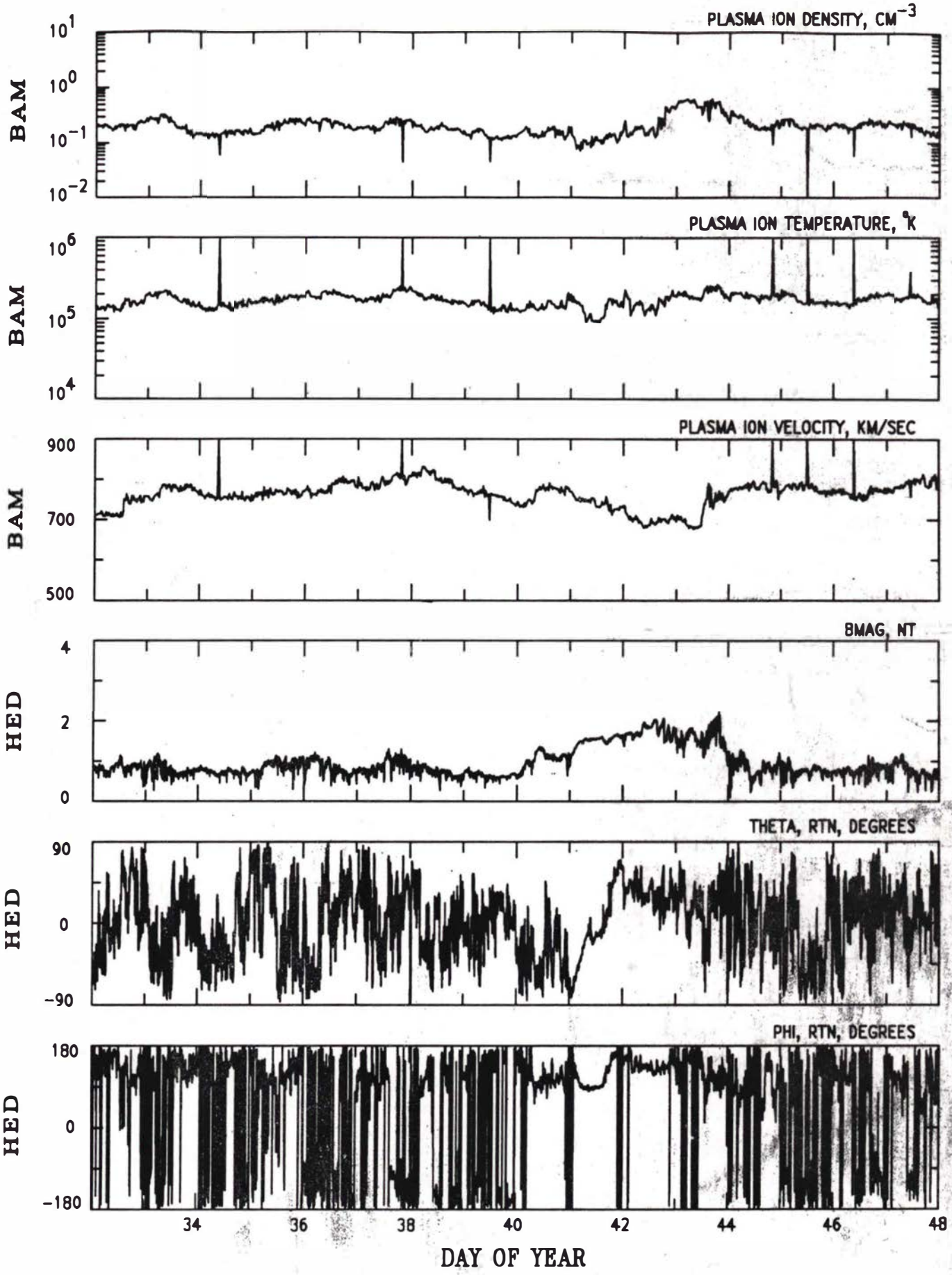
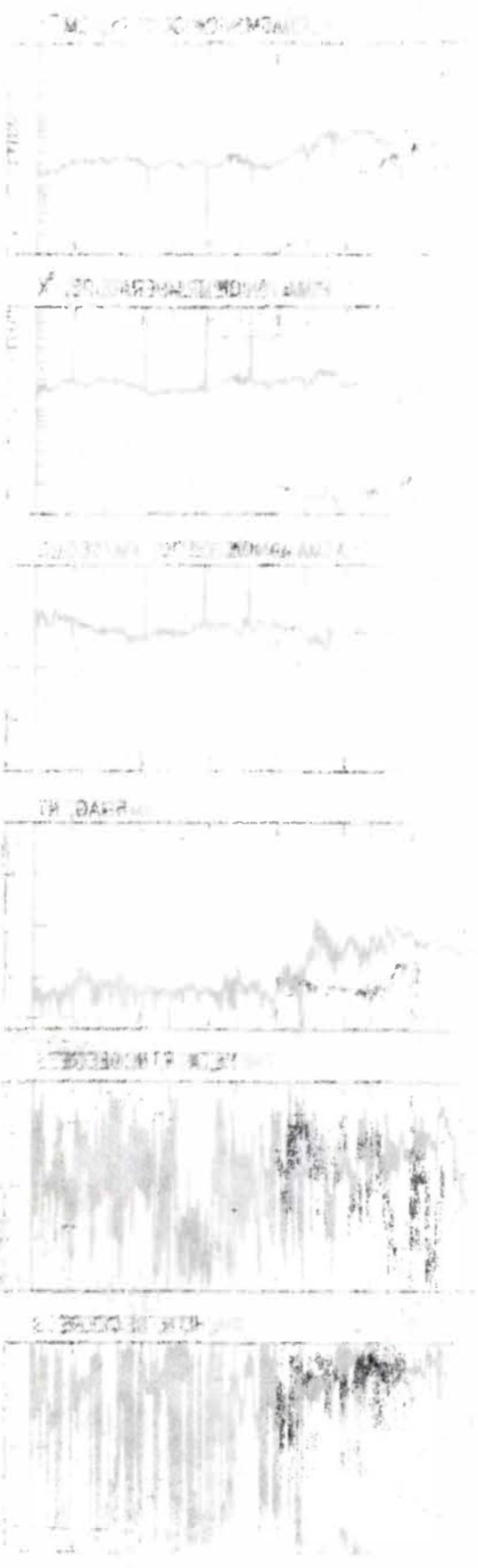
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

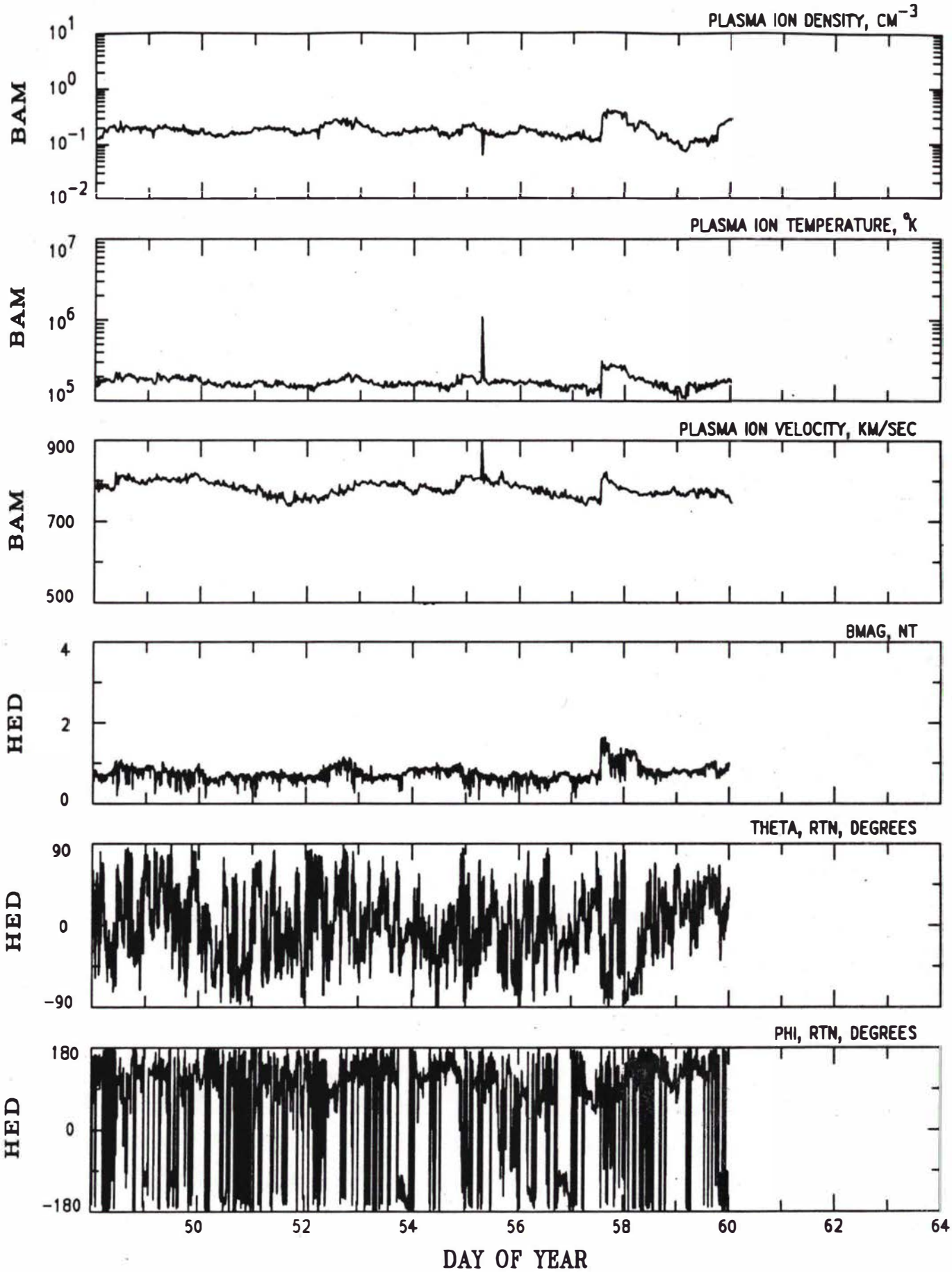
94 032 FEB 1 00:00:00.000 – 94 048 FEB 17 00:00:00.000

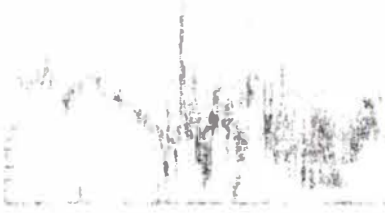




ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

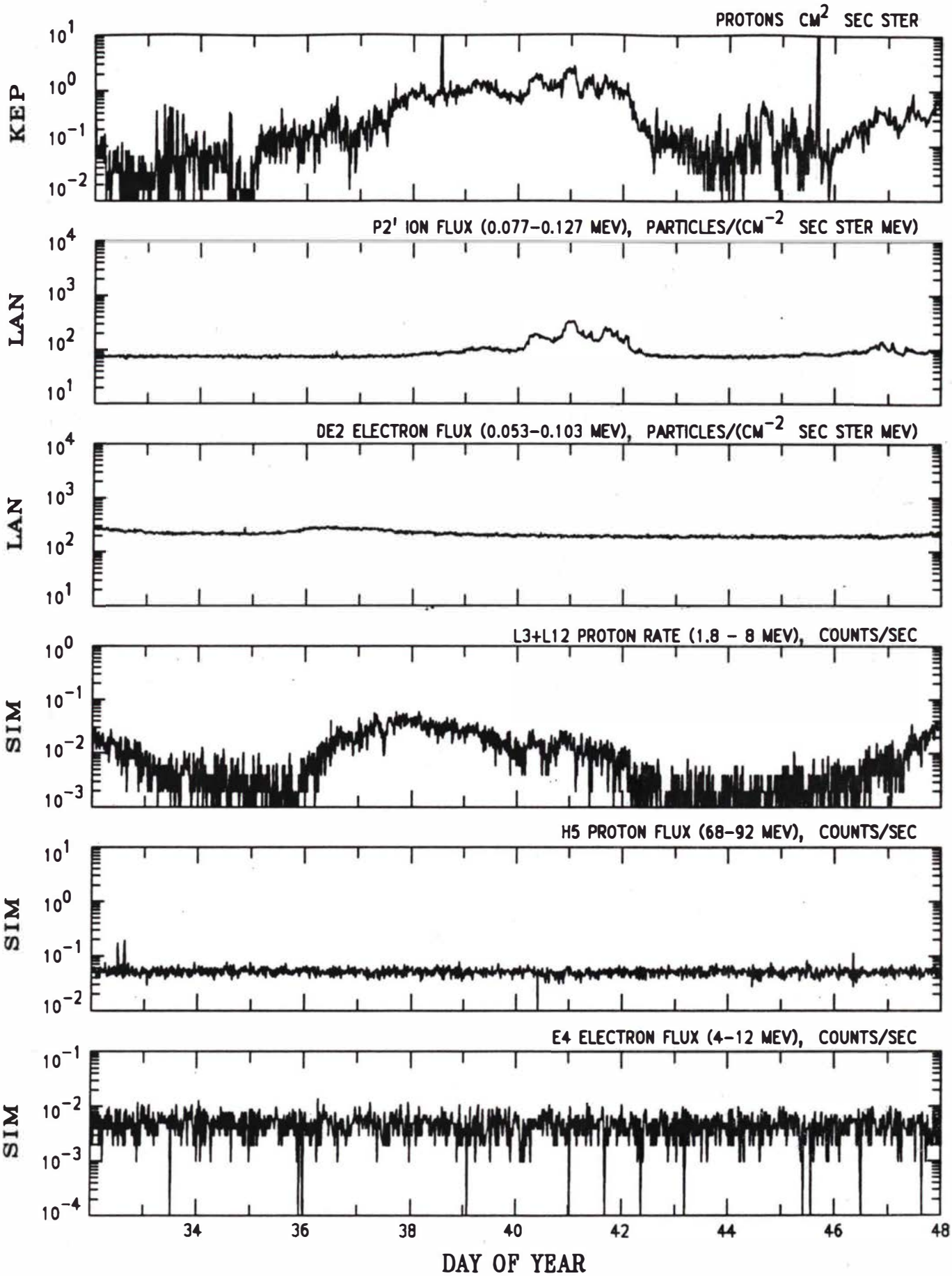
94 048 FEB 17 00:00:00.000 – 94 064 MAR 5 00:00:00.000





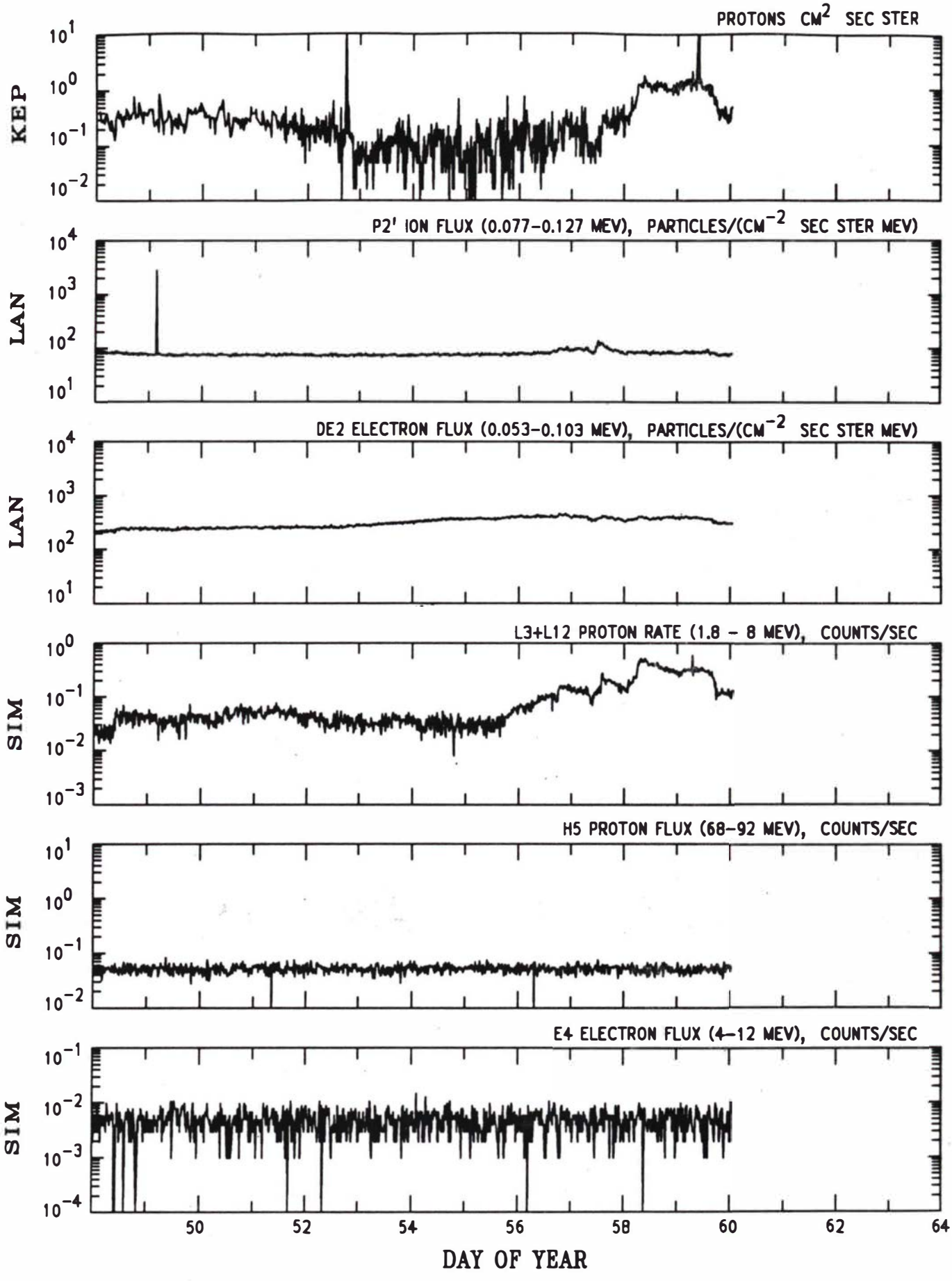
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 032 FEB 1 00:00:00.000 - 94 048 FEB 17 00:00:00.000



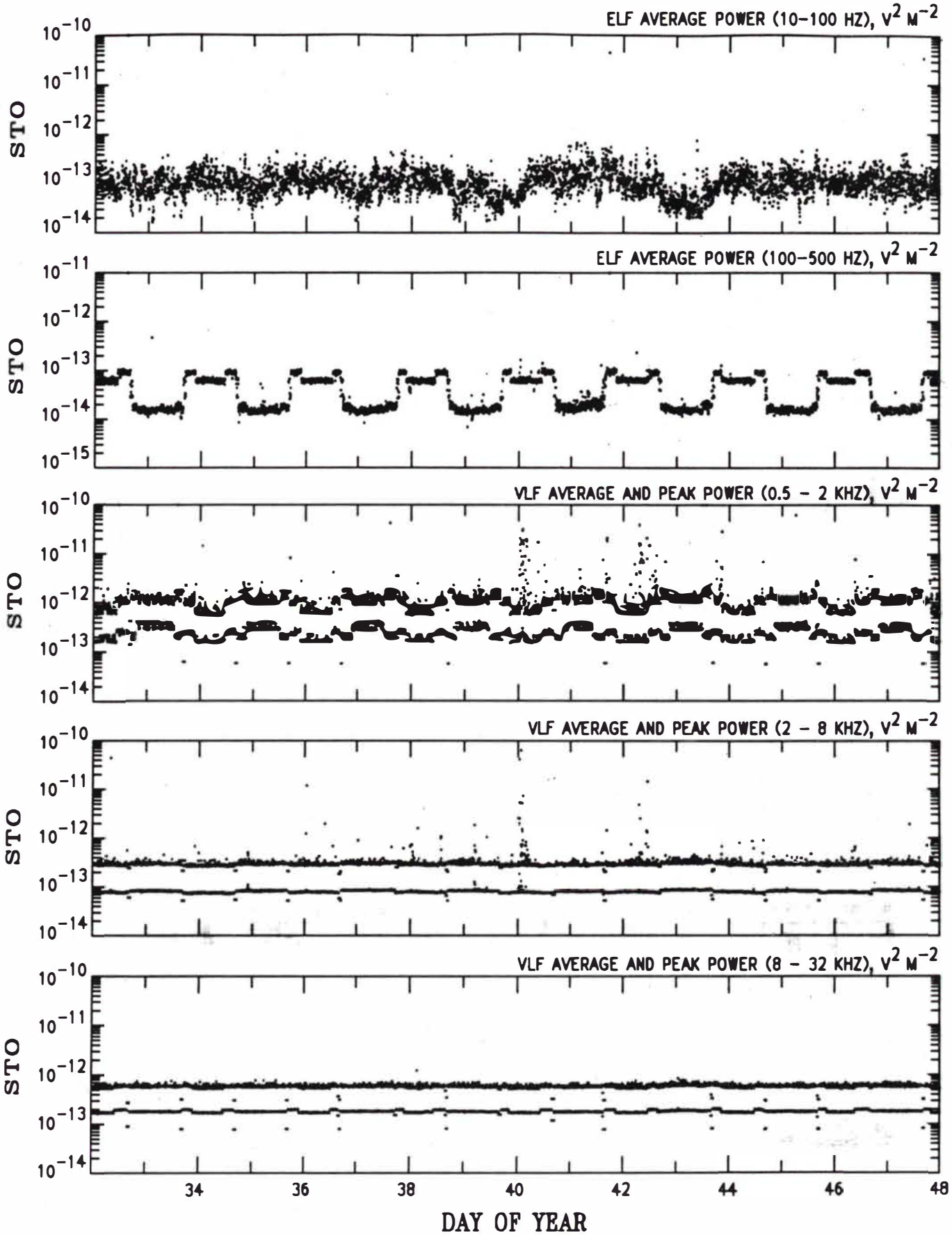
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 048 FEB 17 00:00:00.000 - 94 064 MAR 5 00:00:00.000



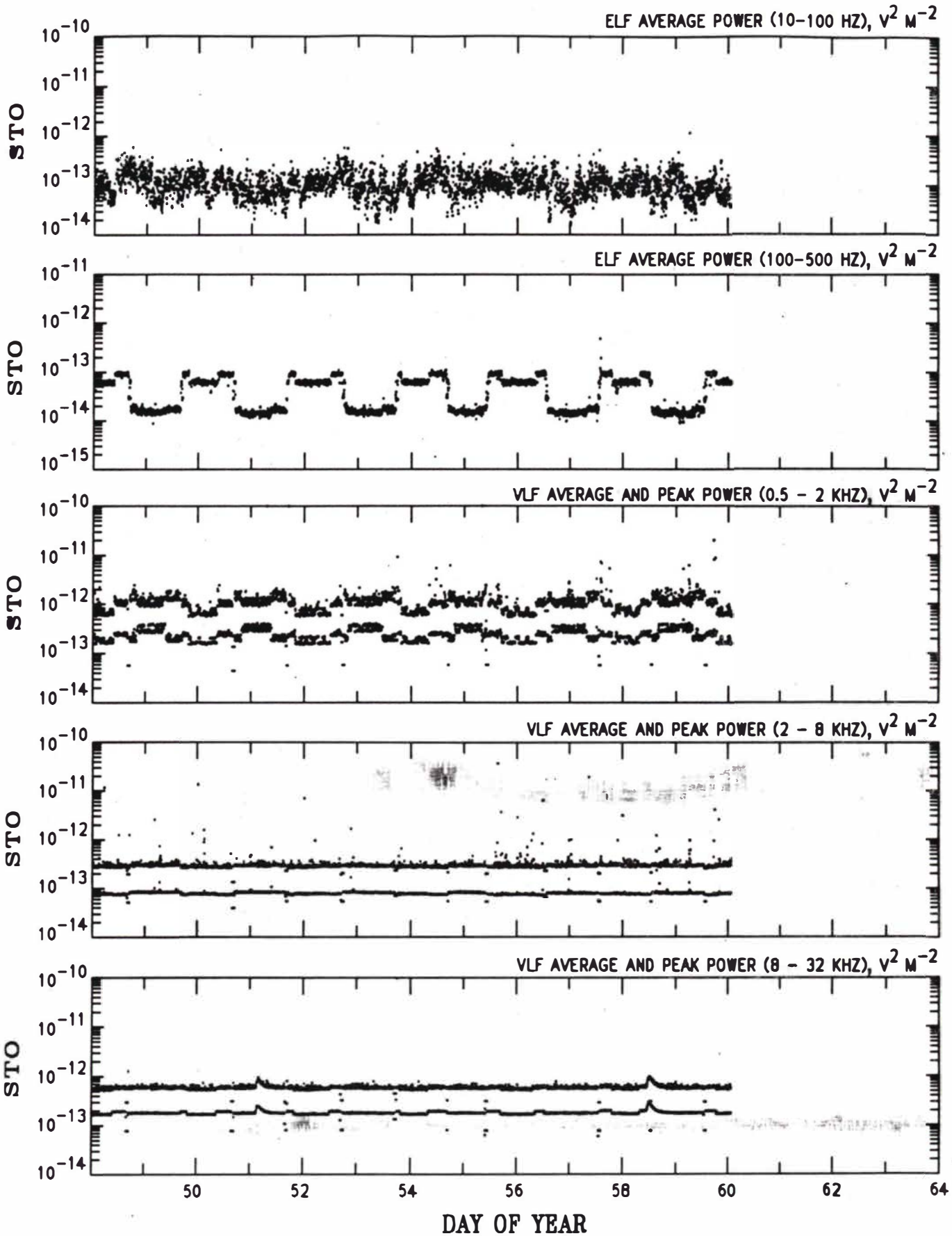
ULYSSES CDR – PLASMA WAVE

94 032 FEB 1 00:00:00.000 – 94 048 FEB 17 00:00:00.000



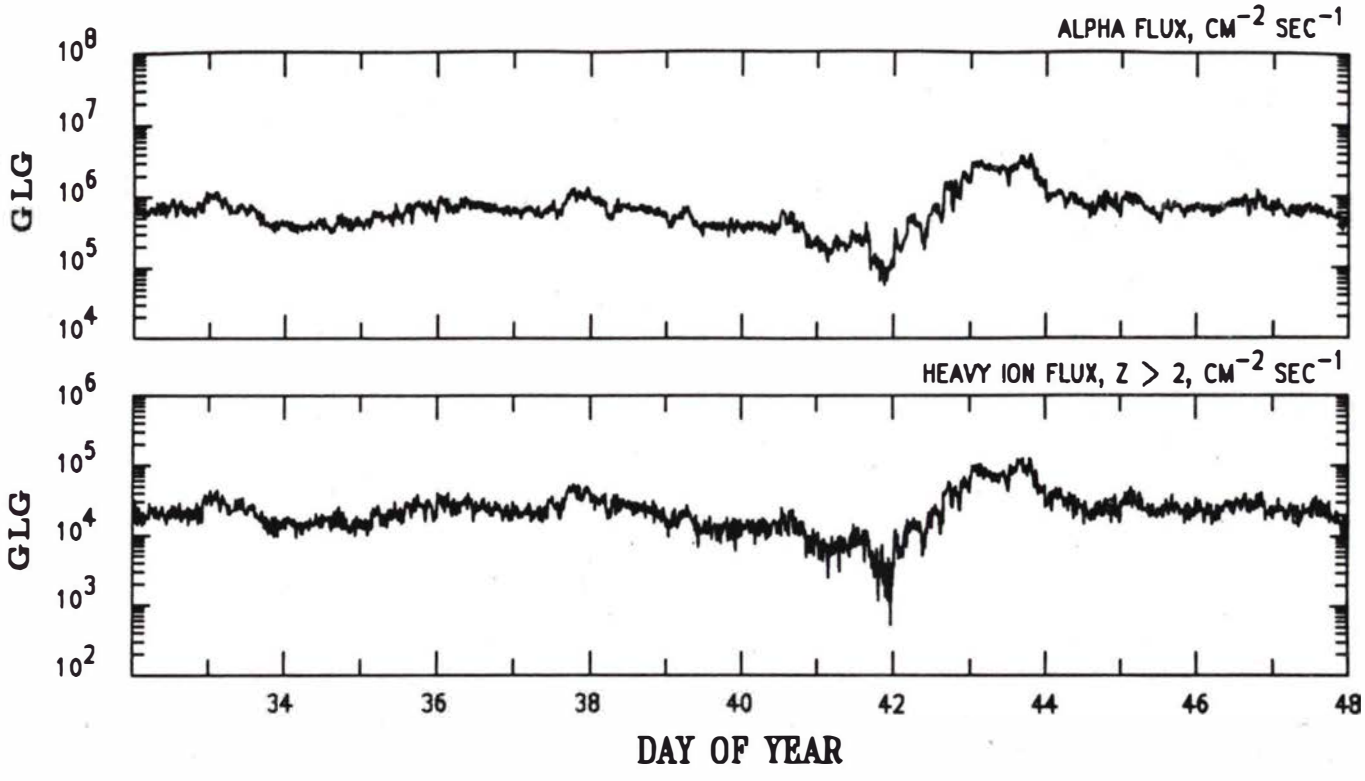
ULYSSES CDR - PLASMA WAVE

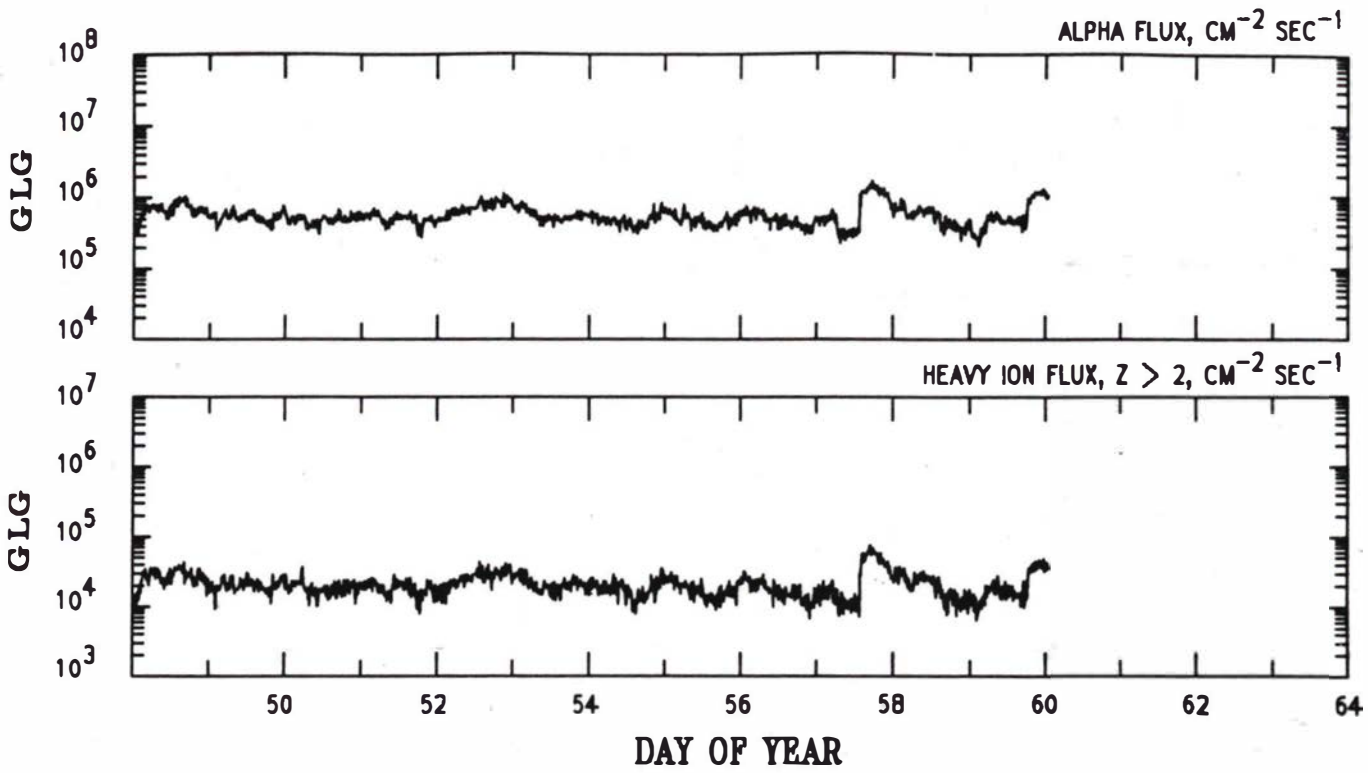
94 048 FEB 17 00:00:00.000 - 94 064 MAR 5 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

94 032 FEB 1 00:00:00.000 - 94 048 FEB 17 00:00:00.000




ULYSSES CDR – SOLAR WIND ION COMPOSITION
94 048 FEB 17 00:00:00.000 – 94 064 MAR 5 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
10^7
10^6
10^5
10^4
10^3
50
52
54
56
58
60
62
64
DAY OF YEAR

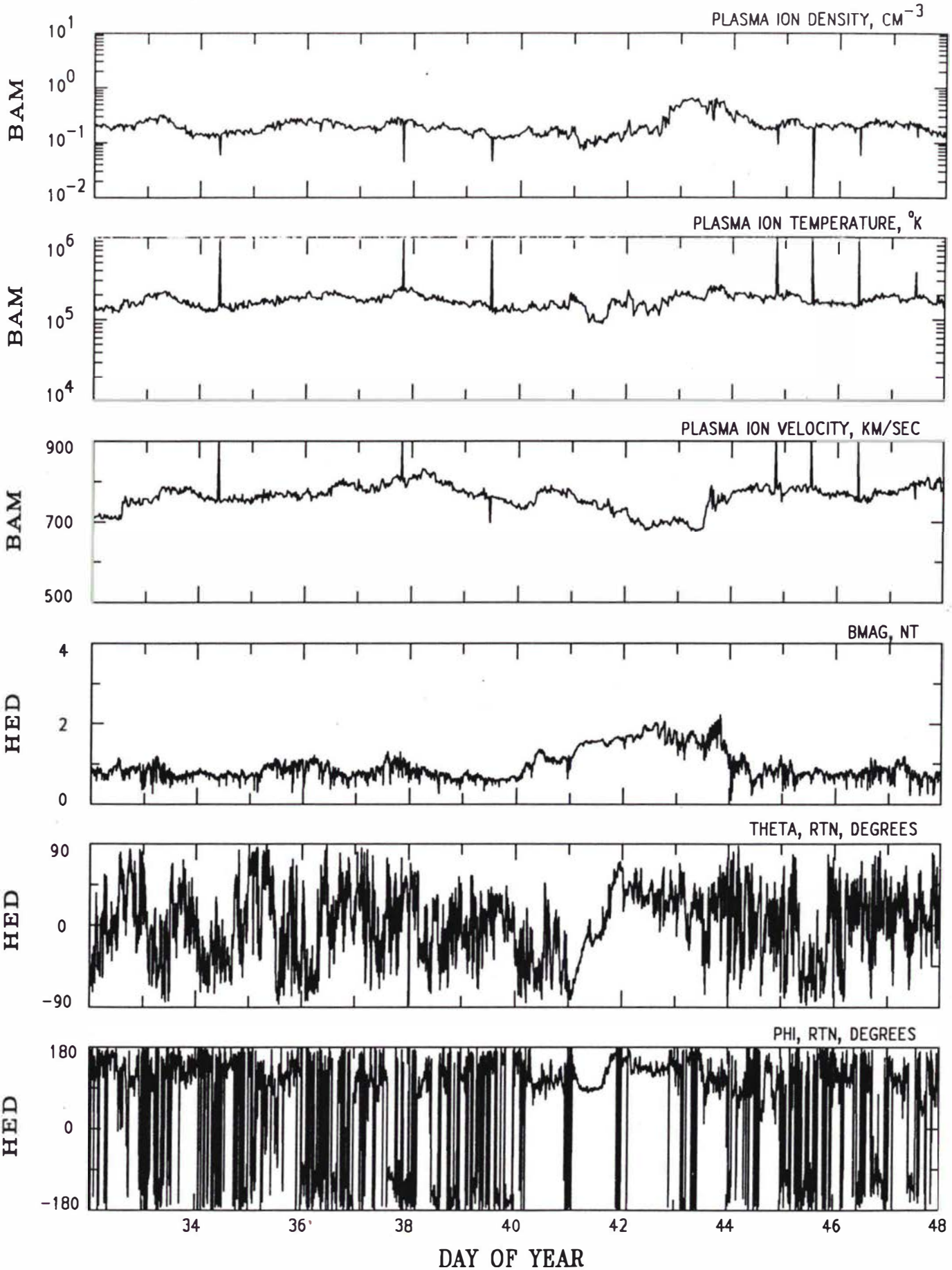
.94.032.00.11.28.859 HUS monthly long term thermal data 818 RET

E002 2ARADTMP S/C	-3.4	E003 2BSENTMP S/C	-46.7	E004 2ASENSTMP EX	10.73



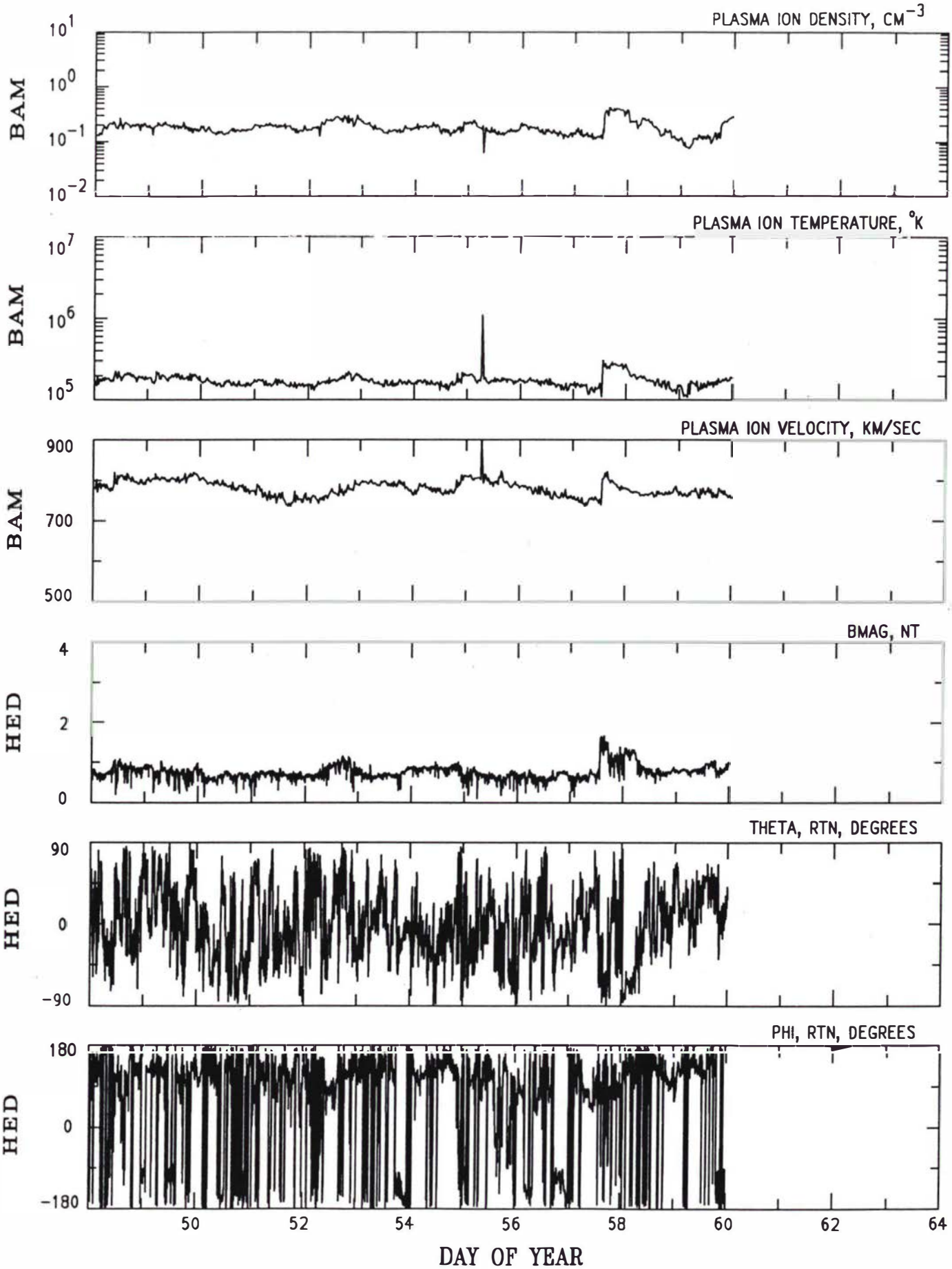
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

94 032 FEB 1 00:00:00.000 – 94 048 FEB 17 00:00:00.000



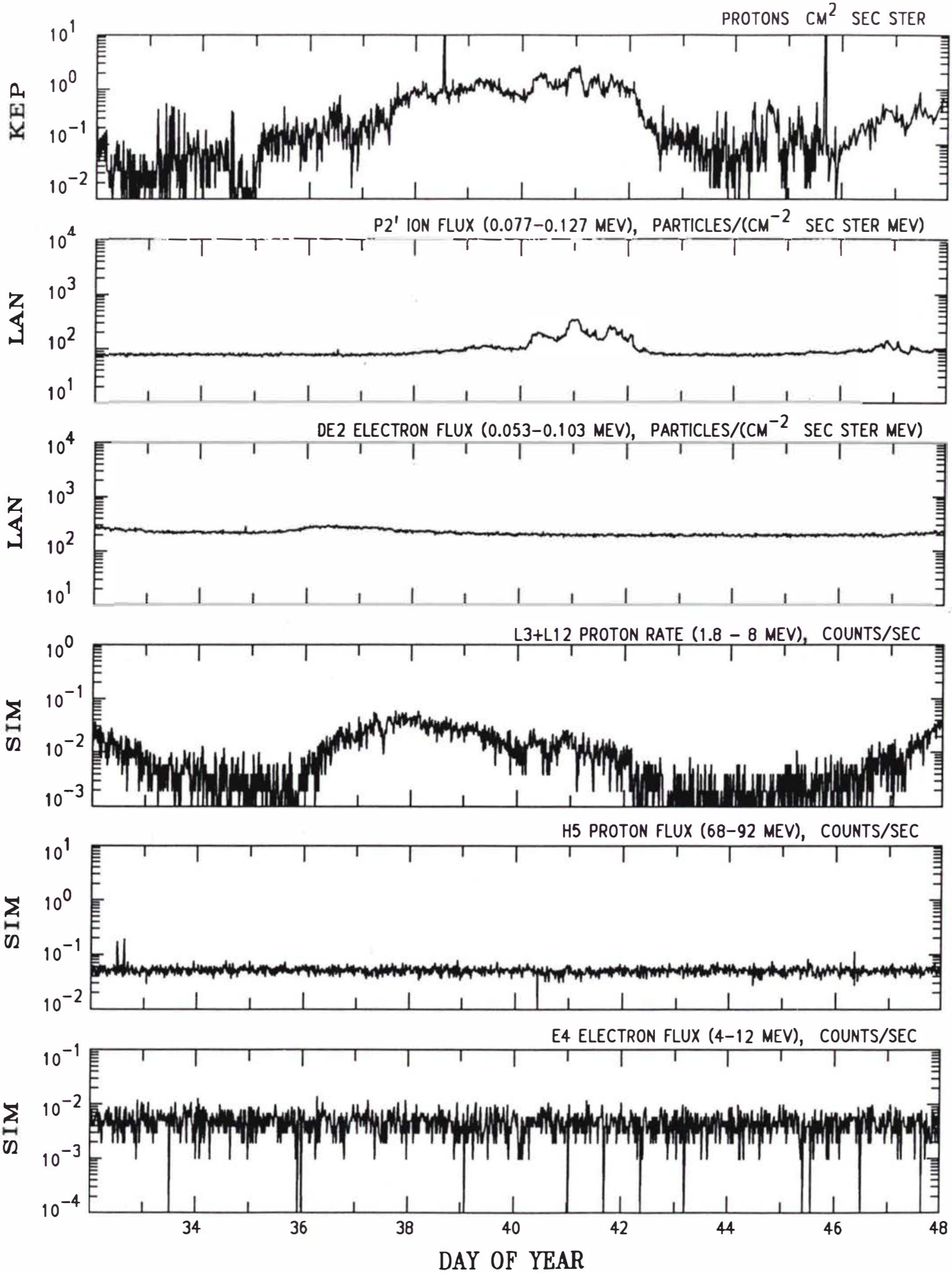
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

94 048 FEB 17 00:00:00.000 - 94 064 MAR 5 00:00:00.000



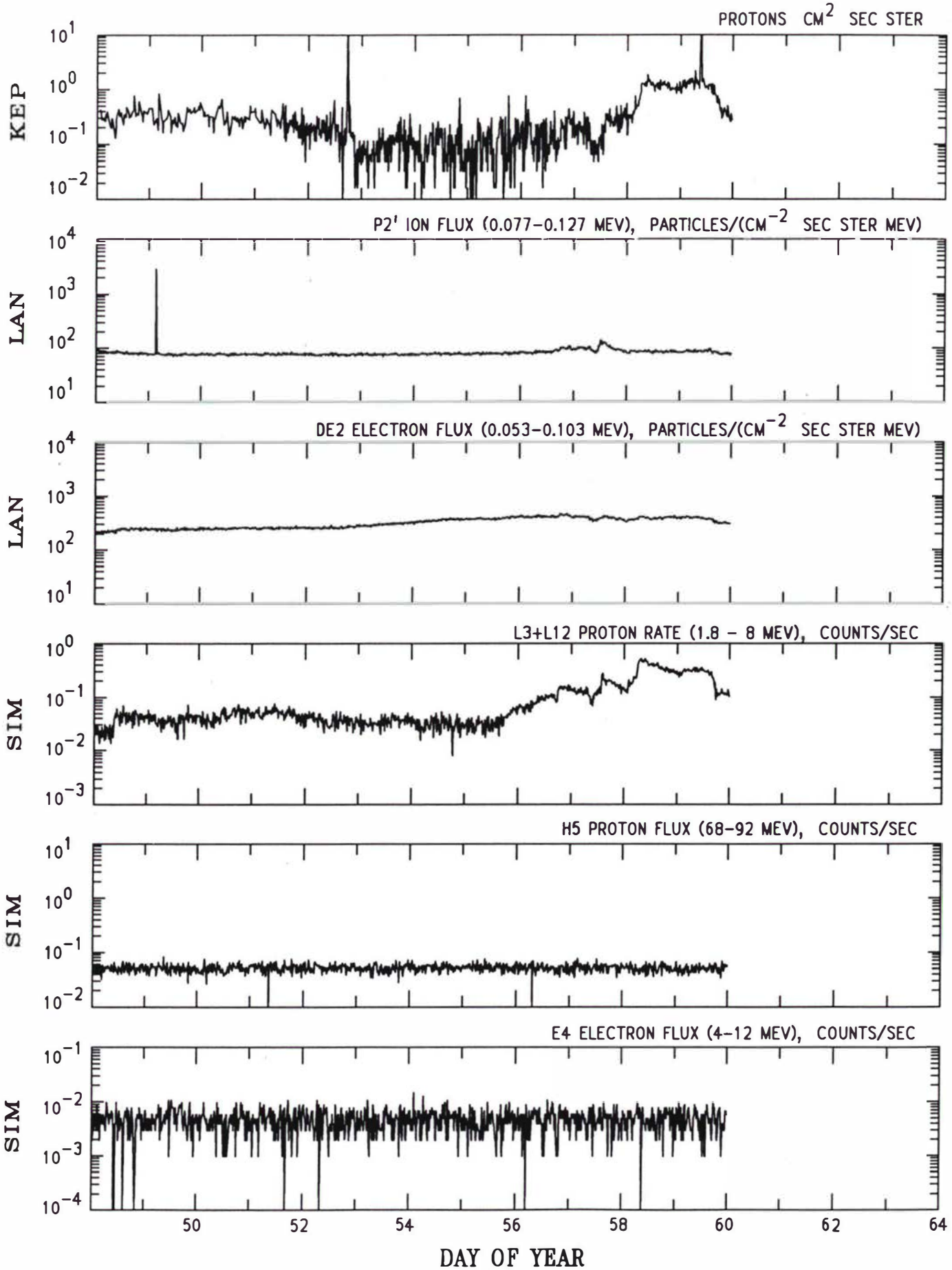
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 032 FEB 1 00:00:00.000 - 94 048 FEB 17 00:00:00.000



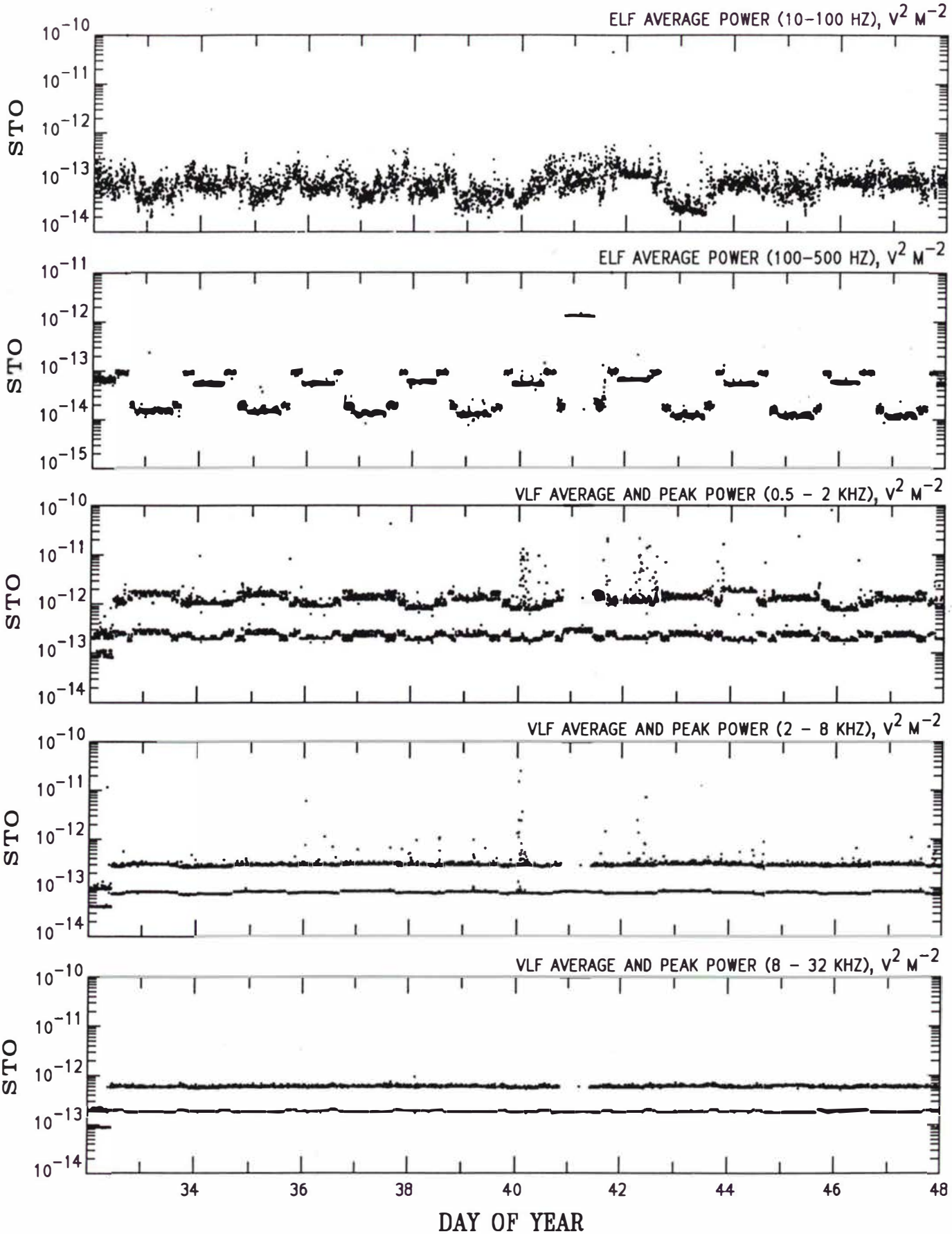
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 048 FEB 17 00:00:00.000 – 94 064 MAR 5 00:00:00.000



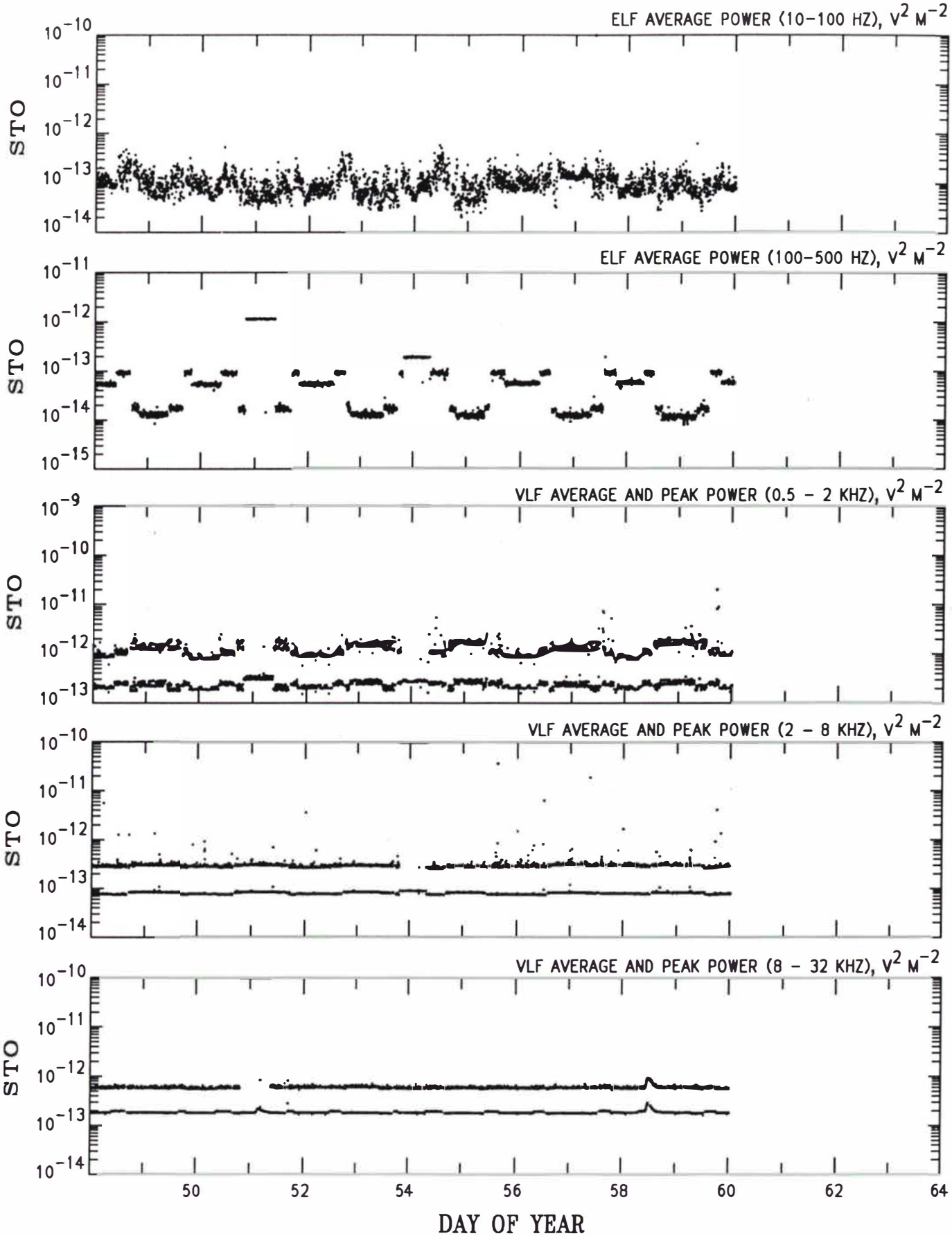
ULYSSES CDR - PLASMA WAVE

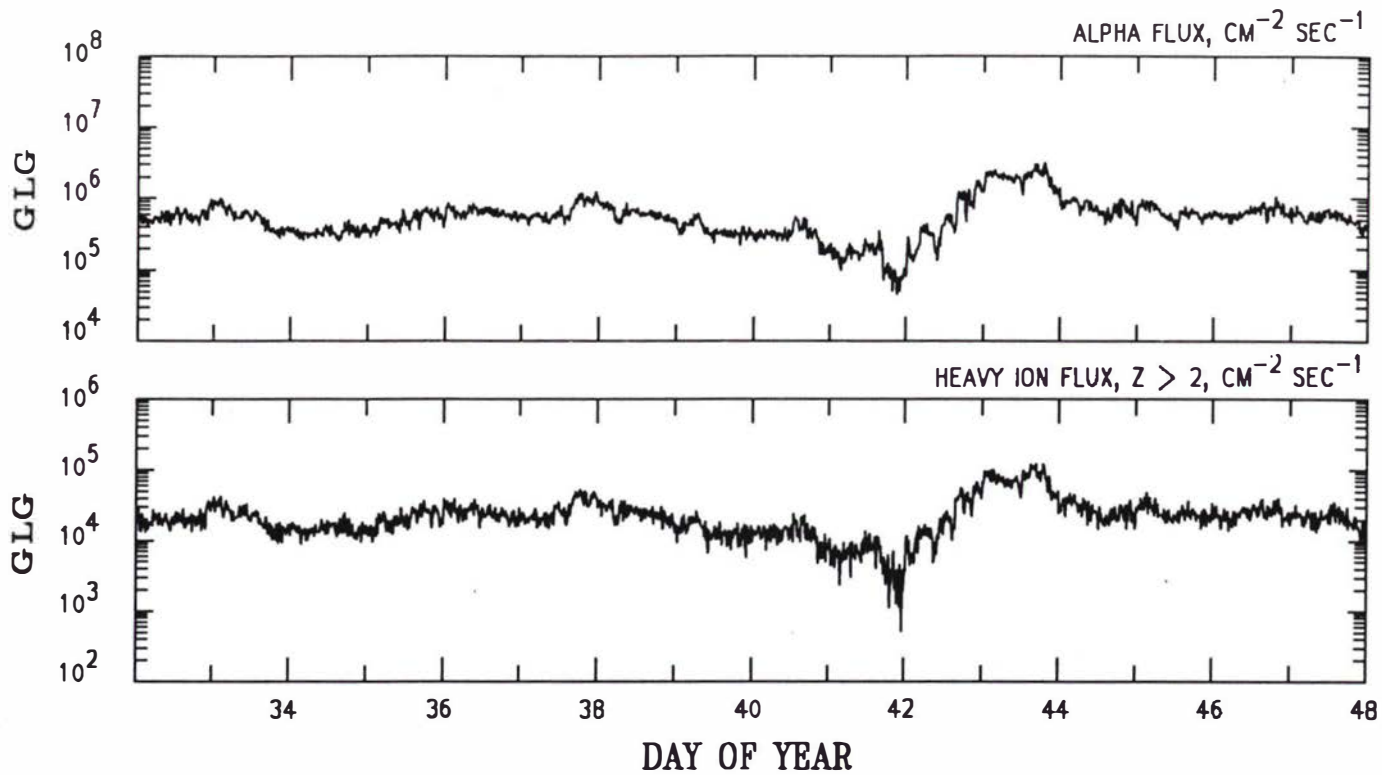
94 032 FEB 1 00:00:00.000 - 94 048 FEB 17 00:00:00.000

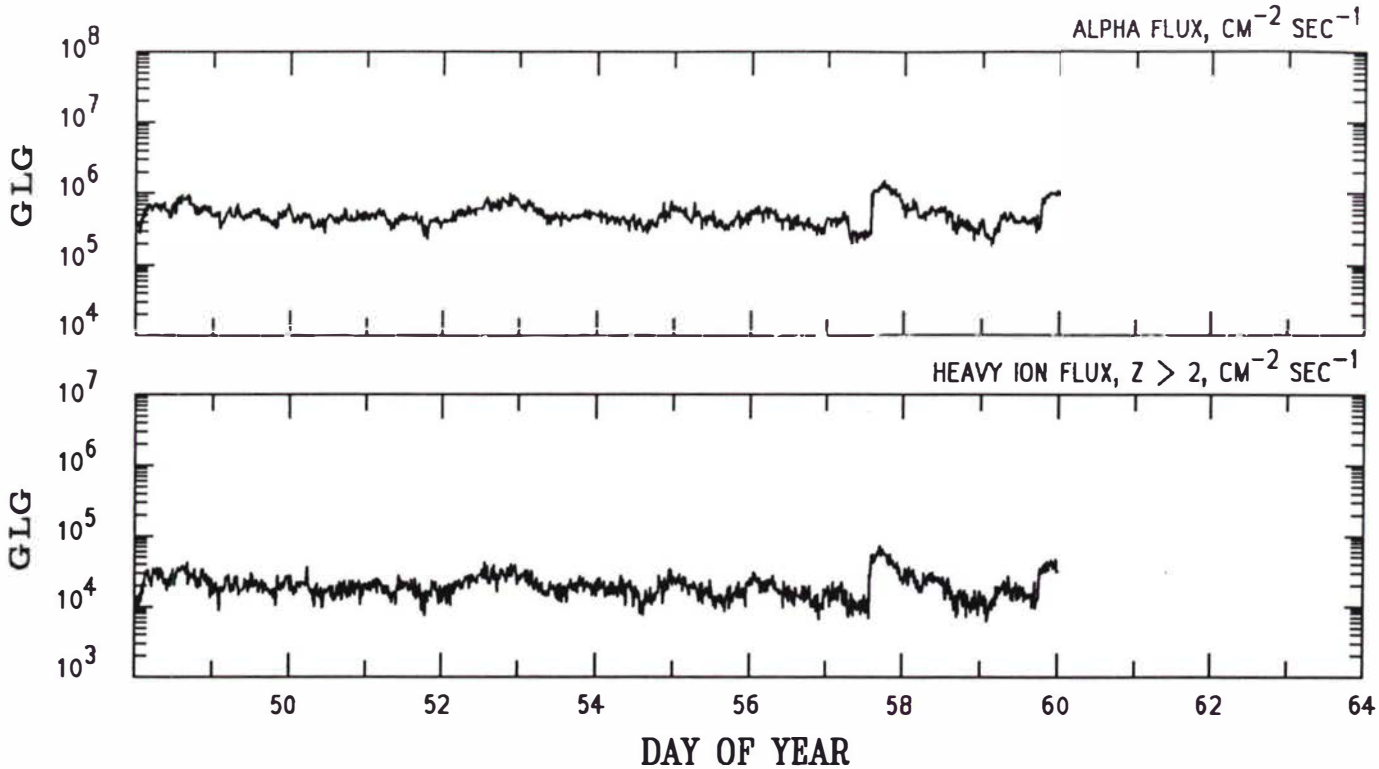


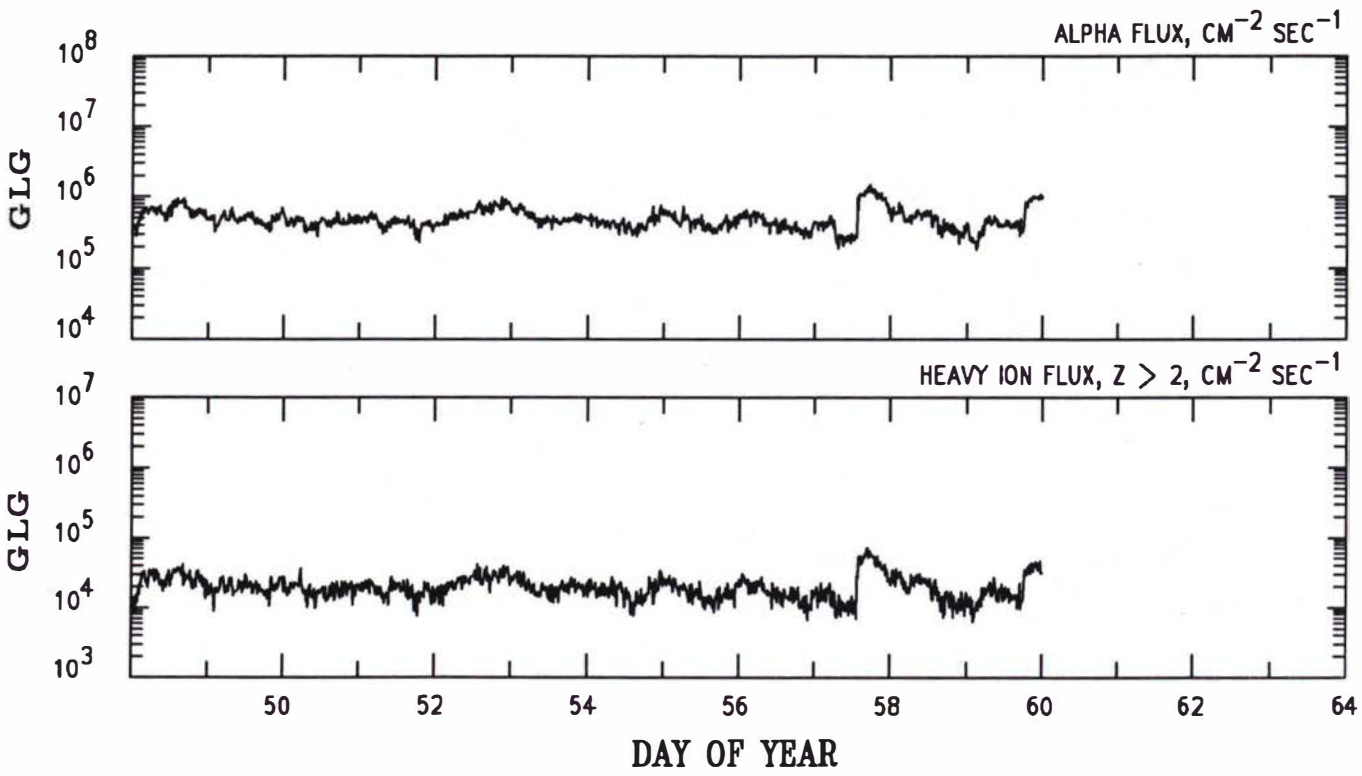
ULYSSES CDR - PLASMA WAVE

94 048 FEB 17 00:00:00.000 - 94 064 MAR 5 00:00:00.000




ULYSSES CDR – SOLAR WIND ION COMPOSITION
94 032 FEB 1 00:00:00.000 – 94 048 FEB 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
34
36
38
40
42
44
46
48
DAY OF YEAR


ULYSSES CDR – SOLAR WIND ION COMPOSITION
94 048 FEB 17 00:00:00.000 – 94 064 MAR 5 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
10^7
10^6
10^5
10^4
10^3
50
52
54
56
58
60
62
64
DAY OF YEAR


ULYSSES CDR – SOLAR WIND ION COMPOSITION
94 048 FEB 17 00:00:00.000 – 94 064 MAR 5 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
10^7
10^6
10^5
10^4
10^3
50
52
54
56
58
60
62
64
DAY OF YEAR

From MEEGAN@ssl.msfc.nasa.gov Thu Feb 3 08:38 PST 1994
Date: Thu, 3 Feb 1994 10:42:14 -0600 (CST)
From: MEEGAN@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2794
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2794
 EVENT OF 1994 FEB  1 DAY OF YEAR= 32
 EVENT CROSSING TIME AT BATSE      : 27640. S. OR 07:40:40.0
 COORDINATES ARE   0.000   0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 273.000   18.000
 BATSE PEAK COUNTING RATE:   3500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  1/ 2/  94 IS:
 RA=  156.514 DEC=  -49.284 DIST=    3.210 AU
 BATSE-ULYSSES DISTANCE =  480196068. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.28 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  818.34 SECS.
 CROSSING TIME AT ULYSSES    IS 28458. S. OR   07:54:18 +/-  301.49 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  1/ 2/  94 IS:
 RA=  305.522 DEC=  -20.477 DIST=    2.373 AU
 MARS-BATSE DISTANCE =  355063456. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.03 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -761.71 SECS.
 CROSSING TIME AT MARS       IS 26878. S. OR   07:27:58 +/-  145.89 SECONDS
```

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2794	940201	9384	27640	3500	273	+18

BATSE BURST TRIGGER

NO.: 02794

TIME: TJD=9384 SECONDS=27640

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 90. AZIMUTH= 53. ERROR= DEGREES

COMMENTS:
TWO PULSES; TOTAL DURATION OF ABOUT 40 SECONDS. SEEN ABOVE 300 KEV.

Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

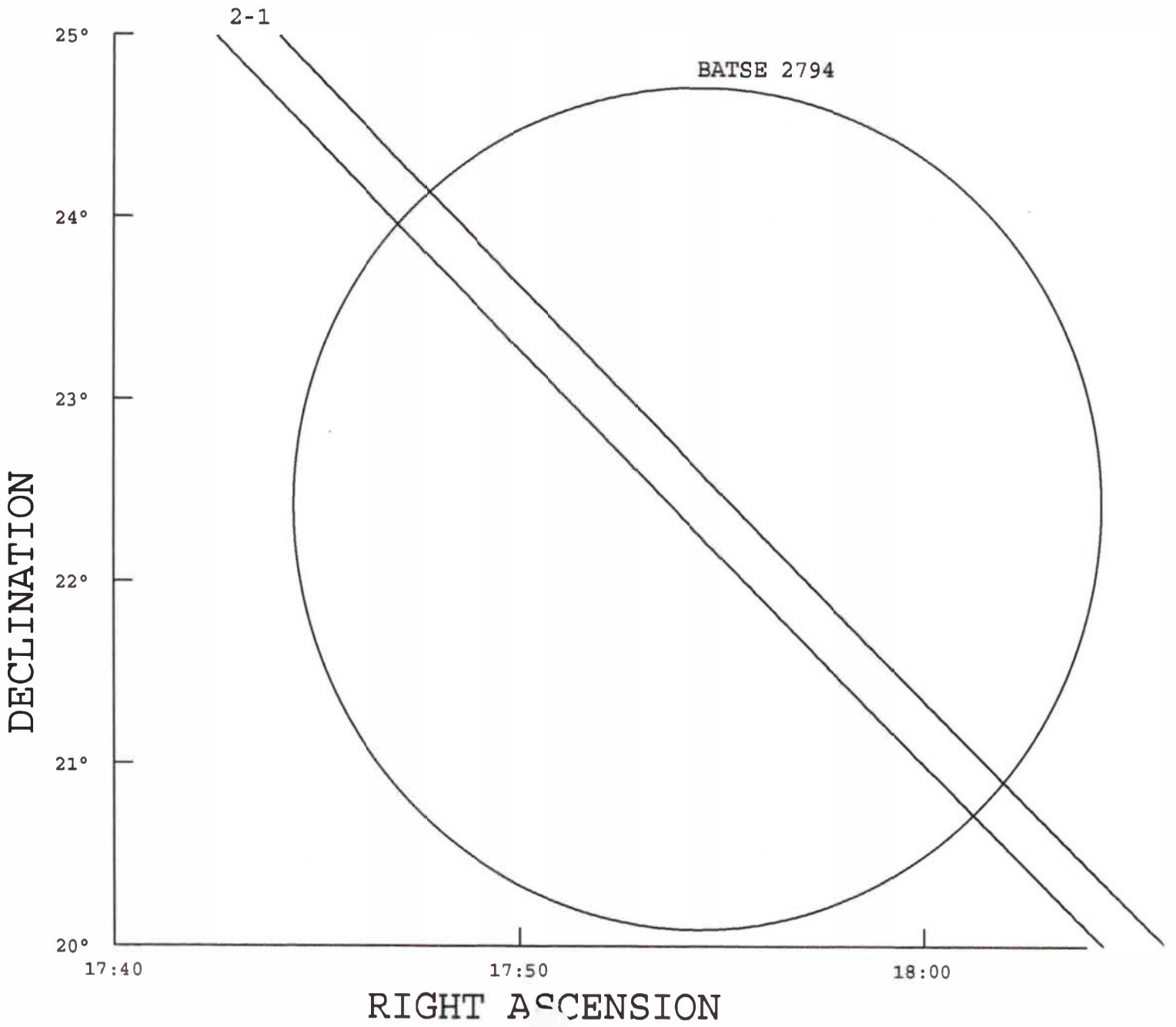
☐ 2000 coordinates used?

☐ Geocentric time used?

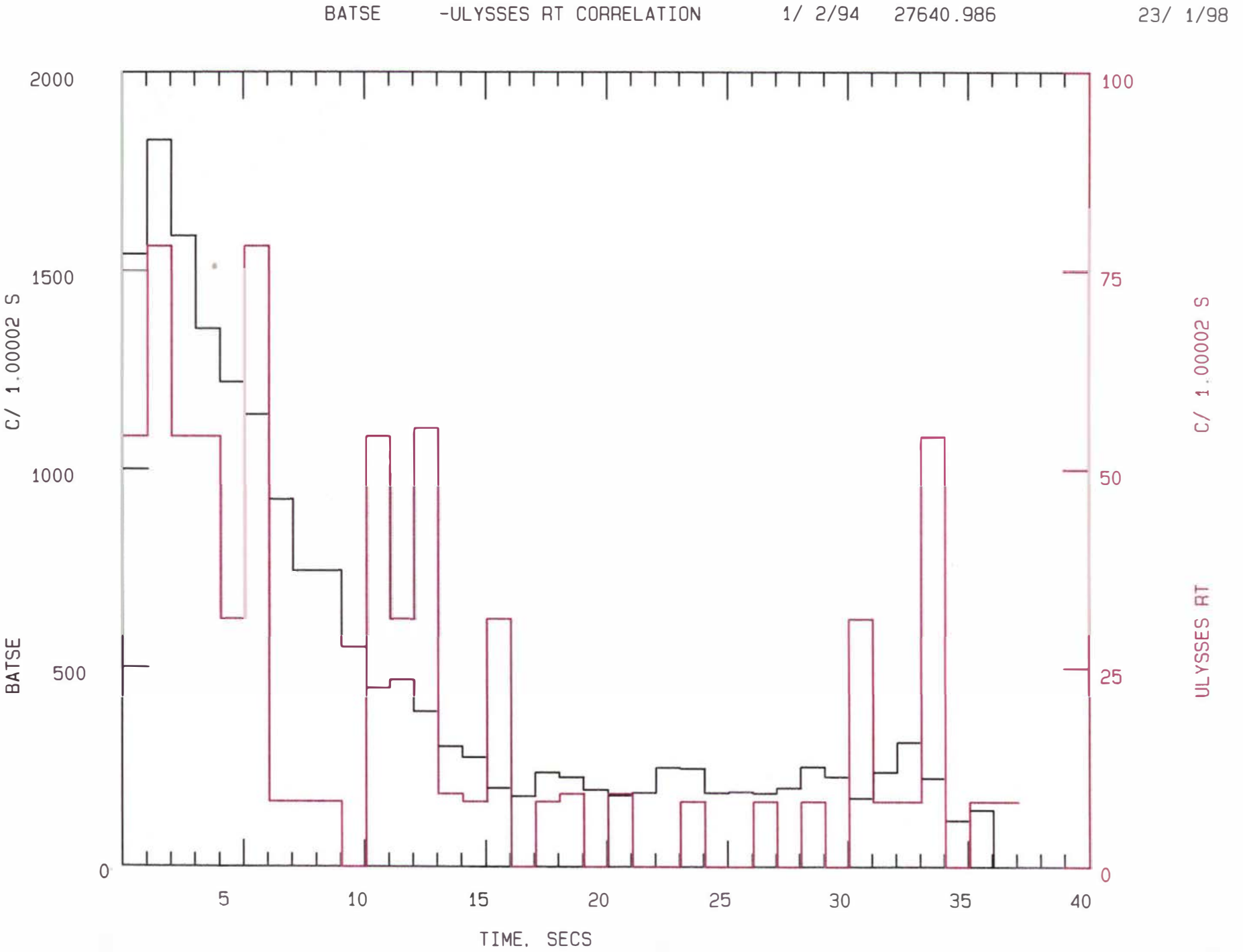
☑ ACCESS database updated?

EVENT OF FEB 1, 1994 7:53

23/ 1/98

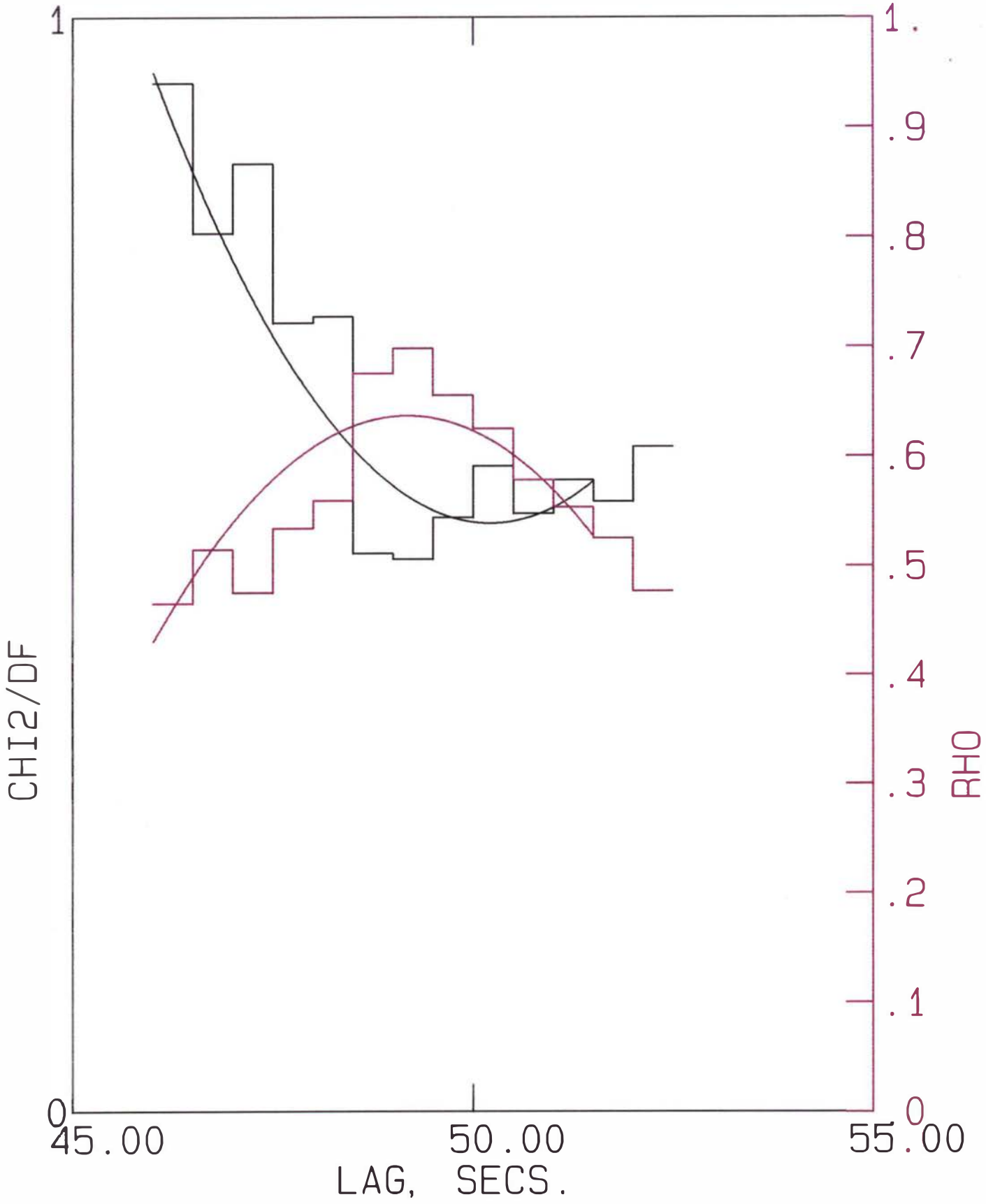


N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE


BATSE -ULYSSES RT CORRELATION 1/ 2/94 27640.986 23/ 1/98
2000
1500
1000
500
0
BATSE
C/ 1.00002 S
100
75
50
25
0
ULYSSES RT
C/ 1.00002 S
5
10
15
20
25
30
35
40
TIME. SECS

23/ 1/98

BATSE -ULYSSES RT CORRELATION 1/ 2/94 27640.986



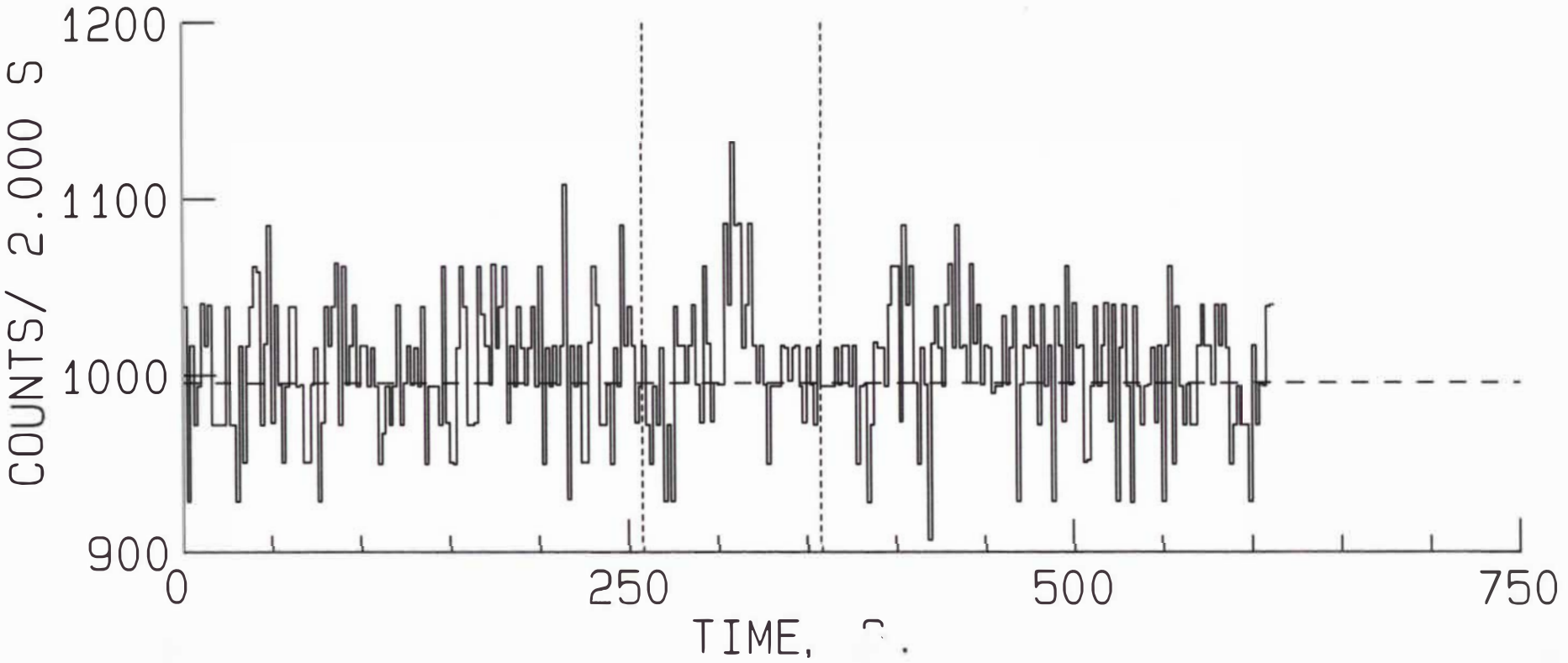
ULYSSES RT

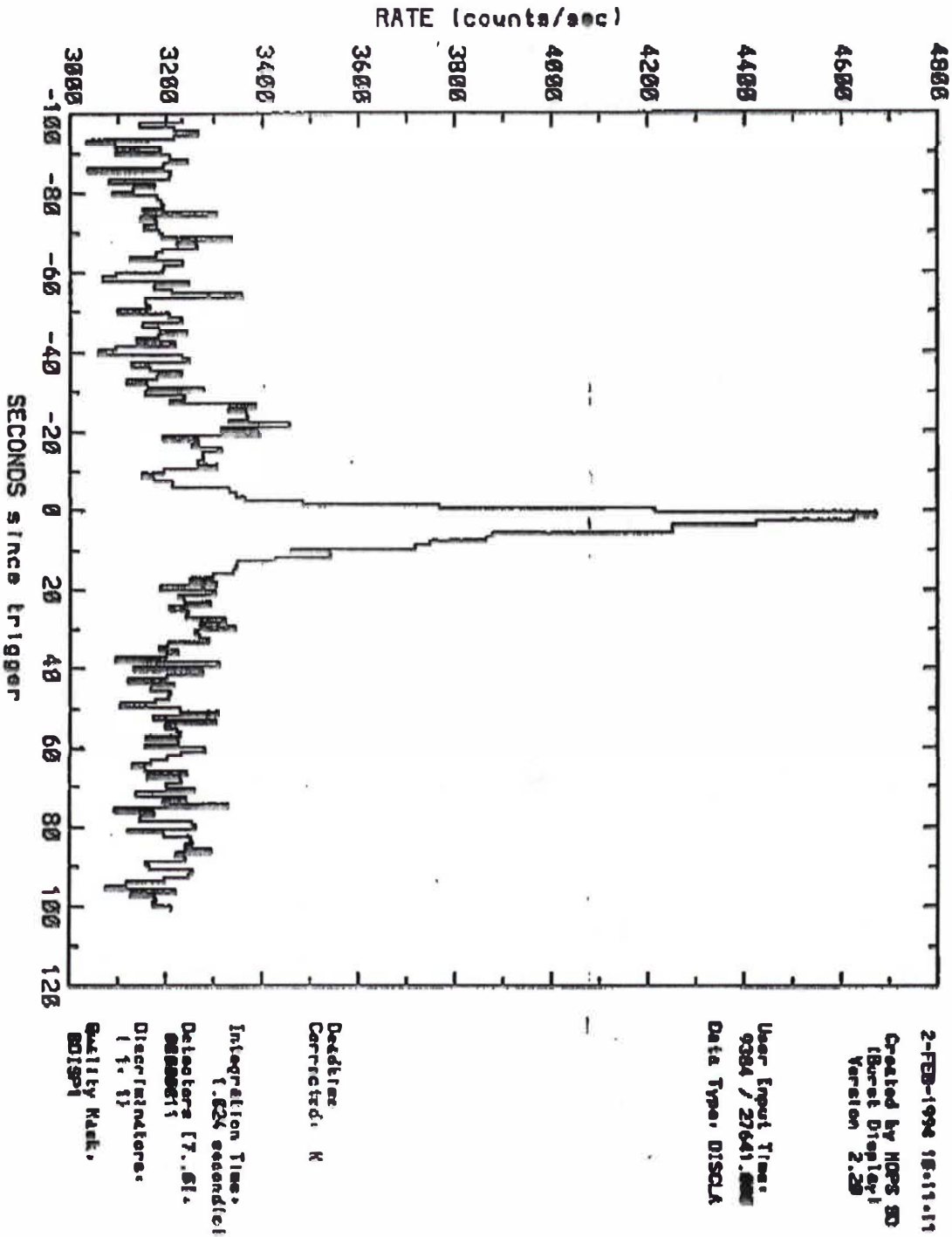
23/ 1/98

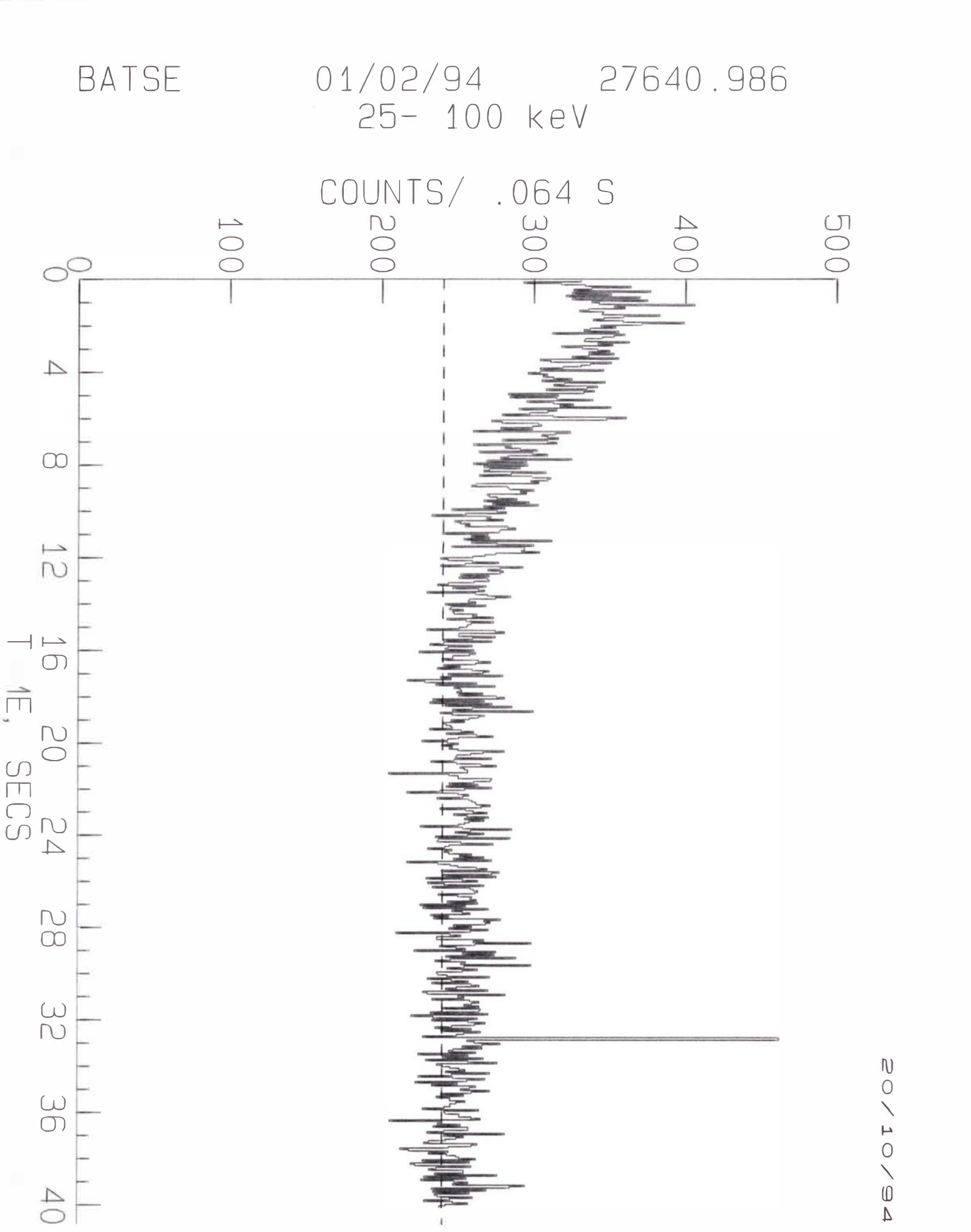
1/ 2/94 28152.322 s

0.500 S INTERVALS REGROUPED BY 4

20- 140 keV




Trigger # 2794 DISCLA DATA
RATE (counts/sec)
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
-100 -80 -60 -40 -20 0 20 40 60 80 100 120
SECONDS since trigger
2-FEB-1994 18:11:11
Created by HOPS XD
(Burst Display)
Version 2.20
User Input Time:
9384 / 27641.000
Data Type: DISCLA
Deadtime
Corrected: N
Integration Time:
1.024 seconds
Detectors (7..0):
00000011
Discriminators:
(1: 1)
Quality Mask:
00192


BATSE 01/02/94 27640.986
25- 100 keV
COUNTS/ .064 S
0
100
200
300
400
500
0
4
8
12
16
20
24
28
32
36
40
TIME, SECS
20/10/94

From MEEGAN@ssl.msfc.nasa.gov Thu Feb 3 08:41 PST 1994
Date: Thu, 3 Feb 1994 10:44:47 -0600 (CST)
From: MEEGAN@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2795
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2795
EVENT OF 1994 FEB 1 DAY OF YEAR= 32
EVENT CROSSING TIME AT BATSE : 29677. S. OR 08:14:37.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 332.000 16.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 2/ 94 IS:
RA= 156.504 DEC= -49.289 DIST= 3.210 AU
BATSE-ULYSSES DISTANCE = 480151162. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.49 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1335.71 SECS.
CROSSING TIME AT ULYSSES IS 31013. S. OR 08:36:52 +/- 223.72 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 2/ 94 IS:
RA= 305.522 DEC= -20.477 DIST= 2.373 AU
MARS-BATSE DISTANCE = 355063456. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=135.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -840.46 SECS.
CROSSING TIME AT MARS IS 28837. S. OR 08:00:36 +/- 132.11 SECONDS

KJO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2795	940201	9384	29677	7500	332	+16

BATSE BURST TRIGGER

NO.: 02795

TIME: TJD=9384 SECONDS=29677

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=132. AZIMUTH= 9. ERROR= DEGREES

COMMENTS:
SINGLE 0.3 SECOND SPIKE. SEEN ABOVE 300 KEV.

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

 ATSE BURST # 2795
EVENT OF 1994 FEB  1 DAY OF YEAR= 32
EVENT CROSSING TIME AT BATSE      : 29678. S. OR 08:14:37.7
COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 353.460   28.320
BATSE PEAK COUNTING RATE:  0000   C/S

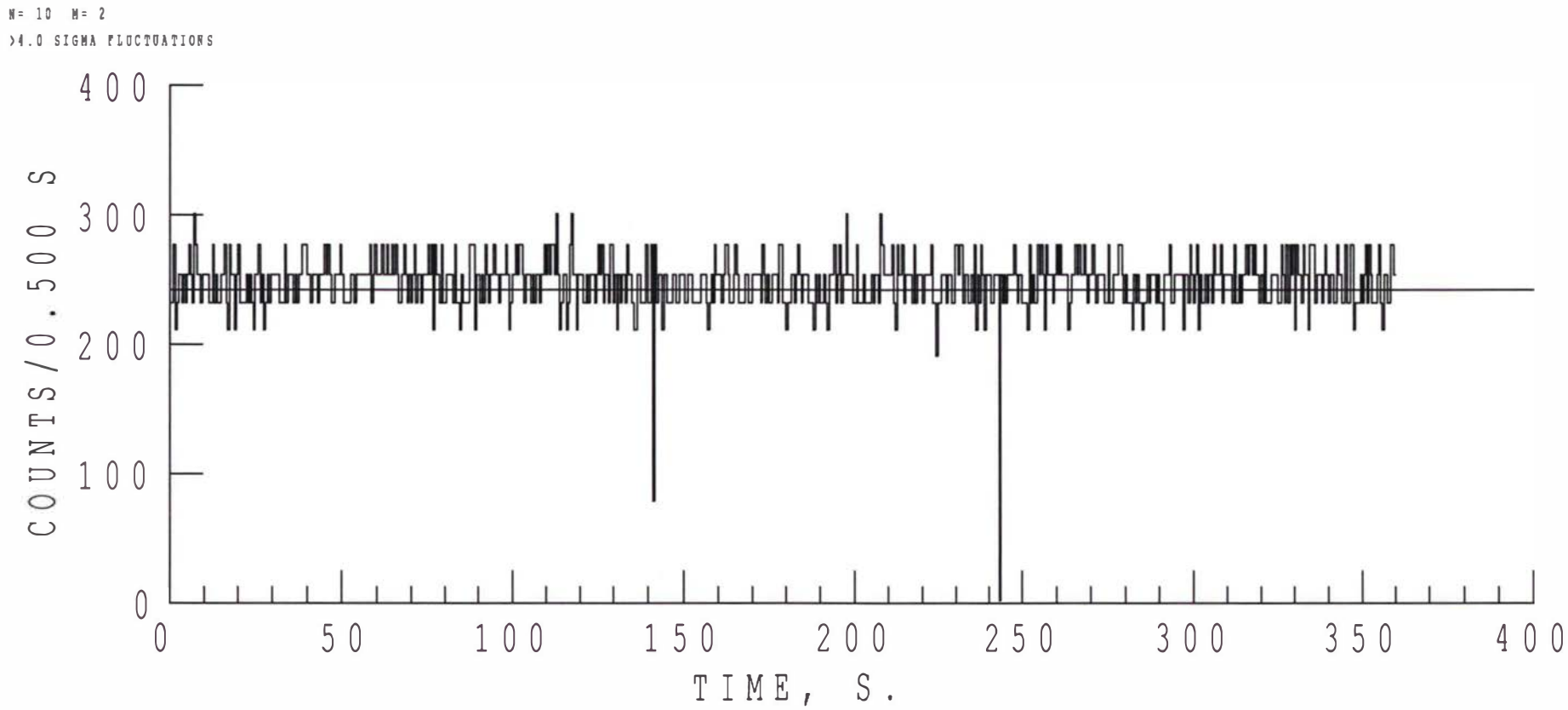
EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON  1/ 2/  94 IS:
RA=  156.650 DEC=  -49.223 DIST=    3.214 AU
BATSE-ULYSSES DISTANCE =  480781488. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL    DIRECTION= 24.55 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1458.77 SECS.
CROSSING TIME AT ULYSSES    IS 31136. S. OR 08:38:56.4 +/-  187.83 SECONDS
```

9/11/95

ULYSSES RT

1/ 2/94 30960.369 s

0- 0 keV



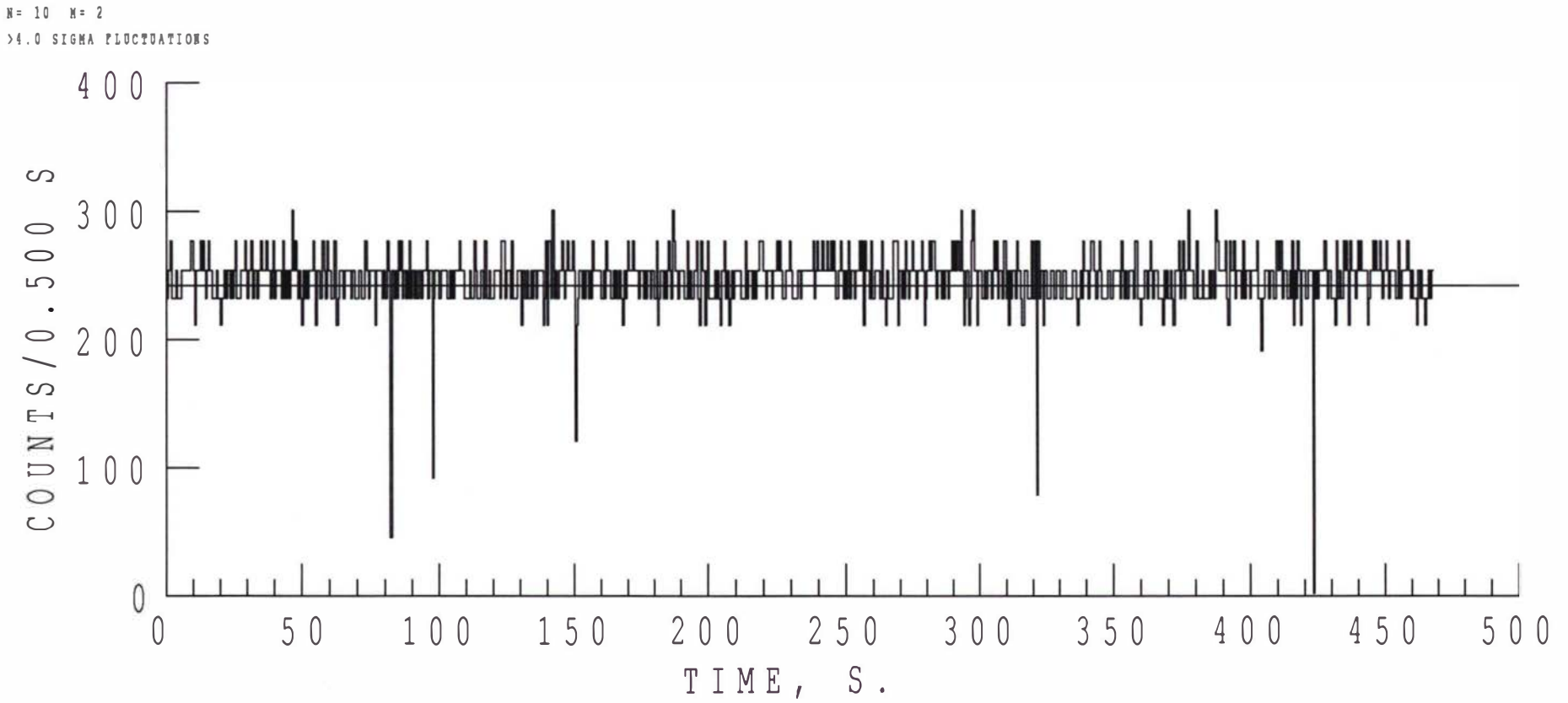
Batse 2795

3 / 2 / 94

ULYSSES RT

1/ 2/94 30780.369 s

0- 0 keV



From MEEGAN@ssl.msfc.nasa.gov Thu Feb 3 08:36 PST 1994
Date: Thu, 3 Feb 1994 10:39:21 -0600 (CST)
From: MEEGAN@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER
NO.: 02796

TIME: TJD=9384 SECONDS=63055

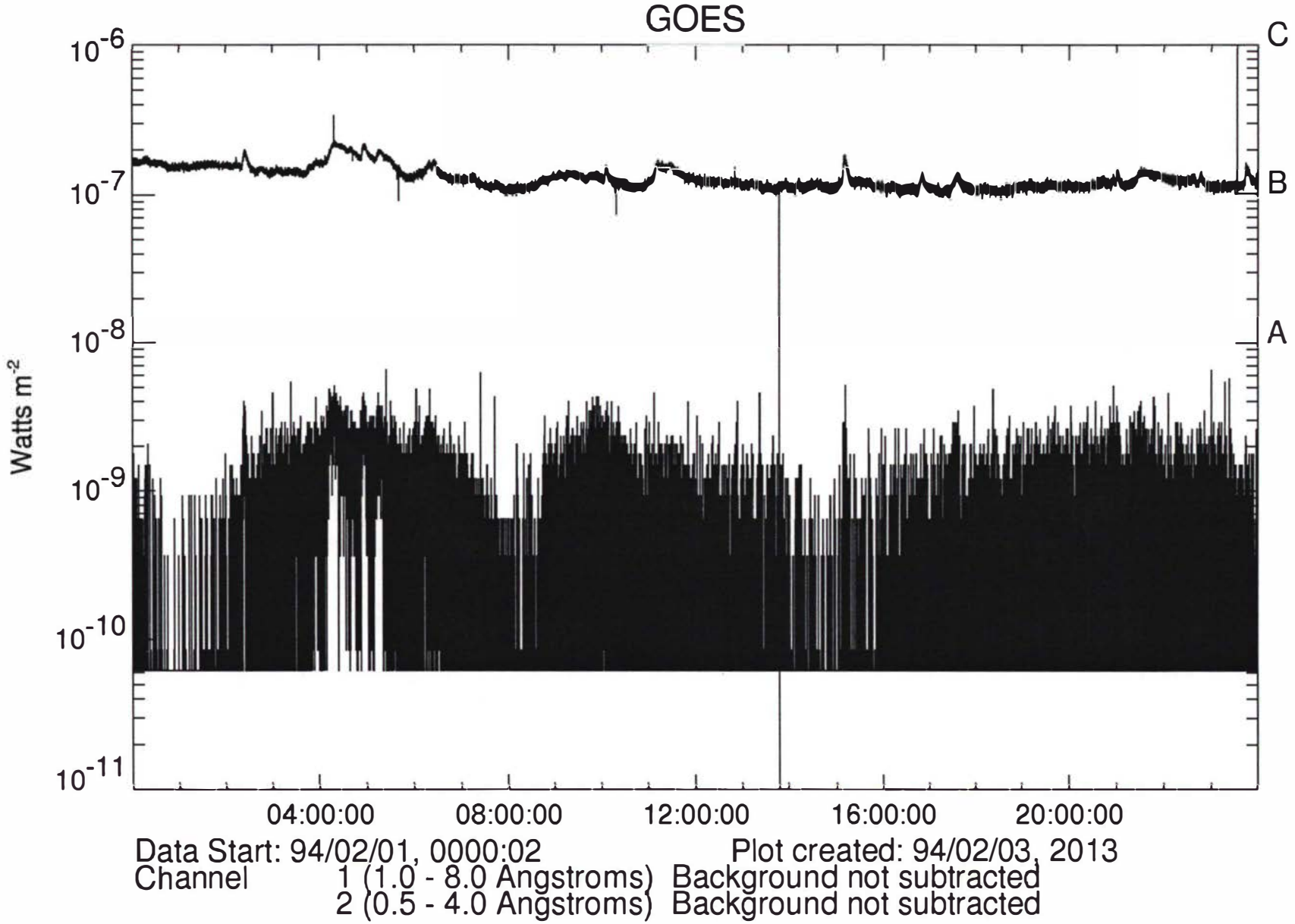
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

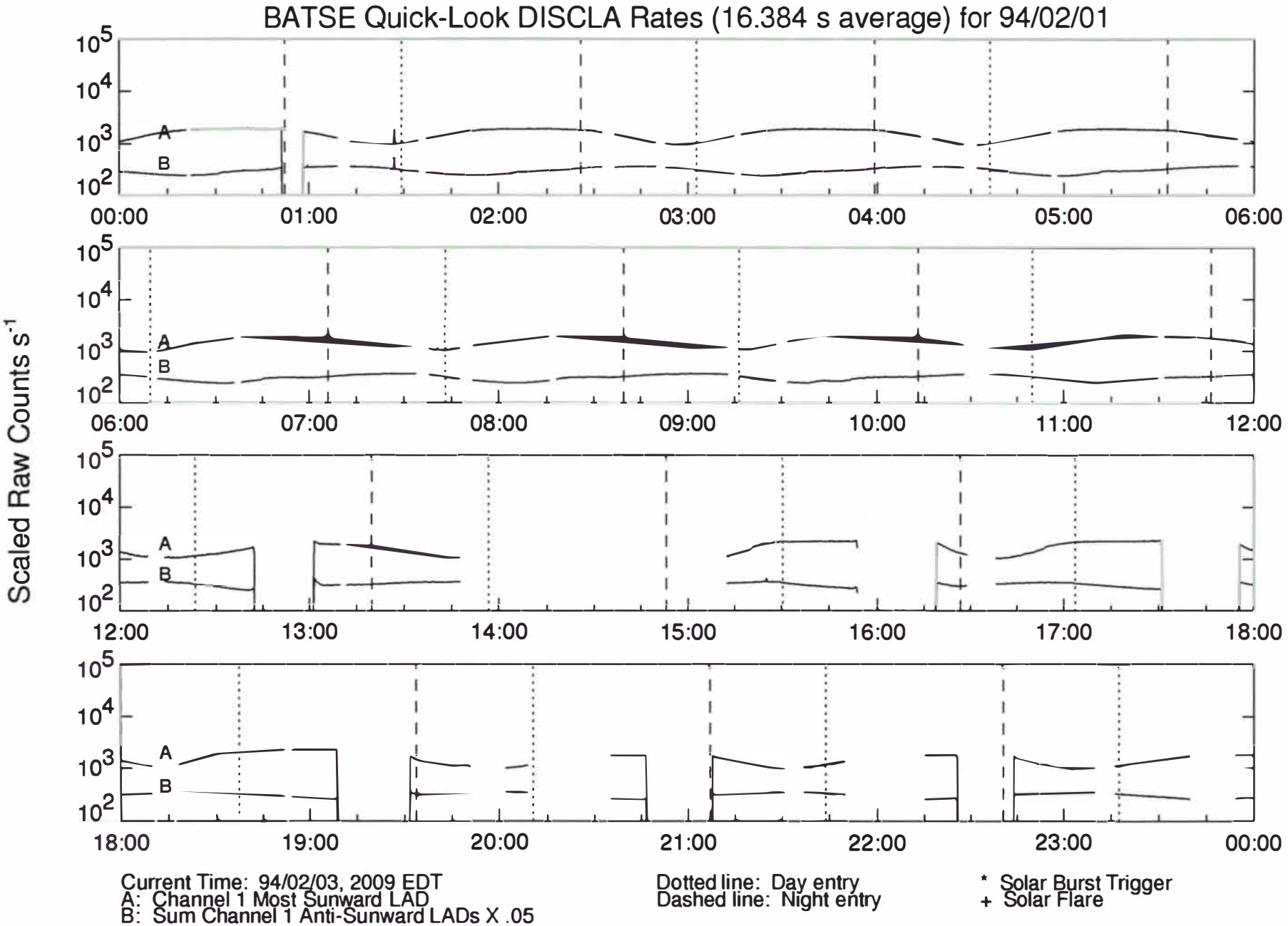
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

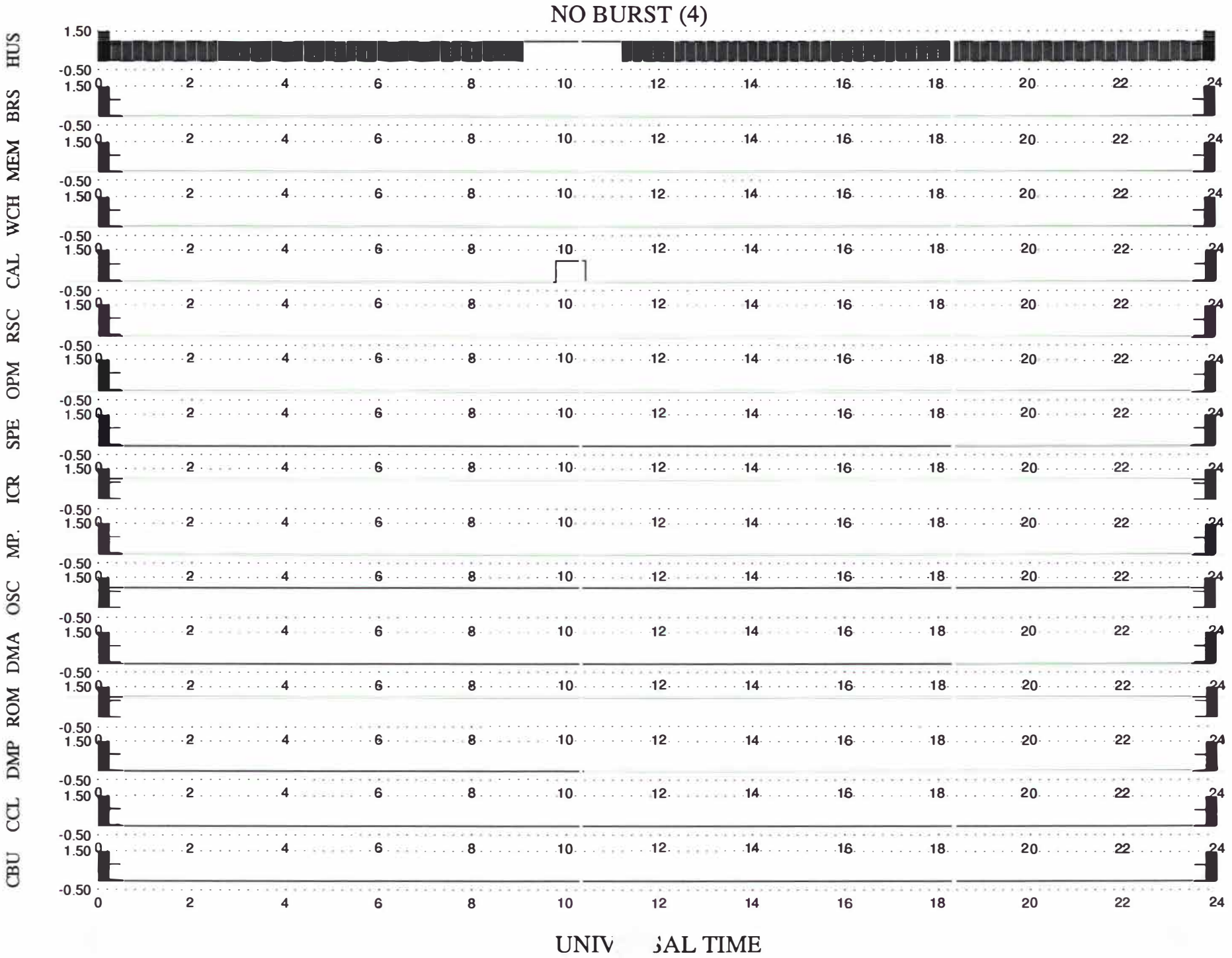
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGER ON ENTRY INTO SAA.


GOES
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/01, 0000:02
Plot created: 94/02/03, 2013
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

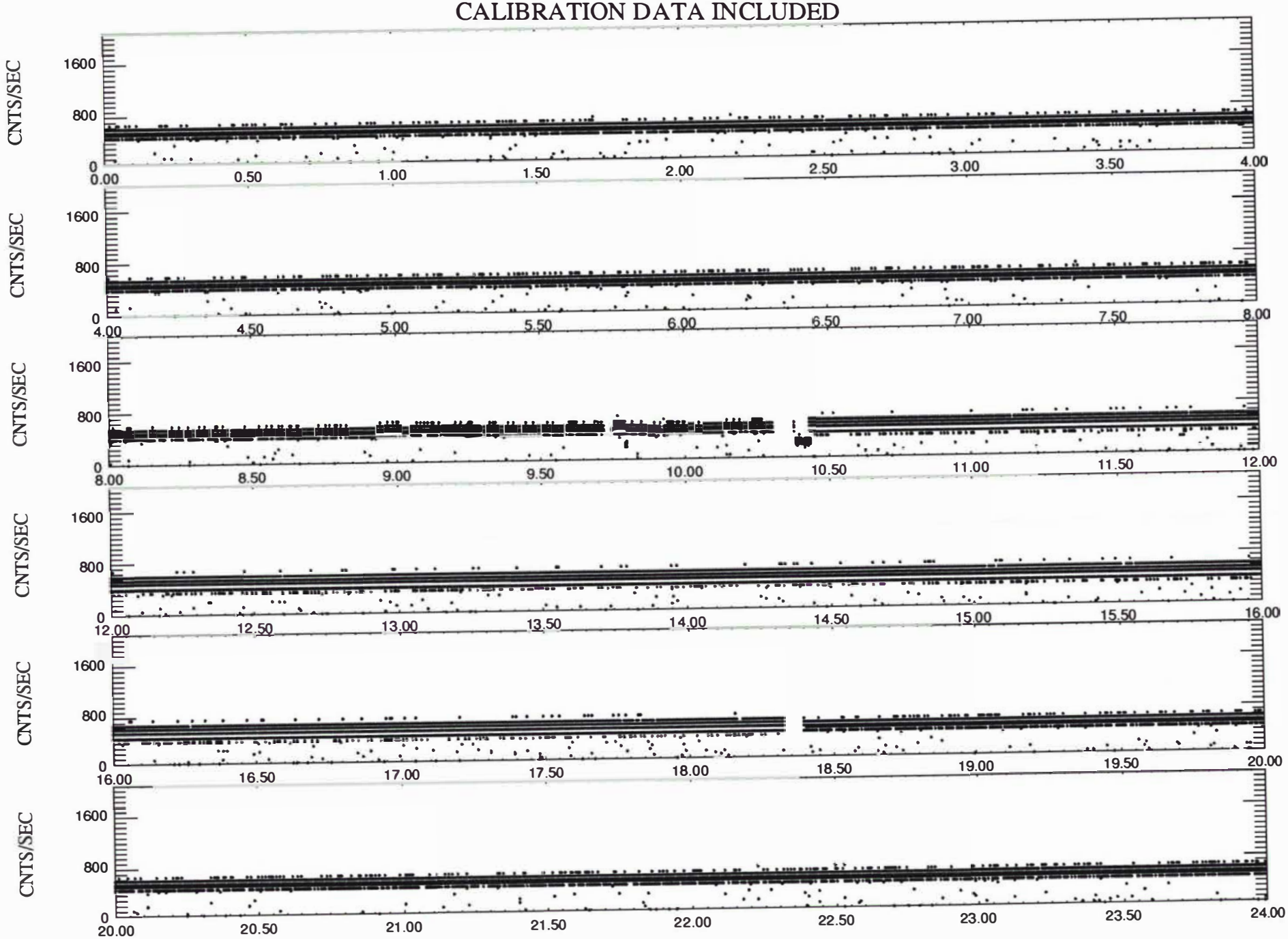

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/01
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 94/02/03, 2009 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 32, year 1994 to day 32, year 1994 5/26/94



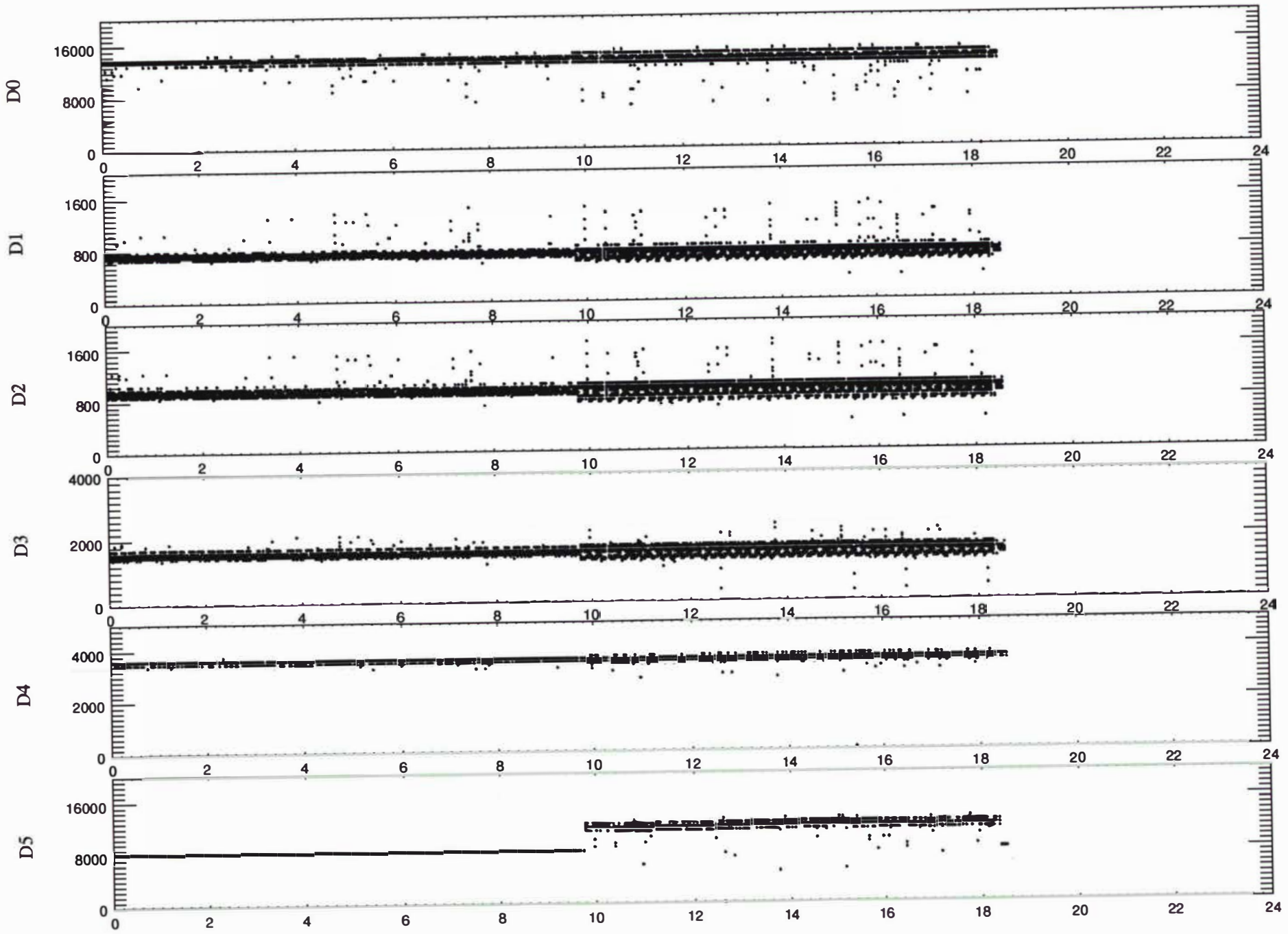
HUS 2A, MODE 1, NOT AVERAGED EDR day 32, year 1994 to day 32, year 1994 5/26/94

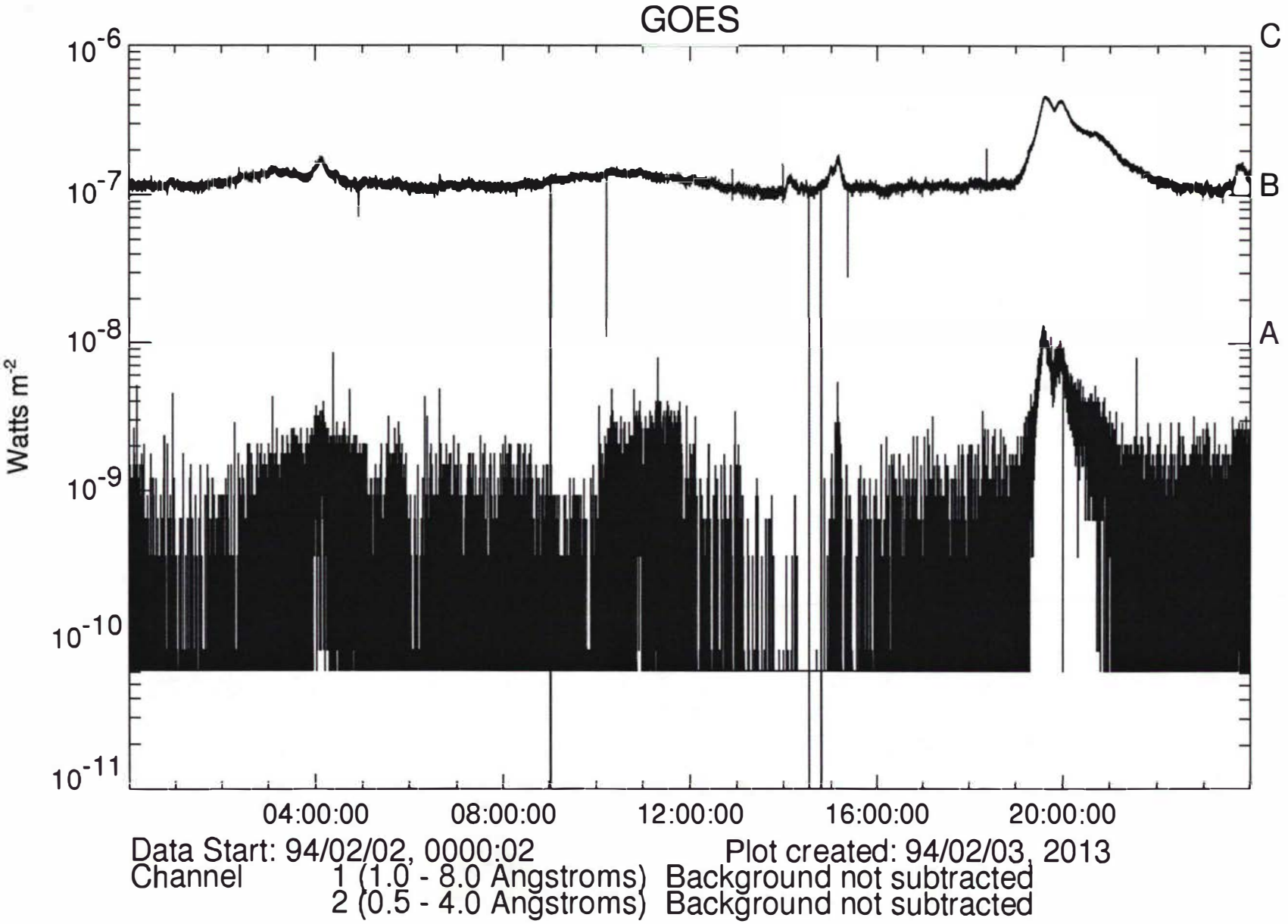
CALIBRATION DATA INCLUDED

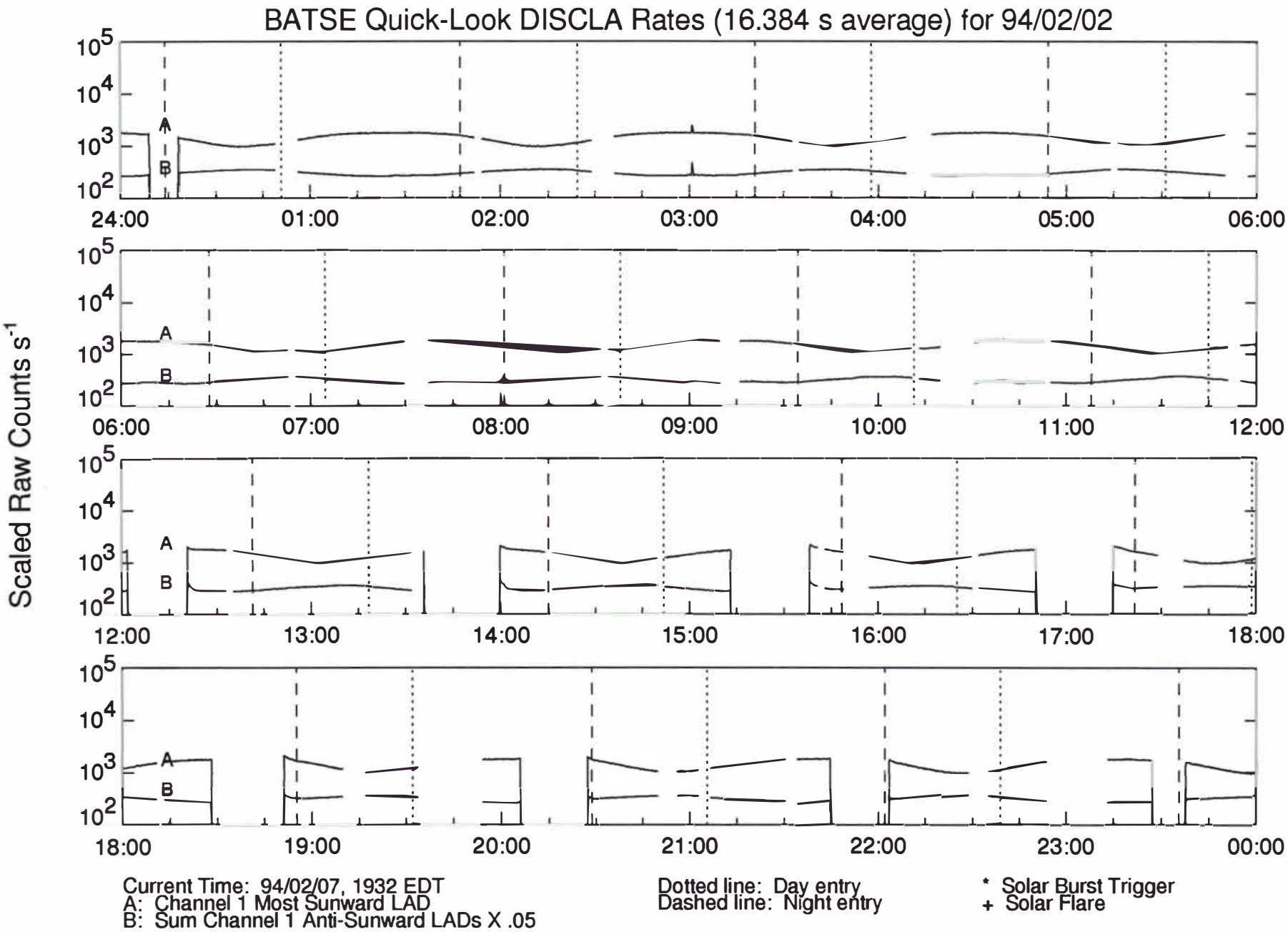


UNIV SAL TIME

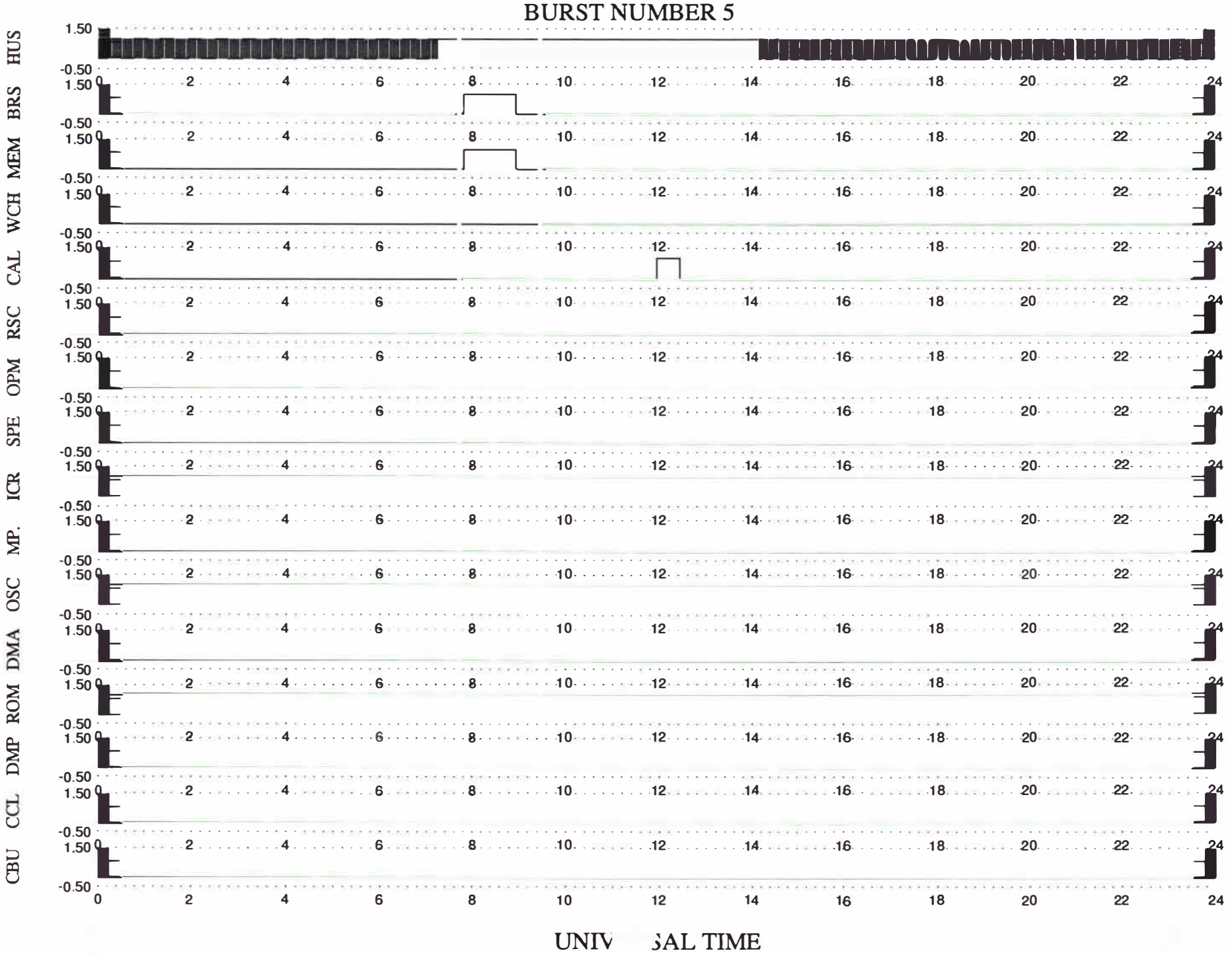
HUS 2B COUNTS / SEC QEDR day 32, year 1994 to day 32, year 1994 2/2/94




GOES
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/02, 0000:02
Plot created: 94/02/03, 2013
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

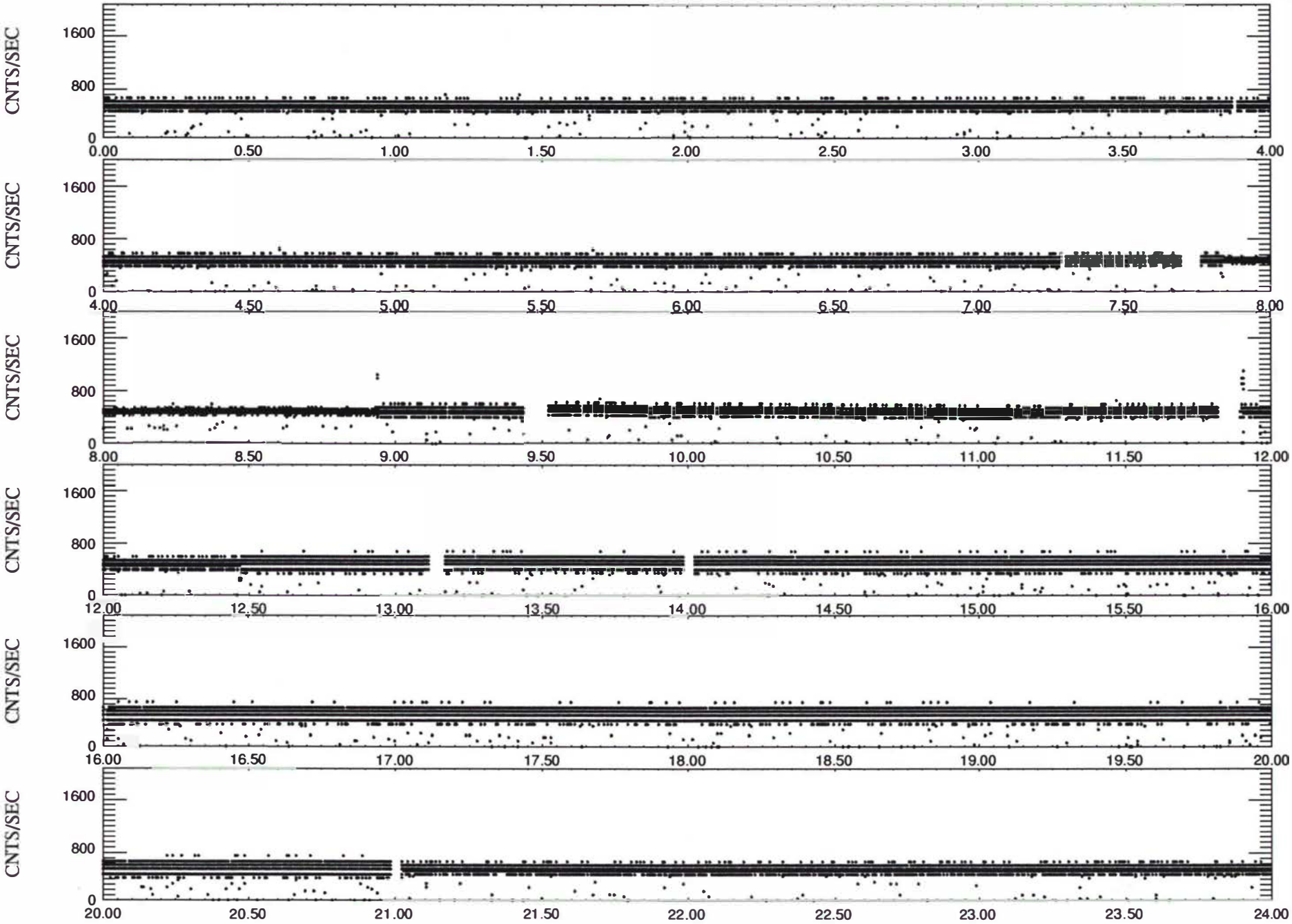

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/02
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/02/07, 1932 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 33, year 1994 to day 33, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 33, year 1994 to day 33, year 1994 5/26/94

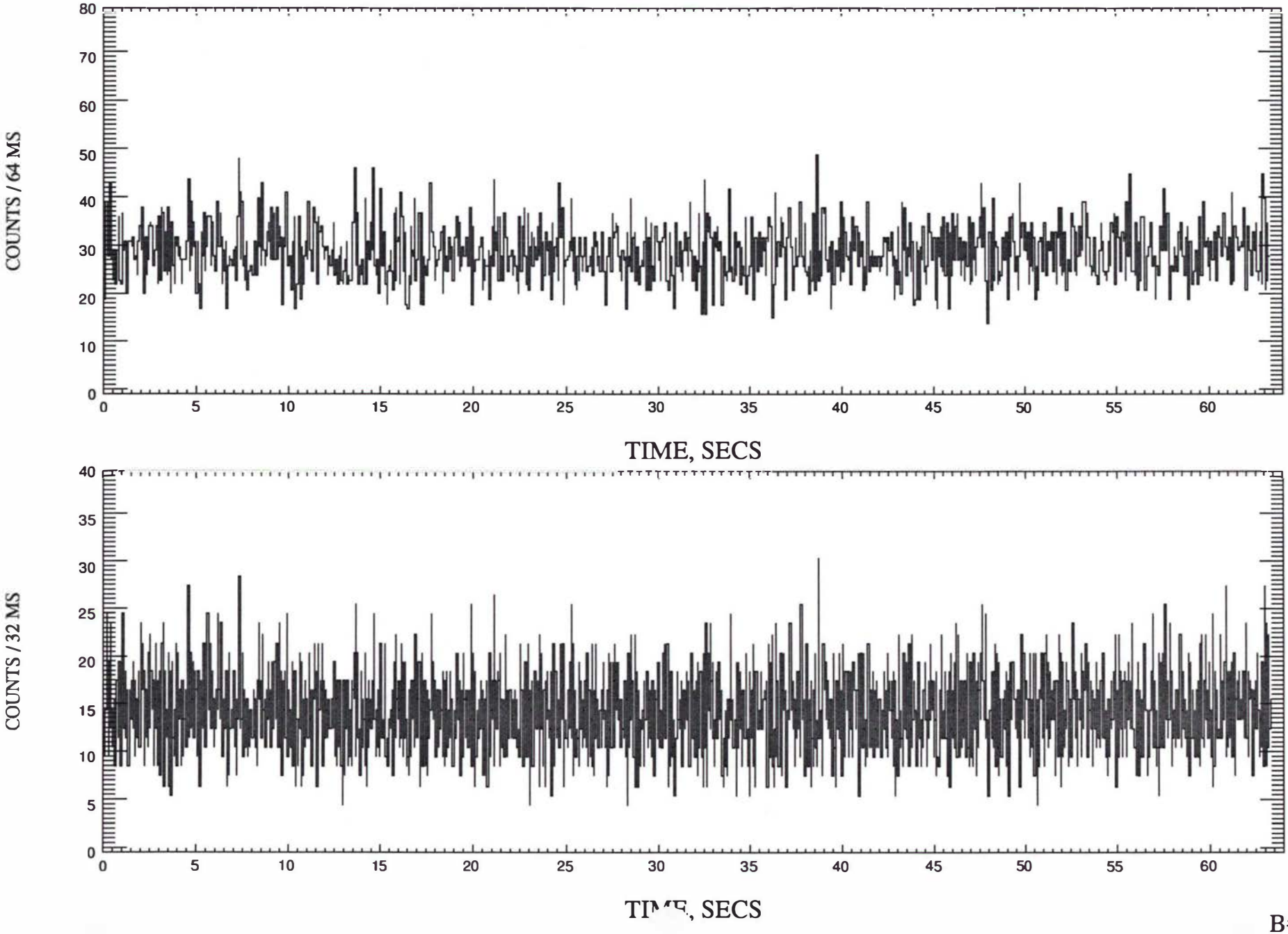
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 33, year 1994 5/26/94

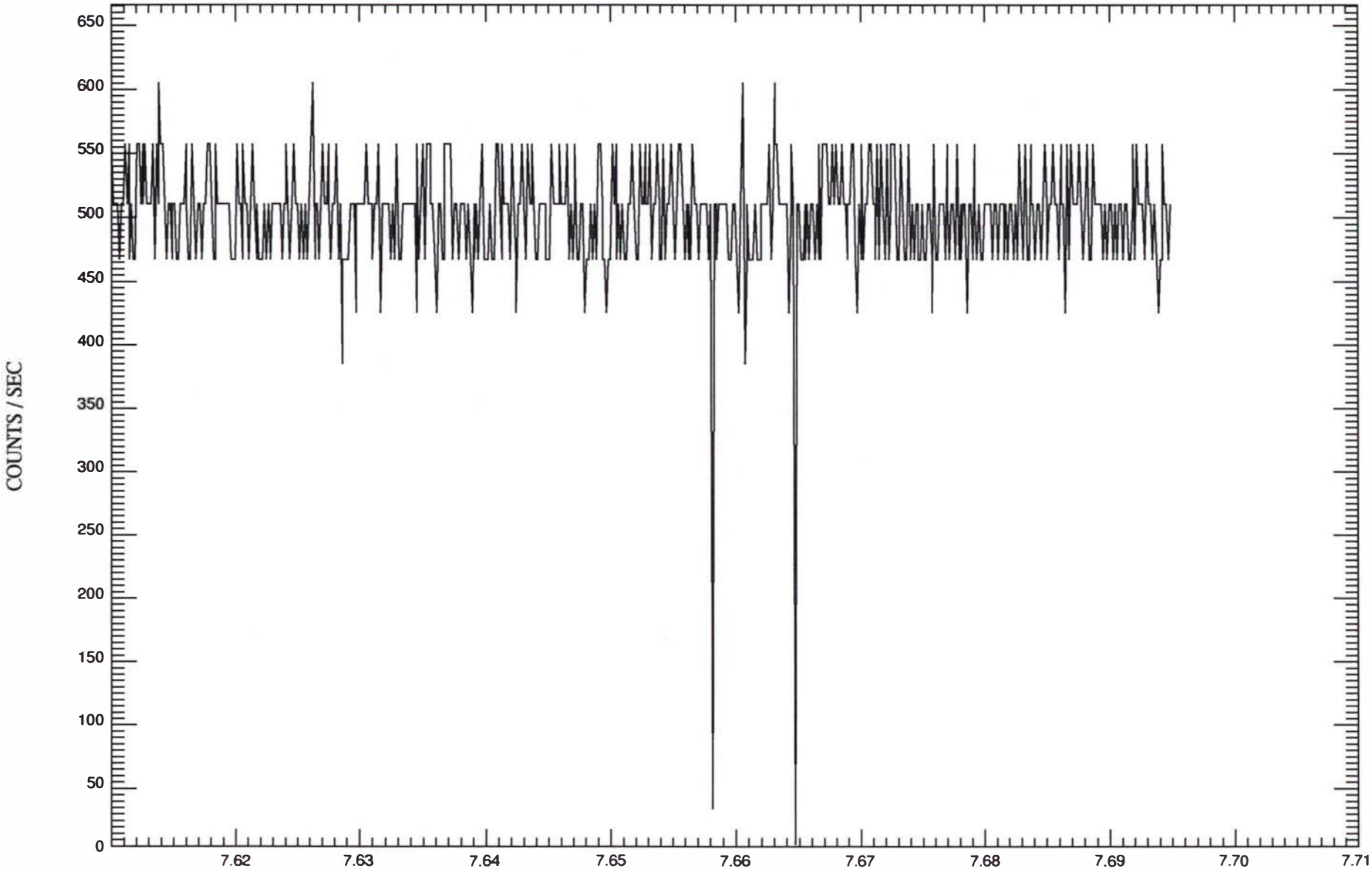
Burst Counter 5 at UT= 7.660559230381 h=27578.013 s 07:39:38.013



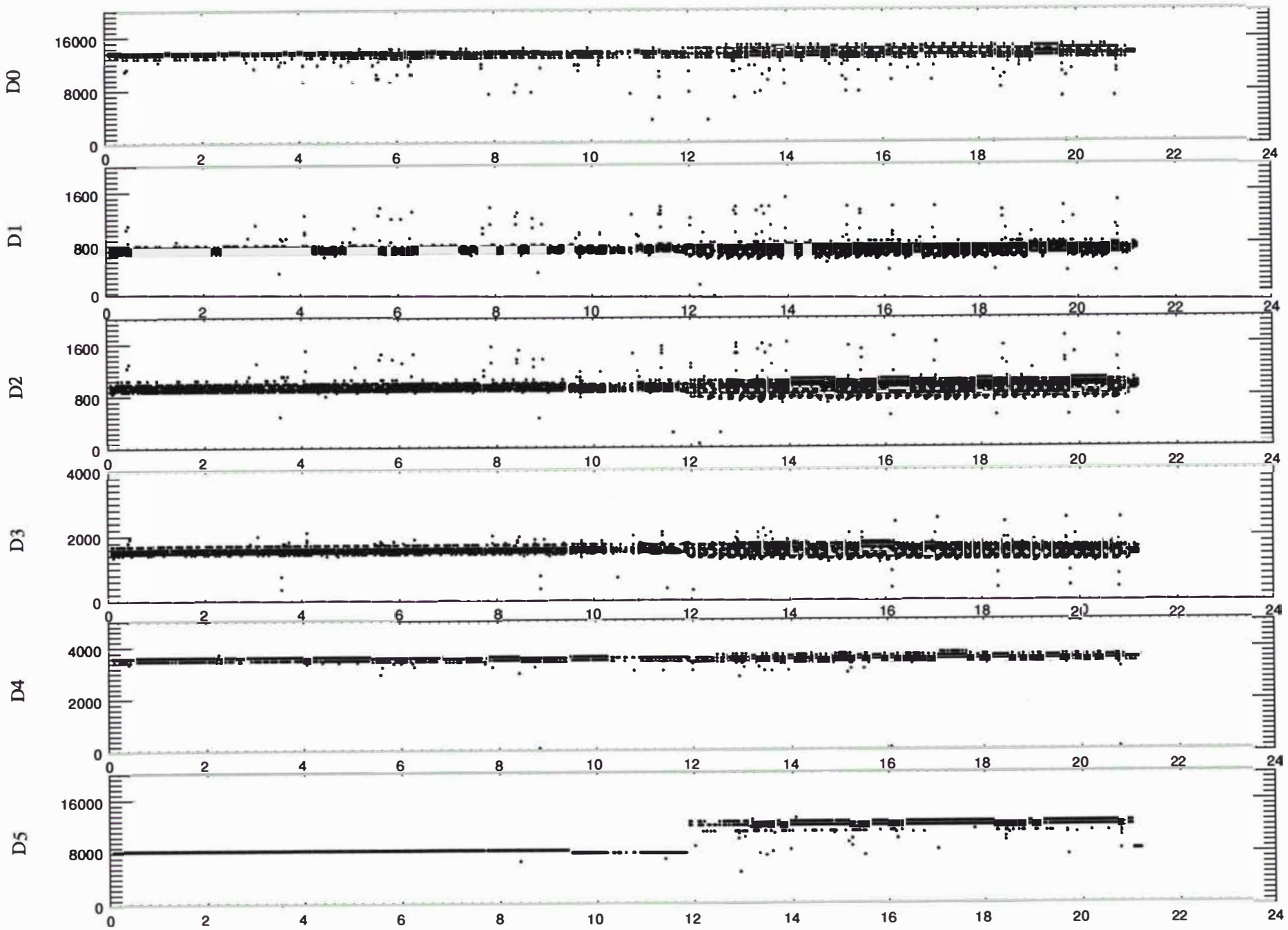
B# 1

HUS 2A, MODE 1, NOT AVERAGED QEDR day 33, year 1994 to day 34, year 1994 2/3/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 33, year 1994 to day 33, year 1994 2/3/94



From SHARIFF@ssl.msfc.nasa.gov Fri Feb 4 07:59 PST 1994
Date: Fri, 4 Feb 1994 10:02:39 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2797
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2797
 EVENT OF 1994 FEB  3 DAY OF YEAR= 34
 EVENT CROSSING TIME AT BATSE      : 56816. S. OR 15:46:56.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 181.000  -41.000
 BATSE PEAK COUNTING RATE:  30000    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  3/ 2/  94 IS:
 RA=  155.497 DEC=  -49.721 DIST=    3.182 AU
 BATSE-ULYSSES DISTANCE =  476053297. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=160.20 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1494.09 SECS.
 CROSSING TIME AT ULYSSES    IS 55322. S. OR   15:22:01 +/-  120.69 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  3/ 2/  94 IS:
 RA=  307.140 DEC=  -20.119 DIST=    2.370 AU
 MARS-BATSE DISTANCE =  354535296. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.91 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  227.38 SECS.
 CROSSING TIME AT MARS       IS 57043. S. OR   15:50:43 +/-  204.94 SECONDS
```

Trigger

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2797	940203	9386	56816	30000	181	-41

BATSE BURST TRIGGER

NO.: 02797

TIME: TJD=9386 SECONDS=56816

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=131.9 AZIMUTH=281.4 ERROR= DEGREES

COMMENTS:
BURST, STRONG SINGLE PULSE WITH SUBSTRUCTURE, HARD SPECTRUM, LASTING ~10SECONDS.
VISIBLE ABOVE 300KEV.

Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

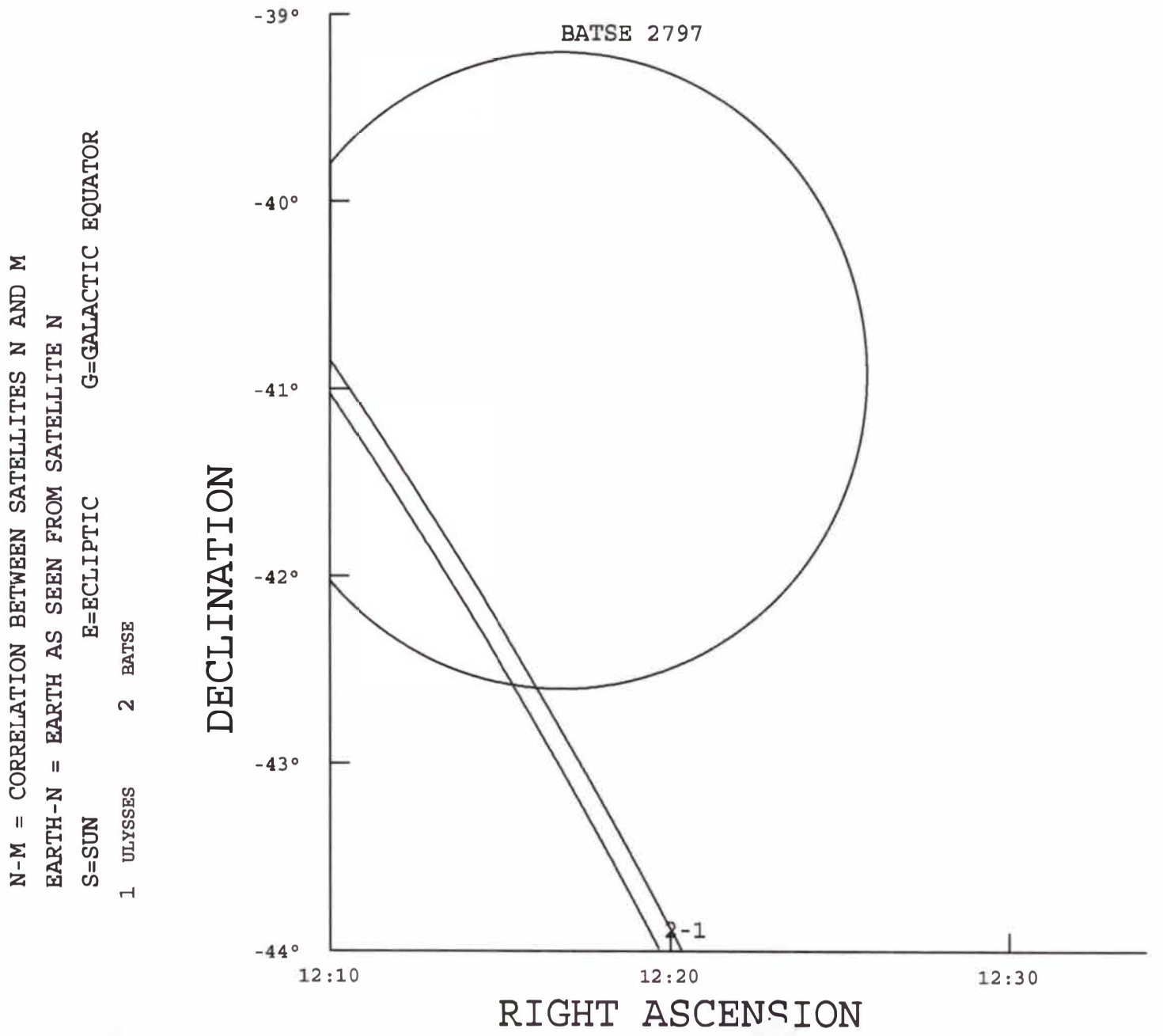
☐ 2000 coordinates used?

☐ Geocentric time used?

☑ ACCESS database updated?

EVENT OF FEB 3, 1994 15:22

6/ 3/98

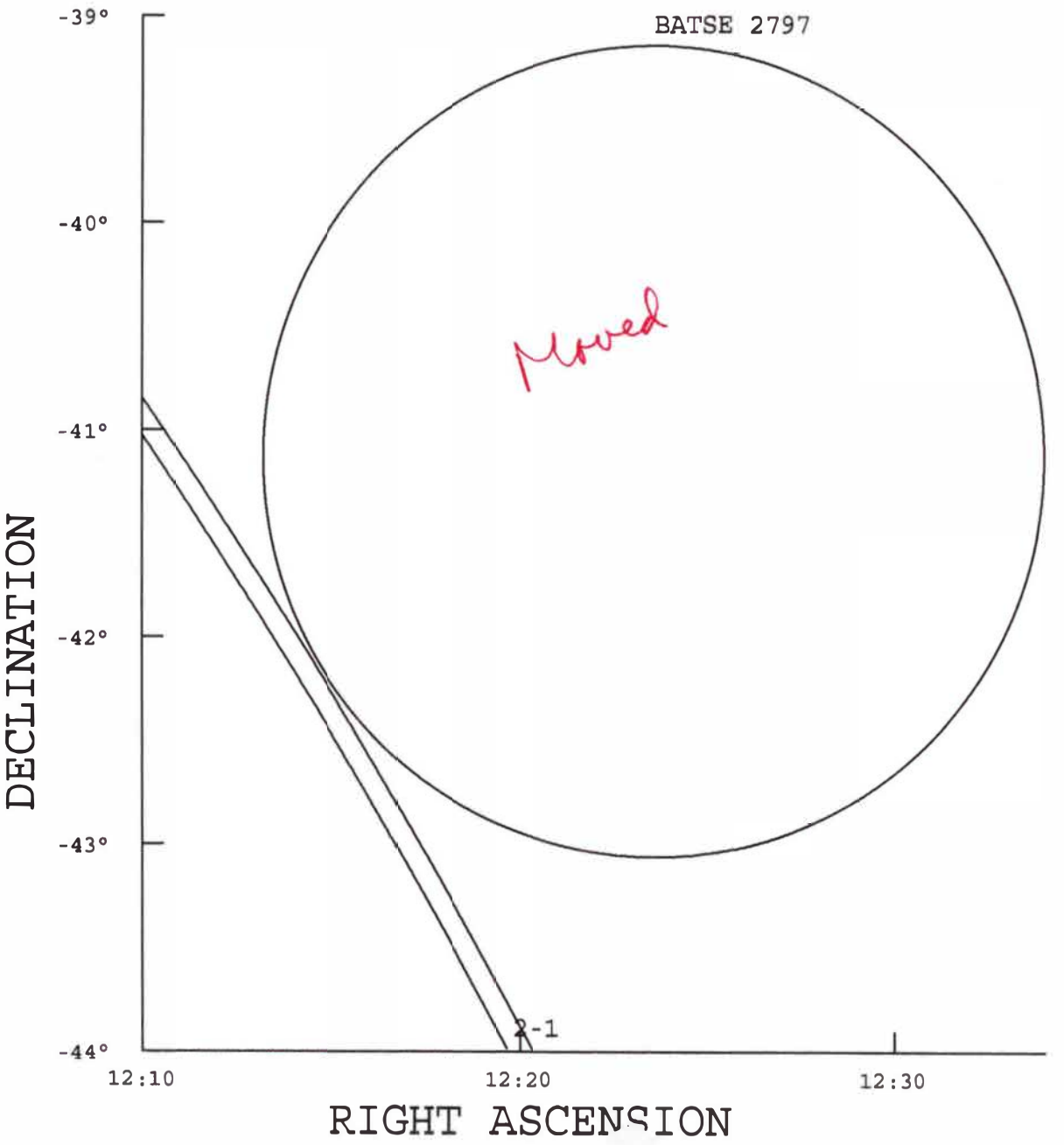


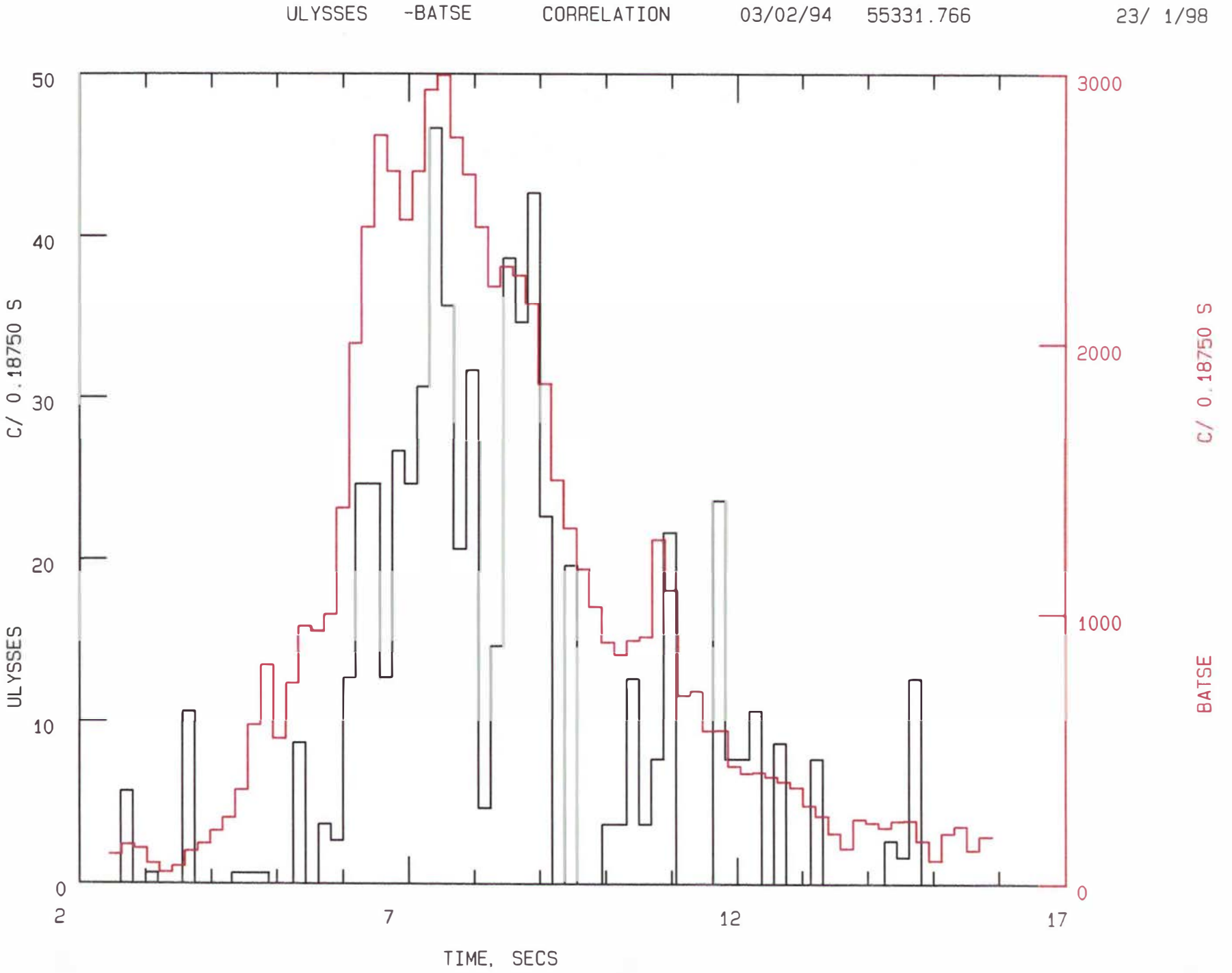
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

EVENT OF FEB 3, 1994 15:22

23/ 1/98

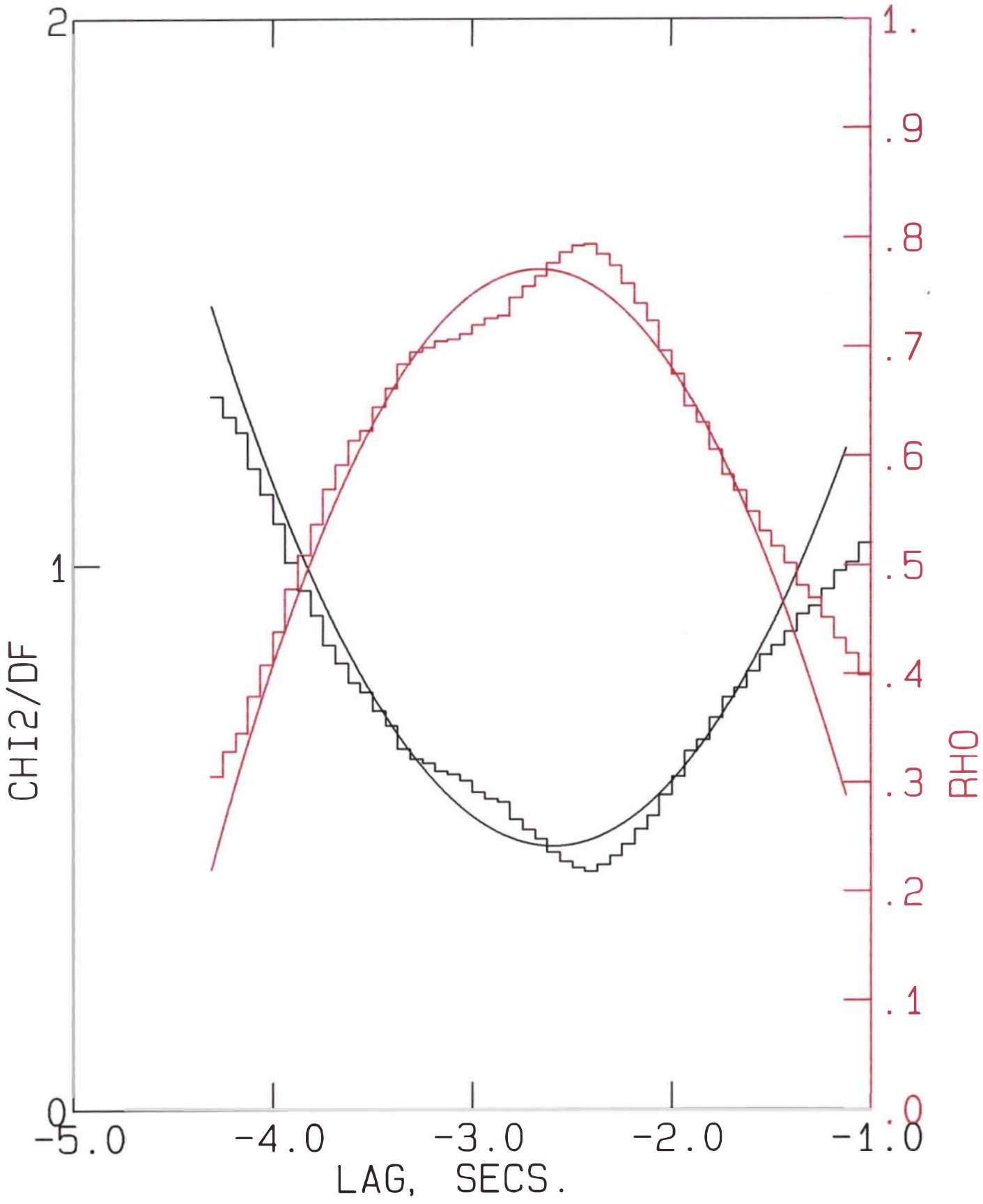
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

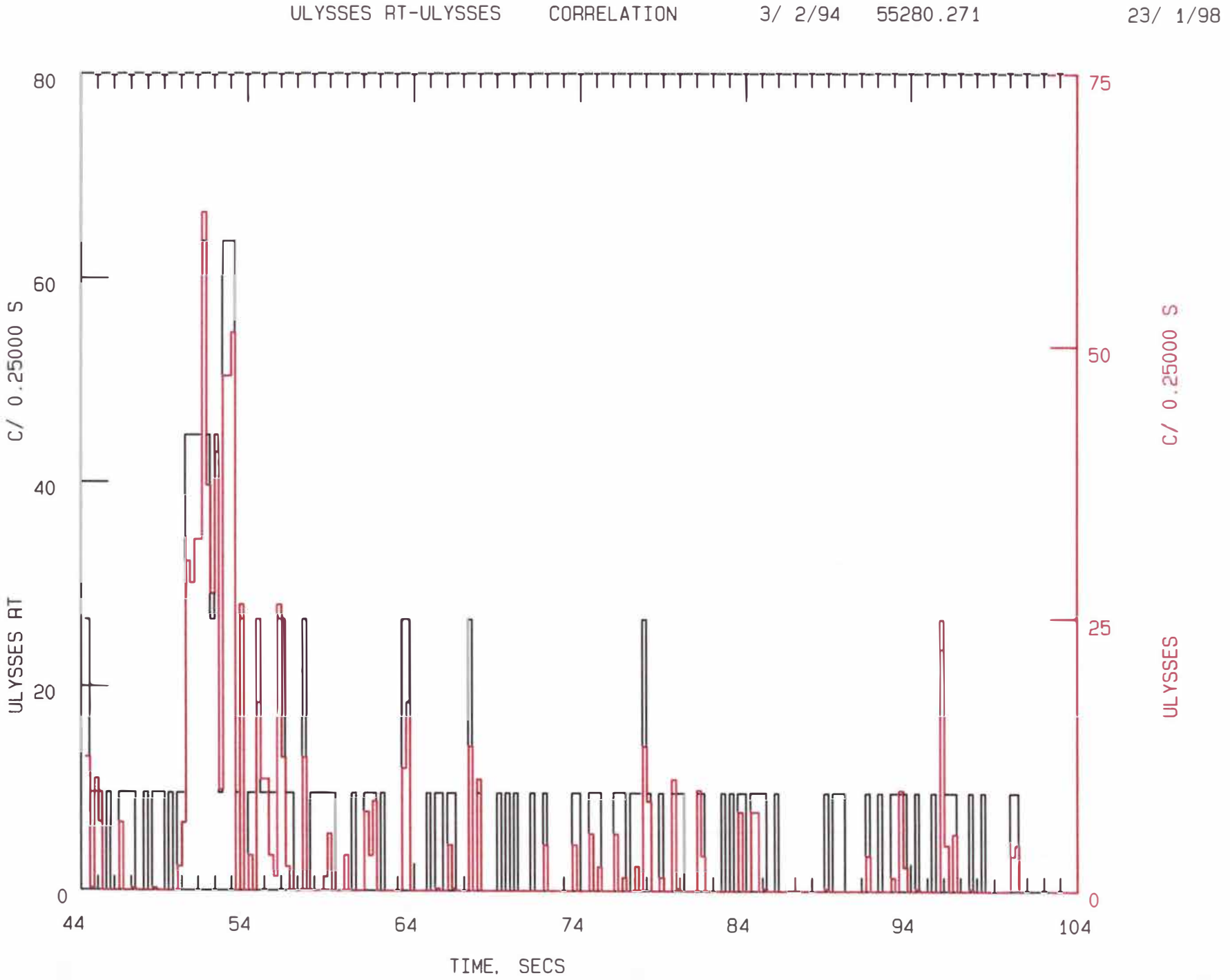



ULYSSES -BATSE CORRELATION 03/02/94 55331.766 23/ 1/98
50
40
30
20
10
0
C/ 0.18750 S
ULYSSES
3000
2000
1000
0
C/ 0.18750 S
BATSE
2
7
12
17
TIME, SECS

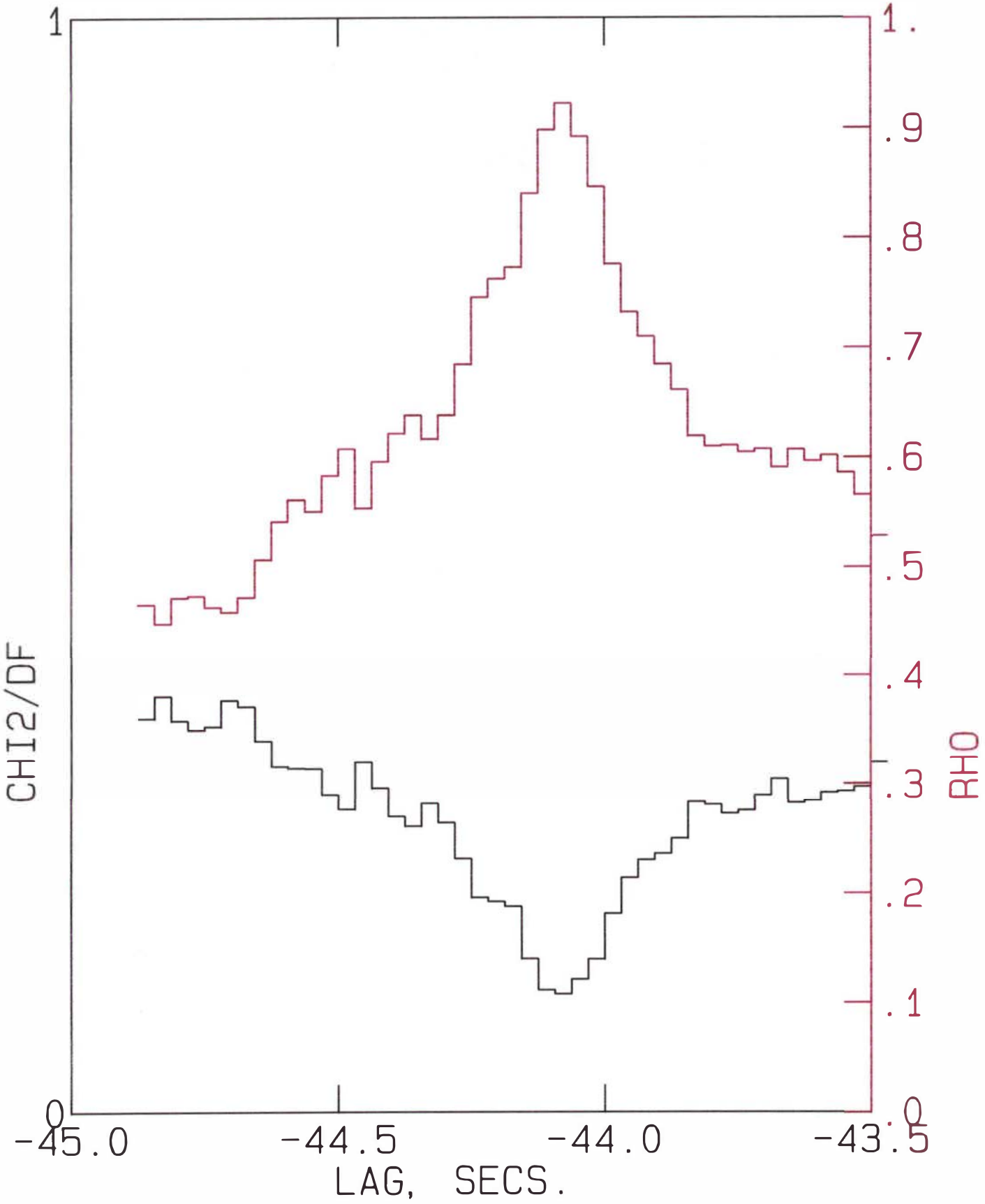
23/ 1/98

ULYSSES -BATSE CORRELATION 03/02/94 55331.766




ULYSSES RT-ULYSSES CORRELATION 3/ 2/94 55280.271 23/ 1/98
80
60
40
20
0
C/ 0.25000 S
ULYSSES RT
75
50
25
0
C/ 0.25000 S
ULYSSES
44
54
64
74
84
94
104
TIME, SECS

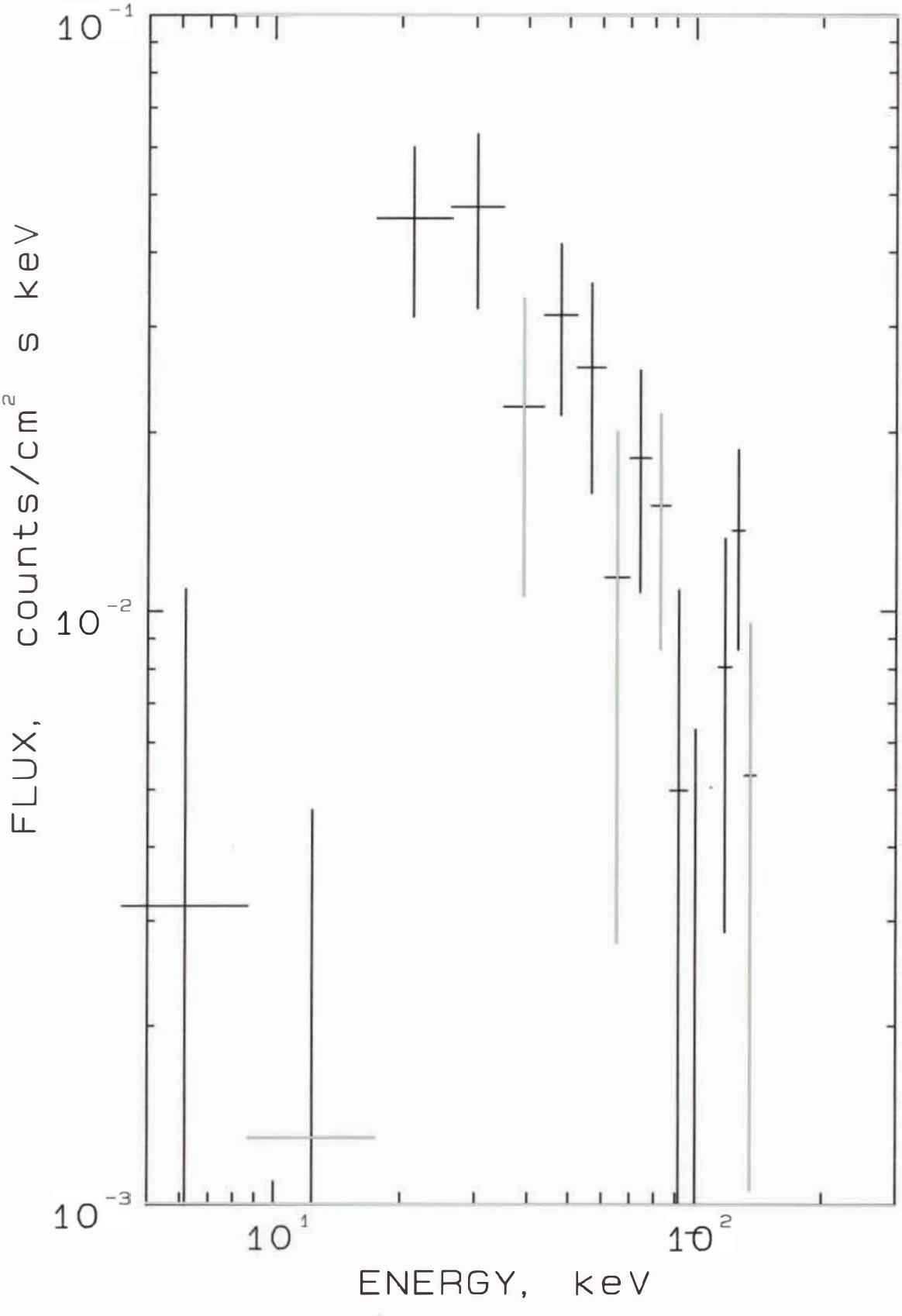
ULYSSES RT-ULYSSES CORRELATION 3/ 2/94 55280.271

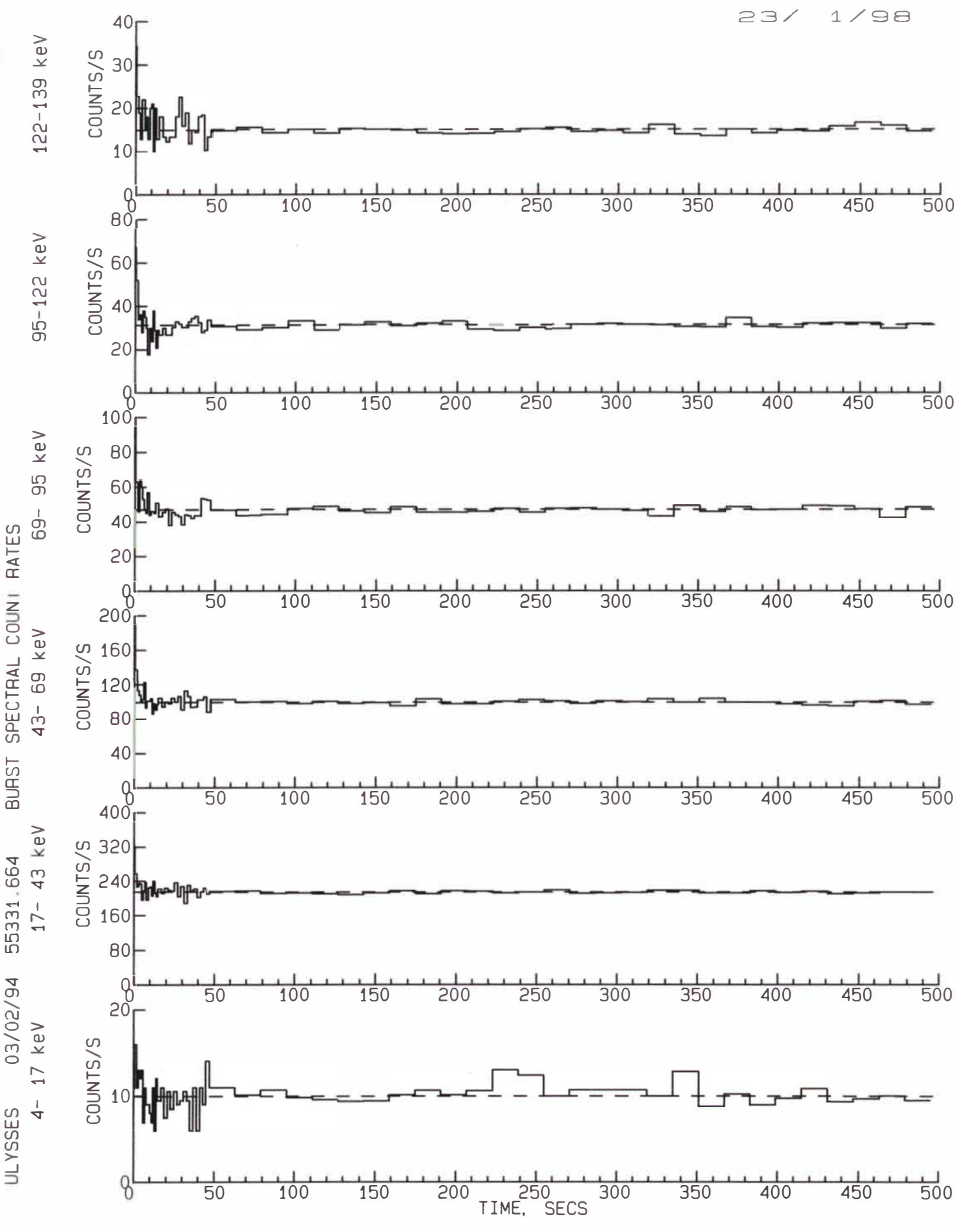


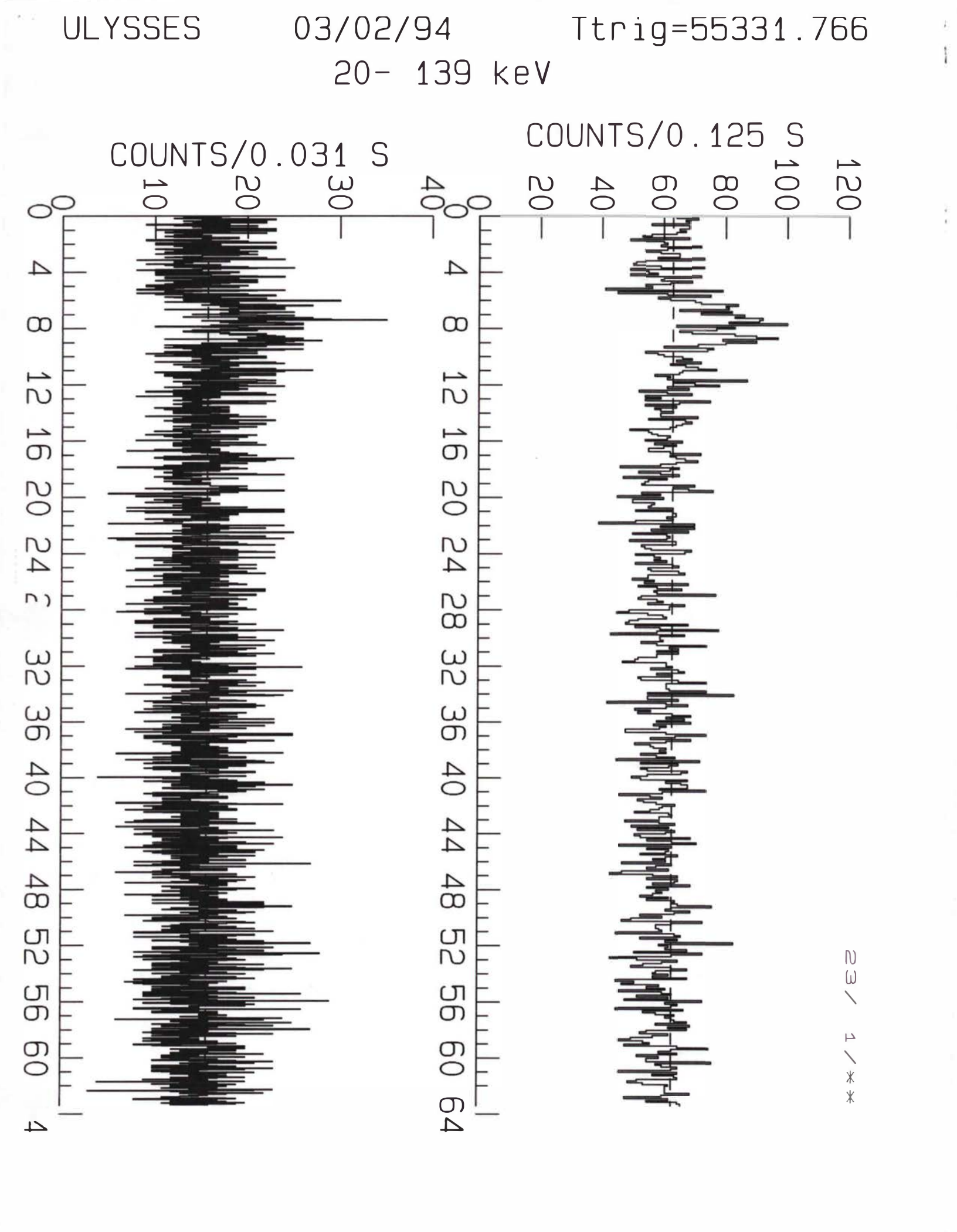
ULYSSES 03/02/94 55331.664

23/ 1/98

SPECTRUM INTEGRATED OVER 20.8 SECONDS, INTERVALS 2 TO 20




23/ 1/98
ULYSSES 03/02/94 55331.664 BURST SPECTRAL COUNT RATES
122-139 keV
95-122 keV
69- 95 keV
43- 69 keV
17- 43 keV
4- 17 keV
COUNTS/S
TIME, SECS

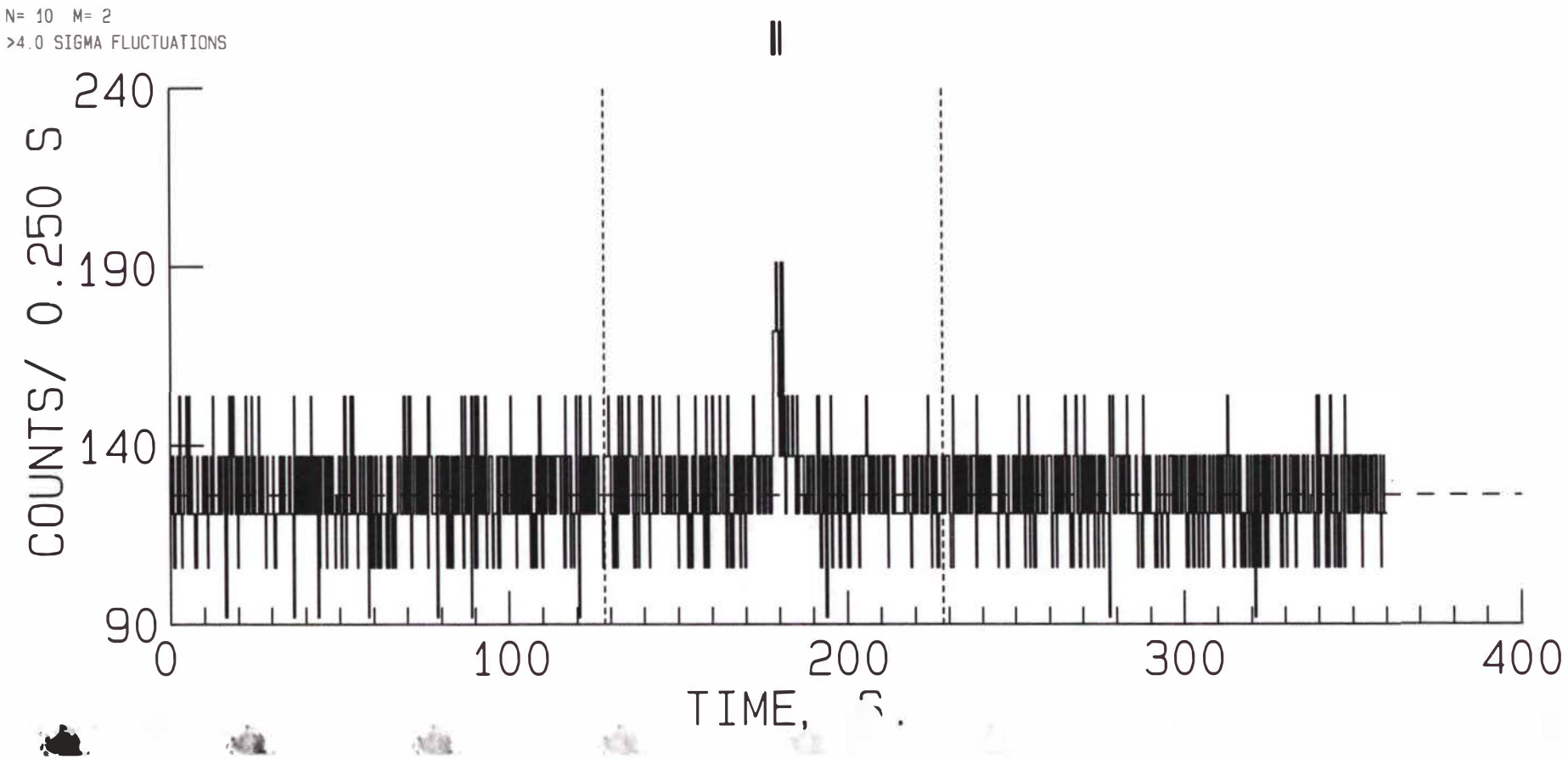

ULYSSES 03/02/94 Ttrig=55331.766
20- 139 keV
COUNTS/0.031 S
COUNTS/0.125 S
23/ 1/**

ULYSSES RT

23/ 1/98

3/ 2/94 55152.167 s

20- 139 keV



From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 259

BATSE detected an intense burst on February 3, 56816 seconds, which I
believe we have also detected with Ulysses. Observers are prepared to take
images of the location if the error box is small enough (that is, a degree
or so). Did WATCH detect this event?

To Lund, Sunyaev, & Terekhov

From root Sun Feb 6 14:56 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA01824; Sun, 6 Feb 94 14:56:28
Received: from nak.berkeley.edu by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA07056; Sun, 6 Feb 1994 14:00:24 +0800
Received: from cmsa.Berkeley.EDU by nak.berkeley.edu (8.6.4/1.40)
id OAA16631; Sun, 6 Feb 1994 14:03:52 -0800
Message-Id: <199402062203.OAA16631@nak.berkeley.edu>
Received: from cmsa.Berkeley.EDU by cmsa.Berkeley.EDU (IBM VM SMTP V2R2)
with BSMTP id 1072; Sun, 06 Feb 94 14:03:36 PST
Received: from ESOC.BITNET by cmsa.Berkeley.EDU (Mailer R2.08 R208004) with
BSMTP id 9604; Sun, 06 Feb 94 14:00:57 PST
Received: from ESOC1.BITNET (NJE origin RSUNYAEV@ESOC1) by ESOC.BITNET (LMail
V1.2a/1.8a) with BSMTP id 0921; Sun, 6 Feb 1994 10:38:31 +0100
Date: Sun, 6 Feb 1994 12:40:14 +0300
From: <rsunyaev%ESOC1.BITNET@cmsa.Berkeley.EDU>
To: khurley@space6.ssl.berkeley.edu
Subject: bright burst
In-Reply-To: Your letter of Fri, 4 Feb 94 09:29:30
Content-Length: 1638
Status: R

Dear Dr Hurley

Thank you very much for your message. It is obvious that we will try
to look for the bright BATSE burst in the PHEBUS and WATCH data.
We have all the data from WATCH/GRANAT and PHEBUS/GRANAT obtained
during last three weeks. Unfortunately the main frame computer
of the Institute is out of operation after January 1. The computer
Center decided to move it into different location. We are using main
frame computer to unpack the telemetry and preprocessing. We had
time to move with all SIGMA/GRANAT software to workstations but were
late with WATCH/GRANAT and PHEBUS/GRANAT software. Immediately when main
frame computer begins to operate we inform you about WATCH results.

There is finite probability that we were not operating during bright
BATSE burst. We continue to work three days of every four.

I have no time to check the real situation because there is a danger
that GRANAT will be switched off due to lack of financing. The prices
went up again. Evpatoria contractors and Lavochkin industry are
requesting two and half million dollars for operations during 1994.
This is without IKI expenses. I am trying to find solution how to
force the industry to continue observations without interruption.
I had similar requests every season just before the beginning of the
Galactic Center observations.

We check everything automatically immediately when main frame computer
begins to operate. Then we inform you about WATCH and PHEBUS results
about this burst.

My congratulations with BATSE and ULLYSSES results.

Best regards Rashid Sunyaev
---------- end of message ----------

From root Sun Dec 5 15:37 1993
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA08119; Sun, 5 Dec 93 15:37:52
Received: from Sdsc.Edu (m5.sdsc.edu) by sunspot.ssl.berkeley.edu (4.1/1.30.1)
id AA02670; Sun, 5 Dec 93 14:40:54 PST
Received: from ssl.span by Sdsc.Edu with VMSmail ;
Sun, 5 Dec 93 22:43:12 GMT
Date: Sun, 5 Dec 93 22:43:12 GMT
From: fishman%ssl.span@sdsc.edu
Message-Id: <931205224312.20401dd0@Sdsc.Edu>
Subject: Burst Alert Follow-up, Trigger #2676
To: khurley@sunspot.ssl.berkeley.edu, rsunyaev%esoc1.bitnet%ssl.span@sdsc.edu
X-St-Vmsmail-To: @QUIKALRT
Status: R

To BATSE Quick-Alert Network:

Below is a more accurate location (est. 4-6 deg.) and a description of the
intense gamma-ray burst detected yesterday (Dec. 12, 1993 @ 09:48:10 UT).
It appears to be a real burst with a peak LAD rate of over 10**5 cps, >20 keV.
These preliminary data were provided by Mr. Mark Zmyewski/BATSE.
It may be too near the sun for optical follow-up observations.
Additional data on this burst and/or inquiries regarding
coordinated observations should be directed to Dr. Chryssa Kouveliotou.

Jerry Fishman
Principal Investigator, BATSE

TRIGGER #2676

TJD: 9325 SECONDS OF DAY: 35290
RA: 244.9 DEC: 35.8

COMMENTS: GRB lasting approx. 45 seconds. Two main peaks, each
having much structure, and each approx. 15 seconds in
duration, separated by 15 seconds. Strong in channel 4
(>300 keV). Not in COMPTEL or EGRET FOV.

From root Sat Feb 5 11:31 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA01704; Sat, 5 Feb 94 11:31:27
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA04868; Sat, 5 Feb 1994 10:35:24 +0800
Received: by xtelab.gsfc.nasa.gov (4.1/1.35)
id AA18567; Sat, 5 Feb 94 13:38:45 EST
Date: Sat, 5 Feb 94 13:38:45 EST
From: scott@xtelab.gsfc.nasa.gov (Scott Barthelmy)
Message-Id: <9402051838.AA18567@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu
Subject: bacodine on 940203
Cc: scott@xtelab.gsfc.nasa.gov
Content-Length: 365
Status: R

Kevin,

I will fax you the bacodine light curves for 940203.
These plots are slightly different than what I have sent in the past.
Here all 8 dets are on one page. and there is a single light curve for
each det which is sum of the middle 2 energy bins of discla data (50-300kev).

I say the burst peaked at 56820sec-of-day on tjd 9386.

fax in a few minutes,
scott

From root Sat Feb 5 11:43 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA01707; Sat, 5 Feb 94 11:43:07
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA04880; Sat, 5 Feb 1994 10:47:06 +0800
Received: by xtelab.gsfc.nasa.gov (4.1/1.35)
id AA18608; Sat, 5 Feb 94 13:50:32 EST
Date: Sat, 5 Feb 94 13:50:32 EST
From: scott@xtelab.gsfc.nasa.gov (Scott Barthelmy)
Message-Id: <9402051850.AA18608@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu
Subject: fax sent
Cc: scott@xtelab.gsfc.nasa.gov
Content-Length: 492
Status: R

Kevin,
I sent it. I hope the blue ink was scannable by the fax machine.
And I hope the thin lines of this new plotting style/format are scannable.
--scott

PS Do you have any better information from (Huntsville or whereever)
about the location. The Bernie McNamara notice said 12h00m -42d00m.
Was this a BATSE MAXBC location determination? Or something else?
It is 19deg away from the bacodine position (ra=166.5 dec=-59.2) and this seems
like a large difference for such a strong burst.

From root Tue Feb 8 11:40 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA02731; Tue, 8 Feb 94 11:40:18
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA23141; Tue, 8 Feb 1994 10:44:10 +0800
Received: by xtelab.gsfc.nasa.gov (4.1/1.35)
id AA02582; Tue, 8 Feb 94 13:47:45 EST
Date: Tue, 8 Feb 94 13:47:45 EST
From: scott@xtelab.gsfc.nasa.gov (Scott Barthelmy)
Message-Id: <9402081847.AA02582@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu
Subject: interset(?)
Cc: scott@xtelab.gsfc.nasa.gov
Content-Length: 658
Status: R

Kevin,
I agree there isn't much interest in this one. You can circulate BACODINE
position to whomever is interested. Please note that the difference between BATSE
and BACODINE is not as bad as your fax-ed plot. The BATSE position you show
is their quicklook MAXBC program output position. About 2 days later
they came out with their usual "admistrative notice" for which the postion
moved to ra=180.81 dec=-52.39 (ie the 19deg difference between BATSE & BACO
decreased to 10.7deg). Their new position is more grazing to your IPN arc.

i'll send the light curve for 2793 when I get a bug worked out of the
plotting program (maybe today).

thanks,
scott

From khurley@space6.ssl.berkeley.edu Sat Feb 5 10:16 PST 1994
Date: Sat, 5 Feb 94 11:12:43
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 375

Ulysses triggered on the BATSE event of February 3 (#2797). I am prepared to work out an annulus for it quickly if anyone is still interested, but I do not have the BATSE time history. If Scott can send me the BACODINE time history, or if Chryssa can send me the DISCLA data, I will work on it. I have contacted the WATCH team to see if they have detected it, too.

Kevin

Dear Scott,

Please have a look at the fax I just sent and tell me what you think.
Should I circulate the BACODINE position (which is part of the triangulation program output) to interested observers? Come to think of it, are there any interested observers? I don't exactly detect any intense activity out there for this source.

Kevin

From root Mon Feb 7 15:46 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA02268; Mon, 7 Feb 94 15:46:24
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA13098; Mon, 7 Feb 1994 14:50:14 +0800
Received: by xtelab.gsfc.nasa.gov (4.1/1.35)
id AA01796; Mon, 7 Feb 94 17:53:46 EST
Date: Mon, 7 Feb 94 17:53:46 EST
From: scott@xtelab.gsfc.nasa.gov (Scott Barthelmy)
Message-Id: <9402072253.AA01796@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu
Subject: ok & a question
Cc: scott@xtelab.gsfc.nasa.gov
Content-Length: 1083
Status: R

Kevin, 07 Feb 94

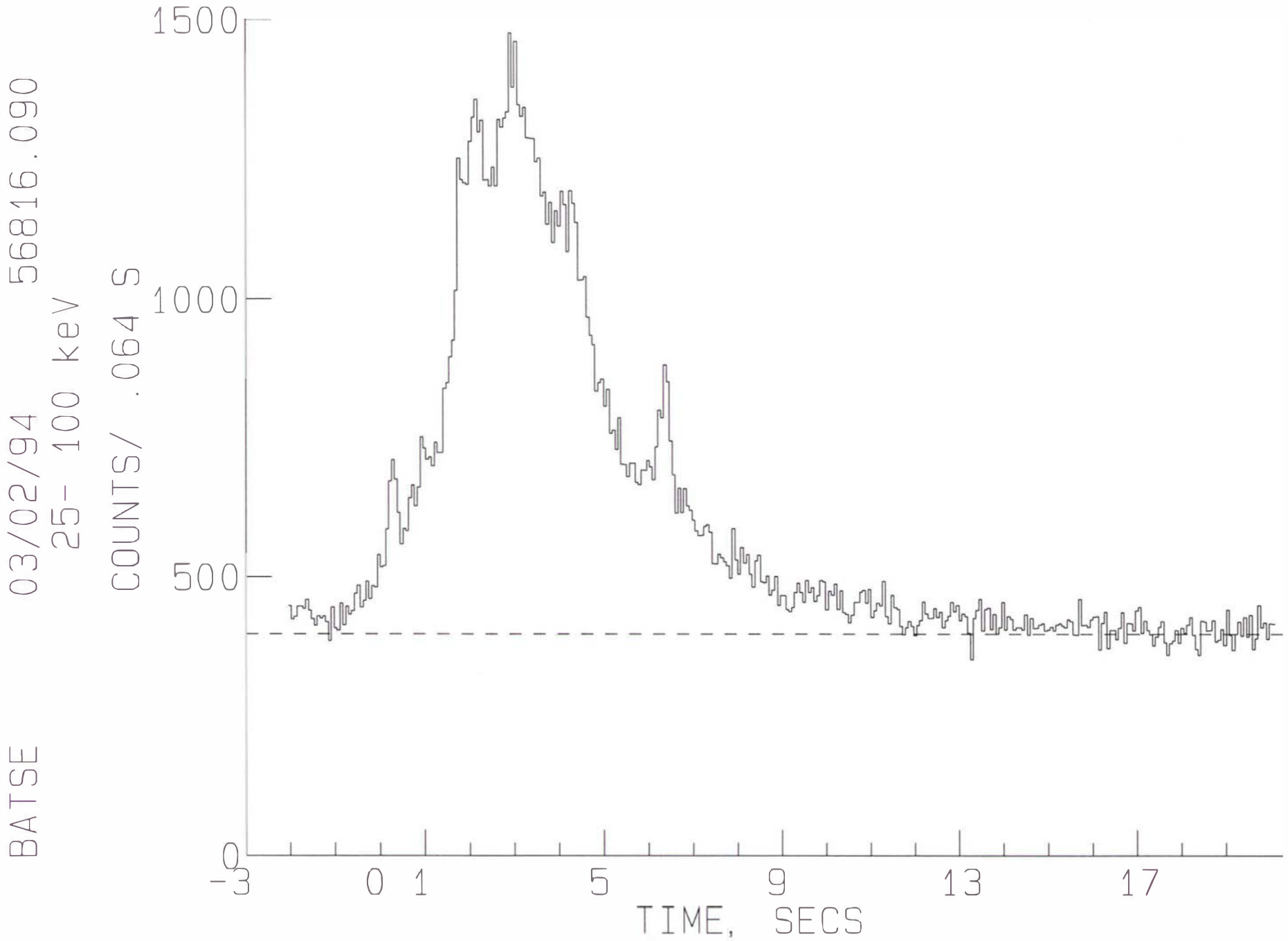
No problem about tomorrow. Unless the geometry of the McNamara position, the BACODINE position, and the IPN arc are paricularly fortunate, we will probably not invoke our CTIO or VLA ToO's. The VLA is out because of too much tiling for a half degree FOV. And the CTIO Schmidt is out for the same reason with a 0.8deg FOV CCD. And of course KPNO Schmidt is out because Dec=-50 is too far south.

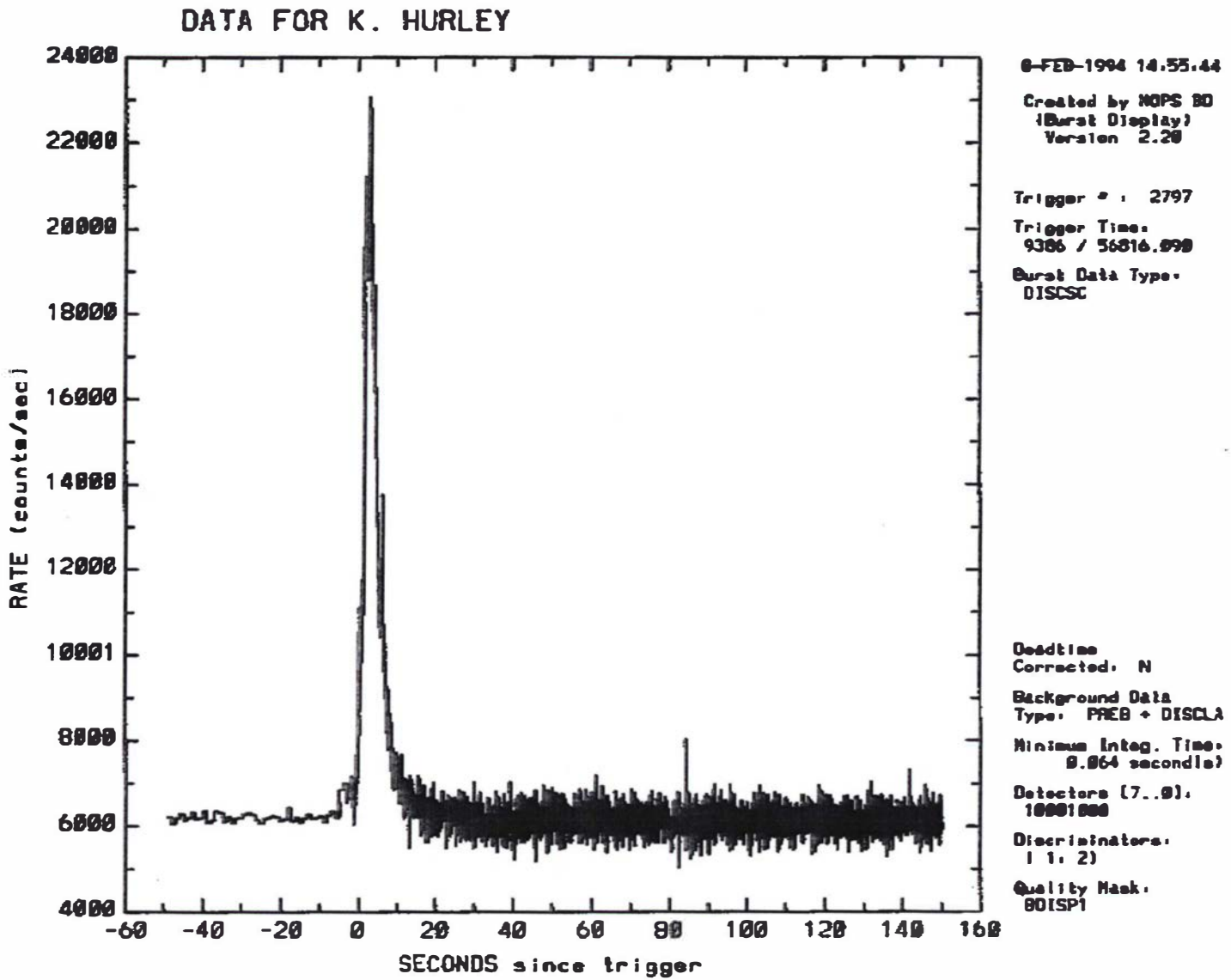
However, what is the possibility of Ulysses detecting anything for BATSE trigger #2793? BACODINE sent a notice to the LLNL GROCSE system and they got good images of that region. So now the question would be to narrow down the scan region. The particulars are:

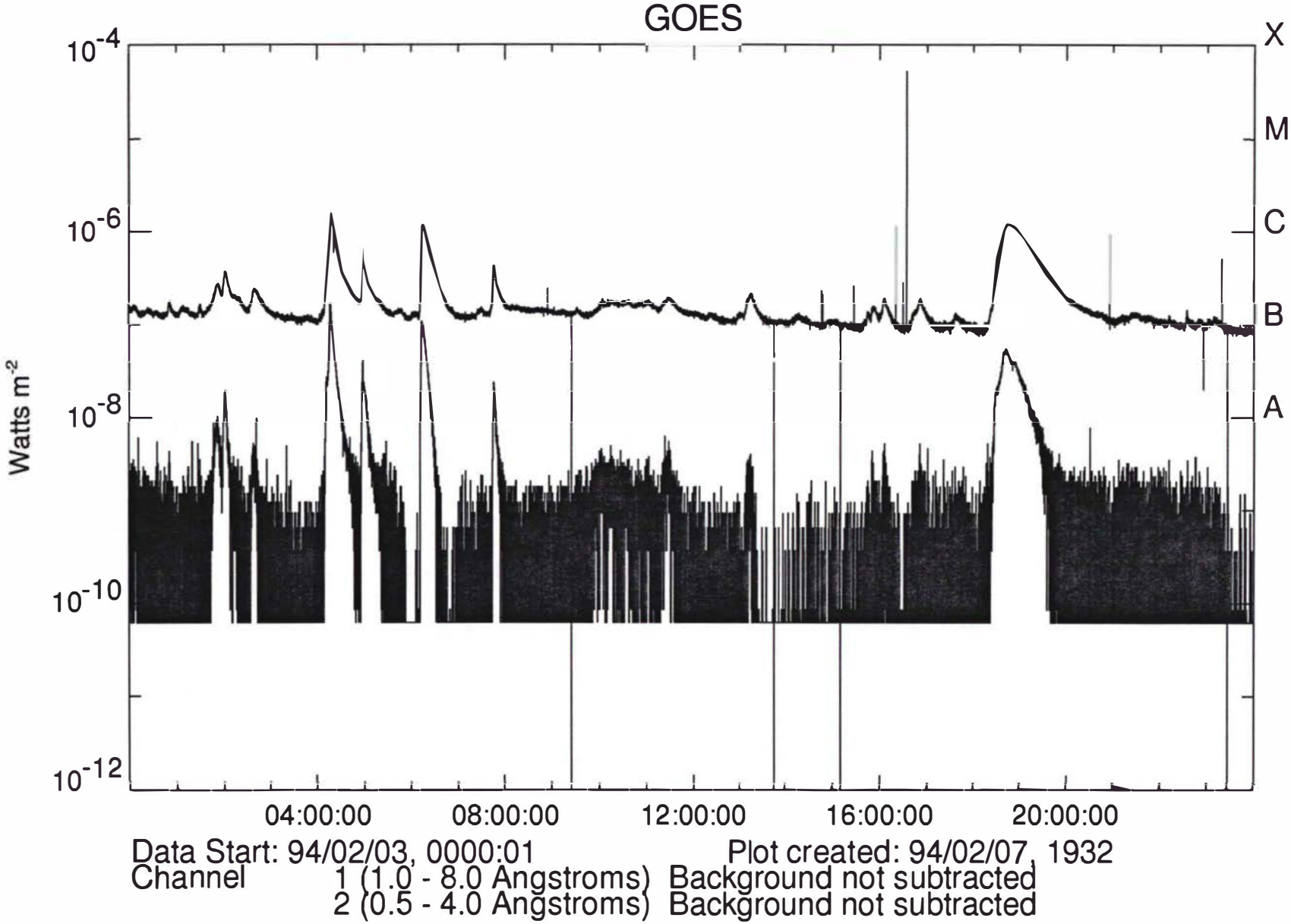
TJD 9381
SOD 38599 (actually maybe a sec or two sooner than this)
BACODINE RA 129.89
Dec +30.01
It was a 6sec burst of about the same intensity as the 9386.56816 burst.
I can send light curves if you are interested.

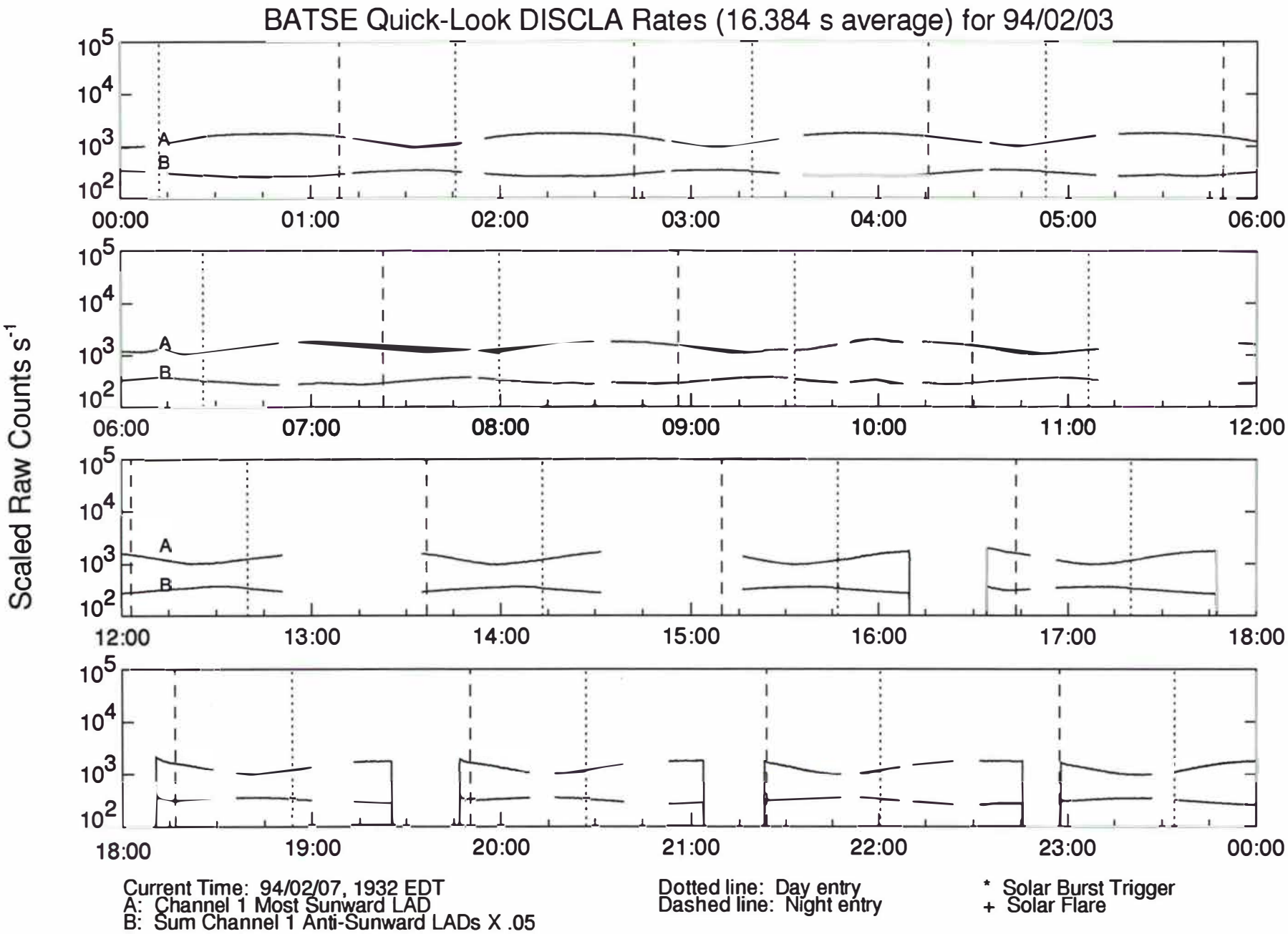
If you would like to talk more about either of these items, please do not hesitate to call (or e-mail): 301-286-3106.

--scott

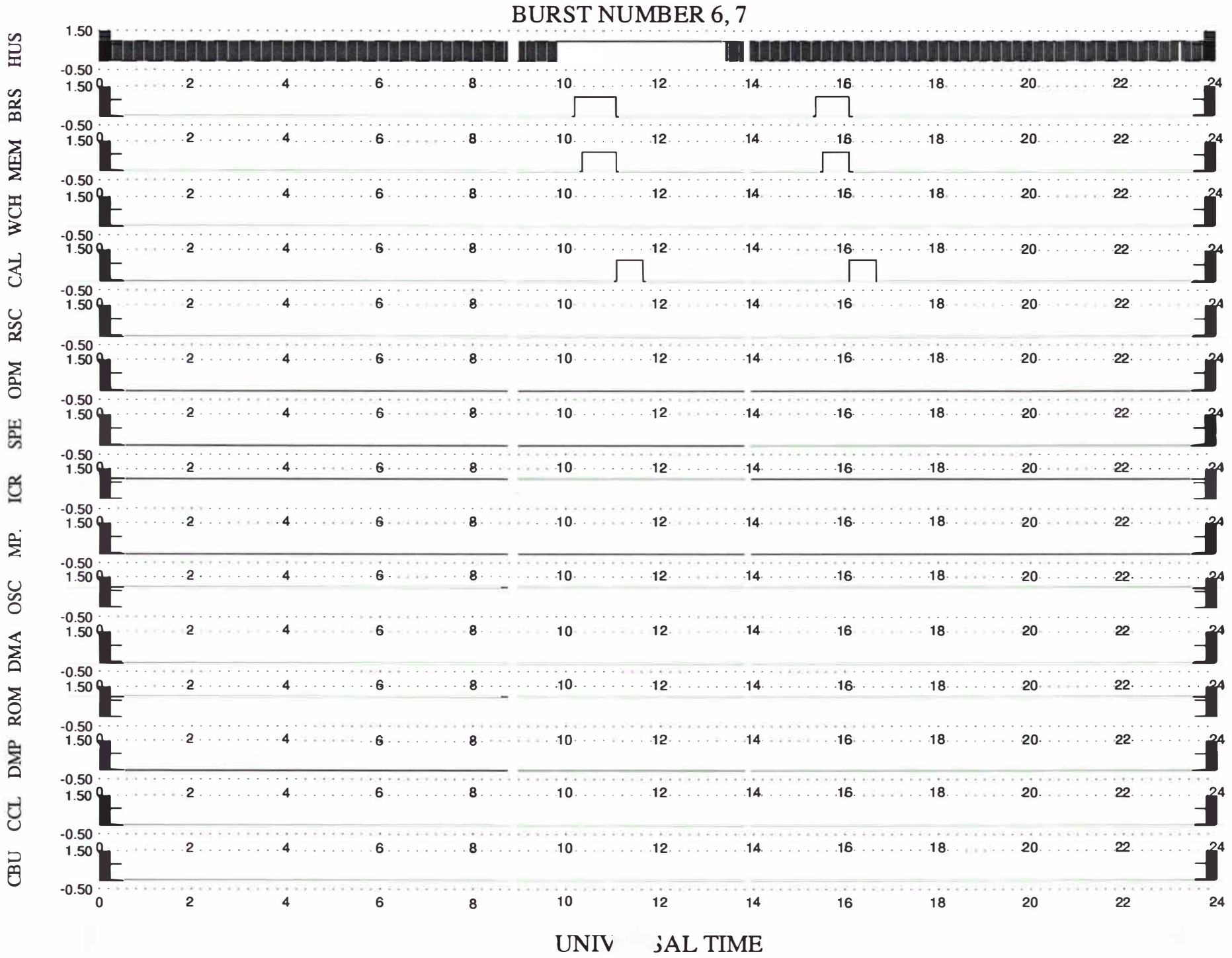

BATSE 03/02/94 568816.090
25- 100 keV
COUNTS/ .064 S
1500
1000
500
0
-3
0 1
5
9
13
17
TIME, SECS


DATA FOR K. HURLEY
RATE (counts/sec)
24000
22000
20000
18000
16000
14000
12000
10001
8000
6000
4000
-60
-40
-20
0
20
40
60
80
100
120
140
160
SECONDS since trigger
8-FEB-1994 14:55:44
Created by MOPS BD
(Burst Display)
Version 2.20
Trigger # : 2797
Trigger Time:
9386 / 56816.890
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors (7..0):
10001000
Discriminators:
(1: 2)
Quality Mask:
BDISP1


GOES
X
M
C
B
A
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/03, 0000:01
Plot created: 94/02/07, 1932
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

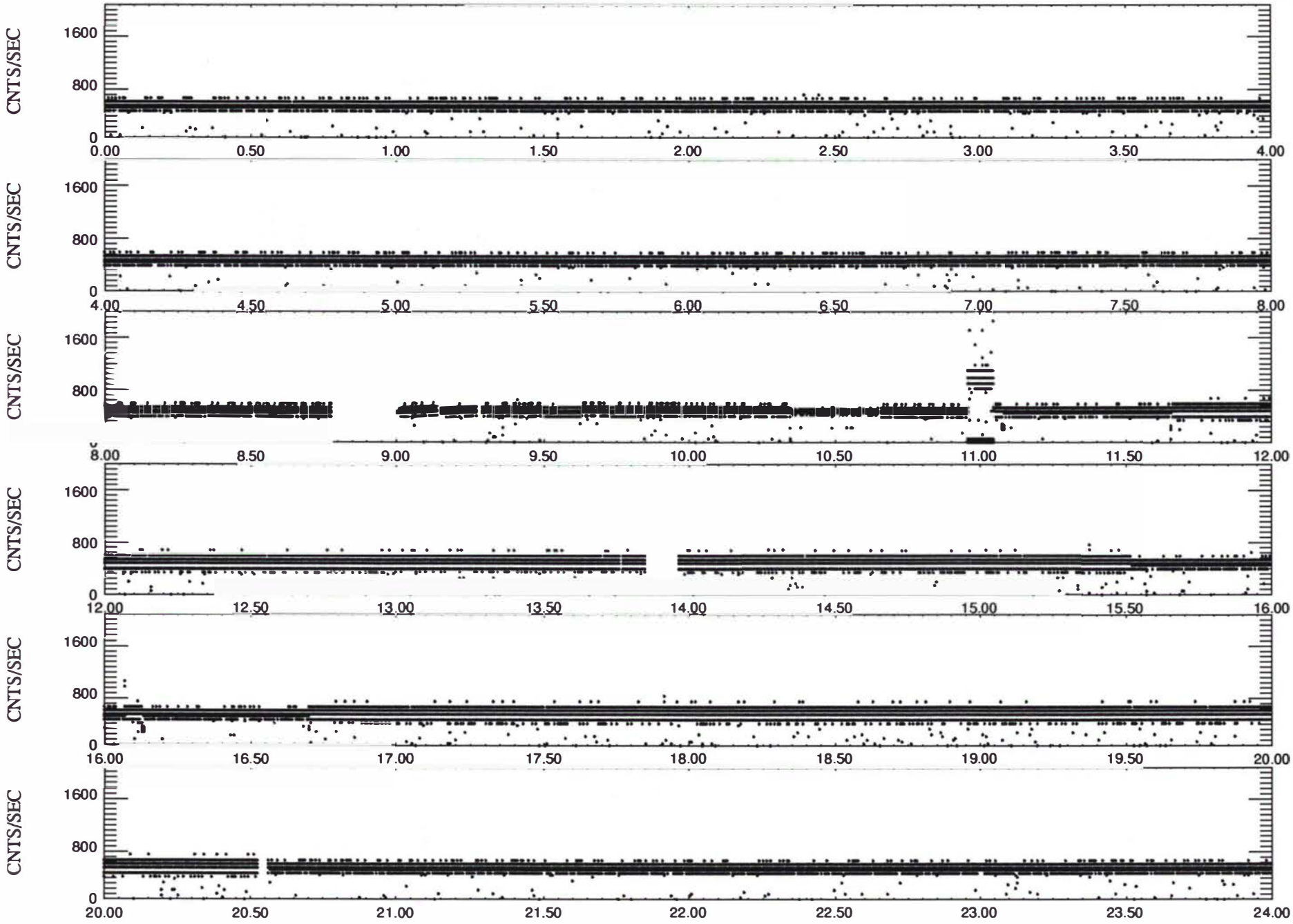

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/03
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/02/07, 1932 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 34, year 1994 to day 34, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 34, year 1994 to day 34, year 1994 5/26/94

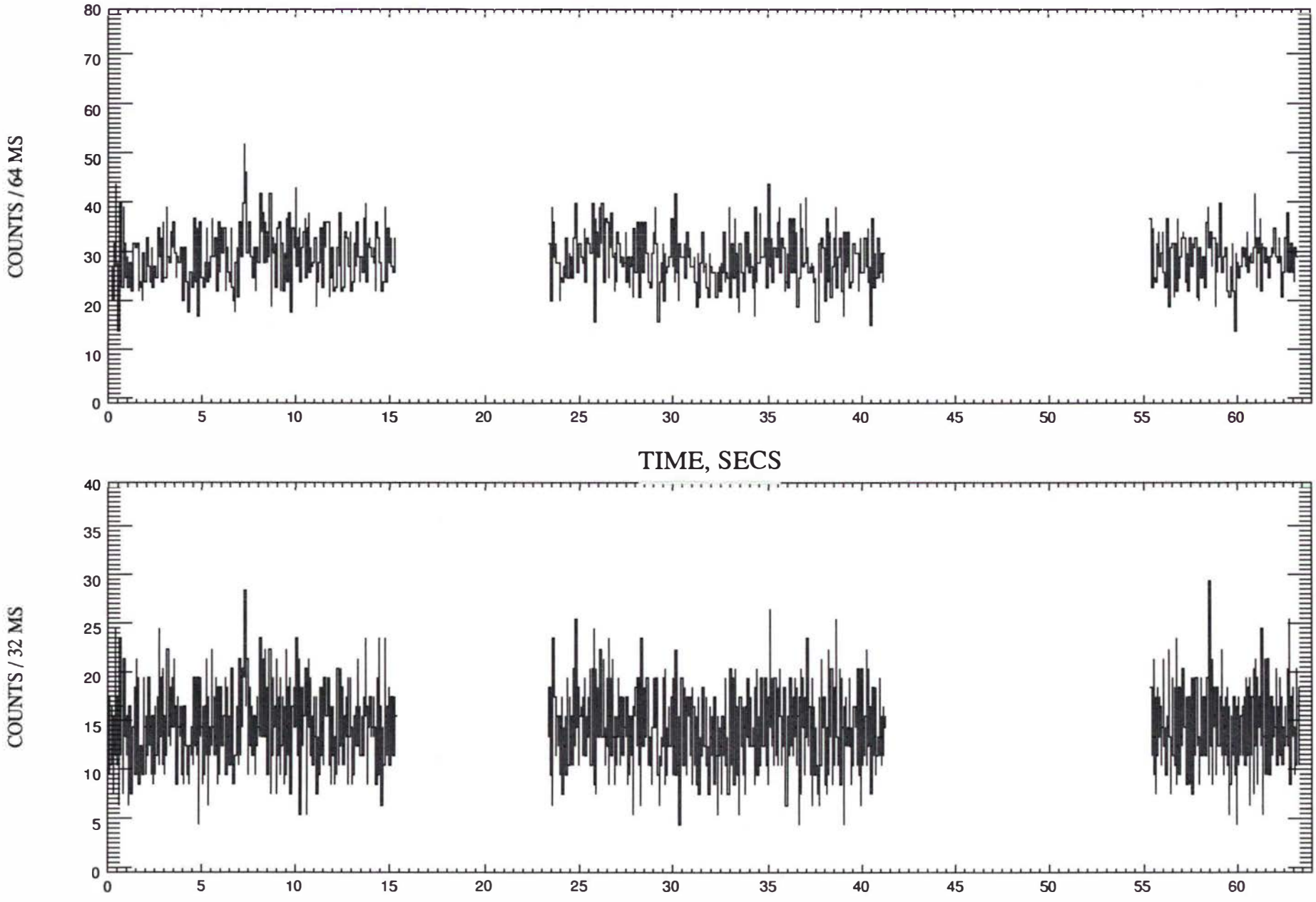
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 34, year 1994 5/26/94

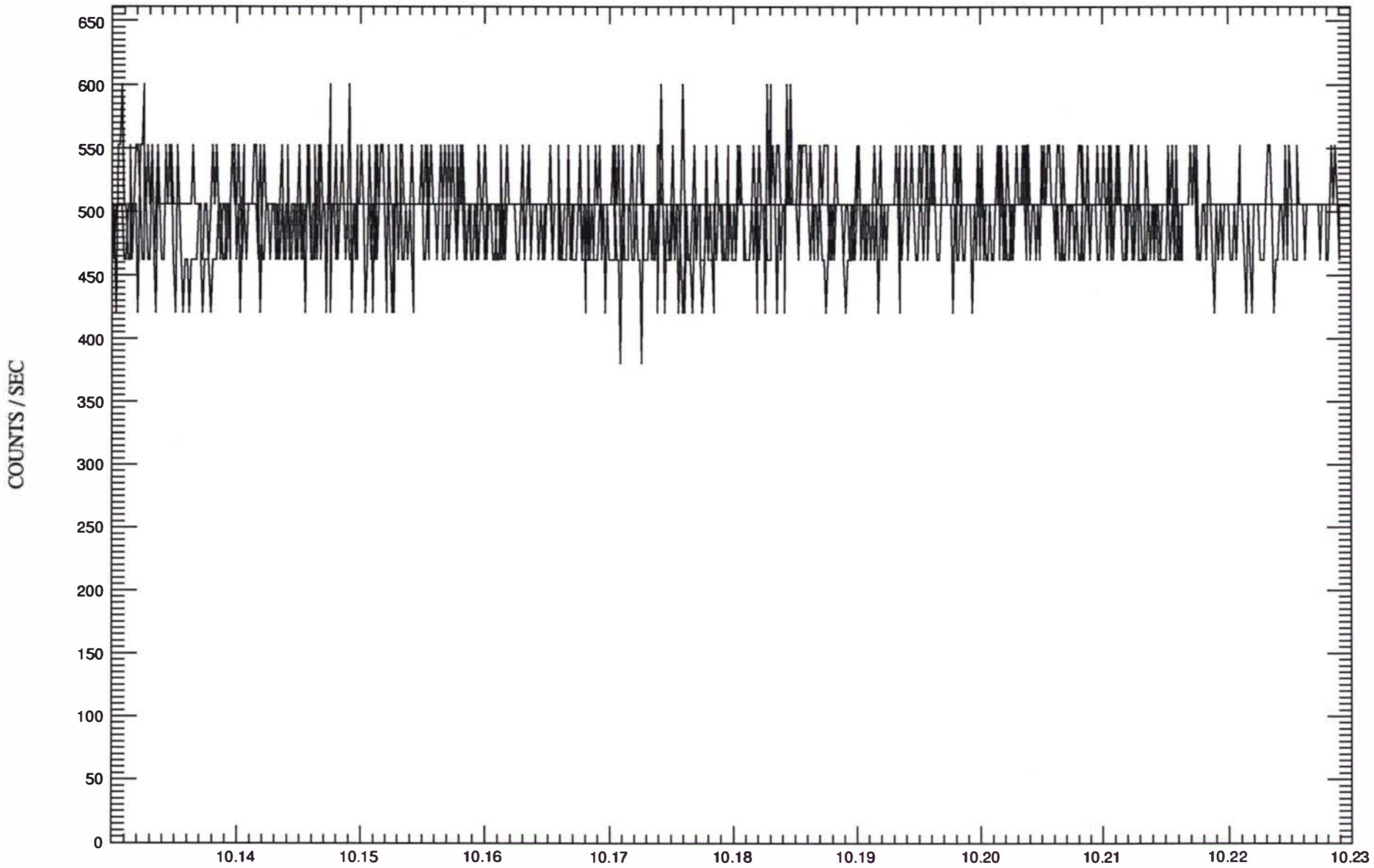
Burst Counter 6 at UT=10.184581315782 h=36664.493 s 10:11:04.493



B# 1

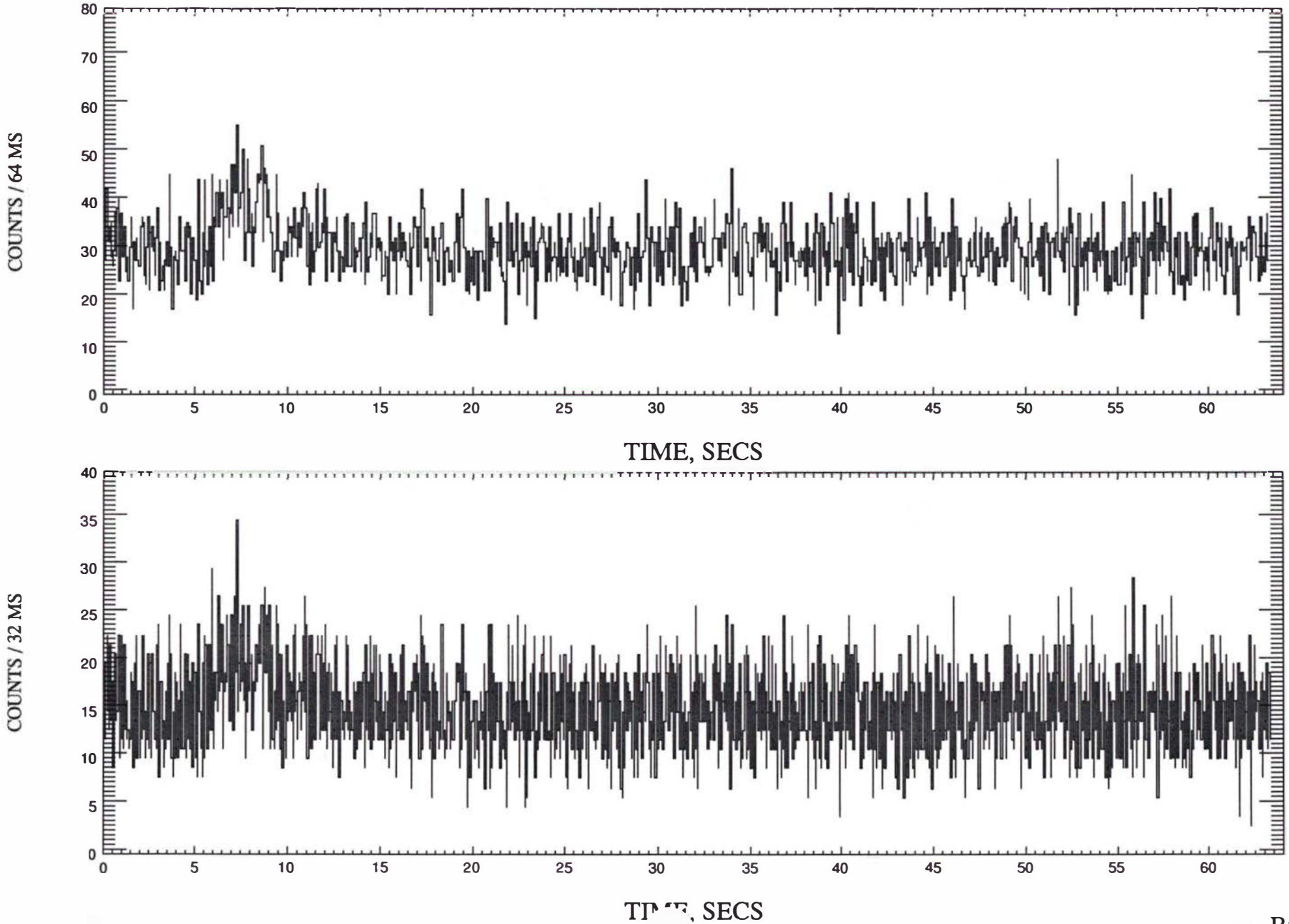
HUS 2A, MODE 1, NOT AVERAGED QEDR day 34, year 1994 to day 35, year 1994 2/4/94

CALIBRATION DATA INCLUDED



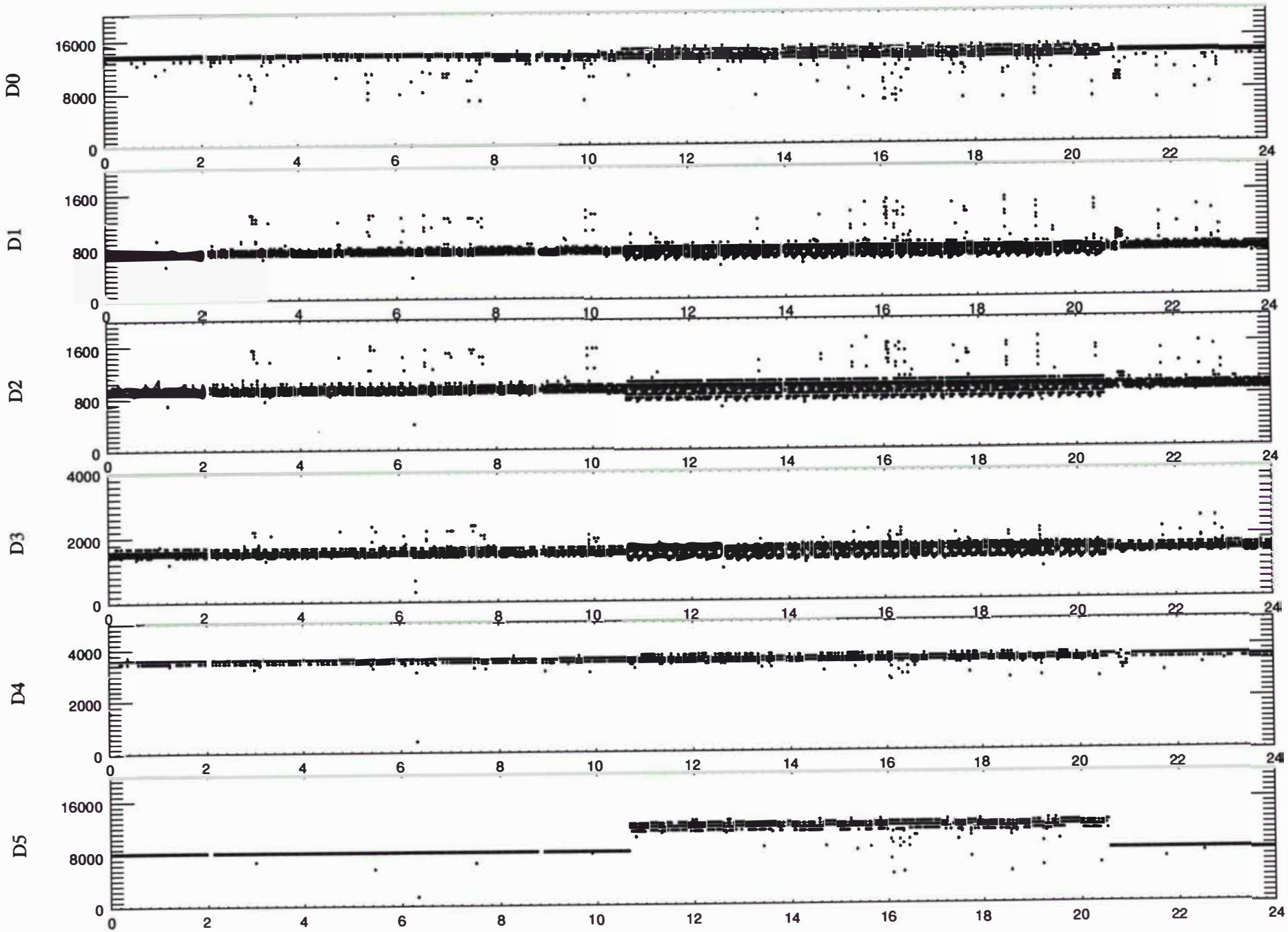
HUS 2A TRIGGERED DATA EDR day 34, year 1994 5/26/94

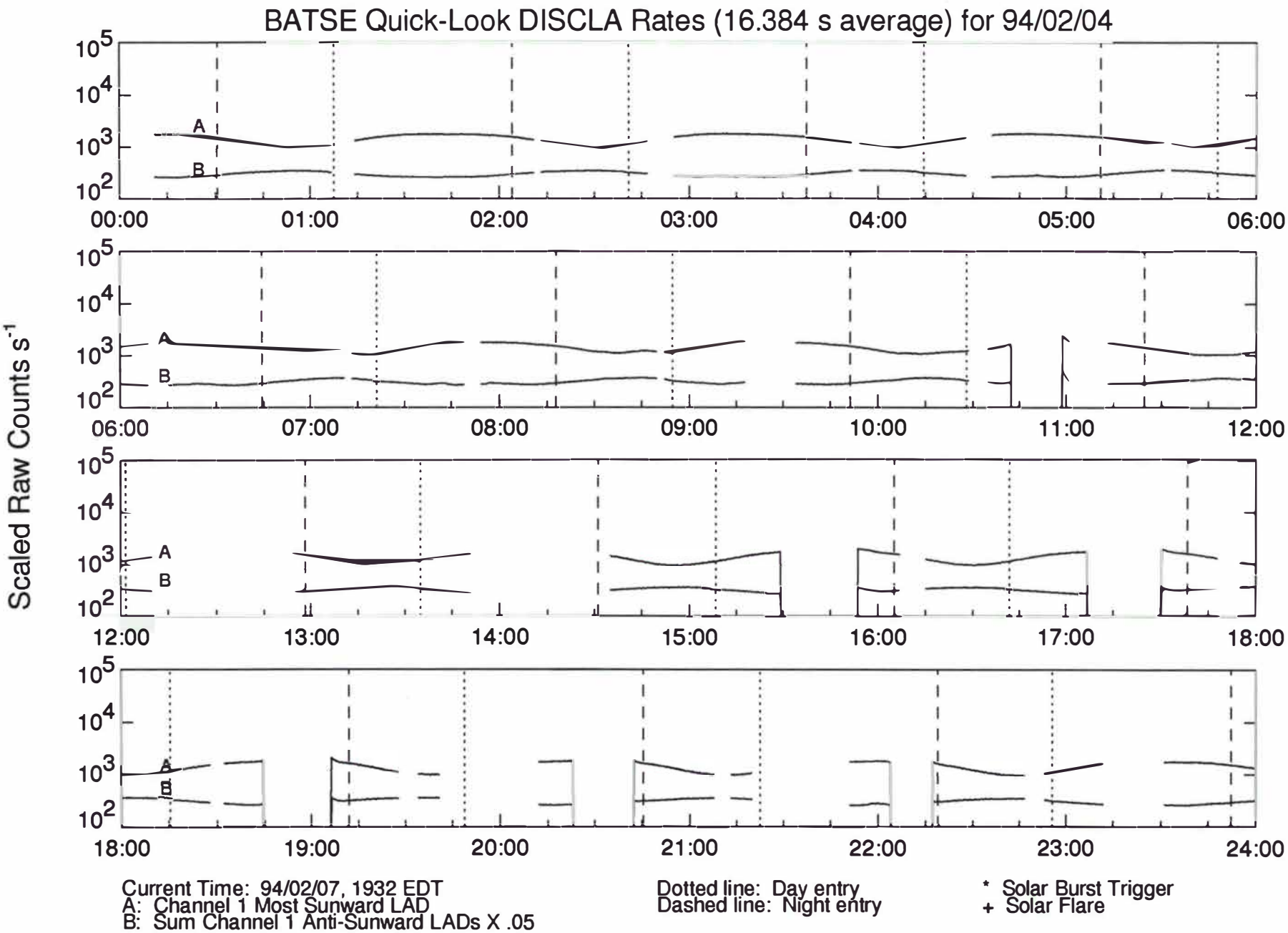
Burst Counter 7 at UT=15.369906620449 h=55331.664 s 15:22:11.664



B# 2

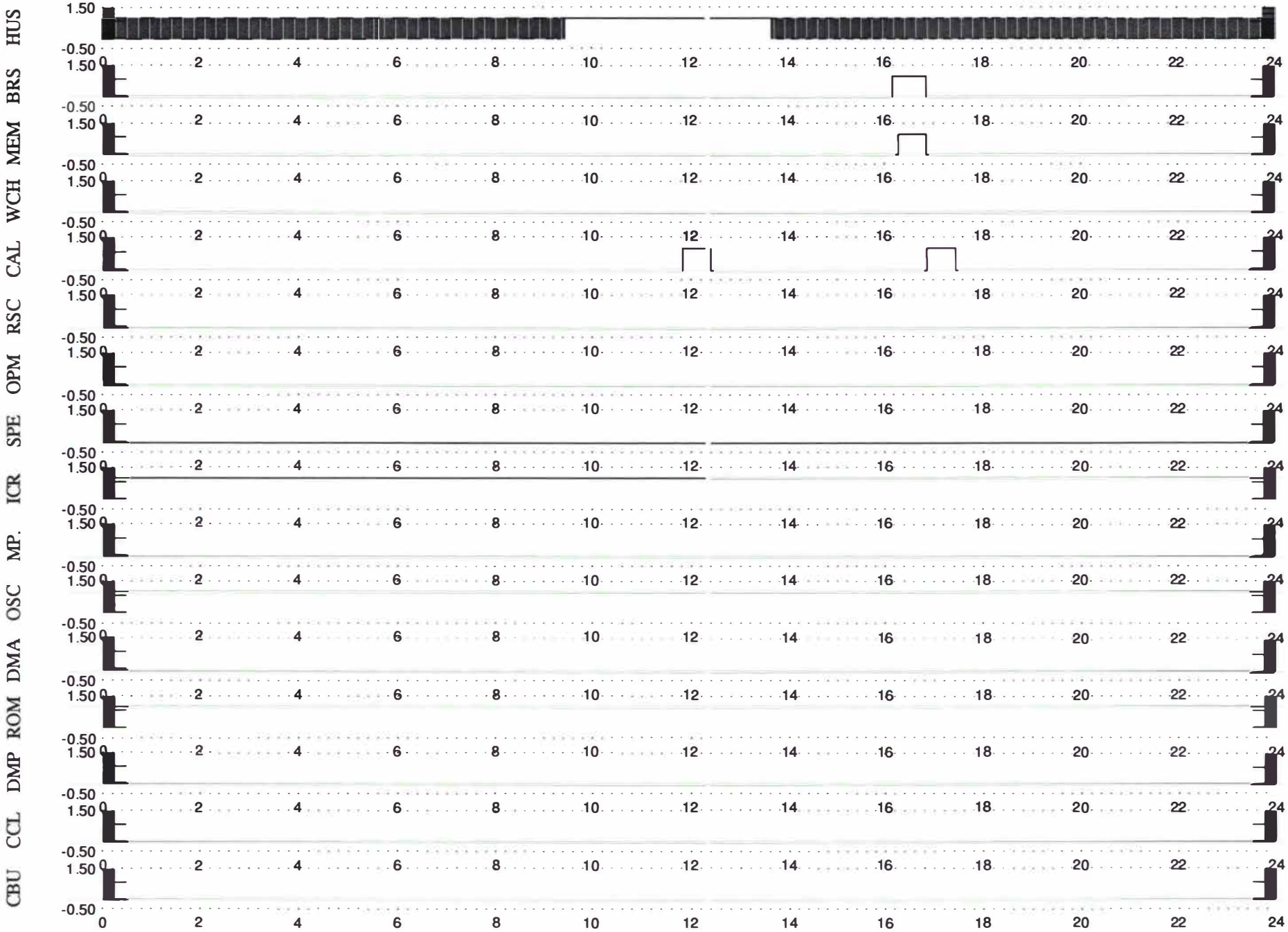
HUS 2B COUNTS / SEC QEDR day 34, year 1994 to day 34, year 1994 2/4/94




BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/04
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
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
24:00
Current Time: 94/02/07, 1932 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 35, year 1994 to day 35, year 1994 5/26/94

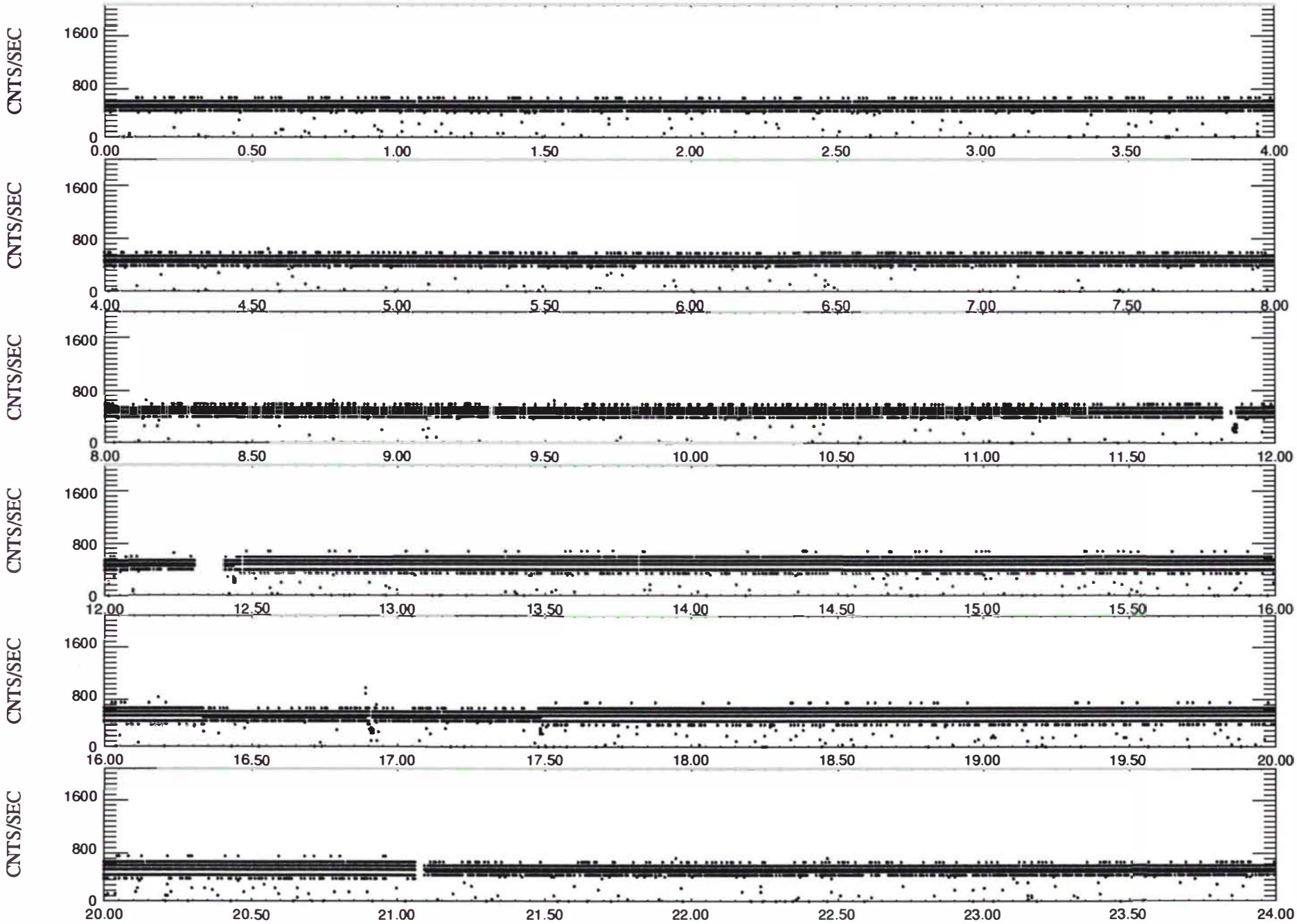
BURST NUMBER 8



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 35, year 1994 to day 35, year 1994 5/26/94

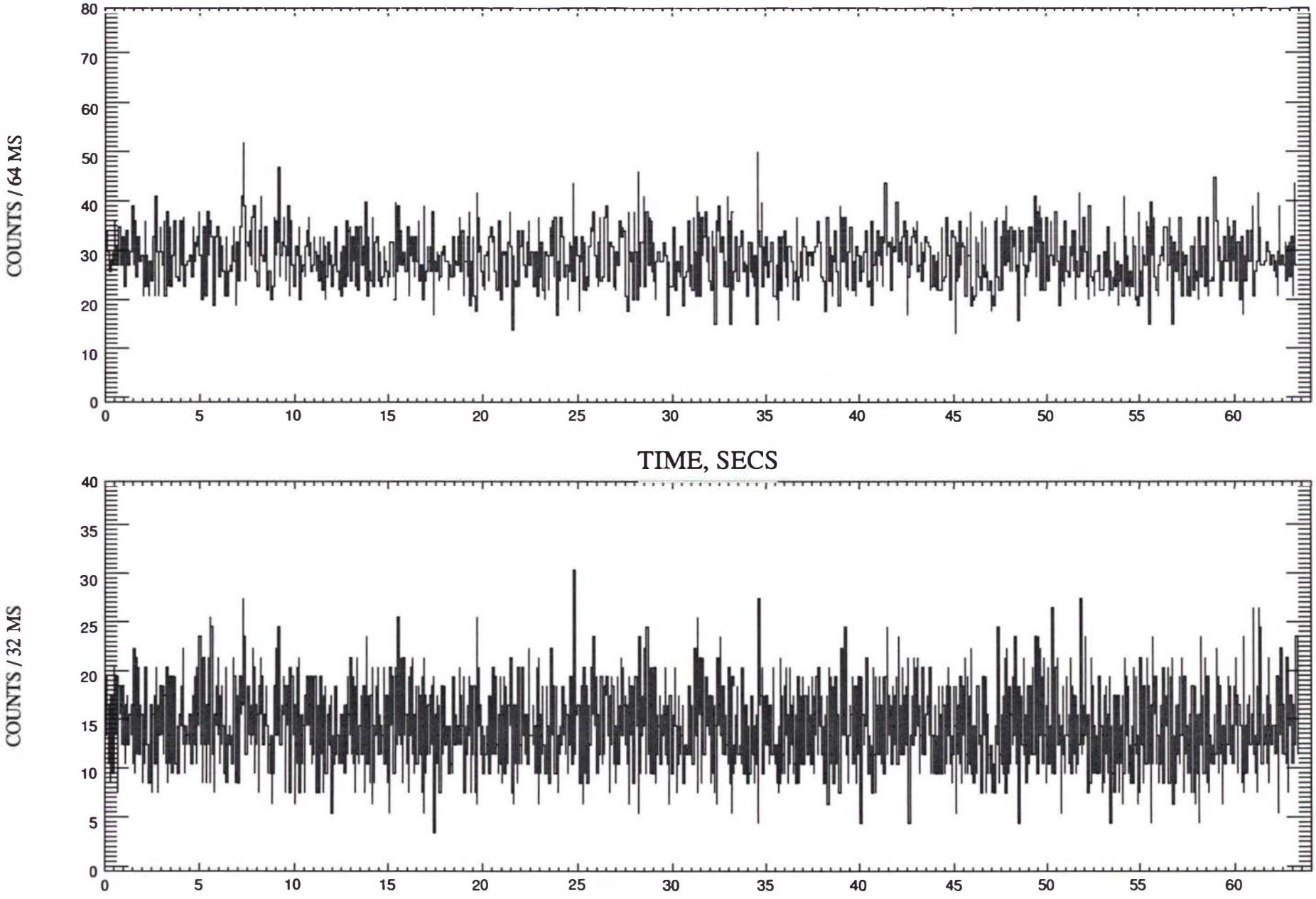
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 35, year 1994 5/26/94

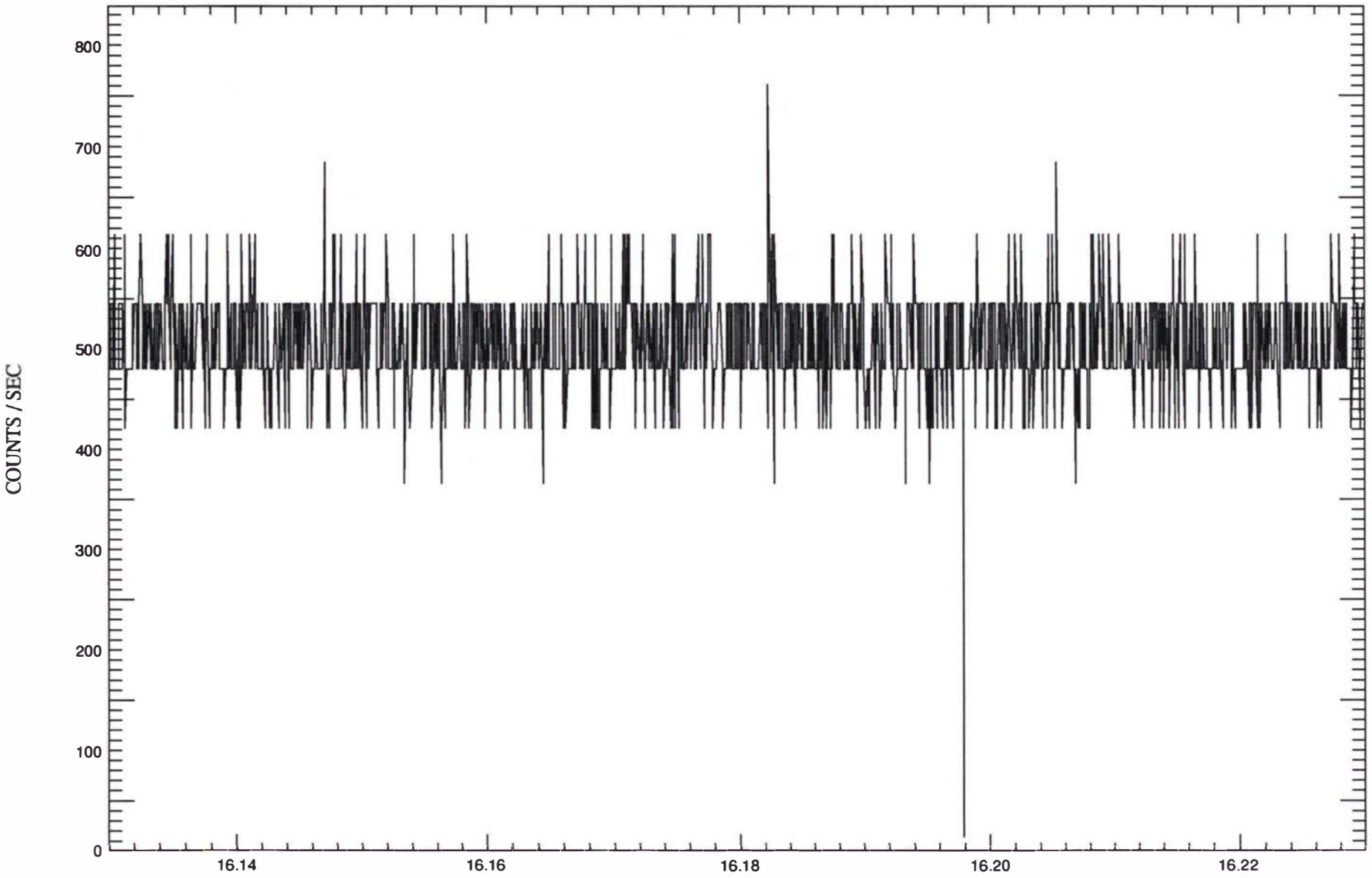
Burst Counter 8 at UT=16.182450167338 h=58256.821 s 16:10:56.821



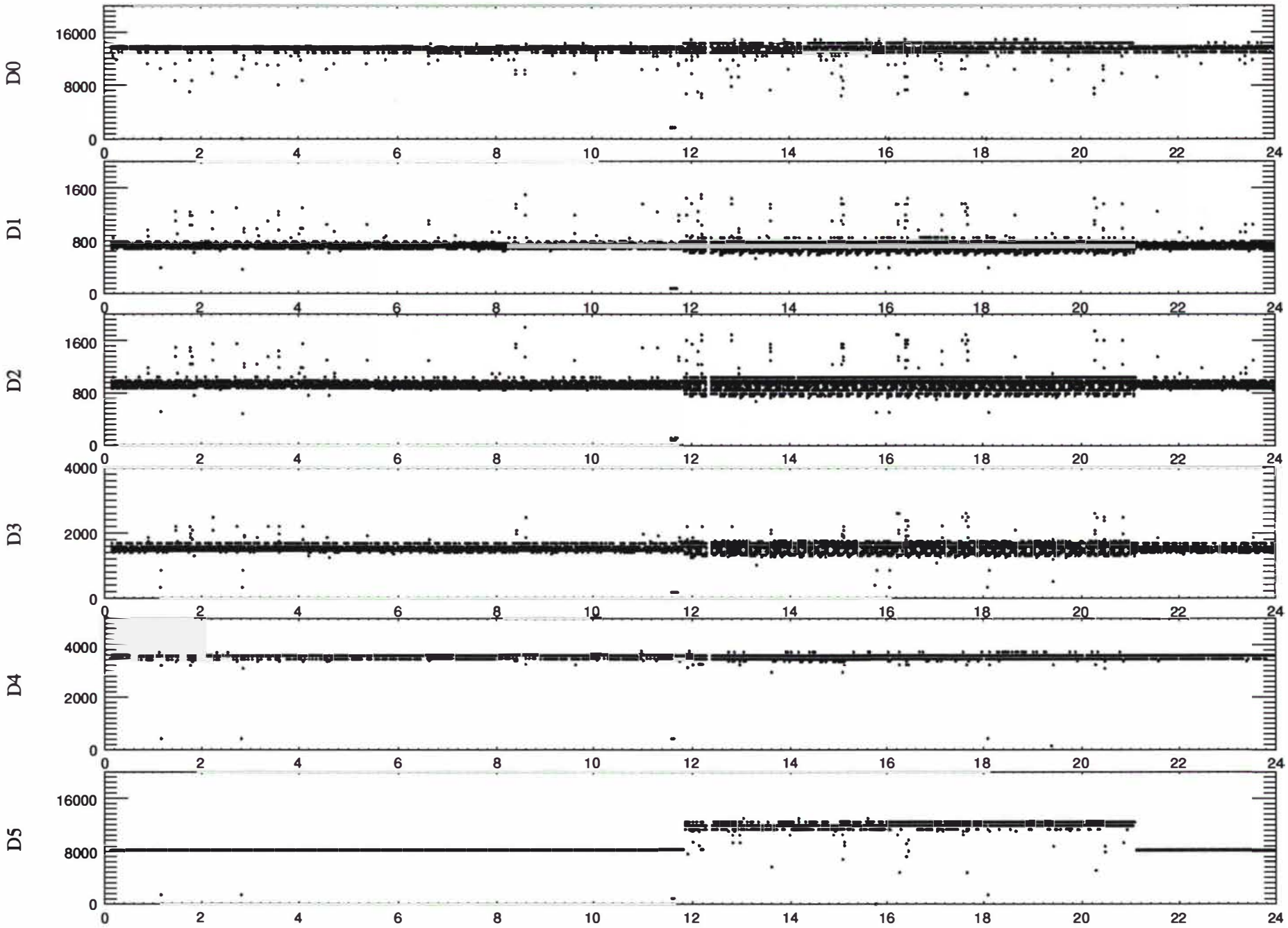
B# 1

HUS 2A, MODE 1, NOT AVERAGED QEDR day 35, year 1994 to day 36, year 1994 2/7/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 35, year 1994 to day 35, year 1994 2/7/94



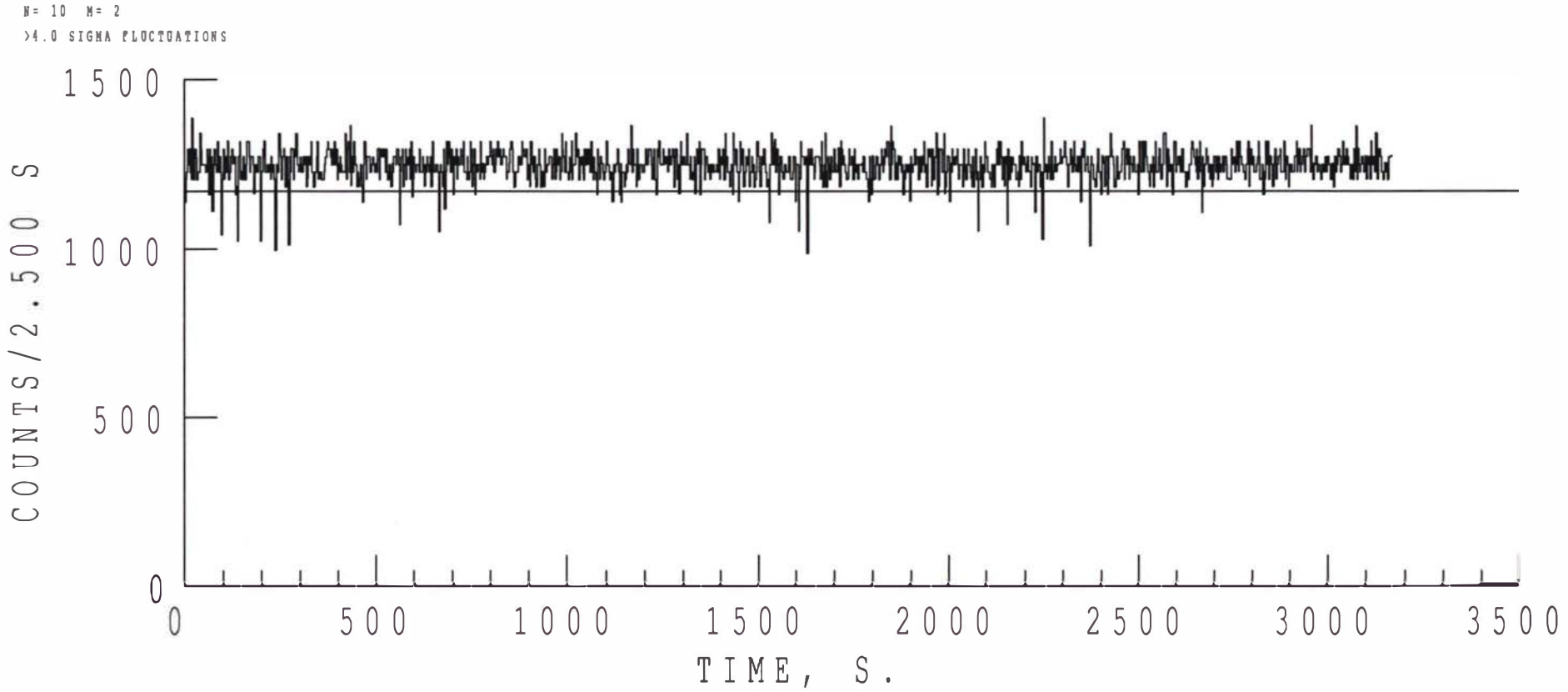
22/ 2/95

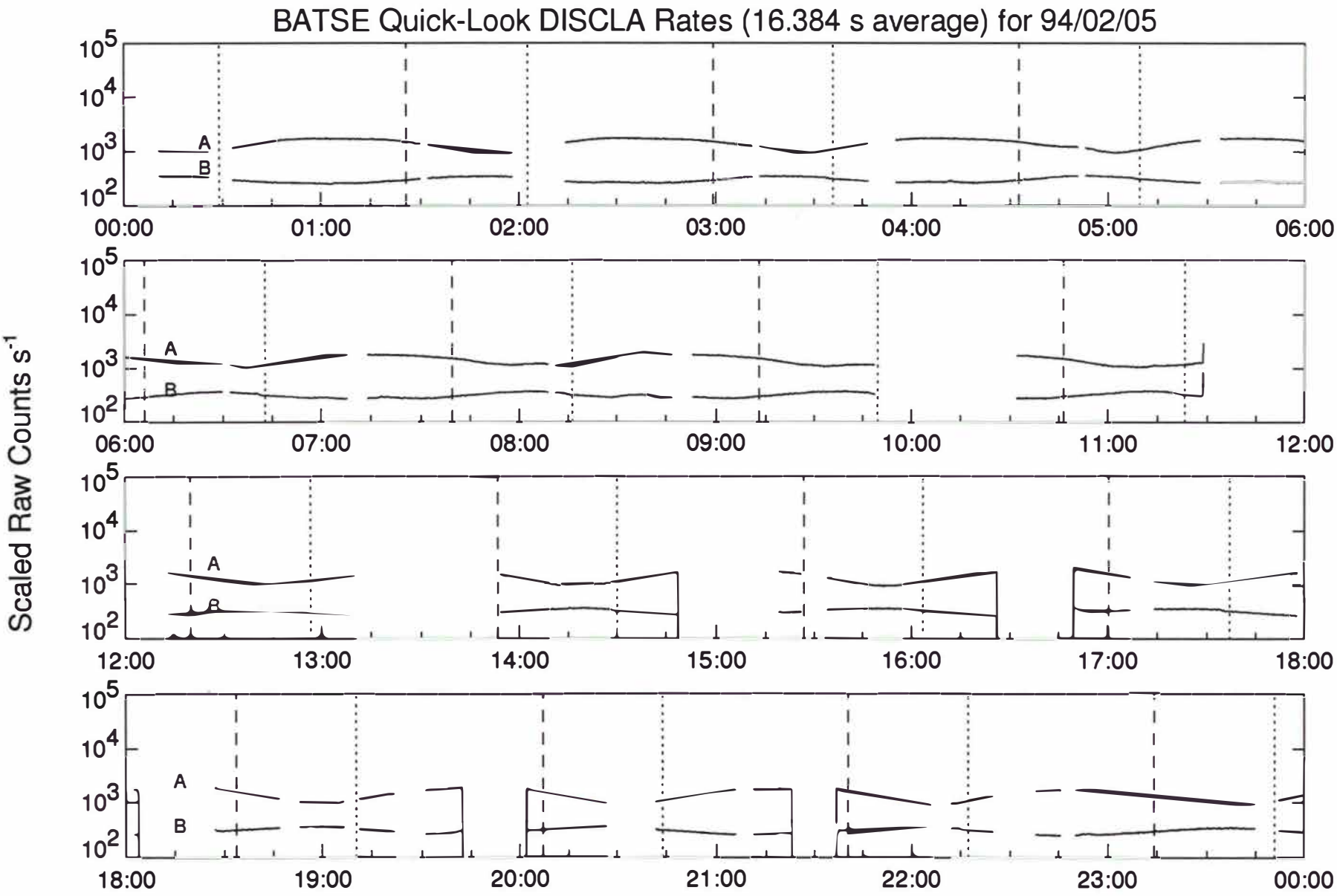
ULYSSES RT

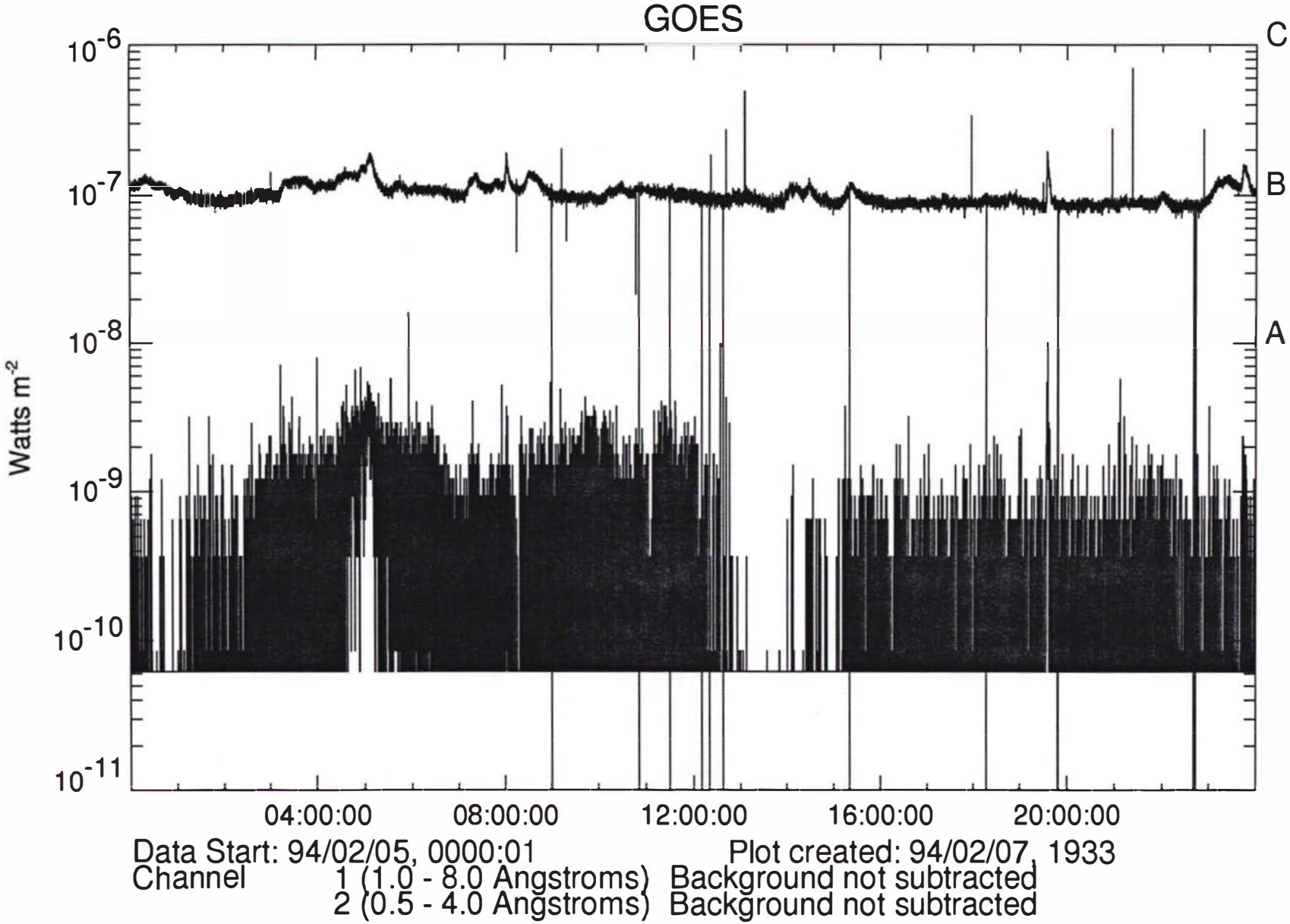
5/ 2/94 32148.258 s

0.500 S INTERVALS REGROUPED BY 5

0- 0 keV

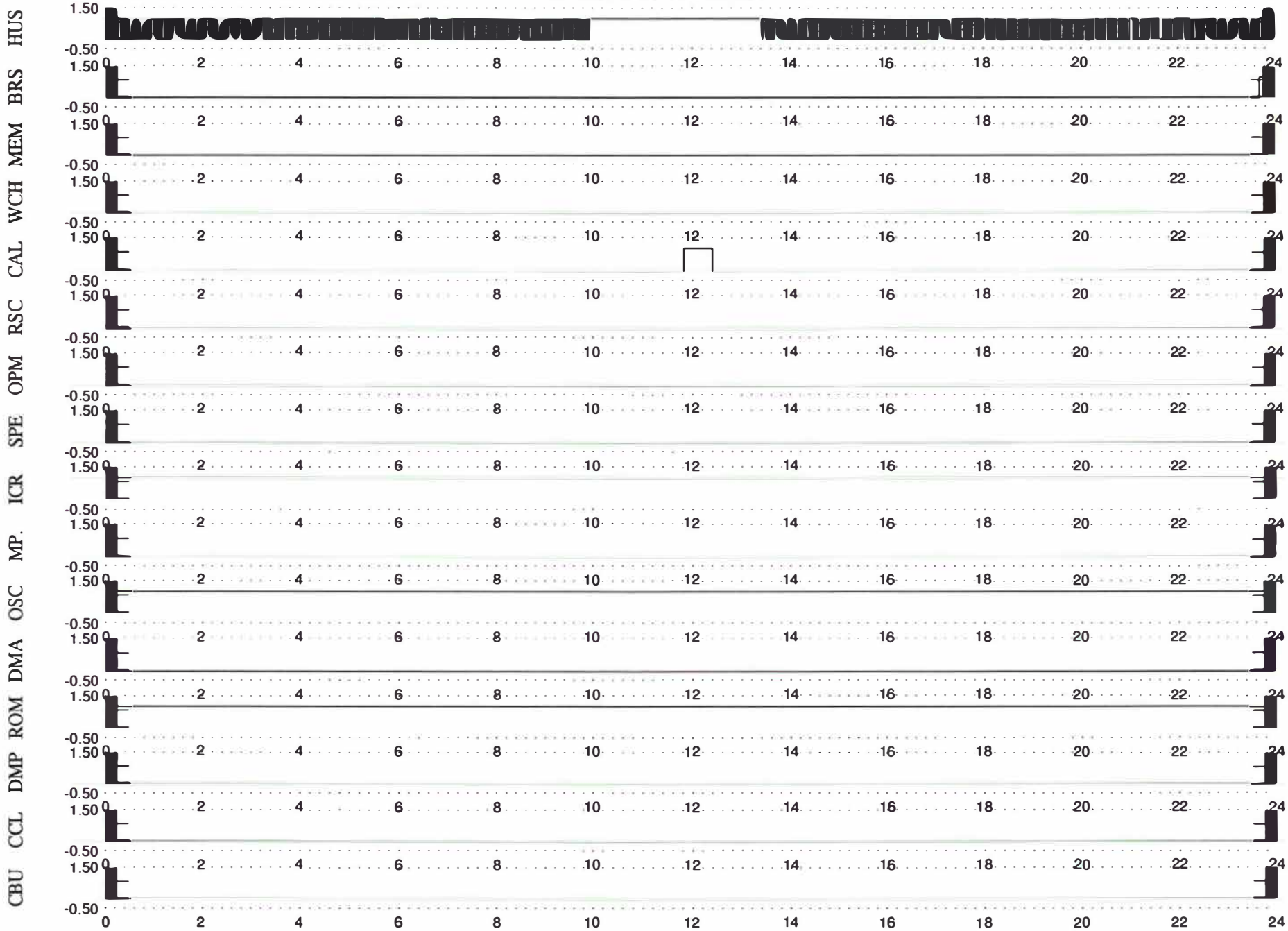



BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/05
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 94/02/07, 1932 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/05, 0000:01
Plot created: 94/02/07, 1933
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

HUS MODES EDR day 36, year 1994 to day 36, year 1994 5/26/94

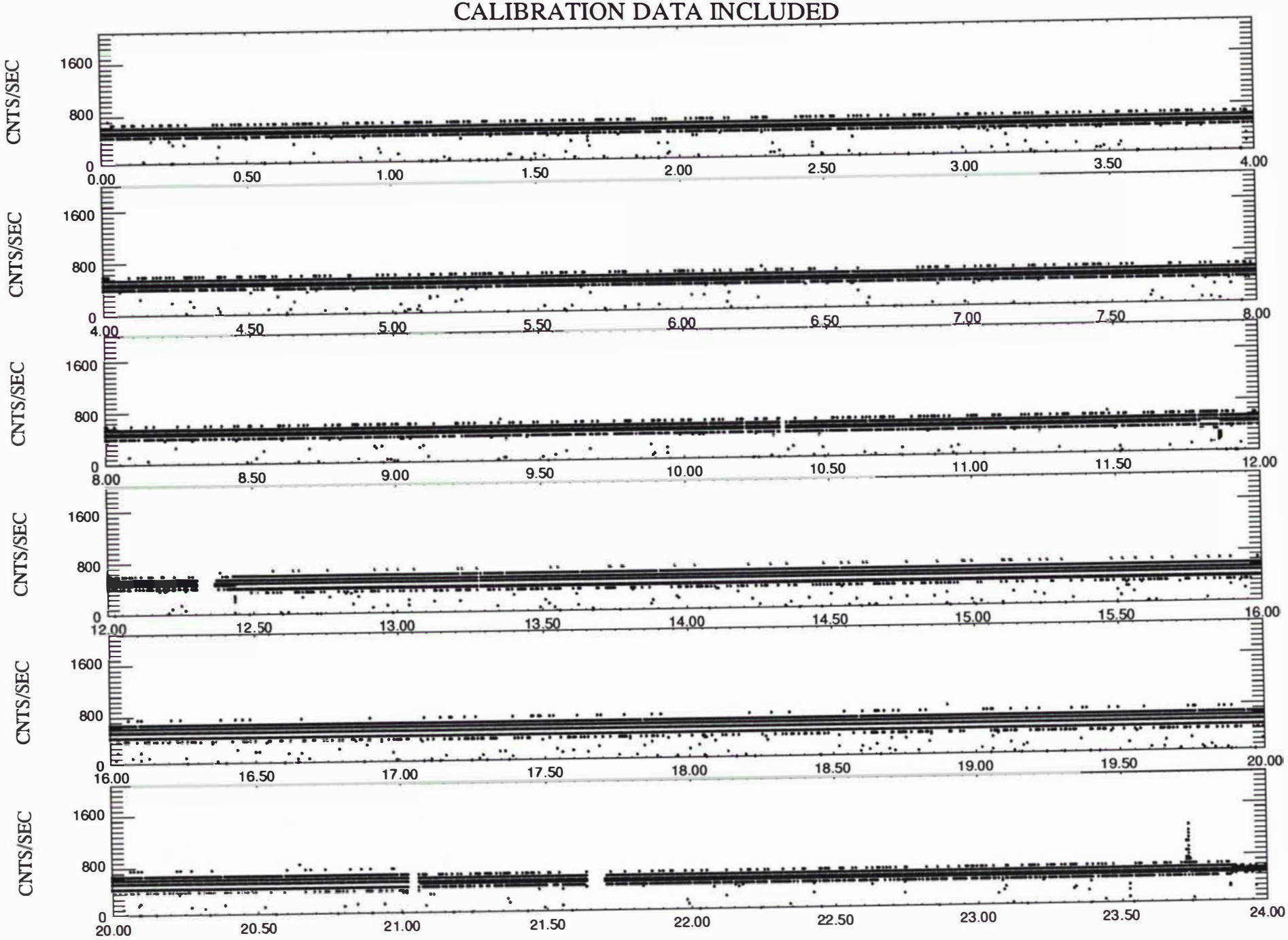
BURST NUMBER 9



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 36, year 1994 to day 36, year 1994 5/26/94

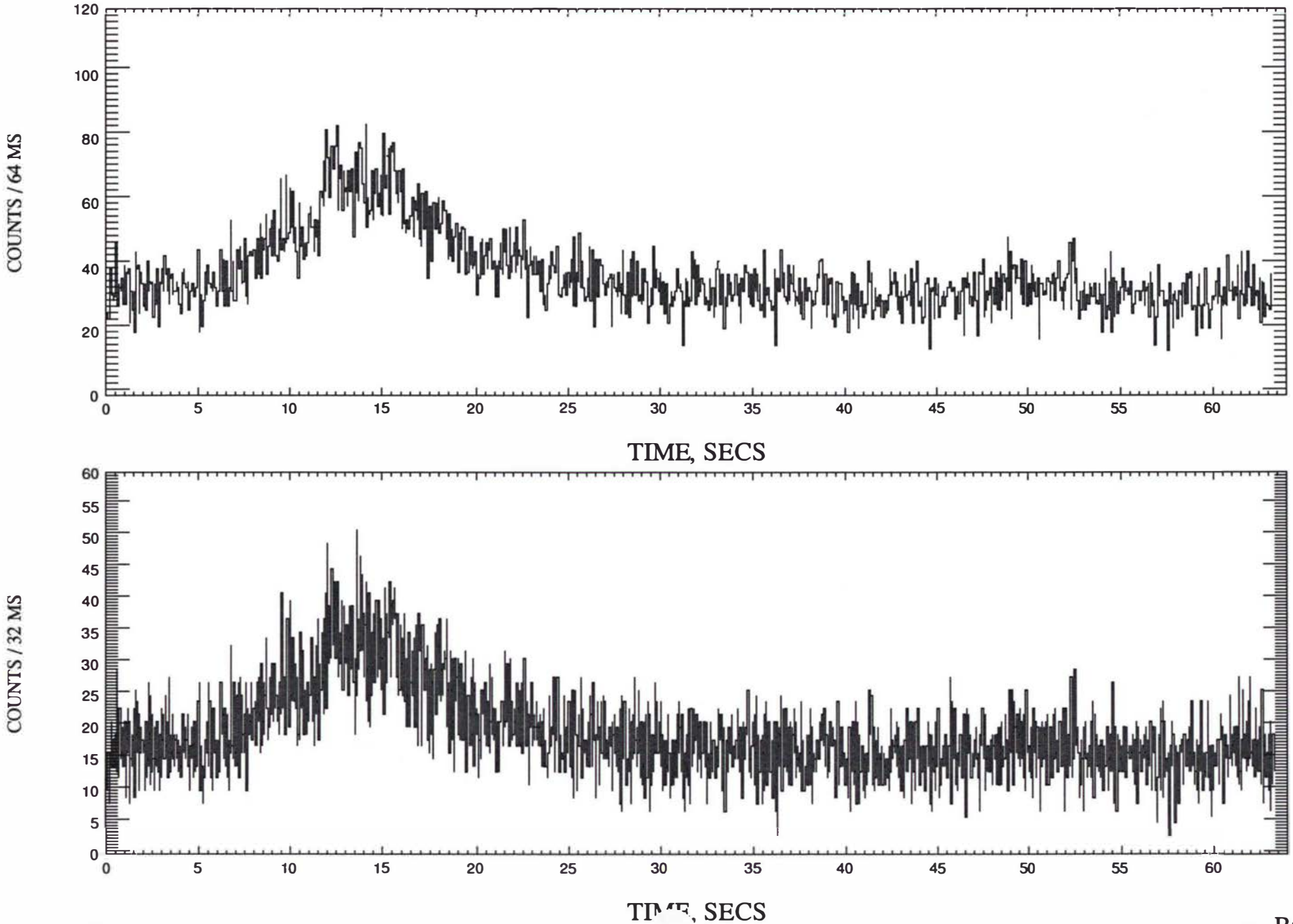
CALIBRATION DATA INCLUDED



UNIV SAL TIME

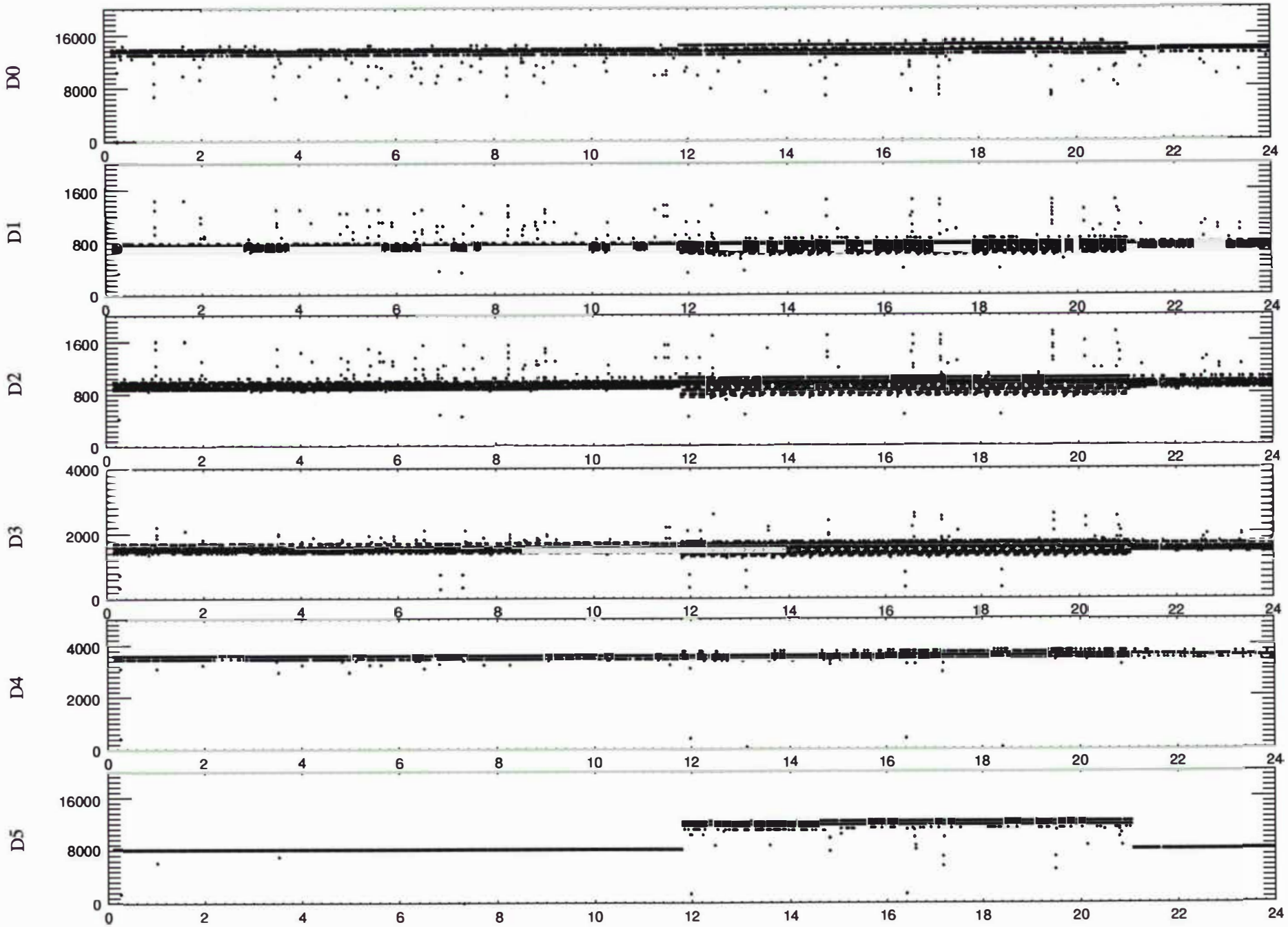
HUS 2A TRIGGERED DATA EDR day 36, year 1994 5/26/94

Burst Counter 9 at UT=23.721166038513 h=85396.198 s 23:43:16.198



B# 1

HUS 2B COUNTS / SEC QEDR day 36, year 1994 to day 36, year 1994 2/7/94



From MEEGAN@ssl.msfc.nasa.gov Mon Feb 7 12:27 PST 1994
Date: Mon, 7 Feb 1994 14:30:43 -0600 (CST)
From: MEEGAN@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2798
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2798
 EVENT OF 1994 FEB  6 DAY OF YEAR= 37
 EVENT CROSSING TIME AT BATSE      :   517. S. OR 00:08:37.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 147.000  -64.000
 BATSE PEAK COUNTING RATE:  80000    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  6/ 2/  94 IS:
 RA=  154.425 DEC=  -50.132 DIST=    3.155 AU
 BATSE-ULYSSES DISTANCE =  472053624. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=165.58 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1524.99 SECS.
 CROSSING TIME AT ULYSSES    IS 85392. S. OR   23:43:12 +/-   94.92 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  6/ 2/  94 IS:
 RA=  309.556 DEC=  -19.553 DIST=    2.365 AU
 MARS-BATSE DISTANCE =  353731936. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.65 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  110.07 SECS.
 CROSSING TIME AT MARS       IS   627. S. OR   00:10:27 +/-  205.63 SECONDS
```

Trigger (on 5 Feb)

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2798	940206	9389	00517	80000	147	-64

BATSE BURST TRIGGER

NO.: 02798

TIME: TJD=9389 SECONDS=00517

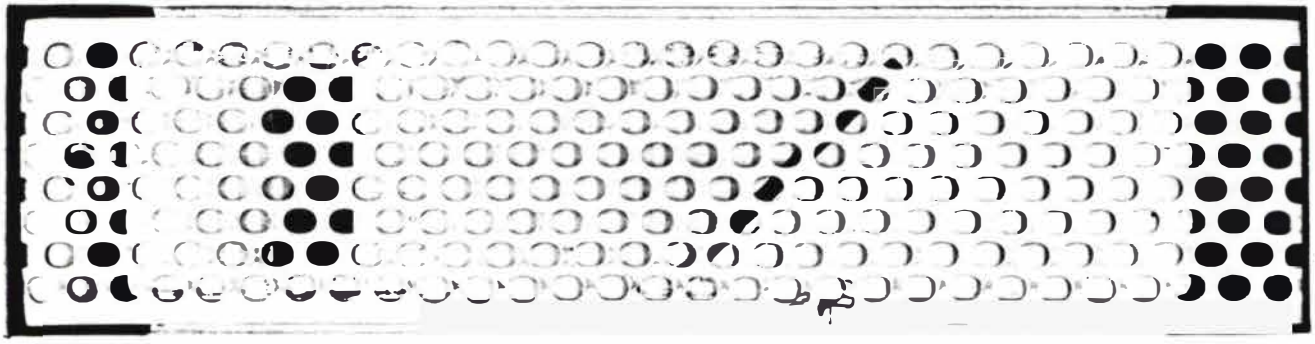
TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

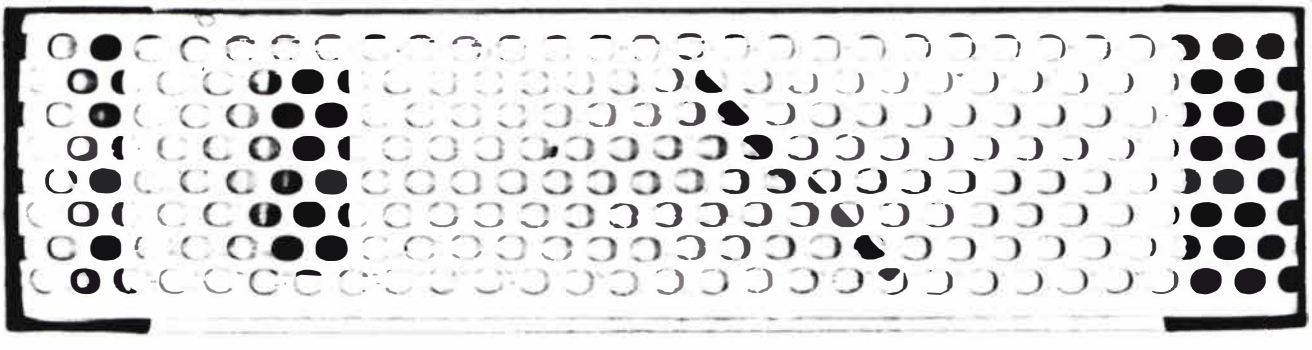
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=143. AZIMUTH=323. ERROR= DEGREES

COMMENTS:
VERY INTENSE BURST ABOUT 40 S LONG. SEEN ABOVE 300 KEV.





Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

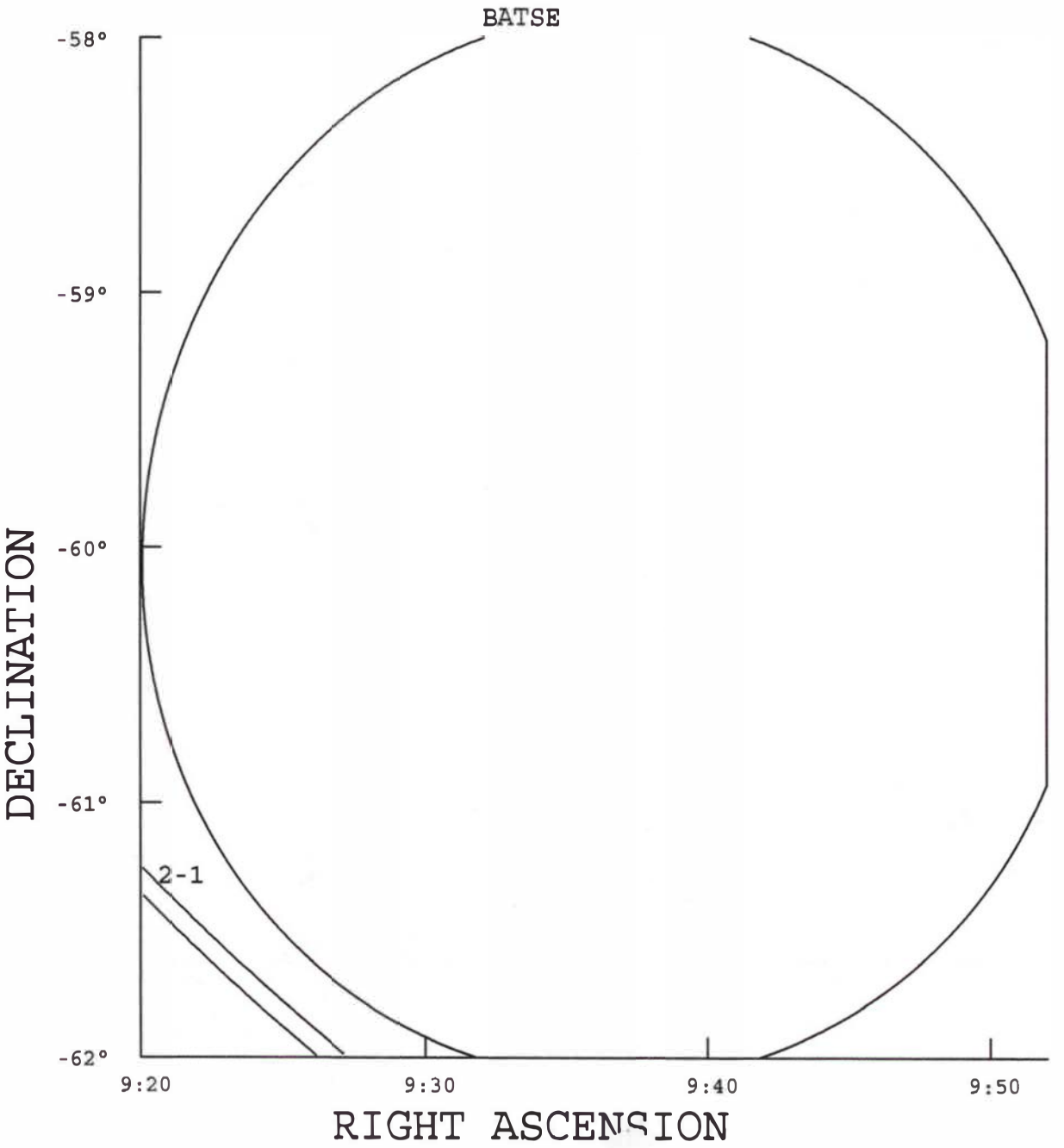
☐ 2000 coordinates used?

☐ Geocentric time used?

☑ ACCESS database updated?

EVENT OF FEB 5, 1994 23:43

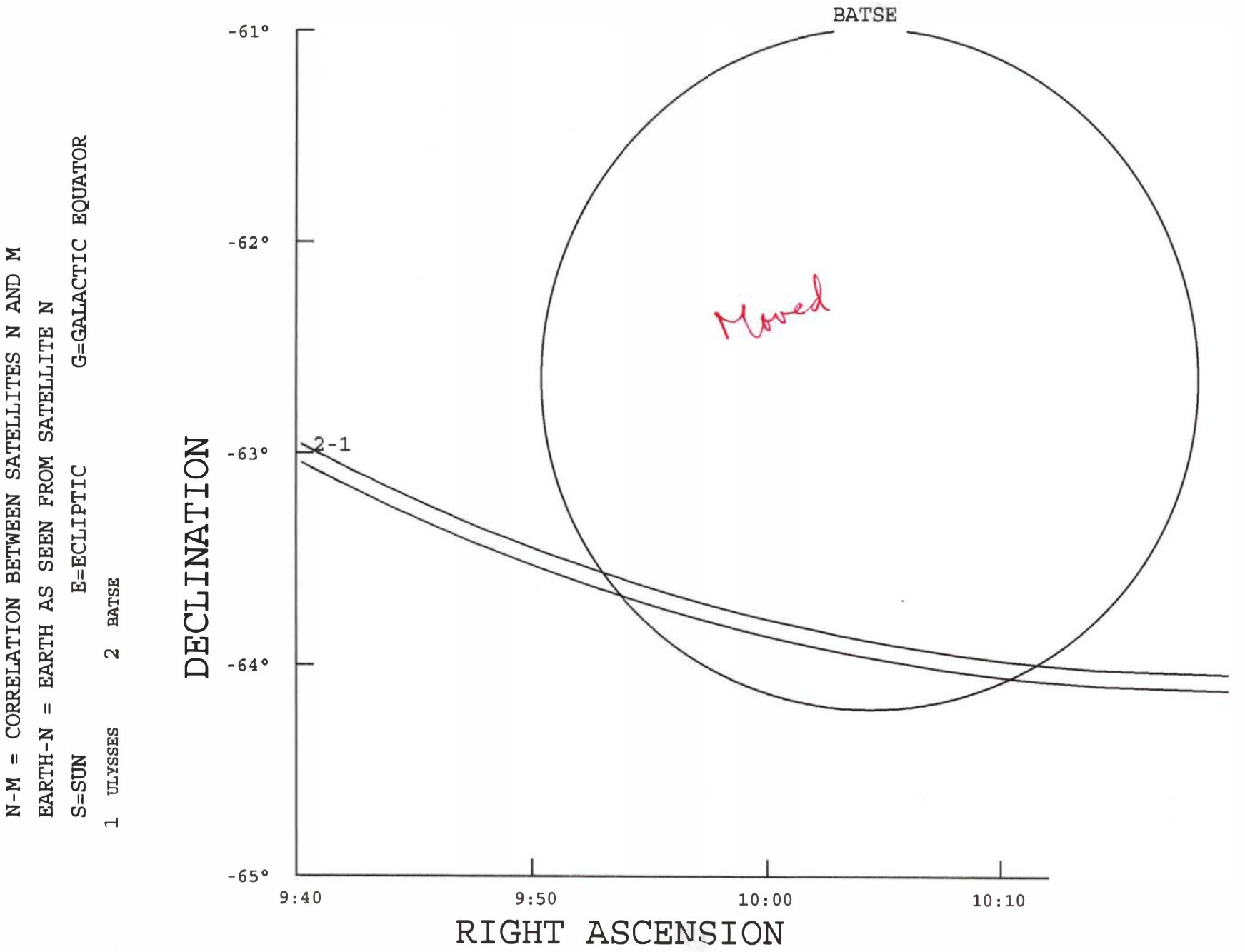
6/ 3/98

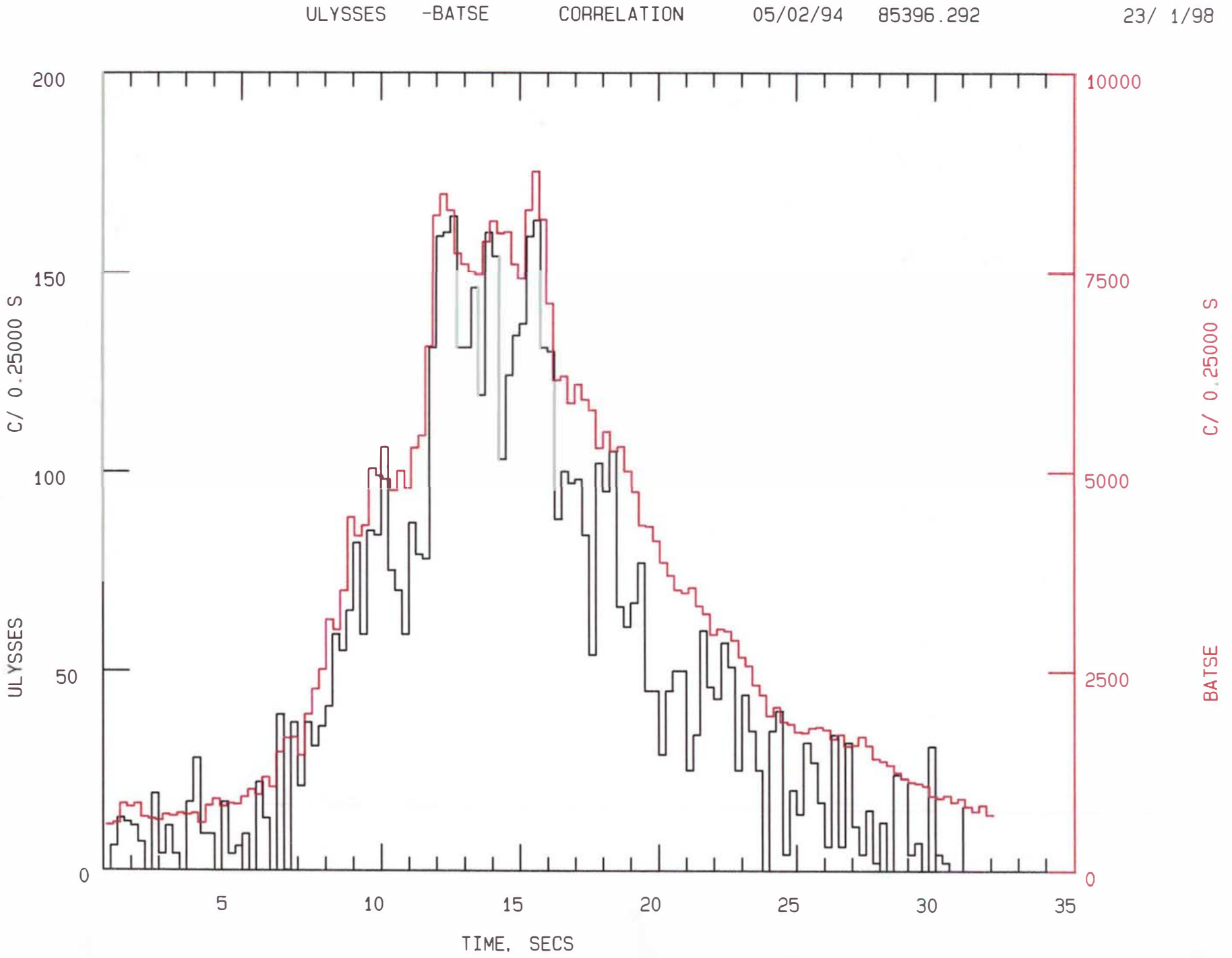


N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

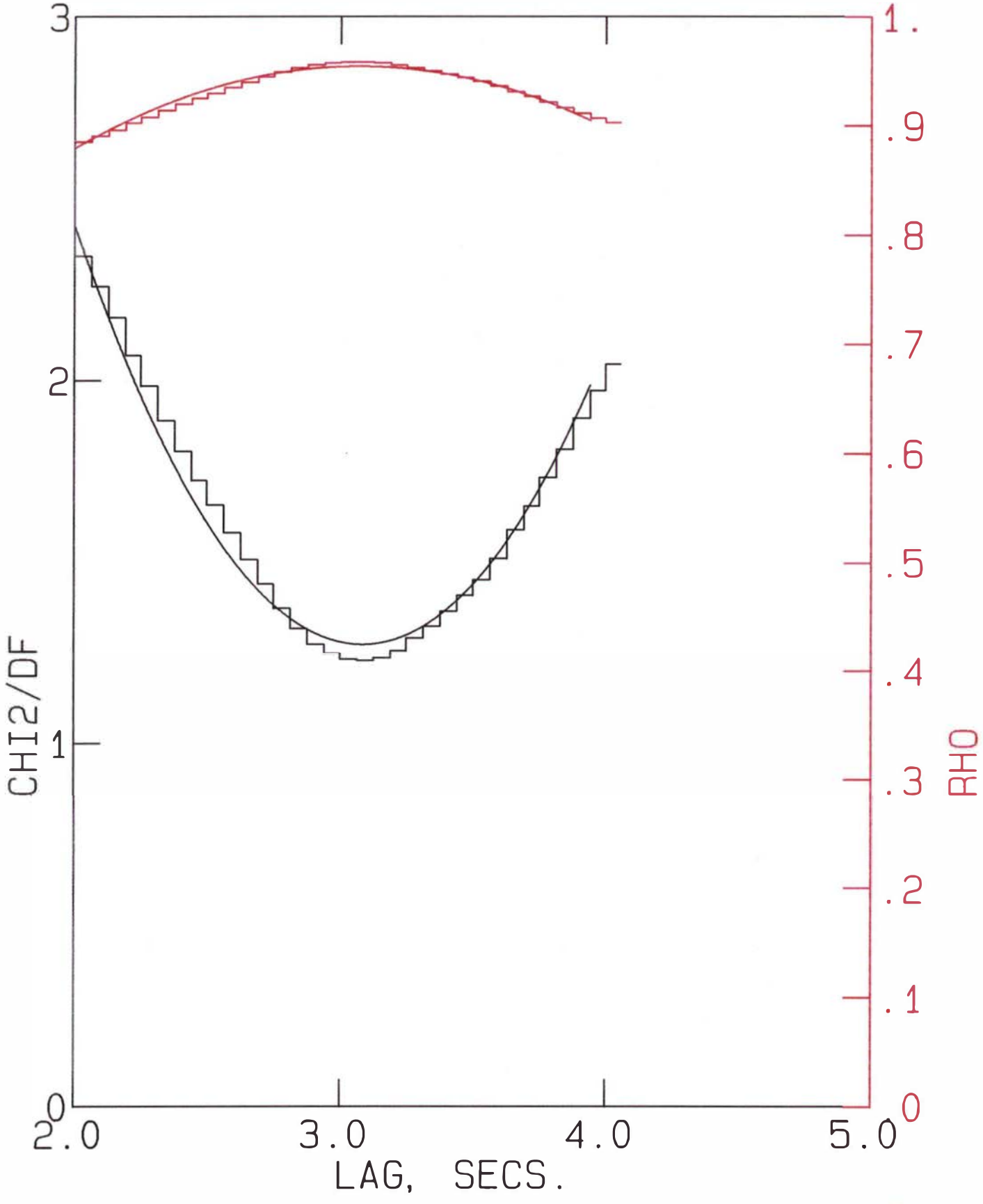
EVENT OF FEB 5, 1994 23:43

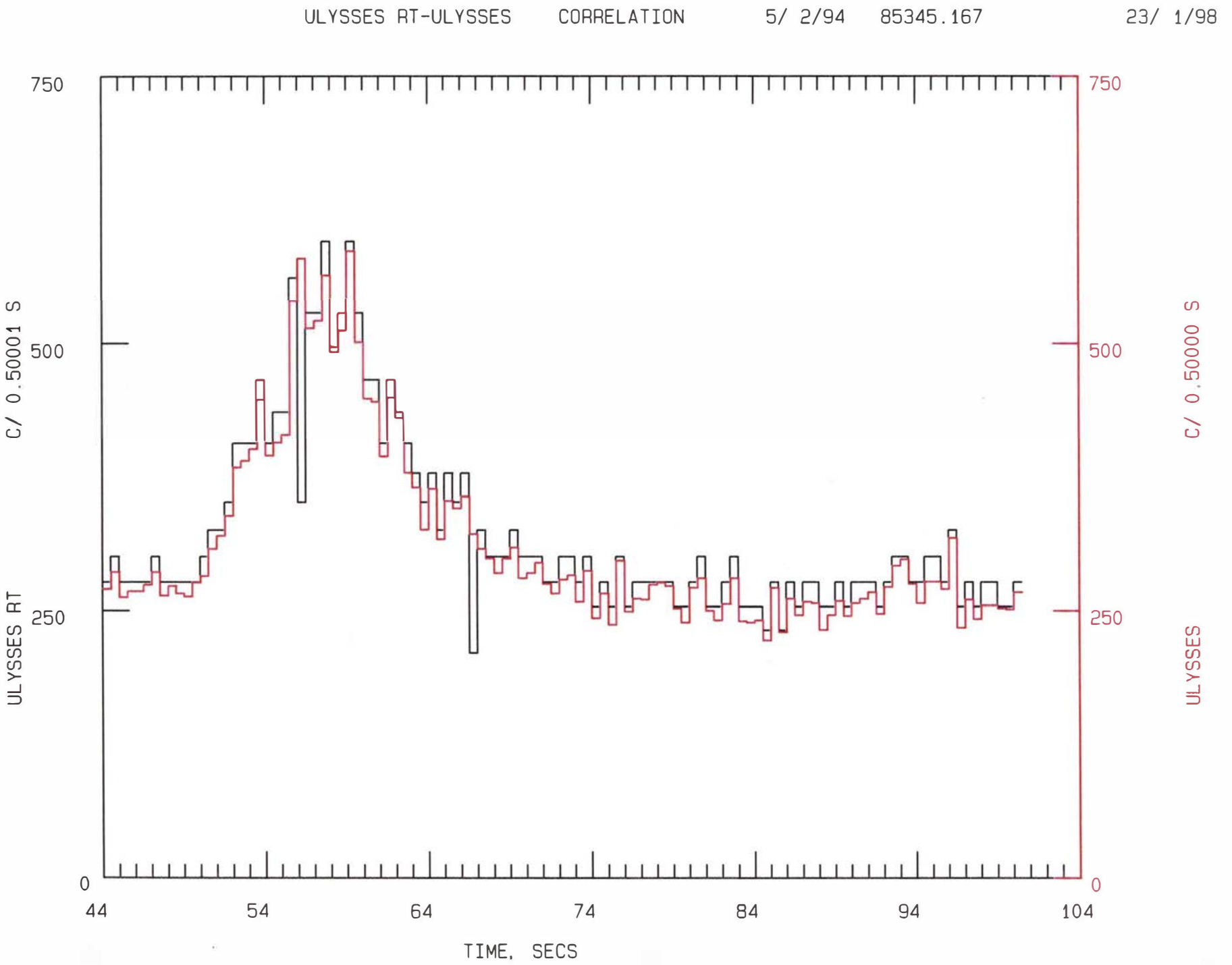
23/ 1/98



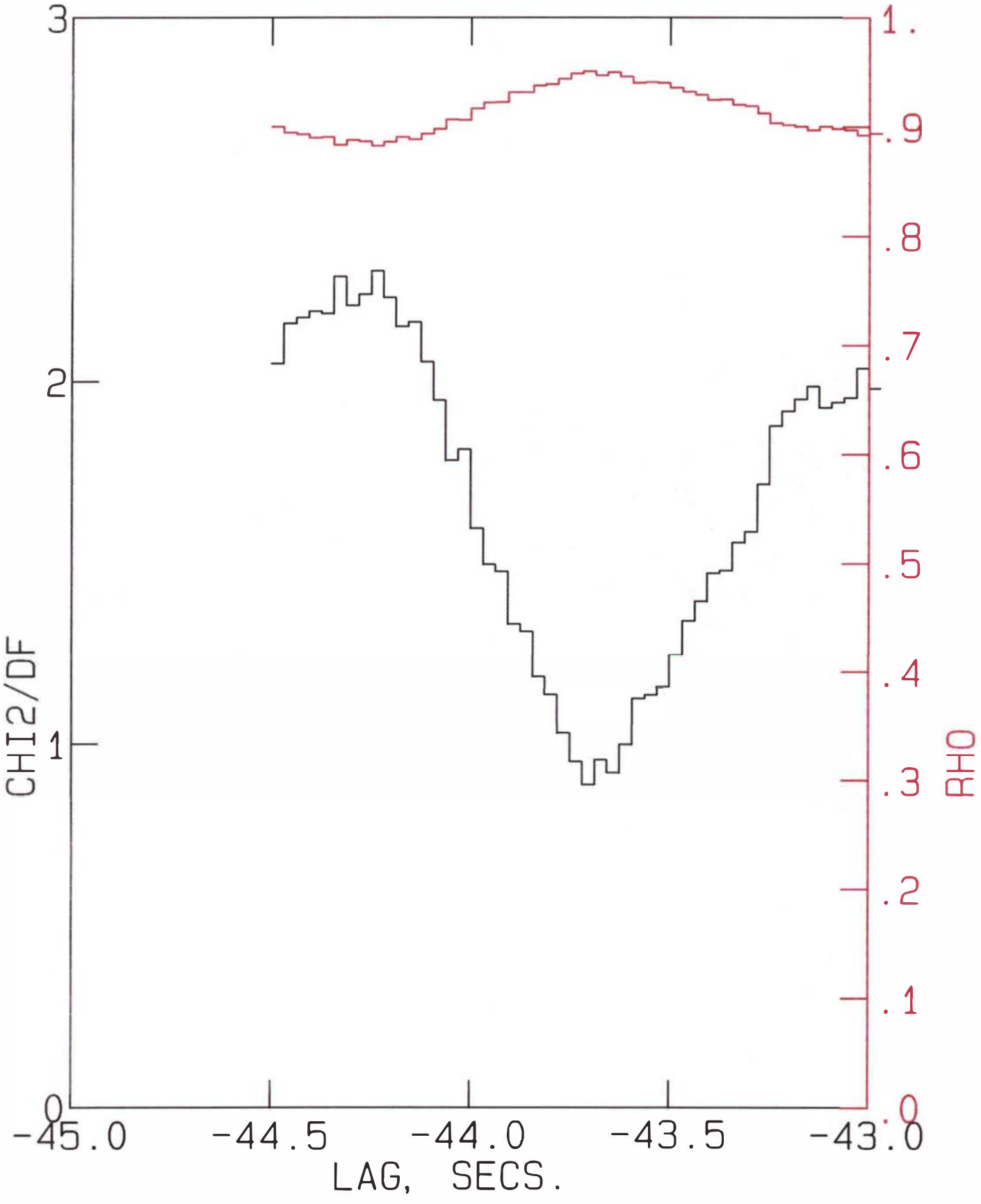

ULYSSES -BATSE CORRELATION 05/02/94 85396.292 23/ 1/98
200
150
100
50
0
C/ 0.25000 S
ULYSSES
10000
7500
5000
2500
0
C/ 0.25000 S
BATSE
5
10
15
20
25
30
35
TIME, SECS

ULYSSES -BATSE CORRELATION 05/02/94 85396.292



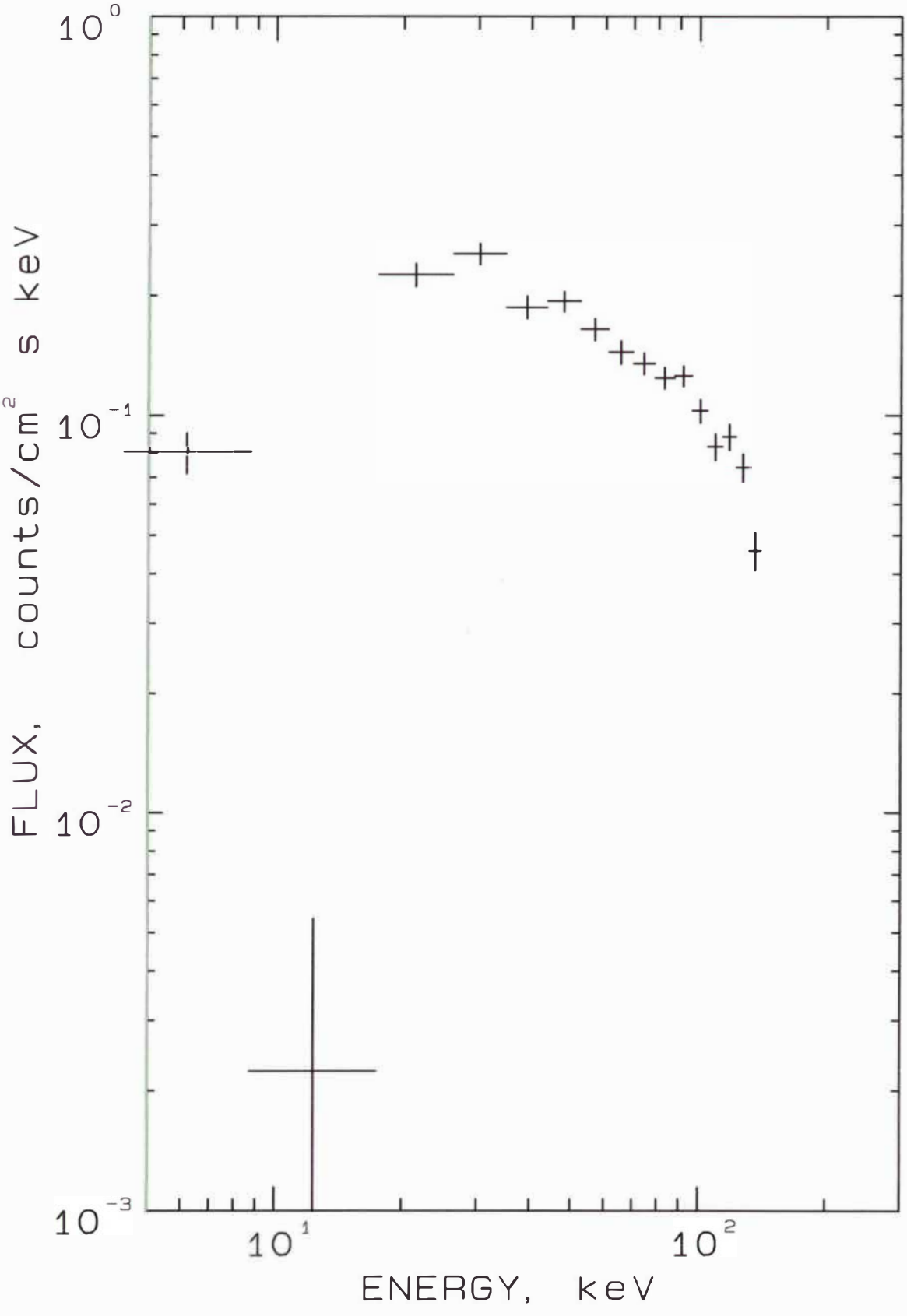

ULYSSES RT-ULYSSES CORRELATION 5/ 2/94 85345.167 23/ 1/98
750
500
250
0
C/ 0.50001 S
ULYSSES RT
750
500
250
0
C/ 0.50000 S
ULYSSES
44
54
64
74
84
94
104
TIME, SECS

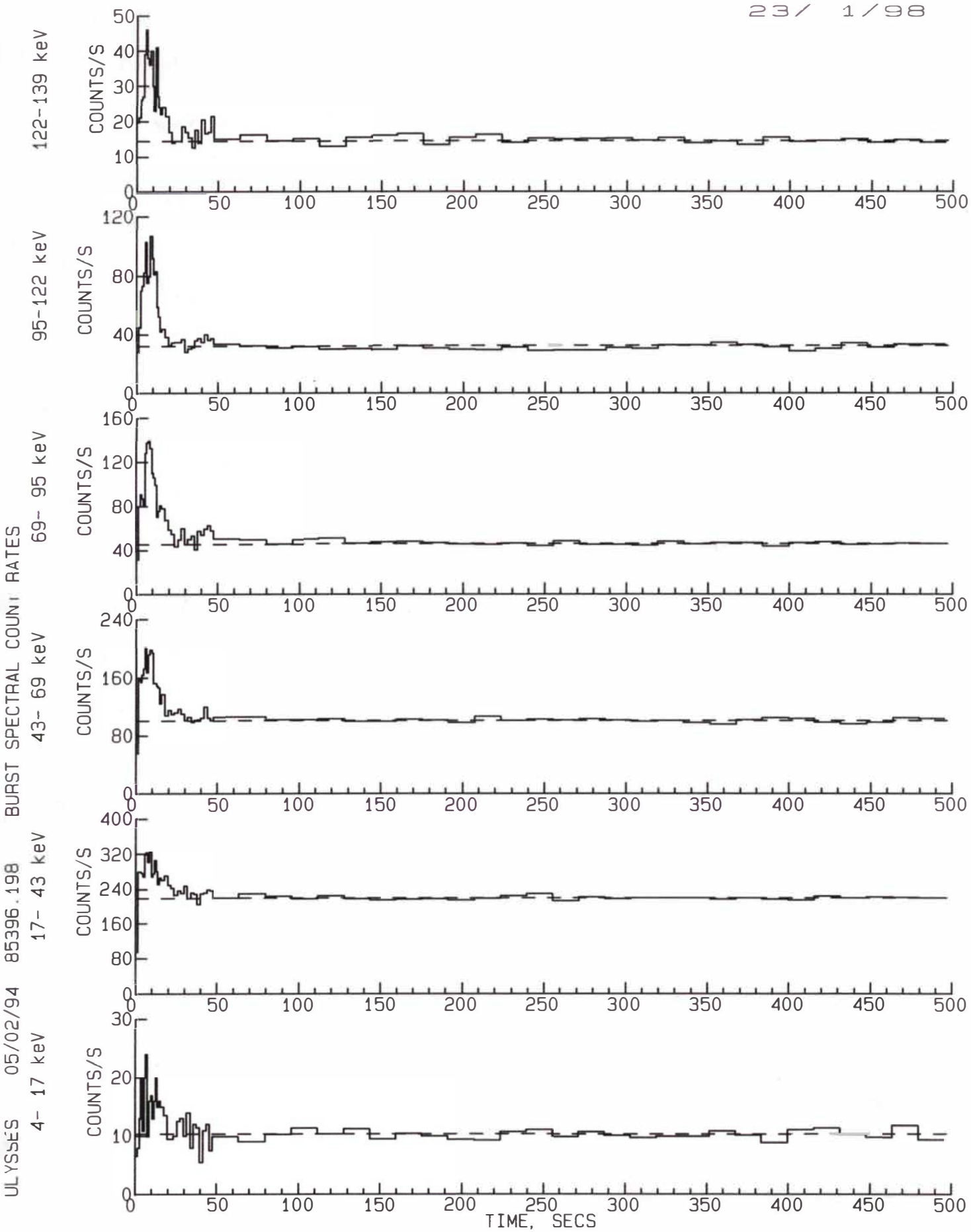
ULYSSES RT-ULYSSES CORRELATION 5/ 2/94 85345.167



ULYSSES 05/02/94 85396.198

SPECTRUM INTEGRATED OVER 25.4 SECONDS, INTERVALS 2 TO 22




23/ 1/98
ULYSSES 05/02/94 85396.198 BURST SPECTRAL COUNT RATES
122-139 keV
95-122 keV
69- 95 keV
43- 69 keV
17- 43 keV
4- 17 keV
COUNTS/S
TIME, SECS

ULYSSES 05/02/94 Ttrig=85396.292

20- 140 keV

COUNTS/0.031 S

COUNTS/0.125 S

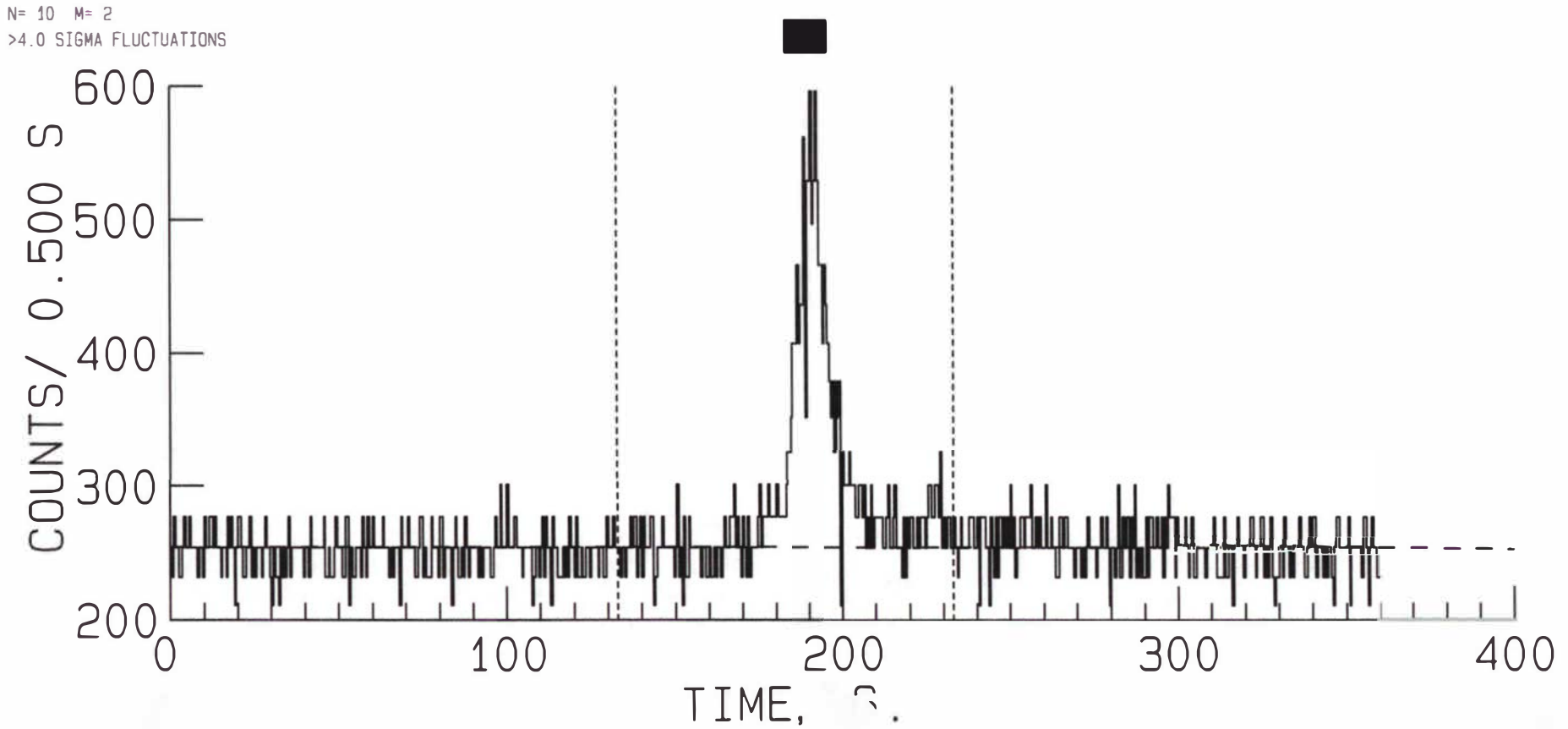
23/ 1/**

ULYSSES RT

23/ 1/98

5/ 2/94 85212.080 s

20- 140 keV

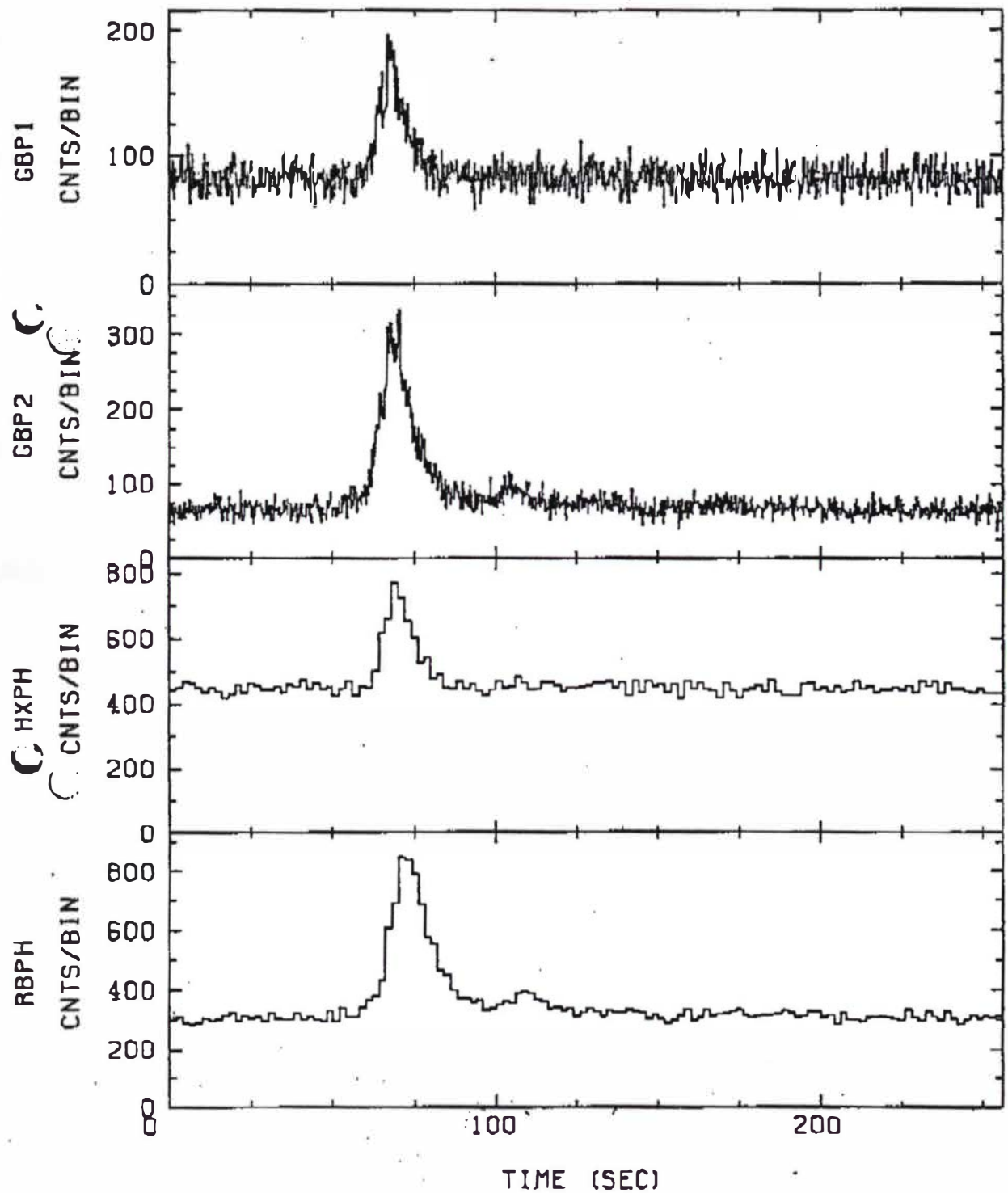


GB940206 00h08m47s UT Trigger 13/19

GBD MEMORY PLOT

FLG ON TIME 1994 2 6 0 8 47 680.0

FILE NAME 9402061104 /PC BIN TIME(SEC) = 0.250
SF : 0 -.3 /PH BIN TIME(SEC) = 2.0 Yoshioh
PH ENERGY CH.: 1 - 32



From root Wed Nov 30 03:00 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA07664; Wed, 30 Nov 94 03:00:48
  eived: from ax252.rikkyo.ac.jp by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA11098; Wed, 30 Nov 1994 02:59:29 +0800
Received: by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-MX9407011)
        id AA22039; Wed, 30 Nov 94 19:59:42 JST
Received: from ax251.rikkyo.ac.jp by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-M
        id AA22032; Wed, 30 Nov 94 19:59:27 JST
Received: by ax251.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-NoMX940525)
        id AA18391; Wed, 30 Nov 94 19:59:27 JST
Date: Wed, 30 Nov 94 19:59:27 JST
From: M. Yoshimori <yosimori@rikkyo.ac.jp>
Return-Path: <yosimori@rikkyo.ac.jp>
Message-Id: <9411301059.AA18391@ax251.rikkyo.ac.jp>
To: khurley@space6.ssl.berkeley.edu
Cc: suga@flare2.solar.isas.ac.jp, morimoto@flare2.solar.isas.ac.jp
Subject: Yohkoh GBD events
Content-Length: 362
Status: R

Dear Dr.Hurley,

  Yohkoh observed the following four events.

1. 1994 Feb.06 00:08:37 UT
2. 1994 Feb.18 19:32:28 UT
3. 1994 Mar.02 05:08:31 UT
   1994 Jul.03 04:40:46 UT

We like to know the locations of the following three events,
1. 1994 Feb.06 00:08:37 UT ✓
2. 1994 Feb.18 19:32:28 UT ✓
3. 1994 Mar.02 05:08:31 UT (rough location only) ✓

Thank you.

Regards,

  M.Yoshimori

From root Fri Dec 2 01:06 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA08685; Fri, 2 Dec 94 01:06:01
Received: from ax252.rikkyo.ac.jp by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA01032; Fri, 2 Dec 1994 01:04:42 +0800
Received: by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-MX9407011)
        id AA14094; Fri, 2 Dec 94 18:04:59 JST
Received: from ax251.rikkyo.ac.jp by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-M
        id AA14087; Fri, 2 Dec 94 18:04:51 JST
Received: by ax251.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-NoMX940525)
        id AA07502; Fri, 2 Dec 94 18:04:50 JST
Date: Fri, 2 Dec 94 18:04:50 JST
From: M. Yoshimori <yosimori@rikkyo.ac.jp>
Return-Path: <yosimori@rikkyo.ac.jp>
Message-Id: <9412020904.AA07502@ax251.rikkyo.ac.jp>
To: khurley@space6.ssl.berkeley.edu
Subject: Burst positions
Cc: suga@flare2.solar.isas.ac.jp
Content-Length: 297
Status: R

Dear Dr.Hurley,

In addition to the previous three events, we found the following
five events:

1992.Oct.04 14:00:21 UT ✓
1992.Dec.07 16:00:48 ✓
1993.Jan.06 15:37:39 ✓
1994.Aug.09 12:00:06 NO POSITION AVAILABLE
1994.Aug.26 20:55:20 ✓

We would appreciate receiving their positions.

Thank you.

Regards,

M.Yoshimori

TO: Kevin Hurley

U.C Berkeley

PHONE: 510-643-9173
FAX: 510-643-8302

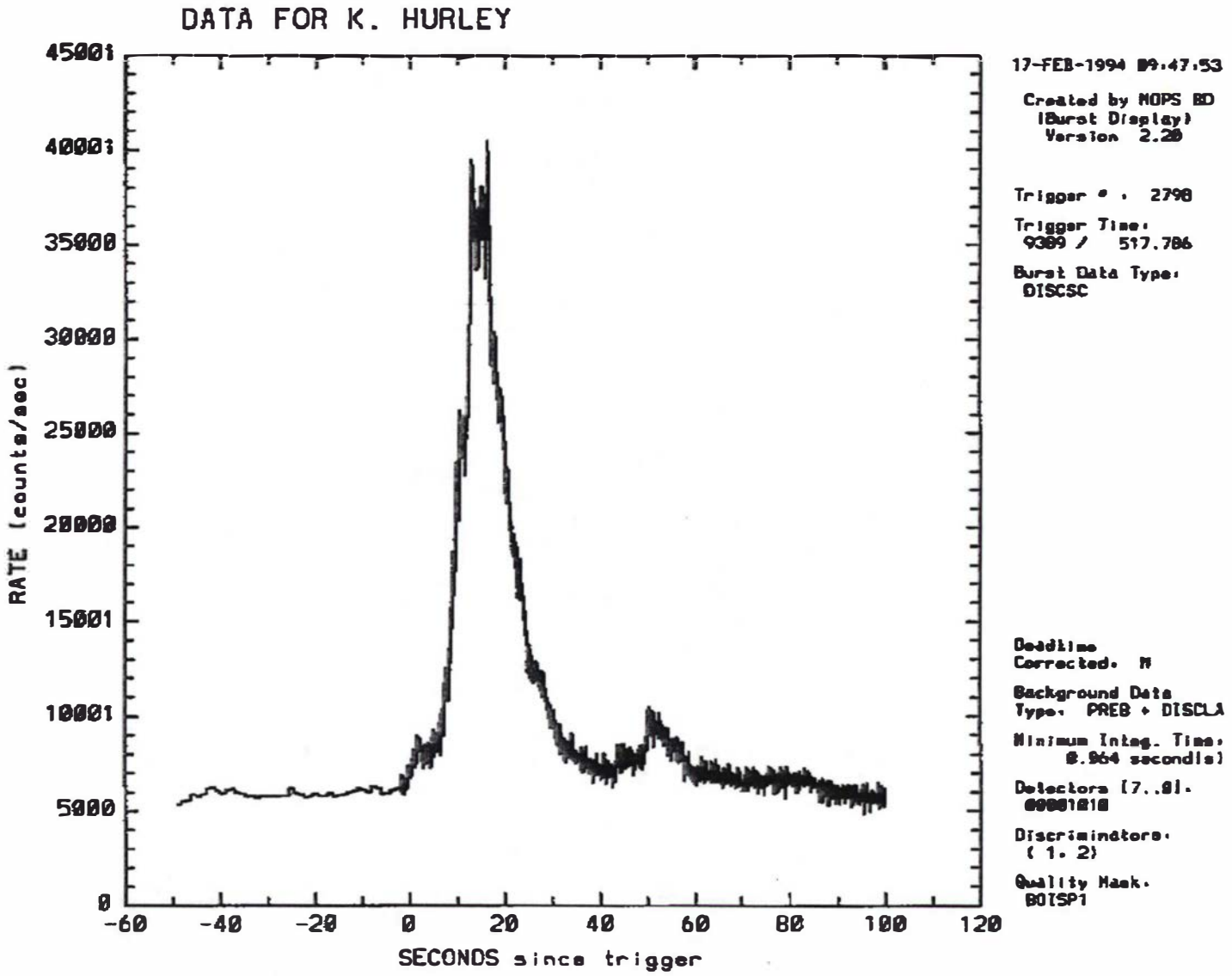
FROM: Scott Barthelmy
NASA-GSFC
Code 661
Greenbelt, MD 20771

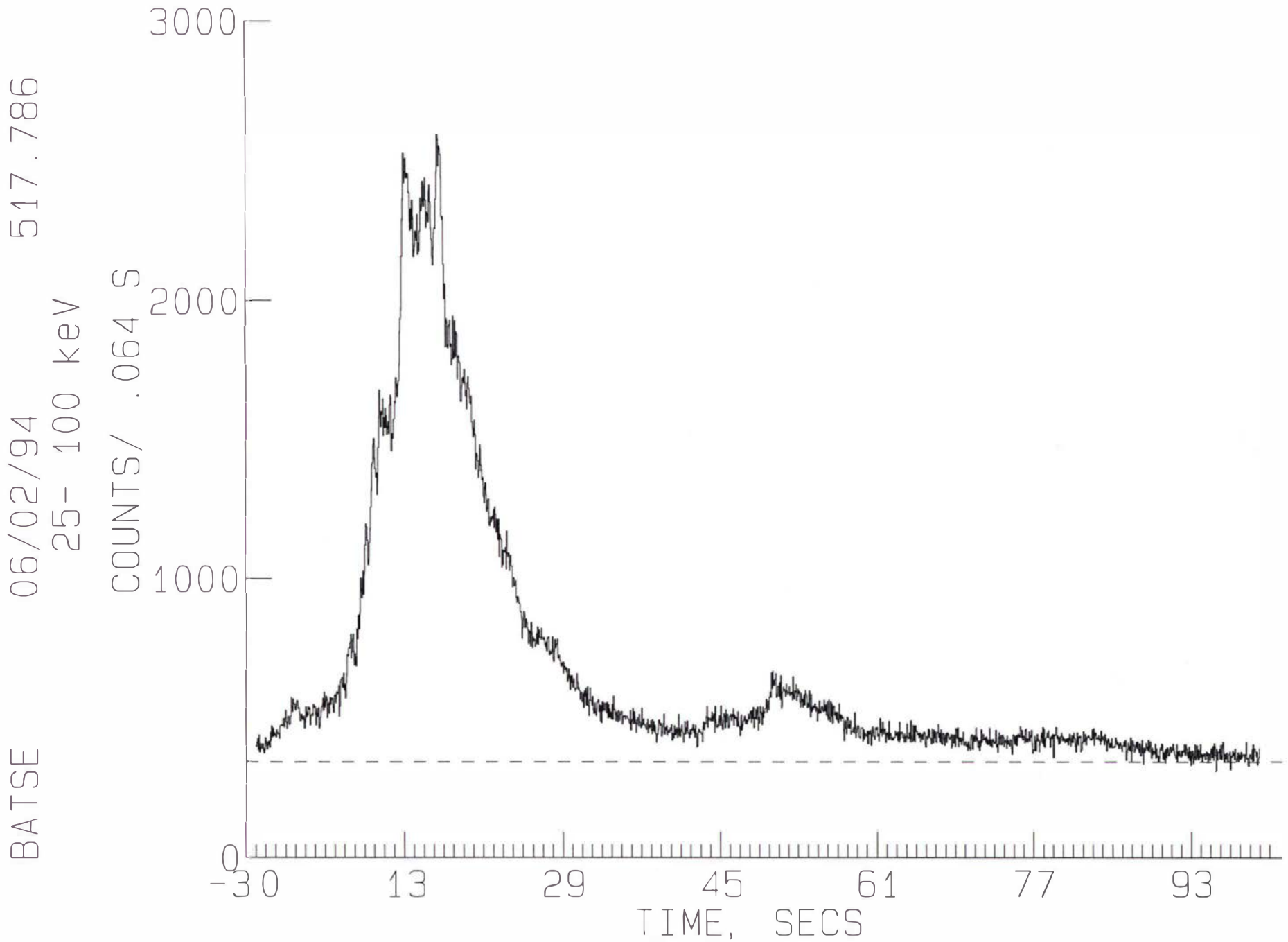
PHONE: 301-286-3106
FAX: 301-286-1684

DATE: 11 Feb 94
PAGES SENT: 3 including cover

COMMENT:

Attached are the BACODINE light curves for GRB940210 for all 8 detectors. Each plot is 1 curve for the sum of the middle two energy bins of DISCLA data (ie 50-300 kev). There are ten 1.024sec pre-burst background rate samples and 32 1.024sec samples during the burst. This new plot style with the flat tops (histogram style) explicitly shows the 1.024sec sampling. However, I still do not know the absolute time to plus/minus 0.512sec.
(Please note that I am 99% sure that the light curve I sent you yesterday had the times wrong by 2.048 sec. The times I marked on the plot were too big by 2.048sec. I forgot the time in the telemetry header is for the header and the count rates contained therein are for the 2.048sec prior to that time. I'm re-faxing the corrected 940206.)
--scott


DATA FOR K. HURLEY
RATE (counts/sec)
45001
40001
35000
30000
25000
20000
15001
10001
5000
0
-60
-40
-20
0
20
40
60
80
100
120
SECONDS since trigger
17-FEB-1994 09:47:53
Created by MOPS BD
(Burst Display)
Version 2.20
Trigger # : 2798
Trigger Time:
9389 / 517.786
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors (7..0):
00001010
Discriminators:
(1, 2)
Quality Mask:
BOISP1


BATSE
06/02/94
25- 100 keV
517.786
COUNTS/ .064 S
3000
2000
1000
0
-30
13
29
45
61
77
93
TIME, SECS

Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION
Postal Address: Central Bureau for Astronomical Telegrams
Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
Telephone 617-495-7244/7440/7444 (for emergency use only)
TWX 710-320-6842 ASTROGRAM CAM EASYLINK 62794505
MARSDEN@CFA or GREEN@CFA (.SPAN, .BITNET or .HARVARD.EDU)

GAMMA-RAY BURST

A. Goldwurm, S. Gaertner, E. Churazov, and M. Gilfanov, on behalf of the Granat SIGMA team (Service d'Astrophysique, Centre d'Etudes de Saclay; Centre d'Etude Spatiale des Rayonnements, Toulouse; Space Research Institute, Moscow), report: "The SIGMA telescope onboard the Granat Observatory detected a gamma-ray burst on Feb. 6.00625 UT, which lasted about 16 s and was detected in the energy range 40-480 keV through an interruption of the passive shield acting as a collimator. The localization process is based on a maximum likelihood method, yielding a signal-to-noise ratio of 24. The 1-sigma error box of the burst is approximately rectangular-shaped, the corners having the following positions: R.A. = 10h04m00s, Decl. = -68o40'.2; 9h57m19s, -68o00'.0; 10h46m41s, -57o19'.8; 11h01m19s, -56o19'.8 (equinox 1950.0)."

1950

α	δ
151.00	-68.666
149.329	-68.000
161.671	-57.330
165.329	-56.330

2000

151.295	-68.909
149.618	-68.239
162.175	-57.594
165.863	-56.599

ETA CARINAE

S. White, University of Maryland; R. Duncan, Australia Telescope; S. Drake, Goddard Space Flight Center; J. Lim, California Institute of Technology; and M. Kundu, University of Maryland, report: "Australia Telescope observations of the luminous blue variable eta Car show that it is undergoing a radio outburst, with the flux having doubled in the last 7 months and apparently still increasing. It is currently a 2-Jy radio source at 9 GHz. The rise in flux is associated with the appearance of a new feature in the radio images, about 1".1 northwest of the radio source attributed to the stellar wind and almost as bright. Assuming that this feature is due to a gas clump ejected asymmetrically by the star and radiating thermal free-free emission, the minimum mass involved is 0.005 solar mass. Infrared observations to follow the history of dust formation in this gas clump would be valuable."

PERIODIC COMET SCHWASSMANN-WACHMANN 1

Total visual magnitude estimates (cf. IAUC 5915): Jan. 10.31 UT, 11.9 (R. Keen, Mt. Thorodin, CO, 0.32-m reflector); 23.19, 12.3 (H. Mikuz, Ljubljana, Slovenia, 0.20-m Baker-Schmidt camera + CCD + V filter); 29.7, 13.3 (Mikuz); Feb. 7.56, 13.3 (T. Kojima, Chiyoda, Ohra, Gunma, Japan, 0.25-m reflector + CCD); 10.57, 12.3 (Kojima).

From root Tue Feb 8 10:14 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA02556; Tue, 8 Feb 94 10:14:19
Received: from pamir.inria.fr by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA21934; Tue, 8 Feb 1994 09:17:55 +0800
X400-Received: by /PRMD=inria/ADMD=atlas/C=FR/;
 Relayed; 08 Feb 94 18:21:27+0100
X400-Received: by /PRMD=cnes/ADMD=atlas/C=FR/;
 Relayed; 08 Feb 94 17:04:58+0000
Date: 08 Feb 94 17:04:58+0000
From: LAURENT@32779.span.cnes.fr
To: MINT@@sunspot.ssl.berkeley.edu
Message-Id: <00979C2D.17B04B40.8122@cnesta.cnes.fr>
Subject: a new SIGMA GRB
X-Mx-Warning: Warning -- Invalid "To" header.
Content-Length: 1255
Status: R

Saclay, 1994 February 8th.

Dear Kevin,

SIGMA has just detected a GRB through its sidelobes. Unfortunately, the arc structure is at the corner of the detector, so the error box derived by Andrea Goldwurm at the ground station in Evpatoria is very large. Anyway, a preliminary version of the IAU circular that we intend to propose may be usefull for you.

A. Goldwurm, ?, ?, ?, on behalf of the SIGMA/GRANAT team (Service d'Astrohysique, CEN Saclay, FRANCE, Centre d'Etude Spatiale des Rayonnements, Toulouse, FRANCE, Space Research Institute ,Moscow, RUSSIA), report :
" The SIGMA telescope on board the GRANAT observatory has detected a gamma ray burst on 1994 February 6th 00h09'00.126" UT. The event lasted about 16 s and was detected in the 40 - 480 keV energy range through an interuption of the passive shield acting as a collimator. The localization process is based on a maximun likelihood method yielding a signal to noise ratio of 24. The 1 sigma error box of the burst is approximatively rectangular-shaped and the 4 positions corresponding to the rectangle corners are given below :

R.A. (1950)	Decl. (1950)
10h04mn00s	-68.67
09h57mn19s	-68.00
10h46mn41s	-57.33
11h01mn19s	-56.33

"
Best regards, Arnaud Claret.

From MEEGAN@ssl.msfc.nasa.gov Mon Feb 7 12:30 PST 1994
Date: Mon, 7 Feb 1994 14:34:00 -0600 (CST)
From: MEEGAN@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2799
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

No - too weak

BATSE BURST # 2799
EVENT OF 1994 FEB 6 DAY OF YEAR= 37
EVENT CROSSING TIME AT BATSE : 66347. S. OR 18:25:47.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 259.000 -47.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 2/ 94 IS:
RA= 154.065 DEC= -50.259 DIST= 3.147 AU
BATSE-ULYSSES DISTANCE = 470797667. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -706.67 SECS.
CROSSING TIME AT ULYSSES IS 65640. S. OR 18:14:00 +/- 282.75 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 2/ 94 IS:
RA= 309.556 DEC= -19.553 DIST= 2.365 AU
MARS-BATSE DISTANCE = 353731936. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -770.58 SECS.
CROSSING TIME AT MARS IS 65576. S. OR 18:12:56 +/- 143.43 SECONDS

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2799	940206	9389	66347	30000	259	-47

BATSE BURST TRIGGER
NO.: 02799

TIME: TJD=9389 SECONDS=66347

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

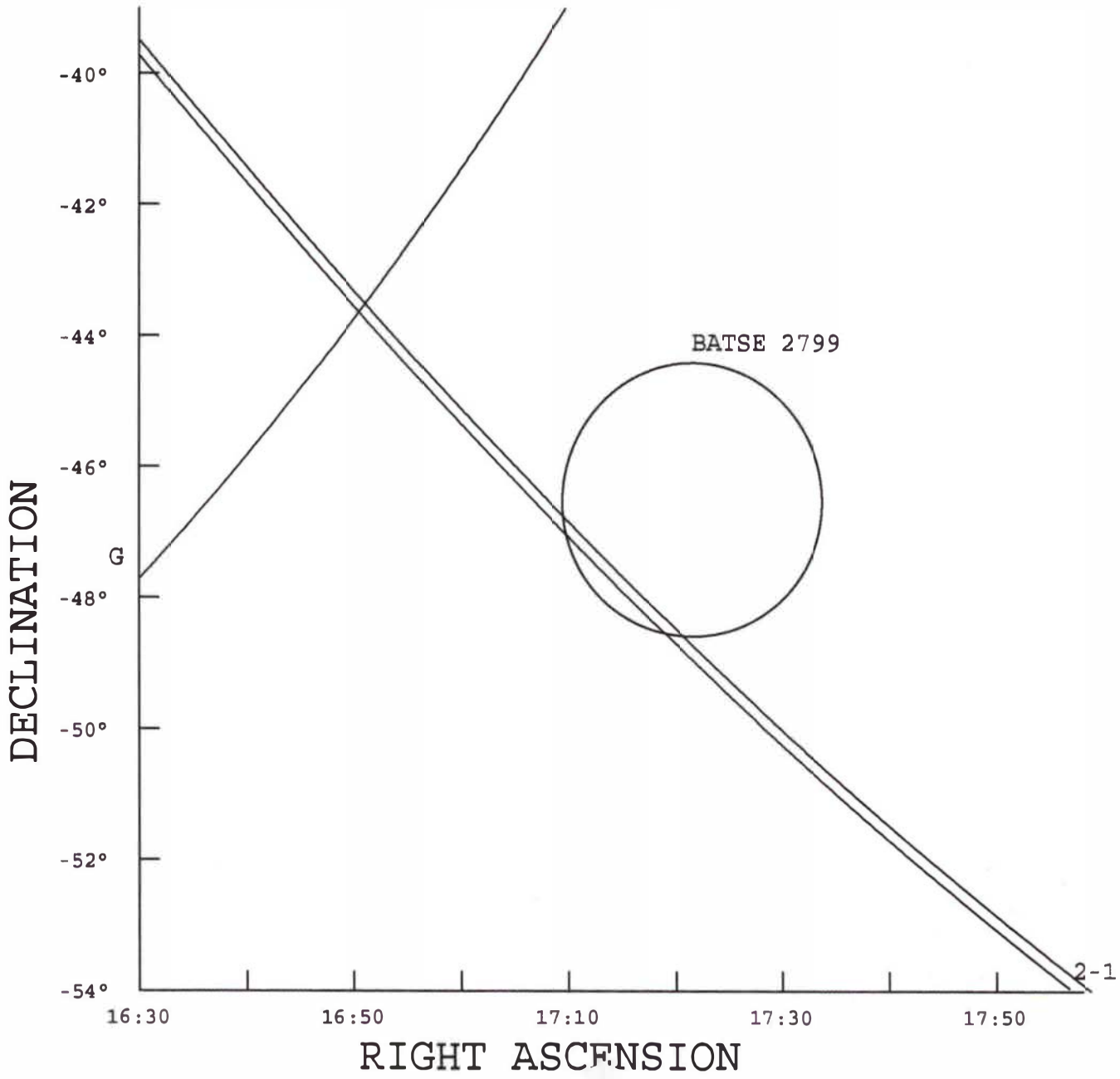
LOCATION: ZENITH= 86. AZIMUTH=315. ERROR= DEGREES

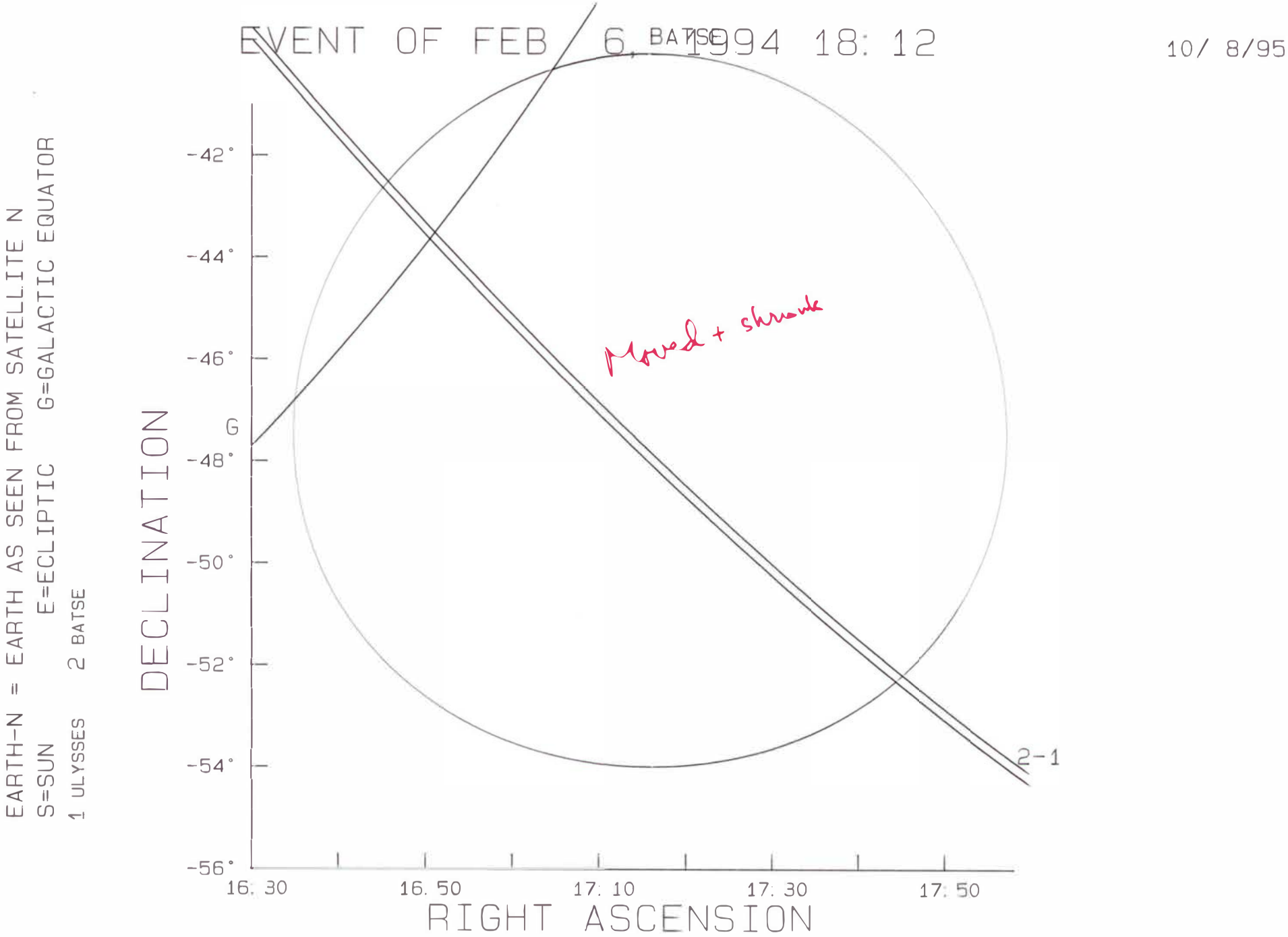
COMMENTS:
FAIRLY STRONG BURST WITH THREE PEAKS IN 4 SECONDS. MARGINAL ABOVE 300 KEV.

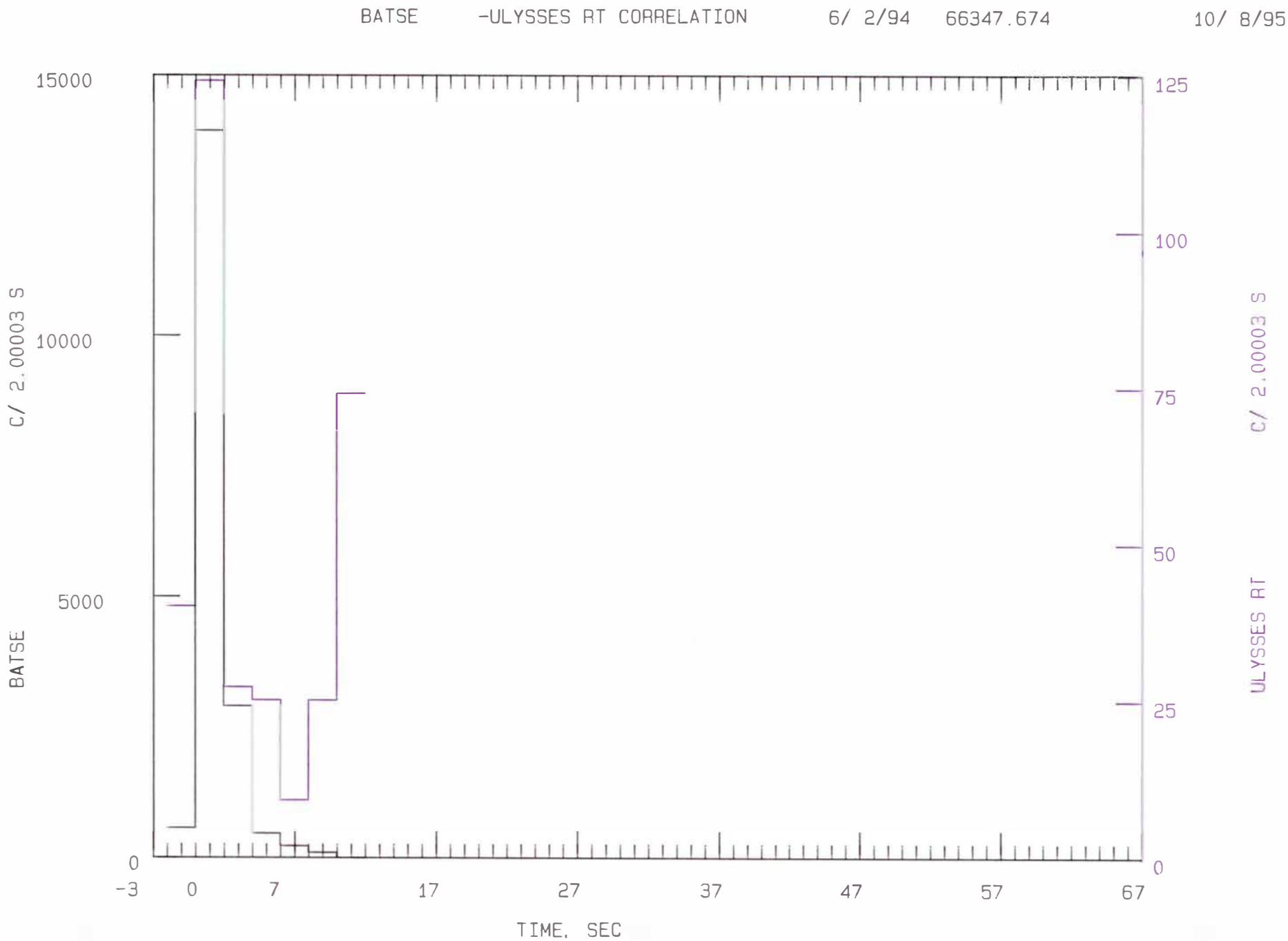
EVENT OF FEB 6, 1994 18:12

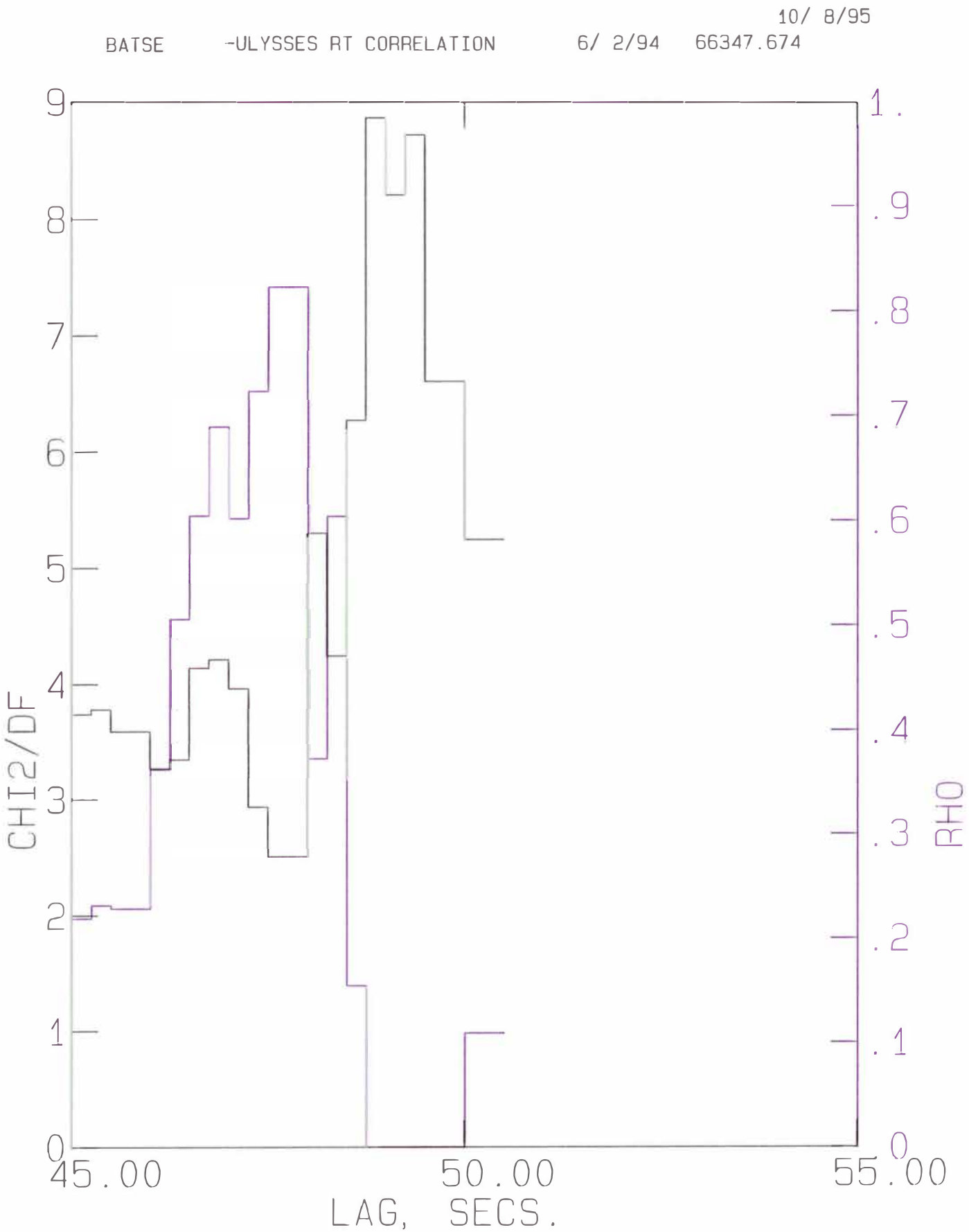
6/ 3/98

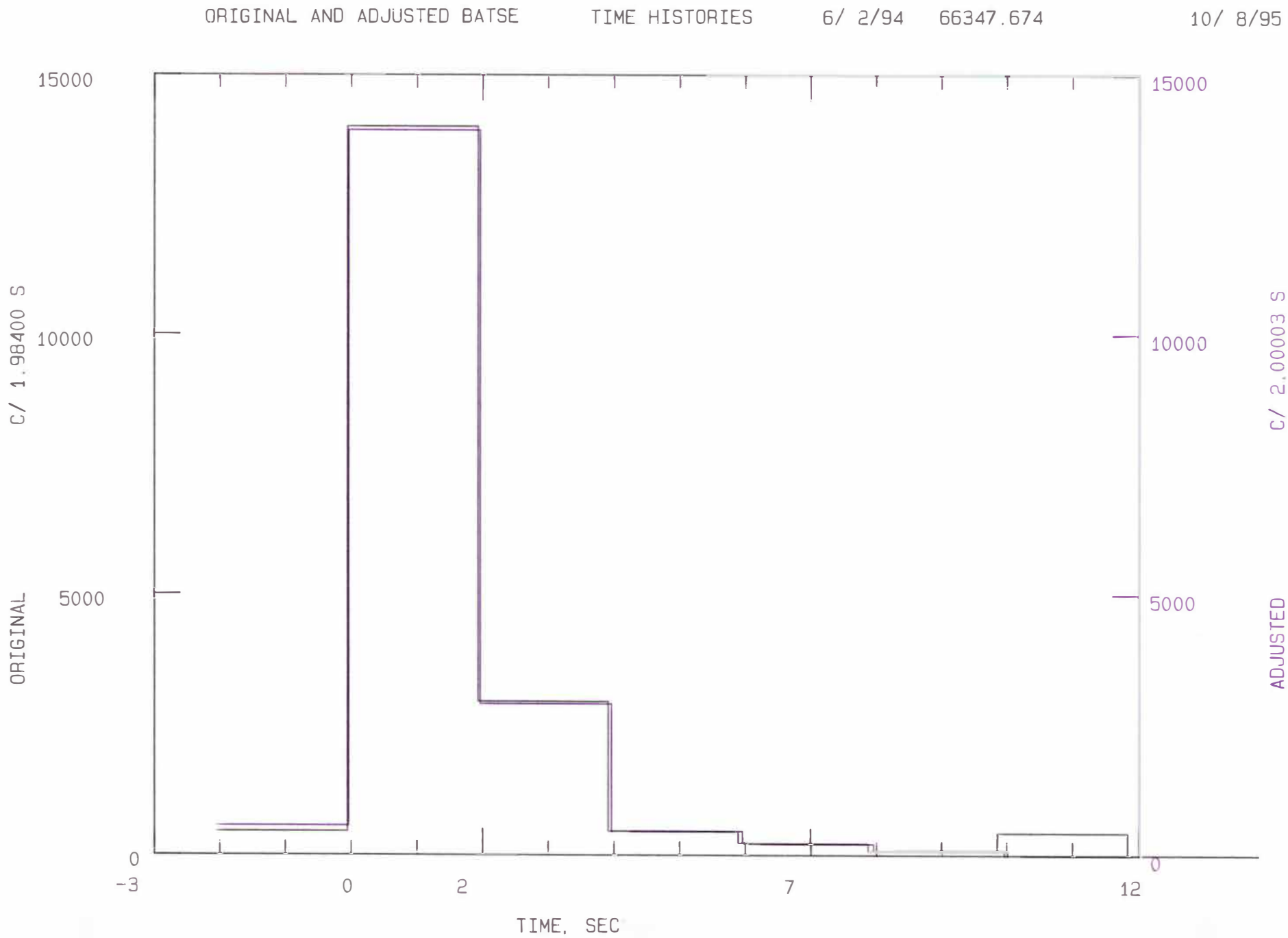
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




EVENT OF FEB 6, 1994 18: 12 BATSE
10/ 8/95
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE
DECLINATION
-42°
-44°
-46°
G
-48°
-50°
-52°
-54°
-56°
16. 30
16. 50
17. 10
17. 30
17. 50
RIGHT ASCENSION
2-1
Moved + shrunk


BATSE -ULYSSES RT CORRELATION 6/ 2/94 66347.674 10/ 8/95
15000
10000
5000
0
C/ 2.00003 S
BATSE
125
100
75
50
25
0
C/ 2.00003 S
ULYSSES RT
-3
0
7
17
27
37
47
57
67
TIME, SEC


10/ 8/95
BATSE -ULYSSES RT CORRELATION 6/ 2/94 66347.674
CHI2/DF
RHO
LAG, SECS.
45.00
50.00
55.00
0
1
2
3
4
5
6
7
8
9
.1
.2
.3
.4
.5
.6
.7
.8
.9
1.


ORIGINAL AND ADJUSTED BATSE TIME HISTORIES 6/ 2/94 66347.674 10/ 8/95
15000
10000
5000
0
ORIGINAL
C/ 1.98400 S
15000
10000
5000
0
ADJUSTED
C/ 2.00003 S
-3
0
2
7
12
TIME, SEC

BATSE BURST# 2799

ULYSSES RT 19/11/97

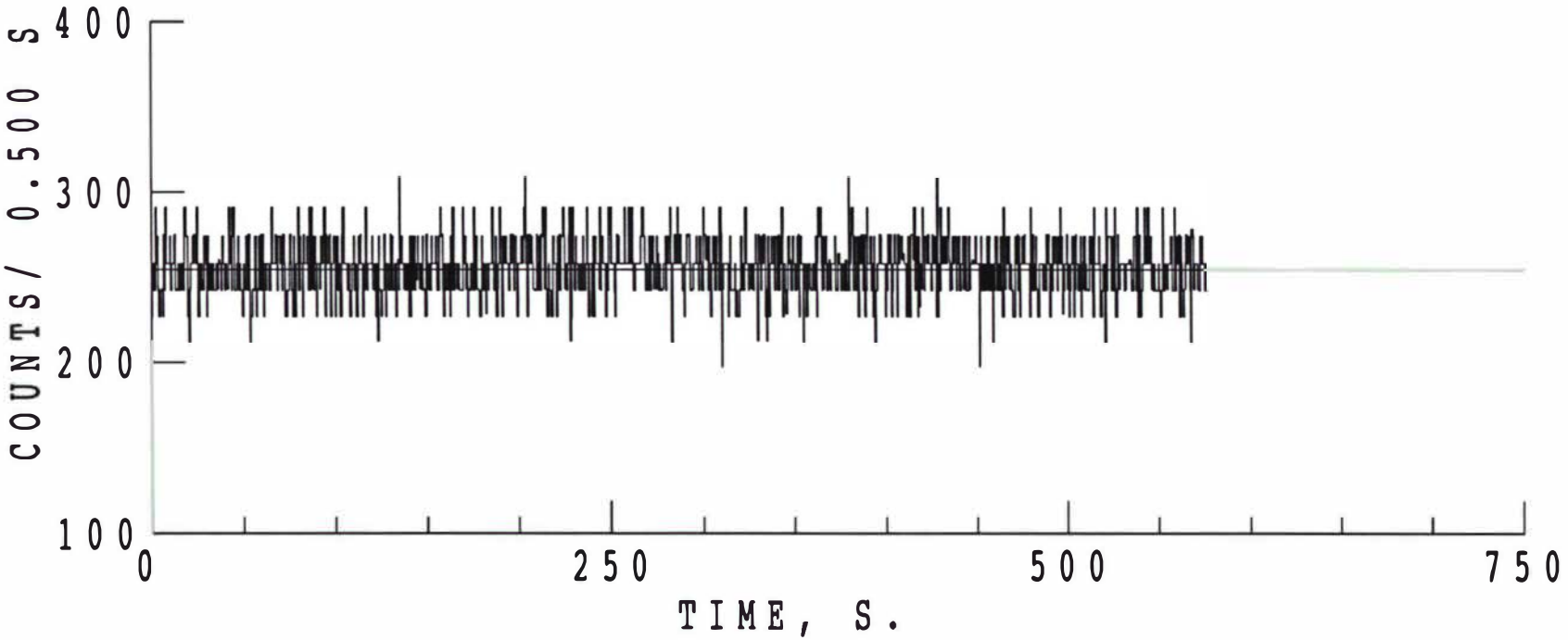
6/ 2/94 65412.113 s Updated BATSE window

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

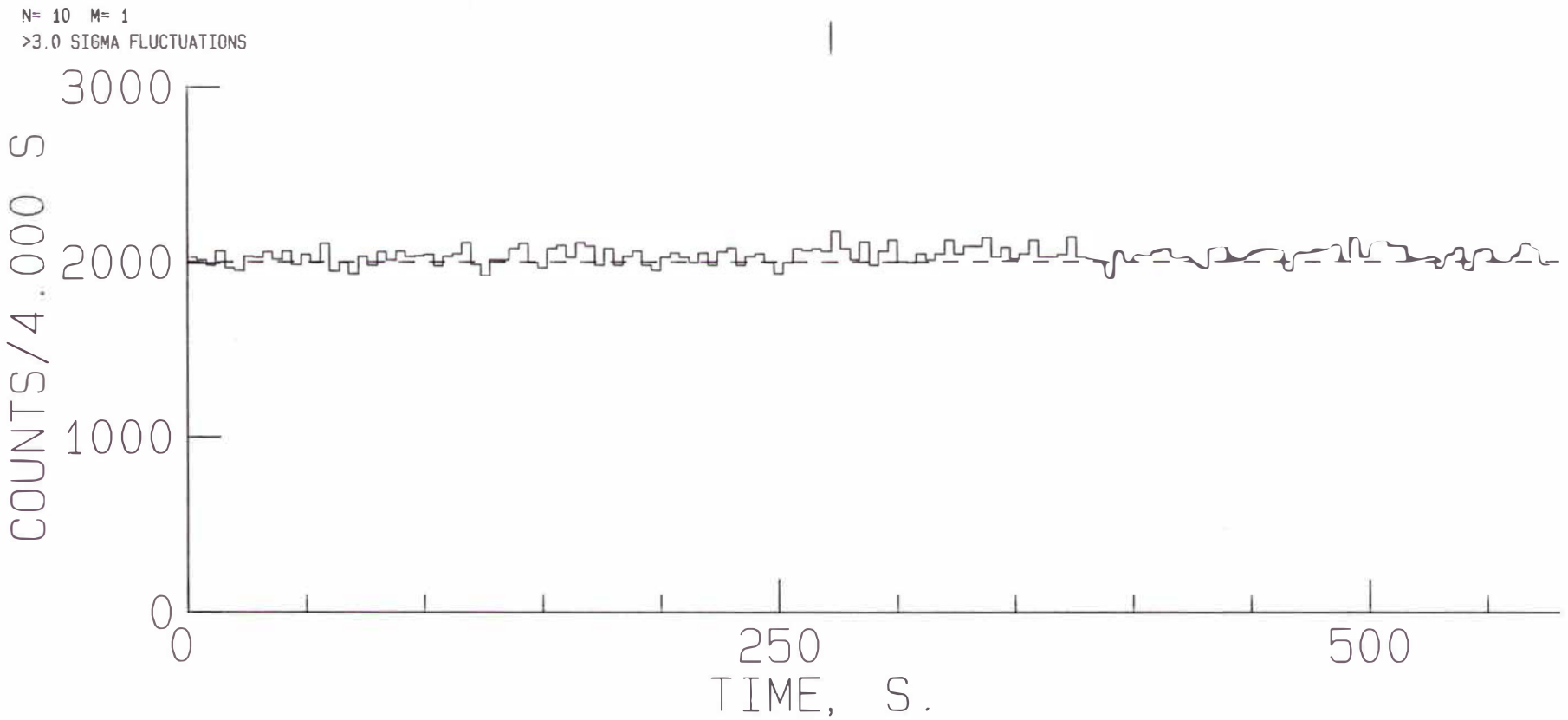


ULYSSES RT 9/ 2/94

6/ 2/94 65340.113 s

.250 S INTERVALS REGROUPED BY 16

0- 0 keV



From khurley@space6.ssl.berkeley.edu Sat Feb 19 11:18 PST 1994
Date: Sat, 19 Feb 94 12:15:00
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 199

Dear Chryssa,

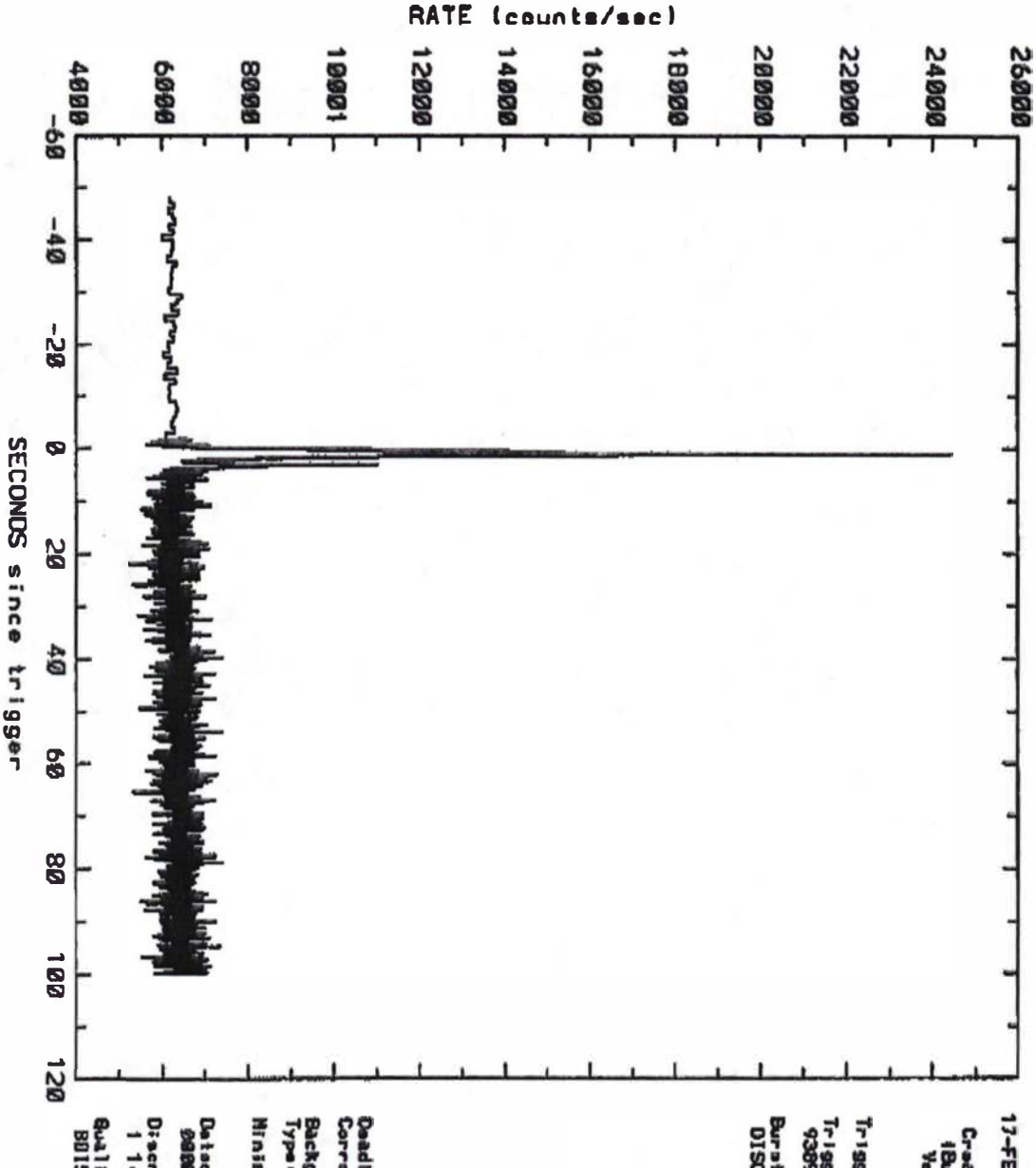
There is a problem with the data file for 2799. The trigger time in the digital data is given as 66346.674, while in the time history plot, it is 66347.674. Which is correct?

Kevin

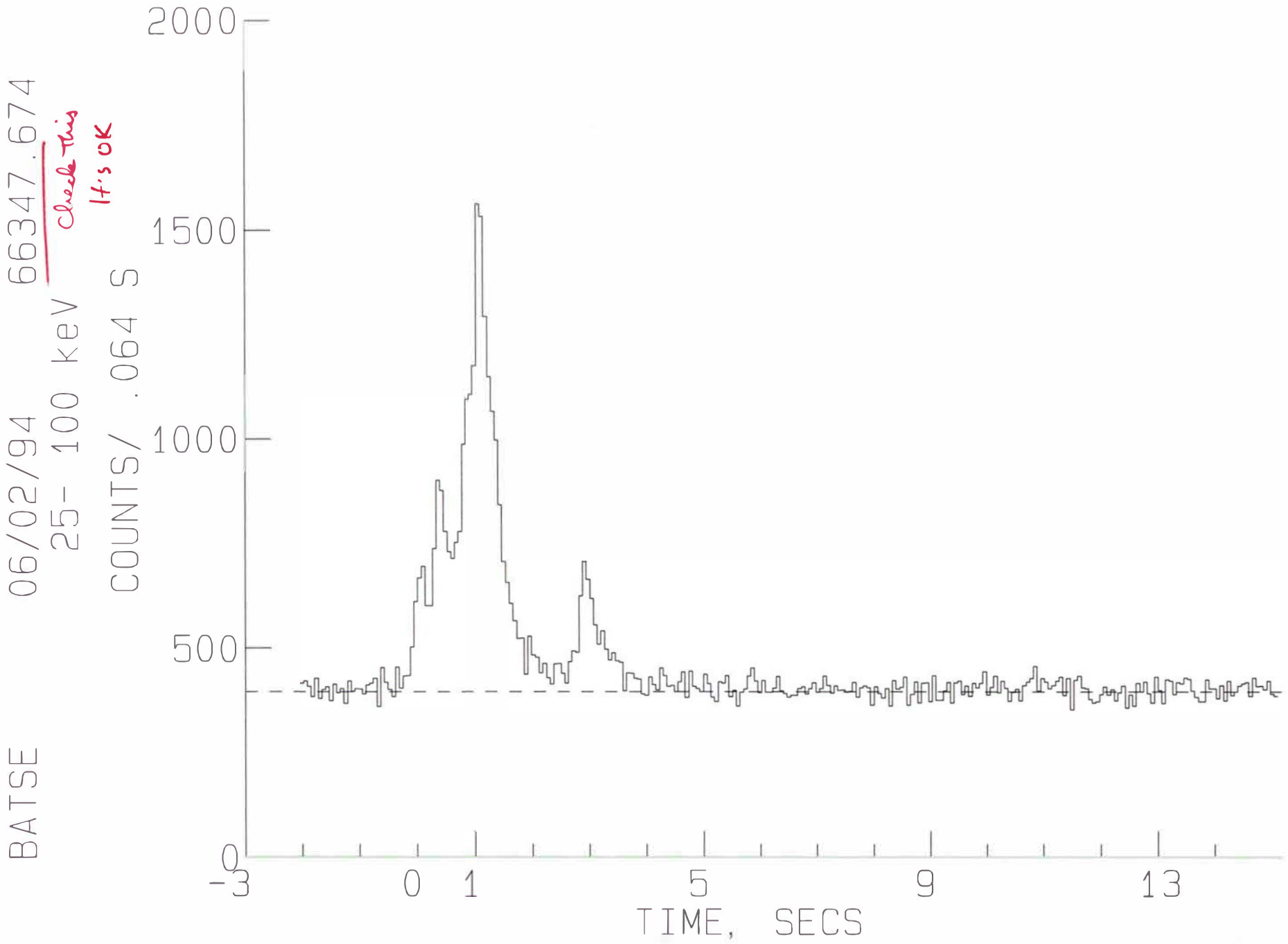
From root Thu Feb 24 09:25 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA04317; Thu, 24 Feb 94 09:25:25
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA10144; Thu, 24 Feb 1994 08:28:42 +0800
Date: Thu, 24 Feb 1994 10:33:12 -0600 (CST)
From: COLE@ssl.msfc.nasa.gov
To: khurley@space6.ssl.berkeley.edu
Message-Id: <940224103312.2180194c@ssl.msfc.nasa.gov>
Subject: 2799
Content-Length: 48
Status: R

THE CORRECT TIME FOR 2799 IS 66347.674.

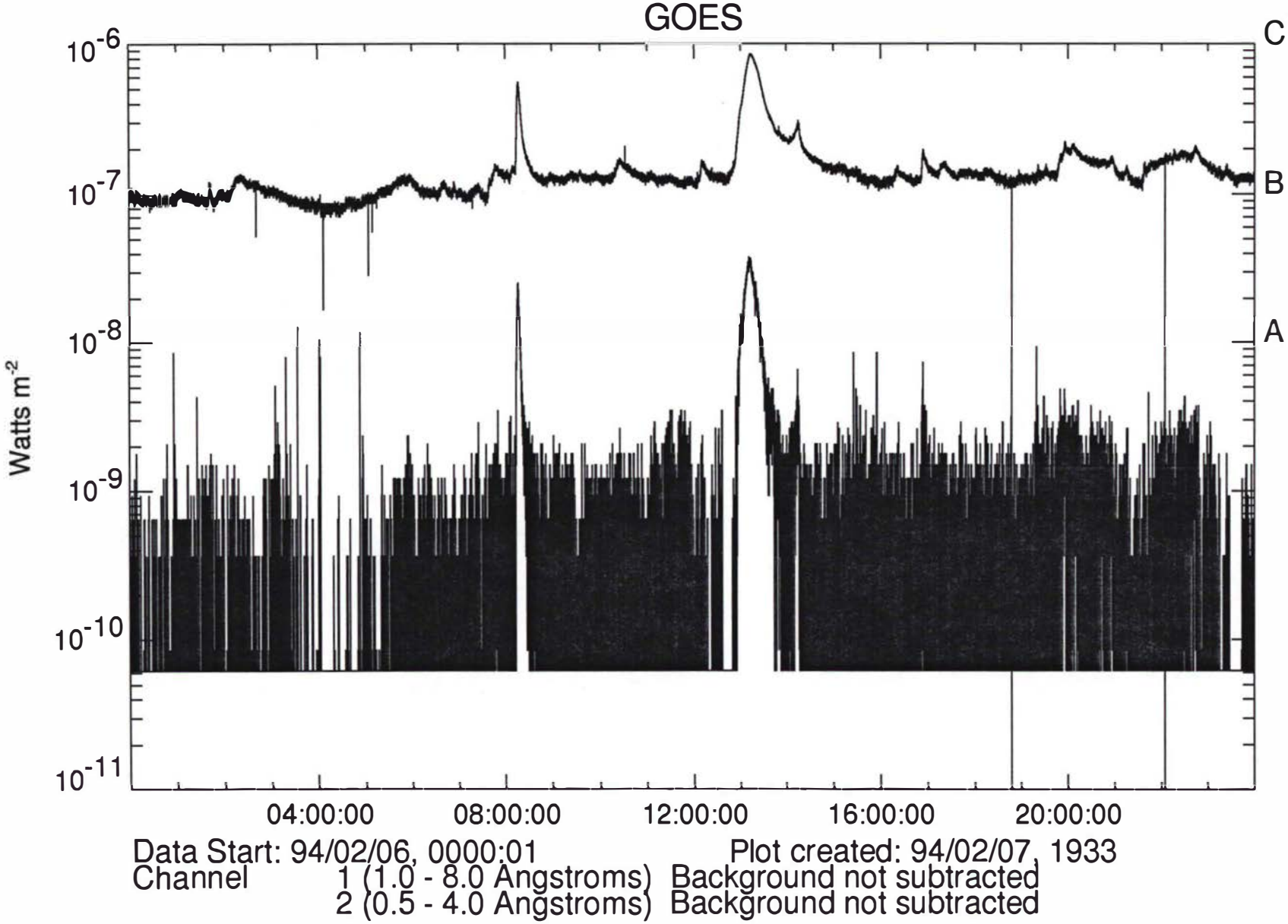
STAYCE

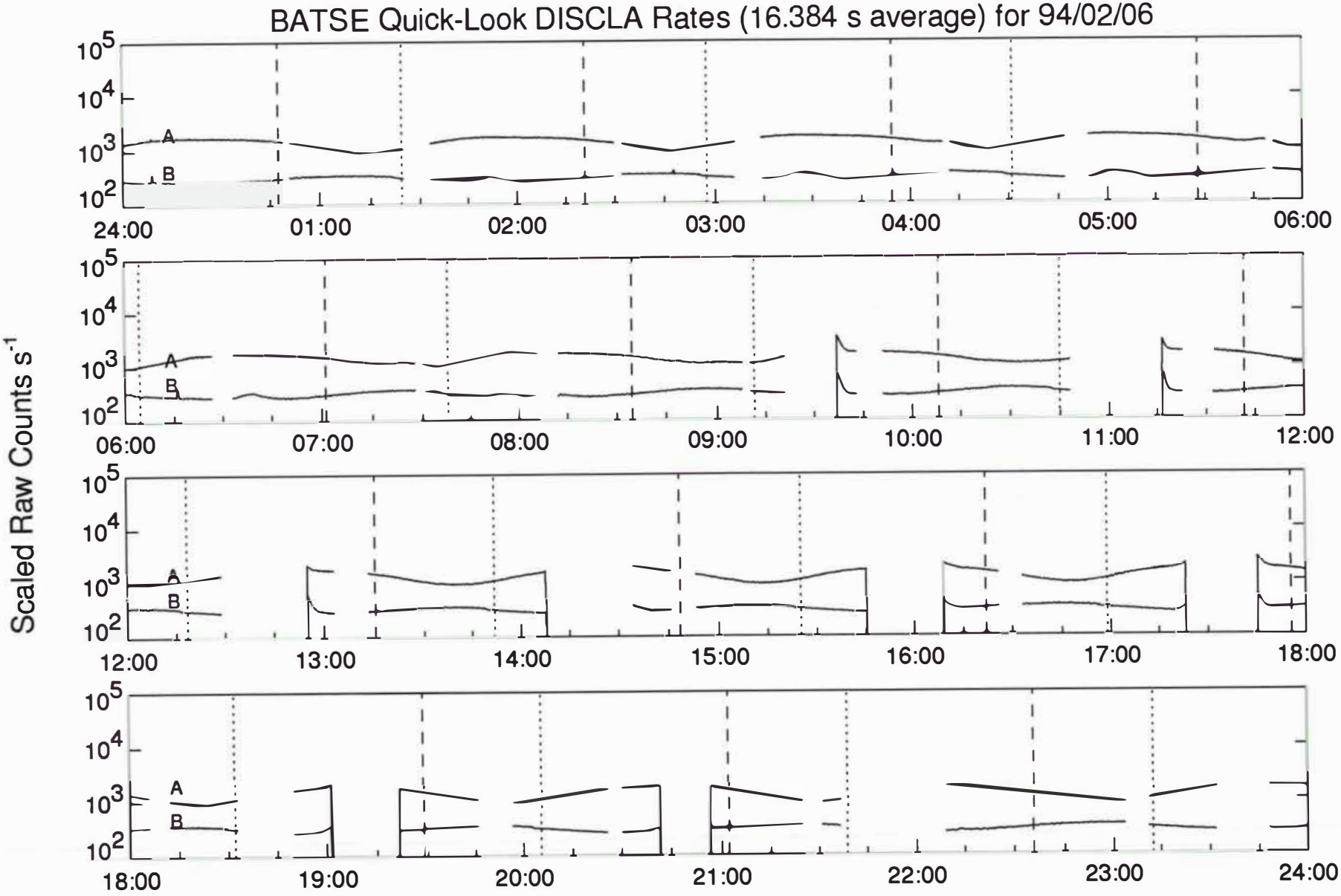


check this!
Digital data was 66346
Digital data has wrong time



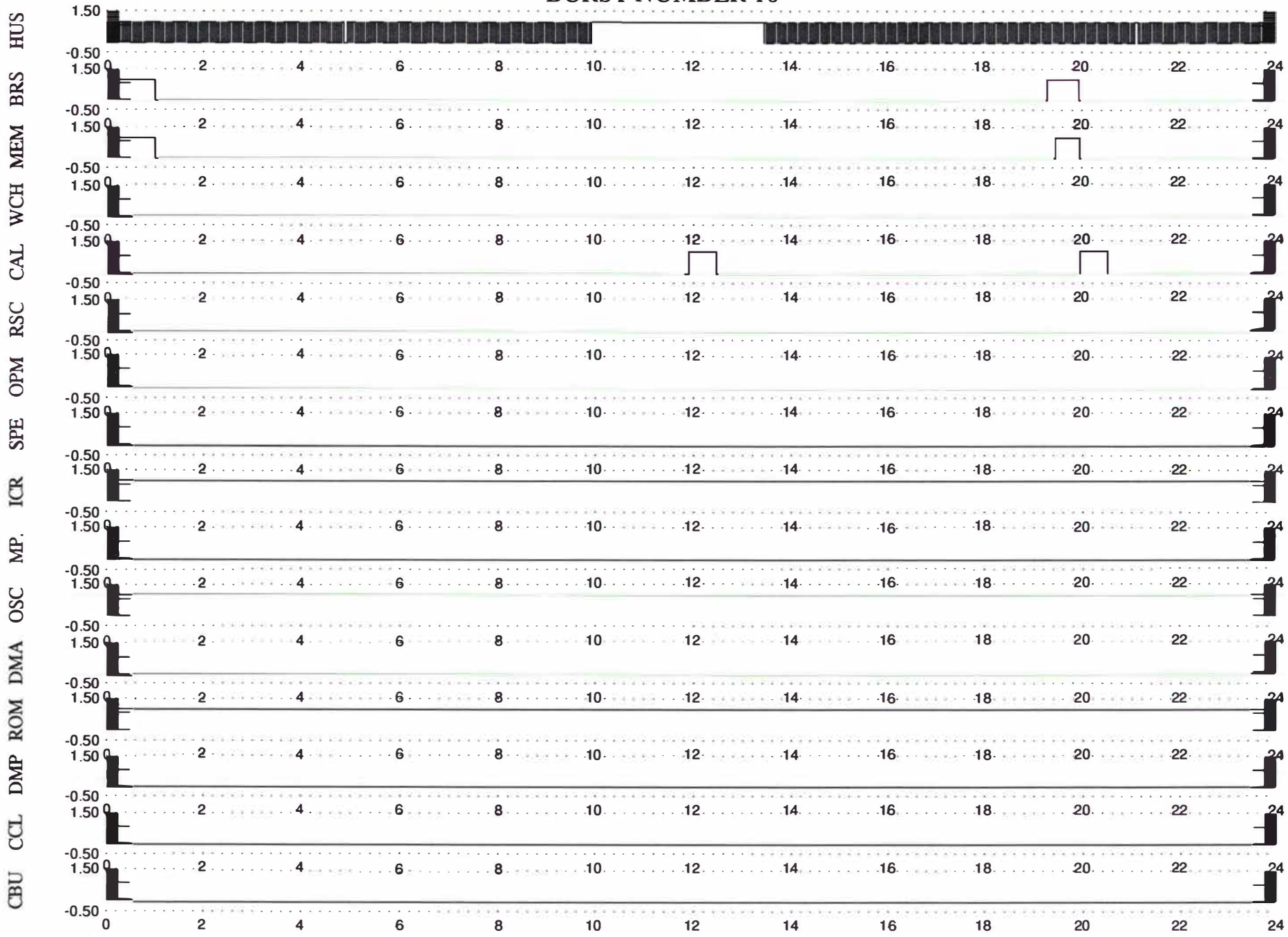
check this
it's OK


GOES
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/06, 0000:01
Plot created: 94/02/07, 1933
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/06
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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: 94/02/09, 1558 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 37, year 1994 to day 37, year 1994 5/26/94

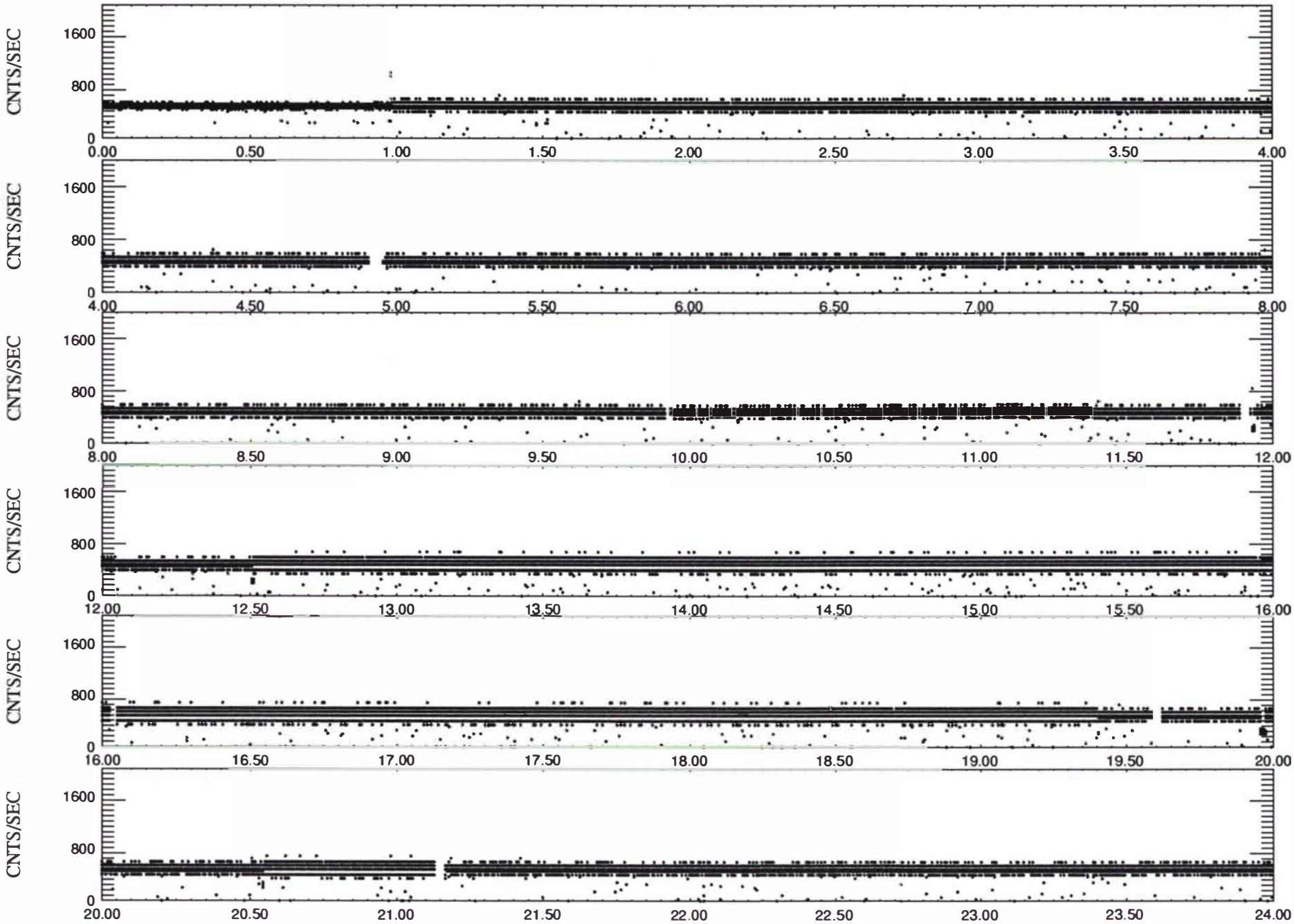
BURST NUMBER 10



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 37, year 1994 to day 37, year 1994 5/26/94

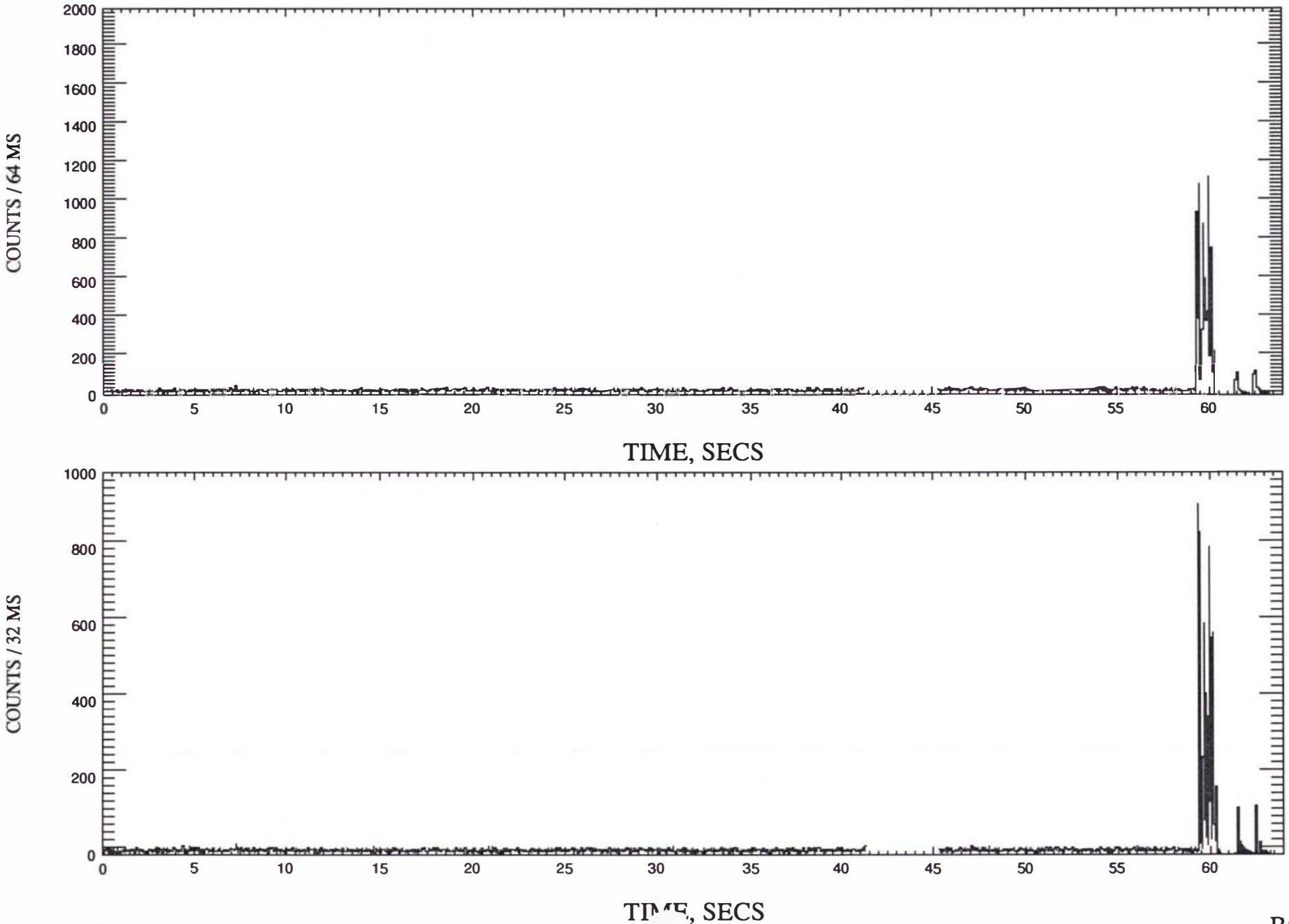
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 37, year 1994 5/26/94

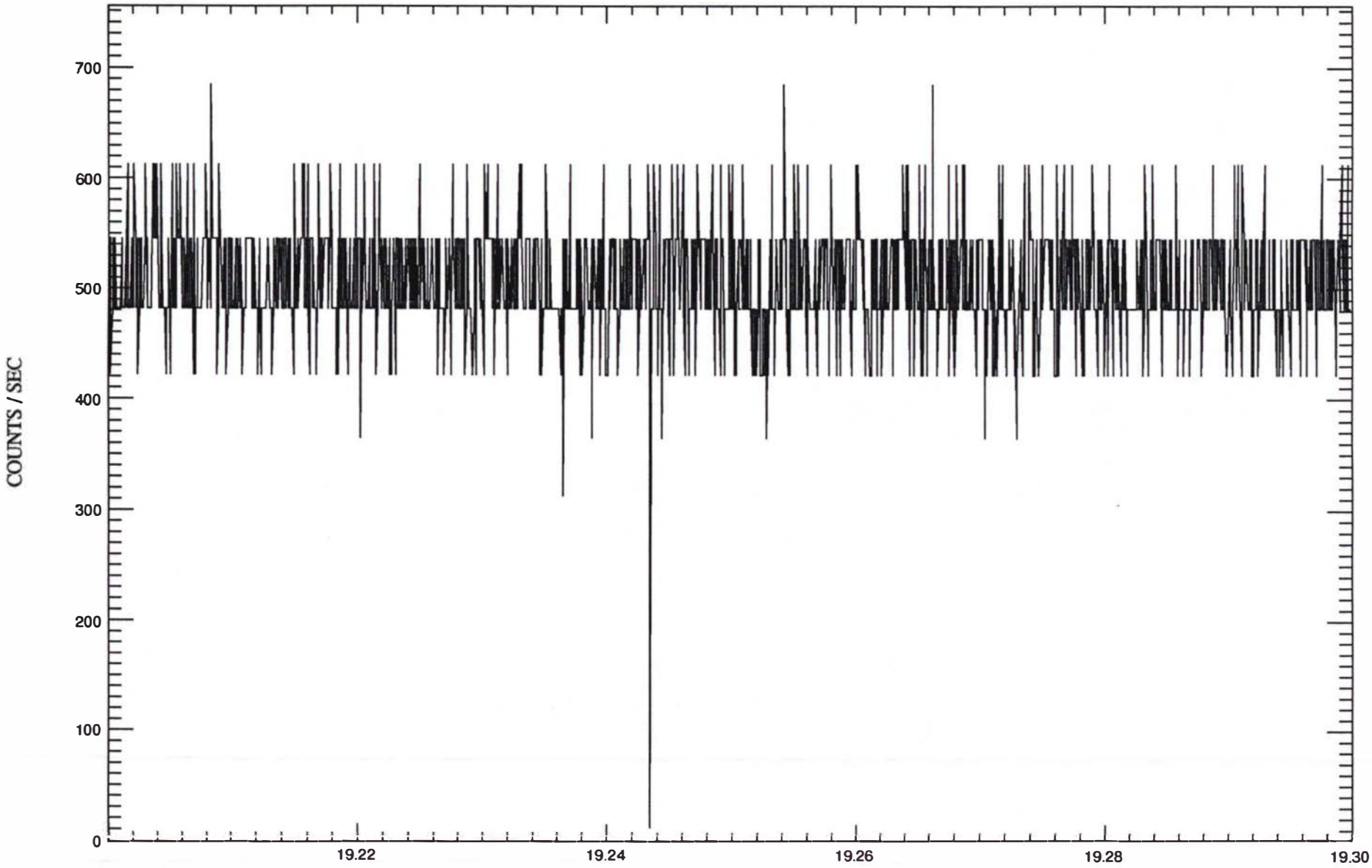
Burst Counter 10 at UT=19.254318101671 h=69315.545 s 19:15:15.545



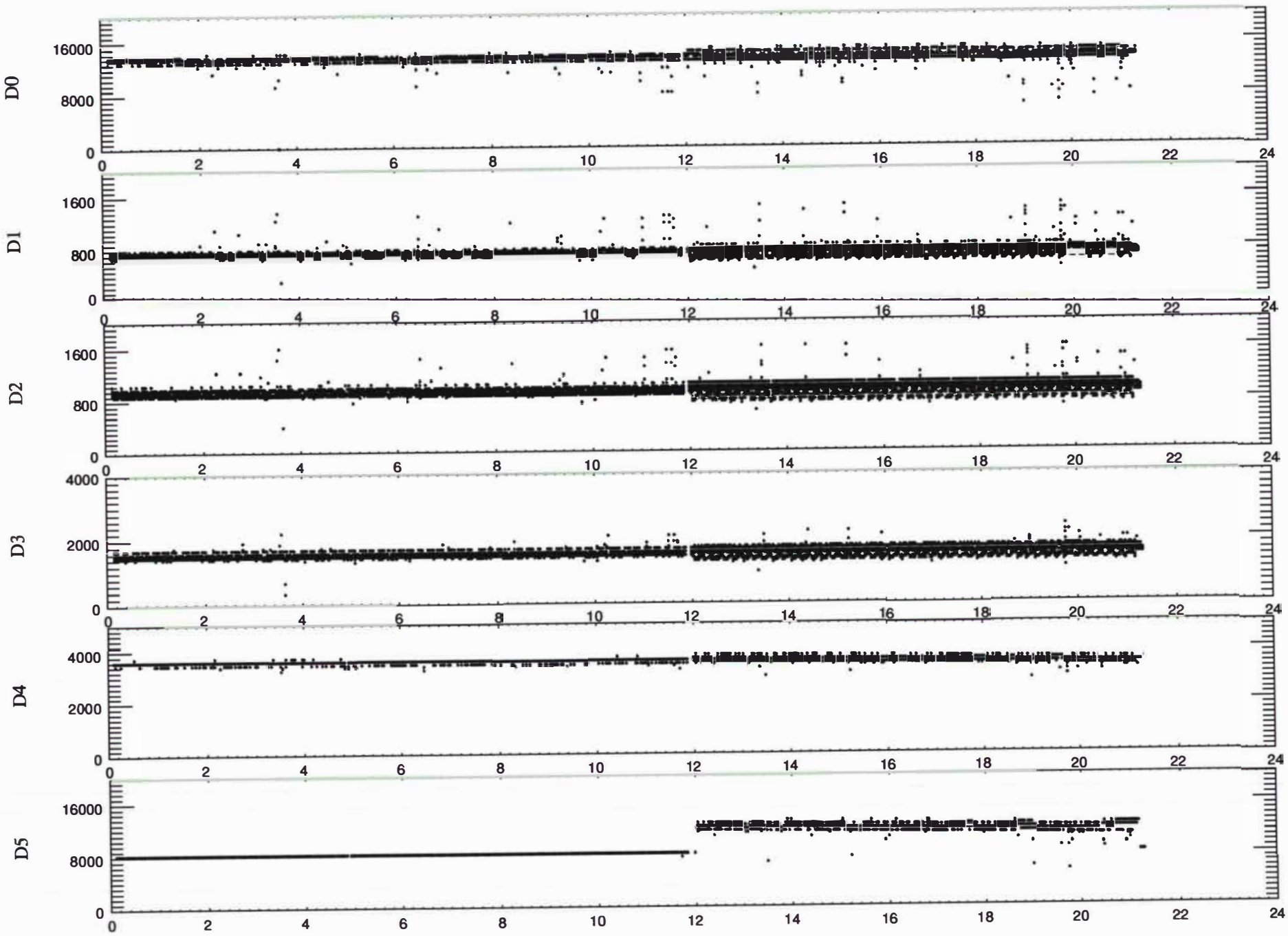
B# 1

HUS 2A, MODE 1, NOT AVERAGED QEDR day 37, year 1994 to day 38, year 1994 2/8/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 37, year 1994 to day 37, year 1994 2/7/94



From HAGEDON@fender.msfc.nasa.gov Wed Feb 9 09:47 PST 1994
Date: Wed, 9 Feb 1994 11:51:03 -0600 (CST)
From: HAGEDON@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2800
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2800
EVENT OF 1994 FEB 7 DAY OF YEAR= 38
EVENT CROSSING TIME AT BATSE : 36052. S. OR 10:00:52.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 197.000 -39.000
BATSE PEAK COUNTING RATE: 3400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 2/ 94 IS:
RA= 153.755 DEC= -50.364 DIST= 3.140 AU
BATSE-ULYSSES DISTANCE = 469735884. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=147.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1325.21 SECS.
CROSSING TIME AT ULYSSES IS 34727. S. OR 09:38:46 +/- 175.02 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 2/ 94 IS:
RA= 310.358 DEC= -19.358 DIST= 2.363 AU
MARS-BATSE DISTANCE = 353461184. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 96.80 SECS.
CROSSING TIME AT MARS IS 36149. S. OR 10:02:28 +/- 205.48 SECONDS

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2800	940207	9390	36052	3400	197	-39

BATSE BURST TRIGGER

NO.: 2800

TIME: TJD=9390 SECONDS=36052

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=119 AZIMUTH=283 ERROR= DEGREES

COMMENTS:
BURST. WEAK SPIKE WITH TWO PEAKS. DUR. ~0.7 SEC.
MARGINALLY VISIBLE ABOVE 300 KEV.

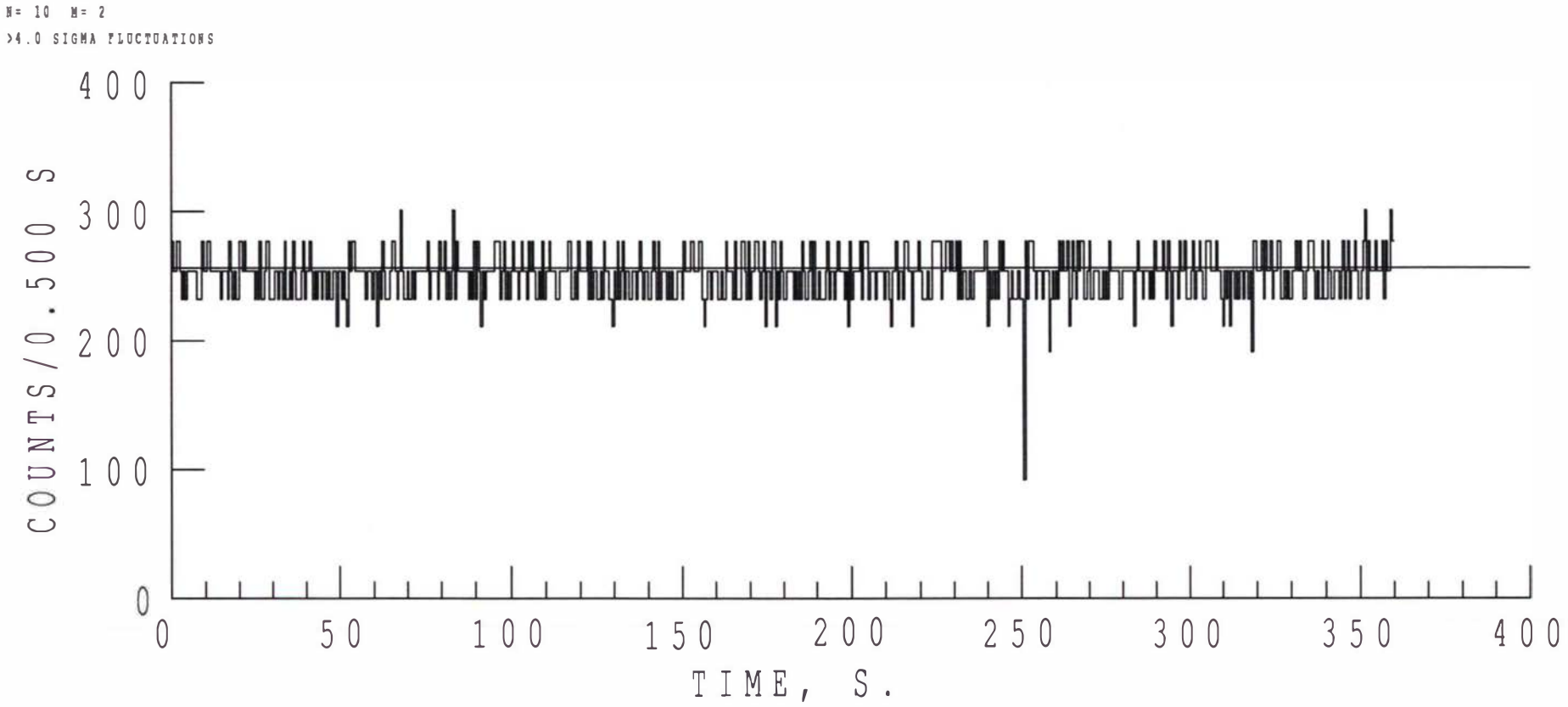
Batse Burst # 2800

9 / 2 / 94

ULYSSES RT

7/ 2/94 34560.473 s

0- 0 keV



From HAGEDON@fender.msfc.nasa.gov Wed Feb 9 09:49 PST 1994
Date: Wed, 9 Feb 1994 11:52:58 -0600 (CST)
From: HAGEDON@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2801
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2801
EVENT OF 1994 FEB 7 DAY OF YEAR= 38
EVENT CROSSING TIME AT BATSE : 41496. S. OR 11:31:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 255.000 -5.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 2/ 94 IS:
RA= 153.725 DEC= -50.374 DIST= 3.139 AU
BATSE-ULYSSES DISTANCE = 469631414. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 89.44 SECS.
CROSSING TIME AT ULYSSES IS 41585. S. OR 11:33:05 +/- 322.89 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 2/ 94 IS:
RA= 310.358 DEC= -19.358 DIST= 2.363 AU
MARS-BATSE DISTANCE = 353461184. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=124.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -663.97 SECS.
CROSSING TIME AT MARS IS 40832. S. OR 11:20:32 +/- 159.07 SECONDS

KJD

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2801	940207	9390	41496	3000	255	-05

BATSE BURST TRIGGER
NO.: 2801

TIME: TJD=9390 SECONDS=41496

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=57 AZIMUTH=283 ERROR= DEGREES

COMMENTS:
BURST. WEAK SPIKE. DUR.~0.25 SEC. NOT VISIBLE ABOVE 300 KEV.

Batse Burst # 2801

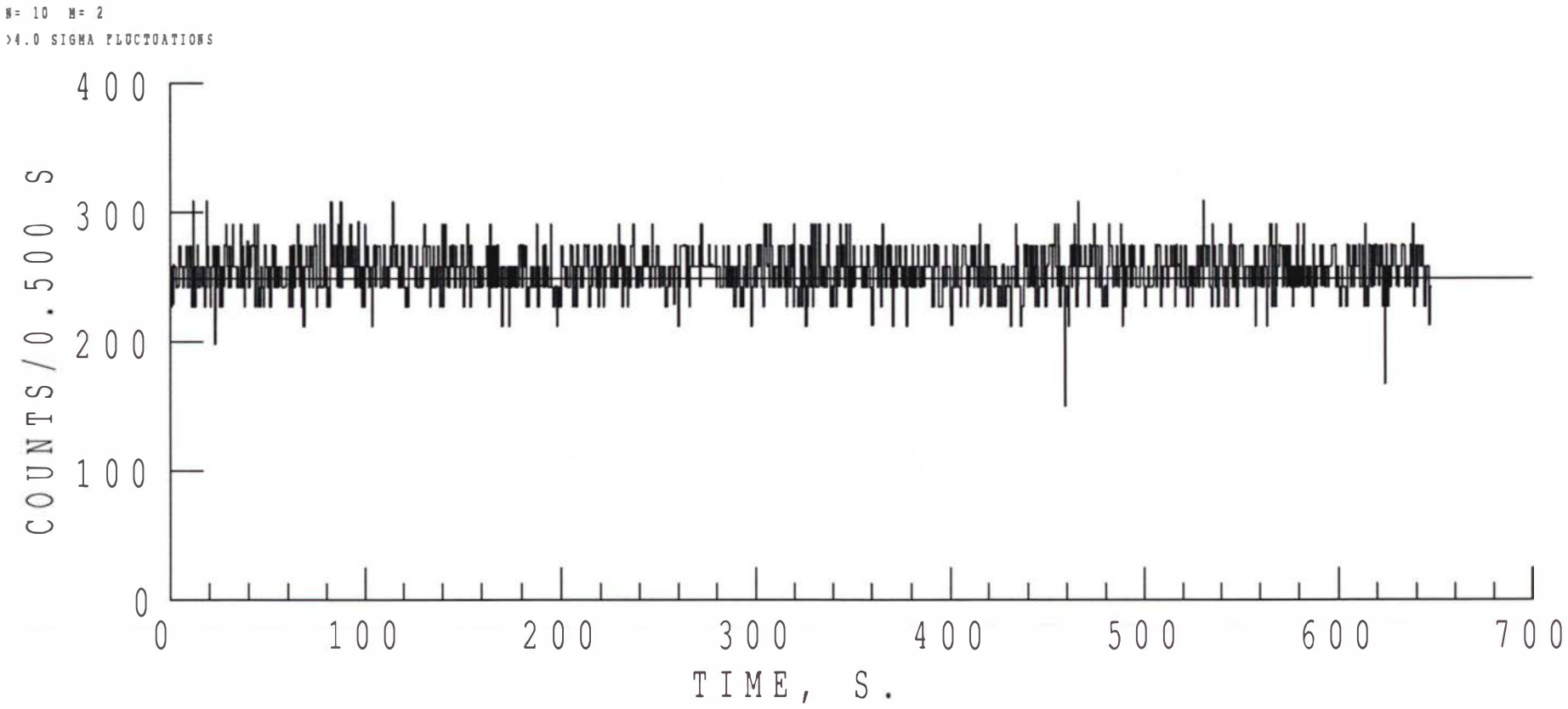
9 / 2 / 94

ULYSSES RT

7/ 2/94 41256.078 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV



From HAGEDON@ssl.msfc.nasa.gov Wed Feb 9 09:45 PST 1994
Date: Wed, 9 Feb 1994 11:47:13 -0600 (CST)
From: HAGEDON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2802

TIME: TJD=9390 SECONDS=54239

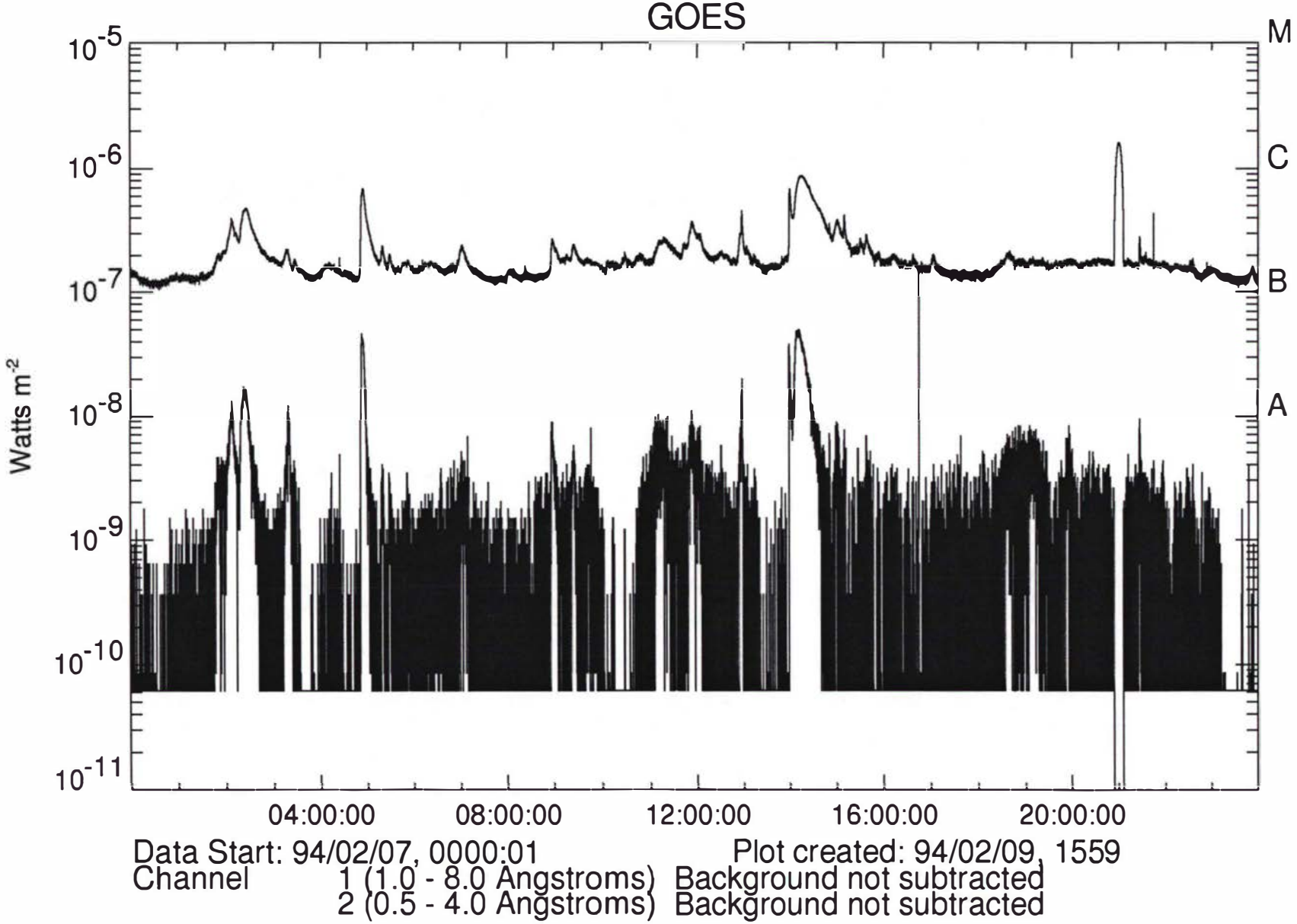
TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

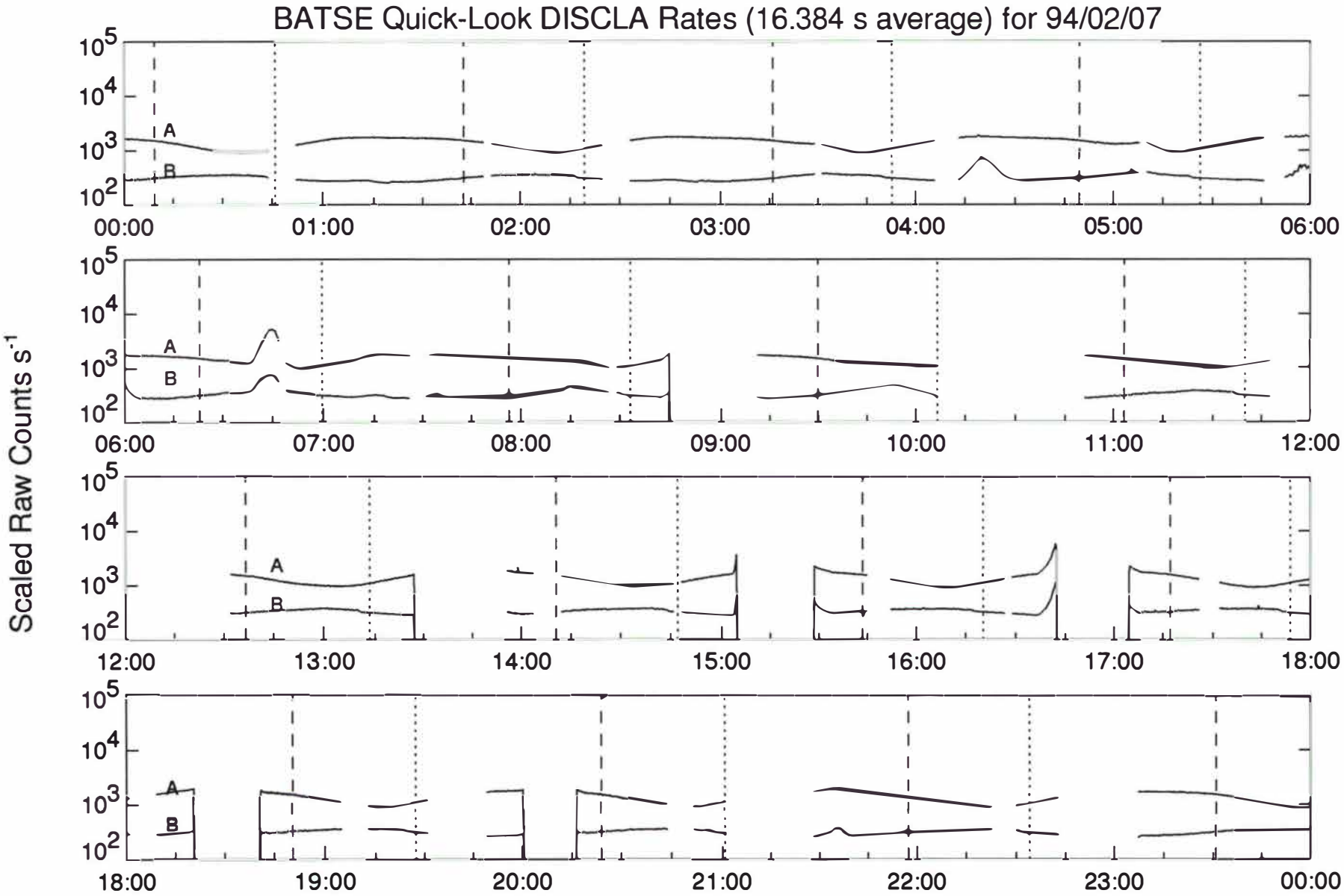
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

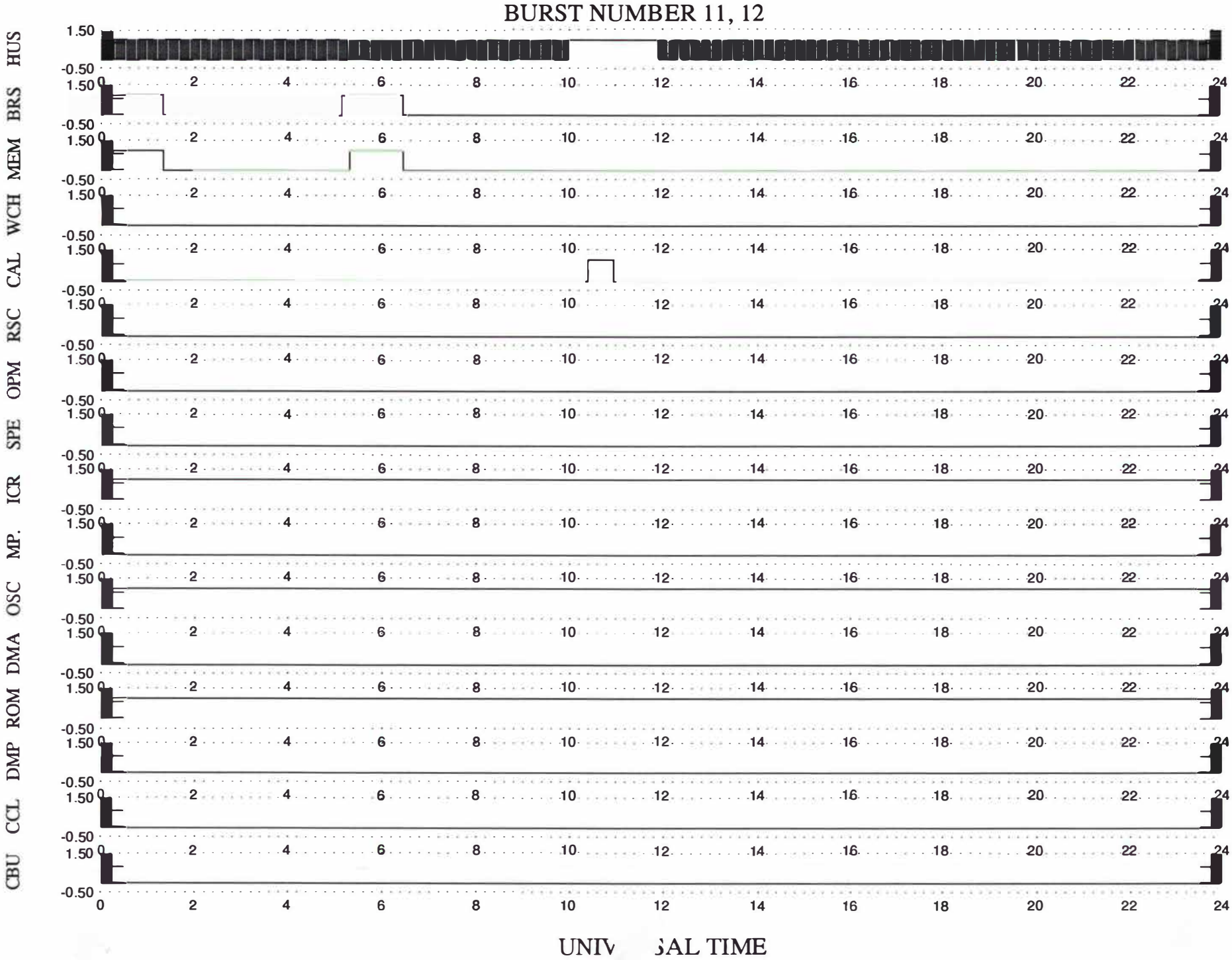
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.


GOES
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/07, 0000:01
Plot created: 94/02/09, 1559
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

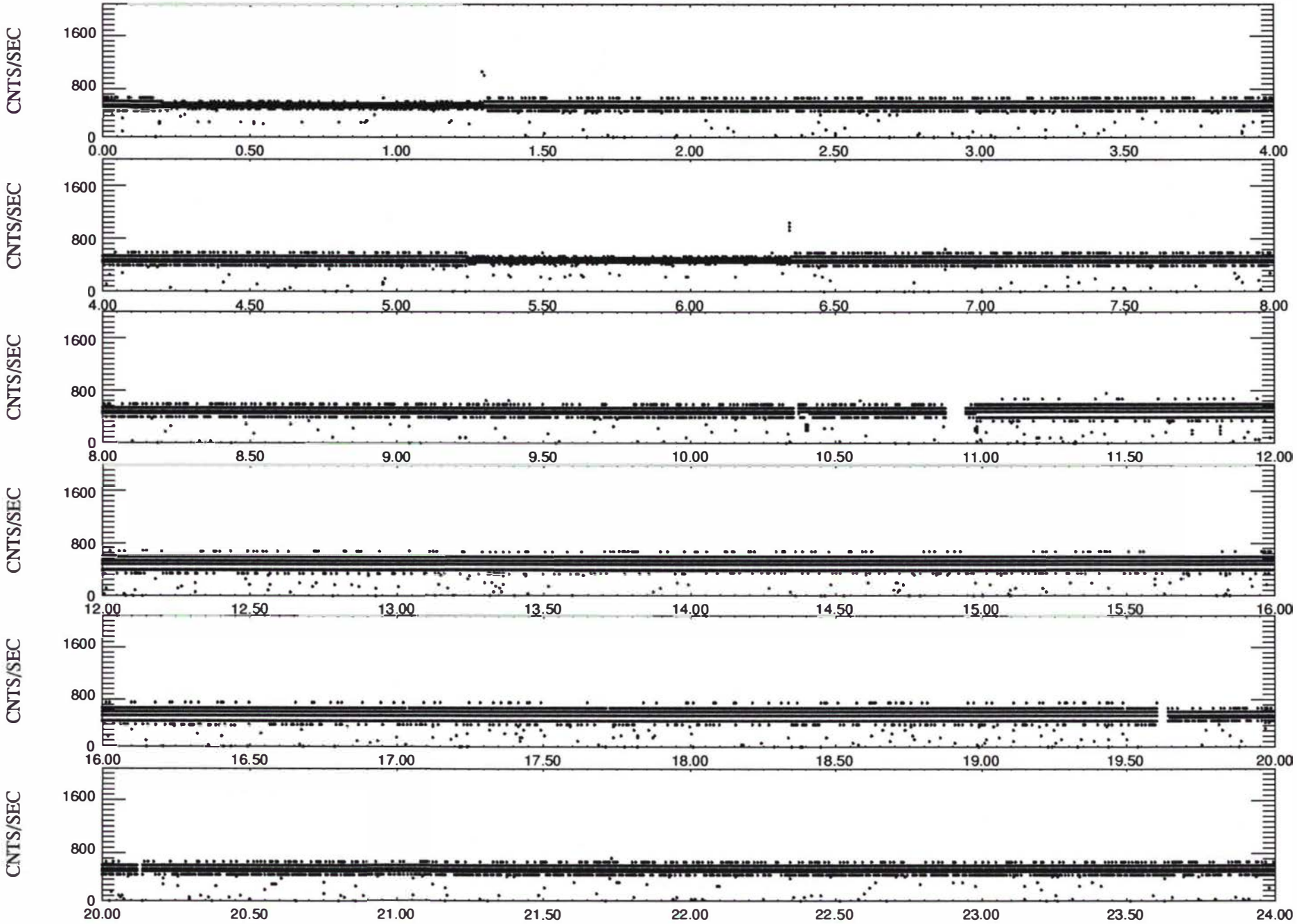

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/07
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/02/09, 1558 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 38, year 1994 to day 38, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 38, year 1994 to day 38, year 1994 5/26/94

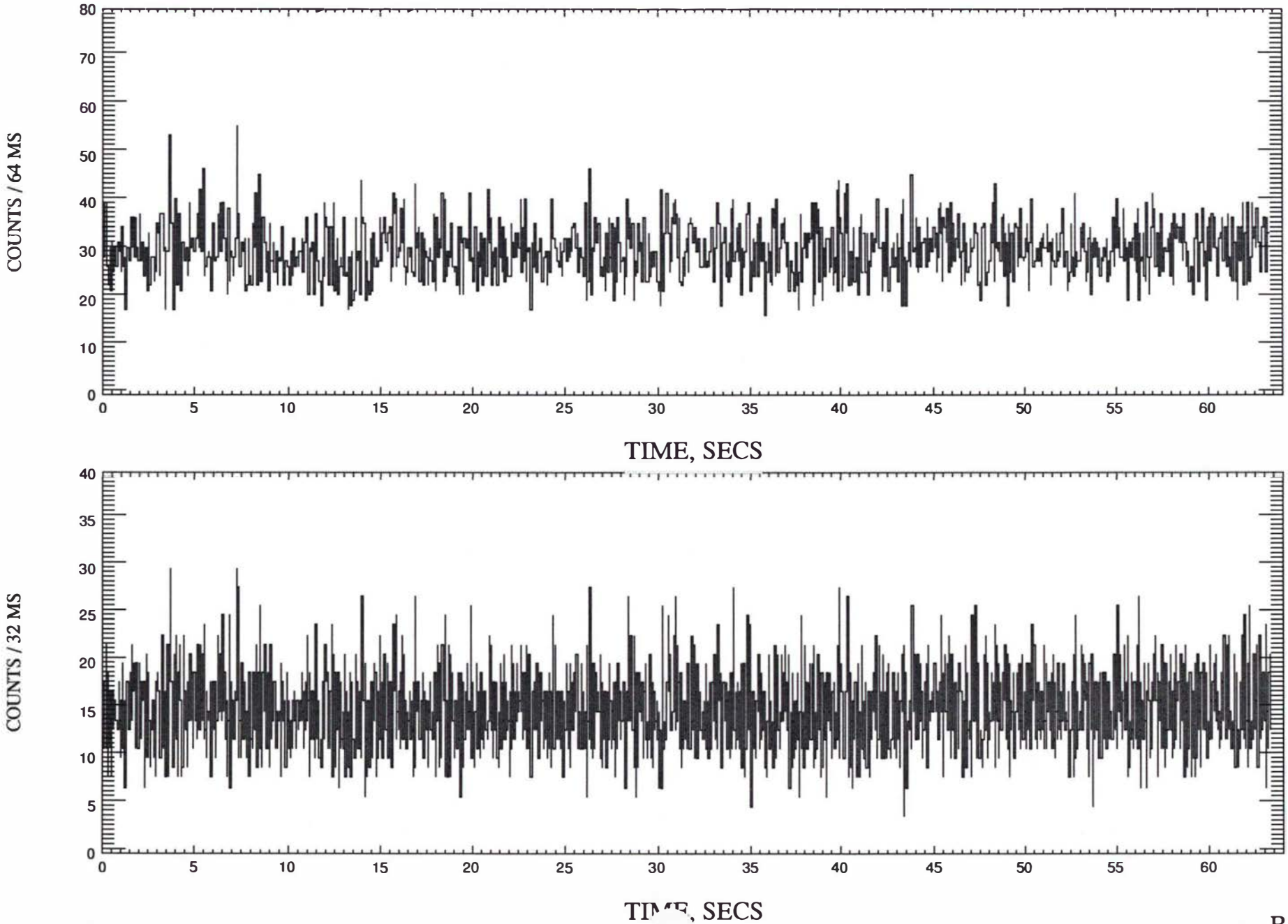
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 38, year 1994 5/26/94

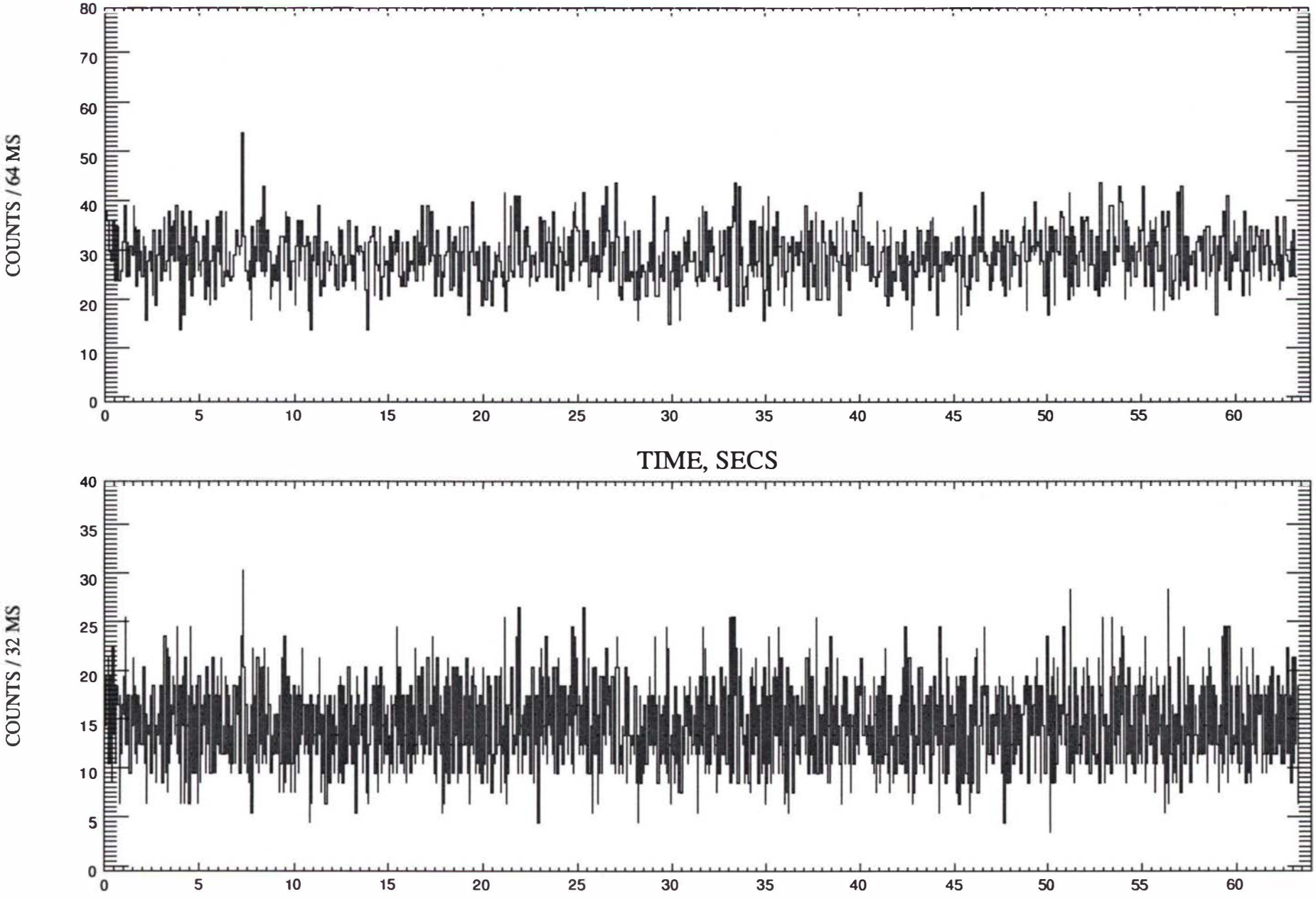
Burst Counter 11 at UT= 0.029147131178 h= 104.930 s 00:01:44.930



B# 1

HUS 2A TRIGGERED DATA EDR day 38, year 1994 5/26/94

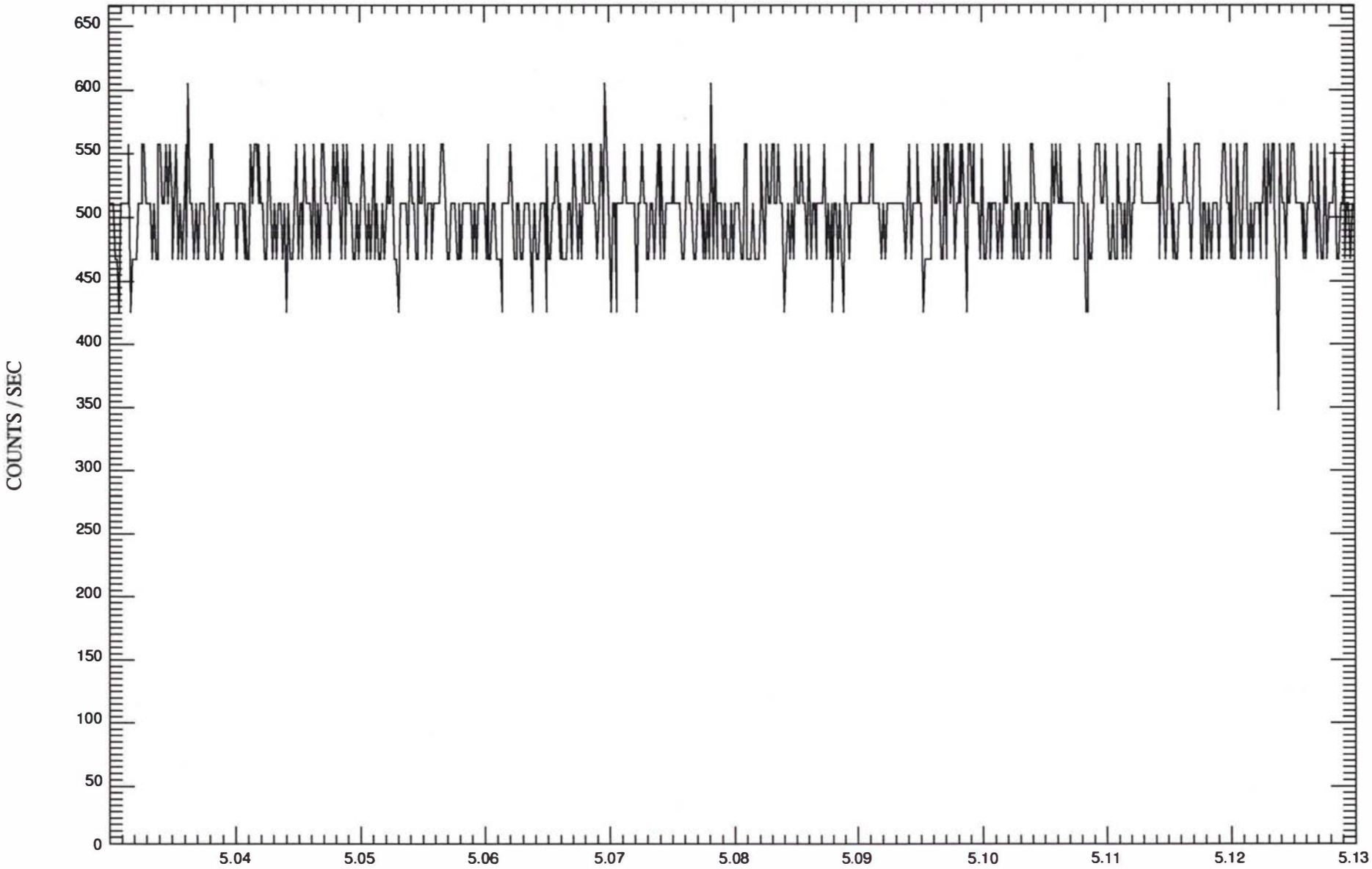
Burst Counter 12 at UT= 5.078360481262 h=18282.098 s 05:04:42.098



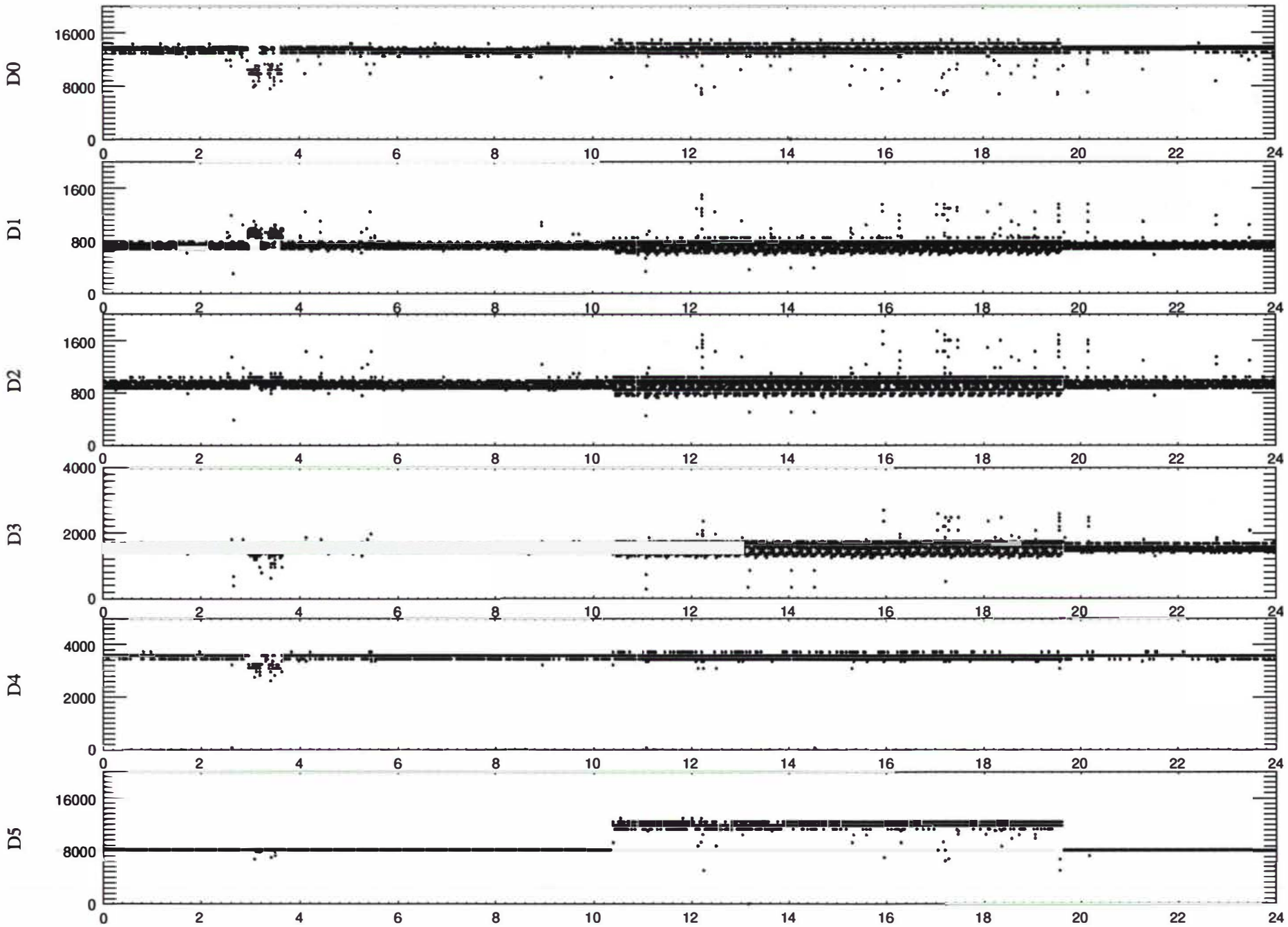
B# 2

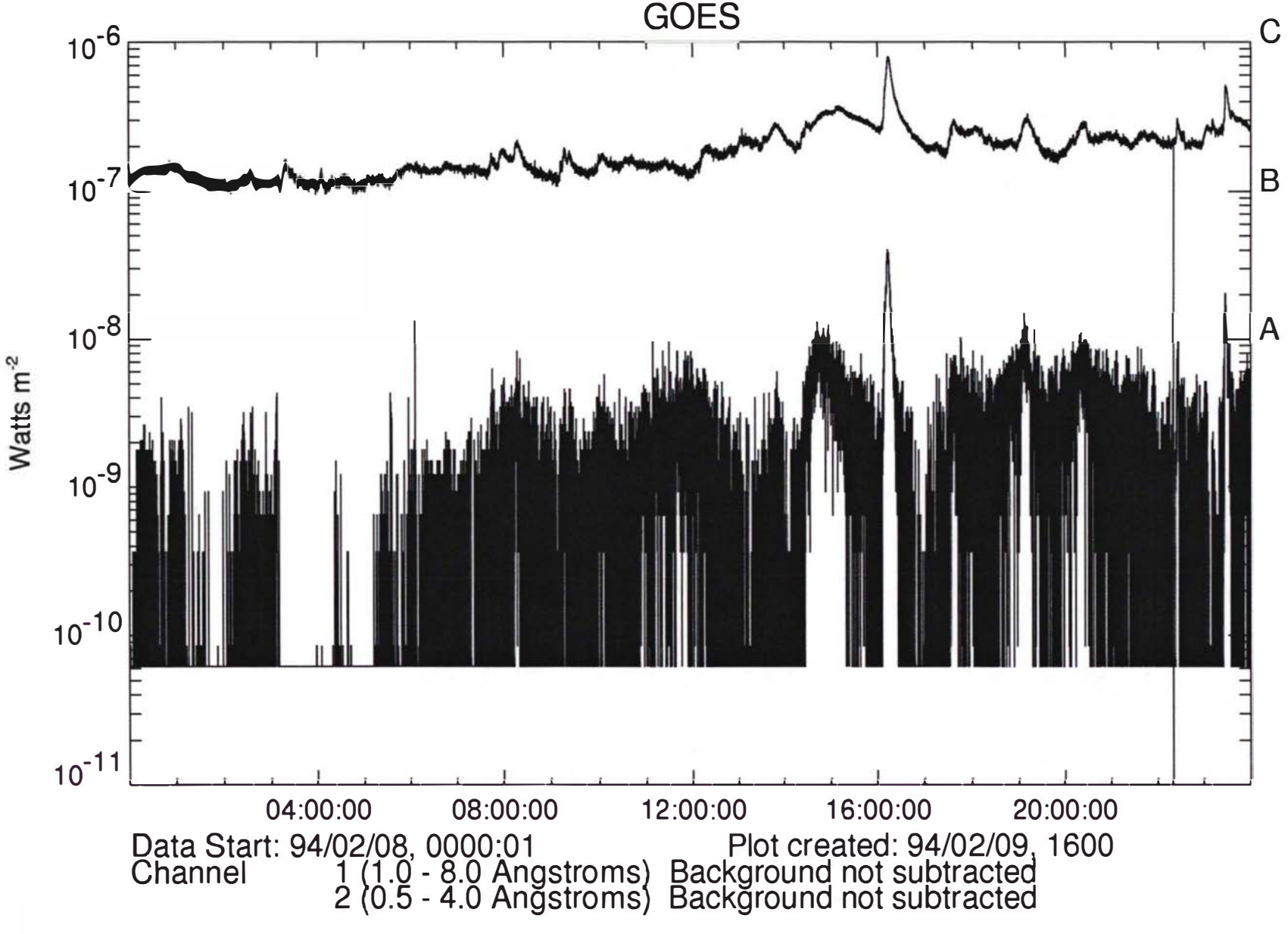
HUS 2A, MODE 1, NOT AVERAGED QEDR day 38, year 1994 to day 39, year 1994 2/10/94

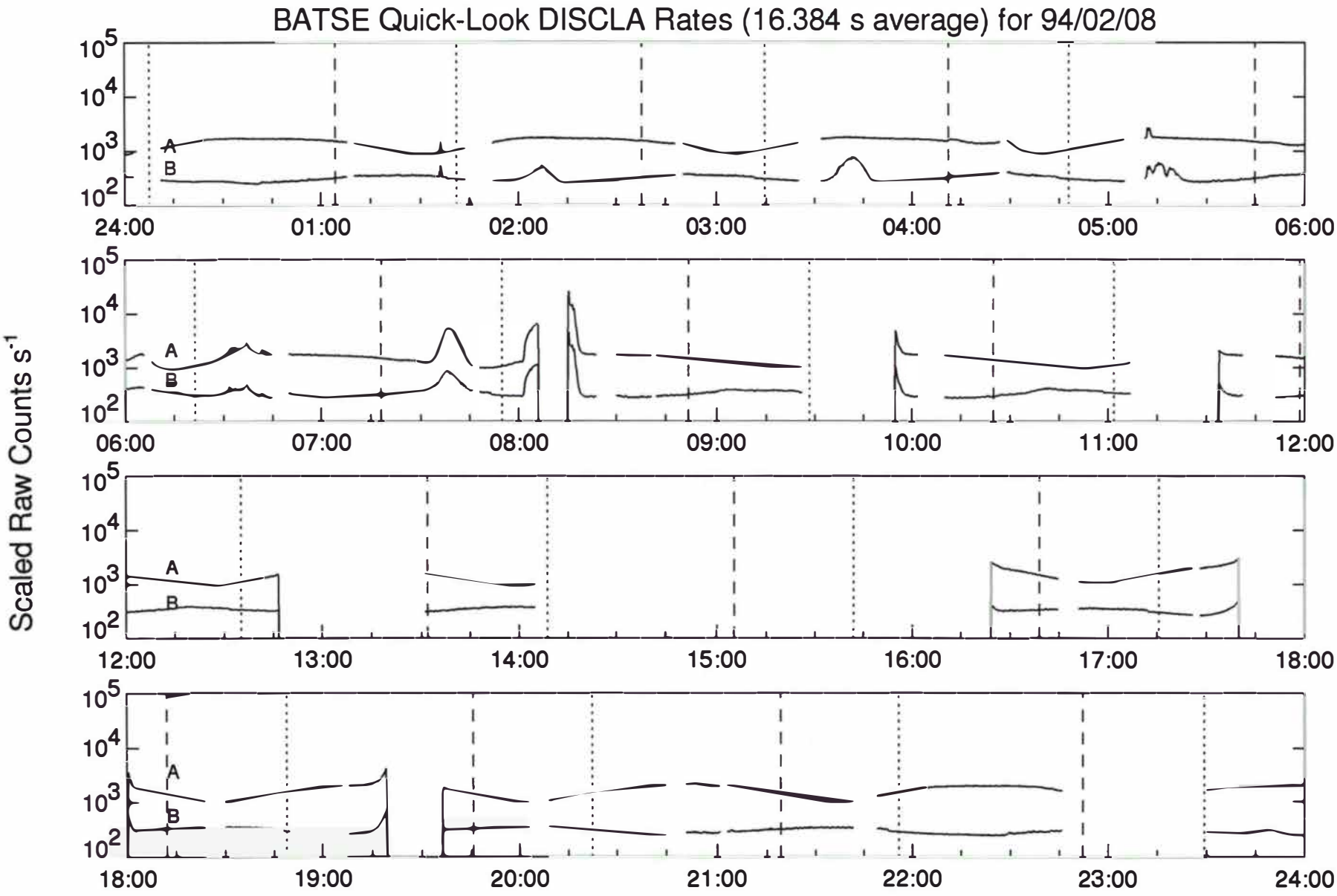
CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 38, year 1994 to day 38, year 1994 2/10/94

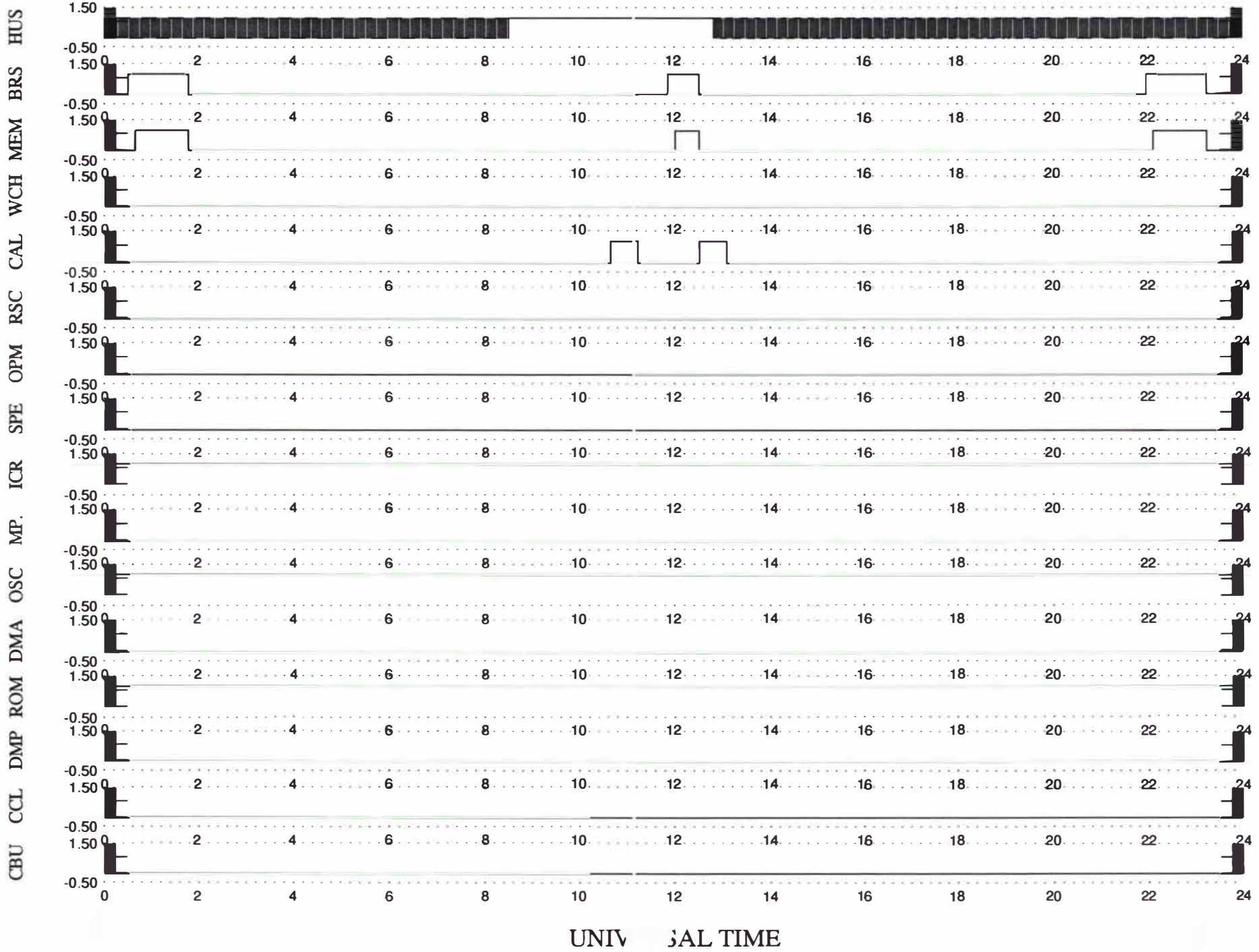



GOES
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/08, 0000:01
Plot created: 94/02/09, 1600
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/08
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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: 94/02/15, 1313 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

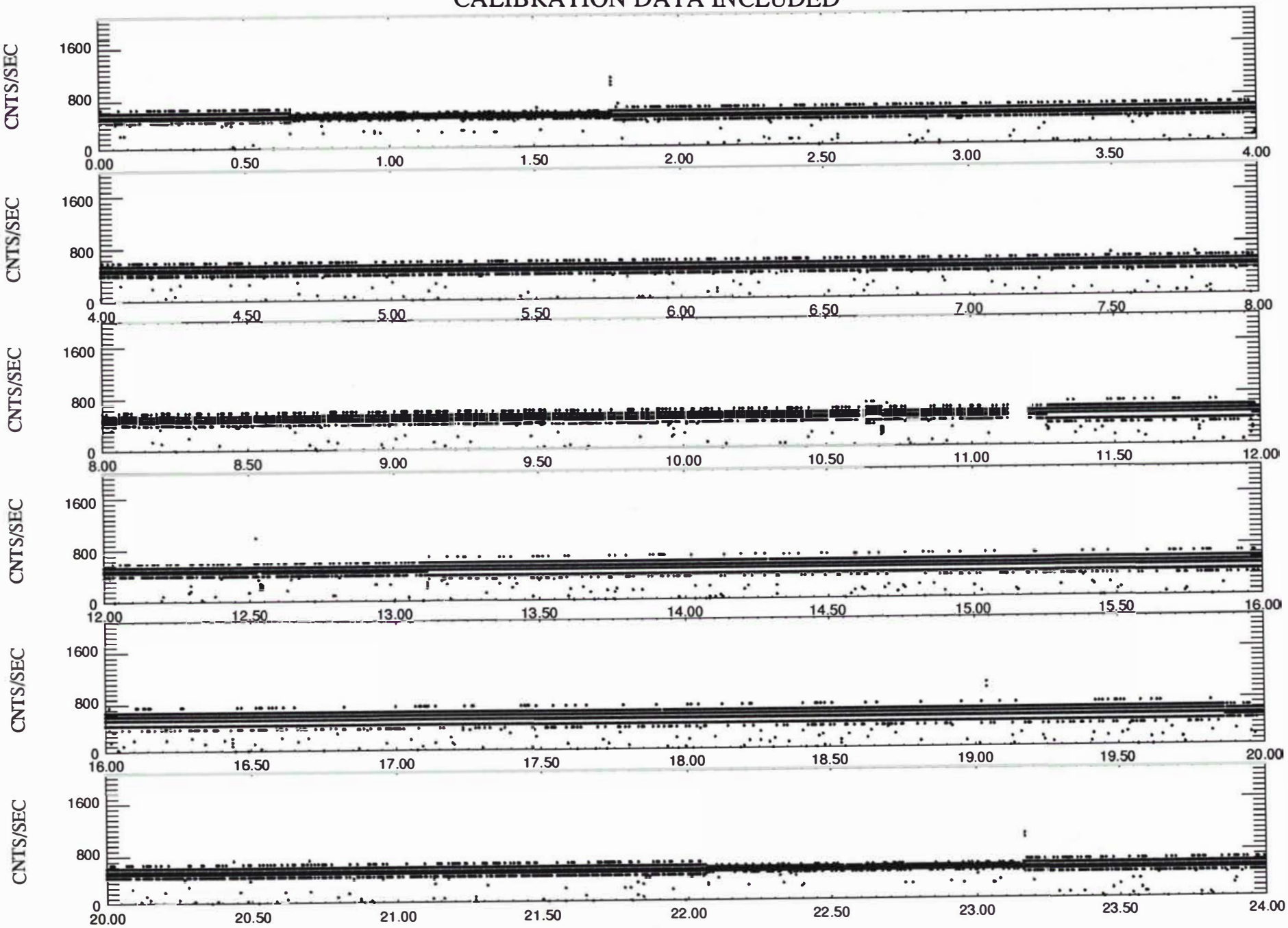
HUS MODES EDR day 39, year 1994 to day 39, year 1994 5/26/94

BURST NUMBER 13 - 15



HUS 2A, MODE 1, NOT AVERAGED EDR day 39, year 1994 to day 39, year 1994 5/26/94

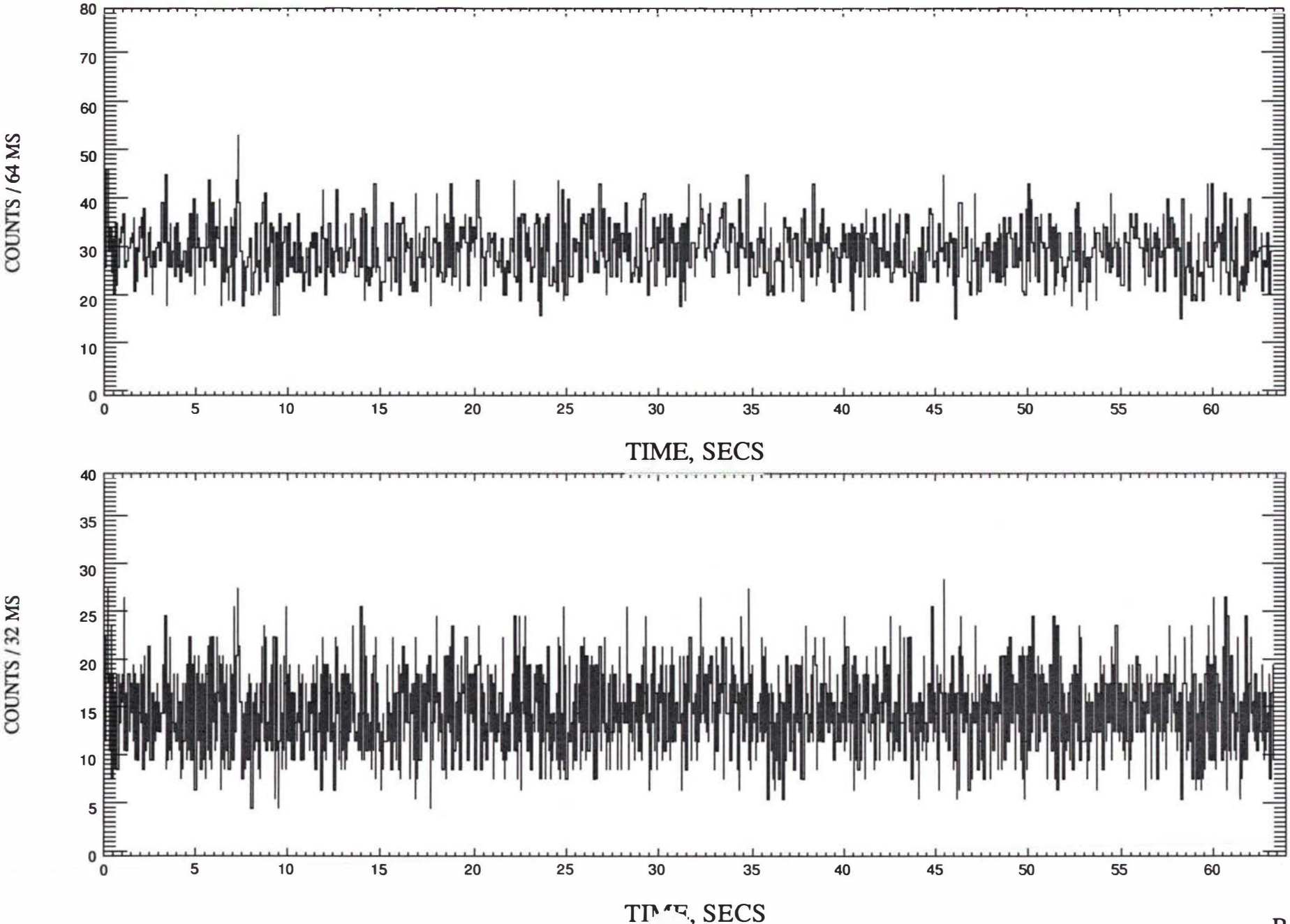
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 39, year 1994 5/26/94

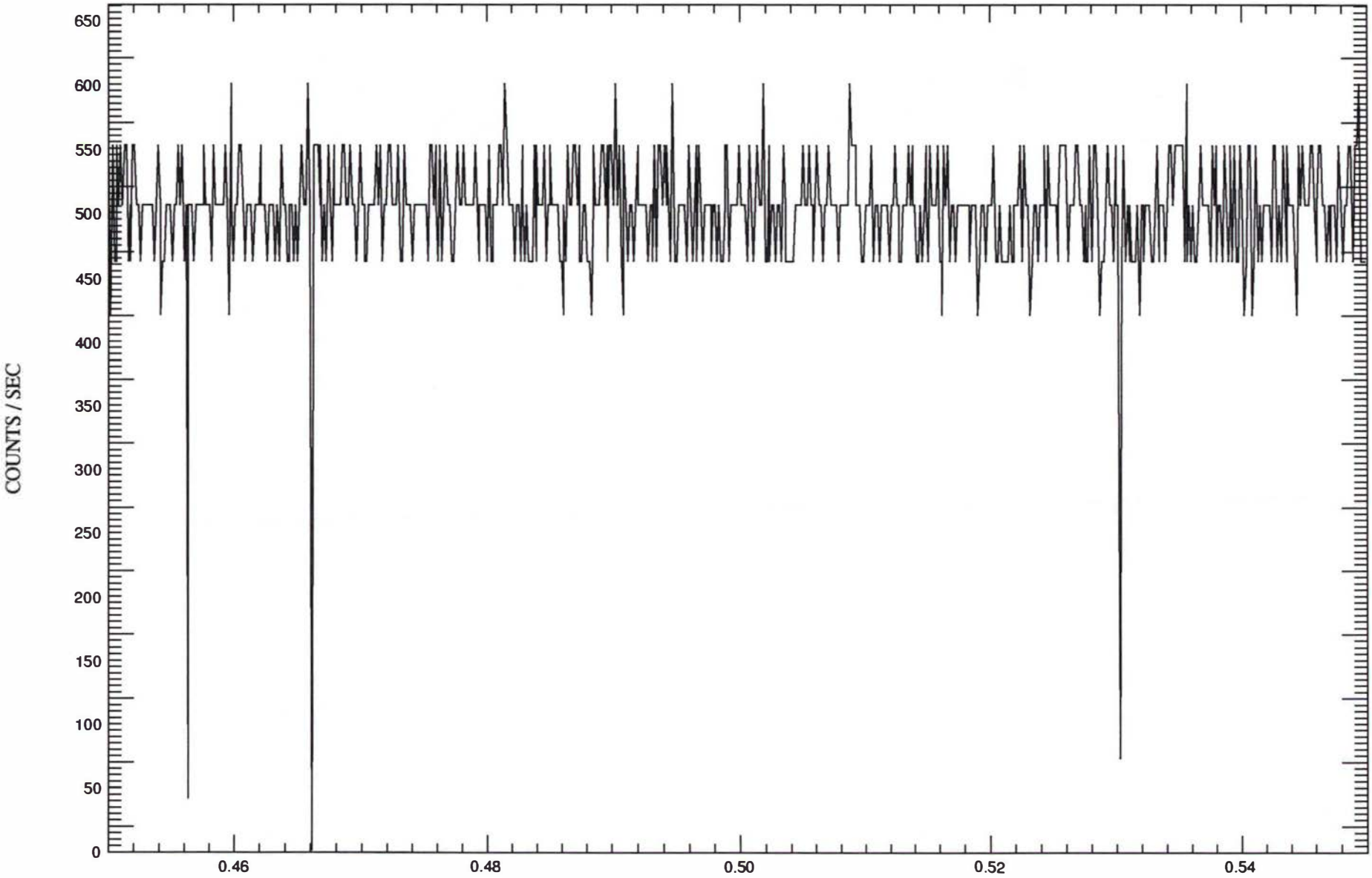
Burst Counter 13 at UT= 0.501954612732 h= 1807.037 s 00:30:07.037



B# 1

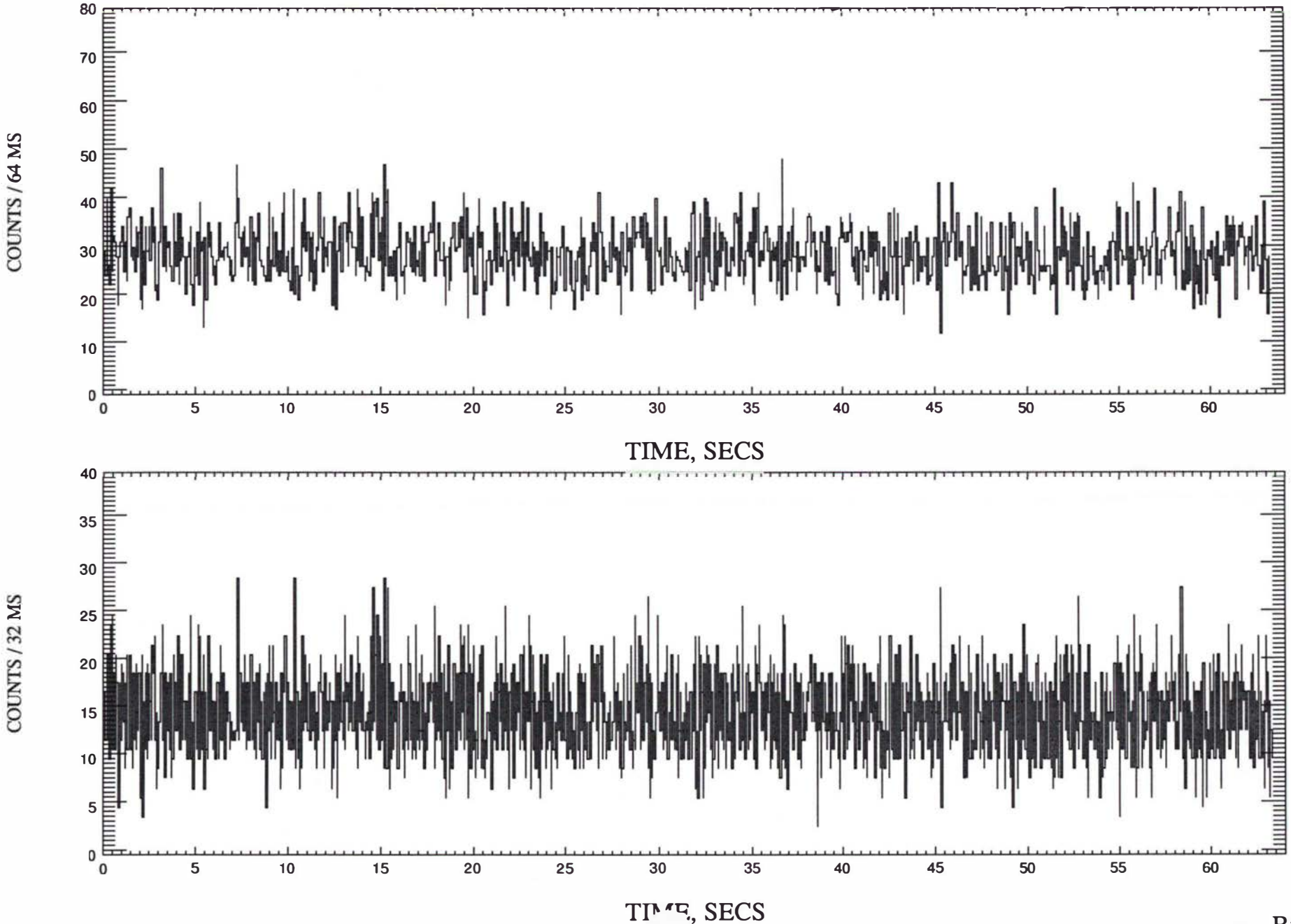
HUS 2A, MODE 1, NOT AVERAGED QEDR day 39, year 1994 to day 40, year 1994 2/10/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 39, year 1994 5/26/94

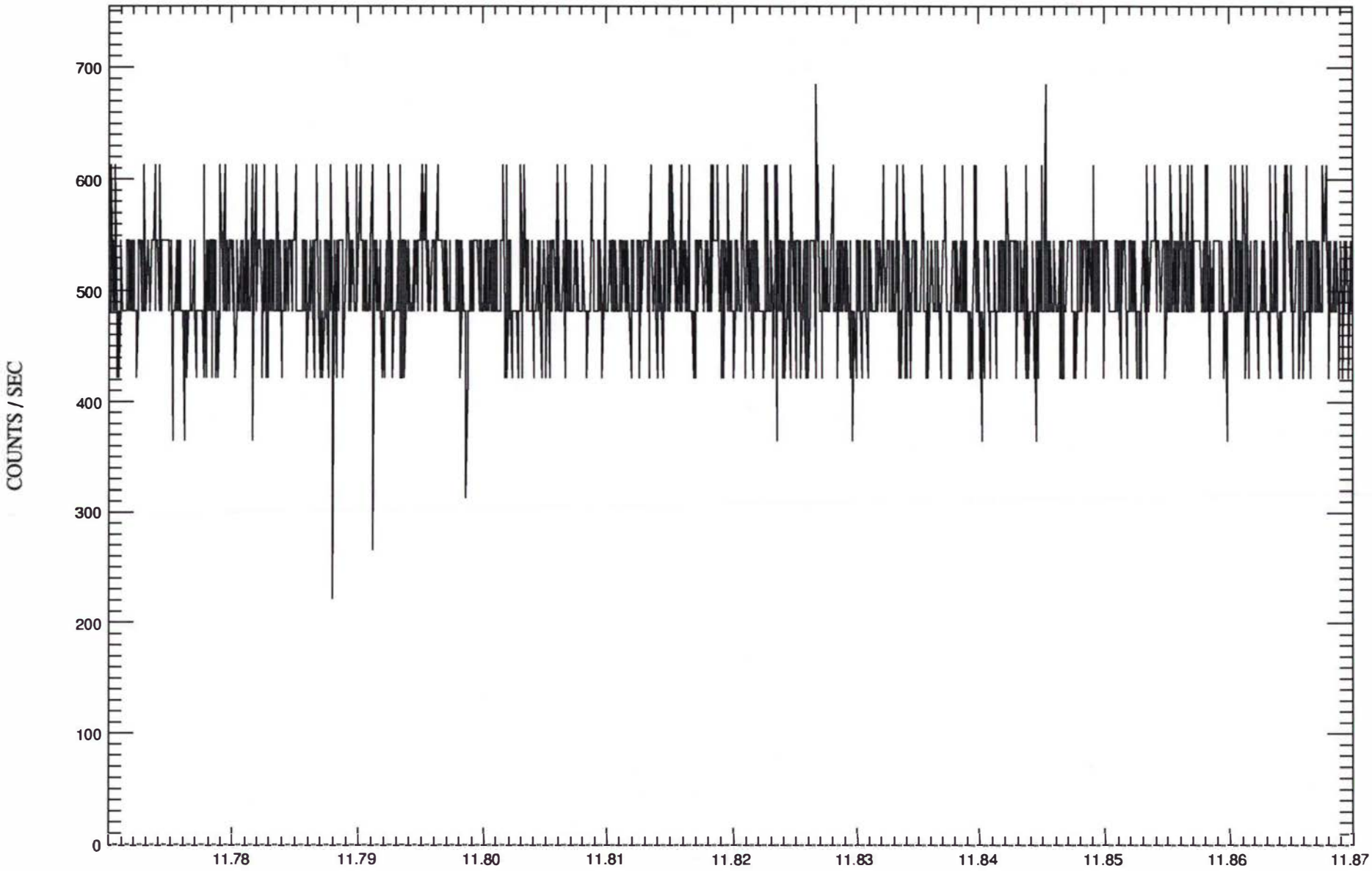
Burst Counter 14 at UT=11.824843122694 h=42569.435 s 11:49:29.435



B# 2

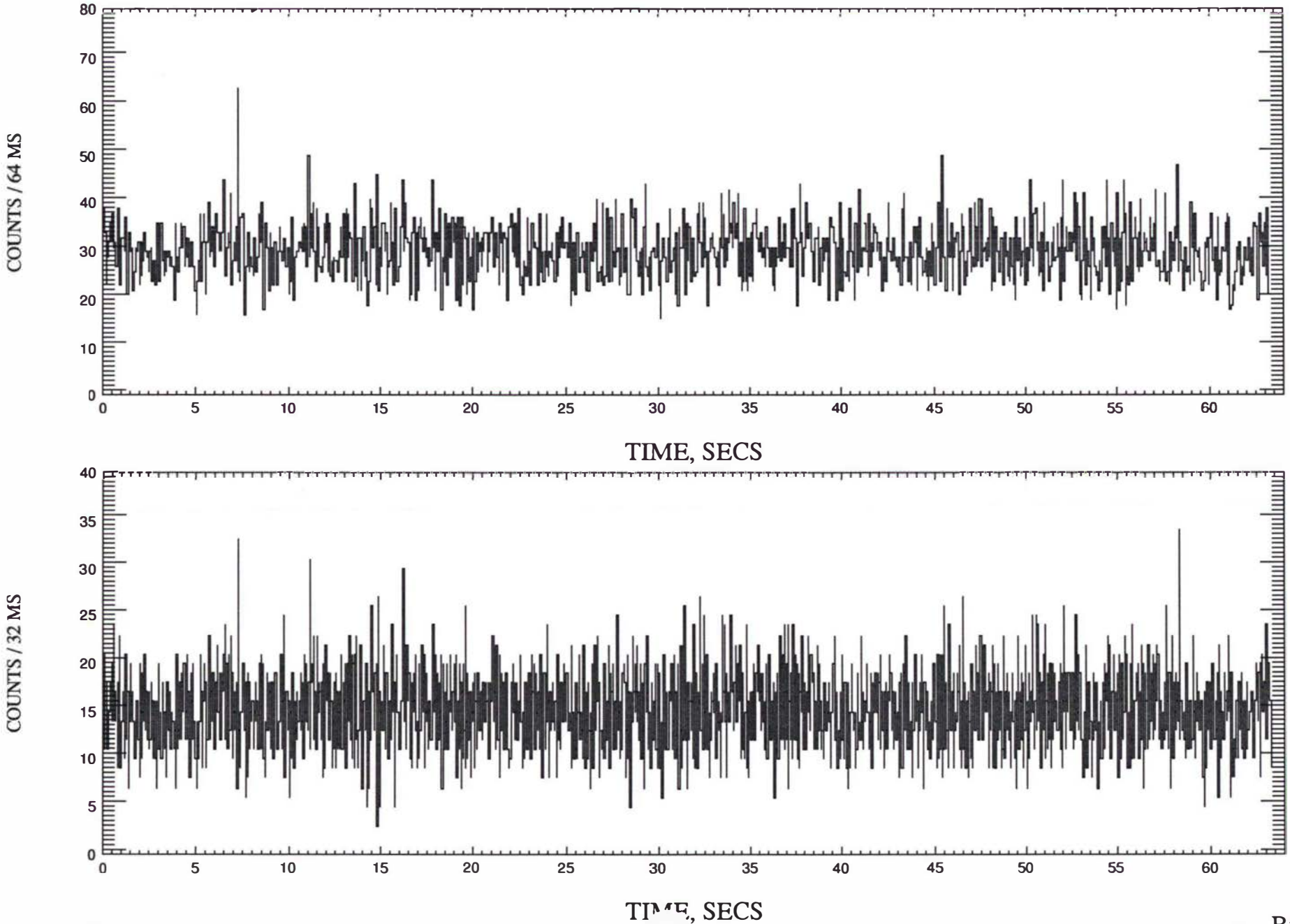
HUS 2A, MODE 1, NOT AVERAGED QEDR day 39, year 1994 to day 40, year 1994 2/10/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 39, year 1994 5/26/94

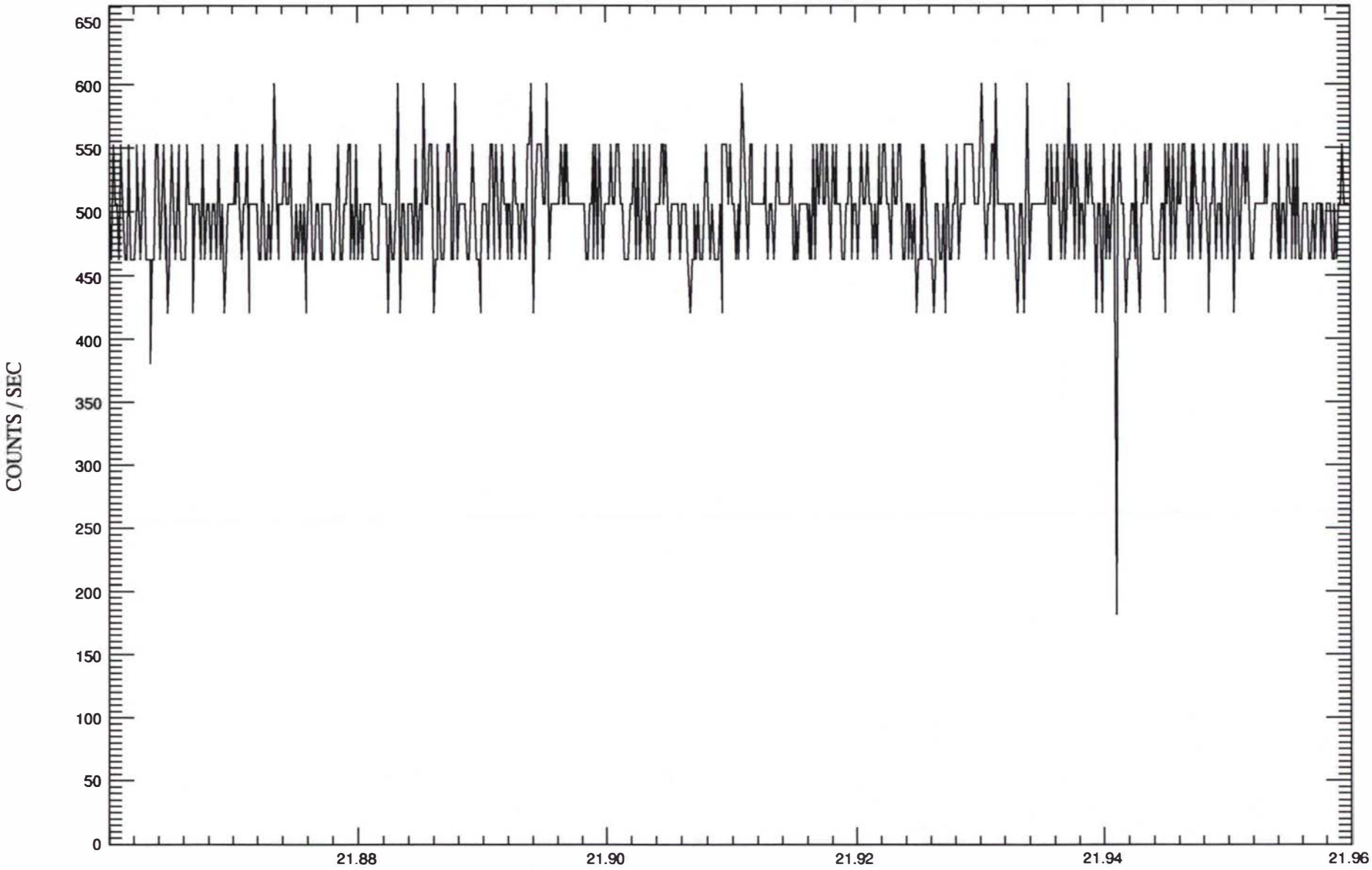
Burst Counter 15 at UT=21.910028953552 h=78876.104 s 21:54:36.104



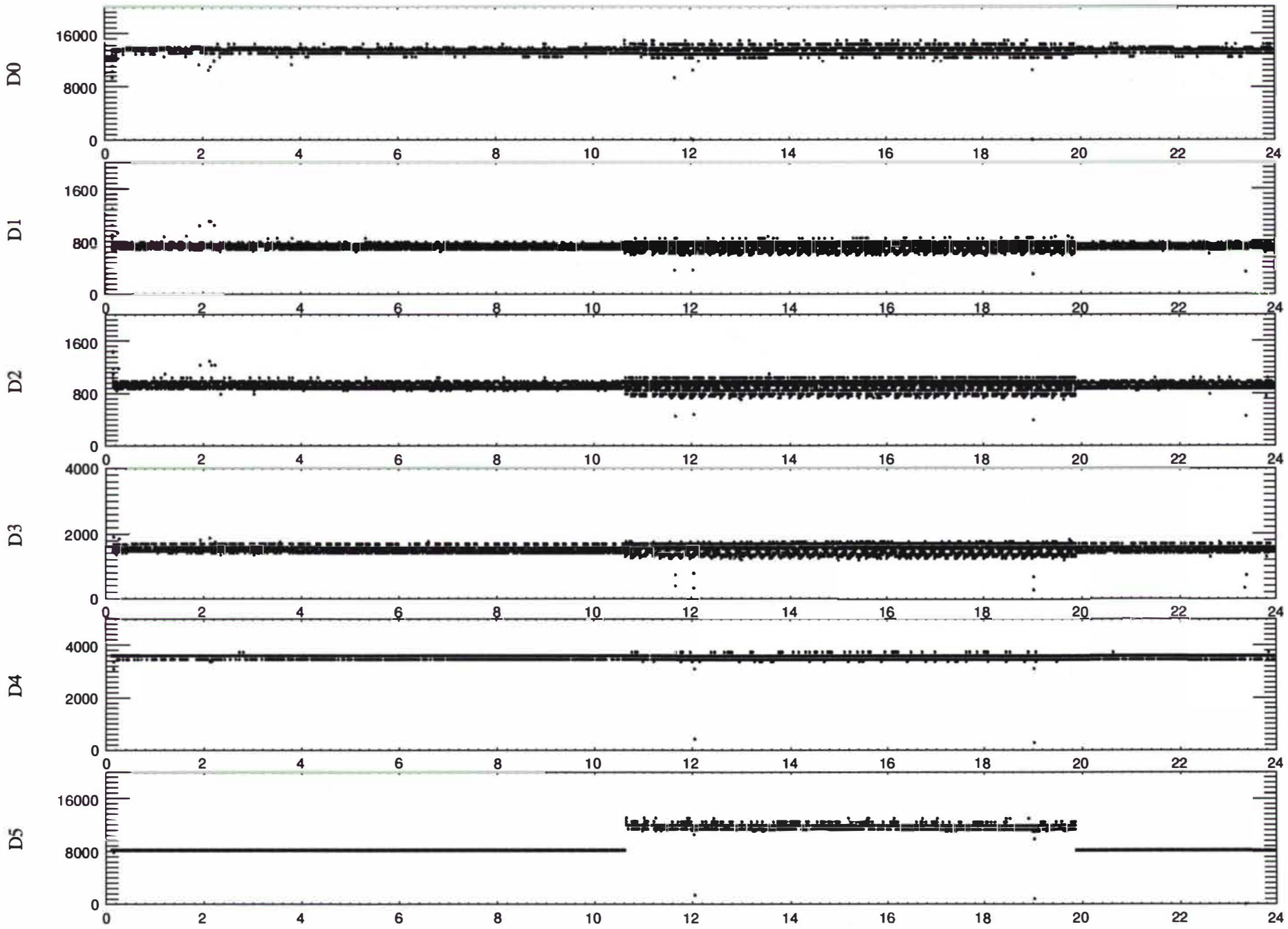
B# 3

HUS 2A, MODE 1, NOT AVERAGED QEDR day 39, year 1994 to day 40, year 1994 2/10/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 39, year 1994 to day 39, year 1994 2/10/94



BATSE BURST TRIGGER

NO.: 02807

TIME: TJD=9392 SECONDS=05282

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

BATSE BURST TRIGGER

NO.: 02808

TIME: TJD=9392 SECONDS=22876

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 88. AZIMUTH=212. ERROR= DEGREES

COMMENTS:
REVISED MESSAGE FOR THIS EVENT. VERY LITTLE DATA AVAILABLE, BUT THIS IS DEFINITELY A TERRESTRIAL EVENT. VERY HARD SPECTRUM, ABOUT 1 MS LONG, AND COMING FROM 25 DEGREES BELOW EARTH HORIZON.

BATSE BURST TRIGGER

NO.: 02809

TIME: TJD=9392 SECONDS=26511

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

From DEAL@fender.msfc.nasa.gov Fri Feb 11 09:29 PST 1994
Date: Fri, 11 Feb 1994 11:31:39 -0600 (CST)
From: DEAL@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2810
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2810
EVENT OF 1994 FEB 9 DAY OF YEAR= 40
EVENT CROSSING TIME AT BATSE : 72001. S. OR 20:00:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 355.000 81.000
BATSE PEAK COUNTING RATE: 3480 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 2/ 94 IS:
RA= 152.573 DEC= -50.735 DIST= 3.114 AU
BATSE-ULYSSES DISTANCE = 465900673. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 31.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1330.62 SECS.
CROSSING TIME AT ULYSSES IS 73332. S. OR 20:22:11 +/- 209.60 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 2/ 94 IS:
RA= 311.958 DEC= -18.956 DIST= 2.359 AU
MARS-BATSE DISTANCE = 352915232. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 250.41 SECS.
CROSSING TIME AT MARS IS 72251. S. OR 20:04:11 +/- 203.51 SECONDS

KJo

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2810	940209	9392	72001	3480	355	+81

BATSE BURST TRIGGER
NO.: 02810

TIME: TJD=9392 SECONDS=72001

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=085.8 AZIMUTH=319.5 ERROR= DEGREES

COMMENTS:
BURST. SINGLE PULSE WITH SOME SUBSTRUCTURE. DUR APPROX. 4S. NOT VISIBLE ABOVE 30
0 KEV.

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

 ATSE BURST # 2810
EVENT OF 1994 FEB  9 DAY OF YEAR= 40
EVENT CROSSING TIME AT BATSE      : 72002. S. OR 20:00:01.6
COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION:   3.600   -5.100
BATSE PEAK COUNTING RATE:  0000   C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
POSITION OF ULYSSES ON  9/ 2/  94 IS:
RA=  152.987 DEC=  -50.611 DIST=    3.123 AU
BATSE-ULYSSES DISTANCE =  467211272. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL    DIRECTION= 61.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=  740.69 SECS.
CROSSING TIME AT ULYSSES    IS 72742. S. OR 20:12:22.3 +/-  299.31 SECONDS
```

BATSE BURST# 2810

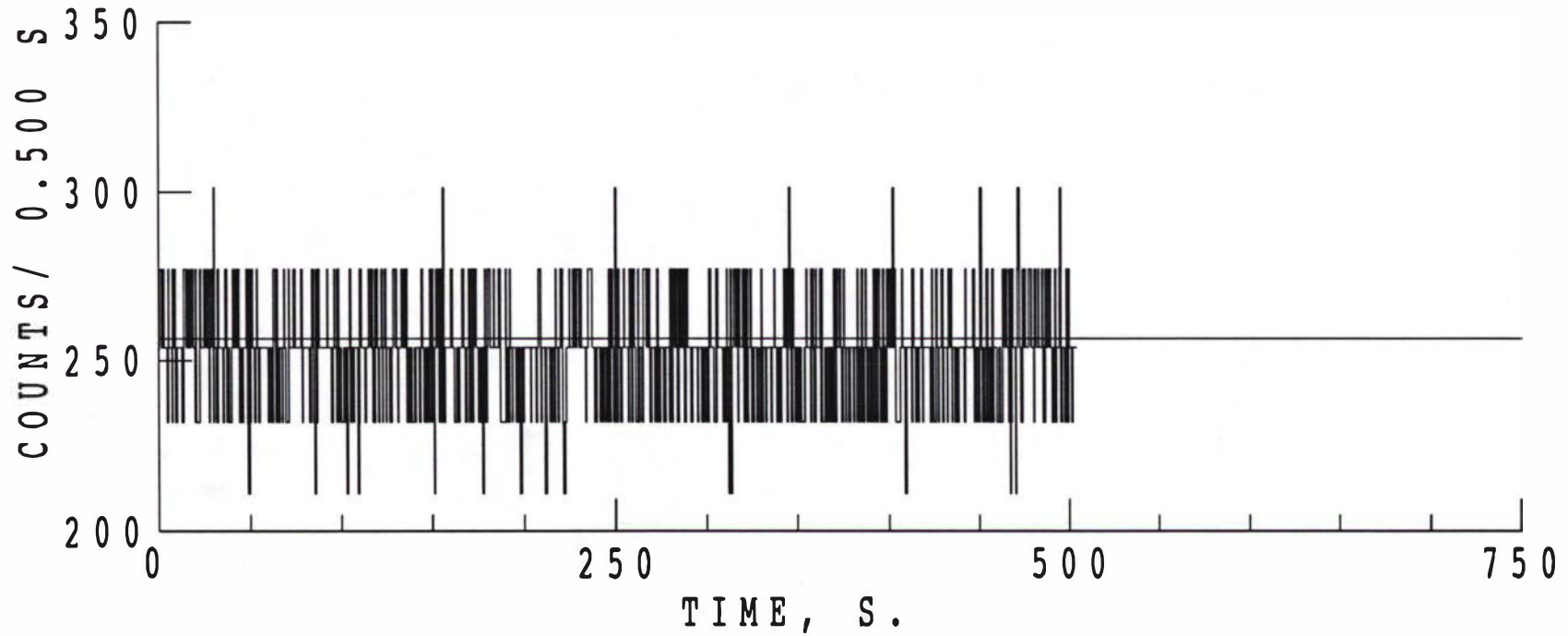
ULYSSES RT 4/ 5/98

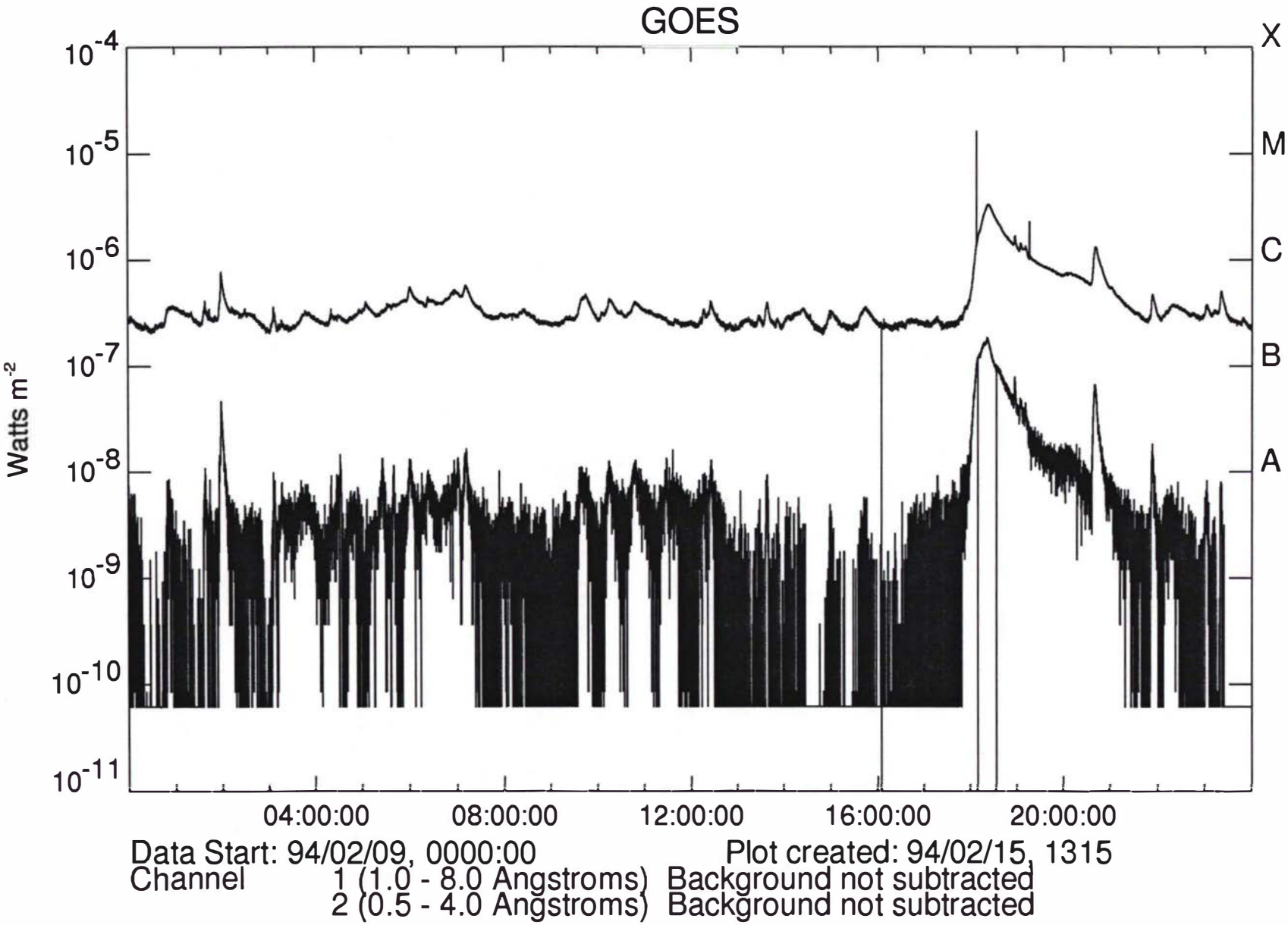
9/ 2/94 72864.242 s

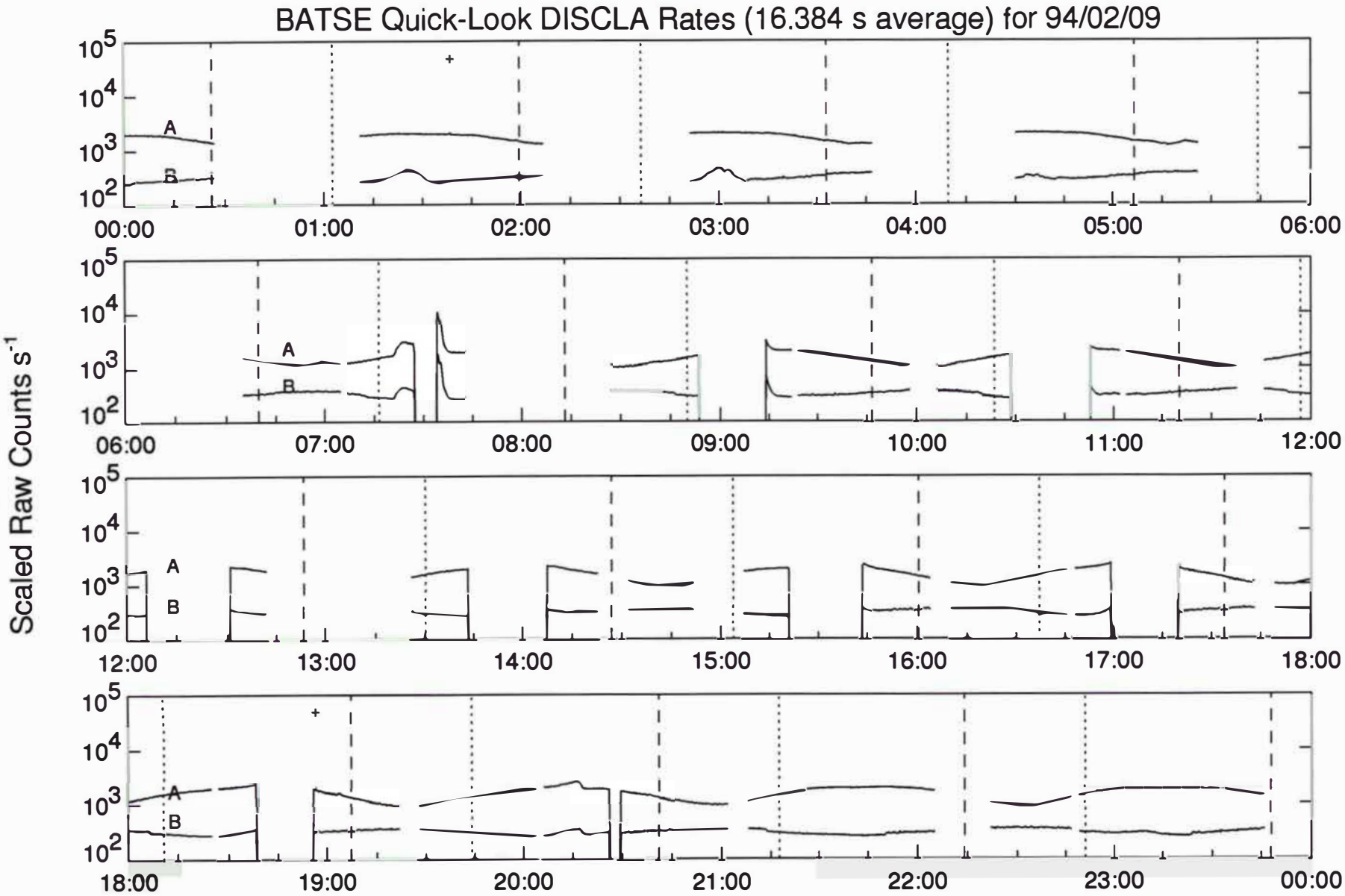
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

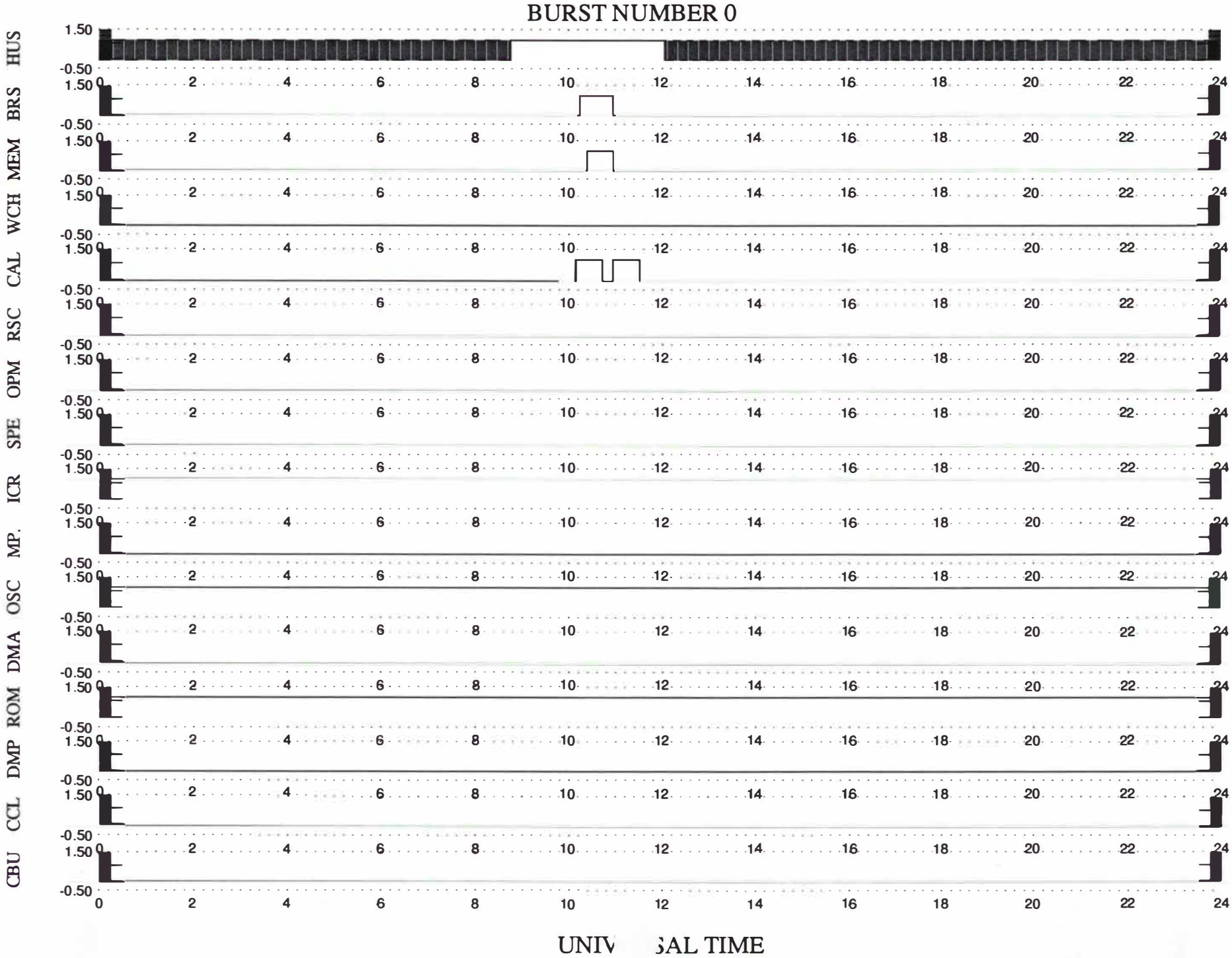
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




GOES
X
M
C
B
A
Watts m-2
10-4
10-5
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/09, 0000:00
Plot created: 94/02/15, 1315
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

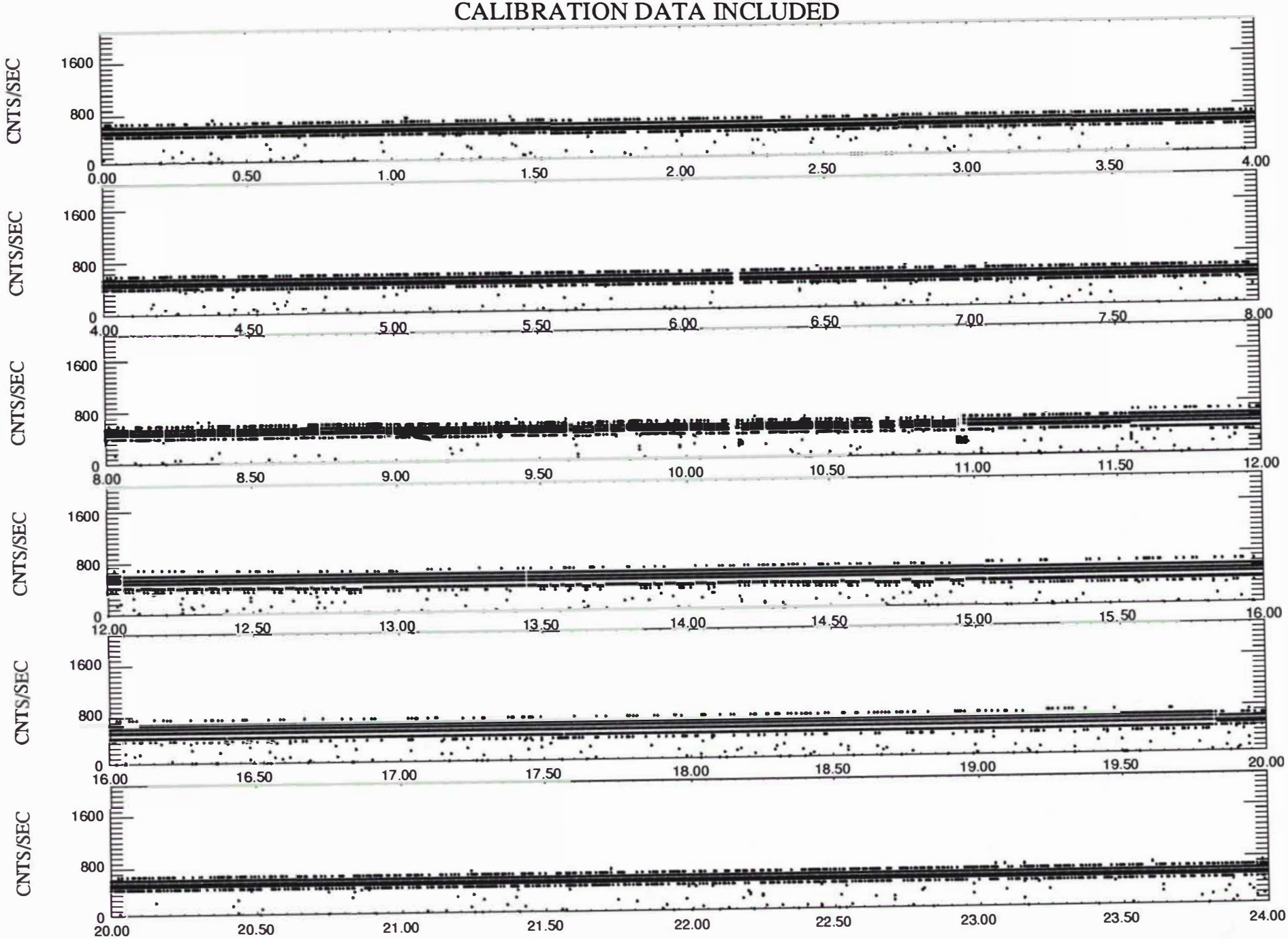

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/09
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/02/15, 1313 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 40, year 1994 to day 40, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 40, year 1994 to day 40, year 1994 5/26/94

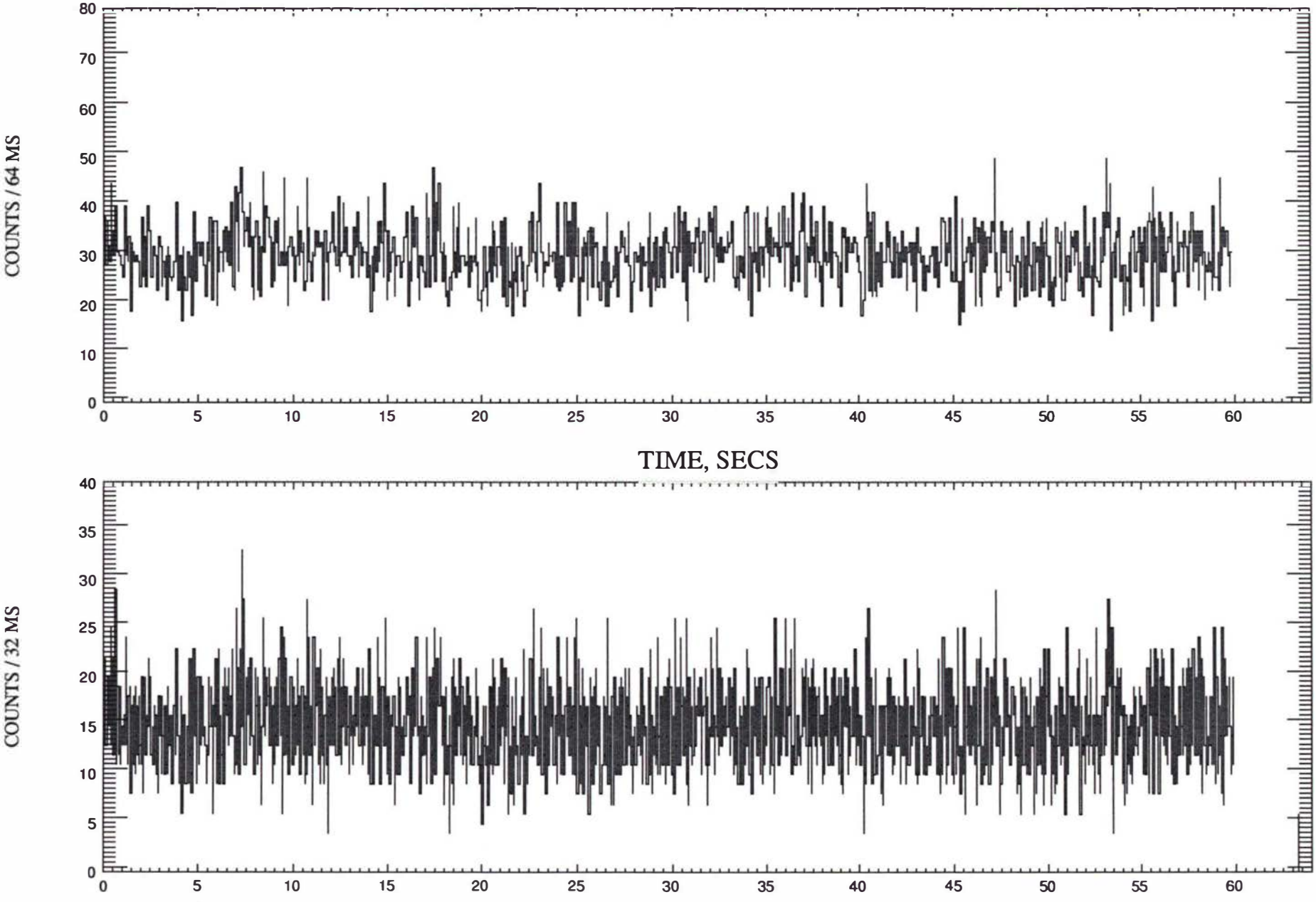
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 40, year 1994 5/26/94

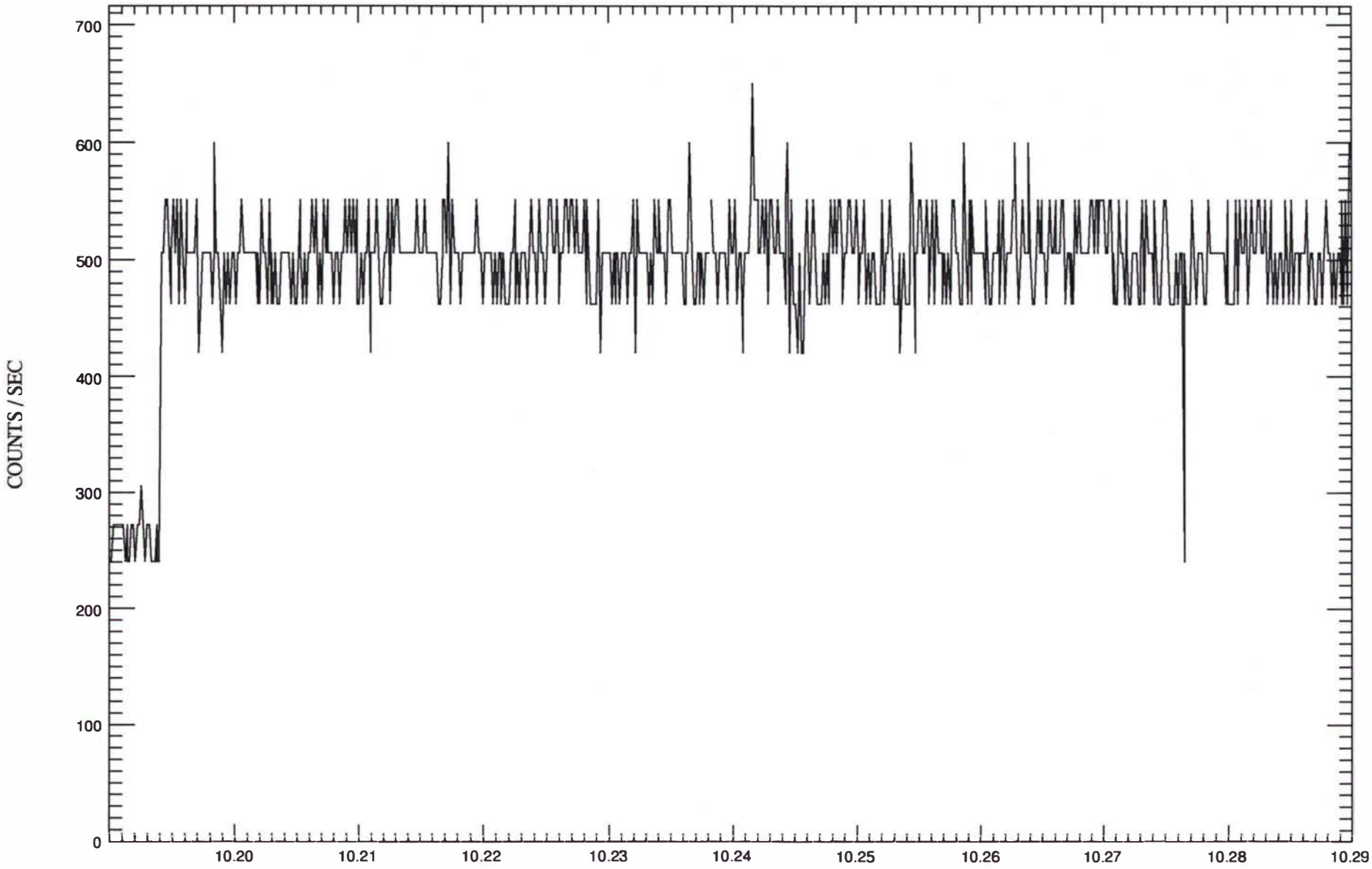
Burst Counter 0 at UT=10.241819674174 h=36870.551 s 10:14:30.551



B# 1

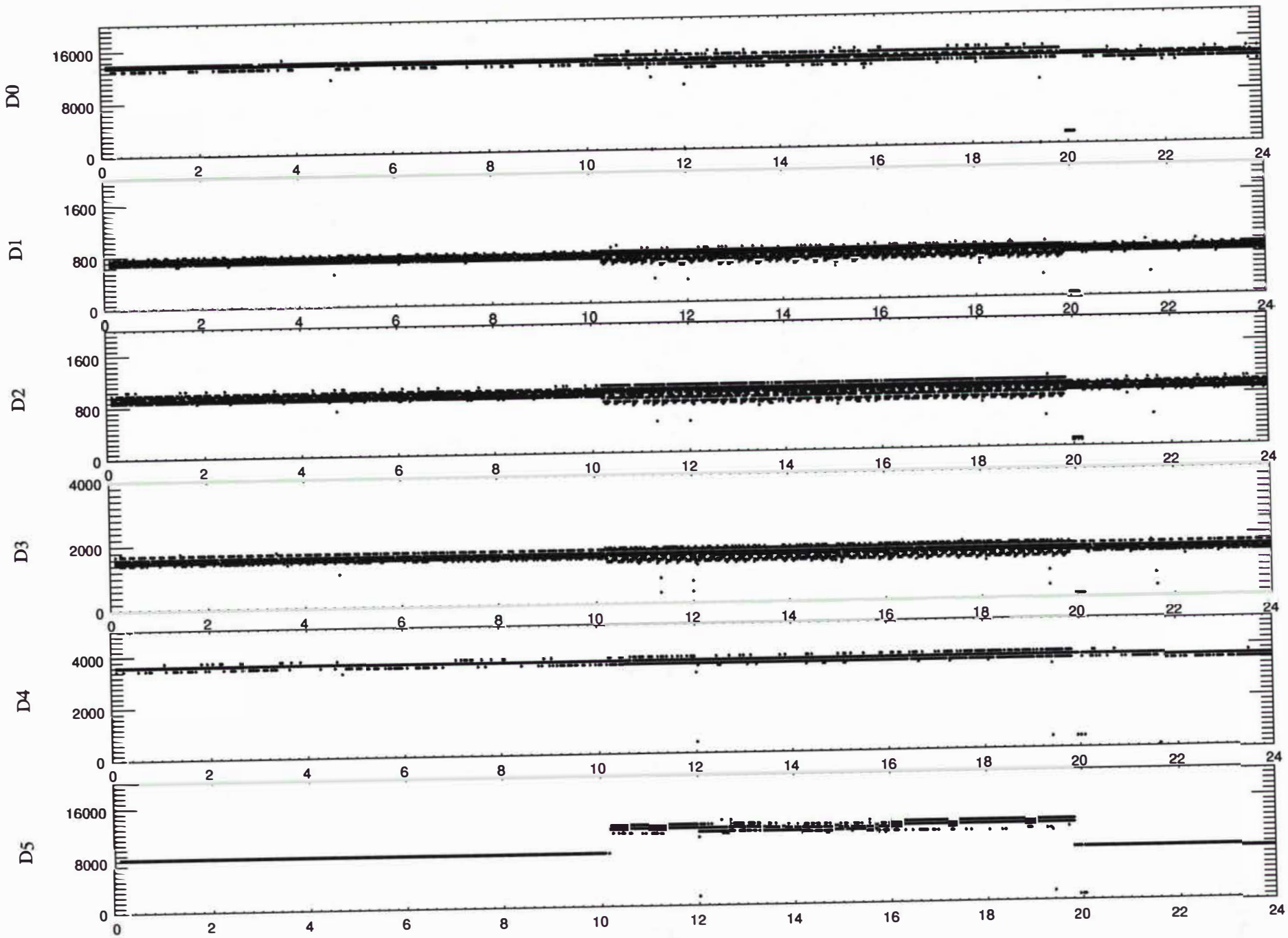
HUS 2A, MODE 1, NOT AVERAGED QEDR day 40, year 1994 to day 41, year 1994 2/10/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 40, year 1994 to day 40, year 1994

2/10/94



From SHARIFF@ssl.msfc.nasa.gov Fri Feb 11 09:44 PST 1994
Date: Fri, 11 Feb 1994 11:40:42 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02811

TIME: TJD=9393 SECONDS=02899

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PREC. EVENT.

From SHARIFF@fender.msfc.nasa.gov Fri Feb 11 09:42 PST 1994
Date: Fri, 11 Feb 1994 11:46:27 -0600 (CST)
From: SHARIFF@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2812
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2812
EVENT OF 1994 FEB 10 DAY OF YEAR= 41
EVENT CROSSING TIME AT BATSE : 69196. S. OR 19:13:16.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 157.000 82.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 2/ 94 IS:
RA= 152.086 DEC= -50.873 DIST= 3.104 AU
BATSE-ULYSSES DISTANCE = 464432816. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1054.52 SECS.
CROSSING TIME AT ULYSSES IS 70251. S. OR 19:30:50 +/- 263.05 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 2/ 94 IS:
RA= 312.756 DEC= -18.750 DIST= 2.357 AU
MARS-BATSE DISTANCE = 352640064. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 63.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 515.77 SECS.
CROSSING TIME AT MARS IS 69712. S. OR 19:21:51 +/- 191.37 SECONDS

TRIGGER

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2812	940210	9393	69196	30000	157	+82

BATSE BURST TRIGGER

NO.: 02812

TIME: TJD=9393 SECONDS=69196

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=061.4 AZIMUTH=228.7 ERROR= DEGREES

COMMENTS:
BURST, COMPLEX, LASTING ~ 38 SECONDS. VISIBLE ABOVE 300KEV.

Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

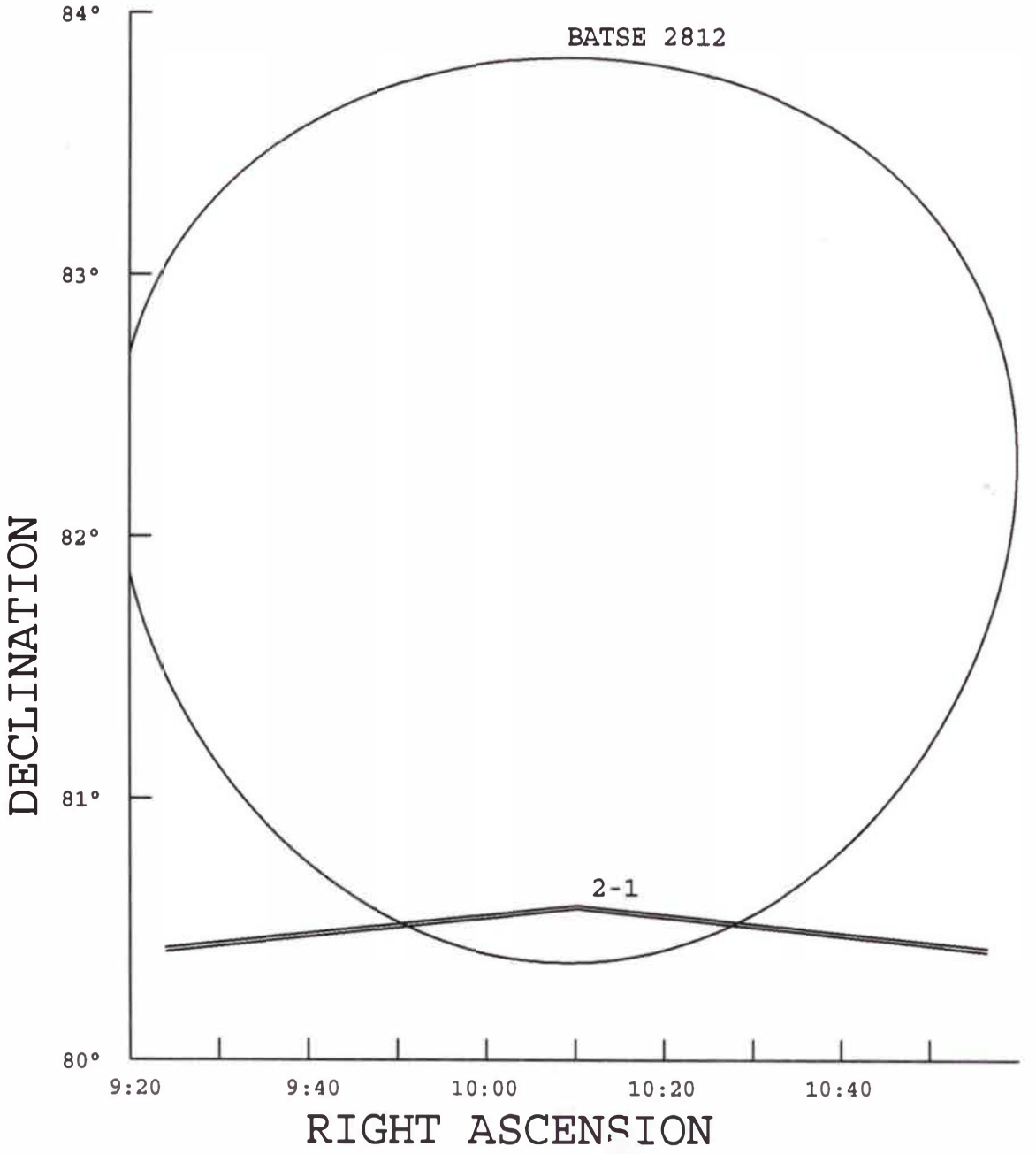
☐ Geocentric time used?

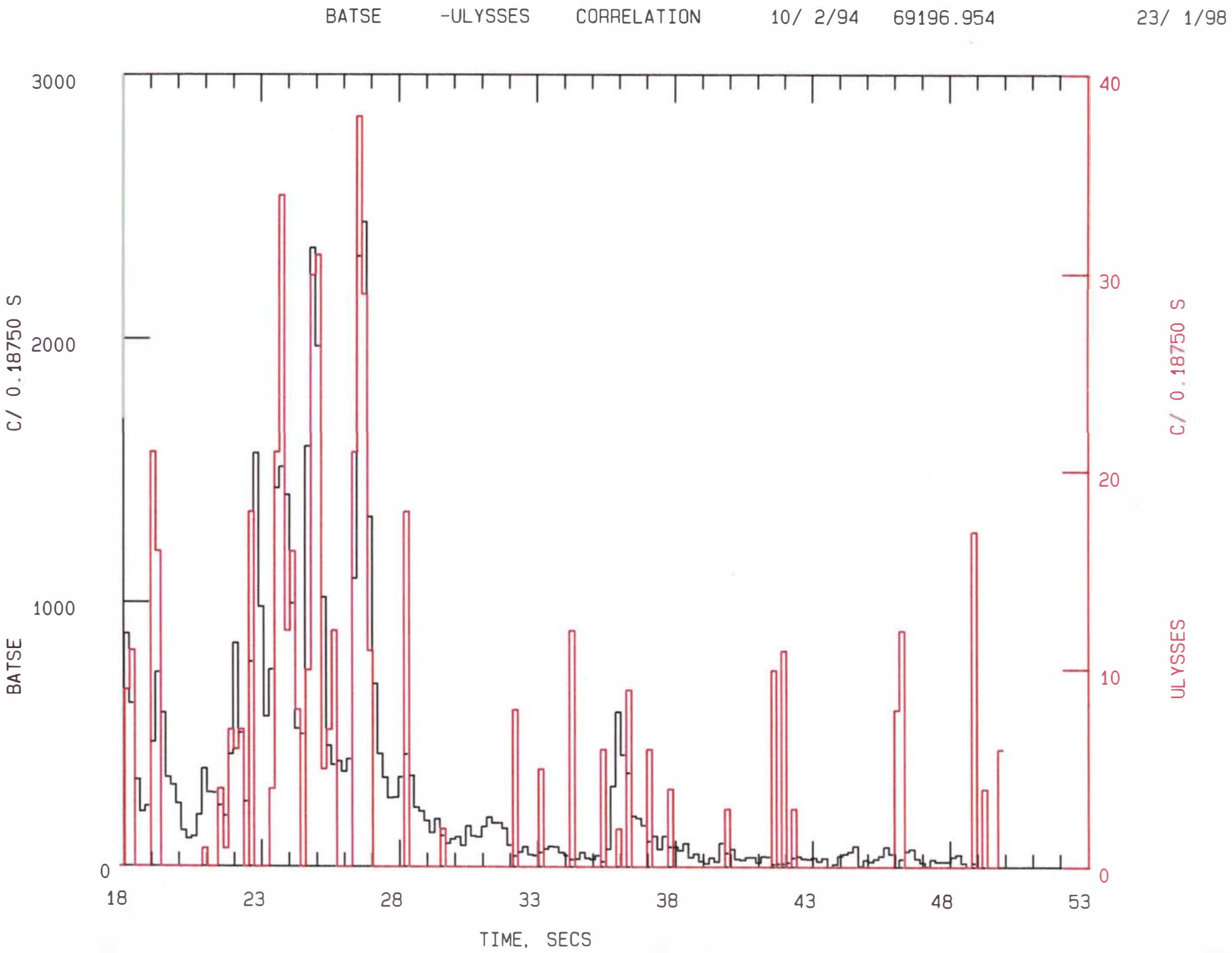
☑ ACCESS database updated?

EVENT OF FEB 10, 1994 19:30

23/ 1/98

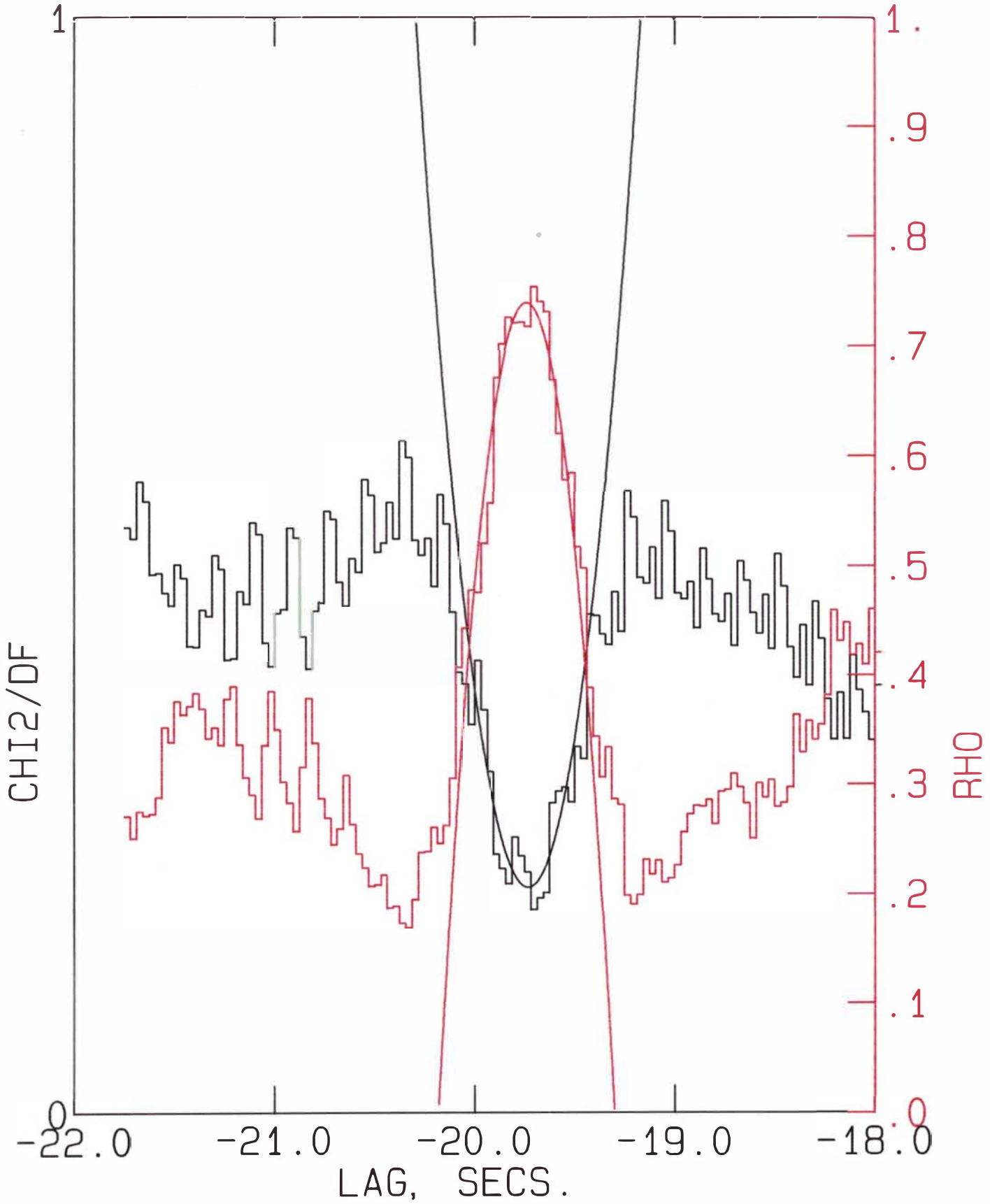
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

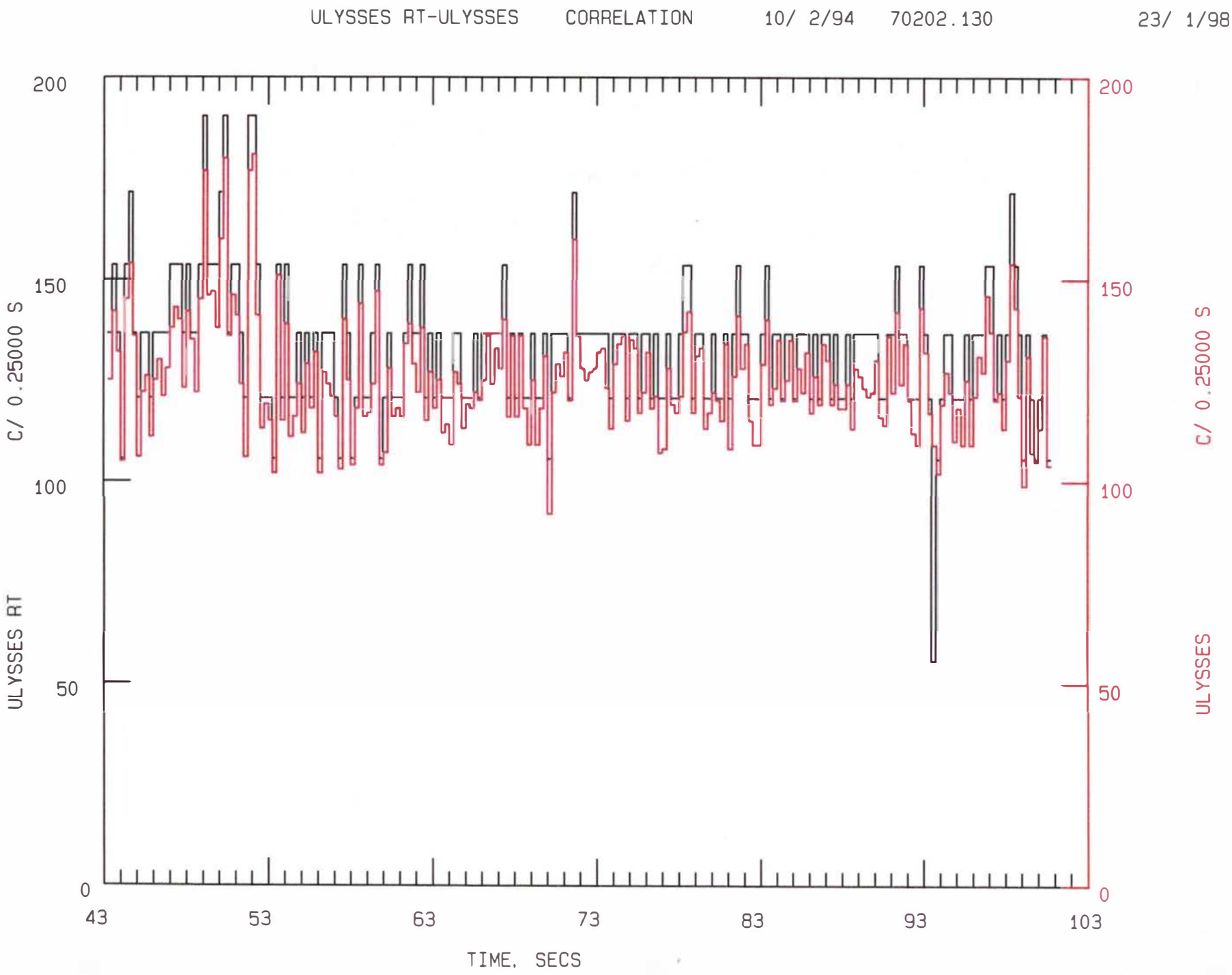



BATSE -ULYSSES CORRELATION 10/ 2/94 69196.954 23/ 1/98
3000
2000
1000
0
C/ 0.18750 S
BATSE
40
30
20
10
0
C/ 0.18750 S
ULYSSES
18
23
28
33
38
43
48
53
TIME, SECS

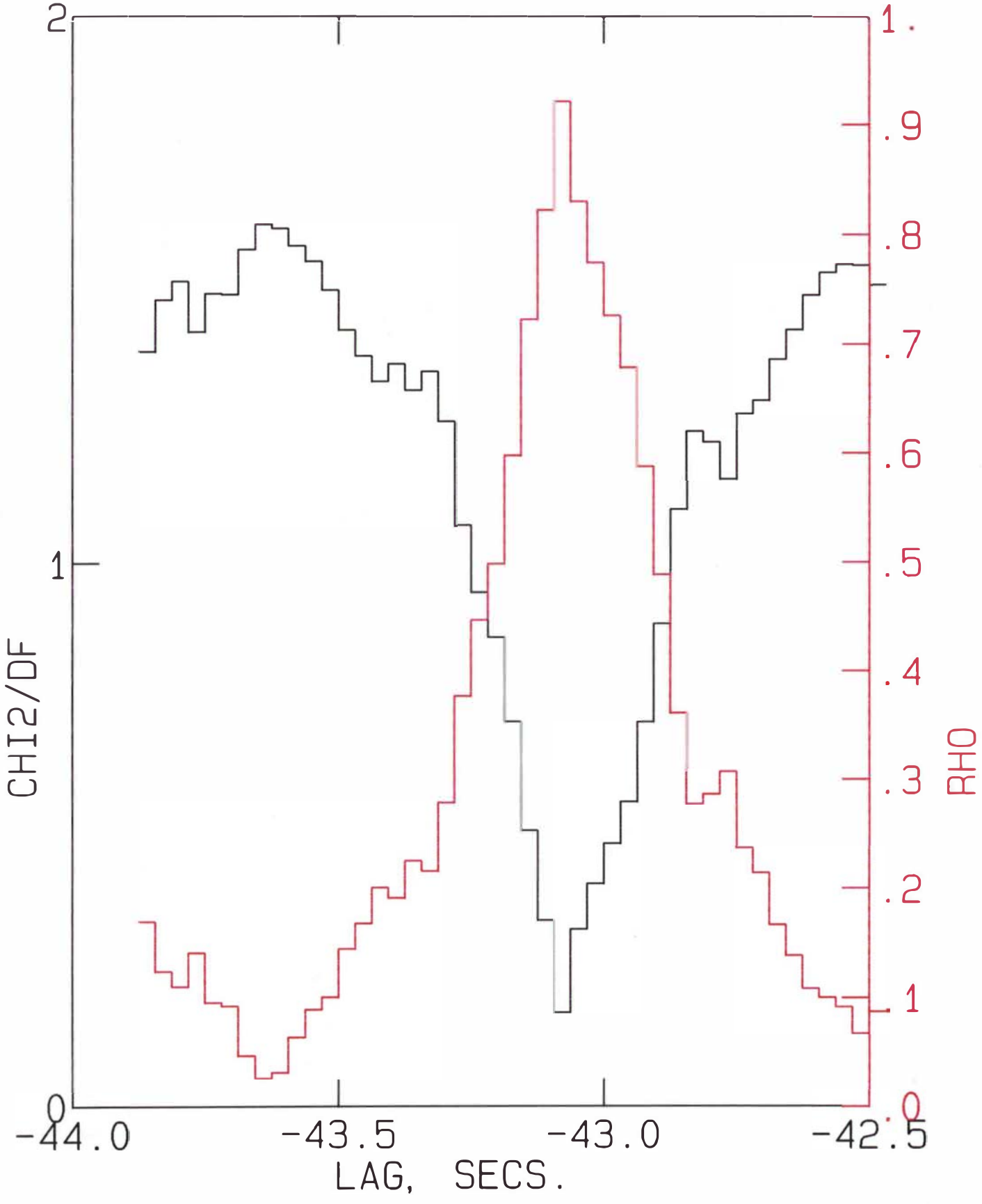
23/ 1/98

BATSE -ULYSSES CORRELATION 10/ 2/94 69196.954




ULYSSES RT-ULYSSES CORRELATION 10/ 2/94 70202.130 23/ 1/98
200
150
100
50
0
C/ 0.25000 S
ULYSSES RT
43
53
63
73
83
93
103
TIME, SECS
ULYSSES

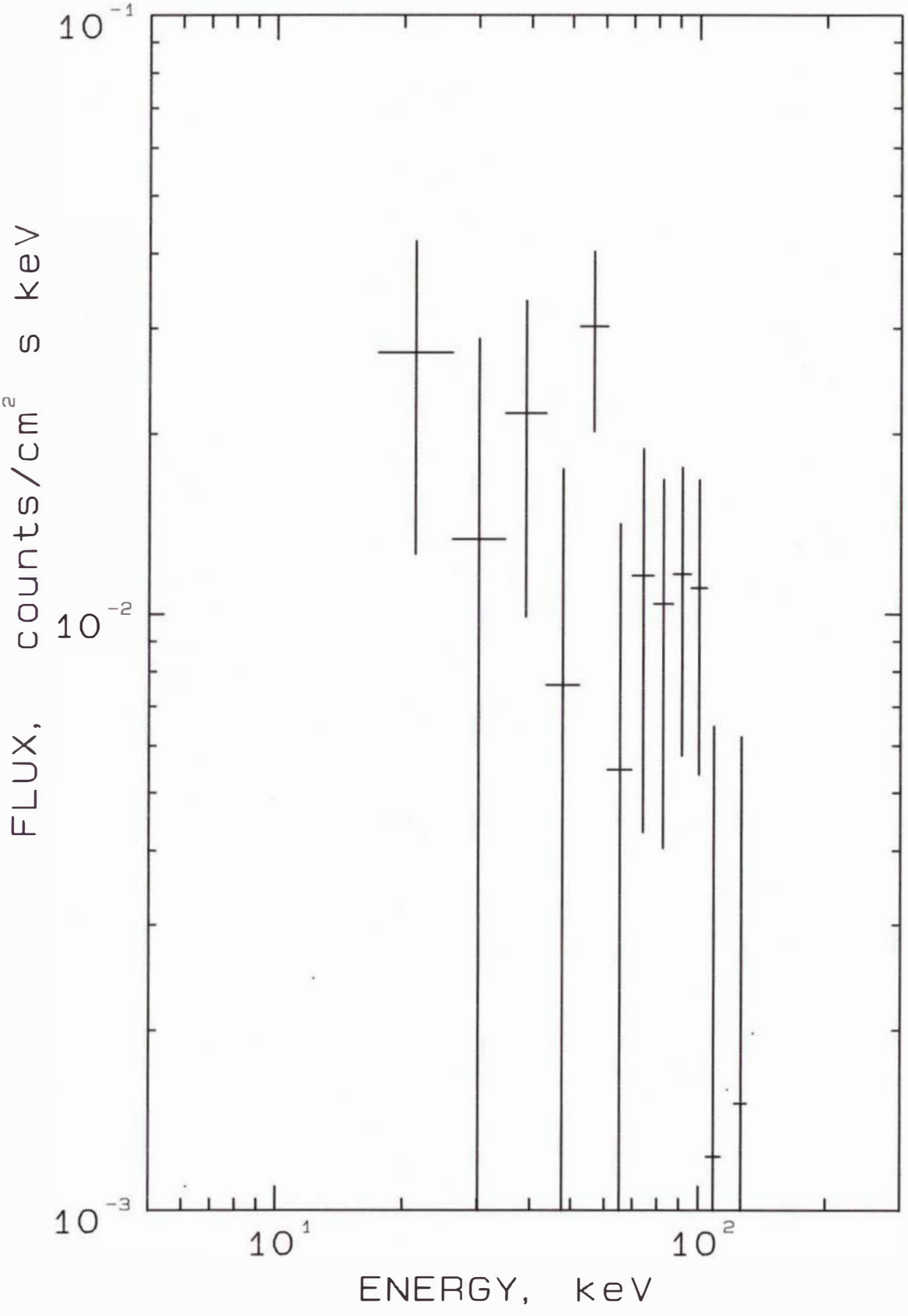
ULYSSES RT-ULYSSES CORRELATION 10/ 2/94 70202.130

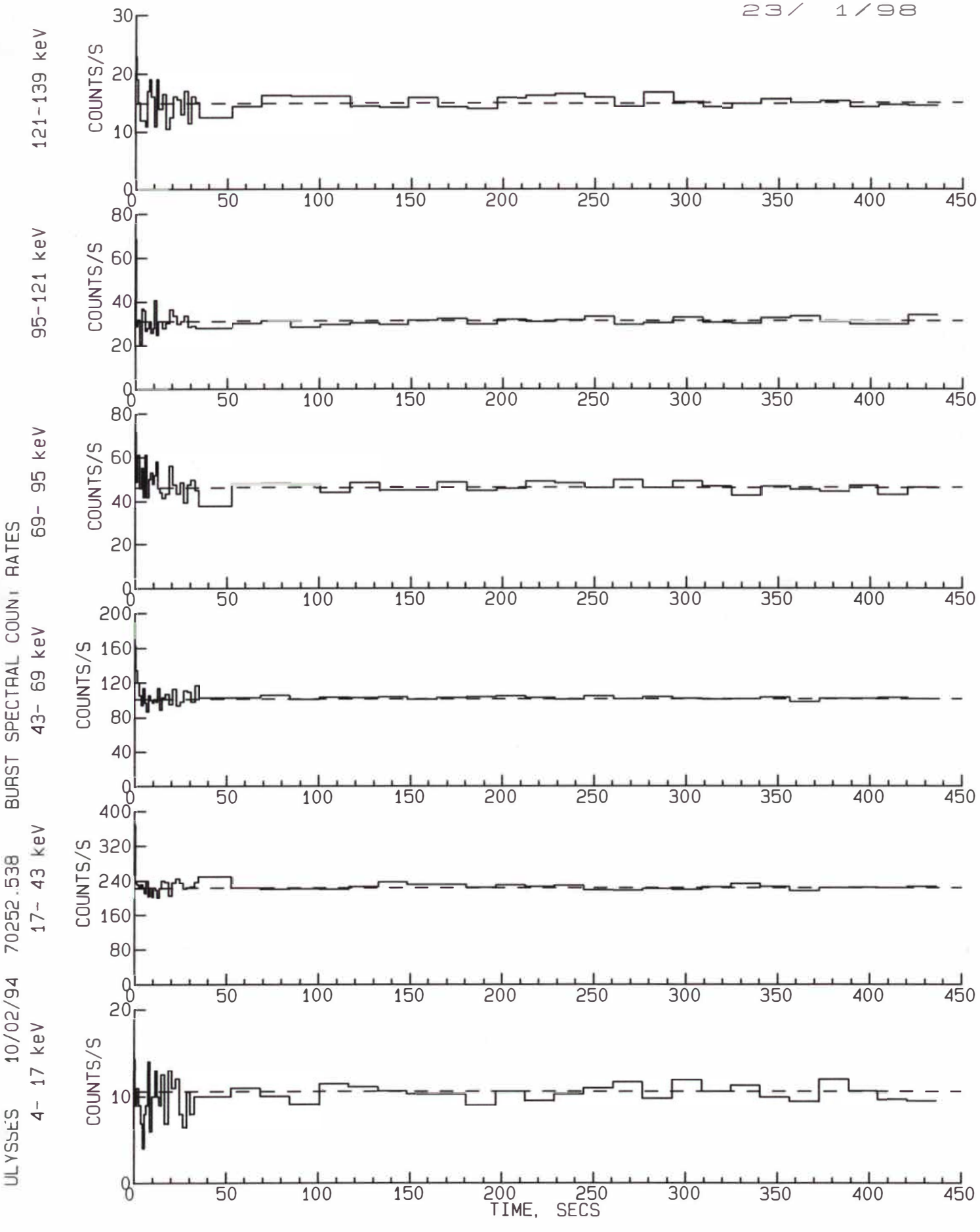


ULYSSES 10/02/94 70252.538

23/ 1/98

SPECTRUM INTEGRATED OVER 20.5 SECONDS, INTERVALS 2 TO 20




23/ 1/98
ULYSSES 10/02/94 70252.538 BURST SPECTRAL COUNT RATES
4- 17 keV
17- 43 keV
43- 69 keV
69- 95 keV
95-121 keV
121-139 keV
COUNTS/S
TIME, SECS

ULYSSES 10/02/94 Ttrig=70252.633

20- 139 keV

COUNTS/0.031 S

COUNTS/0.125 S

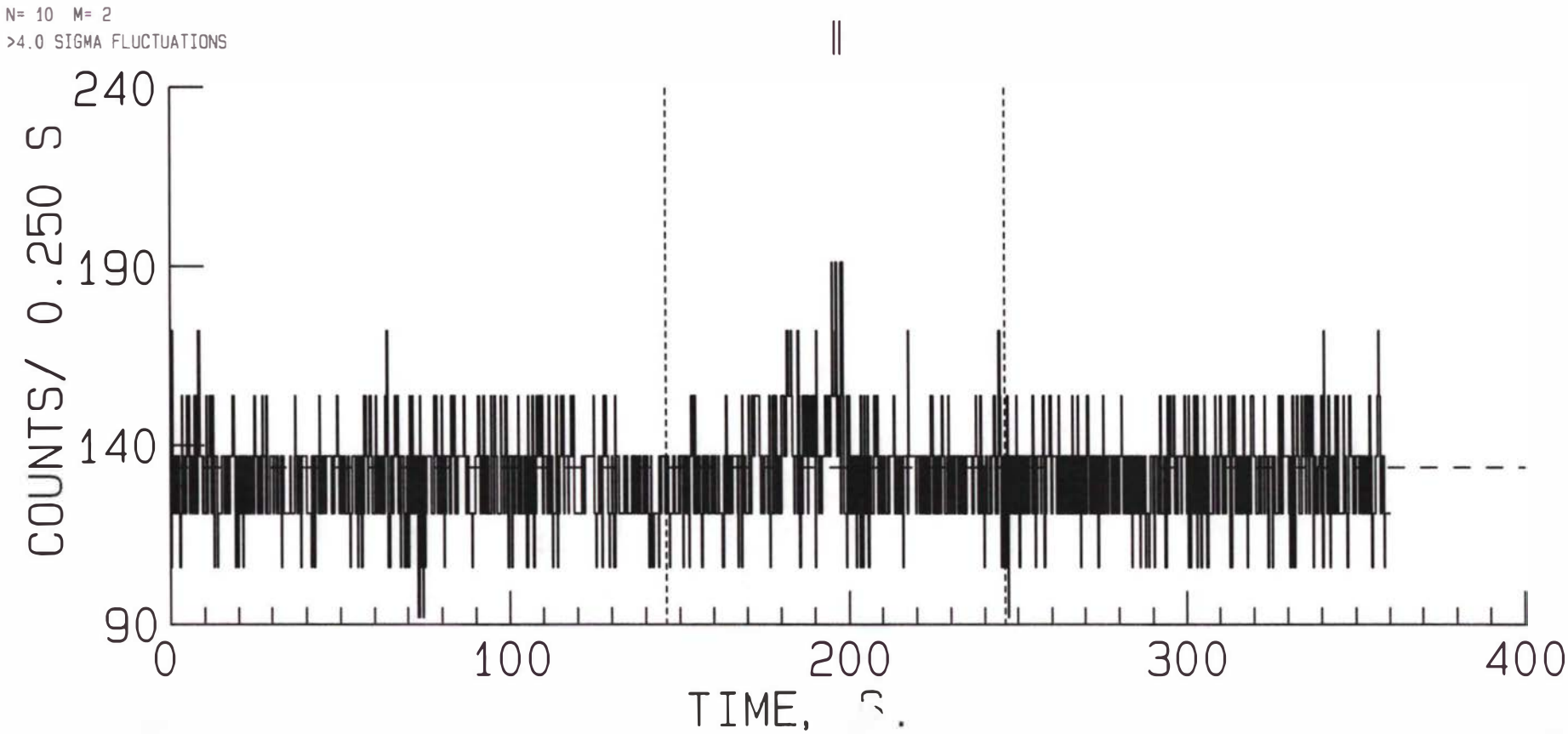
23/ 1/**

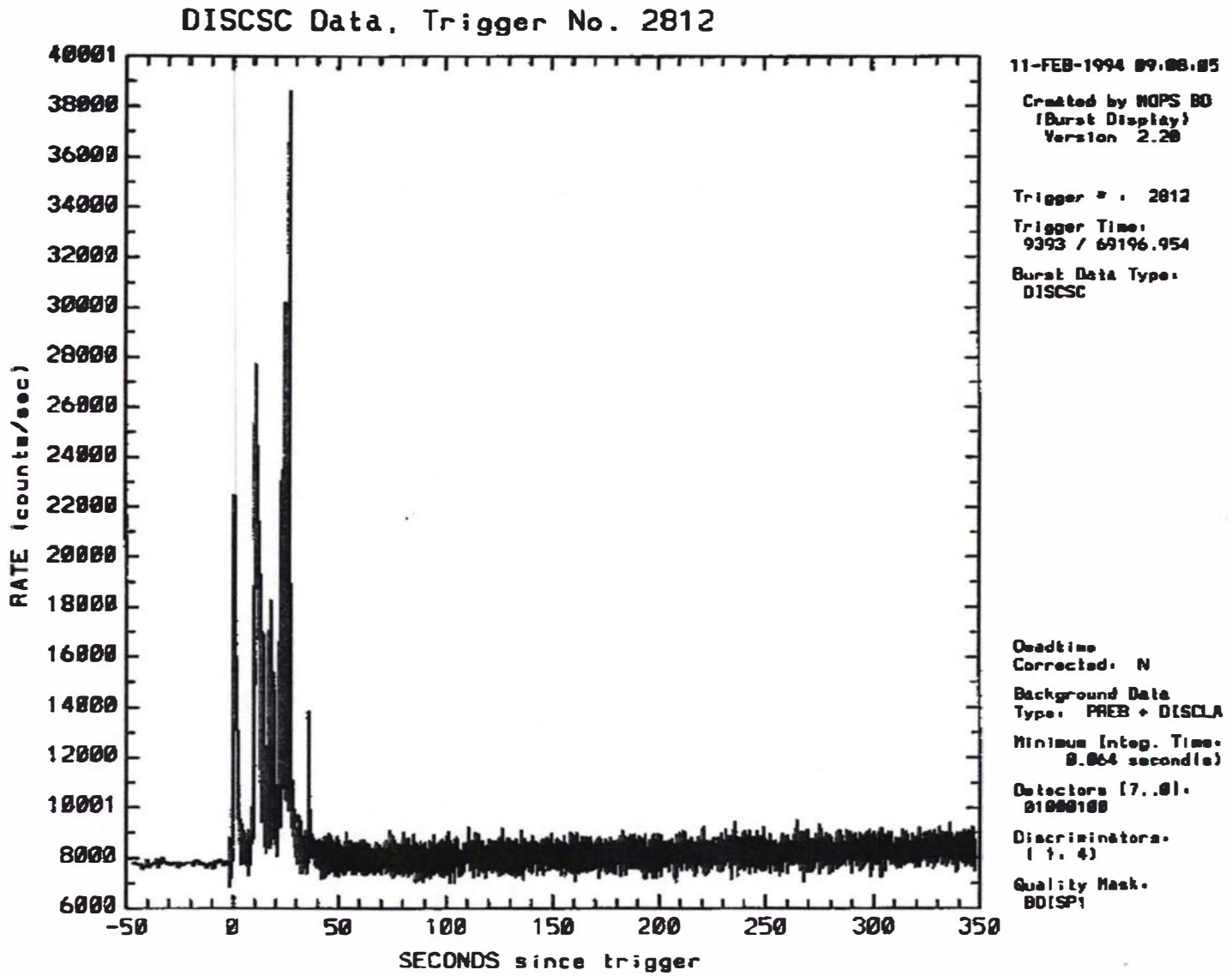
ULYSSES RT

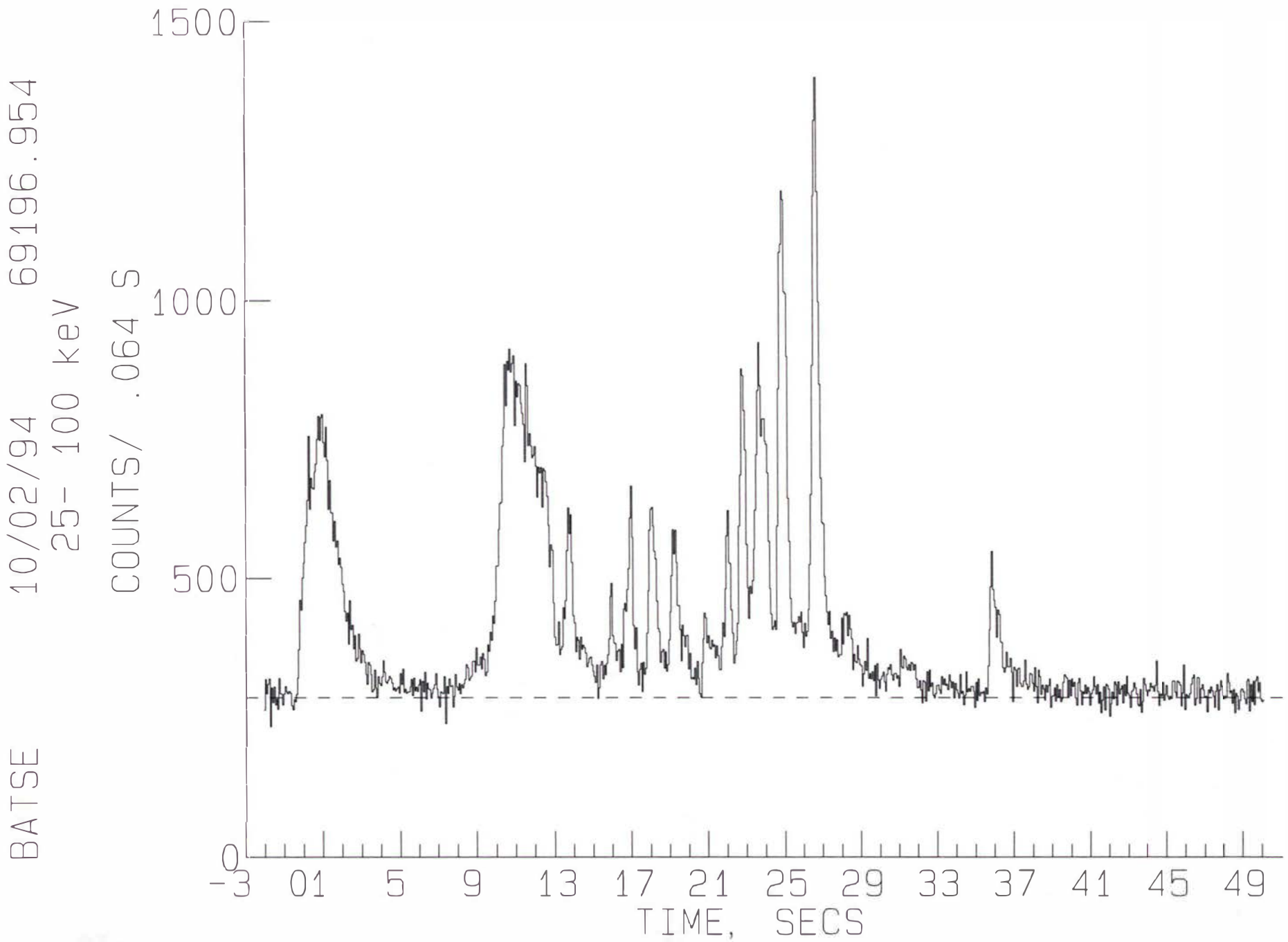
23/ 1/98

10/ 2/94 70056.034 s

20- 139 keV




DISCSC Data, Trigger No. 2812
RATE (counts/sec)
40001
38000
36000
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10001
8000
6000
-50
0
50
100
150
200
250
300
350
SECONDS since trigger
11-FEB-1994 09:08:05
Created by MOPS BD
(Burst Display)
Version 2.20
Trigger # : 2812
Trigger Time:
9393 / 69196.954
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors (7..0):
01000100
Discriminators:
(1, 4)
Quality Mask:
BD[SP]


BATSE
10/02/94 69196.954
25- 100 keV
COUNTS/ .064 S
1500
1000
500
0
-3 01 5 9 13 17 21 25 29 33 37 41 45 49
TIME, SECS

From root Fri Feb 11 19:16 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA00426; Fri, 11 Feb 94 19:16:13
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA12919; Fri, 11 Feb 1994 18:19:56 +0800
Received: by xtelab.gsfc.nasa.gov (4.1/1.35)
        id AA05686; Fri, 11 Feb 94 21:23:38 EST
Date: Fri, 11 Feb 94 21:23:38 EST
From: scott@xtelab.gsfc.nasa.gov (Scott Barthelmy)
Message-Id: <9402120223.AA05686@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu
Subject: ipn arc for 940210
Cc: scott@xtelab.gsfc.nasa.gov
Content-Length: 703
Status: R

Kevin,
Thanks for the IPN arc for GRB 940210. It's very late to schedule something for tonight at Kitt Peak -- if I rush though ti I'm lible to make another mistake & I'm at home and don't have all my "tools" available and the weather is really lousy, so I will go for tomorrow night. In a addition I have a question about the output you sent. In the inital part it lists two rows for the two spacecraft. For SC #2 (BATSE) the date/time listed for the event is 92 02 10 hhmm ss. I wonder about the year being 92 instead of 94. I suspect that it won't effect the arc position (the year being cyclic), but I am not sure. Just thought I'd mention it in case it is influencing.

Thanks again,
scott

From khurley@space6.ssl.berkeley.edu Mon Feb 14 10:28 PST 1994
Date: Mon, 14 Feb 94 11:25:07
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 1882

SATELLITE POSITIONAL INFORMATION AND BURST ARRIVAL TIME

NO	NAME	DIST. FROM EARTH, KM.	ALPHA, DEG.	DELTA, DEG.
1	ULYSSES	464410177.0000+/- 500.0000000	152.56170+/- .00500	-51.12170+/-
2	BATSE	6800.0000+/- 100.0000000	.00000+/-180.00000	.00000+/-

JULIAN DAY NUMBER IS 34374.31 DAYS SINCE 1900 JAN 0.5

15.66 BY 15.00 CM MAP FOR RA= 126.00 TO 186.00, DEC= 78.00 TO 86.00

INTERSATELLITE CORRELATIONS

SEPARATION BETWEEN SATELLITES 1 AND 2 IS 1549.11802 LIGHT SECONDS. TIME DELAY IS -1
CORRELATION BETWEEN SATELLITE 1(ULYSSES) AND SATELLITE 2(BATSE
GIVES A CIRCLE OF RADIUS 48.321611 DEGREES CENTERED AT ALPHA=332.562316 DEGREES, DELTA= 51.1
ERROR IN DETERMINATION OF RADIUS IS .110966 DEGREES OR 13.315948 ' TOTAL WIDTH
(.011850 DUE TO POSITION, .099117 DEGREES DUE TO TIMING)
INTERSATELLITE TIMING ERROR IS 2000000 MICROSECONDS

BASED ON THIS ANNULUS, THE EARTH CROSSING TIME IS 69196.962+/- .014 SECS.

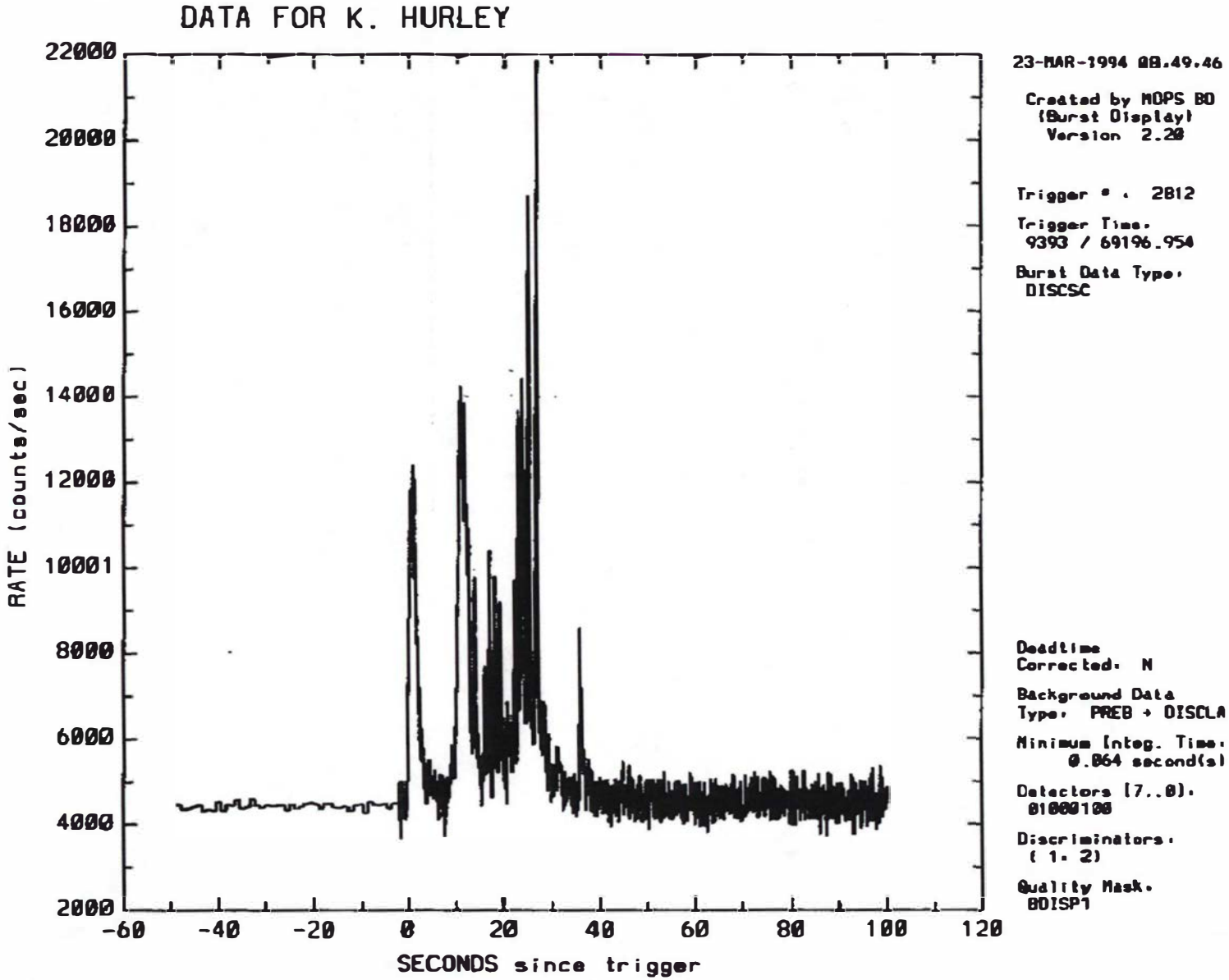
AT SATELLITE 1, EARTH SUBTENDS .000786 DEGREES HALF ANGLE CENTERED AT ALPHA=332.561700 DE
AT SATELLITE 2, EARTH SUBTENDS 69.443033 DEGREES HALF ANGLE CENTERED AT ALPHA=180.000000 DE

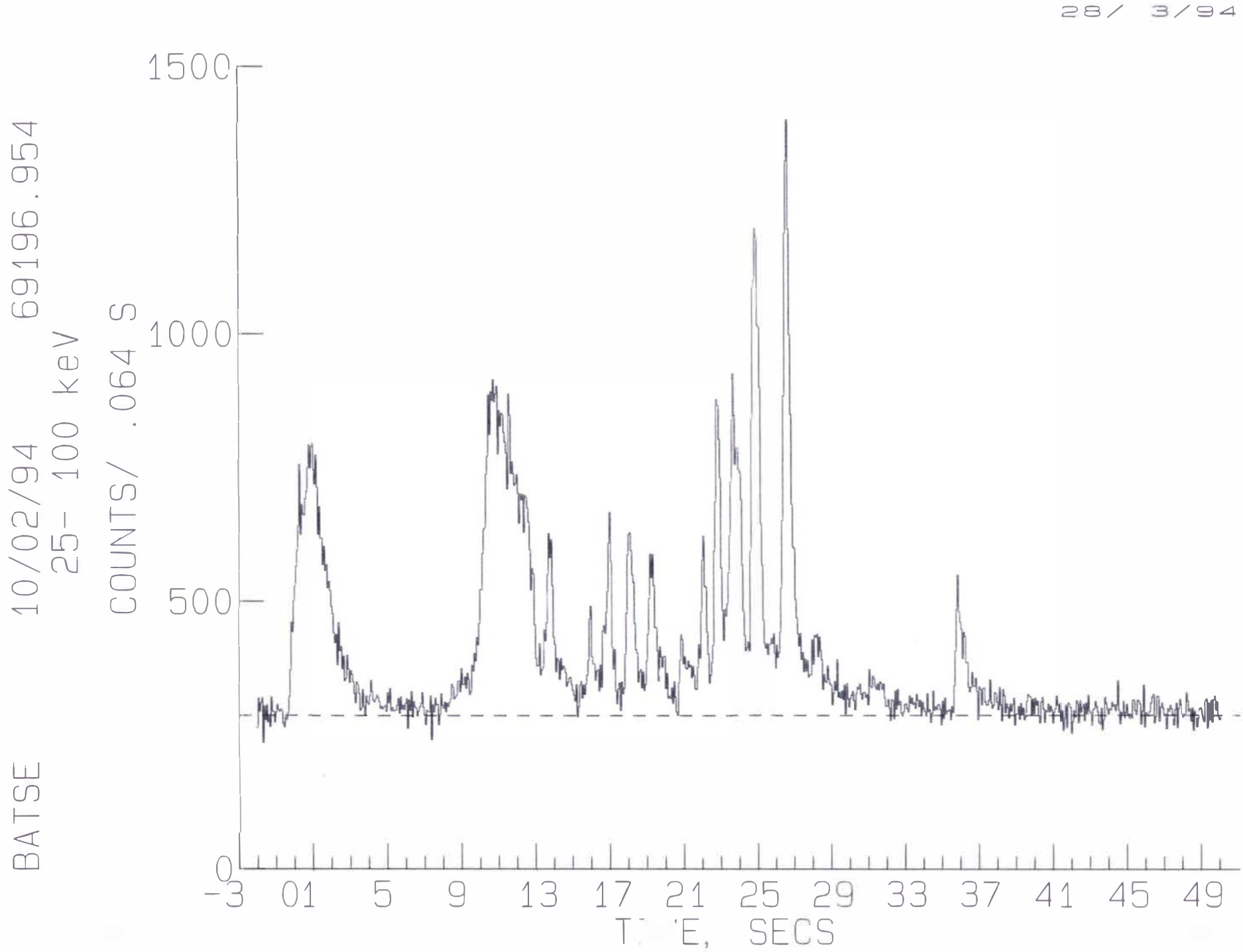
CIRCLE CENTERED AT ALPHA=156.000 DEG, DELTA= 82.000 DEG, RADIUS= 4.000 DEG WILL BE TRACED WI
MINIMUM DISTANCE BETWEEN THE POINT OR CENTER OF THE CIRCLE AND THE TRIANGULATION ANNULUS IS

SUN IS AT ALPHA=324.209795 DEGREES, DELTA=-14.228015 DEGREES
TODAY IS 11/ 2/94

→ Frail, Mahoney, Van Paradijs

Sent twice by mistake




28/ 3/94
BATSE 10/02/94 69196.954
25- 100 keV
COUNTS/ .064 S
1500
1000
500
0
-3 01 5 9 13 17 21 25 29 33 37 41 45 49
TIME, SECS

From root Thu Dec 29 15:02 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA01467; Thu, 29 Dec 94 15:02:30
Received: from NMSU.Edu (dns1.NMSU.Edu) by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA17613; Thu, 29 Dec 1994 15:01:35 +0800
From: tharriso@nmsu.edu
Received: from charon by NMSU.Edu (8.6.8.1/NMSU-1.18)
        id QAA16440; Thu, 29 Dec 1994 16:01:31 -0700
Date: Thu, 29 Dec 1994 16:01:30 -0700
Message-Id: <199412292301.QAA16440@NMSU.Edu>
Received: from vega.astronomy by charon (4.1/NMSU)
        id AA09565; Thu, 29 Dec 94 16:01:30 MST
To: khurley@space6.ssl.berkeley.edu
Subject: IPN request
Content-Length: 651
Status: R

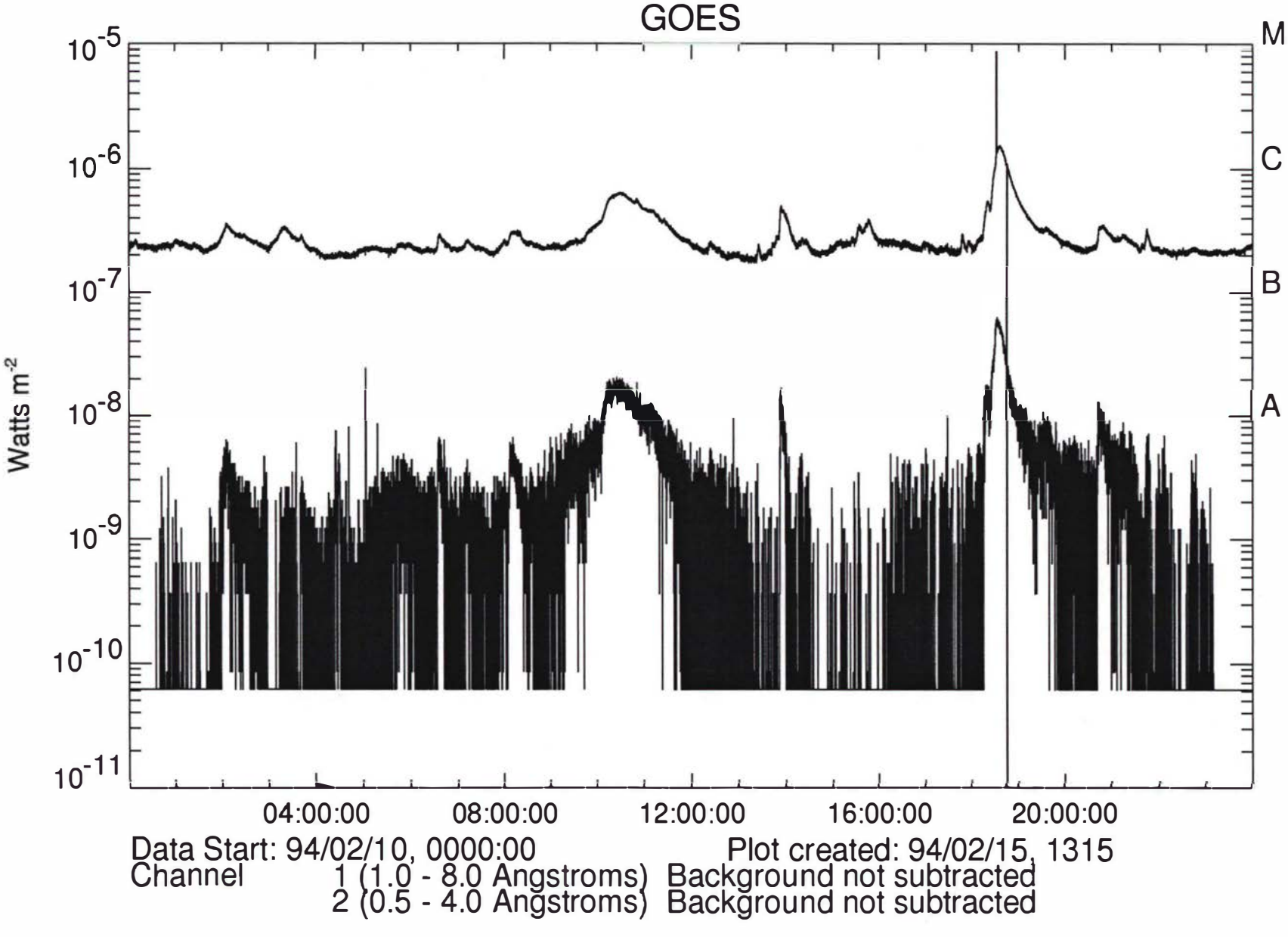
Kevin,

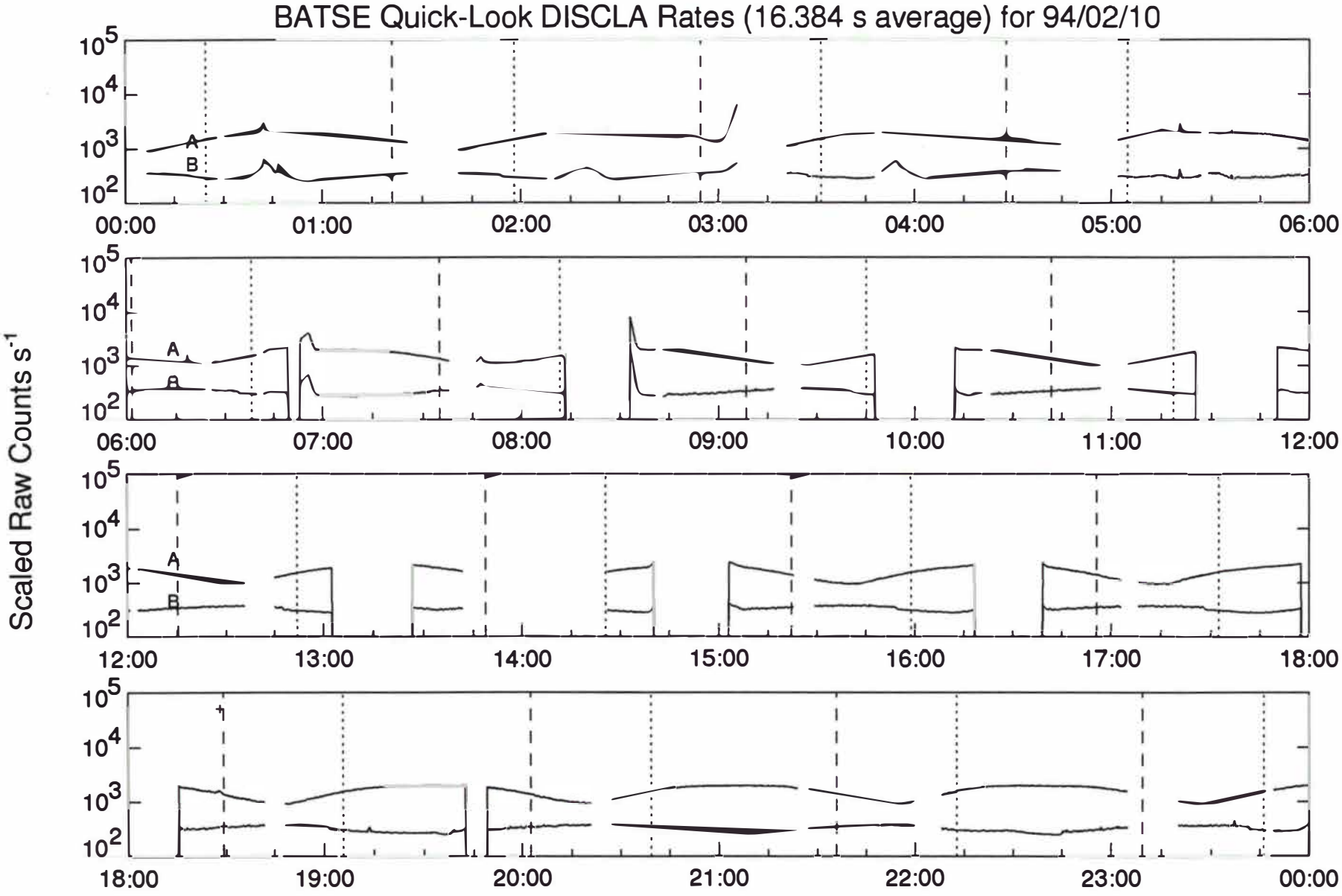
Our Russian network members have identified an optical transient on a plate for one of the BATSE bursts back in February. We need to have the IPN so that we see if this "transient" is located anywhere near the IPN. I've attatched the BATSE announcement below.

Thanks, Tom

BATSE Message:

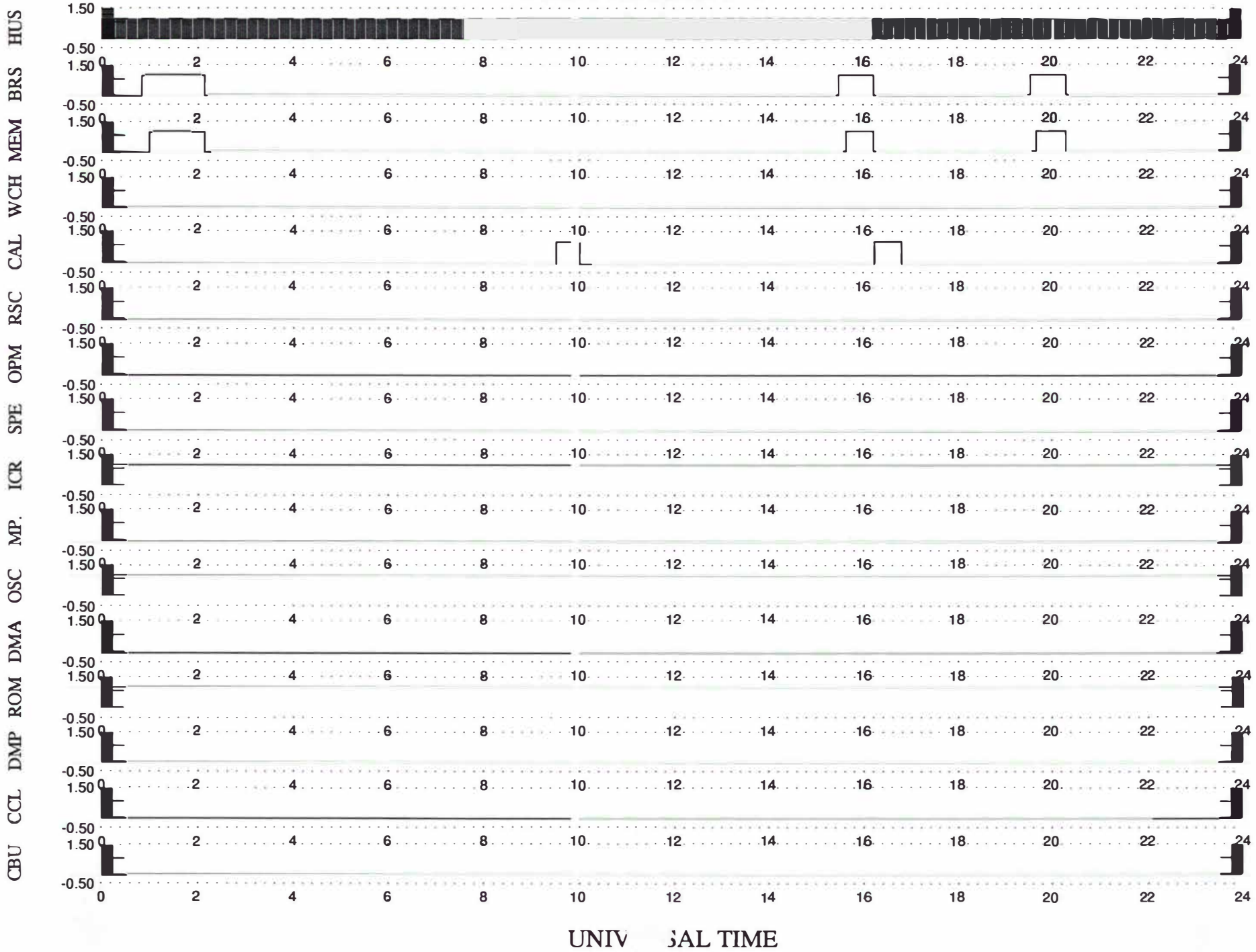
Follow-up to (usually) earlier message:
BATSE triggered on an intense GRB on 940210 at 19:13:16 UT.
The event lasted approximately 37 second(s).
Final BATSE location: RA = 156 deg, Dec = +82 deg (~4 deg error circle).
Follow-up observations are encouraged. Highly structured time history; about 14 distinct pulses. Spectral index of about -1.5.


GOES
M
C
B
A
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/10, 0000:00
Plot created: 94/02/15, 1315
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/10
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
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: 94/02/15, 1313 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

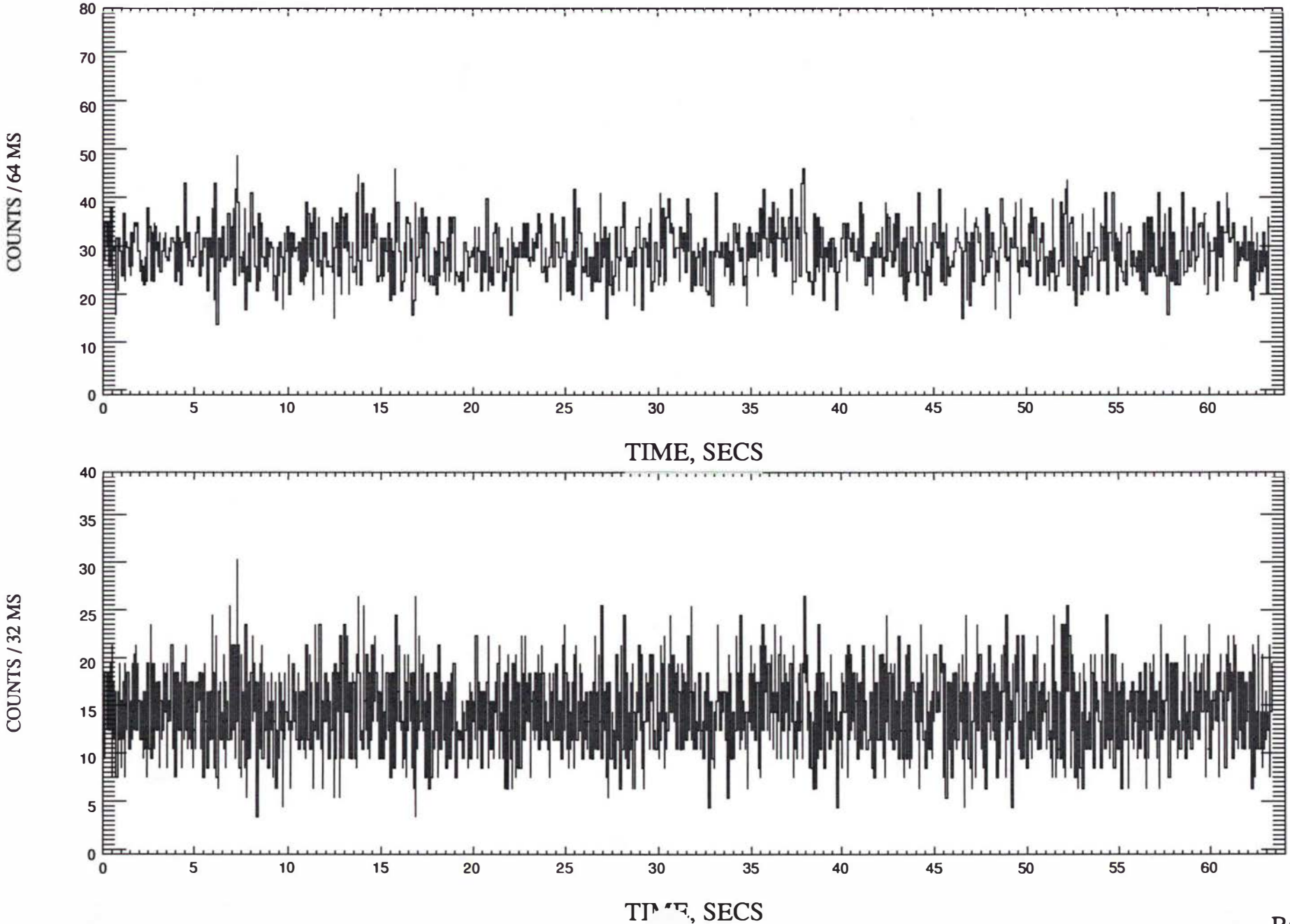
HUS MODES EDR day 41, year 1994 to day 41, year 1994 5/26/94

BURST NUMBER 1 - 3



HUS 2A TRIGGERED DATA EDR day 41, year 1994 5/26/94

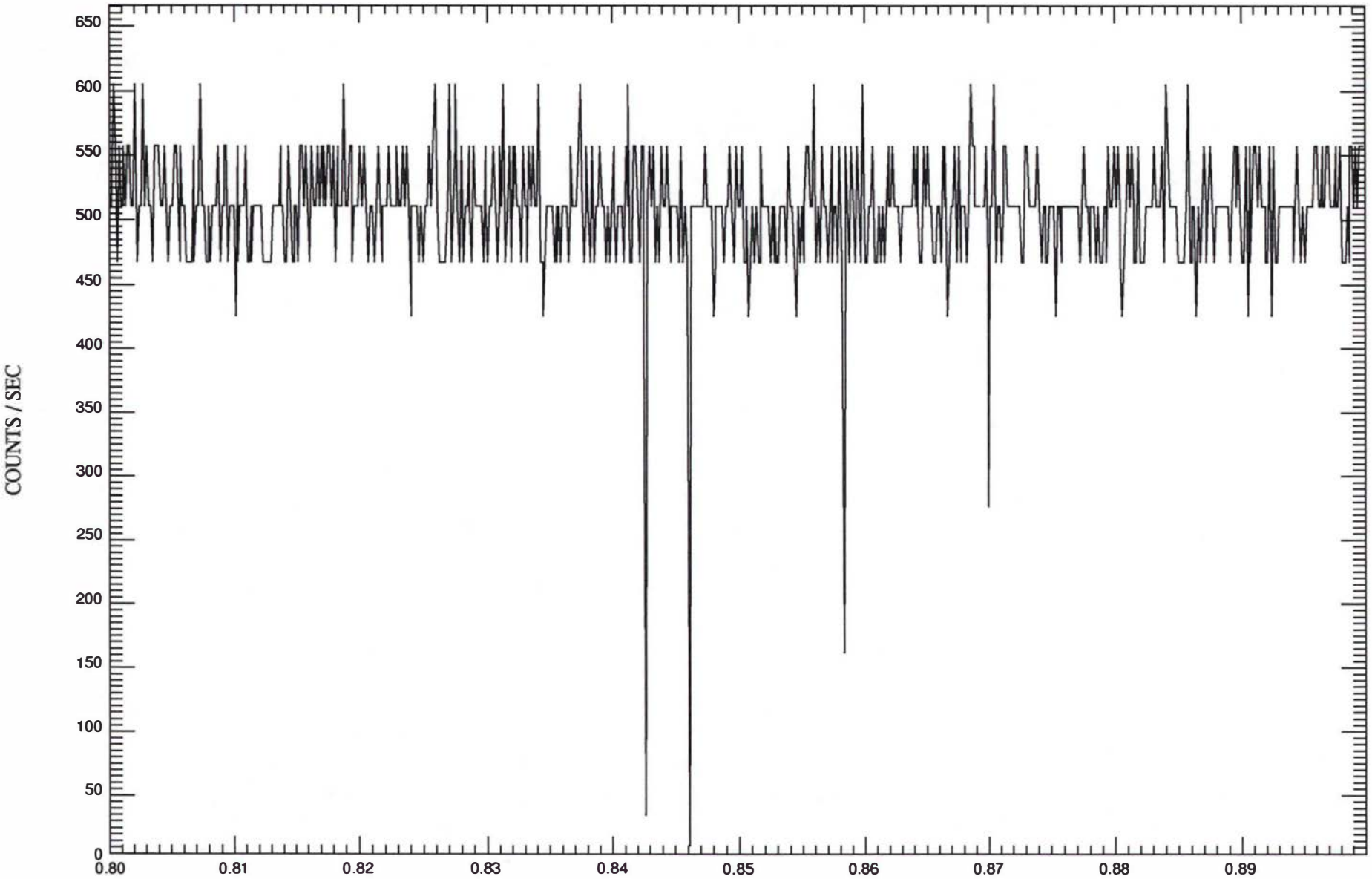
Burst Counter 1 at UT= 0.847565727234 h= 3051.237 s 00:50:51.237



B# 1

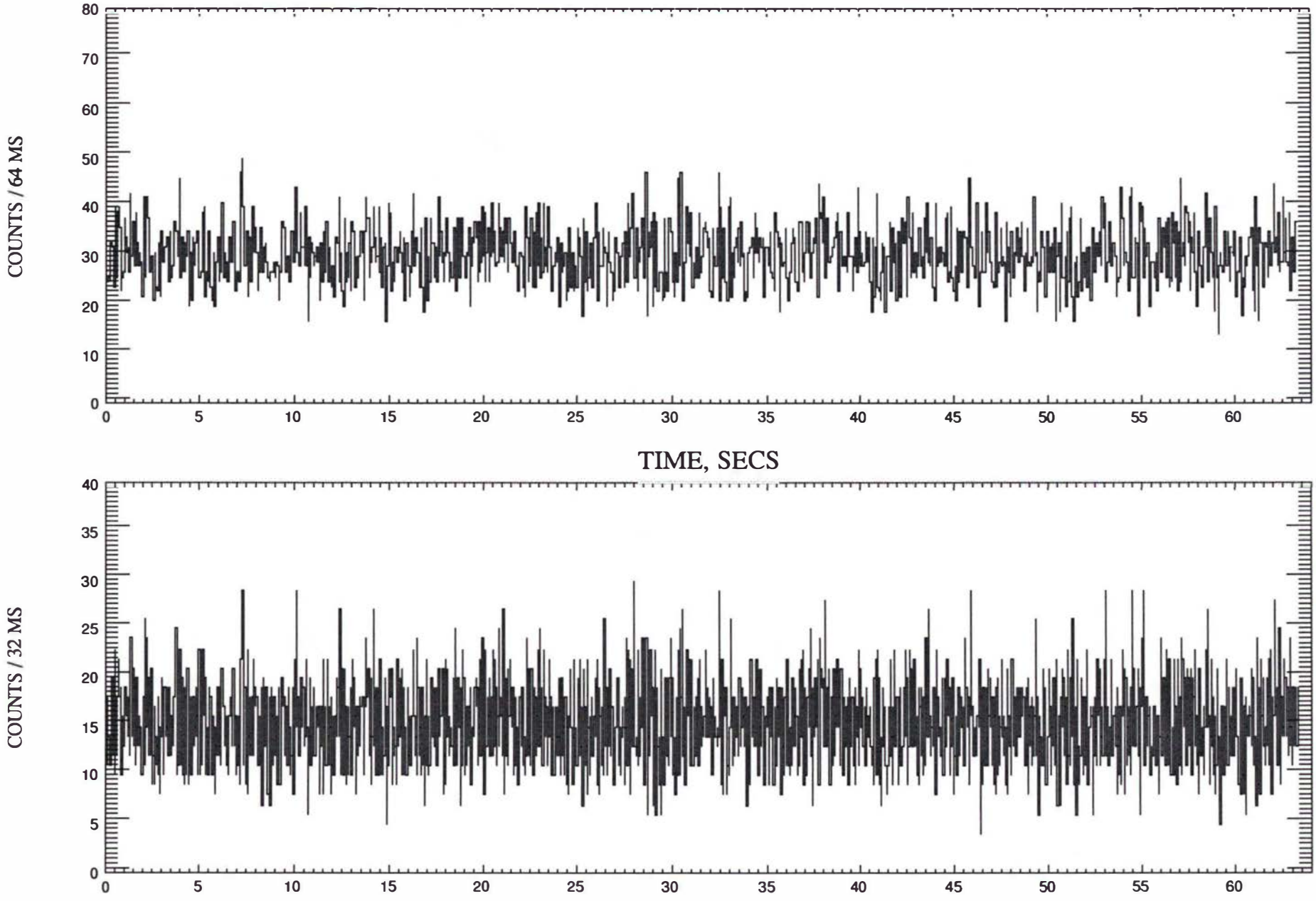
HUS 2A, MODE 1, NOT AVERAGED QEDR day 41, year 1994 to day 42, year 1994 2/11/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 41, year 1994 5/26/94

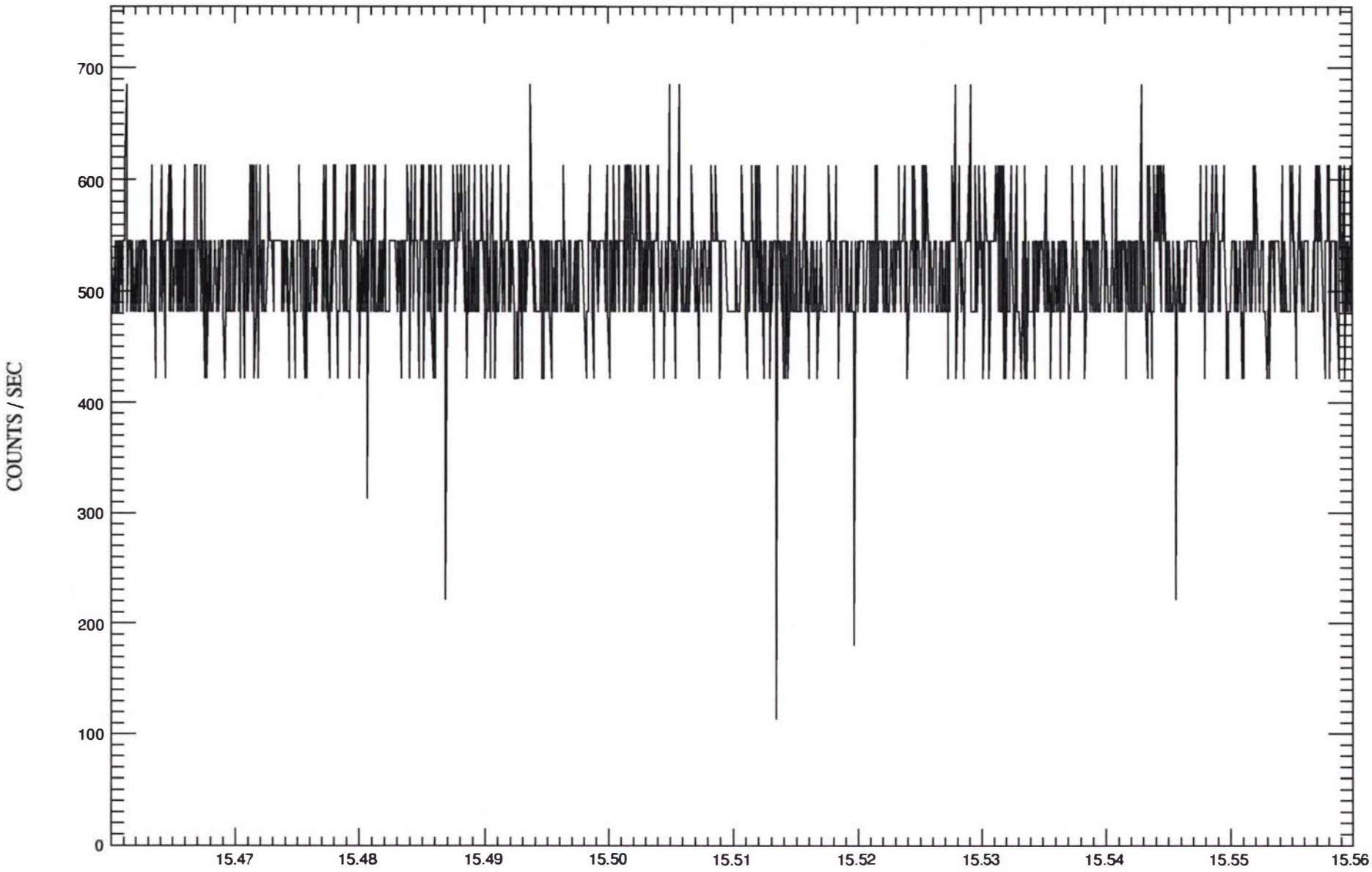
Burst Counter 2 at UT=15.505119370355 h=55818.430 s 15:30:18.430



B# 2

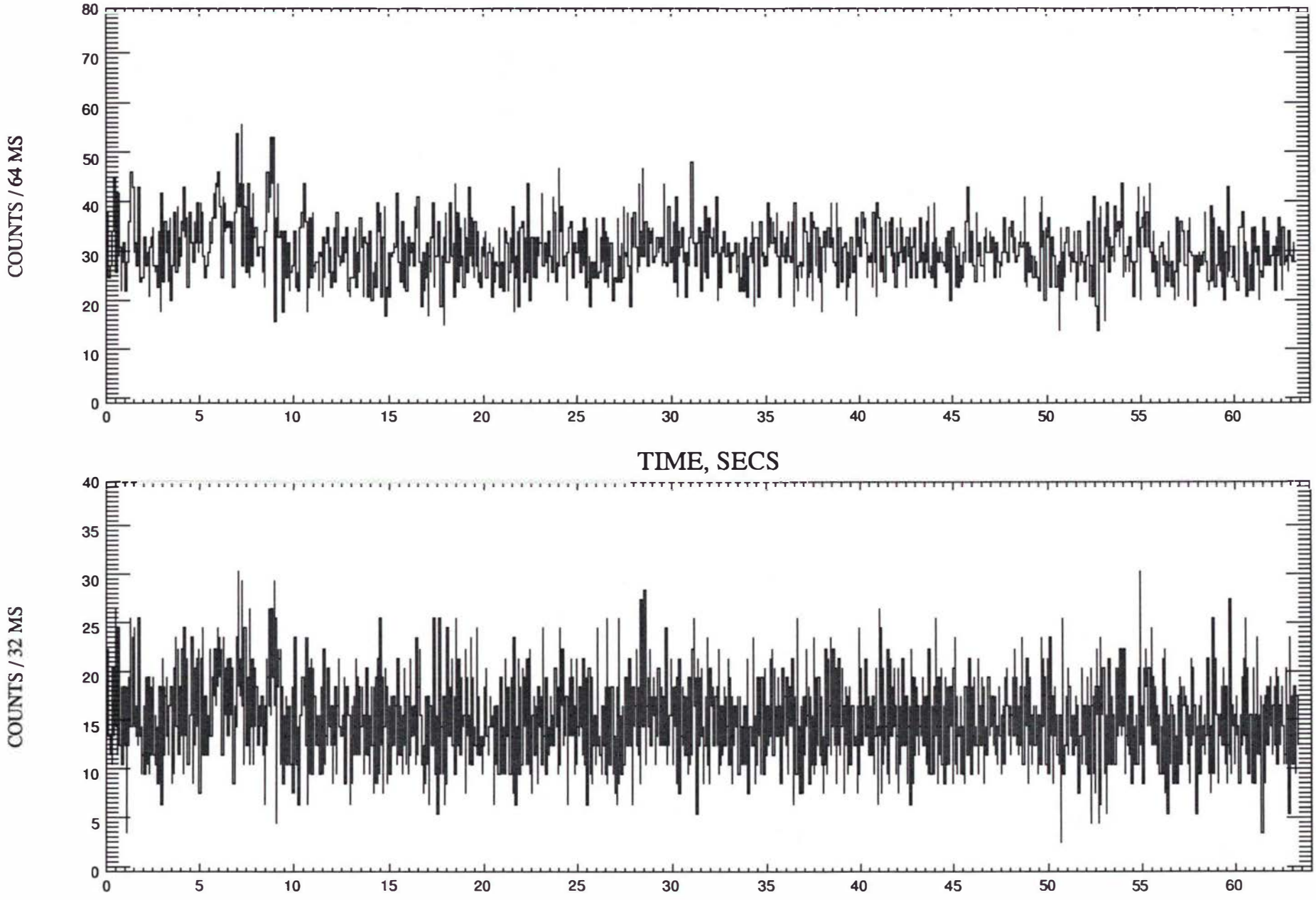
HUS 2A, MODE 1, NOT AVERAGED QEDR day 41, year 1994 to day 42, year 1994 2/11/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 41, year 1994 5/26/94

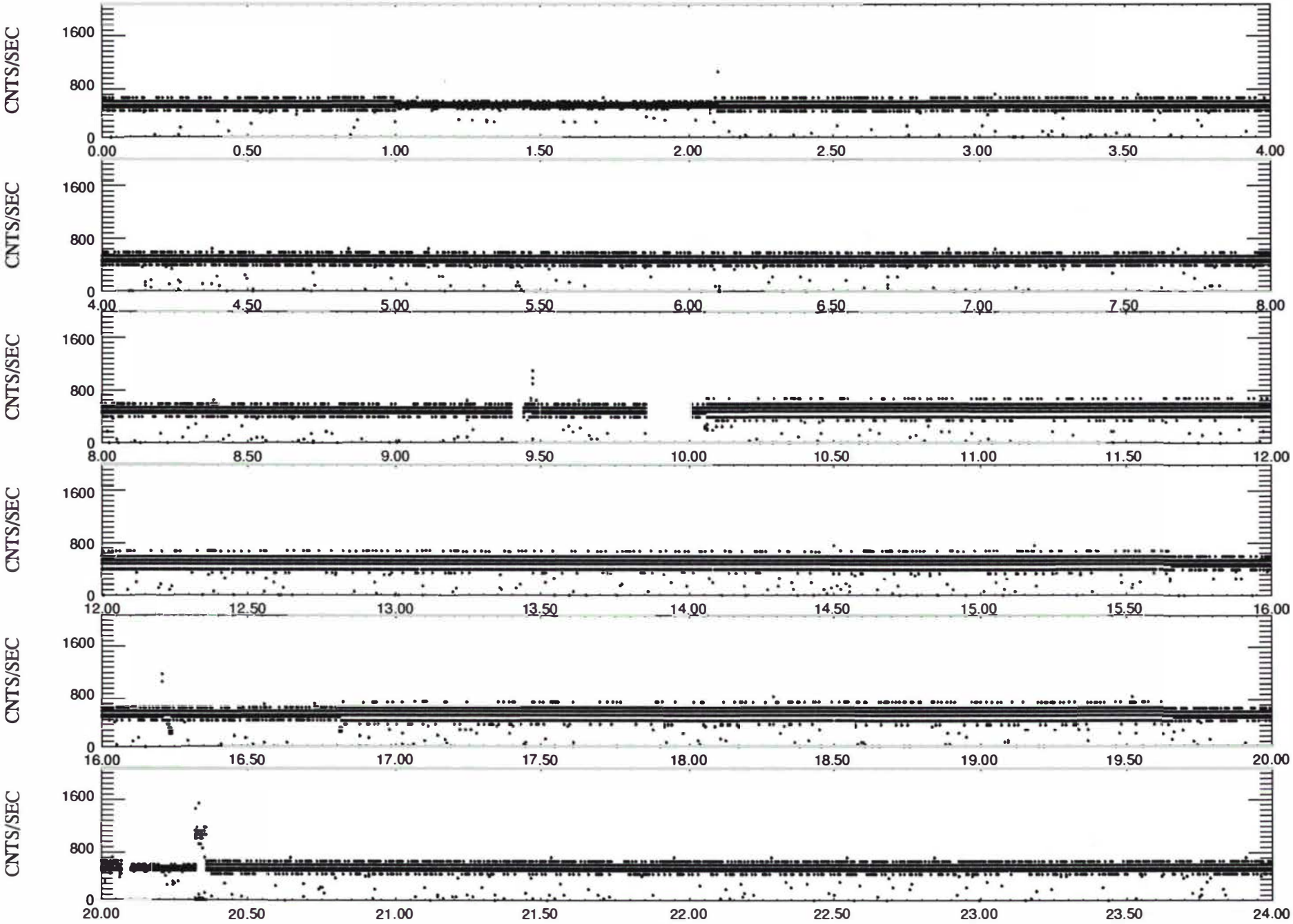
Burst Counter 3 at UT=19.514593993293 h=70252.538 s 19:30:52.538



B# 3

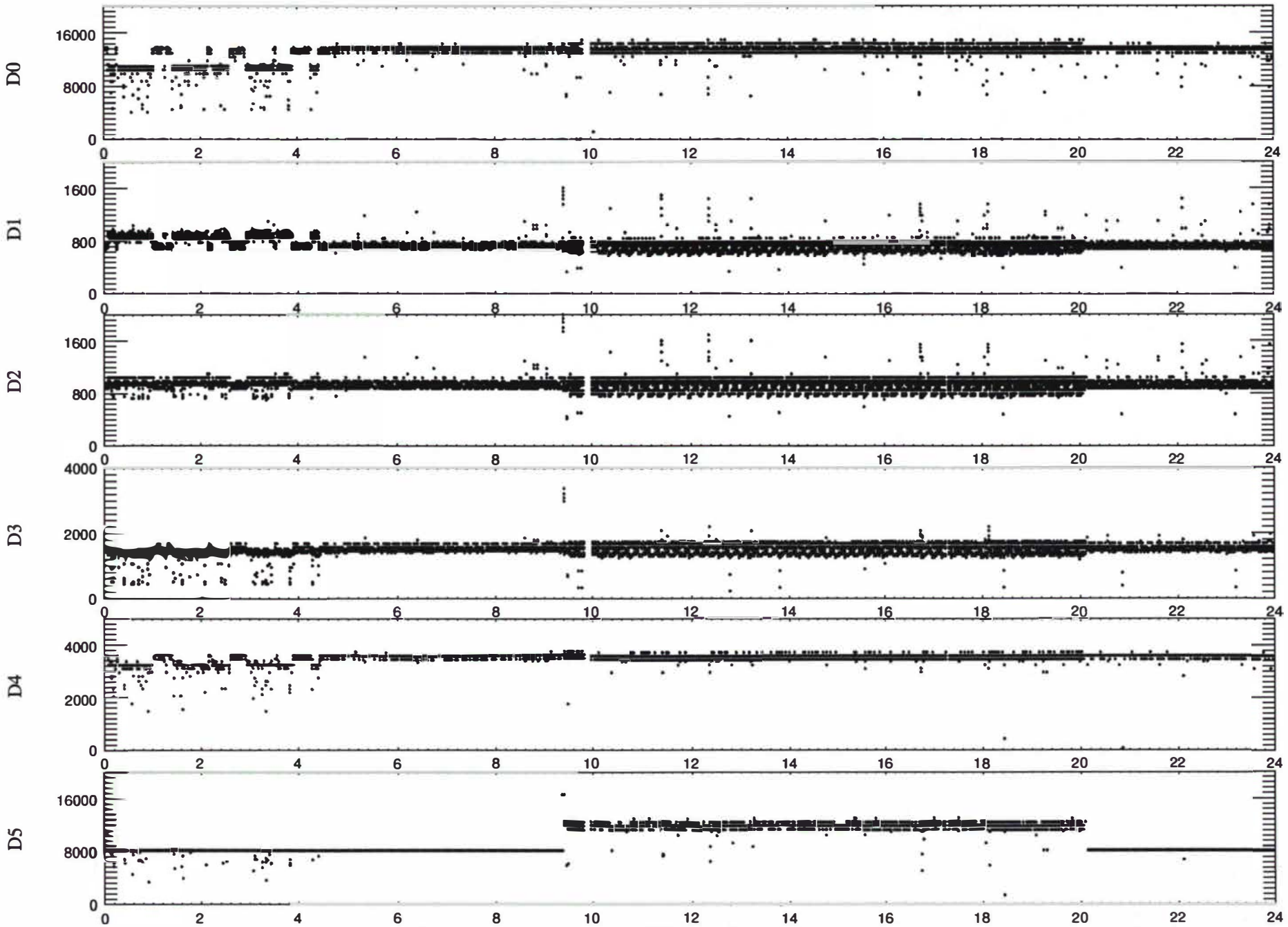
HUS 2A, MODE 1, NOT AVERAGED EDR day 41, year 1994 to day 41, year 1994 5/26/94

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC QEDR day 41, year 1994 to day 41, year 1994 2/11/94



From ZMYEWSKI@ssl.msfc.nasa.gov Mon Feb 14 10:24 PST 1994
Date: Mon, 14 Feb 1994 12:28:28 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02813

TIME: TJD=9394 SECONDS=11272

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From ZMYEWSKI@ssl.msfc.nasa.gov Mon Feb 14 10:31 PST 1994
Date: Mon, 14 Feb 1994 12:35:29 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2814
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #    2814
 EVENT OF 1994 FEB 11 DAY OF YEAR= 42
 EVENT CROSSING TIME AT BATSE     : 48713. S. OR 13:31:53.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 280.000   60.000
 BATSE PEAK COUNTING RATE:   7500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 11/ 2/  94 IS:
 RA=  151.697 DEC=  -50.978 DIST=    3.097 AU
 BATSE-ULYSSES DISTANCE =  463290424. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 29.78 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1341.29 SECS.
 CROSSING TIME AT ULYSSES    IS 50054. S. OR   13:54:14 +/-  203.63 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 11/ 2/  94 IS:
 RA=  313.552 DEC=  -18.541 DIST=    2.355 AU
 MARS-BATSE DISTANCE =  352363520. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.87 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -140.68 SECS.
 CROSSING TIME AT MARS       IS 48572. S. OR   13:29:32 +/-  200.46 SECONDS
```

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2814	940211	9394	48713	7500	280	+60

BATSE BURST TRIGGER

NO.: 02814

TIME: TJD=9394 SECONDS=48713

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=92.9 AZIMUTH=245.3 ERROR= DEGREES

COMMENTS:
GRB LASTING APPROX. 0.06SEC. NOT VISIBLE ABOVE 300KEV.

Batse # 2814

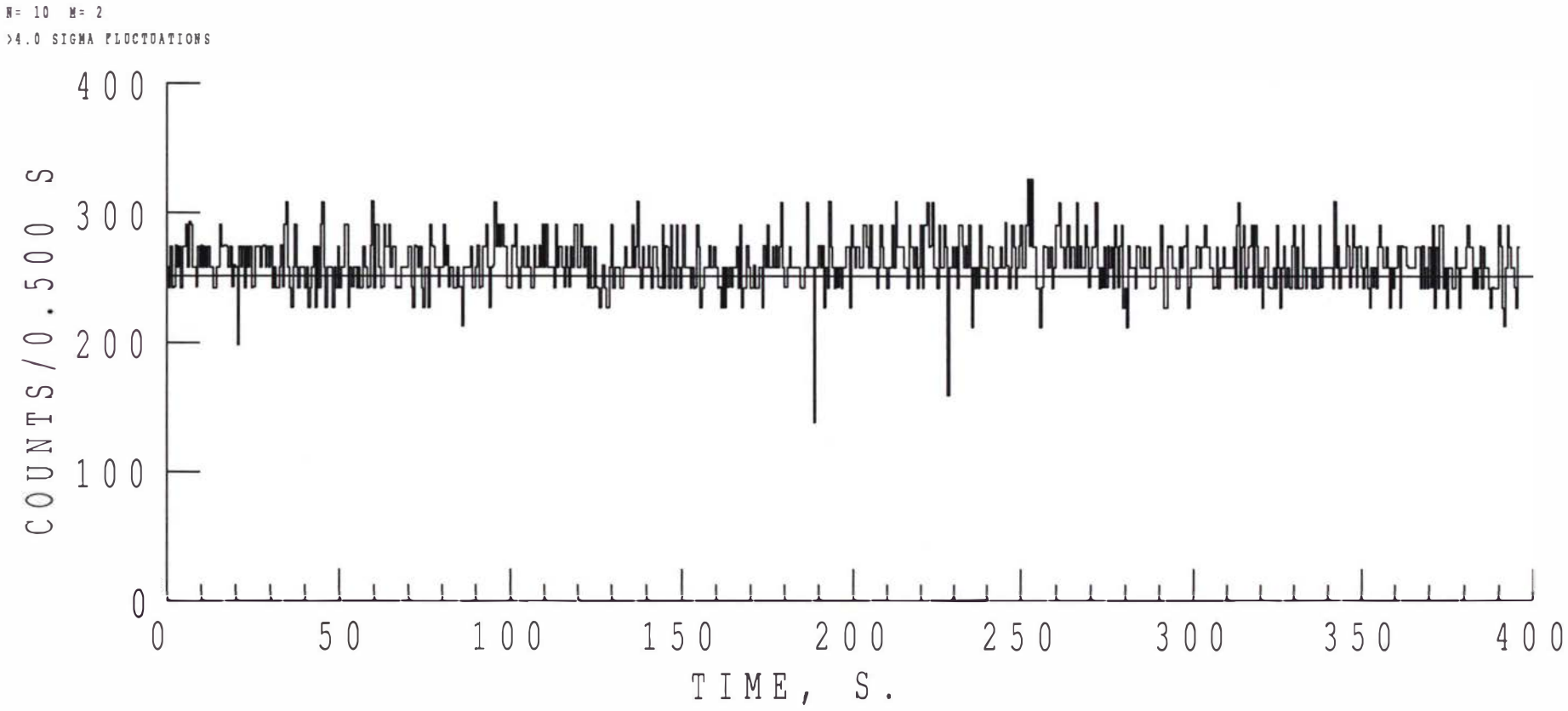
14/ 2/94

ULYSSES RT

11/ 2/94 49860.098 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV



From ZMYEWSKI@ssl.msfc.nasa.gov Mon Feb 14 10:33 PST 1994
Date: Mon, 14 Feb 1994 12:36:48 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2815
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #    2815
 EVENT OF 1994 FEB 11 DAY OF YEAR= 42
 EVENT CROSSING TIME AT BATSE     : 58585. S. OR 16:16:25.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 343.000   31.000
 BATSE PEAK COUNTING RATE:   3600    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 11/ 2/  94 IS:
 RA=  151.639 DEC=  -50.993 DIST=    3.096 AU
 BATSE-ULYSSES DISTANCE =  463120041. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 21.70 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1435.37 SECS.
 CROSSING TIME AT ULYSSES    IS 60020. S. OR   16:40:20 +/-  170.94 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 11/ 2/  94 IS:
 RA=  313.552 DEC=  -18.541 DIST=    2.355 AU
 MARS-BATSE DISTANCE =  352363520. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.95 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -639.29 SECS.
 CROSSING TIME AT MARS       IS 57946. S. OR   16:05:45 +/-  161.53 SECONDS
```

N6

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2815	940211	9394	58585	3600	029	+01

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2815	940211	9394	58585	3600	343	+31

BATSE BURST TRIGGER

NO.: 02815

TIME: TJD=9394 SECONDS=58585

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=58.7 AZIMUTH=343.1 ERROR= DEGREES

COMMENTS:
GRB LASTING APPROX. 150 SECONDS. NOT VISIBLE ABOVE 300KEV.
MUCH "NOISE" FROM A0535.

Batse # 2815

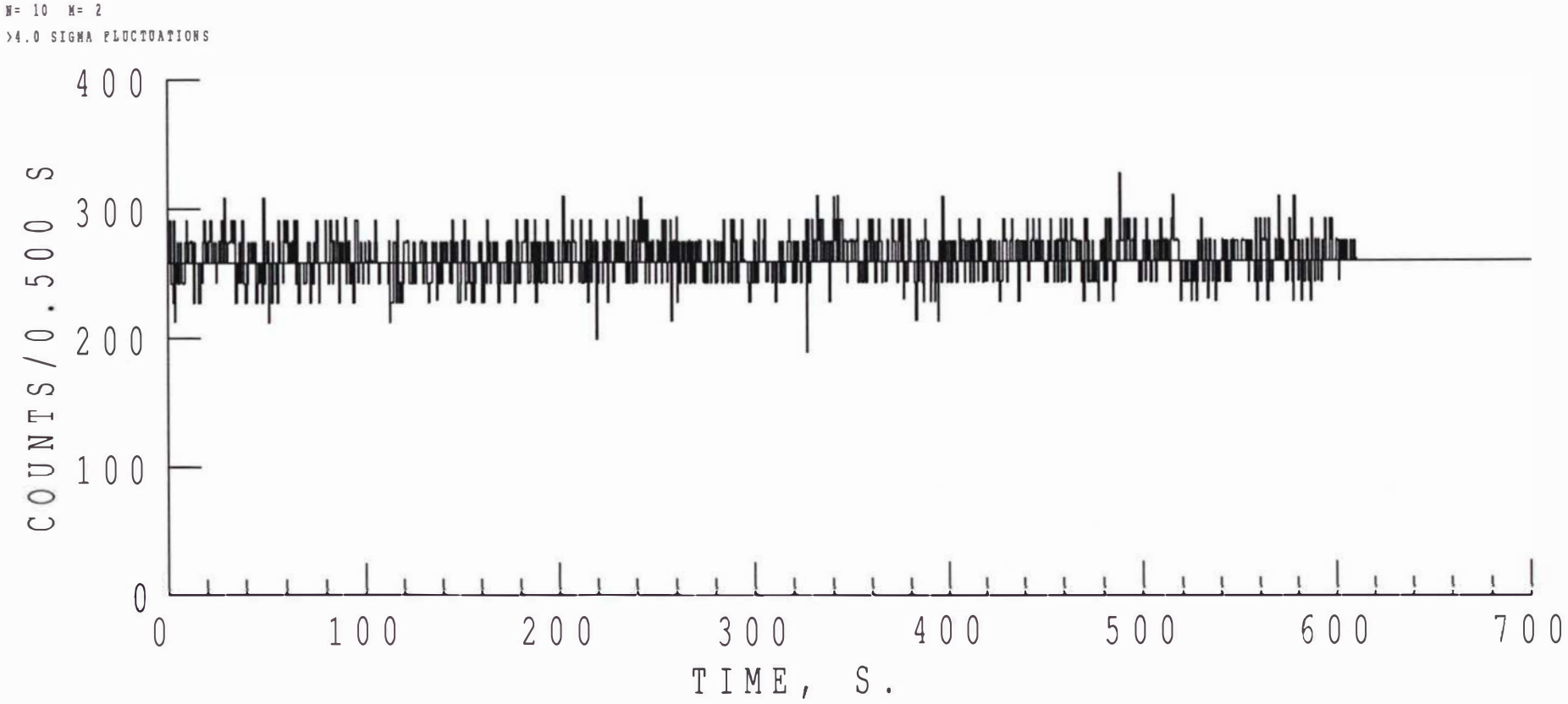
14/ 2/94

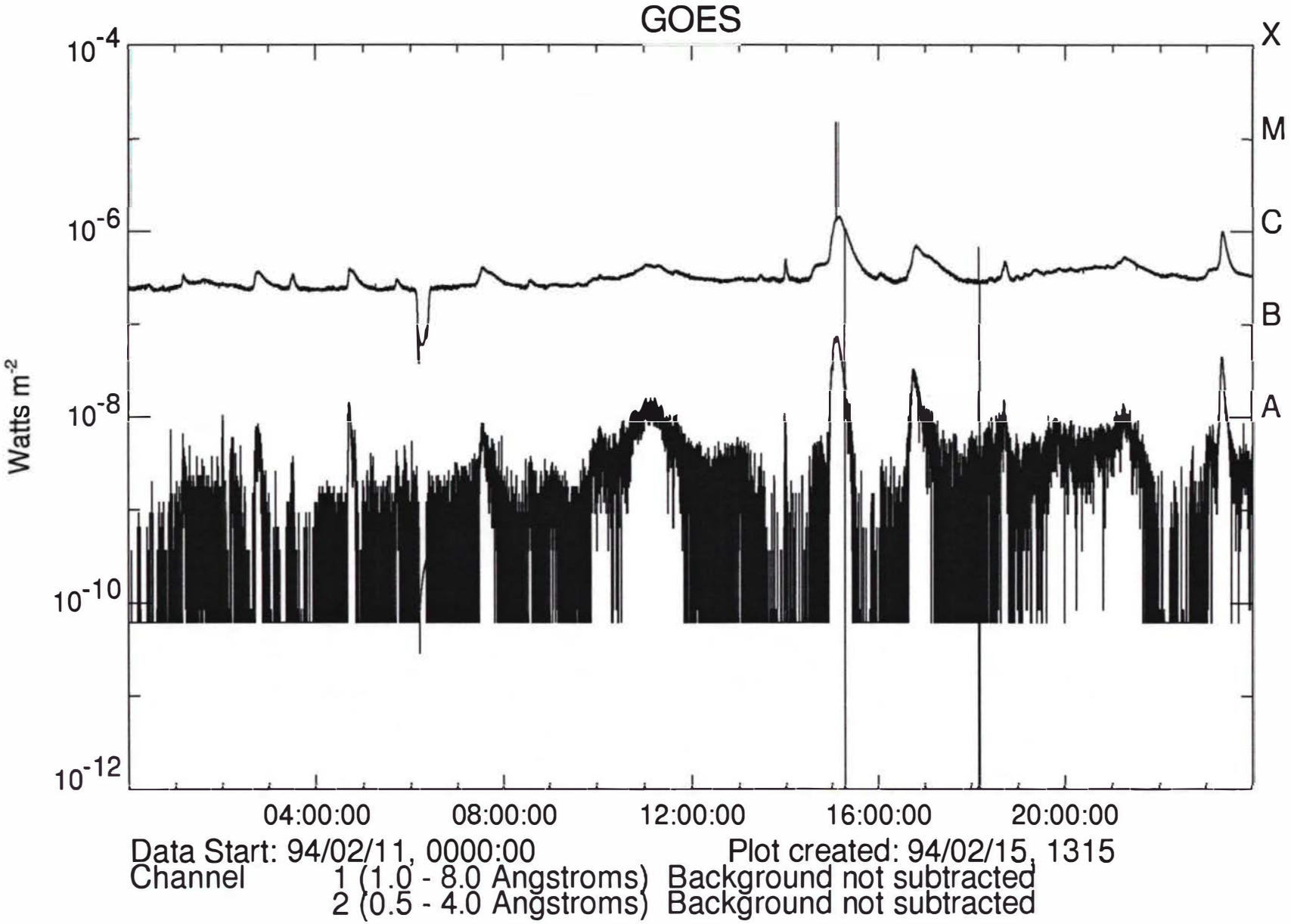
ULYSSES RT

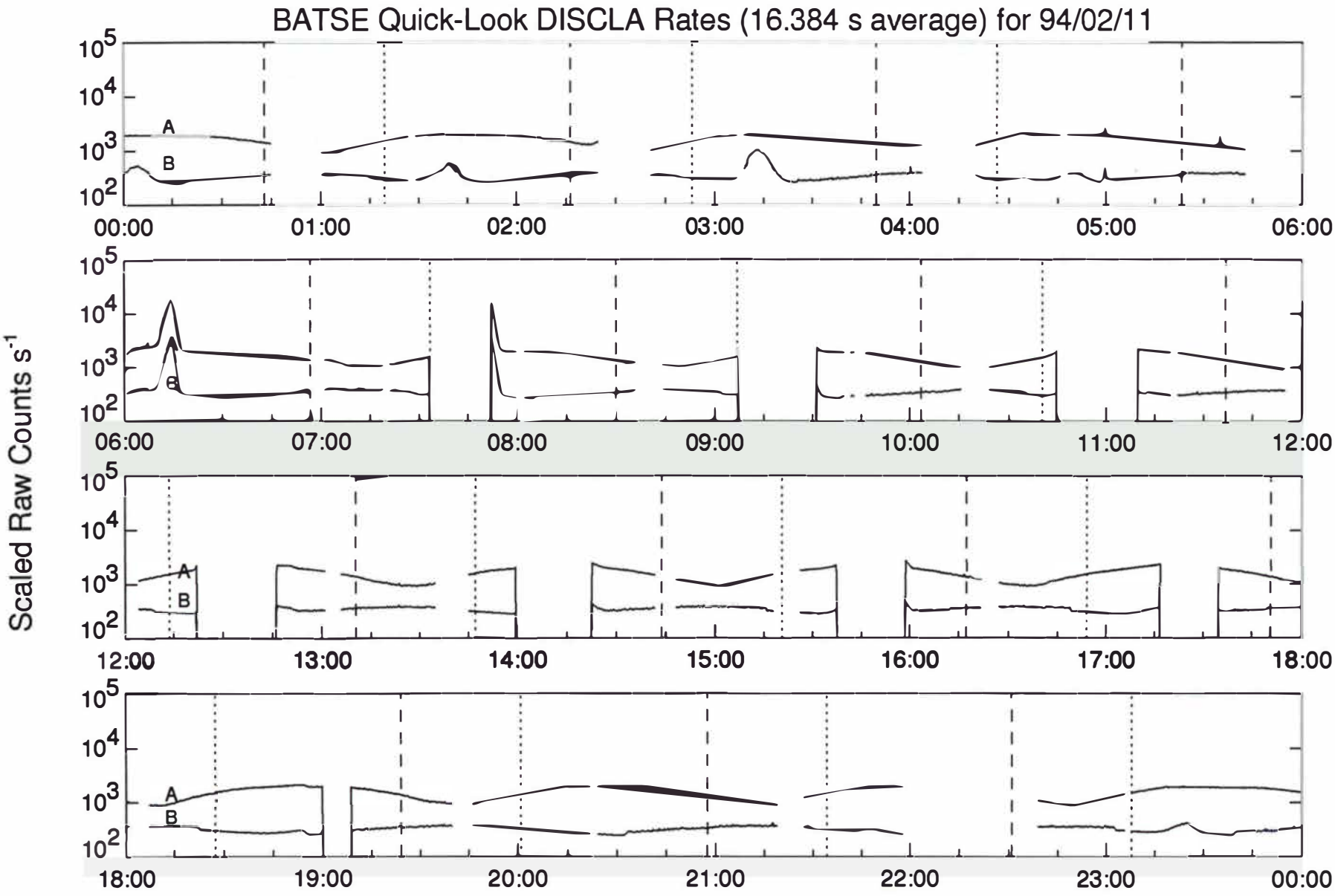
11/ 2/94 58824.234 s

0.250 S INTERVALS REGROUPED BY 2

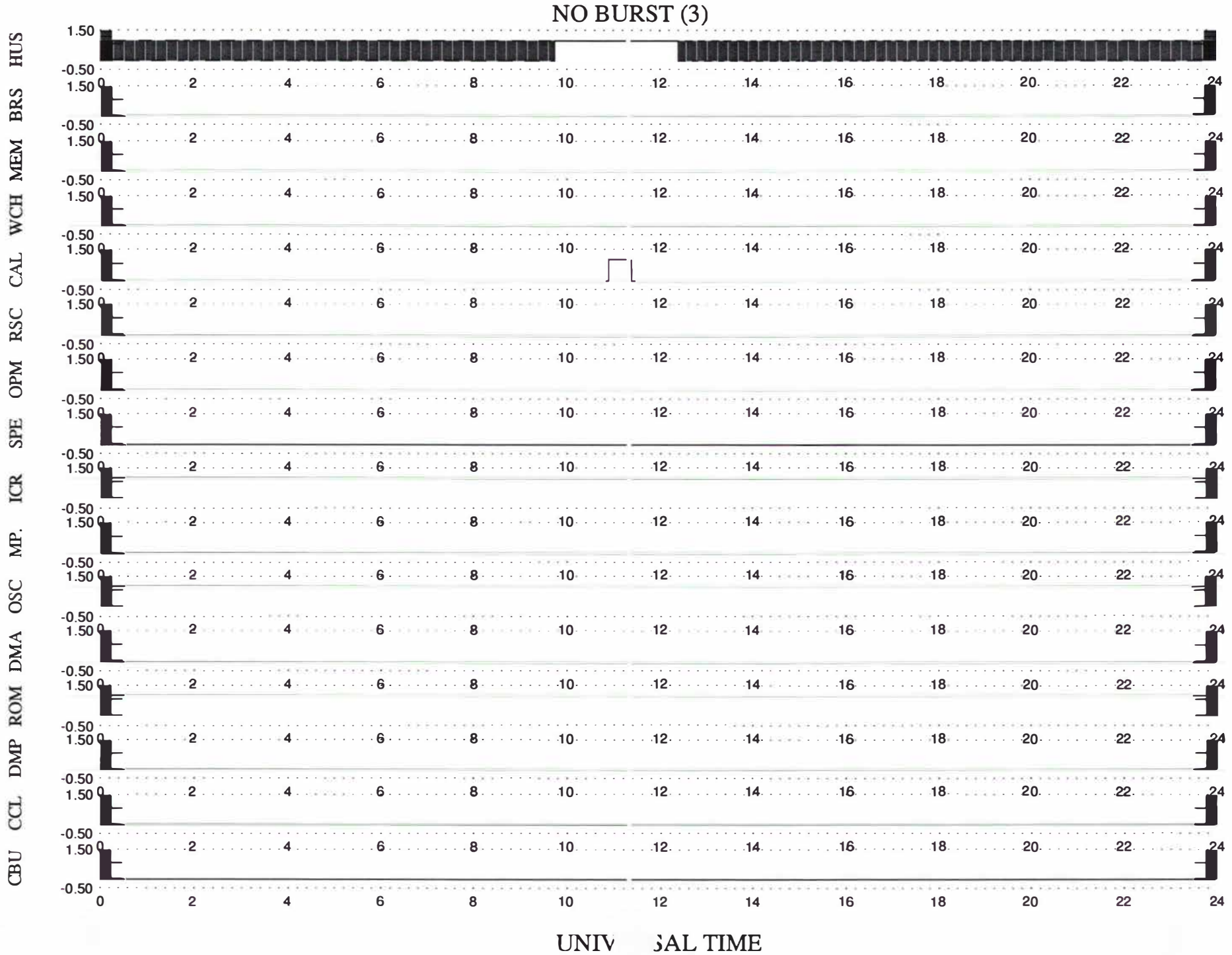
0- 0 keV




GOES
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
Watts m^{-2}
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/11, 0000:00
Plot created: 94/02/15, 1315
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

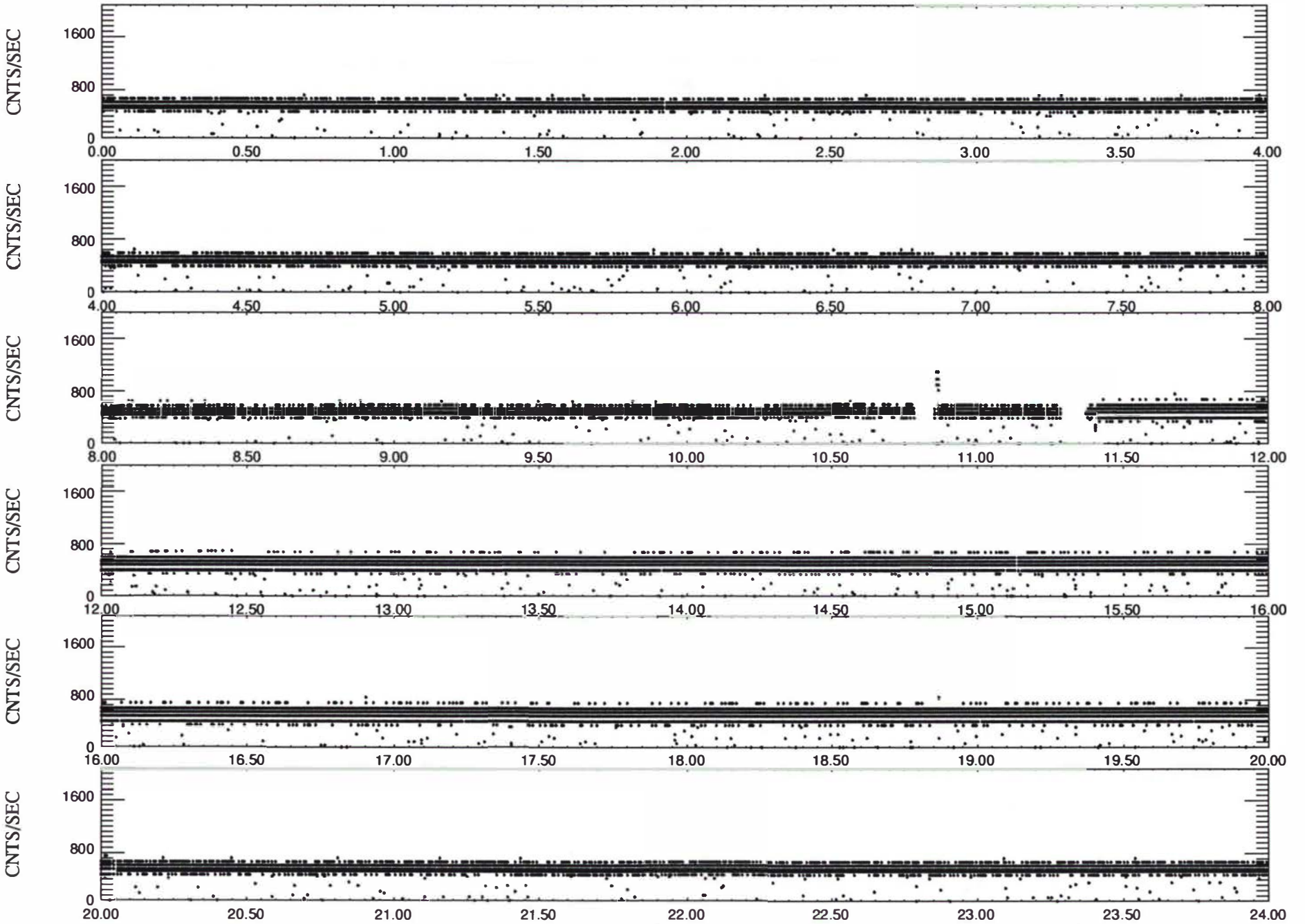

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/11
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/02/15, 1313 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 42, year 1994 to day 42, year 1994 5/26/94



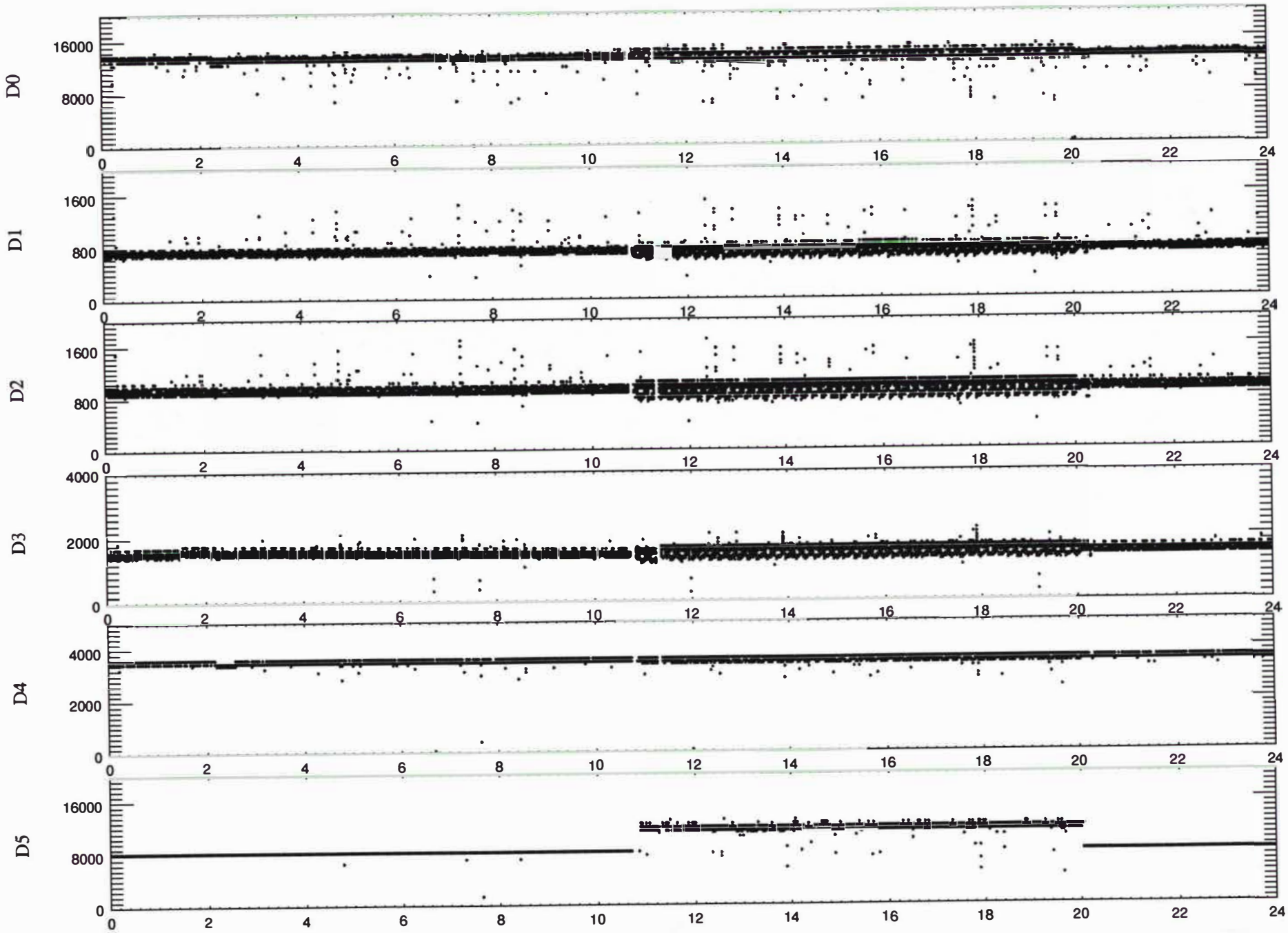
HUS 2A, MODE 1, NOT AVERAGED EDR day 42, year 1994 to day 42, year 1994 5/26/94

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC QEDR day 42, year 1994 to day 42, year 1994 2/14/94



From HAGEDON@ssl.msfc.nasa.gov Mon Feb 14 09:32 PST 1994
Date: Mon, 14 Feb 1994 11:36:29 -0600 (CST)
From: HAGEDON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER
NO.: 2816

TIME: TJD=9395 SECONDS=03158

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From HAGEDON@ssl.msfc.nasa.gov Mon Feb 14 09:36 PST 1994
Date: Mon, 14 Feb 1994 11:40:06 -0600 (CST)
From: HAGEDON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER
NO.: 2817

TIME: TJD=9395 SECONDS=47932

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

esa **ULYSSES**

TELECOMMUNICATIONS MESSAGE

european space agency
mail stop 264-318
4800 oak grove drive
pasadena ca91109 usa

Attention: KEVIN HURLEY		Transmit No.: 510-643-8640
Organisation: UNIVERSITY OF CALIFORNIA	Date: 14-Feb-94	Pages: 1 of 1
From: Gus Macintosh, FCT/JPL	Phone: 818-393-0944	Fax: 818-393-4501
Copies: Command Request of 9th. Feb. 94		

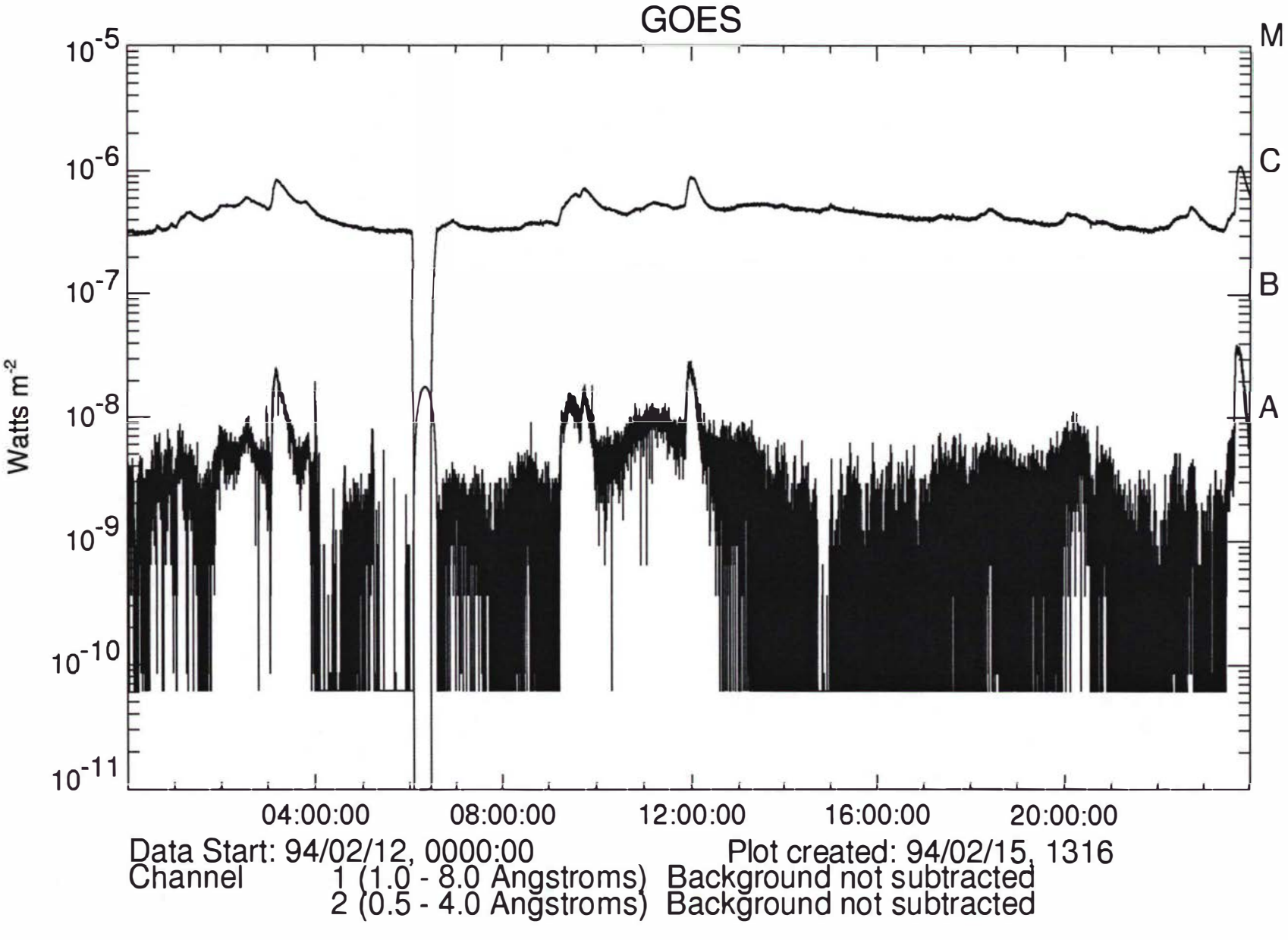
Dear Dr. Hurley,

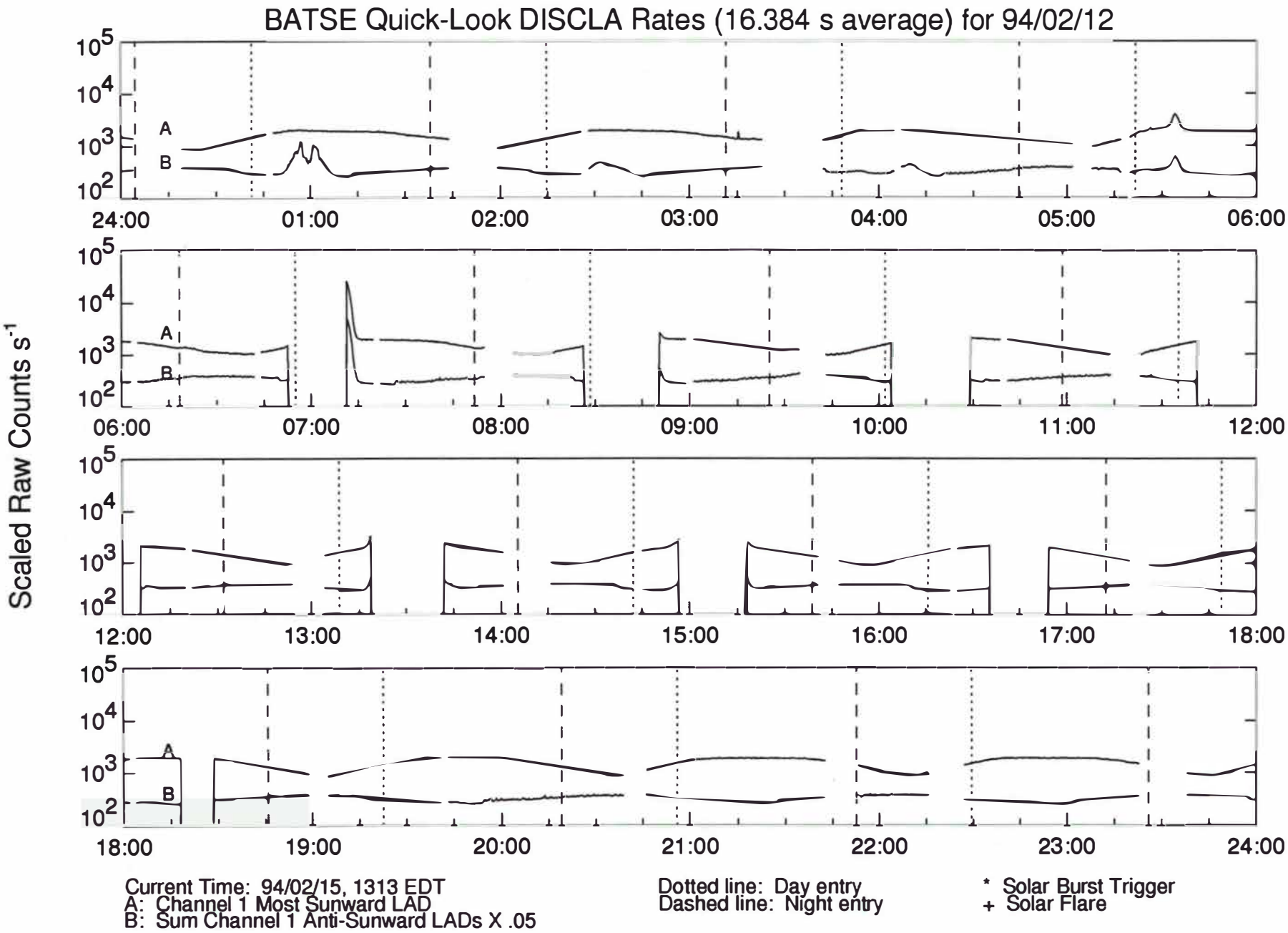
Please note that the command you requested, Z019 104A (designated as CR-238) was transmitted to the S/C on day 043 at 15310z and executed at 1536z. Confirmation was within the range expected (1500 volts).

Regards,

Gus Macintosh

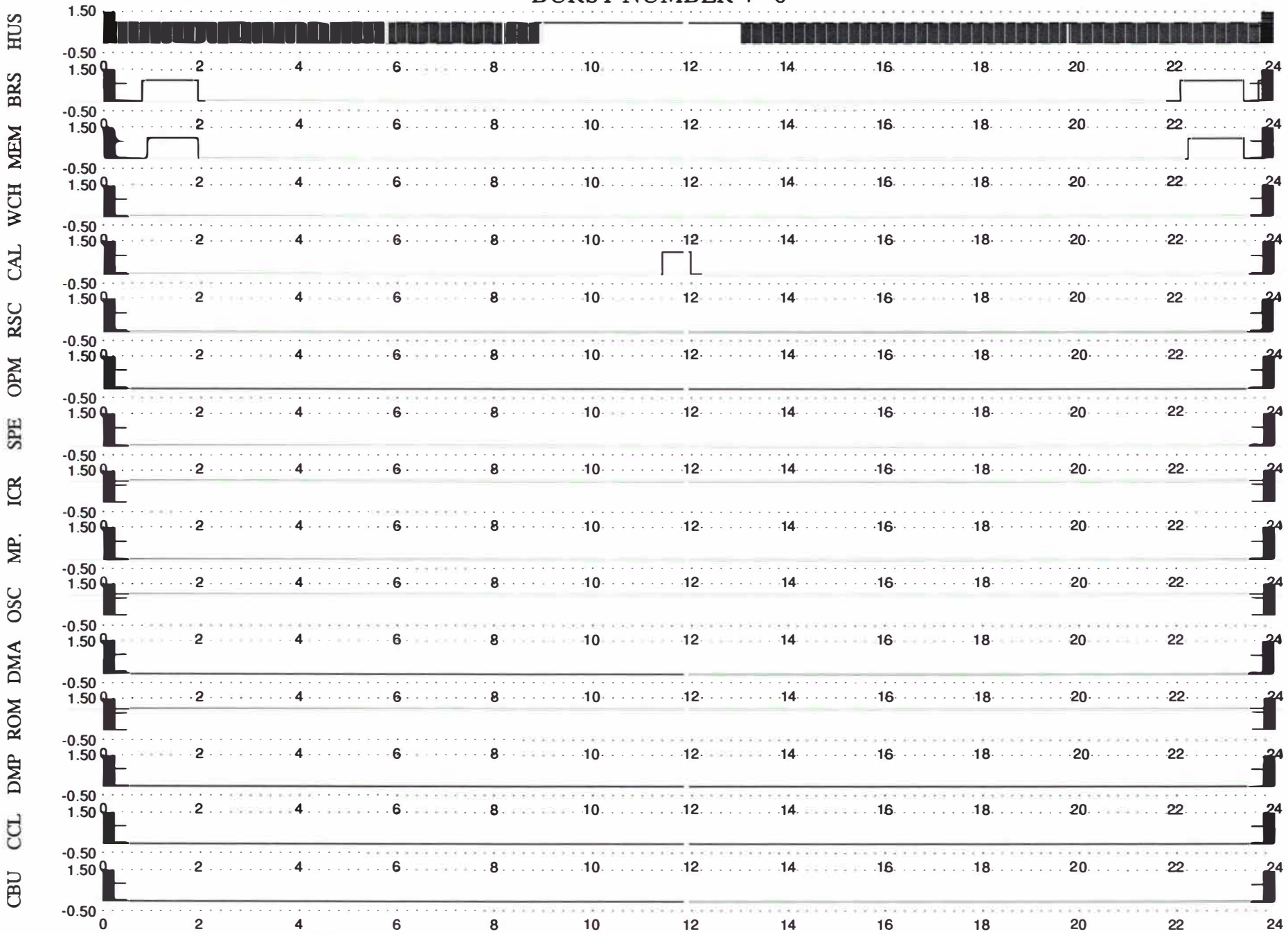
Gus MacIntosh


GOES
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/12, 0000:00
Plot created: 94/02/15, 1316
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/12
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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
24:00
Current Time: 94/02/15, 1313 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

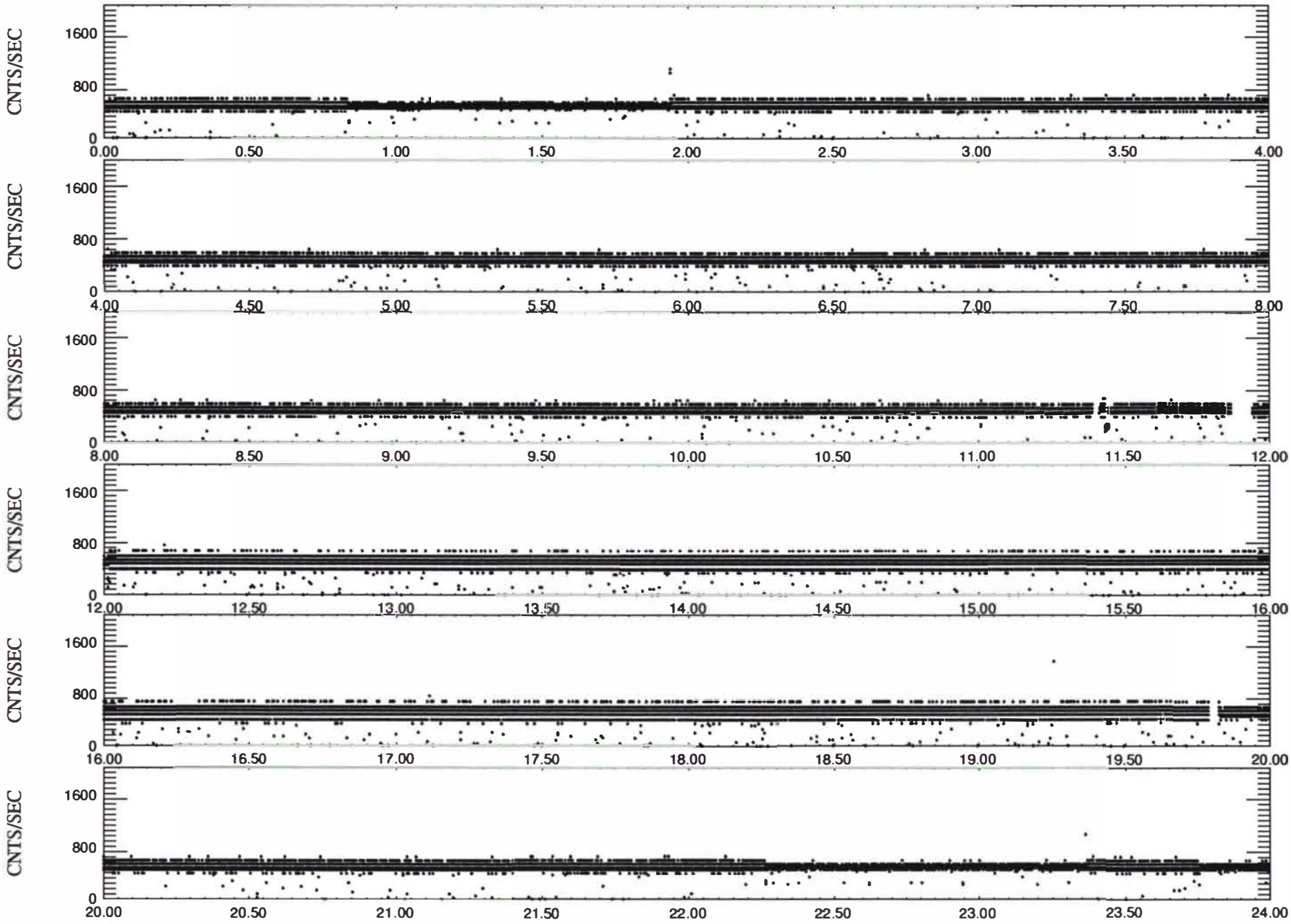
HUS MODES EDR day 43, year 1994 to day 43, year 1994 5/26/94

BURST NUMBER 4 - 6



HUS 2A, MODE 1, NOT AVERAGED EDR day 43, year 1994 to day 43, year 1994 5/26/94

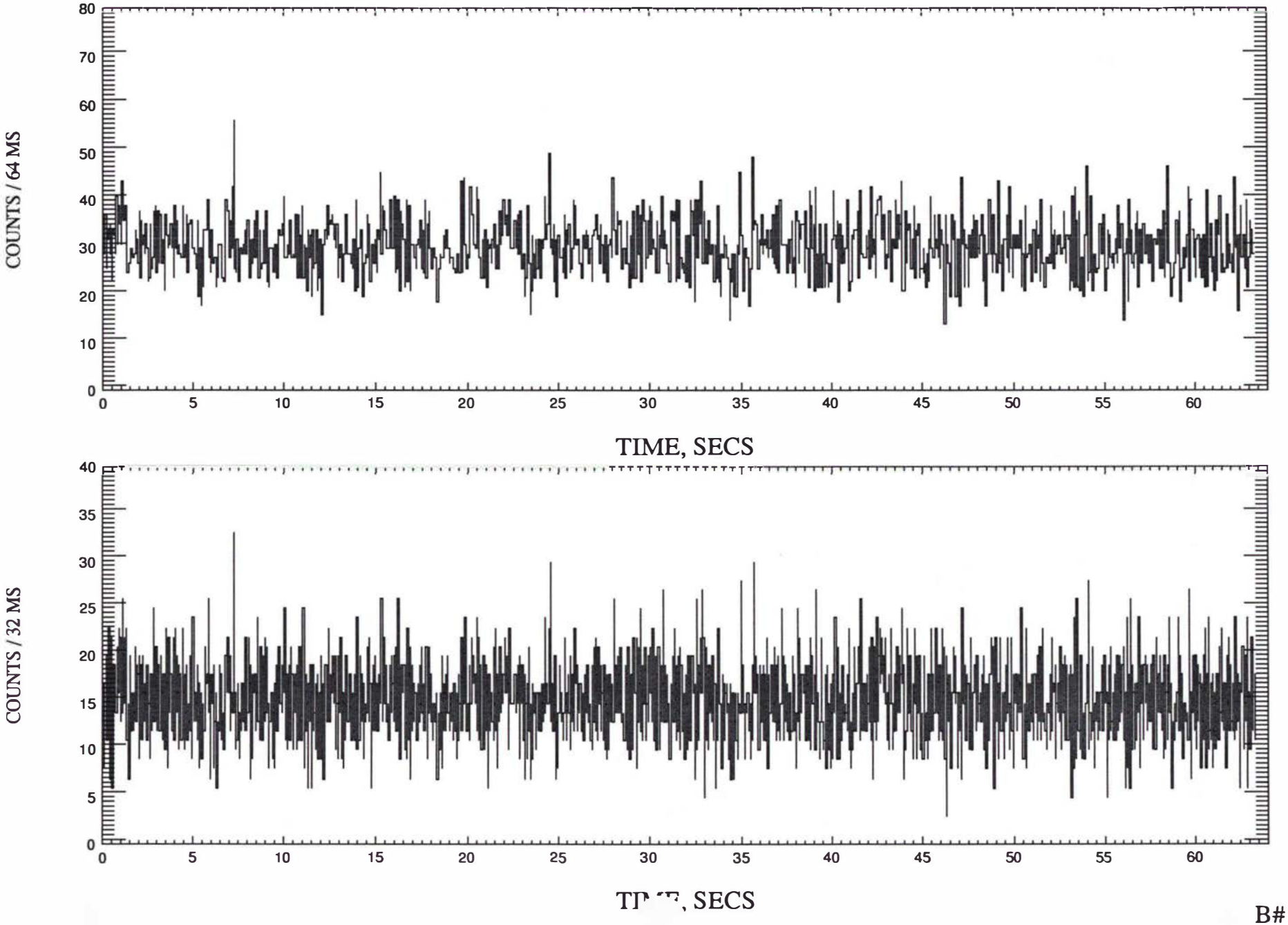
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 43, year 1994 5/26/94

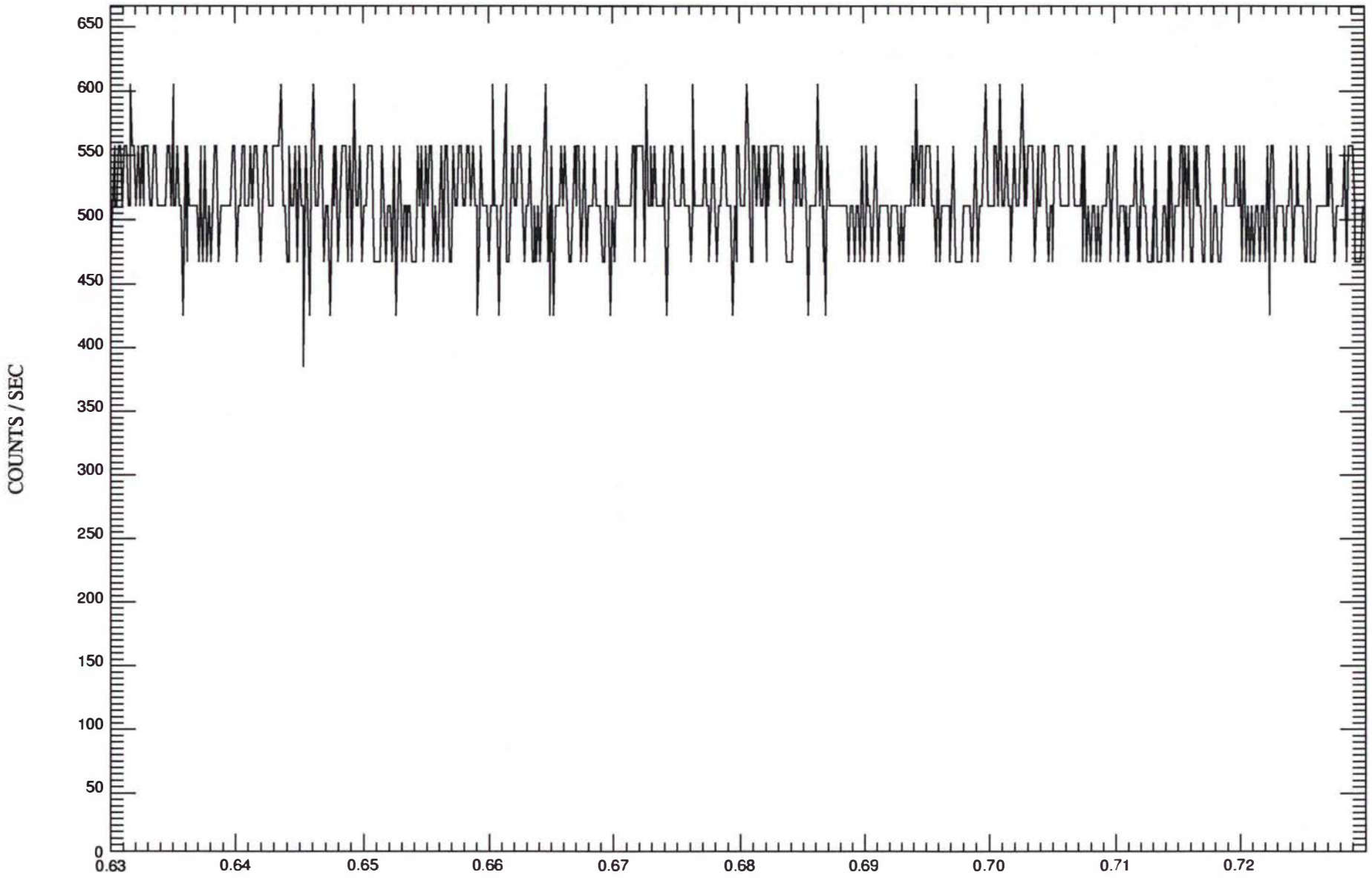
Burst Counter 4 at UT= 0.676546300252 h= 2435.567 s 00:40:35.567



B# 1

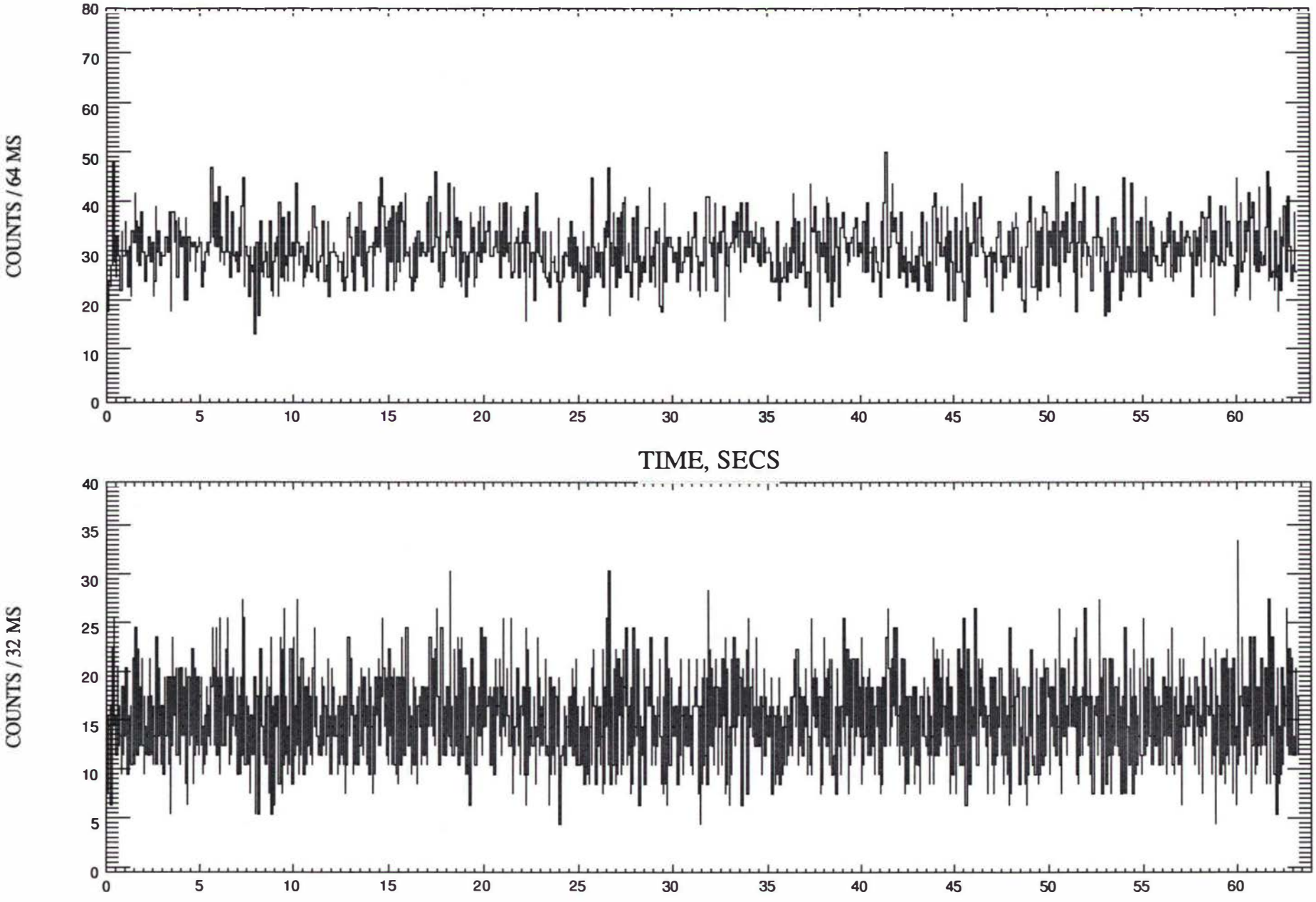
HUS 2A, MODE 1, NOT AVERAGED QEDR day 43, year 1994 to day 44, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 43, year 1994 5/26/94

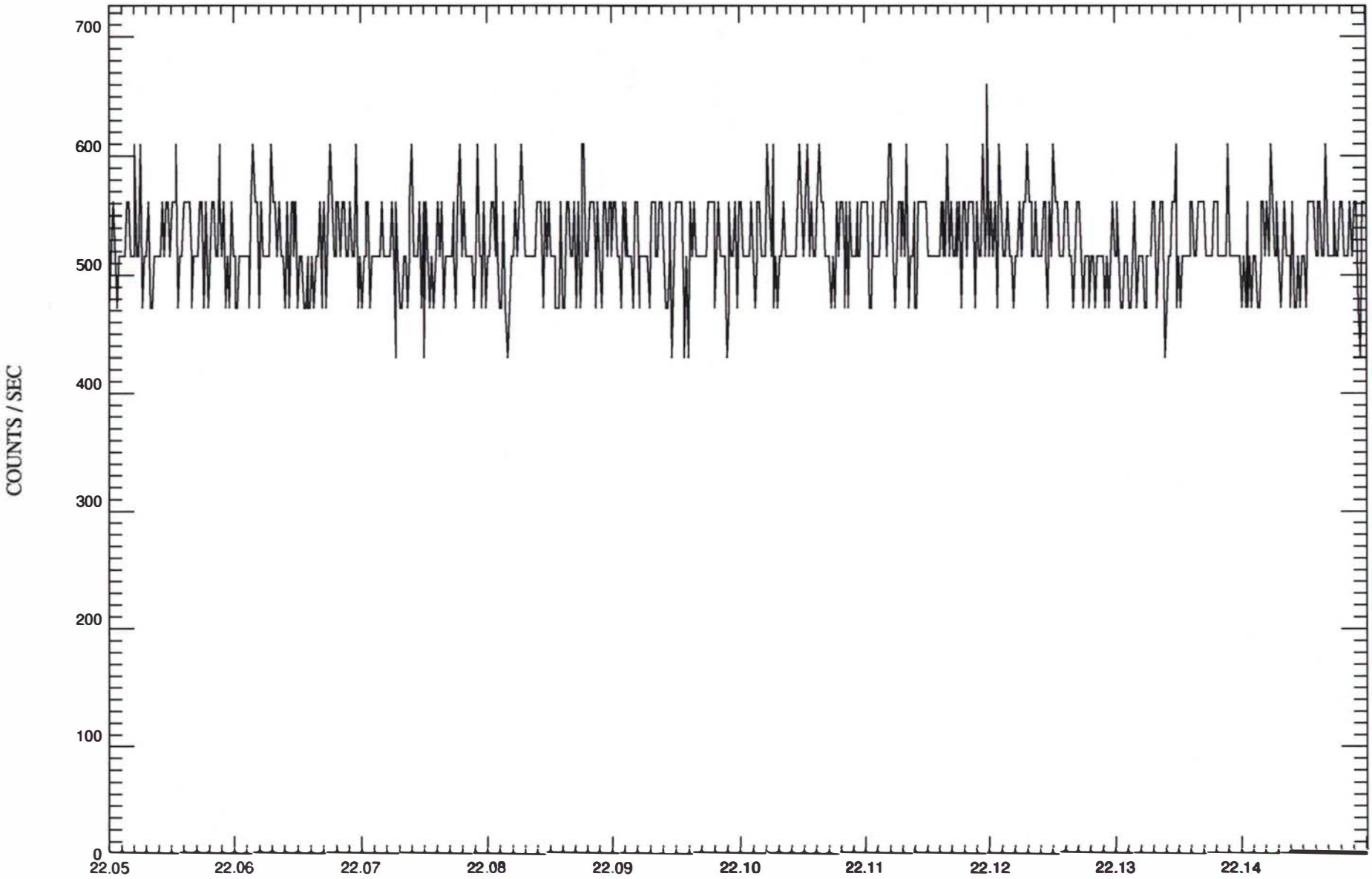
Burst Counter 5 at UT=22.102678294712 h=79569.642 s 22:06:09.642



B# 2

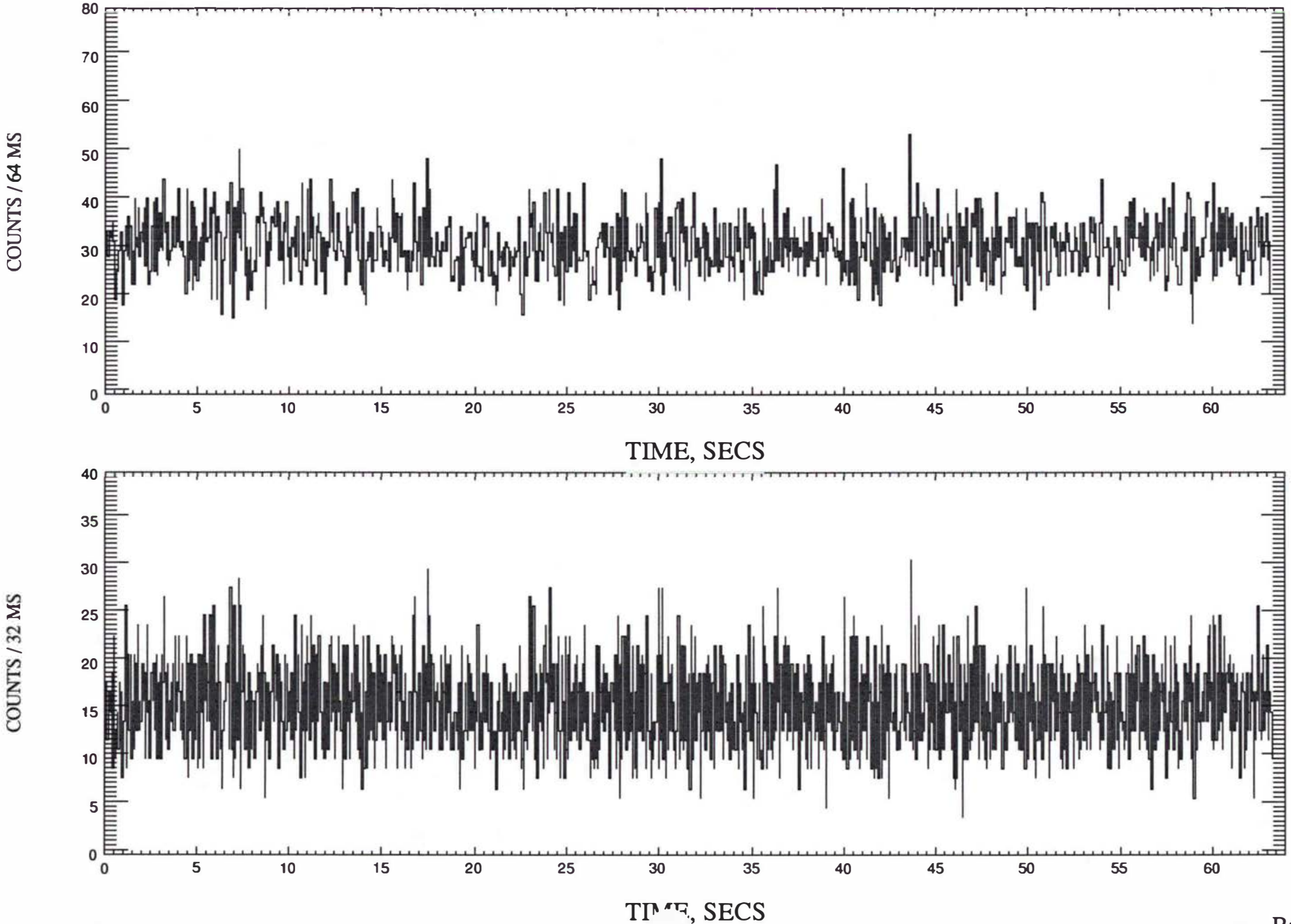
HUS 2A, MODE 1, NOT AVERAGED QEDR day 43, year 1994 to day 44, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 43, year 1994 5/26/94

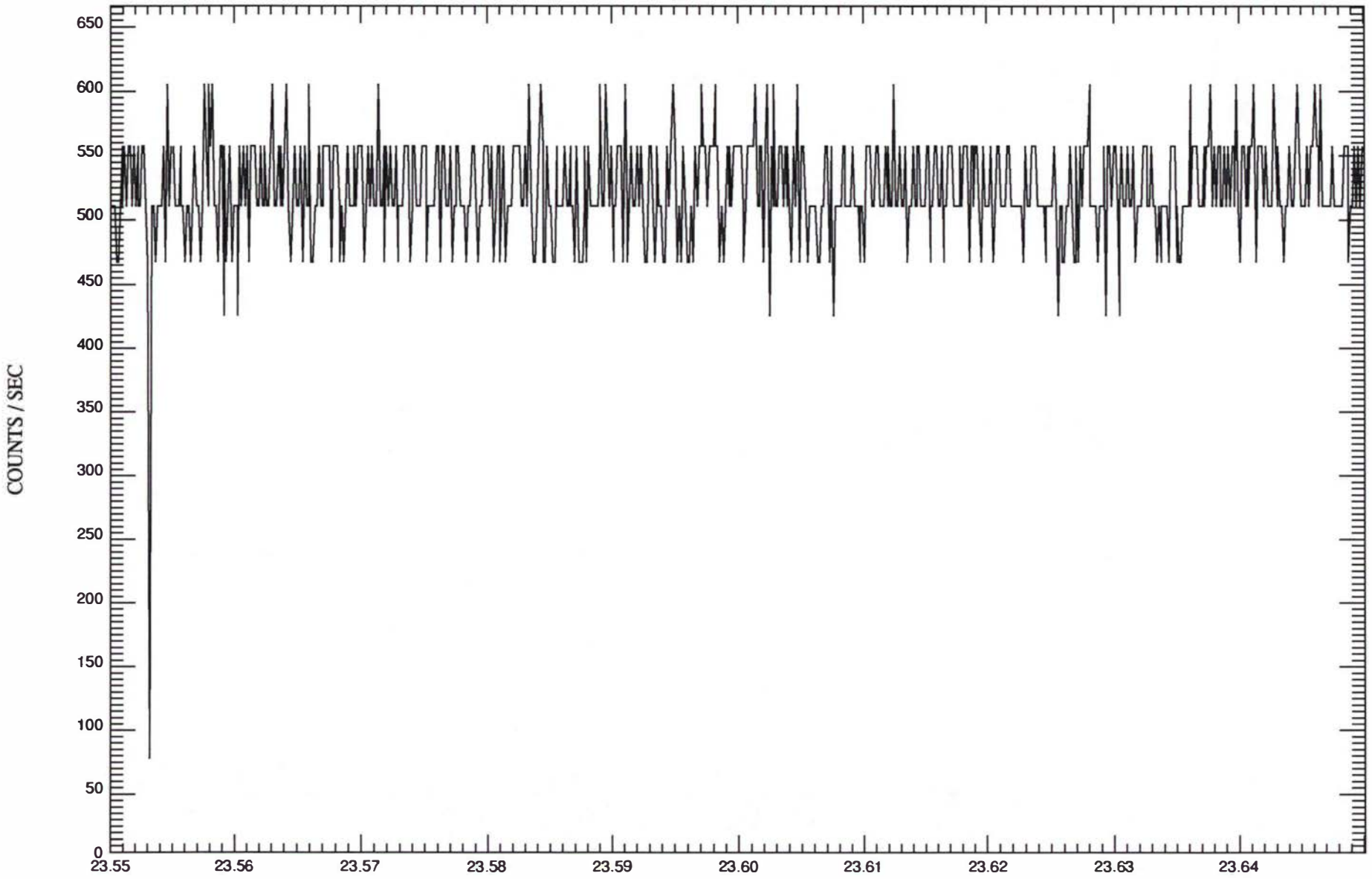
Burst Counter 6 at UT=23.602424841987 h=84968.729 s 23:36:08.729



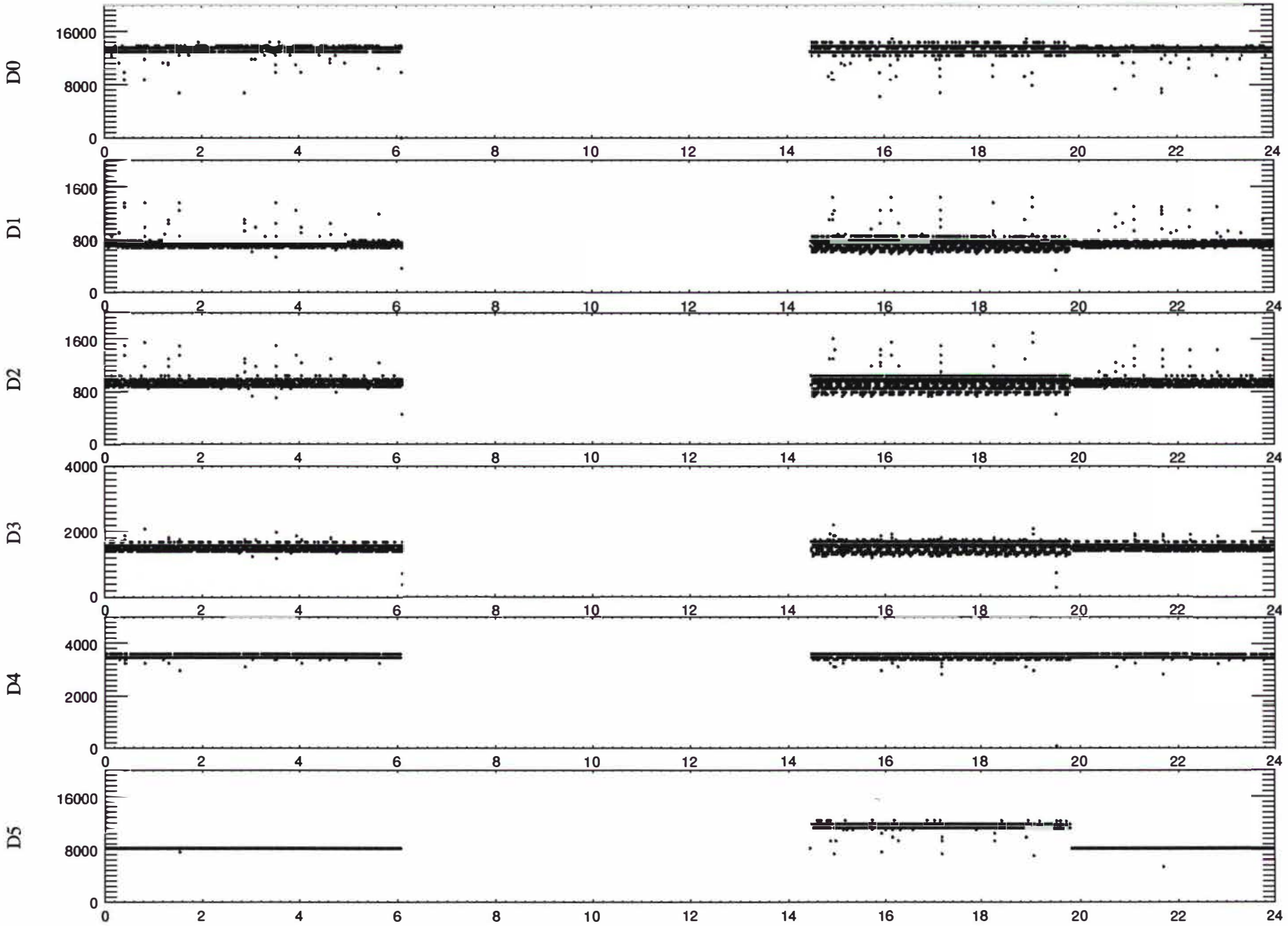
B# 3

HUS 2A, MODE 1, NOT AVERAGED QEDR day 43, year 1994 to day 44, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 43, year 1994 to day 43, year 1994 2/14/94



From ZMYEWSKI@ssl.msfc.nasa.gov Mon Feb 14 13:58 PST 1994
Date: Mon, 14 Feb 1994 16:02:07 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02818

TIME: TJD=9396 SECONDS=06405

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

BATSE time corrected w/01

Date: Jul 03 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 3Δt's calculated?

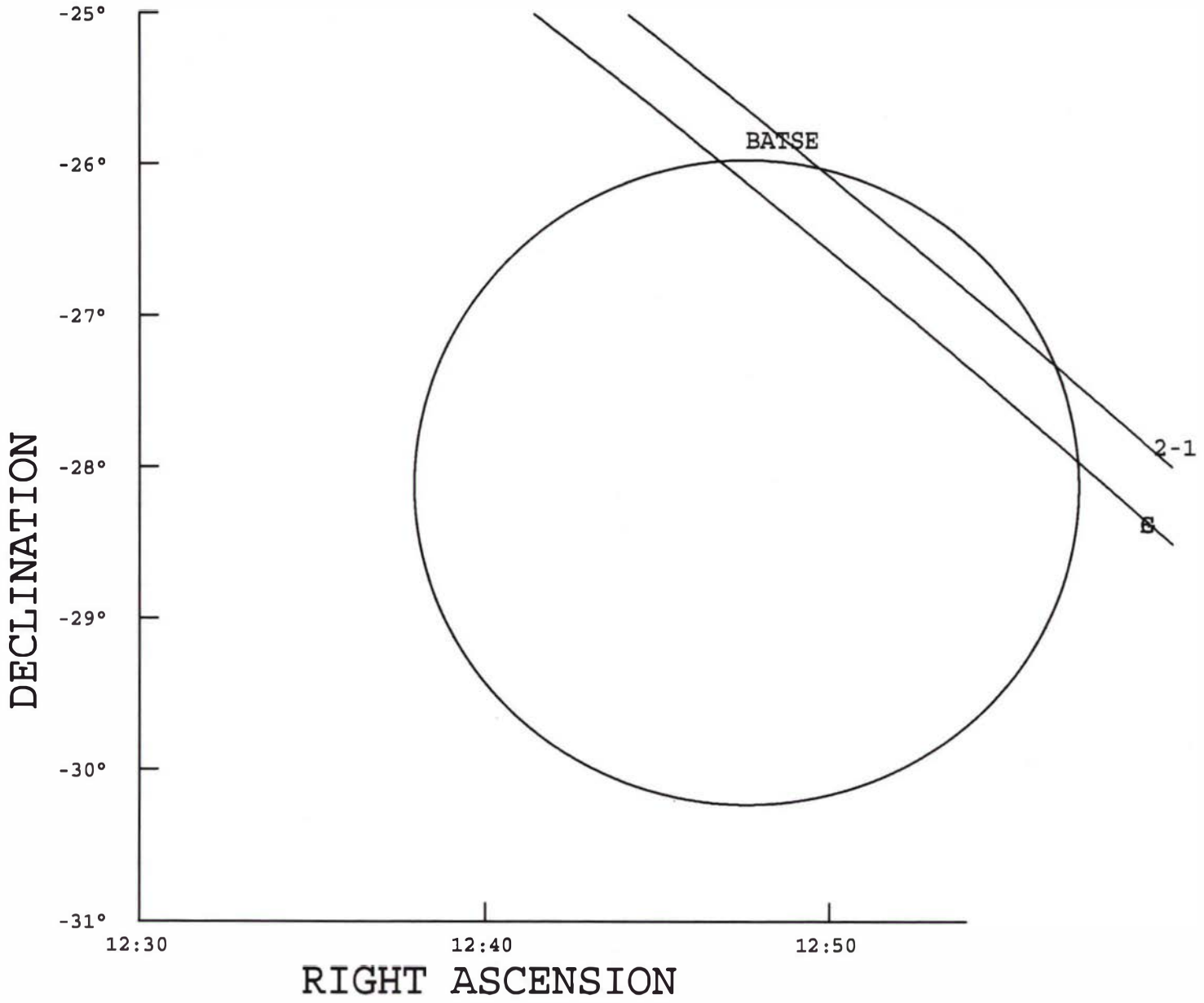
3. For 4 Spacecraft Events

☐ BMAPSUM executed to get chisquare for alternate positions?

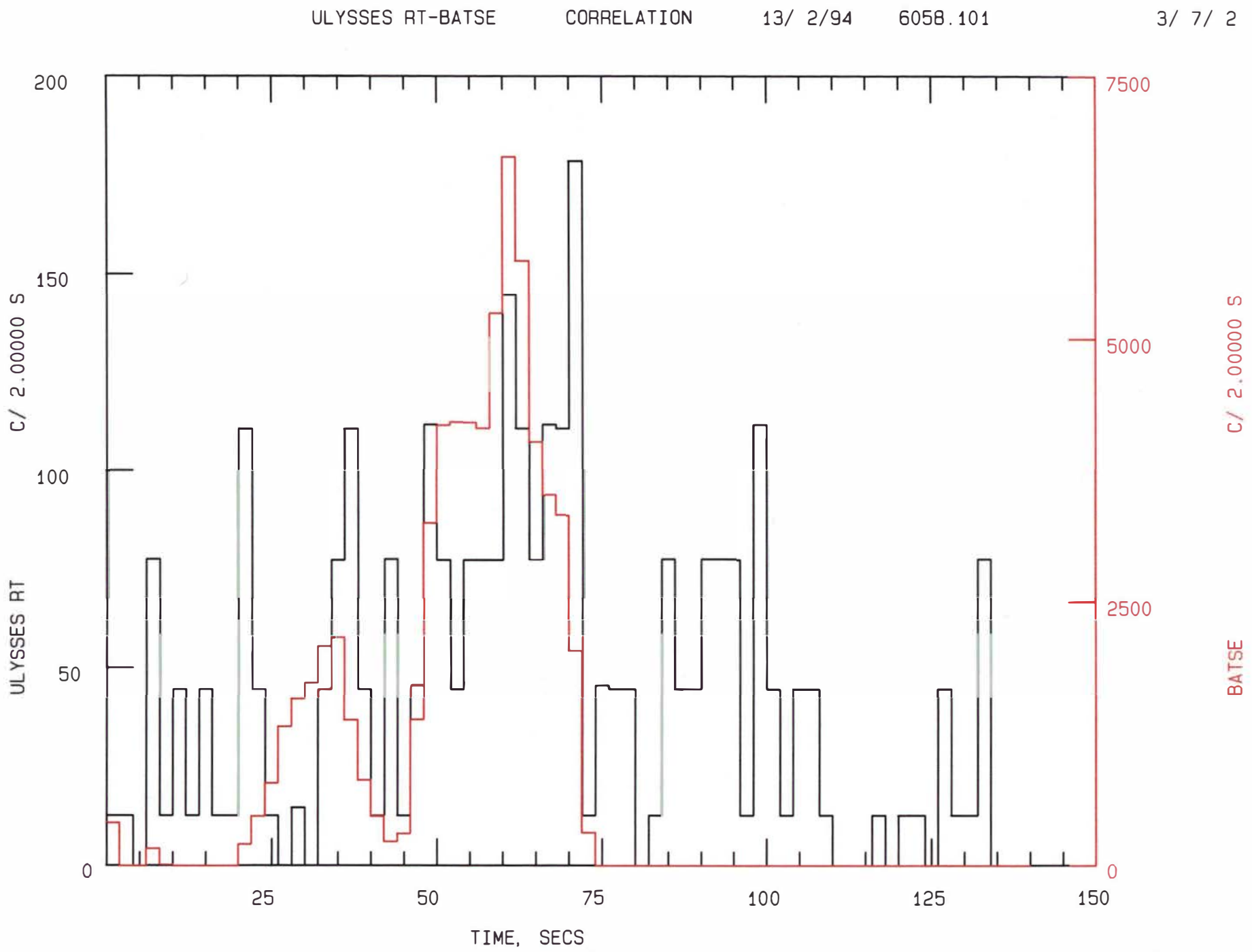
☑ ACCESS database updated?

EVENT OF FEB 13, 1994 2:01

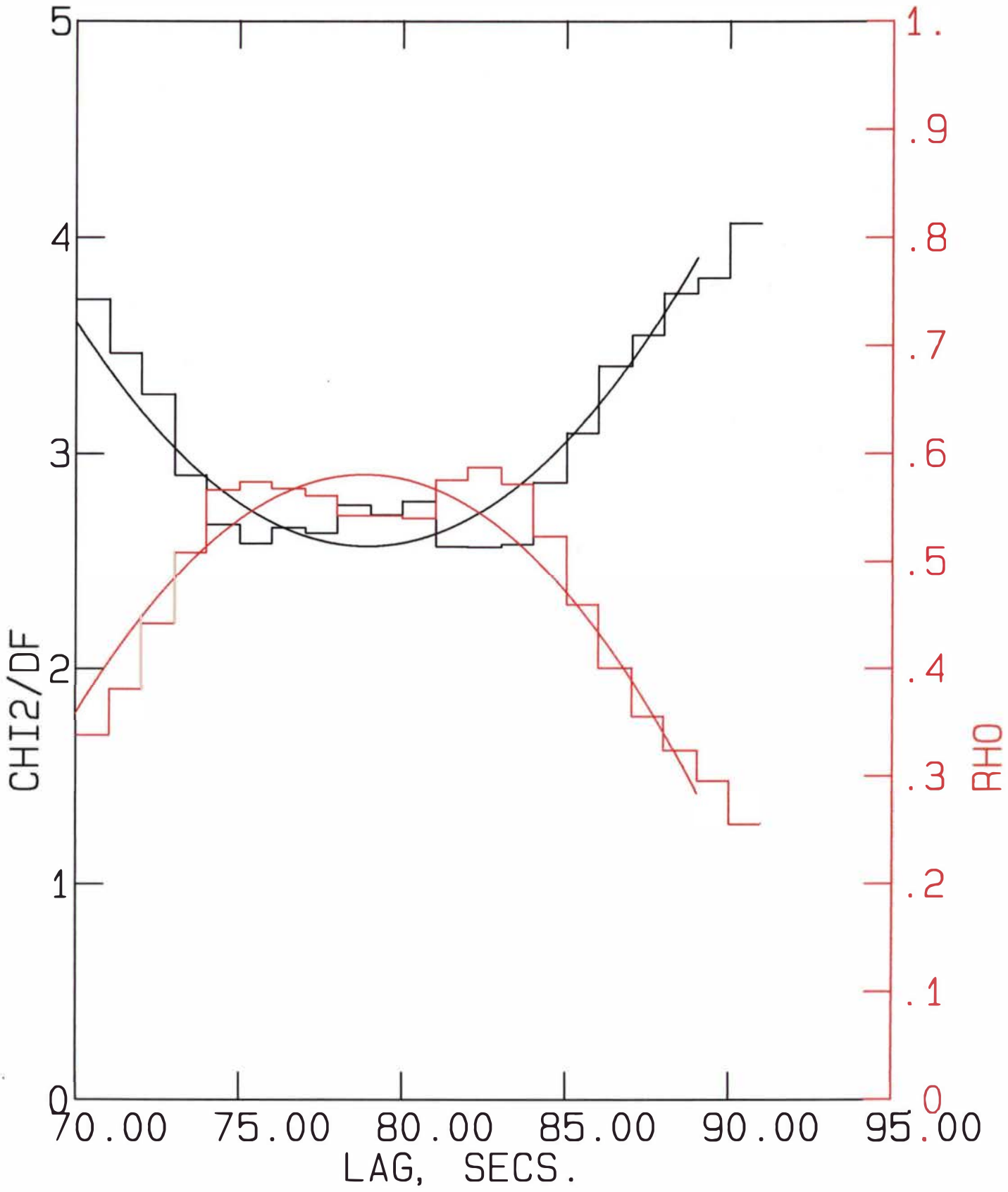
3/ 7/ 2



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 13/ 2/94 6058.101 3/ 7/ 2
200
150
100
50
0
C/ 2.00000 S
ULYSSES RT
7500
5000
2500
0
C/ 2.00000 S
BATSE
25
50
75
100
125
150
TIME, SECS

ULYSSES RT-BATSE CORRELATION 13/ 2/94 6058.101

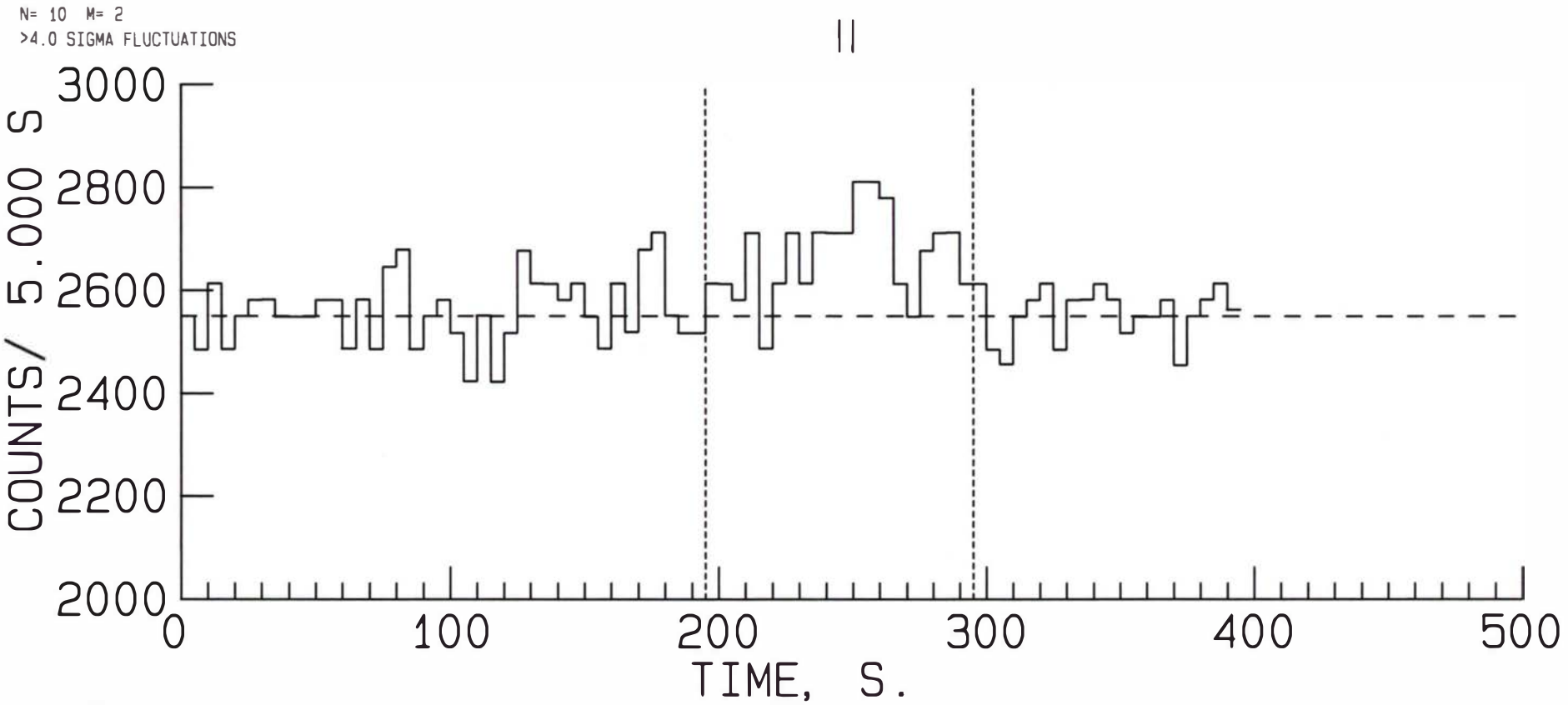


ULYSSES RT 3/ 7/ 2

13/ 2/94 5868.098 s

1.000 S INTERVALS REGROUPED BY 5

20- 137 keV



From ZMYEWSKI@ssl.msfc.nasa.gov Mon Feb 14 14:11 PST 1994
Date: Mon, 14 Feb 1994 16:15:39 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2819
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2819
 EVENT OF 1994 FEB 13 DAY OF YEAR= 44
 EVENT CROSSING TIME AT BATSE      : 44326. S. OR 12:18:46.0
 COORDINATES ARE    0.000    0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION:    4.000    66.000
 BATSE PEAK COUNTING RATE:    6300     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 13/ 2/  94 IS:
 RA=  150.684 DEC=  -51.230 DIST=     3.078 AU
 BATSE-ULYSSES DISTANCE =  460458467. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 22.32 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1420.88 SECS.
 CROSSING TIME AT ULYSSES     IS 45747. S. OR   12:42:26 +/-  172.84 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 13/ 2/  94 IS:
 RA=  315.139 DEC=  -18.112 DIST=     2.352 AU
 MARS-BATSE DISTANCE =  351806336. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.30 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=   34.82 SECS.
 CROSSING TIME AT MARS        IS 44361. S. OR   12:19:20 +/-  204.18 SECONDS
```

~~RI~~ Too weak - reject

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2819	940213	9396	44326	6300	004	+66

BATSE BURST TRIGGER

NO.: 02819

TIME: TJD=9396 SECONDS=44326

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=62.5 AZIMUTH=264.7 ERROR= DEGREES

COMMENTS:
GRB LASTING APPROX. 0.6 SEC. MARGINALLY VISIBLE ABOVE 300KEV.

RT data files which may contain ~ 0.5 s timing error because they follow a trigger

2 hour time range from beginning of burst that extract falls in:			DATA USED ?	
b02:0126	extract beg time:0244	e91270_2A1_02.73_02.84.ascii.Z	N	
b03:0219	extract beg time:0244	e91270_2A1_02.73_02.84.ascii.Z	N	
b01:0121	extract beg time:0310	e91360_2A1_03.16_03.37.ascii.Z	N	
:0932	extract beg time:1025	e92010_2A1_10.42_10.48.ascii.Z	Y	(TRIGGER)
:0845	extract beg time:1015	e92058_2A1_10.25_10.75.ascii.Z	N	&
b01:0609	extract beg time:0723	e92111_2A1_07.38_07.54.ascii.Z	N	
b01:0629	extract beg time:0634	e92174_2A1_06.57_06.87.ascii.Z	N	
b01:0541	extract beg time:0549	e92190_2A1_5.76_5.90.ascii.Z	Y	(SGR 1900)
b02:2032	extract beg time:2058	e92205_2A1_20.97_22.66.ascii.Z	Y	(TRIGGER)
b01:1202	extract beg time:1240	e92209_2A1_12.67_12.85.ascii.Z	N	
b01:1717	extract beg time:1831	e92213_2A1_18.51_18.82.ascii.Z	N	
b01:1142	extract beg time:1301	e92303_2A1_13.02_13.28.ascii	Y	
b03:0736	extract beg time:0844	q92313_2A1_8.70_8.96.ascii.Z	N	
b03:0736	extract beg time:0844	e92313_2A1_08.74_09.02.ascii.Z	N	
b14:1730	extract beg time:1905	q92314_2A1_19.08_19.30.ascii.Z	N	
b15:1825	extract beg time:1905	q92314_2A1_19.08_19.30.ascii.Z	N	
b02:0156	extract beg time:0344	e92315_2A1_3.10_3.36.ascii.Z	N	
b03:0322	extract beg time:0344	e92315_2A1_3.10_3.36.ascii.Z	N	
b06:0819	extract beg time:0844	e92315_2A1_8.71_8.85.ascii.Z	N	
b08:1211	extract beg time:1340	e92315_2A1_13.66_13.96.ascii.Z	N	
b08:1211	extract beg time:1344	e92315_2A1_13.74_14.03.ascii.Z	N	
b02:0600	extract beg time:0644	e92316_2A1_6.76_7.04.ascii.Z	N	
b02:0135	extract beg time:0329	e93012_2A1_3.50_3.72.ascii.Z	Y	
b03:0227	extract beg time:0329	e93012_2A1_3.50_3.72.ascii.Z	Y	
b04:0315	extract beg time:0329	e93012_2A1_3.50_3.72.ascii.Z	Y	
b01:1105	extract beg time:1150	q93077_2A1_11.83_12.05.ascii.Z	Y	
b01:0745	extract beg time:0756	q93096_2A1_7.71_7.85.ascii.Z	Y	(TRIGGER)
b01:0745	extract beg time:0856	q93096_2A1_8.40_8.50.ascii.Z	N	
1:1445	extract beg time:1530	e93126_2A1_15.50_15.65.ascii.Z	N	
1:1445	extract beg time:1548	e93126_2A1_15.80_15.95.ascii.Z	N	
b01:0334	extract beg time:0434	e93265_2A1_04.56_04.64.ascii.Z	N	
b01:0900	extract beg time:0943	e93272_2A1_09.71_09.98.ascii.Z	Y	(SGR 1806)
b01:1654	extract beg time:1707	e93287_2A1_17.11_17.37.ascii.Z	Y	
b01:2215	extract beg time:2240	e93294_2A1_22.67_22.85.ascii.Z	N	
b01:0824	extract beg time:0840	e93303_2A1_08.66_08.81.ascii.Z	N	
b01:0352	extract beg time:0510	e93318_2A1_05.17_05.42.ascii.Z	N	
b01:0641	extract beg time:0824	e93340_2A1_08.40_08.61.ascii.Z	N	
b02:0602	extract beg time:0733	e94026_2A1_07.55_07.71.ascii.Z	N	
b05:1140	extract beg time:1240	e94044_2A1_12.66_12.76.ascii.Z	Y	– No difference between old + new files
b01:0204	extract beg time:0326	e94047_2A1_03.44_03.62.ascii.Z	N	
b01:0113	extract beg time:0124	e94049_2A1_01.40_02.50.ascii.Z	N	
b03:1943	extract beg time:2123	e94058_2A1_21.38_21.49.ascii.Z	N	
b01:0346	extract beg time:0505	e94061_2A1_05.08_05.25.ascii.Z	Y	(Trigger; but RT data probably used)
b01:0047	extract beg time:0128	e94062_2A1_01.47_01.63.ascii.Z	N	
b01:2113	extract beg time:2142	e94202_2A1_21.70_21.98.ascii.Z	N	
b01:2113	extract beg time:2144	e94202_2A1_21.74_22.14.ascii.Z	N	
b01:1047	extract beg time:1143	e94242_2A1_11.71_11.86.ascii.Z	N	
b01:0647	extract beg time:0728	e94298_2A1_07.47_07.51.ascii.Z	N	
b01:0128	extract beg time:0241	e94299_2A1_02.68_02.80.ascii.Z	Y	
b09:1148	extract beg time:1348	e94321_2A1_13.80_14.47.ascii.Z	N	
b10:1238	extract beg time:1348	e94321_2A1_13.80_14.47.ascii.Z	N	
b11:1328	extract beg time:1348	e94321_2A1_13.80_14.47.ascii.Z	N	
b01:1952	extract beg time:2040	e94326_2A1_20.66_20.78.ascii.Z	N	
b01:0223	extract beg time:0406	e95042_2A1_04.10_04.76.ascii.Z	N	
1:0640	extract beg time:0740	e95072_2A1_07.67_07.81.ascii.Z	N	
b01:0144	extract beg time:0158	e95216_2A1_01.96_02.09.ascii.Z	Y	(Trigger)
b02:1628	extract beg time:1718	e95339_2A1_17.30_17.45.ascii.Z	N	
b03:1718	extract beg time:1718	e95339_2A1_17.30_17.45.ascii.Z	N	
b01:1124	extract beg time:1205	e95362_2A1_12.09_12.87.ascii.Z	N	

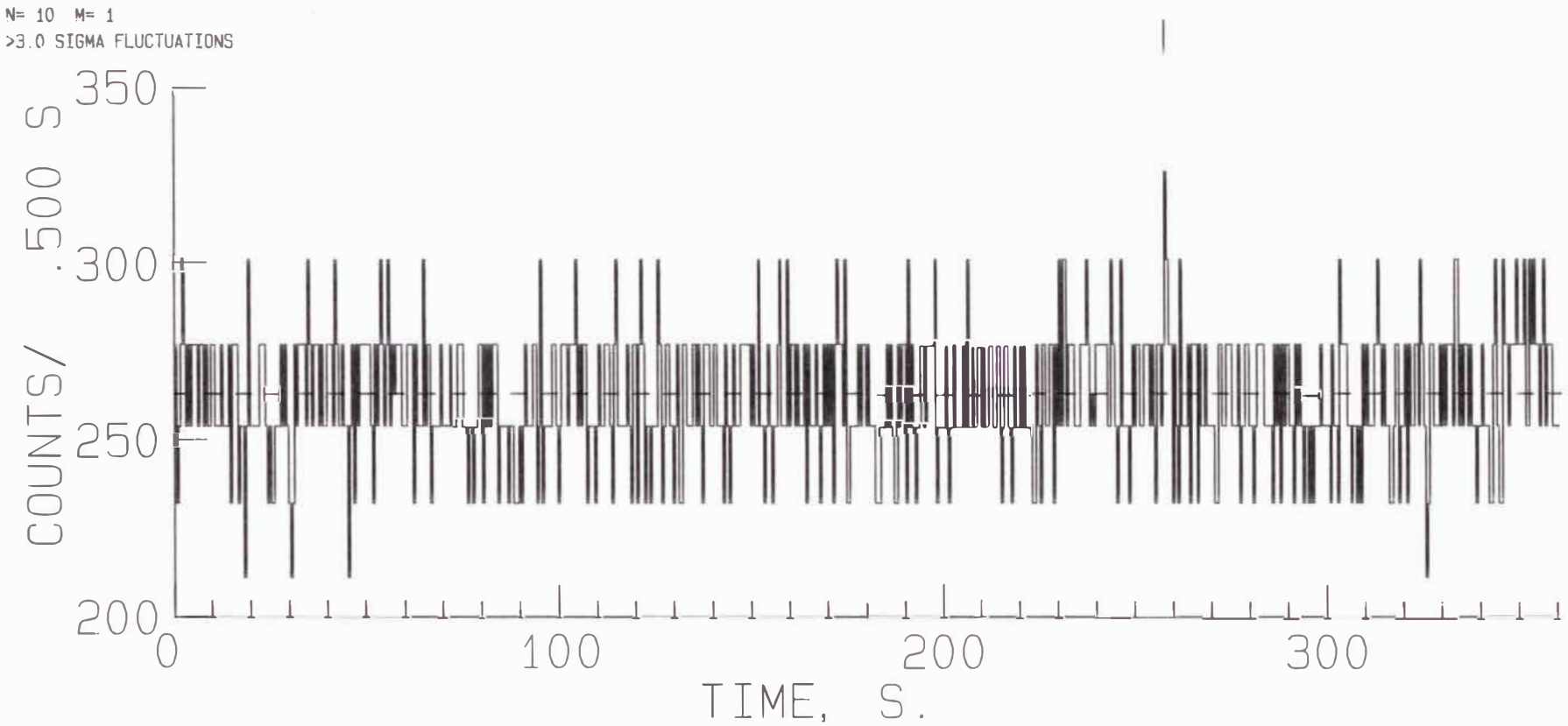
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b04:1343  extract beg time:1540  e95362_2A1_15.67_15.84.ascii.Z Y
b04:1343  extract beg time:1541  e95362_2A1_15.69_15.85.ascii.Z Y
b05:1516  extract beg time:1540  e95362_2A1_15.67_15.84.ascii.Z Y
b05:1516  extract beg time:1541  e95362_2A1_15.69_15.85.ascii.Z Y
b01:0053  extract beg time:0251  e96002_2A1_02.85_03.62.ascii   N
b02:0216  extract beg time:0251  e96002_2A1_02.85_03.62.ascii   N
b20:1956  extract beg time:2041  e96002_2A1_20.68_20.76.ascii   N
b20:1956  extract beg time:2041  e96002_2A1_20.69_20.76.ascii   N
b02:0128  extract beg time:0305  e96004_2A1_03.09_03.87.ascii.Z N
b03:0235  extract beg time:0305  e96004_2A1_03.09_03.87.ascii.Z N
b05:1621  extract beg time:1656  e96006_2A1_16.93_17.08.ascii.Z N
b01:0116  extract beg time:0150  e96007_2A1_01.84_01.95.ascii    N
b01:0116  extract beg time:0152  e96007_2A1_01.87_01.99.ascii    N
b01:1819  extract beg time:1935  e96028_2A1_19.59_19.87.ascii.Z Y  (GR 1747 ? - MAYBE USED FOR NETSYN?)
b01:0208  extract beg time:0233  e96030_2A1_02.55_02.66.ascii.Z Y      "        "        "
b01:0208  extract beg time:0235  e96030_2A1_02.58_02.73.ascii.Z Y      "        "        "
b01:0208  extract beg time:0235  e96030_2A1_02.59_02.73.ascii.Z Y      "        "        "
b01:0849  extract beg time:0949  qp96032_2A1_09.81_09.94.ascii.Z Y     "        "        "
b02:2011  extract beg time:2144  qp96032_2A1_21.74_21.90.ascii.Z Y
b01:1929  extract beg time:2049  qp96051_2A1_20.82_20.85.ascii.Z N
b01:1929  extract beg time:2049  qp96051_2A1_20.82_20.86.ascii.Z N
b01:1529  extract beg time:1719  qp96094_2A1_17.32_17.48.ascii.Z N
b01:1529  extract beg time:1722  qp96094_2A1_17.36_17.52.ascii.Z N
b01:1652  extract beg time:1752  qp96168_2A1_17.87_17.97.ascii.Z N
b01:1652  extract beg time:1755  qp96168_2A1_17.91_18.05.ascii.Z N
```

ULYSSES RT

10/ 8/95

13/ 2/94 45576.215 s

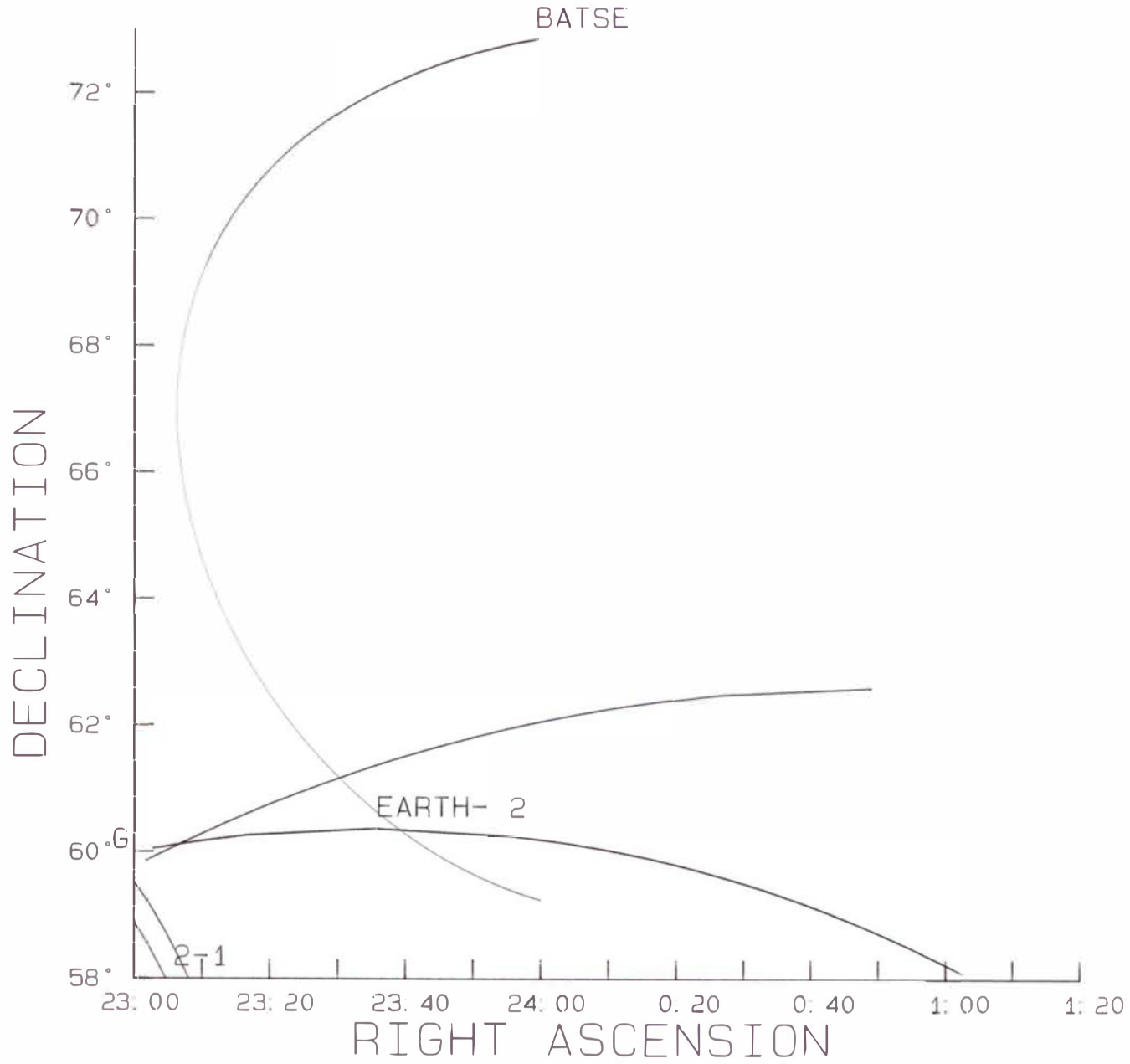
20- 137 keV

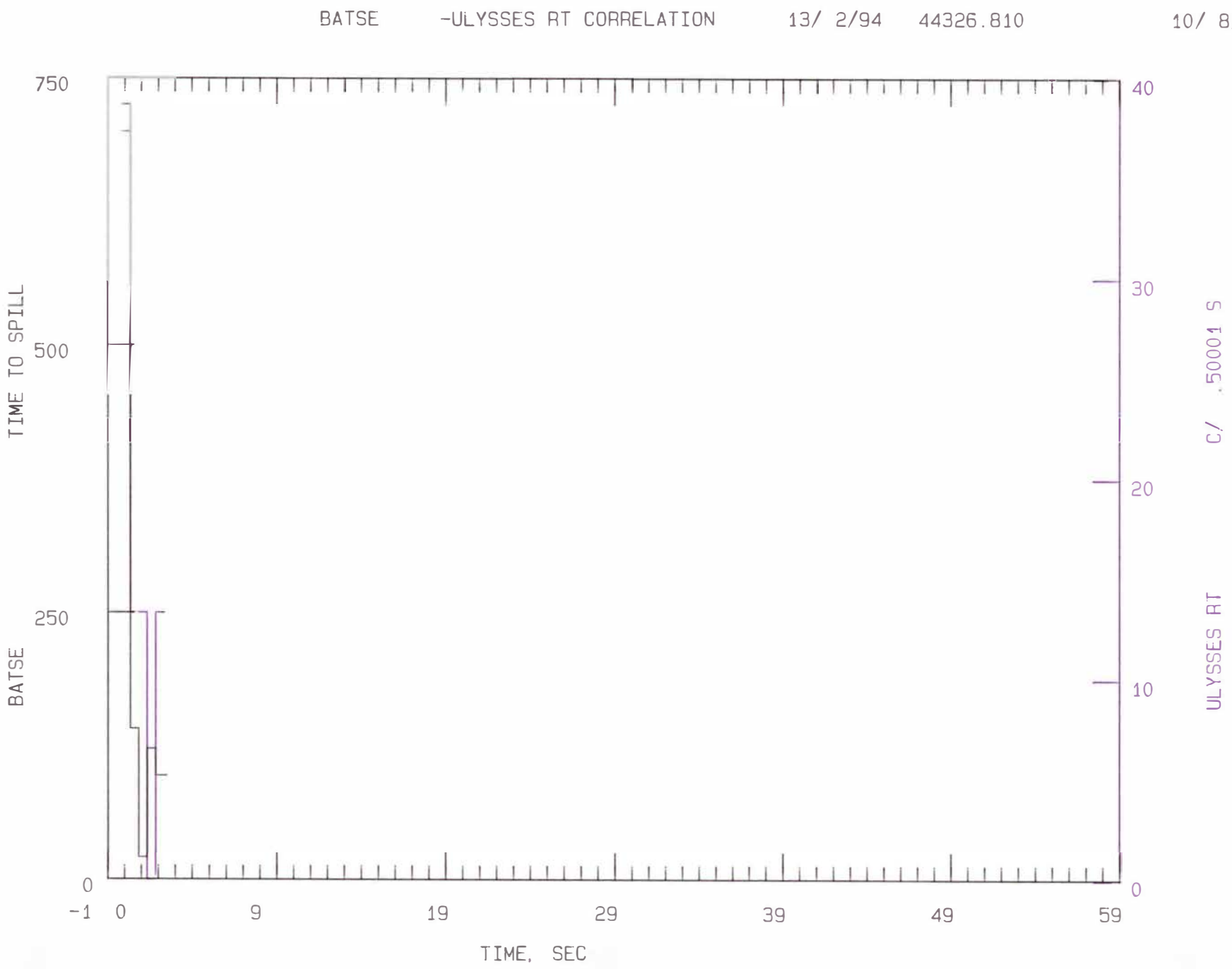


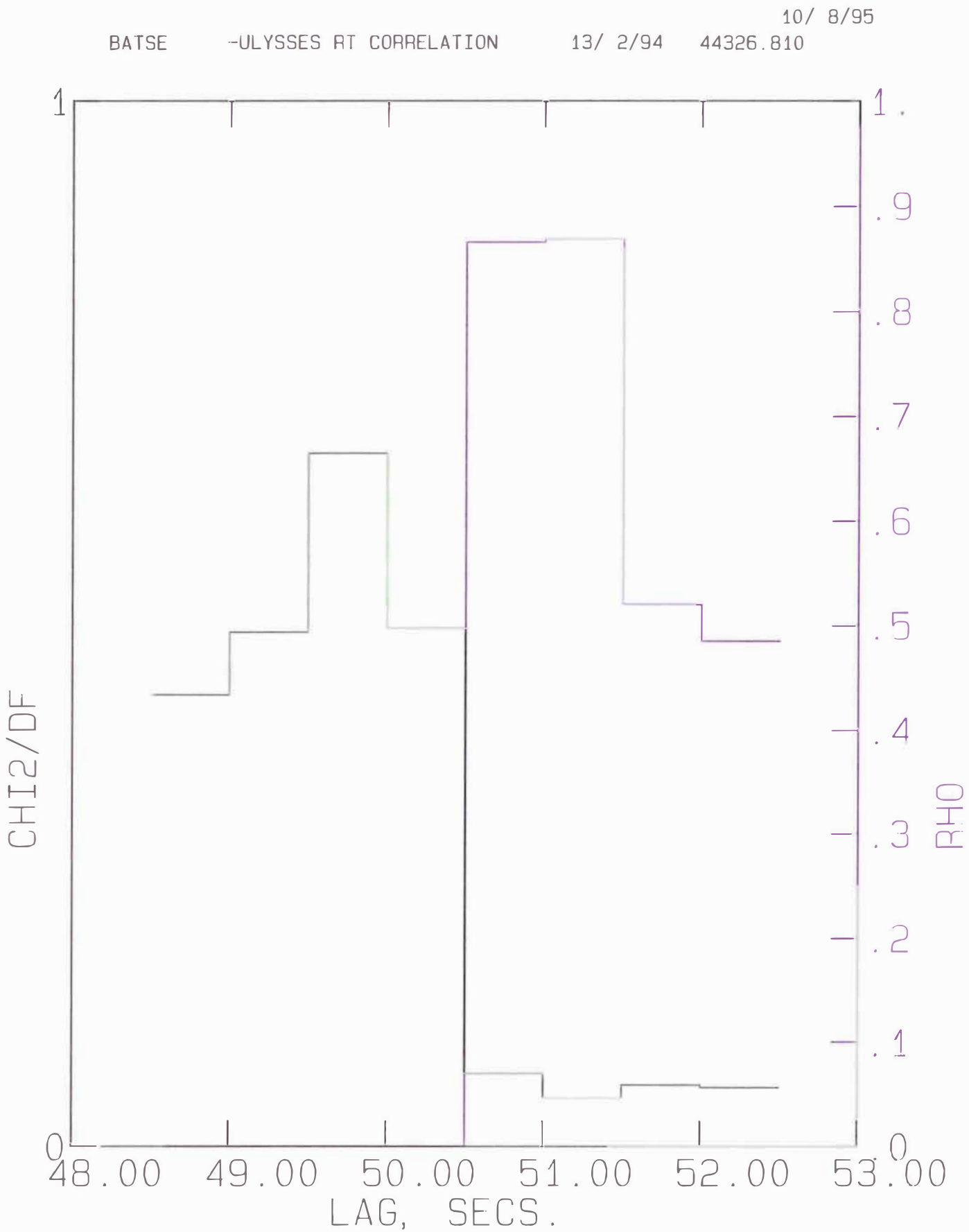
EVENT OF FEB 13, 1994 12:43

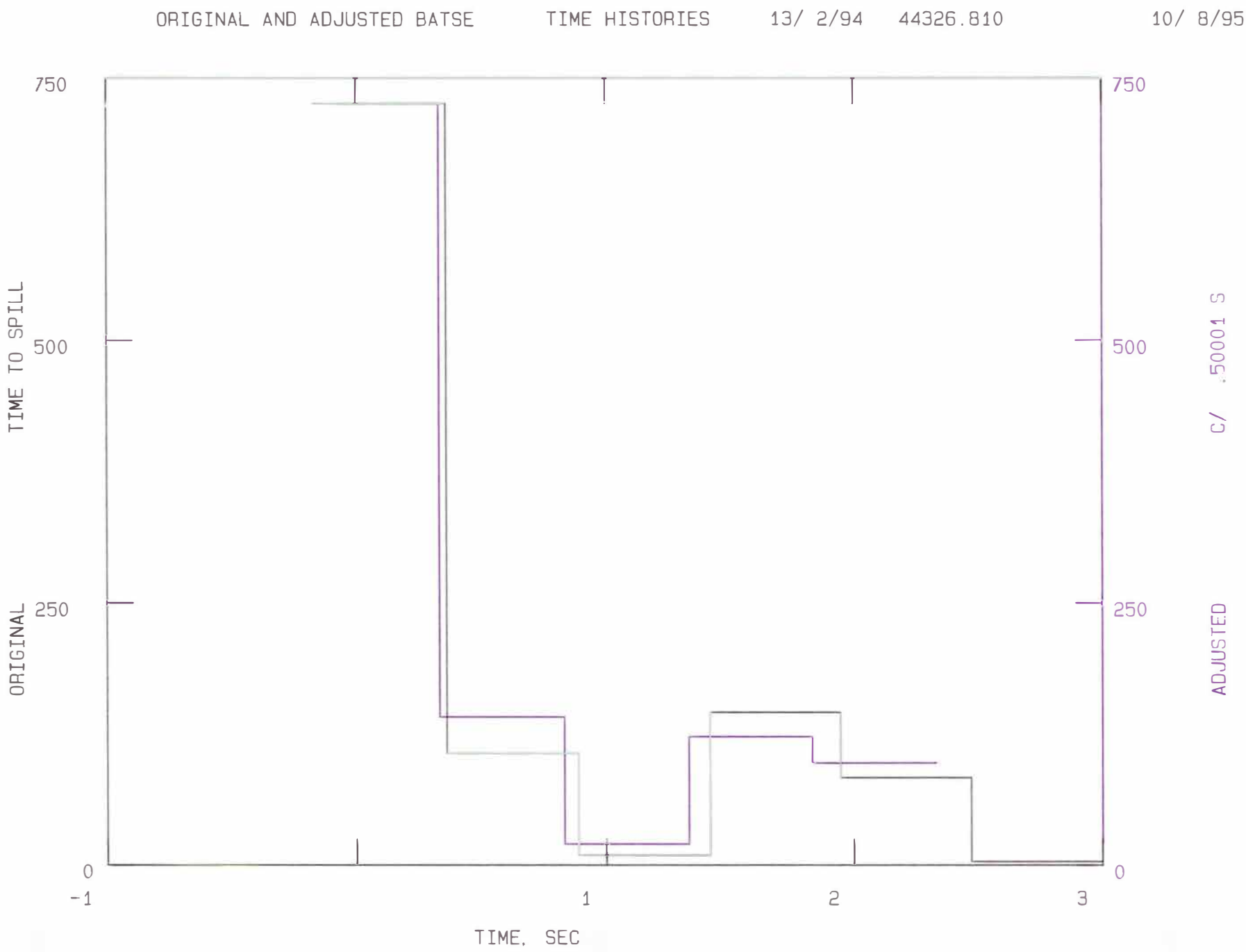
10/ 8/95

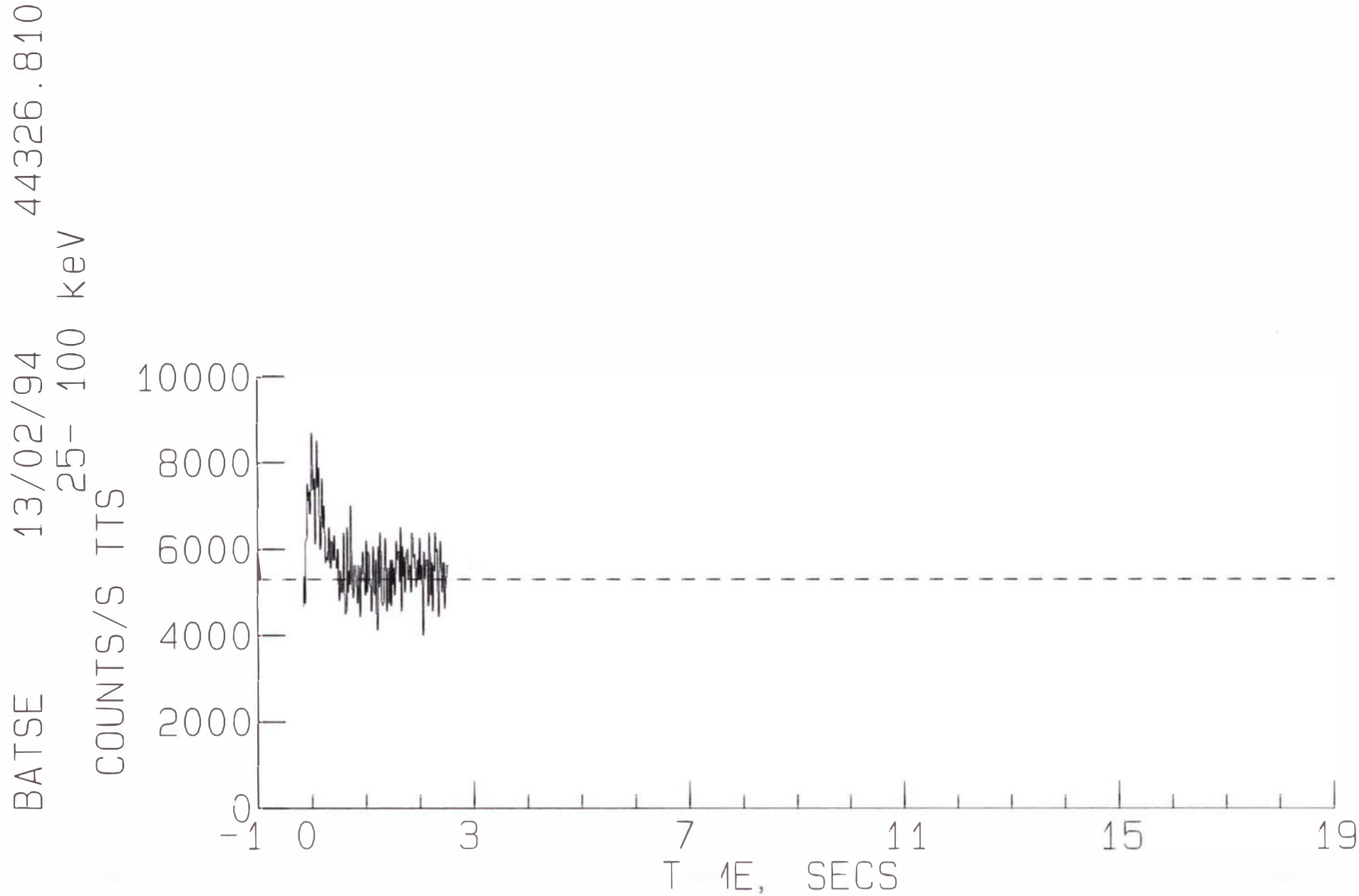
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

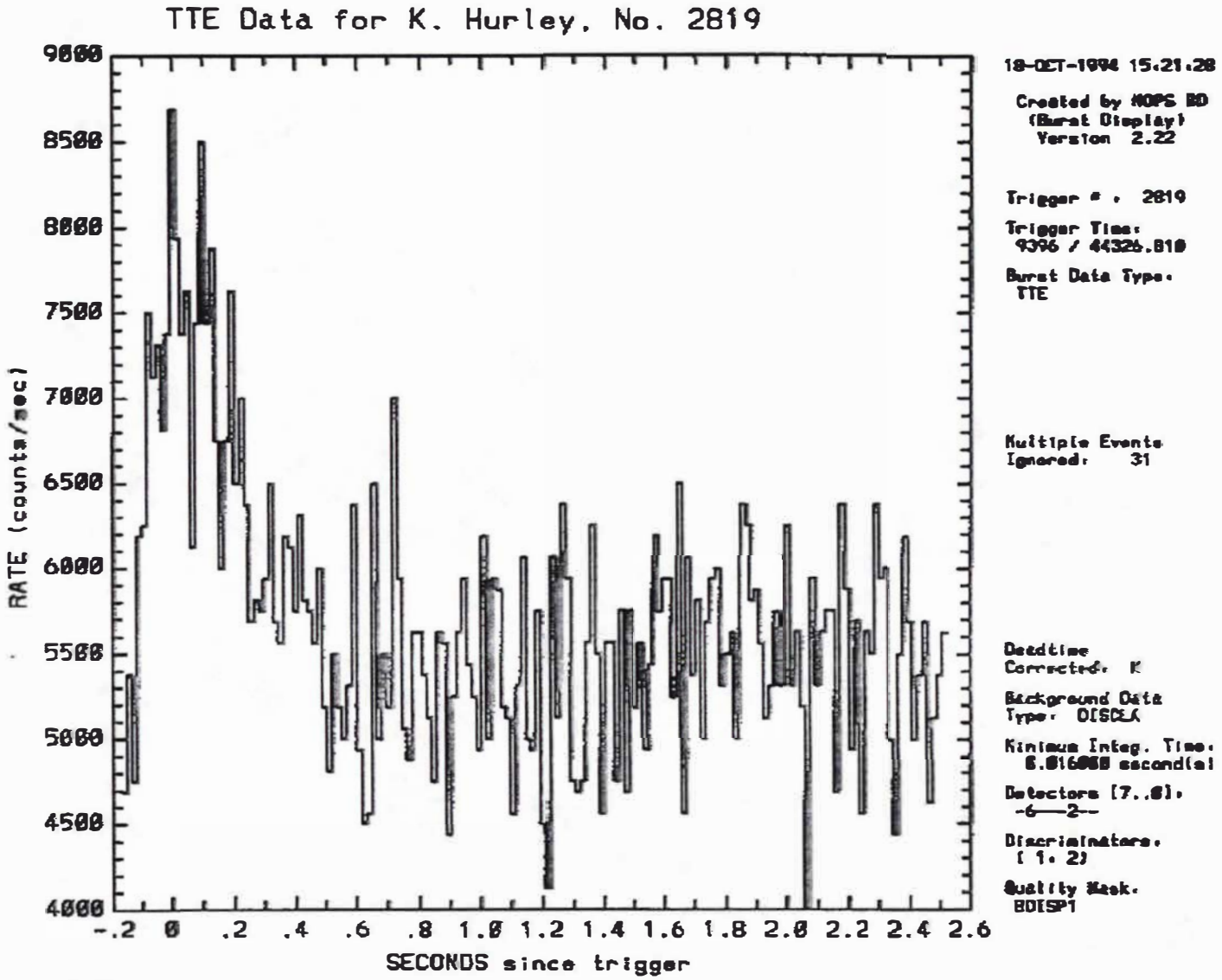



BATSE -ULYSSES RT CORRELATION 13/ 2/94 44326.810 10/ 8/95
750
500
250
0
TIME TO SPILL
BATSE
40
30
20
10
0
ULYSSES RT
C/ .50001 S
-1
0
9
19
29
39
49
59
TIME, SEC


10/ 8/95
BATSE -ULYSSES RT CORRELATION 13/ 2/94 44326.810
1
0
CHI2/DF
1.
.9
.8
.7
.6
.5
.4
.3
.2
.1
0
RHO
48.00
49.00
50.00
51.00
52.00
53.00
LAG, SECS.


ORIGINAL AND ADJUSTED BATSE TIME HISTORIES 13/ 2/94 44326.810 10/ 8/95
750
500
250
0
TIME TO SPILL
ORIGINAL
750
500
250
0
C/ .50001 S
ADJUSTED
-1
1
2
3
TIME, SEC


BATSE 13/02/94 44326.810
25- 100 keV
COUNTS/S TTS
10000
8000
6000
4000
2000
0
-1
0
3
7
11
15
19
T 1E, SECS


TTE Data for K. Hurley, No. 2819
RATE (counts/sec)
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
-.2 0 .2 .4 .6 .8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6
SECONDS since trigger
18-OCT-1994 15:21:28
Created by MOPS BD
(Burst Display)
Version 2.22
Trigger # : 2819
Trigger Time:
9396 / 44326.819
Burst Data Type:
TTE
Multiple Events
Ignored: 31
Deadtime
Corrected: N
Background Data
Type: DISCLA
Minimum Integ. Time:
0.016000 second(s)
Detectors [7..0]:
--6----2--
Discriminators:
[1: 2]
Quality Mask:
BDISP1

From root Fri Aug 26 10:01 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA02337; Fri, 26 Aug 94 10:00:56
Received: from pamir.inria.fr by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA11986; Fri, 26 Aug 1994 10:12:05 +0800
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/;
 Relayed; 26 Aug 94 19:12:22+0200
X400-Received: by /PRMD=cnes/ADMD=atlas/C=FR/;
 Relayed; 26 Aug 94 19:10:53+0200
Date: 26 Aug 94 19:10:53+0200
From: boer@cesr.cnes.fr
Message-Id: <9408261710.AA16104@cesr.cnes.fr>
To: khurley@space6.ssl.berkeley.edu
Cc: boer@cesr.cnes.fr
Subject:
Content-Length: 927
Status: R

Cher Kevin,

Phebus a observe un burst le 13 fevrier 1994 a 18:21 qui n'est pas solaire.
Il est aussi dans les VL SIGMA. Je n'ai pas reussi a le
retrouver dans les donnees d'Ulysses, bien qu'il soit particulierement intense.
Pour l'instant je n'ai pas de reponse de BATSE mais j'ai demande a Chryssa
(qui est certainement en Europe actuellement). Jean Luc aussi a regarde
independamment, et il n'est pas dnas la burst list, mais pour etre bien sur,
pourrais tu verifier aussi dans Ulysses?
et eventuellemnt regarder les donnees DMSP?
Merci, amities
Michel

==========

Michel Boer
CESR
BP 4346
F 31029 Toulouse Cedex
France

Telephone: (33) 61 55 66 40
Telefax: (33) 61 55 67 01

Internet: boer@cesr.cnes.fr

==========

Ulysses-Earth 1538 l-s

Cher Michel,

En effet, je ne vois pas de sursaut dans les donnees Ulysses. J'ai regarde
dans un creneau +/-1600 s autour de 18:31 le 13/2/94. Mais pour en entre
il me faudrait connaitre la duree de l'evenement.

Amities

Kevin

```
From root Wed Aug 31 08:07  1994
Received: by space6.ssl.berkeley.edu (AIX  2.1 2/4.03)
          id AA03160; Wed, 31 Aug 94 08:07:05
Received: from pamir.inria.fr by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA07869; Wed, 31 Aug 1994 08:17:52 +0800
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/;
 Relayed; 31 Aug 94 17:18:27+0200
X400-Received: by /PRMD=cnes/ADMD=atlas/C=FR/;
 Relayed; 31 Aug 94 17:16:57+0200
Date: 31 Aug 94 17:16:57+0200
From: boer@cesr.cnes.fr
Message-Id: <9408311516.AA17455@cesr.cnes.fr>
To: khurley@space6.ssl.berkeley.edu
Cc: boer@cesr.cnes.fr
In-Reply-To: <9408311955.AA03145@space6.ssl.berkeley.edu>
Content-Length: 1058
Status: R
```

La durie est de l'ordre de 60secondes, le sursaut etant composi de 2 pics
principaux, siparis approximativement de 20secondes sans signal. Ce qui est
ieux, c'est que l'origine solaire est pratiquement exclue, que ca ne
semble vraiment pas a une particule (ou 2 dans ce cas!), et qu'il est
assez intenses. A ce niveau, je ne crois pas qu'il y ai d'exemple de sursaut
vu par Phebus de cette intensiti qui ne sortent pas dans les donnies Ulysses.
Dis que j'ai une riponse de BATSE (je pense que Chryssa est en Europe
actuellement) je te le dit. Avec un peu de chance ils etait en operation a ce
moment la. J'ai regarde dans un intervalle de 40 minutes pour Ulysses.

Amities
Michel

==========

Michel Boer
CESR
BP 4346
31029 Toulouse Cedex
France

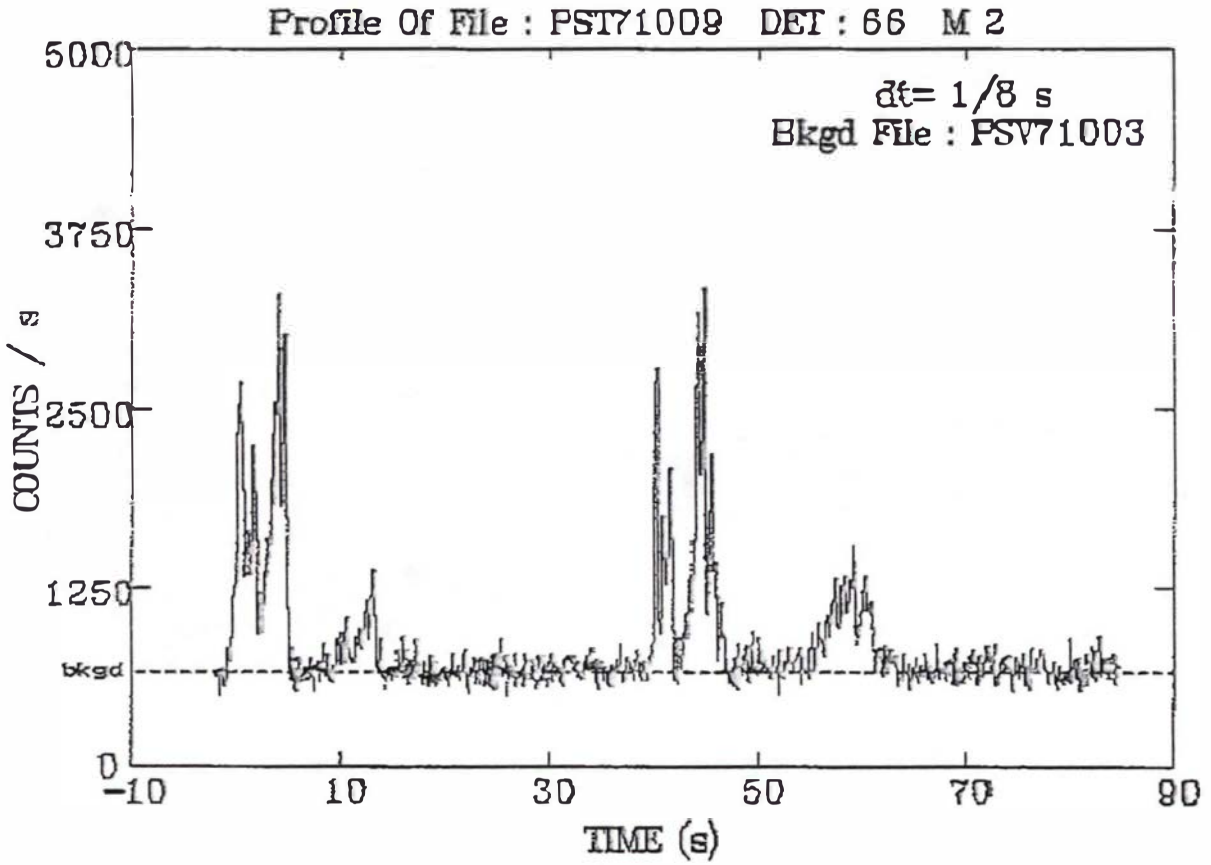
Phone: (33) 61 55 66 40
Telefax: (33) 61 55 67 01

Internet: boer@cesr.cnes.fr

==========

13/02/94

13/2 194



61556651

09-02-94 05:16AM P001 #40

Cher Michel,

J'ai cherche un exces a plus de 4 sigma dans les taux de comptages sur deux
echelles de temps: 2 s et 20 s. Je n'ai rien trouve. C'est peut-etre un
saut avec un spectre tres dur?

Amities

Kevin
From root Thu Sep 1 09:33 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA03891; Thu, 1 Sep 94 09:33:37
Received: from pamir.inria.fr by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA17080; Thu, 1 Sep 1994 09:44:31 +0800
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/;
Relayed; 01 Sep 94 18:45:08+0200
X400-Received: by /PRMD=cnes/ADMD=atlas/C=FR/;
Relayed; 01 Sep 94 18:43:27+0200
Date: 01 Sep 94 18:43:27+0200
From: boer@cesr.cnes.fr
Message-Id: <9409011643.AA15496@cesr.cnes.fr>
To: khurley@space6.ssl.berkeley.edu
Cc: boer@cesr.cnes.fr
In-Reply-To: <9409012113.AA03852@space6.ssl.berkeley.edu>
Content-Length: 581
Status: R

Ca ne m'etonne pas que tu ne le trouve pas,
puisque c'est exactement ce que nous avons fait

si le spectre est assez mou et il est vu dans
les VL de sigma. Je t'envoi le profil par fax

A bientot
Michel

Michel Boer
CESR
BP 4346
31029 Toulouse Cedex
France

Phone: (33) 61 55 66 40
Telefax: (33) 61 55 67 01

Internet: boer@cesr.cnes.fr

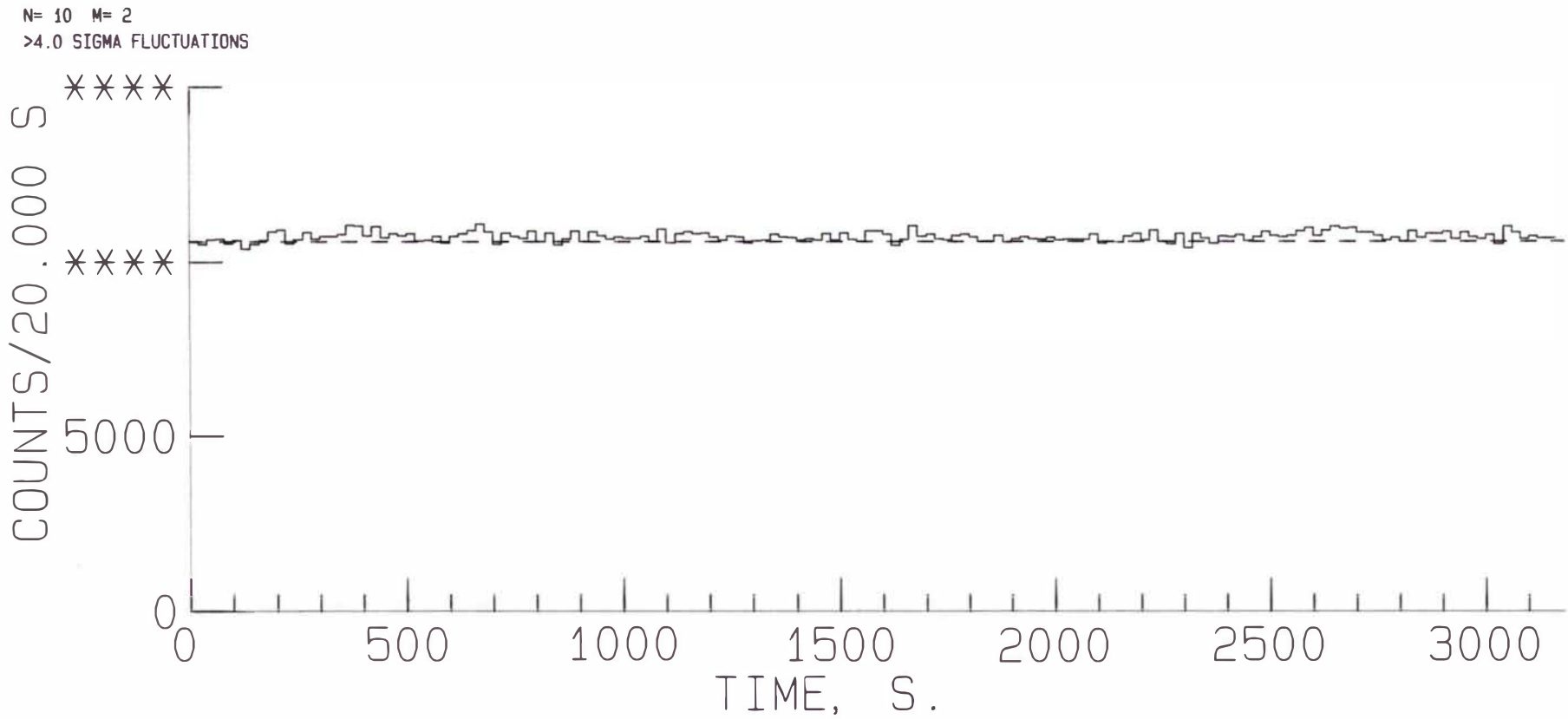
ULYSSES RT

1/ 9/94

13/ 2/94 64476.012 s

.250 S INTERVALS REGROUPED BY 80

0- 0 keV



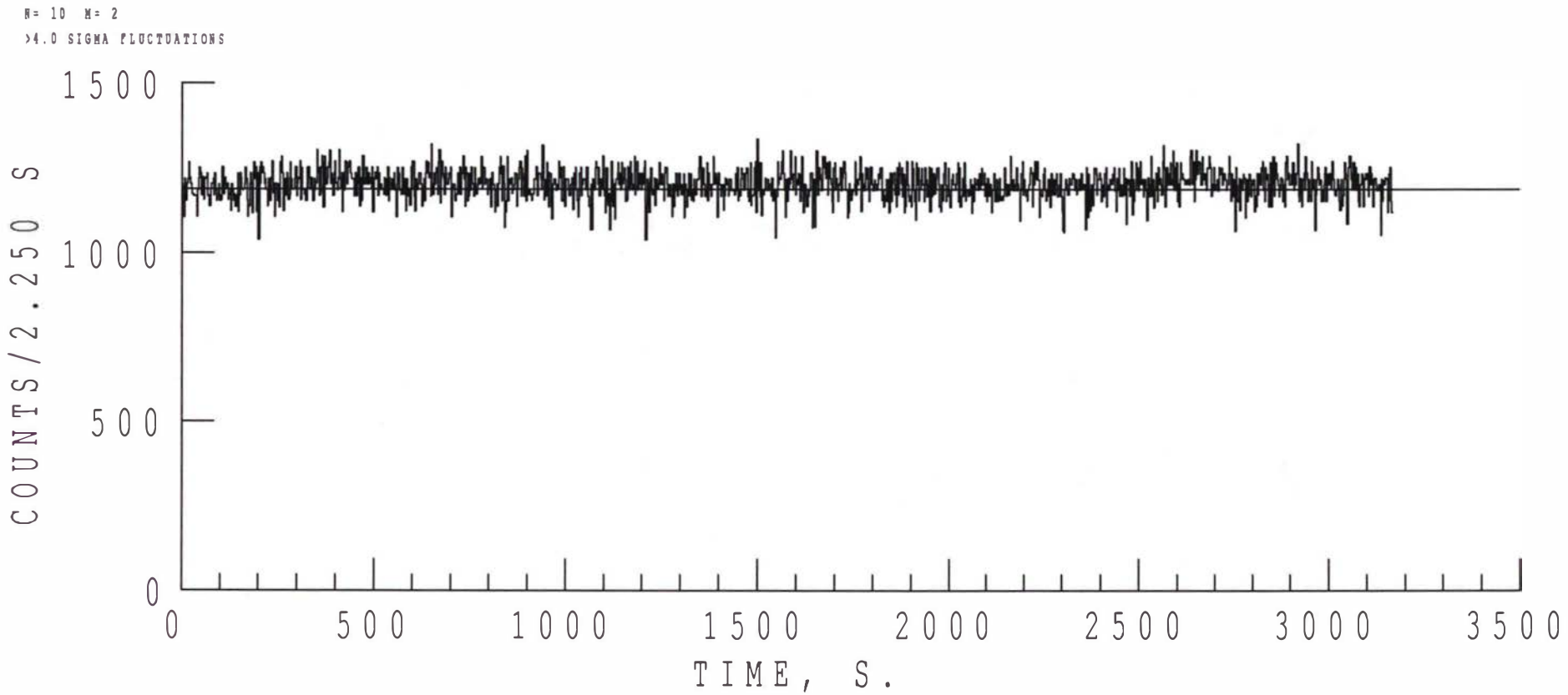
29/ 8/94

ULYSSES RT

13/ 2/94 64476.012 s

0.250 S INTERVALS REGROUPED BY 9

0- 0 keV



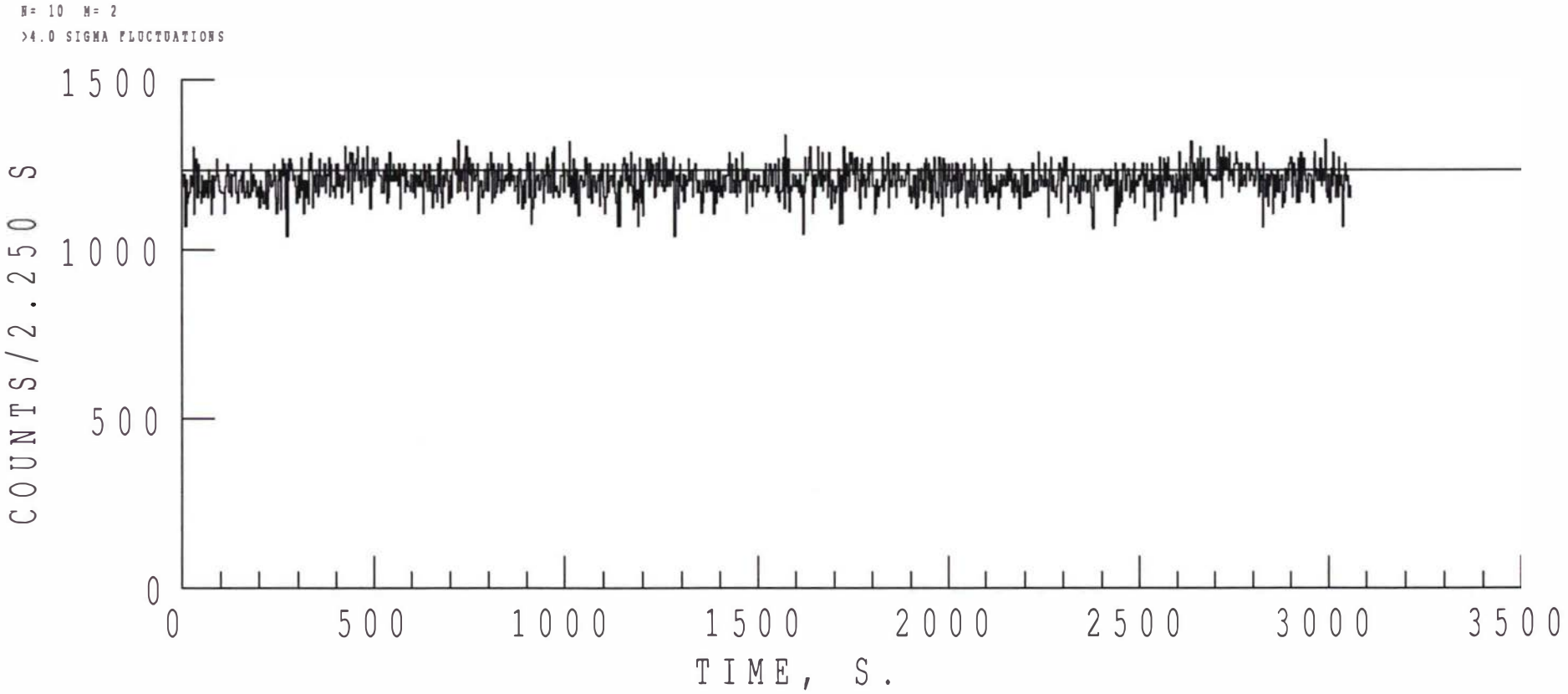
22/ 2/95

ULYSSES RT

13/ 2/94 64404.012 s

0.250 S INTERVALS REGROUPED BY 9

0- 0 keV



From ZMYEWSKI@ssl.msfc.nasa.gov Mon Feb 14 14:08 PST 1994
Date: Mon, 14 Feb 1994 16:12:09 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02820

TIME: TJD=9396 SECONDS=79153

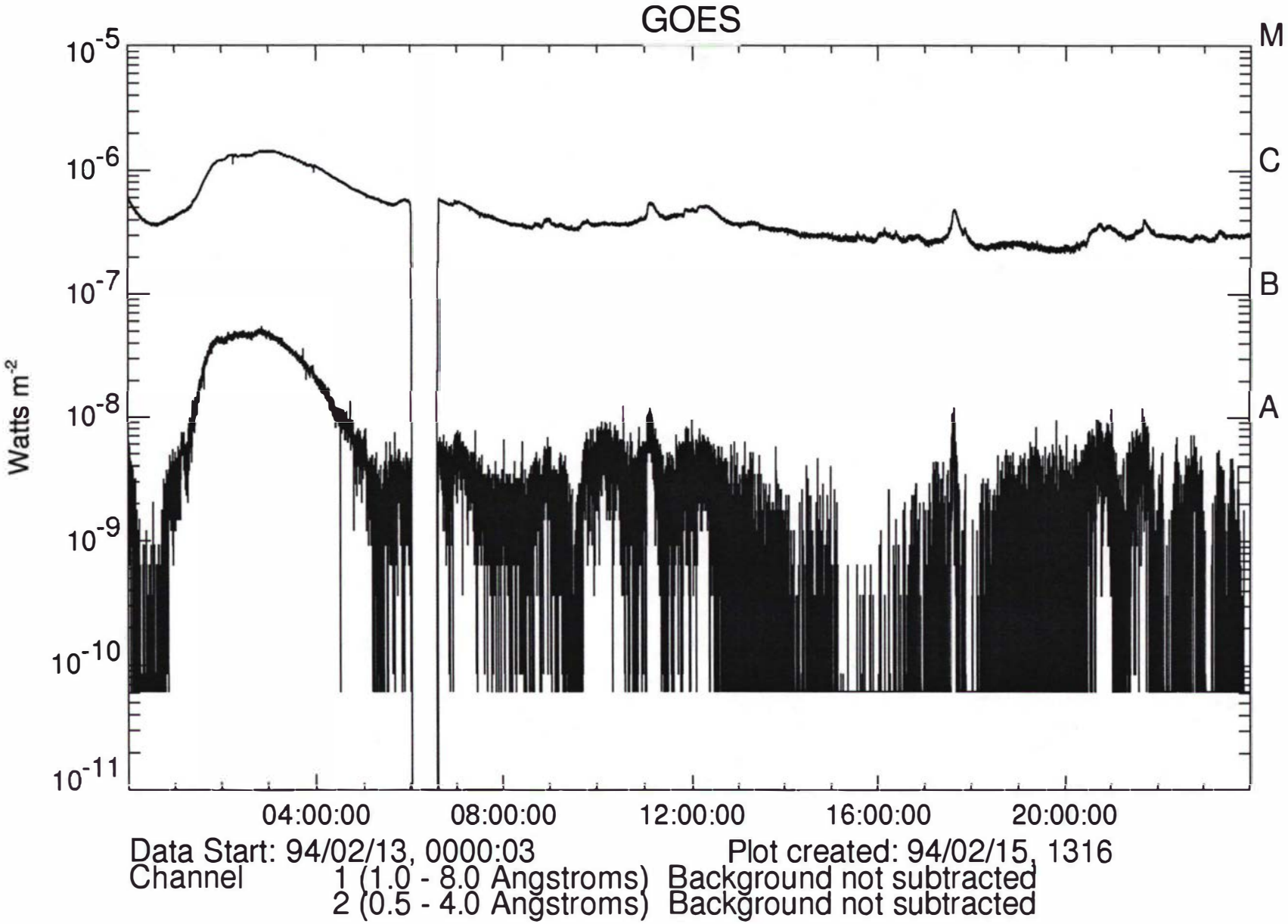
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

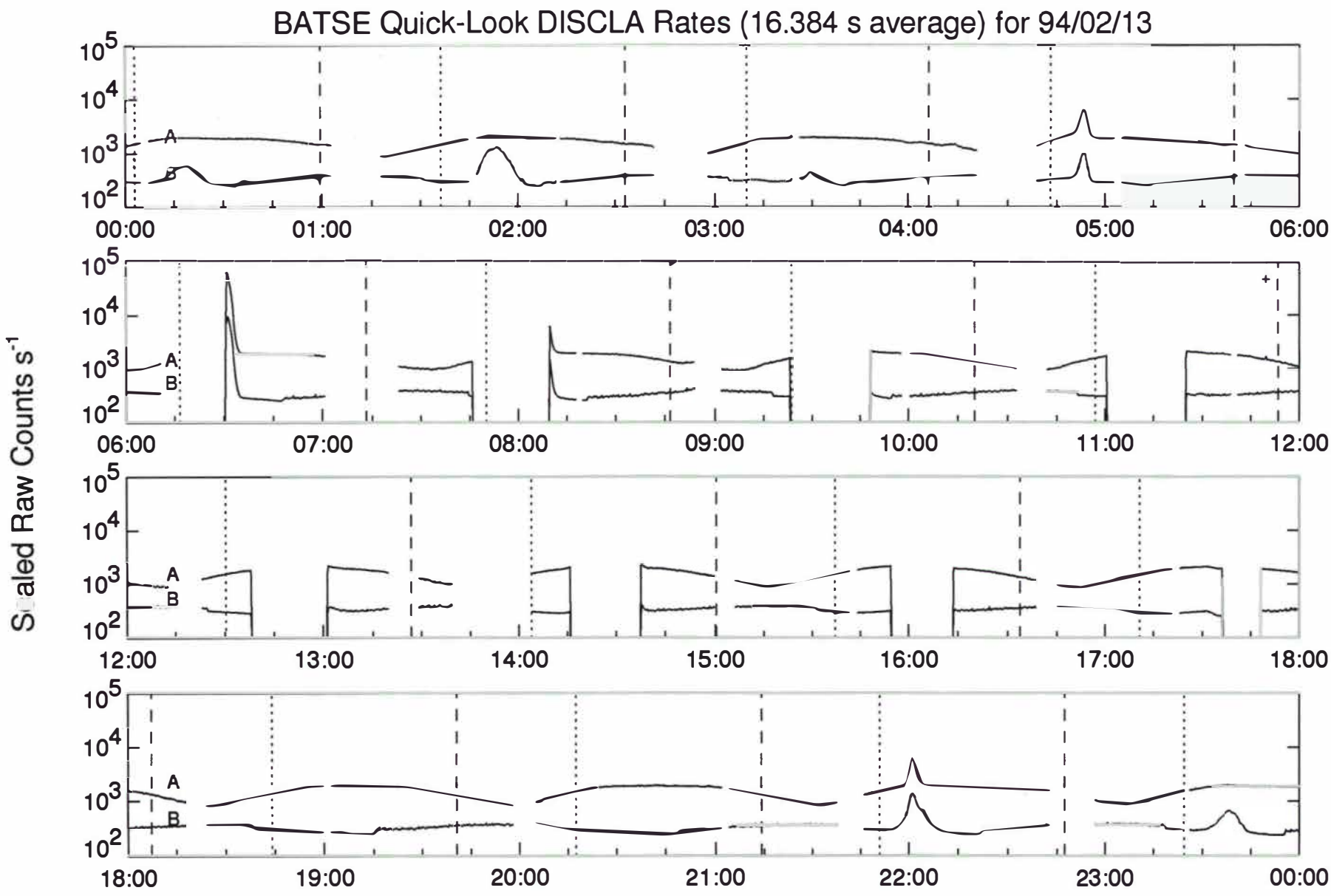
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

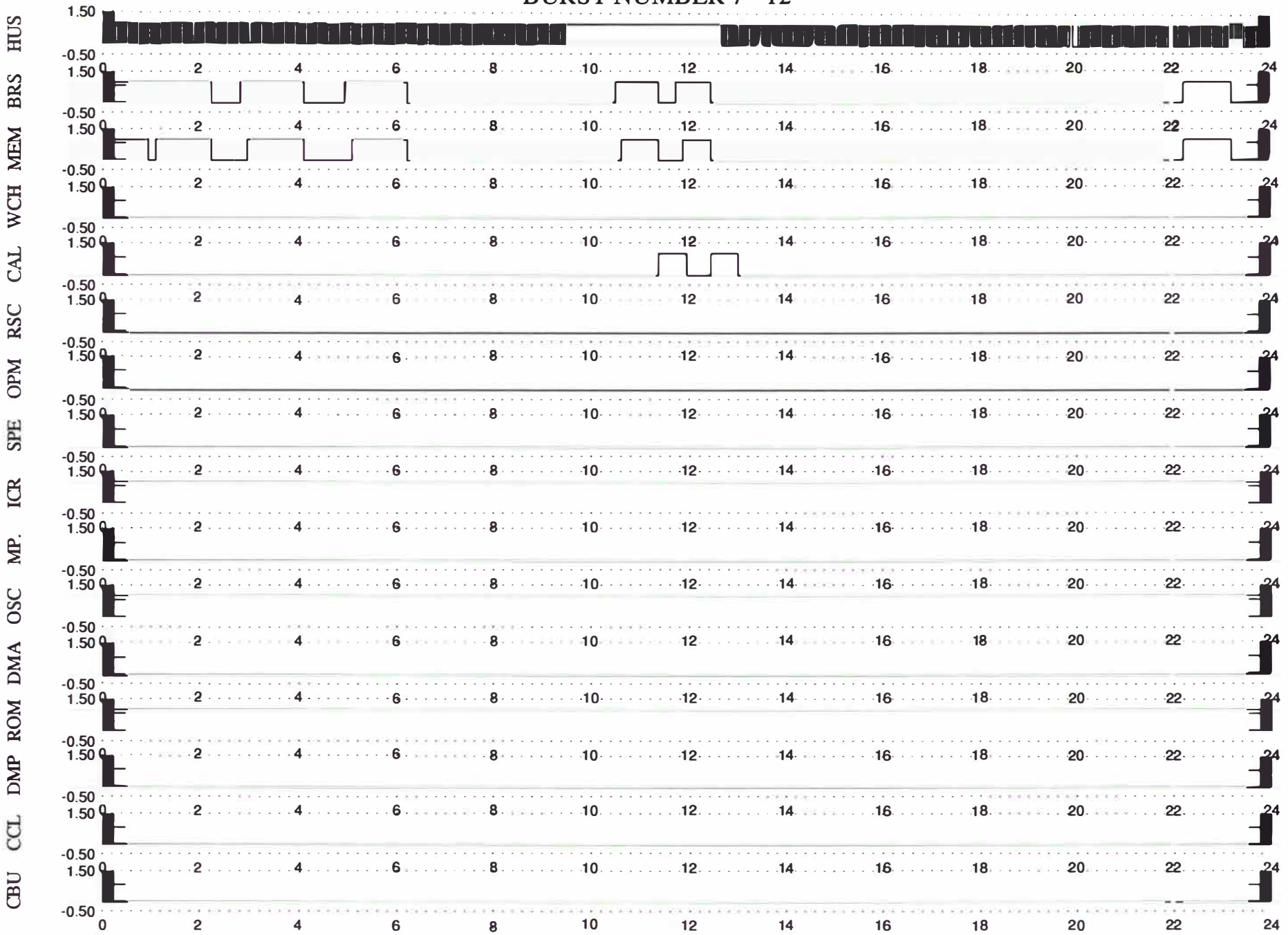
COMMENTS:
YELLOW/RED LIMIT ELECTRON EVENT.


GOES
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/13, 0000:03
Plot created: 94/02/15, 1316
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/13
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
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: 94/02/15, 1313 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

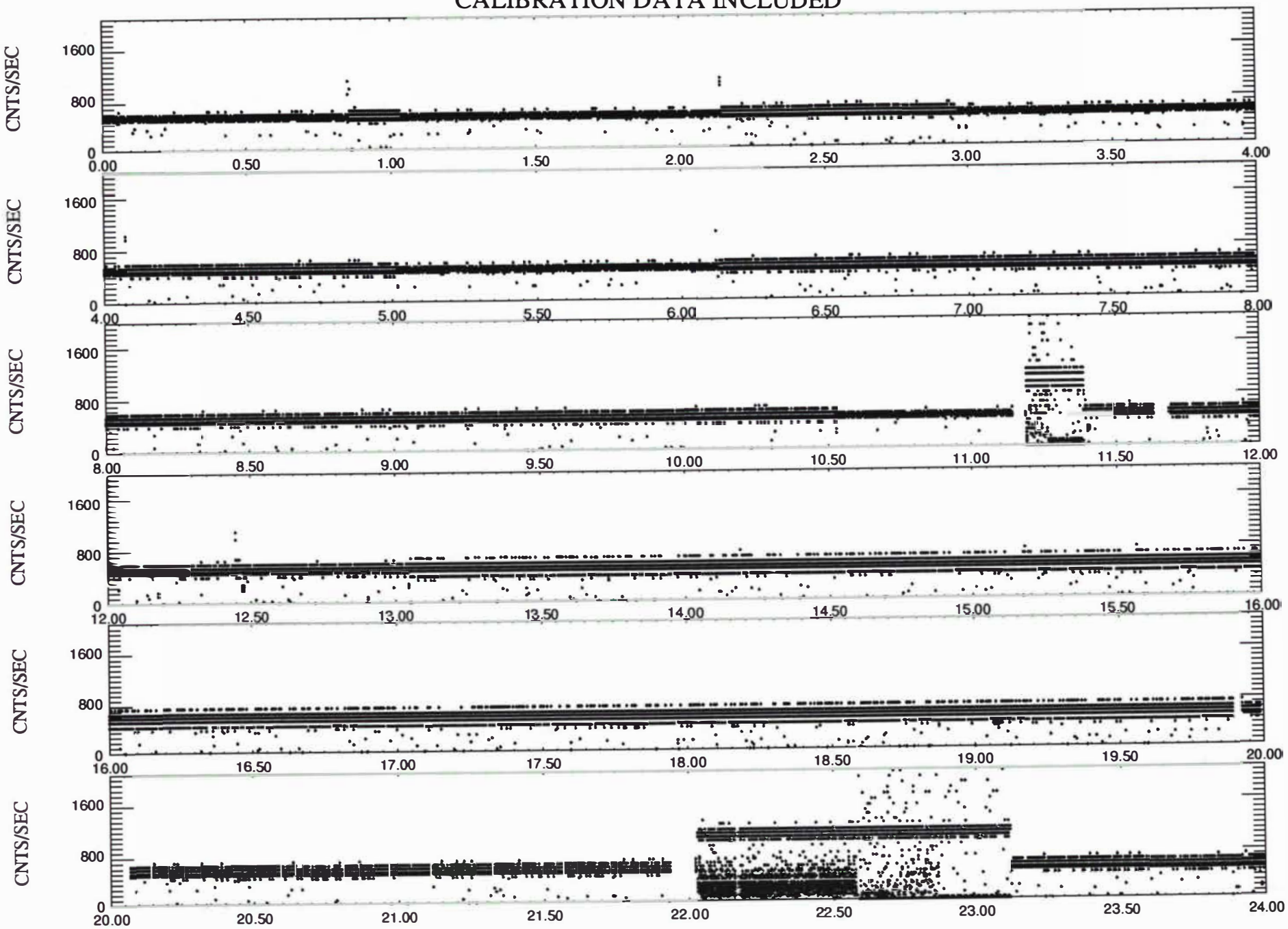
HUS MODES EDR day 44, year 1994 to day 44, year 1994 5/26/94

BURST NUMBER 7 - 12



HUS 2A, MODE 1, NOT AVERAGED EDR day 44, year 1994 to day 44, year 1994 5/26/94

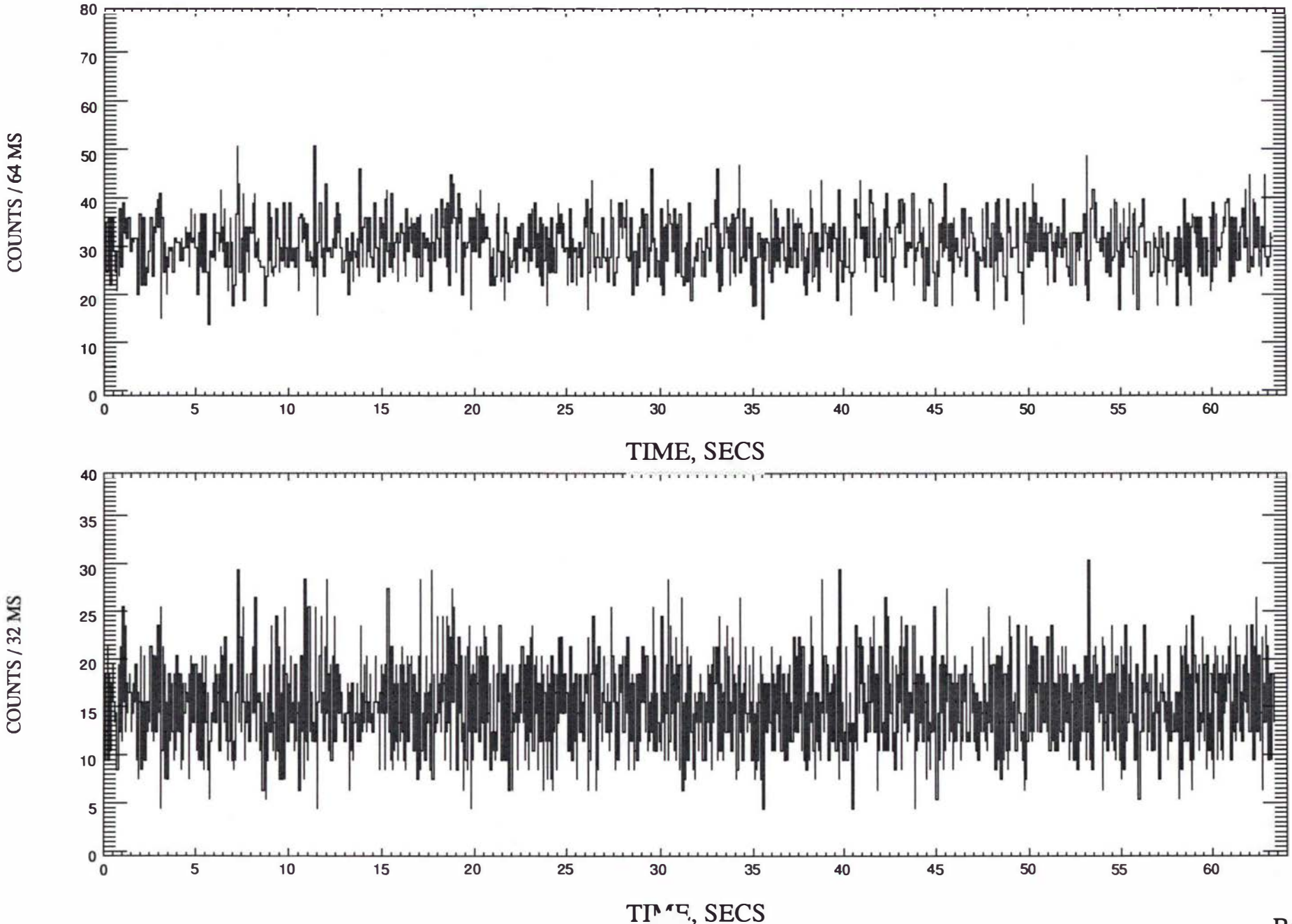
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 44, year 1994 5/26/94

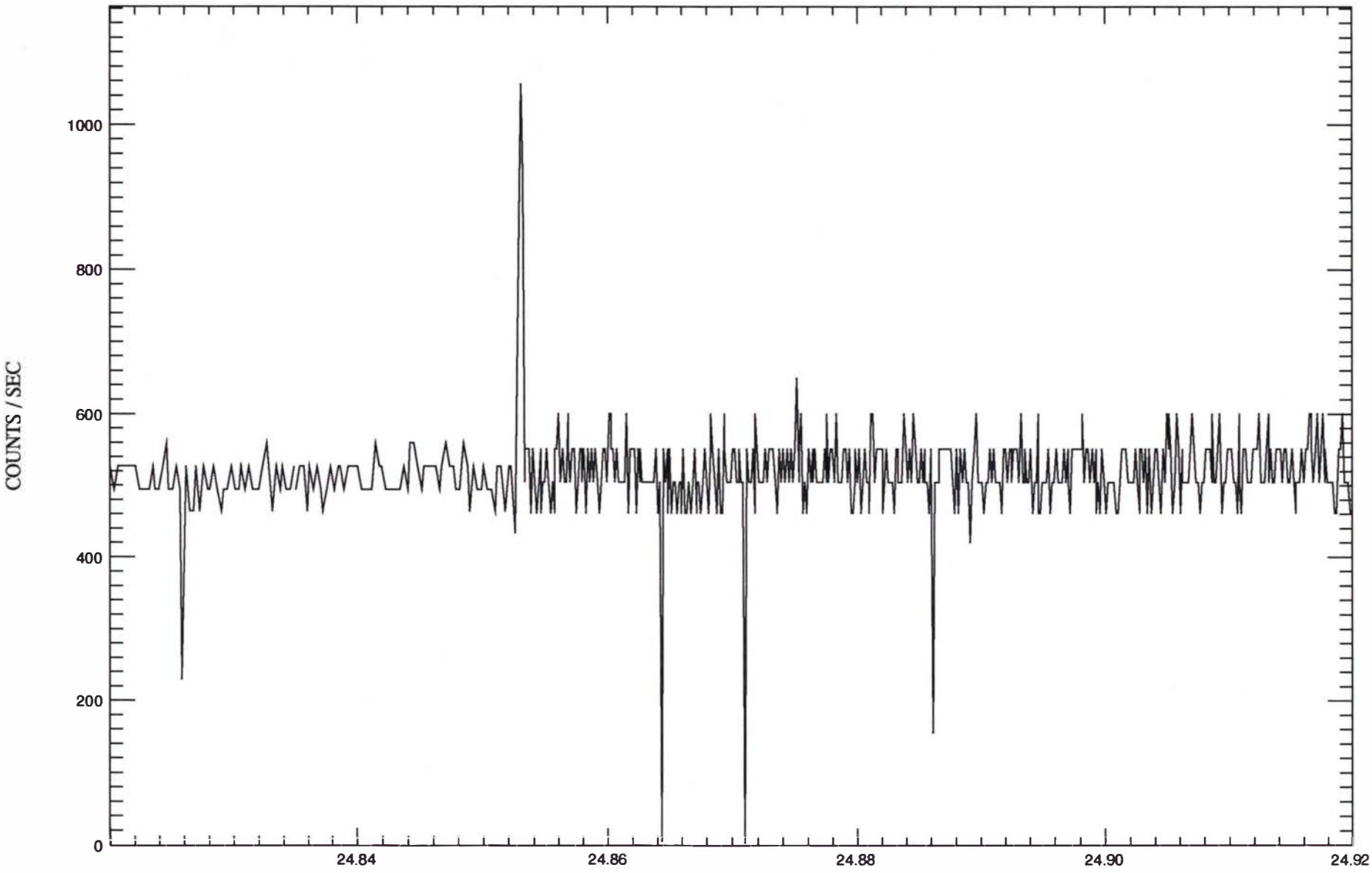
Burst Counter 7 at UT= 0.871993357340 h= 3139.176 s 00:52:19.176



B# 1

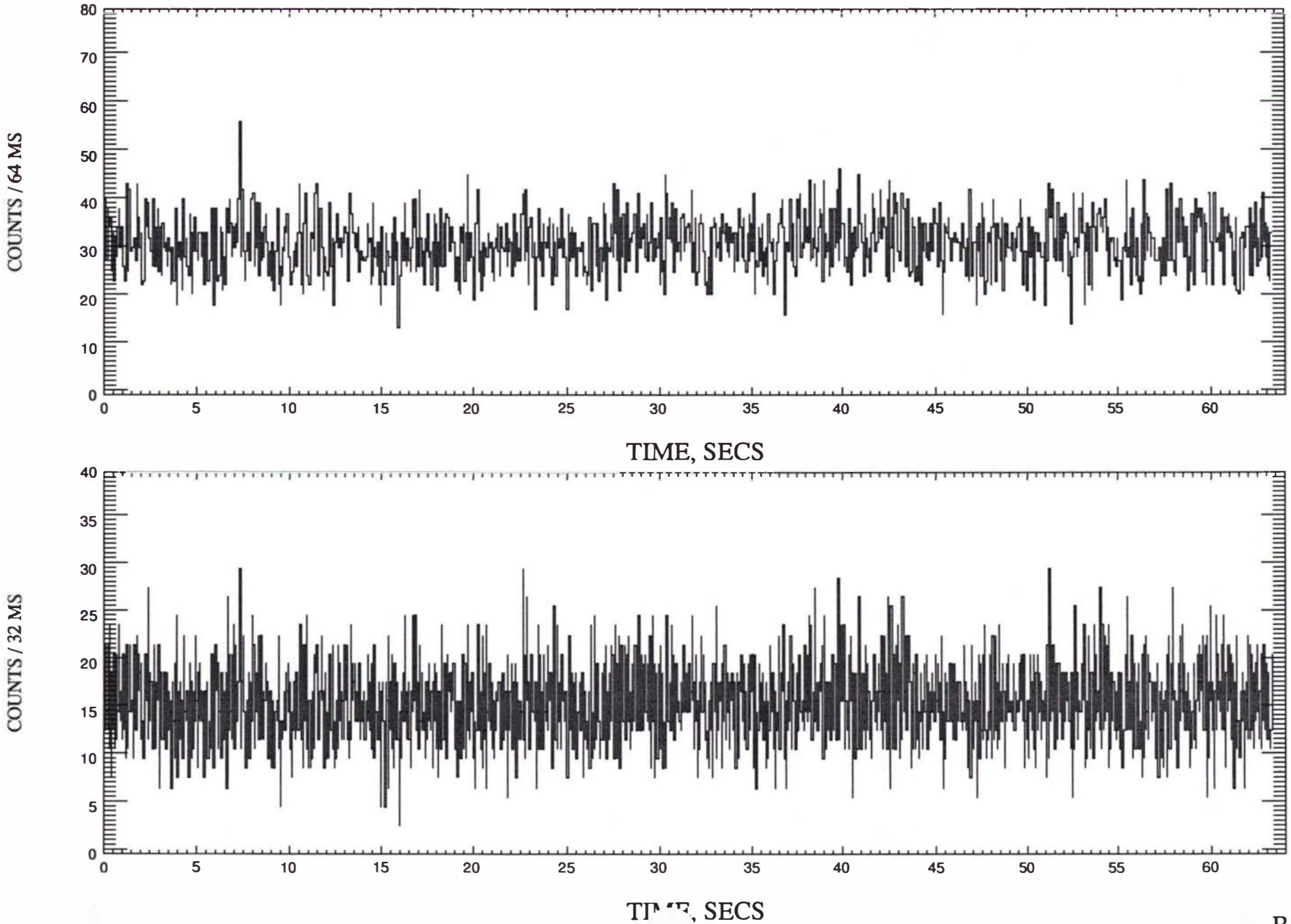
HUS 2A, MODE 1, NOT AVERAGED QEDR day 43, year 1994 to day 44, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 44, year 1994 5/26/94

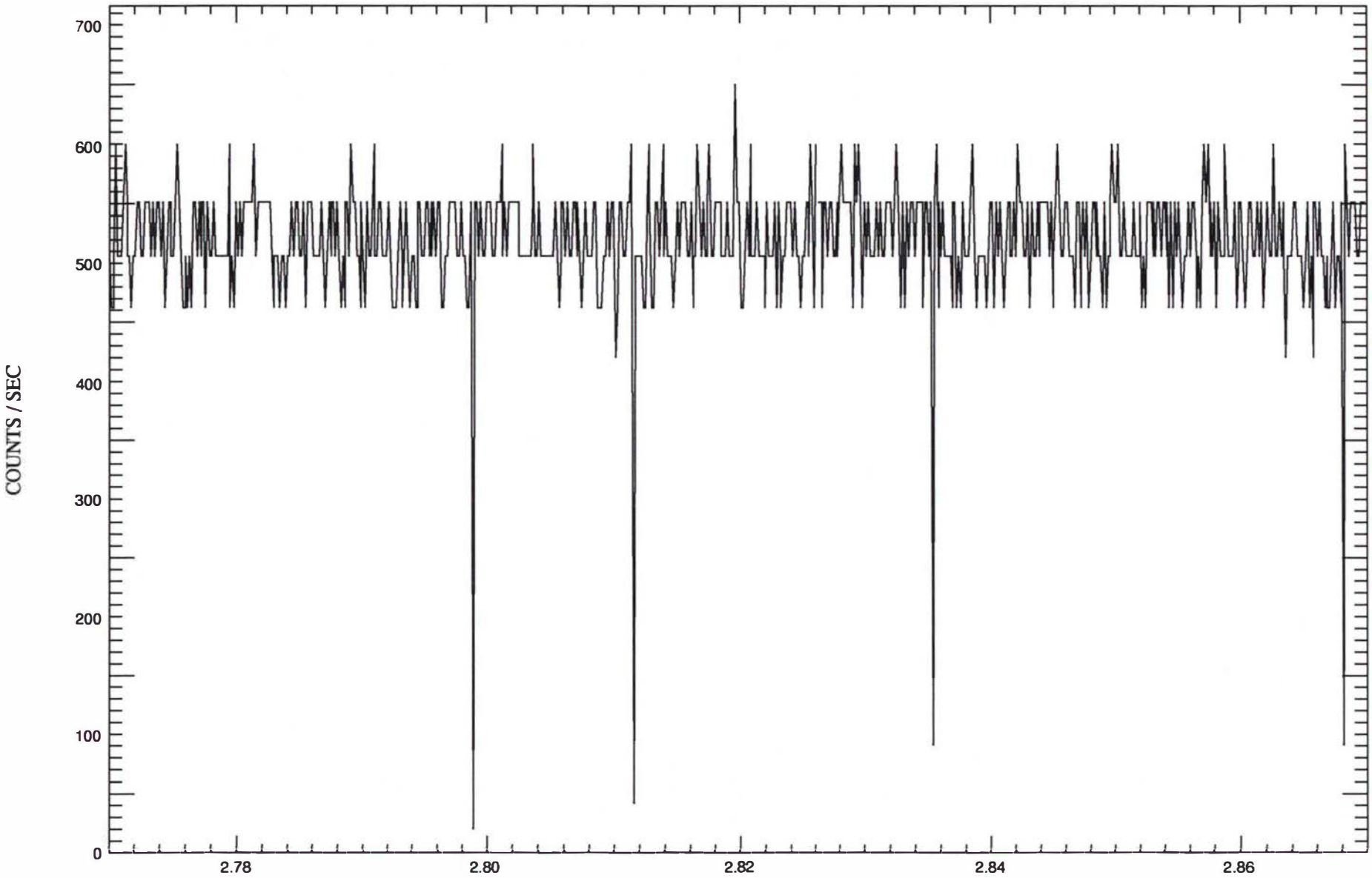
Burst Counter 8 at UT= 2.819765162998 h=10151.155 s 02:49:11.155



B# 2

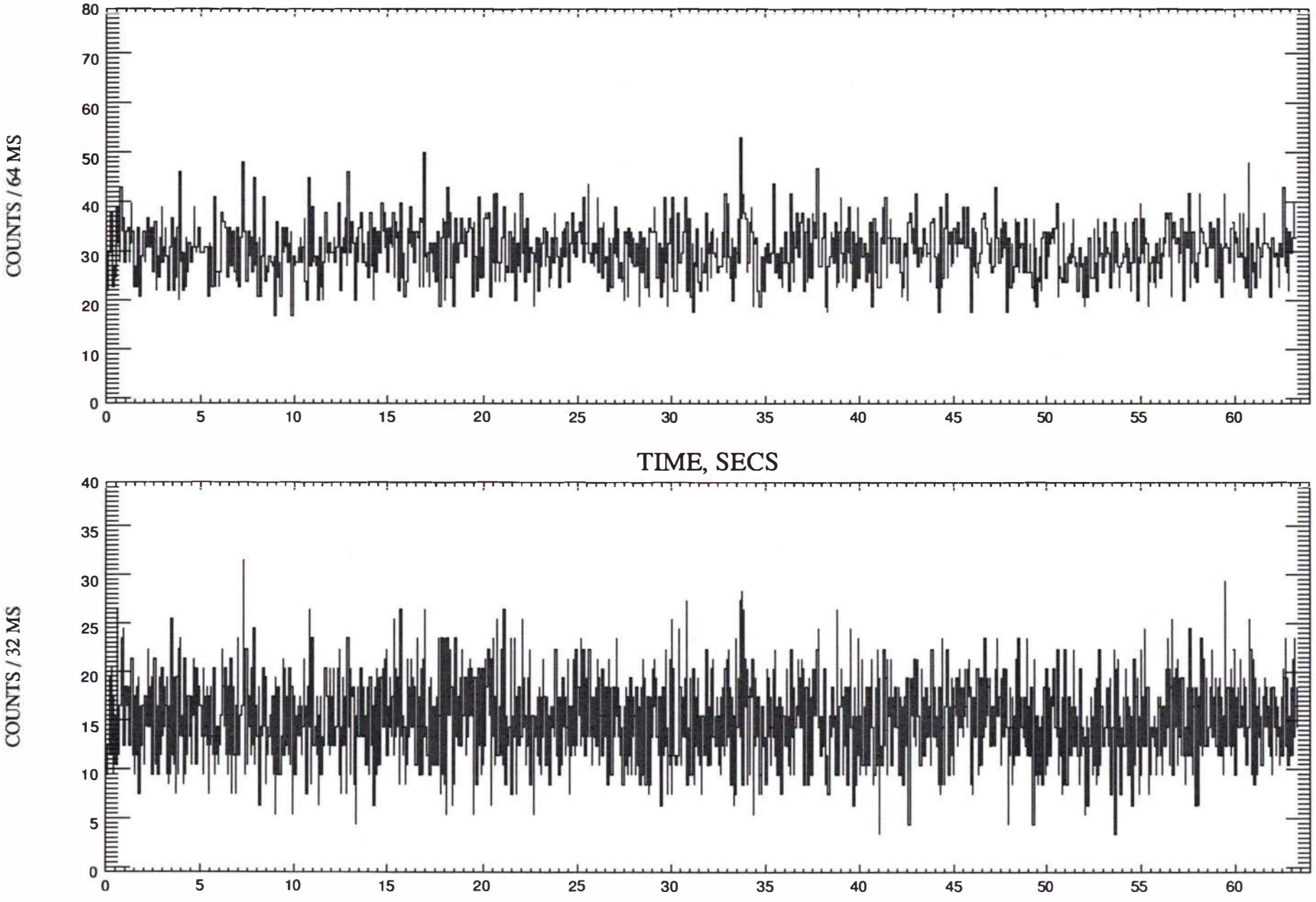
HUS 2A, MODE 1, NOT AVERAGED QEDR day 44, year 1994 to day 45, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 44, year 1994 5/26/94

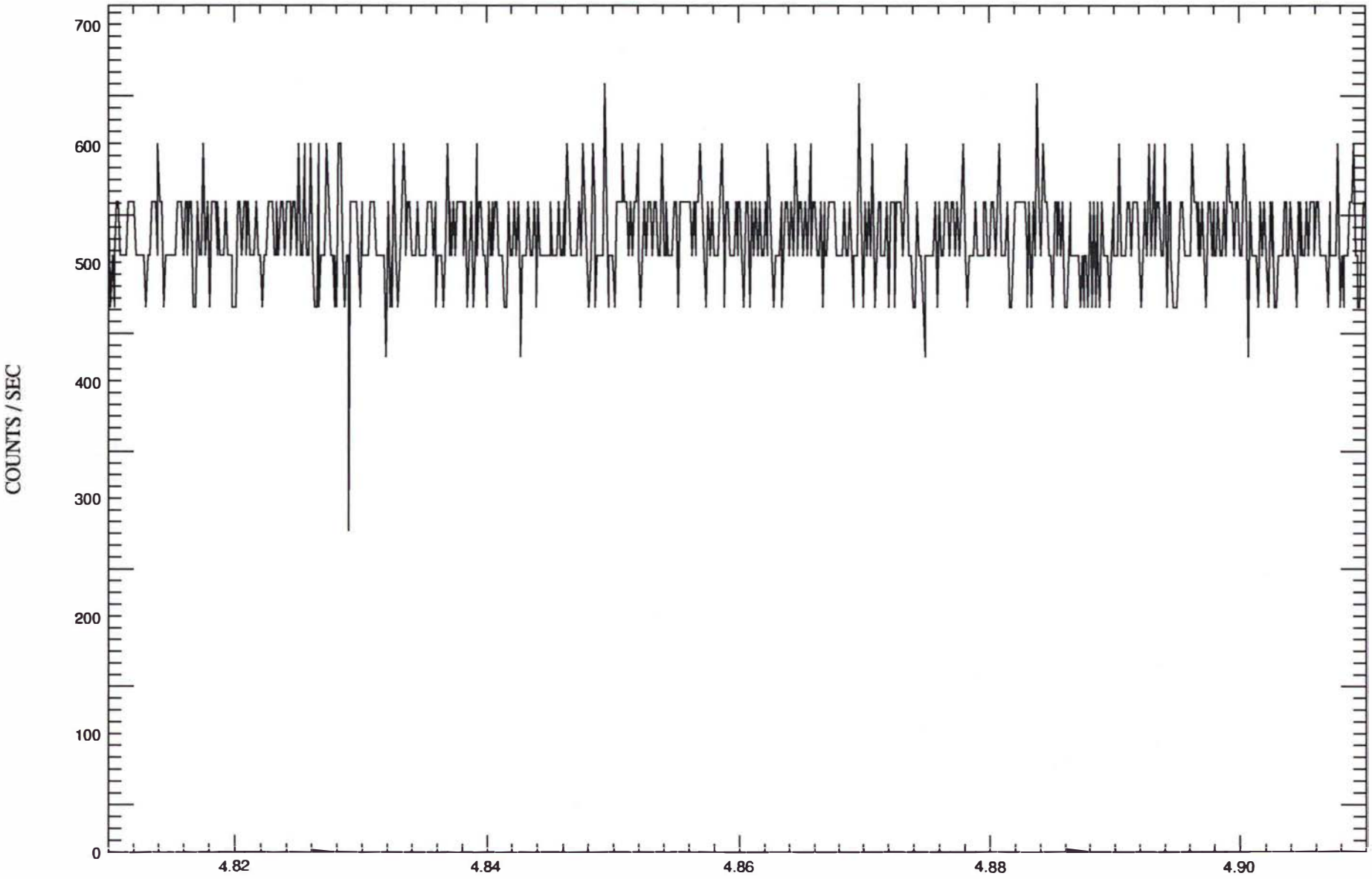
Burst Counter 9 at UT= 4.862541389465 h=17505.149 s 04:51:45.149



B# 3

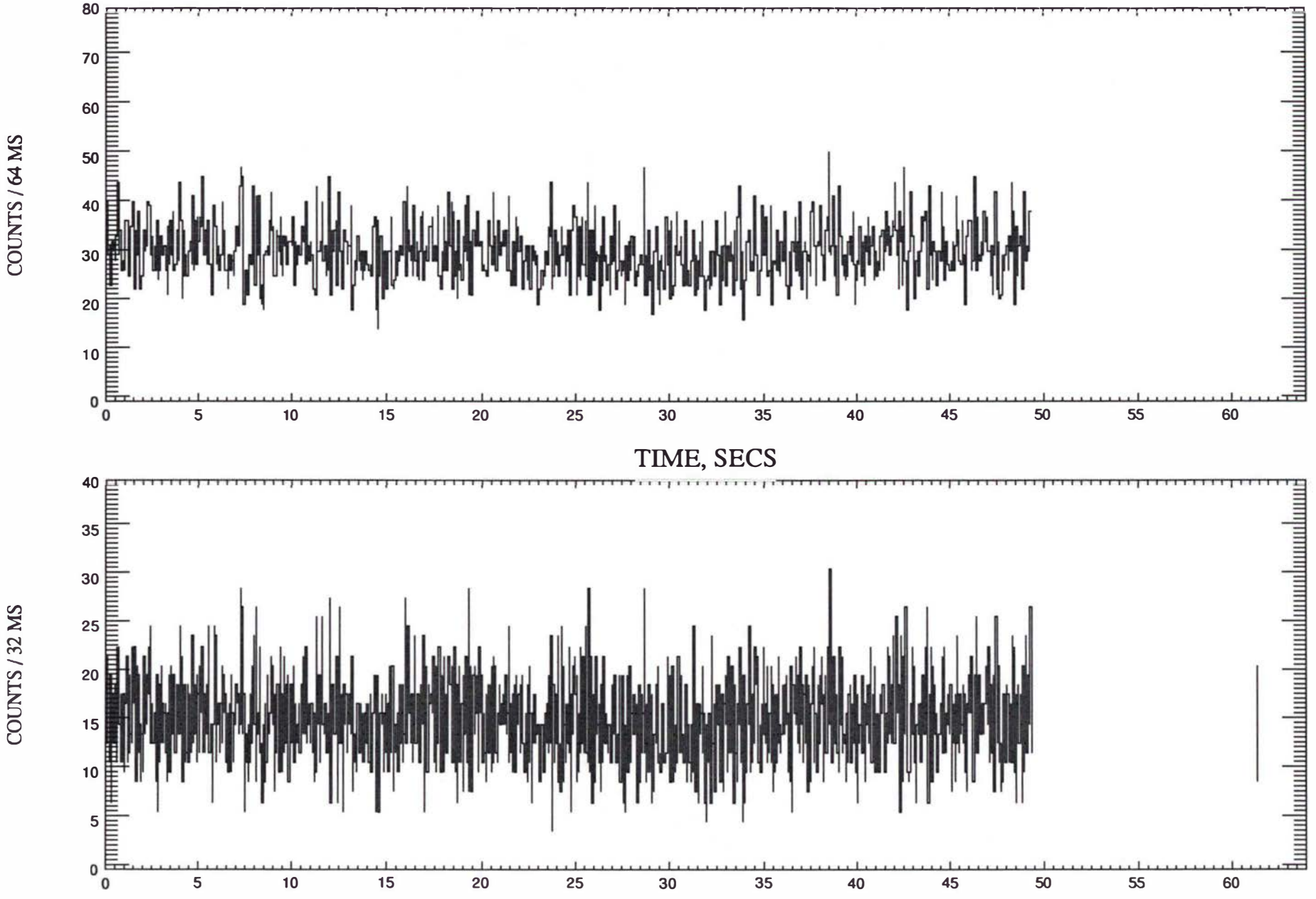
HUS 2A, MODE 1, NOT AVERAGED QEDR day 44, year 1994 to day 45, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 44, year 1994 5/26/94

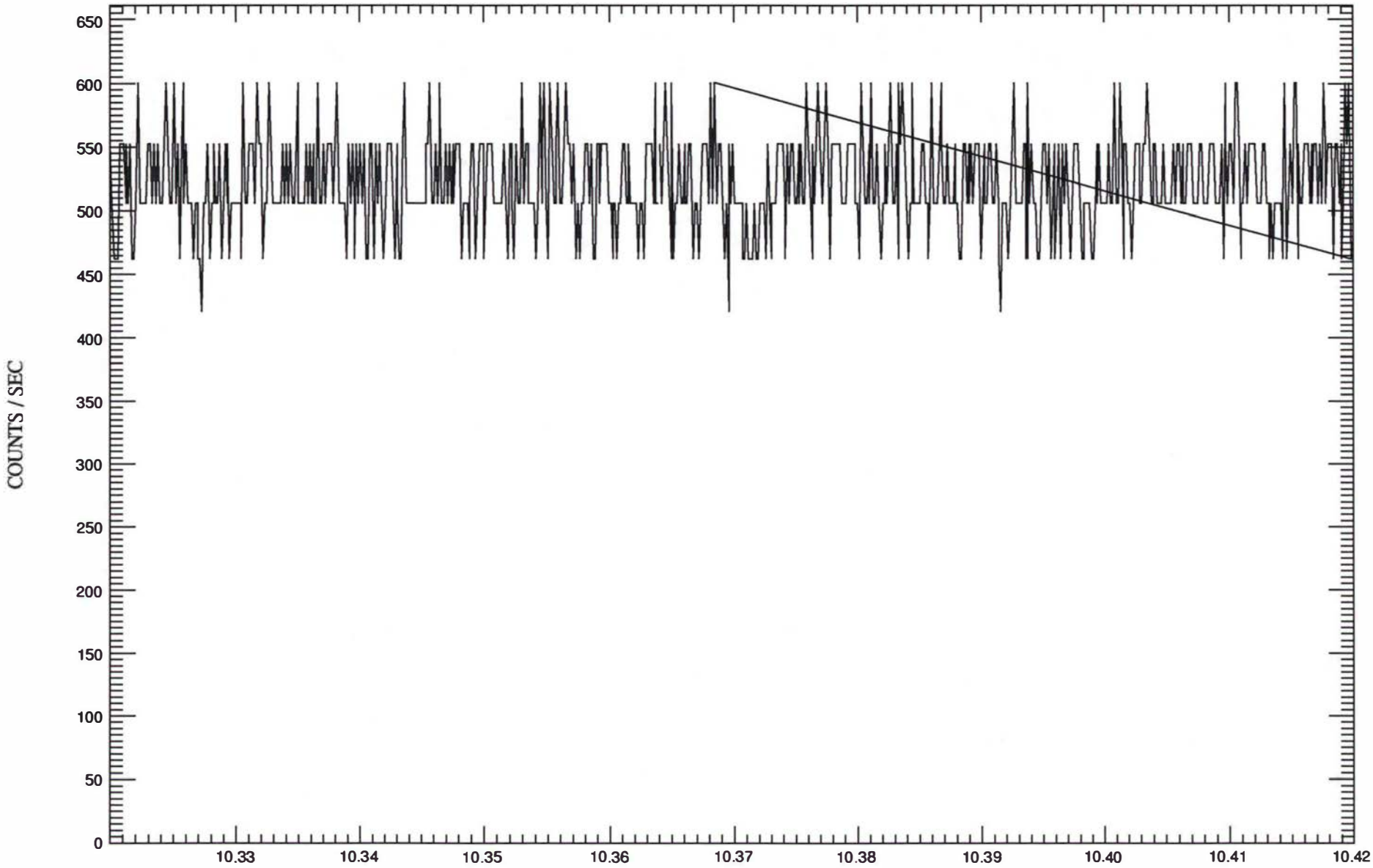
Burst Counter 10 at UT=10.365266524421 h=37314.959 s 10:21:54.959



B# 4

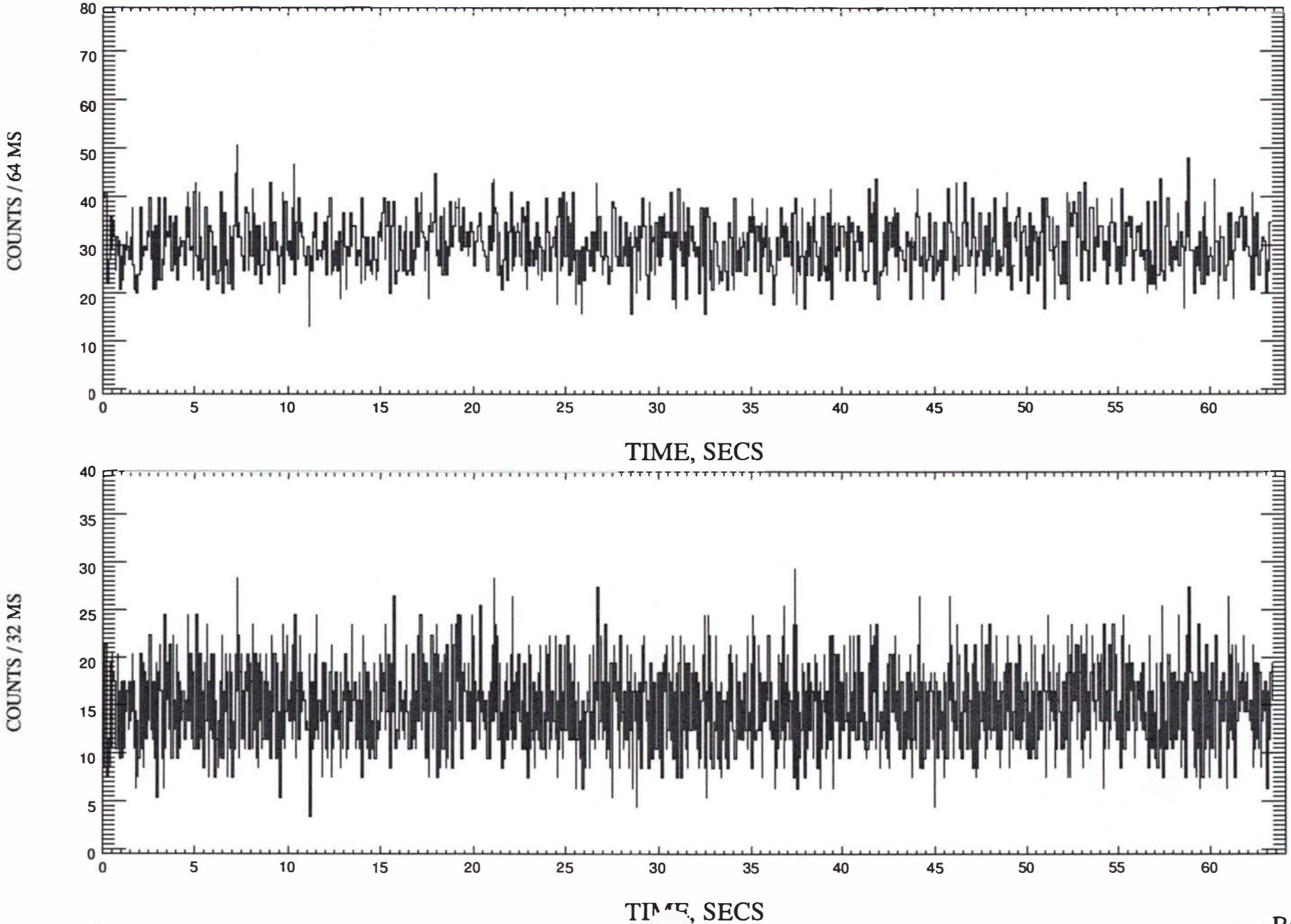
HUS 2A, MODE 1, NOT AVERAGED QEDR day 44, year 1994 to day 45, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 44, year 1994 5/26/94

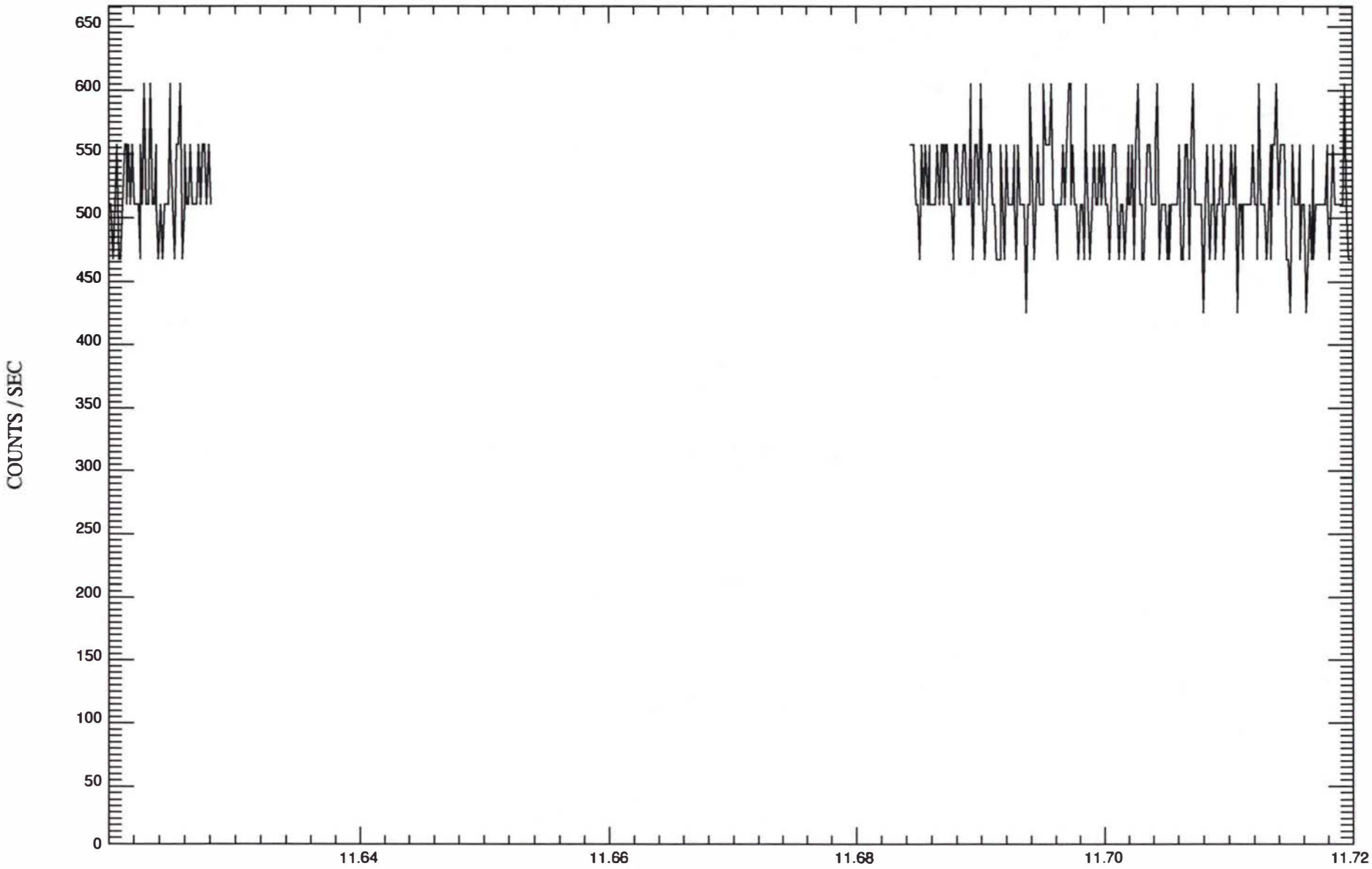
Burst Counter 11 at UT=11.670390044318 h=42013.404 s 11:40:13.404



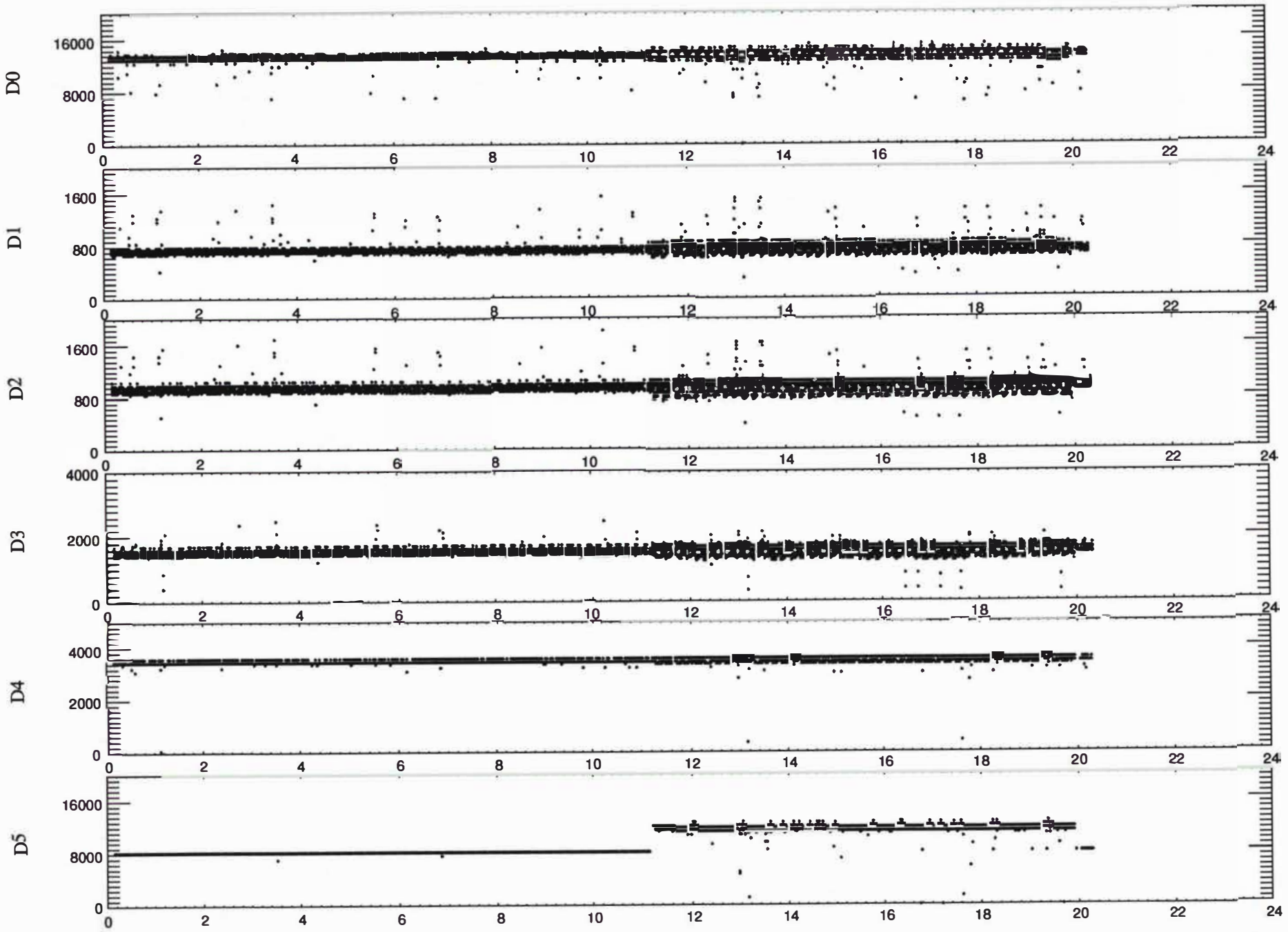
B# 5

HUS 2A, MODE 1, NOT AVERAGED QEDR day 44, year 1994 to day 45, year 1994 2/14/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 44, year 1994 to day 44, year 1994 2/14/94



From SHARIFF@ssl.msfc.nasa.gov Wed Feb 16 12:10 PST 1994
Date: Wed, 16 Feb 1994 14:14:59 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2821
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #    2821
 EVENT OF 1994 FEB 14 DAY OF YEAR= 45
 EVENT CROSSING TIME AT BATSE     :  2288. S. OR 00:38:08.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 122.000   57.000
 BATSE PEAK COUNTING RATE:   5500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 14/ 2/  94 IS:
 RA=  150.415 DEC=  -51.293 DIST=    3.073 AU
 BATSE-ULYSSES DISTANCE =  459730780. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.21 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  544.25 SECS.
 CROSSING TIME AT ULYSSES    IS  2832. S. OR   00:47:12 +/-  307.17 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 14/ 2/  94 IS:
 RA=  315.930 DEC=  -17.893 DIST=    2.350 AU
 MARS-BATSE DISTANCE =  351525824. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.47 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  892.00 SECS.
 CROSSING TIME AT MARS       IS  3180. S. OR   00:52:59 +/-  145.68 SECONDS
```

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2821	940214	9397	02288	5500	122	+57

00:38:08

BATSE BURST TRIGGER

NO.: 02821

TIME: TJD=9397 SECONDS=02288

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=040.4 AZIMUTH=207.2 ERROR= DEGREES

COMMENTS:
BURST, SINGLE SPIKE, LASTING ~ 0.4 SECONDS. NOT VISIBLE ABOVE 300KEV.

BATSE BURST# 2821

ULYSSES RT

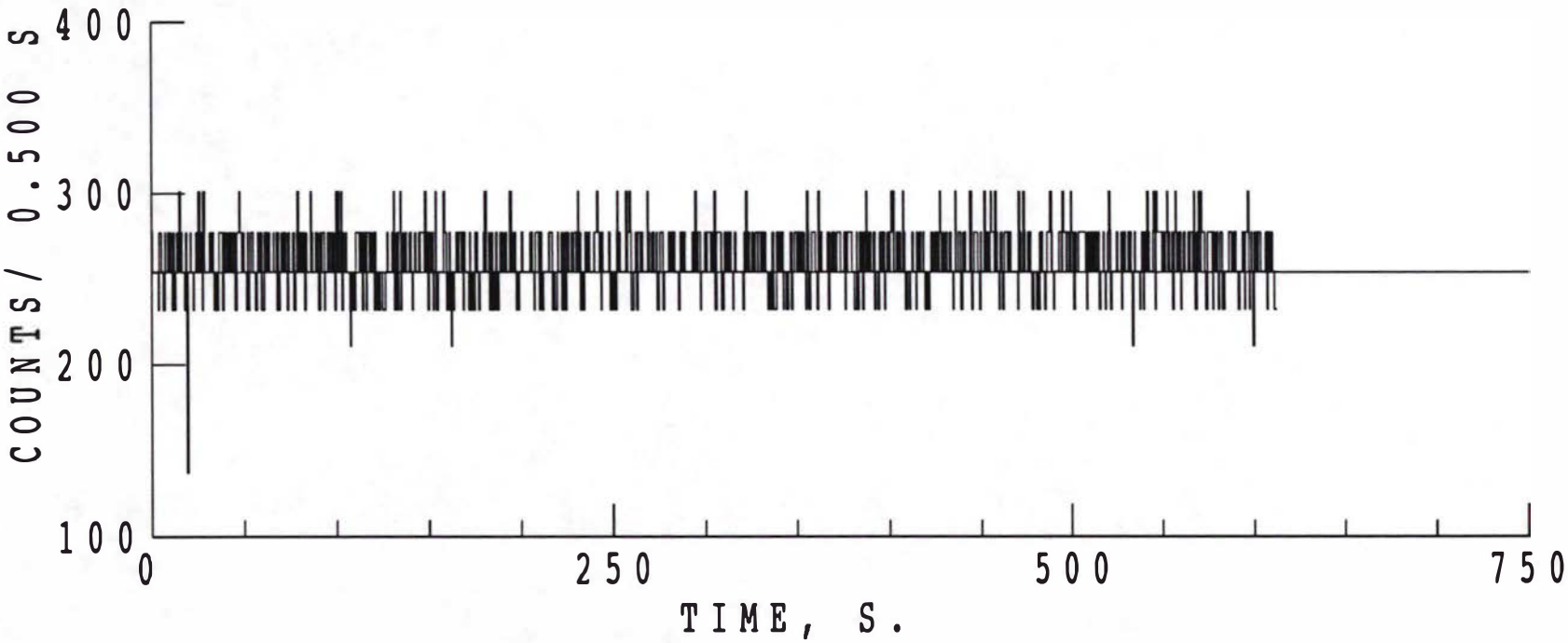
4/ 5/98

14/ 2/94 2376.388 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SHARIFF@ssl.msfc.nasa.gov Wed Feb 16 11:51 PST 1994
Date: Wed, 16 Feb 1994 13:55:33 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02822

TIME: TJD=9397 SECONDS=14924

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PREC. EVENT

From SHARIFF@ssl.msfc.nasa.gov Wed Feb 16 12:13 PST 1994
Date: Wed, 16 Feb 1994 14:17:10 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2823
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2823
 EVENT OF 1994 FEB 14 DAY OF YEAR= 45
 EVENT CROSSING TIME AT BATSE      : 33259. S. OR 09:14:19.0
 COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 346.000    -3.000
 BATSE PEAK COUNTING RATE:    4000     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 14/ 2/  94 IS:
 RA=  150.223 DEC=  -51.335 DIST=     3.070 AU
 BATSE-ULYSSES DISTANCE =  459230865. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 55.98 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  857.13 SECS.
 CROSSING TIME AT ULYSSES     IS 34116. S. OR   09:28:36 +/-  283.44 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 14/ 2/  94 IS:
 RA=  315.930 DEC=  -17.893 DIST=     2.350 AU
 MARS-BATSE DISTANCE =  351525824. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=146.98 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -983.20 SECS.
 CROSSING TIME AT MARS        IS 32276. S. OR   08:57:55 +/-   96.00 SECONDS
```

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2823	940214	9397	33259	4000	346	-03

BATSE BURST TRIGGER

NO.: 02823

TIME: TJD=9397 SECONDS=33259

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=099.1 AZIMUTH=325.8 ERROR= DEGREES

COMMENTS:
BURST, WEAK SINGLE SPIKE, LASTING ~ 0.15 SECONDS. NOT VISIBLE ABOVE 300KEV.

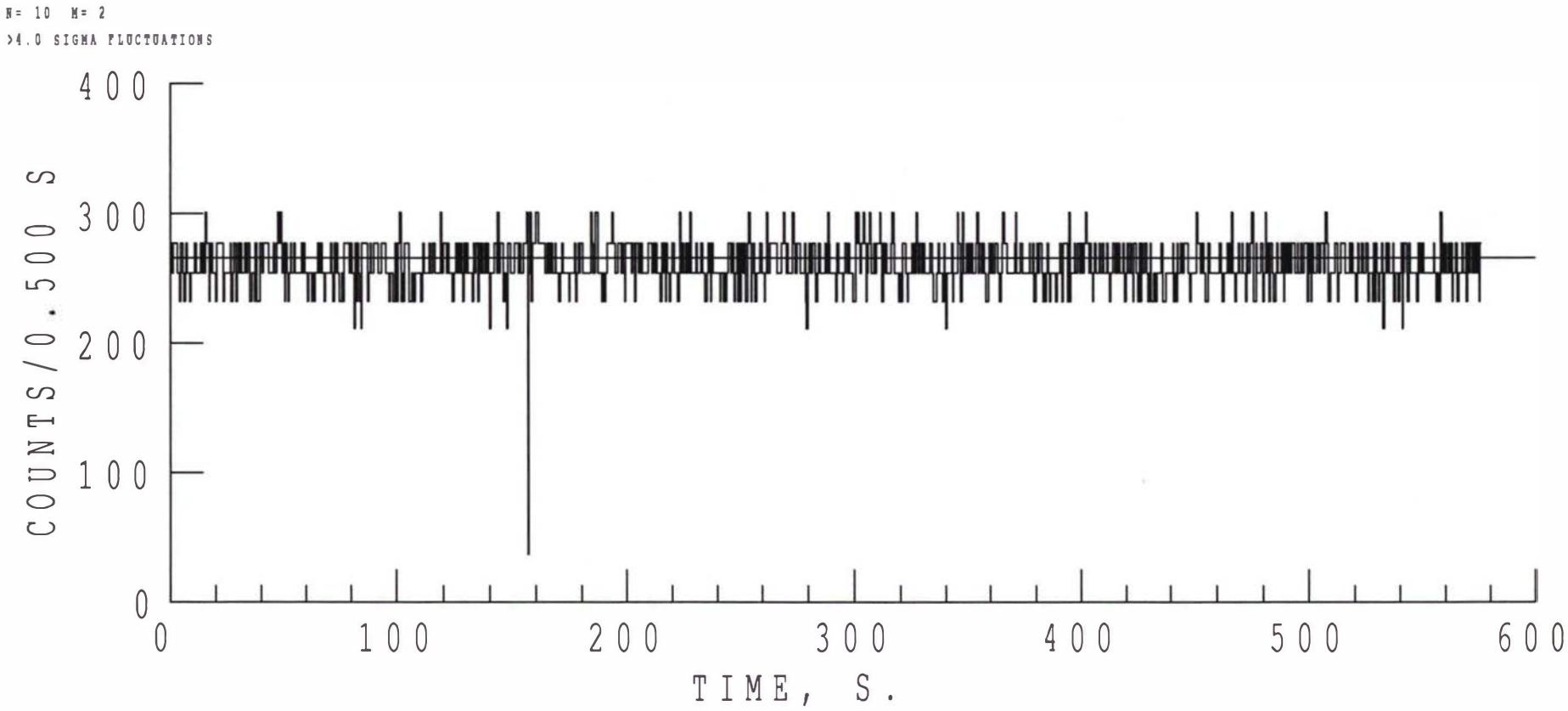
BatseBurst # 2823

16/ 2/94

ULYSSES RT

14/ 2/94 33840.375 s

0- 0 keV



From SHARIFF@ssl.msfc.nasa.gov Wed Feb 16 12:17 PST 1994
Date: Wed, 16 Feb 1994 14:21:26 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2824
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #    2824
 EVENT OF 1994 FEB 14 DAY OF YEAR= 45
 EVENT CROSSING TIME AT BATSE     : 41676. S. OR 11:34:36.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 100.000   -9.000
 BATSE PEAK COUNTING RATE:   7000    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 14/ 2/  94 IS:
 RA=  150.171 DEC=  -51.346 DIST=    3.069 AU
 BATSE-ULYSSES DISTANCE =  459095222. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.15 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -792.19 SECS.
 CROSSING TIME AT ULYSSES    IS 40884. S. OR   11:21:23 +/-  265.50 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 14/ 2/  94 IS:
 RA=  315.930 DEC=  -17.893 DIST=    2.350 AU
 MARS-BATSE DISTANCE =  351525824. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.52 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  836.07 SECS.
 CROSSING TIME AT MARS       IS 42512. S. OR   11:48:32 +/-  155.43 SECONDS
```

ND

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2824	940214	9397	41676	7000	100	-09

BATSE BURST TRIGGER

NO.: 02824

TIME: TJD=9397 SECONDS=41676

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=037.6 AZIMUTH=082.8 ERROR= DEGREES

COMMENTS:
BURST, SINGLE SPIKE, LASTING ~ 0.8 SECONDS. VISIBLE ABOVE 300KEV.

Batse Burst # 2824

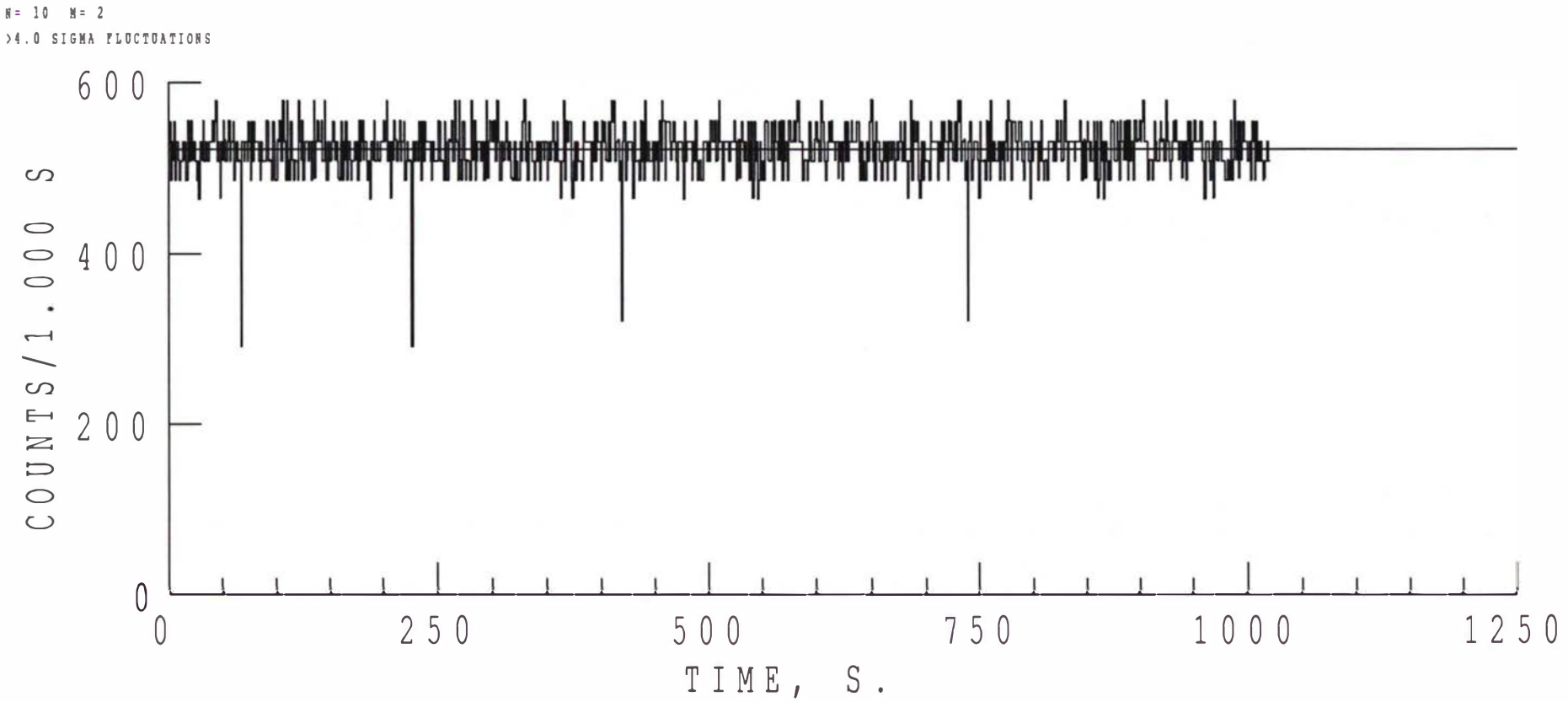
16/ 2/94

ULYSSES RT

14/ 2/94 40608.480 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



From SHARIFF@ssl.msfc.nasa.gov Wed Feb 16 12:19 PST 1994
Date: Wed, 16 Feb 1994 14:23:08 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2825
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2825
 EVENT OF 1994 FEB 14 DAY OF YEAR= 45
 EVENT CROSSING TIME AT BATSE      : 60360. S. OR 16:46:00.0
 COORDINATES ARE    0.000    0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 191.000    20.000
 BATSE PEAK COUNTING RATE:    2200     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 14/ 2/  94 IS:
 RA=  150.055 DEC=  -51.371 DIST=     3.067 AU
 BATSE-ULYSSES DISTANCE =  458792941. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.13 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -269.21 SECS.
 CROSSING TIME AT ULYSSES     IS 60091. S. OR   16:41:30 +/-  307.46 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 14/ 2/  94 IS:
 RA=  315.930 DEC=  -17.893 DIST=     2.350 AU
 MARS-BATSE DISTANCE =  351525824. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.90 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  723.59 SECS.
 CROSSING TIME AT MARS        IS 61084. S. OR   16:58:03 +/-  171.18 SECONDS
```

ND

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2825	940214	9397	60360	2200	191	+20

BATSE BURST TRIGGER

NO.: 02825

TIME: TJD=9397 SECONDS=60360

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=094.7 AZIMUTH=172.2 ERROR= DEGREES

COMMENTS:
BURST, SINGLE PULSE, LASTING ~ 35 SECONDS. NOT VISIBLE ABOVE 300 KEV.

Batse Burst #2825

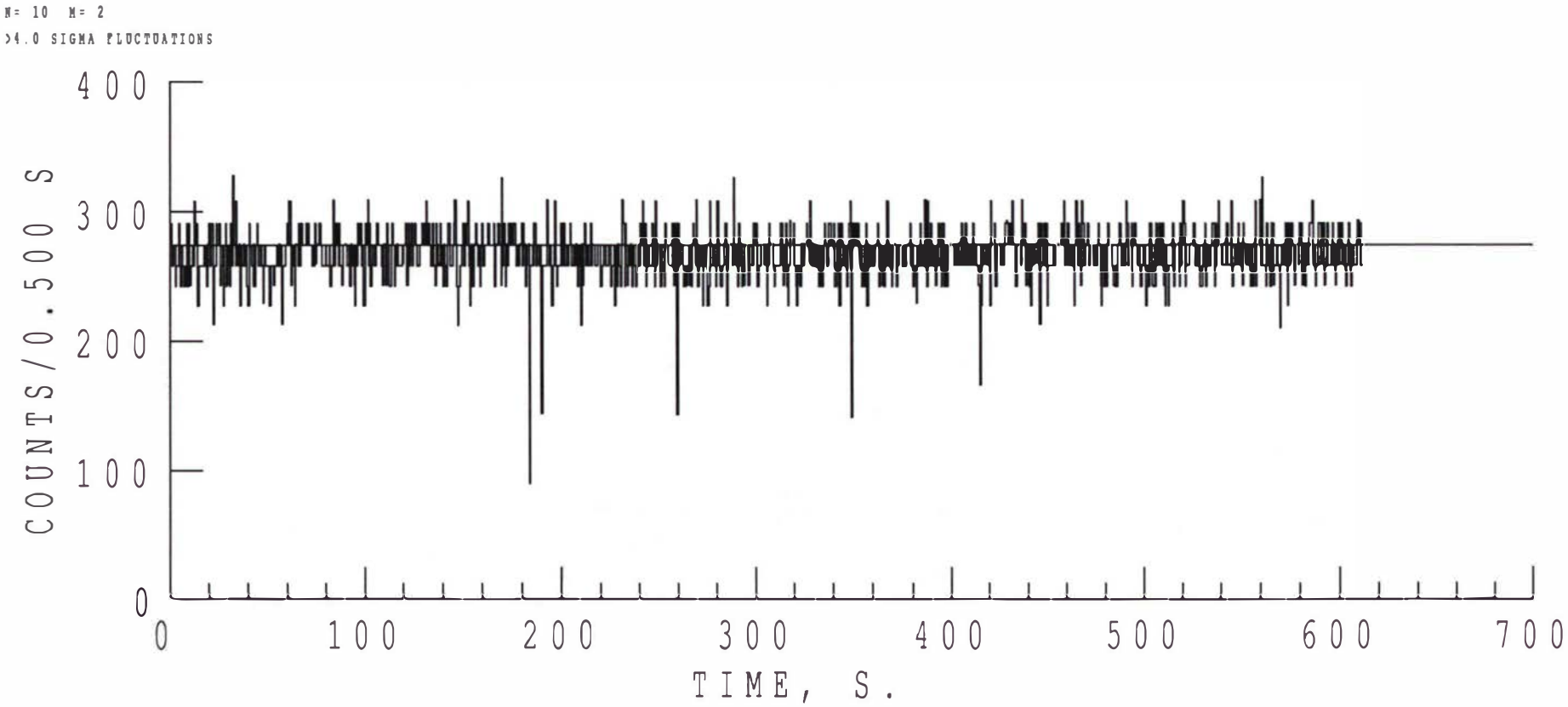
16/ 2/94

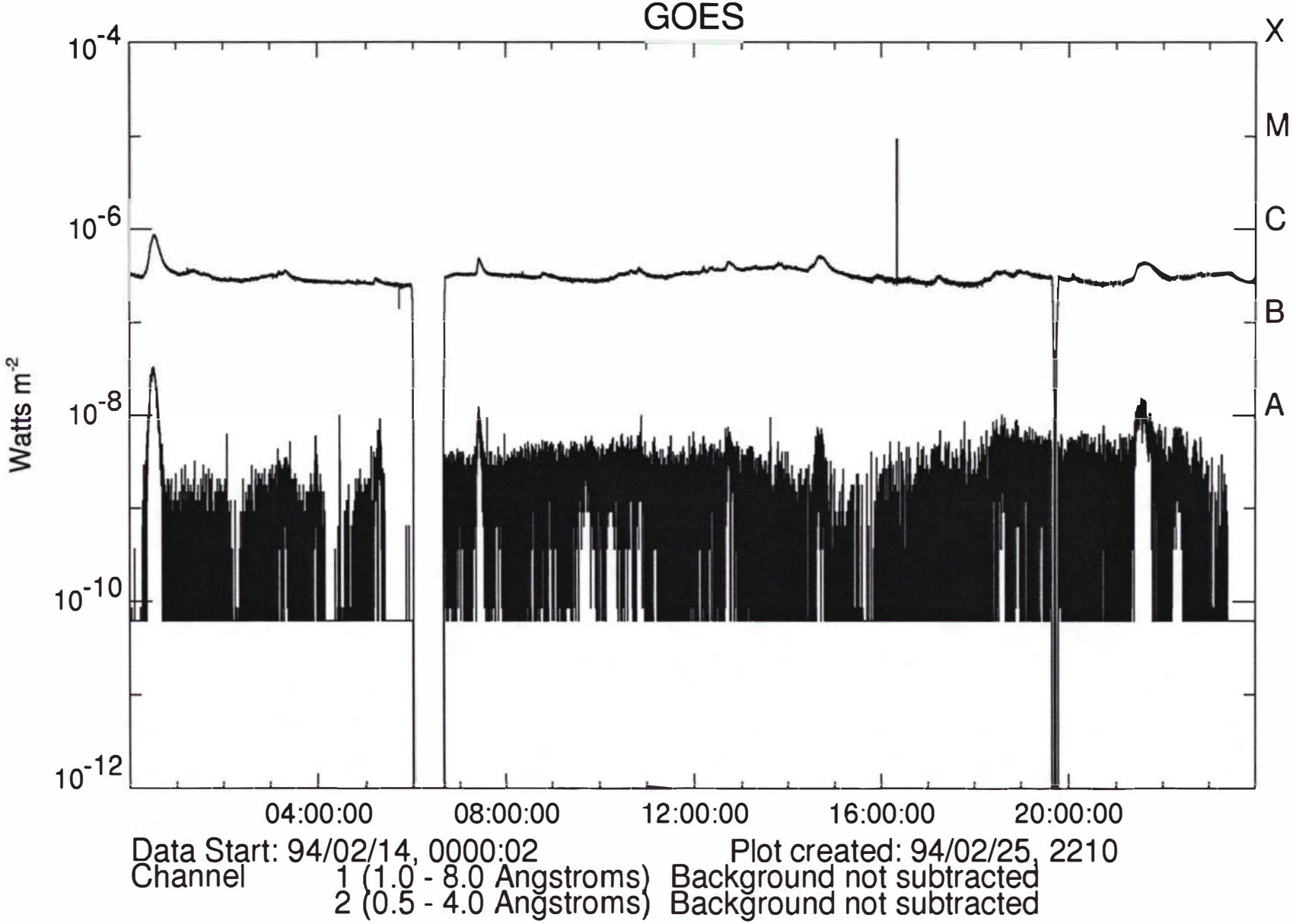
ULYSSES RT

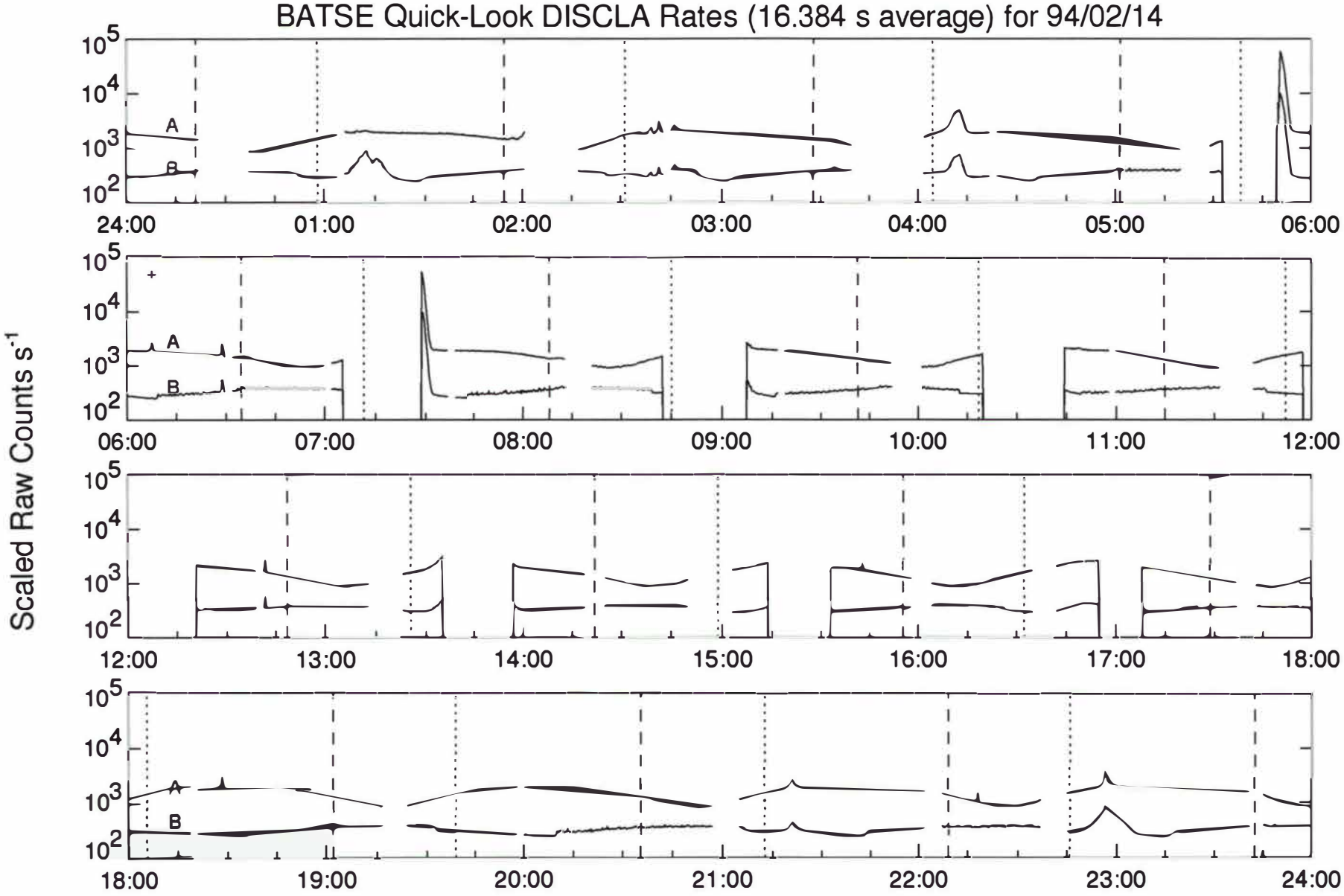
14/ 2/94 59796.035 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

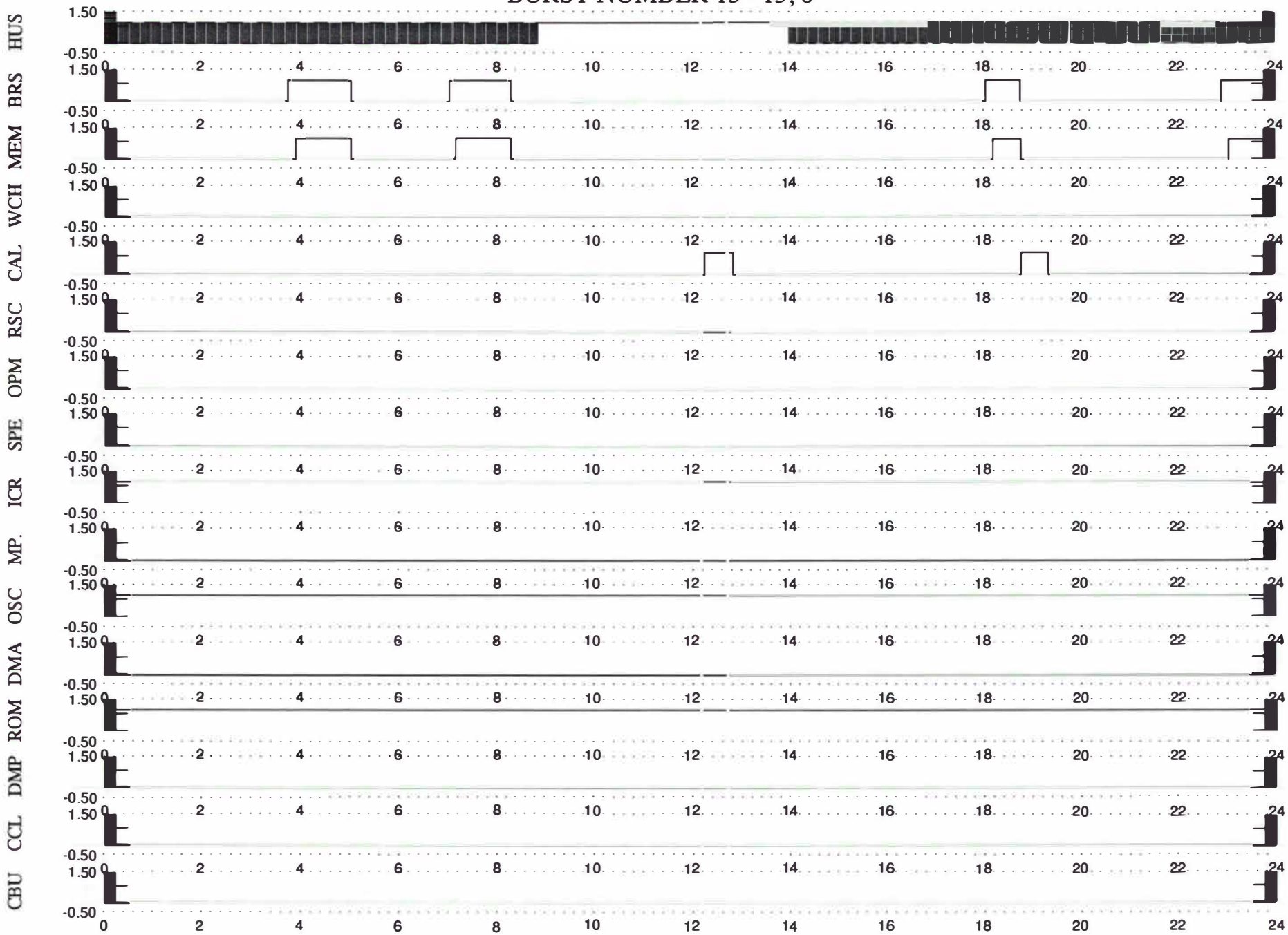



GOES
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
Watts m^{-2}
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/14, 0000:02
Plot created: 94/02/25, 2210
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/14
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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: 94/02/16, 1643 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 45, year 1994 to day 45, year 1994 5/26/94

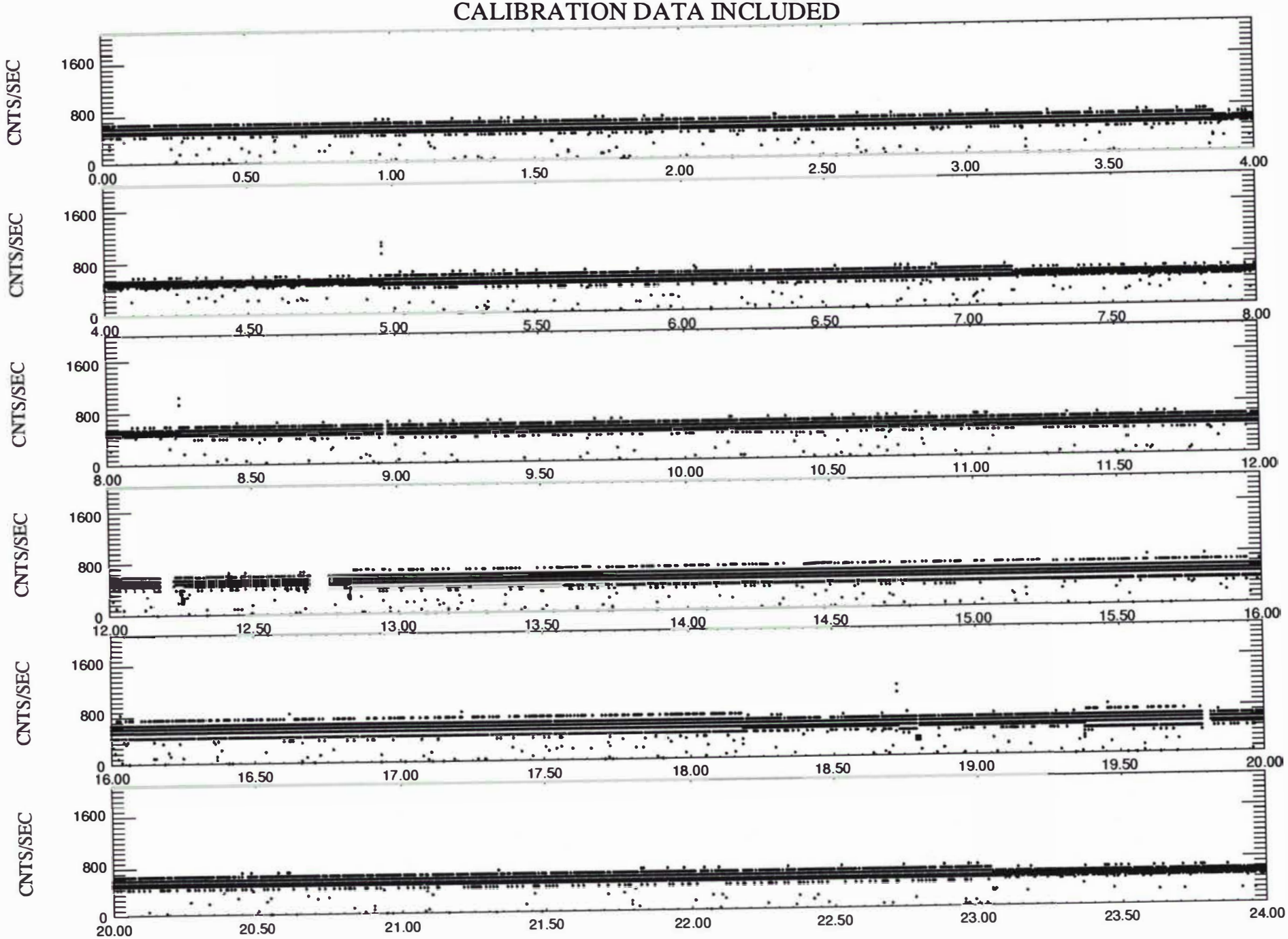
BURST NUMBER 13 - 15, 0



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 45, year 1994 to day 45, year 1994 5/26/94

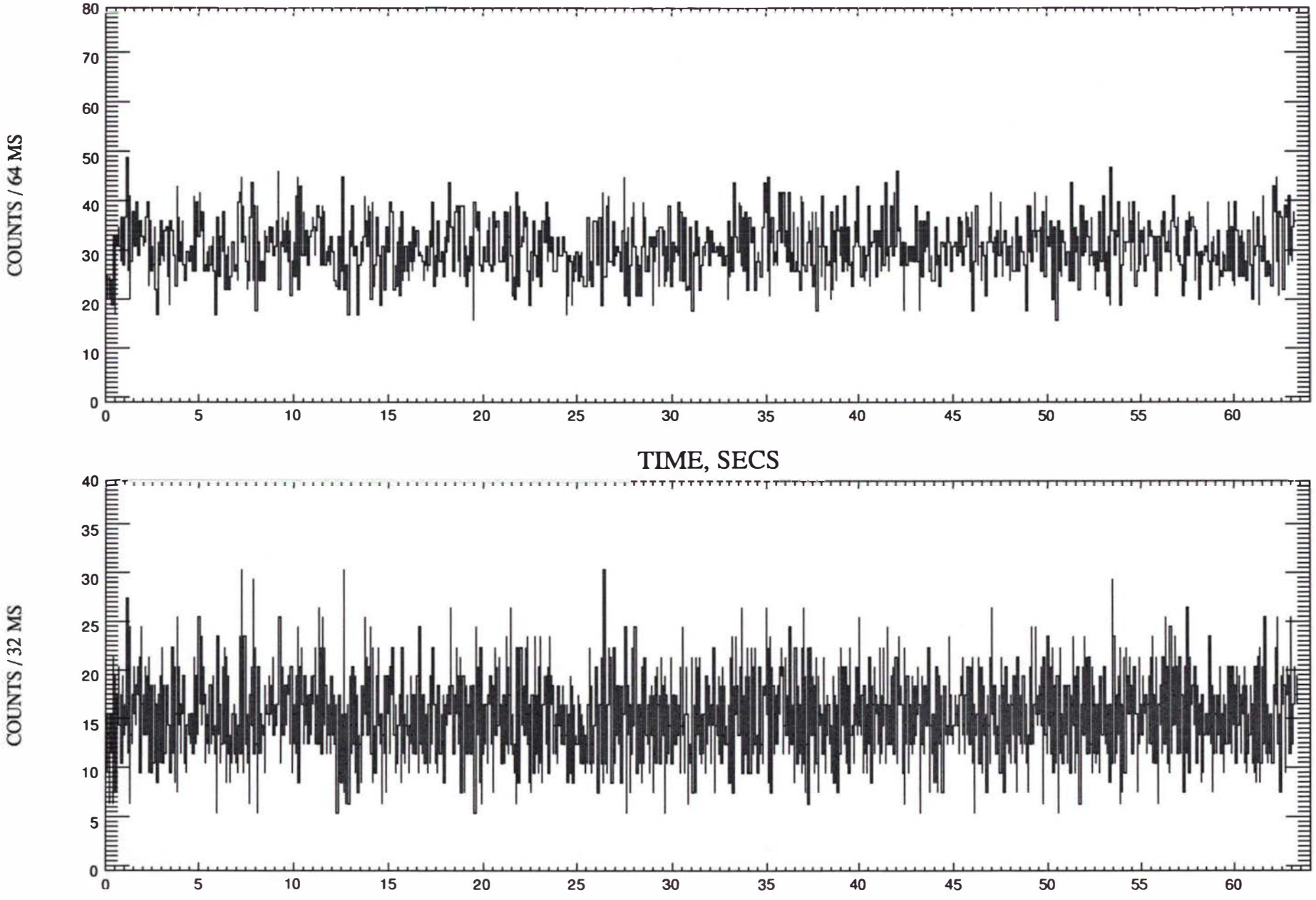
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 45, year 1994 5/26/94

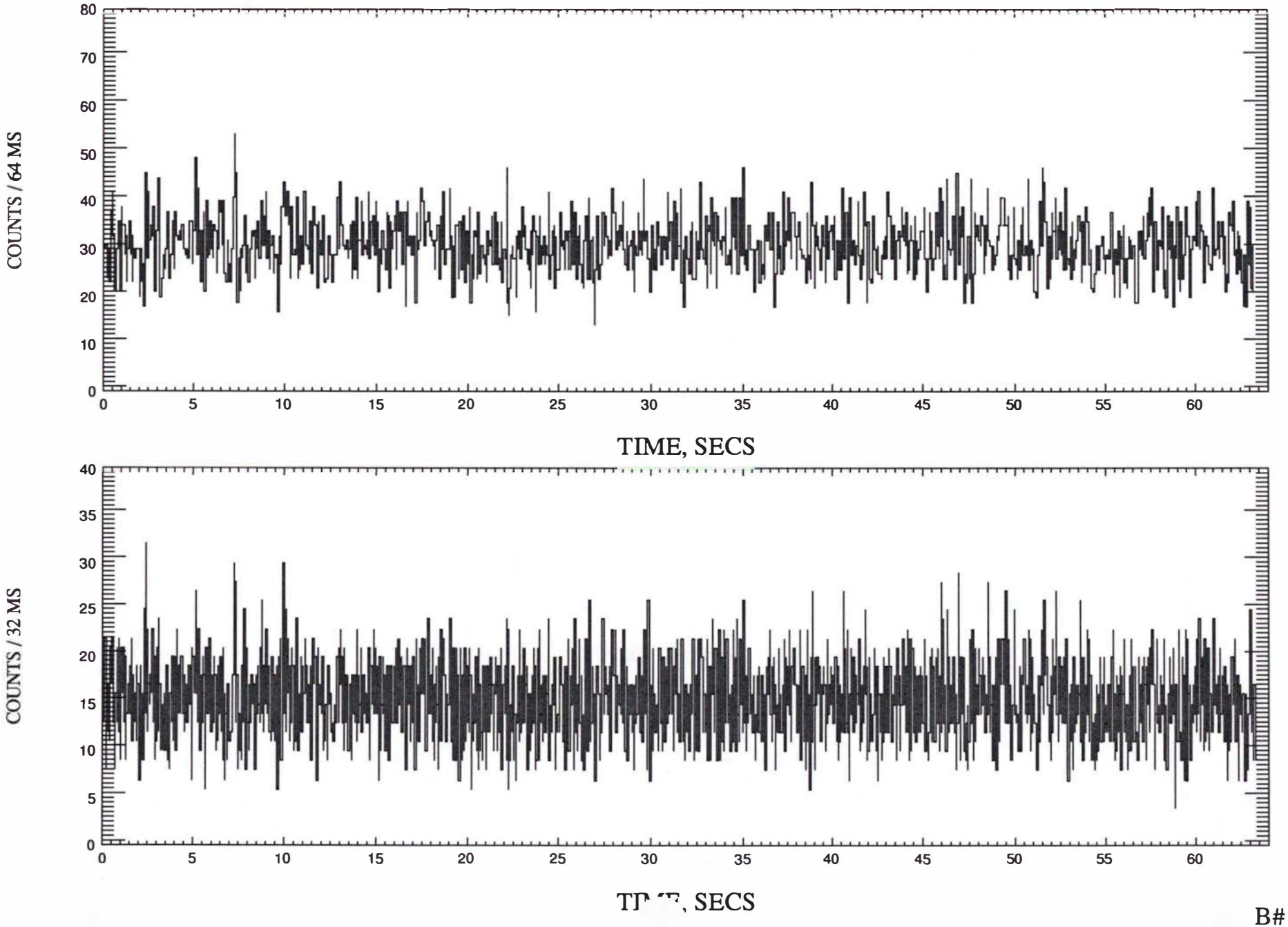
Burst Counter 13 at UT= 3.697478561401 h=13310.923 s 03:41:50.923



B# 1

HUS 2A TRIGGERED DATA EDR day 45, year 1994 5/26/94

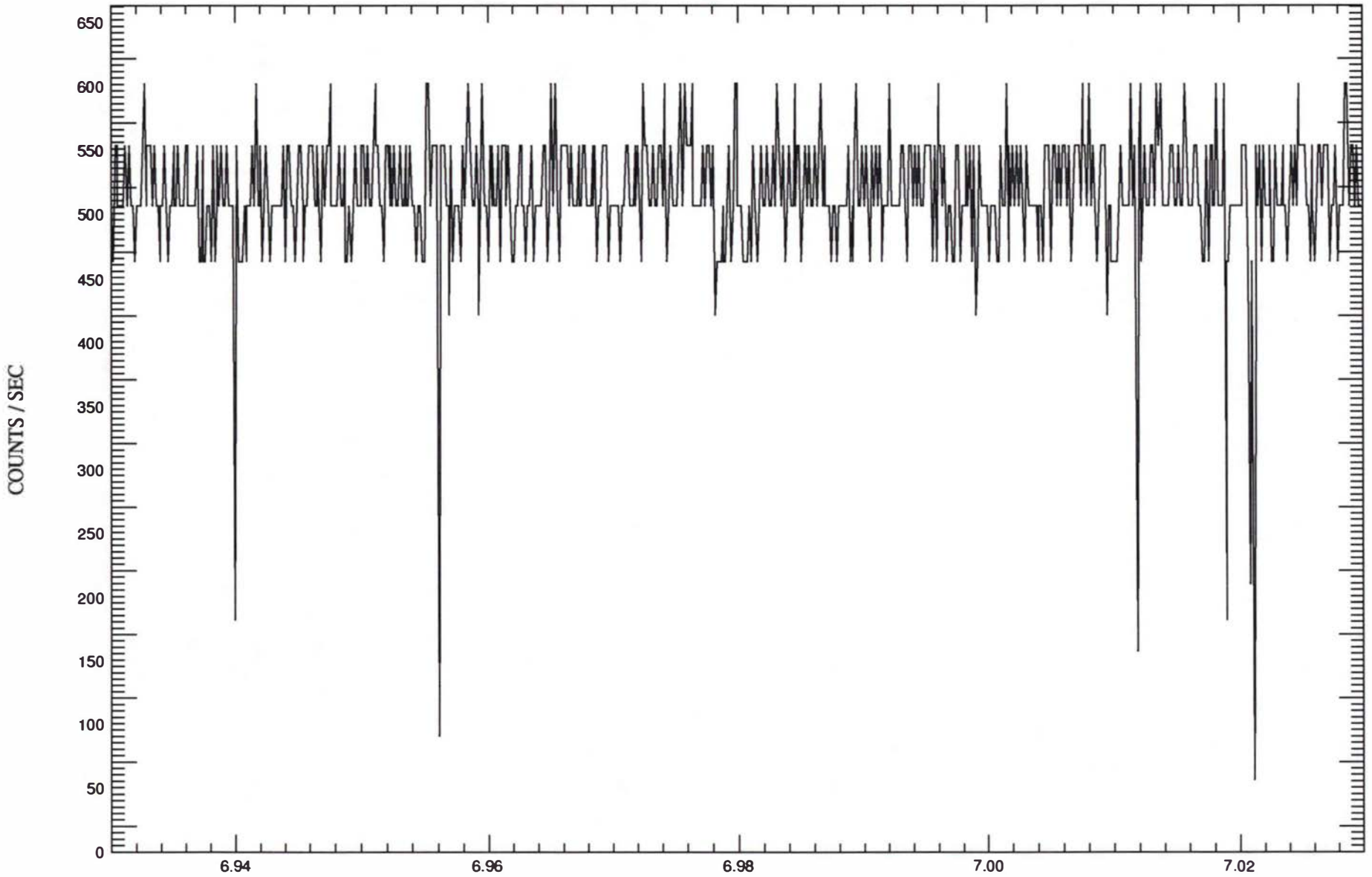
Burst Counter 14 at UT= 6.983777253893 h=25141.598 s 06:59:01.598



B# 2

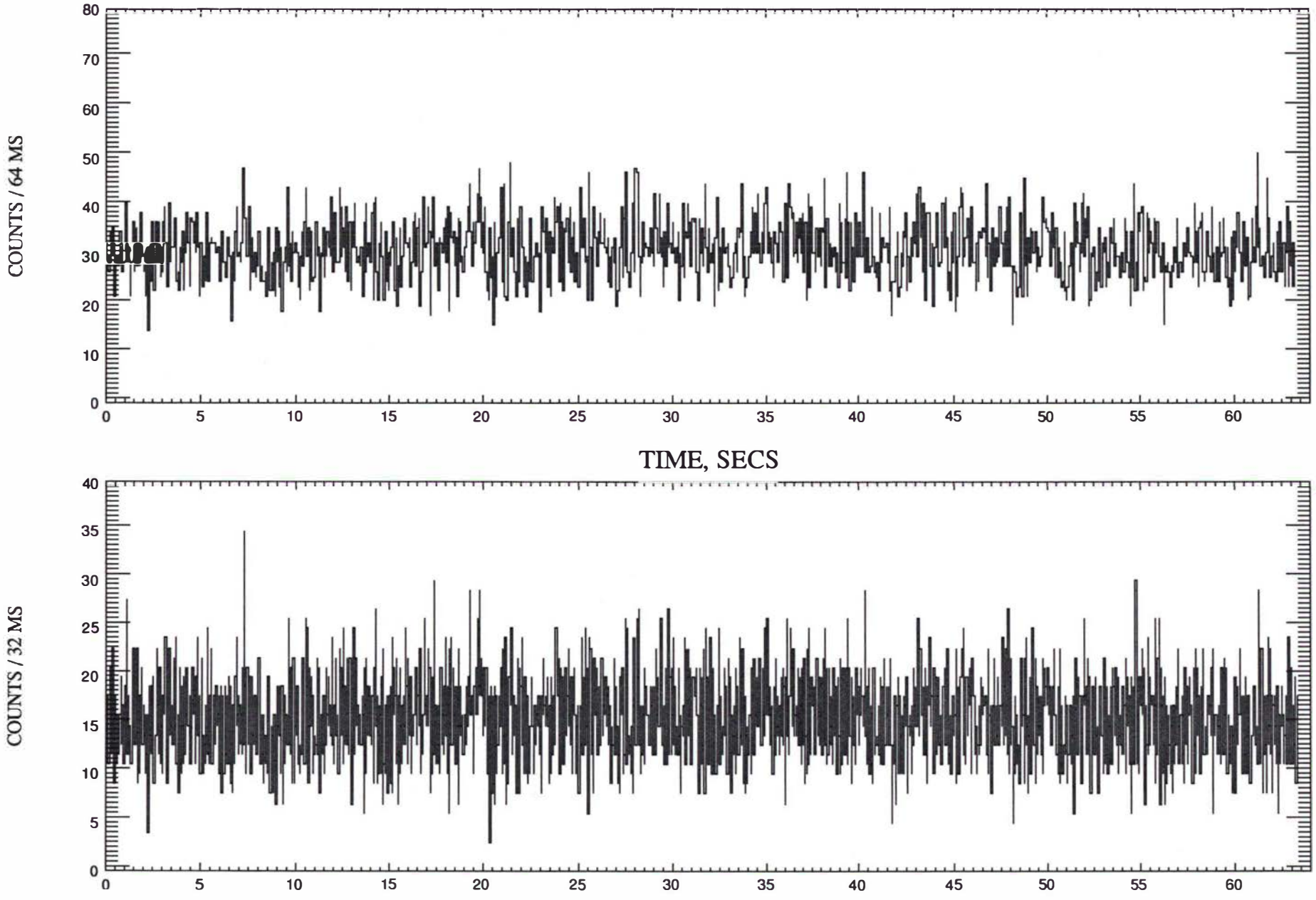
HUS 2A, MODE 1, NOT AVERAGED QEDR day 45, year 1994 to day 46, year 1994 2/16/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 45, year 1994 5/26/94

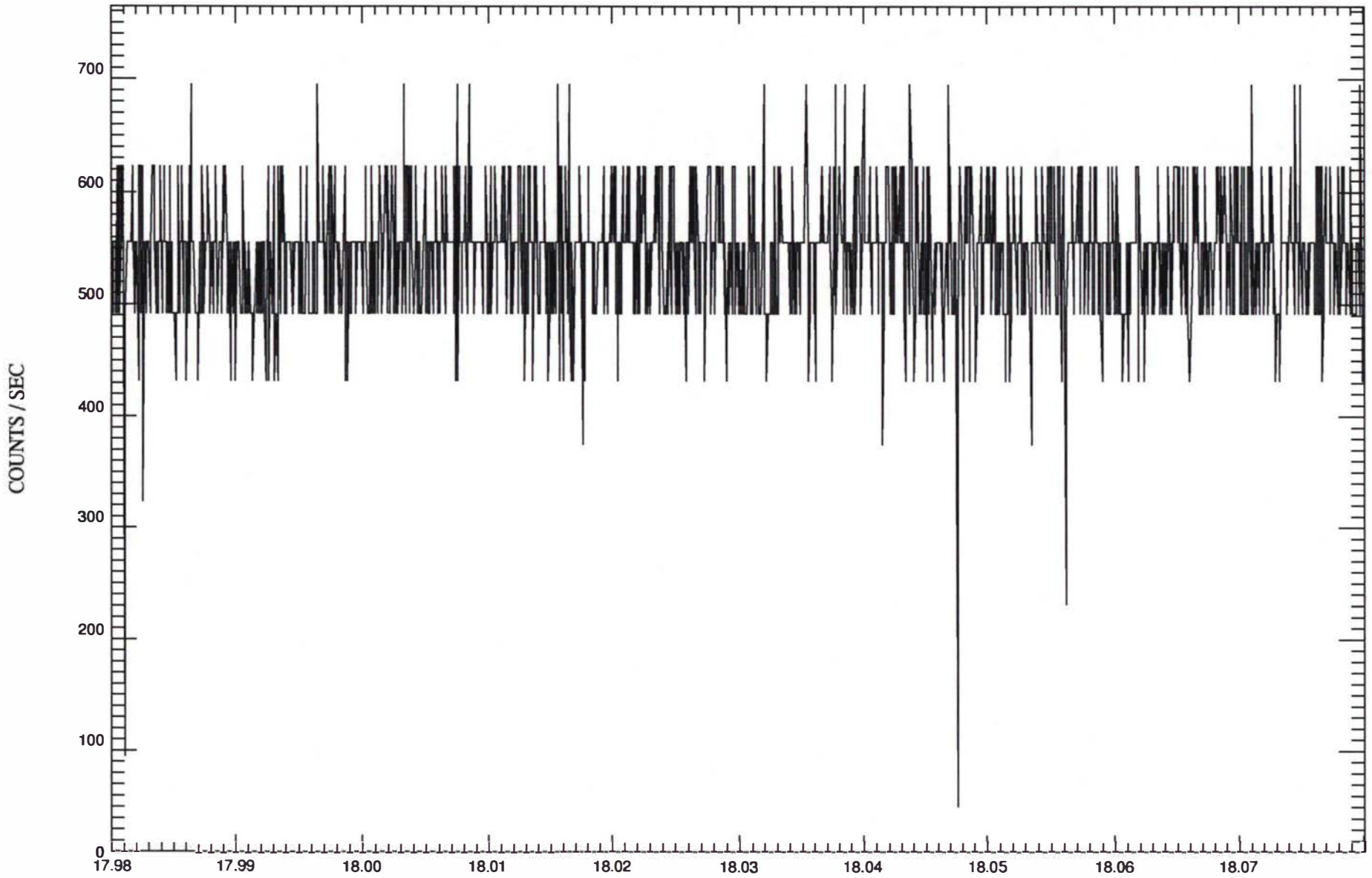
Burst Counter 15 at UT=18.032007751465 h=64915.228 s 18:01:55.228



B# 3

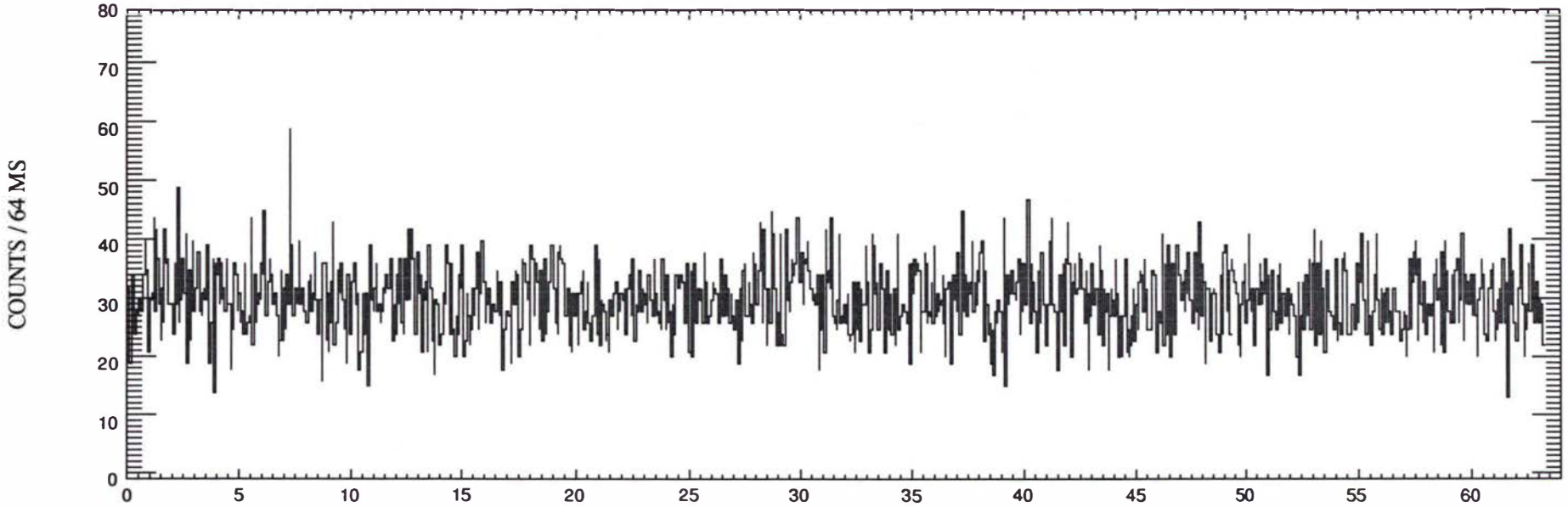
HUS 2A, MODE 1, NOT AVERAGED QEDR day 45, year 1994 to day 46, year 1994 2/16/94

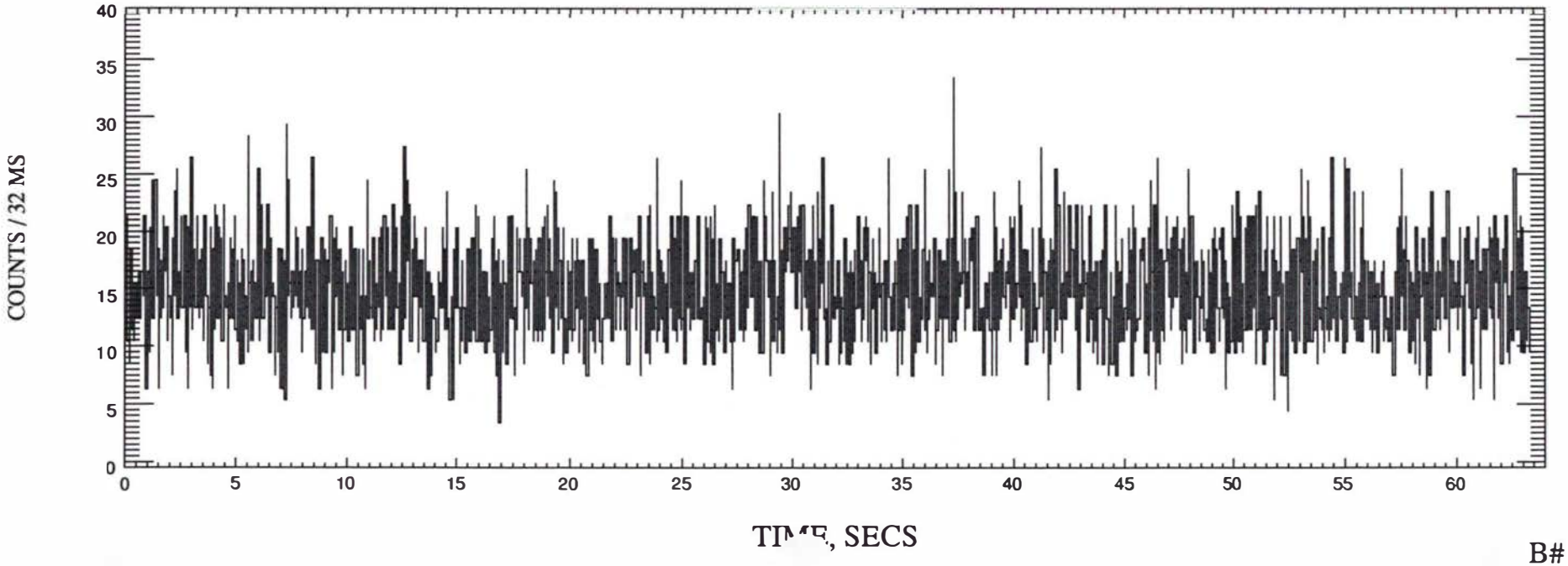
CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 45, year 1994 5/26/94

Burst Counter 0 at UT=22.879232720269 h=82365.238 s 22:52:45.238

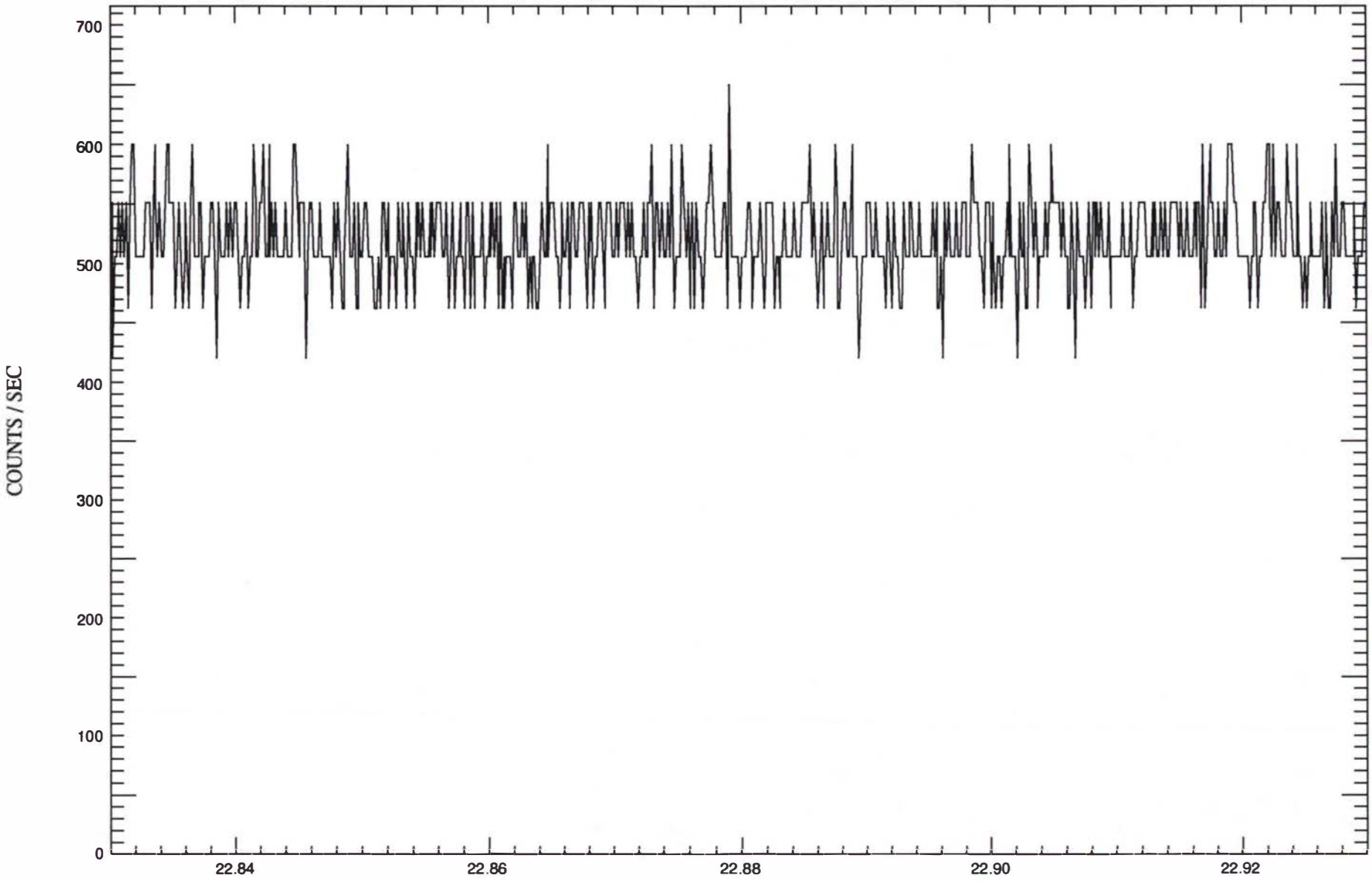




B# 4

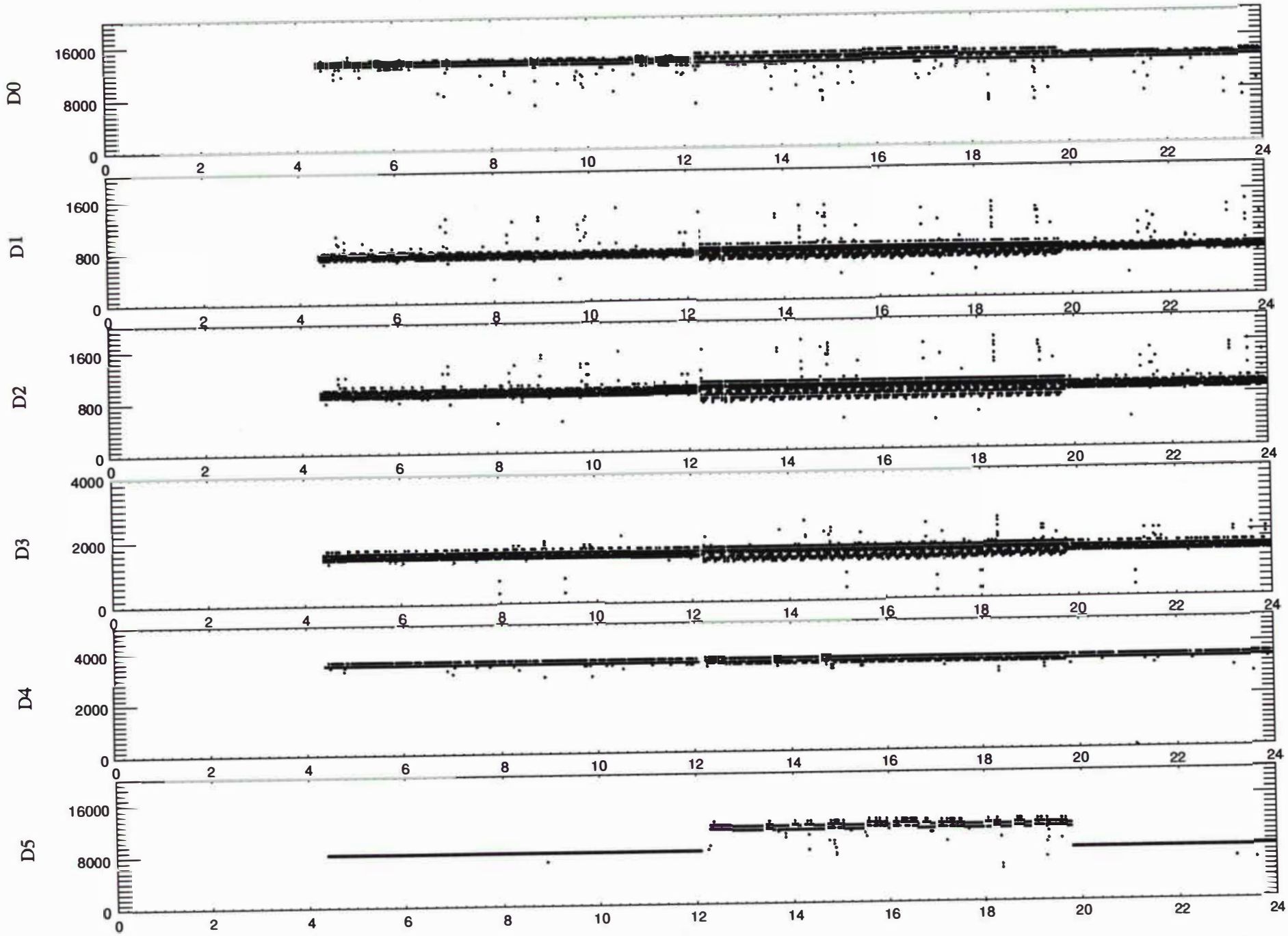
HUS 2A, MODE 1, NOT AVERAGED QEDR day 45, year 1994 to day 46, year 1994 2/16/94

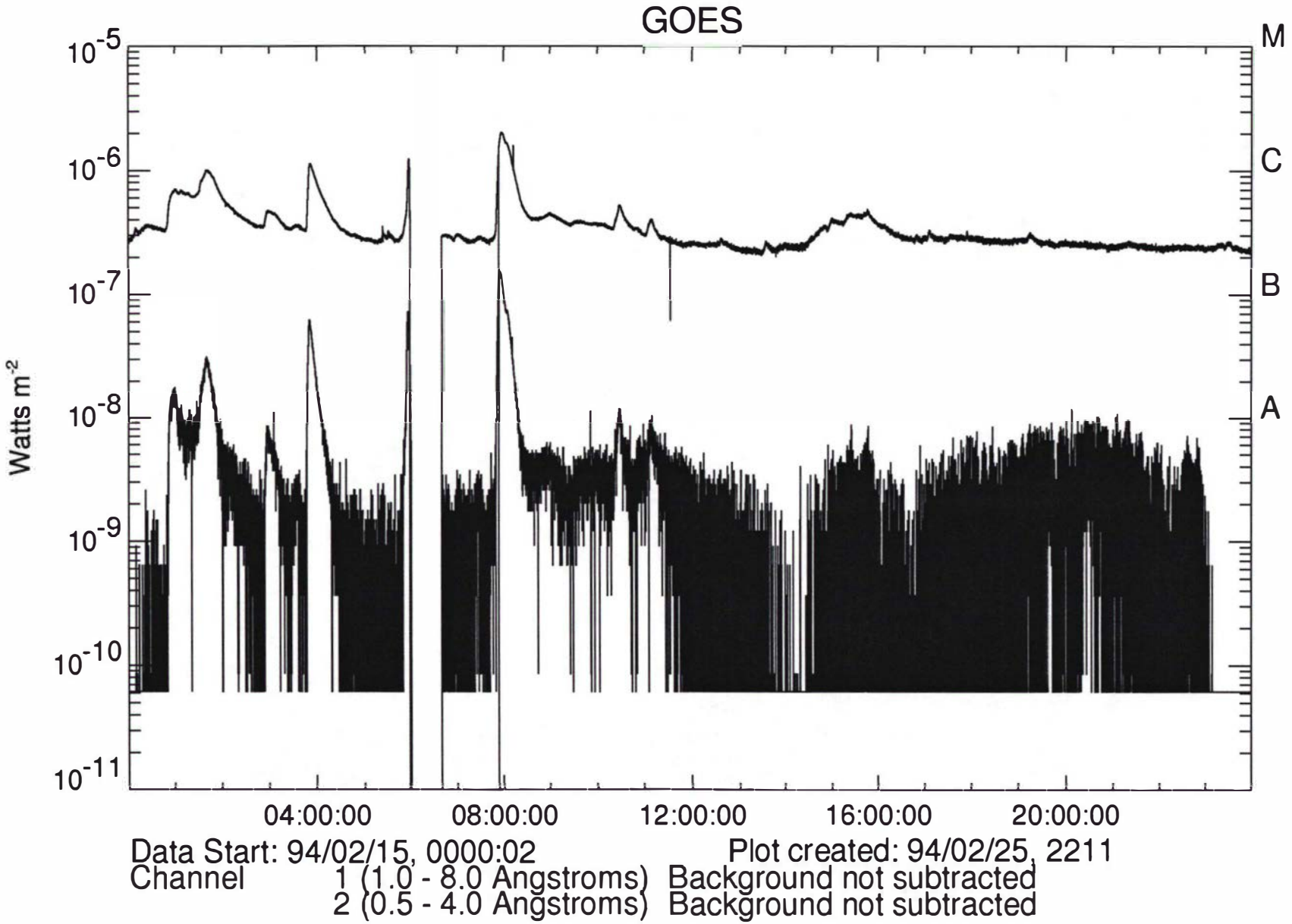
CALIBRATION DATA INCLUDED

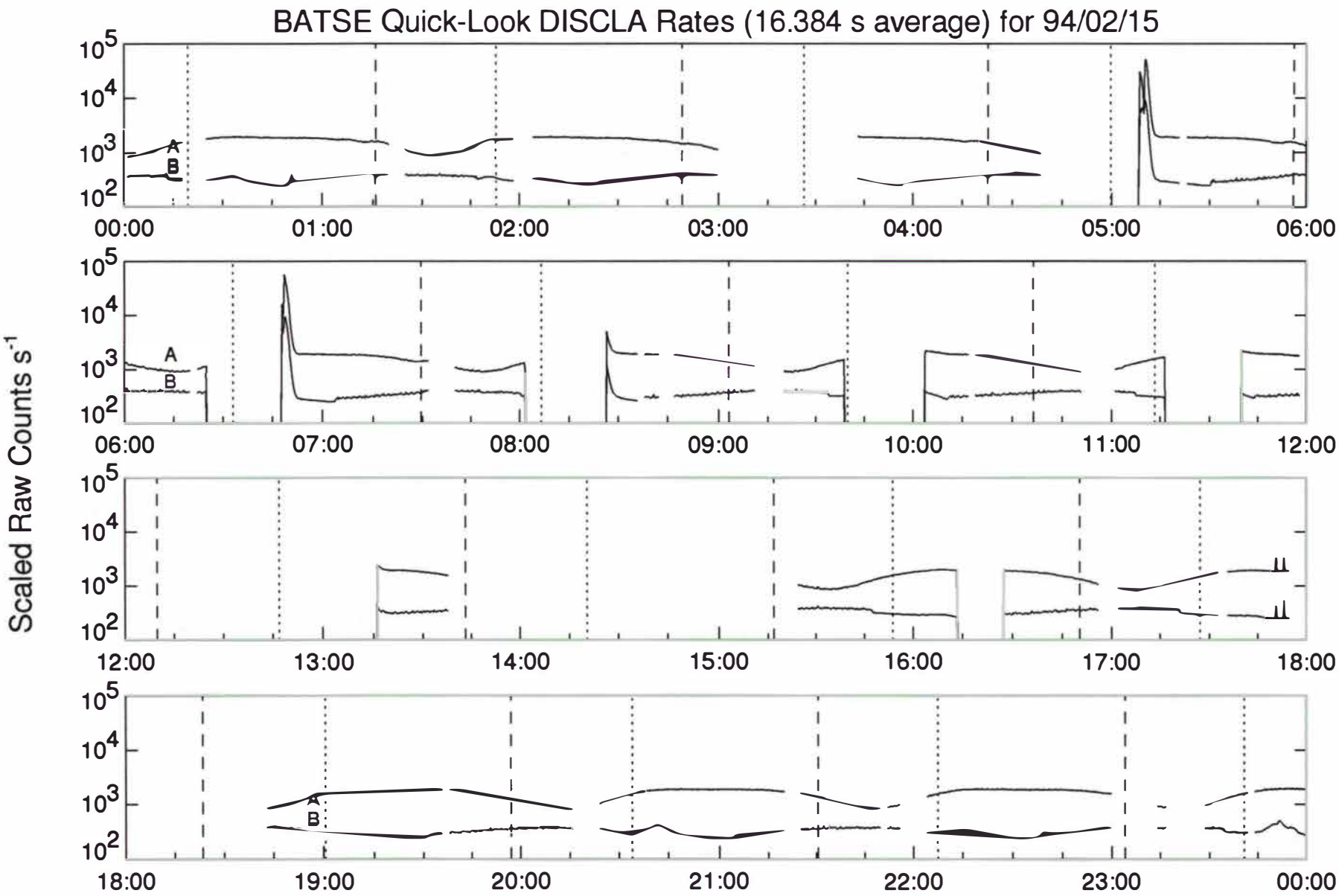


HUS 2B COUNTS / SEC QEDR day 45, year 1994 to day 45, year 1994

2/16/94

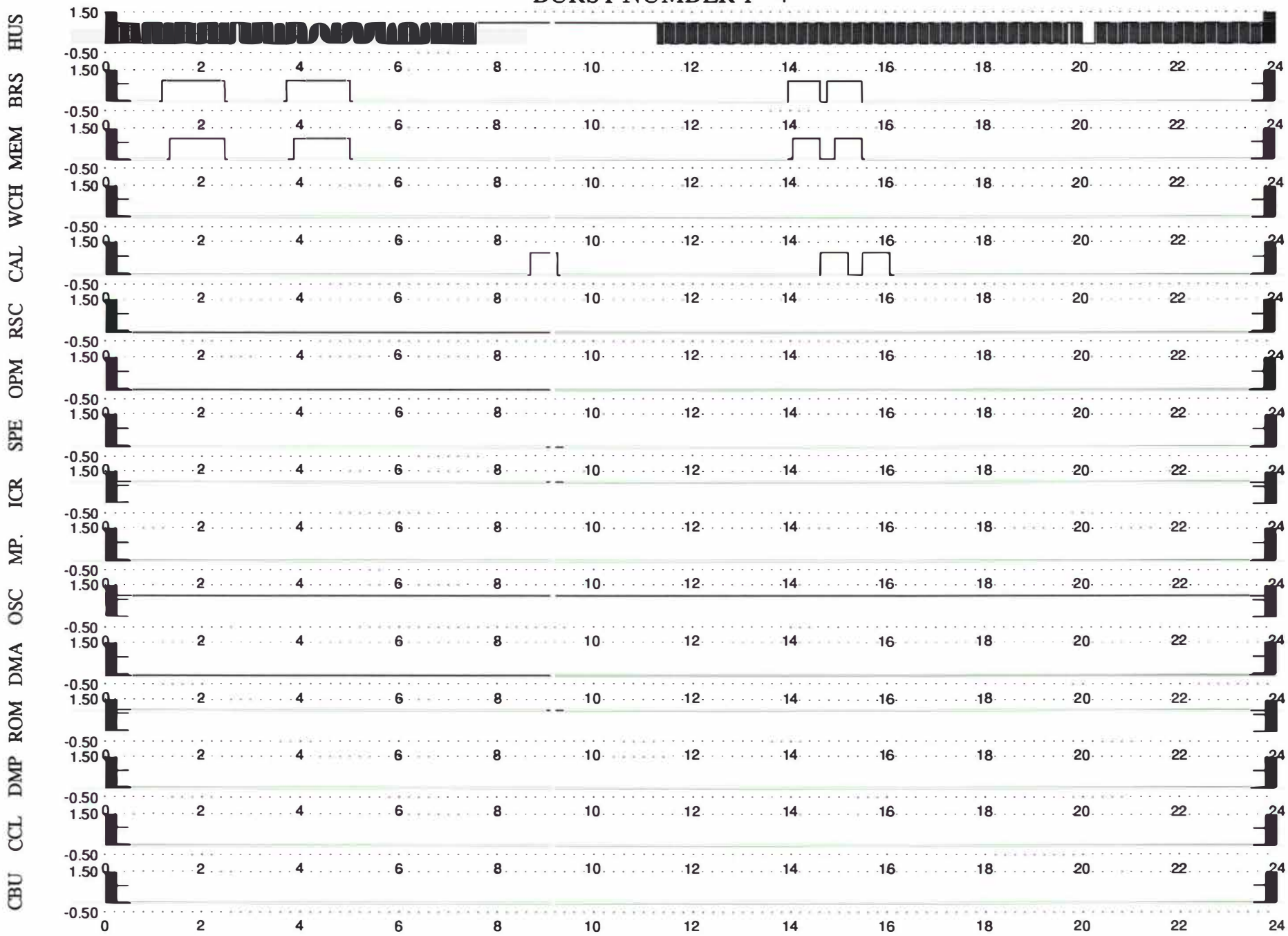



GOES
M
C
B
A
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/15, 0000:02
Plot created: 94/02/25, 2211
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/15
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
00:00
Current Time: 94/02/16, 1643 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 46, year 1994 to day 46, year 1994 5/26/94

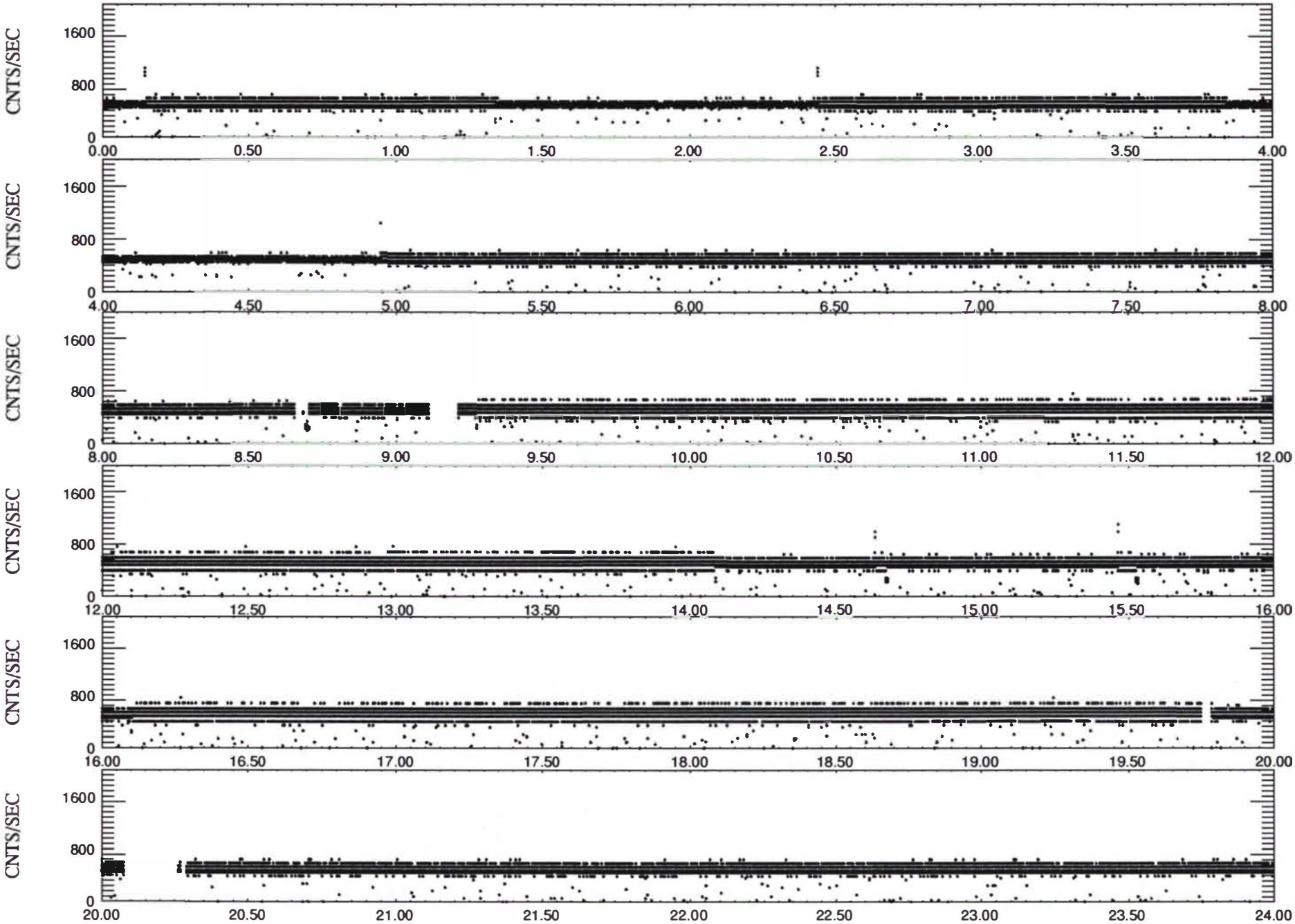
BURST NUMBER 1 - 4



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 46, year 1994 to day 46, year 1994 5/26/94

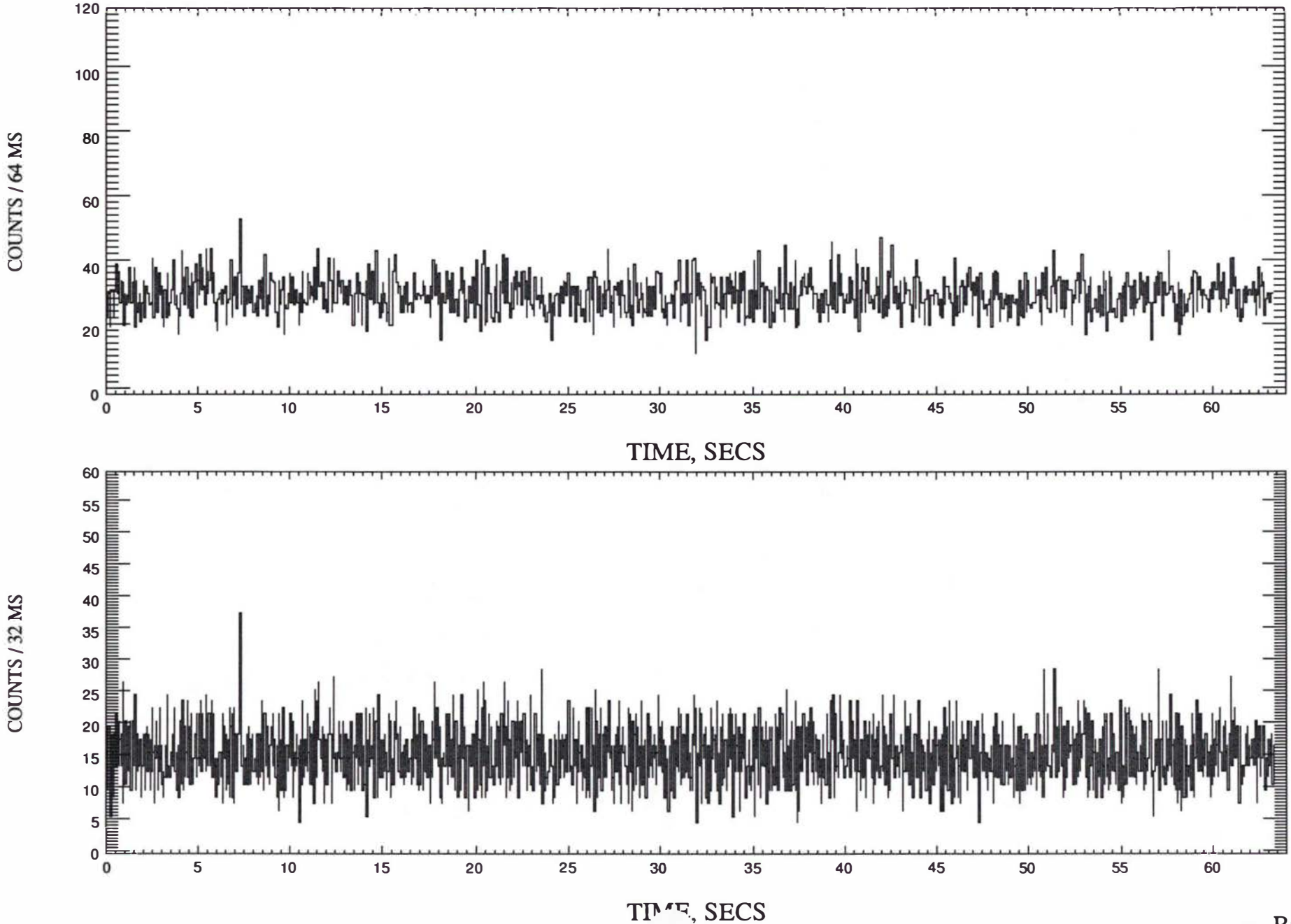
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 46, year 1994 5/26/94

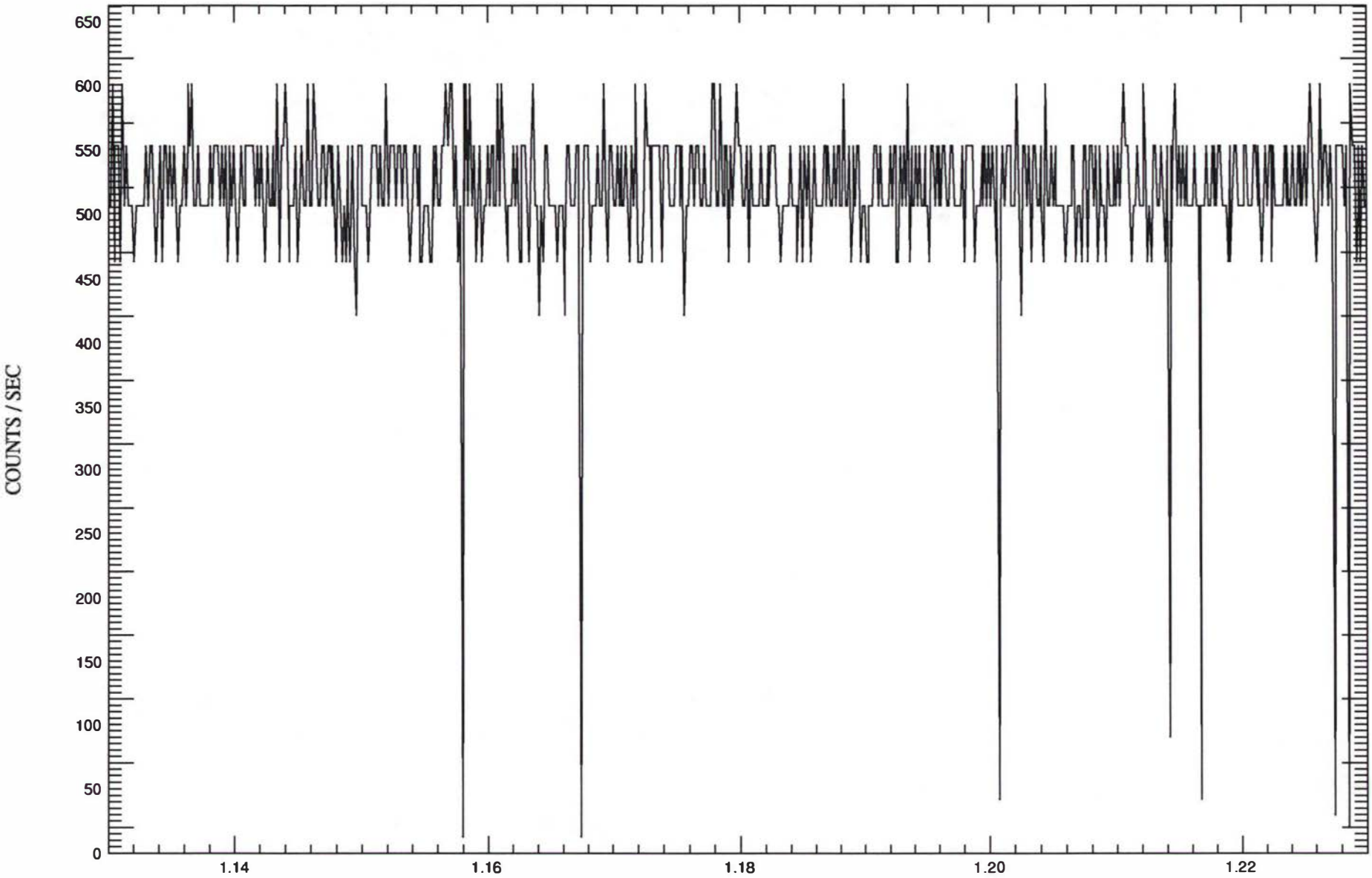
Burst Counter 1 at UT= 1.178679996067 h= 4243.248 s 01:10:43.248



B# 2

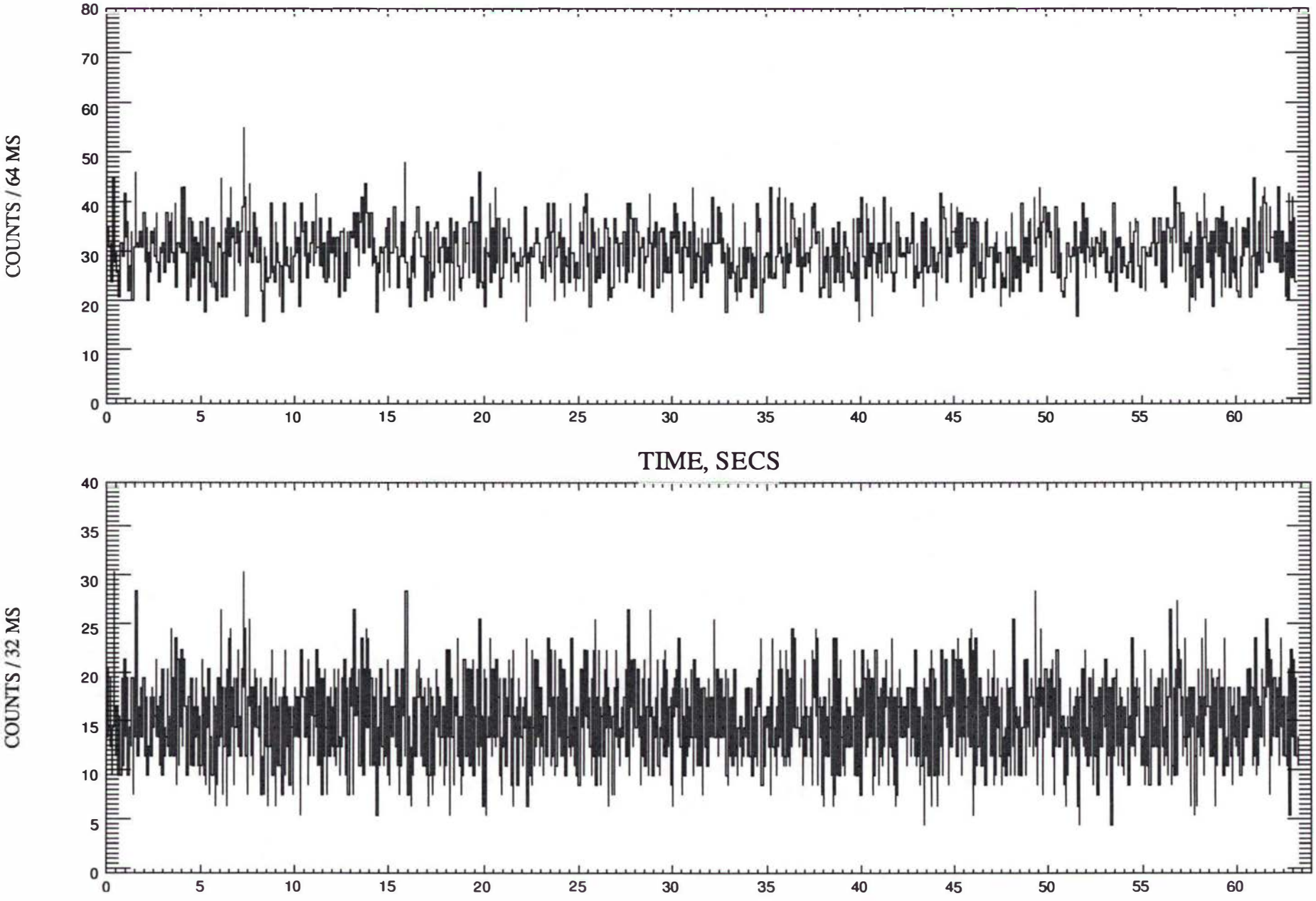
HUS 2A, MODE 1, NOT AVERAGED QEDR day 46, year 1994 to day 47, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 46, year 1994 5/26/94

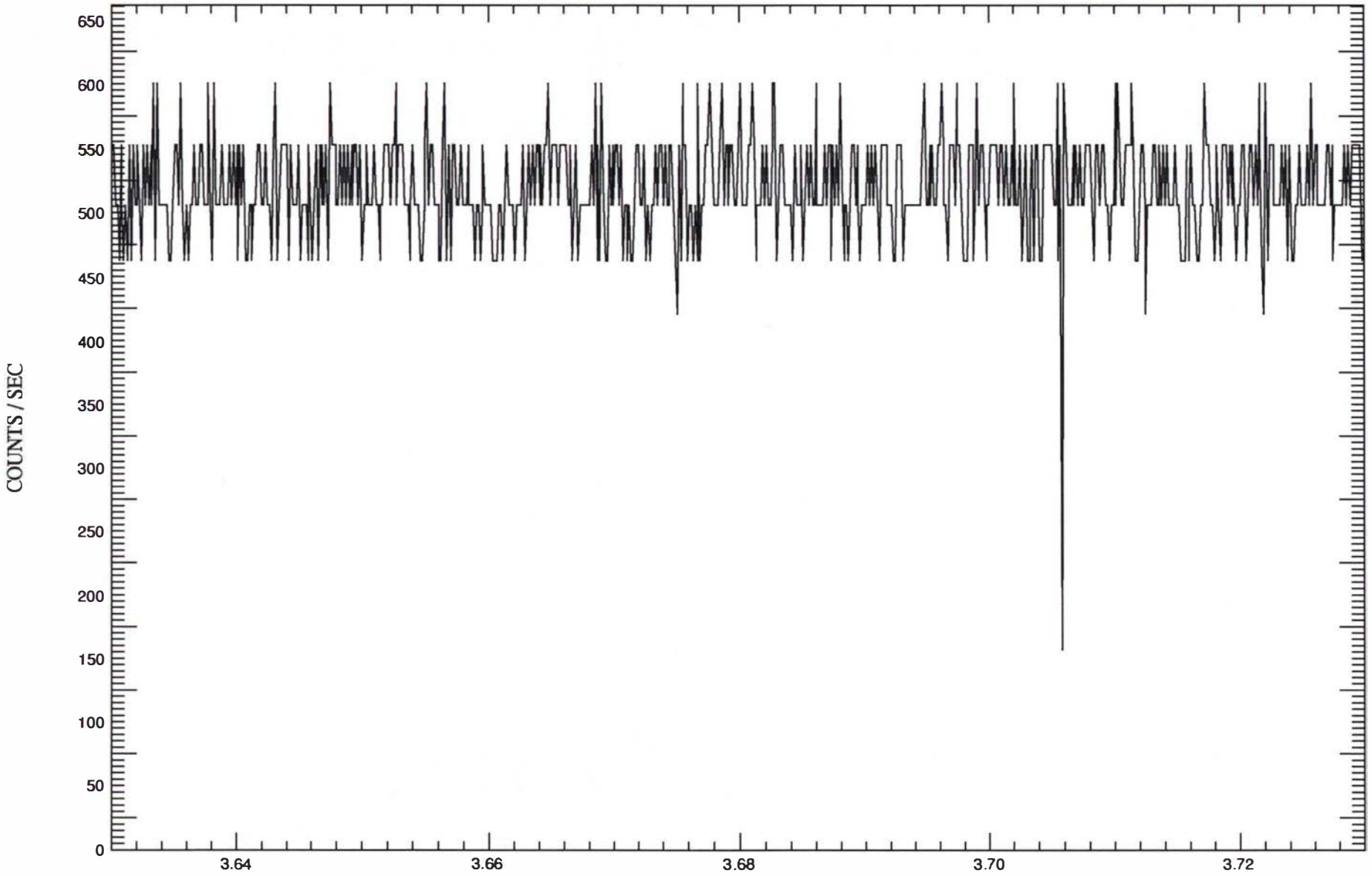
Burst Counter 2 at UT= 3.681150360107 h=13252.141 s 03:40:52.141



B# 3

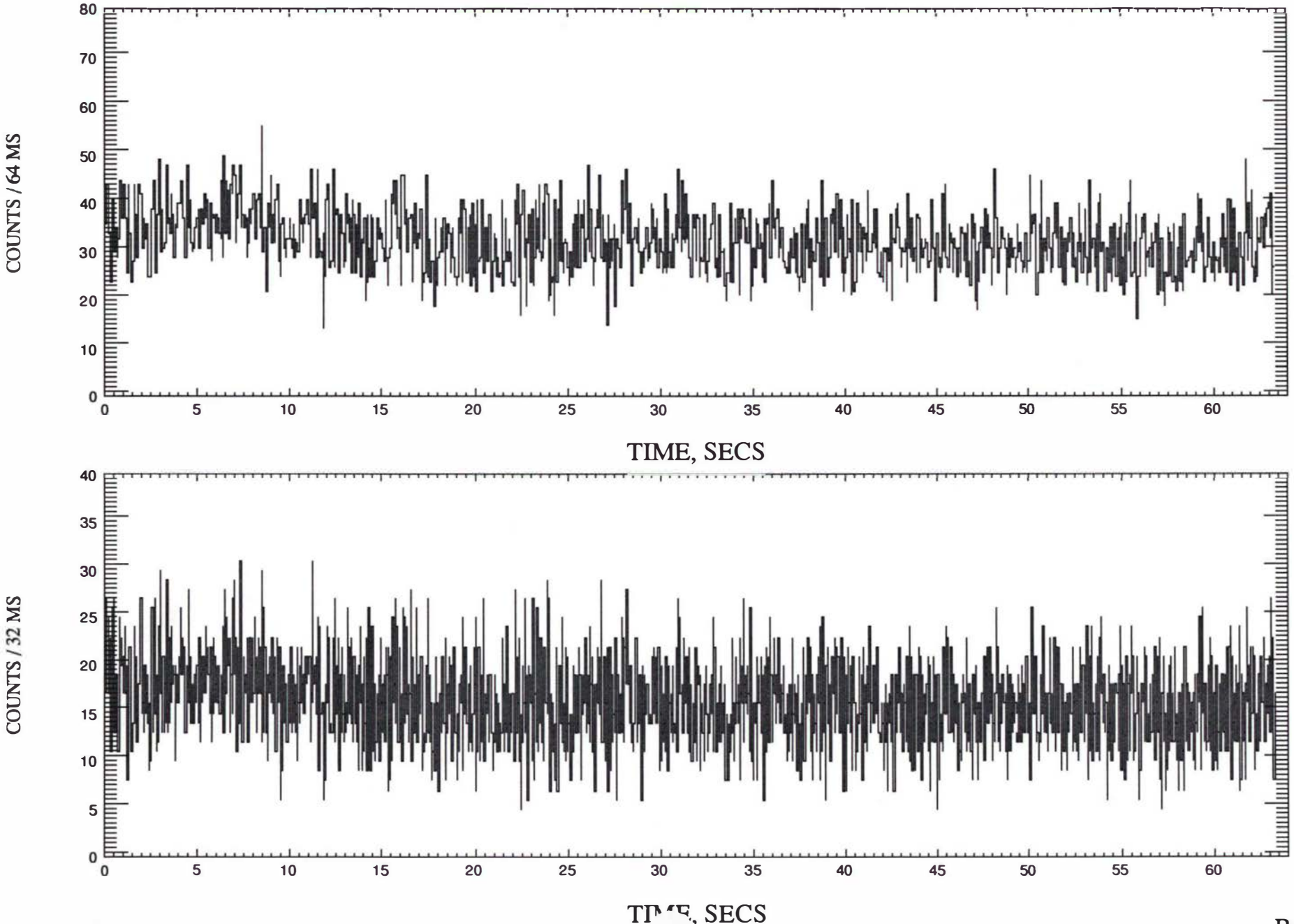
HUS 2A, MODE 1, NOT AVERAGED QEDR day 46, year 1994 to day 47, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 46, year 1994 5/26/94

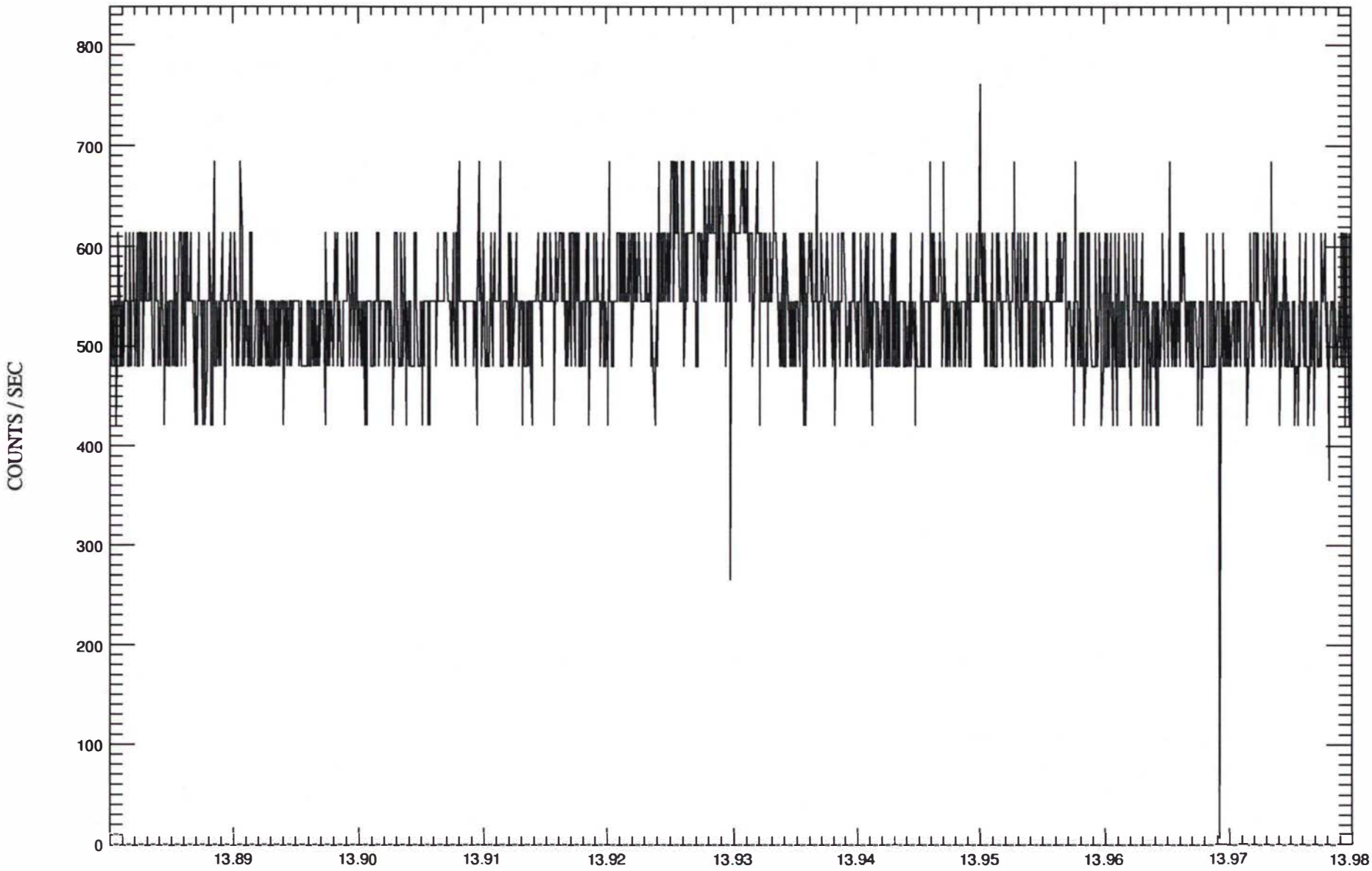
Burst Counter 3 at UT=13.930999531216 h=50151.598 s 13:55:51.598



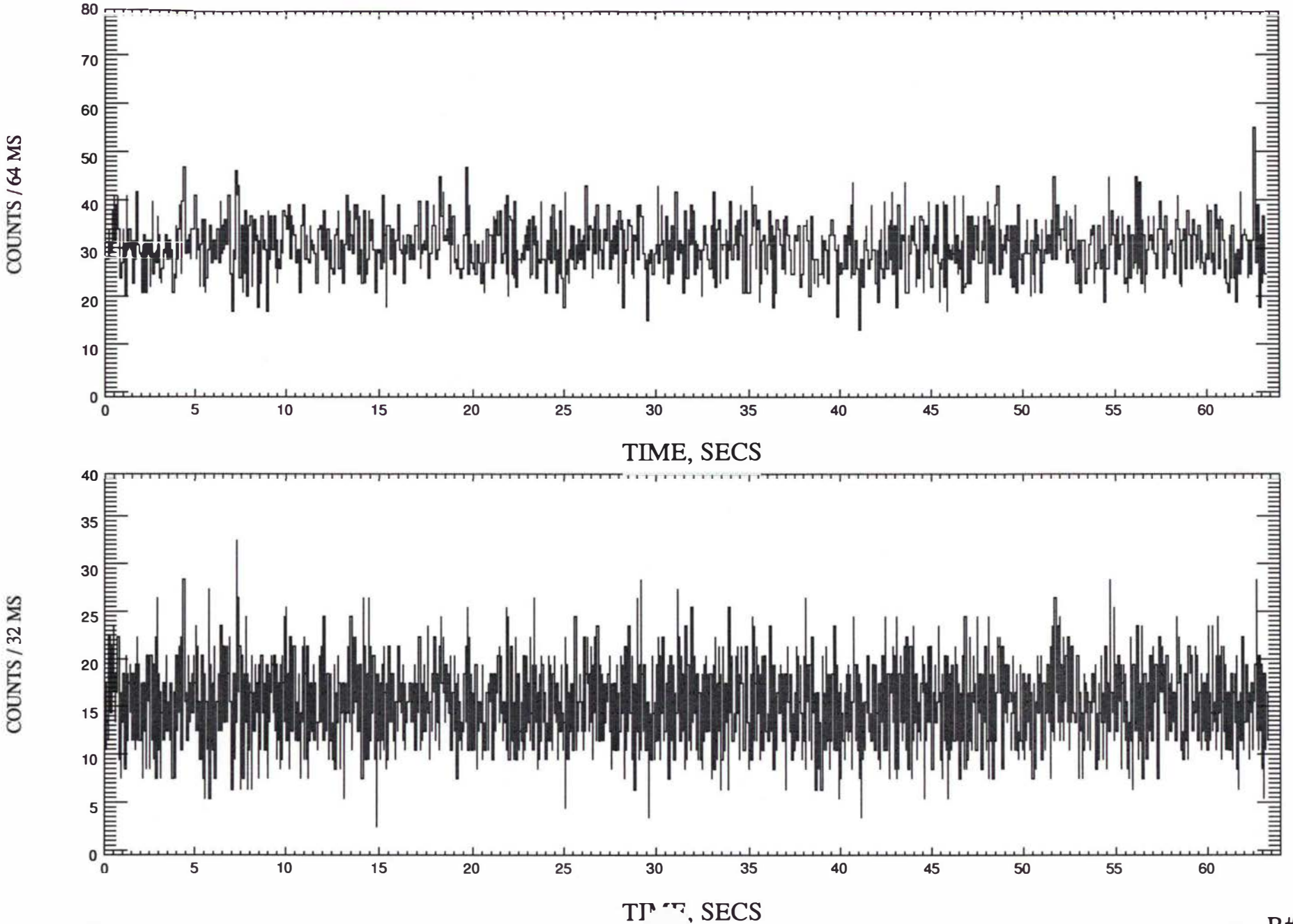
B# 4

HUS 2A, MODE 1, NOT AVERAGED QEDR day 46, year 1994 to day 47, year 1994 2/17/94

CALIBRATION DATA INCLUDED

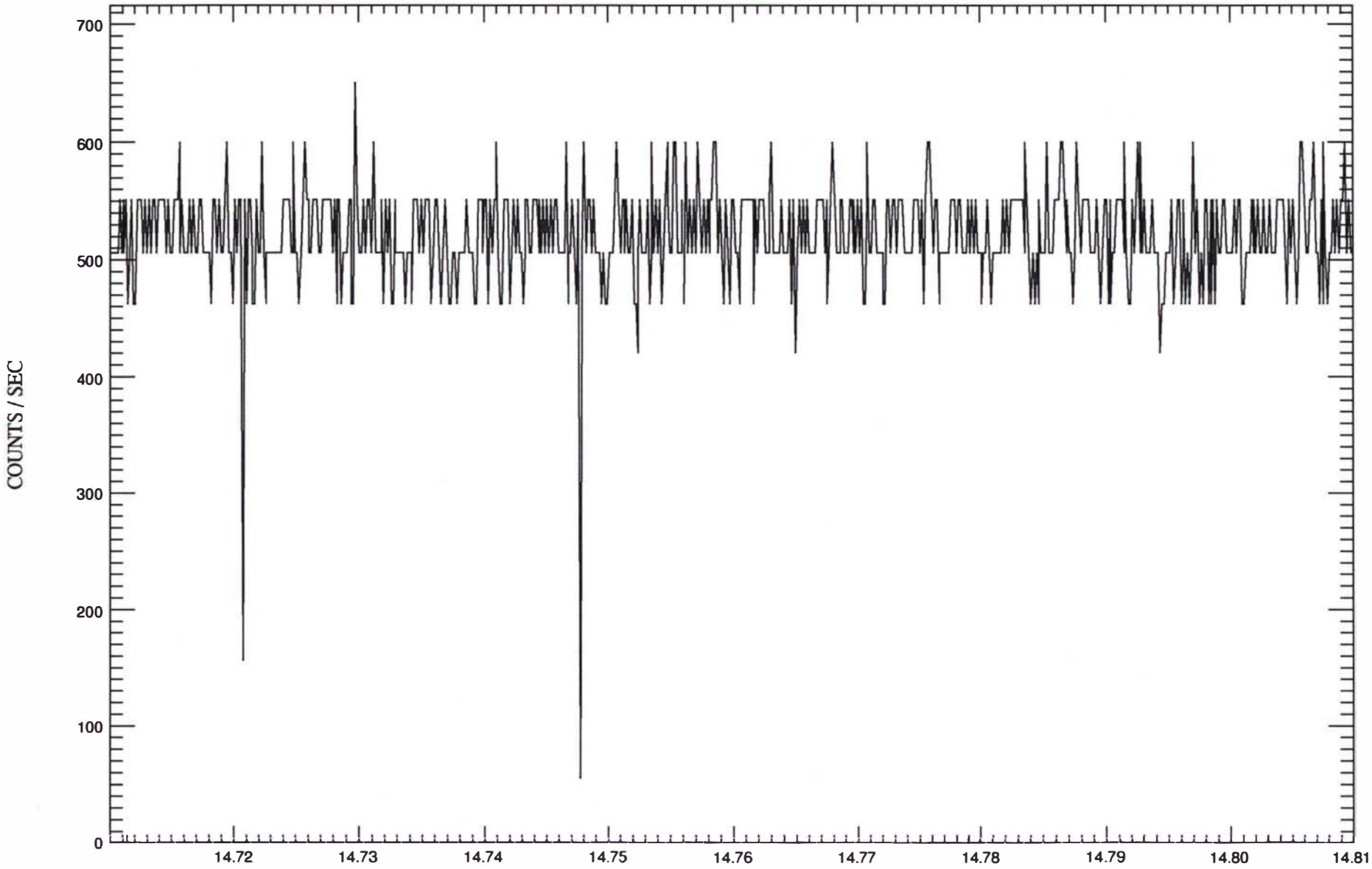


Burst Counter 4 at UT=14.755698131985 h=53120.513 s 14:45:20.513



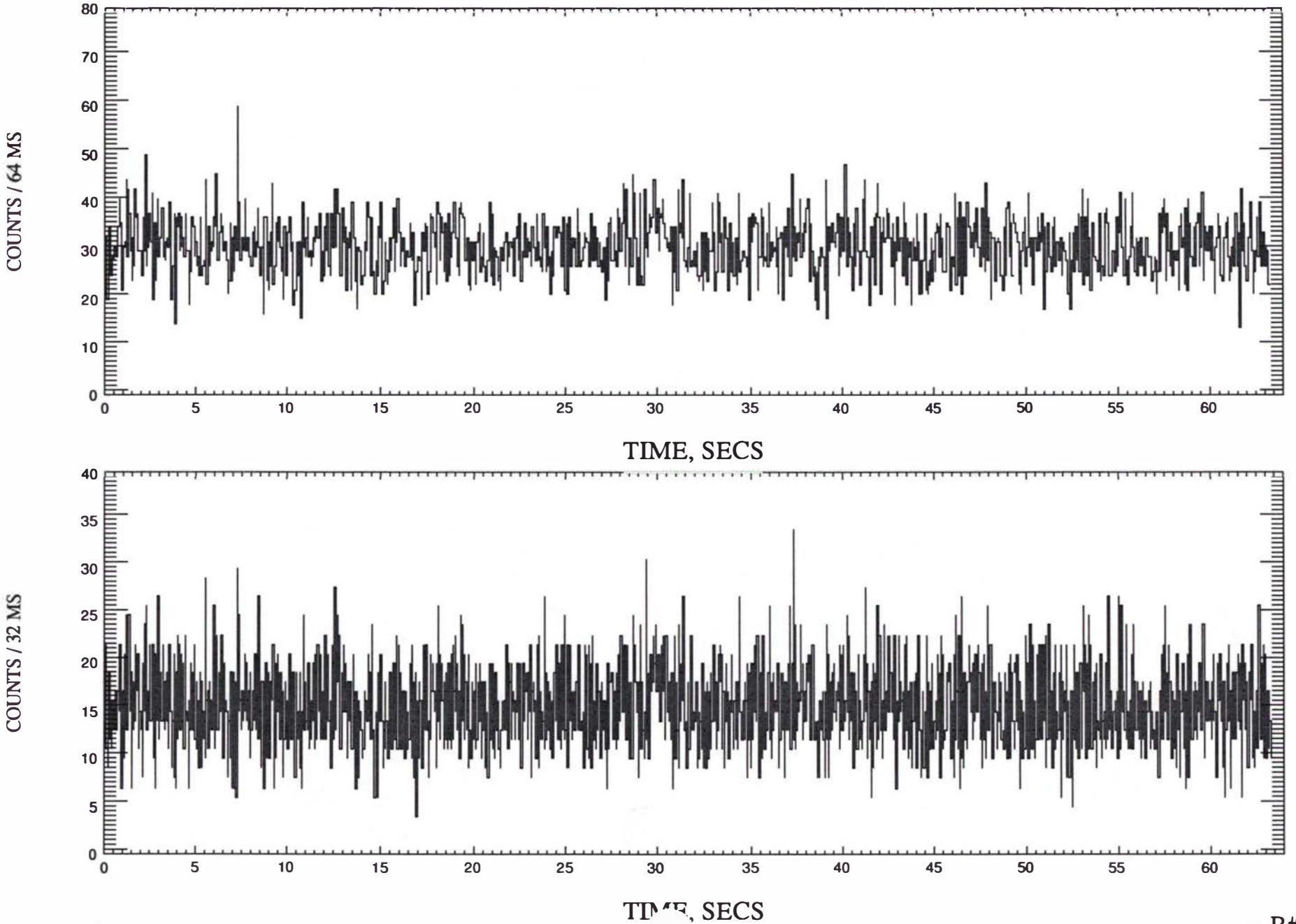
HUS 2A, MODE 1, NOT AVERAGED QEDR day 46, year 1994 to day 47, year 1994 2/17/94

CALIBRATION DATA INCLUDED



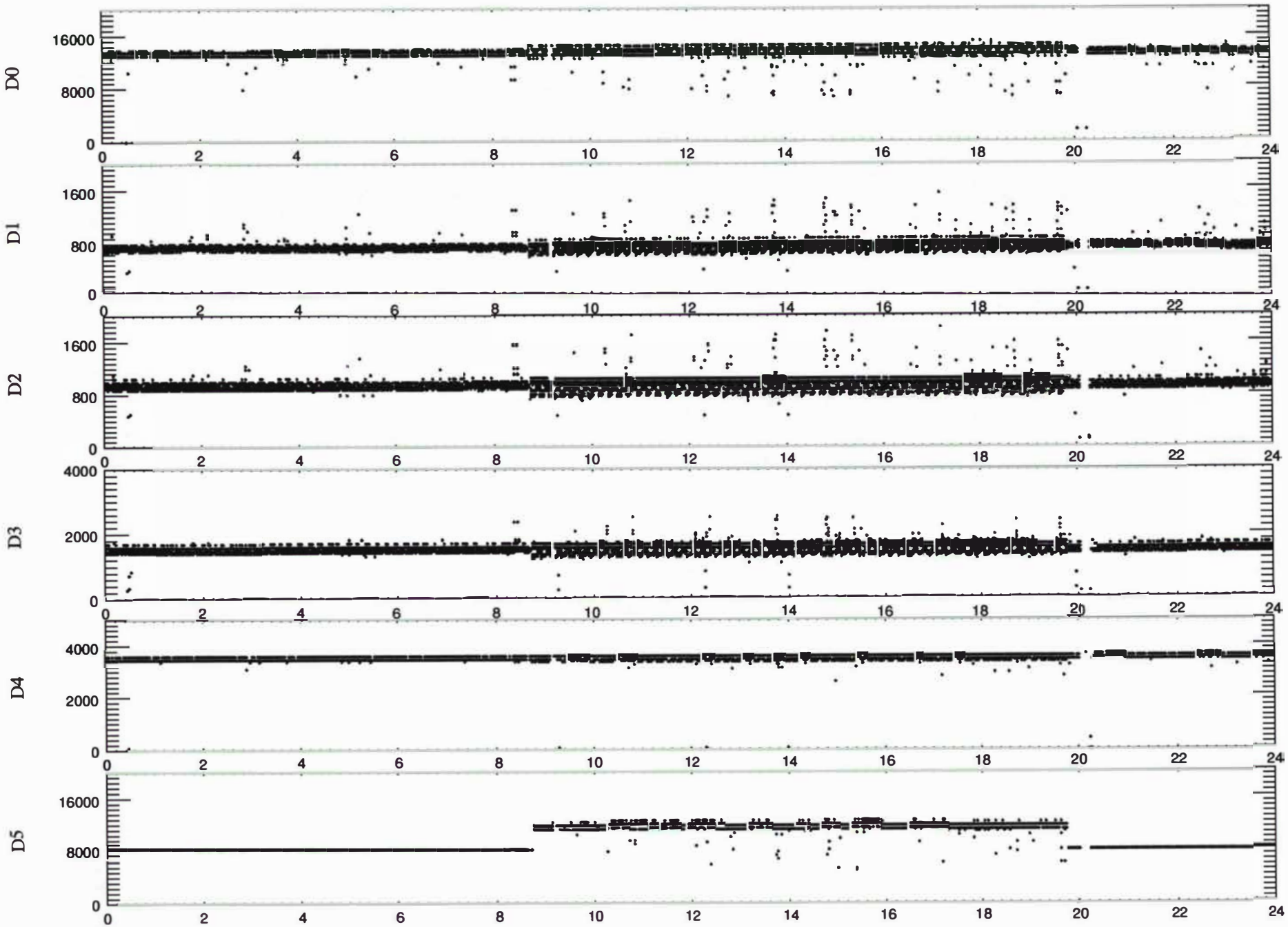
HUS 2A TRIGGERED DATA EDR day 46, year 1994 5/26/94

Burst Counter 0 at UT=15.555047298008 h=55998.170 s 15:33:18.170



B# 1

HUS 2B COUNTS / SEC QEDR day 46, year 1994 to day 46, year 1994 2/17/94



From RICHARDSON@ssl.msfc.nasa.gov Fri Feb 18 08:50 PST 1994
Date: Fri, 18 Feb 1994 10:54:39 -0600 (CST)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02826

TIME: TJD=9399 SECONDS=05026

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From RICHARDSON@ssl.msfc.nasa.gov Fri Feb 18 08:52 PST 1994
Date: Fri, 18 Feb 1994 10:56:25 -0600 (CST)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02827

TIME: TJD=9399 SECONDS=10710

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From RICHARDSON@ssl.msfc.nasa.gov Tue Feb 22 09:27 PST 1994
Date: Tue, 22 Feb 1994 11:32:13 -0600 (CST)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2828
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2828
 EVENT OF 1994 FEB 16 DAY OF YEAR= 47
 EVENT CROSSING TIME AT BATSE      : 12767. S. OR 03:32:47.0
 COORDINATES ARE   0.000   0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION:  21.000  -29.000
 BATSE PEAK COUNTING RATE:   2400    C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 16/ 2/  94 IS:
 RA=  149.277 DEC=  -51.530 DIST=     3.054 AU
 BATSE-ULYSSES DISTANCE =  456818678. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 92.44 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  -64.80 SECS.
 CROSSING TIME AT ULYSSES     IS 12702. S. OR   03:31:42 +/-  313.33 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 16/ 2/  94 IS:
 RA=  317.506 DEC=  -17.445 DIST=     2.346 AU
 MARS-BATSE DISTANCE =  350961312. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.18 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -606.09 SECS.
 CROSSING TIME AT MARS        IS 12161. S. OR   03:22:40 +/-  164.68 SECONDS
```

Y10

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2828	940216	9399	12767	2400	021	-29

BATSE BURST TRIGGER
NO.: 02828

TIME: TJD=9399 SECONDS=12767

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=007.6 AZIMUTH=007.2 ERROR= DEGREES

COMMENTS:
GRB. SINGLE SPIKE, LASTING APPROX. 0.5S. NOT VISIBLE ABOVE 300KEV.

BATSE BURST# 2828

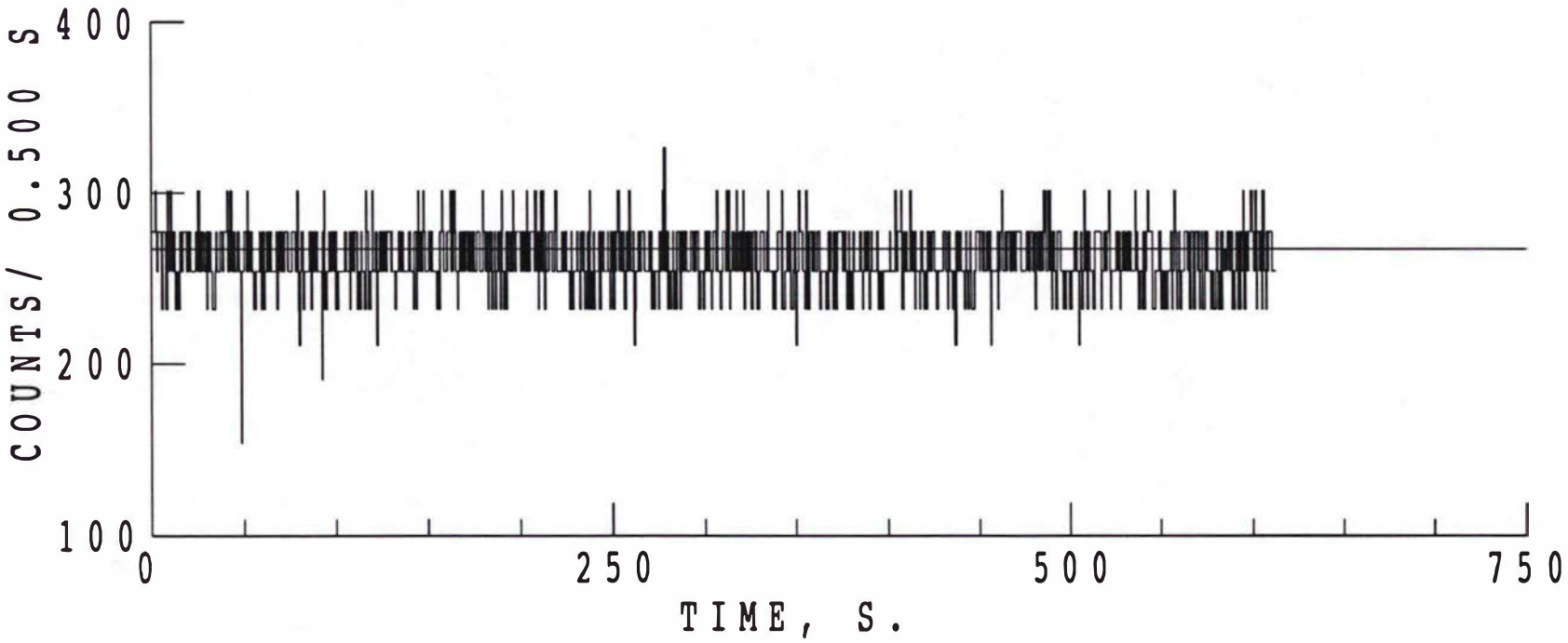
ULYSSES RT 4/ 5/98

16/ 2/94 12132.224 s

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



esa **ULYSSES**

TELECOMMUNICATIONS MESSAGE

european space agency
mail stop 264-318
4800 oak grove drive
pasadena ca91109 usa

Attention: KEVIN HURLEY		Transmit No.: 510-643-8640
Organisation: UNIVERSITY OF CALIFORNIA	Date: 16-Feb-94	Pages: 1 of 1
From: Gus Macintosh, FCT/JPL	Phone: 818-393-0944	Fax: 818-393-4501
Copies: Command Request of 15th. Feb. 94		

Dear Dr. Hurley,

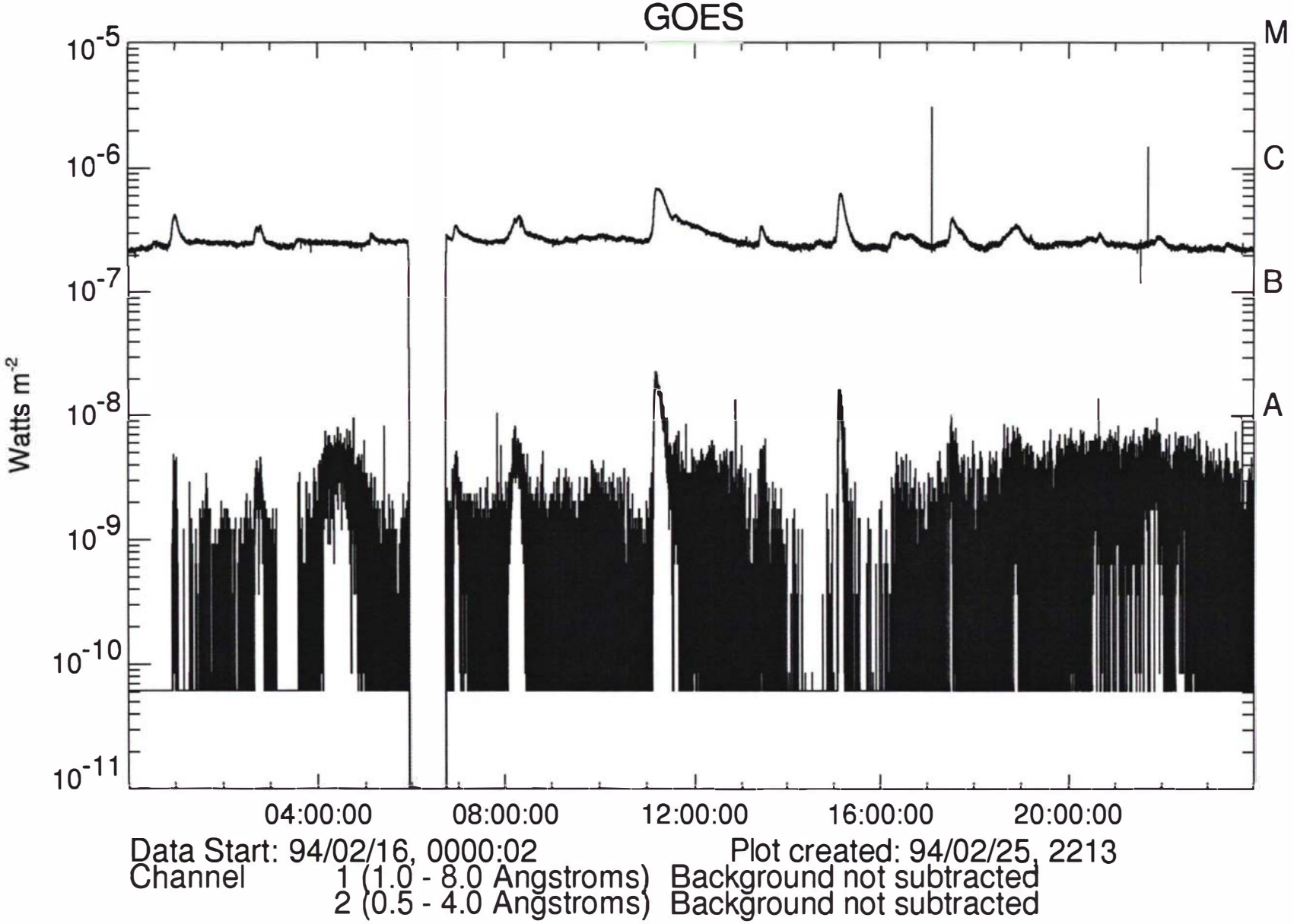
Please note that the commands requested on 15th Feb. (designated as CR-239) were transmitted to the S/C earlier today, details as follows:

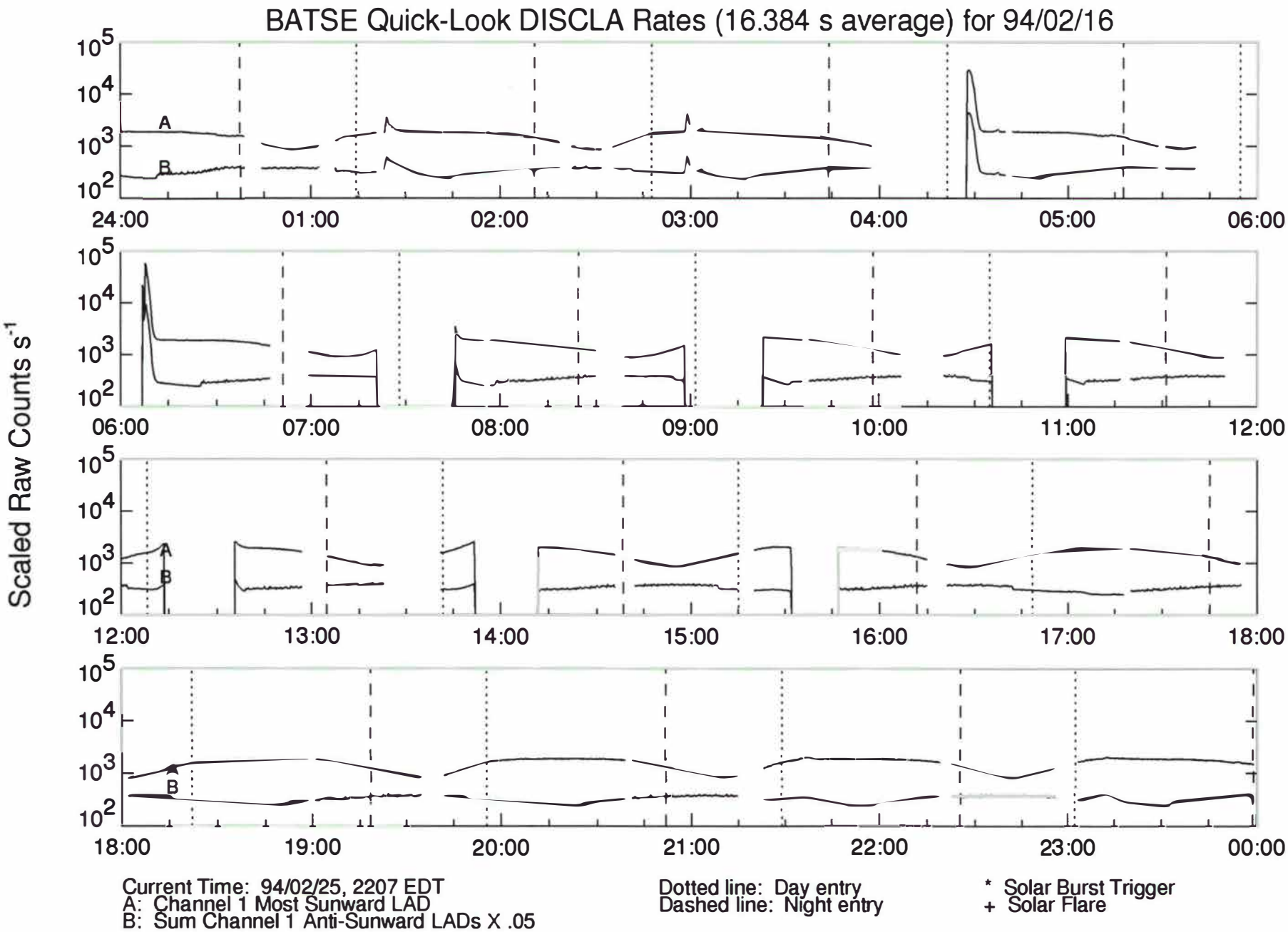
Z019 1046 sent @ Day 047/1220 - executed @ 1246z. E011 = 1480v

Z019 4040 sent @ Day 047/1230 - executed @ 1256z. E010 = 1460v

Regards,

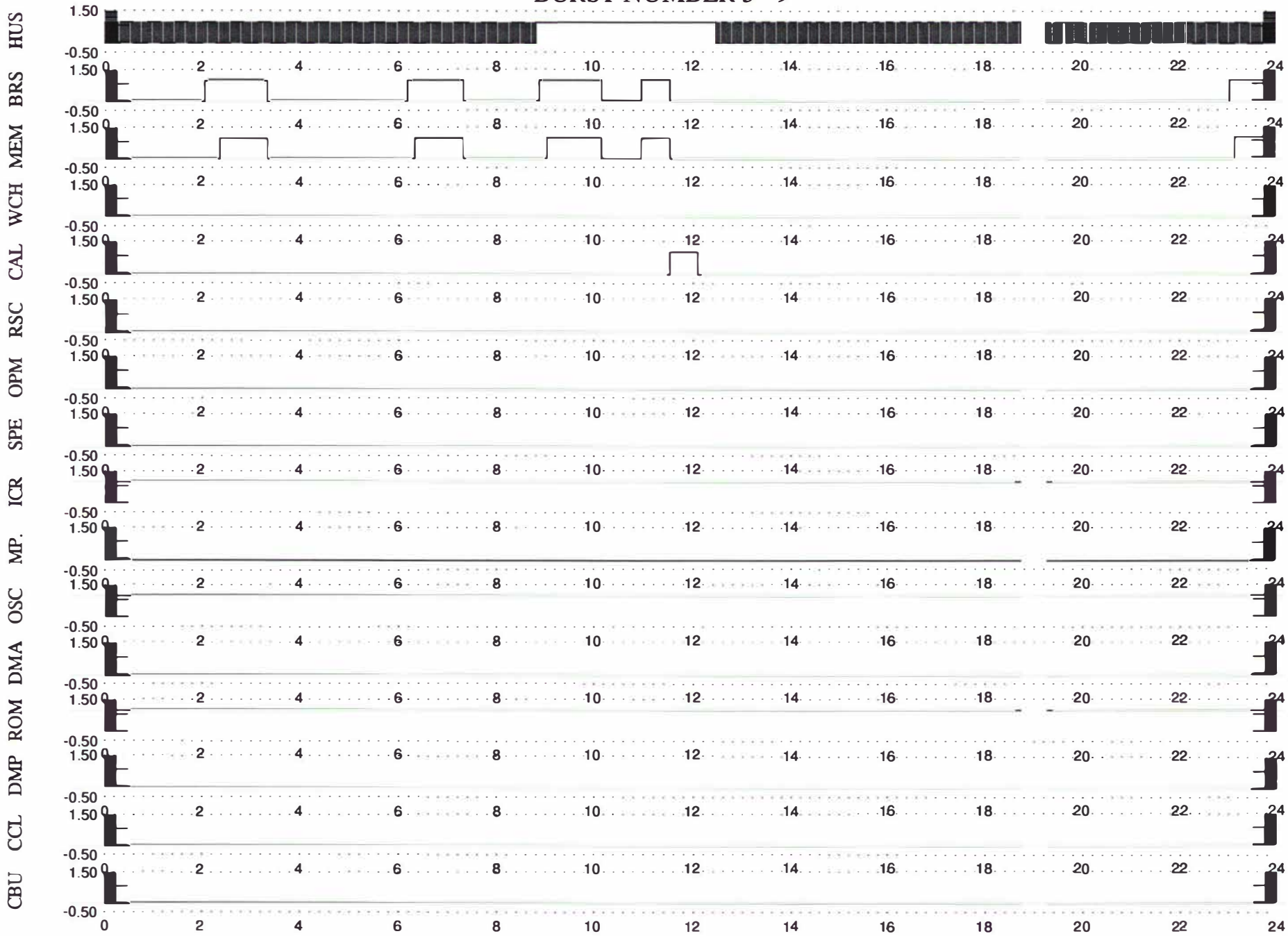
Gus Macintosh


GOES
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/16, 0000:02
Plot created: 94/02/25, 2213
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/16
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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: 94/02/25, 2207 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 47, year 1994 to day 47, year 1994 5/26/94

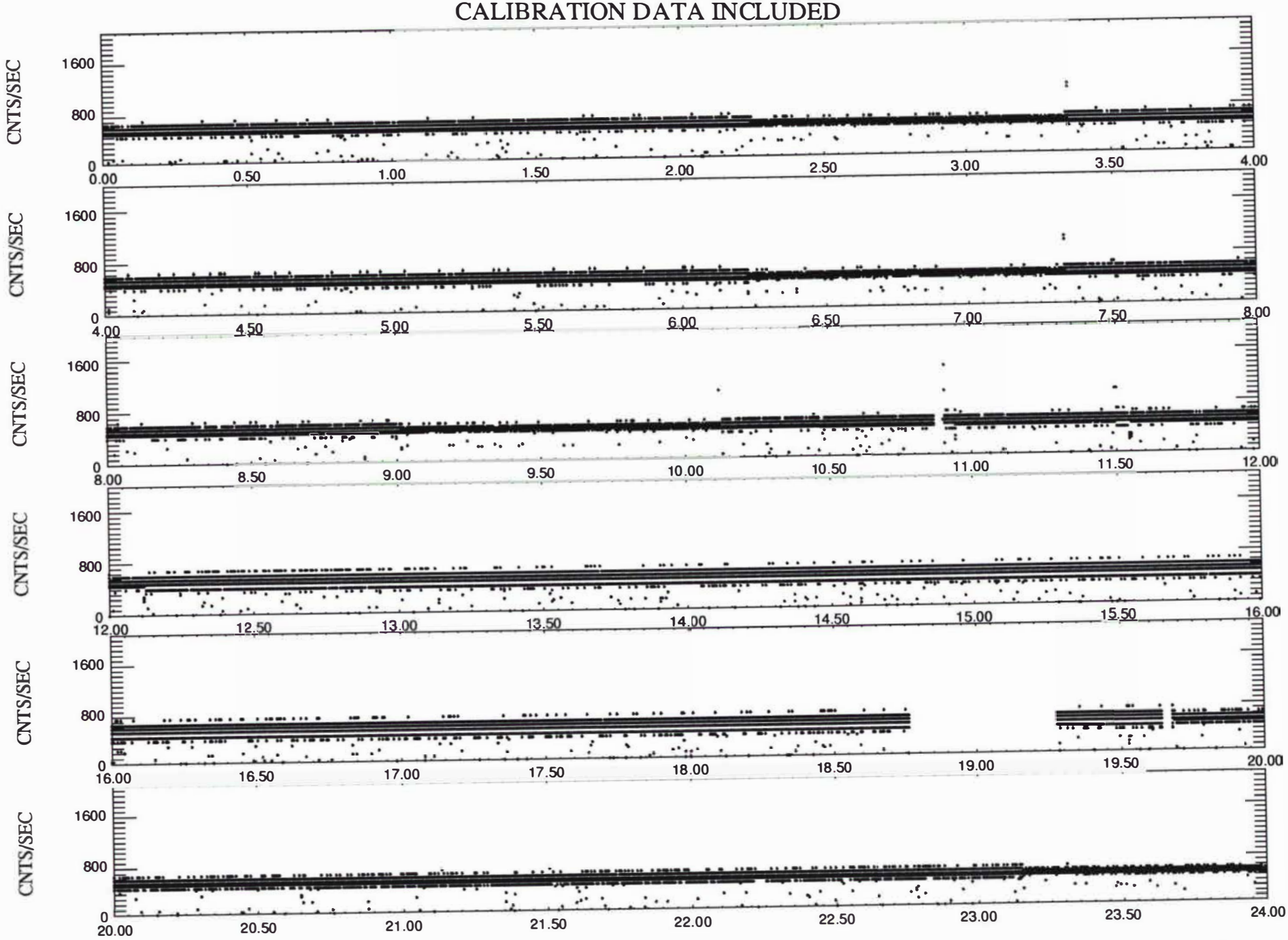
BURST NUMBER 5 - 9



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 47, year 1994 to day 47, year 1994 5/26/94

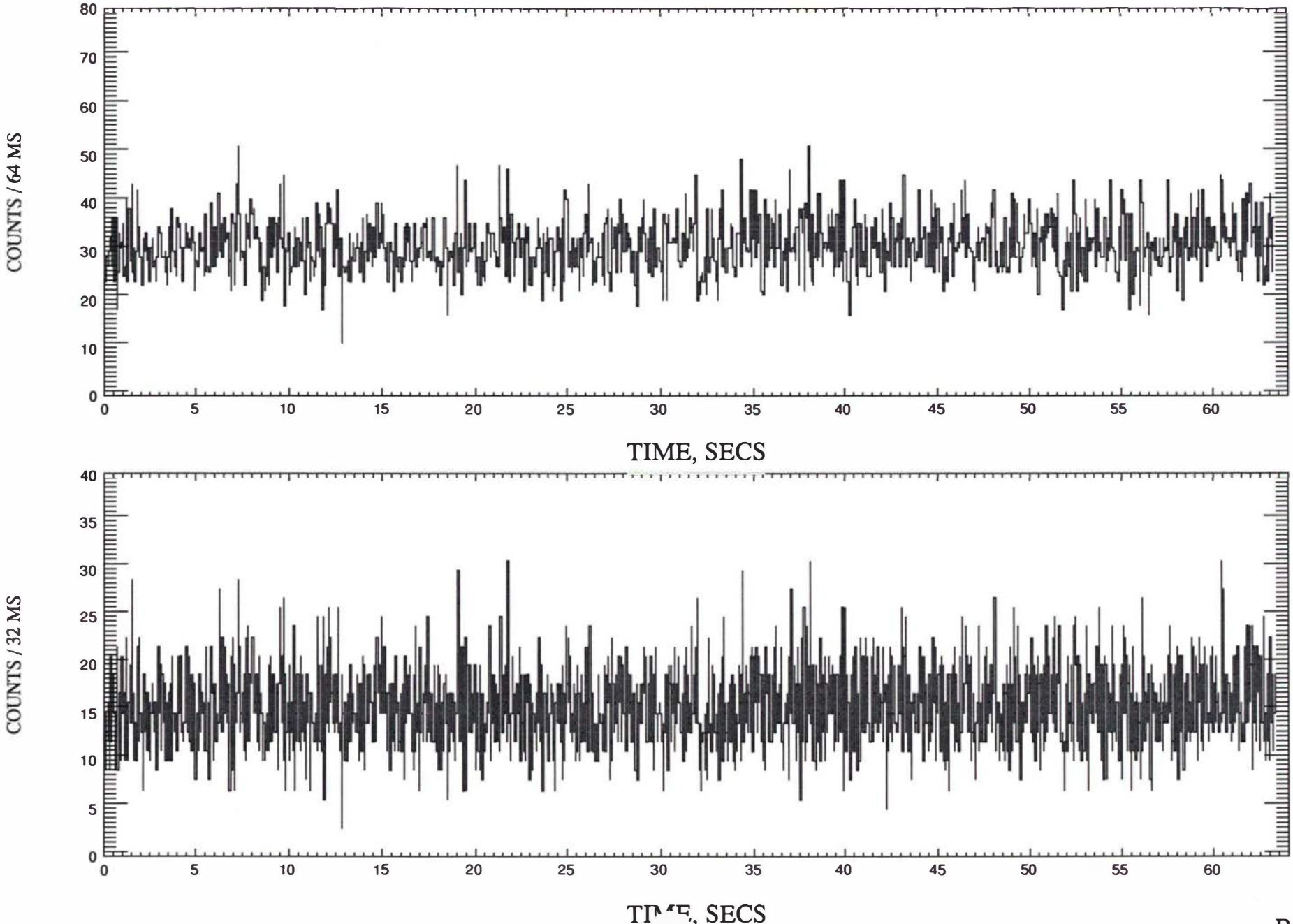
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 47, year 1994 5/26/94

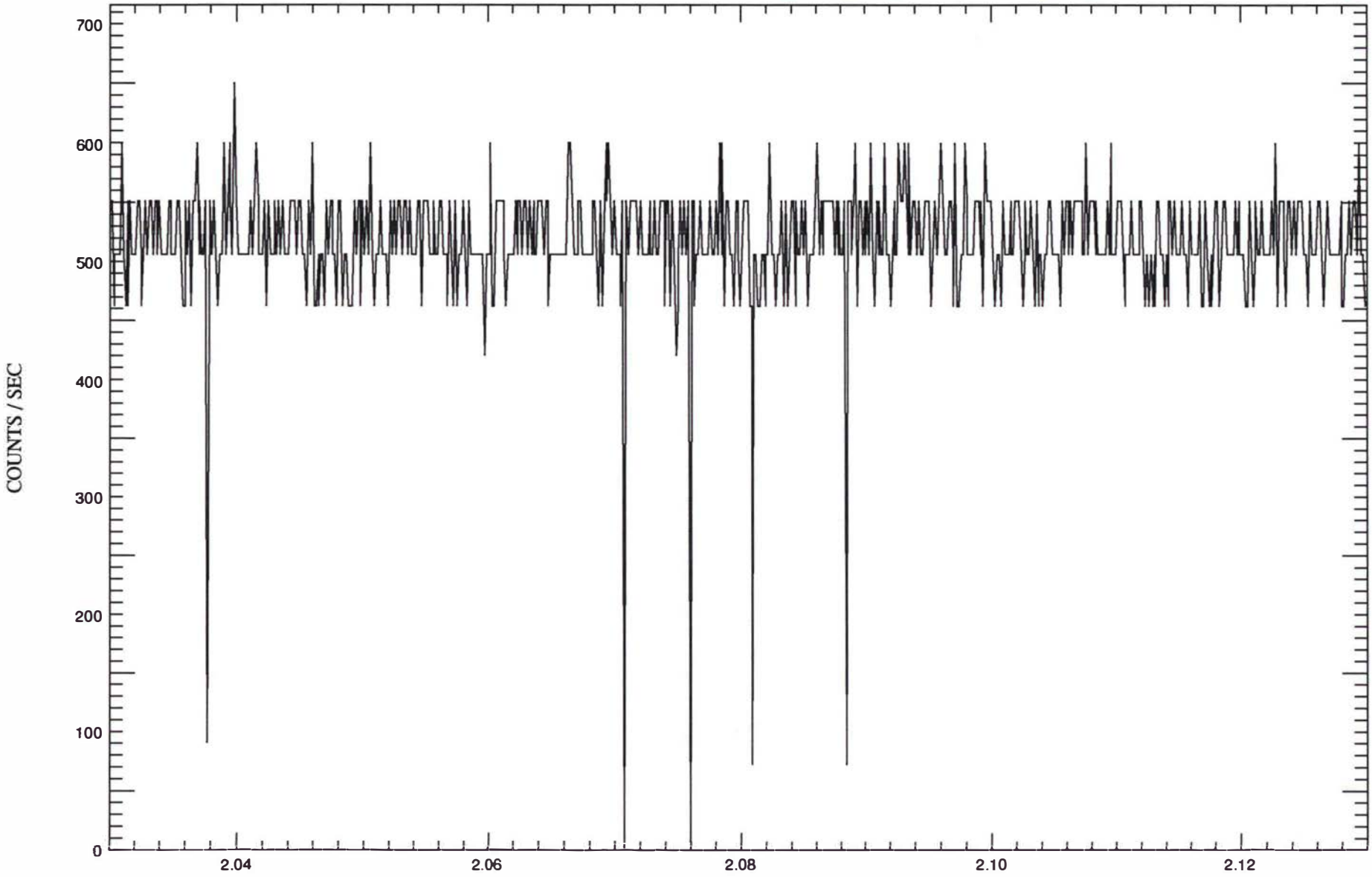
Burst Counter 5 at UT= 2.078510343764 h= 7482.637 s 02:04:42.637



B# 1

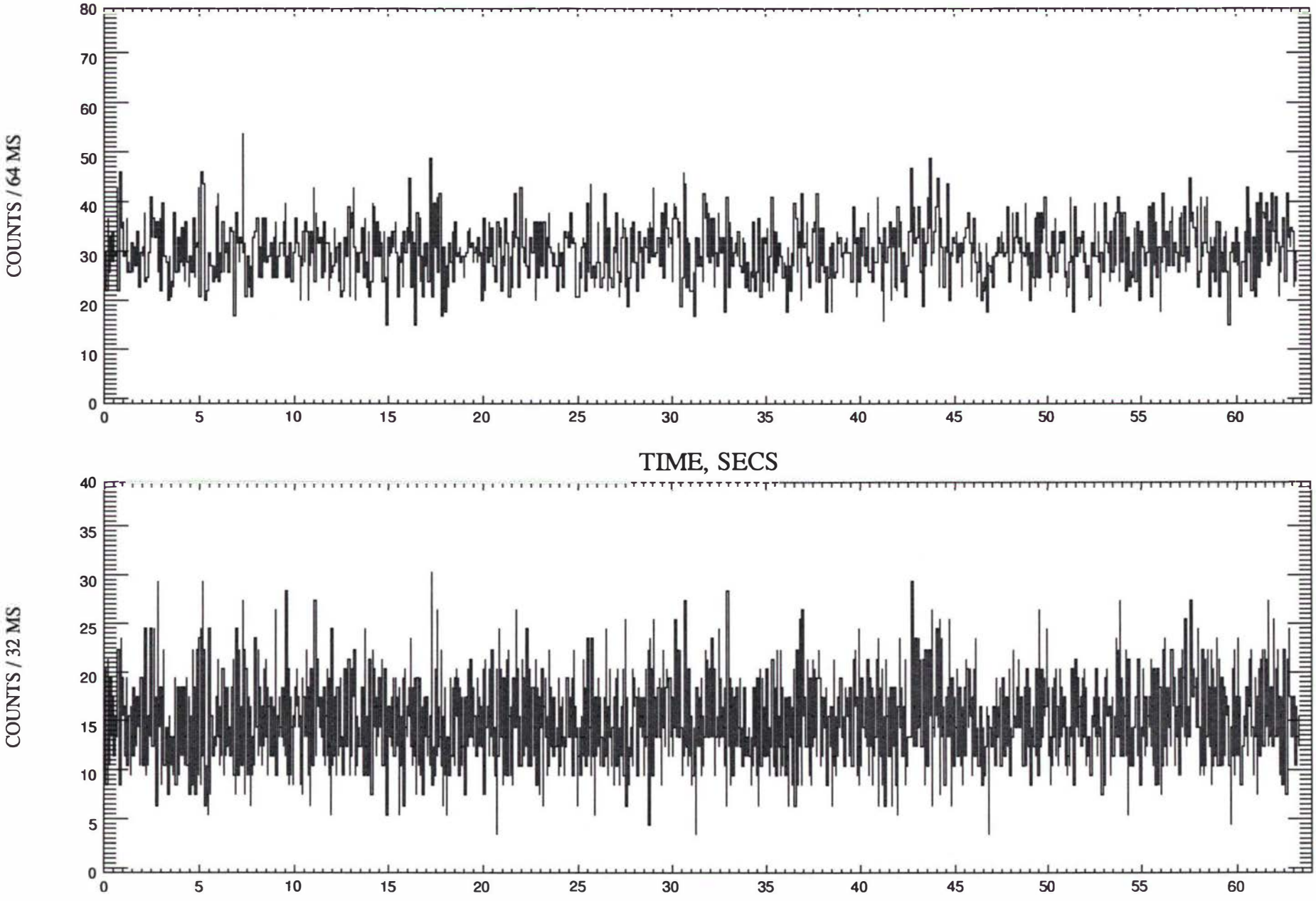
HUS 2A, MODE 1, NOT AVERAGED QEDR day 47, year 1994 to day 48, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 47, year 1994 5/26/94

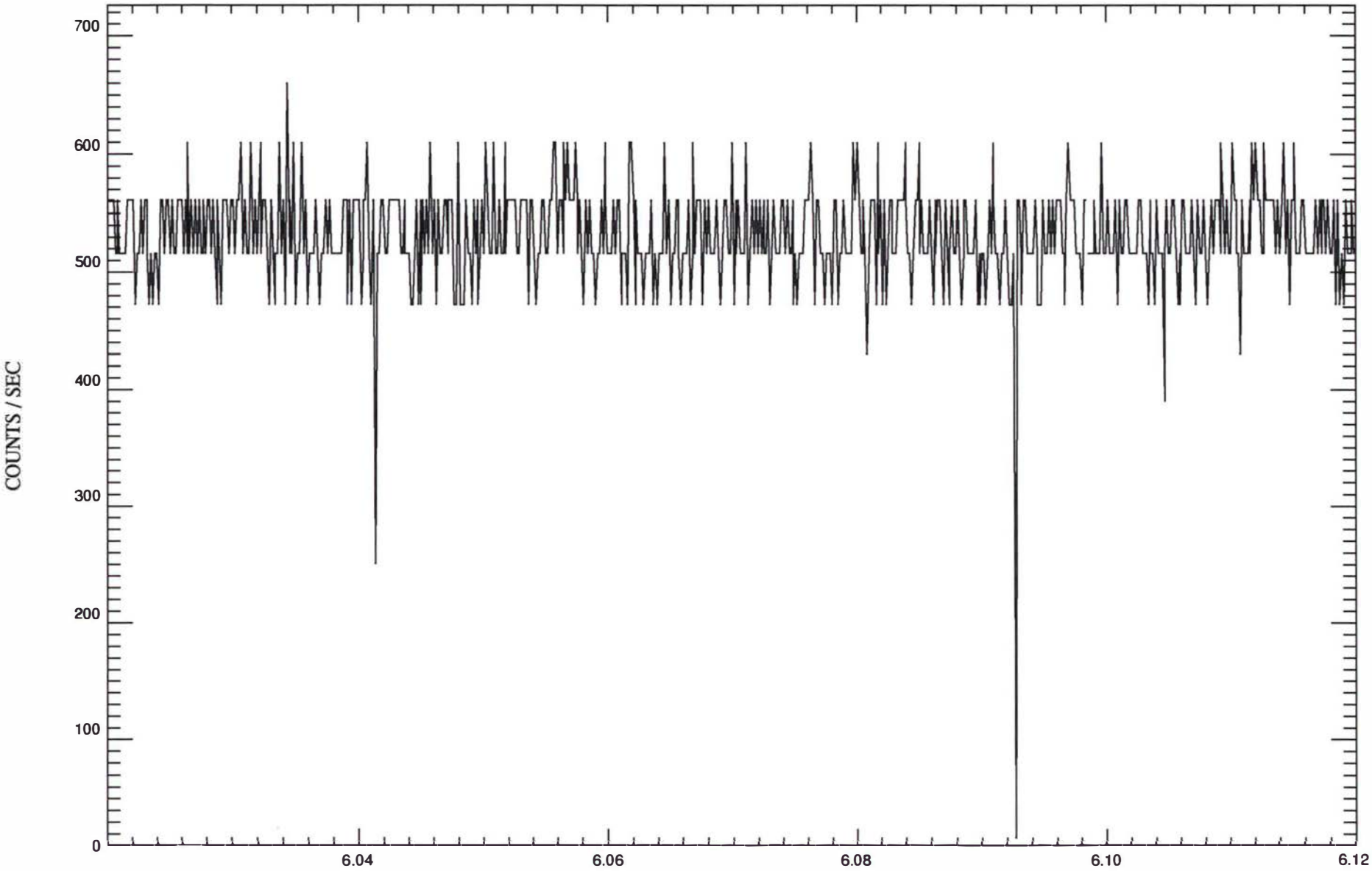
Burst Counter 6 at UT= 6.070067532857 h=21852.243 s 06:04:12.243



B# 2

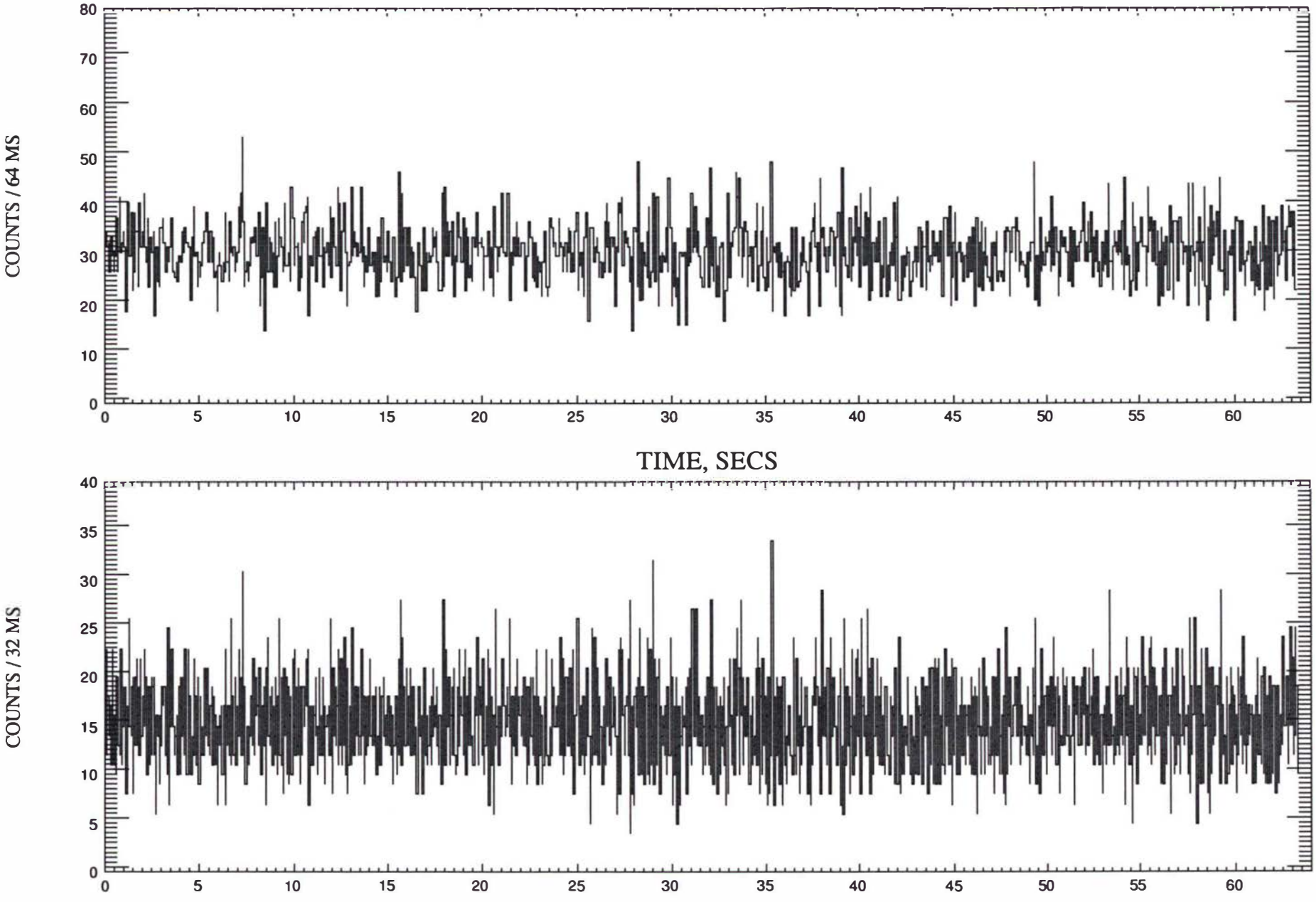
HUS 2A, MODE 1, NOT AVERAGED QEDR day 47, year 1994 to day 48, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 47, year 1994 5/26/94

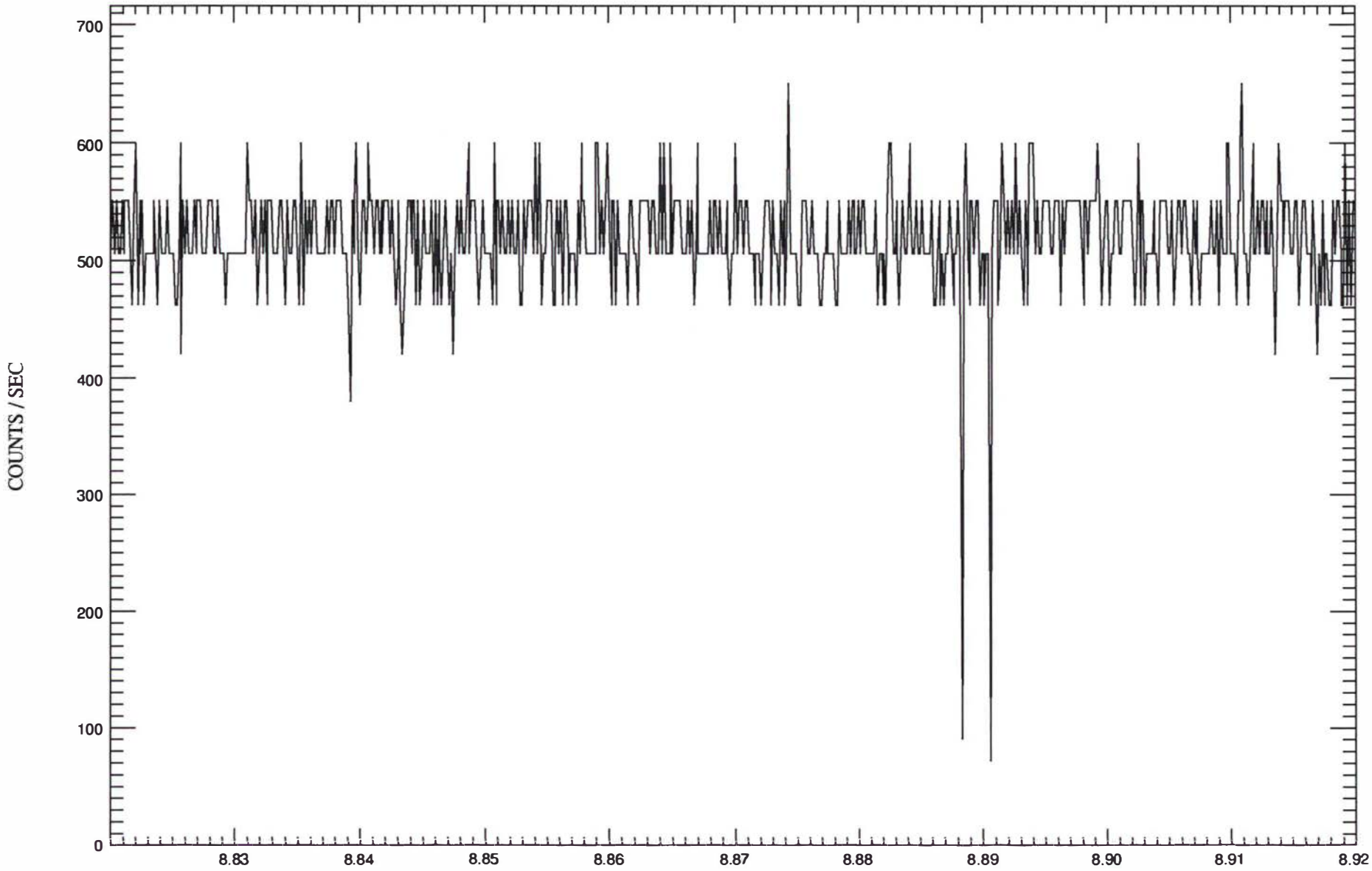
Burst Counter 7 at UT= 8.867227609422 h=31922.019 s 08:52:02.019



B# 3

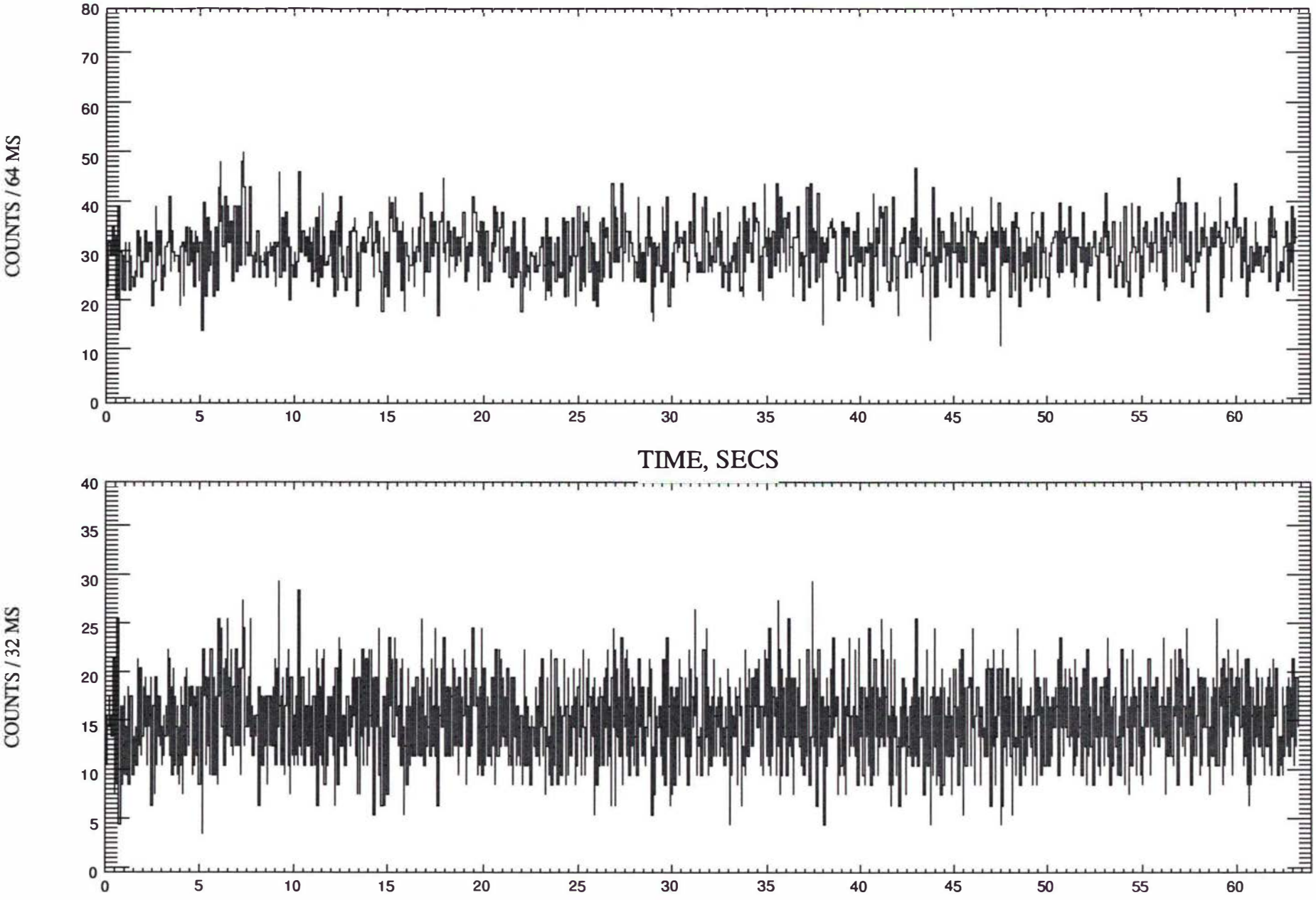
HUS 2A, MODE 1, NOT AVERAGED QEDR day 47, year 1994 to day 48, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 47, year 1994 5/26/94

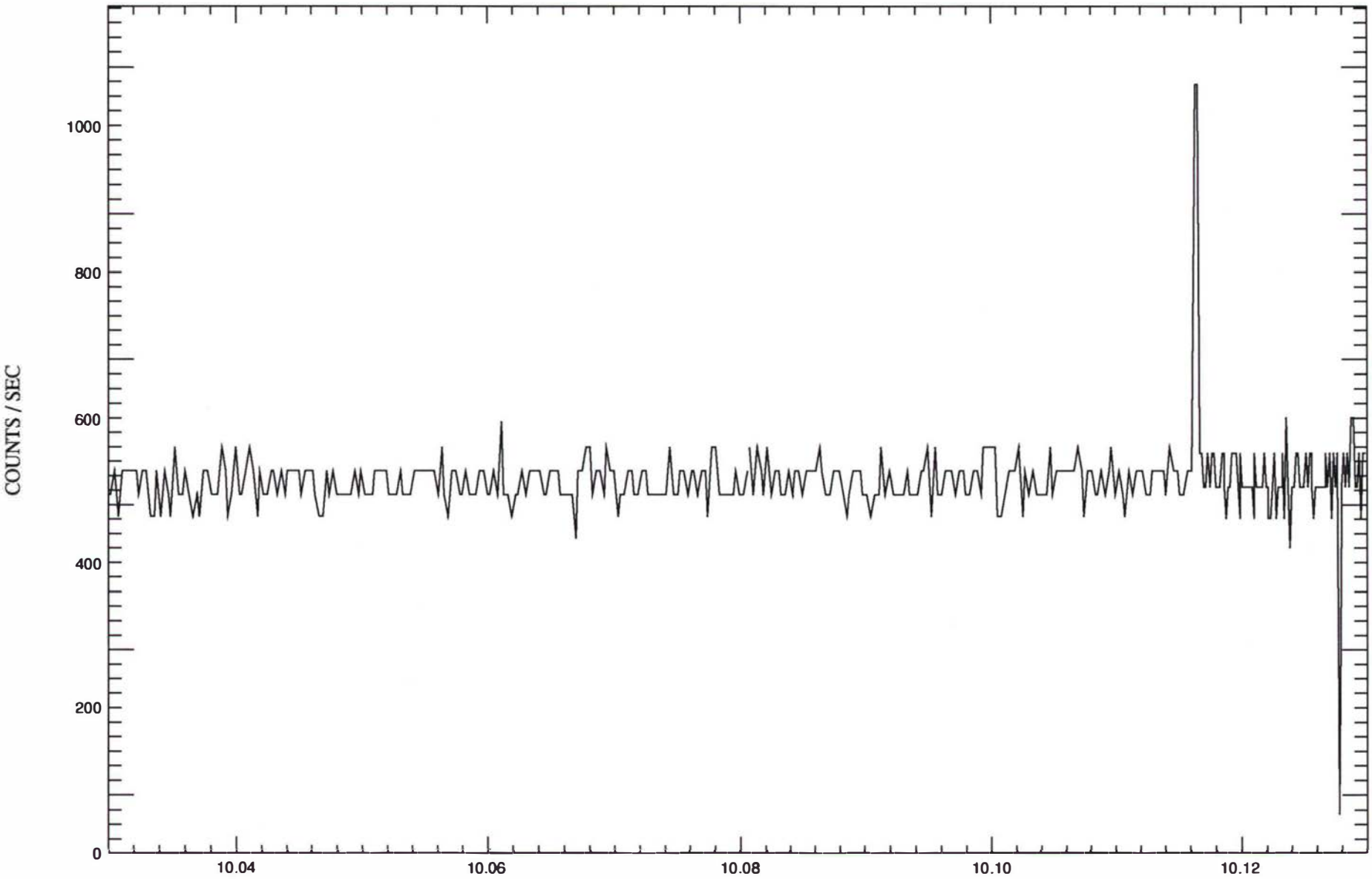
Burst Counter 8 at UT=10.078428064982 h=36282.341 s 10:04:42.341



B# 4

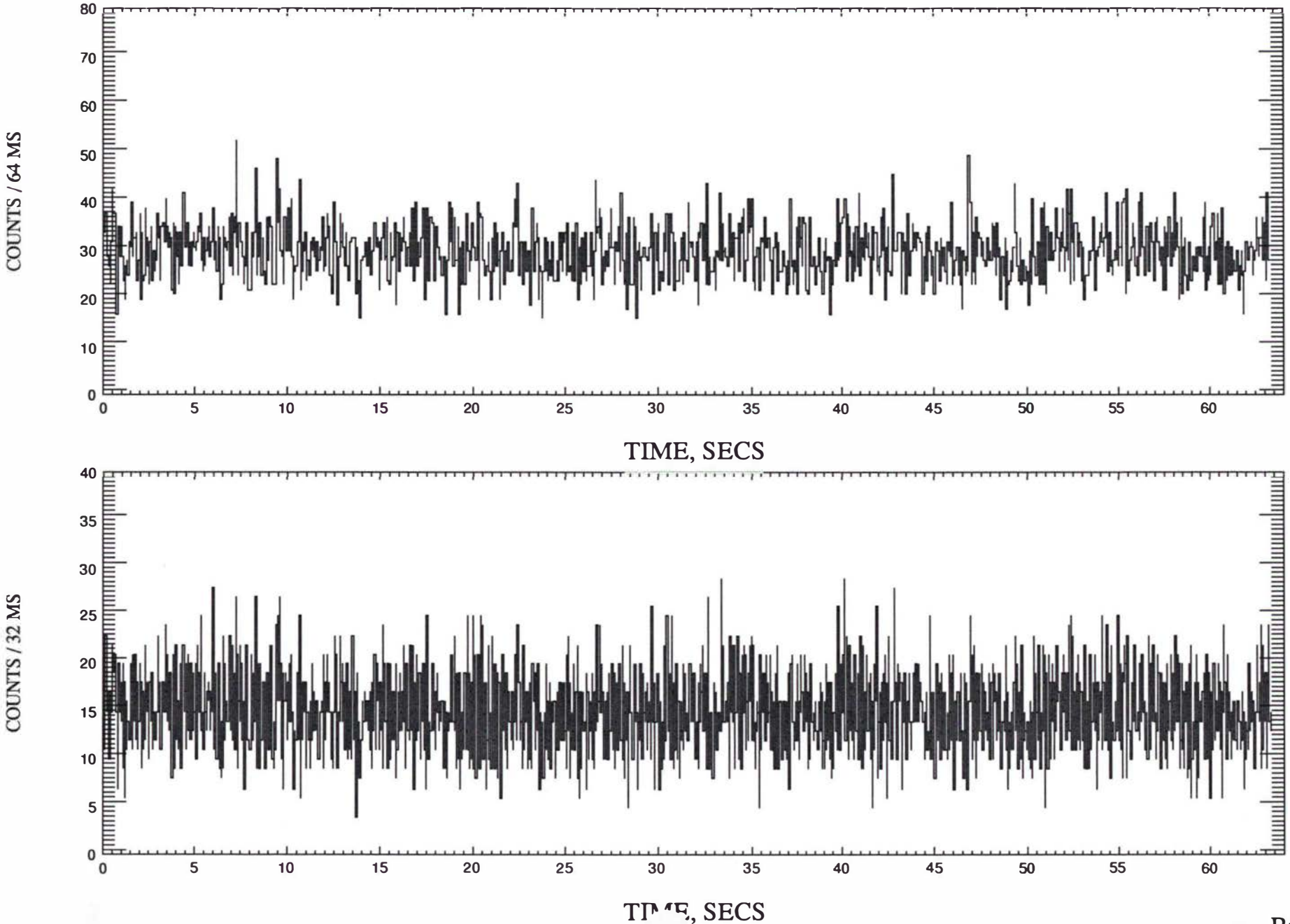
HUS 2A, MODE 1, NOT AVERAGED QEDR day 47, year 1994 to day 47, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 47, year 1994 5/26/94

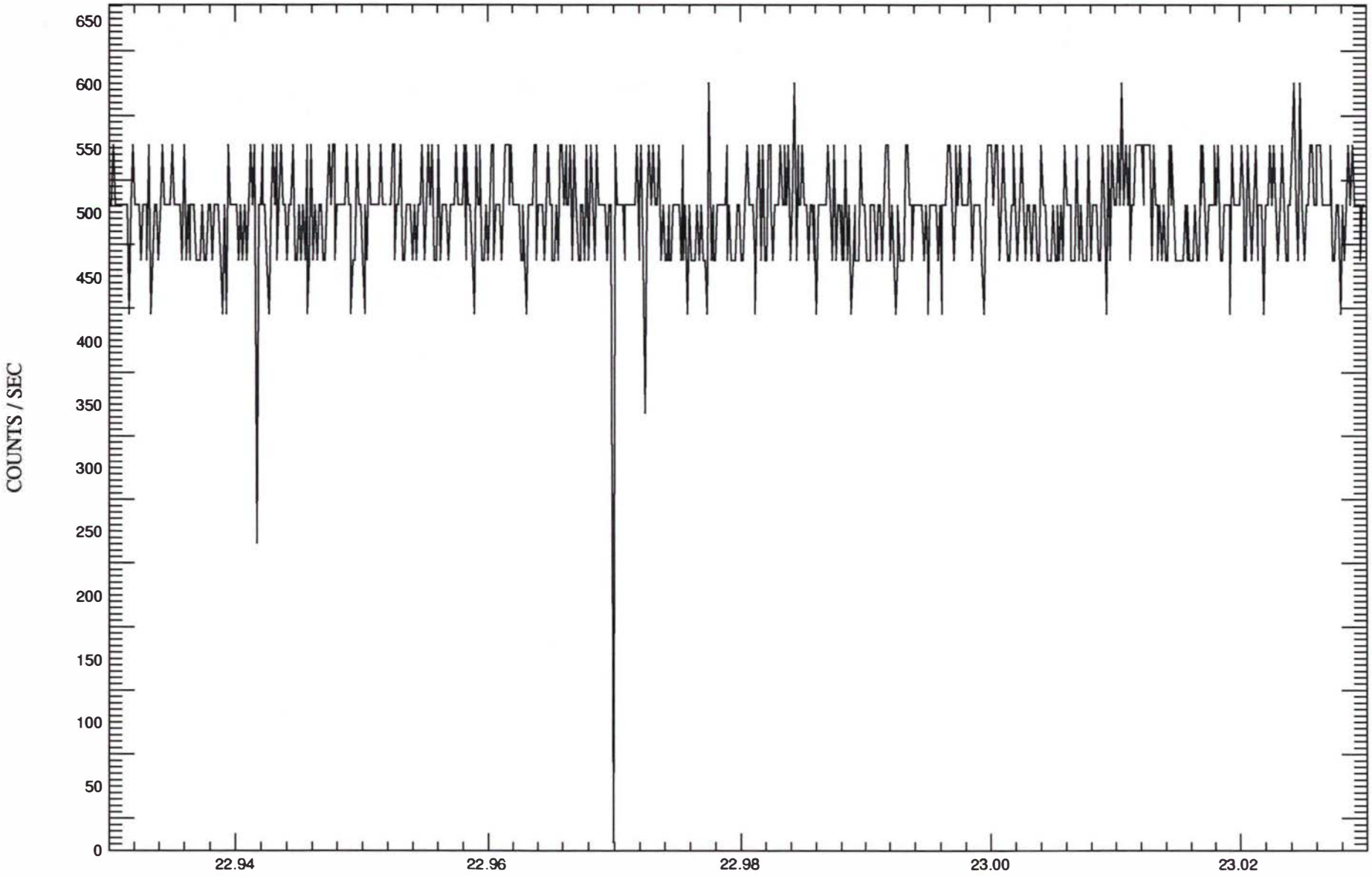
Burst Counter 9 at UT=22.984462644789 h=82744.066 s 22:59:04.066



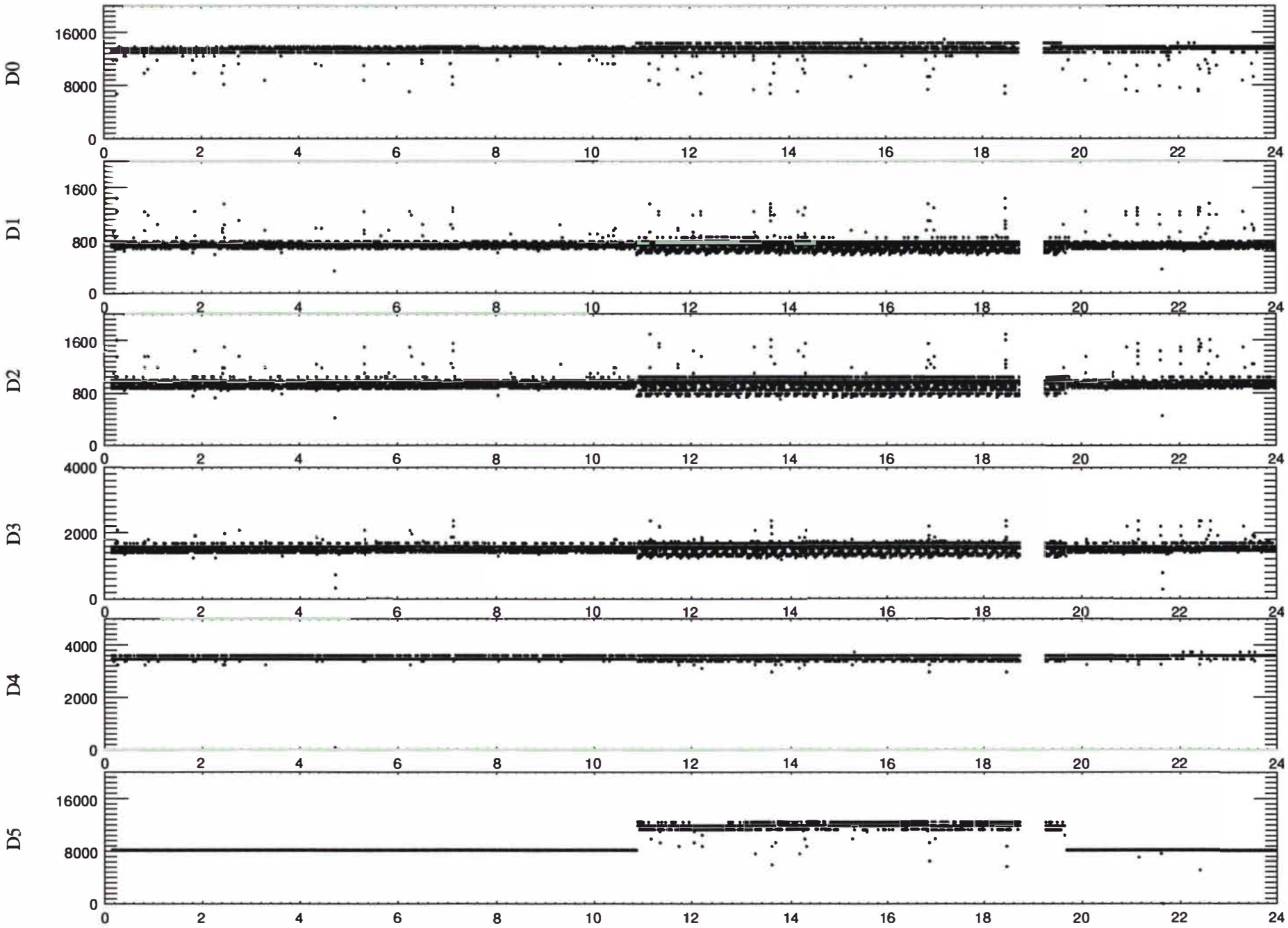
B# 5

HUS 2A, MODE 1, NOT AVERAGED QEDR day 47, year 1994 to day 48, year 1994 2/17/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 47, year 1994 to day 47, year 1994 2/17/94



From ZMYEWSKI@ssl.msfc.nasa.gov Fri Feb 18 13:04 PST 1994
Date: Fri, 18 Feb 1994 15:08:12 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2829

TIME: TJD=9400 SECONDS=12807

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From ZMYEWSKI@ssl.msfc.nasa.gov Fri Feb 18 13:11 PST 1994
Date: Fri, 18 Feb 1994 15:15:35 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2830
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2830
 EVENT OF 1994 FEB 17 DAY OF YEAR= 48
 EVENT CROSSING TIME AT BATSE      : 21412. S. OR 05:56:52.0
 COORDINATES ARE    0.000    0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 354.000    55.000
 BATSE PEAK COUNTING RATE:    3400     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 17/ 2/  94 IS:
 RA=  148.676 DEC=  -51.642 DIST=     3.044 AU
 BATSE-ULYSSES DISTANCE =  455377607. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 15.40 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1464.41 SECS.
 CROSSING TIME AT ULYSSES     IS 22876. S. OR    06:21:16 +/-  142.29 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 17/ 2/  94 IS:
 RA=  318.292 DEC=  -17.216 DIST=     2.344 AU
 MARS-BATSE DISTANCE =  350677440. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.68 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -236.78 SECS.
 CROSSING TIME AT MARS        IS 21175. S. OR    05:52:55 +/-  195.28 SECONDS
```

No

From ZMYEWSKI@ssl.msfc.nasa.gov Fri Feb 18 13:11 PST 1994
Date: Fri, 18 Feb 1994 15:15:12 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Cc: ZMYEWSKI@ssl.msfc.nasa.gov
Subject: BATSE Burst 2830
Content-Type: text
Content-Length: 108

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2830	940217	9400	21412	3400	354	+55

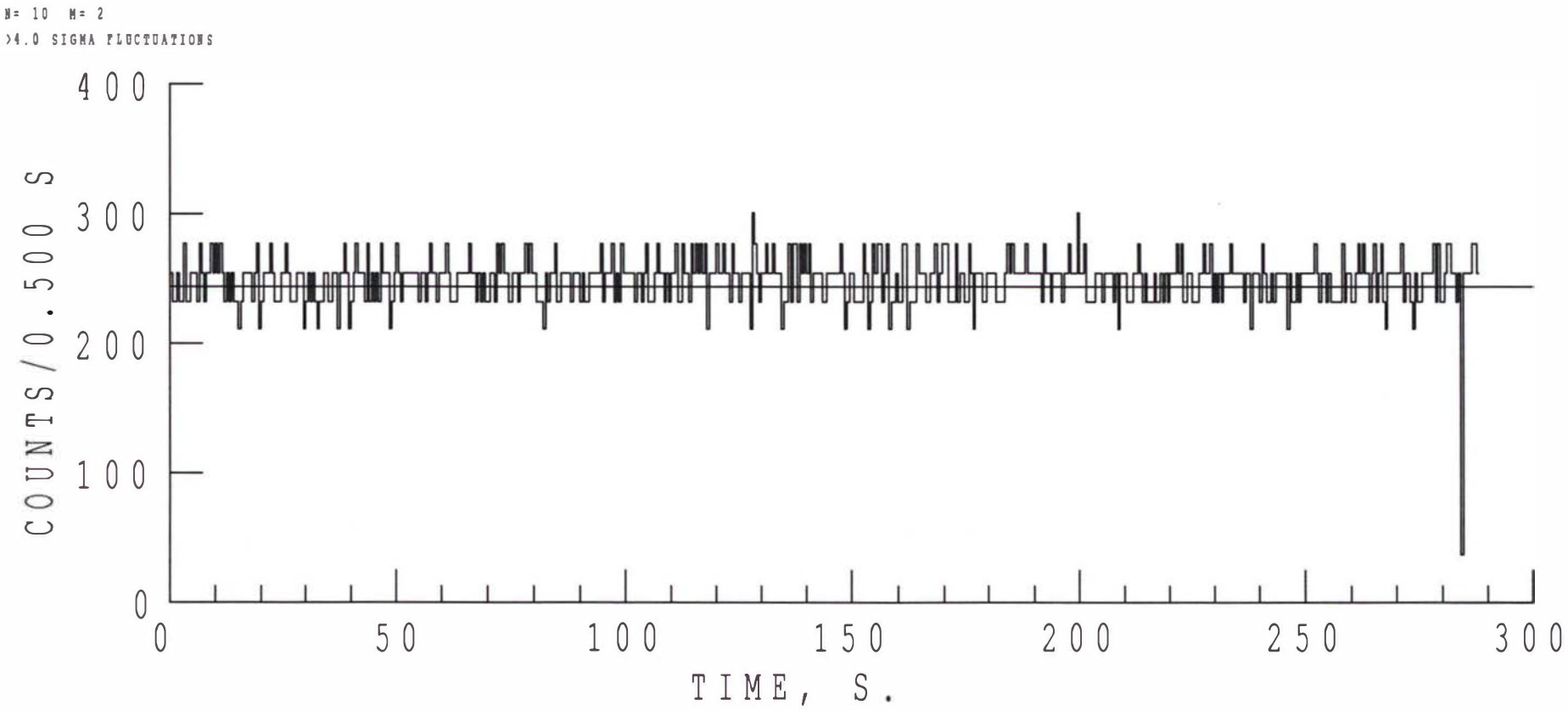
Batse Burst #2830

18/ 2/94

ULYSSES RT

17/ 2/94 22716.232 s

0- 0 keV



From ZMYEWSKI@ssl.msfc.nasa.gov Fri Feb 18 11:43 PST 1994
Date: Fri, 18 Feb 1994 13:48:00 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2831
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2831
EVENT OF 1994 FEB 17 DAY OF YEAR= 48
EVENT CROSSING TIME AT BATSE : 82962. S. OR 23:02:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 30.000 4.000
BATSE PEAK COUNTING RATE: 125500 C/S

Trigger

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 2/ 94 IS:
RA= 148.283 DEC= -51.709 DIST= 3.038 AU
BATSE-ULYSSES DISTANCE = 454460170. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 527.01 SECS.
CROSSING TIME AT ULYSSES IS 83489. S. OR 23:11:29 +/- 304.77 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 2/ 94 IS:
RA= 318.292 DEC= -17.216 DIST= 2.344 AU
MARS-BATSE DISTANCE = 350677440. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -325.68 SECS.
CROSSING TIME AT MARS IS 82636. S. OR 22:57:16 +/- 190.11 SECONDS

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2831	940217	9400	82962	125500	030	+04

BATSE BURST TRIGGER

NO.: 02831

TIME: TJD=9400 SECONDS=82962

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=10.9 AZIMUTH=37.0 ERROR= DEGREES

COMMENTS:
GRB. STRONG EVENT. SIX MAIN PULSES, EACH WITH SUBSTRUCTURE, EACH
SEEN ABOVE 300KEV. DURATION OF EVENT IS APPROX. 170 SECONDS.
COMPTEL LOCATION IS: RA: 30, DEC: 4 (WITH ERROR RADIUS APPROX. 1/2).

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	Raduis	(-/+)	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	0.21	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

Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

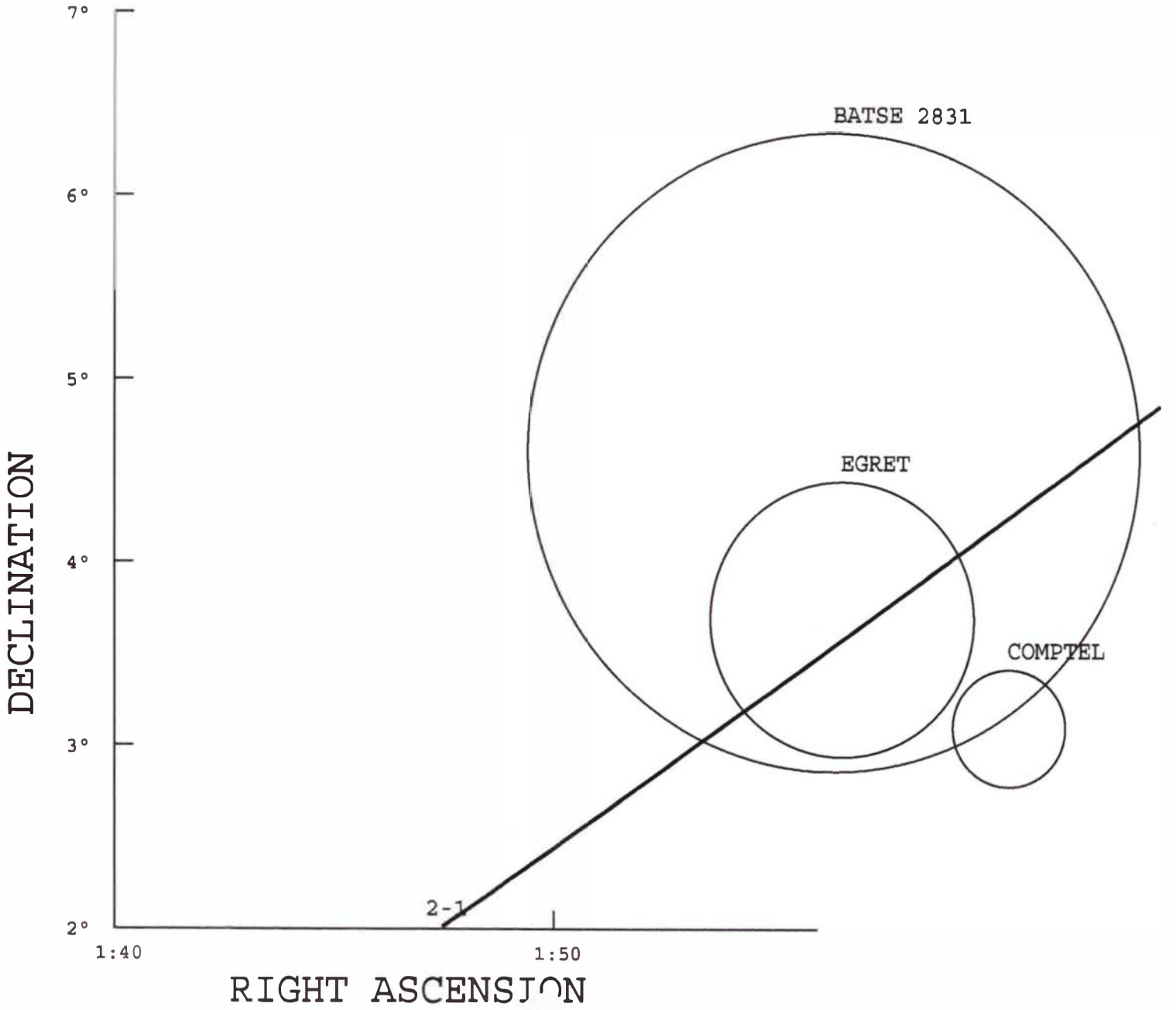
☐ Geocentric time used?

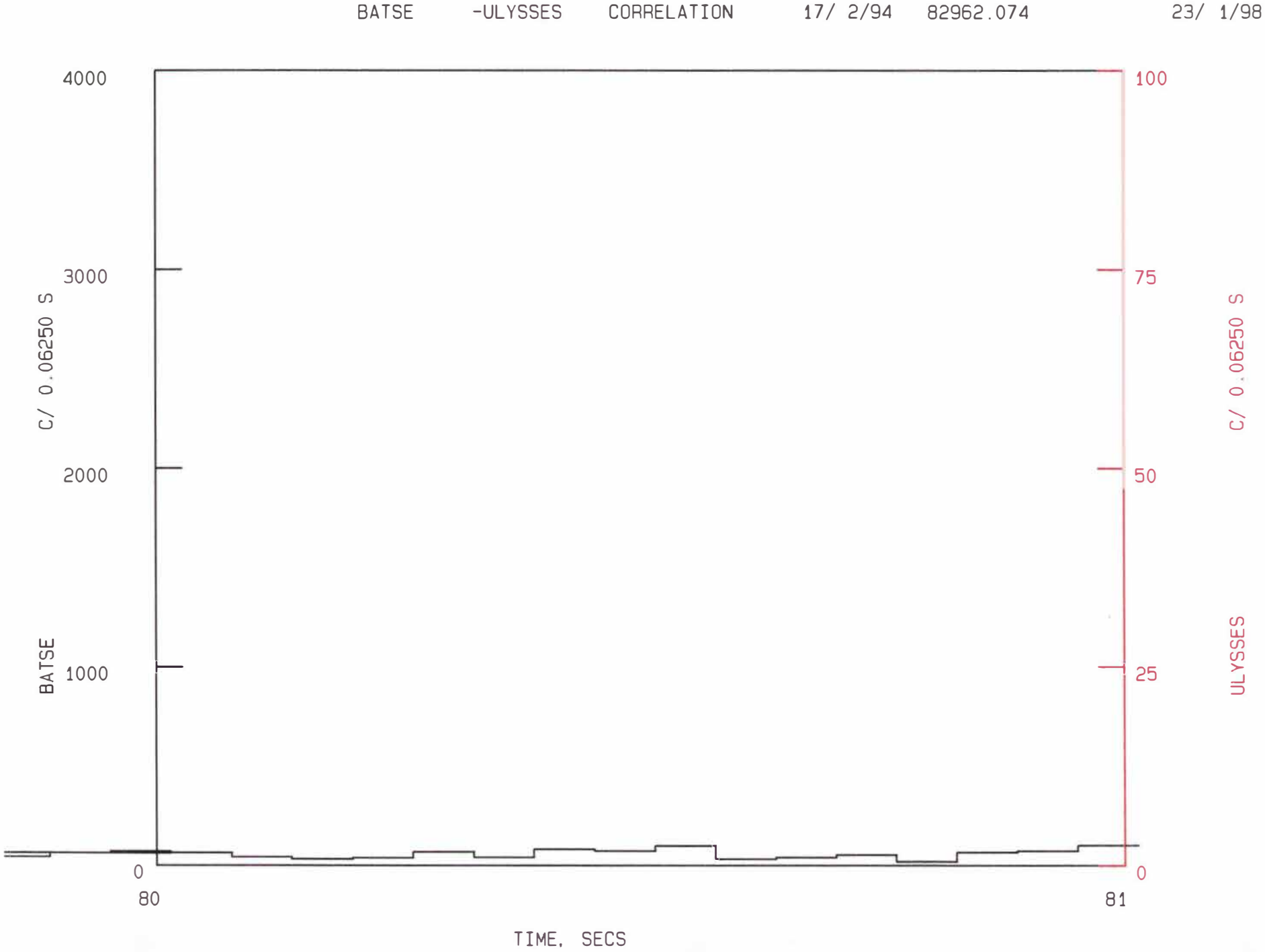
☑ ACCESS database updated?

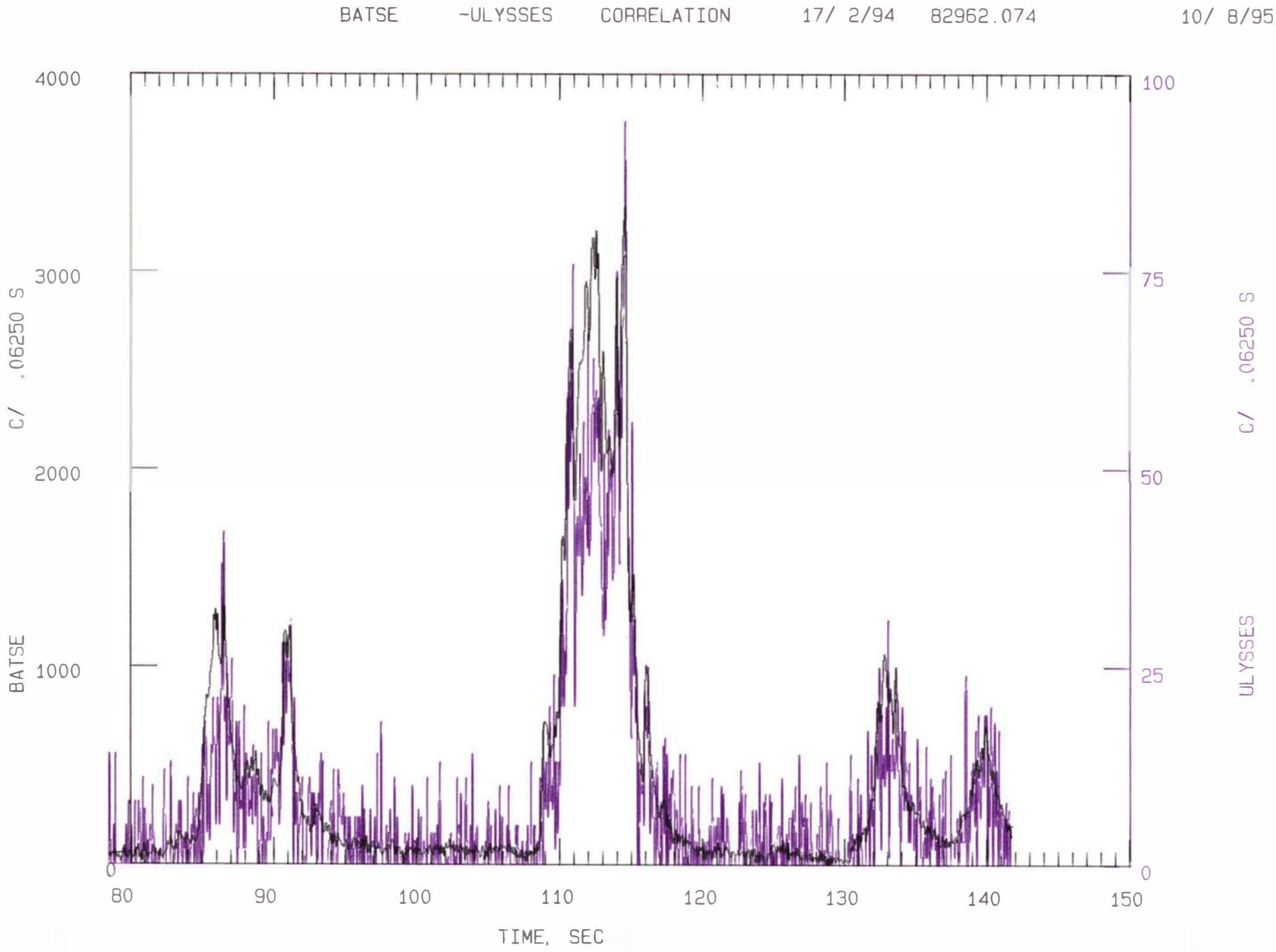
EVENT OF FEB 17, 1994 23:13

23/ 1/98

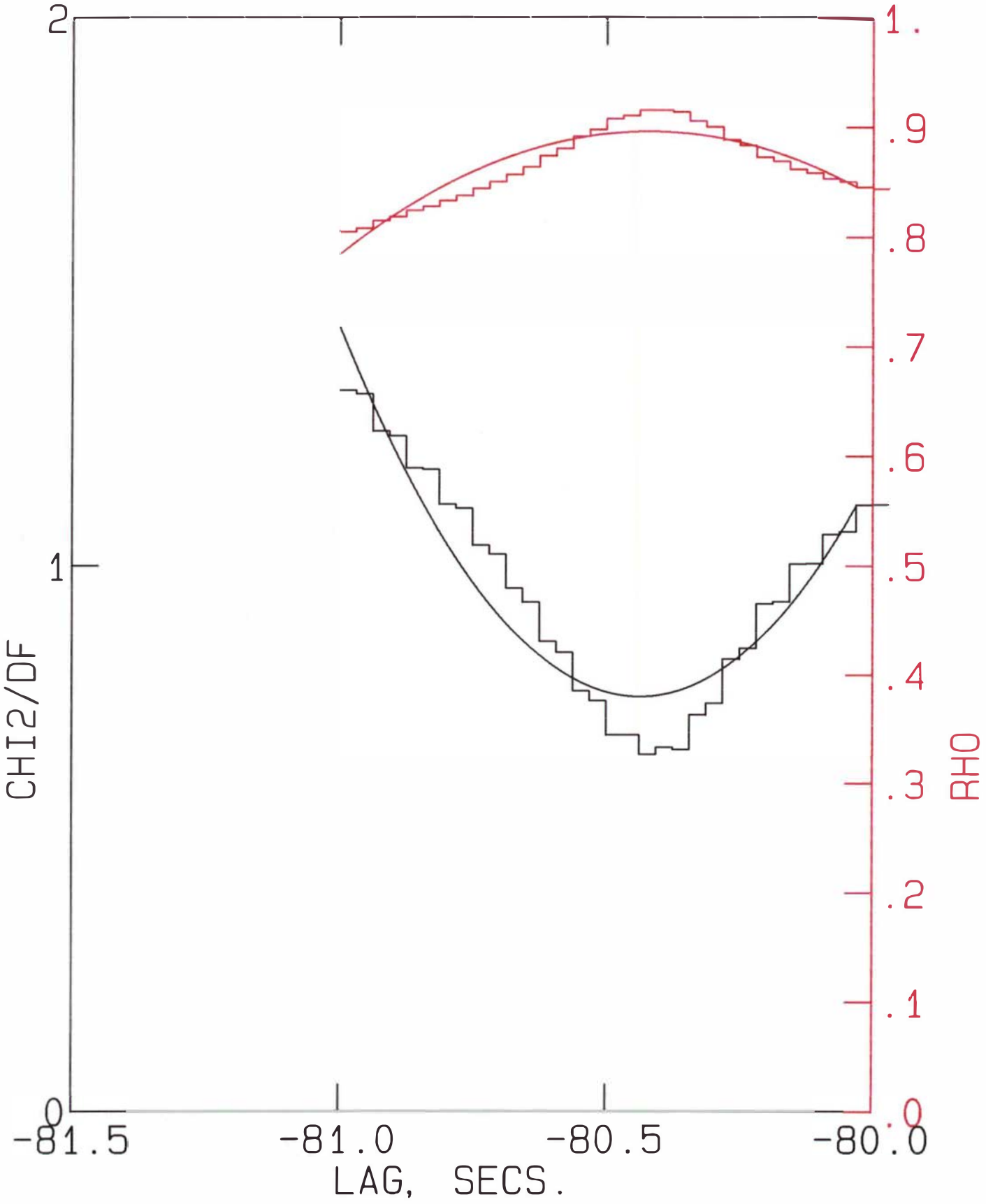
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

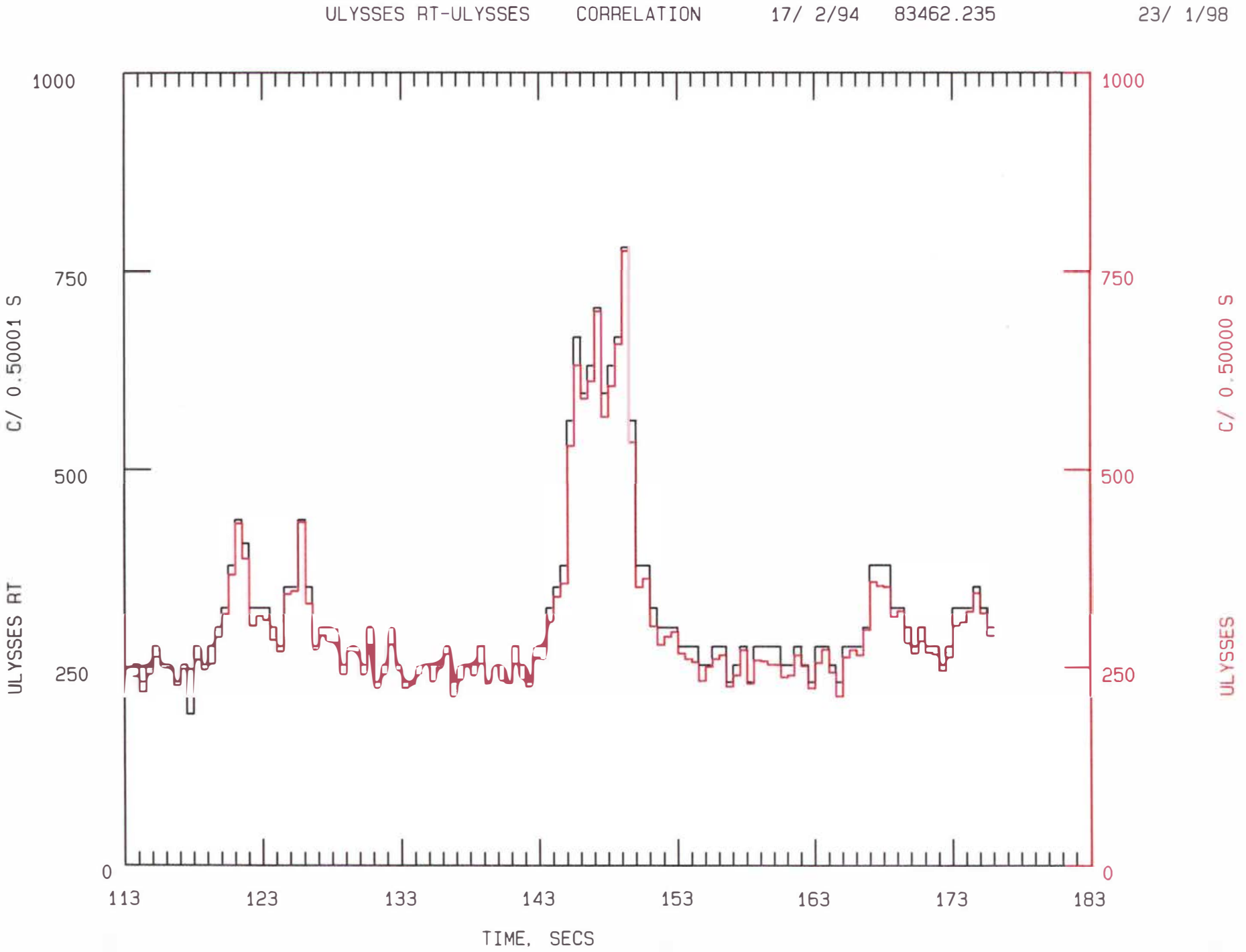



BATSE -ULYSSES CORRELATION 17/ 2/94 82962.074 23/ 1/98
4000
3000
2000
1000
0
C/ 0.06250 S
BATSE
100
75
50
25
0
C/ 0.06250 S
ULYSSES
80
81
TIME, SECS

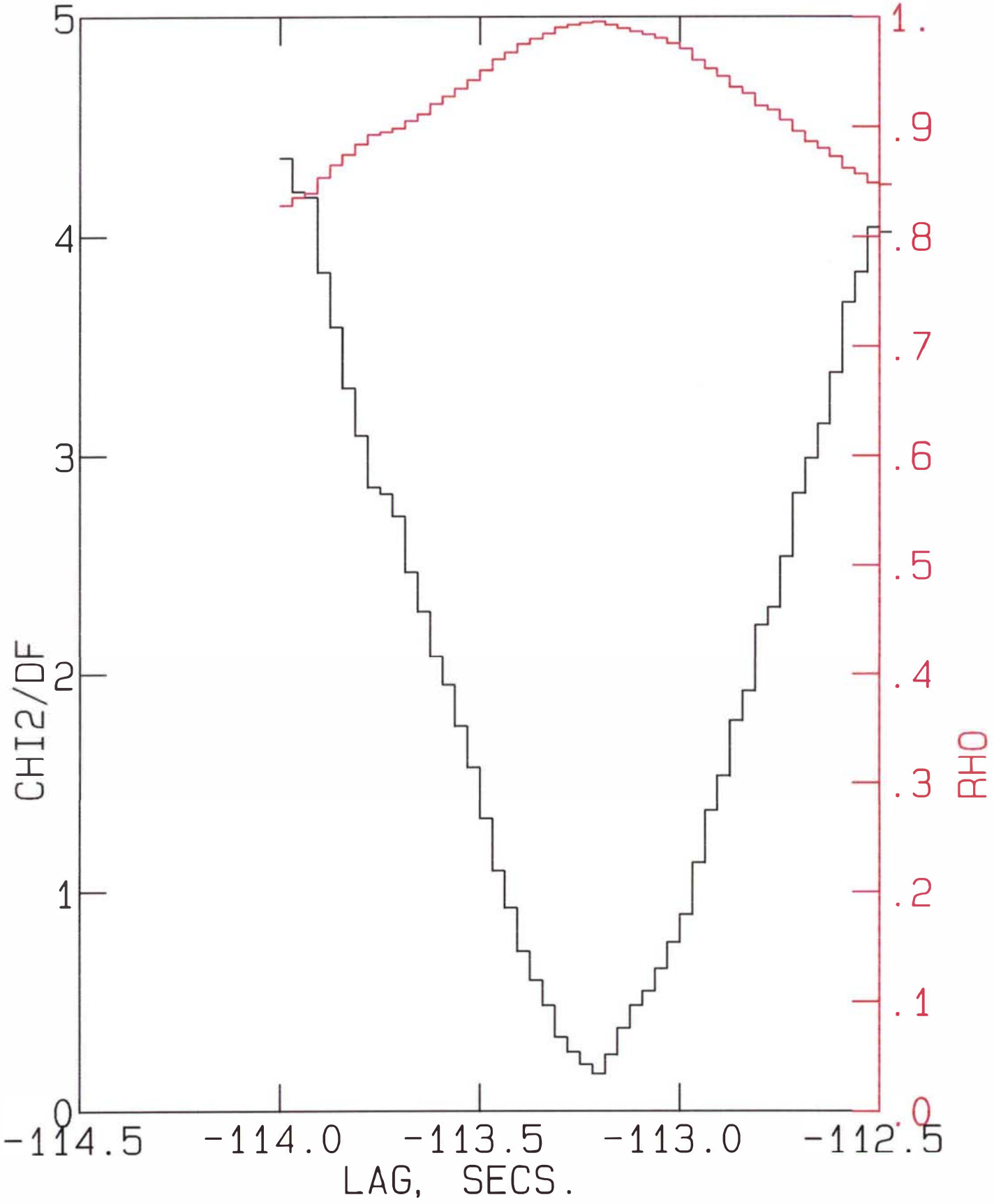

BATSE -ULYSSES CORRELATION 17/ 2/94 82962.074 10/ 8/95
4000
3000
2000
1000
0
C/ .06250 S
BATSE
100
75
50
25
0
C/ .06250 S
ULYSSES
80
90
100
110
120
130
140
150
TIME, SEC

BATSE -ULYSSES CORRELATION 17/ 2/94 82962.074




ULYSSES RT-ULYSSES CORRELATION 17/ 2/94 83462.235 23/ 1/98
1000
750
500
250
0
C/ 0.50001 S
ULYSSES RT
C/ 0.50000 S
ULYSSES
113
123
133
143
153
163
173
183
TIME, SECS

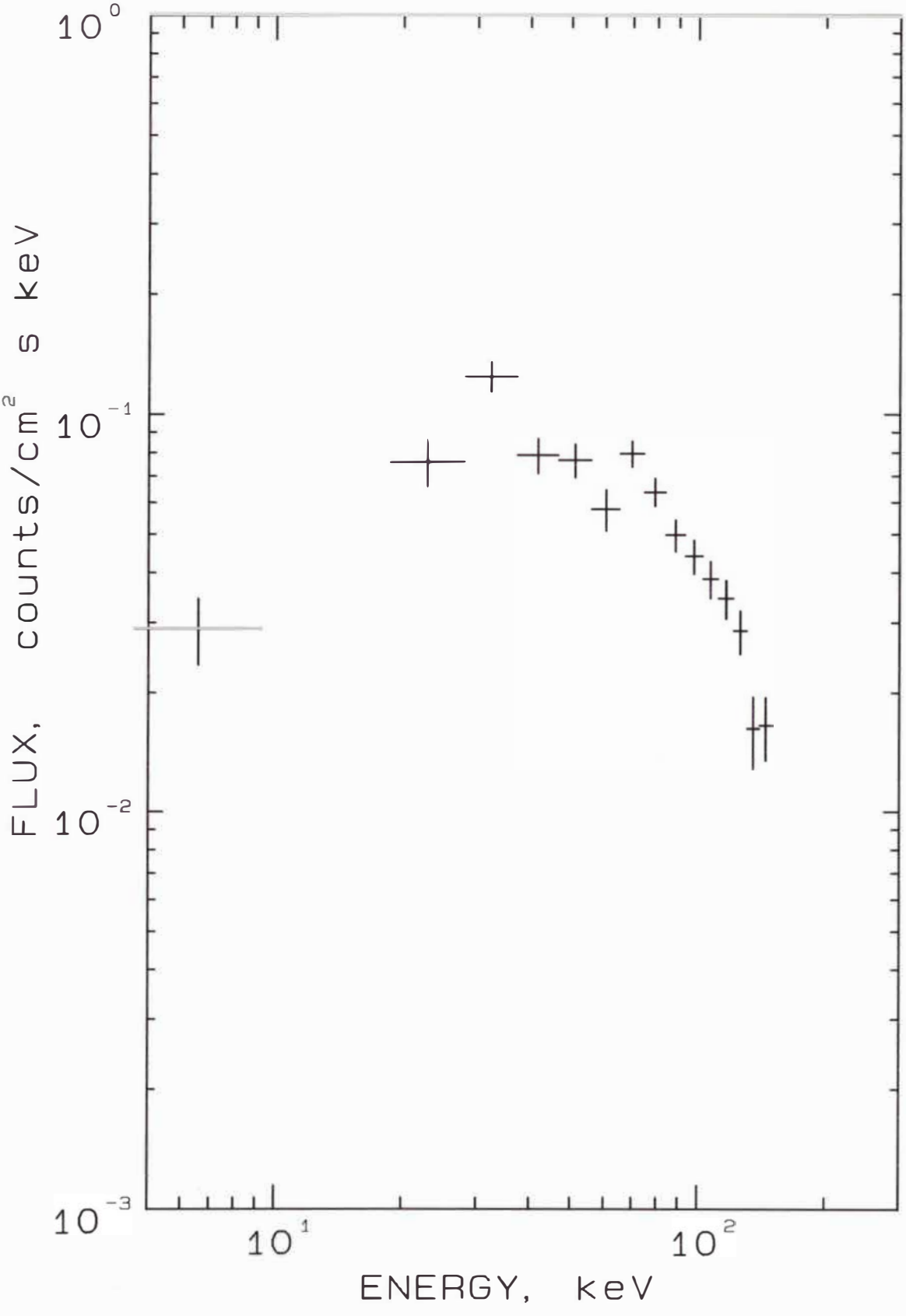
ULYSSES RT-ULYSSES CORRELATION 17/ 2/94 83462.235



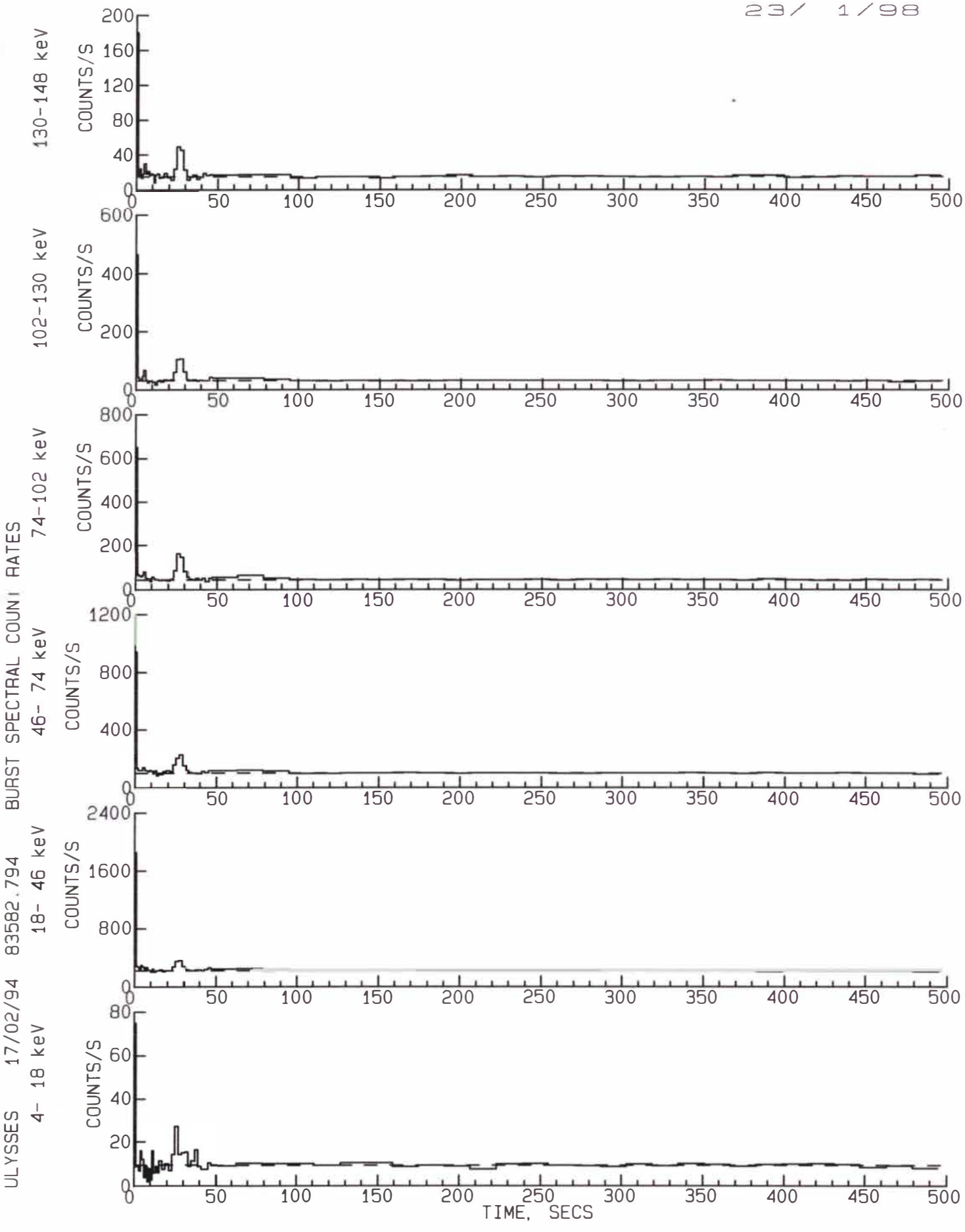
ULYSSES 17/02/94 83582.794

23/ 1/98

SPECTRUM INTEGRATED OVER 62.9 SECONDS, INTERVALS 2 TO 34



23/ 1/98


ULYSSES 17/02/94 83582.794 BURST SPECTRAL COUNT RATES
130-148 keV
102-130 keV
74-102 keV
46- 74 keV
18- 46 keV
4- 18 keV
COUNTS/S
TIME, SECS

ULYSSES 17/02/94 Ttrig=83582.868

22- 149 keV

COUNTS/0.031 S

0 20 40 60 80

COUNTS/0.125 S

0 100 200 300

0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64

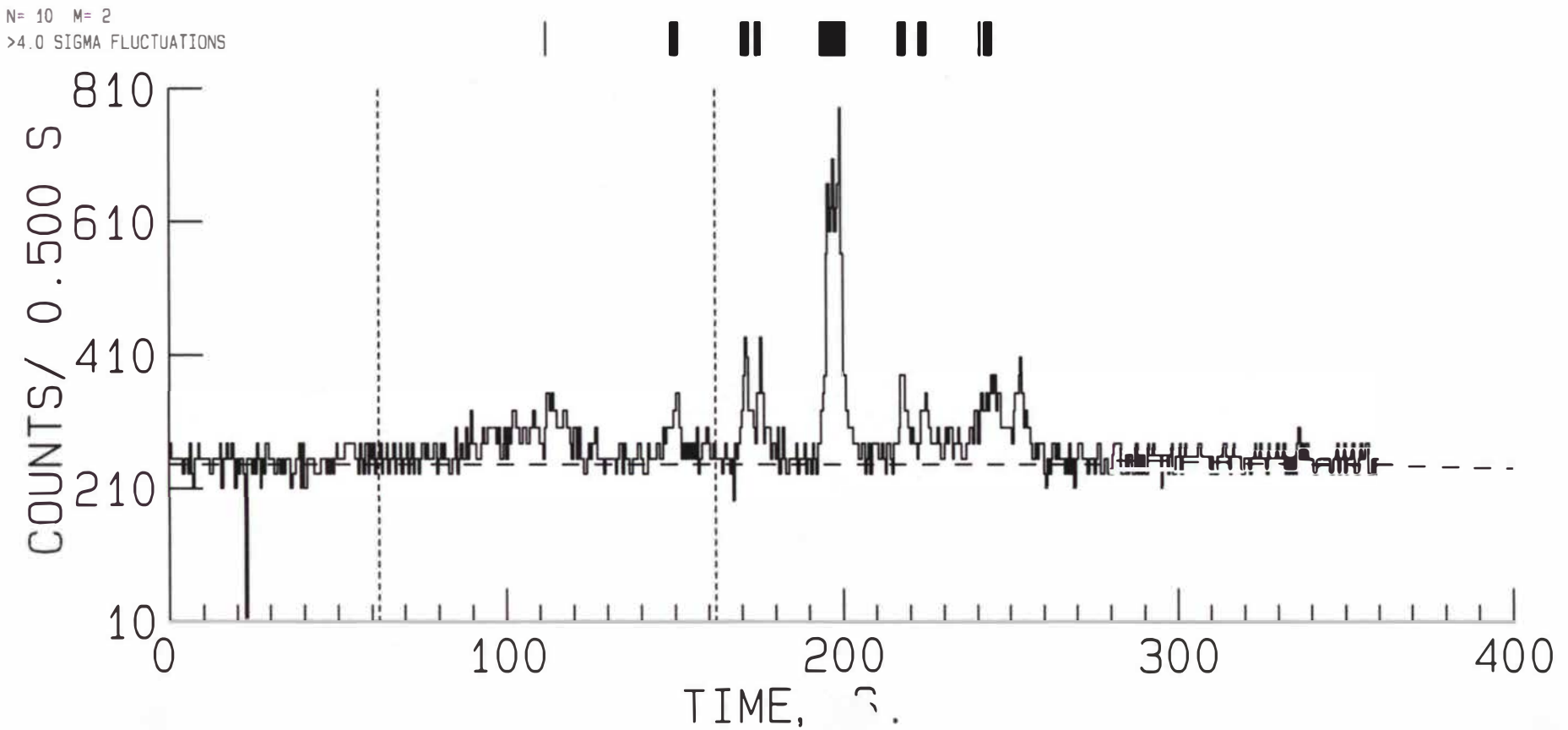
23/ 1/***

ULYSSES RT

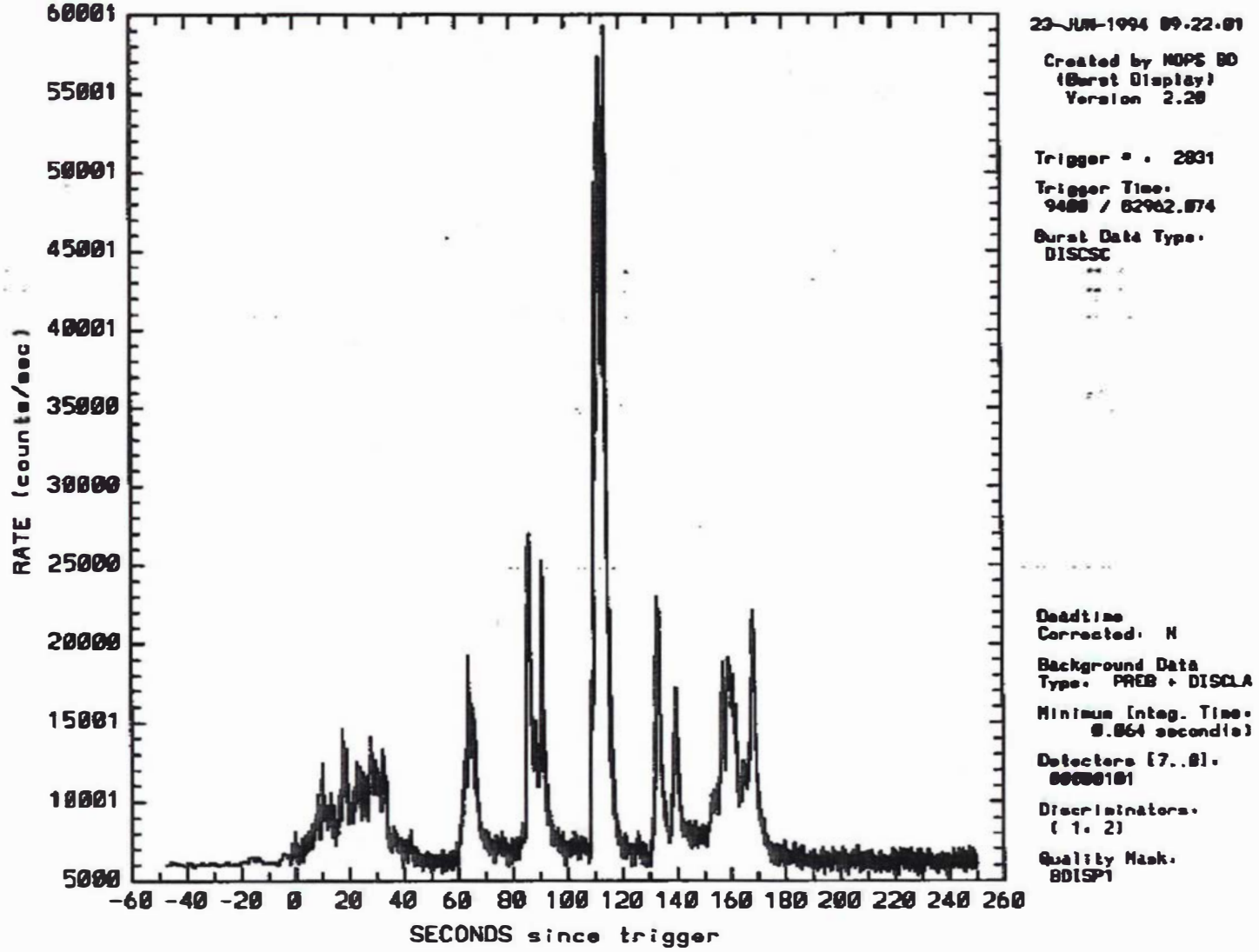
23/ 1/98

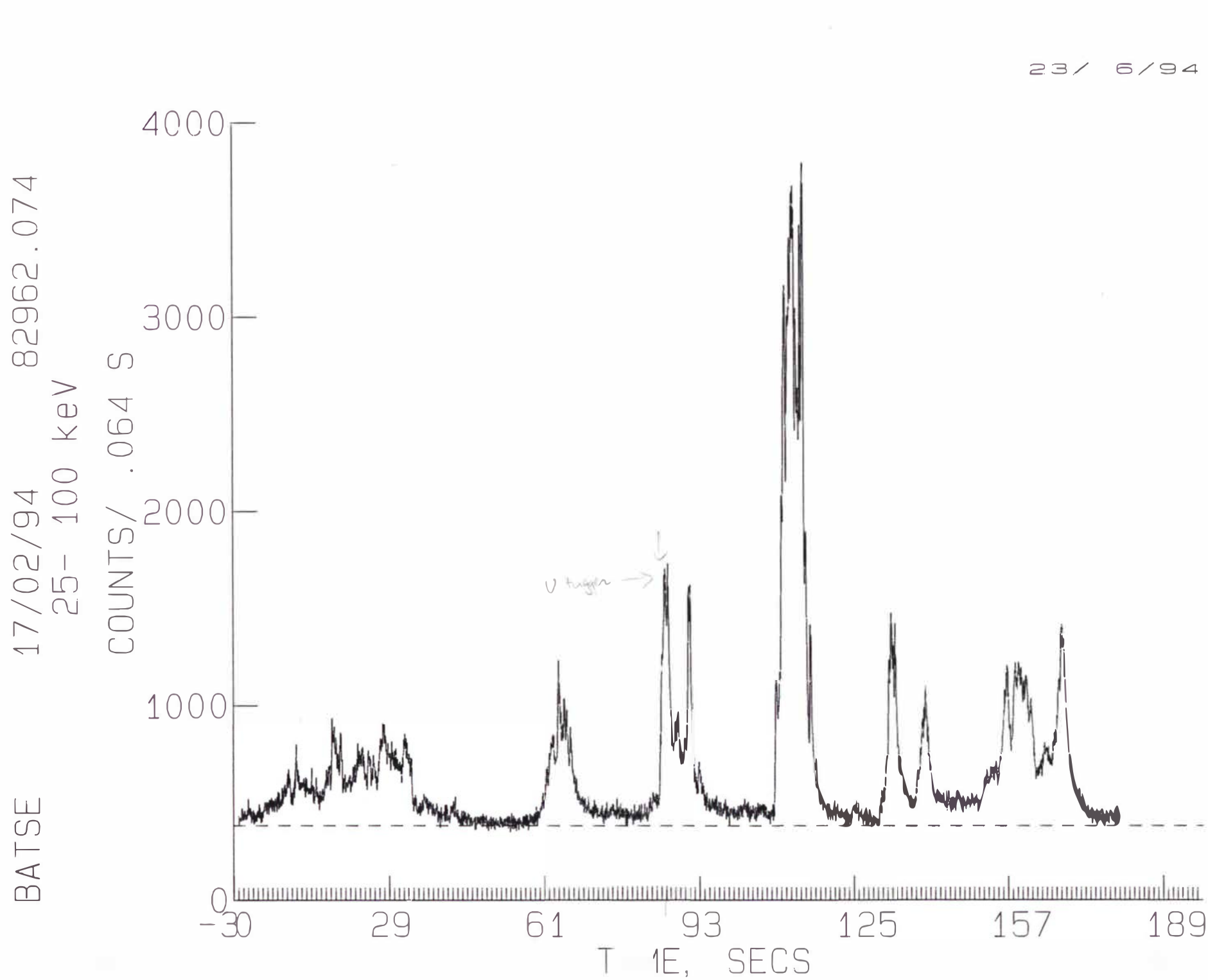
17/ 2/94 83412.176 s

22- 149 keV



DATA FOR K. HURLEY




23/ 6/94
BATSE 17/02/94 82962.074
25- 100 keV
COUNTS/ .064 S
4000
3000
2000
1000
0
trigger
-30
29
61
93
125
157
189
TIME, SECS

COMPTEL/BATSE/IPN Burst Lo ıtions

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

		Center		Radius								
Burst	Rf	Ra	Dec	Radius	(-/+)	D(AU)	Ra	Dec	1sig	Rf	Ra	Dec	1sig
GRB910425 UB	1	115.140	23.172	51.733	0.053	?	92.40	-18.60	4.11	6	90.20	-22.20	1.28
GRB910503 UB	1	117.730	22.657	30.352	0.010	?	87.20	37.60	4.04	6	87.00	38.60	0.54
GRB910601 UB	1	307.038	-20.538	52.936	0.011	3.708	311.40	33.70	4.07	6	309.90	32.70	0.49
GRB910627 UB	2	134.824	18.425	66.820	?	?	200.00	-3.20	4.01	6	199.40	-5.00	1.90
UP	2	133.523	18.792	68.352	?	?	-	-	-	-	-	-	-
GRB910709	NA	NA	NA	NA	NA	NA	64.20	50.00	15.03	6	144.10	75.60	2.41
GRB910814 UB	2	328.558	-13.966	45.699	0.018	4.918	352.10	32.30	4.03	6	343.80	29.50	0.47
UP	2	328.287	-14.629	46.428	0.019	4.626	-	-	-	-	-	-	-
GRB911118 UB	2	166.979	6.889	30.110	?	?	165.00	-15.60	4.06	6	166.30	-22.50	1.35
UP	2	162.619	8.562	32.018	?	?	-	-	-	-	-	-	-
BP	2	190.131	-2.551	30.766	?	?	-	-	-	-	-	-	-
GRB920622 UB	8	150.167	6.667	41.335	0.003	?	156.30	44.90	4.00	9	162.50	49.20	1.01
GRB920830	NA	NA	NA	NA	NA	NA	258.50	-73.40	4.03	9	259.00	-74.50	1.46
GRB930118	NA	NA	NA	NA	NA	NA	228.40	-34.30	?	7	221.80	-34.80	1.54
GRB930131 UB	3	161.411	-14.563	22.256	0.011	4.218	184.30	-10.90	4.05	9	186.20	-7.90	1.86
GRB930309 UB	8	332.600	14.645	36.601	0.033	?	327.10	49.20	4.03	9	322.70	55.20	0.94
GRB930612 UB	8	143.974	-11.184	63.928	0.053	4.870	114.00	-66.70	?	7	106.50	-71.00	1.61
GRB930704 UB	8	146.146	-11.823	82.959	0.114	5.089	90.30	59.40	?	7	99.30	62.80	1.22
GRB931229	NA	NA	NA	NA	NA	NA	230.60	20.00	?	7	241.90	21.00	2.66
GRB940217 UB	4	328.725	51.950	69.330	0.050	?	27.90	5.10	?	7	30.10	3.10	0.38
GRB940301 UB	5	321.913	52.508	59.260	0.150	?	103.00	64.30	?	7	102.70	64.00	0.42
GRB940314	NA	NA	NA	NA	NA	NA	353.60	-1.20	?	7	355.60	-1.20	1.54
GRB940520 UB	8	300.149	41.387	40.380	0.133	2.986	339.80	-15.82	?	7	324.60	73.76	1.18
GRB940619 UB	8	303.998	39.140	69.375	0.211	3.039	298.70	-33.29	?	7	297.70	-31.90	1.38
GRB940708	?	?	?	?	?	?	301.52	24.92	?	7	300.30	22.70	1.04
GRB940728	?	?	?	?	?	?	86.43	-39.76	?	7	85.00	-37.80	1.08

1 Hurley, K. et al Huntsville workshop (1994)
2 Cline, T. et al Compton Symposium (1993)
3 Hurley, K. et al Huntsville workshop (1994)
4 Hurley, K. et al IAUC 5940 (1994)
5 Hurley, K. et al IAUC 5944 (1994)
6 Fishman, G. et al ApJS 92 229-284 (1994)
7 Meegan, C. Priv. Comm. (Trigger Messages)
8 Hurley, K. Priv. Comm.
9 GROSSC Online BATSE 2B Catalog

From root Wed Aug 10 08:12 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA02206; Wed, 10 Aug 94 08:12:52
Received: by comptel.unh.edu (4.1/SMI-4.1)
id AA12702; Wed, 10 Aug 94 11:23:36 EDT
From: mkippen@comptel.unh.edu (R Marc Kippen)
Message-Id: <9408101523.AA12702@comptel.unh.edu>
Subject: COMPTEL/IPN bursts
To: khurley@space6.ssl.berkeley.edu (Hurley)
Date: Wed, 10 Aug 1994 11:23:35 -0400 (EDT)
X-Mailer: ELM [version 2.4 PL23]
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Length: 4437
Status: R

Kevin,

As promised, enclosed is a list of all the bursts which have been localized by COMPTEL since the start of its mission. The COMPTEL part is complete and up-to-date. Only unambiguous detections are included (>3.5 sigma), thus some questionable events you may have seen in the past are absent.

Included are all the IPN annuli I have knowledge of. Any updates/ additions/corrections you could offer would be greatly appreciated. In particular, I am interested in the inter-spacecraft distances and multiple spacecraft measurements which are absent in some cases.

Best regards,

Marc

| R. Marc Kippen Internet: rmkippen@unh.edu |
| Space Science Center / Morse Hall |
| University of New Hampshire Phone : (603) 862-4703 |
| Durham, NH 03824 FAX : (603) 862-4685 |

GRB	RA°	DEC°	DIMENSIONS	SOURCE
17 FEB 94	29	+4	6'x60'	IAUC 5940
25 APR 91	90	-22		A&A Suppl. 97, 75
09 NOV 91	111	-27	1'x6'	CoI calculation
01 MAY 92	124	-33	1'x2'	CoI calculation
11 MAR 92	132	-36	1'x4'	CoI calculation
22 MAY 91	138	-51	2'x2'	CoI calculation
18 NOV 91	167	-23	2'x10'	CoI calculation
31 JAN 93	184	-10	0.3'x96'	Hurley et al. (preprint)
27 JUN 91	199	-4		A&A Suppl. 97, 75
17 MAY 92	203	-17	2'x6'	CoI calculation
17 JUL 91	247	-58	1'x1'	CoI calculation
SGR 1900+14	285	+14		pos. of G42.8+0.6
06 APR 92	289	-58	2'x2'	CoI calculation
22 JAN 91	297	-71	2'x6'	CoI calculation
25 MAY 92	301	-43	2'x3'	CoI calculation
25 MAR 92	351	13	2'x7'	CoI calculation

From this list, approx. half will be selected for study (depending on season). SGR 1900+14 is one of the three *soft-gamma repeaters*. It has been tentatively associated with a supernova-remnant G42.8+0.6 (Hurley et al., preprint).

21. For SEST proposals, indicate:

a) Your preferred LST interval :

b) The period when the targets can be observed, taking into account the Sun constraint (50°) :

22. Justification of requested number of observing nights. Do not include any correction for expected meteorological conditions:

Eight fields are to be imaged in four colours, twice. The exposure time will be 10 min in B, and 5 in V, R, and Z. Hence, in total, 400 min integration.

CoIs are constantly revising the list of targets. Some reduction in the size of error boxes is possible; this may limit the need to image by mosaic.

23. Reasons why the observations cannot be performed in remote mode.

24. **Important notice:**
If the programme described in this application requires excellent seeing or photometric conditions or low water vapour content, **a back-up programme using the same instrumentation** has to be described on a separate page.

From holger@astro.ku.dk Thu Jul 7 00:49 PDT 1994
Date: Thu, 7 Jul 94 09:51:25 +0200
From: holger@astro.ku.dk (Holger Pedersen)
To: boer@cesr.cnes.fr, hpedersen@nbivax.nbi.dk,
khurley@sunspot.ssl.berkeley.edu
Subject: NTT_observing_time
Content-Type: text
Content-Length: 1062

Kevin, Michel:

I am pleased to report verbal information from ESO that we have been granted one night of observing time on the 3.5-m New Technology Telescope, in March 1995, for the execution of the observing program mailed to you earlier. The observations are to be conducted using remote control, from Garching. I hope that you can join me in Garching.

Similar observations will be done at the 1.54-m Danish telescope, La Silla, August 5 - 12, 1994. If there is any update to Kevin's list of positions, please let me know.

Best regards

Holger

July 7, 1994

Holger Pedersen	e-mail	holger@astro.ku.dk
Copenhagen University Observatory	phone	(45) 3532 3966
Oster Voldgade 3	-	(45) 3532 3999 (secretary)
DK 1350 Copenhagen	-	(45) 3888 6779 (private)
Denmark	fax	(45) 3532 3989

Olympus GRB

BS - VLA time (Dave Palmer) 1 day delay

CTIO - source had set - no obs.

KPNO - Scott has data 1d delay

From root Thu May 5 14:23 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA06063; Thu, 5 May 94 14:23:51
Received: from SSTDP2.LANL.GOV by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA10060; Thu, 5 May 1994 14:32:36 +0800
Date: Thu, 5 May 1994 15:33:07 -0600 (MDT)
From: 046369@sstdp2.lanl.gov
To: KHURLEY@space6.ssl.berkeley.edu
Message-Id: <940505153307.20203447@SSTDP2.LANL.GOV>
Subject: DMSP OBSERVATIONS OF GRB
Content-Length: 890
Status: R

FROM: SMTP%"JTERRELL.LANL.GOV" (ESSDP2::TERRELL) 940505
TO: GIBSON::COLE
CC: SMTP%"KHURLEY@SPACE6.SSL.BERKELEY.EDU"
SUBJ: DMSP OBSERVATIONS OF GRB

Chryssa and Stayce:

Thanks very much for the list of more recent BATSE strong bursts, sent
940415. After moving my office to a different building, with the
resultant chaos, I have looked at the DMSP data for these events
and have found a number of them. I assume that these, as before,
are >30K c/sec in Batse data. Detailed data will be extracted for
the obvious detections.
Data had already been looked at for the 940217 Olympic event, which is one
of the strongest ever detected by DMSP, with multiple peaks! Any information
you could give me on event strengths and directions would be much appreciated.
We are keeping up much better with DMSP data now, running only 2 or 3
weeks behind real time.

With thanks--Jim Terrell.

From root Fri Feb 25 14:01 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA04368; Fri, 25 Feb 94 14:01:31
Received: by seti.seti_net (4.1/SMI-4.1)
        id AA24709; Fri, 25 Feb 94 13:07:34 PST
Date: Fri, 25 Feb 94 13:07:34 PST
From: steve@seti (Steve Levin (x4-1917))
Message-Id: <9402252107.AA24709@seti.seti_net>
To: tharriso@NMSU.Edu
Subject: Re: GRB940217_Update
Cc: burster@heag1, khurley@space6.ssl.berkeley.edu
Status: RO

Hi Tom,
We performed two sets of observations looking for GRB940217 at 8.4 GHz.
On Friday 2/18/94 we scanned a rectangular patch of sky covering Right
Ascension 29 to 31 degrees and Declination 2.5 to 4.5 degrees, and saw
no point sources at the 100 mJy level. On Tuesday February 22, with
better pointing information (from Kevin Hurley), we searched a 0.4 degree
thick section of arc, with corners at (28,2.6),(28,3.0),(31,4.7), and
(31,5.1). We saw no signal at the 50 mJy level.
                        -Steve Levin, Ed Olsen, et al.

X-St-Vmsmail-To: ST%QUAI,ST%QUAJ,ST%QUAK,ST%QUAL,ST%QUAM,ST%QUAN
Content-Type: text
Content-Length: 2968

Circular No. 5940

Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION
Postal Address: Central Bureau for Astronomical Telegrams
Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
Telephone 617-495-7244/7440/7444 (for emergency use only)
TWX 710-320-6842 ASTROGRAM CAM EASYLINK 62794505
MARSDEN@CFA or GREEN@CFA (.SPAN, .BITNET or .HARVARD.EDU)

GRB 940217

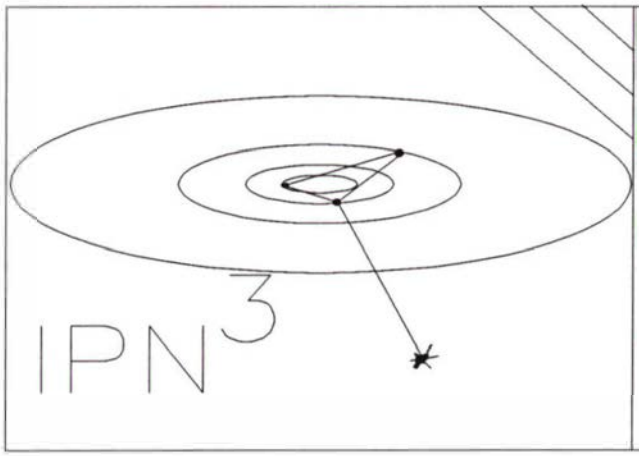
K. Hurley, University of California; D. Bertsch, T. Cline, B. Dingus, J. Esposito, C. E. Fichtel, R. Hartman, S. Hunter, J. Mattox, C. von Montigny, R. Mukherjee, P. Sreekumar and D. Thompson, NASA/Goddard Space Flight Center; D. Kniffen, Hampden-Sydney College; J. Fierro, Y. C. Lin, P. Michelson, P. Nolan and T. Willis, Stanford University; E. Schneid, Grumman Aerospace Corporation; G. Kanbach, H. Mayer-Hasselwander and M. Sommer, Max Planck-Institut fur Extraterrestrische Physik; G. Fishman, C. Kouveliotou and C. Meegan, NASA/Marshall Space Flight Center; and M. Boer and M. Niel, Centre d'Etude Spatiale des Rayonnements, Toulouse, report gamma-ray observations by the EGRET instrument of the strong burst first detected by the BATSE experiment on Feb. 17.96021 UT, and on its annulus defined by timing using the ULYSSES/BATSE network. Gamma rays above 30 MeV were recorded in the 170-s interval following the BATSE trigger. Additional events that appear to come from the burst direction were also recorded in the following 180 s. The preliminary position, based on only 15 photons, is R.A = 1h56m.8, Decl. = +3d48' (equinox 2000.0), with uncertainty radii of 0.3 and 0.7 deg for the 68-percent and 95-percent confidence contours, respectively. The position is strongly influenced by the highest energy event at 4.4 GeV. The annulus defined by timing from ULYSSES and BATSE has a preliminary center at R.A. = 21h54m.9, Decl. = +51d57' (equinox 2000.0), with a radius of 69.33 deg and a total width of 6'. The width of the annulus is expected to decrease with additional analysis. The nearest portion of the annulus is approximately 0.1 deg from the center of the EGRET location. The EGRET location is also consistent with the position found by COMPTEL (Kippen et al. 1994, IAUC 5937) and by BATSE.

COMET McNAUGHT-RUSSELL (1993v)

Recent total visual magnitude estimates indicate that this comet is significantly brighter than the prediction on IAUC 5926: Feb. 13.46 UT, 9.5 (D. A. J. Seargent, The Entrance, N.S.W., 0.25-m reflector); 15.44, 10.4 (A. F. Jones, Nelson, New Zealand, 0.32-m reflector); 15.44, 9.1 (P. Camilleri, Cobram, Victoria, 20 x 80 binoculars); 16.39, 10.6 (Jones); 16.45, 9.0: (Camilleri).

PERIODIC COMET TEMPEL 1 (1993c)

Total magnitude estimates: Feb. 6.15 UT, 15.1 (P. Pravec, Ondrejov, Czech Republic, 0.65-m reflector + CCD); 10.45, 13.4 (A. Hale, near Orogrande, NM, 0.41-m reflector).



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: Dr. Y. Tanaka
FAX #: 011 81 427 59 4253
DATE: February 19, 1994
TOTAL NUMBER OF PAGES: 1
Dear Dr. Tanaka,

An exceptionally intense gamma-ray burst was observed by Ulysses and Compton Observatory (BATSE, COMPTEL, and EGRET) on February 17. EGRET observed photons up to 4.4 GeV, and obtained an error circle of 0.75 degrees radius (two sigma) which is intersected by the 5' annulus of the interplanetary network. A world-wide observing campaign is now underway, and I am writing to ask you to consider the possibility of an ASCA target of opportunity observation. Under similar circumstances, we had a ROSAT TOO observation of the May 1 1992 burst source and found a variable x-ray source in the error box which we are now studying. This, along with the recent ASCA success at observing the soft repeater SGR1806-20, makes me think that a TOO might give extremely interesting results. The position to observe would be centered at RA(2000)=29.15 degrees, dec(2000)=3.69 degrees. This position is presently about 59 degrees from the sun.

See you in Tokyo!

Best regards,

Kevin

From khurley@space6.ssl.berkeley.edu Sat Feb 19 08:59 PST 1994
Date: Sat, 19 Feb 94 09:55:42
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 218

Dear Chryssa,

For your information, the 17 February source is about 59 degrees away from the sun, and therefore just barely observable to ASCA (but not to ROSAT). I have sent a fax to Tanaka requesting a TOO.

Kevin

Carl,

There was an intense GRB on the 17th of February which should have been in the EGRET FOV. It occurred around 23:02:42 UT, and the arrival direction was ra=027, dec=+04. Did EGRET detect it? We have about a dozen observers waiting to check the position out.

Kevin

From root Fri Feb 18 12:17 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA02369; Fri, 18 Feb 94 12:17:28
Received: from lheavx.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA06161; Fri, 18 Feb 1994 11:20:59 +0800
Date: Fri, 18 Feb 1994 13:08:32 -0500 (EST)
From: FICHTEL@lheavx.gsfc.nasa.gov
To: khurley%space6.ssl.berkeley.edu@sunspot.ssl.berkeley.edu
Message-Id: <940218130832.2020671a@lheavx.gsfc.nasa.gov>
Subject: THE BURST
Content-Length: 719
Status: R

Dear Kevin:
I was about to send you a message when I read yours. We have learned that, if the direction information is correct, it should be about ten degrees from the EGRET axis. The COMPTEL group says that it is perhaps ten times as big as the superbowl burst. We do not have yesterday's tape yet, but we shall let you know when we do. Anyway, there seems to be a good probability that you have your burst, and, although you had to wait a while , it is really something. If it is as we hope, we may really have something to say about the high energies, and you would be the first author of a really exciting paper. I am happy for you, and we shall all be enthusiastic about working with you. Carl

From root Fri Feb 18 14:18 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA02437; Fri, 18 Feb 94 14:18:10
Received: from lheavx.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA07039; Fri, 18 Feb 1994 13:21:41 +0800
Date: Fri, 18 Feb 1994 16:23:45 -0500 (EST)
From: FICHTEL@lheavx.gsfc.nasa.gov
To: khurley%space6.ssl.berkeley.edu@sunspot.ssl.berkeley.edu
Message-Id: <940218162345.2020716c@lheavx.gsfc.nasa.gov>
Subject: the burst
Content-Length: 325
Status: R

Dear Kevin:
We have now seen the data. At high energies, there are about a dozen photons--not as many as the COMPTEL result might have suggested, but by the standard of the earlier results, a respectable number. I shall stay in touch, probabaly with some preliminary results next week.
Have a nice weekend, Carl

Tony,

There was an exceptionally intense GRB yesterday, the 17th, around 23:02:42 UT. The position was ra=29.9, dec=3.5 with an error radius of about 0.5 degrees, one sigma (2000 coordinates). You may get a BACODINE message for this, but please take the above coordinates as the correct ones. We have about a dozen observers world-wide at various frequencies prepared to observe it. This looks like it will be the "burst of the year". Can you get plates?

Kevin

From root Fri Feb 18 10:54 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AB02191; Fri, 18 Feb 94 10:54:33
Received: from cats.ucsc.edu (cats-po-1.UCSC.EDU) by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA04797; Fri, 18 Feb 1994 09:58:04 +0800
Received: from ucscloc by cats.ucsc.edu with SMTP
id KAA04146; Fri, 18 Feb 1994 10:02:13 -0800
Received: by ucscloc (5.51/4.7)
id AA09142; Fri, 18 Feb 94 10:03:43 PST
Date: Fri, 18 Feb 94 10:03:43 PST
From: tony@ucscloc.UCSC.EDU (Tony Misch)
Message-Id: <9402181803.AA09142@ucscloc>
To: khurley@space6.ssl.berkeley.edu
Subject: burst of the year
Content-Length: 360
Status: R

Kevin, I'm going to be away from tomorrow until the following Sunday. On top of that, we've got 4-5 inches of snow on the dome and it's still coming down hard, so tonight is out of the question. Unfortunately, there's no one up here who I can ask to fill in.

BTW, what is the ra? 29.9 is not a legal coordinate (must be between 0 and 23.9... hrs).

Tony

From @MITVMA.MIT.EDU:brian%cfaps1.span@CFA.BITNET Mon Feb 21 17:30 PST 1994
Date: Mon, 21 Feb 94 11:55:30 EST
From: brian%cfaps1.span%cfa.BITNET@mitvma.mit.edu
Subject: IAUC 5937: GRB 940217, 1993e
To: quak%cfa.BITNET@mitvma.mit.edu
X-St-Vmsmail-To: ST%QUAI,ST%QUAJ,ST%QUAK,ST%QUAL,ST%QUAM,ST%QUAN
Content-Type: text
Content-Length: 3015

Circular No. 5937

Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION
Postal Address: Central Bureau for Astronomical Telegrams
Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
Telephone 617-495-7244/7440/7444 (for emergency use only)
TWX 710-320-6842 ASTROGRAM CAM EASYLINK 62794505
MARSDEN@CFA or GREEN@CFA (.SPAN, .BITNET or .HARVARD.EDU)

GRB 940217

R. M. Kippen, J. Macri and J. Ryan, University of New Hampshire; G. J. Fishman and C. Meegan, Space Sciences Laboratory, NASA/Marshall Space Flight Center; B. McNamara, New Mexico State University; V. Schoenfelder, Max-Planck Institut fur Extraterrestrische Physik; W. Hermsen, SRON Laboratory for Space Research, Leiden; and K. Bennett, Astrophysics Division, Space Science Department, ESTEC, European Space Agency, report: "As part of the BATSE/COMPTEL/NMSU Rapid Burst Response Campaign, COMPTEL has imaged a strong cosmic gamma-ray burst that was first detected by the BATSE experiment on Feb. 17.96021 UT. This event is one of the strongest bursts yet observed by BATSE and COMPTEL, with several hundred COMPTEL telescope events. Significant emission > 0.72 MeV was measured for > 150 s. Within this interval an intense, multipeaked structure is observed. The preliminary COMPTEL imaging analysis yields a roughly circular uncertainty region centered at R.A. = 1h59m.8, Decl. = +3d23' (equinox 2000.0; 3-sigma-confidence radius 1.2 deg). Four hours after the burst the COMPTEL location was distributed to a world-wide network of multiwavelength observatories to search for fading counterparts. We encourage further follow-up observations as quickly as possible. Interested parties should contact B. McNamara at New Mexico State University (e-mail bmcnamar@nmsu.edu, telephone 505-646-2614)."

PERIODIC COMET SHOEMAKER-LEVY 9 (1993e)

Measurements by R. H. McNaught from an image obtained by G. Da Costa, F. Freeman, C. Heisler and T. Hill with the Anglo-Australian Telescope on Feb. 14 confirm all 21 nuclei in the Hubble Space Telescope images of Jan. 24-27 (IAUC 5936) and permit now the determination of an orbit for nucleus 3. This is given with new orbits for nuclei 2 and 4 on MPEC 1994-D07. The Jupiter-collision time for nucleus 3 is July 21.9 UT. The latest orbits (from MPC 23105-23107, MPEC 1994-D02 and D07) for 19 nuclei, together with daily ephemerides Feb. 17-July 17 (to July 16 for nucleus 21), are given in the Computer Service, option "X".

J. J. Eitter, P. N. Appleton and R. J. Lavery, Iowa State University, report that the comet has faded to a low average surface brightness of 24.2 mag arcsec-2. R-band CCD observations made at the Fick Observatory on Feb. 11.5 UT in conditions of good seeing show the six brightest nuclei to have faded to a surface brightness of 23.6-24.5 mag arcsec-2. The comet's integrated R-band magnitude was 15.4.

1994 February 21 (5937) Brian G. Marsden

From scott@xtelab.gsfc.nasa.gov Fri Feb 18 07:31 PST 1994
Date: Fri, 18 Feb 94 10:34:51 EST
From: scott@xtelab.gsfc.nasa.gov (Scott Barthelmy)
To: khurley@space6.ssl.berkeley.edu, khurley@sunspot.ssl.berkeley.edu
Subject: fax? and any ipn?
Content-Type: text
Content-Length: 438

Kevin,
Did you get my fax of the bacodine light curves for the bright burst 940217? The comptel box is small (to the point we are thinking of going with the vla and kpno too's without an ipn) but it will mean multiple pointings. An ipn would be nice because comptel boxes have moved in the past (although those were for "weak" bursts and they catagorize this as a "strong" burst (425 comptel events seen!).

with fingers crossed,
scott

From root Tue Feb 22 10:31 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA03536; Tue, 22 Feb 94 10:31:16
Received: from abeach.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA20987; Tue, 22 Feb 1994 09:34:37 +0800
Received: by abeach.gsfc.nasa.gov (4.1/1.35)
        id AA12331; Tue, 22 Feb 94 12:39:00 EST
From: bld@abeach.gsfc.nasa.gov (Brenda Dingus)
Message-Id: <9402221739.AA12331@abeach.gsfc.nasa.gov>
Subject: EGRET IAU Circular?
To: khurley@space6.ssl.berkeley.edu (Kevin Hurley)
Date: Tue, 22 Feb 1994 12:38:59 -0500 (EST)
X-Mailer: ELM [version 2.4 PL22]
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Length: 941
Status: R

Hi Kevin,

I just spoke with Carl about issuing an IAU Circular on the EGRET observation of this latest burst. Carl said that he'd call you after lunch our time. Here's a summary of what I've found out so far.

There are 15 photons in the spark chamber from a direction consistent with the burst direction between the BATSE trigger time 23:02:42 and when the telemetry ends 23:18. I'm not sure what kind of background we expect, but its pretty low since we are over 50 degrees off the galactic plane. I'll know better when we've got the data analyzed for the times before and after the burst. I've listed the times and energies of the gamma rays below.

23:03:05	300	70	
3:24	3400		(may not meet standard gamma criteria)
3:43	75	30	
3:48	207	23	
3:59	181	49	
4:09	4350	570	
4:16	44	17	
4:34	80	13	
4:35	260	65	
4:36	44	17	
6:15	122	16	
9:04	107	13	
9:26	43	23	
9:52	153	43	
11:16	140	17	8 min later!

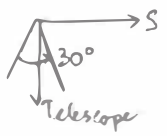
Brenda

From MEEGAN@ssl.msfc.nasa.gov Thu Feb 17 17:27 PST 1994
Date: Thu, 17 Feb 1994 19:00:10 -0600 (CST)
From: MEEGAN@ssl.msfc.nasa.gov
To: srk@astro.caltech.edu, dfrail@nrao.edu, dag@mrao.cam.ac.uk,
tgrspalmer@ssl.msfc.nasa.gov,
east"thomas@astro.uva.nl"@ssl.msfc.nasa.gov,
11340matz@ssl.msfc.nasa.gov,
east"astmph@csearn.bitnet"@ssl.msfc.nasa.gov,
ames"hpedersen@nbivax.nbi.dk"@ssl.msfc.nasa.gov,
cesrvdboer@ssl.msfc.nasa.gov, east"nl@danru.dk"@ssl.msfc.nasa.gov,
11340grove@ssl.msfc.nasa.gov, jlaros@peewee.lpl.arizona.edu,
bp@astro.princeton.edu, mpr@astro.princeton.edu,
lheavxcline@ssl.msfc.nasa.gov, essdp1103283@ssl.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu,
east"snn@sai.msk.su"@ssl.msfc.nasa.gov, jryan@unh.edu,
batselschaefer@ssl.msfc.nasa.gov, scott@xtelab.gsfc.nasa.gov,
percyfvrba@ssl.msfc.nasa.gov, bmcnamar@nmsu.edu, tharriso@nmsu.edu,
grr@space.mit.edu, hansk@kiir.mit.edu, roland@space.mit.edu,
east"klet@csearn.bitnet"@ssl.msfc.nasa.gov, 19460mjc@ssl.msfc.nasa.gov,
sdsc"rsunyaev@esocl.bitnet"@ssl.msfc.nasa.gov,
essdplterrell@ssl.msfc.nasa.gov, mpejcg@ssl.msfc.nasa.gov,
ames"smette.astra.astro.ulg.ac.be"@ssl.msfc.nasa.gov,
ames"jpkneib@lw0.ls.eso.org"@ssl.msfc.nasa.gov,
ames"mkopp@lw0.ls.eso.org"@ssl.msfc.nasa.gov, rhjellmi@nrao.edu,
east"schmidt@aaocbn.oz.au"@ssl.msfc.nasa.gov,
east"mh@aaocbn3.aao.gov.au"@ssl.msfc.nasa.gov, mccallum@bootes.unm.edu,
mprice@bootes.unm.edu, mmeier@lanl.gov,
47556magalhaes@ssl.msfc.nasa.gov, kouveliotou@ssl.msfc.nasa.gov,
sslfishman@ssl.msfc.nasa.gov
Cc: MEEGAN@ssl.msfc.nasa.gov
Subject: BATSE Burst Alert
Content-Type: text
Content-Length: 418

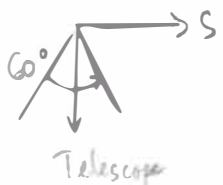
BATSE triggered on an intense GRB on 940217 at 23:02:42 UT.
Prelim. location: RA = 030 deg, Dec = +05 deg.
Follow-up observations are encouraged.
The above information was based on a very limited amount of data
obtained in real-time at the GRO-POCC at GSFC. More data are
forthcoming and it is expected that a follow-up message on this event
will be issued by approximately 18:00 UT of the day following the event.

Sun: $22^h\,08^m$ $-11°\,26'$ (Feb 19)
332° $-11.4°$

~60° away

ROSAT: 

23 23 −4 (Mar 11)
350

ASCA 

From root Fri Feb 18 19:20 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA02738; Fri, 18 Feb 94 19:20:51
Received: from elroy.jpl.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA10414; Fri, 18 Feb 1994 18:24:21 +0800
Received: from heag1.Jpl.Nasa.Gov by elroy.jpl.nasa.gov (4.1/SMI-4.1+DXR)
        id AA11400; Fri, 18 Feb 94 18:28:32 PST
Received: by heag1.Jpl.Nasa.Gov (4.1/SMI-4.1+DXRs2.0)
        id AA07661; Fri, 18 Feb 94 18:34:17 PST
Date: Fri, 18 Feb 94 18:34:17 PST
From: wam@heag1.jpl.nasa.gov (Bill Mahoney)
Message-Id: <9402190234.AA07661@heag1.Jpl.Nasa.Gov>
To: khurley@space6.ssl.berkeley.edu
Subject: Radio Observations of Burst
Cc: wam@heag1.jpl.nasa.gov
Content-Length: 633
Status: R

Hi Kevin:

Ed Olsen has just completed a scan of the roughly 2 degree by 2 degree error box quoted earlier by the COMPTEL team, using the 34 m antenna at Goldstone (8.4 GHz). No sources at all are evident, to a sensitivity limit of order 150 mJy.

I had expected there would be an observation tonight with the 70 m antenna, however, the available time starts after the source has set. I believe there will be further observations with the 34 m dish on Tuesday.

Let me know if anyone sees anything. Also, I would appreciate a plot of the time history if you could FAX it to me when things settle down a bit (818 354 8895).

Bill

From khurley@space6.ssl.berkeley.edu Mon Feb 21 08:57 PST 1994
Date: Mon, 21 Feb 94 09:53:42
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 353

Dear Rene,

In principle a Kitt Peak observation of the gamma ray burst source took place on Friday; I don't have any details yet. If you want to do a follow-up observation on Wednesday, that is certainly OK. Unfortunately the error box cannot be reduced much more at this point. I am faxing you a copy of the figure showing the localization.

Kevin

I am about to send you a computer print-out of the location of the February 17 1994 burst. It is more or less self explanatory, but I can send a fax showing the BATSE, COMPTEL, EGRET and IPN locations if you want. Let me know what your fax number is.

From root Mon Feb 21 02:53 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA03152; Mon, 21 Feb 94 02:53:46
Received: from lpve ([161.72.6.33]) by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA15274; Mon, 21 Feb 1994 01:56:50 +0800
Message-Id: <9402210956.AA15274@sunspot.ssl.berkeley.edu>
Date: Mon, 21 Feb 1994 10:01:21 -0100
From: rgmr@lpve.ing.iac.es
To: khurley@space6.ssl.berkeley.edu
Subject: gamma ray source
X-Vms-To: SMTP%"khurley@space6.ssl.berkeley.edu"
Content-Length: 499
Status: R

Hi Kevin,

only next Wednesday there will be an opportunity to get images of the gamma ray burster field with the 1 meter telescope here on La Palma. Because it is bright time very deep imaging shall not be possible. If you have more accurate coordinates, that would be helpful. Also your chart with error boxes would be helpful. Our fax number is spain+22+463899. 9 011 34
In case images have already been taken at other telescopes and additional data is not required please let me know.

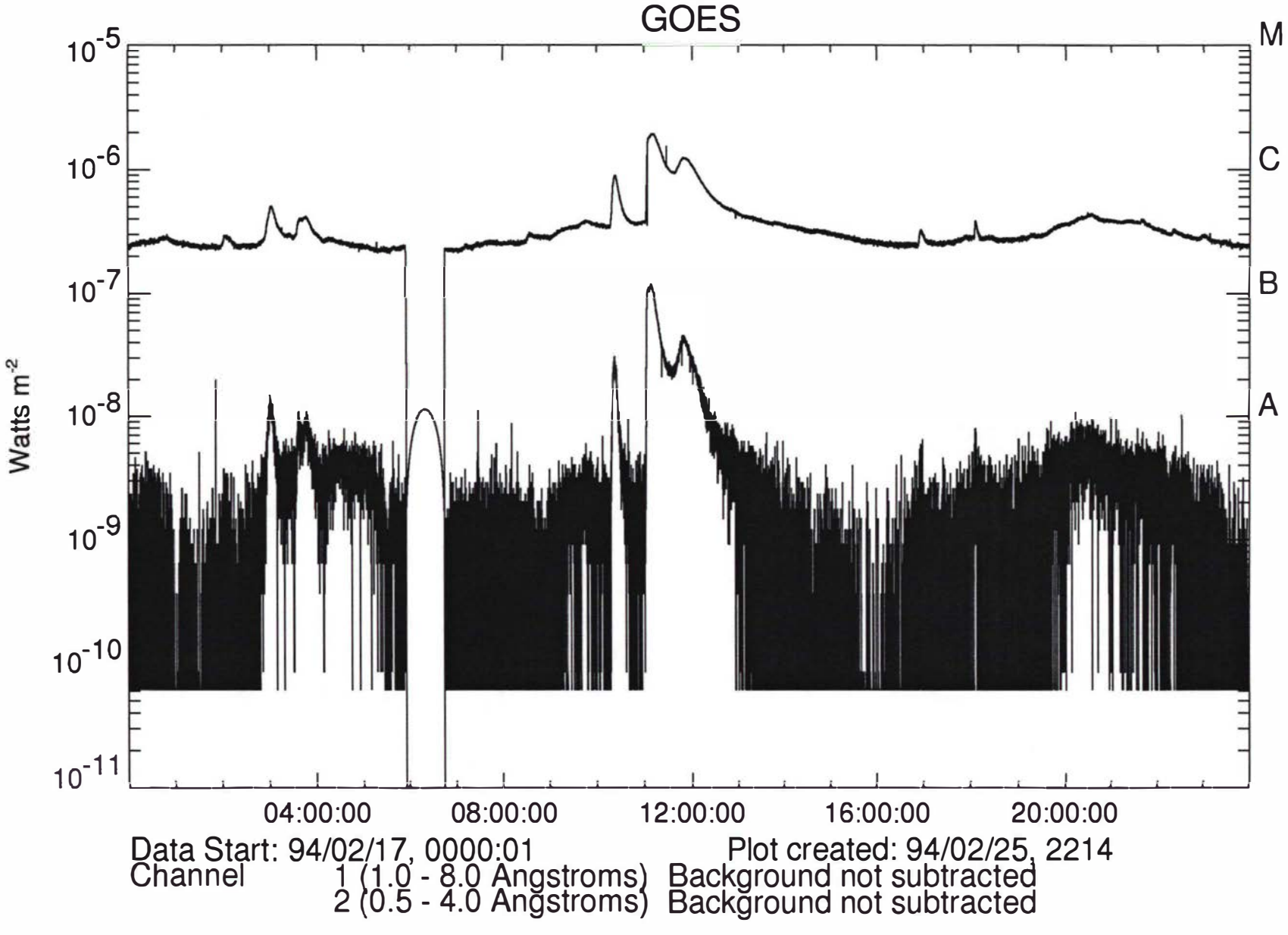
Rene' Rutten

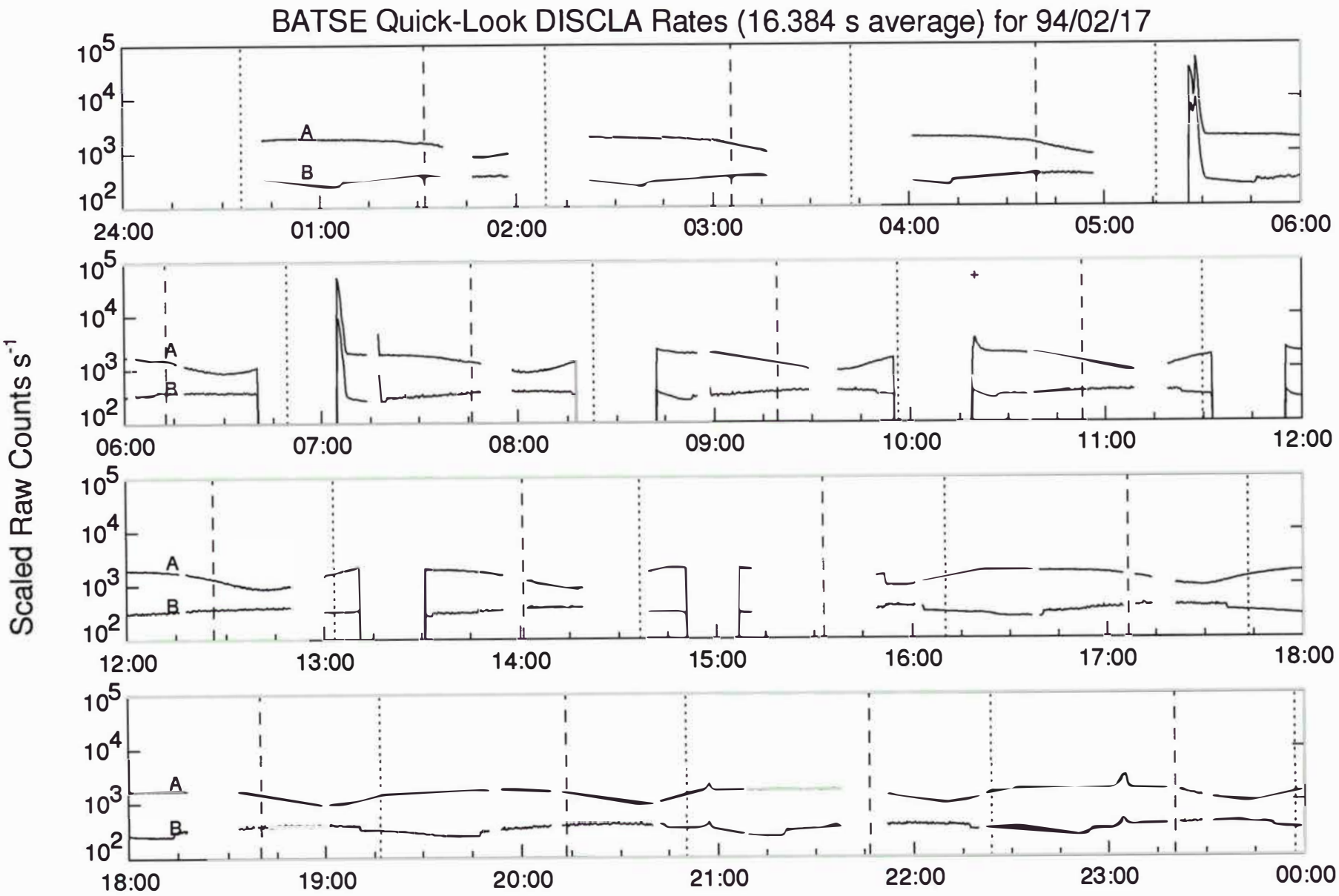
From root Mon Feb 21 05:16 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA03155; Mon, 21 Feb 94 05:15:53
Received: from xray (xray.astro.isas.ac.jp) by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA15639; Mon, 21 Feb 1994 04:19:05 +0800
Received: by xray (5.57/TISN-1.3M/R2)
        id AA03568; Mon, 21 Feb 94 21:22:33 +0900
Received: by inazuma.astro.isas.ac.jp (4.1/TISN-1.3M/R2)
        id AA12684; Mon, 21 Feb 94 21:17:15 JST
Date: Mon, 21 Feb 94 21:17:15 JST
From: Yasuo Tanaka <tanaka@astro.isas.ac.jp>
Message-Id: <9402211217.AA12684@inazuma.astro.isas.ac.jp>
To: khurley@sunspot.ssl.berkeley.edu
Subject: burst
Content-Length: 405
Status: R

Dear Kevin,

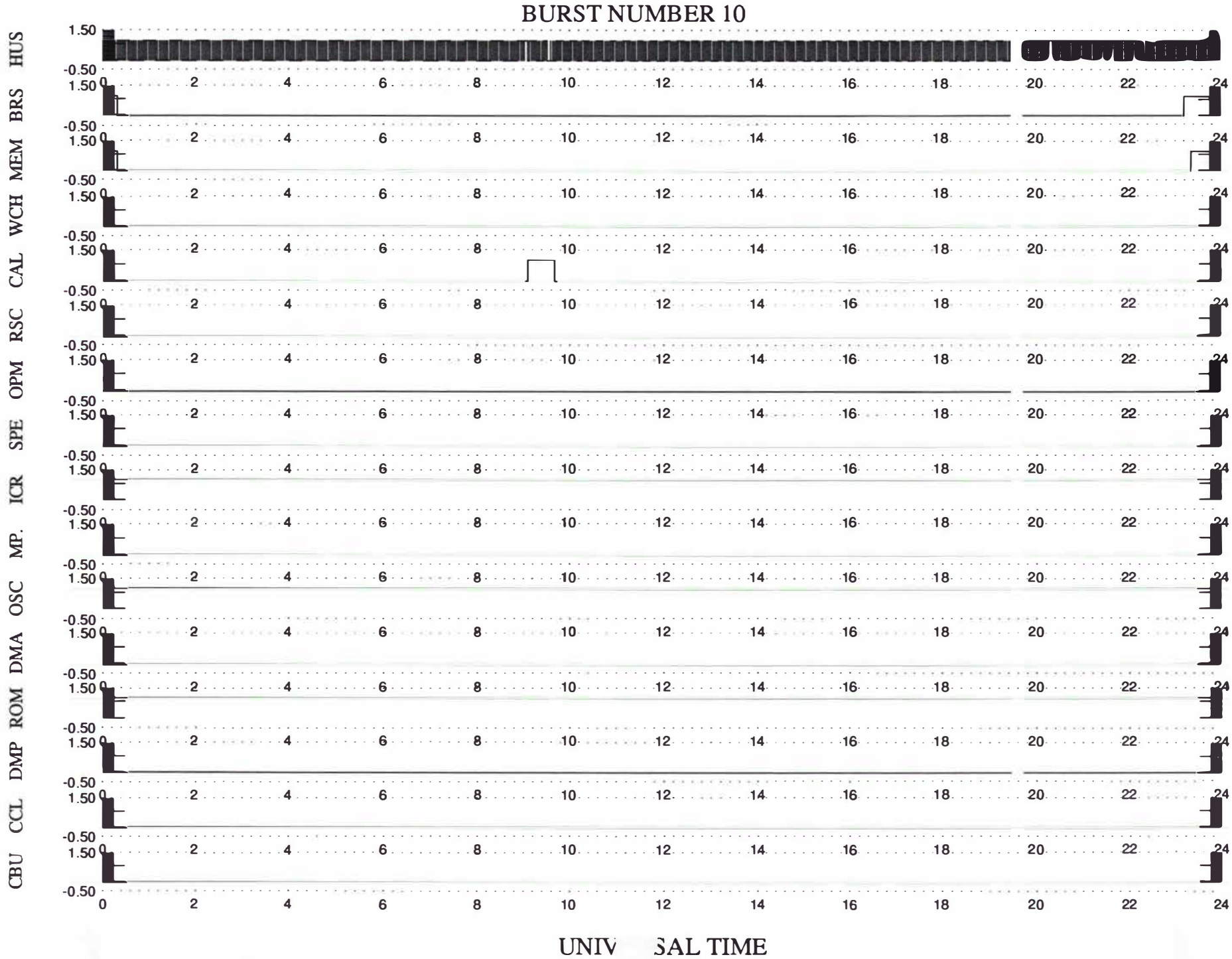
Thank you for your information on an exceptionally intense gamma-ray burst.
It is very exciting, and we have investigated feasibility of a TOO observation.
However, the present sun angle is just outside the allowable limit, and it
goes worse with time. We shall consider a later observation when the sun angle
has become acceptable.

Looking forward to seeing you soon. Yasuo


GOES
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/17, 0000:01
Plot created: 94/02/25, 2214
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

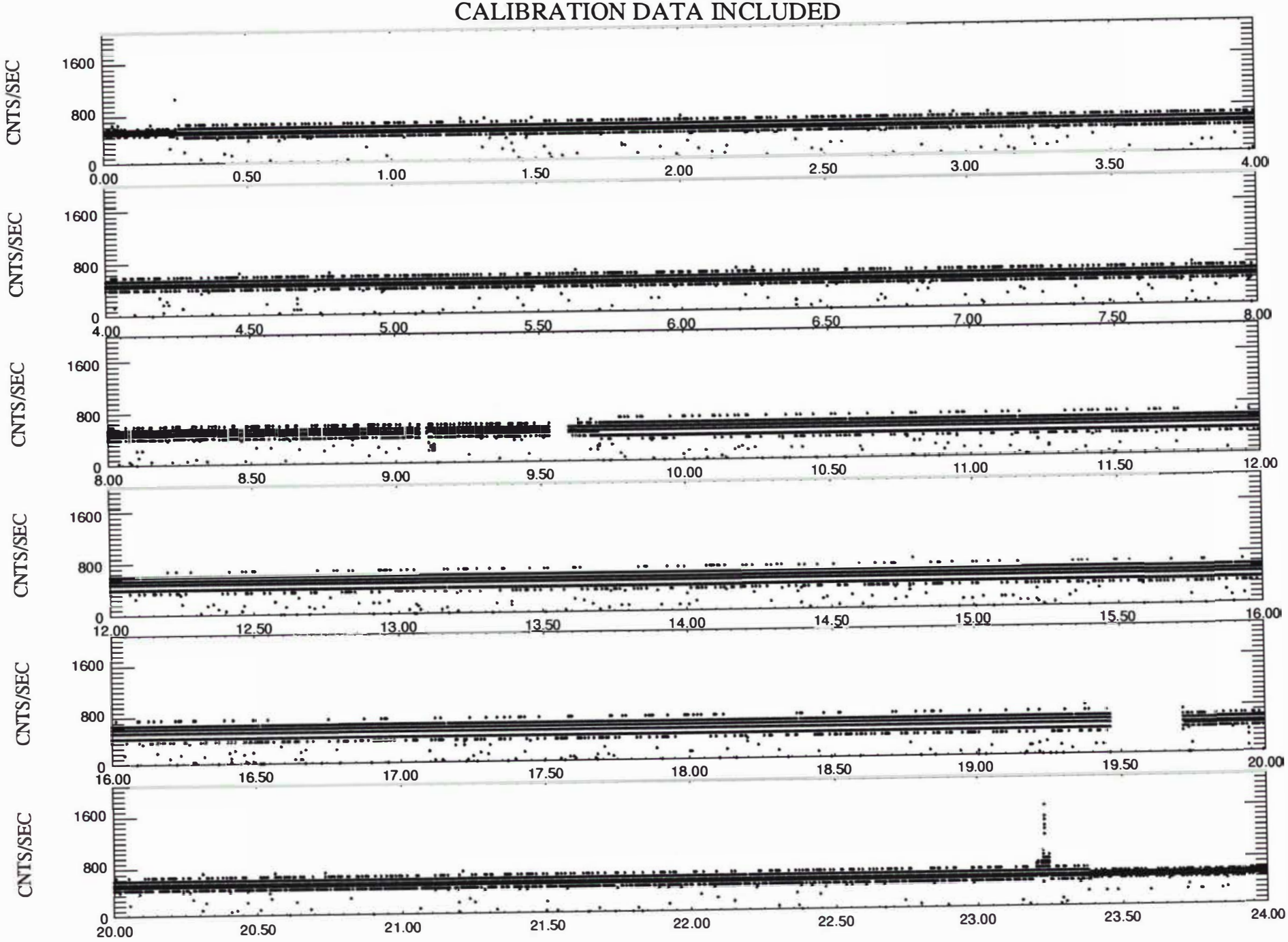

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/17
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/02/25, 2207 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 48, year 1994 to day 48, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 48, year 1994 to day 48, year 1994 5/26/94

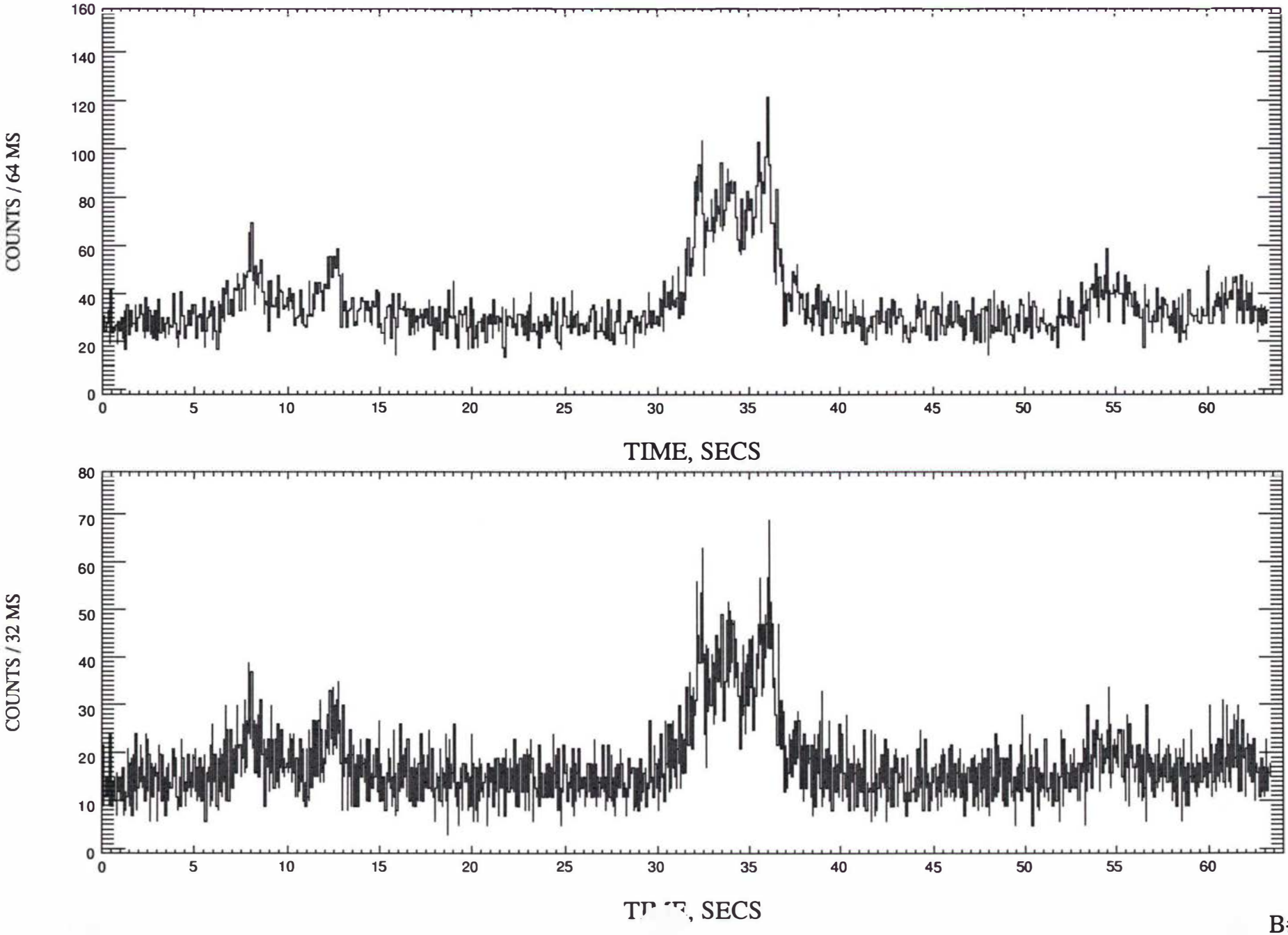
CALIBRATION DATA INCLUDED



UNIV SAL TIME

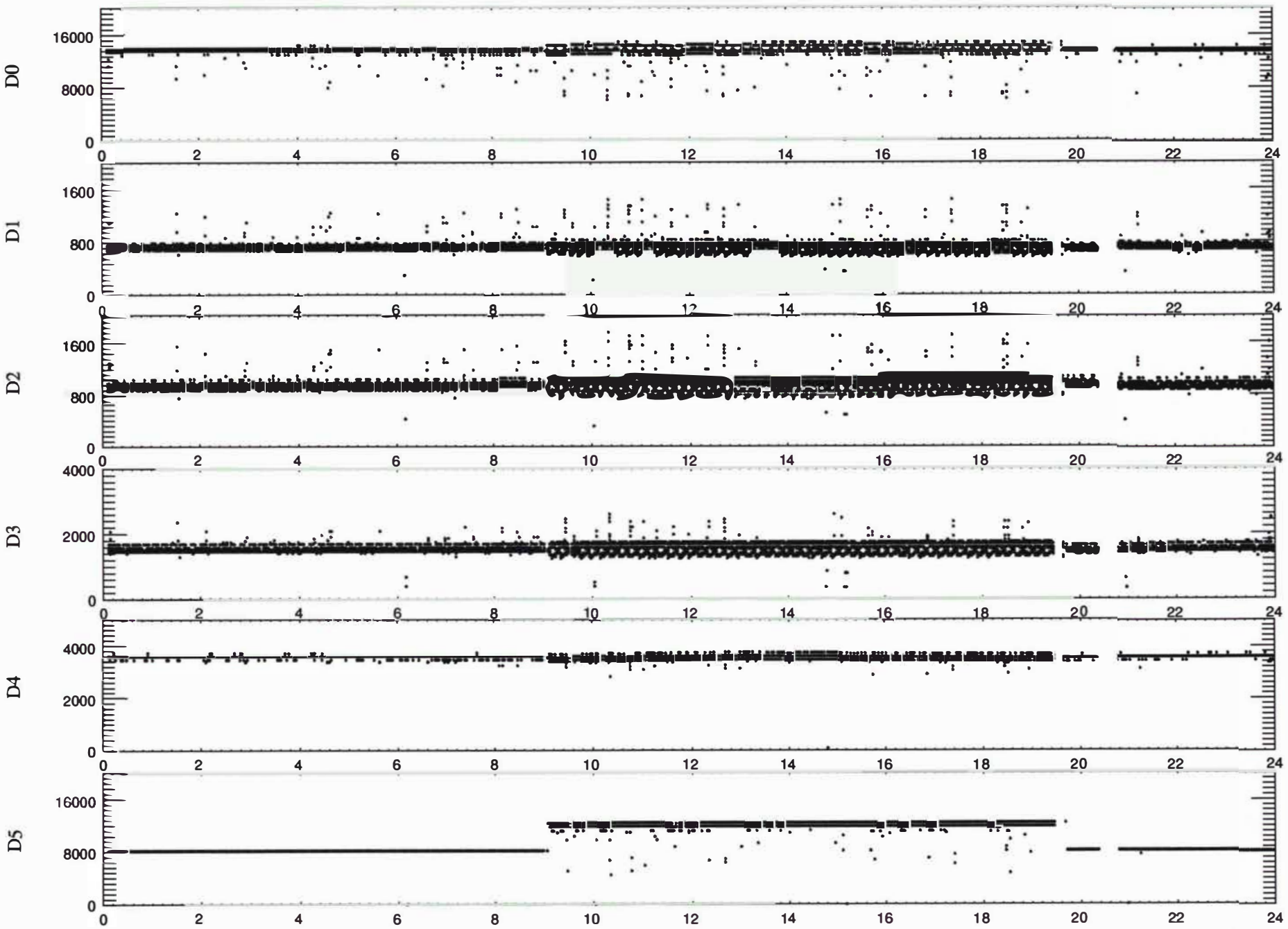
HUS 2A TRIGGERED DATA EDR day 48, year 1994 5/26/94

Burst Counter 10 at UT=23.217442762587 h=83582.794 s 23:13:02.794



B# 1

HUS 2B COUNTS / SEC QEDR day 48, year 1994 to day 48, year 1994 2/18/94



From ZMYEWSKI@ssl.msfc.nasa.gov Sat Feb 19 08:54 PST 1994
Date: Sat, 19 Feb 1994 10:58:51 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2832
Content-Type: text
Content-Length: 1135

Not in 3B cat

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

 BATSE BURST #     2832
 EVENT OF 1994 FEB 18 DAY OF YEAR= 49
 EVENT CROSSING TIME AT BATSE      : 35281. S. OR 09:48:01.0
 COORDINATES ARE    0.000    0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION:   82.000    20.000
 BATSE PEAK COUNTING RATE:    4500     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 18/ 2/  94 IS:
 RA=  148.035 DEC=  -51.749 DIST=     3.034 AU
 BATSE-ULYSSES DISTANCE =  453895448. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.15 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=   48.89 SECS.
 CROSSING TIME AT ULYSSES     IS 35330. S. OR   09:48:49 +/-  313.47 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 18/ 2/  94 IS:
 RA=  319.076 DEC=  -16.985 DIST=     2.342 AU
 MARS-BATSE DISTANCE =  350392608. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.96 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  687.69 SECS.
 CROSSING TIME AT MARS        IS 35969. S. OR   09:59:28 +/-  174.52 SECONDS
```

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2832	940218	9401	35281	4500	082	+20

BATSE BURST TRIGGER

NO.: 02833

TIME: TJD=9401 SECONDS=70348

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=57.7 AZIMUTH=042.3 ERROR= DEGREES

COMMENTS:
GRB LASTING APPROX. 10 SECONDS. QUITE VISIBLE ABOVE 300KEV.

Batse # 2832

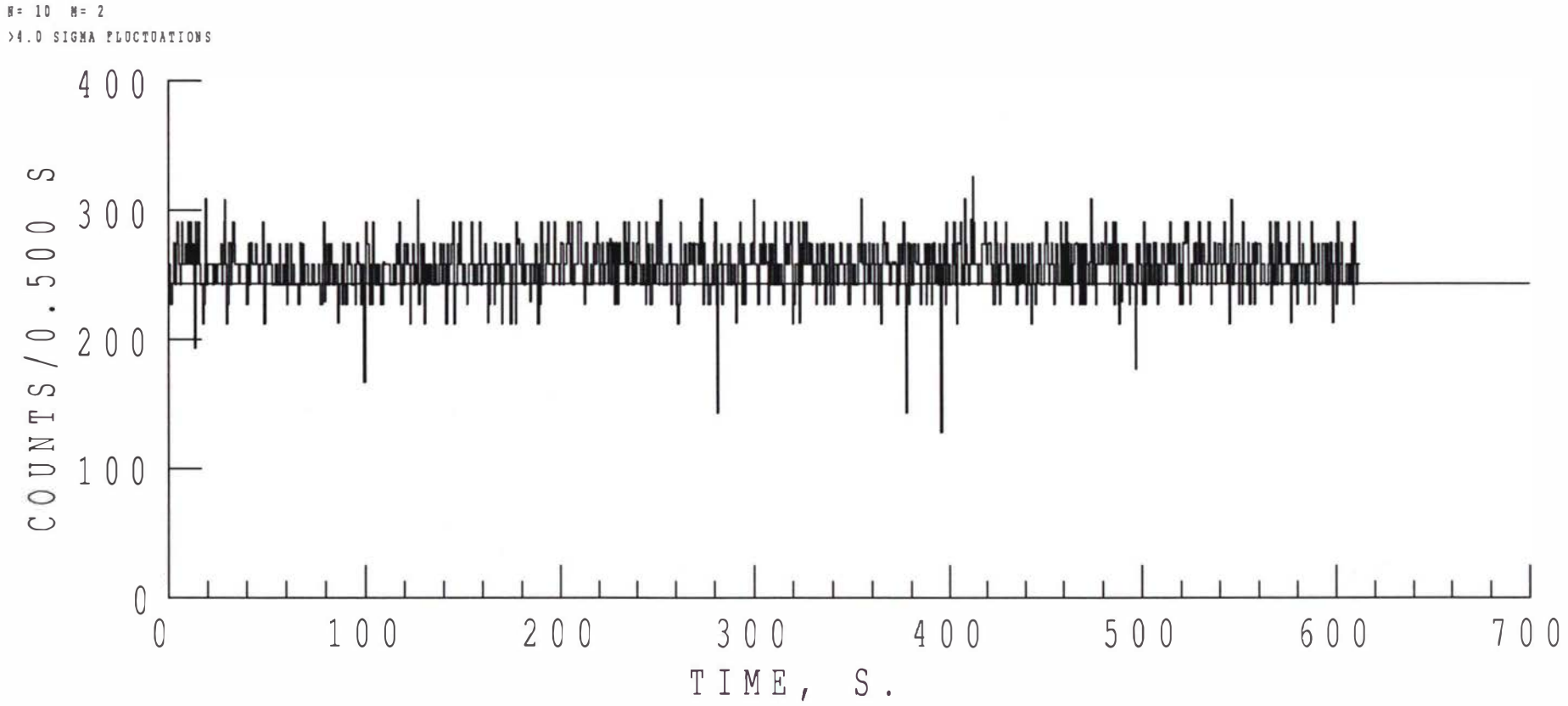
22/ 2/94

ULYSSES RT

18/ 2/94 35028.020 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV



From ZMYEWSKI@ssl.msfc.nasa.gov Sat Feb 19 08:58 PST 1994
Date: Sat, 19 Feb 1994 11:02:33 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2833
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #    2833
 EVENT OF 1994 FEB 18 DAY OF YEAR= 49
 EVENT CROSSING TIME AT BATSE     : 70348. S. OR 19:32:28.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 349.000  -22.000
 BATSE PEAK COUNTING RATE:  31500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 18/ 2/  94 IS:
 RA=  147.809 DEC=  -51.786 DIST=    3.031 AU
 BATSE-ULYSSES DISTANCE =  453384369. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.09 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  363.64 SECS.
 CROSSING TIME AT ULYSSES    IS 70712. S. OR   19:38:31 +/-  310.38 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 18/ 2/  94 IS:
 RA=  319.076 DEC=  -16.985 DIST=    2.342 AU
 MARS-BATSE DISTANCE =  350392608. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=151.40 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1026.15 SECS.
 CROSSING TIME AT MARS       IS 69322. S. OR   19:15:21 +/-   81.56 SECONDS
```



From ZMYEWSKI@ssl.msfc.nasa.gov Sat Feb 19 08:58 PST 1994
Date: Sat, 19 Feb 1994 11:02:13 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Cc: ZMYEWSKI@ssl.msfc.nasa.gov
Subject: BATSE Burst 2833
Content-Type: text
Content-Length: 108

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2833	940218	9401	70348	31500	349	-22

Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☐ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

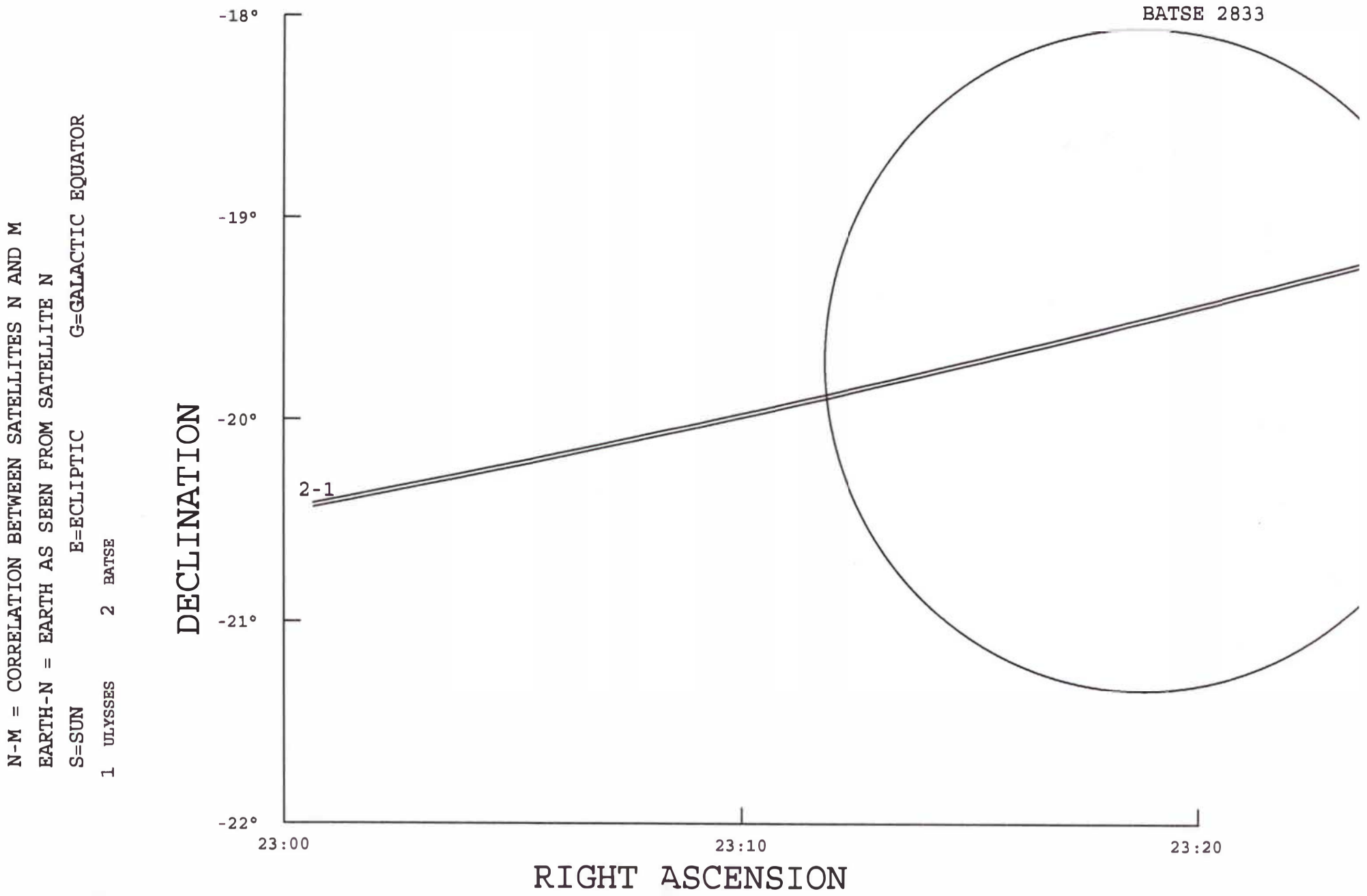
☐ 2000 coordinates used?

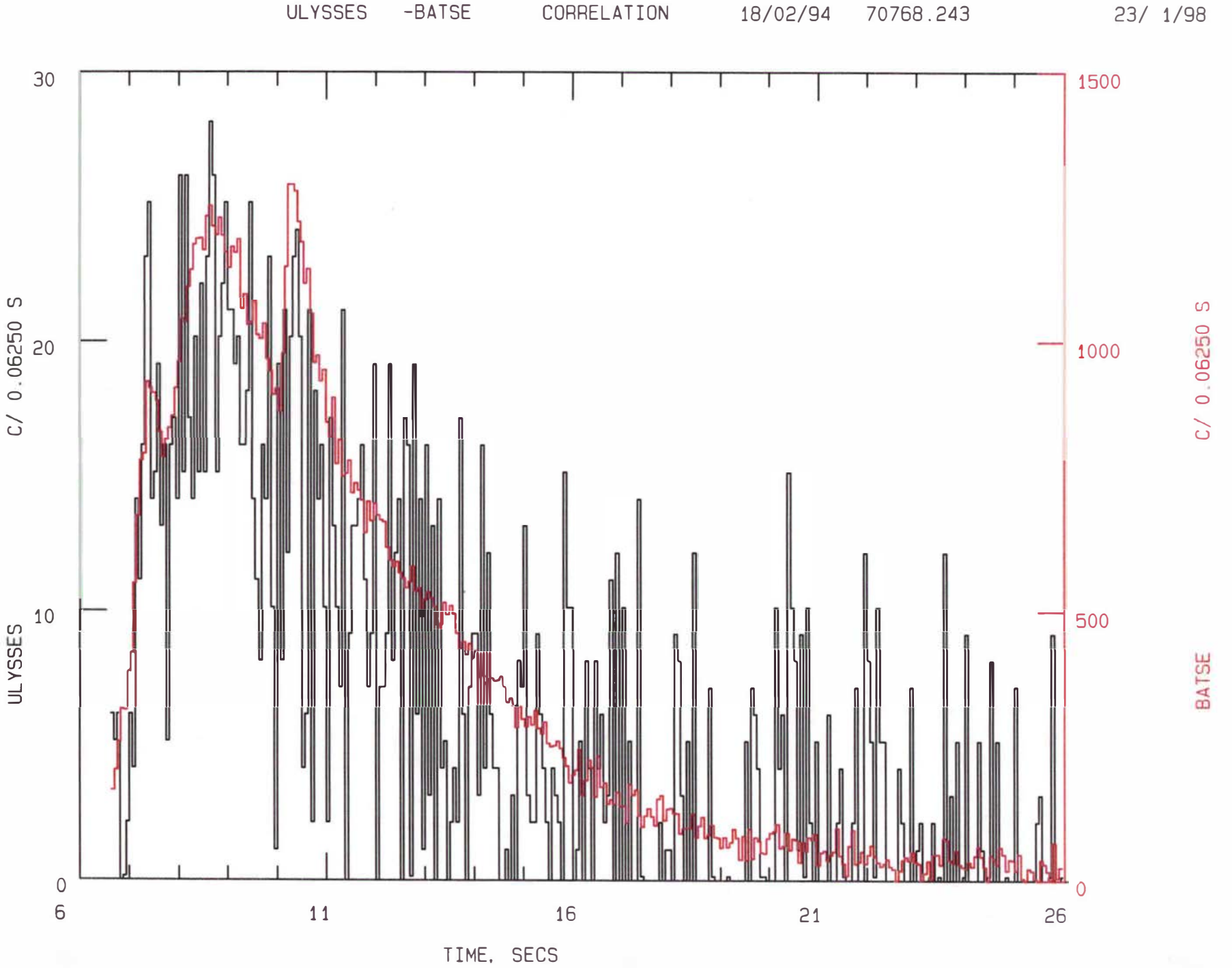
☐ Geocentric time used?

☑ ACCESS database updated?

EVENT OF FEB 18, 1994 19:39

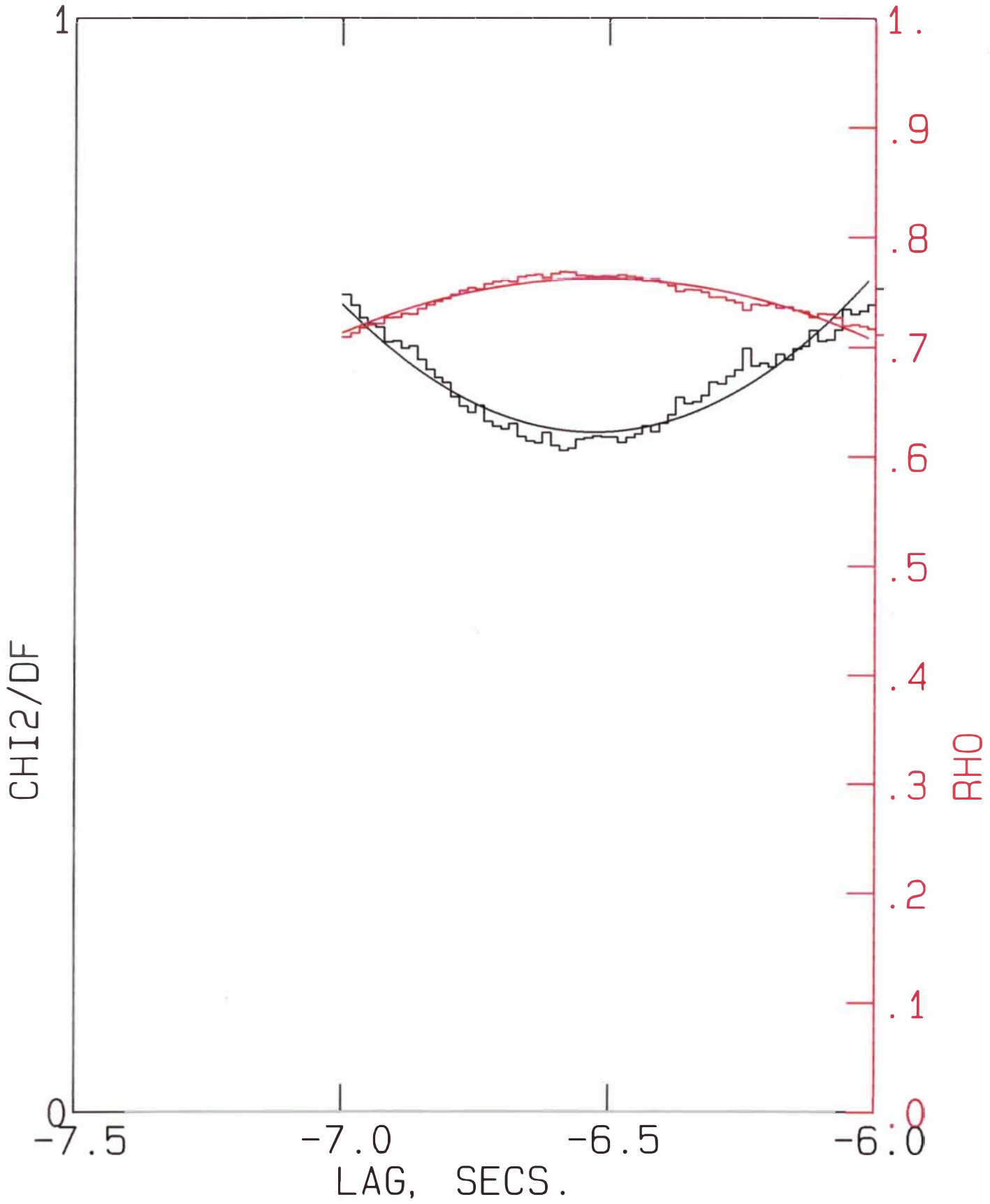
23/ 1/98

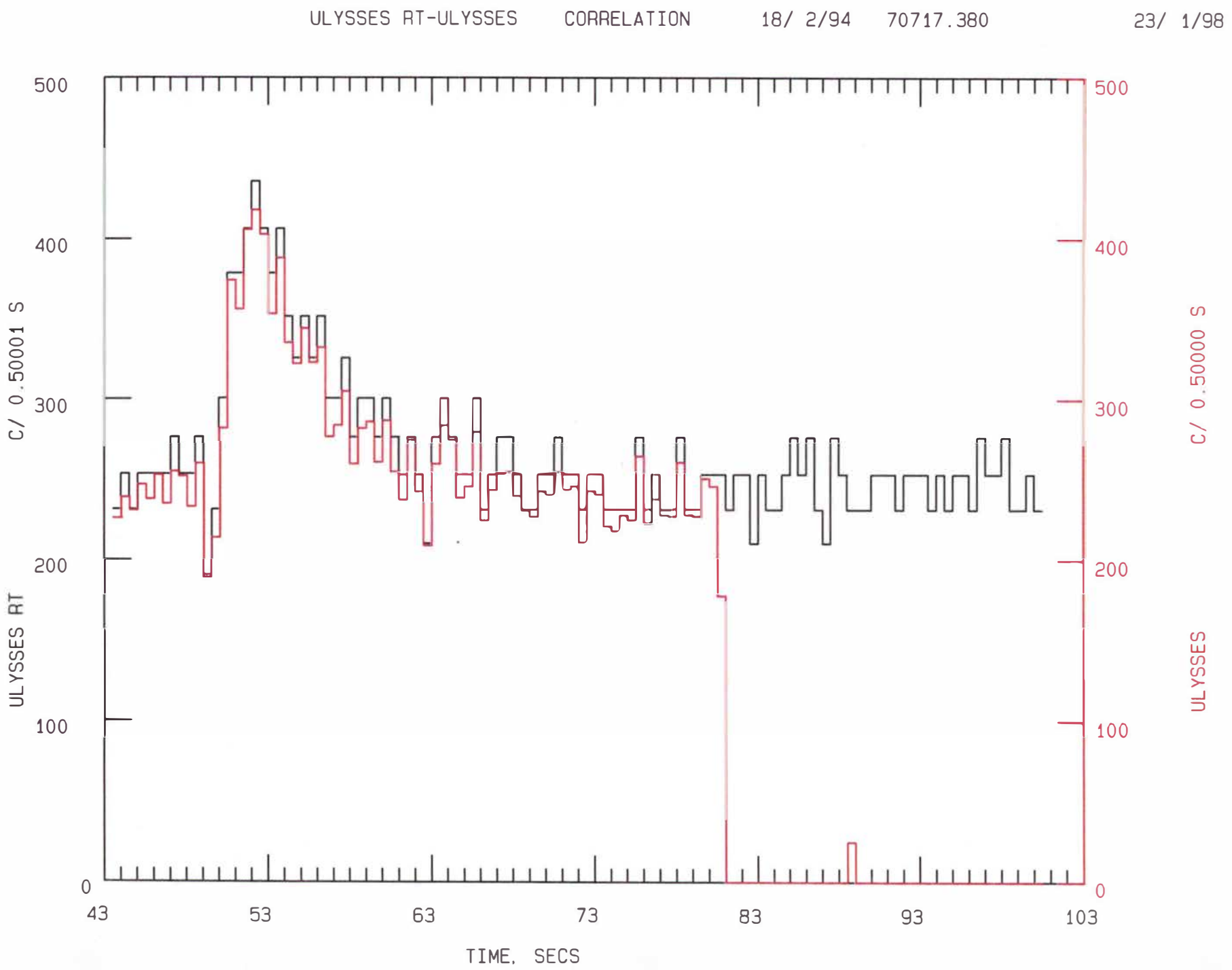



ULYSSES -BATSE CORRELATION 18/02/94 70768.243 23/ 1/98
30
20
10
0
6
11
16
21
26
1500
1000
500
0
C/ 0.06250 S
ULYSSES
C/ 0.06250 S
BATSE
TIME, SECS

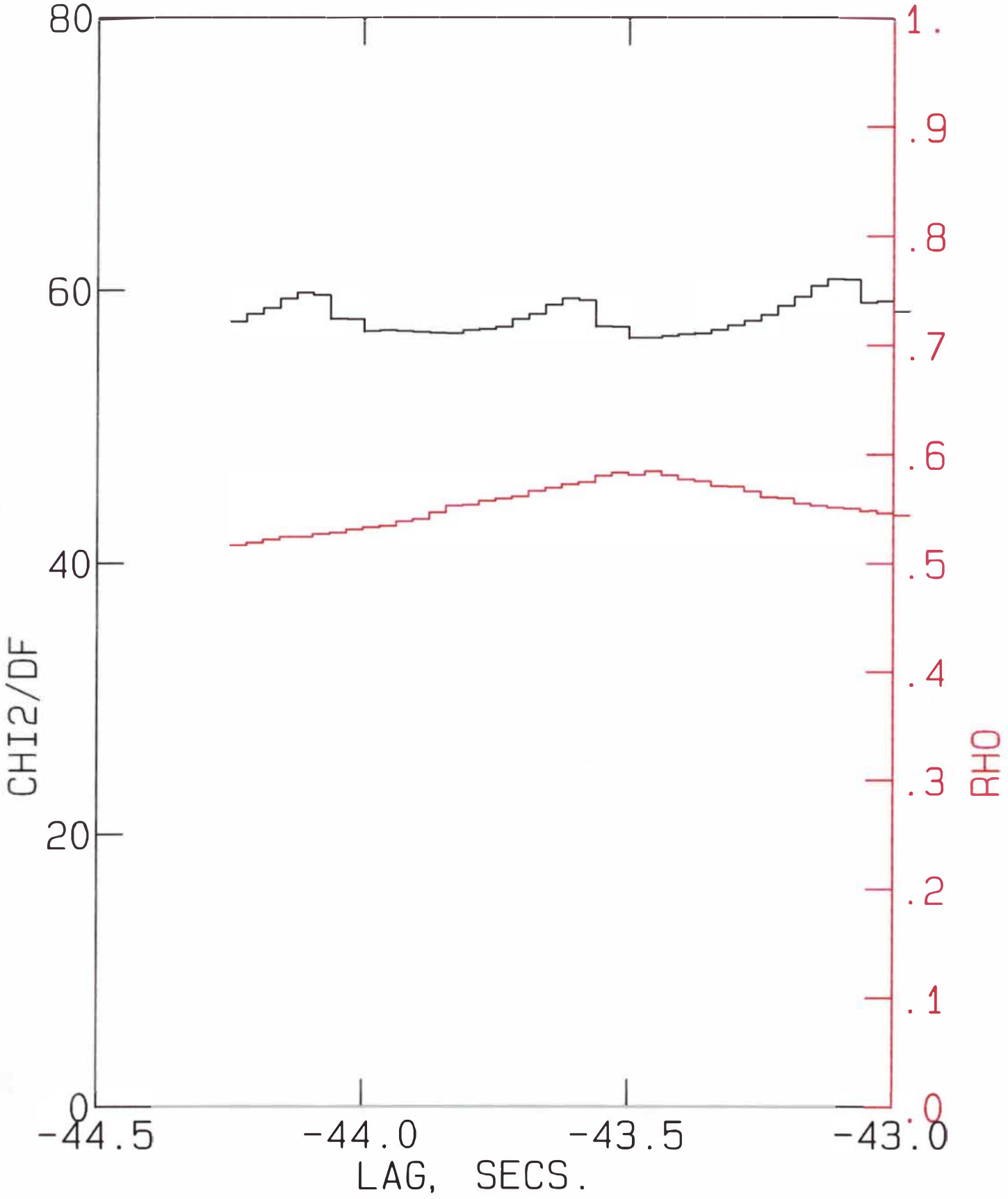
23/ 1/98

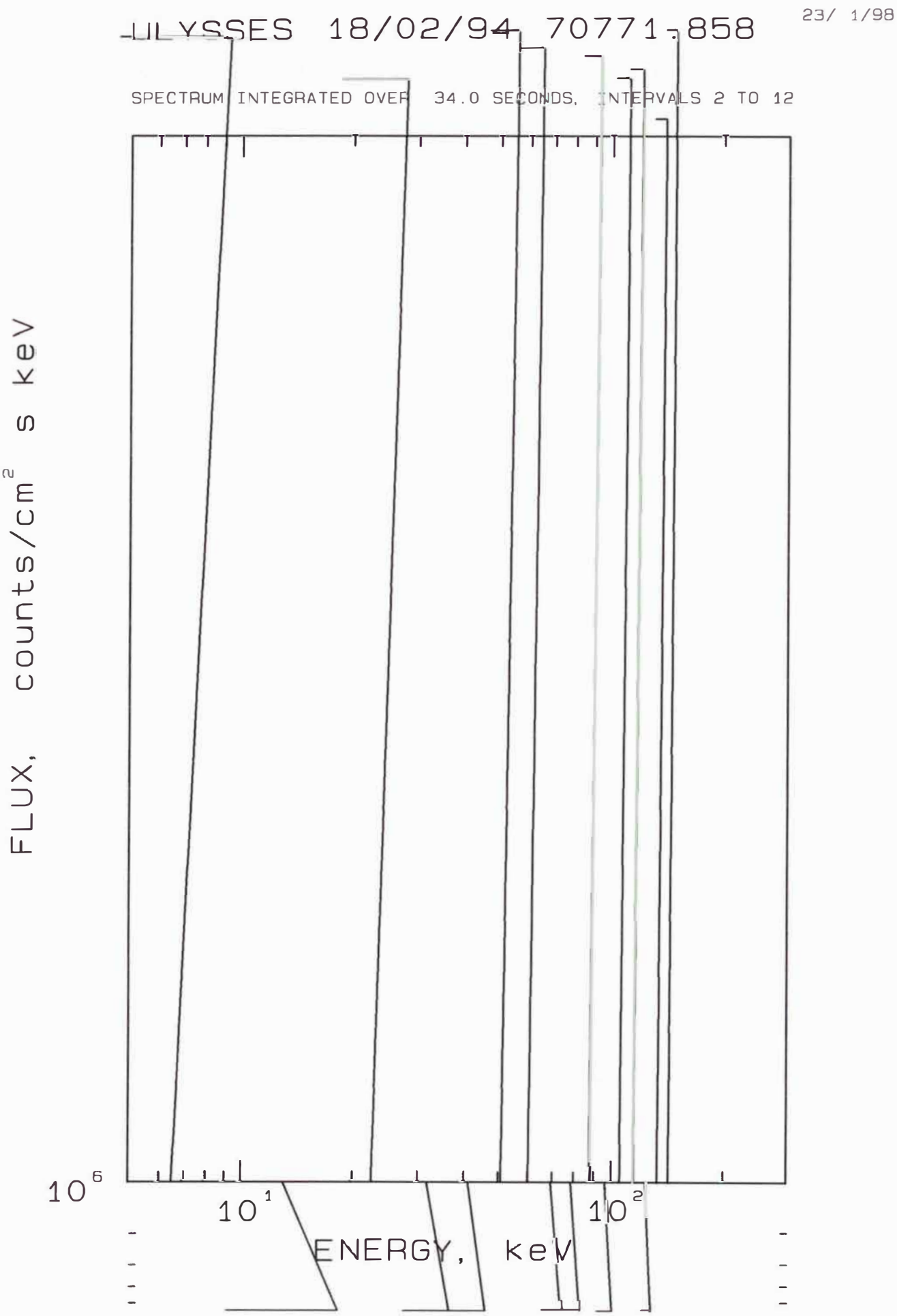
ULYSSES -BATSE CORRELATION 18/02/94 70768.243

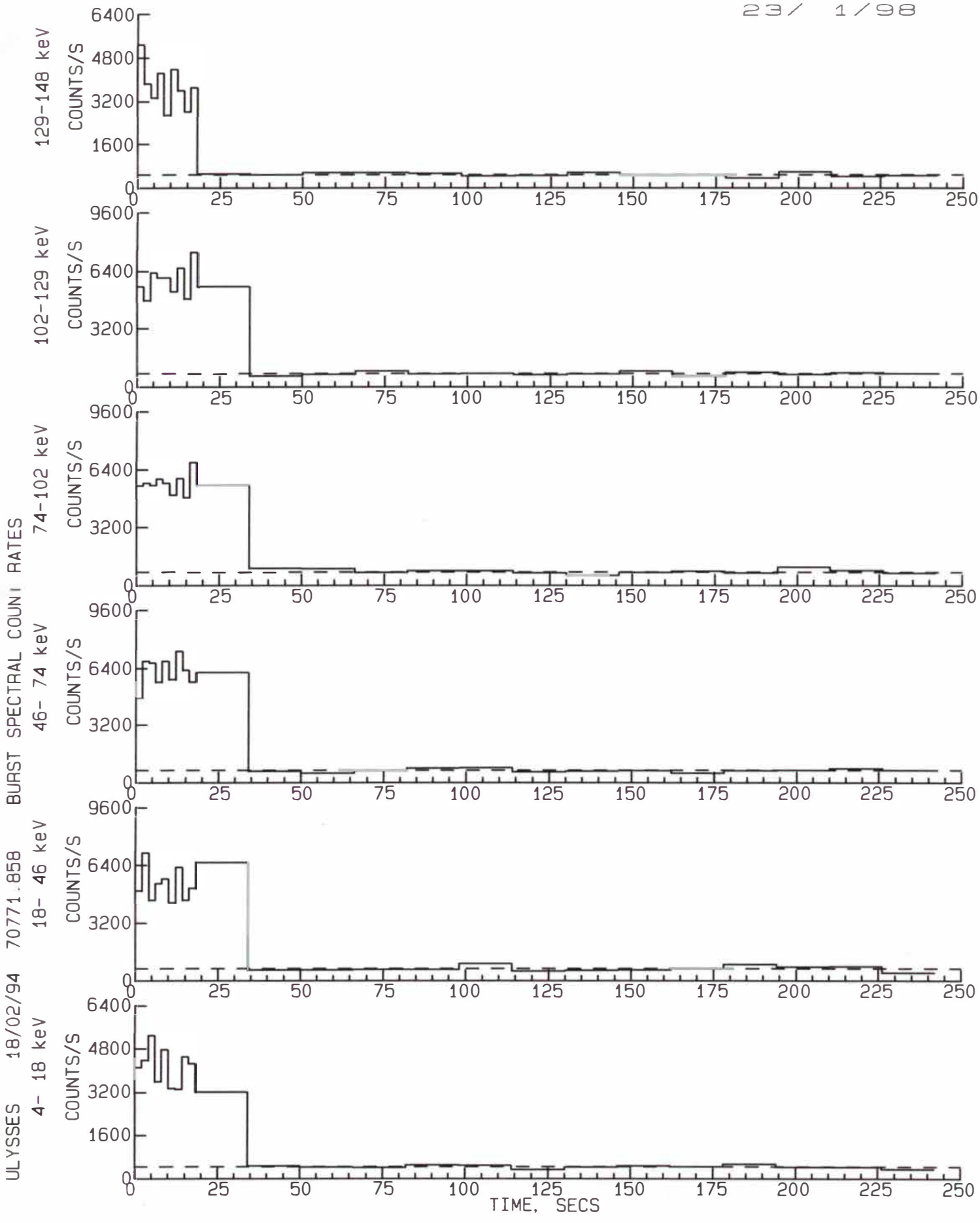


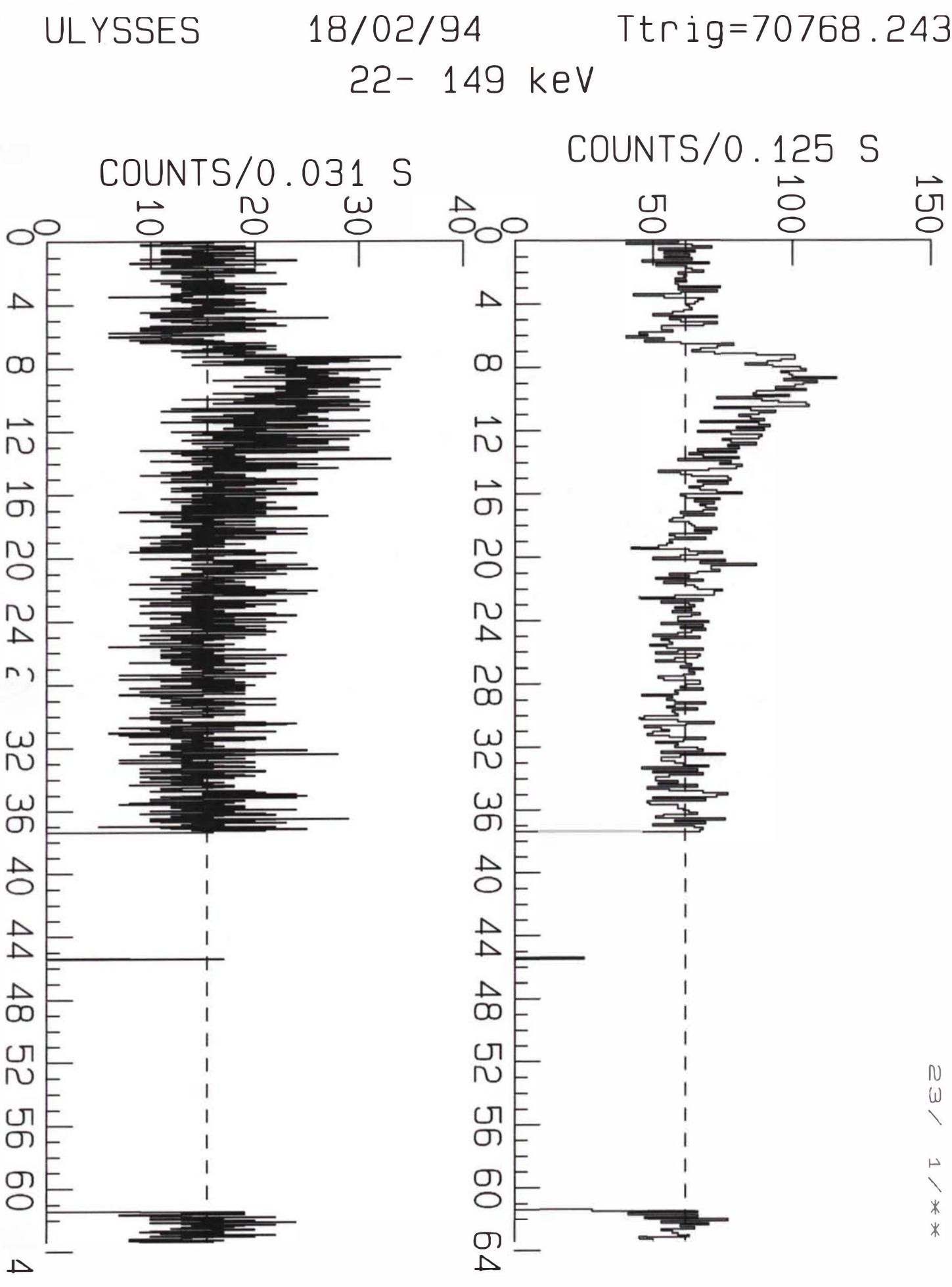

ULYSSES RT-ULYSSES CORRELATION 18/ 2/94 70717.380 23/ 1/98
500
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
C/ 0.50000 S
ULYSSES
43
53
63
73
83
93
103
TIME, SECS

ULYSSES RT-ULYSSES CORRELATION 18/ 2/94 70717.380




ULYSSES 18/02/94 70771.858
23/ 1/98
SPECTRUM INTEGRATED OVER 34.0 SECONDS, INTERVALS 2 TO 12
FLUX, counts/cm² s keV
10⁶
10¹
10²
ENERGY, keV


23/ 1/98
ULYSSES 18/02/94 70771.858 BURST SPECTRAL COUNT RATES
129-148 keV
102-129 keV
74-102 keV
46- 74 keV
18- 46 keV
4- 18 keV
COUNTS/S
6400
4800
3200
1600
9600
0
25
50
75
100
125
150
175
200
225
250
TIME, SECS

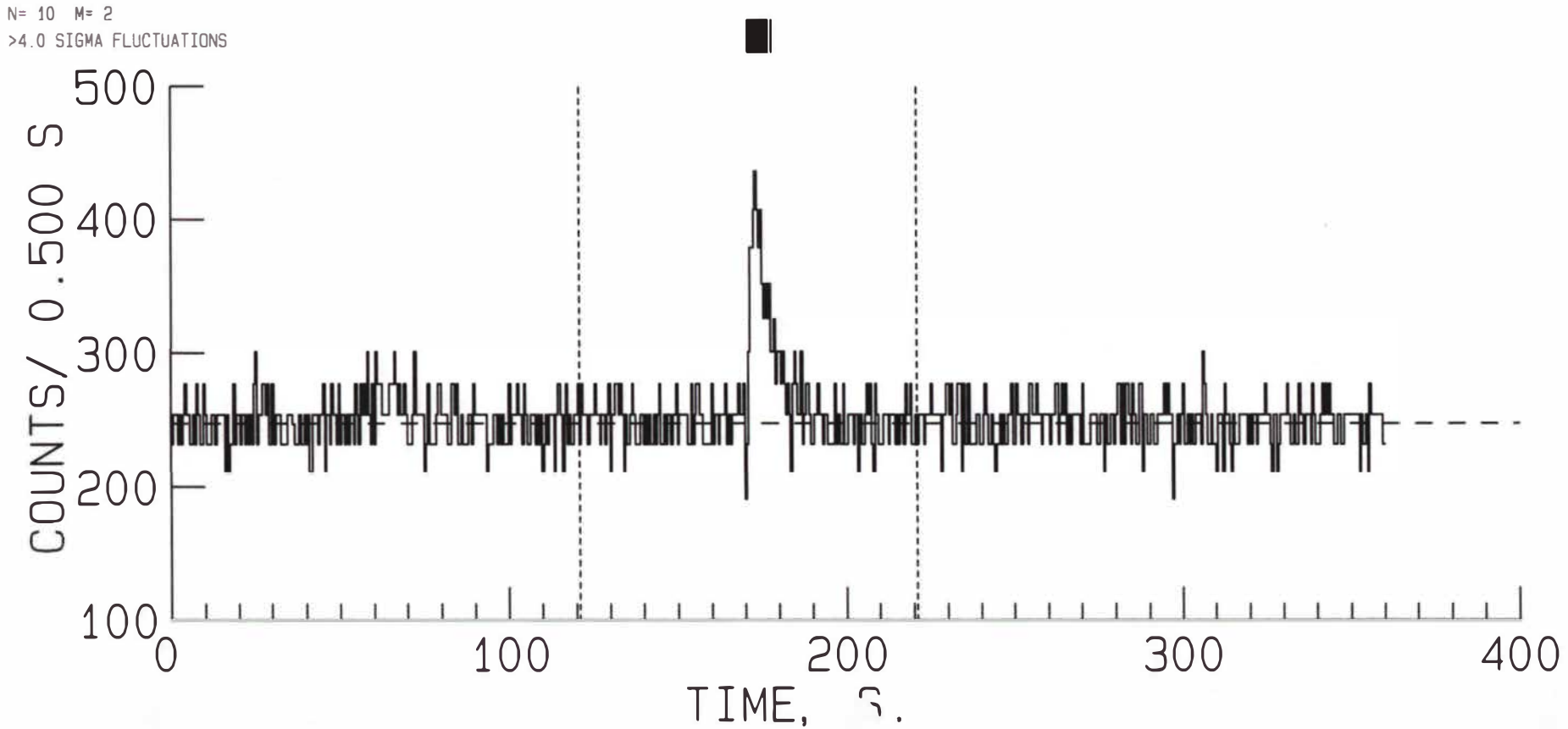

ULYSSES 18/02/94 Ttrig=70768.243
22- 149 keV
COUNTS/0.031 S
COUNTS/0.125 S
23/ 1/**

ULYSSES RT

23/ 1/98

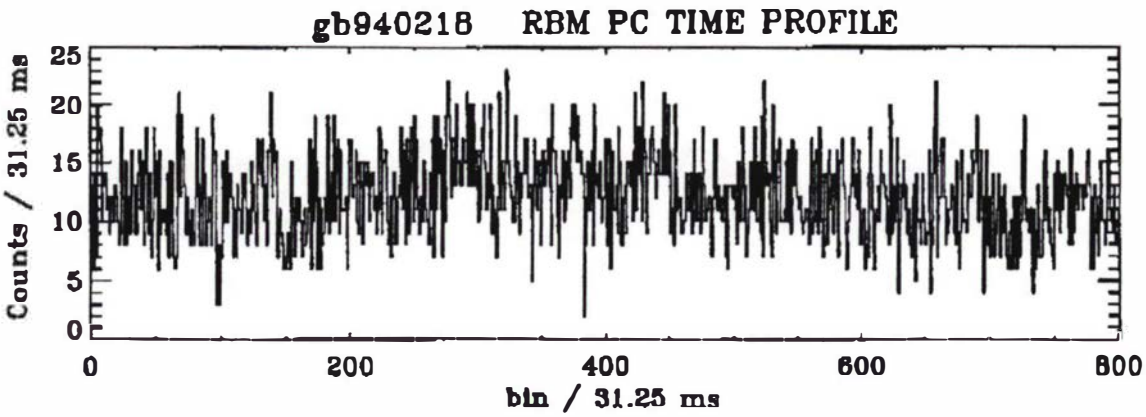
18/ 2/94 70596.321 s

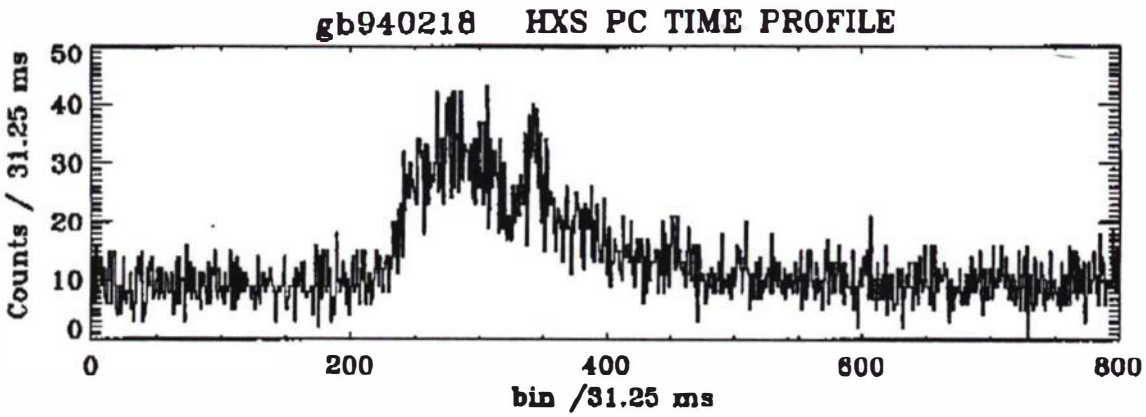
22- 149 keV



16/19

Yoshida





From root Wed Nov 30 03:00 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA07664; Wed, 30 Nov 94 03:00:48
eived: from ax252.rikkyo.ac.jp by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA11098; Wed, 30 Nov 1994 02:59:29 +0800
Received: by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-MX9407011)
        id AA22039; Wed, 30 Nov 94 19:59:42 JST
Received: from ax251.rikkyo.ac.jp by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-M
        id AA22032; Wed, 30 Nov 94 19:59:27 JST
Received: by ax251.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-NoMX940525)
        id AA18391; Wed, 30 Nov 94 19:59:27 JST
Date: Wed, 30 Nov 94 19:59:27 JST
From: M. Yoshimori <yosimori@rikkyo.ac.jp>
Return-Path: <yosimori@rikkyo.ac.jp>
Message-Id: <9411301059.AA18391@ax251.rikkyo.ac.jp>
To: khurley@space6.ssl.berkeley.edu
Cc: suga@flare2.solar.isas.ac.jp, morimoto@flare2.solar.isas.ac.jp
Subject: Yohkoh GBD events
Content-Length: 362
Status: R

Dear Dr.Hurley,

Yohkoh observed the following four events.

1. 1994 Feb.06 00:08:37 UT
2. 1994 Feb.18 19:32:28 UT
3. 1994 Mar.02 05:08:31 UT
   1994 Jul.03 04:40:46 UT

We like to know the locations of the following three events,
1. 1994 Feb.06 00:08:37 UT ✓
2. 1994 Feb.18 19:32:28 UT ✓
3. 1994 Mar.02 05:08:31 UT (rough location only) ✓

Thank you.

Regards,

M.Yoshimori

From root Fri Dec 2 01:06 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA08685; Fri, 2 Dec 94 01:06:01
Received: from ax252.rikkyo.ac.jp by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
        id AA01032; Fri, 2 Dec 1994 01:04:42 +0800
Received: by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-MX9407011)
        id AA14094; Fri, 2 Dec 94 18:04:59 JST
Received: from ax251.rikkyo.ac.jp by ax252.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-M
        id AA14087; Fri, 2 Dec 94 18:04:51 JST
Received: by ax251.rikkyo.ac.jp (5.67+1.6W/6.4JAIN-rky-NoMX940525)
        id AA07502; Fri, 2 Dec 94 18:04:50 JST
Date: Fri, 2 Dec 94 18:04:50 JST
From: M. Yoshimori <yosimori@rikkyo.ac.jp>
Return-Path: <yosimori@rikkyo.ac.jp>
Message-Id: <9412020904.AA07502@ax251.rikkyo.ac.jp>
To: khurley@space6.ssl.berkeley.edu
Subject: Burst positions
Cc: suga@flare2.solar.isas.ac.jp
Content-Length: 297
Status: R

Dear Dr.Hurley,

In addition to the previous three events, we found the following
five events:

1992.Oct.04 14:00:21 UT ✓
1992.Dec.07 16:00:48 ✓
1993.Jan.06 15:37:39 ✓
1994.Aug.09 12:00:06 NO POSITION AVAILABLE
1994.Aug.26 20:55:20 ✓

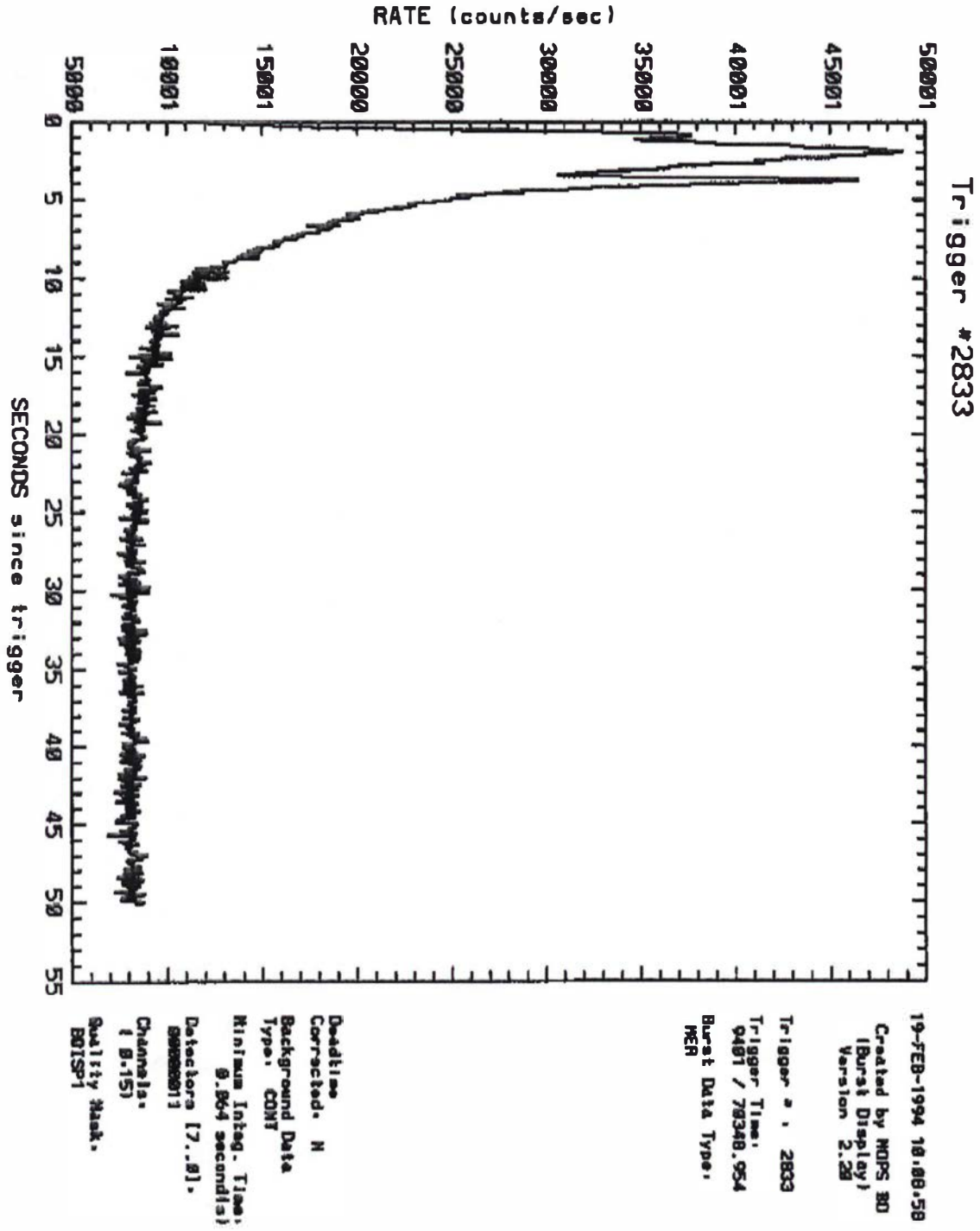
We would appreciate receiving their positions.

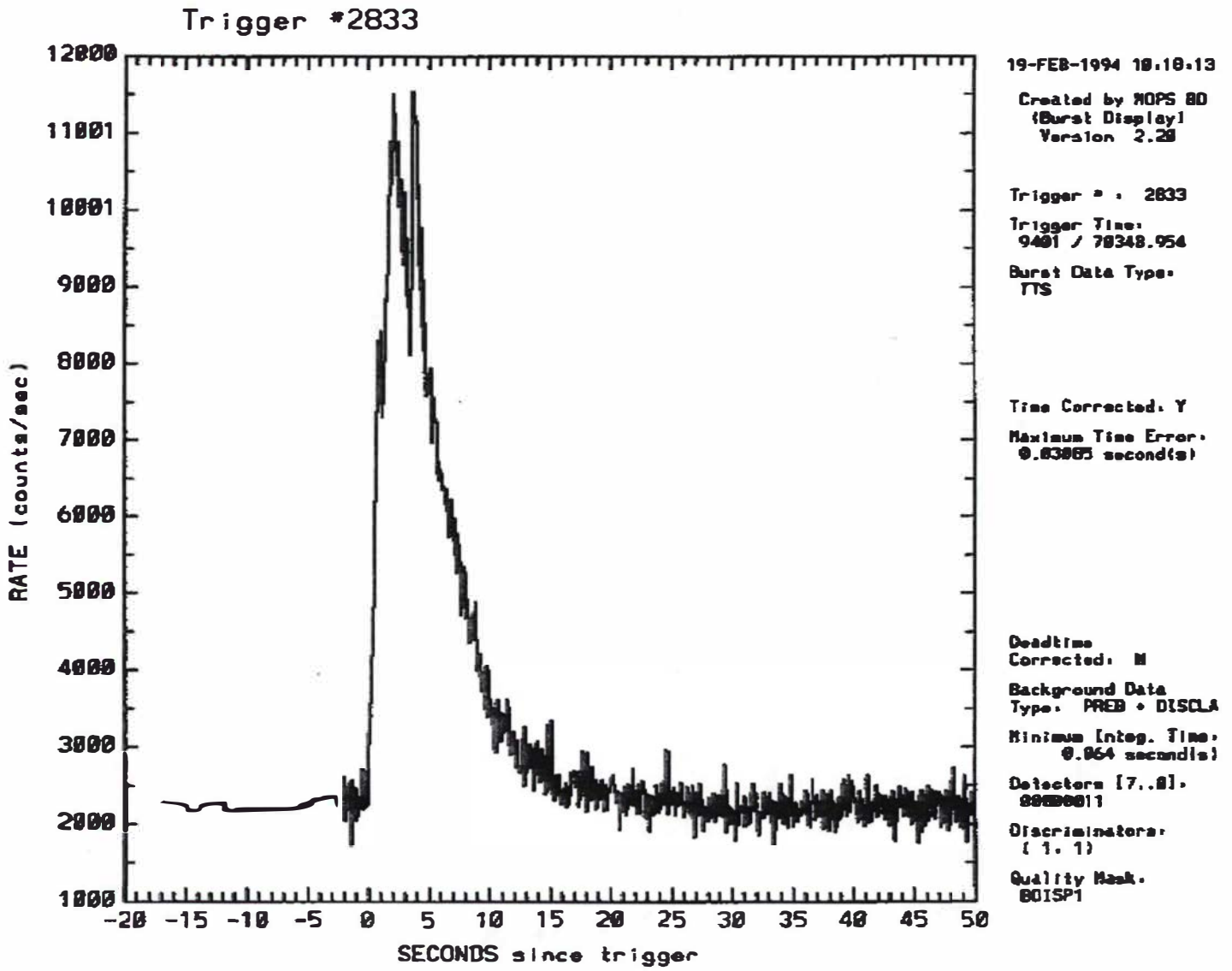
Thank you.

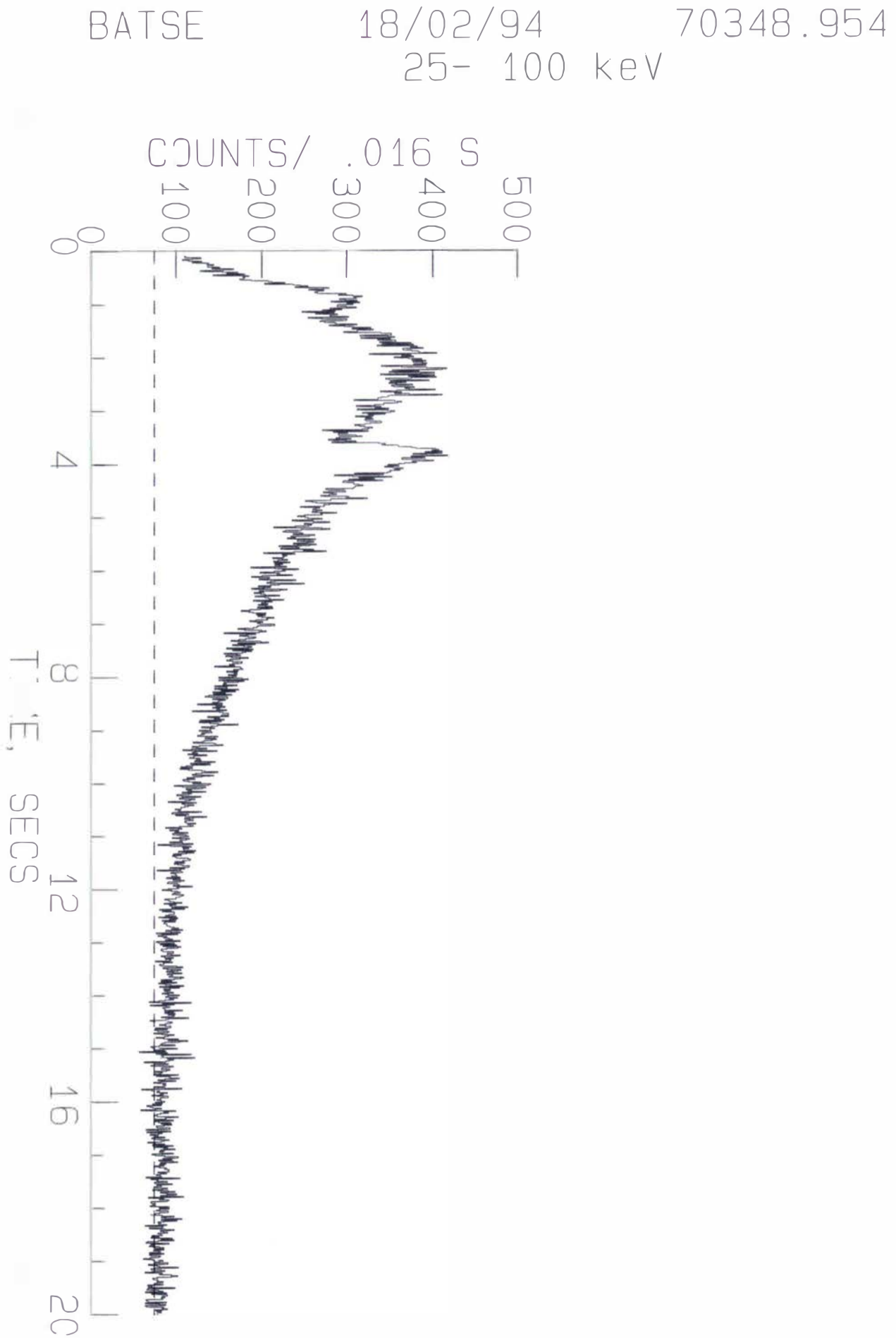
Regards,

M.Yoshimori

© maled Lund, Sweden, Terelchan
F2/23

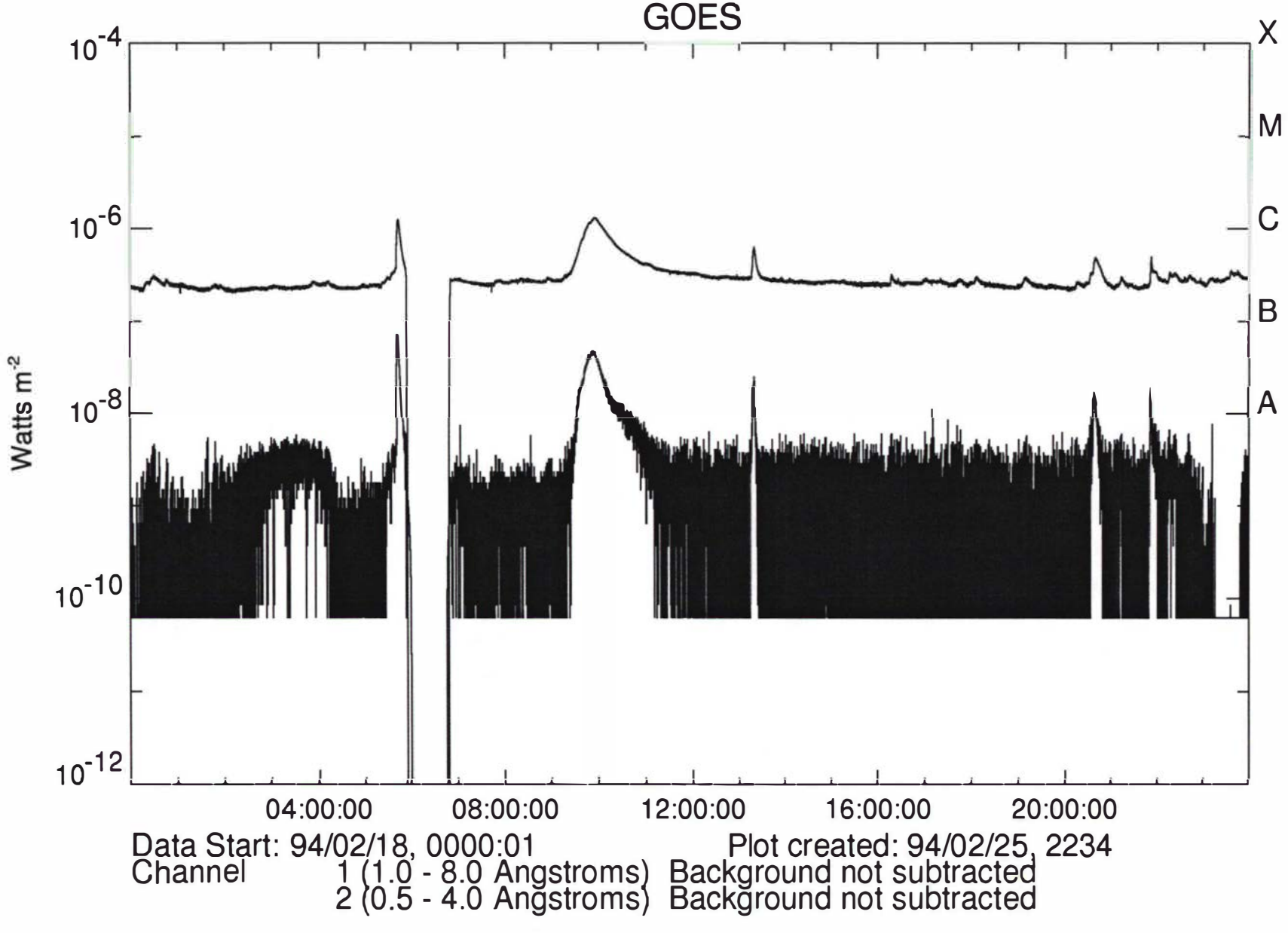

RATE (counts/sec)
50001
45001
40001
35000
30000
25000
20000
15001
10001
5000
0
5
10
15
20
25
30
35
40
45
50
55
SECONDS since trigger
Trigger #2833
19-FEB-1994 10:08:58
Created by MOPS 3D
(Burst Display)
Version 2.28
Trigger # : 2833
Trigger Time:
9481 / 78348.954
Burst Data Type:
MER
Deadtime
Corrected: N
Background Data
Type: CONT
Minimum Integ. Time:
0.064 seconds)
Detectors [7..0]:
00000011
Channels:
(0:15)
Quality Mask:
BATSP1

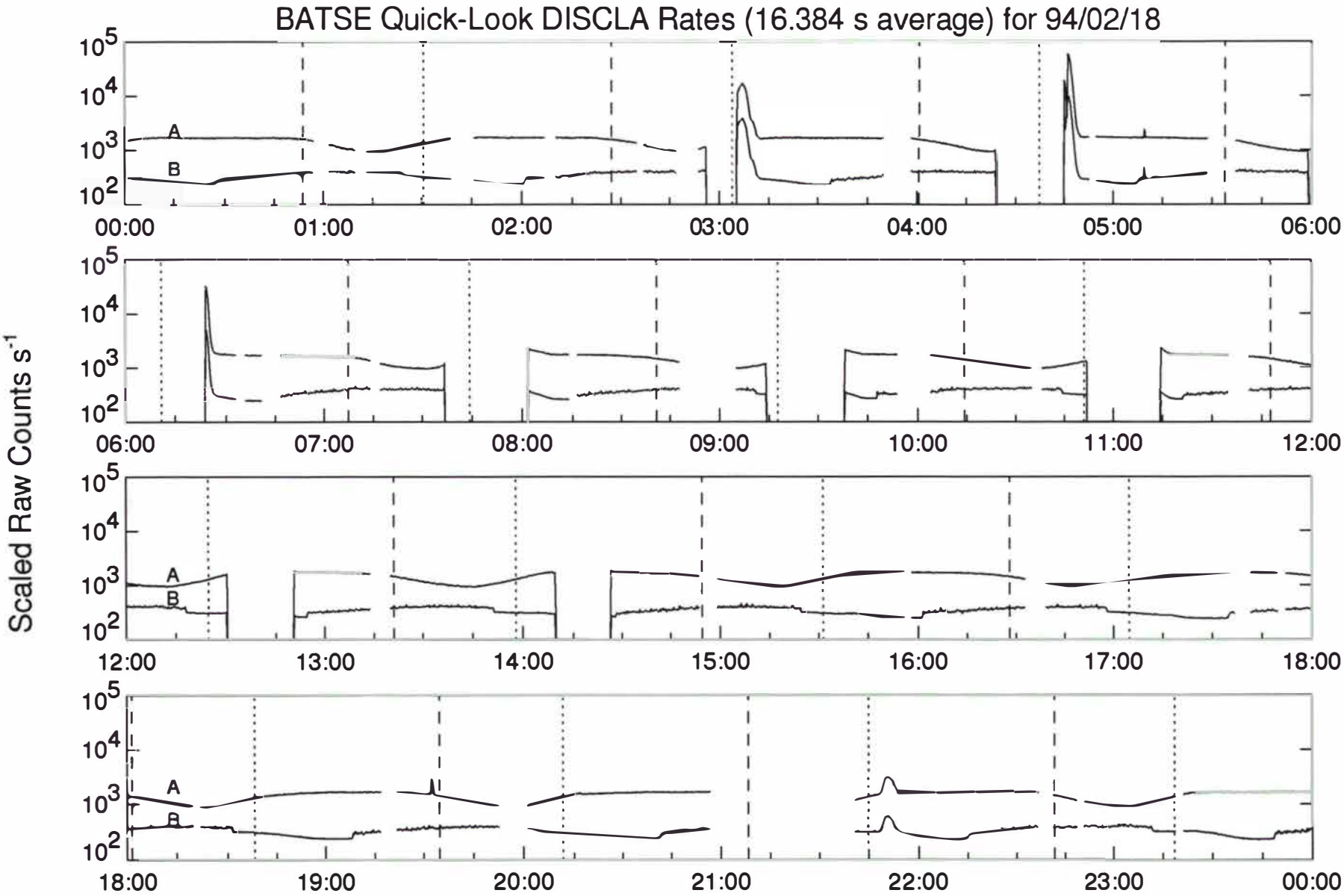

Trigger #2833
RATE (counts/sec)
SECONDS since trigger
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
-20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45 50
19-FEB-1994 10:10:13
Created by MOPS BD
(Burst Display)
Version 2.20
Trigger # : 2833
Trigger Time:
9401 / 70348.954
Burst Data Type:
TTS
Time Corrected: Y
Maximum Time Error:
0.03005 second(s)
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
00000011
Discriminators:
(1, 1)
Quality Mask:
BDISP1


BATSE 18/02/94 70348.954
25- 100 keV
COUNTS/ .016 S
0
100
200
300
400
500
0
4
8
12
16
20
T, E, SECS

From root Fri Feb 25 14:01 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
          id AA04368; Fri, 25 Feb 94 14:01:31
Received: by seti.seti_net (4.1/SMI-4.1)
        id AA24709; Fri, 25 Feb 94 13:07:34 PST
Date: Fri, 25 Feb 94 13:07:34 PST
From: steve@seti (Steve Levin (x4-1917))
Message-Id: <9402252107.AA24709@seti.seti_net>
To: tharriso@NMSU.Edu
Subject: Re: GRB940217_Update
Cc: burster@heag1, khurley@space6.ssl.berkeley.edu
Status: RO

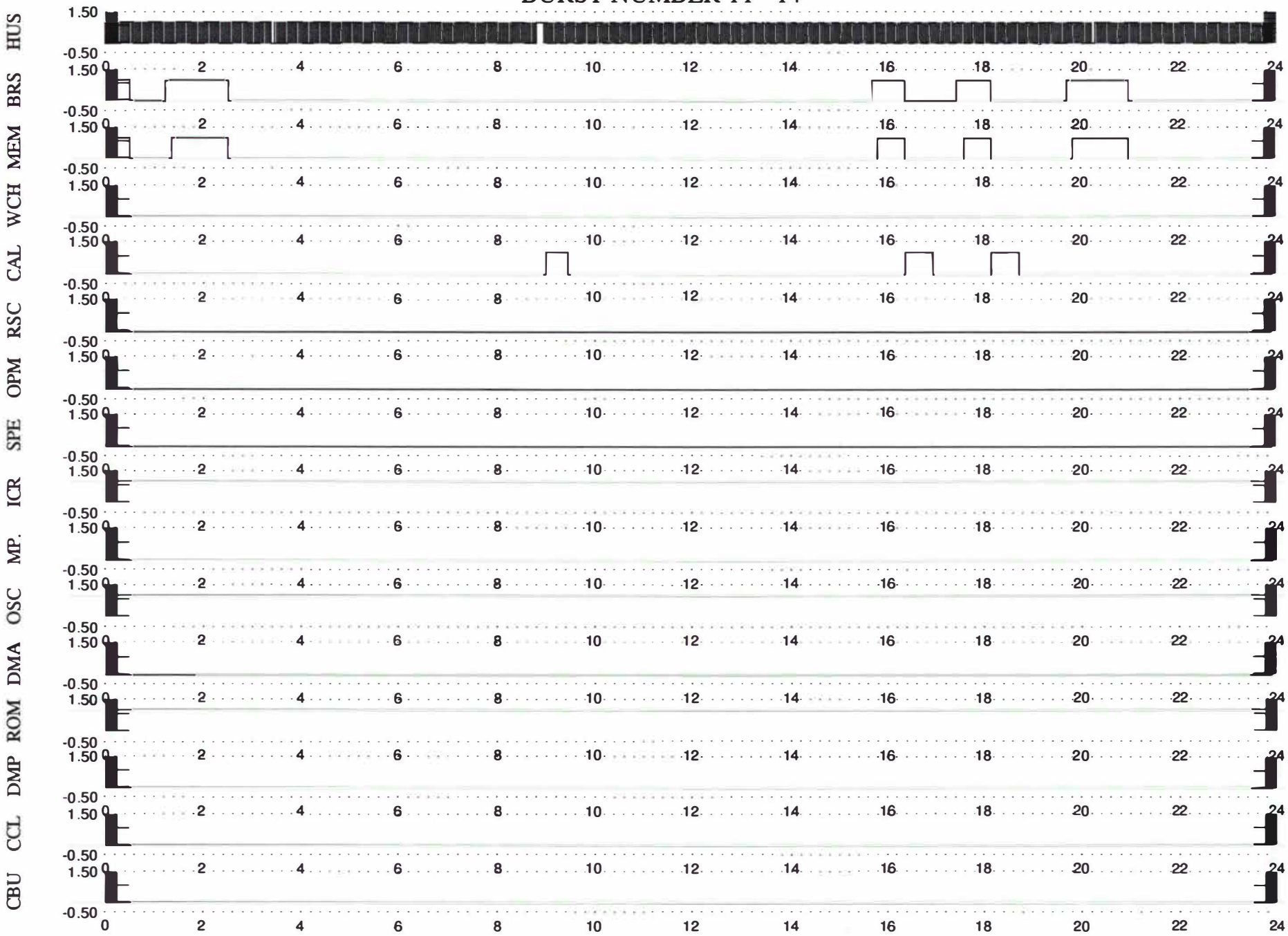
Hi Tom,
We performed two sets of observations looking for GRB940217 at 8.4 GHz.
On Friday 2/18/94 we scanned a rectangular patch of sky covering Right
Ascension 29 to 31 degrees and Declination 2.5 to 4.5 degrees, and saw
no point sources at the 100 mJy level. On Tuesday February 22, with
better pointing information (from Kevin Hurley), we searched a 0.4 degree
thick section of arc, with corners at (28,2.6),(28,3.0),(31,4.7), and
(31,5.1). We saw no signal at the 50 mJy level.
                        -Steve Levin, Ed Olsen, et al.


GOES
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
Watts m^{-2}
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/18, 0000:01
Plot created: 94/02/25, 2234
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/18
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: 94/02/25, 2207 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 49, year 1994 to day 49, year 1994 5/26/94

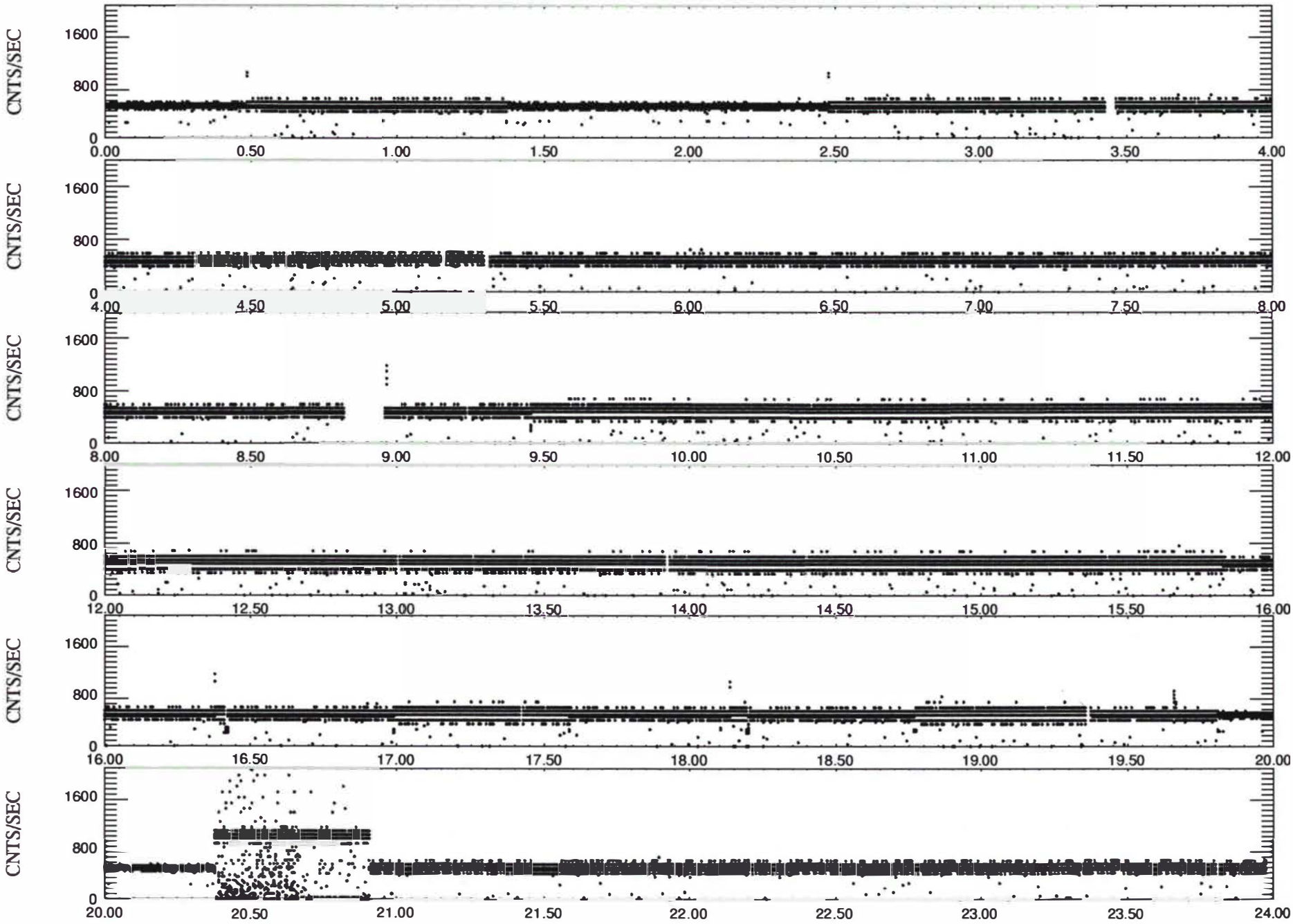
BURST NUMBER 11 - 14



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 49, year 1994 to day 49, year 1994 5/26/94

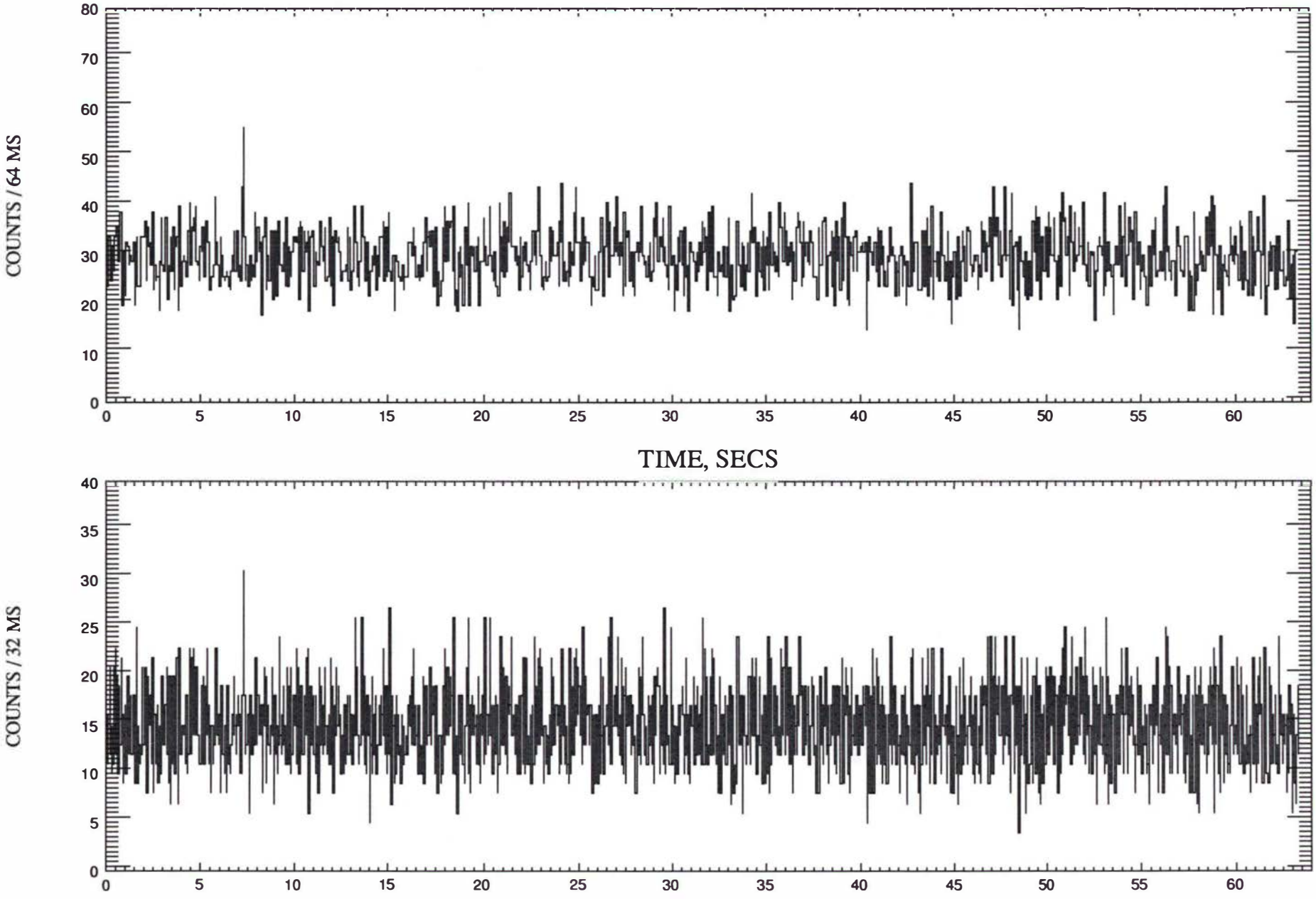
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 49, year 1994 5/26/94

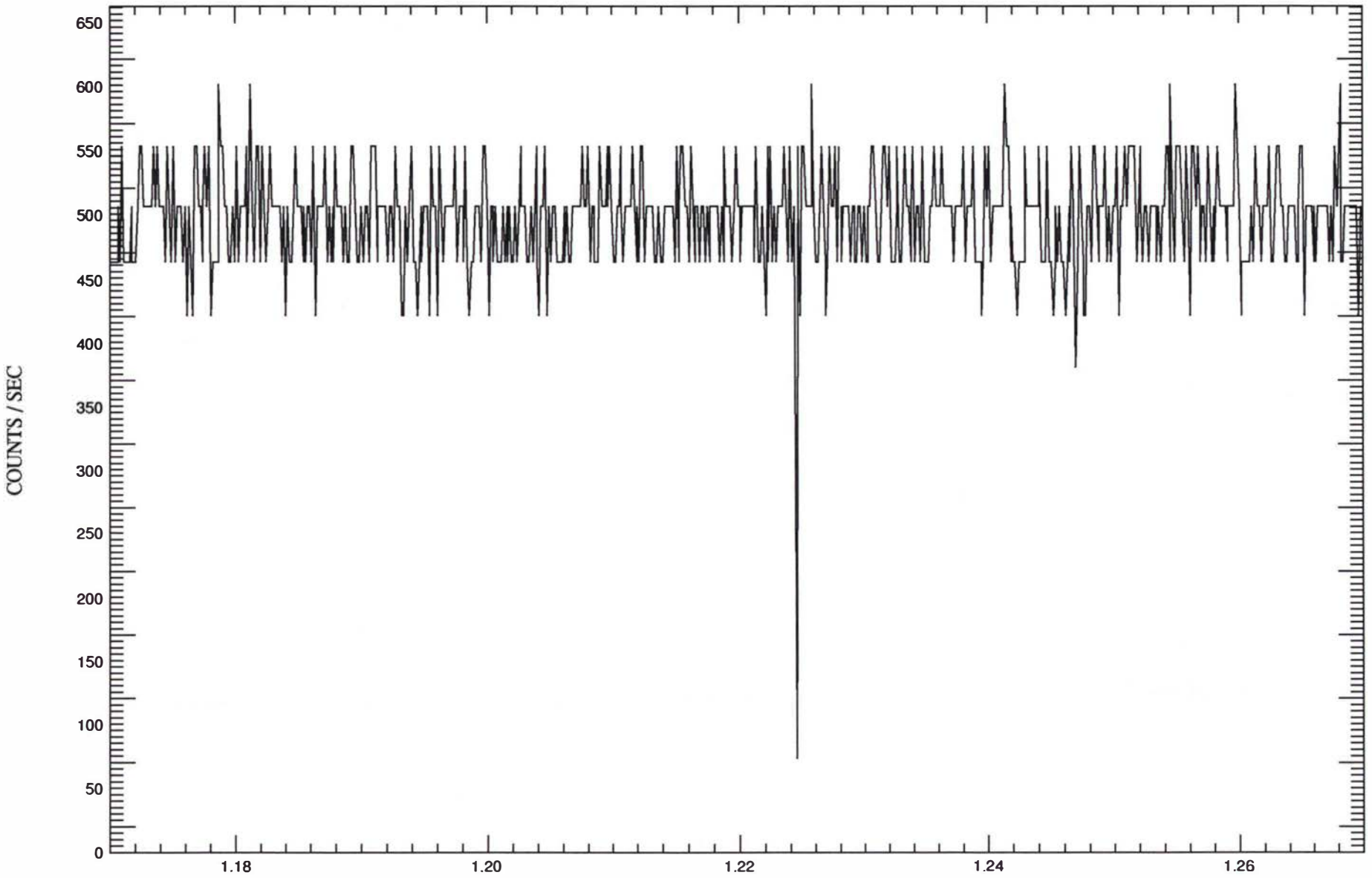
Burst Counter 11 at UT= 1.219869558546 h= 4391.530 s 01:13:11.530



B# 1

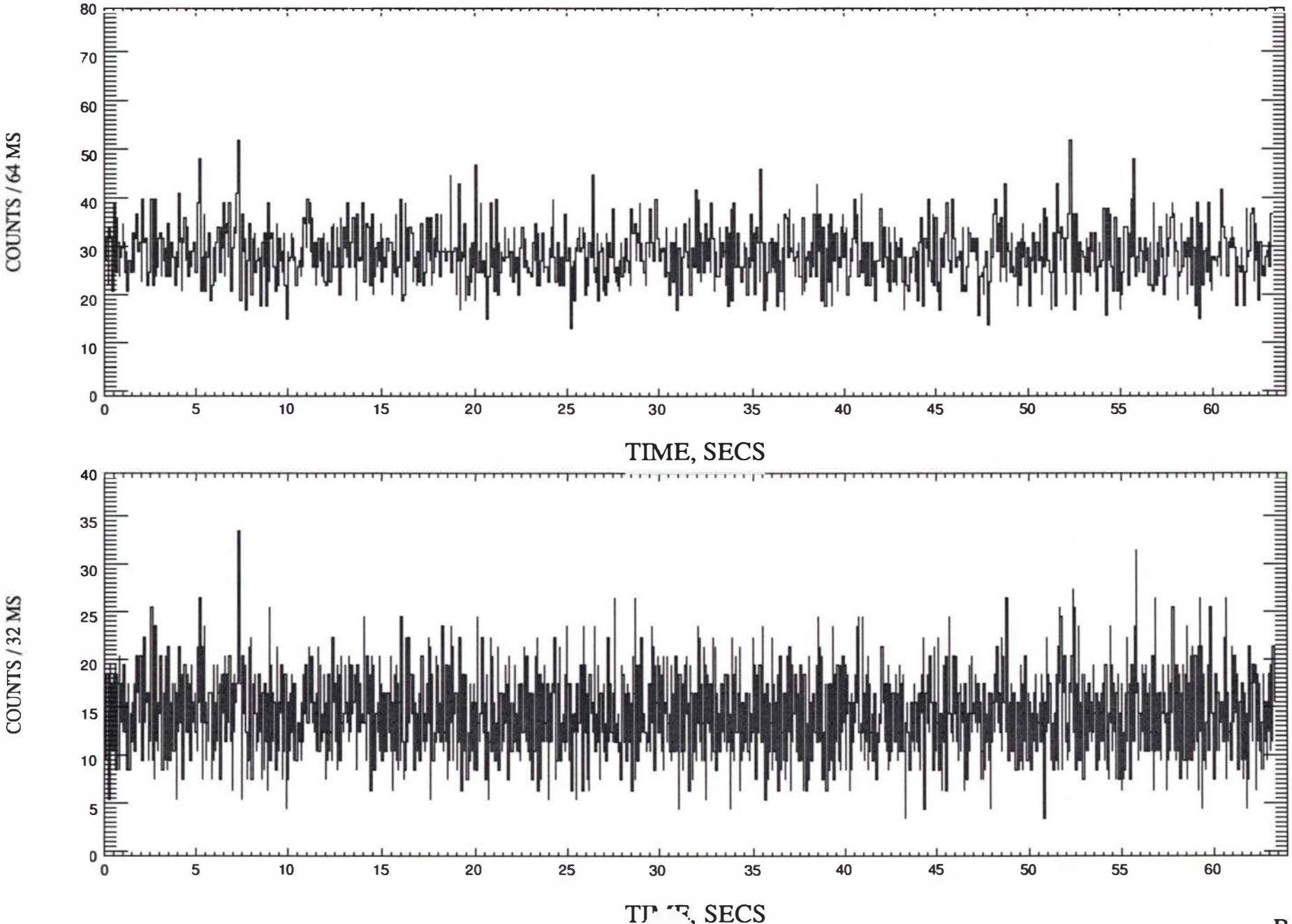
HUS 2A, MODE 1, NOT AVERAGED QEDR day 49, year 1994 to day 50, year 1994 2/18/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 49, year 1994 5/26/94

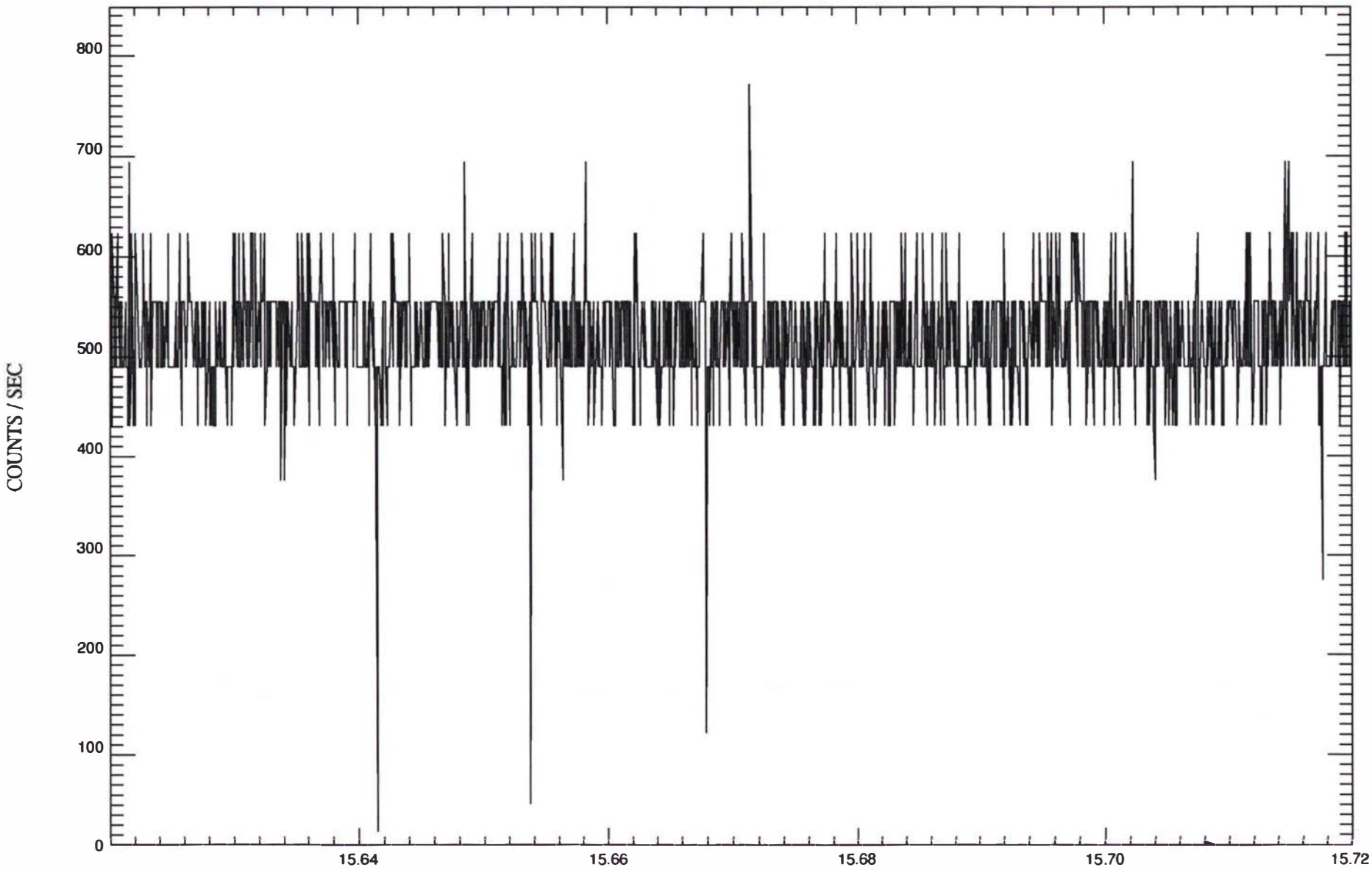
Burst Counter 12 at UT=15.671519016690 h=56417.468 s 15:40:17.468



B# 2

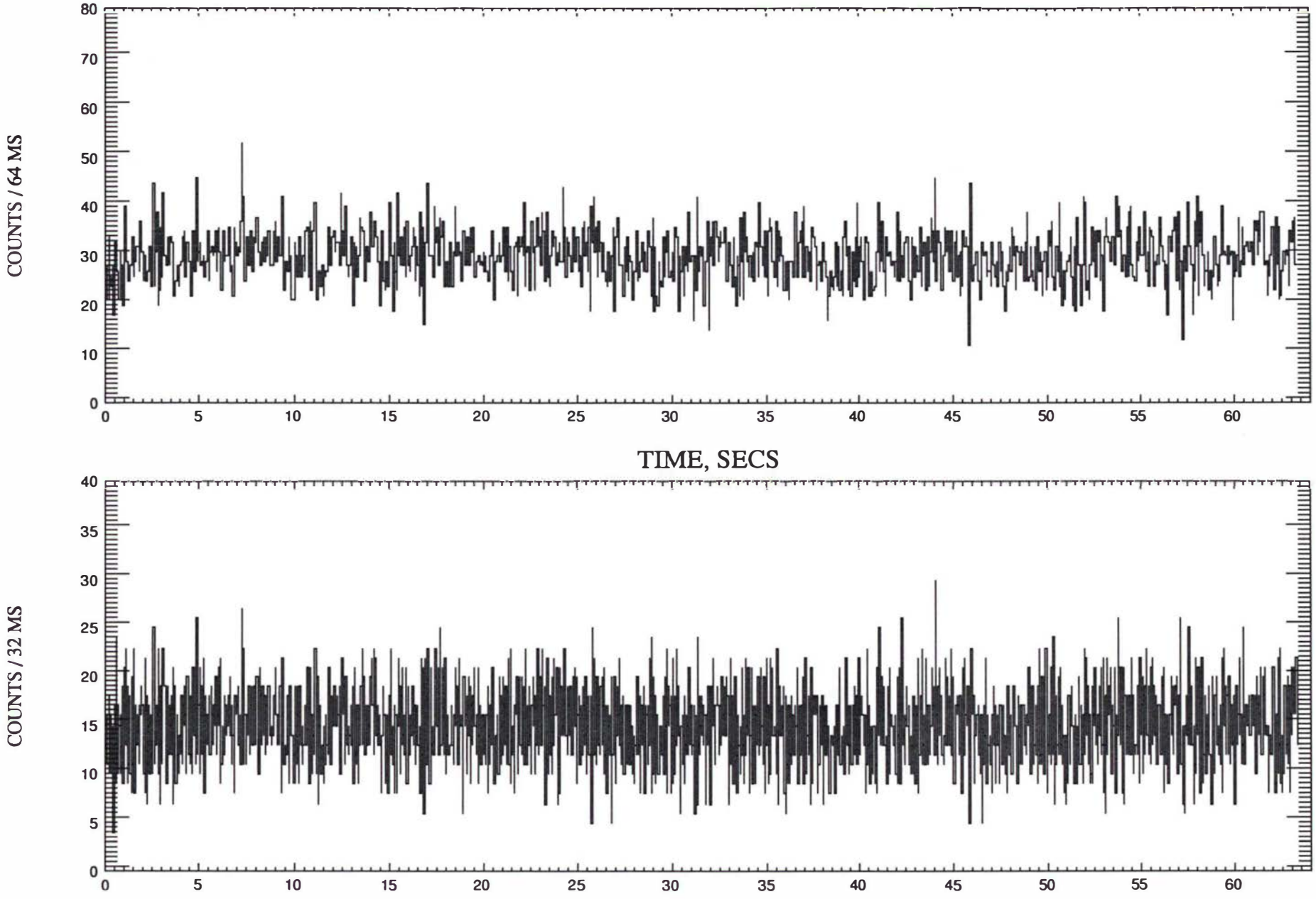
HUS 2A, MODE 1, NOT AVERAGED QEDR day 49, year 1994 to day 50, year 1994 2/18/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 49, year 1994 5/26/94

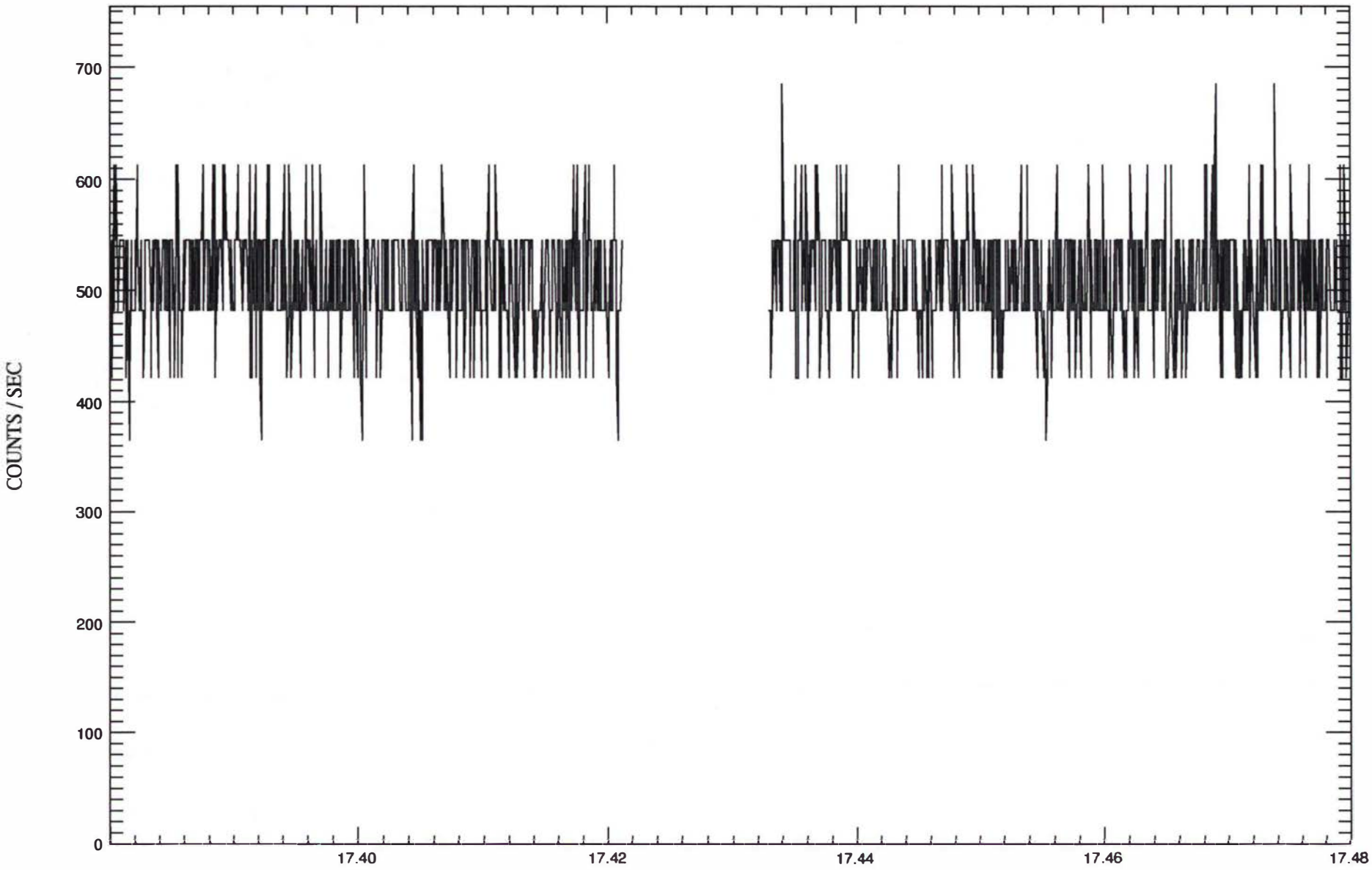
Burst Counter 13 at UT=17.434185549418 h=62763.068 s 17:26:03.068



B# 3

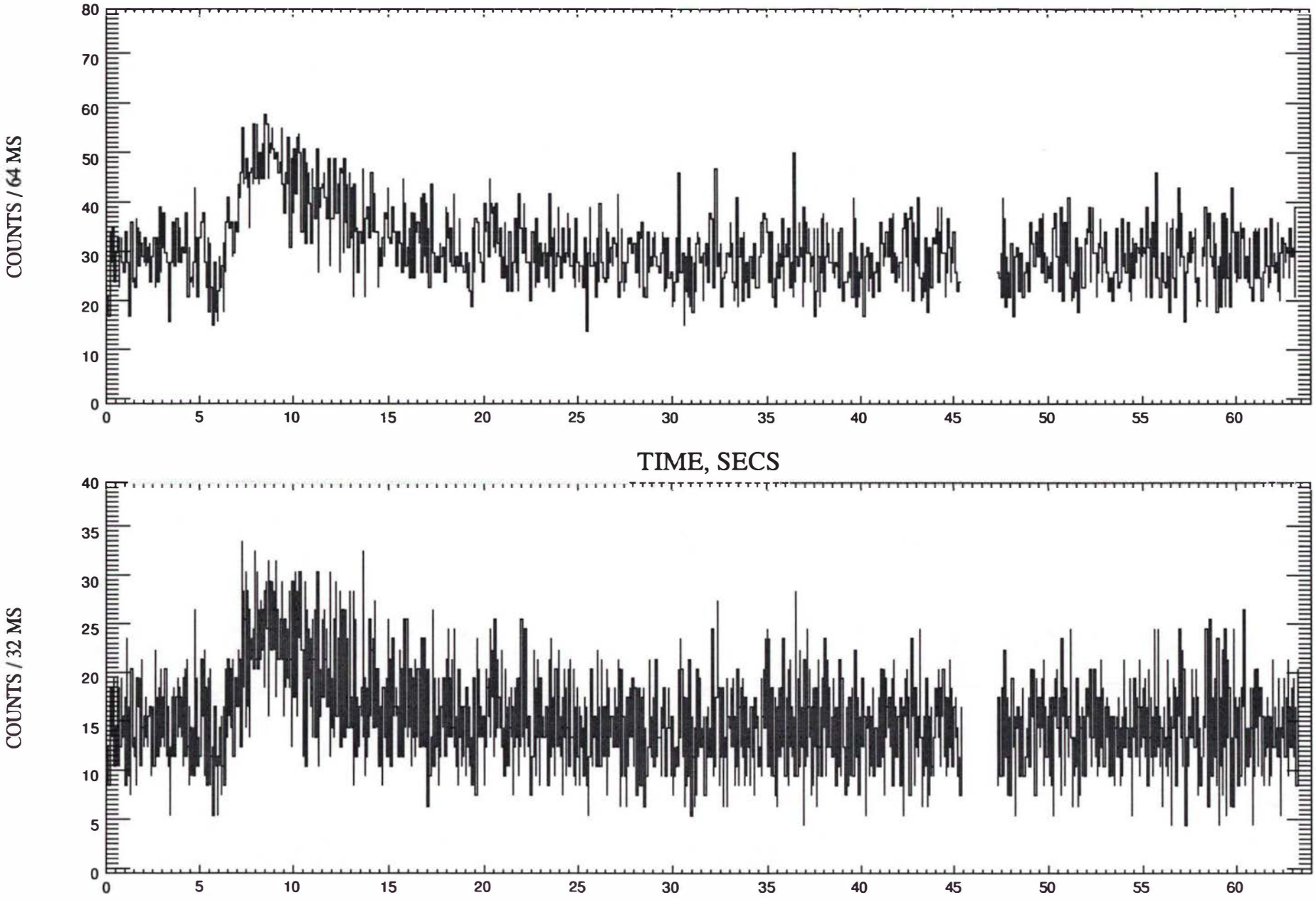
HUS 2A, MODE 1, NOT AVERAGED QEDR day 49, year 1994 to day 50, year 1994 2/22/94

CALIBRATION DATA INCLUDED



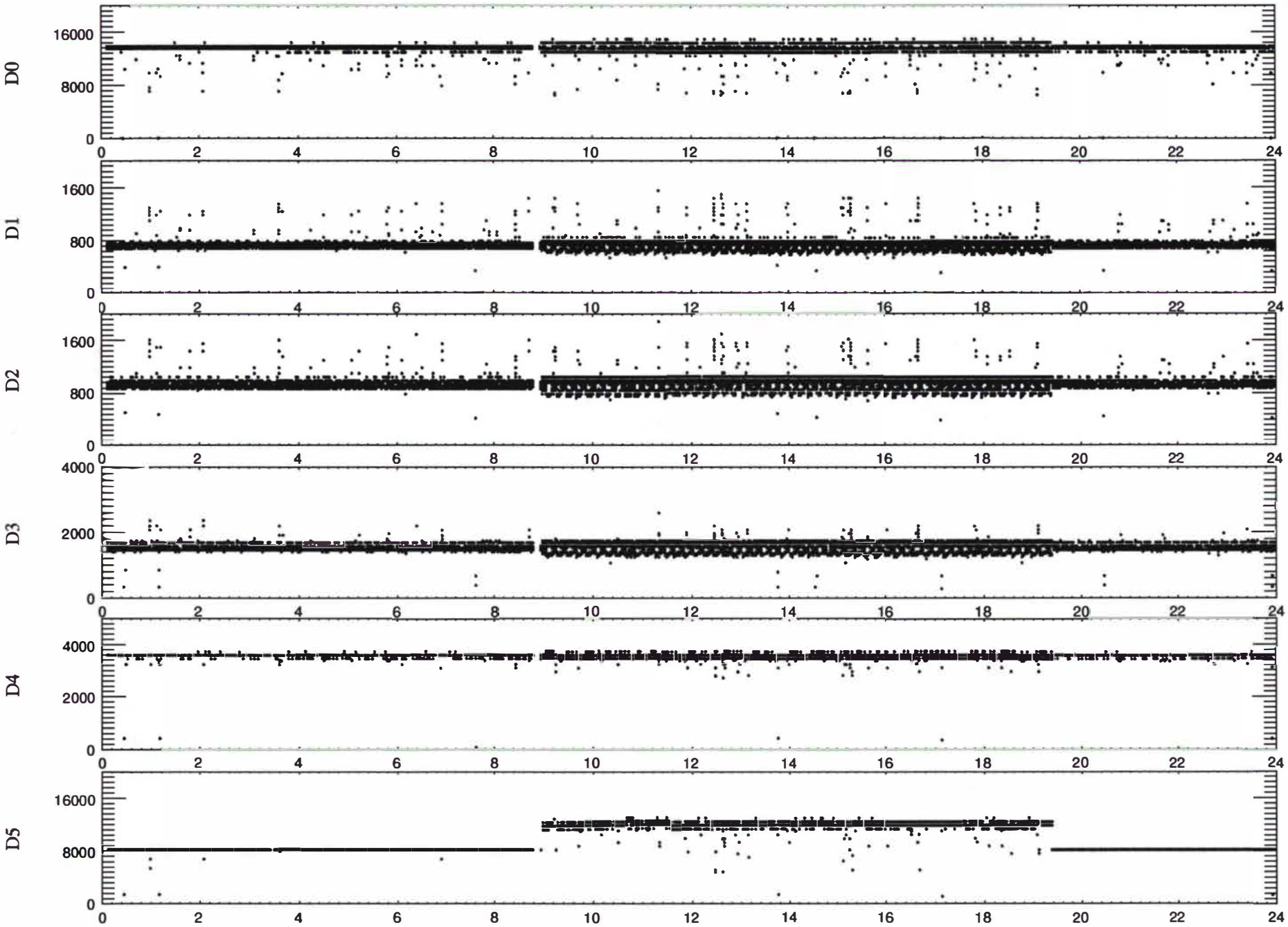
HUS 2A TRIGGERED DATA QEDR day 49, year 1994 2/22/94

Burst Counter 14 at UT=19.657825770908 h=70768.173 s 19:39:28.173



4

HUS 2B COUNTS / SEC QEDR day 49, year 1994 to day 49, year 1994 2/22/94



From HENZE@ssl.msfc.nasa.gov Tue Feb 22 11:51 PST 1994
Date: Tue, 22 Feb 1994 13:55:43 -0600 (CST)
From: HENZE@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2834
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2834
EVENT OF 1994 FEB 19 DAY OF YEAR= 50
EVENT CROSSING TIME AT BATSE : 16005. S. OR 04:26:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 68.000 1.000
BATSE PEAK COUNTING RATE: 28000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 2/ 94 IS:
RA= 147.602 DEC= -51.817 DIST= 3.028 AU
BATSE-ULYSSES DISTANCE = 452924402. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -147.80 SECS.
CROSSING TIME AT ULYSSES IS 15857. S. OR 04:24:17 +/- 308.79 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 2/ 94 IS:
RA= 319.859 DEC= -16.750 DIST= 2.340 AU
MARS-BATSE DISTANCE = 350106880. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 354.01 SECS.
CROSSING TIME AT MARS IS 16359. S. OR 04:32:39 +/- 198.59 SECONDS

N/O

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2834	940219	9402	16005	28000	068	+01

4:26:45

BATSE BURST TRIGGER

NO.: 02834

TIME: TJD=9402 SECONDS=16005

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=031.9 AZIMUTH=170.7 ERROR= DEGREES

COMMENTS:
TWO SPIKES. FIRST: DUR. 0.2 S. SECOND (STRONGER): MAX T+0.55 S, DUR. 0.4 S.
HARD SPECTRUM, VISIBLE ABOVE 300 KEV.

From HENZE@ssl.msfc.nasa.gov Tue Feb 22 11:48 PST 1994
Date: Tue, 22 Feb 1994 13:52:24 -0600 (CST)
From: HENZE@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 02835

TIME: TJD=9402 SECONDS=58464

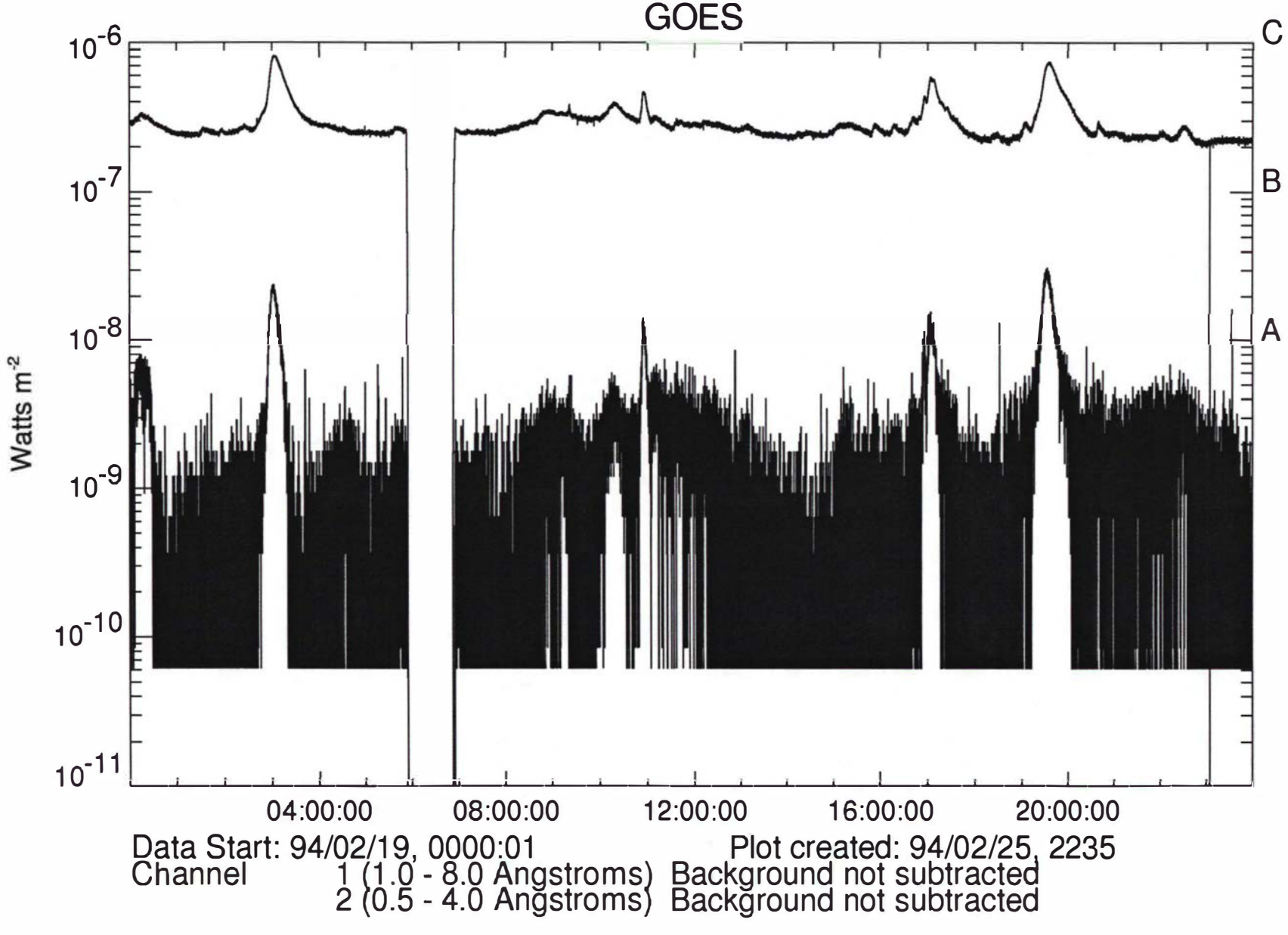
TYPE: UNKNOWN SOLAR FLARE TRIGGER SIGNAL:N

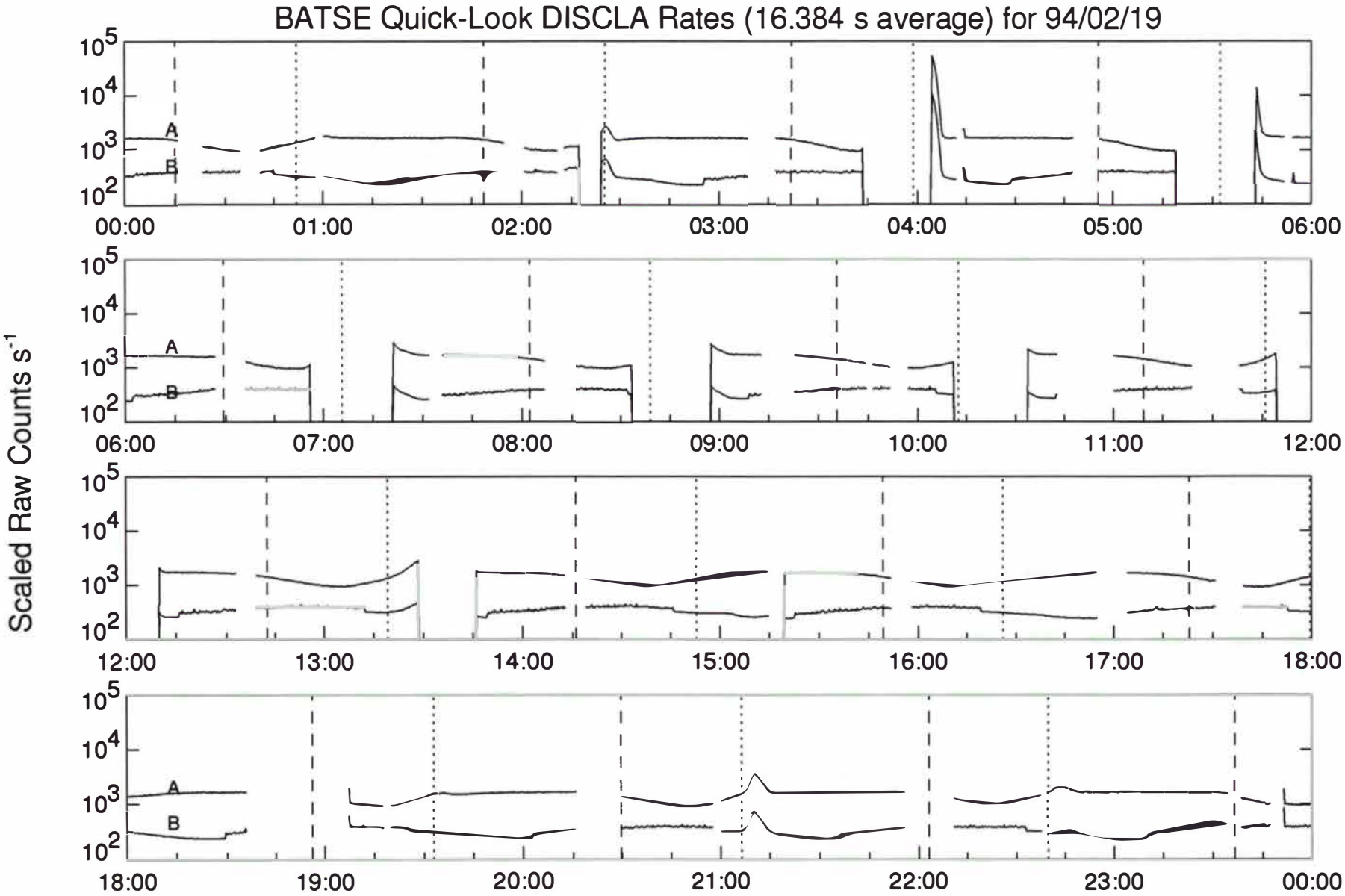
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=077.2 AZIMUTH=23.9 ERROR= DEGREES

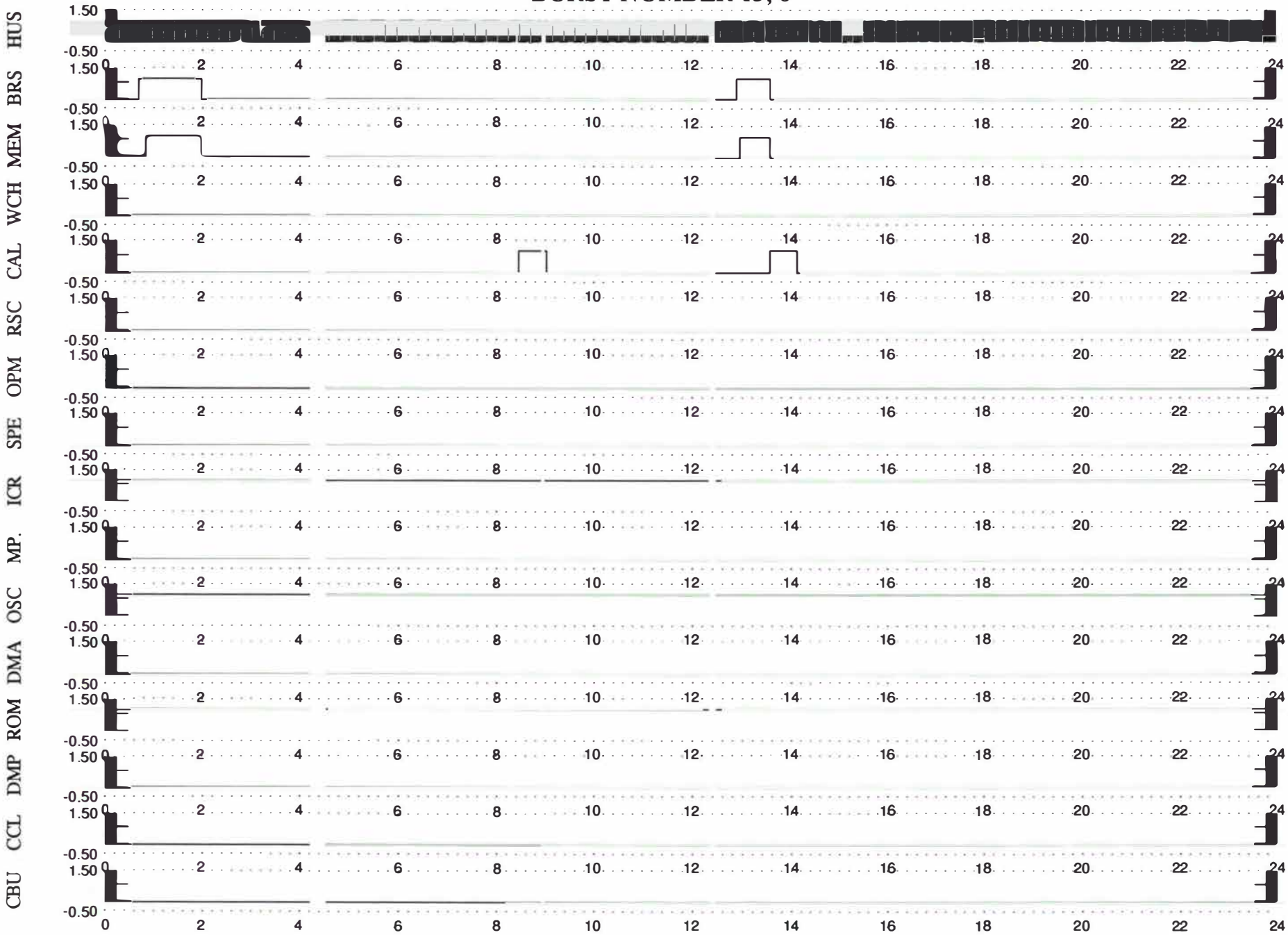
COMMENTS:
FROM EARTH. TWO SPIKES, DUR. 1 MS EACH, SEPARATED BY 1.5 MS.
VISIBLE ABOVE 300 KEV.


GOES
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/19, 0000:01
Plot created: 94/02/25, 2235
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/19
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
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: 94/02/25, 2207 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 50, year 1994 to day 50, year 1994 5/26/94

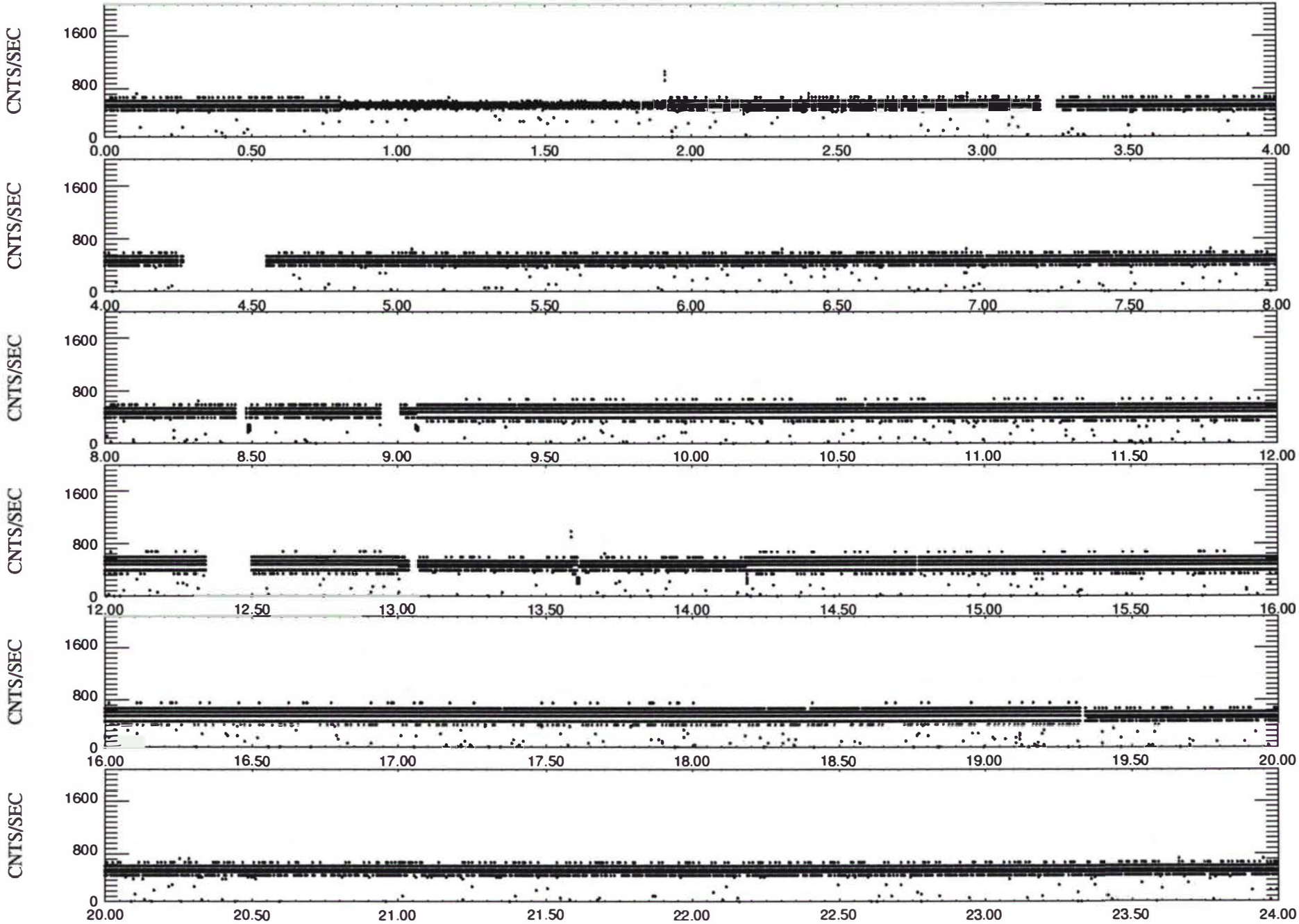
BURST NUMBER 15, 0



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 50, year 1994 to day 50, year 1994 5/26/94

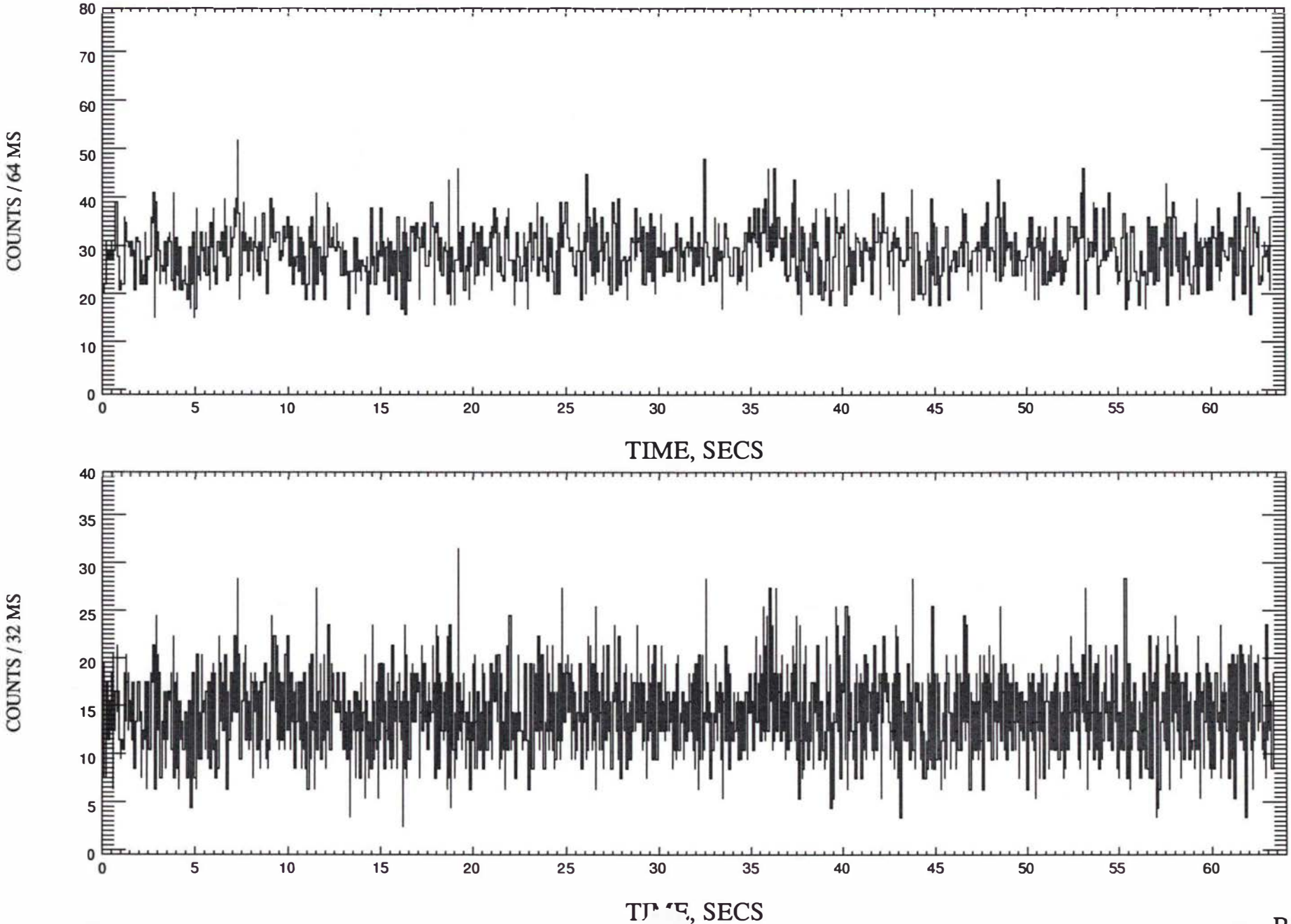
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 50, year 1994 5/26/94

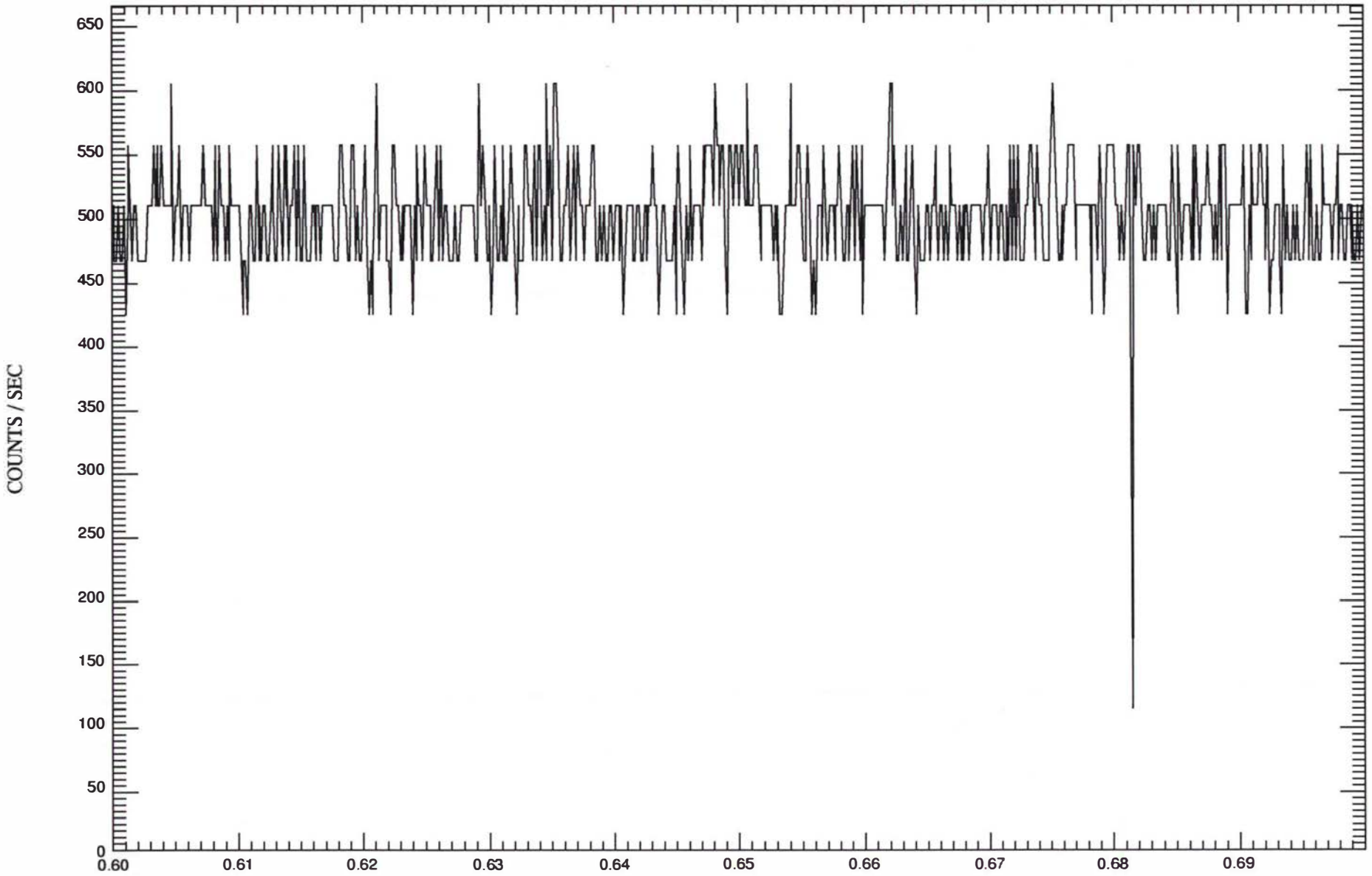
Burst Counter 15 at UT= 0.654299676683 h= 2355.479 s 00:39:15.479



B# 1

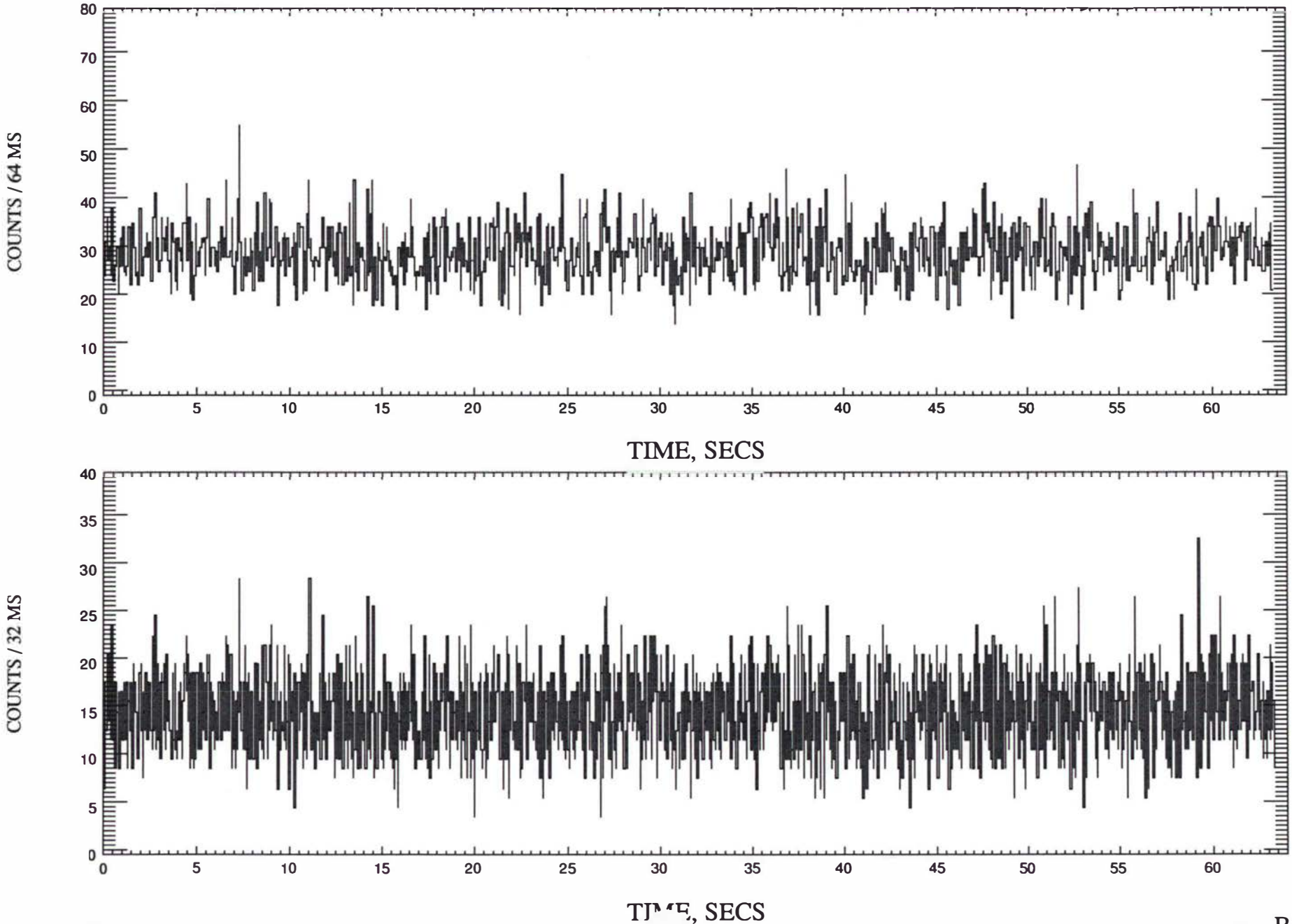
HUS 2A, MODE 1, NOT AVERAGED QEDR day 50, year 1994 to day 51, year 1994 2/22/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 50, year 1994 5/26/94

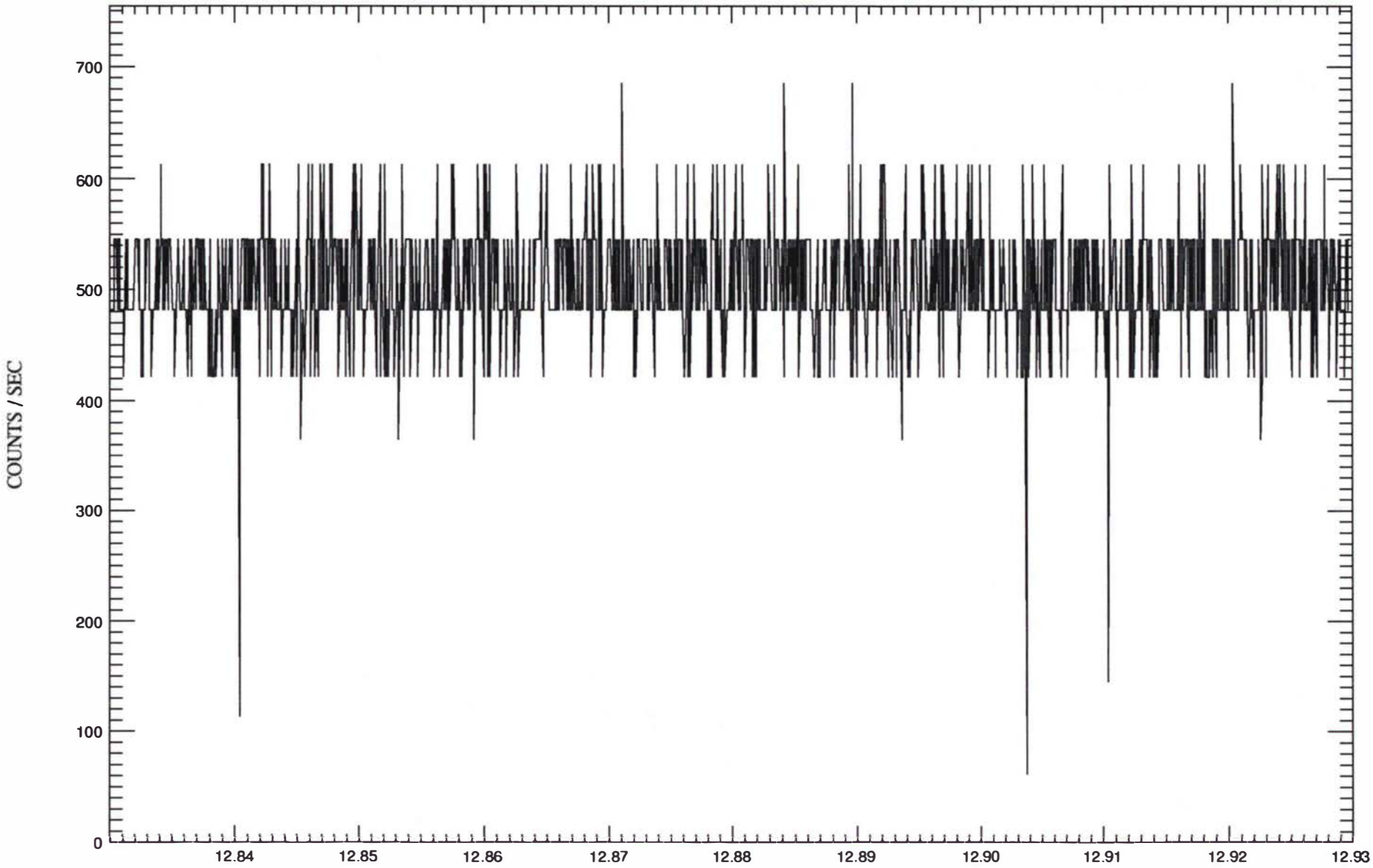
Burst Counter 0 at UT=12.884348805745 h=46383.656 s 12:53:03.656



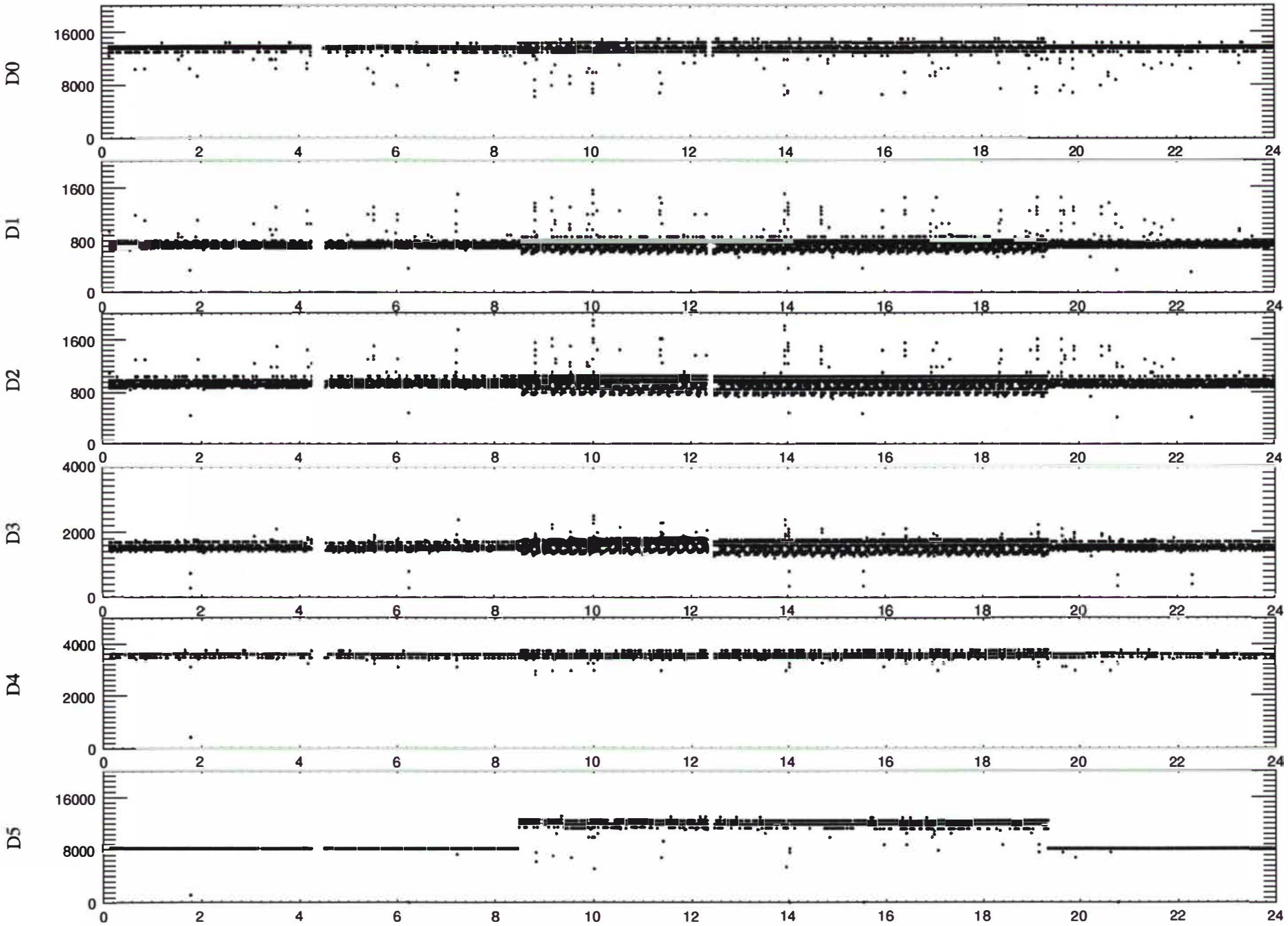
B# 2

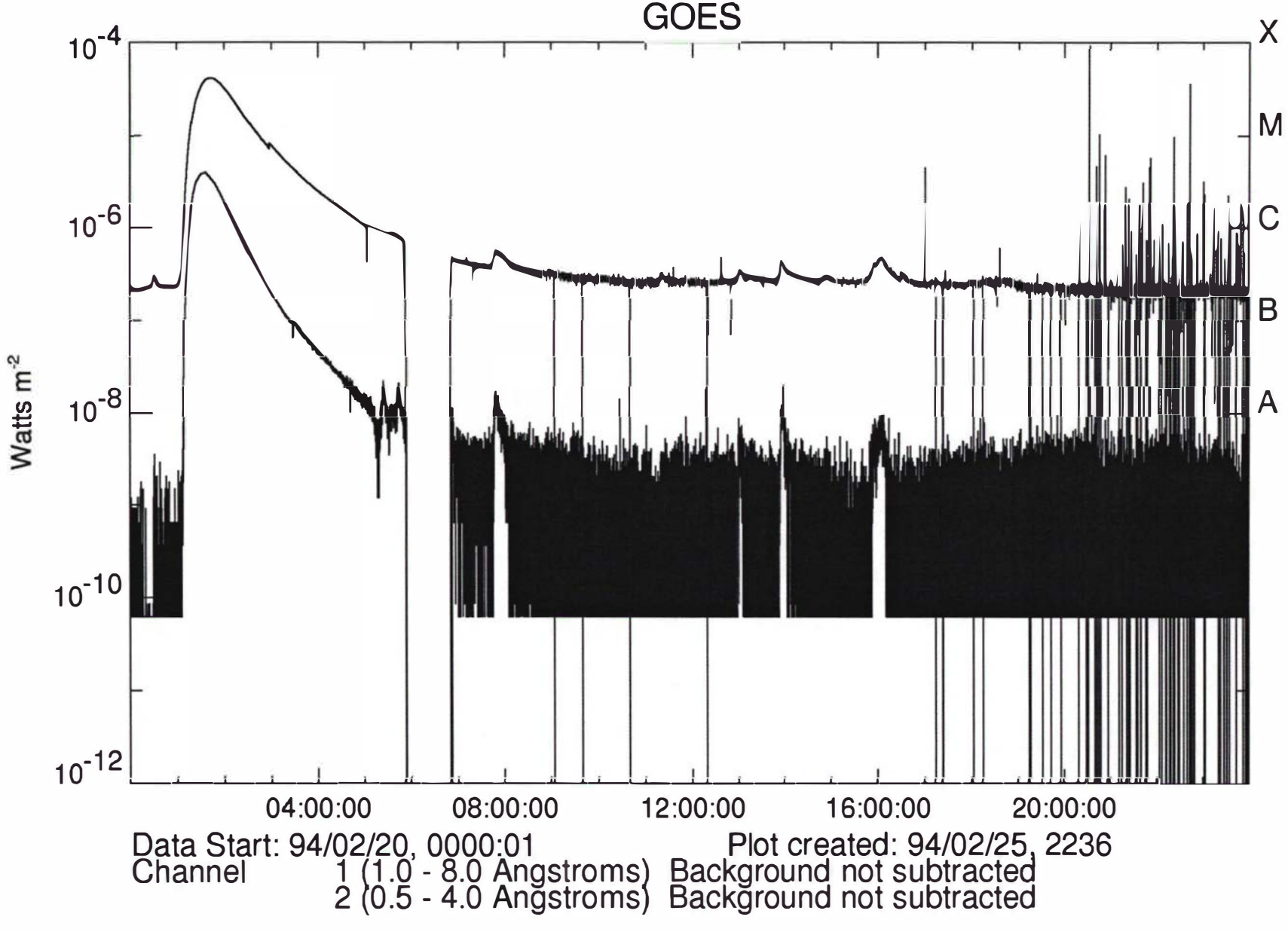
HUS 2A, MODE 1, NOT AVERAGED QEDR day 50, year 1994 to day 51, year 1994 2/22/94

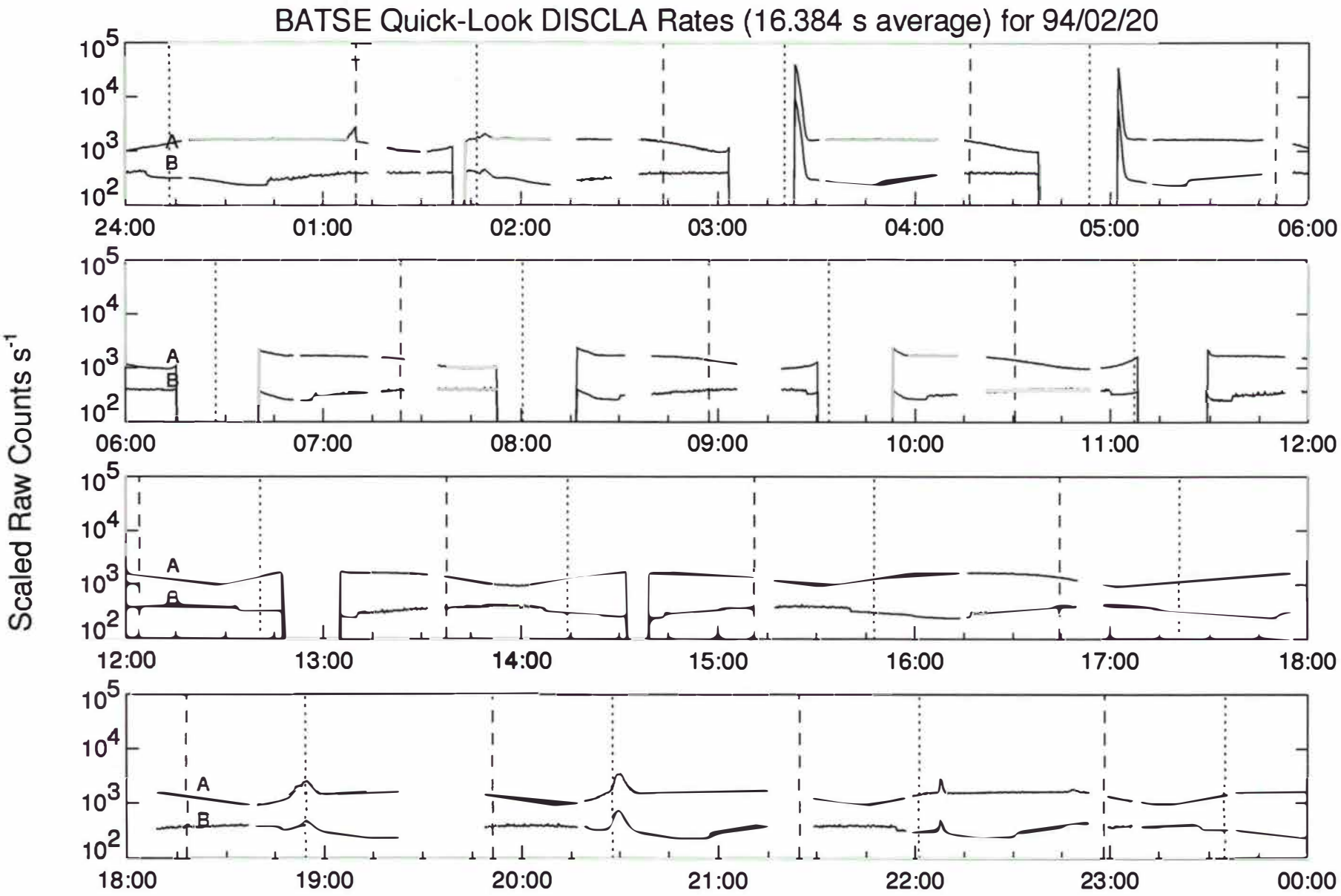
CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 50, year 1994 to day 50, year 1994 2/22/94




GOES
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
Watts m^{-2}
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/20, 0000:01
Plot created: 94/02/25, 2236
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/20
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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: 94/02/25, 2208 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

From SHARIFF@ssl.msfc.nasa.gov Tue Feb 22 09:58 PST 1994
Date: Tue, 22 Feb 1994 12:02:23 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02836

TIME: TJD=9403 SECONDS=75455

TYPE: A0535+2 SOLAR FLARE TRIGGER SIGNAL:N

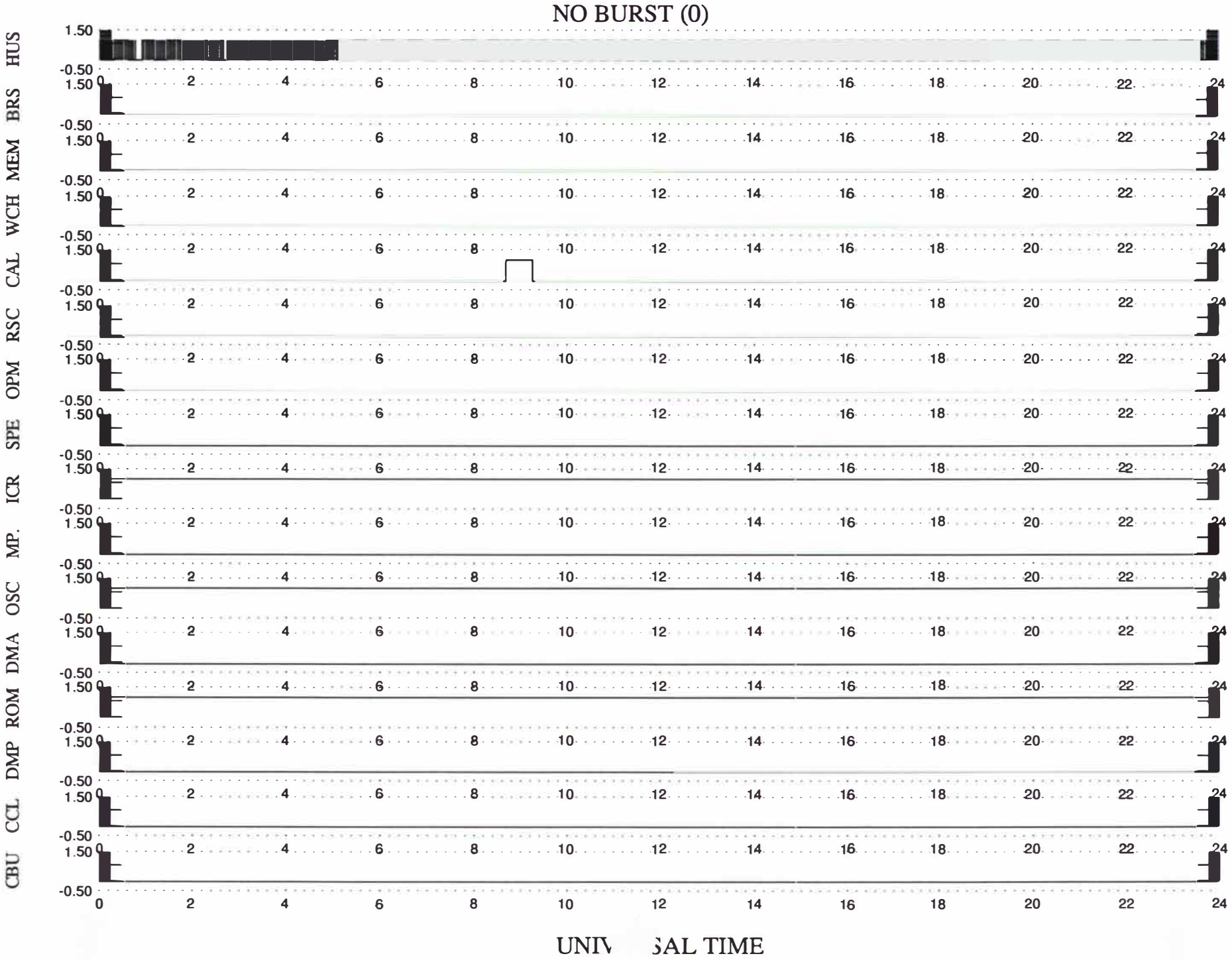
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

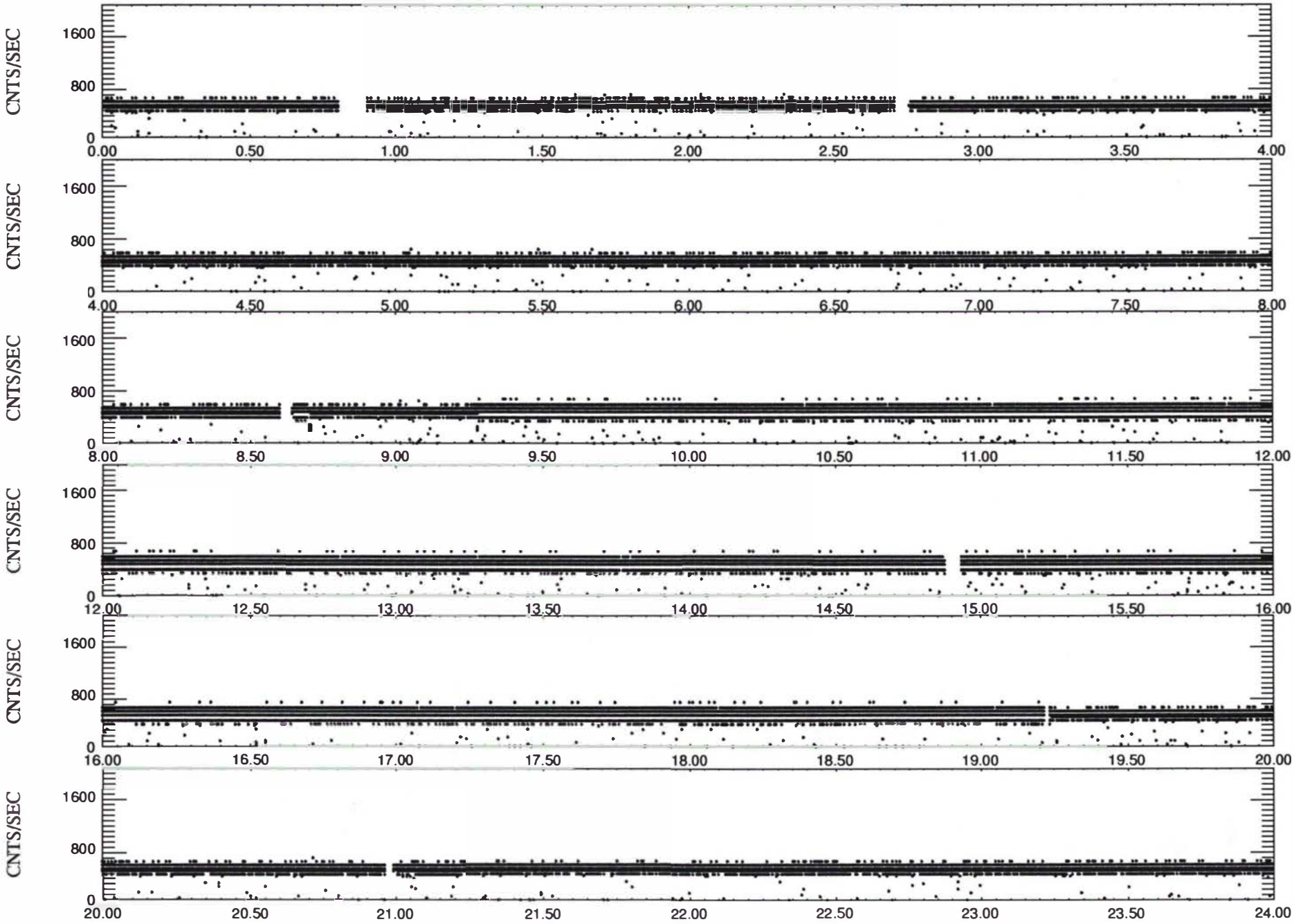
COMMENTS:
TRANSIENT SOURCE A0535+262 RISE.

HUS MODES EDR day 51, year 1994 to day 51, year 1994 5/26/94



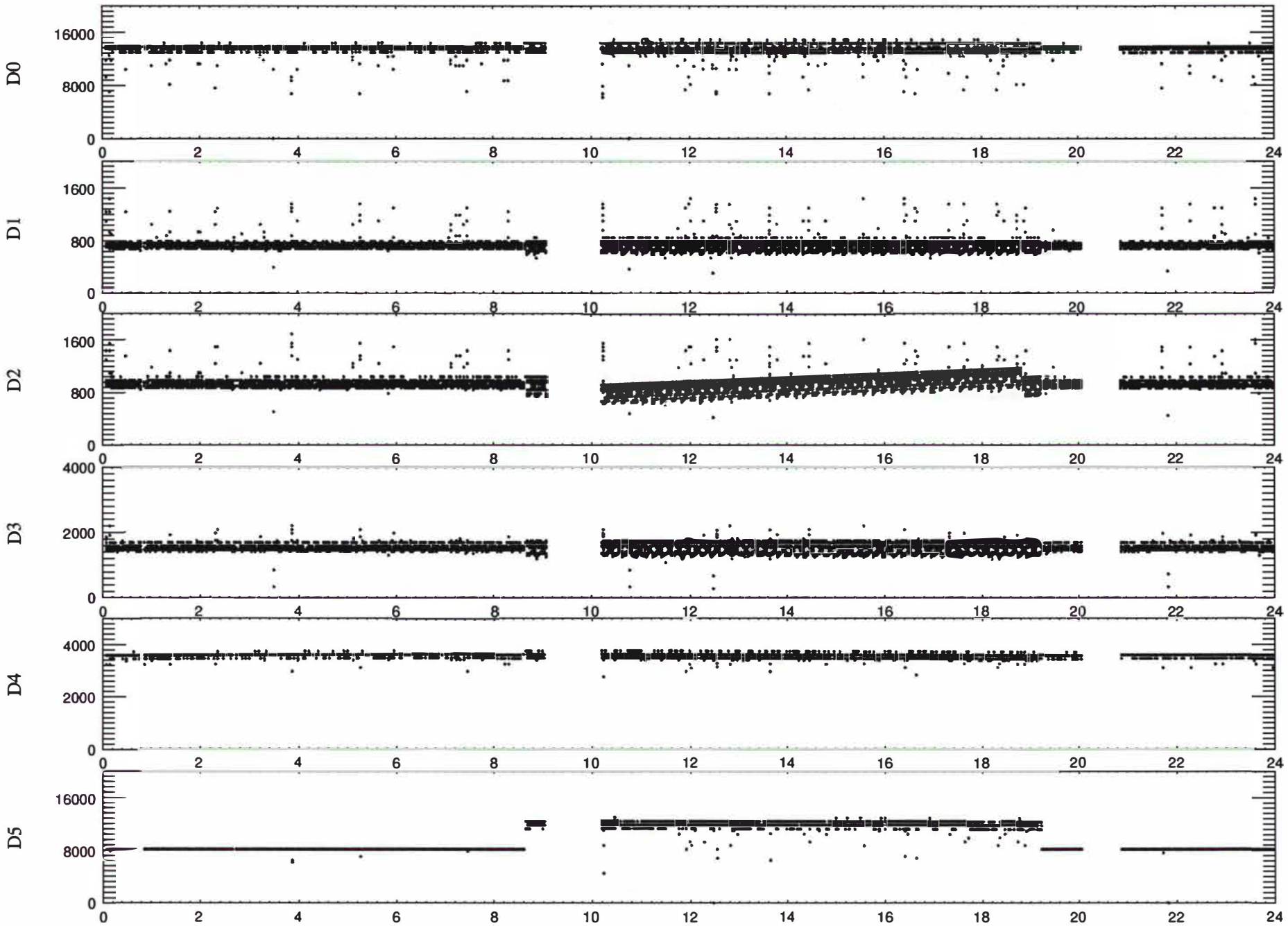
HUS 2A, MODE 1, NOT AVERAGED EDR day 51, year 1994 to day 51, year 1994 5/26/94

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC QEDR day 51, year 1994 to day 51, year 1994 2/22/94



BATSE BURST TRIGGER
NO.: 02837

TIME: TJD=9404 SECONDS=37630

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

BATSE BURST TRIGGER
NO.: 02838

TIME: TJD=9404 SECONDS=65318

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES AT A DISTANCE.

BATSE BURST TRIGGER
NO.: 02839

TIME: TJD=9404 SECONDS=76698

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

BATSE BURST TRIGGER
NO.: 02840

TIME: TJD=9404 SECONDS=84670

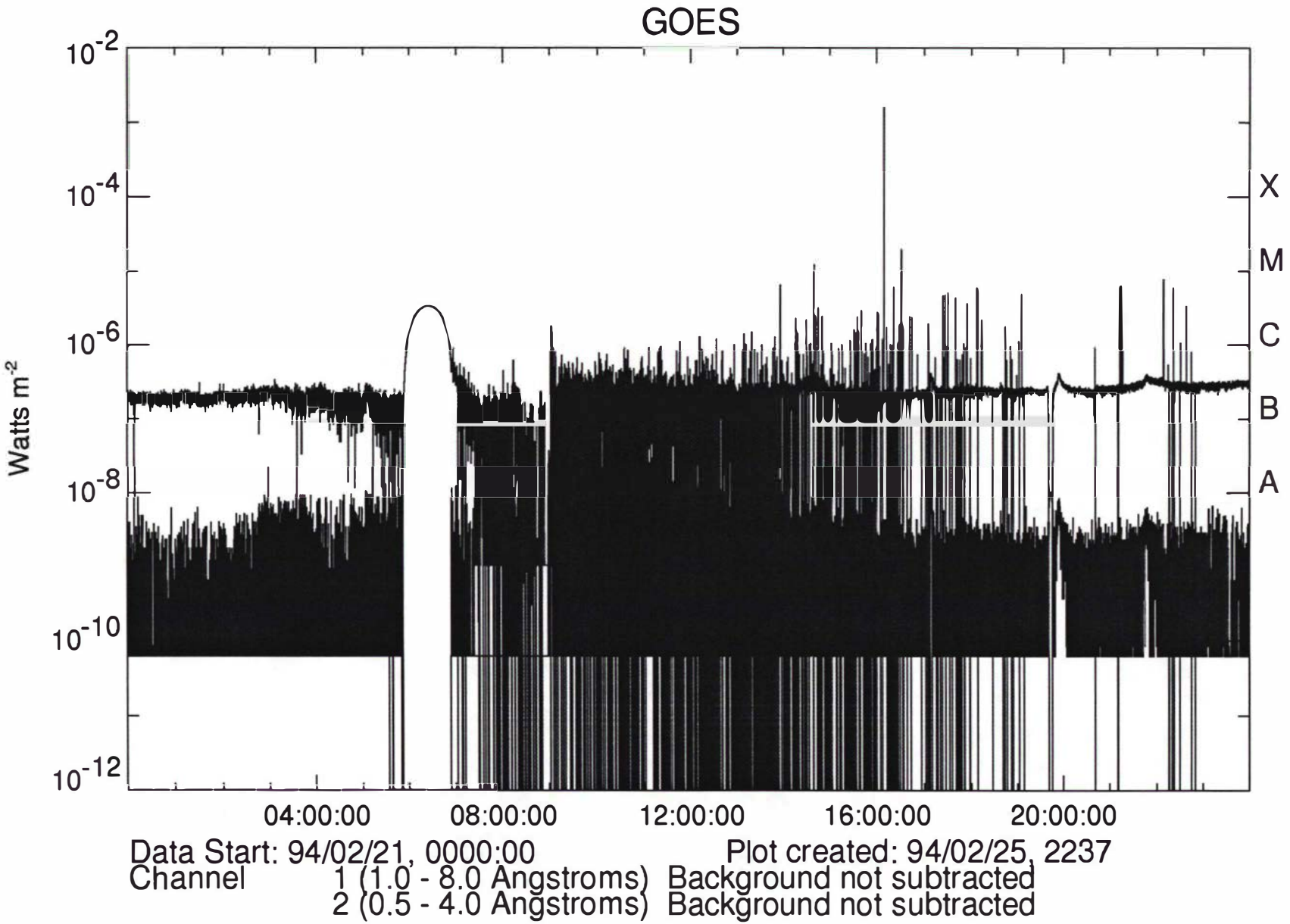
TYPE: A0535 SOLAR FLARE TRIGGER SIGNAL:N

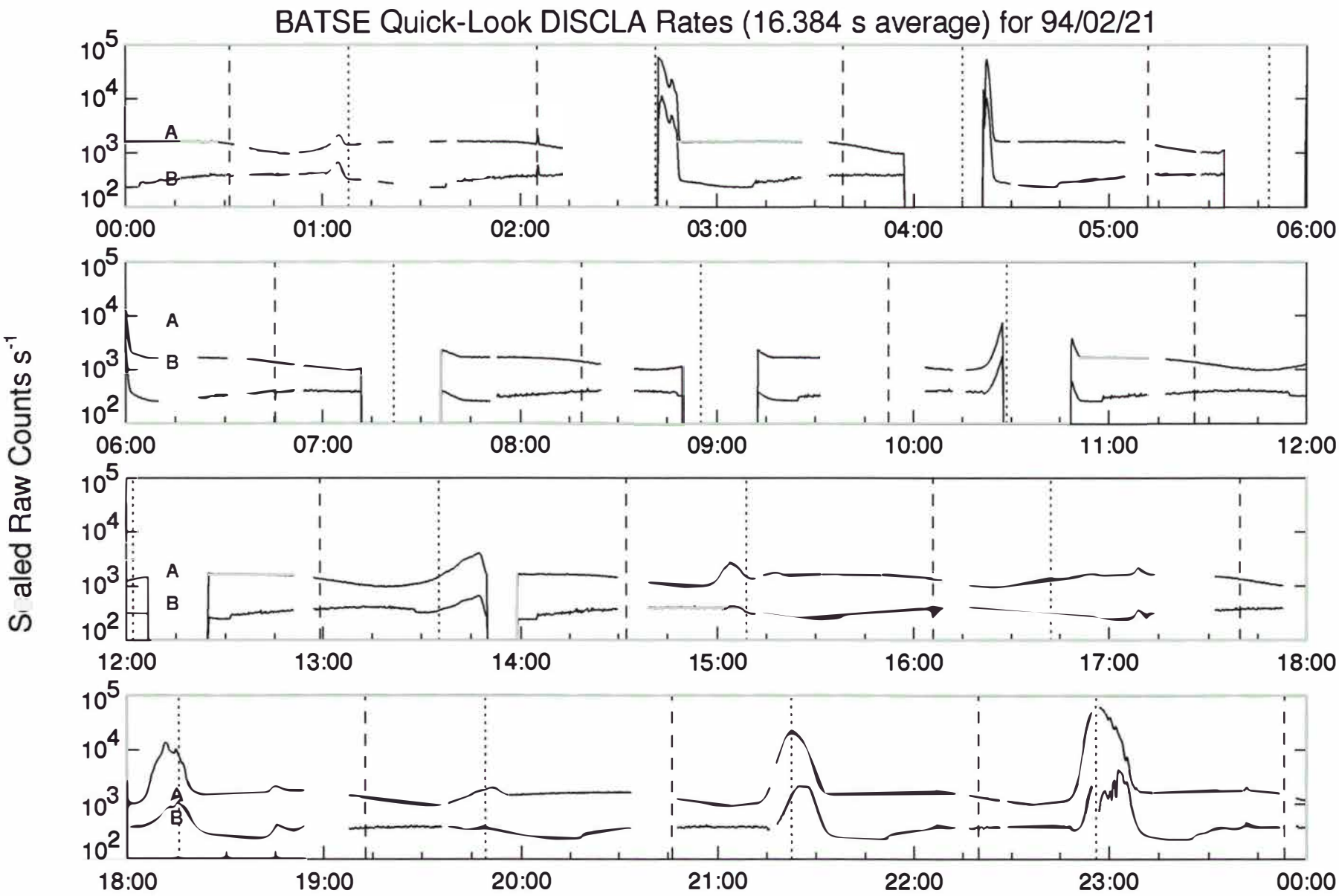
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

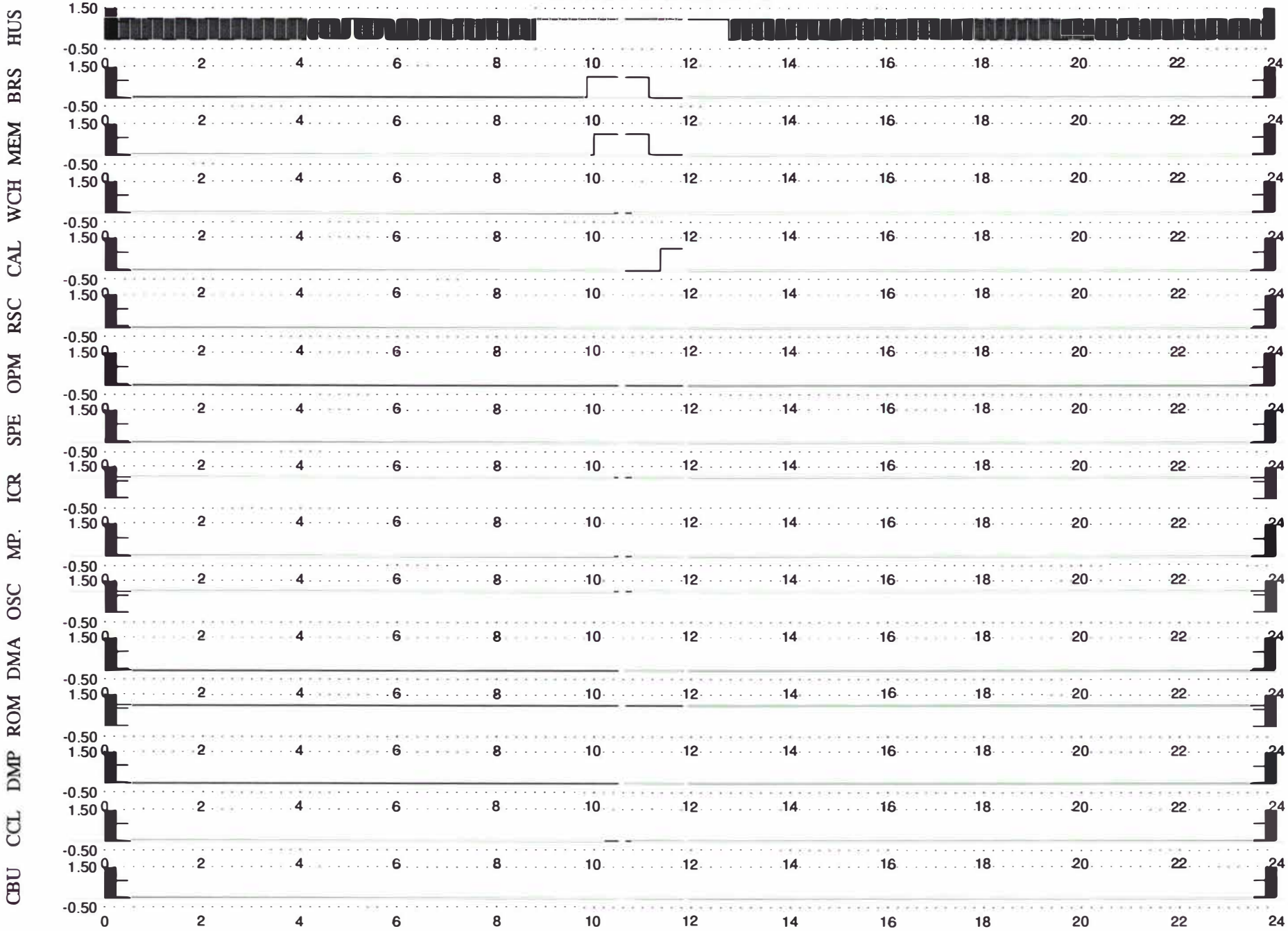
COMMENTS:
FLUCTUATION BY A0535+262.


GOES
Watts m-2
10-2
10-4
10-6
10-8
10-10
10-12
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/21, 0000:00
Plot created: 94/02/25, 2237
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/21
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
00:00
Current Time: 94/02/25, 2208 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 52, year 1994 to day 52, year 1994 5/26/94

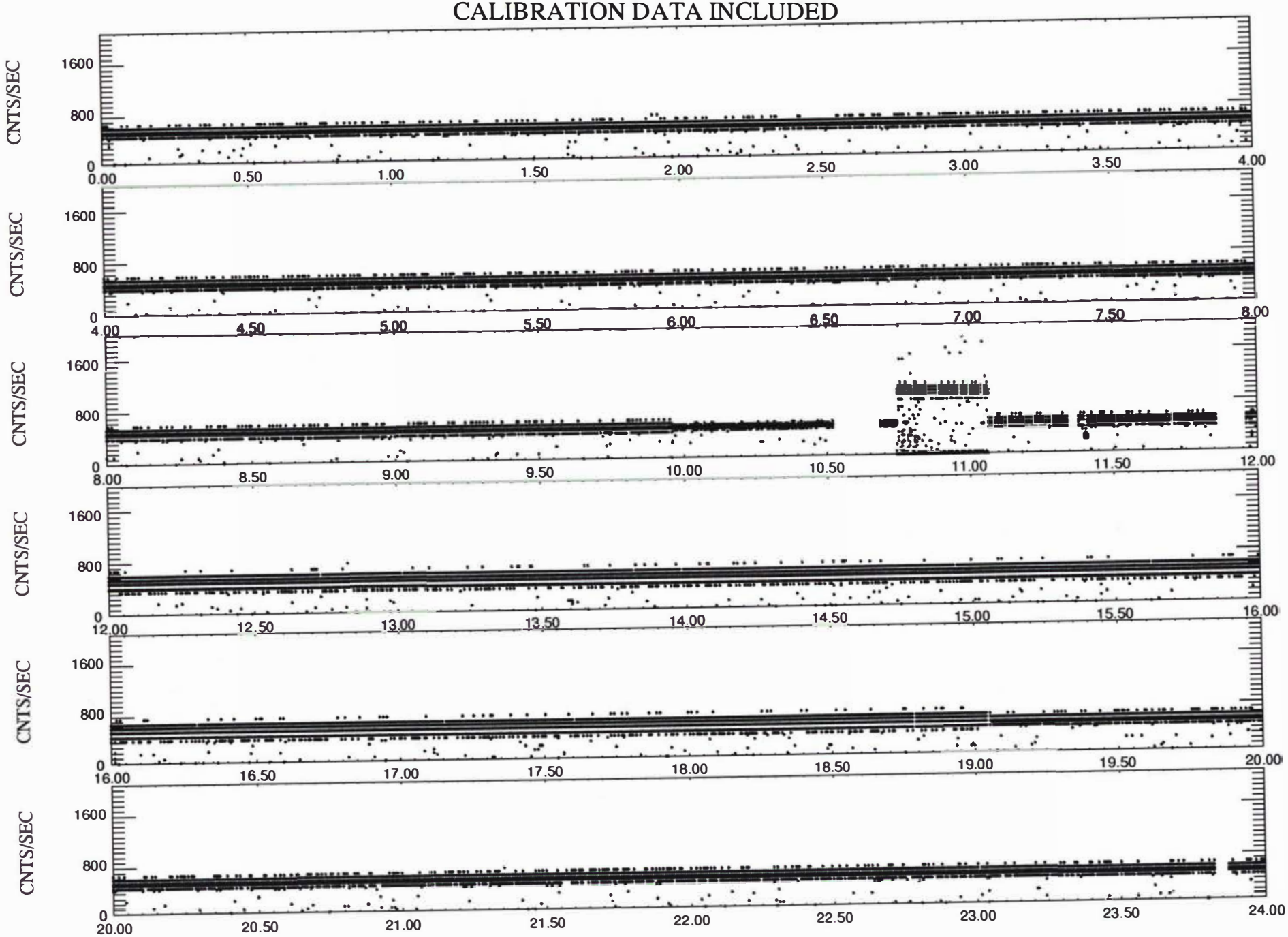
BURST NUMBER 1



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 52, year 1994 to day 52, year 1994 5/26/94

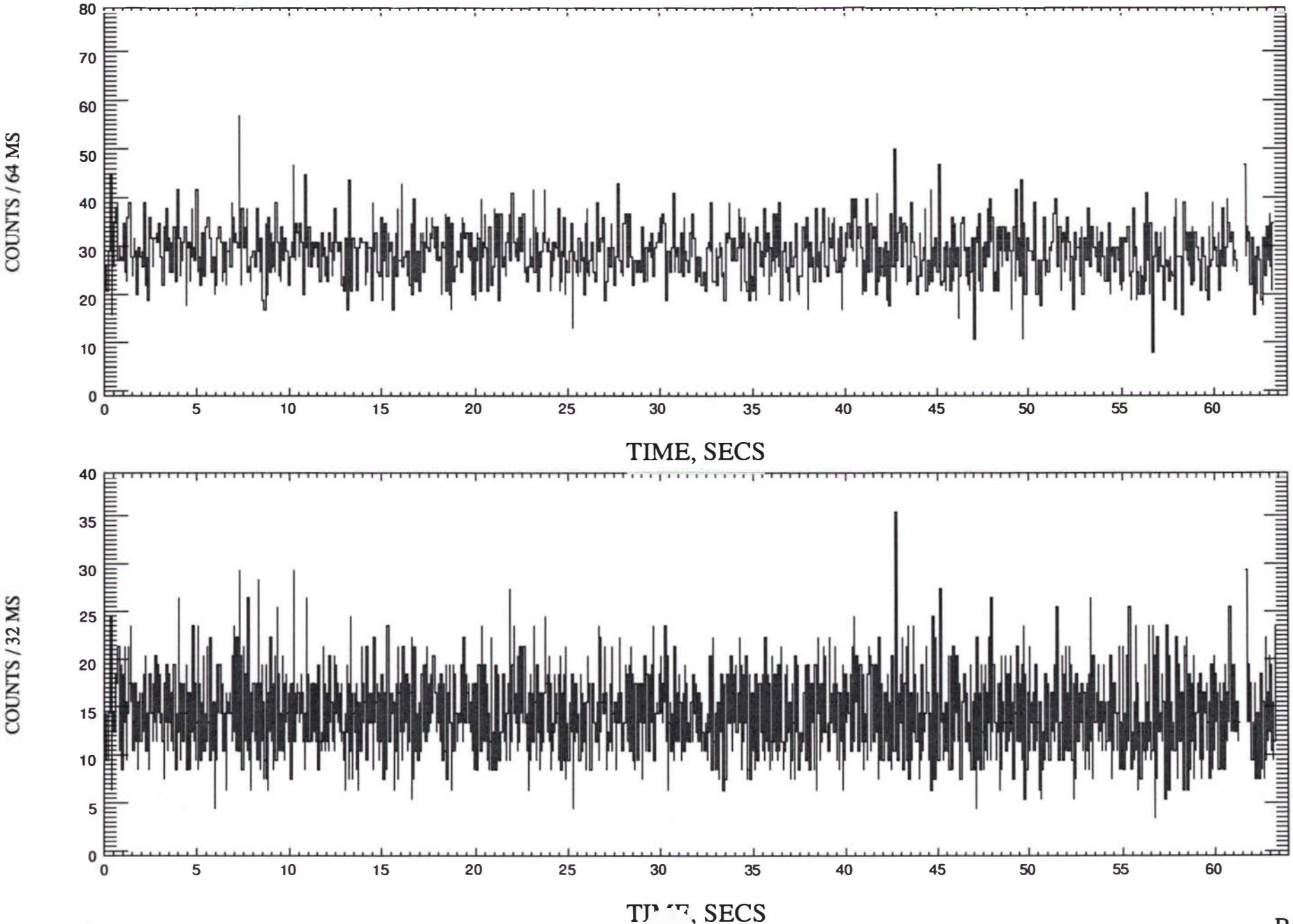
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 52, year 1994 5/26/94

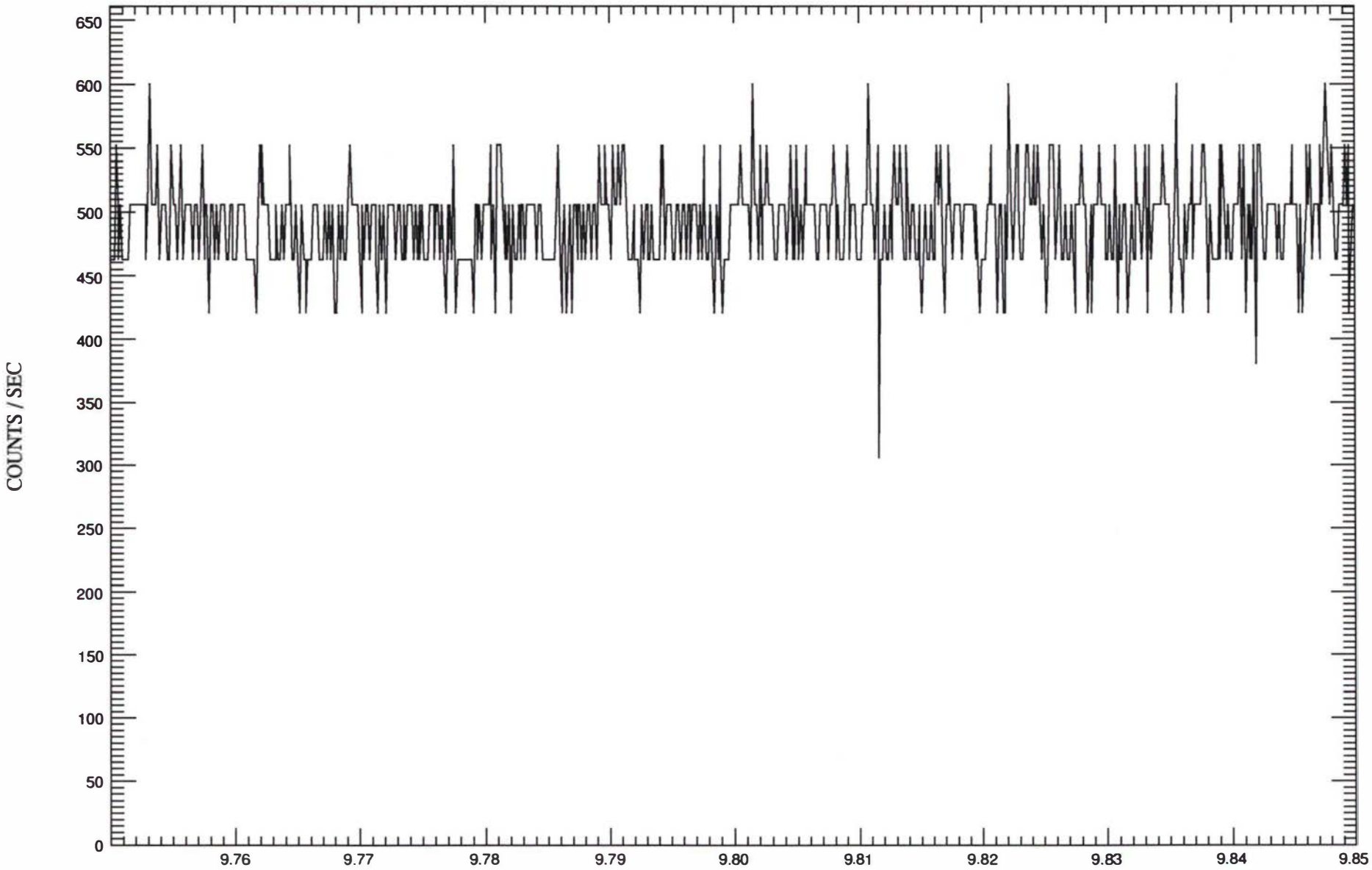
Burst Counter 1 at UT= 9.801747915480 h=35286.292 s 09:48:06.292



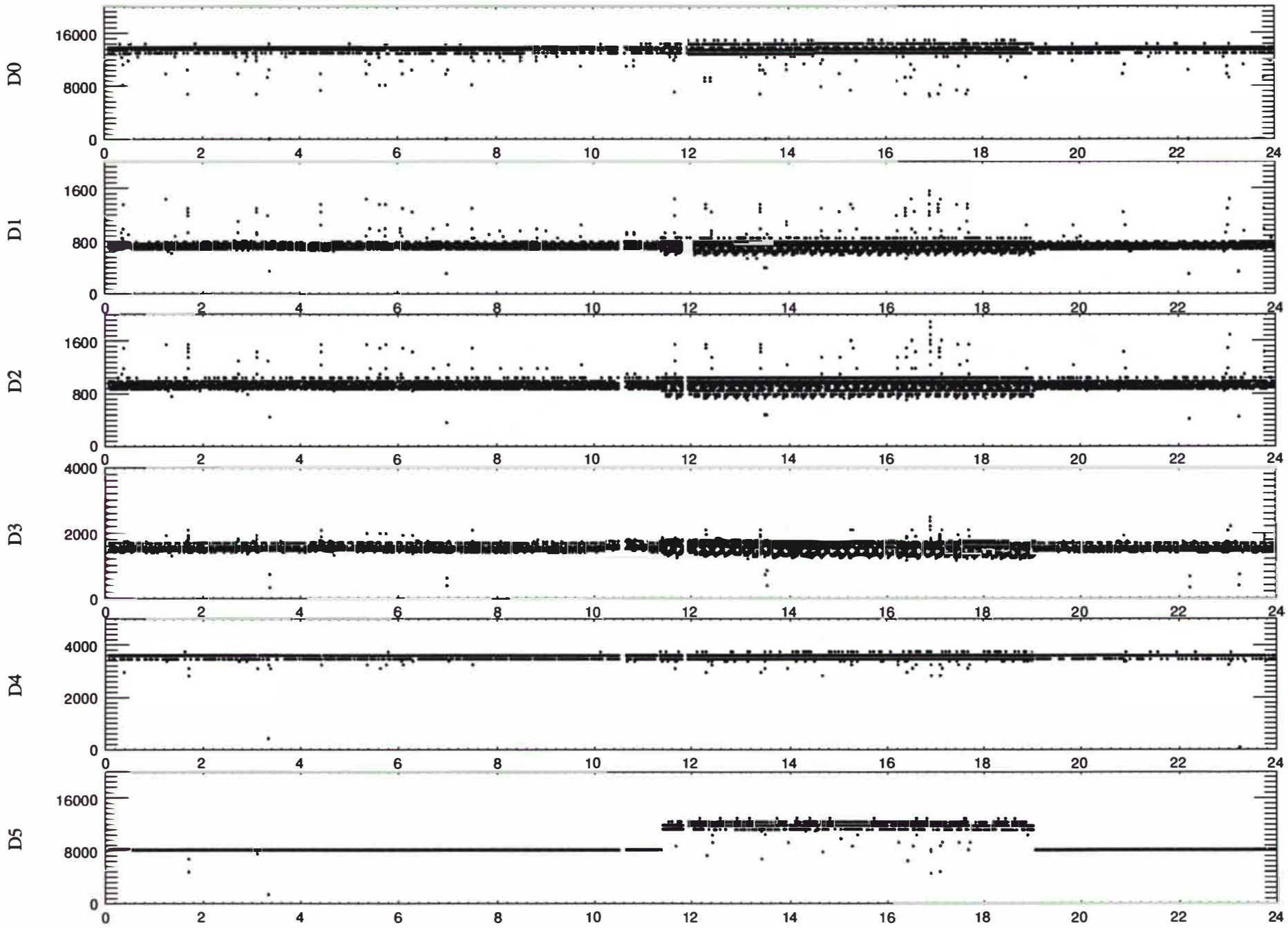
B# 1

HUS 2A, MODE 1, NOT AVERAGED QEDR day 52, year 1994 to day 53, year 1994 2/22/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 52, year 1994 to day 52, year 1994 2/22/94



BATSE time corrected 10/01

Date: Jul 05 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. BATSE Data

☐ BATSE ephemeris for T_0?

☐ Error circle position and radius from public catalog used?

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

3. NEAR Data

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

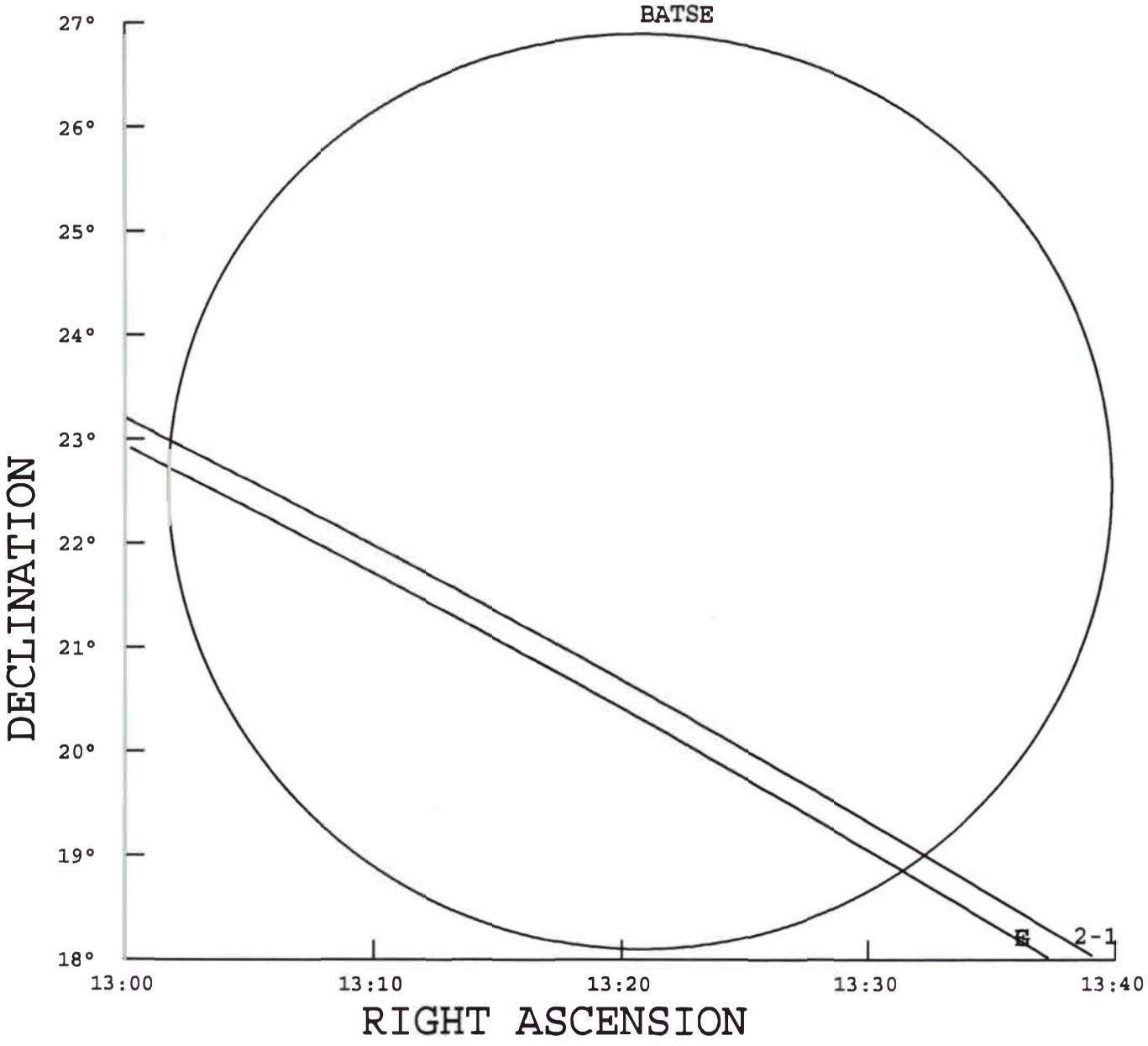
☐ BATSE >100 keV data used for NEAR correlation?

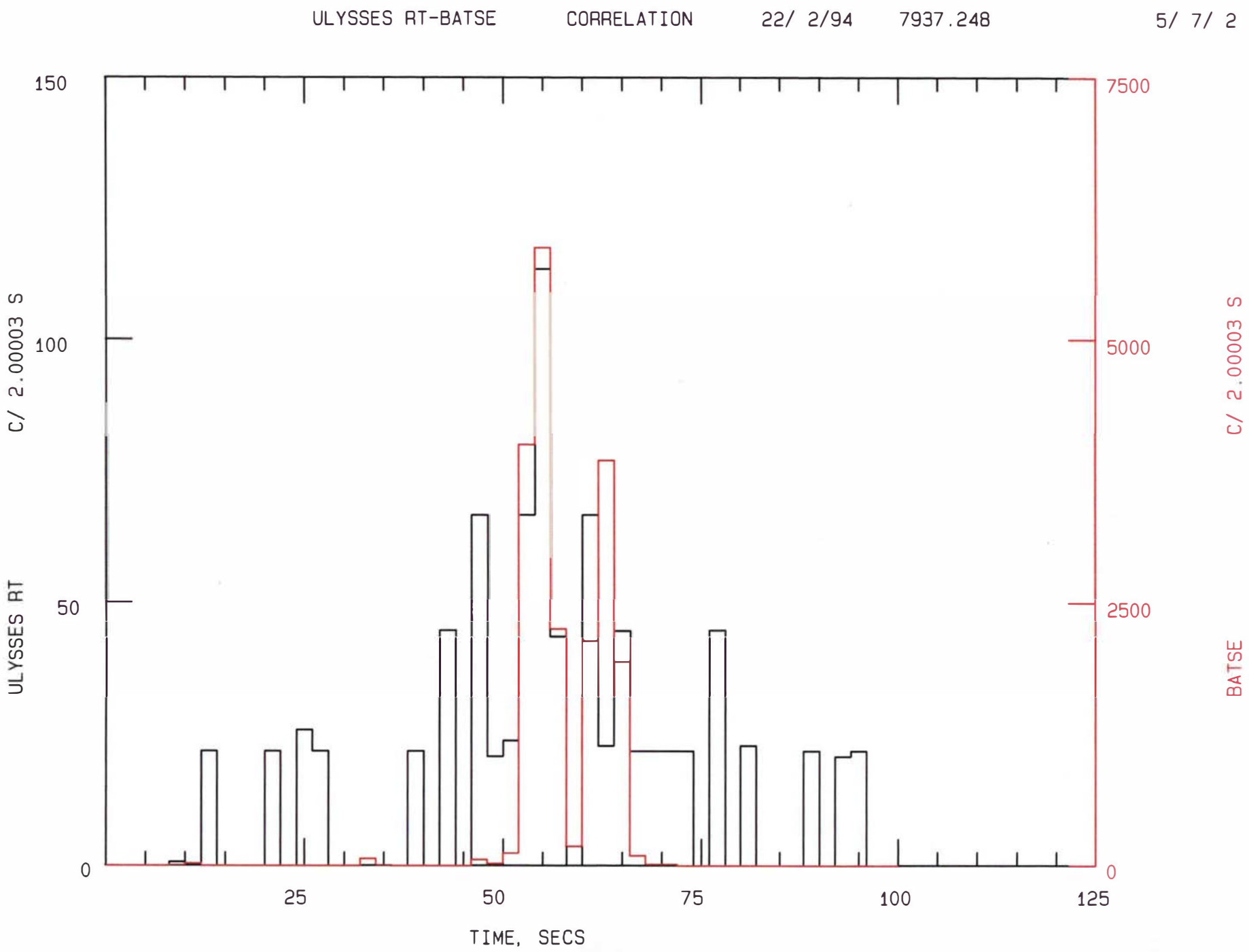
☑ ACCESS database updated?

EVENT OF FEB 22, 1994 2:14

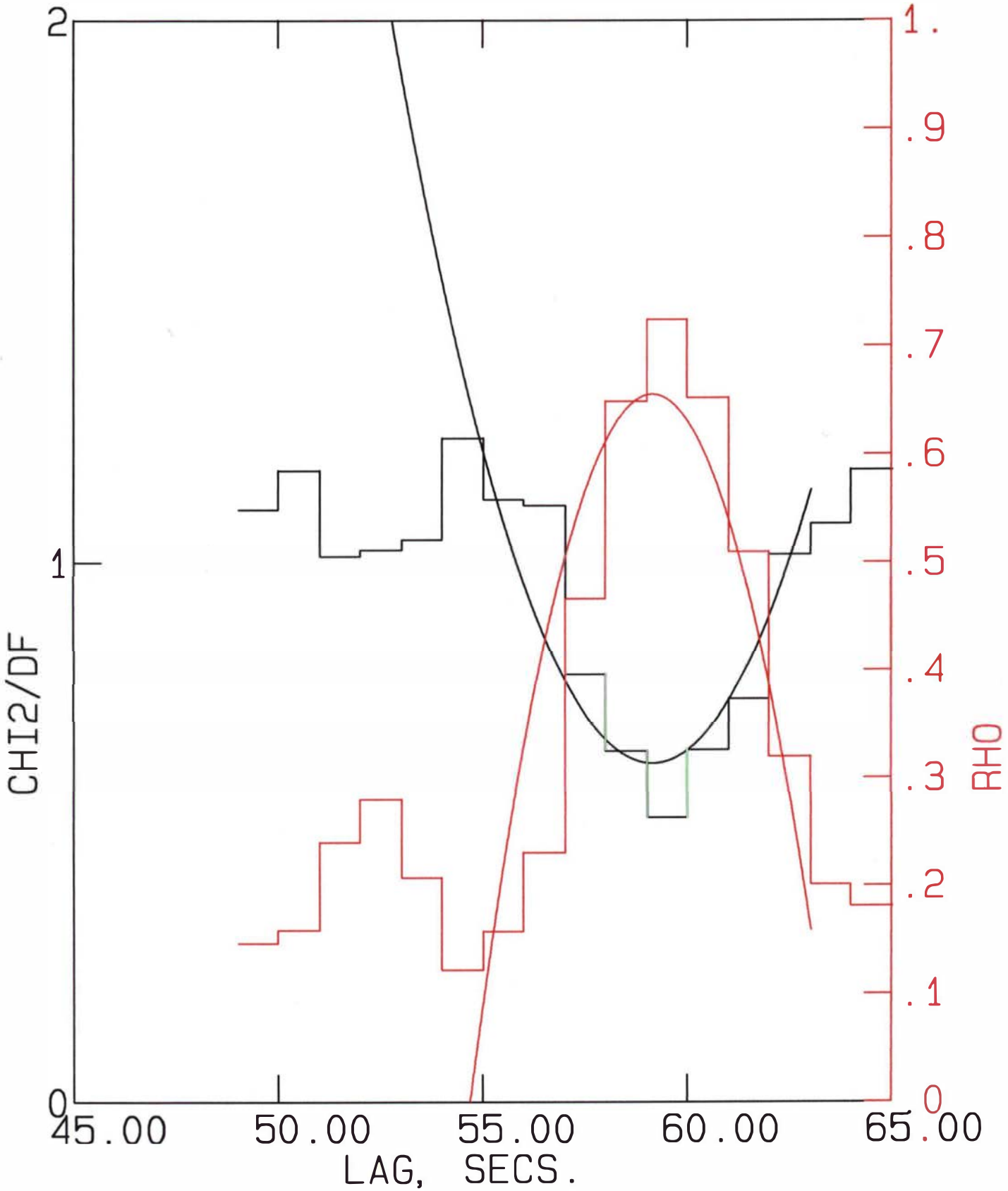
5/ 7/ 2

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 22/ 2/94 7937.248 5/ 7/ 2
150
100
50
0
ULYSSES RT
C/ 2.00003 S
7500
5000
2500
0
BATSE
C/ 2.00003 S
25
50
75
100
125
TIME, SECS

ULYSSES RT-BATSE CORRELATION 22/ 2/94 7937.248

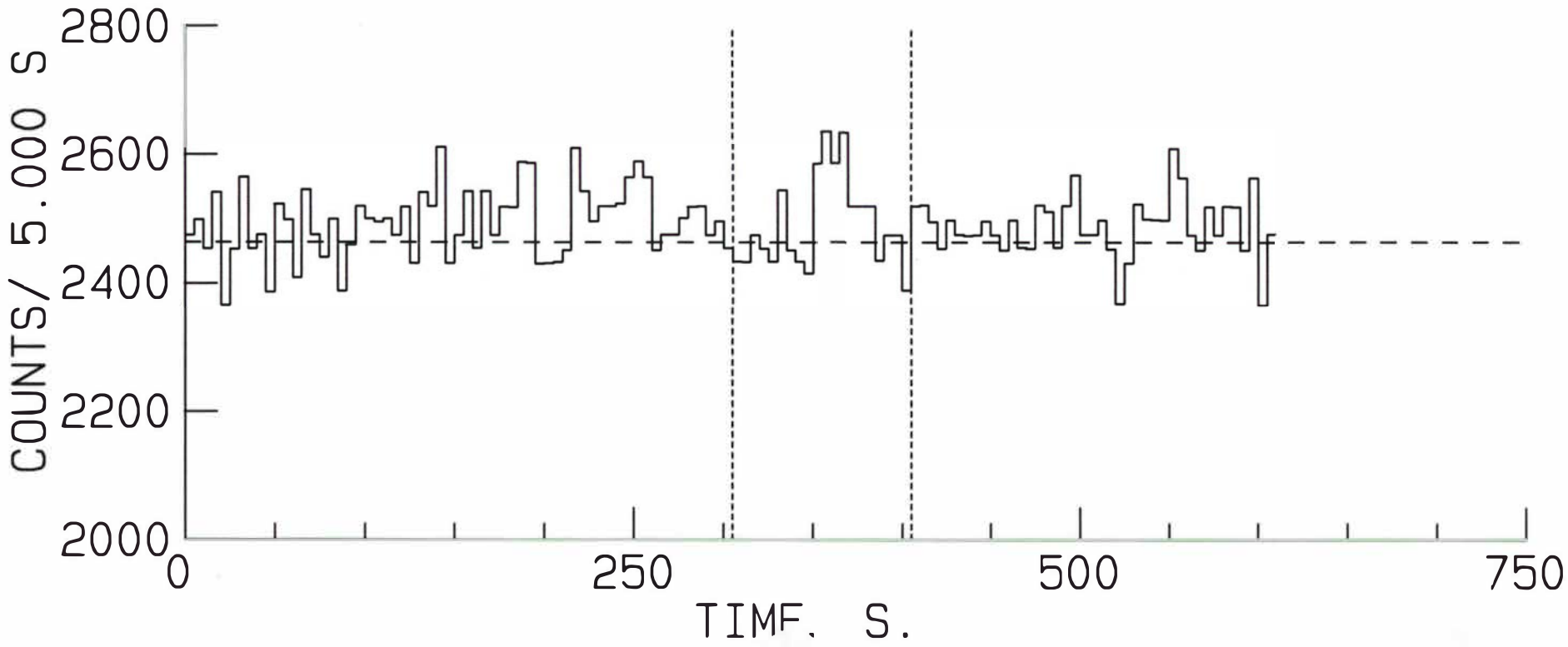


ULYSSES RT 5/ 7/ 2

22/ 2/94 7632.215 s

0.500 S INTERVALS REGROUPED BY 10

22- 149 keV



From MALLOZZI@ssl.msfc.nasa.gov Wed Feb 23 12:37 PST 1994
Date: Wed, 23 Feb 1994 14:41:56 -0600 (CST)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER
NO.: 02841

TIME: TJD=9405 SECONDS=01050

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From MALLOZZI@ssl.msfc.nasa.gov Wed Feb 23 12:41 PST 1994
Date: Wed, 23 Feb 1994 14:44:51 -0600 (CST)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER
NO.: 02842

TIME: TJD=9405 SECONDS=29233

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGERED ON SAA ENTRY.

From MALLOZZI@ssl.msfc.nasa.gov Wed Feb 23 13:12 PST 1994
Date: Wed, 23 Feb 1994 15:17:06 -0600 (CST)
From: MALLOZZI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2843
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2843
EVENT OF 1994 FEB 22 DAY OF YEAR= 53
EVENT CROSSING TIME AT BATSE : 42653. S. OR 11:50:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 65.000 42.000
BATSE PEAK COUNTING RATE: 5500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 2/ 94 IS:
RA= 145.736 DEC= -52.053 DIST= 3.002 AU
BATSE-ULYSSES DISTANCE = 449039721. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 680.16 SECS.
CROSSING TIME AT ULYSSES IS 43333. S. OR 12:02:13 +/- 292.02 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 2/ 94 IS:
RA= 322.195 DEC= -16.029 DIST= 2.335 AU
MARS-BATSE DISTANCE = 349245152. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 399.66 SECS.
CROSSING TIME AT MARS IS 43053. S. OR 11:57:32 +/- 196.05 SECONDS

KJO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2843	940222	9405	42653	5500	065	+42

BATSE BURST TRIGGER
NO.: 02843

TIME: TJD=9405 SECONDS=42653

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=039.5 AZIMUTH=245.3 ERROR= DEGREES

COMMENTS:
FAIRLY HARD GAMMA-RAY BURST; OBSERVED ABOVE 300 KEV.
TWO MAIN PEAKS WITH A TOTAL DURATION OF APPROX. 12 SECONDS. POSSIBLY
SOME EMISSION AT ~TRIGGER + 50 SECONDS. SHOULD BE IN COMPTEL'S FOV.

BatseBurst #2843

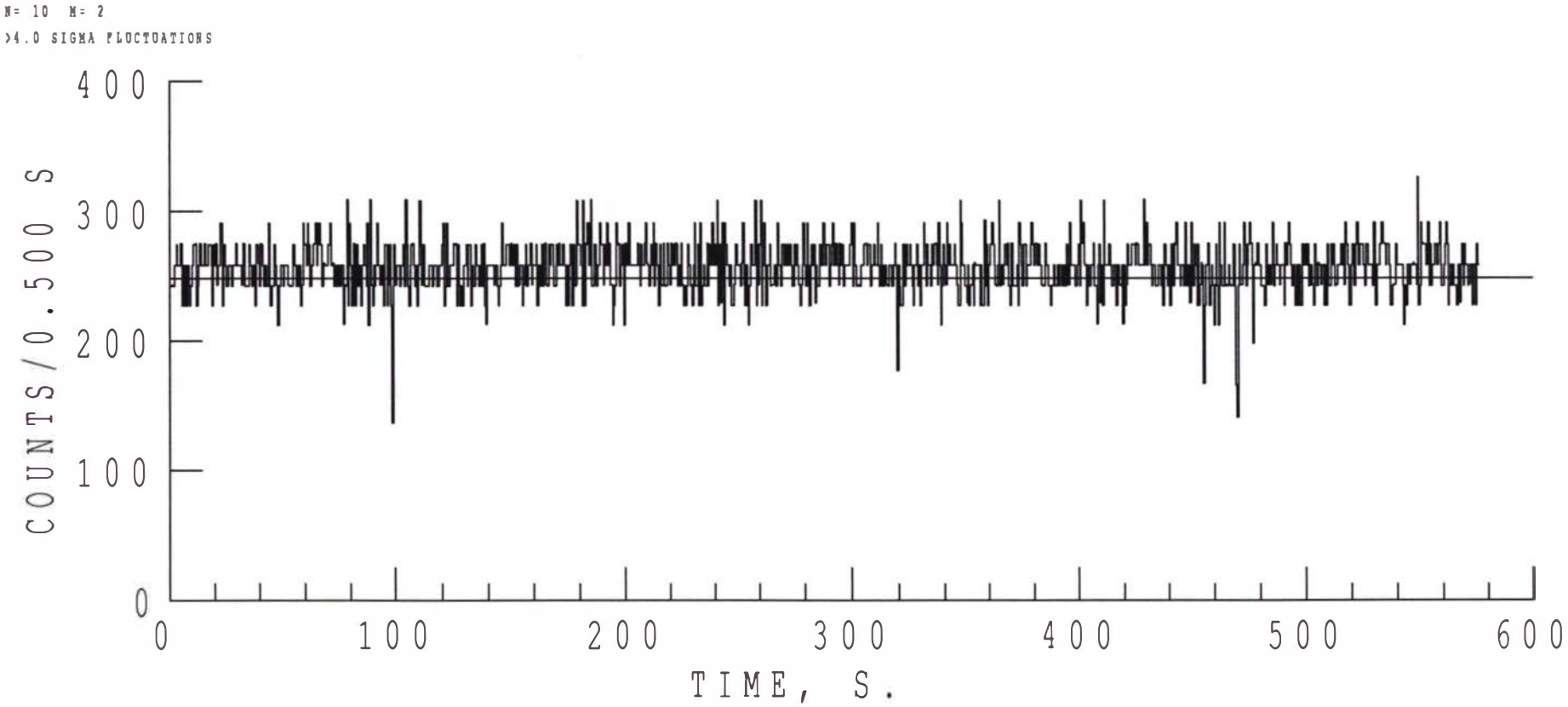
23/ 2/94

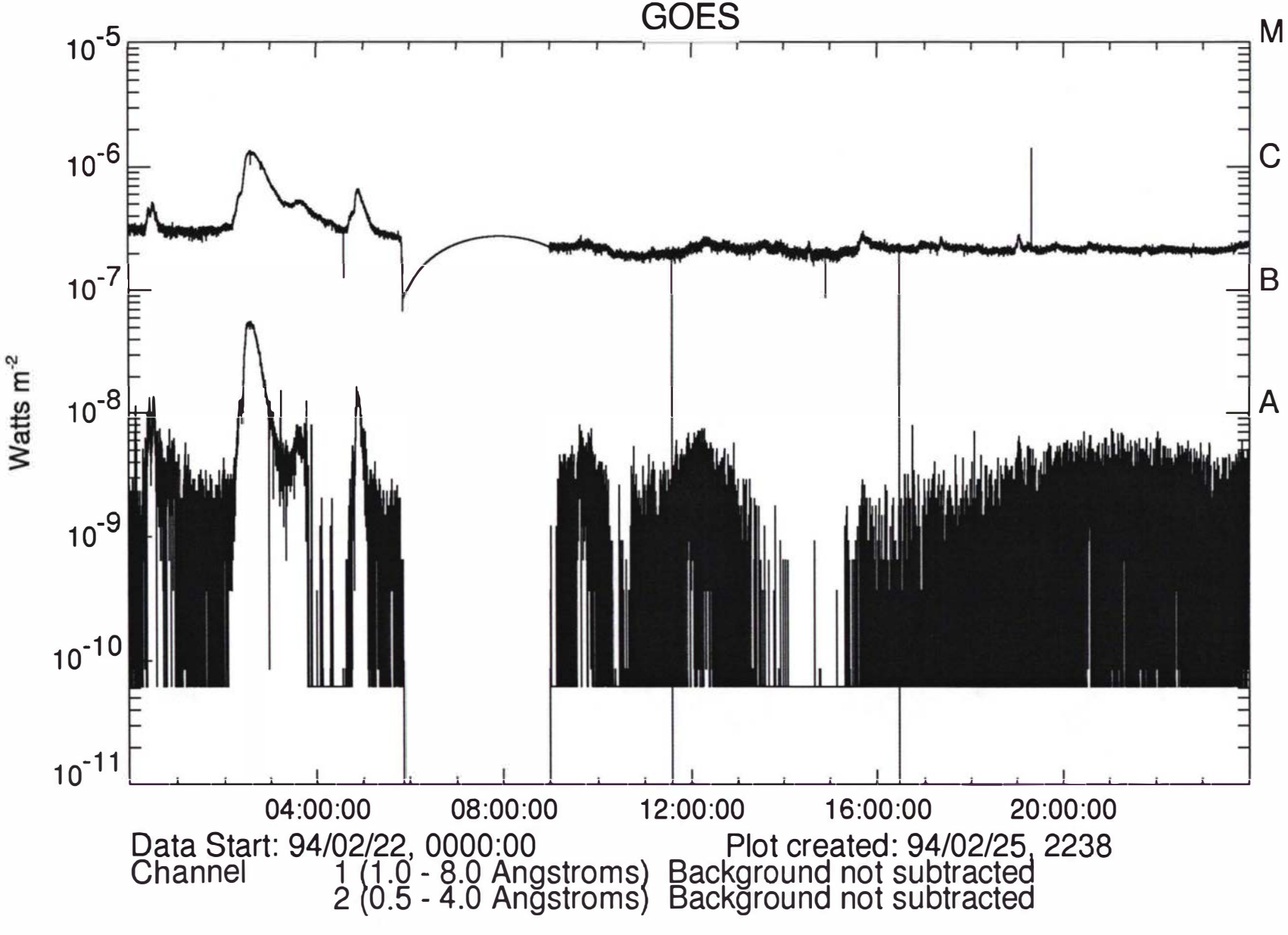
ULYSSES RT

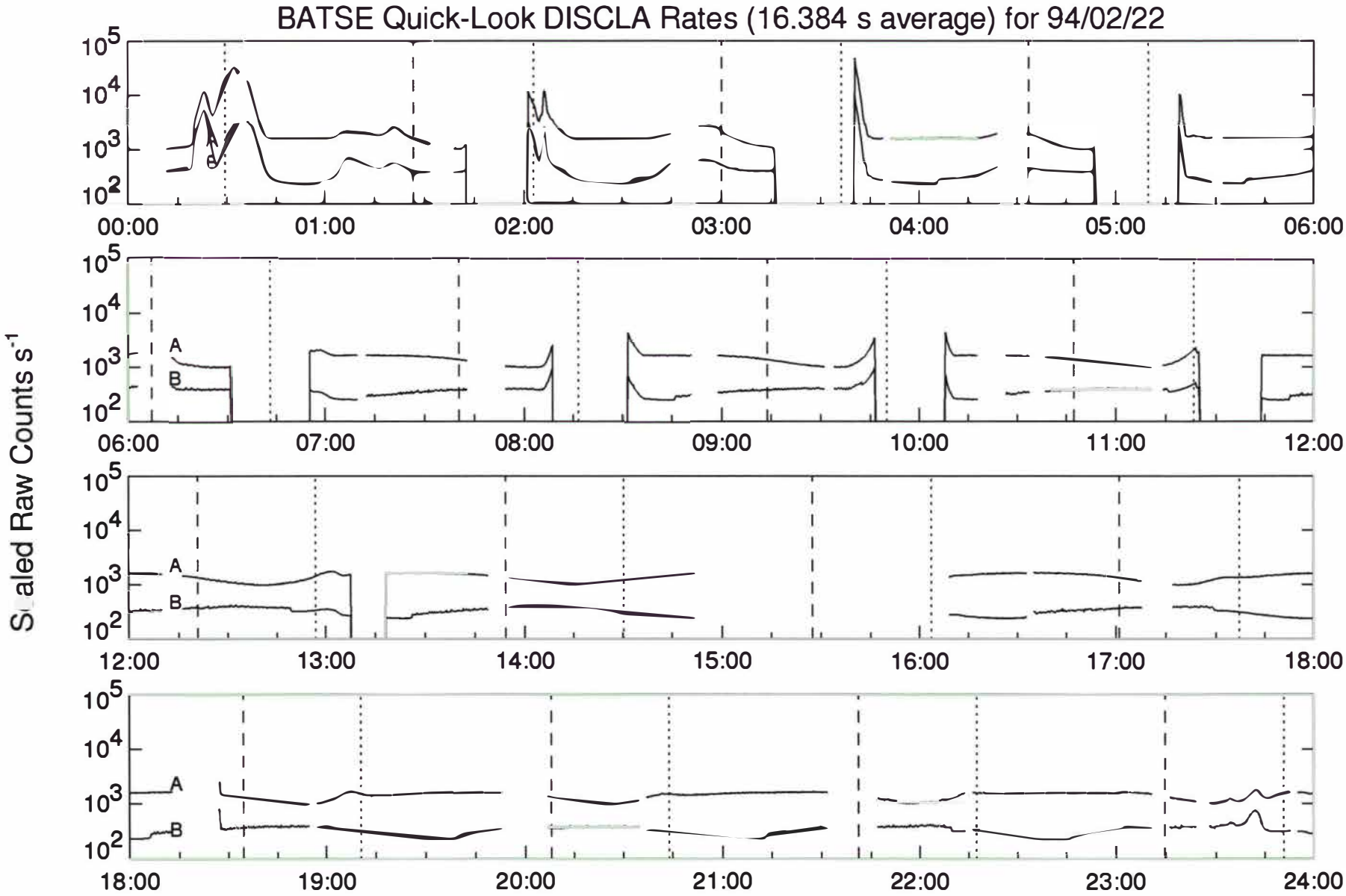
22/ 2/94 43056.020 s

0.250 S INTERVALS REGROUPED BY 2

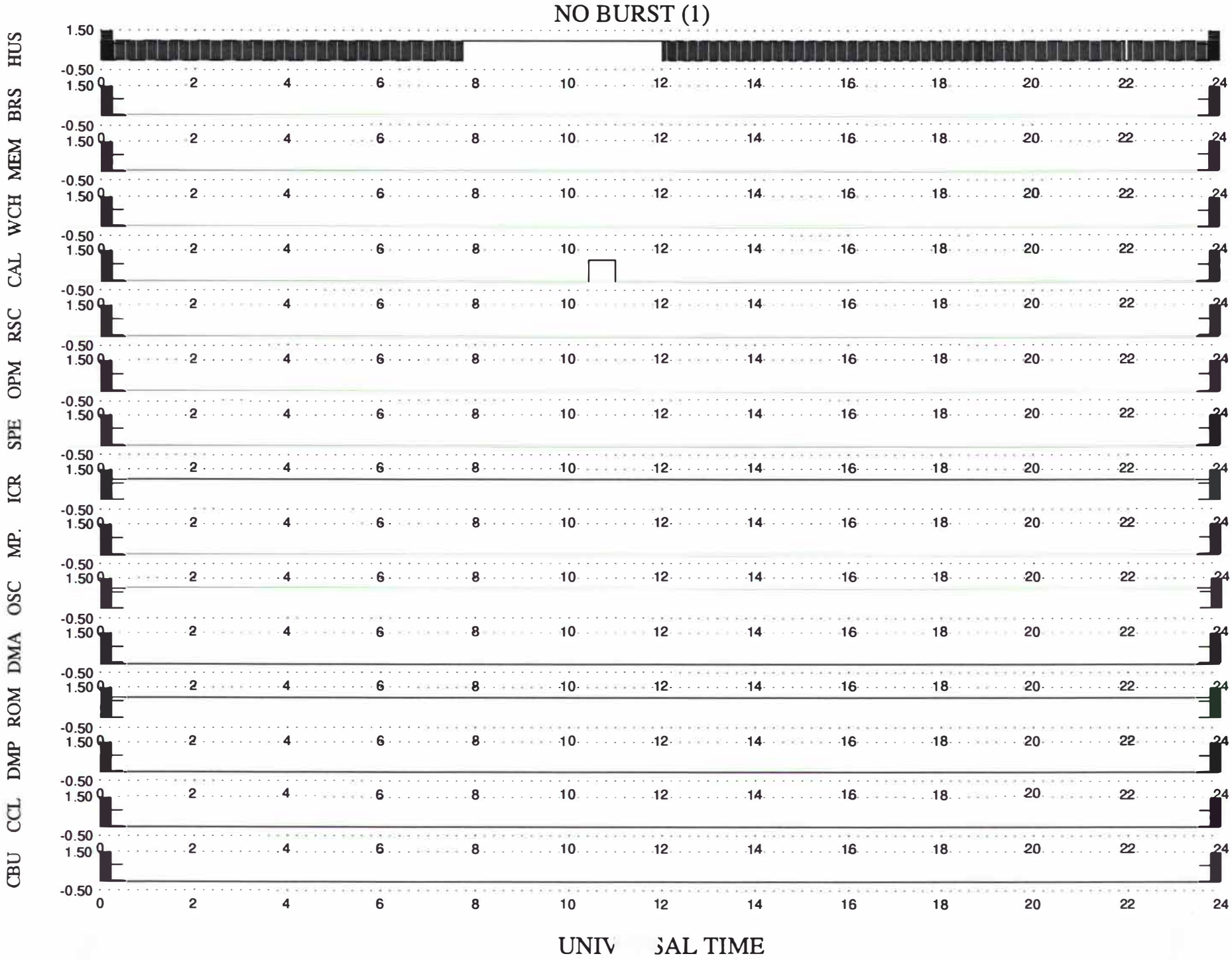
0- 0 keV




GOES
M
C
B
A
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/22, 0000:00
Plot created: 94/02/25, 2238
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

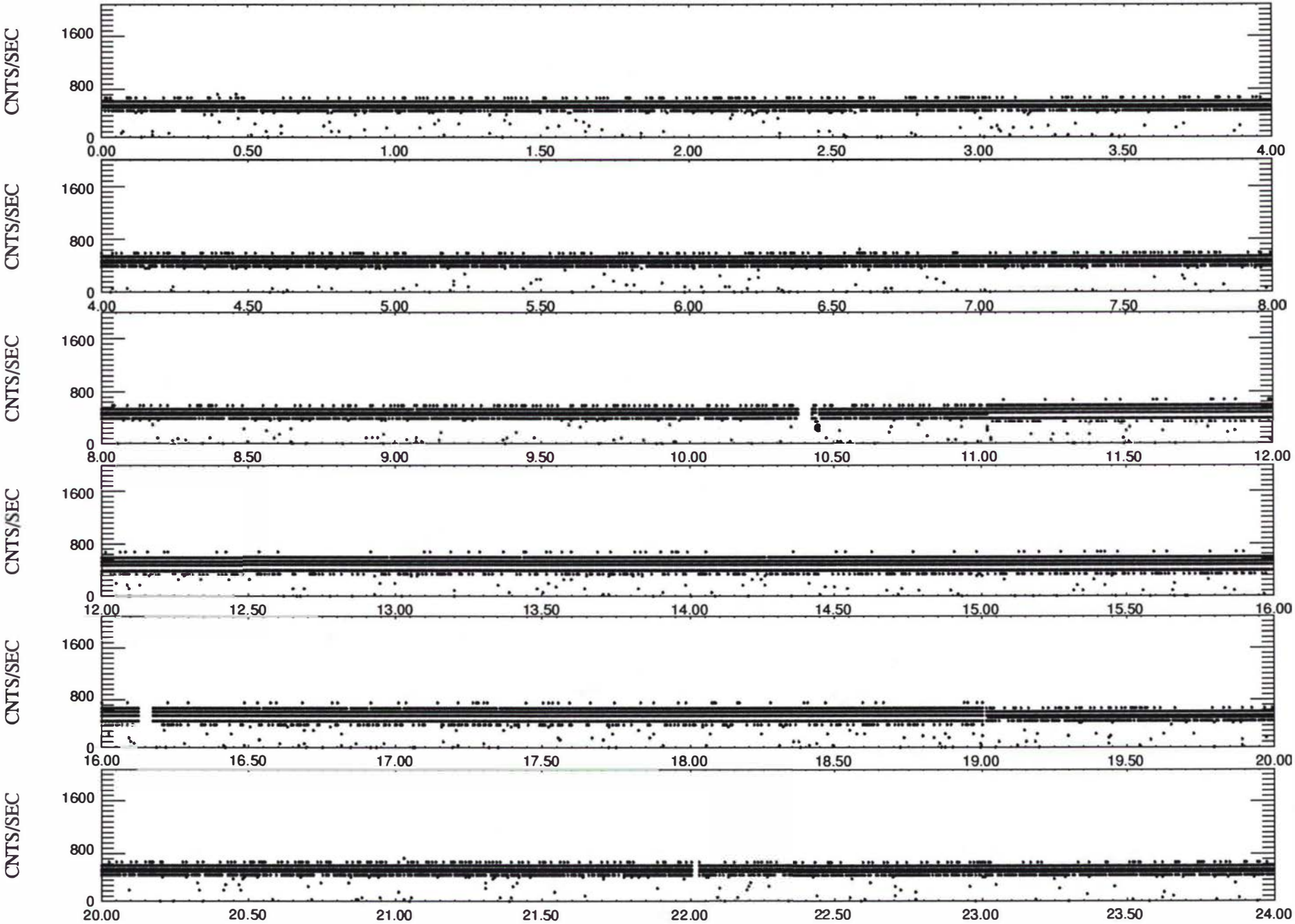

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/22
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
24:00
Current Time: 94/02/25, 2208 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 53, year 1994 to day 53, year 1994 5/26/94



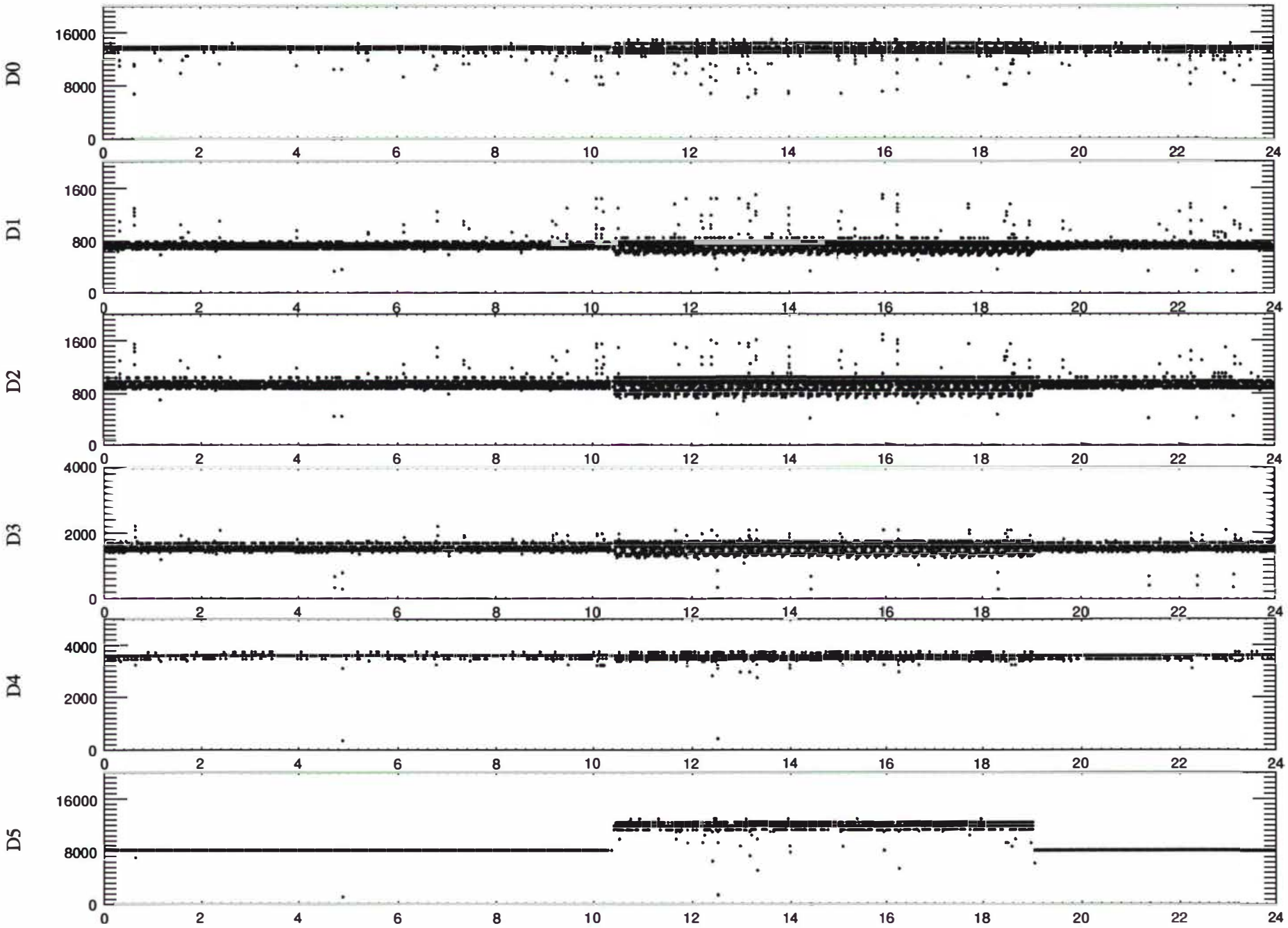
HUS 2A, MODE 1, NOT AVERAGED EDR day 53, year 1994 to day 53, year 1994 5/26/94

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC QEDR day 53, year 1994 to day 53, year 1994 2/23/94



From ZMYEWSKI@ssl.msfc.nasa.gov Thu Feb 24 12:38 PST 1994
Date: Thu, 24 Feb 1994 14:42:54 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2844
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #    2844
 EVENT OF 1994 FEB 23 DAY OF YEAR= 54
 EVENT CROSSING TIME AT BATSE      : 28813. S. OR 08:00:13.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION:  13.000   18.000
 BATSE PEAK COUNTING RATE:   2900    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 23/ 2/  94 IS:
 RA=  145.257 DEC=  -52.100 DIST=    2.995 AU
 BATSE-ULYSSES DISTANCE =  448113866. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 50.45 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  951.71 SECS.
 CROSSING TIME AT ULYSSES    IS 29765. S. OR   08:16:04 +/-  264.56 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 23/ 2/  94 IS:
 RA=  322.971 DEC=  -15.784 DIST=    2.333 AU
 MARS-BATSE DISTANCE =  348956544. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.26 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -586.49 SECS.
 CROSSING TIME AT MARS       IS 28227. S. OR   07:50:26 +/-  165.65 SECONDS
```

From ZMYEWSKI@ssl.msfc.nasa.gov Thu Feb 24 12:37 PST 1994
Date: Thu, 24 Feb 1994 14:42:05 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Cc: ZMYEWSKI@ssl.msfc.nasa.gov
Subject: BATSE Burst 2844
Content-Type: text
Content-Length: 108

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2844	940223	9406	28813	2900	013	+18

Batse Burst # 2844

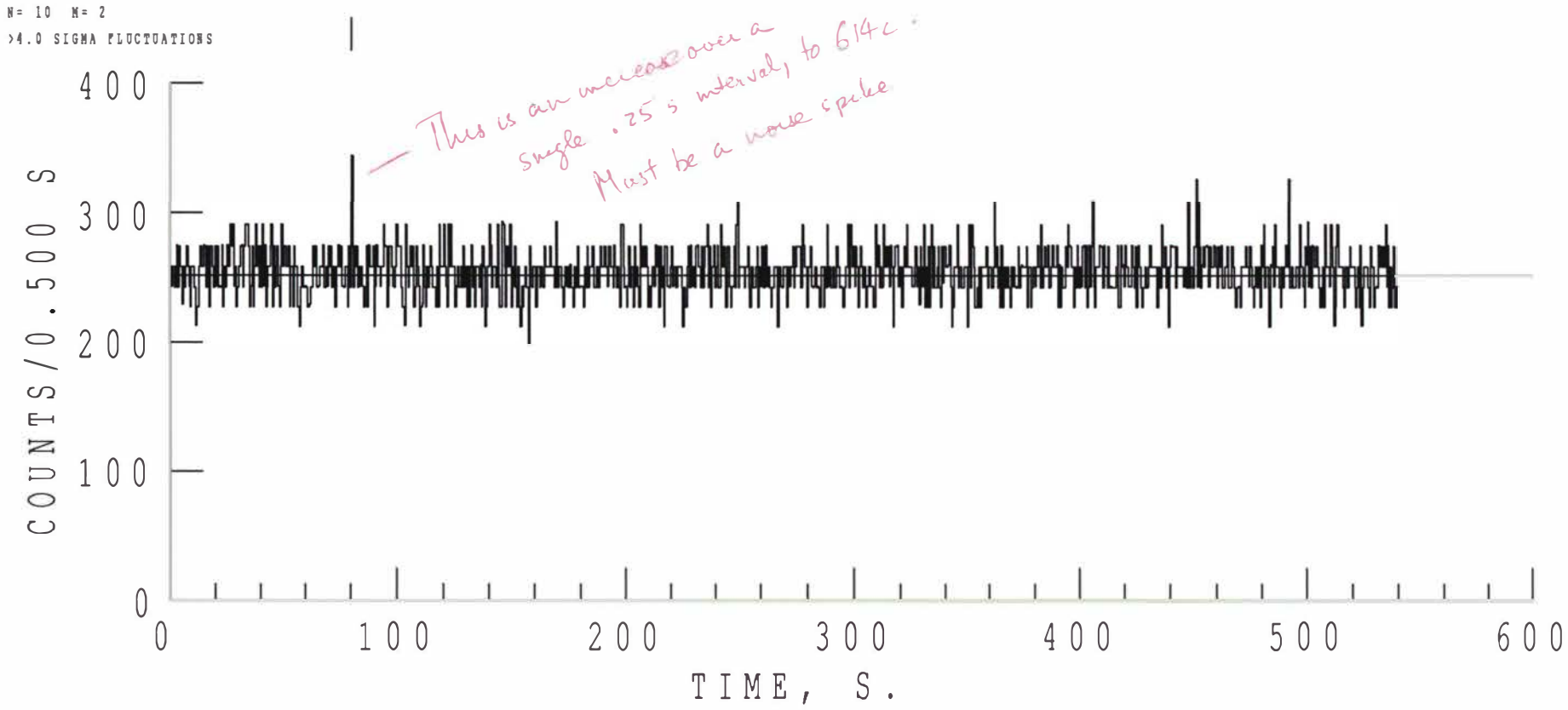
24/ 2/94

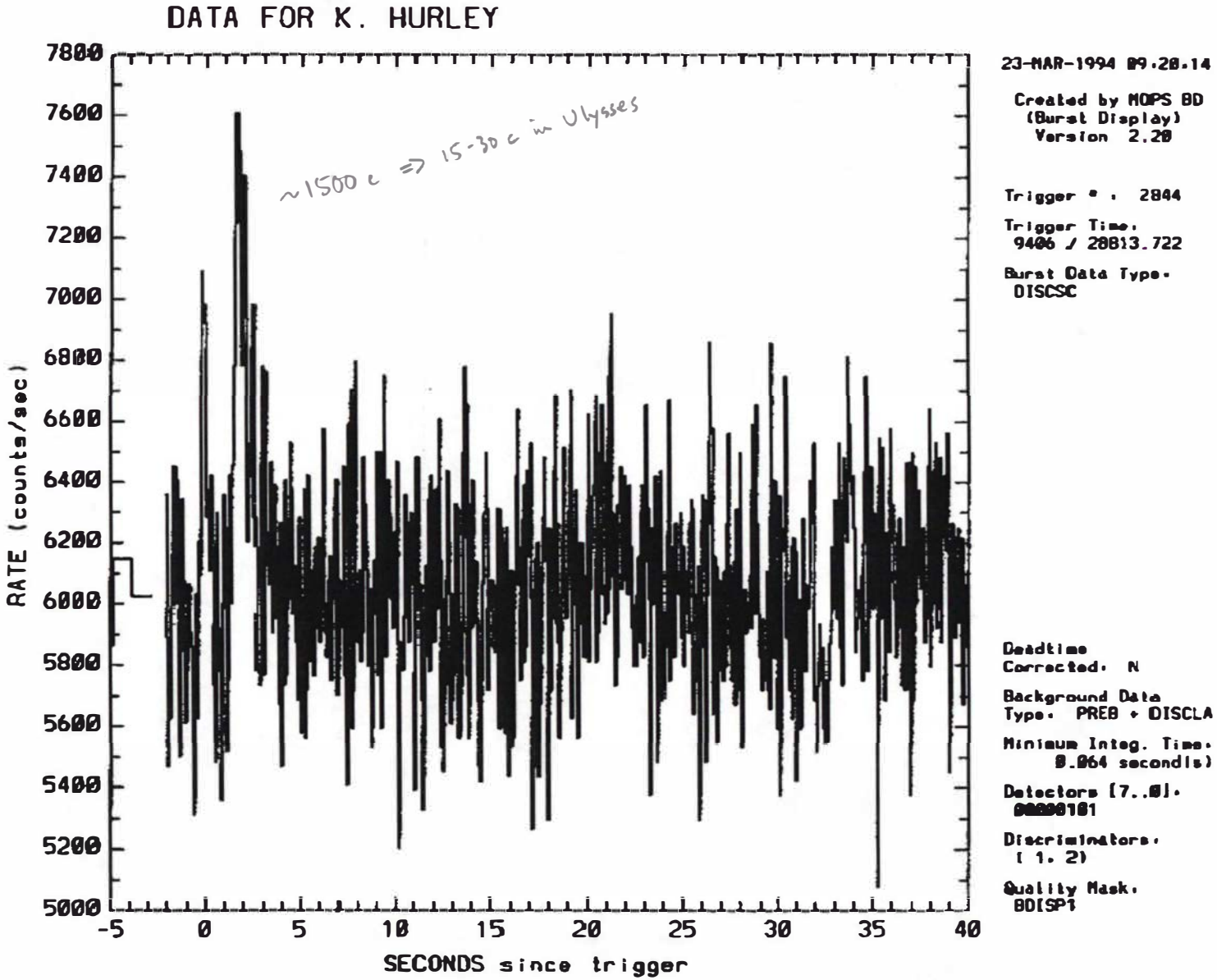
ULYSSES RT

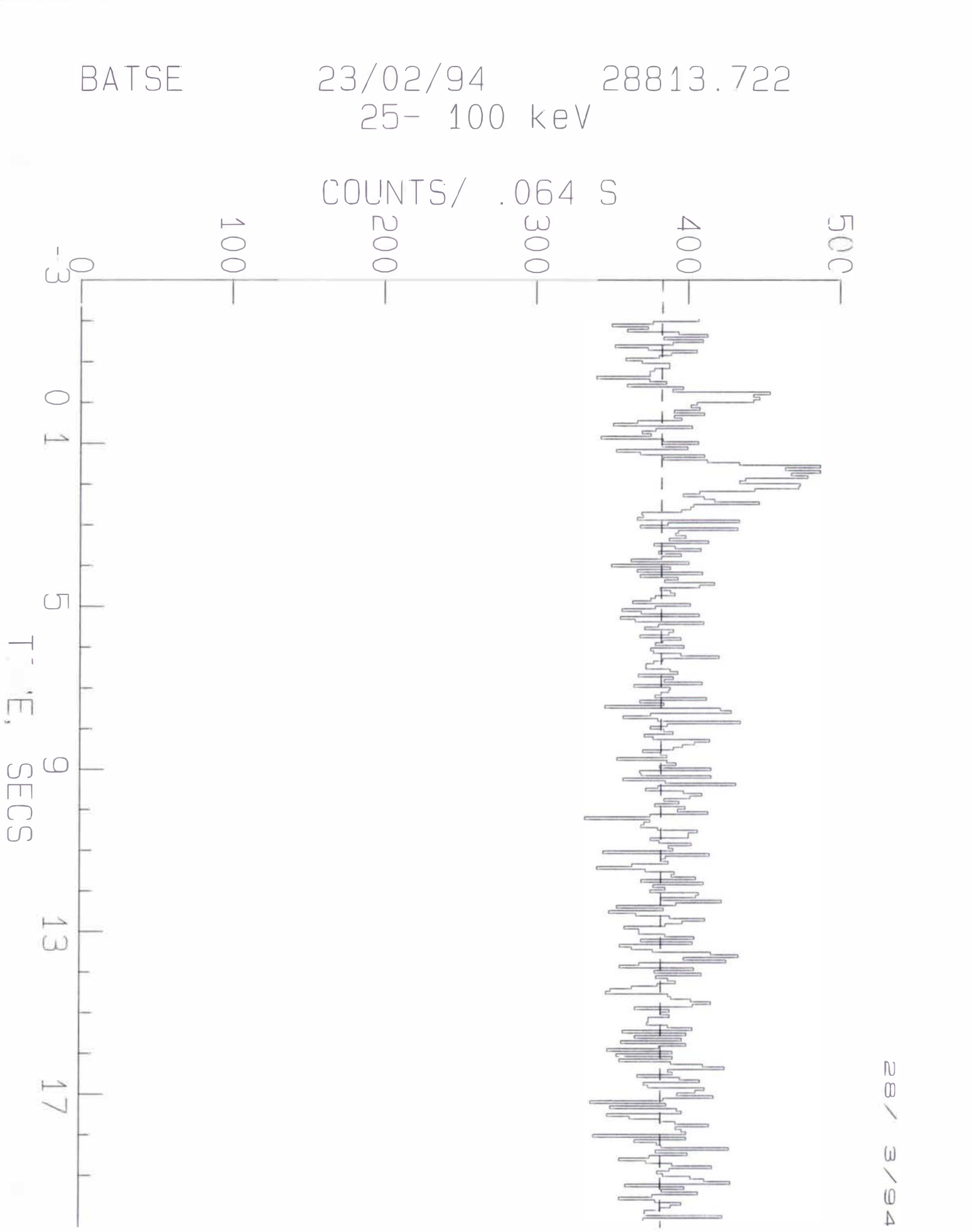
23/ 2/94 29484.152 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV




DATA FOR K. HURLEY
~1500 c ⇒ 15-30 c in Ulysses
RATE (counts/sec)
7800
7600
7400
7200
7000
6800
6600
6400
6200
6000
5800
5600
5400
5200
5000
-5
0
5
10
15
20
25
30
35
40
SECONDS since trigger
23-MAR-1994 09.28.14
Created by MOPS BD
(Burst Display)
Version 2.20
Trigger # : 2844
Trigger Time:
9406 / 28813.722
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors [7..0]:
00000101
Discriminators:
(1, 2)
Quality Mask:
BDISP1


BATSE 23/02/94 28813.722
25- 100 keV
COUNTS/ .064 S
0
100
200
300
400
500
-3
0
1
5
9
13
17
T-E, SECS
28/ 3/94

From ZMYEWSKI@ssl.msfc.nasa.gov Fri Feb 25 08:06 PST 1994
Date: Fri, 25 Feb 1994 10:10:32 -0600 (CST)
From: ZMYEWSKI@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02845

TIME: TJD=9406 SECONDS=82939

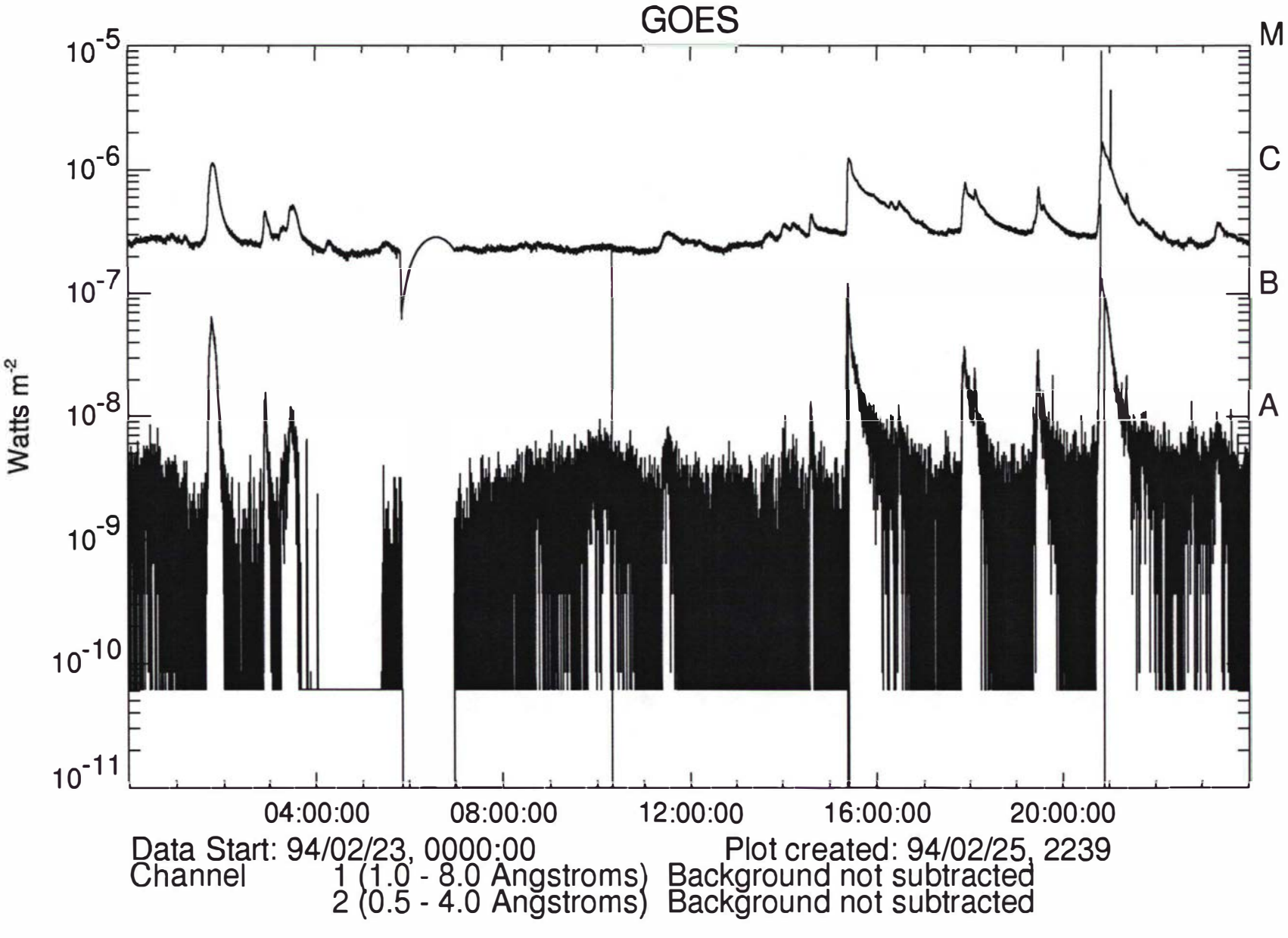
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

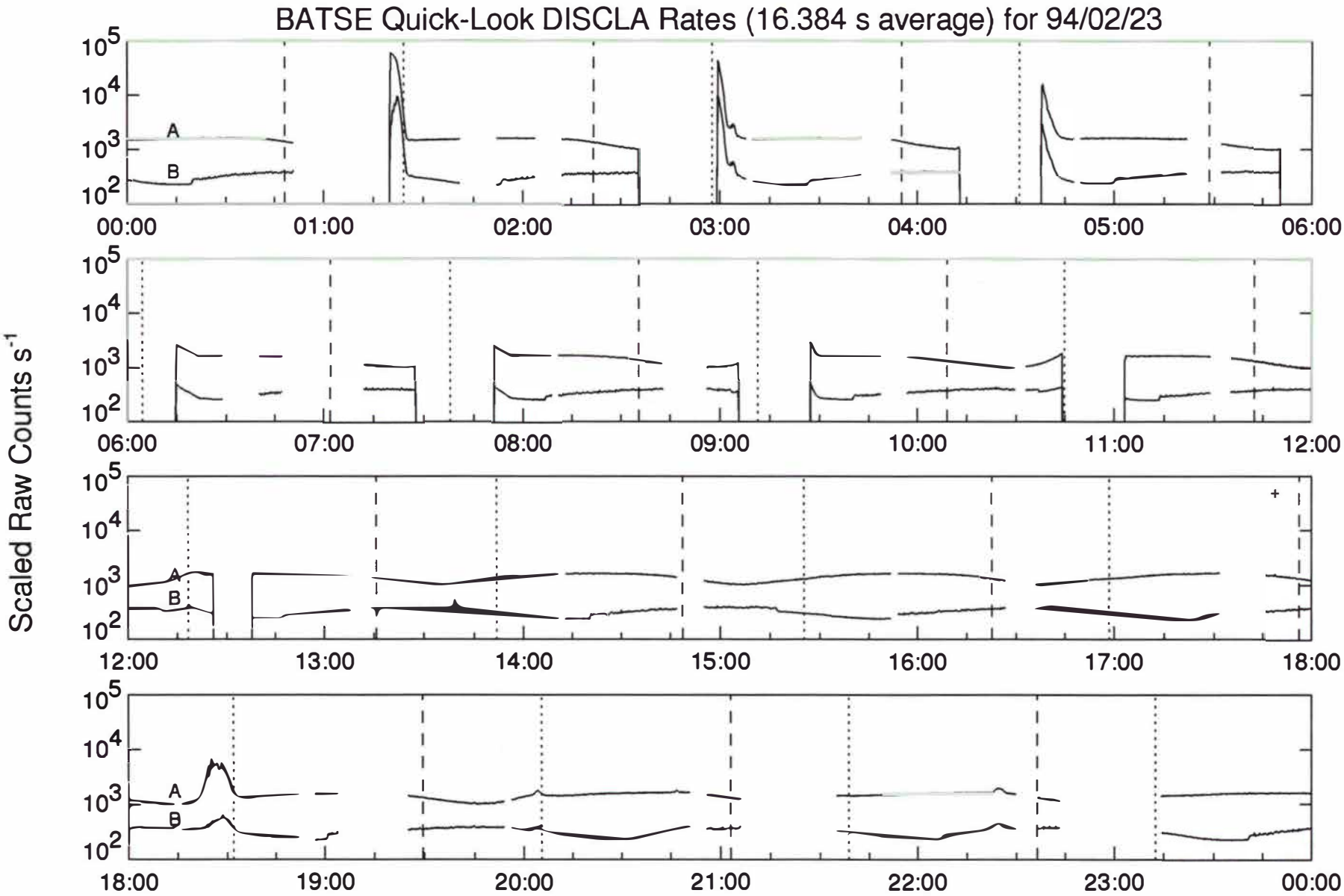
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

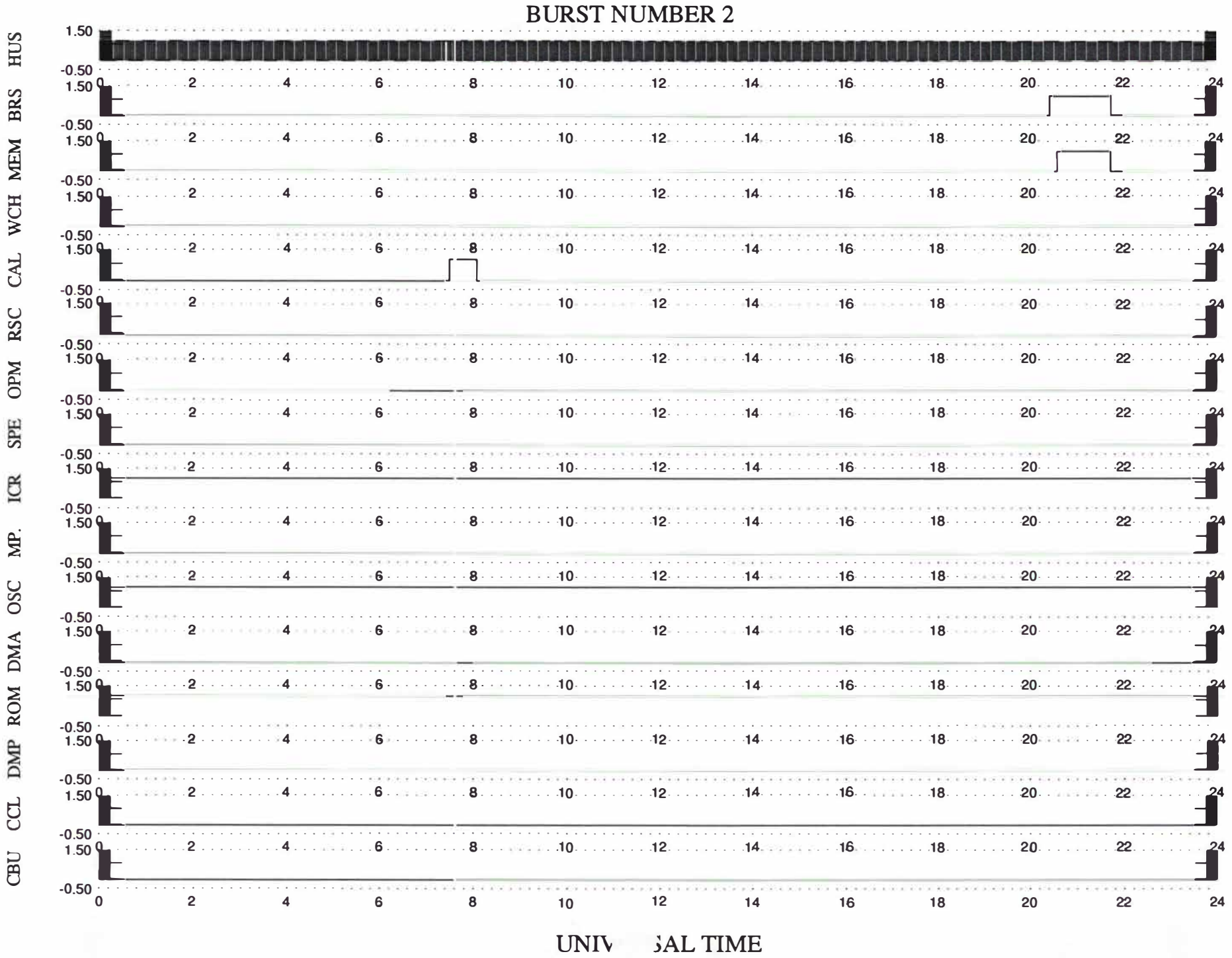
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.


GOES
M
C
B
A
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/23, 0000:00
Plot created: 94/02/25, 2239
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

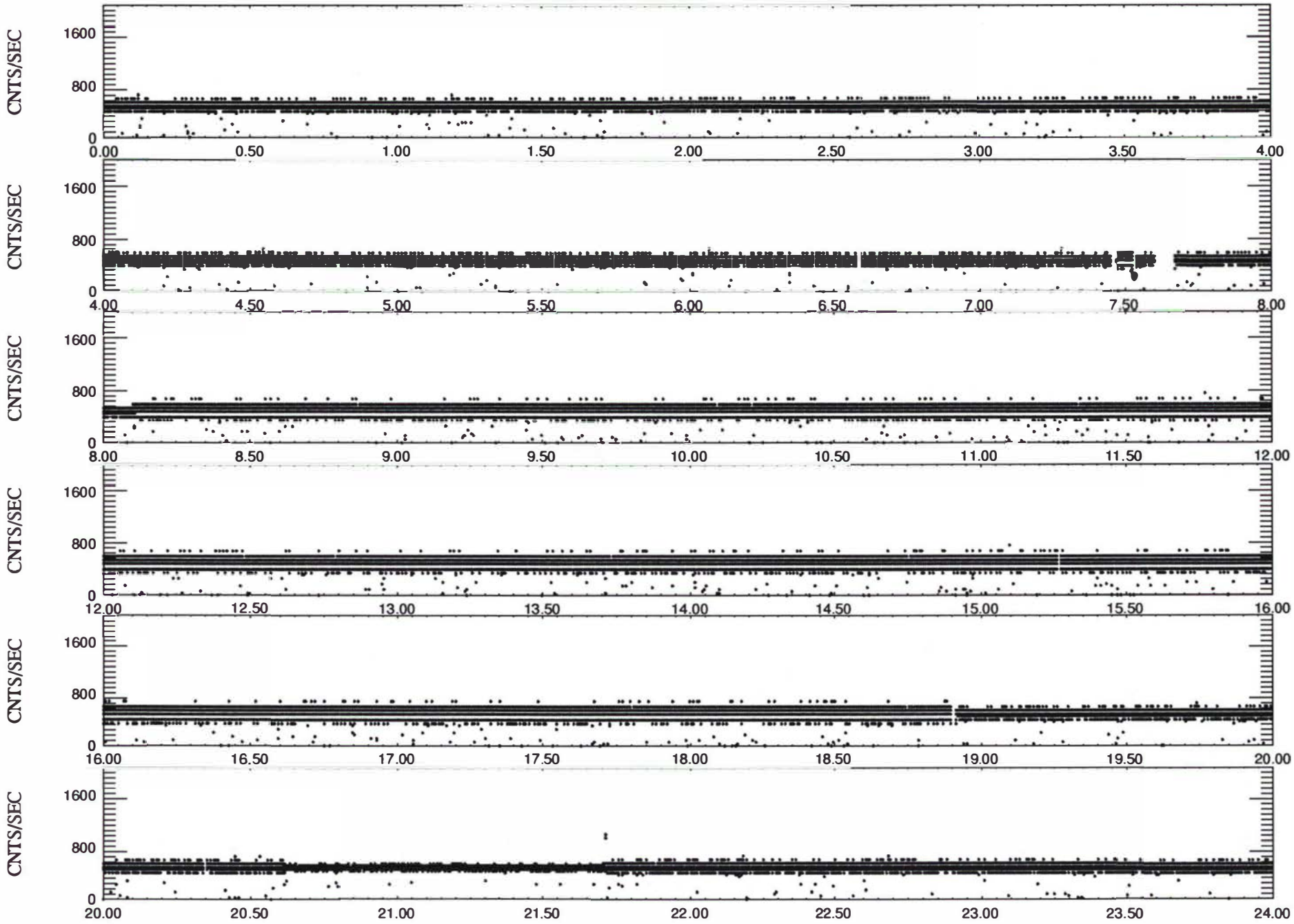

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/23
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
+
Current Time: 94/02/25, 2208 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 54, year 1994 to day 54, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 54, year 1994 to day 54, year 1994 5/26/94

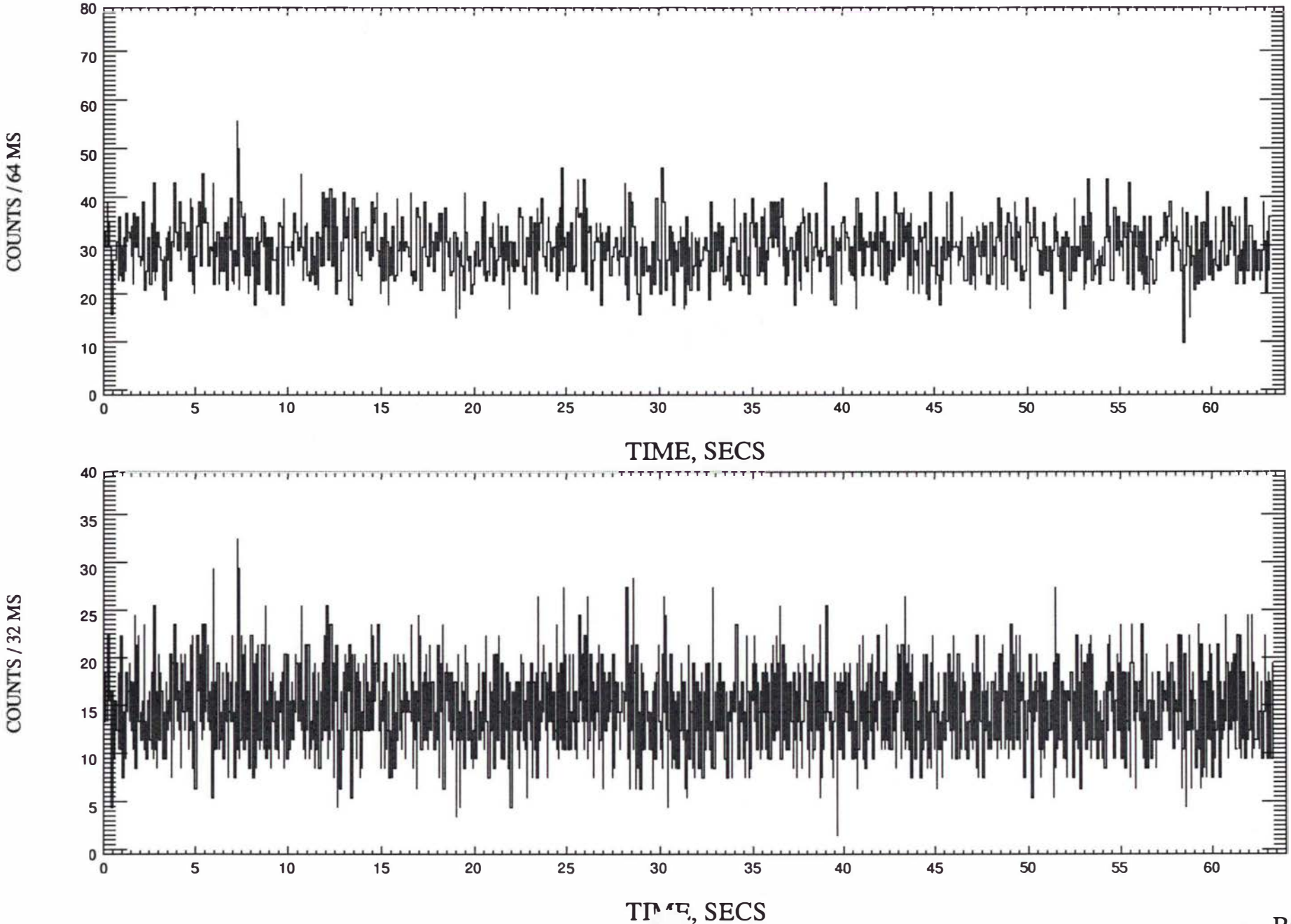
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 54, year 1994 5/26/94

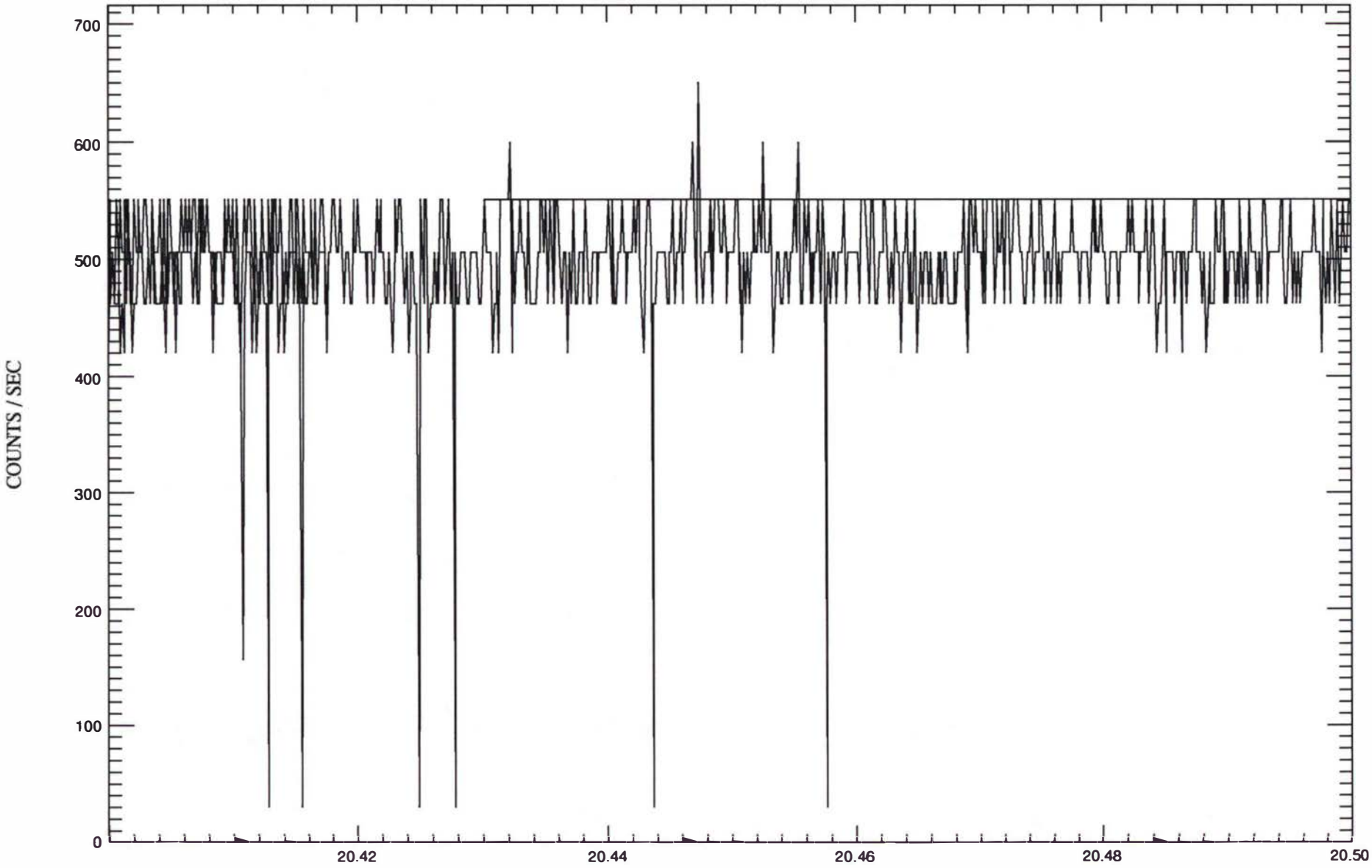
Burst Counter 2 at UT=20.447555363973 h=73611.199 s 20:26:51.199



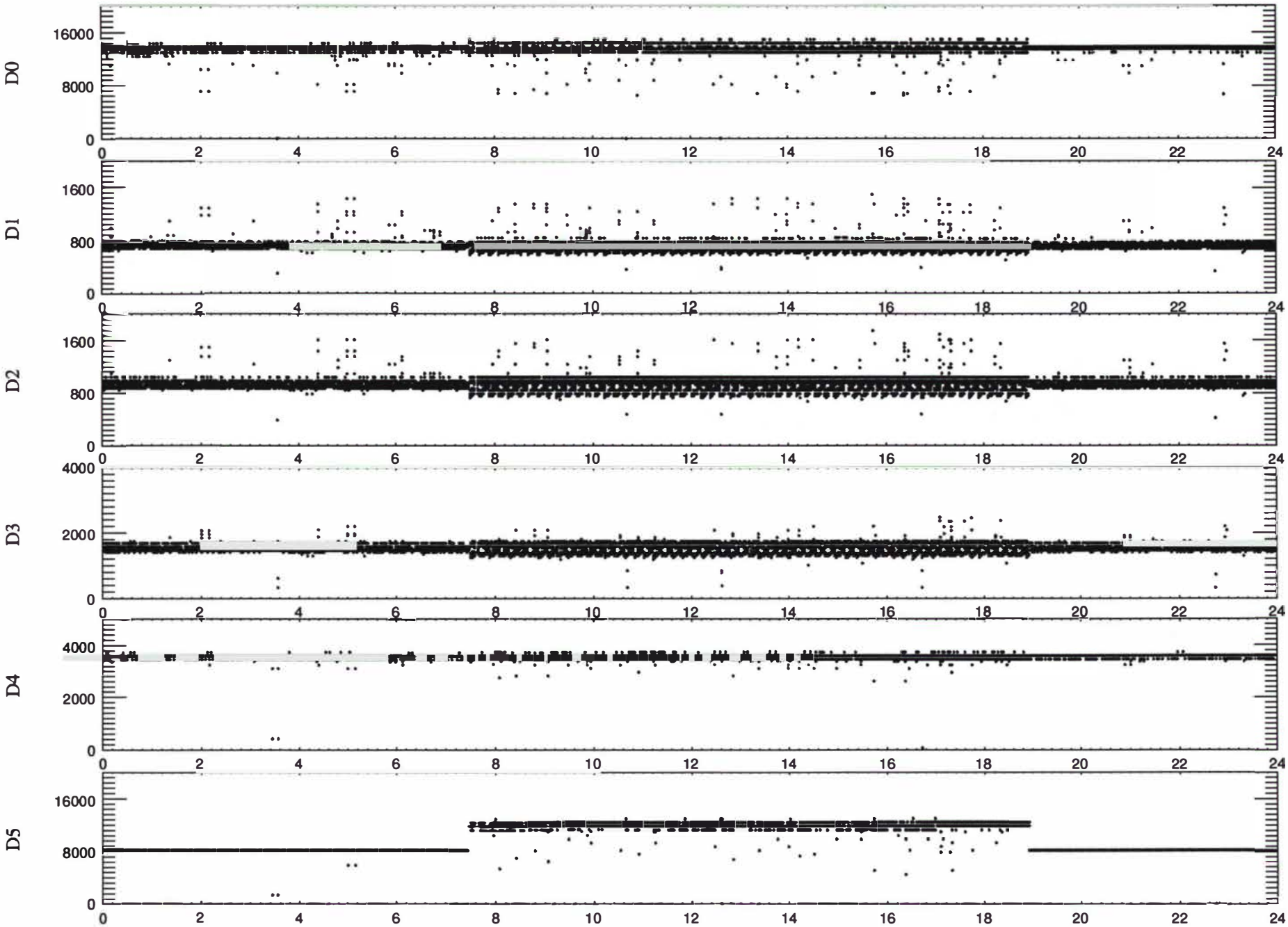
B# 1

HUS 2A, MODE 1, NOT AVERAGED QEDR day 54, year 1994 to day 55, year 1994 2/25/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 54, year 1994 to day 54, year 1994 2/25/94



From SHARIFF@ssl.msfc.nasa.gov Fri Feb 25 08:17 PST 1994
Date: Fri, 25 Feb 1994 10:22:09 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2846
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2846
 EVENT OF 1994 FEB 24 DAY OF YEAR= 55
 EVENT CROSSING TIME AT BATSE      : 58493. S. OR 16:14:53.0
 COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 122.000    -8.000
 BATSE PEAK COUNTING RATE:    6000     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 24/ 2/  94 IS:
 RA=  144.485 DEC=  -52.165 DIST=     2.986 AU
 BATSE-ULYSSES DISTANCE =  446684922. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.16 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1000.01 SECS.
 CROSSING TIME AT ULYSSES     IS 57493. S. OR   15:58:12 +/-  226.58 SECONDS

 EVENT CROSSING TIME AT MARS        WILL BE FOUND
 POSITION OF MARS ON 24/ 2/  94 IS:
 RA=  323.745 DEC=  -15.535 DIST=     2.331 AU
 MARS-BATSE DISTANCE =  348667392. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 31.90 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  987.33 SECS.
 CROSSING TIME AT MARS        IS 59480. S. OR   16:31:20 +/-  121.71 SECONDS
```

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2846	940224	9407	58493	6000	122	-08

BATSE BURST TRIGGER

NO.: 02846

TIME: TJD=9407 SECONDS=58493

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=086.3 AZIMUTH=179.1 ERROR= DEGREES

COMMENTS:
BURST, WEAK, DOUBLE SPIKED, LASTING ~0.1 SECONDS. WEAKLY VISIBLE ABOVE 300KEV.

BATSE Burst # 2846

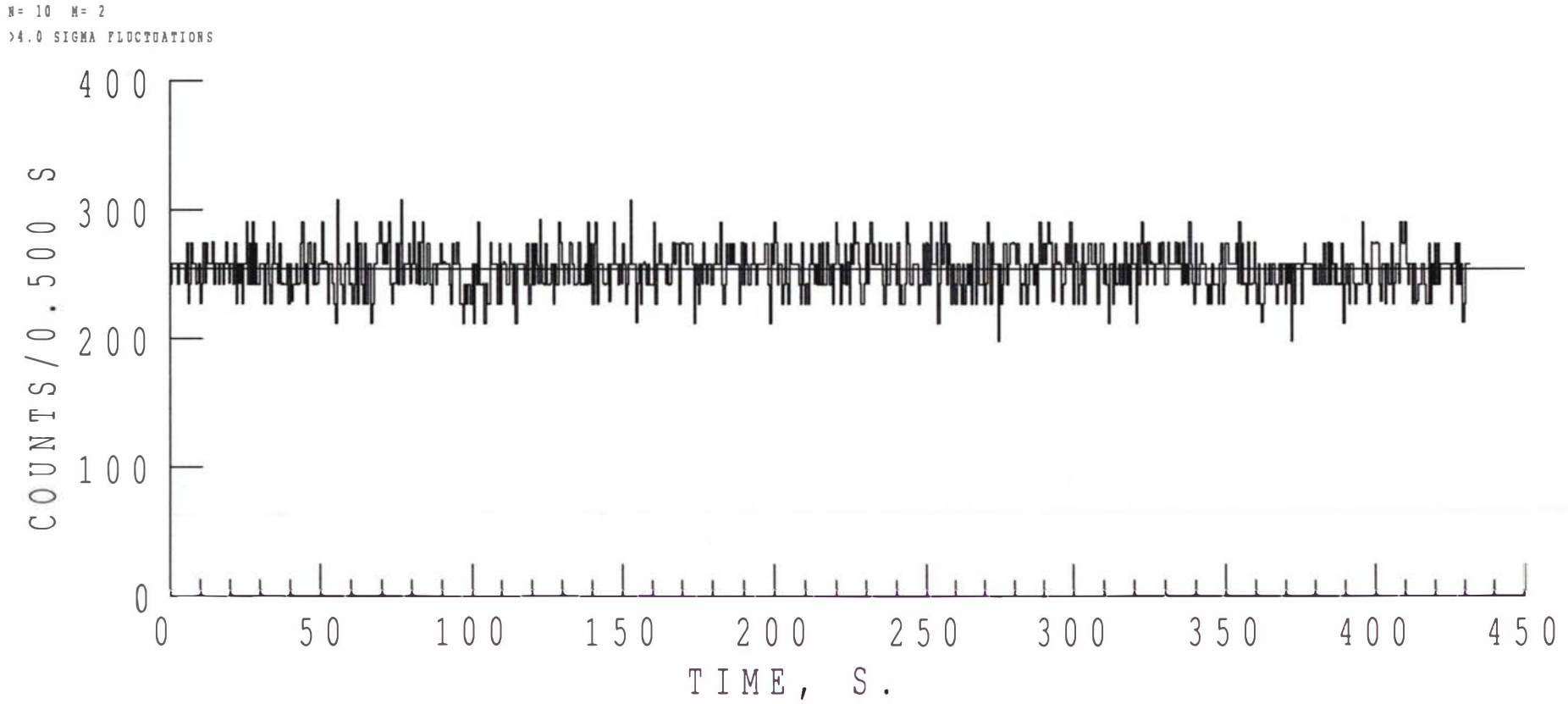
28/ 2/94

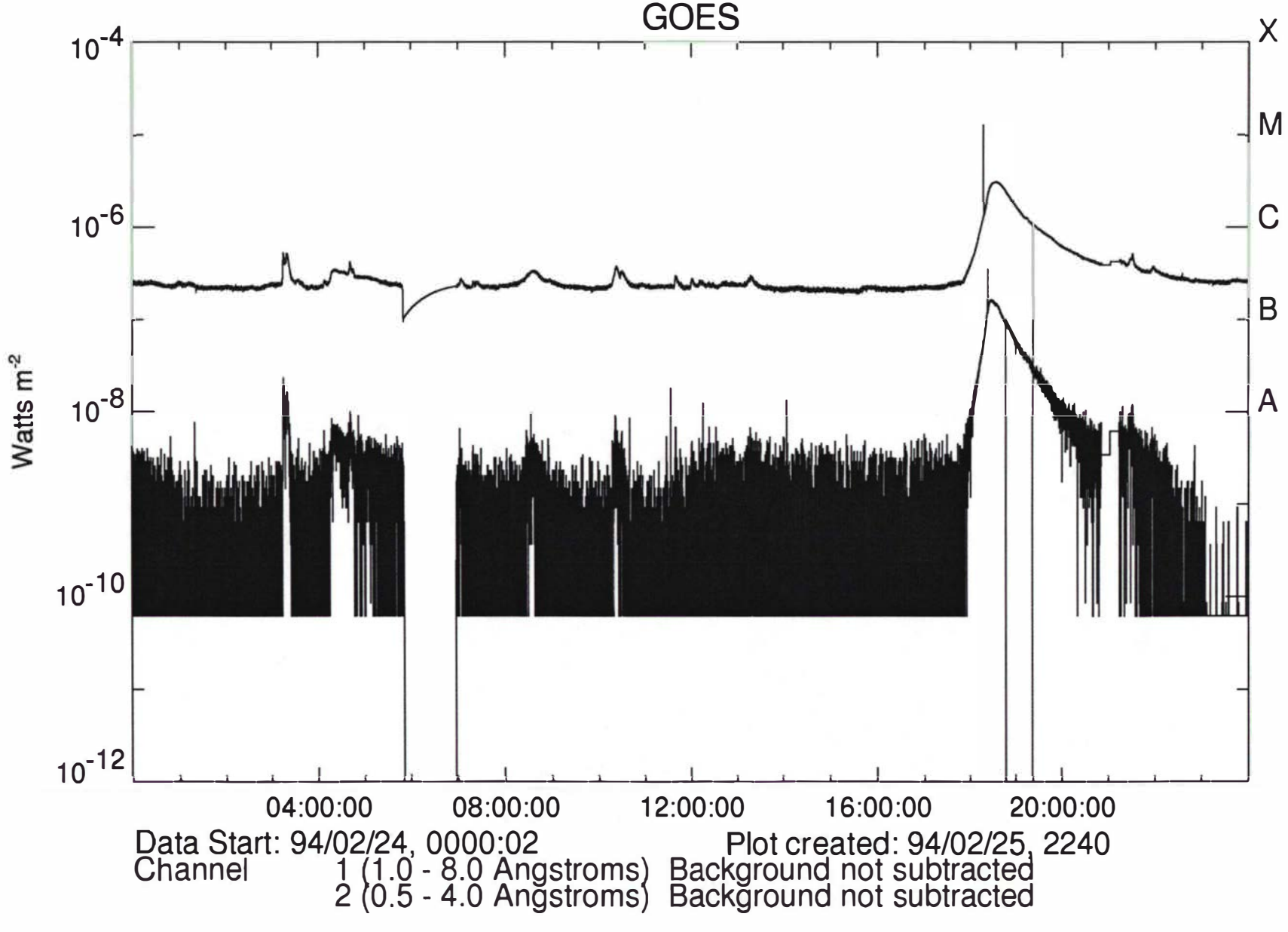
ULYSSES RT

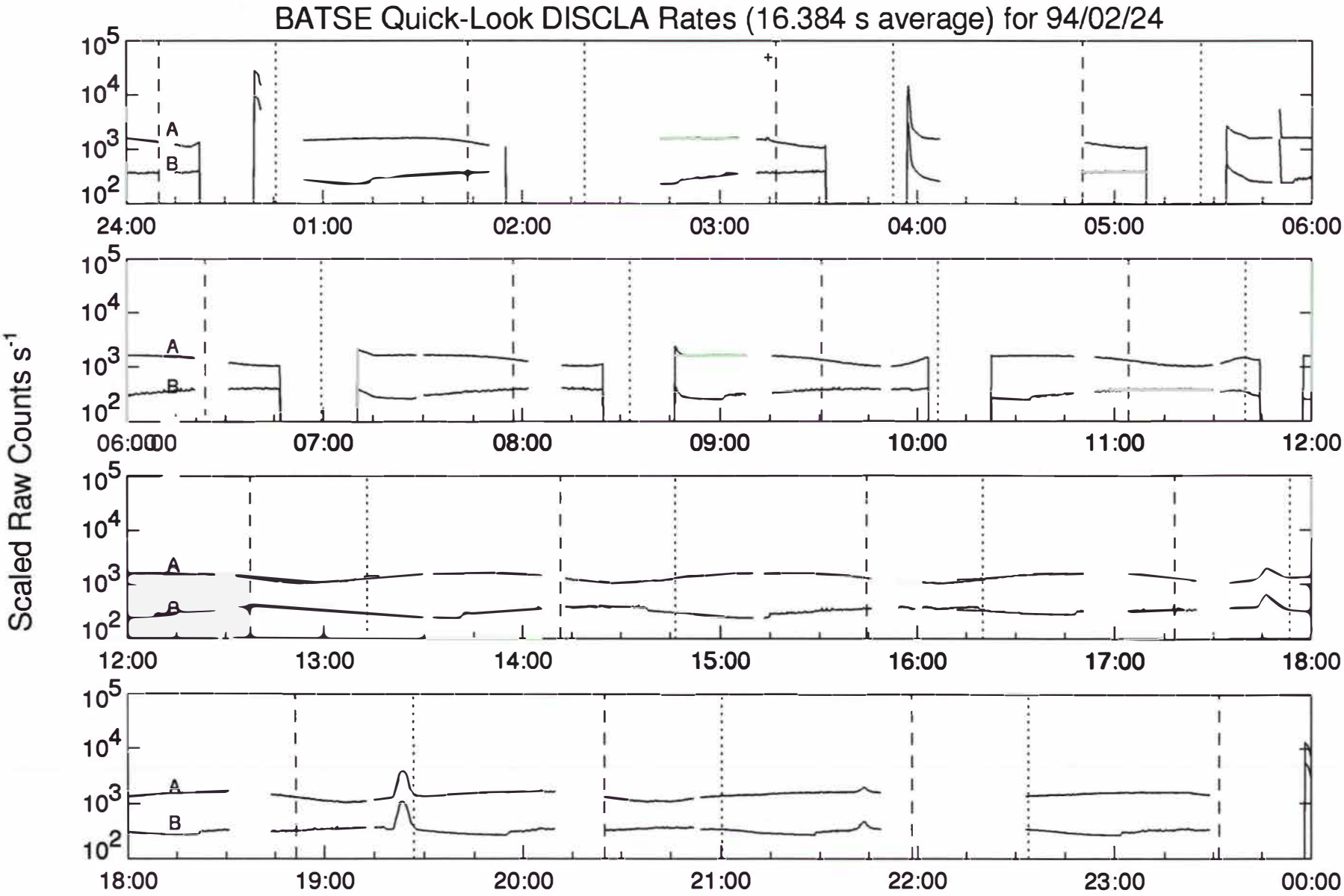
24/ 2/94 57276.215 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

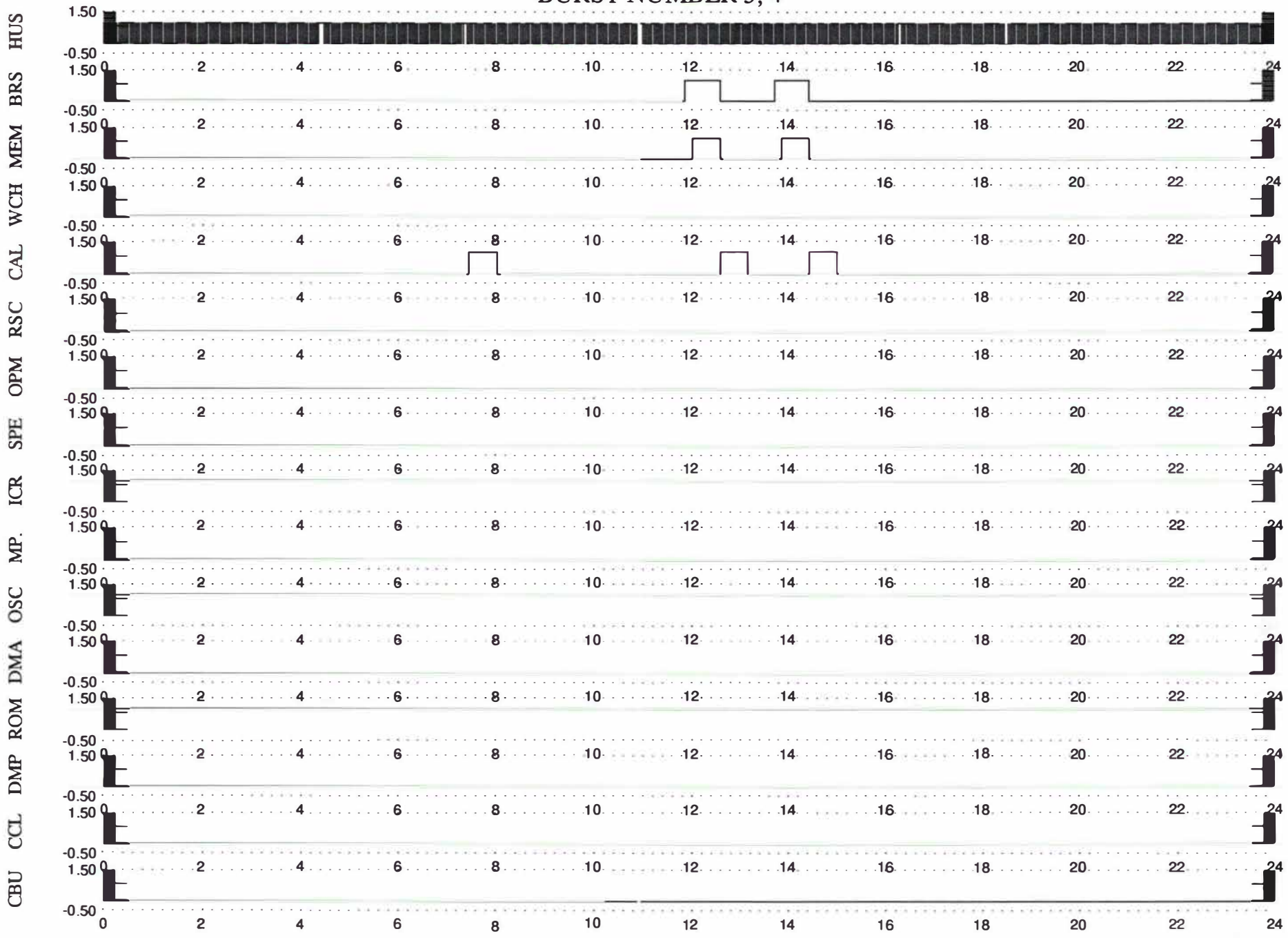



GOES
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
Watts m^{-2}
X
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/24, 0000:02
Plot created: 94/02/25, 2240
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
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: 94/02/25, 2208 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 55, year 1994 to day 55, year 1994 5/26/94

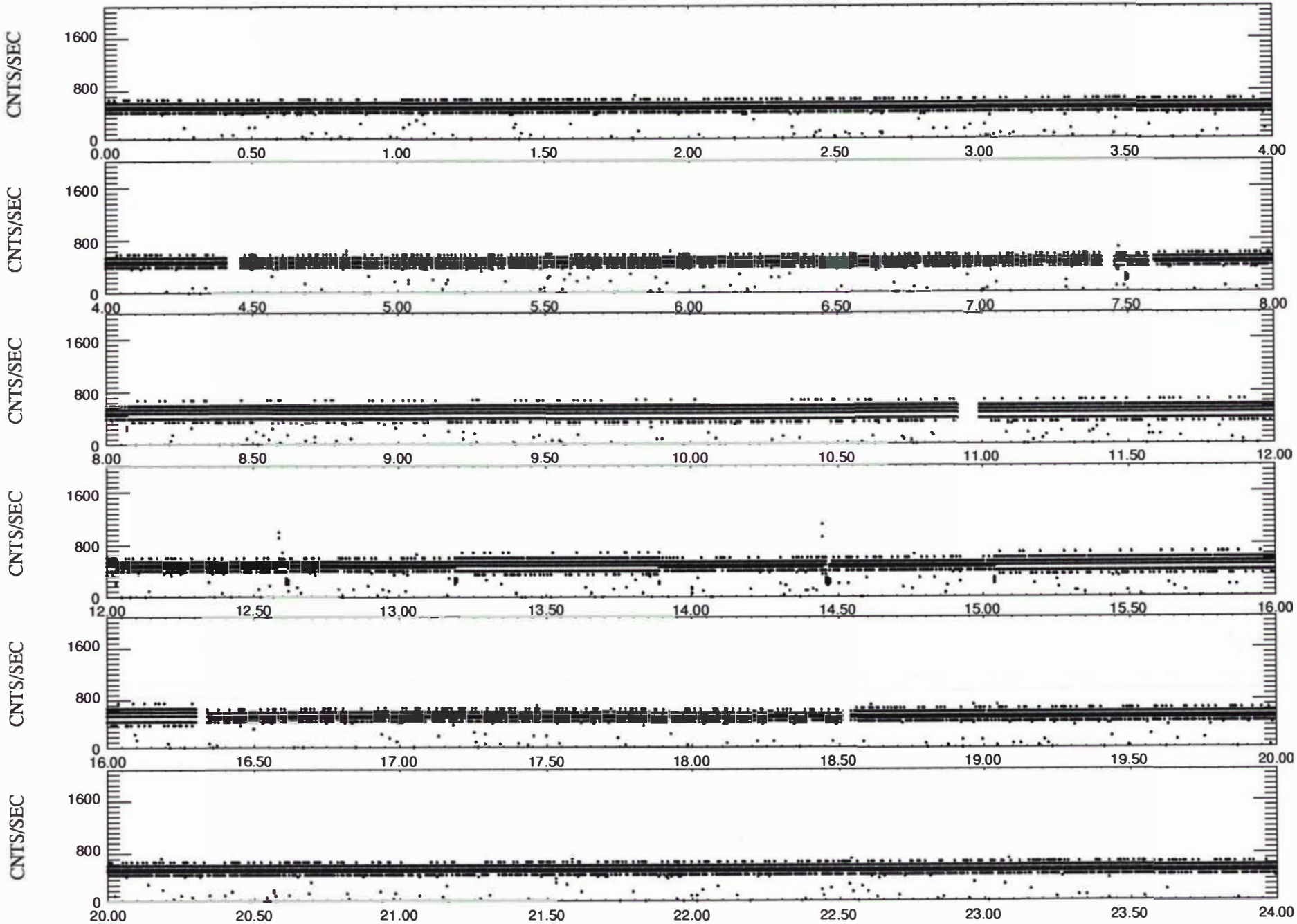
BURST NUMBER 3, 4



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 55, year 1994 to day 55, year 1994 5/26/94

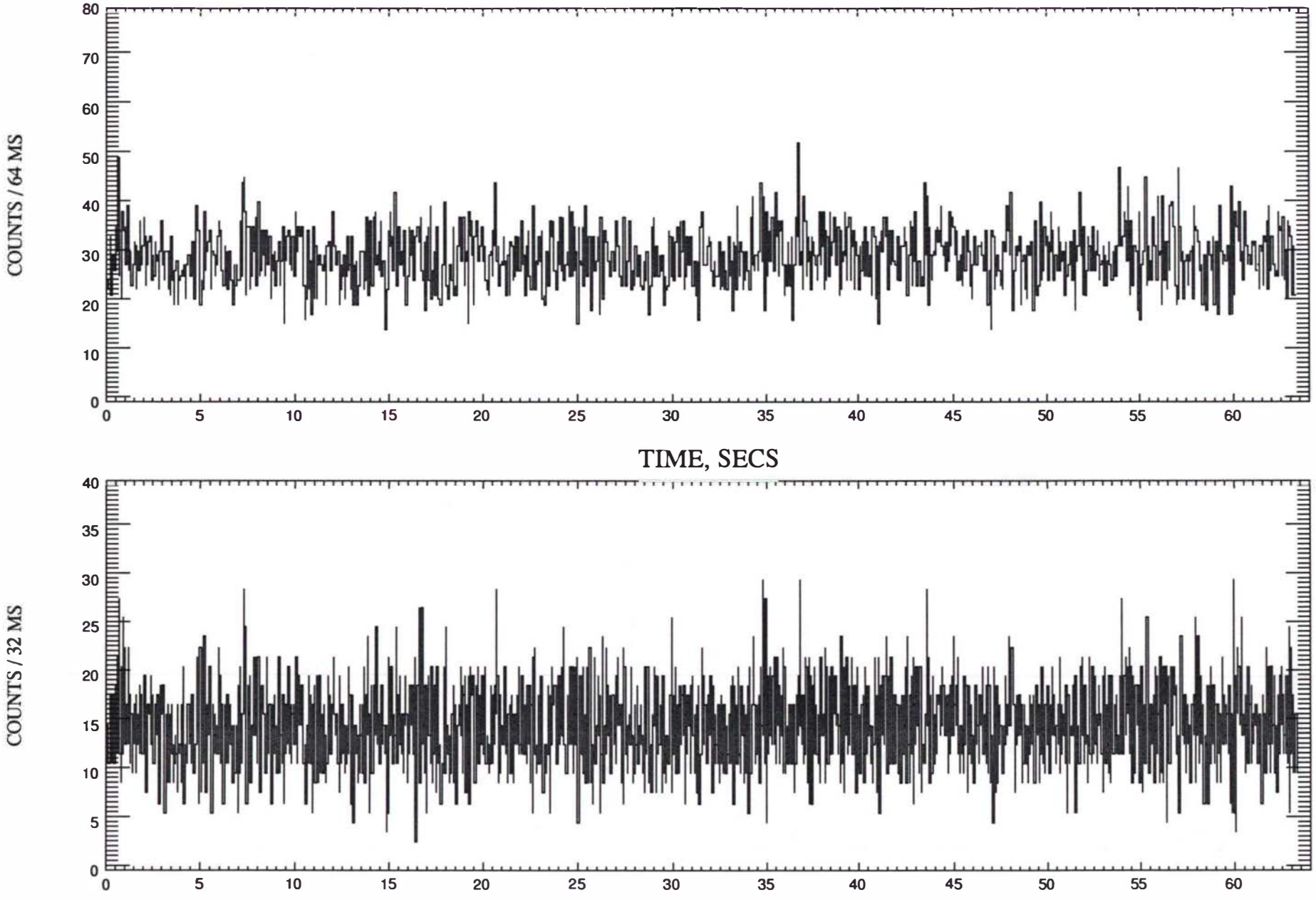
CALIBRATION DATA INCLUDED



UNIV :AL TIME

HUS 2A TRIGGERED DATA EDR day 55, year 1994 5/26/94

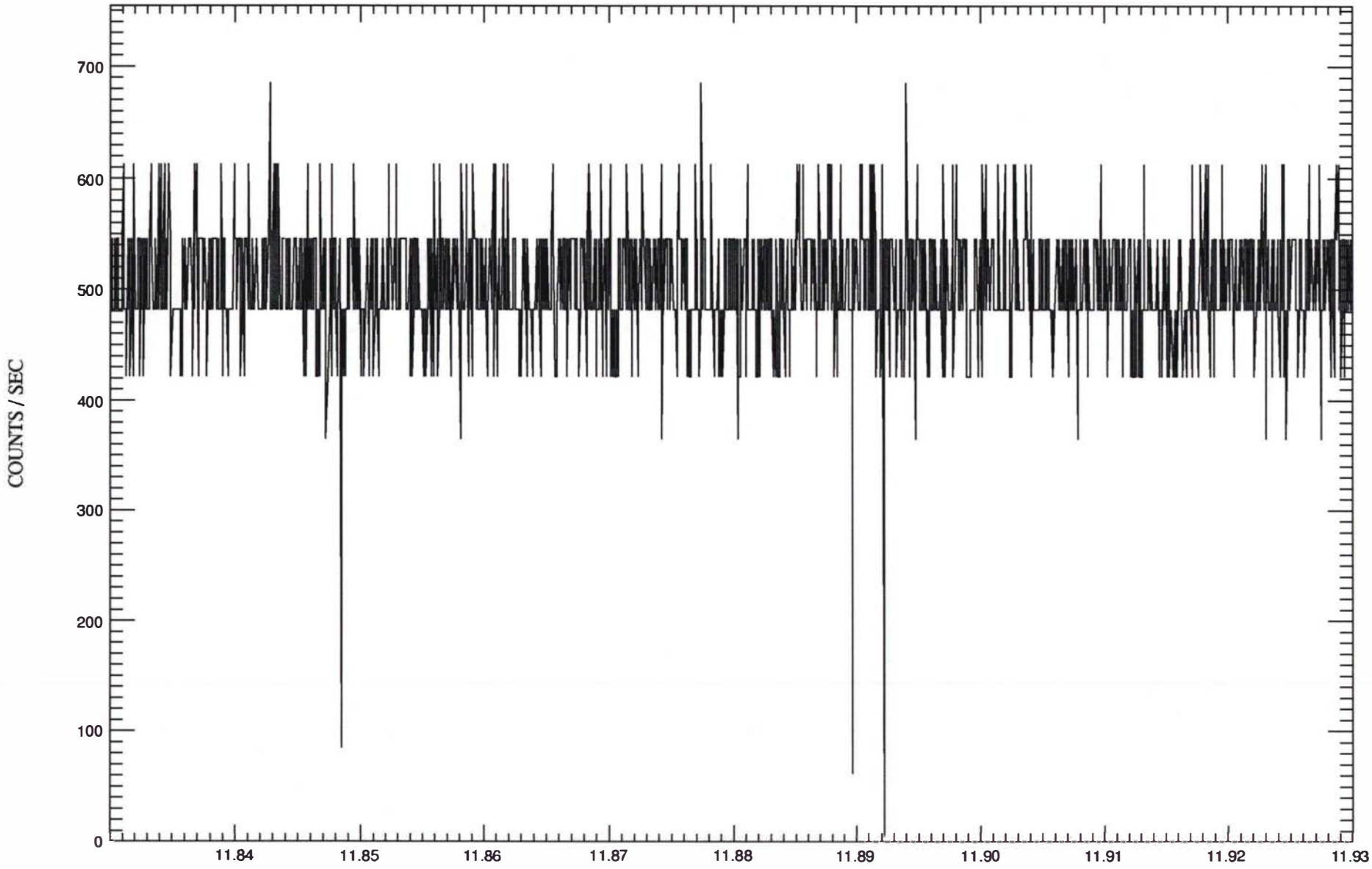
Burst Counter 3 at UT=11.877562383016 h=42759.225 s 11:52:39.225



B# 1

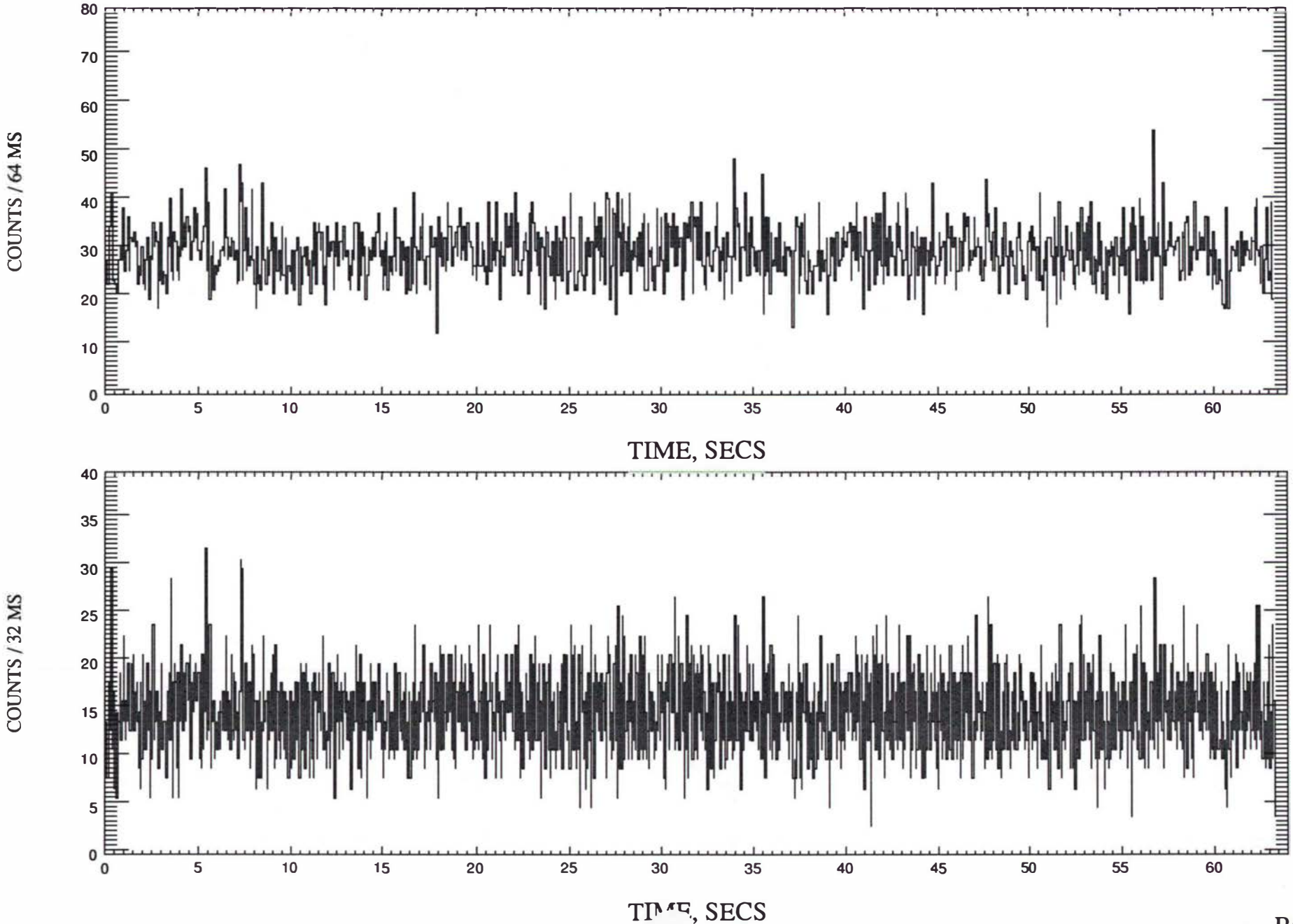
HUS 2A, MODE 1, NOT AVERAGED QEDR day 55, year 1994 to day 56, year 1994 2/25/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 55, year 1994 5/26/94

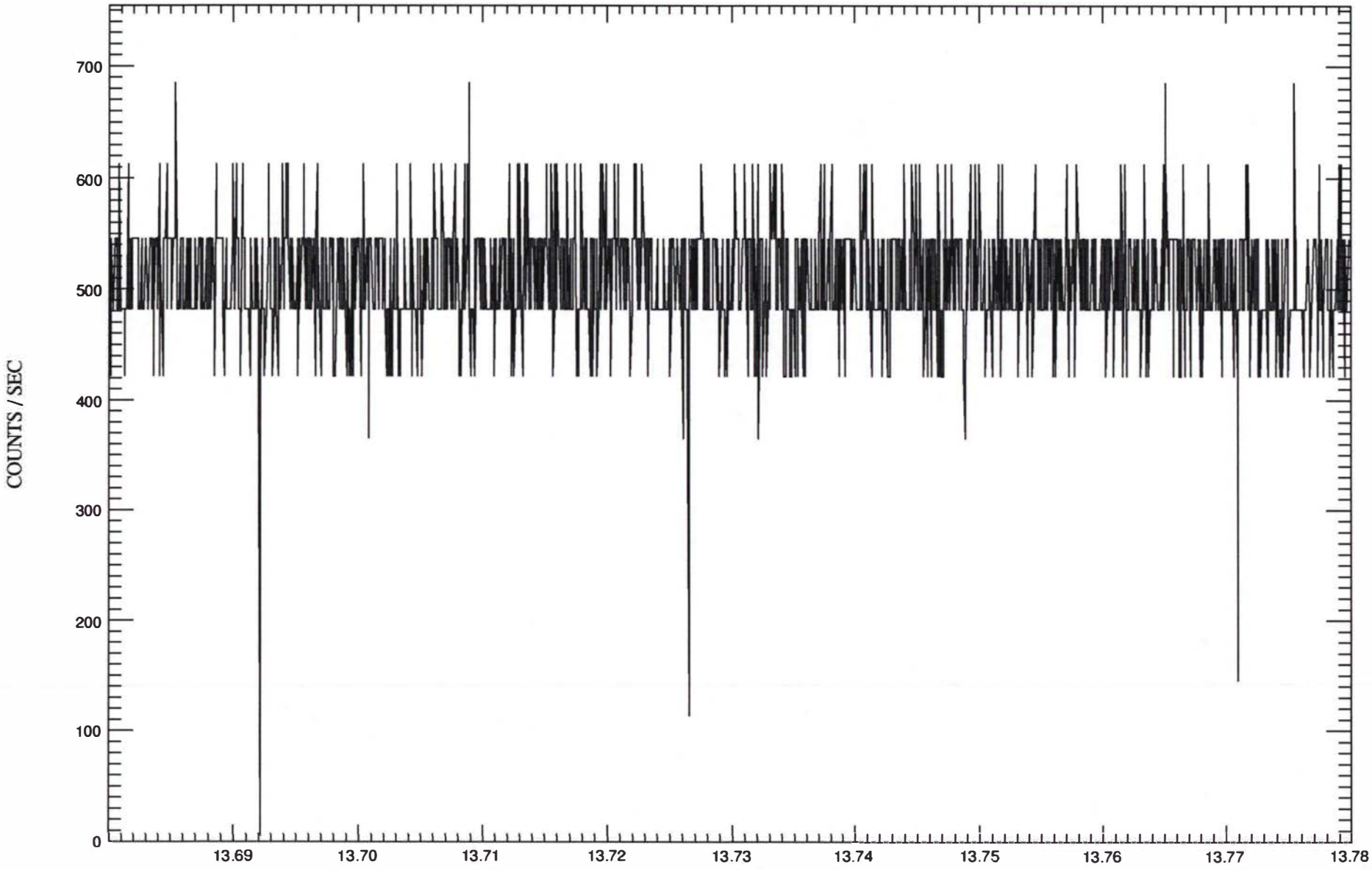
Burst Counter 4 at UT=13.734153900146 h=49442.954 s 13:44:02.954



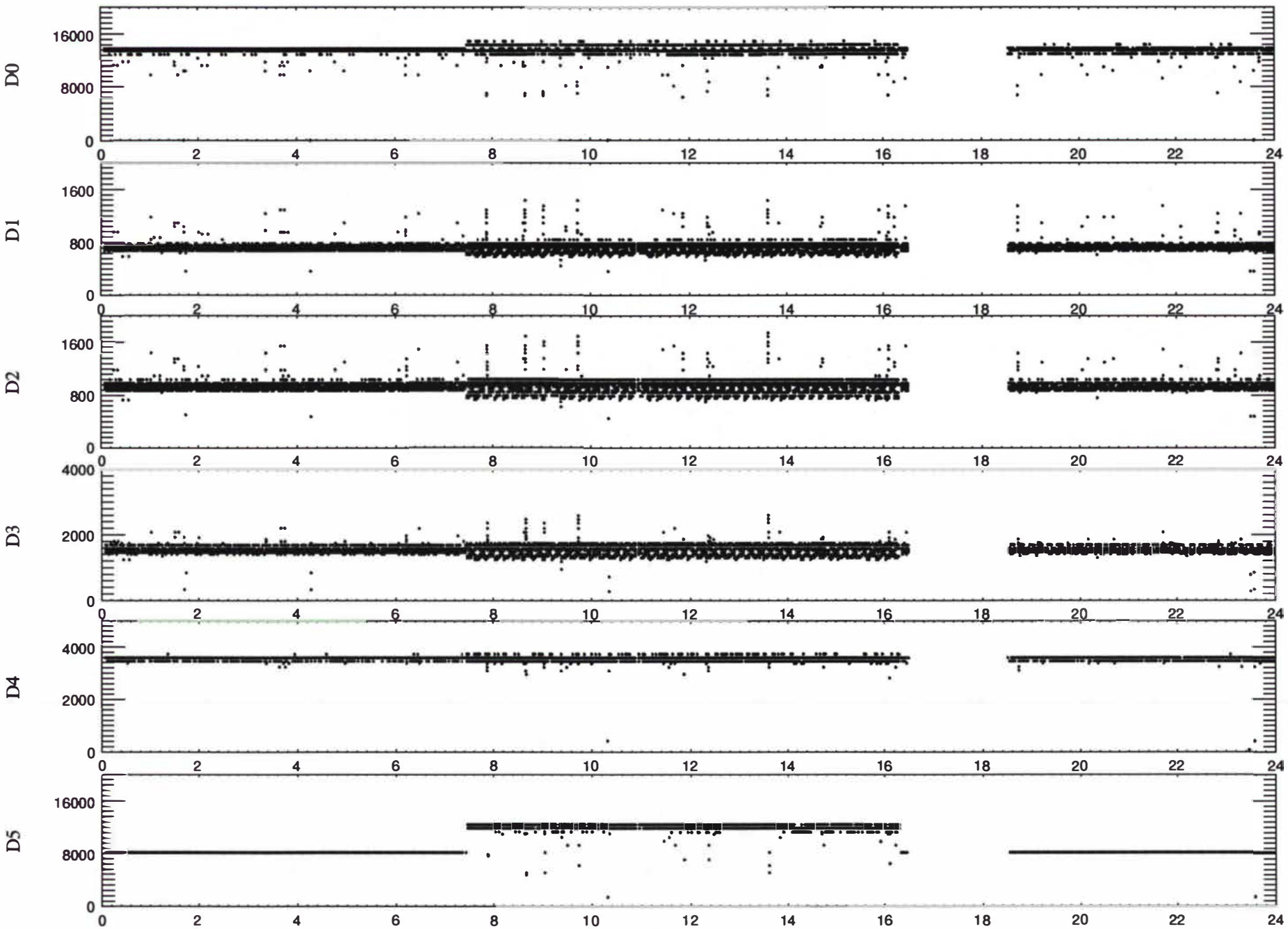
B# 2

HUS 2A, MODE 1, NOT AVERAGED QEDR day 55, year 1994 to day 56, year 1994 2/25/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 55, year 1994 to day 55, year 1994 2/25/94



From SHARIFF@ssl.msfc.nasa.gov Mon Feb 28 08:27 PST 1994
Date: Mon, 28 Feb 1994 10:32:10 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02847

TIME: TJD=9408 SECONDS=83033

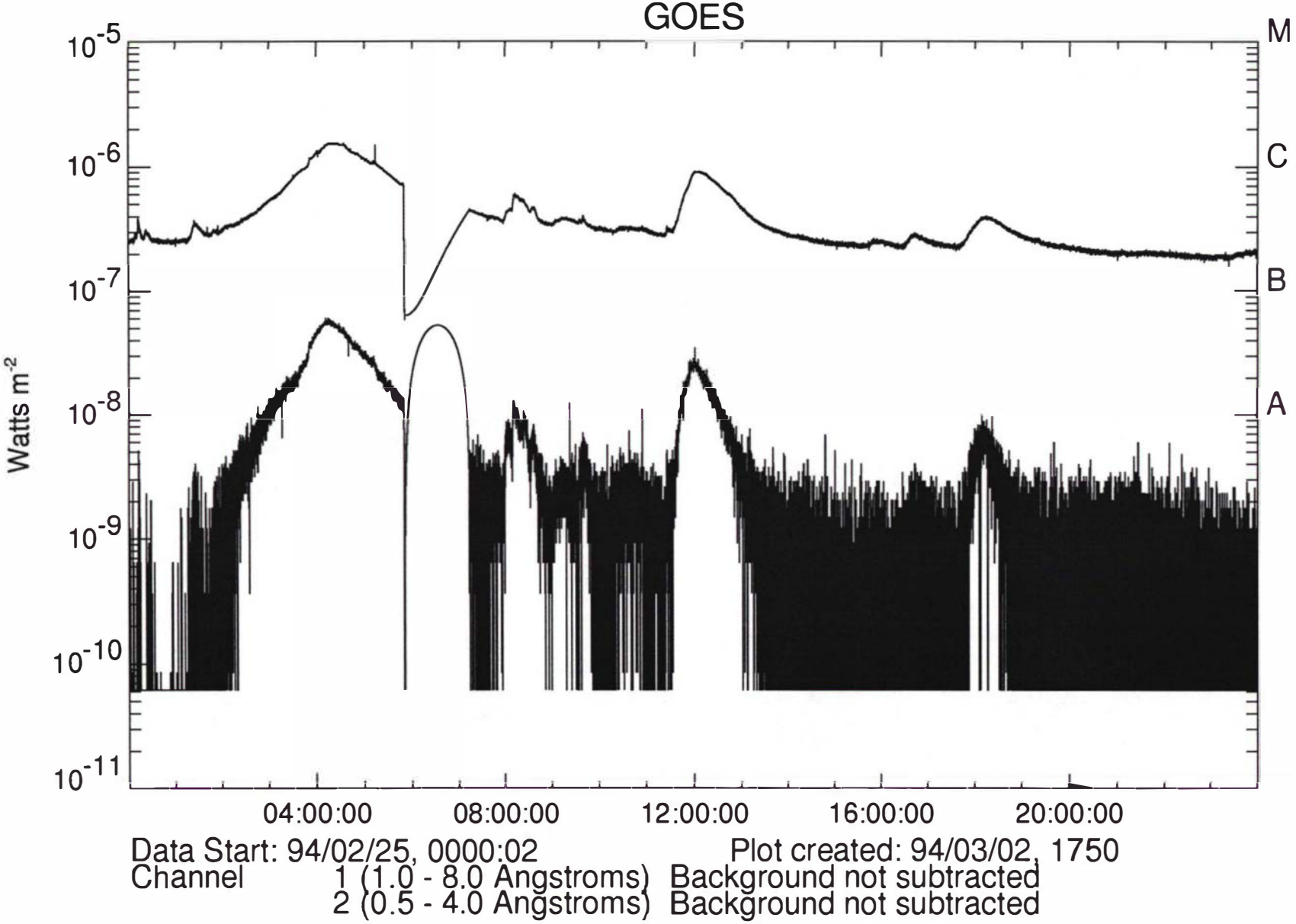
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:

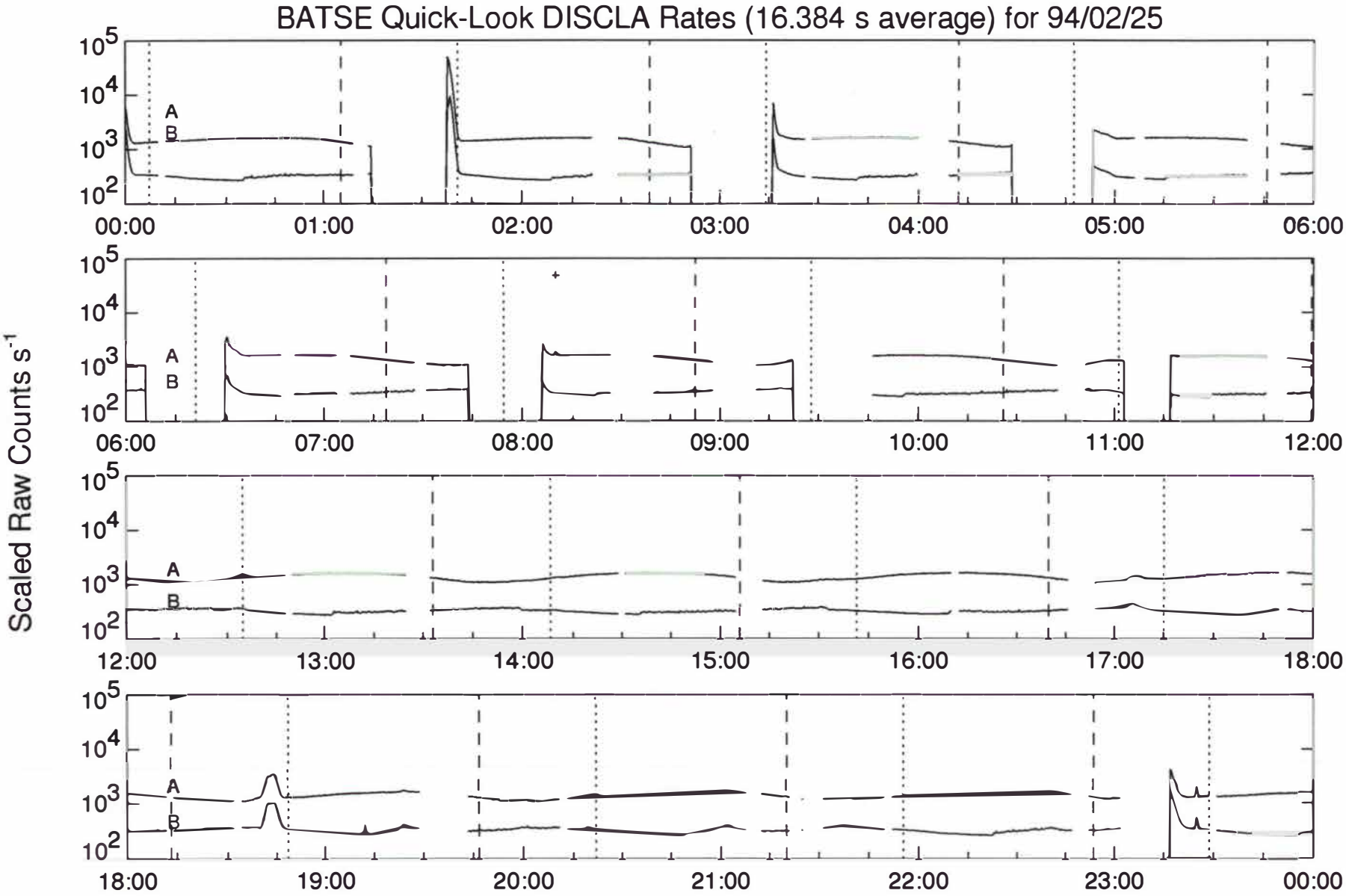
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

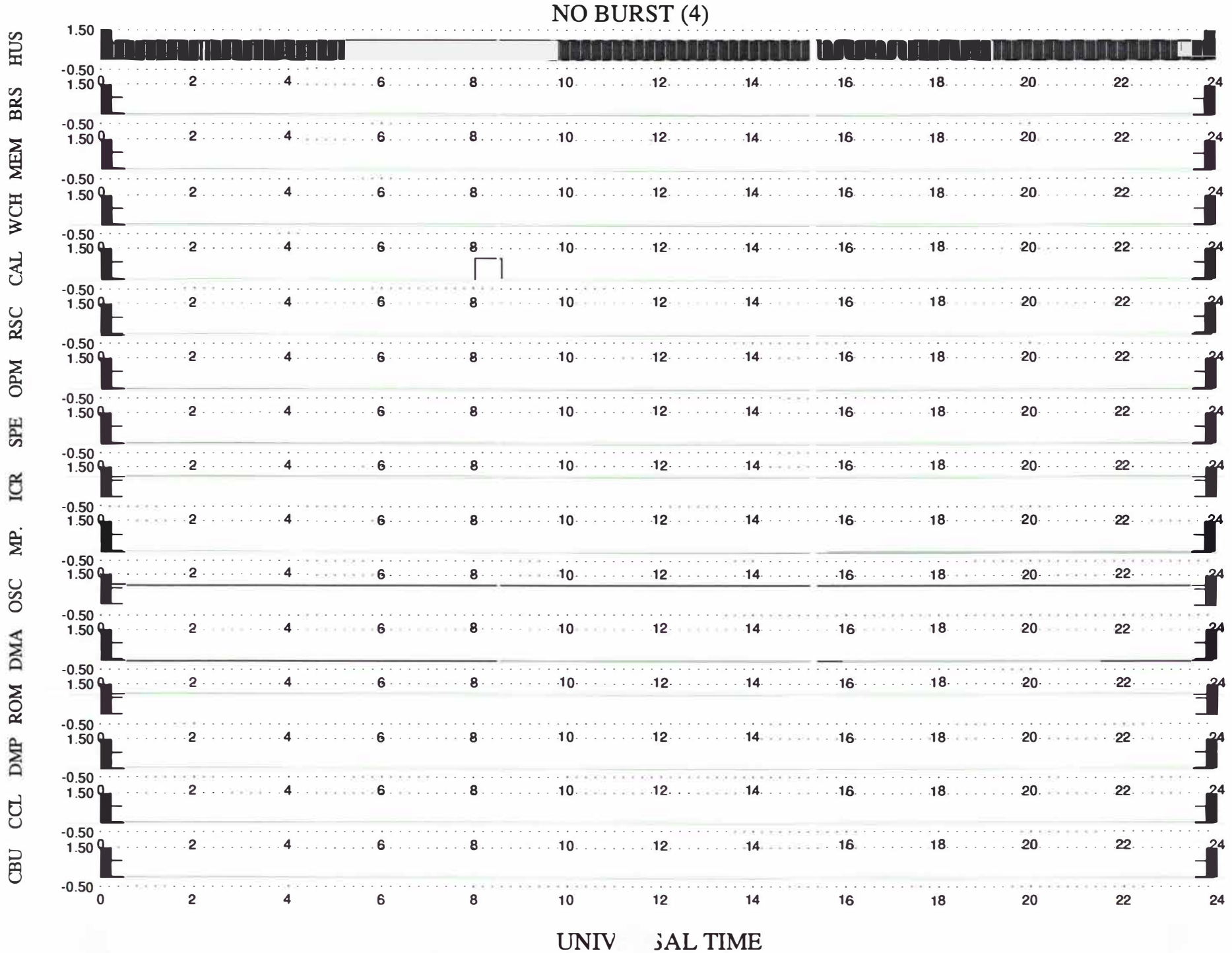
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY EVENT.


GOES
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
M
C
B
A
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/25, 0000:02
Plot created: 94/03/02, 1750
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

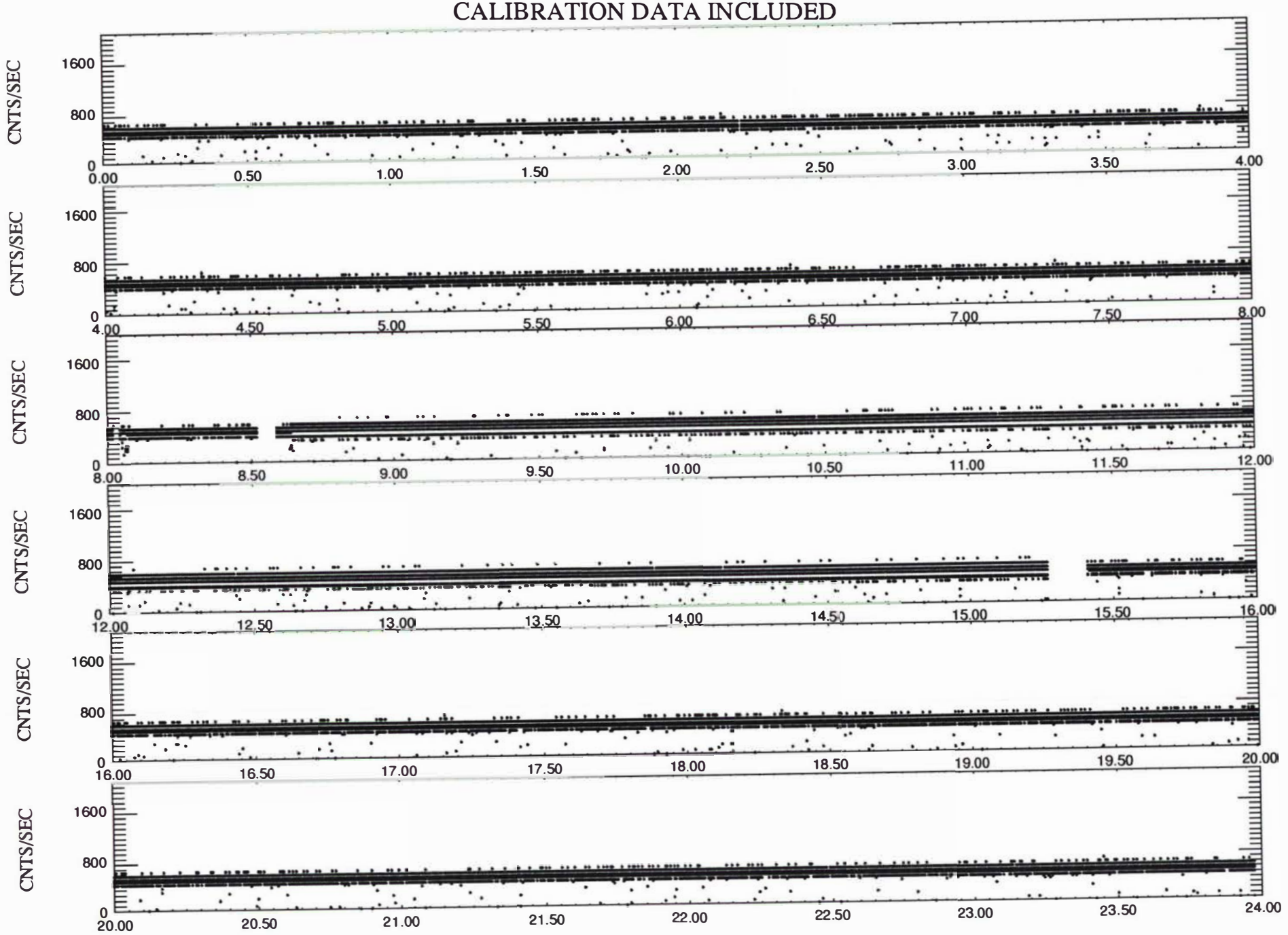

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/25
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/03/02, 1811 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 56, year 1994 to day 56, year 1994 5/26/94



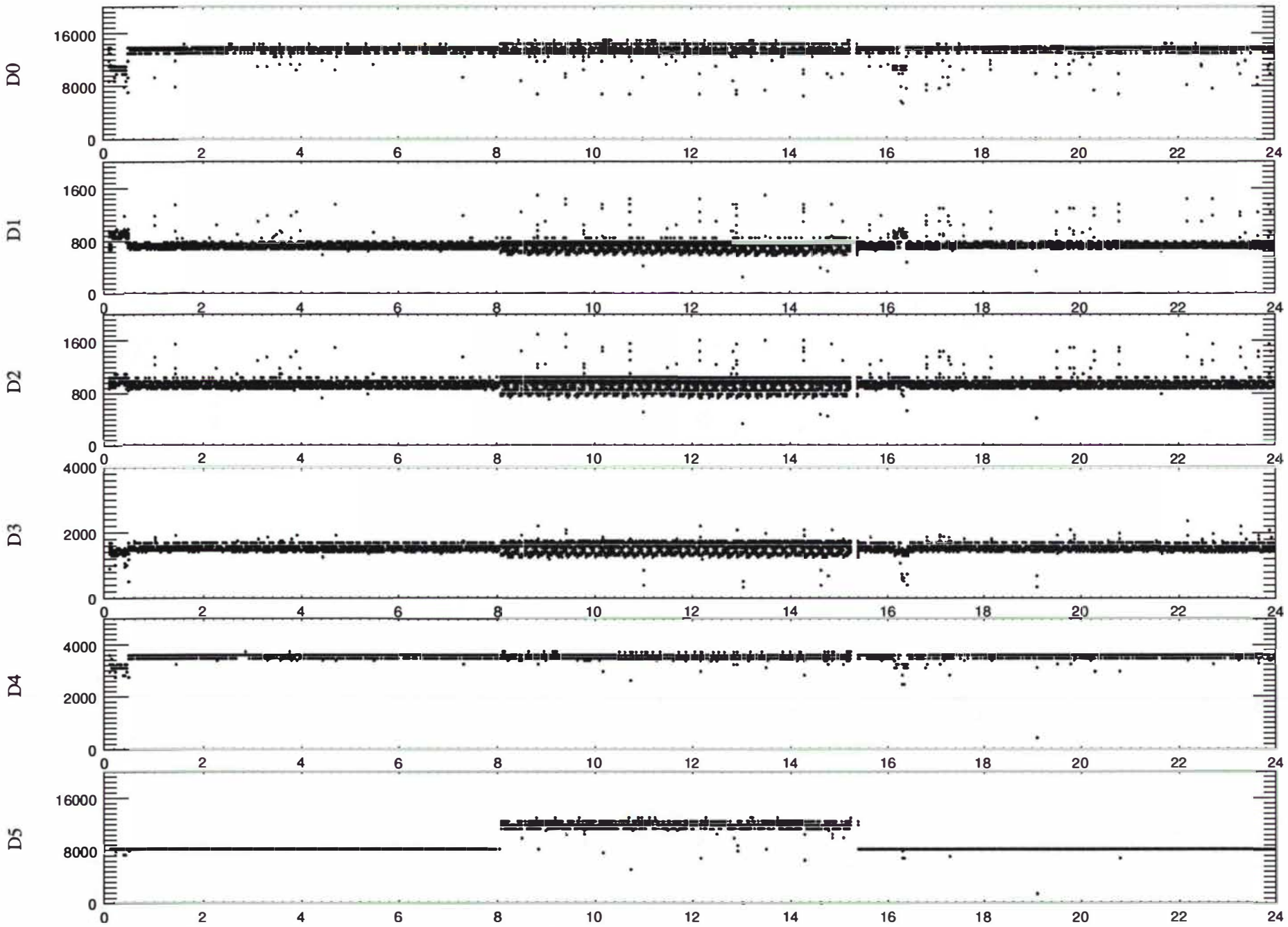
HUS 2A, MODE 1, NOT AVERAGED EDR day 56, year 1994 to day 56, year 1994 5/26/94

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC QEDR day 56, year 1994 to day 56, year 1994 2/28/94



From SHARIFF@ssl.msfc.nasa.gov Mon Feb 28 08:53 PST 1994
Date: Mon, 28 Feb 1994 10:53:26 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2848
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2848
 EVENT OF 1994 FEB 26 DAY OF YEAR= 57
 EVENT CROSSING TIME AT BATSE      :   714. S. OR 00:11:54.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 300.000  -23.000
 BATSE PEAK COUNTING RATE:   2500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 26/ 2/  94 IS:
 RA=  143.717 DEC=  -52.217 DIST=    2.977 AU
 BATSE-ULYSSES DISTANCE =  445321143. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.02 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  308.27 SECS.
 CROSSING TIME AT ULYSSES    IS  1022. S. OR   00:17:02 +/-  306.96 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 26/ 2/  94 IS:
 RA=  325.287 DEC=  -15.030 DIST=    2.327 AU
 MARS-BATSE DISTANCE =  348087424. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=154.84 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1050.97 SECS.
 CROSSING TIME AT MARS       IS 86063. S. OR   23:54:23 +/-   69.73 SECONDS
```

V0

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2848	940226	9409	00714	2500	300	-23

BATSE BURST TRIGGER

NO.: 02848

TIME: TJD=9409 SECONDS=00714

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=101.2 AZIMUTH=028.2 ERROR= DEGREES

COMMENTS:
BURST, SINGLE PULSE, LASTING ~ 5 SECONDS. MARGINALLY VISIBLE ABOVE 300KEV.

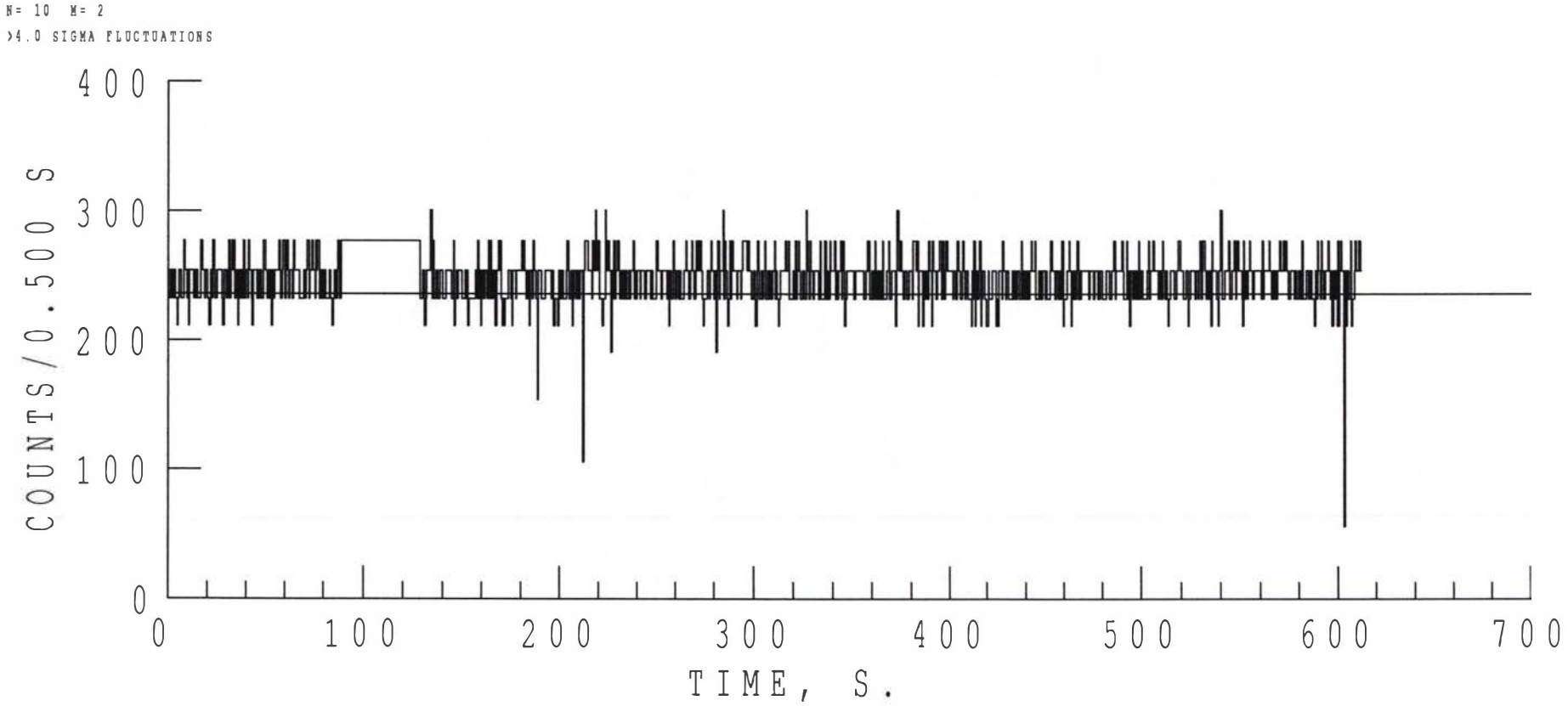
BATSE Burst # 2846

28/ 2/94

ULYSSES RT

26/ 2/94 720.034 s

0- 0 keV



From SHARIFF@ssl.msfc.nasa.gov Mon Feb 28 08:55 PST 1994
Date: Mon, 28 Feb 1994 10:55:57 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2849
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2849
 EVENT OF 1994 FEB 26 DAY OF YEAR= 57
 EVENT CROSSING TIME AT BATSE      : 16786. S. OR 04:39:46.0
 COORDINATES ARE    0.000    0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION:  27.000    17.000
 BATSE PEAK COUNTING RATE:    5000     C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 26/ 2/  94 IS:
 RA=  143.609 DEC=  -52.223 DIST=     2.976 AU
 BATSE-ULYSSES DISTANCE =  445139667. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.43 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  732.74 SECS.
 CROSSING TIME AT ULYSSES    IS 17519. S. OR   04:51:58 +/-  285.34 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 26/ 2/  94 IS:
 RA=  325.287 DEC=  -15.030 DIST=     2.327 AU
 MARS-BATSE DISTANCE =  348087424. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.21 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -420.14 SECS.
 CROSSING TIME AT MARS       IS 16366. S. OR   04:32:45 +/-  181.54 SECONDS
```

110

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2849	940226	9409	16786	5000	027	+17

BATSE BURST TRIGGER

NO.: 02849

TIME: TJD=9409 SECONDS=16786

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=012.1 AZIMUTH=334.6 ERROR= DEGREES

COMMENTS:
BURST, TWO SPIKES, LASTING ~1 SECOND. VISIBLE ABOVE 300KEV.

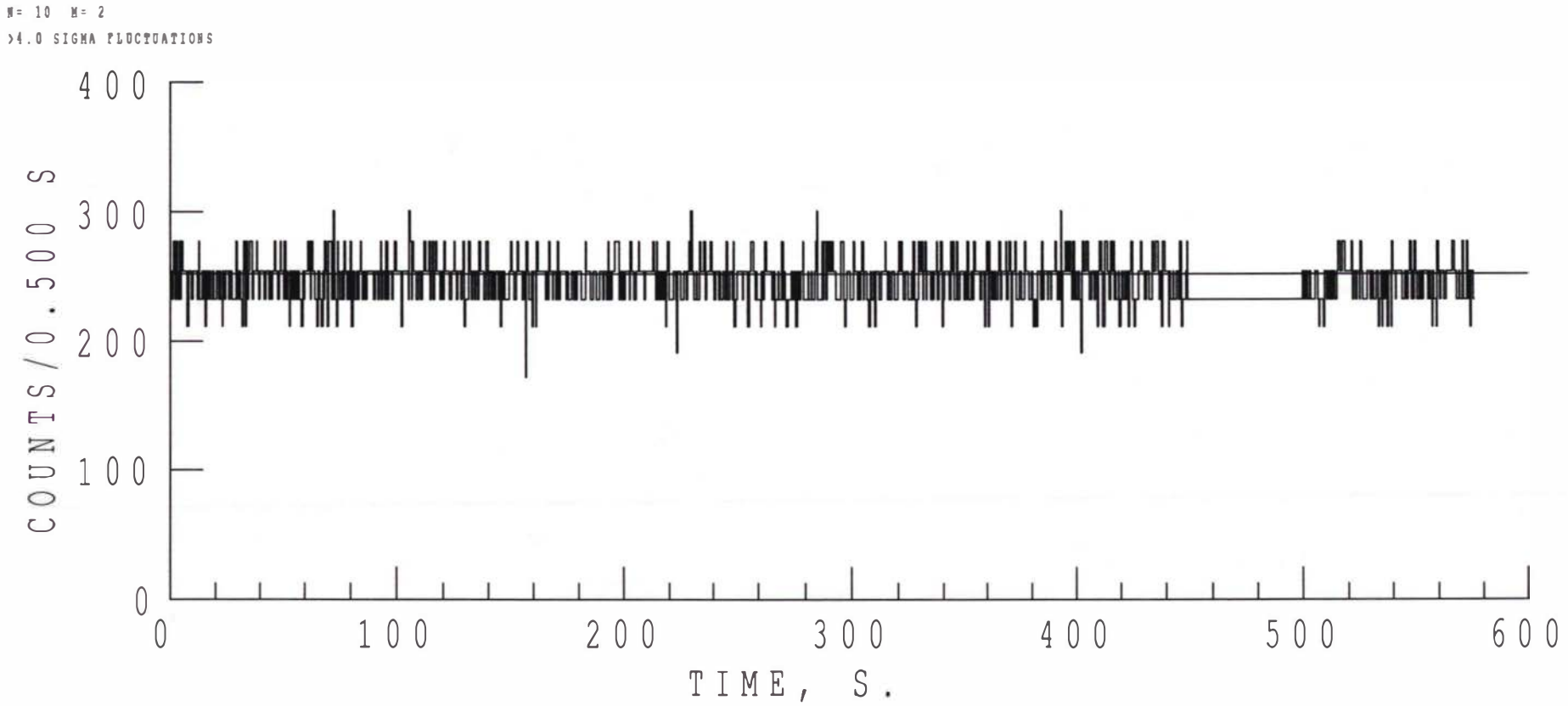
BATSE Burst # 2849

28/ 2/94

ULYSSES RT

26/ 2/94 17244.301 s

0- 0 keV



Date: Aug 5 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☐ BATSE ephemeris for T_0?

☐ Error circle position and radius from public catalog used?

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

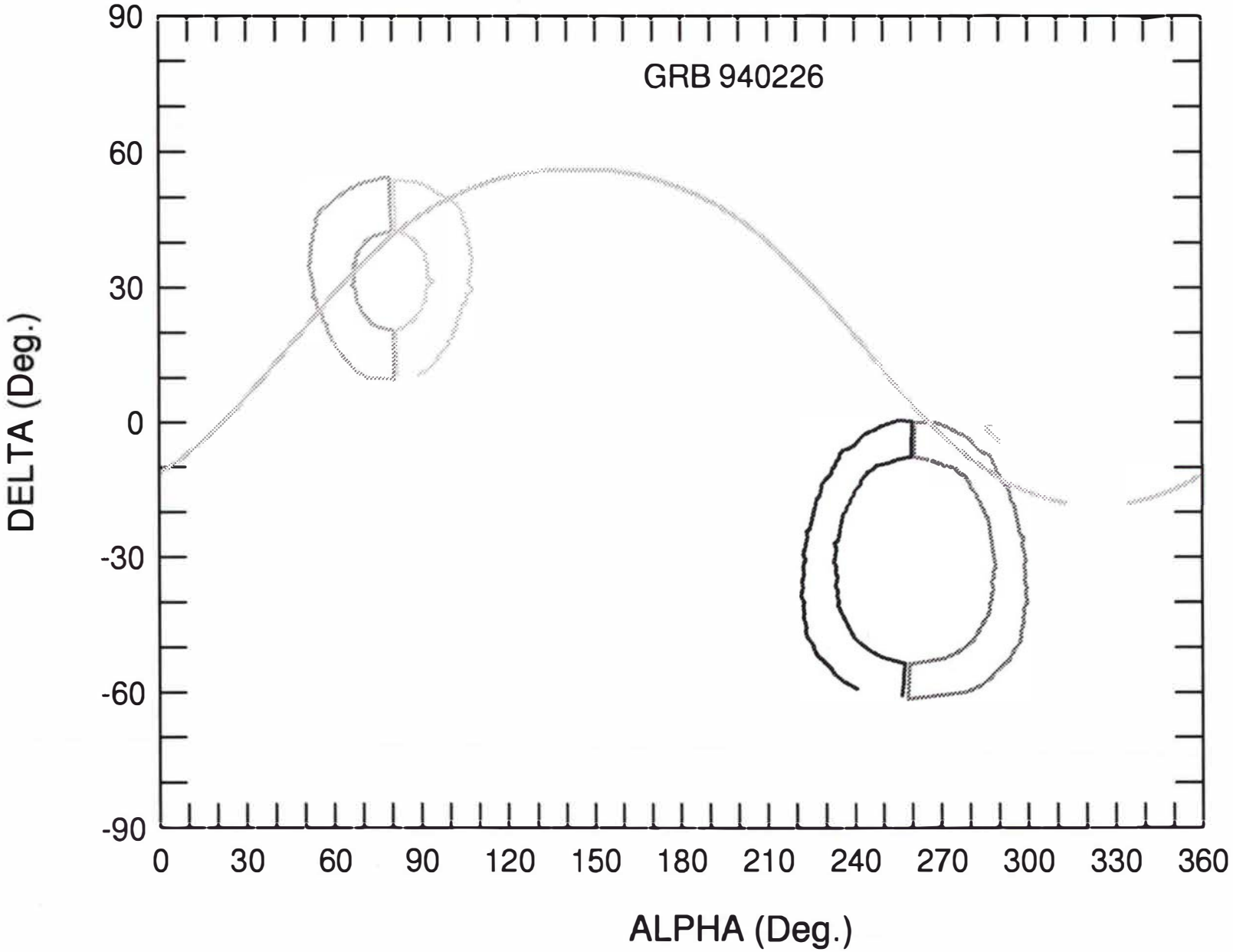
3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

☐ Geocentric time used?

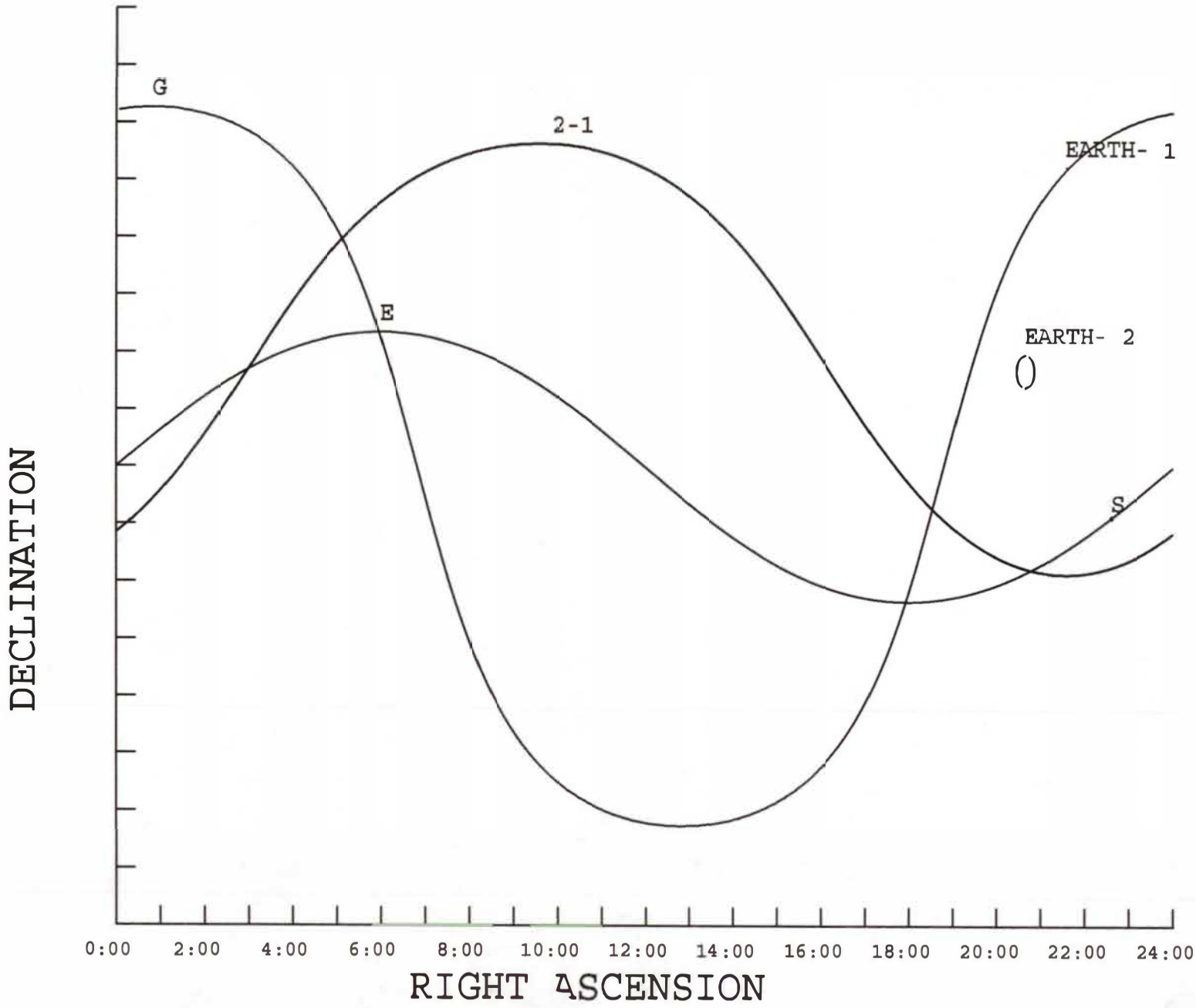
☑ ACCESS and MBL databases updated with identical times?

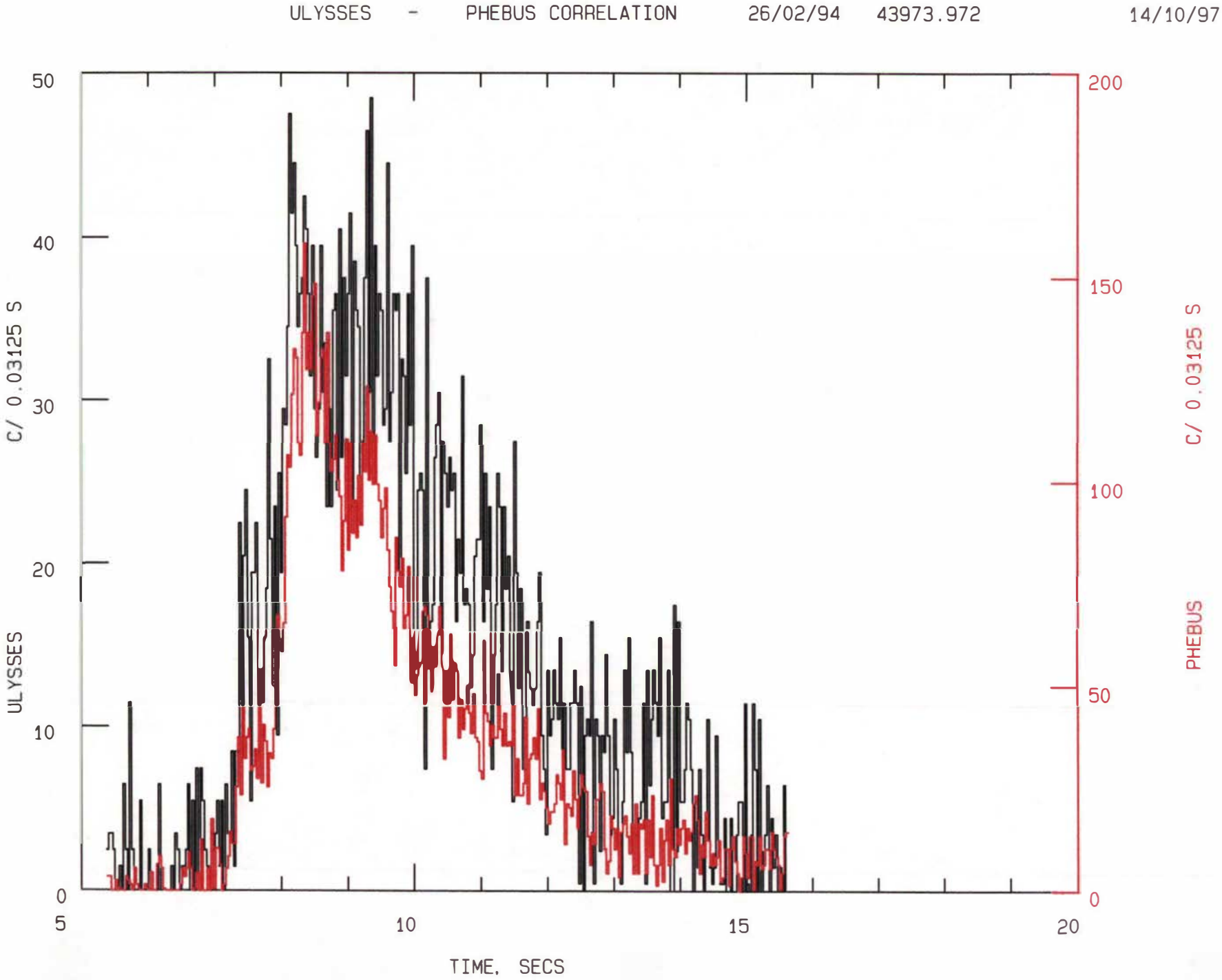

GRB 940226
90
60
30
0
-30
-60
-90
DELTA (Deg.)
0
30
60
90
120
150
180
210
240
270
300
330
360
ALPHA (Deg.)

EVENT OF FEB 26, 1994 12:12

14/10/97

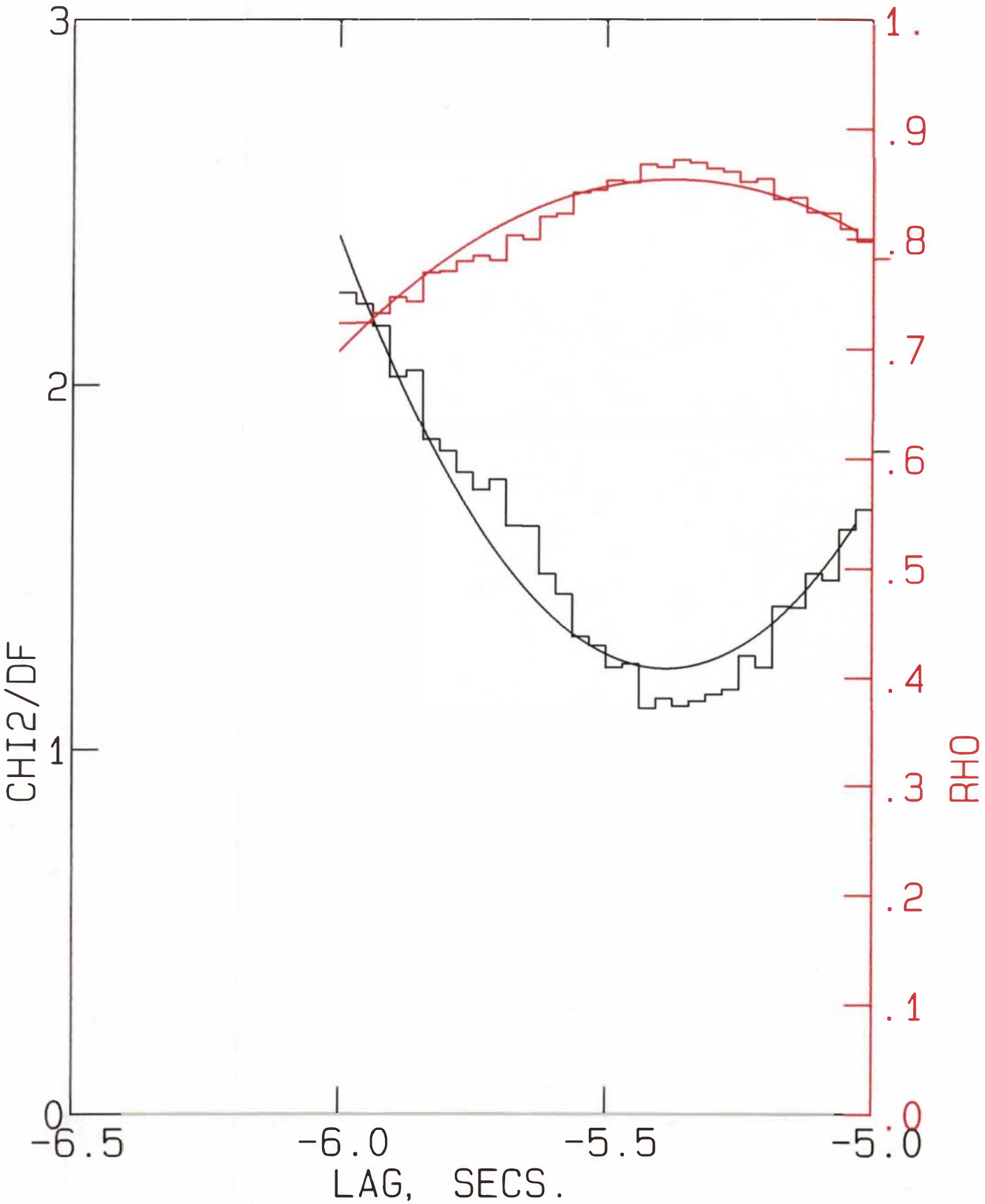
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 PHEBUS

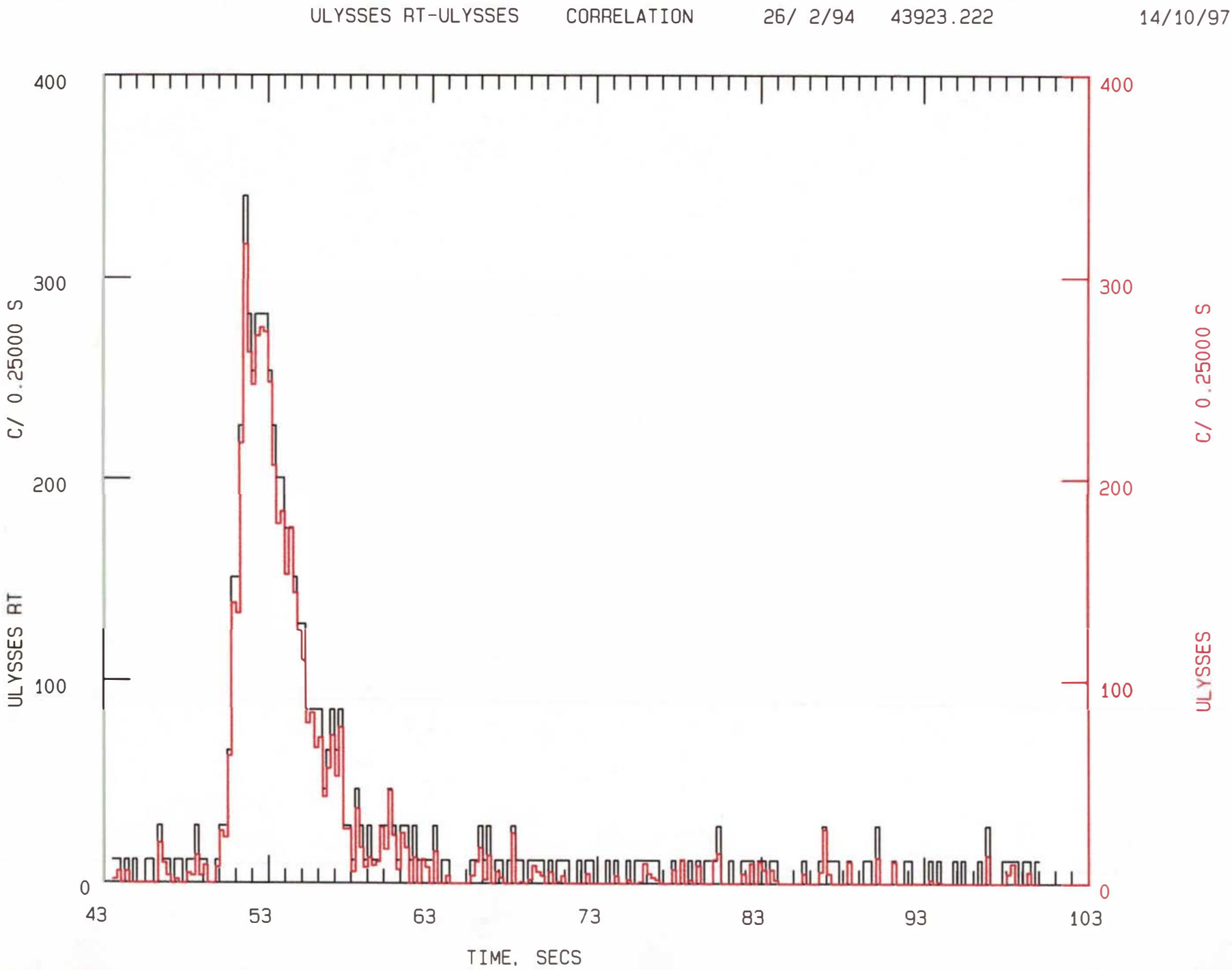



ULYSSES - PHEBUS CORRELATION 26/02/94 43973.972 14/10/97
50
40
30
20
10
0
C/ 0.03125 S
ULYSSES
200
150
100
50
0
C/ 0.03125 S
PHEBUS
5
10
15
20
TIME, SECS

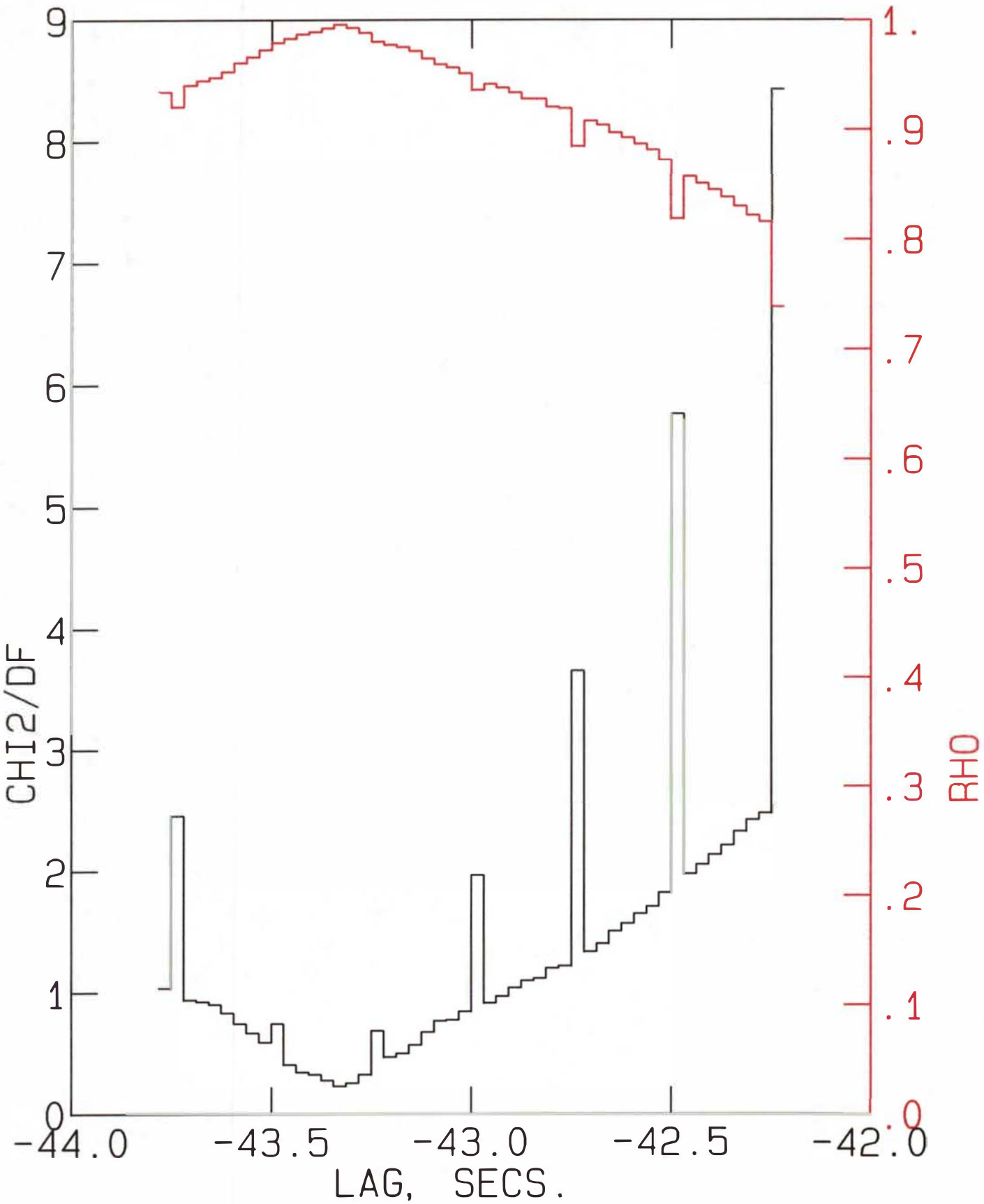
14/10/97

ULYSSES - PHEBUS CORRELATION 26/02/94 43973.972




ULYSSES RT-ULYSSES CORRELATION 26/ 2/94 43923.222 14/10/97
400
300
200
100
0
C/ 0.25000 S
ULYSSES RT
400
300
200
100
0
C/ 0.25000 S
ULYSSES
43
53
63
73
83
93
103
TIME, SECS

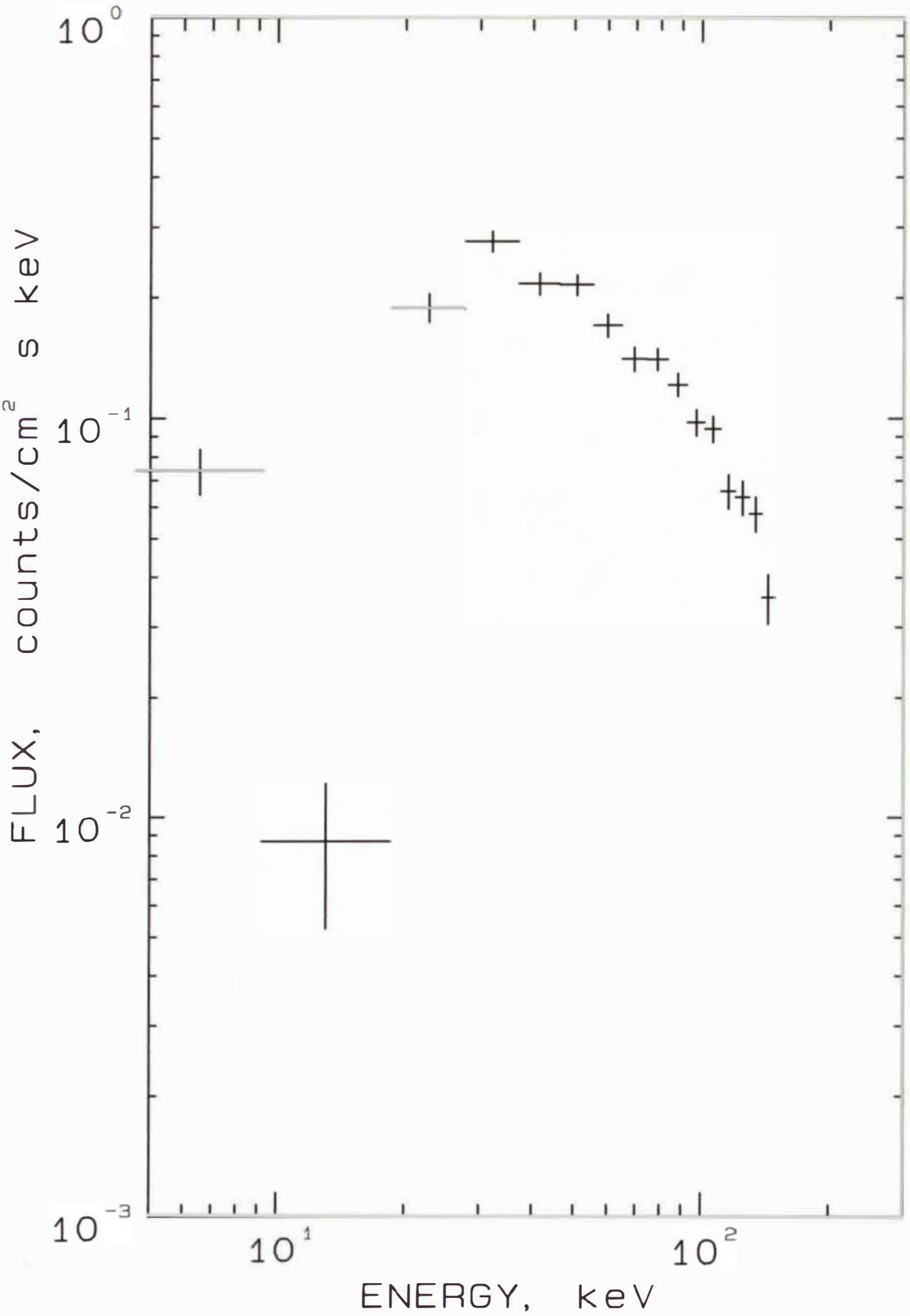
ULYSSES RT-ULYSSES CORRELATION 26/ 2/94 43923.222

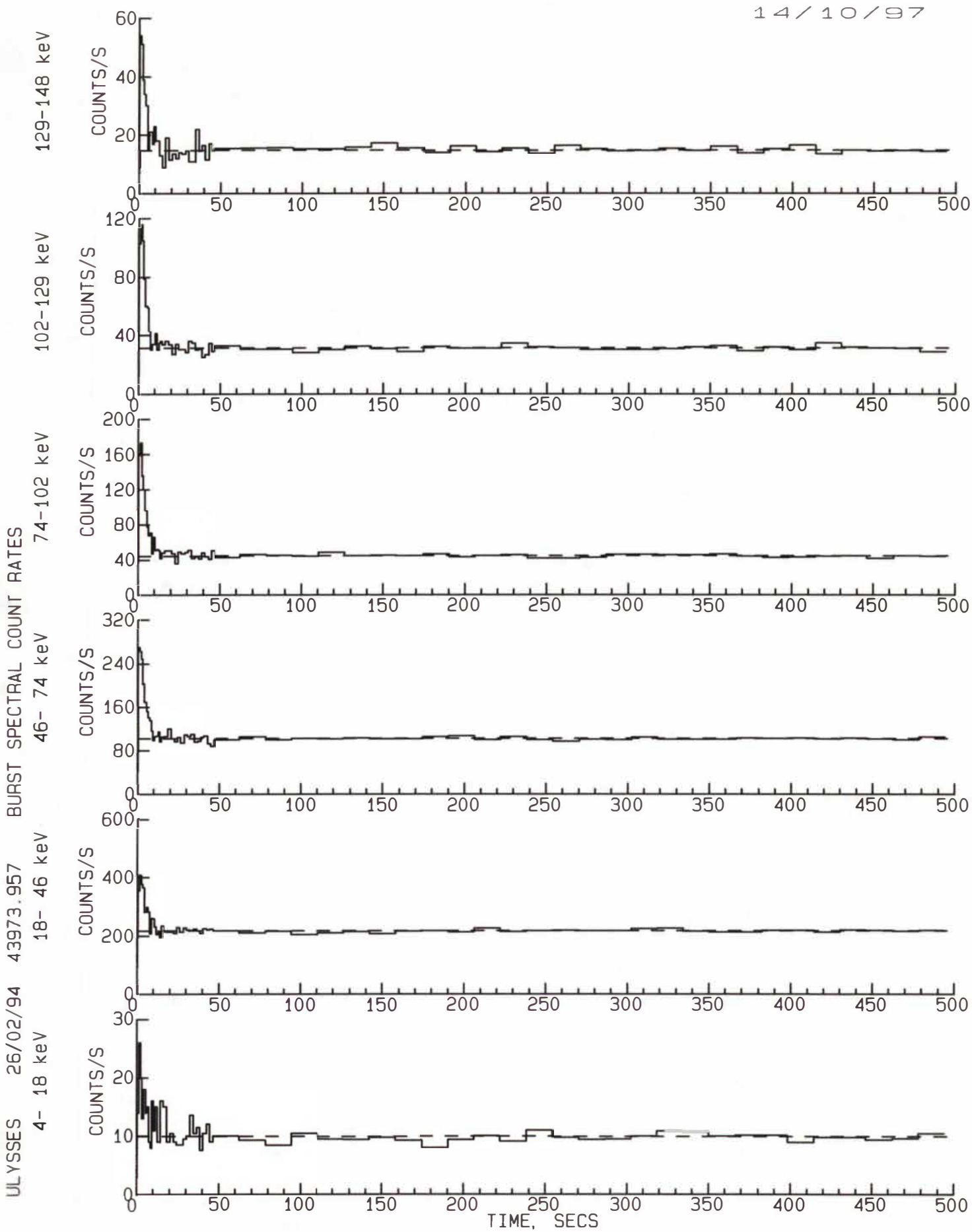


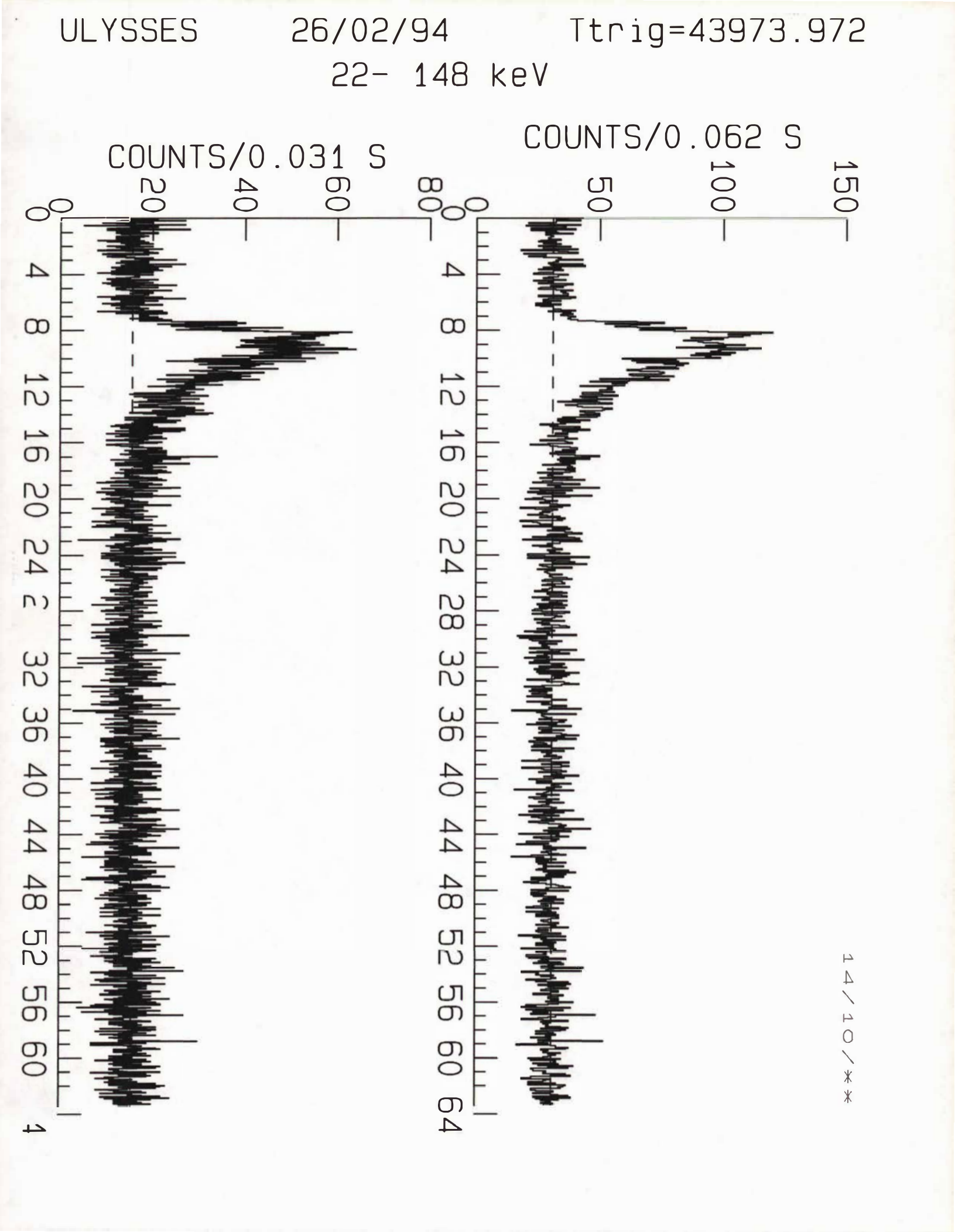
ULYSSES 26/02/94 43973.957

14/10/97

SPECTRUM INTEGRATED OVER 20.3 SECONDS, INTERVALS 2 TO 20




14/10/97
ULYSSES 26/02/94 43973.957 BURST SPECTRAL COUNT RATES
4- 18 keV
18- 46 keV
46- 74 keV
74-102 keV
102-129 keV
129-148 keV
COUNTS/S
TIME, SECS

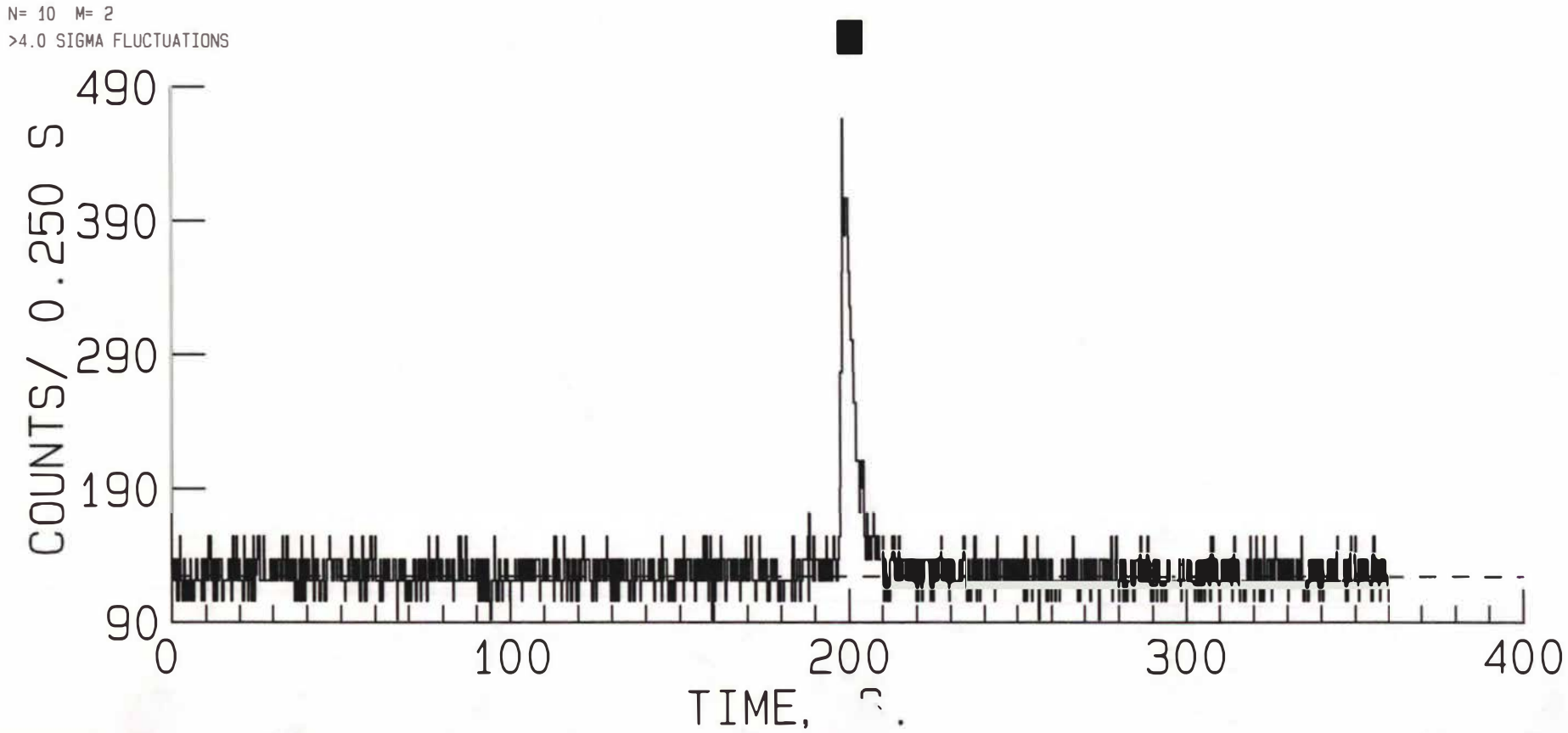

ULYSSES 26/02/94 Ttrig=43973.972
22- 148 keV
COUNTS/0.031 S
COUNTS/0.062 S
14/10/**

ULYSSES RT

14/10/97

26/ 2/94 43776.215 s

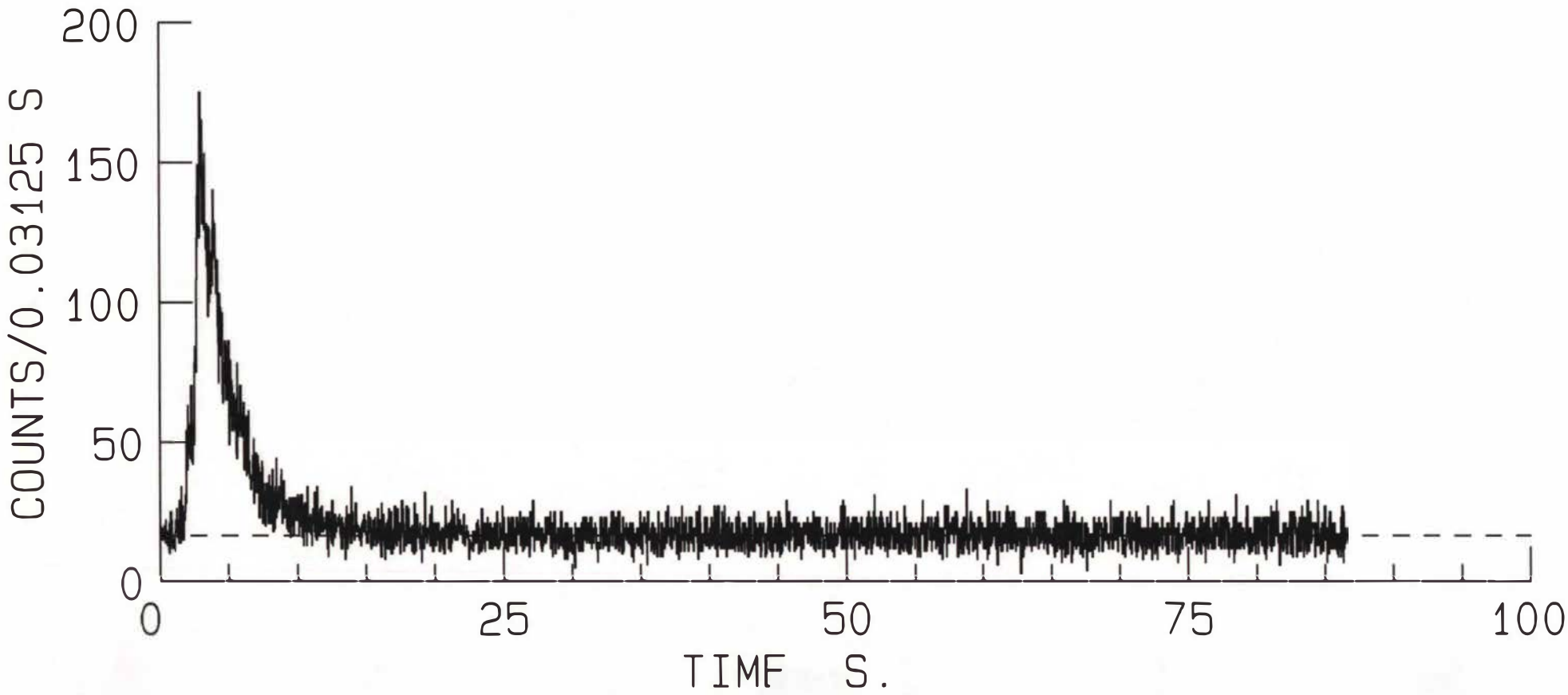
22- 148 keV



PHEBUS

26/ 2/94 43491.407 s

100- 1600 keV



From SHARIFF@ssl.msfc.nasa.gov Mon Feb 28 08:57 PST 1994
Date: Mon, 28 Feb 1994 10:57:22 -0600 (CST)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2850
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2850
 EVENT OF 1994 FEB 26 DAY OF YEAR= 57
 EVENT CROSSING TIME AT BATSE      : 71718. S. OR 19:55:18.0
 COORDINATES ARE   0.000   0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 348.000     7.000
 BATSE PEAK COUNTING RATE:   2500     C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 26/ 2/  94 IS:
 RA=  143.242 DEC=  -52.241 DIST=    2.971 AU
 BATSE-ULYSSES DISTANCE =  444522085. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.59 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  961.23 SECS.
 CROSSING TIME AT ULYSSES    IS 72679. S. OR   20:11:19 +/-  260.61 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 26/ 2/  94 IS:
 RA=  325.287 DEC=  -15.030 DIST=    2.327 AU
 MARS-BATSE DISTANCE =  348087424. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=148.50 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -990.00 SECS.
 CROSSING TIME AT MARS       IS 70728. S. OR   19:38:47 +/-   90.29 SECONDS
```

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2850	940226	9409	71718	2500	348	+07

BATSE BURST TRIGGER

NO.: 02850

TIME: TJD=9409 SECONDS=71718

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=049.3 AZIMUTH=007.0 ERROR= DEGREES

COMMENTS:
BURST, SINGLE PULSE WITH SUBSTRUCTURE, LASTING ~ 3 SECONDS. NOT VISIBLE ABOVE 300KEV.

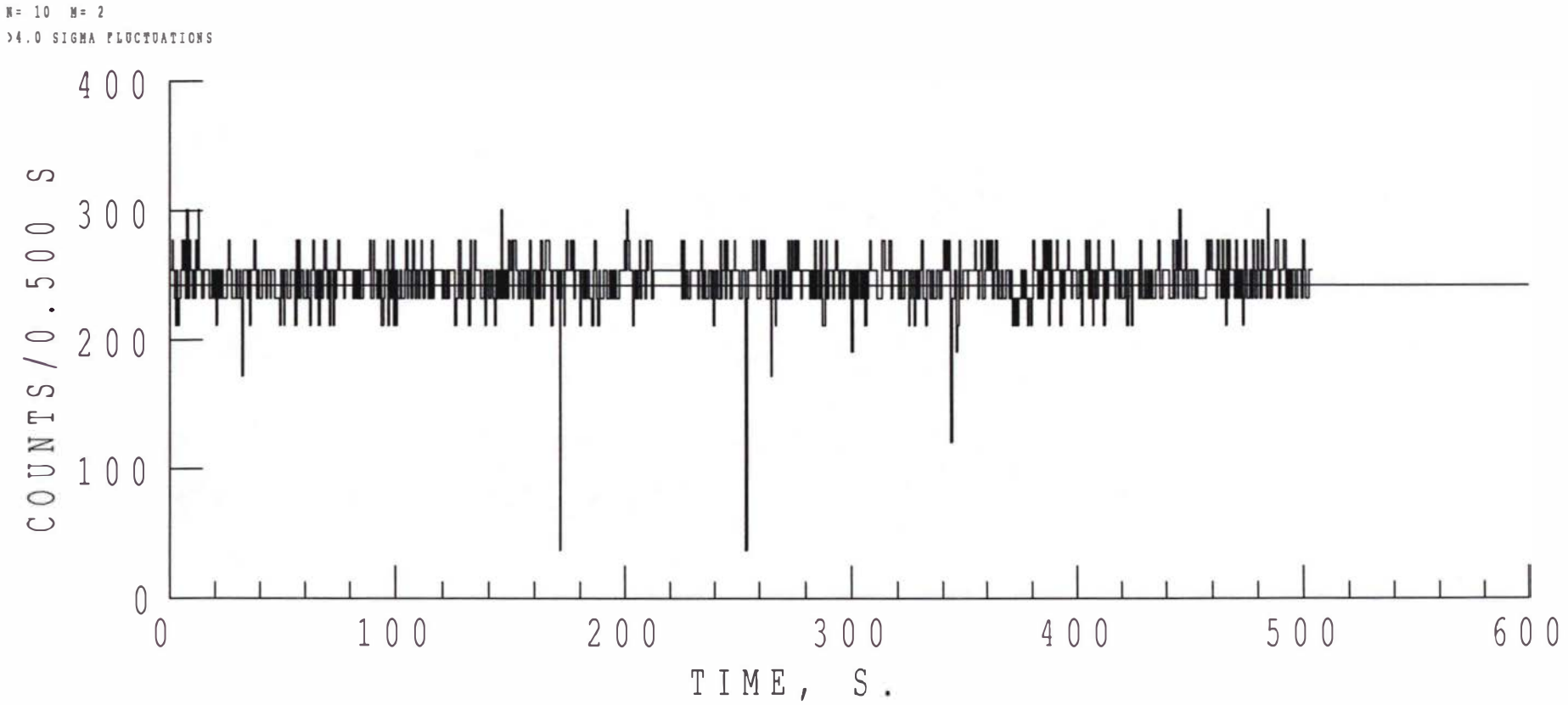
BATSE Burst # 94057
2850

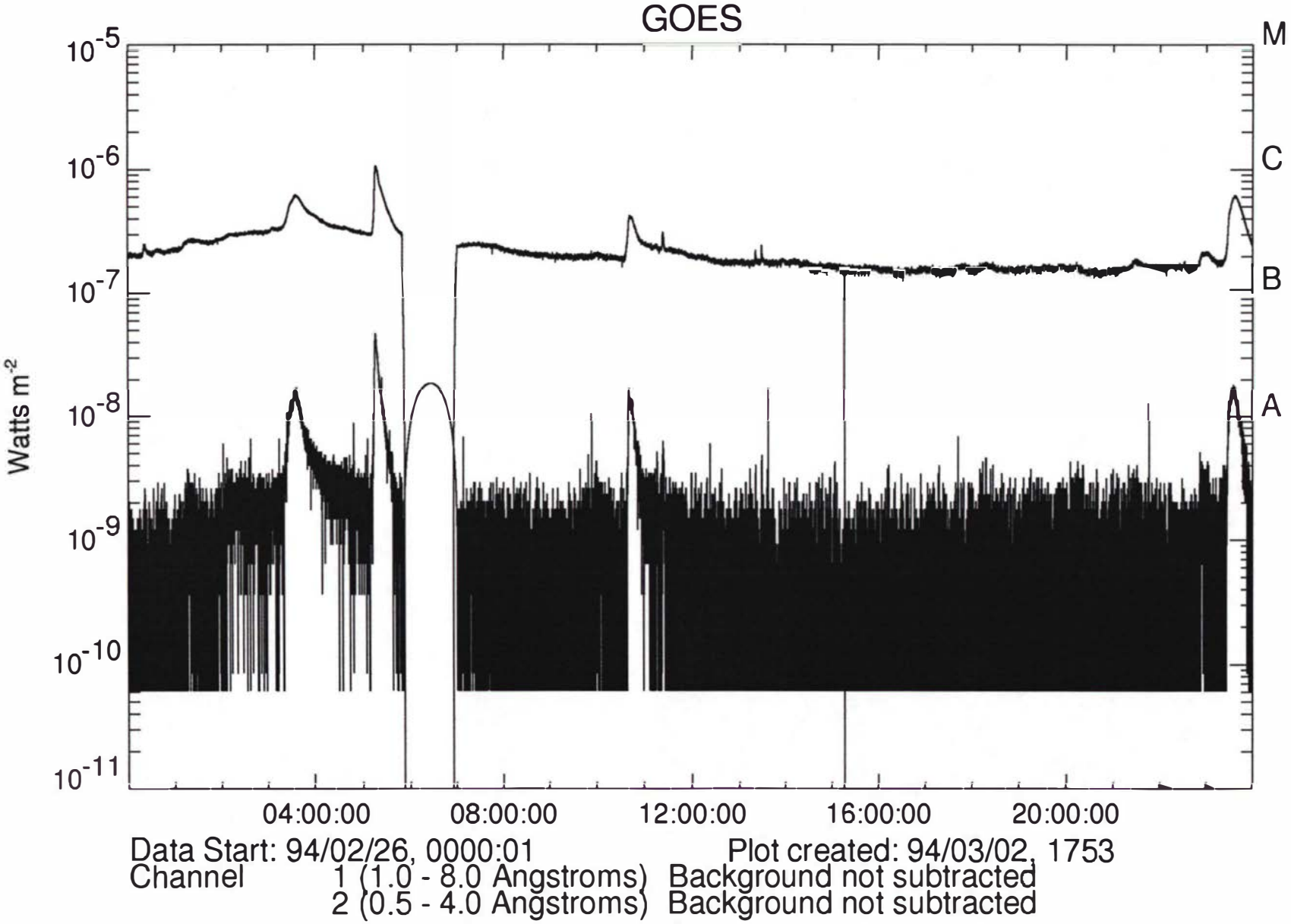
28/ 2/94

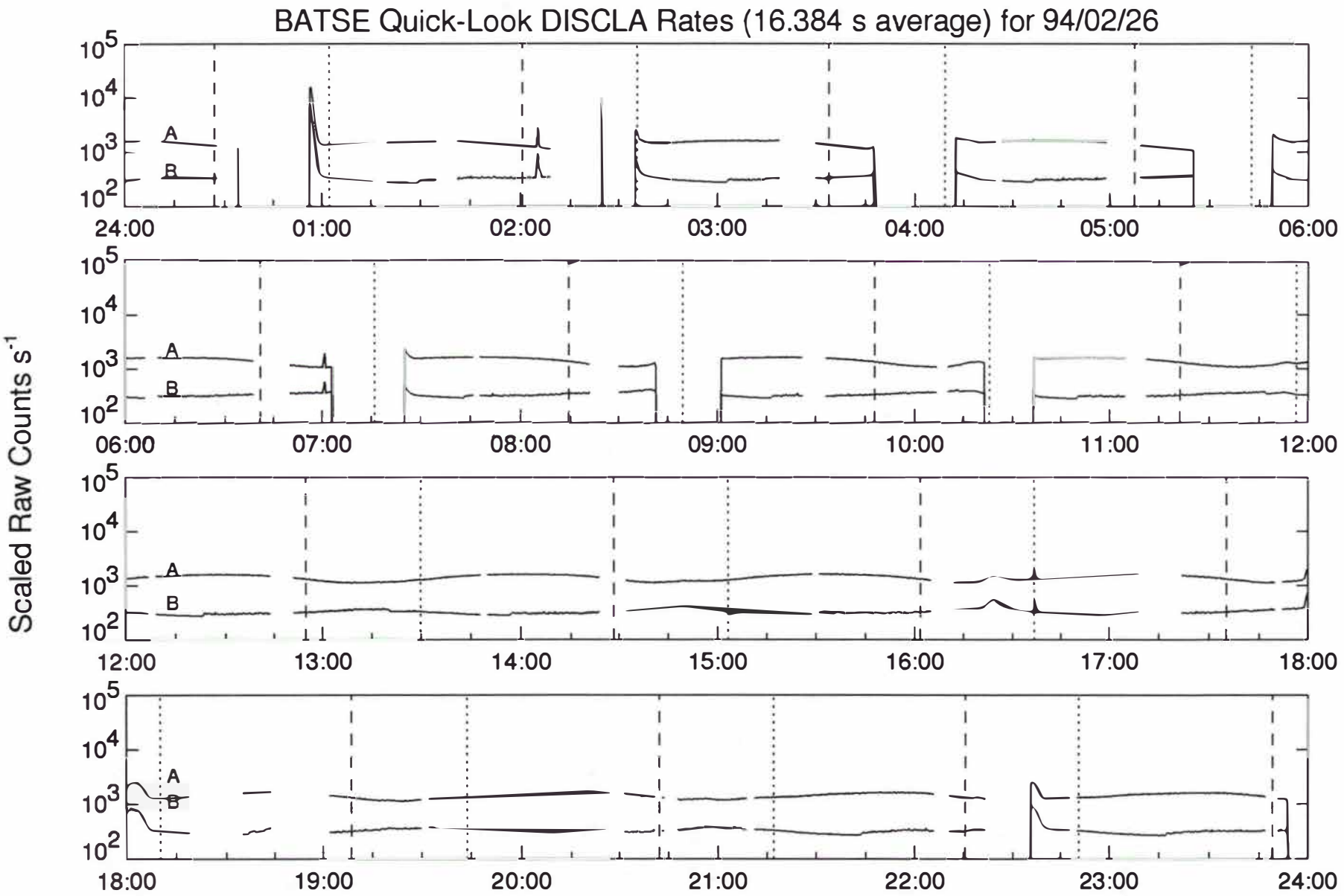
ULYSSES RT

26/ 2/94 72432.156 s

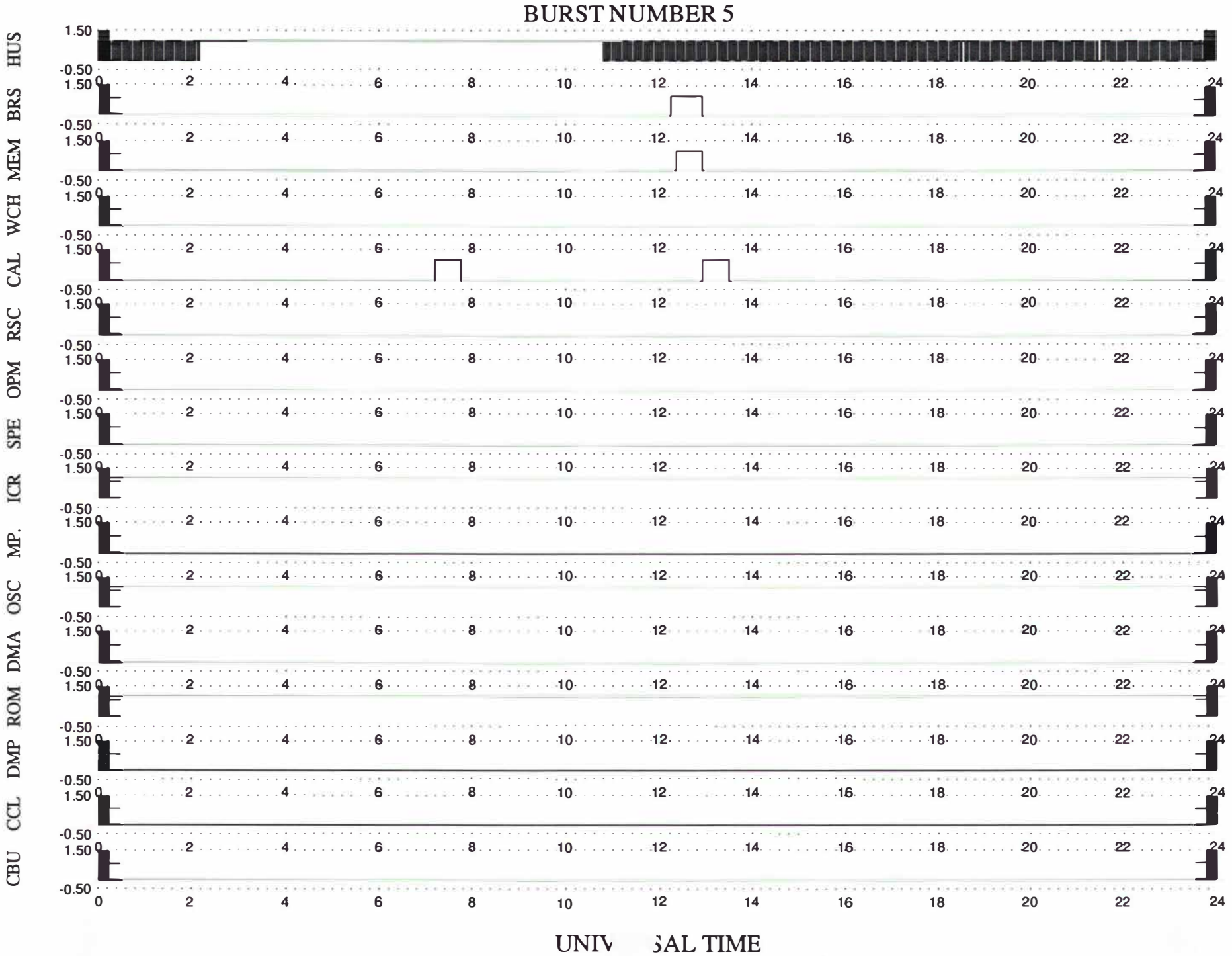
0- 0 keV




GOES
M
C
B
A
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
10-11
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/26, 0000:01
Plot created: 94/03/02, 1753
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

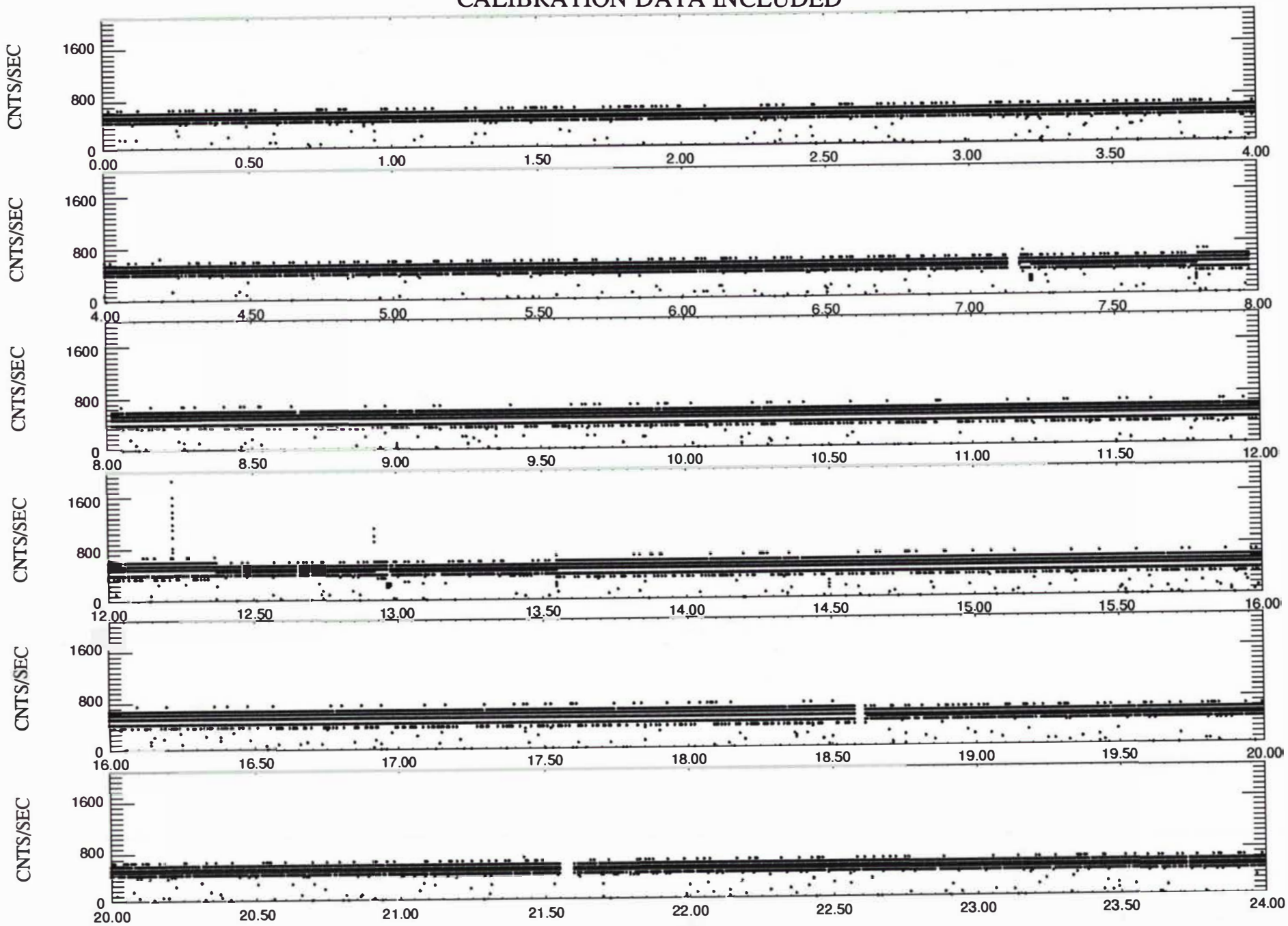

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/26
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
24:00
Current Time: 94/03/02, 1811 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 57, year 1994 to day 57, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 57, year 1994 to day 57, year 1994 5/26/94

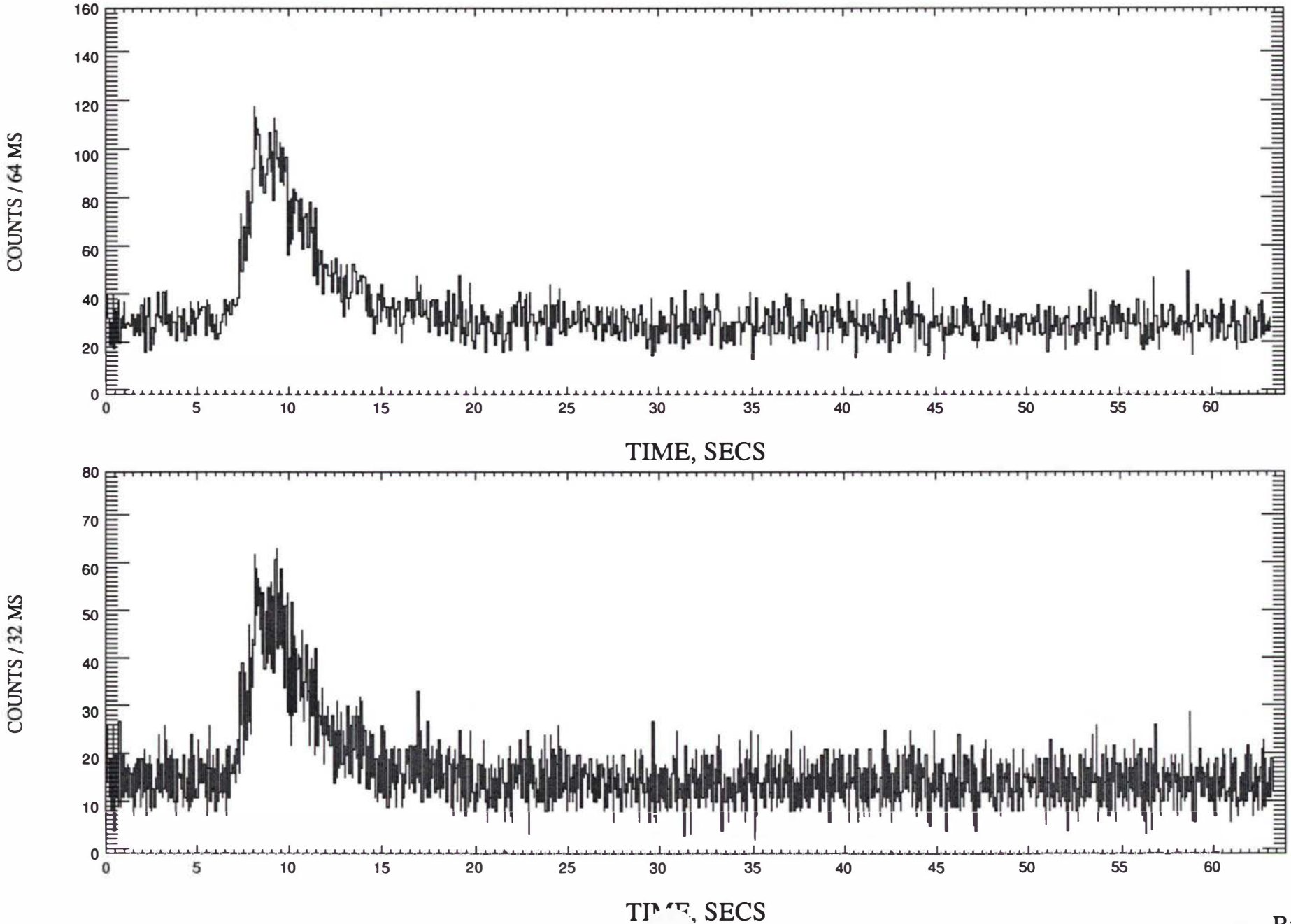
CALIBRATION DATA INCLUDED



UNIV SAL TIME

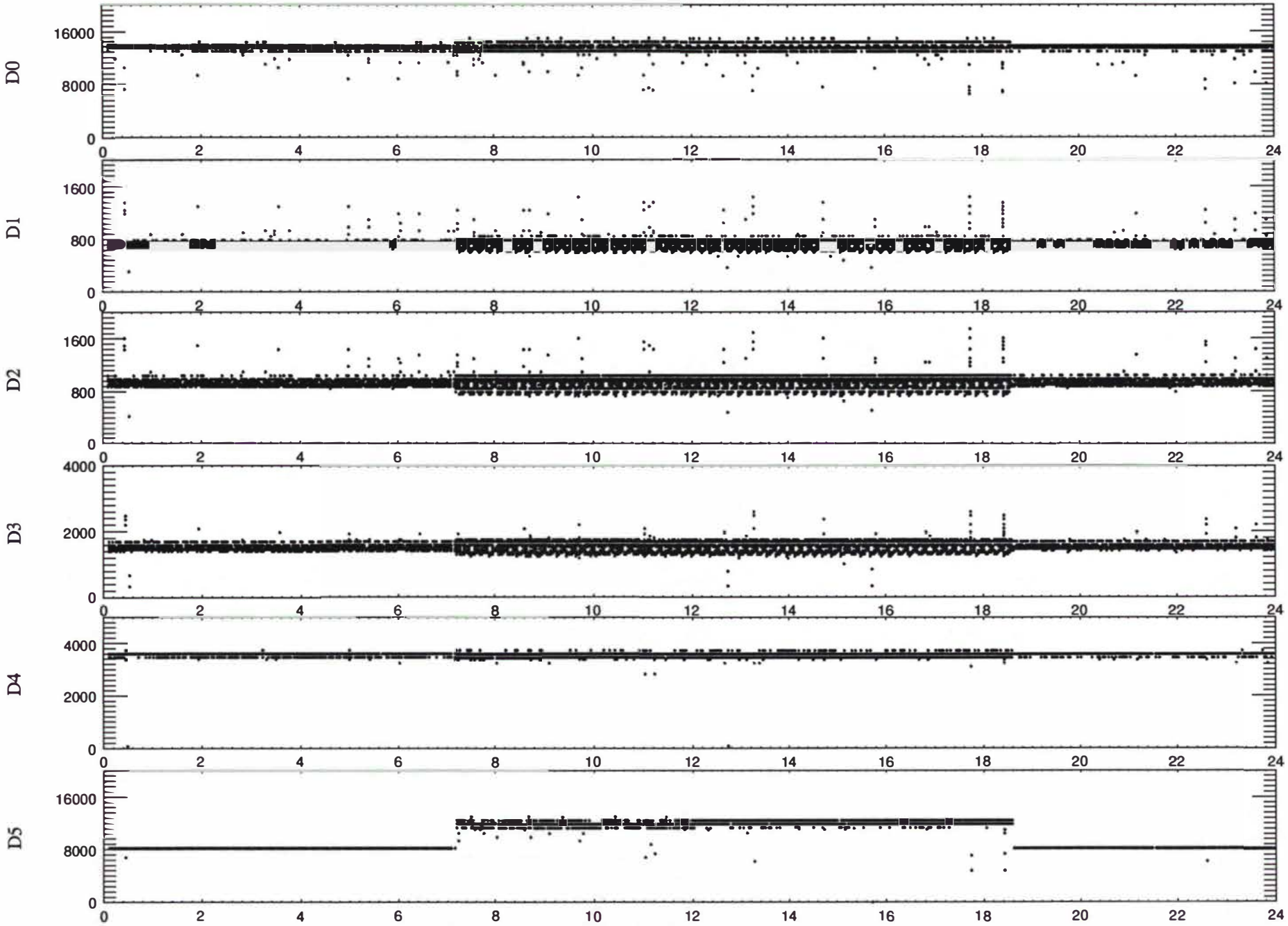
HUS 2A TRIGGERED DATA EDR day 57, year 1994 5/26/94

Burst Counter 5 at UT=12.214988149007 h=43973.957 s 12:12:53.957



B# 1

HUS 2B COUNTS / SEC QEDR day 57, year 1994 to day 57, year 1994 2/28/94



Dear Trevor,

I tried to find a nice solar event for you on day 20, but there was nothing; I looked back to day 14, and we had nothing that entire week. There is some indication of activity from GOES on the 19th, however. Let me know if you have any other dates to check out.

Kevin

From root Wed Nov 16 05:53 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA00441; Wed, 16 Nov 94 05:53:23
Received: from ESTCS1 (estcs1.estec.esa.nl) by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA05025; Wed, 16 Nov 1994 05:51:54 +0800
Date: Wed, 16 Nov 1994 14:51:35 +0200
Message-Id: <941116145135543@estcs1.estec.esa.nl>
From: tsanders@estcs1.estec.esa.nl (TREVOR SANDERSON, SSD/ESTEC)
To: khurley@space6.ssl.berkeley.edu
Subject: Re:
X-Vms-To: SMTP%"khurley@space6.ssl.berkeley.edu"
X-Vms-Cc: TSANDERS
Content-Length: 533
Status: R

Dear Kevin,

Thank you for looking through your data for me. I think however I gave you the wrong date to look for. The event we are interested in was observed to start at Ulysses very close to the end of day 36 of 1994. We see a rapid rise in our counting rate, and a sudden change in our spectral index. I guess you may have to look back a couple of days to find something.

What about the event around day 58 of 1994, which was supposed to be from a M4/3Bflare on 20 February. Did you observe that?

regards

Trevor

From khurley@space6.ssl.berkeley.edu Fri Nov 18 09:27 PST 1994
Date: Fri, 18 Nov 94 09:29:11
From: khurley@space6.ssl.berkeley.edu

Dear Trevor, (Sanderson)

There is not much on day 36 either, except for a nice gamma ray burst around 23:30 UT. The same is true for the preceding days. We did not detect the flare on 20 February either, but on day 58, we had series of mysterious triggers. We have seen these before, and they are not due to gamma-ray bursts as far as I can tell. I think that they are from the effects of energetic particles passing through the crystals and depositing large amounts of energy, which then appear as count rate increases lasting a few milliseconds. Can you tell me what the UT's of your events are?

From root Wed Nov 30 00:28 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA07658; Wed, 30 Nov 94 00:28:28
Received: from mx.nsi.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA10539; Wed, 30 Nov 1994 00:27:07 +0800
Received: Wed, 30 Nov 94 00:27:08 PST from ESTCS1.dnet by mx.nsi.nasa.gov (4.1/1
Message-Id: <9411300827.AA05631@mx.nsi.nasa.gov>
Received: from ESTCS1.dnet by AMES.dnet with MAIL-11
(utk-mail11d v1.7); Wed, 30 Nov 94 00:27:08 PST
Date: Wed, 30 Nov 94 00:27:08 PST
From: "TREVOR SANDERSON, SSD/ESTEC" <TSANDERS@estcs1.span.nasa.gov>
X-To: AMES::"khurley@space6.ssl.berkeley.edu"
X-Cc: TSANDERS
Subject: RE:
To: khurley@space6.ssl.berkeley.edu
Content-Length: 628
Status: R

I looked at our data, but could not find any significant increases. There are a few features in the magnetic field on day 58 which might give a clue, i.e at around 00:50 the s/c could be entering a CME, and then leaving it at 07:40 UT. Our 1 MeV fluxes are the highest at 07:40, but still many orders of magnitude below the highest we ever saw.

A CME was entered at 1045 according to the solar wind people.

It looks like there are some discontinuities around 1610 UT amd 1655 UT.

I know the Hiscale team are working on this, and have some interesting electron measurements which we do not have. Maybe they can help

trevor

From HAGEDON@ssl.msfc.nasa.gov Mon Feb 28 12:27 PST 1994
Date: Mon, 28 Feb 1994 14:27:50 -0600 (CST)
From: HAGEDON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2851
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2851
 EVENT OF 1994 FEB 27 DAY OF YEAR= 58
 EVENT CROSSING TIME AT BATSE      : 75854. S. OR 21:04:14.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 358.000   40.000
 BATSE PEAK COUNTING RATE:   2400    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 27/ 2/  94 IS:
 RA=  142.637 DEC=  -52.266 DIST=    2.965 AU
 BATSE-ULYSSES DISTANCE =  443529925. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 27.04 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1317.72 SECS.
 CROSSING TIME AT ULYSSES    IS 77172. S. OR   21:26:11 +/-  186.79 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 27/ 2/  94 IS:
 RA=  326.055 DEC=  -14.774 DIST=    2.325 AU
 MARS-BATSE DISTANCE =  347796704. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.69 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -539.03 SECS.
 CROSSING TIME AT MARS       IS 75315. S. OR   20:55:14 +/-  170.17 SECONDS
```

KJD

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2851	940227	9410	75854	2400	358	+40

BATSE BURST TRIGGER

NO.: 02851

TIME: TJD=9410 SECONDS=75854

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=45.8 AZIMUTH=320.9 ERROR= DEGREES

COMMENTS:
BURST. SINGLE PULSE. DUR.~3 SEC. NOT VISIBLE ABOVE 300 KEV.

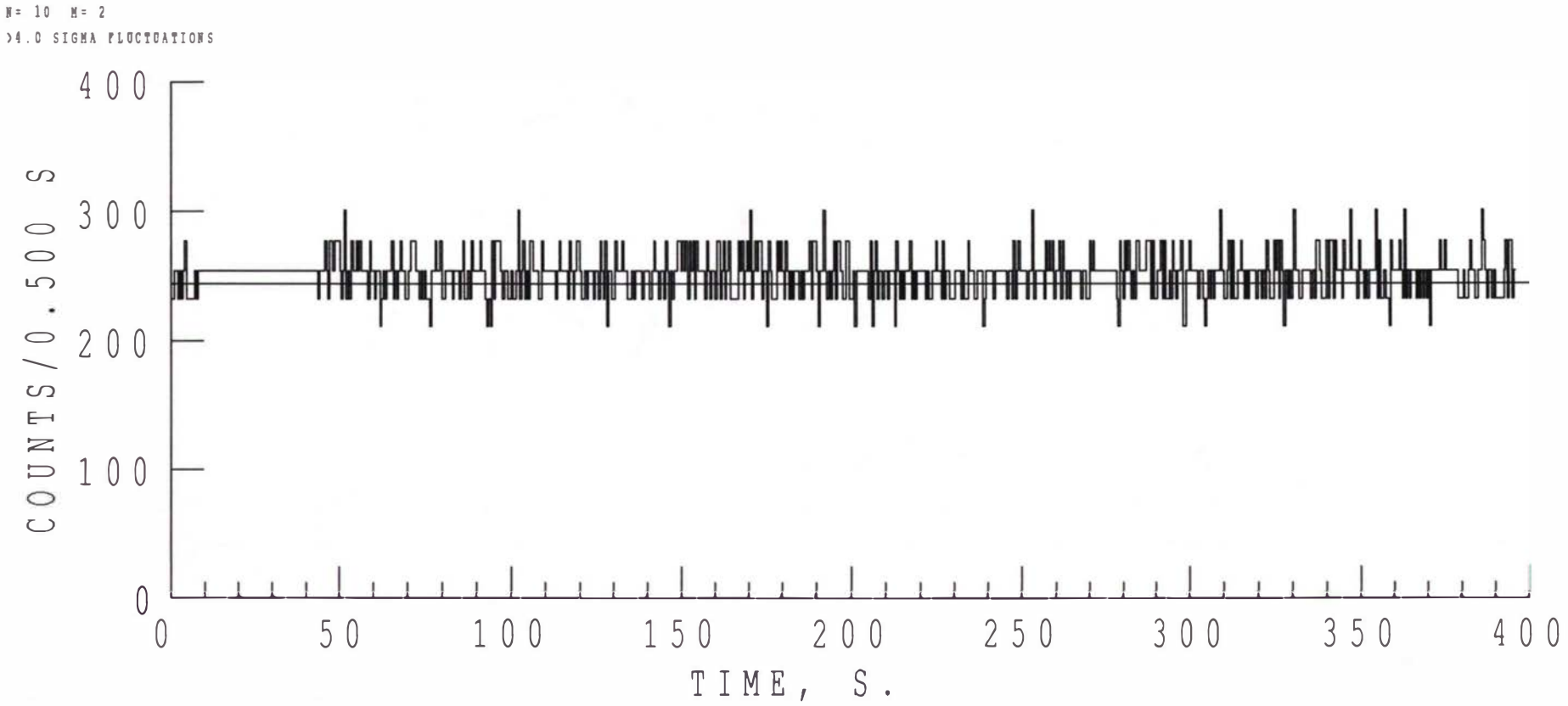
BATSE BURST # 2851

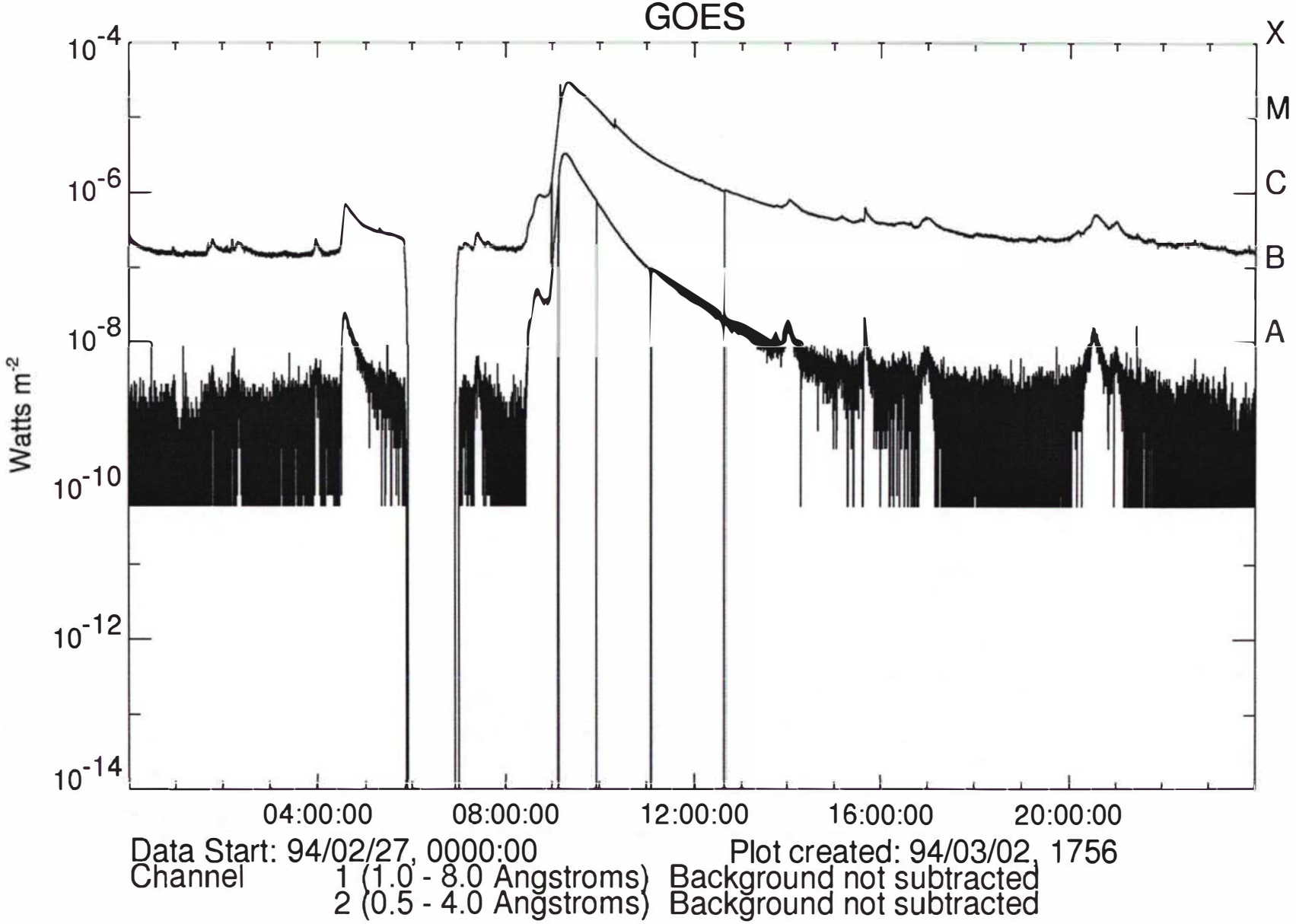
28/ 2/94

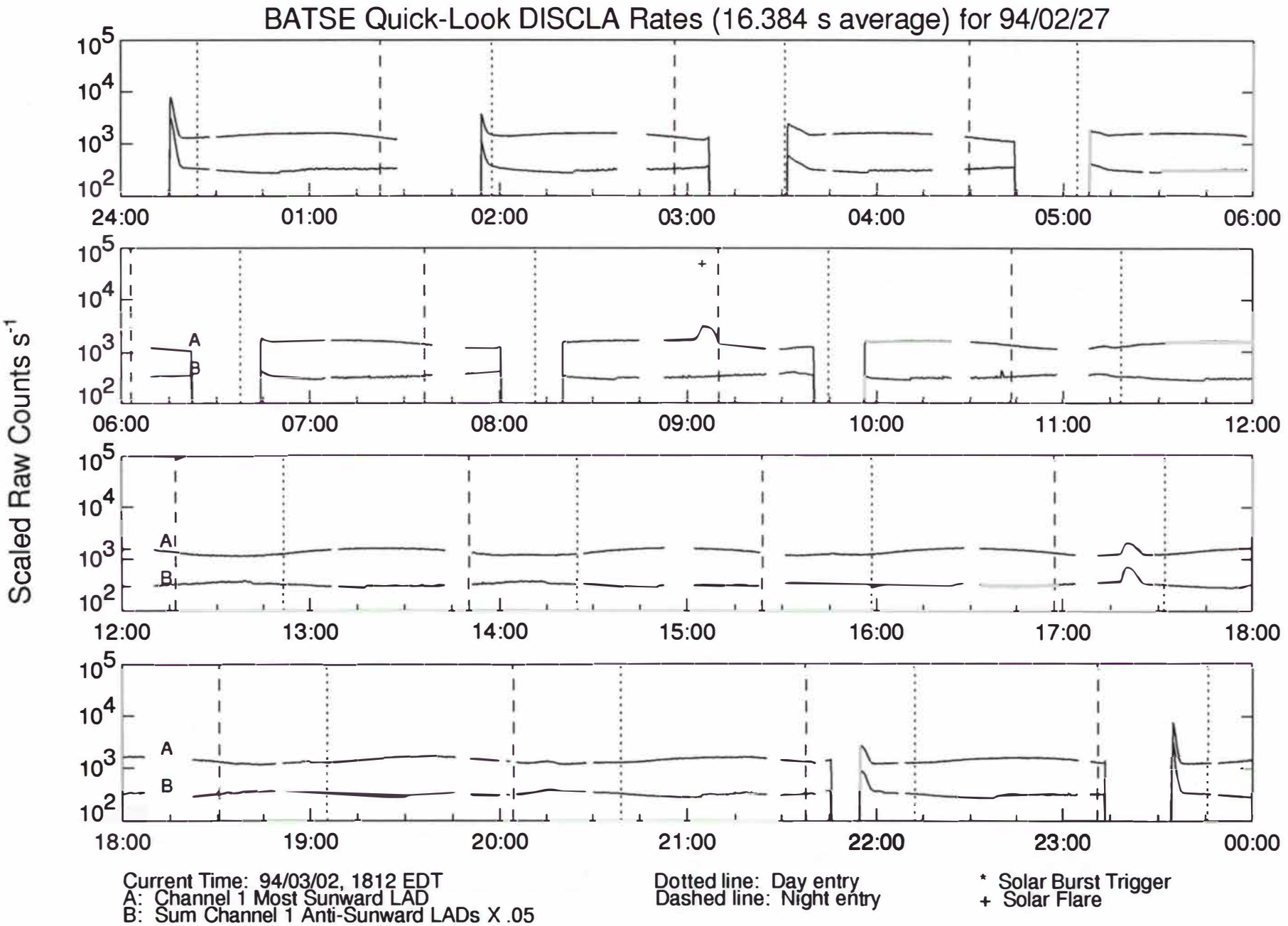
ULYSSES RT

27/ 2/94 76968.086 s

0- 0 keV

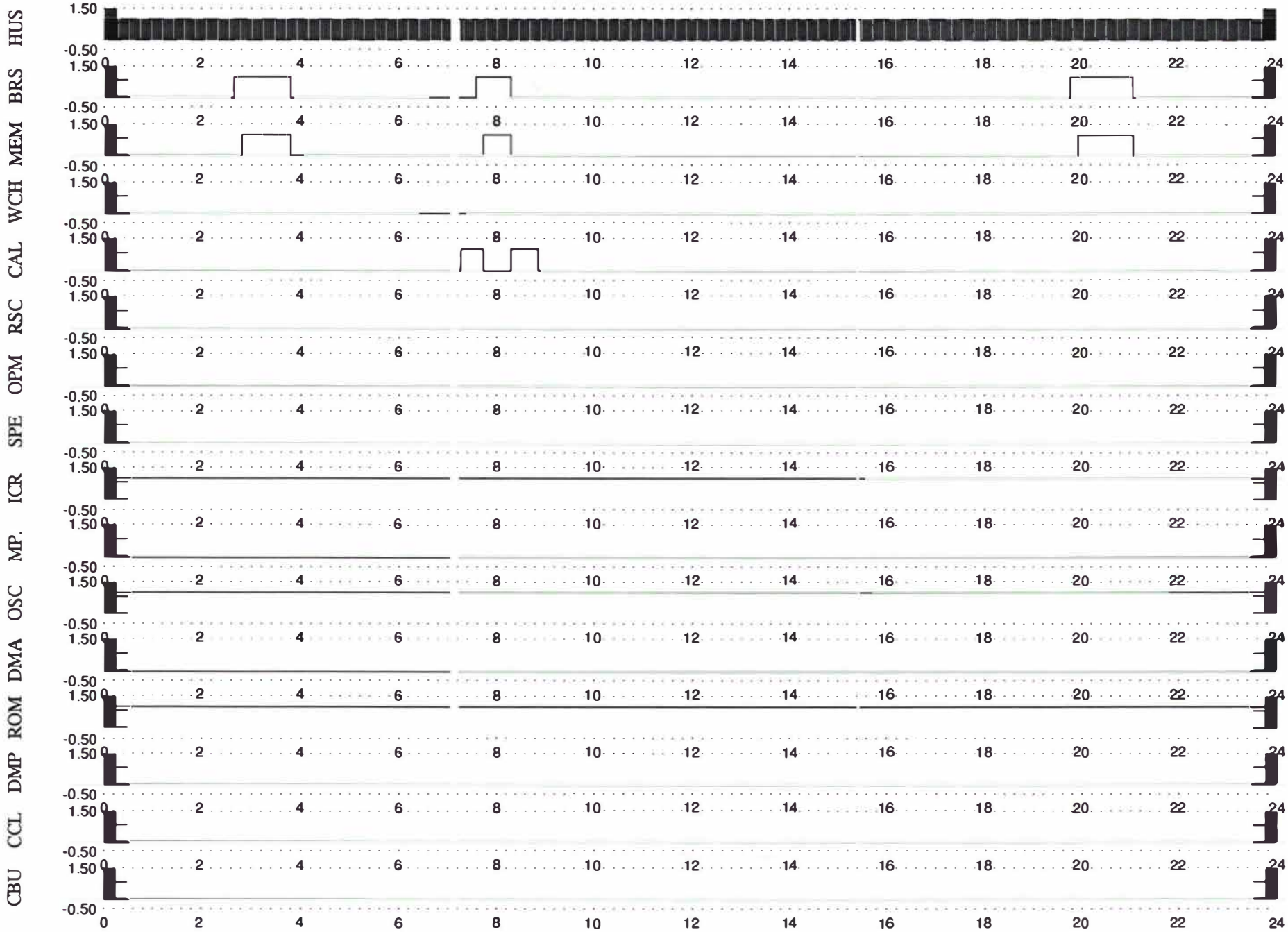



GOES
X
M
C
B
A
10^{-4}
10^{-6}
10^{-8}
10^{-10}
10^{-12}
10^{-14}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/27, 0000:00
Plot created: 94/03/02, 1756
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted


BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/27
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
24:00
01:00
02:00
03:00
04:00
05:00
06:00
A
B
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: 94/03/02, 1812 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 58, year 1994 to day 58, year 1994 5/26/94

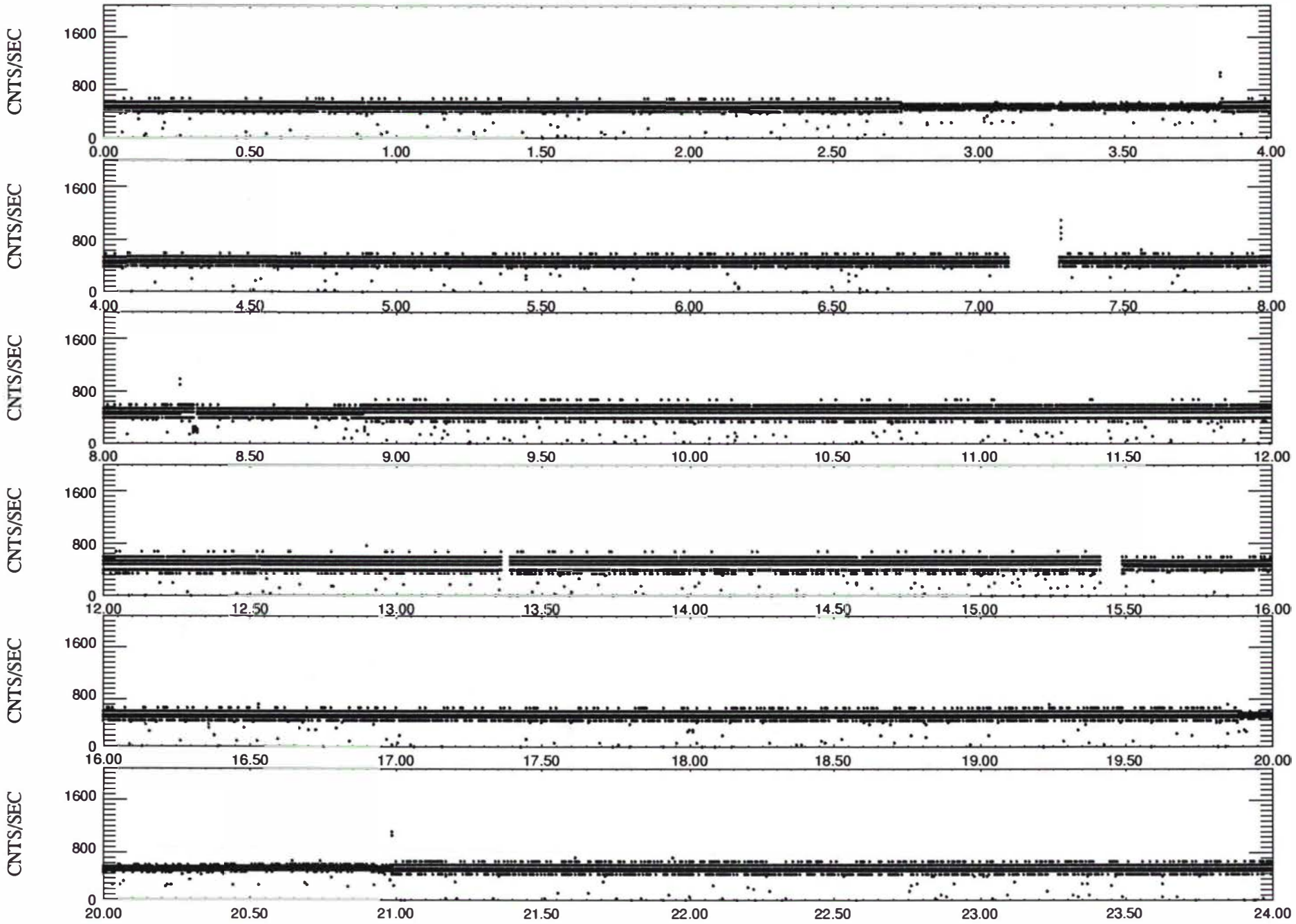
BURST NUMBER 6 - 8



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 58, year 1994 to day 58, year 1994 5/27/94

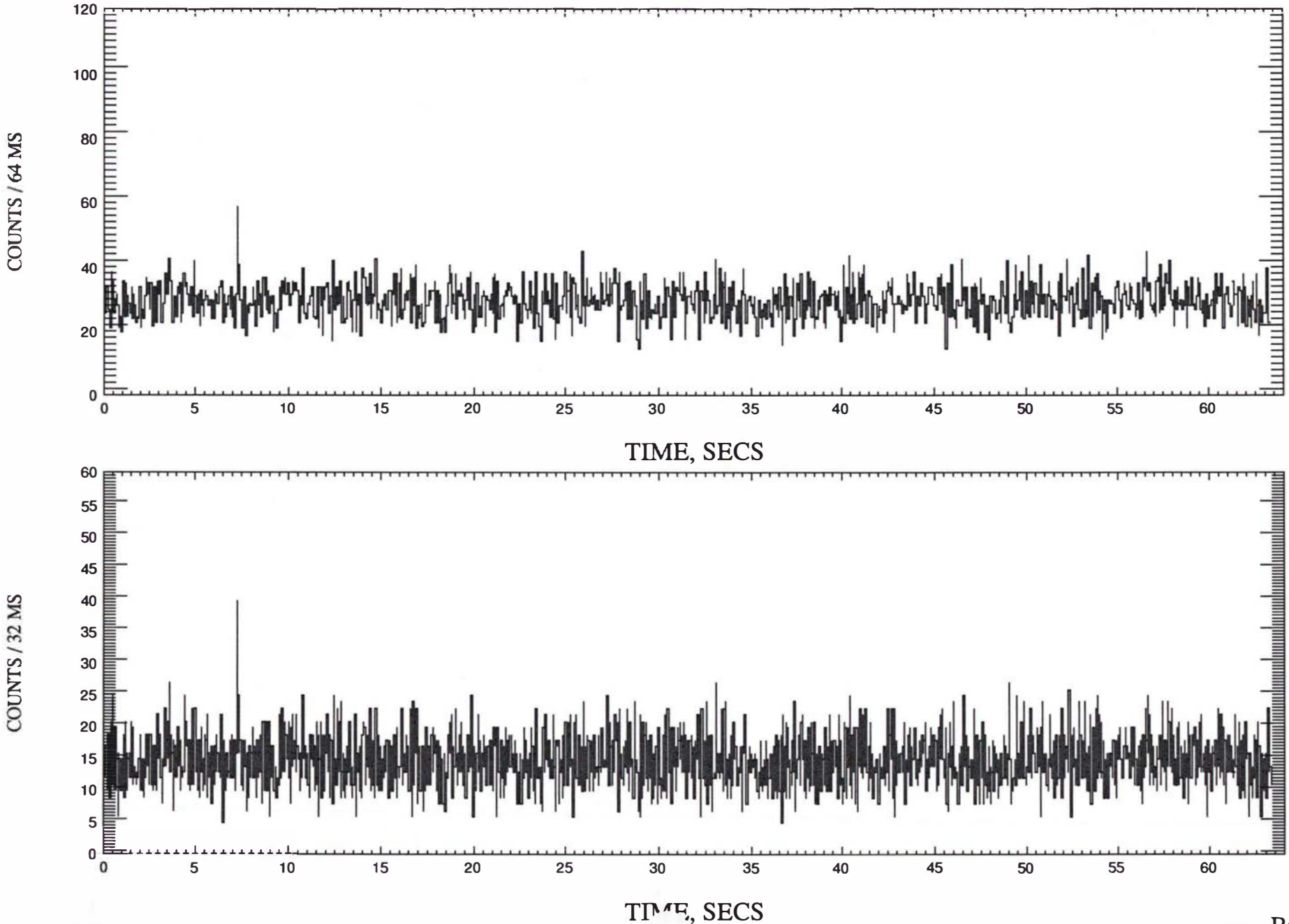
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 58, year 1994 5/26/94

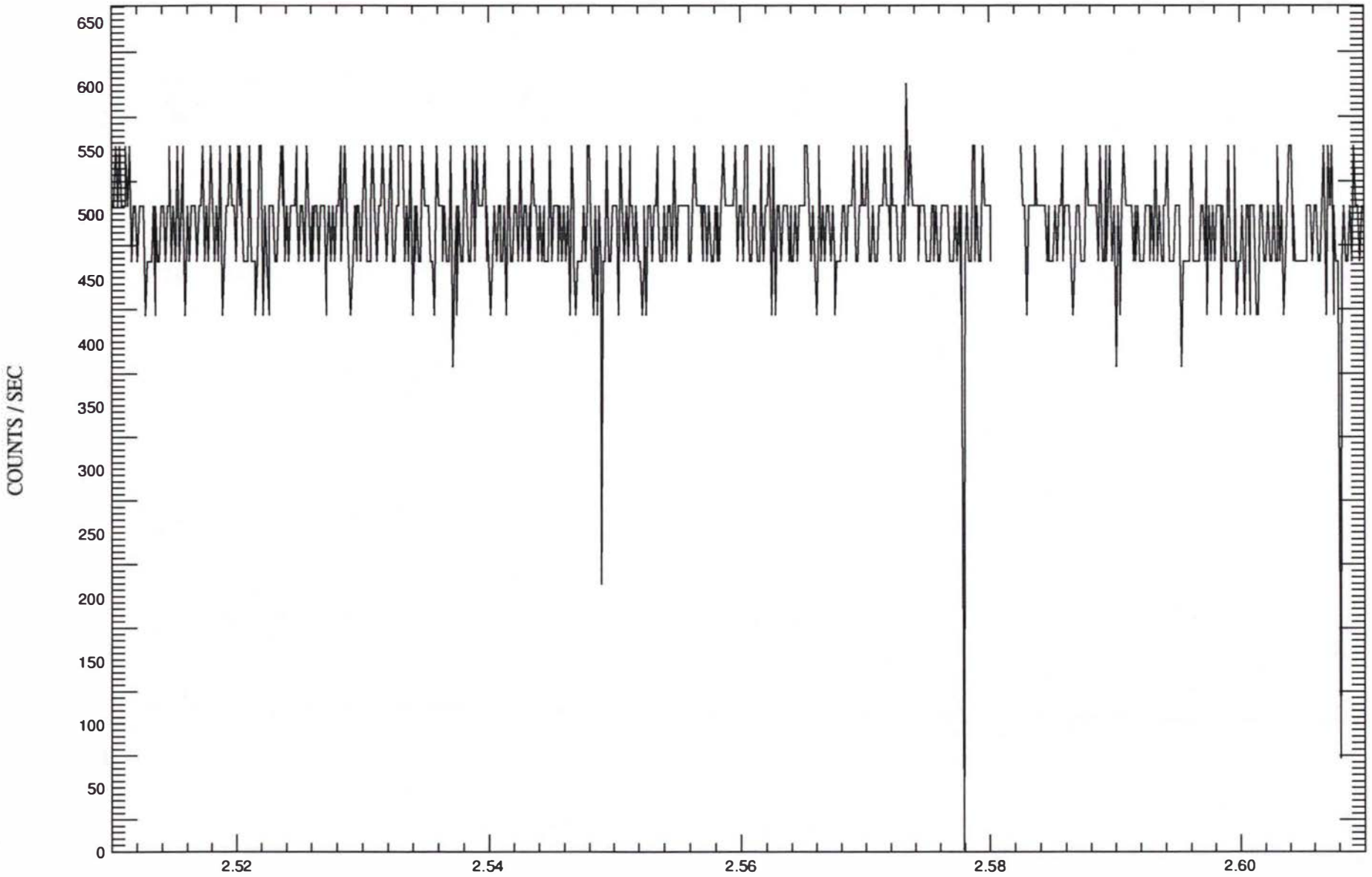
Burst Counter 6 at UT= 2.562052726746 h= 9223.390 s 02:33:43.390



B# 1

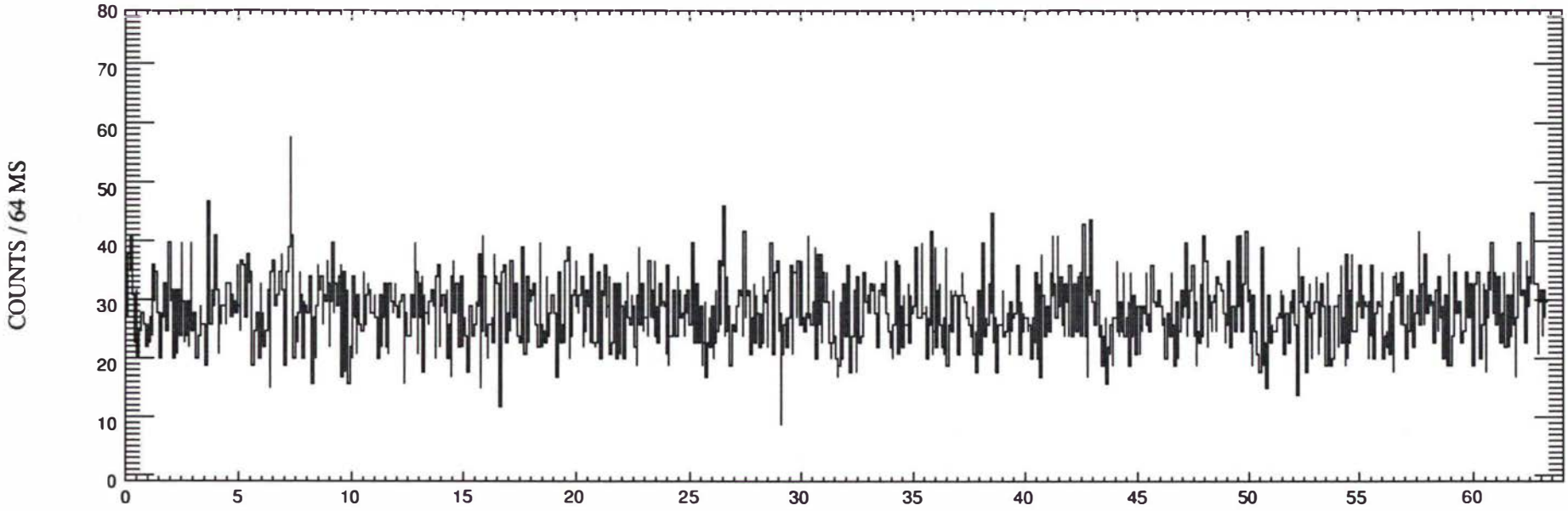
HUS 2A, MODE 1, NOT AVERAGED QEDR day 58, year 1994 to day 59, year 1994 2/28/94

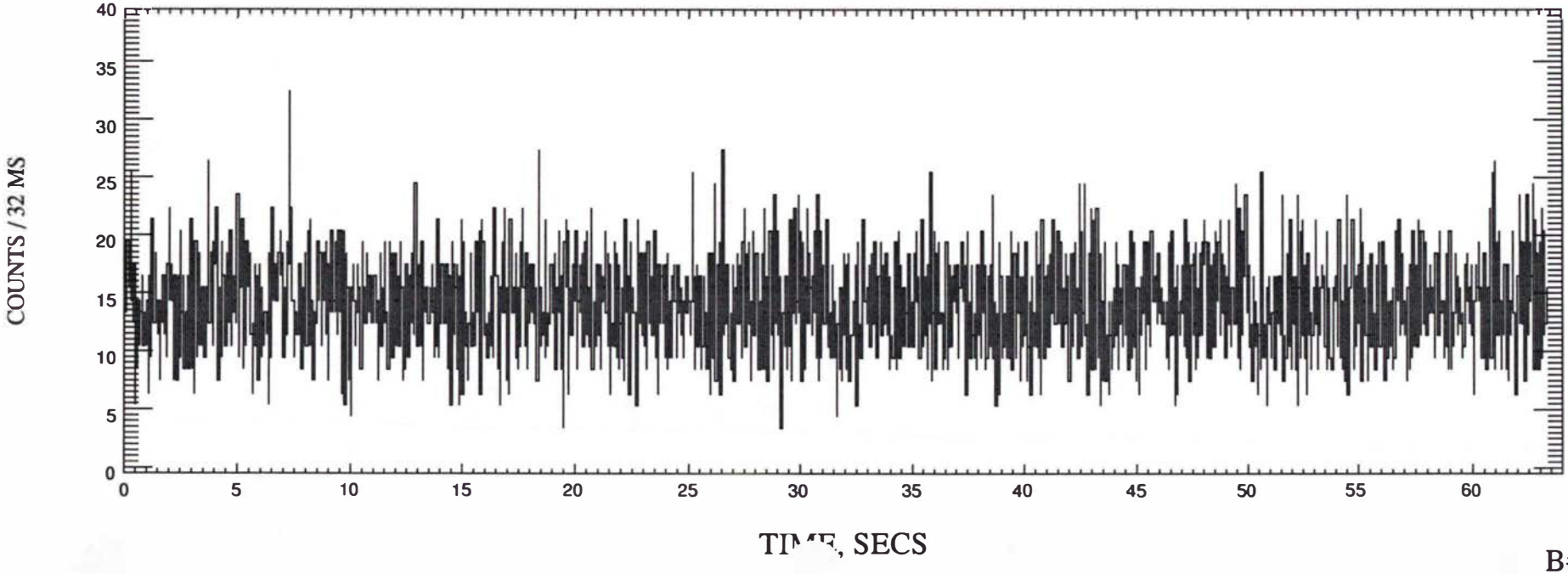
CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 58, year 1994 5/26/94

Burst Counter 7 at UT= 7.558208342658 h=27209.550 s 07:33:29.550

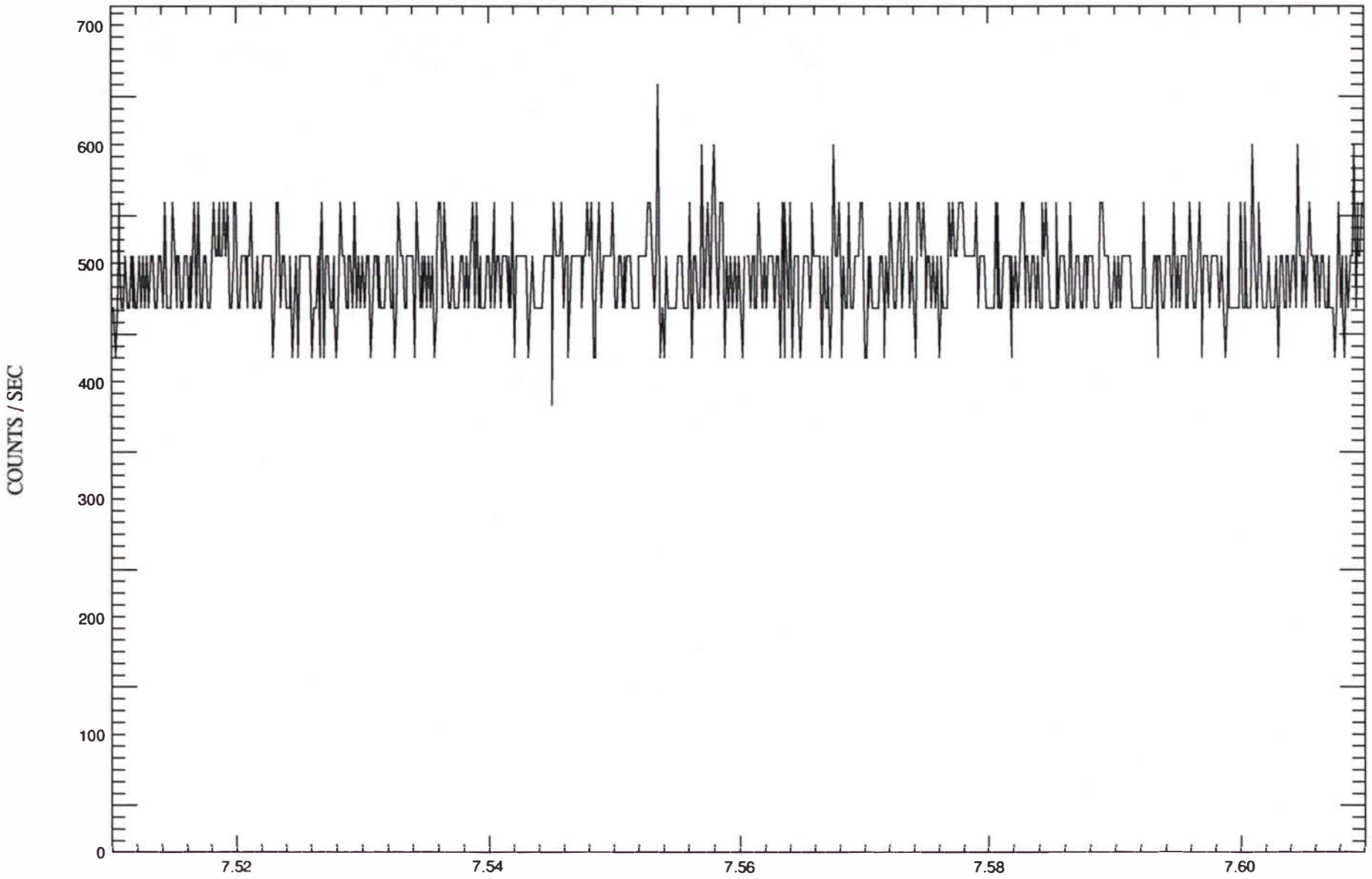




B# 2

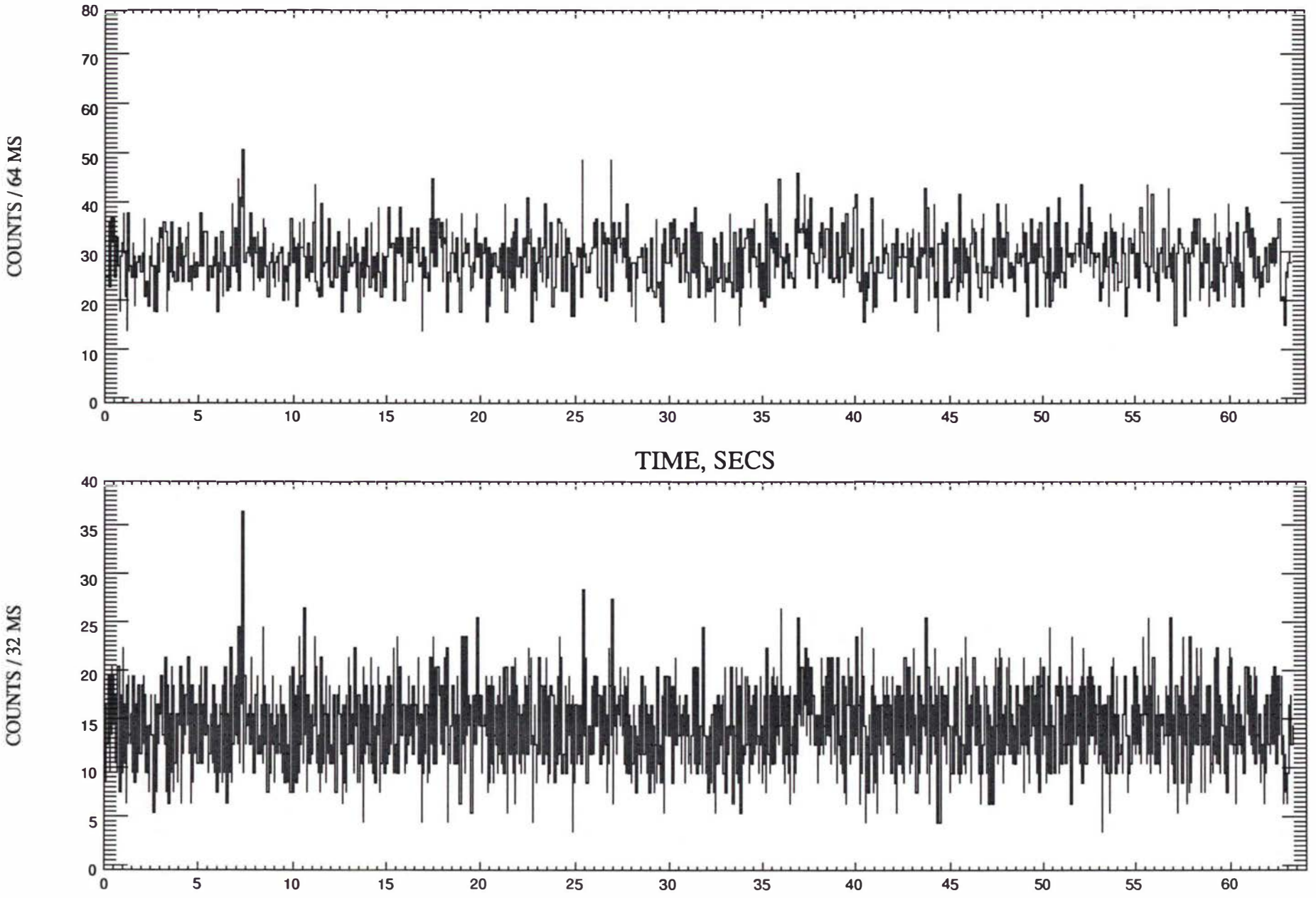
HUS 2A, MODE 1, NOT AVERAGED QEDR day 58, year 1994 to day 59, year 1994 2/28/94

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 58, year 1994 5/26/94

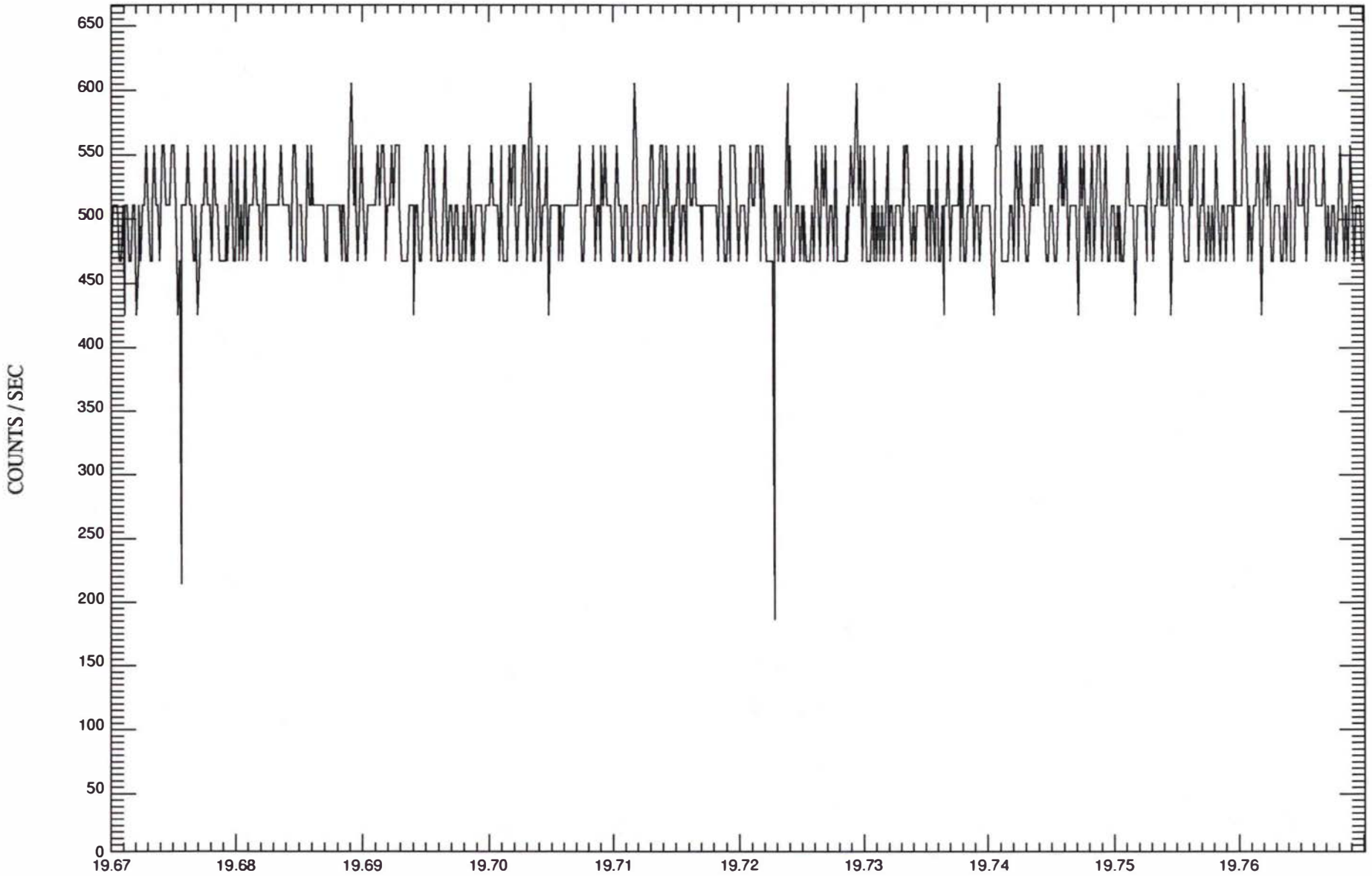
Burst Counter 8 at UT=19.723956332737 h=71006.243 s 19:43:26.243



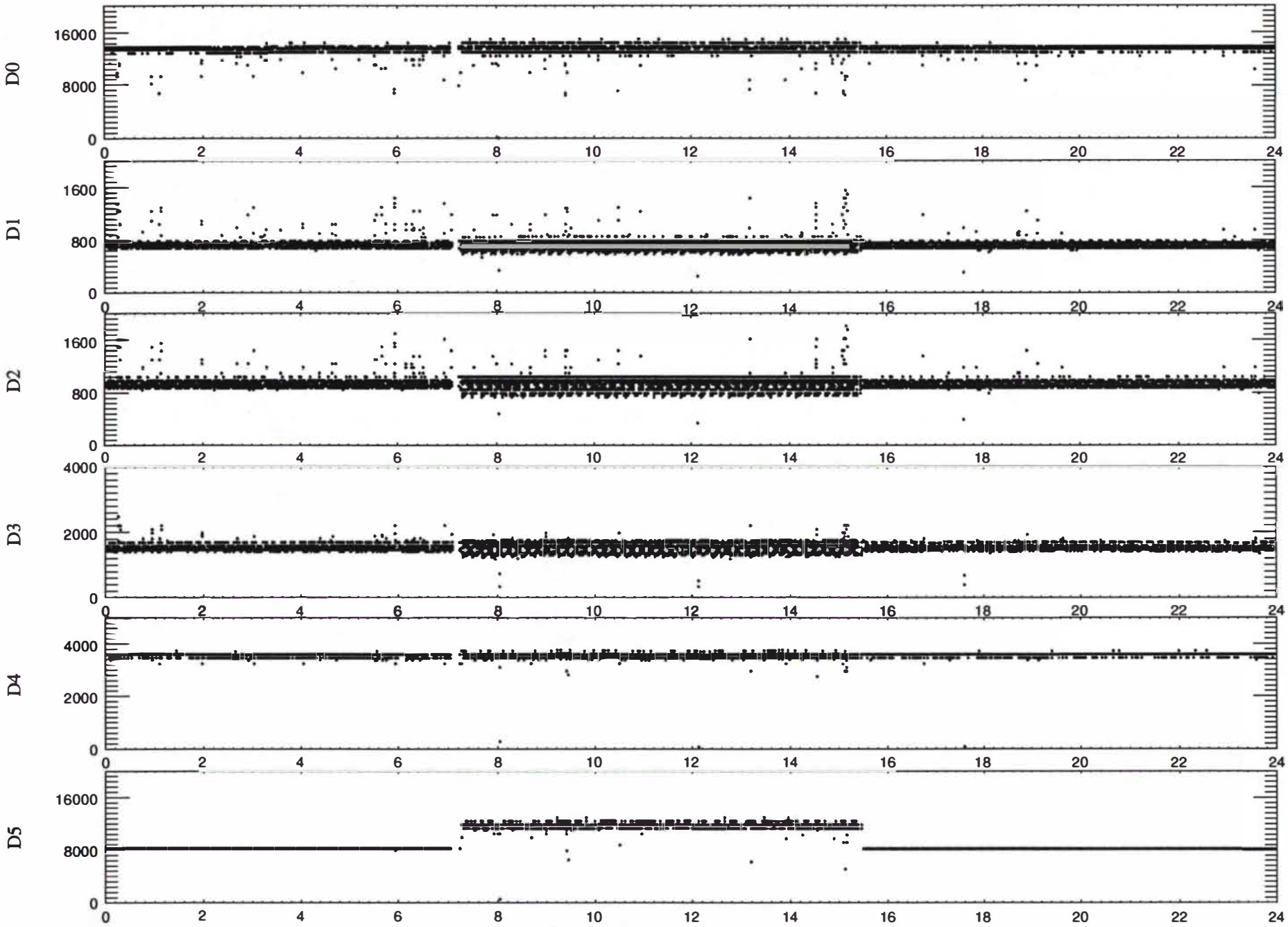
B# 3

HUS 2A, MODE 1, NOT AVERAGED QEDR day 58, year 1994 to day 59, year 1994 2/28/94

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC QEDR day 58, year 1994 to day 58, year 1994 2/28/94



From RICHARDSON@ssl.msfc.nasa.gov Wed Mar 2 09:49 PST 1994
Date: Wed, 2 Mar 1994 11:49:49 -0600 (CST)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2852
Content-Type: text
Content-Length: 1135

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

 BATSE BURST #     2852
 EVENT OF 1994 FEB 28 DAY OF YEAR= 59
 EVENT CROSSING TIME AT BATSE      : 41340. S. OR 11:29:00.0
 COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 128.000    -4.000
 BATSE PEAK COUNTING RATE:  18000     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 28/ 2/  94 IS:
 RA=  142.485 DEC=  -52.271 DIST=     2.963 AU
 BATSE-ULYSSES DISTANCE =  443286495. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.26 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -955.51 SECS.
 CROSSING TIME AT ULYSSES     IS 40384. S. OR   11:13:04 +/-  231.41 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 28/ 2/  94 IS:
 RA=  326.822 DEC=  -14.515 DIST=     2.323 AU
 MARS-BATSE DISTANCE =  347505440. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 26.29 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1039.29 SECS.
 CROSSING TIME AT MARS       IS 42379. S. OR   11:46:19 +/-  104.90 SECONDS
```

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2852	940228	9411	41340	18000	128	-04

BATSE BURST TRIGGER

NO.: 02852

TIME: TJD=9411 SECONDS=41340

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=091.7 AZIMUTH=182.7 ERROR= DEGREES

COMMENTS:
GRB. WITH STRUCTURE. LASTING APROX. 45S. VISIBLE ABOVE 300KEV.

Helio corr removed

Date: Jan 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

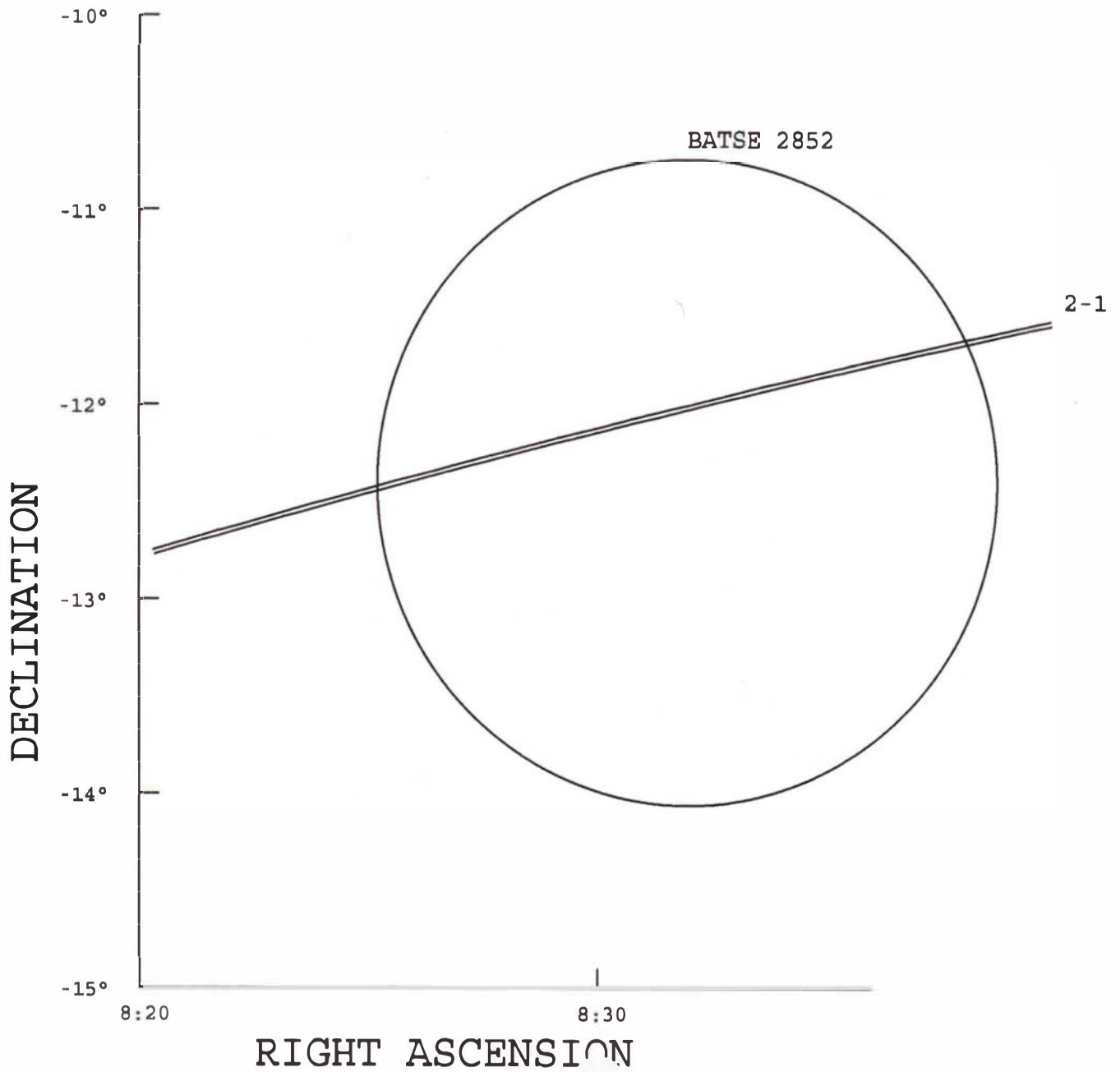
☐ Geocentric time used?

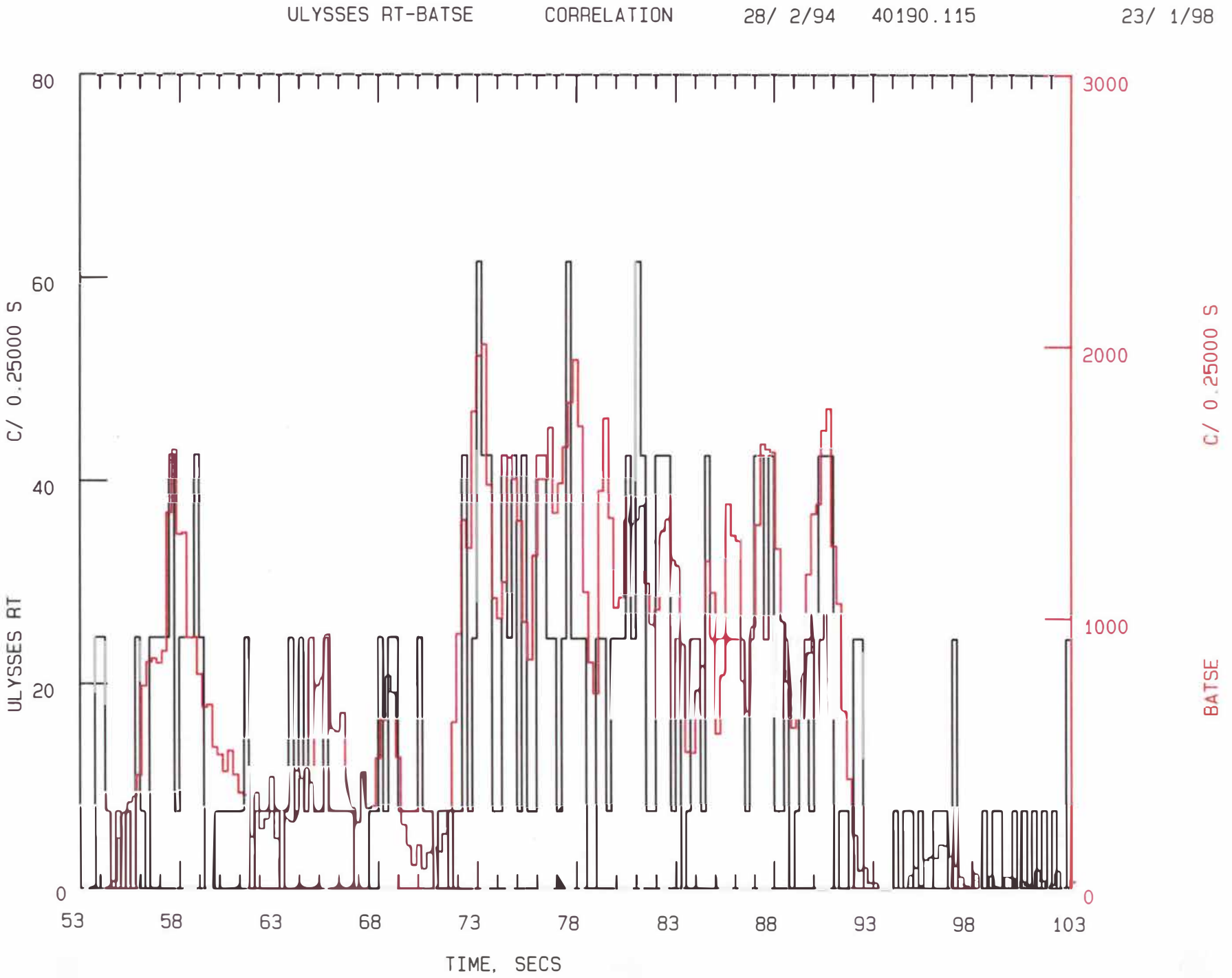
☑ ACCESS database updated?

EVENT OF FEB 28, 1994 11:09

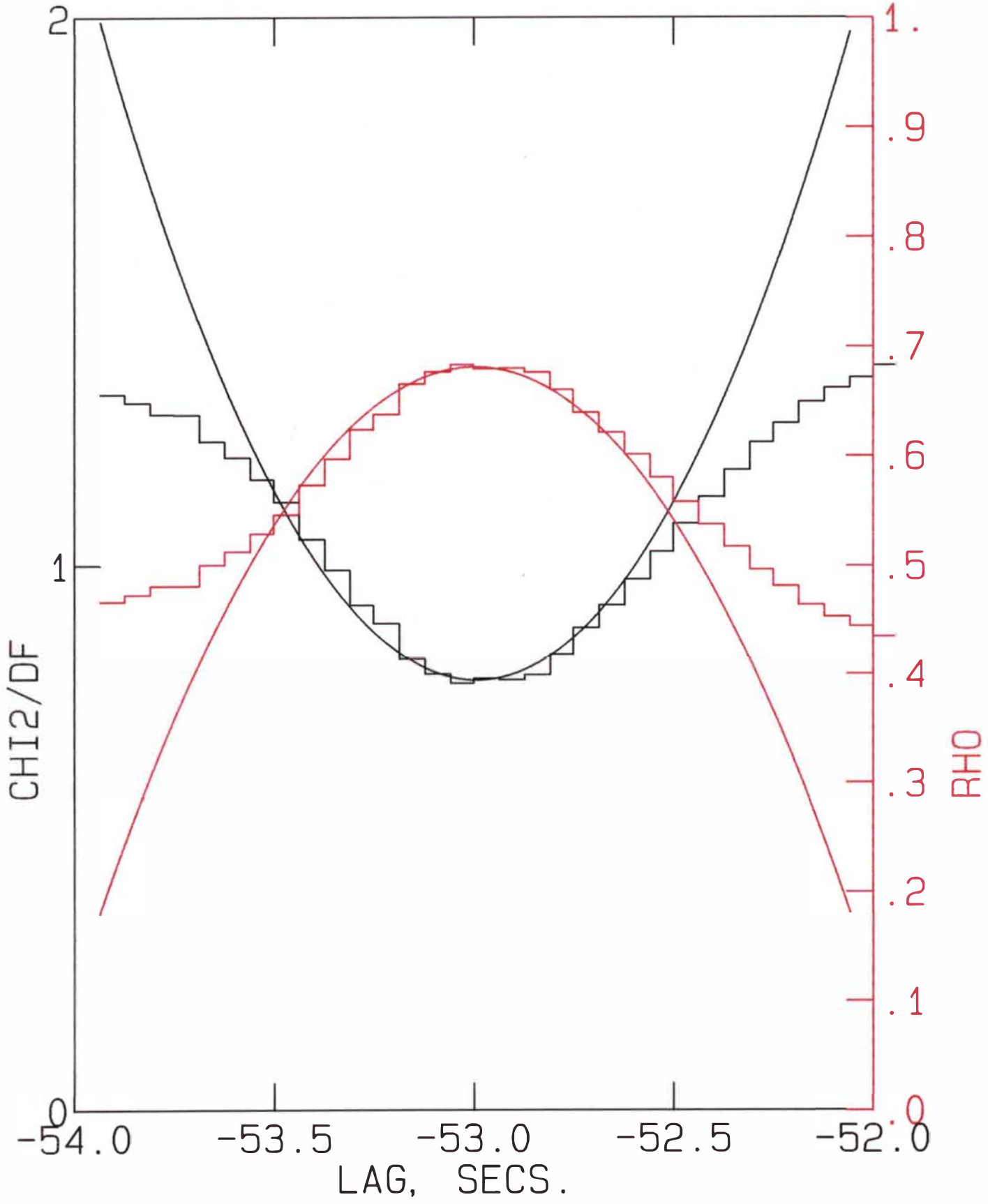
23/ 1/98

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




ULYSSES RT-BATSE CORRELATION 28/ 2/94 40190.115 23/ 1/98
80
60
40
20
0
C/ 0.25000 S
ULYSSES RT
3000
2000
1000
0
C/ 0.25000 S
BATSE
53
58
63
68
73
78
83
88
93
98
103
TIME, SECS

ULYSSES RT-BATSE CORRELATION 28/ 2/94 40190.115

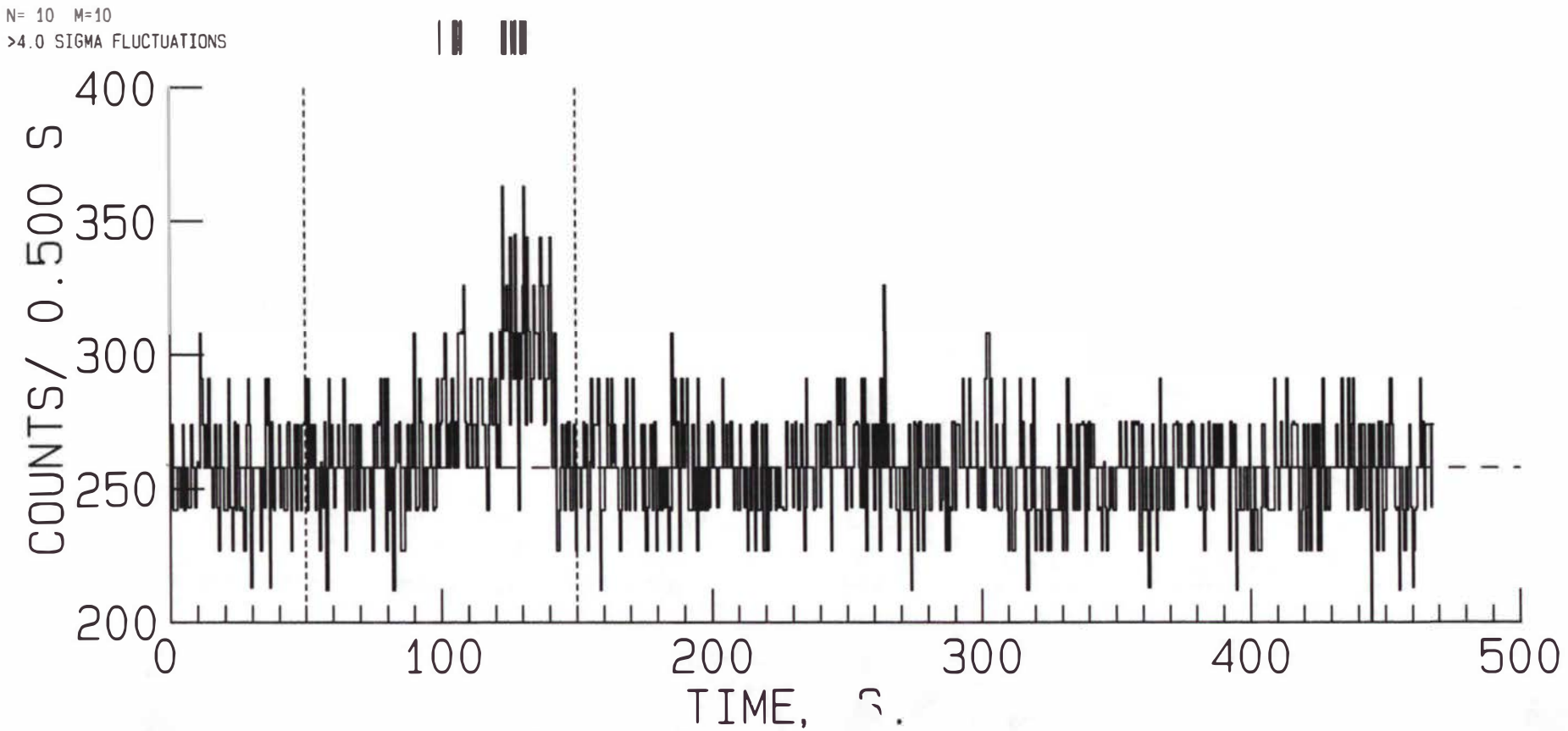


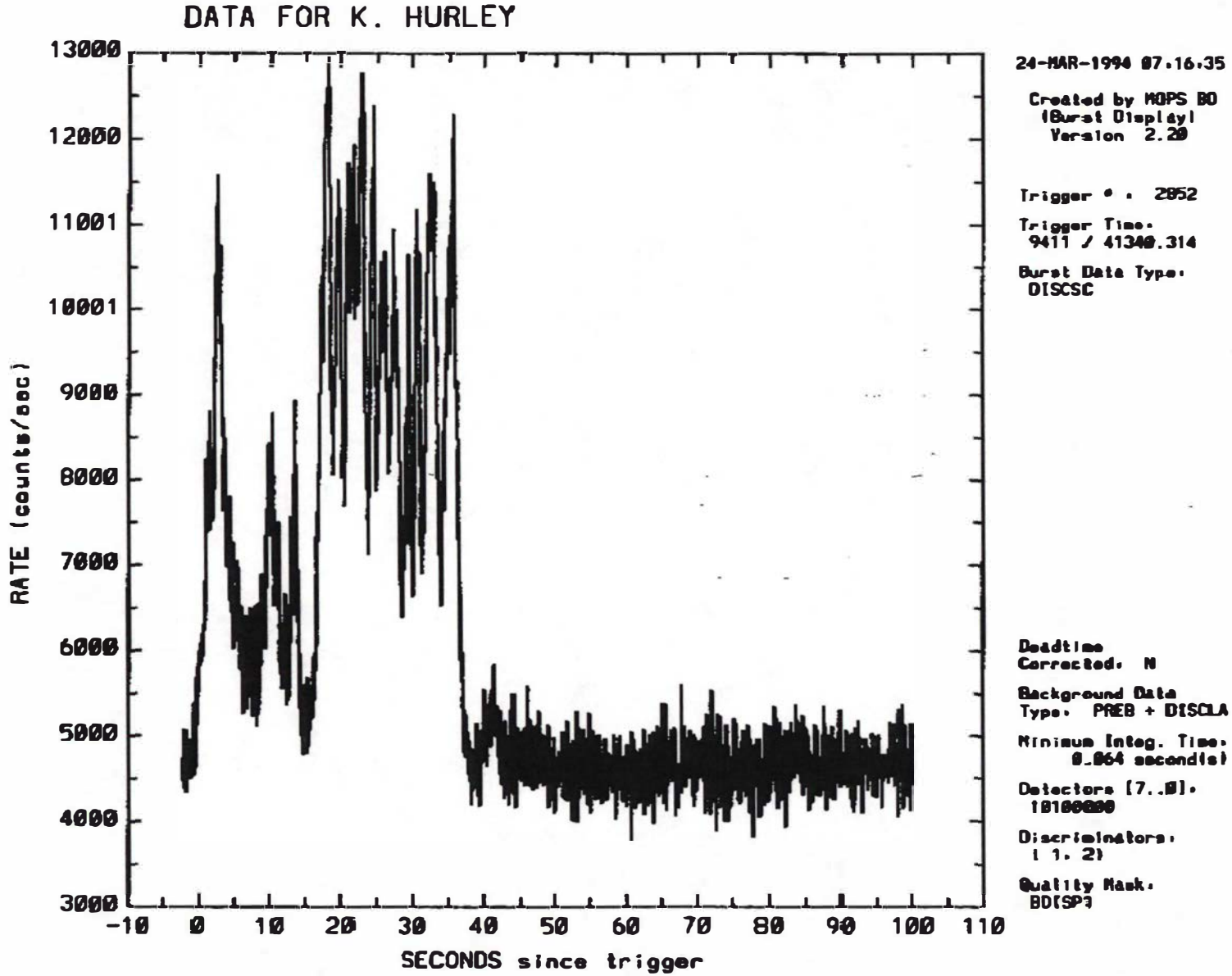
ULYSSES RT 23/ 1/98

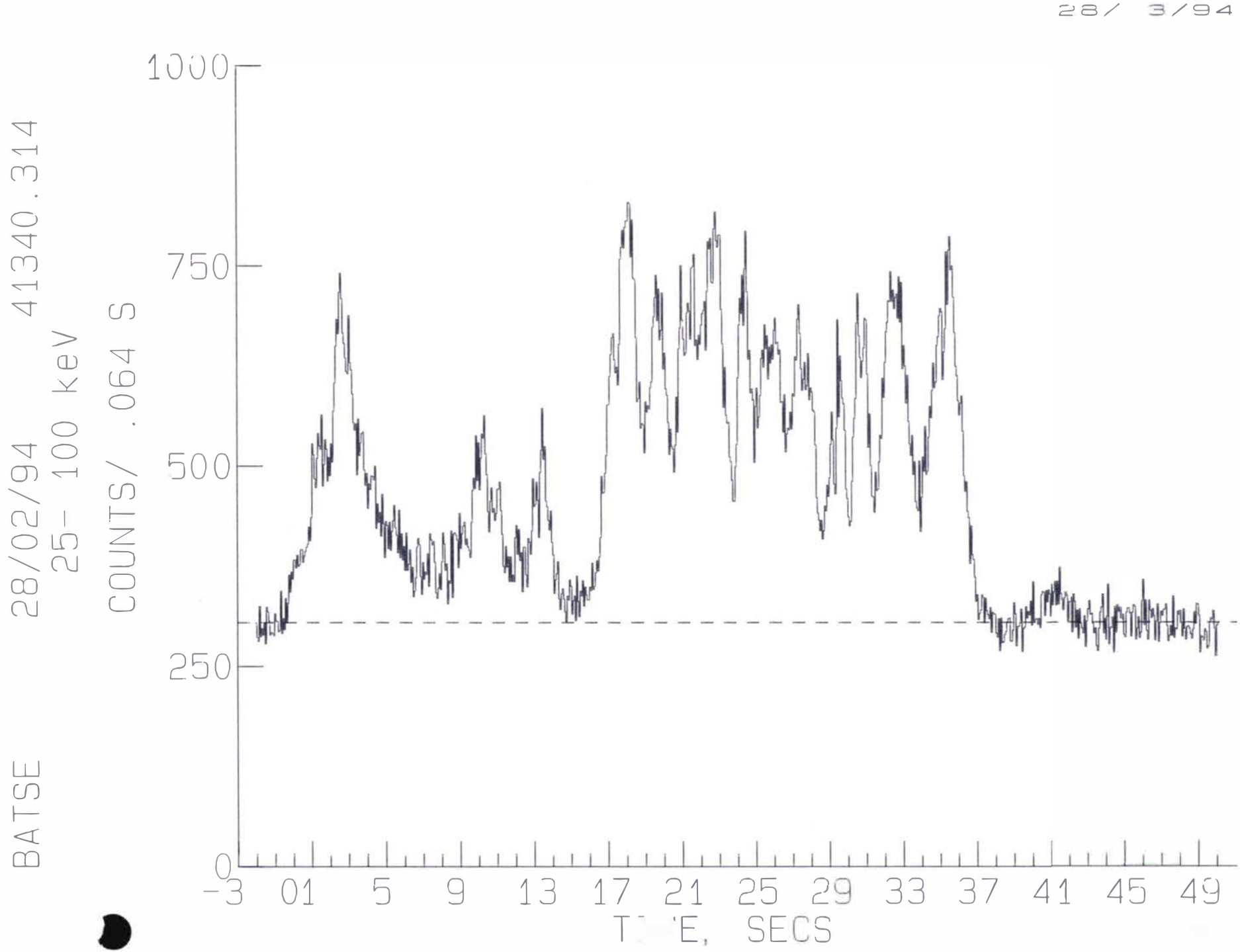
28/ 2/94 40140.117 s

0.250 S INTERVALS REGROUPED BY 2

22- 148 keV




DATA FOR K. HURLEY
RATE (counts/sec)
13000
12000
11001
10001
9000
8000
7000
6000
5000
4000
3000
-10
0
10
20
30
40
50
60
70
80
90
100
110
SECONDS since trigger
24-MAR-1994 07.16.35
Created by MOPS BD
(Burst Display)
Version 2.20
Trigger # : 2852
Trigger Time:
9411 / 41340.314
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors (7..0):
10100000
Discriminators:
(1, 2)
Quality Mask:
BD(SP)


28/ 3/94
BATSE 28/02/94 41340.314
25- 100 keV
COUNTS/ .064 S
1000
750
500
250
0
-3 01 5 9 13 17 21 25 29 33 37 41 45 49
TIME, SECS

From RICHARDSON@ssl.msfc.nasa.gov Wed Mar 2 09:52 PST 1994
Date: Wed, 2 Mar 1994 11:52:21 -0600 (CST)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2853
Content-Type: text
Content-Length: 1135

****
BATSEARCH PROGRAM
****

BATSE BURST # 2853
EVENT OF 1994 FEB 28 DAY OF YEAR= 59
EVENT CROSSING TIME AT BATSE : 71114. S. OR 19:45:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 123.000 -9.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 2/ 94 IS:
RA= 142.426 DEC= -52.272 DIST= 2.963 AU
BATSE-ULYSSES DISTANCE = 443194259. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1025.51 SECS.
CROSSING TIME AT ULYSSES IS 70088. S. OR 19:28:08 +/- 219.29 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 2/ 94 IS:
RA= 326.822 DEC= -14.515 DIST= 2.323 AU
MARS-BATSE DISTANCE = 347505440. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 968.47 SECS.
CROSSING TIME AT MARS IS 72082. S. OR 20:01:22 +/- 125.29 SECONDS

2853 KJ

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2853	940228	9411	71114	3500	123	-09

BATSE BURST TRIGGER

NO.: 02853

TIME: TJD=9411 SECONDS=71114

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=098.3 AZIMUTH=177.5 ERROR= DEGREES

COMMENTS:
GRB. WITH STRUCTURE. LASTING APROX. 5S. VISIBLE ABOVE 300KEV.
CONTAMINATION FROM A0535.

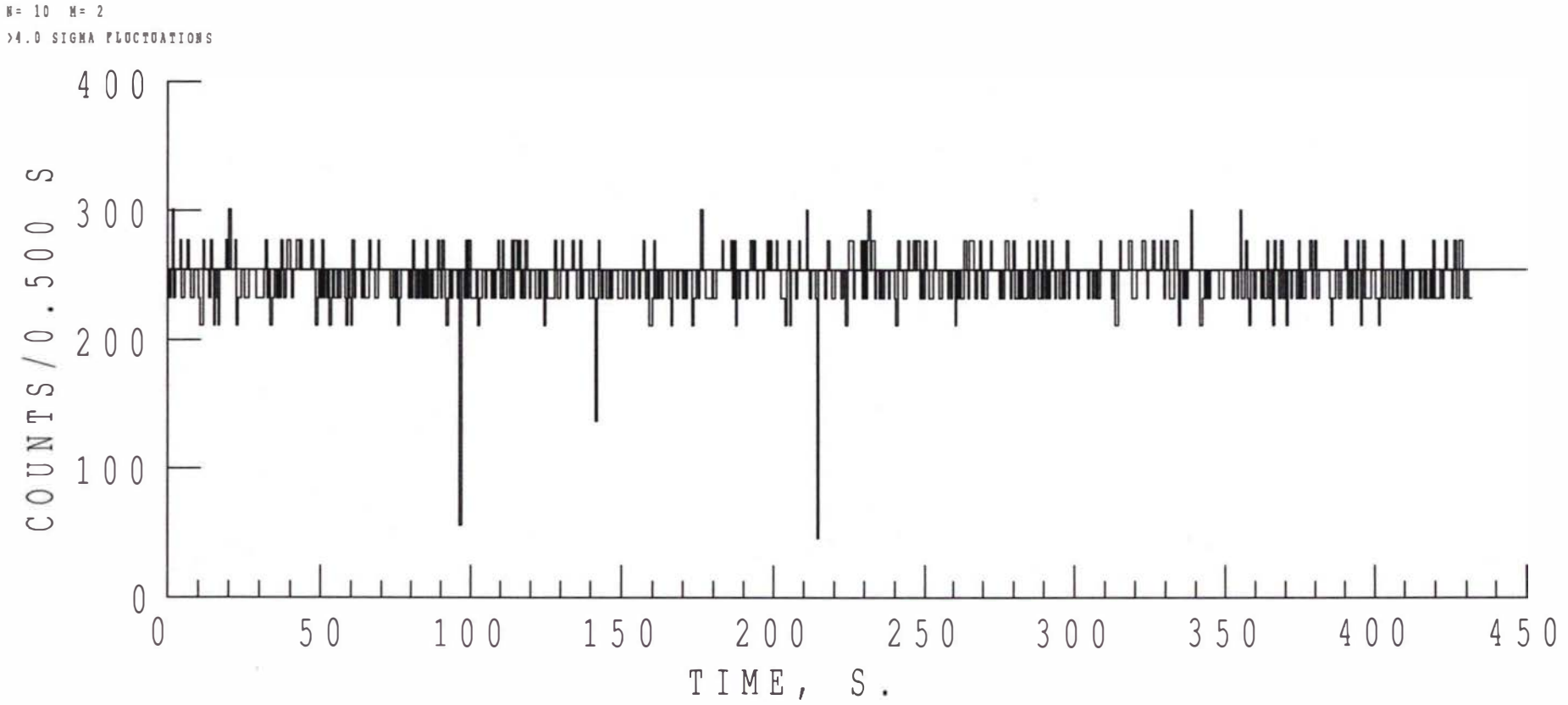
BATSE BURST #2853

2 / 3 / 94

ULYSSES RT

28/ 2/94 69876.328 s

0- 0 keV



From RICHARDSON@ssl.msfc.nasa.gov Wed Mar 2 09:37 PST 1994
Date: Wed, 2 Mar 1994 11:37:36 -0600 (CST)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1213

BATSE BURST TRIGGER

NO.: 02854

TIME: TJD=09411 SECONDS=81114

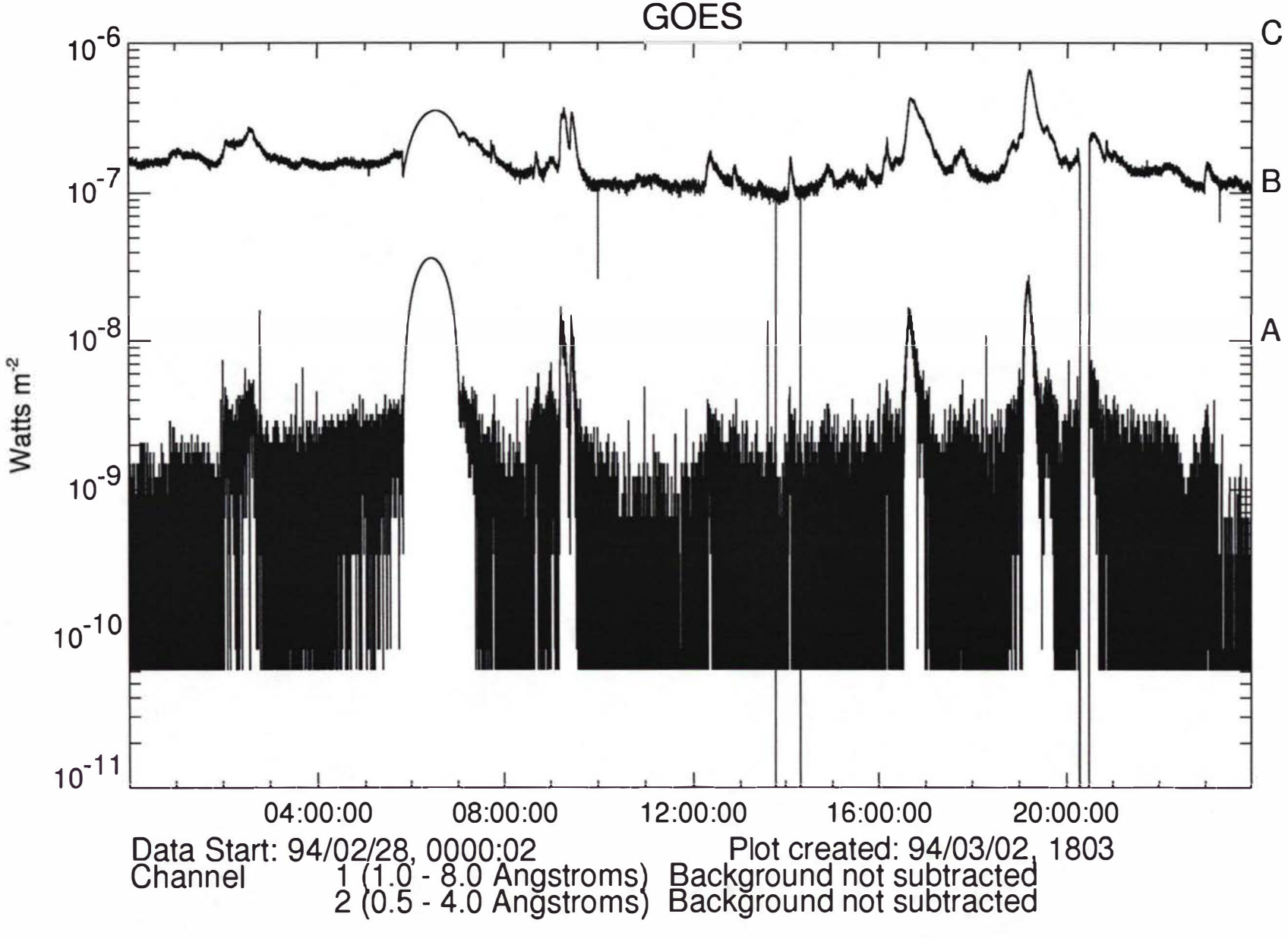
TYPE: SAA ENTRY SOLAR FLARE TRIGGER SIGNAL:N

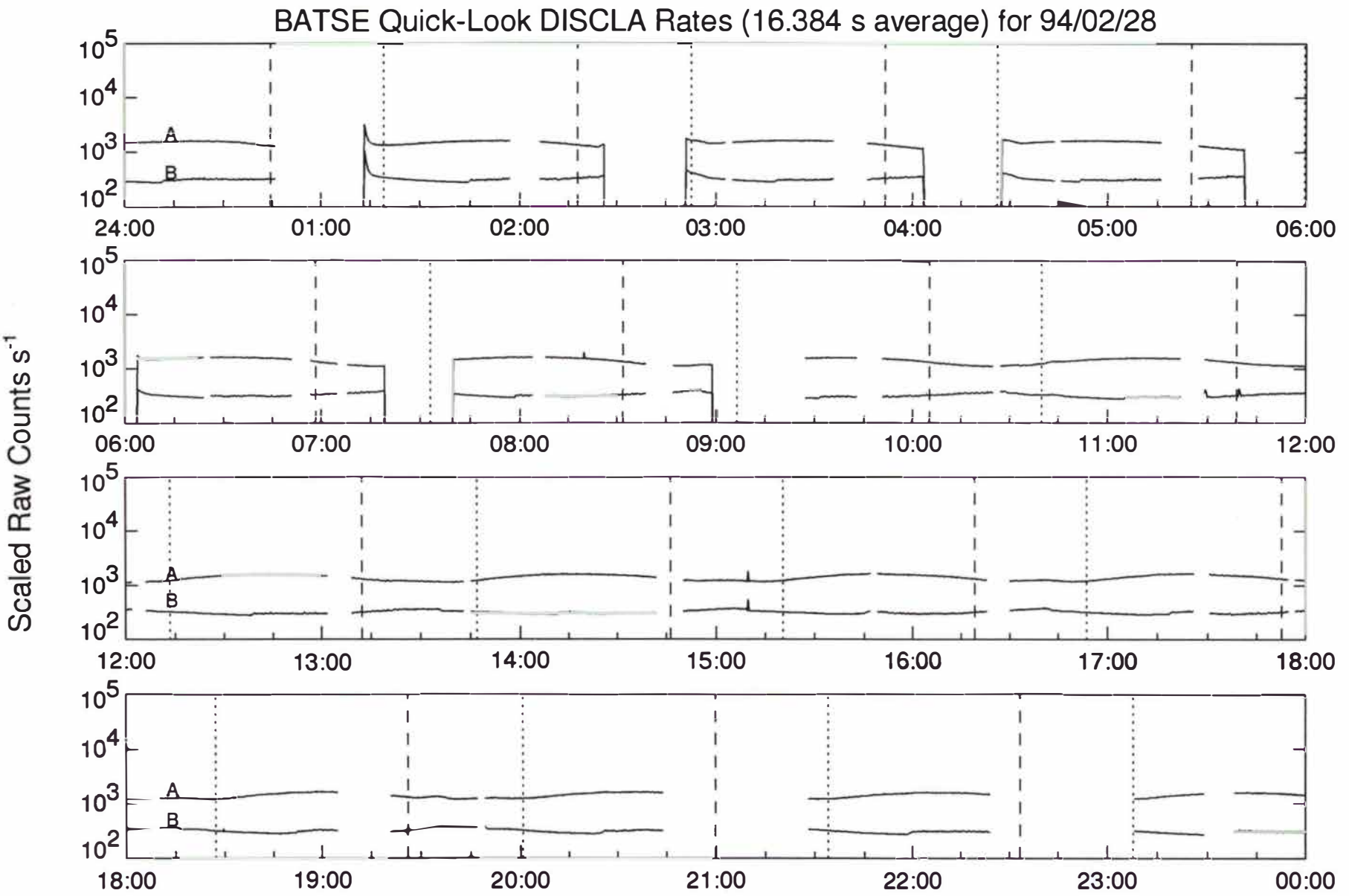
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

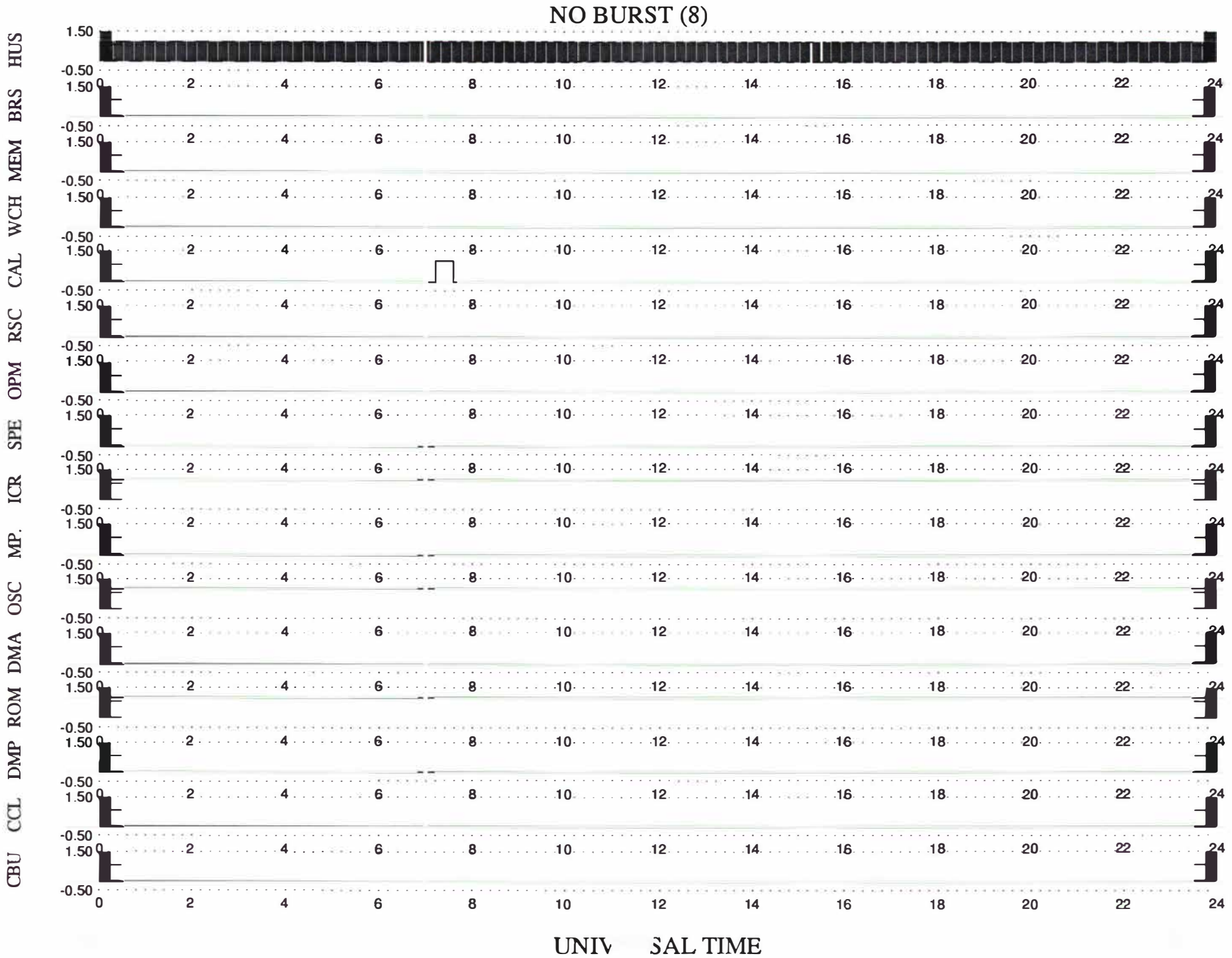
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY


GOES
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
10^{-11}
Watts m^{-2}
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 94/02/28, 0000:02
Plot created: 94/03/02, 1803
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted

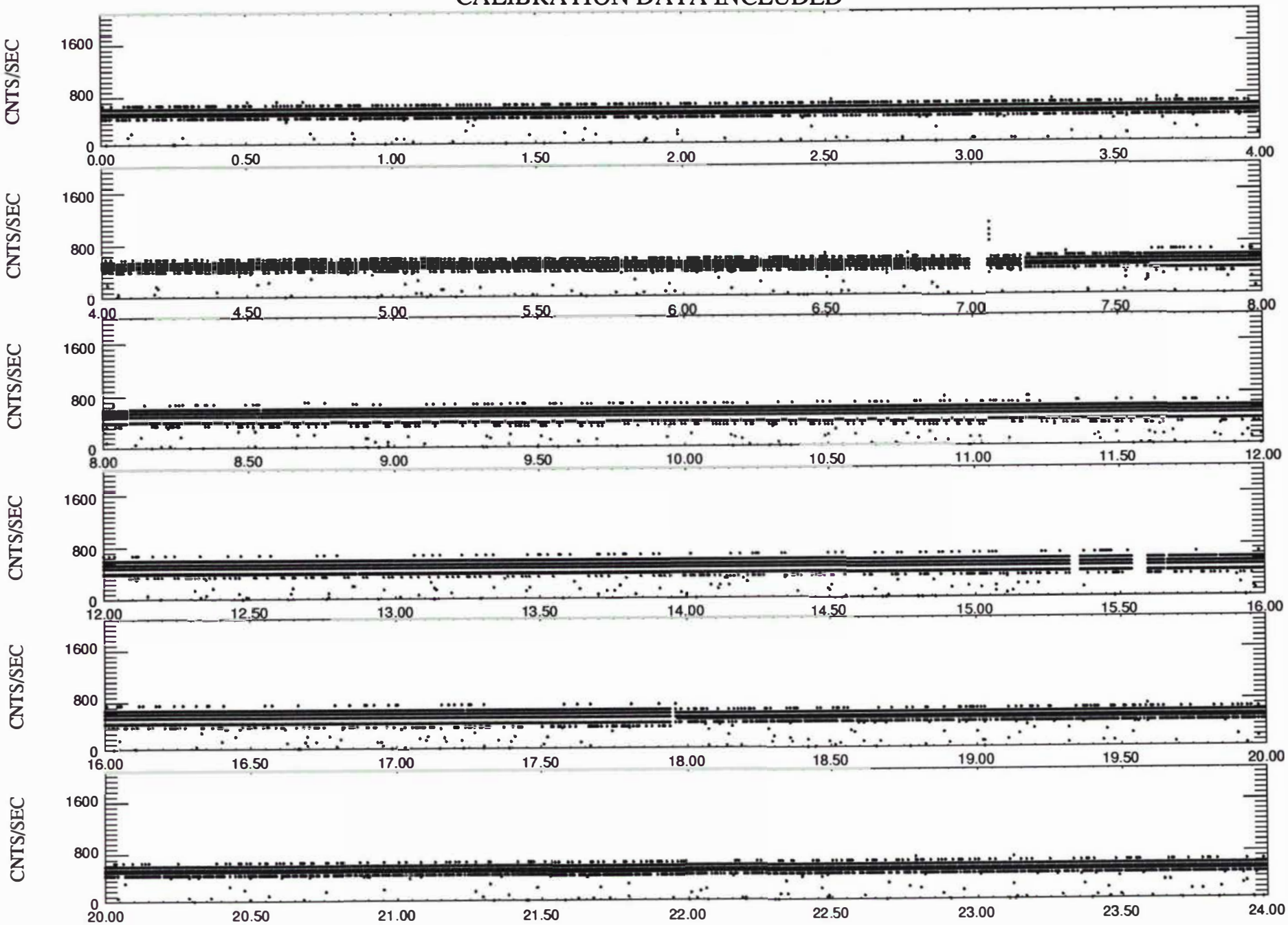

BATSE Quick-Look DISCLA Rates (16.384 s average) for 94/02/28
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
24:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 94/03/02, 1812 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 59, year 1994 to day 59, year 1994 5/26/94



HUS 2A, MODE 1, NOT AVERAGED EDR day 59, year 1994 to day 59, year 1994 5/27/94

CALIBRATION DATA INCLUDED



UNIV SAL TIME

ARCHIVE

HUS 2B COUNTS / SEC QEDR day 59, year 1994 to day 59, year 1994 3/1/94

