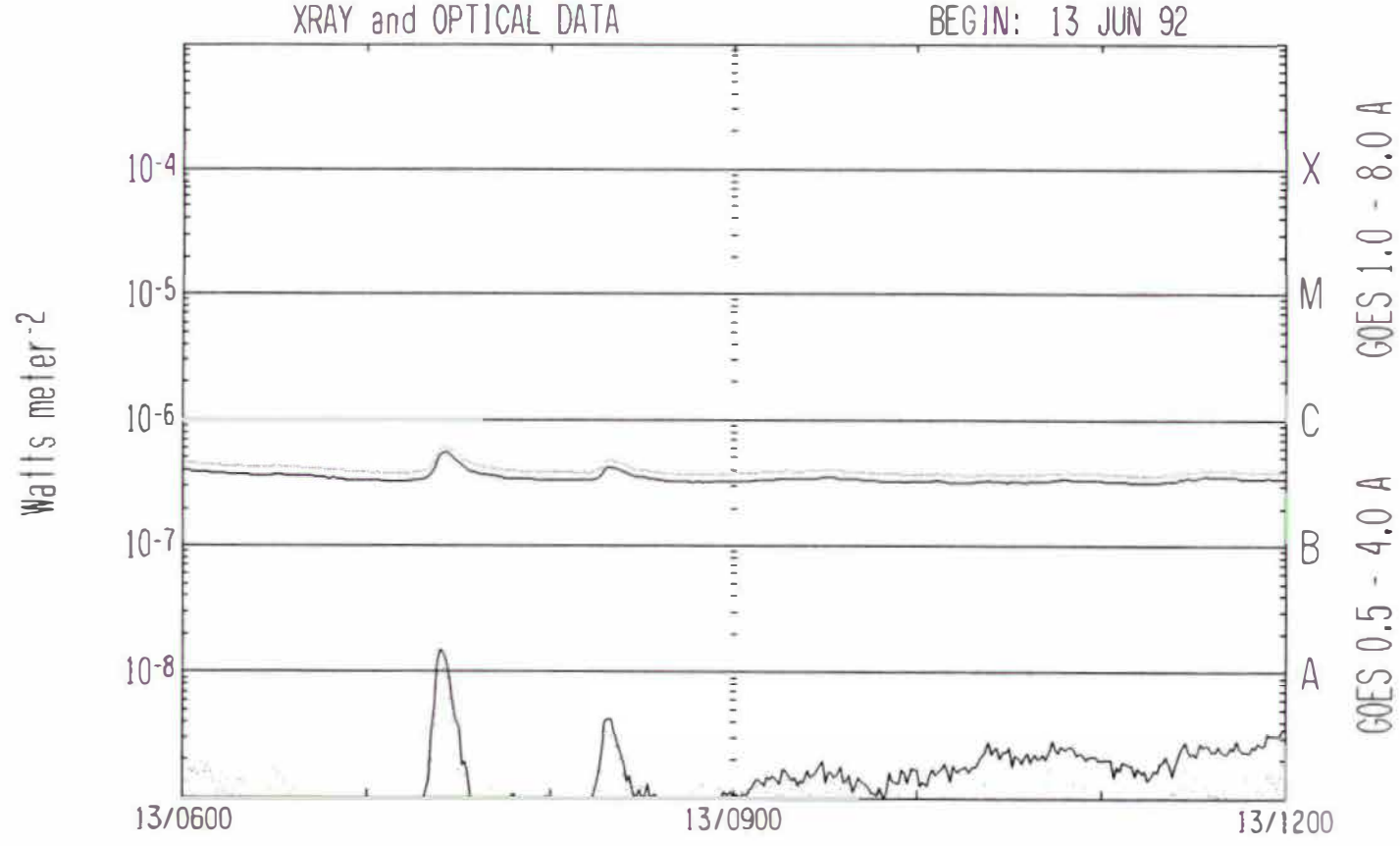
.250 S INTERVALS REGROUPED BY 3

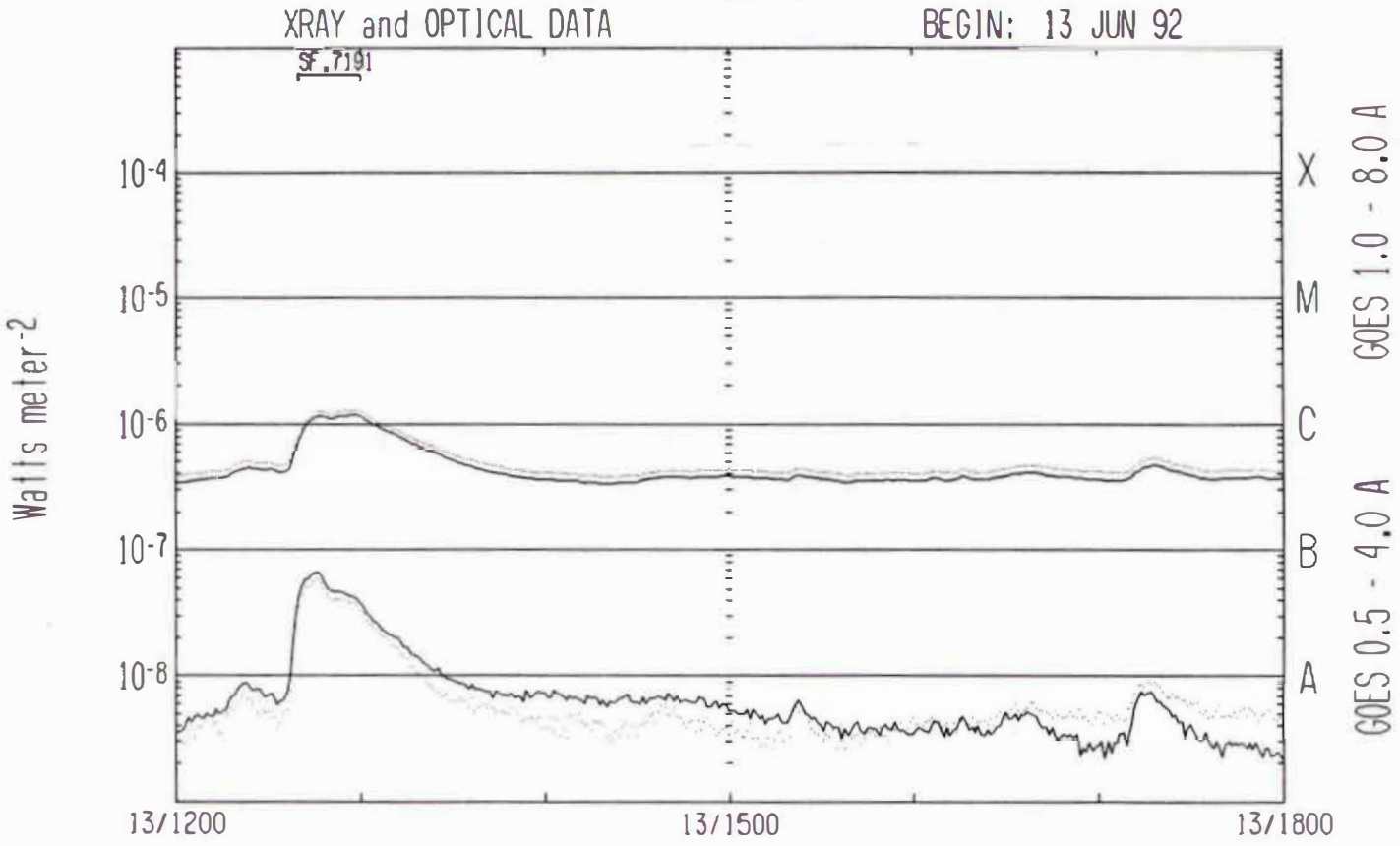
0- 0 keV

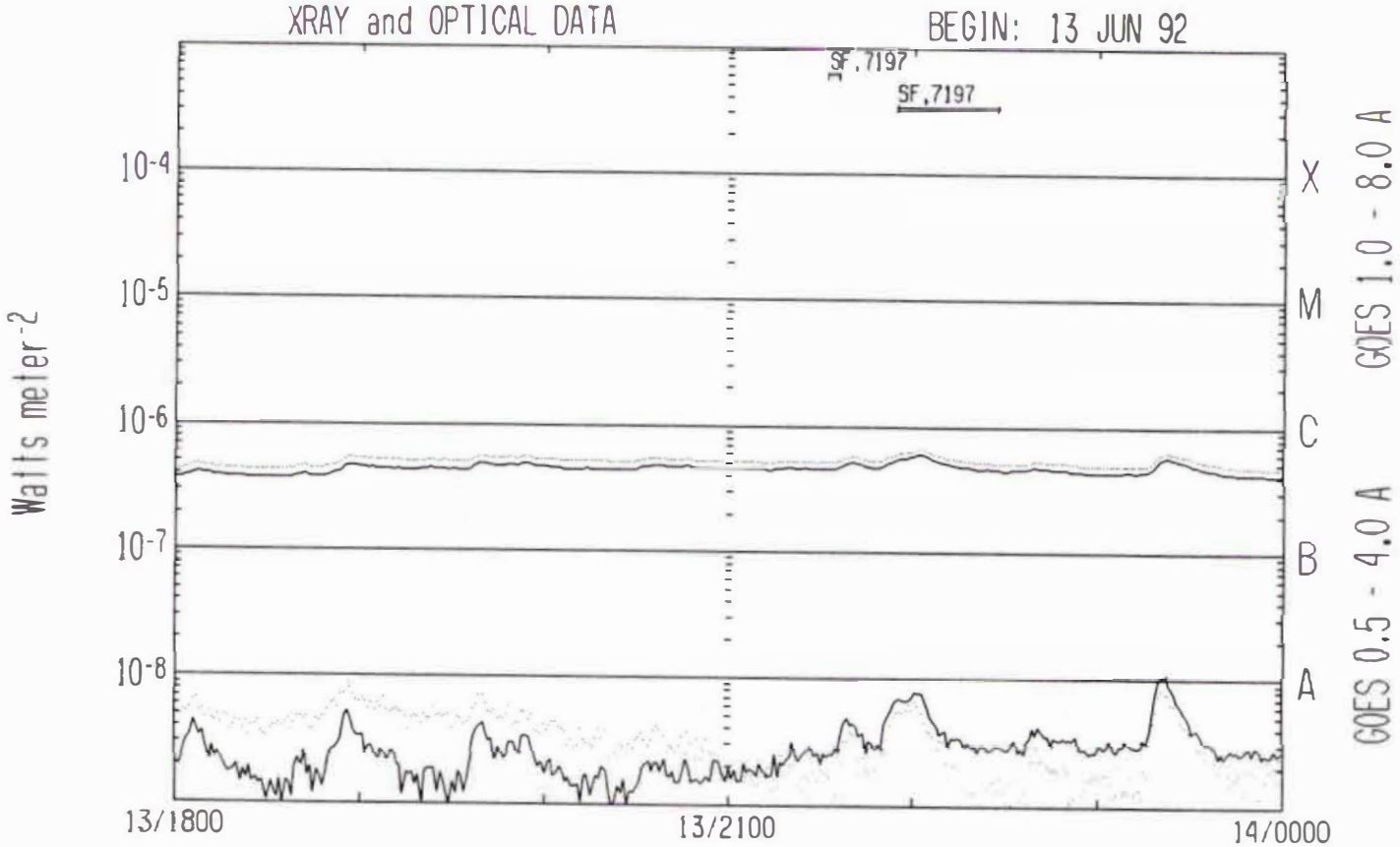



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/13
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1403 EDT
A: Channel 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

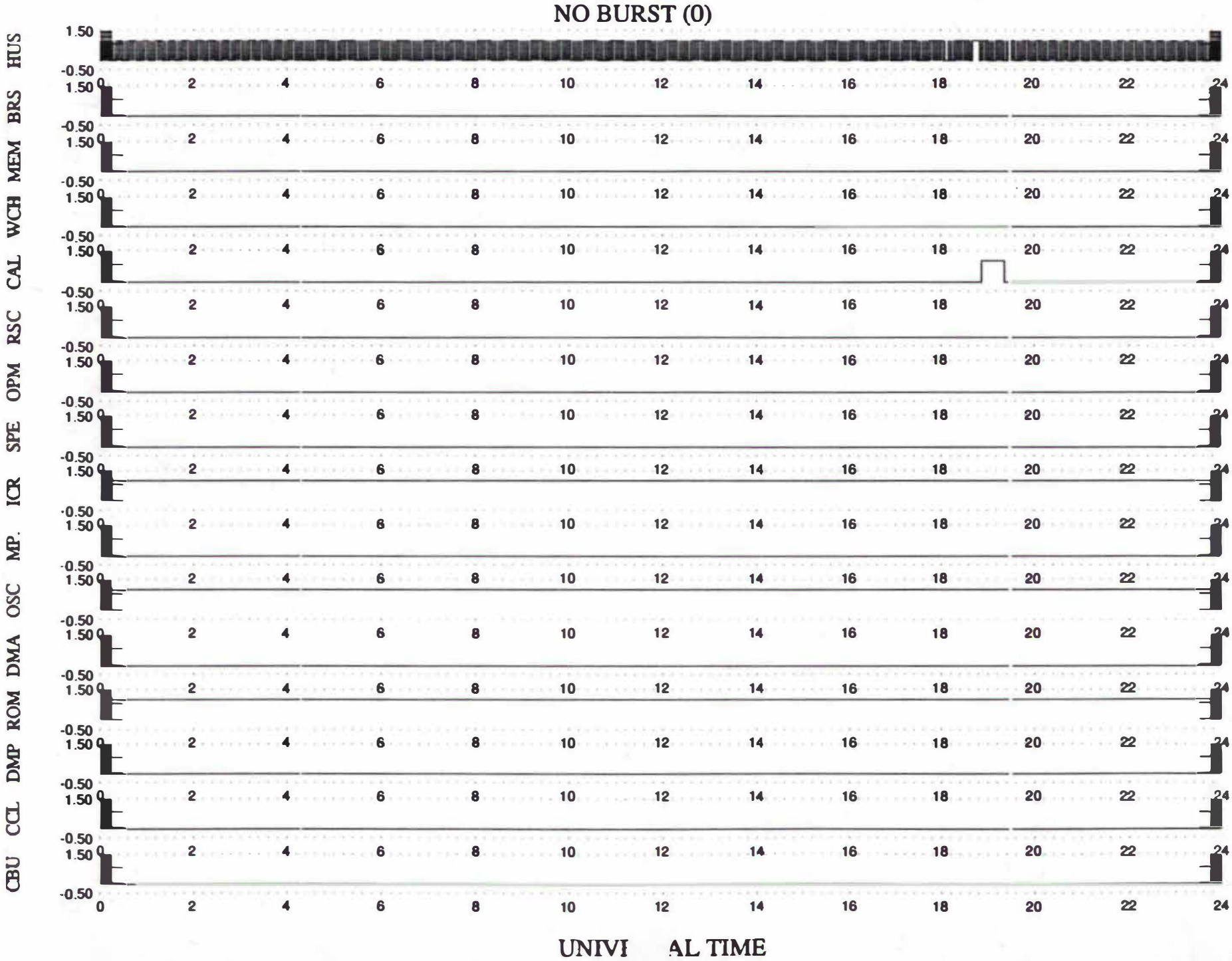

XRAY and OPTICAL DATA
BEGIN: 13 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
13/0000
13/0300
13/0600


XRAY and OPTICAL DATA
BEGIN: 13 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
13/0600
13/0900
13/1200


XRAY and OPTICAL DATA
BEGIN: 13 JUN 92
SF,7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
13/1200
13/1500
13/1800

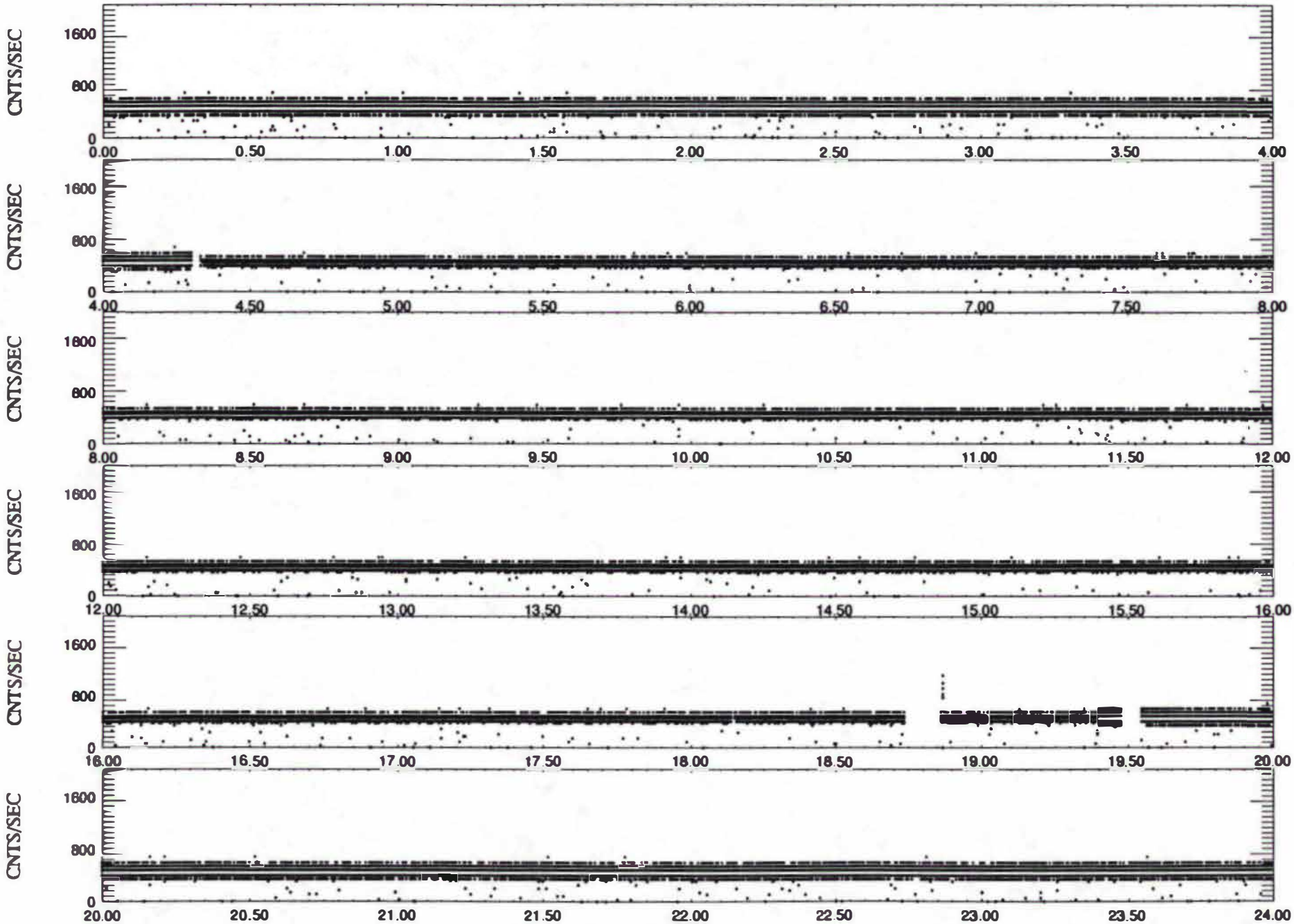

XRAY and OPTICAL DATA
BEGIN: 13 JUN 92
SF,7197
SF,7197
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
13/1800
13/2100
14/0000

HUS MODES EDR day 165, year 1992 to day 165, year 1992 6/25/92

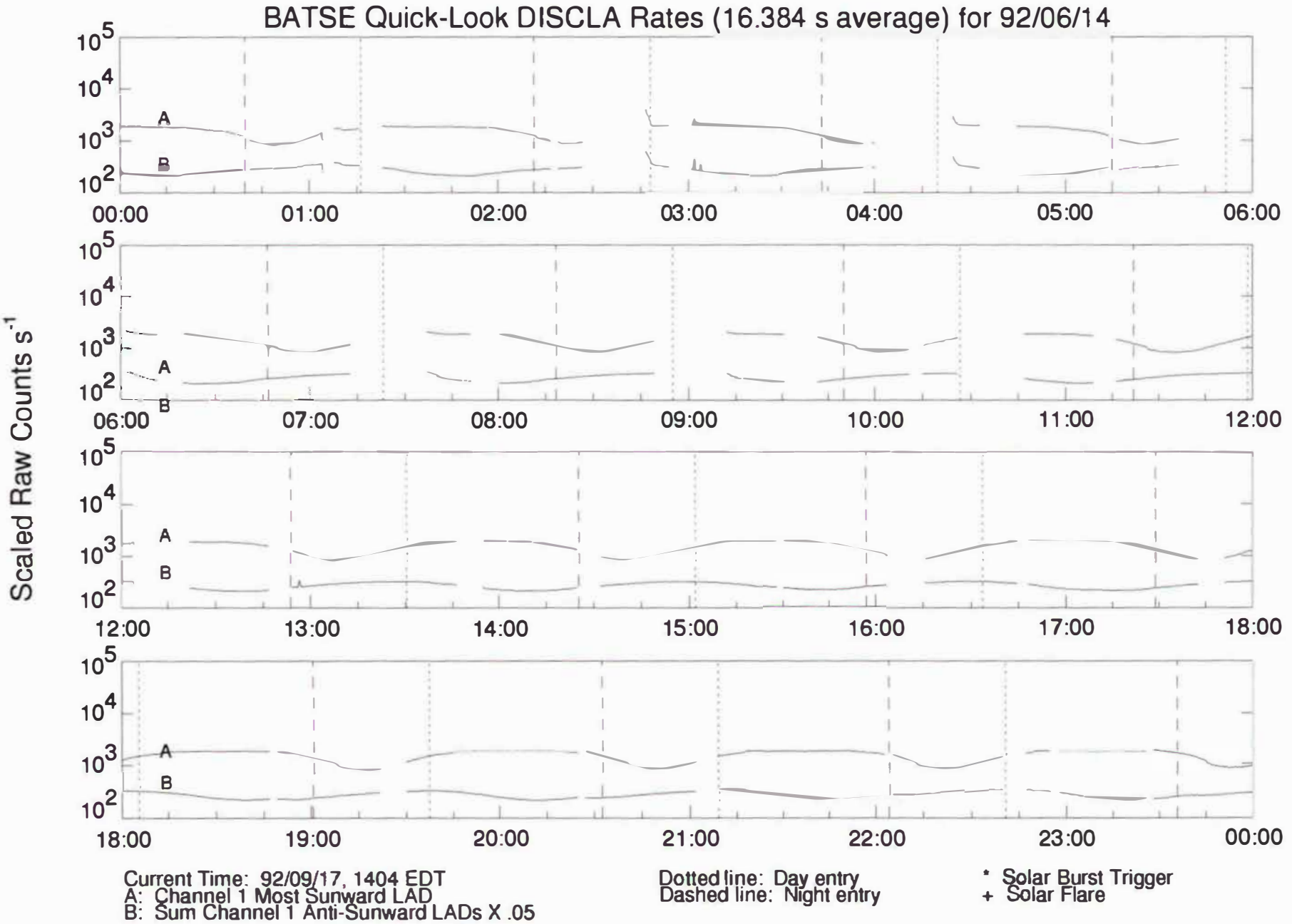


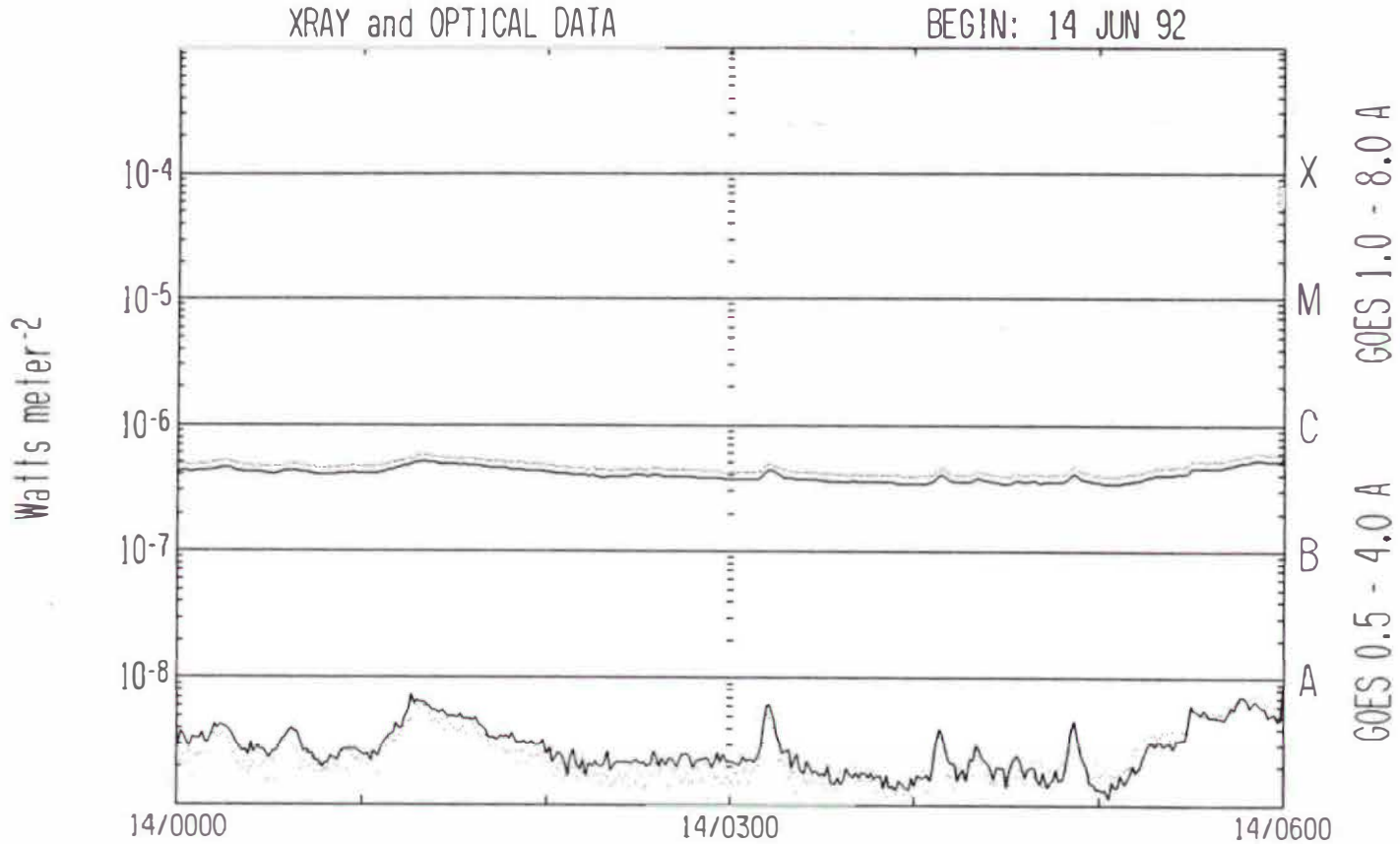
HUS 2A, MODE 1, NOT AVERAGED EDR day 165, year 1992 to day 165, year 1992 6/25/92

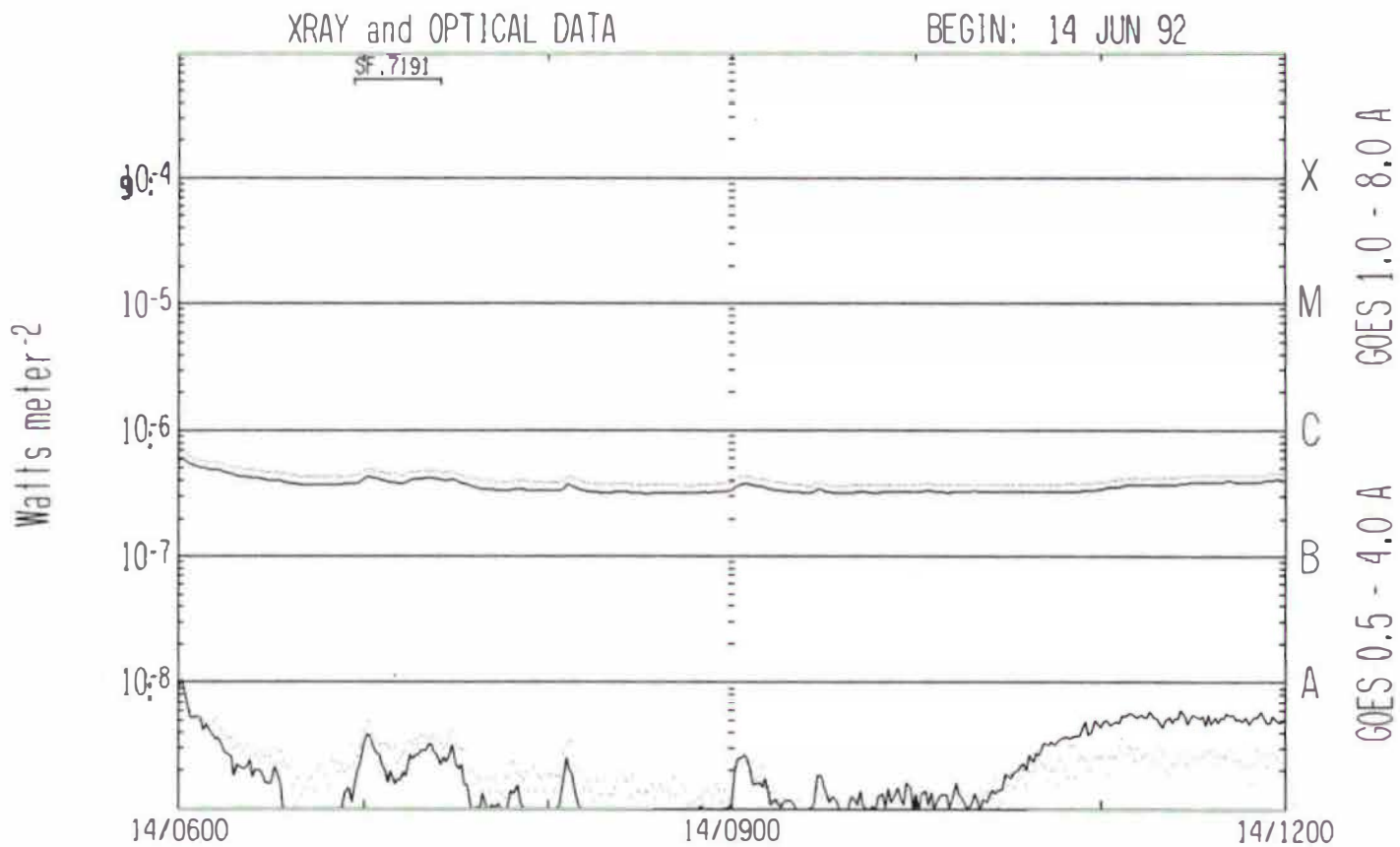
CALIBRATION DATA INCLUDED

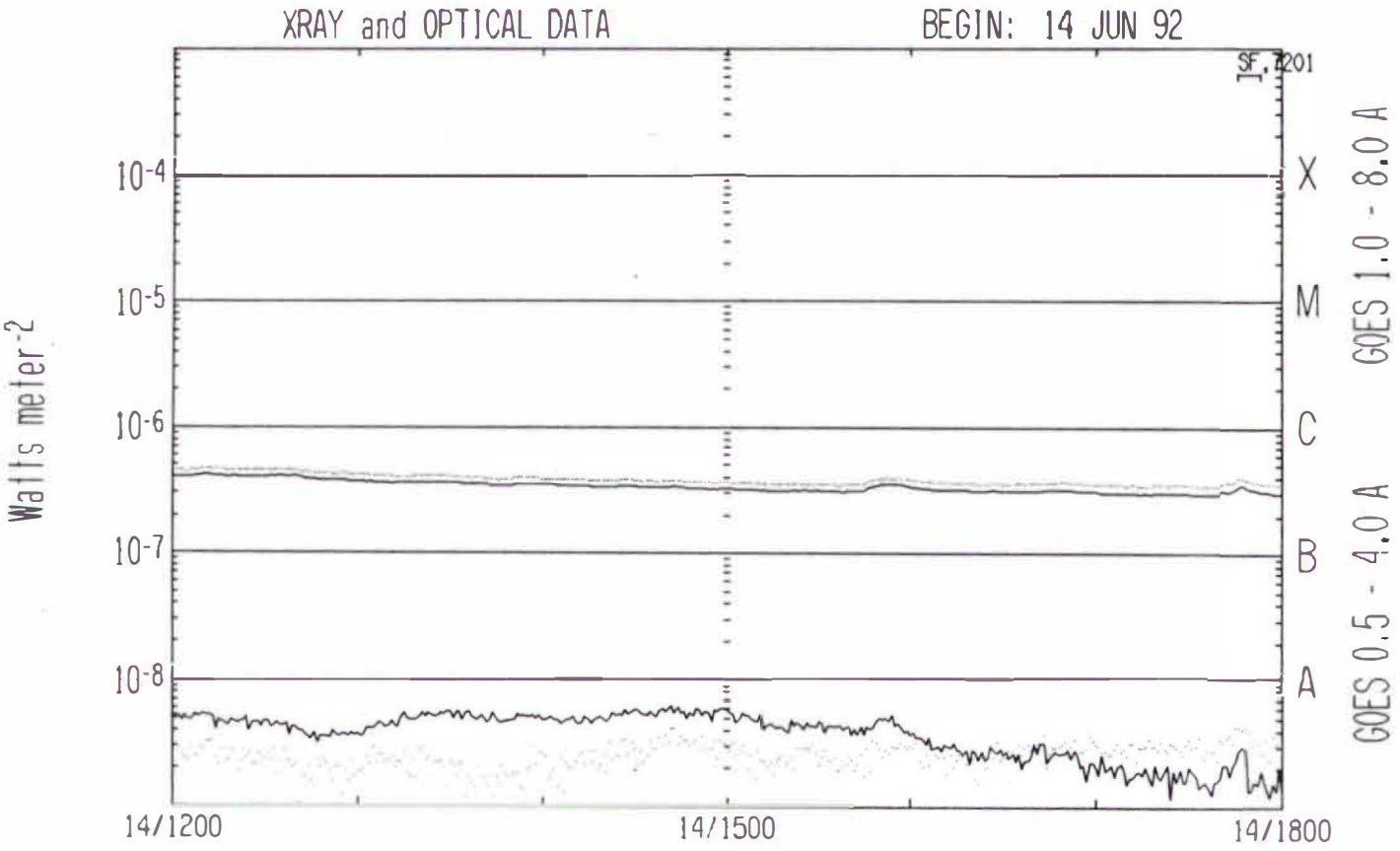


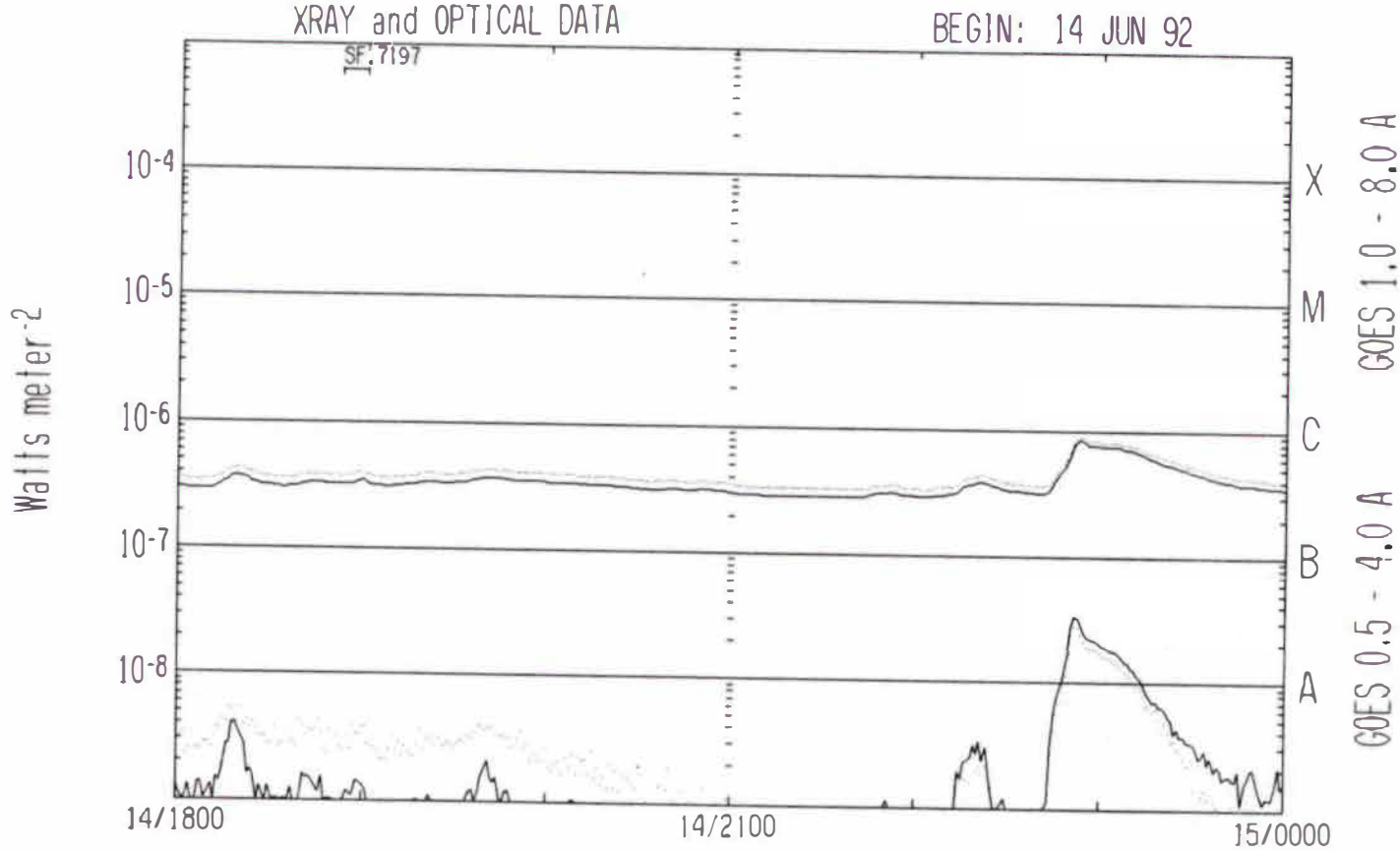
UNIVE AL TIME


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/14
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1404 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

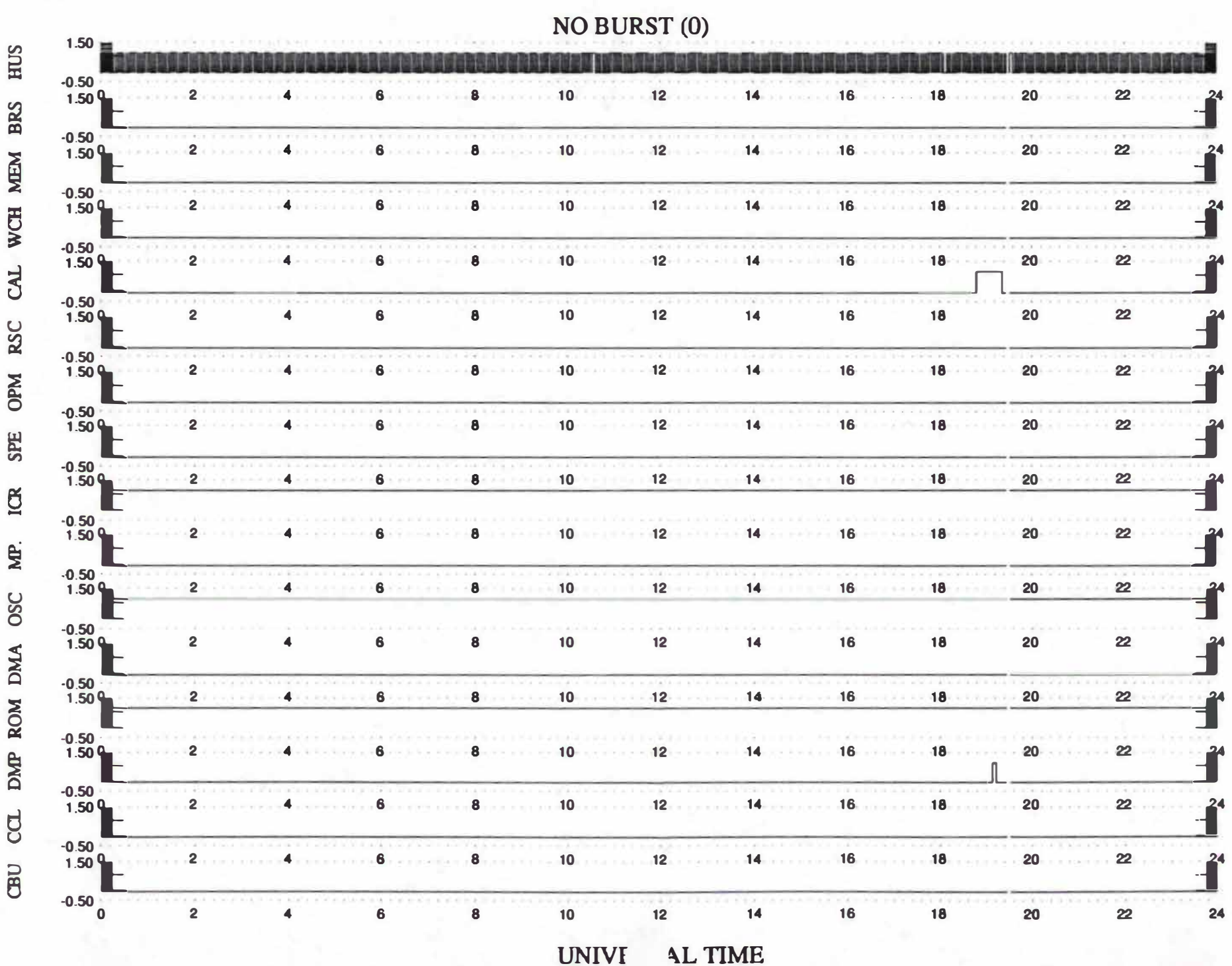

XRAY and OPTICAL DATA
BEGIN: 14 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
14/0000
14/0300
14/0600


XRAY and OPTICAL DATA
BEGIN: 14 JUN 92
SF.7191
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
14/0600
14/0900
14/1200


XRAY and OPTICAL DATA
BEGIN: 14 JUN 92
SF:7201
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
14/1200
14/1500
14/1800

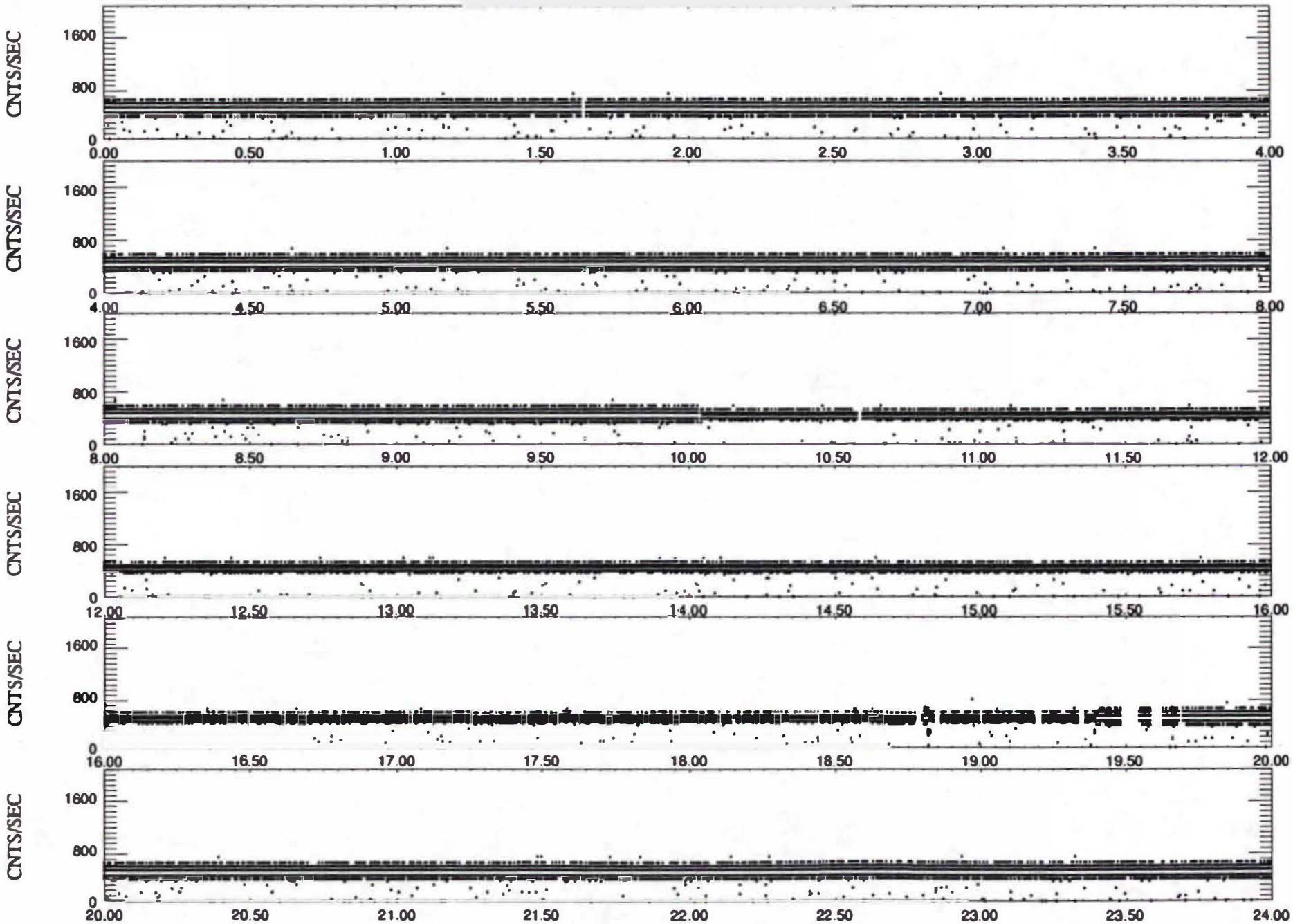

XRAY and OPTICAL DATA
BEGIN: 14 JUN 92
SF:7197
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
14/1800
14/2100
15/0000

HUS MODES EDR day 166, year 1992 to day 166, year 1992 6/25/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 166, year 1992 to day 166, year 1992 6/25/92

CALIBRATION DATA INCLUDED



UNIVE AL TIME

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CATSEARCH PROGRAM
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BATSE BURST # 1648
EVENT OF 1992 JUN 15 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE : 22353. S. OR 06:12:32.5
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 253.900 -10.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 15/ 6/ 92 IS:
RA= 149.008 DEC= 7.345 DIST= 5.700 AU
BATSE-ULYSSES DISTANCE = 852696064. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 777.11 SECS.
CROSSING TIME AT ULYSSES IS 23130. S. OR 06:25:29.6 +/- 536.83 SECONDS

From HORACK@ssl.msfc.nasa.gov Wed Jun 17 05:23:40 1992
Date: Wed, 17 Jun 1992 7:26:56 -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: 1377

BATSE BURST TRIGGER

NO.: 01648

June 15

TIME: TJD=8788 SECONDS=22354

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=121. AZIMUTH=166. ERROR= DEGREES

COMMENTS:
WEAK EVENT LASTING APPROXIMATELY 10 SECONDS. TIME PROFILE IS CHARACTERIZED BY A FASTER RISE THAN DECAY, HOWEVER SIGNAL IS TOO WEAK TO DETERMINE ANY OTHER SIGNIFICANT TIME STRUCTURE.

No trigger

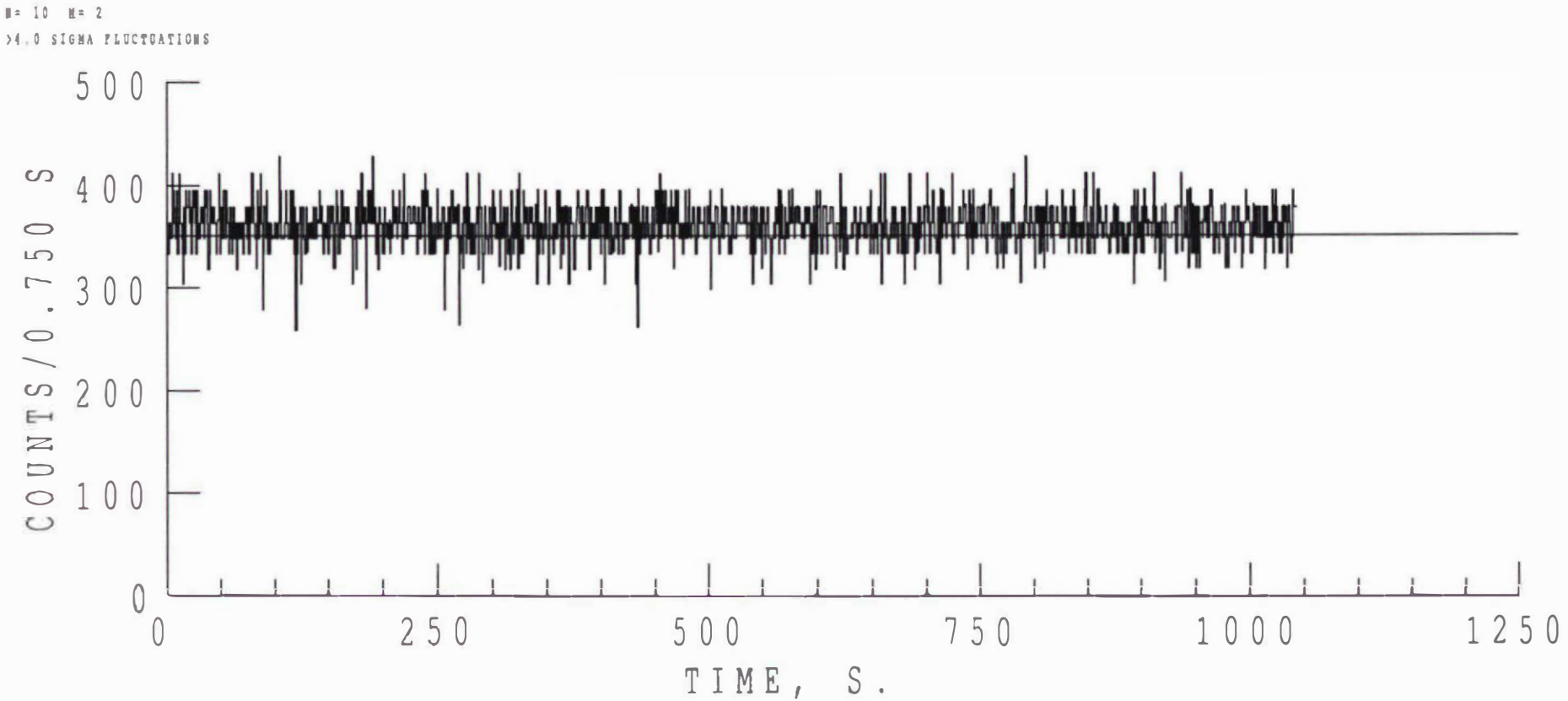
8/ 6/94

ULYSSES RT

15/ 6/92 22608.139 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



Dear Kevin,

Here I send you my comments about the WATCH GRBs-like events you examined:

23/7/91. The duration of this event is around 10 s, but it is very weak. Enclosed I send the time profile for this burst. Note the small increase in the count rate visible in the WATCH data.

15/8/91. The duration of the event is 40 s. It is a clear burst.

16/8/91. If you did not see anything in Ulysses and PVO, I suppose it is a particle event.

7/3/92. I send you the time history in order to get an annulus.

14/3/92. Particle event. The same than 15/8/91.

21/3/92. WATCH sees the event at 13:00:54. The duration is 1 s. The center of the field is at alfa: 15 30; delta = +32. No increase in the count rate is visible at the time of the BATSE burst in all the three units. A particle event ?

21/7/92. Particle event. The same than 15/8/91.

15/6/92. The event is only a peak in one WATCH bin, i.e. the duration is around 7 s.

25/9/92a. There is an error in my list. The trigger time is 20:30:42, not 19:30:42.

25/9/92b. It is a completely different event that lasted for about 15 s. At 20:45:14. The center of the field is at 08 35 + 29. Nothing to do with 920925a or 920925c.

Did you finally confirm 910408?

Regards
Alberto
17 Dec 1993

P.S. Please, note that I will be absent from Dec 20 to Jan 20! But you always could reach me by fax at +34 52 61 04 49.

From khurley@space6.ssl.berkeley.edu Wed Dec 15 10:55:46 1993
Date: Wed, 15 Dec 93 11:53:02
From: khurley@space6.ssl.berkeley.edu
Content-Length: 2621

Dear Alberto,

I've looked through the WATCH candidate events, and this is what I have found.

23/7/91: Ulysses had 0.25 s data for the entire crossing window. I searched it on two timescales: 0.25 s and 3.25 s. Neither shows any strong evidence for an event, but there may be a very weak event in the rebinned data (3.25 s resolution). What is the duration of your event? PVO data is available for this time, but only at 64 s resolution - is it worth looking?

15/8/91: Ulysses had 0.25 s data for the entire crossing window, but it was noisy. There were numerous noise spikes which lasted 0.25, 0.5, and 0.75 s, and a few dropouts. When I eliminate the big noise spikes there are still many smaller ones. I searched the data on two timescales: 0.25 and 2.75 s. There is nothing obvious, but again, I need to know the event duration to have a better look.

16/8/91: Ulysses had 0.25 s data for the entire crossing window. I searched it on two timescales: 0.25 s and 3.25 s. Neither shows any evidence for an event. PVO had coverage, too, and they detected nothing.

7/3/92: We find a small rate increase in the crossing window. If you send me the WATCH data, I can get an annulus.

15/6/92: Ulysses had 0.25 s data for the entire crossing window. I searched it on two timescales: 0.25 and 4 s. In the 4 s data, there is perhaps a very weak event, about 16 s long. Is that what you see with WATCH?

25/9/92a and b: "a" event: Ulysses had 0.25 s data for the entire crossing window. I searched it on two timescales: 0.25 and 4.25 s. I find the "b" event in this window, but nothing else.

"b" event: The time of the b event has changed by 15 minutes in your new list, but it is now inconsistent with the BATSE time, which was consistent with your original time. Given this, and the fact that the "a" event is close to one hour before the "b" time, is it possible that there is a mistake, and that "a" and "b" are the same event, at 20:30?

14/3/93: Ulysses had 0.25 s data for the entire crossing window. I searched it on two timescales: 0.25 s and 2.75 s. No evidence for any event.

21/7/93 06:17: Ulysses had 0.25 s data for the entire crossing window. I searched it on two timescales: 0.25 and 3.5 s. No evidence for any event.

21/7/93 13:00: Ulysses had 1 s data for the entire window. I searched it on two timescales: 1 s and 4 s. There was a BATSE event at 45935 s, which we recorded as a weak rate increase. There was also a 2 s increase in the Ulysses data, which could be your event. How long was the WATCH event, and are you sure of the time (i.e., could it be the BATSE event)?

Kevin

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 June 15
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 AVALIABLE 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

```
         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,CMPLX,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,ULYSS
           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 ANGSUN=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
```

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

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CATSEARCH PROGRAM
****

BATSE BURST # 1649
EVENT OF 1992 JUN 15 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE : 35588. S. OR 09:53:08.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 351.300 -29.200
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 15/ 6/ 92 IS:
RA= 149.008 DEC= 7.345 DIST= 5.700 AU
BATSE-ULYSSES DISTANCE = 852696064. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 30.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2455.83 SECS.
CROSSING TIME AT ULYSSES IS 38044. S. OR 10:34:03.9 +/- 336.41 SECONDS

From HORACK@ssl.msfc.nasa.gov Wed Jun 17 05:27:51 1992
Date: Wed, 17 Jun 1992 7:31:08 -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: 1539

BATSE BURST TRIGGER

NO.: 01649 June 15

TIME: TJD=8788 SECONDS=35590

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=117 AZIMUTH=285. ERROR= DEGREES

COMMENTS:
FIVE LINES NOT ENOUGH FOR THIS ONE. COMPLEX EVENT LASTING APPROXIMATELY 1 S. TWO EMISSION REGIONS, WITH FIRST BEING MOST INTENSE, VERY HARD SPECTRUM, LASTING 20 MILLISEC. SEEN TO HIGHEST ENERGY REGION. SECOND REGION IS AT 0.55 S AFTER TRIGGER. CONSIDERABLY WEAKER, BUT ALSO VERY HARD. EMISSION IS NOTICEABLY NARROWER IN TIME AT HIGHER ENERGIES. INTERESTING EVENT.

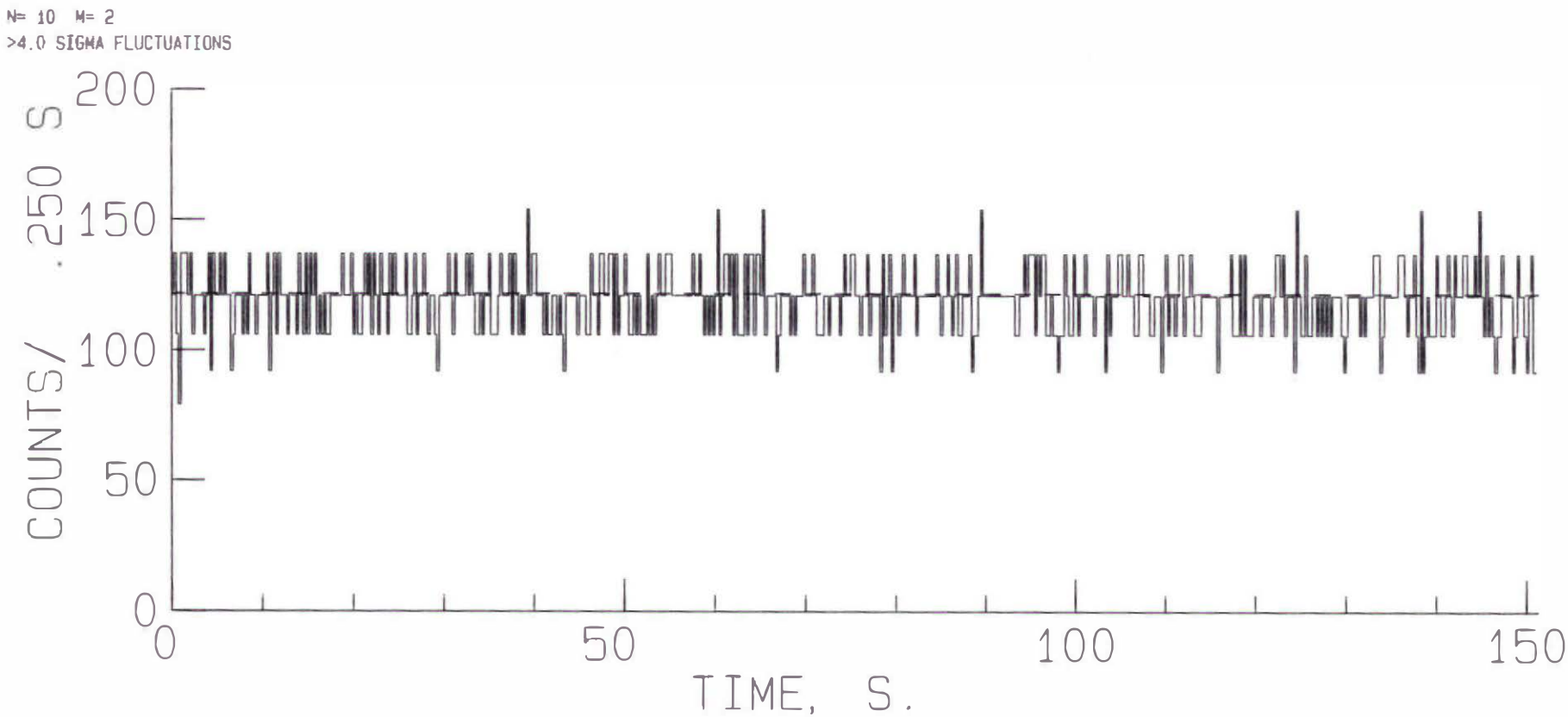
No trigger

ULYSSES RT

22/ 6/94

15/ 6/92 38177.141 s

23- 154 keV



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

B  SE BURST #
E  NT OF 1992 JUN 15 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE      : 22354. S. OR 06:12:34.0
COORDINATES ARE     .000     .000        6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 255.000     8.000
BATSE PEAK COUNTING RATE: 9500       C/S
EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 15/ 6/  92 IS:
RA=  149.008 DEC=     7.345 DIST=     5.700 AU
BATSE-ULYSSES DISTANCE =  852696064. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=  719.01 SECS.
CROSSING TIME AT ULYSSES     IS 23073. S. OR   06:24:33 +/-  538.69 SECONDS
```

No

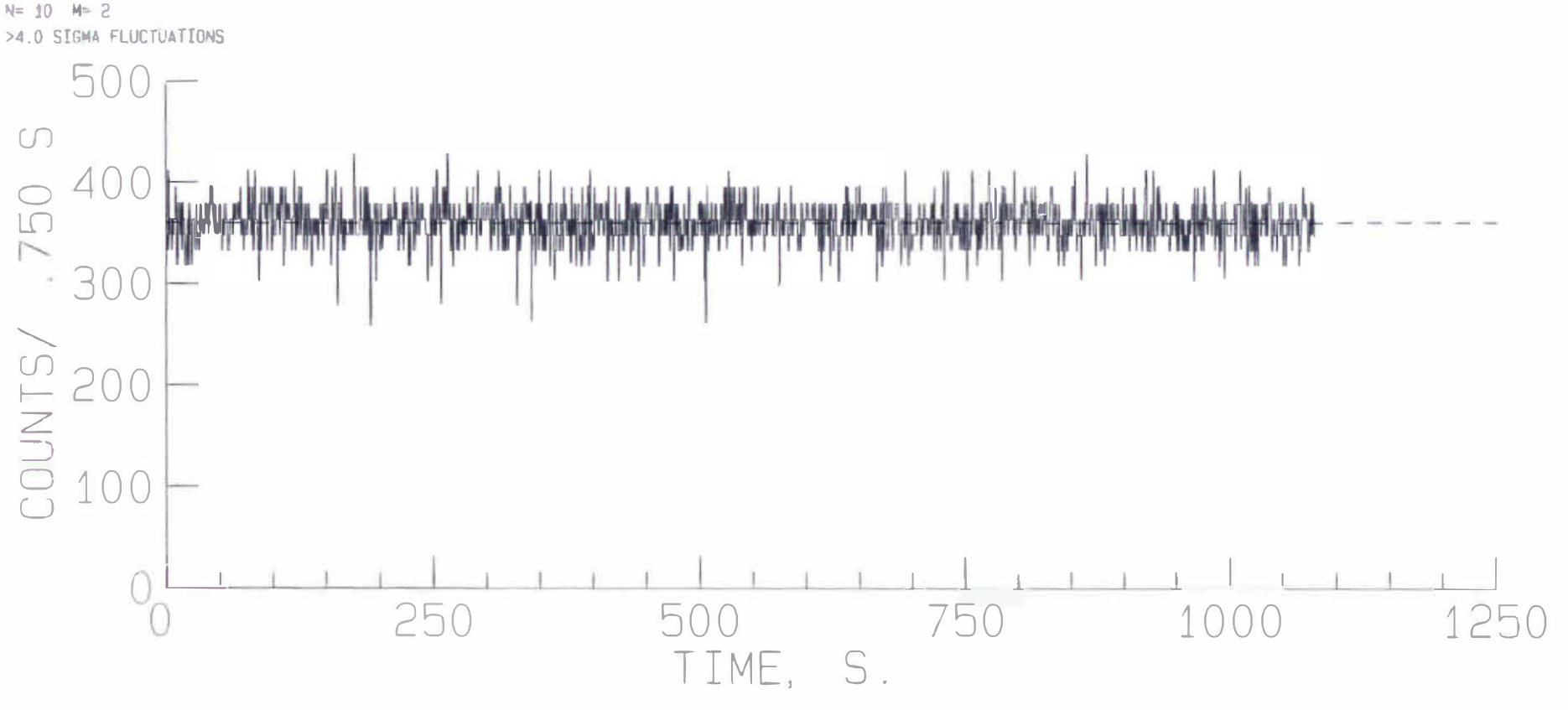
18/ 8/92

ULYSSES RT

15/ 6/92 22536.135 s

.250 S INTERVALS REGROUPED BY 3

0- 0 keV



****
CATSEARCH PROGRAM
****

BATSE BURST # 1650
EVENT OF 1992 JUN 15 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE : 51897. S. OR 14:24:56.9
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 18.100 23.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 15/ 6/ 92 IS:
RA= 149.008 DEC= 7.345 DIST= 5.700 AU
BATSE-ULYSSES DISTANCE = 852696064. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 56.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1558.36 SECS.
CROSSING TIME AT ULYSSES IS 53455. S. OR 14:50:55.3 +/- 486.77 SECONDS

ND

From HORACK@ssl.msfc.nasa.gov Wed Jun 17 05:33:07 1992
Date: Wed, 17 Jun 1992 7:36:24 -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.: 01650 June 15

TIME: TJD=8788 SECONDS=51899

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=54 AZIMUTH=269. ERROR= DEGREES

COMMENTS:
MODERATE BURST WITH SIGNIFICANT TIME STRUCTURE. EVENT LASTS ABOUT 4 SEC, WITH A MINIMUM OF FOUR DISTINCT EMISSION REGIONS. STRUCTURE DEPENDENT ON THE ENERGY REGION ONE IS VIEWING, WITH SOMEWHAT NARROWER EMISSION AT HIGH ENERGIES. (A TED WILLIAMS DAY TODAY 3-FOR-3)

No trigger

BATSE BURST# 1650

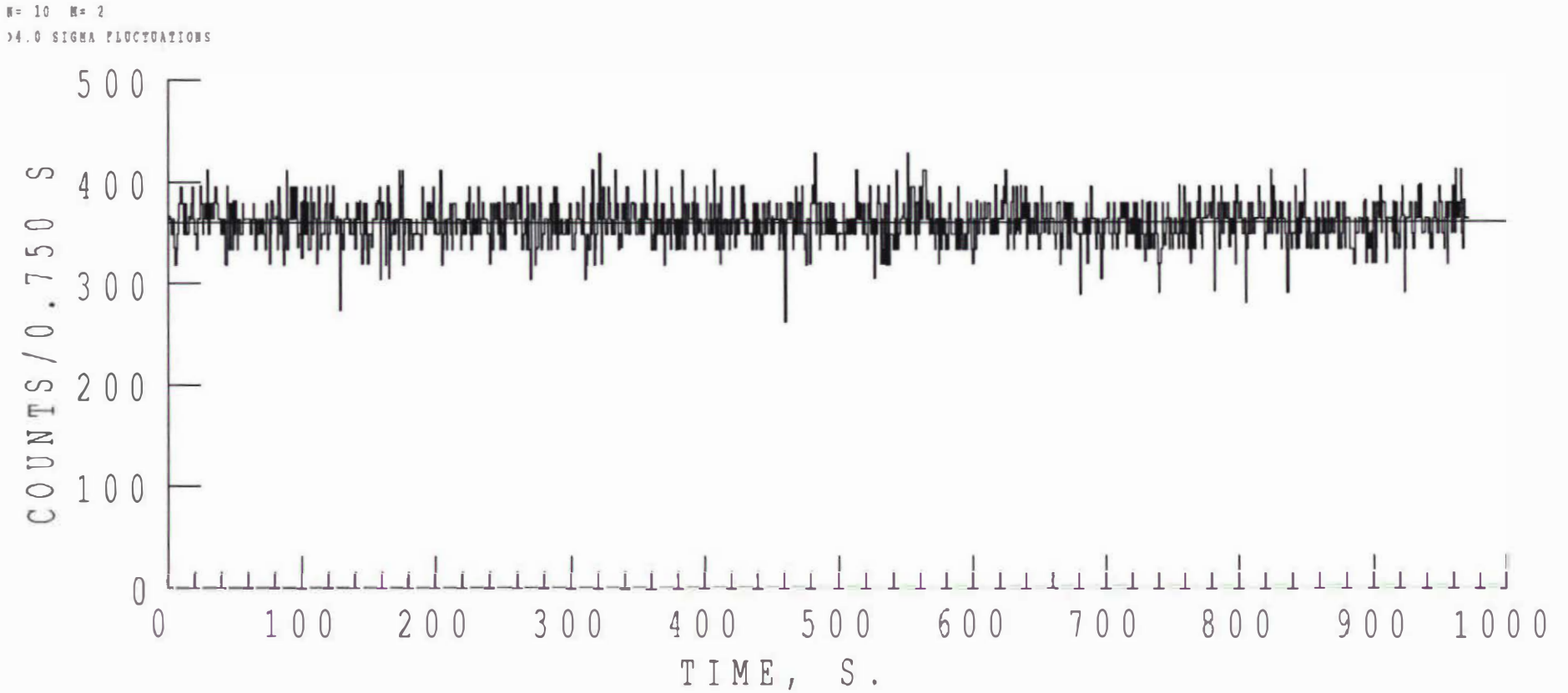
8/ 6/94

ULYSSES RT

15/ 6/92 52956.129 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



FAXCOVER

DANISH SPACE RESEARCH INSTITUTE
GL. LUNDTOFTEVEJ 7
DK-2800 LYNGBY
DENMARK

PHONE: +45 42 88 22 77 TELEFAX: +45 45 93 02 83 TELEX: 37198 dsrlyn dk

DATE: Nov 23, 1993 Page 1 of 2

From: Alberto J. CASTRO-TIRADO

TO : Kevin HURLEY

FAX no
Name : 510 643 8640

Dear Kevin.

Thank you for you answer. Enclosed I send you the list of CONFIRMED 64 GRBs plus 14 CANDIDATES. Now you may fill the WATCH response in the Master GRB list for WATCH-GRANAT in the period 1/1/90 - 25/9/92.

GRB 920321 (at 13:00:44) is a ≤ 1 s burst in WATCH data, so I think it could be the same event seen by Ulysses. We do not have better time resolution.

The other repeater is 900126/920311. The two error boxes are separated by 1°, at $\sim \alpha = 08\ 46$ $\delta = -38$ (1450.0)

Kind regards, Alberto

First GRANAT/WATCH Gamma-Ray Burst Catalogue

[illegible] (yymmdd)	U.T. (hh:mm:ss)
900118	17:40:48
900120	20:37:33
900123a	01:42:13
900123b	18:44:17
900126	18:04:27
900222	11:56:35
900308	09:32:02
900327	10:24:28
900404	17:54:36
900413	10:11:21
900709a	11:30:21
900708b	18:44:53
900901	01:35:47
900925	20:25:22
900929	01:49:10
901009	00:15:46
901015b	08:44:48
901027	04:21:07
901112	14:57:37
901116	01:42:10
901119	18:08:32
901219	21:52:43
910117	00:57:51
910122	15:13:40
910202	20:57:35
910219	11:45:25
910310	13:02:06
910312	12:43:09
910425	00:37:52
910517	05:02:20
910627	04:29:24
910717a	04:33:07
910717b	13:07:25
910721	19:30:12
910723	14:06:20
910814	19:14:31
910815	14:24:32
910817	17:09:26
910818	13:44:46
910821	10:33:36
910901	05:24:14
910925	03:35:36
910927	23:36:53
911016	11:03:31
911018	05:32:00
911022	04:13:58
911202	20:28:51
911205	23:04:41
911209	18:36:00
920105	17:41:17
920116	18:30:35
920130	00:29:07
920302	06:16:54
920307	00:18:06
920311	02:20:20
920325	17:17:37
920615	14:24:5a
920714	13:04:52
920718a	14:41:10
920718b	21:32:47
920720	05:53:04
920723a	01:00:34
920723b	20:03:11
920814	00:10:25
920902	00:29:04
920903a	01:36:15
920903b	23:28:52
920925a	19:30:44
920925b	20:45:14
920925c	22:40:14

CANDIDATES

900415	06:20:58
900603	06:20:50
900616	03:56:50
900618	23:12:22
900626	22:04:16
900628	11:17:51
900815	11:35:12
900914	04:46:40
901015a	02:42:16
910408	22:24:18
910414	07:28:27
910816	01:57:40
920314	05:48:42
920721	13:00:49
920721	06:17:25

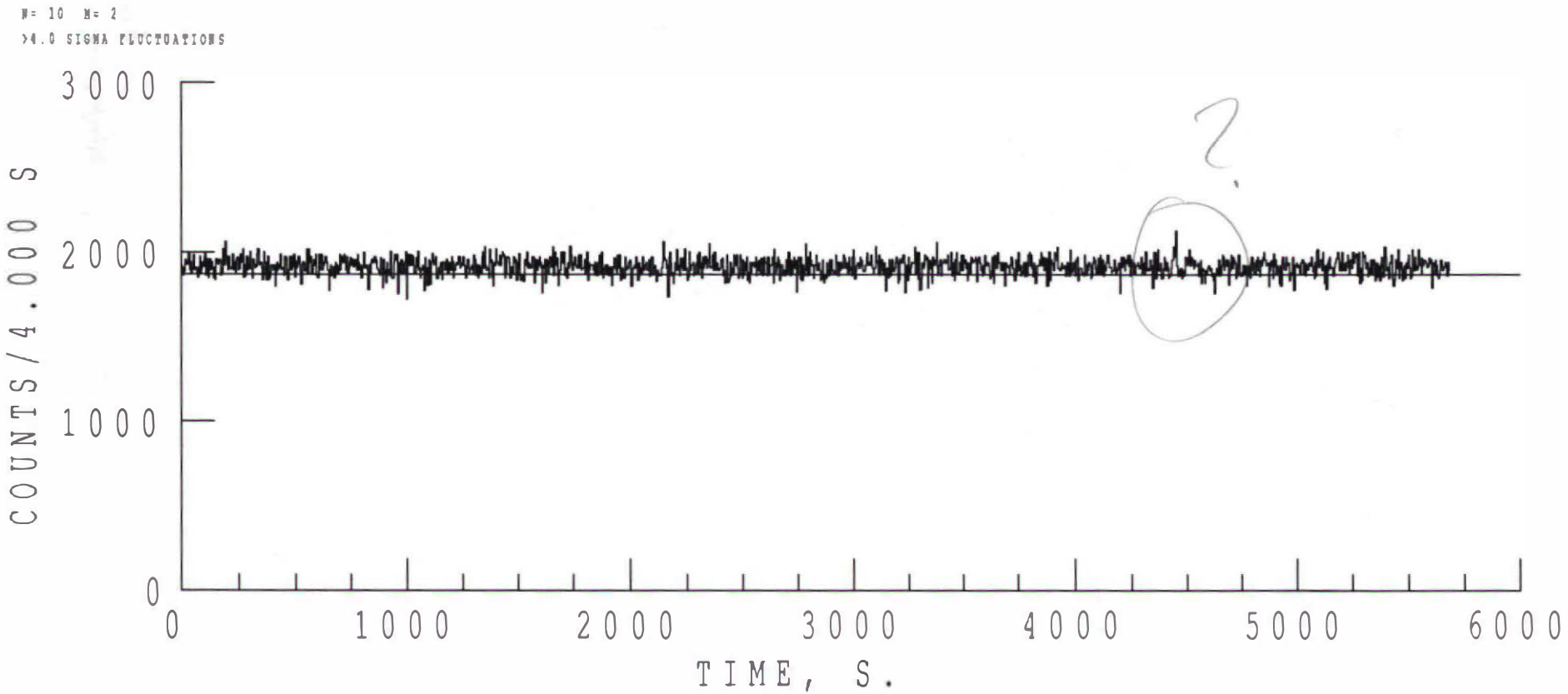
29/11/93

ULYSSES RT

15/ 6/92 49068.062 s

0.250 S INTERVALS REGROUPED BY 16

0- 0 keV

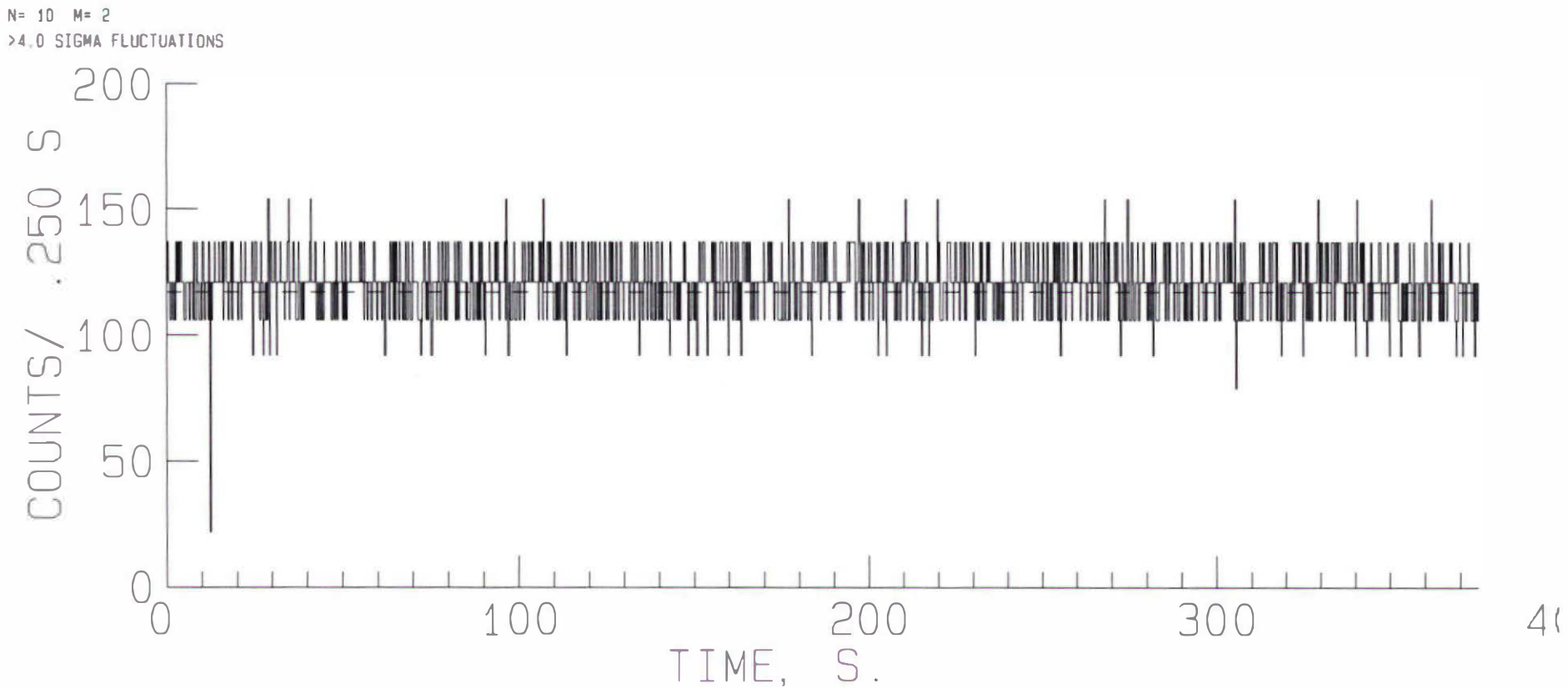


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

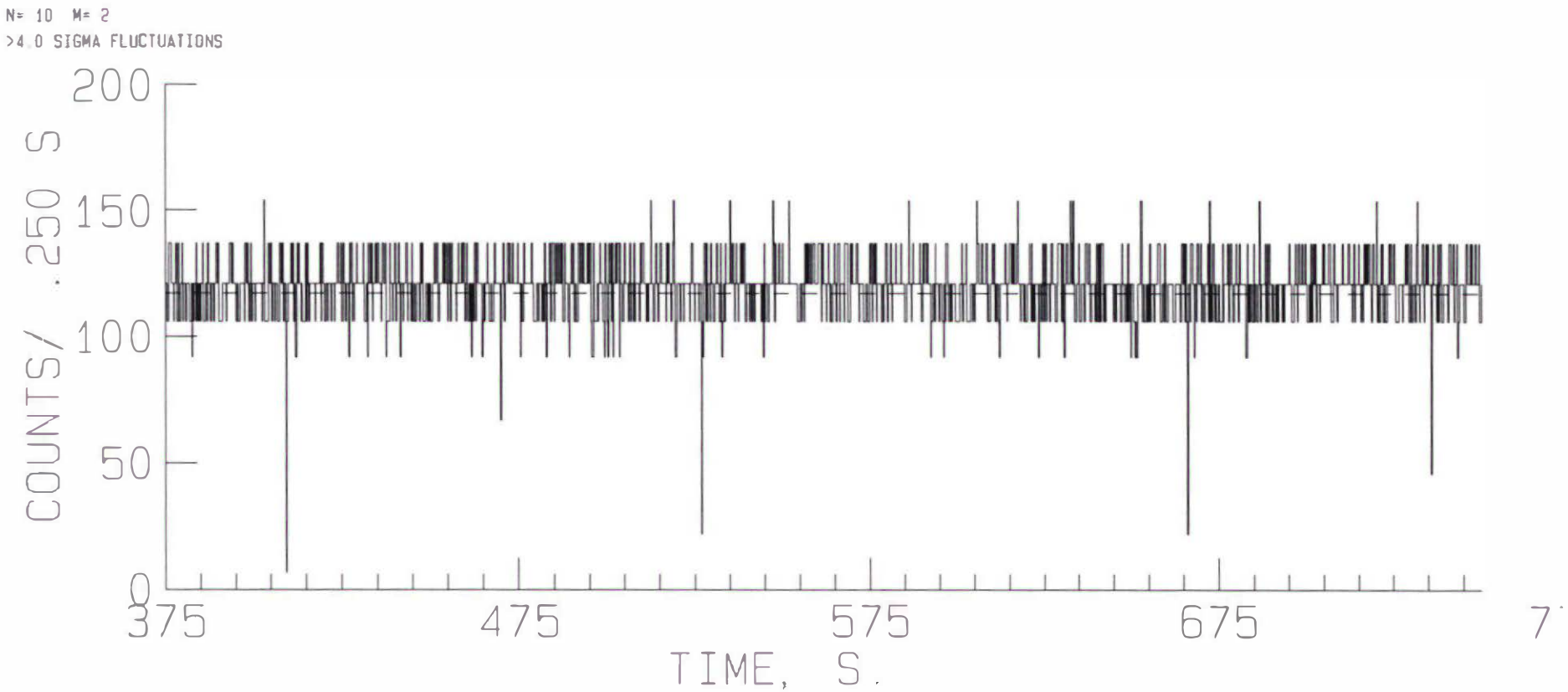


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

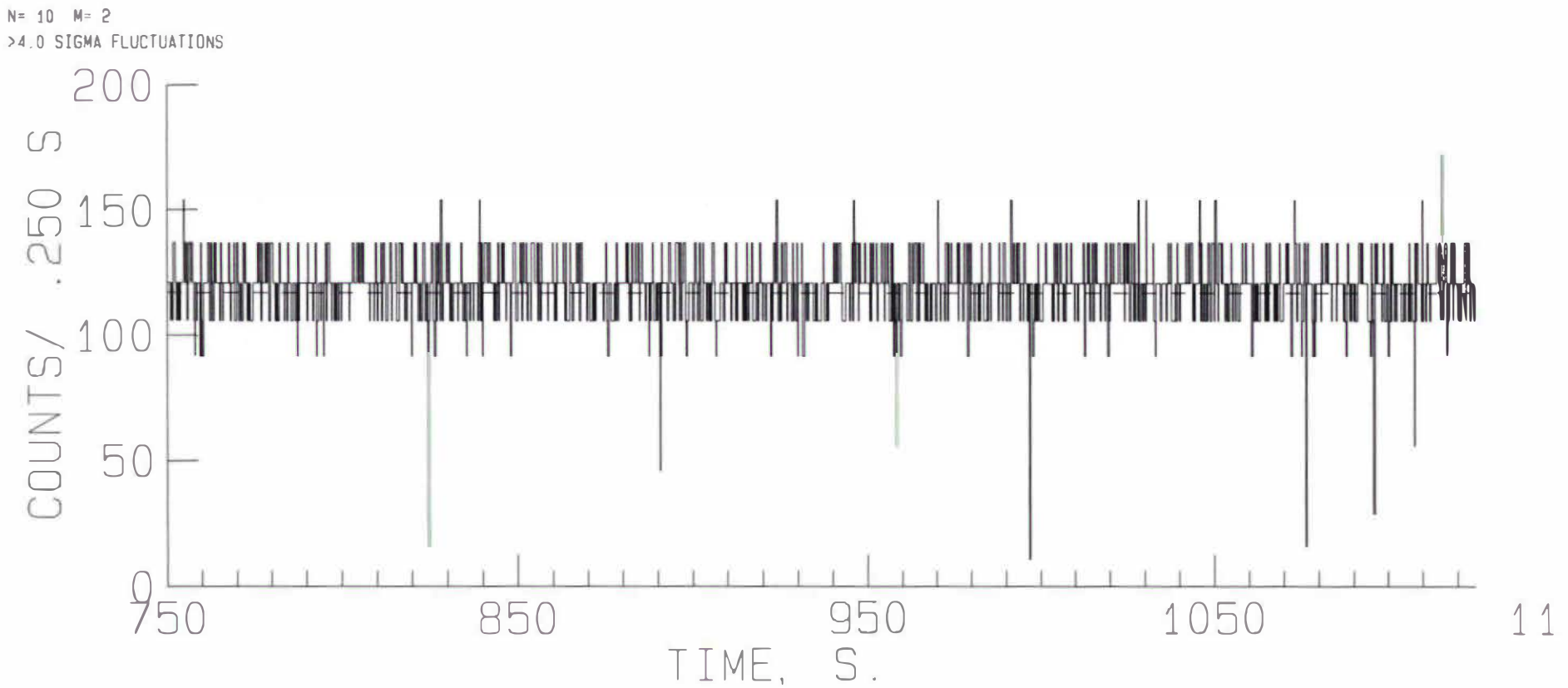


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

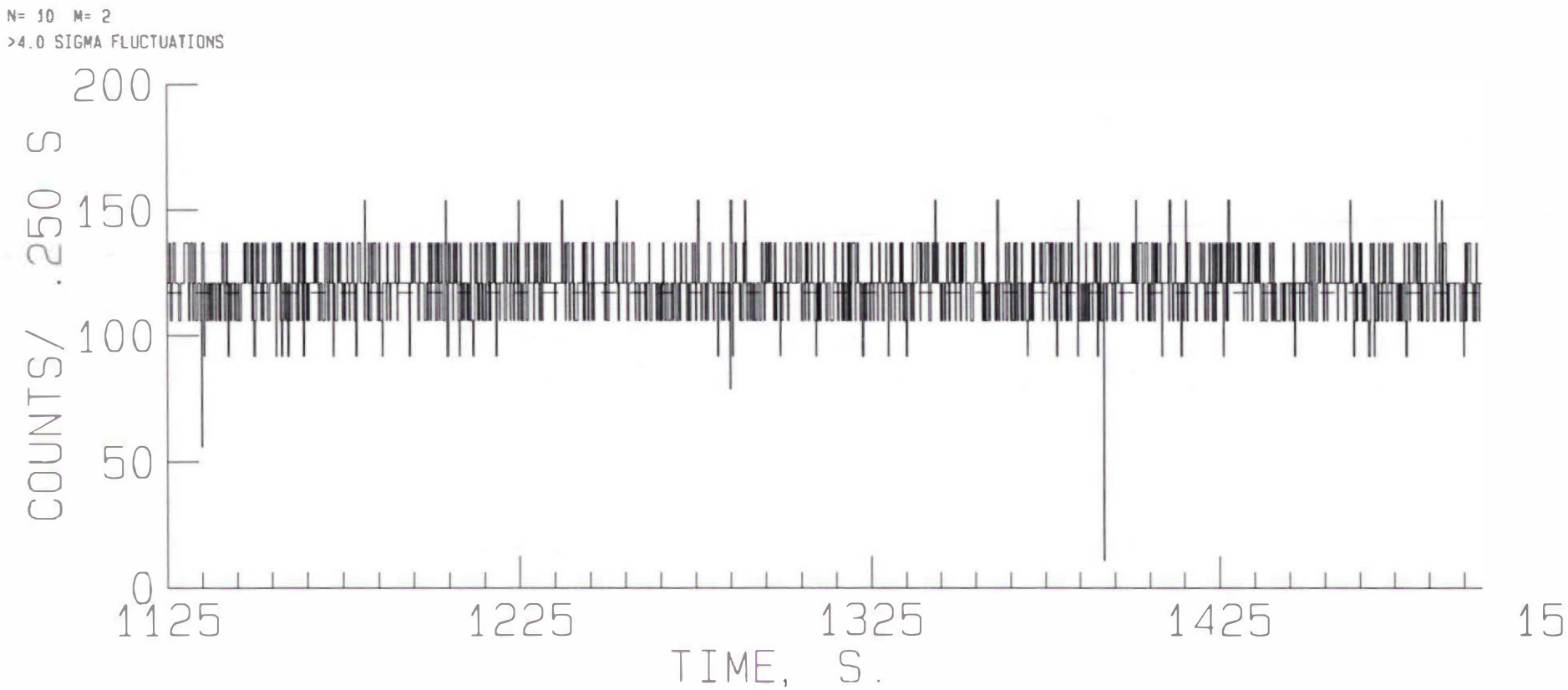


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

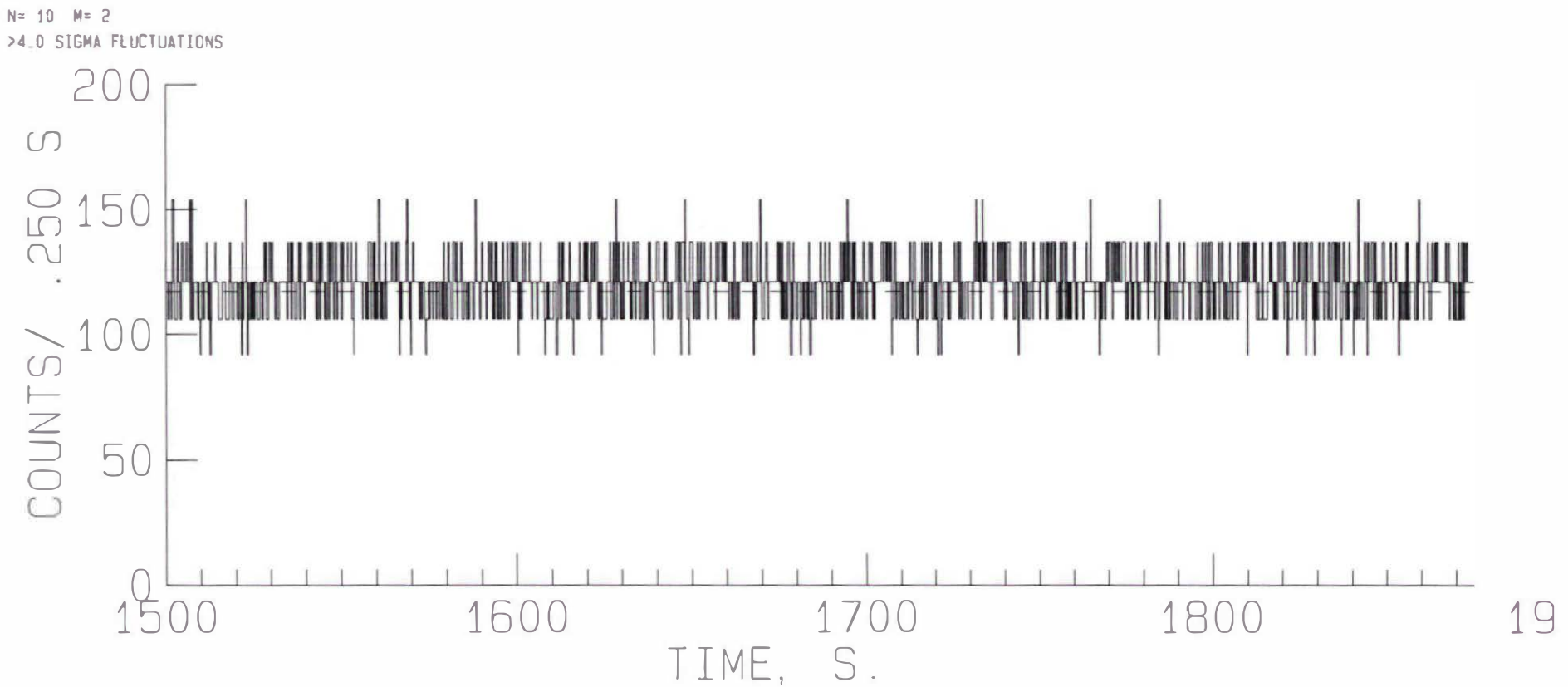


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

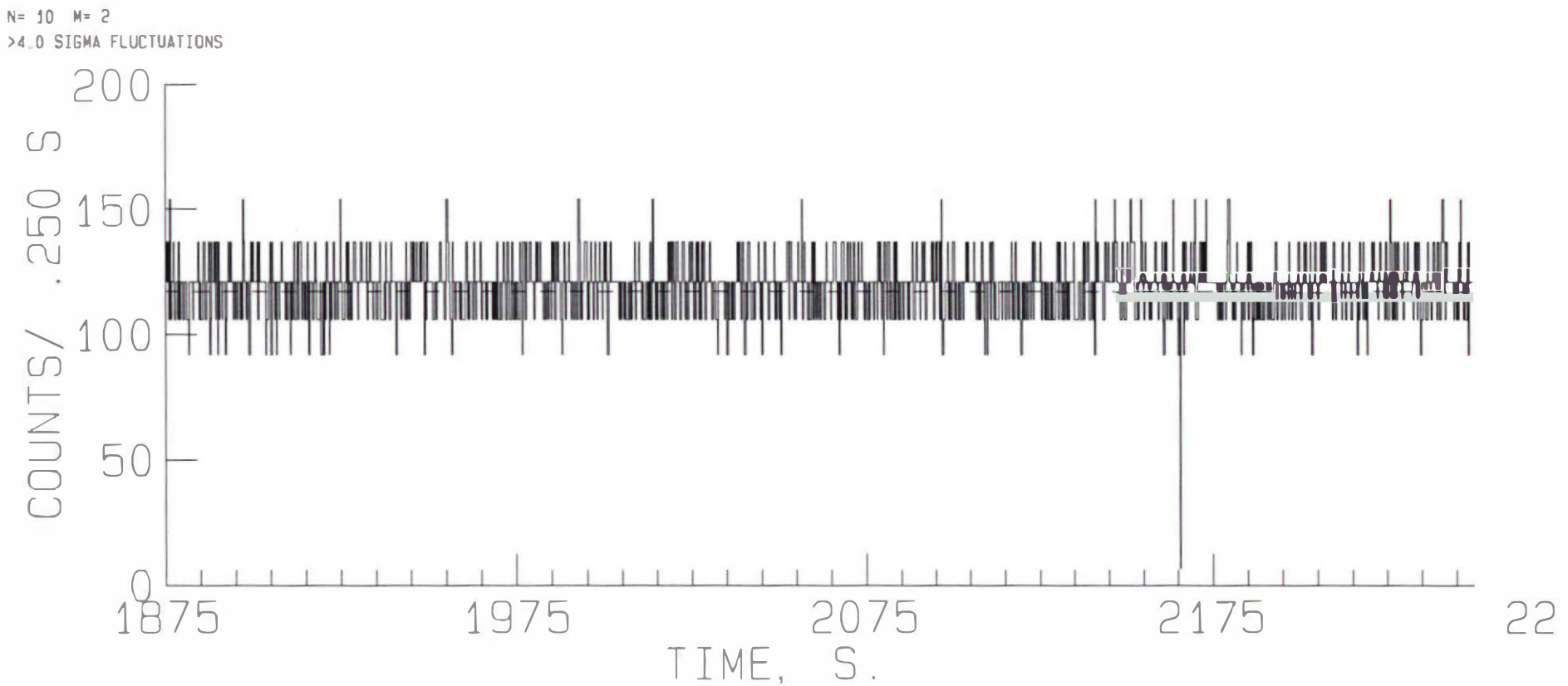


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

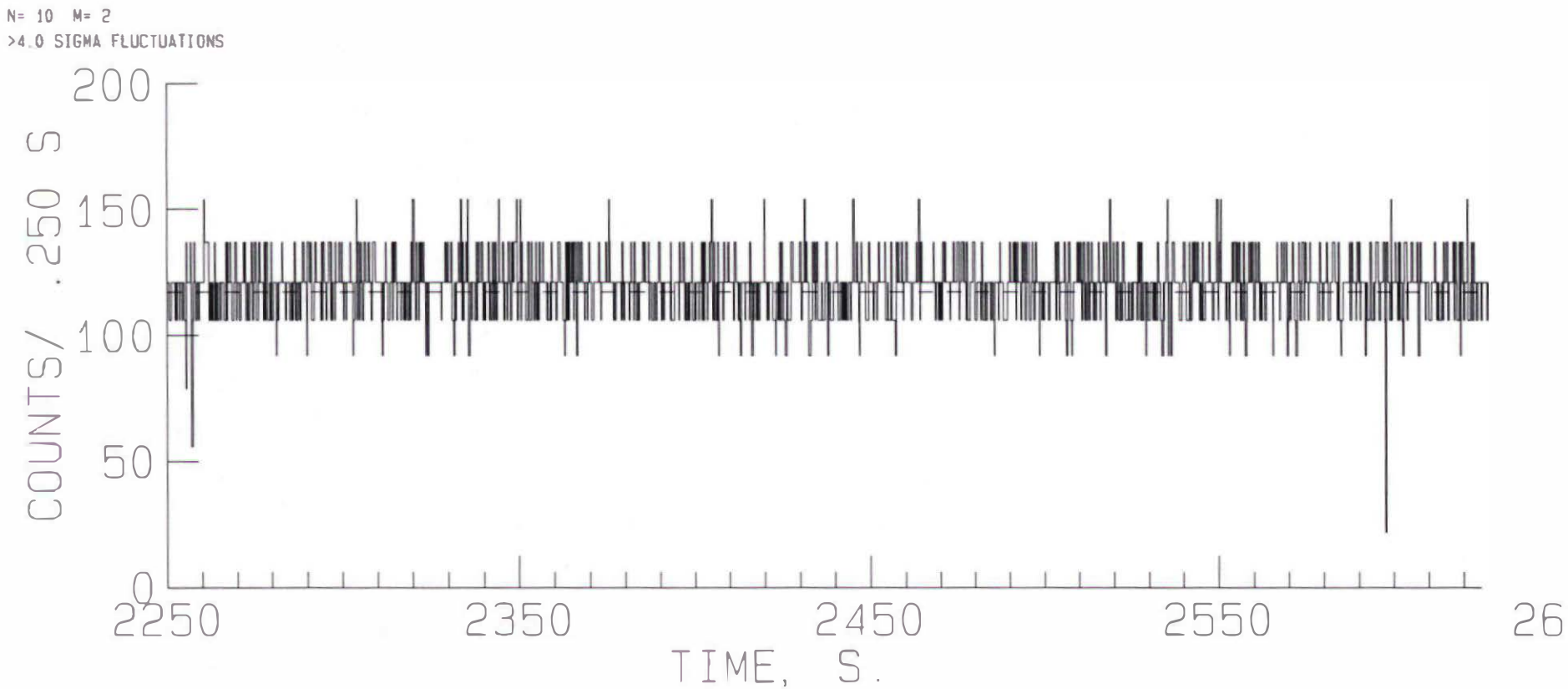


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

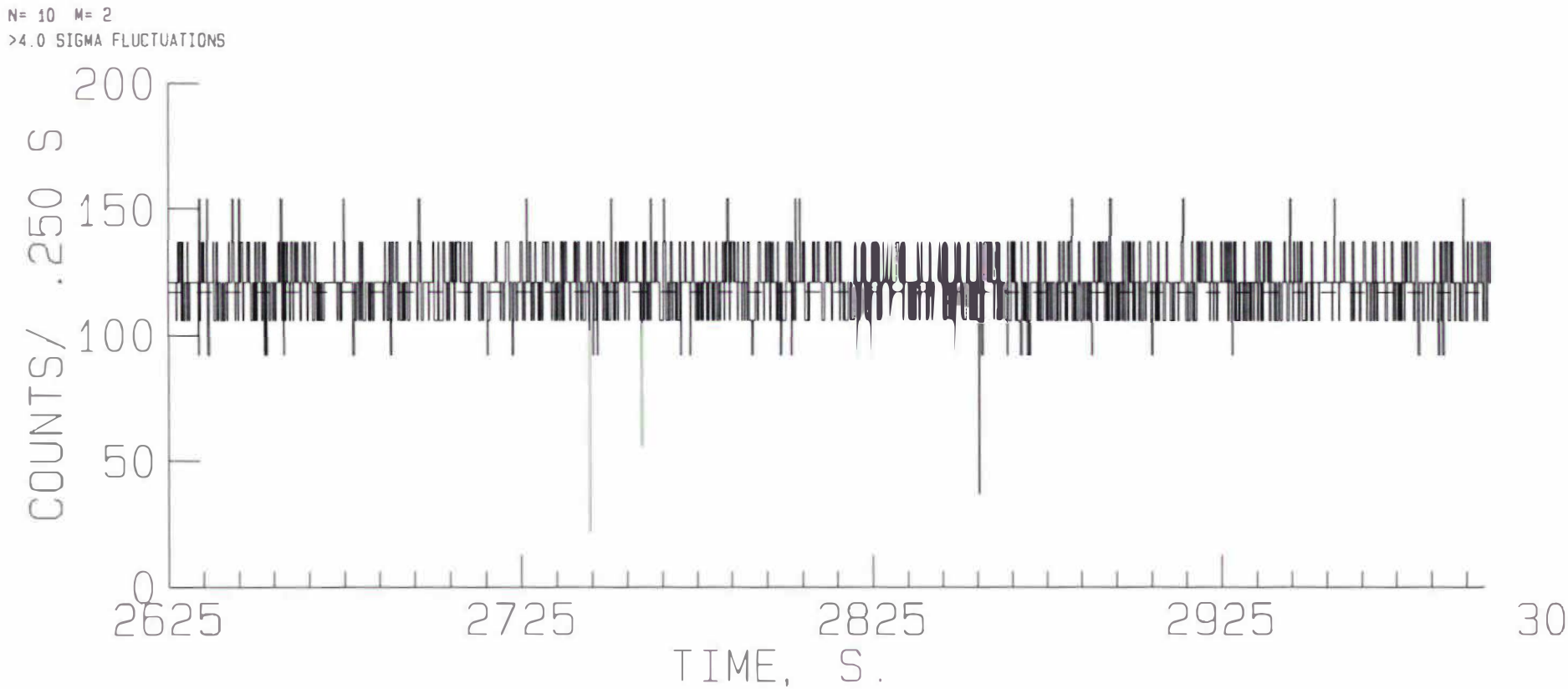


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

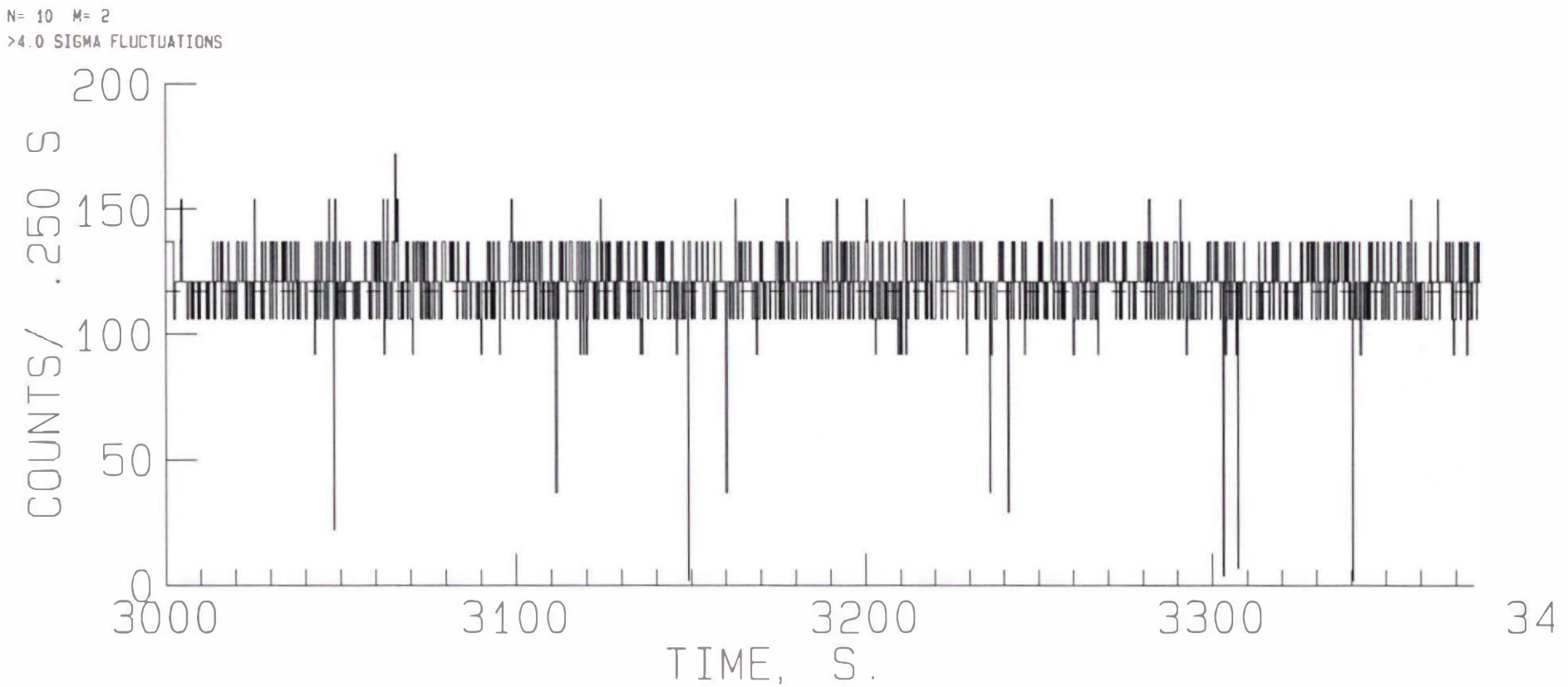


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

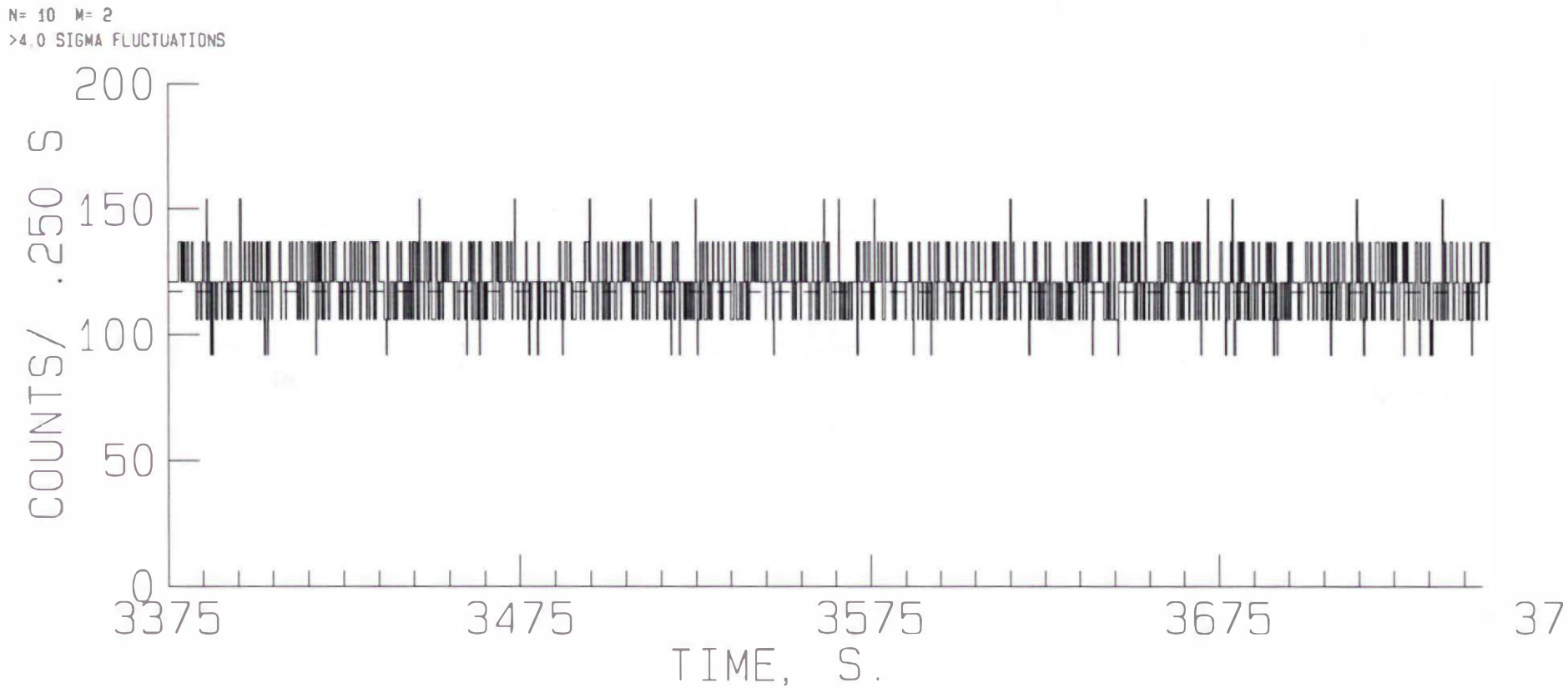


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

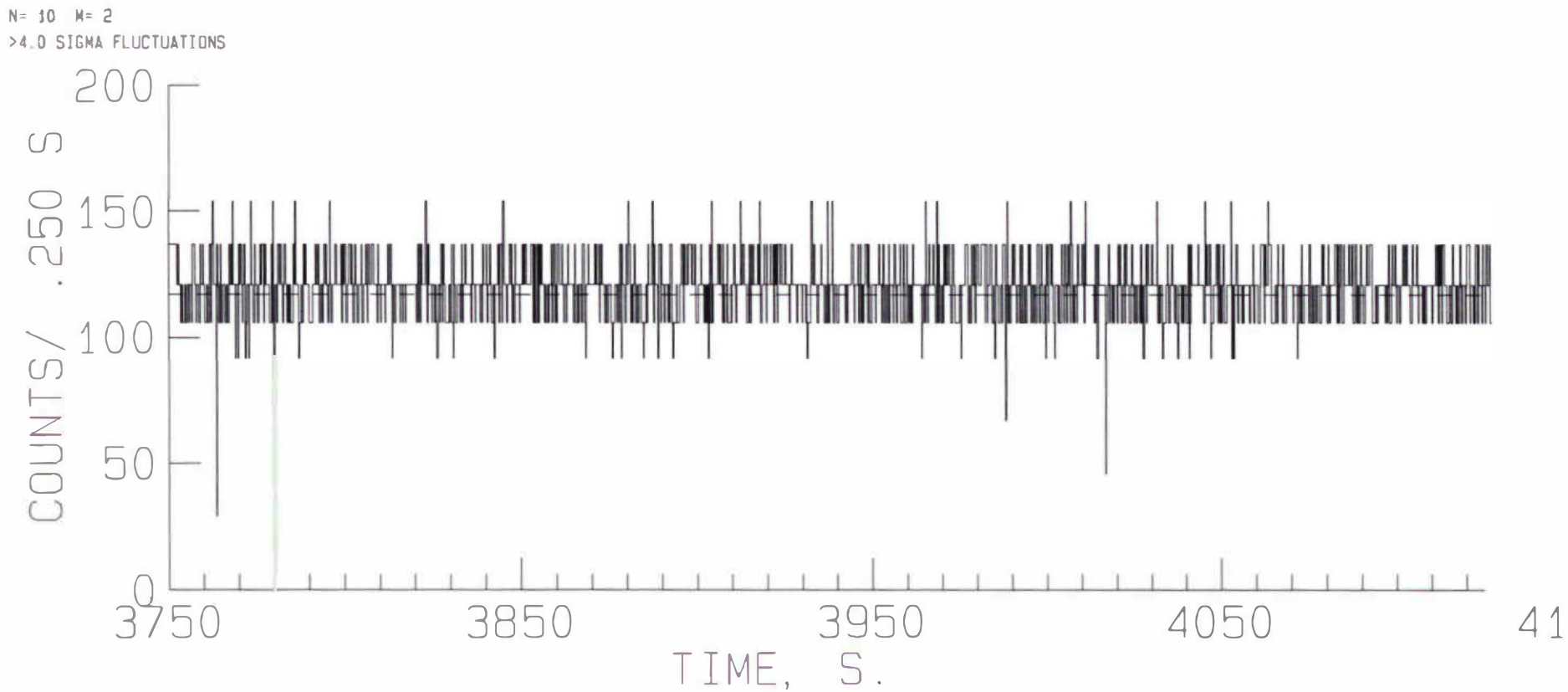


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

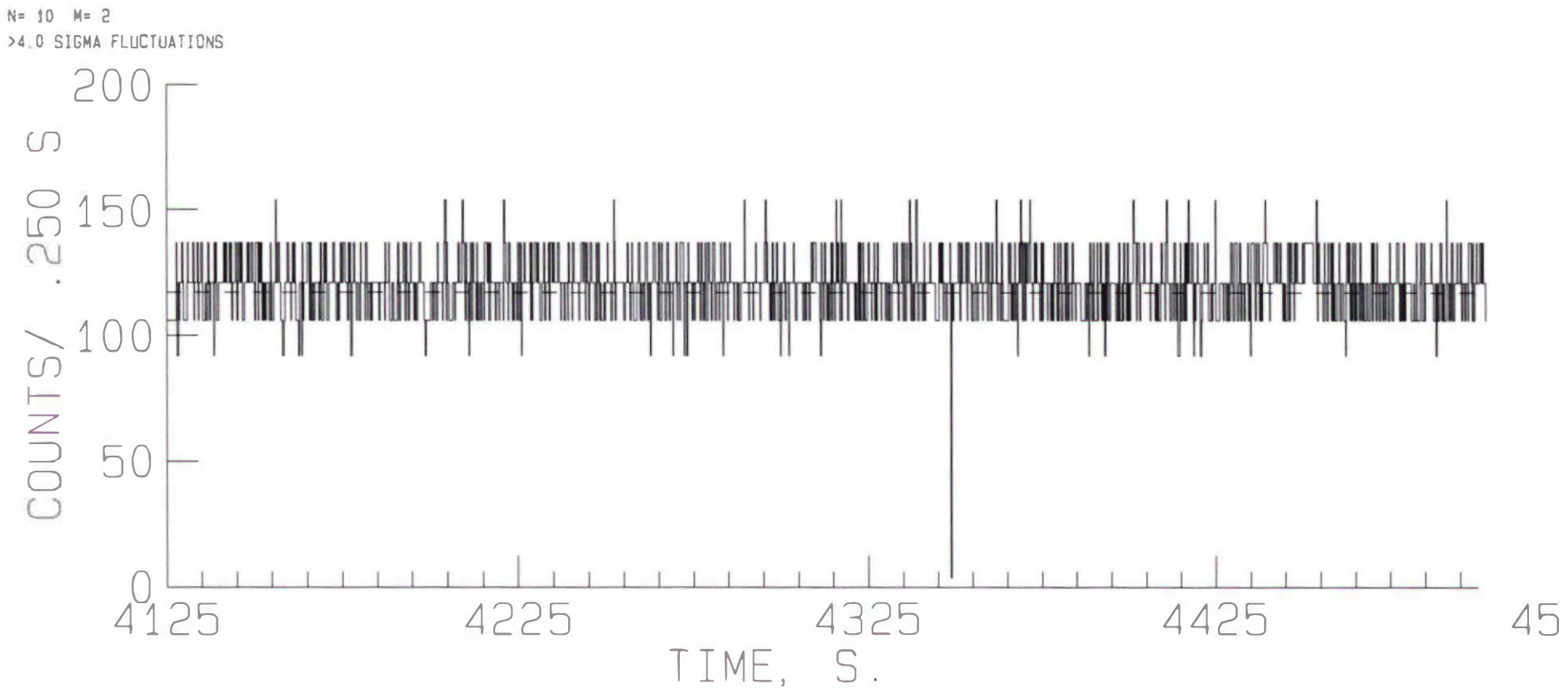


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

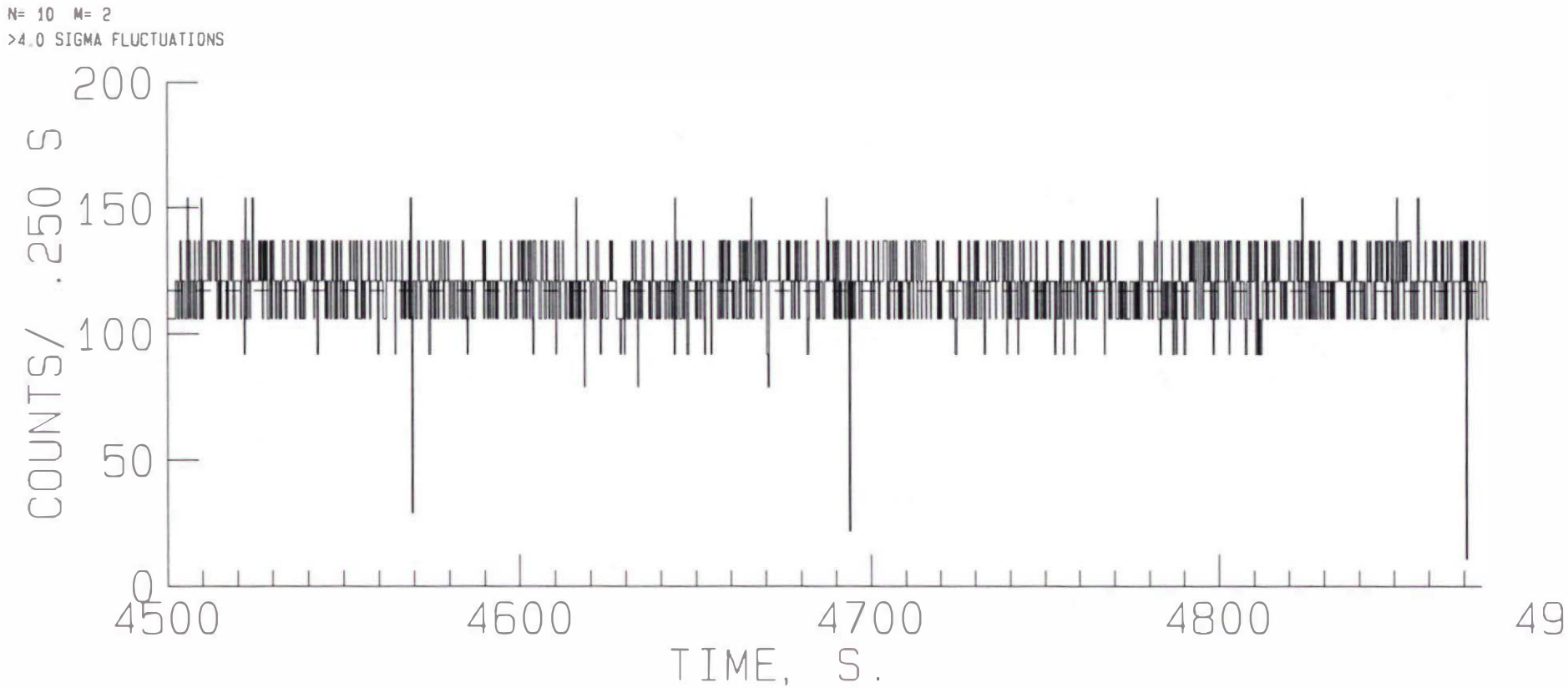


ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

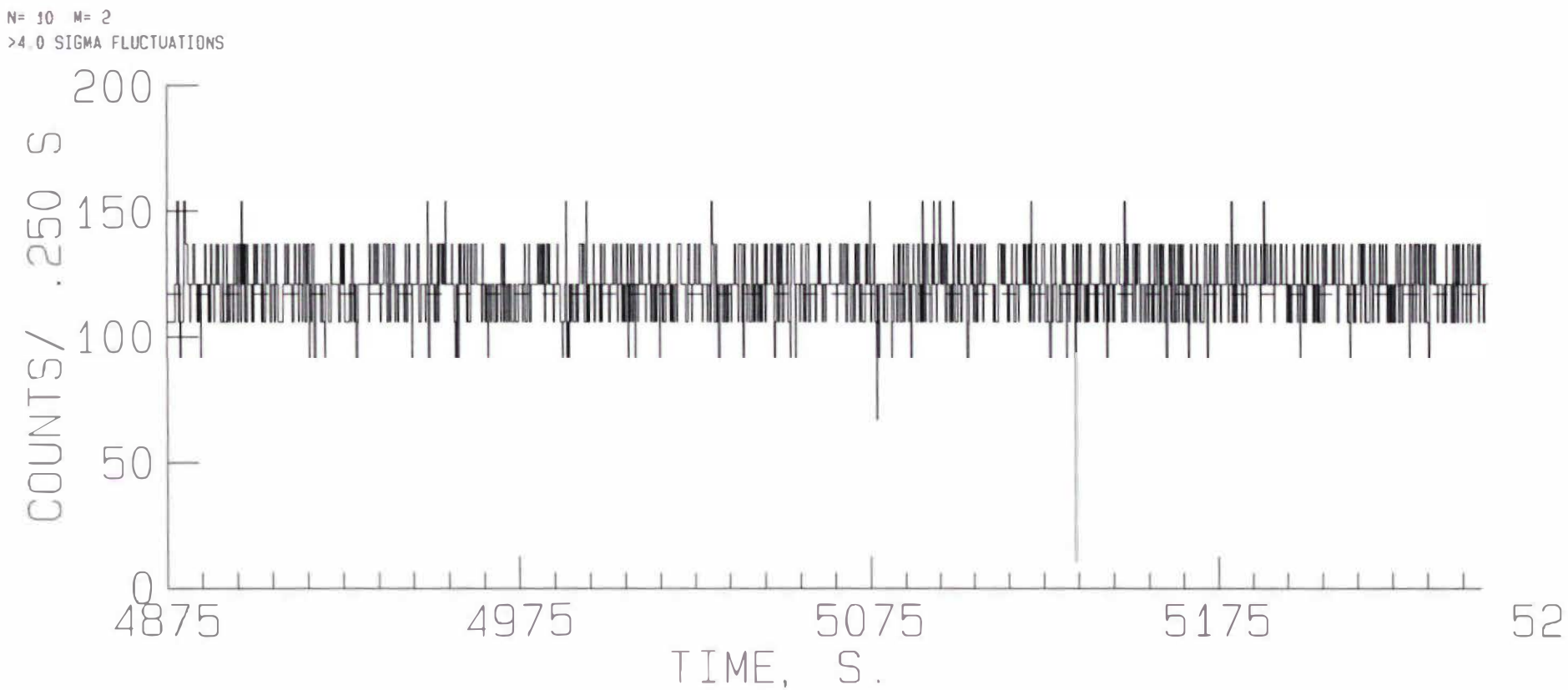


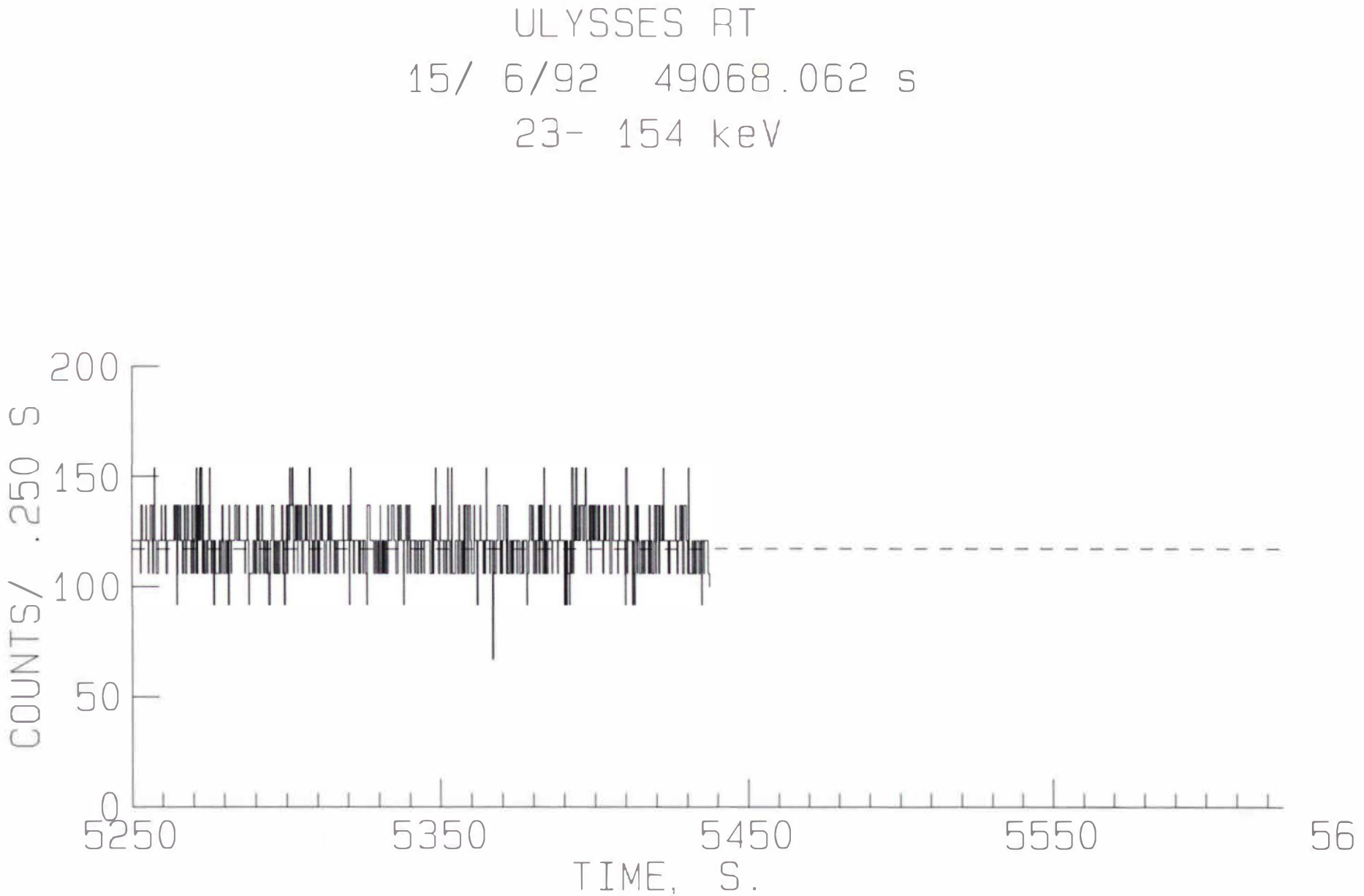
ULYSSES RT

13/12/93

15/ 6/92 49068.062 s

23- 154 keV

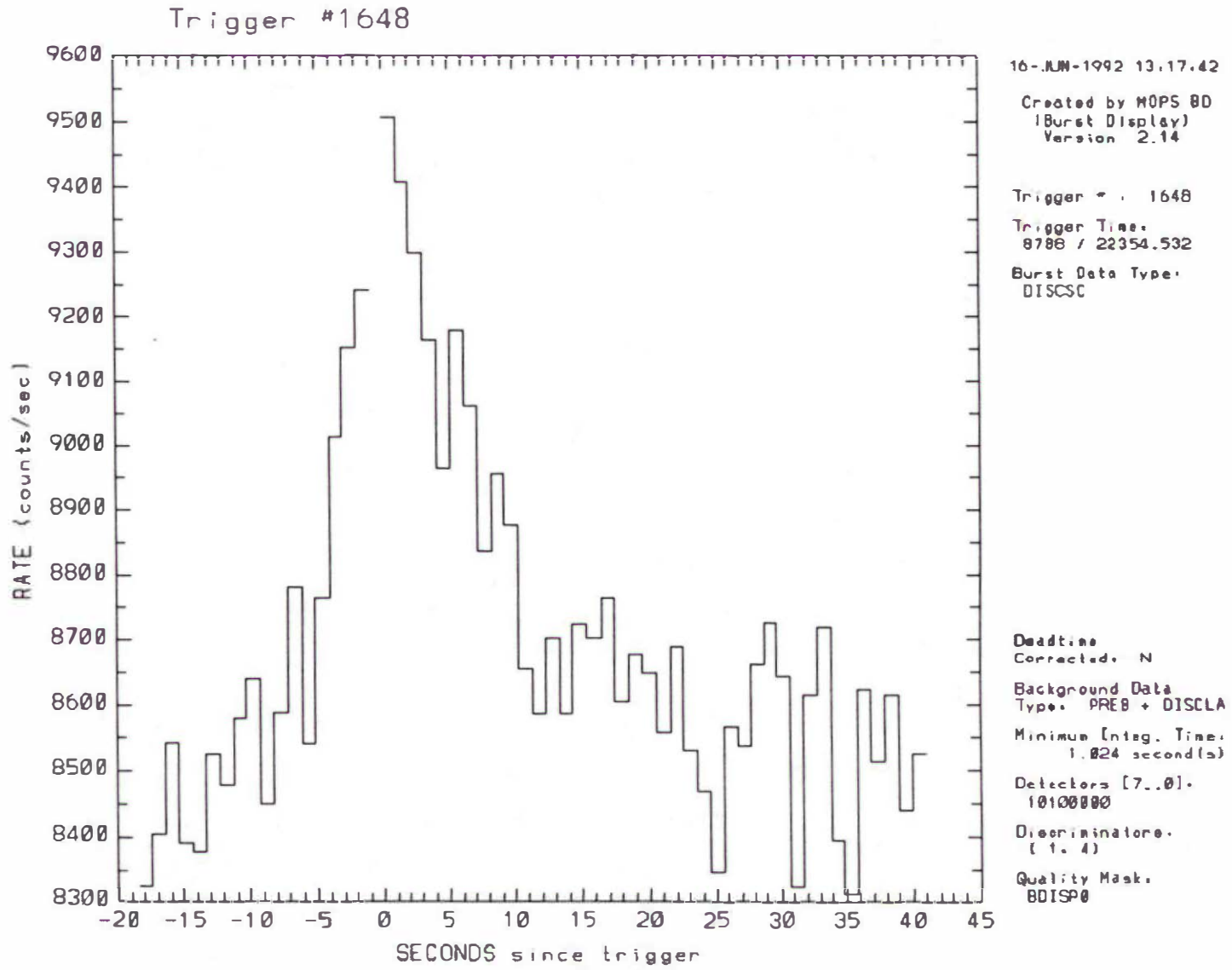



ULYSSES RT
15/ 6/92 49068.062 s
23- 154 keV
COUNTS/ .250 S
200
150
100
50
0
5250
5350
5450
5550
56
TIME, S.

255.3, 8.4

6×10^{-7} erg/cm²

June 15



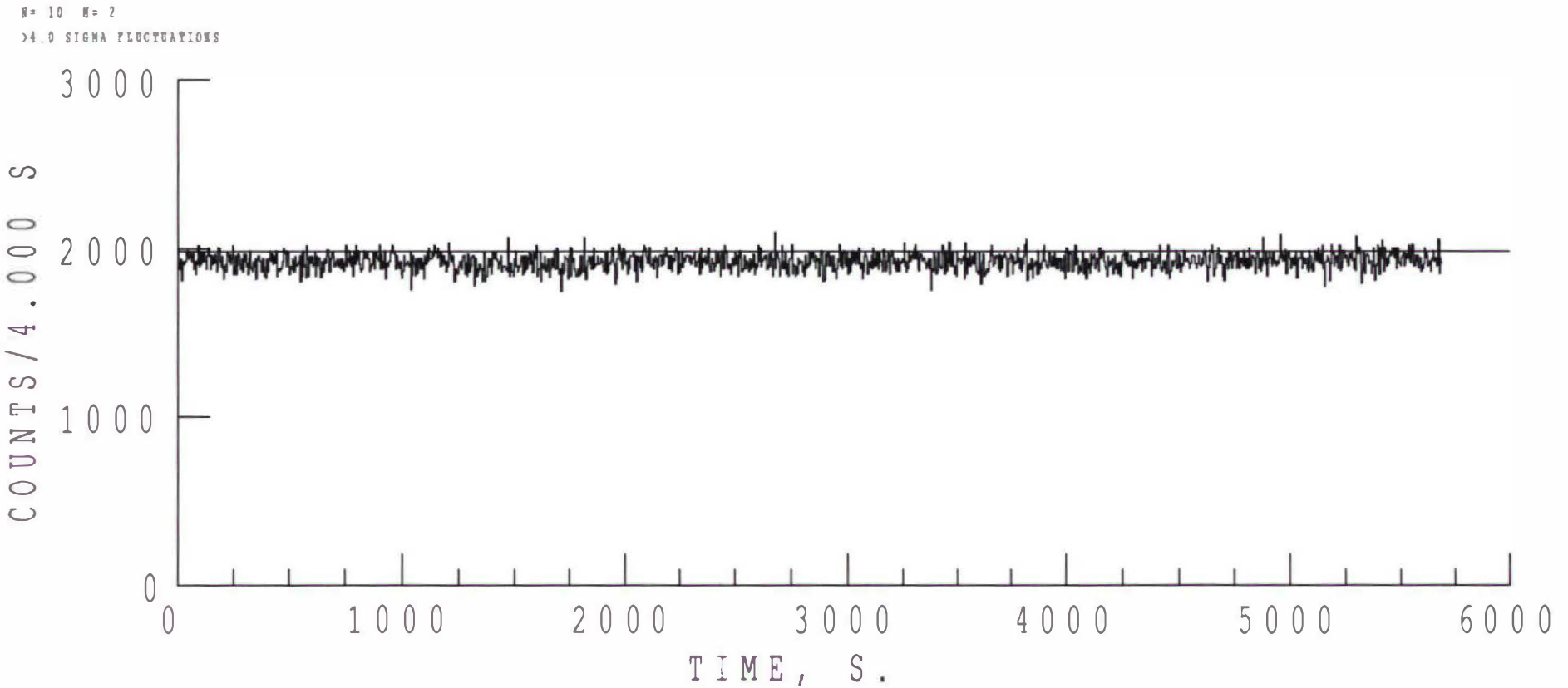
26/ 9/95

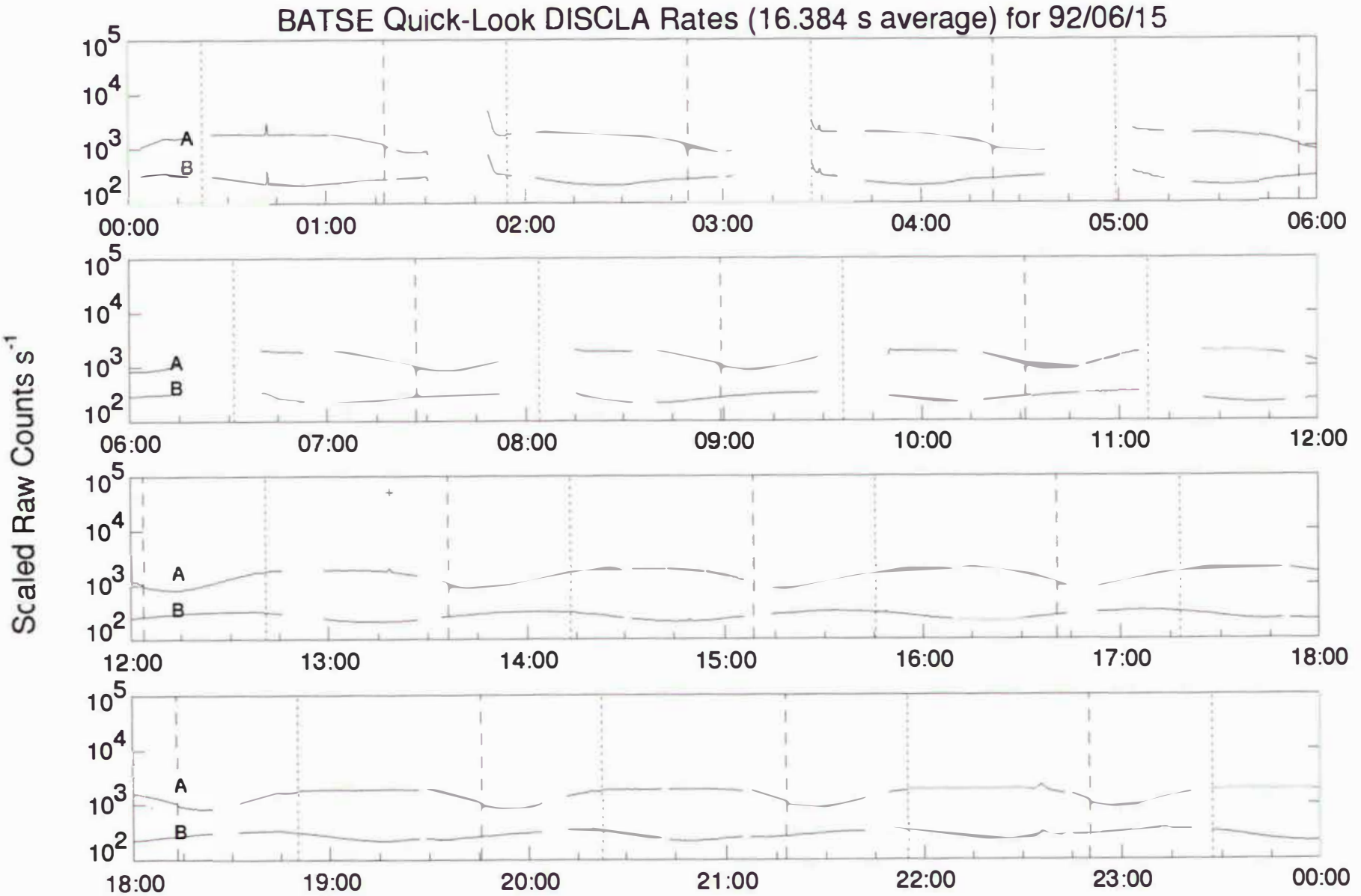
ULYSSES RT

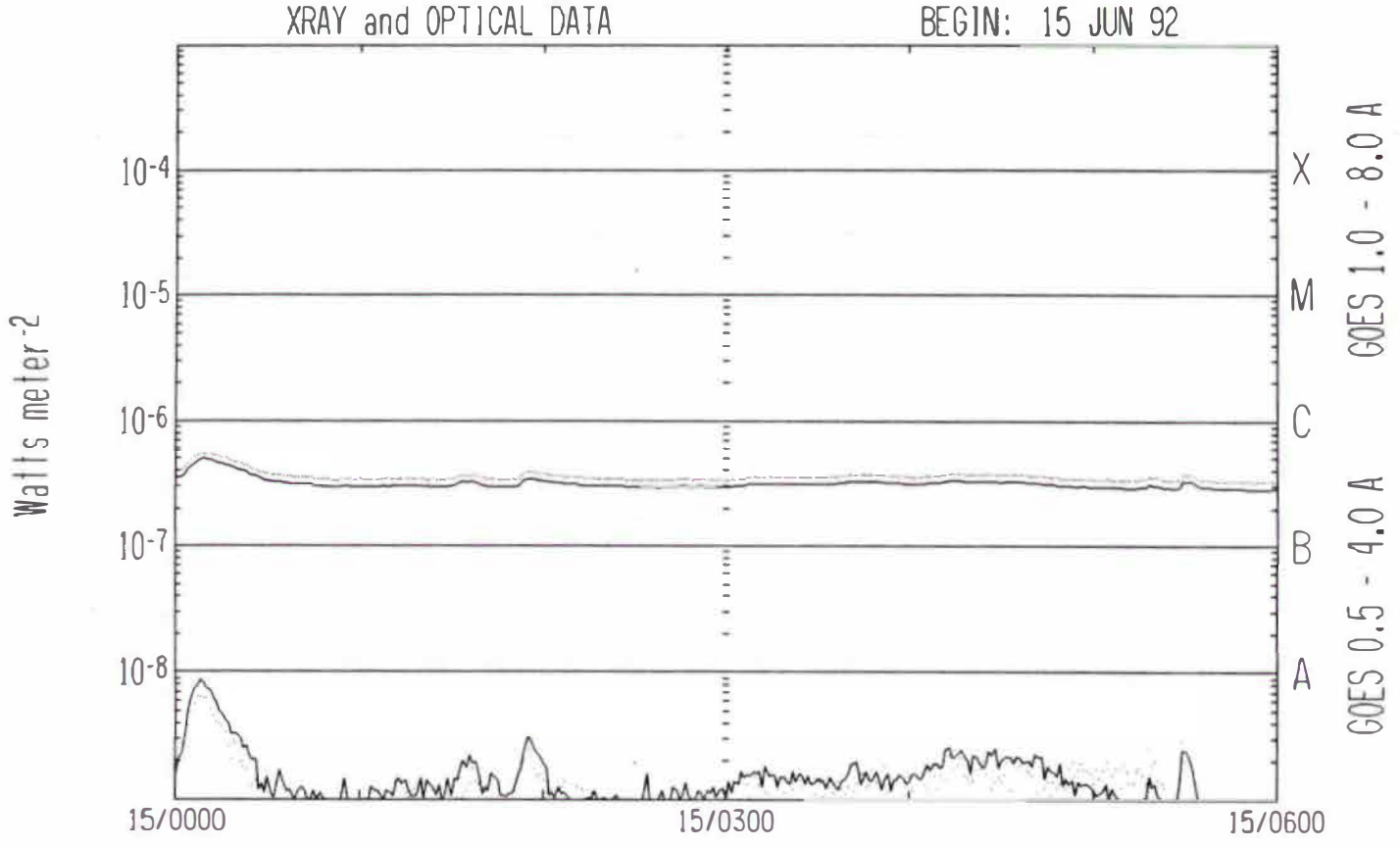
15/ 6/92 61812.023 s

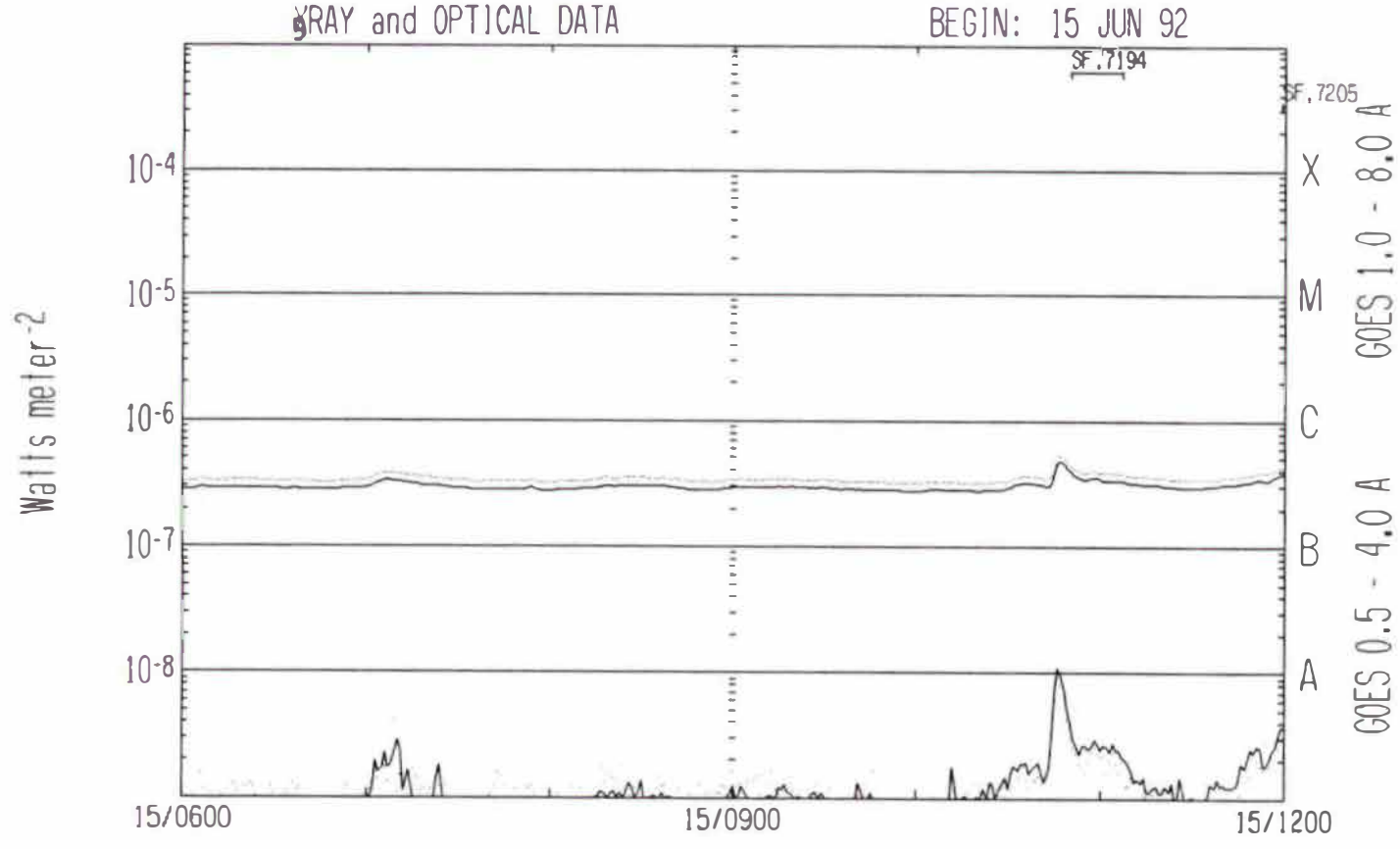
0.250 S INTERVALS REGROUPED BY 16

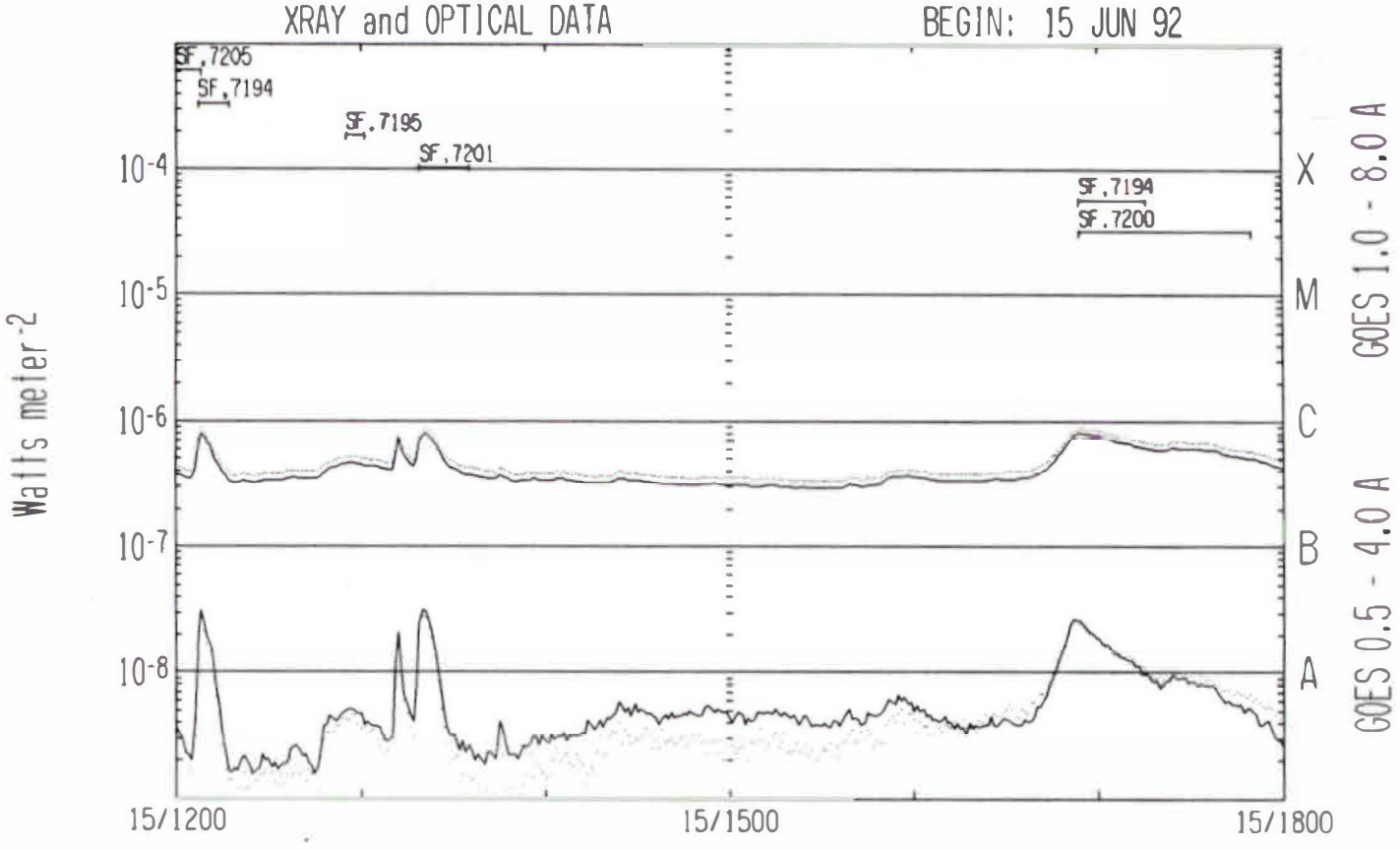
0- 0 keV

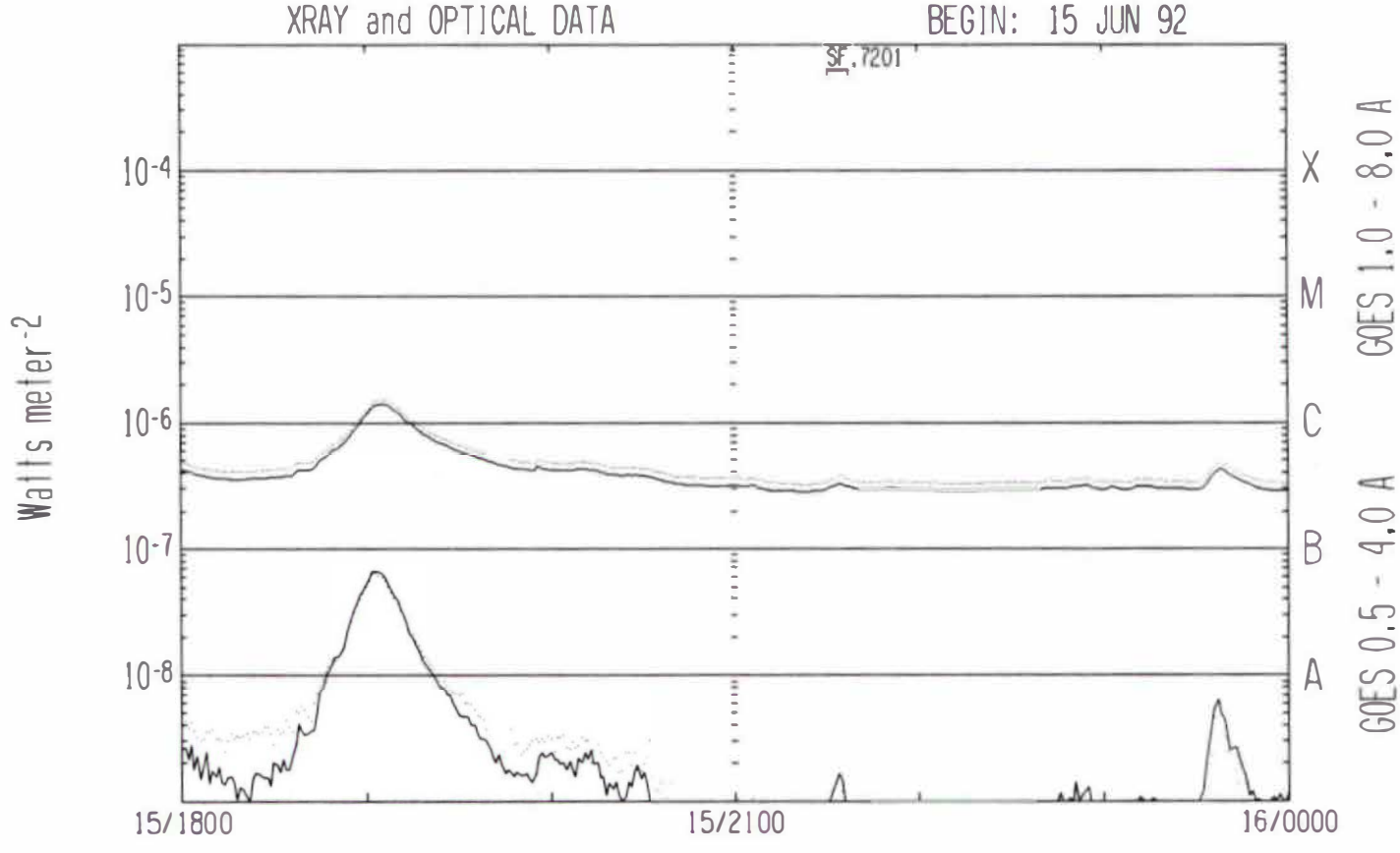



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/15
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1406 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

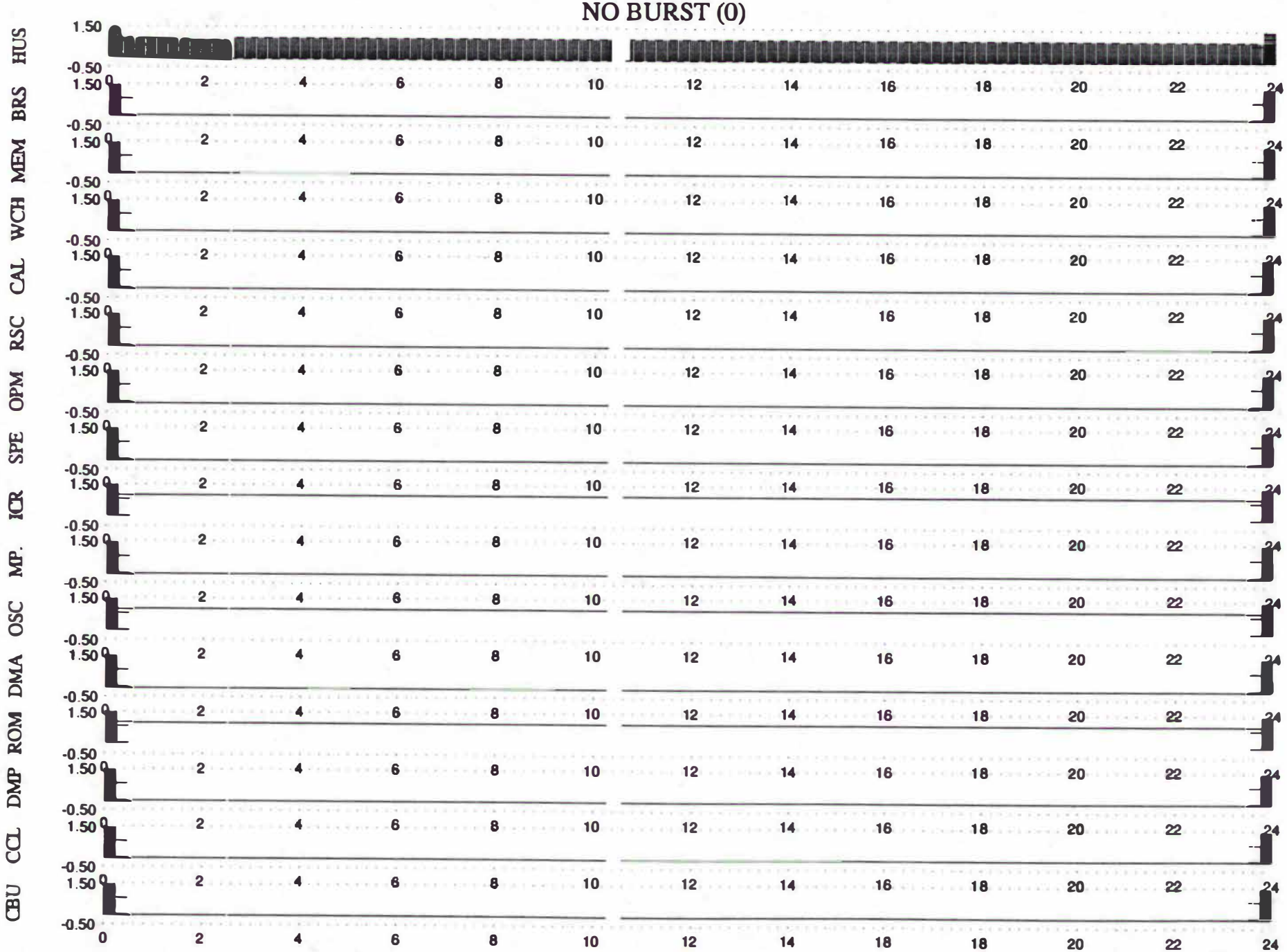

XRAY and OPTICAL DATA
BEGIN: 15 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
15/0000
15/0300
15/0600


XRAY and OPTICAL DATA
BEGIN: 15 JUN 92
SF.7194
SF.7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
15/0600
15/0900
15/1200


XRAY and OPTICAL DATA
BEGIN: 15 JUN 92
SF,7205
SF,7194
SF,7195
SF,7201
SF,7194
SF,7200
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
15/1200
15/1500
15/1800

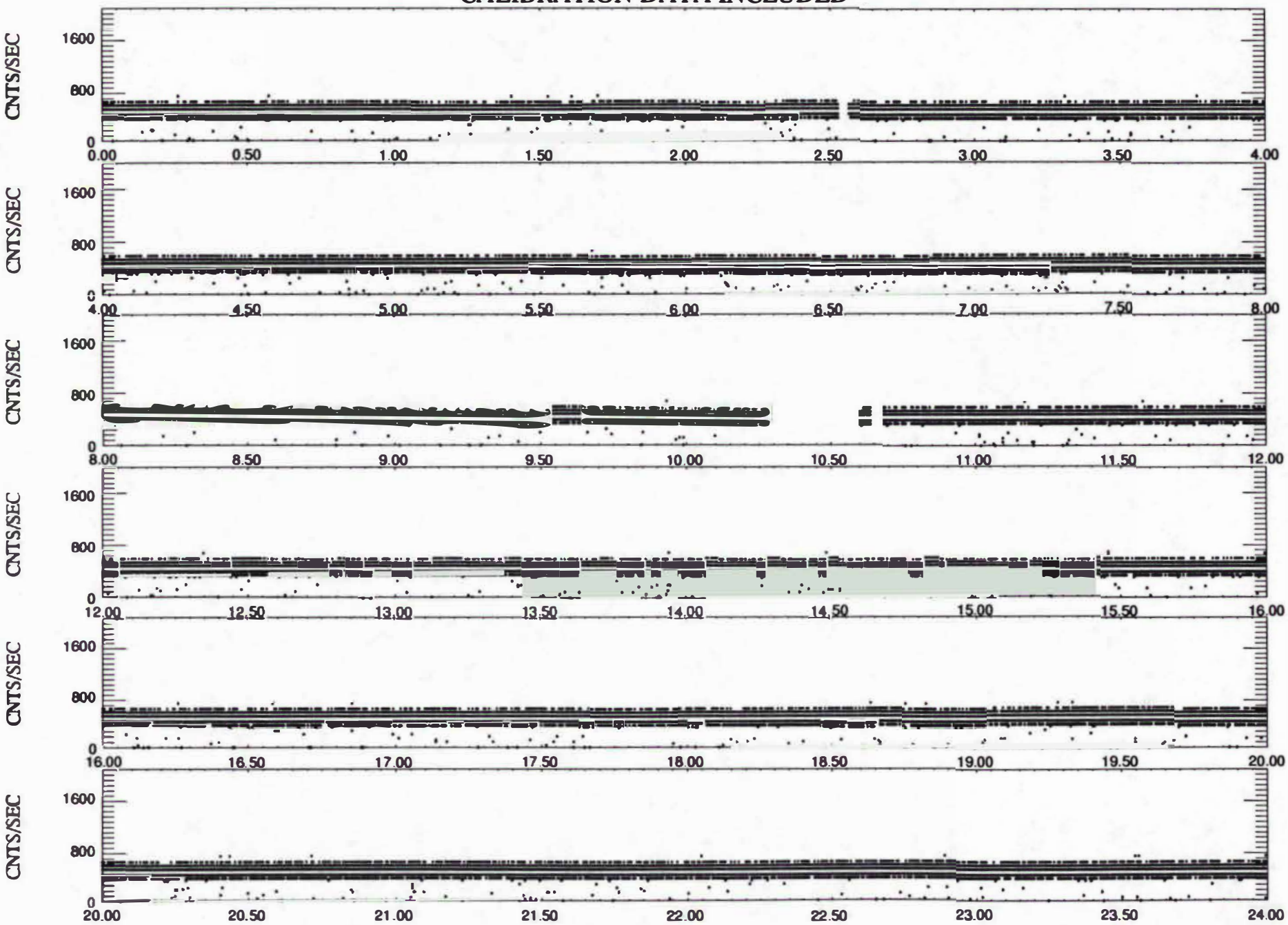

XRAY and OPTICAL DATA
BEGIN: 15 JUN 92
SF,7201
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
15/1800
15/2100
16/0000

HUS MODES EDR day 167, year 1992 to day 167, year 1992 6/25/92

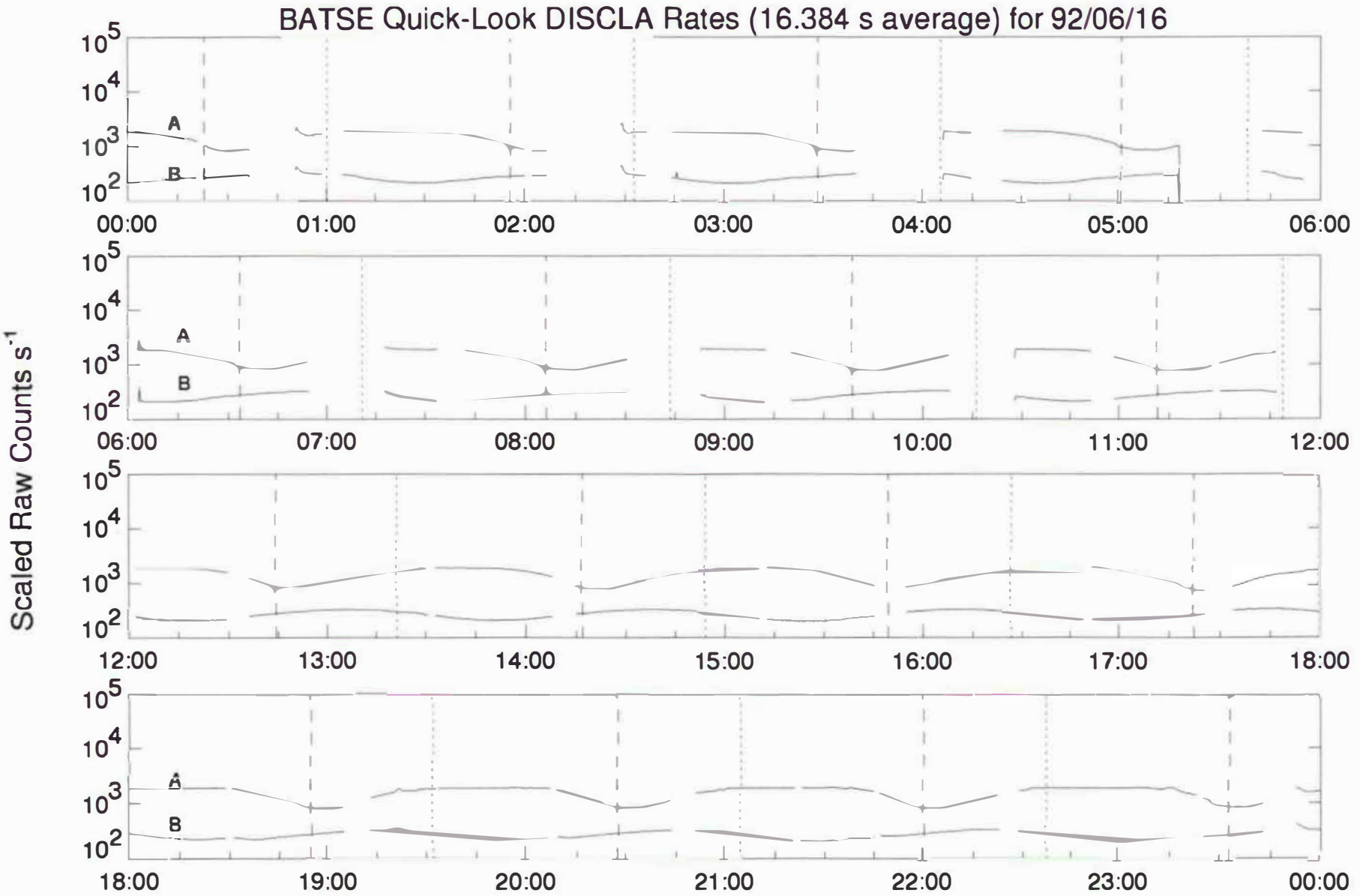


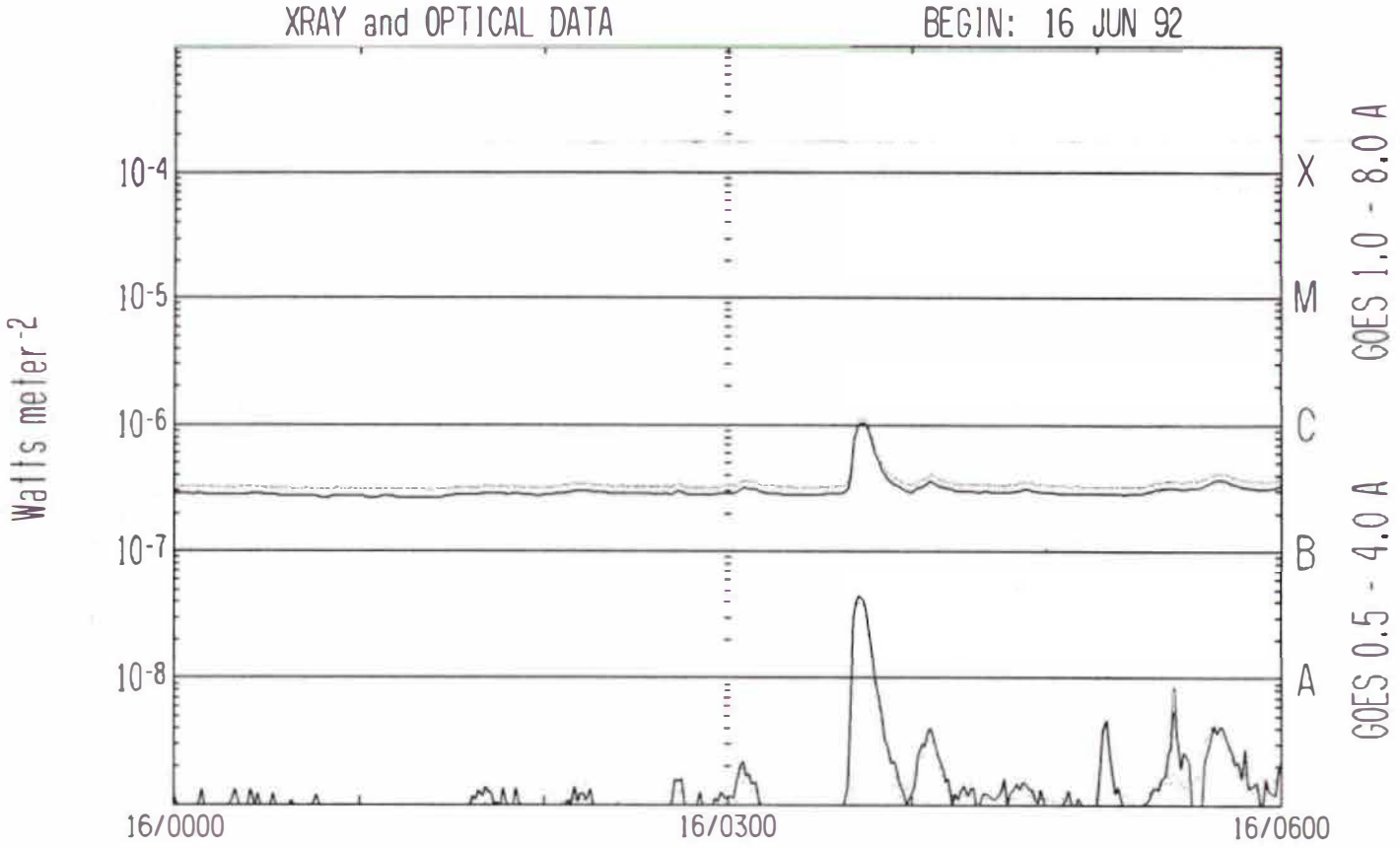
HUS 2A, MODE 1, NOT AVERAGED EDR day 167, year 1992 to day 167, year 1992 6/25/92

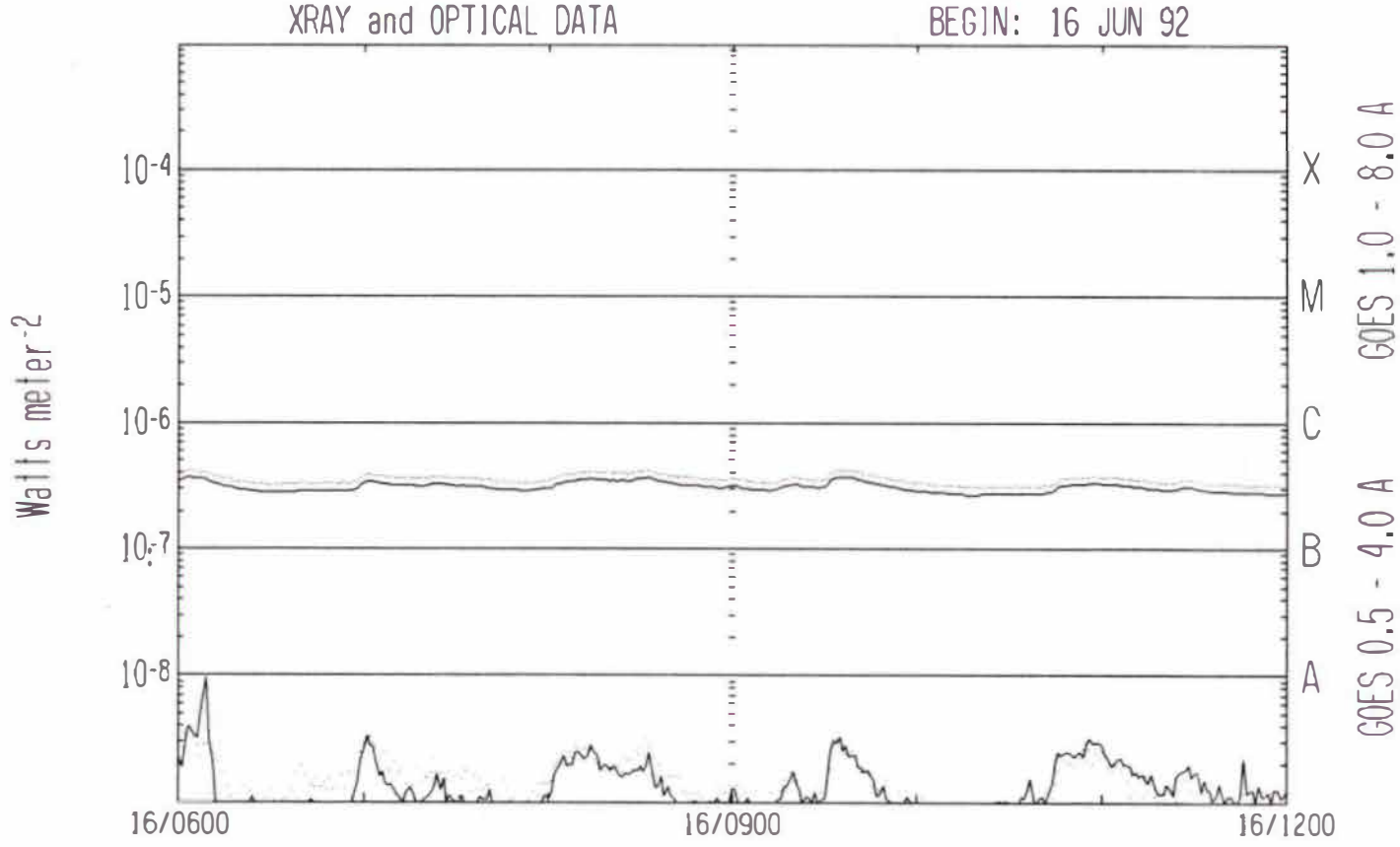
CALIBRATION DATA INCLUDED

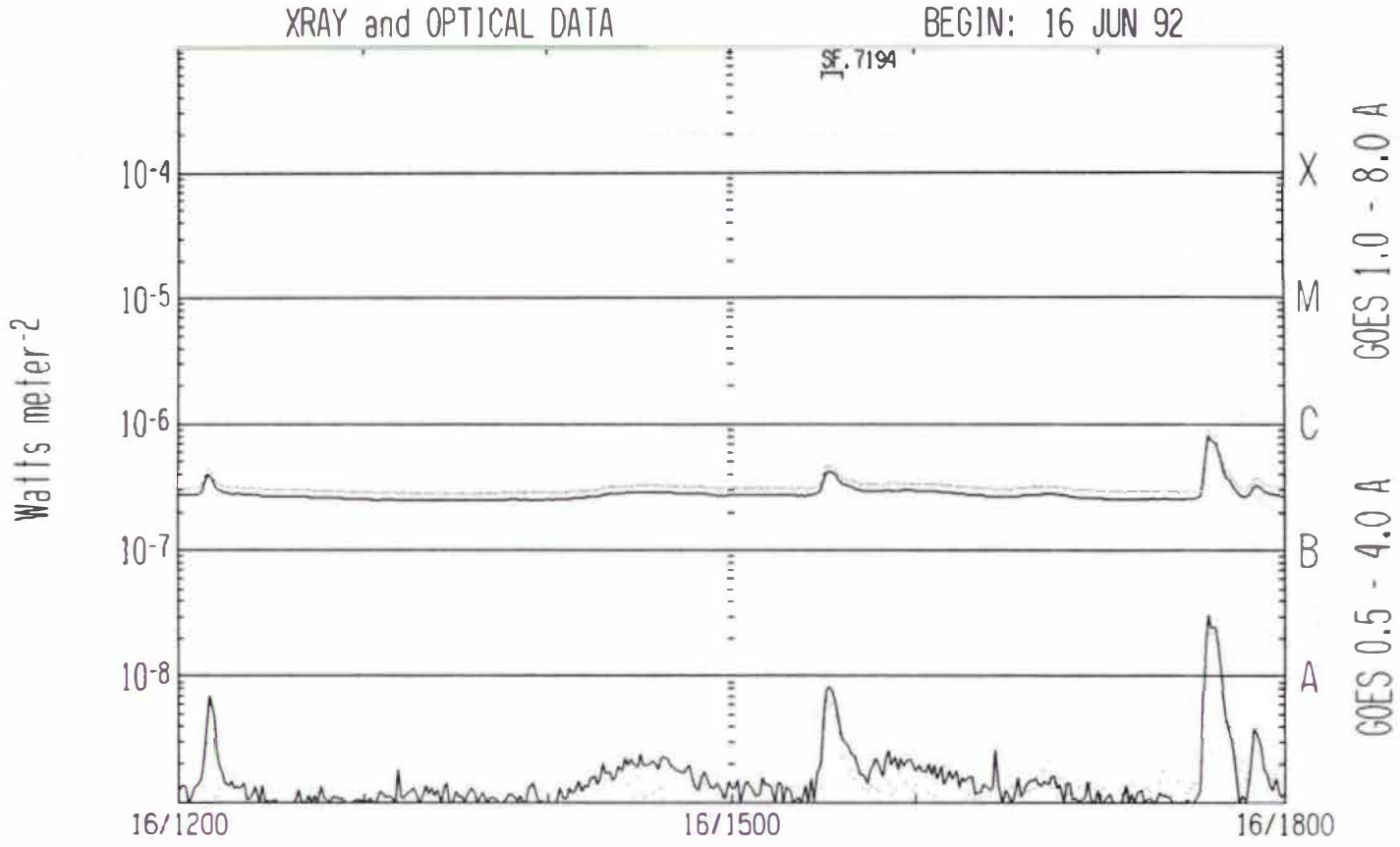


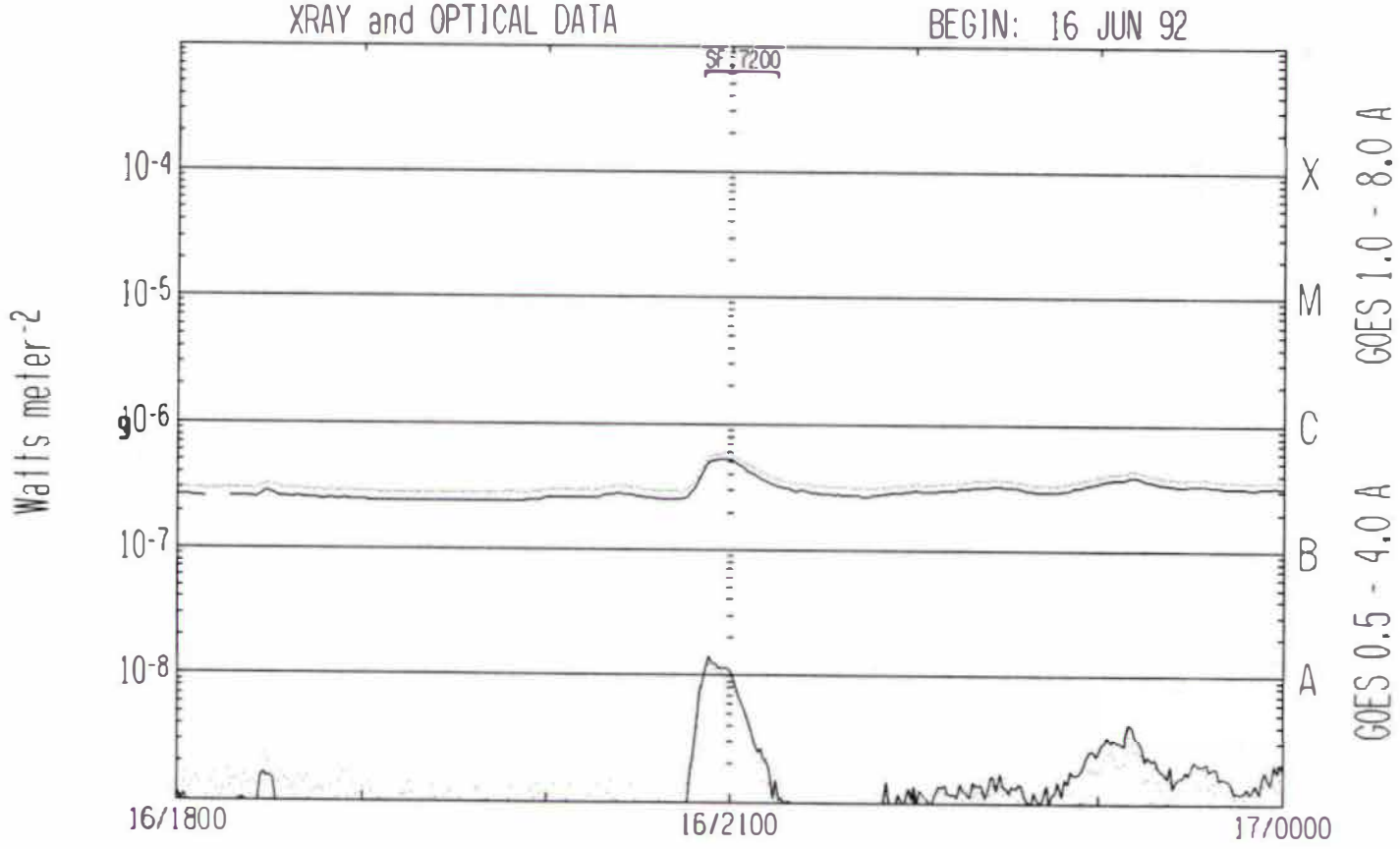
UNIV 'AL TIME


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/16
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1407 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

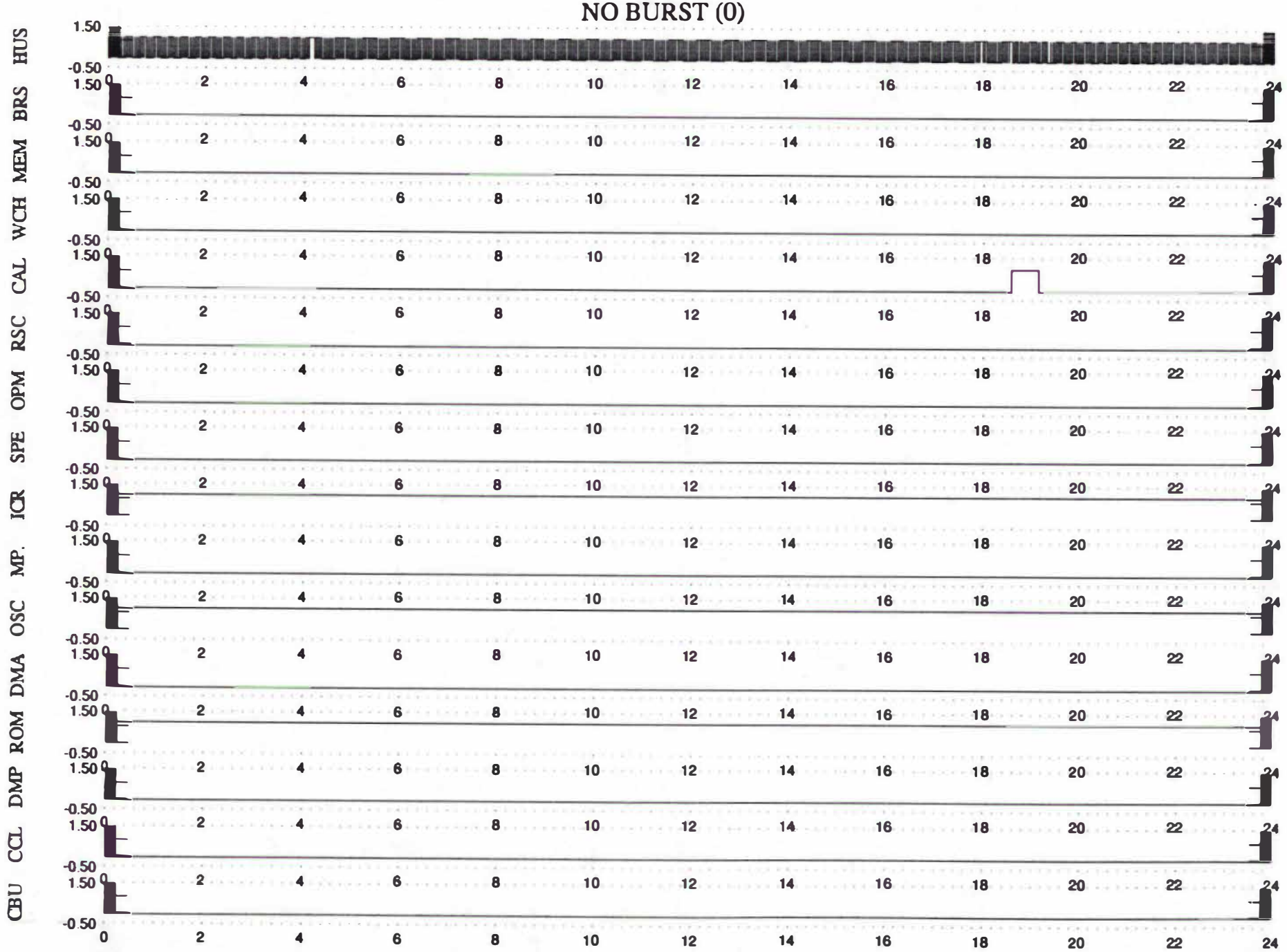

XRAY and OPTICAL DATA
BEGIN: 16 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
16/0000
16/0300
16/0600


XRAY and OPTICAL DATA
BEGIN: 16 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
16/0600
16/0900
16/1200


XRAY and OPTICAL DATA
BEGIN: 16 JUN 92
SF.7194
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
16/1200
16/1500
16/1800

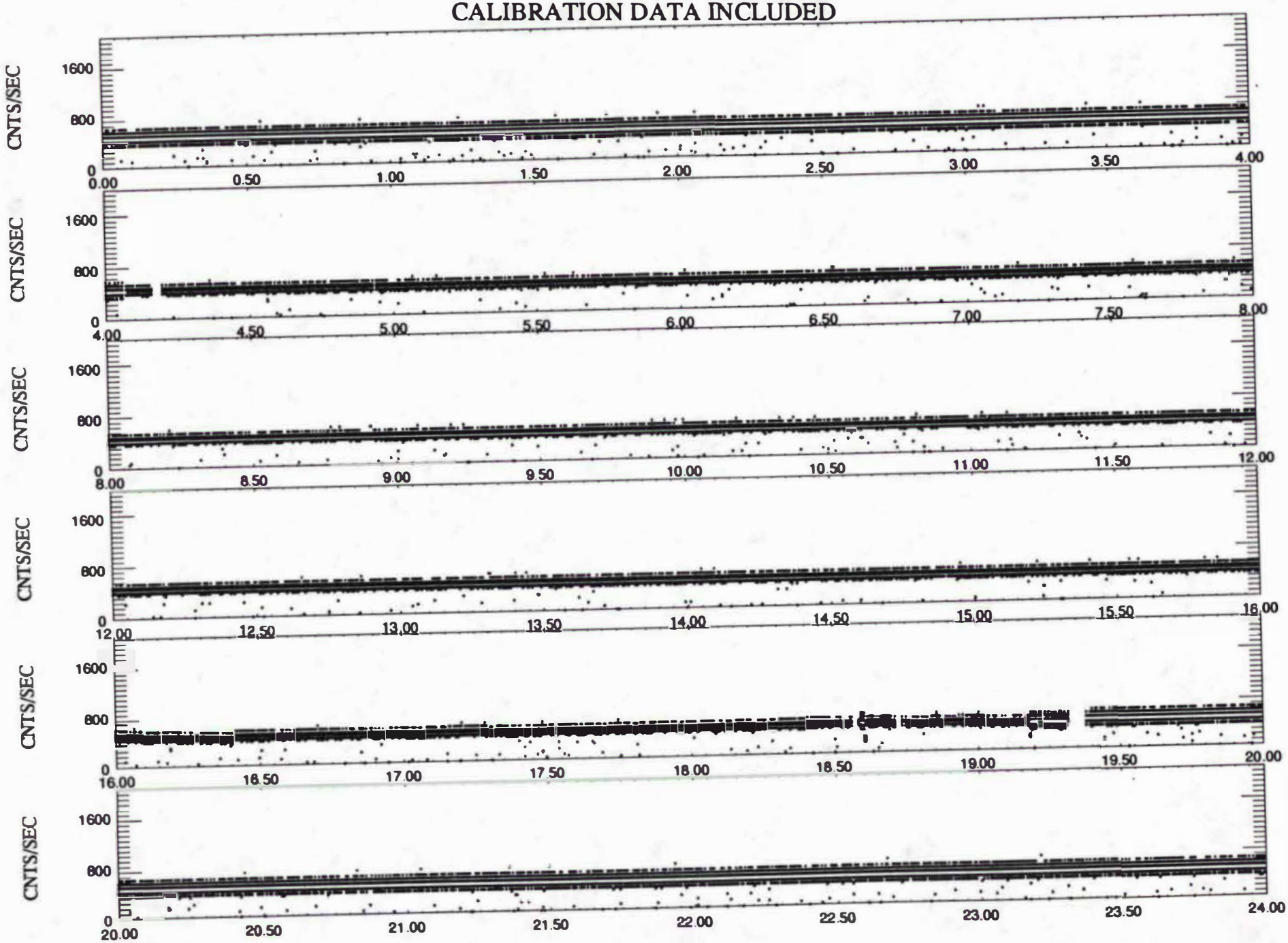

XRAY and OPTICAL DATA
BEGIN: 16 JUN 92
SF:7200
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
16/1800
16/2100
17/0000

HUS MODES EDR day 168, year 1992 to day 168, year 1992 6/25/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 168, year 1992 to day 168, year 1992 6/25/92

CALIBRATION DATA INCLUDED



UNIVI AL TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1651
EVENT OF 1992 JUN 17 DAY OF YEAR=169
EVENT CROSSING TIME AT BATSE : 13468. S. OR 03:44:28.3
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 103.400 -66.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 17/ 6/ 92 IS:
RA= 149.136 DEC= 7.227 DIST= 5.728 AU
BATSE-ULYSSES DISTANCE = 856961160. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -459.46 SECS.
CROSSING TIME AT ULYSSES IS 13009. S. OR 03:36:48.8 +/- 532.85 SECONDS

NO

From WILSONB@ssl.msfc.nasa.gov Fri Jun 19 07:50:44 1992
Date: Fri, 19 Jun 1992 9:50:28 -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.: 01651 June 17

TIME: TJD=8790 SECONDS=13470

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=120.9 AZIMUTH=006.4 ERROR=010.0 DEGREES

COMMENTS:
HARD SPECTRUM, SHARP RISE, SLOW DECAY EVENT, LASTING UNTIL 10S AFTER
TRIGGER. PEAK AMPLITUDE 11K C/S ABOVE 25 KEV.

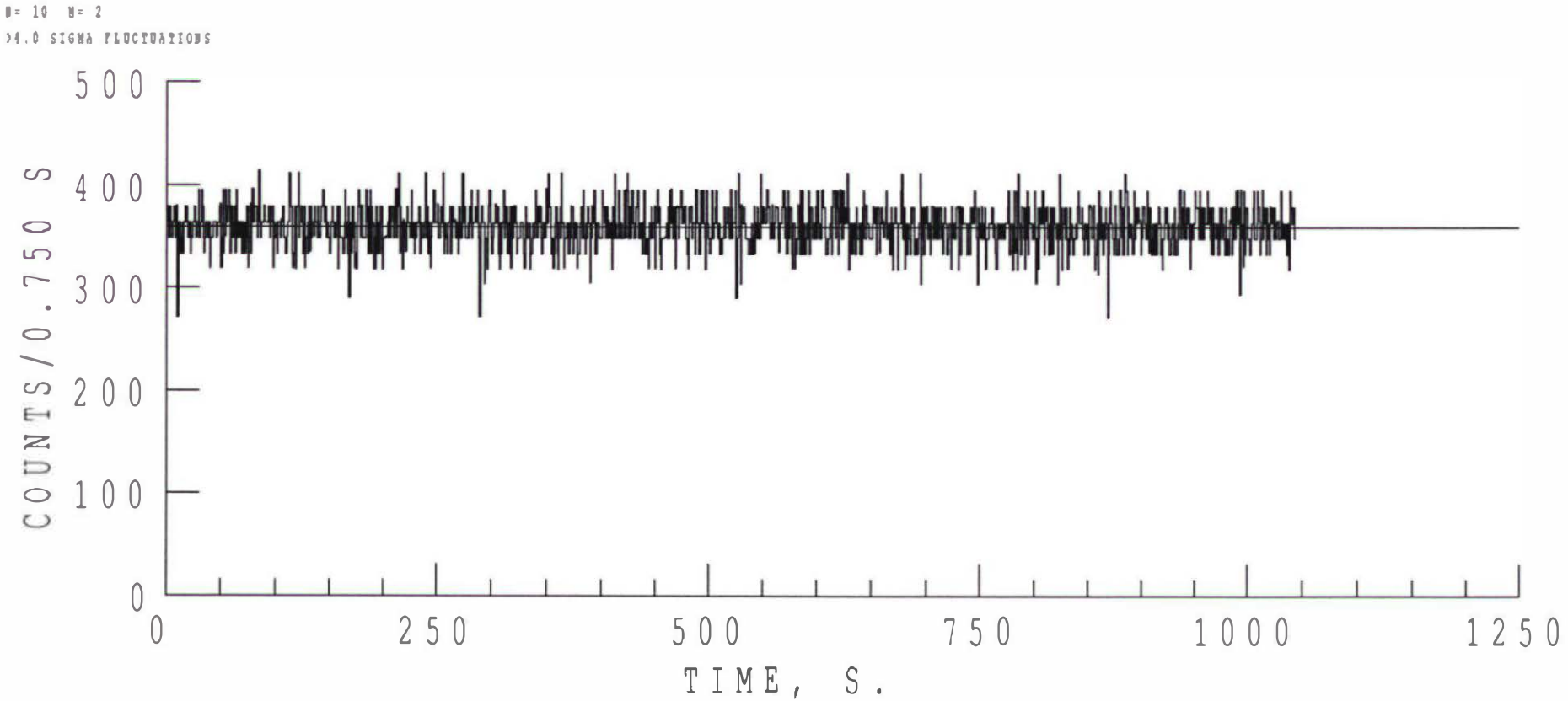
8/ 6/94

ULYSSES RT

17/ 6/92 12492.021 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



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/0
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 June 17
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 AVALIABLE 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

****
CATSEARCH PROGRAM
****

BATSE BURST # 1652
EVENT OF 1992 JUN 17 DAY OF YEAR=169
EVENT CROSSING TIME AT BATSE : 19611. S. OR 05:26:51.2
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 42.900 76.400
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 17/ 6/ 92 IS:
RA= 149.136 DEC= 7.227 DIST= 5.728 AU
BATSE-ULYSSES DISTANCE = 856961160. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -163.07 SECS.
CROSSING TIME AT ULYSSES IS 19448. S. OR 05:24:08.1 +/- 543.00 SECONDS

RI

From WILSONB@ssl.msfc.nasa.gov Fri Jun 19 08:27:38 1992
Date: Fri, 19 Jun 1992 10:27:27 -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.: 01652

TIME: TJD=8790 SECONDS=19613

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=038.0 AZIMUTH=196.8 ERROR=10.0 DEGREES

COMMENTS:
HARD EVENT. SIGNIFICANT FLUX BEGINS ~25S AFTER TRIGGER TIME, UNTIL ~80S
AFTER TRIGGER. TWO PRINCIPAL PEAKS , WITH SIGNIFICANT ADDITIONAL STRUCTURE.
15 K C/S ABOVE BKG, ABOVE 25 KEV

Helio corr removed

Date: Dec 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)?

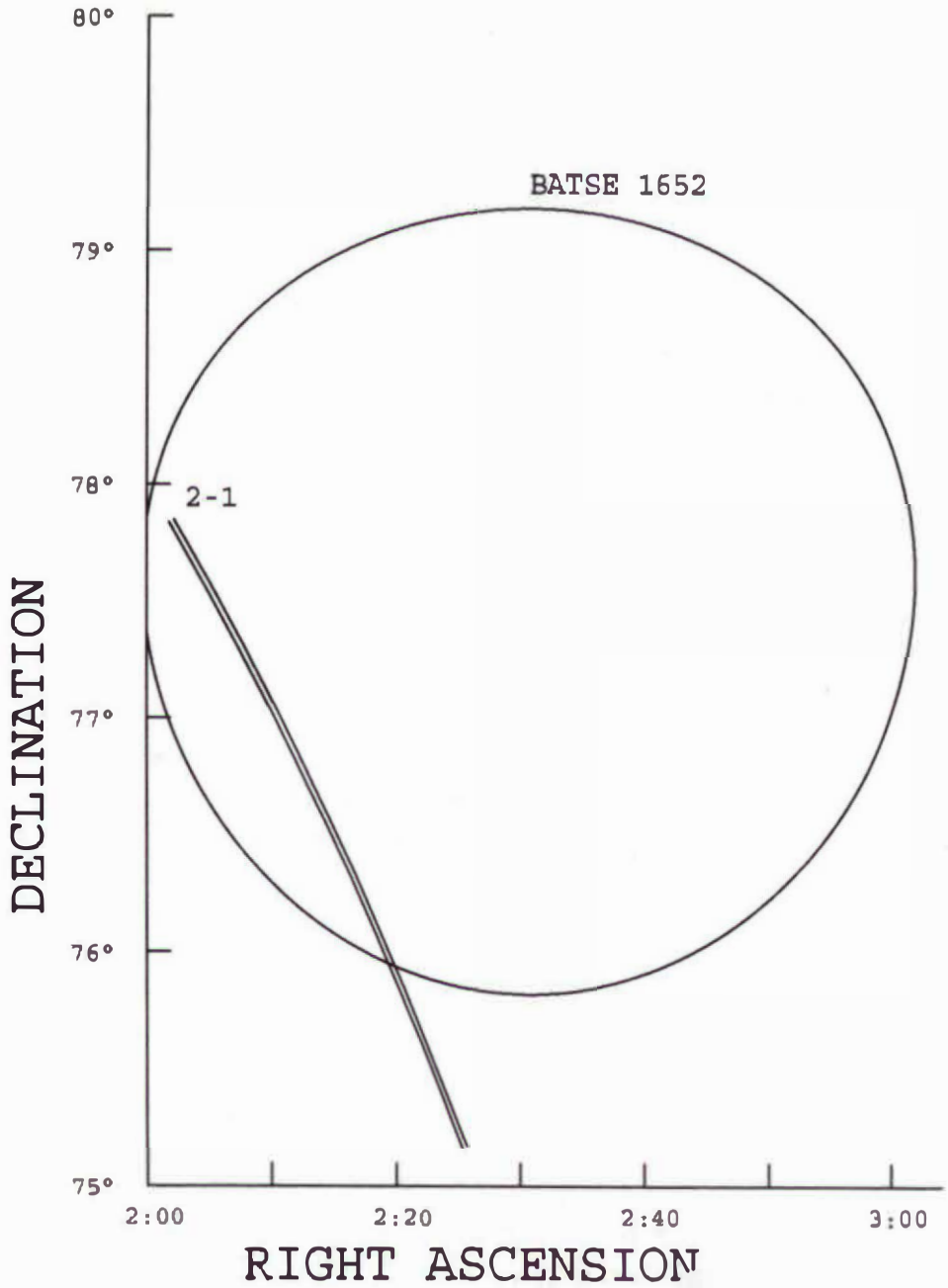
☐ 2000 coordinates used?

☐ Geocentric time used?

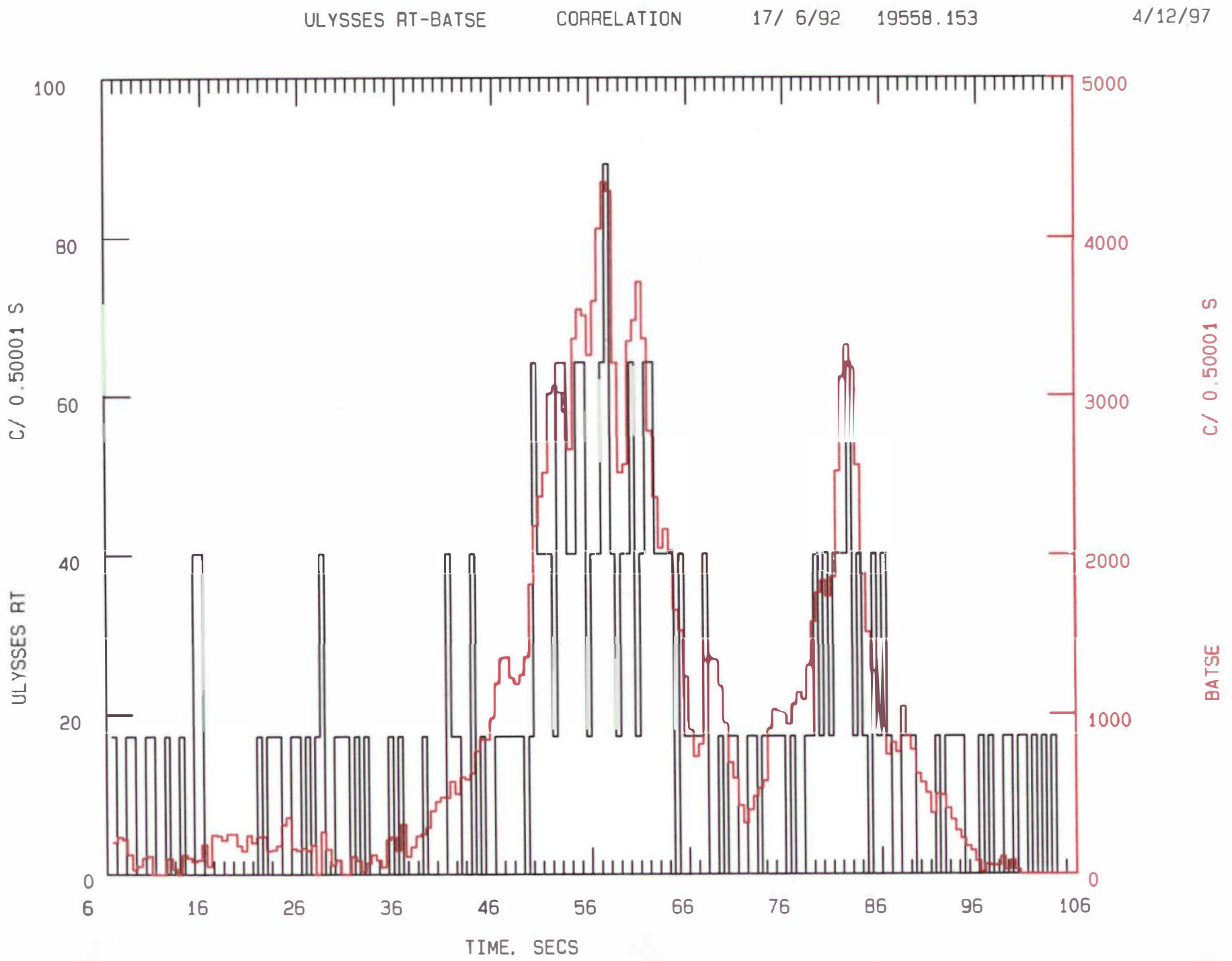
☑ ACCESS database updated?

EVENT OF JUN 17, 1992 5:25

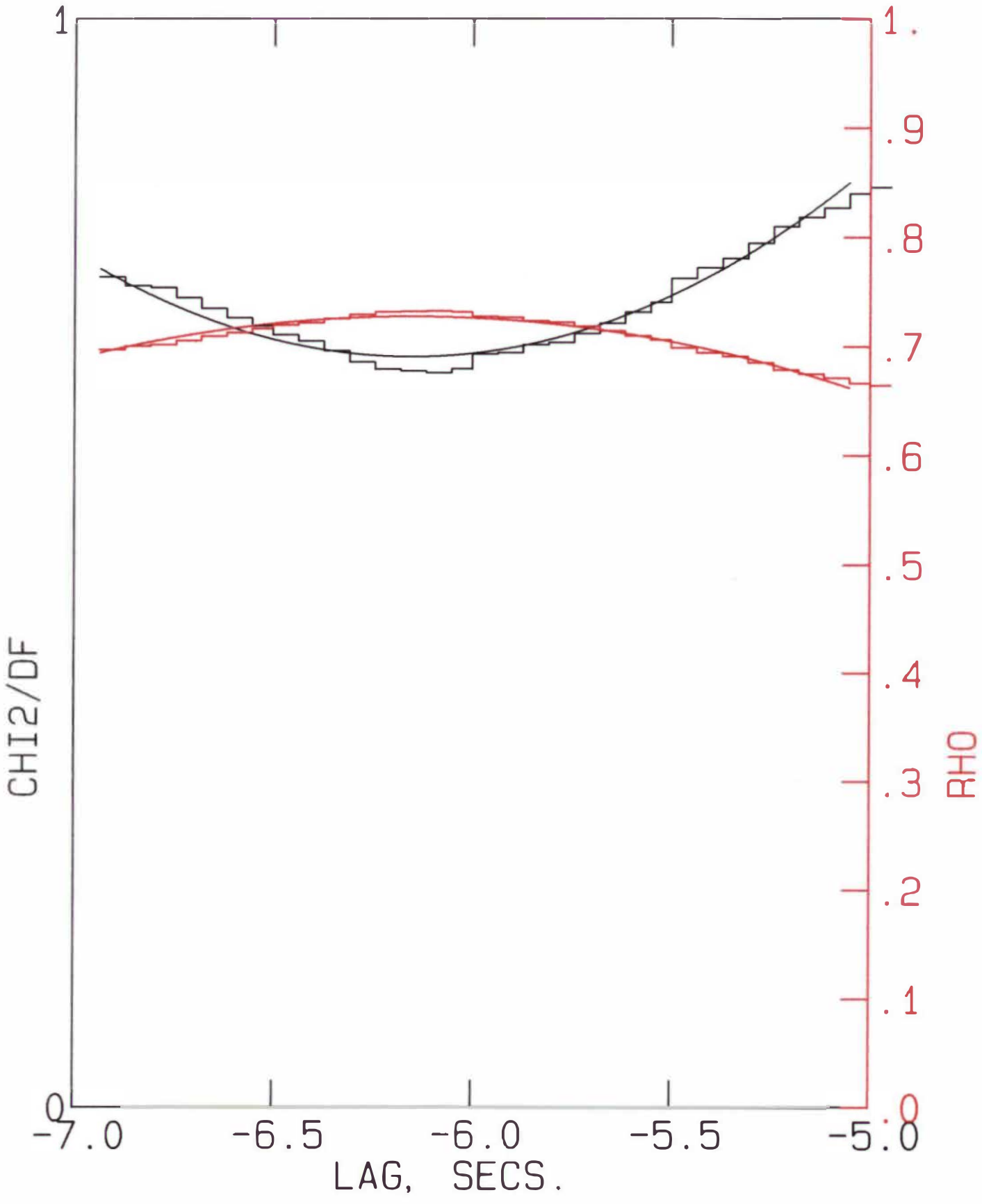
4/12/97



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


ULYSSES RT-BATSE CORRELATION 17/ 6/92 19558.153 4/12/97
100
80
60
40
20
0
C/ 0.50001 S
ULYSSES RT
5000
4000
3000
2000
1000
0
C/ 0.50001 S
BATSE
6
16
26
36
46
56
66
76
86
96
106
TIME, SECS

ULYSSES RT-BATSE CORRELATION 17/ 6/92 19558.153



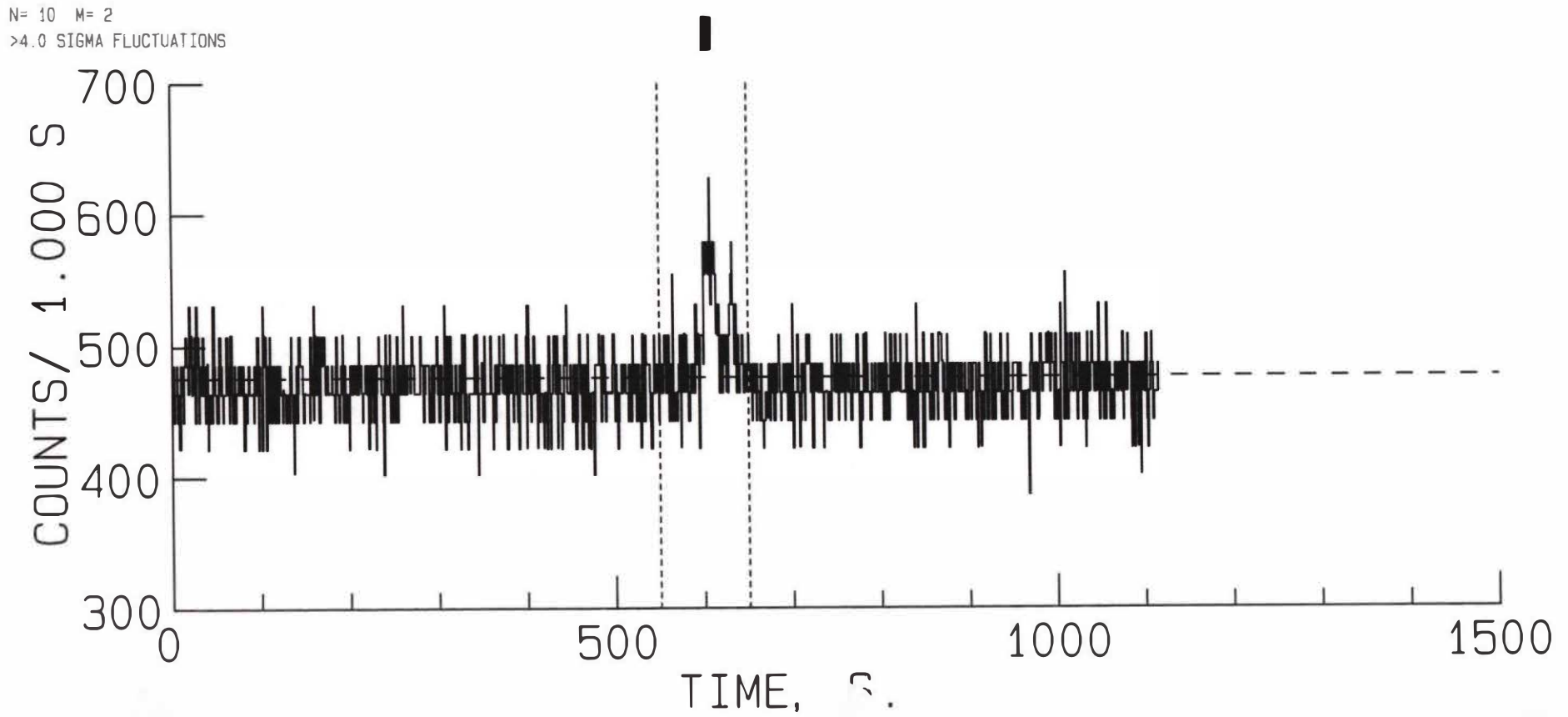
ULYSSES RT

4/12/97

17/ 6/92 19008.376 s

0.500 S INTERVALS REGROUPED BY 2

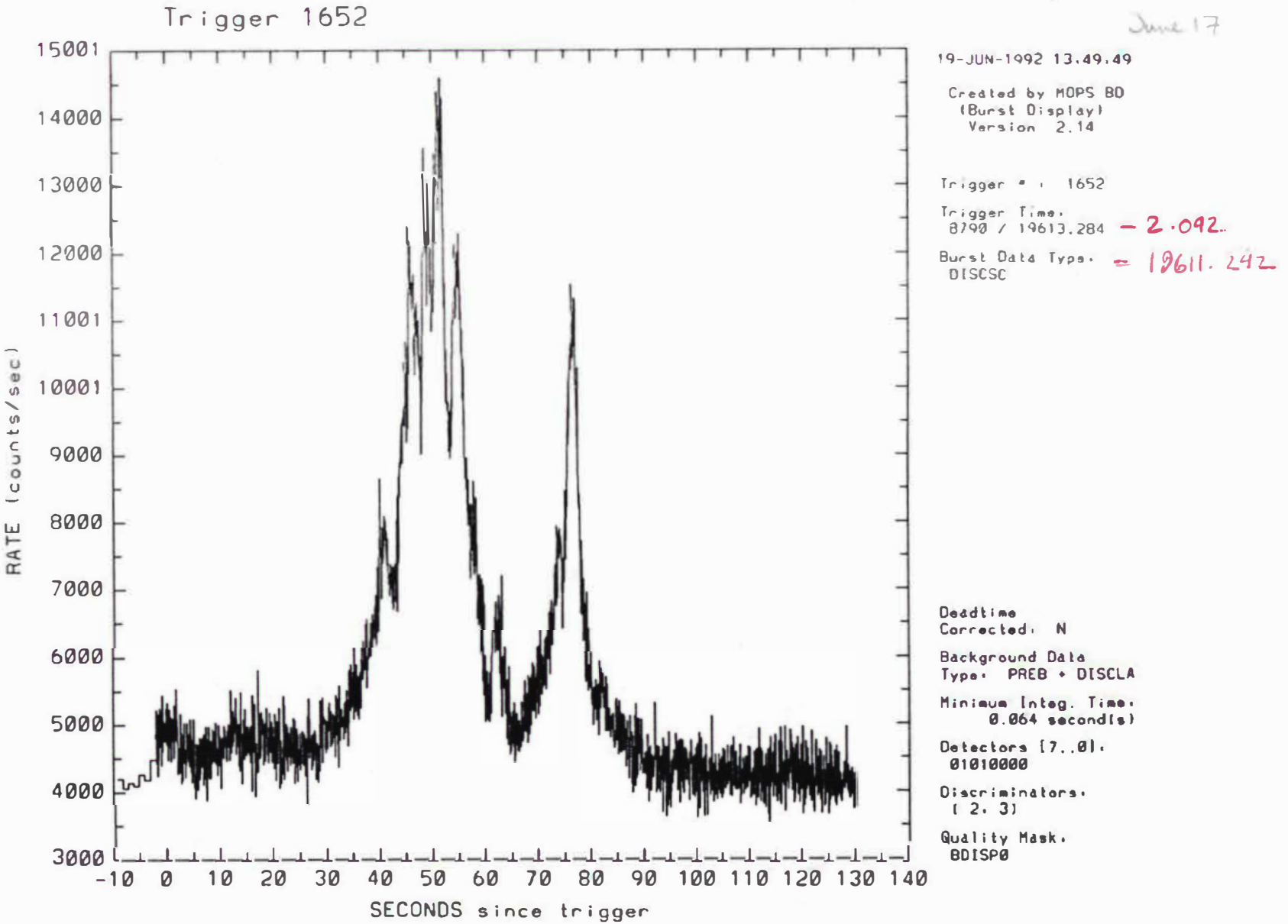
23- 155 keV



7.7×10⁻⁶ erg/cm²

19.9, 80.3

June 17



From @space6.ssl.berkeley.edu,@cmsa.berkeley.edu:X024862@JPNRKY00.BITNET Thu Nov 26 03:41:24 1
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*	04:22	HXS
09/12/91	18:36	HXS/RBM
21/12/91*	06:17	HXS/RBM
18/02/92*	18:44	HXS
06/04/92	02:45	HXS/RBM
19/04/92*	01:22	HXS/RBM
19/05/92*	16:30	HXS/RBM
17/06/92*	05:29	HXS
22/06/92	07:05	HXS/RBM
01/07/92*	19:39	HXS
11/07/92	16:09	HXS/RBM
31/07/92	17:07	HXS/RBM
16/08/92	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>

From khurley@space6.ssl.berkeley.edu Tue Dec 1 17:49:52 1992
Date: Tue, 1 Dec 92 17:43:25
From: khurley@space6.ssl.berkeley.edu
Content-Length: 1348

Dear Dr. Yoshimori

Thanks for the e-mail list. I have done a preliminary check, and here are the results.

27/11/91 4:22 Ulysses, BATSE triggers. Position is around 17:40,+50
21/12/91 6:17 No Ulysses or BATSE trigger*
18/02/92 18:44 Ulysses Rate Increase, no BATSE
19/04/92 1:22 PVO trigger, no Ulysses, no BATSE*
19/05/92 16:30 Ulysses Rate Increase, PVO trigger, no BATSE
17/06/92 5:29 Ulysses Rate Increase, BATSE
01/07/92 19:39 No Ulysses or BATSE trigger
11/07/92 16:09 Ulysses trigger, no BATSE
16/08/92 12:36 No Ulysses trigger, no BATSE*

* for the cases where there is no Ulysses trigger, I will search the real-time data (typically 0.25 - 0.5 second time resolution) over the appropriate time window (about +/- 3000 seconds for this time period). I'll keep you informed about the results.

Where I have indicated no BATSE response, this means either:

If there was a Ulysses trigger, we looked for a BATSE response and found none.

If there was no Ulysses trigger or rate increase, we probably did not look for a BATSE event. We would have been notified of one if it was intense, but if it was weak, we probably would not have received any information. Chryssa Kouveliotou of the BATSE team will be contacting you soon, and you might wish to request that she take a closer look at their data.

Best regards,

Kevin Hurley

```
         ********************
         *CATSEARCH PROGRAM*
         ********************

BATSE BURST # 1653
EVENT OF 1992 JUN 17 DAY OF YEAR=169
EVENT CROSSING TIME AT BATSE      : 67433. S. OR 18:43:52.8
COORDINATES ARE     .000     .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION:  19.500   21.200
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 17/ 6/  92 IS:
RA=  149.136 DEC=     7.227 DIST=     5.728 AU
BATSE-ULYSSES DISTANCE =  856961160. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1556.52 SECS.
CROSSING TIME AT ULYSSES     IS 68989. S. OR 19:09:49.3 +/-  489.89 SECONDS
```

ND

```
From WILSONB@ssl.msfc.nasa.gov Fri Jun 19 08:56:51 1992
Date:    Fri, 19 Jun 1992 10:56:14 -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.: 01653

TIME: TJD=8790 SECONDS=67434

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=057.9  AZIMUTH=276.3  ERROR=010.0 DEGREES

COMMENTS:
HIGHLY TIME VARIABLE EVENT, WITH MAJOR PEAKS AT TRIGGER TIME, ~13S LATER,
~22S LATER, AND 45 - 60S LATER. ONLY ~3500 C/S ABOVE BKG, ABOVE 25 KEV.
```

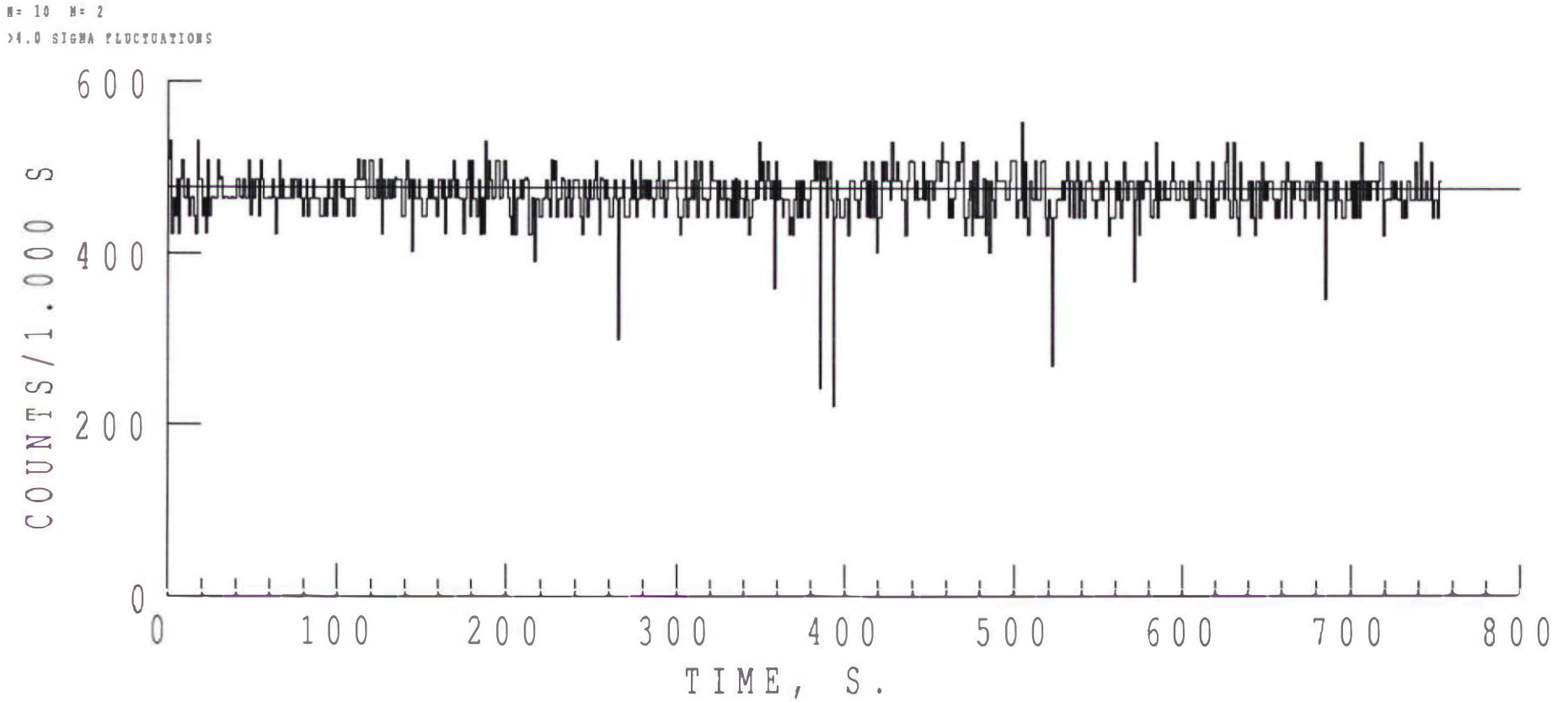
8/ 6/94

ULYSSES RT

17/ 6/92 68508.188 s

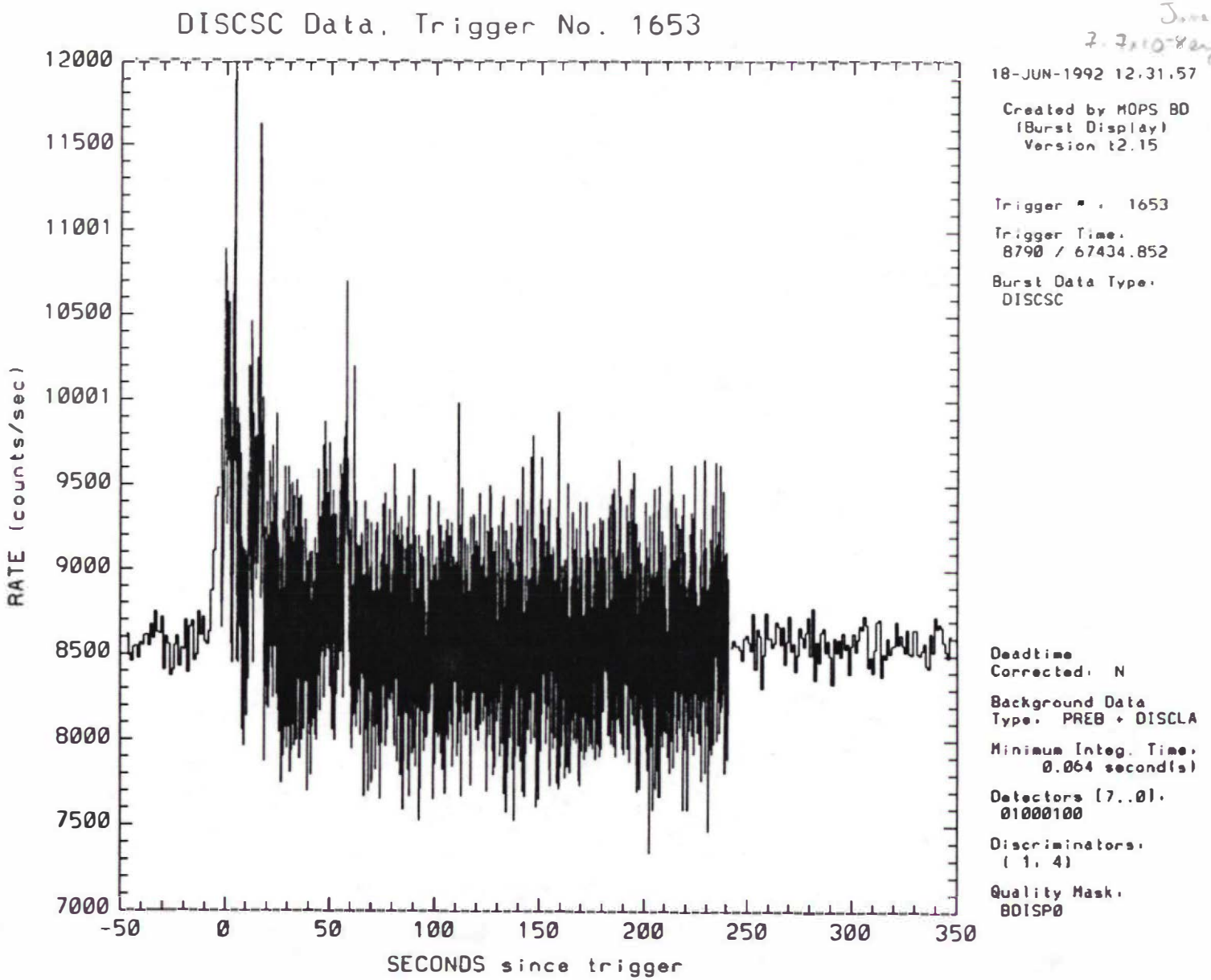
0.500 S INTERVALS REGROUPED BY 2

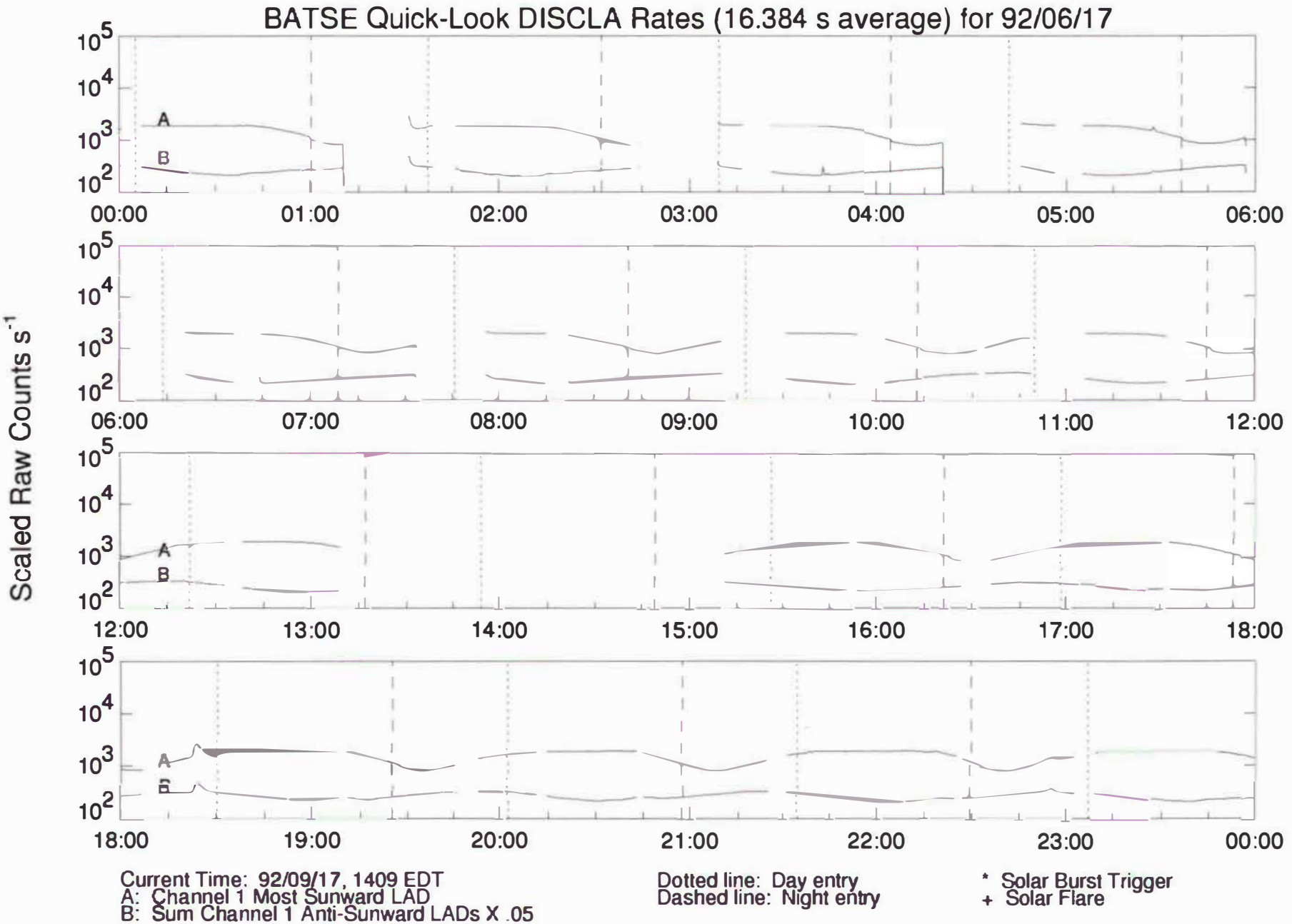
0- 0 keV

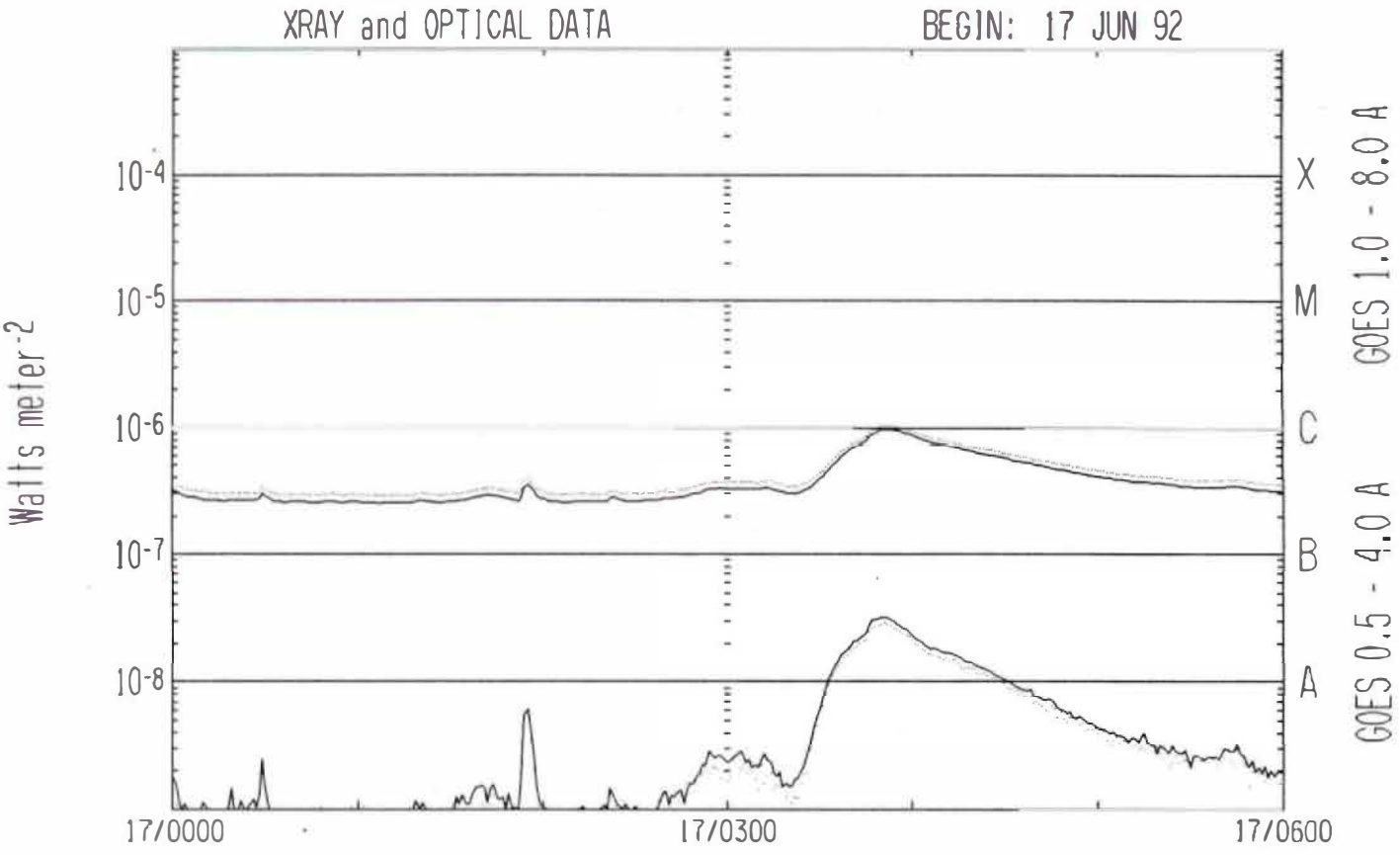


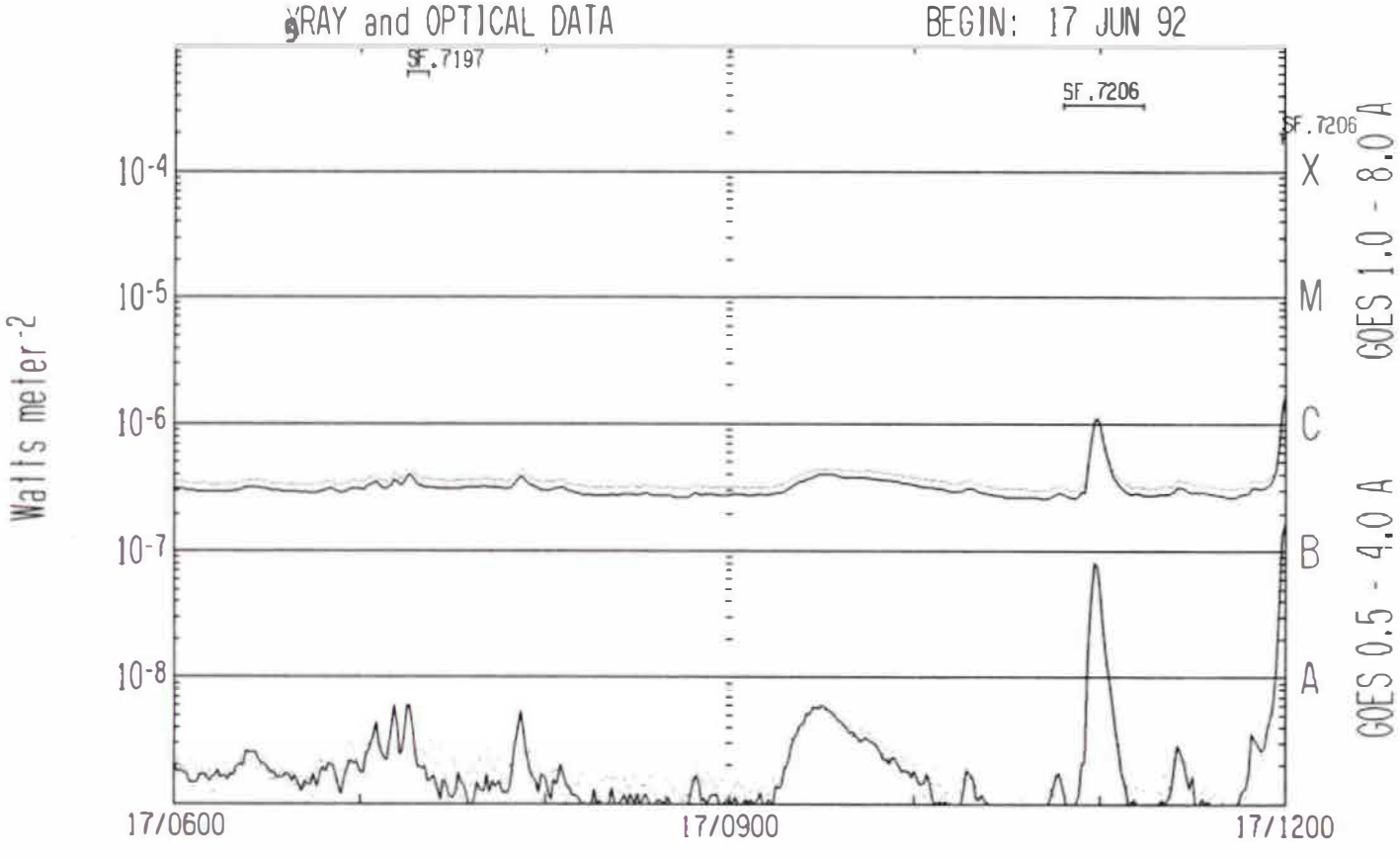
42.6, 32.2

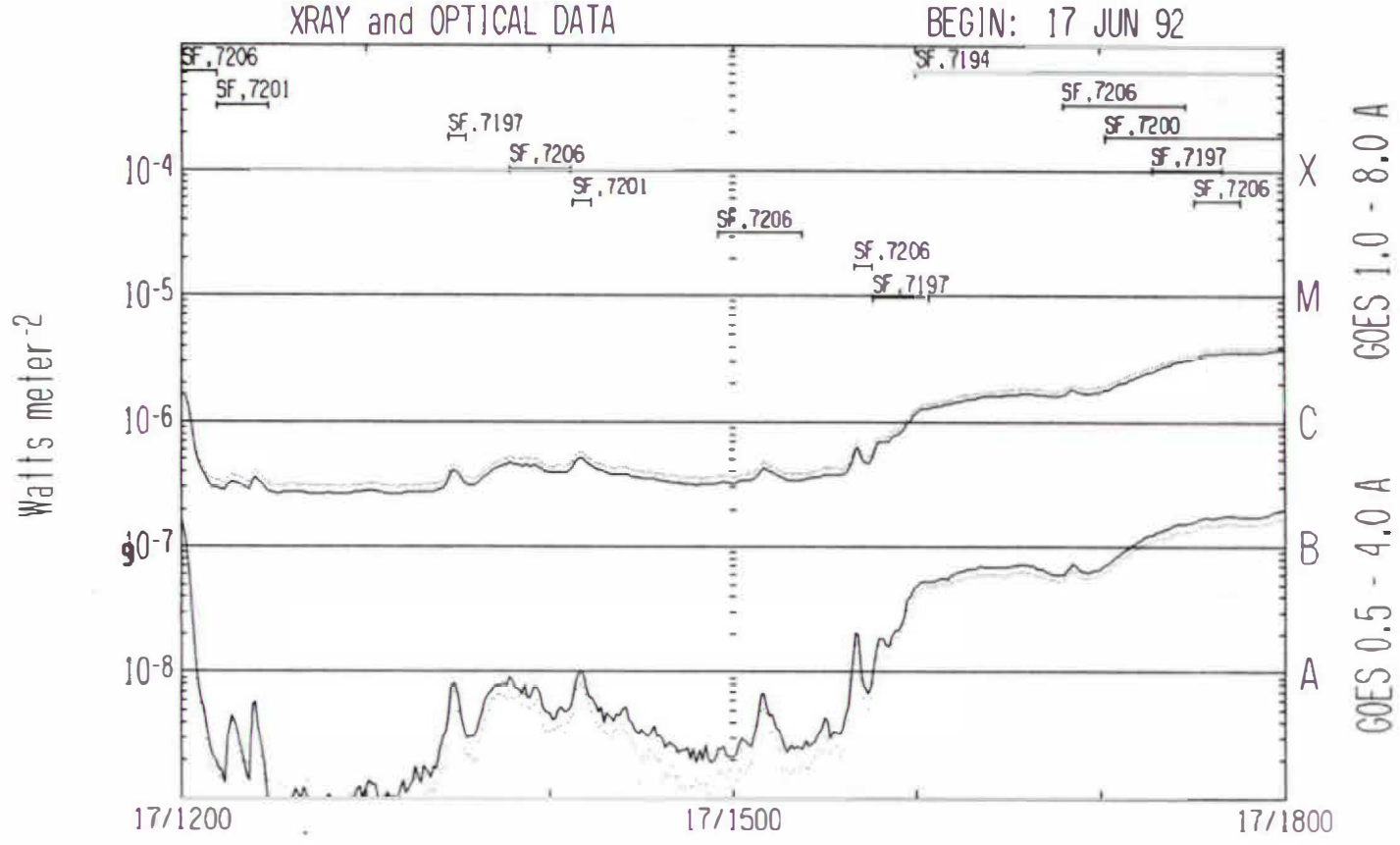
June 17
7.7×10^{-4} erg/cm^2

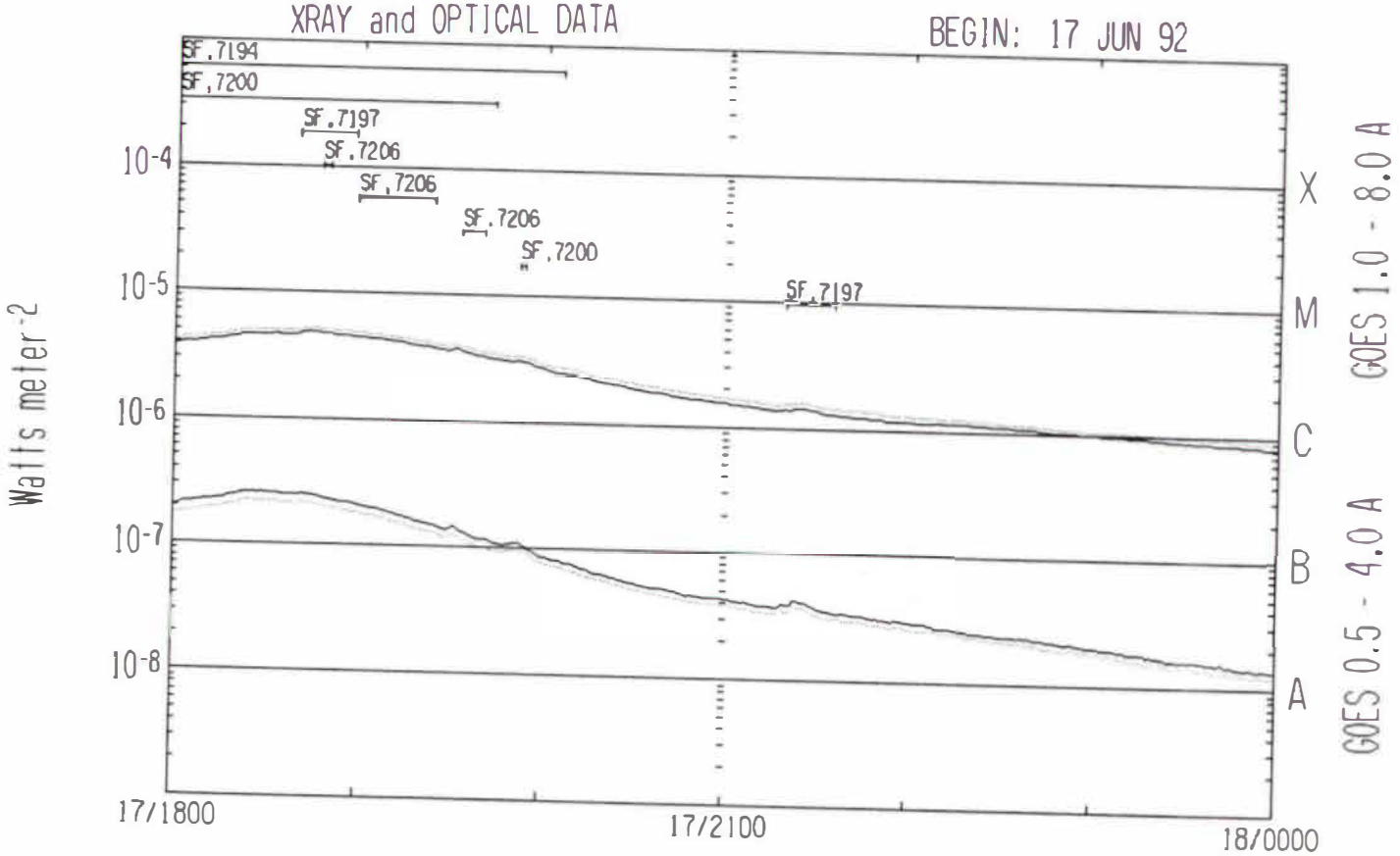



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/17
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1409 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

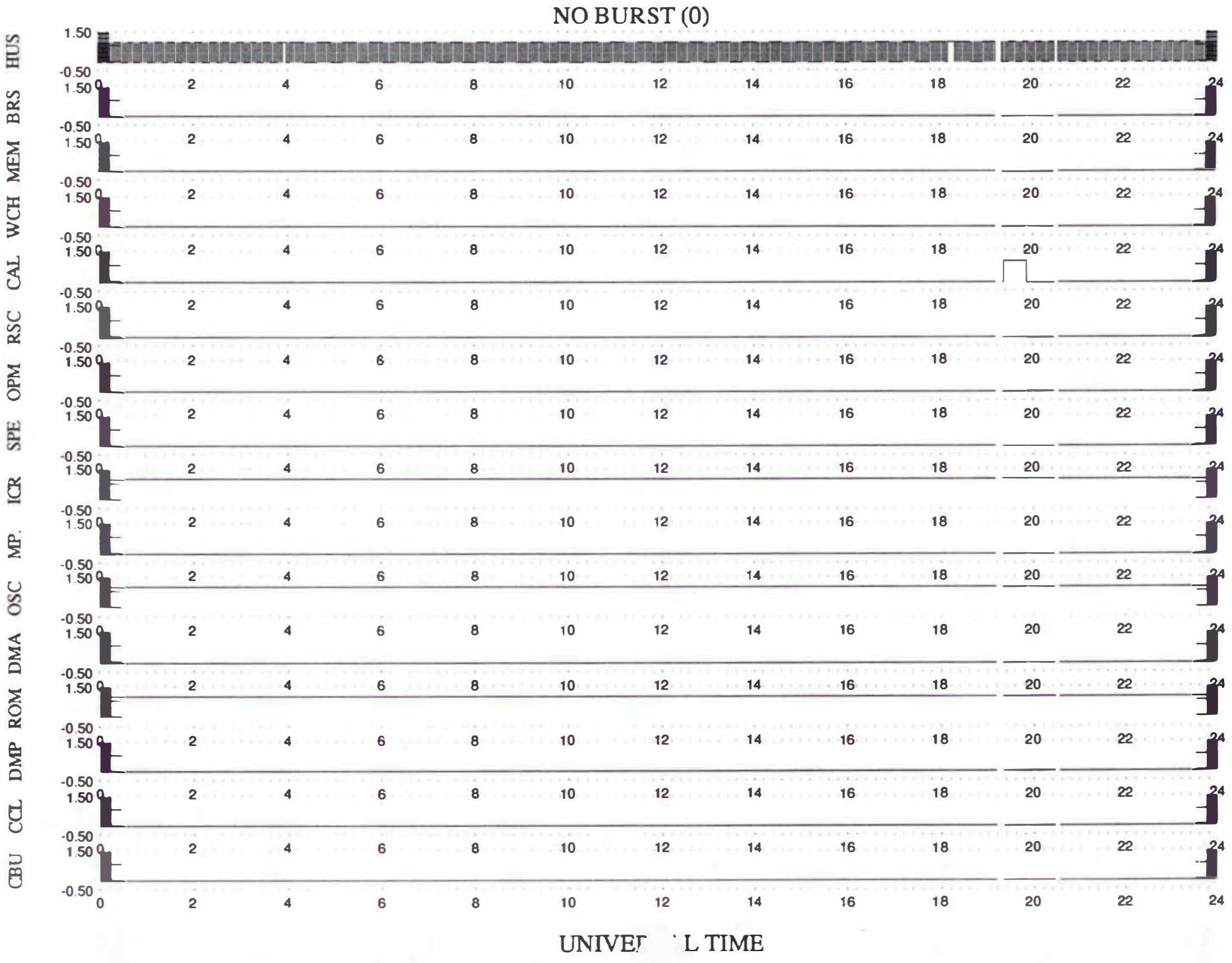

XRAY and OPTICAL DATA
BEGIN: 17 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
17/0000
17/0300
17/0600


XRAY and OPTICAL DATA
BEGIN: 17 JUN 92
SF.7197
SF.7206
SF.7206
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
17/0600
17/0900
17/1200


XRAY and OPTICAL DATA
BEGIN: 17 JUN 92
SF,7206
SF,7201
SF,7197
SF,7206
SF,7201
SF,7206
SF,7206
SF,7197
SF,7194
SF,7206
SF,7200
SF,7197
SF,7206
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
17/1200
17/1500
17/1800

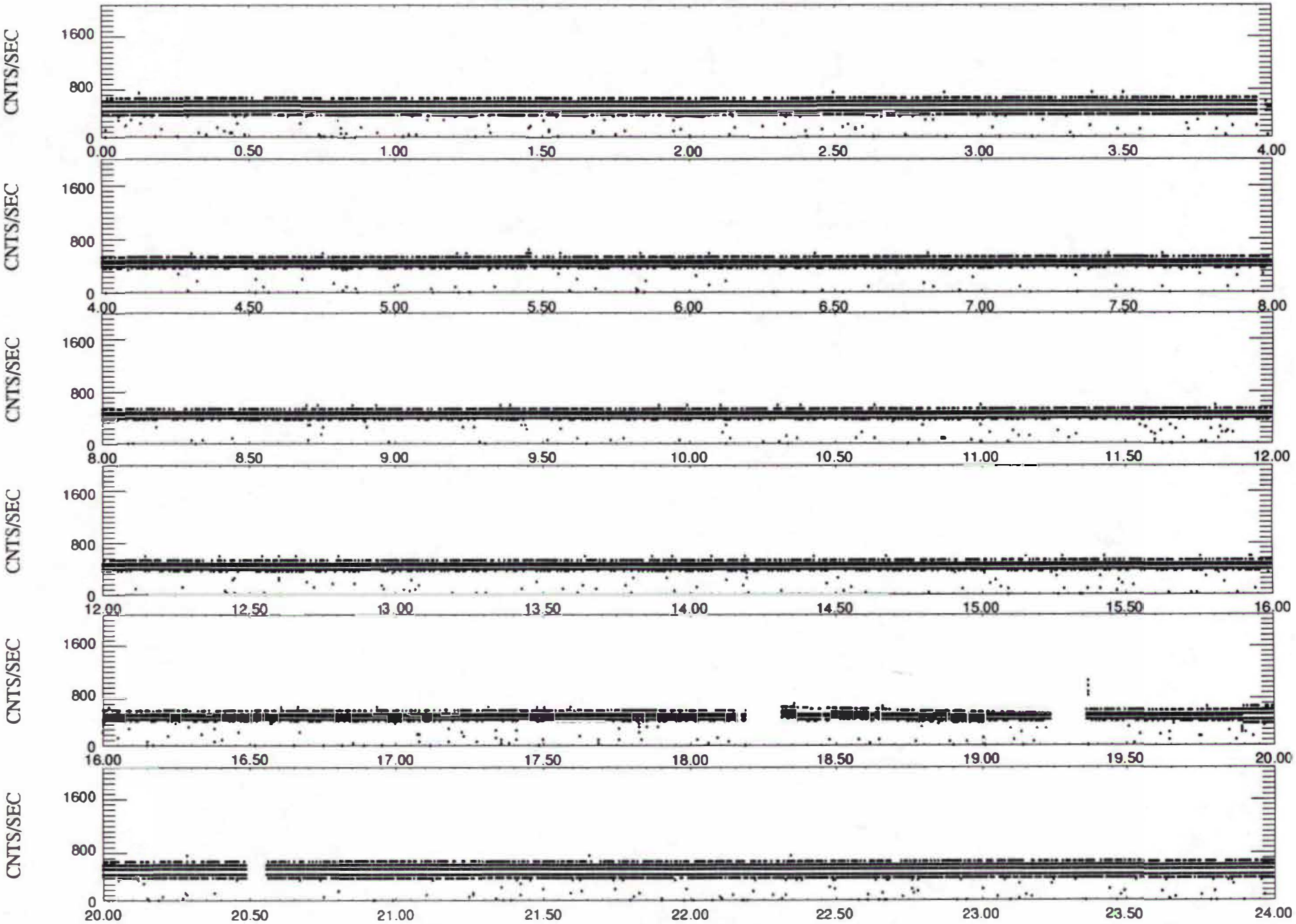

XRAY and OPTICAL DATA
BEGIN: 17 JUN 92
SF,7194
SF,7200
SF,7197
SF,7206
SF,7206
SF,7206
SF,7200
SF,7197
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
17/1800
17/2100
18/0000

HUS MODES EDR day 169, year 1992 to day 169, year 1992 7/8/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 169, year 1992 to day 169, year 1992 7/8/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

From BHAT@ssl.msfc.nasa.gov Mon Jun 22 05:58:44 1992
Date: Mon, 22 Jun 1992 7:58:22 -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: 1215

BATSE BURST TRIGGER

NO.: 1654

June 18

TIME: TJD=8791 SECONDS=68515

TYPE: ELE. PR SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
AN ELECTRON PRECIPITATION EVENT.

****
CATSEARCH PROGRAM
****

BATSE BURST # 1655
EVENT OF 1992 JUN 18 DAY OF YEAR=170
EVENT CROSSING TIME AT BATSE : 78608. S. OR 21:50:08.0
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 313.000 -46.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 18/ 6/ 92 IS:
RA= 149.203 DEC= 7.168 DIST= 5.742 AU
BATSE-ULYSSES DISTANCE = 859067528. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2153.78 SECS.
CROSSING TIME AT ULYSSES IS 80762. S. OR 22:26:01.7 +/- 410.86 SECONDS

NO

From BHAT@ssl.msfc.nasa.gov Mon Jun 22 06:05:11 1992
Date: Mon, 22 Jun 1992 8:05:07 -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.: 1655

TIME: TJD=8791 SECONDS=78610

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142.4 AZIMUTH=281.2 ERROR= DEGREES

COMMENTS:
A WEAK BURST LASTING ABOUT 35 SEC HAS A REASONABLY SMOOTH SINGLE BROAD PULSE PROFILE. RISE TIME DECREASES WITH ENERGY AND NO SIGNIFICANT SIGNAL IS SEEN ABOVE 300 KEV.

No trig

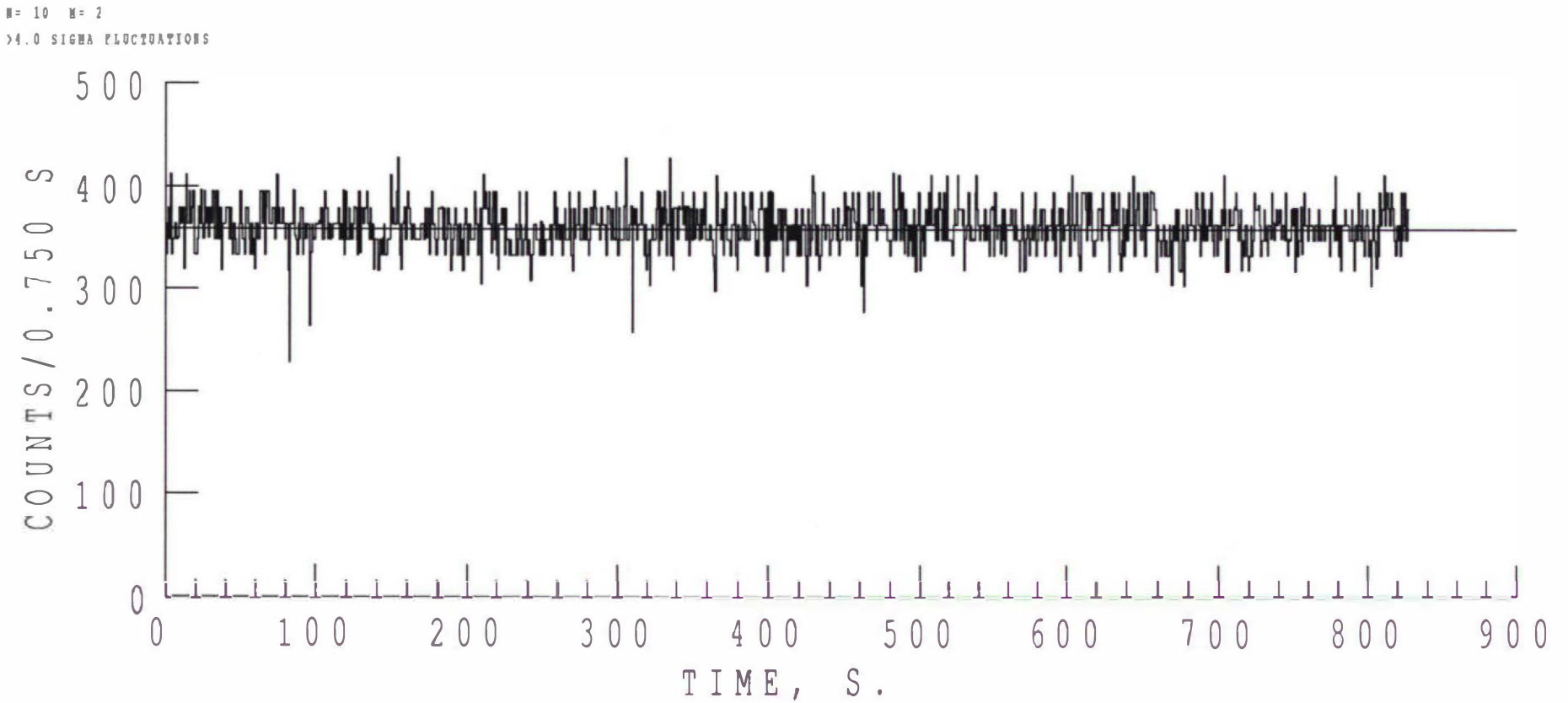
8/ 6/94

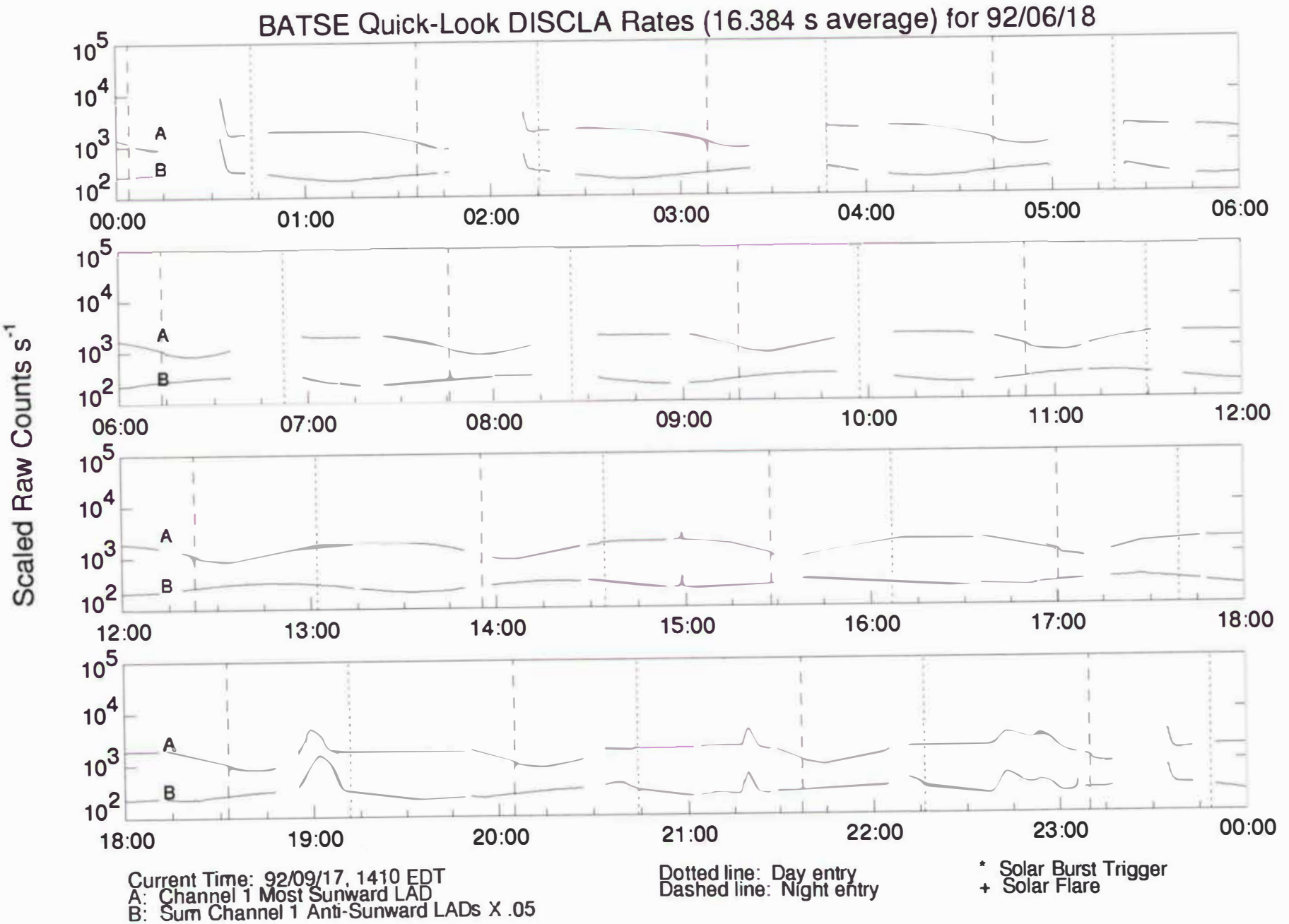
ULYSSES RT

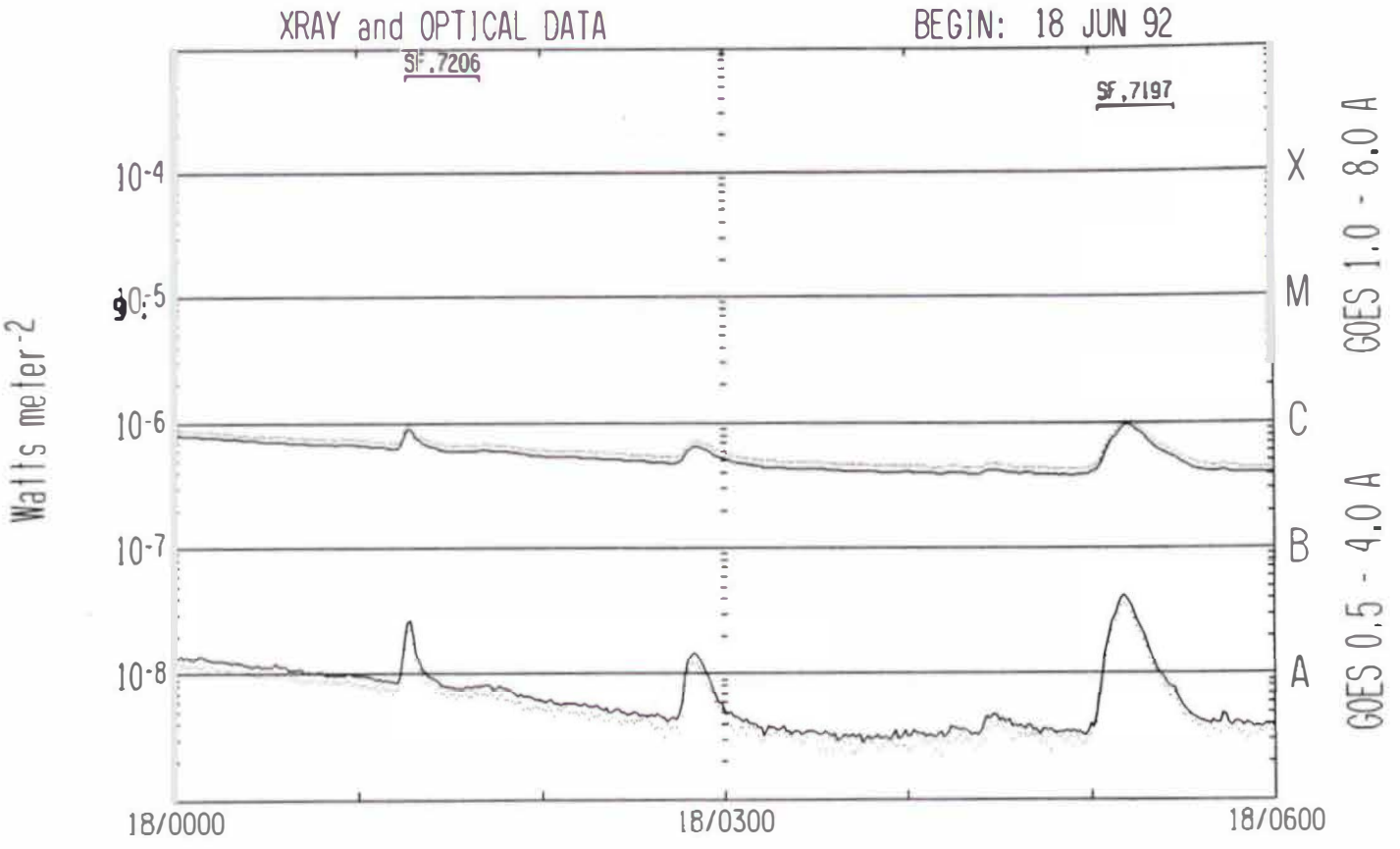
18/ 6/92 80352.016 s

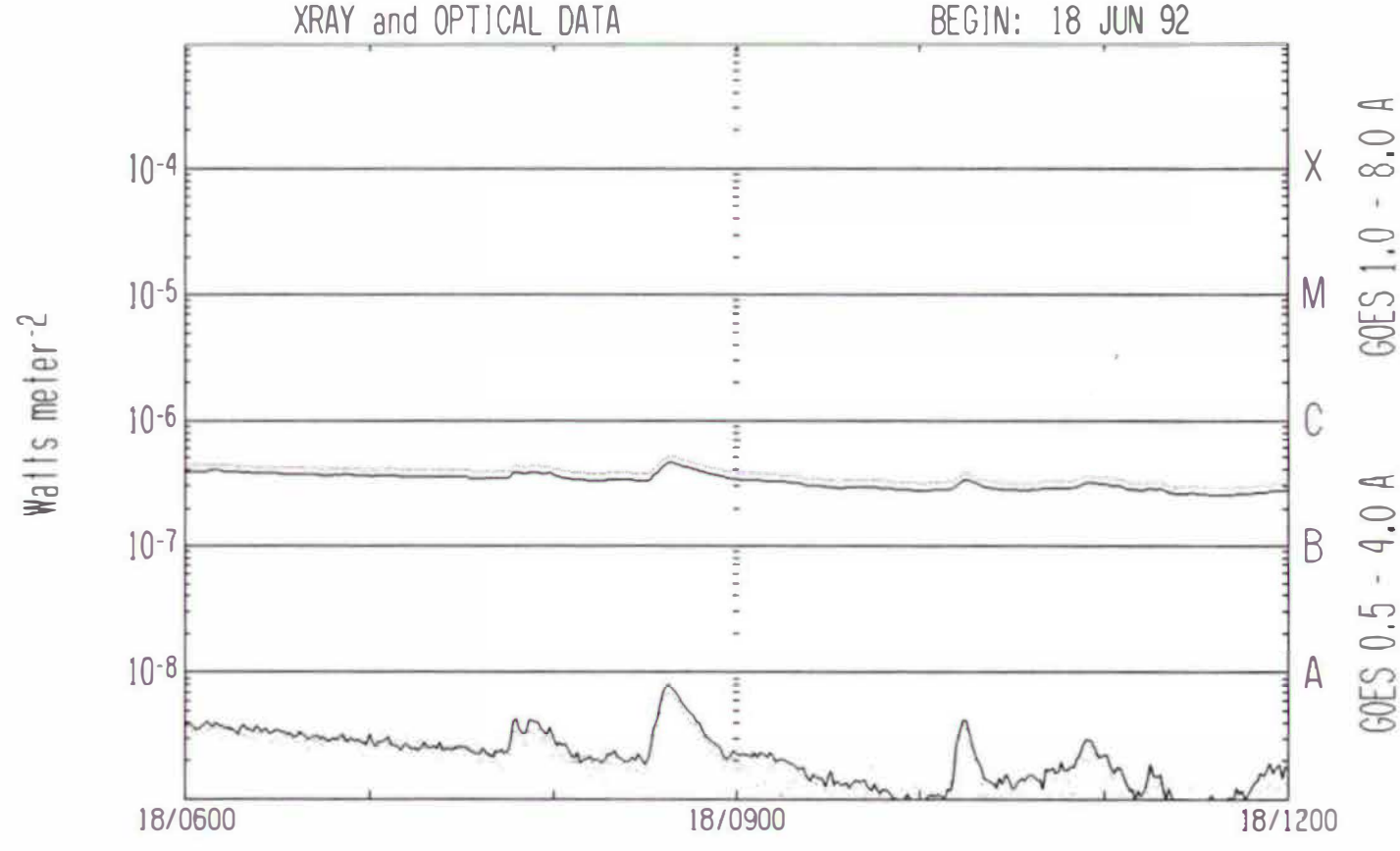
0.250 S INTERVALS REGROUPED BY 3

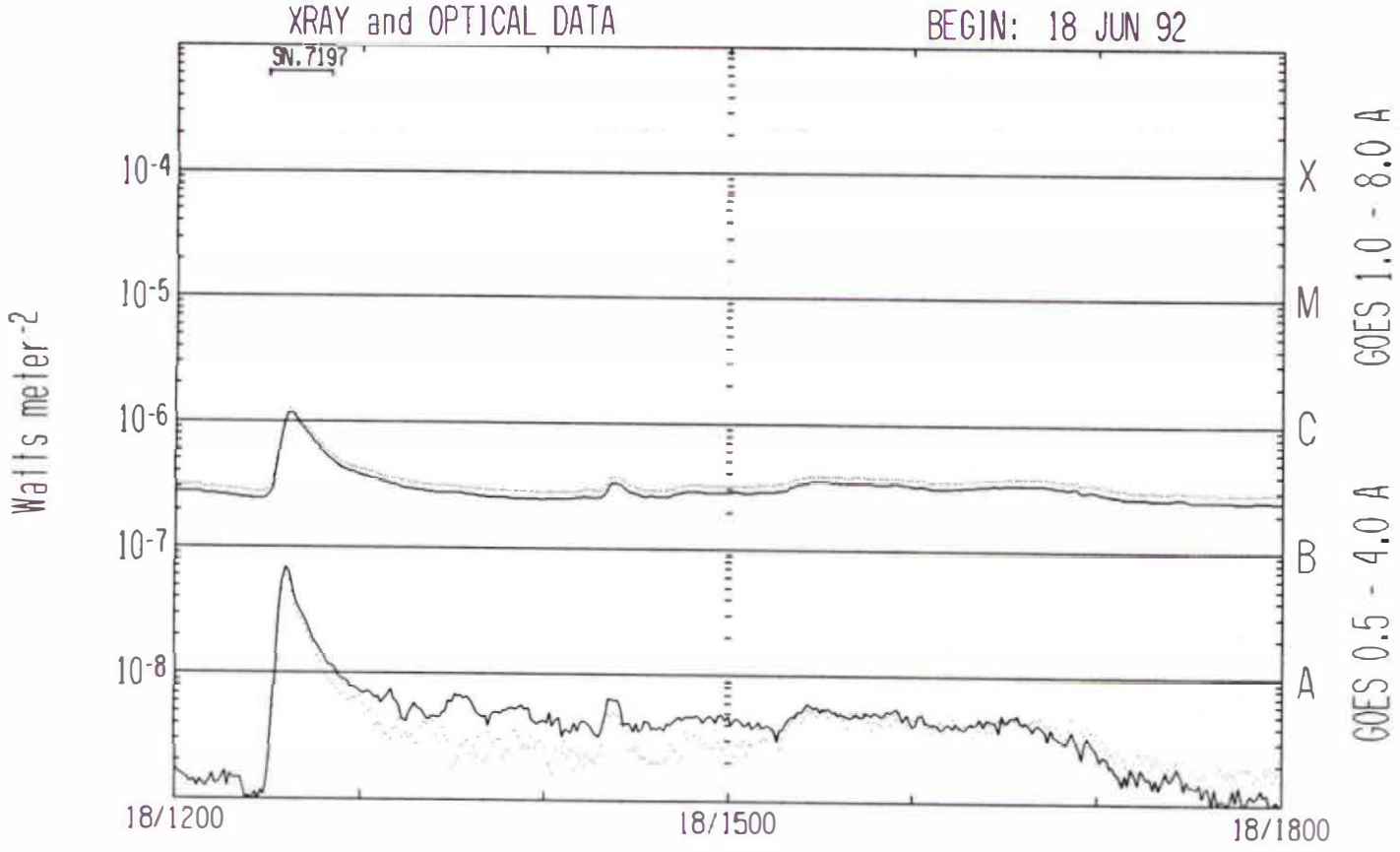
0- 0 keV

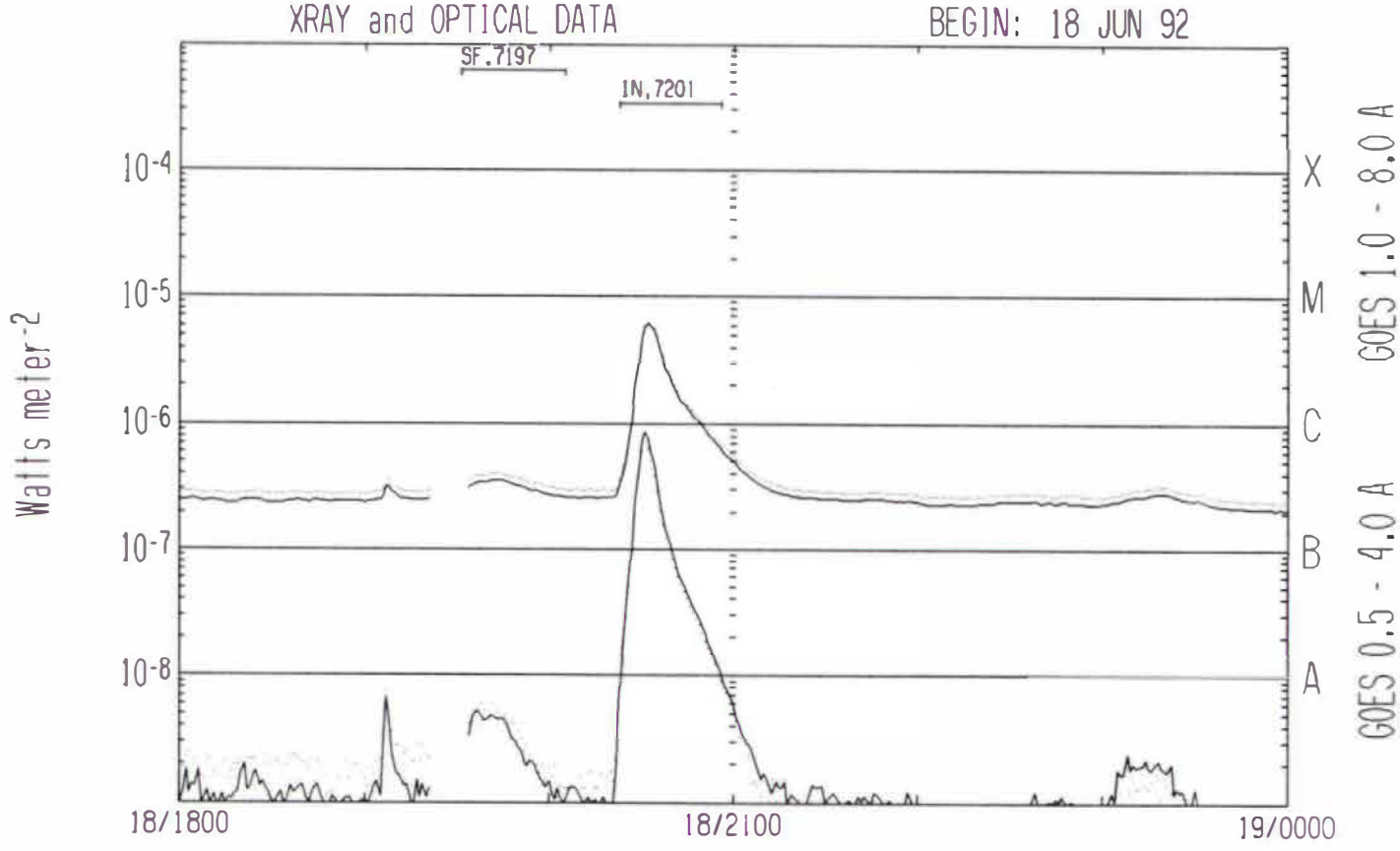



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/18
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1410 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

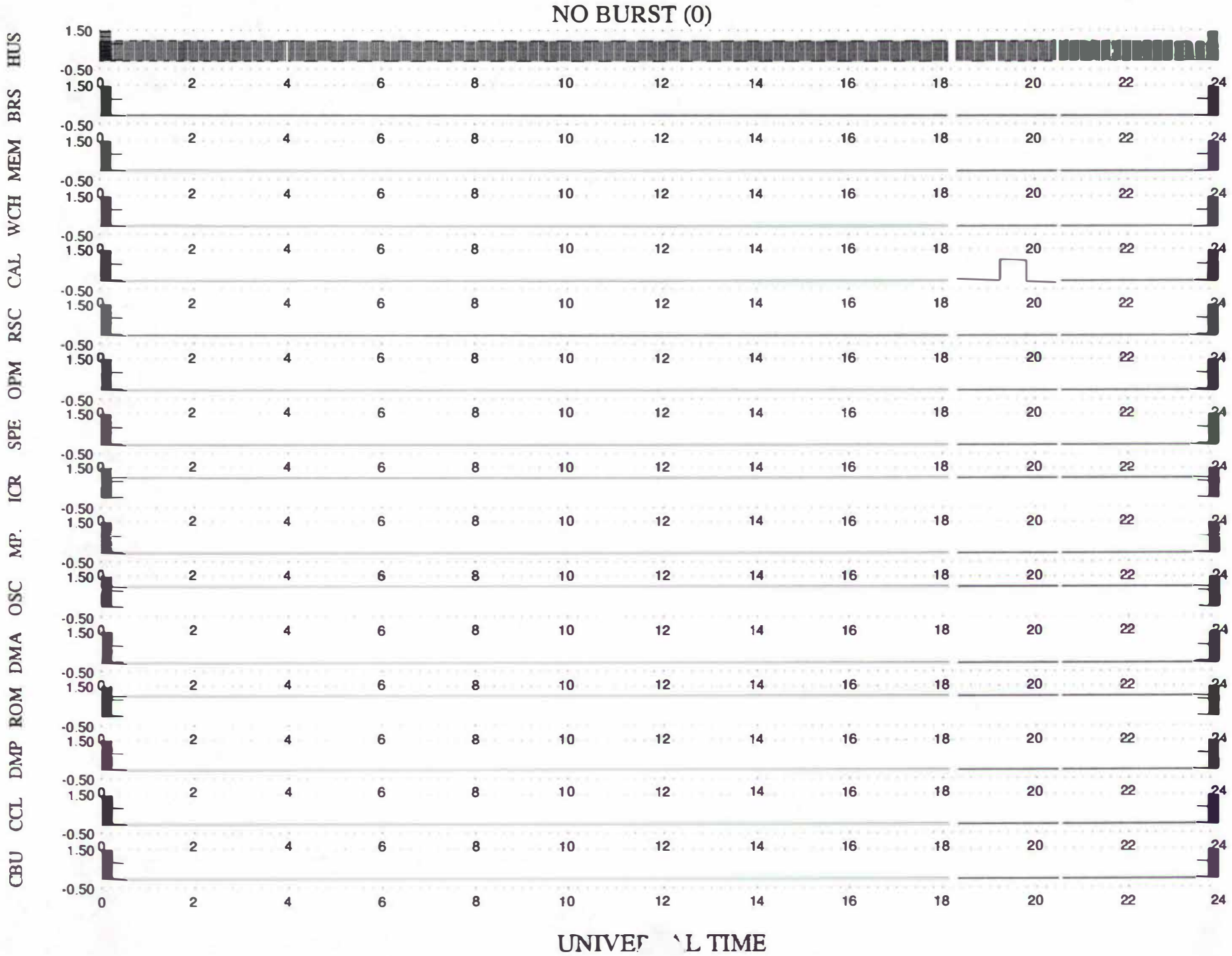

XRAY and OPTICAL DATA
BEGIN: 18 JUN 92
SF,7206
SF,7197
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
18/0000
18/0300
18/0600


XRAY and OPTICAL DATA
BEGIN: 18 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
18/0600
18/0900
18/1200


XRAY and OPTICAL DATA
BEGIN: 18 JUN 92
SN.7197
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
18/1200
18/1500
18/1800

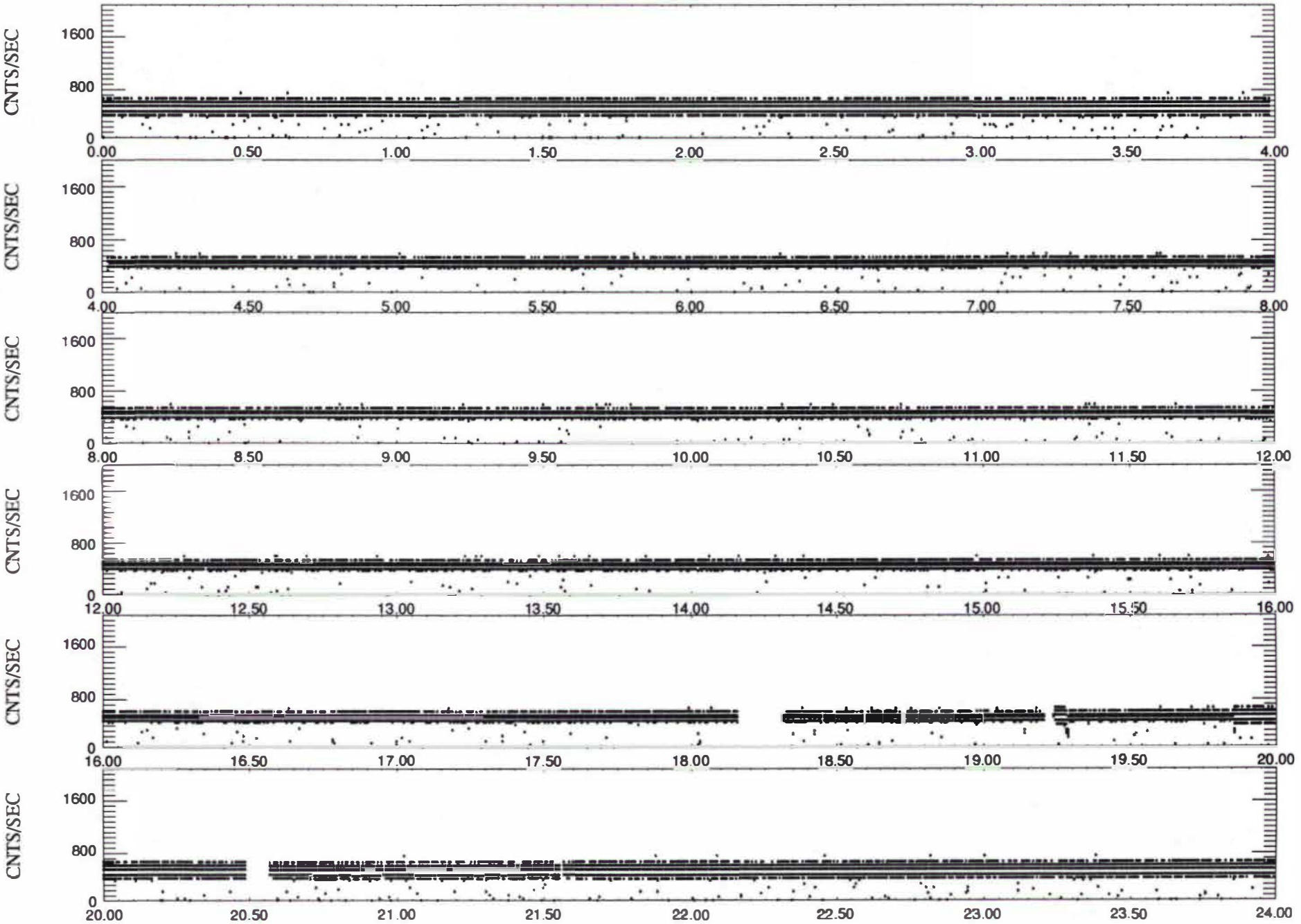

XRAY and OPTICAL DATA
BEGIN: 18 JUN 92
SF.7197
1N,7201
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
18/1800
18/2100
19/0000

HUS MODES EDR day 170, year 1992 to day 170, year 1992 7/8/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 170, year 1992 to day 170, year 1992 7/8/92

CALIBRATION DATA INCLUDED



UNIVE[illegible]L TIME

```
**********
*CATSEARCH PROGRAM*
**********

BATSE BURST # 1656
EVENT OF 1992 JUN 19 DAY OF YEAR=171
EVENT CROSSING TIME AT BATSE     : 30782. S. OR 08:33:01.5
COORDINATES ARE    .000    .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 148.400  -64.900
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON 19/ 6/  92 IS:
RA=  149.272 DEC=    7.107 DIST=    5.756 AU
BATSE-ULYSSES DISTANCE =  861152952. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -887.17 SECS.
CROSSING TIME AT ULYSSES    IS 29894. S. OR 08:18:14.3 +/-  510.86 SECONDS
```

No

```
From KOSHUT@ssl.msfc.nasa.gov Mon Jun 22 07:07:28 1992
Date:    Mon, 22 Jun 1992 9:07:28 -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: 1659

                BATSE BURST TRIGGER
NO.: 01656
```

June 19

```
TIME: TJD=8792 SECONDS=30783

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=123.5  AZIMUTH=24.2   ERROR=      DEGREES

COMMENTS:
BURST OF ~ 190 SECOND DURATION, WITH PEAK RATE AT ~ TRIGGER + 150 SECONDS.
THE TIME HISTORY CONSISTS OF 2 PERIODS OF EMISSION, SEPERATED BY BACKGROUND.
THE FIRST PERIOD IS FROM TRIGGER - 13 SECONDS TO TRIGGER + 5 SECONDS.
THE SECOND IS FROM TRIGGER + 110 SECONDS TO TRIGGER + 180 SECONDS.
THE SECOND PERIOD OF EMISSION IS MARGINALLY OBSERVED ABOVE 300 KEV, WHILE
THE FIRST IS NOT.  THE SECOND PERIOD OF EMISSION CONSISTS OF SIGNIFICANT
STRUCTURES WITH DURATIONS OF ~ 1 - 5 SECONDS.
```

No trig

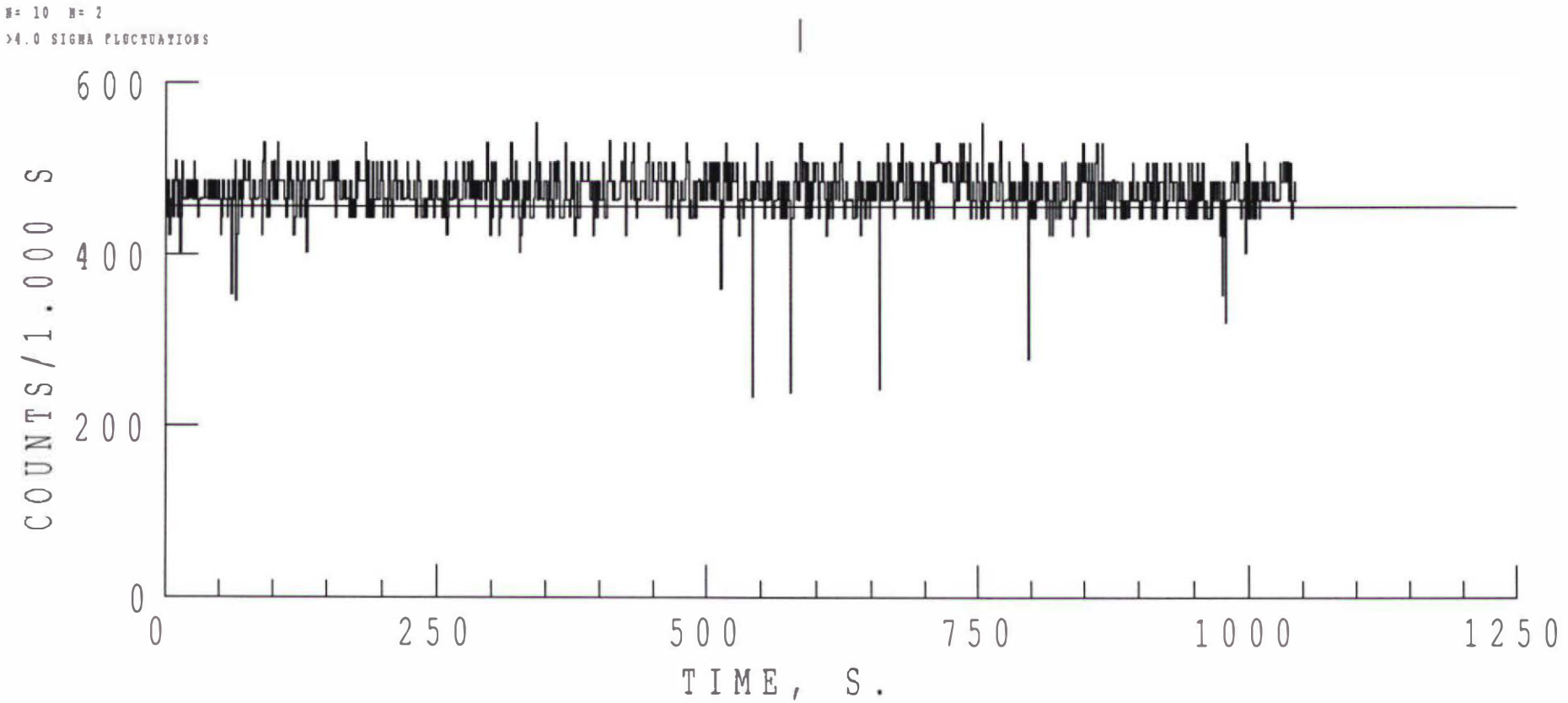
8/ 6/94

ULYSSES RT

19/ 6/92 29376.340 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



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/0
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 June 19
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 AVALIABLE 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-maillld 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

are well fitted with an optically thin thermal bremsstrahlung (OTTB) function with temperatures between 30 and 40 keV (refs 4, 14) and show no evidence for spectral evolution[4]. The total numbers of events so far observed from SGR0526−66, SGR1900+14 and SGR1806−20 are 16, 3 and over 100, respectively, with intervals between events that vary stochastically from hours to years.

The first SGR event detected with BATSE[7] (Fig. 1*a* and *b*) consists of two pulses separated by ~0.5 s. The first pulse (Fig. 1*a*) lasts 40 ms and has a trapezoidal shape. It initially rises

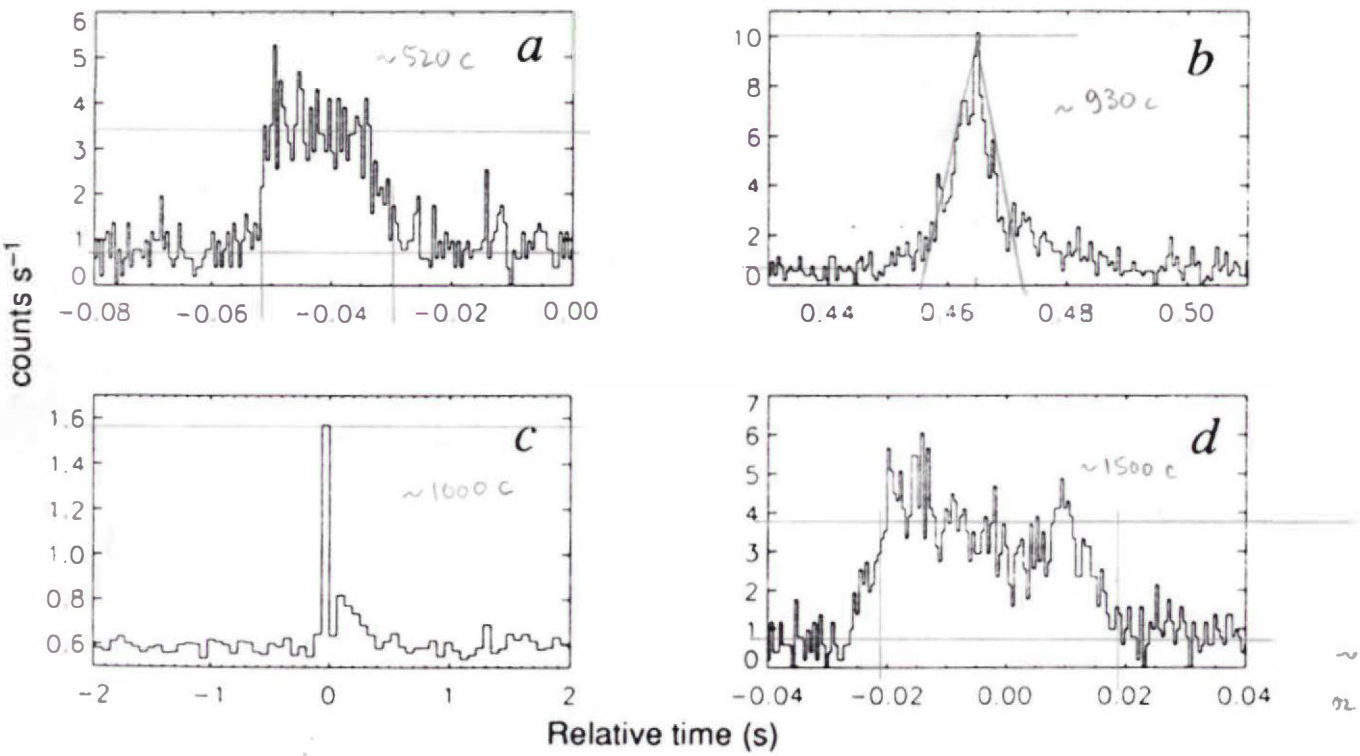


FIG. 1 Light curves of the three SGR bursts detected with the Burst and Transient Source Experiment (BATSE) on the Compton Gamma Ray Observatory. BATSE is unique in combining good sensitivity to weak γ-ray and SGR-like bursts with the capability of determining their locations in a single experiment. *a*, *b*, First and second pulse, respectively, of the 19 June 1992 trigger. The counts are integrated between 20 and 100 keV. Time resolution is 0.512 ms. *c*, Event of 8 July 1992 recorded with 64-ms time resolution (the only resolution available). The initial spike of <64 ms appears only up to 100 keV. *d*, Event of 19 August 1992 recorded with 0.512-ms resolution between 20 and 100 keV. Notice the similarity in structure between *a* and *d*.

****
CATSEARCH PROGRAM
****

BATSE BURST # 1657
EVENT OF 1992 JUN 19 DAY OF YEAR=171
EVENT CROSSING TIME AT BATSE : 47037. S. OR 13:03:57.0
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 136.000 35.800
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 19/ 6/ 92 IS:
RA= 149.272 DEC= 7.107 DIST= 5.756 AU
BATSE-ULYSSES DISTANCE = 861152952. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=148.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2458.02 SECS.
CROSSING TIME AT ULYSSES IS 44579. S. OR 12:22:59.0 +/- 270.73 SECONDS

ND

From KOSHUT@ssl.msfc.nasa.gov Mon Jun 22 07:12:50 1992
Date: Mon, 22 Jun 1992 9:12:56 -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.: 1657

TIME: TJD=8792 SECONDS=47039

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=51.1 AZIMUTH=90.6 ERROR= DEGREES

COMMENTS:
BURST OF ~ 10 SECOND DURATION, WITH MARGINAL EMISSION ABOVE 300 KEV.
TIME HISTORY CONSISTS OF A SINGLE PULSE WITH A RELATIVELY SLOW RISE AND DECAY.

No fig

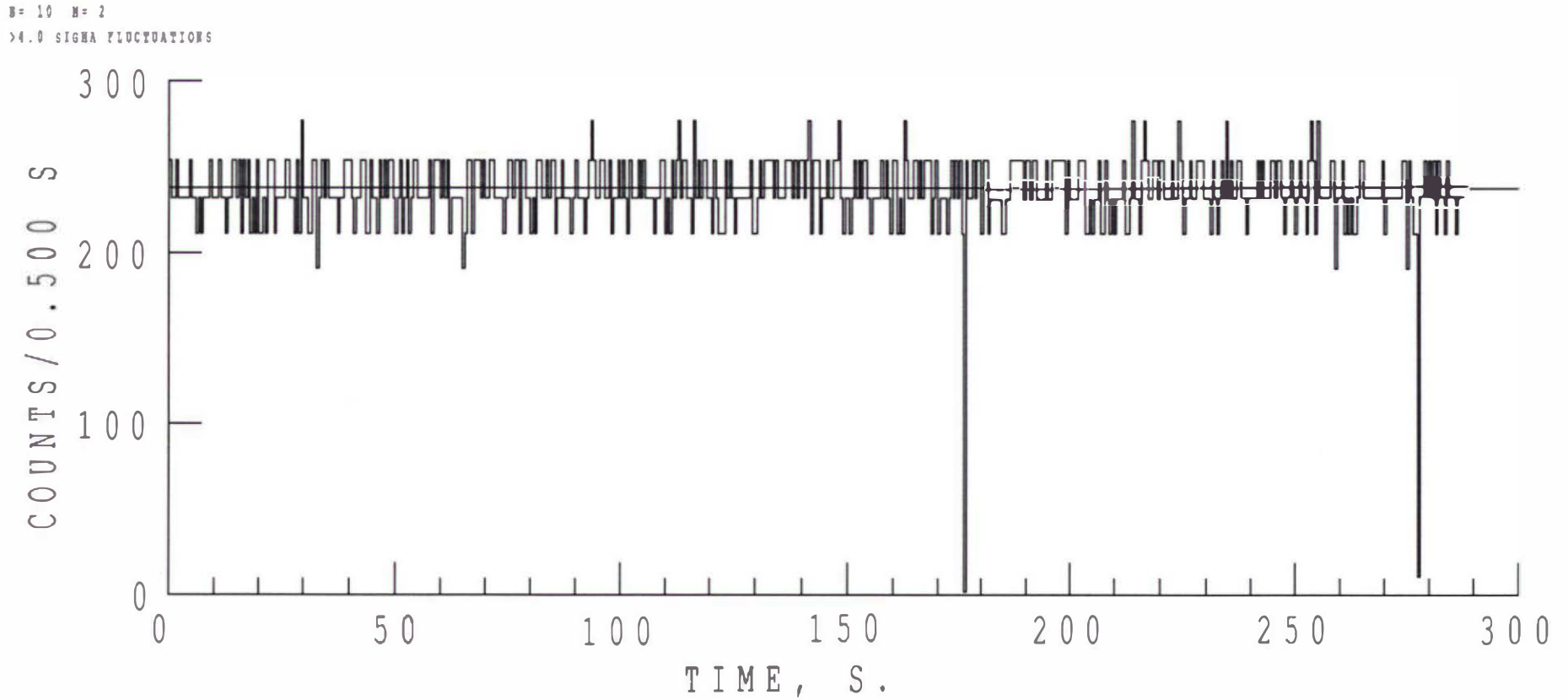
```
          ********************
          *CATSEARCH PROGRAM*
          ********************

 ATSE BURST # 1657
EVENT OF 1992 JUN 19 DAY OF YEAR=171
EVENT CROSSING TIME AT BATSE      : 47037. S. OR 13:03:57.0
COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 155.280   22.470
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON 19/ 6/  92 IS:
RA=  149.272 DEC=    7.107 DIST=    5.756 AU
BATSE-ULYSSES DISTANCE =  861152952. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL    DIRECTION=163.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2755.38 SECS.
CROSSING TIME AT ULYSSES    IS 44282. S. OR 12:18:01.6 +/-  149.11 SECONDS
```

9/11/95

ULYSSES RT

19/ 6/92 44136.078 s

0- 0 keV



From KOSHUT@ssl.msfc.nasa.gov Wed Jun 24 11:11:13 1992
Date: Wed, 24 Jun 1992 13:11:22 -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: 1731

BATSE BURST TRIGGER

NO.: 01658

TIME: TJD=8792 SECONDS=64668

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

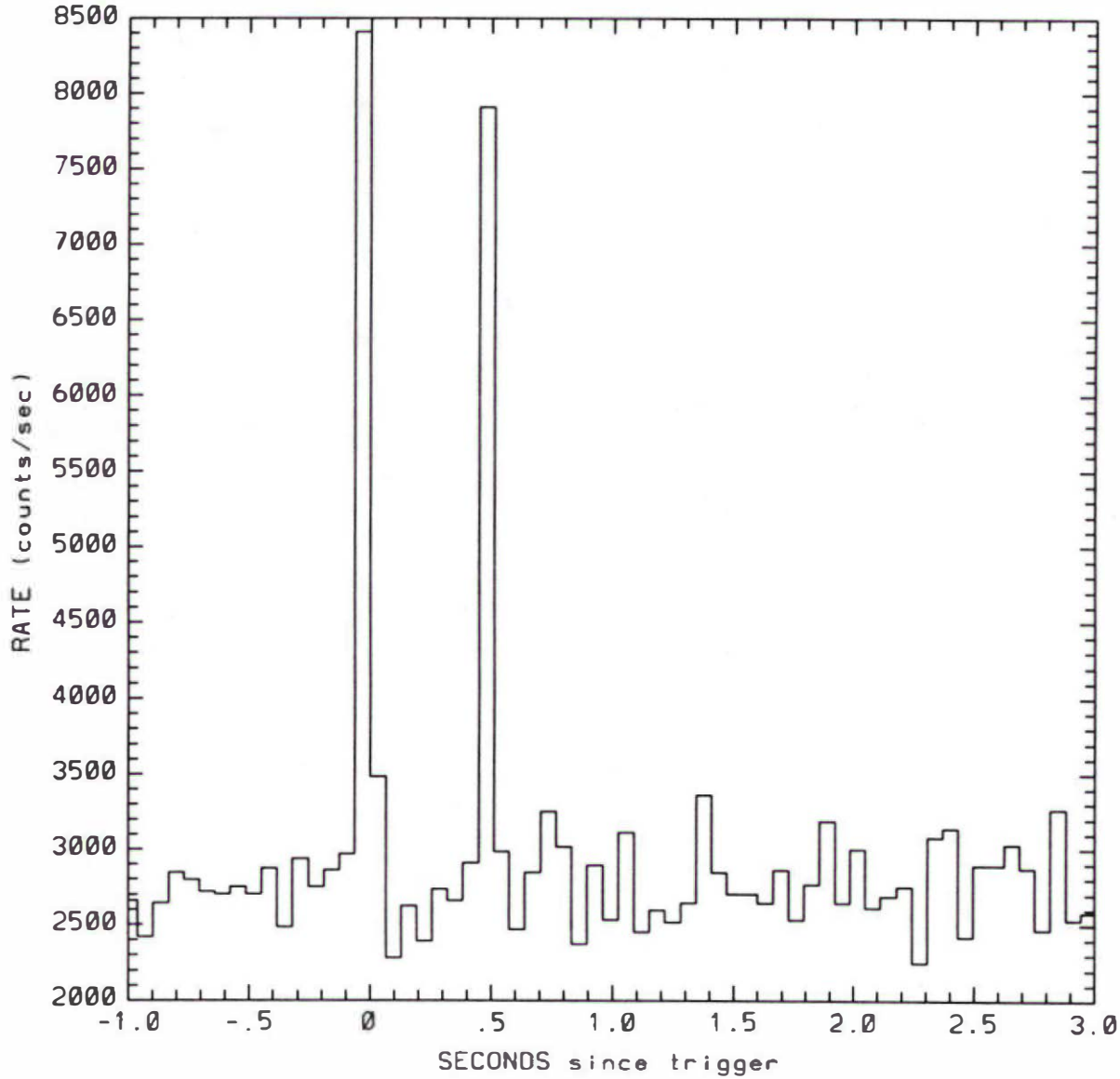
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=120.7 AZIMUTH=199.1 ERROR= DEGREES

COMMENTS:
THIS BURST HAS 3 PERIODS OF EMISSION. THE FIRST IS A SPIKE (MARGINALLY OBSERVED ABOVE 100 KEV) PEAKING AT TRIGGER - 0.04 SEC, WITH A ~ 20 MS DURATION. THE SECOND IS ALSO A SPIKE (MARGINAL ABOVE 100 KEV) PEAKING AT ~ TRIGGER + 0.46 SEC, WITH A ~ 20 MS DURATION. THE THIRD PERIOD BEGINS AT ~ TRIGGER + 142 SEC, PEAKS AT ~ T + 148 SEC, WITH A ~ 23 SEC DURATION. EMISSION IN THE THIRD PERIOD IS MARGINALLY (!!!) OBSERVED ABOVE 300 KEV. AT THIS TIME IT IS NOT CLEAR WHETHER OR NOT THE LOCATION OF THE THIRD PERIOD IS CONSISTENT WITH THE FIRST TWO SPIKES.

June 19 '92
SGR



3-JUL-1992 19:47:28

Created by MOPS BD
(Burst Display)
Version t2.15

Trigger # : 1658

Trigger Time:
8792 / 64668.260 −2.042

Burst Data Type:
DISCSC = 64666.218

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..0]:
10100000

Discriminators:
[2, 2]

Quality Mask:
BDISP0

```
        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,CMPLX,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,ULYSS
          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 ANGSUN=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
```

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

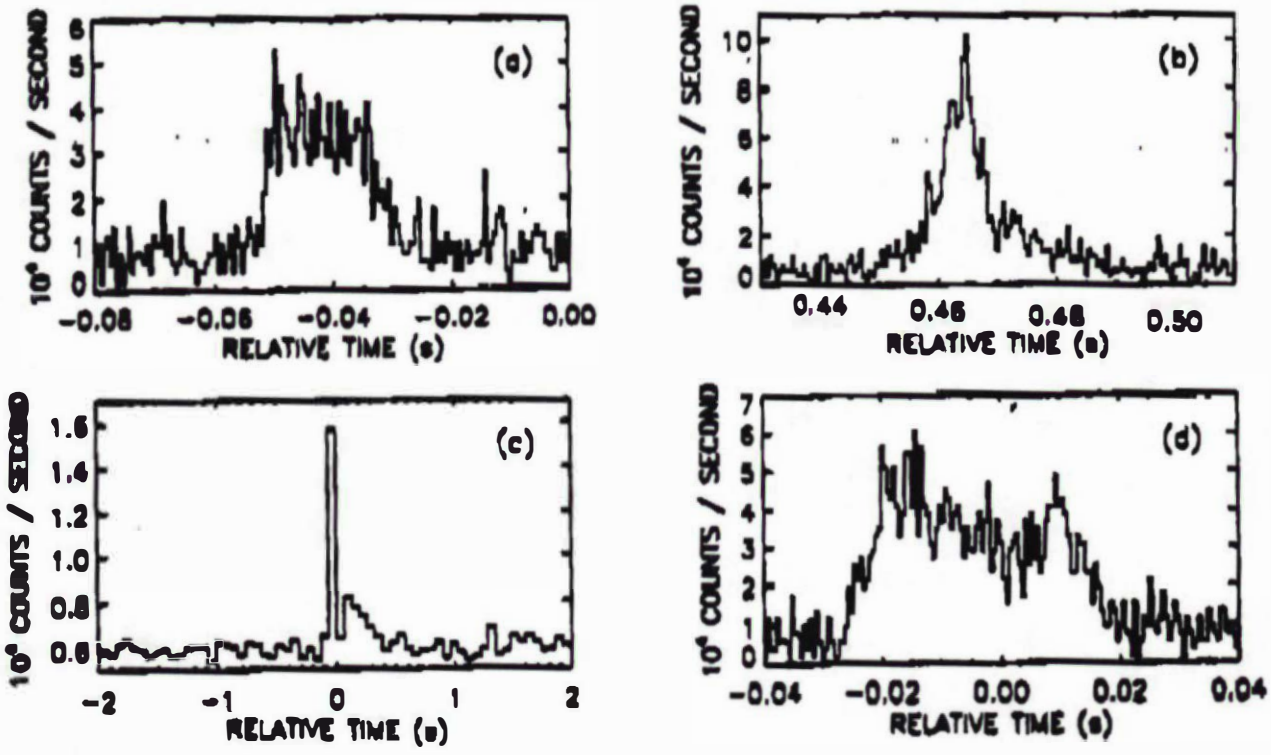
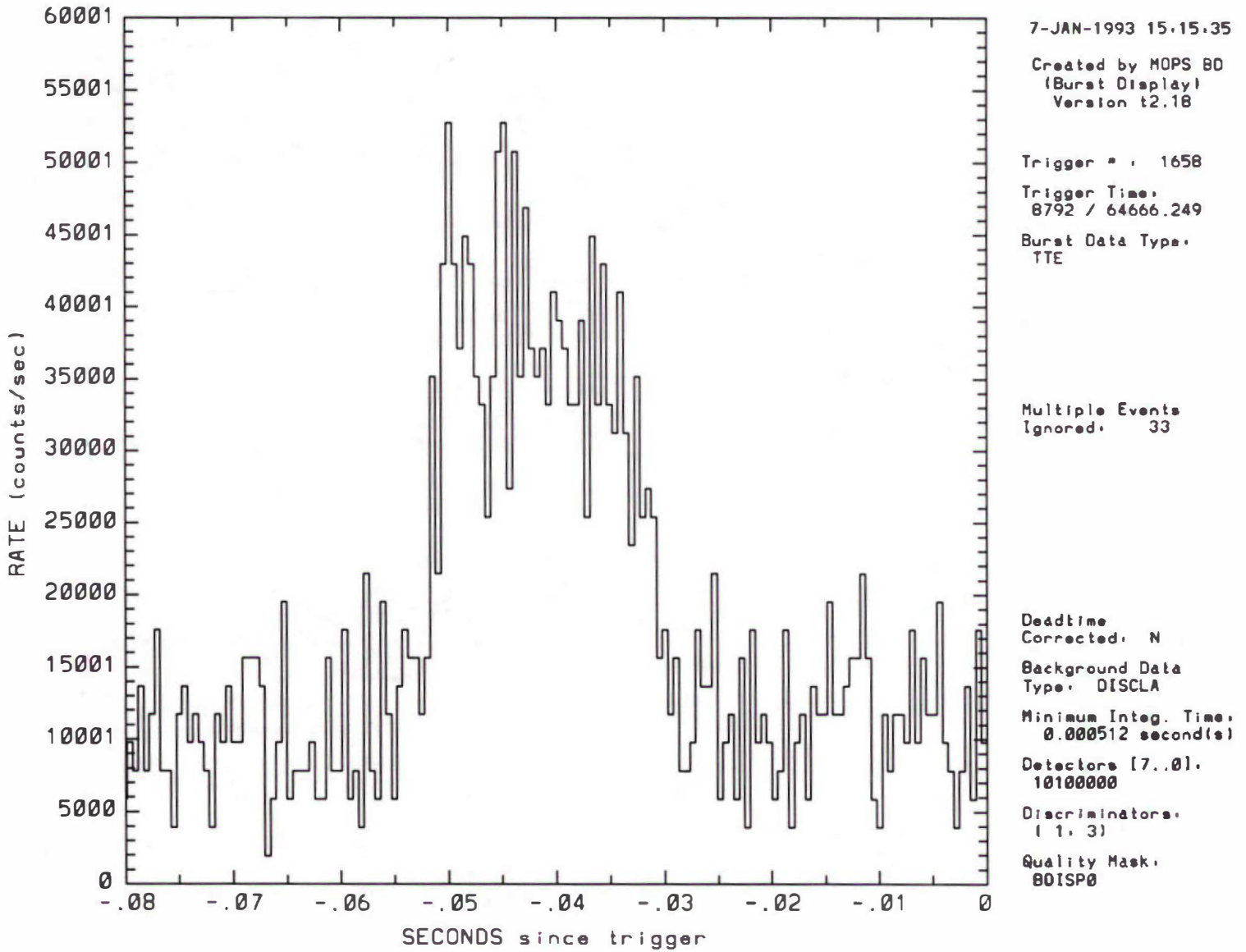
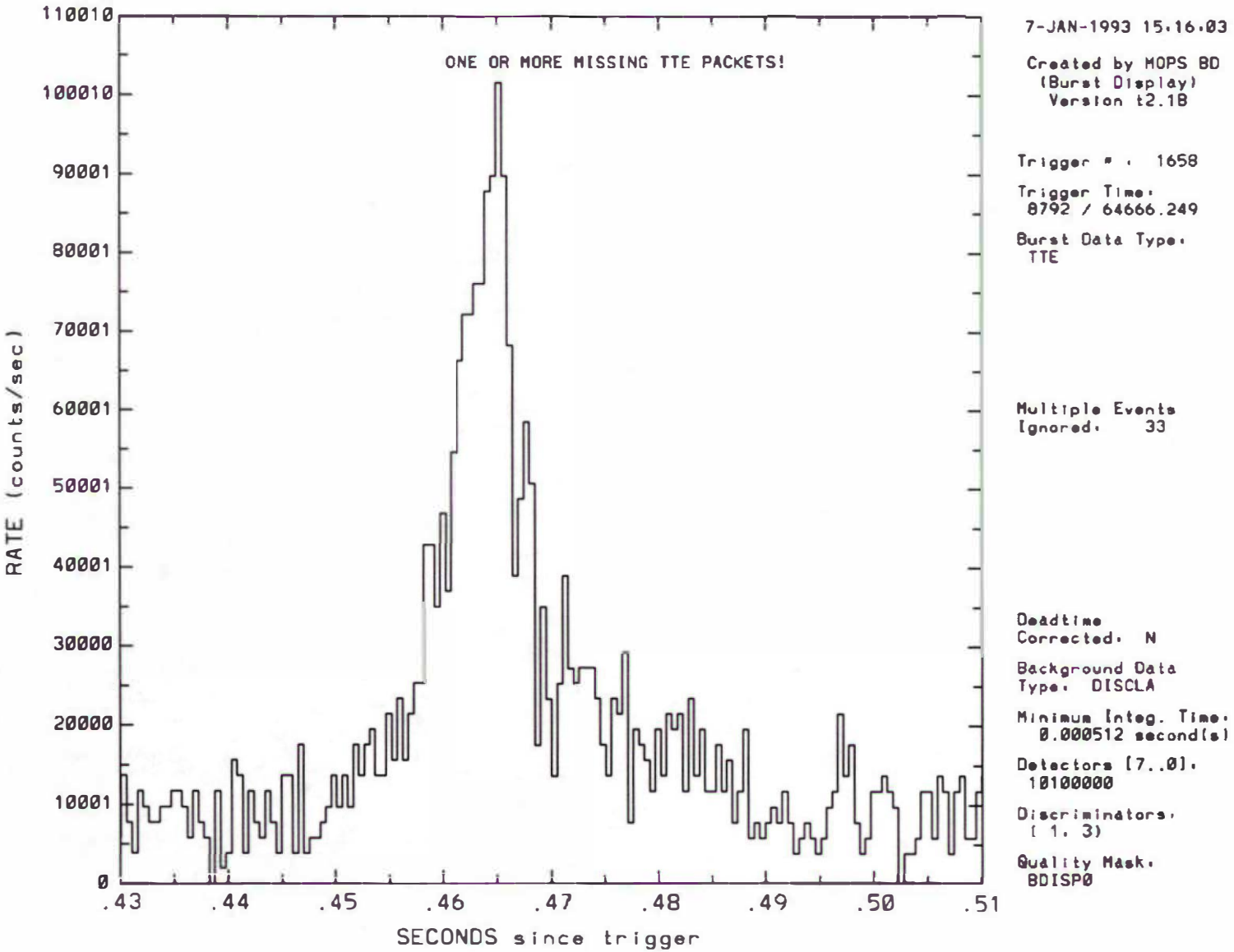

(a)
10⁴ COUNTS / SECOND
RELATIVE TIME (s)
(b)
10⁴ COUNTS / SECOND
RELATIVE TIME (s)
(c)
10⁴ COUNTS / SECOND
RELATIVE TIME (s)
(d)
10⁴ COUNTS / SECOND
RELATIVE TIME (s)

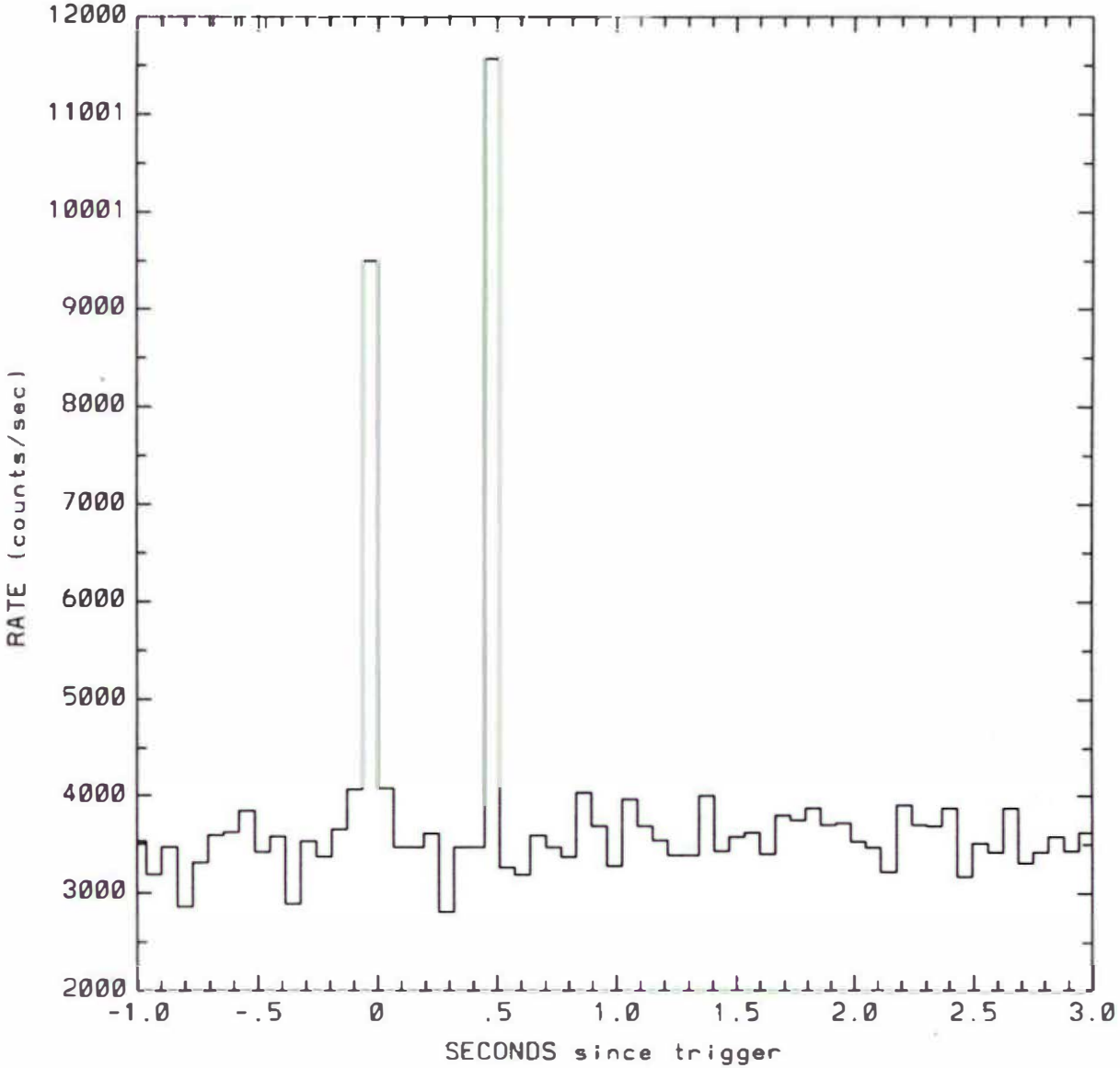
Figure 1


60001
55001
50001
45001
40001
35000
30000
25000
20000
15001
10001
5000
0
RATE (counts/sec)
-.08
-.07
-.06
-.05
-.04
-.03
-.02
-.01
0
SECONDS since trigger
7-JAN-1993 15:15:35
Created by MOPS BD
(Burst Display)
Version t2.18
Trigger # : 1658
Trigger Time:
8792 / 64666.249
Burst Data Type:
TTE
Multiple Events
Ignored: 33
Deadtime
Corrected: N
Background Data
Type: DISCLA
Minimum Integ. Time:
0.000512 second(s)
Detectors [7..0]:
10100000
Discriminators:
(1, 3)
Quality Mask:
BDISP0


ONE OR MORE MISSING TTE PACKETS!
RATE (counts/sec)
110010
100010
90001
80001
70001
60001
50001
40001
30000
20000
10001
0
.43
.44
.45
.46
.47
.48
.49
.50
.51
SECONDS since trigger
7-JAN-1993 15:16:03
Created by MOPS BD
(Burst Display)
Version t2.18
Trigger # : 1658
Trigger Time:
8792 / 64666.249
Burst Data Type:
TTE
Multiple Events
Ignored: 33
Deadtime
Corrected: N
Background Data
Type: DISCLA
Minimum Integ. Time:
0.000512 second(s)
Detectors [7..0]:
10100000
Discriminators:
[1, 3)
Quality Mask:
BDISP0

SGR B1900+14

June 19



3-JUL-1992 19.45.03

Created by MOPS BD
(Burst Display)
Version t2.15

Trigger # : 1658

Trigger Time:
8792 / 64668.260 - 2.042

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..0]:
10100000

Discriminators:
(1, 1)

Quality Mask:
BDISP0

285, 14

3-JUL-1992 BLt2.13 Burst #1658 Location 16:10:24

Detector/Rate			Equatorial (degs):	287.2, 12.0		
	457.9	+/- 218.8	GRO (degs):	202.1,-26.5	+/-	3.987E+00
1	-177.8	+/- 192.7	Spectral index:	3.00		
2	432.1	+/- 216.5	PL flux (ph/cm^2-s):	1.145E+02	+/-	6.962E+00
3	143.8	+/- 201.9#	Fluence (ergs/cm^2):	3.174E-08	+/-	3.016E-08
4	78.9	+/- 201.3	Energy range (keV):	60.2 - 322.0		
5	2217.5	+/- 268.8*	Consistency:	0.04		
6	1417.5	+/- 249.5*				
7	4413.4	+/- 327.0*	Data type:	PREB		
Corrected rates			Options:	ATMOSPHERE, CHI2-MIN		
0	277.3	+/- 218.8	Channel range:	2 - 3		
1	-214.8	+/- 192.7	BSTST:	8792 : 64668.26		
2	276.0	+/- 216.5	Burst interval:	(-0.06, 0.00)		
3	121.6	+/- 201.9#	Preburst interval:	(-14.34, -5.12)		
4	-19.7	+/- 201.3	Postburst interval:	(5.12, 9.22)		
5	2211.6	+/- 268.8*	Geocenter (GRO degs):	(359.0, 65.5)		
6	1337.6	+/- 249.5*	Geocenter angle:	138.4		
7	4403.4	+/- 327.0*				

in catalog

Estimation complete.

LAD	Source	Earth	Thresholds (keV)		Model Rate,	DTheta,	DAlpha
0	158.7	40.3	56.1 -	319.3	0.0,	0.0,	0.0
1	114.5	107.0	58.3 -	308.5	0.0,	0.0,	0.0
2	122.8	39.8	59.2 -	324.6	0.0,	0.0,	0.0
3	91.5	106.5	65.2 -	322.2	0.0,	0.0,	0.0
	88.5	73.5	60.7 -	318.7	222.9,	-51.0,	-2.0
	57.3	140.1	59.4 -	317.0	2201.7,	-80.6,	-1.8
		73.0	66.2 -	321.7	1329.4,	-55.5,	-1.9
		139.5	60.2 -	322.0	4404.0,	-26.6,	-1.7

GRO axes

	RA	Dec
X:	86.2	-40.6
Z:	88.9	49.4

LAD	Calibration times
0	8792:63833.74 - 69678.73
1	8792:63833.74 - 69678.73
2	8792:63833.74 - 69678.73
3	8792:63833.74 - 69678.73
4	8792:63833.74 - 69678.73
5	8792:63833.74 - 69678.73
6	8792:64423.57 - 69678.73
7	8792:64423.57 - 69678.73

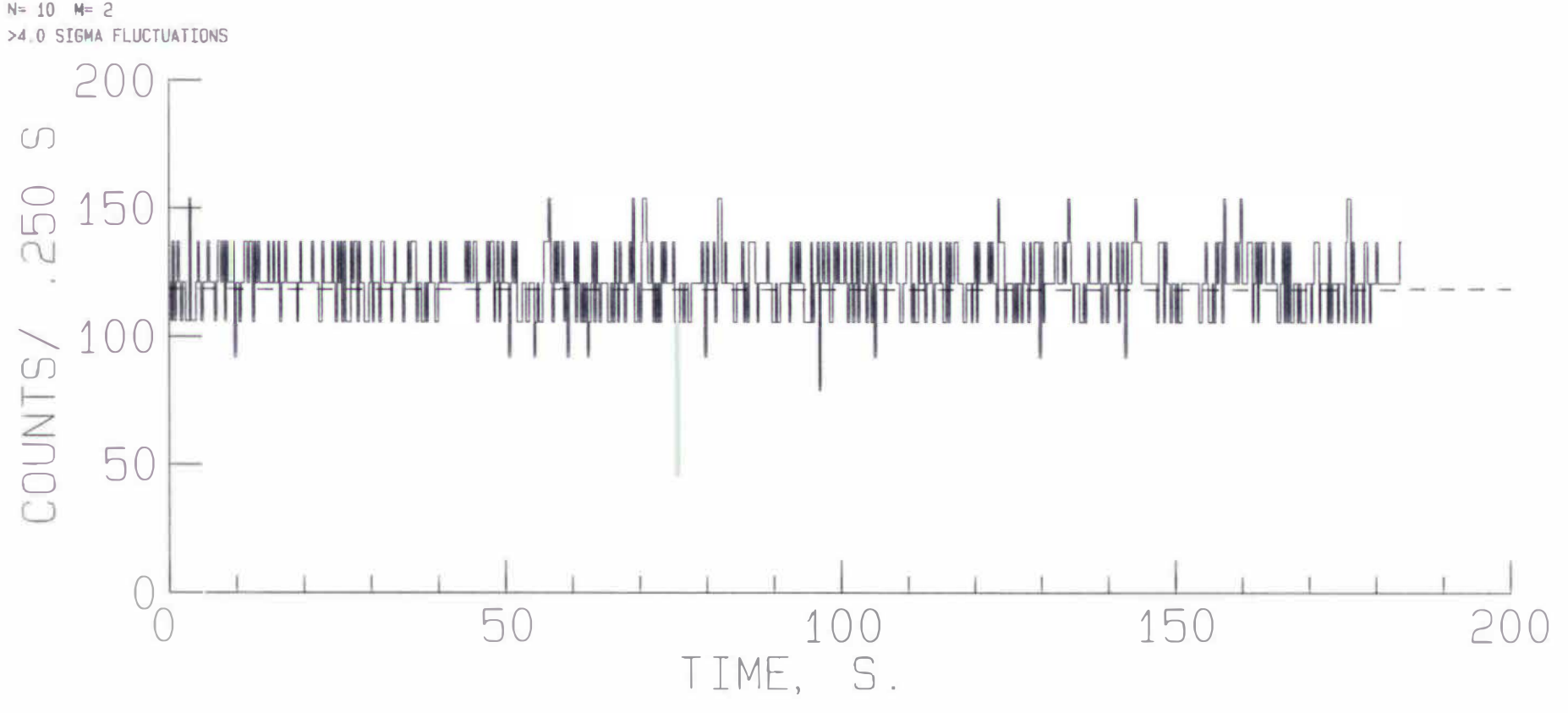
10/ 7/92

ULYSSES RT

19/ 6/92 66269.195 s

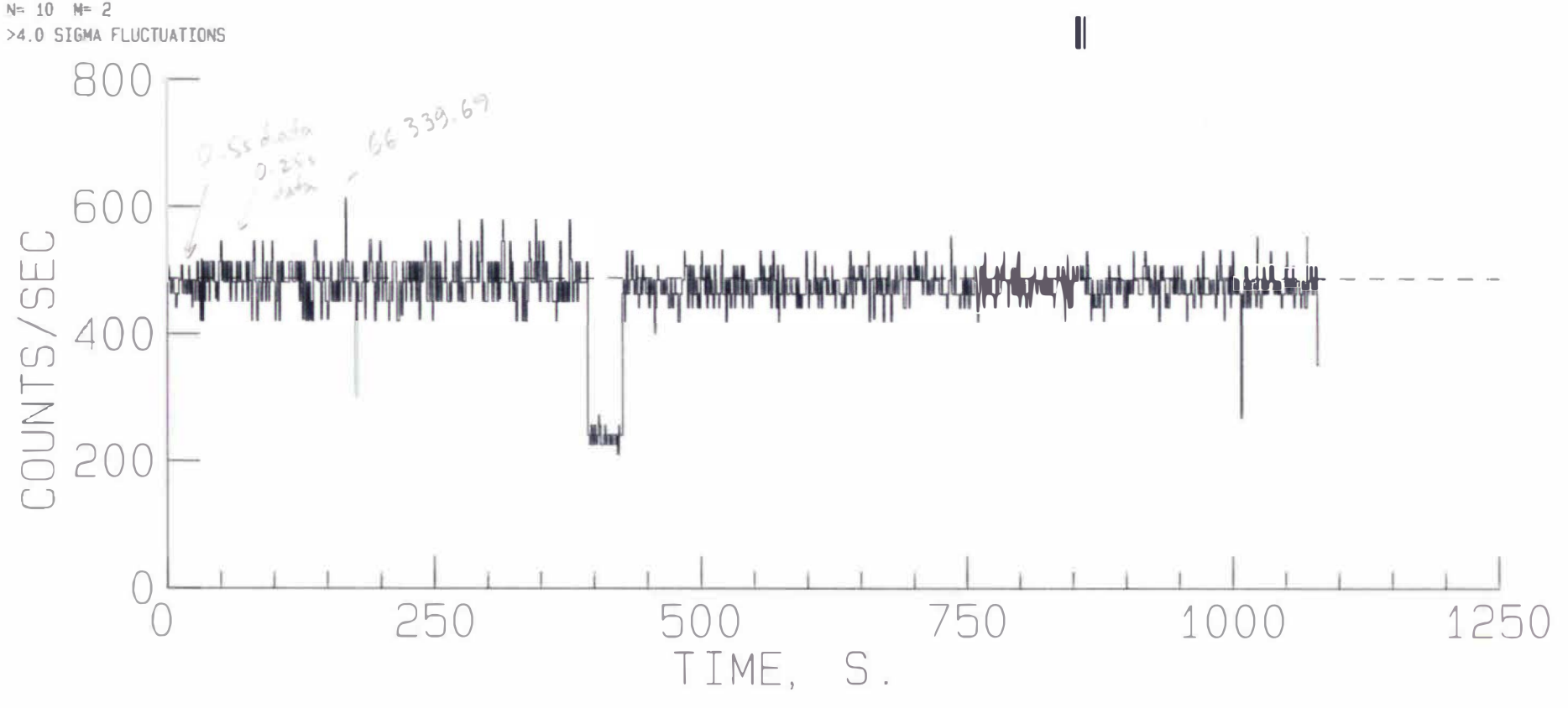
0- 0 keV

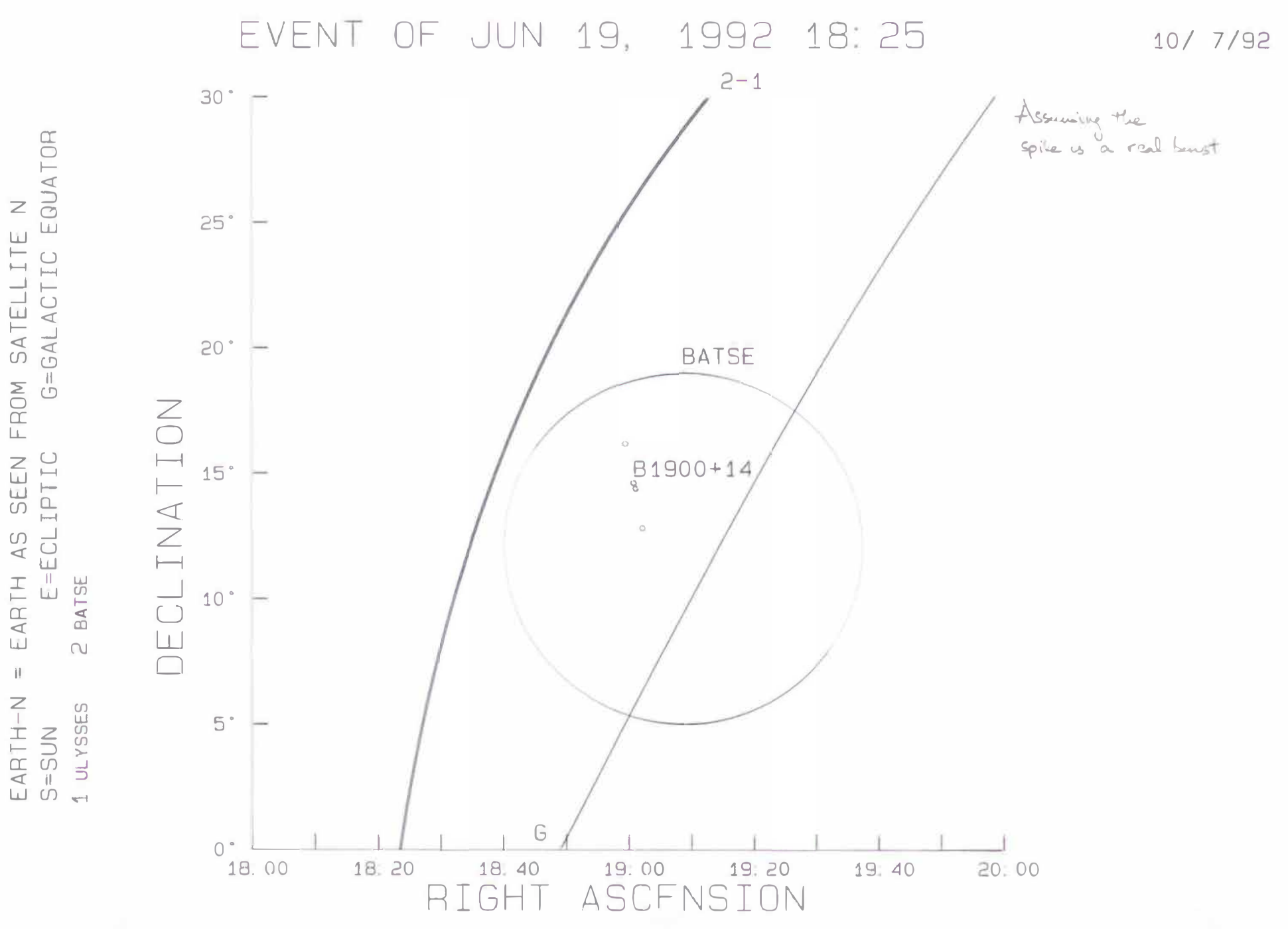
Zoom on region around 66339

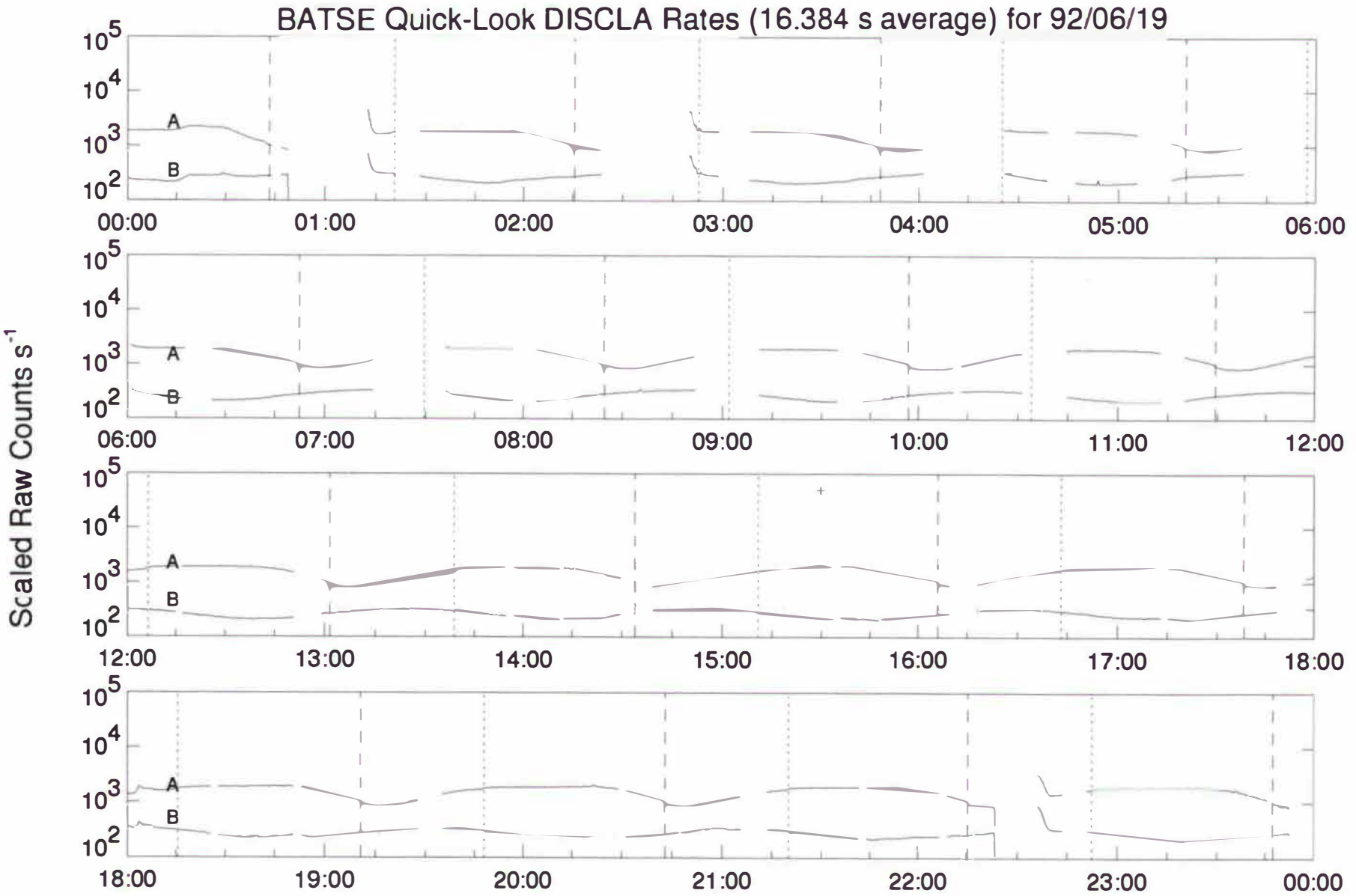


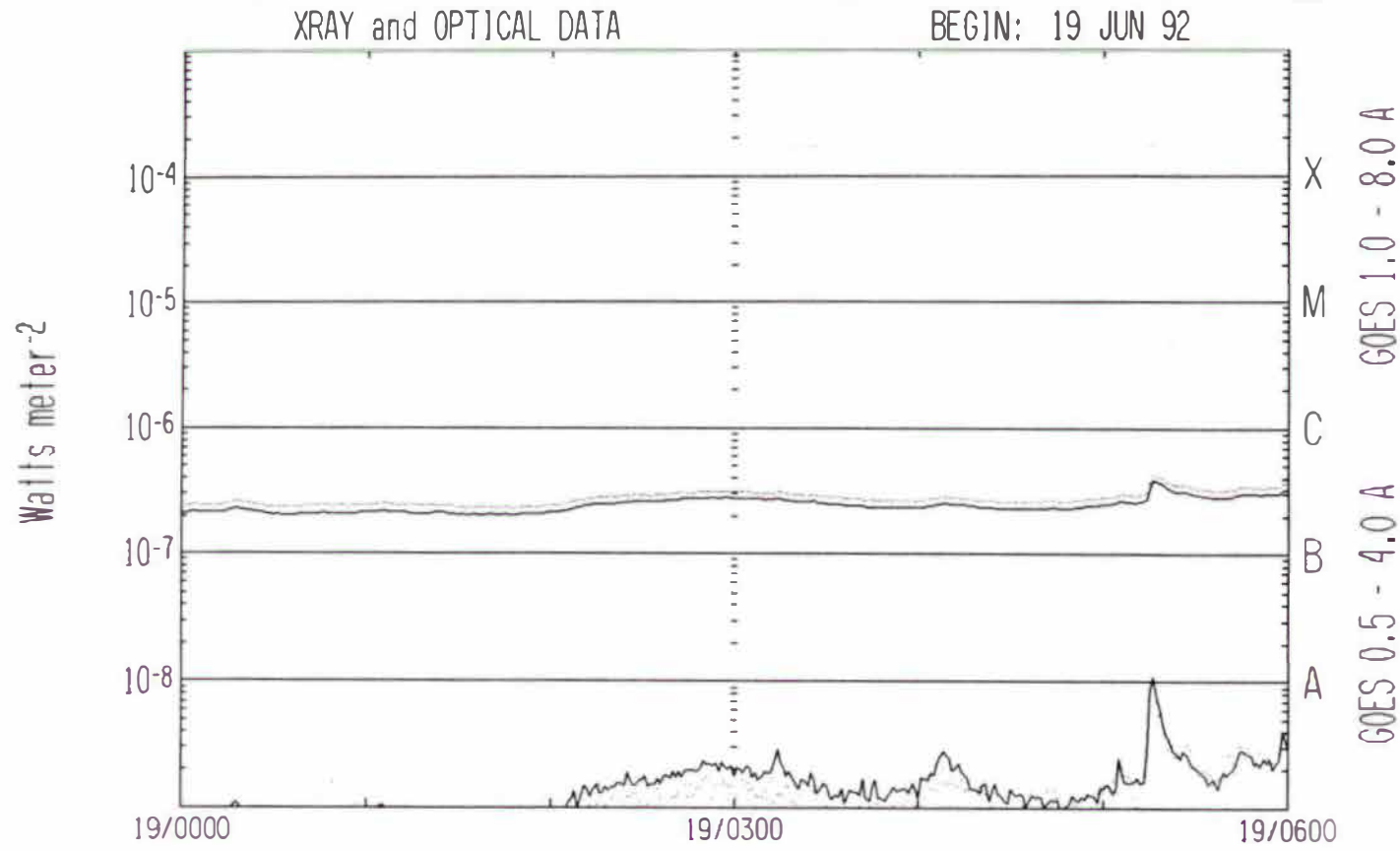
10/ 7/92

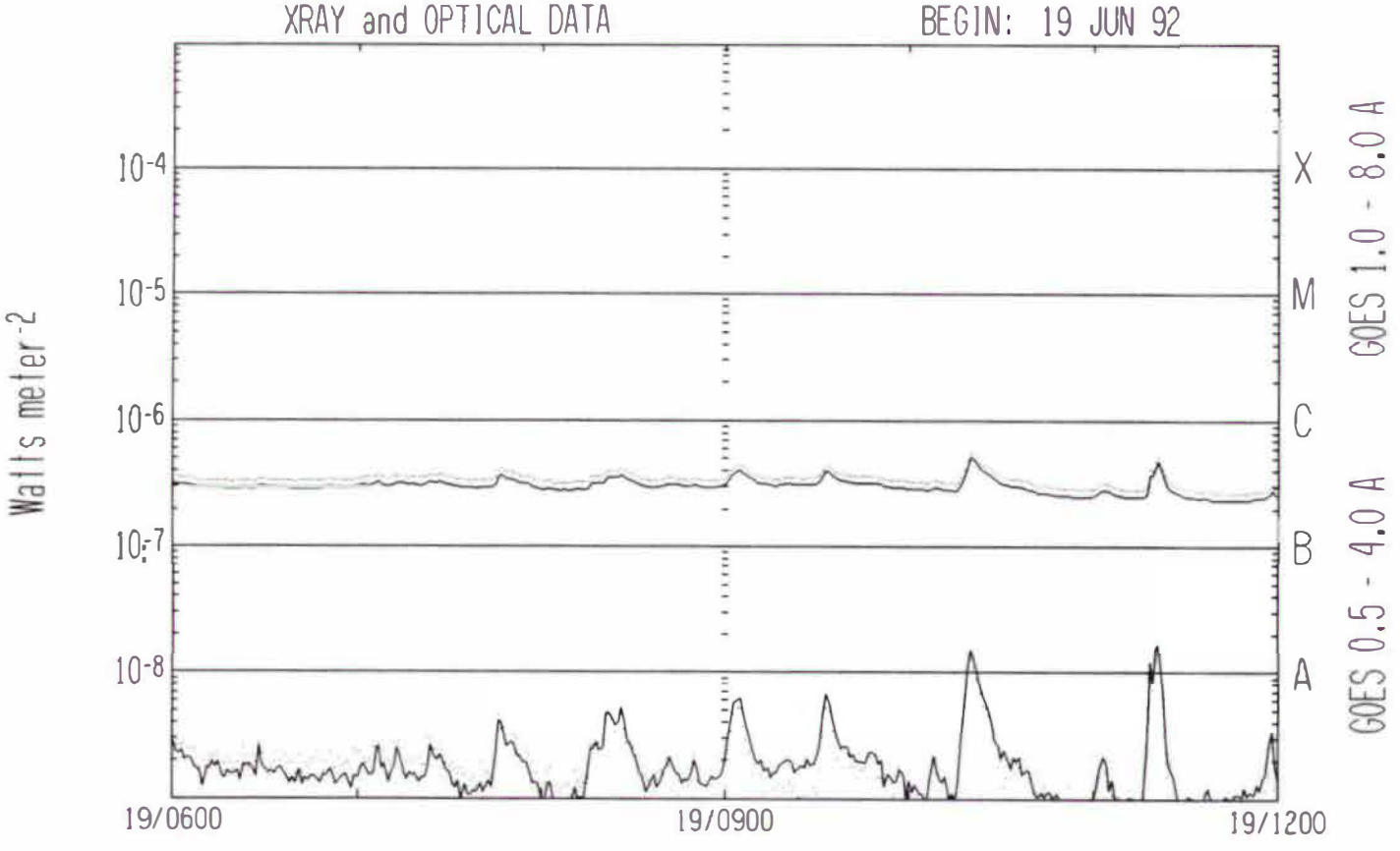
ULYSSES RT
19/ 6/92 66168.437 s
.500 S INTERVALS REGROUPED BY 2
0- 0 keV

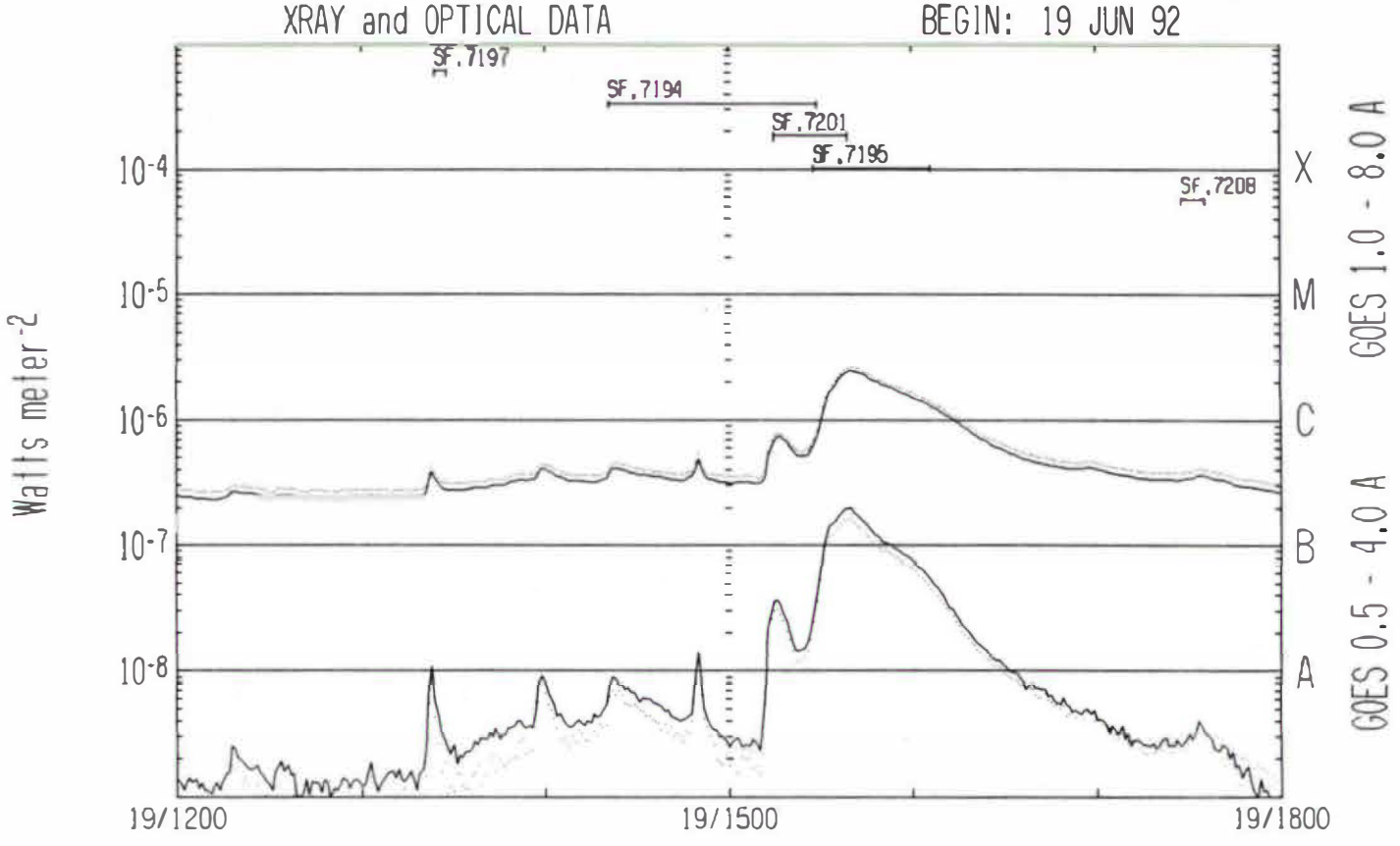


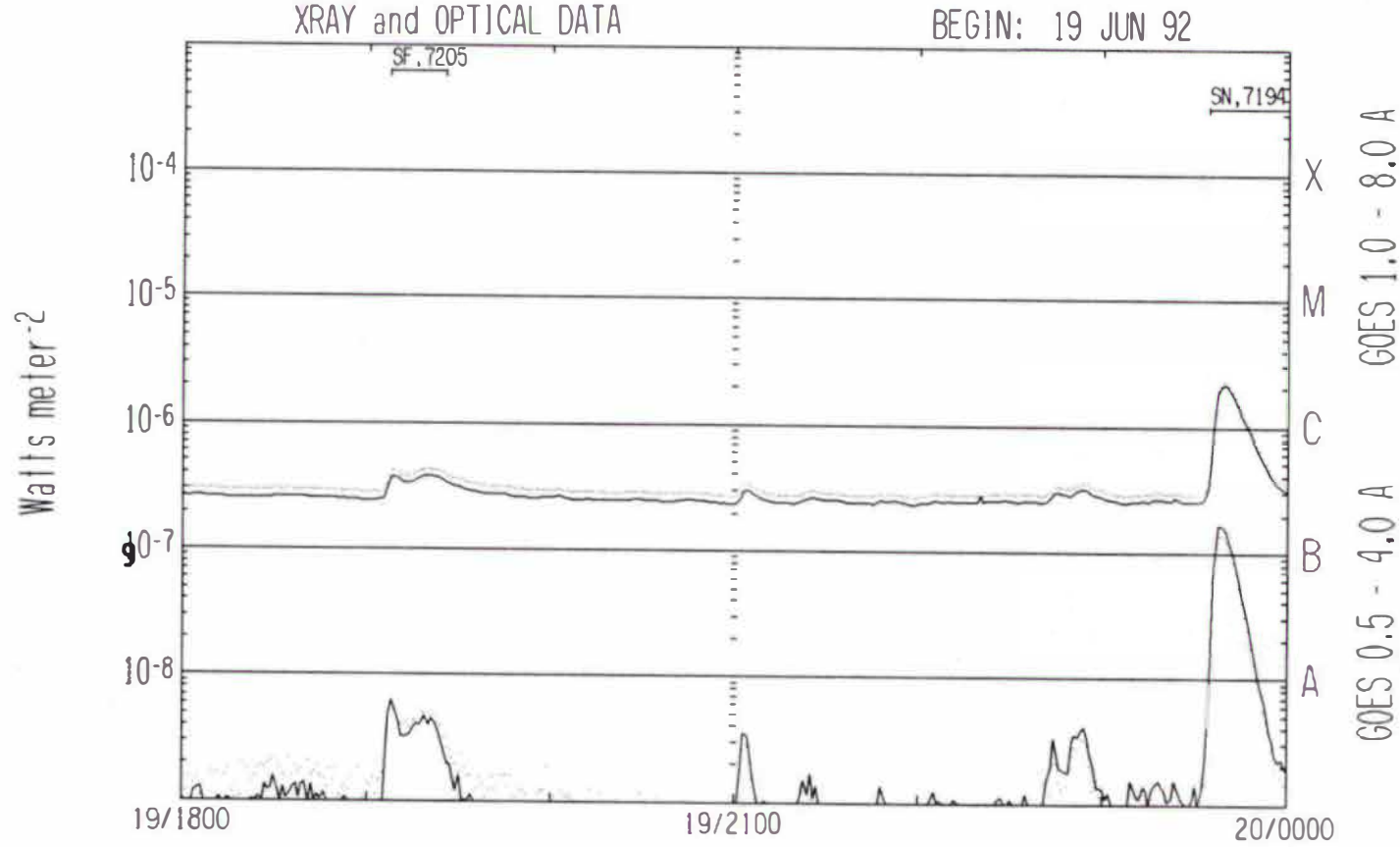

EVENT OF JUN 19, 1992 18:25
10/ 7/92
2-1
Assuming the spike is a real burst
BATSE
B1900+14
G
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE
DECLINATION
30°
25°
20°
15°
10°
5°
0°
18.00
18.20
18.40
19.00
19.20
19.40
20.00
RIGHT ASCENSION


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/19
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1412 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

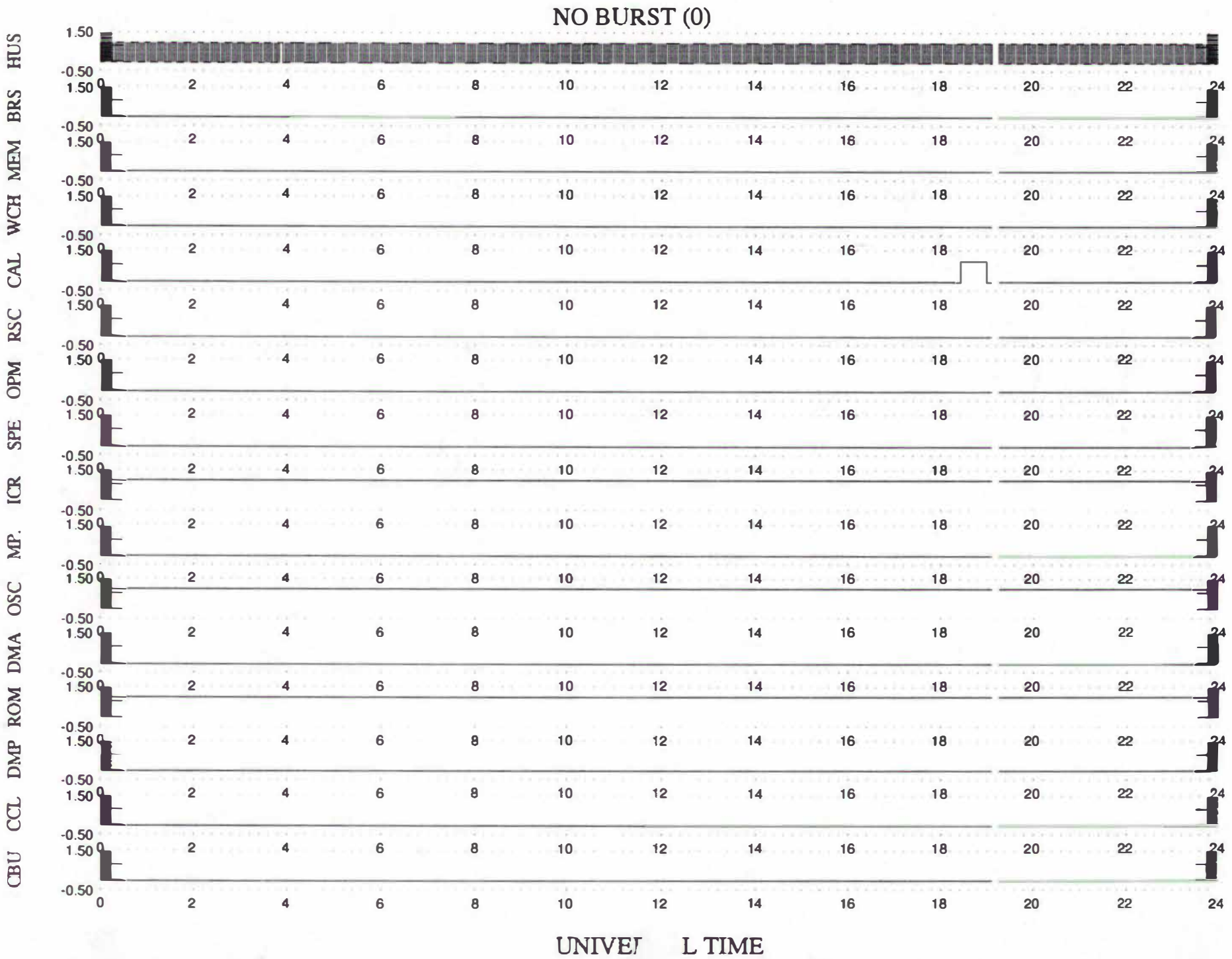

XRAY and OPTICAL DATA
BEGIN: 19 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
19/0000
19/0300
19/0600


XRAY and OPTICAL DATA
BEGIN: 19 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
19/0600
19/0900
19/1200


XRAY and OPTICAL DATA
BEGIN: 19 JUN 92
SF,7197
SF,7194
SF,7201
SF,7195
SF,7208
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
19/1200
19/1500
19/1800

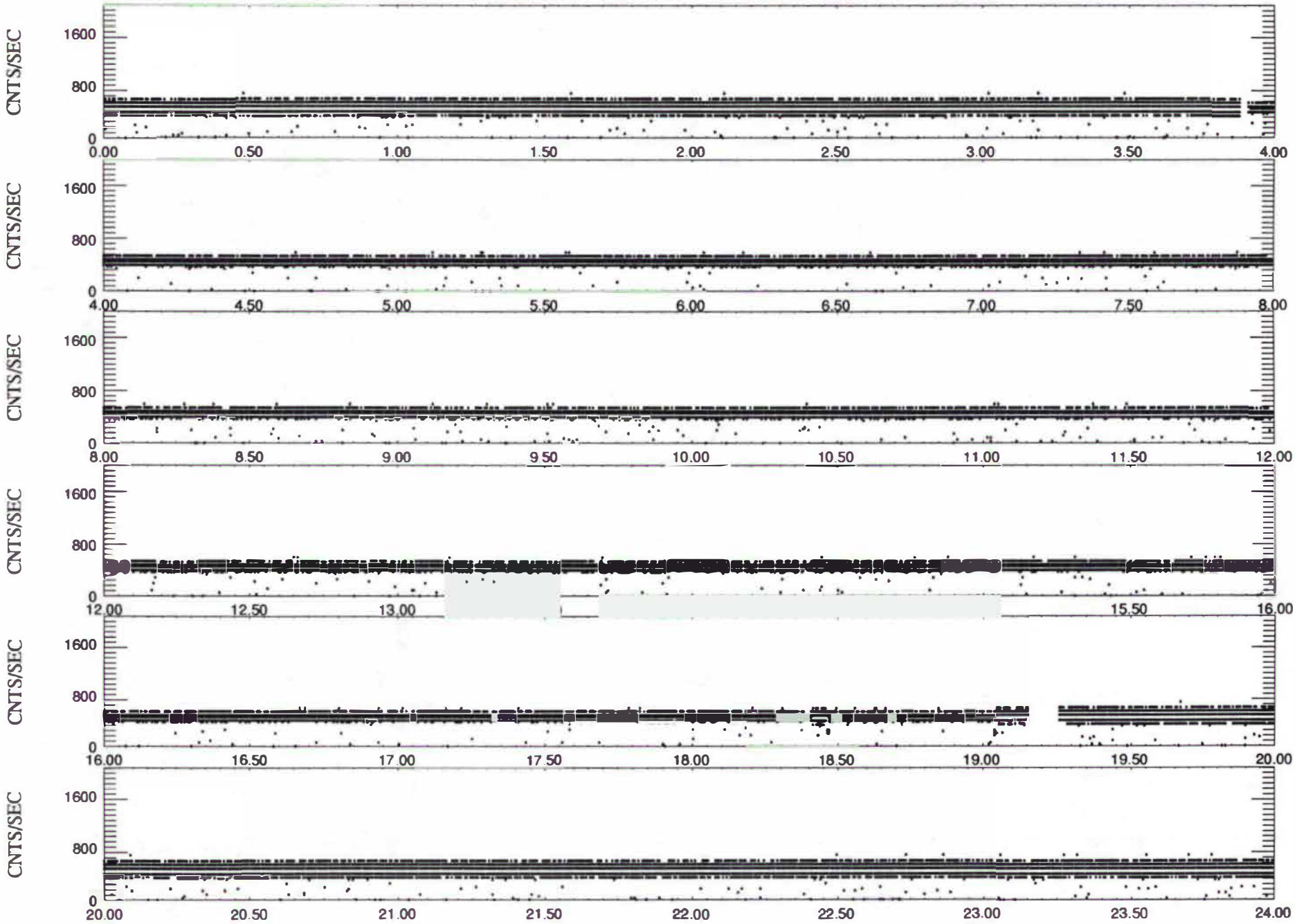

XRAY and OPTICAL DATA
BEGIN: 19 JUN 92
SF,7205
SN,7194
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
19/1800
19/2100
20/0000

HUS MODES EDR day 171, year 1992 to day 171, year 1992 7/8/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 171, year 1992 to day 171, year 1992 7/8/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

```
          ********************
          *CATSEARCH PROGRAM*
          ********************

BATSE BURST # 1659
EVENT OF 1992 JUN 20 DAY OF YEAR=172
EVENT CROSSING TIME AT BATSE      : 65593. S. OR 18:13:13.2
COORDINATES ARE     .000     .000        6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION:  79.800  -34.300
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 20/ 6/  92 IS:
RA=  149.343 DEC=     7.046 DIST=     5.770 AU
BATSE-ULYSSES DISTANCE =  863220424. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -626.03 SECS.
CROSSING TIME AT ULYSSES     IS 64967. S. OR 18:02:47.1 +/-  528.44 SECONDS
```

NO

```
From PREECE@ssl.msfc.nasa.gov Mon Jun 22 08:04:31 1992
Date:    Mon, 22 Jun 1992 10:04:27 -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.: 01659

TIME: TJD=8793 SECONDS=65595

TYPE: BURST                       SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:        SIGMA

INTENSITY:           COUNTS/CM2

LOCATION: ZENITH=087.1  AZIMUTH=012.2  ERROR=       DEGREES

COMMENTS:
SHORT (1 SEC.) WEAK GRB. SEEN ABOVE 300 KEV.
```

No fig

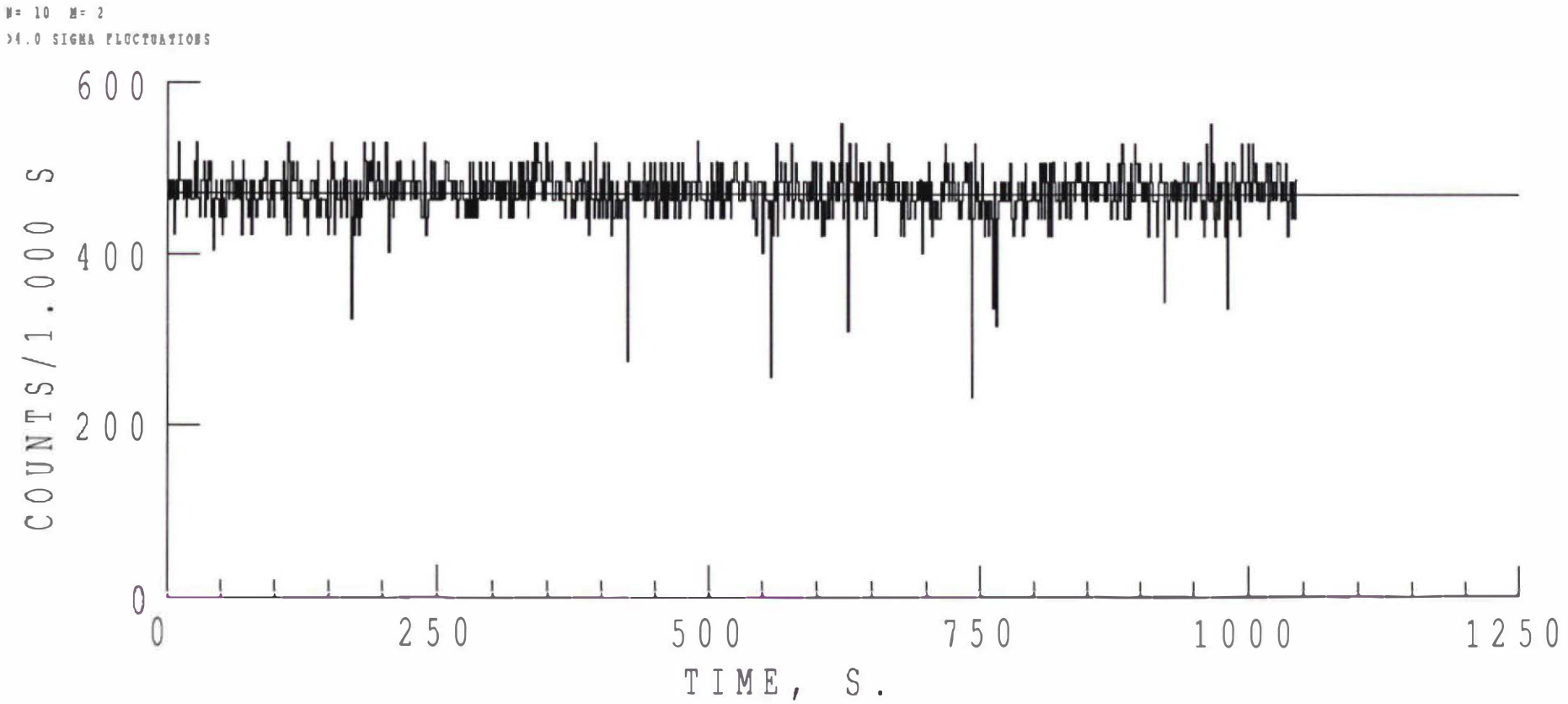
8/ 6/94

ULYSSES RT

20/ 6/92 64440.309 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



****
CATSEARCH PROGRAM
****

BATSE BURST # 1660
EVENT OF 1992 JUN 20 DAY OF YEAR=172
EVENT CROSSING TIME AT BATSE : 68222. S. OR 18:57:01.7
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 7.000 -2.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 20/ 6/ 92 IS:
RA= 149.343 DEC= 7.046 DIST= 5.770 AU
BATSE-ULYSSES DISTANCE = 863220424. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2273.30 SECS.
CROSSING TIME AT ULYSSES IS 70495. S. OR 19:34:55.0 +/- 391.34 SECONDS

ND

From PREECE@ssl.msfc.nasa.gov Mon Jun 22 08:41:39 1992
Date: Mon, 22 Jun 1992 10:41:25 -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.: 01660

TIME: TJD=8793 SECONDS=68223 June 20

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=086.2 AZIMUTH=277.2 ERROR= DEGREES

COMMENTS:
GRB, 60 SEC. LONG WITH COMPLEX STRUCTURE. 4 MAIN PEAKS IN THE OUTBURST.
MARGINAL DETECTION ABOVE 300 KEV.

No freq

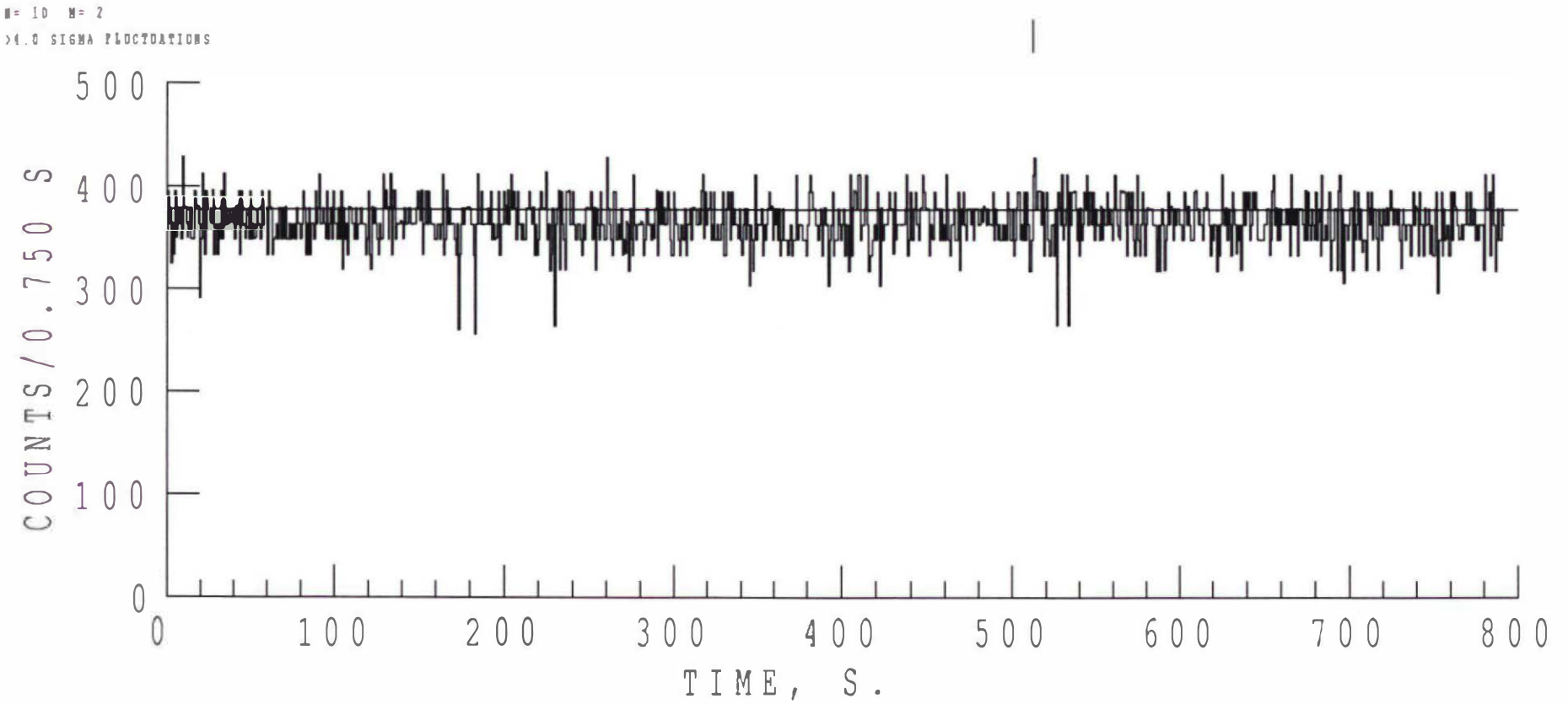
8/ 6/94

ULYSSES RT

20/ 6/92 70092.148 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



```
**********
*CATSEARCH PROGRAM*
**********

BATSE BURST # 1661
EVENT OF 1992 JUN 20 DAY OF YEAR=172
EVENT CROSSING TIME AT BATSE      : 82404. S. OR 22:53:23.9
COORDINATES ARE     .000     .000        6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 162.100    11.900
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 20/ 6/  92 IS:
RA=  149.343 DEC=     7.046 DIST=     5.770 AU
BATSE-ULYSSES DISTANCE =  863220424. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=166.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2800.04 SECS.
CROSSING TIME AT ULYSSES     IS 79604. S. OR 22:06:43.9 +/-  124.03 SECONDS
```

NO

```
From PREECE@ssl.msfc.nasa.gov Mon Jun 22 10:00:32 1992
Date:     Mon, 22 Jun 1992 11:59:39 -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.: 01661

TIME: TJD=8793 SECONDS=82406

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:        SIGMA

INTENSITY:           COUNTS/CM2

LOCATION: ZENITH=068.3  AZIMUTH=092.9  ERROR=       DEGREES

COMMENTS:
GRB, 40 SEC. LONG, WEAK, SINGLE PEAK. SEEN ABOVE 300 KEV.
```

No trig

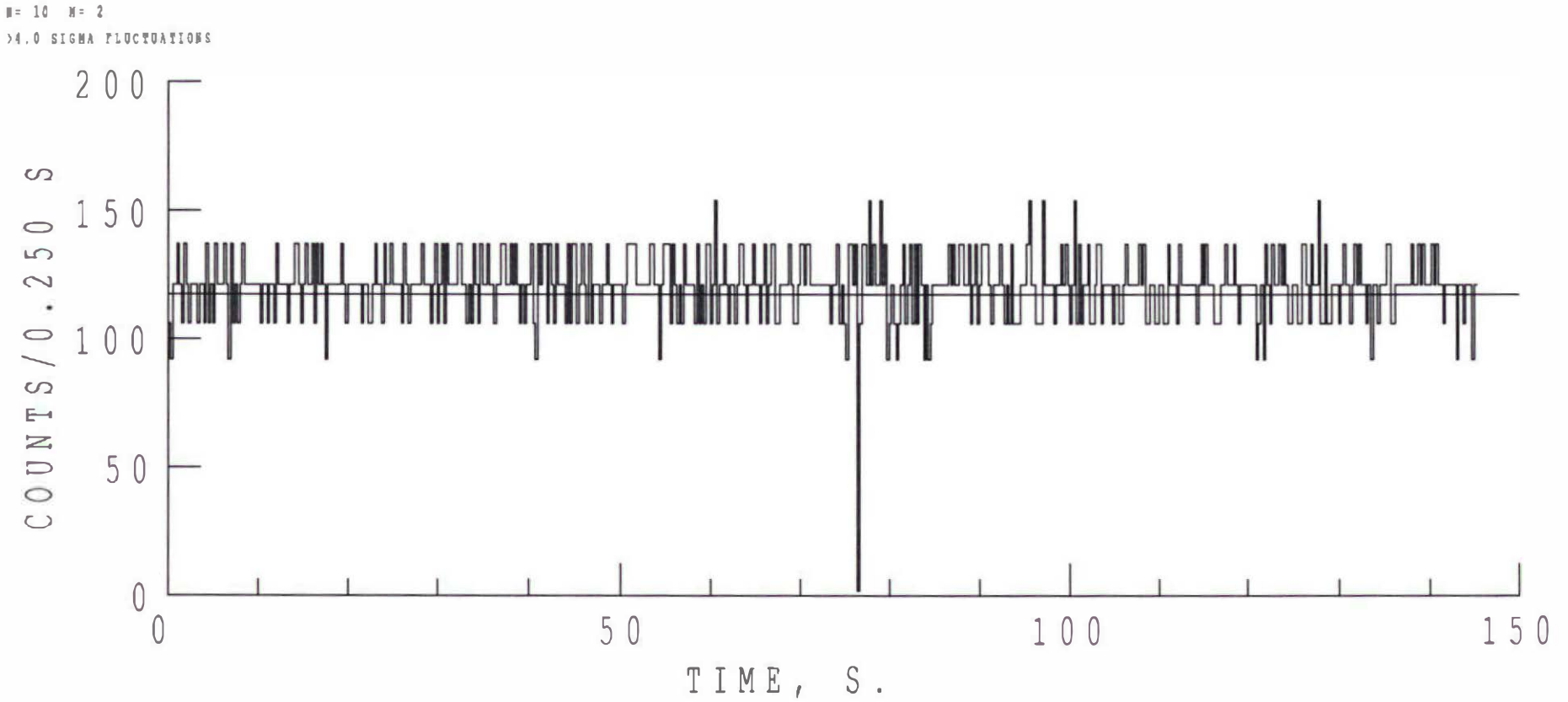
BATSE BURST# 1661

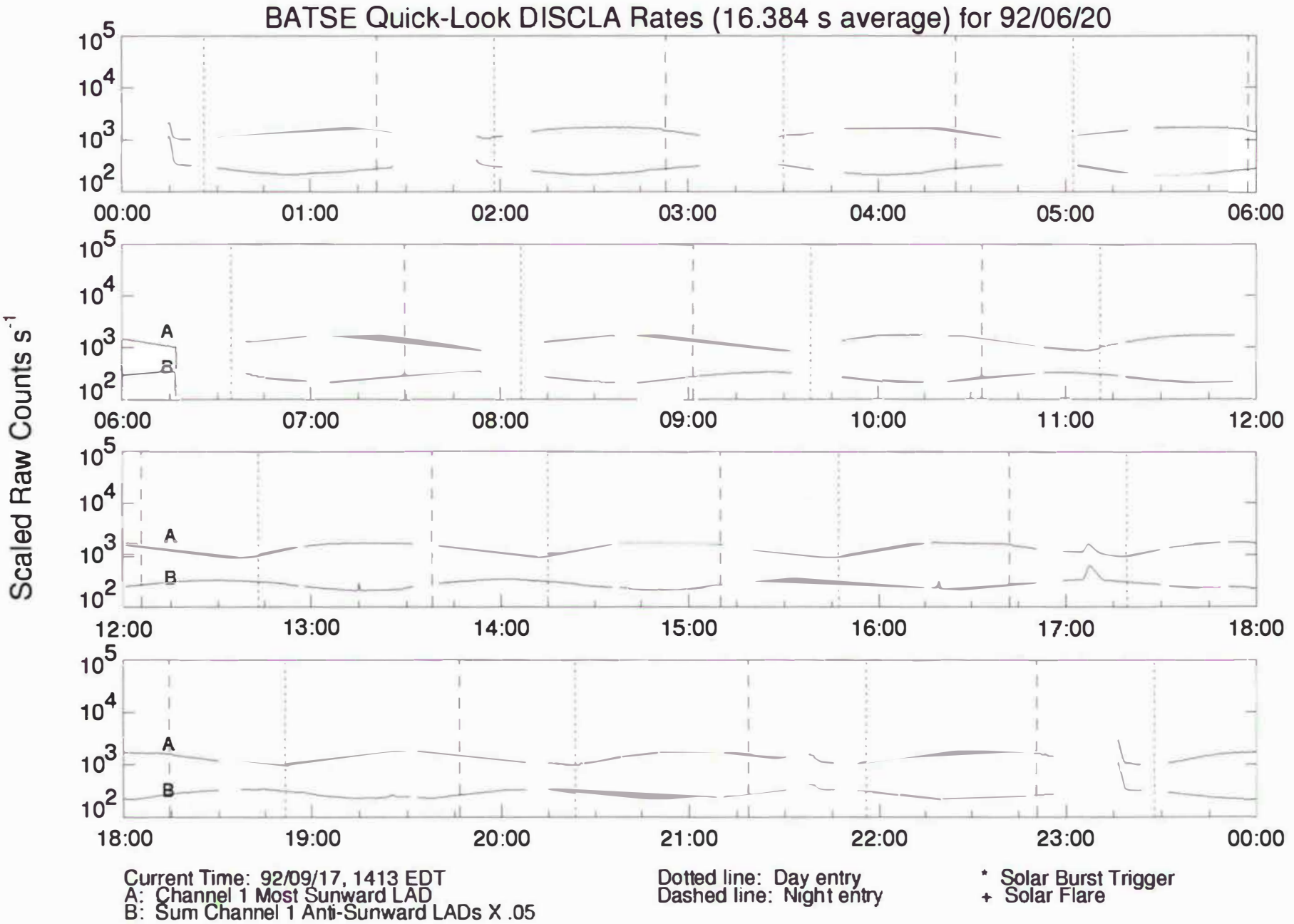
8/ 6/94

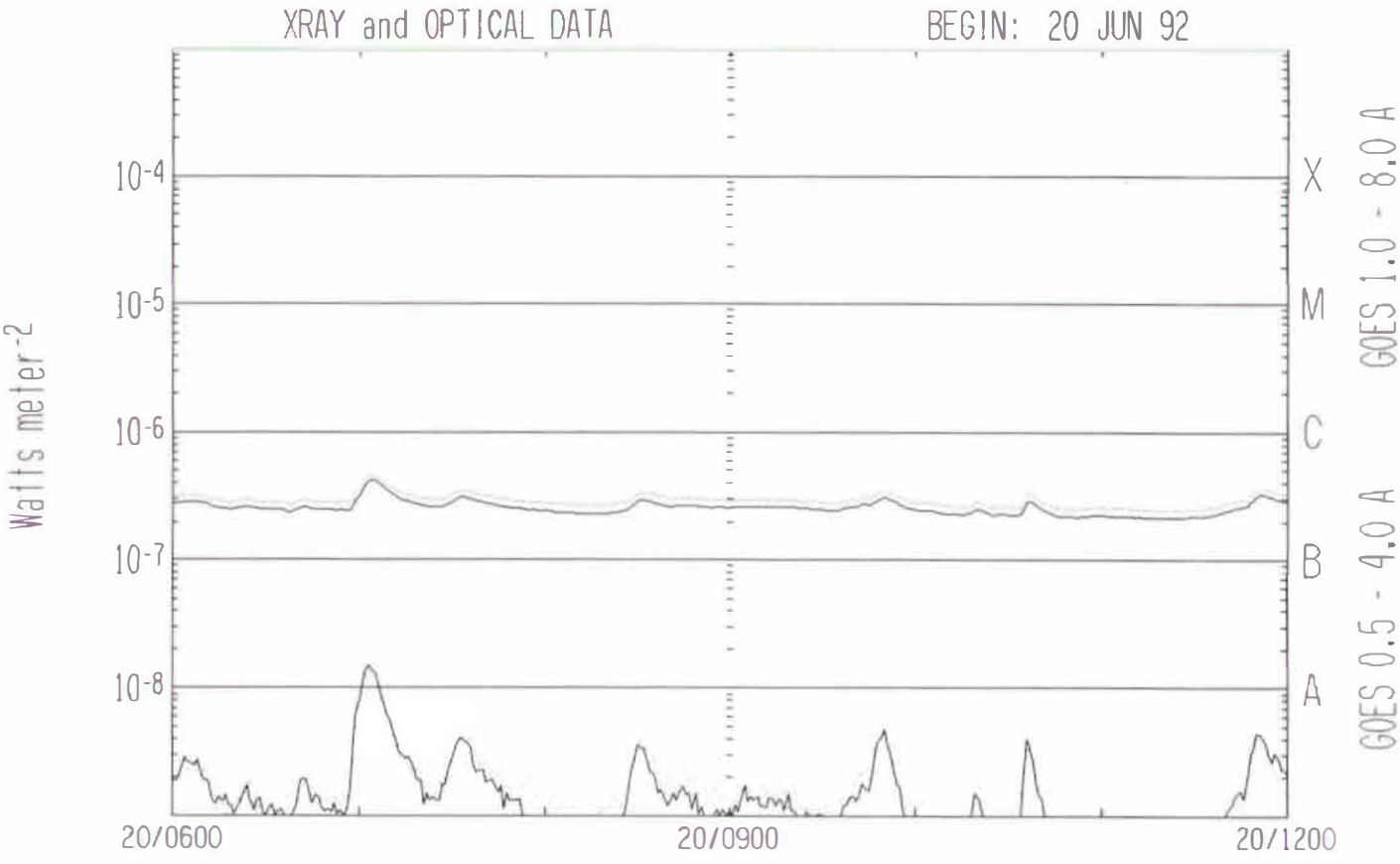
ULYSSES RT

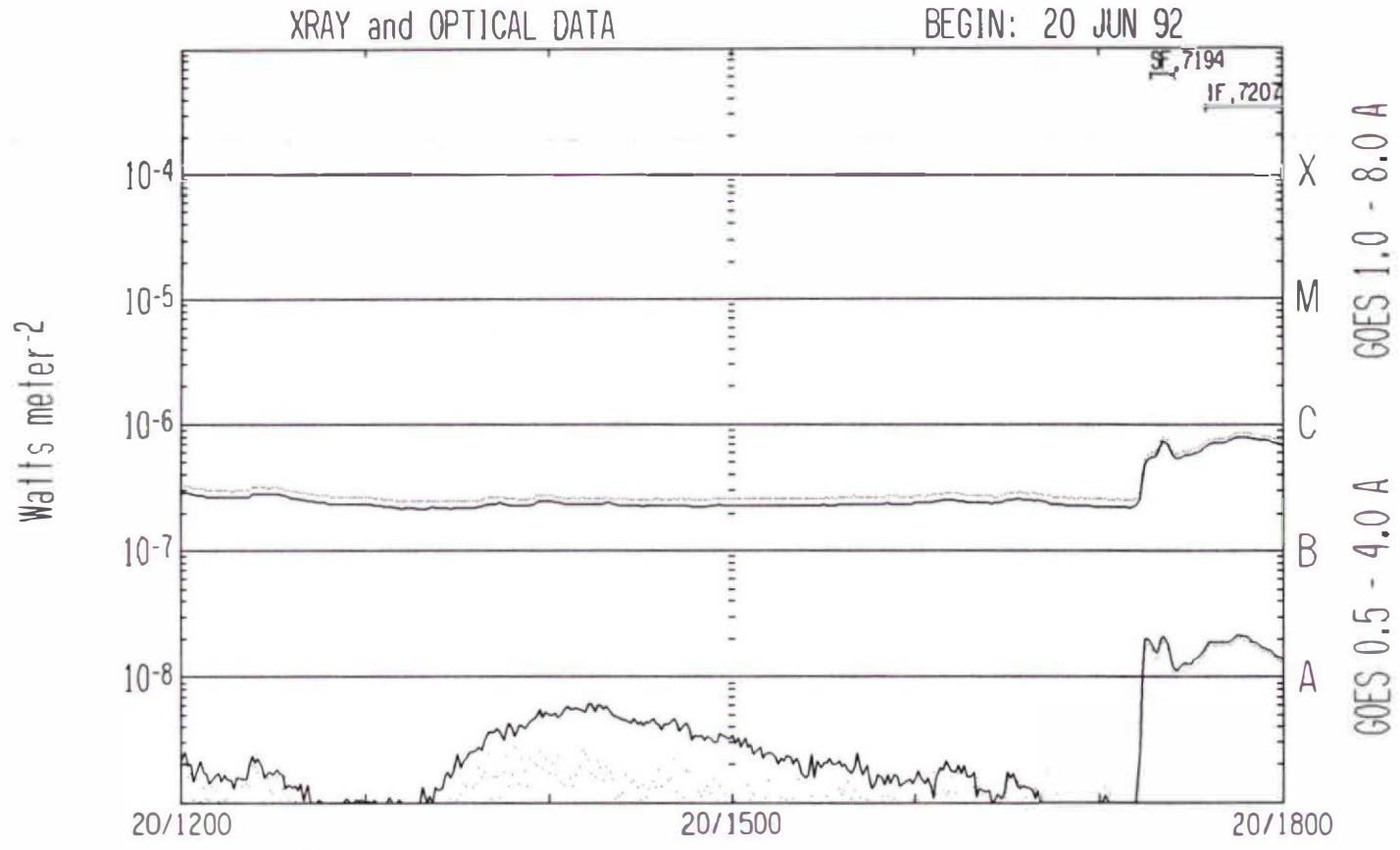
20/ 6/92 79594.805 s

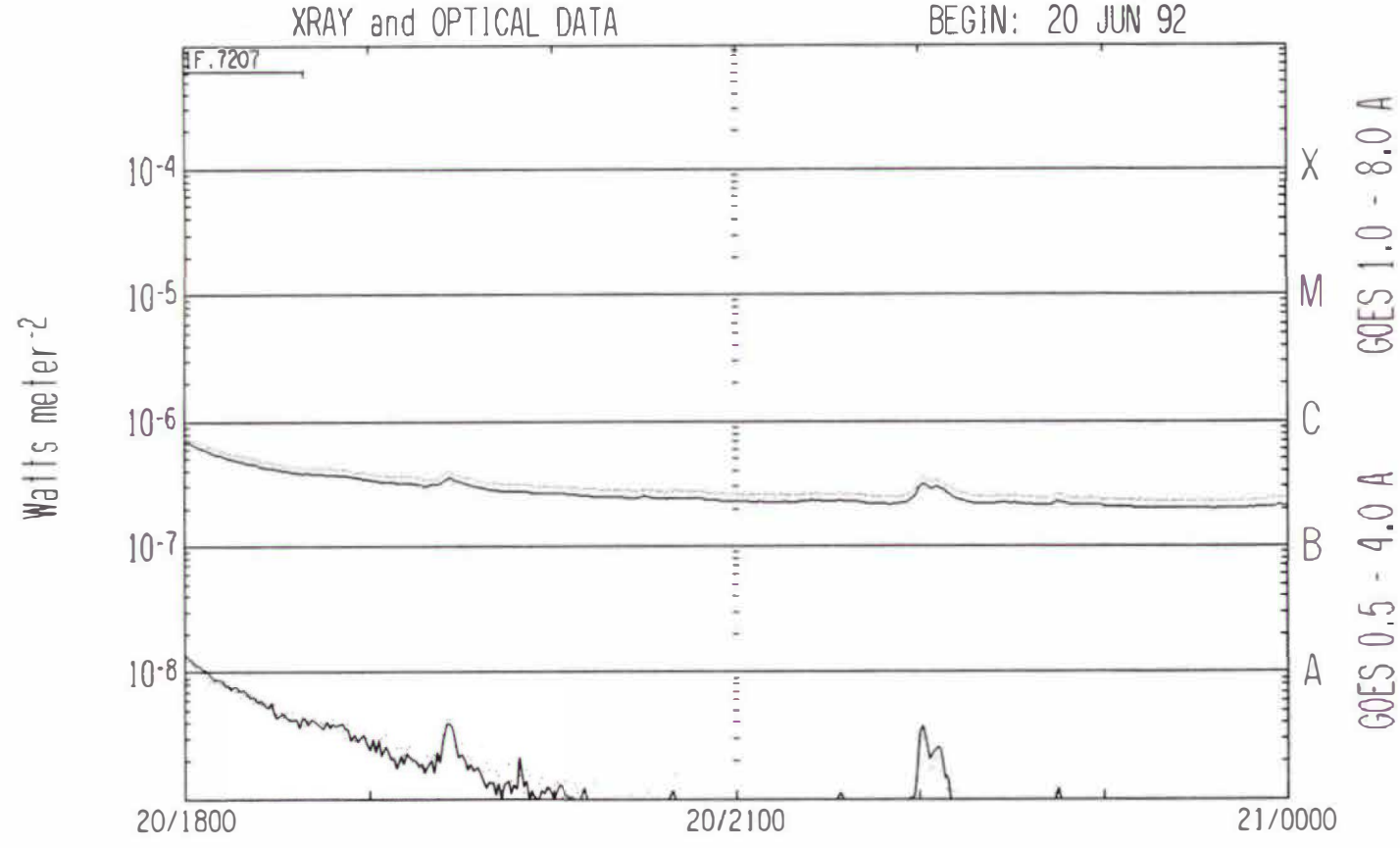
0- 0 keV



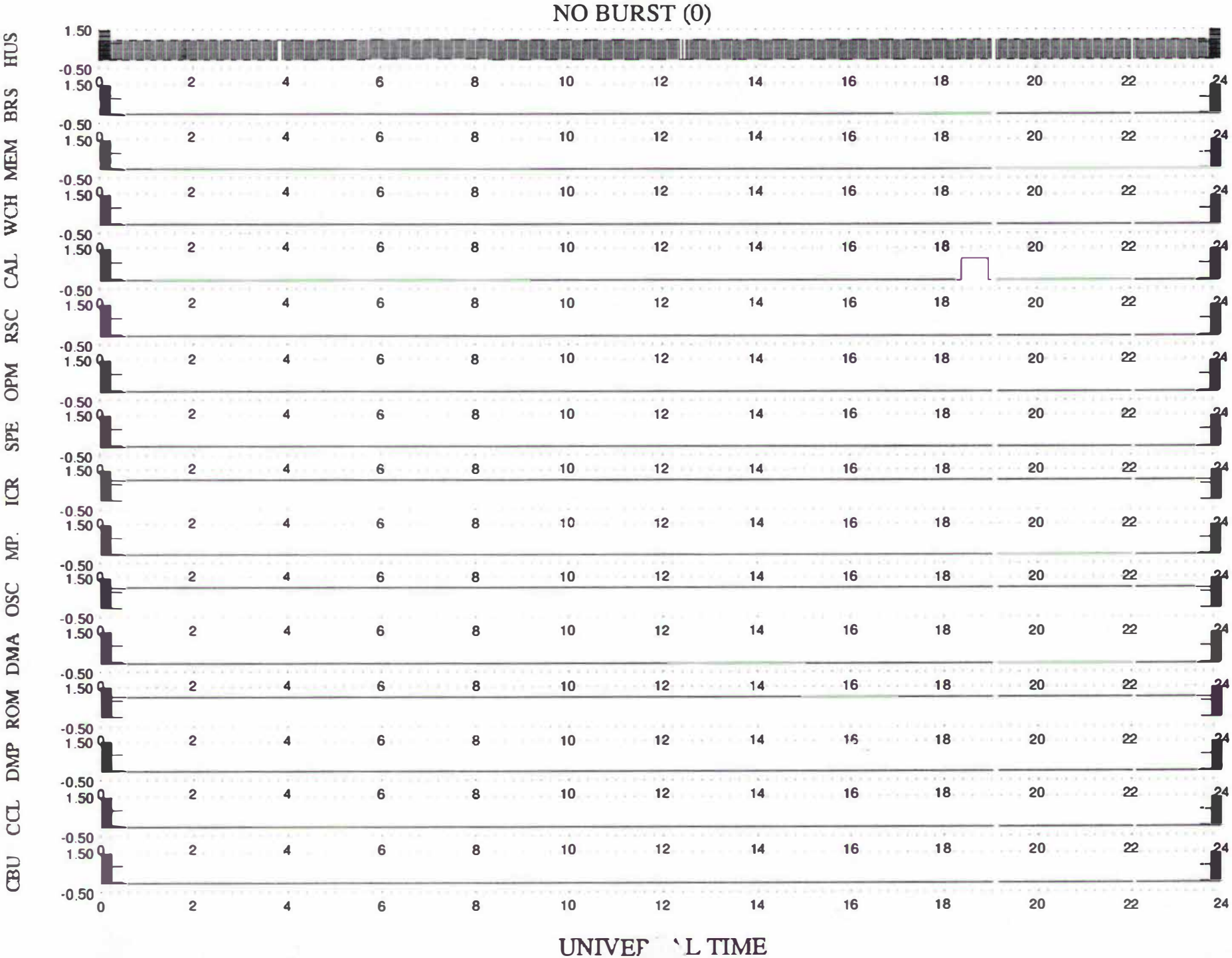

BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/20
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
A
B
Current Time: 92/09/17, 1413 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


XRAY and OPTICAL DATA
BEGIN: 20 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
20/0600
20/0900
20/1200


XRAY and OPTICAL DATA
BEGIN: 20 JUN 92
SF,7194
1F,7207
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
20/1200
20/1500
20/1800

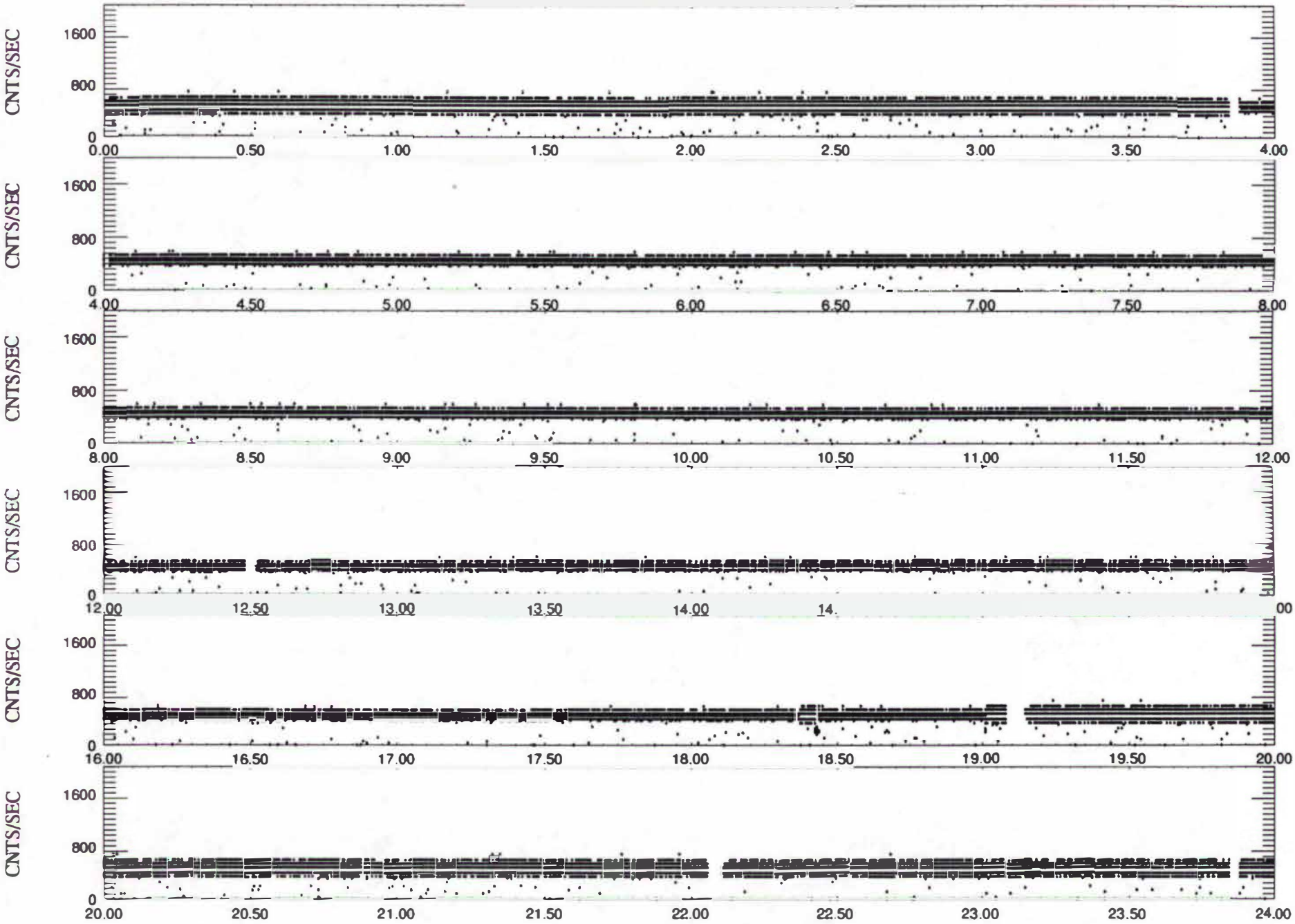

XRAY and OPTICAL DATA
BEGIN: 20 JUN 92
1F,7207
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
20/1800
20/2100
21/0000

HUS MODES EDR day 172, year 1992 to day 172, year 1992 7/8/92

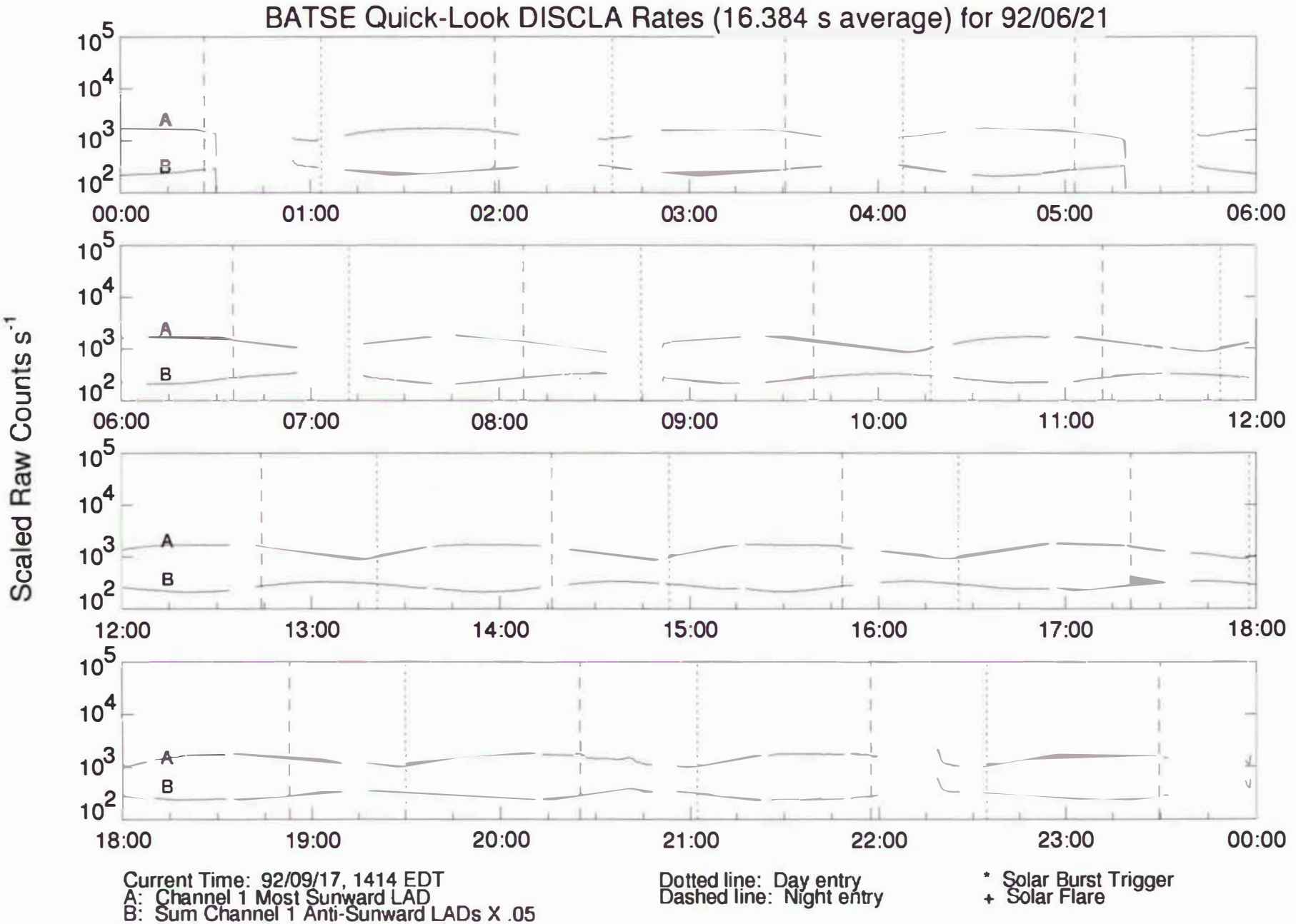


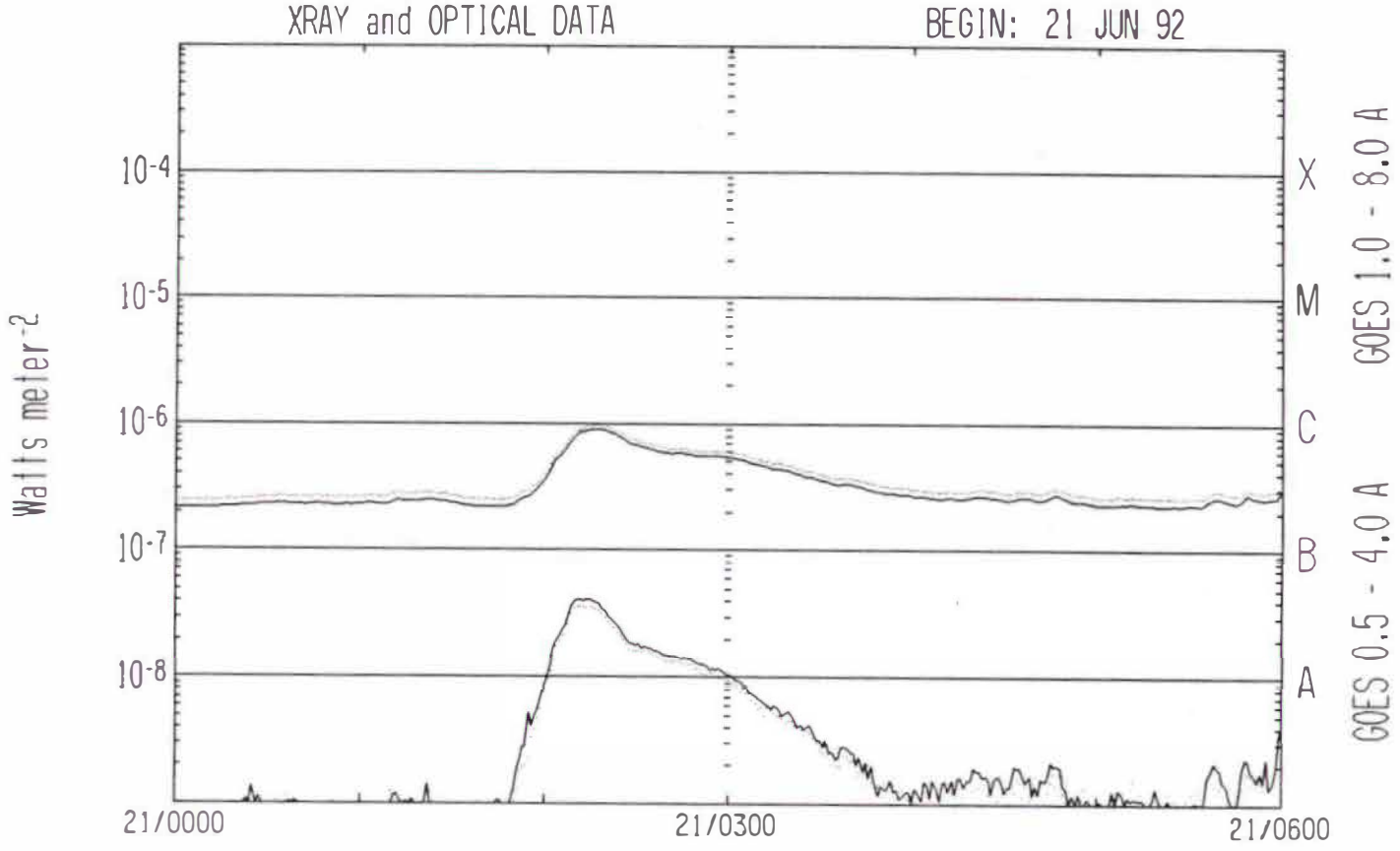
HUS 2A, MODE 1, NOT AVERAGED EDR day 172, year 1992 to day 172, year 1992 7/8/92

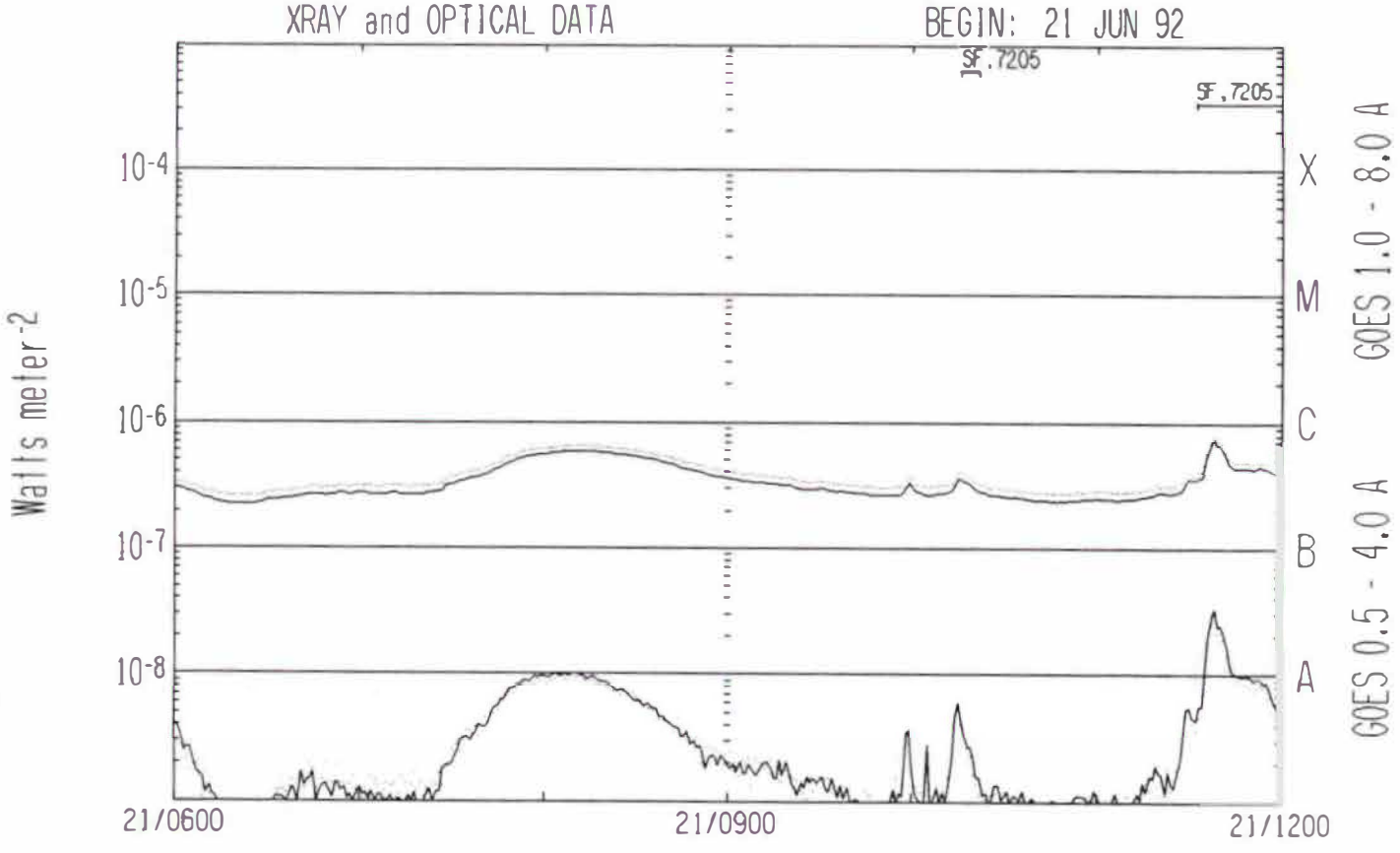
CALIBRATION DATA INCLUDED

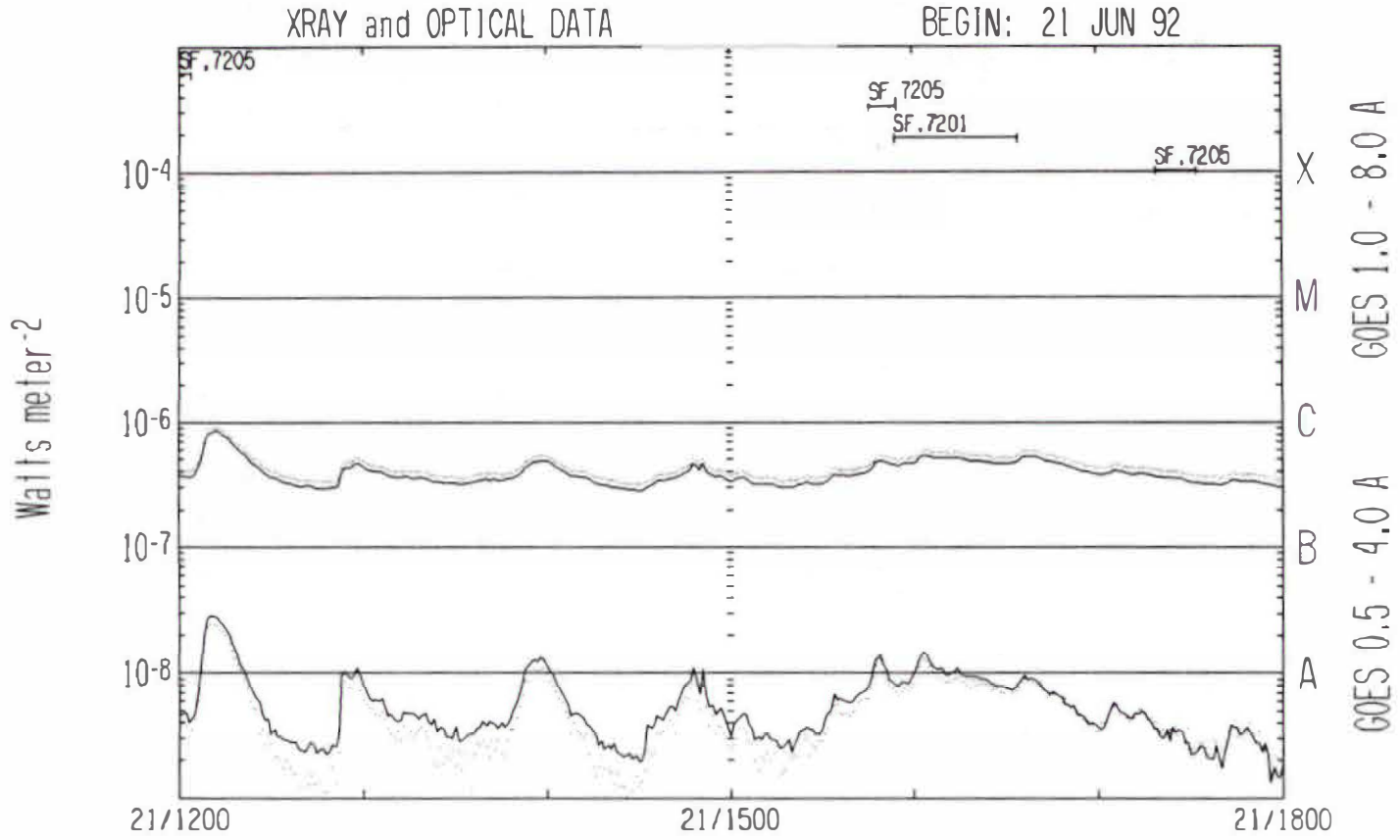


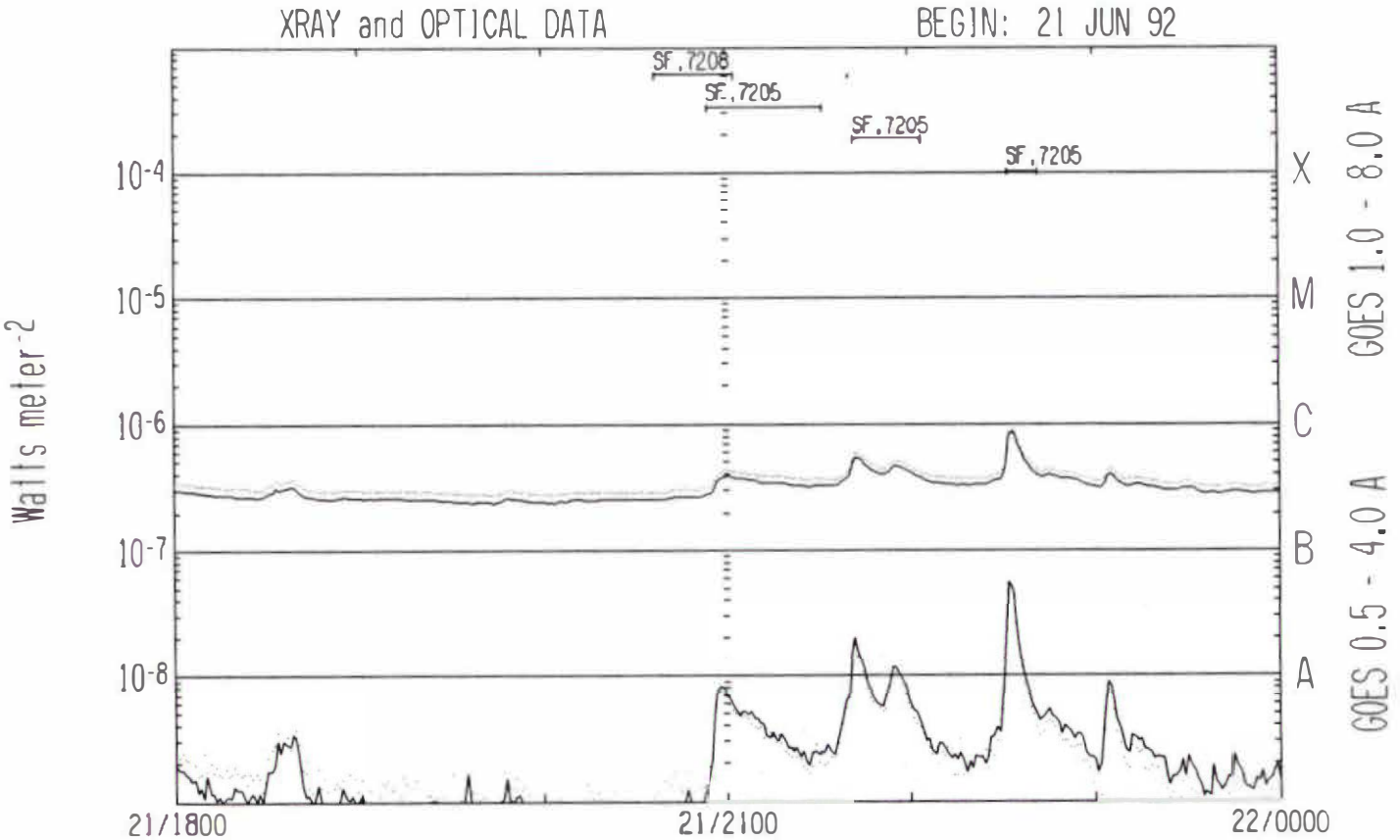
UNIVEF ` L TIME


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/21
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1414 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

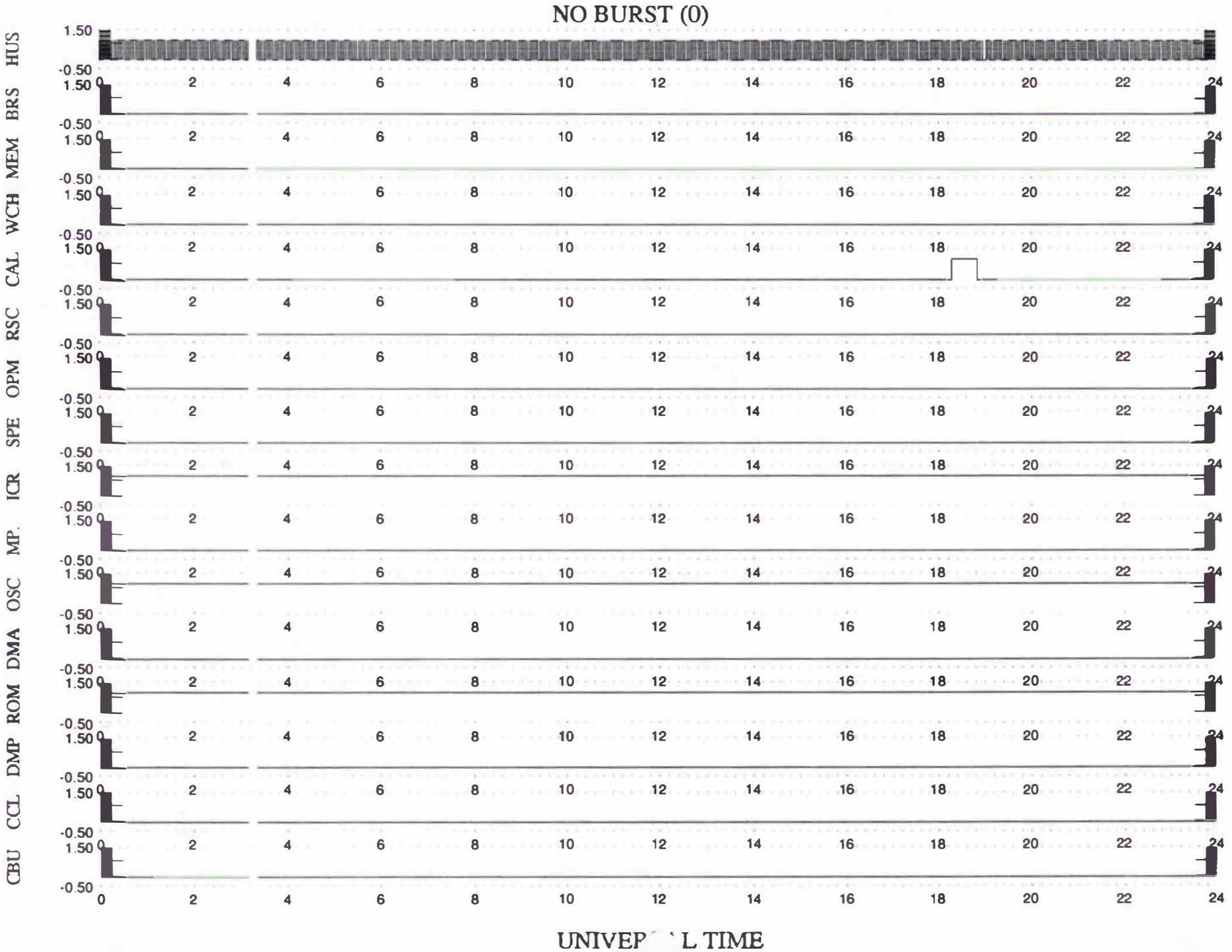

XRAY and OPTICAL DATA
BEGIN: 21 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
21/0000
21/0300
21/0600


XRAY and OPTICAL DATA
BEGIN: 21 JUN 92
SF,7205
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
21/0600
21/0900
21/1200


XRAY and OPTICAL DATA
BEGIN: 21 JUN 92
SF,7205
SF,7205
SF,7201
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
21/1200
21/1500
21/1800

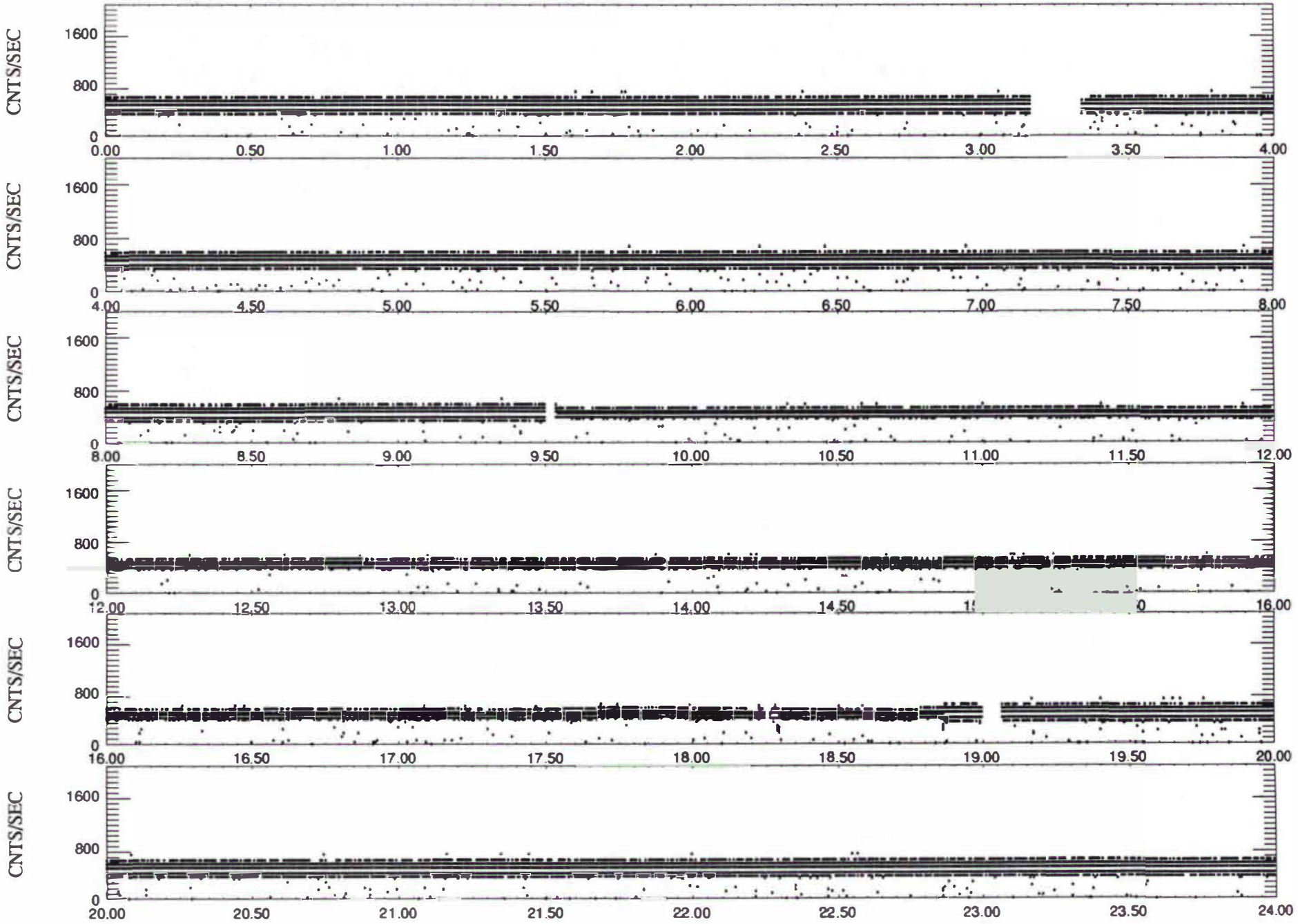

XRAY and OPTICAL DATA
BEGIN: 21 JUN 92
SF,7208
SF,7205
SF,7205
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
21/1800
21/2100
22/0000

HUS MODES EDR day 173, year 1992 to day 173, year 1992 7/8/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 173, year 1992 to day 173, year 1992 7/8/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1662
EVENT OF 1992 JUN 22 DAY OF YEAR=174
EVENT CROSSING TIME AT BATSE : 23283. S. OR 06:28:02.9
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 31.900 -64.200
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 22/ 6/ 92 IS:
RA= 149.491 DEC= 6.922 DIST= 5.797 AU
BATSE-ULYSSES DISTANCE = 867294032. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 892.82 SECS.
CROSSING TIME AT ULYSSES IS 24176. S. OR 06:42:55.7 +/- 541.31 SECONDS

No

From KOSHUT@ssl.msfc.nasa.gov Wed Jun 24 12:33:48 1992
Date: Wed, 24 Jun 1992 14:33:31 -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.: 01662

Jun 22

TIME: TJD=8795 SECONDS=23284

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=158.3 AZIMUTH=49. ERROR= DEGREES

COMMENTS:
BURST OF ~ 0.15 SEC DURATION, WITH NO EMISSION OBSERVED ABOVE 300 KEV.

No liz

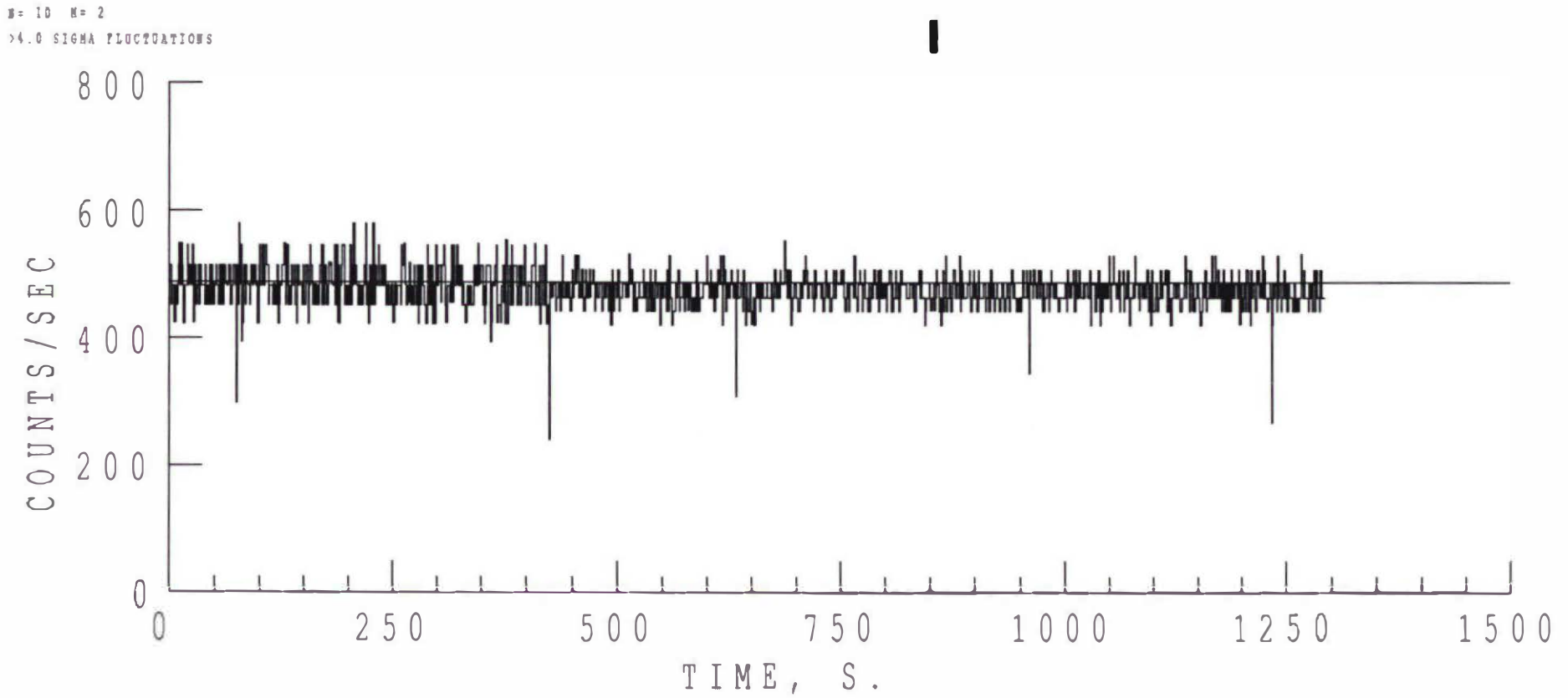
8/ 6/94

ULYSSES RT

22/ 6/92 23652.197 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



Date: June 11 '03

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. BATSE Data

☐ BATSE ephemeris for T_0? No

☐ Error circle position and radius from public catalog used? N/A

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

3. NEAR Data

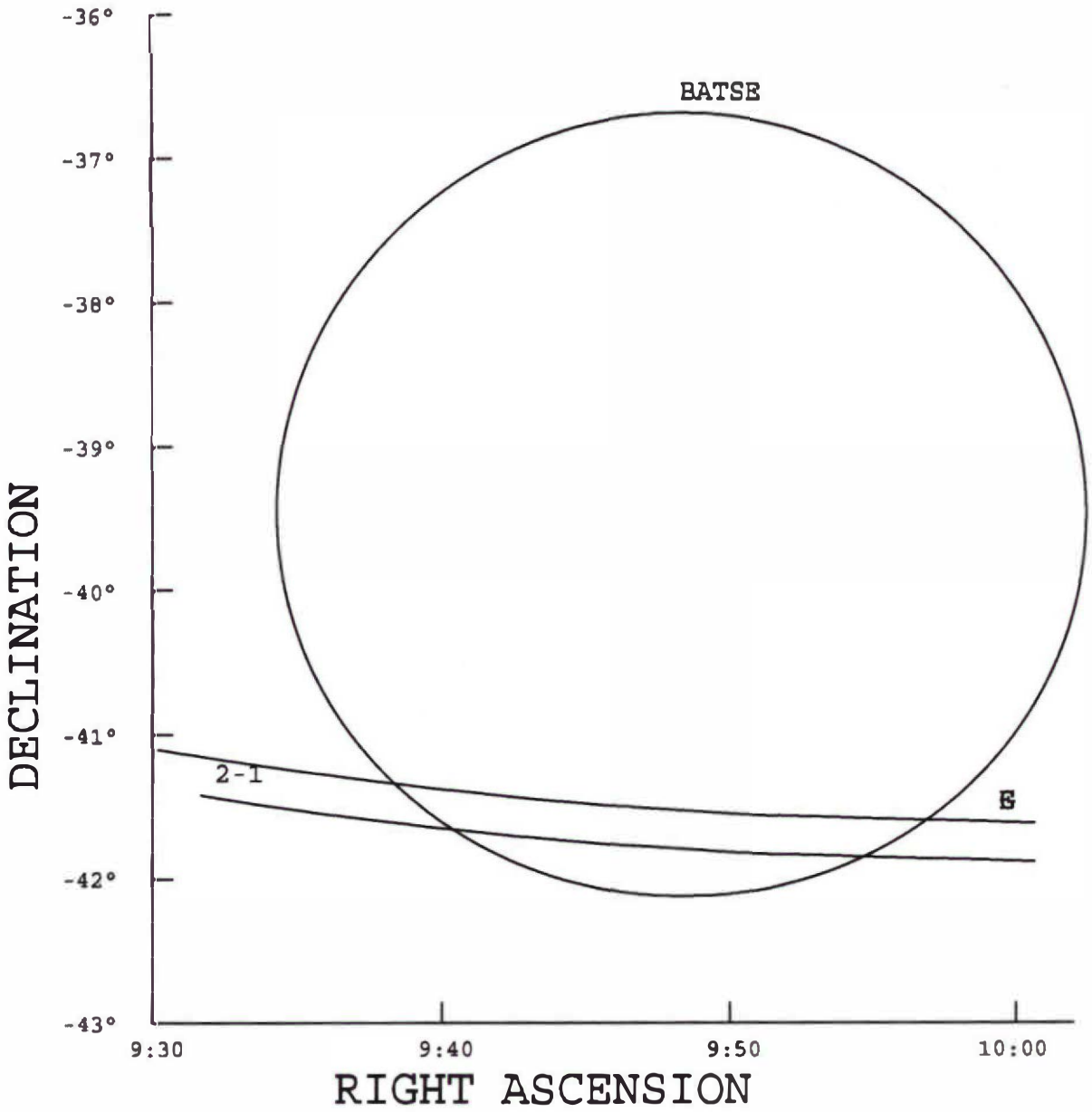
☐ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

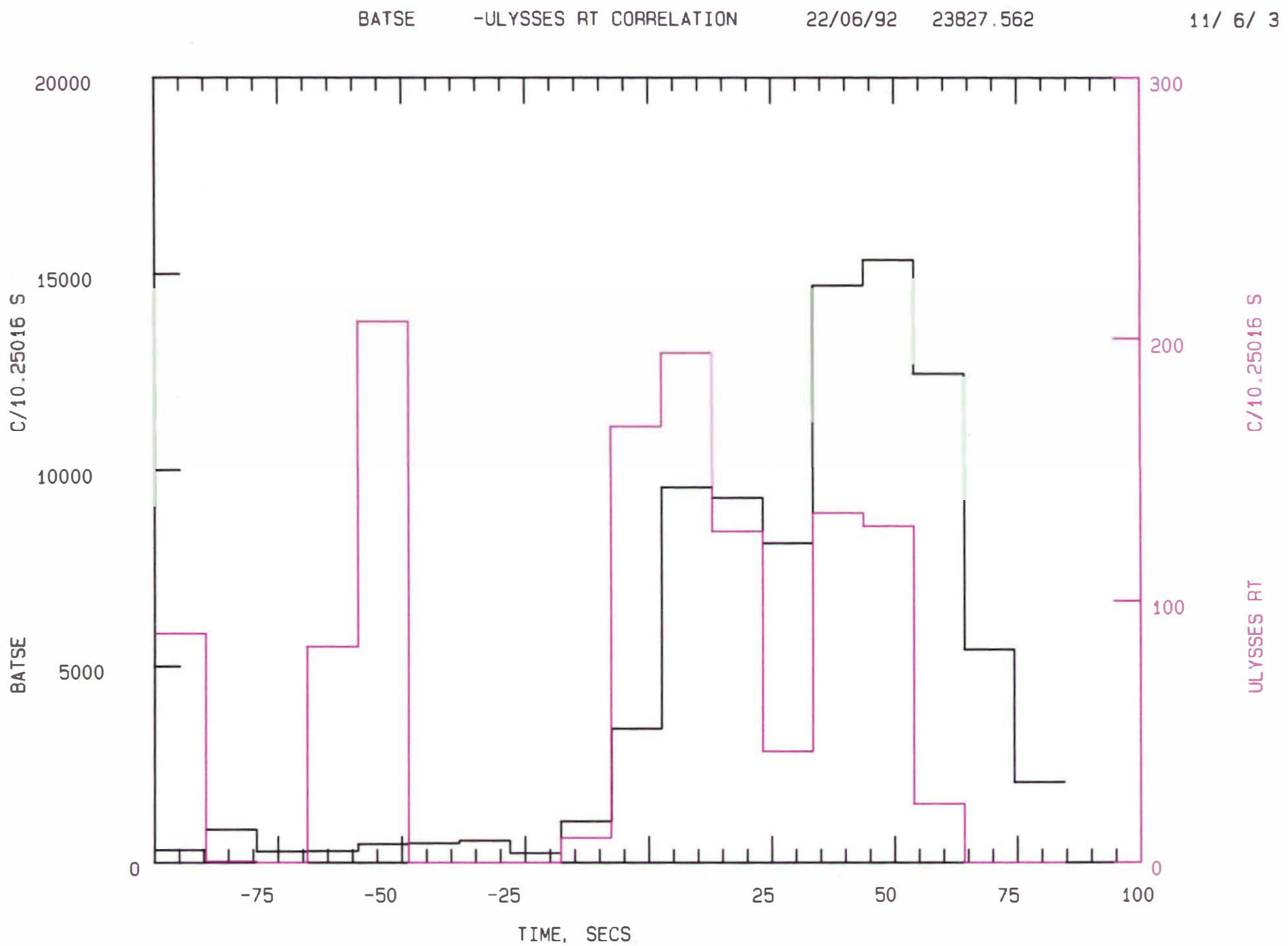
☐ BATSE >100 keV data used for NEAR correlation?

☑ ACCESS database updated?

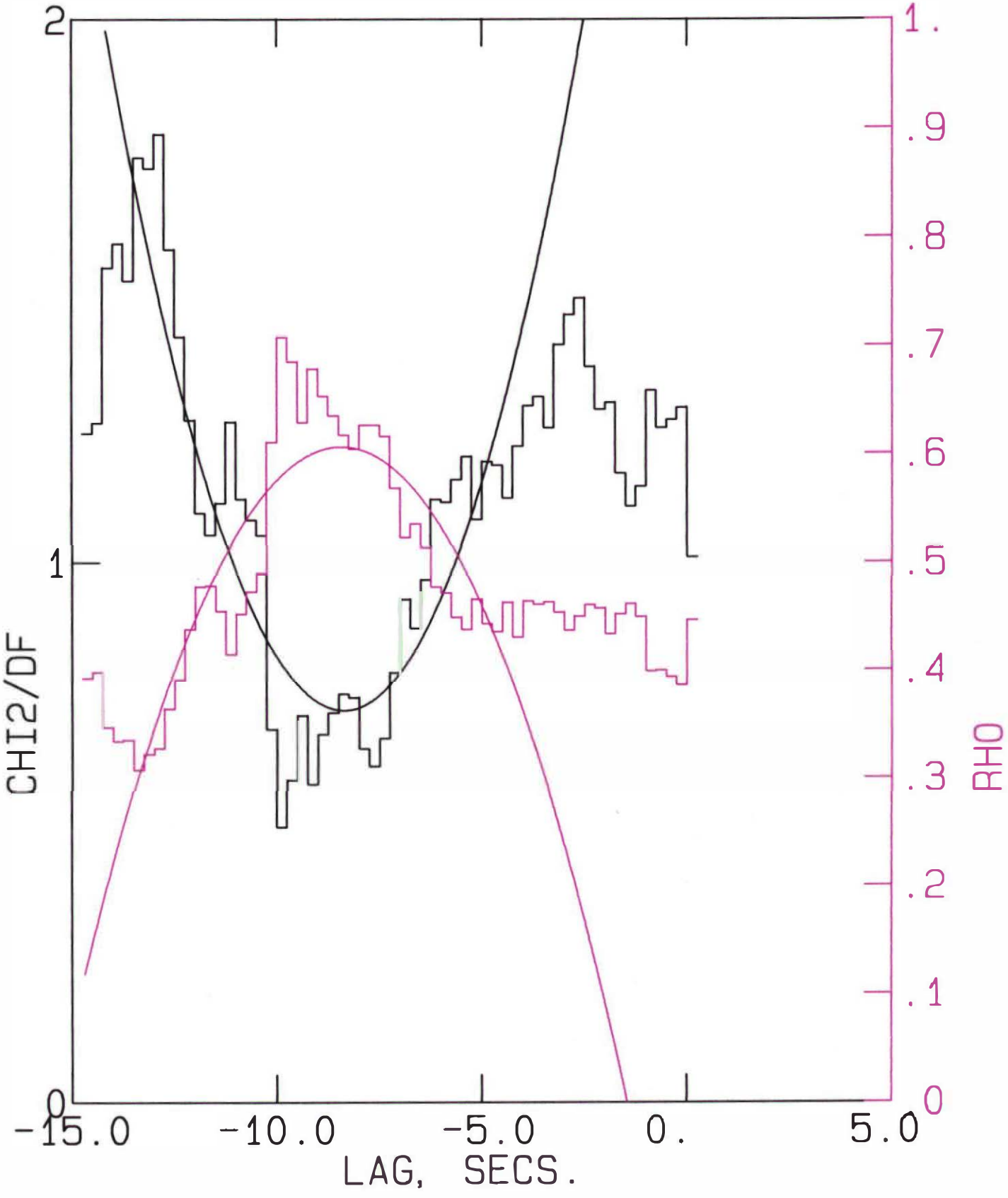
EVENT OF JUN 22, 1992 6:37

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




BATSE -ULYSSES RT CORRELATION 22/06/92 23827.562 11/ 6/ 3
20000
15000
10000
5000
0
C/10.25016 S
BATSE
300
200
100
0
C/10.25016 S
ULYSSES RT
-75
-50
-25
25
50
75
100
TIME, SECS

BATSE -ULYSSES RT CORRELATION 22/06/92 23827.562



****
CATSEARCH PROGRAM
****

BATSE BURST # 1663
EVENT OF 1992 JUN 22 DAY OF YEAR=174
EVENT CROSSING TIME AT BATSE : 25505. S. OR 07:05:04.5
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 162.900 45.700
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 22/ 6/ 92 IS:
RA= 149.491 DEC= 6.922 DIST= 5.797 AU
BATSE-ULYSSES DISTANCE = 867294032. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2200.62 SECS.
CROSSING TIME AT ULYSSES IS 23304. S. OR 06:28:23.8 +/- 342.62 SECONDS

Trigger

From KOSHUT@ssl.msfc.nasa.gov Wed Jun 24 13:46:17 1992
Date: Wed, 24 Jun 1992 15:46:01 -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: 1555

BATSE BURST TRIGGER
NO.: 01663

Jun 22

TIME: TJD=8795 SECONDS=25506

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=44.5 AZIMUTH=113.1 ERROR= DEGREES

COMMENTS:
STRONG BURST OF ~ 50 SEC DURATION WITH FAST (~ 1 SEC) RISE, COMPLEX
STRUCTURE, AND EXPONENTIAL DECAY TO BACKGROUND. PEAK RATE IS AT
TRIGGER + 16 SEC. SIGNIFICANT EMISSION ABOVE 300 KEV IS OBSERVED.
THERE IS PRECURSOR EMISSION STARTING AT ~ TRIGGER - 50 SEC, WITH A
DURATION OF ~ 20 SEC. THE PRECURSOR IS WEAK, AND NO EMISSION IS OBSERVED
ABOVE 300 KEV.

Yes

Helio corr removed

Date: Dec 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?

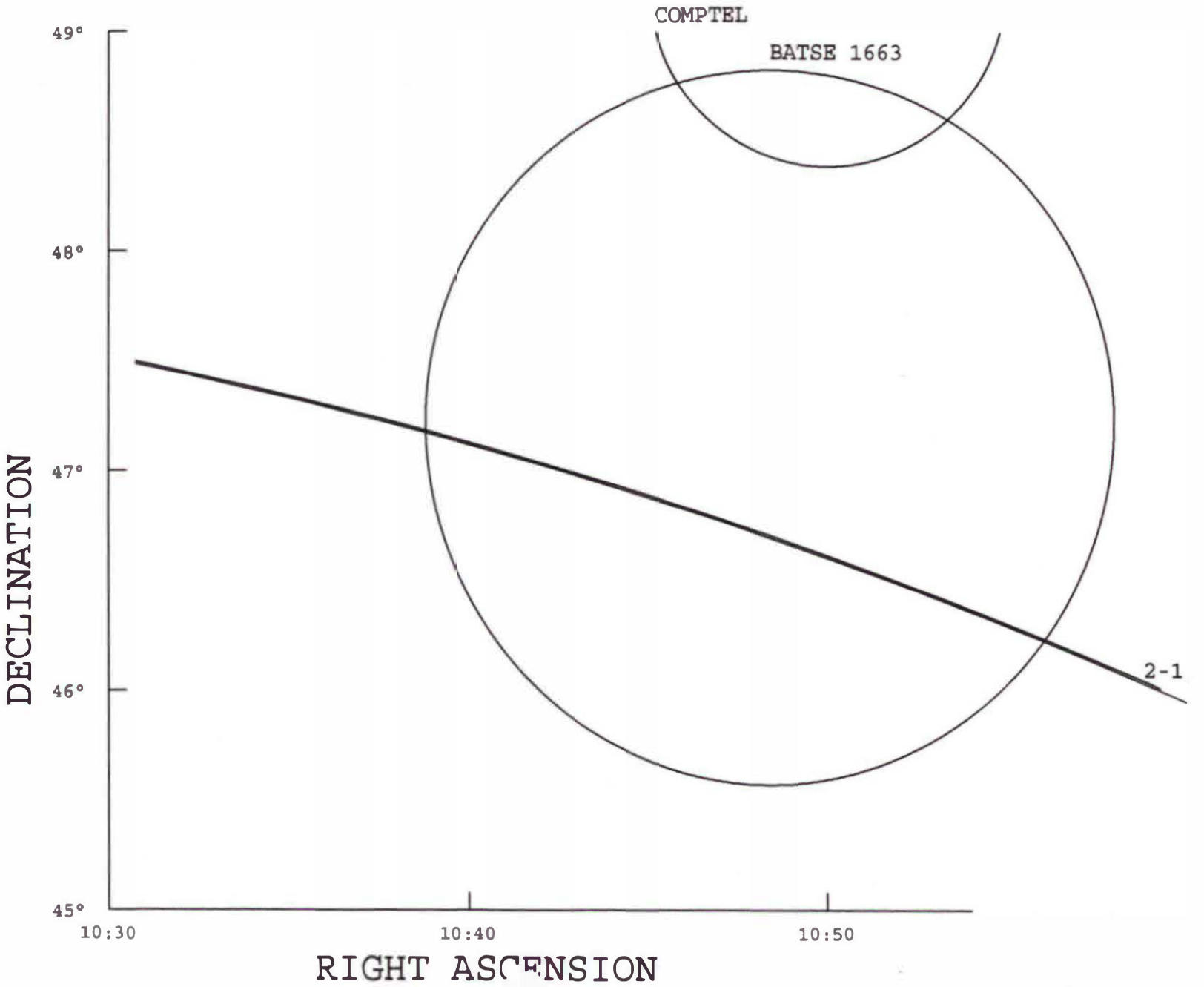
☐ Geocentric time used?

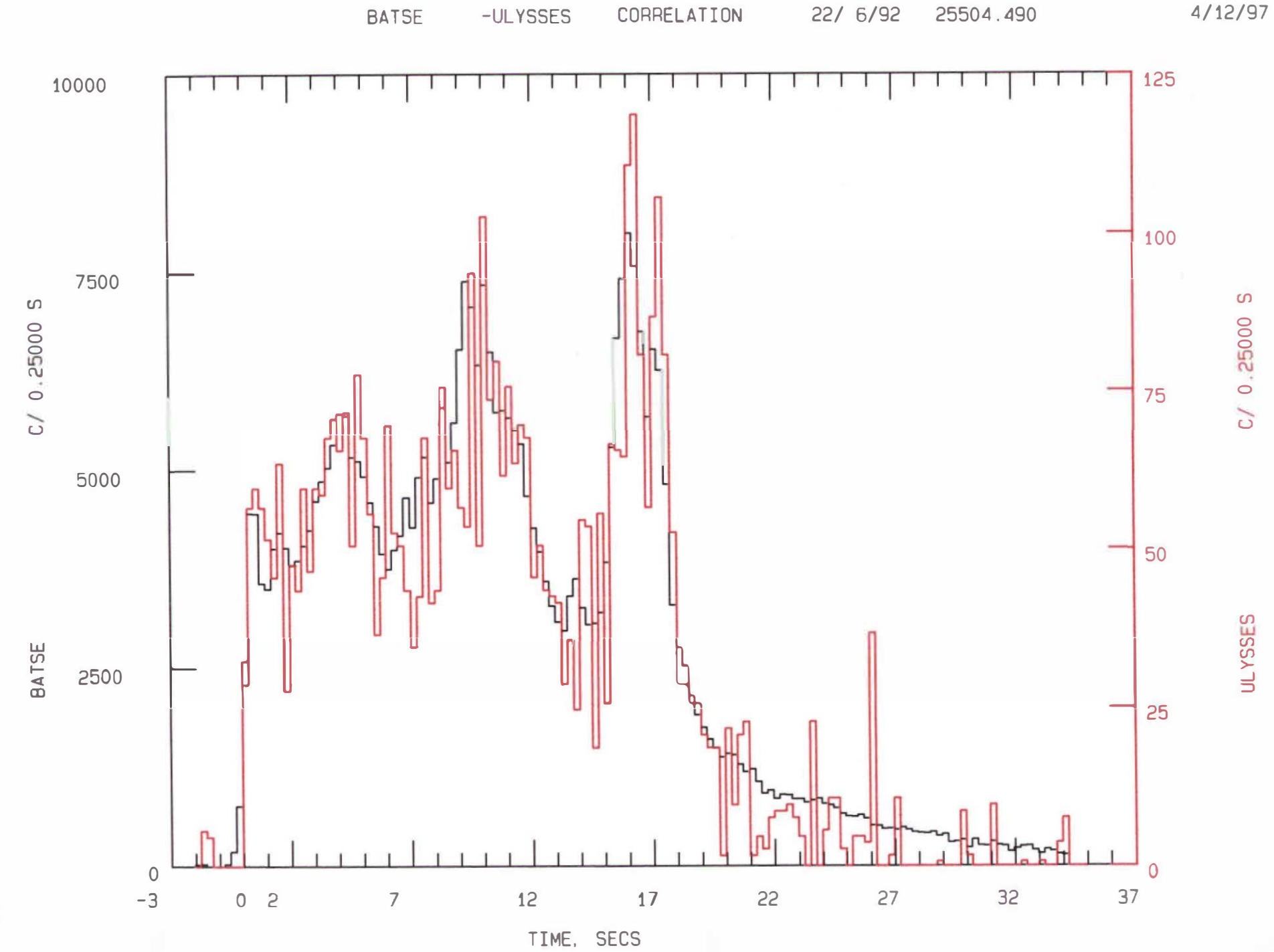
☑ ACCESS database updated?

EVENT OF JUN 22, 1992 6:28

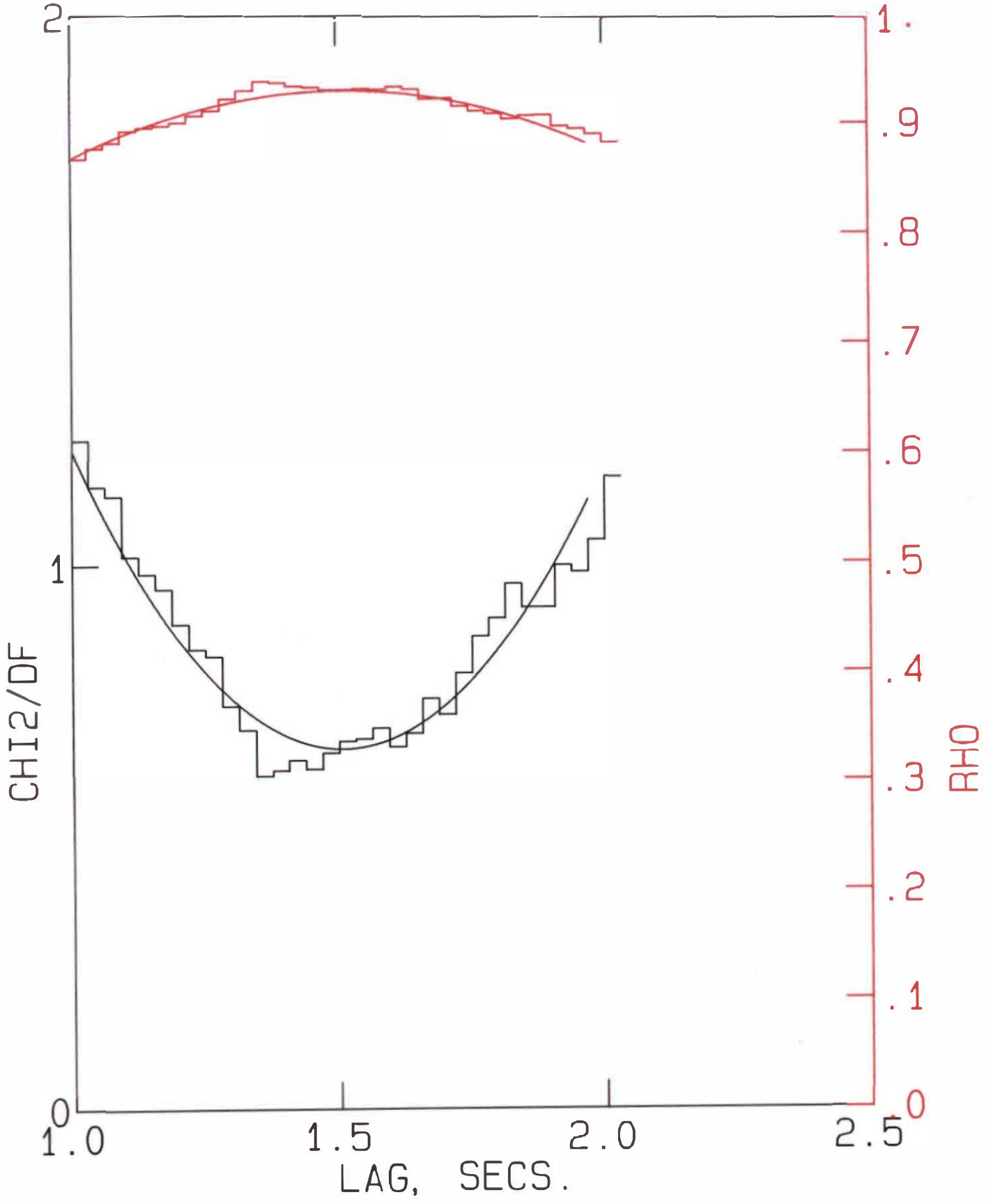
4/12/97

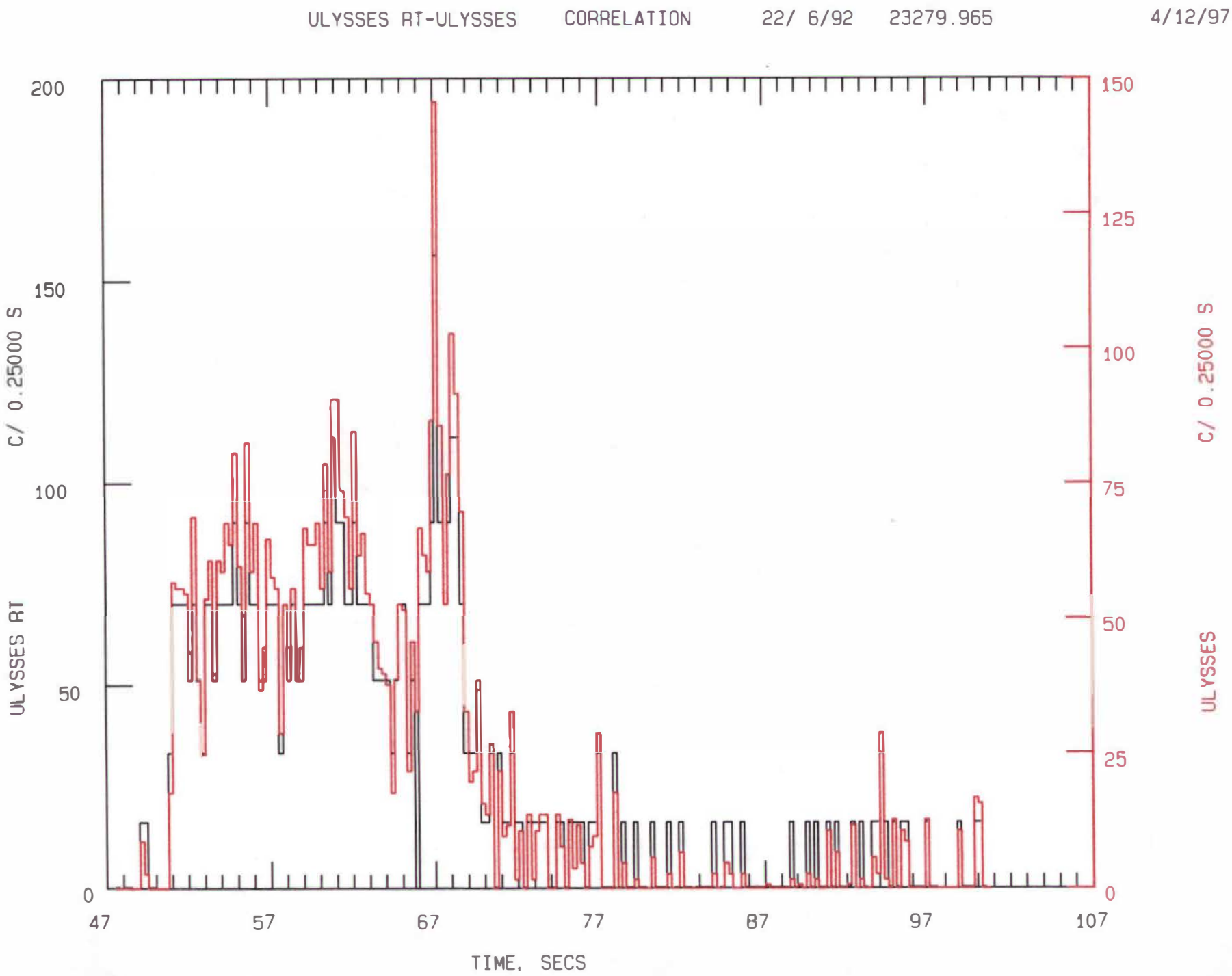
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




BATSE -ULYSSES CORRELATION 22/ 6/92 25504.490 4/12/97
10000
7500
5000
2500
0
C/ 0.25000 S
BATSE
125
100
75
50
25
0
C/ 0.25000 S
ULYSSES
-3
0
2
7
12
17
22
27
32
37
TIME, SECS

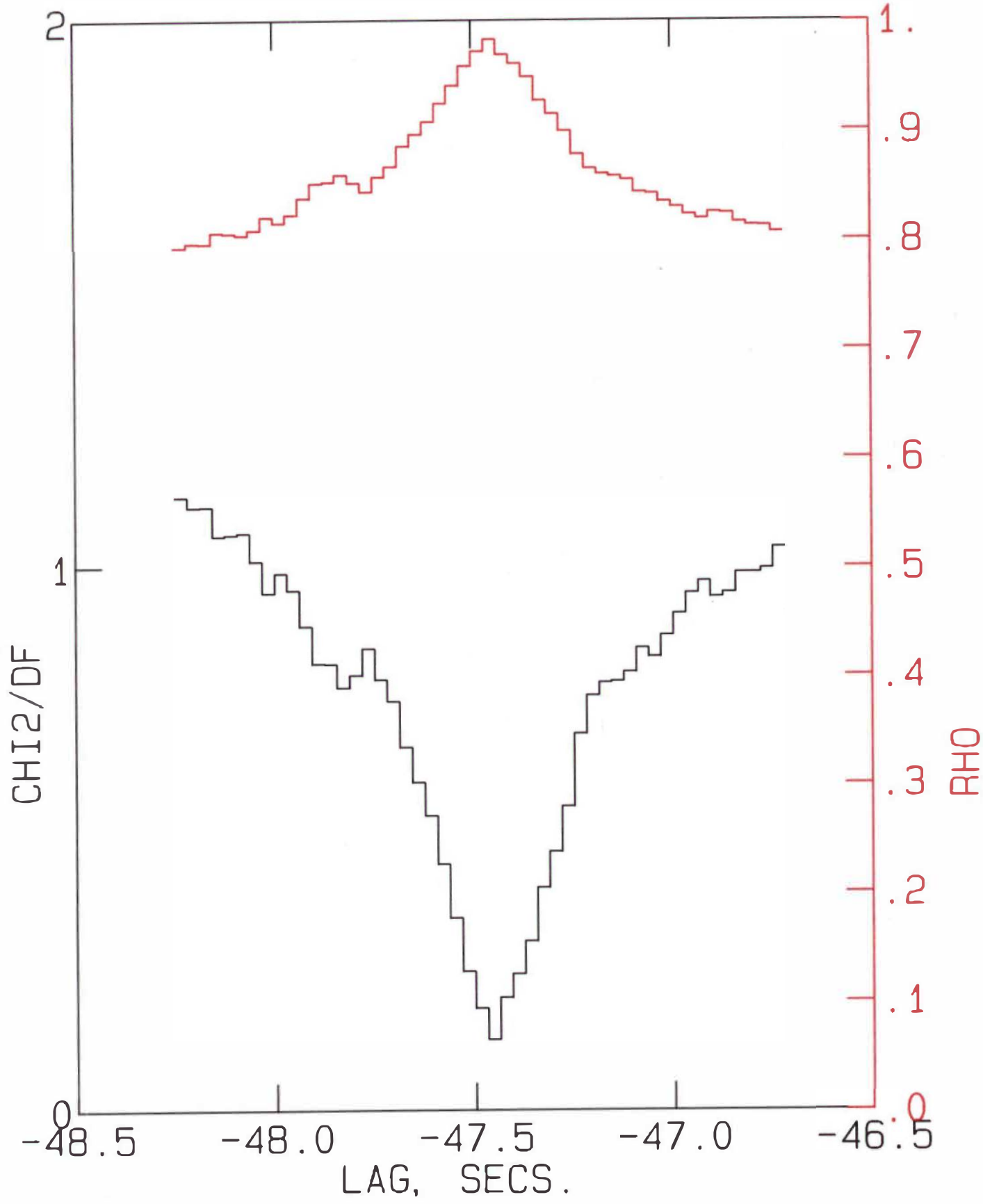
BATSE -ULYSSES CORRELATION 22/ 6/92 25504.490




ULYSSES RT-ULYSSES CORRELATION 22/ 6/92 23279.965 4/12/97
200
150
100
50
0
C/ 0.25000 S
ULYSSES RT
150
125
100
75
50
25
0
C/ 0.25000 S
ULYSSES
47
57
67
77
87
97
107
TIME, SECS

4/12/97

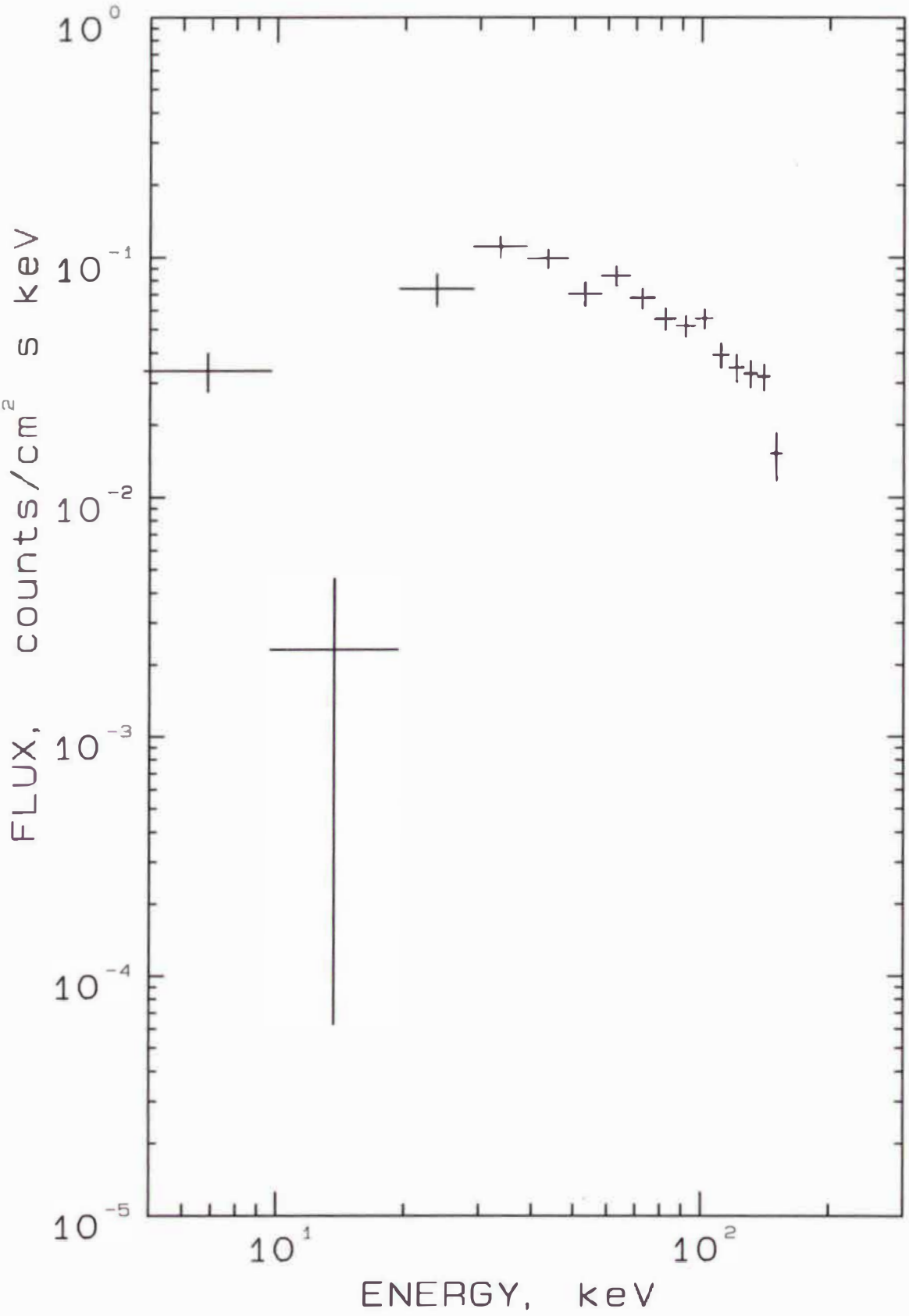
ULYSSES RT-ULYSSES CORRELATION 22/ 6/92 23279.965

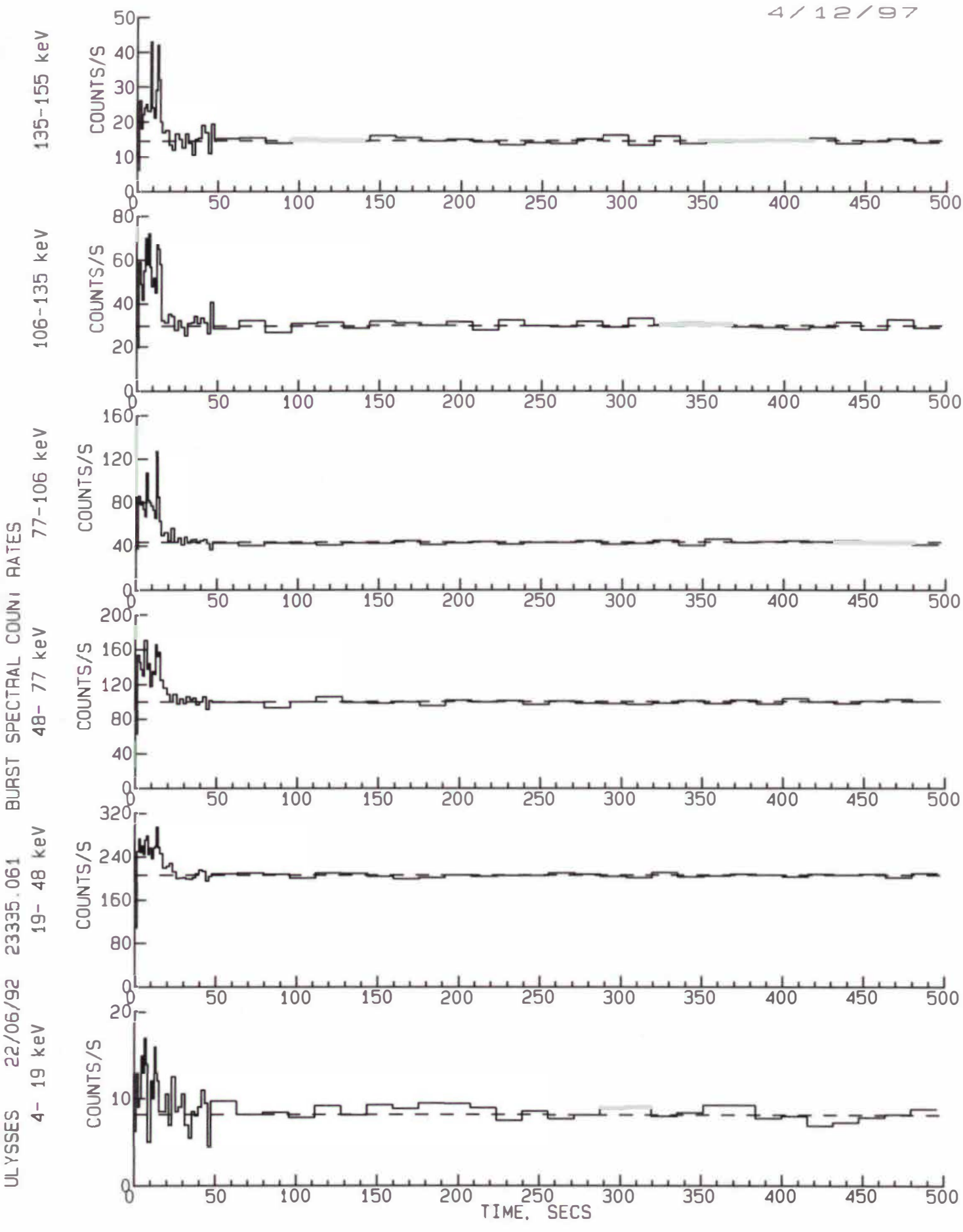


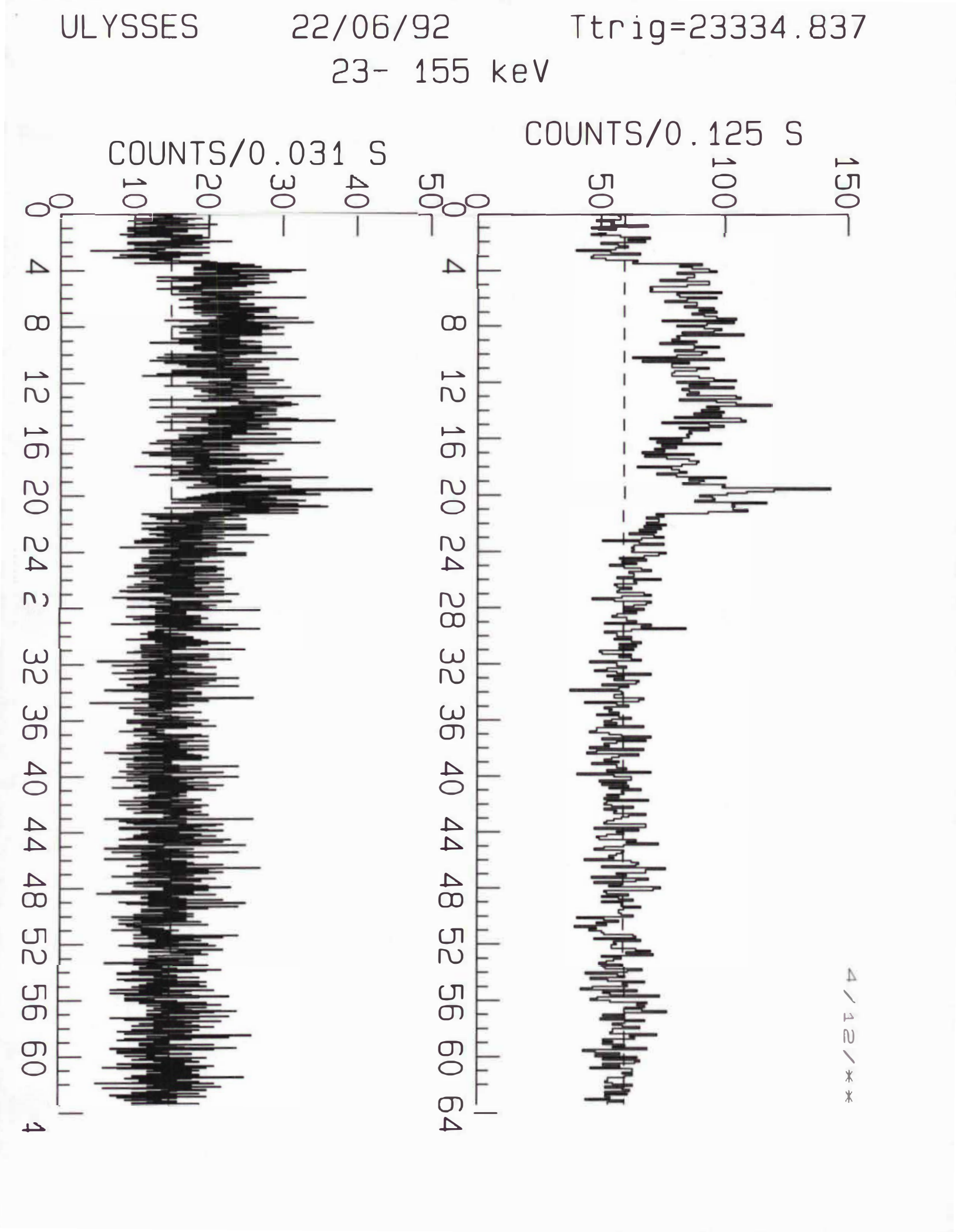
4/12/97

ULYSSES 22/06/92 23335.061

SPECTRUM INTEGRATED OVER 31.4 SECONDS, INTERVALS 2 TO 25




4/12/97
ULYSSES 22/06/92 23335.061 BURST SPECTRAL COUNT RATES
4- 19 keV
19- 48 keV
48- 77 keV
77-106 keV
106-135 keV
135-155 keV
COUNTS/S
TIME, SECS

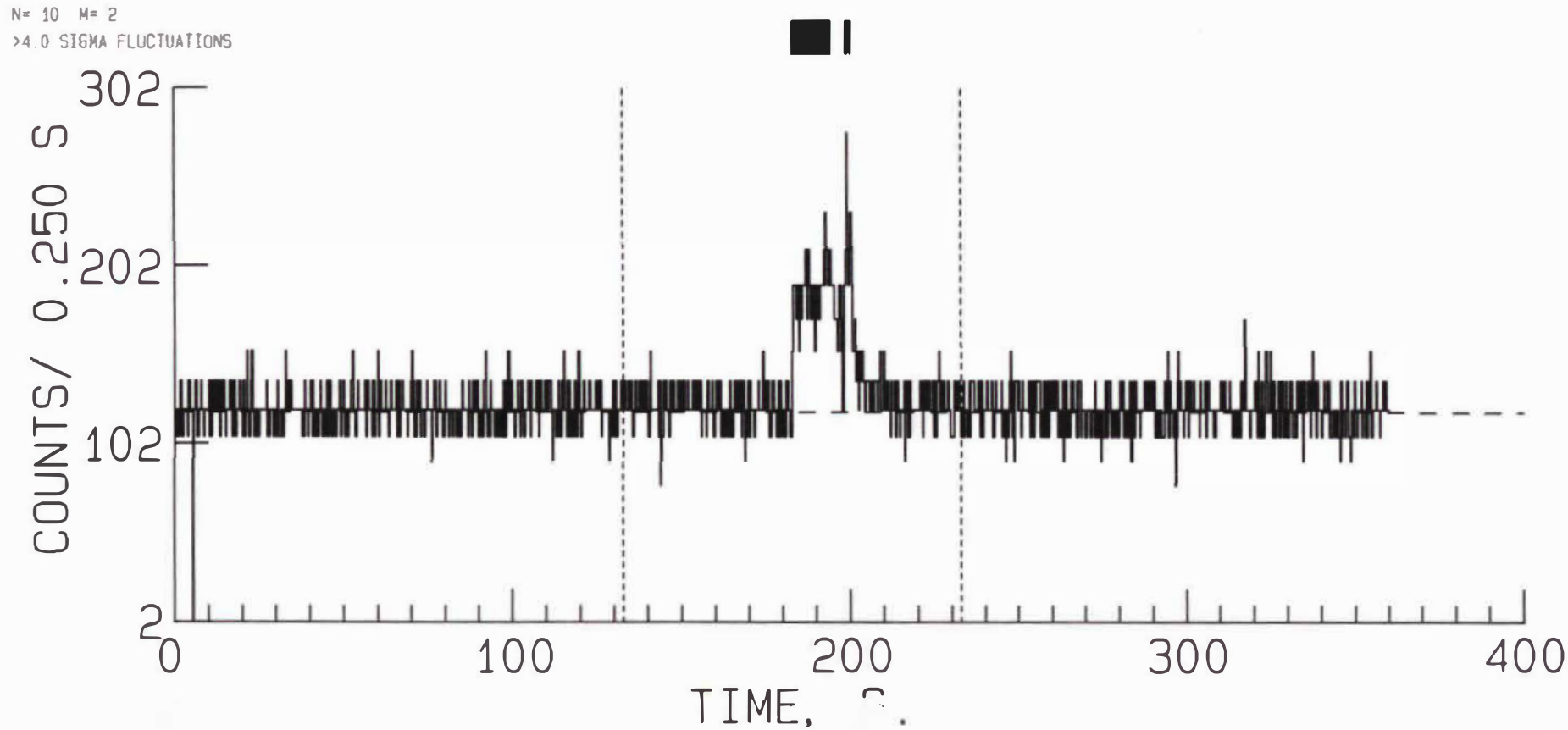

ULYSSES 22/06/92 Ttrig=23334.837
23- 155 keV
COUNTS/0.031 S
COUNTS/0.125 S
0 10 20 30 40 50
0 50 100 150
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
4 / 12 / * *

ULYSSES RT

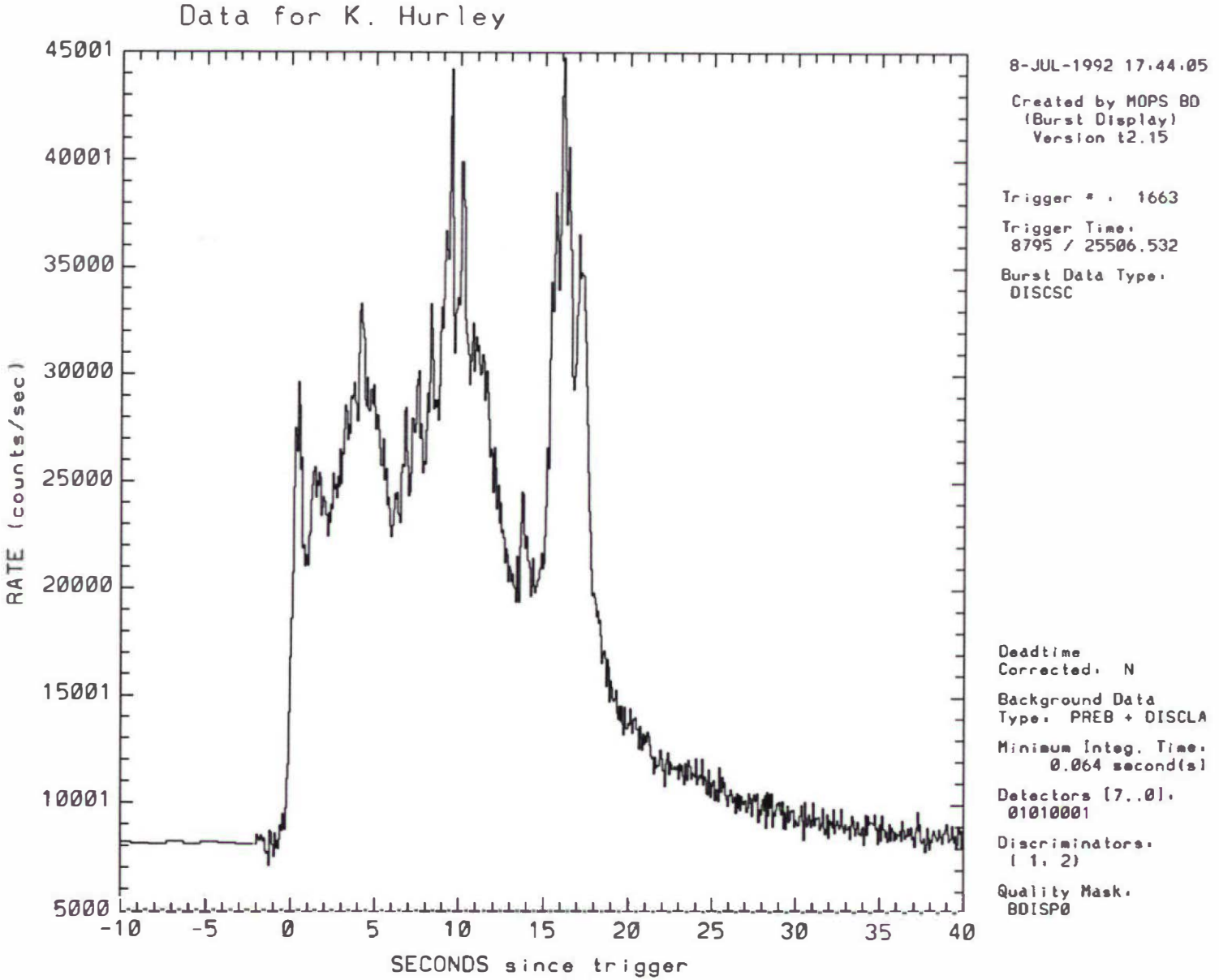
4/12/97

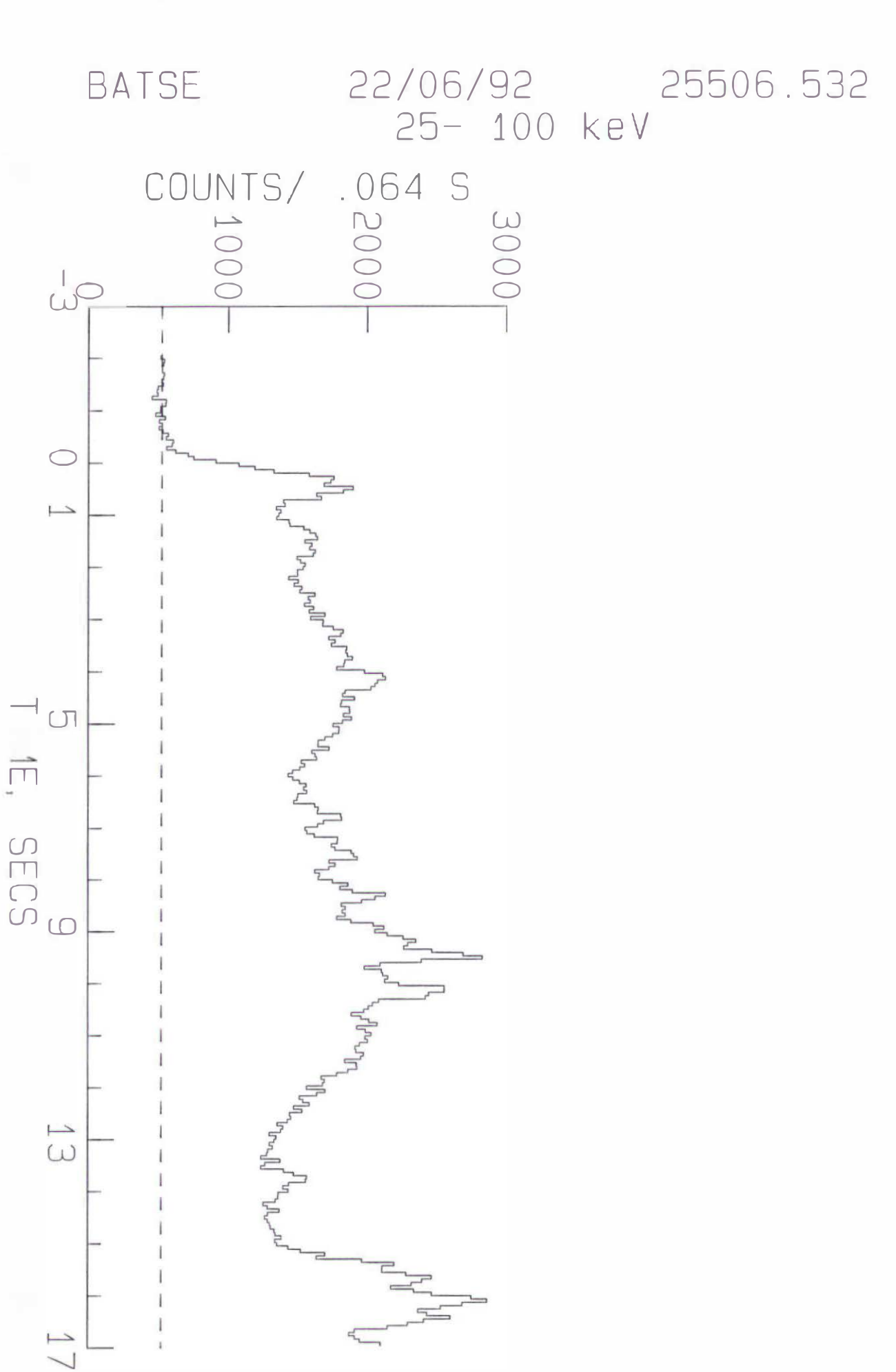
22/ 6/92 23148.189 s

23- 155 keV



$\alpha = 158,\ \delta = 44$




BATSE 22/06/92 25506.532
25- 100 keV
COUNTS/ .064 S
1000
2000
3000
-3
0
1
5
9
13
17
T-E, SECS

BATSE 22/06/92 25506.532

25- 100 keV

COUNTS/ .064 S

0 1000 2000 3000

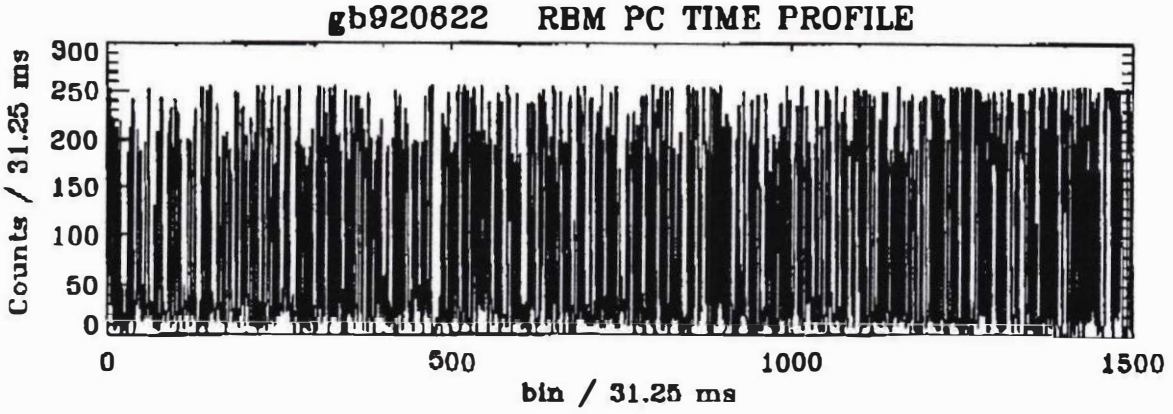
17 21 25 29 33 37

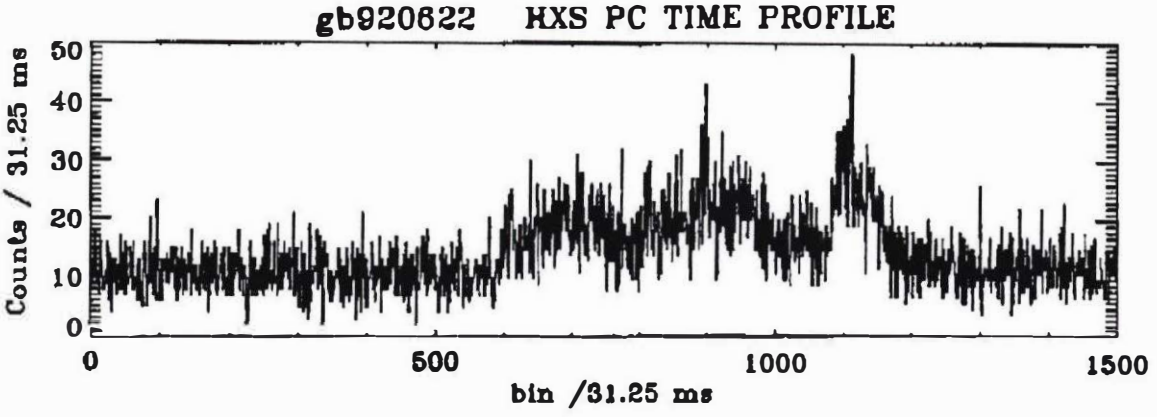
TIME, SECS

20/8/92

119

Yohkoh


gb920622 RBM PC TIME PROFILE
Counts / 31.25 ms
300
250
200
150
100
50
0
0
500
1000
1500
bin / 31.25 ms


gb920622 HXS PC TIME PROFILE
Counts / 31.25 ms
50
40
30
20
10
0
0
500
1000
1500
bin /31.25 ms

COMPTEL/BATSE/IPN Burst Localizations

All Coordinates Epoch J2000.0

UB= Ulysses/BATSE UP = Ulysses/PVO BP= BATSE/PVO

		Center		Radius			BATSE Position					COMPTEL Position			
Burst	Rf	Ra	Dec	Radius	(-/+)	D (AU)	Ra	Dec	1σ	Smin	Rf	Ra	Dec	1σ	Smin
GRB910425 UB	1	115.140	23.172	51.733	0.053	2.848	91.29	-22.77	1.02	0.27	3	90.20	-22.20	0.92	0.28
GRB910503 UB	1	117.730	22.657	30.352	0.010	3.042	87.45	38.74	0.87	0.03	3	87.00	38.60	0.44	0.30
GRB910601 UB	1	307.038	-20.538	52.936	0.011	3.708	310.12	32.34	0.17	0.02	3	309.90	32.70	0.46	0.37
GRB910627 UB	1	134.824	18.425	66.820	0.031	4.215	197.99	-2.48	0.28	1.28	3	199.40	-5.00	1.63	0.96
UP	1	133.523	18.792	68.352	0.036	3.621	-	-	-	1.53	-	-	-	-	0.71
GRB910709	NA	NA	NA	NA	NA	NA	172.77	81.67	2.31	NA	3	144.10	75.60	1.80	NA
GRB910814 UB	1	328.558	-13.966	45.699	0.018	4.918	346.35	30.43	0.48	1.89	3	343.80	29.50	0.39	0.19
UP	1	328.287	-14.629	46.428	0.019	4.626	-	-	-	1.87	-	-	-	-	0.17
GRB911118 UB	1	166.979	6.889	30.110	0.017	4.972	167.03	-20.85	0.36	2.37	3	166.30	-22.50	1.11	0.71
UP	1	162.619	8.562	32.018	0.019	4.248	-	-	-	2.29	-	-	-	-	0.75
BP	1	190.131	-2.551	30.766	0.086	0.813	-	-	-	1.76	-	-	-	-	0.23
GRB920622 UB	1	150.167	6.667	41.335	0.009	5.800	162.1	47.17	0.31	0.43	3	162.50	49.20	0.81	2.44
GRB920627 UB	1	150.590	6.327	23.540	0.049	5.869	166.02	-2.58	0.65	5.74		166.80	-8.50	1.18	1.61
GRB920830 UB	1	338.192	0.949	86.268	0.018	?	258.53	-73.99	0.54	1.81	3	259.00	-74.50	1.35	1.78
GRB930118	NA	NA	NA	NA	NA	NA	228.40	-34.30	?	NA	4	221.80	-34.80	1.47	NA
GRB930131 UB	1	161.411	-14.563	22.256	0.011	4.218	182.04	-8.24	2.16	1.09	3	186.20	-7.90	1.77	2.93
GRB930309 UB	1	332.600	14.645	36.601	0.035	3.998	325.41	51.73	0.72	0.93	3	322.70	55.20	0.74	4.67
GRB930612 UB	1	143.974	-11.184	63.928	0.053	4.870	103.07	-69.76	0.4	0.07	3	106.50	-71.00	1.60	0.17
GRB930704 UB	1	146.146	-11.823	82.959	0.113	5.089	100.9	60.8	0.59	2.01	3	99.30	62.80	1.08	0.07
BM	1	159.825	8.635	68.701	2.319	1.981	-	-	-	1.04	-	-	-	-	0.45
GRB931229	NA	NA	NA	NA	NA	NA	240.06	19.7	1.4	NA	3	241.90	21.00	2.35	NA
GRB940217 UB	1	328.736	51.947	69.334	0.050	3.038	29.07	4.55	0.69	0.84	3	30.10	3.10	0.32	0.94
GRB940301 UB	1	321.914	52.508	59.395	0.136	2.953	103.51	64.35	0.35	0.02	3	102.70	64.00	0.40	0.17
GRB940314 UB	1	314.850	51.972	64.530	0.220	?	354.86	-2.14	0.94	0.77	3	356.00	-1.40	1.43	0.92
GRB940520 UB	1	300.149	41.387	40.380	0.133	2.986	323.5	6.93	0.88	0.16	3	324.70	7.70	0.70	0.27
GRB940619 UB	1	303.998	39.140	69.375	0.211	3.039	299.05	-29.89	0.34	0.20	3	298.50	-31.50	1.15	1.44
GRB940708 UB	1	308.119	39.489	17.431	0.038	?	301.58	24.66	1.02	1.61	3	300.50	22.70	1.03	0.56
GRB940728 UB	1	133.614	-41.397	36.245	0.131	?	85.49	-39.87	1.44	0.17	3	85.10	-38.00	1.10	0.75
GRB940921 UB	2	155.516	-55.210	54.361	0.121	2.583	196.59	-18.71	?	6.49	4	207.10	-16.40	0.68	0.75
GRB941017	NA	NA	NA	NA	NA	NA	302.63	11.10	?	NA	4	301.70	13.30	2.10	NA
GRB950208 UB	2	334.715	-27.012	83.397	0.022	2.301	337.06	54.19	?	2.17	4	344.80	56.00	1.95	0.05
GRB950421 UB	2	177.048	-19.097	81.048	0.226	2.171	71.92	-63.03	?	1.41	4	70.10	-61.70	1.43	0.11
GRB950425 UB	2	178.121	-21.566	17.005	0.207	2.154	163.16	-35.21	?	1.90	4	164.90	-33.80	0.34	0.11
GRB950522 UB	2	7.656	42.578	86.989	0.063	2.039	109.57	19.31	?	1.60	4	110.81	20.34	1.14	1.47

1 Hurley, K. et al Huntsville workshop (1995)

2 BACODINE/IPN burst alert messages (Hurley)

3 BATSE 3B Catalog

4 Meegan, C. Priv. Comm. (Trigger Messages)

Smin = minimum distance between point and IPN annulus

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 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

From root Tue Dec 14 07:45 1993
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA11028; Tue, 14 Dec 93 07:45:39
Received: from mpens.mpe-garching.mpg.de (mpe.mpe-garching.mpg.de) by sunspot.ssl.berkeley.edu
        id AA00669; Tue, 14 Dec 93 06:48:11 PST
Received: from DECNET-MAIL (JCG@MPECR1) by MPE.MPE-GARCHING.MPG.DE (PMDF
 V4.2-14 #4099) id <01H6H4ER9YKW9LV0X2@MPE.MPE-GARCHING.MPG.DE>; Tue,
 14 Dec 1993 15:52:24 CET
Date: Tue, 14 Dec 1993 15:52:24 +0100 (CET)
From: JCG%MPECR1@mpe.mpe-garching.mpg.de
Subject: equinox for coordinates?
To: khurley@space6.ssl.berkeley.edu
Message-Id: <01H6H4ERBASY9LV0X2@MPE.MPE-GARCHING.MPG.DE>
X-Vms-To: MPE::IN%"khurley@space6.ssl.berkeley.edu"
Mime-Version: 1.0
Content-Transfer-Encoding: 7BIT
Status: R

Dear Kevin,

  we are just in the process of identifying ROSAT sources along the
triangulation arc of GB 920622 within the COMPTEL error box. We are, however,
not quite sure which equinox you are using for your coordinate output
(which you kindly sent me in October): Is it 1950.0 as I also used for the
previous ROSAT searches of your small triangulation boxes, or is it
2000.0, or the date of the burst (i.e. 1992.475) as my colleagues at UNH claim?

My latest information for GB 920622 is:
Center: alpha=150.166656, delta=6.66716, radius=41.3348 degrees

I would be glad for the clarification of this question.

With best regards
Jochen Greiner

TO: KEVIN HURLEY, SPACE SCIENCES LABORATORY
BERKELEY, FAX 001 510 643 8640 (8302)

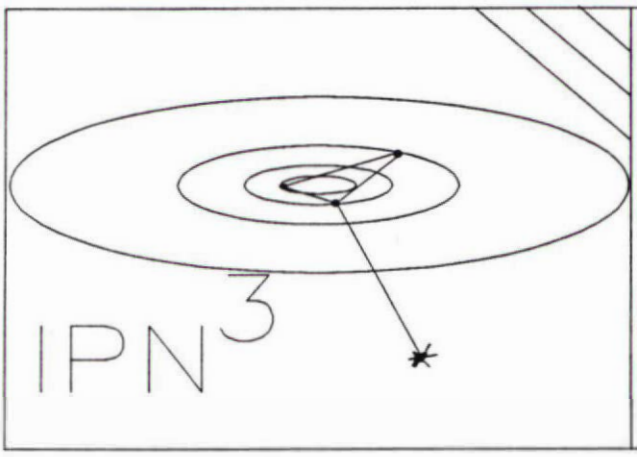
FROM MICHAEL SOMMER , HUNDHAM 2, D-83122 SAMERBERG
FAX D - 8032 8629

Dear Kevin, please note my new zip code. I am working on GRB920622 since Jochen Greiner wants to put ROSAT observations, COMPTEL spectra and other stuff together.

I would like you to confirm my basic data I am starting from:

Times:	BATSE raw trigger time	25506.568 sec UT	on 920622
	CGRO correction	- 2.041 sec UT	
	Batse burst onset	25504.527 sec UT	
	Ulysses GRB trigger time	23335.064 sec UT	
	Ulysses trigger delay	- 3.84 sec	
	Ulysses burst onset	23331.224 sec UT	
Diffference in burst arrival times		2173.344 sec	dt1
Distance Ulysses - Earth		2894.402 sec	dt2
Radius of annulus arccos(dt1/dt2)		41.3335 degr.	
Center of annulus			
Ep. 1950	RA = 149.5096 degr.	delta = 6.9079 degr.	
2000	RA = 150.1667	delta = 6.6677	
galact.Coord.	l = 231.7534	b = 44.6409	

(all data derived by taking CGRO position at center of earth, using SEDR final data) -- Regards Michael



FAX FROM K. HURLEY
UNIVERSITY OF CALIFORNIA
SPACE SCIENCES LABORATORY
BERKELEY, CA. 94720
PHONE: (510) 643-9173
FAX: (510) 643-8640 (OFFICE),-8302 (SECT'Y)
E-MAIL: khurley@sunspot.ssl.berkeley.edu

TO: M. Sommer Hundham, Germany
FAX #: 49 8032 8629
DATE: September 19, 1993
TOTAL NUMBER OF PAGES: 3

FAXED MG 9/20

Dear Michael,

I have found a few errors in your calculation. Although they don't make a lot of difference in the final annulus, here they are:

1. BATSE trigger is 25506.568
2. Subtract 2.042 s to get 25504.490
3. Ulysses trigger is OK, but there are 236 32/1024 s intervals of pretrigger (7.375 s) so the start of record is 23327.689
4. For the differences in burst arrival times, see the following page. I used a cross-correlation to get them.

Let me know if you agree.

Best regards,

Kevin

I revised my #s slightly after this fax

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: $C <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!)

Dezalay -> KH 7/93

DATE	U.T.	Nr UGB	Event Nature
1992-01-22	09:19:43.748	395-a	Solar Flare
1992-01-25	08:57:27.156	397-a	GRB
1992-01-26	15:27:47.181	398-a	Solar Flare
1992-01-30	09:36:04.439	400-a	Solar Flare
1992-02-05	13:16:18.413	401-a	Solar Flare
1992-02-06	18:55:30.506	402-a	Solar Flare
1992-02-07	11:54:15.583	402-b	Solar Particles
1992-02-07	13:57:21.179	402-c	Solar Particles
1992-02-08	03:03:12.168	403-a	Unknown
1992-02-08	~03:15	403-b	Solar Flare ?
1992-02-10	09:53:52.511	404-a	GRB
1992-02-11	04:22:31.263	405-a	Solar Flare
1992-02-11	20:56:14.388	406-a	Unknown
1992-02-11	21:11:06.397	406-b	Unknown
1992-02-12	05:28:23.479	406-c	Unknown
1992-02-14	23:07:22.311	408-a	Solar Flare
1992-02-15	21:29:26.098	409-a	Solar Flare
1992-02-16	12:32:56.671	409-b	Solar Flare
1992-02-18	18:44:19.178	411-a	GRB
1992-02-20	04:20:06.490	412-a	Unknown
1992-02-29	19:21:17.526	415-a	GRB
1992-03-03	10:52:09.629	417-a	Unknown
1992-03-03	11:43:17.434	417-b	Unknown
1992-03-03	~11:56	417-c	Unknown
1992-03-07	16:44:00.135	420-a	Solar Particles
1992-03-11	02:20:27.297	422-a	GRB
1992-03-11	12:23:20.018	422-b	Solar Flare ?
1992-03-25	17:17:36.626	430-a	GRB
1992-04-04	22:37:28.456	434-a	GRB
1992-04-05	07:41:37.612	434-b	GRB
1992-04-13	11:58:56.617	440-a	Unknown
1992-04-14	23:22:42.474	441-a	GRB
1992-04-20	02:12:27.422	444-a	GRB
1992-04-24	19:18:18.006	447-a	Solar Flare
1992-05-19	16:28:38.427	449-a	GRB
1992-06-22	07:05:04.644	468-a	GRB

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         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,CMPLX,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,ULYSS
           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 ANGSUN=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
```

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

In the Compton Observatory Science Report of June 11th the editor summarized a talk given at the AAS meeting by Bonnard Teegarden on the search for absorption lines in gamma-ray burst spectra. Several BATSE team members felt that the summary was inaccurate. Dr. Teegarden's own summary of his conclusions is as follows:

"Thus far the BATSE team has not found any statistically significant spectral features in 52 bursts that have been examined. At this point in time it is premature to say whether or not there is any conflict with the GINGA results. The relative sensitivities of the Ginga and BATSE experiments for line detection are similar, but differences between them could have an important effect on the question of whether there is a significant discrepancy between the two experiments. Analysis of these sensitivities is currently underway at GSFC and the University of Chicago."

COMPTEL

COMPTEL is performing well and continues routine observations.

A hard cosmic gamma-ray burst (BATSE trigger number 1663) occurred within the field of view of COMPTEL during a real-time telemetry pass of the spacecraft on 22 June 1992 (=TJD 8795). A preliminary image for this burst has been obtained, based on the few hundred counts detected over the COMPTEL energy range from 1 to 30 MeV. The burst occurred at a zenith angle of 40 degrees from the instrument axis; a preliminary determination of the burst location places it at a Galactic longitude of 172 degrees, and a Galactic latitude of 51 degrees, with an error radius of a few degrees at the present time. The analysis of this event is continuing. Procedures for the rapid analysis of such events are being implemented, with the aim of providing gamma-ray burst locations in a timely fashion for follow-up counterpart searches at other wavelengths. $\alpha = 148.7 \quad \delta = 46.4$

ver the two weeks of Observing Period 31, when the Sun was within the field of view of the telescope, and COMPTEL's solar observing mode was enabled, the Sun remained quiet and no solar activity was observed. In a classic demonstration of Murphy's Law in action, we note that, eight hours after the maneuver of the spacecraft to begin Observing Period 32 on 25 June 1992 a strong X3.9-class solar flare occurred. The Sun by then was outside the field of view of the instrument, and this solar flare event was not detected by COMPTEL.

EGRET

The EGRET instrument and ground control systems continue to function well. All of the data up through June 29, 1992 have been processed by the automatic analysis system, including the period of time in March when the tape recorded data was of poor quality.

The EGRET team presented results in eight talks at the GRO Conference in Ising, Germany on June 22-24, 1992 covering observations of galactic diffuse emission, galactic point sources and pulsars, extragalactic sources, gamma ray bursts, and solar flare gamma ray emission.

OSSE

OSSE continues to operate safely. OSSE makeup heaters were switched from MPS1 to MPS2 on June 30, to maintain the temperature of OSSE in the event of a failure of MPS1 on GRO and the consequent shutdown of OSSE electronics and thermal control heaters.

leap second correction was applied to the GRO clock just before JD 2448804.5, nd was seen in OSSE telemetry as expected.

For the viewing period starting on 2 July, the primary OSSE target will be NGC 2992 and the secondary OSSE target will be 3C 120. This observation is

From khurley@space6.ssl.berkeley.edu Wed Jun 24 17:16:38 1992
Date: Wed, 24 Jun 92 16:10:43
From: khurley@space6.ssl.berkeley.edu
Content-Length: 309

Just got the BATSE circular for the June 22 event. However, Ray tells me that PVO was not on. They have re-established contact with the satellite, and experiments will be turned on Thursday, June 25 at 20:00. Too bad! Anyway, send me the data when you get a chance, and we'll construct the annulus.

Kevin

From root Thu Sep 30 11:30 1993
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA08650; Thu, 30 Sep 93 11:30:14
Received: from mpens.mpe-garching.mpg.de (mpe.mpe-garching.mpg.de) by sunspot.ssl.berkeley.edu
        id AA15740; Thu, 30 Sep 93 11:32:19 PDT
Received: from DECNET-MAIL (JCG@MPECR1) by MPE.MPE-GARCHING.MPG.DE (PMDF #3135
) id <01H3KMEXBYSGAC2ZLD@MPE.MPE-GARCHING.MPG.DE>; Thu,
 30 Sep 1993 20:34:47 CET
Date: 30 Sep 1993 20:34:47 +0100 (CET)
From: JCG%MPECR1@mpe.mpe-garching.mpg.de
Subject: GB 920622
To: khurley@space6.ssl.berkeley.edu
Message-Id: <01H3KMEXC8FMAC2ZLD@MPE.MPE-GARCHING.MPG.DE>
X-Vms-To: MPE::IN%"khurley@space6.ssl.berkeley.edu"
Mime-Version: 1.0
Content-Transfer-Encoding: 7BIT
Status: R

Dear Kevin,

I just talked to M. Sommer, and he wants you to send the revised triangulation arc for GB 920622 again: either to him (FAX) or to me. (The FAX he received was not readable.)

Another question concerns the spectrum which M. Sommer derived for GB 920622. He wants you to cross-check the numbers he got. He has summed over 14 sec starting at the Ulysses trigger. The deconvolution was done without any spectral model.

keV	Photons/cm^2/sec/MeV
35.06	114.09
43.825	112.01
52.59	85.01
61.355	98.21
70.12	84.727
78.885	80.33
87.65	63.18
96.415	77.367
105.18	61.259
113.945	45.38
122.71	44.89
131.475	41.57

With best regards
Jochen Greiner

JLA 10/19/92

Date	Heure Phebus		Sigma	Heure Ulysse	Seance	Cmax Phebus	Cmax Ulysse	Loc. α, δ	Comment.
1991-09-01	19467				327	145			faible
1991-09-07	3910	I		2066	330	177	90		
1991-10-16	39695				355	213			HUS : lim sup
1991-10-18	19936	I		21720	356	553	375		
1991-10-25	77116				362	107			faible
1991-11-19	61954		gca		367	131			faible
1991-12-22	54010	I		53610	381	277	179		
1992-01-10	33540	I	ac	34298	386		151		bdf Phebus faux
1992-01-25	32247		ac/gca		397				HUS : lim sup
1992-02-10	35633		ac		404				HUS : no data
1992-02-18	67459				411				HUS : manque données
1992-02-29	69678				415				HUS : lim sup
1992-03-11	8427	I	ac/gca	7045	422		505	131.6 -36.1	loc Network
1992-03-25	62257	I	ac/gca	64262	430		154		
1992-04-04	81448	I		79239	434		212		
1992-04-05	27698	I	ac	28498	434		91		
1992-04-14	84162	I	gca	84257	441		171		
1992-04-20	7947	I		7573	444		112		
1992-05-19	59421	I		61011	449		268		
1992-06-22	25505	I	ac/gca	23347	468		408		
1992-06-28	76453				473				HUS : no data
1992-07-14	47072	I	ac/gca	46282	482		221	219.9 +5.4	loc Sigma gca
1992-07-20	11529	I	ac/gca	9808	486		227		
1992-07-23	72189	I	ac/gca	73964	489		1084	285.8 +26.7	loc Sigma gca

From @space6.ssl.berkeley.edu,@cmsa.berkeley.edu:X024862@JPNRKY00.BITNET Thu Nov 26 03:41:24 1

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*	04:22	HXS
09/12/91	18:36	HXS/RBM
21/12/91*	06:17	HXS/RBM
18/02/92*	18:44	HXS
06/04/92	02:45	HXS/RBM
19/04/92*	01:22	HXS/RBM
19/05/92*	16:30	HXS/RBM
17/06/92*	05:29	HXS
22/06/92	07:05	HXS/RBM
01/07/92*	19:39	HXS
11/07/92	16:09	HXS/RBM
31/07/92	17:07	HXS/RBM
16/08/92	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>

From khurley@space6.ssl.berkeley.edu Tue Nov 24 08:06:08 1992
Date: Tue, 24 Nov 92 07:59:26
From: khurley@space6.ssl.berkeley.edu
Content-Length: 1629

Dear Dr. Yoshimori

Thank you for your recent fax inquiring about the locations of Yohkoh gamma ray bursts. Here are the replies.

1991 Dec 9 18:36: Observed by Ulysses, BATSE, and WATCH. Triangulated position combined with independent BATSE and WATCH positions consistent with source location around RA 17:30, Dec -45.

1992 Apr 6 02:45: Observed by Ulysses, PVO, and BATSE. Triangulated position indicates location around RA 19:15, Dec -57

1992 Jun 22 07:05: Observed by Ulysses, SIGMA/GRANAT, COMPTEL, and BATSE. Preliminary triangulated position combined with COMPTEL location consistent with source location around RA 10:00 Dec +48.

1992 July 31 17:07: Observed by Ulysses. Apparently no other observations.

1992 Aug 24 10:56: Observed by Ulysses and BATSE. Triangulated position and independent BATSE location consistent with source position around RA 15:00, Dec -50.

1992 Sep 3 23:29: Observed by Ulysses on September 4. Apparently no other observations.

As you are aware, I sent a letter to Professor Uchida on January 31 of this year, proposing to collaborate with Yohkoh scientists on burst locations. I am particularly interested in events which were detected by Ulysses, but not by GRO or any other near-earth spacecraft (there seem to be two of these in your list). I never received a reply to this letter, so I am not sure what the status of this suggestion is. If there is agreement that a collaboration is possible, then we should establish formats for data exchange by e-mail and proceed to exchange lists of candidate events. Please let me know whether you agree.

Best regards,

Kevin Hurley

M. Yoshimori

Department of Physics
Rikkyo University
3-34-1 Nishi-Ikebukuro, Toshima-ku, Tokyo 171, Japan
Phone. 011-81-3-3985-2391
Fax. 011-81-3-5992-3434
E-Mail: X024862@JPNRKY00.BITNET

To: Dr. K. Hurley (Space Sciences Lab. UCB)
Fax. 001-1-510-643-7629
Date: Fri. 20 Nov. 1992

Dear Dr. Hurley:

Yohkoh has observed the following six gamma-ray bursts since its launch (Aug. 30, 1991):

Date	Start Time (UT)
1991 Dec.09	18 h 36 m
1992 Apr.06	02 h 45 m
1992 June 22	07 h 05 m
1992 July 31	17 h 07 m
1992 Aug.24	10 h 56 m
1992 Sept.03	23 h 29 m

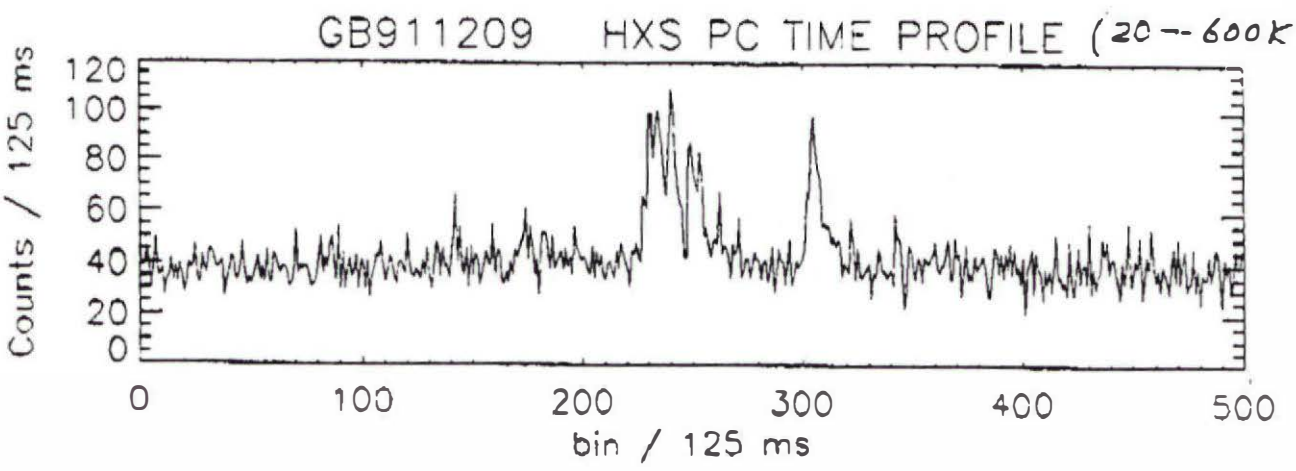
If you have the data of their locations obtained from GRO/ BATSE and Ulysses, please let me know them. I am sending the time profiles of four Yohkoh bursts.
Thank you in advance for it.

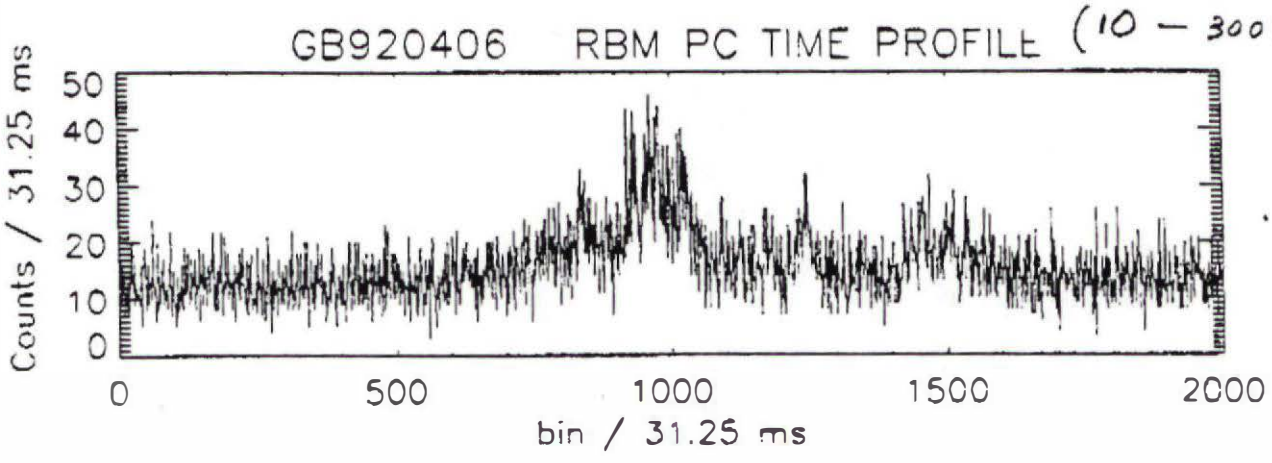
With best regards,

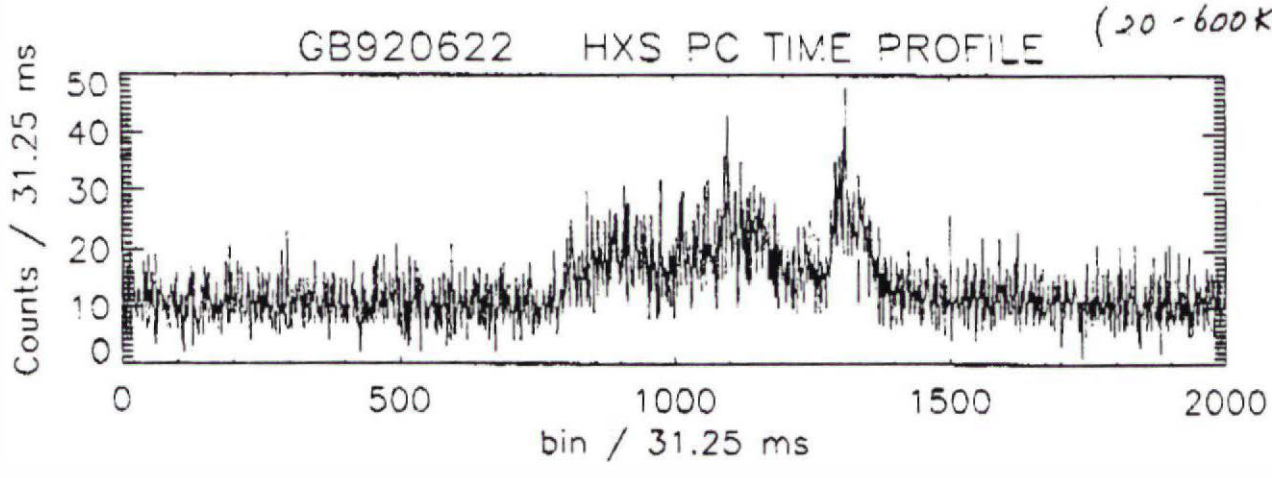
Masato Yoshimori

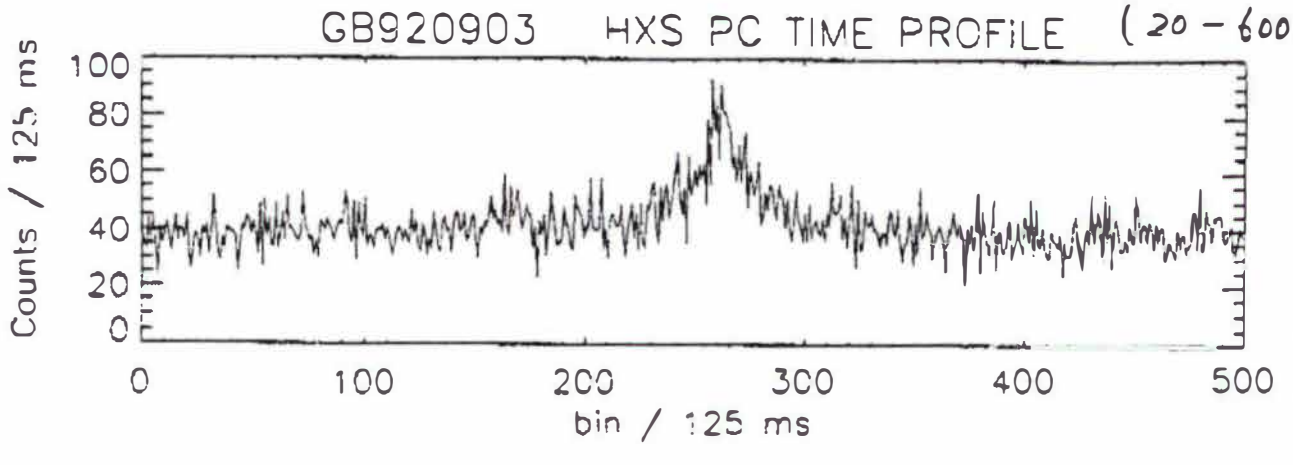
M. Yoshimori

2/2


GB911209 HXS PC TIME PROFILE (20--600keV)
Counts / 125 ms
bin / 125 ms


GB920406 RBM PC TIME PROFILE (10 — 300keV)
Counts / 31.25 ms
bin / 31.25 ms


GB920622 HXS PC TIME PROFILE (20 - 600ke
Counts / 31.25 ms
bin / 31.25 ms


GB920903 HXS PC TIME PROFILE (20 — 600keV)
Counts / 125 ms
bin / 125 ms

```
          ********************
          *CATSEARCH PROGRAM*
          ********************

BATSE BURST # 1664
EVENT OF 1992 JUN 22 DAY OF YEAR=174
EVENT CROSSING TIME AT BATSE      : 46461. S. OR 12:54:21.3
COORDINATES ARE     .000     .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 345.200     9.700
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 22/ 6/  92 IS:
RA=  149.491 DEC=     6.922 DIST=     5.797 AU
BATSE-ULYSSES DISTANCE =  867294032. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 22.83 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2666.36 SECS.
CROSSING TIME AT ULYSSES     IS 49128. S. OR 13:38:47.6 +/-  285.36 SECONDS
```

RI

```
From KOSHUT@ssl.msfc.nasa.gov Wed Jun 24 12:42:25 1992
Date:     Wed, 24 Jun 1992 14:42:04 -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: 1540

                  BATSE BURST TRIGGER
NO.: 01664

TIME: TJD=8795 SECONDS=46463

TYPE: BURST                       SOLAR FLARE TRIGGER SIGNAL:N

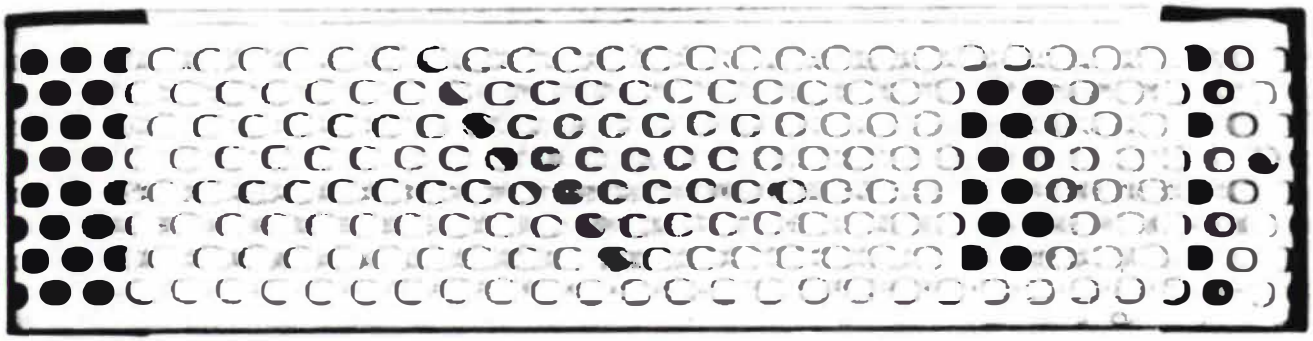
SIGNIFICANCE:        SIGMA

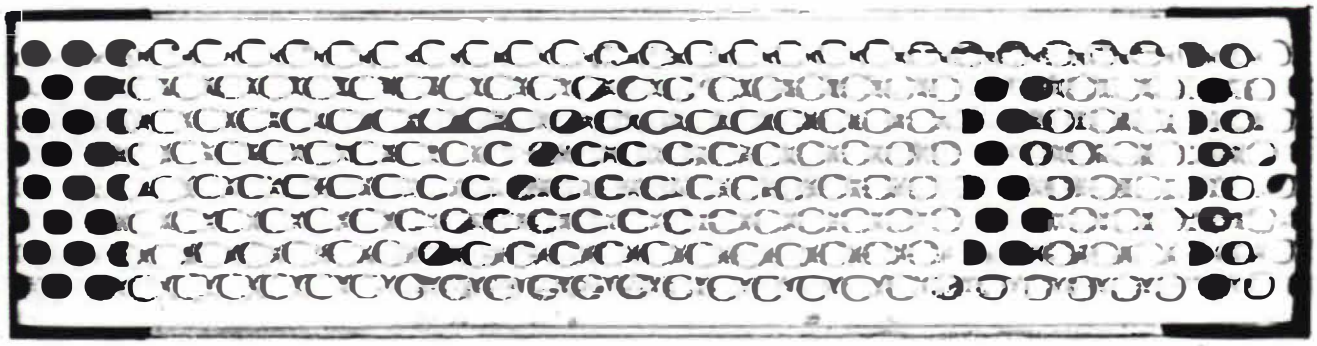
INTENSITY:           COUNTS/CM2

LOCATION: ZENITH=91.9    AZIMUTH=252.9  ERROR=       DEGREES

COMMENTS:
BURST OF ~ 11 SEC DURATION.  TIME HISTORY CONSISTS OF A 1 SEC DURATION
PULSE PEAKING AT THE TRIGGER TIME, AN INTENSE 3 SEC DURATION PULSE PEAKING
AT TRIGGER + 2.5 SEC, AND WEAK EMISSION AT TRIGGER + 9 SEC.  NO EMISSION
IS OBSERVED ABOVE 300 KEV.  THE LOCATION FOR EACH STRUCTURE IS CONSISTENT WITH
THE SAME SOURCE.
```

No fig





Helio corr removed

Date: Jul 2 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☐ Were data checked by Joe Springer for 0.5 s errors?

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

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

2. BATSE Data

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

☑ 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)?

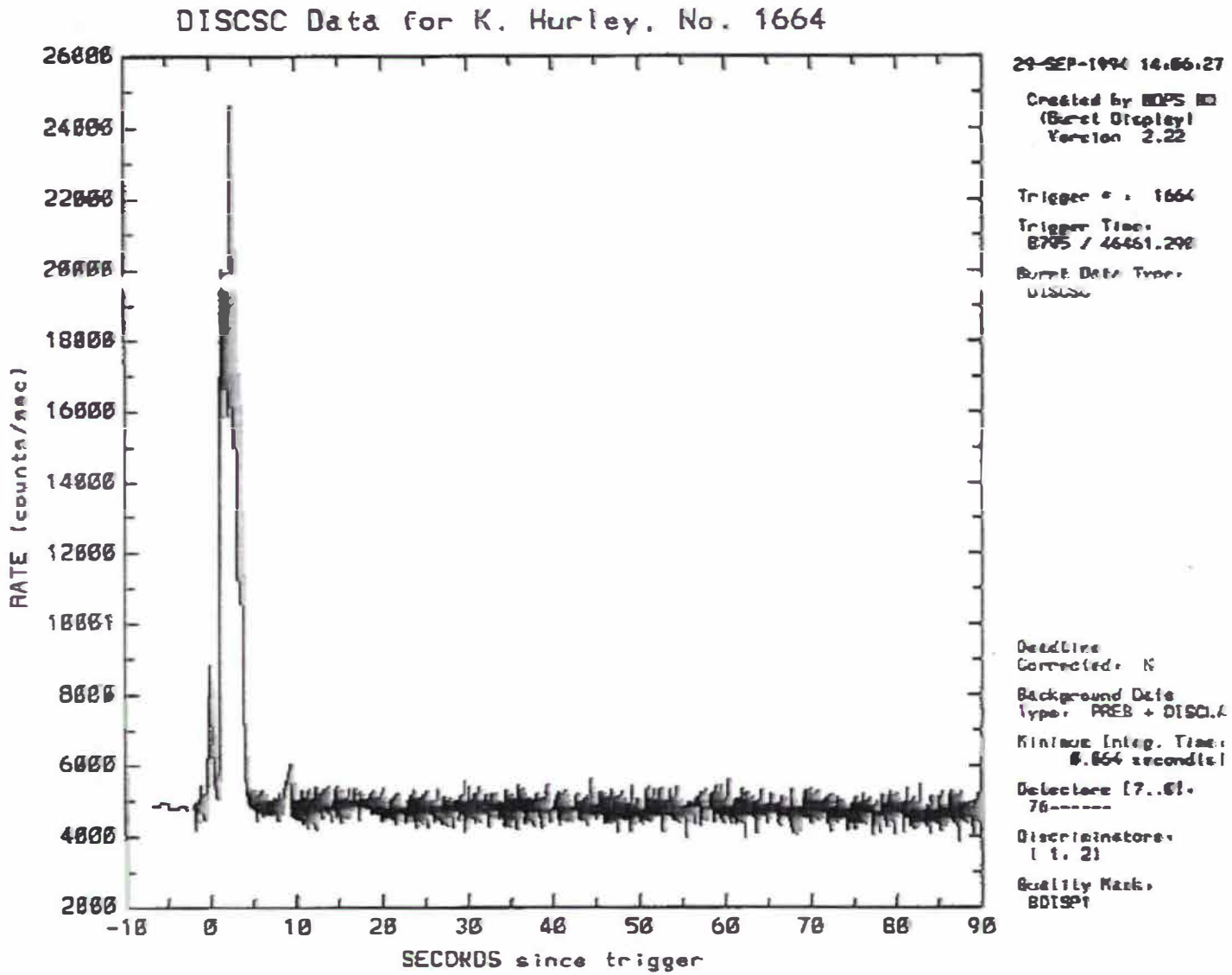
☐ 2000 coordinates used?

☐ Geocentric time used?

☑ ACCESS database updated?

K-95%

09-30-1994 11:32 205 544 5800 BATSE P.06

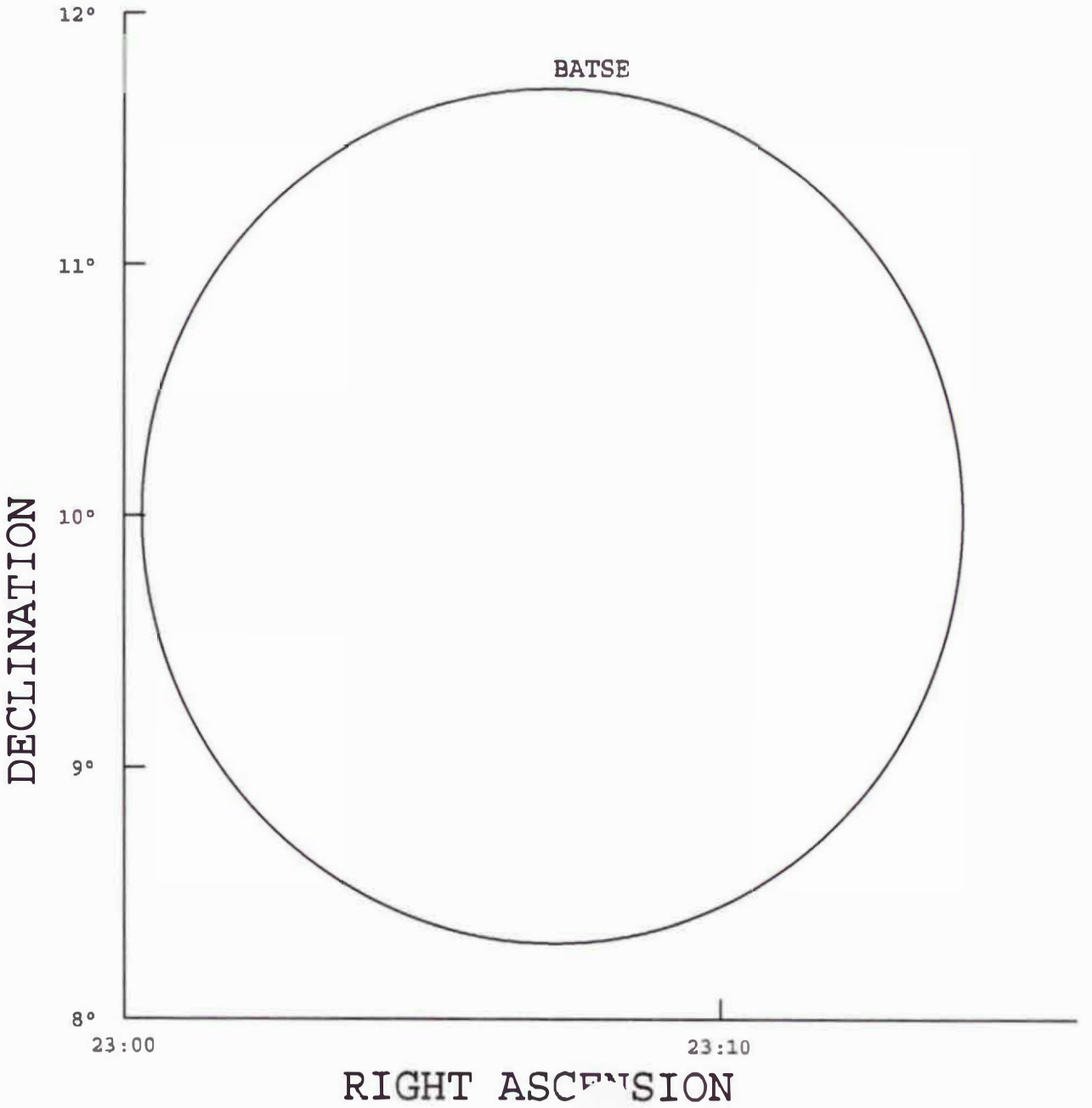


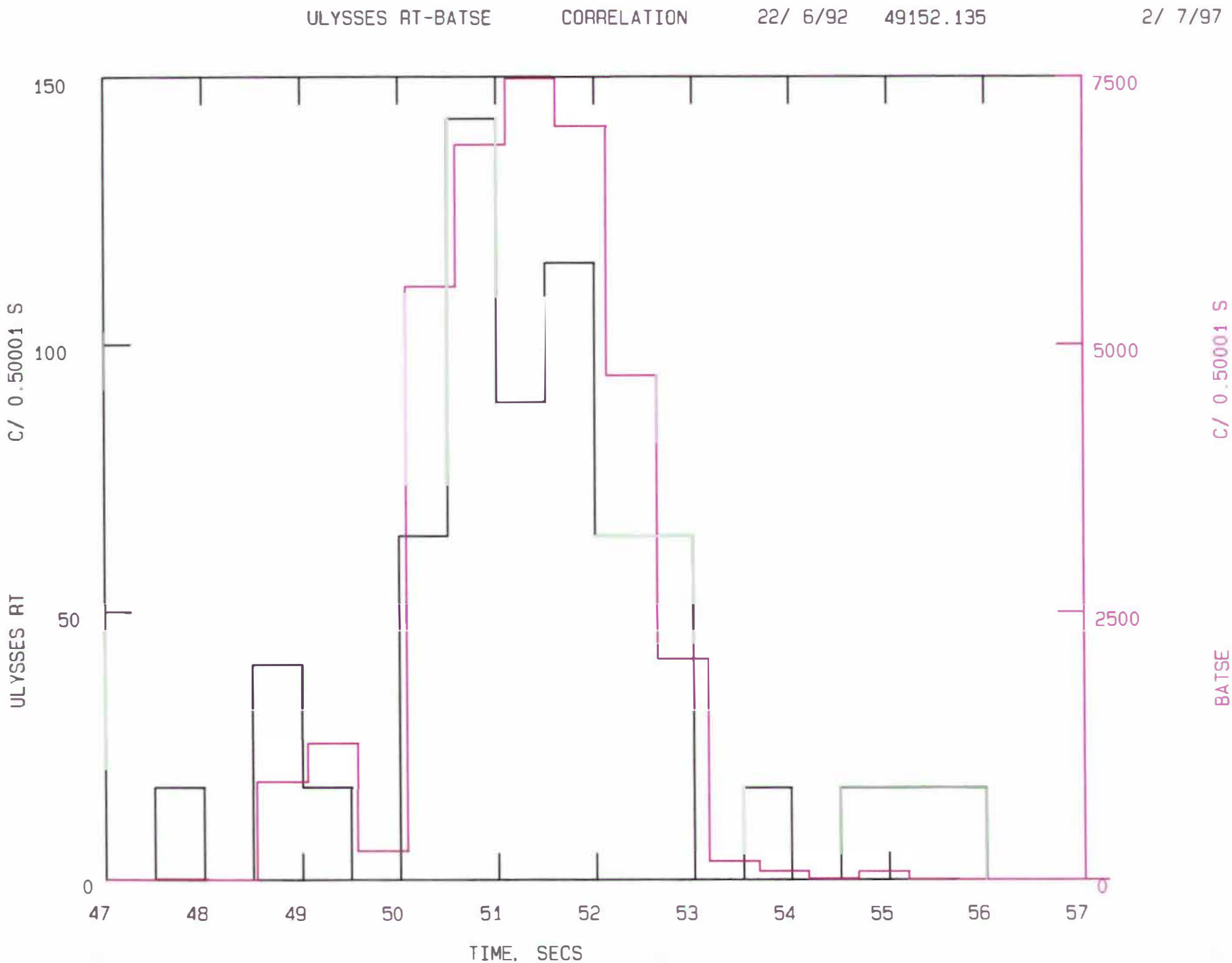
205 544 5800 09-30-94 09:55AM P006 #40

EVENT OF JUN 22, 1992 13:39

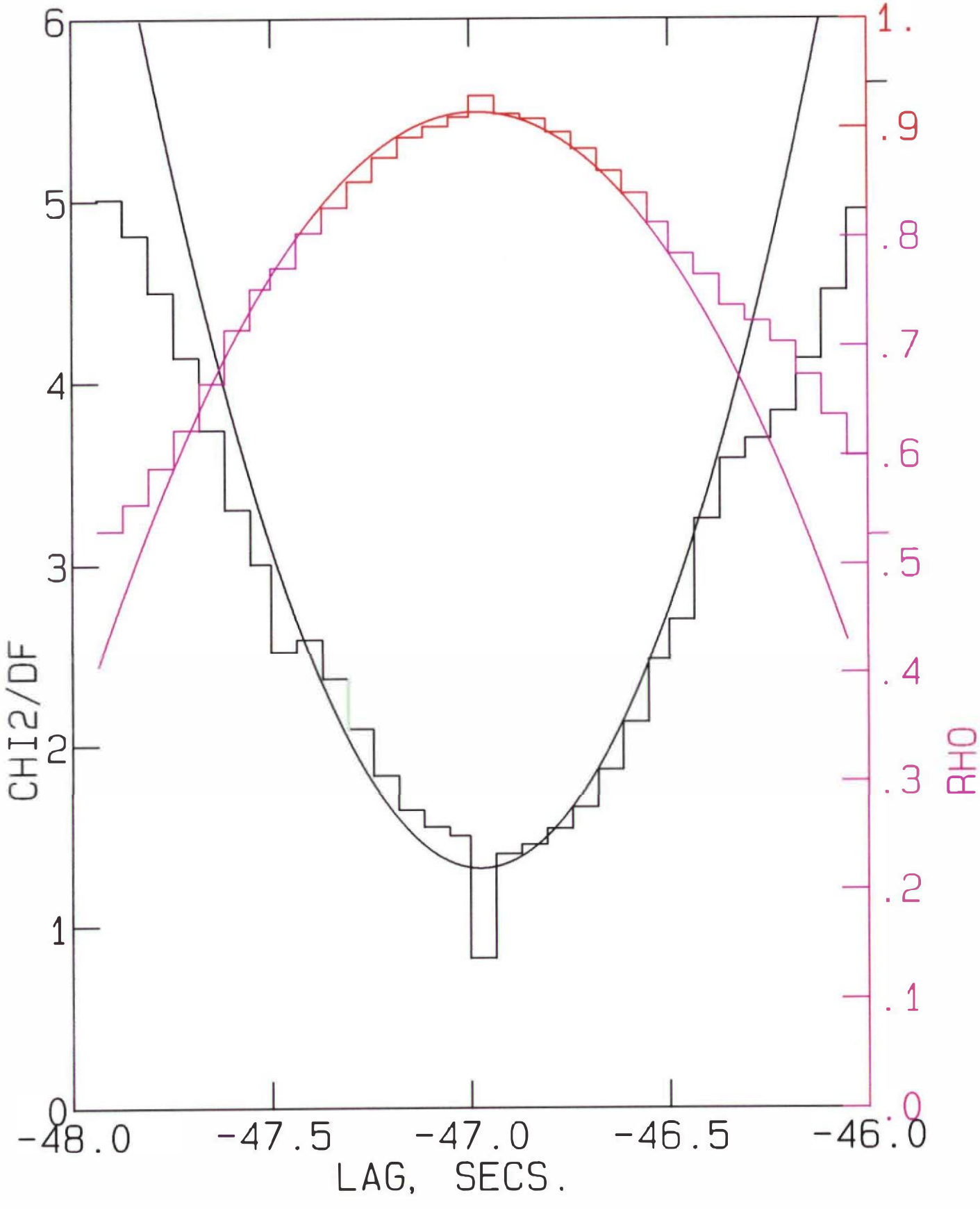
2/ 7/97

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




ULYSSES RT-BATSE CORRELATION 22/ 6/92 49152.135 2/ 7/97
150
100
50
0
C/ 0.50001 S
ULYSSES RT
7500
5000
2500
0
C/ 0.50001 S
BATSE
47
48
49
50
51
52
53
54
55
56
57
TIME. SECS

ULYSSES RT-BATSE CORRELATION 22/ 6/92 49152.135

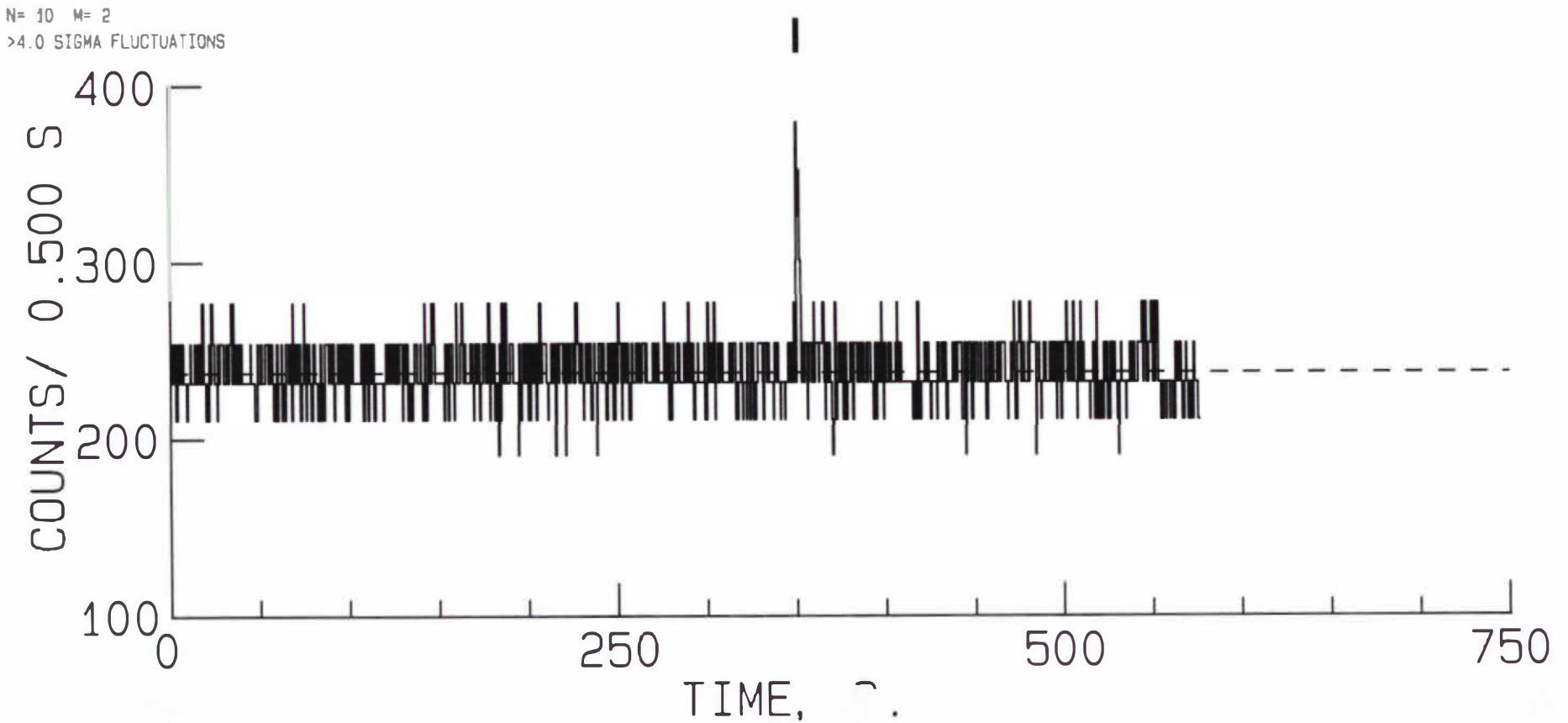


ULYSSES RT

2/ 7/97

22/ 6/92 48852.354 s

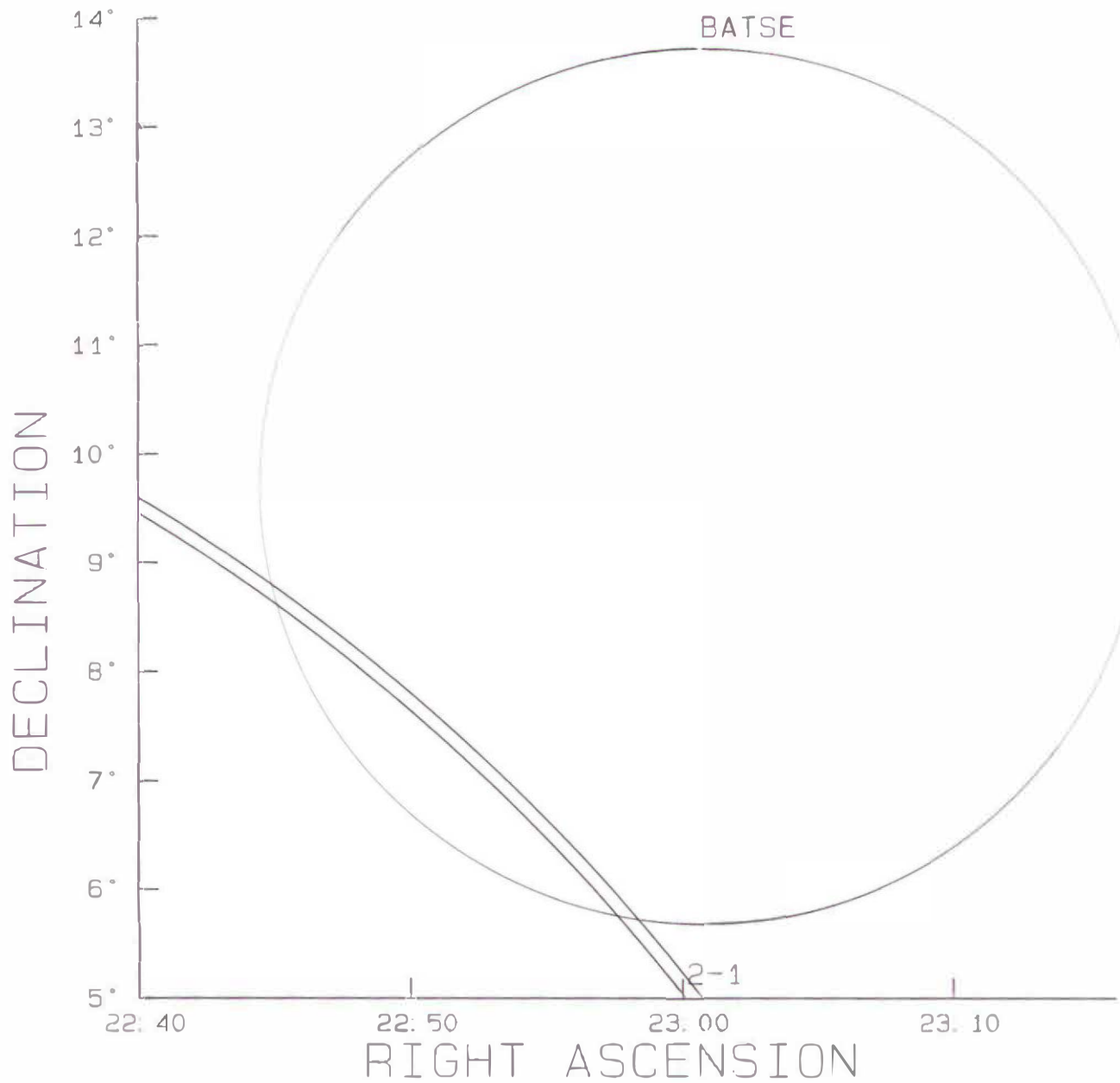
23- 155 keV



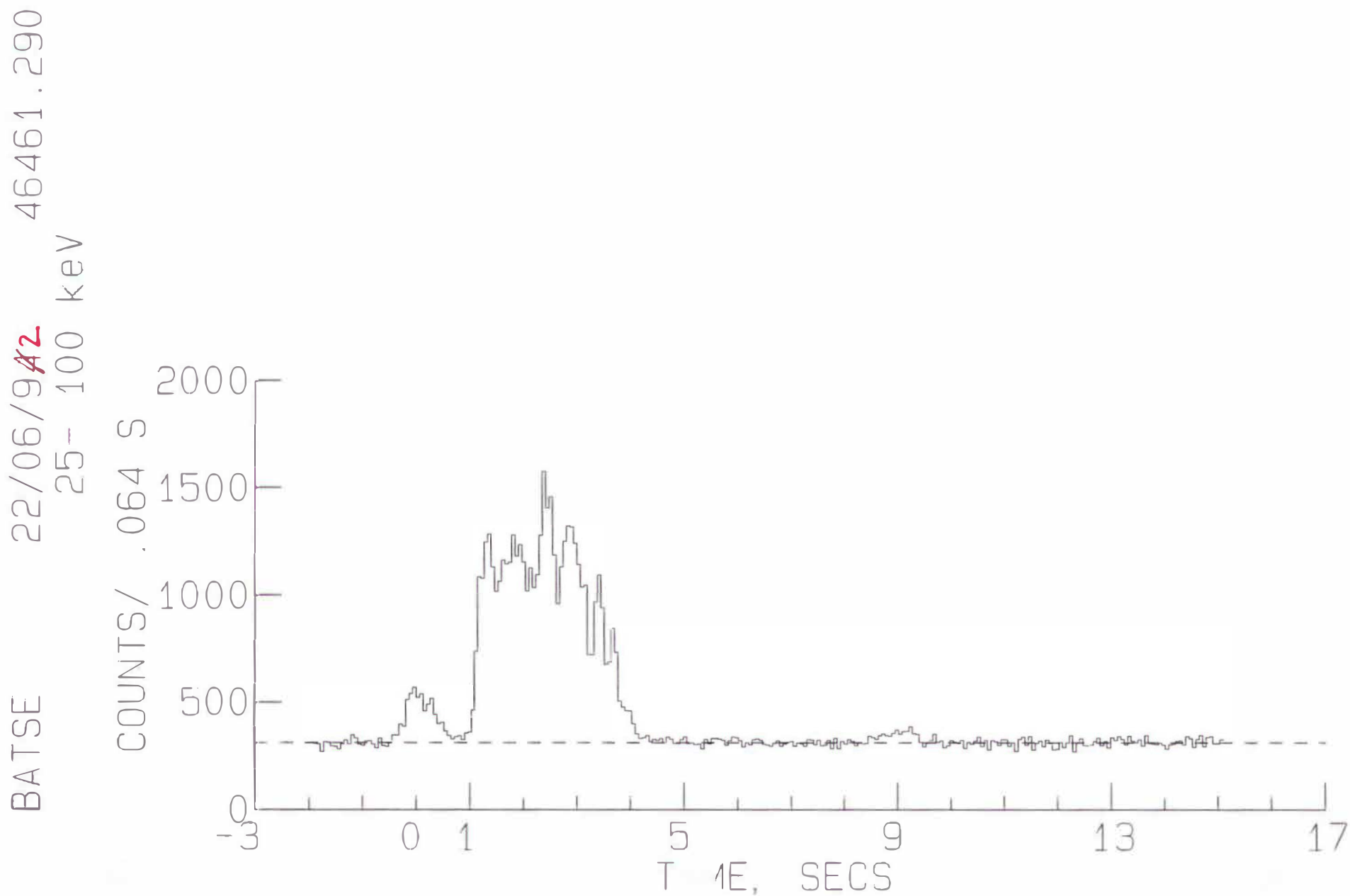
EVENT OF JUN 22, 1992 13:39

12/ 5/95

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



15/10/94


BATSE 22/06/9442 464461.290
25- 100 keV
COUNTS/ .064 S
2000
1500
1000
500
0
-3
0
1
5
9
13
17
TIME, SECS

```
**********
*CATSEARCH PROGRAM*
**********

BATSE BURST # 1665
EVENT OF 1992 JUN 22 DAY OF YEAR=174
EVENT CROSSING TIME AT BATSE     : 58041. S. OR 16:07:20.9
COORDINATES ARE    .000    .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 139.300  -59.400
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON 22/ 6/  92 IS:
RA=  149.491 DEC=    6.922 DIST=    5.797 AU
BATSE-ULYSSES DISTANCE =  867294032. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.18 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1138.74 SECS.
CROSSING TIME AT ULYSSES    IS 56902. S. OR 15:48:22.2 +/-  494.43 SECONDS
```

ND

```
From KOSHUT@ssl.msfc.nasa.gov Wed Jun 24 12:45:35 1992
Date:    Wed, 24 Jun 1992 14:45:46 -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.: 01665

TIME: TJD=8795 SECONDS=58042

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=124.1  AZIMUTH=41.5   ERROR=      DEGREES

COMMENTS:
BURST OF < 0.5 SEC DURATION, WITH OBSERVED EMISSION ABOVE 300 KEV.
```

No trig

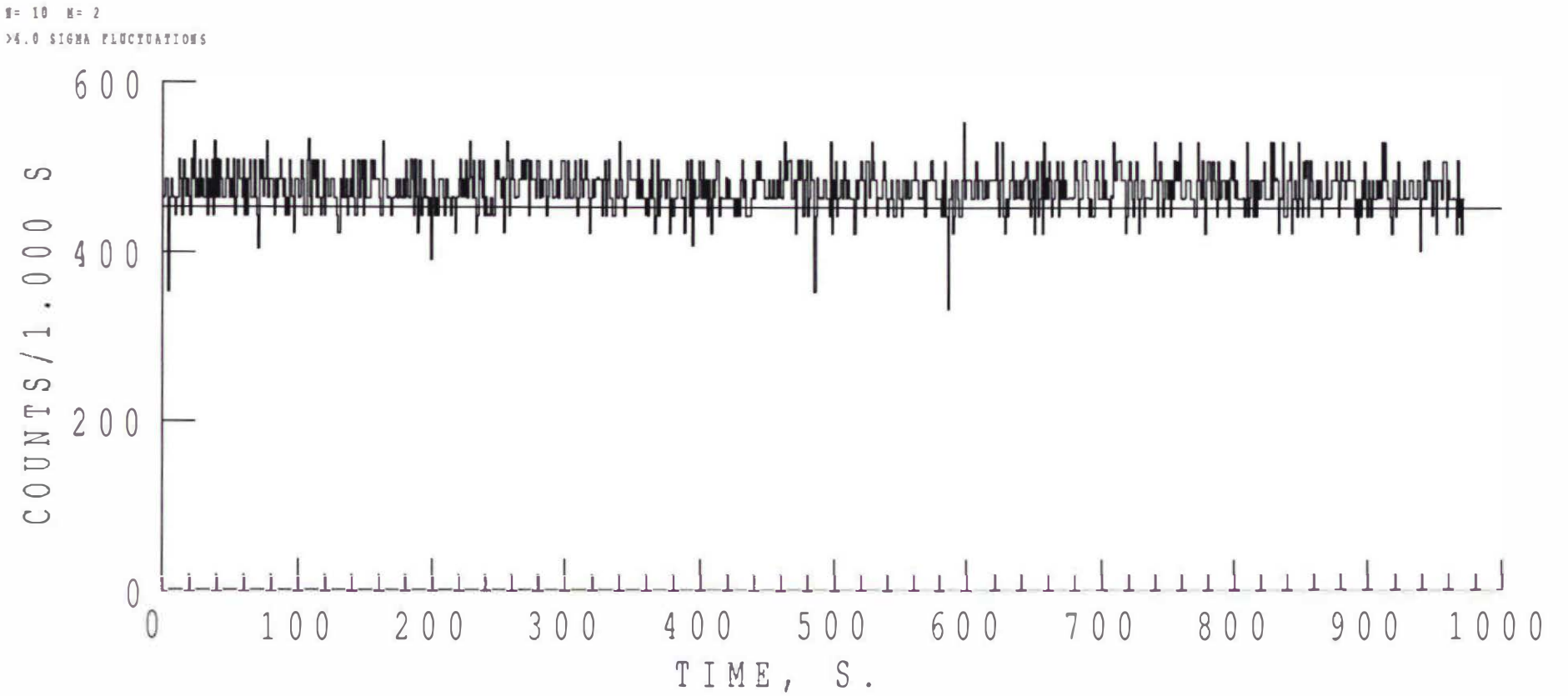
8/ 6/94

ULYSSES RT

22/ 6/92 56412.480 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



From KOSHUT@ssl.msfc.nasa.gov Wed Jun 24 13:06:42 1992
Date: Wed, 24 Jun 1992 15:06:42 -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.: 01666

TIME: TJD=8795 SECONDS=66178

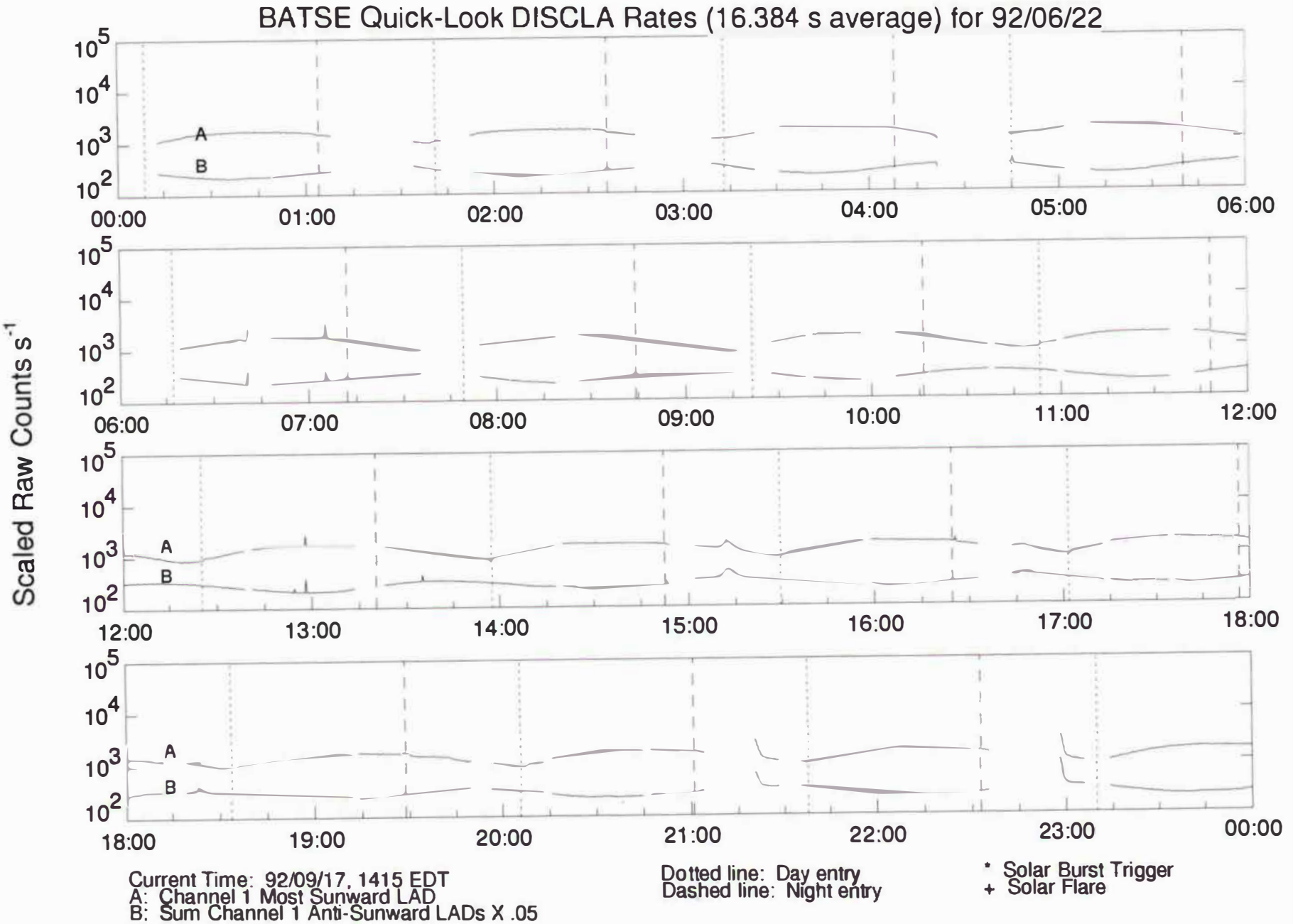
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

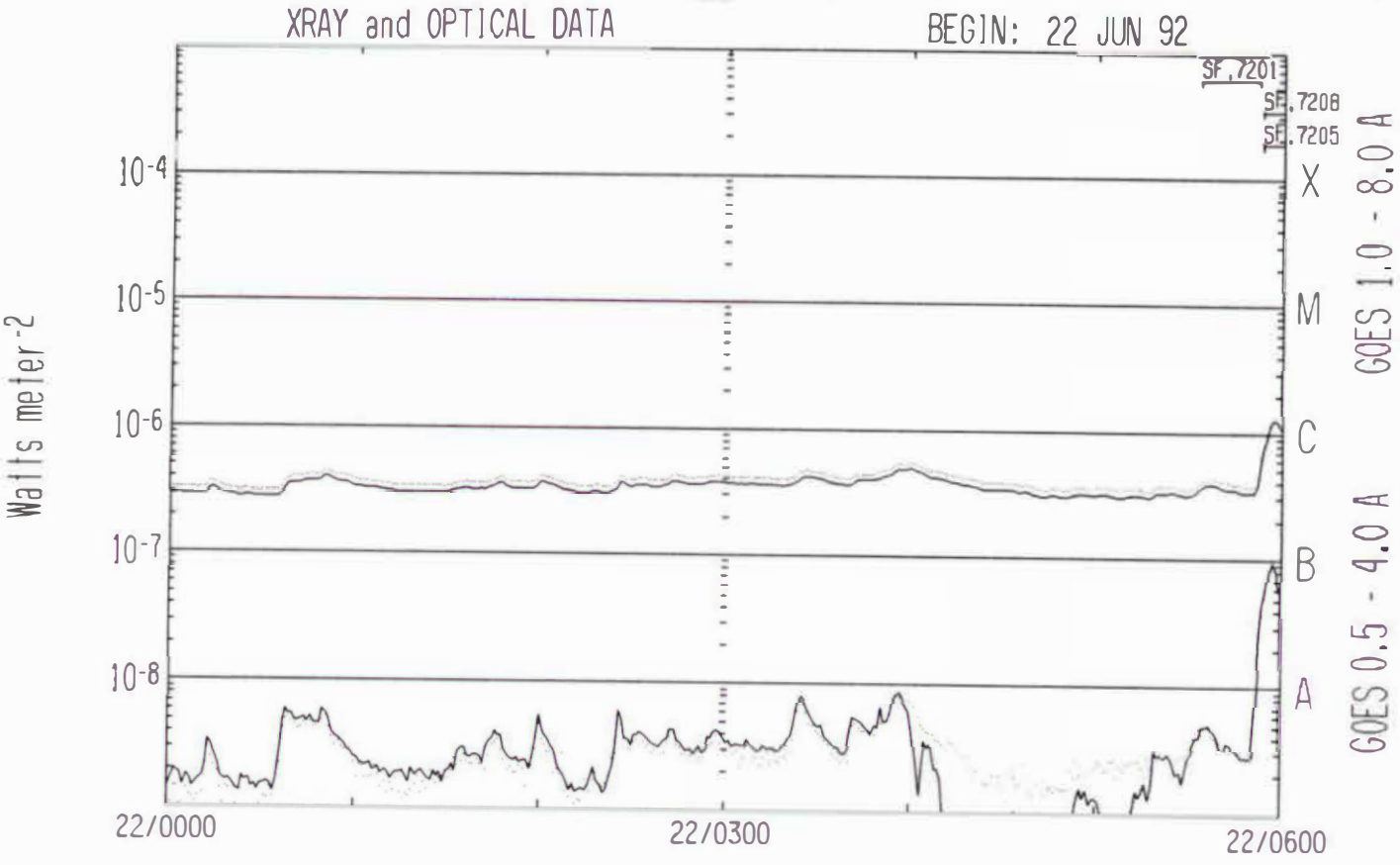
SIGNIFICANCE: SIGMA

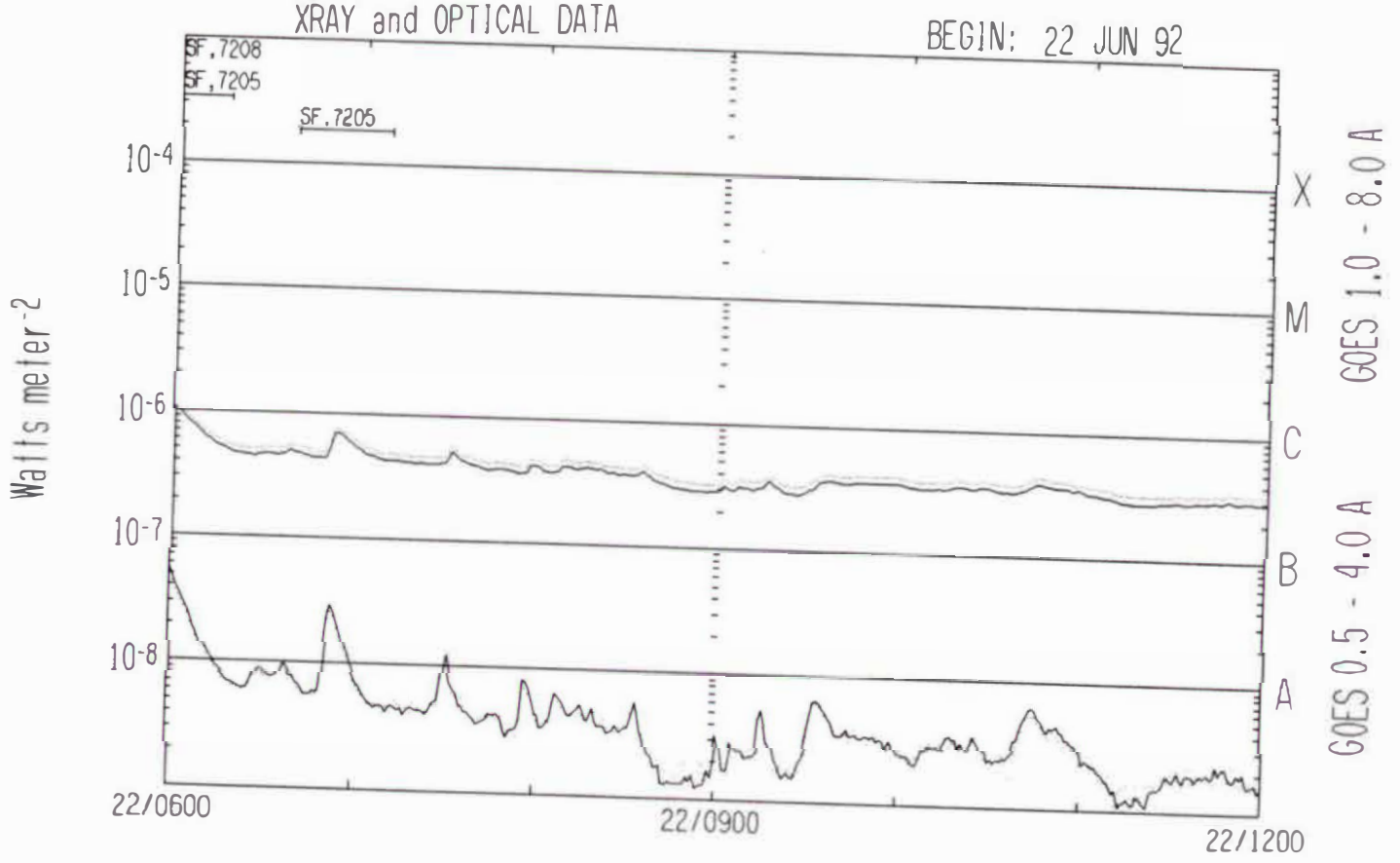
INTENSITY: COUNTS/CM2

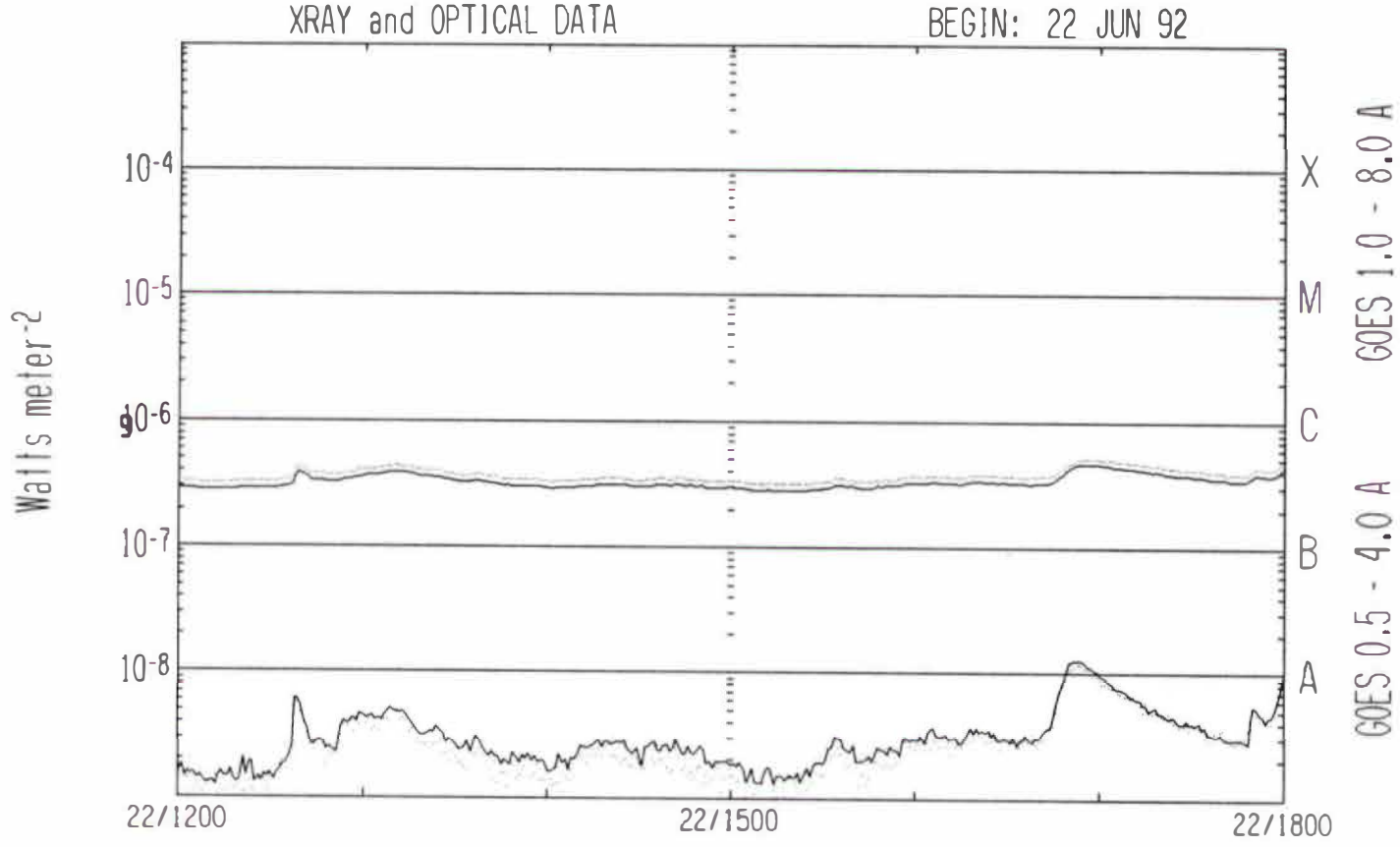
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

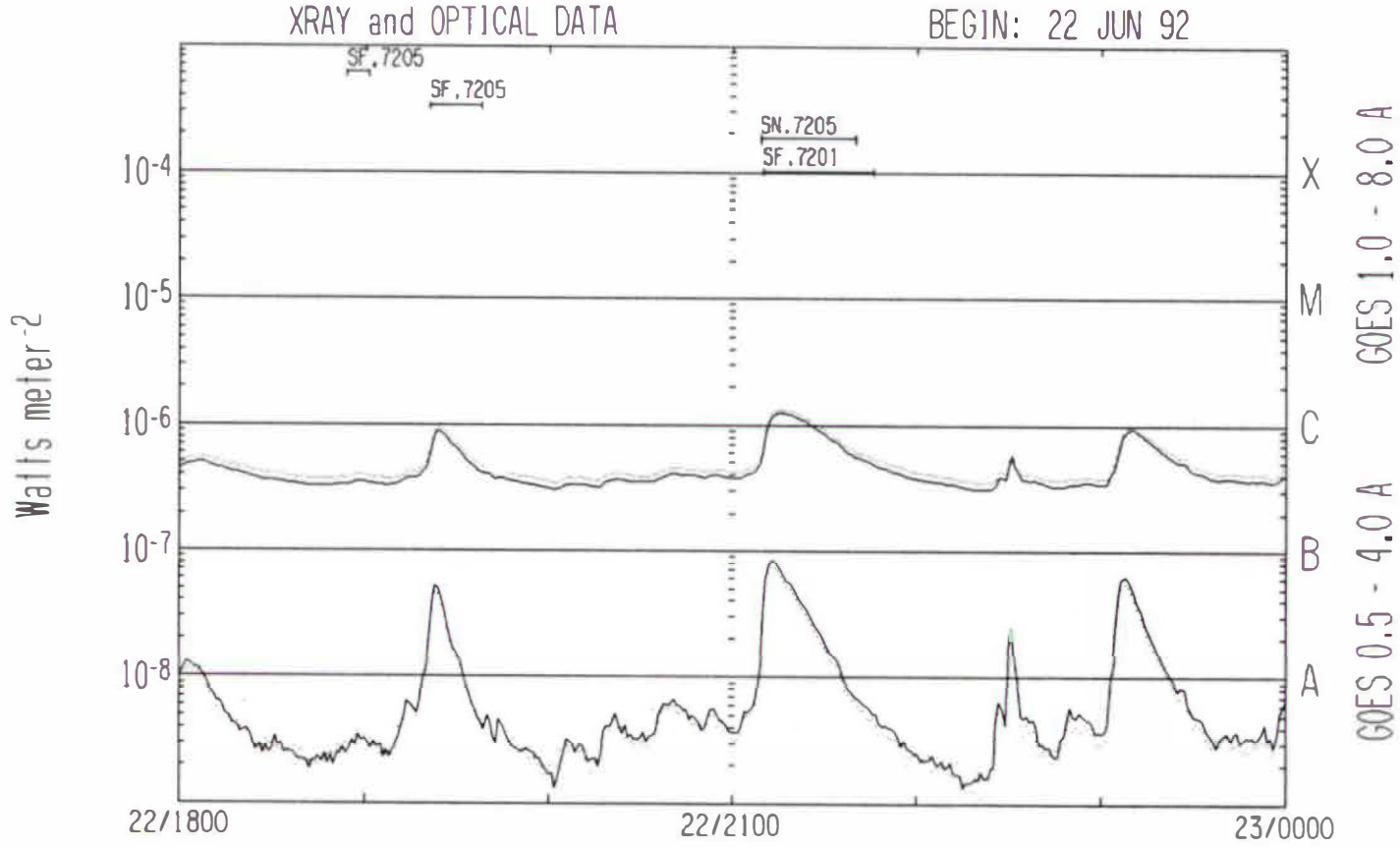
COMMENTS:
PARTICLE PRECIPITATION EVENT


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/22
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1415 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


XRAY and OPTICAL DATA
BEGIN: 22 JUN 92
SF,7201
SF,7208
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
22/0000
22/0300
22/0600

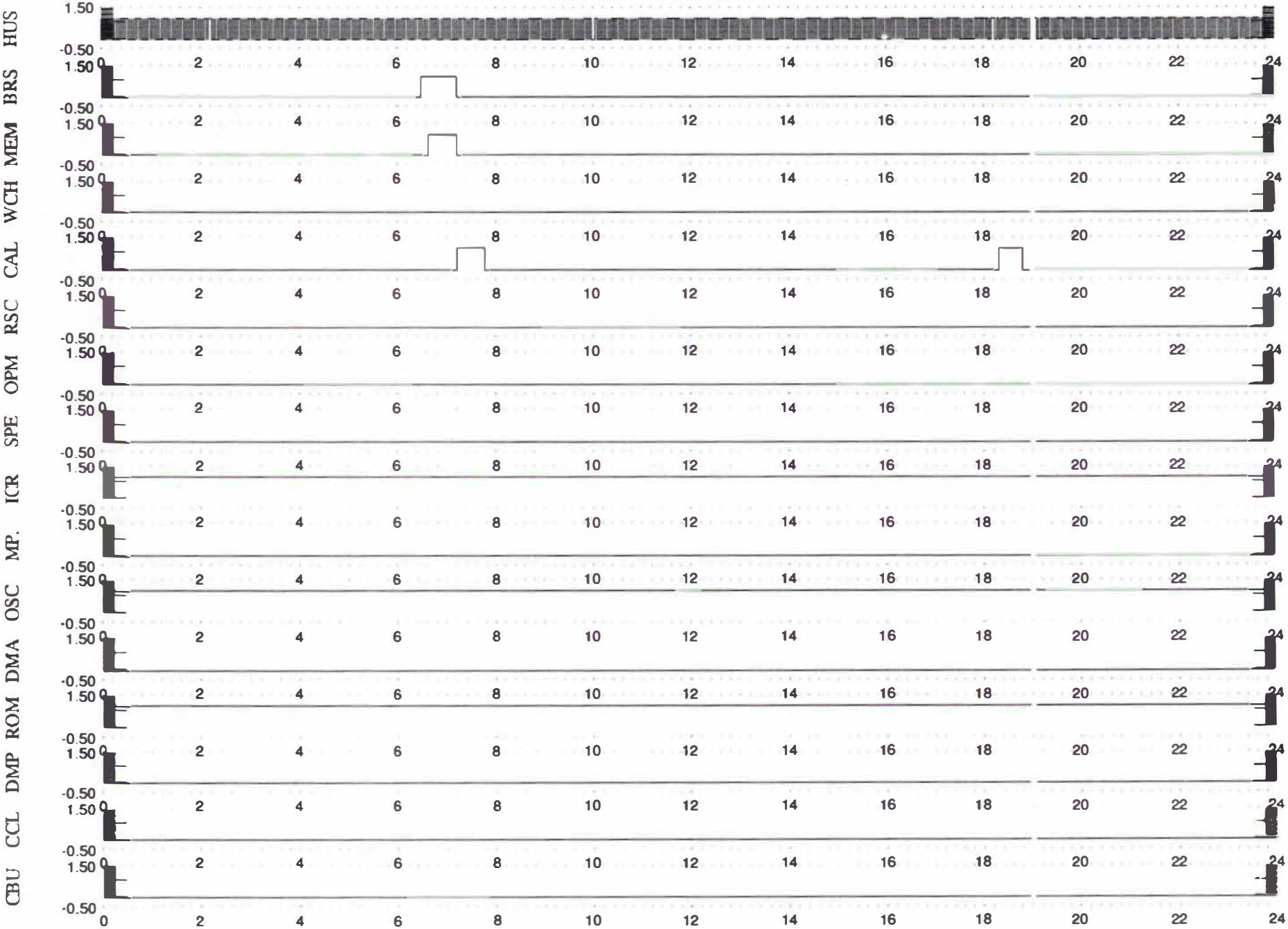

XRAY and OPTICAL DATA
BEGIN: 22 JUN 92
SF,7208
SF,7205
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
22/0600
22/0900
22/1200


XRAY and OPTICAL DATA
BEGIN: 22 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
22/1200
22/1500
22/1800


XRAY and OPTICAL DATA
BEGIN: 22 JUN 92
SF.7205
SF.7205
SN.7205
SF.7201
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
22/1800
22/2100
23/0000

HUS MODES EDR day 174, year 1992 to day 174, year 1992 7/8/92

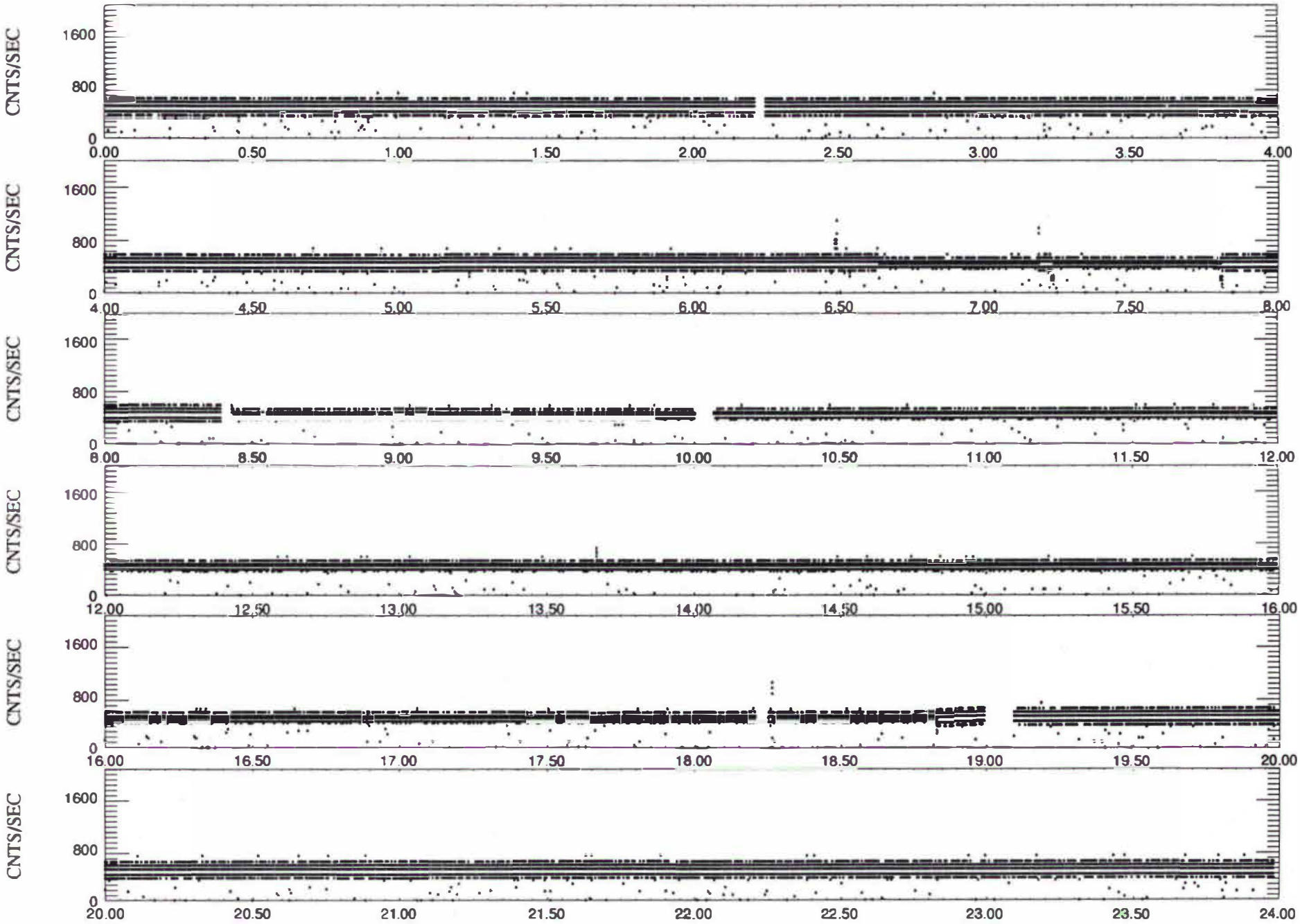
BURST NUMBER 1



UNIVE[illegible]L TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 174, year 1992 to day 174, year 1992 7/8/92

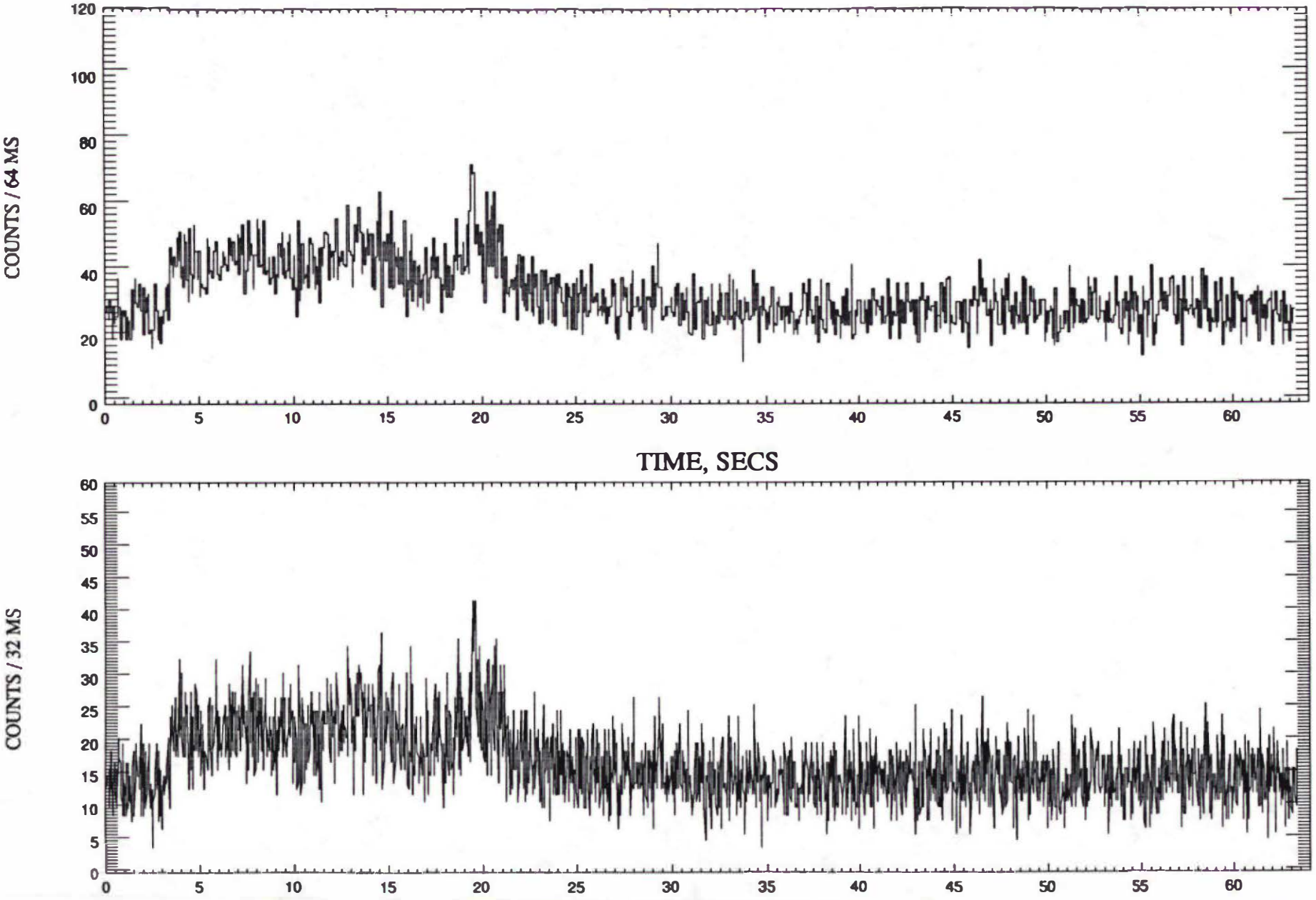
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 174, year 1992 7/10/92

Burst Counter 1 at UT= 6.481961568197 h=23335.062 s



B# 1

```
         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,CMPLX,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,ULYSS
           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 ANGSUN=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
```

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

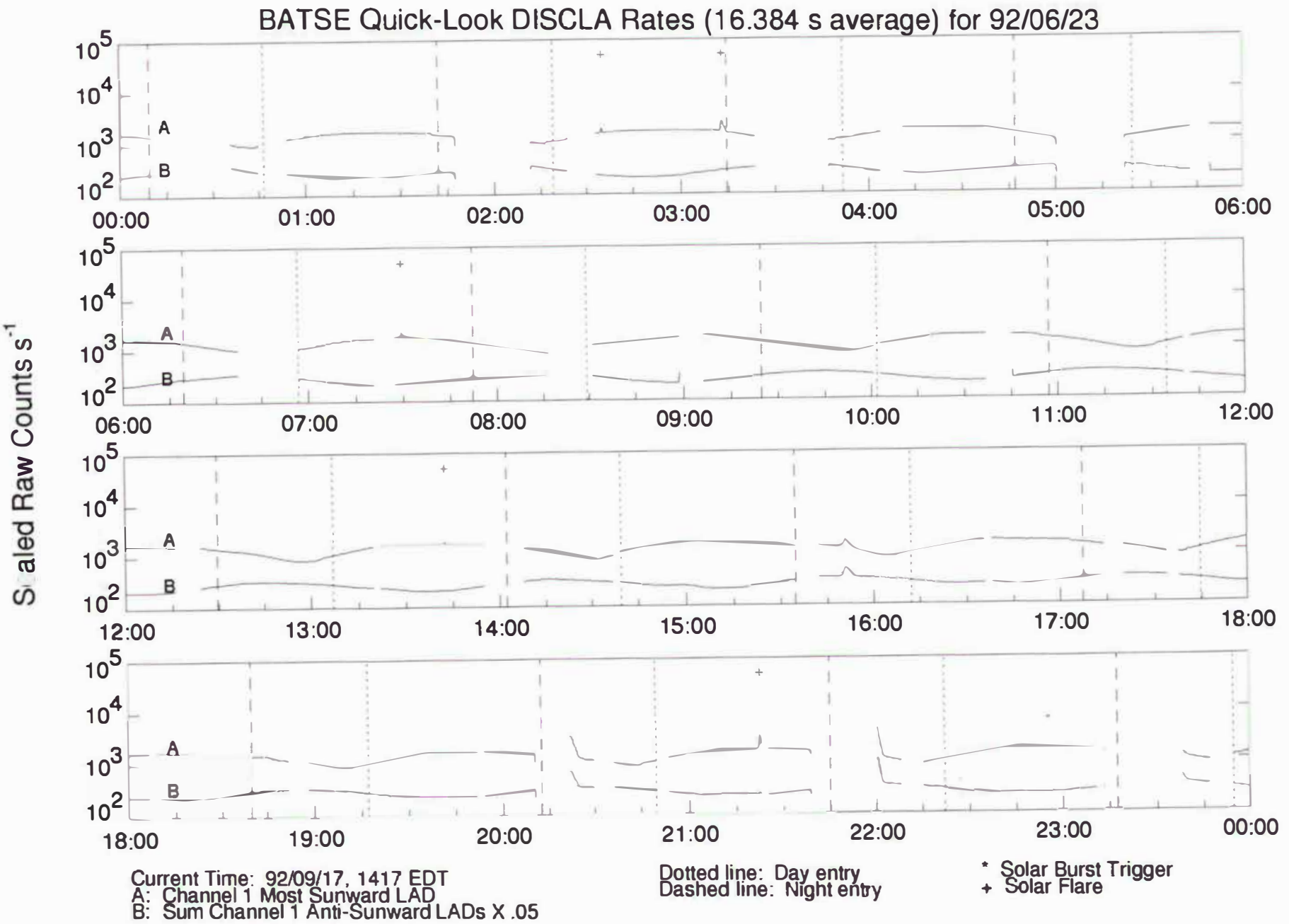
Received: from ESSDP2 by UCBSP.SSL.BERKELEY.EDU via MAIL-11 with
DECnet; Tue, 5 May 92 13:40:33-PST
Date: Tue 5 May 92 13:40:33-PST
From: 046369@ESSDP2.SPAN.NASA.GOV
Subject: DMSP GRB DATA
To: "UCBSP::KHURLEY"@ESSDP2.SPAN.NASA.GOV

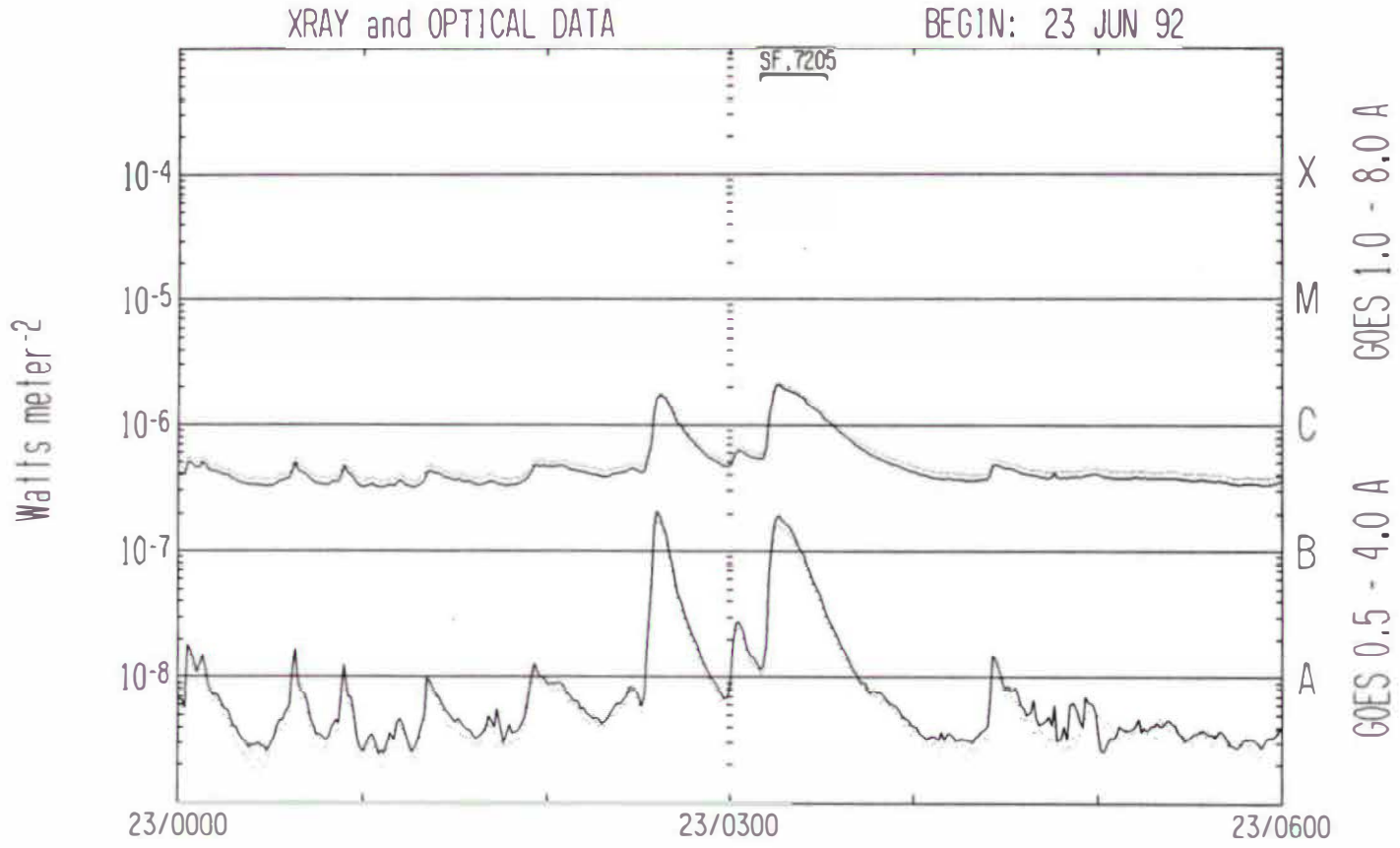
FROM: ESSDP2::TERRELL 93/05/05
TO: UCBSP::KHURLEY
CC: BATSE::KOUVELIOTOU
SUBJ: DMSP GRB DATA

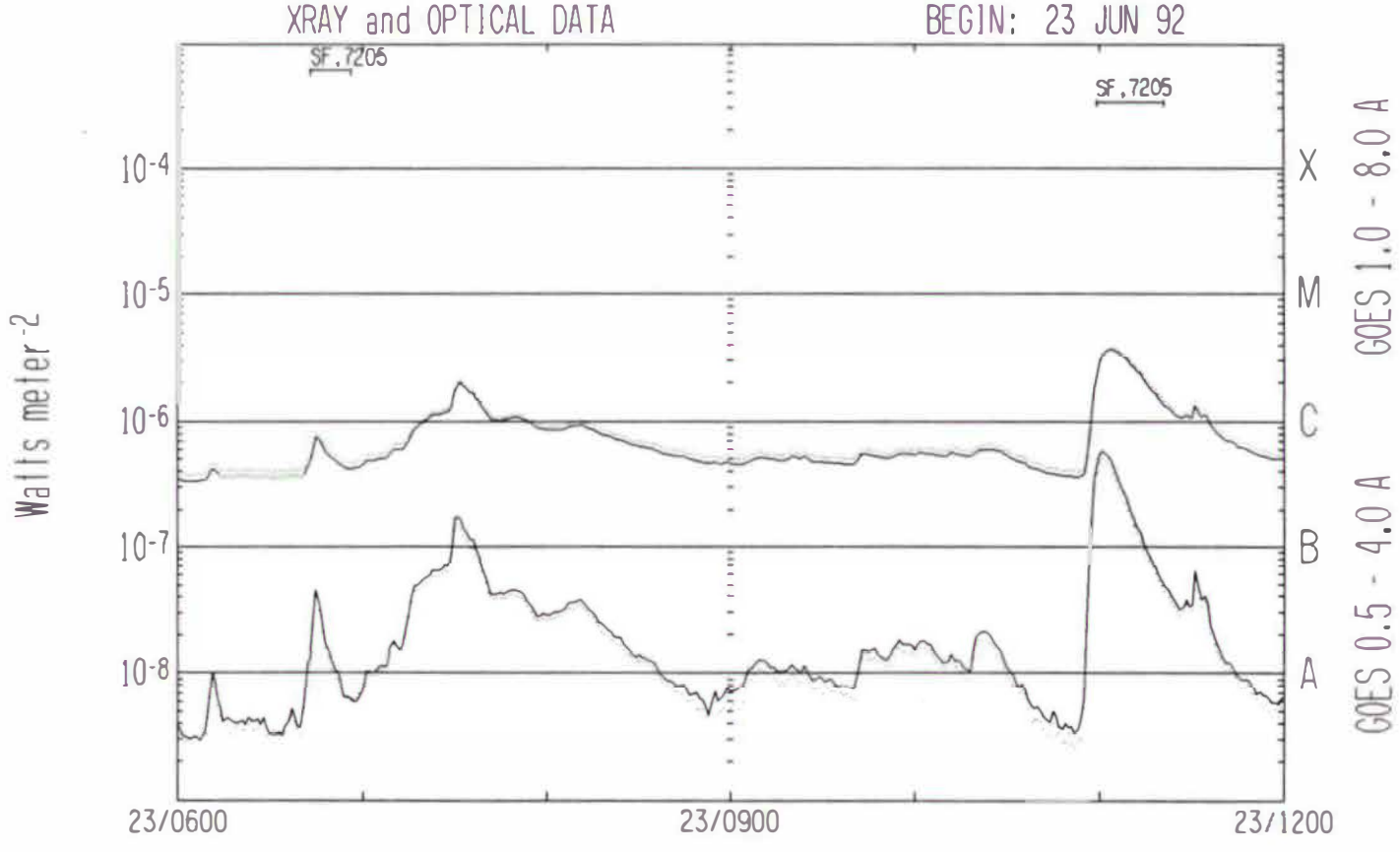
HERE IS A PARTIAL LIST OF 1992 DMSP GAMMA-RAY-BURST DATA, AS OF TODAY.
OTHER DATA APPEARING TO CONFIRM UNCONFIRMED EVENTS IN YOUR LISTING IS
BEING EXTRACTED, AND I WILL CHECK IT OUT WHEN I RETURN FROM HOUSTON.
THANKS FOR YOUR CONTINUING HELP--JIM TERRELL

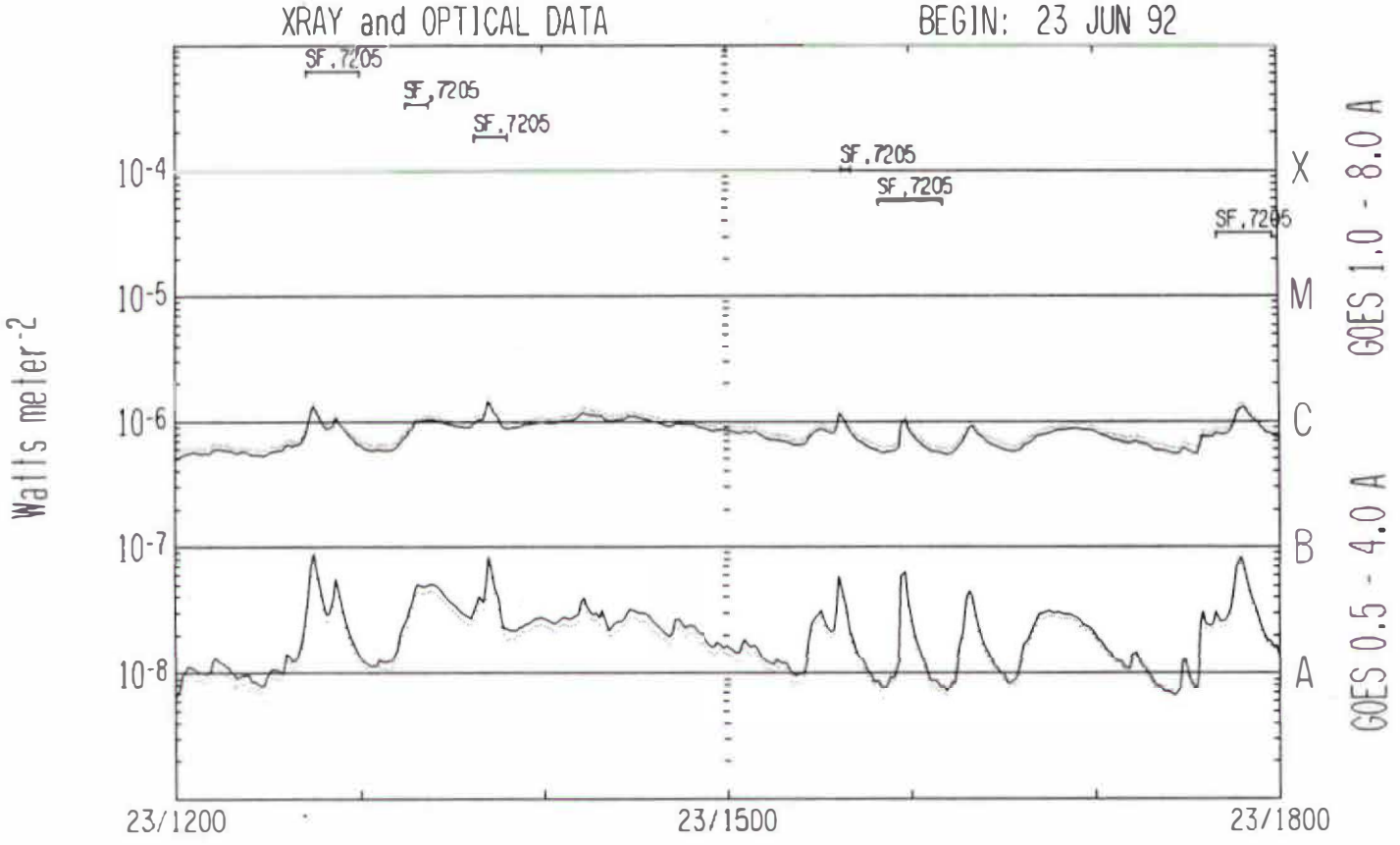
DMSP GAMMA PEAKS 90281-92305 CHECKED,2-SEC CTS,TERRELL/DMSP.GAM 930505
ORBITAL PERIODS FOR 8,9,10: 6110,6080,6040SEC. ALT=800KM. INCLIN=99DEG
GRB PEAK TIMES CORRECTED (8,9,10=11) FOR AVG DELAYS: 1.82,1.98,5.50SEC
CHANS: (8)50,100,200,420 (9)50,100 (10,11)20,100,200,430,550(-1000KEV)

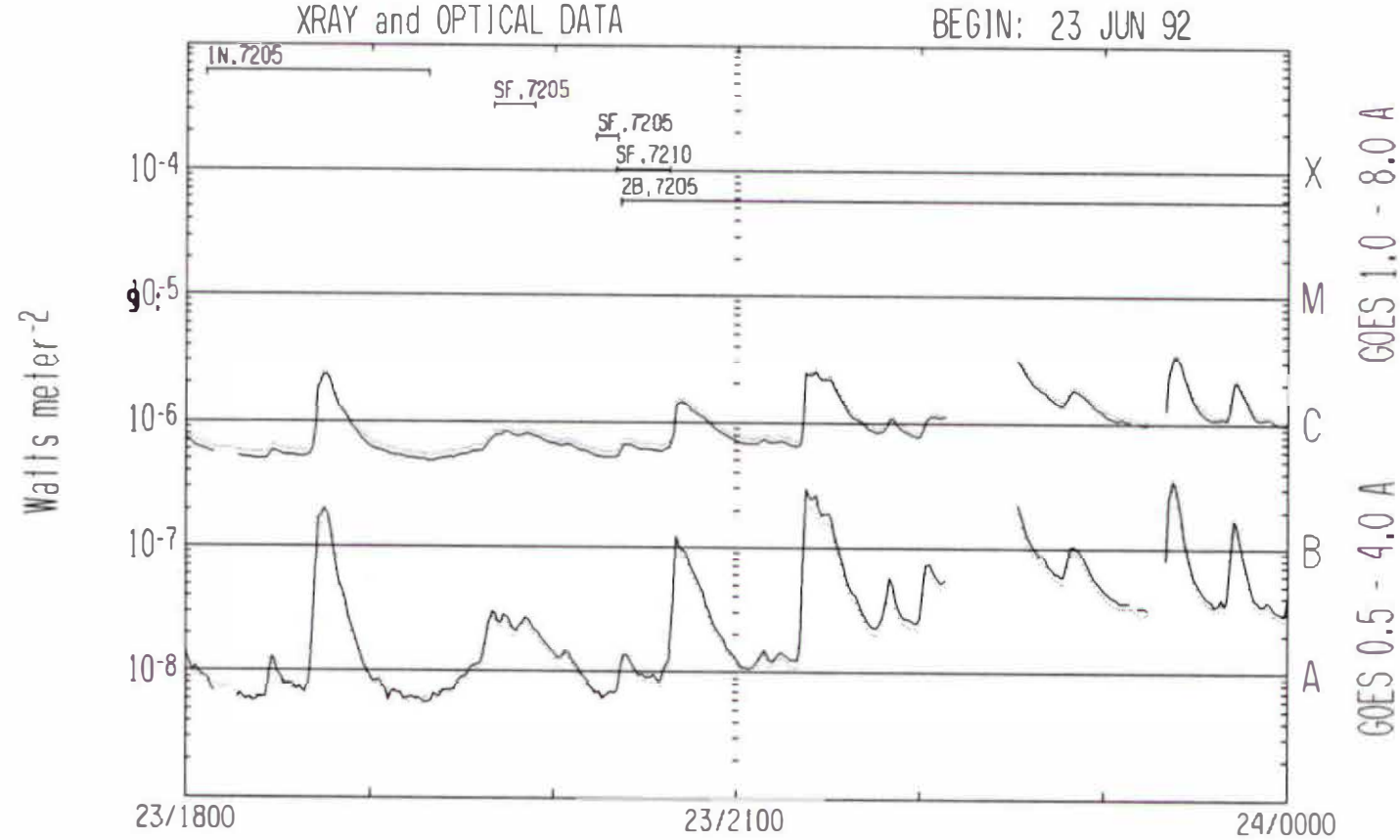
DATE	FL	DAY	TIME	NOTES--------(ND=NO DATA,NA=NOT APPARENT)----NOTES	DATATIMES
920101		001	0	JD8622.5	
920110		010	33480	BATSE GRB (16XMIN) (8ND,9NA,10SAA,11NA)	
920122		022		NO DMSP TAPES, DAYS 22-25 (92022-25)	
920126	9	026	55714	BURST? WIDE SOFT PEAK 55714.0 (4KC/S)(8SRAD,11SAA)	55646-768
	10	026	55704	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


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/23
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1417 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

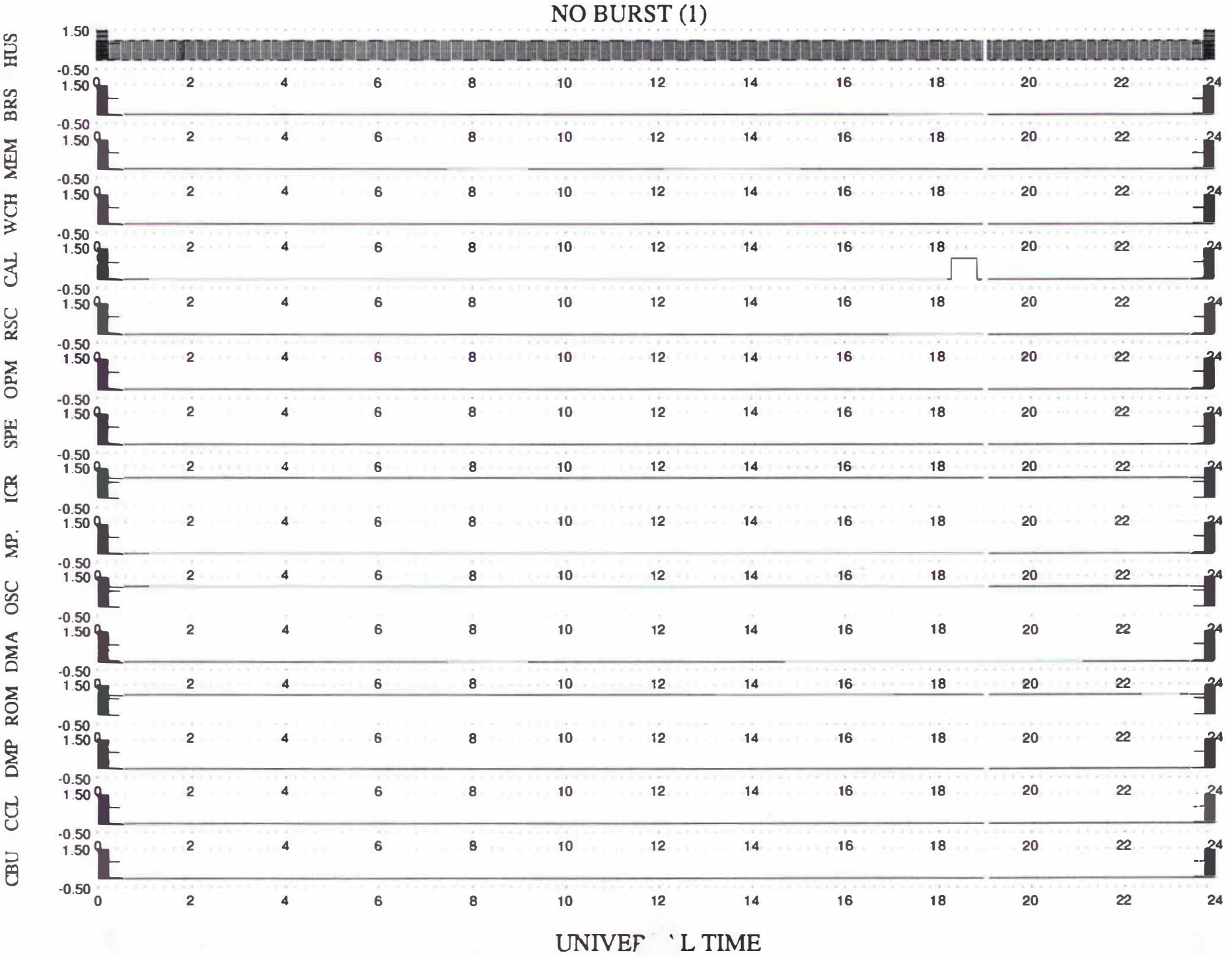

XRAY and OPTICAL DATA
BEGIN: 23 JUN 92
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
23/0000
23/0300
23/0600


XRAY and OPTICAL DATA
BEGIN: 23 JUN 92
SF,7205
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
23/0600
23/0900
23/1200


XRAY and OPTICAL DATA
BEGIN: 23 JUN 92
SF,7205
SF,7205
SF,7205
SF,7205
SF,7205
SF,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
23/1200
23/1500
23/1800

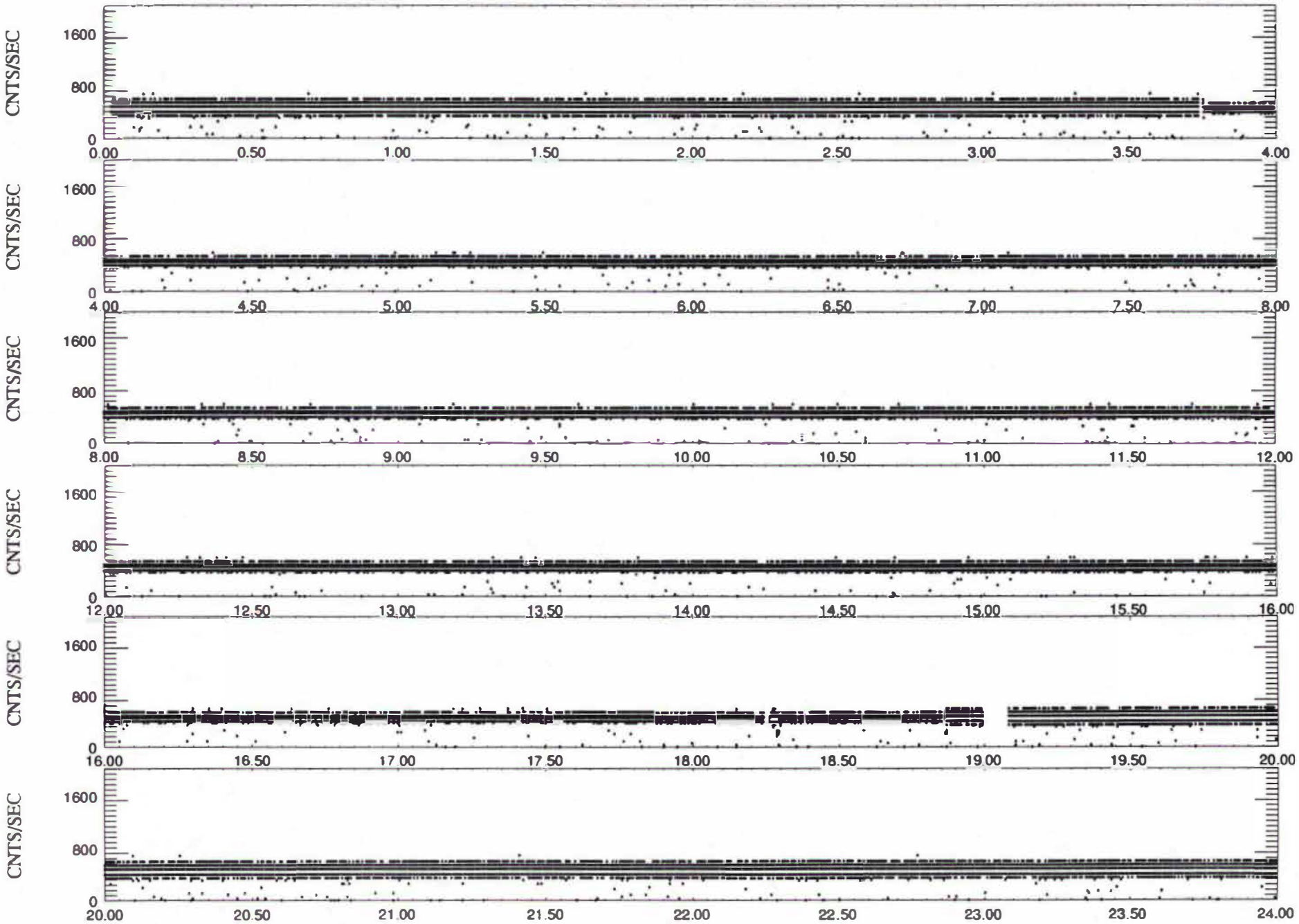

XRAY and OPTICAL DATA
BEGIN: 23 JUN 92
1N,7205
SF,7205
SF,7205
SF,7210
2B,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
23/1800
23/2100
24/0000

HUS MODES EDR day 175, year 1992 to day 175, year 1992 7/8/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 175, year 1992 to day 175, year 1992 7/8/92

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1667
EVENT OF 1992 JUN 24 DAY OF YEAR=176
EVENT CROSSING TIME AT BATSE : 16297. S. OR 04:31:36.5
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 68.100 1.900
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 24/ 6/ 92 IS:
RA= 149.646 DEC= 6.795 DIST= 5.824 AU
BATSE-ULYSSES DISTANCE = 871283864. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -435.43 SECS.
CROSSING TIME AT ULYSSES IS 15861. S. OR 04:24:21.1 +/- 542.27 SECONDS

NO

From HORACK@ssl.msfc.nasa.gov Thu Jun 25 12:22:26 1992
Date: Thu, 25 Jun 1992 14:22:17 -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: 1539

BATSE BURST TRIGGER
NO.: 1667 Jun 24

TIME: TJD=8797 SECONDS=16343

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=335 AZIMUTH=50 ERROR= DEGREES

COMMENTS:
BELIEVE IT....OR DON'T. SMALL WIMPY BURST SET OFF THE TRIGGER, TO BE FOLLOWED 50 SECONDS LATER BY A GOES C-1.2 FLARE IN THE SAME DETECTORS. BURST AND FLARE DO NOT LOCATE TO SAME PLACE, AND HAVE VASTLY DIFFERENT SPECTRAL INDICES. BURST LASTS APPROXIMATELY 20 SECONDS, AND HAS A FAST RISE, WITH SLOWER DECAY. NO DETAILED TIME STRUCTURE.

Nothing

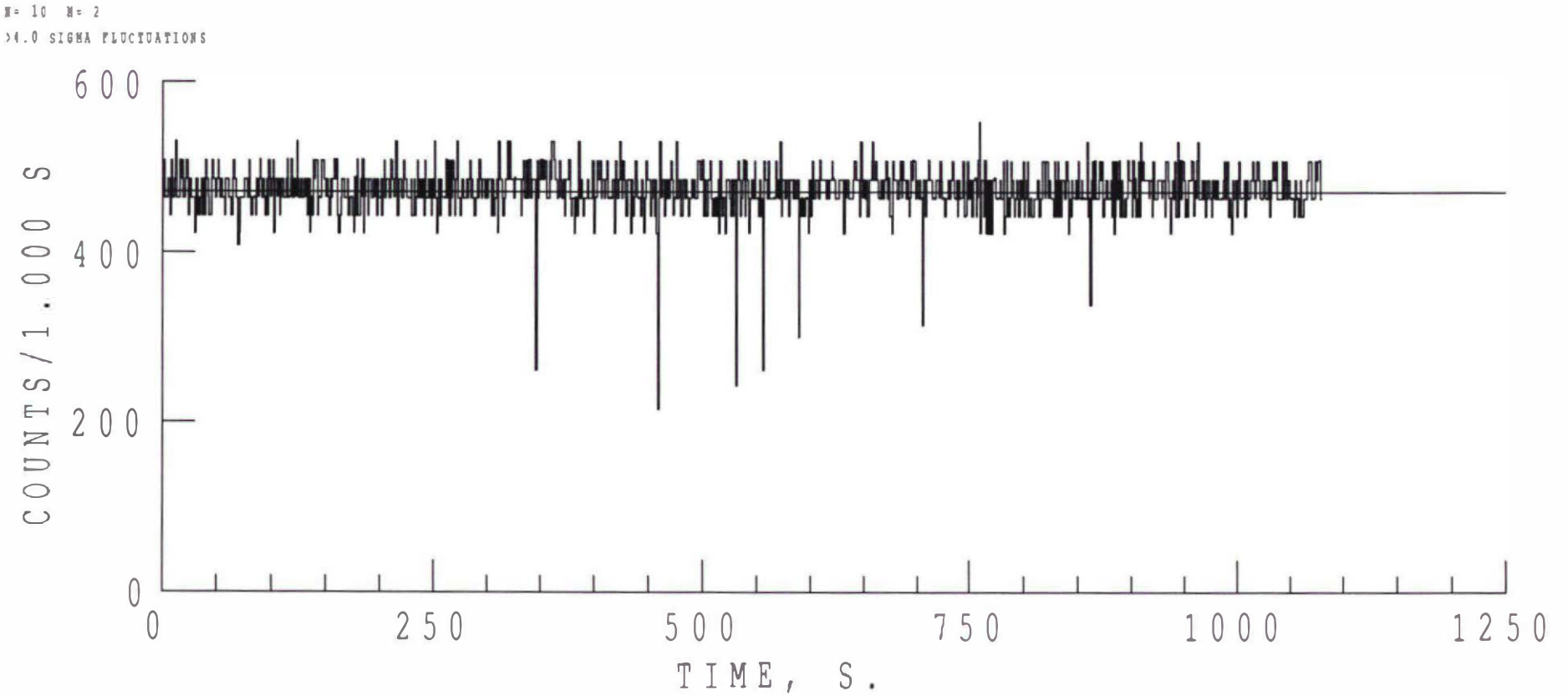
8/ 6/94

ULYSSES RT

24/ 6/92 15336.114 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



From HORACK@ssl.msfc.nasa.gov Thu Jun 25 12:26:55 1992
Date: Thu, 25 Jun 1992 14:26:56 -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: 1377

BATSE BURST TRIGGER

NO.: 1668

TIME: TJD=8797 SECONDS=68003

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=29 AZIMUTH=6 ERROR= DEGREES

COMMENTS:
SORRY, I REVERSED THE ZENITH AND AZIMUTH ON THE PREVIOUS MESSAGE.....
THIS ONE IS A FLARE, GOES C-3.6 FLARE, LASTING ABOUT 30 SECONDS. CONSISTS
OF A MAJOR EMISSION REGION FROM 0-5 SEC, THEN DIES AWAY. SOFT SPECTRUM

No flag

From HORACK@ssl.msfc.nasa.gov Thu Jun 25 12:31:06 1992
Date: Thu, 25 Jun 1992 14:30:59 -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: 1539

BATSE BURST TRIGGER

NO.: 1669

TIME: TJD=8797 SECONDS=77442

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

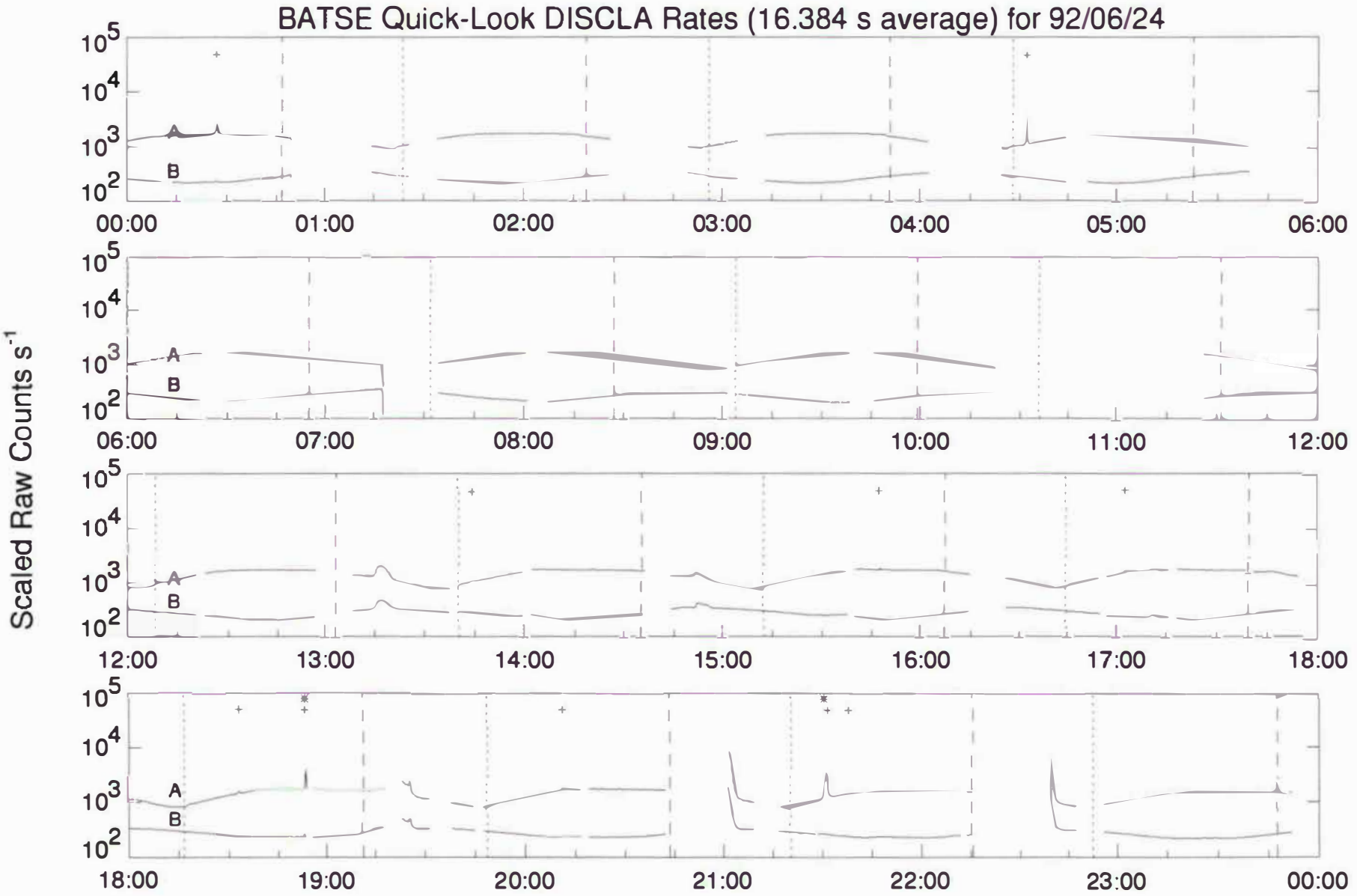
SIGNIFICANCE: SIGMA

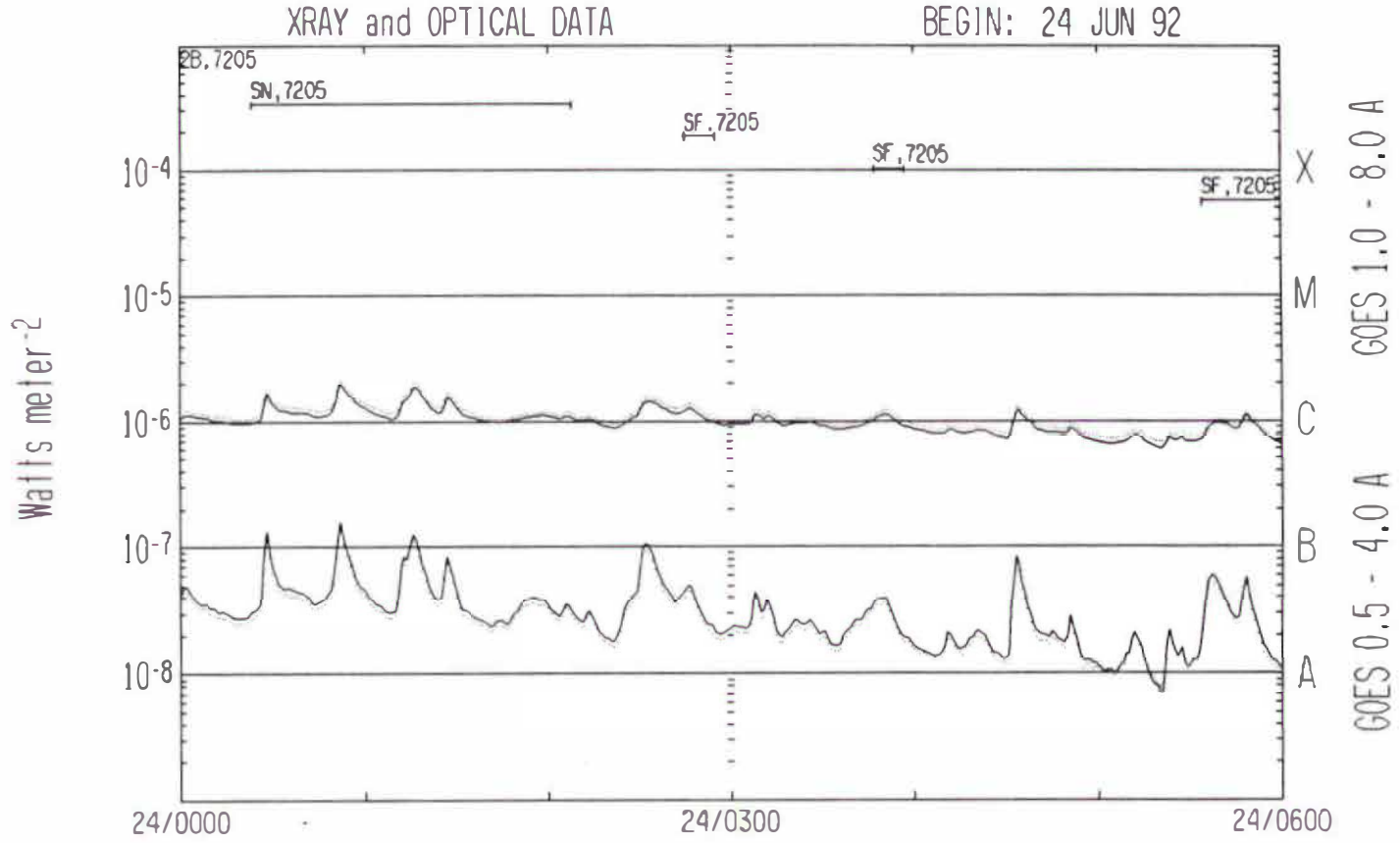
INTENSITY: COUNTS/CM2

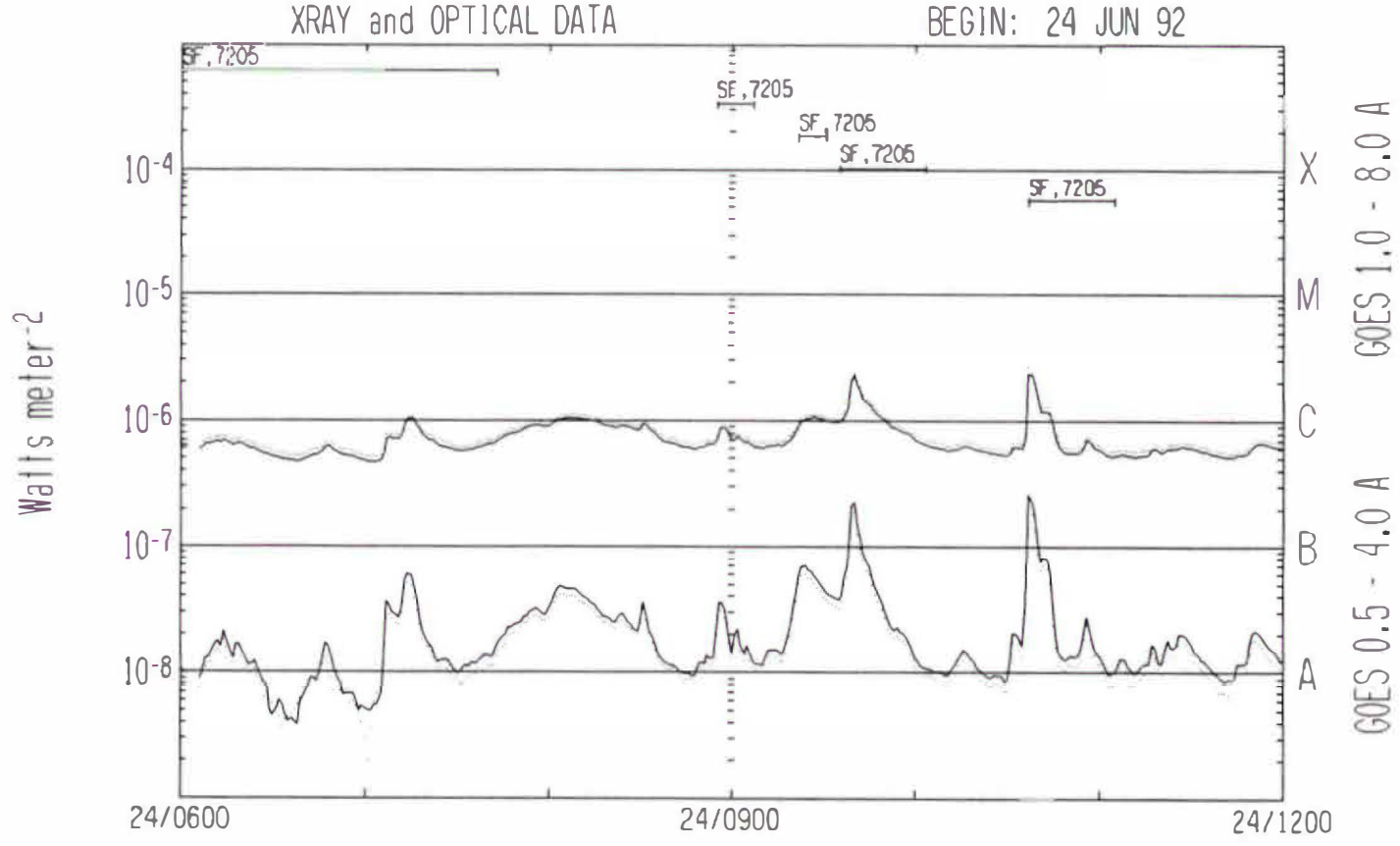
LOCATION: ZENITH=26 AZIMUTH=2 ERROR= DEGREES

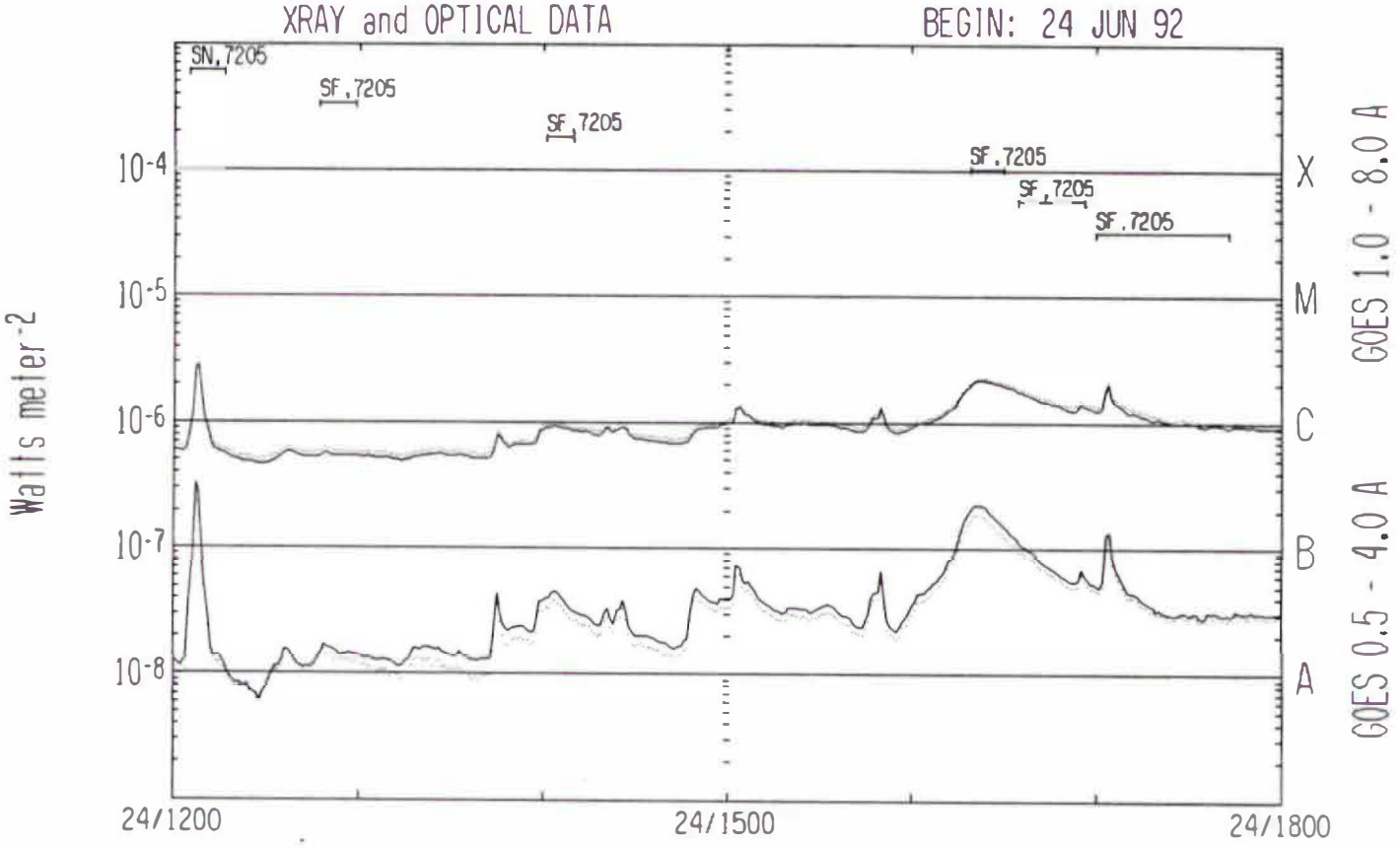
COMMENTS:
GOES C-5.4 FLARE LASTING APPROXIMATELY 120 SECONDS. MODERATE INTENSITY
EVENT WITH SOME DETAILED TIME STRUCTURE. THREE MAIN EMISSION REGIONS, AT
APPROX 5, 30, AND 65 SEC AFTER TRIGGER. THIRD ONE IS MOST INTERESTING WITH
LARGEST INTENSITY AND MOST TIME STRUCTURE. ONSET OF FLARE HAS THE HARDEST
SPECTRUM.

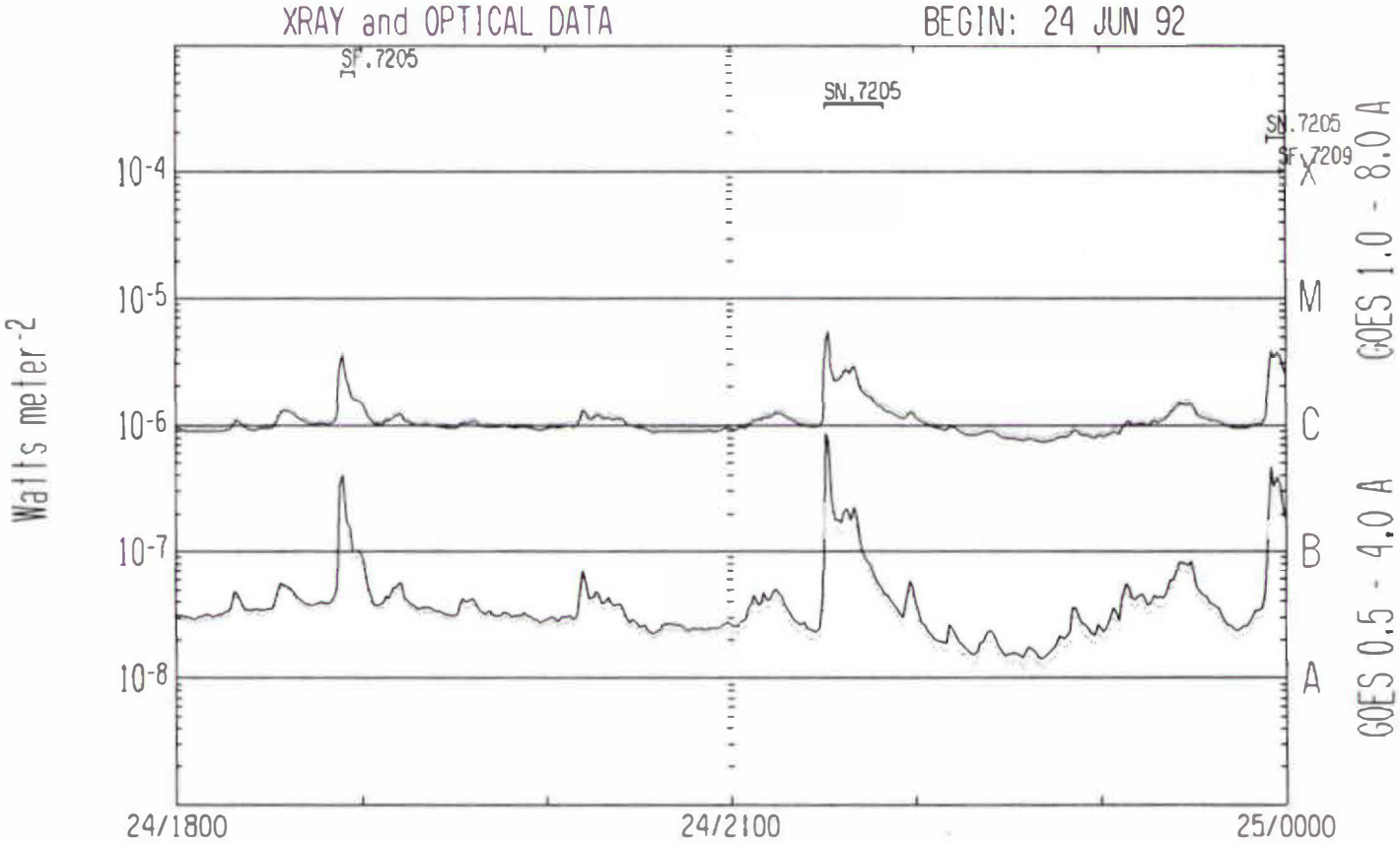
No flag


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1418 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


XRAY and OPTICAL DATA
BEGIN: 24 JUN 92
2B,7205
SN,7205
SF,7205
SF,7205
SF,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
24/0000
24/0300
24/0600


XRAY and OPTICAL DATA
BEGIN: 24 JUN 92
SF,7205
SF,7205
SF,7205
SF,7205
SF,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
24/0600
24/0900
24/1200


XRAY and OPTICAL DATA
BEGIN: 24 JUN 92
SN,7205
SF,7205
SF,7205
SF,7205
SF,7205
SF,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
24/1200
24/1500
24/1800


XRAY and OPTICAL DATA
BEGIN: 24 JUN 92
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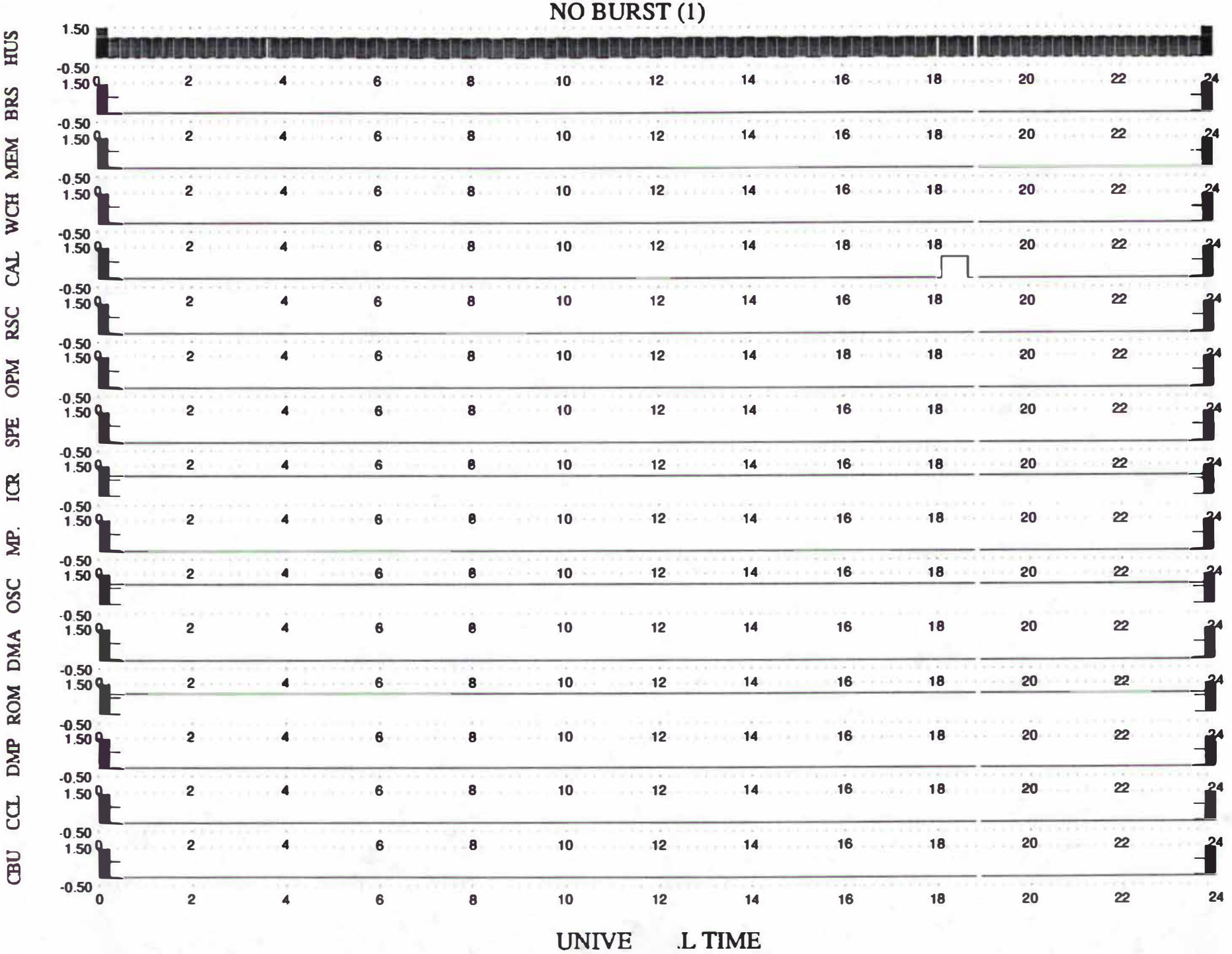
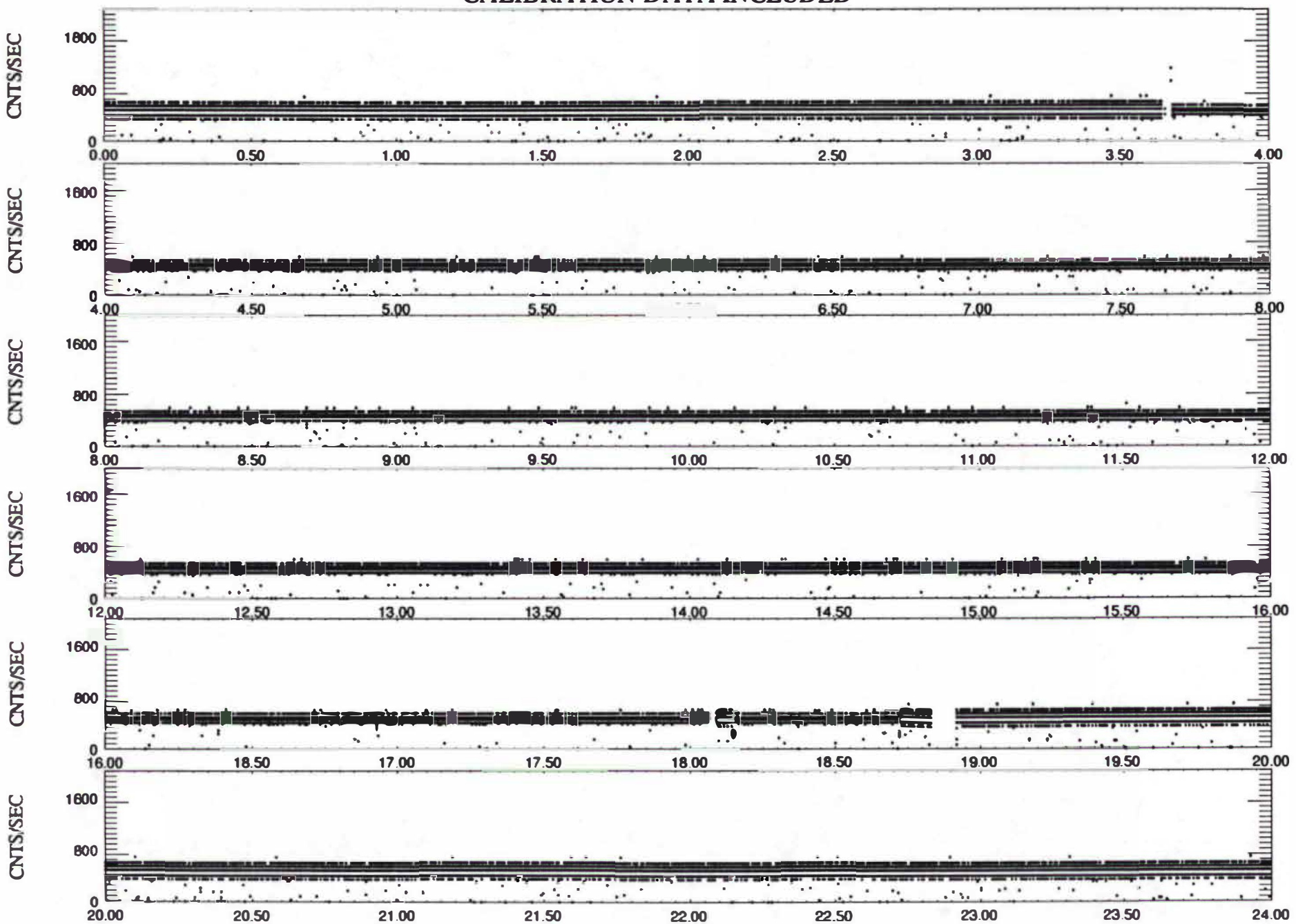
SN,7205
SN,7205
SF,7209
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
24/1800
24/2100
25/0000

HUS MODES EDR day 176, year 1992 to day 176, year 1992 7/10/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 176, year 1992 to day 176, year 1992 7/10/92

CALIBRATION DATA INCLUDED



UNIVE L TIME

```
         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,CMPLX,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,ULYSS
           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 ANGSUN=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
```

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

From BHAT@ssl.msfc.nasa.gov Mon Jun 29 06:47:20 1992
Date: Mon, 29 Jun 1992 8:47:29 -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.: 1670

June 25

TIME: TJD=8798 SECONDS=12852

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 31.5 AZIMUTH= 5.3 ERROR= DEGREES

COMMENTS:
THIS SOLAR FLARE WAS SEEN BY GOES, BUT NOT CLASSIFIED. THE TIME HISTORY CONSISTS ONE LARGE PULSE WITH SOME STRUCTURE LASTING FOR ABOUT 28 SEC. NO SIGNAL IS SEEN ABOVE 300 KEV.

No trig

From BHAT@ssl.msfc.nasa.gov Mon Jun 29 07:09:00 1992
Date: Mon, 29 Jun 1992 9:08:44 -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: 1576

BATSE BURST TRIGGER

NO.: 1671

TIME: TJD=8798 SECONDS=18658

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 30.2 AZIMUTH= 12.1 ERROR= DEGREES

COMMENTS:
THIS FLARE WAS CLASSIFIED IN GOES CATLOG AS C5.4. THIS IS ONE OF THE MOST INTERESTING FLARE CONSISTING OF TWO DISTINCT PARTS SEPARATED BY ABOUT 200 SEC QUIET PERIOD. THE FIRST PART CONSISTS OF SINGLE SOFT PULSE WITH SOME STRUCTURE LASTING ABOUT 11 SEC HAS NO SIGNAL ABOVE 100 KEV. THE SECOND PART HAS A SLOW RIS RISE SHARP DECAY PULSE WITH SOME STRUCTURE DURING RISE. IT DOES NOT SHOW SIGNAL BEYOND 300 KEV AND LASTS FOR 47 SEC.

No trig

From BHAT@ssl.msfc.nasa.gov Mon Jun 29 08:45:58 1992
Date: Mon, 29 Jun 1992 10:46:13 -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.: 1672

TIME: TJD=8798 SECONDS=64408

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=347.5 AZIMUTH= 93.9 ERROR= DEGREES

COMMENTS:
THIS A LARGE FLARE CLASSIFIED IN GOES AS M1.4. THE TIME HISTORY CONSISTS OF
A LARGE SINGLE PULSE LASTING ABOUT 250 SEC. NO SIGNAL IS SEEN BEYOND 300 KEV.

No fig

From BHAT@ssl.msfc.nasa.gov Mon Jun 29 08:54:28 1992
Date: Mon, 29 Jun 1992 10:54:53 -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: 1303

BATSE BURST TRIGGER

NO.: 1673

TIME: TJD=8798 SECONDS=73796

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

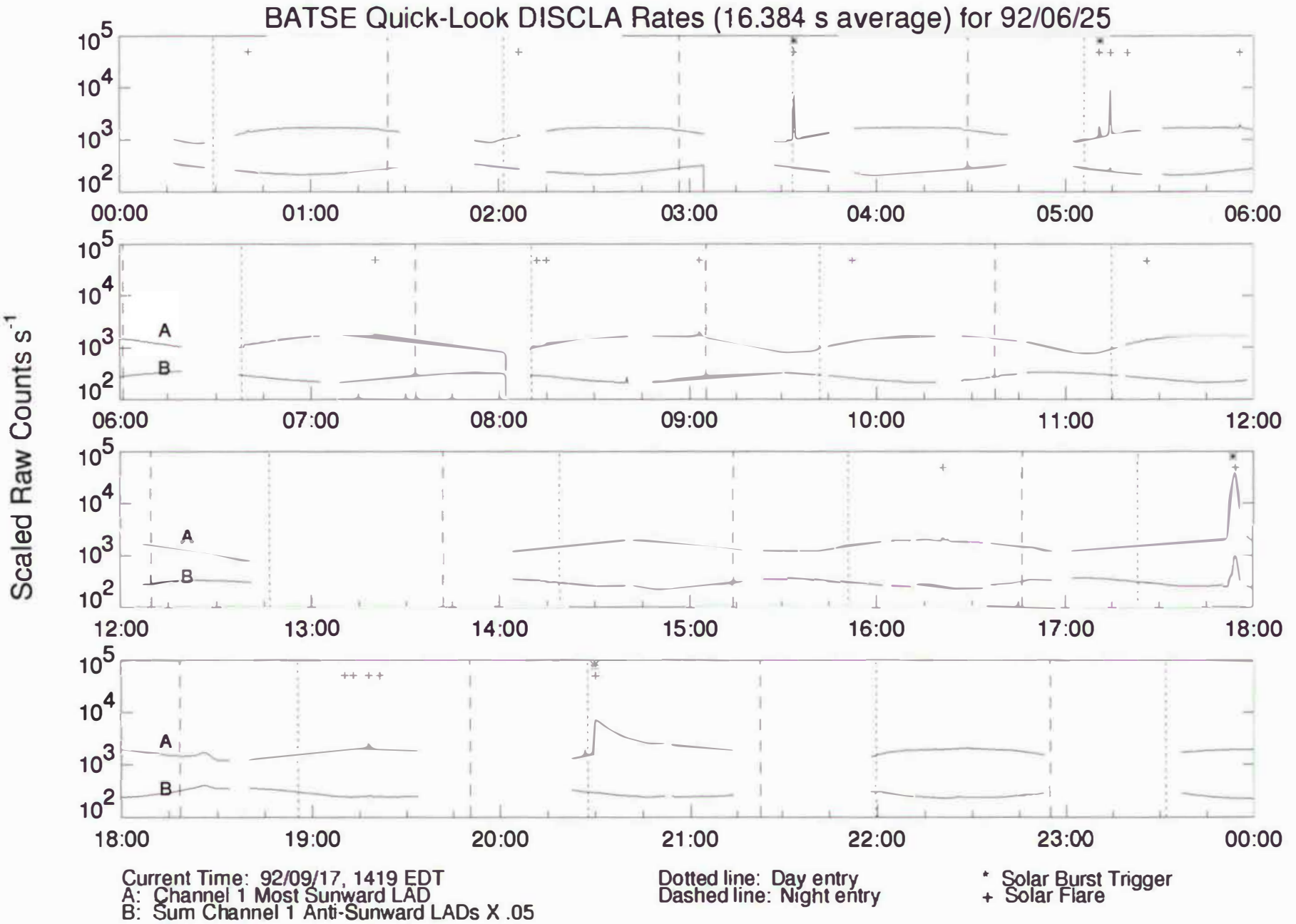
SIGNIFICANCE: SIGMA

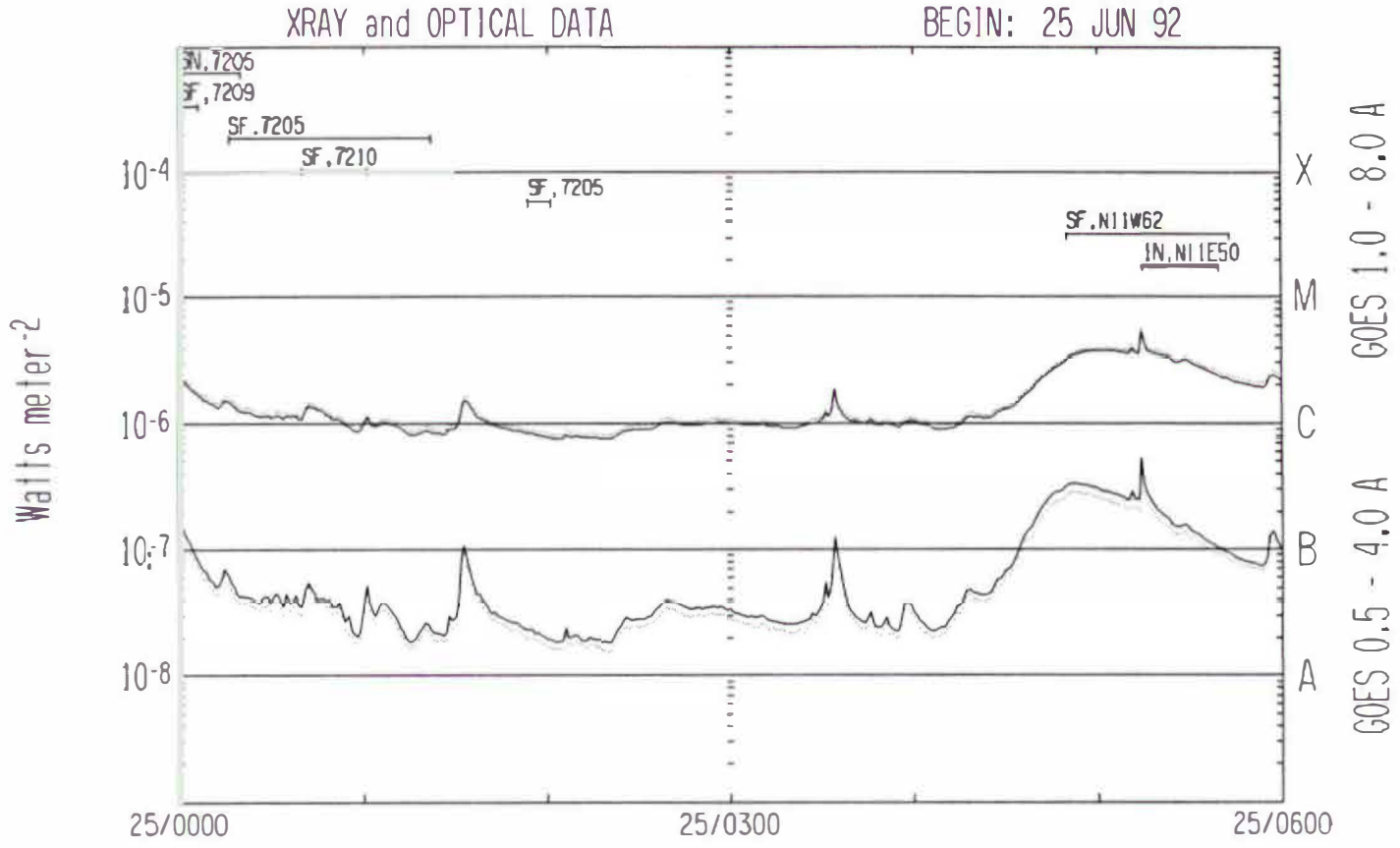
INTENSITY: COUNTS/CM2

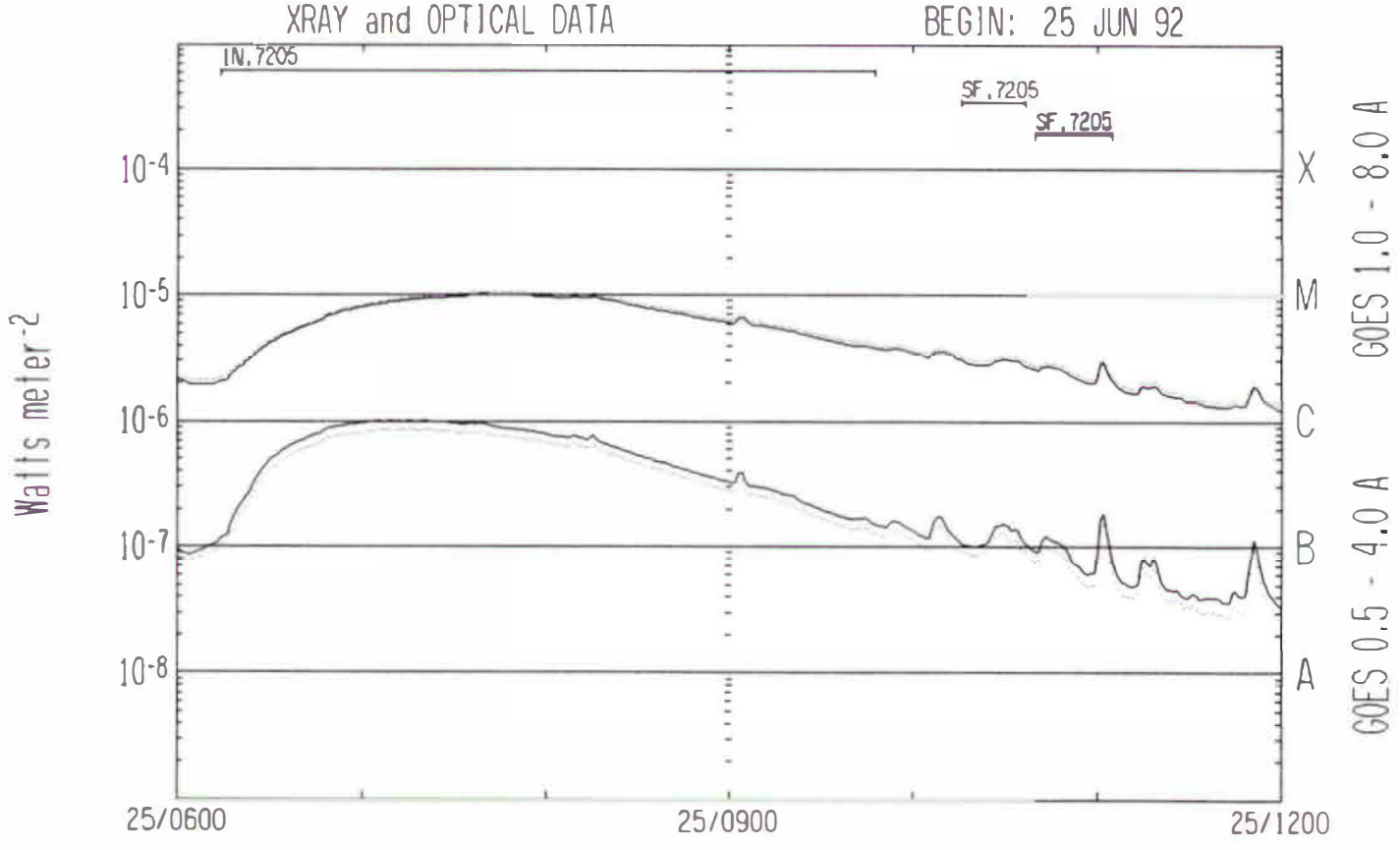
LOCATION: ZENITH=87.2 AZIMUTH=341.6 ERROR= DEGREES

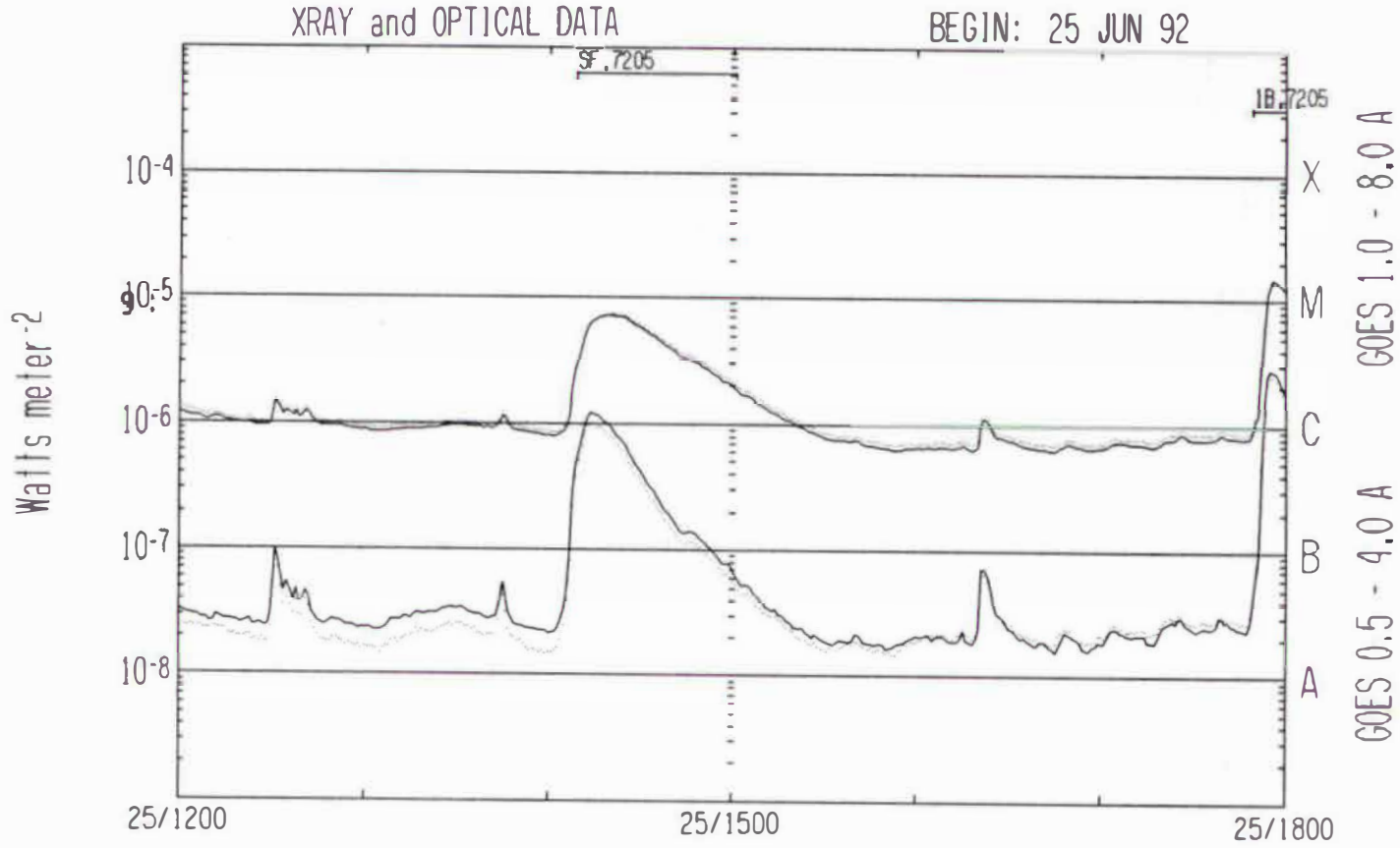
COMMENTS:
THE DECAYING PART OF A X3.9 FLARE TRIGGERED AT GRO SUN-RISE. THE BURSTS LASTS
FOR MORE THAN 900 SEC. SIGNAL IS BARELY SEEN ABOVE 300 KEV. IT HAS A SMOOTH
TIME PROFILE.

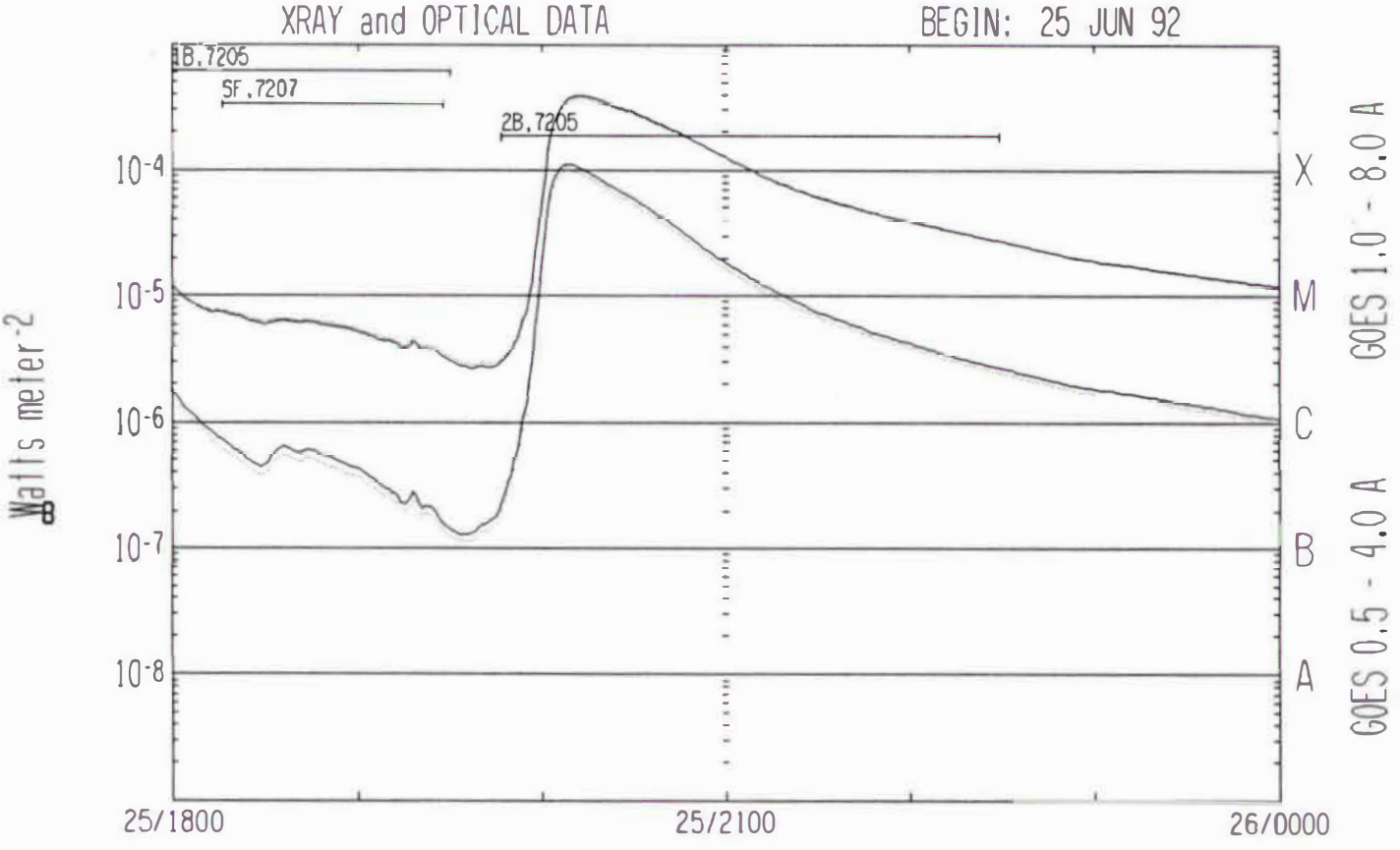
No fig


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/25
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1419 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


XRAY and OPTICAL DATA
BEGIN: 25 JUN 92
SN,7205
SF,7209
SF,7205
SF,7210
SF,7205
SF,N11W62
1N,N11E50
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
25/0000
25/0300
25/0600


XRAY and OPTICAL DATA
BEGIN: 25 JUN 92
1N,7205
SF,7205
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
25/0600
25/0900
25/1200


XRAY and OPTICAL DATA
BEGIN: 25 JUN 92
SF,7205
1B,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
25/1200
25/1500
25/1800


XRAY and OPTICAL DATA
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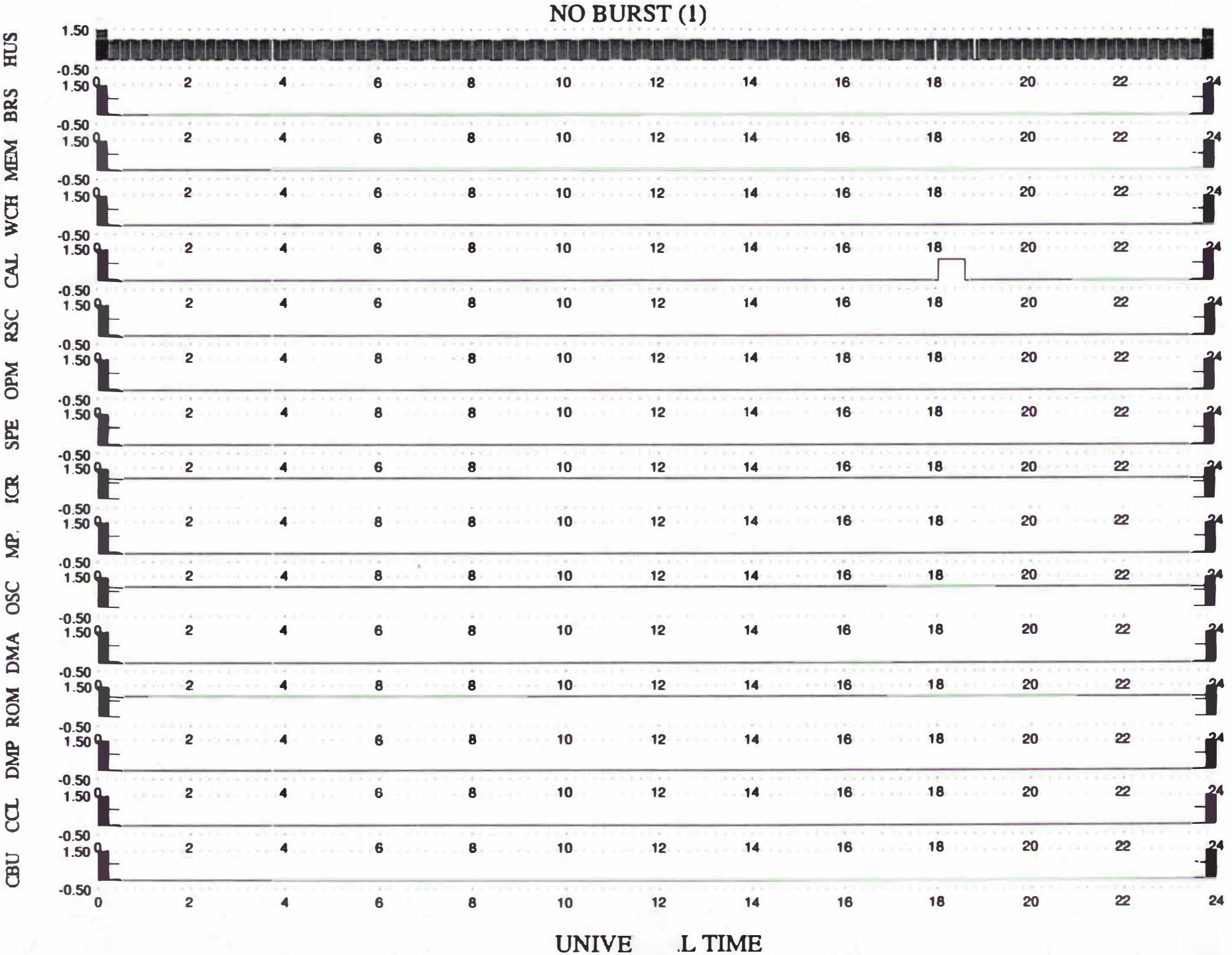
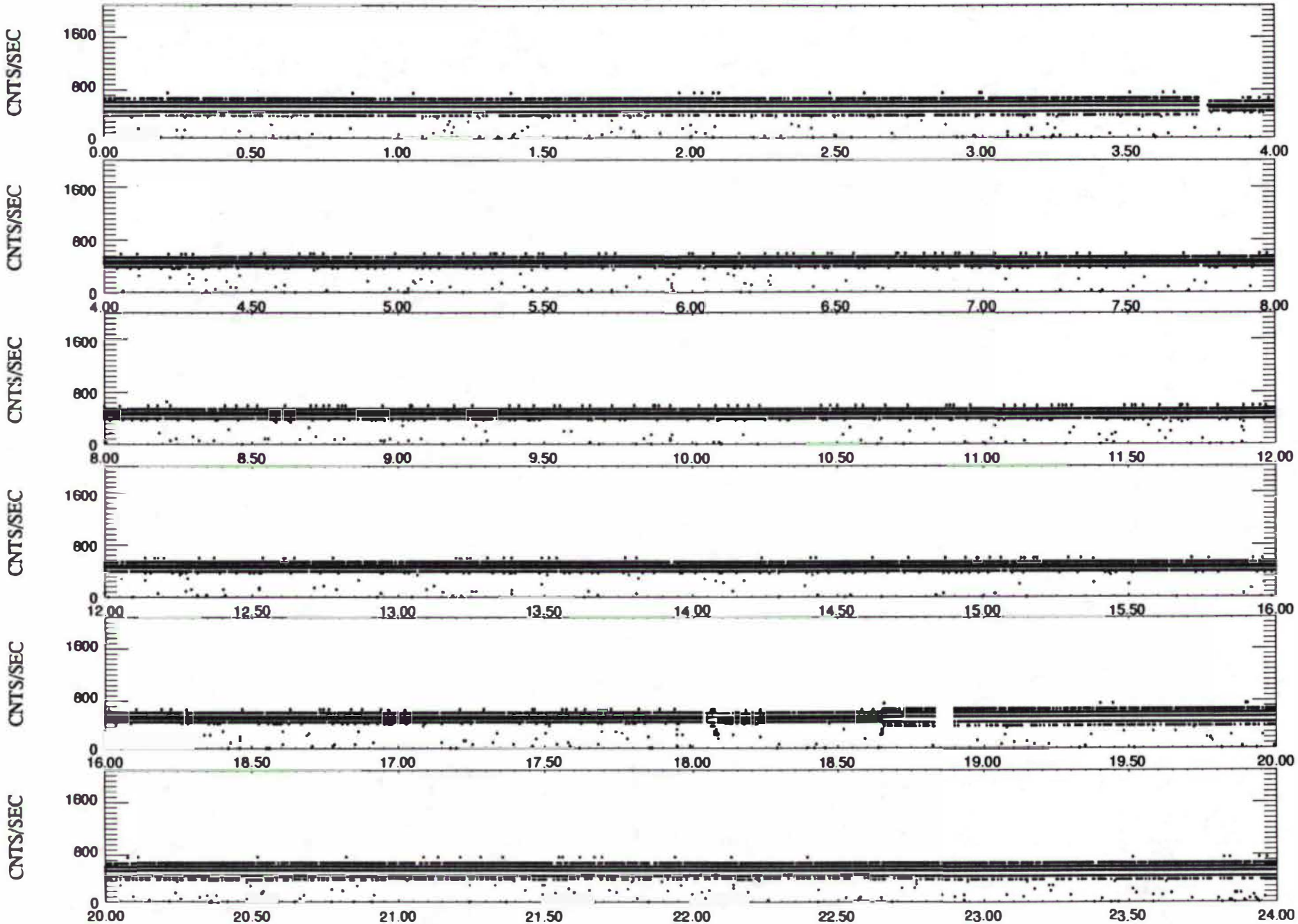
1B,7205
SF,7207
2B,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
25/1800
25/2100
26/0000

HUS MODES EDR day 177, year 1992 to day 177, year 1992 7/10/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 177, year 1992 to day 177, year 1992 7/10/92

CALIBRATION DATA INCLUDED



UNIVE' .L TIME

BATSE time corrected 9/30

Date: June 28 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? No

2. For 3 Spacecraft events

☐ Konus N/S anisotropy used to distinguish between positions?

☐ SAX anisotropy used to distinguish between positions?

☐ SAX Earth-blocking used to distinguish between positions?

☐ Σ $3\Delta t$'s calculated?

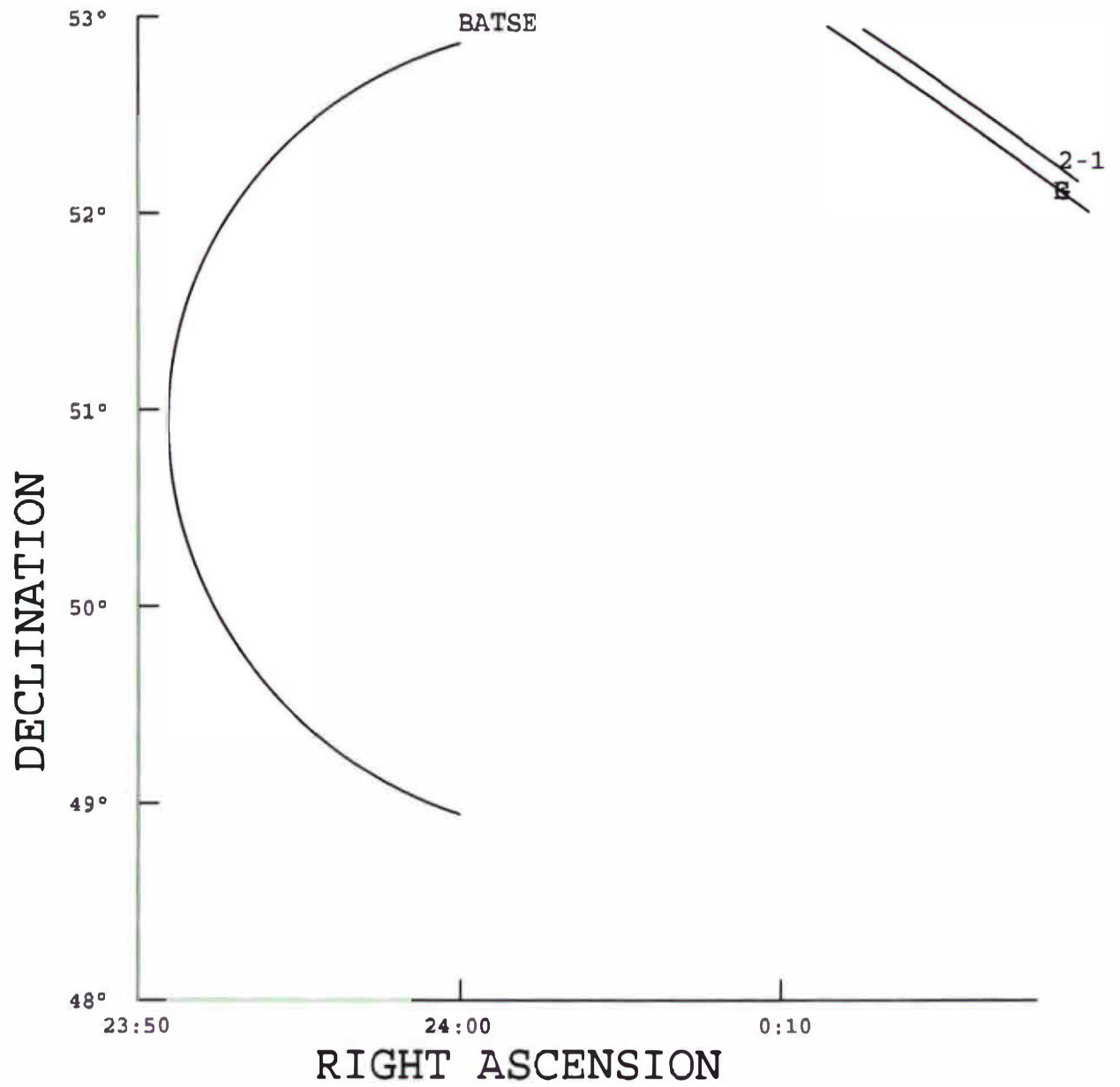
3. For 4 Spacecraft Events

☐ BMAPSUM executed to get chisquare for alternate positions?

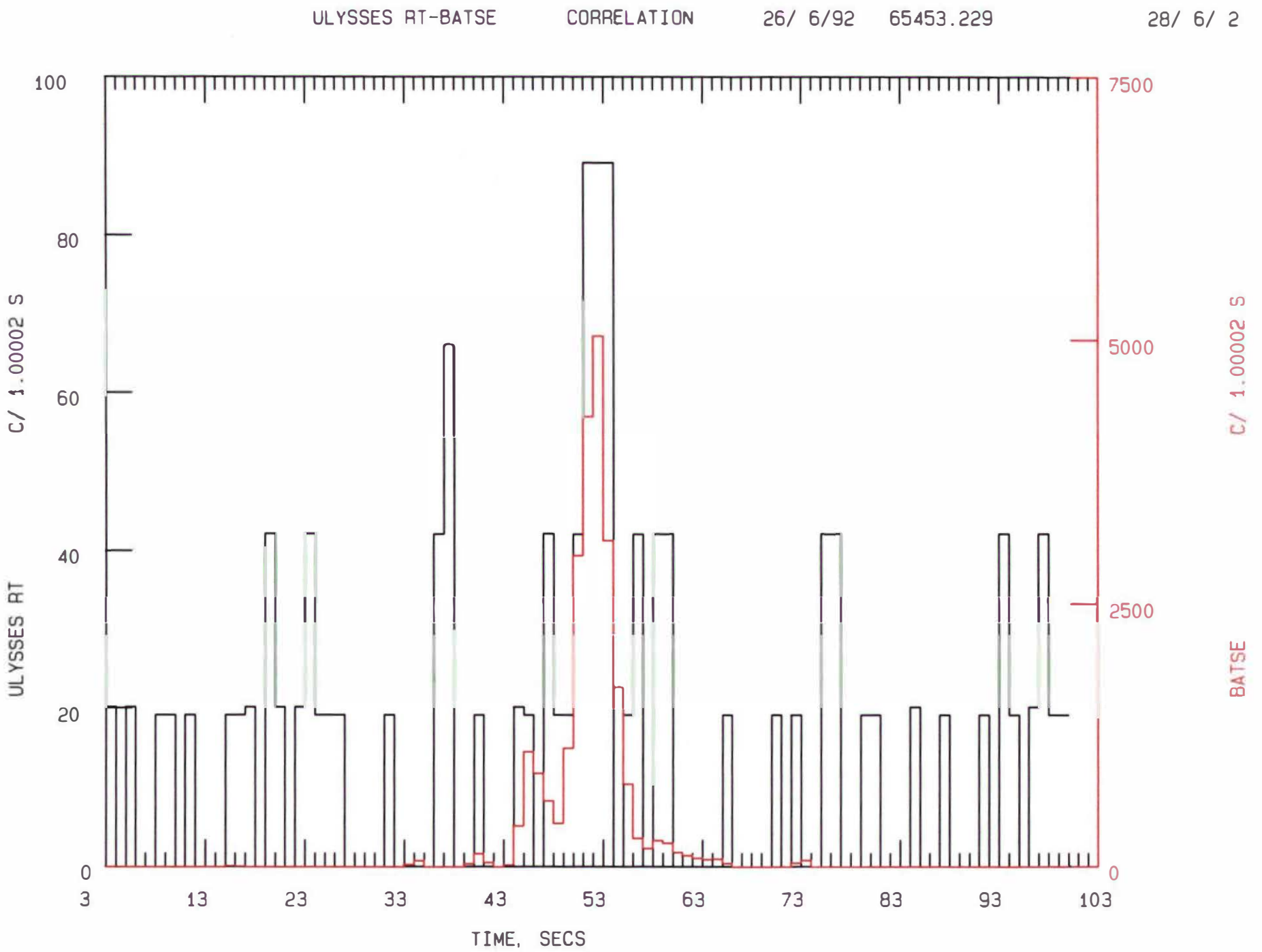
☑ ACCESS database updated?

EVENT OF JUN 26, 1992 17:51

28/ 6/ 2

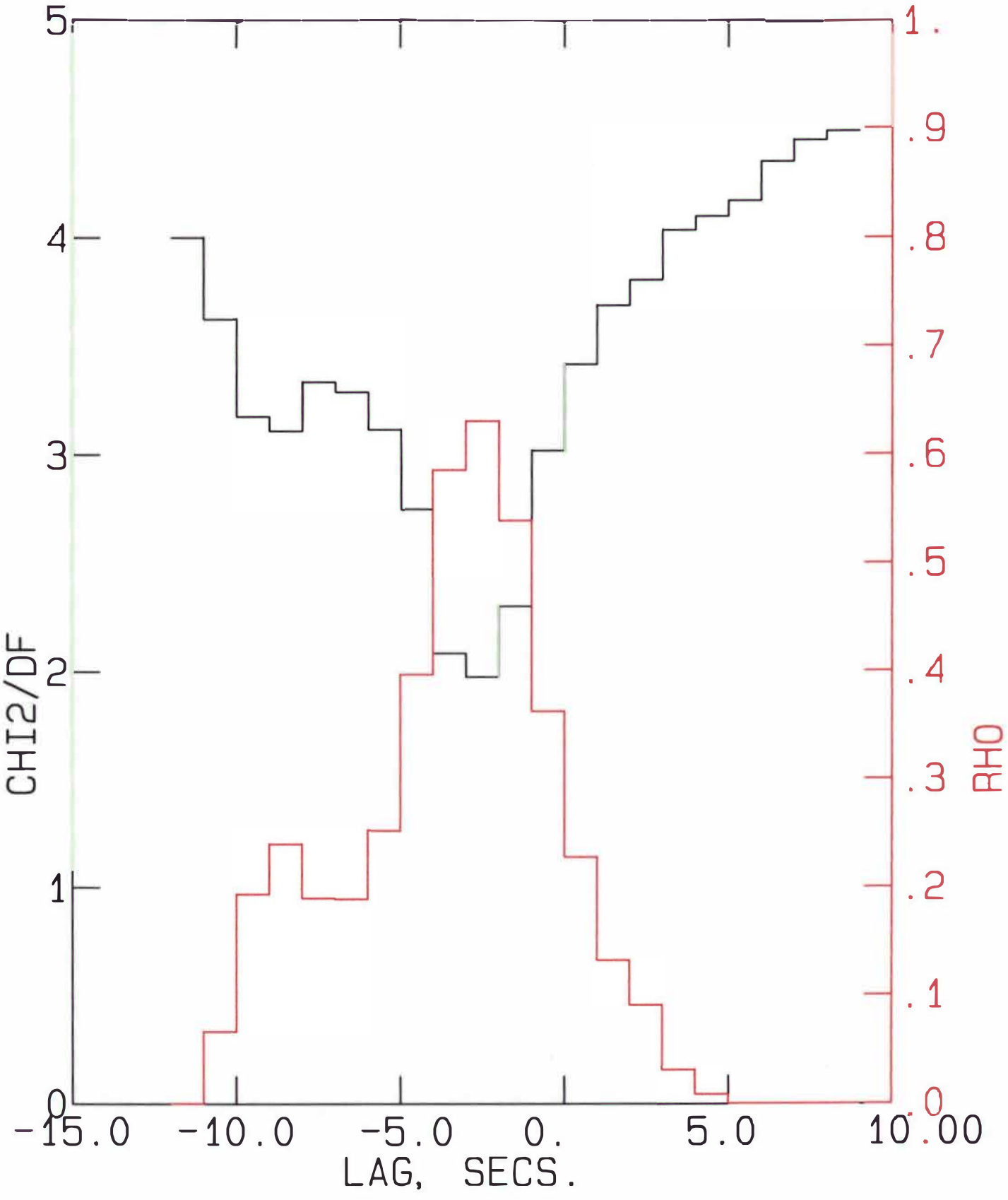


N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 ULYSSES


ULYSSES RT-BATSE CORRELATION 26/ 6/92 65453.229 28/ 6/ 2
100
80
60
40
20
0
C/ 1.00002 S
ULYSSES RT
7500
5000
2500
0
C/ 1.00002 S
BATSE
3
13
23
33
43
53
63
73
83
93
103
TIME, SECS

28/ 6/ 2

ULYSSES RT-BATSE CORRELATION 26/ 6/92 65453.229



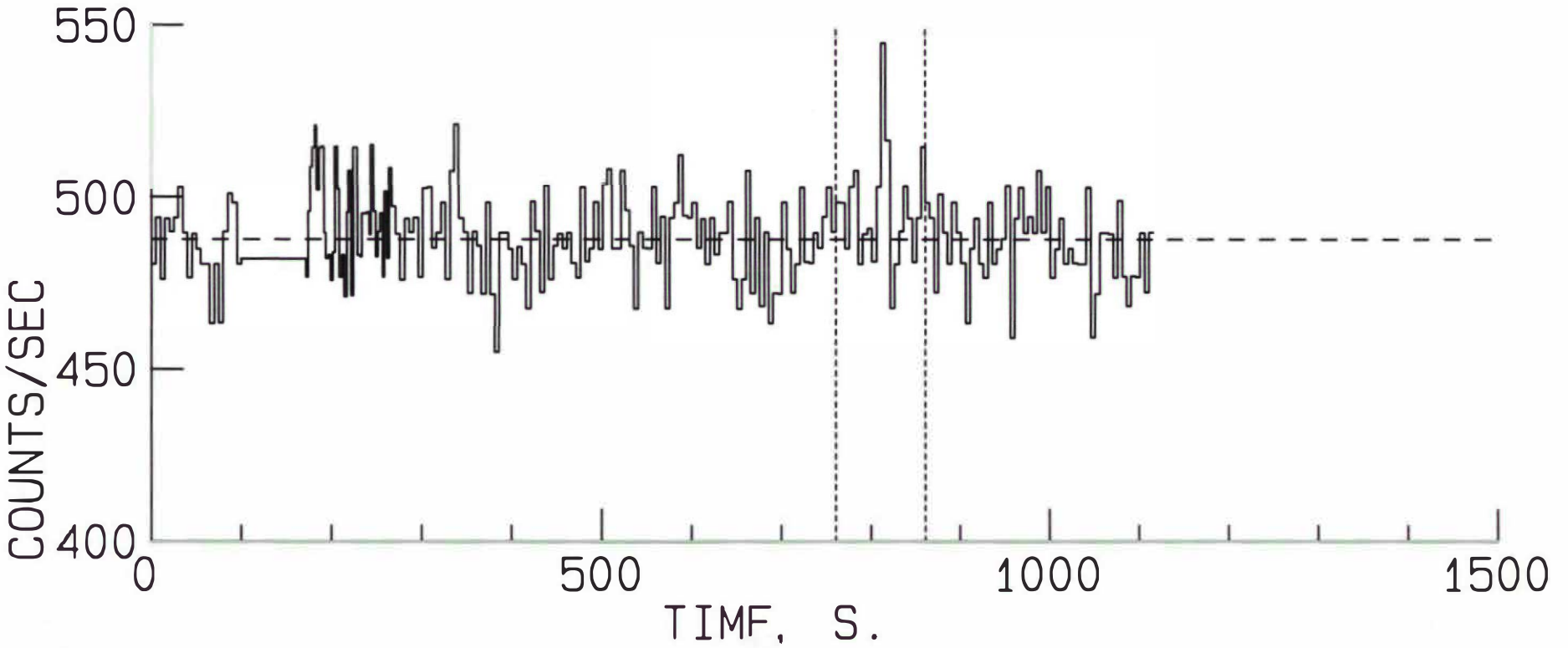
ULYSSES RT

28/ 6/ 2

26/ 6/92 64692.211 s

INTERVALS REGROUPED BY 10

23- 154 keV



From KOSHUT@ssl.msfc.nasa.gov Sat Jun 27 11:49:50 1992
Date: Sat, 27 Jun 1992 13:50:10 -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.: 01674

Jun 26

TIME: TJD=8799 SECONDS=61786

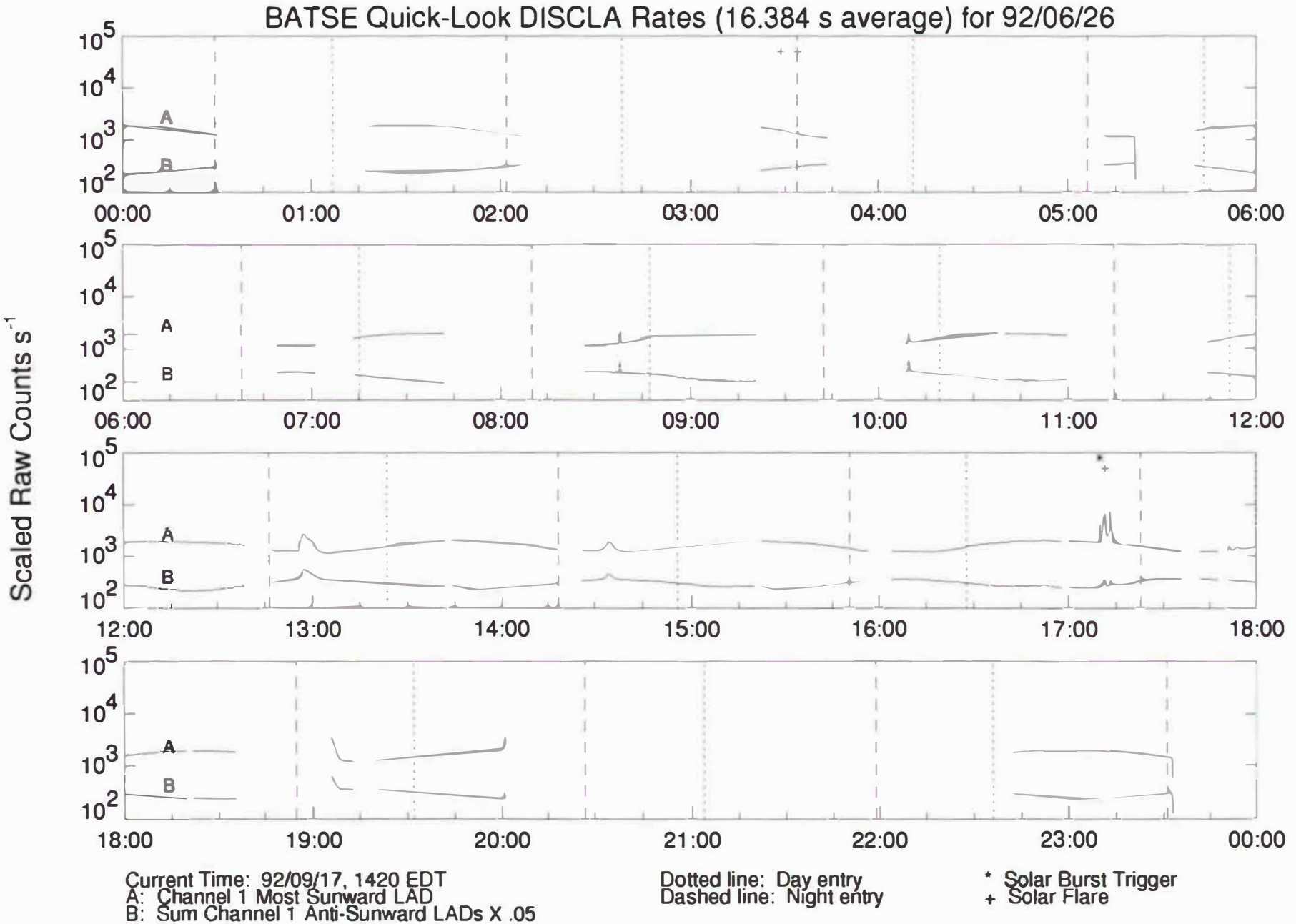
TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

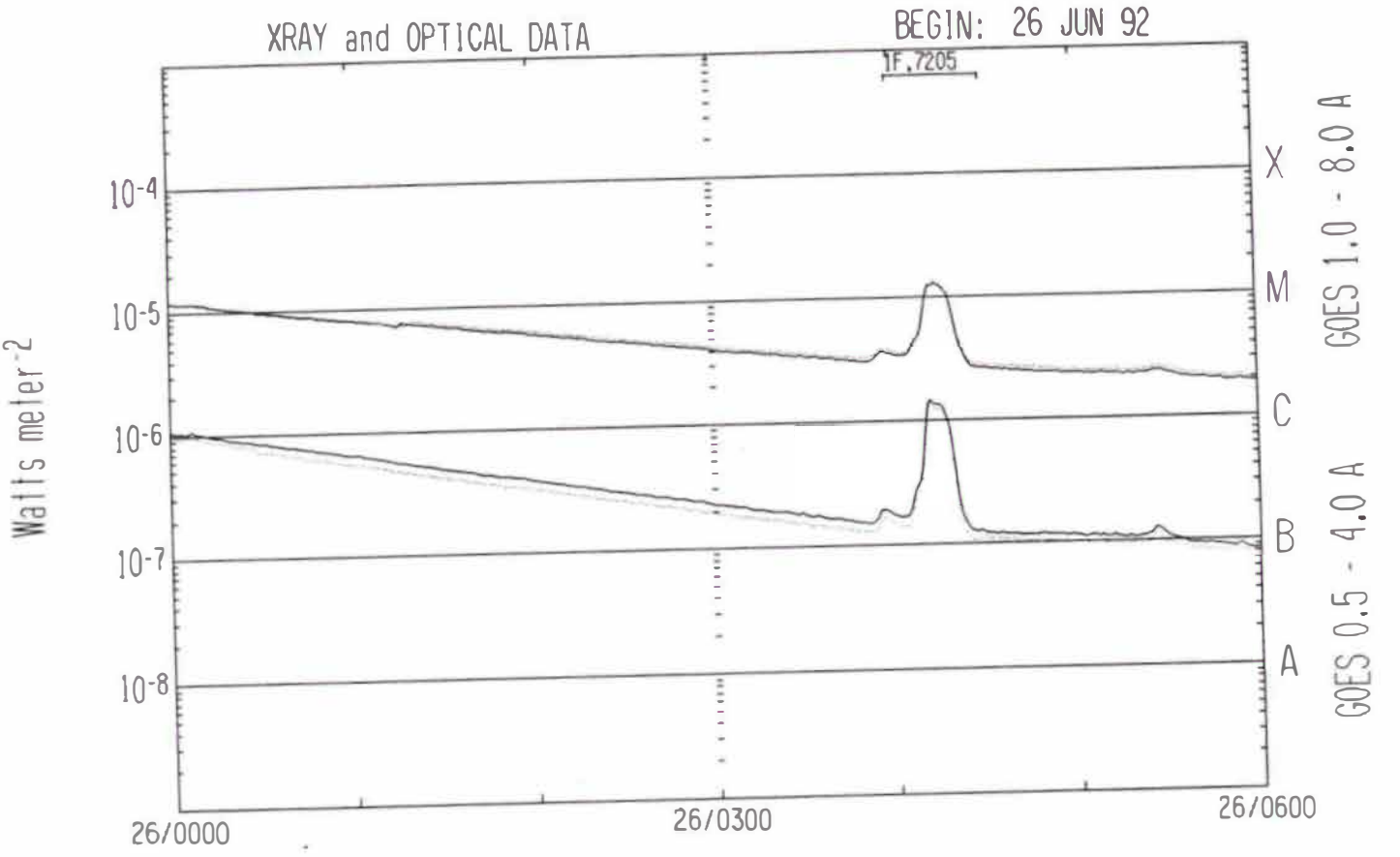
SIGNIFICANCE: SIGMA

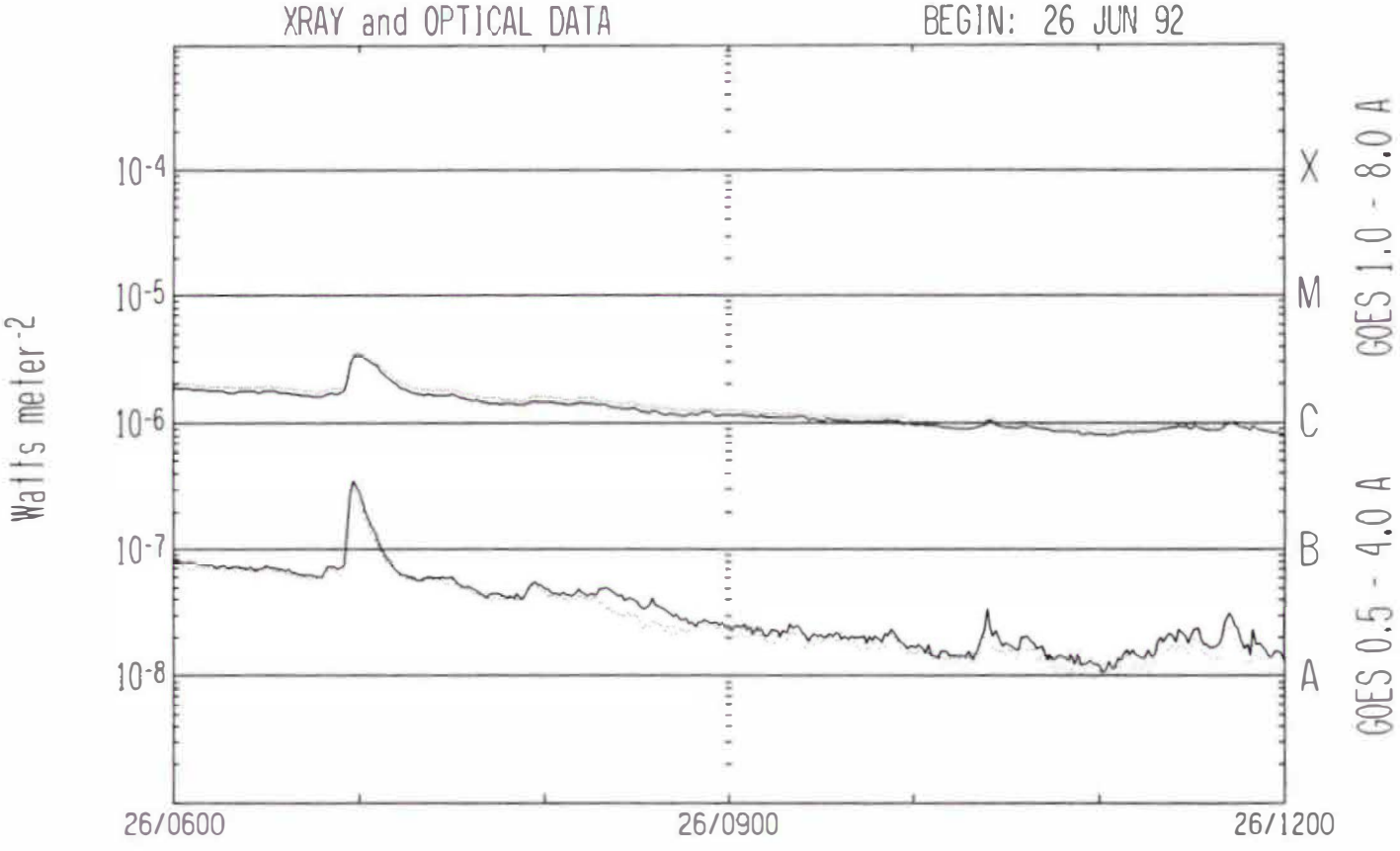
INTENSITY: COUNTS/CM2

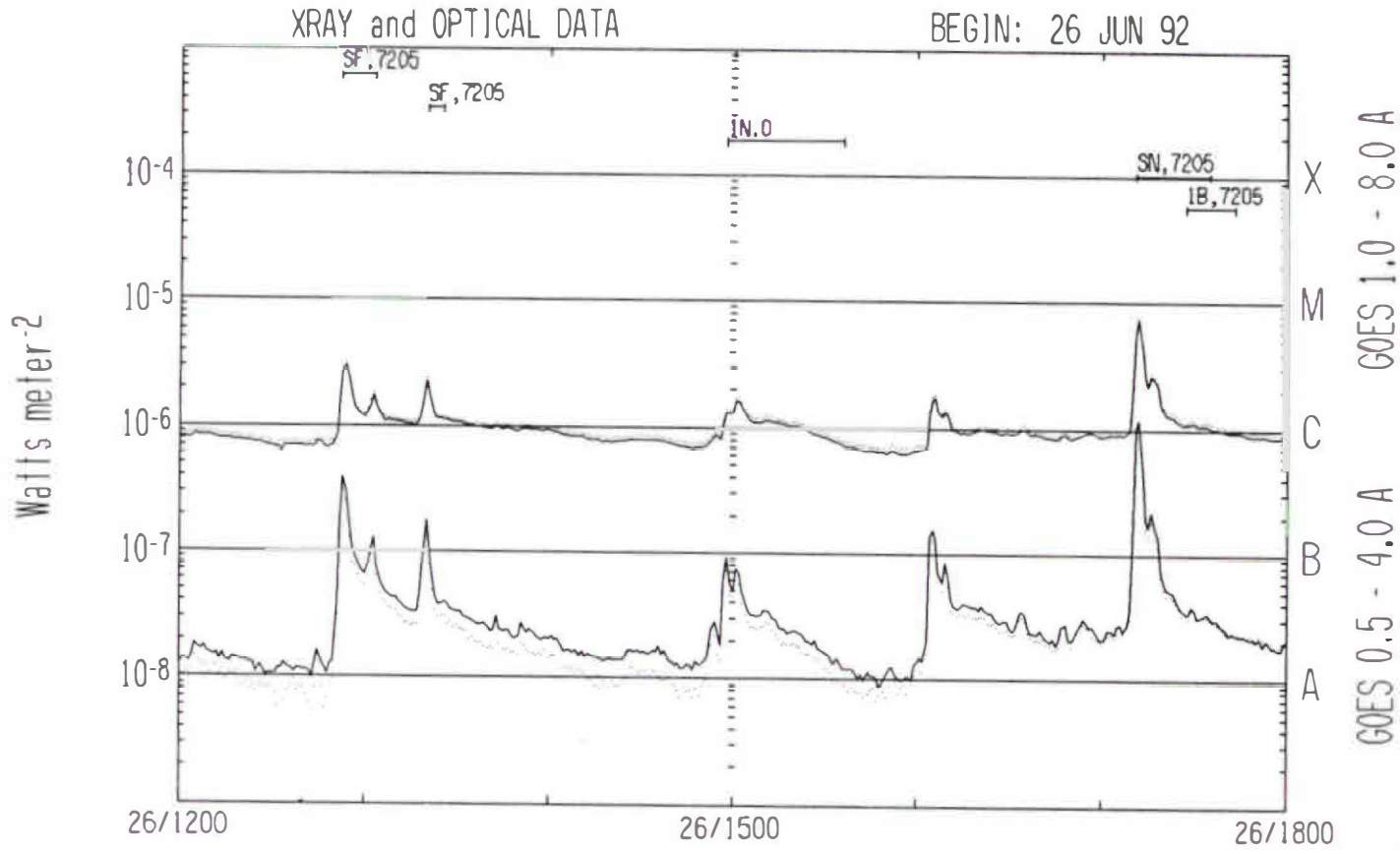
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

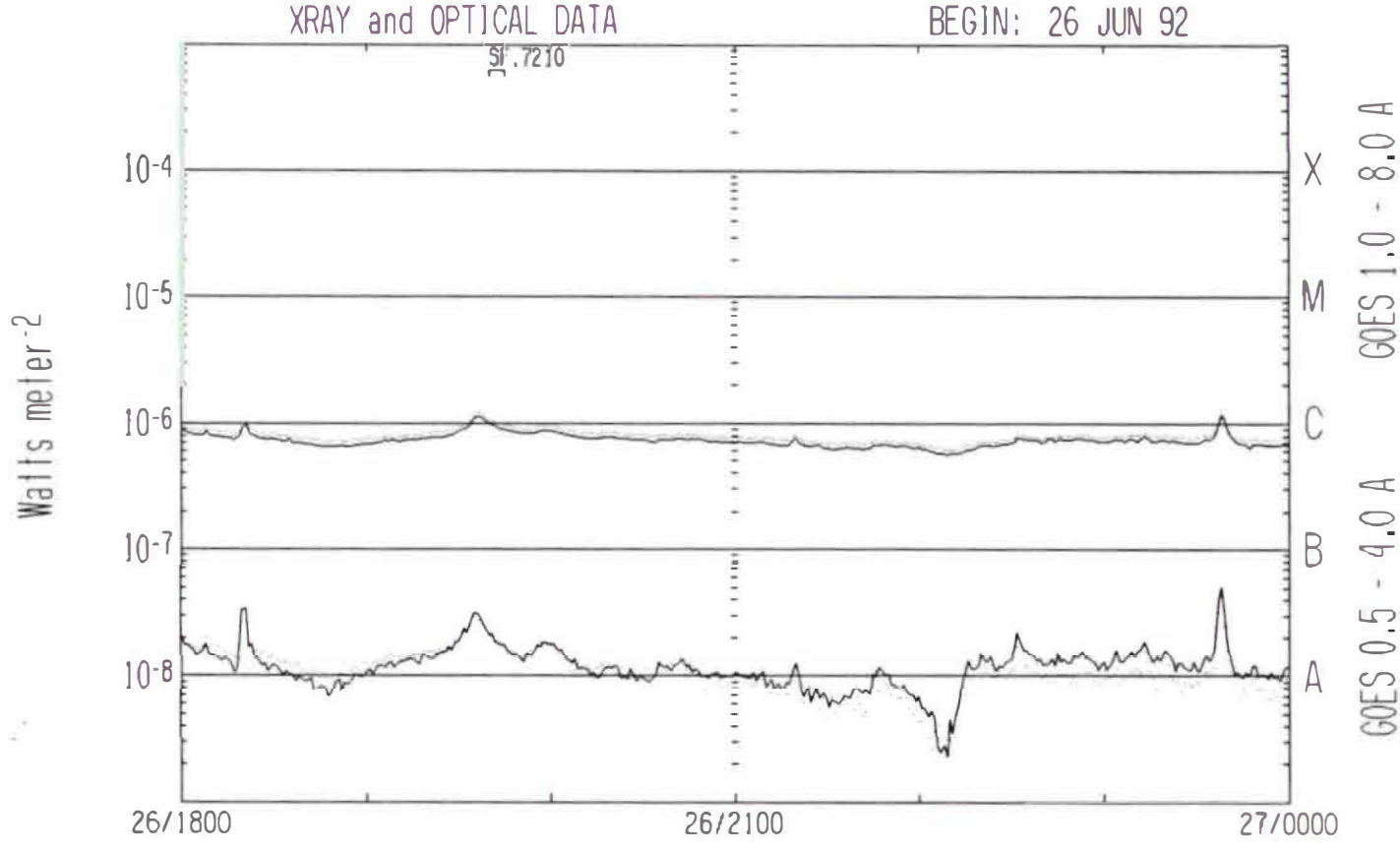
COMMENTS:
SOLAR FLARE OF ~ 365 SECOND DUARION, WITH EMISSION OBSERVED ABOVE 300 KEV. TIME HISTORY CONSISTS OF COMPLEX STRUCTURE, WITH A PEAK RATE AT TRIGGER + 103 SECONDS. CLASSIFIED AS A C7.3 FLARE IN GOES X-RAY DATA.


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/26
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1420 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

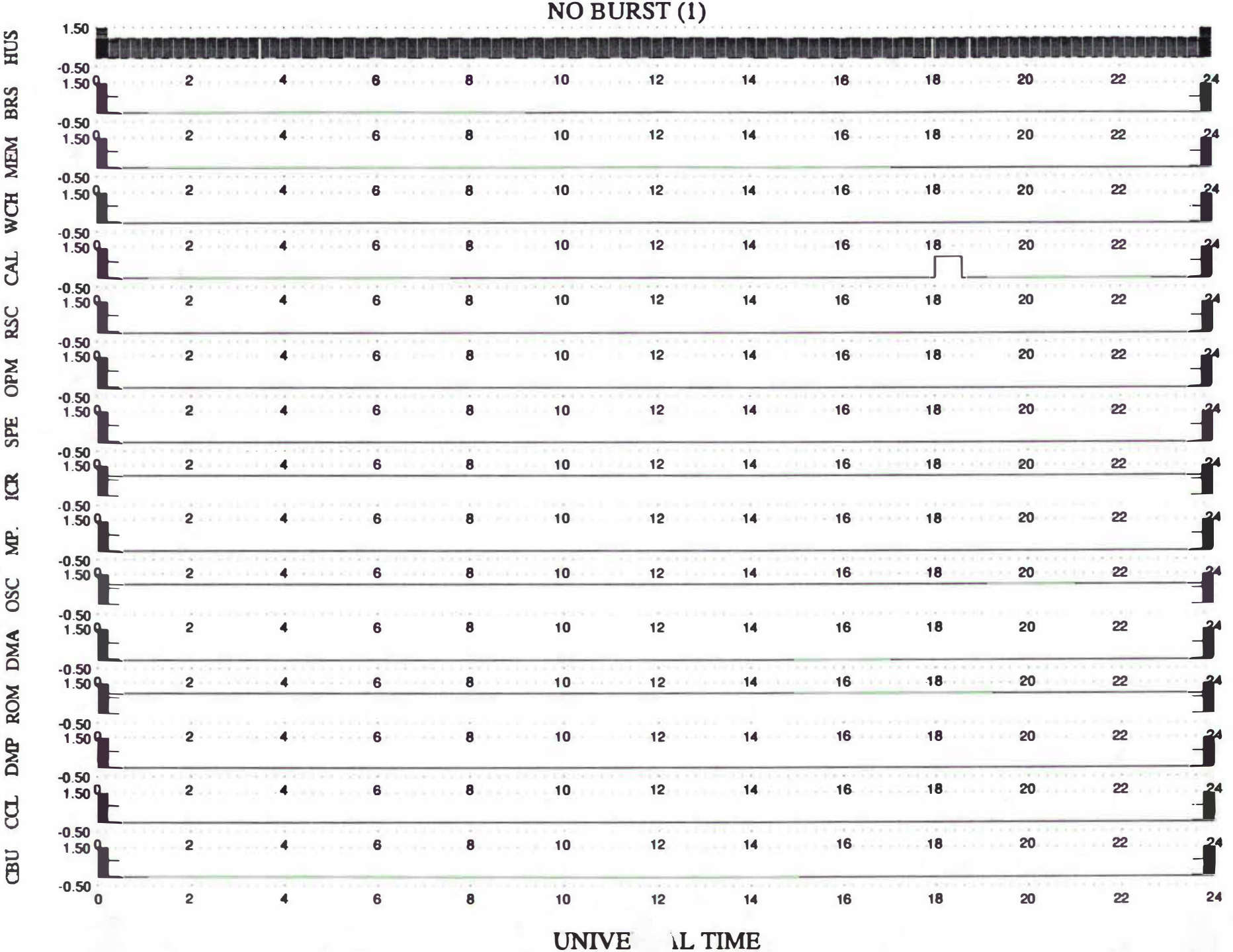

XRAY and OPTICAL DATA
BEGIN: 26 JUN 92
1F,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
26/0000
26/0300
26/0600


XRAY and OPTICAL DATA
BEGIN: 26 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
26/0600
26/0900
26/1200


XRAY and OPTICAL DATA
BEGIN: 26 JUN 92
SF,7205
SF,7205
IN.0
SN,7205
1B,7205
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
26/1200
26/1500
26/1800

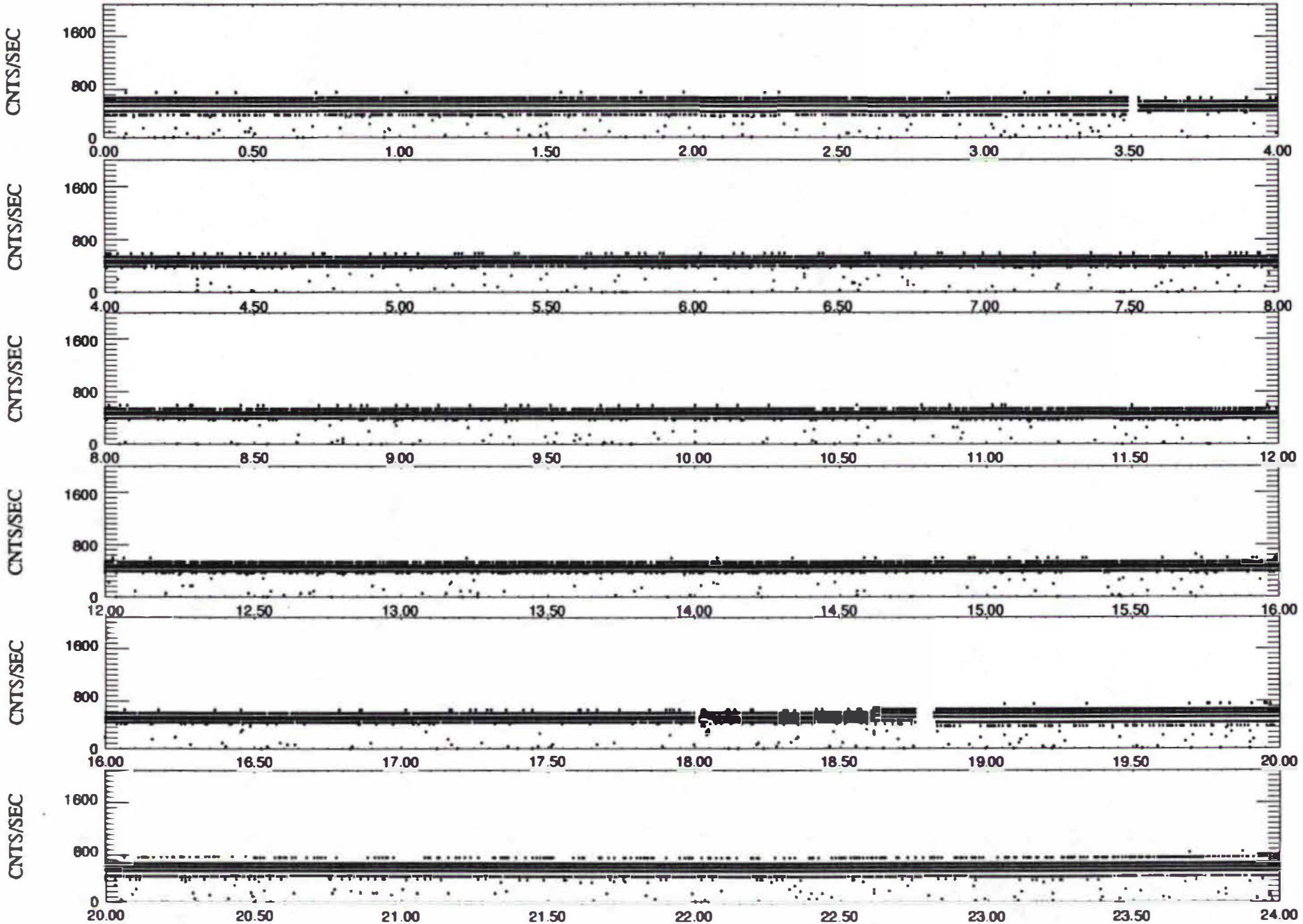

XRAY and OPTICAL DATA
BEGIN: 26 JUN 92
SF,7210
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
26/1800
26/2100
27/0000

HUS MODES EDR day 178, year 1992 to day 178, year 1992 7/10/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 178, year 1992 to day 178, year 1992 7/10/92

CALIBRATION DATA INCLUDED



UNIVE! .L TIME

****
CATSEARCH PROGRAM
****

BATSE BURST # 1675
EVENT OF 1992 JUN 27 DAY OF YEAR=179
EVENT CROSSING TIME AT BATSE : 37124. S. OR 10:18:43.7
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 215.400 -28.100
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 27/ 6/ 92 IS:
RA= 149.892 DEC= 6.600 DIST= 5.863 AU
BATSE-ULYSSES DISTANCE = 877104800. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -904.45 SECS.
CROSSING TIME AT ULYSSES IS 36219. S. OR 10:03:39.2 +/- 519.33 SECONDS

No

From BRIGGS@ssl.msfc.nasa.gov Sun Jun 28 15:26:07 1992
Date: Sun, 28 Jun 1992 17:26:29 -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: 1378

BATSE BURST TRIGGER

NO.: 01675

TIME: TJD=8800 SECONDS=37123

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: 6.1 SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=199.3 AZIMUTH=142.0 ERROR= DEGREES

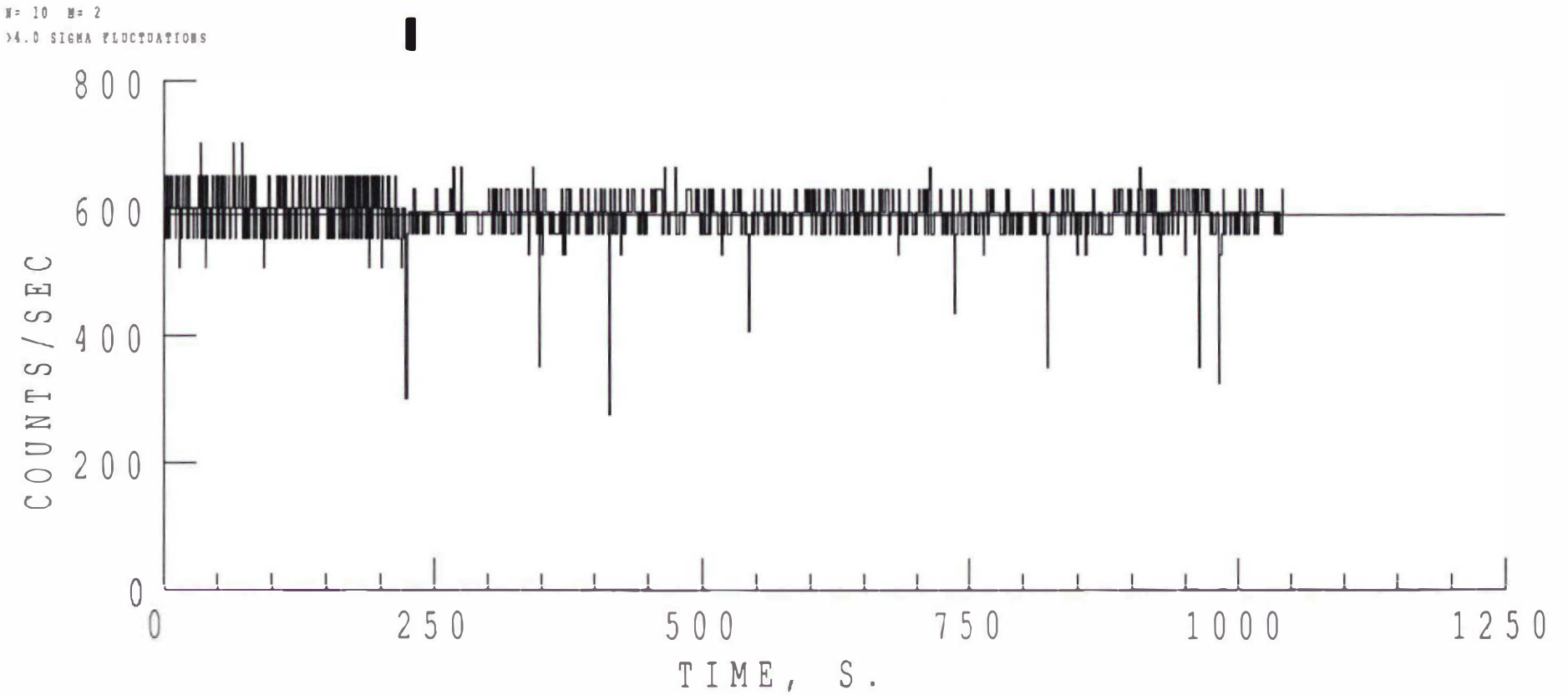
COMMENTS:
WEAK BURST OF ABOUT 8 SECONDS DURATION. STRONGEST EMISSION IS FROM 5 TO 6 SECONDS. OTHER EMISSION FROM 0 TO 3 AND 6 TO 8 SECONDS. NOT SEEN ABOVE 310 KEV.

8/ 6/94

ULYSSES RT

27/ 6/92 35712.145 s

0- 0 keV



****
CATSEARCH PROGRAM
****

BATSE BURST # 1676
EVENT OF 1992 JUN 27 DAY OF YEAR=179
EVENT CROSSING TIME AT BATSE : 46956. S. OR 13:02:36.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 166.400 -3.500
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 27/ 6/ 92 IS:
RA= 149.892 DEC= 6.600 DIST= 5.863 AU
BATSE-ULYSSES DISTANCE = 877104800. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=160.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2760.79 SECS.
CROSSING TIME AT ULYSSES IS 44195. S. OR 12:16:35.3 +/- 176.20 SECONDS

RI

From BRIGGS@ssl.msfc.nasa.gov Sun Jun 28 14:25:09 1992
Date: Sun, 28 Jun 1992 16:25:25 -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.: 01676

June 27

TIME: TJD=8800 SECONDS=46956

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: 81 SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=143.4 AZIMUTH=292.6 ERROR= DEGREES

COMMENTS:
BRIGHT BURST WITH FAST TIME STRUCTURE. TOTAL DURATION 60 SEC WITH 3 MAIN
COMPLEXES OF SPIKES. SEEN ABOVE 300 KEV.

COMPTEL/BATSE/IPN Burst Localizations

All Coordinates Epoch J2000.0

UB= Ulysses/BATSE UP = Ulysses/PVO BP= BATSE/PVO

		Center		Radius			BATSE Position					COMPTEL Position			
Burst	Rf	Ra	Dec	Radius	(-/+)	D (AU)	Ra	Dec	lσ	Smin	Rf	Ra	Dec	lσ	Smin
GRB910425 UB	1	115.140	23.172	51.733	0.053	2.848	91.29	-22.77	1.02	0.27	3	90.20	-22.20	0.92	0.28
GRB910503 UB	1	117.730	22.657	30.352	0.010	3.042	87.45	38.74	0.87	0.03	3	87.00	38.60	0.44	0.30
GRB910601 UB	1	307.038	-20.538	52.936	0.011	3.708	310.12	32.34	0.17	0.02	3	309.90	32.70	0.46	0.37
GRB910627 UB	1	134.824	18.425	66.820	0.031	4.215	197.99	-2.48	0.28	1.28	3	199.40	-5.00	1.63	0.96
UP	1	133.523	18.792	68.352	0.036	3.621	-	-	-	1.53	-	-	-	-	0.71
GRB910709	NA	NA	NA	NA	NA	NA	172.77	81.67	2.31	NA	3	144.10	75.60	1.80	NA
GRB910814 UB	1	328.558	-13.966	45.699	0.018	4.918	346.35	30.43	0.48	1.89	3	343.80	29.50	0.39	0.19
UP	1	328.287	-14.629	46.428	0.019	4.626	-	-	-	1.87	-	-	-	-	0.17
GRB911118 UB	1	166.979	6.889	30.110	0.017	4.972	167.03	-20.85	0.36	2.37	3	166.30	-22.50	1.11	0.71
UP	1	162.619	8.562	32.018	0.019	4.248	-	-	-	2.29	-	-	-	-	0.75
BP	1	190.131	-2.551	30.766	0.086	0.813	-	-	-	1.76	-	-	-	-	0.23
GRB920622 UB	1	150.167	6.667	41.335	0.009	5.800	162.1	47.17	0.31	0.43	3	162.50	49.20	0.81	2.44
GRB920627 UB	1	150.590	6.327	23.540	0.049	5.869	166.02	-2.58	0.65	5.74		166.80	-8.50	1.18	1.61
GRB920830 UB	1	338.192	0.949	86.268	0.018	?	258.53	-73.99	0.54	1.81	3	259.00	-74.50	1.35	1.78
GRB930118	NA	NA	NA	NA	NA	NA	228.40	-34.30	?	NA	4	221.80	-34.80	1.47	NA
GRB930131 UB	1	161.411	-14.563	22.256	0.011	4.218	182.04	-8.24	2.16	1.09	3	186.20	-7.90	1.77	2.93
GRB930309 UB	1	332.600	14.645	36.601	0.035	3.998	325.41	51.73	0.72	0.93	3	322.70	55.20	0.74	4.67
GRB930612 UB	1	143.974	-11.184	63.928	0.053	4.870	103.07	-69.76	0.4	0.07	3	106.50	-71.00	1.60	0.17
GRB930704 UB	1	146.146	-11.823	82.959	0.113	5.089	100.9	60.8	0.59	2.01	3	99.30	62.80	1.08	0.07
SM	1	159.825	8.635	68.701	2.319	1.981	-	-	-	1.04	-	-	-	-	0.45
GRB931229	NA	NA	NA	NA	NA	NA	240.06	19.7	1.4	NA	3	241.90	21.00	2.35	NA
GRB940217 UB	1	328.736	51.947	69.334	0.050	3.038	29.07	4.55	0.69	0.84	3	30.10	3.10	0.32	0.94
GRB940301 UB	1	321.914	52.508	59.395	0.136	2.953	103.51	64.35	0.35	0.02	3	102.70	64.00	0.40	0.17
GRB940314 UB	1	314.850	51.972	64.530	0.220	?	354.86	-2.14	0.94	0.77	3	356.00	-1.40	1.43	0.92
GRB940520 UB	1	300.149	41.387	40.380	0.133	2.986	323.5	6.93	0.88	0.16	3	324.70	7.70	0.70	0.27
GRB940619 UB	1	303.998	39.140	69.375	0.211	3.039	299.05	-29.89	0.34	0.20	3	298.50	-31.50	1.15	1.44
GRB940708 UB	1	308.119	39.489	17.431	0.038	?	301.58	24.66	1.02	1.61	3	300.50	22.70	1.03	0.56
GRB940728 UB	1	133.614	-41.397	36.245	0.131	?	85.49	-39.87	1.44	0.17	3	85.10	-38.00	1.10	0.75
GRB940921 UB	2	155.516	-55.210	54.361	0.121	2.583	196.59	-18.71	?	6.49	4	207.10	-16.40	0.68	0.75
GRB941017	NA	NA	NA	NA	NA	NA	302.63	11.10	?	NA	4	301.70	13.30	2.10	NA
GRB950208 UB	2	334.715	-27.012	83.397	0.022	2.301	337.06	54.19	?	2.17	4	344.80	56.00	1.95	0.05
GRB950421 UB	2	177.048	-19.097	81.048	0.226	2.171	71.92	-63.03	?	1.41	4	70.10	-61.70	1.43	0.11
GRB950425 UB	2	178.121	-21.566	17.005	0.207	2.154	163.16	-35.21	?	1.90	4	164.90	-33.80	0.34	0.11
GRB950522 UB	2	7.656	42.578	86.989	0.063	2.039	109.57	19.31	?	1.60	4	110.81	20.34	1.14	1.47

1 Hurley, K. et al Huntsville workshop (1995)

2 BACODINE/IPN burst alert messages (Hurley)

3 BATSE 3B Catalog

4 Meegan, C. Priv. Comm. (Trigger Messages)

Smin = minimum distance between point and IPN annulus

Helio. corr removed

Date: July 2 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- [ ] 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? N/A
- [x] Does T_0 in data file agree with T_0 in plot?
- [x] BATSE ephemeris for T_0?
- [x] 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

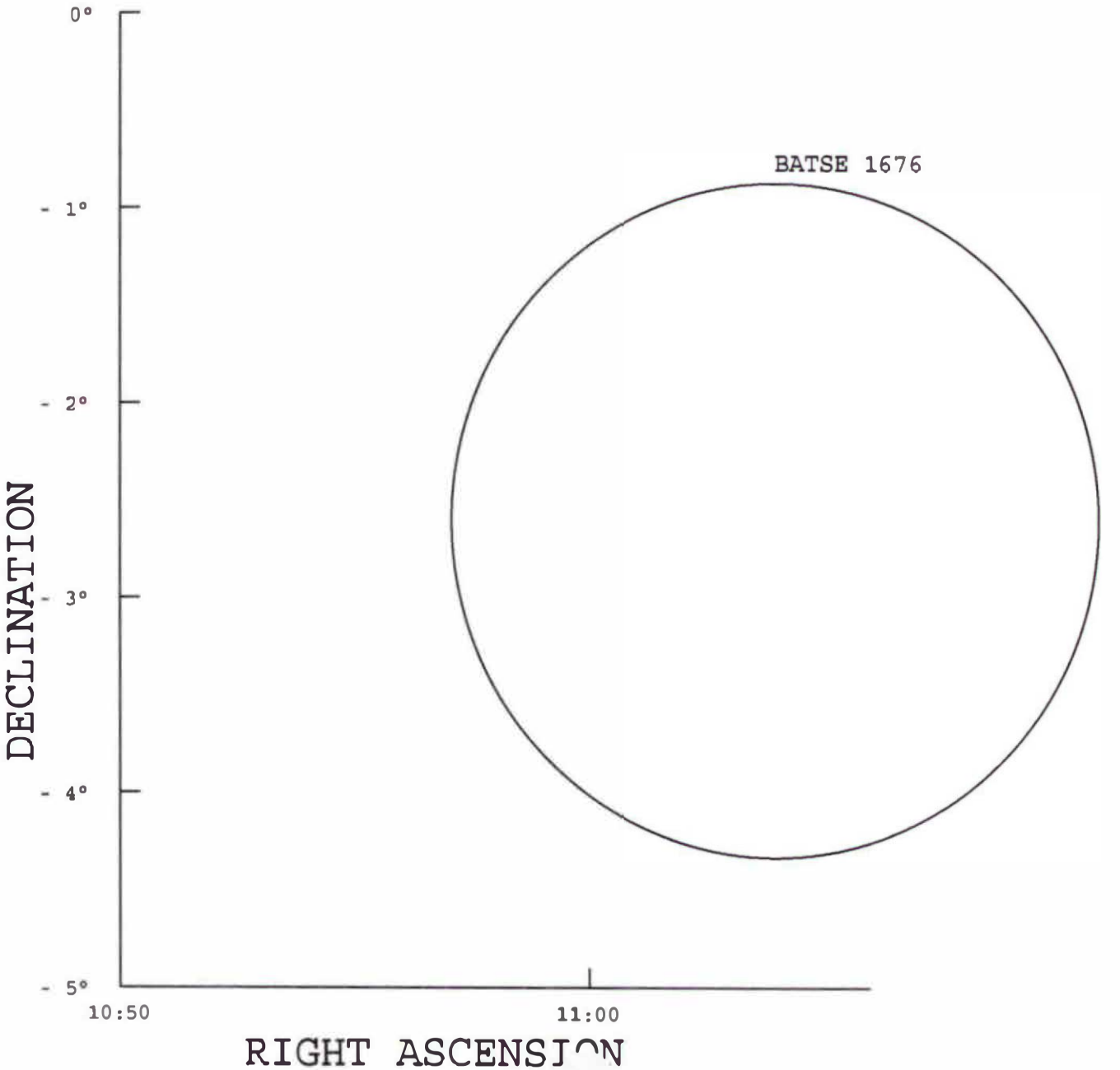
- [ ] Ephemeris of PVO used (not Venus)?
- [ ] 2000 coordinates used?
- [ ] Geocentric time used?

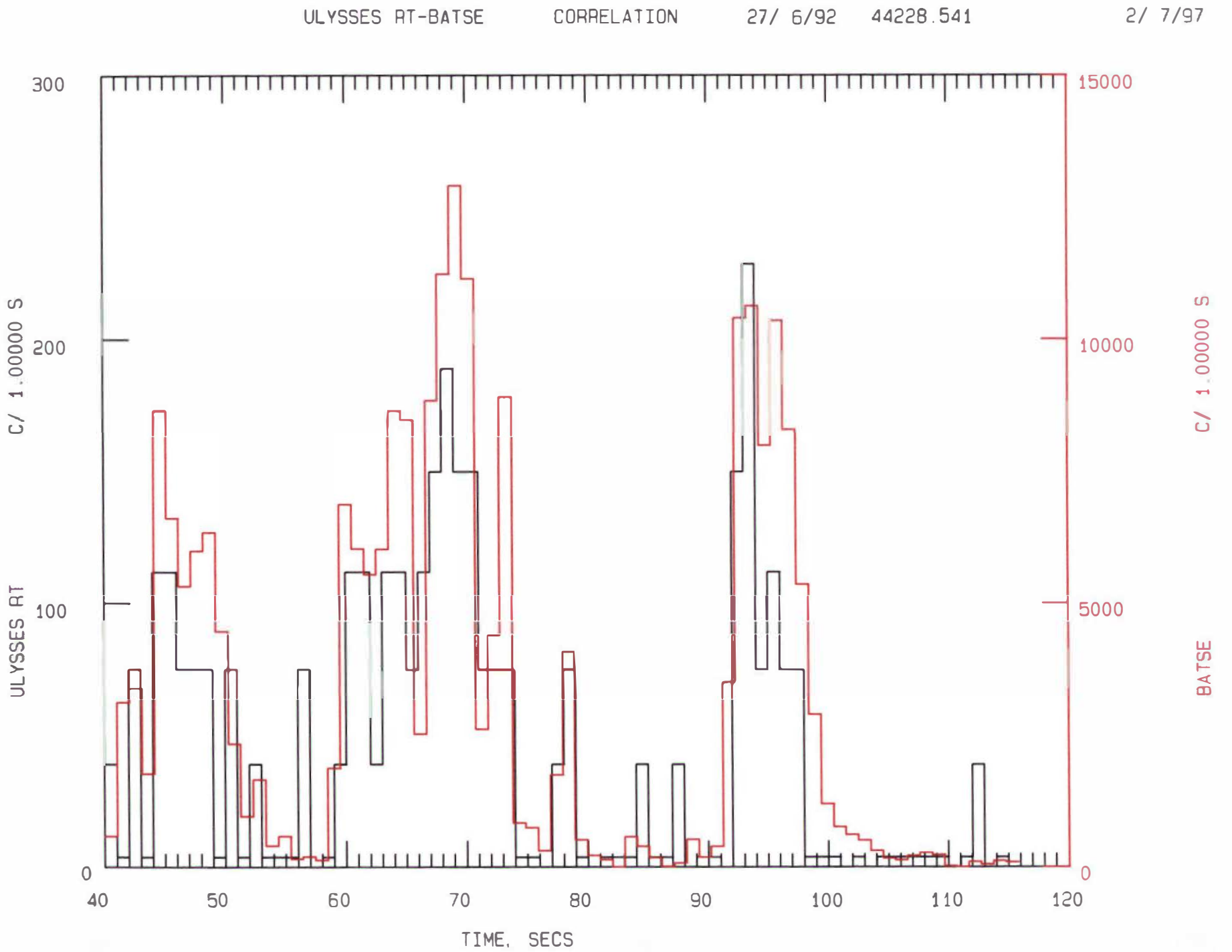
- [x] ACCESS database updated?

EVENT OF JUN 27, 1992 12:17

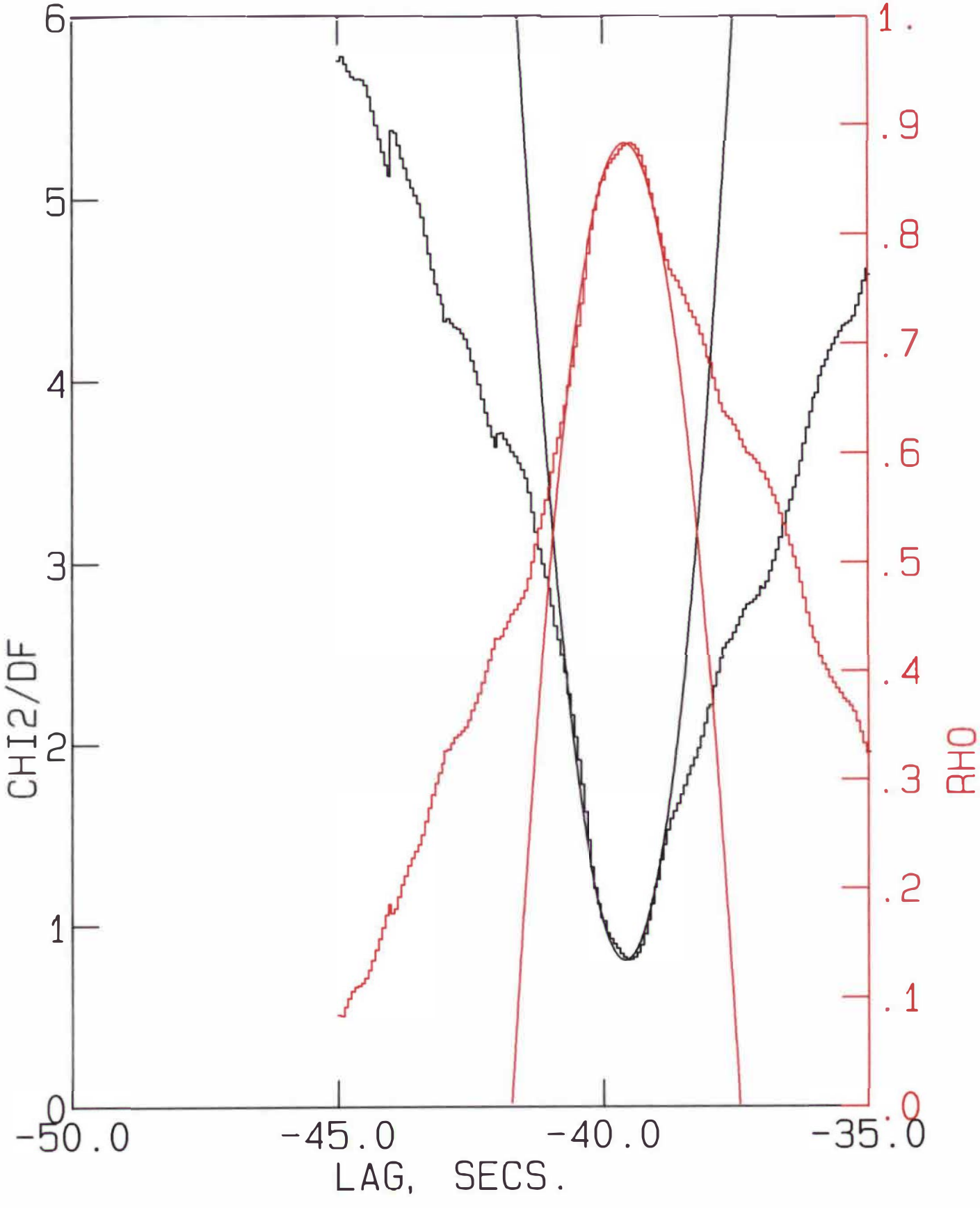
2/ 7/97

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




ULYSSES RT-BATSE CORRELATION 27/ 6/92 44228.541 2/ 7/97
300
200
100
0
C/ 1.00000 S
ULYSSES RT
15000
10000
5000
0
C/ 1.00000 S
BATSE
40
50
60
70
80
90
100
110
120
TIME, SECS

ULYSSES RT-BATSE CORRELATION 27/ 6/92 44228.541

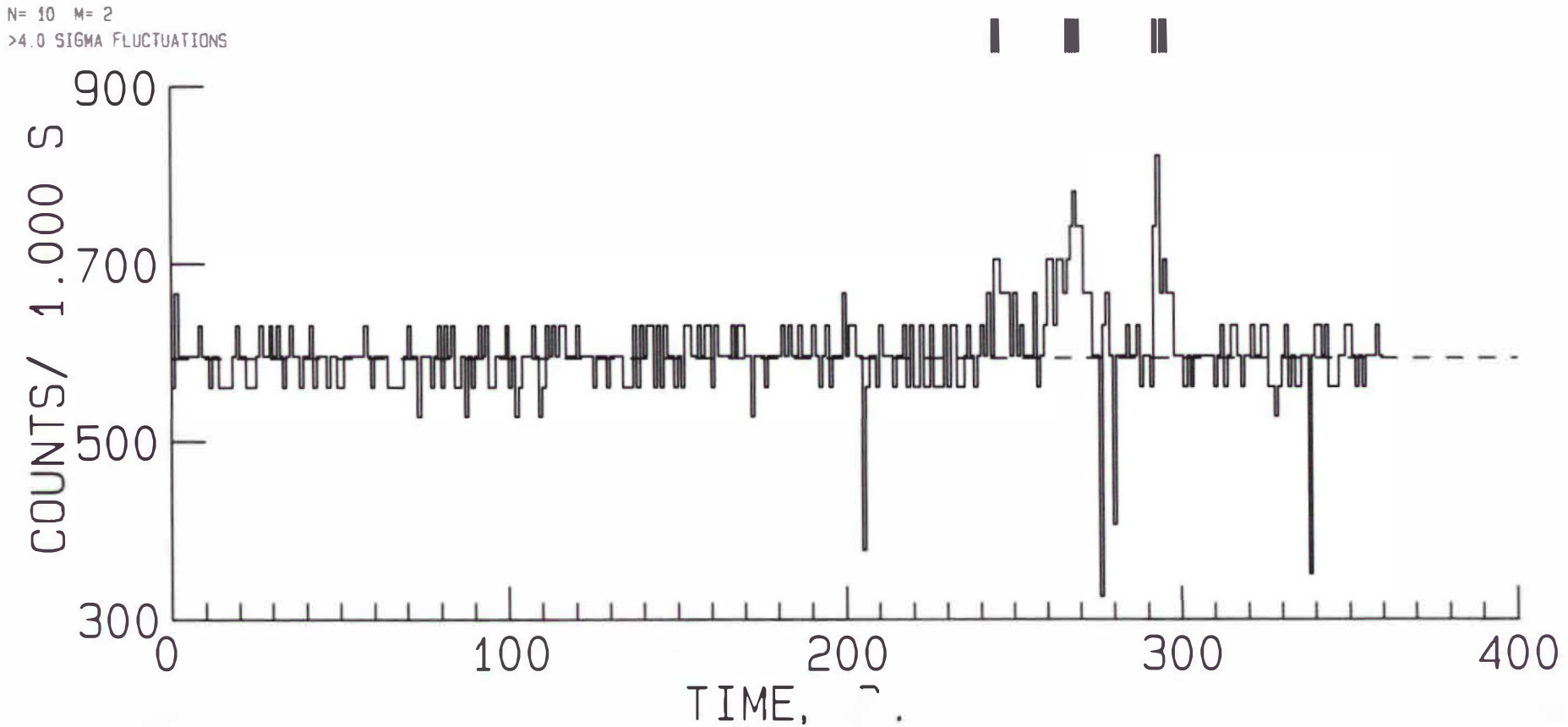


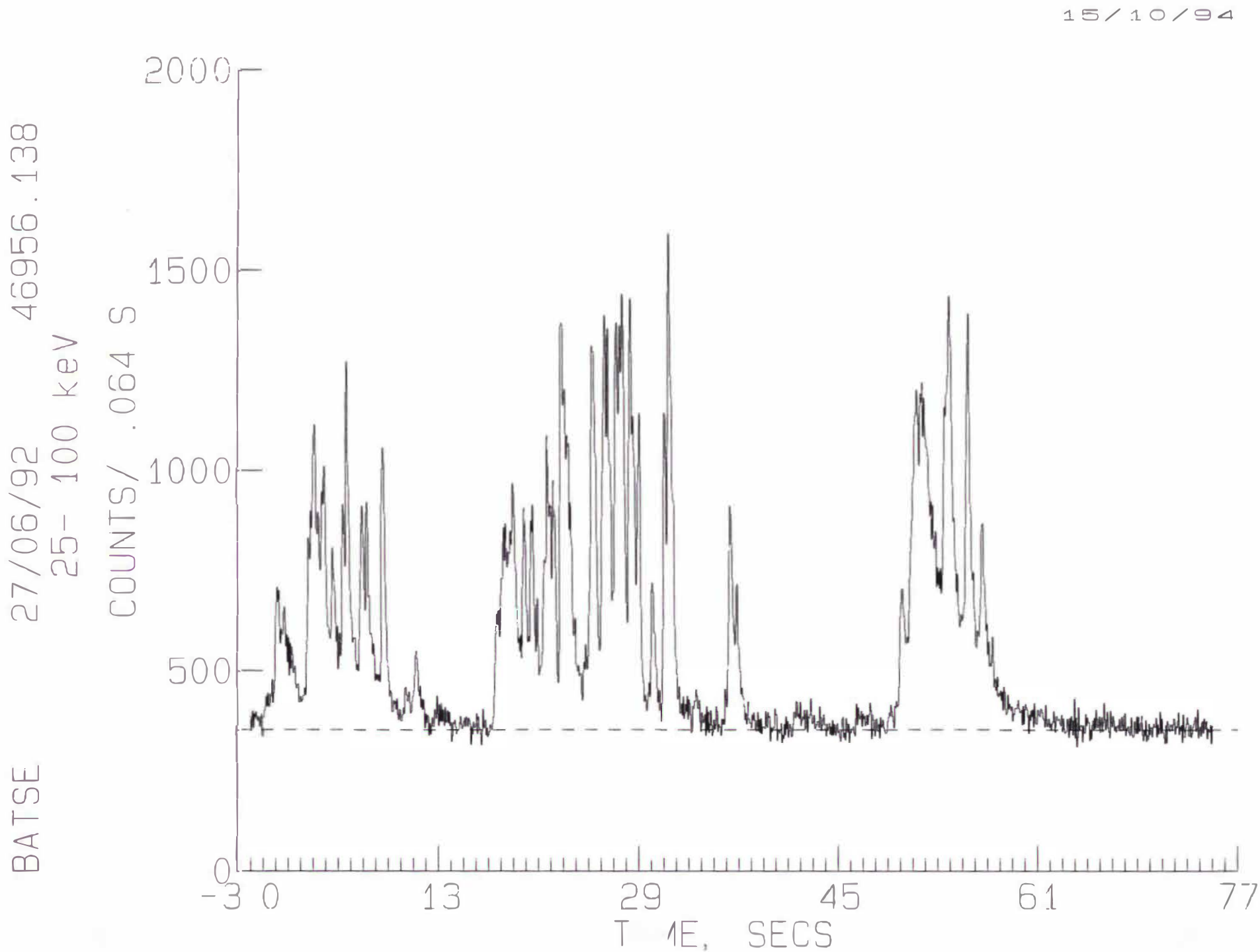
ULYSSES RT

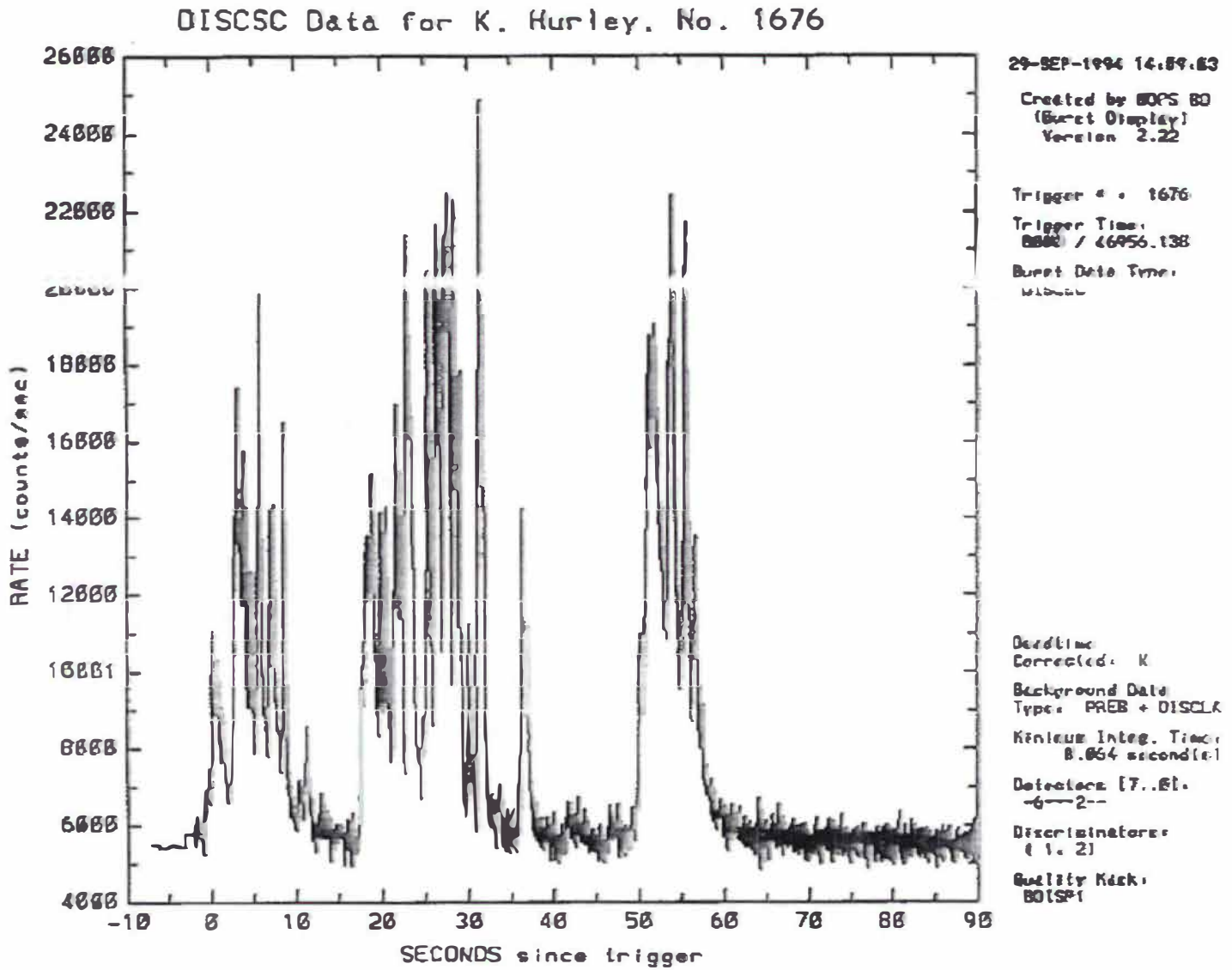
27/ 6/92 44028.774 s

23- 156 keV

2/ 7/97




15/10/94
BATSE 27/06/92 46956.138
25- 100 keV
COUNTS/ .064 S
2000
1500
1000
500
0
-3 0
13
29
45
61
77
T 1E, SECS


DISCSC Data for K. Hurley. No. 1676
RATE (counts/sec)
SECONDS since trigger
29-SEP-1994 14:59:03
Created by BOPS BD
(Burst Display)
Version 2.22
Trigger # : 1676
Trigger Time:
/ 46956.138
Burst Data Type:
Deadtime
Corrected: K
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
8.064 second(s)
Detectors [7..0]:
-6---2--
Discriminators:
(1, 2)
Quality Mask:
BDISP1

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 1ONA 11SR
930506	53571	YES--53578
930506	65631	NA

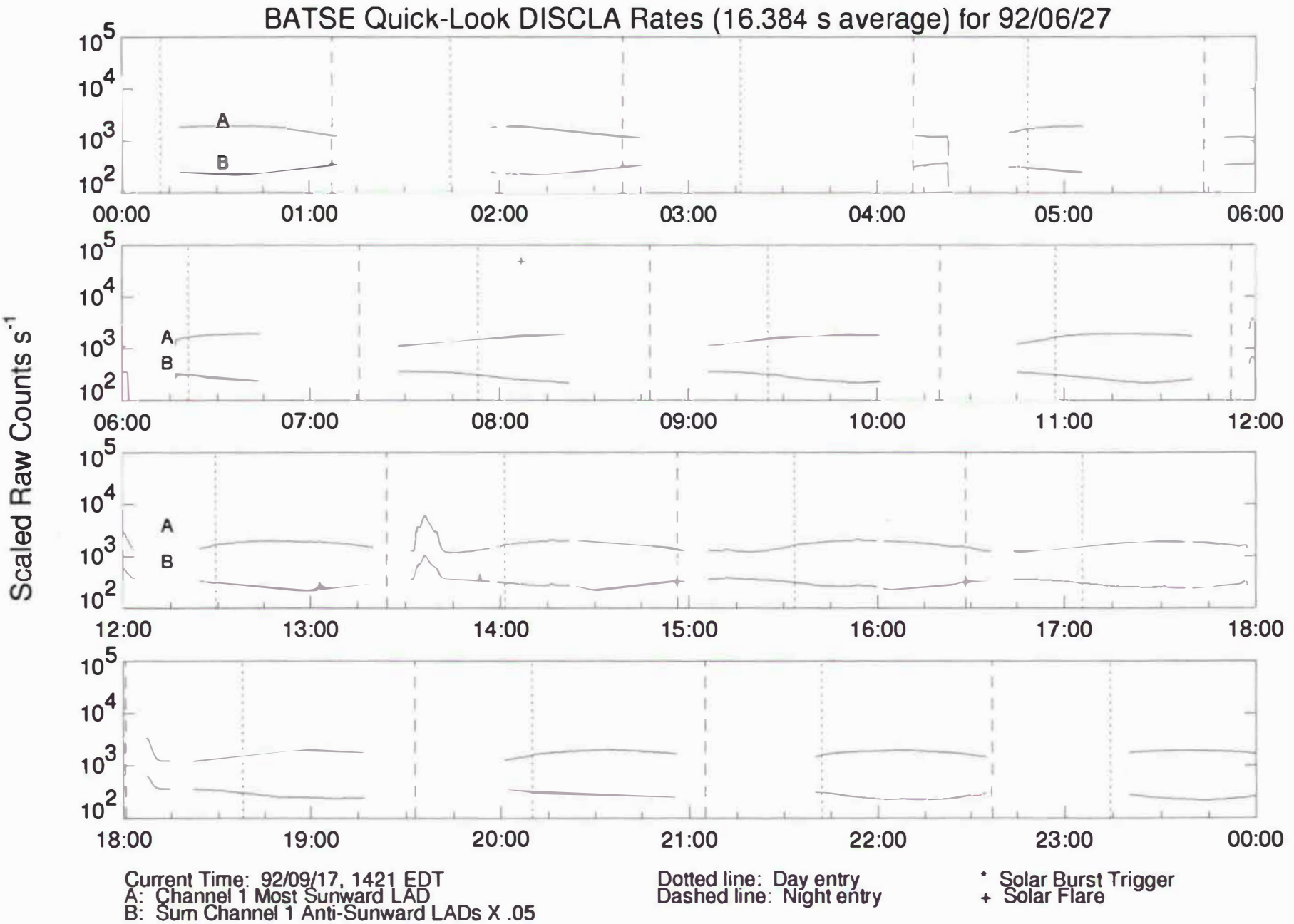
From root Thu Feb 3 13:55 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA00852; Thu, 3 Feb 94 13:55:12
Received: from SSTDP2.LANL.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA13978; Thu, 3 Feb 1994 12:59:12 +0800
Date: Thu, 3 Feb 1994 14:00:37 -0700 (MST)
From: 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

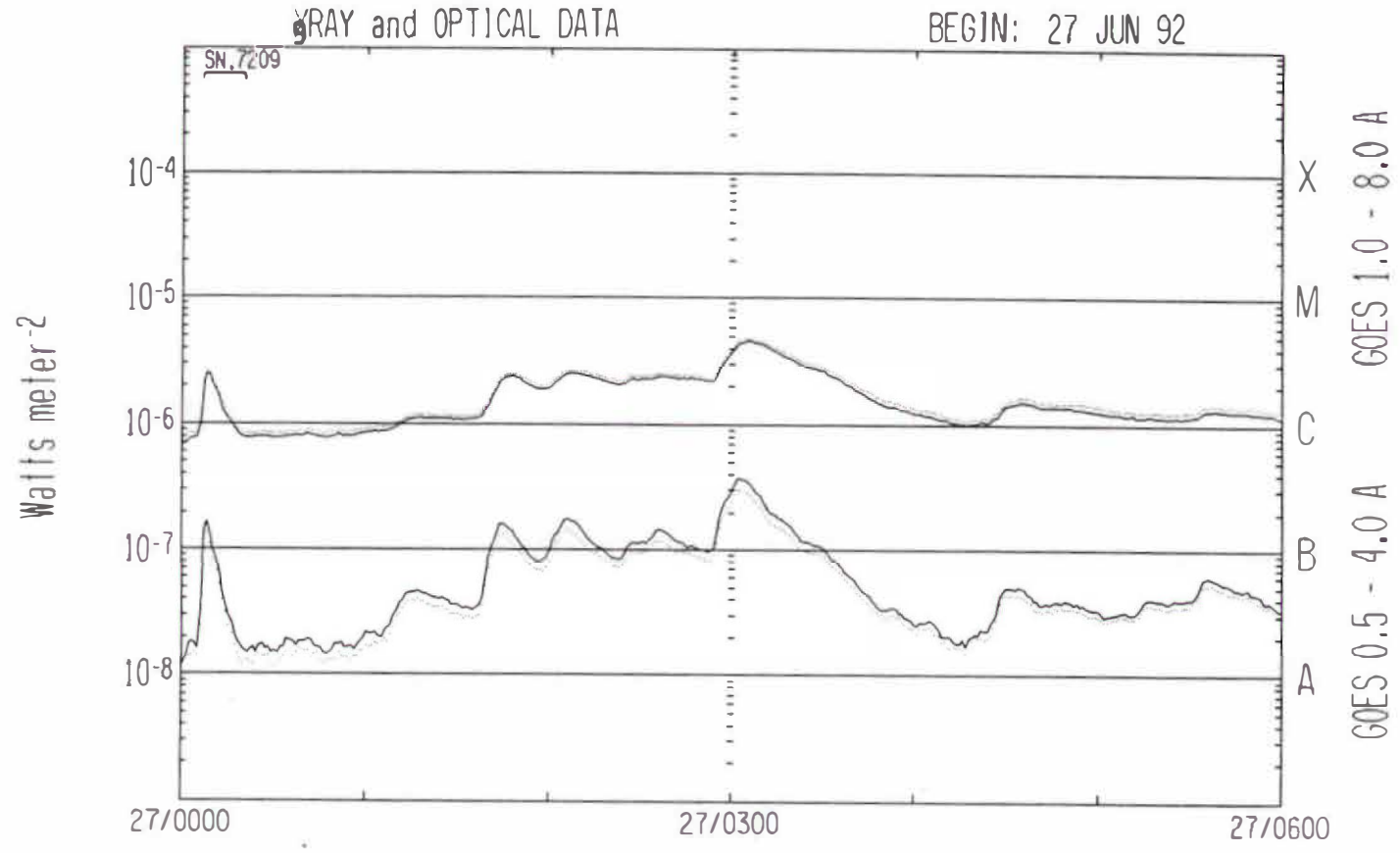
FROM: SMTP%"TERRELL@ESSDP2.LANL.GOV" (ESSDP2::TERRELL) (JAMES TERRELL 94/02/03)
TO: SSL::KOUVELIOTOU AND GIBSON::COLE (CHRYSSA KOUVELIOTOU AND STAYCE COLE)
CC: SMTP%"KHURLEY@SPACE6.SSL.BERKELEY.EDU" (KEVIN HURLEY)
SUBJ: DMSP OBSERVATIONS OF GRO GRB

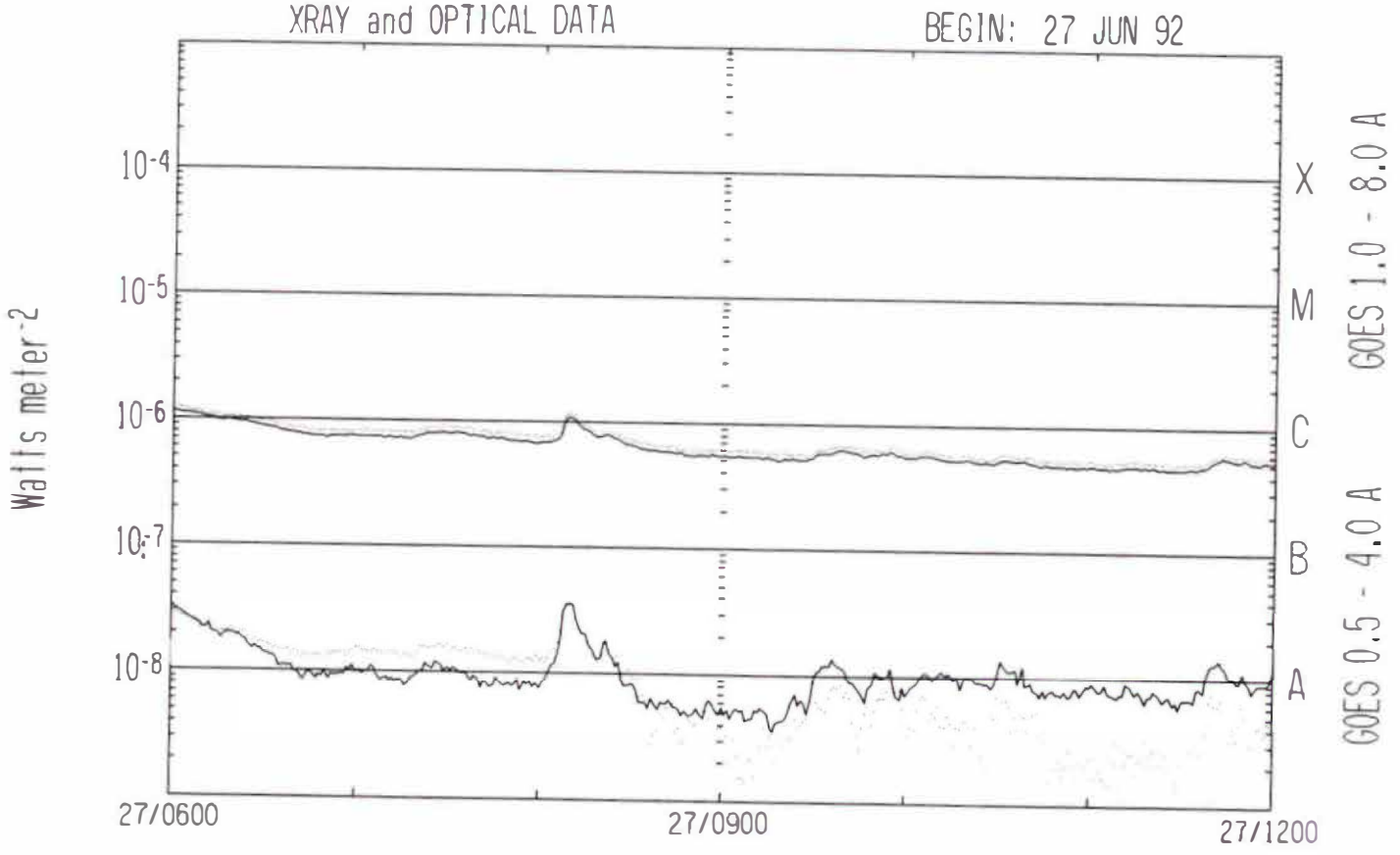
Chryssa and Stayce:
Thanks very much for the listing of strong Batse bursts sent to me 11/1/93.
I have now managed to check all of them against DMSP data, and find that
many of them were also detected by DMSP8,9,10, or 11. Probably the higher percent
of detections in recent data is due to more extraction 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:

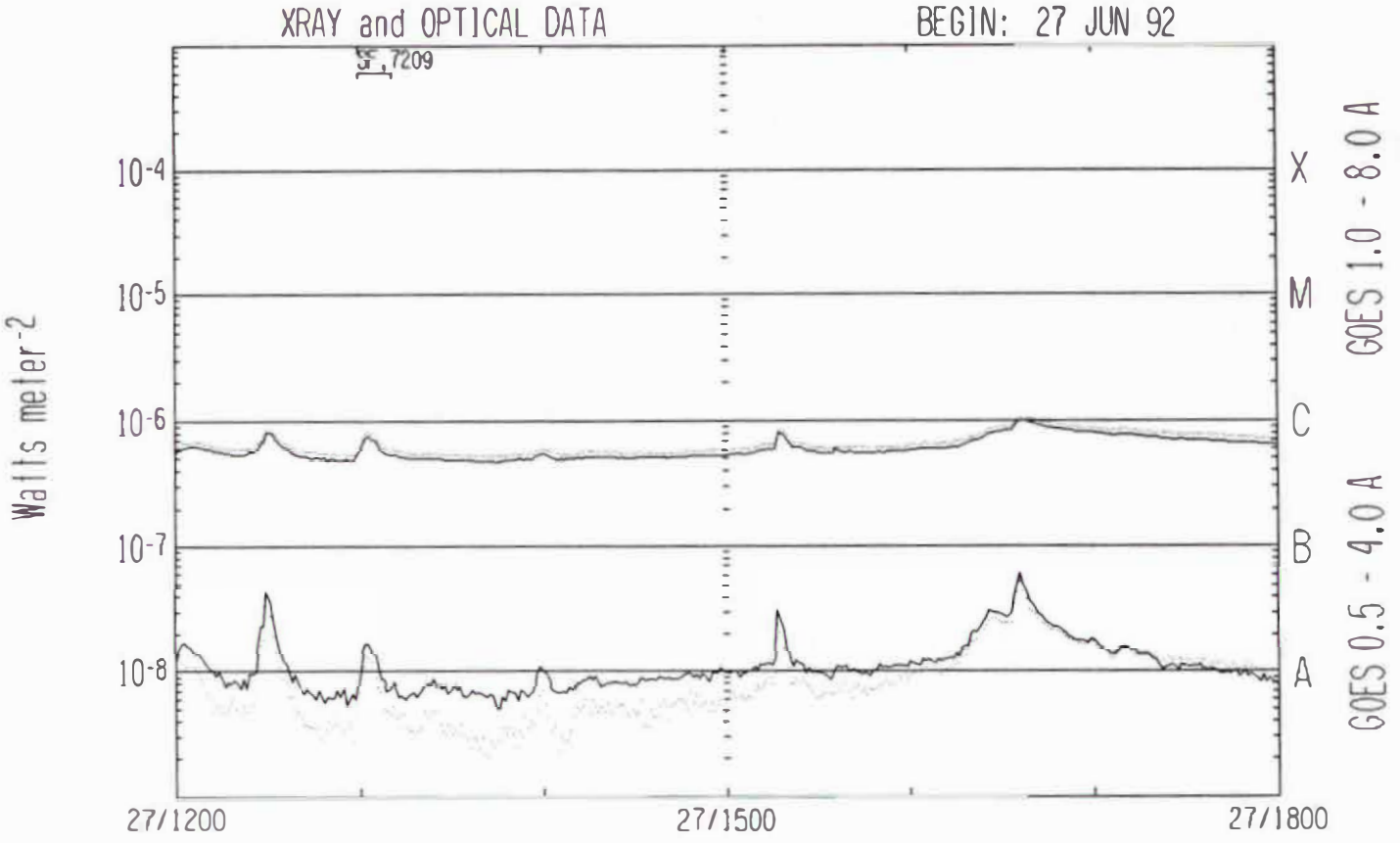
NOTES:
NA: Not apparent in 20-second averaged data (extracting the 2-sec data is
    a more time-consuming task, not undertaken in every case).
NA?: Some slight indication of a peak in 20-second averaged data.
SA: South Atlantic Anomaly, obscuring data with high background rates.
SR: South Radiation 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)

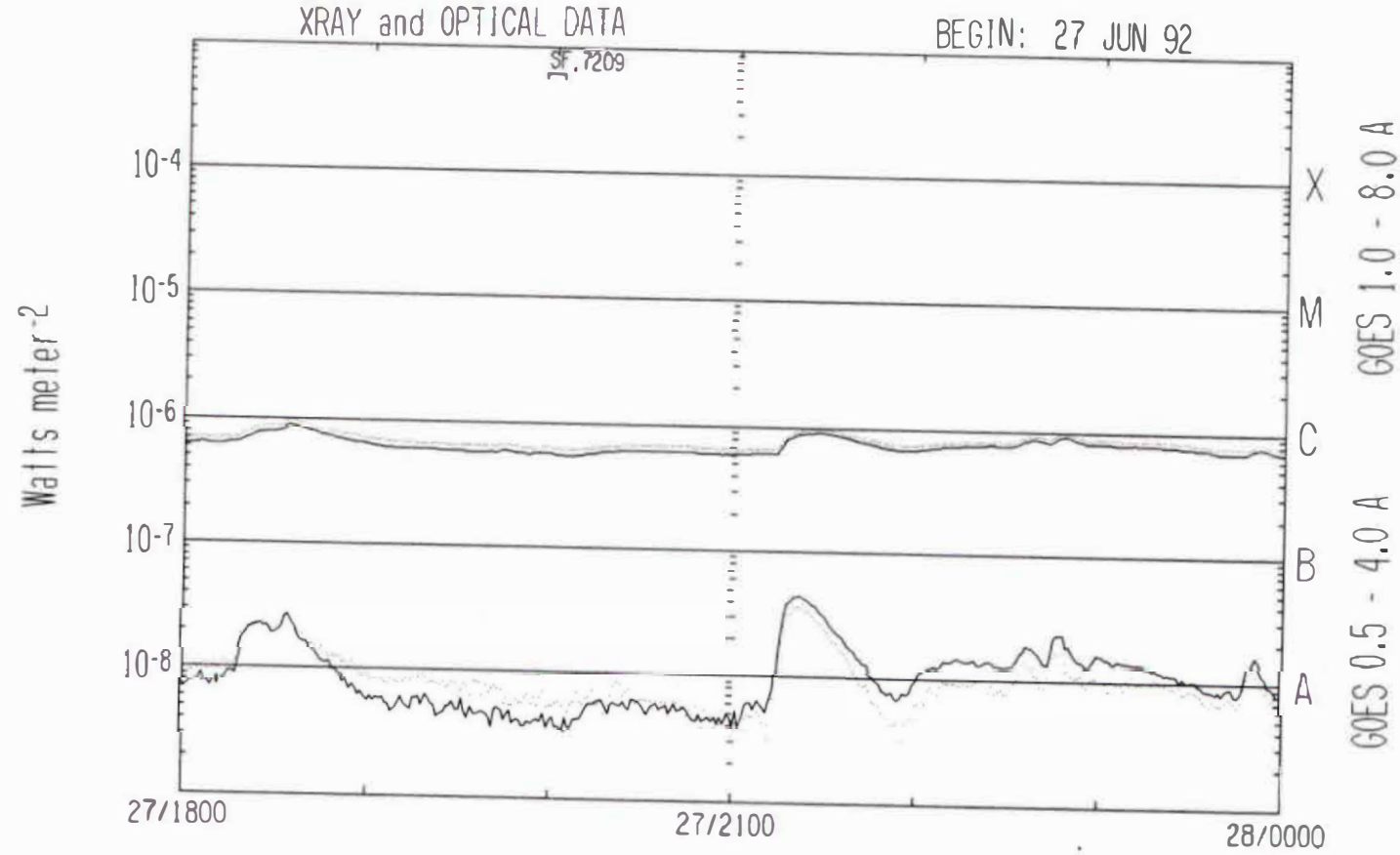
DATE	UT	DMSP
910421	33245	8NO 9SR 10NR
910627	16159	8NA 9NR 10ND
910629	71750	8NA 9SR 10NA
910703	18225	8NA 9NA? 10SR
910717	16386	8NA 9SA 10SR
910718	76051	8NA 9SA 10SA
910802	2718	ND
910814	69275	ND
911024	76208	ND
911104	54283	YES--54286 PEAK
911109	12459	8NO 9NR 10NO
911118	68260	ND
911119	23343	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


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/27
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1421 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

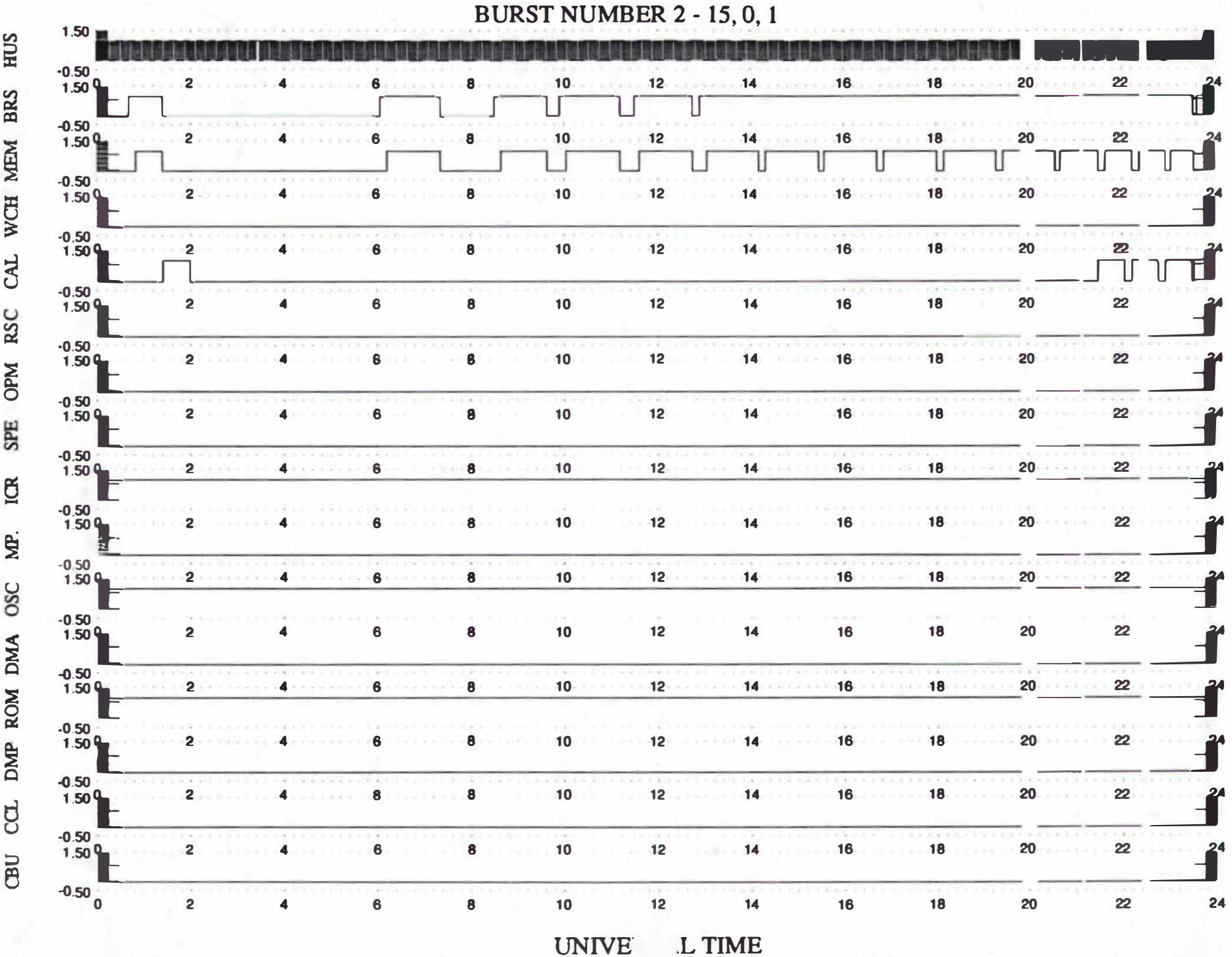

XRAY and OPTICAL DATA
BEGIN: 27 JUN 92
SN.7209
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
27/0000
27/0300
27/0600


XRAY and OPTICAL DATA
BEGIN: 27 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
27/0600
27/0900
27/1200


XRAY and OPTICAL DATA
BEGIN: 27 JUN 92
SF, 7209
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
27/1200
27/1500
27/1800

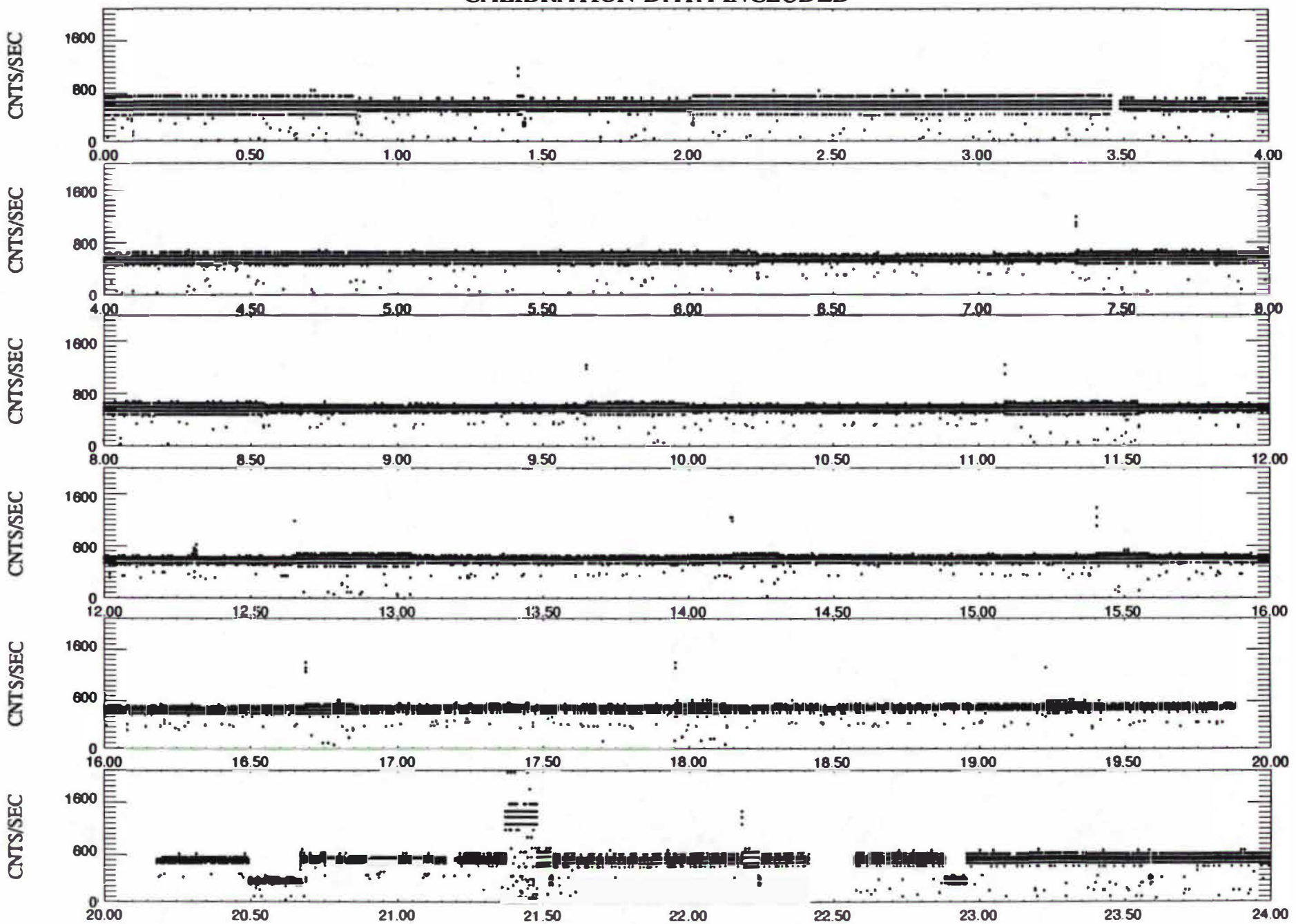

XRAY and OPTICAL DATA
BEGIN: 27 JUN 92
SF, 7209
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
27/1800
27/2100
28/0000

HUS MODES EDR day 179, year 1992 to day 179, year 1992 7/10/92



HUS 2A, MODE 1, NOT AVERAGED EDR day 179, year 1992 to day 179, year 1992 7/10/92

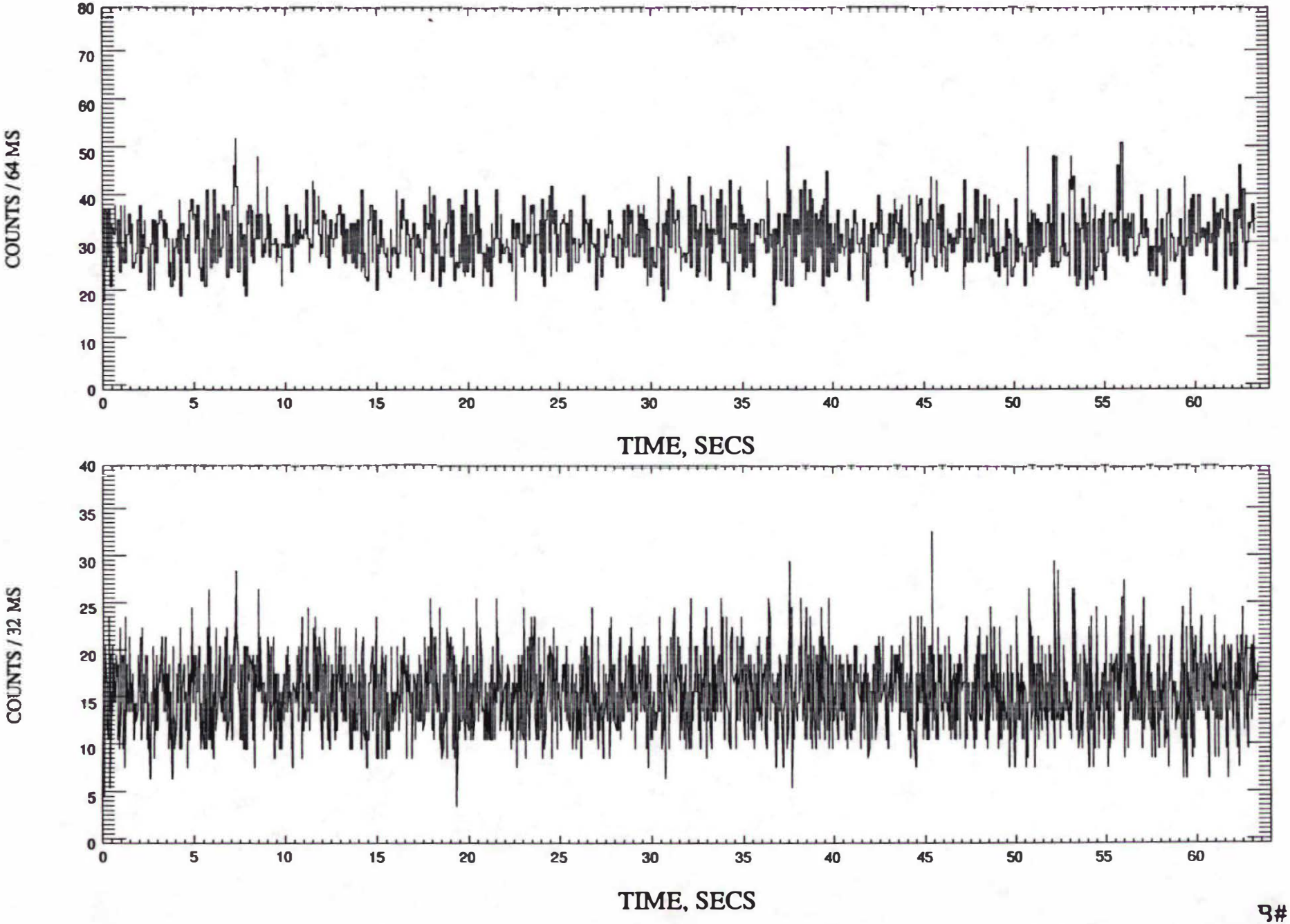
CALIBRATION DATA INCLUDED



UNIVE' .L TIME

HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

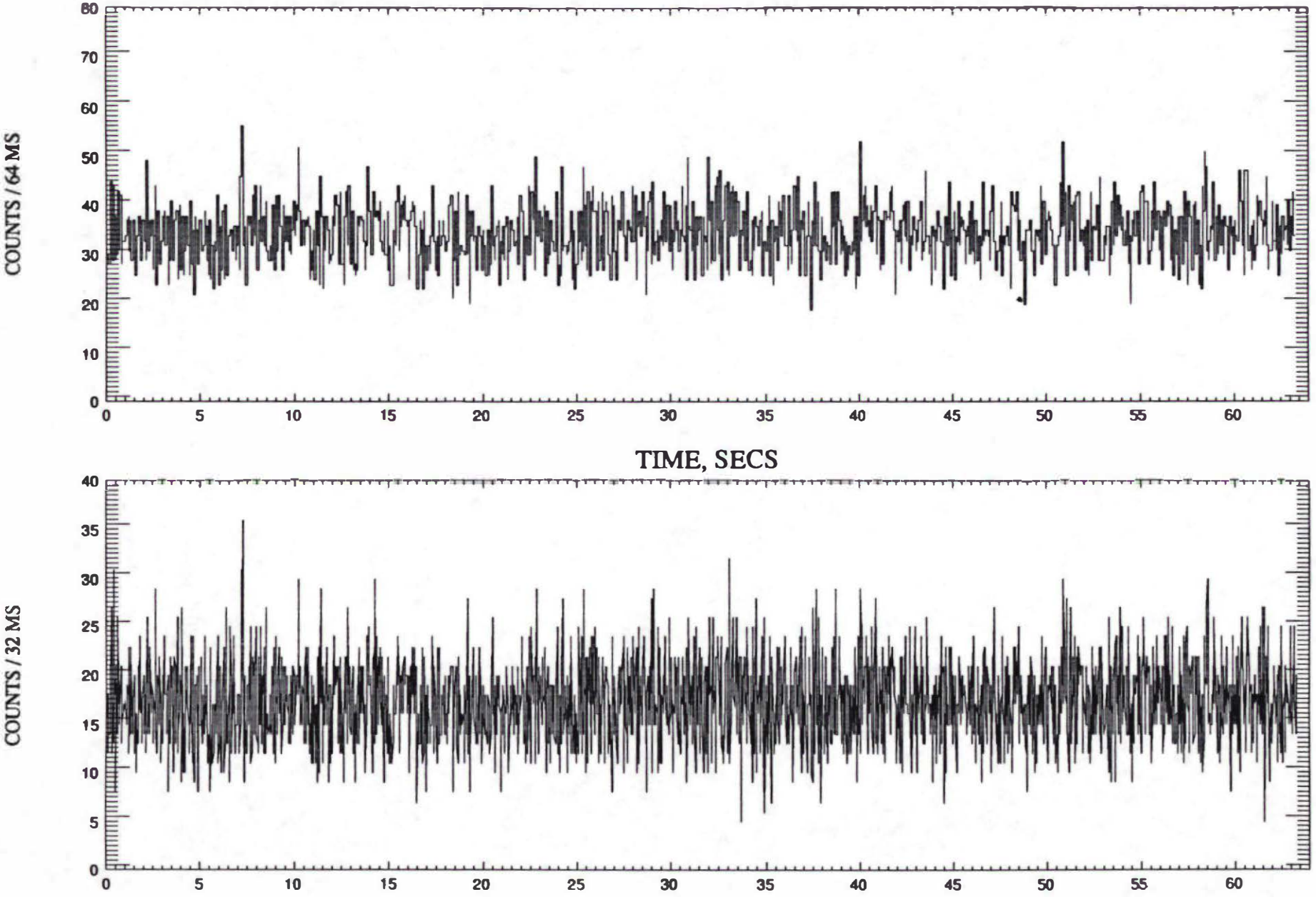
Burst Counter 2 at UT= 0.707457169427 h= 2546.846 s



9# 1

HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

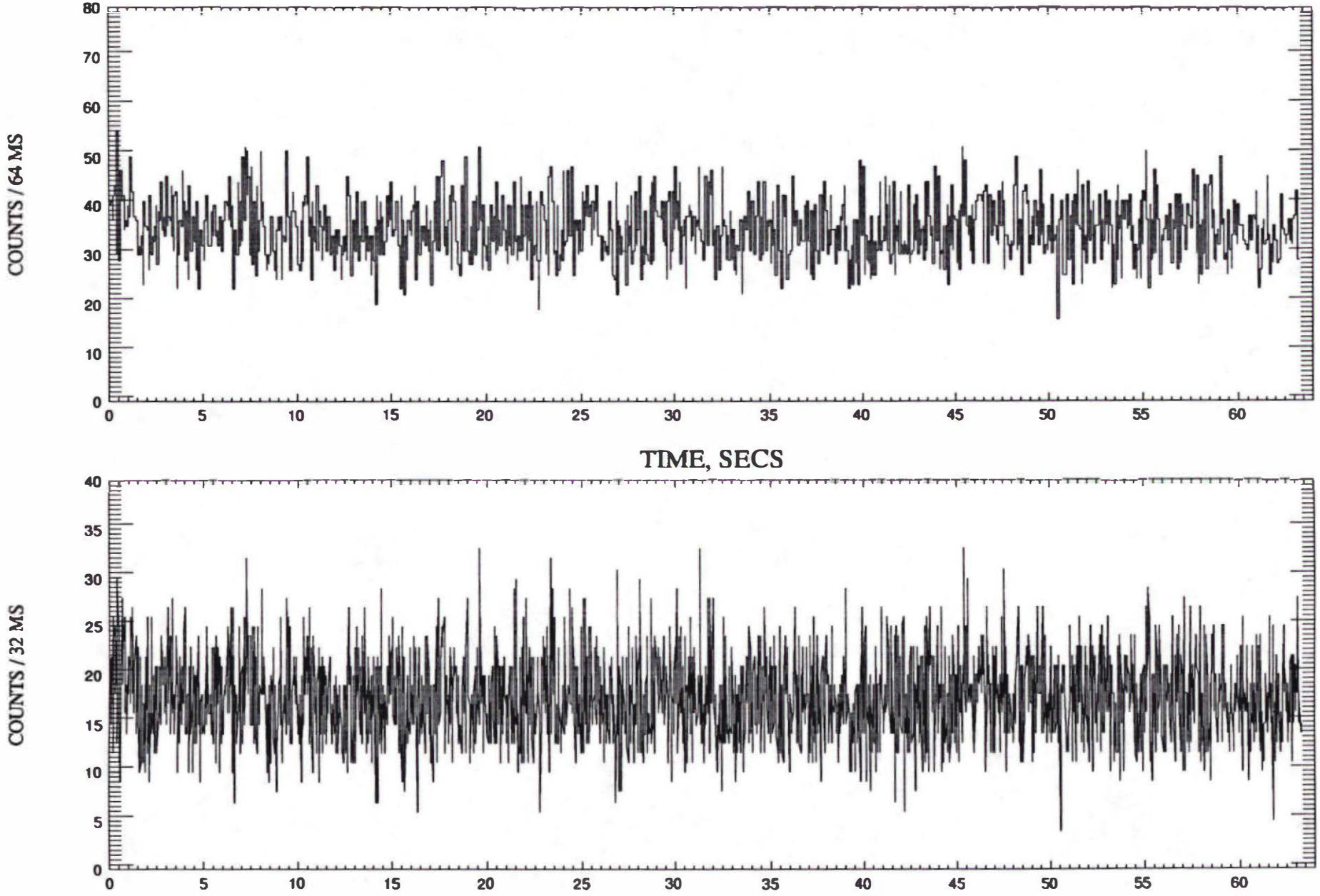
Burst Counter 3 at UT= 6.073861846924 h=21865.903 s



B# 2

HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

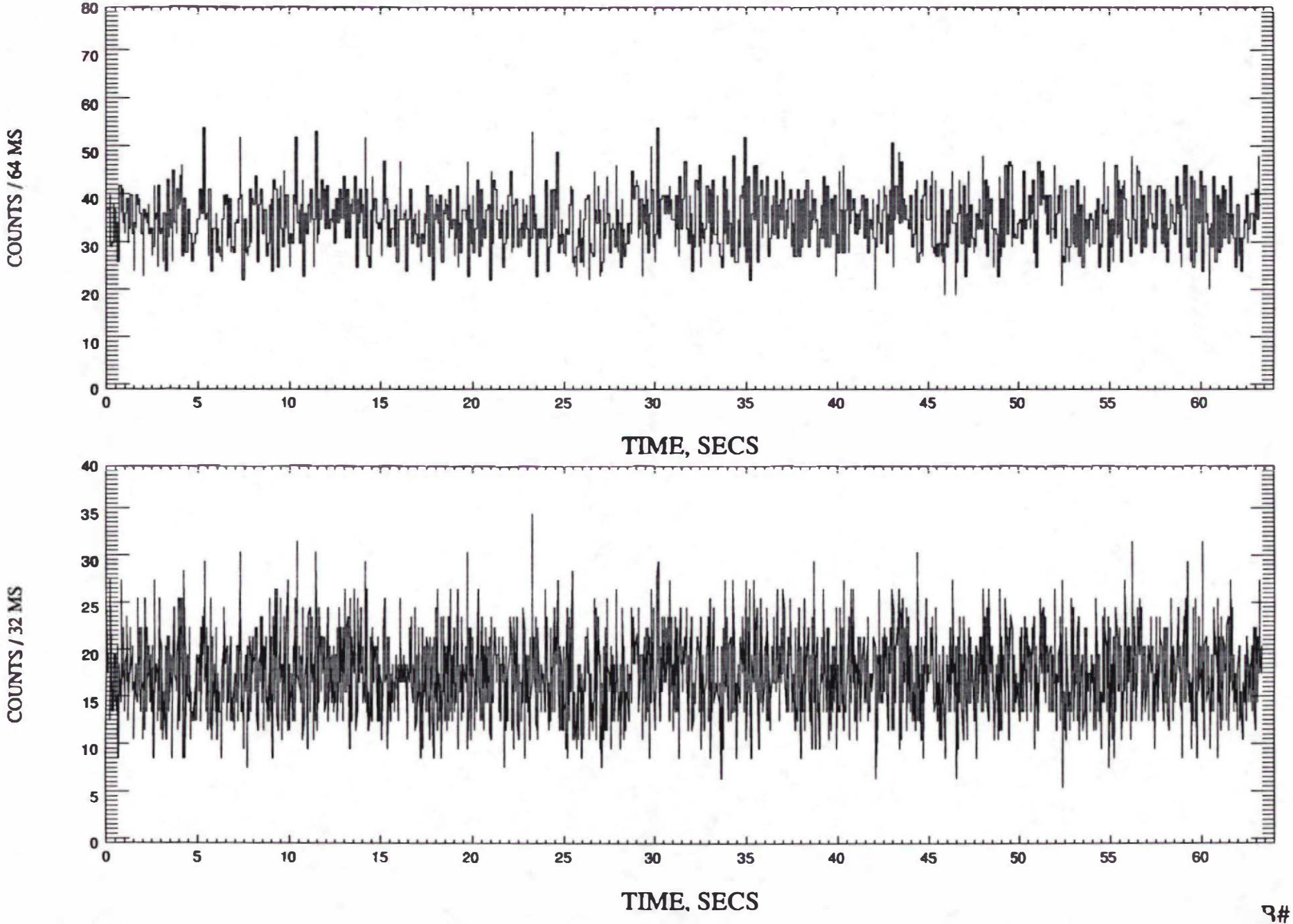
Burst Counter 4 at UT= 8.395880173577 h=30225.169 s



B# 3

HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

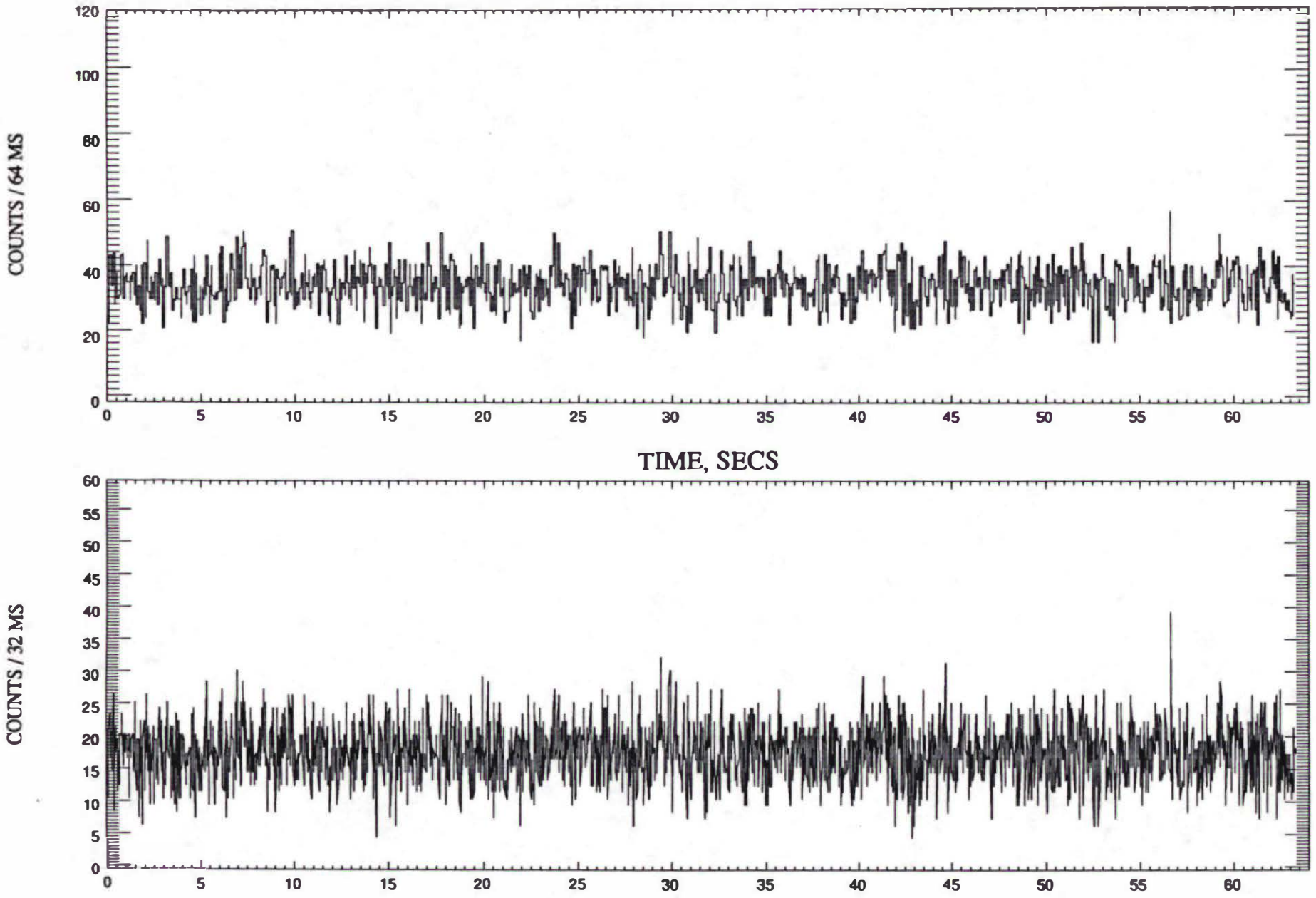
Burst Counter 5 at UT= 9.825347654555 h=35371.252 s



R# 4

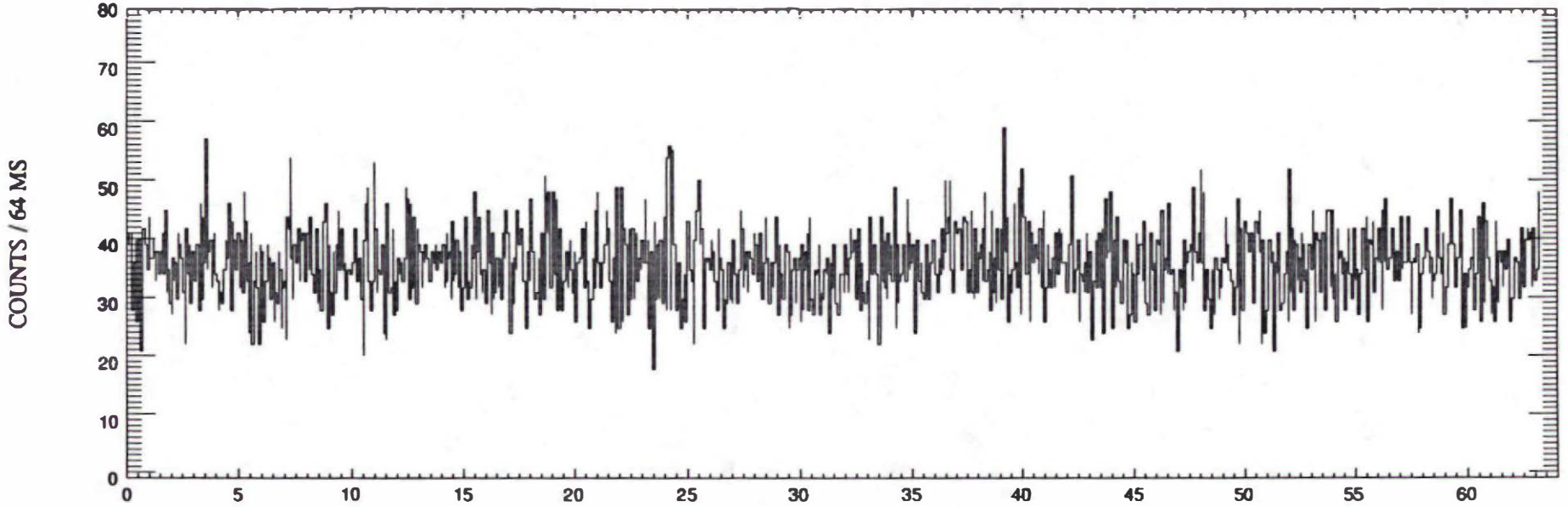
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

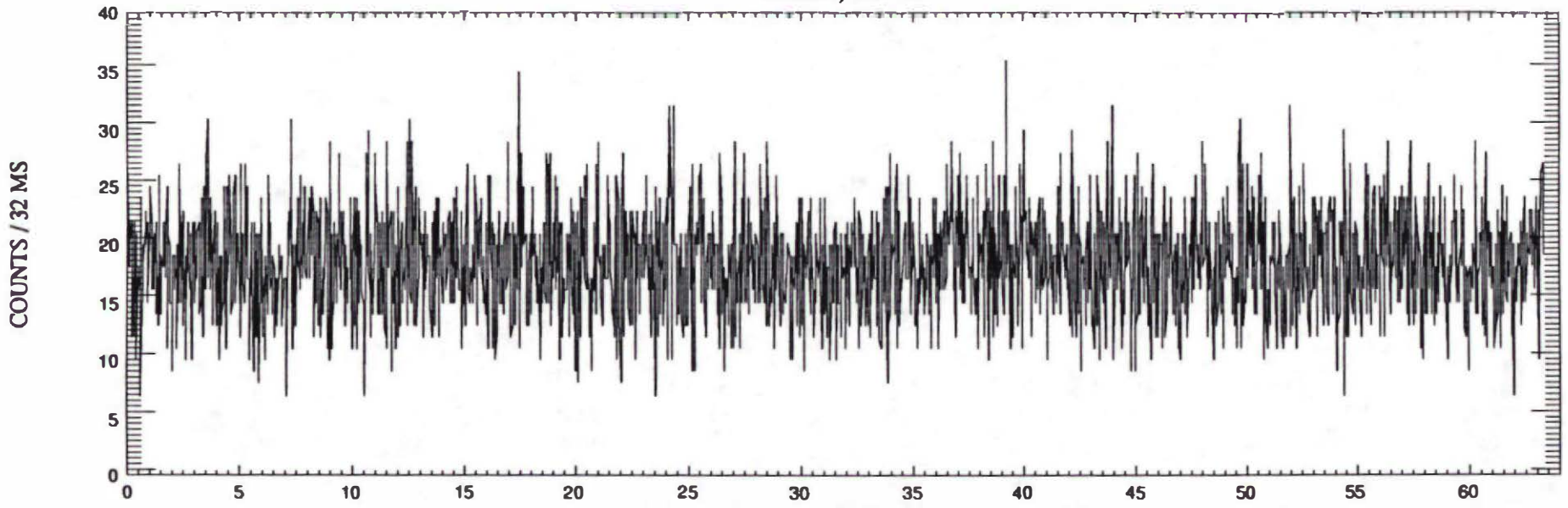
Burst Counter 6 at UT=11.391798773872 h=41010.476 s



HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

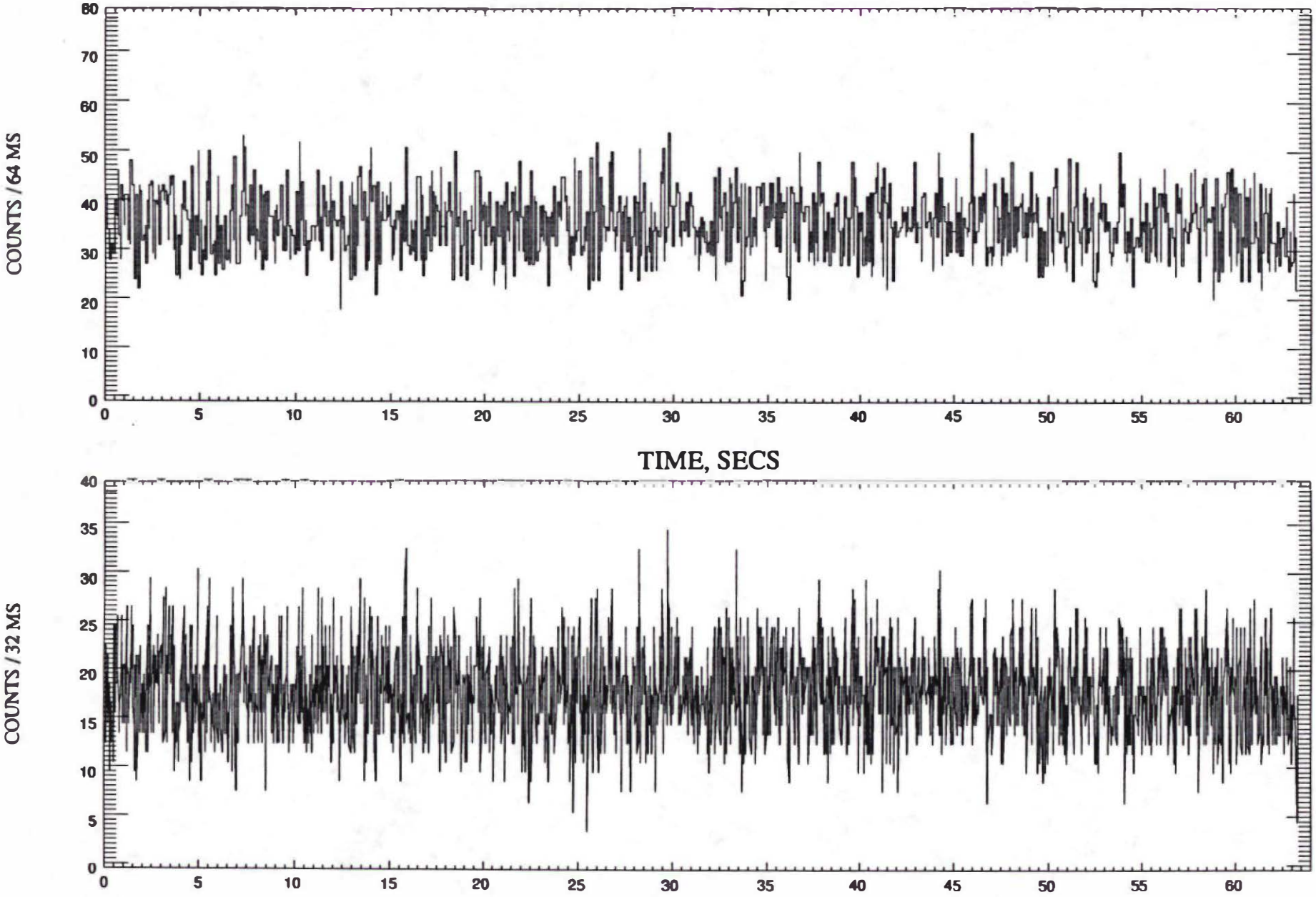
Burst Counter 7 at UT=12.876958529154 h=46357.051 s





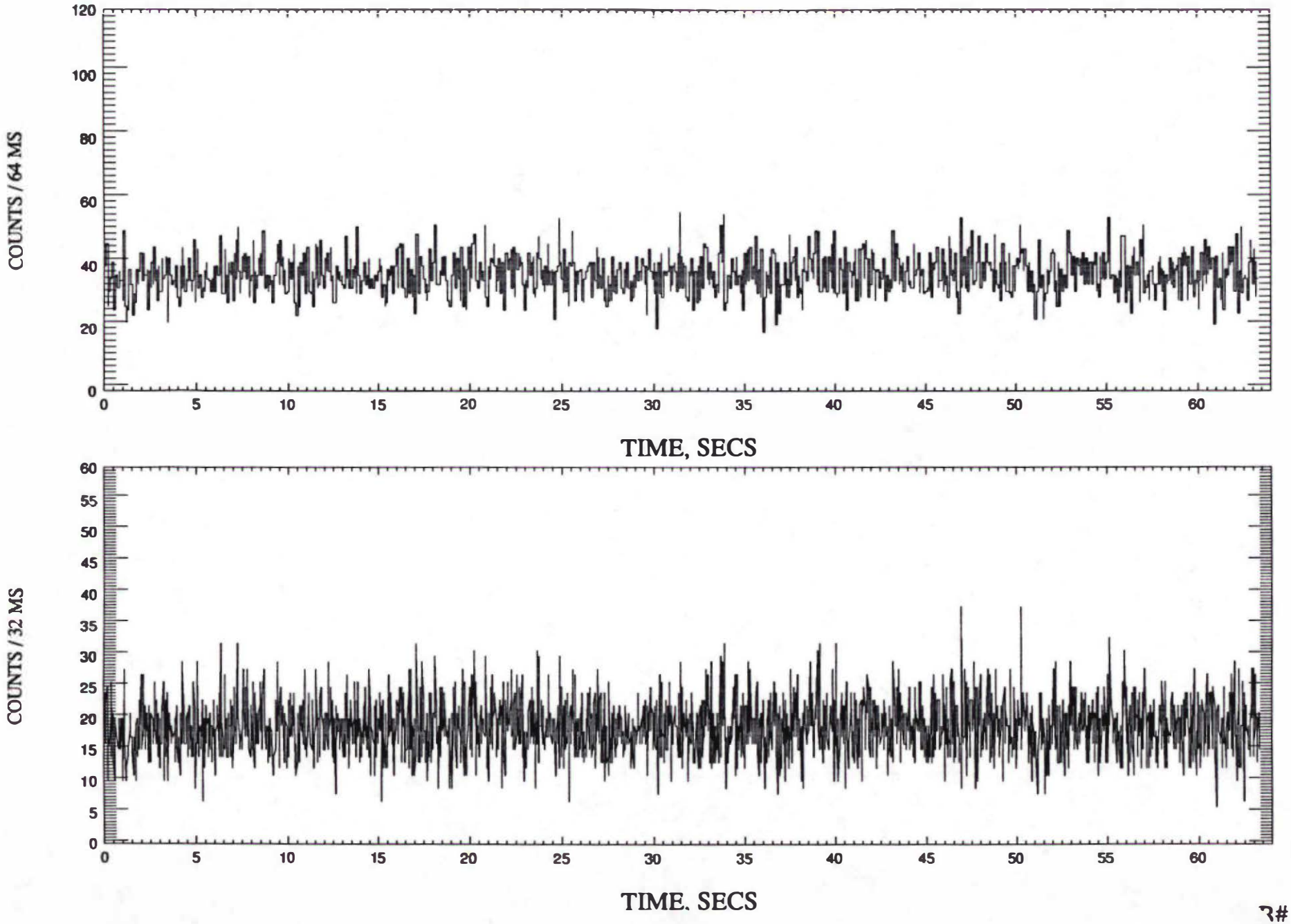
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 8 at UT=14.143993148804 h=50918.375 s



HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

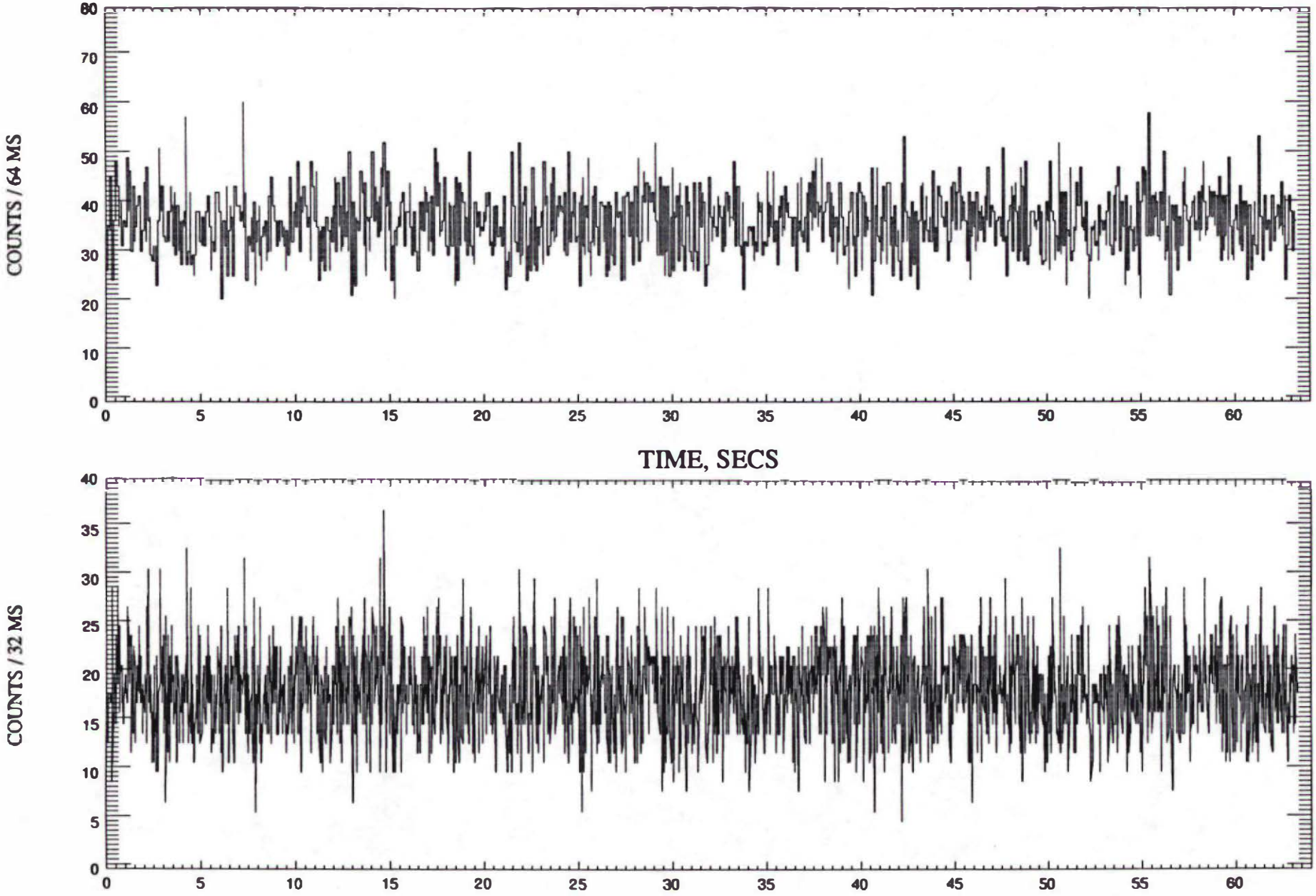
Burst Counter 9 at UT=15.433840272692 h=55561.825 s



R# 8

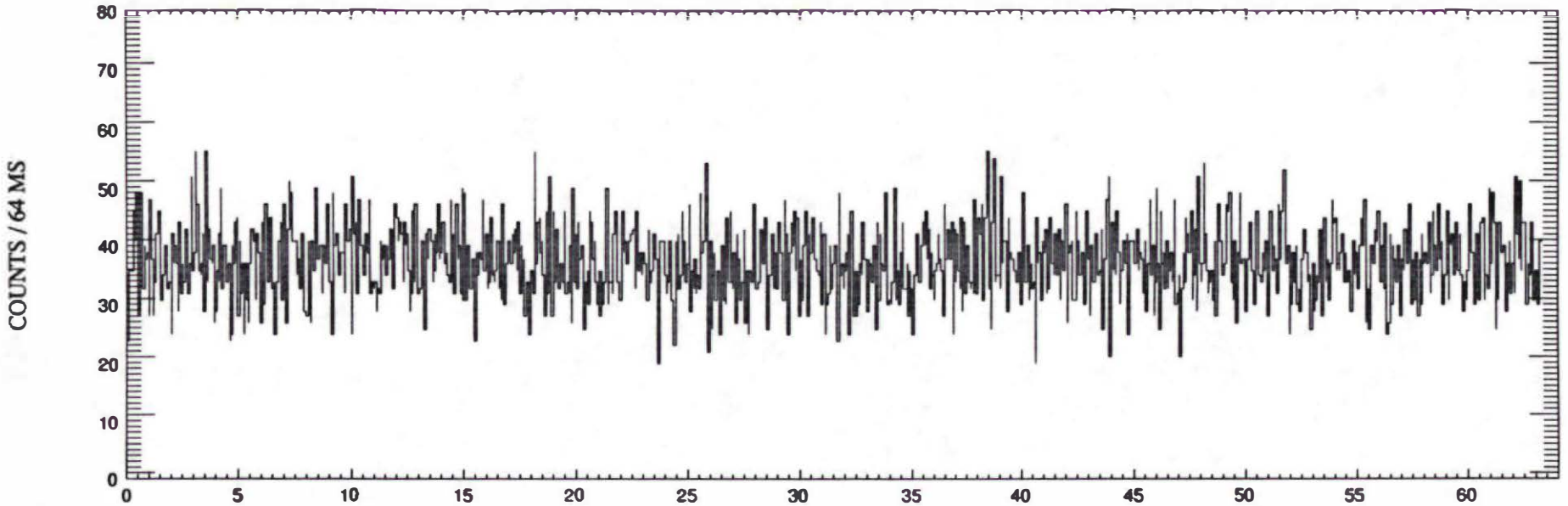
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

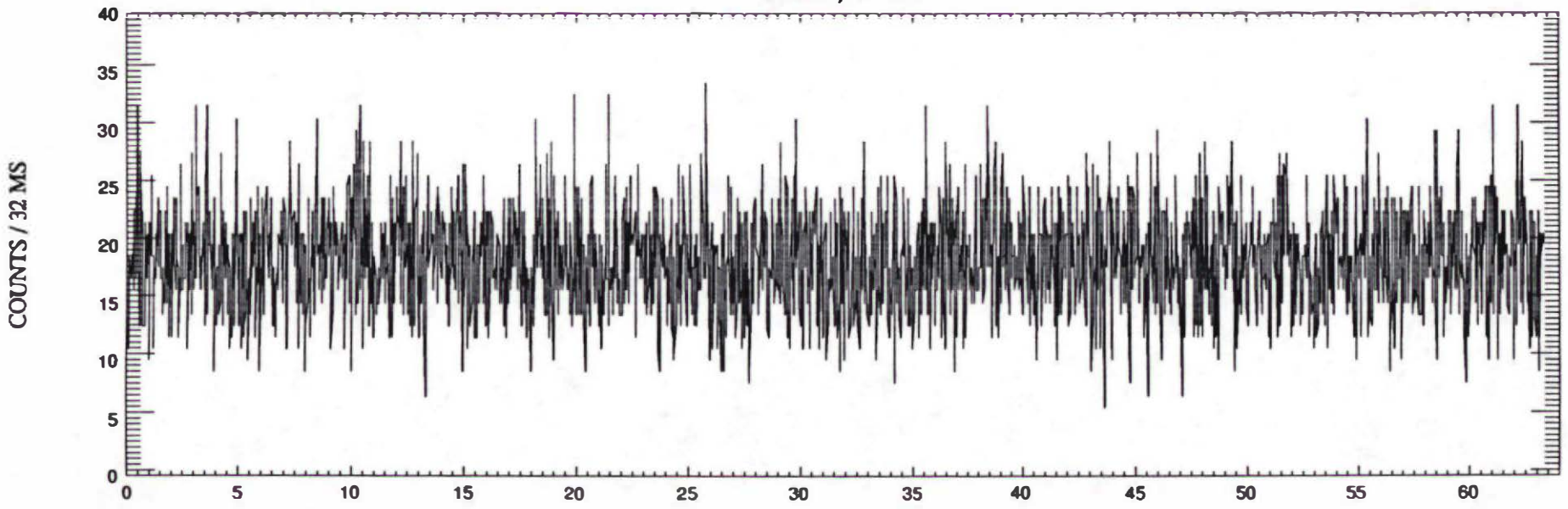
Burst Counter 10 at UT=16.694104059007 h=60098.775 s



HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

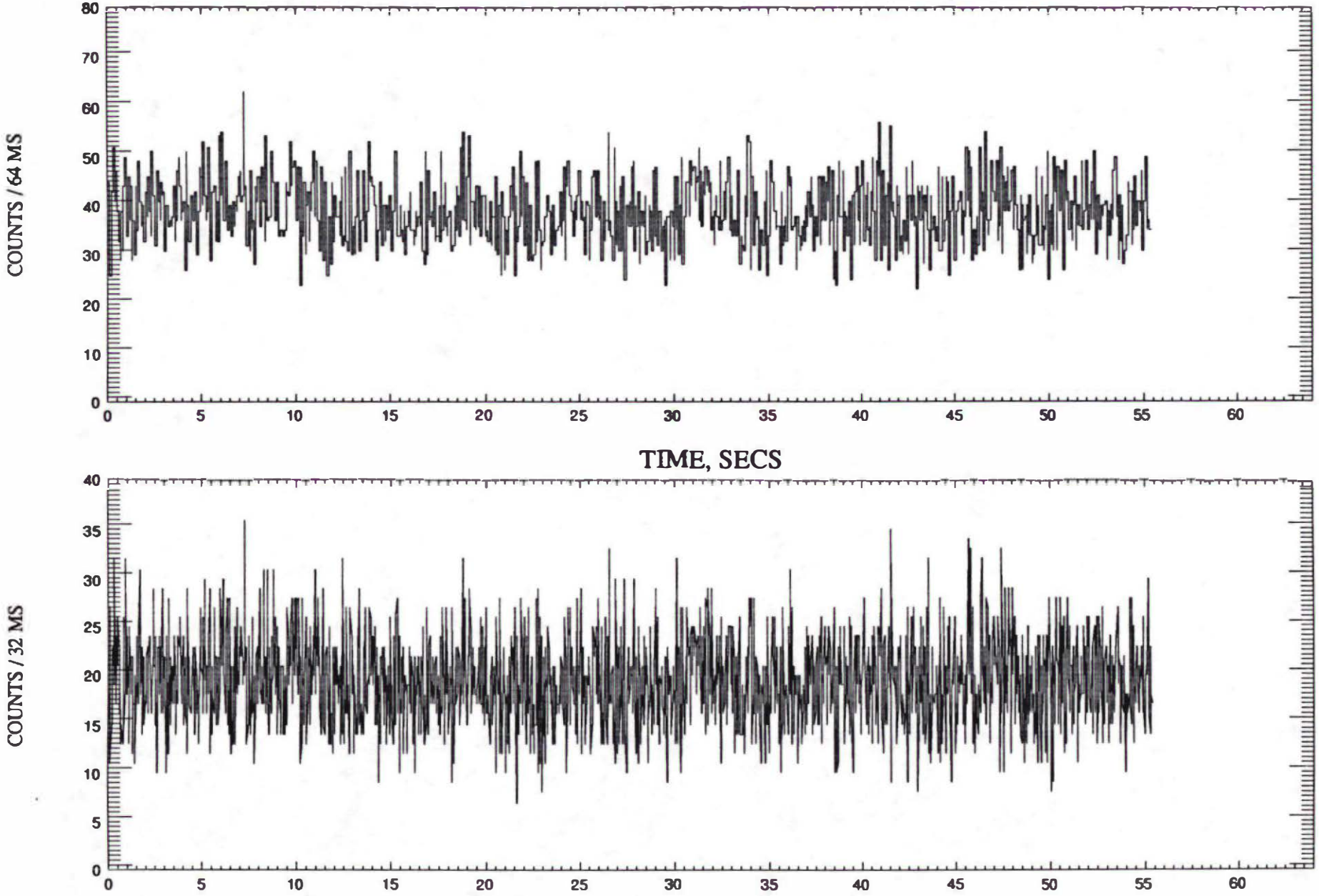
Burst Counter 11 at UT=17.968085293240 h=64685.107 s





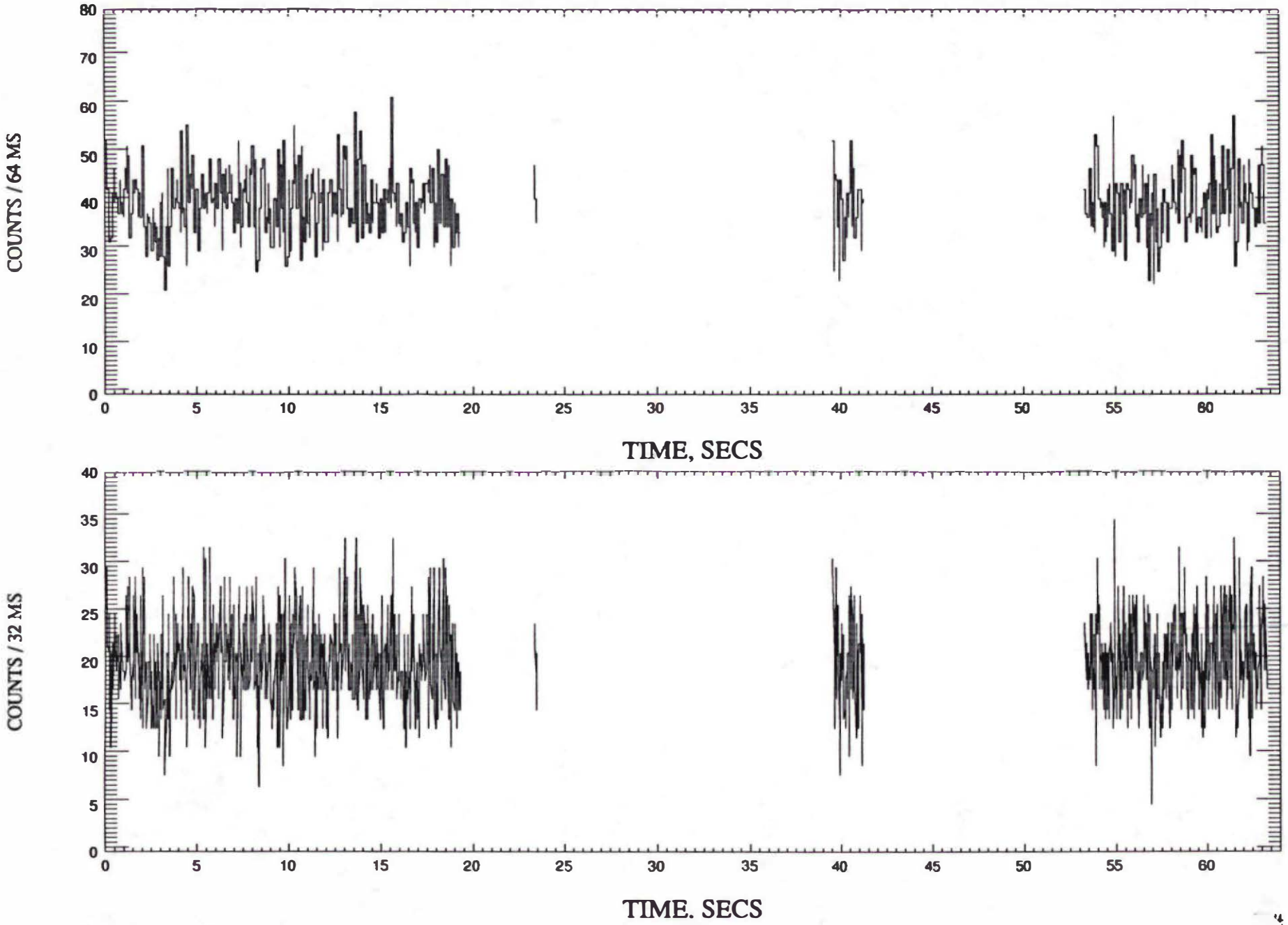
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 12 at UT=19.229008806017 h=69224.432 s



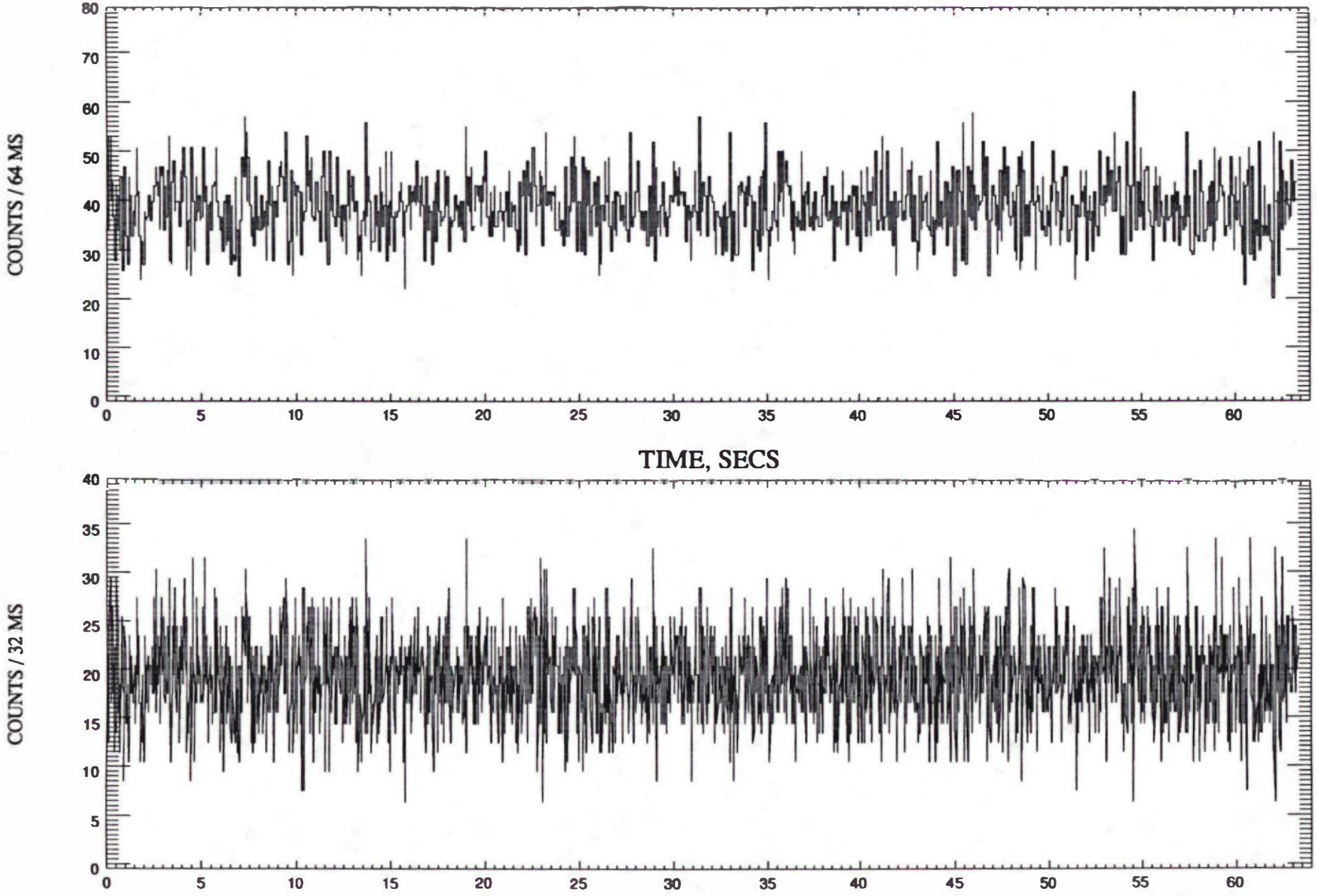
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 13 at UT=20.528819609748 h=73903.751 s



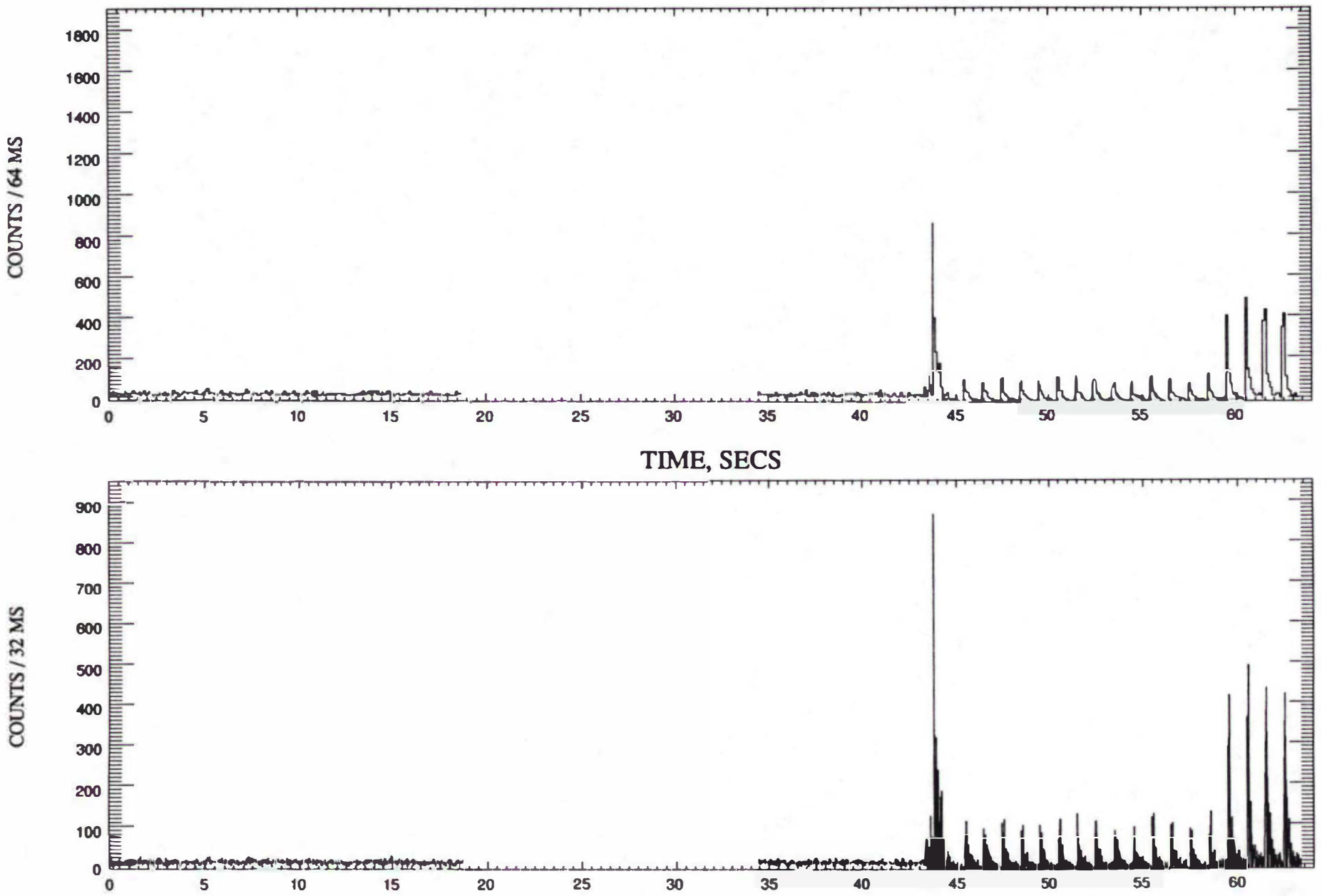
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 14 at UT=21.479564323425 h=77326.432 s



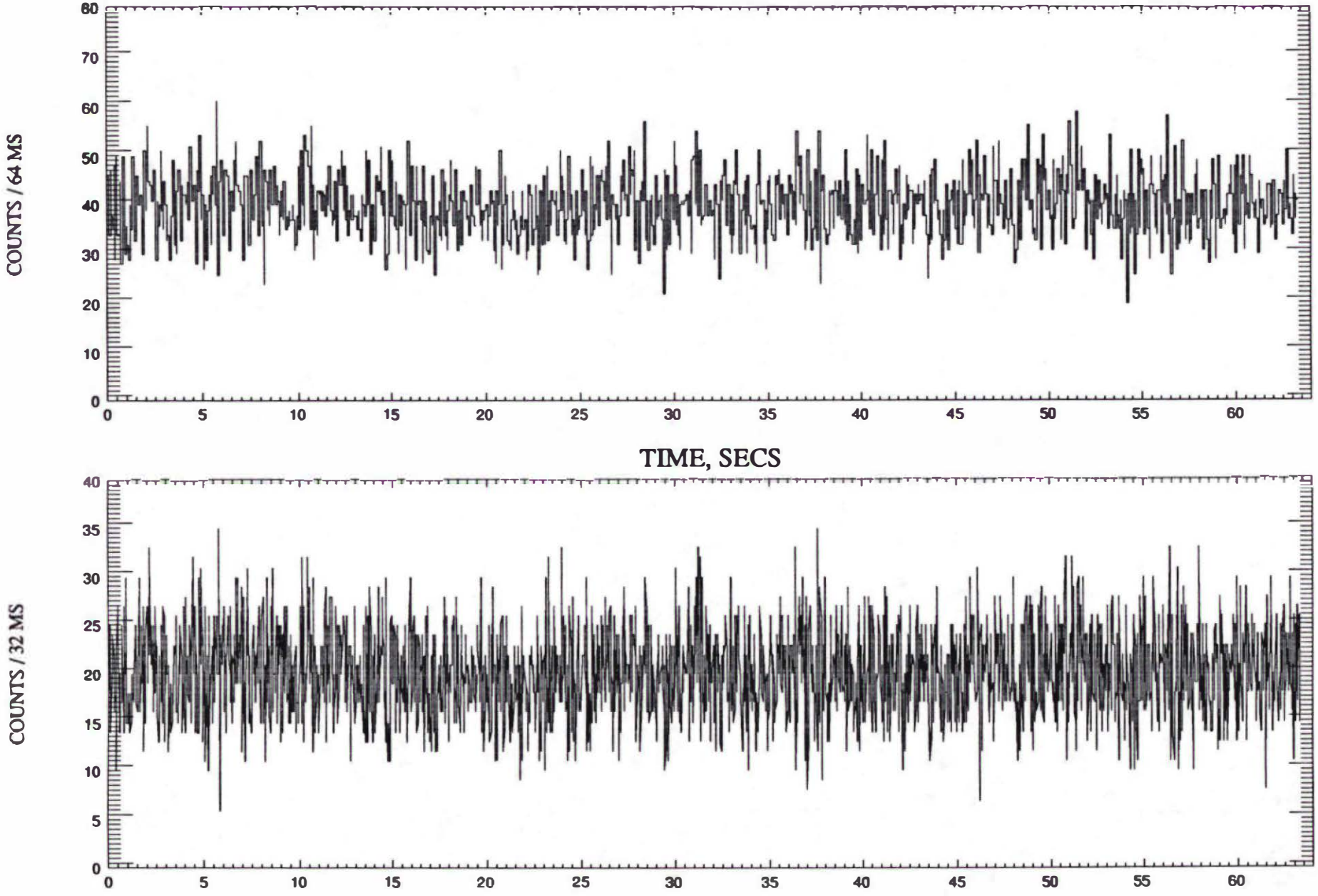
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 15 at UT=22.179957788255 h=79847.848 s



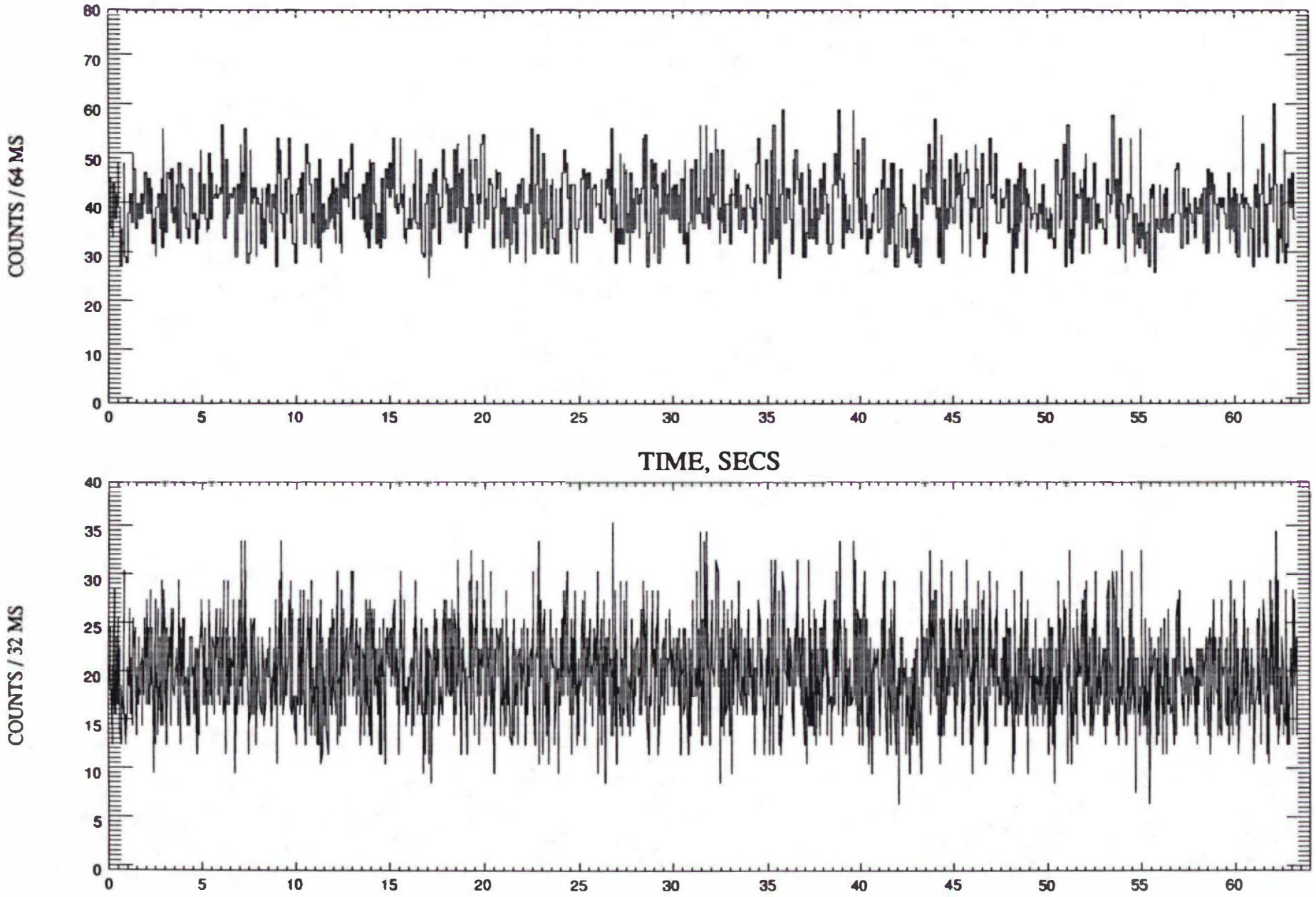
HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 0 at UT=22.882712648180 h=82377.766 s



HUS 2A TRIGGERED DATA EDR day 179, year 1992 7/10/92

Burst Counter 1 at UT=23.588108283149 h=84917.190 s



From WILSONB@ssl.msfc.nasa.gov Tue Jun 30 14:54:58 1992
Date: Tue, 30 Jun 1992 16:54:19 -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: 1215

BATSE BURST TRIGGER

NO.: 01677

TIME: TJD=8801 SECONDS=19605

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CAUGHT AN X1.8 GOES FLARE IN PROGRESS, AT SUNRISE, LONG AFTER ONSET.

****
CATSEARCH PROGRAM
****

BATSE BURST # 1678
EVENT OF 1992 JUN 28 DAY OF YEAR=180
EVENT CROSSING TIME AT BATSE : 32501. S. OR 09:01:41.3
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 293.200 66.200
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 28/ 6/ 92 IS:
RA= 149.978 DEC= 6.534 DIST= 5.876 AU
BATSE-ULYSSES DISTANCE = 879000232. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 636.28 SECS.
CROSSING TIME AT ULYSSES IS 33138. S. OR 09:12:17.6 +/- 556.58 SECONDS

N/o

From WILSONB@ssl.msfc.nasa.gov Tue Jun 30 15:00:57 1992
Date: Tue, 30 Jun 1992 17:00:05 -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: 1215

BATSE BURST TRIGGER
NO.: 01678

TIME: TJD=8801 SECONDS=32501

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=130.4 AZIMUTH=266.5 ERROR=010.0 DEGREES

COMMENTS:
WEAK (~2500 C/S ABOVE 25 KEV) EVENT, DURATION ~5S, NO FINE TIME STRUCTURE.

```
          ********************
          *CATSEARCH PROGRAM*
          ********************

BATSE BURST # 1679
EVENT OF 1992 JUN 28 DAY OF YEAR=180
EVENT CROSSING TIME AT BATSE      : 75463. S. OR 20:57:42.7
COORDINATES ARE     .000     .000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 330.700  -46.800
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON 28/ 6/  92 IS:
RA=  149.978 DEC=    6.534 DIST=    5.876 AU
BATSE-ULYSSES DISTANCE =  879000232. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2237.14 SECS.
CROSSING TIME AT ULYSSES    IS 77700. S. OR 21:34:59.9 +/-  413.02 SECONDS
```

N/D

```
From WILSONB@ssl.msfc.nasa.gov Tue Jun 30 15:13:32 1992
Date:    Tue, 30 Jun 1992 17:13:50 -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: 1213

                BATSE BURST TRIGGER
NO.: 01679
```

June 28

```
TIME: TJD=8801 SECONDS=75462

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=105.7  AZIMUTH=142.4  ERROR=010.0 DEGREES

COMMENTS:
WEAK (~2800 C/S ABOVE 25 KEV) EVENT, DURATION ~5S, NO FINE TIME STRUCTURE.
```

No data due to earthquake

```
          ********************
          *CATSEARCH PROGRAM*
          ********************

 BATSE BURST # 1679
EVENT OF 1992 JUN 28 DAY OF YEAR=180
EVENT CROSSING TIME AT BATSE      : 75463. S. OR 20:57:42.7
COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 317.790  -27.320
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON 28/ 6/  92 IS:
RA=  149.978 DEC=    6.534 DIST=    5.876 AU
BATSE-ULYSSES DISTANCE =  879000232. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL    DIRECTION= 23.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2682.86 SECS.
CROSSING TIME AT ULYSSES    IS 78146. S. OR 21:42:25.6 +/-  296.10 SECONDS
```

N/O

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/0
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 June 28
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 AVALIABLE 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-maillld 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

From khurley@space6.ssl.berkeley.edu Tue Nov 23 08:45:15 1993
Date: Tue, 23 Nov 93 09:41:35
From: khurley@space6.ssl.berkeley.edu
Content-Length: 4895

Jim,

I've finally managed to get back to the DMSP localizations. I'm e-mailing you files for the following events: July 31 1992 and October 4 1992

I have not sent data for the following events:

May 19, 1992: I think that you have everything already. Let me know if that is not the case.

June 28, 1992: No Ulysses data due to the earthquake, which knocked out the tracking station.

June 29, 1992: There is no trace of this event in the Ulysses data. I would have said that it is solar, but the GOES data show no activity at this time. Also, there is a BATSE data gap around this time. This one is a mystery to me.

July 16, 1992: I'm pretty sure this one is solar; there was a strong GOES event at just this time. There is a BATSE data gap at the time, and Ulysses did not observe it.

Aug 5, 1992: Ulysses did not observe this event. Both BATSE and GOES report a strong solar flare at this time, so I think that is the explanation for this event.

Jan 6 1993: This is a nice-looking candidate in the DMSP data, but I haven't found anything corresponding to it in the Ulysses data. We had coverage at 0.5 s resolution, and I searched a window +/- 2100 seconds long around the DMPS time. No other spacecraft reported an event at this time, either.

And, on another subject, you mentioned a possible burst on Oct 24, 1991. Ulysses did not observe it, but the WATCH experiment aboard GRANAT observed solar particles at the time of this event.

SATELLITE POSITIONAL INFORMATION AND BURST ARRIVAL TIME

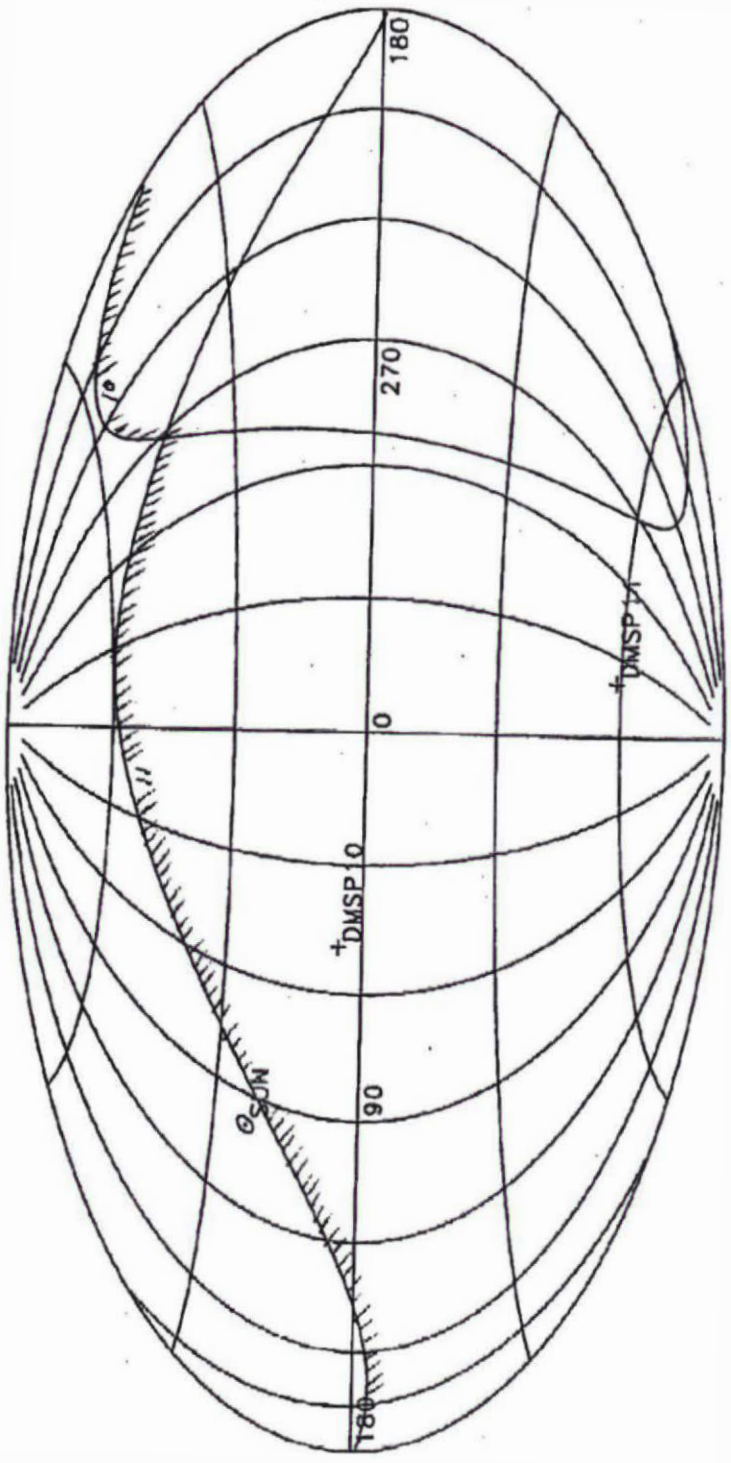
NO	NAME	DIST. FROM EARTH, KM.		ALPHA, DEG.		DELTA, DEG.	
1	ULYSSES	926718236.0000	+/- 23.8000000	154.29600	+/- .00003	3.69480	+/-
2	DMSP	6800.0000	+/- 50.0000000	.00000	+/-180.00000	.00000	+/-

JULIAN DAY NUMBER IS 33815.22 DAYS SINCE 1900 JAN 0.5

20.00 BY 15.00 CM MAP FOR RA= .00 TO 360.00, DEC= -70.00 TO 70.00

INTERSATELLITE CORRELATIONS

SEPARATION BETWEEN SATELLITES 1 AND 2 IS 3091.21926 LIGHT SECONDS. TIME DELAY IS
CORRELATION BETWEEN SATELLITE 1(ULYSSES) AND SATELLITE 2(DMSP



DMSP POSITIONS+VIEW, 92/06/28 76452 UT
EQUATORIAL COORDINATES

BJ0820

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: $C <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!)

Dezalay-> KH 7/93

DATE	U.T.	Nr UGB	Event Nature
1992-06-28	21:14:12.932	473-a	GRB
1992-07-08	16:30:01.944	479-a	Solar Flare
1992-07-14	13:04:30.544	482-a	GRB
1992-07-16	16:55:27.526	484-a	Solar Flare
1992-07-18	21.32:44.275	485-a	GRB
1992-07-20	03:12:04.391	486-a	GRB
1992-07-23	00:59:16.612	488-a	GRB
1992-07-23	20:03:08.386	489-a	GRB
1992-07-23	21:48:54.786	489-b	GRB
1992-08-16	12:37:31.102	493-a	GRB
1992-08-26	02:47:07.423	500-a	GRB
1992-08-30	01:45:19.113	503-a	GRB
1992-09-02	00:29:00.916	504-a	GRB
1992-09-03	00:49:18.142	505-a	GRB
1992-09-03	01:37:17.202	505-b	GRB ?
1992-09-03	23:29:01.404	506-a	GRB
1992-09-04	04:41:38.922	506-b	GRB
1992-09-05	15:56:15.844	507-a	Solar Flare
1992-09-06	18:45:29.617	507-b	Solar Flare
1992-09-06	20:56:31.135	507-c	Solar Flare
1992-09-14	07:14:50.878	508-a	Unknown
1992-09-18	09:41:19.340	511-a	GRB
1992-09-25	20:30:41.410	517-a	GRB
1992-09-25	21:40:47.837	517-b	No Available data
1992-09-30	00:47:46.089	518-a	Unknown
1992-10-04	22:19:05.006	522-a	Solar Flare
1992-10-12	13:14:44.786	523-a	Solar Flare
1992-10-13	23:01:01.582	524-a	GRB
1992-10-25	13:53:16.735	527-a	GRB
1992-10-27	06:52:02.336	528-a	Solar Flare
1992-10-29	15:23:10.349	530-a	SF ou Unknown?
1992-10-29	16:11:39.173	530-b	SF ou Unknown?
1992-10-29	16:26:49.045	530-c	SF ou Unknown?
1992-11-23	16:32:04.840	534-a	SF ou Unknown?
1992-11-23	17:11:35.698	534-b	SF ou Unknown?

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         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,CMPLX,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,ULYSS
           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 ANGSUN=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
```

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

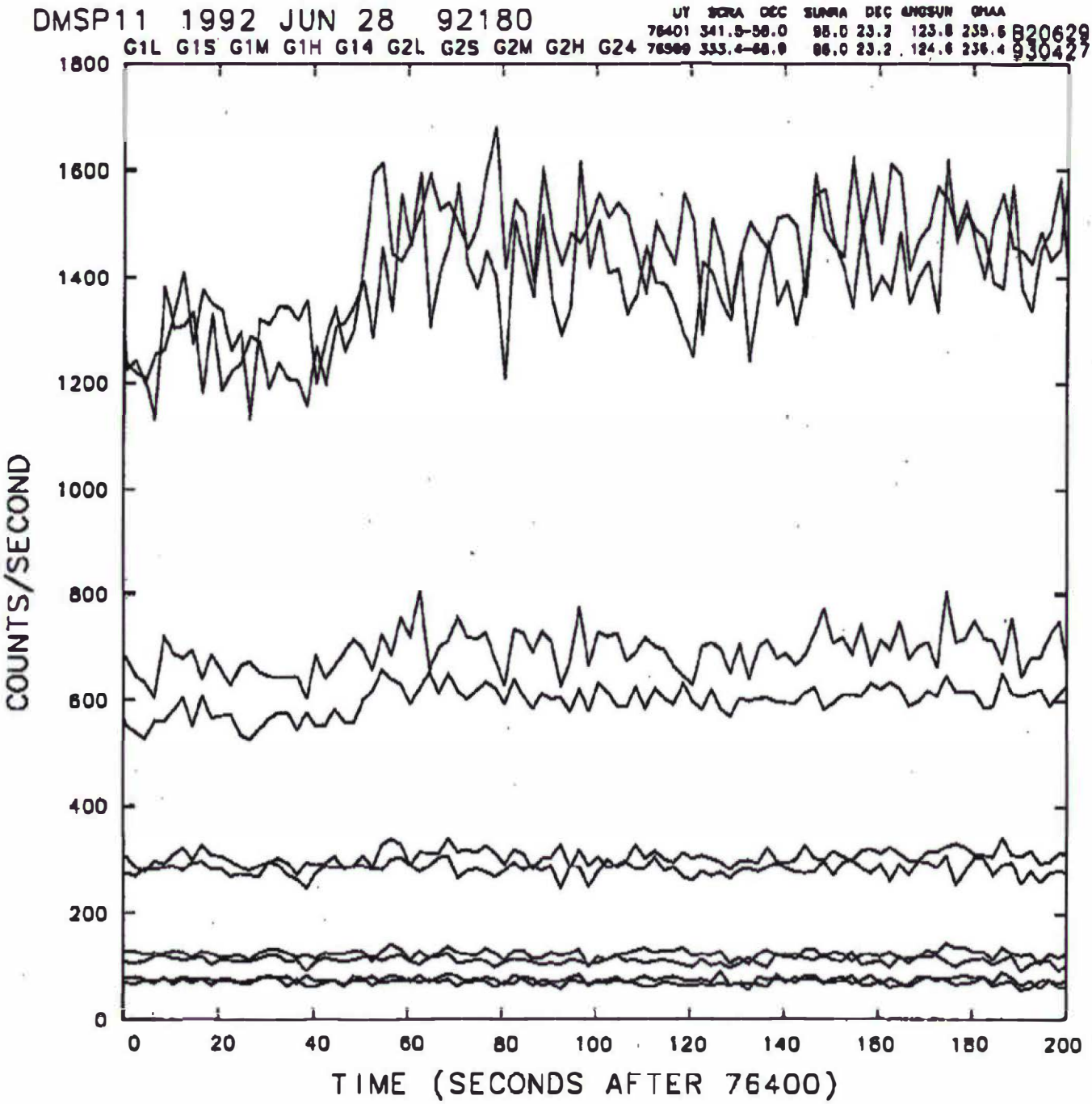
Received: from ESSDP2 by UCBSP.SSL.BERKELEY.EDU via MAIL-11 with
DECnet; Tue, 5 May 92 13:40:33-PST
Date: Tue 5 May 92 13:40:33-PST
From: 046369@ESSDP2.SPAN.NASA.GOV
Subject: DMSP GRB DATA
To: "UCBSP::KHURLEY"@ESSDP2.SPAN.NASA.GOV

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

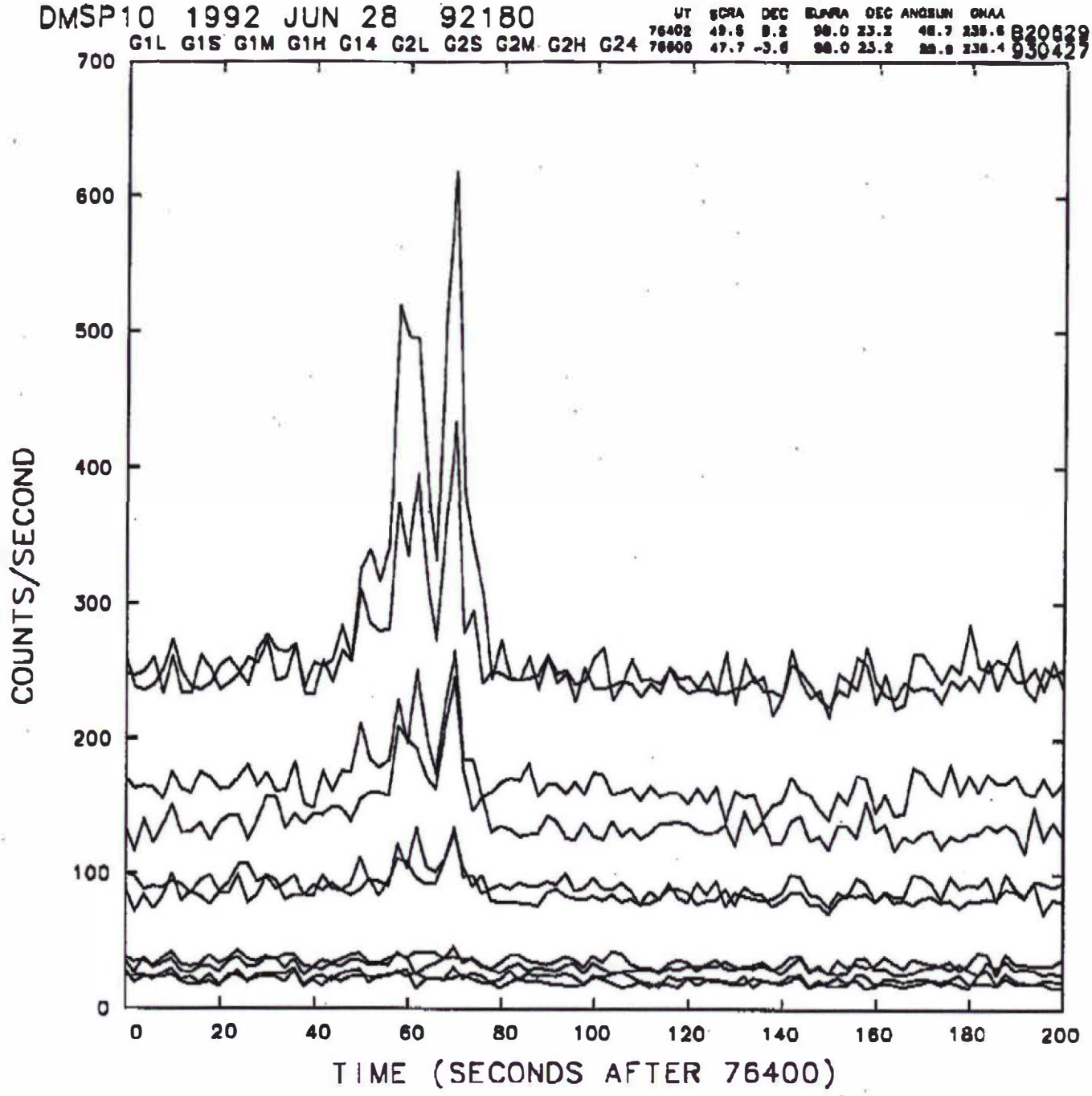
HERE IS A PARTIAL LIST OF 1992 DMSP GAMMA-RAY-BURST DATA, AS OF TODAY.
OTHER DATA APPEARING TO CONFIRM UNCONFIRMED EVENTS IN YOUR LISTING IS
BEING EXTRACTED, AND I WILL CHECK IT OUT WHEN I RETURN FROM HOUSTON.
THANKS FOR YOUR CONTINUING HELP--JIM TERRELL

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


DMSP11 1992 JUN 28 92180
G1L G1S G1M G1H G14 G2L G2S G2M G2H G24
UT SCRA DEC SUNRA DEC GMSUN GMAA
76401 341.5-58.0 88.0 23.2 123.8 235.6
76800 333.4-68.0 88.0 23.2 124.6 236.4
B20629
930427
COUNTS/SECOND
TIME (SECONDS AFTER 76400)
0
200
400
600
800
1000
1200
1400
1600
1800
0
20
40
60
80
100
120
140
160
180
200

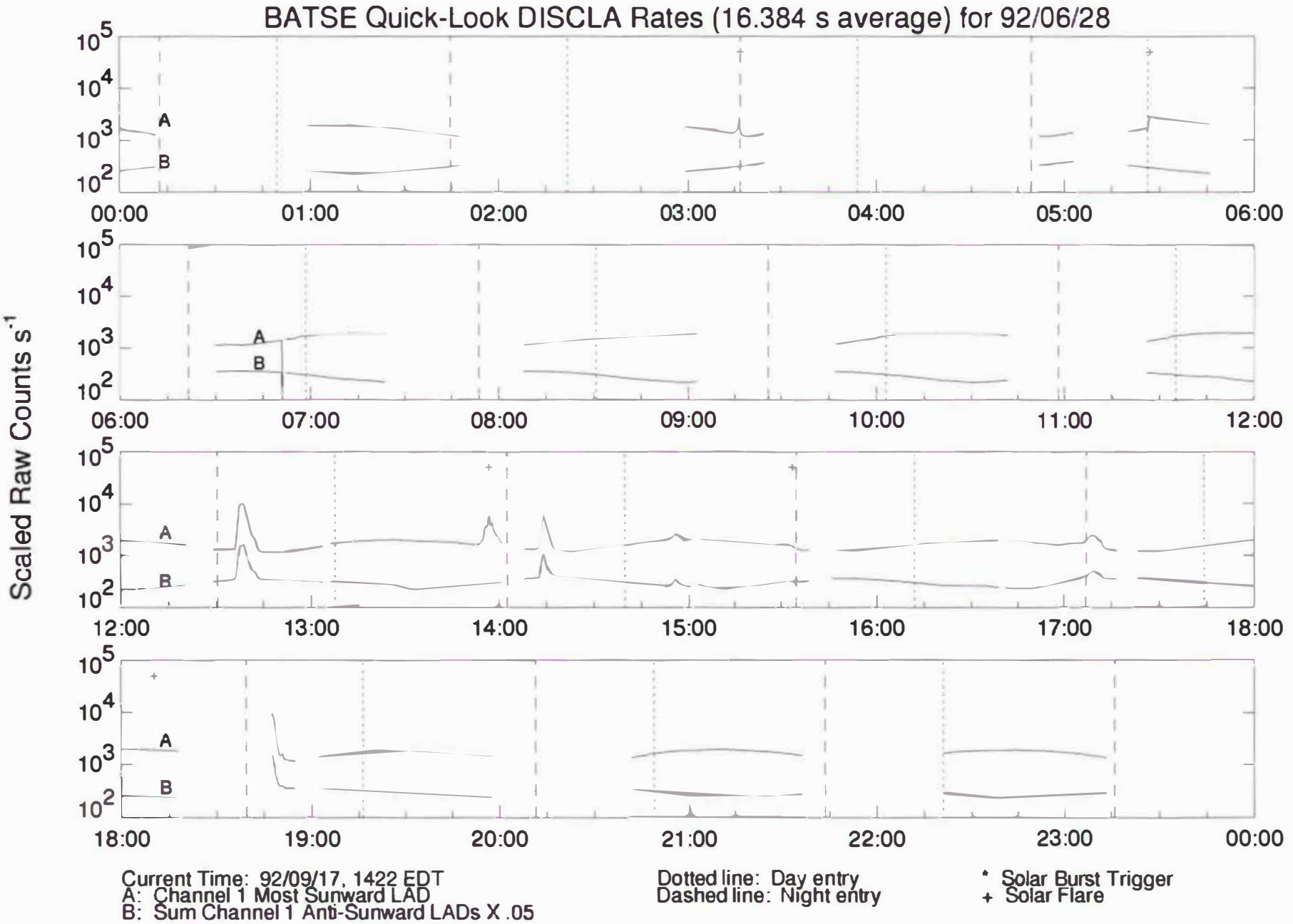
(NOT OBS.)

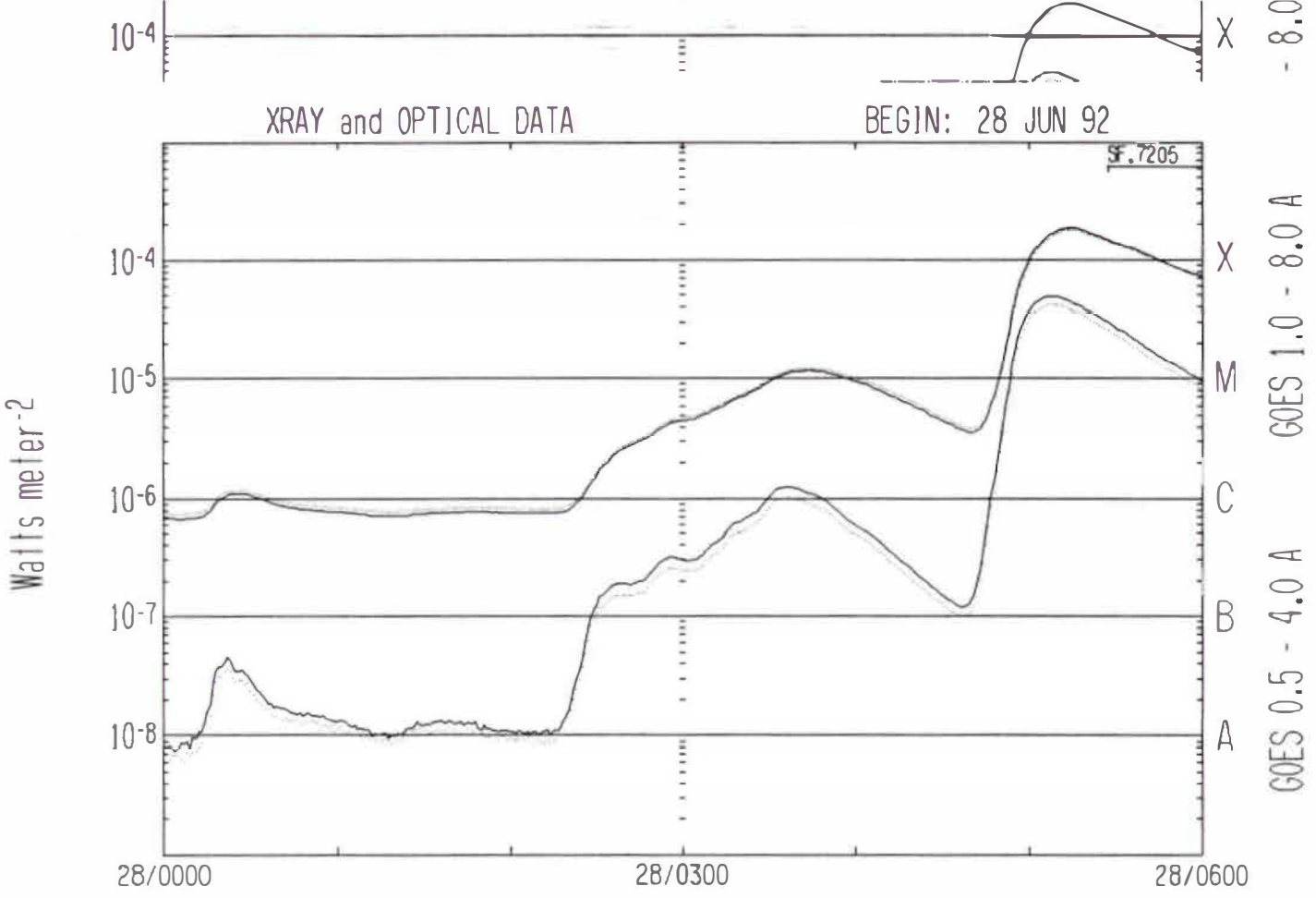


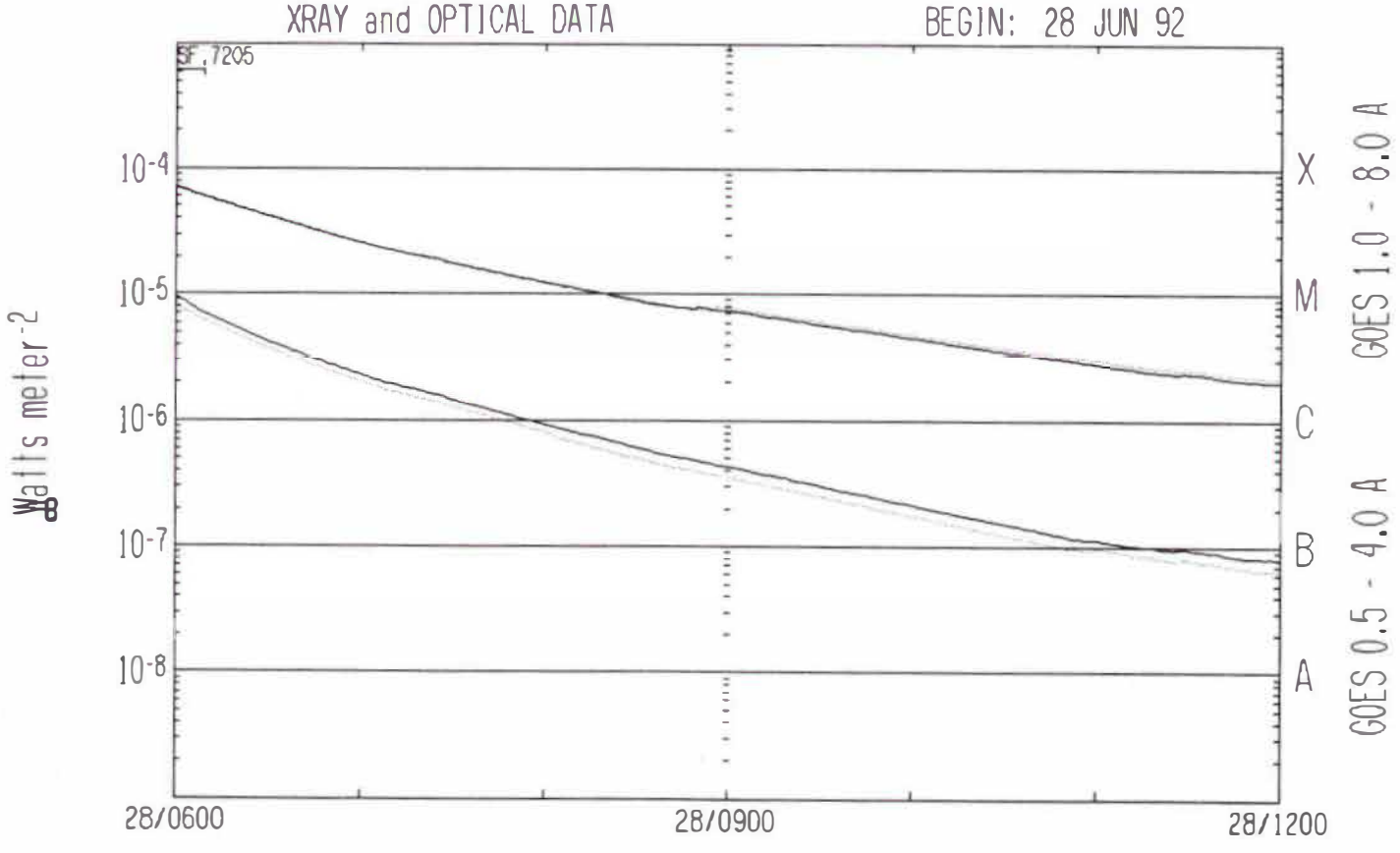
1
76452.3
1
76464.3

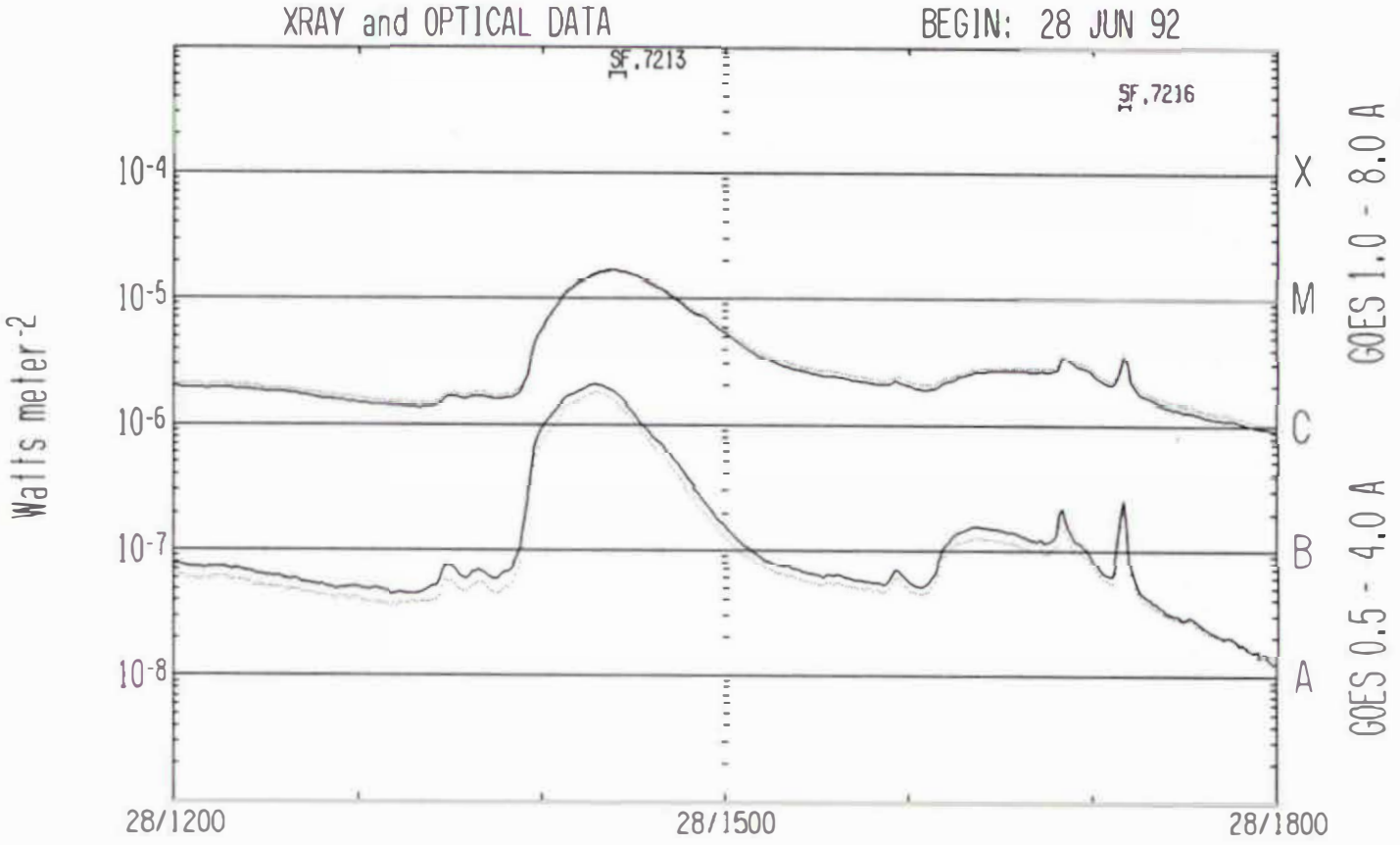
JLA 10/19/92

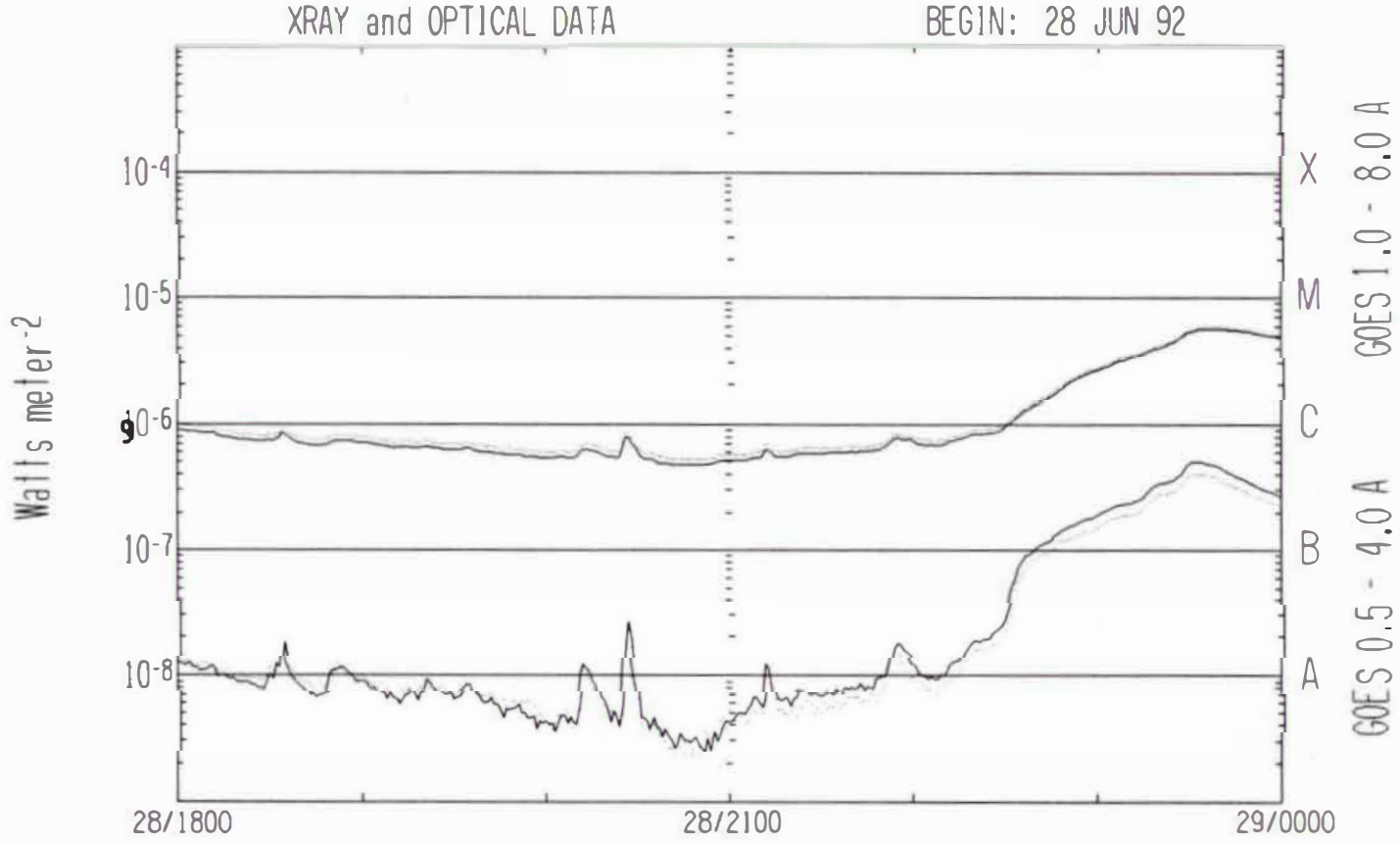
Date	Heure Phebus		Sigma	Heure Ulysse	Seance	Cmax Phebus	Cmax Ulysse	Loc. α, δ	Comment.
1991-09-01	19467				327	145			faible
1991-09-07	3910	I		2066	330	177	90		
1991-10-16	39695				355	213			HUS : lim sup
1991-10-18	19936	I		21720	356	553	375		
1991-10-25	77116				362	107			faible
1991-11-19	61954		gca		367	131			faible
1991-12-22	54010	I		53610	381	277	179		
1992-01-10	33540	I	ac	34298	386		151		bdf Phebus faux
1992-01-25	32247		ac/gca		397				HUS : lim sup
1992-02-10	35633		ac		404				HUS : no data
1992-02-18	67459				411				HUS : manque données
1992-02-29	69678				415				HUS : lim sup
1992-03-11	8427	I	ac/gca	7045	422		505	131.6 -36.1	loc Network
1992-03-25	62257	I	ac/gca	64262	430		154		
1992-04-04	81448	I		79239	434		212		
1992-04-05	27698	I	ac	28498	434		91		
1992-04-14	84162	I	gca	84257	441		171		
1992-04-20	7947	I		7573	444		112		
1992-05-19	59421	I		61011	449		268		
1992-06-22	25505	I	ac/gca	23347	468		408		
1992-06-28	76453				473				HUS : no data
1992-07-14	47072	I	ac/gca	46282	482		221	219.9 +5.4	loc Sigma gca
1992-07-20	11529	I	ac/gca	9808	486		227		
1992-07-23	72189	I	ac/gca	73964	489		1084	285.8 +26.7	loc Sigma gca


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/28
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1422 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


XRAY and OPTICAL DATA
BEGIN: 28 JUN 92
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
28/0000
28/0300
28/0600


XRAY and OPTICAL DATA
BEGIN: 28 JUN 92
SF,7205
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
28/0600
28/0900
28/1200

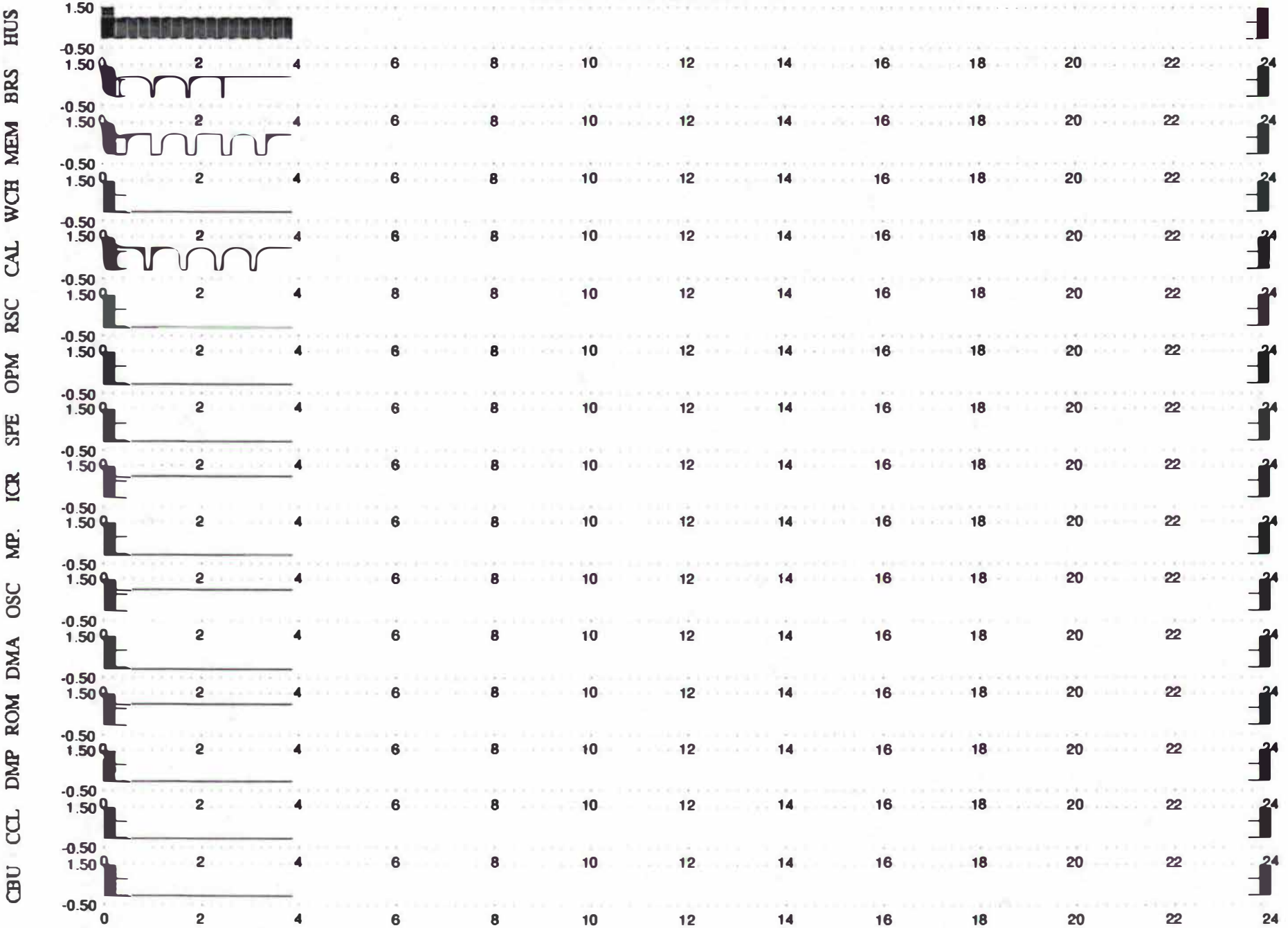

XRAY and OPTICAL DATA
BEGIN: 28 JUN 92
SF.7213
SF.7216
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
28/1200
28/1500
28/1800


XRAY and OPTICAL DATA
BEGIN: 28 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
28/1800
28/2100
29/0000

No data due to earthquake

HUS MODES EDR day 180, year 1992 to day 180, year 1992 7/10/92

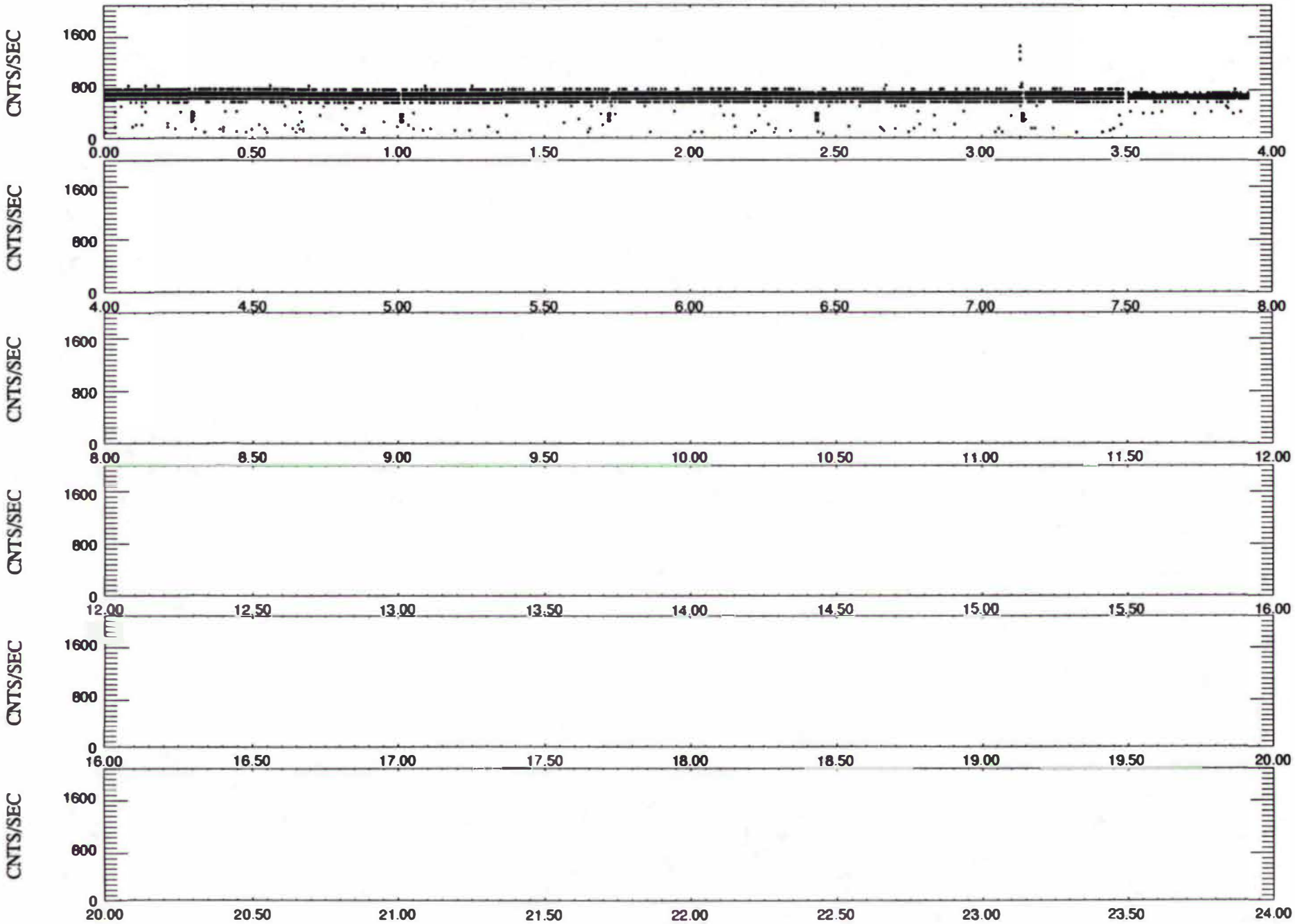
BURST NUMBER 2 - 6



UNIVEI L TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 180, year 1992 to day 180, year 1992 7/10/92

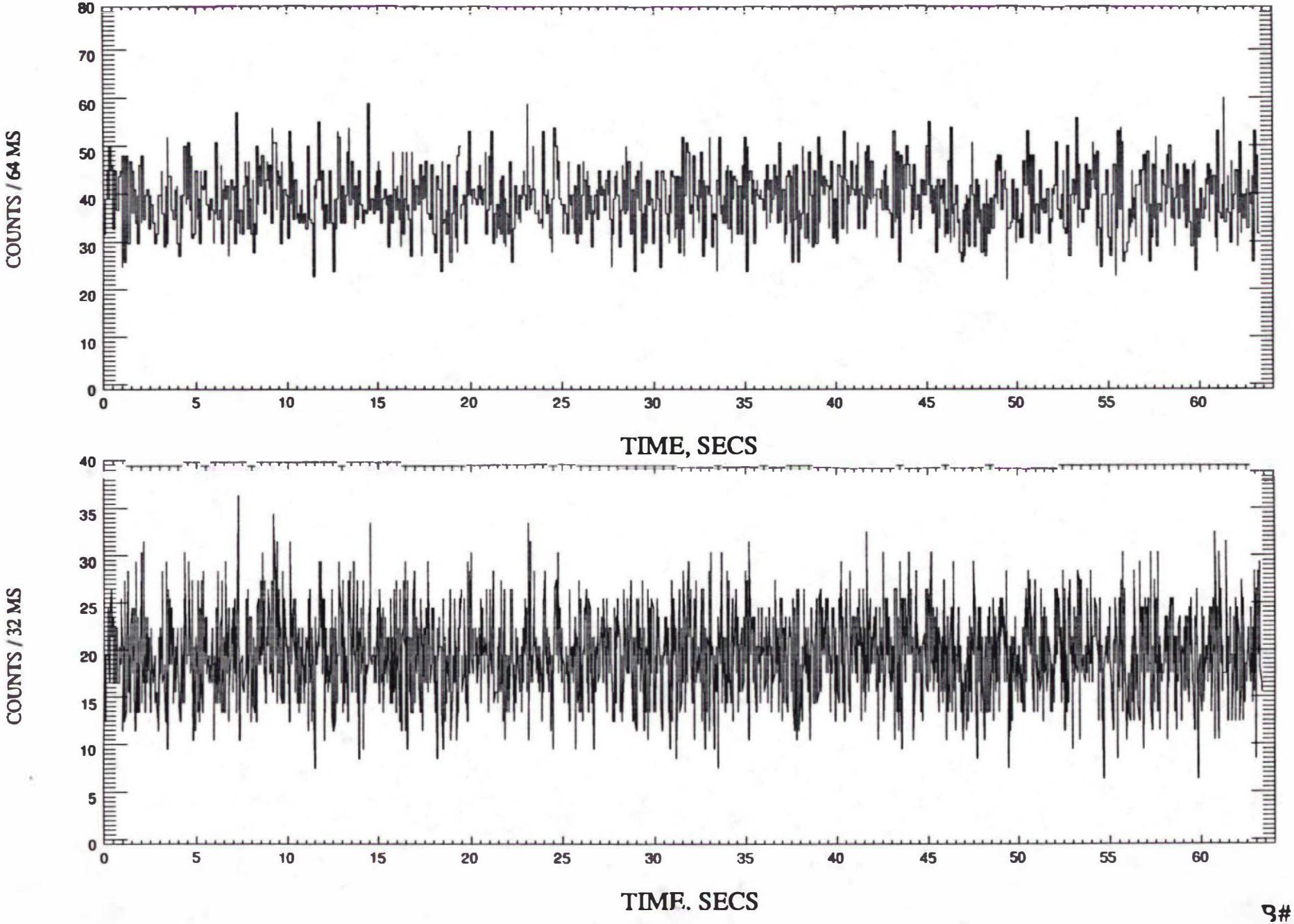
CALIBRATION DATA INCLUDED



UNIVE L TIME

HUS 2A TRIGGERED DATA EDR day 180, year 1992 7/10/92

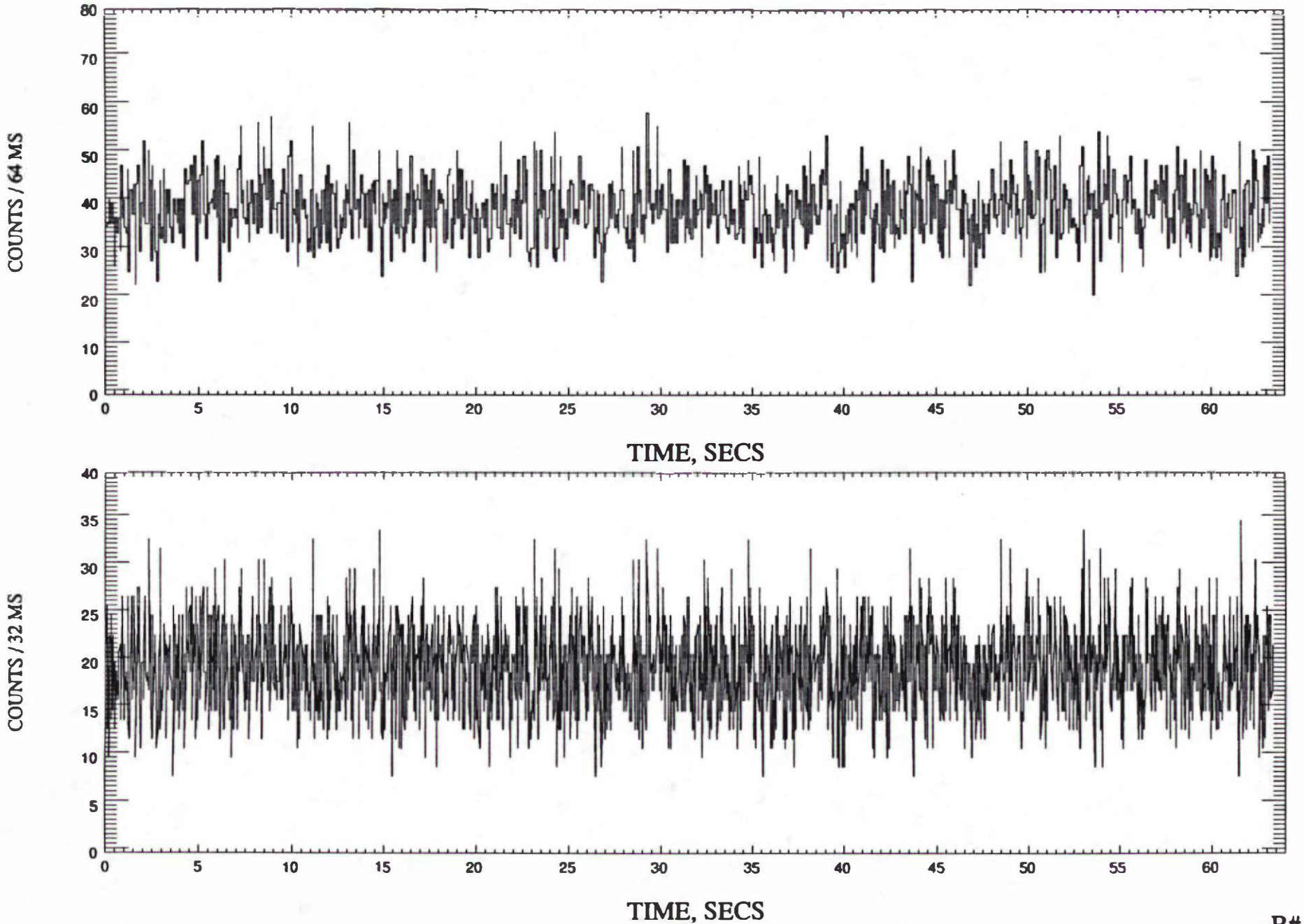
Burst Counter 2 at UT= 0.298946622213 h= 1076.208 s



B# 1

HUS 2A TRIGGERED DATA EDR day 180, year 1992 7/10/92

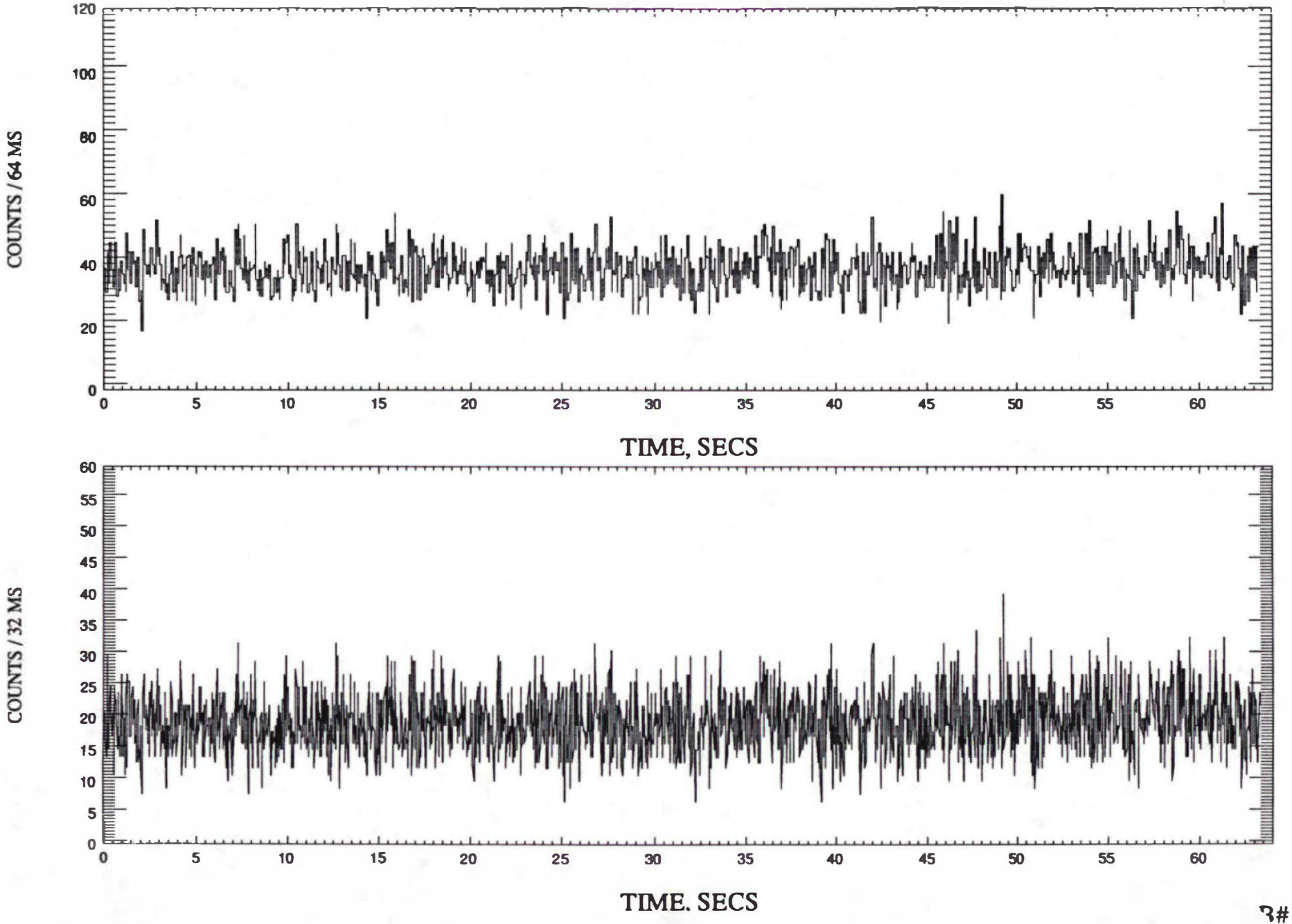
Burst Counter 3 at UT= 1.013547982110 h= 3648.773 s



B# 2

HUS 2A TRIGGERED DATA EDR day 180, year 1992 7/10/92

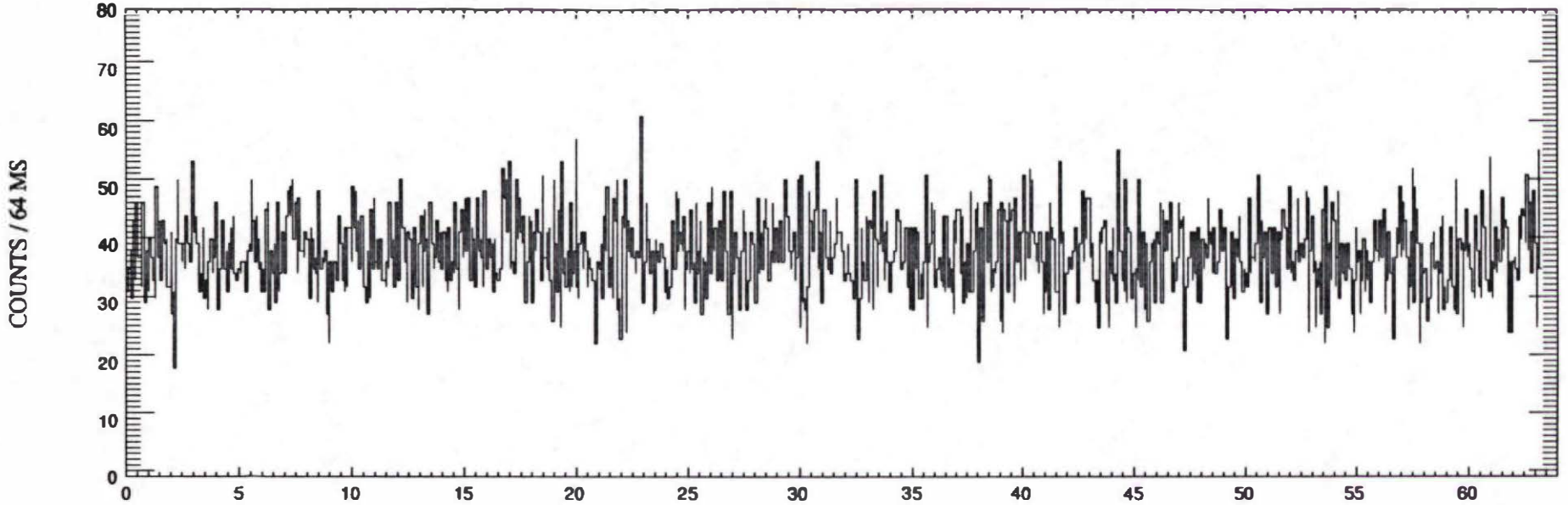
Burst Counter 4 at UT= 1.721092054579 h= 6195.931 s

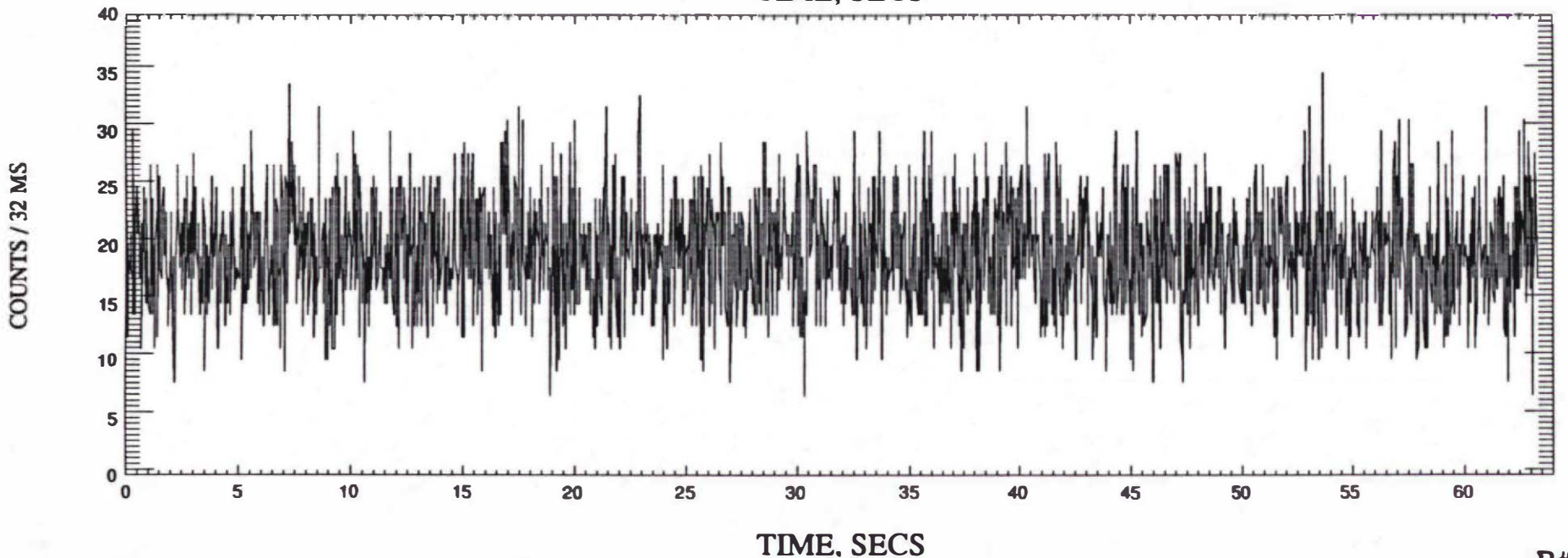


B# 3

HUS 2A TRIGGERED DATA EDR day 180, year 1992 7/10/92

Burst Counter 5 at UT= 2.428082737393 h= 8741.098 s

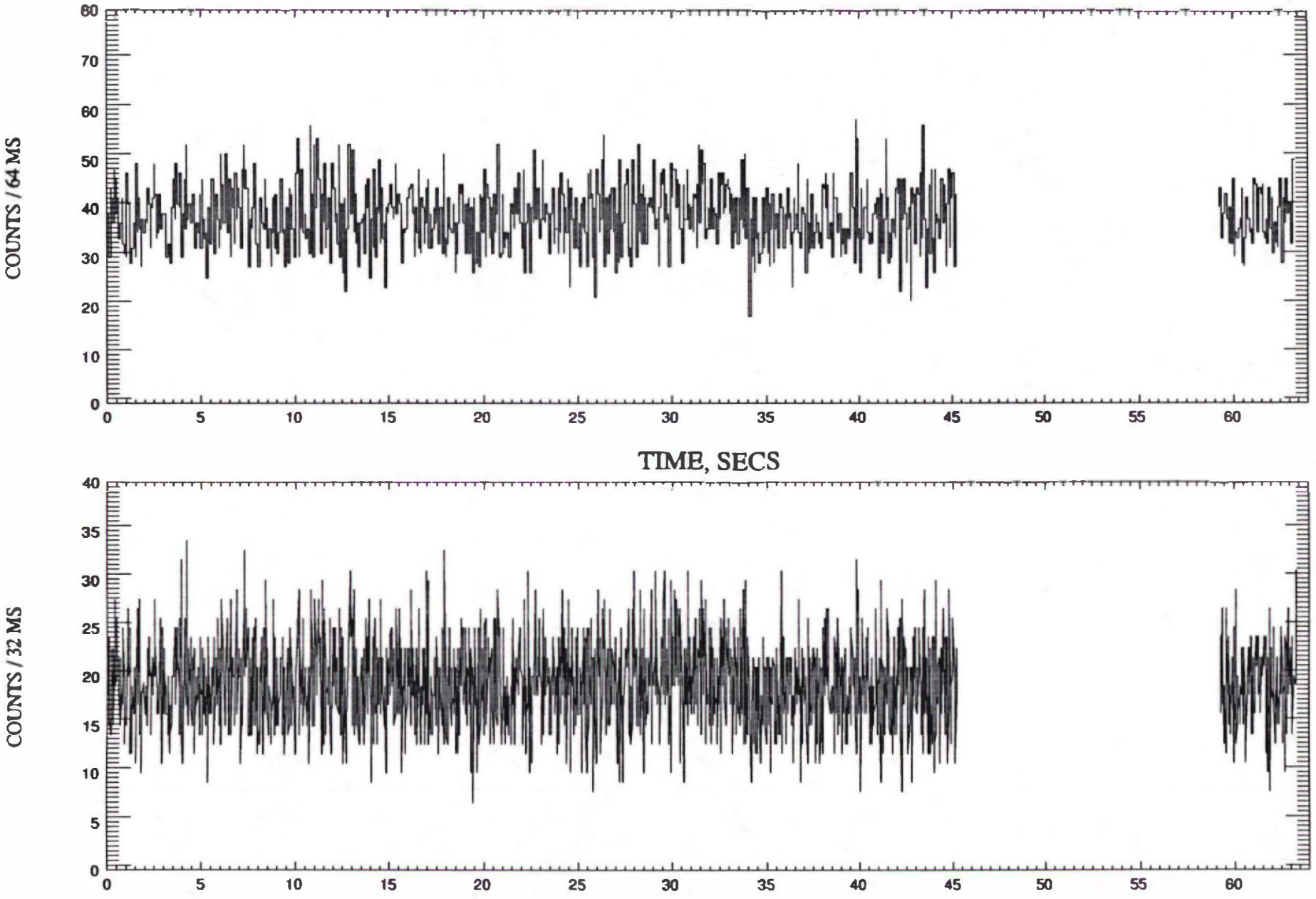




R# 4

HUS 2A TRIGGERED DATA EDR day 180, year 1992 7/10/92

Burst Counter 6 at UT= 3.137294493781 h=11294.260 s



B# 5

****
CATSEARCH PROGRAM
****

BATSE BURST # 1680
EVENT OF 1992 JUN 29 DAY OF YEAR=181
EVENT CROSSING TIME AT BATSE : 32814. S. OR 09:06:54.1
COORDINATES ARE .000 .000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 251.900 -31.000
BATSE PEAK COUNTING RATE: 0000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 29/ 6/ 92 IS:
RA= 150.065 DEC= 6.467 DIST= 5.888 AU
BATSE-ULYSSES DISTANCE = 880871728. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 683.71 SECS.
CROSSING TIME AT ULYSSES IS 33498. S. OR 09:18:17.8 +/- 556.51 SECONDS

No

From MALLOZZI@ssl.msfc.nasa.gov Wed Jul 1 09:31:17 1992
Date: Wed, 1 Jul 1992 11:31:28 -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.: 01680

TIME: TJD=8802 SECONDS=34814

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=65.3 AZIMUTH=177.8 ERROR= DEGREES

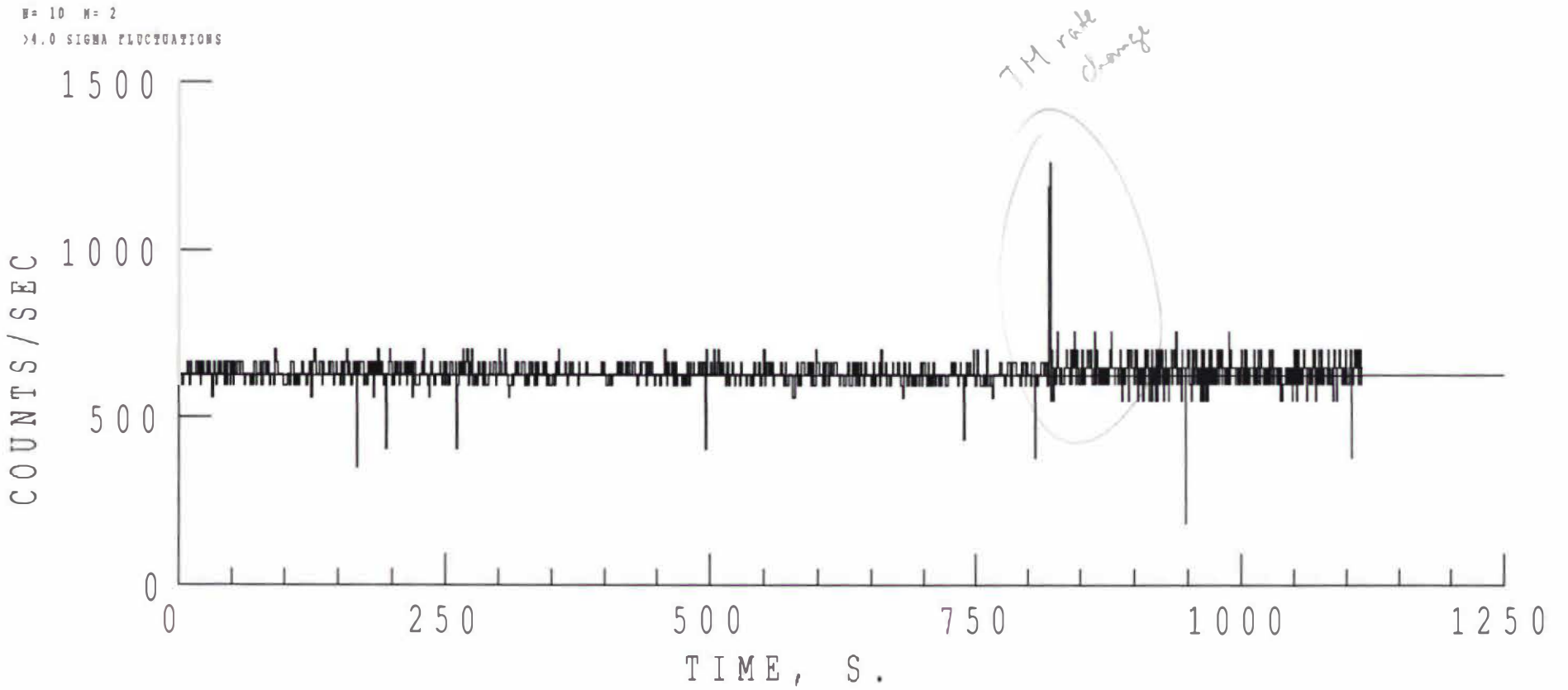
COMMENTS:
WEAK, SPIKE EVENT. DURATION ~128 MS
OBSERVED ABOVE 100 KEV.

8/ 6/94

ULYSSES RT

29/ 6/92 32940.895 s

0- 0 keV



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/0
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 June 29
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 AVALIABLE 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-maillld 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

From khurley@space6.ssl.berkeley.edu Tue Nov 23 08:45:15 1993
Date: Tue, 23 Nov 93 09:41:35
From: khurley@space6.ssl.berkeley.edu
Content-Length: 4895

Jim,

I've finally managed to get back to the DMSP localizations. I'm e-mailing you files for the following events: July 31 1992 and October 4 1992

I have not sent data for the following events:

May 19, 1992: I think that you have everything already. Let me know if that is not the case.

June 28, 1992: No Ulysses data due to the earthquake, which knocked out the tracking station.

June 29, 1992: There is no trace of this event in the Ulysses data. I would have said that it is solar, but the GOES data show no activity at this time. Also, there is a BATSE data gap around this time. This one is a mystery to me.

July 16, 1992: I'm pretty sure this one is solar; there was a strong GOES event at just this time. There is a BATSE data gap at the time, and Ulysses did not observe it.

Aug 5, 1992: Ulysses did not observe this event. Both BATSE and GOES report a strong solar flare at this time, so I think that is the explanation for this event.

Jan 6 1993: This is a nice-looking candidate in the DMSP data, but I haven't found anything corresponding to it in the Ulysses data. We had coverage at 0.5 s resolution, and I searched a window +/- 2100 seconds long around the DMPS time. No other spacecraft reported an event at this time, either.

And, on another subject, you mentioned a possible burst on Oct 24, 1991. Ulysses did not observe it, but.the WATCH experiment aboard GRANAT observed solar particles at the time of this event.

SATELLITE POSITIONAL INFORMATION AND BURST ARRIVAL TIME

NO	NAME	DIST. FROM EARTH, KM.		ALPHA, DEG.		DELTA, DEG.	
1	ULYSSES	926718236.0000+/-	23.8000000	154.29600+/-	.00003	3.69480+/-	
2	DMSP	6800.0000+/-	50.0000000	.00000+/-180.00000		.00000+/-	

JULIAN DAY NUMBER IS 33815.22 DAYS SINCE 1900 JAN 0.5

20.00 BY 15.00 CM MAP FOR RA= .00 TO 360.00, DEC= -70.00 TO 70.00

INTERSATELLITE CORRELATIONS

SEPARATION BETWEEN SATELLITES 1 AND 2 IS 3091.21926 LIGHT SECONDS. TIME DELAY IS
CORRELATION BETWEEN SATELLITE 1(ULYSSES) AND SATELLITE 2(DMSP

```
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: $C <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!)
```

```
         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,CMPLX,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,ULYSS
           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 75895 SOFT BURST, PEAKS 75896.0,906.0 ANGSUN=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
```

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

From MALLOZZI@ssl.msfc.nasa.gov Tue Jun 30 13:24:10 1992
Date: Tue, 30 Jun 1992 15:12:18 -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.: 01681 June 29

TIME: TJD=8802 SECOND$=64365

TYPE: PARTICLES SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

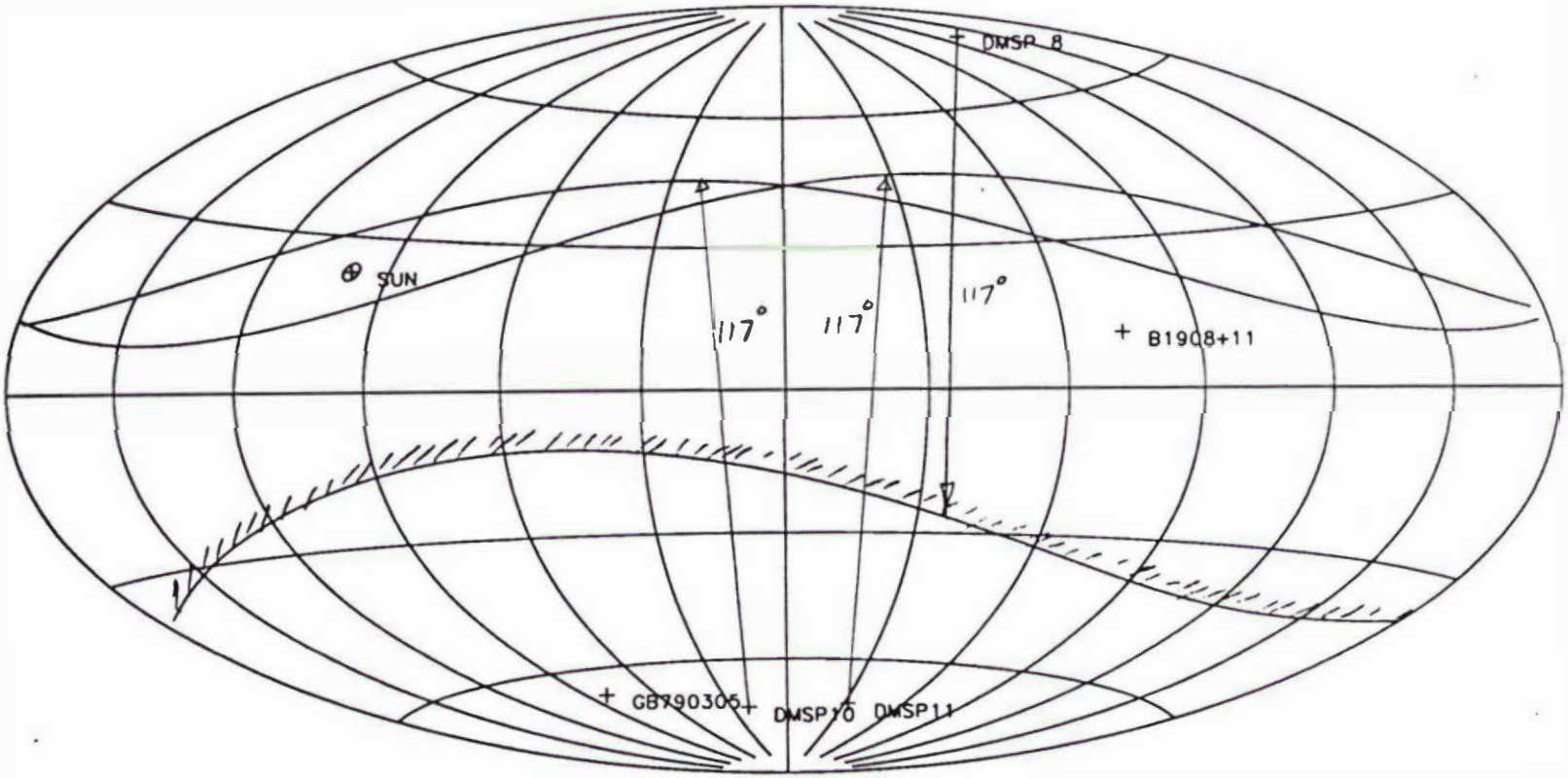
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT...

DMSP POSITIONS+VIEW, 92/06/29 75896 UT (92181) GHAA=234.43 921008:TAPE1.920629

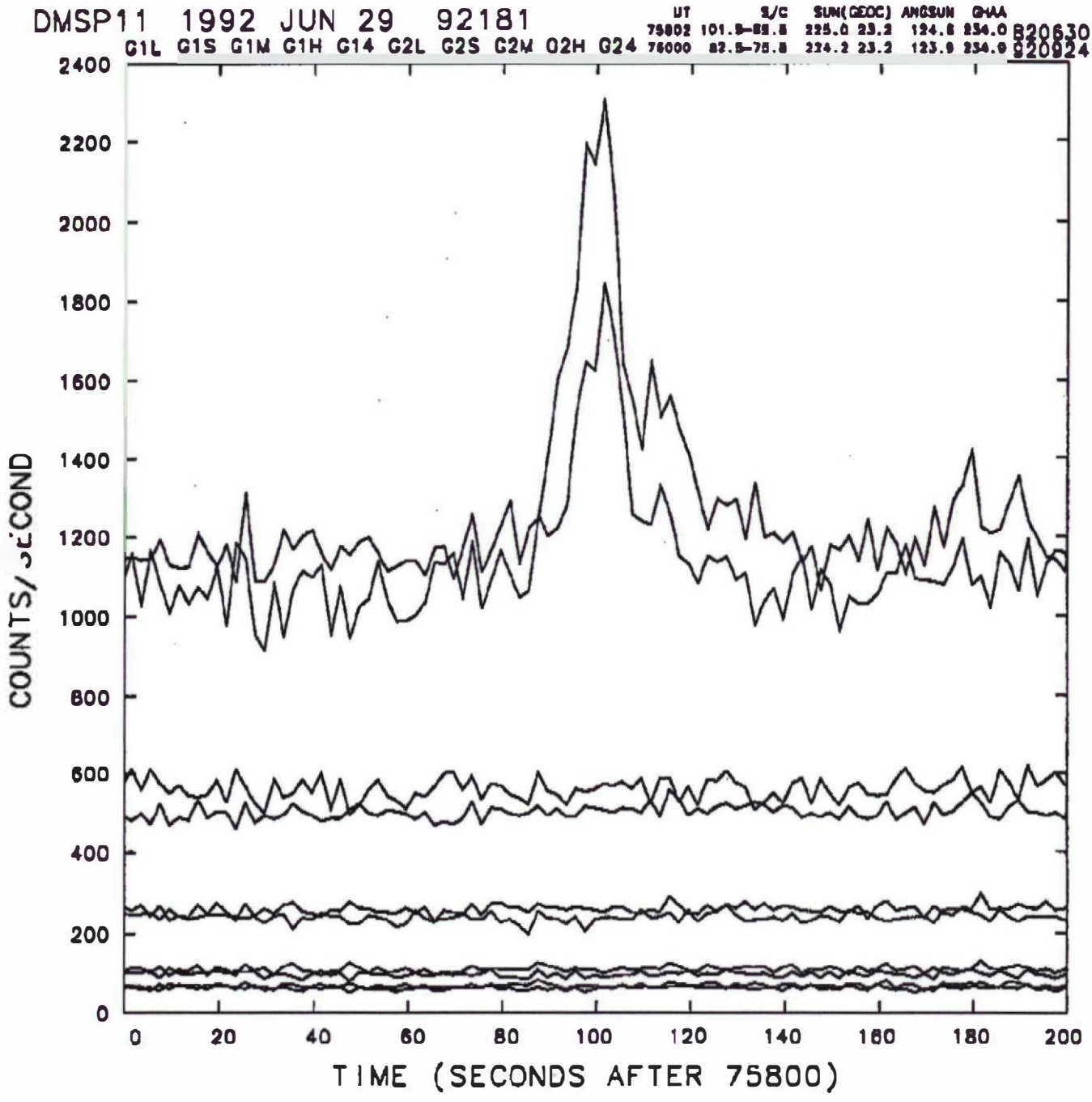
DMSP8	229.4	75.		NO DETECTION (ANGSUN=76.9)
DMSP10	22.0 202	-71.4 +71.4	*	350C/S (ANGSUN=107.9)
DMSP11	329.1 149.1	-70.8 +70.8	*	1200C/S (ANGSUN=124.5) (BATSE OFF)
B1908+11	287.	11.		SOFT REPEATER GRS
GB790305	81.52	-66.08		1992 POSITION (1950.0: 81.50,-66.12)
SUN	99.05	23.18	600.	

* No earth blocking

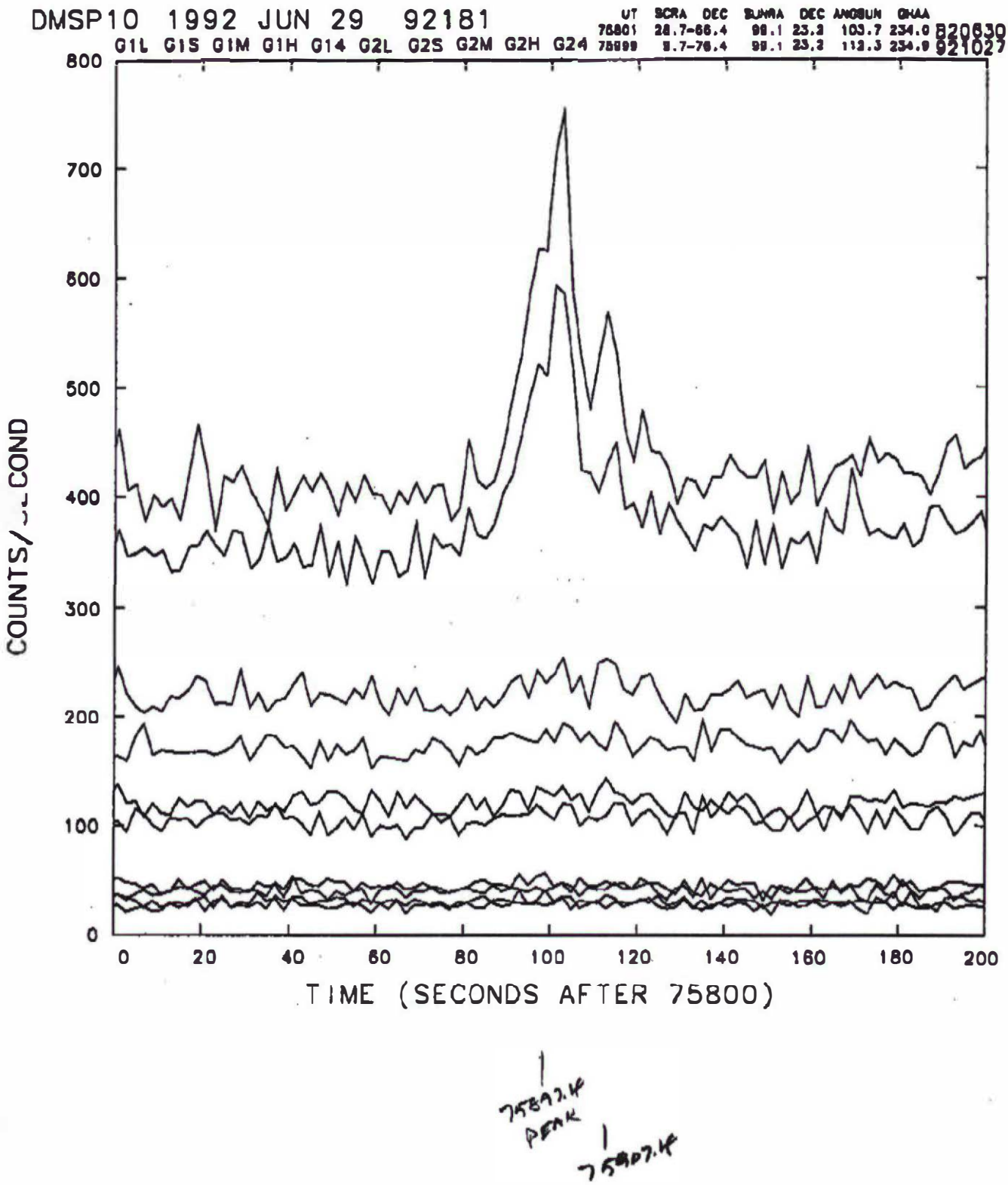


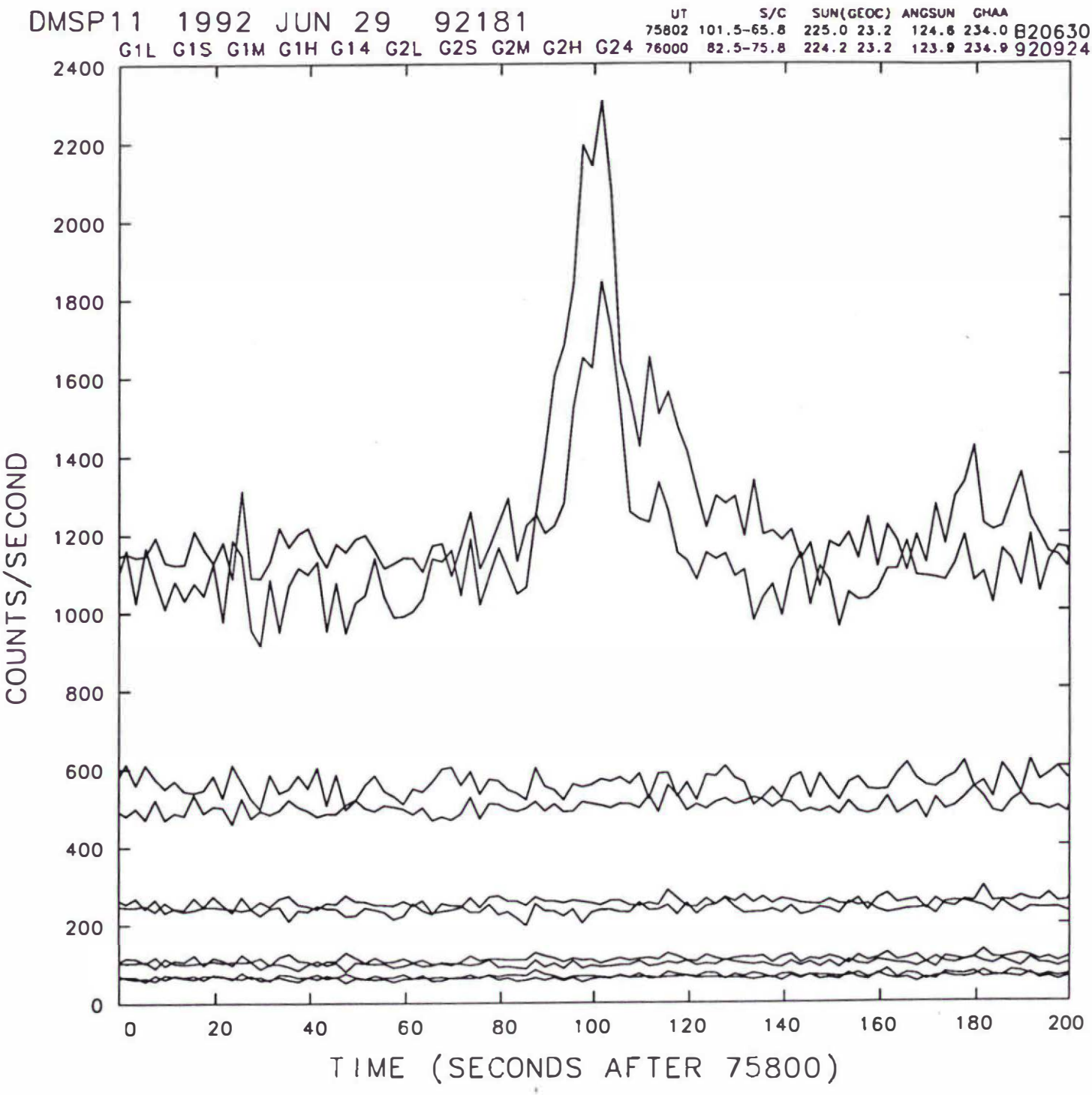
DMSP POSITIONS+VIEW, 92/06/29, 75896 UT

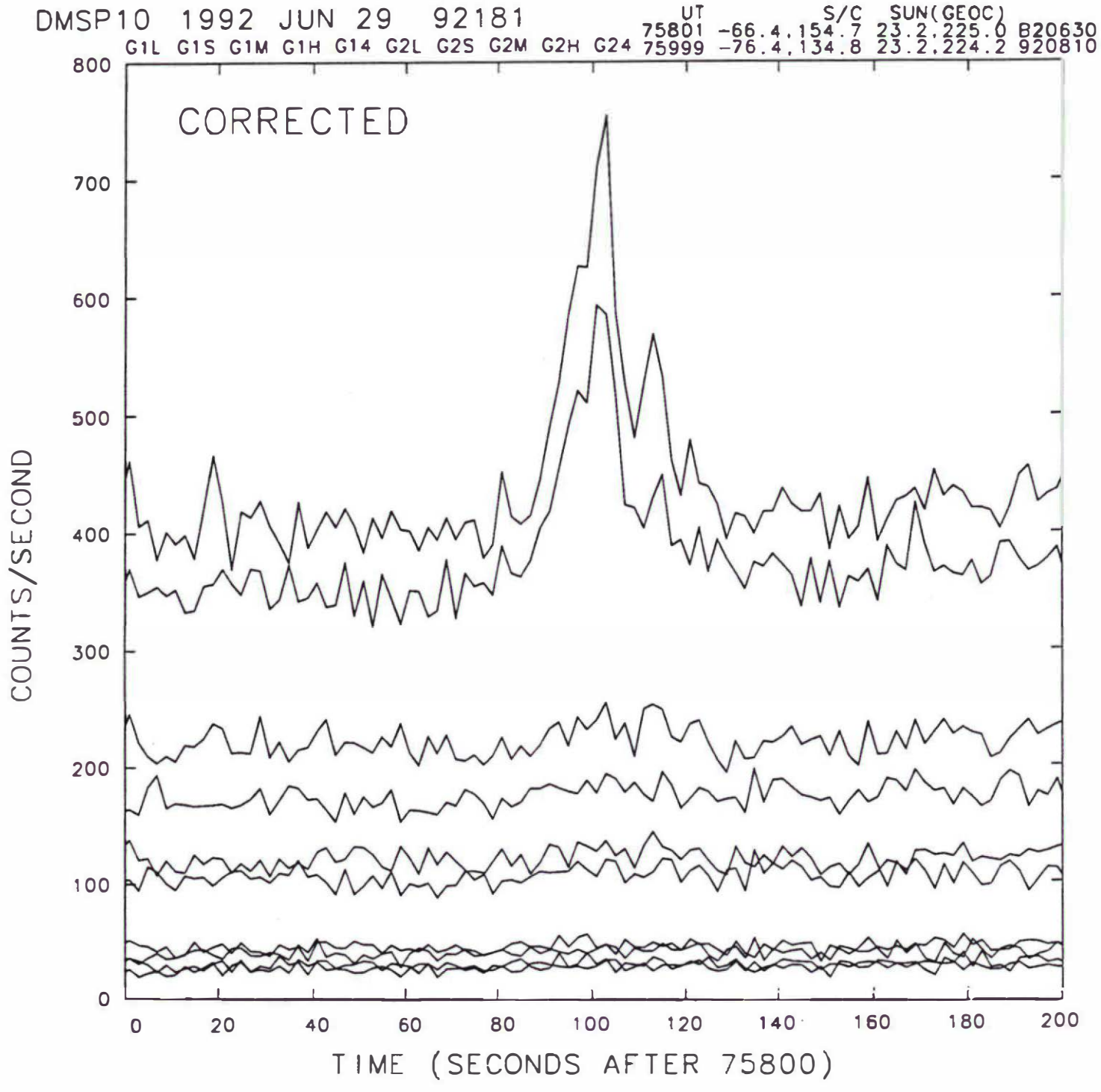
920924 EQUATORIAL COORDINATES


DMSP11 1992 JUN 29 92181
UT S/C SUN(GEOC) ANGSUN GHAA
75802 101.8–82.8 225.0 23.2 124.8 234.0 B20630
76000 82.5–75.8 224.2 23.2 123.9 234.0 B20824
G1L G1S G1M G1H G14 G2L G2S G2M O2H G24
COUNTS/SECOND
TIME (SECONDS AFTER 75800)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
0
20
40
60
80
100
120
140
160
180
200

75696.0
PEAK


DMSP10 1992 JUN 29 92181
UT SCRA DEC SUNRA DEC ANOSUN GHAA
75801 28.7-66.4 98.1 23.2 103.7 234.0 B20630
75999 8.7-76.4 98.1 23.2 113.3 234.9 921027
G1L G1S G1M G1H G14 G2L G2S G2M G2H G24
COUNTS/ CONDS
TIME (SECONDS AFTER 75800)
75892.4 PEAK
75907.4


DMSP11 1992 JUN 29 92181
G1L G1S G1M G1H G14 G2L G2S G2M G2H G24
UT S/C SUN(GEOC) ANGSUN GHAA
75802 101.5-65.8 225.0 23.2 124.8 234.0 B20630
76000 82.5-75.8 224.2 23.2 123.9 234.9 920924
COUNTS/SECOND
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0 20 40 60 80 100 120 140 160 180 200
TIME (SECONDS AFTER 75800)


DMSP10 1992 JUN 29 92181
UT S/C SUN(GEOC)
75801 -66.4,154.7 23.2,225.0 B20630
G1L G1S G1M G1H G14 G2L G2S G2M G2H G24 75999 -76.4,134.8 23.2,224.2 920810
CORRECTED
COUNTS/SECOND
TIME (SECONDS AFTER 75800)
0
100
200
300
400
500
600
700
800
0
20
40
60
80
100
120
140
160
180
200

From 046369@essdp1.dnet.nasa.gov Fri Aug 21 09:23:57 1992
Date: Fri, 21 Aug 92 12:23:50 -0400
From: 046369@essdp1.dnet.nasa.gov
To: "khurley@space6.ssl.berkeley.edu"@east.dnet.nasa.gov
Subject: 6/29/92 DMSP EVENT
Content-Length: 762

FROM: ESSDP2::TERRELL (DECNET), TERRELL@SSTDP2.LANL.GOV (INTERNET)
TO: KHURLEY@SUNSPOT.SSL.BERKELEY.EDU (OR SPACE6.SSL.BERKELEY.EDU ?)
SUBJ: 6/29/92 DMSP EVENT

THANKS FOR YOUR FAX. THE DMSP EVENT WAS SEEN BY DMSP10 AT 75897 UT
AND BY DMSP11 AT 75896 (PEAK TIMES). TIME HISTORIES LOOK IDENTICAL
AND EVENT HAD 3 PEAKS, LASTED ABOUT 30 SECONDS, AND WAS SOFT (LESS
THAN 100 KEV). DMSP11 COULD NOT HAVE SEEN THE SUN AT THAT TIME,
AT 124.5 DEGREES AWAY. DMSP10 WAS 108 DEGREES AWAY FROM SUN.
DMSP8 APPARENTLY DID NOT SEE IT, BUT DATA HAS NOT BEEN EXTRACTED
IN DETAIL.

MY FAX NUMBER IS 505-665-4414, MY PHONE NUMBER IS 505-662-2044,
AND MY ELECTRONIC MAIL ADDRESS IS GIVEN ABOVE. DO I HAVE YOUR
ADDRESS IN PROPER FORM? WHAT IS YOUR FAX NUMBER? --JIM 8/21/92

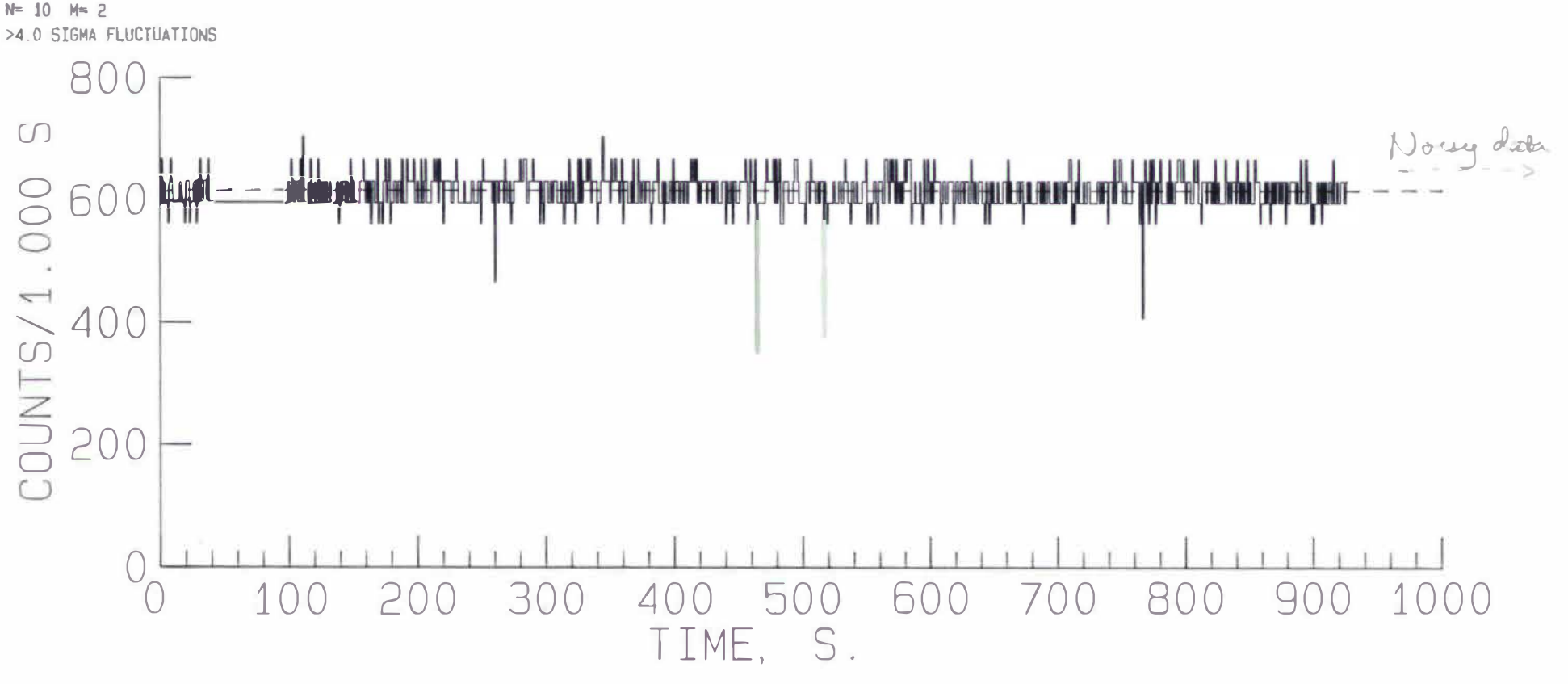
```
POSITION OF ULYSSES ON 297 6/1992 IS:
RA=  150.065 DEC=    6.467 DIST=    5.888 AU
THE DISTANCE BETWEEN TWO OBJECTS AT
150.065    6.467  880871700.00  KM. AND
   .000     .000           .00  KM. IS
 880871800.00 KM., OR   5.888 A.U., OR 2938.27 LIGHT-SECONDS
THE ANGLE BETWEEN THEM IS 149.438 DEGREES
```

19/ 8/92

ULYSSES RT

29/ 6/92 72900.039 s

0- 0 keV

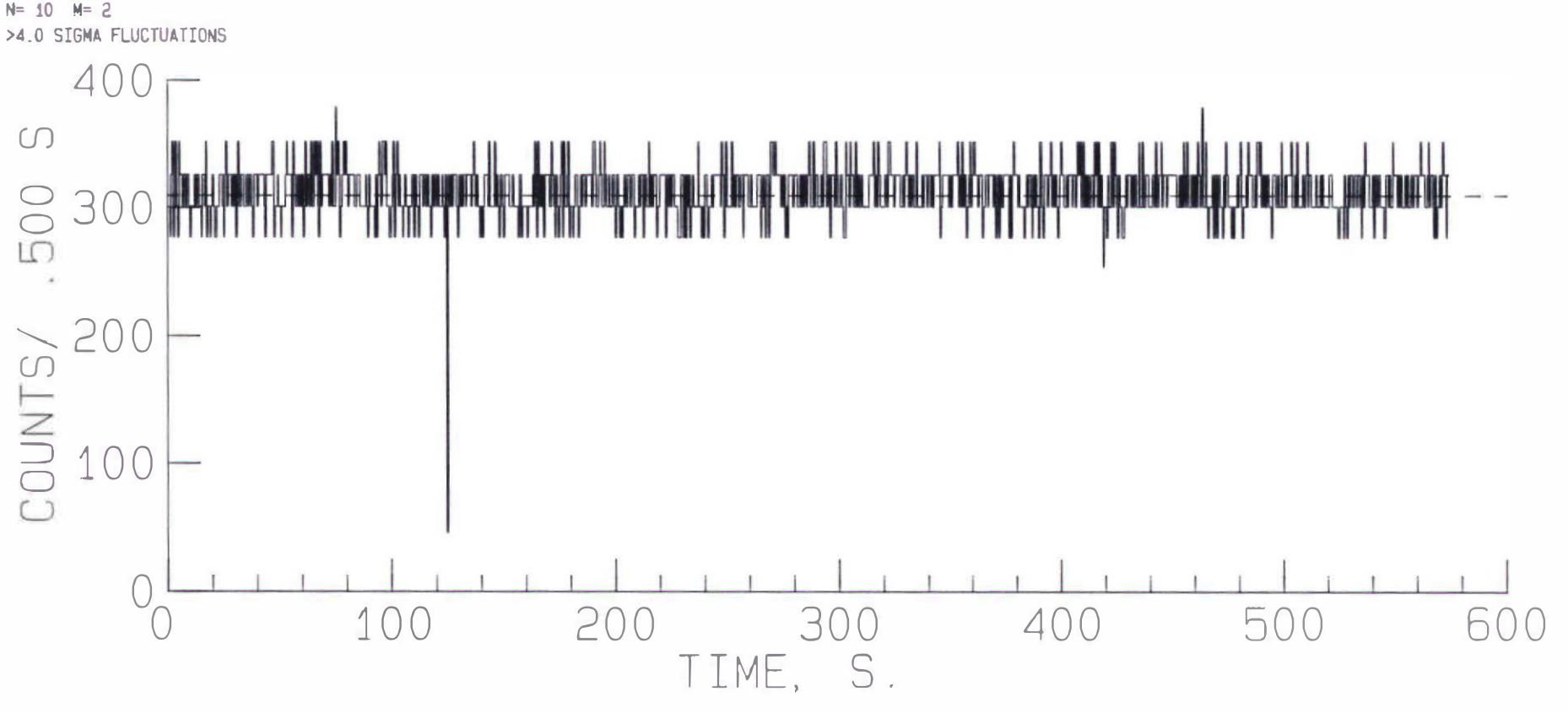


19/ 8/92

ULYSSES RT

29/ 6/92 74084.563 s

0- 0 keV



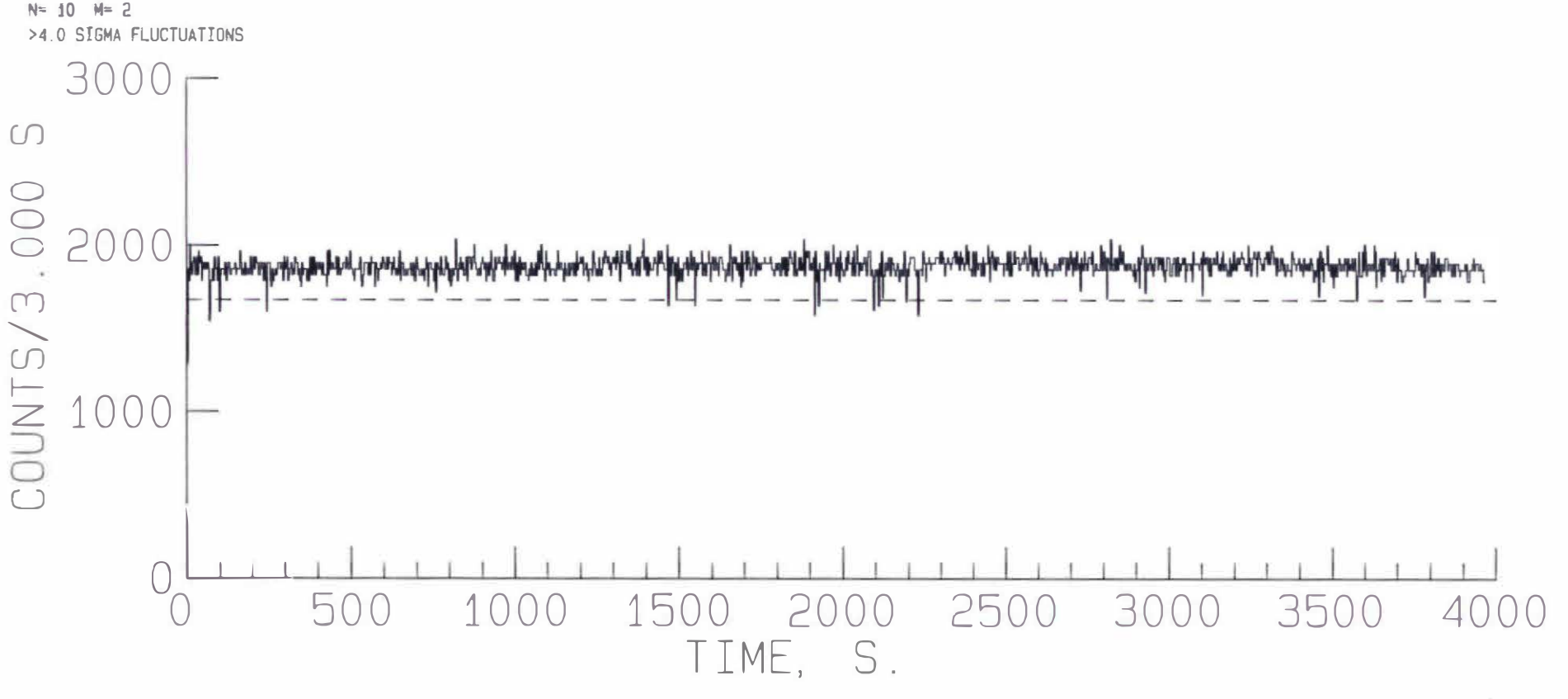
19/ 8/92

ULYSSES RT

29/ 6/92 74659.062 s

1.000 S INTERVALS REGROUPED BY 3

0- 0 keV

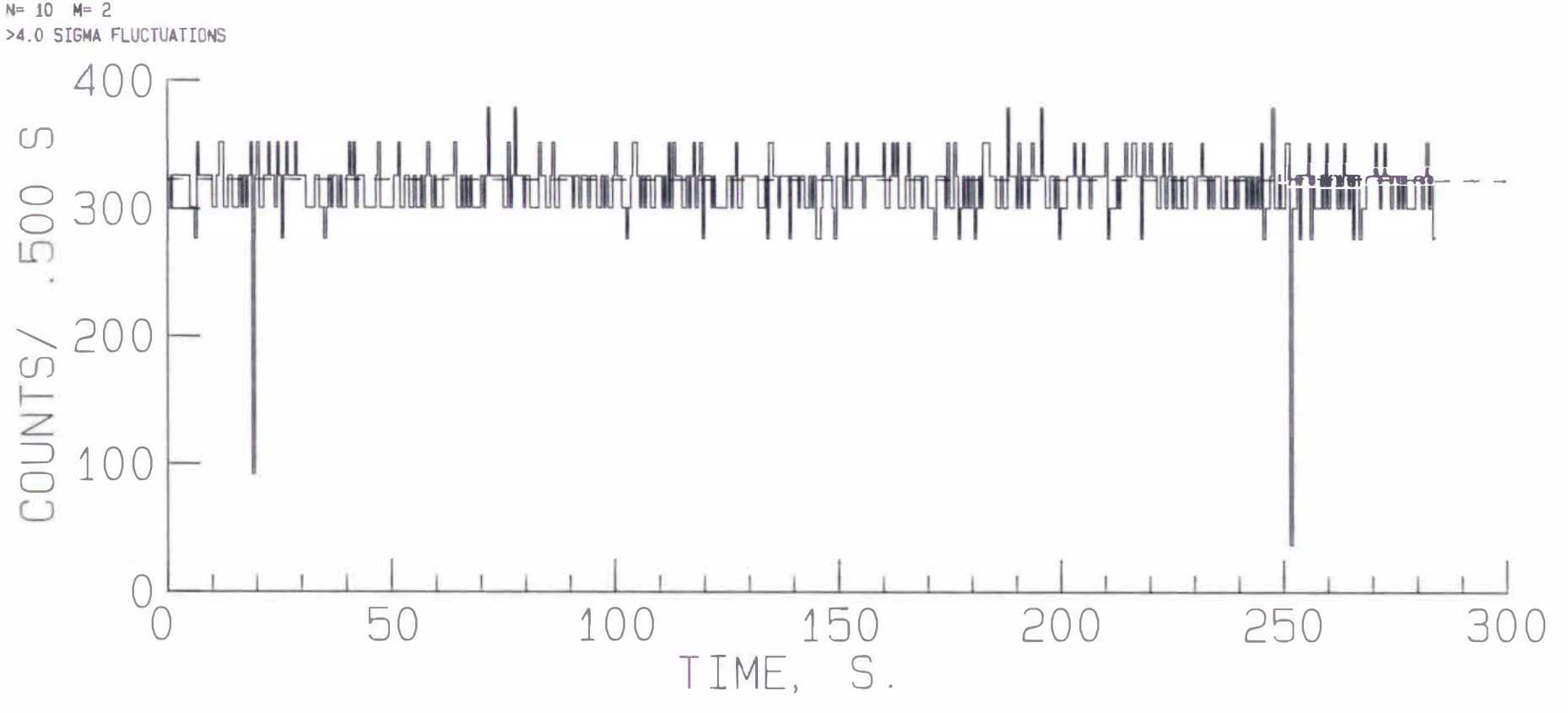


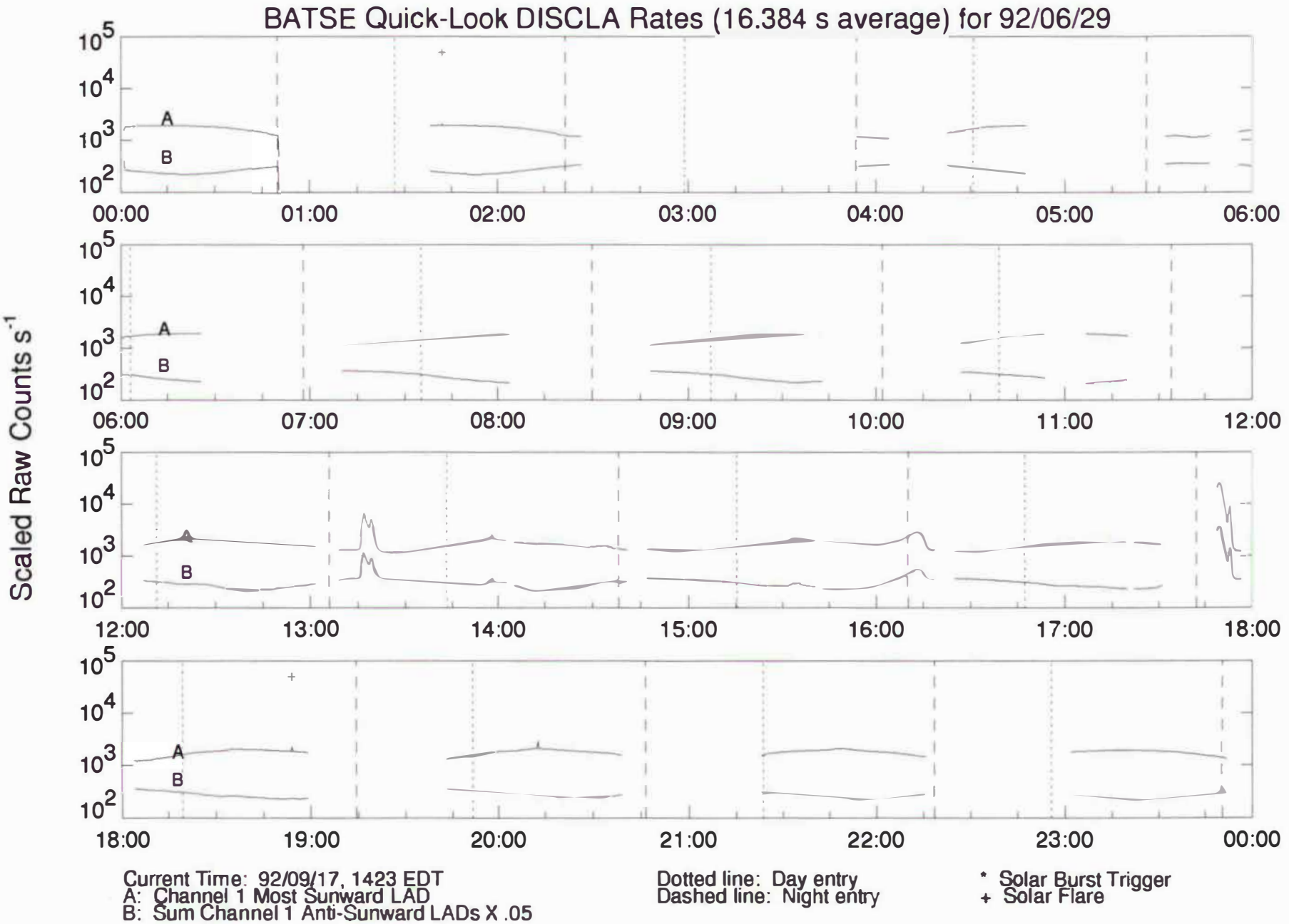
19/ 8/92

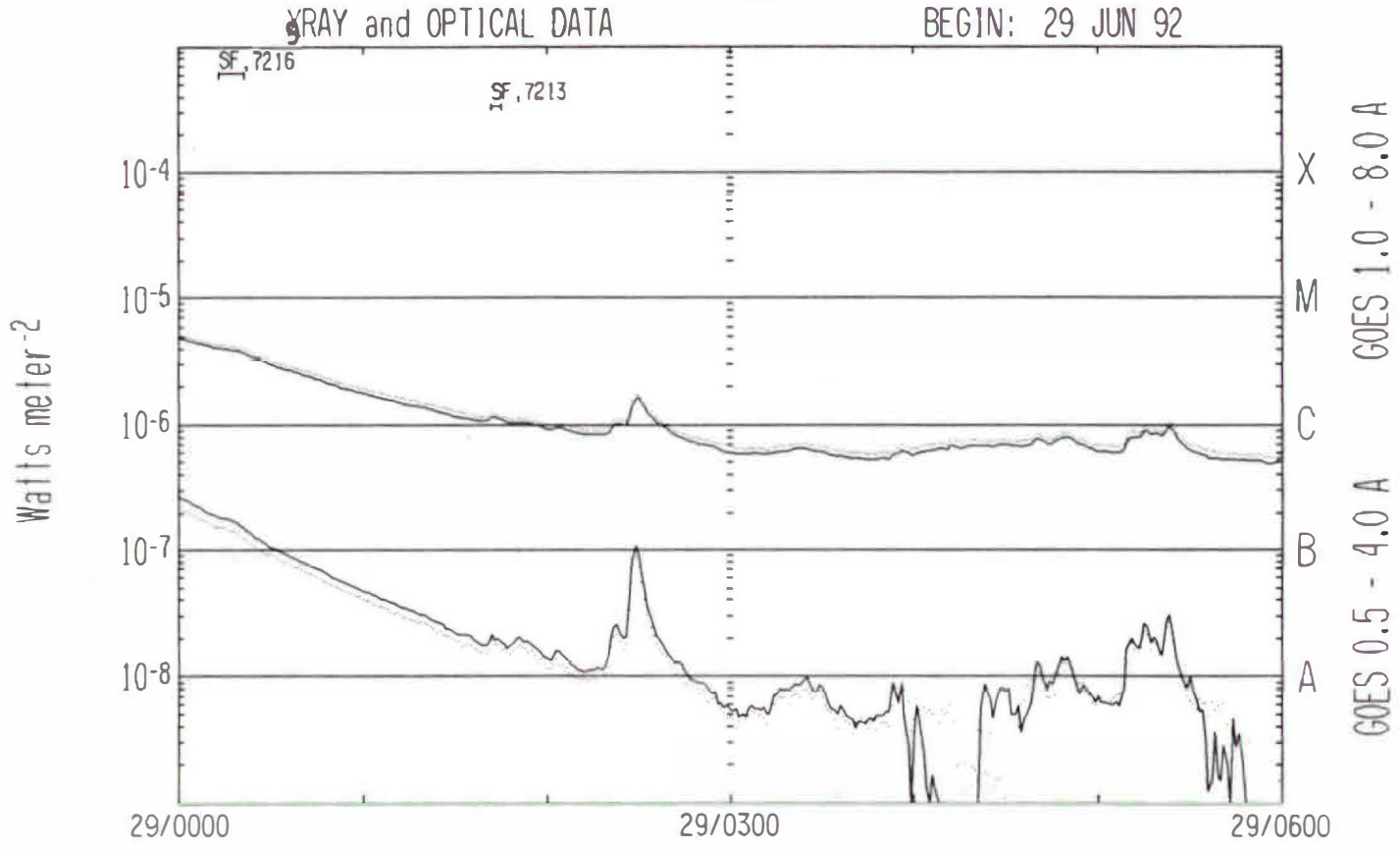
ULYSSES RT

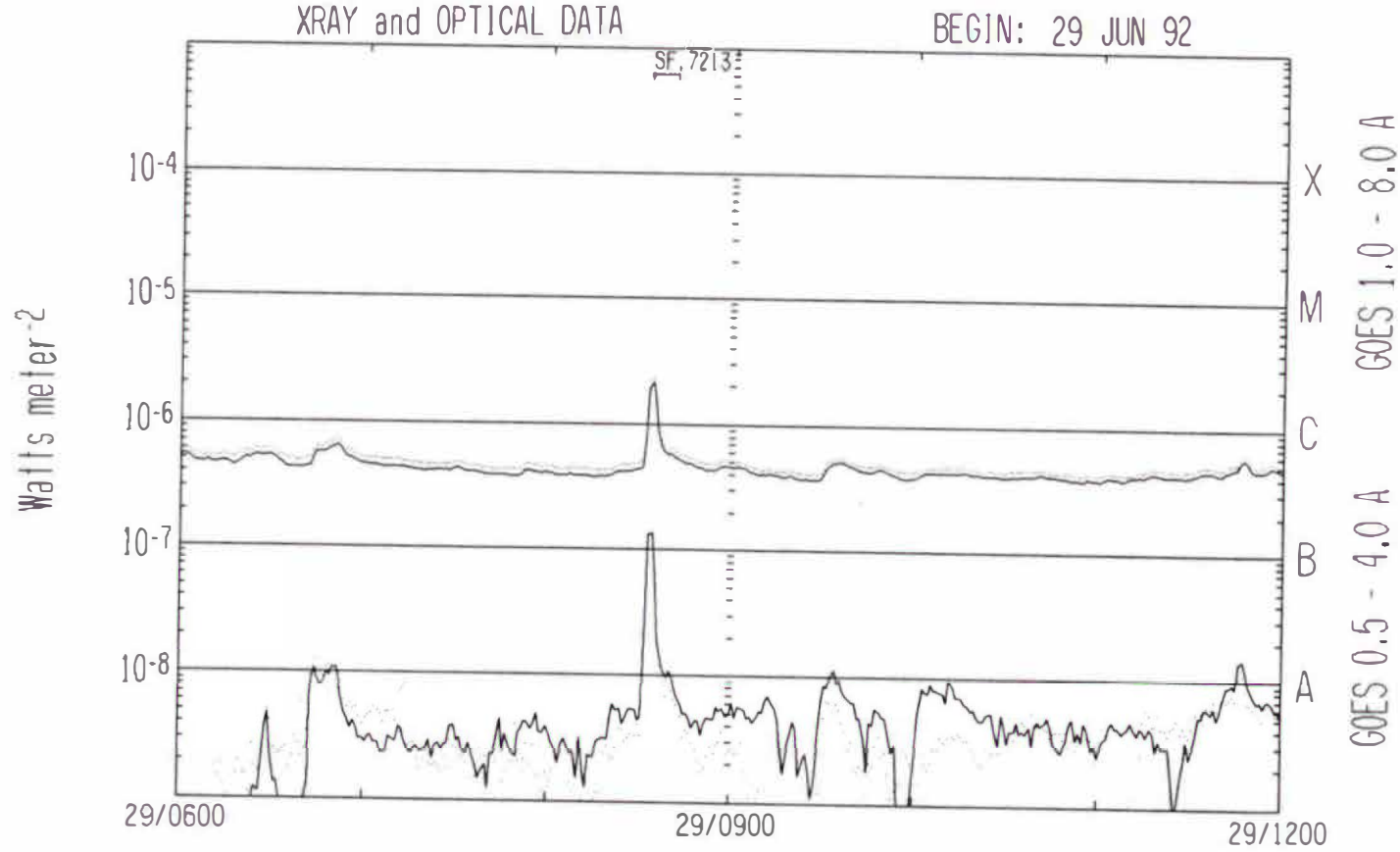
29/ 6/92 78628.133 s

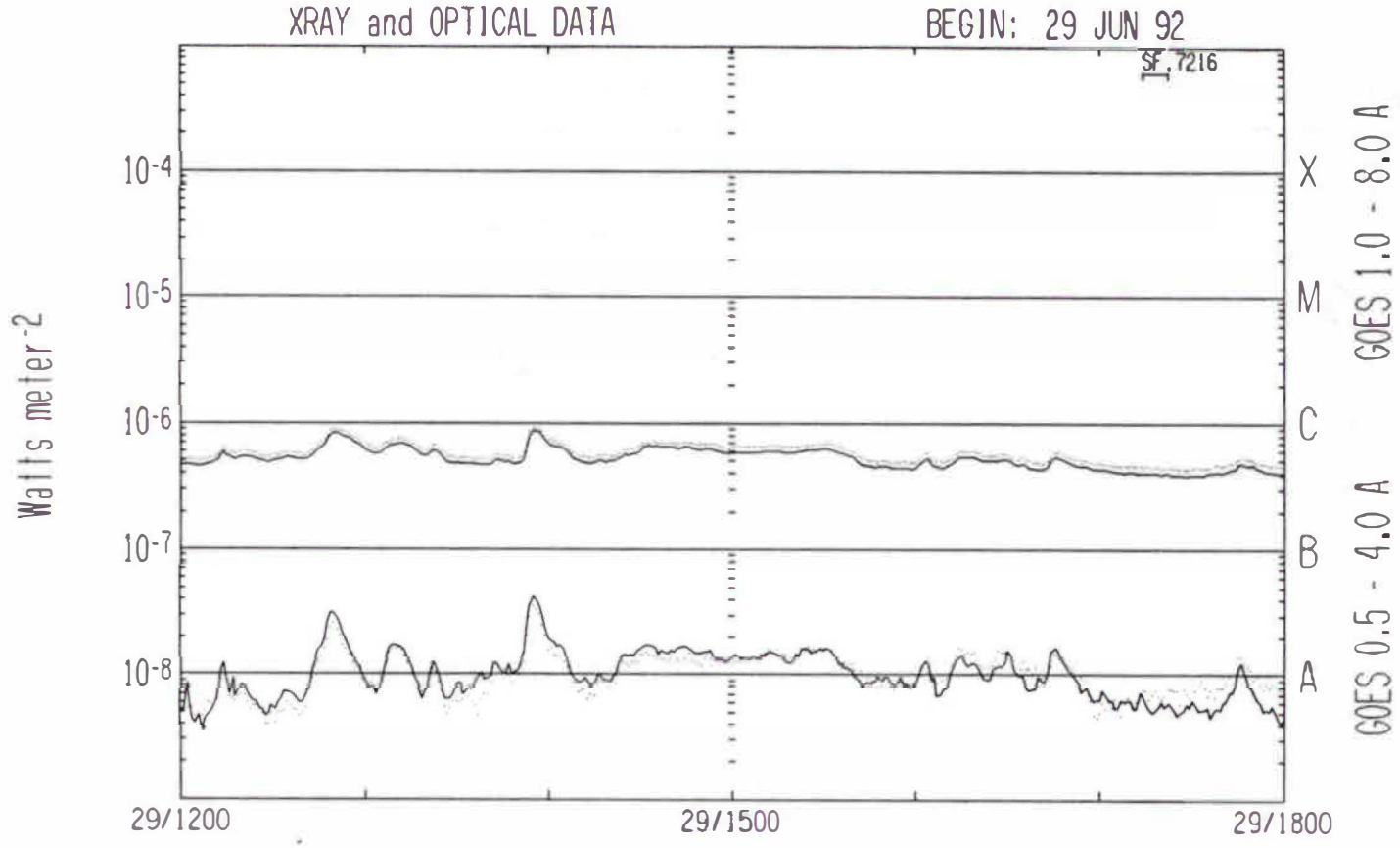
0- 0 keV

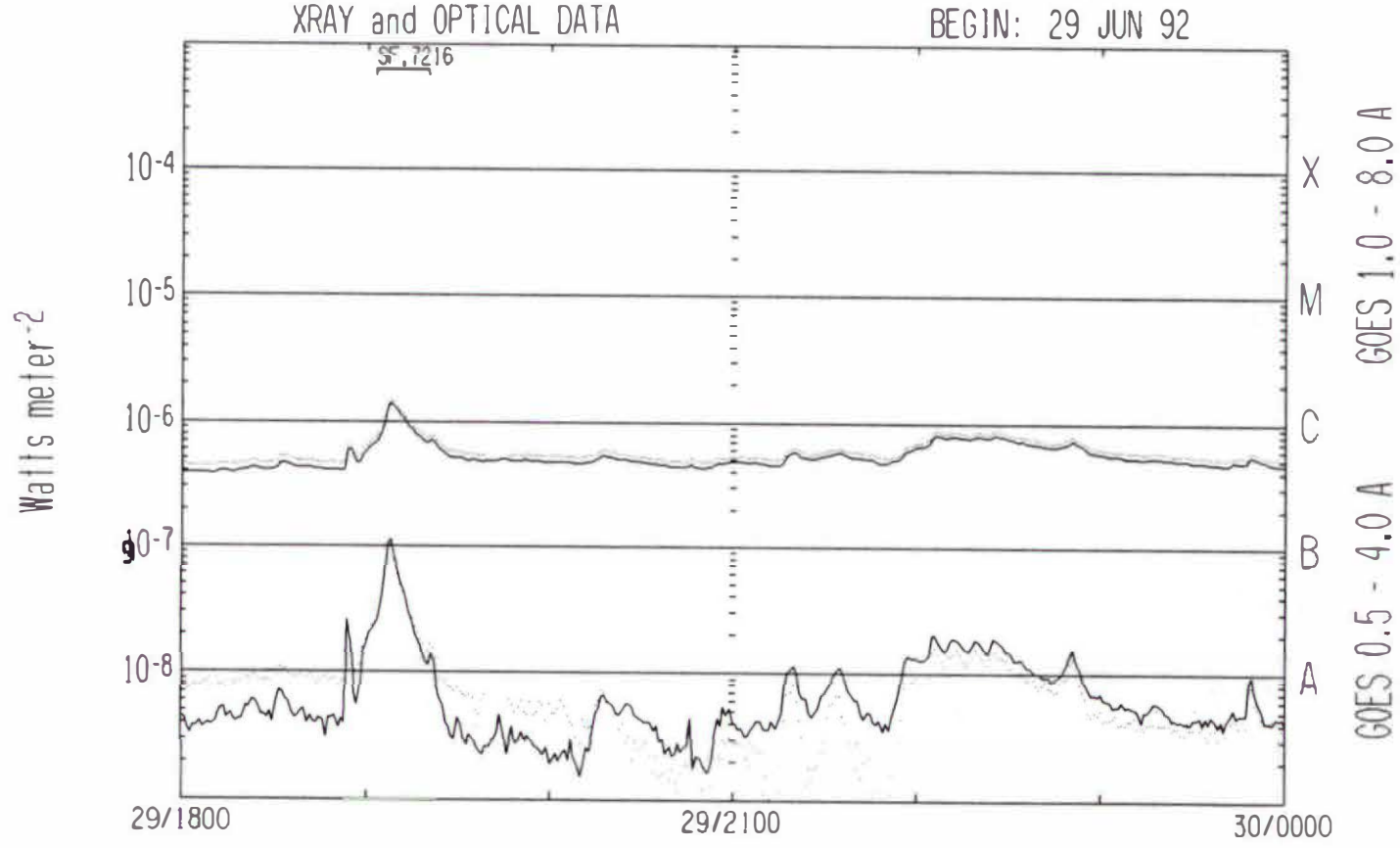



BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/29
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 92/09/17, 1423 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


XRAY and OPTICAL DATA
BEGIN: 29 JUN 92
SF, 7216
SF, 7213
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
29/0000
29/0300
29/0600

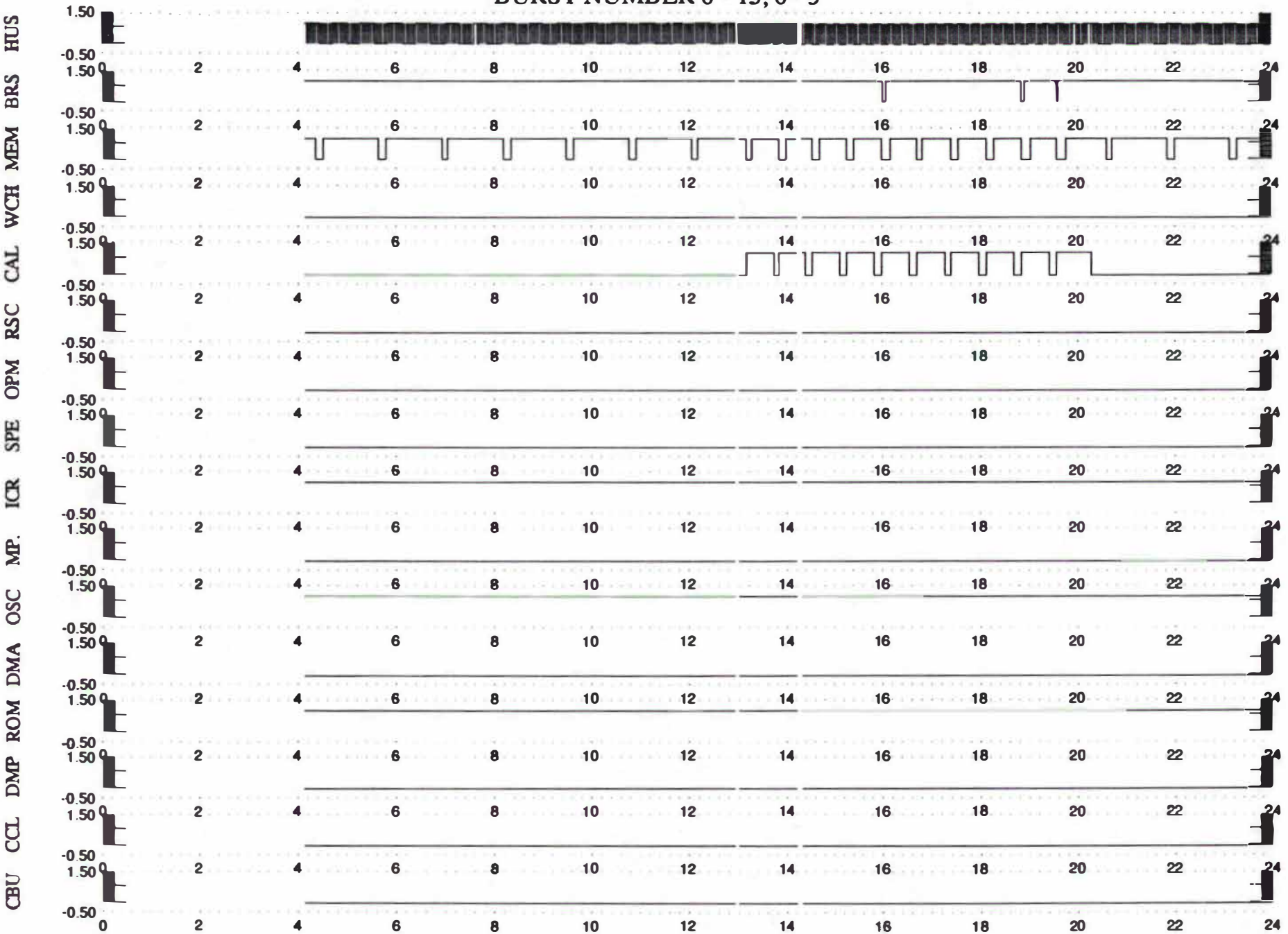

XRAY and OPTICAL DATA
BEGIN: 29 JUN 92
SF, 7213
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
29/0600
29/0900
29/1200


XRAY and OPTICAL DATA
BEGIN: 29 JUN 92
SF, 7216
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
29/1200
29/1500
29/1800


XRAY and OPTICAL DATA
BEGIN: 29 JUN 92
SF, 7216
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
29/1800
29/2100
30/0000

HUS MODES EDR day 181, year 1992 to day 181, year 1992 7/10/92

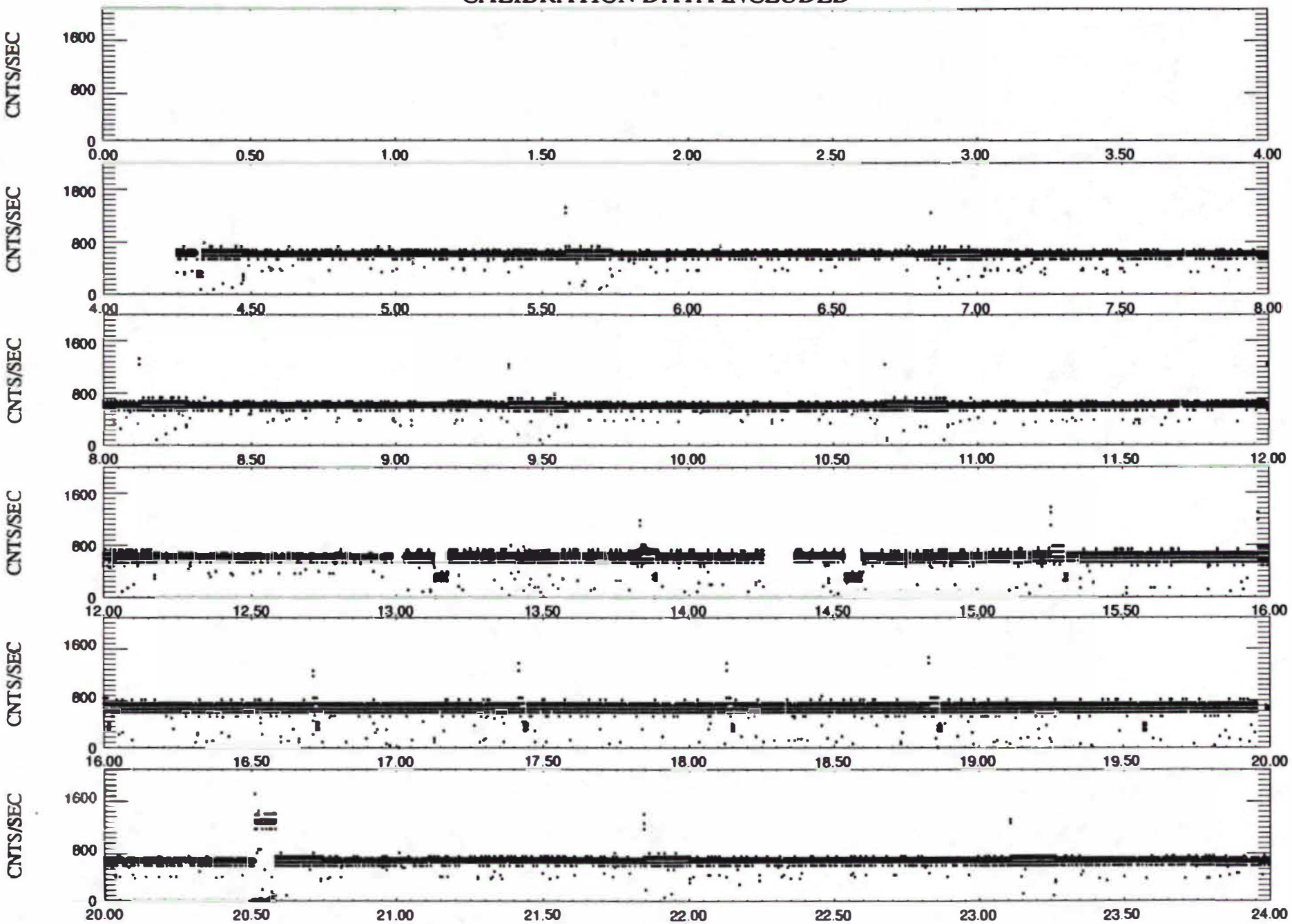
BURST NUMBER 0 - 15, 0 - 3



UNIVE .L TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 181, year 1992 to day 181, year 1992 7/10/92

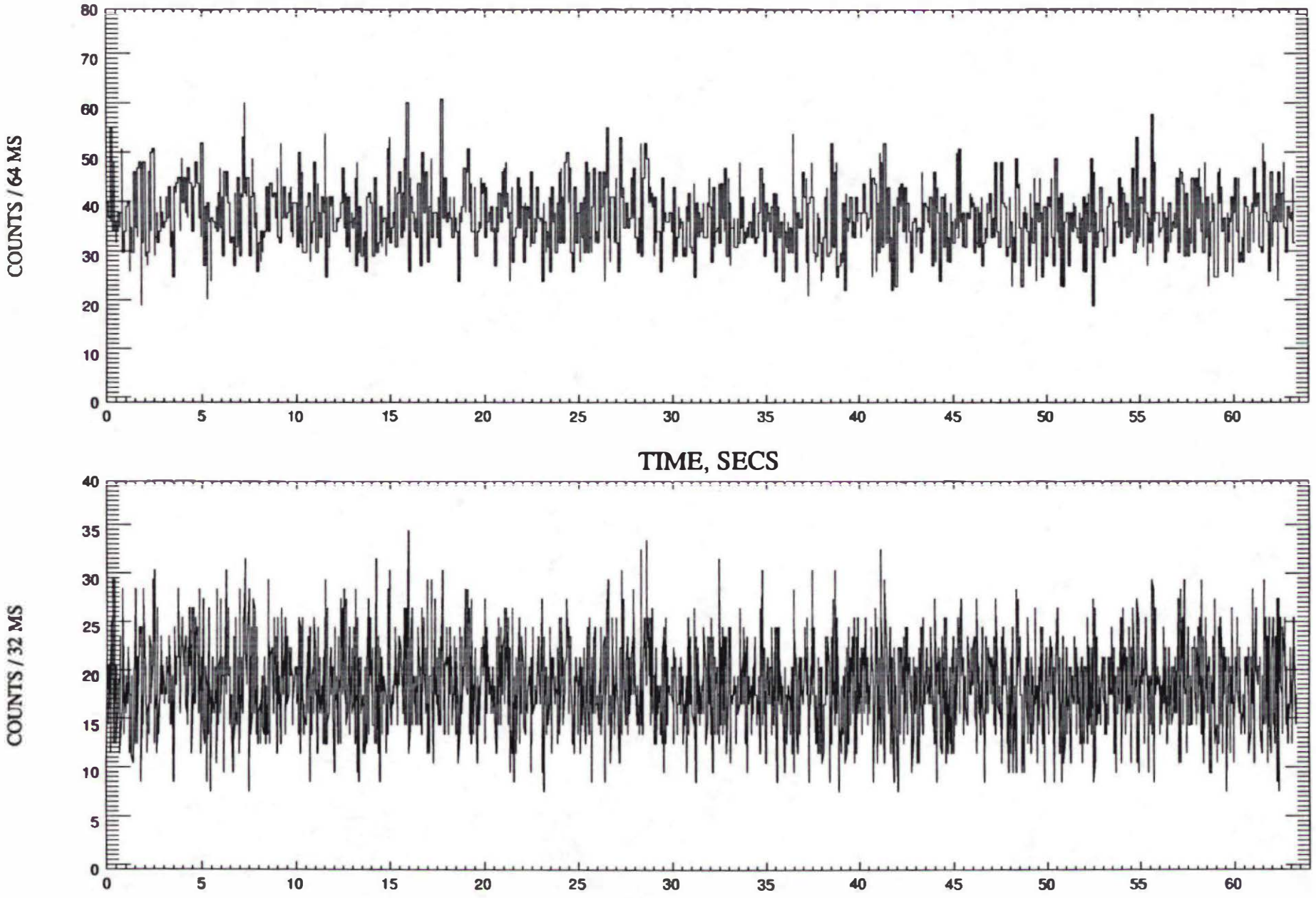
CALIBRATION DATA INCLUDED



UNIVE L TIME

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

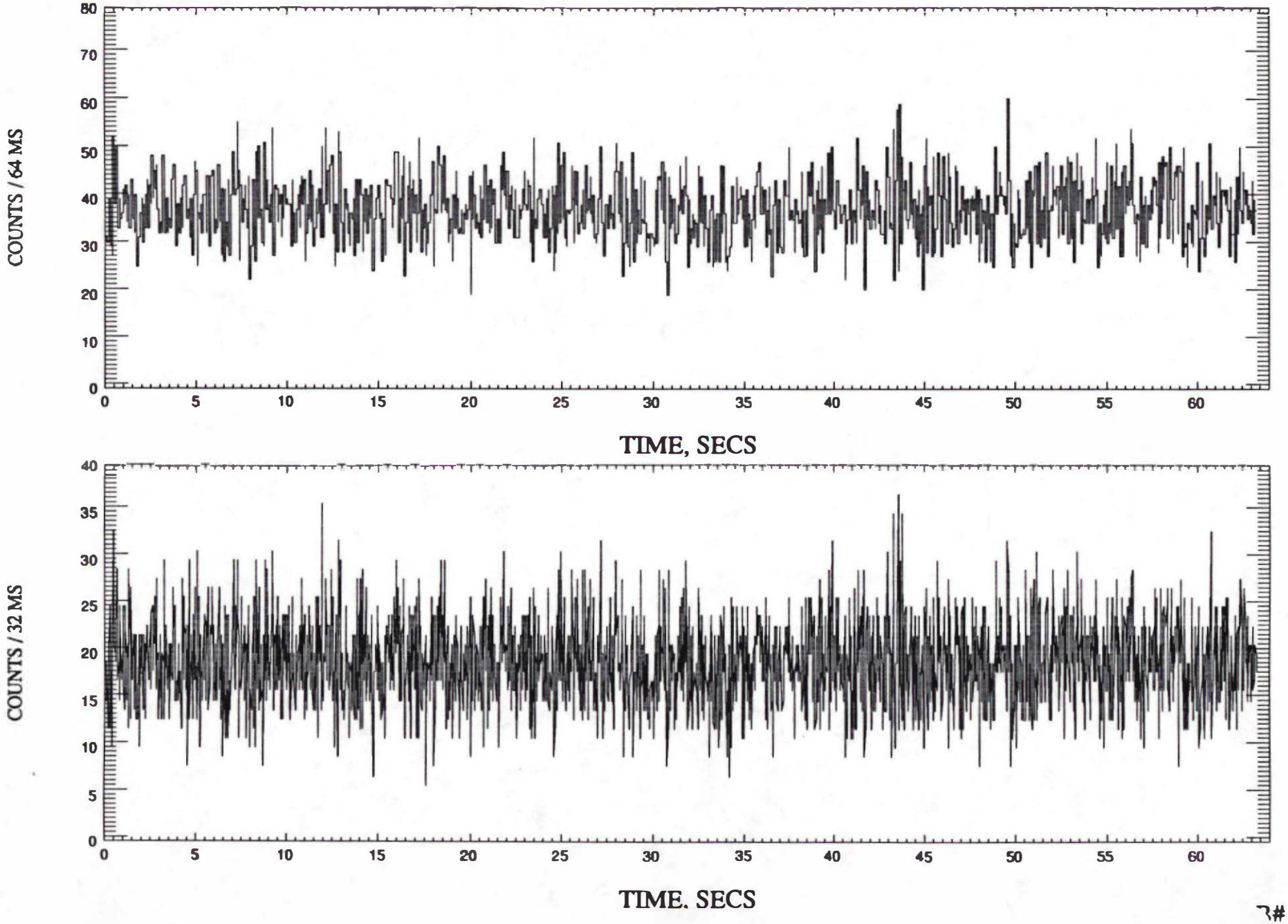
Burst Counter 1 at UT= 5.587476865980 h=20114.917 s



B# 1

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

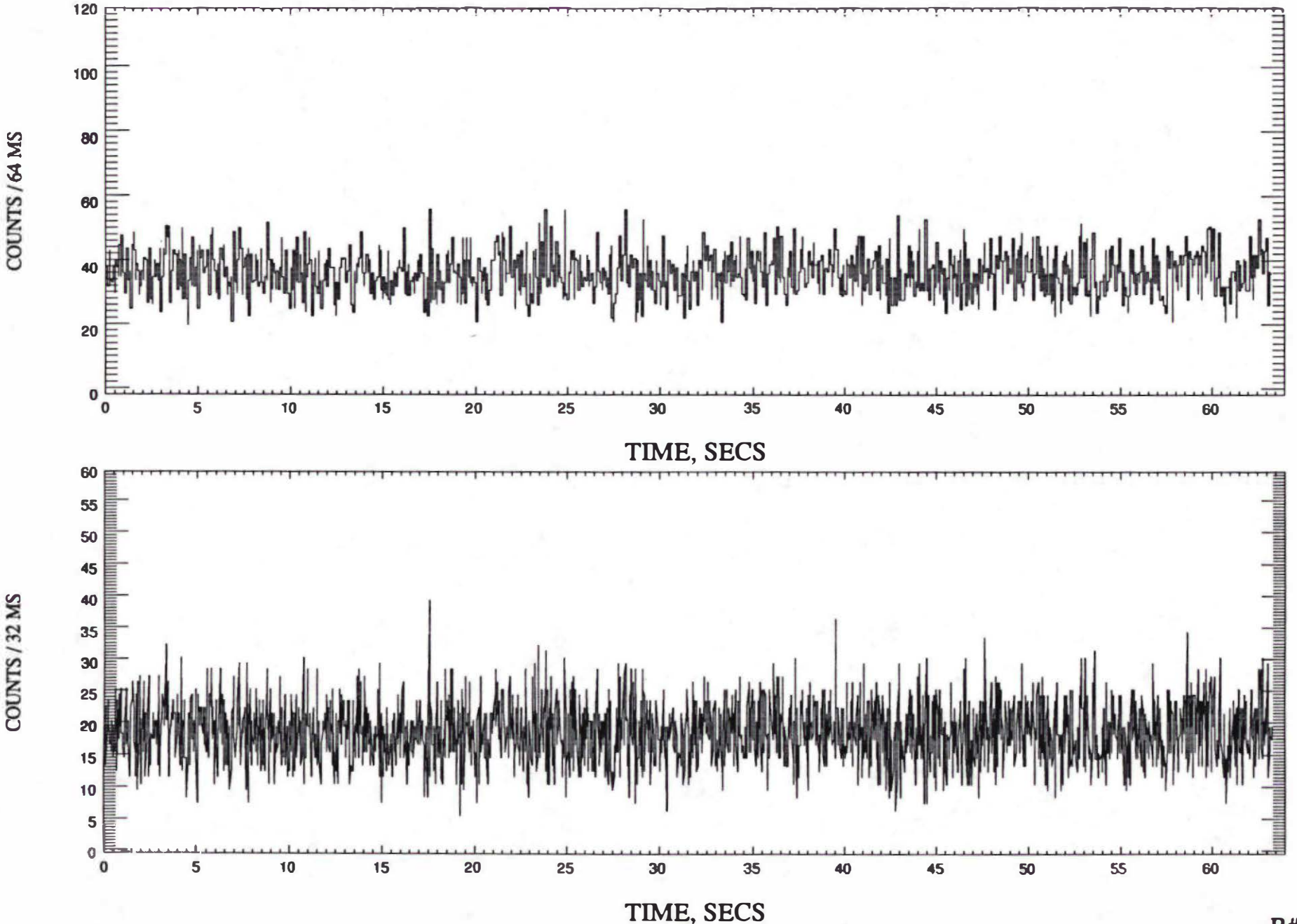
Burst Counter 2 at UT= 6.856353937785 h=24682.874 s



2

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

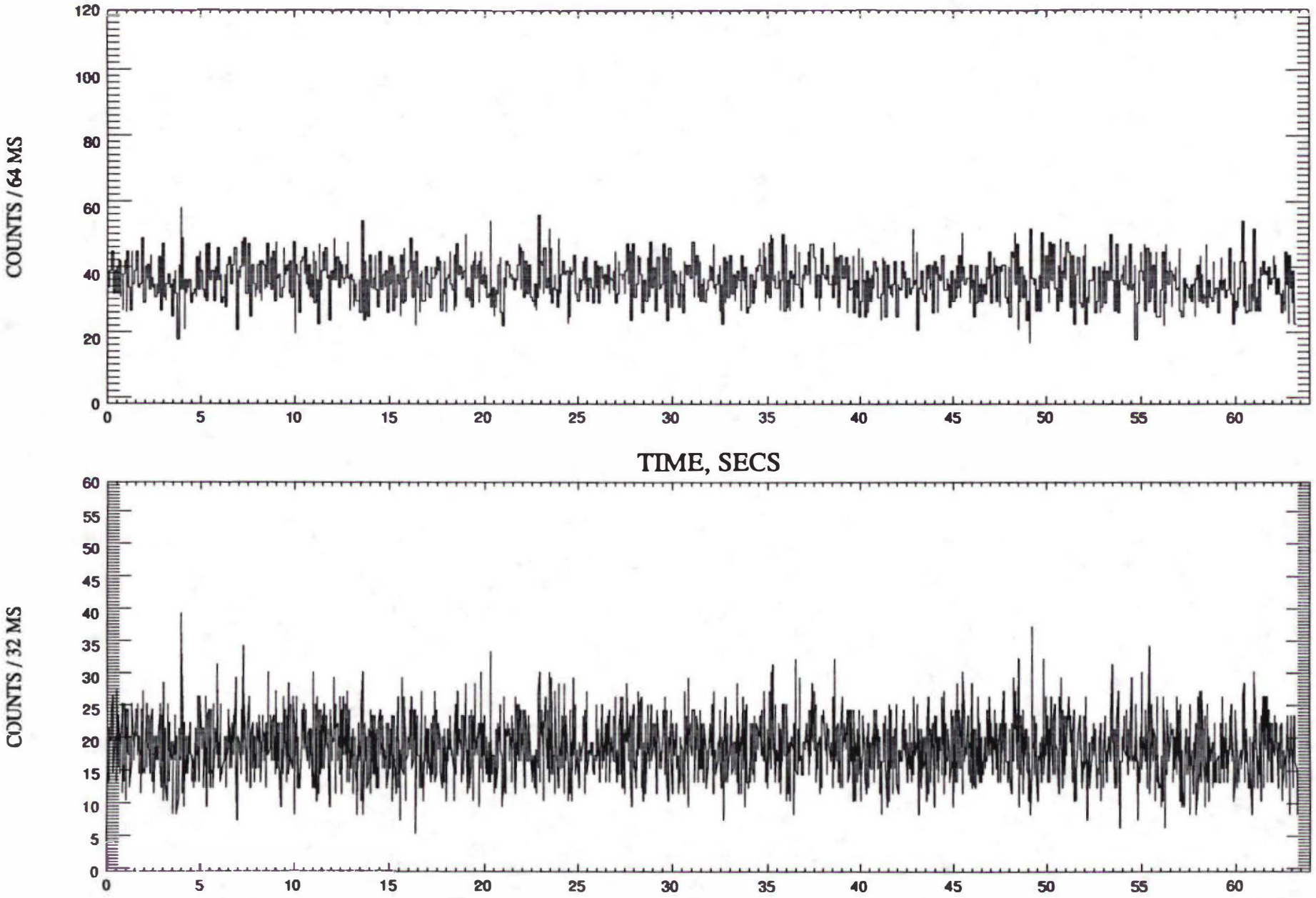
Burst Counter 3 at UT= 8.126201057434 h=29254.324 s



B# 3

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

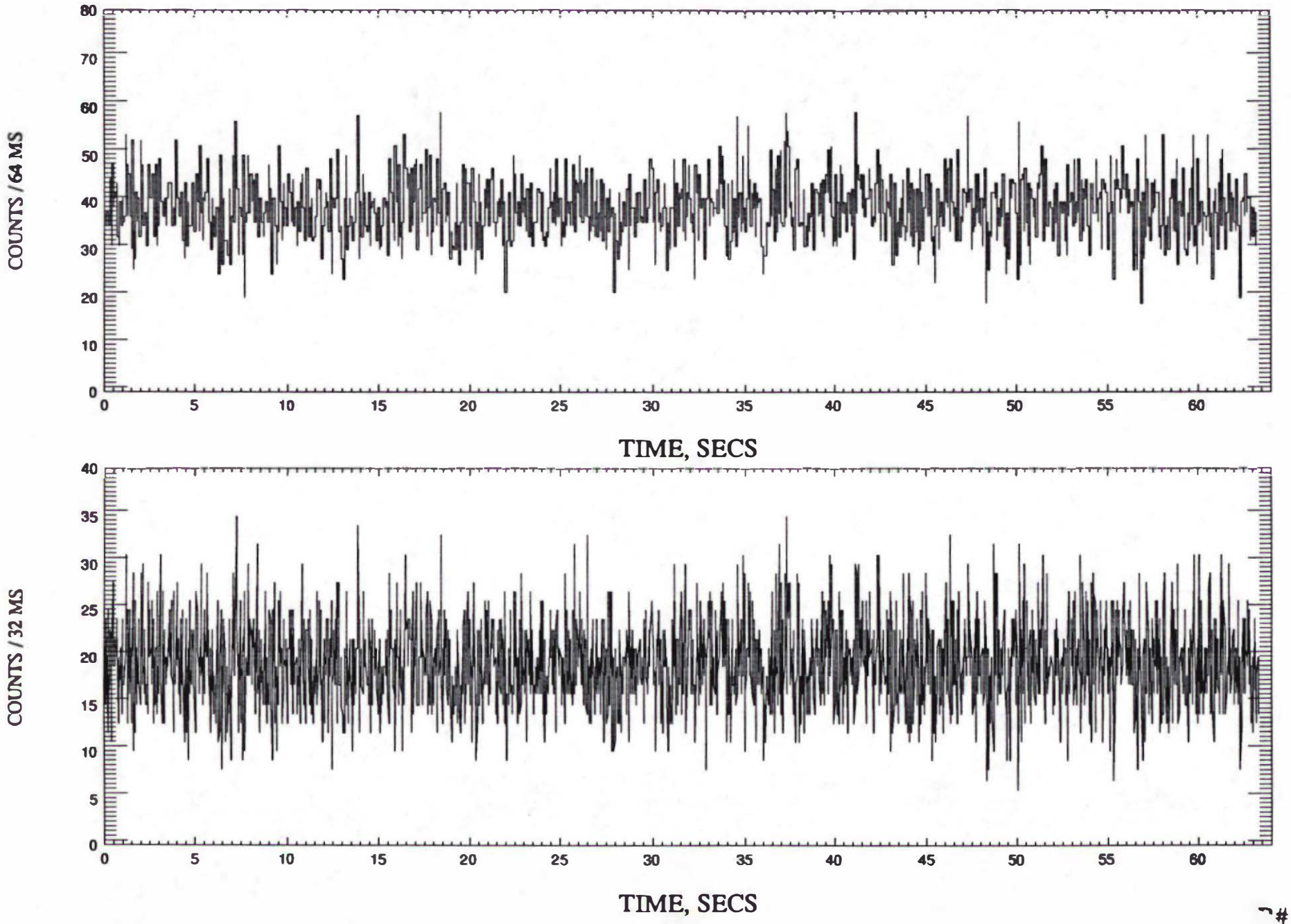
Burst Counter 4 at UT= 9.425041232639 h=33930.148 s



4

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

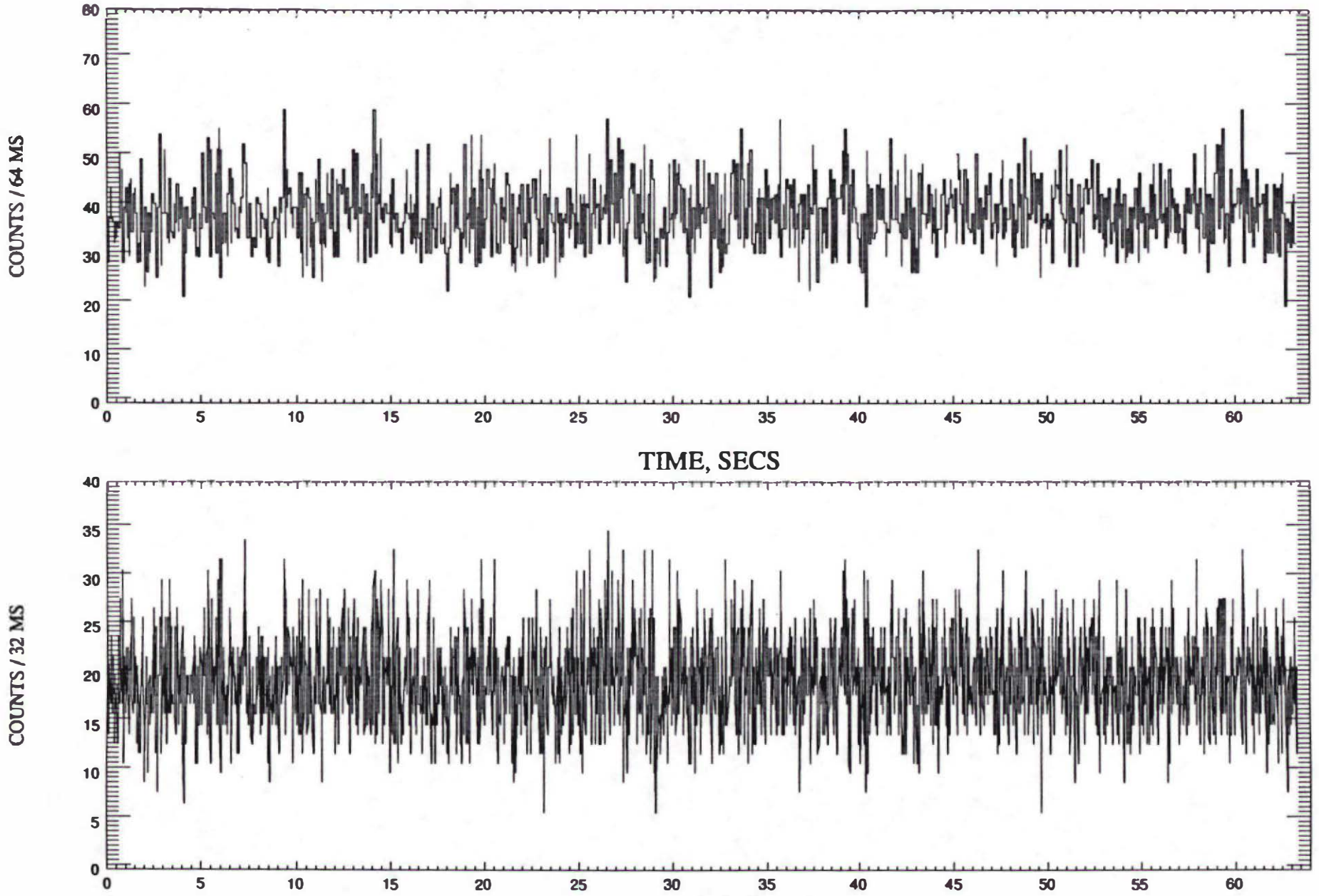
Burst Counter 5 at UT=10.738670908610 h=38659.215 s



5

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

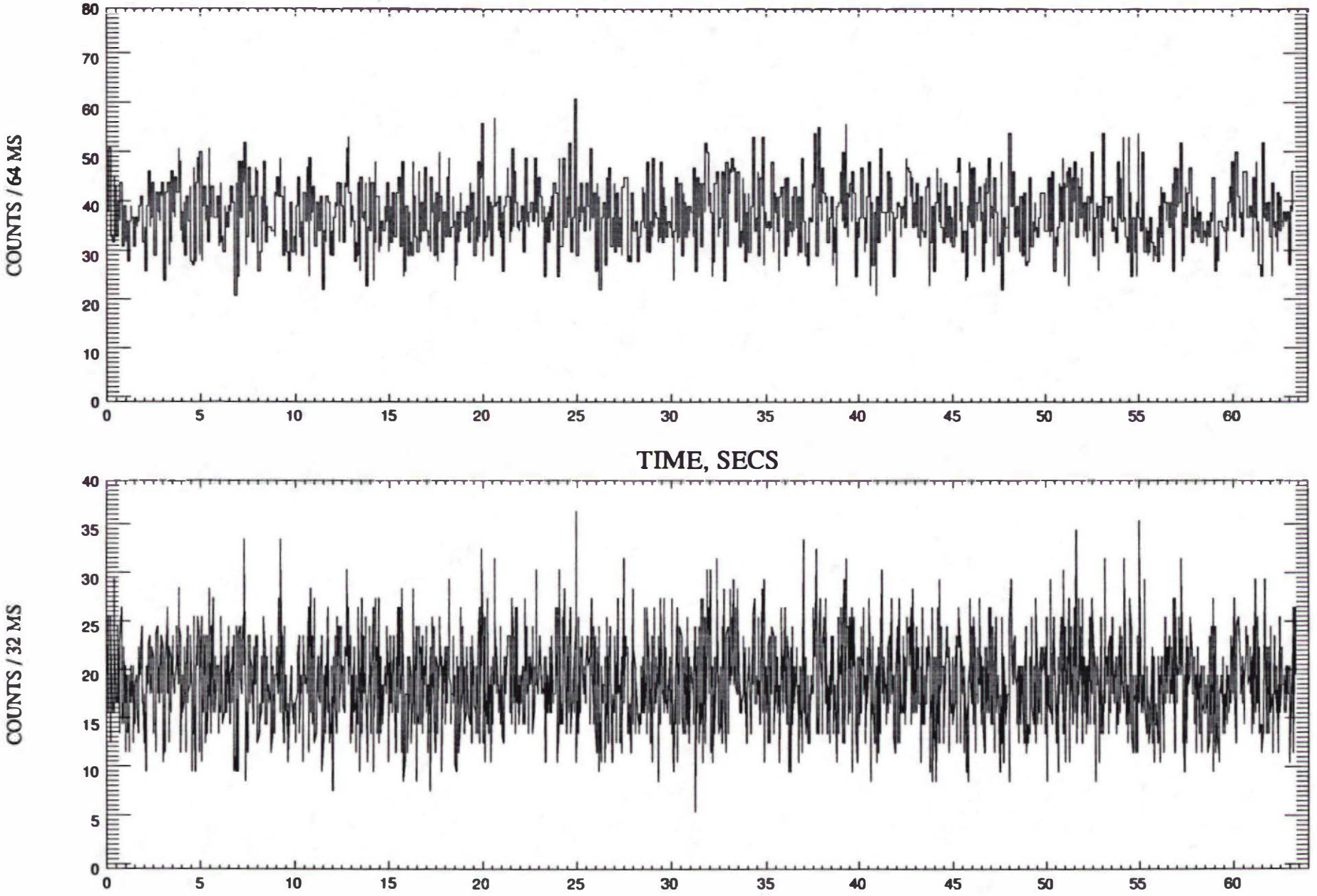
Burst Counter 6 at UT=12.019698583815 h=43270.915 s



#6

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

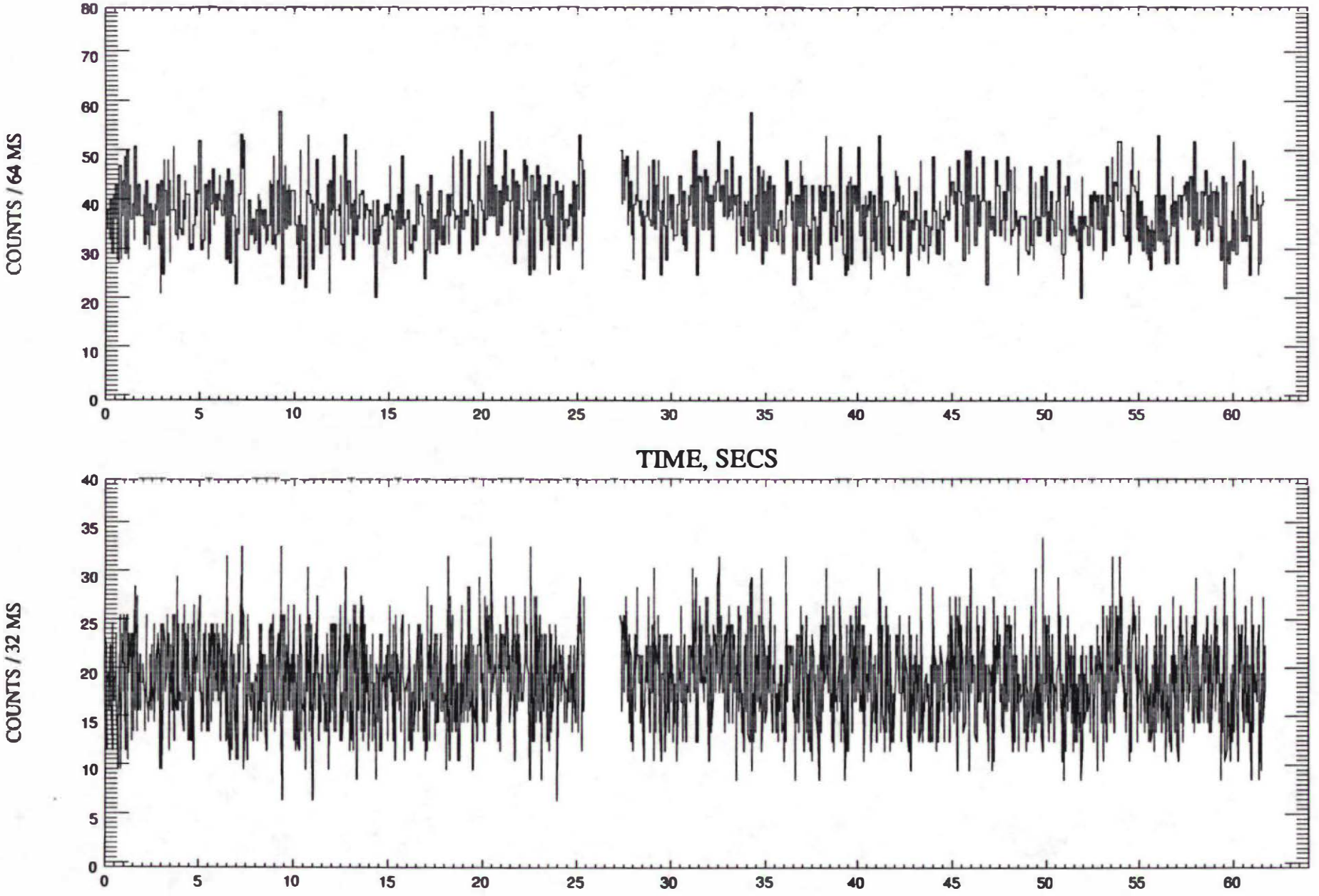
Burst Counter 7 at UT=13.131700079176 h=47274.120 s



7

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

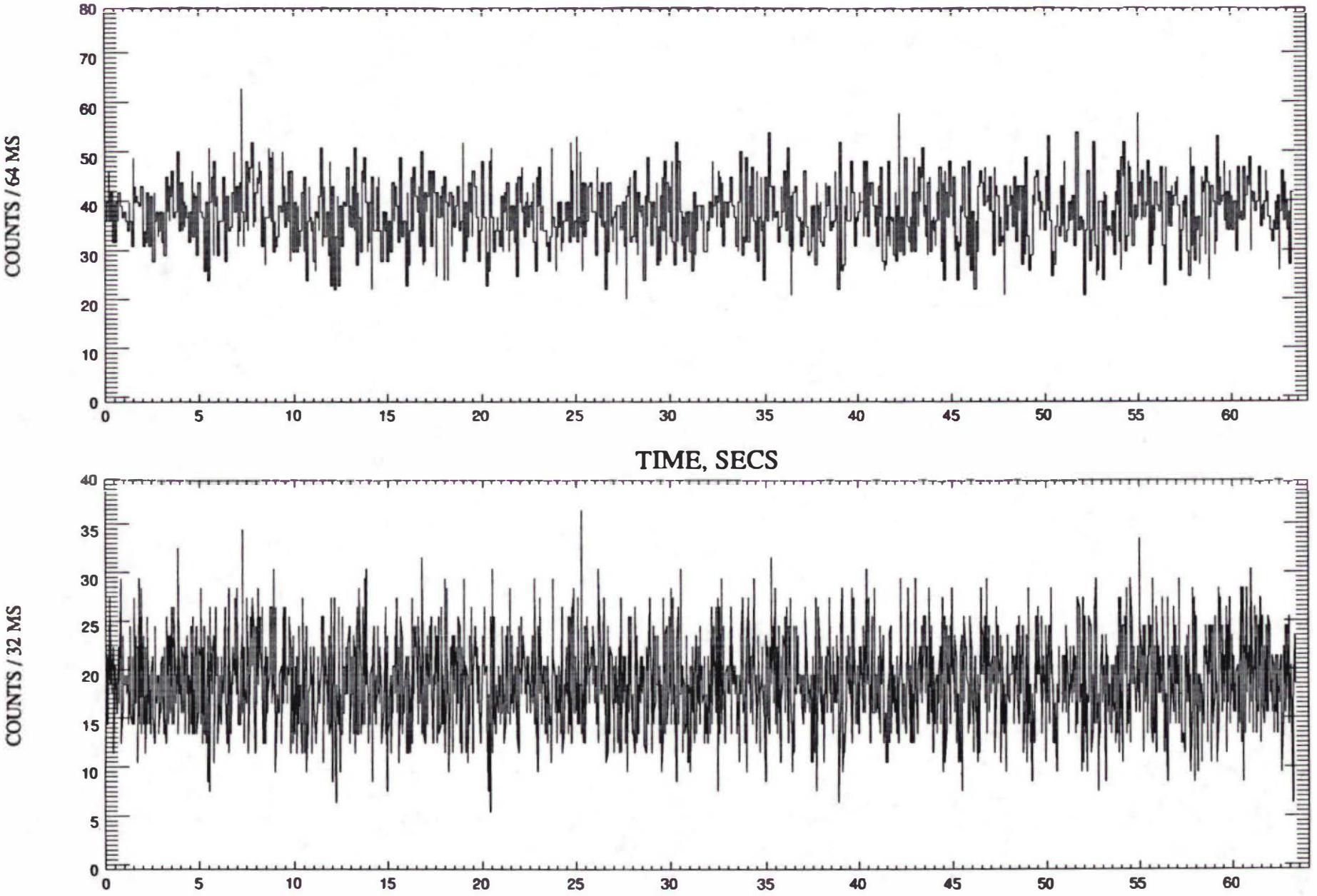
Burst Counter 8 at UT=13.832961595323 h=49798.662 s



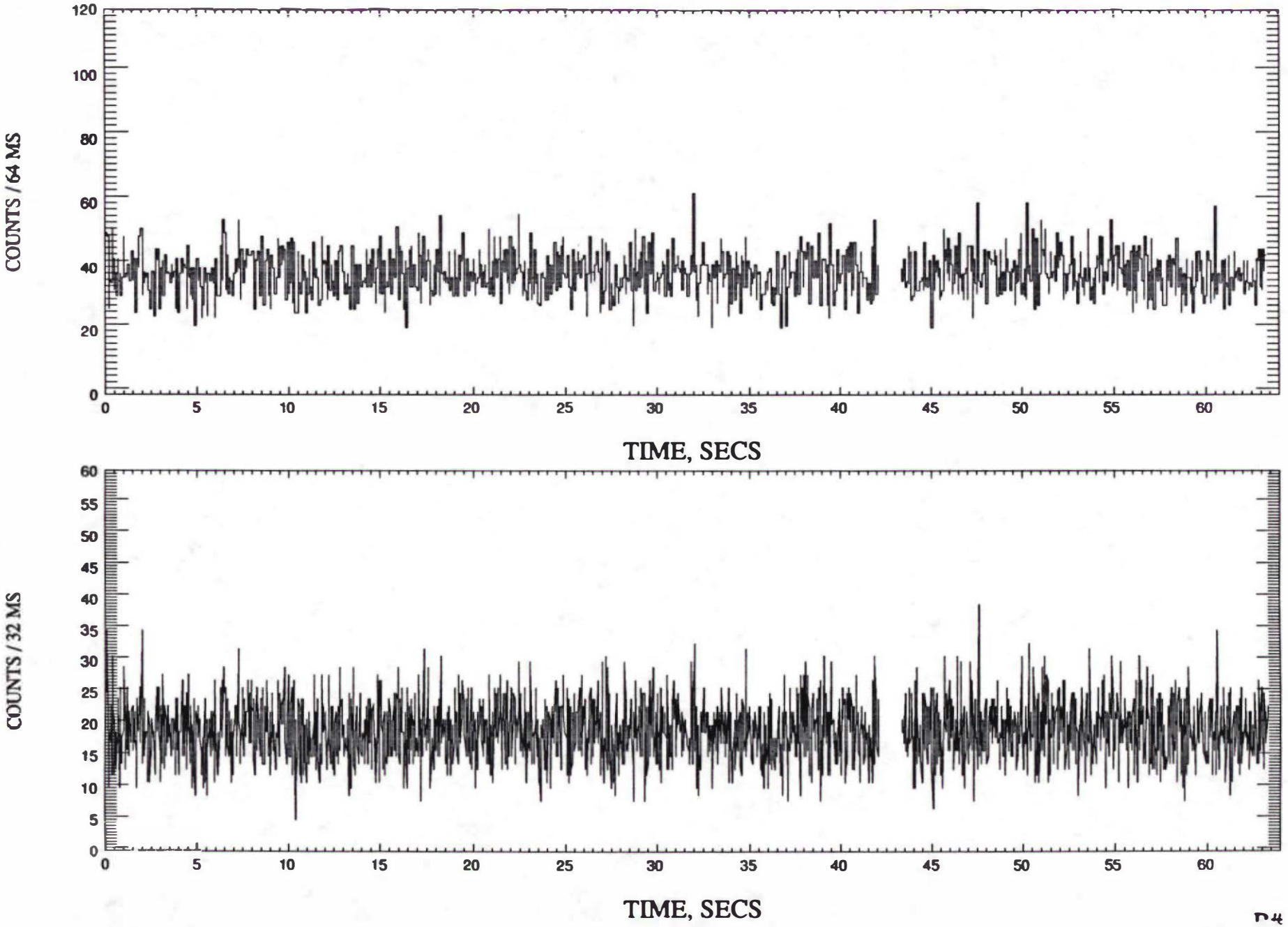
8

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

Burst Counter 9 at UT=14.549465878805 h=52378.077 s

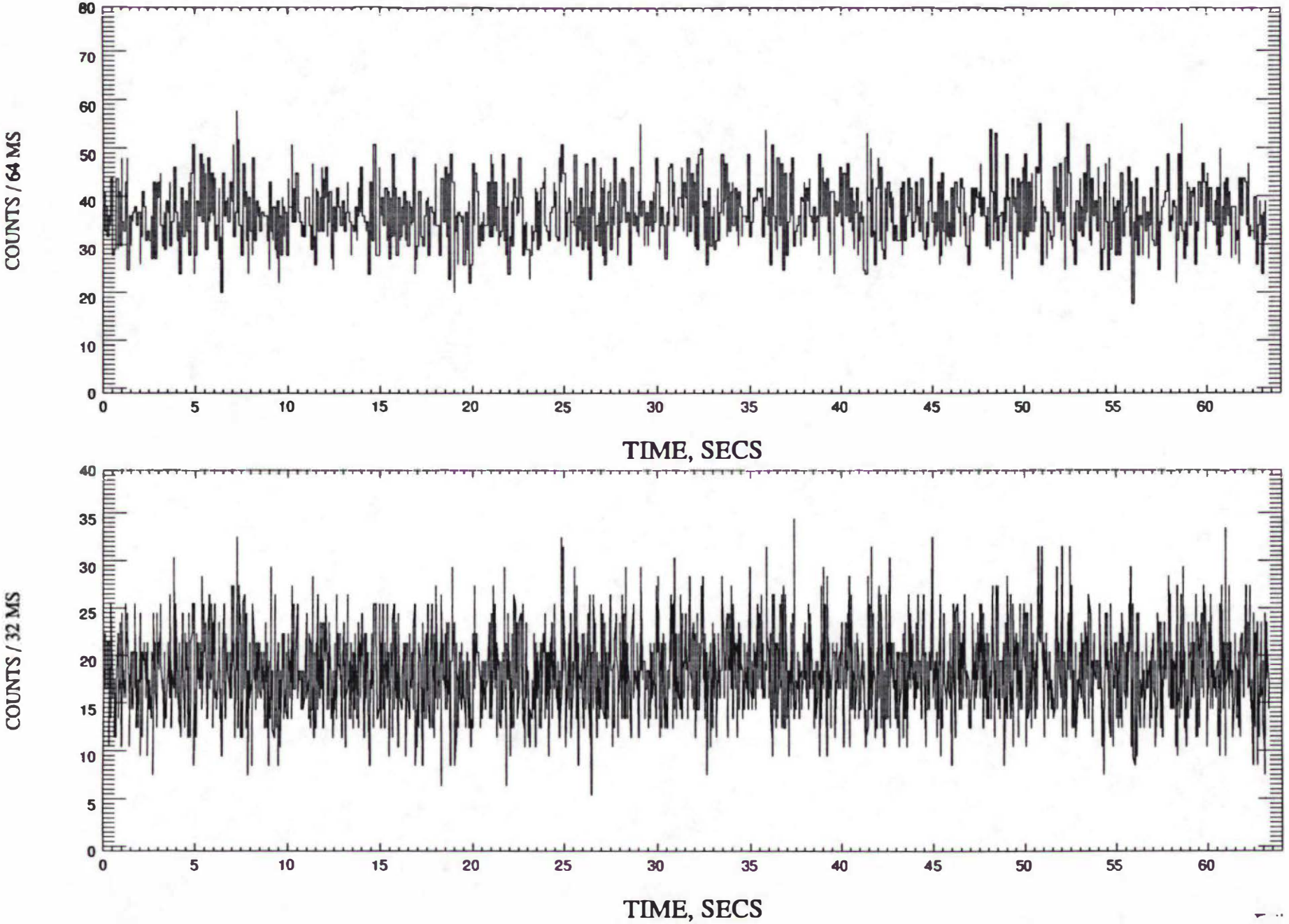


Burst Counter 10 at UT=15.258227399190 h=54929.619 s



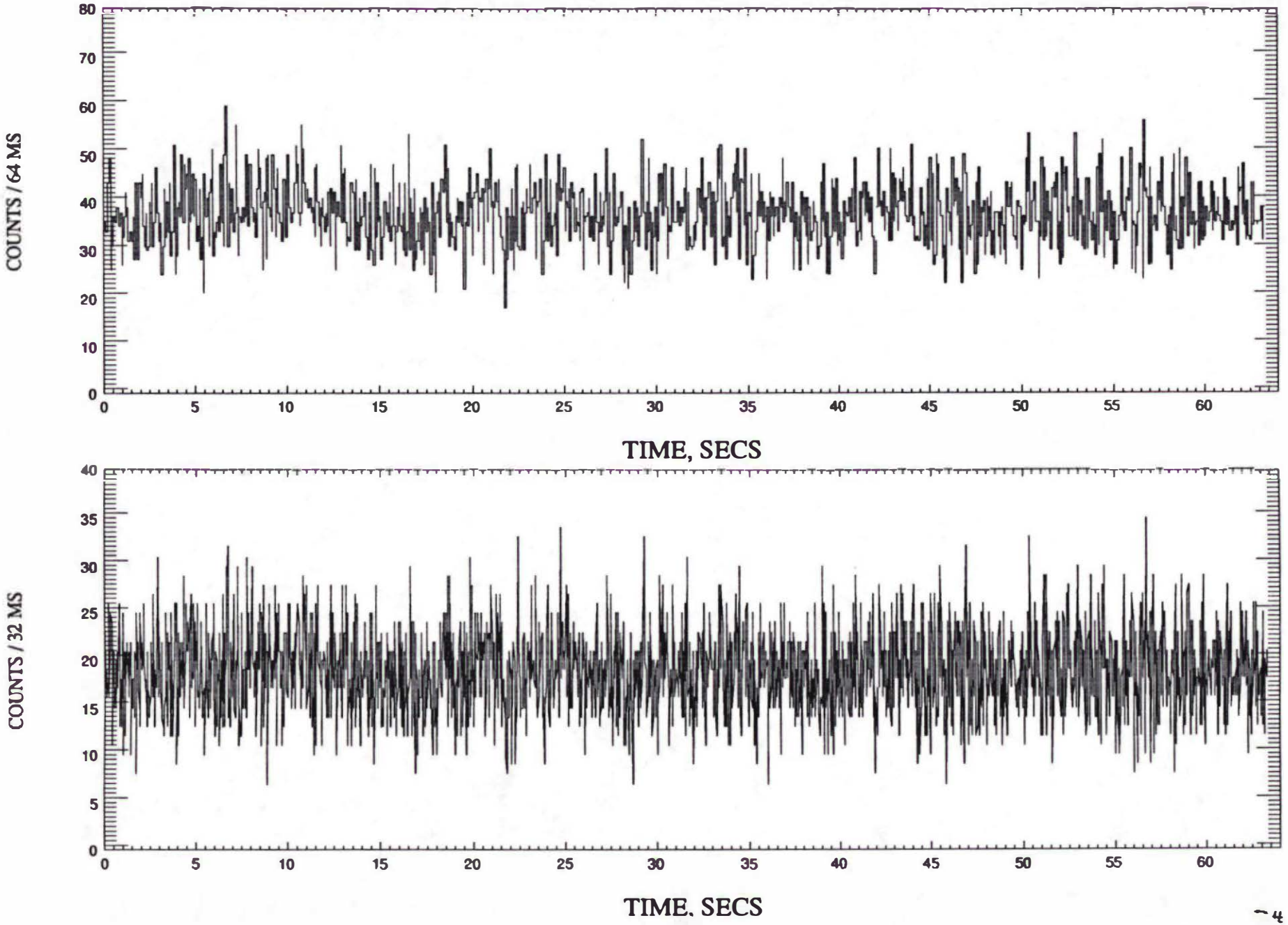
HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

Burst Counter 11 at UT=16.010043453640 h=57636.156 s



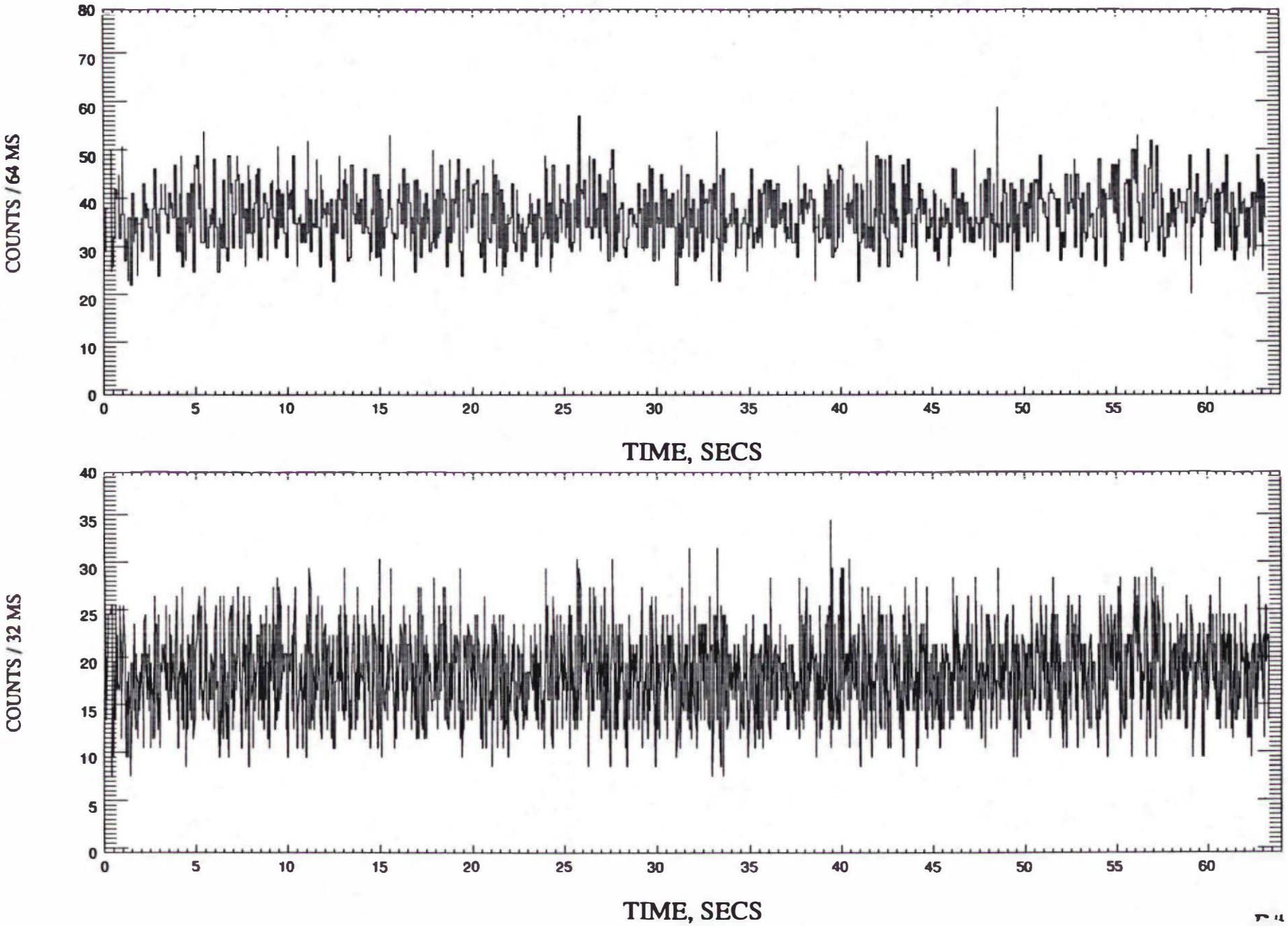
HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

Burst Counter 12 at UT=16.712625435723 h=60165.452 s



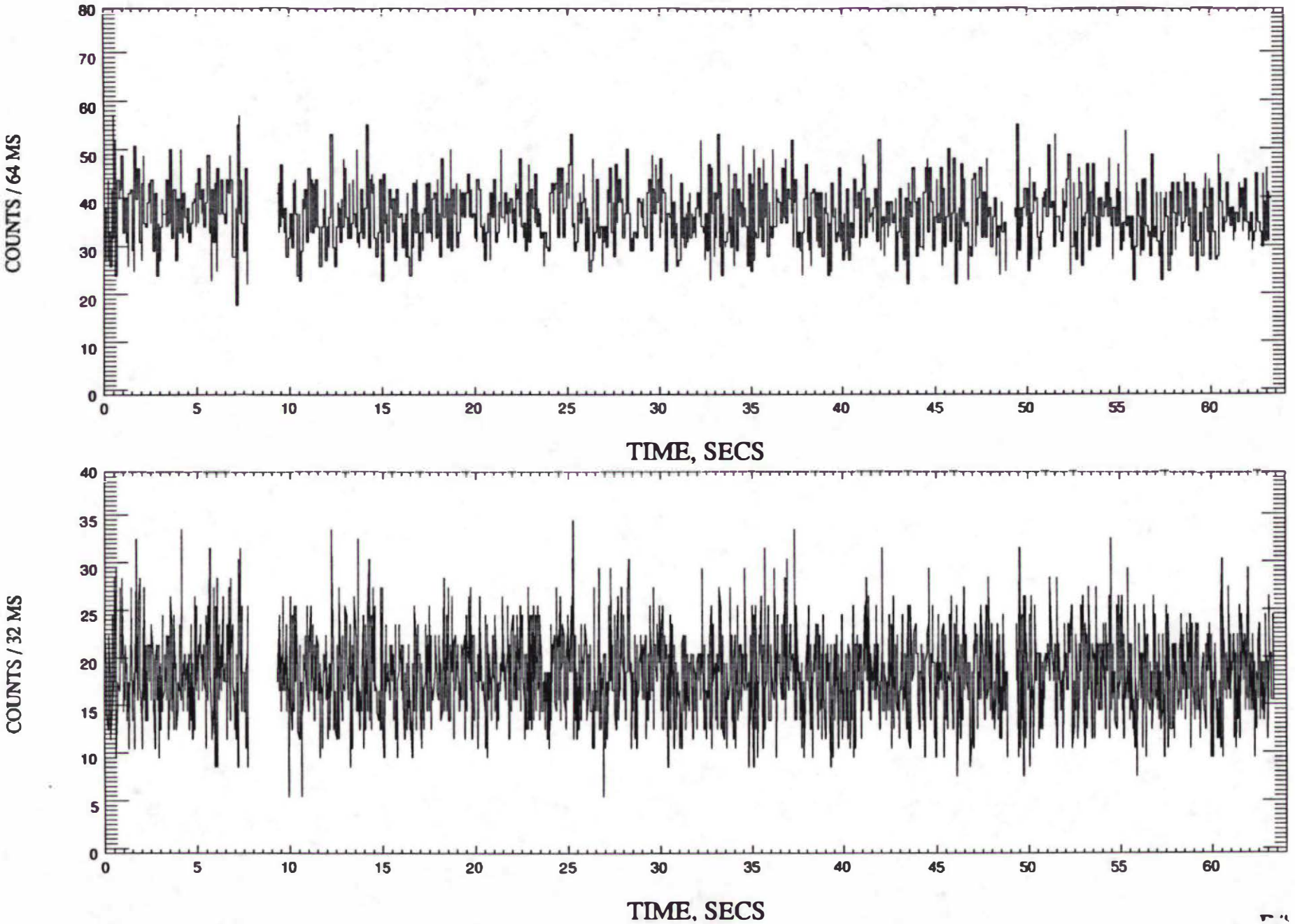
12

Burst Counter 13 at UT=17.419164729648 h=62708.993 s



HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

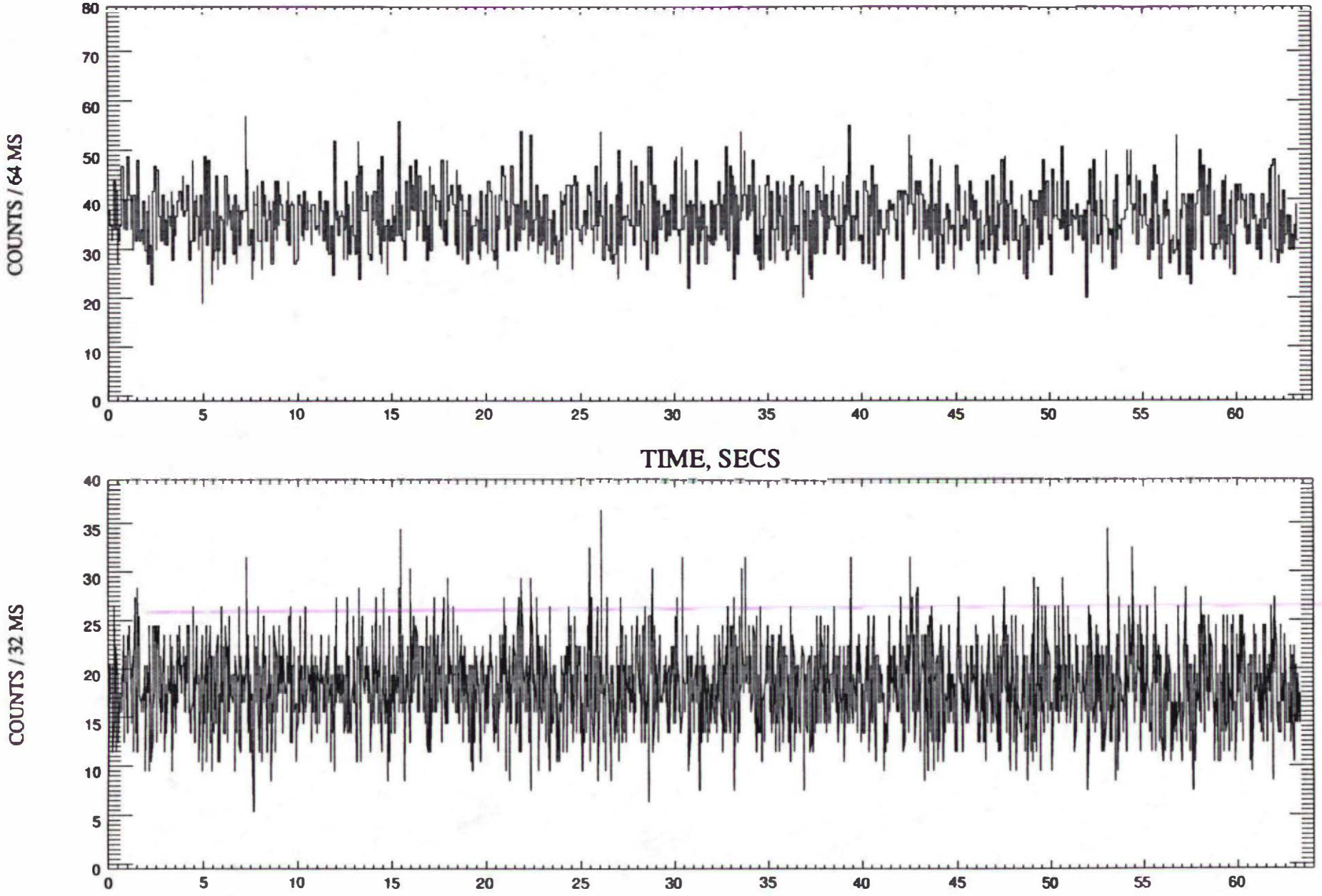
Burst Counter 14 at UT=18.129558194478 h=65266.410 s



14

HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

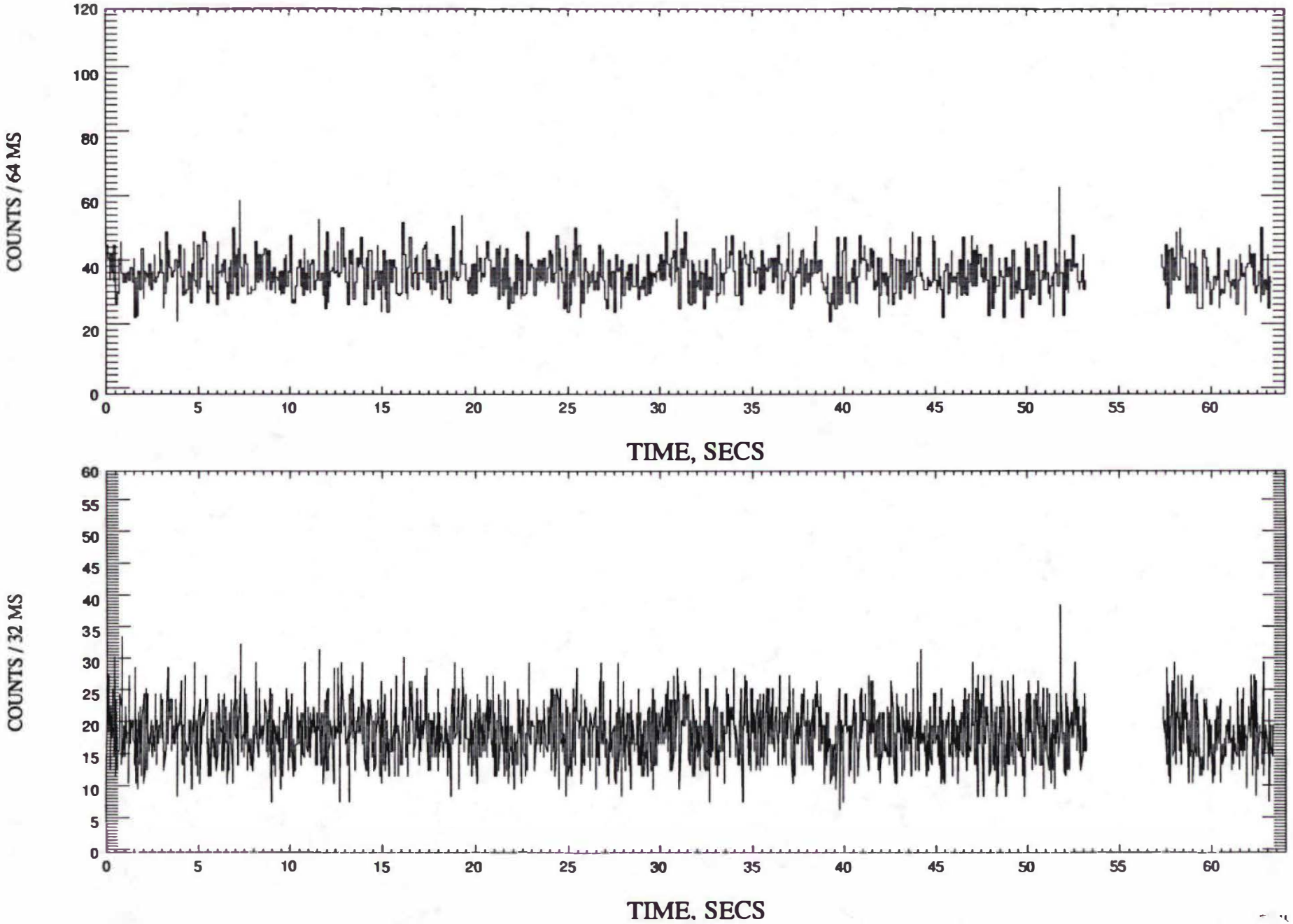
Burst Counter 15 at UT=18.864709752401 h=67912.955 s



15

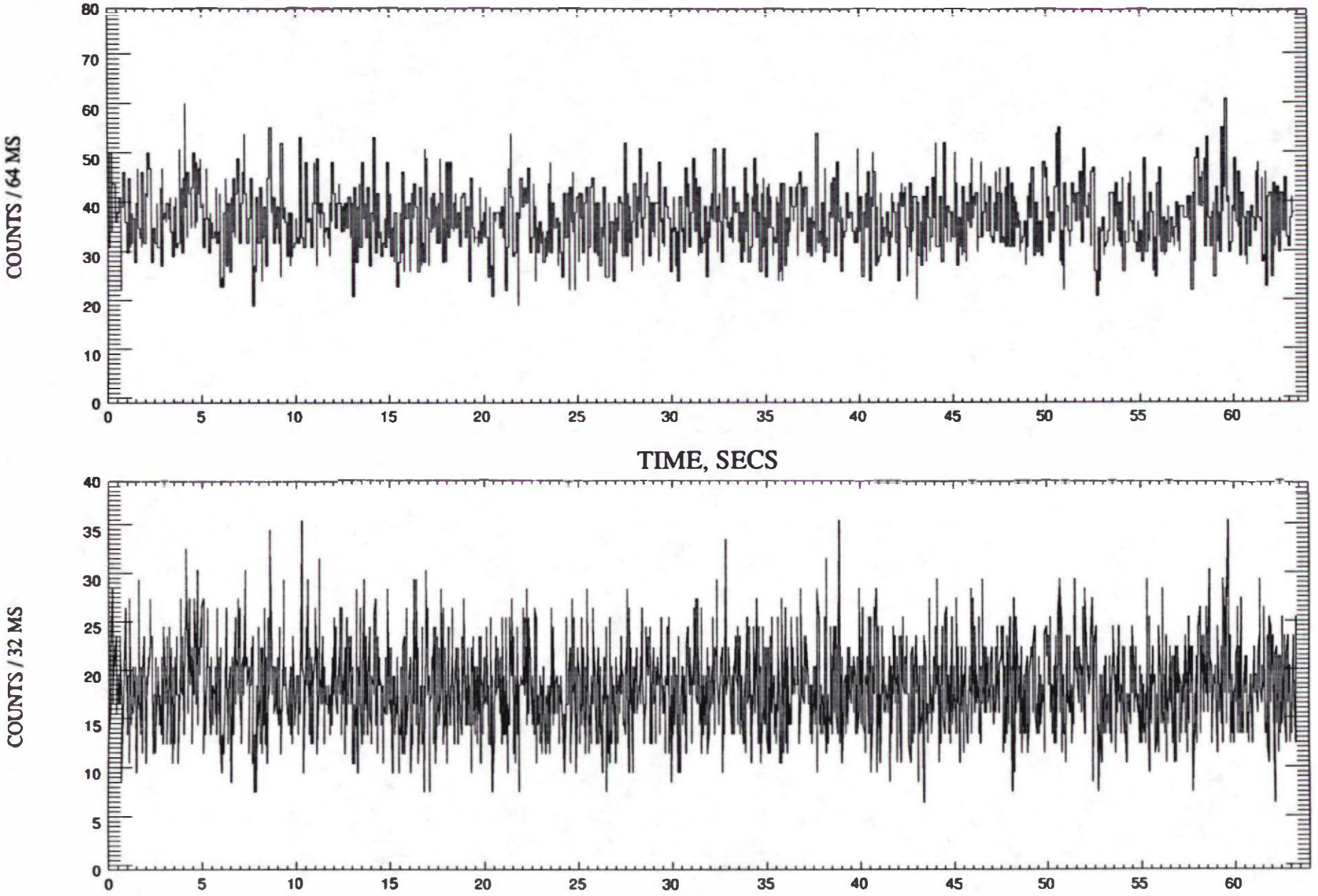
HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

Burst Counter 0 at UT=19.569545487298 h=70450.364 s



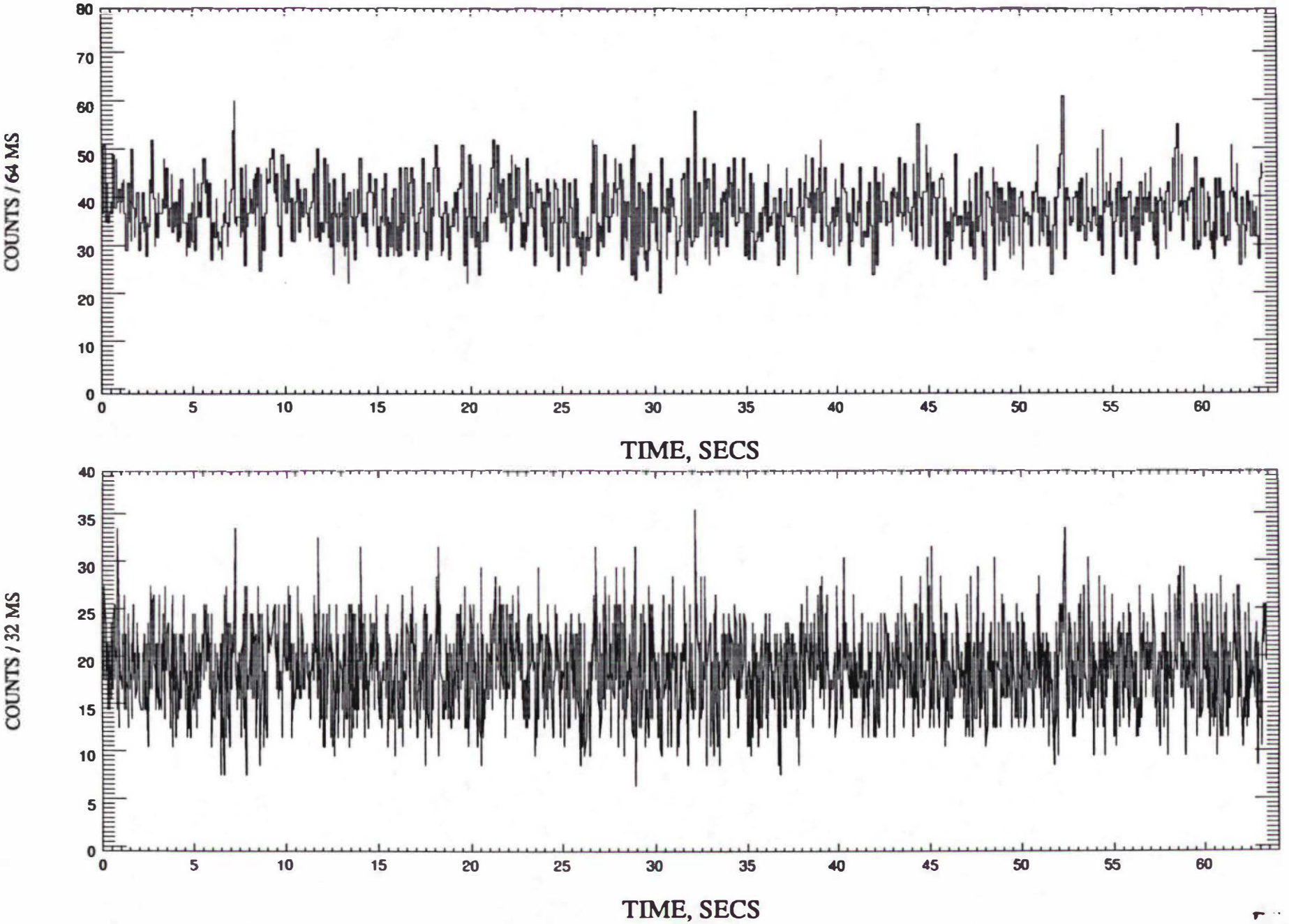
HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

Burst Counter 1 at UT=20.579664781359 h=74086.793 s

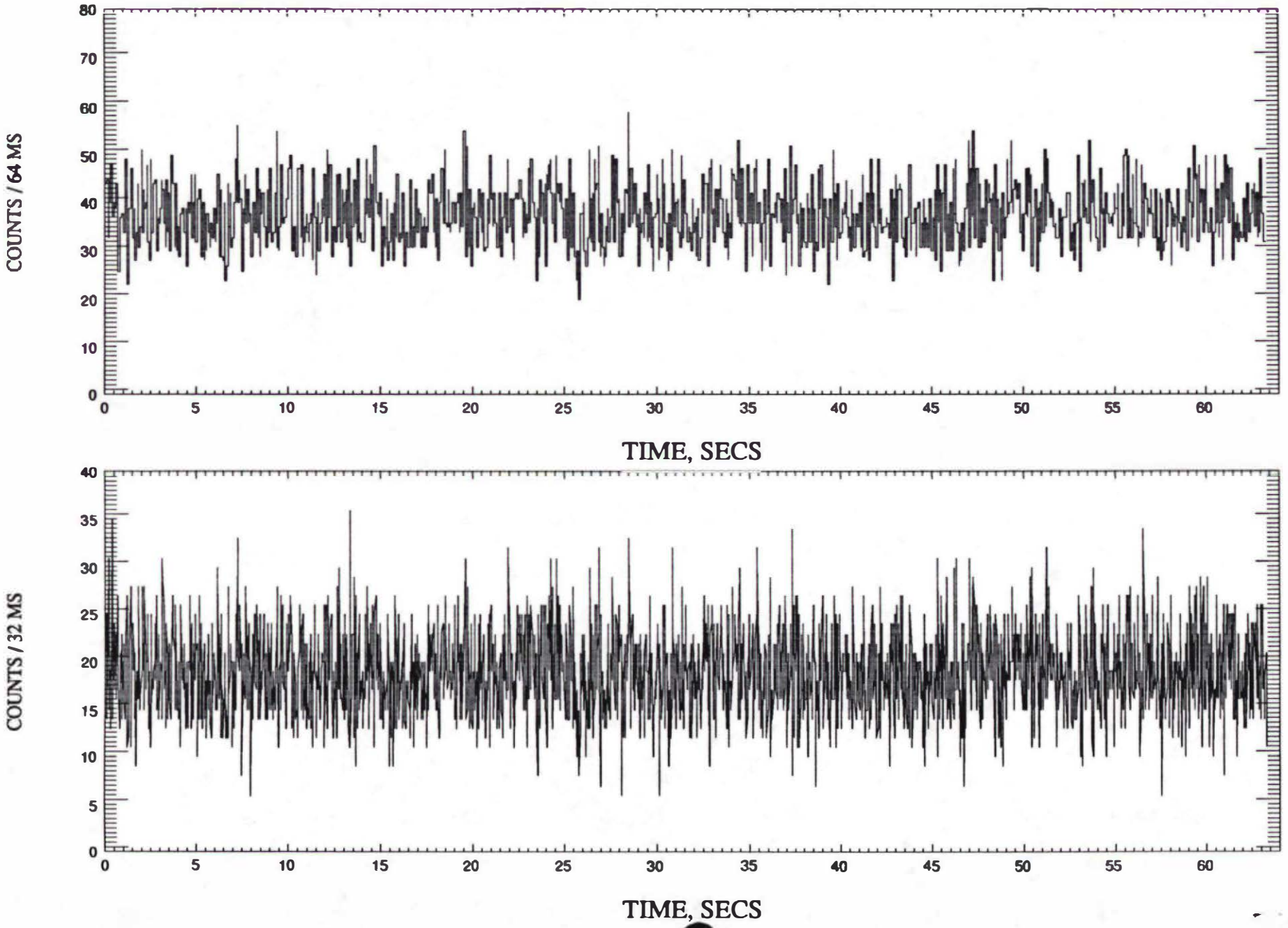


HUS 2A TRIGGERED DATA EDR day 181, year 1992 7/10/92

Burst Counter 2 at UT=21.848535338508 h=78654.727 s



Burst Counter 3 at UT=23.109220136007 h=83193.192 s



```
          ********************
          *CATSEARCH PROGRAM*
          ********************

BATSE BURST # 1682
EVENT OF 1992 JUN 30 DAY OF YEAR=182
EVENT CROSSING TIME AT BATSE      : 19437. S. OR 05:23:56.6
COORDINATES ARE     .000     .000        6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 357.300    13.800
BATSE PEAK COUNTING RATE:  0000    C/S

EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
POSITION OF ULYSSES ON 30/ 6/  92 IS:
RA=  150.154 DEC=     6.399 DIST=     5.901 AU
BATSE-ULYSSES DISTANCE =  882719288. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2450.34 SECS.
CROSSING TIME AT ULYSSES     IS 21887. S. OR 06:04:47.0 +/-  370.66 SECONDS
```

NO

```
From HORACK@ssl.msfc.nasa.gov Wed Jul  1 11:41:44 1992
Date:    Wed, 1 Jul 1992 13:42:15 -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: 1539

                BATSE BURST TRIGGER

NO.: 1682
```

June 30

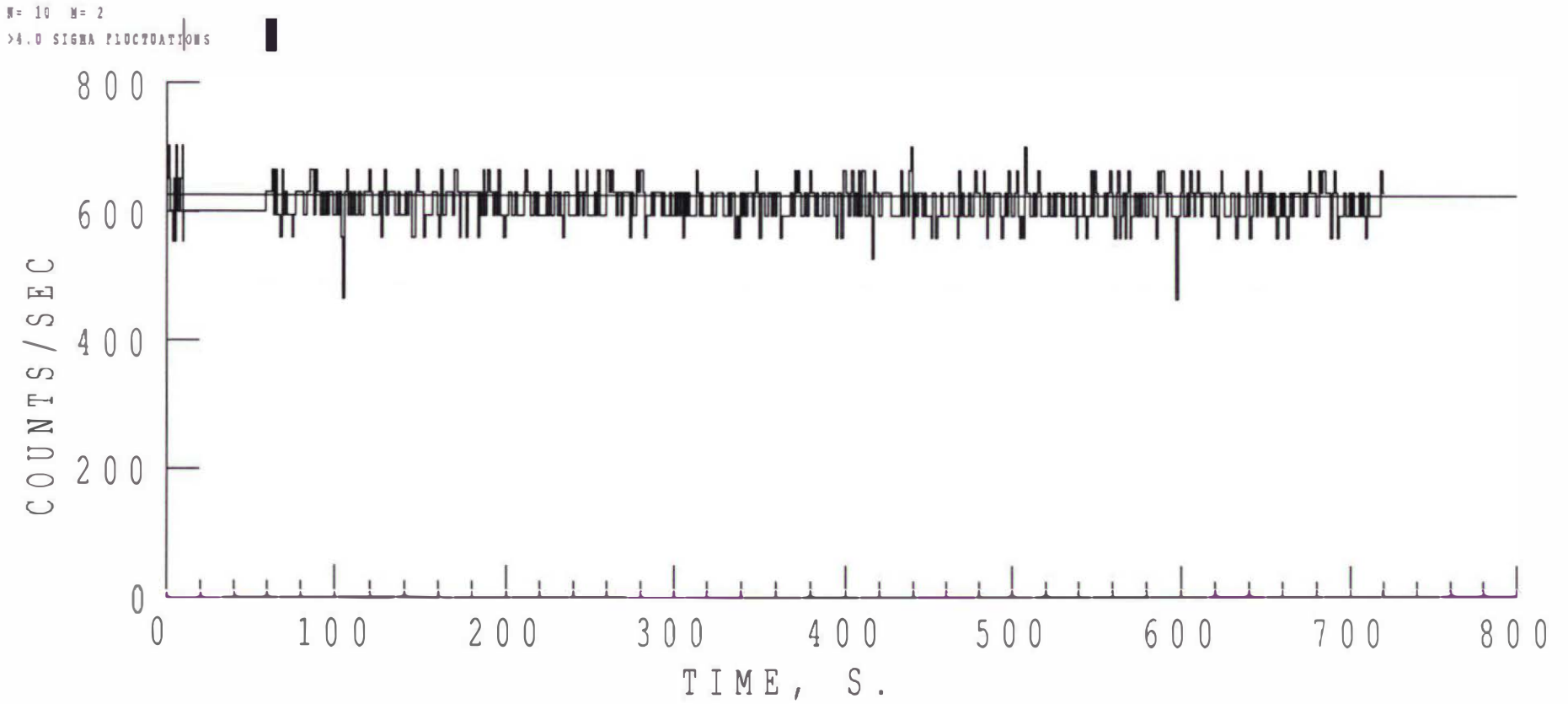
```
TIME: TJD=8803 SECONDS=19436

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:        SIGMA

INTENSITY:           COUNTS/CM2

LOCATION: ZENITH=155    AZIMUTH=95     ERROR=       DEGREES

COMMENTS:
BURST, I GUESS.....EXTREMELY WEAK AND SHORT EVENT.  LASTING APPROXIMATELY 1 SE
OR LESS, THE EVENT IS EXTREMELY WEAK, AND DETECTED ONLY IN OUR THIRD ENERGY CHAN
DATA PRIOR TO TRIGGER IS MISSING, SO FIRST PART OF EMISSION IS NOT VIEWABLE.
LOCATION CONSISTENT WITH POINT SOURCE IN SKY, 65-70 DEGREES ABOVE THE EARTH
LIMB.
```

8/ 6/94

ULYSSES RT

30/ 6/92 21528.109 s

0- 0 keV



From kouveliotou%batse.span@Sdsc.Edu Thu Oct 7 15:02:35 1993
Date: Thu, 7 Oct 93 22:05:27 GMT
From: kouveliotou%batse.span@Sdsc.Edu (Chryssa Kouveliotou NASA/MSFC (205) 544-7711)
Subject: Kevin, is there an IPN location for any of them ?
To: khurley@sunspot.ssl.berkeley.edu
X-St-Vmsmail-To: HURLEY
Content-Length: 524

From: MPE::MPECR1::JCG 7-OCT-1993 16:20:21.32
To: MPE::BATSE::KOUVELIOTOU
CC: MPE::8858::COLE
Subj: GRB/optical

Dear Chryssa,

Don't even have BATSE coords

due to the changes for GB 920630 19436 we have now a simultaneous plate (Hudec), so I ask for the coordinates.

Yes Second question: We have found optical activity on simultaneous plates for GB 920925 78316 and GB 920525 02506. Can you communicate the error radii for these two locations? Do you have improved coordinates compared to those which we got from you???

Don't observe it

Best regards
Jochen

```
         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,CMPLX,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,ULYSS
           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 ANGSUN=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
```

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

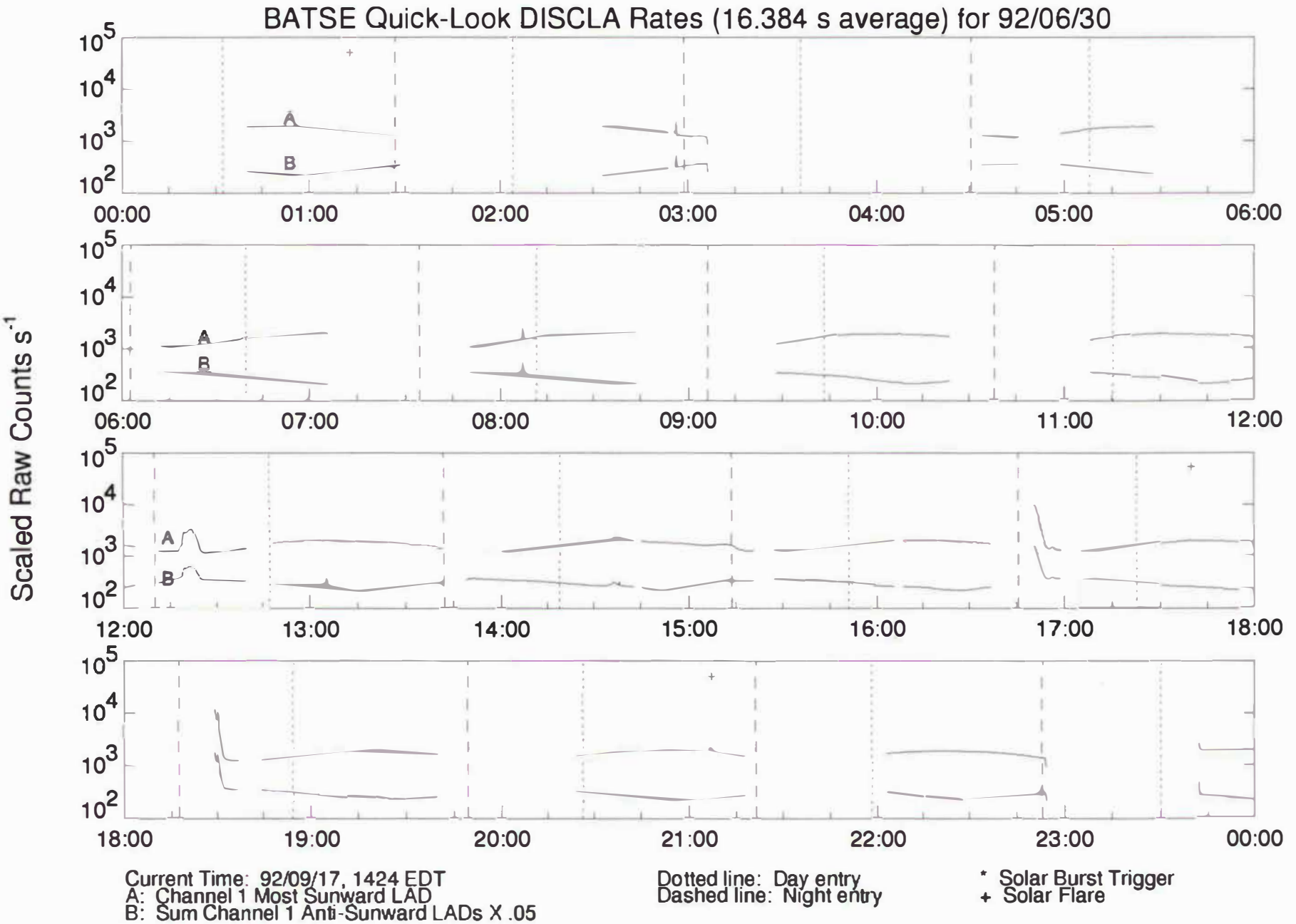
Received: from ESSDP2 by UCBSP.SSL.BERKELEY.EDU via MAIL-11 with
DECnet; Tue, 5 May 92 13:40:33-PST
Date: Tue 5 May 92 13:40:33-PST
From: 046369@ESSDP2.SPAN.NASA.GOV
Subject: DMSP GRB DATA
To: "UCBSP::KHURLEY"@ESSDP2.SPAN.NASA.GOV

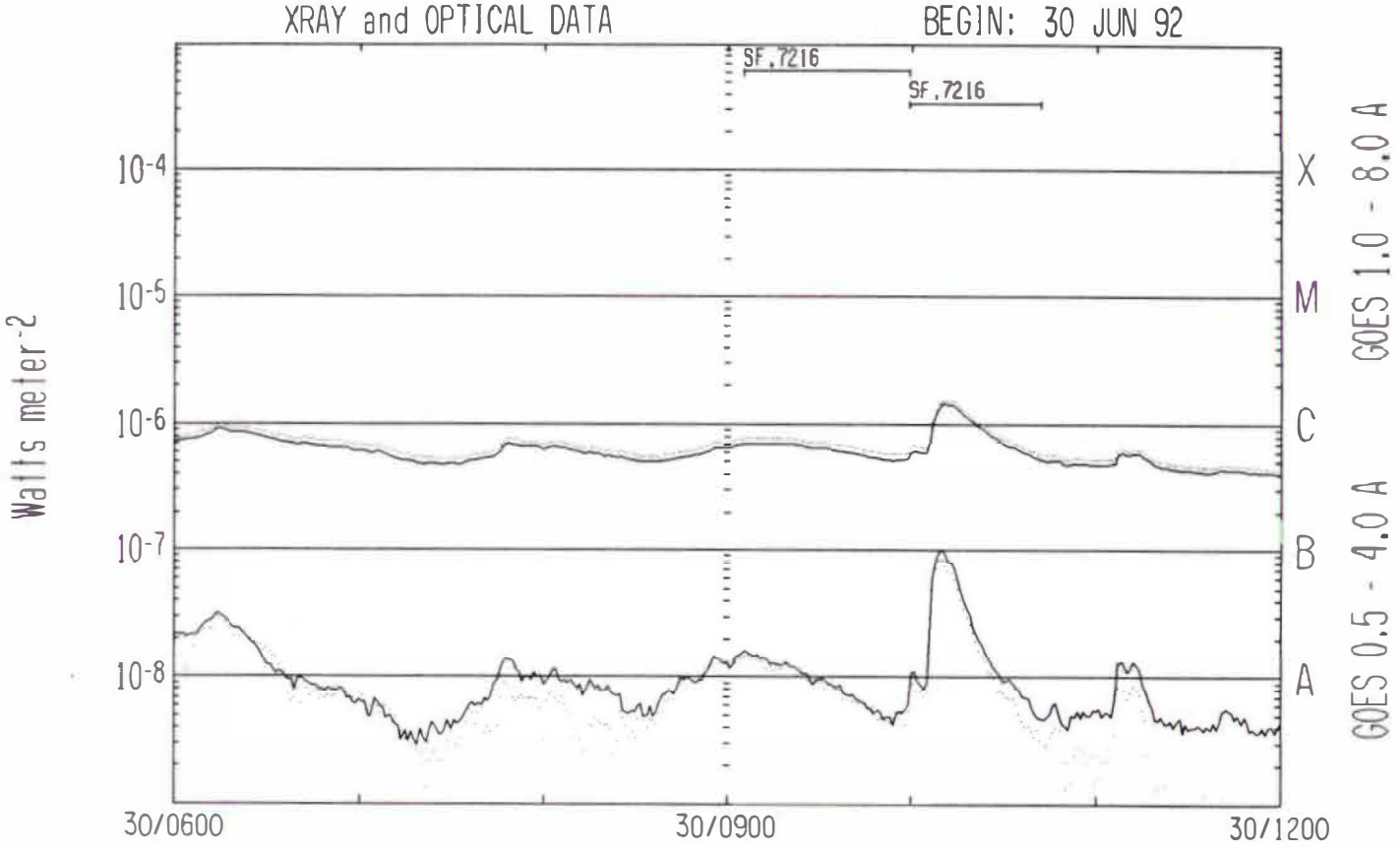
FROM: ESSDP2::TERRELL 93/05/05
TO: UCBSP::KHURLEY
CC: BATSE::KOUVELIOTOU
SUBJ: DMSP GRB DATA

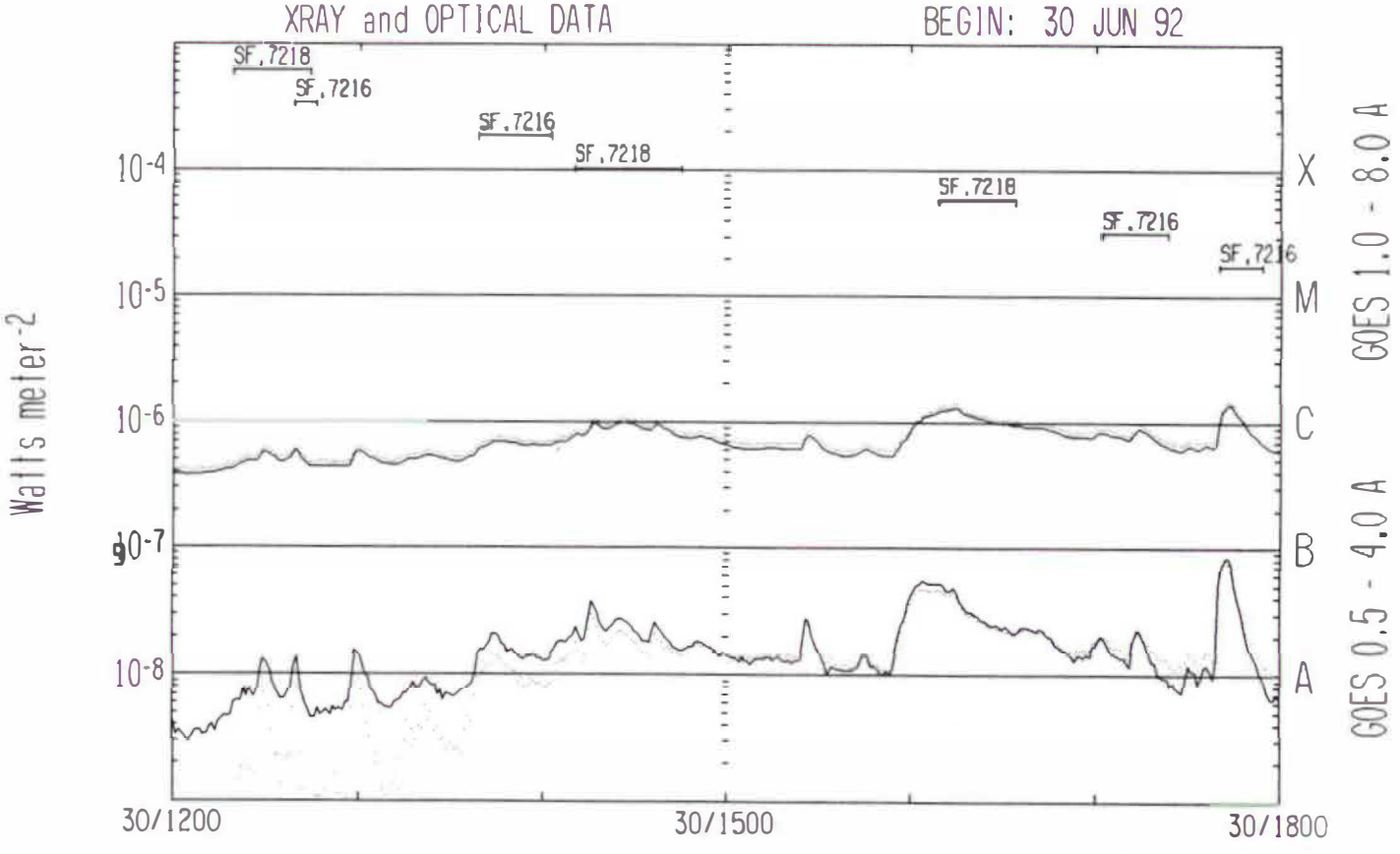
HERE IS A PARTIAL LIST OF 1992 DMSP GAMMA-RAY-BURST DATA, AS OF TODAY.
OTHER DATA APPEARING TO CONFIRM UNCONFIRMED EVENTS IN YOUR LISTING IS
BEING EXTRACTED, AND I WILL CHECK IT OUT WHEN I RETURN FROM HOUSTON.
THANKS FOR YOUR CONTINUING HELP--JIM TERRELL

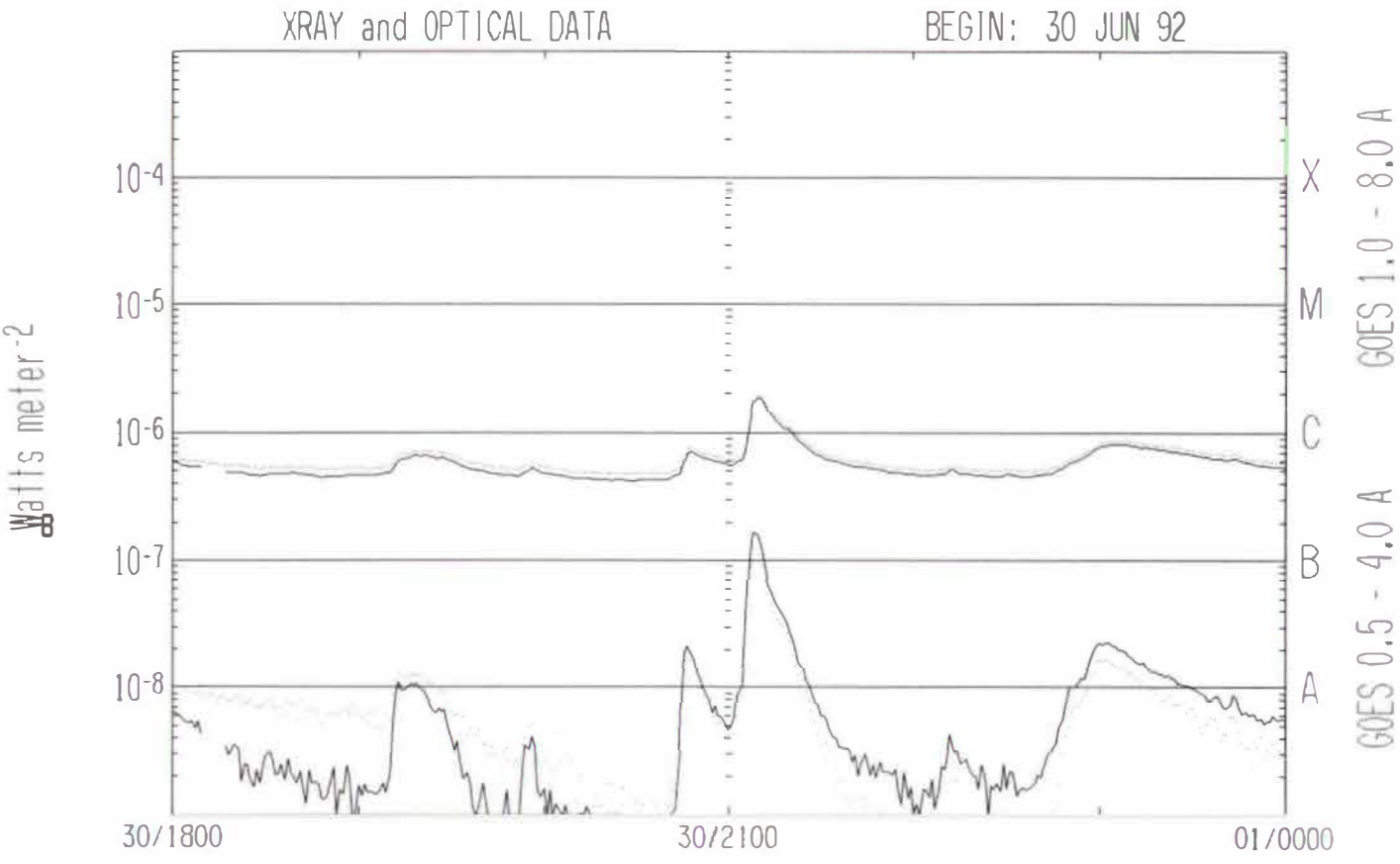
DMSP GAMMA PEAKS 90281-92305 CHECKED,2-SEC CTS,TERRELL/DMSP.GAM 930505
ORBITAL PERIODS FOR 8,9,10: 6110,6080,6040SEC. ALT=800KM. INCLIN=99DEG
GRB PEAK TIMES CORRECTED (8,9,10=11) FOR AVG DELAYS: 1.82,1.98,5.50SEC
CHANS: (8)50,100,200,420 (9)50,100 (10,11)20,100,200,430,550(=1000KEV)

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


BATSE Quick-Look DISCLA Rates (16.384 s average) for 92/06/30
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 92/09/17, 1424 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

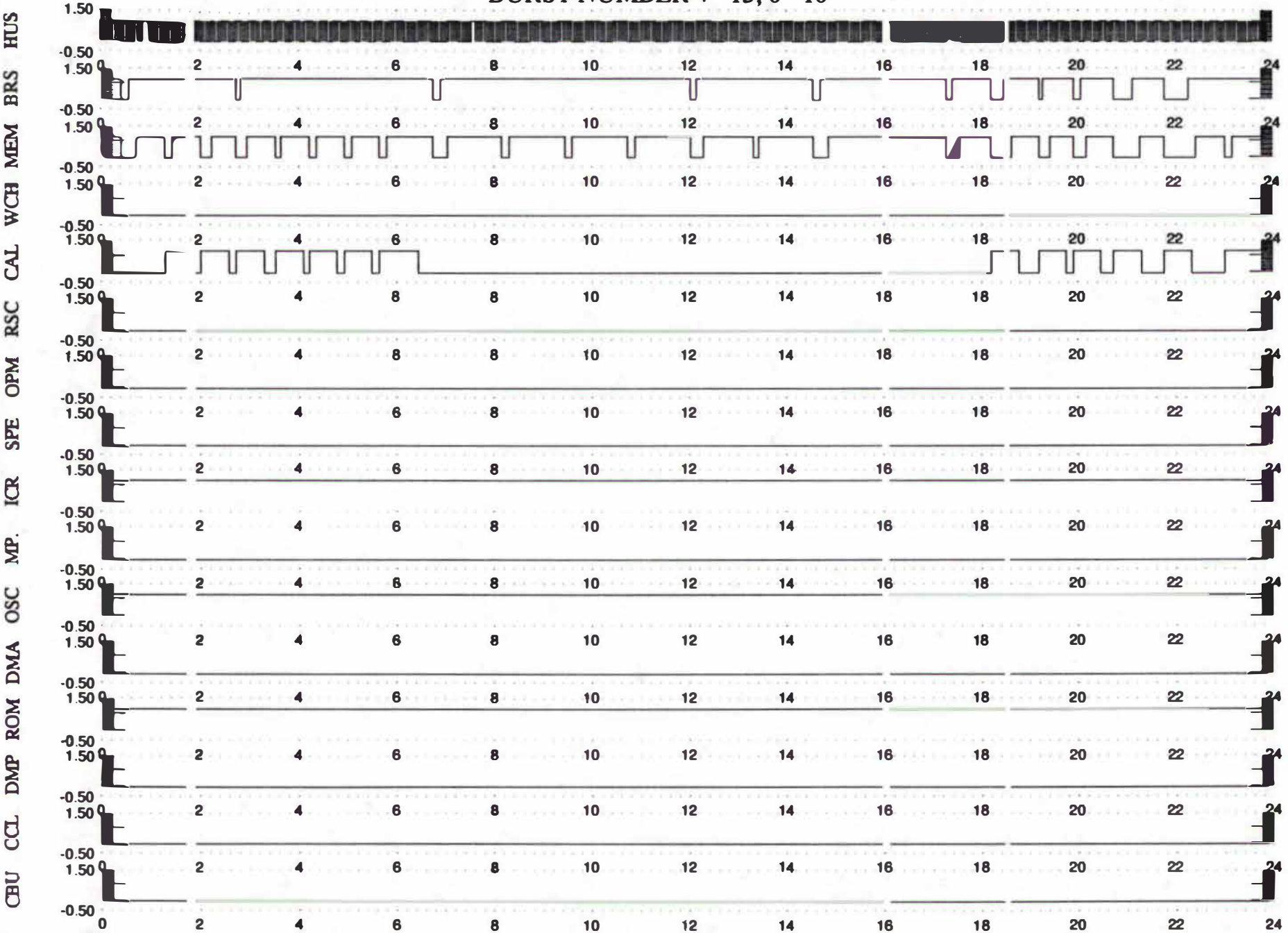

XRAY and OPTICAL DATA
BEGIN: 30 JUN 92
SF,7216
SF,7216
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
30/0600
30/0900
30/1200


XRAY and OPTICAL DATA
BEGIN: 30 JUN 92
SF,7218
SF,7216
SF,7216
SF,7218
SF,7218
SF,7216
SF,7216
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
Watts meter-2
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
30/1200
30/1500
30/1800


XRAY and OPTICAL DATA
BEGIN: 30 JUN 92
Watts meter-2
10-4
10-5
10-6
10-7
10-8
X
M
C
B
A
GOES 1.0 - 8.0 A
GOES 0.5 - 4.0 A
30/1800
30/2100
01/0000

HUS MODES EDR day 182, year 1992 to day 182, year 1992 7/10/92

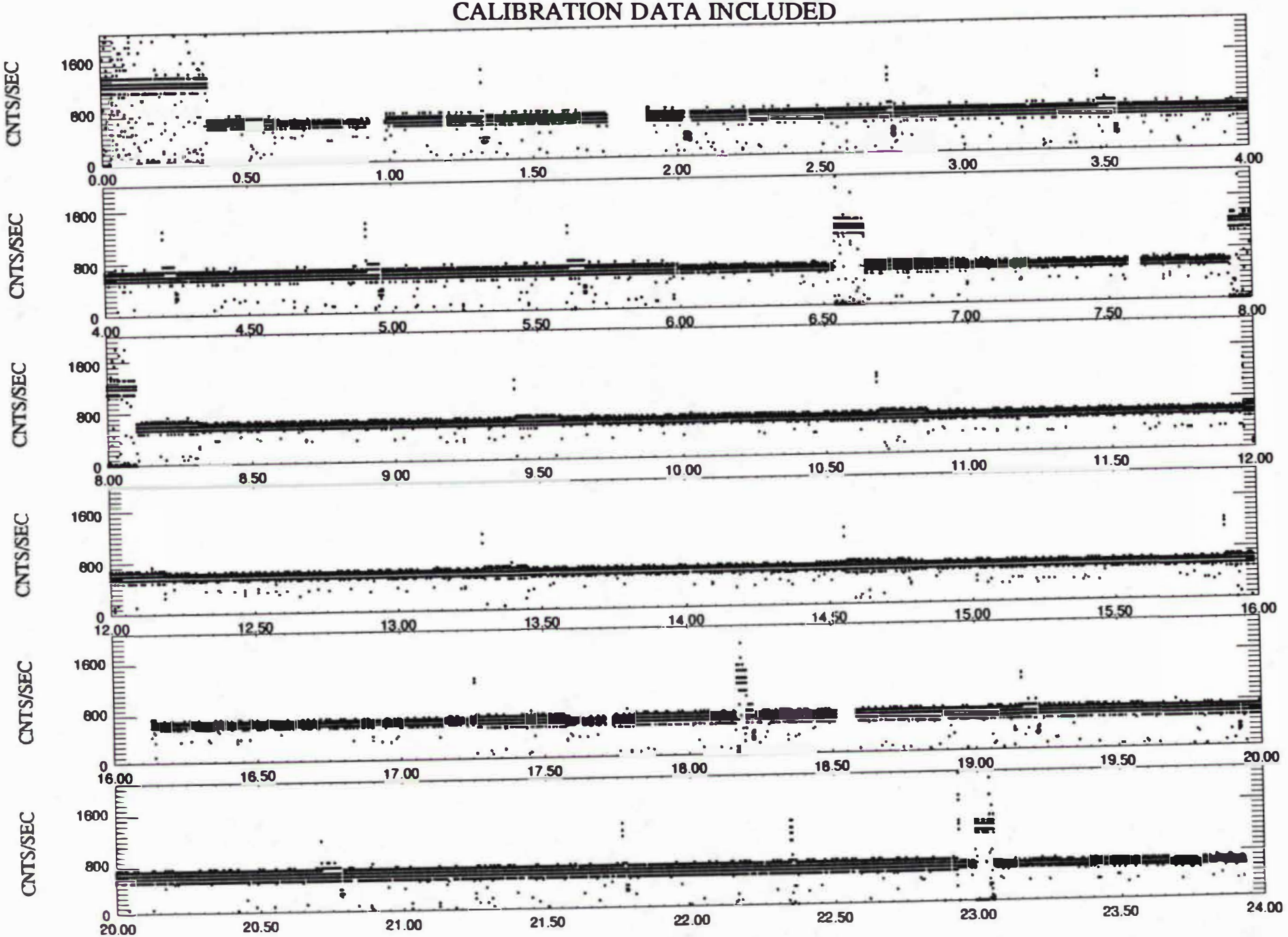
BURST NUMBER 4 - 15, 0 - 10



UNIVE .L TIME

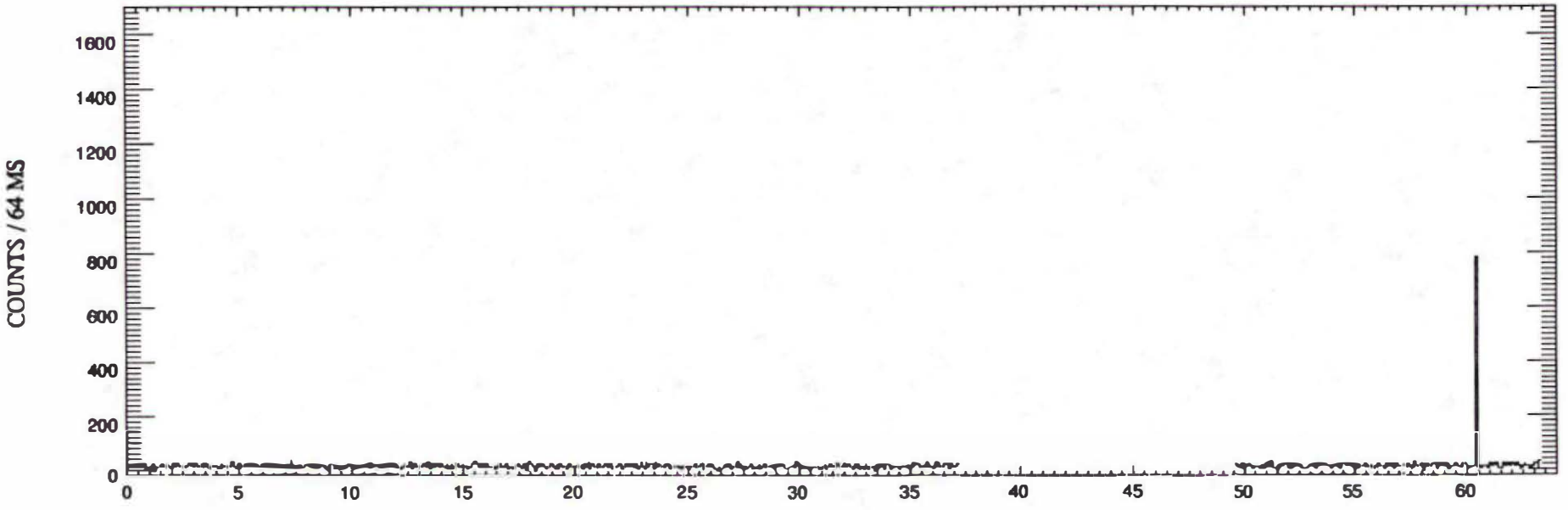
HUS 2A, MODE 1, NOT AVERAGED EDR day 182, year 1992 to day 182, year 1992 7/10/92

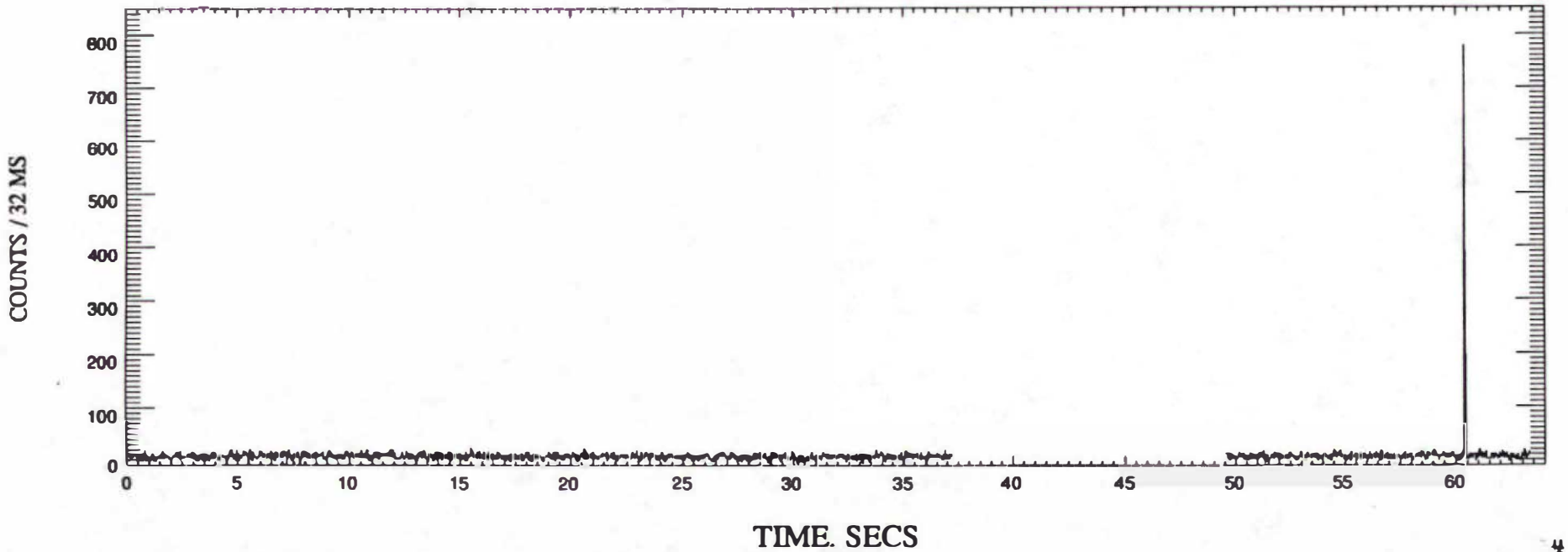
CALIBRATION DATA INCLUDED



UNIVE L TIME

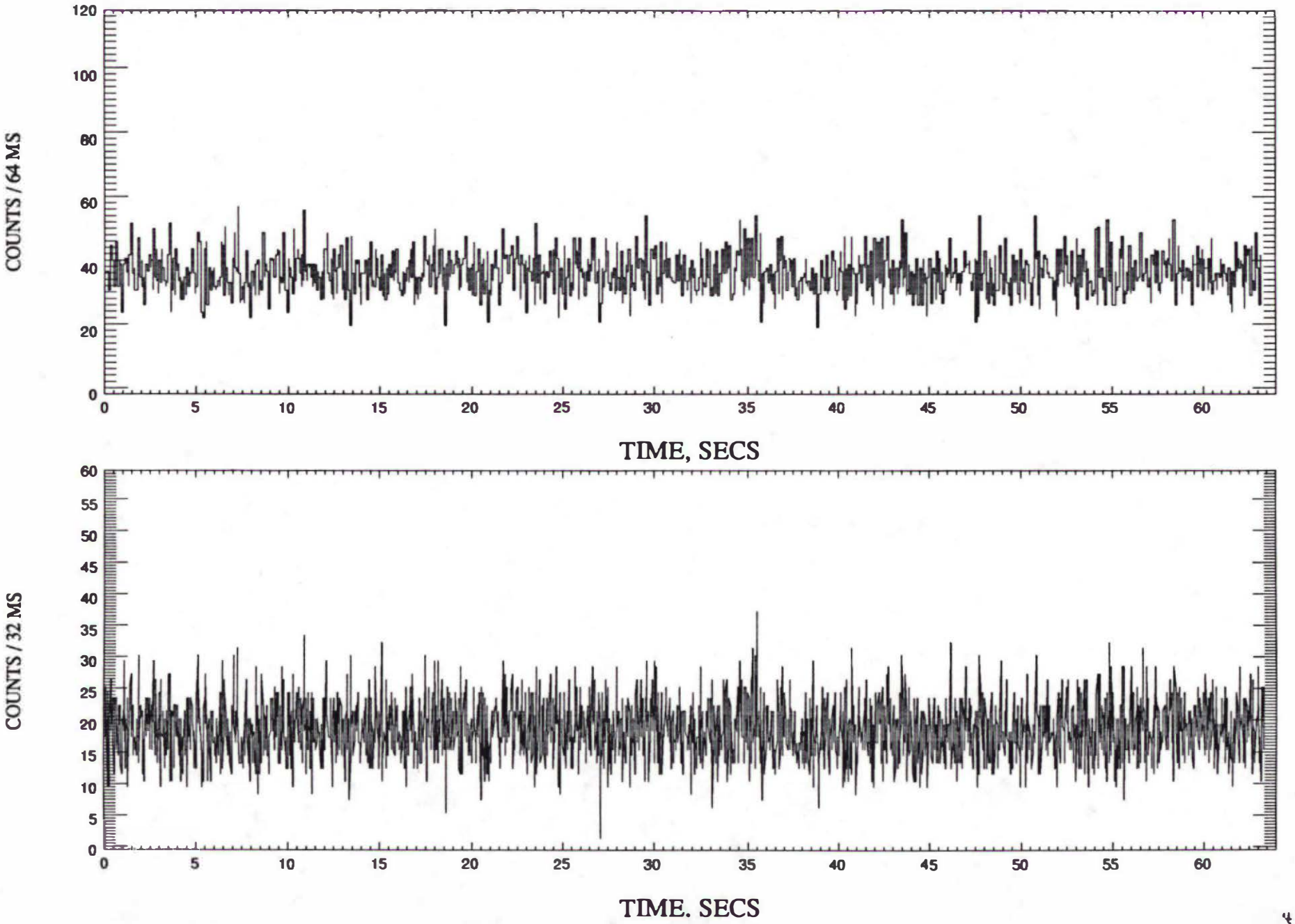
Burst Counter 4 at UT= 0.446671854655 h= 1608.019 s





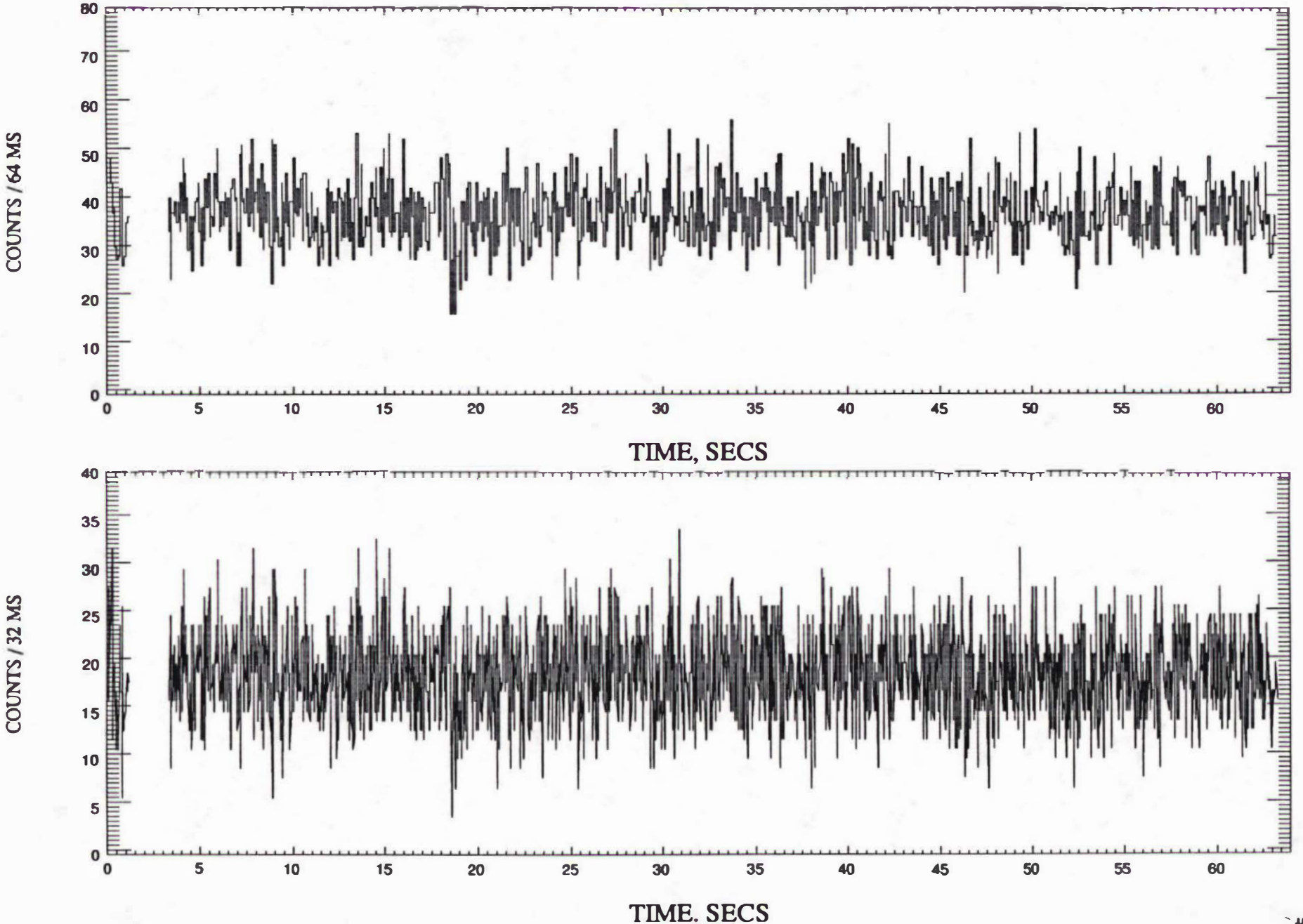
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 5 at UT= 1.320021167331 h= 4752.076 s



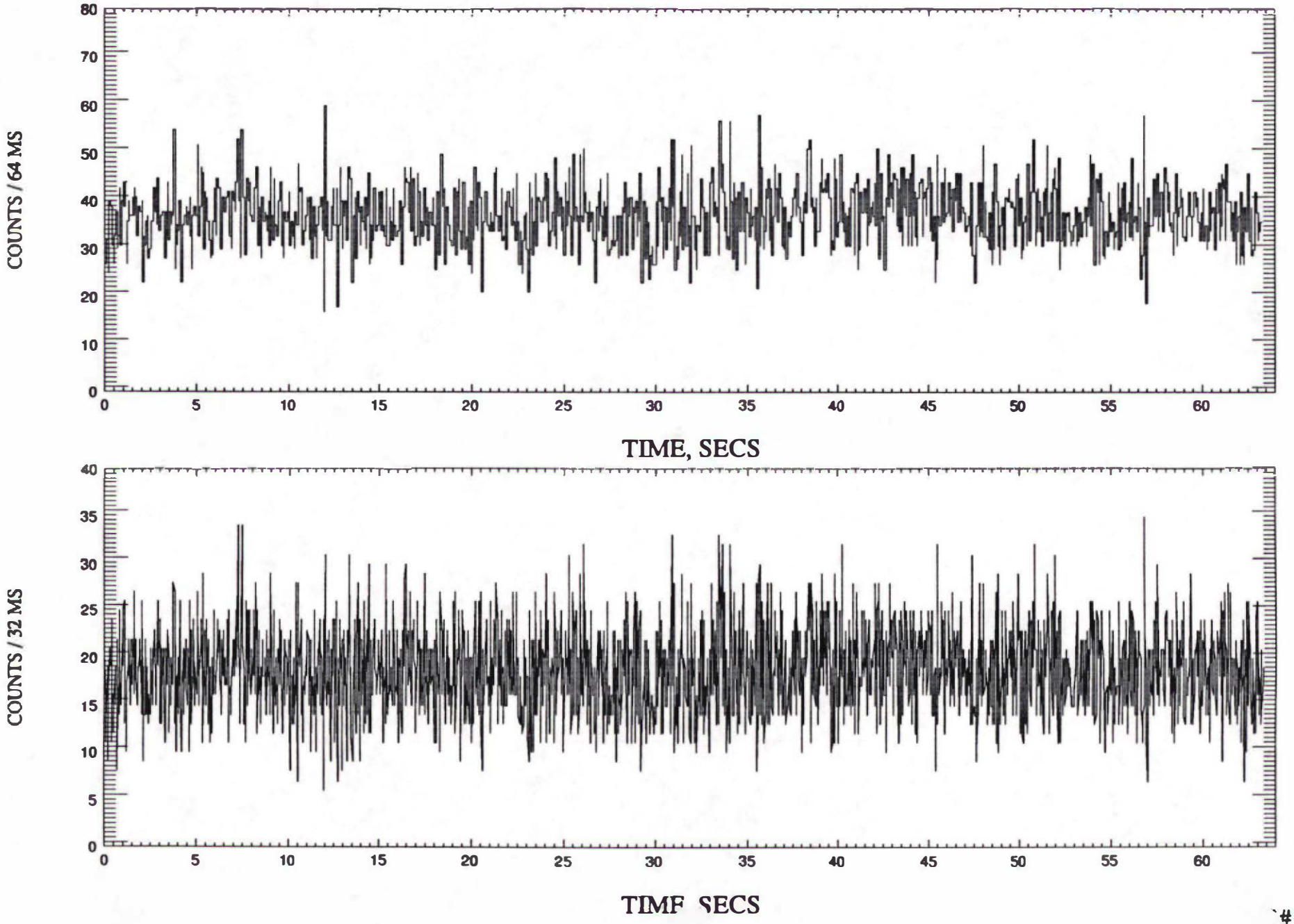
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 6 at UT= 2.032012719048 h= 7315.246 s



HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

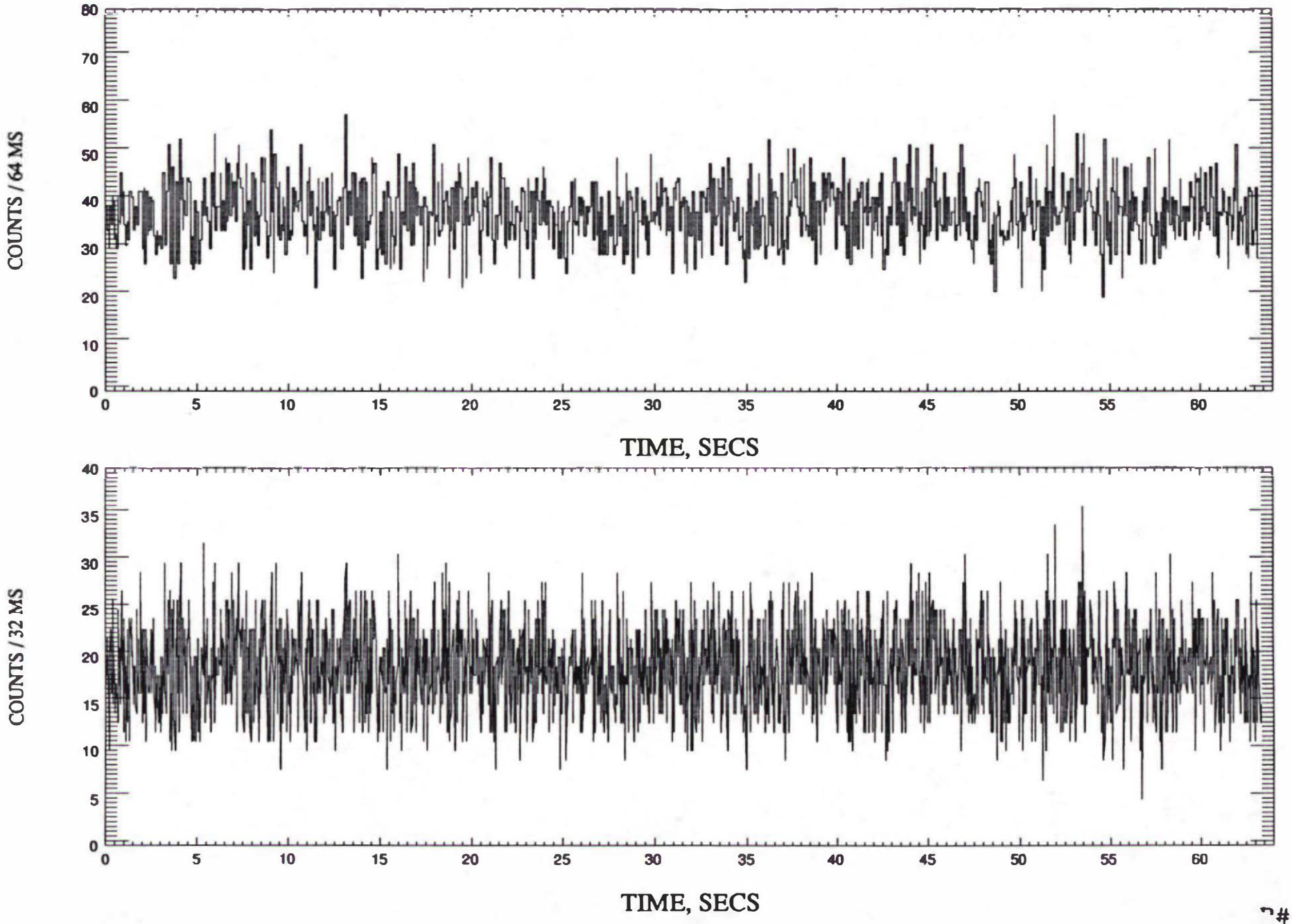
Burst Counter 7 at UT= 2.763347002665 h= 9948.049 s



4

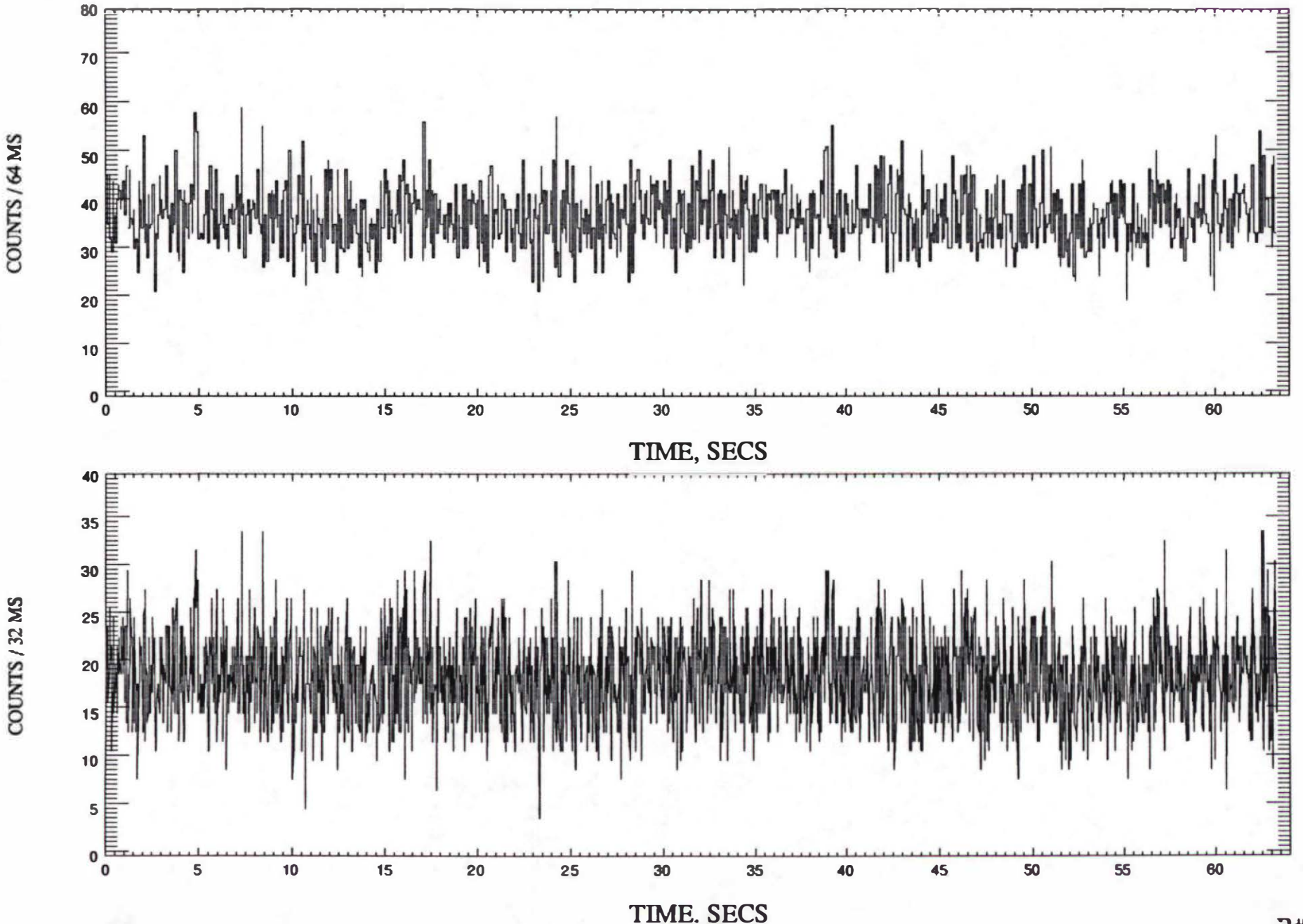
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 8 at UT= 3.492939682007 h=12574.583 s



HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

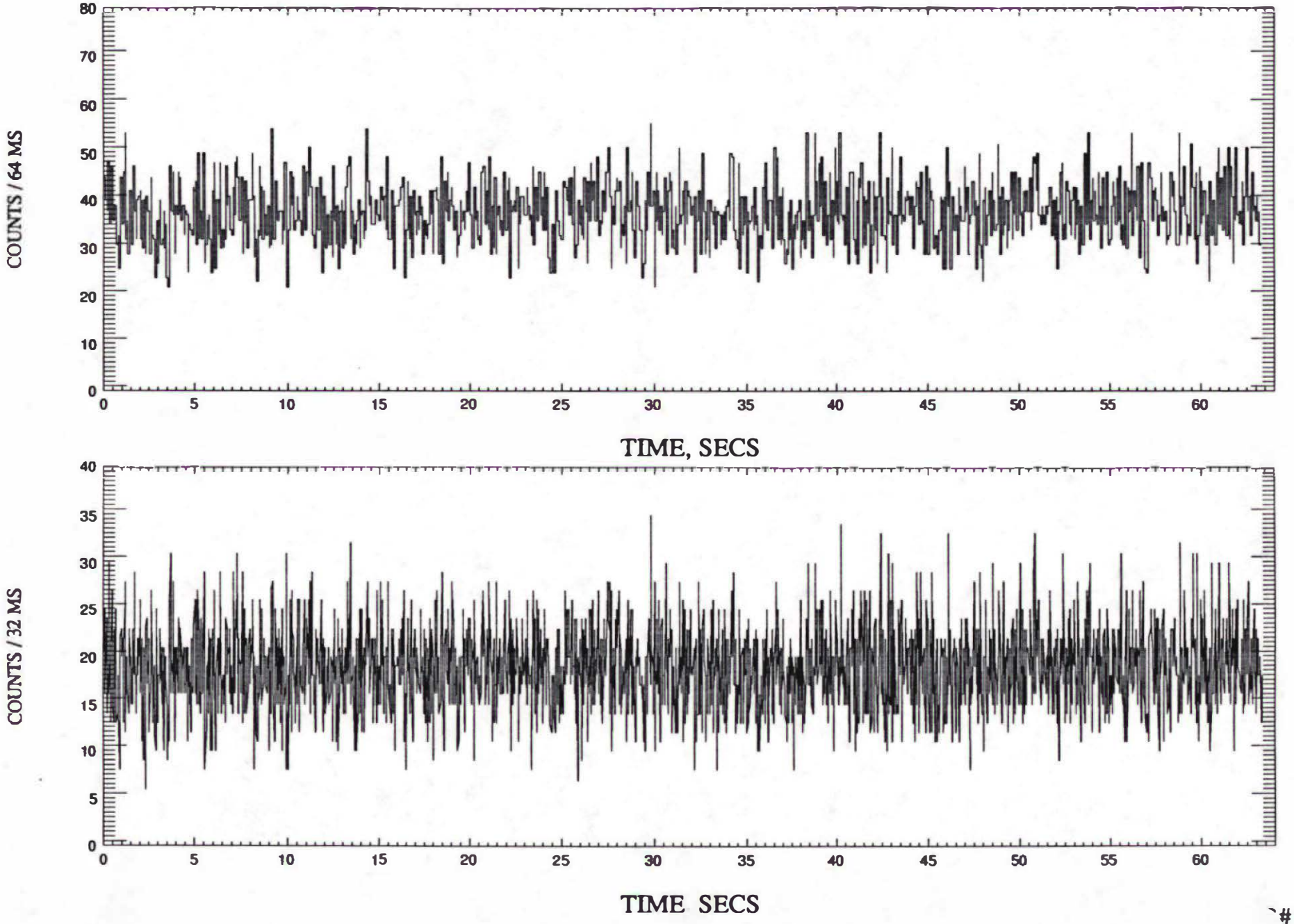
Burst Counter 9 at UT= 4.204305369059 h=15135.499 s



6

HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

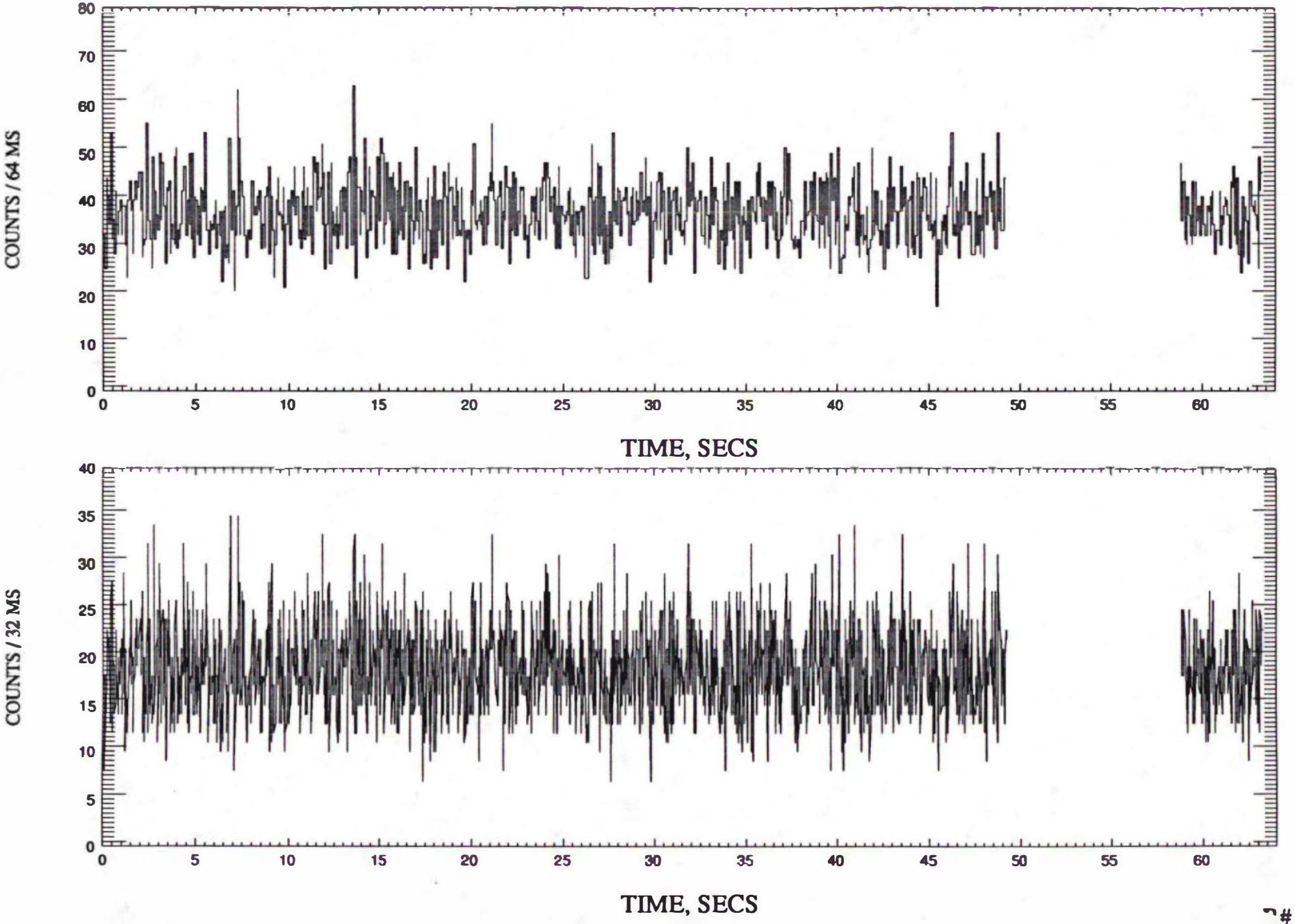
Burst Counter 10 at UT= 4.909525218540 h=17674.291 s



7

HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

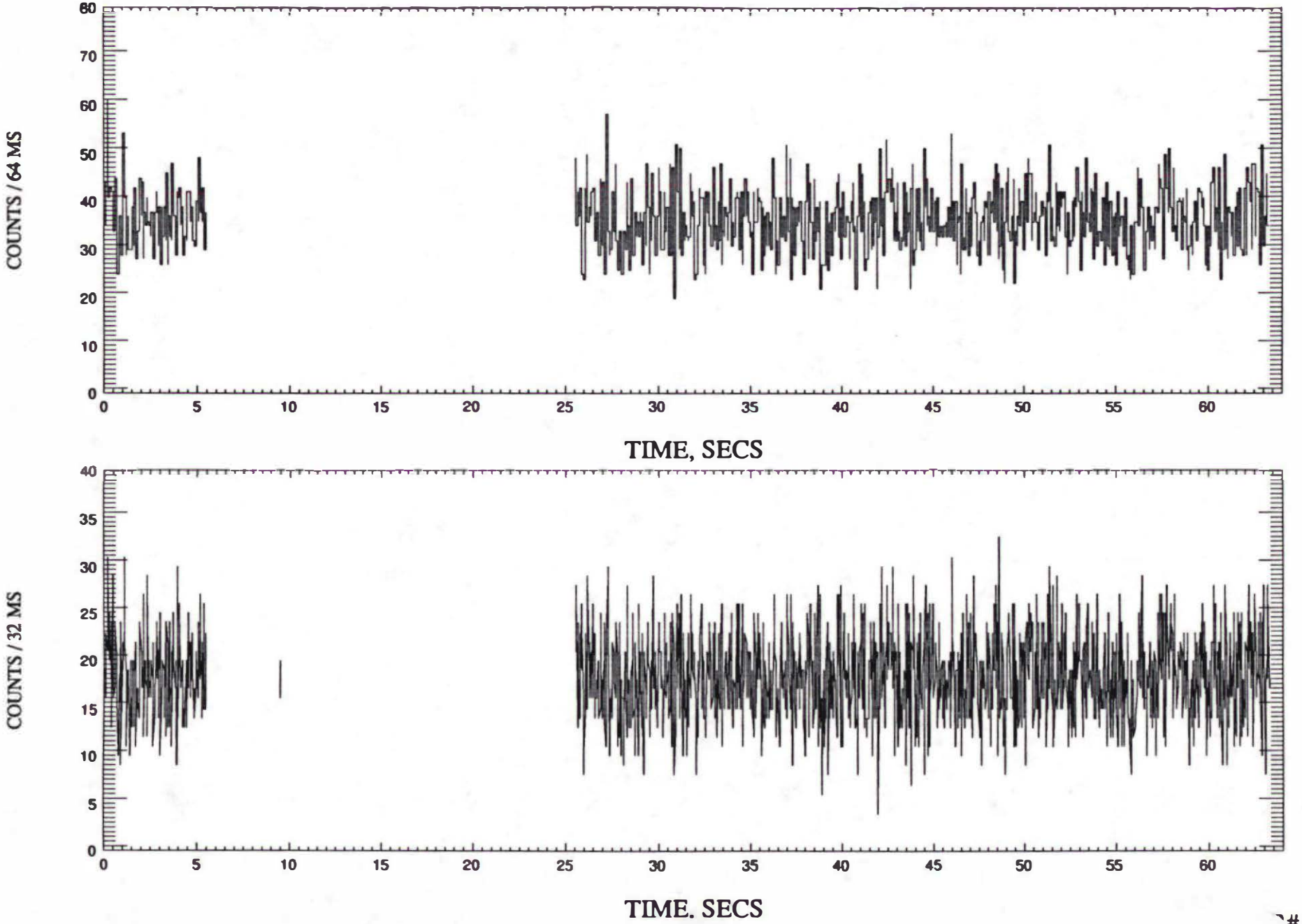
Burst Counter 11 at UT= 5.611967290243 h=20203.082 s



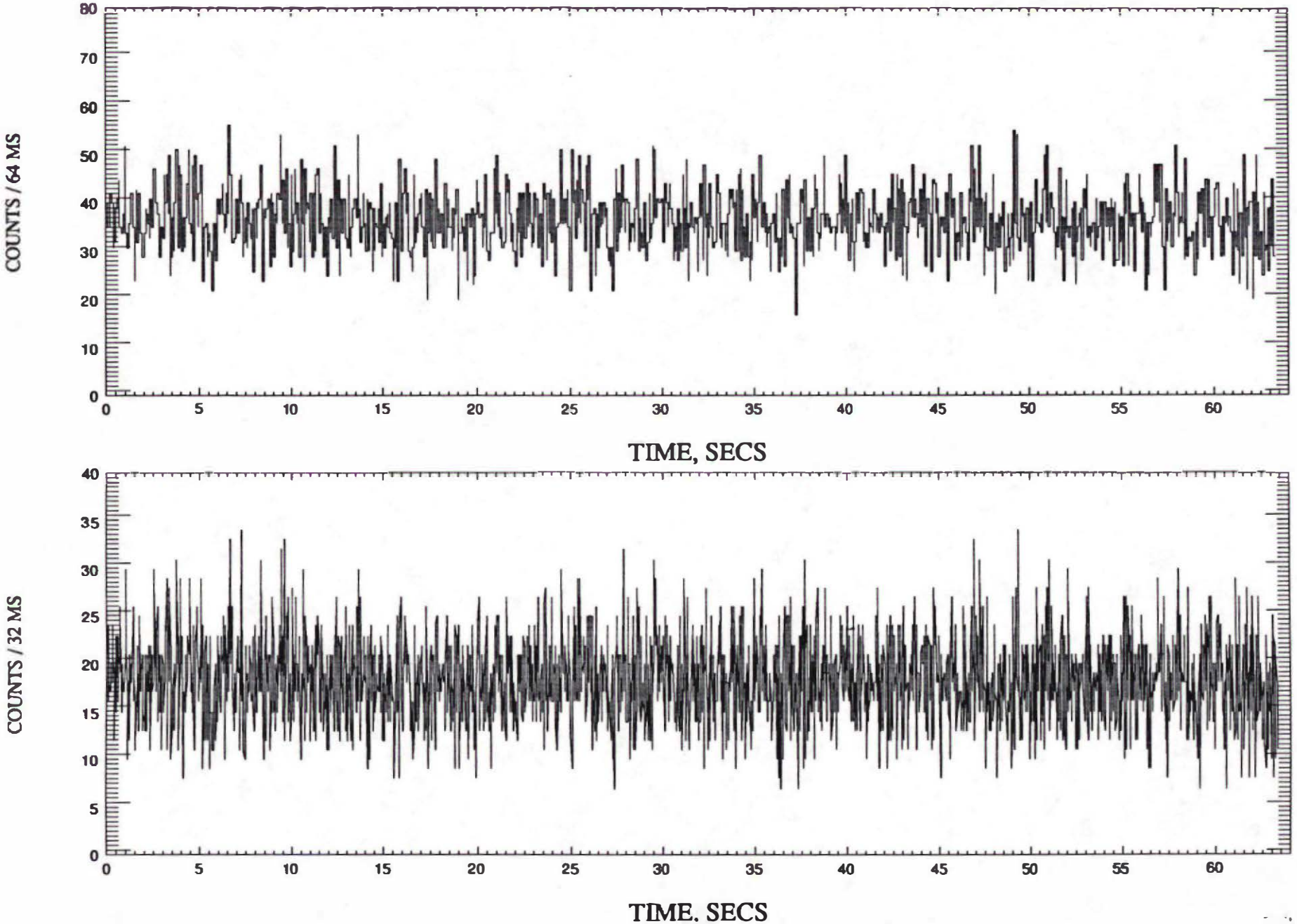
8

HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 12 at UT= 6.834000629849 h=24602.402 s

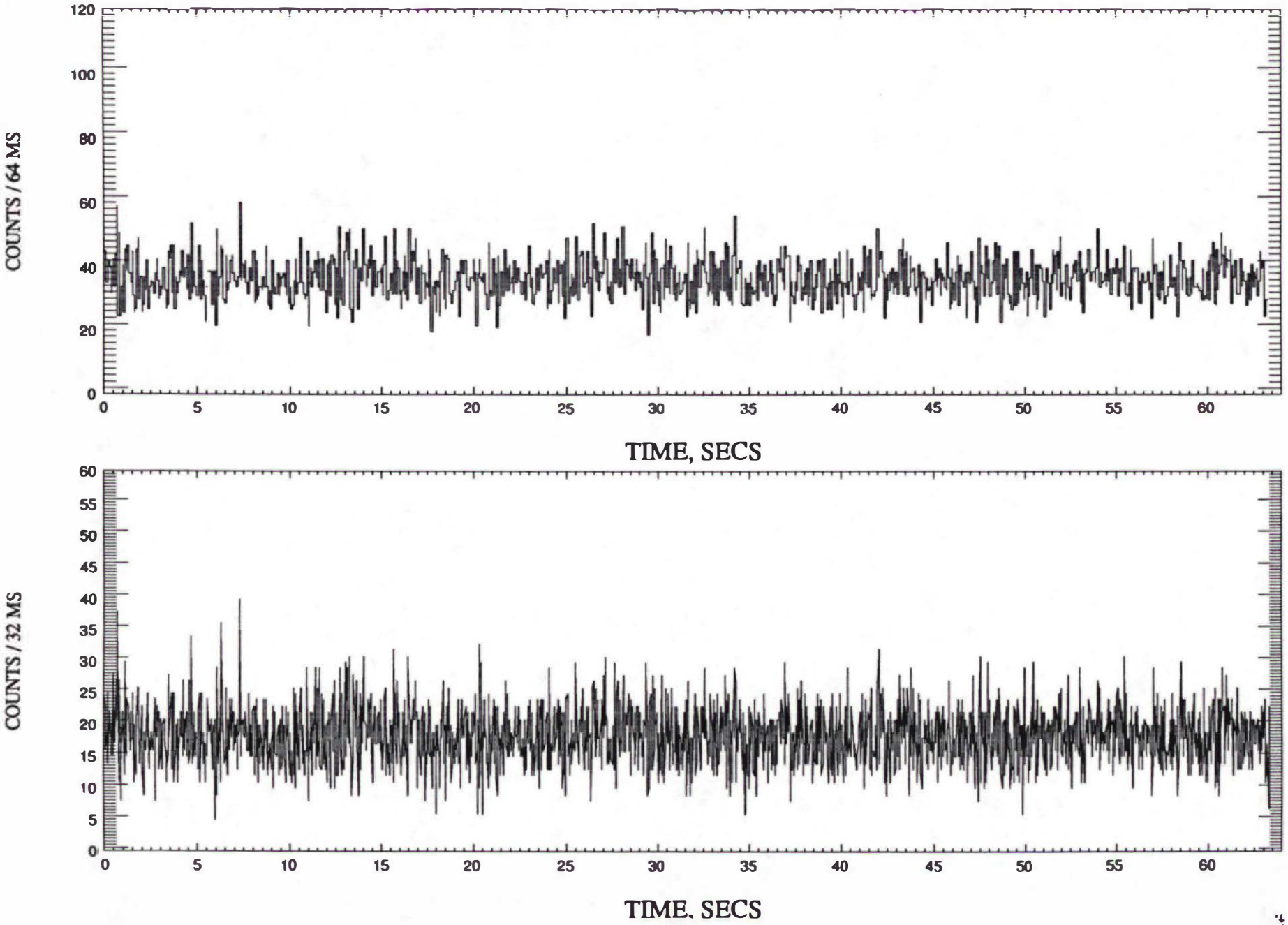


Burst Counter 13 at UT= 8.164437582228 h=29391.975 s



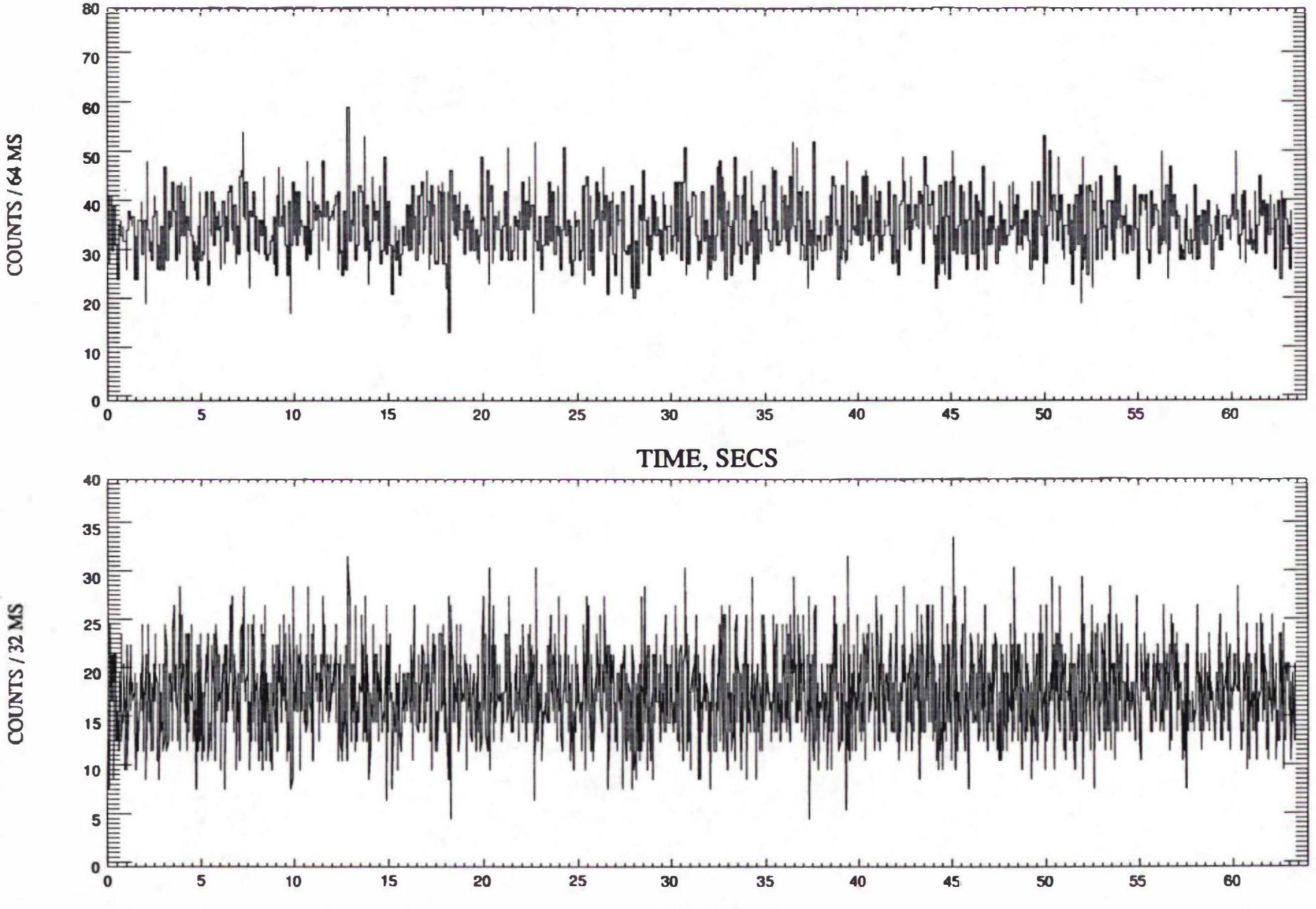
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 14 at UT= 9.417129758199 h=33901.667 s

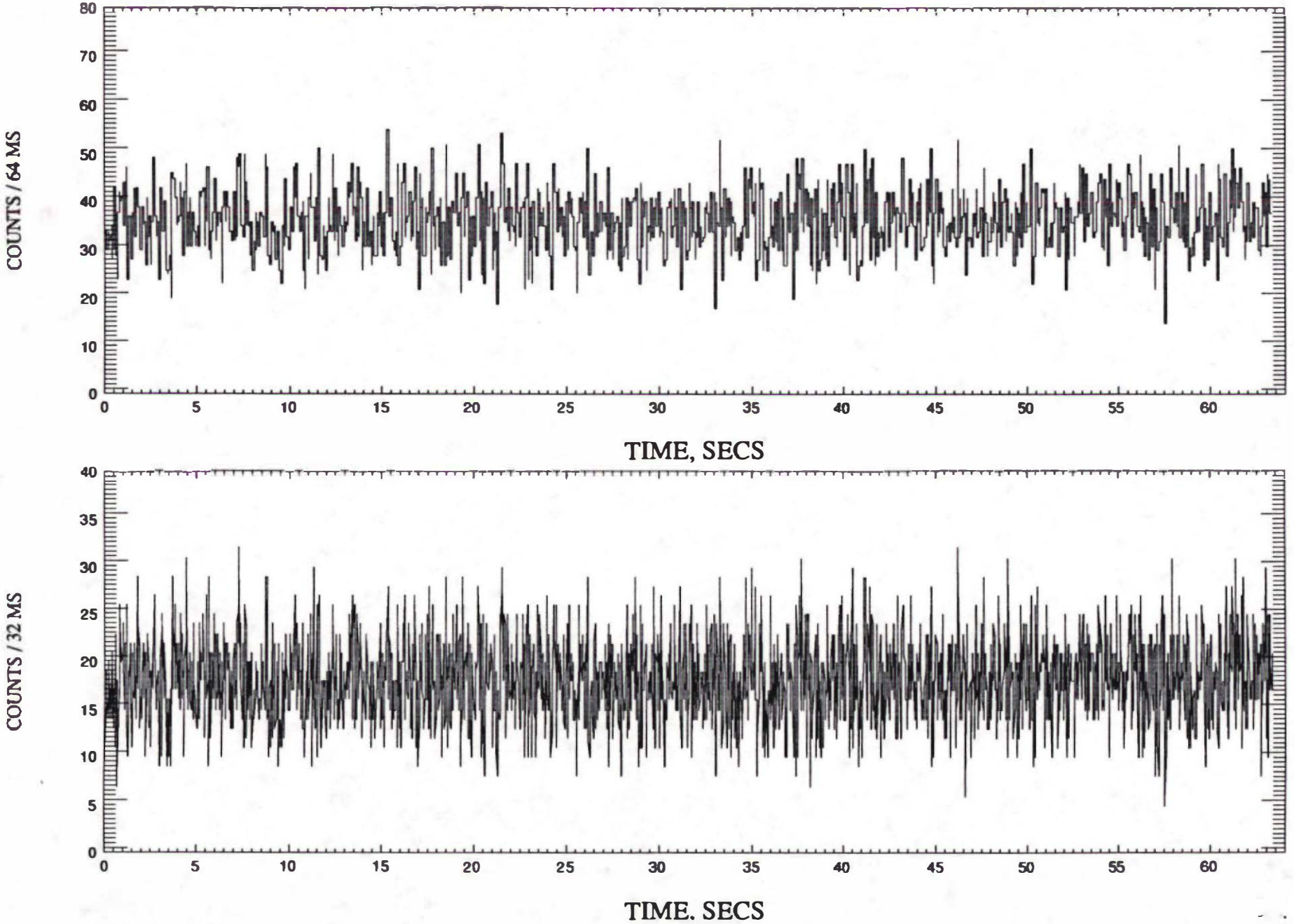


HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

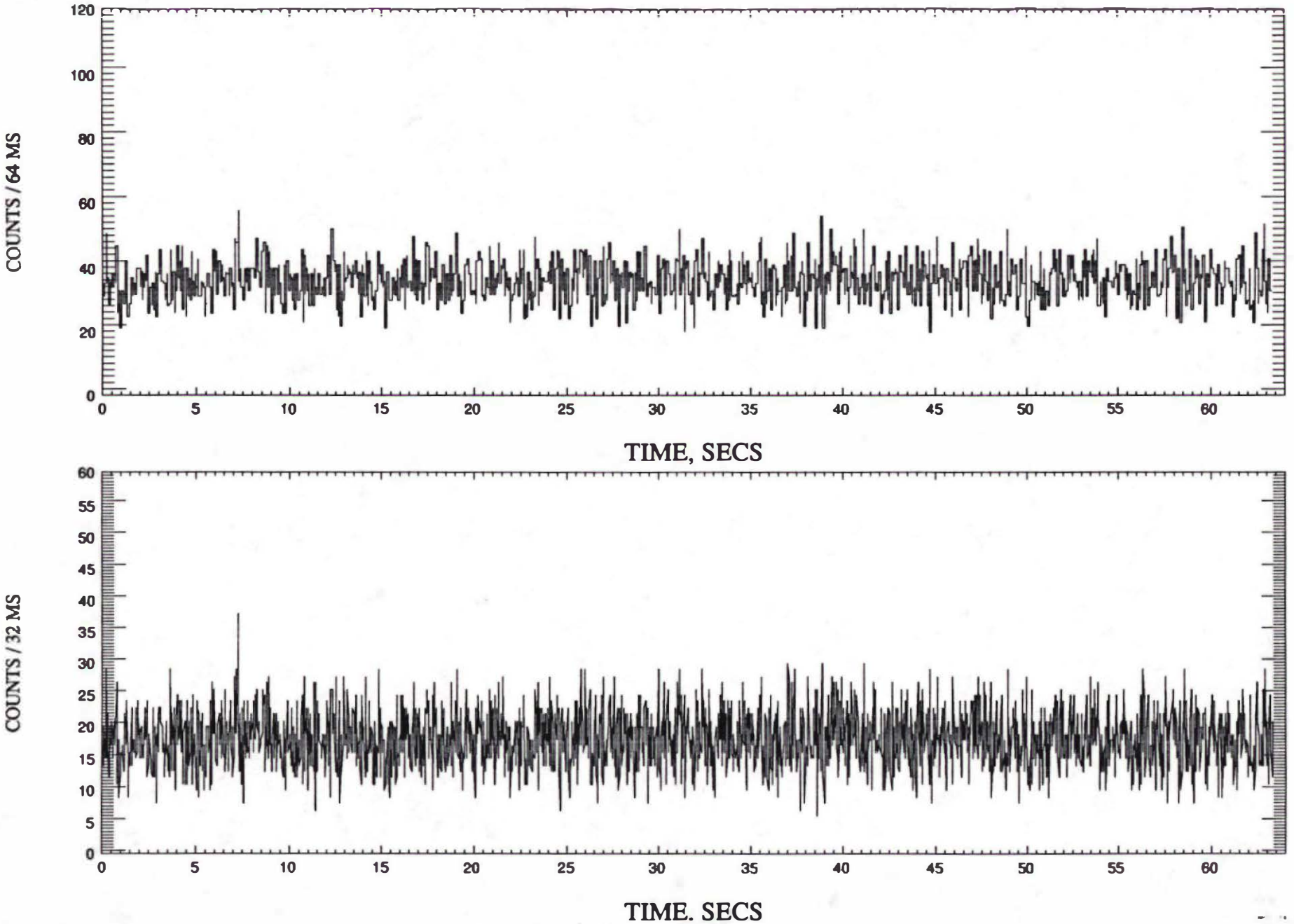
Burst Counter 15 at UT=10.699756825765 h=38519.125 s



Burst Counter 0 at UT=12.039953473409 h=43343.833 s



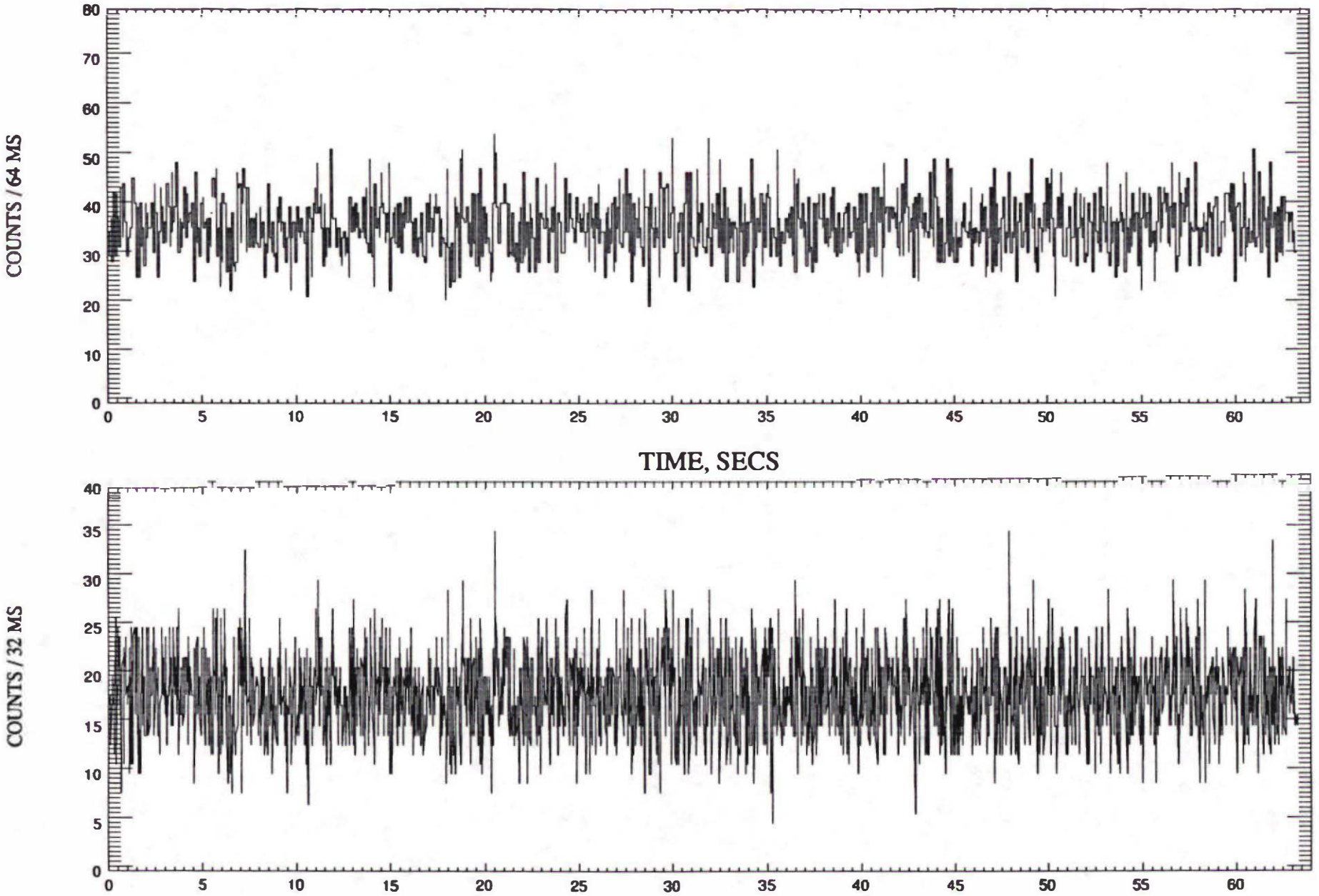
Burst Counter 1 at UT=13.296291347080 h=47866.649 s



Notes

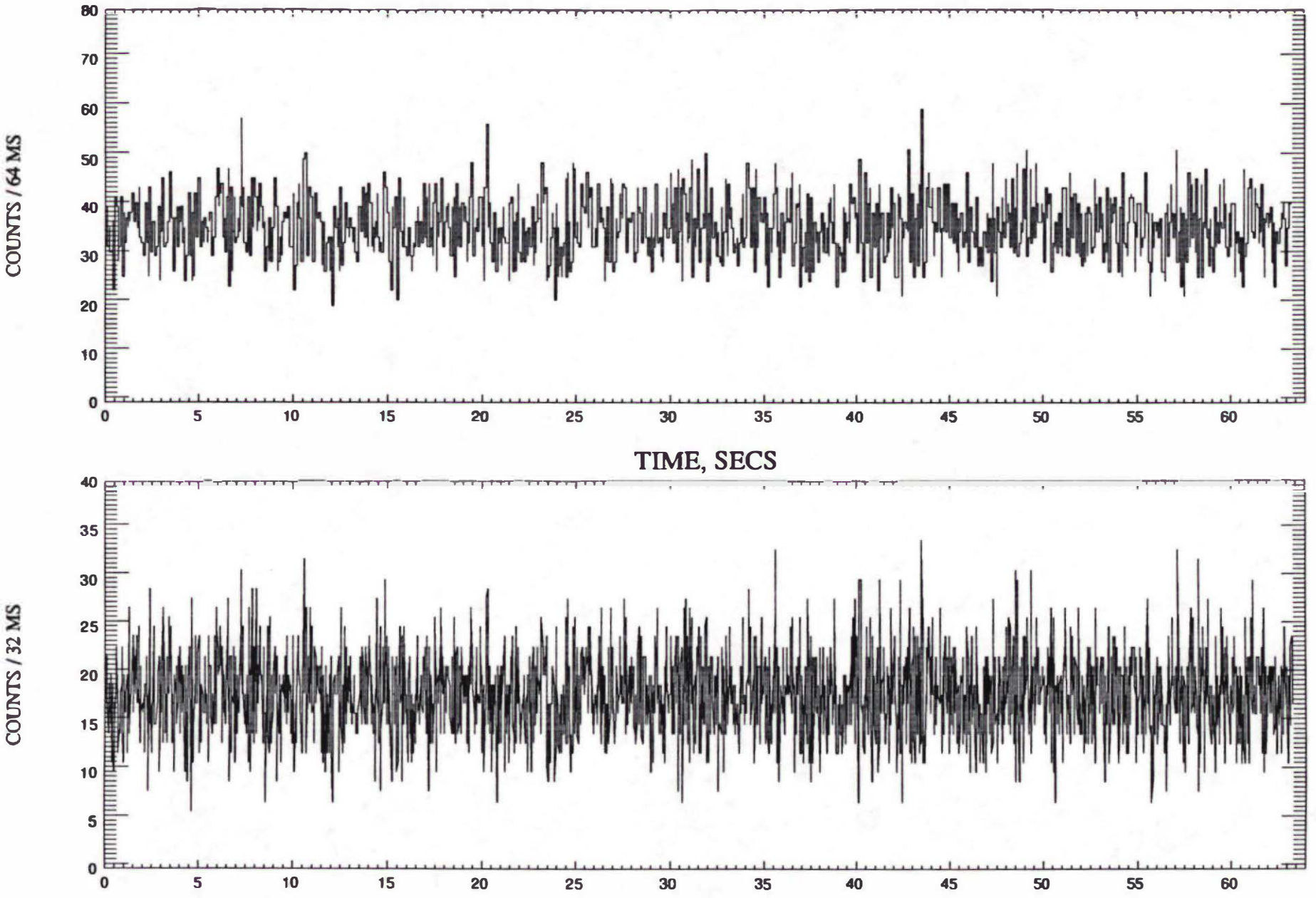
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 2 at UT=14.631175494724 h=52672.232 s



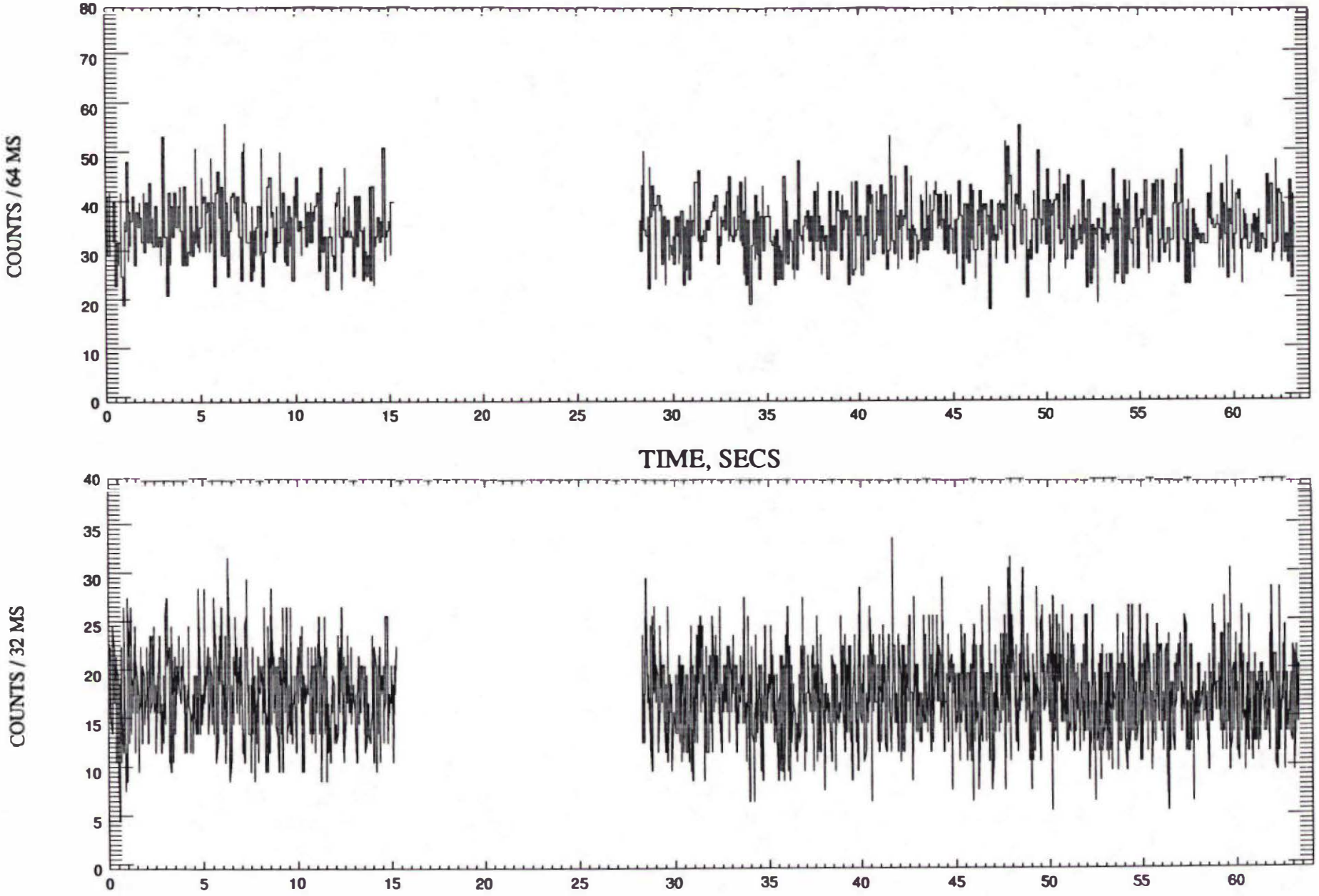
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 3 at UT=14.754751883613 h=53117.107 s



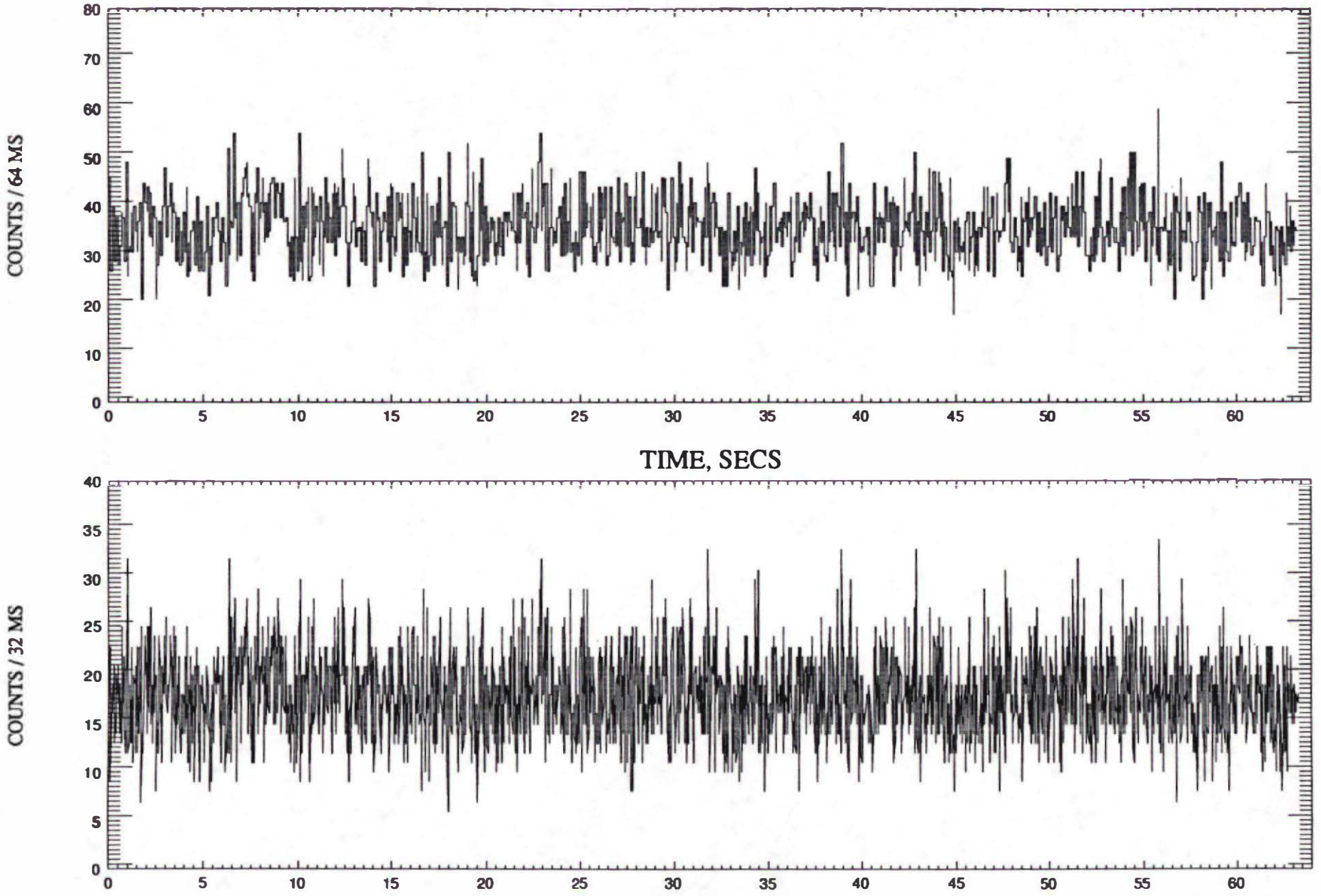
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 4 at UT=17.412781473796 h=62686.013 s



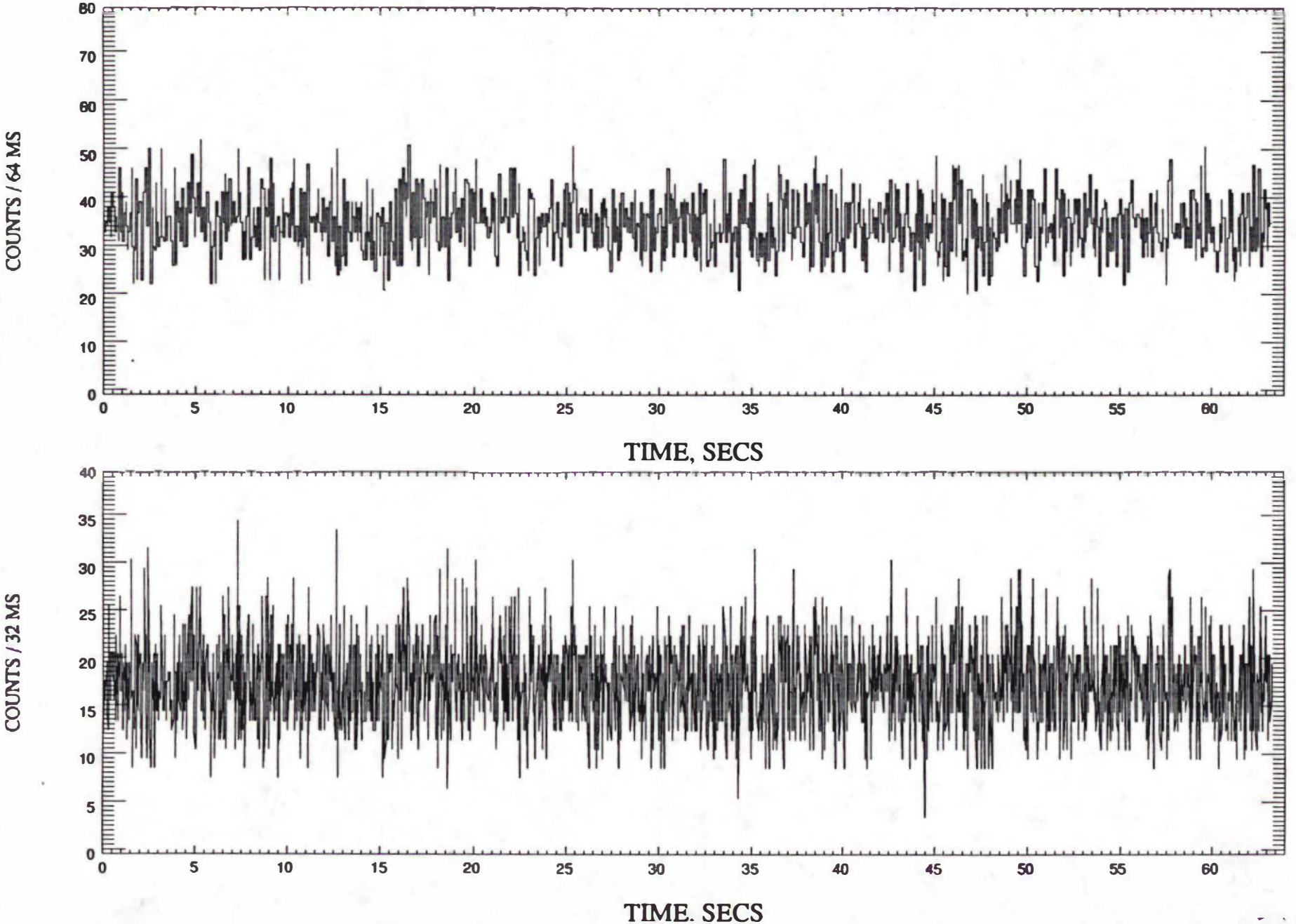
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 5 at UT=18.453563215468 h=66432.828 s



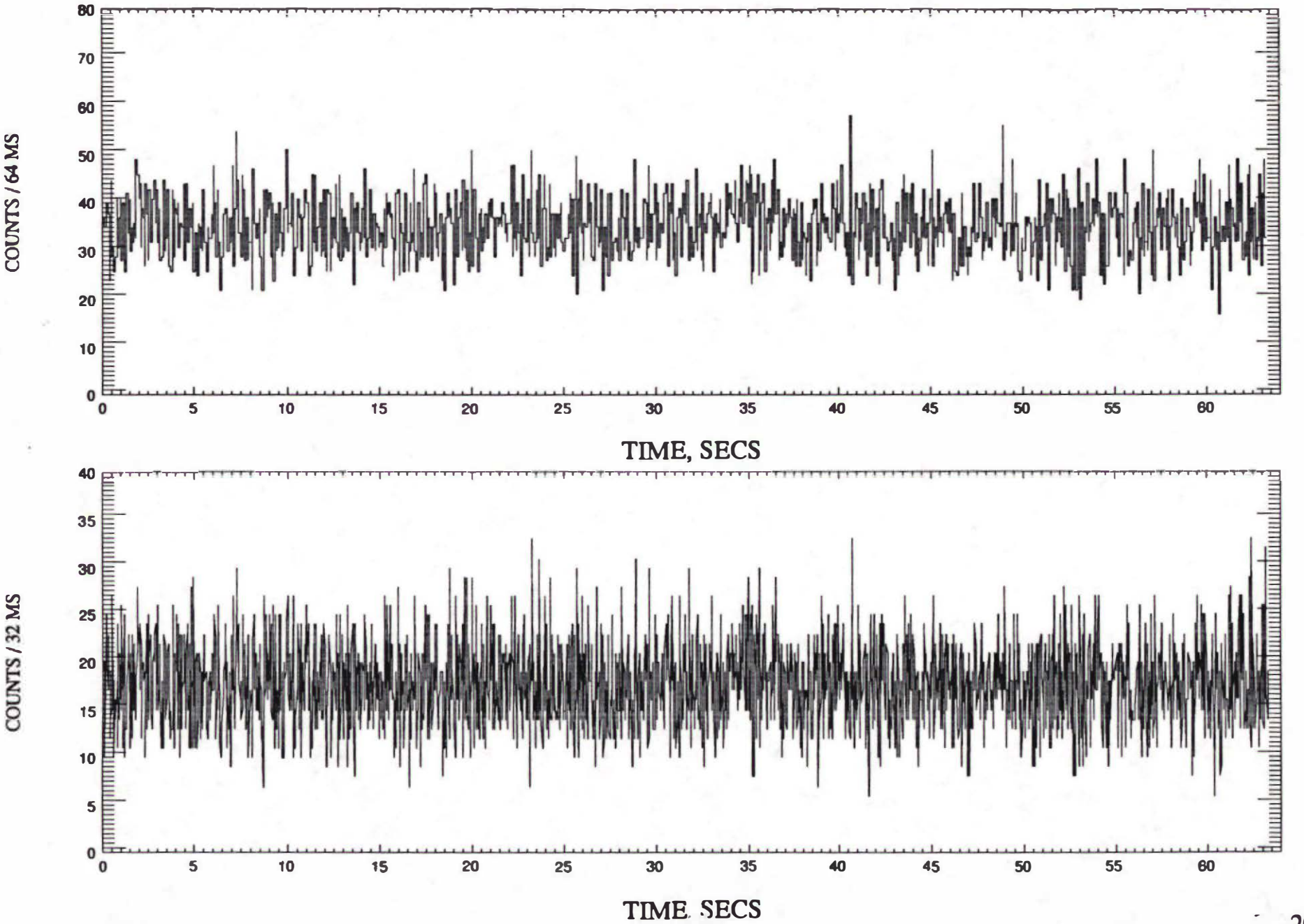
HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 6 at UT=19.217638384501 h=69183.498 s



Withdrawn

Burst Counter 7 at UT=20.008831609090 h=72031.794 s



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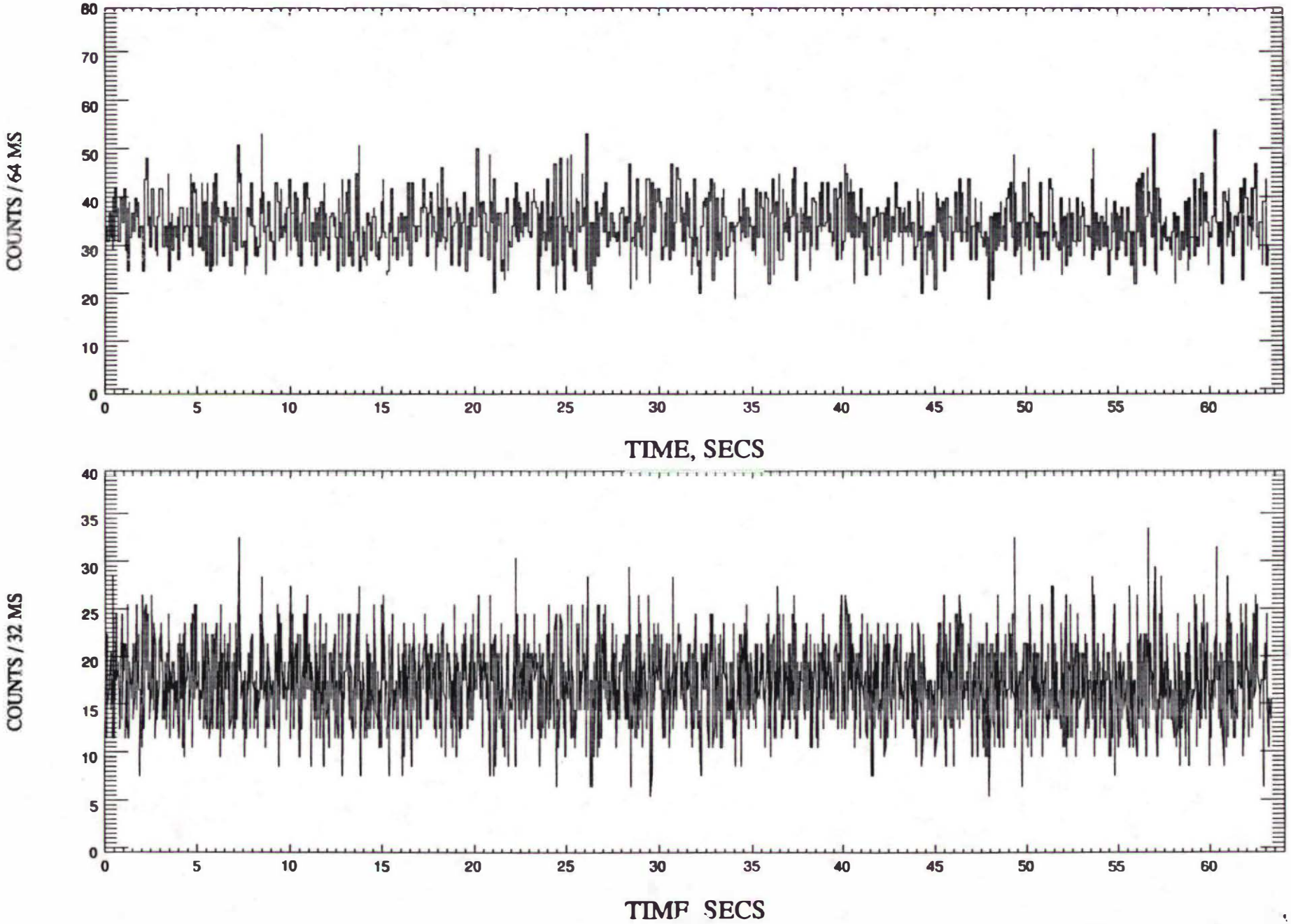
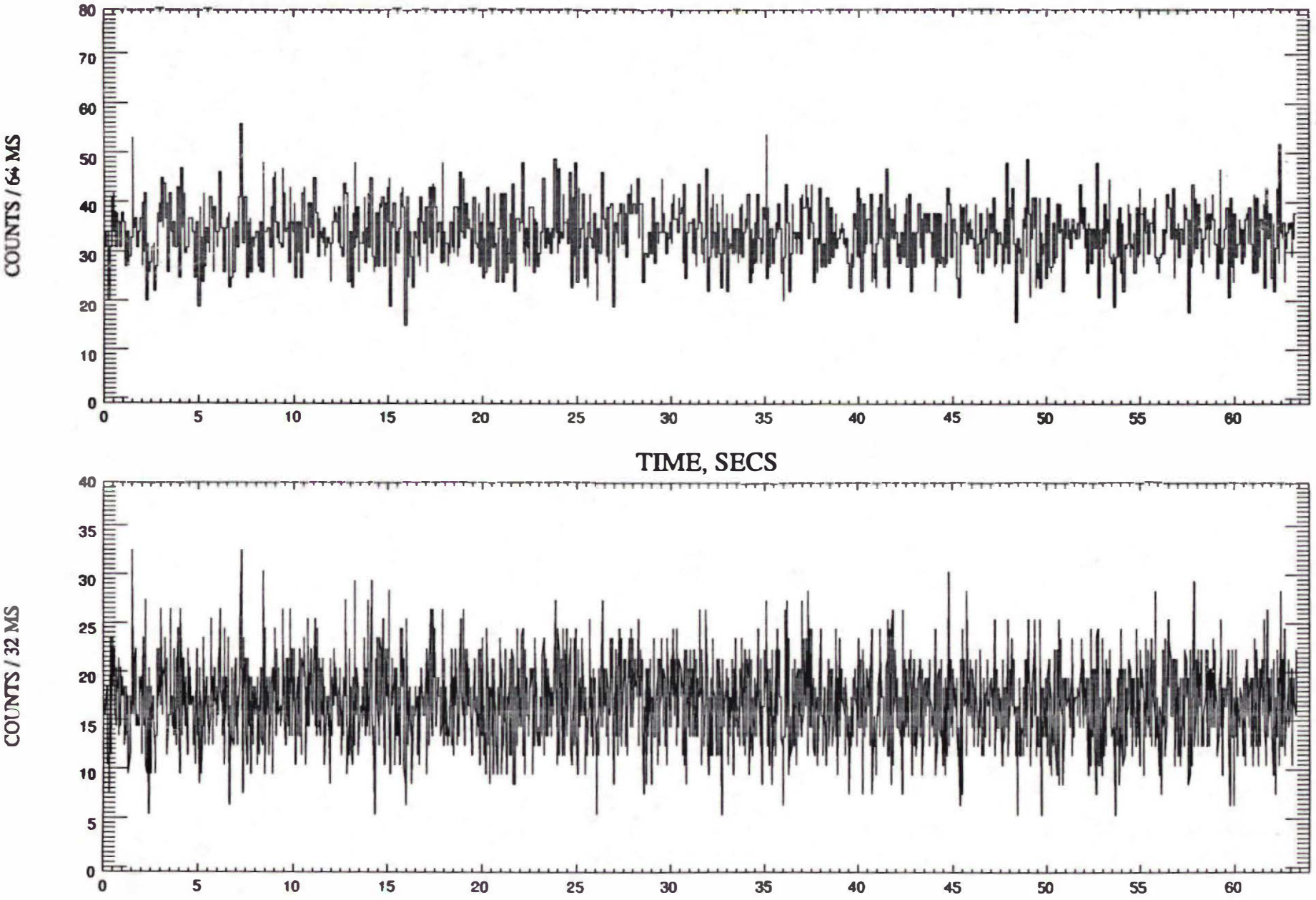
Burst Counter 8 at UT=21.060584996541 h=75818.106 s



HUS 2A TRIGGERED DATA EDR day 182, year 1992 7/10/92

Burst Counter 9 at UT=22.204073477851 h=79934.665 s



Burst Counter 10 at UT=22.897799123128 h=82432.077 s