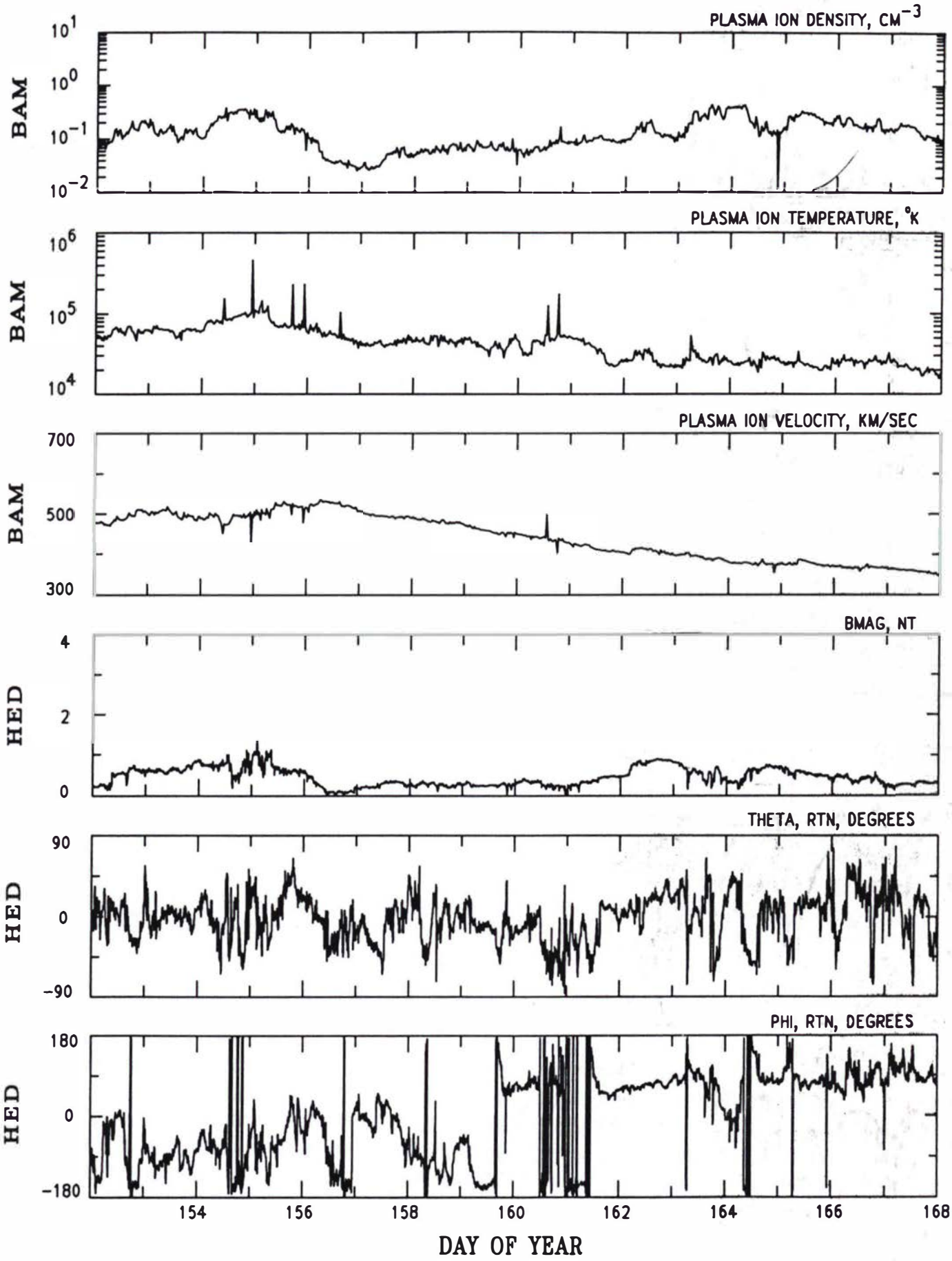
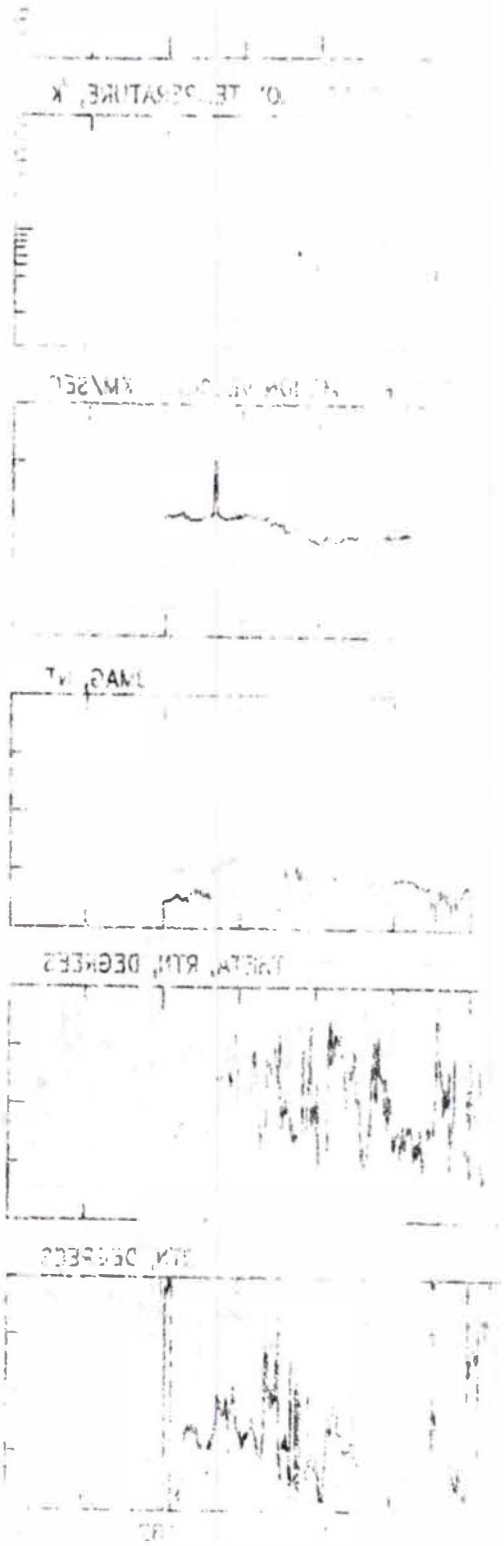
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

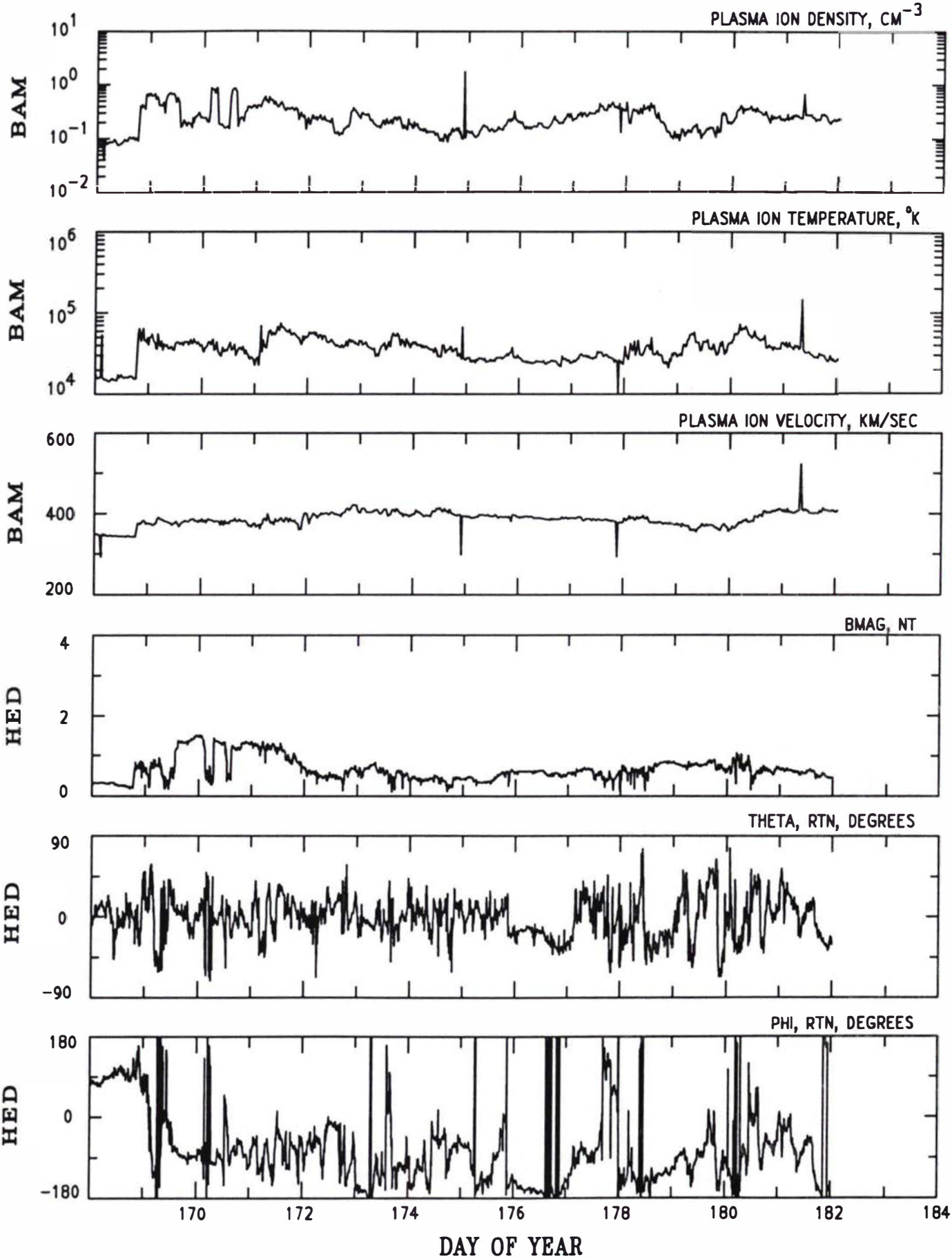
97 152 JUN 1 00:00:00.000 - 97 168 JUN 17 00:00:00.000





ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

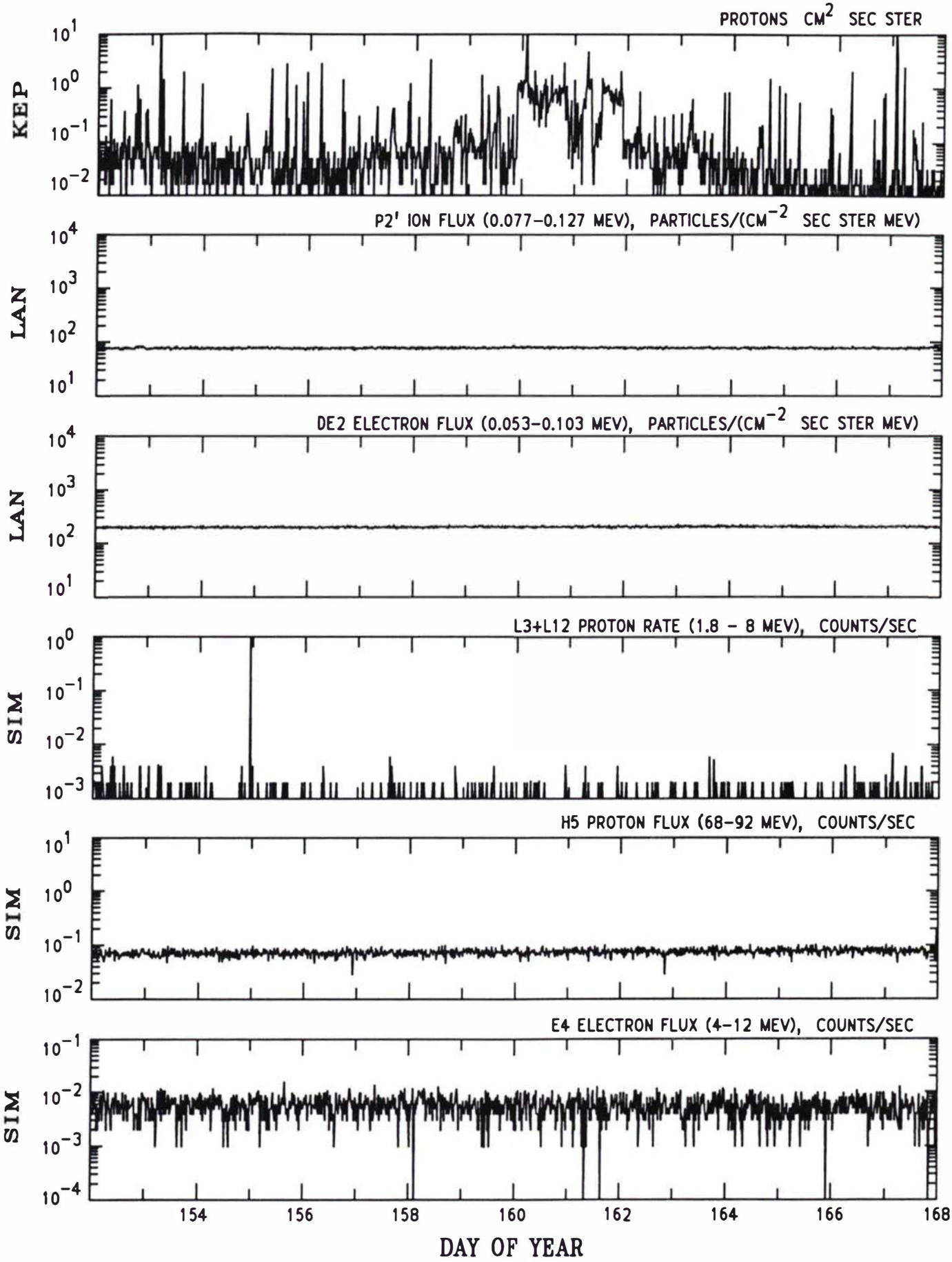
97 168 JUN 17 00:00:00.000 – 97 184 JUL 3 00:00:00.000





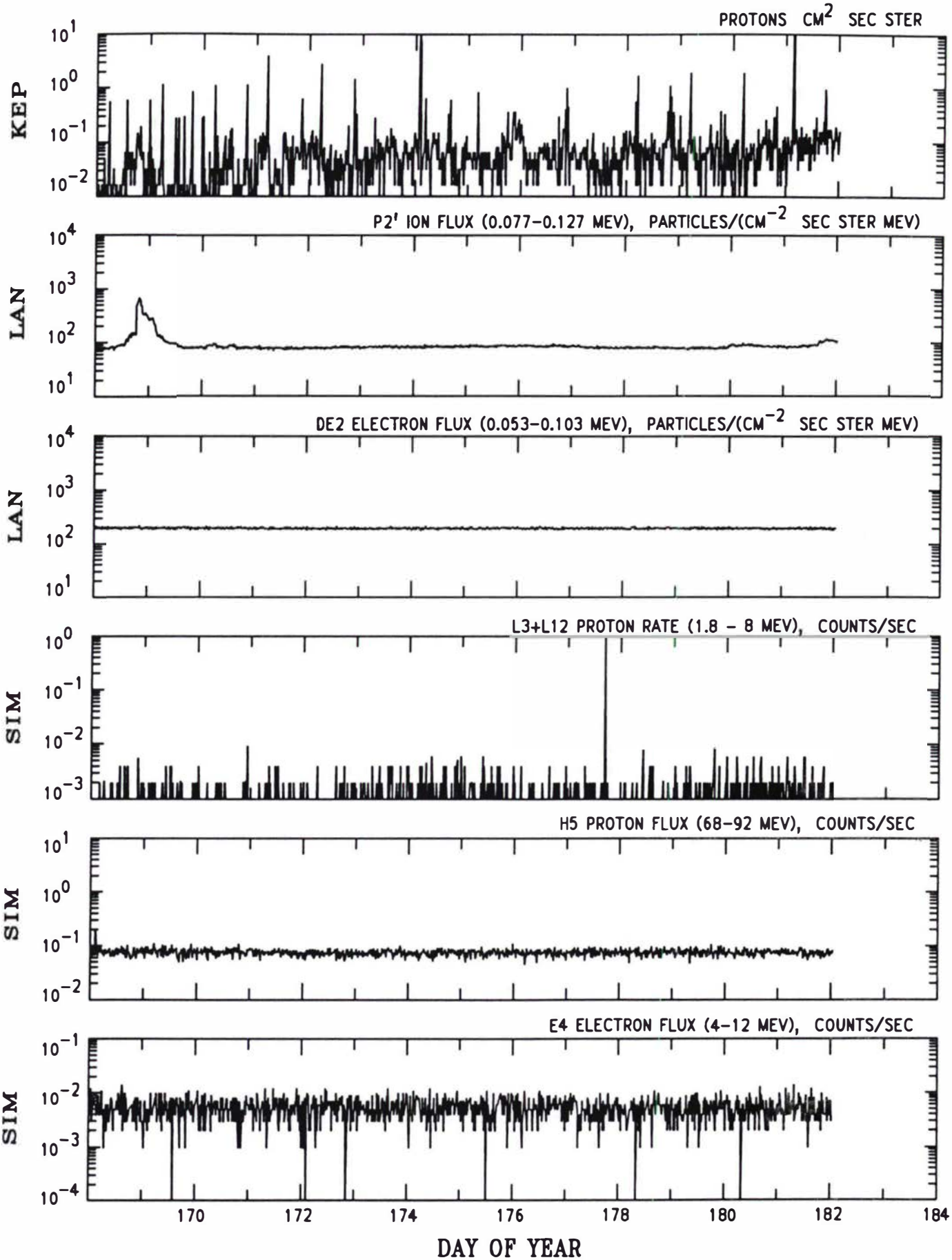
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 152 JUN 1 00:00:00.000 – 97 168 JUN 17 00:00:00.000



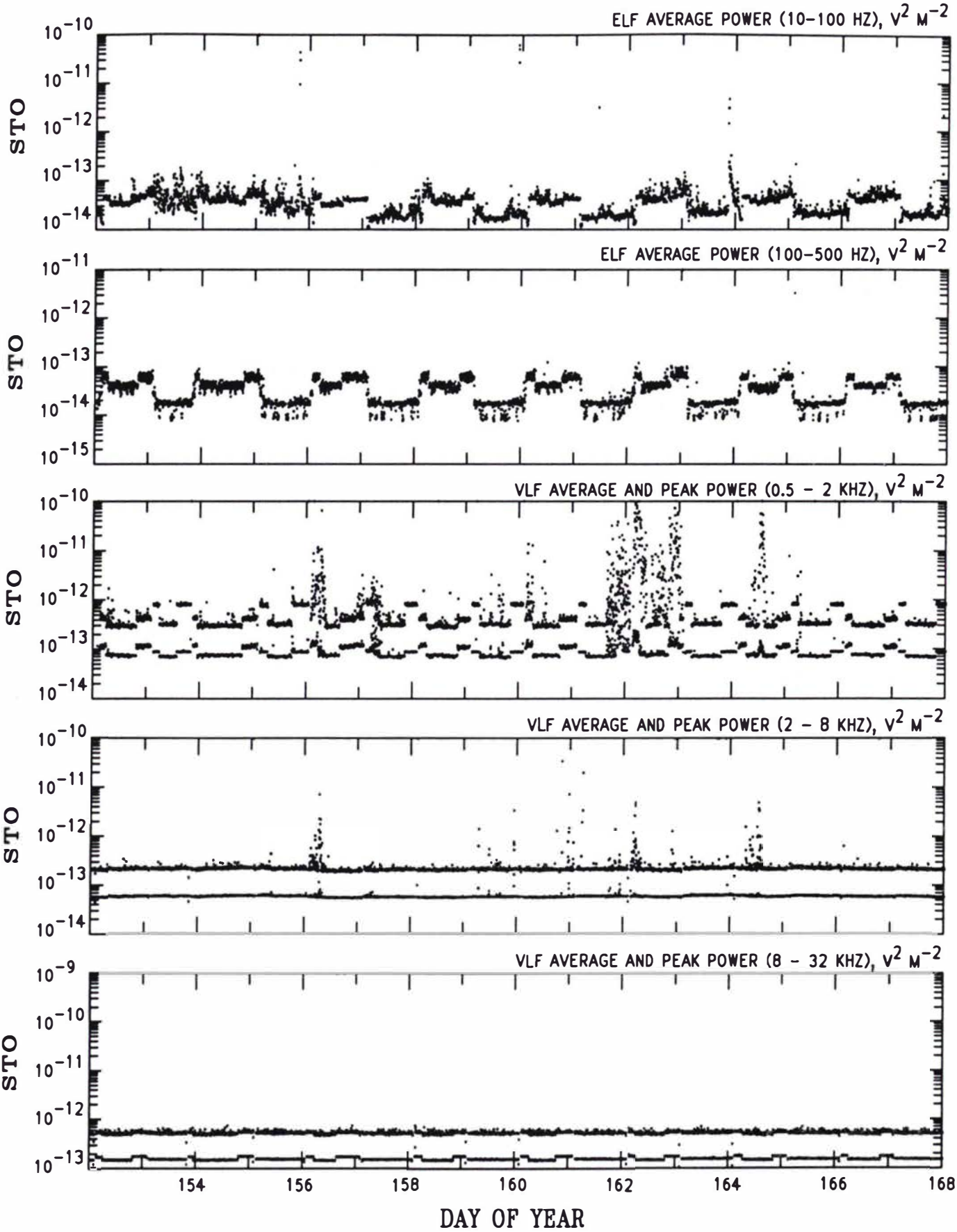
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 168 JUN 17 00:00:00.000 – 97 184 JUL 3 00:00:00.000



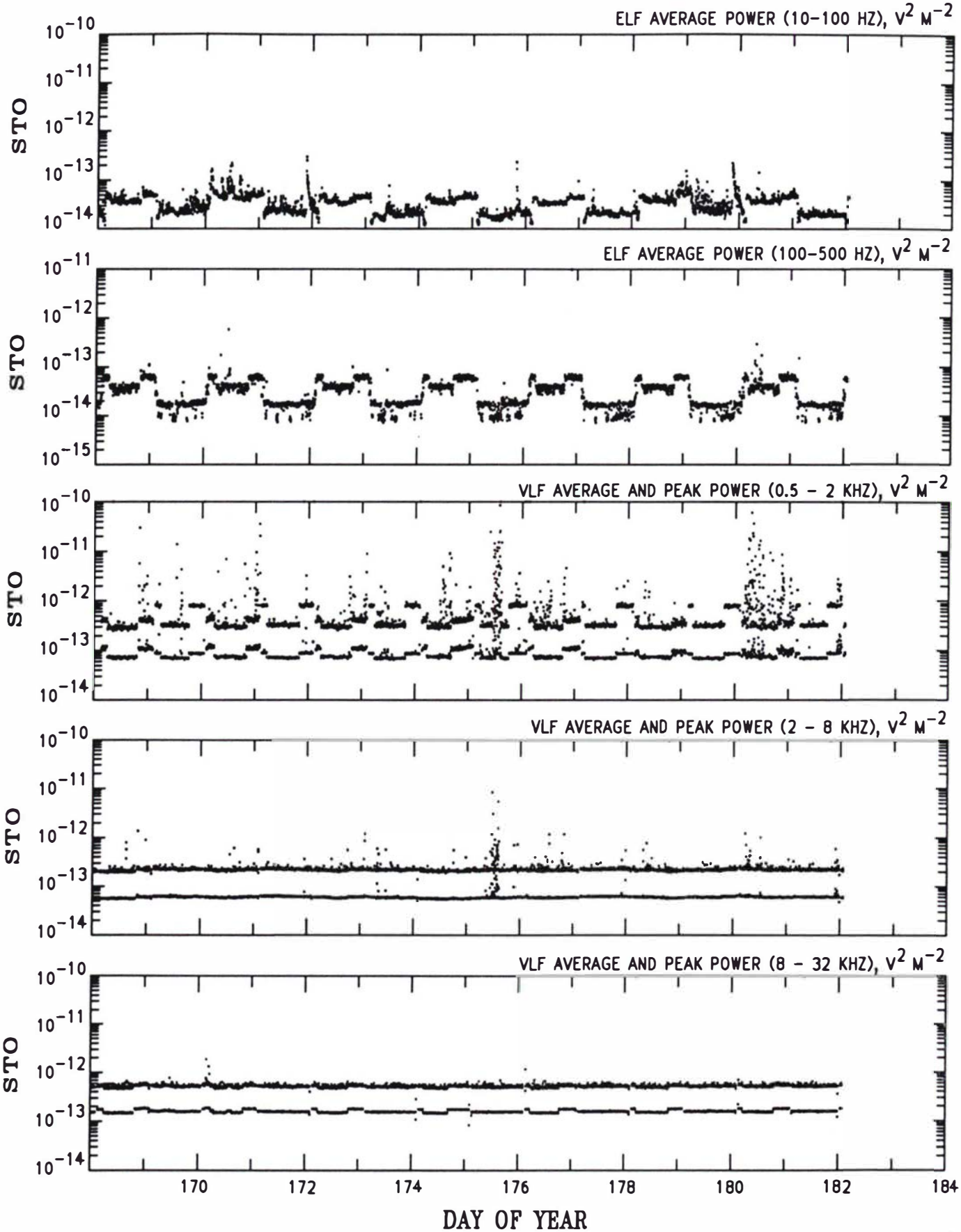
ULYSSES CDR - PLASMA WAVE

97 152 JUN 1 00:00:00.000 - 97 168 JUN 17 00:00:00.000



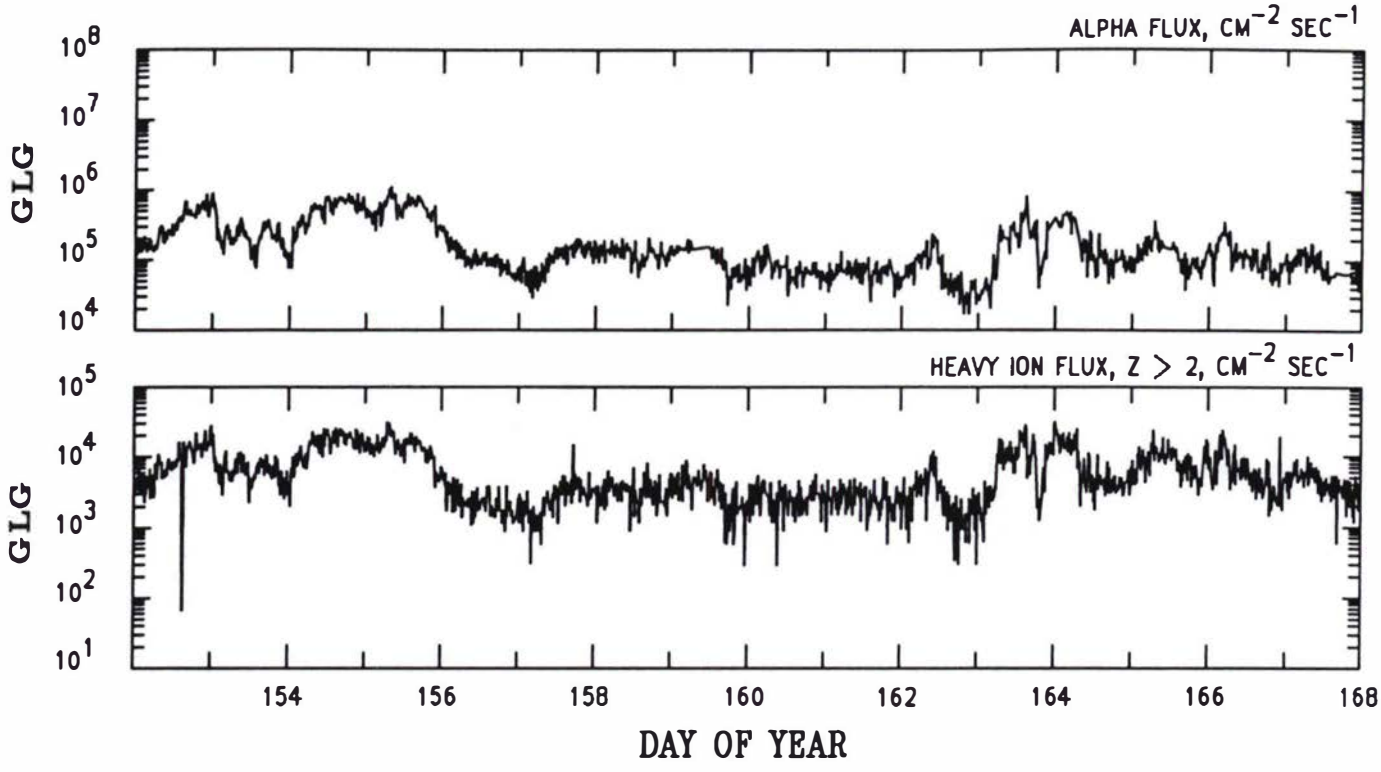
ULYSSES CDR - PLASMA WAVE

97 168 JUN 17 00:00:00.000 - 97 184 JUL 3 00:00:00.000



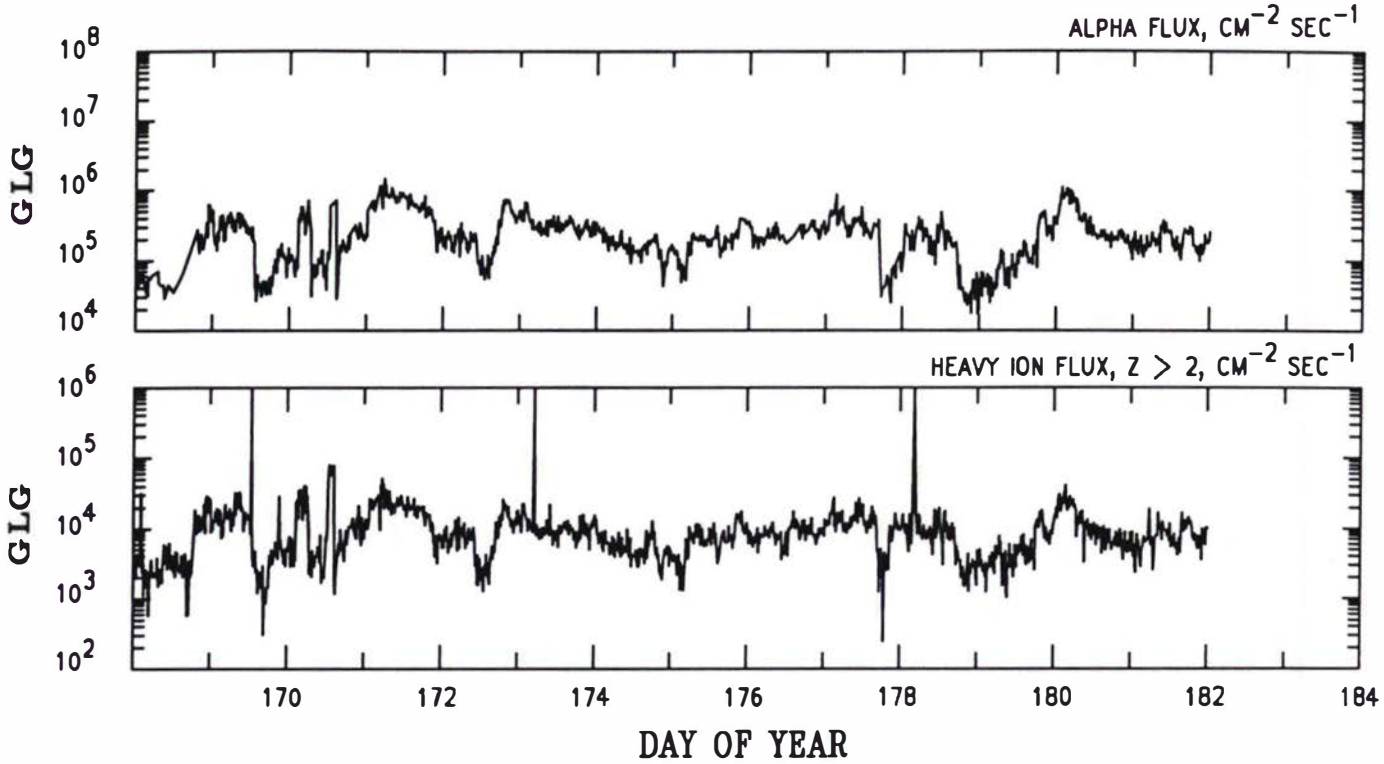
ULYSSES CDR – SOLAR WIND ION COMPOSITION

97 152 JUN 1 00:00:00.000 – 97 168 JUN 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

97 168 JUN 17 00:00:00.000 - 97 184 JUL 3 00:00:00.000



Date: Feb 1 2010

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. BATSE Data

☐ BATSE ephemeris for T_0?

☐ 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?

4. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

☐ Σ 3Δt's calculated?

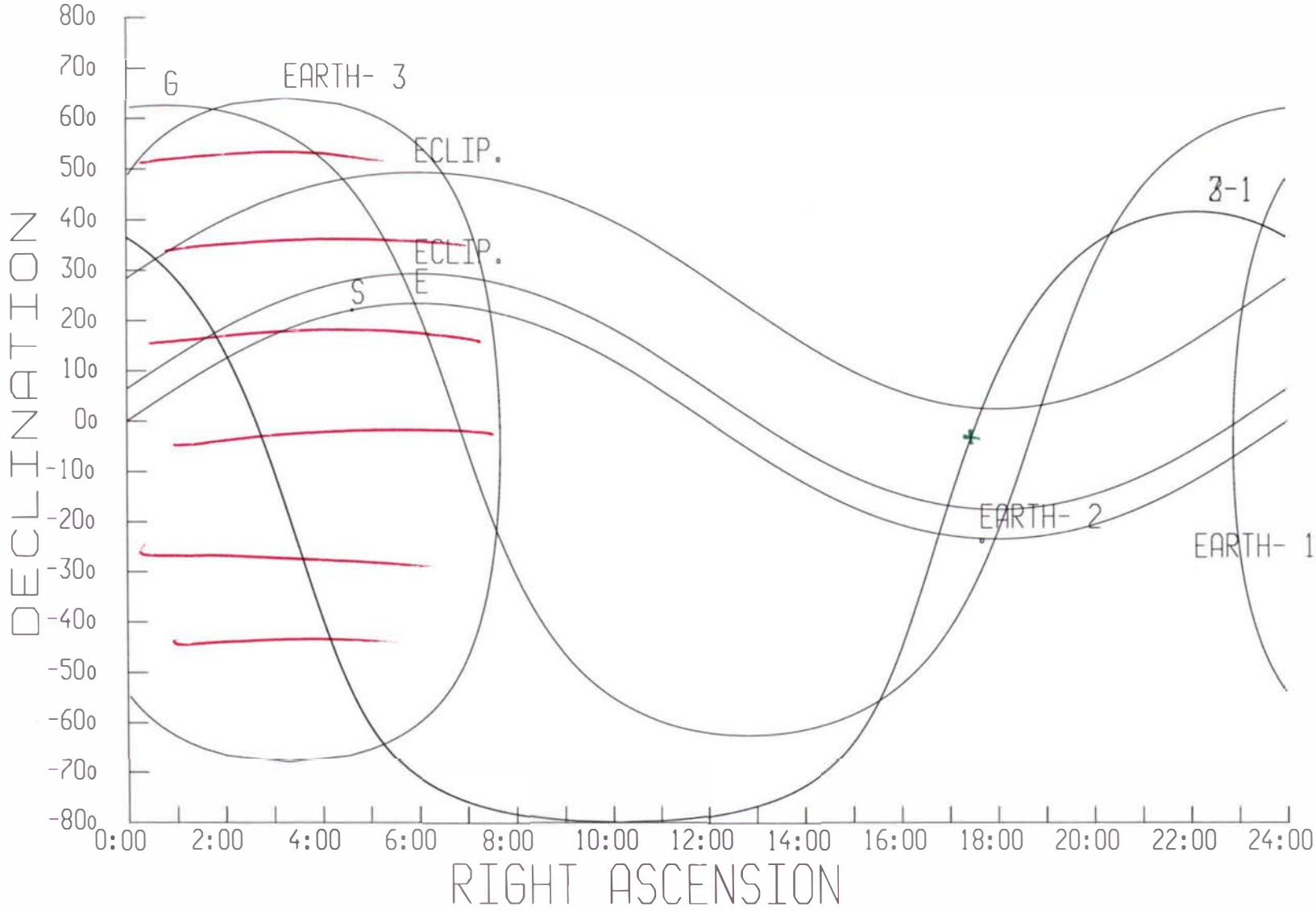
☑ ACCESS database updated?

Waiting for SAX data

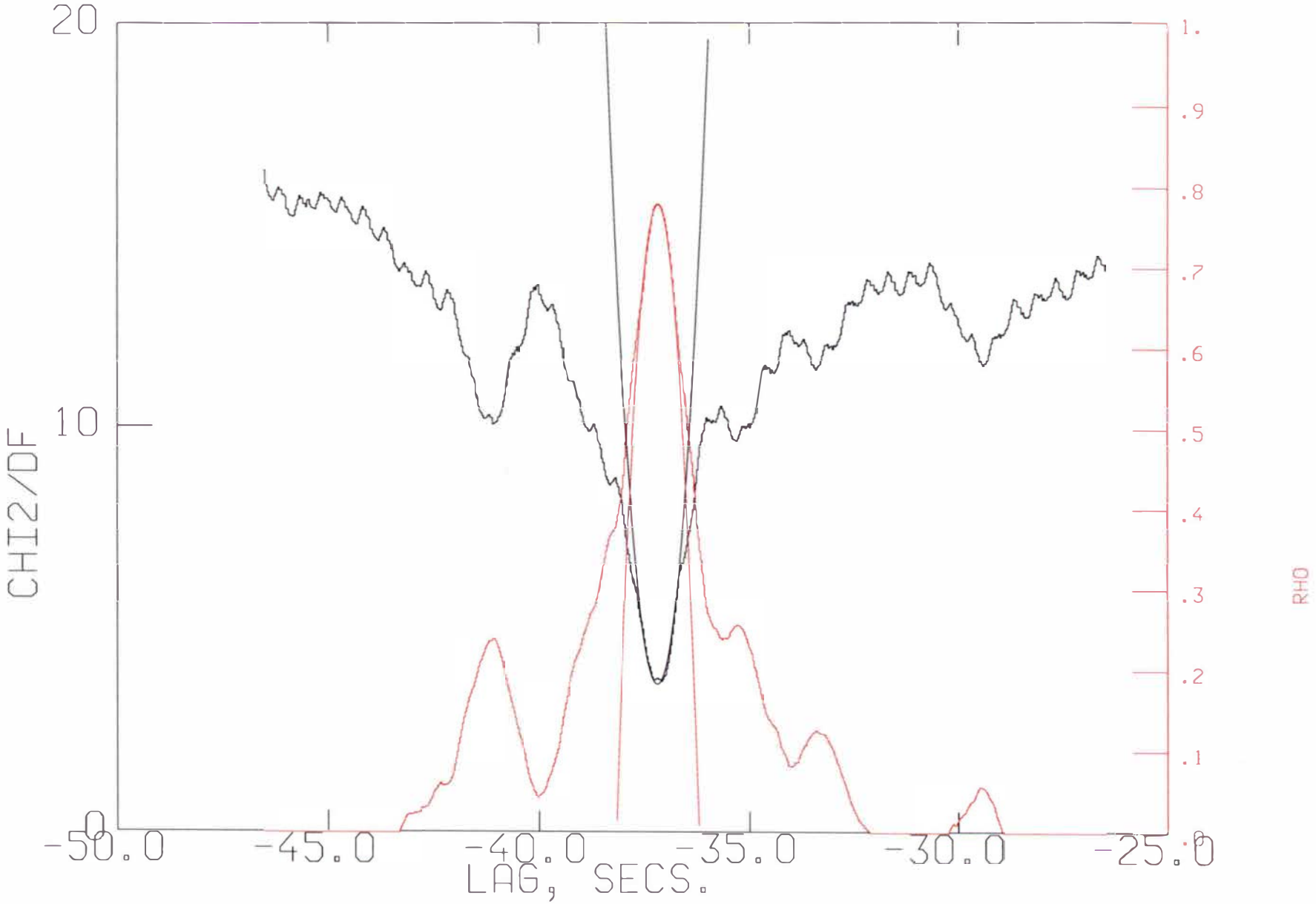
EVENT OF JUN 1, 1997 19:33

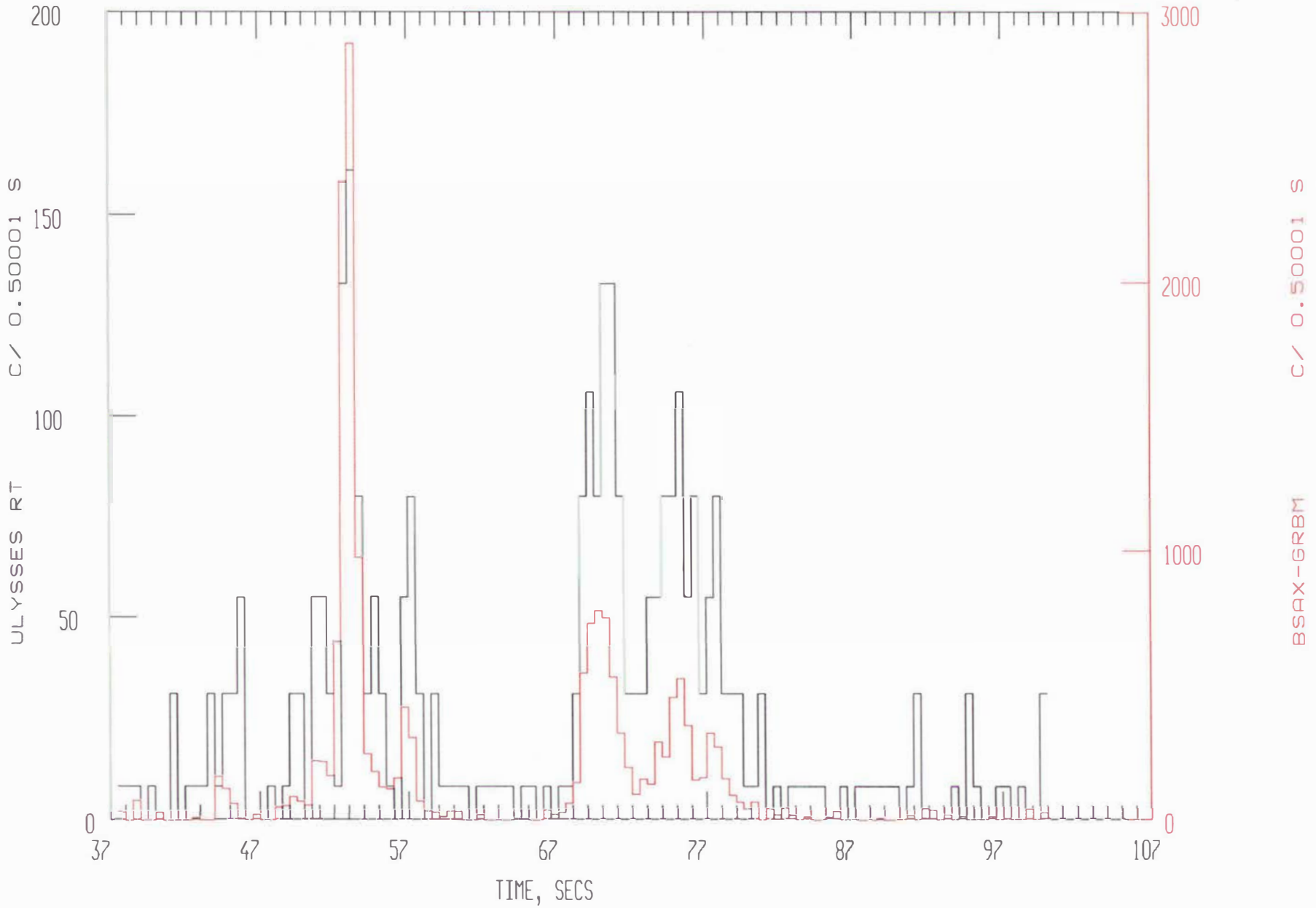
02/02/2010

N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS2 3 SAX

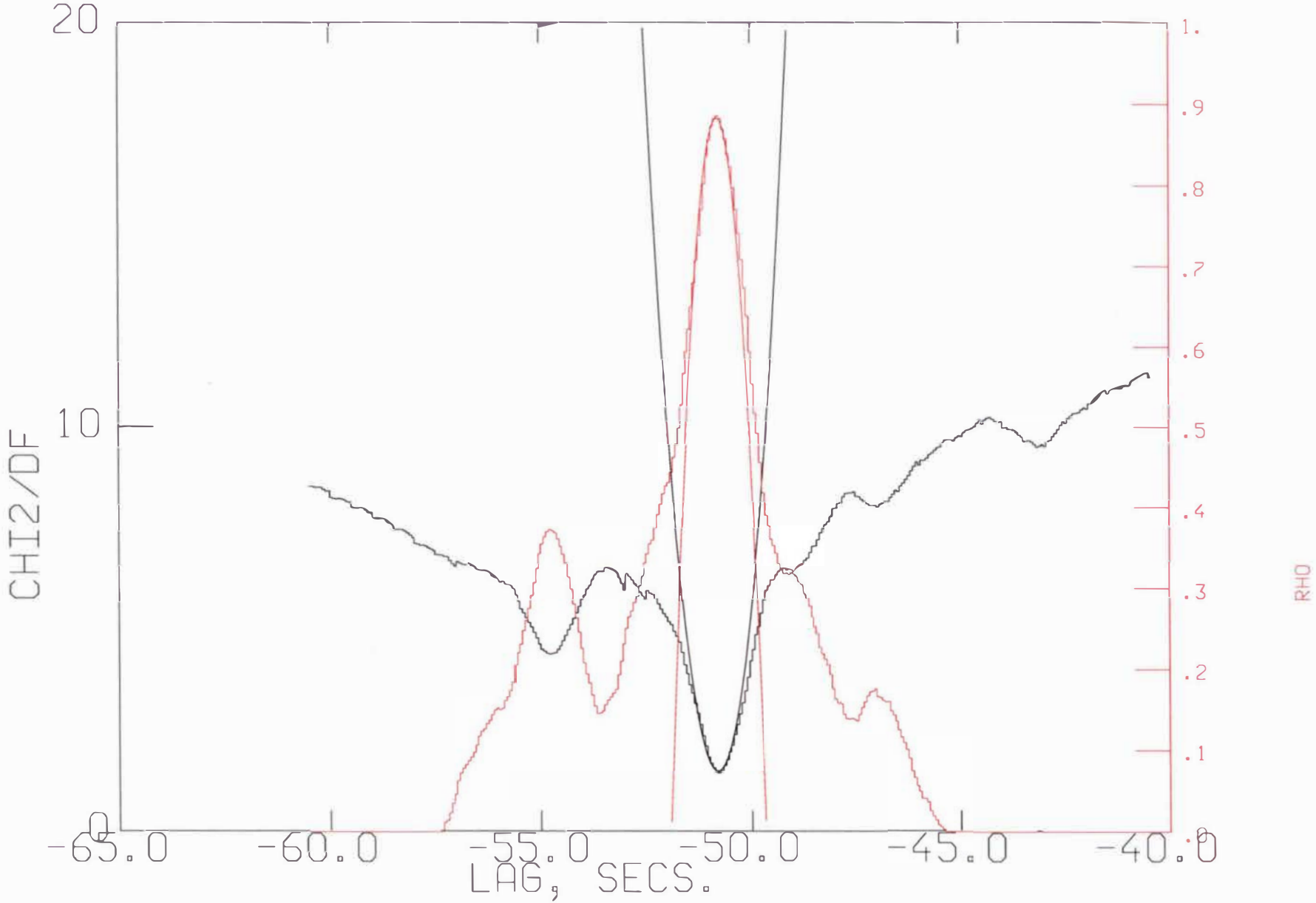


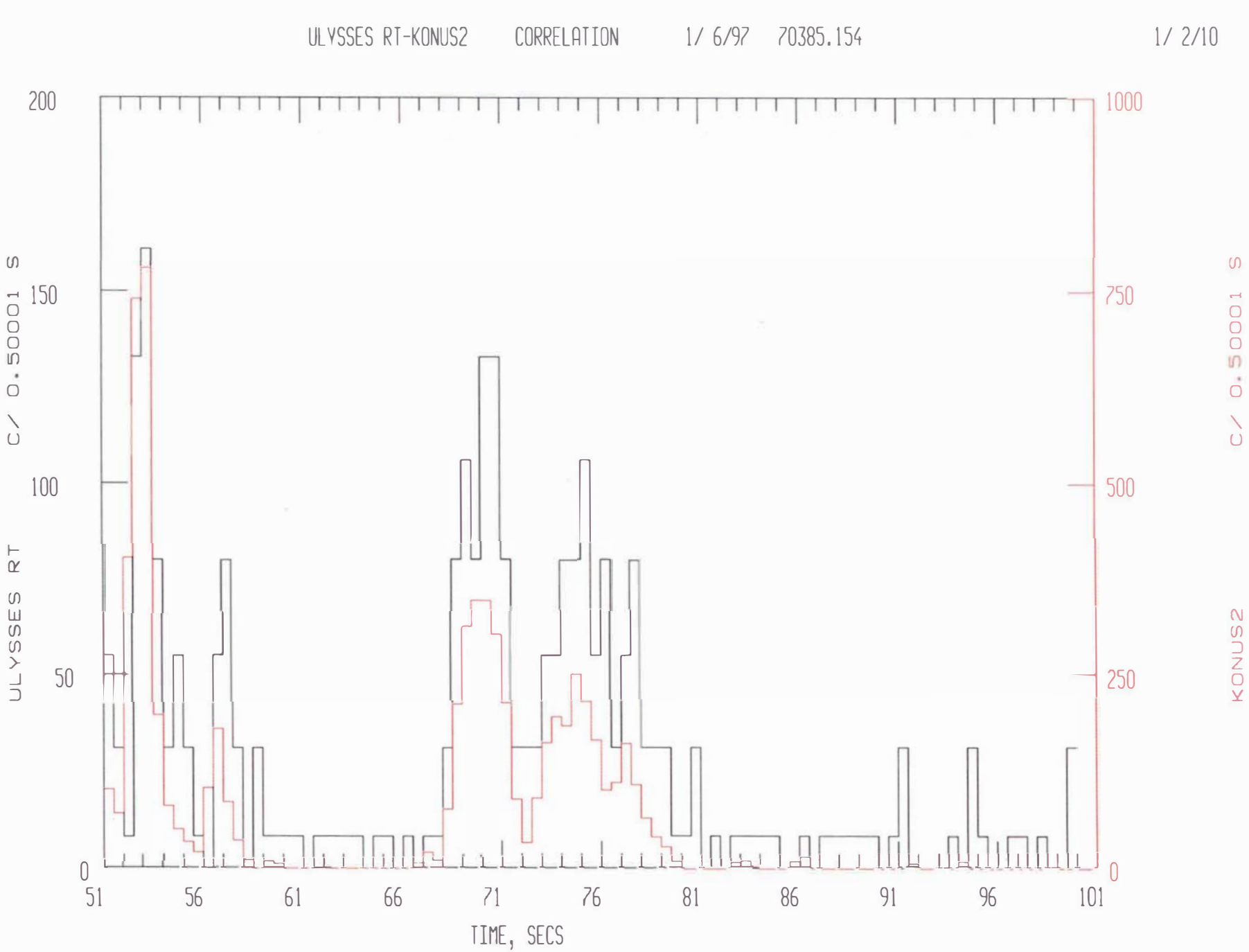
ULYSSES RT-BSAX-GRBM CORRELATION 1/ 6/97 70385.154




200
150
100
50
0
C/ 0.50001 S
ULYSSES RT
3000
2000
1000
0
C/ 0.50001 S
BSAX-GRBM
37
47
57
67
77
87
97
107
TIME, SECS

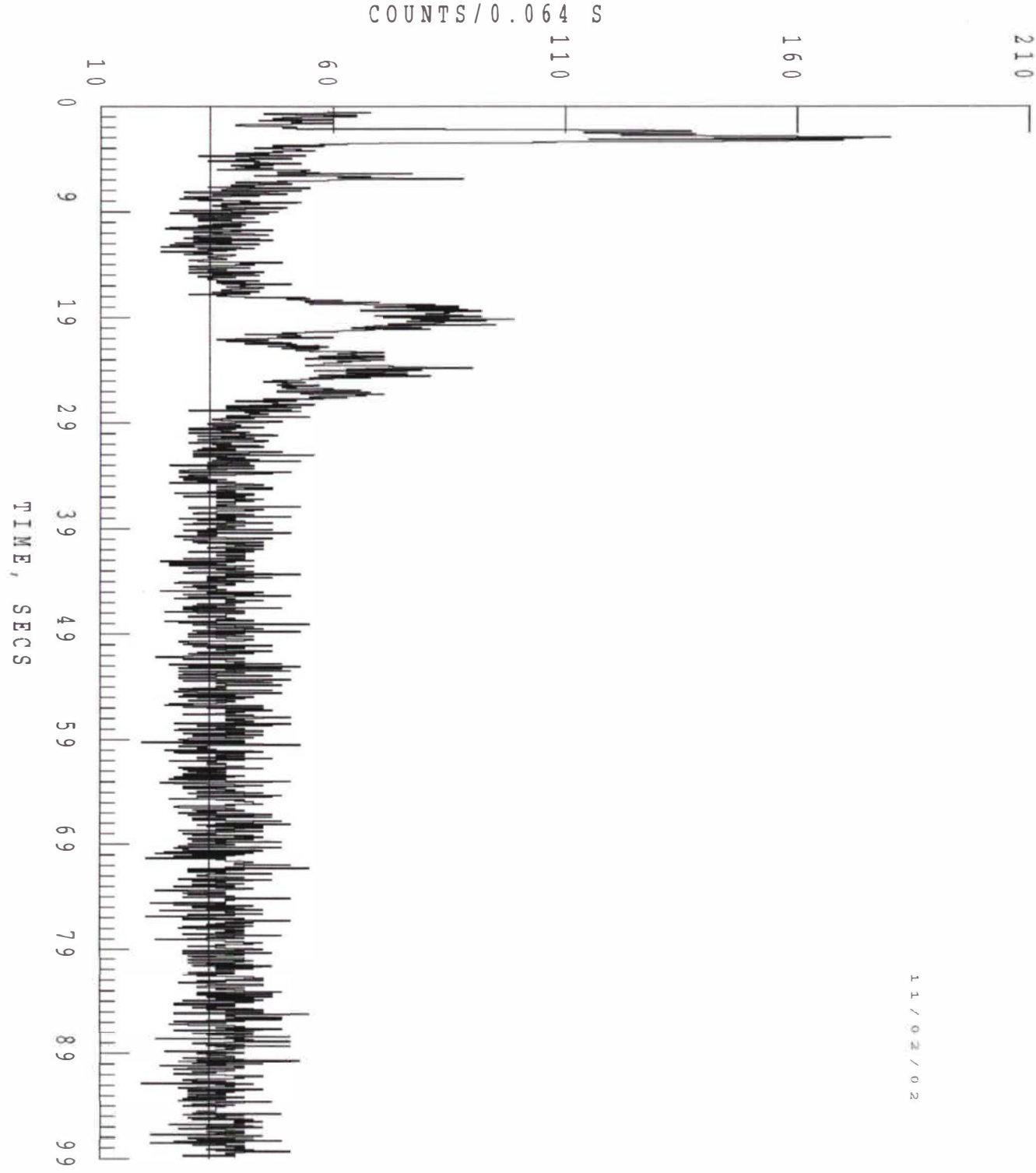
ULYSSES RT-KONUS2 CORRELATION 1/ 6/97 70385.154

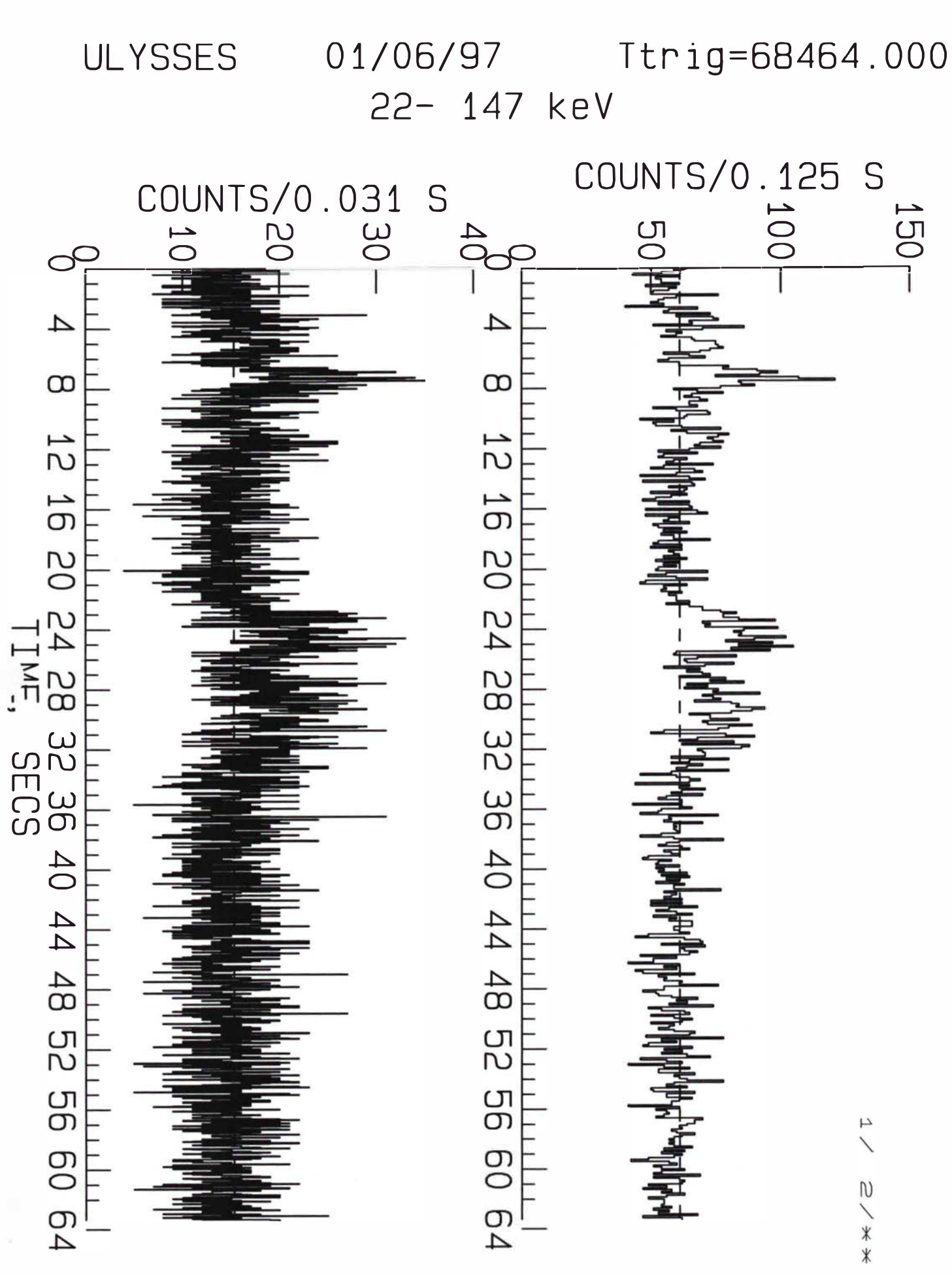



ULYSSES RT-KONUS2 CORRELATION 1/ 6/97 70385.154
1/ 2/10
200
150
100
50
0
C/ 0.50001 S
ULYSSES RT
1000
750
500
250
0
C/ 0.50001 S
KONUS2
51
56
61
66
71
76
81
86
91
96
101
TIME, SECS

KONUS2 01/06/97 69570.567

50- 200 keV



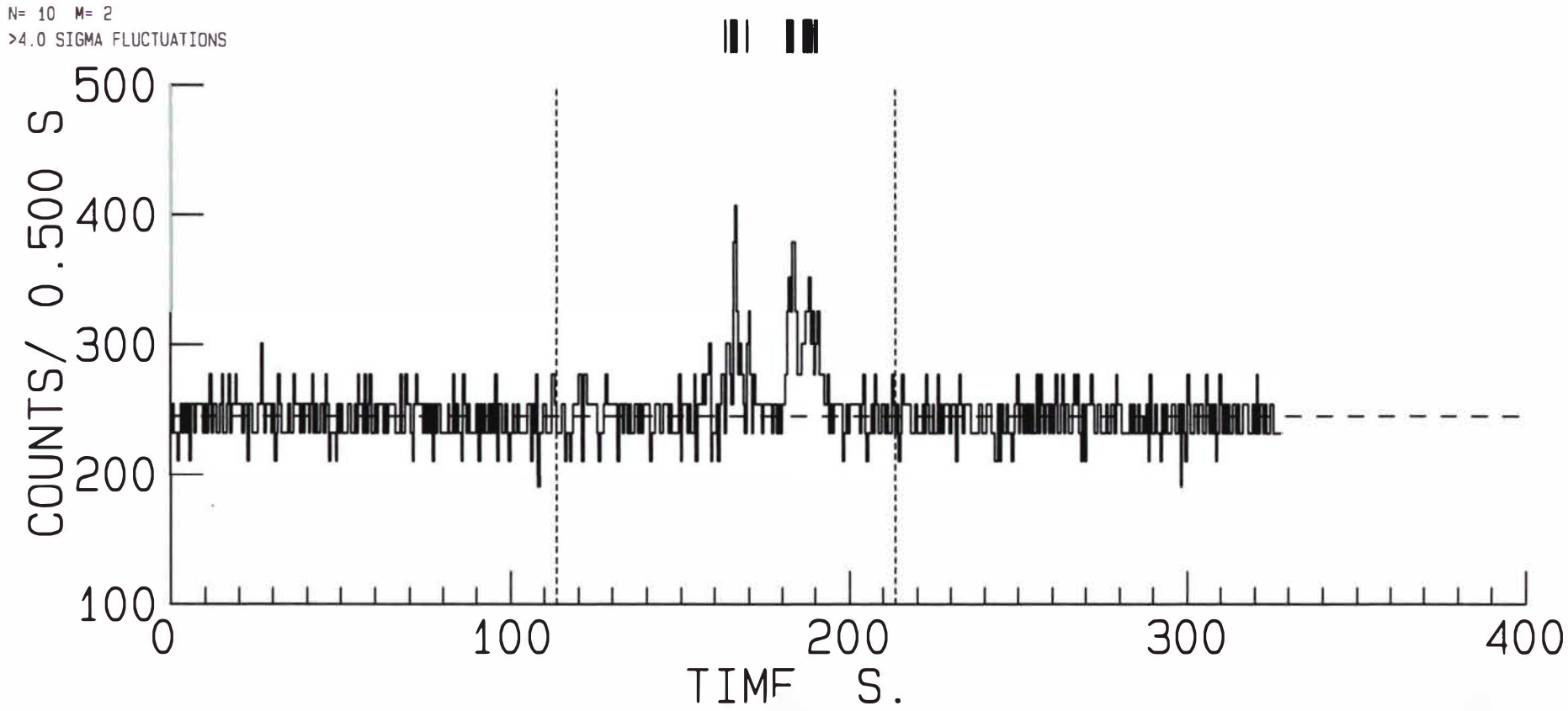

ULYSSES 01/06/97 Ttrig=68464.000
22- 147 keV
COUNTS/0.031 S
0
10
20
30
40
COUNTS/0.125 S
0
50
100
150
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
TIME, SECS
1 / 2 / ***

ULYSSES RT

1/ 6/97 70272.172 s

22- 147 keV

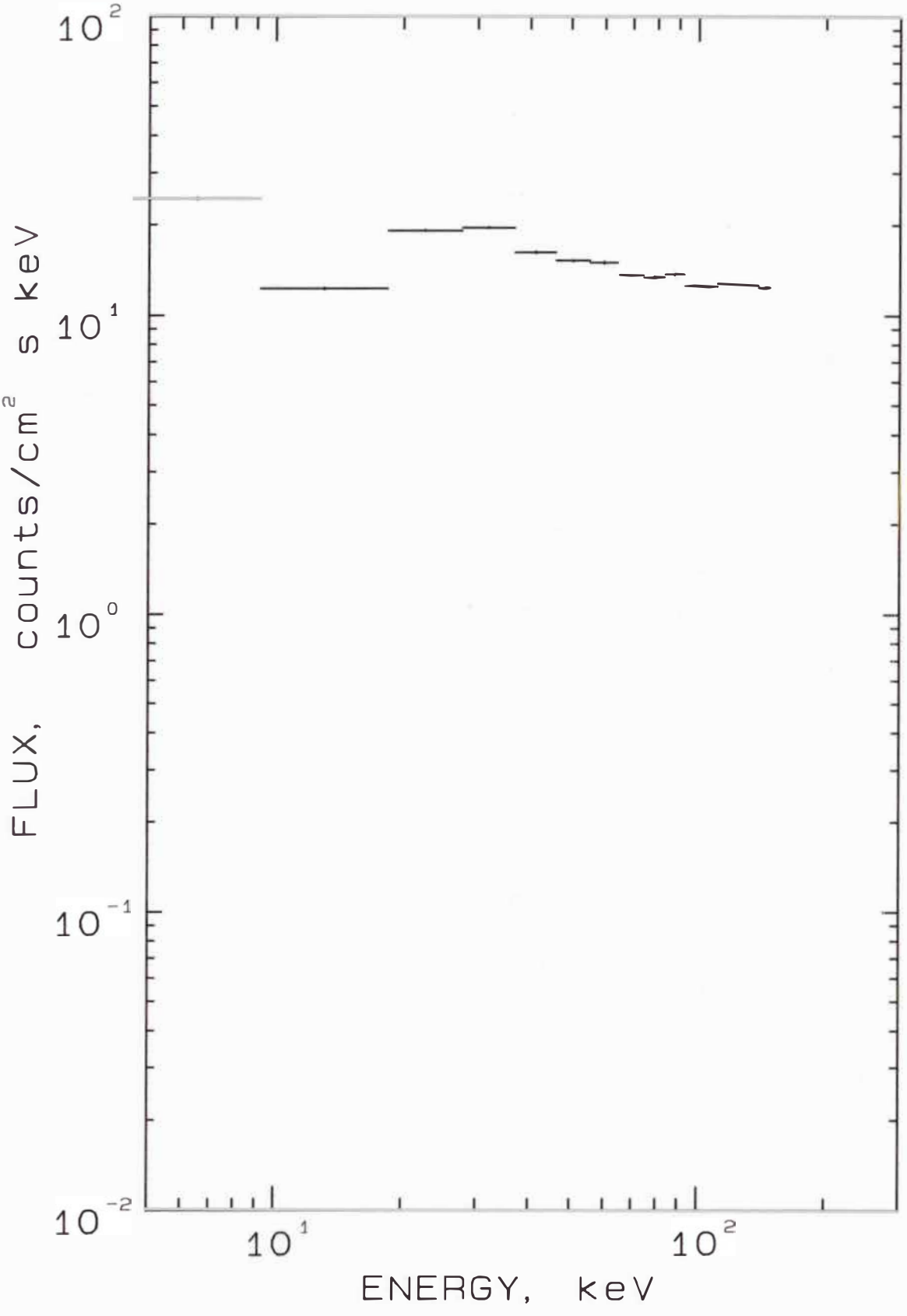
1/ 2/10

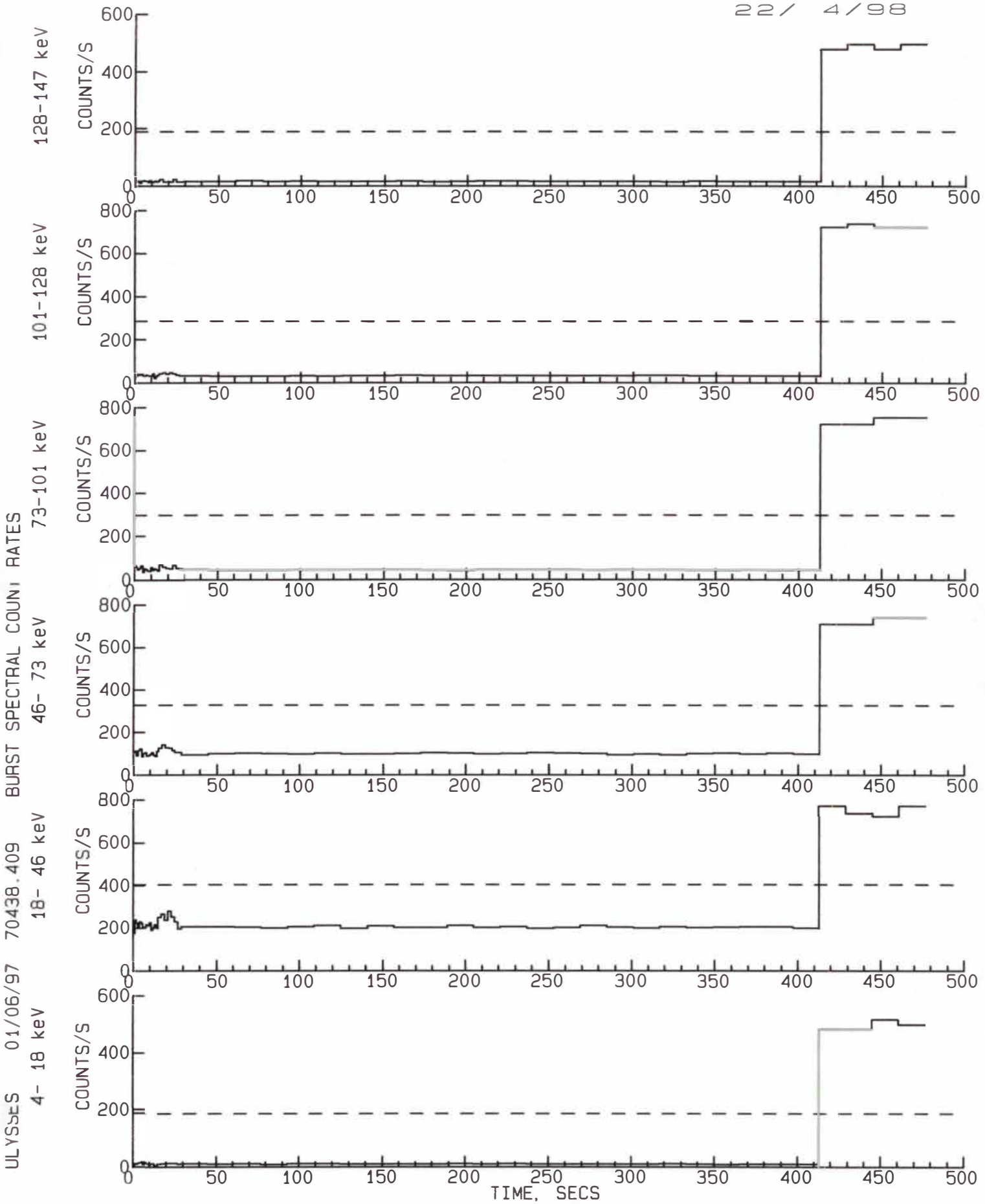


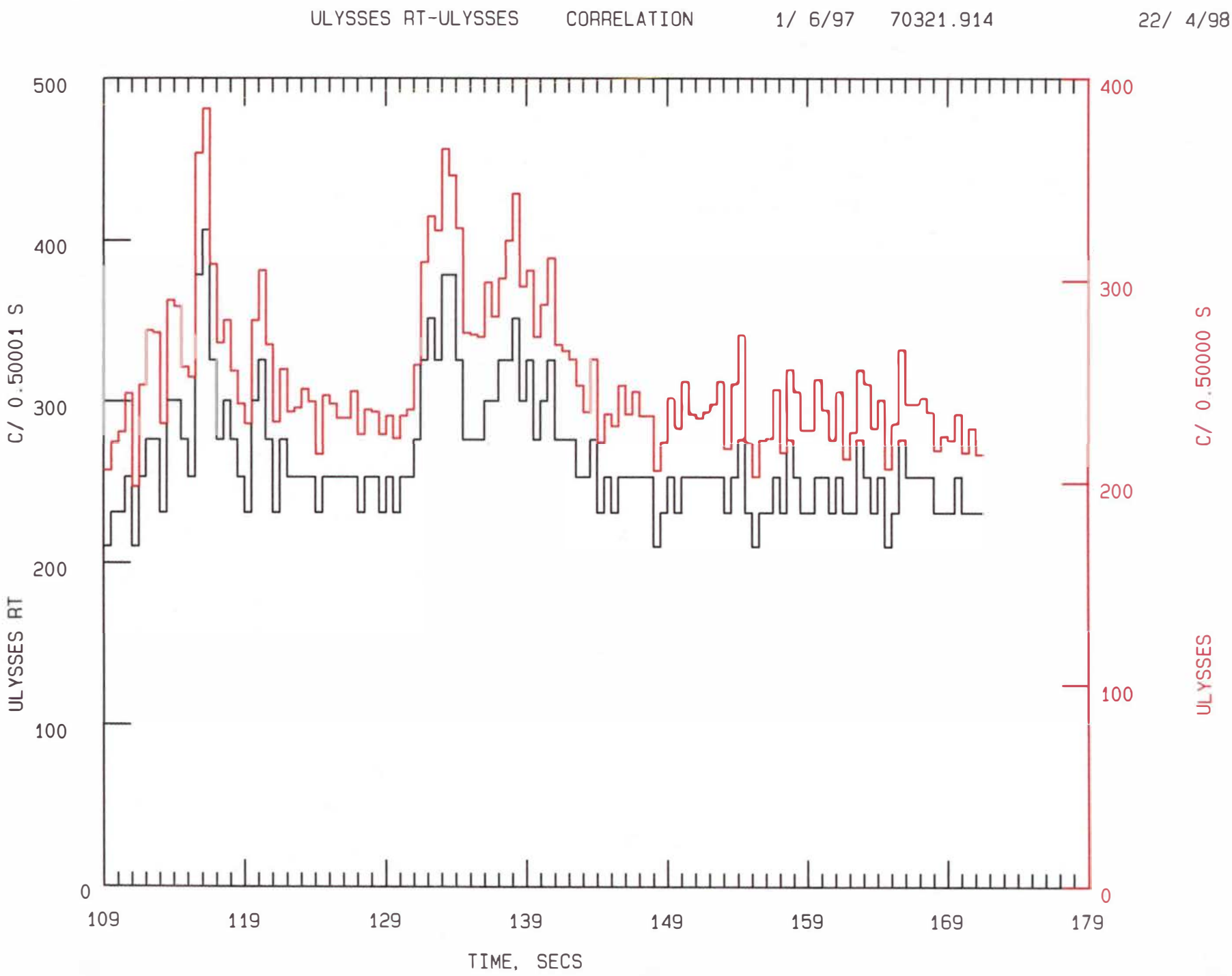
ULYSSES 01/06/97 70438.409

22/ 4/98

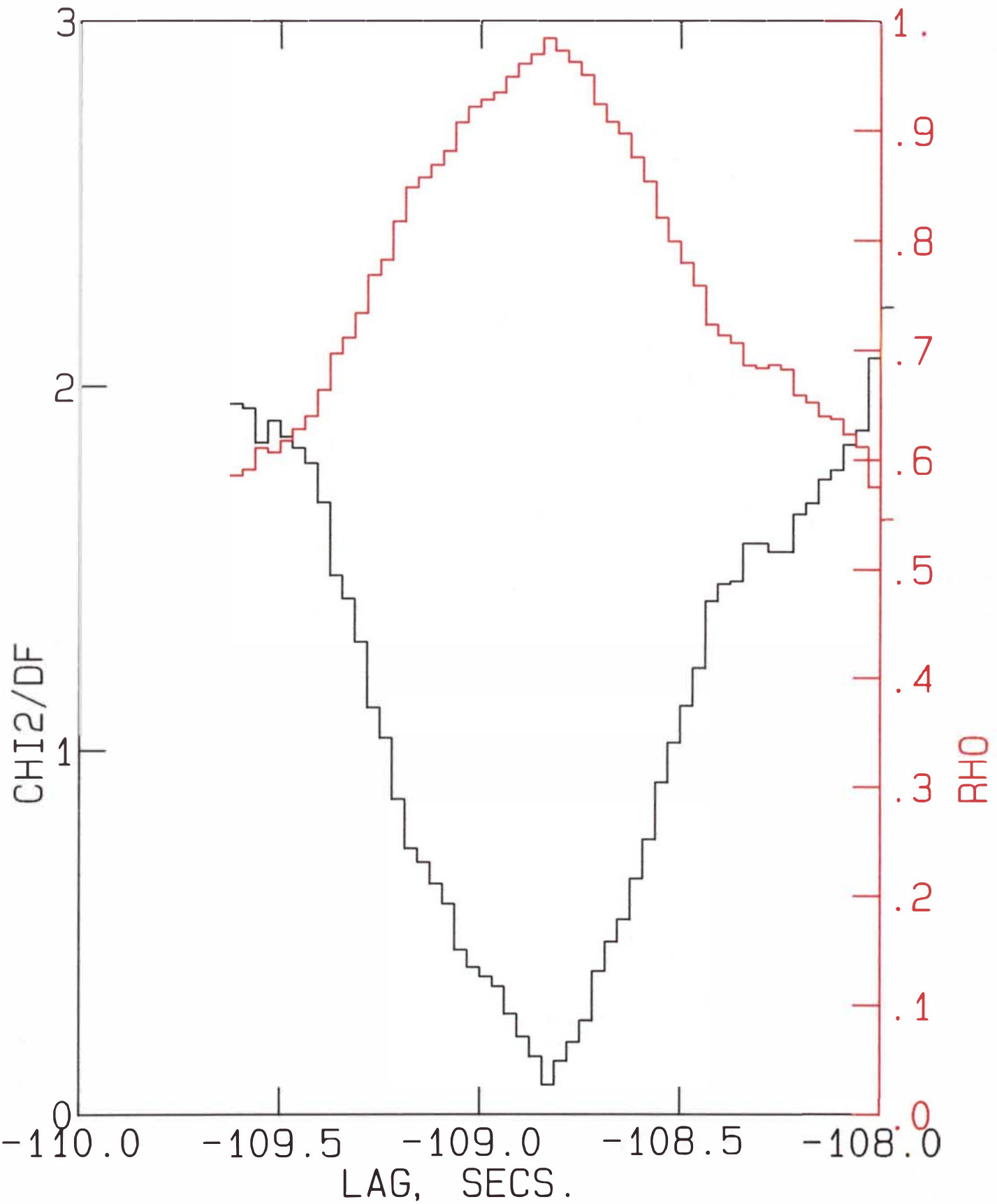
SPECTRUM INTEGRATED OVER 60.8 SECONDS, INTERVALS 2 TO 26




22/ 4/98
ULYSSES 01/06/97 70438.409 BURST SPECTRAL COUNT RATES
128-147 keV
101-128 keV
73-101 keV
46- 73 keV
18- 46 keV
4- 18 keV
COUNTS/S
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 1/ 6/97 70321.914 22/ 4/98
500
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
109
119
129
139
149
159
169
179
TIME, SECS

ULYSSES RT-ULYSSES CORRELATION 1/ 6/97 70321.914



ULYSSES 01/06/97 Ttrig=70438.165

22- 147 keV

COUNTS/0.031 S

COUNTS/0.125 S

22/ 4/98

From kraken@rosserv.gsfc.nasa.gov Thu Jun 5 12:43 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 5 Jun 1997 15:45:27 -0500
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: GRB's seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

TGRS has seen at least one out of the three Ulysses bursts that you've recently sent out email on. Here are the specifics:

Ulysses burst:	TGRS sees?	TGRS characteristics
June 1, 1997 00:17	NO	
June 1, 1997 19:33	NO BUT	3s;180 cts/s event found in waiting mode data (100-300 keV) at 15 sigma signif. It was not seen in 35-100 keV window therefore not "official" detection.
June 2, 1997 15:43	YES!	TGRS burst # 564 125s; 265cts/s peak in 100-300 keV band. 120s; 150 cts/s peak in 35-100 keV band.

Take care,

Pete

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

Konus report on recent Ulysses events not seen by BATSE

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

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

From SURASAK@ssl.msfc.nasa.gov Tue Jun 3 07:03 PDT 1997
Date: Tue, 3 Jun 1997 9:02:25 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6247

TIME: TJD=0600 SECONDS=45338

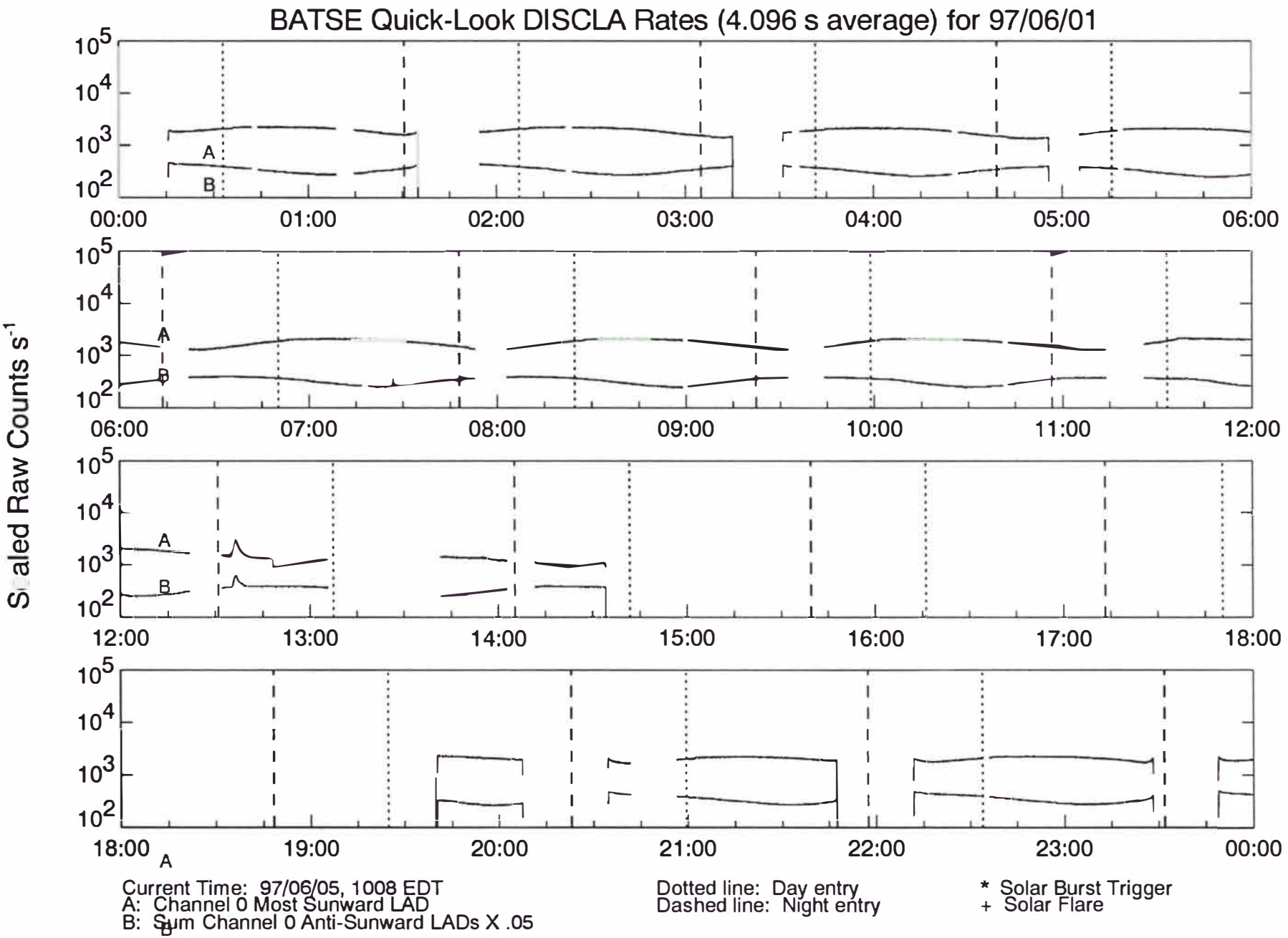
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

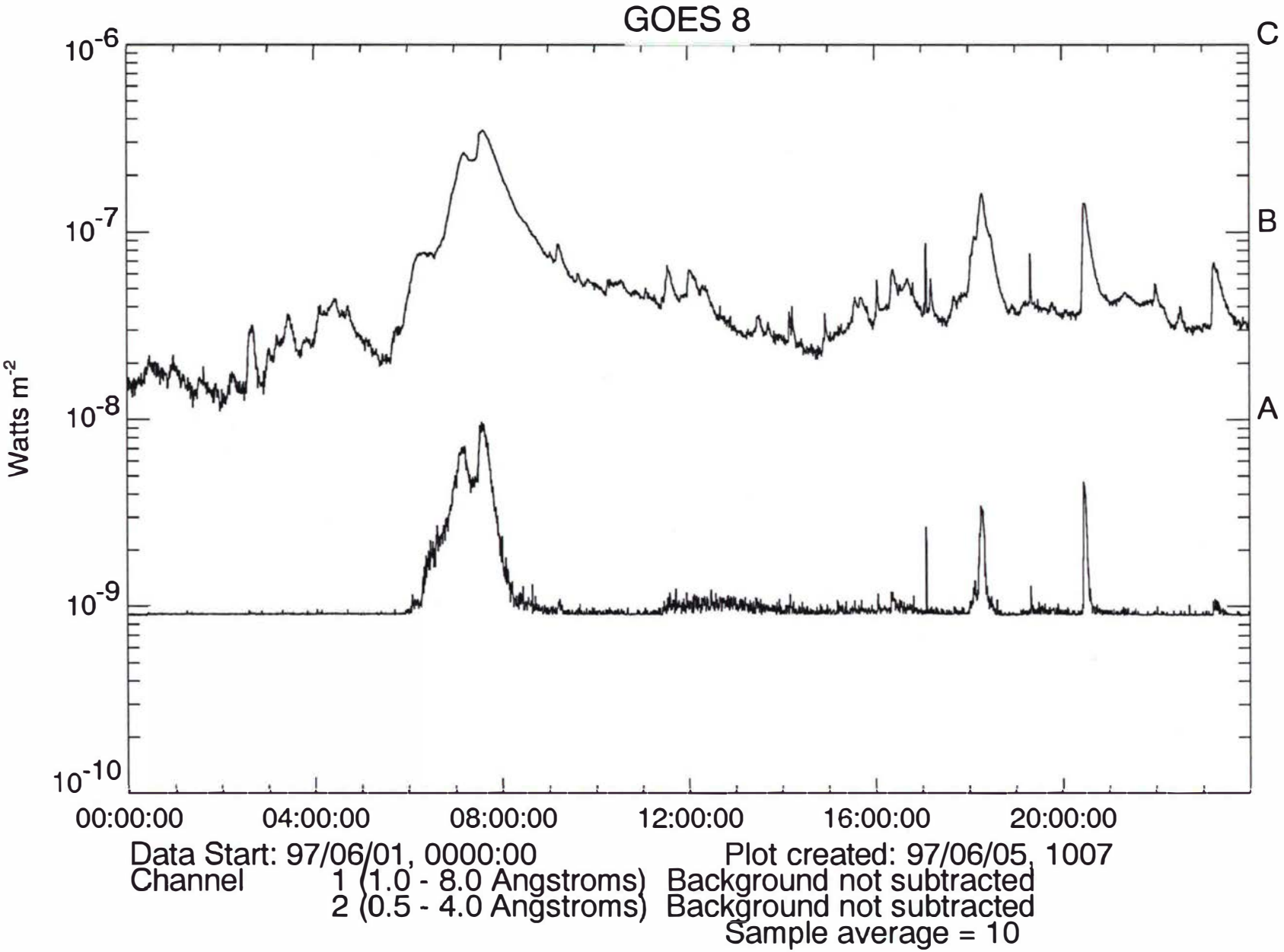
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

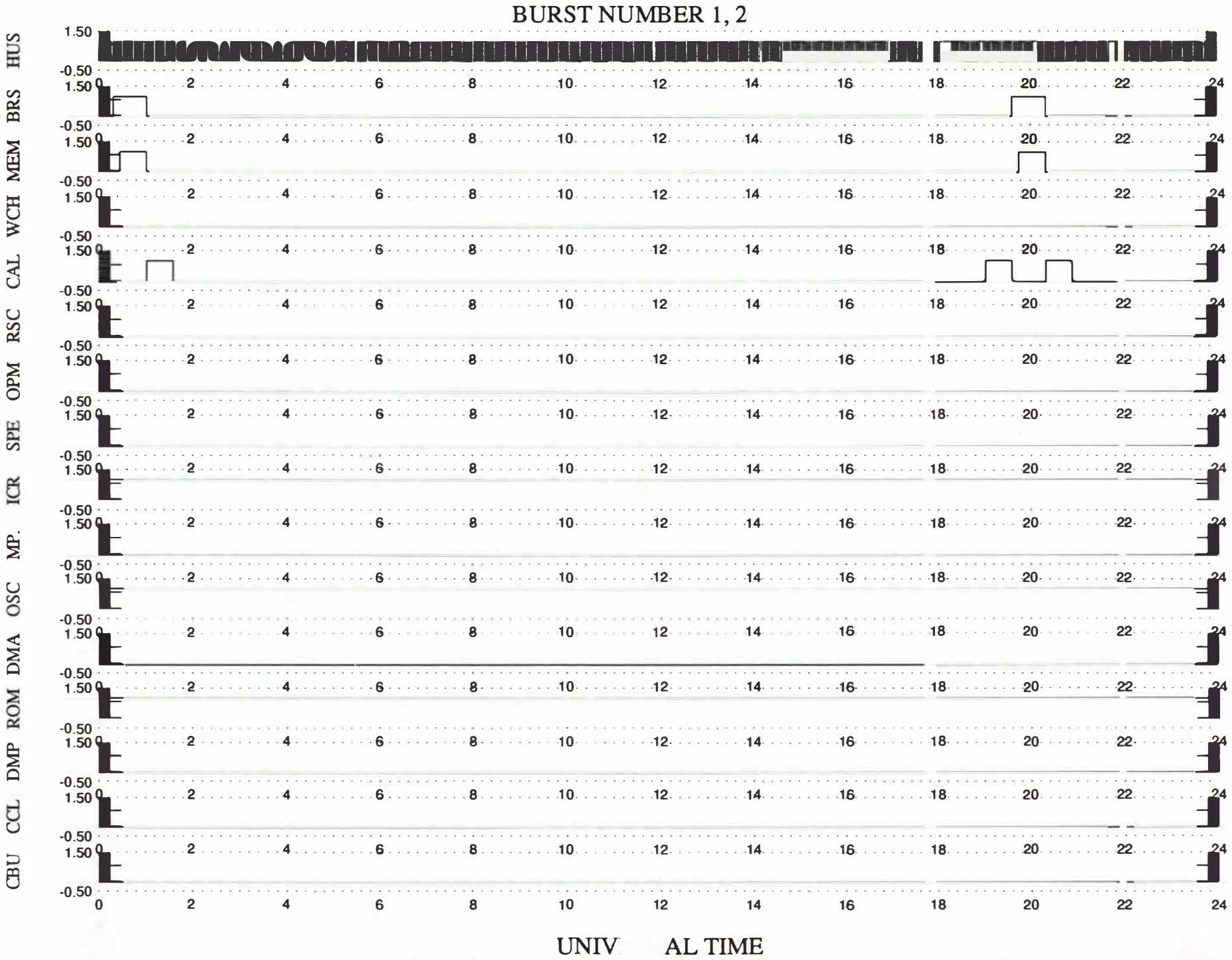
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/01
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/05, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

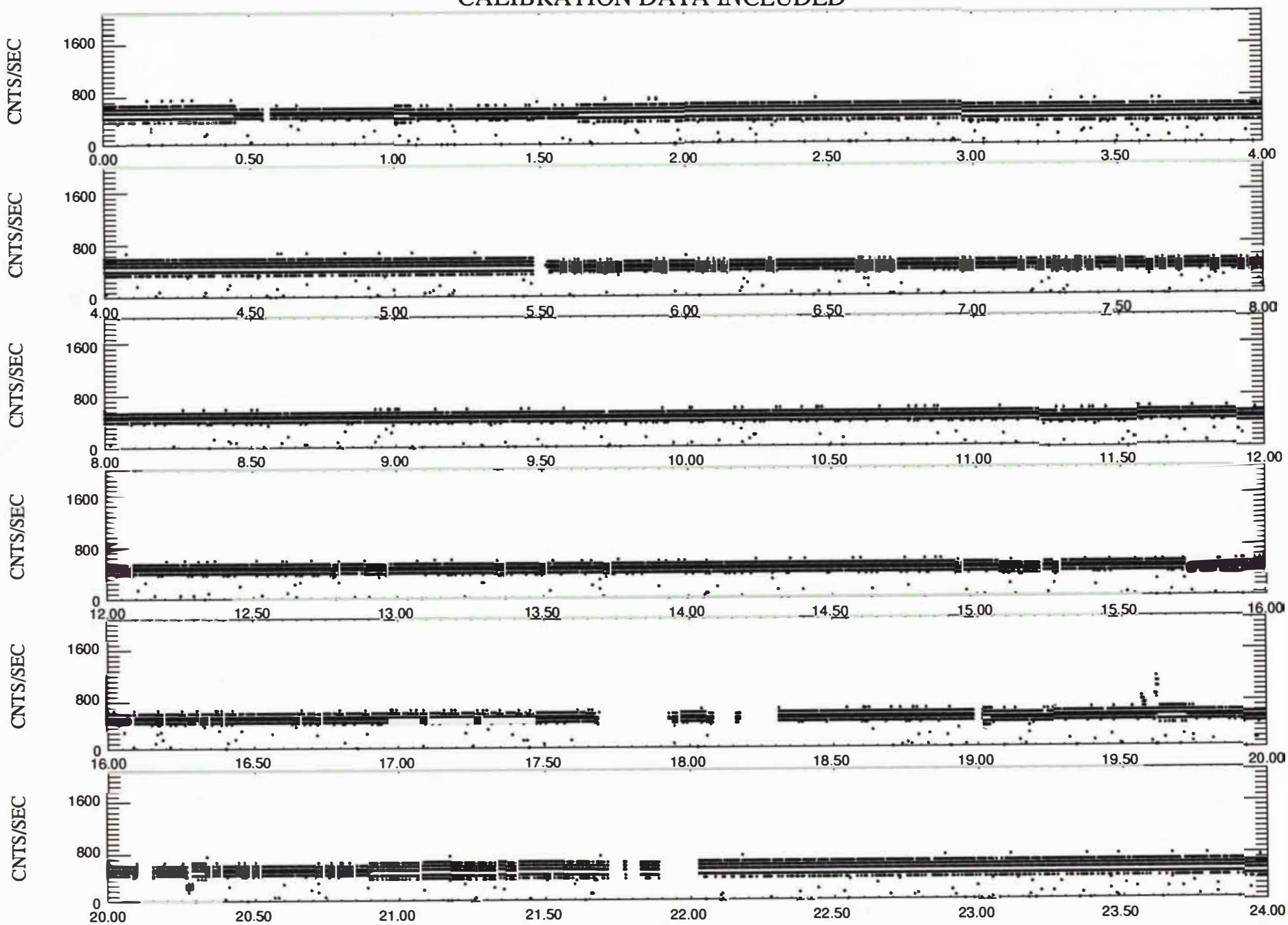

GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/01, 0000:00
Plot created: 97/06/05, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 152, year 1997 to day 152, year 1997 10/13/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 152, year 1997 to day 152, year 1997 10/13/97

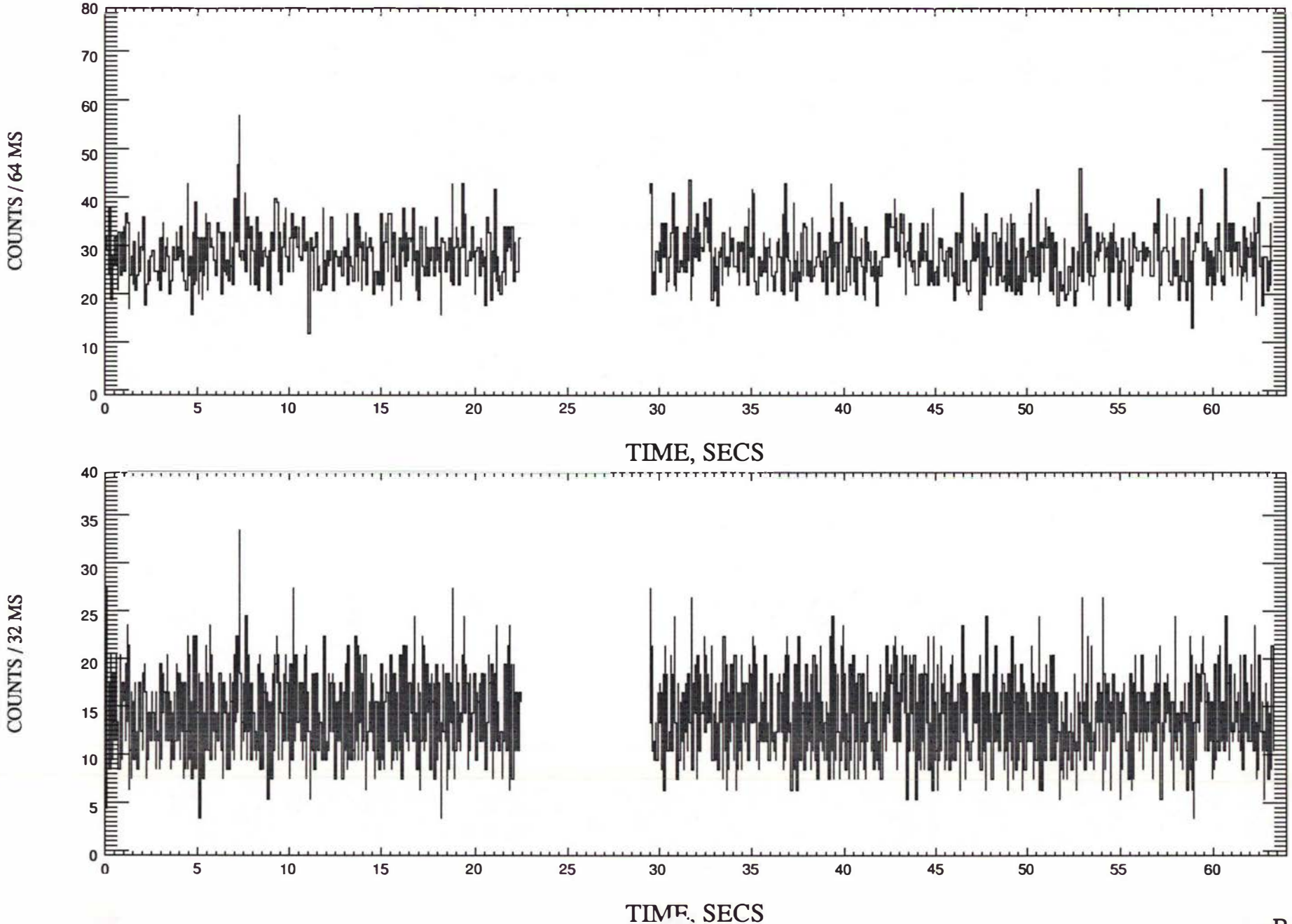
CALIBRATION DATA INCLUDED



UNIV 'AL TIME

HUS 2A TRIGGERED DATA EDR day 152, year 1997 10/13/97

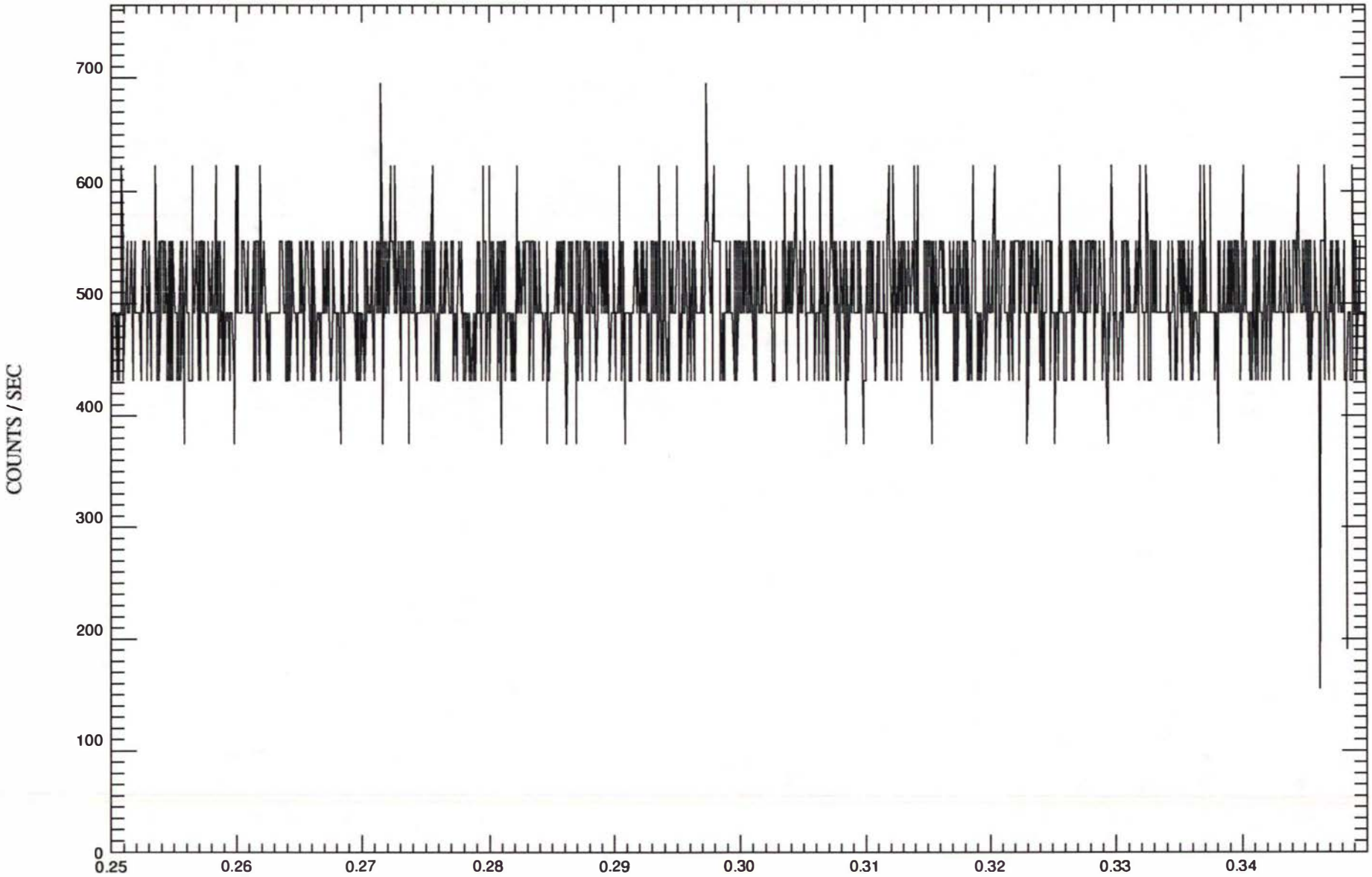
Burst Counter 1 at UT= 0.297558551364 h= 1071.211 s 00:17:51.211



B# 1

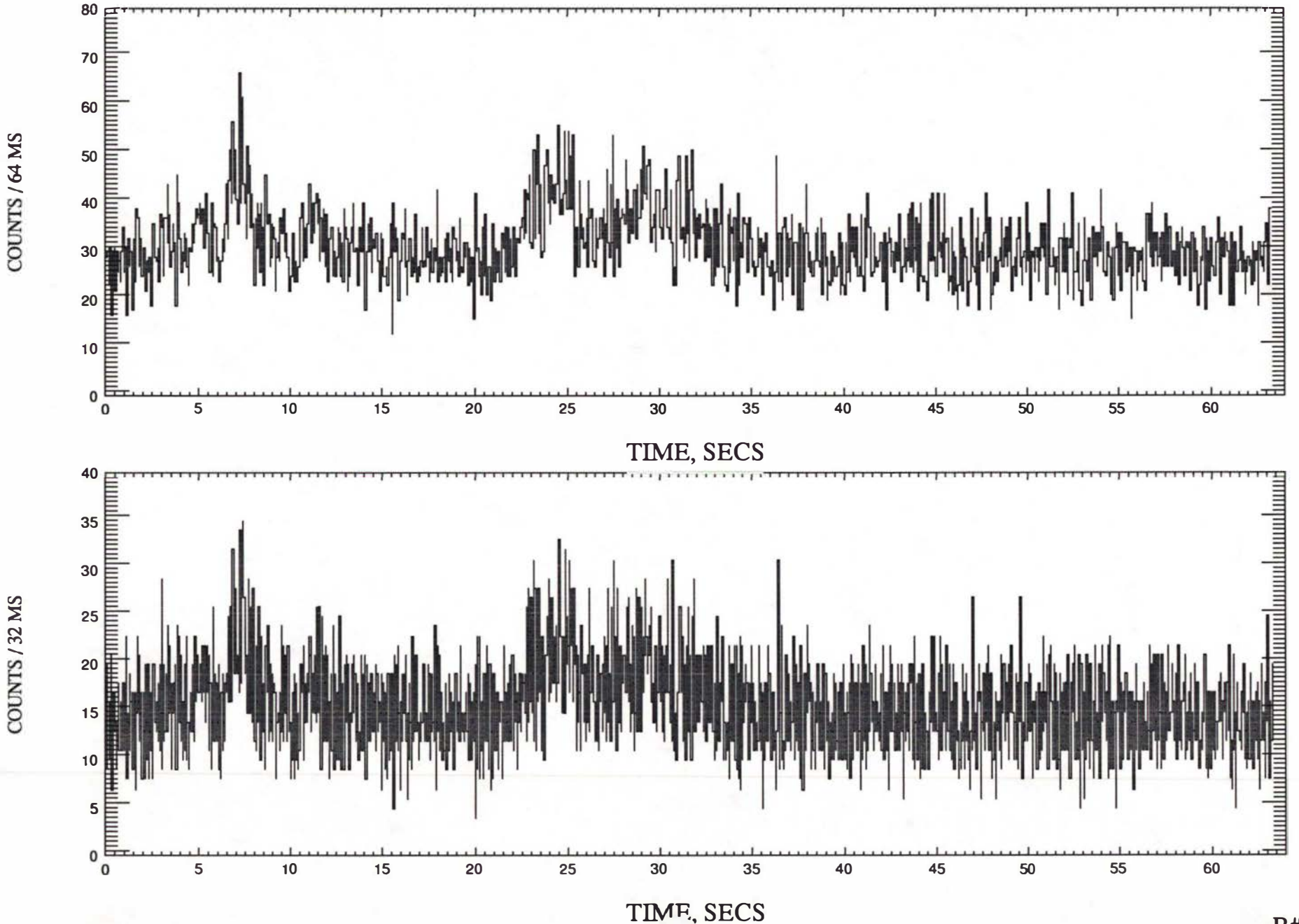
HUS 2A, MODE 1, NOT AVERAGED EDR day 152, year 1997 to day 152, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 152, year 1997 10/13/97

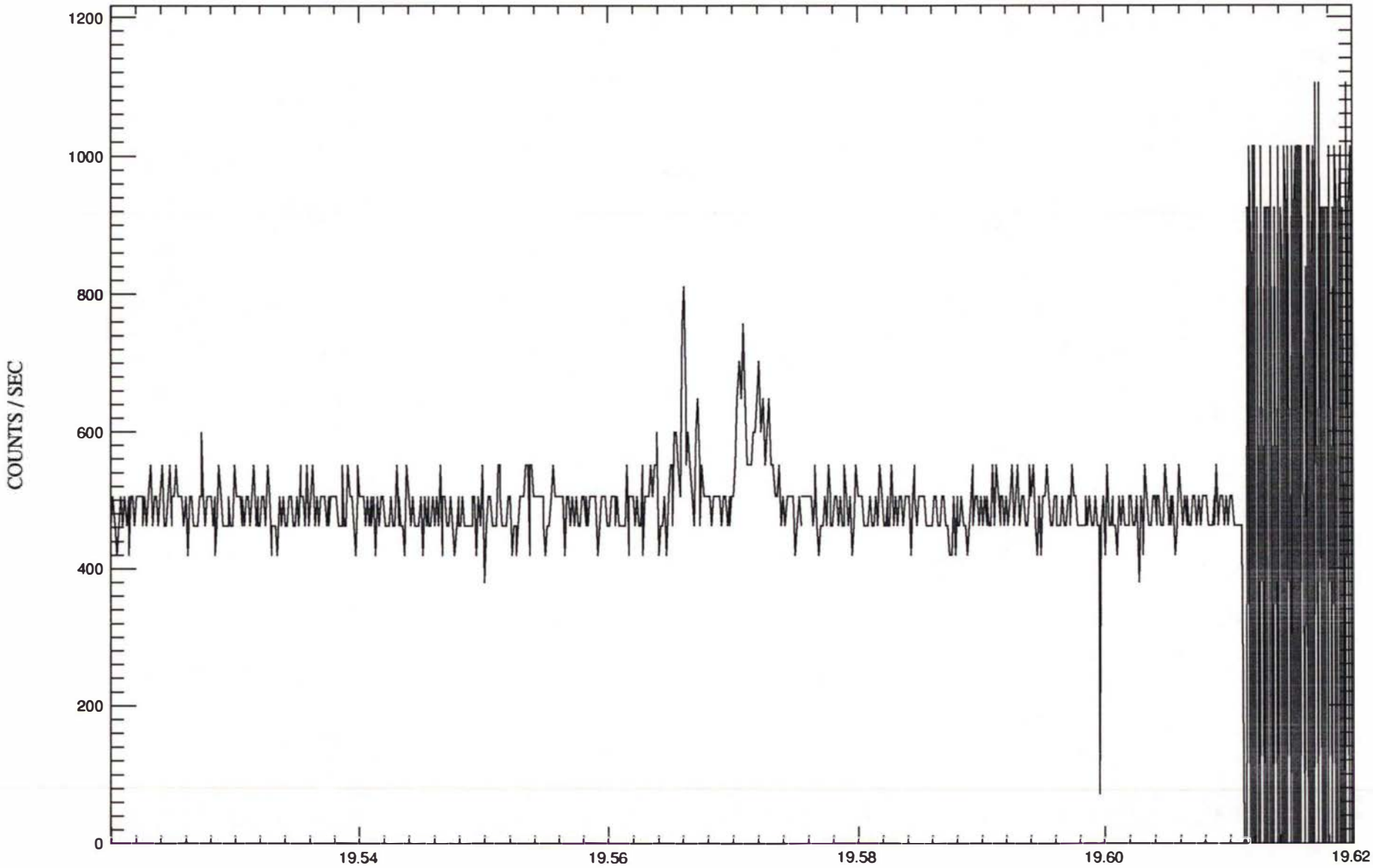
Burst Counter 2 at UT=19.566224623786 h=70438.409 s 19:33:58.409



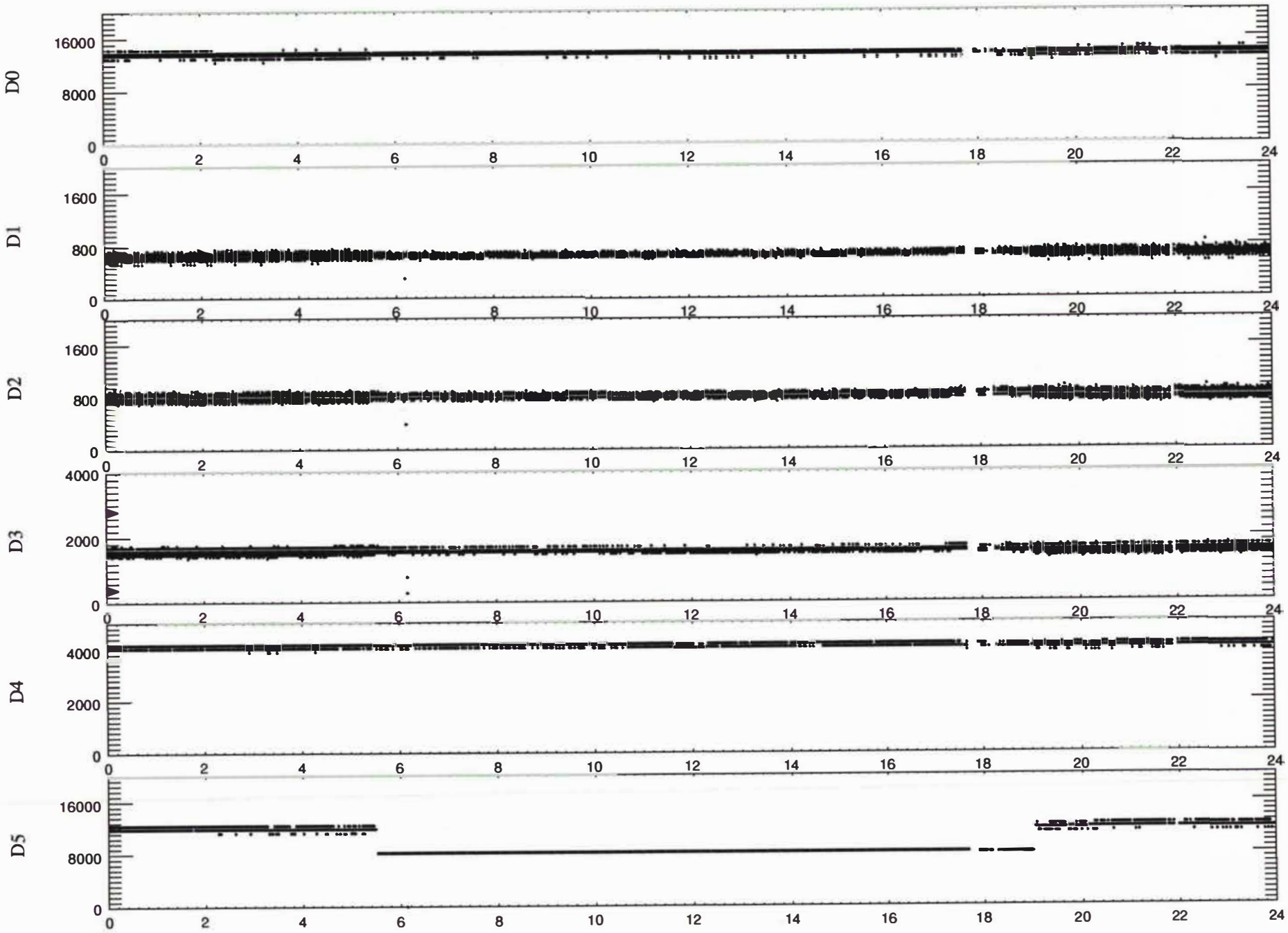
B# 2

HUS 2A, MODE 1, NOT AVERAGED EDR day 152, year 1997 to day 152, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 152, year 1997 to day 152, year 1997 10/13/97



Date: Dec 8 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

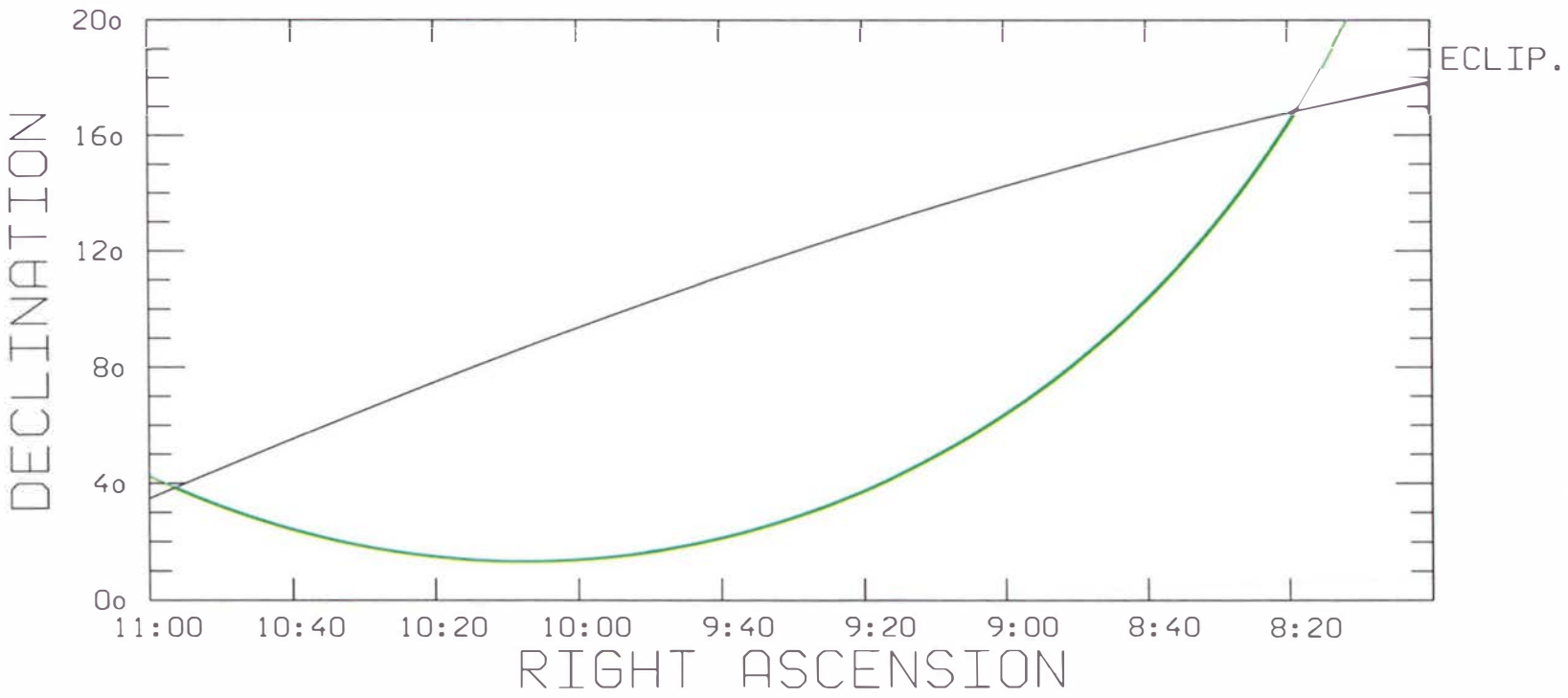
3. For INTEGRAL events

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

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

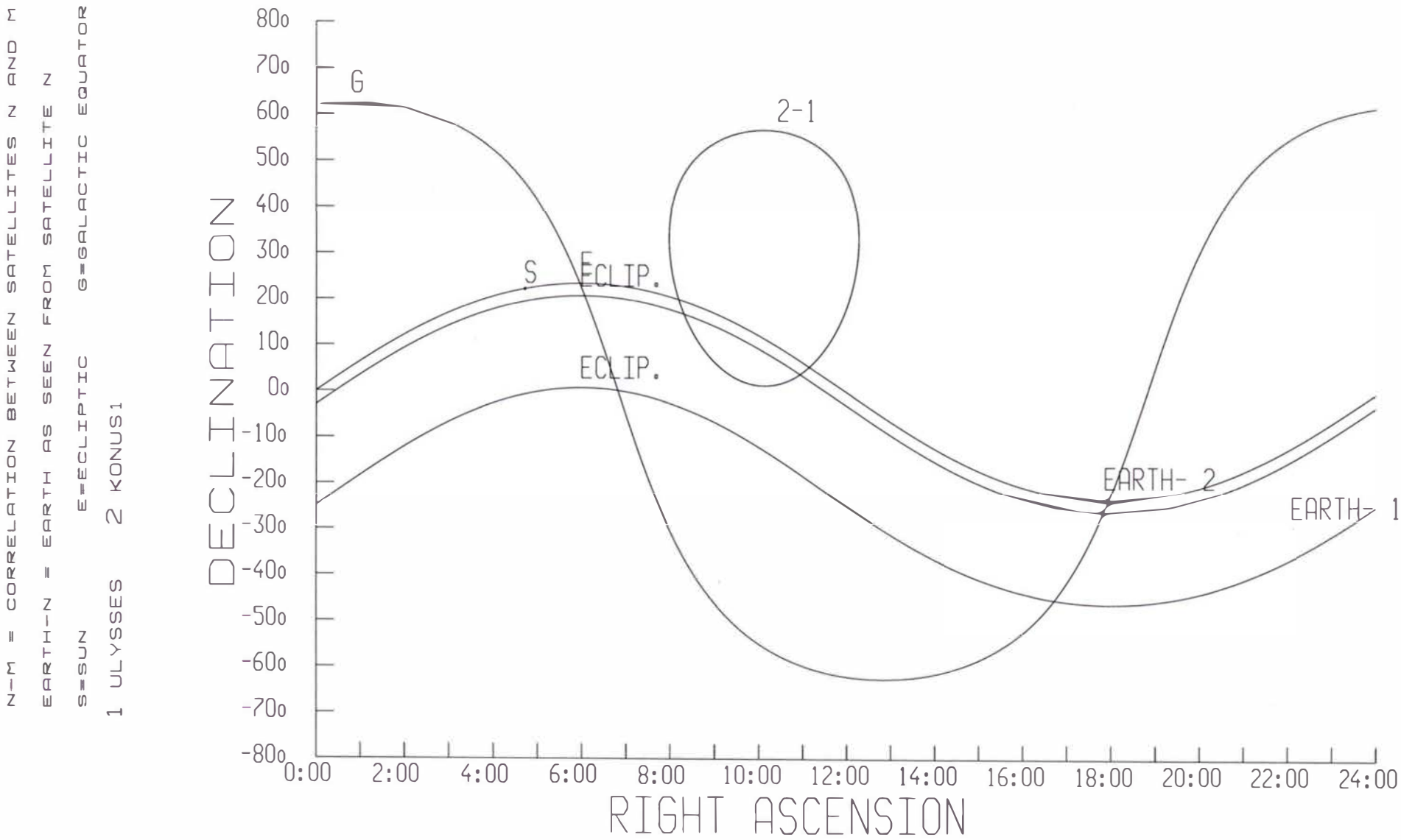
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated with identical times?

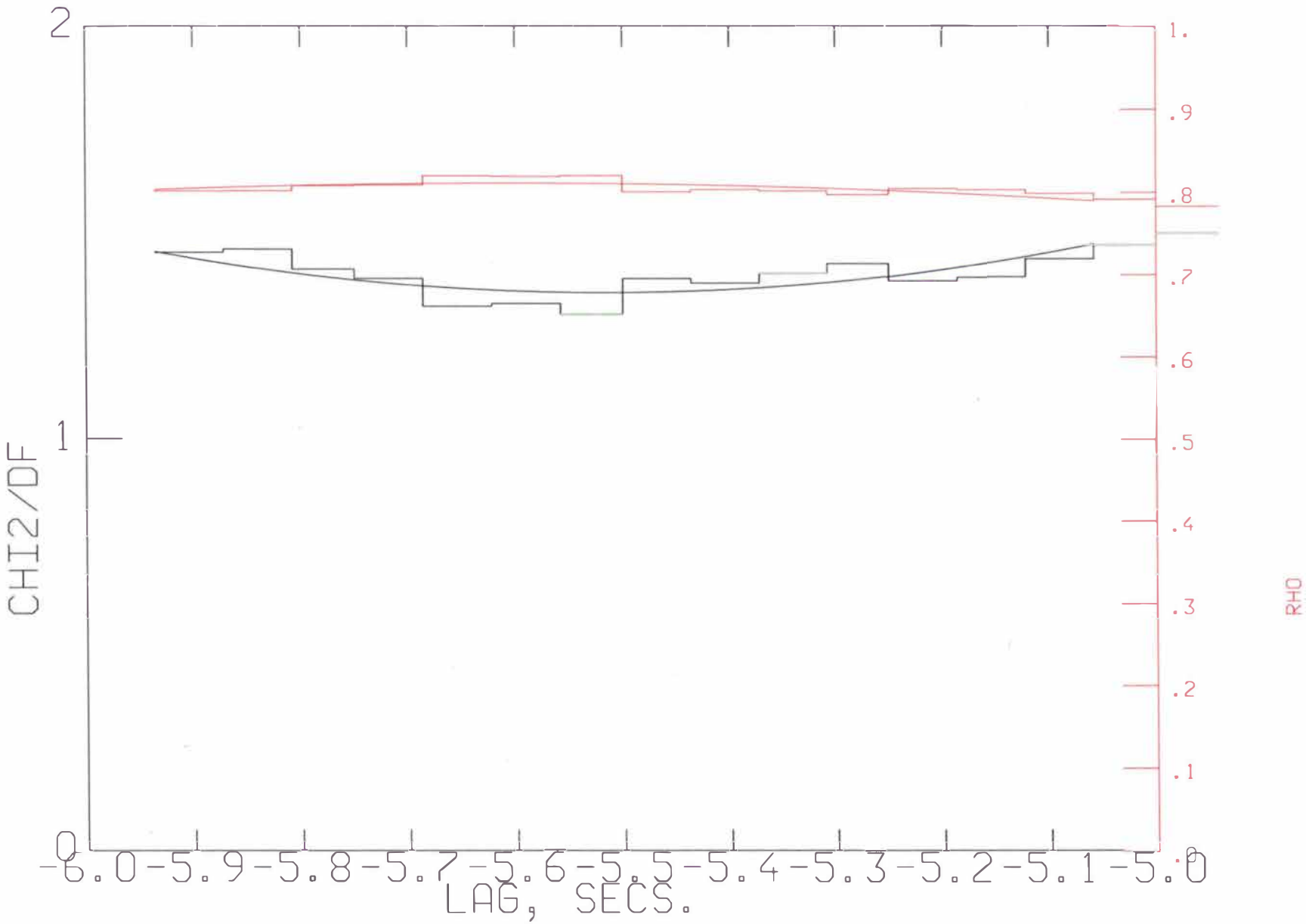

20o
16o
12o
8o
4o
0o
DECLINATION
11:00
10:40
10:20
10:00
9:40
9:20
9:00
8:40
8:20
RIGHT ASCENSION
ECLIP.

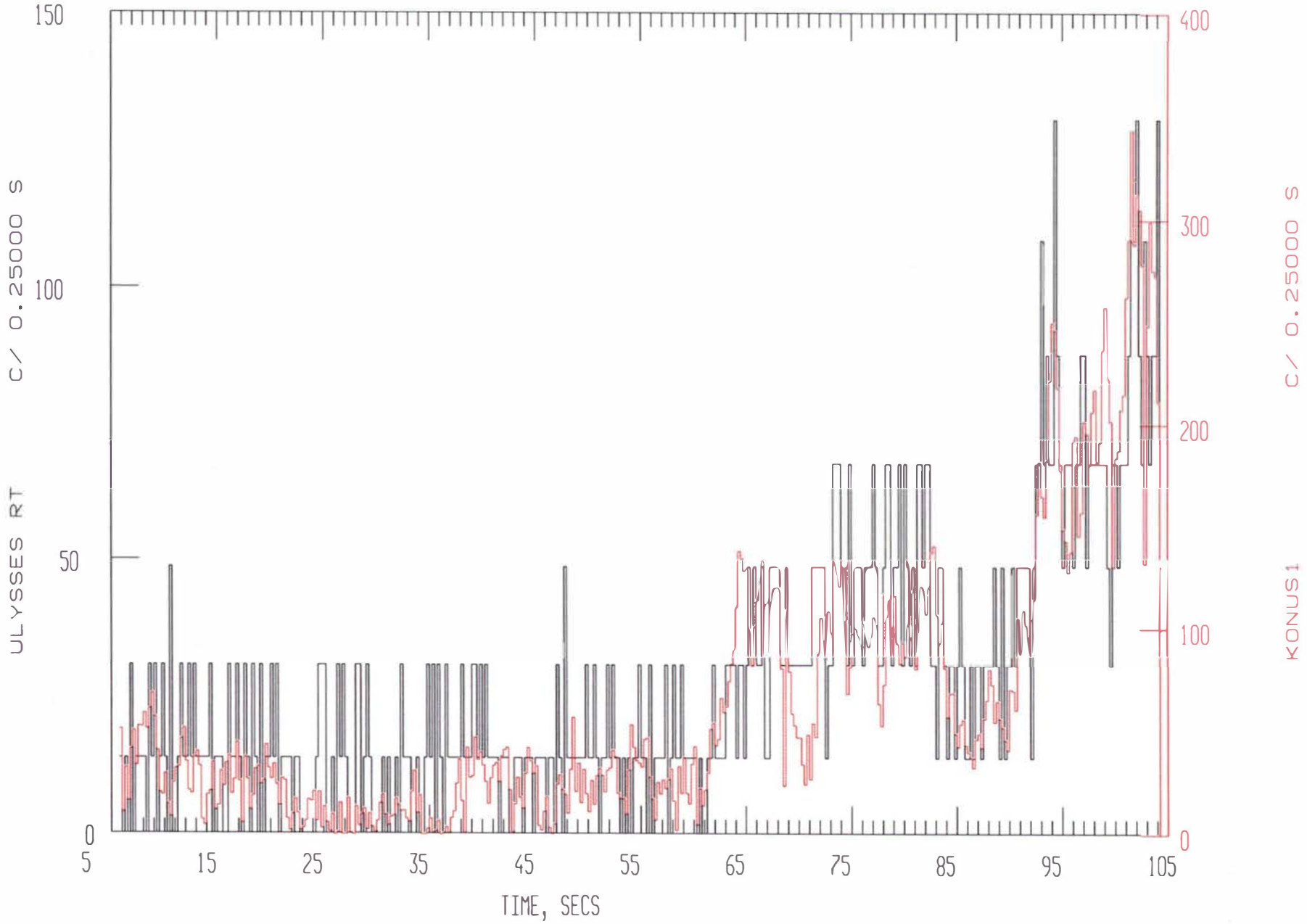
EVENT OF JUN 2, 1997 15:41

08/12/2011



ULYSSES RT-KONUS1 CORRELATION 2/ 6/97 56504.003



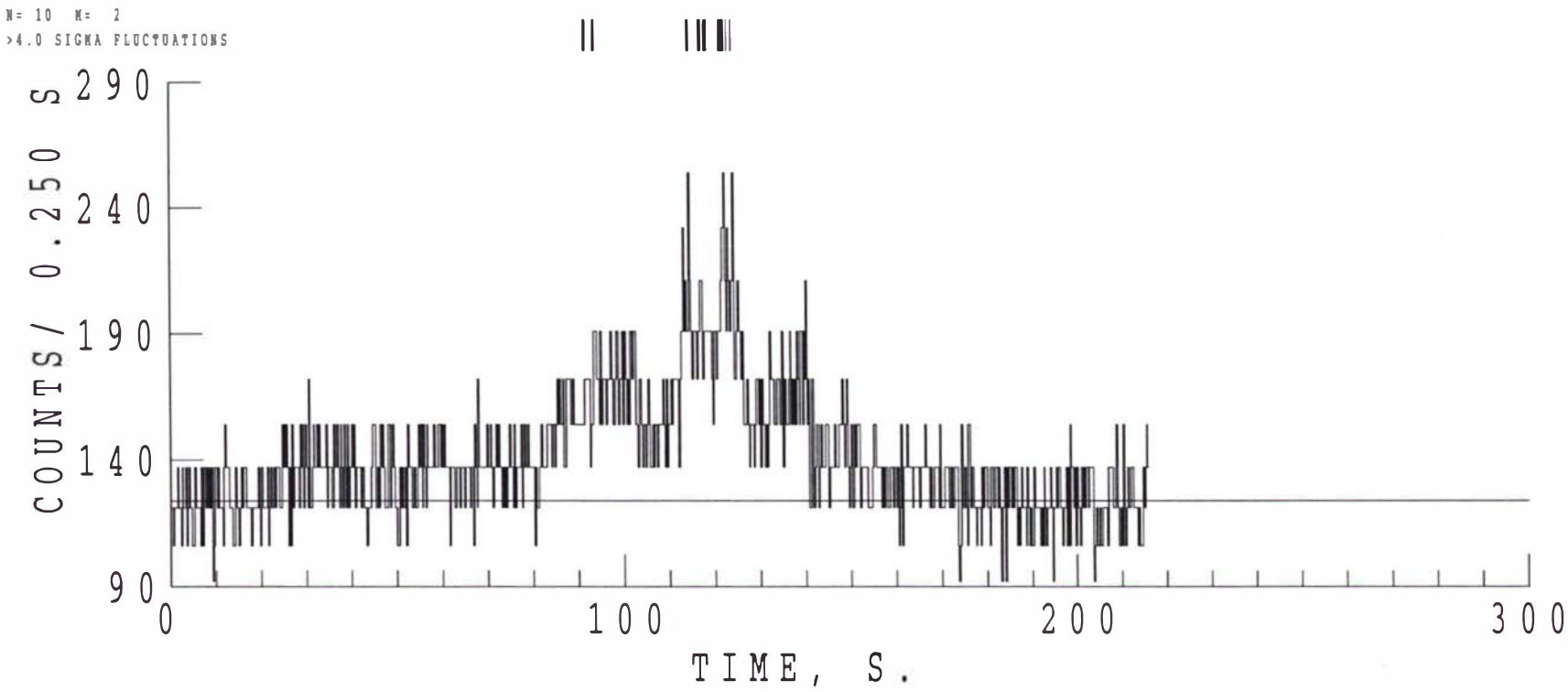

150
100
50
0
ULYSSES RT C/ 0.25000 S
400
300
200
100
0
KONUS1 C/ 0.25000 S
5
15
25
35
45
55
65
75
85
95
105
TIME, SECS

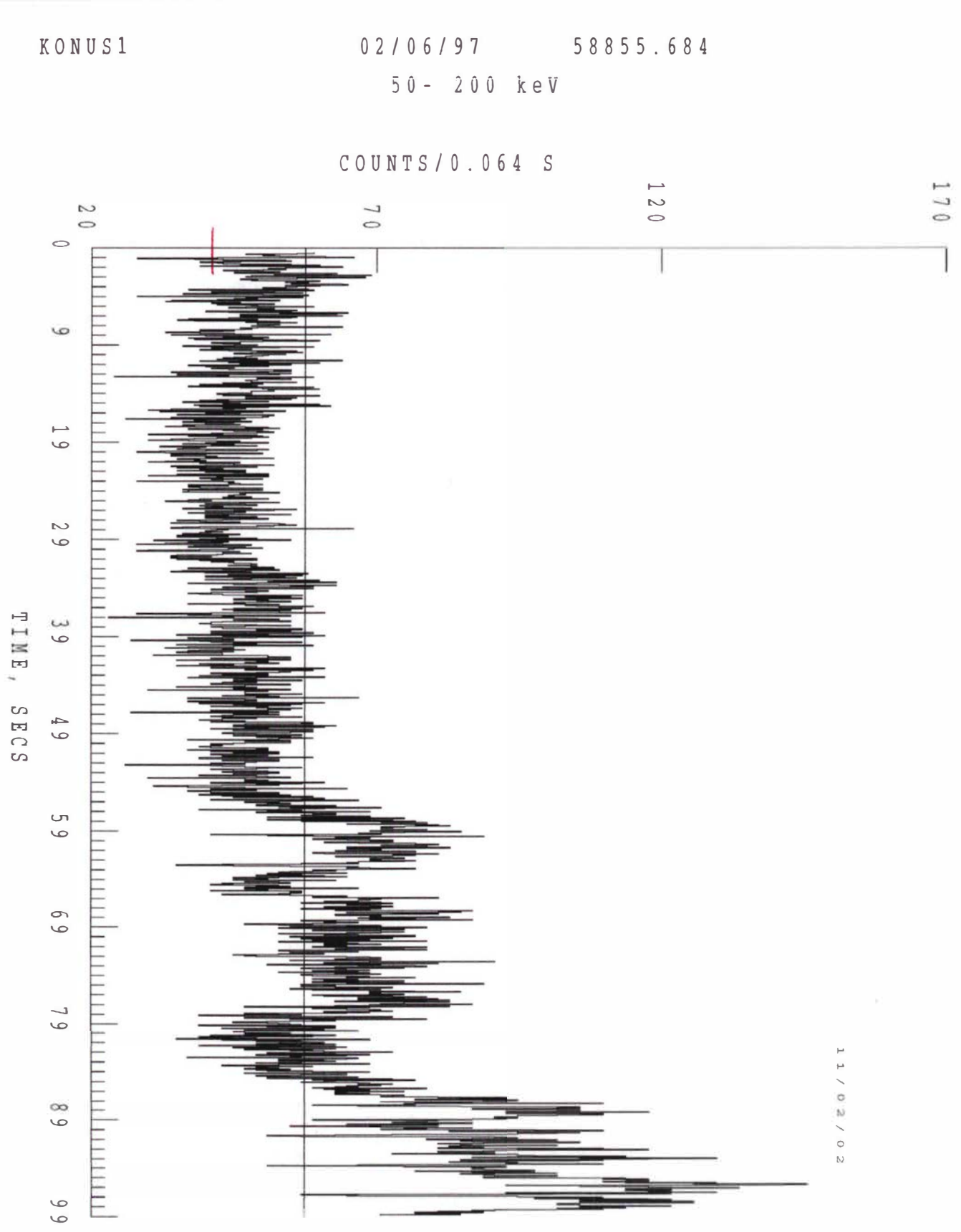
KONUS 19970602 56585

ULYSSES RT 07/12/11

02/06/97 56484.016 s

0- 0 keV




KONUS1
02/06/97
58855.684
50- 200 keV
COUNTS/0.064 S
20
70
120
170
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
11/02/02

KONUS1 19970602 58855

ULYSSES RT

11/02/02

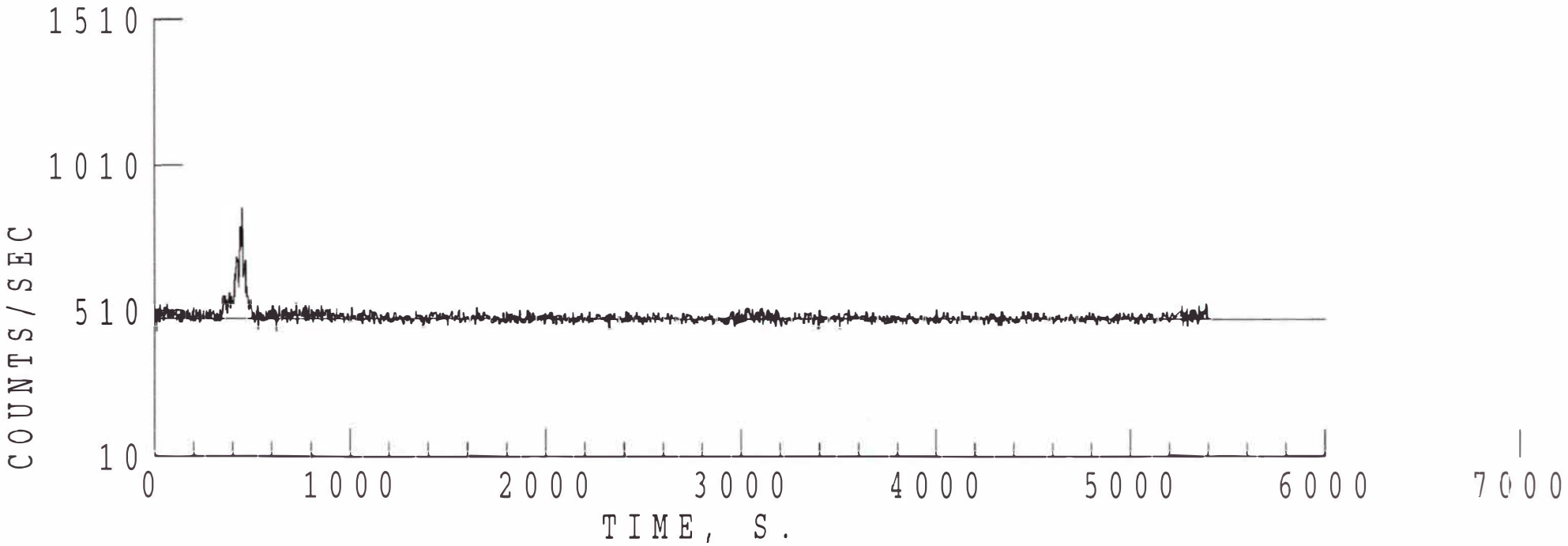
02/06/97 56160.012 s

INTERVALS REGROUPED BY 10

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

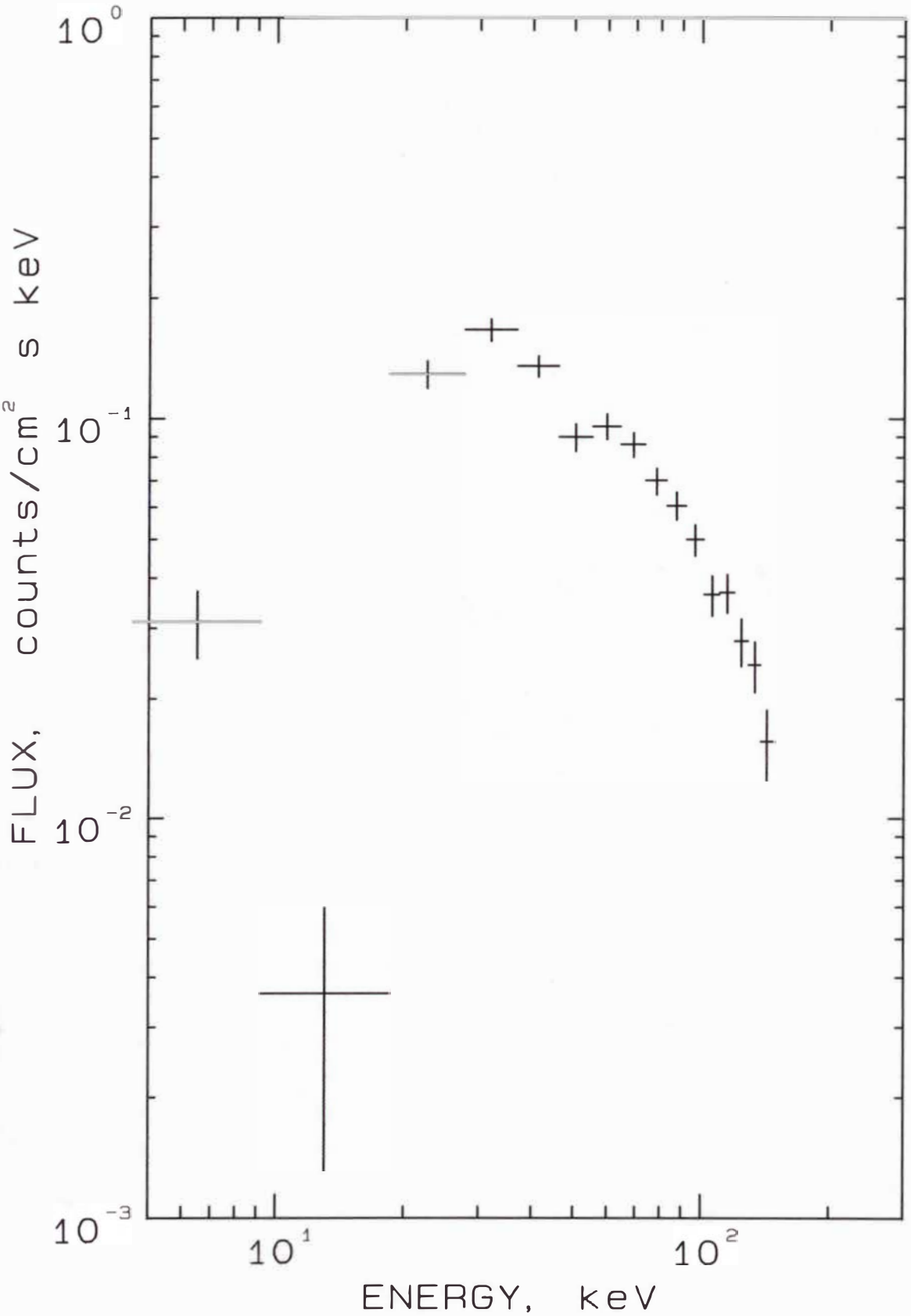
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

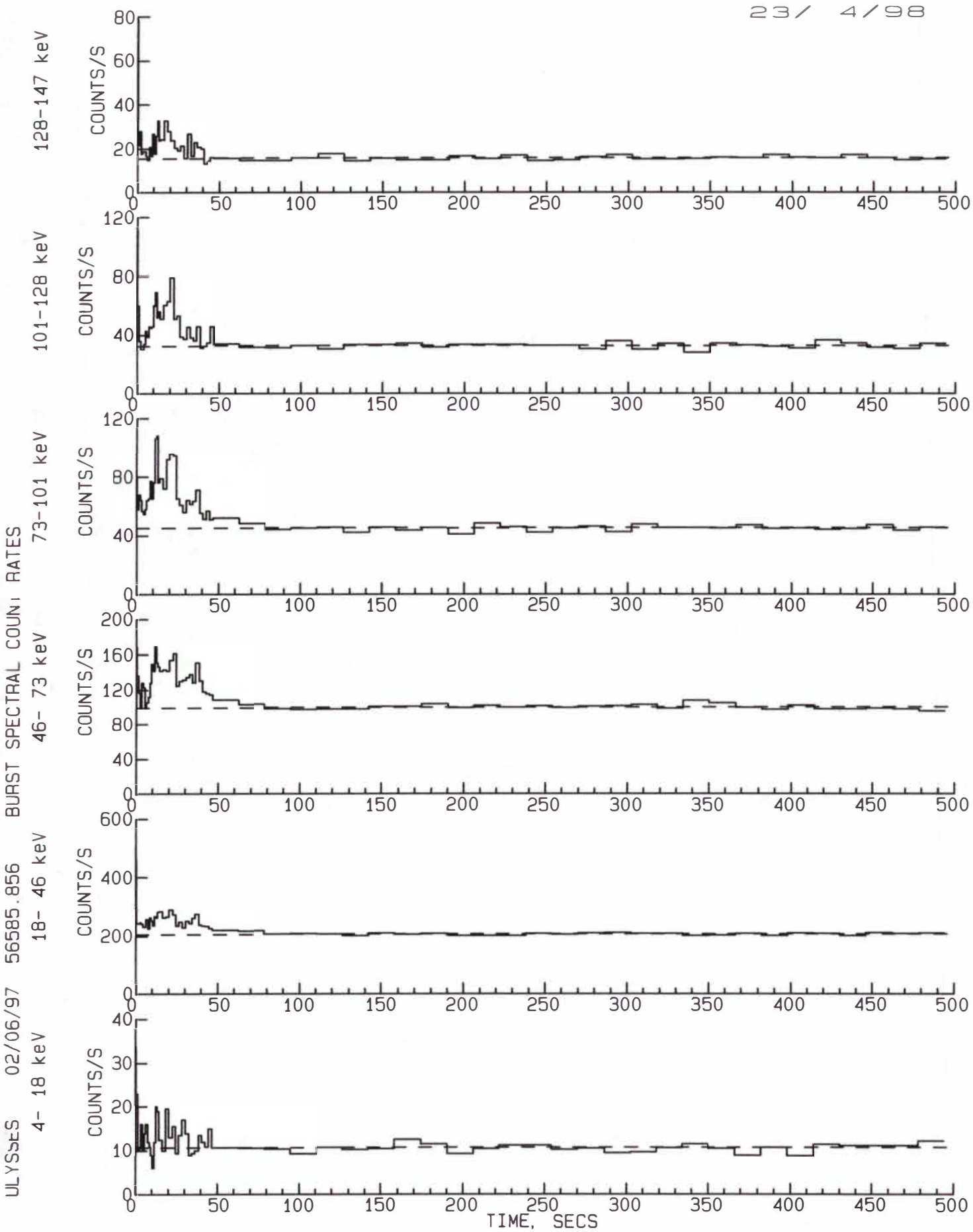


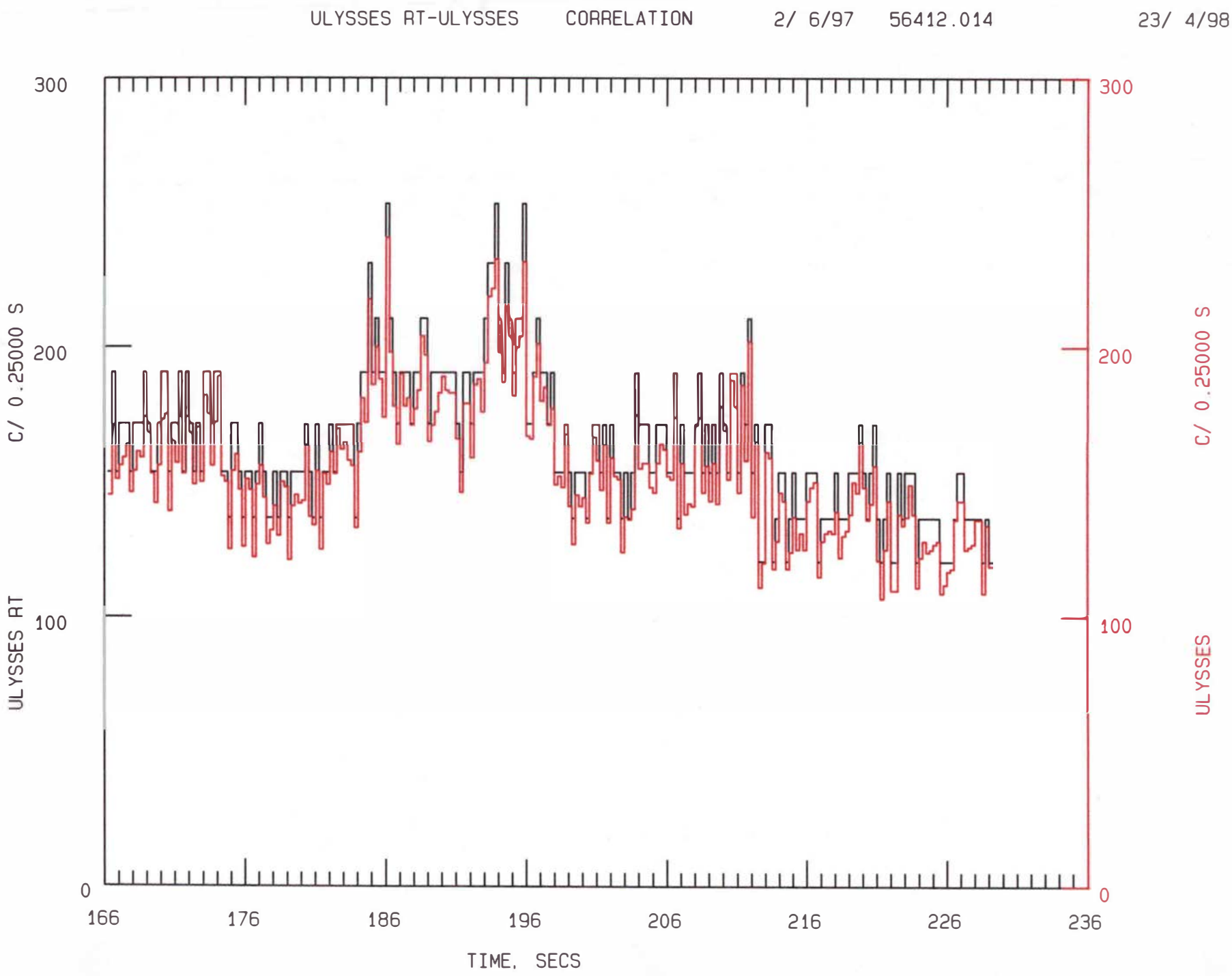
ULYSSES 02/06/97 56585.856

23/ 4/98

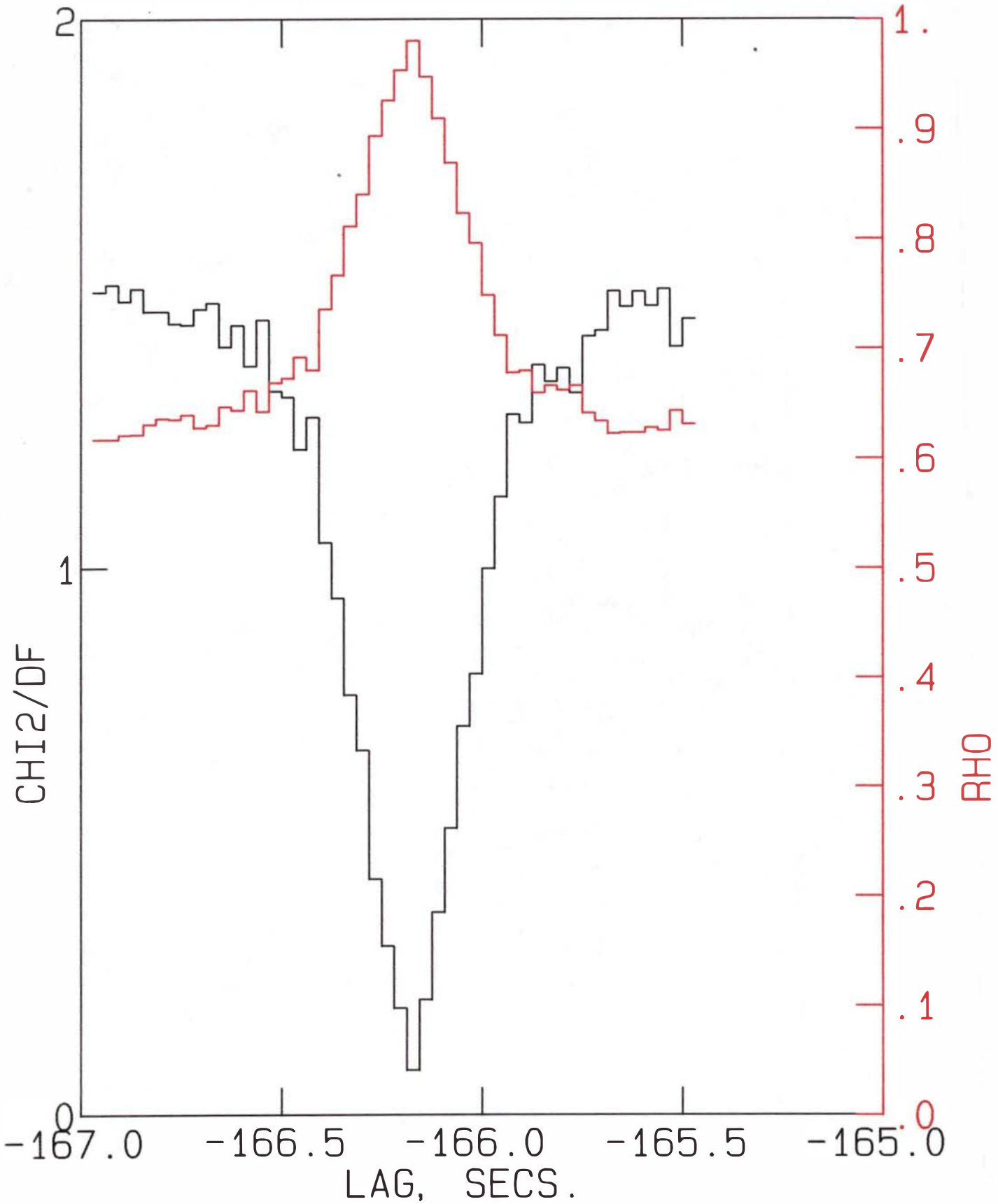
SPECTRUM INTEGRATED OVER 62.2 SECONDS, INTERVALS 2 TO 34

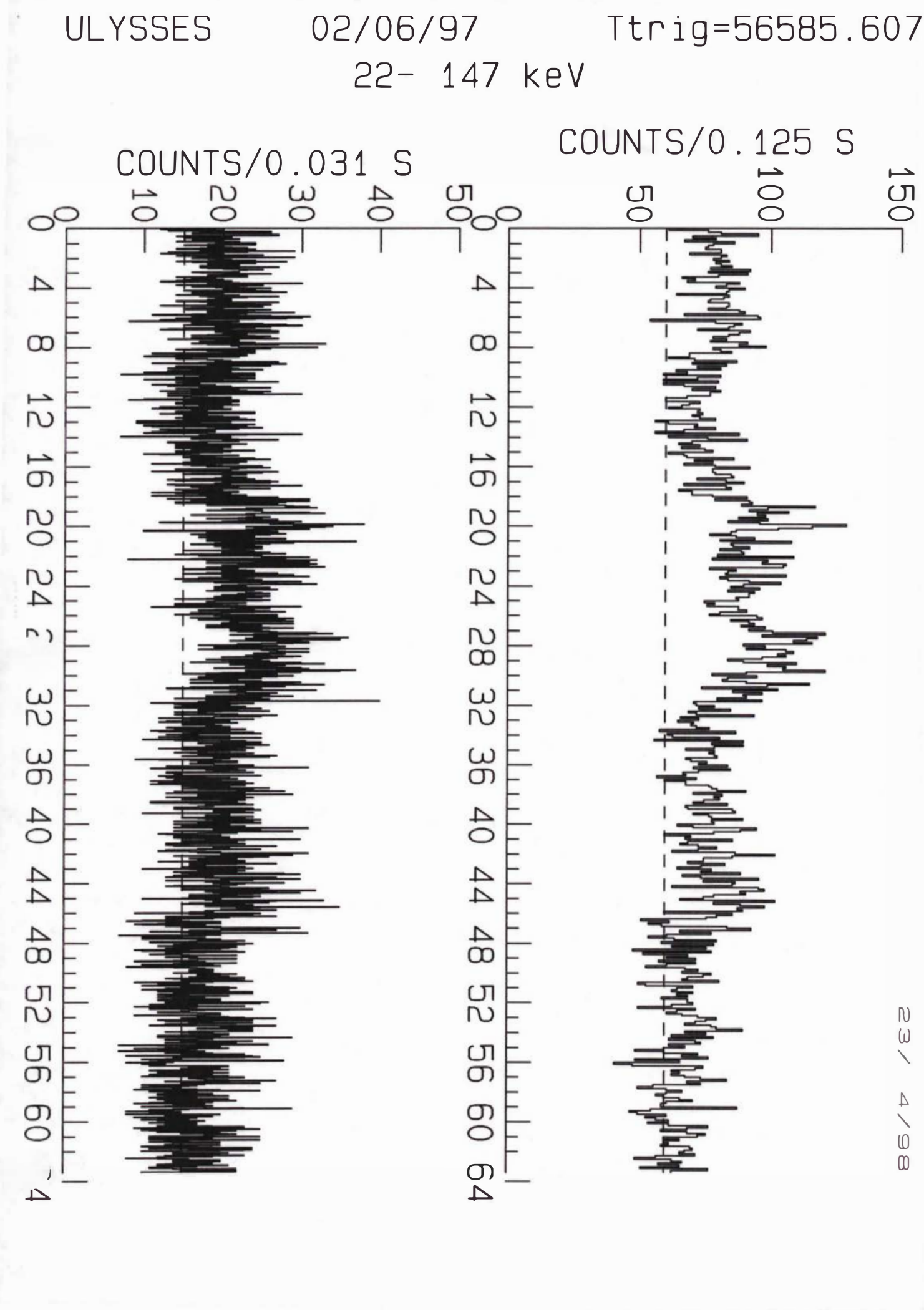



23/ 4/98
ULYSSES 02/06/97 56585.856 BURST SPECTRAL COUNT RATES
128-147 keV
101-128 keV
73-101 keV
46- 73 keV
18- 46 keV
4- 18 keV
COUNTS/S
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 2/ 6/97 56412.014 23/ 4/98
300
200
100
0
C/ 0.25000 S
ULYSSES RT
166
176
186
196
206
216
226
236
TIME, SECS
ULYSSES

ULYSSES RT-ULYSSES CORRELATION 2/ 6/97 56412.014



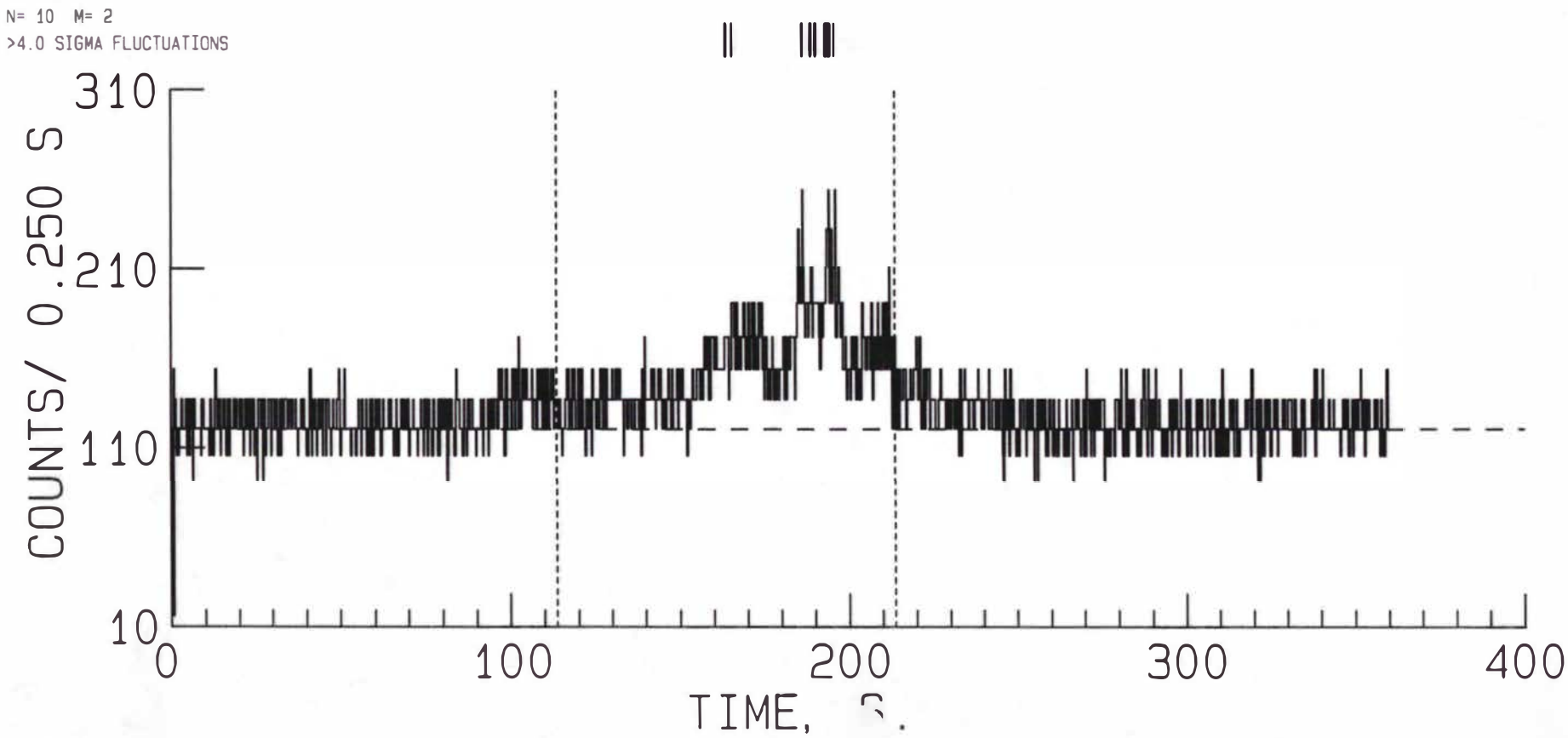

ULYSSES 02/06/97 Ttrig=56585.607
22- 147 keV
COUNTS/0.031 S
COUNTS/0.125 S
23/ 4/98

ULYSSES RT

23/ 4/98

2/ 6/97 56412.016 s

22- 147 keV



LOS ALAMOS
NATIONAL LABORATORY
Nonproliferation & International Security Division
Astrophysics and Radiation Measurement, NIS-2, MS D436
Los Alamos, New Mexico 87545

Telephone: (505) 667-5127
Fax: (505) 665-4414

UNCLASSIFIED
FAX TRANSMITTAL

DATE: 7 Nov. 1997

TO: Kevin Hurley TELEPHONE: 510-643-9173

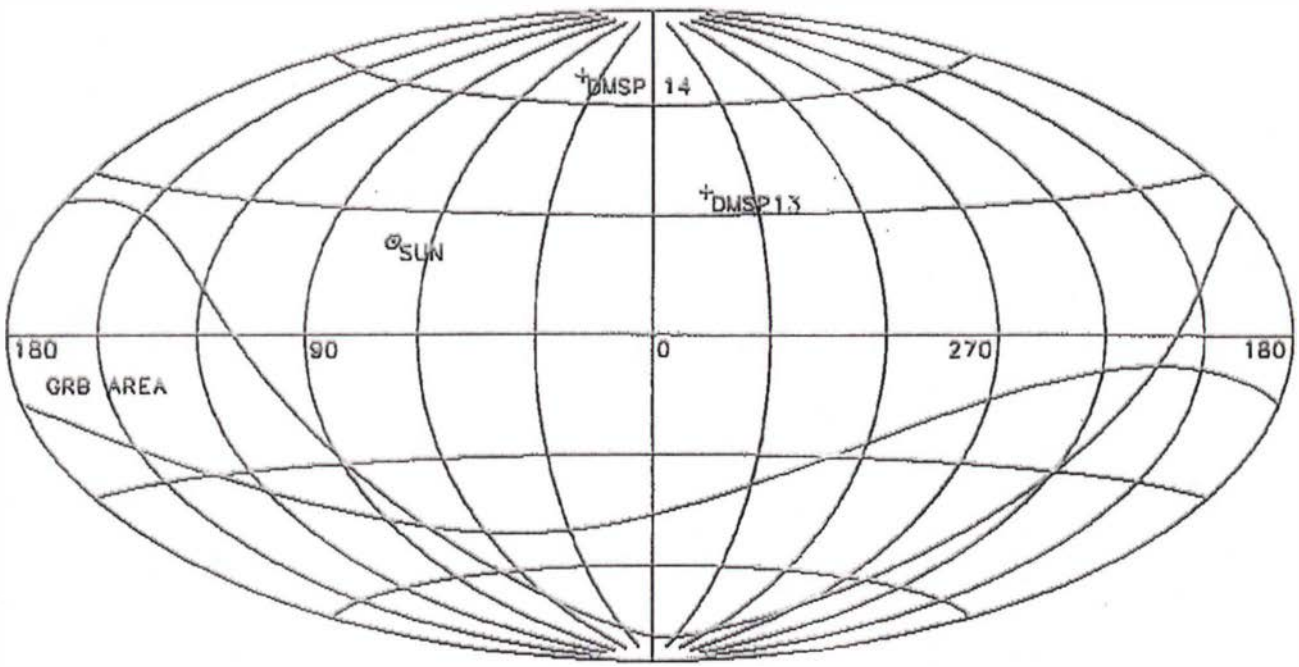
FAX: 510-643-8302

MESSAGE:
Here is a SKYMAP robot shows the area in which GRB970600 presumably lies - determined by DMSP 14 but not by DMSP 13. There is an ambiguity, also, that the brightest area just might explain the events seen by DMSP 14. I hope this & the next diagram with gain triangulation data. Last one hour — Jim

FROM: James Terrell TELEPHONE: 505-667-2044

NUMBER OF PAGES ATTACHED:

If you do not receive all pages transmitted, please contact the Group Office at (505) 667-5127.



DMSP POSITIONS+VIEW, 97/06/02 58952 UT
EQUATORIAL COORDINATES

971106

J. TERRELL ET AL.

From TERRELL@nisdp0.lanl.gov Wed Sep 3 15:25 PDT 1997
From: TERRELL@nisdp0.lanl.gov
Date: Wed, 3 Sep 1997 16:25:30 -0600
To: khurley@sunspot.ssl.berkeley.edu, bonnard@rosserv.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, chryssa.kouveliotou@msfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, henze@fender.msfc.nasa.gov
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: DMSP GRB DETECTIONS: 970602,970629,970715,970721

From: jterrell@lanl.gov (James Terrell) 970903
To: khurley@sunspot.ssl.berkeley.edu,butterworth@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it,cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in,scott@rosserv.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov,yosimori@rikkyo.ac.jp,
bonnard@rosserv.gsfc.nasa.gov,chryssa.kouveliotou@msfc.nasa.gov,
henze@fender.msfc.nasa.gov
Subj: DMSP GRB detections: 970602,970629,970715,970721

DMSP14 was triggered by the GRB of 970602 (previously reported), with peak counts occurring at 58916.7, 58944.3, and 58952.0 sec UT. The last time agrees well with 58953 UT as reported from Konus.

DMSP13 detected a weak GRB on 970629 with peak at 14429.0 UT, apparently the same as the burst detected by Konus at 14424, and by Ulysses at 15960 UT.

DMSP13 detected a GRB on 970715 with peak at 51693.6 sec UT, lasting <4 sec. DMSP14 was unable to detect this or the previous GRB, as it was in the north radiation belt. These detections evidently correspond to the GRB reported from Konus with trigger at 51674.3 and peak 20 sec later, and by Ulysses at 54060 UT).

?13 detected a hard GRB on 970721, with peaks at 84671.9 and 84691.9 UT, lasting <8 and <10 sec respectively, evidently the same as the GRB trigger at 84667.1 reported from Konus, and by Ulysses at 81720 UT.
DMSP14 detected the same GRB, with peaks at 84672.1 and 84692.1 UT (2-sec resolution), lasting <10 sec each. This event was a triggered event for DMSP14, with peak counting rate at 84671.4 UT.

From TERRELL@nisdp0.lanl.gov Tue Jun 24 11:30 PDT 1997
From: TERRELL@nisdp0.lanl.gov
Date: Tue, 24 Jun 1997 12:30:23 -0600
To: khurley@sunspot.ssl.berkeley.edu, bonnard@rosserv.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, chryssa.kouveliotou@msfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, henze@fender.msfc.nasa.gov
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: DMSP GRB DATA

From: jterrell@lanl.gov (James Terrell) 970624
To: khurley@sunspot.ssl.berkeley.edu,butterworth@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it,cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in,scott@rosserv.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov,yosimori@rikkyo.ac.jp,
bonnard@rosserv.gsfc.nasa.gov,chryssa.kouveliotou@msfc.nasa.gov,
henze@fender.msfc.nasa.gov
Subj: DMSP GRB detections: GRB 970218, 970421, 970602

DMSP 13 did not detect the GRB of 961219 reported by Ulysses at 70920 UT.

DMSP 13 detected a GRB on 18 Feb 1997 with peak at 51001.0 UT, lasting <6sec. This is evidently the GRB detected by Ulysses, and by Konus at 50996.1 UT.

DMSP 13 detected a GRB on 21 April at 25691.6 UT, with other peaks at 25711.6 and 25721.6 UT, lasting 20 sec. This apparently corresponds to the GRB detected by Ulysses at 24420 UT.

DMSP 14 was launched 970404, and data has been obtained starting 970428.

DMSP 14 detected a GRB event on 2 June 1997 with peaks at 58917.0 and 58953.0 UT
other times, lasting 60 seconds. This apparently corresponds to the GRB detected at 56580 UT by Ulysses. The burst was strong and very hard. Trigger data was obtained.
DMSP 13 did not detect this GRB. --Jim (leaving for Alaska now)

From kraken@rosserv.gsfc.nasa.gov Thu Jun 5 12:43 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 5 Jun 1997 15:45:27 -0500
    khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: GRB's seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

TGRS has seen at least one out of the three Ulysses bursts that you've recently sent out email on. Here are the specifics:

Ulysses burst:	TGRS sees?	TGRS characteristics
June 1, 1997 00:17	NO	
June 1, 1997 19:33	NO BUT	3s;180 cts/s event found in waiting mode data (100-300 keV) at 15 sigma signif. It was not seen in 35-100 keV window therefore not "official" detection.
June 2, 1997 15:43	YES!	TGRS burst # 564 125s; 265cts/s peak in 100-300 keV band. 120s; 150 cts/s peak in 35-100 keV band.

Take care,

Pete

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

Konus report on recent Ulysses events not seen by BATSE

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

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

From WOODSP@ssl.msfc.nasa.gov Wed Jun 4 08:18 PDT 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 4 Jun 1997 10:17:58 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6248

TIME: TJD=0601 SECONDS=46281

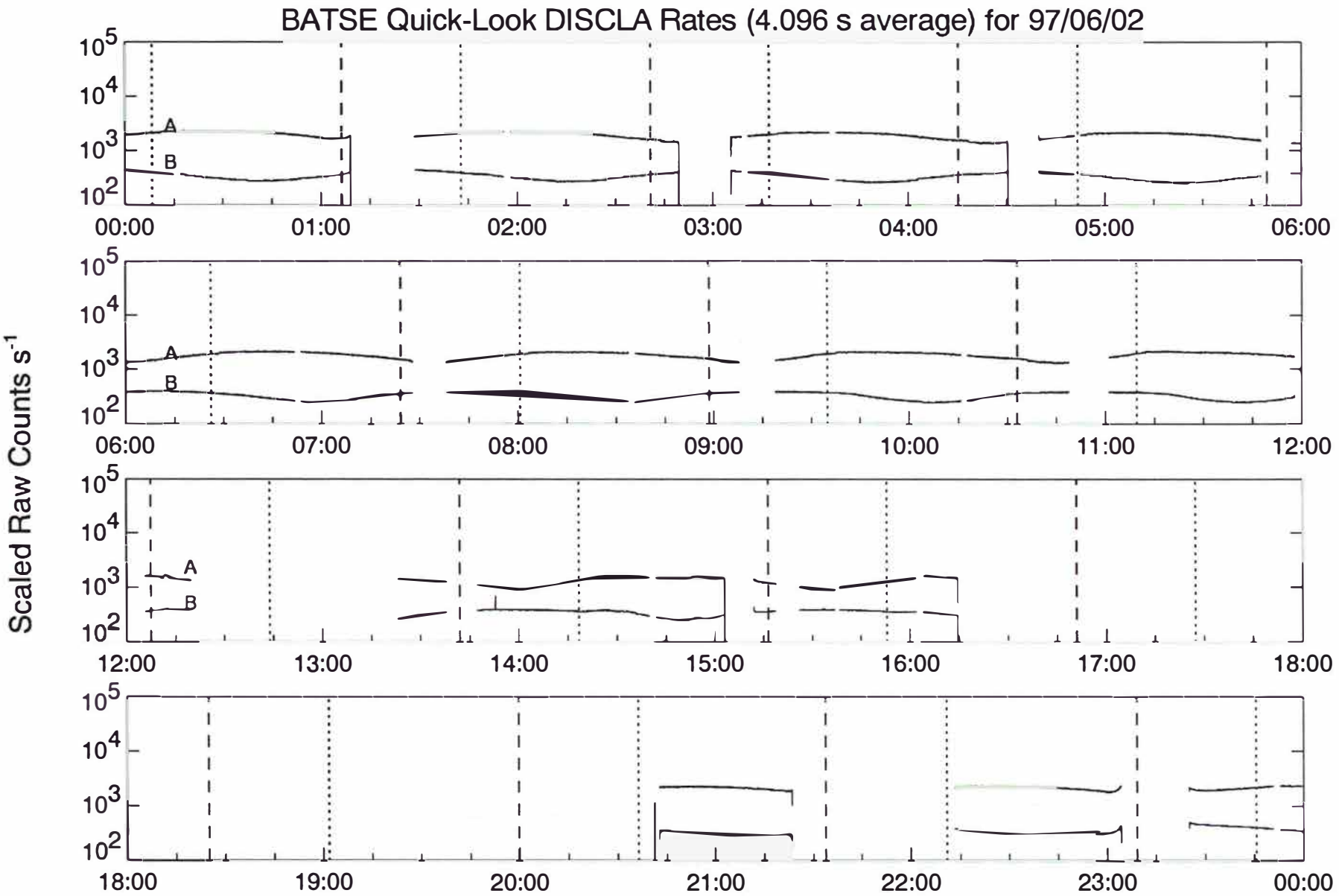
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

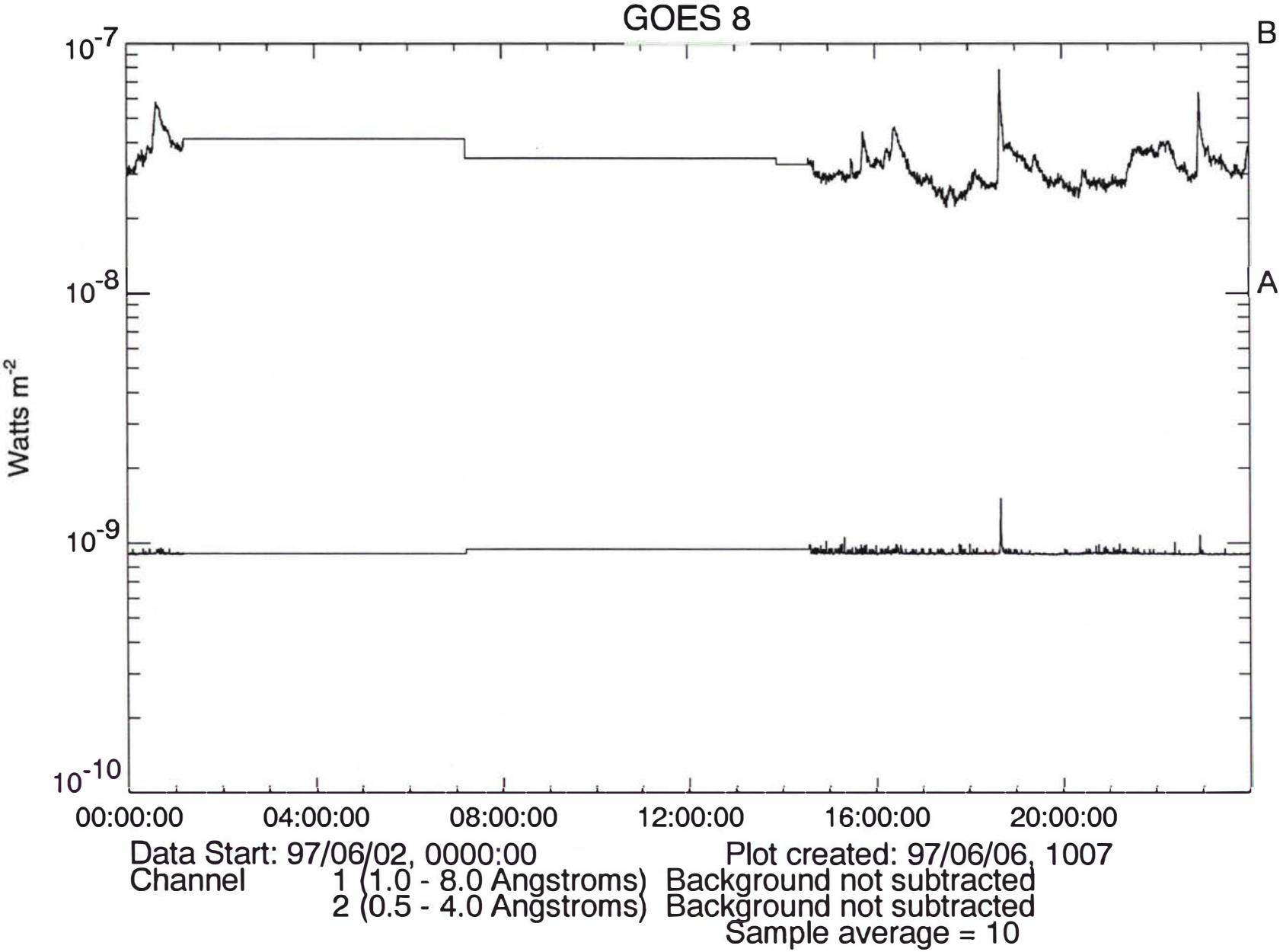
COMMENTS:
PARTICLE EVENT.



Current Time: 97/06/06, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

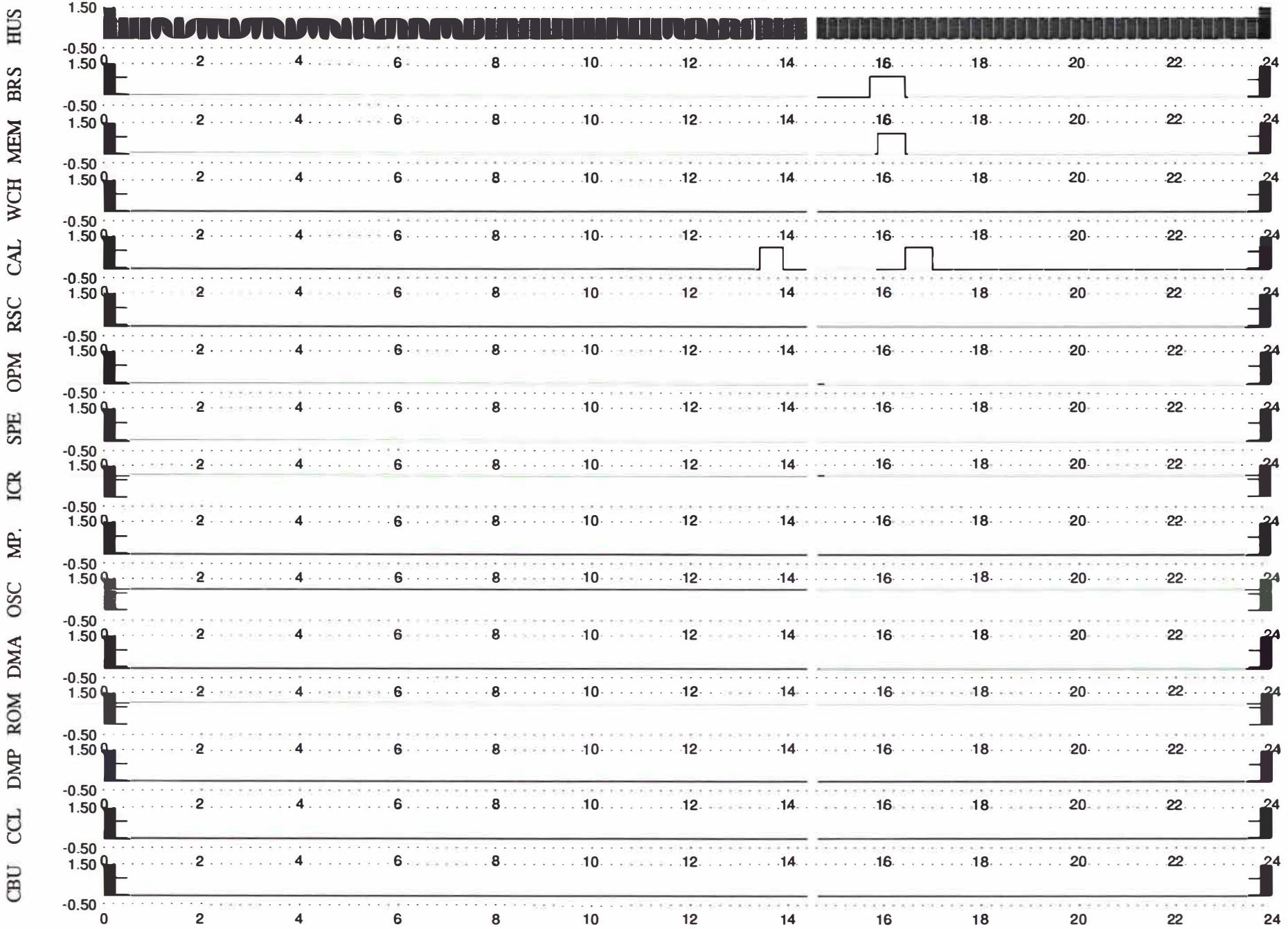
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare


GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/02, 0000:00
Plot created: 97/06/06, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 153, year 1997 to day 153, year 1997 10/13/97

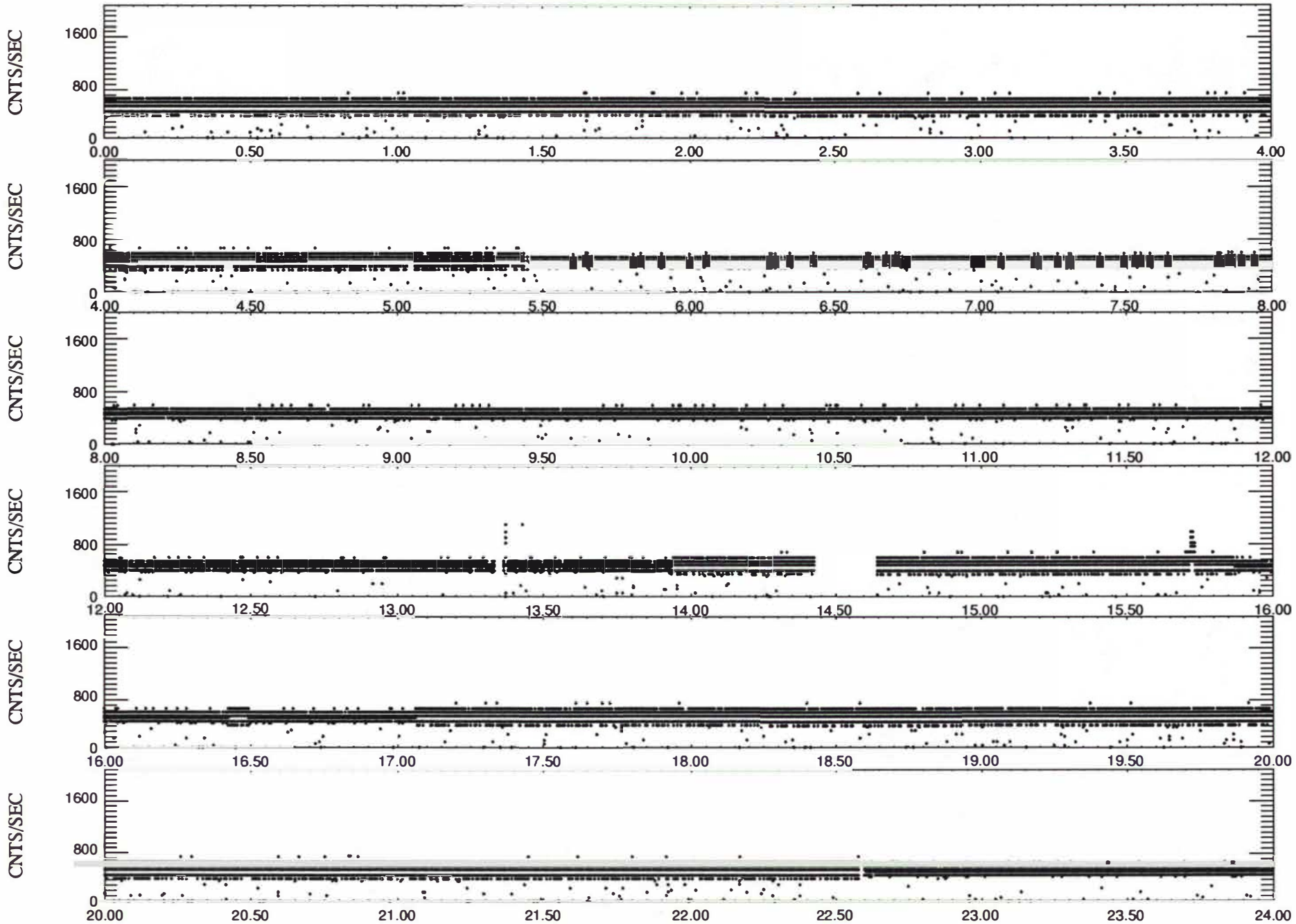
BURST NUMBER 3



UNIV AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 153, year 1997 to day 153, year 1997 10/13/97

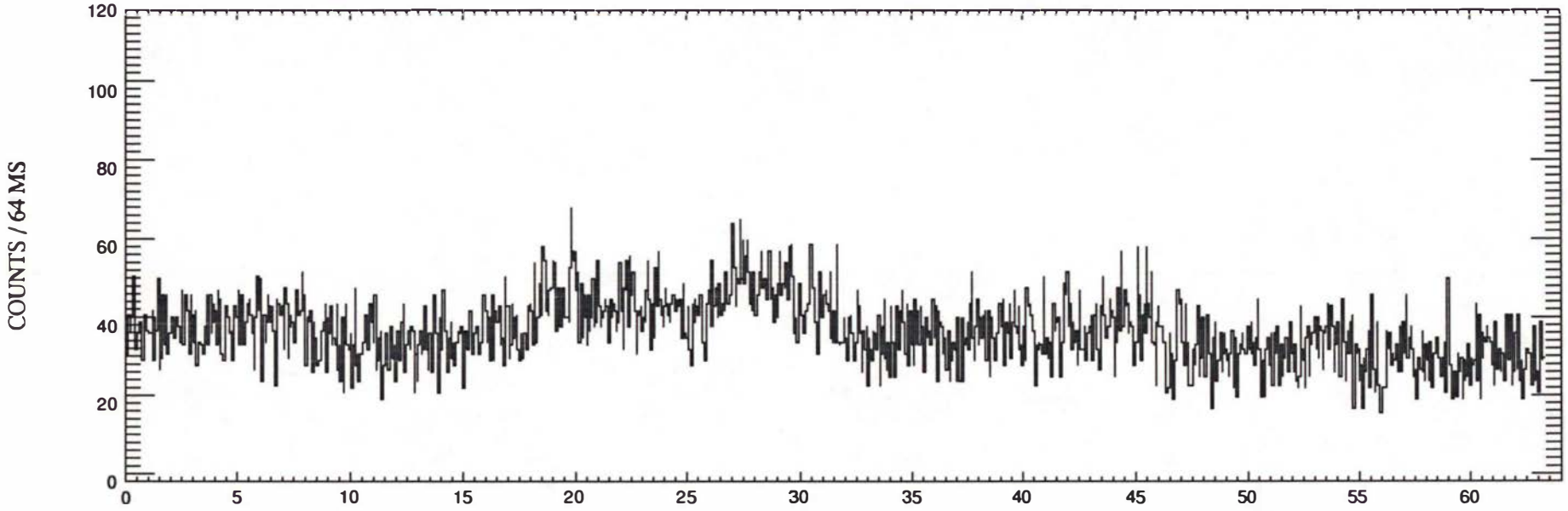
CALIBRATION DATA INCLUDED

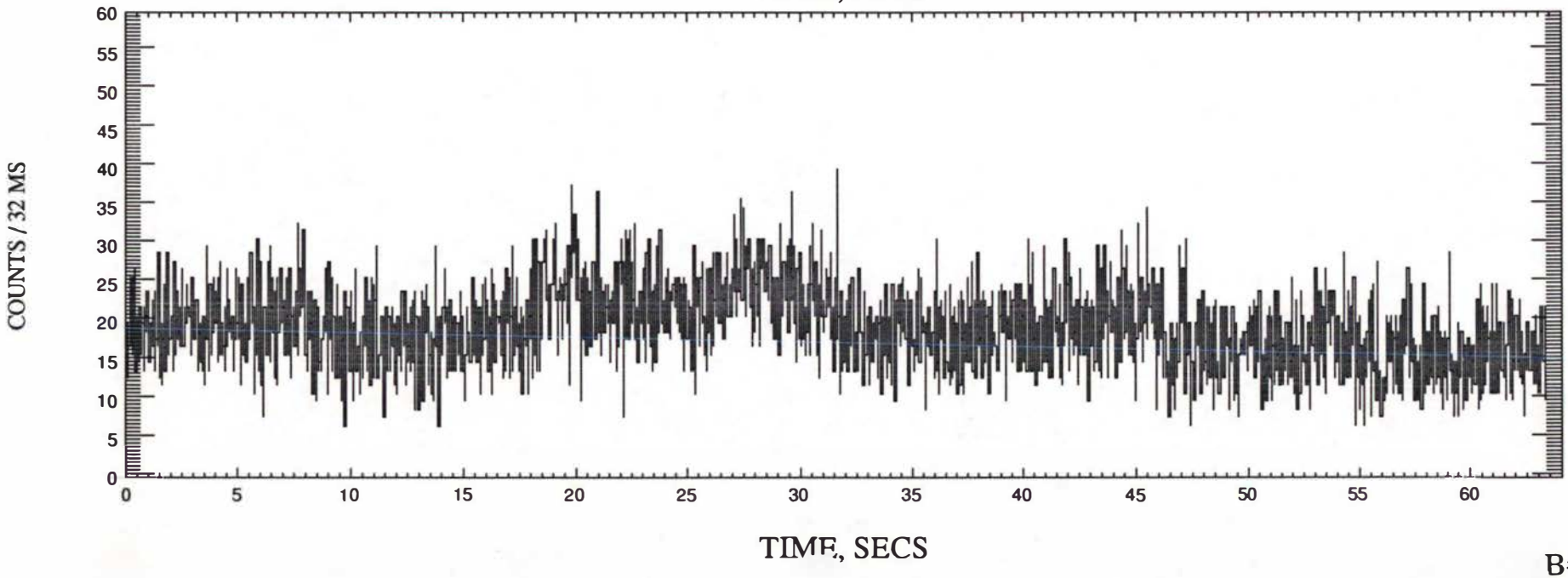


UNIV 'AL TIME

HUS 2A TRIGGERED DATA EDR day 153, year 1997 10/13/97

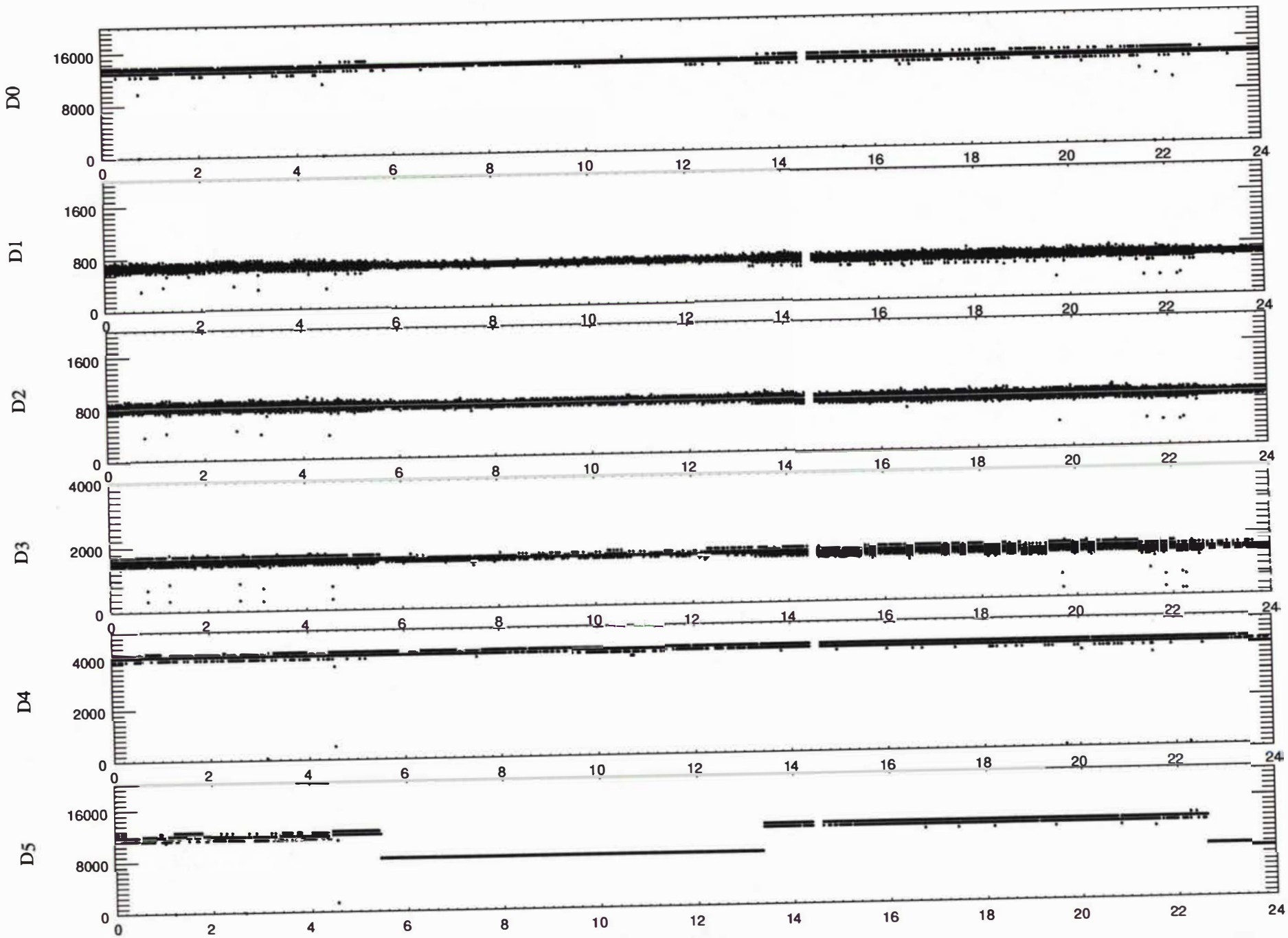
Burst Counter 3 at UT=15.718293266296 h=56585.856 s 15:43:05.856





B# 1

HUS 2B COUNTS / SEC EDR day 153, year 1997 to day 153, year 1997 10/13/97



From SURASAK@ssl.msfc.nasa.gov Thu Jun 5 11:16 PDT 1997
Date: Thu, 5 Jun 1997 13:16:21 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 6249

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

 BATSE BURST #     6249
 EVENT OF 1997 JUN  3 DAY OF YEAR=154
 EVENT CROSSING TIME AT BATSE      : 35345. S. OR 09:49:05.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 105.000  -14.000
 BATSE PEAK COUNTING RATE:   3900    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  3/ 6/  97 IS:
 RA=  151.185 DEC=    29.149 DIST=     5.345 AU
 BATSE-ULYSSES DISTANCE =  799654841. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.96 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1250.59 SECS.
 CROSSING TIME AT ULYSSES    IS 34094. S. OR   09:28:14 +/-  440.05 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  3/ 6/  97 IS:
 RA=  174.463 DEC=     3.305 DIST=     1.048 AU
 MARS-BATSE DISTANCE =  156771520. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.02 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -170.41 SECS.
 CROSSING TIME AT MARS       IS 35175. S. OR   09:46:14 +/-   83.25 SECONDS



                BATSE BURST TRIGGER
NO.: 6249

TIME: TJD=0602 SECONDS=35345

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=59.6   AZIMUTH=16.9   ERROR=1.103 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR~110S. VISIBLE ABOVE 300 KEV.



 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6249   970603   10602   35345     3900   105   -14    110
```

Helio corr removed 18/2/00

Date: Apr 3 '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)?

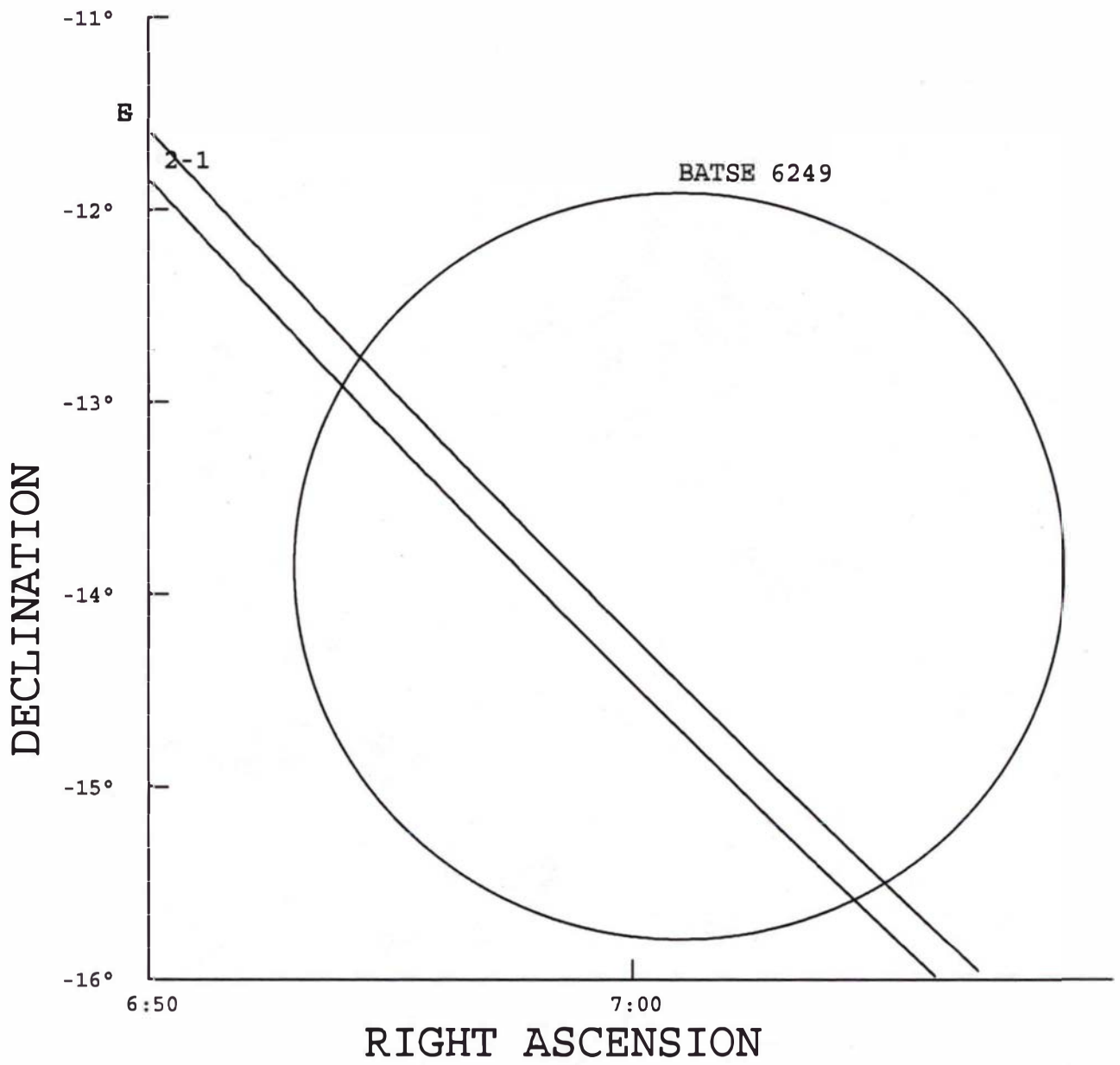
☐ 2000 coordinates used?

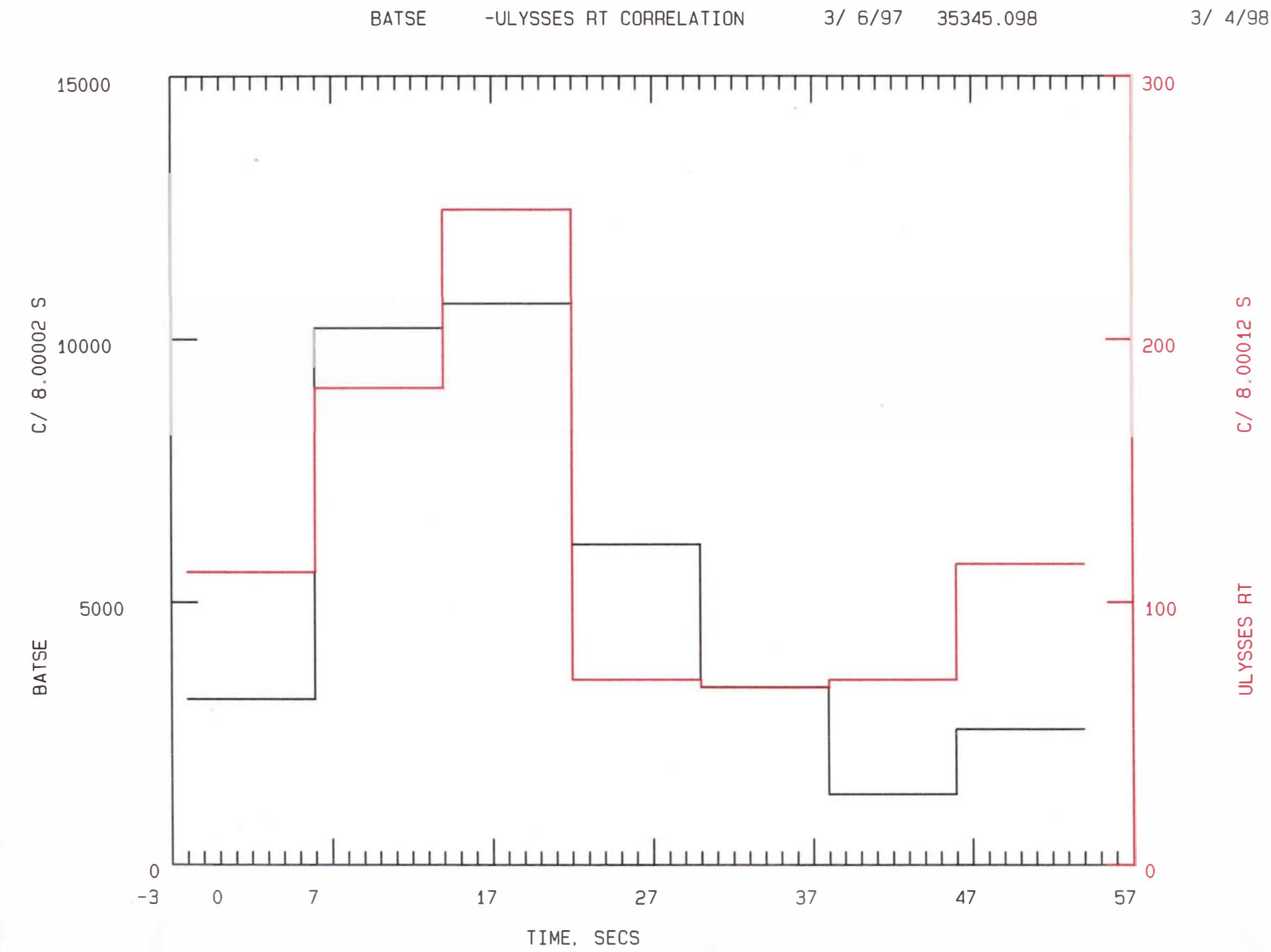
☐ Geocentric time used?

☑ ACCESS database updated?

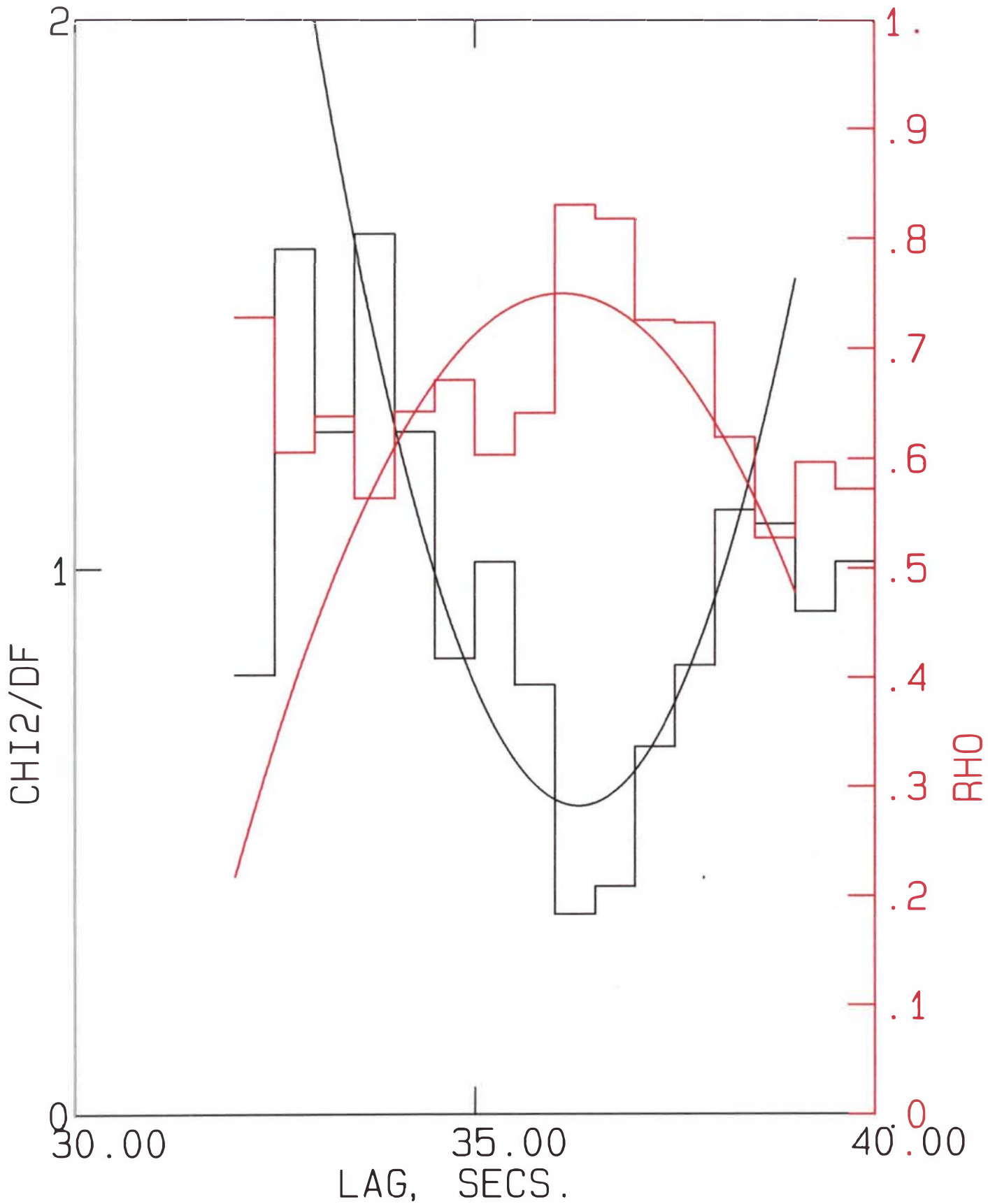
EVENT OF JUN 3, 1997 9:28

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 3/ 6/97 35345.098 3/ 4/98
15000
10000
5000
0
300
200
100
0
C/ 8.00002 S
BATSE
C/ 8.00012 S
ULYSSES RT
-3
0
7
17
27
37
47
57
TIME, SECS

BATSE -ULYSSES RT CORRELATION 3/ 6/97 35345.098

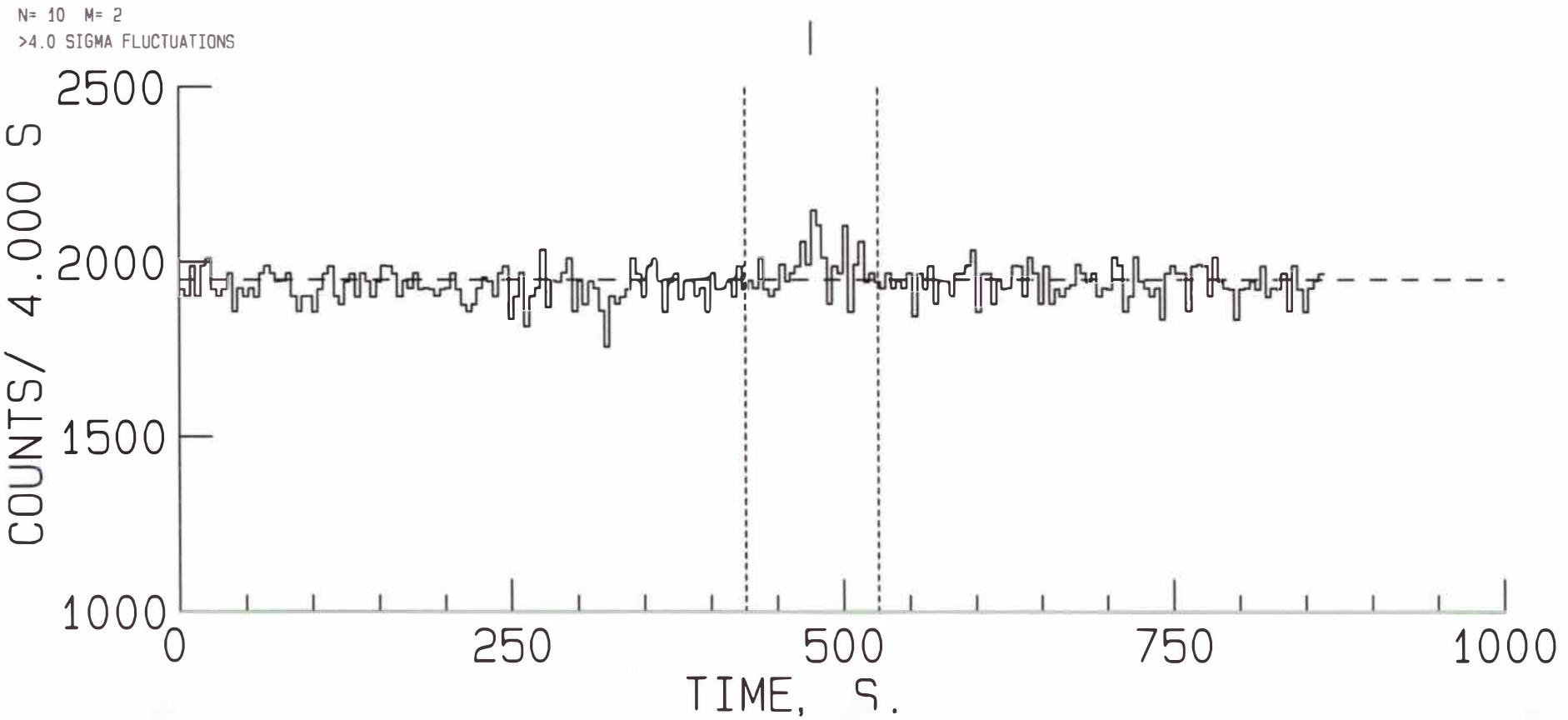


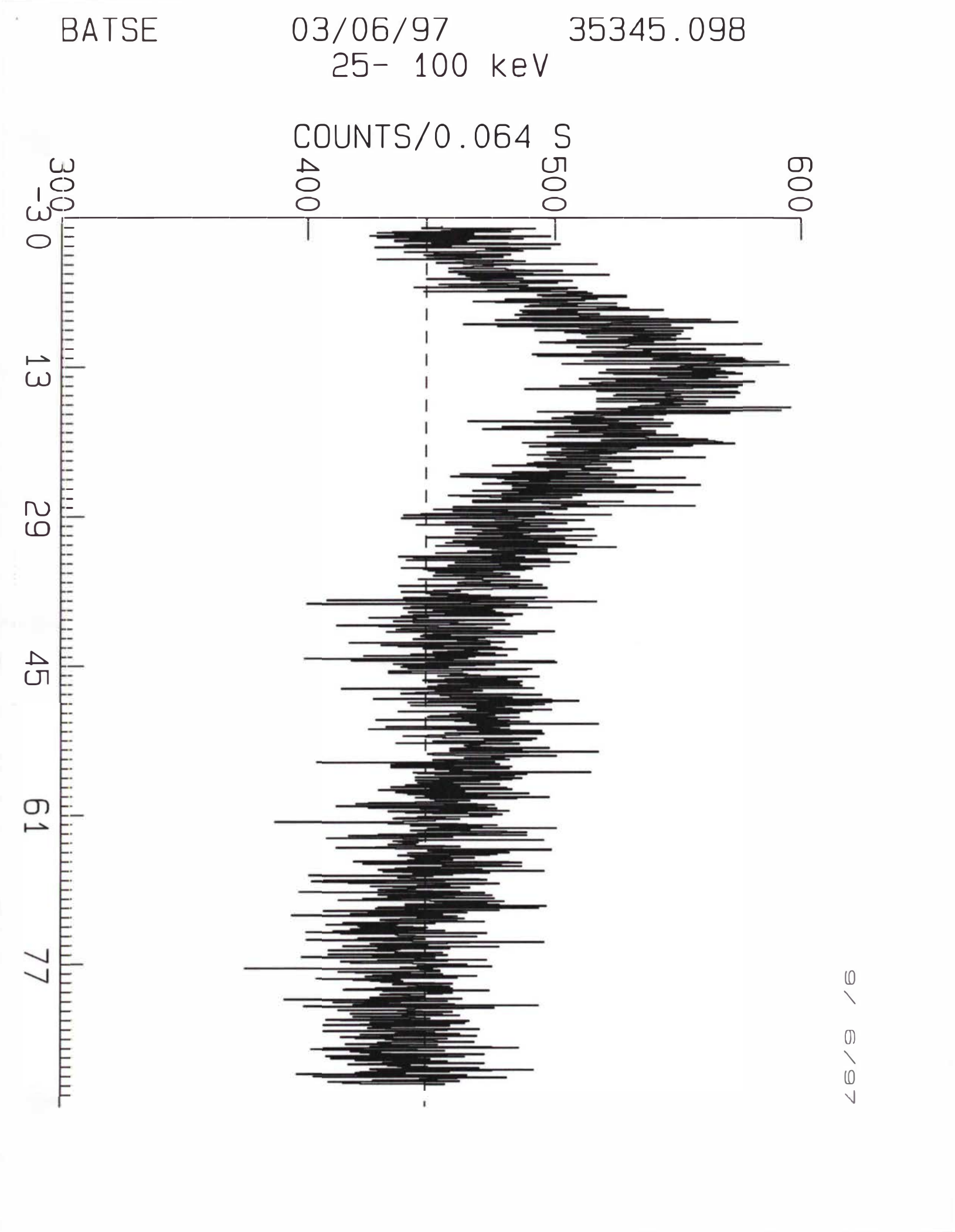
ULYSSES RT 3/ 4/98

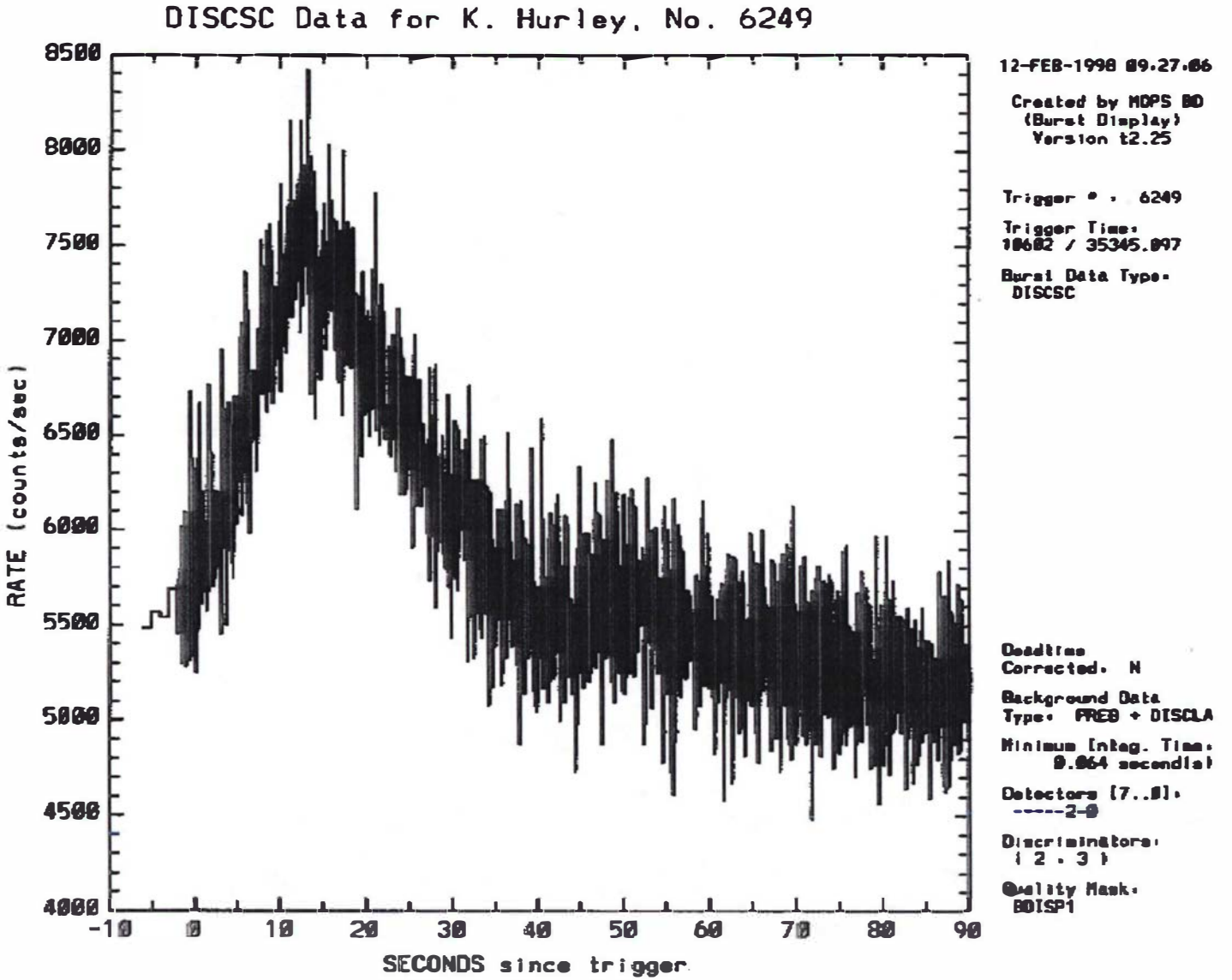
3/ 6/97 33660.261 s

0.500 S INTERVALS REGROUPED BY 8

21- 146 keV




BATSE 03/06/97 35345.098
25- 100 keV
COUNTS/0.064 S
300
400
500
600
-30
0
13
29
45
61
77
9/ 6/97


DISCSC Data for K. Hurley, No. 6249
RATE (counts/sec)
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
12-FEB-1998 09.27.06
Created by MDPS BD
(Burst Display)
Version t2.25
Trigger # : 6249
Trigger Time:
10682 / 35345.097
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
-----2-0
Discriminators:
(2 . 3)
Quality Mask:
BDISP1

From SURASAK@ssl.msfc.nasa.gov Wed Jun 4 13:55 PDT 1997
From: SURASAK@ssl.msfc.nasa.gov
Date: Wed, 4 Jun 1997 15:53:08 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6250

TIME: TJD=0602 SECONDS=42516

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From SURASAK@SSLLES.MSFC.NASA.GOV Thu Jun 5 11:42 PDT 1997
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Thu, 5 Jun 1997 13:42:13 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 6251

****
BATSEARCH PROGRAM
****

BATSE BURST # 6251
EVENT OF 1997 JUN 3 DAY OF YEAR=154
EVENT CROSSING TIME AT BATSE : 84900. S. OR 23:35:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 177.000 62.000
BATSE PEAK COUNTING RATE: 21000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 6/ 97 IS:
RA= 151.210 DEC= 29.080 DIST= 5.355 AU
BATSE-ULYSSES DISTANCE = 801123554. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2133.97 SECS.
CROSSING TIME AT ULYSSES IS 82766. S. OR 22:59:26 +/- 296.85 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 6/ 97 IS:
RA= 174.463 DEC= 3.305 DIST= 1.048 AU
MARS-BATSE DISTANCE = 156771520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -271.47 SECS.
CROSSING TIME AT MARS IS 84629. S. OR 23:30:28 +/- 73.47 SECONDS

BATSE BURST TRIGGER

NO.: 6251

TIME: TJD=0602 SECONDS=84900

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=91.1 AZIMUTH=283.2 ERROR=1.117 DEGREES

COMMENTS:
GRB. TRIPLE PEAKS. DUR~5.5S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6251	970603	10602	84900	21000	177	+62	5.5

Helio corr removed

Date: Apr 3 '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?

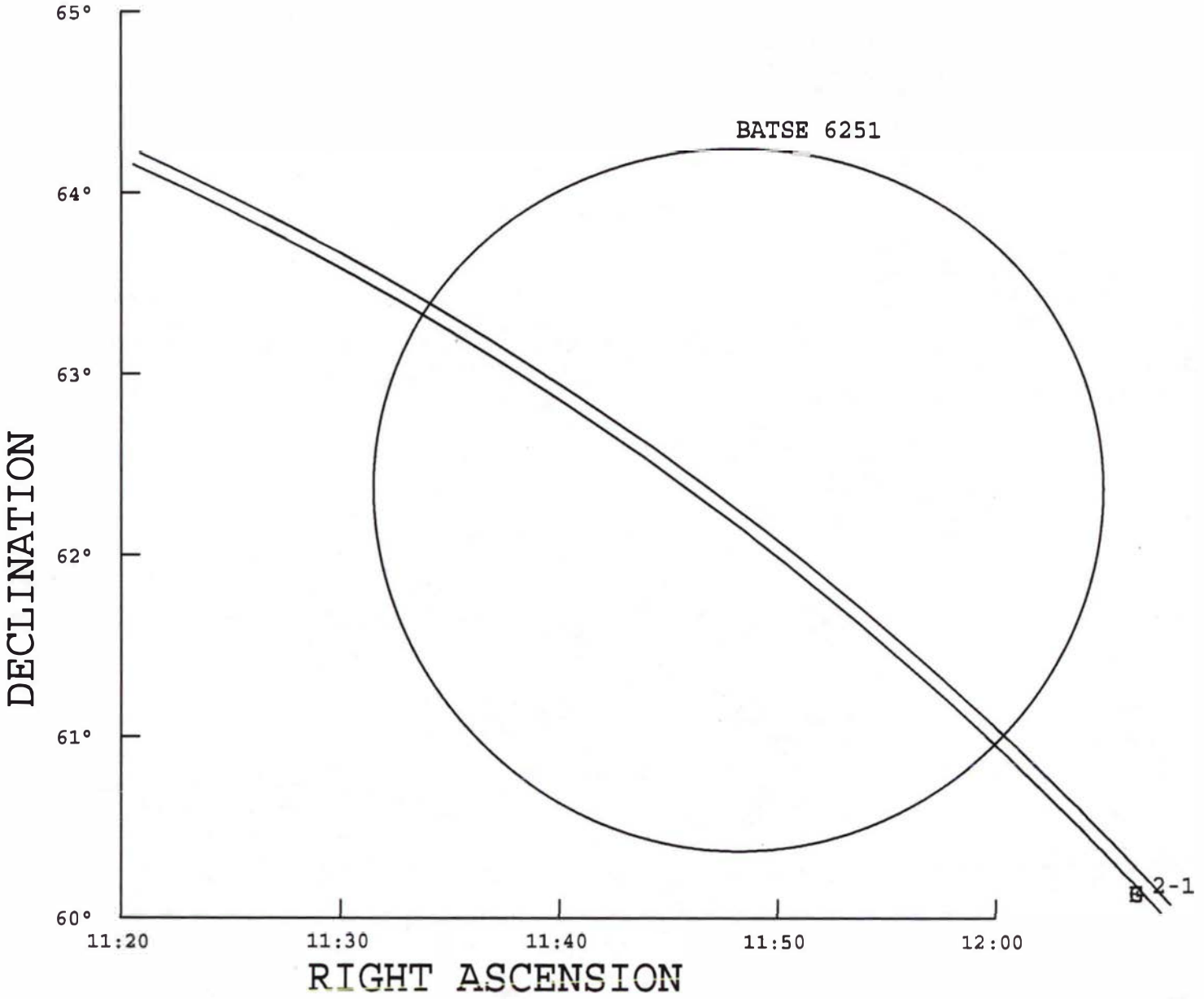
☐ Geocentric time used?

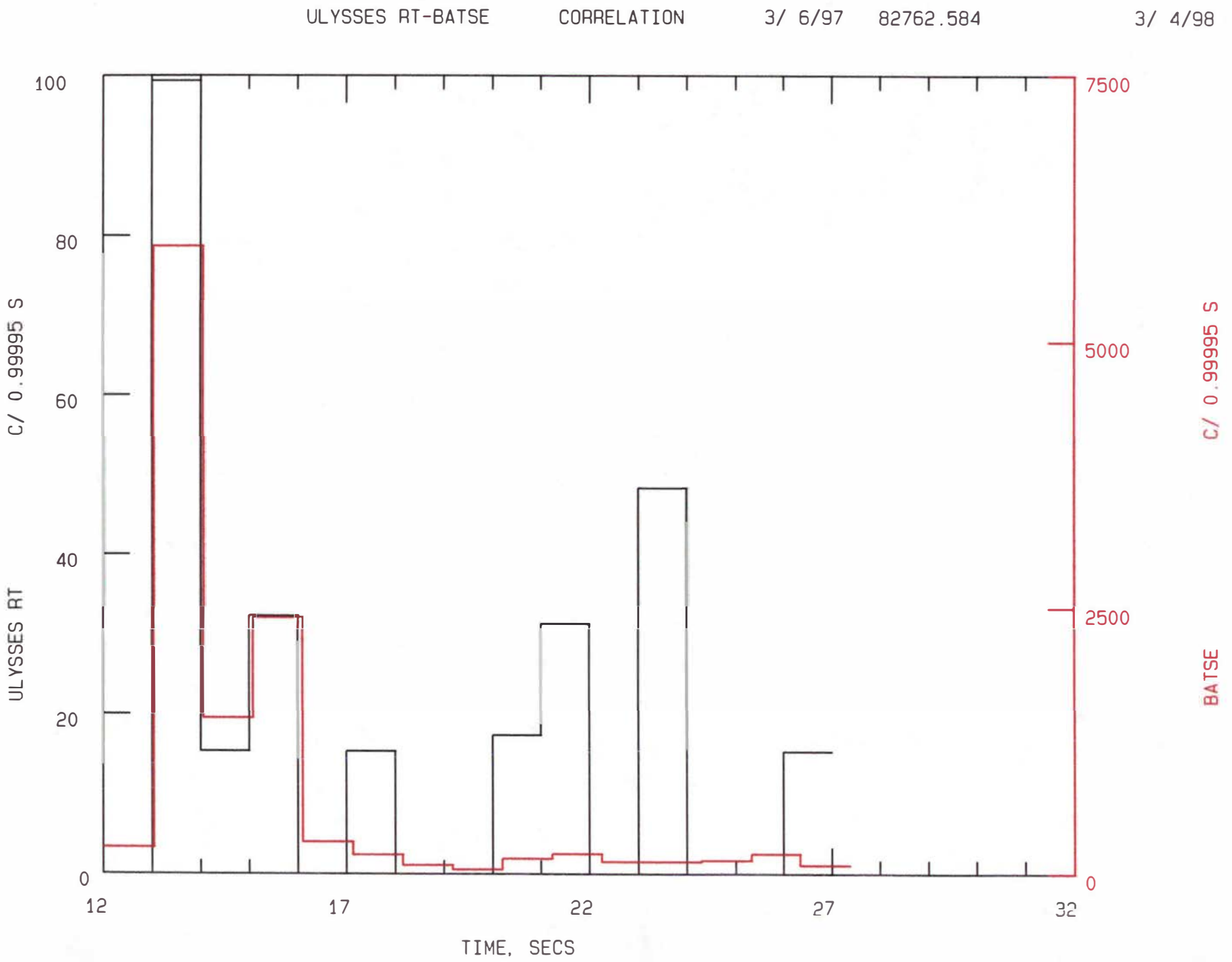
☑ ACCESS database updated?

EVENT OF JUN 3, 1997 22:59

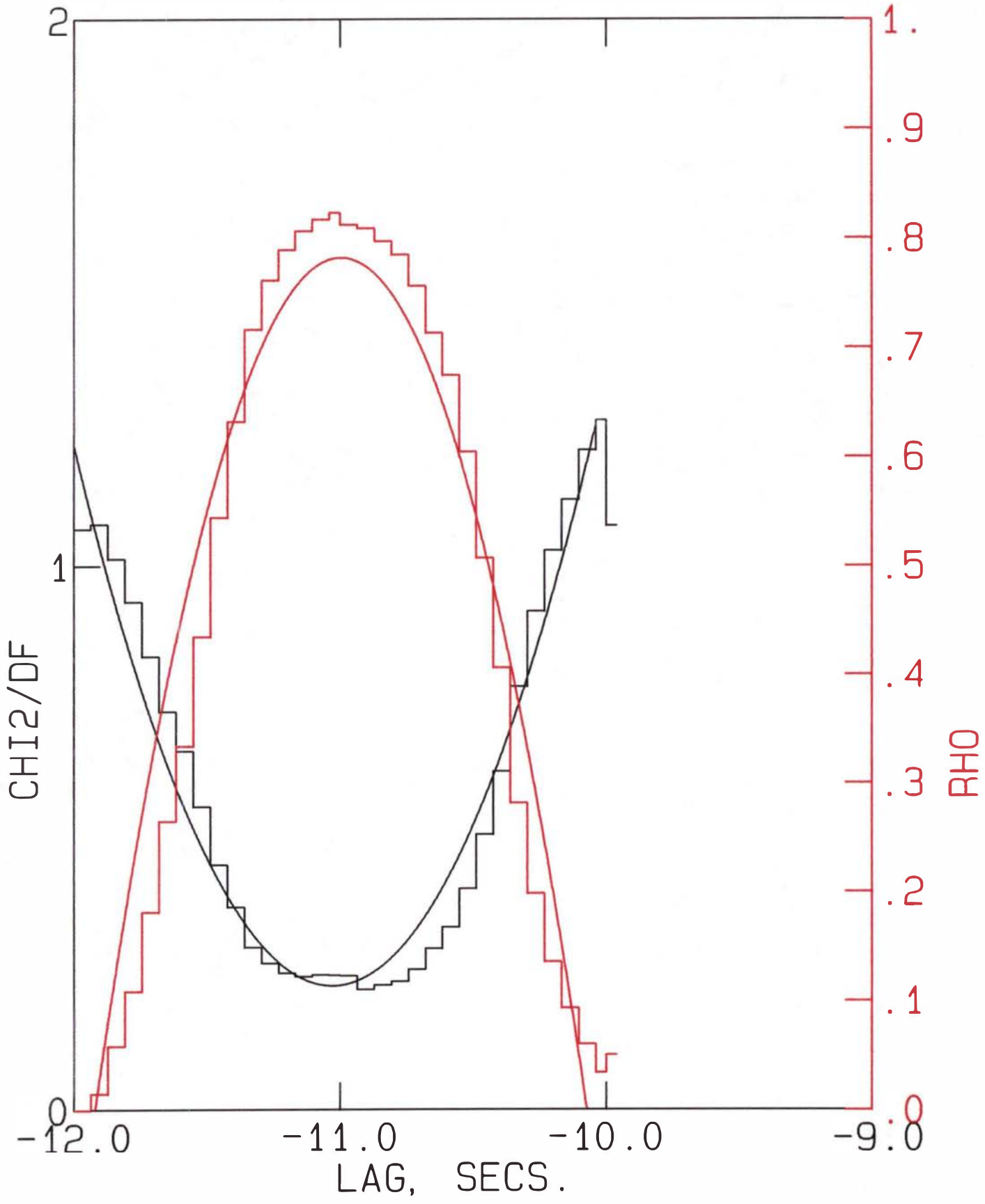
18/ 2/ 0

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




ULYSSES RT-BATSE CORRELATION 3/ 6/97 82762.584 3/ 4/98
100
80
60
40
20
0
C/ 0.99995 S
ULYSSES RT
7500
5000
2500
0
C/ 0.99995 S
BATSE
12
17
22
27
32
TIME, SECS

ULYSSES RT-BATSE CORRELATION 3/ 6/97 82762.584

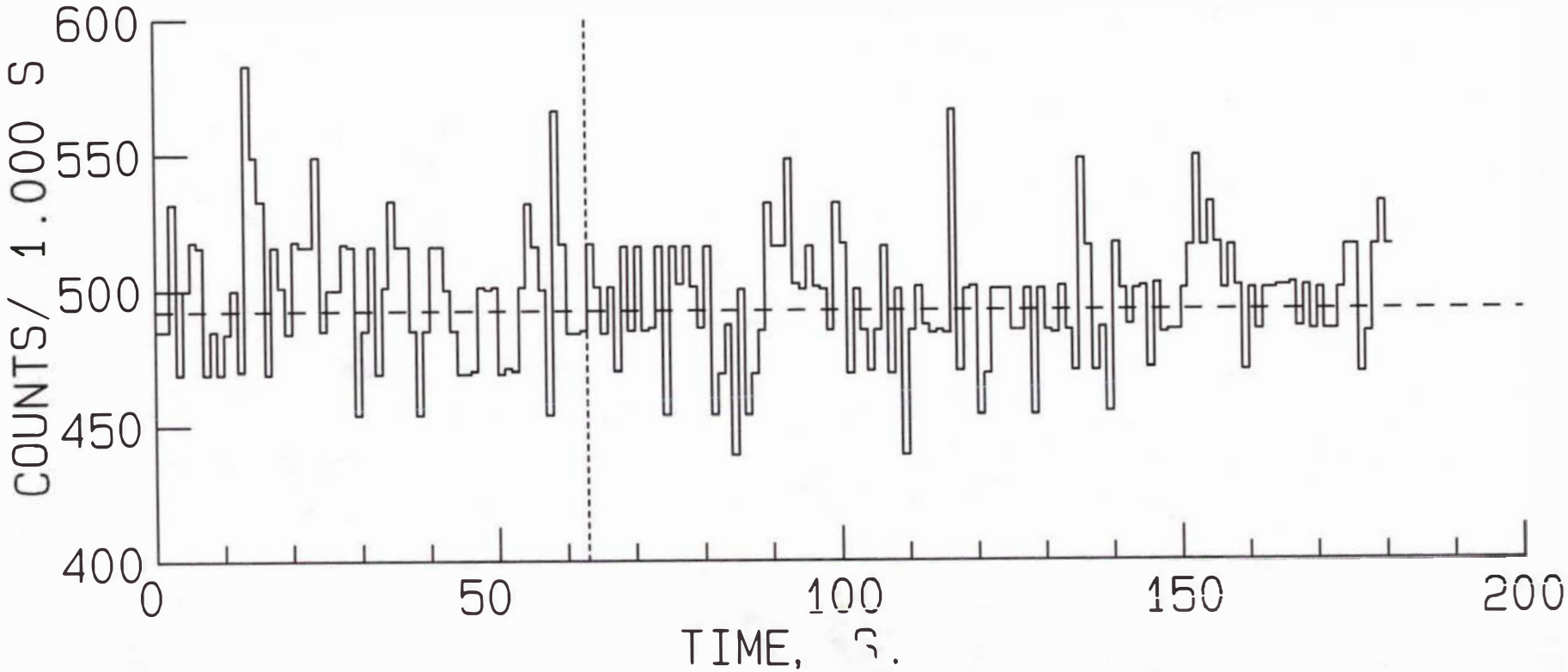


ULYSSES RT 3/ 4/98

3/ 6/97 82762.591 s

0.250 S INTERVALS REGROUPED BY 4

21- 146 keV

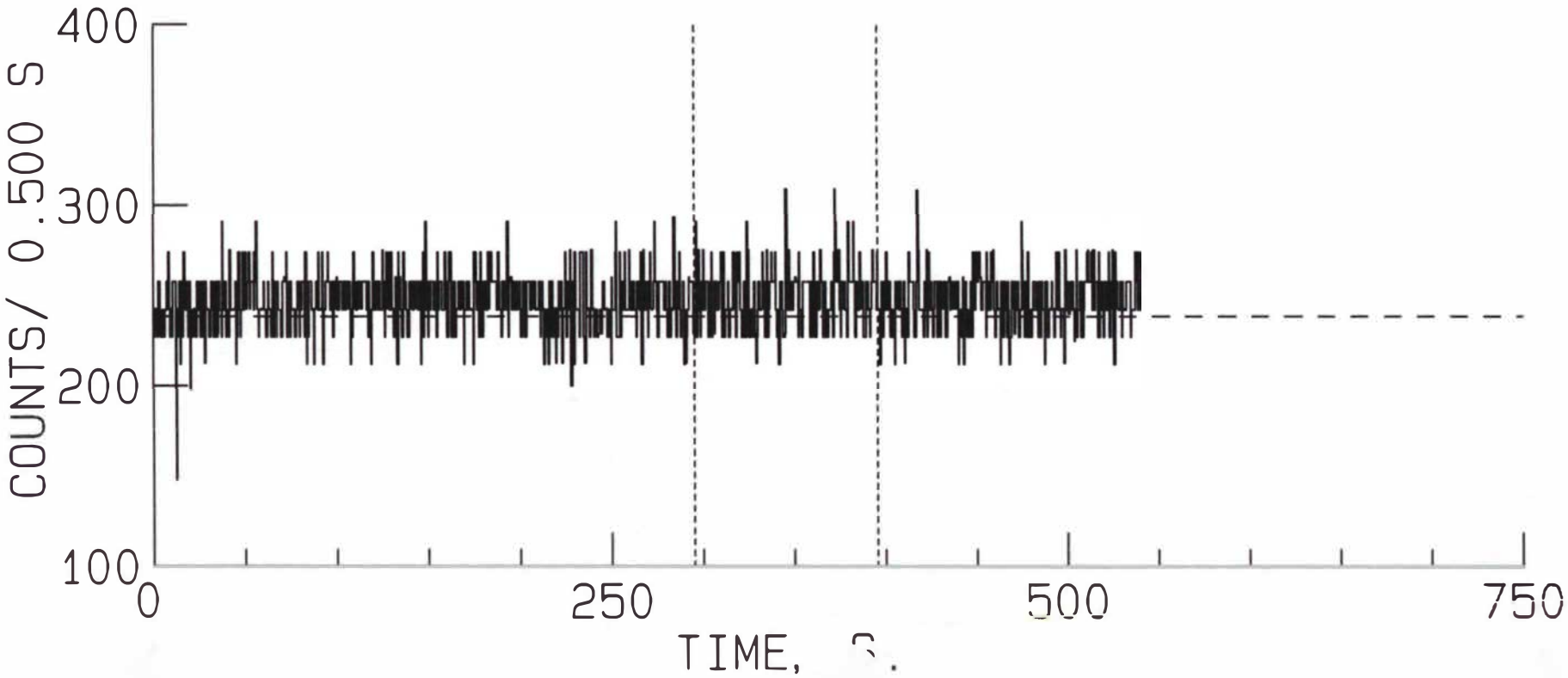


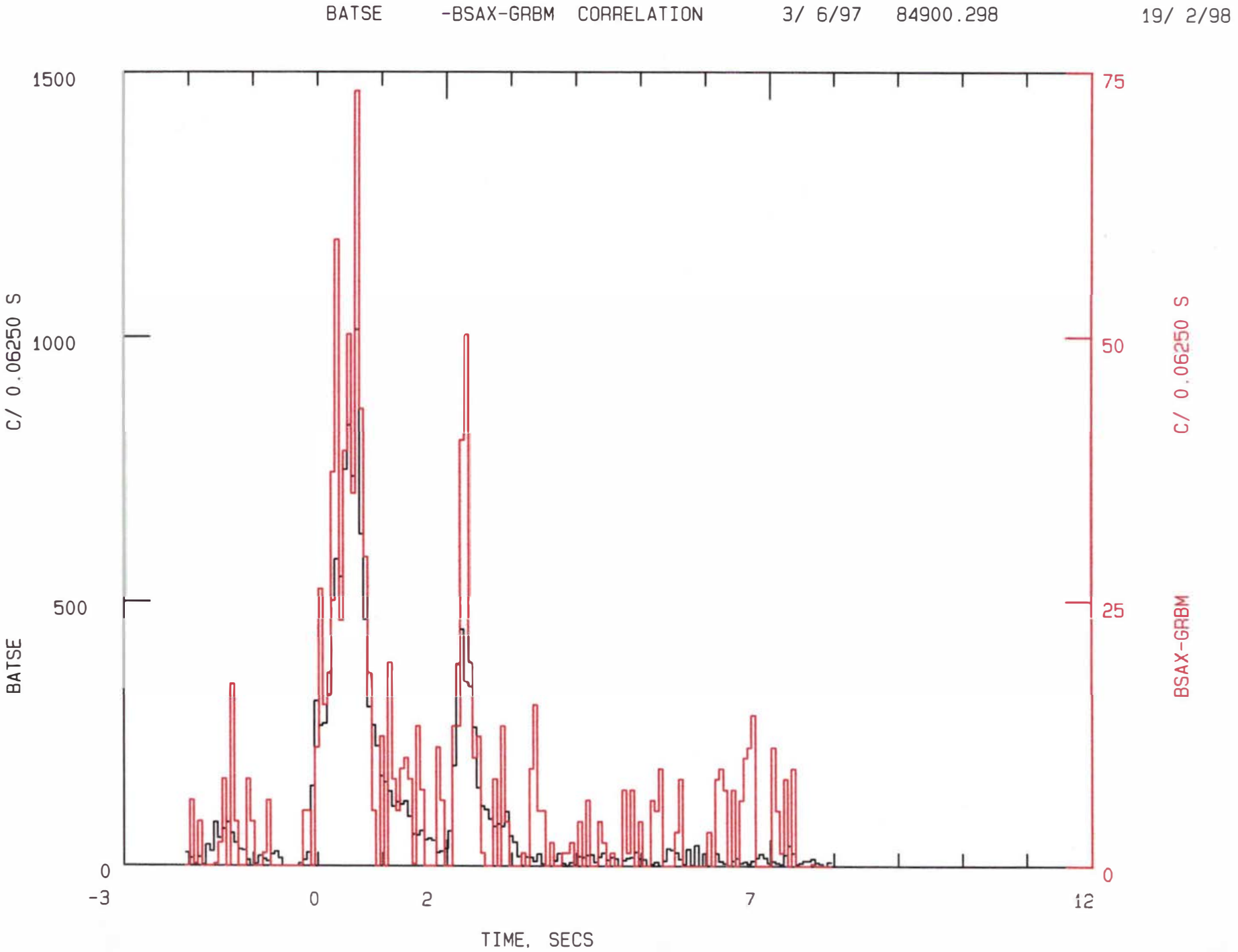
ULYSSES RT 3/ 4/98

3/ 6/97 82404.085 s

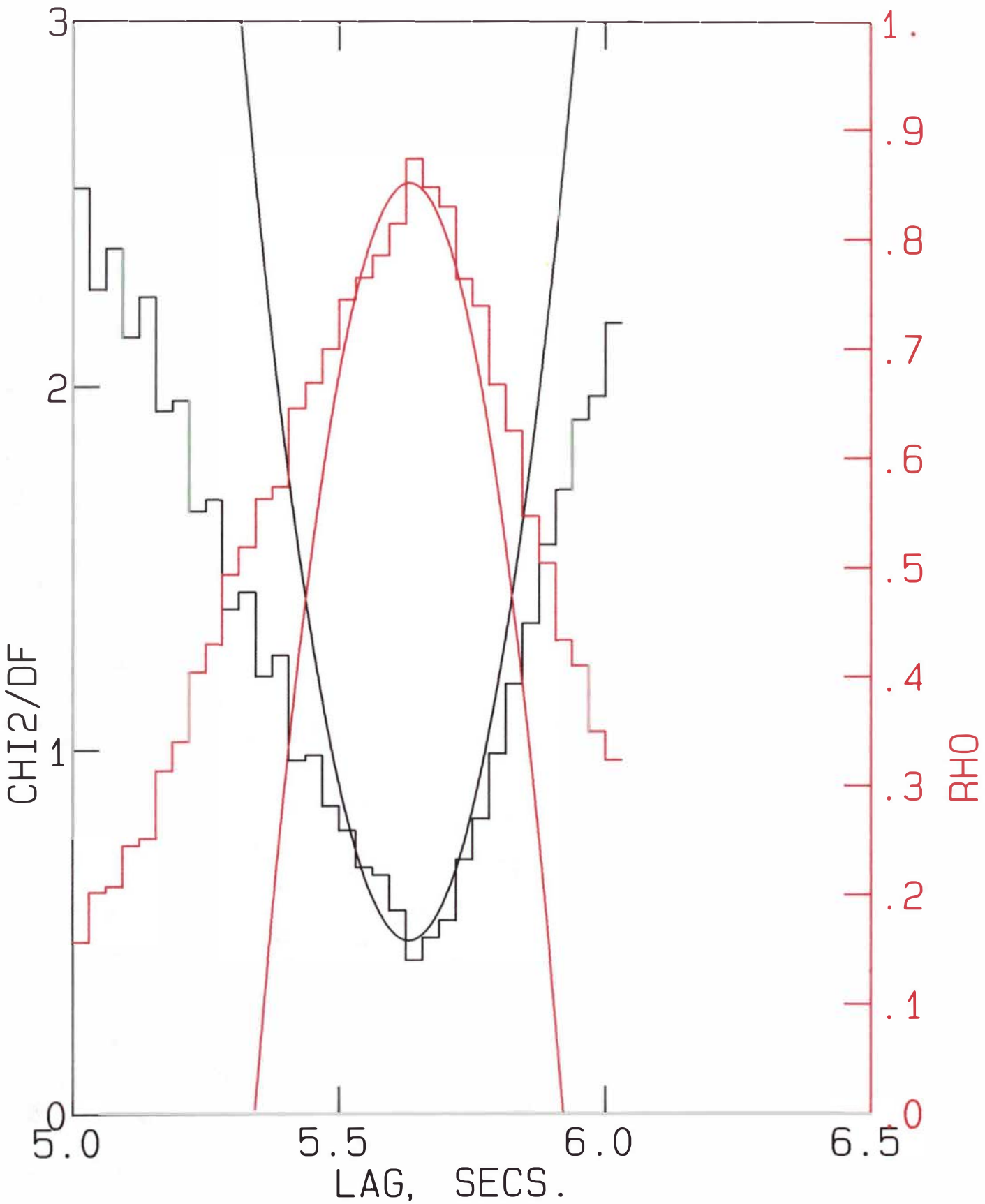
0.250 S INTERVALS REGROUPED BY 2

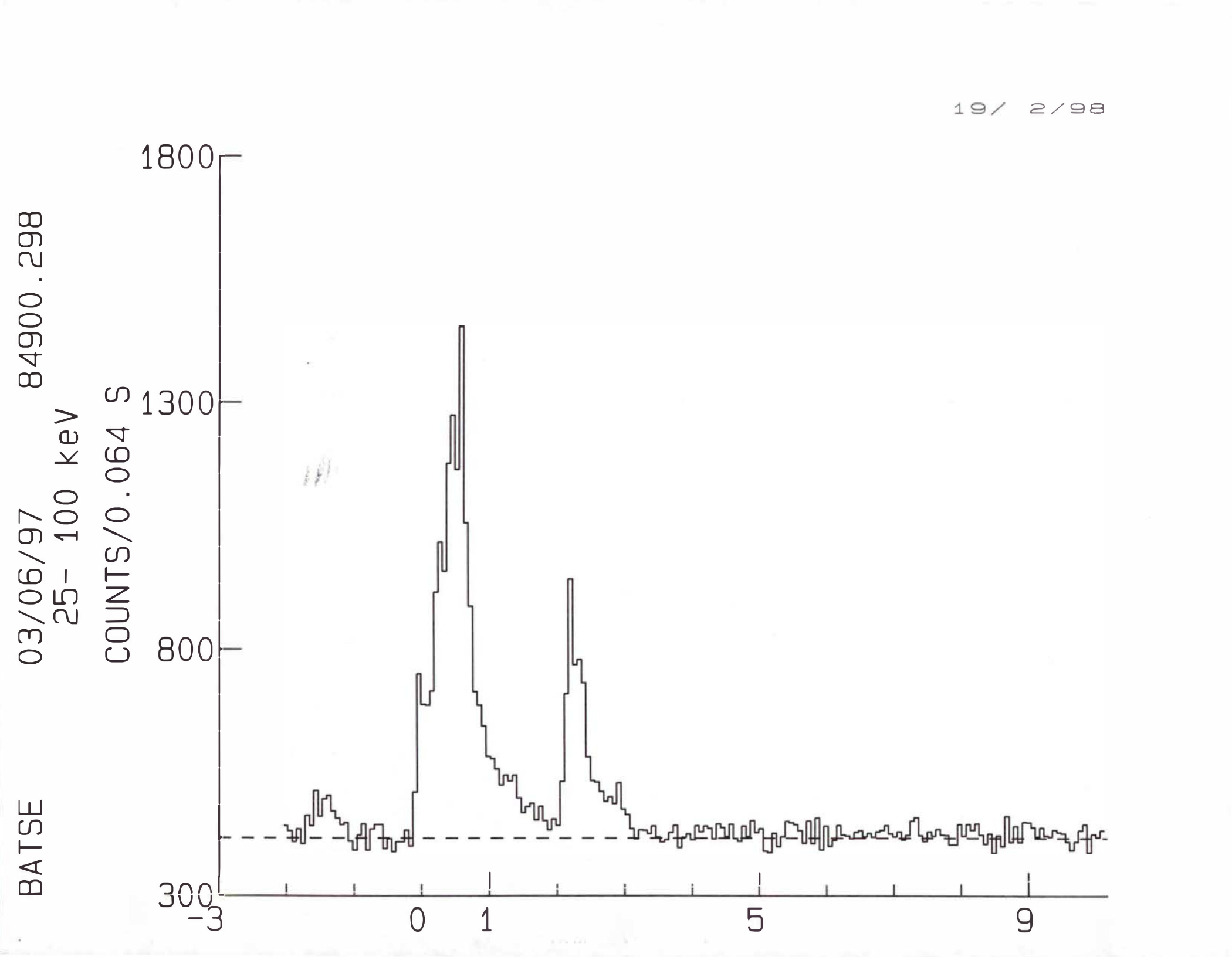
21- 146 keV




BATSE -BSAX-GRBM CORRELATION 3/ 6/97 84900.298 19/ 2/98
1500
1000
500
0
C/ 0.06250 S
BATSE
75
50
25
0
C/ 0.06250 S
BSAX-GRBM
-3
0
2
7
12
TIME, SECS

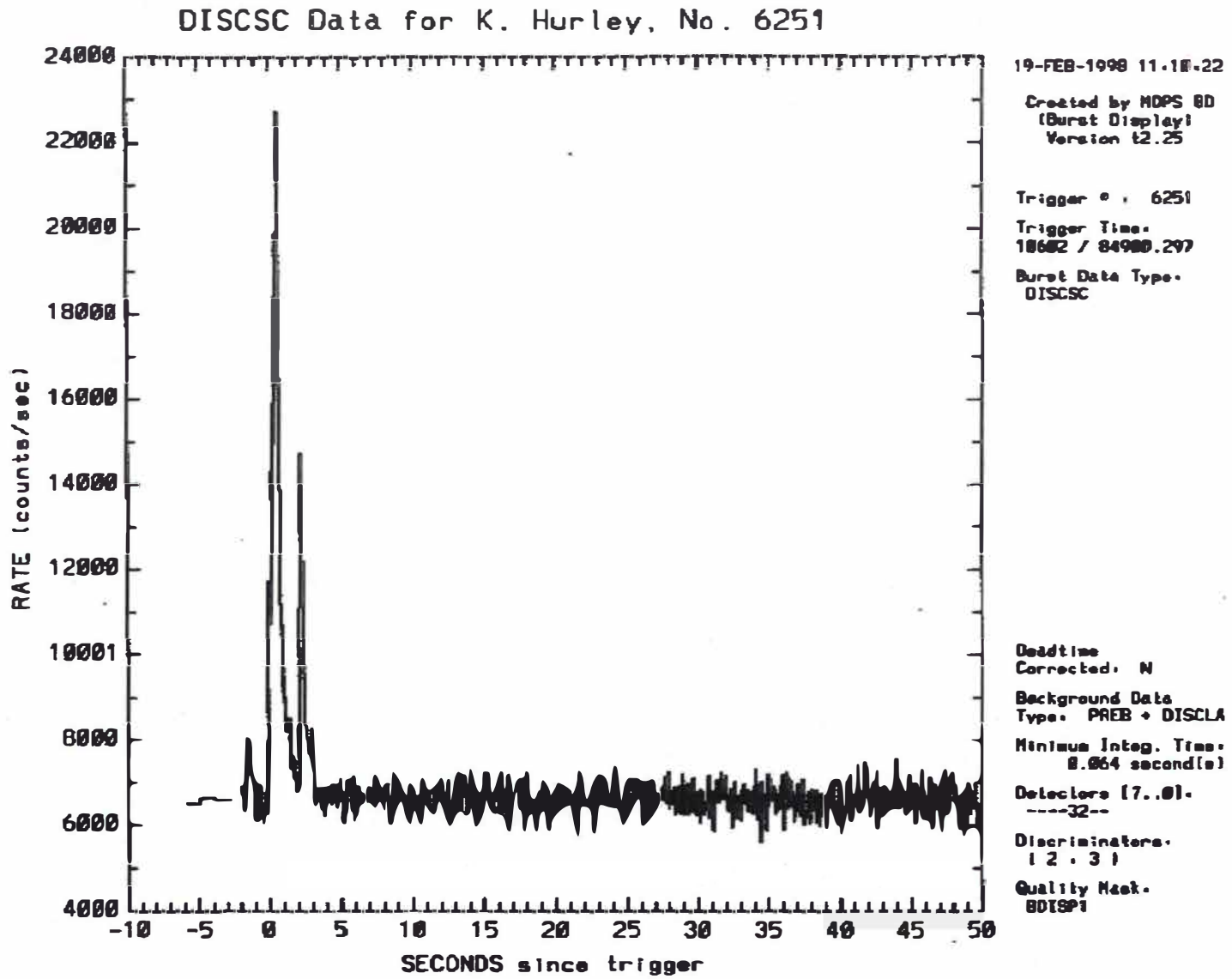
BATSE -BSAX-GRBM CORRELATION 3/ 6/97 84900.298



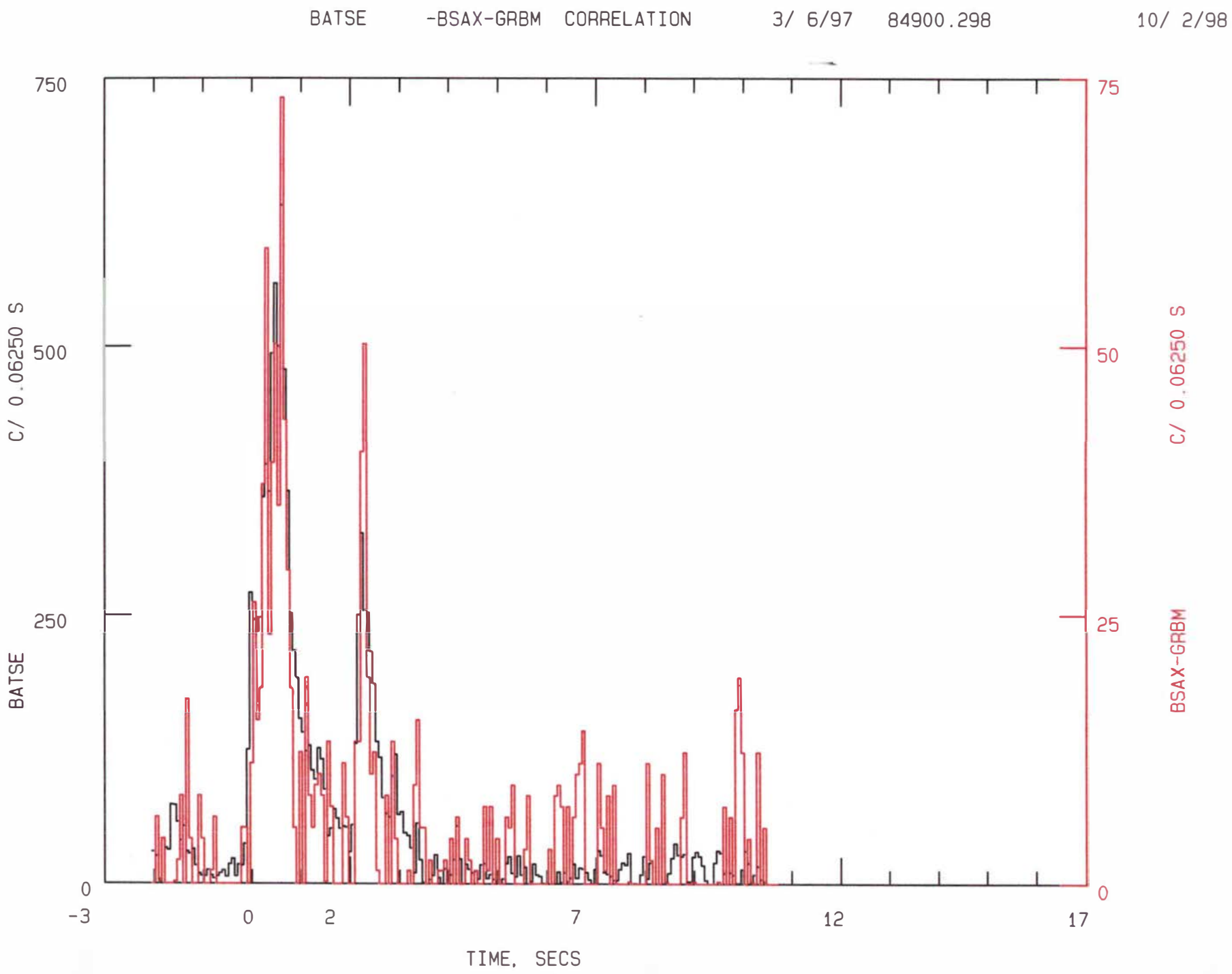

19/ 2/98
BATSE 03/06/97 84900.298
25- 100 keV
COUNTS/0.064 S
1800
1300
800
300
-3
0
1
5
9

R=95%

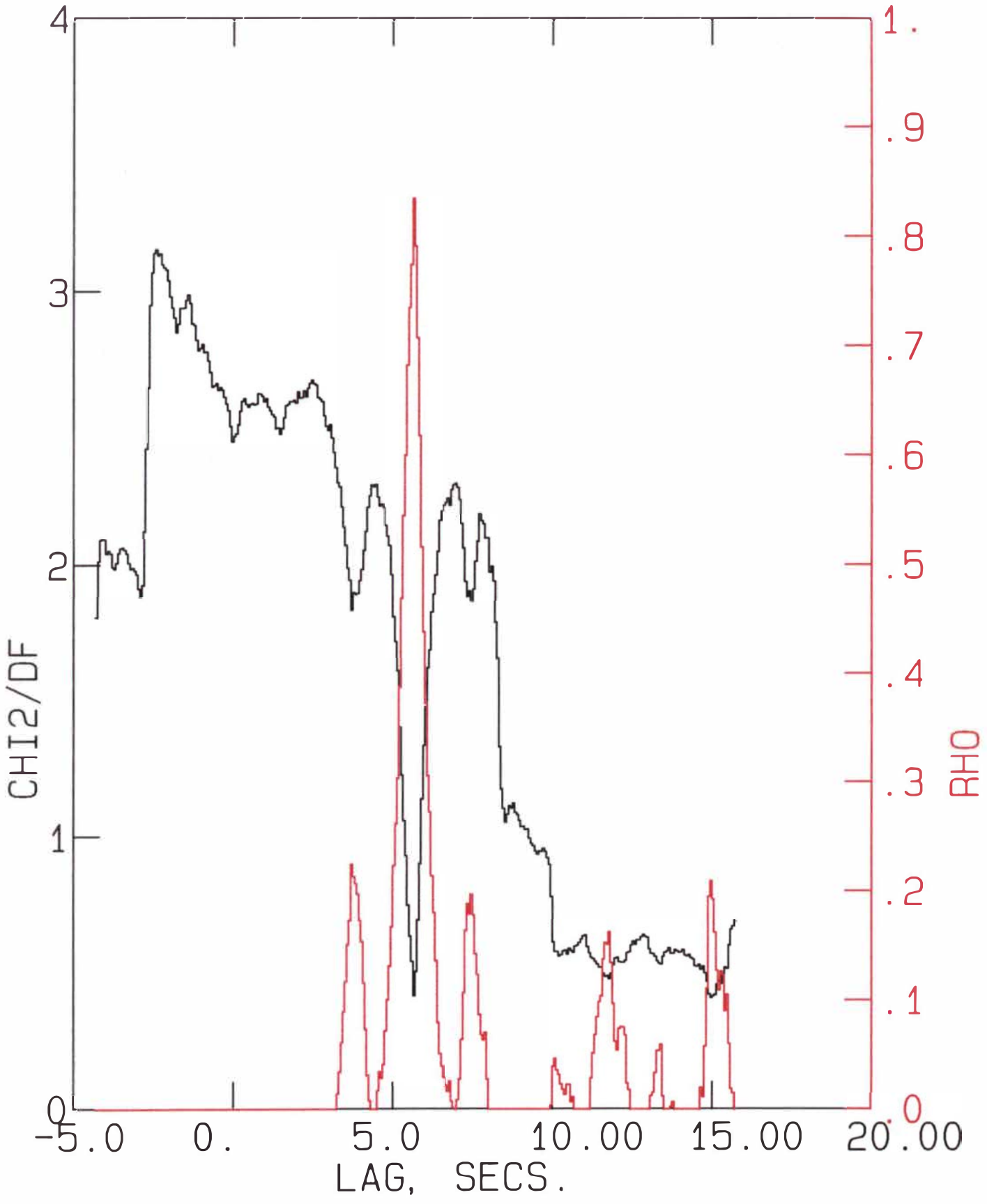
02-19-1998 13:48 205 544 5800 BATSE P.05

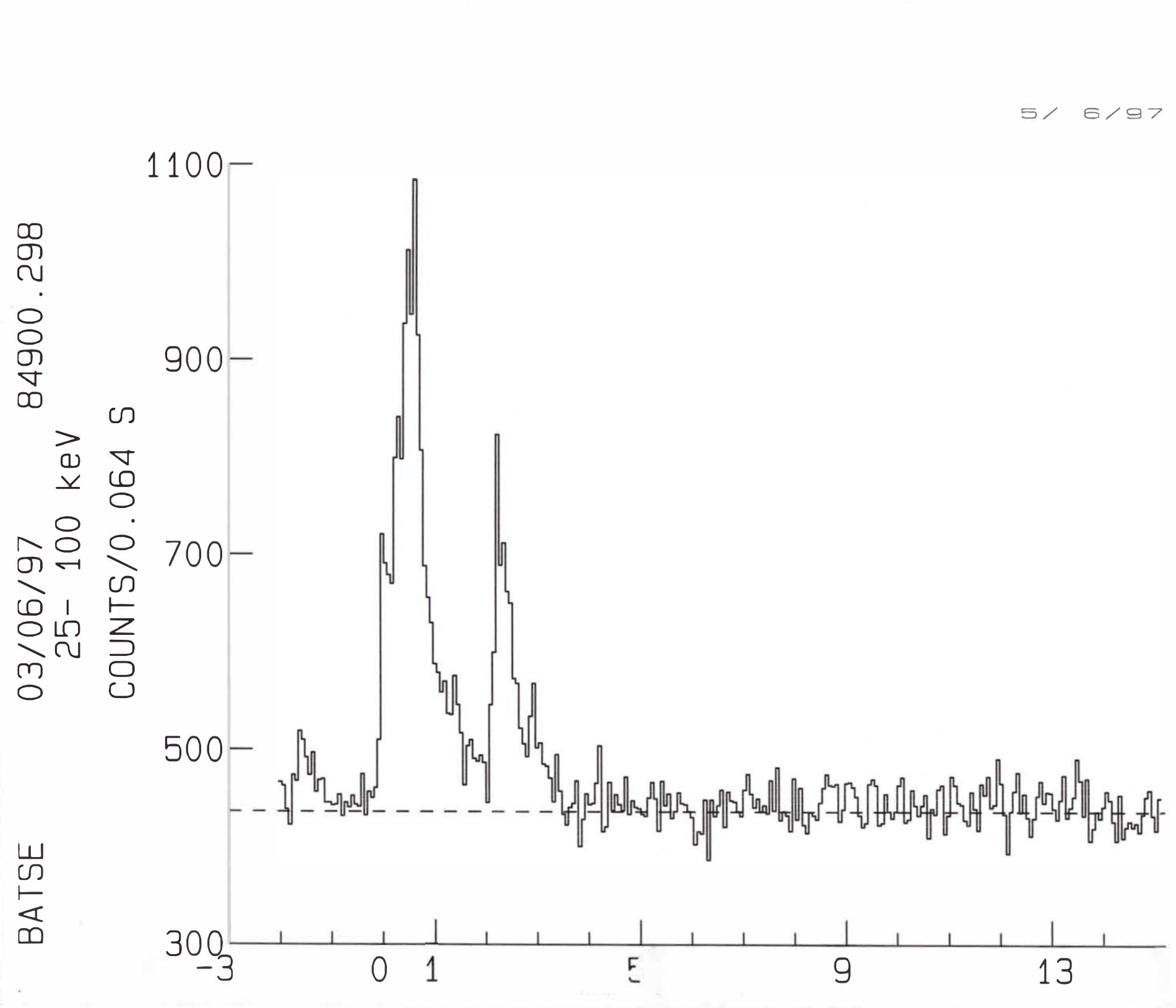


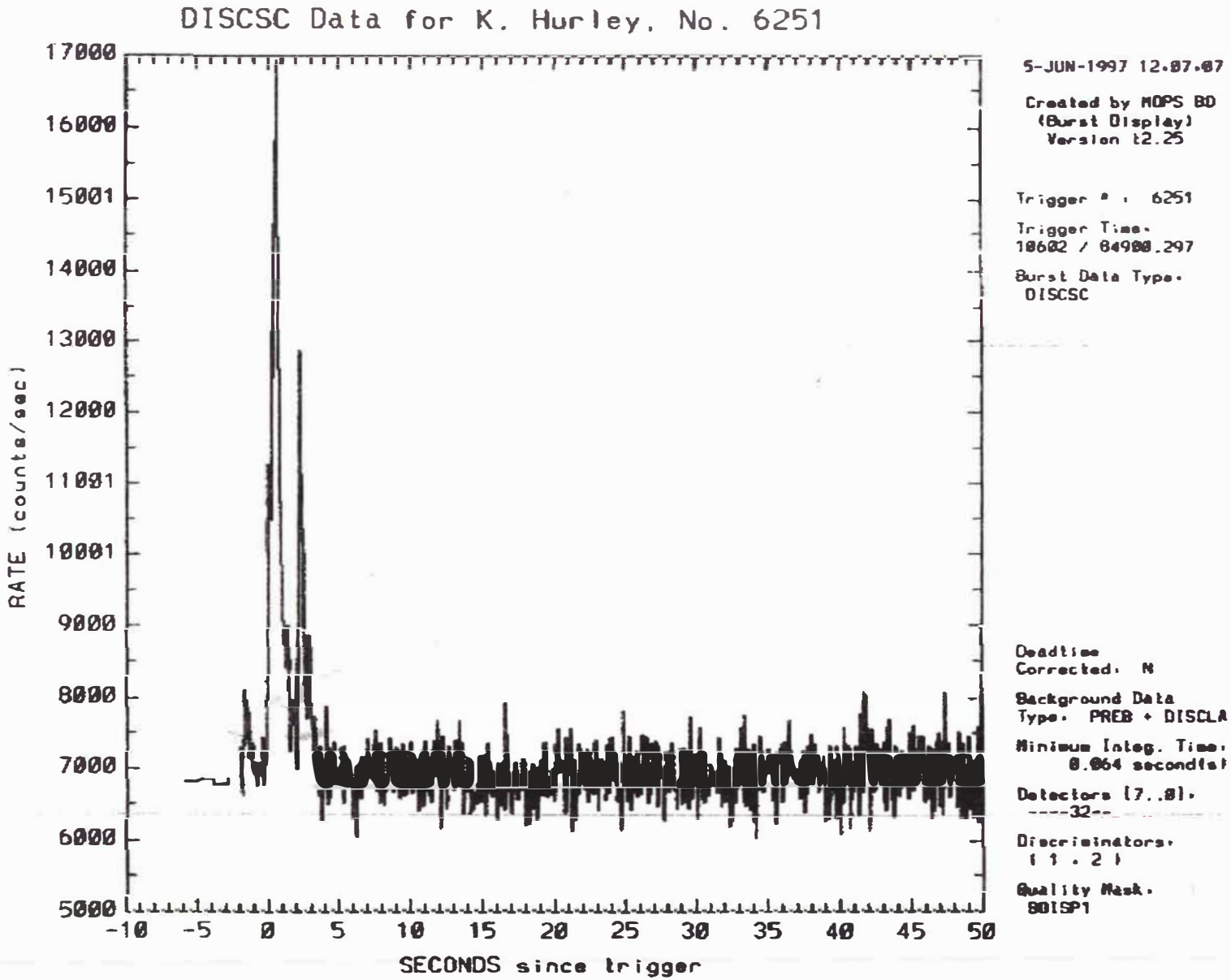
205 544 5800 02-19-98 12:58PM P005 #15

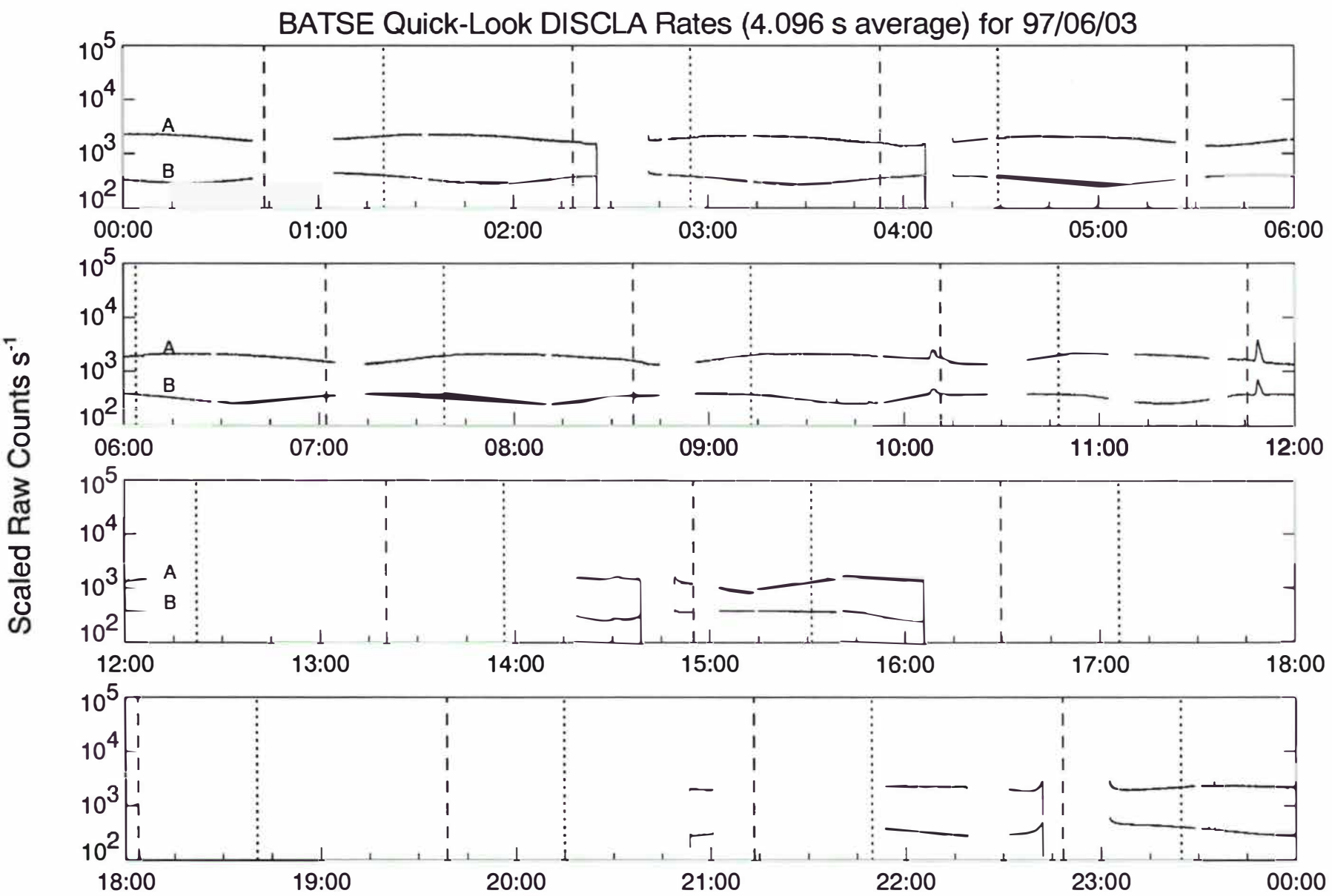

BATSE -BSAX-GRBM CORRELATION 3/ 6/97 84900.298 10/ 2/98
750
500
250
0
C/ 0.06250 S
BATSE
75
50
25
0
C/ 0.06250 S
BSAX-GRBM
-3
0
2
7
12
17
TIME, SECS

BATSE -BSAX-GRBM CORRELATION 3/ 6/97 84900.298




5/ 6/97
BATSE 03/06/97 84900.298
25- 100 keV
COUNTS/0.064 S
1100
900
700
500
300
-3
0
1
5
9
13

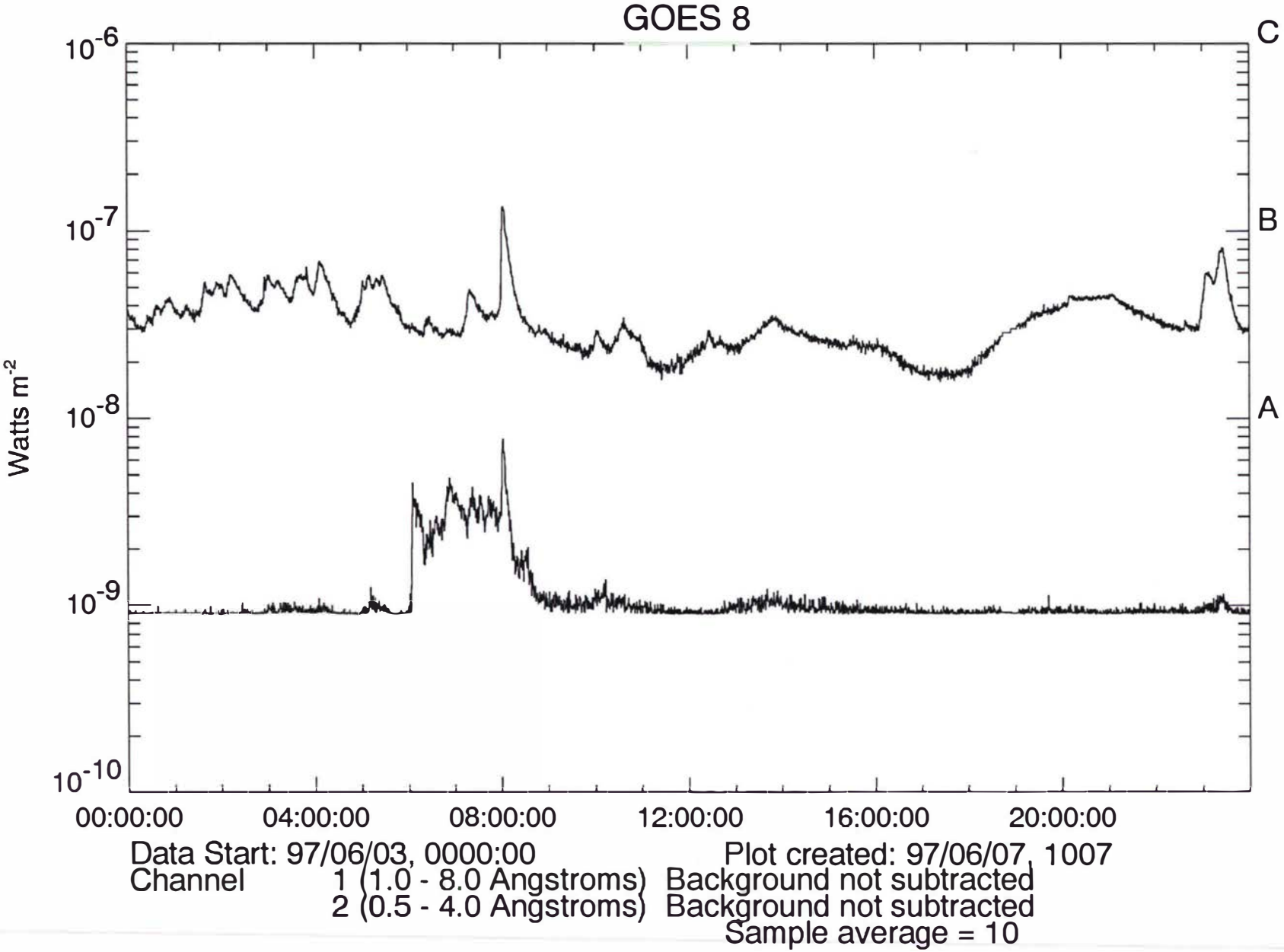

DISCSC Data for K. Hurley, No. 6251
RATE (counts/sec)
17000
16000
15001
14000
13000
12000
11001
10001
9000
8000
7000
6000
5000
-10
-5
0
5
10
15
20
25
30
35
40
45
50
SECONDS since trigger
5-JUN-1997 12:07:07
Created by MOPS BD
(Burst Display)
Version 2.25
Trigger # : 6251
Trigger Time:
10602 / 84900.297
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors (7..0):
----32--
Discriminators:
(1 , 2)
Quality Mask:
BDISP1



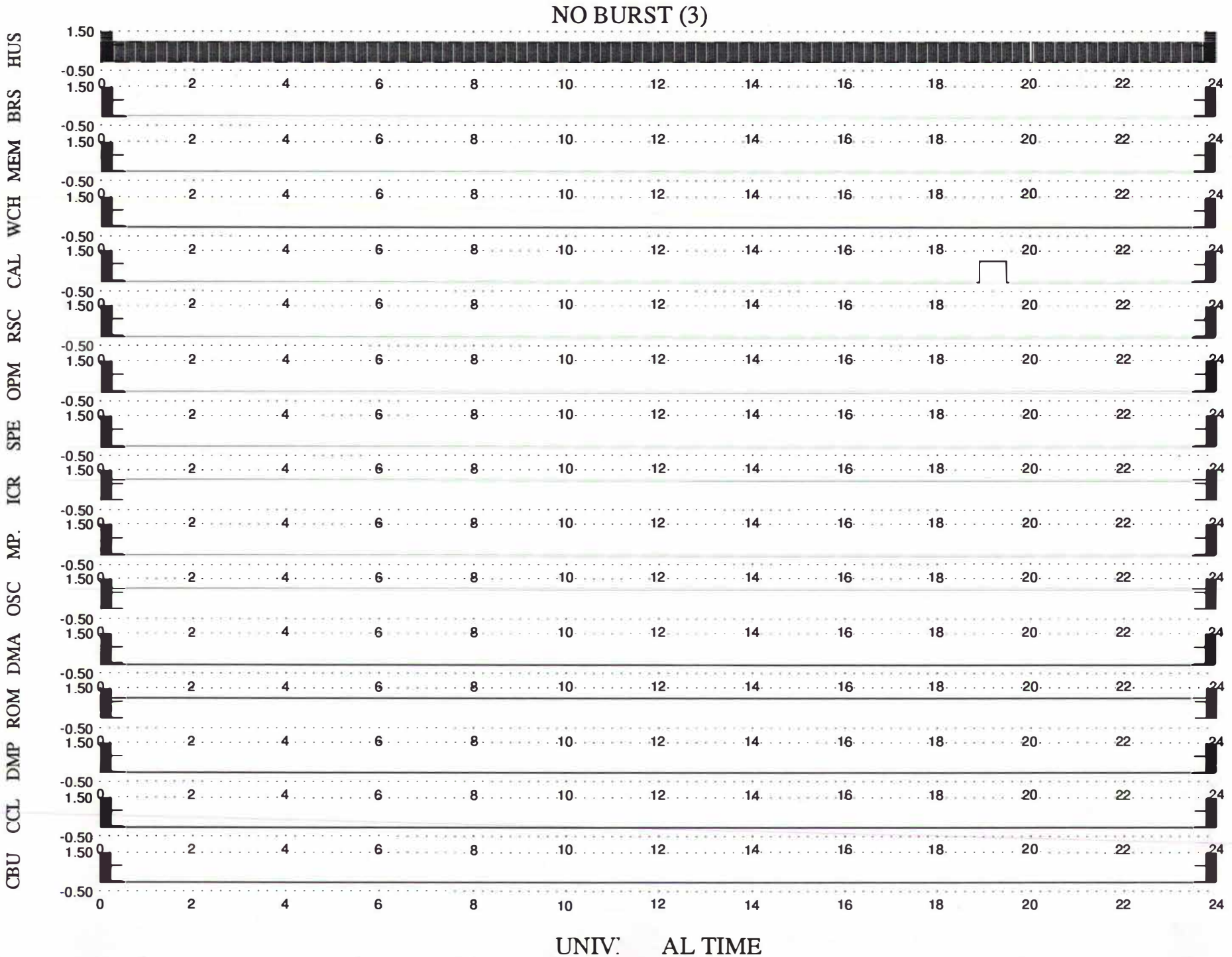
Current Time: 97/06/07, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare

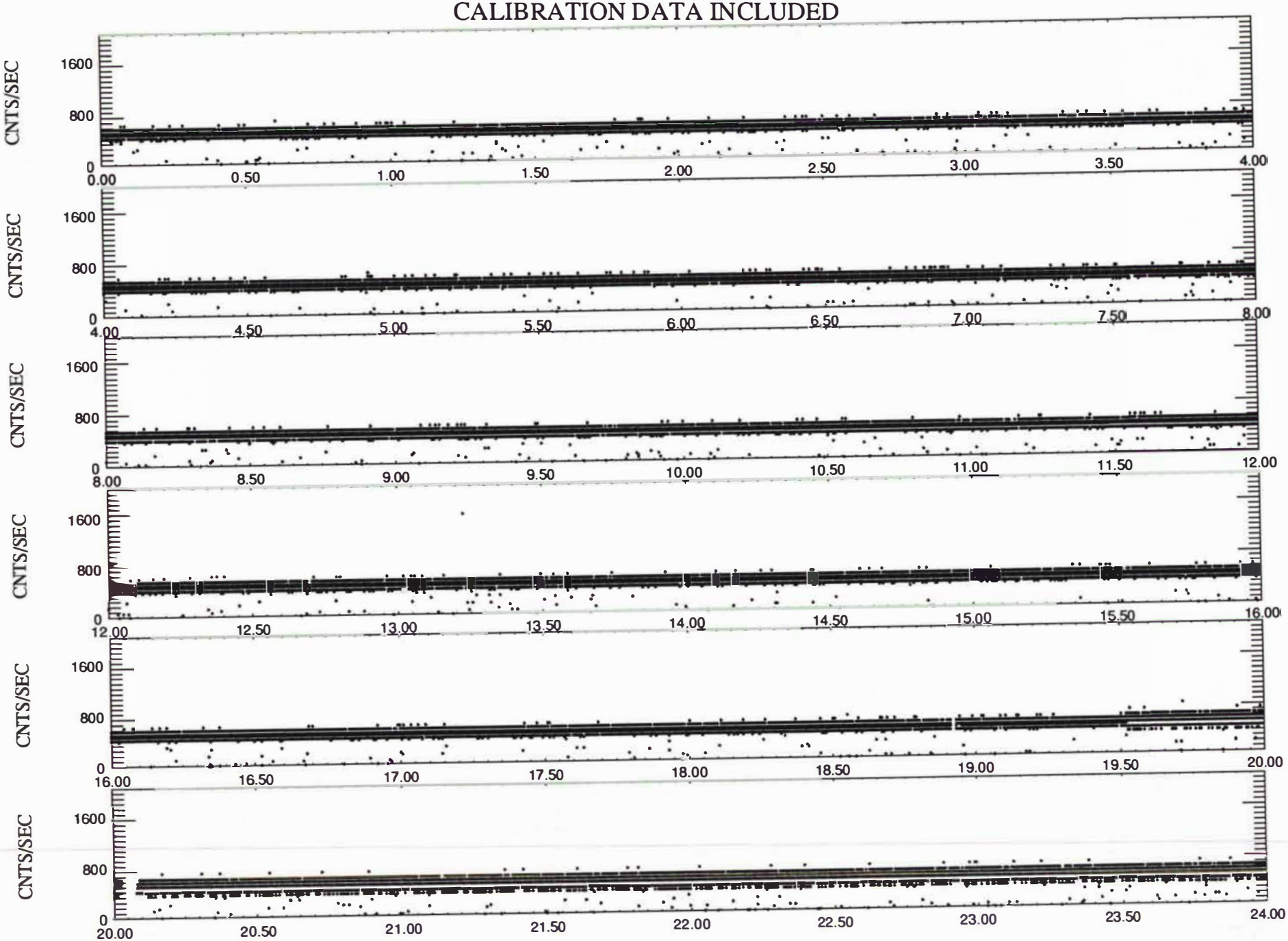

GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/03, 0000:00
Plot created: 97/06/07, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 154, year 1997 to day 154, year 1997 10/13/97



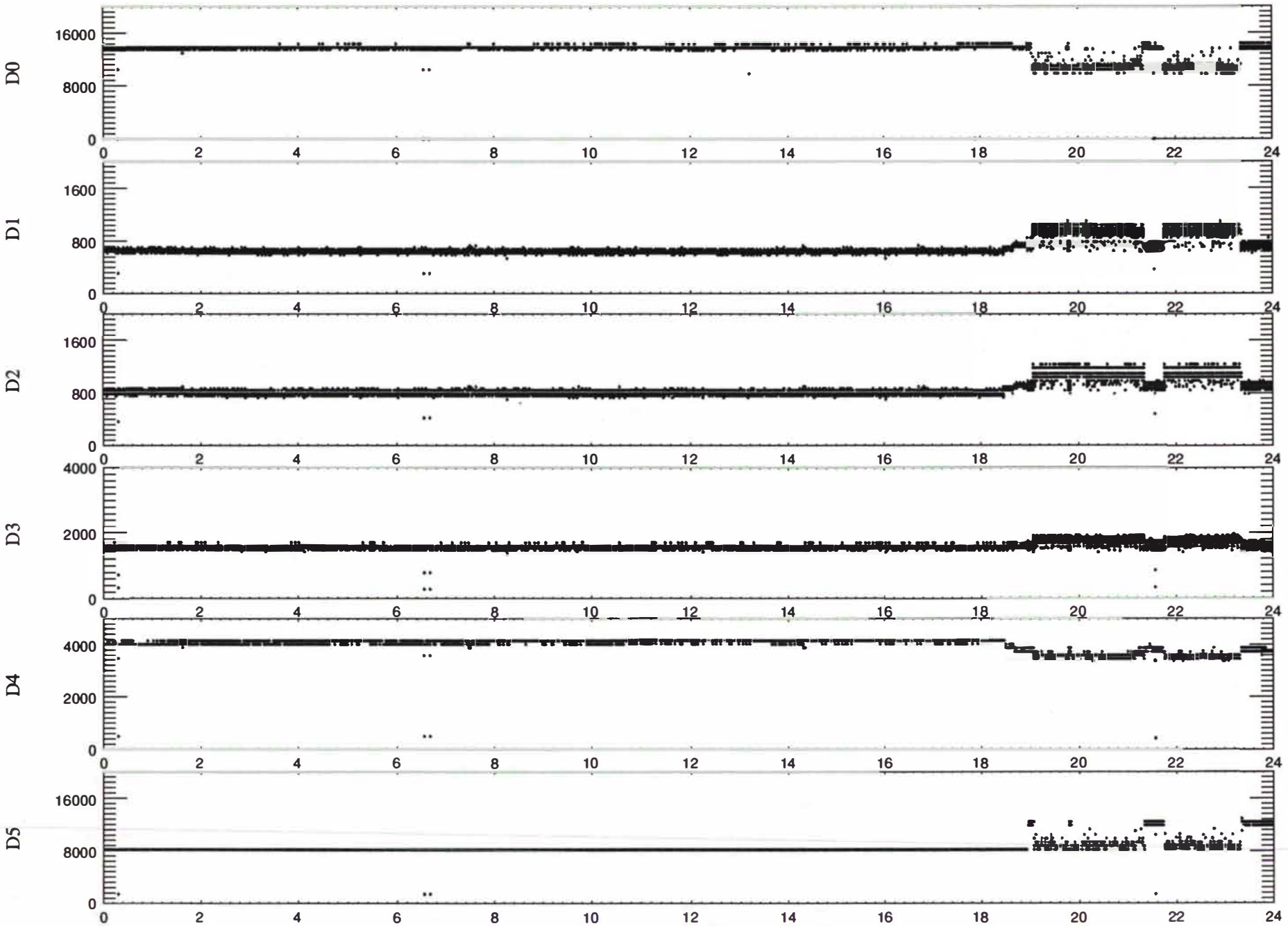
HUS 2A, MODE 1, NOT AVERAGED EDR day 154, year 1997 to day 154, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 154, year 1997 to day 154, year 1997 10/13/97



From kraken@rosserv.gsfc.nasa.gov Mon Jun 9 12:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Mon, 9 Jun 1997 15:15:46 -0500
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses burst not seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

The Ulysses burst:

June 4 1997 19:23 Ulysses time; weak burst, 100 ms long

was not seen by TGRS as a triggered event. There was a peak at 68001 seconds in the 35-100 keV range in the waiting mode data. It registered 250 cts/s above background for < 2.5 s (1 time resolution element). But there was no corresponding peak in the 100-300 keV range. Ordinarily, we require a significant peak in both 35-100 and 100-300 keV ranges for an "official" detection. This event does not meet that requirement, so as a detection it should be considered marginal at the very best.

Pete

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

Konus report on recent Ulysses events not seen by BATSE

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

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

From RICHARDSON@ssl.msfc.nasa.gov Fri Jun 6 10:54 PDT 1997
Date: Fri, 6 Jun 1997 12:53:42 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6252

TIME: TJD=0603 SECONDS=35635

TYPE: ELECTRO 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 Jun 6 10:55 PDT 1997
Date: Fri, 6 Jun 1997 12:55:06 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6253

TIME: TJD=0603 SECONDS=41205

TYPE: ELECTRO 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 Jun 6 10:57 PDT 1997
Date: Fri, 6 Jun 1997 12:56:20 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6254

TIME: TJD=0603 SECONDS=49560

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

Date: Feb 8 2010

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A - unrelated burst

☐ Jim Schmidling's stat file correction applied?

☐ Final ephemeris used?

☐ Final, CDROM data used?

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

2. BATSE Data

☐ BATSE ephemeris for T_0?

☐ 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?

4. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

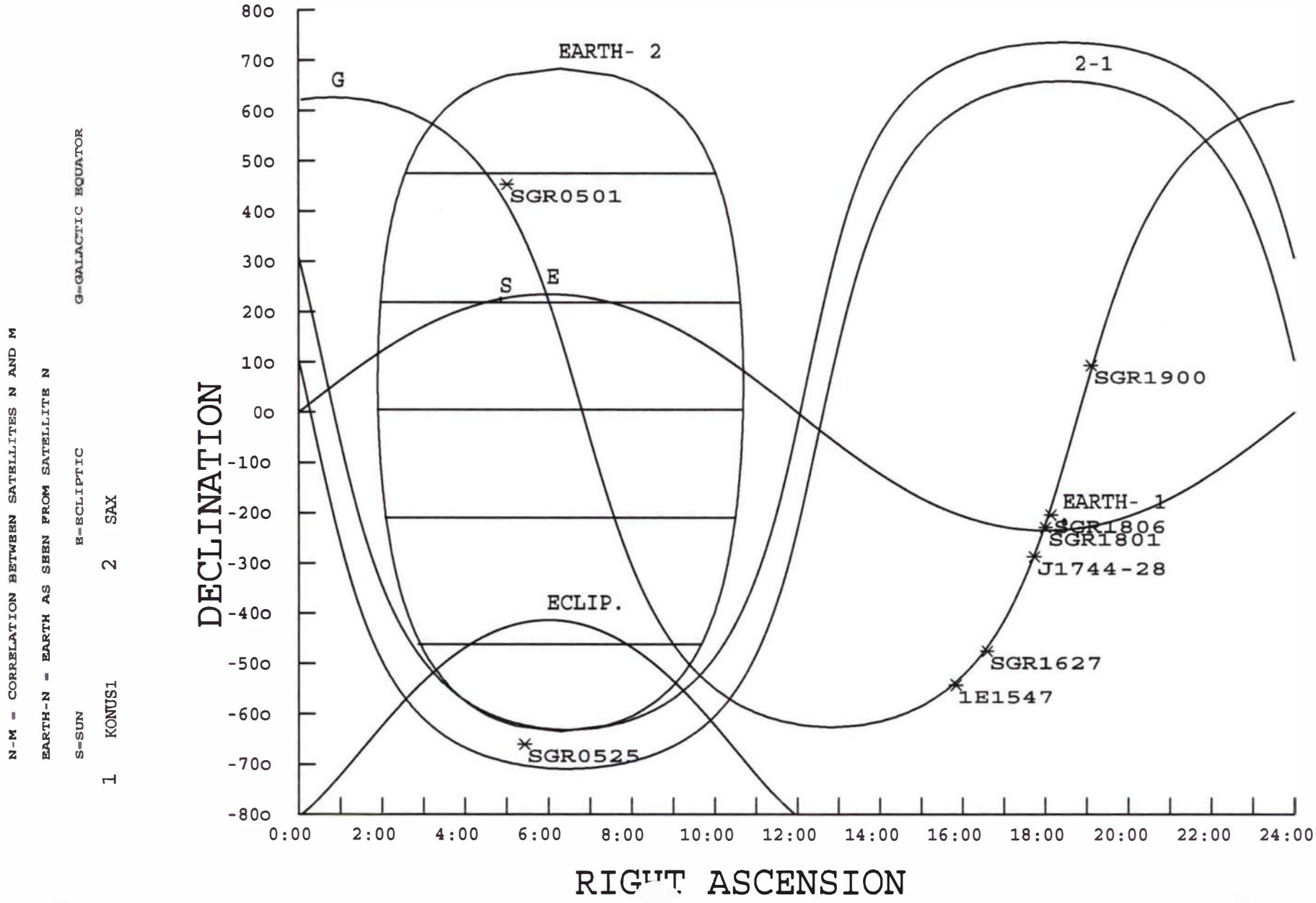
5. For 3 Spacecraft events

☐ Σ 3Δt's calculated?

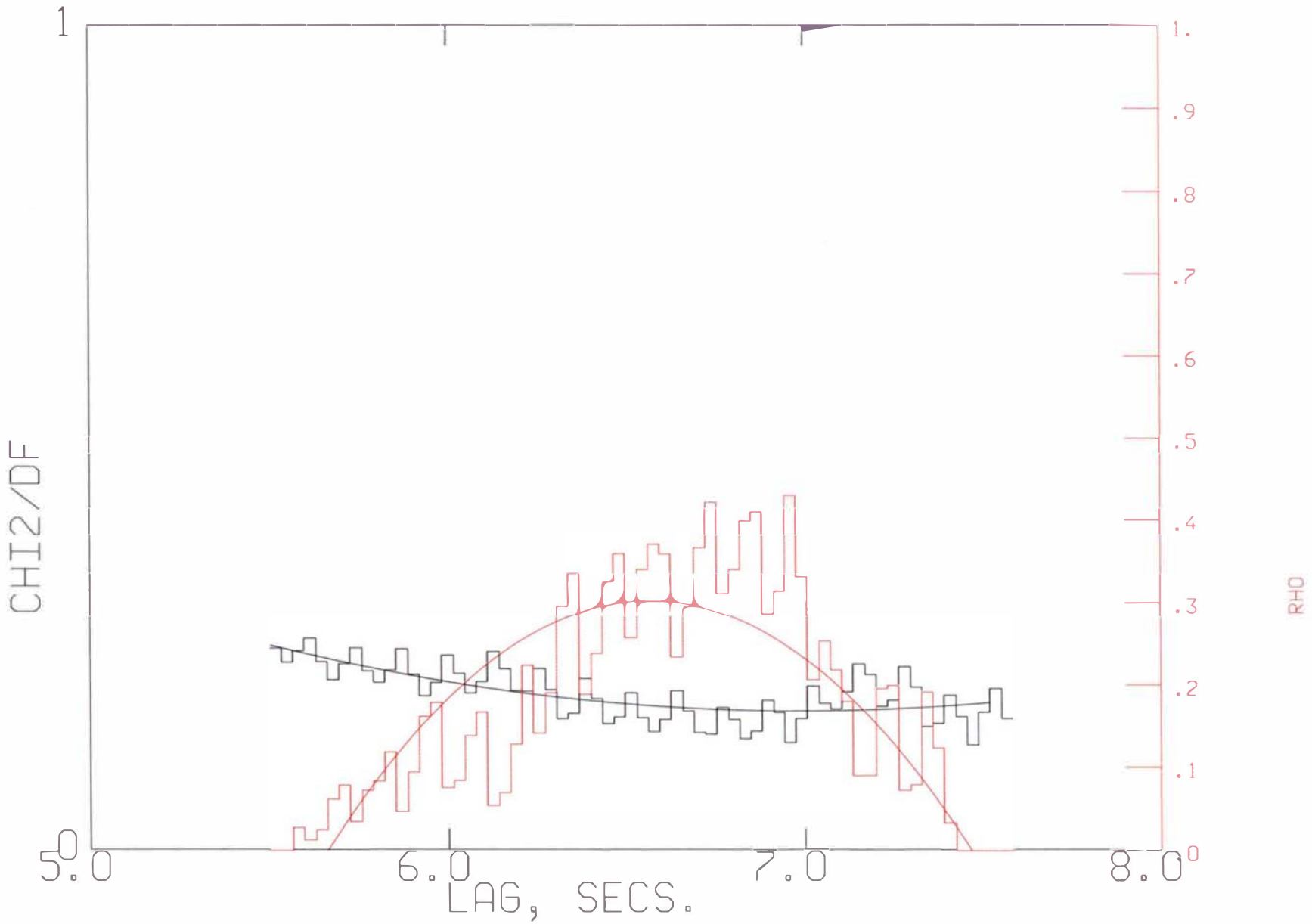
☑ ACCESS database updated?

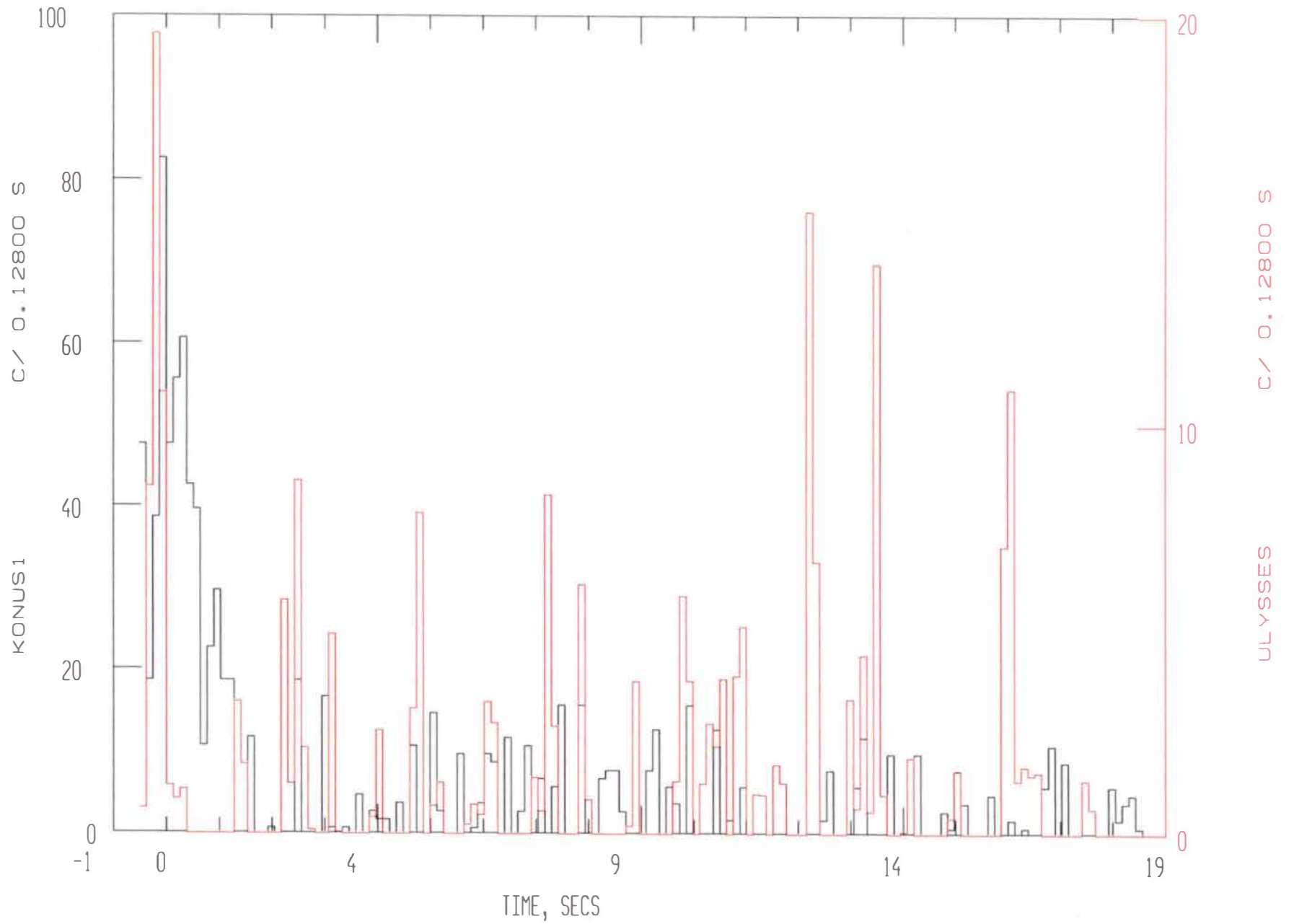
EVENT OF JUN 4, 1997 19:49

08/02/2010

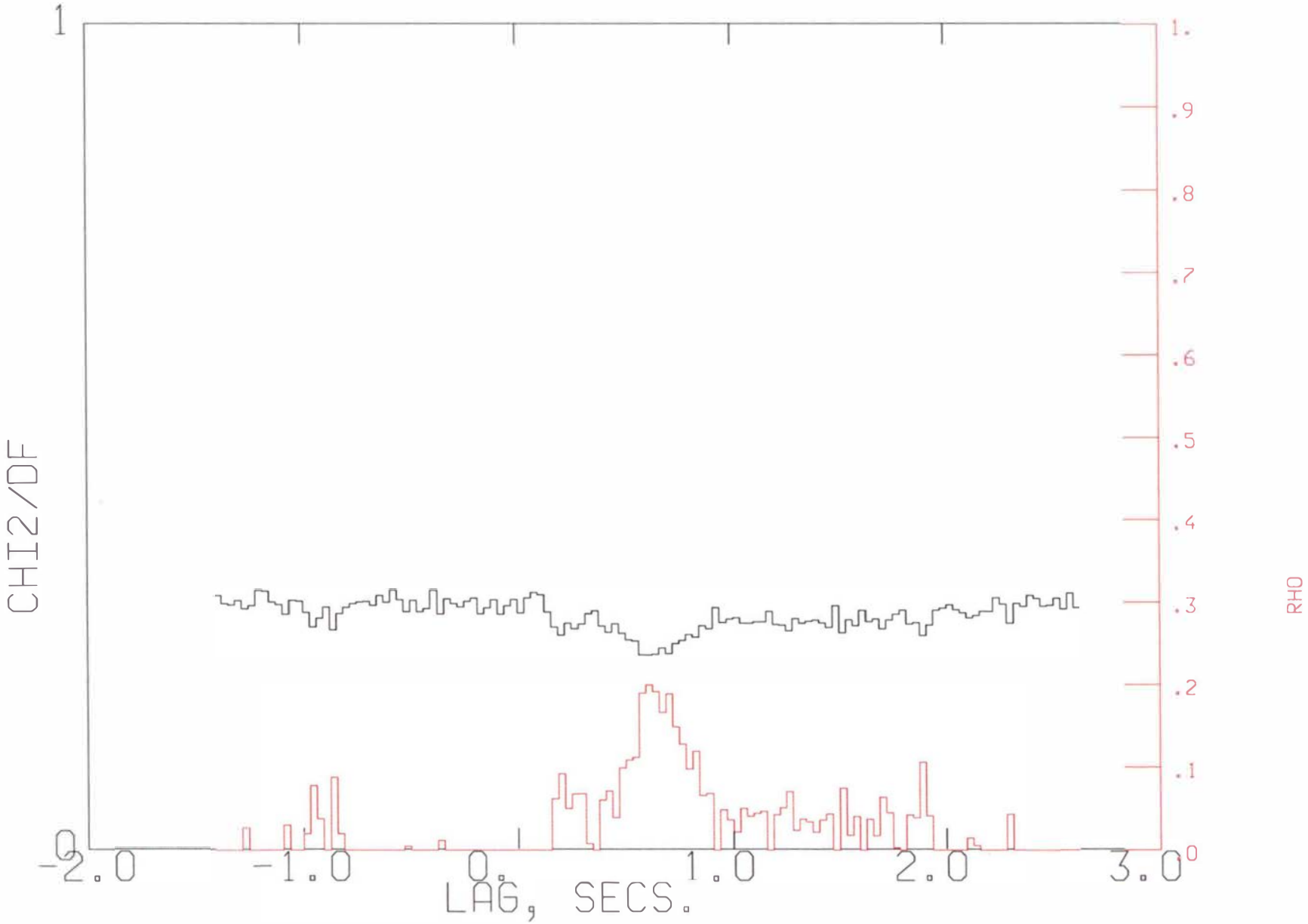


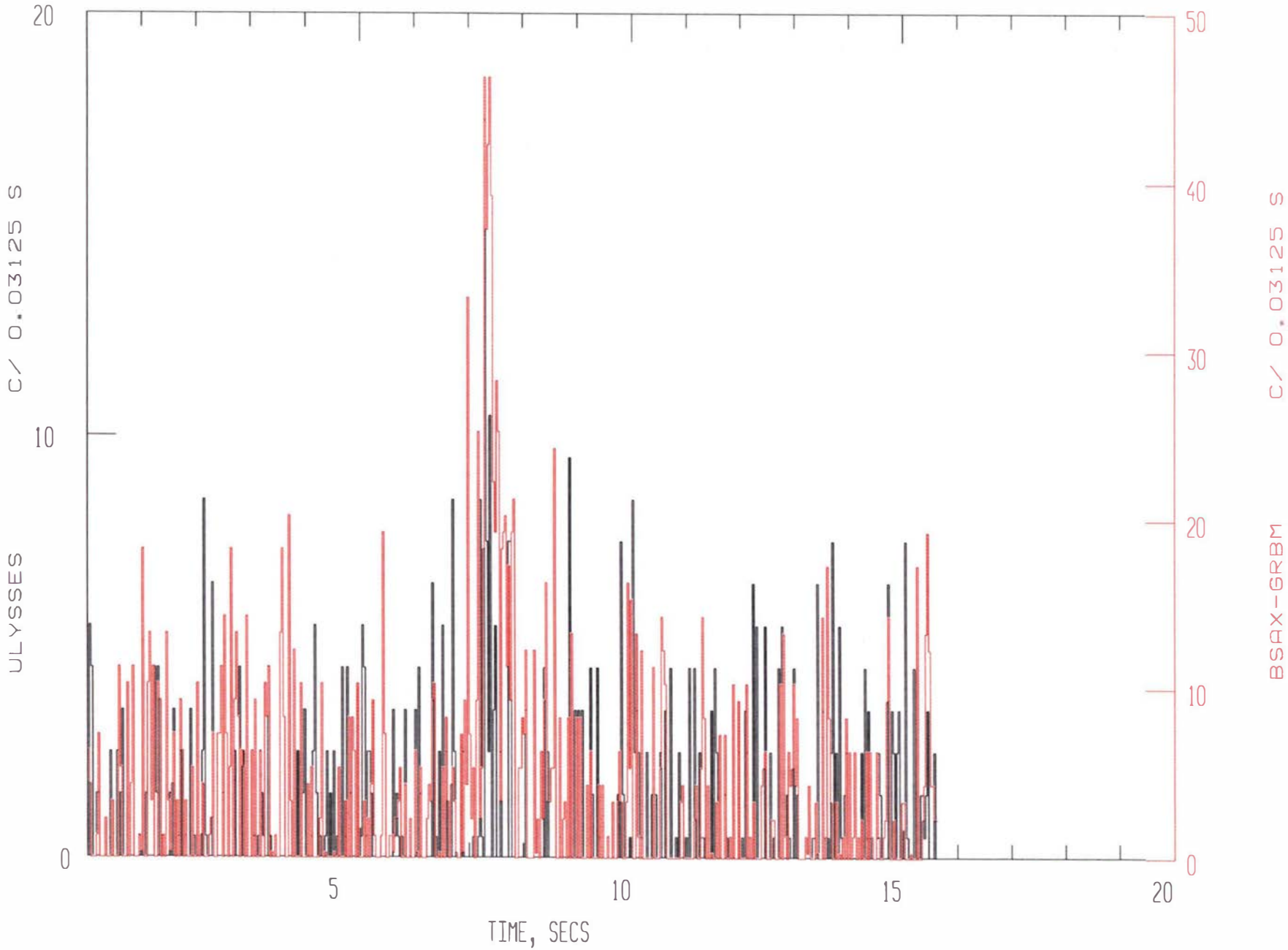
KONUS1 -ULYSSES CORRELATION 04/06/97 71345.369



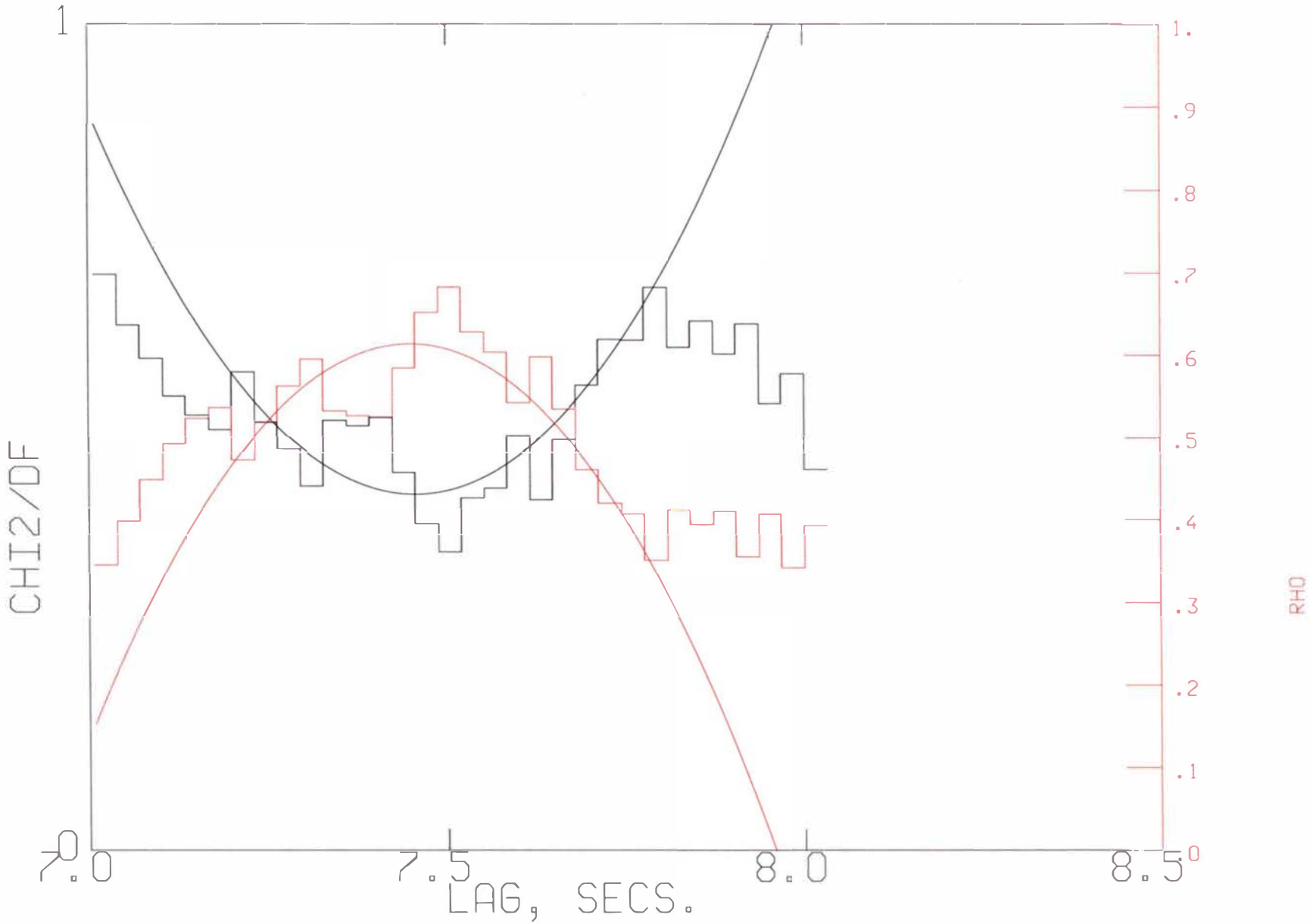

KONUS1 -ULYSSES CORRELATION 04/06/97 71345.369
100
80
60
40
20
0
C/ 0.12800 S
KONUS1
20
10
0
C/ 0.12800 S
ULYSSES
-1
0
4
9
14
19
TIME, SECS

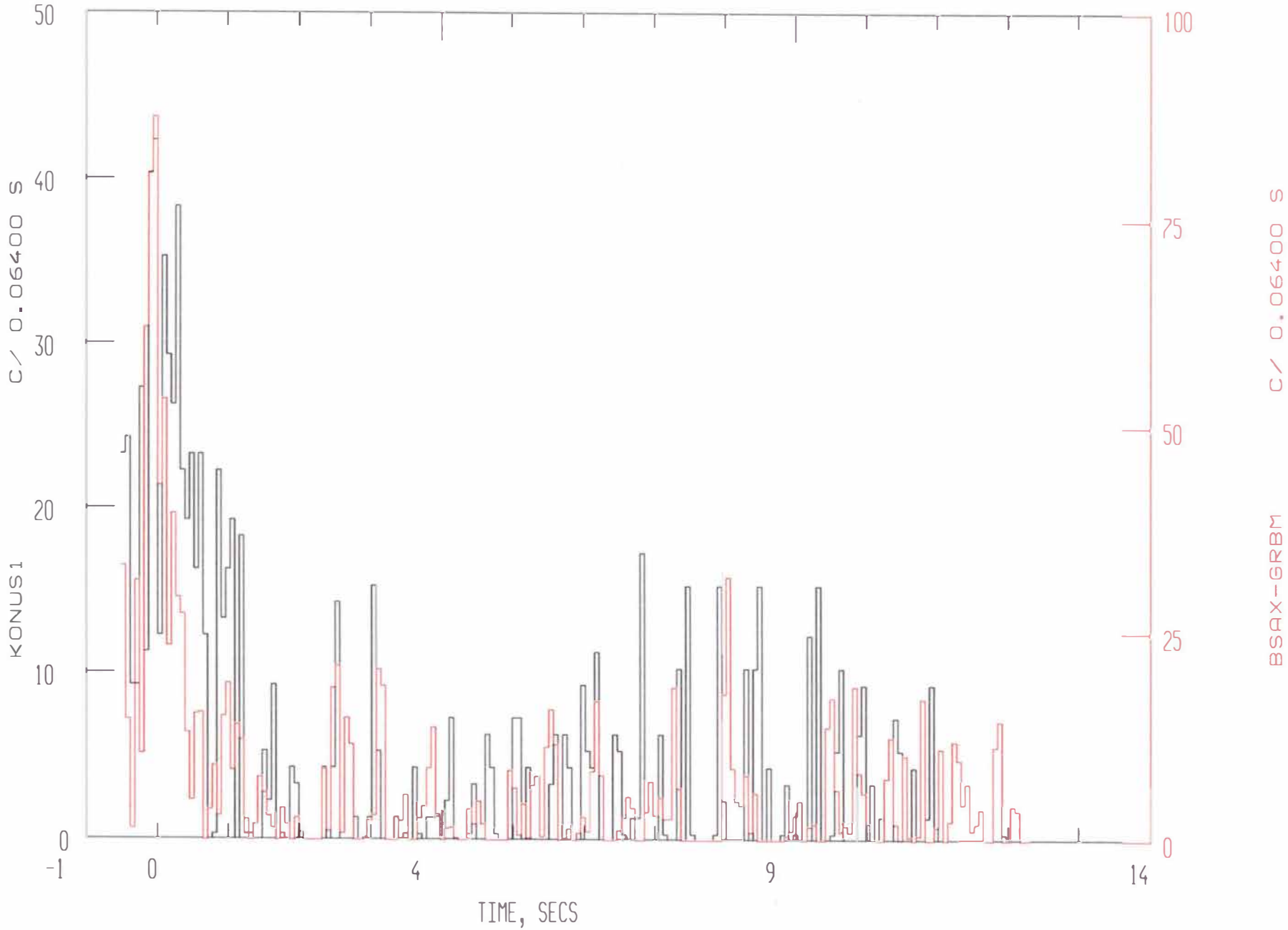
ULYSSES -BSAX-GRBM CORRELATION 04/06/97 69797.808

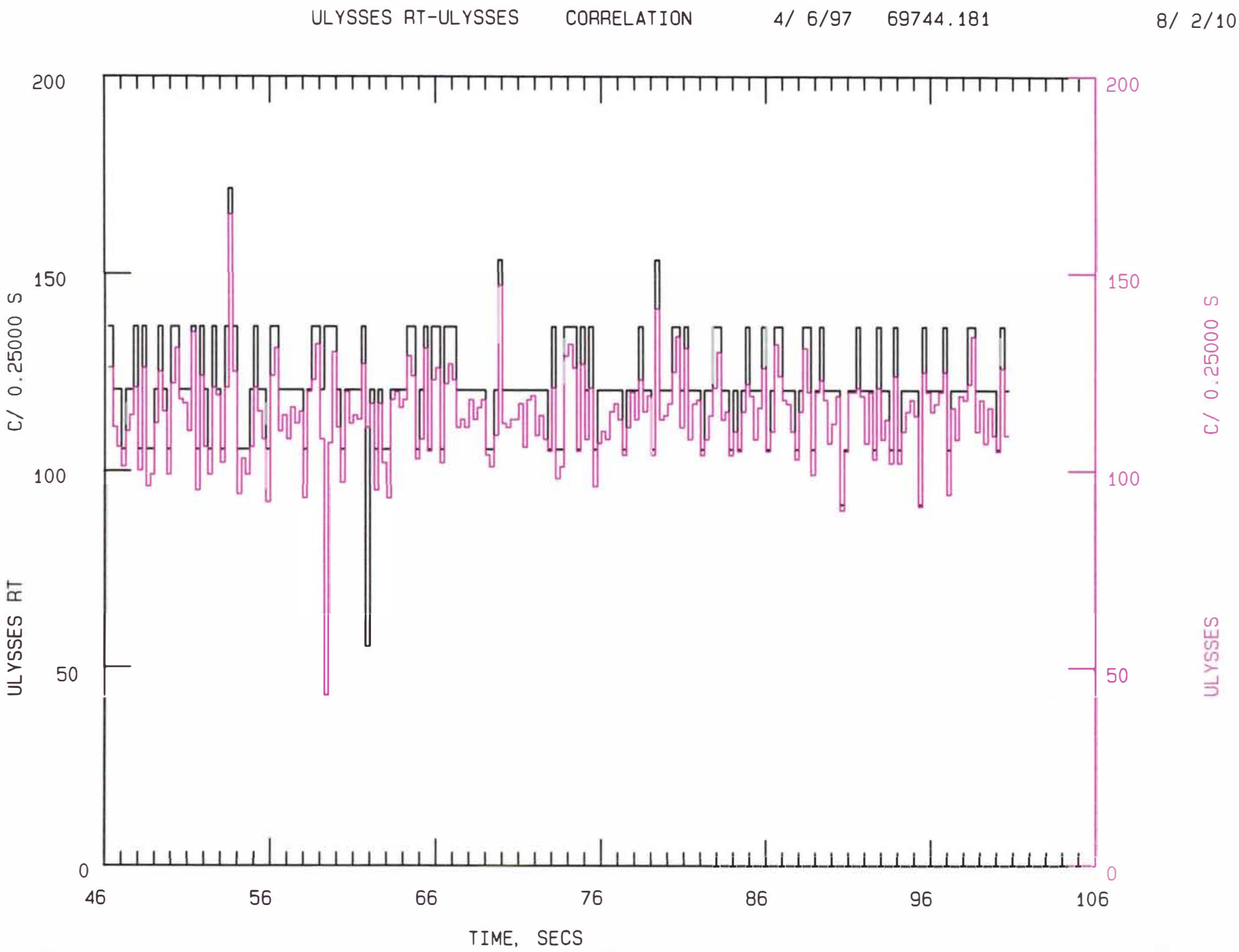



20
10
0
C/ 0.03125 S
ULYSSES
50
40
30
20
10
0
C/ 0.03125 S
BSAX-GRBM
5
10
15
20
TIME, SECS

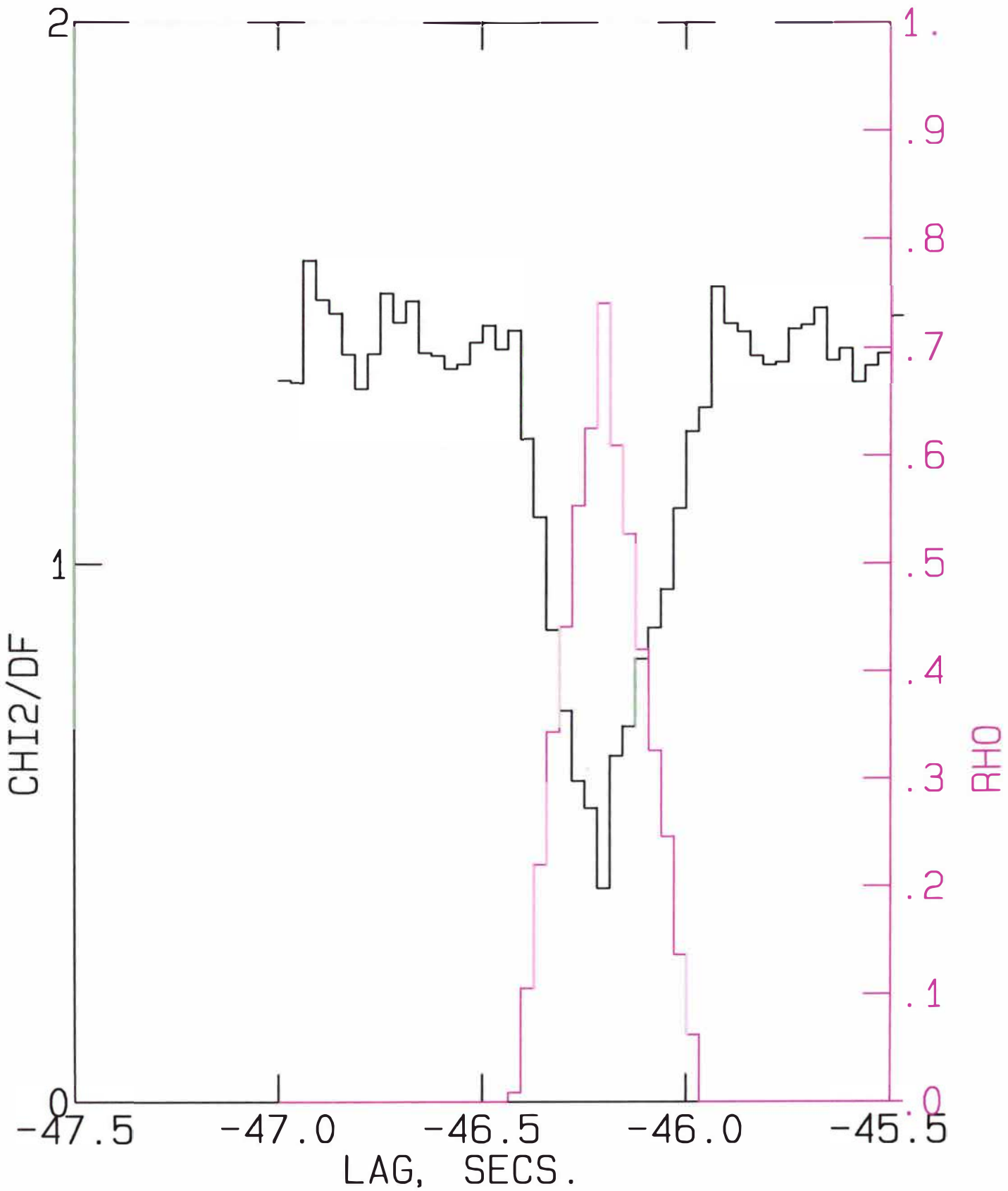
KONUS1 -BSAX-GRBM CORRELATION 04/06/97 71345.369

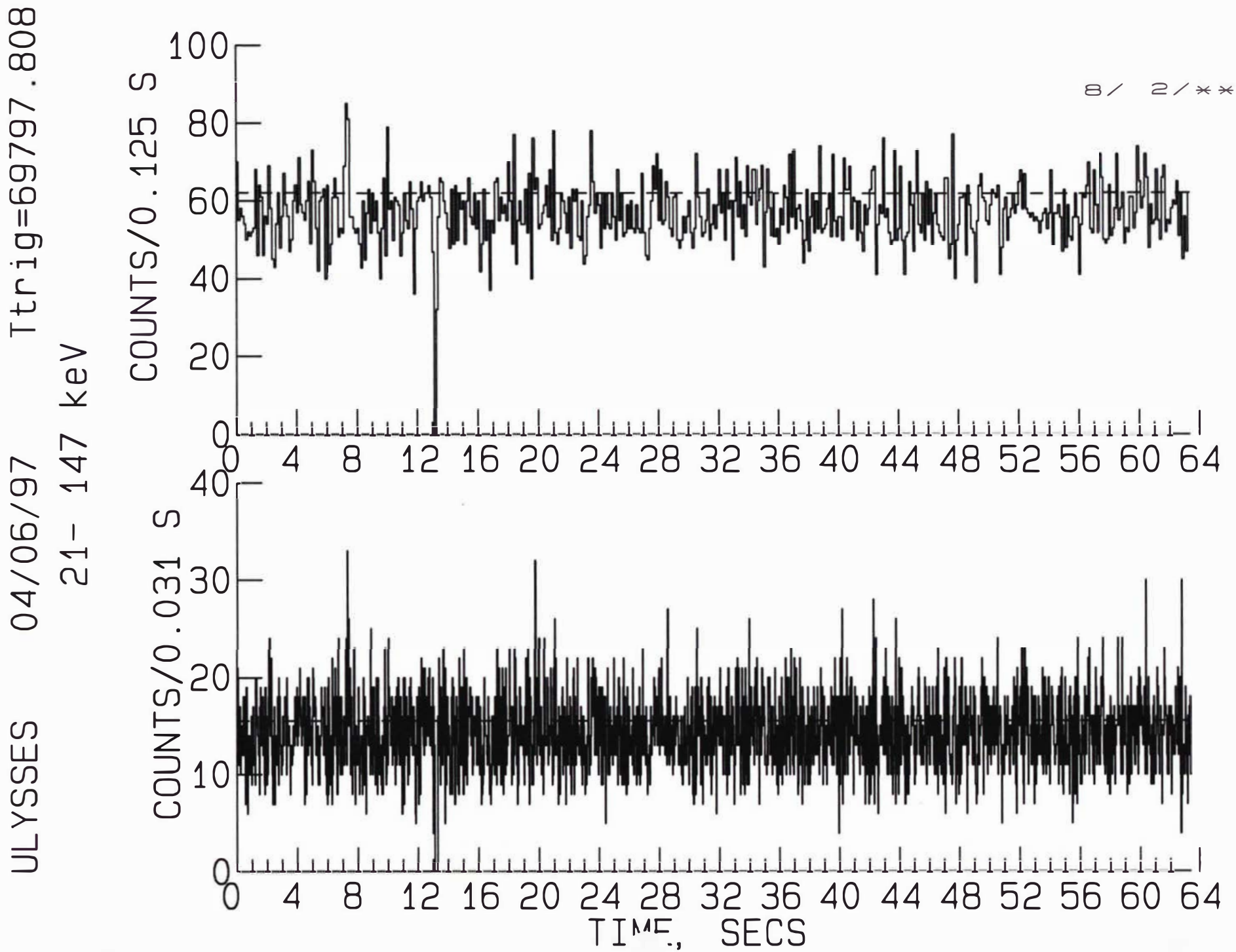



KONUS1 -BSAX-GRBM CORRELATION 04/06/97 71345.369
50
40
30
20
10
0
C/ 0.06400 S
KONUS1
100
75
50
25
0
C/ 0.06400 S
BSAX-GRBM
-1
0
4
9
14
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 4/ 6/97 69744.181 8/ 2/10
200
150
100
50
0
C/ 0.25000 S
ULYSSES RT
46
56
66
76
86
96
106
TIME, SECS
ULYSSES

ULYSSES RT-ULYSSES CORRELATION 4/ 6/97 69744.181



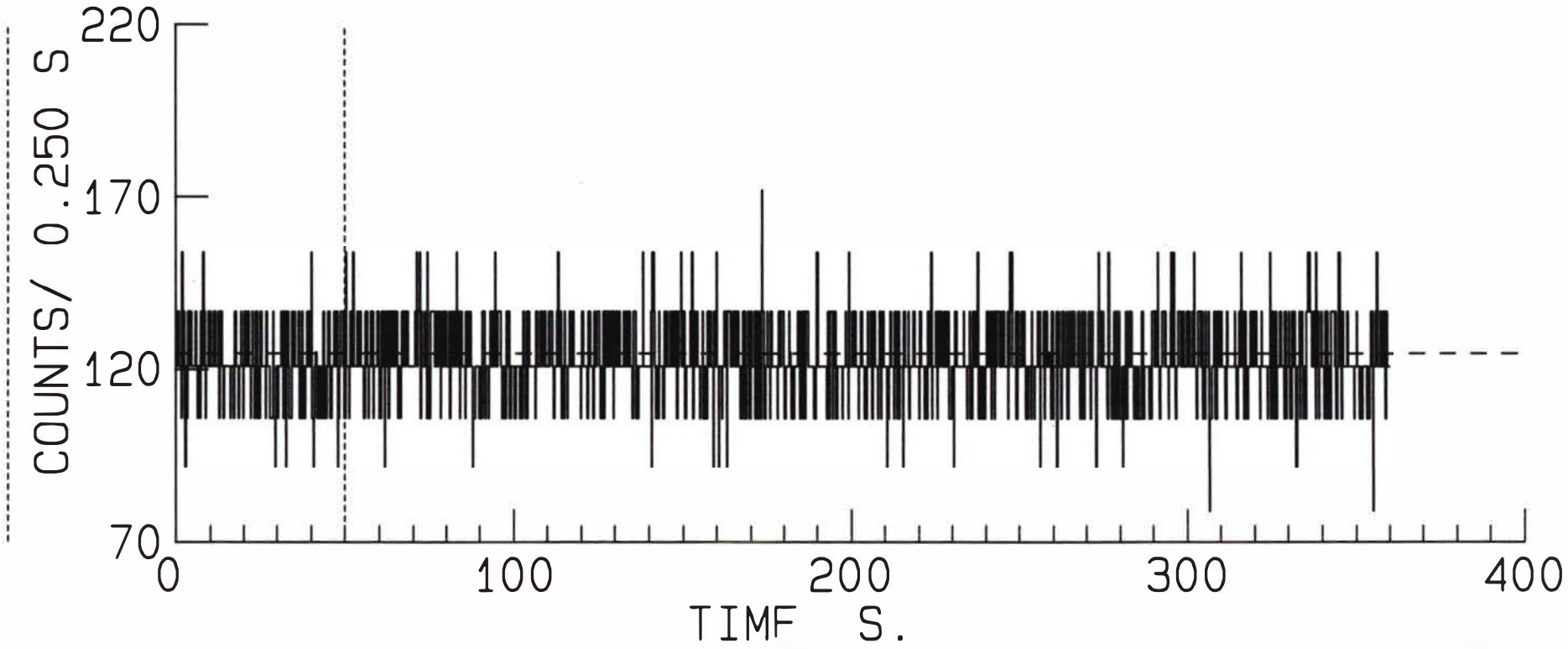

ULYSSES 04/06/97 Ttrig=69797.808
21- 147 keV
8/ 2/**
COUNTS/0.125 S
100
80
60
40
20
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
COUNTS/0.031 S
40
30
20
10
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
TIME, SECS

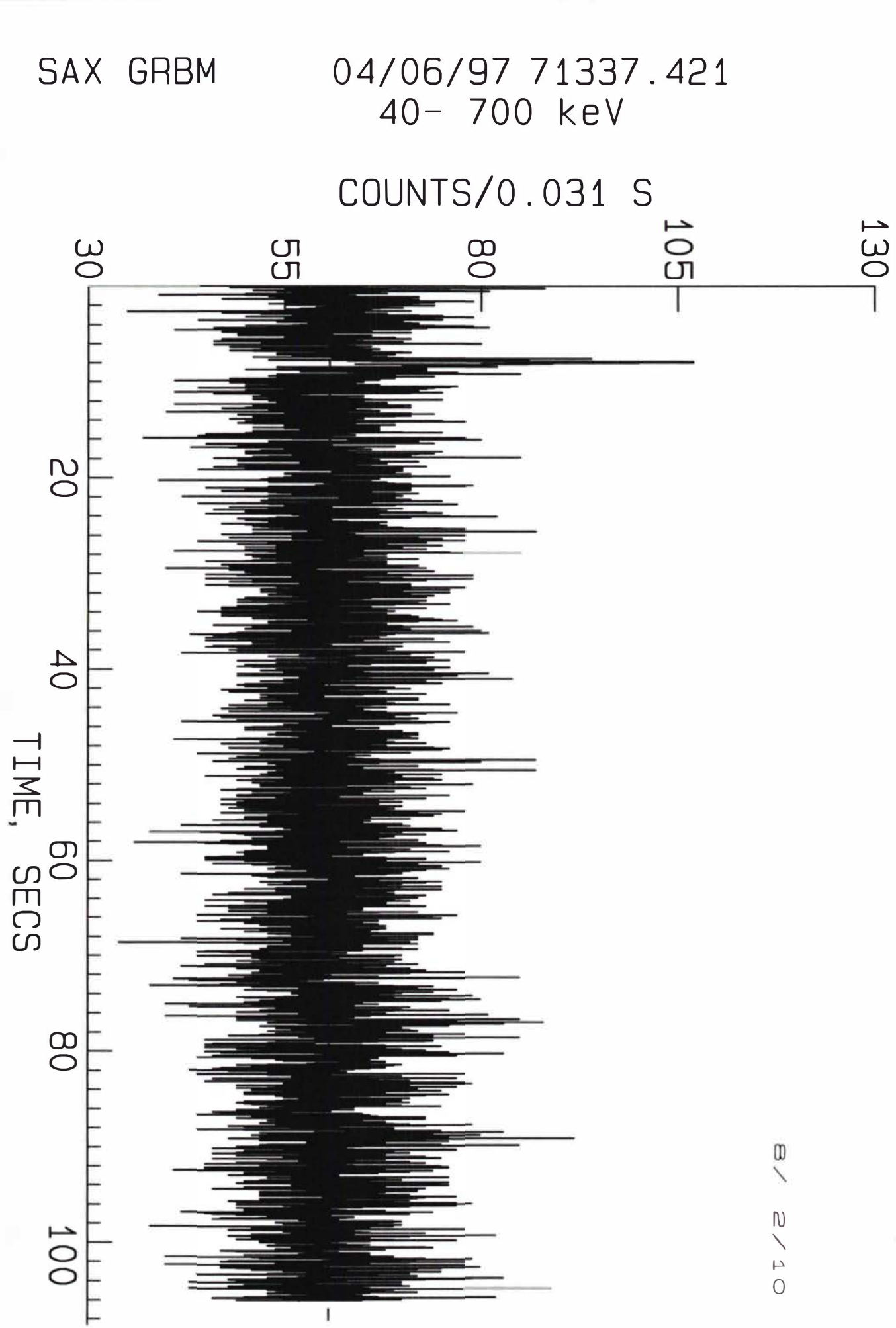
ULYSSES RT

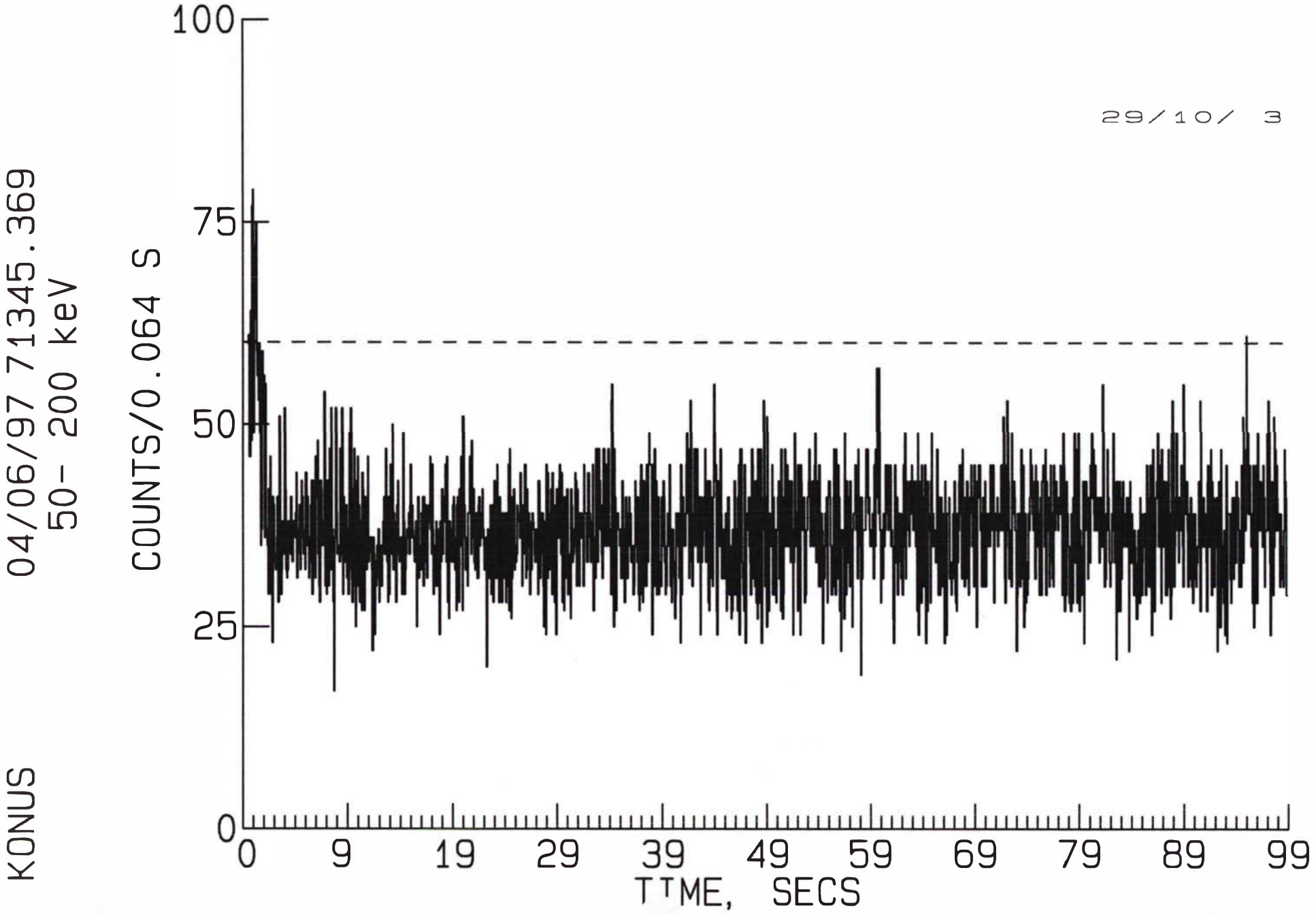
8/ 2/10

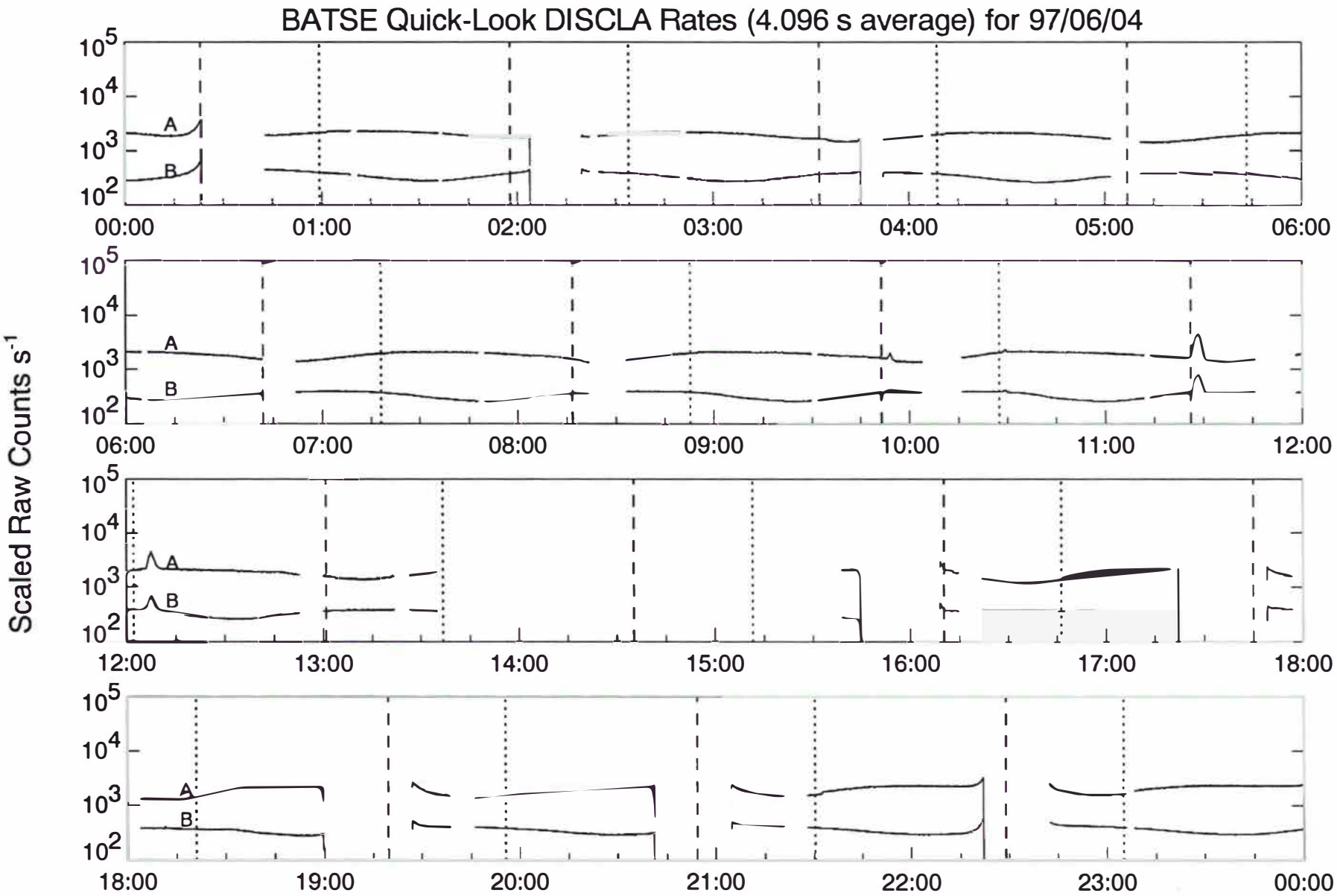
4/ 6/97 69624.203 s

21- 147 keV




SAX GRBM
04/06/97 71337.421
40- 700 keV
COUNTS/0.031 S
30
55
80
105
130
20
40
60
80
100
TIME, SECS

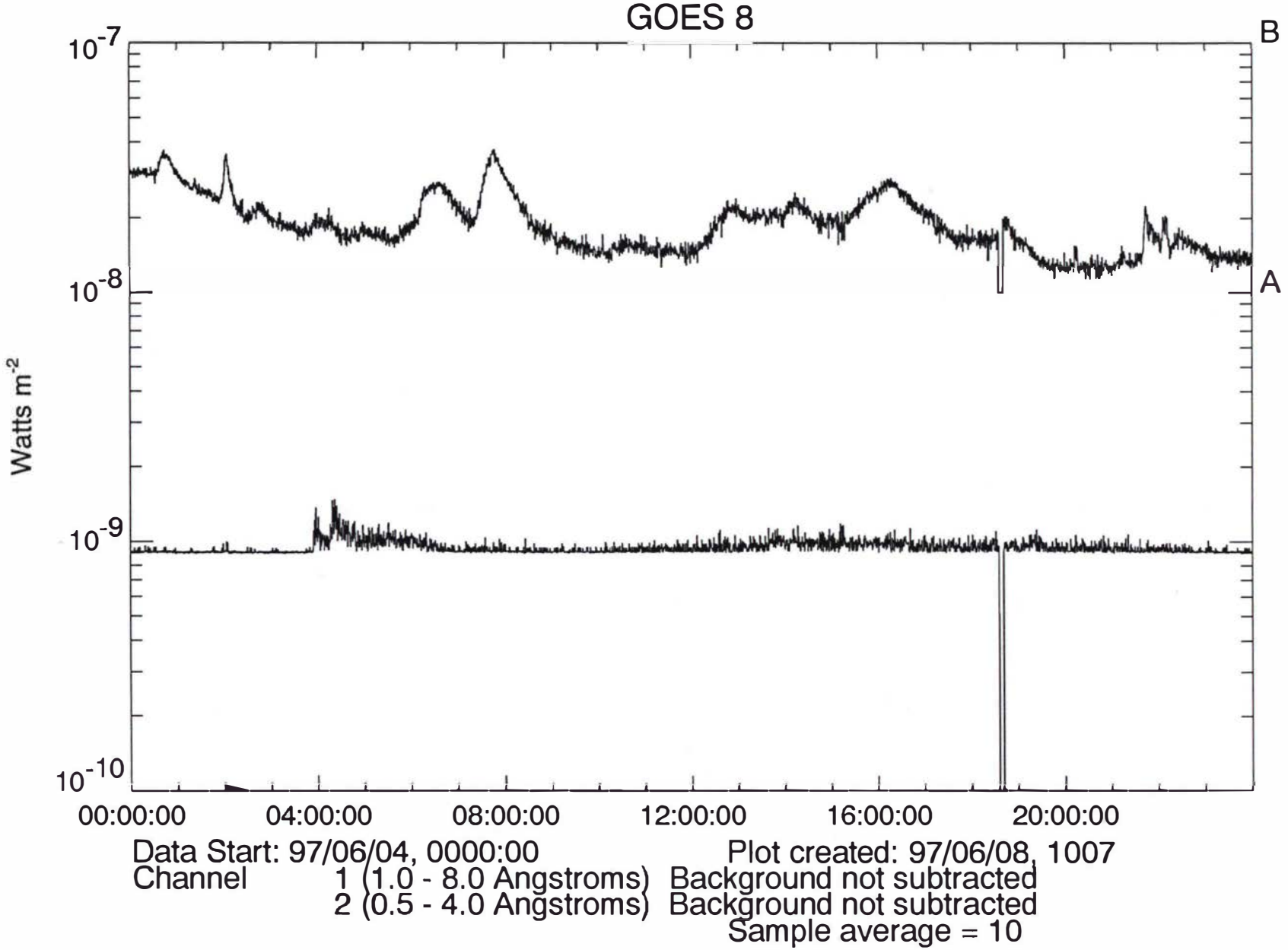

KONUS
04/06/97 71345.369
50- 200 keV
COUNTS/0.064 S
100
75
50
25
0
29/10/ 3
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS



Current Time: 97/06/08, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

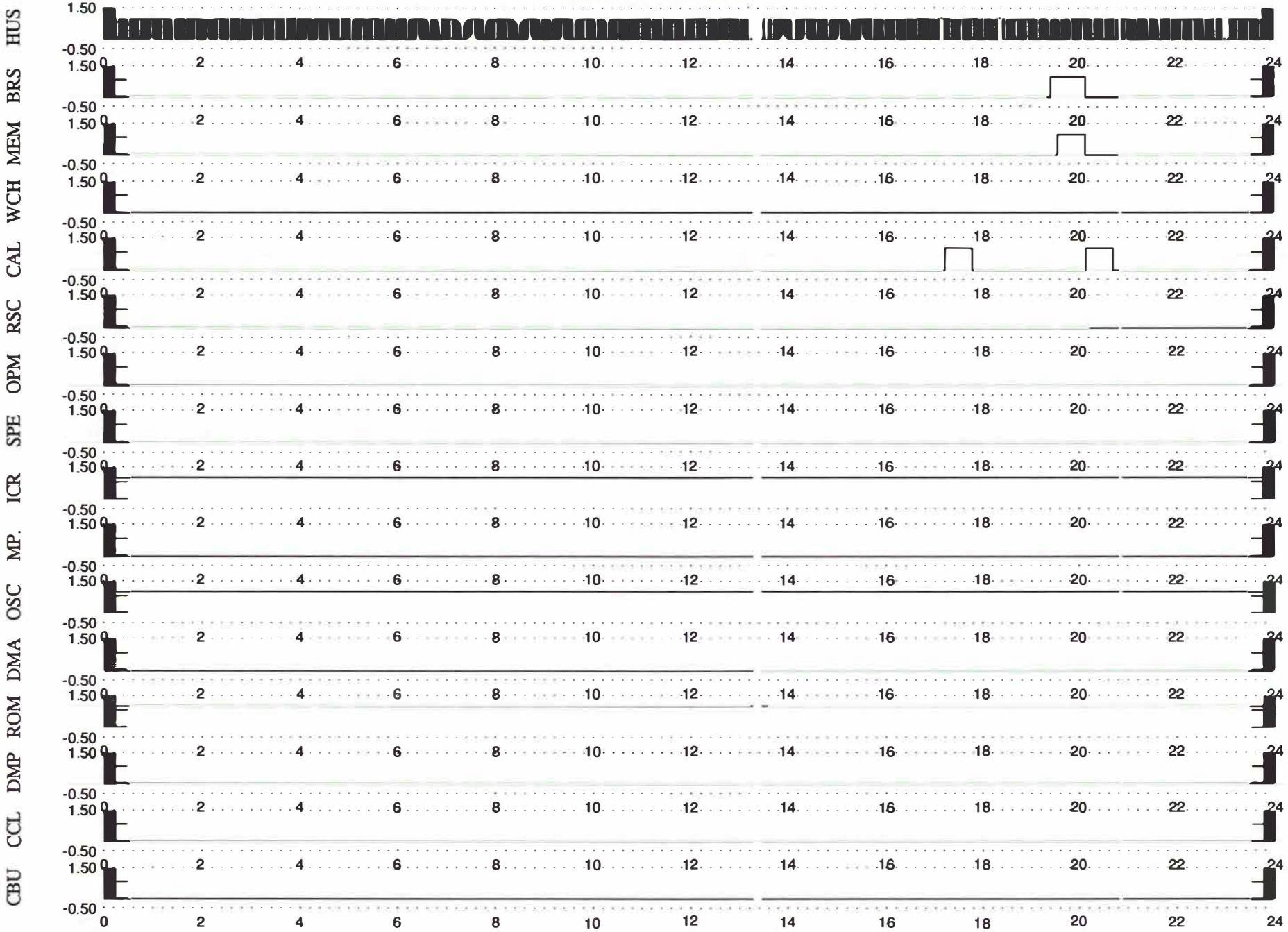
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare


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

HUS MODES EDR day 155, year 1997 to day 155, year 1997 10/13/97

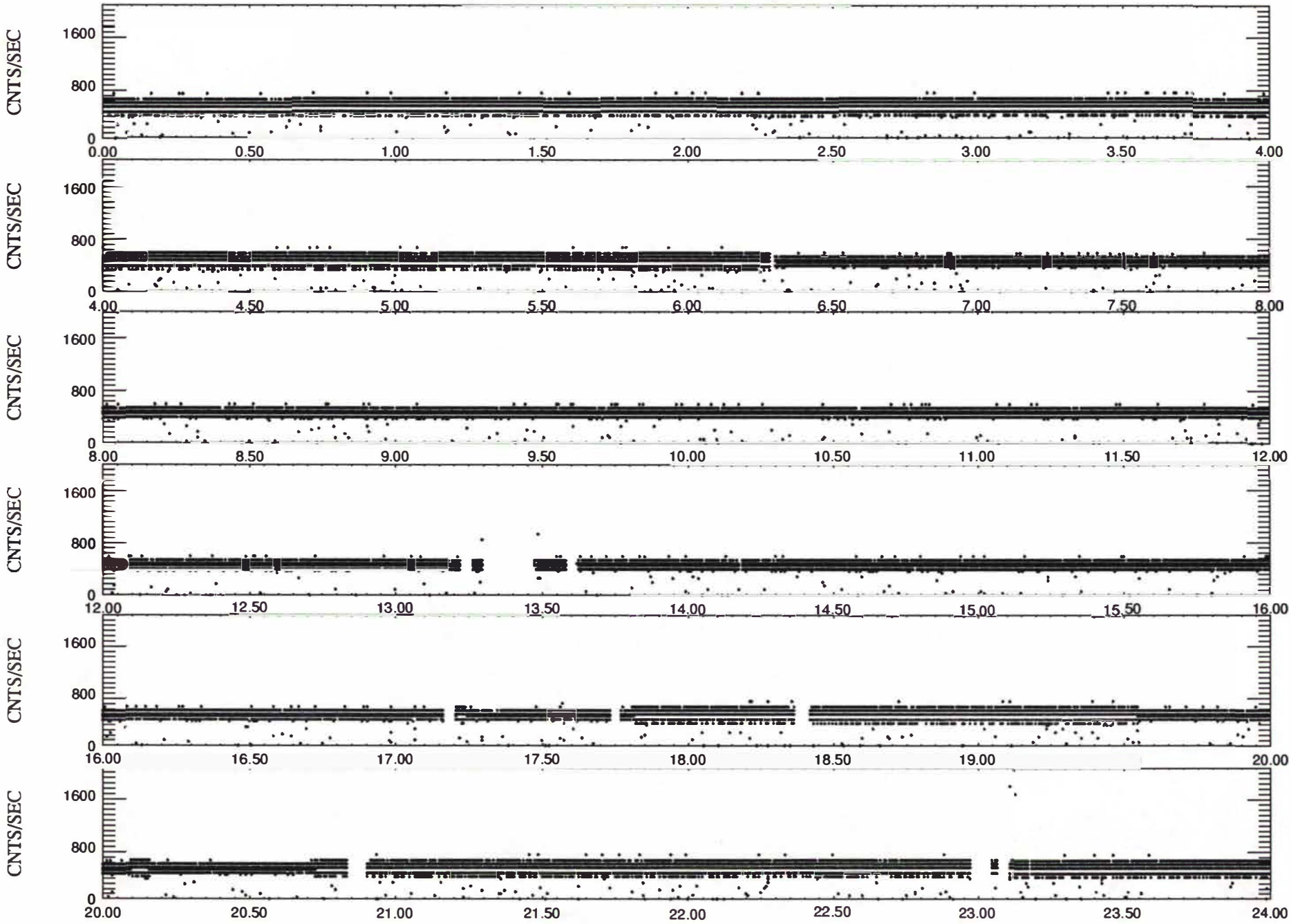
BURST NUMBER 4



UNIV AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 155, year 1997 to day 155, year 1997 10/13/97

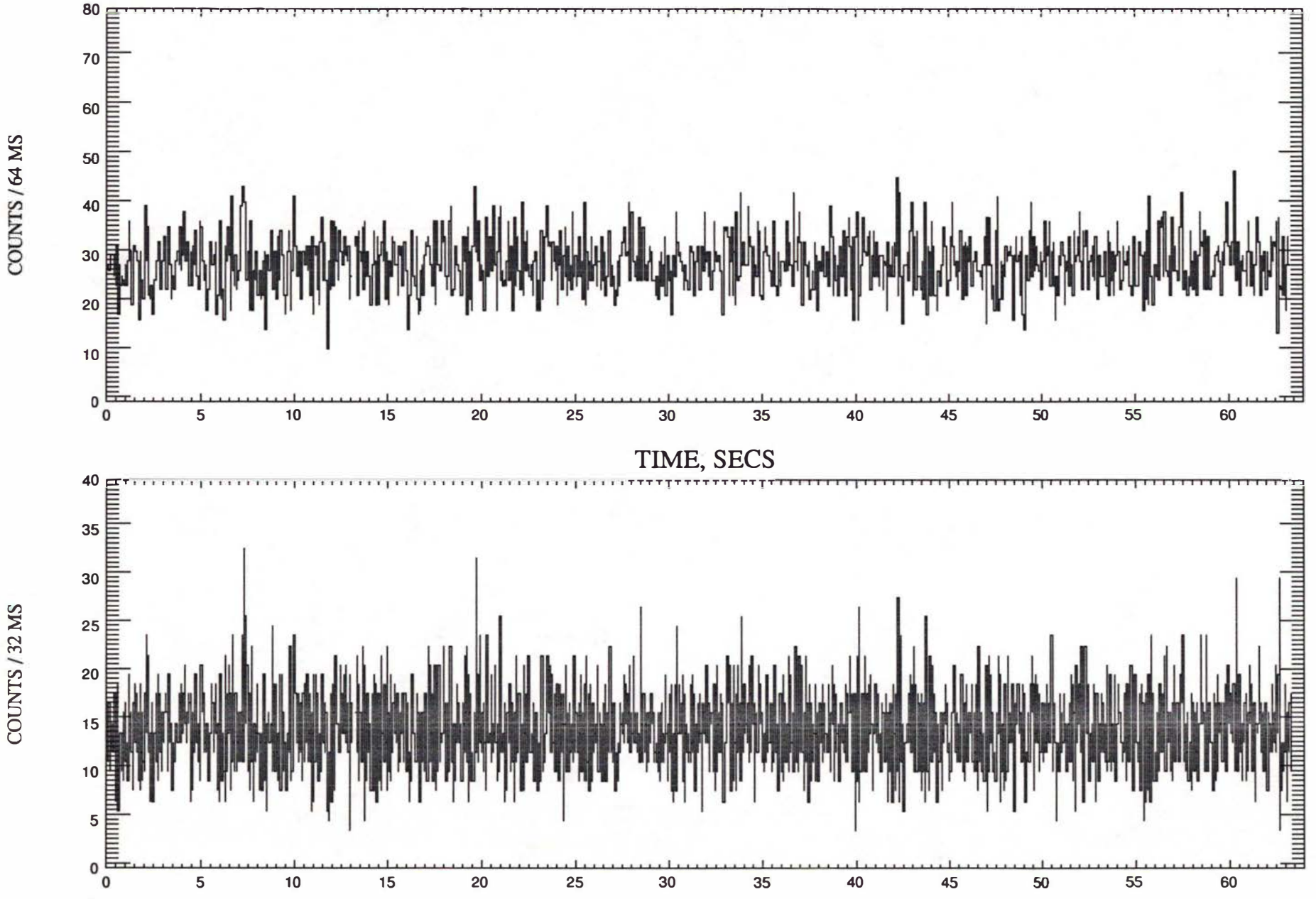
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 155, year 1997 10/13/97

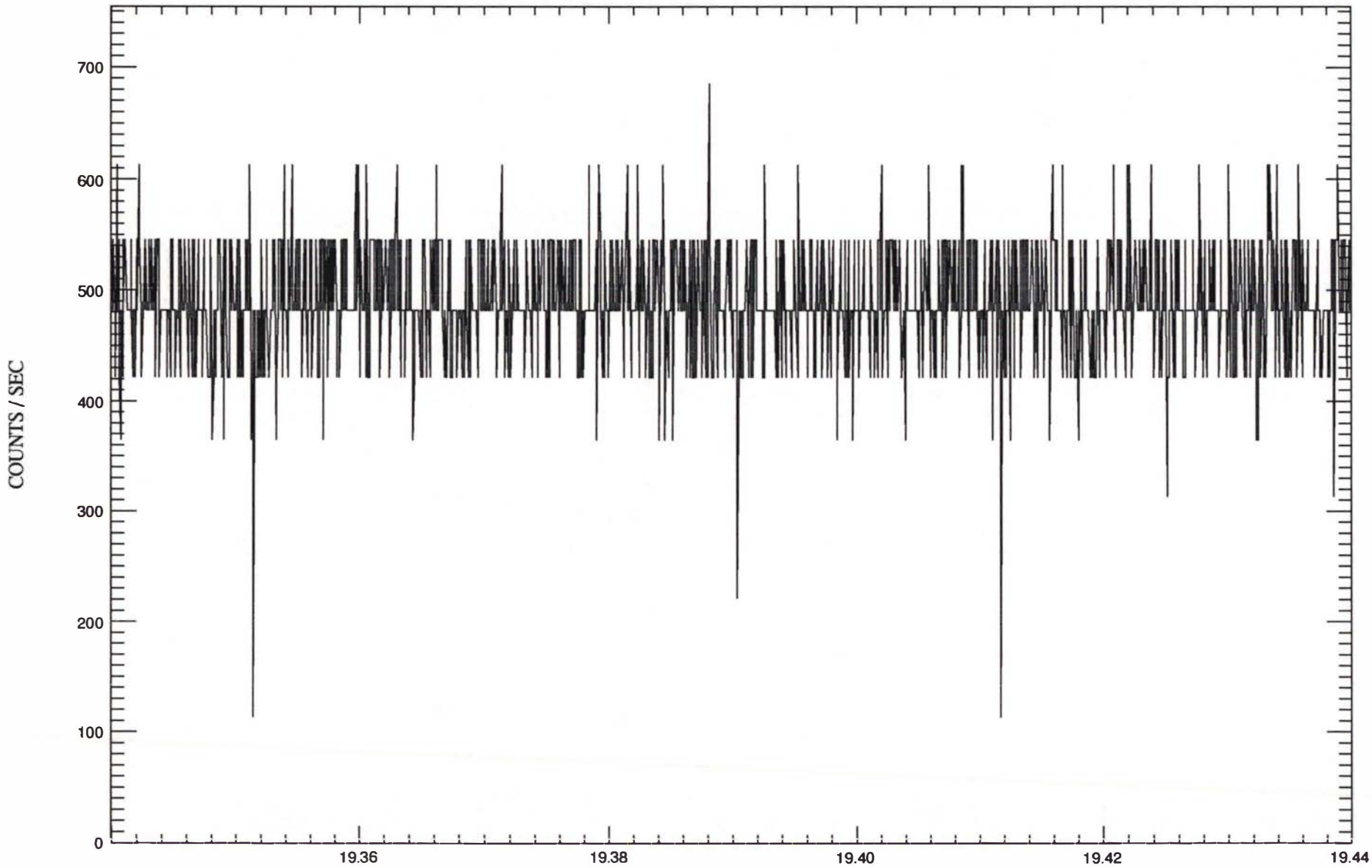
Burst Counter 4 at UT=19.388283123440 h=69797.819 s 19:23:17.819



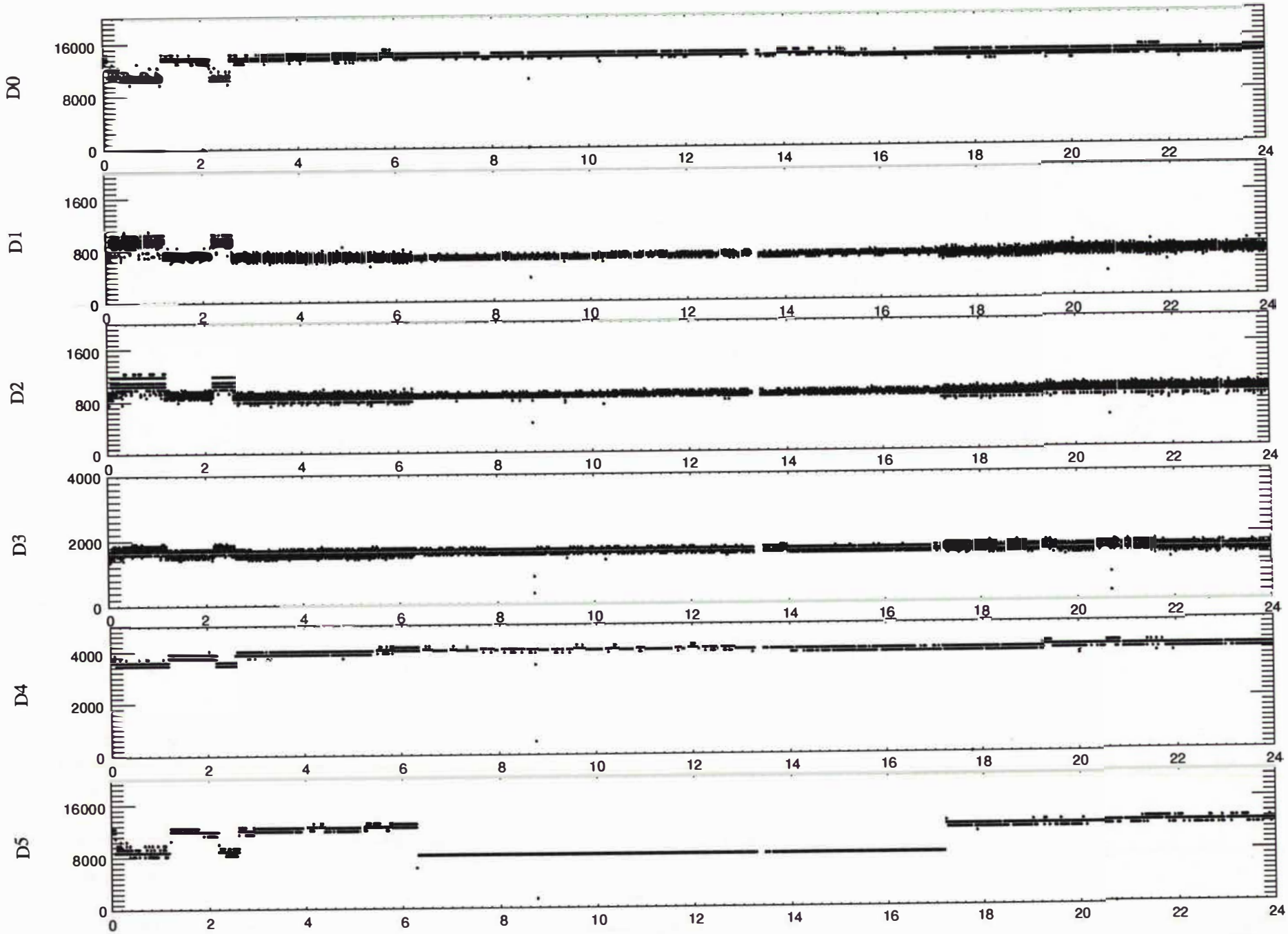
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 155, year 1997 to day 155, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 155, year 1997 to day 155, year 1997 10/13/97



From RICHARDSON@ssl.msfc.nasa.gov Mon Jun 9 09:24 PDT 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA05094; Mon, 9 Jun 1997 09:23:50 -0700
Date: Mon, 9 Jun 1997 11:23:35 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970609112335.2165b6ef@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6255
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6255
EVENT OF 1997 JUN 5 DAY OF YEAR=156
EVENT CROSSING TIME AT BATSE : 29304. S. OR 08:08:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 149.000 61.000
BATSE PEAK COUNTING RATE: 5500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 6/ 97 IS:
RA= 151.274 DEC= 28.917 DIST= 5.378 AU
BATSE-ULYSSES DISTANCE = 804570168. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=147.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2273.00 SECS.
CROSSING TIME AT ULYSSES IS 27031. S. OR 07:30:31 +/- 263.21 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 6/ 97 IS:
RA= 175.081 DEC= 2.976 DIST= 1.063 AU
MARS-BATSE DISTANCE = 159008864. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=118.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -254.73 SECS.
CROSSING TIME AT MARS IS 29049. S. OR 08:04:09 +/- 76.90 SECONDS

id JAA05078; Mon, 9 Jun 1997 09:23:10 -0700

BATSE BURST TRIGGER
NO.: 6255

TIME: TJD=0604 SECONDS=29304

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=135.1 AZIMUTH=248.4 ERROR=12.7 DEGREES

COMMENTS:
GRB. SHORT SPIKE. DUR.~0.4 SEC. NOT VISIBLE ABOVE 300KEV.

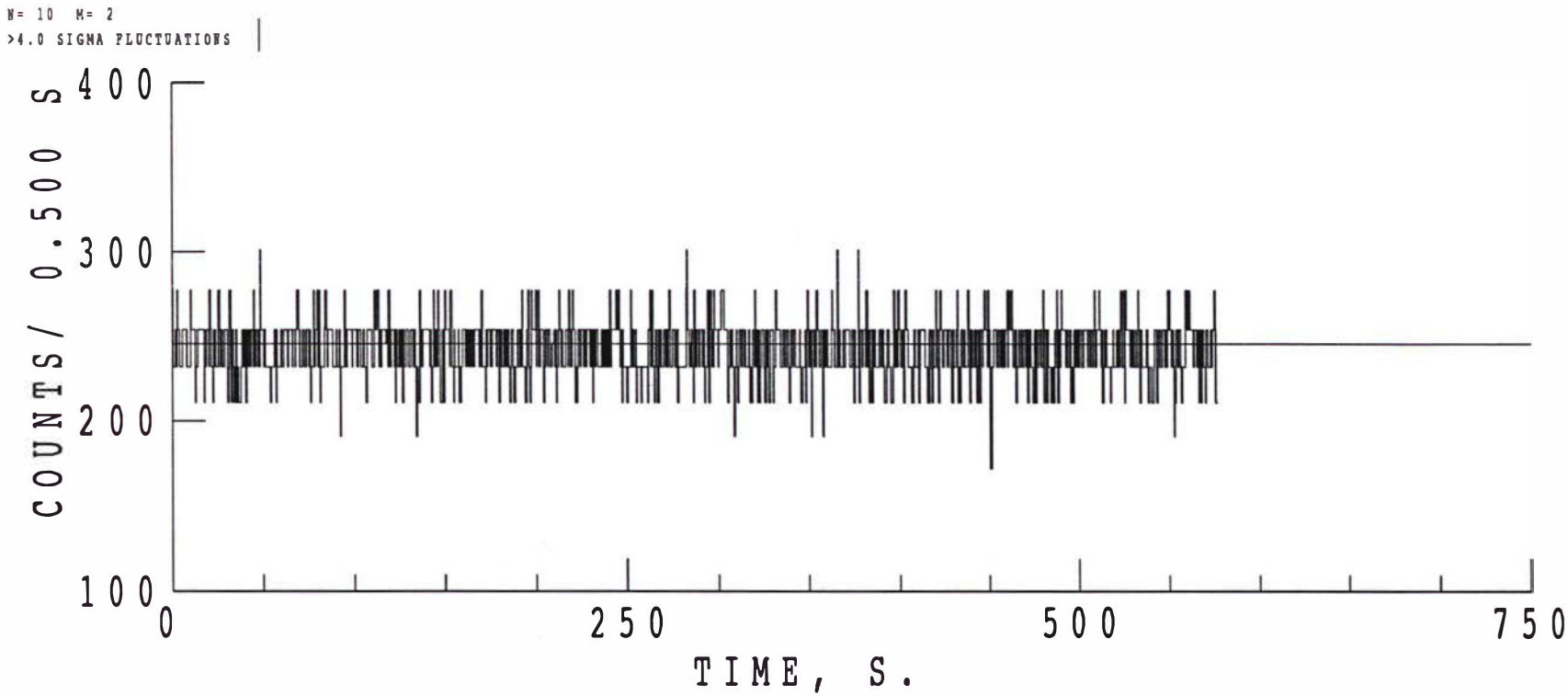
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6255	970605	10604	29304	5500	149	+61	.4

BATSE BURST# 6255

ULYSSES RT 26/ 6/97

5/ 6/97 26748.213 s

0- 0 keV



From RICHARDSON@ssl.msfc.nasa.gov Mon Jun 9 09:22 PDT 1997
Date: Mon, 9 Jun 1997 11:22:01 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6256

TIME: TJD=0604 SECONDS=48470

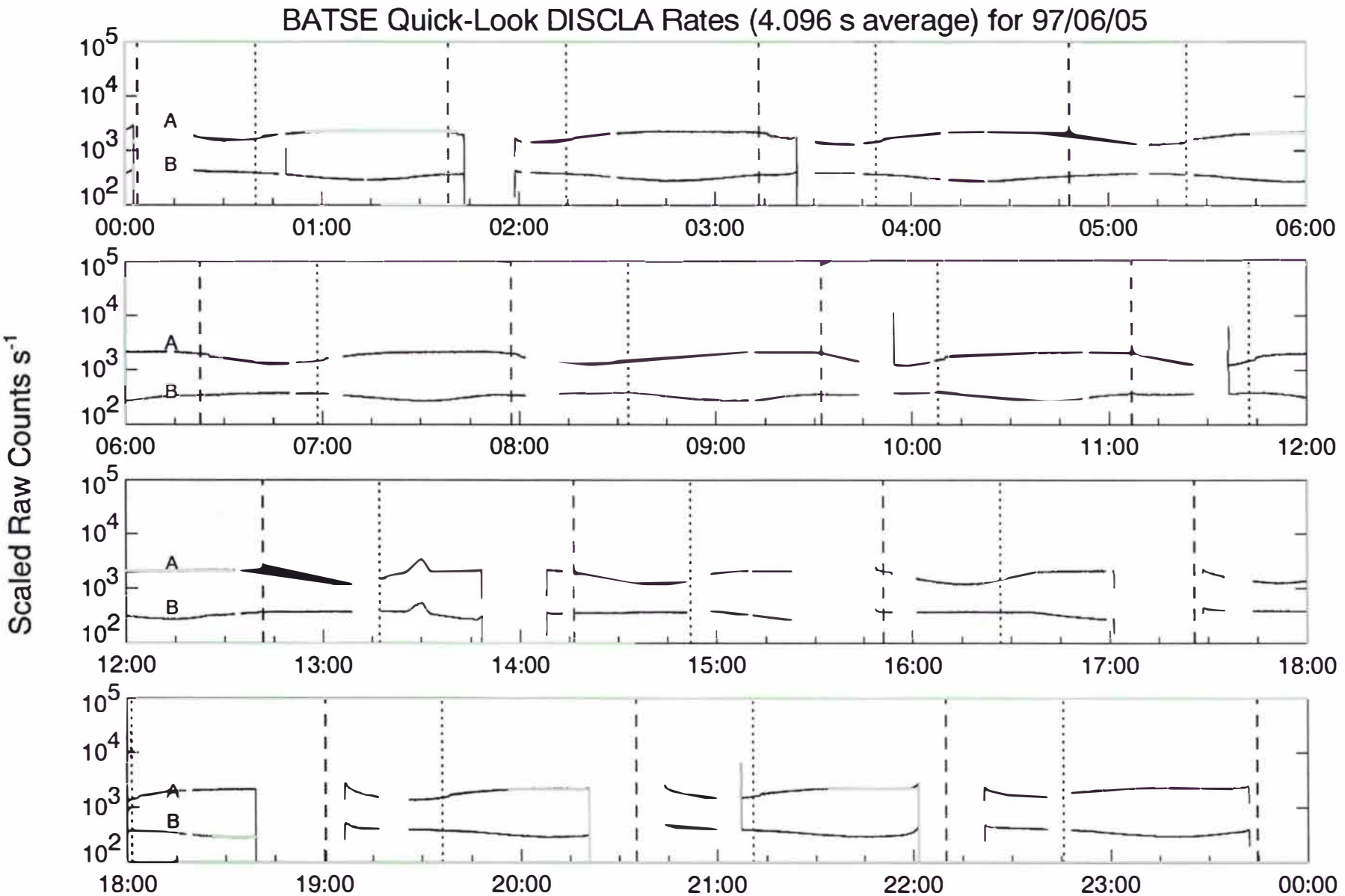
TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

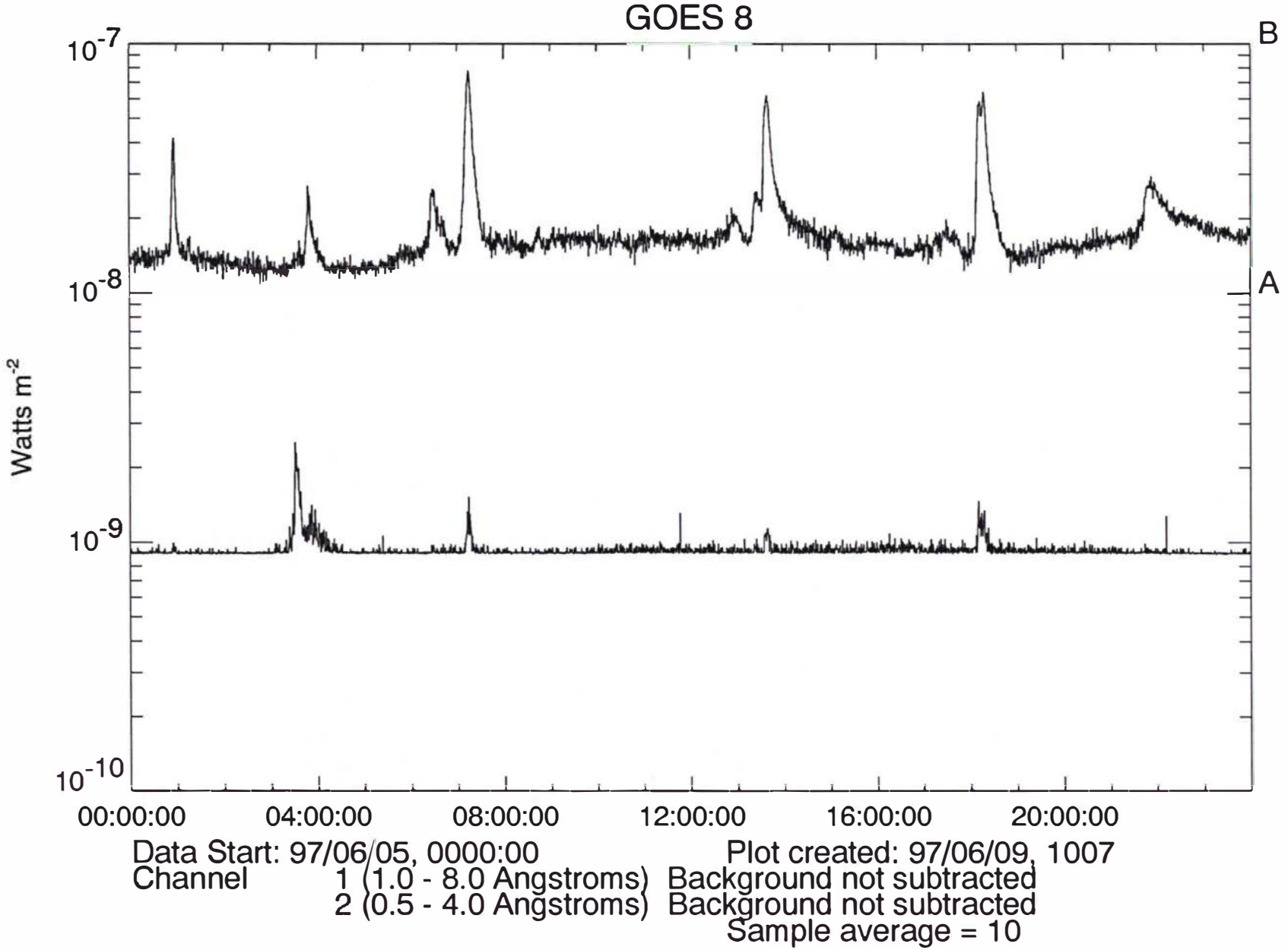
COMMENTS:
ELECTRON EVENT



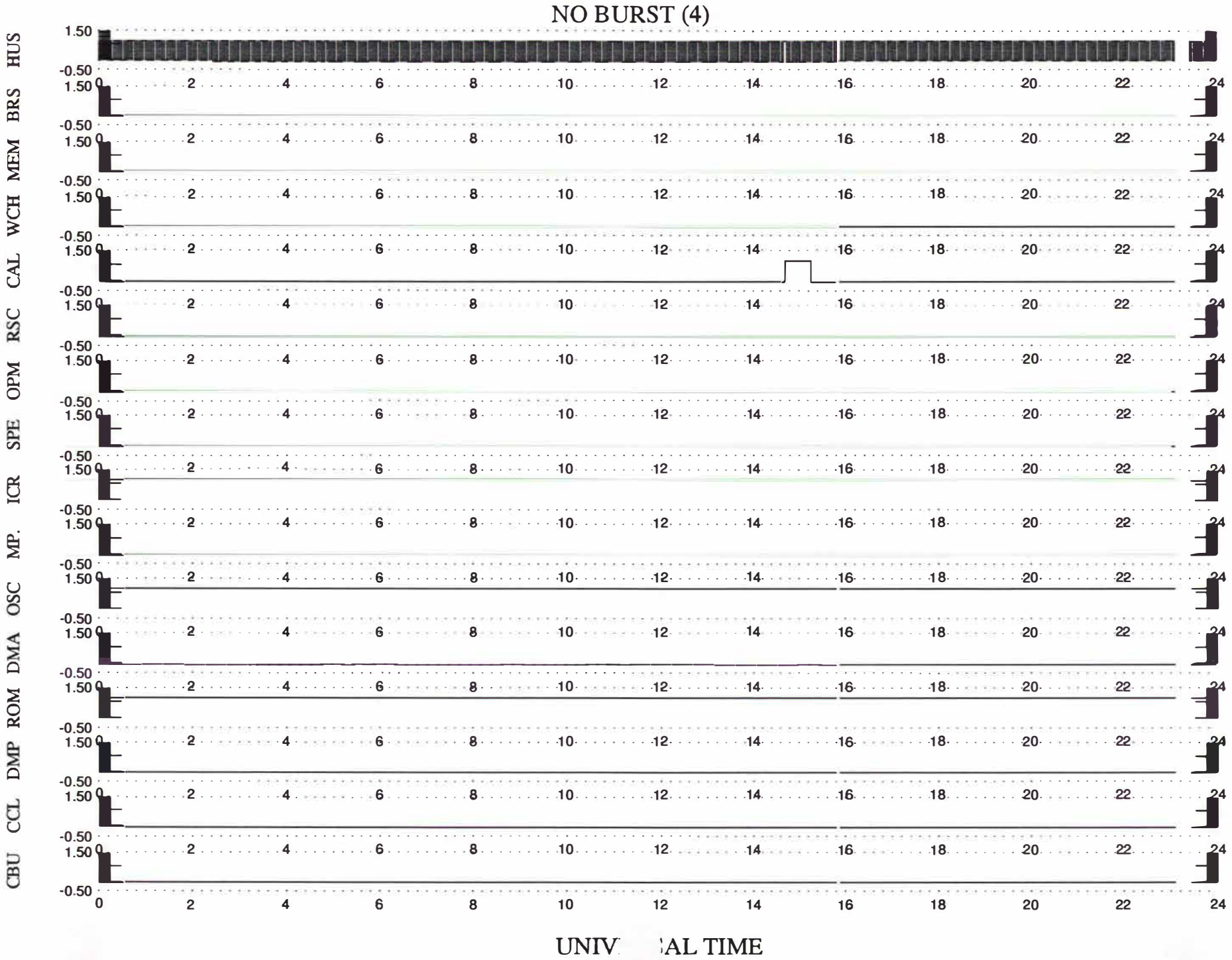
Current Time: 97/06/09, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare

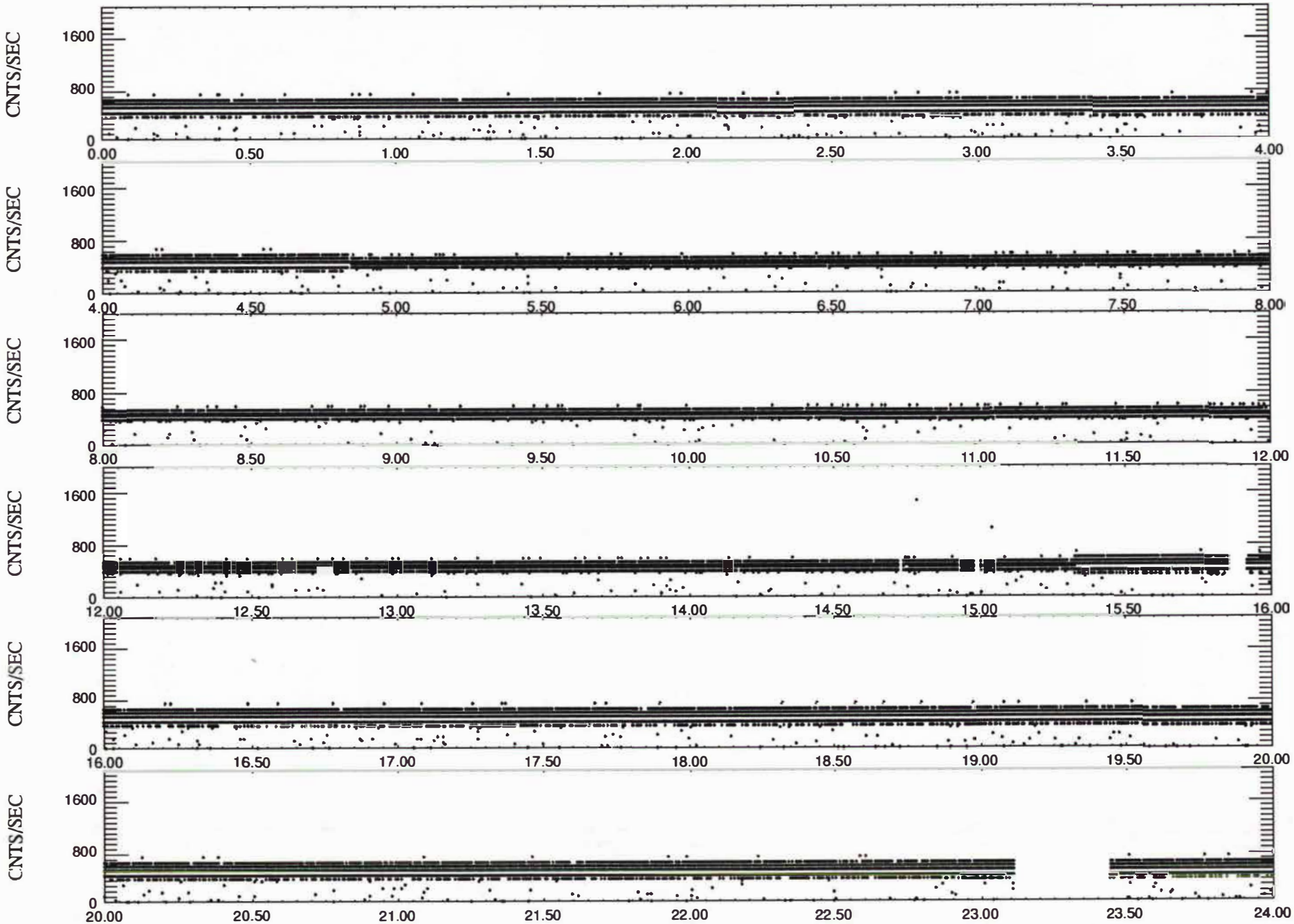

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/05, 0000:00
Plot created: 97/06/09, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 156, year 1997 to day 156, year 1997 10/13/97



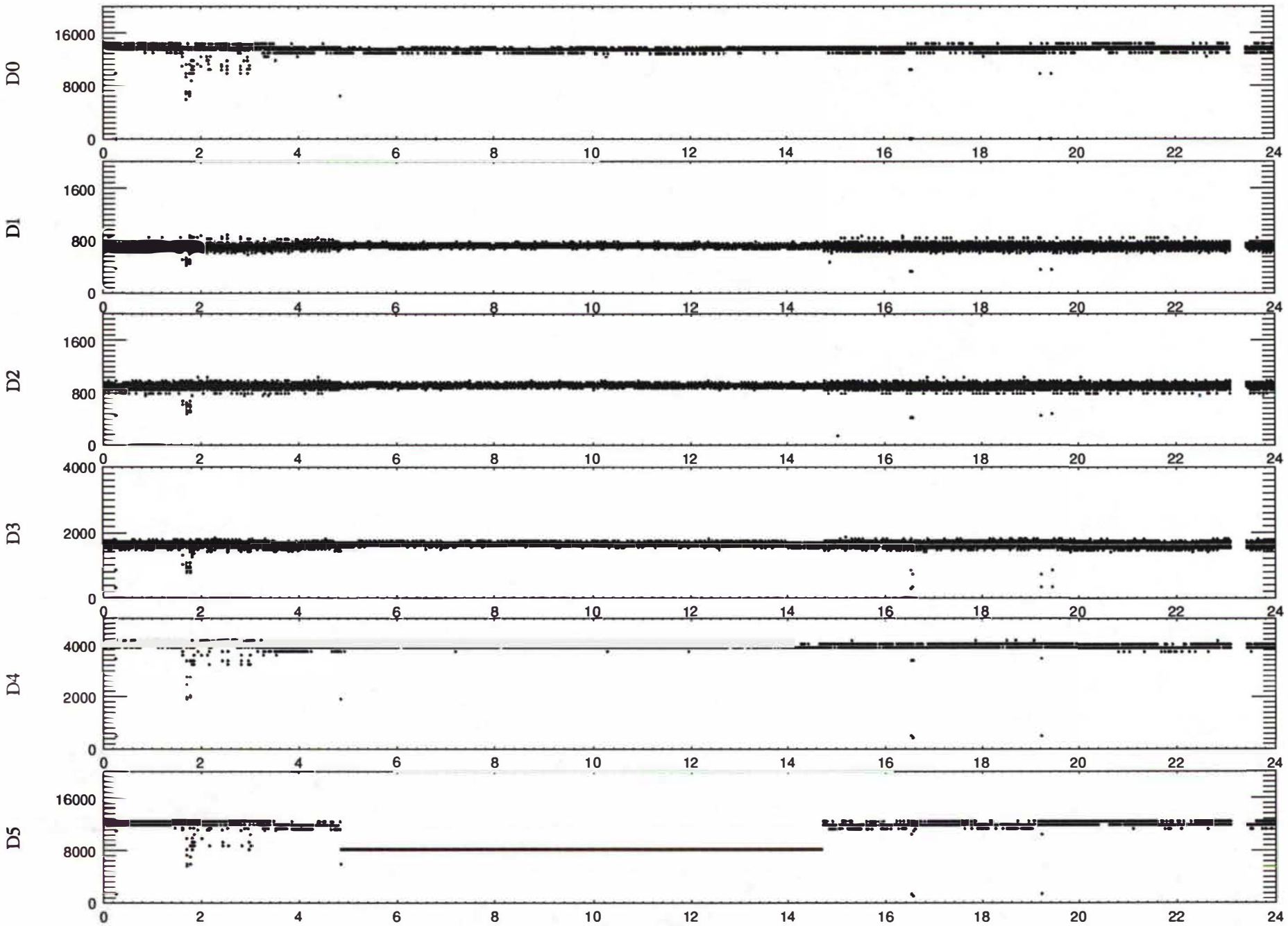
HUS 2A, MODE 1, NOT AVERAGED EDR day 156, year 1997 to day 156, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 156, year 1997 to day 156, year 1997 10/13/97



From SURASAK@ssl.msfc.nasa.gov Mon Jun 9 08:50 PDT 1997
Date: Mon, 9 Jun 1997 10:49:12 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6257

TIME: TJD=0605 SECONDS=47103

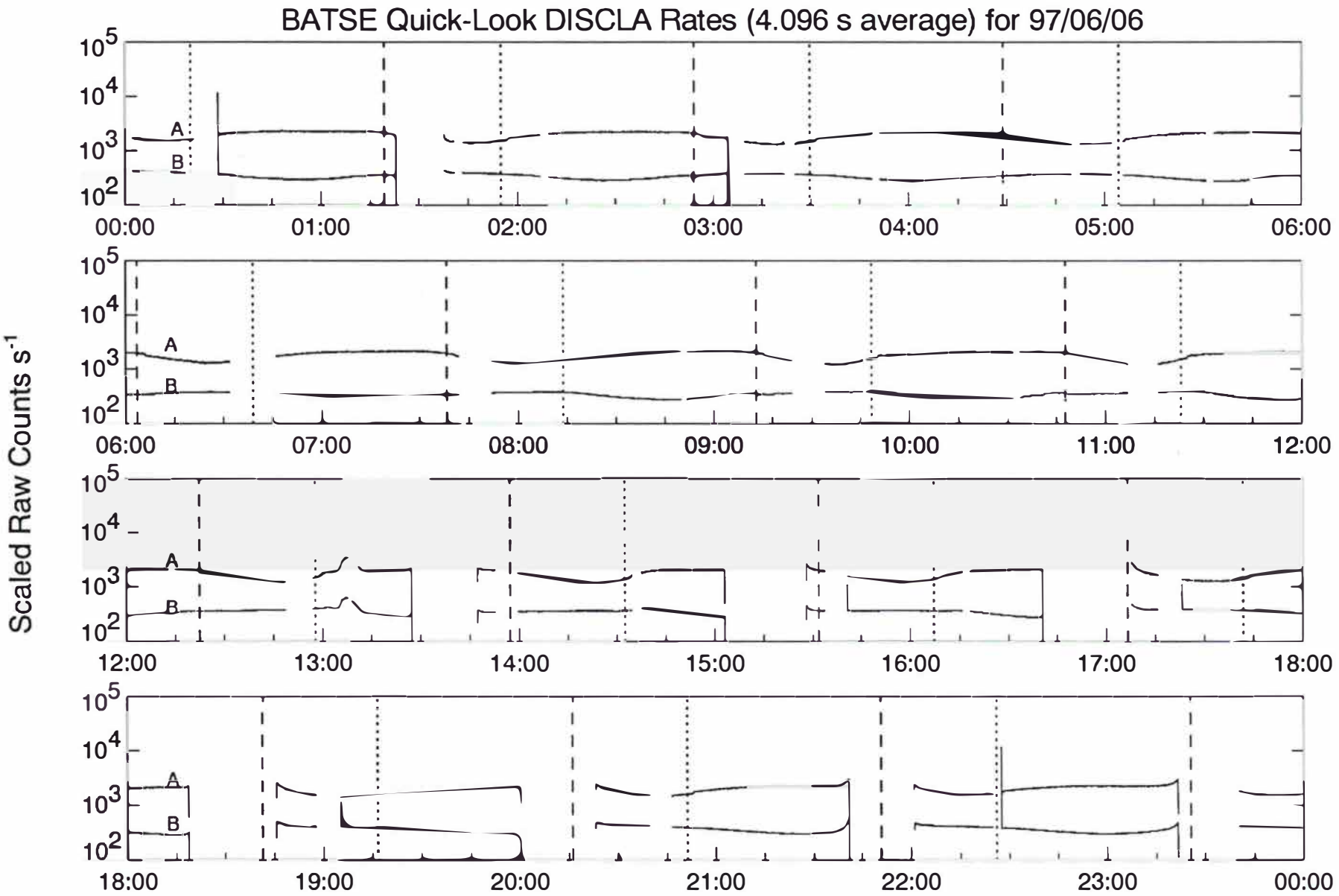
TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL:N

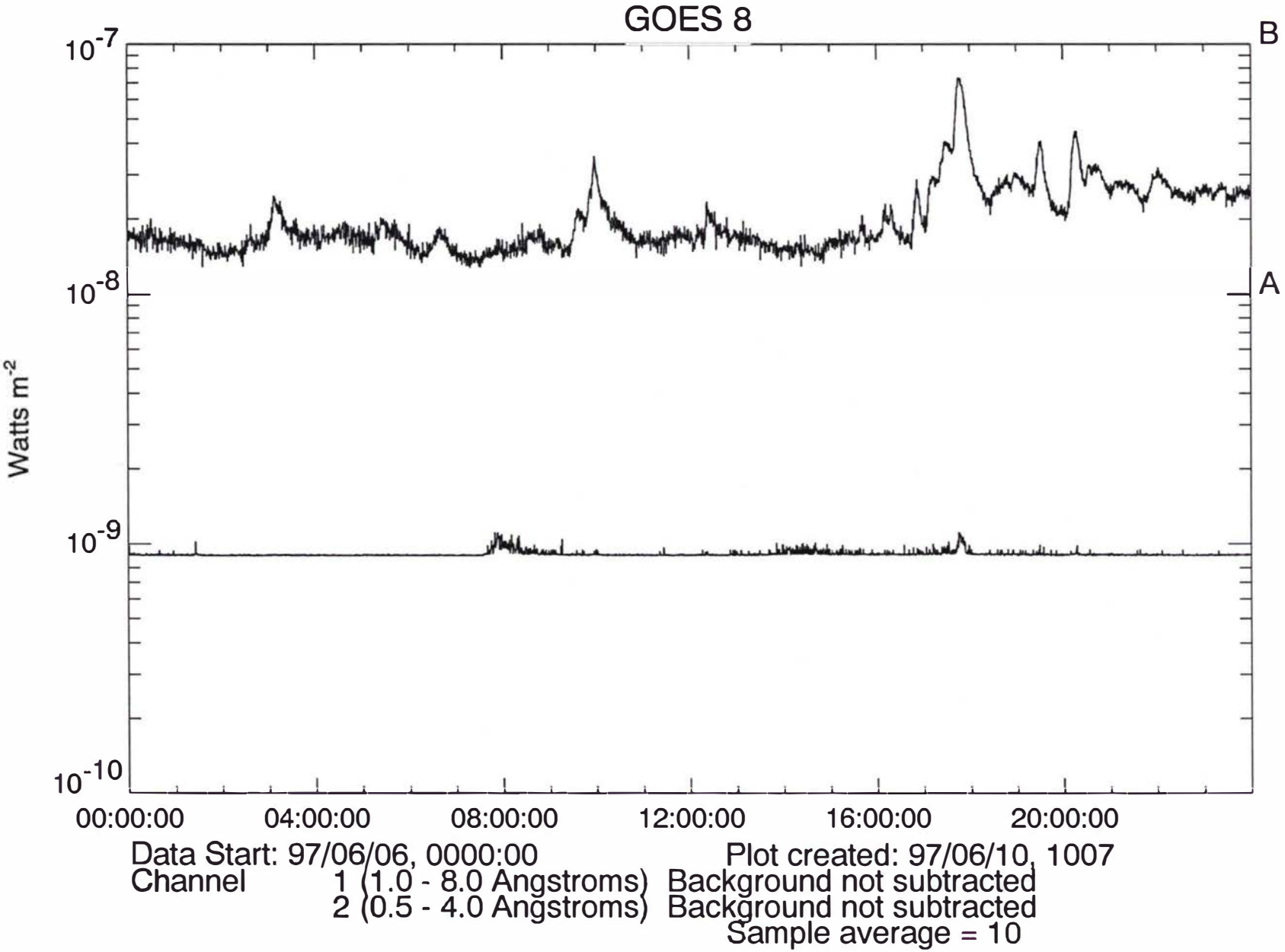
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

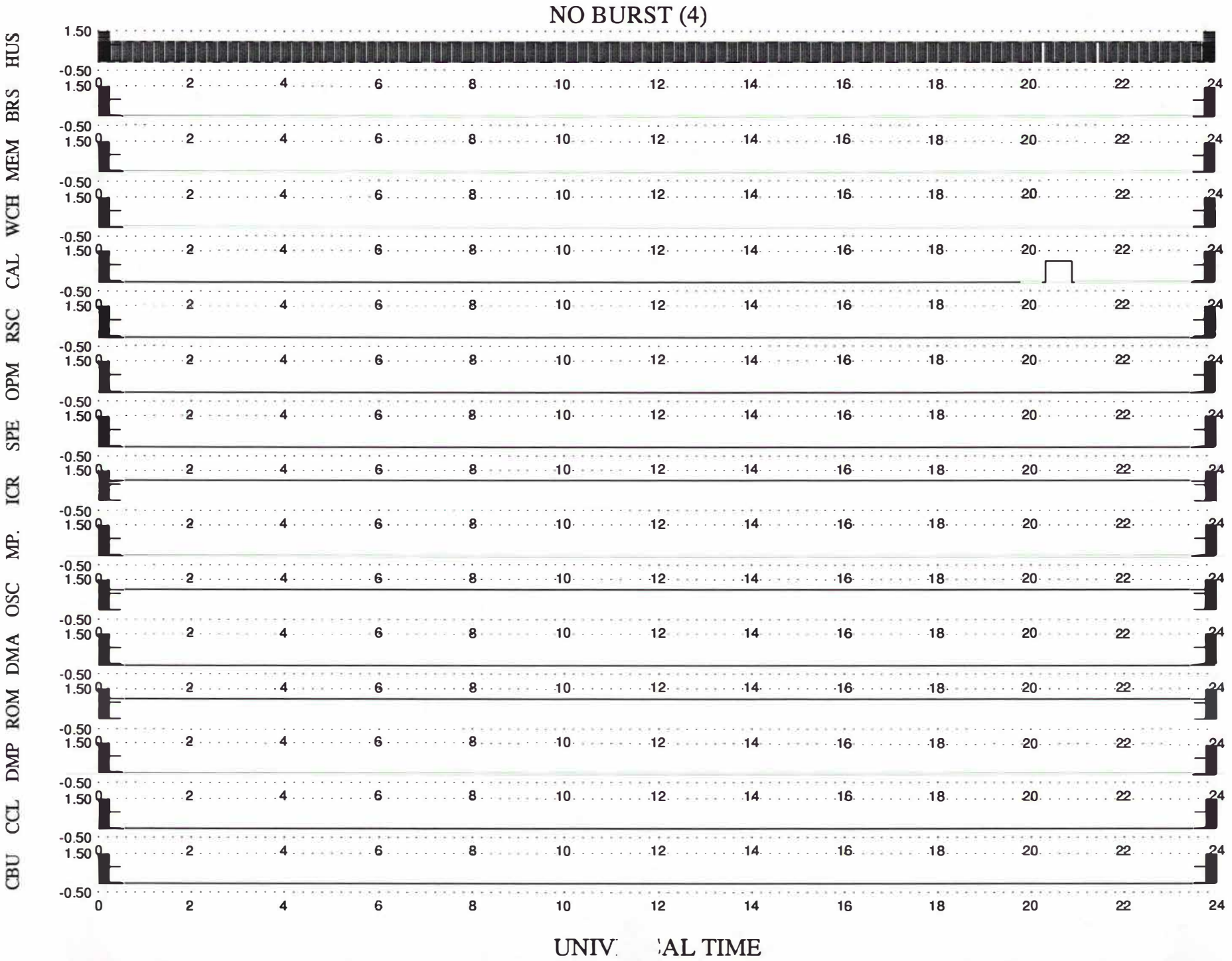
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/06
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/10, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

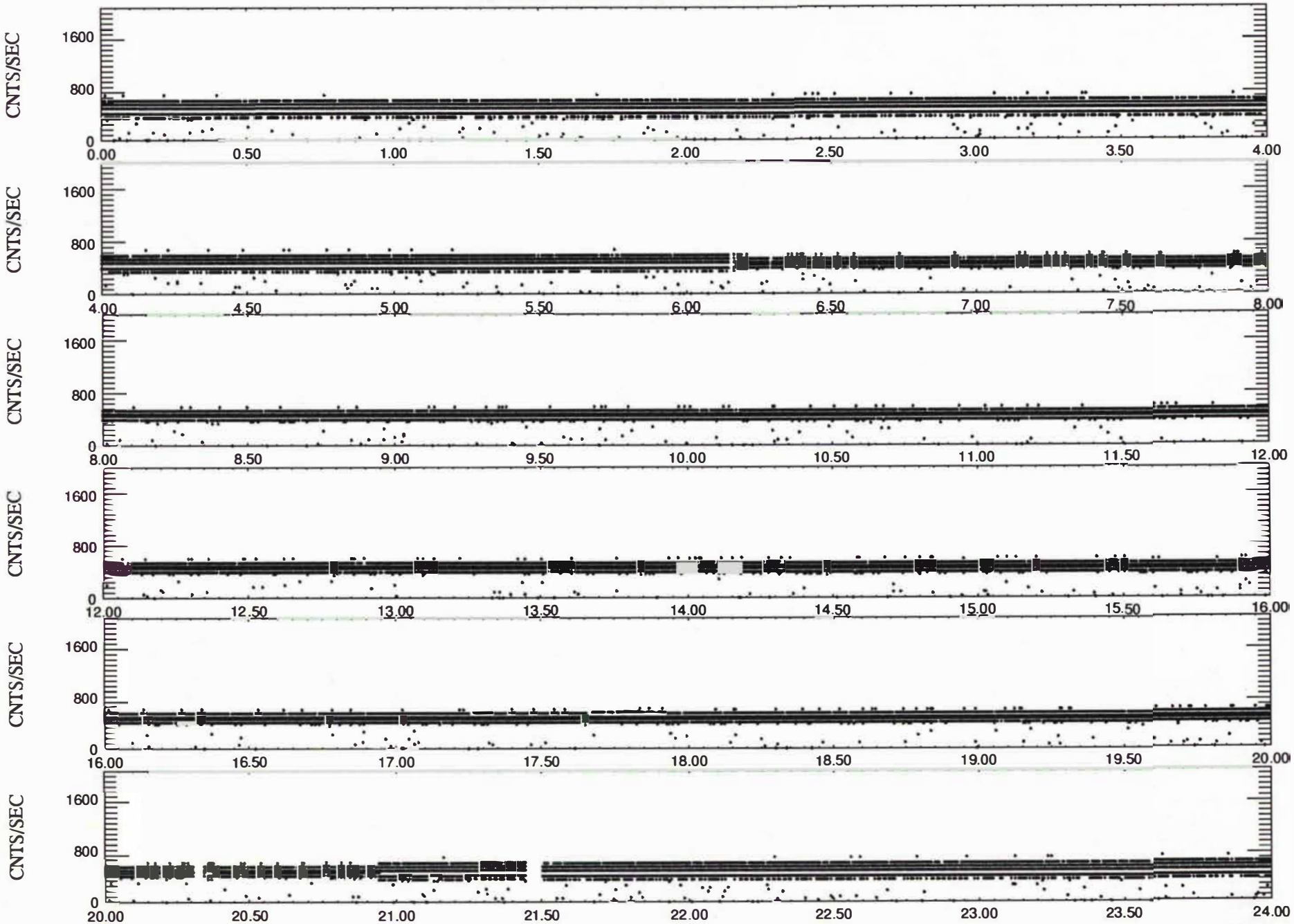

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/06, 0000:00
Plot created: 97/06/10, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 157, year 1997 to day 157, year 1997 10/13/97



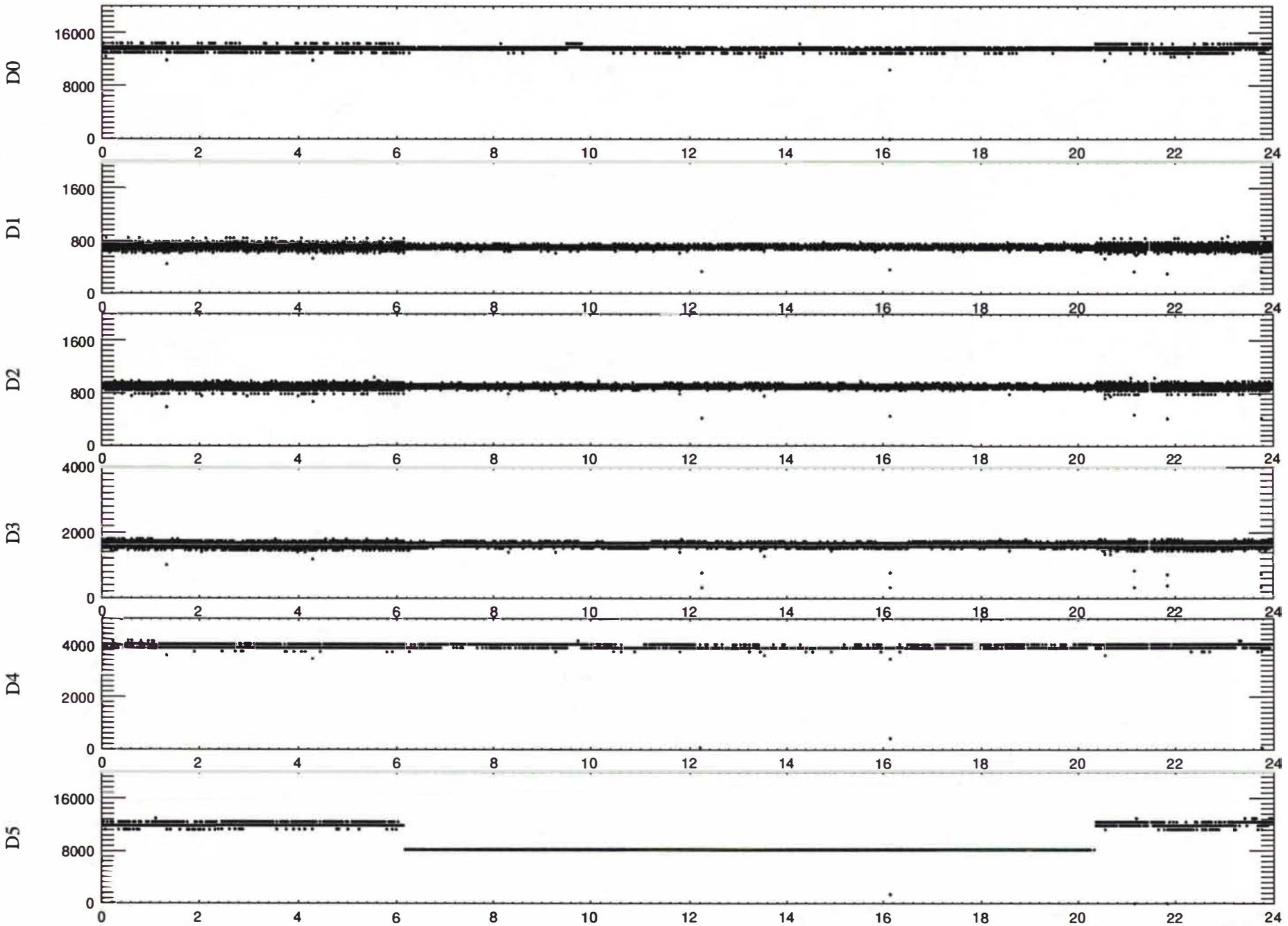
HUS 2A, MODE 1, NOT AVERAGED EDR day 157, year 1997 to day 157, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV 'AL TIME

HUS 2B COUNTS / SEC EDR day 157, year 1997 to day 157, year 1997 10/13/97



Date: Dec 8 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

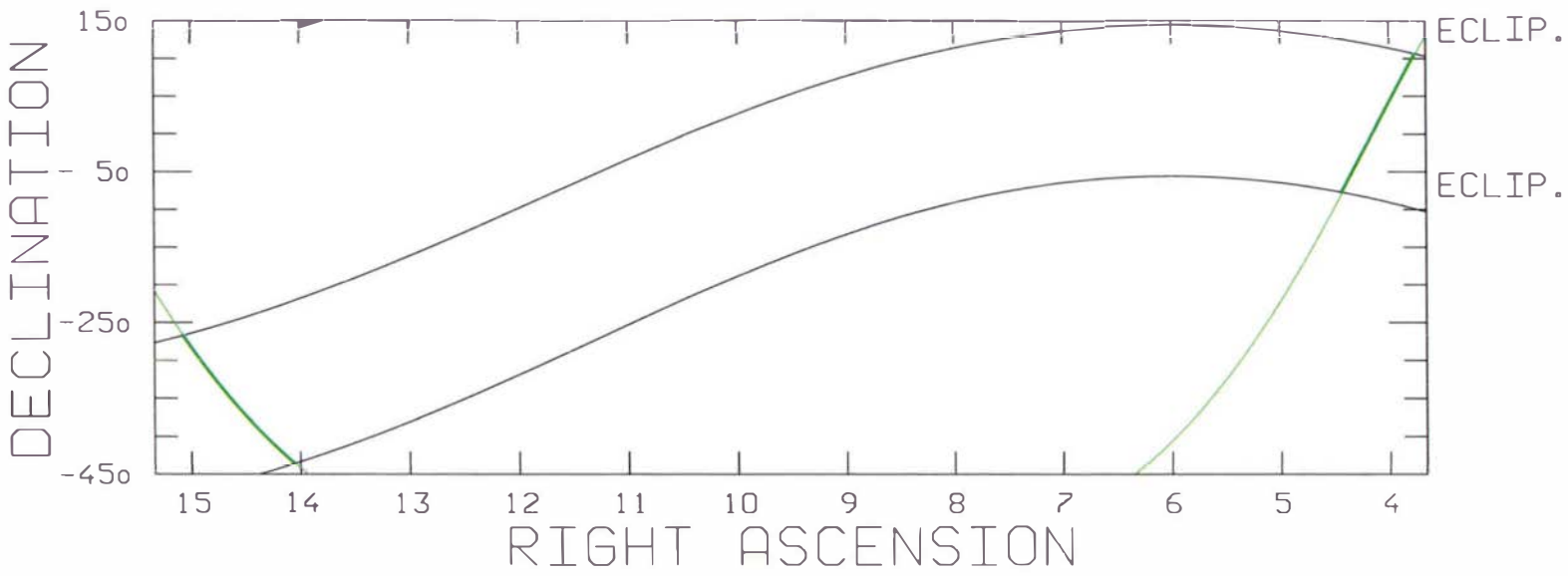
3. For INTEGRAL events

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

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

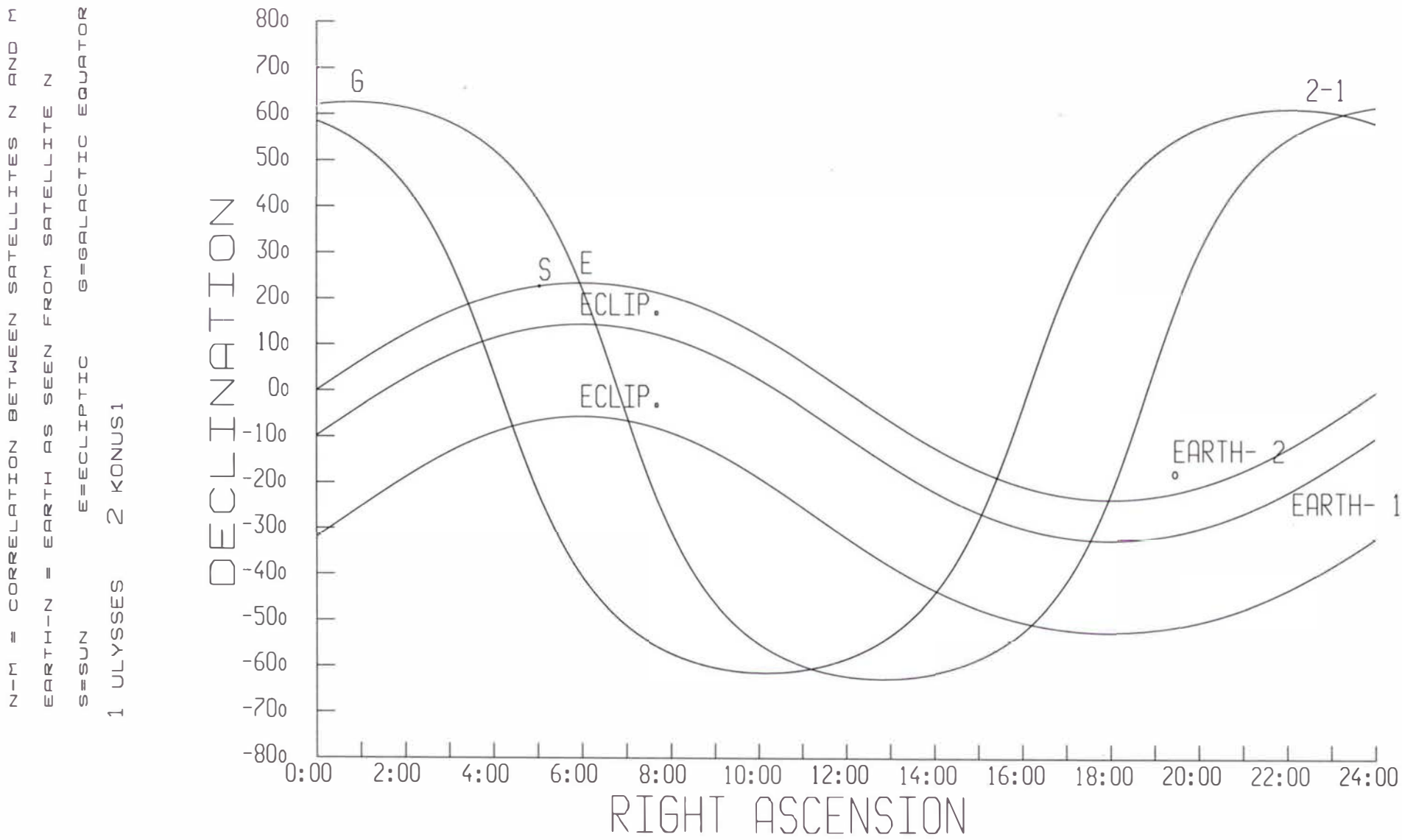
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated with identical times?

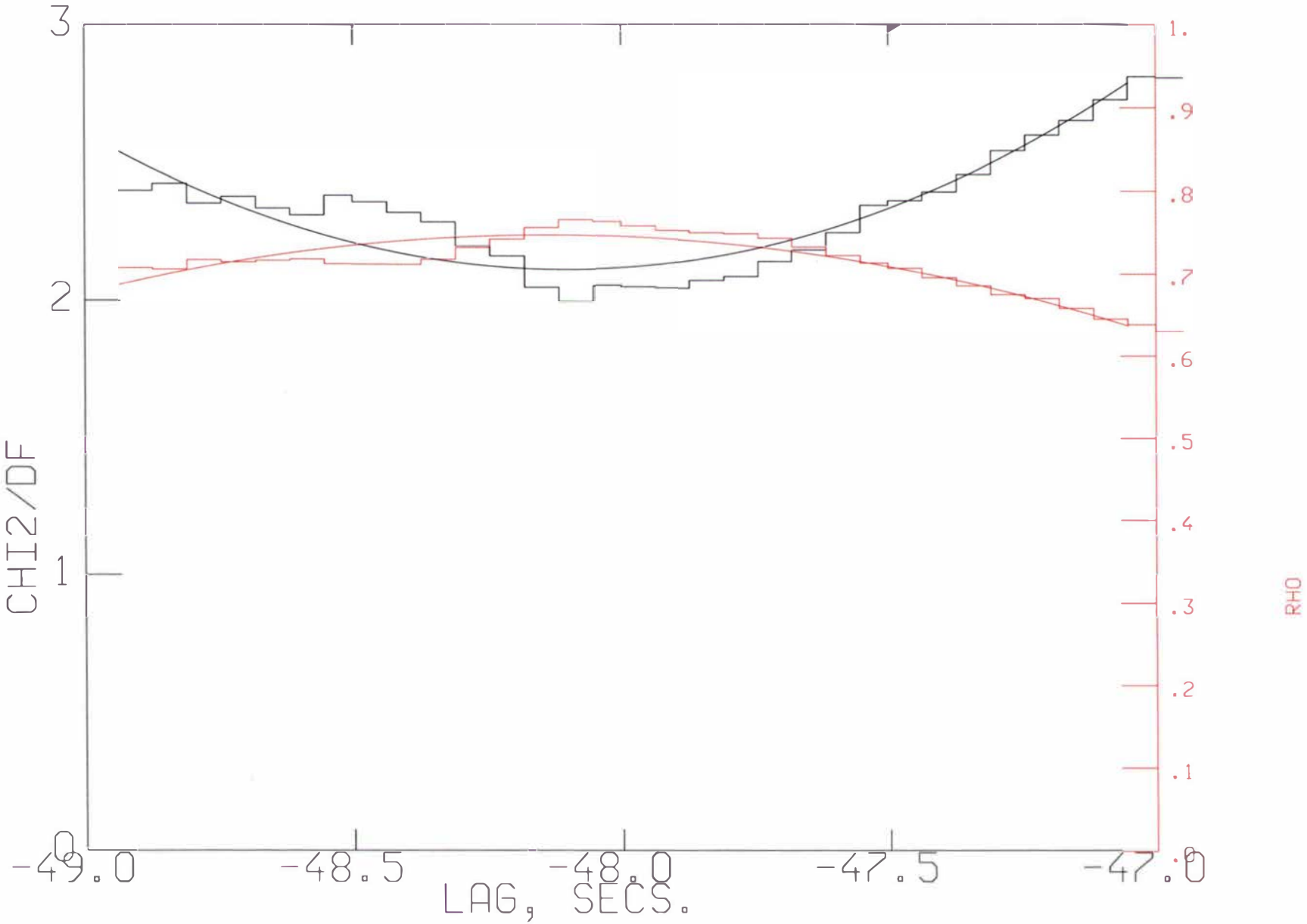

15o
- 5o
-25o
-45o
DECLINATION
15
14
13
12
11
10
9
8
7
6
5
4
RIGHT ASCENSION
ECLIP.
ECLIP.

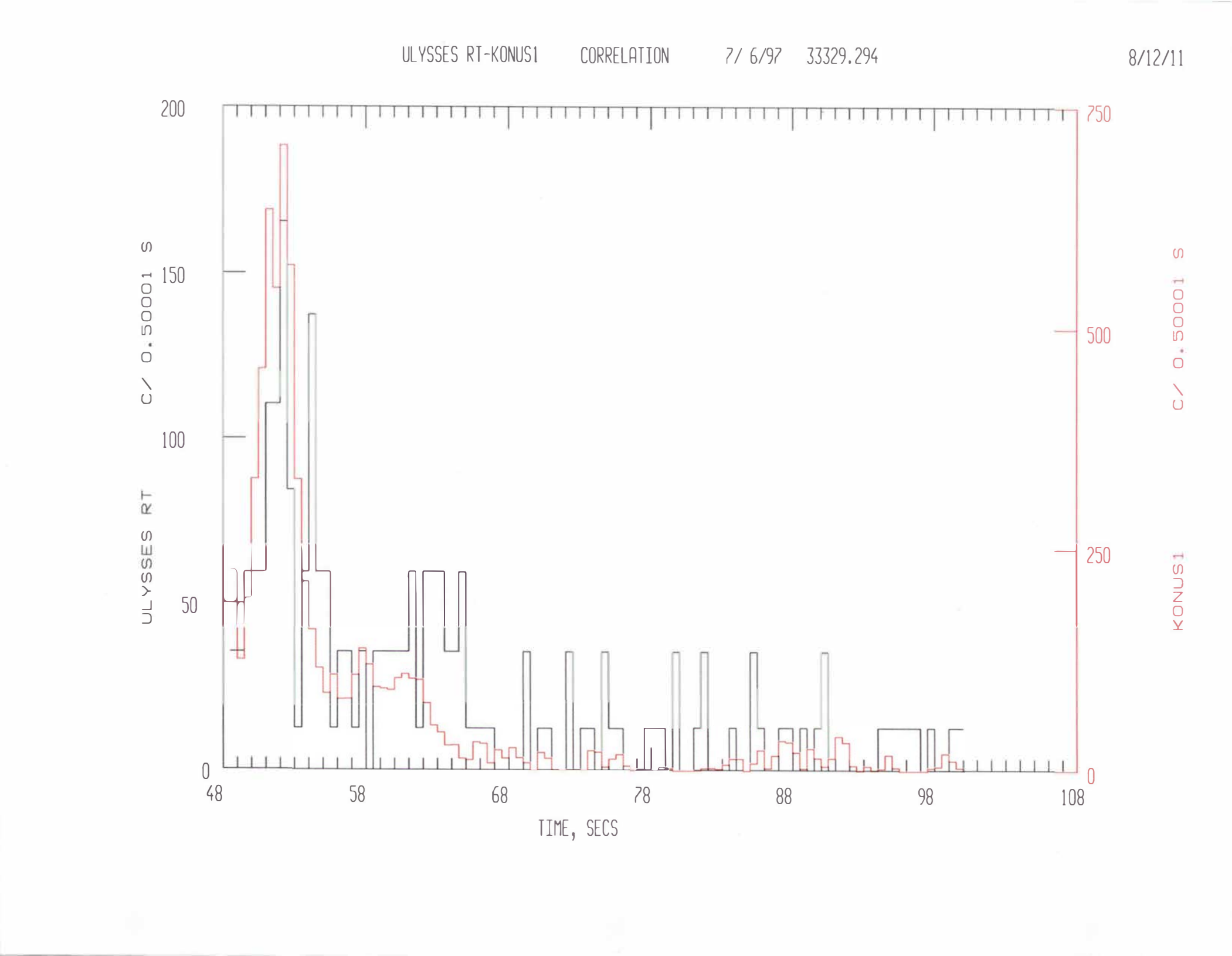
EVENT OF JUN 7, 1997 9:15

08/12/2011



ULYSSES RT-KONUS1 CORRELATION 7/ 6/97 33329.294



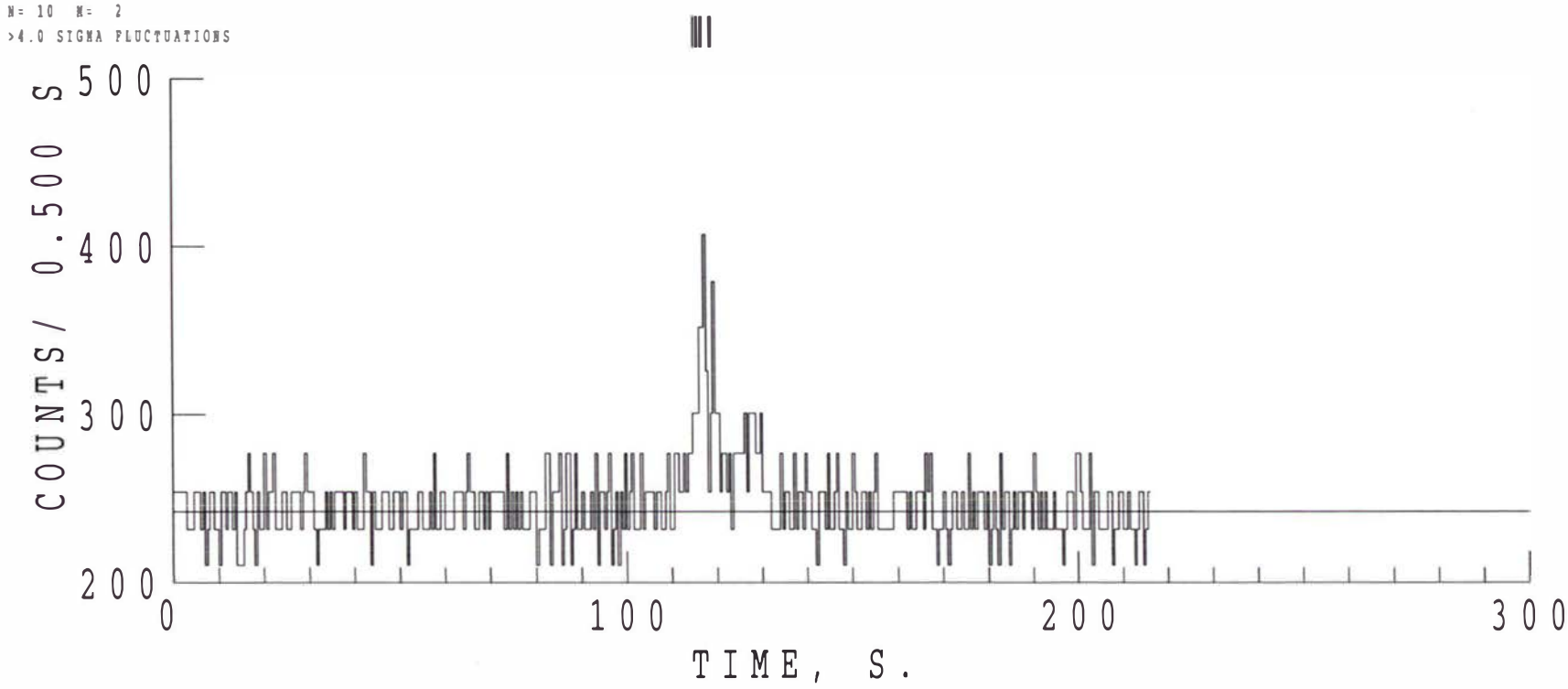

ULYSSES RT-KONUS1 CORRELATION 7/ 6/97 33329.294
8/12/11
200
150
100
50
0
C/ 0.50001 S
ULYSSES RT
750
500
250
0
C/ 0.50001 S
KONUS1
48
58
68
78
88
98
108
TIME, SECS

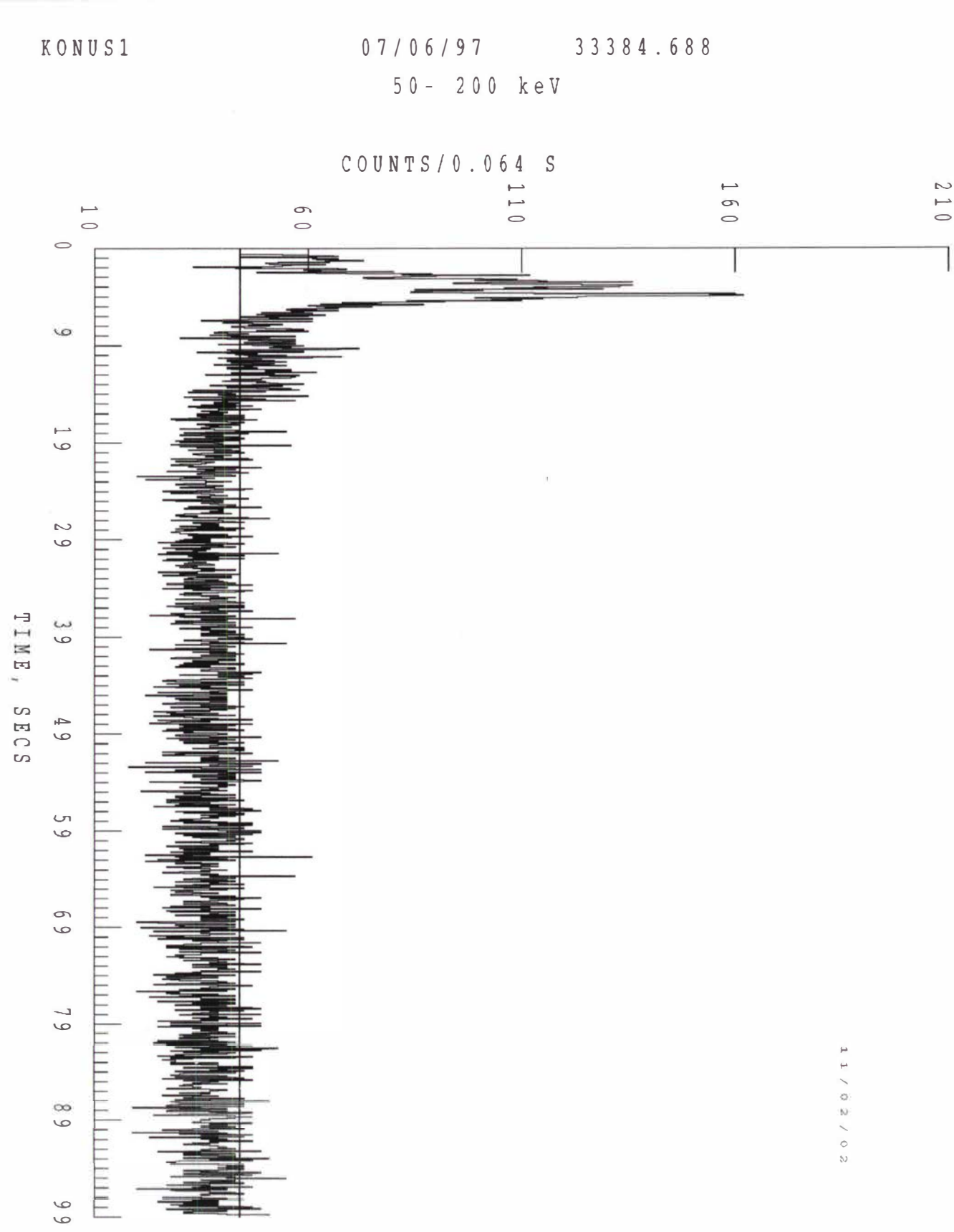
KONUS 19970607 33381

ULYSSES RT 07/12/11

07/06/97 33264.312 s

0- 0 keV




KONUS1
07/06/97
33384.688
50- 200 keV
COUNTS/0.064 S
10
60
110
160
210
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
11/02/02

KONUS1 19970607 33384

ULYSSES RT

11/02/02

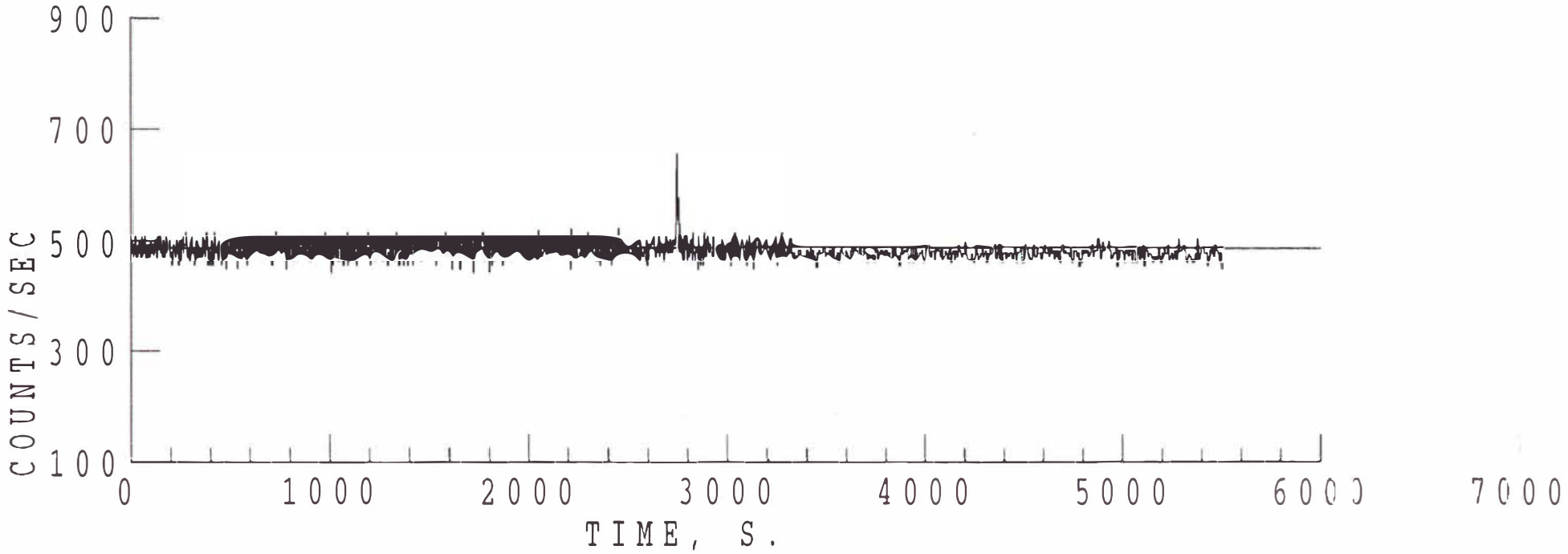
07/06/97 30636.279 s

INTERVALS REGROUPED BY 6

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

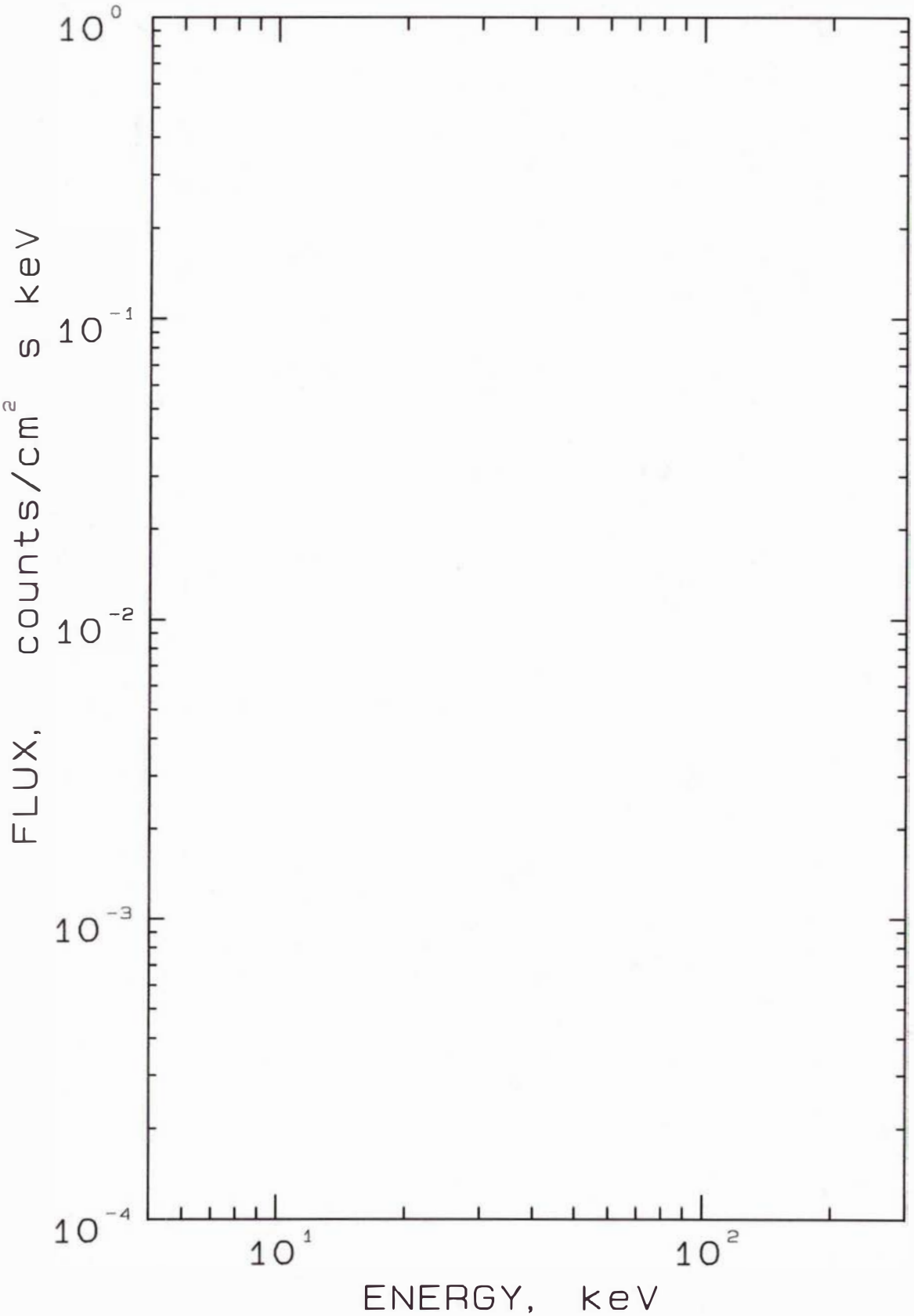
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



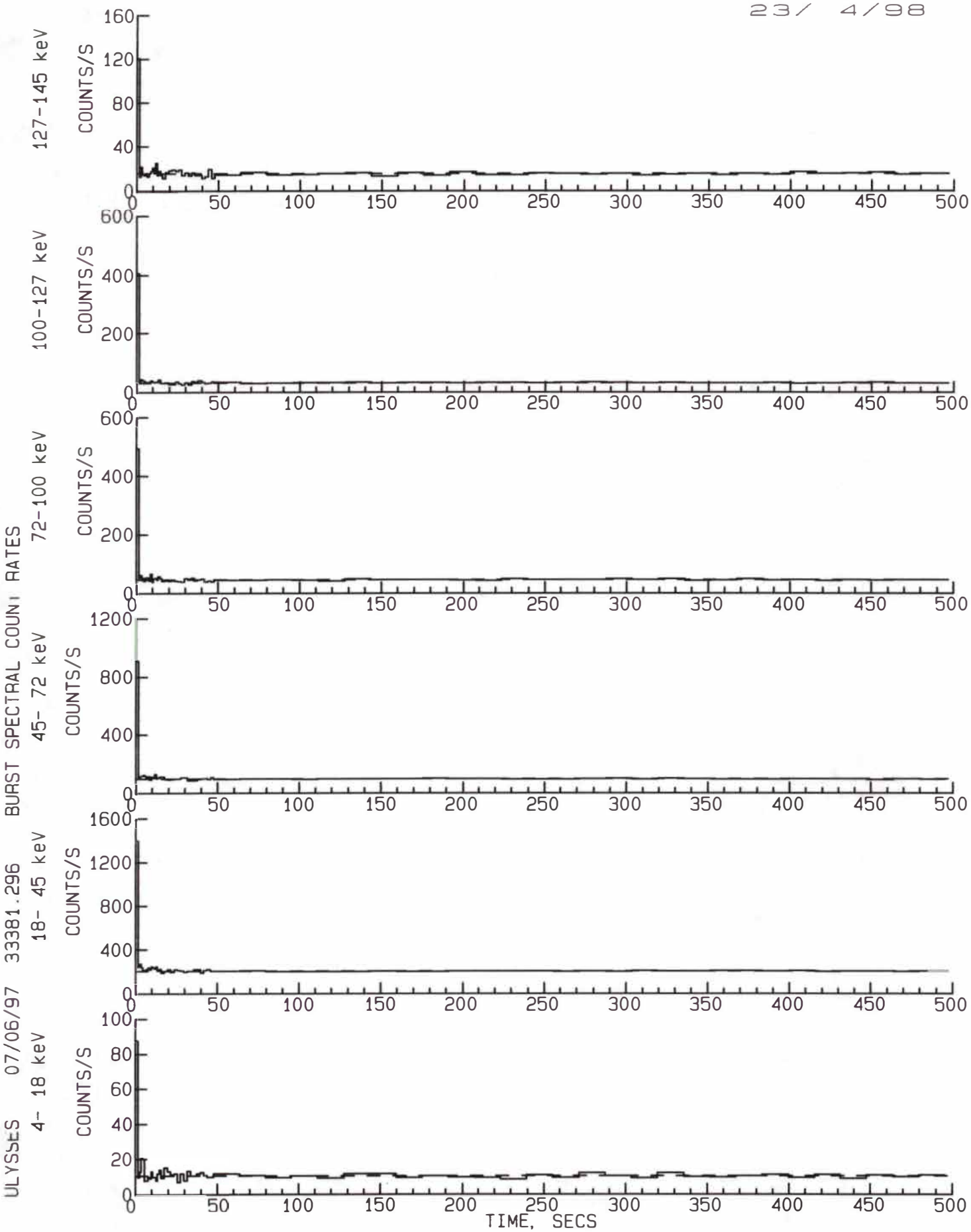
ULYSSES 07/06/97 33381.296

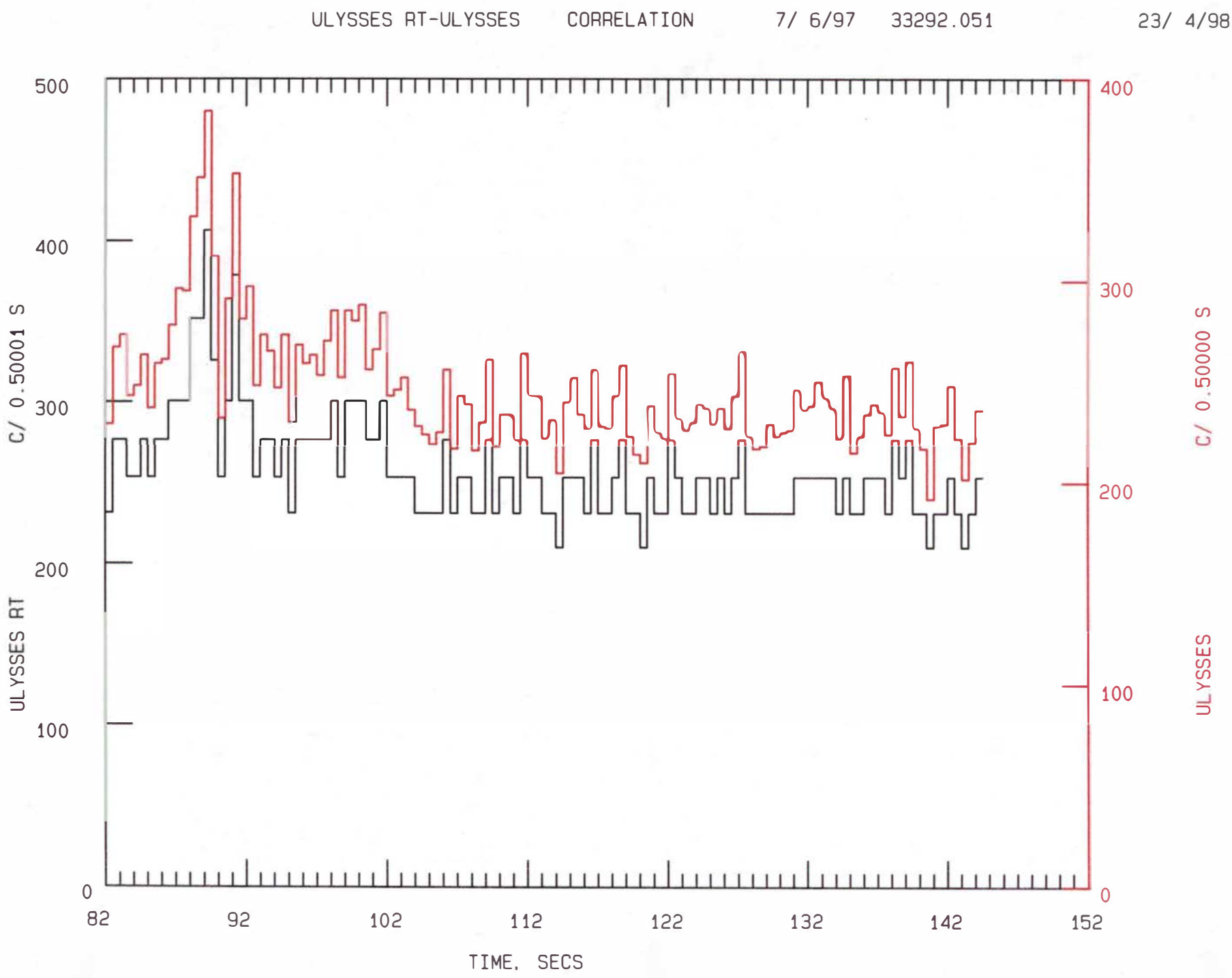
23/ 4/98

SPECTRUM INTEGRATED OVER 10.6 SECONDS, INTERVALS 2 TO 12

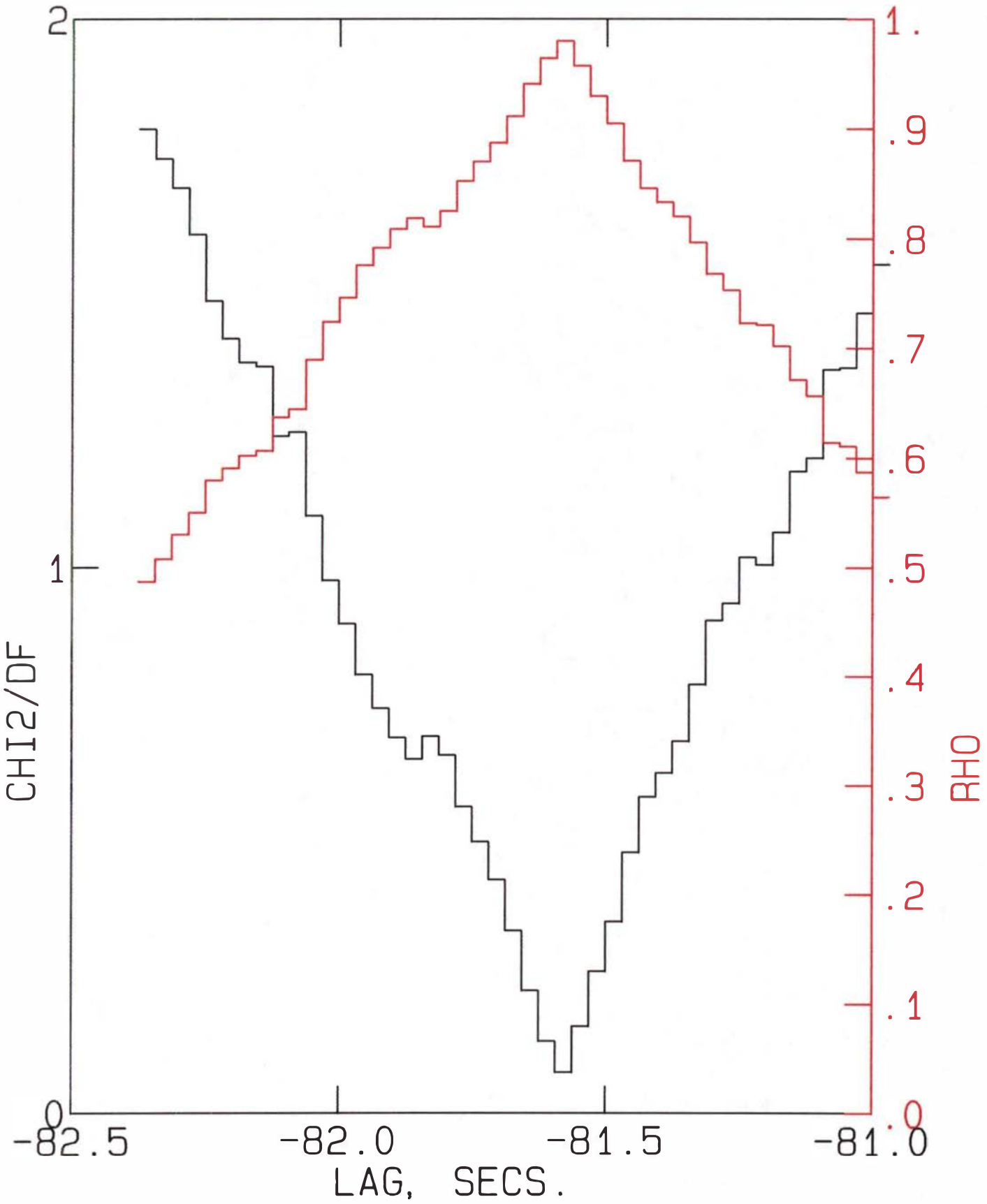


23/ 4/98


ULYSSES 07/06/97 33381.296 BURST SPECTRAL COUNT RATES
127-145 keV
100-127 keV
72-100 keV
45- 72 keV
18- 45 keV
4- 18 keV
COUNTS/S
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 7/ 6/97 33292.051 23/ 4/98
500
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
82
92
102
112
122
132
142
152
TIME, SECS

ULYSSES RT-ULYSSES CORRELATION 7/ 6/97 33292.051



ULYSSES 07/06/97 Ttrig=33381.045

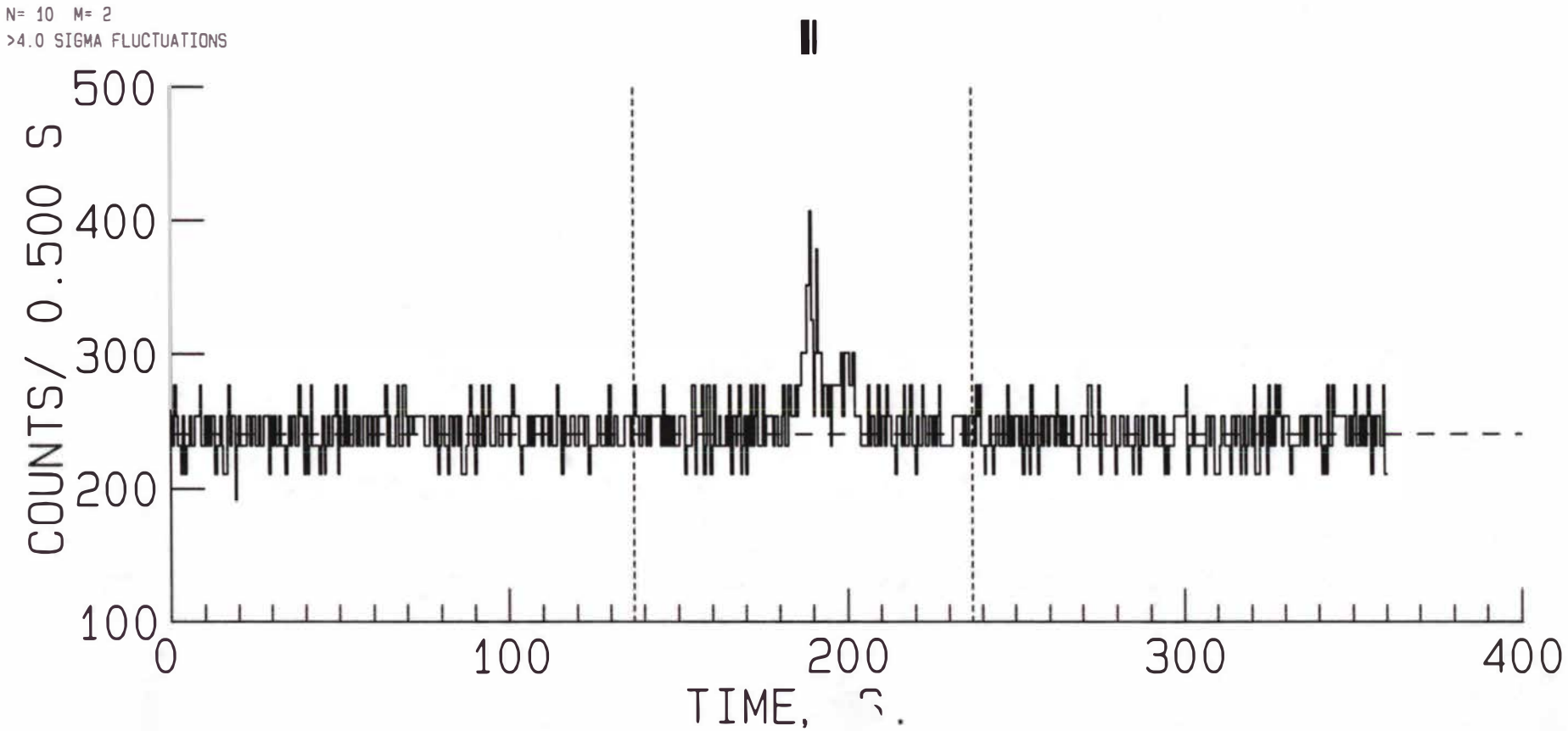
21- 146 keV

ULYSSES RT

23/ 4/98

7/ 6/97 33192.311 s

21- 146 keV



From vnp@isac.ernet.in Thu Jul 3 05:18 PDT 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
id AA32207; Thu, 3 Jul 1997 16:39:08 GMT
e: Thu, 3 Jul 1997 16:39:07 +0000 (CUT)
X Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: SROSS-C2 GRBs
Mime-Version: 1.0

Dear Prof. Hurley,
Thank you for the messages about GRBs on Jun 18 and Jun 26. We have no GRB event on these dates. SROSS-C2 has recorded events on
21 May 97 at 13: 52:08 UT and
7 Jun 97 at 9 16 27.8 UT
We would like to know whether these events were recorded on Ulysses or BATSE.
I shall be grateful if you could kindly include me on your regular mailing list for GRB messages.
thanking you
regards
padmini

From TERRELL@nisdp0.lanl.gov Wed Jul 23 09:45 PDT 1997
From: TERRELL@nisdp0.lanl.gov
Date: Wed, 23 Jul 1997 10:45:37 -0600
To: khurley@sunspot.ssl.berkeley.edu, bonnard@rosserv.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, chryssa.kouveliotou@msfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, henze@fender.msfc.nasa.gov
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: DMSP GRB 970607 DETECTION

From: jterrell@lanl.gov (James Terrell) 970723
To: khurley@sunspot.ssl.berkeley.edu,butterworth@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it,cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in,scott@rosserv.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov,yosimori@rikkyo.ac.jp,
bonnard@rosserv.gsfc.nasa.gov,chryssa.kouveliotou@msfc.nasa.gov,
henze@fender.msfc.nasa.gov
Subj: DMSP GRB detection: 970607

DMSP13 detected an apparent GRB on 970607 with peak at 33388.6, lasting <6sec.
DMSP14 detected the same burst, with peak at 33388.7, lasting <6sec.
These simultaneous detections apparently correspond to the GRB detected by Ulysses at 33360 UT (09:16).

Neither spacecraft detected GRB 970627 reported by Ulysses, and by BeppoSAX at 79610 UT (DMSP 13 was in the south radiation belt at that time).

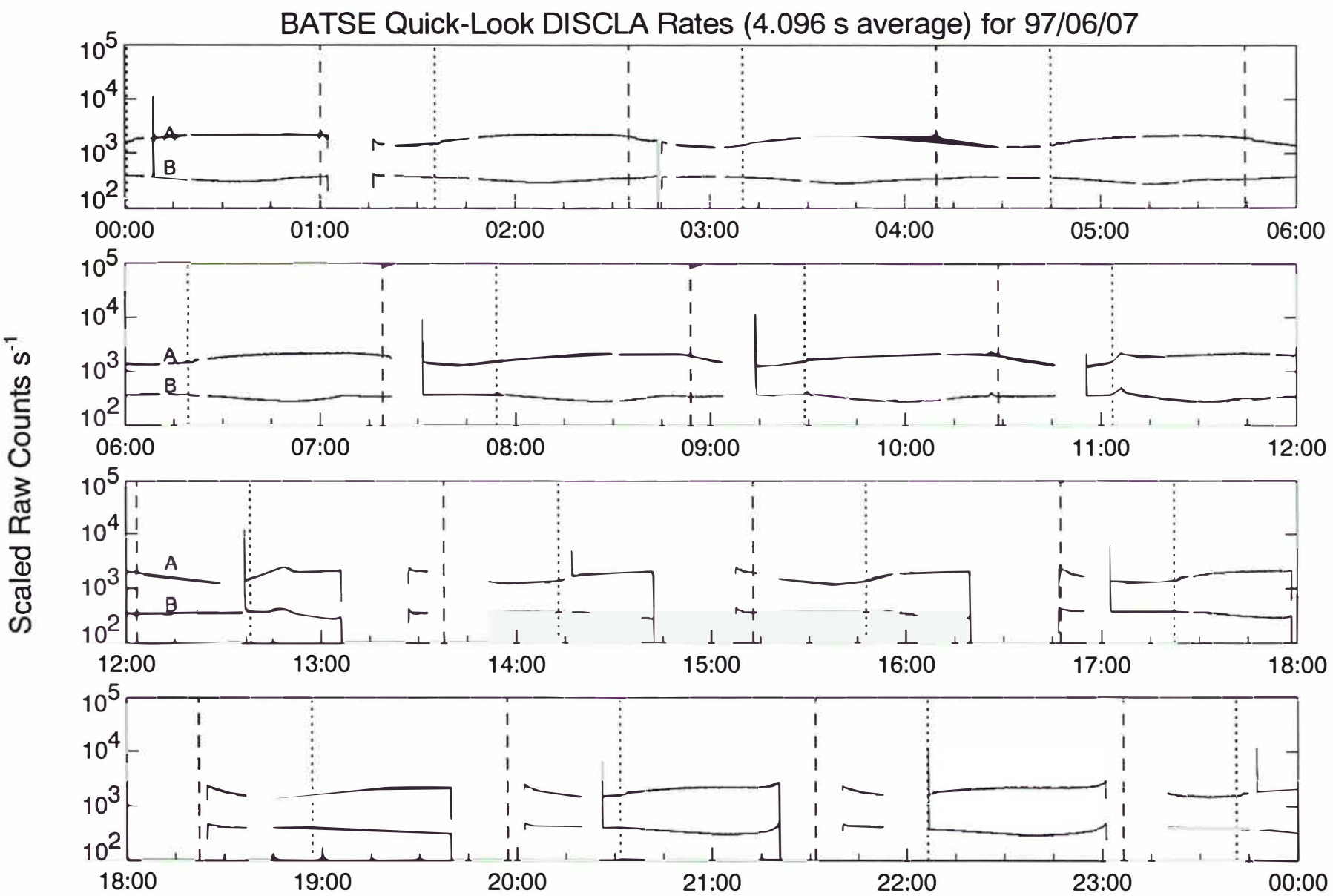
If anyone did not receive my last message (dated 970624), regarding detection of GRB 970218, 970421, and 970602, please let me know.

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

Konus report on recent Ulysses events not seen by BATSE

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

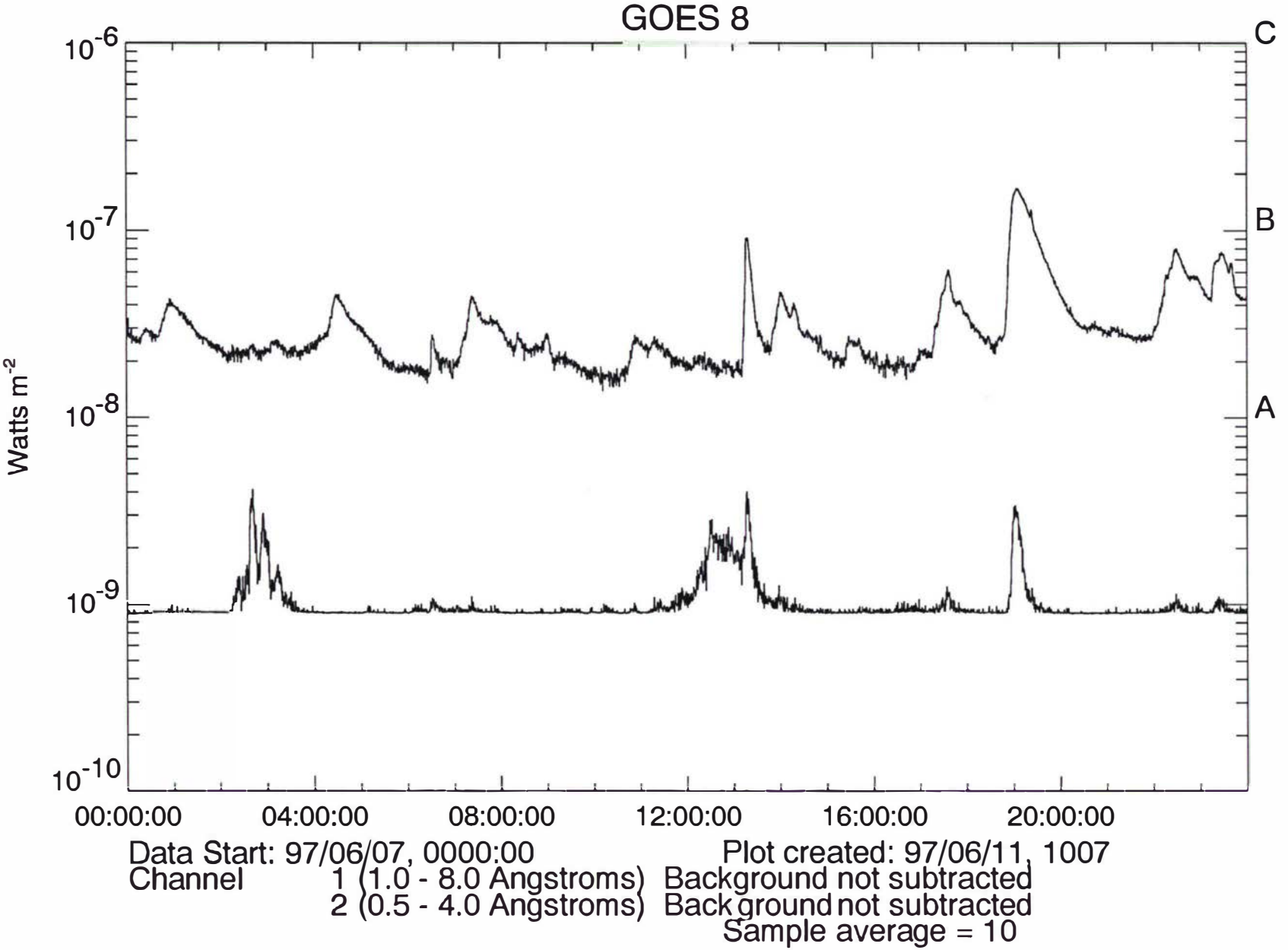
July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
July 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 22:42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



Current Time: 97/06/11, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

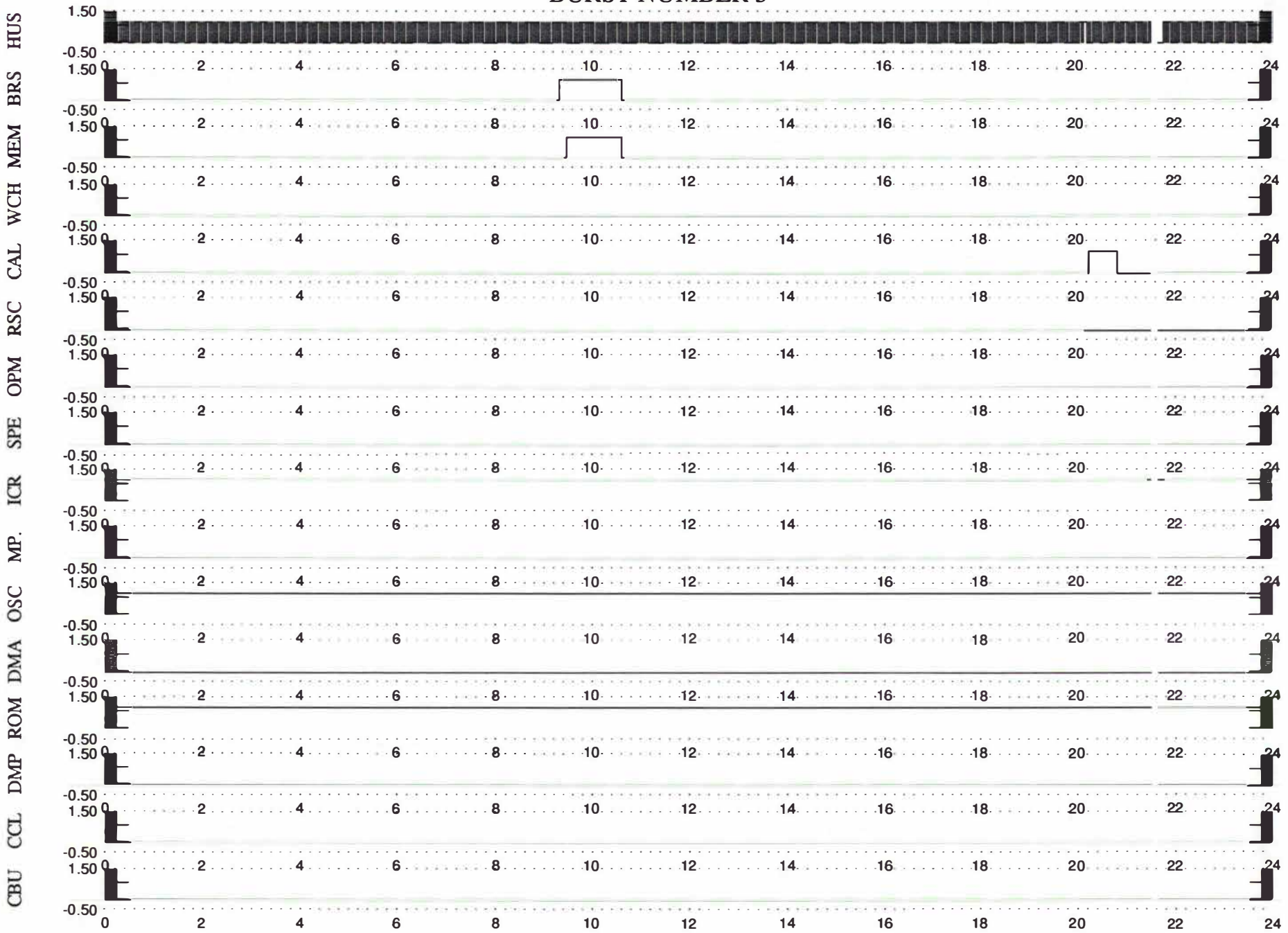
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/07, 0000:00
Plot created: 97/06/11, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 158, year 1997 to day 158, year 1997 10/13/97

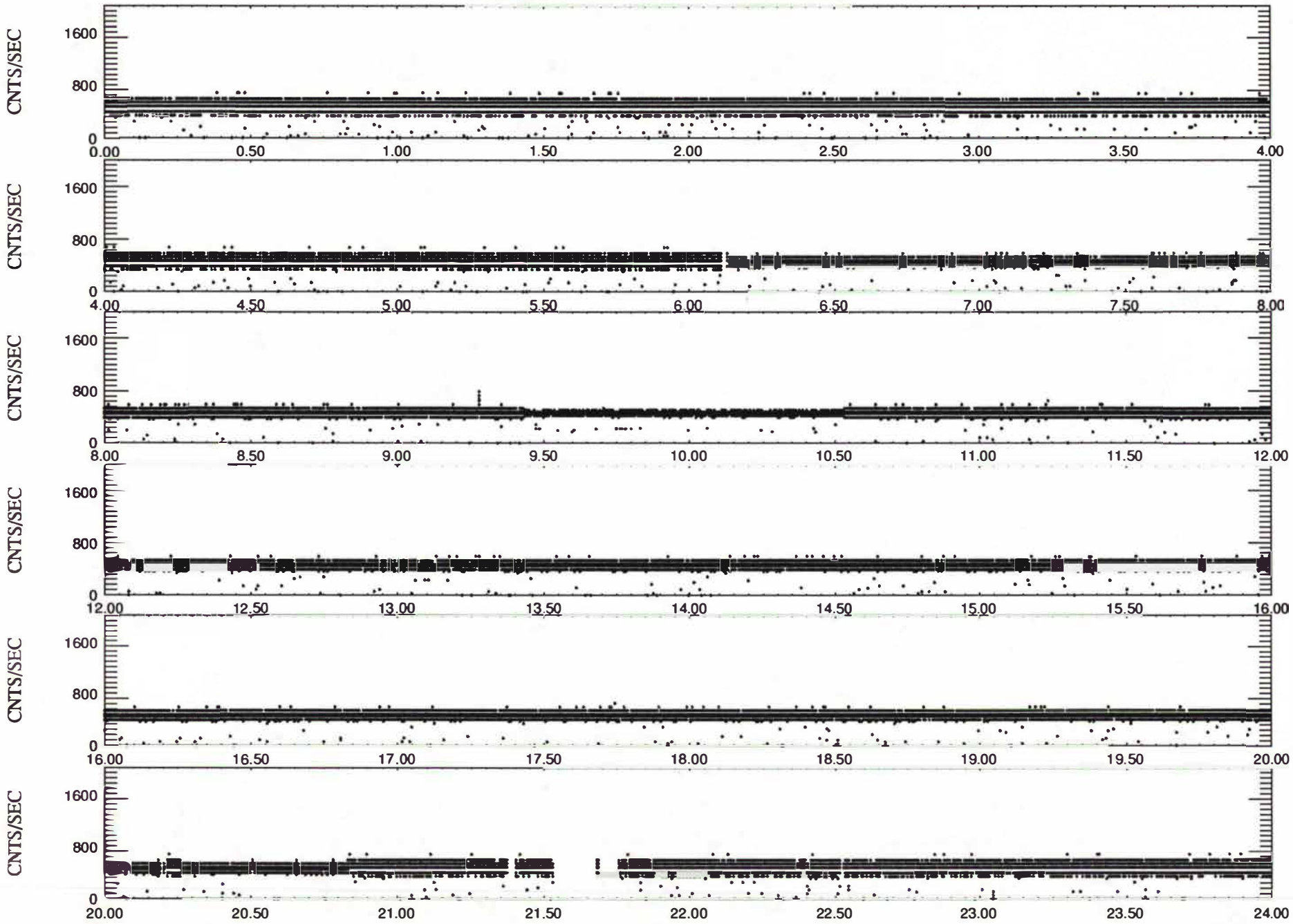
BURST NUMBER 5



UNIV AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 158, year 1997 to day 158, year 1997 10/13/97

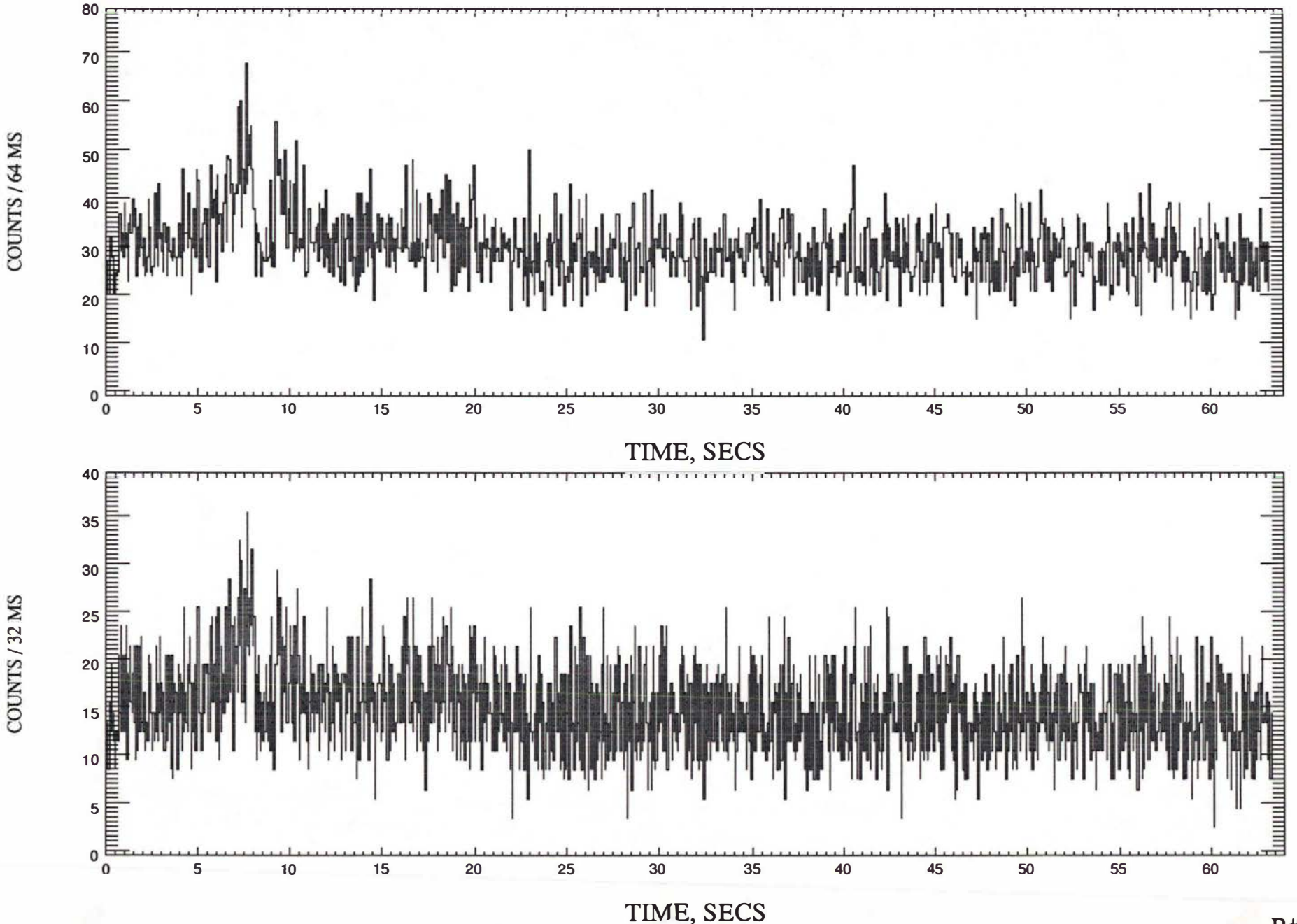
CALIBRATION DATA INCLUDED



UNIV AL TIME

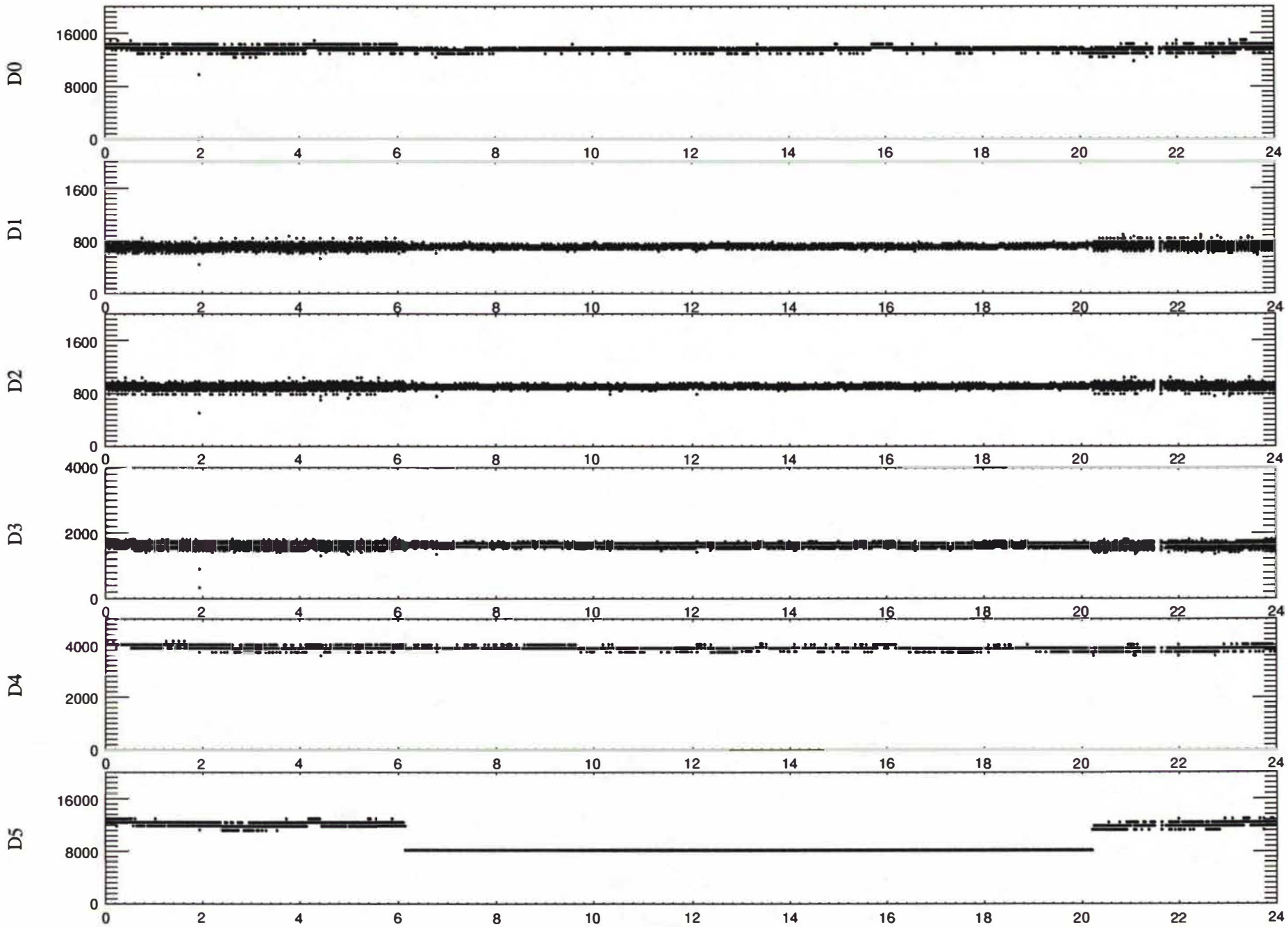
HUS 2A TRIGGERED DATA EDR day 158, year 1997 10/13/97

Burst Counter 5 at UT= 9.272582249112 h=33381.296 s 09:16:21.296



B# 1

HUS 2B COUNTS / SEC EDR day 158, year 1997 to day 158, year 1997 10/13/97



Date: Nov 5 '08

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

□ Jim Schmidling's stat file correction applied?

□ Final ephemeris used?

□ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

□ Was CHECKMO run to eliminate data gaps?

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

□ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

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

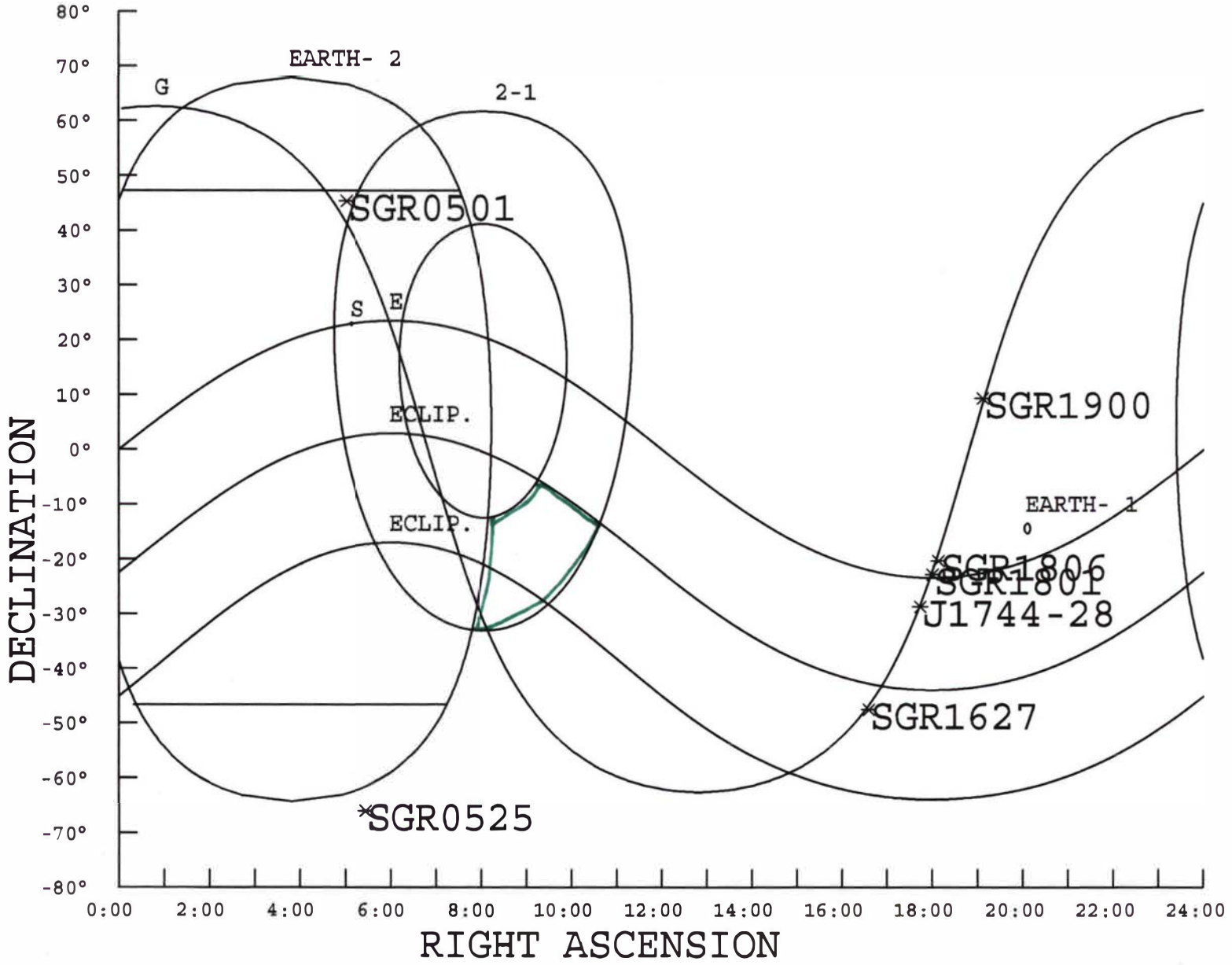
□ Updated ephemeris used for bursts prior to September 30, 2003?

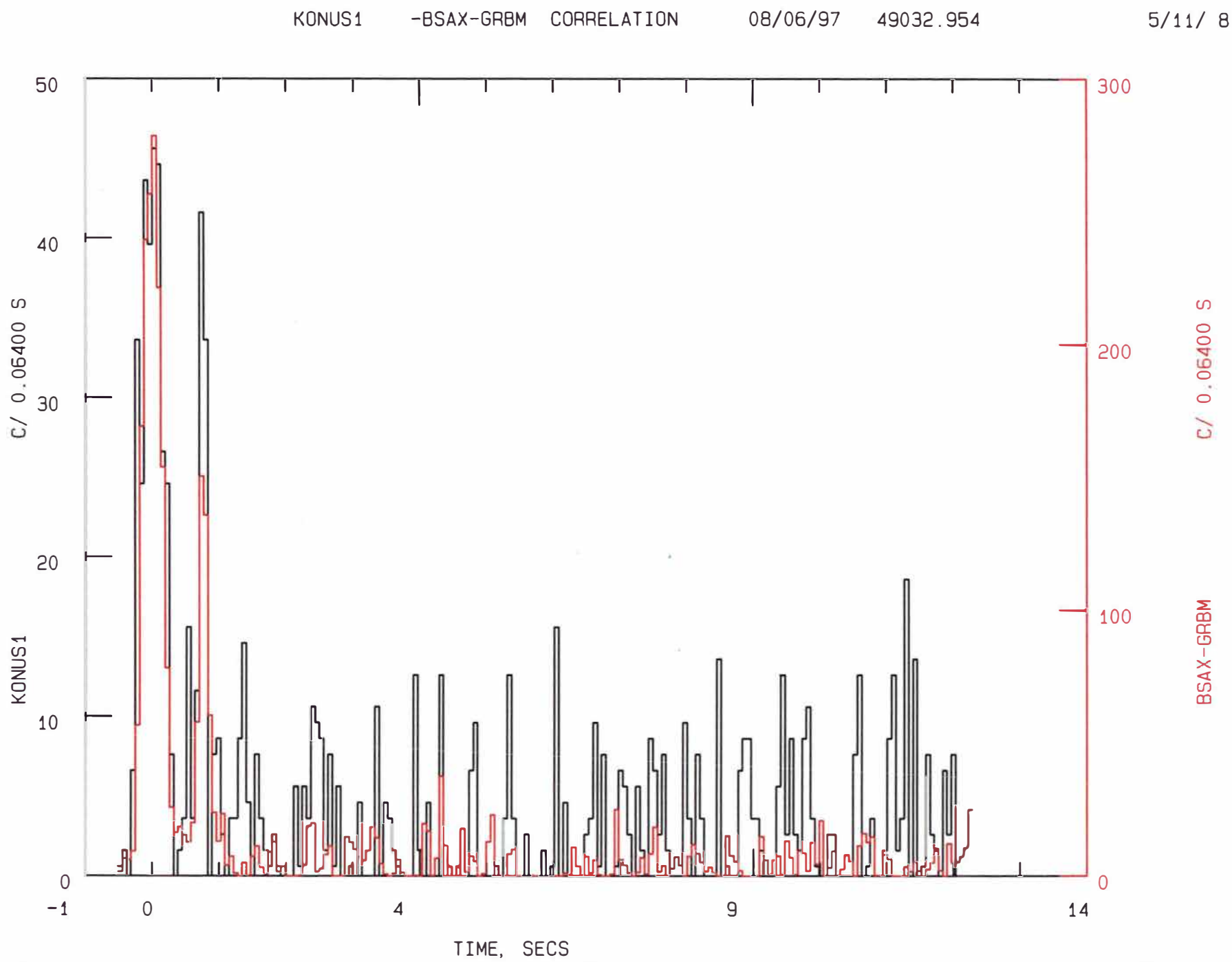
☑ ACCESS and MBL4 databases updated?

EVENT OF JUN 8, 1997 13:37

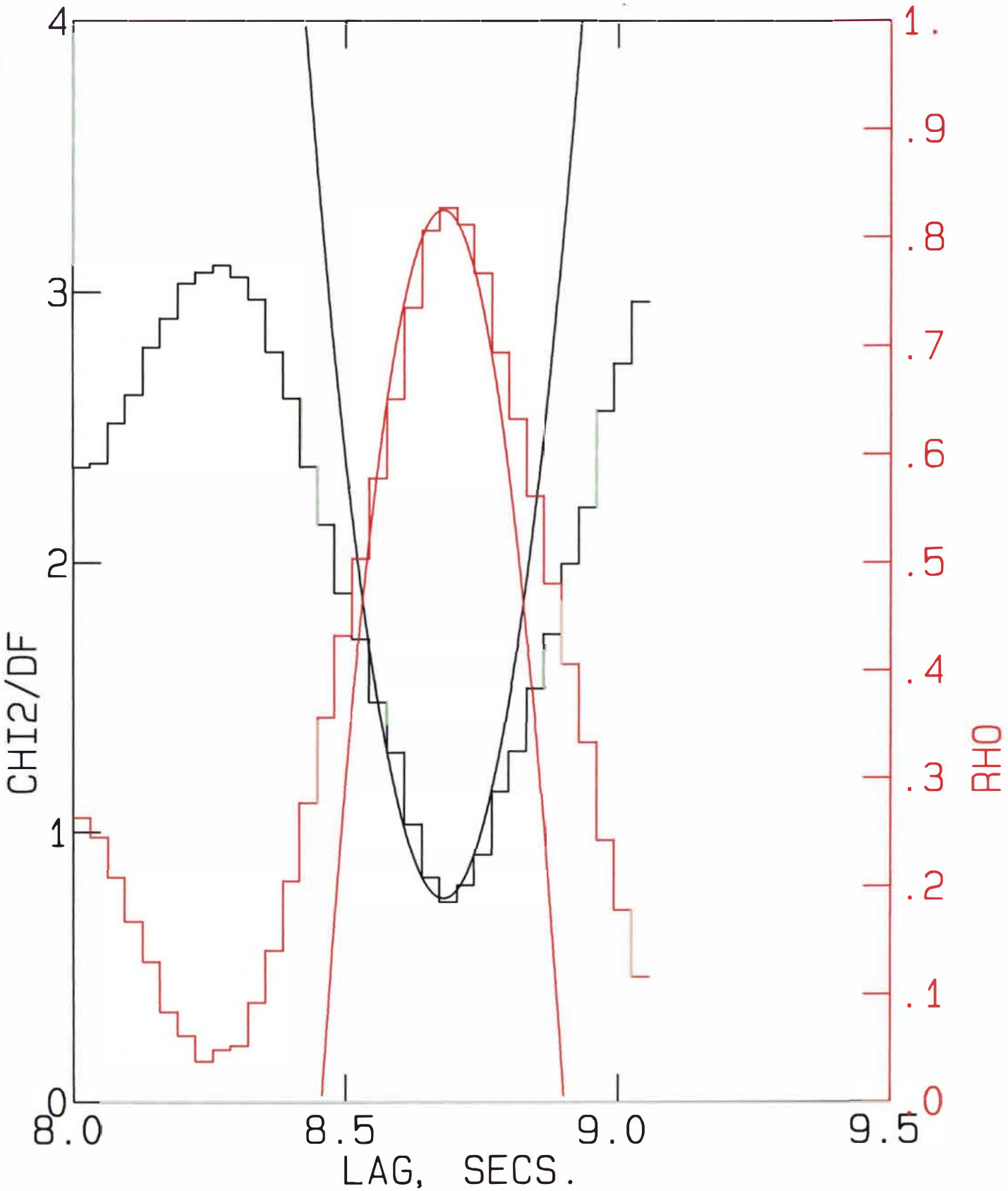
5/11/ 8

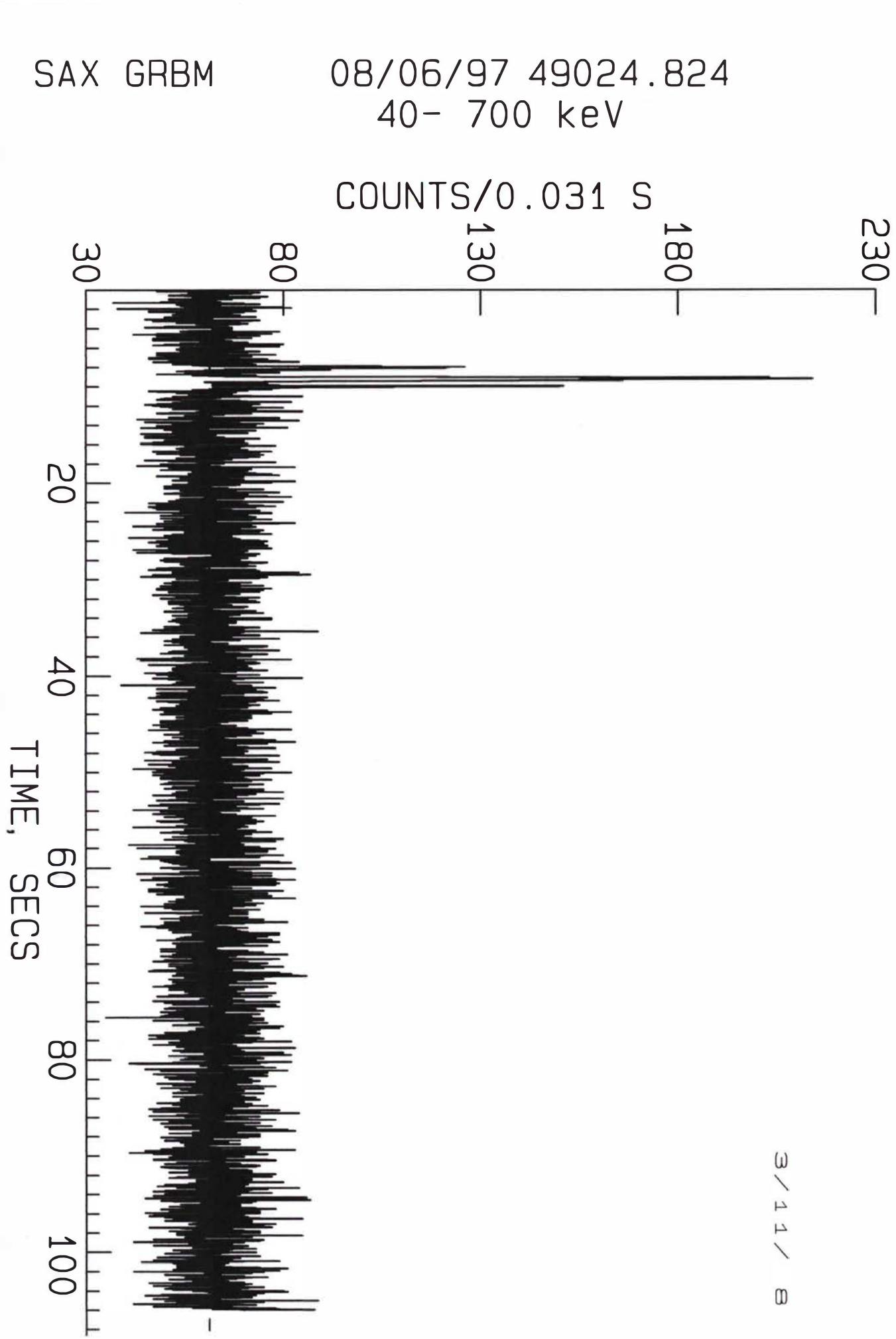
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS1 2 SAX




KONUS1 -BSAX-GRBM CORRELATION 08/06/97 49032.954 5/11/ 8
50
40
30
20
10
0
-1
0
4
9
14
C/ 0.06400 S
KONUS1
TIME, SECS
300
200
100
0
C/ 0.06400 S
BSAX-GRBM

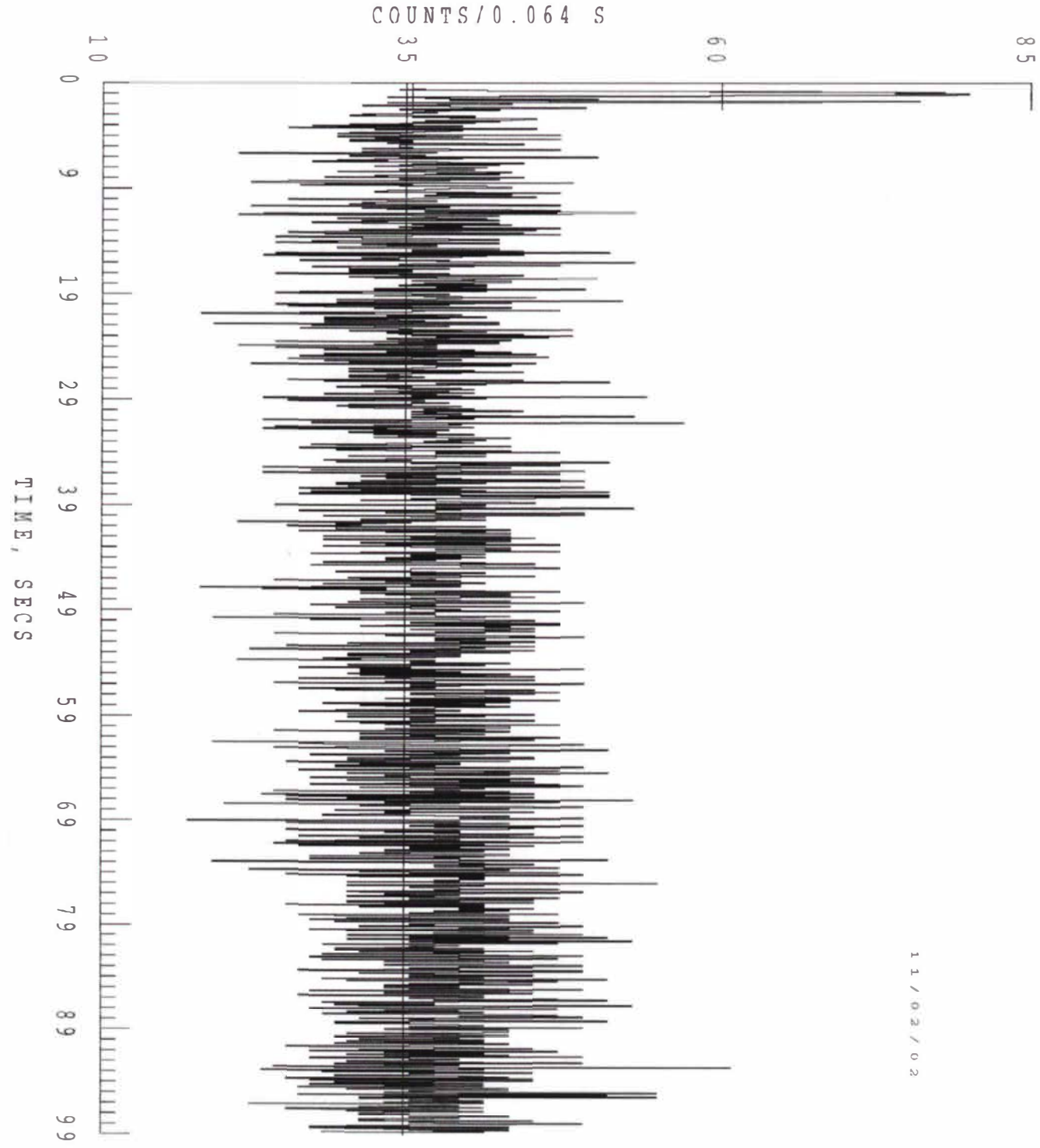
KONUS1 -BSAX-GRBM CORRELATION 08/06/97 49032.954




SAX GRBM
08/06/97 49024.824
40- 700 keV
COUNTS/0.031 S
30
80
130
180
230
20
40
60
80
100
TIME, SECS
3/11/ 8

KONUS1 08/06/97 49032.954

50- 200 keV



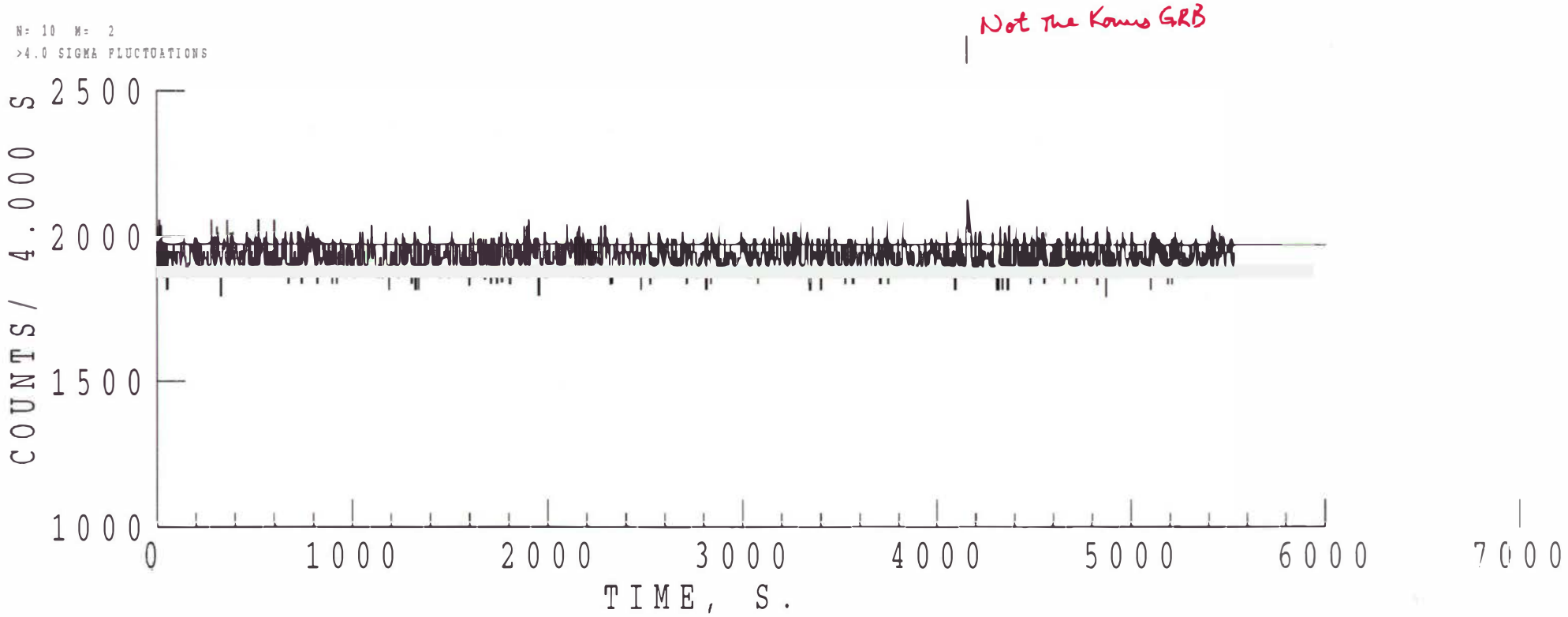
KONUS1 19970608 49032

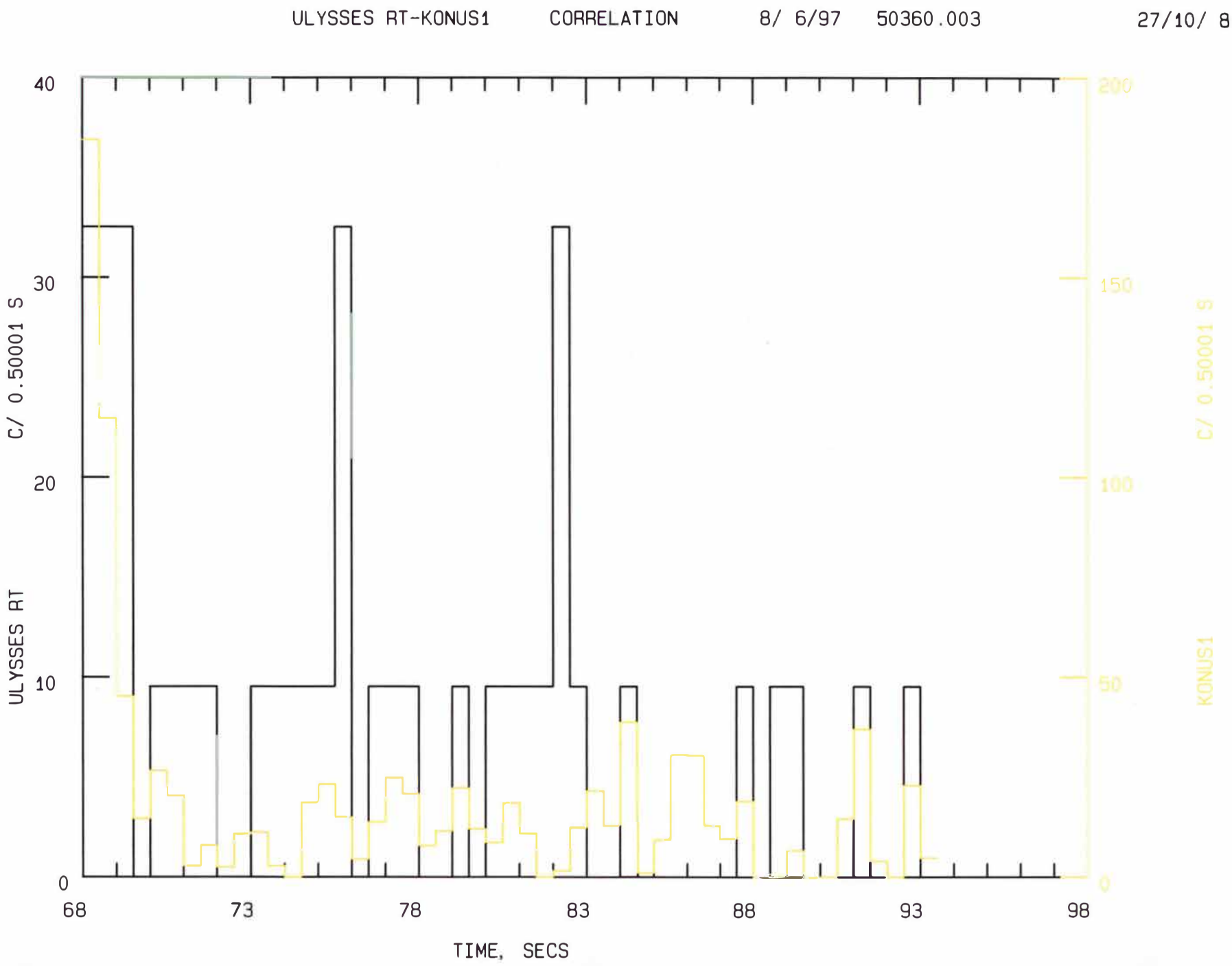
ULYSSES RT 11/02/02

08/06/97 46260.484 s

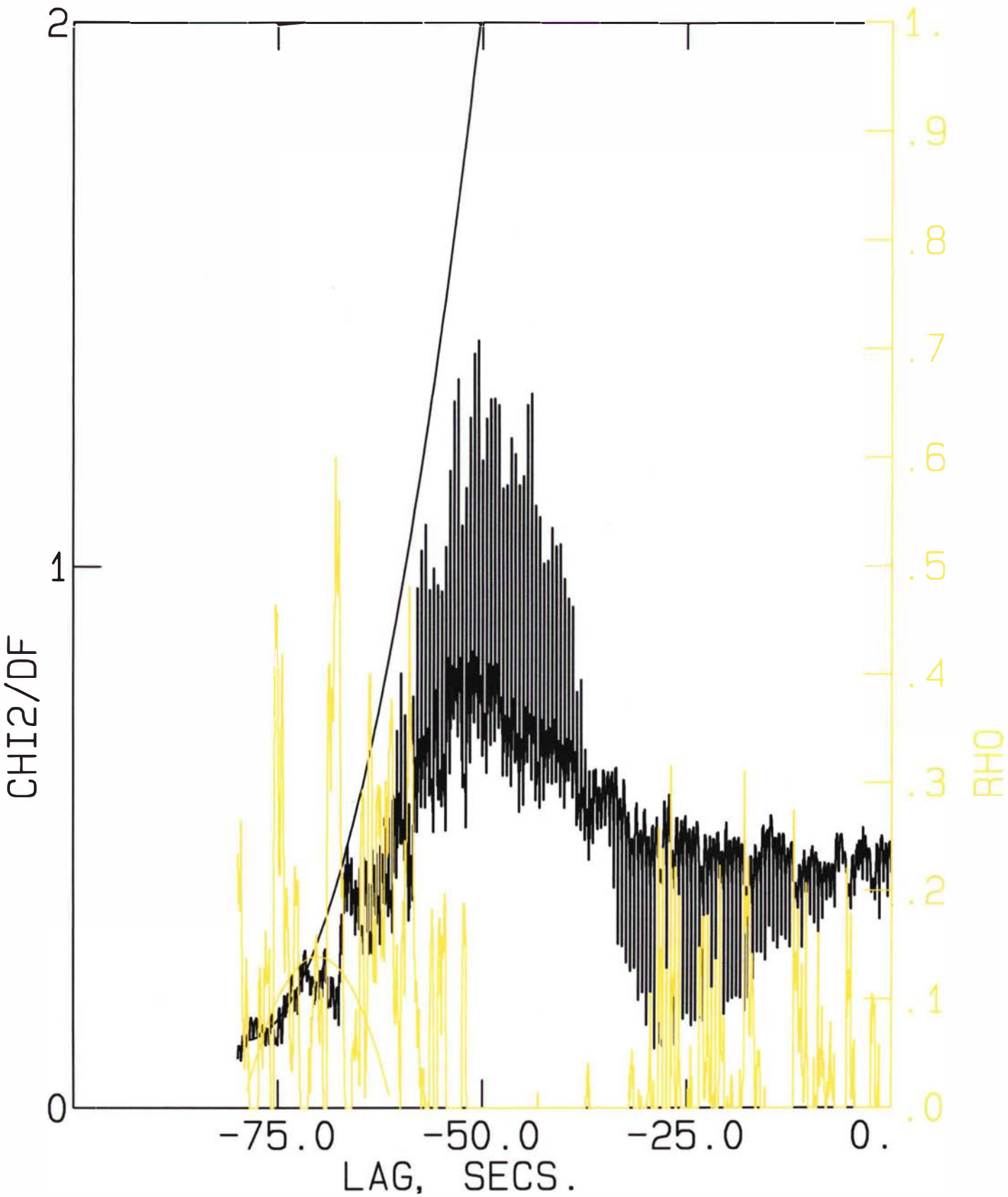
0.500 S INTERVALS REGROUPED BY 8

0- 0 keV




ULYSSES RT-KONUS1 CORRELATION 8/ 6/97 50360.003 27/10/ 8
40
30
20
10
0
C/ 0.50001 S
ULYSSES RT
200
150
100
50
0
C/ 0.50001 S
KONUS1
68
73
78
83
88
93
98
TIME, SECS

ULYSSES RT-KONUS1 CORRELATION 8/ 6/97 50360.003

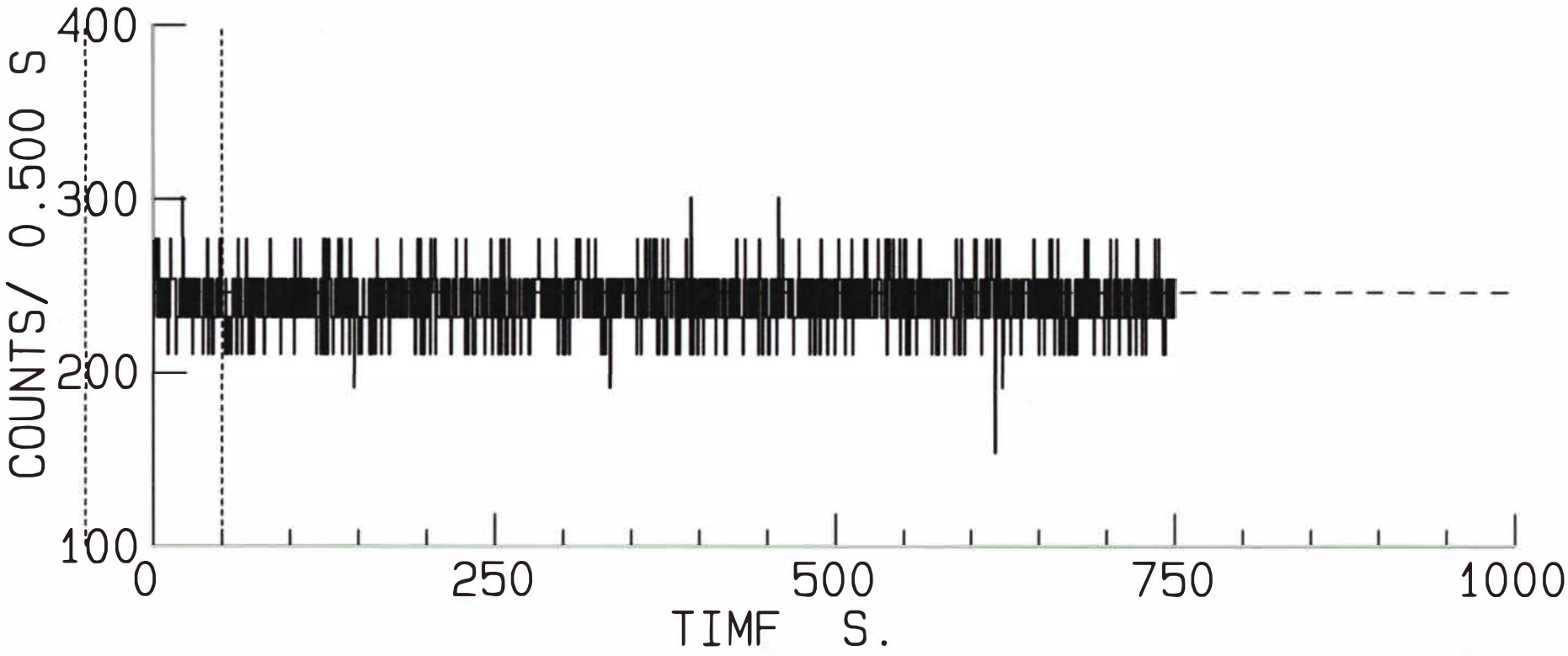


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

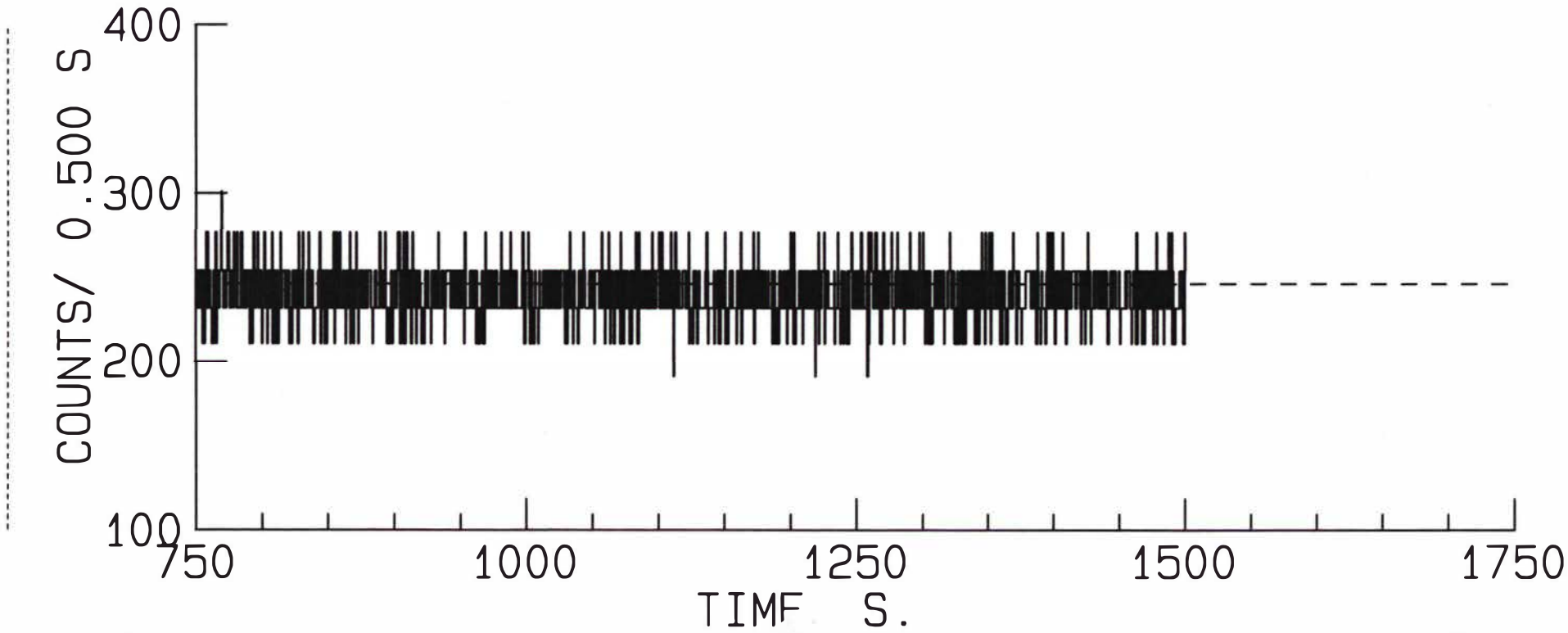


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

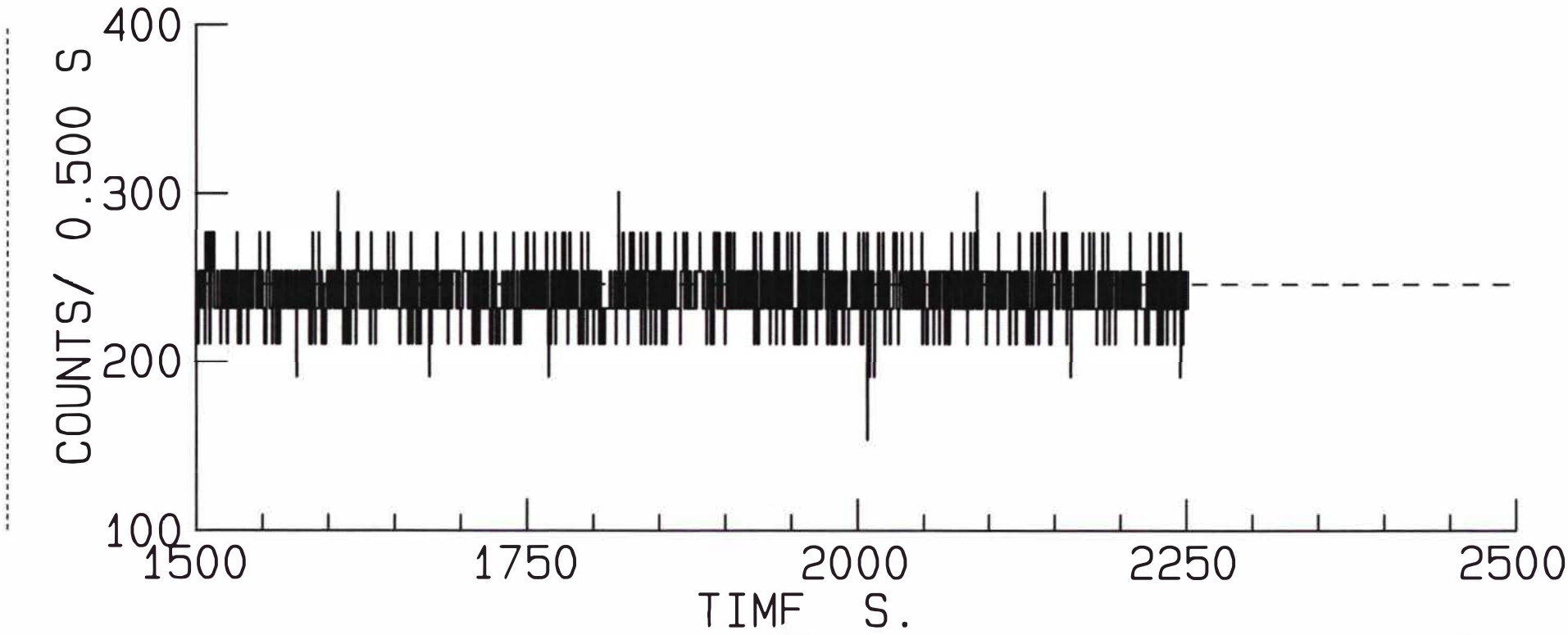


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

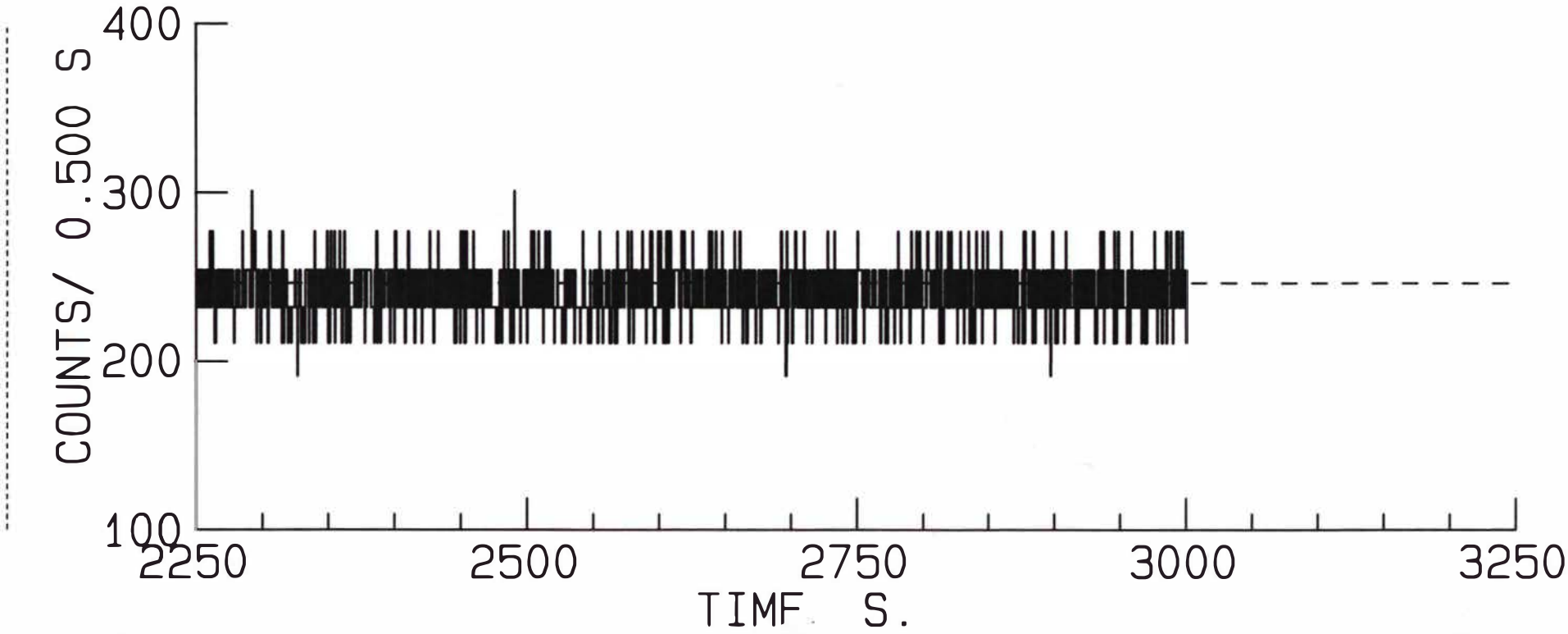


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

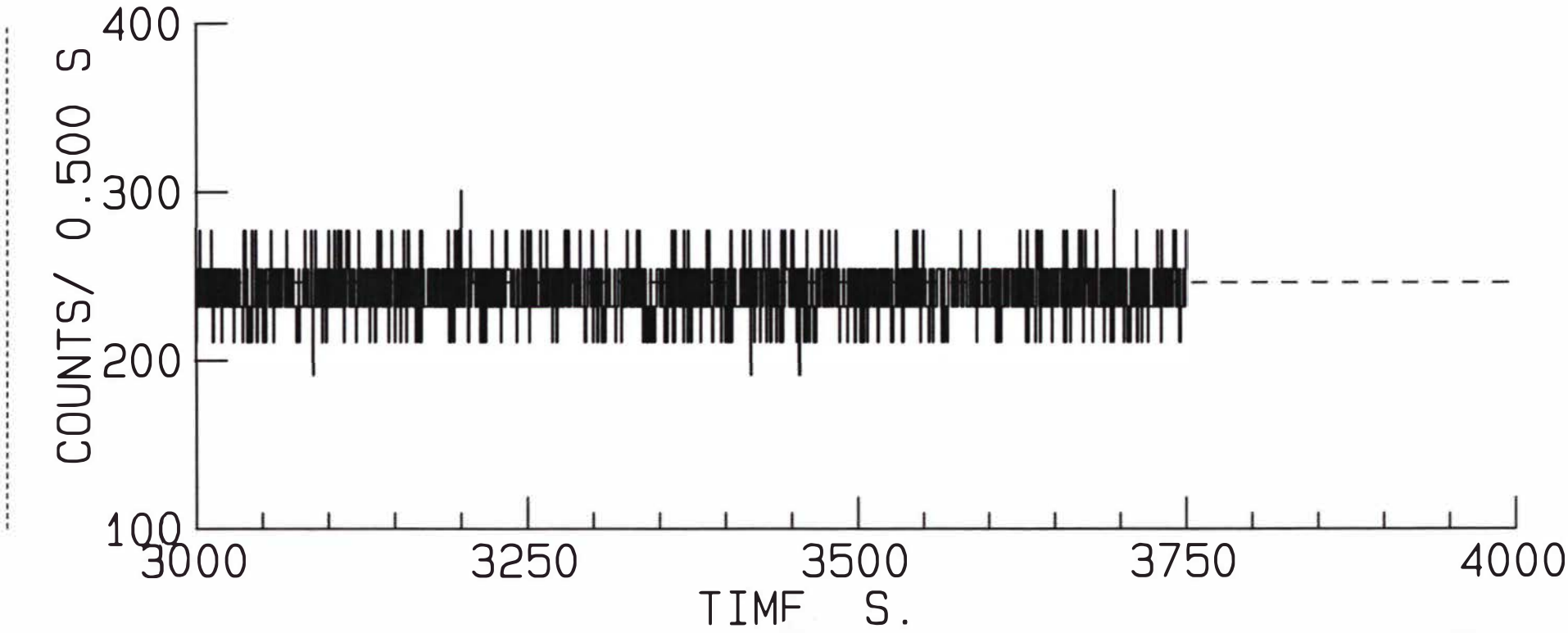


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

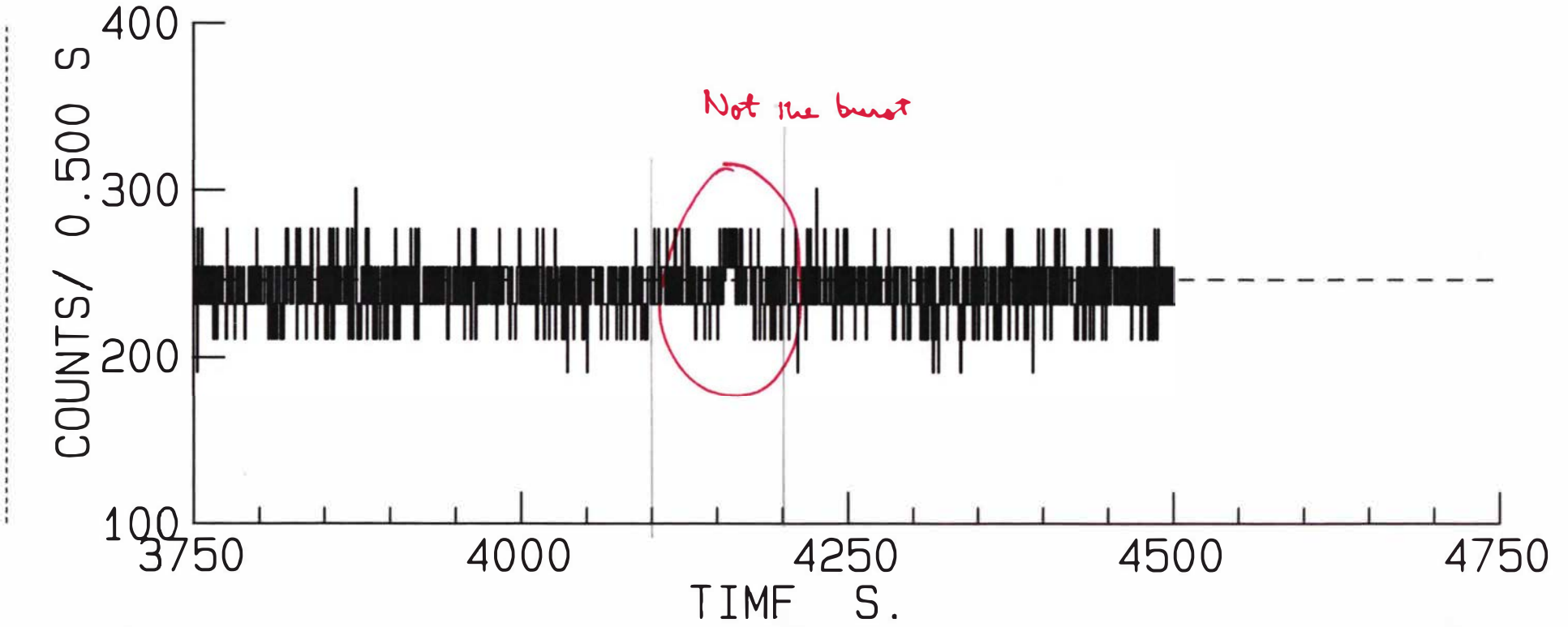


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

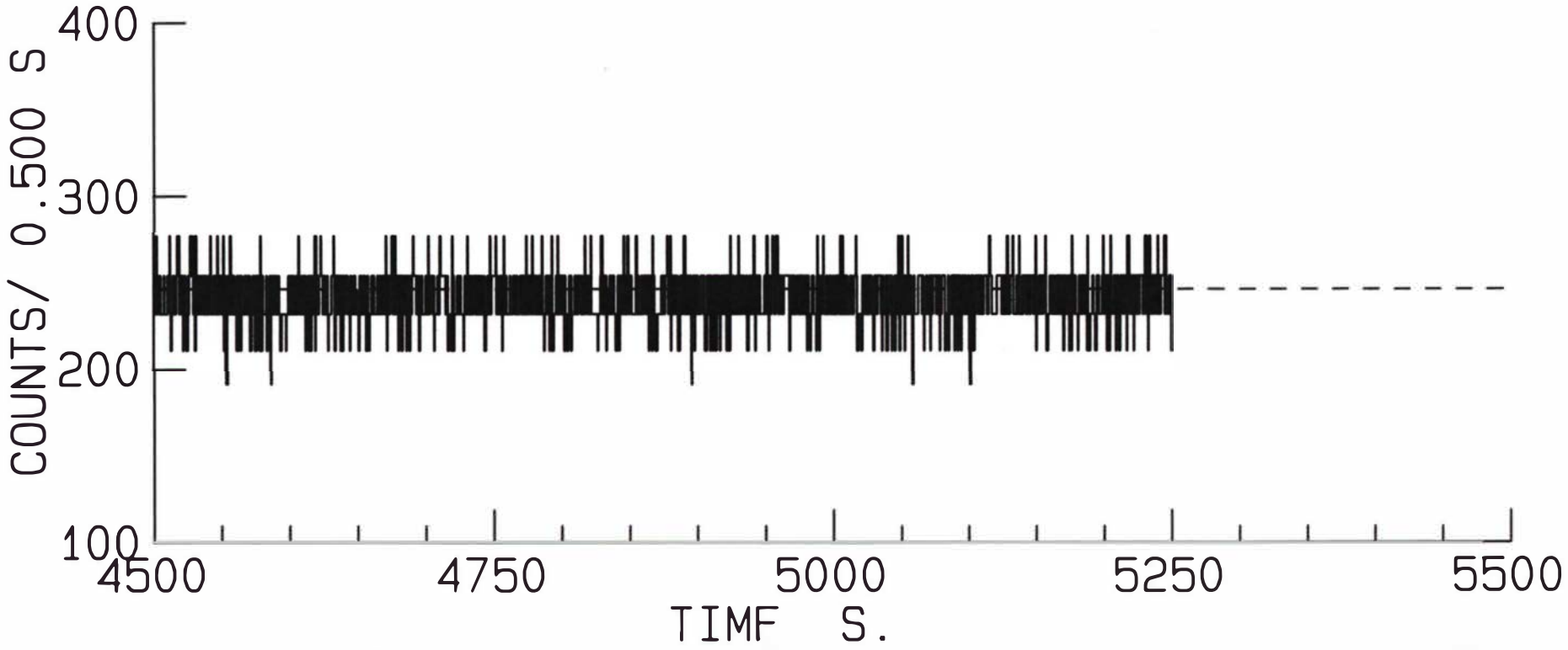


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV

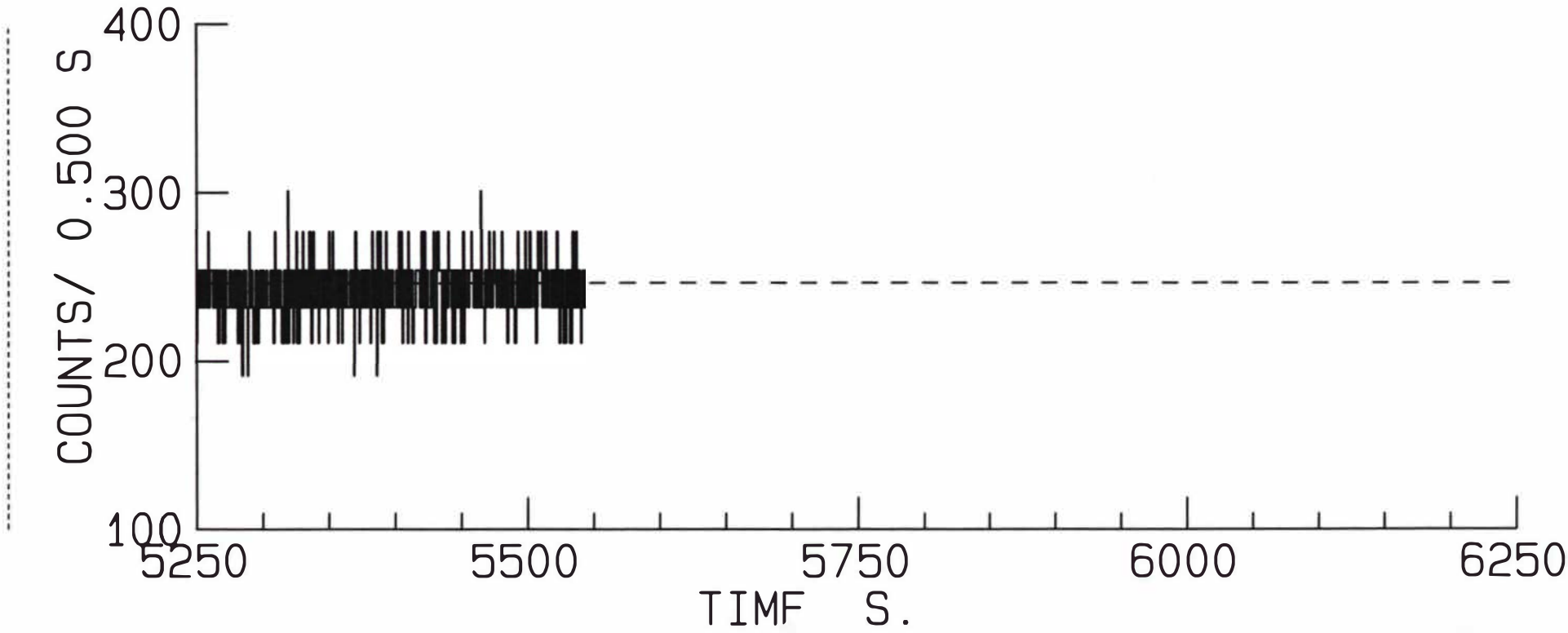


ULYSSES RT

27/10/ 8

8/ 6/97 46260.484 s

21- 146 keV



From WOODSP@ssl.msfc.nasa.gov Mon Jun 9 07:36 PDT 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 9 Jun 1997 9:35:03 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6258

TIME: TJD=0607 SECONDS=69525

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From WOODSP@SSLLES.MSFC.NASA.GOV Mon Jun 9 07:36 PDT 1997
Date: Mon, 9 Jun 1997 9:35:54 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6259

TIME: TJD=0607 SECONDS=81624

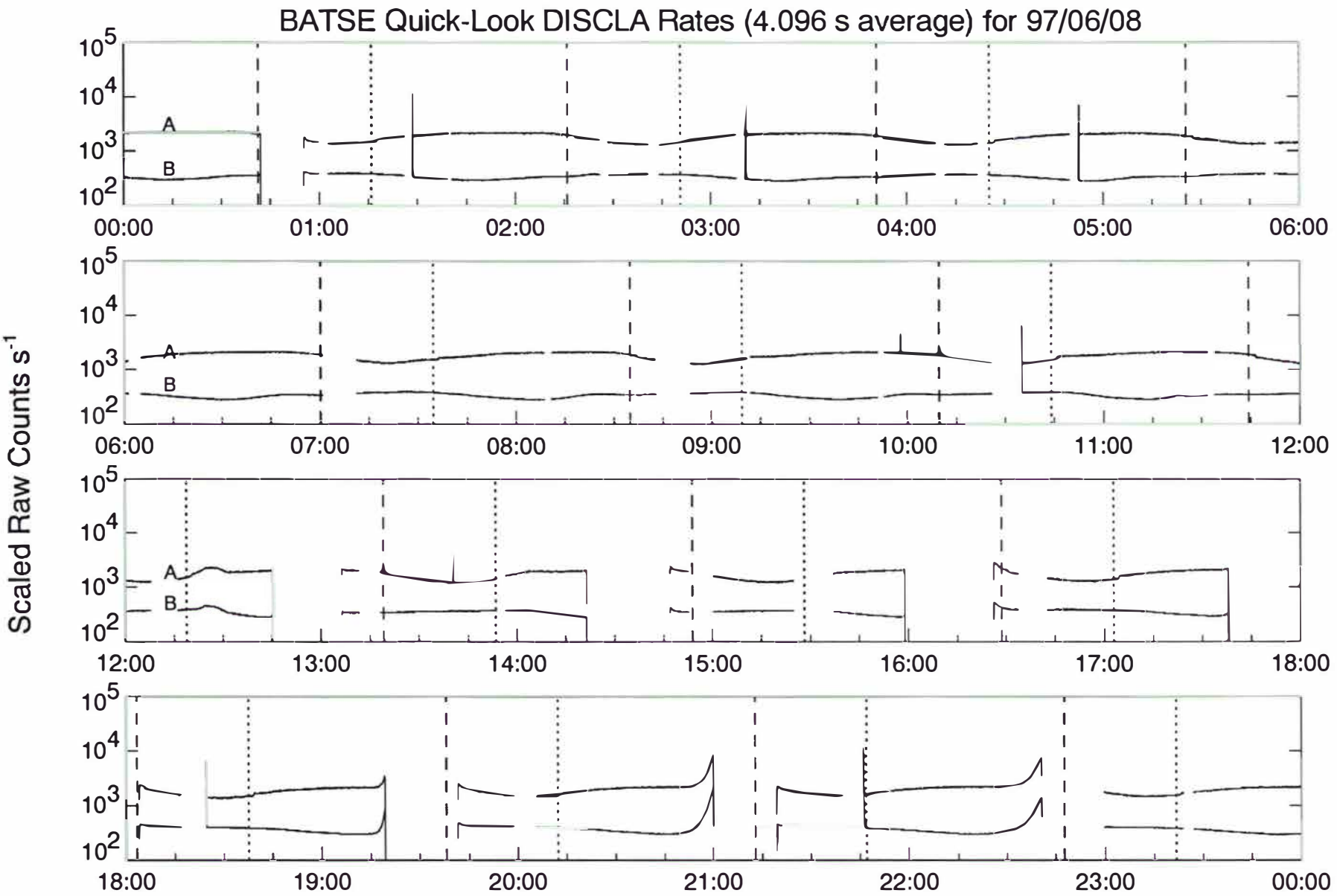
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

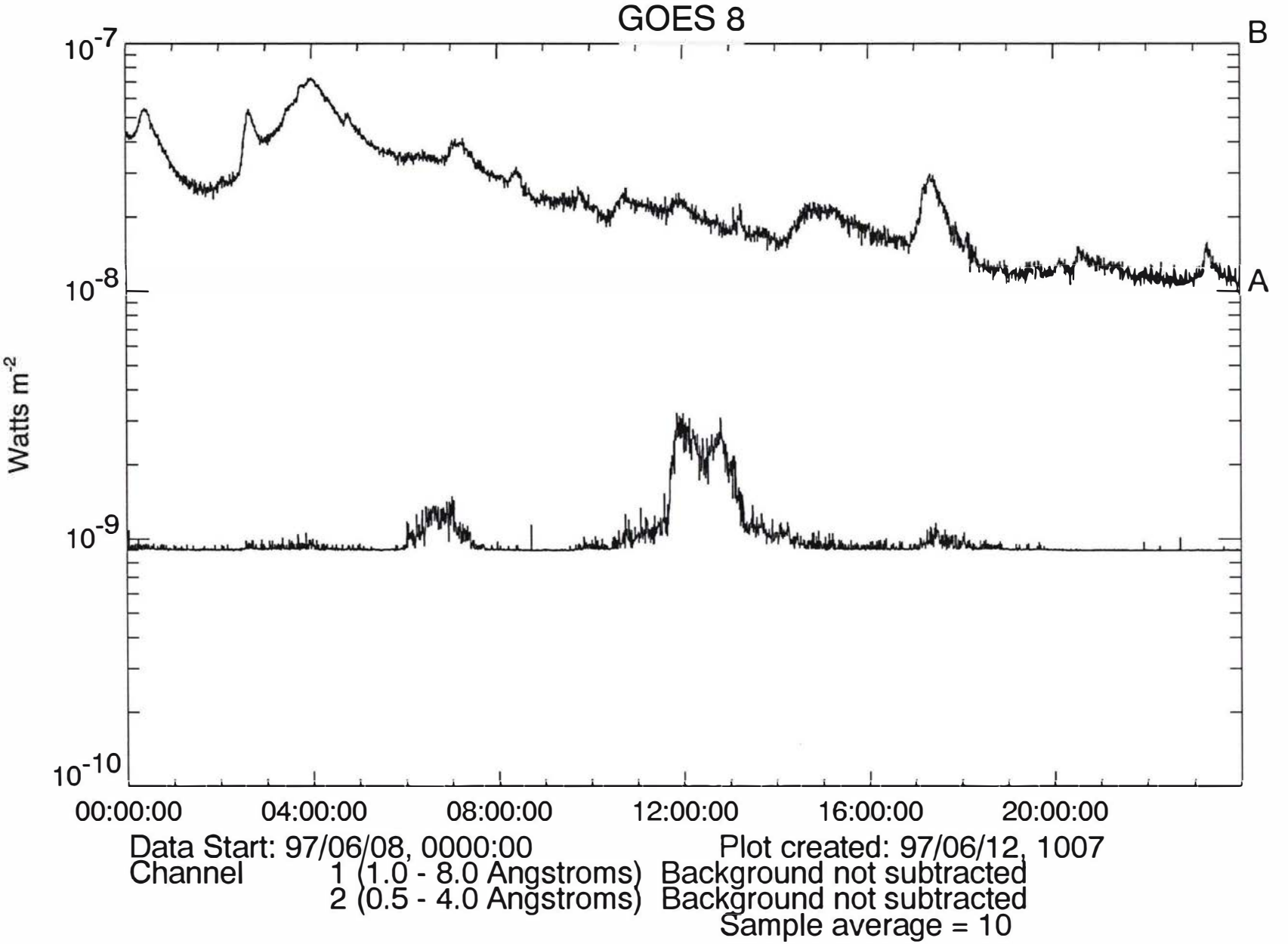
COMMENTS:
PARTICLE EVENT.



Current Time: 97/06/12, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

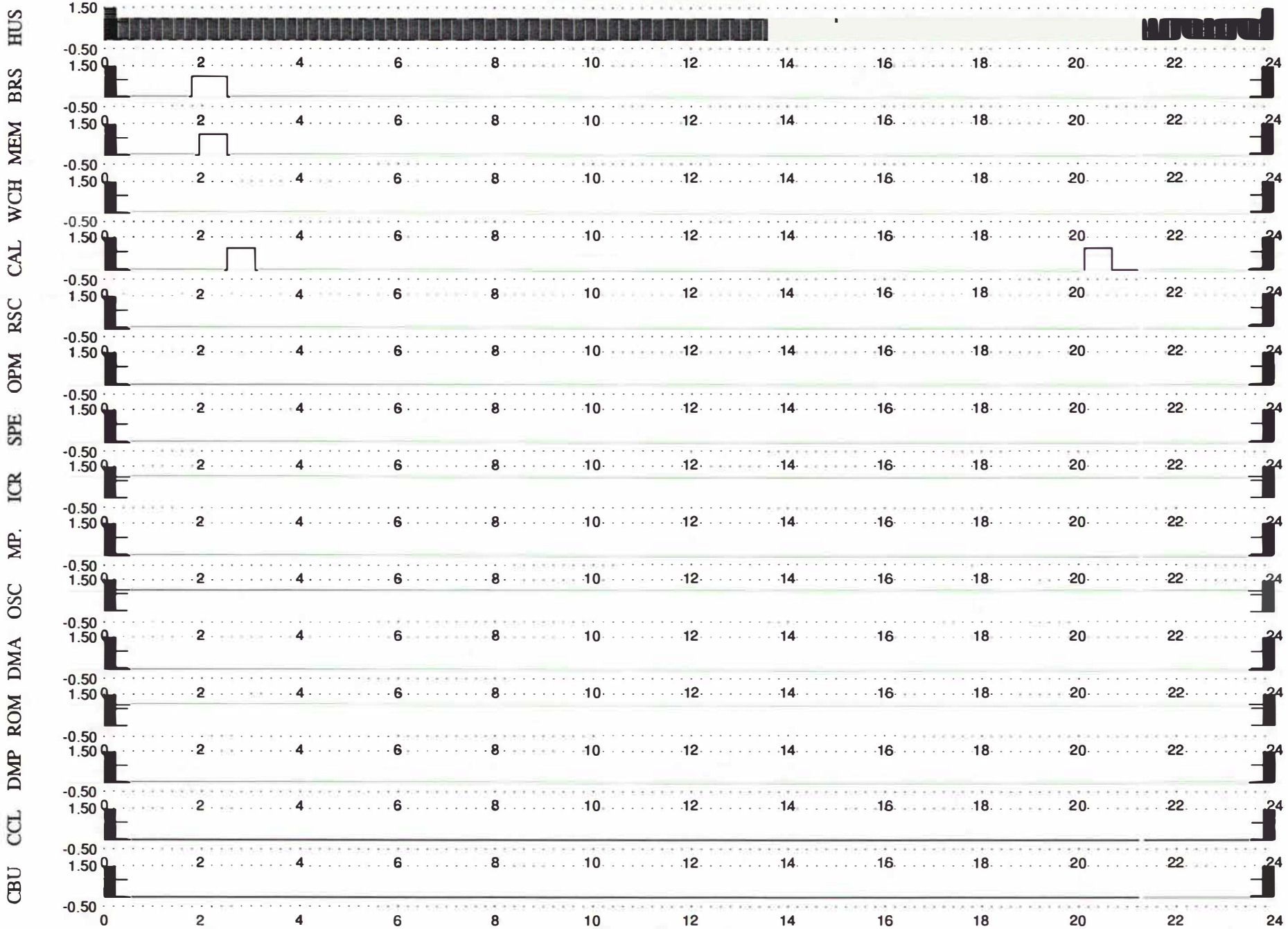
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare


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

HUS MODES EDR day 159, year 1997 to day 159, year 1997 10/13/97

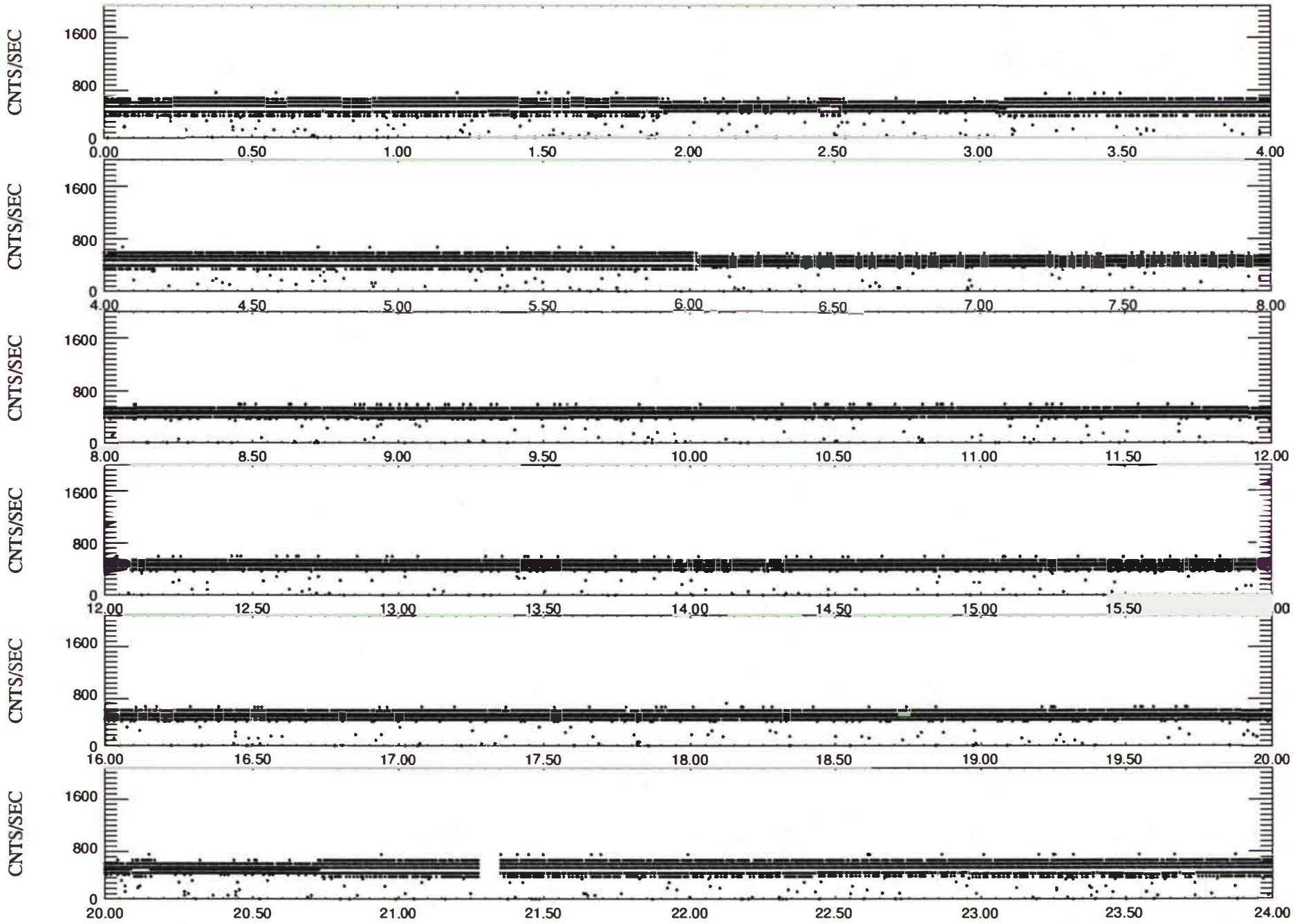
BURST NUMBER 6



UNIV. AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 159, year 1997 to day 159, year 1997 10/13/97

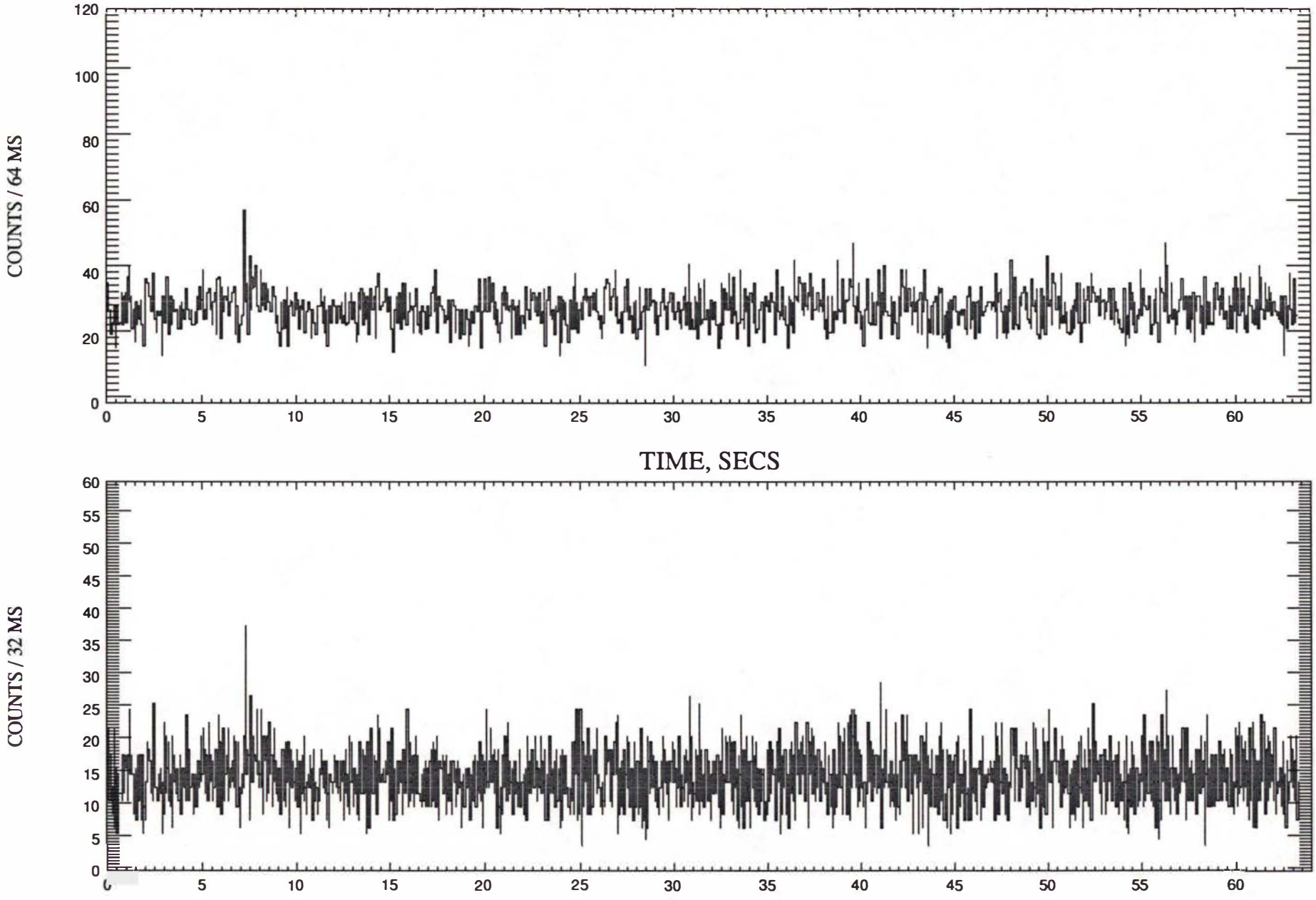
CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2A TRIGGERED DATA EDR day 159, year 1997 10/13/97

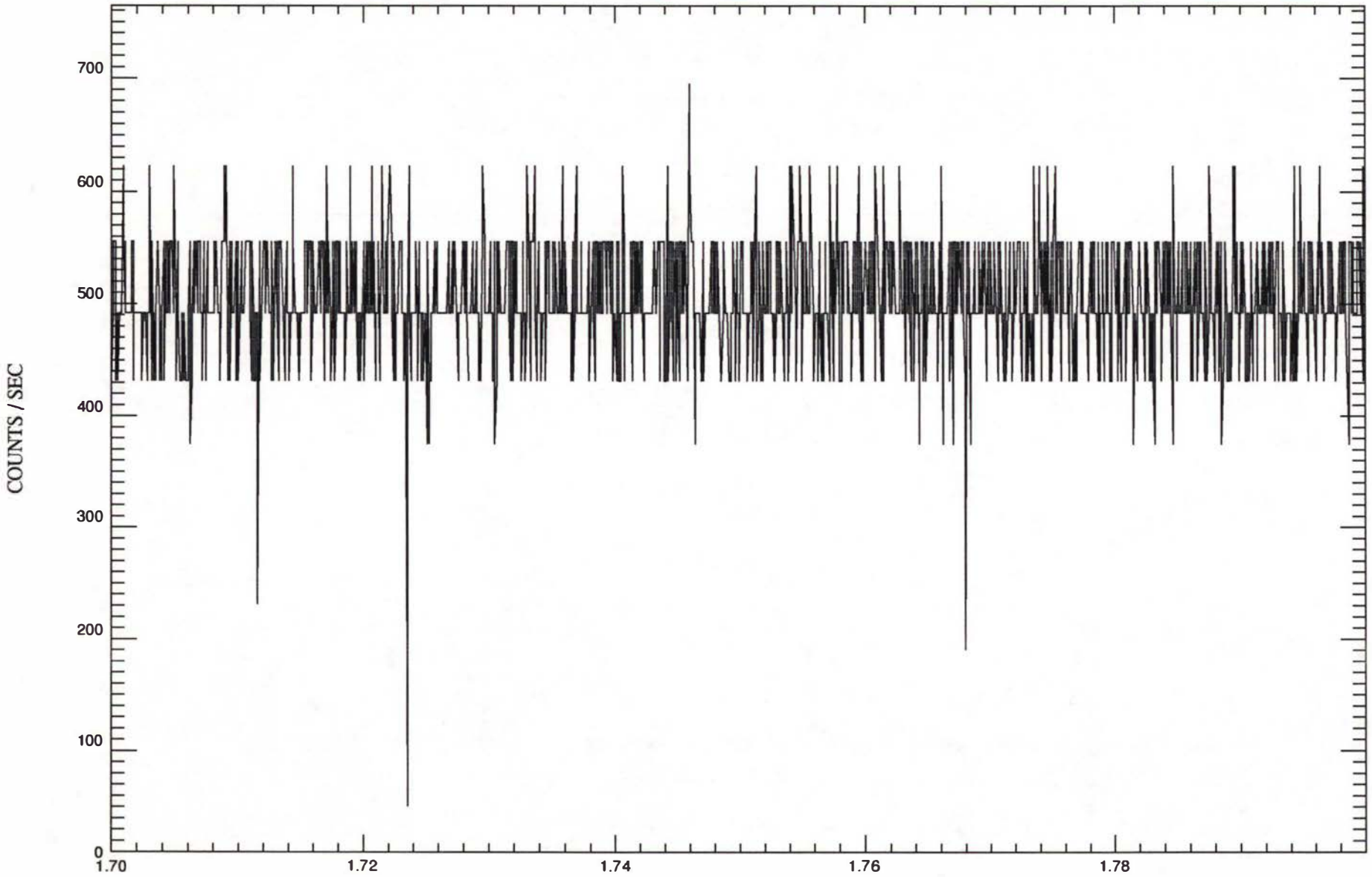
Burst Counter 6 at UT= 1.746008690728 h= 6285.631 s 01:44:45.631



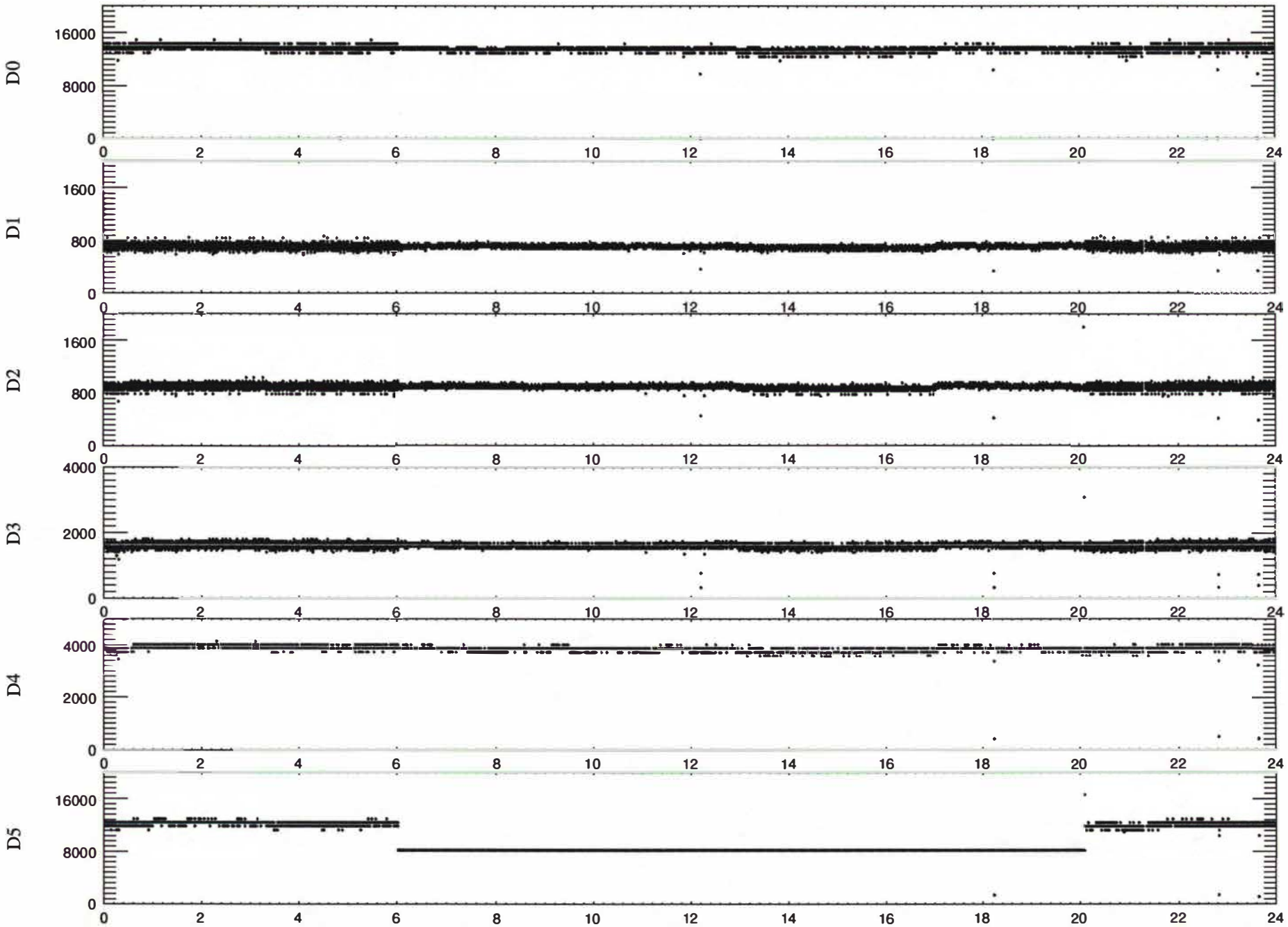
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 159, year 1997 to day 159, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 159, year 1997 to day 159, year 1997 10/13/97



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Jun 10 12:20 PDT 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA16981; Tue, 10 Jun 1997 12:19:57 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Tue, 10 Jun 1997 14:19:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970610141950.2165bac3@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6260
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

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

 BATSE BURST #     6260
 EVENT OF 1997 JUN  9 DAY OF YEAR=160
 EVENT CROSSING TIME AT BATSE      :  7380. S. OR 02:03:00.0
 COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 195.000    37.000
 BATSE PEAK COUNTING RATE:   4800     C/S

 EVENT CROSSING TIME AT ULYSSES     WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  9/ 6/  97 IS:
 RA=  151.473 DEC=    28.466 DIST=     5.441 AU
 BATSE-ULYSSES DISTANCE =  813987080. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.74 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2160.97 SECS.
 CROSSING TIME AT ULYSSES     IS  5219. S. OR   01:26:59 +/-  302.59 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  9/ 6/  97 IS:
 RA=  176.389 DEC=    2.292 DIST=     1.093 AU
 MARS-BATSE DISTANCE =  163481984. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.29 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -425.53 SECS.
 CROSSING TIME AT MARS       IS  6954. S. OR   01:55:54 +/-   52.74 SECONDS


                BATSE BURST TRIGGER
NO.: 6260

TIME: TJD=0608 SECONDS=7380

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=100.5  AZIMUTH=231.4  ERROR=4.908 DEGREES

COMMENTS:
GRB. DOUBLE PULSES. DUR~26S. NOT VISISBLE ABOVE 300KEV.
SECOND PULSE IS AT ~T+16S.


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6260   970609   10608   07380     4800   195   +37     26
```

BATSE BURST# 6260

ULYSSES RT 10/ 6/97

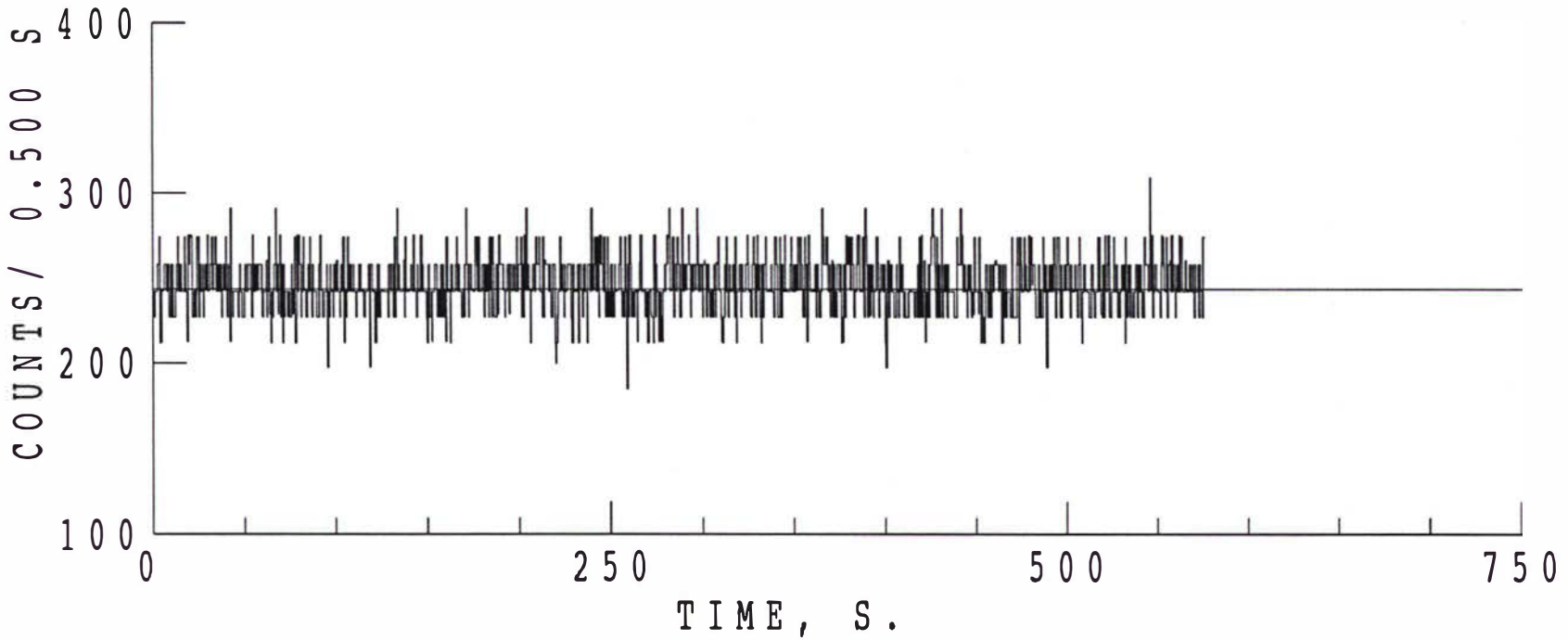
9/ 6/97 4932.010 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@ssl.msfc.nasa.gov Tue Jun 10 09:30 PDT 1997
Date: Tue, 10 Jun 1997 11:29:45 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6261

TIME: TJD=0608 SECONDS=17075

TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!

From SURASAK@ssl.msfc.nasa.gov Wed Jun 11 14:03 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id OAA27668; Wed, 11 Jun 1997 14:03:12 -0700
Date: Wed, 11 Jun 1997 16:03:00 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970611160300.2165bd18@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6262
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

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

 BATSE BURST #    6262
 EVENT OF 1997 JUN  9 DAY OF YEAR=160
 EVENT CROSSING TIME AT BATSE     : 29642. S. OR 08:14:02.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION:  62.000   -6.000
 BATSE PEAK COUNTING RATE:   5700    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  9/ 6/  97 IS:
 RA=  151.489 DEC=   28.435 DIST=    5.445 AU
 BATSE-ULYSSES DISTANCE =  814621960. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.59 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  114.04 SECS.
 CROSSING TIME AT ULYSSES    IS 29756. S. OR   08:15:56 +/-  523.08 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  9/ 6/  97 IS:
 RA=  176.389 DEC=    2.292 DIST=    1.093 AU
 MARS-BATSE DISTANCE =  163481984. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.51 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  226.04 SECS.
 CROSSING TIME AT MARS       IS 29868. S. OR   08:17:48 +/-   89.59 SECONDS


                BATSE BURST TRIGGER
NO.: 6262

TIME: TJD=0608 SECONDS=29642

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=113.7  AZIMUTH=10.4   ERROR=1.512 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR~24S. VISIBLE ABOVE 300 KEV.


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6262   970609   10608   29642     5700   062   -06     24
```

Helio corr removed 15/2/00

Date: Apr 3 '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)?

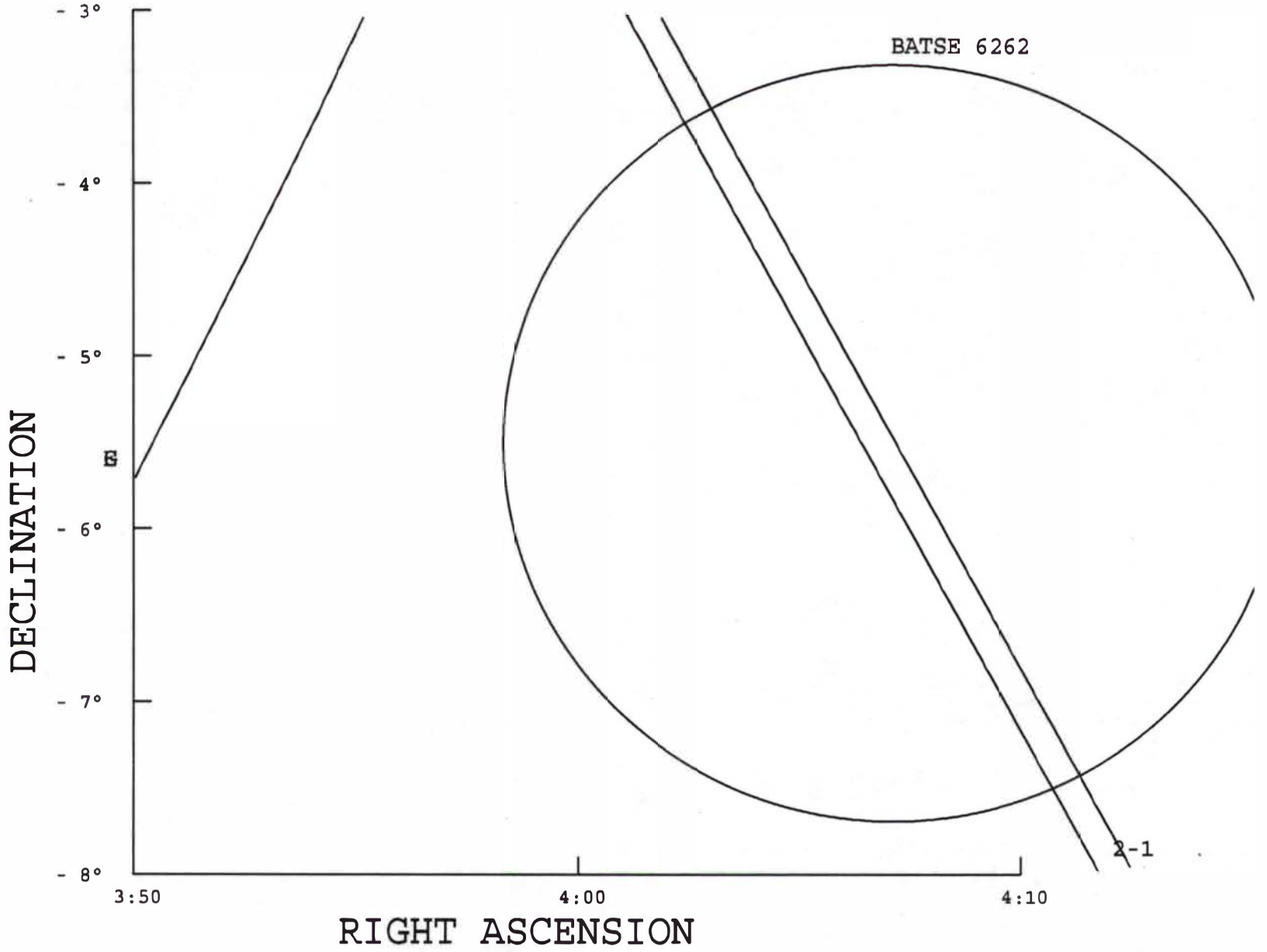
☐ 2000 coordinates used?

☐ Geocentric time used?

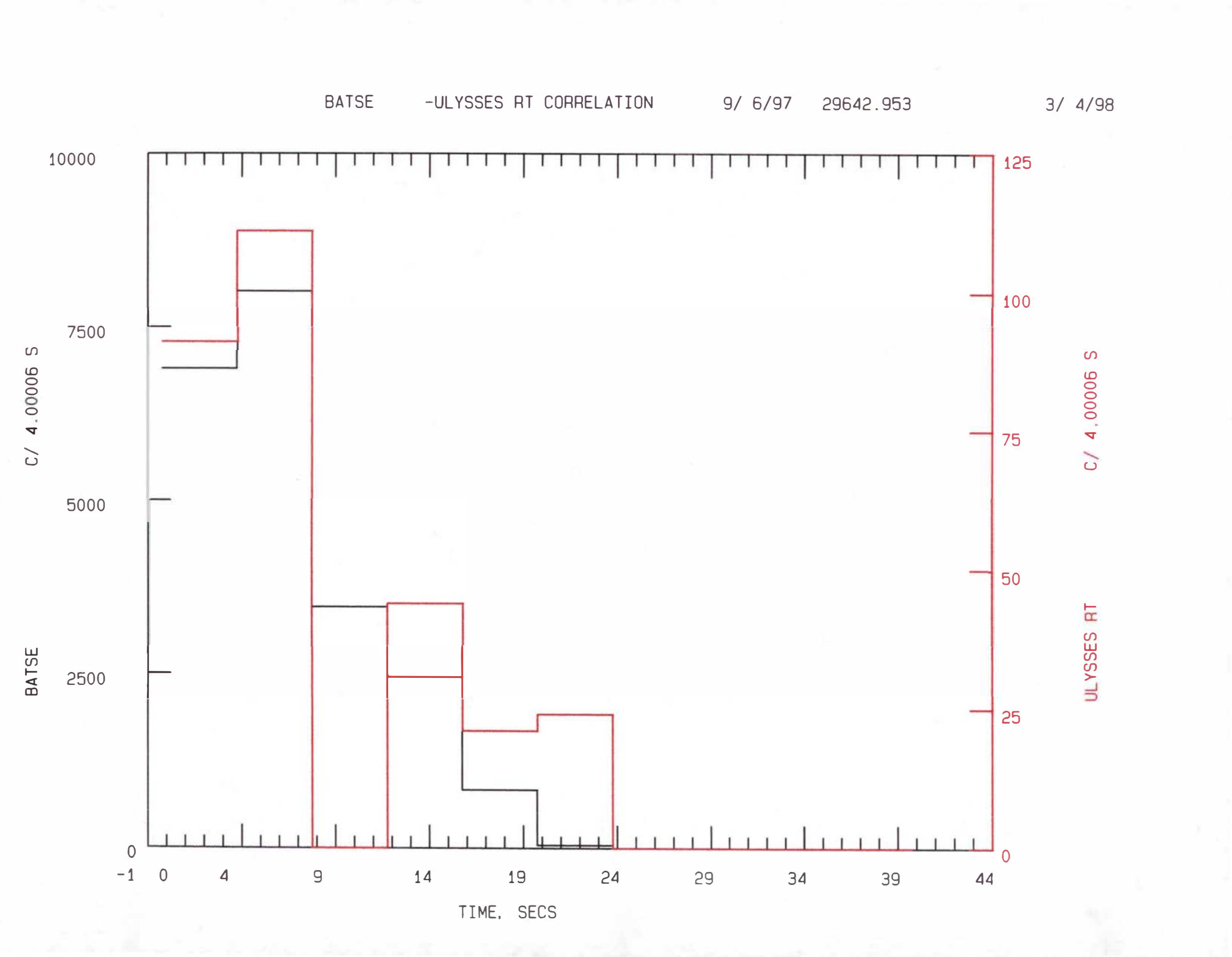
☑ ACCESS database updated?

EVENT OF JUN 9, 1997 8:15

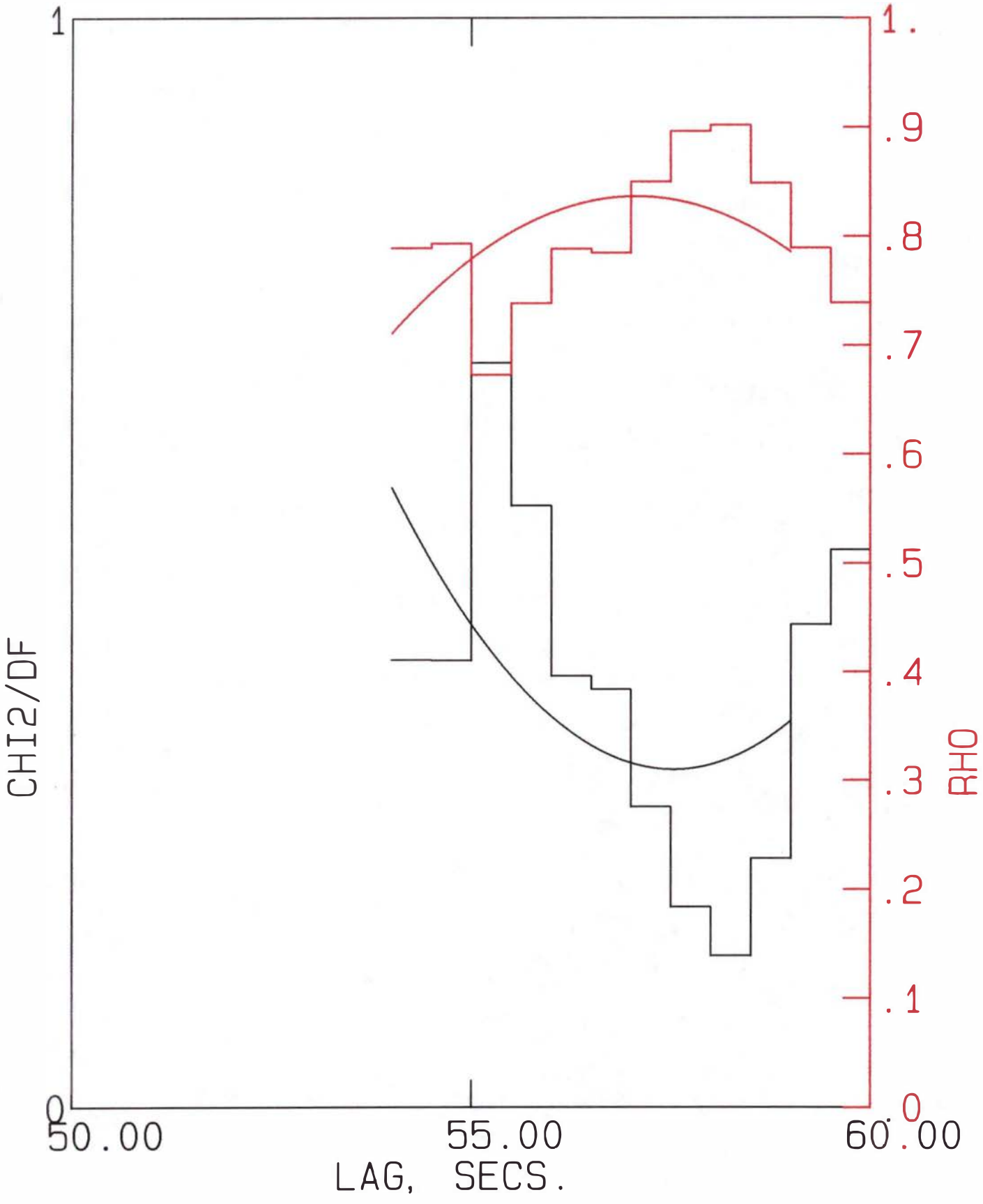
18/ 2/ 0



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


BATSE -ULYSSES RT CORRELATION 9/ 6/97 29642.953 3/ 4/98
10000
7500
5000
2500
0
BATSE
C/ 4.00006 S
125
100
75
50
25
0
ULYSSES RT
C/ 4.00006 S
-1
0
4
9
14
19
24
29
34
39
44
TIME, SECS

BATSE -ULYSSES RT CORRELATION 9/ 6/97 29642.953

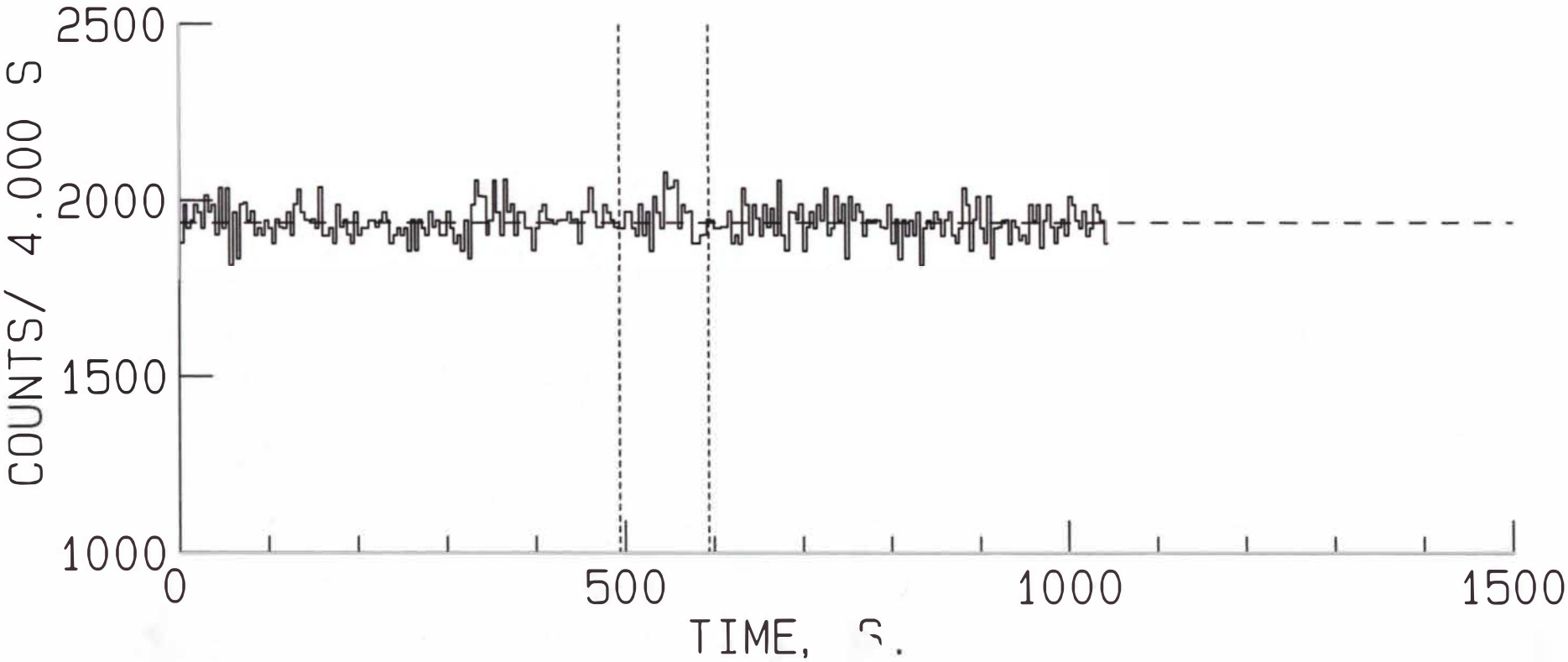


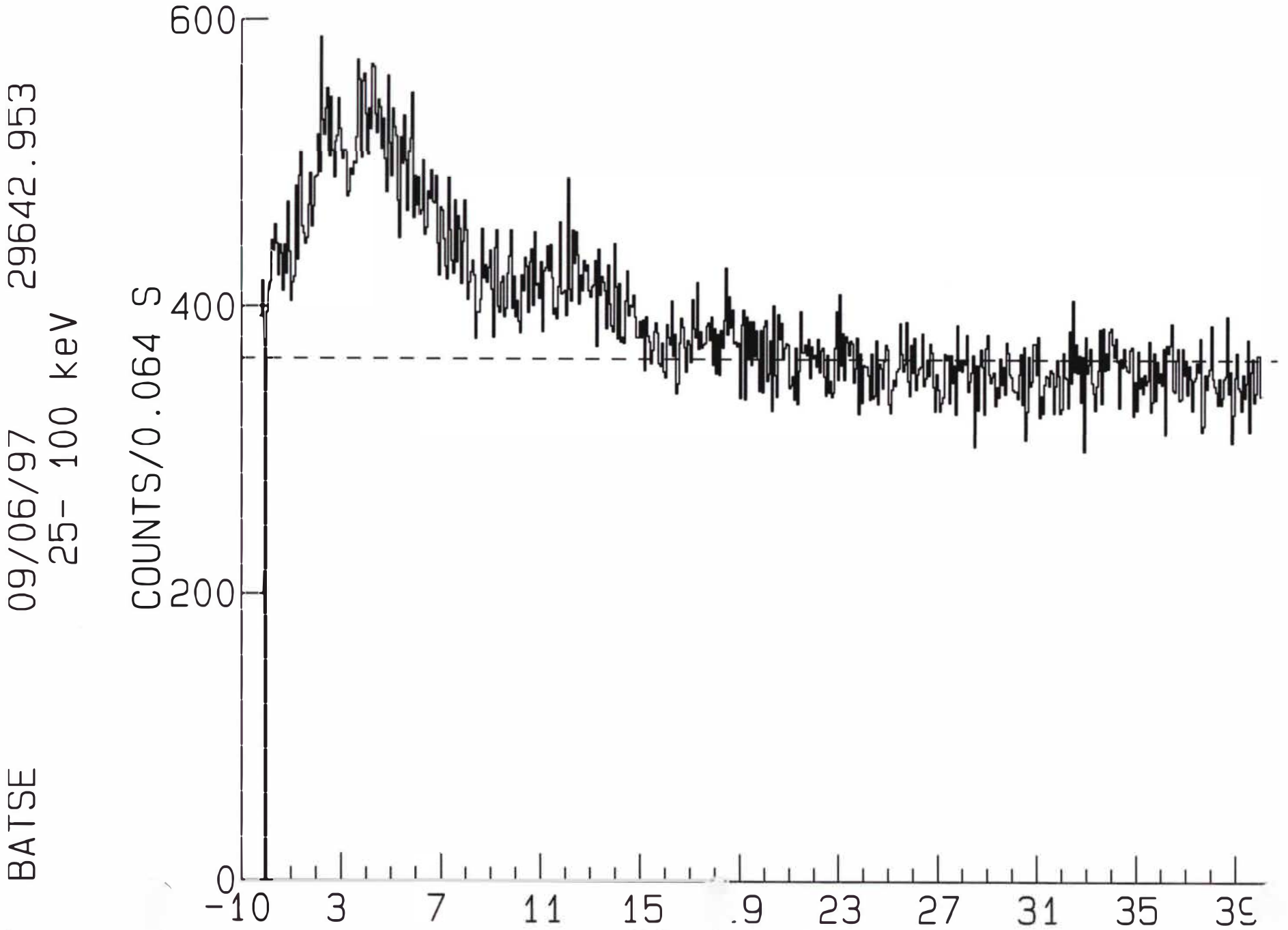
ULYSSES RT 3/ 4/98

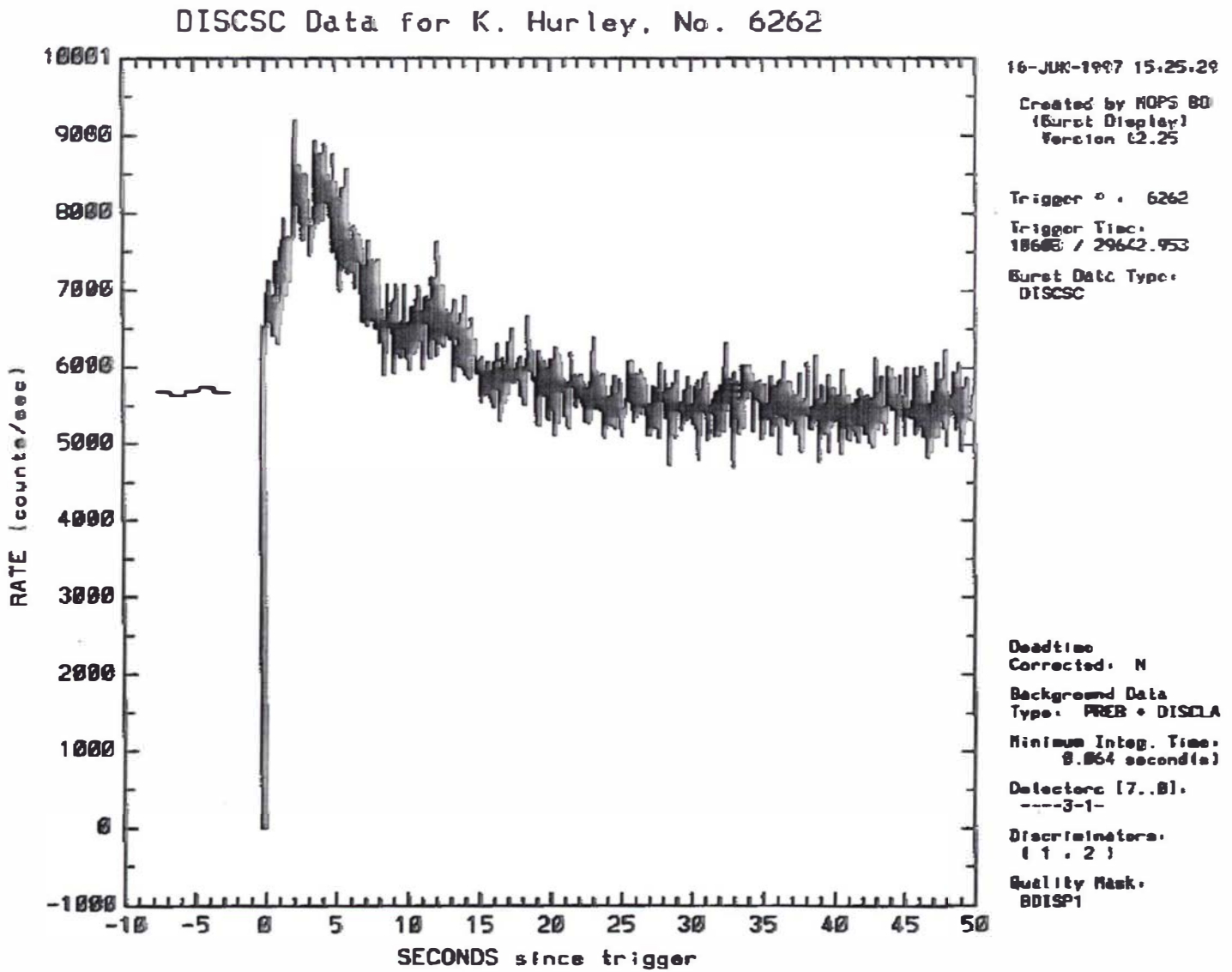
9/ 6/97 29232.260 s

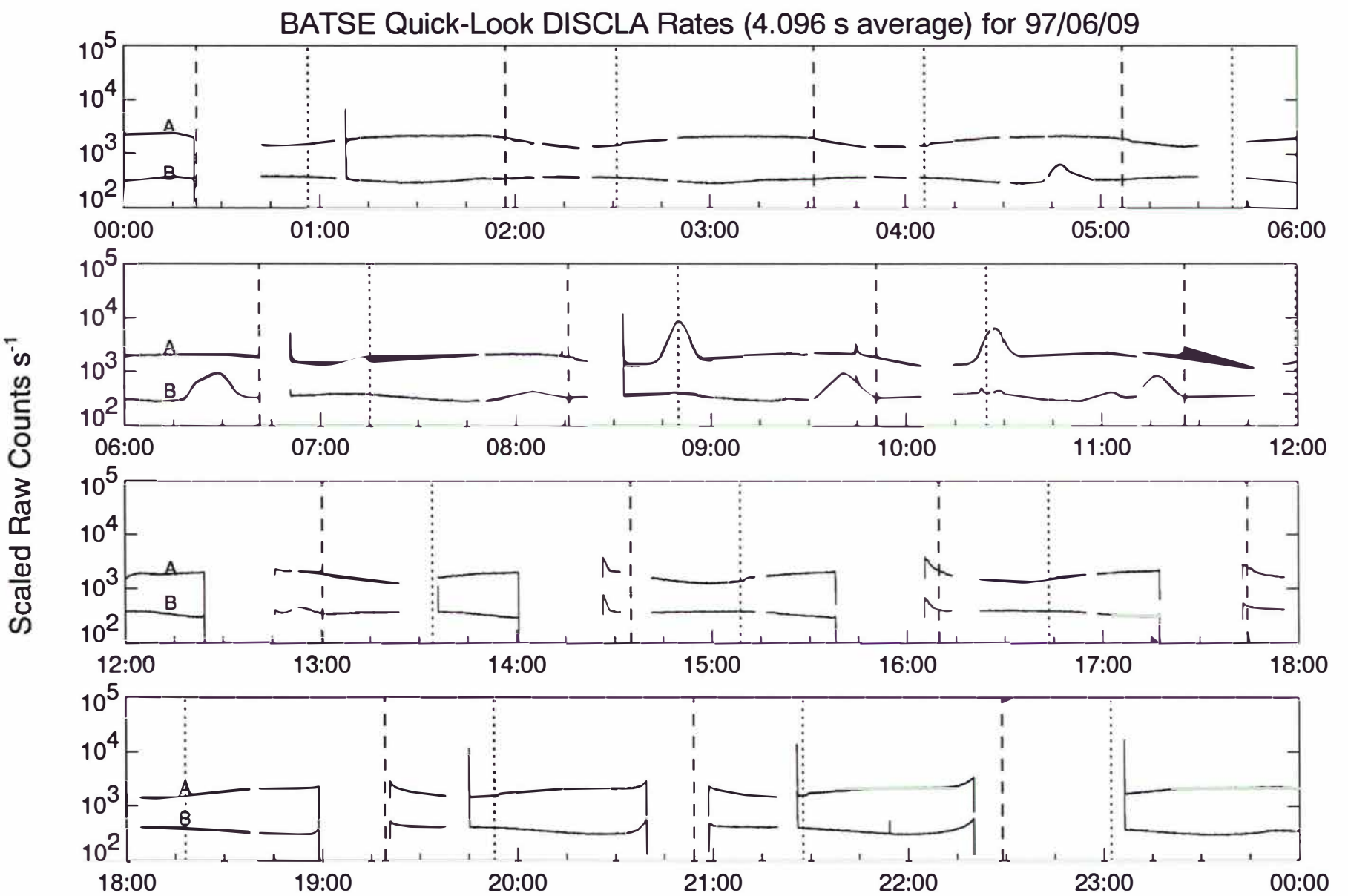
0.500 S INTERVALS REGROUPED BY 8

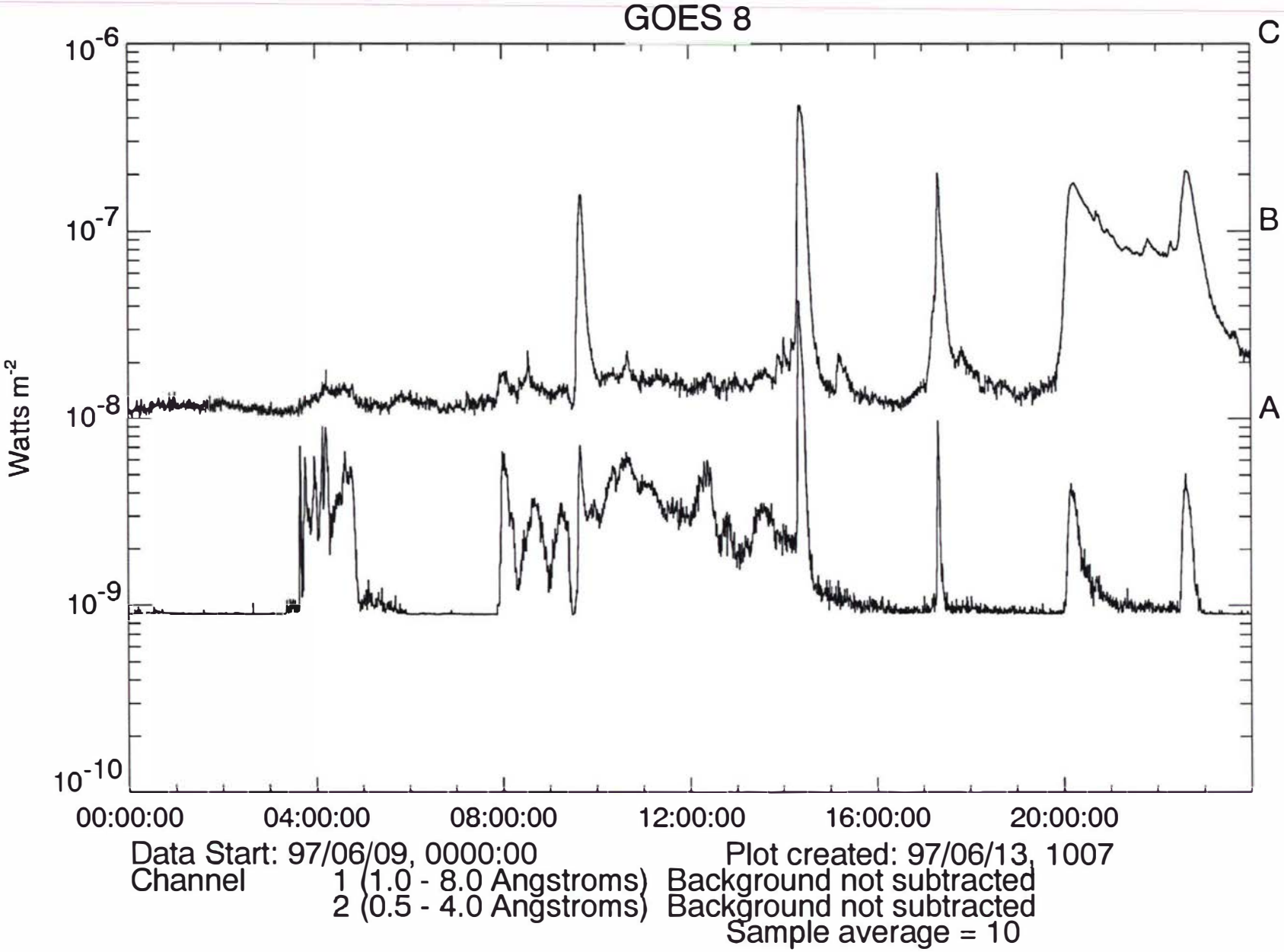
22- 147 keV

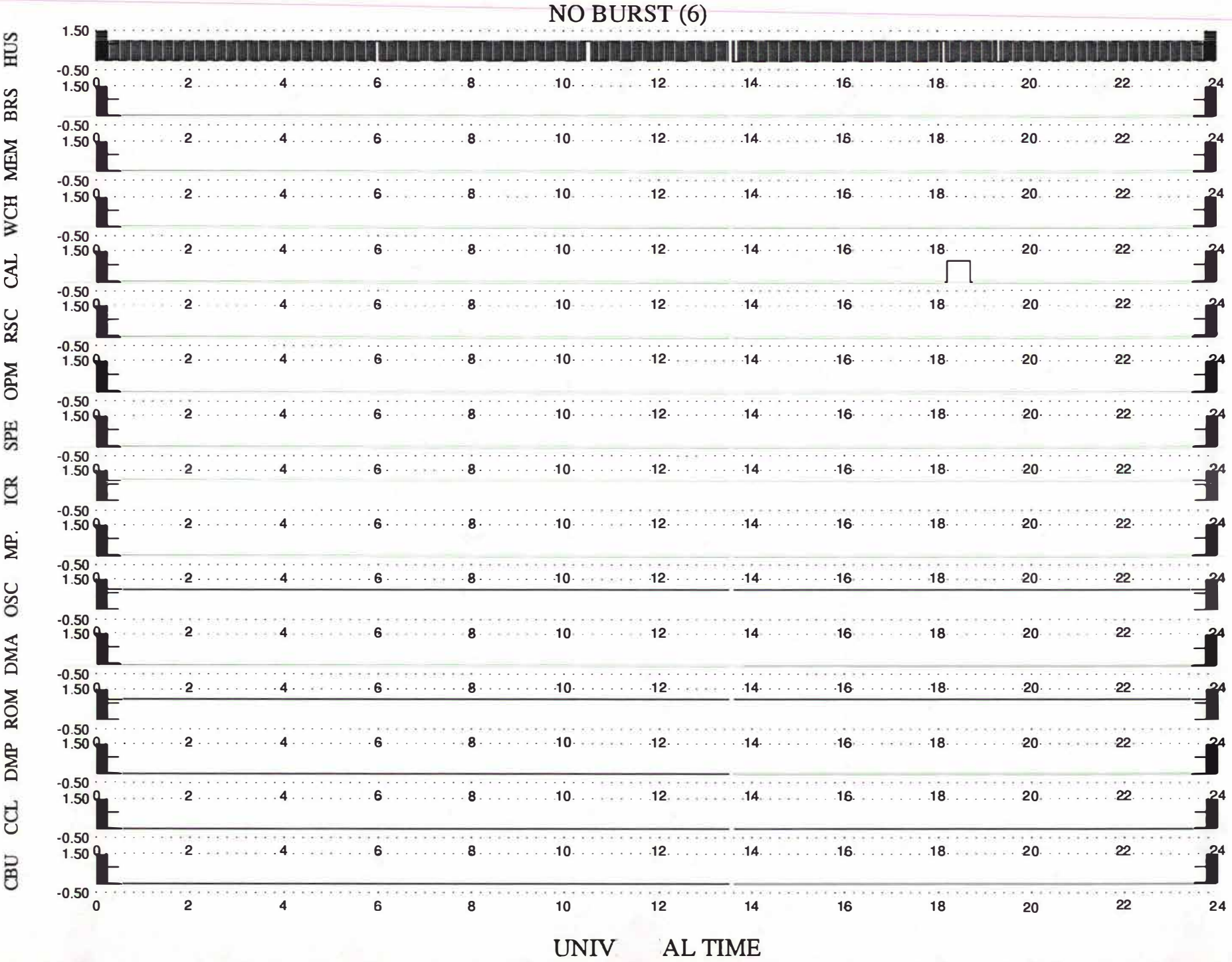



BATSE
09/06/97
25- 100 keV
29642.953
COUNTS/0.064 S
600
400
200
0
-10
3
7
11
15
.9
23
27
31
35
39


DISCSC Data for K. Hurley, No. 6262
RATE (counts/sec)
SECONDS since trigger
16-JUK-1997 15:25:29
Created by MOPS BD
(Burst Display)
Version 02.25
Trigger # : 6262
Trigger Time:
18608 / 29642.953
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
----3-1-
Discriminators:
(1 , 2)
Quality Mask:
BDISP1

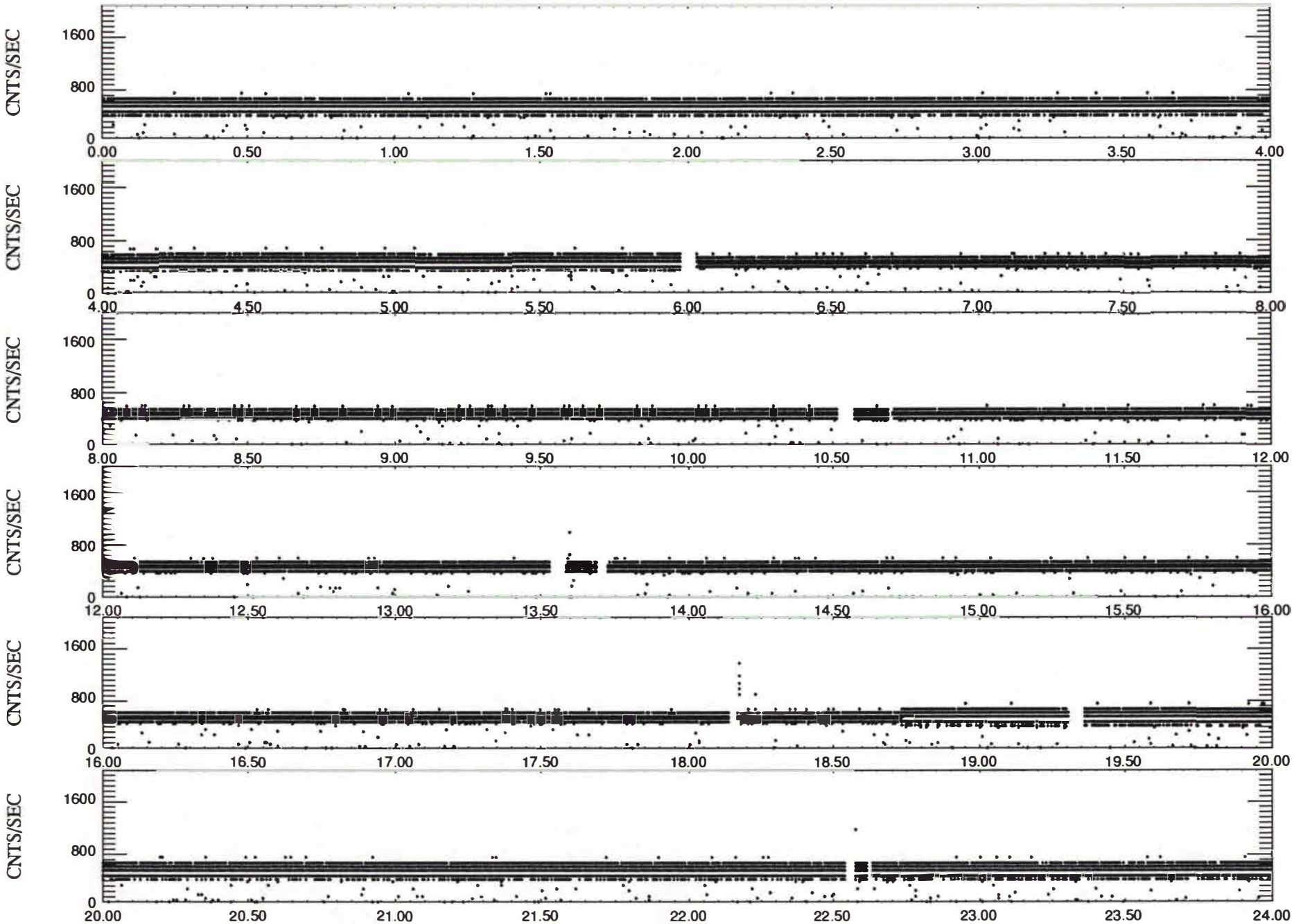

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/09
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/13, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/09, 0000:00
Plot created: 97/06/13, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


NO BURST (6)
HUS
BRS
MEM
WCH
CAL
RSC
OPM
SPE
ICR
MP.
OSC
DMA
ROM
DMP
CCL
CBU
1.50
-0.50
0
2
4
6
8
10
12
14
16
18
20
22
24
UNIV AL TIME

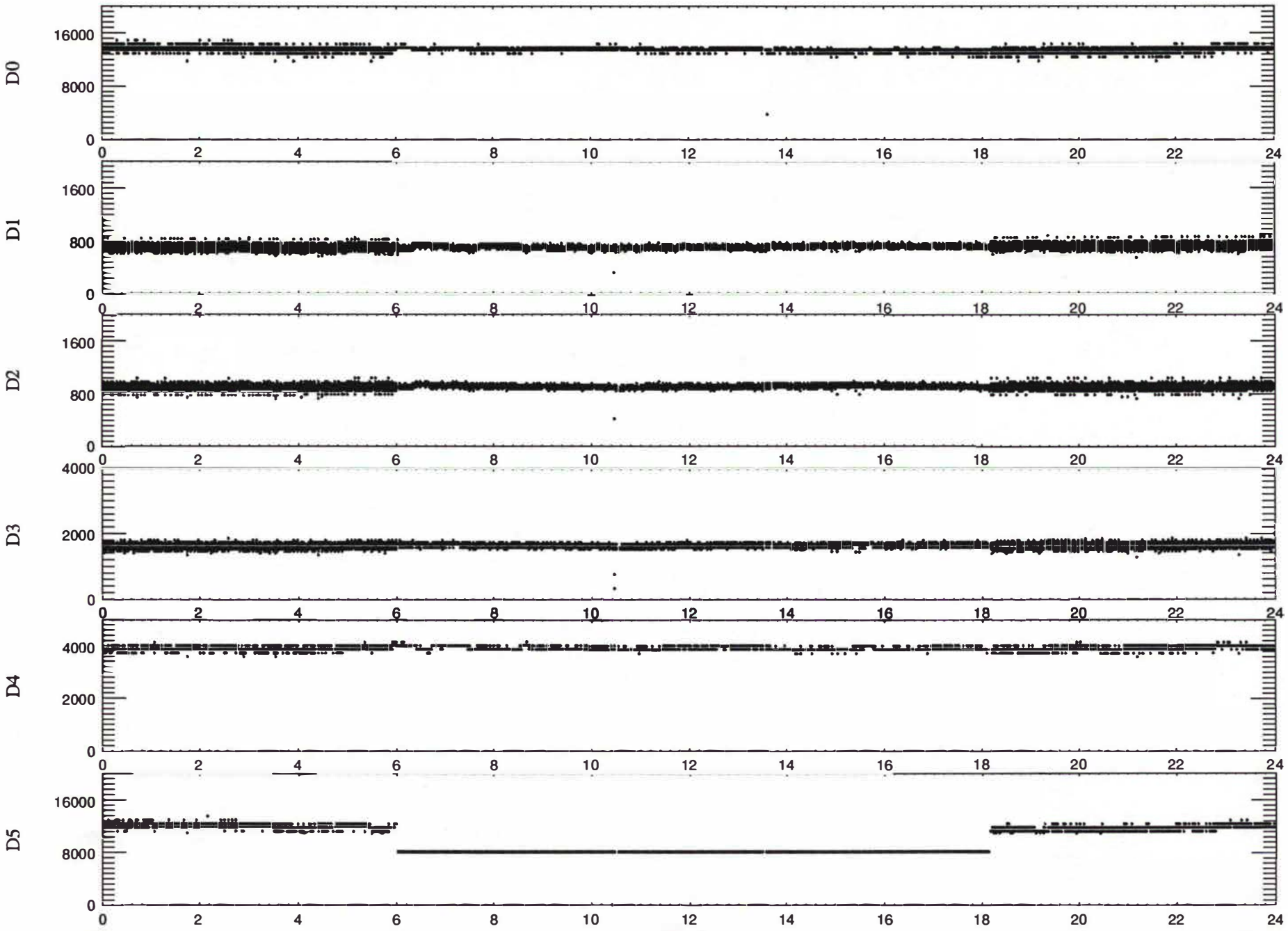
HUS 2A, MODE 1, NOT AVERAGED EDR day 160, year 1997 to day 160, year 1997 10/13/97

CALIBRATION DATA INCLUDED

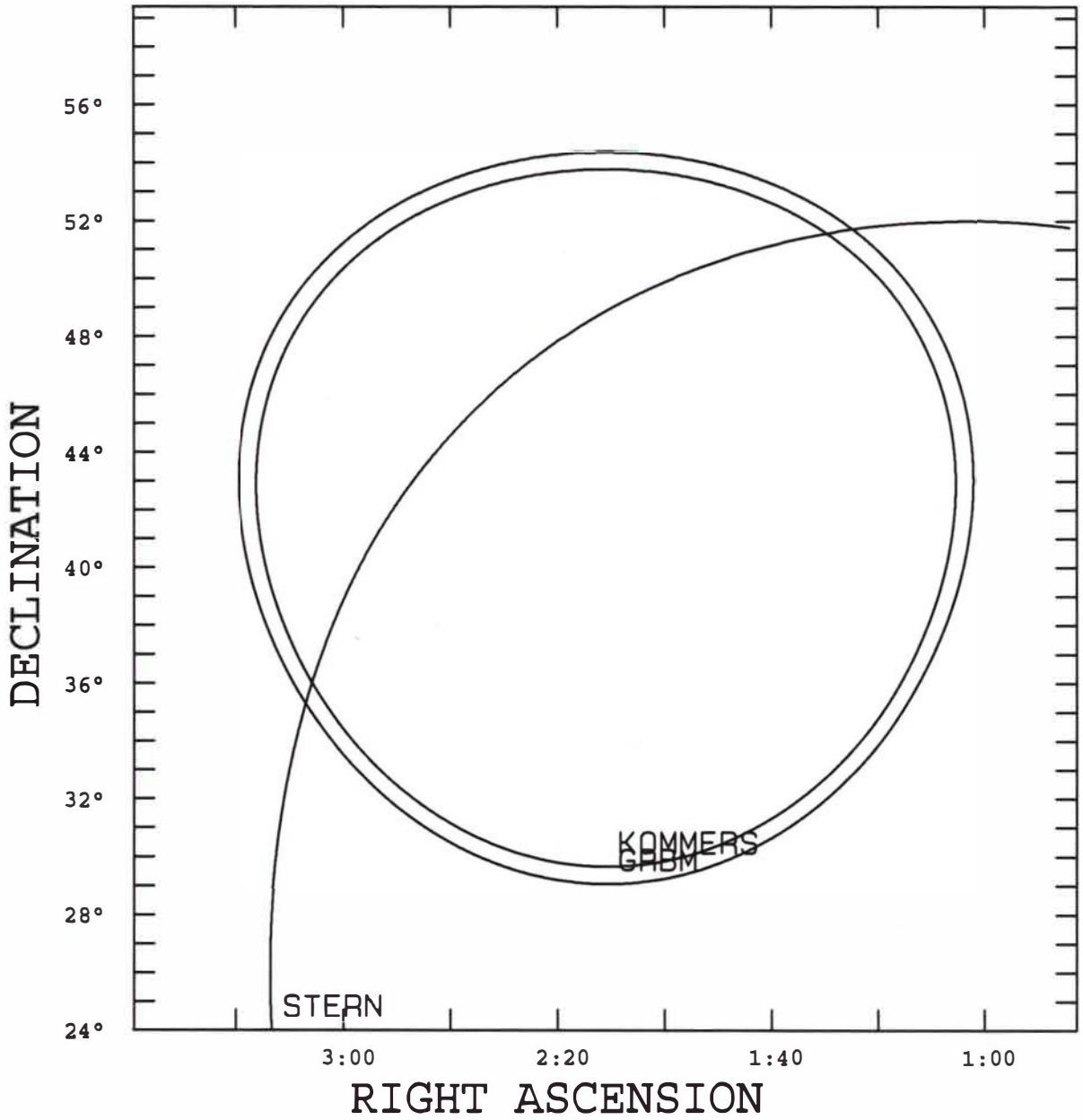


UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 160, year 1997 to day 160, year 1997 10/13/97



36254s


56°
52°
48°
44°
40°
36°
32°
28°
24°
DECLINATION
3:00
2:20
1:40
1:00
RIGHT ASCENSION
KAMMERS
STERN

Date: Dec 8 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

□ Was CHECKMO run to eliminate data gaps?

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

□ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

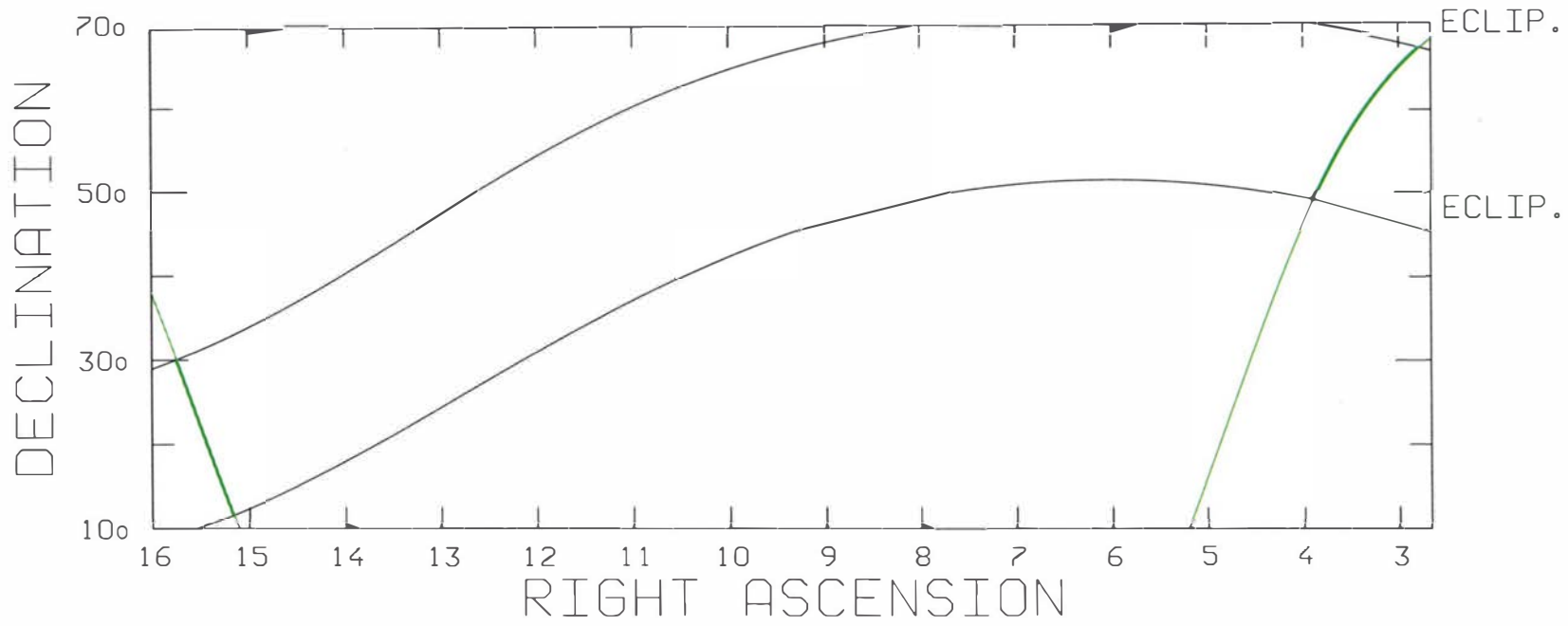
3. For INTEGRAL events

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

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

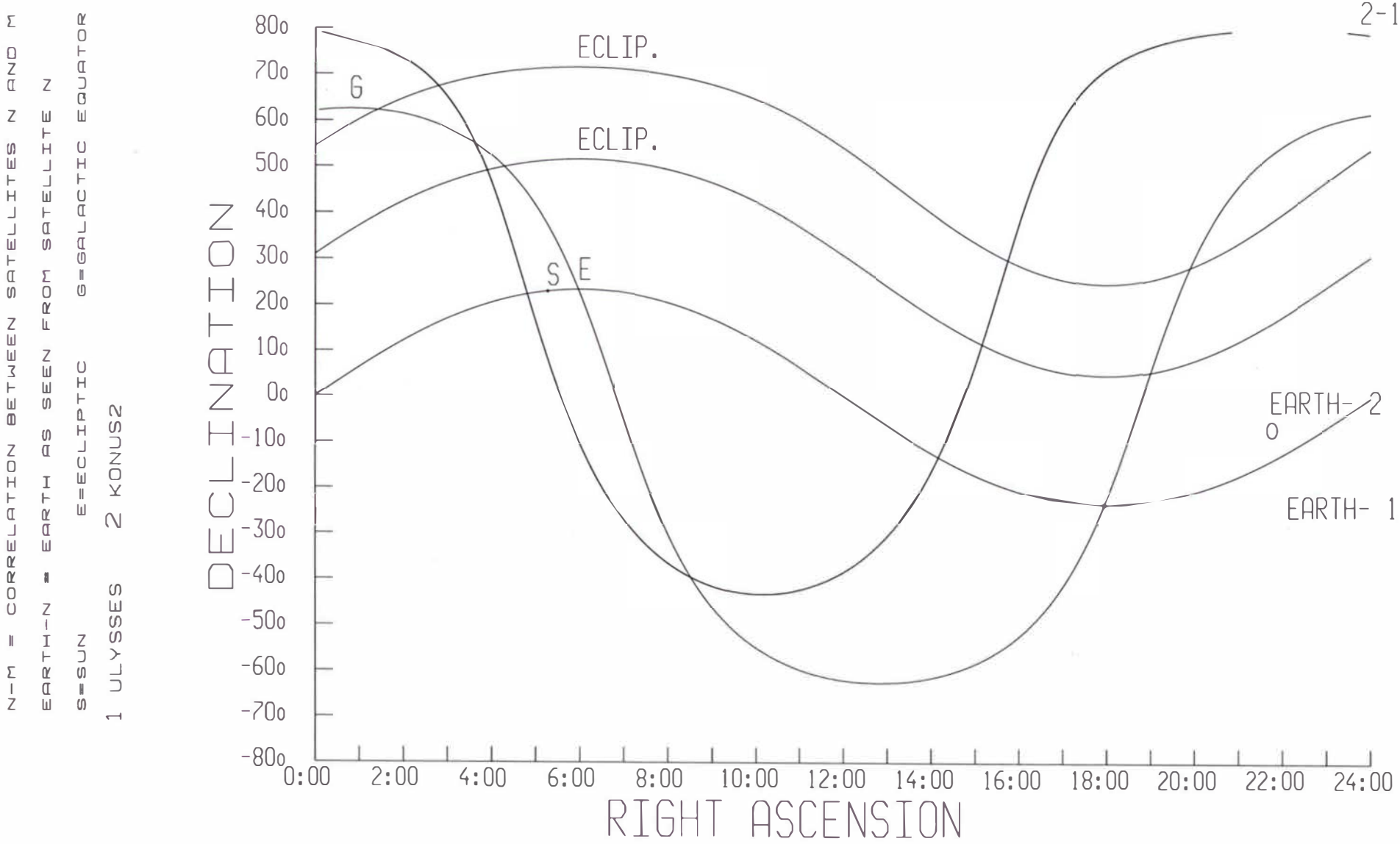
□ Updated ephemeris used for bursts prior to September 30, 2003?

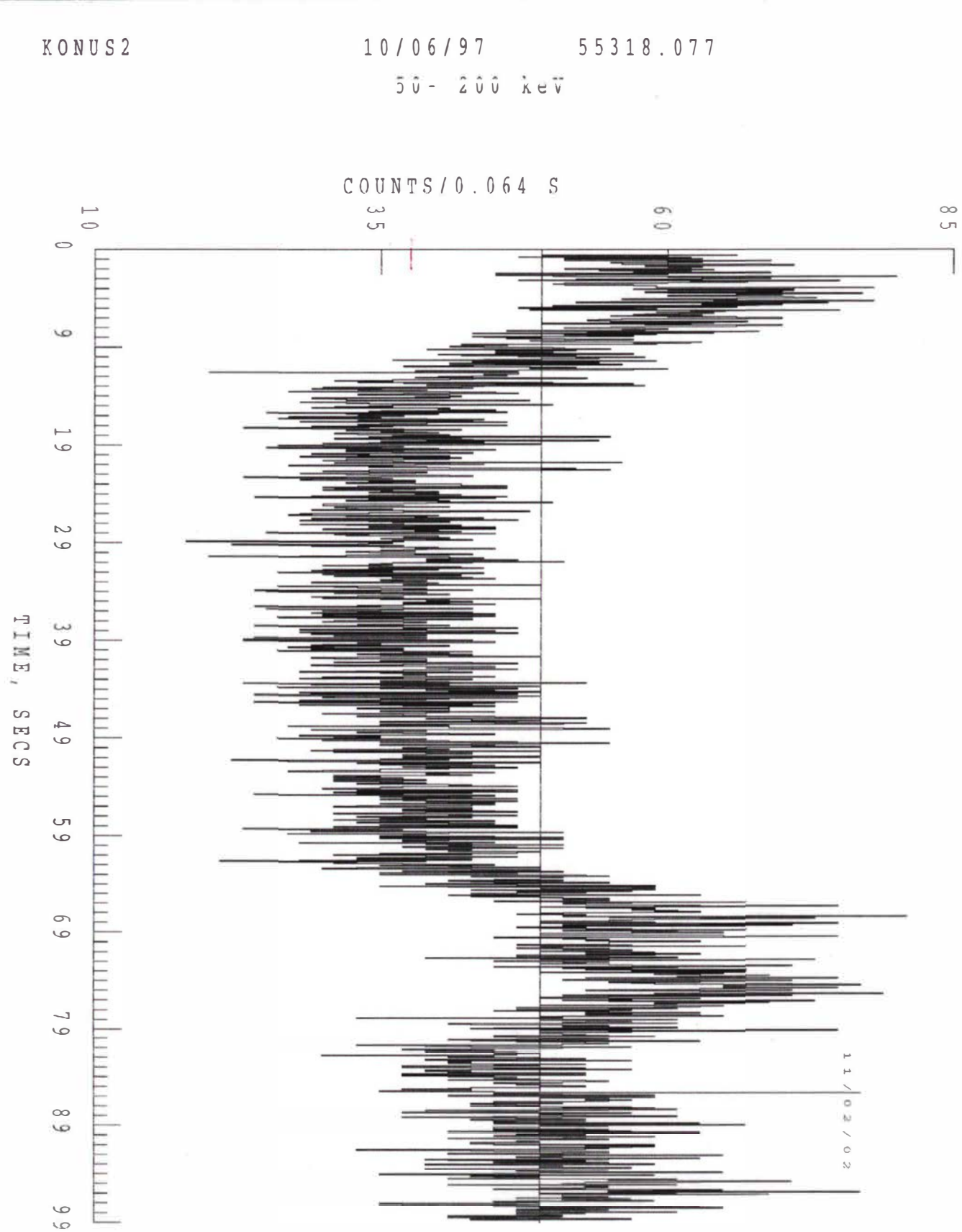
☑ ACCESS and MBL4 databases updated with identical times?


70o
50o
30o
10o
DECLINATION
16
15
14
13
12
11
10
9
8
7
6
5
4
3
RIGHT ASCENSION
ECLIP.
ECLIP.

EVENT OF JUN 10, 1997 15:07

08/12/2011




KONUS2
10/06/97
55318.077
50- 200 keV
COUNTS/0.064 S
10
35
60
85
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
11/02/02

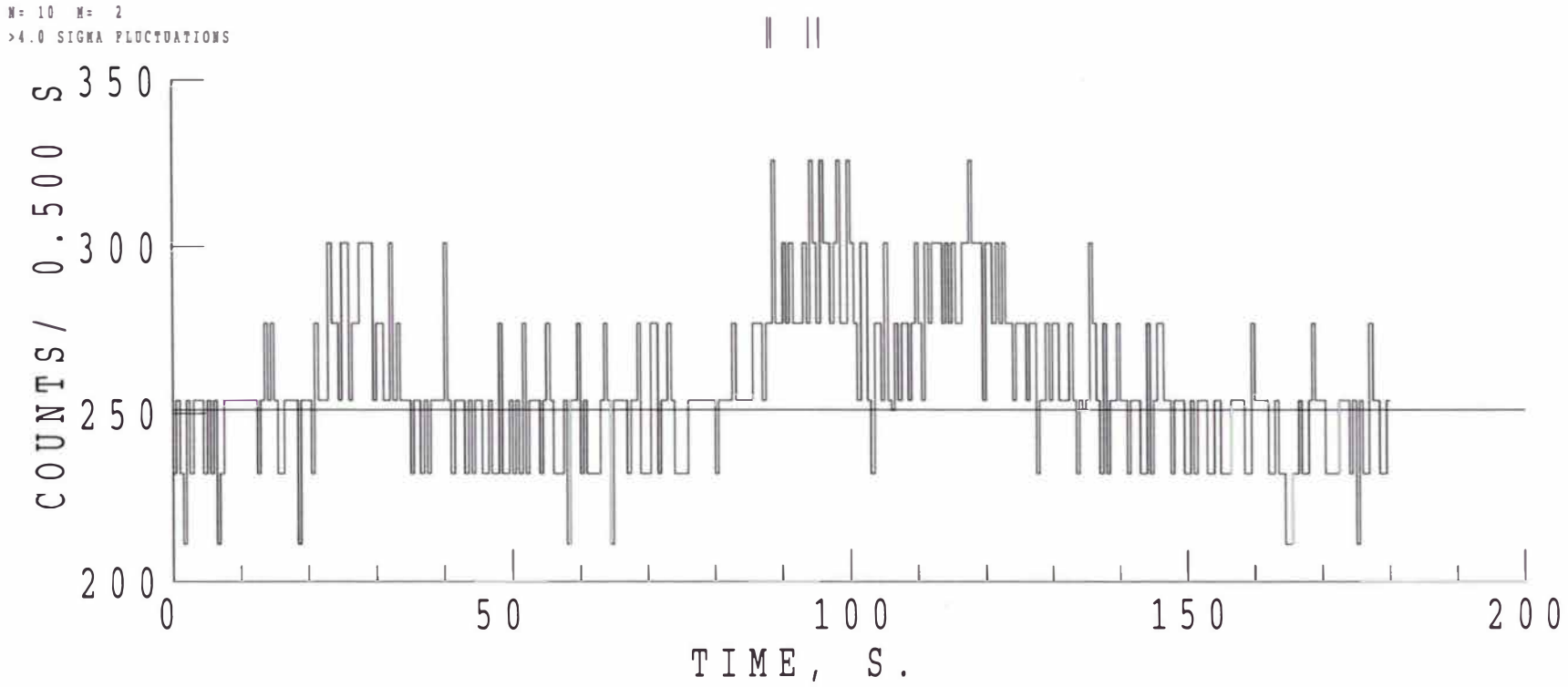
KONUS 19970610 54524

ULYSSES RT

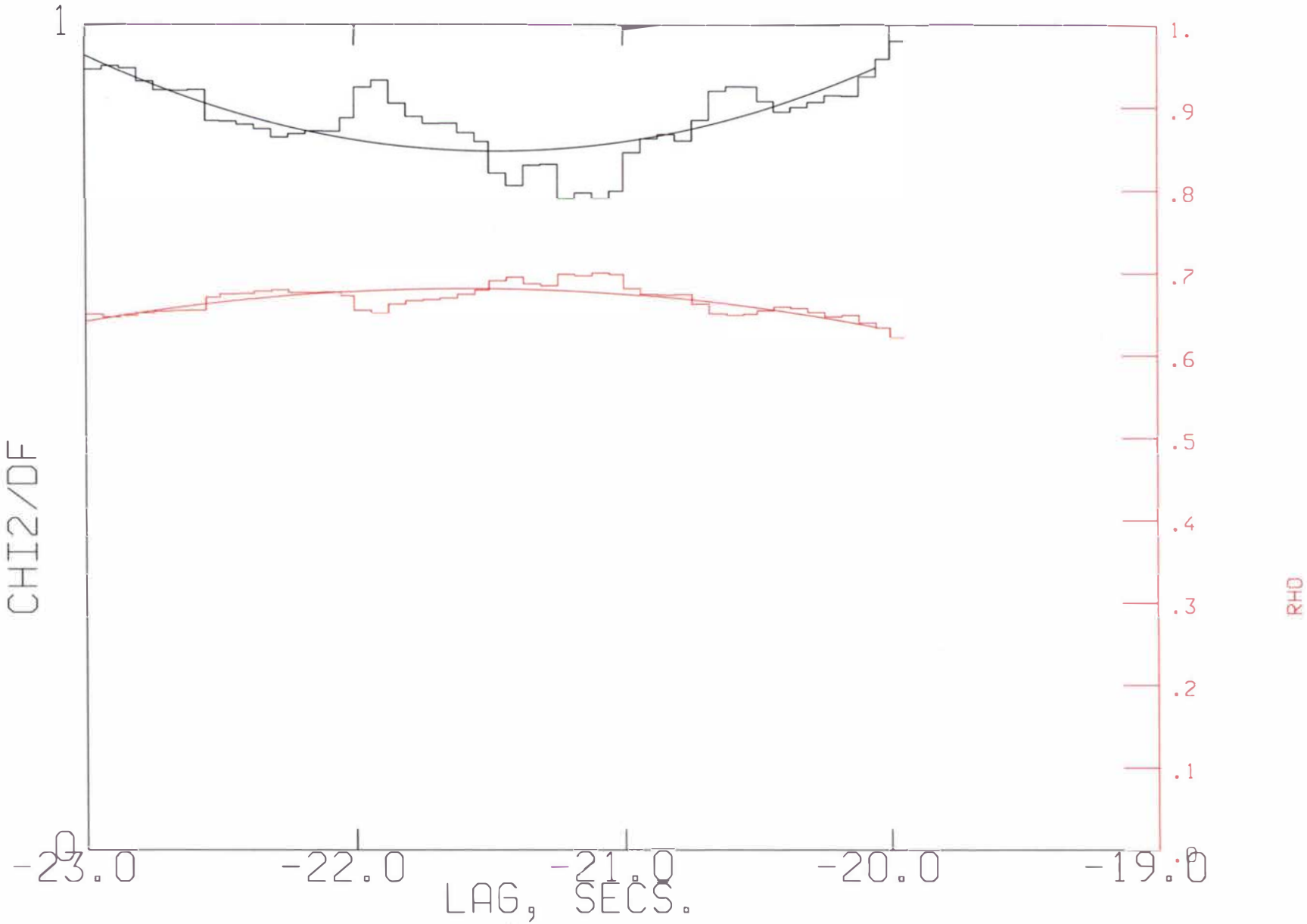
07/12/11

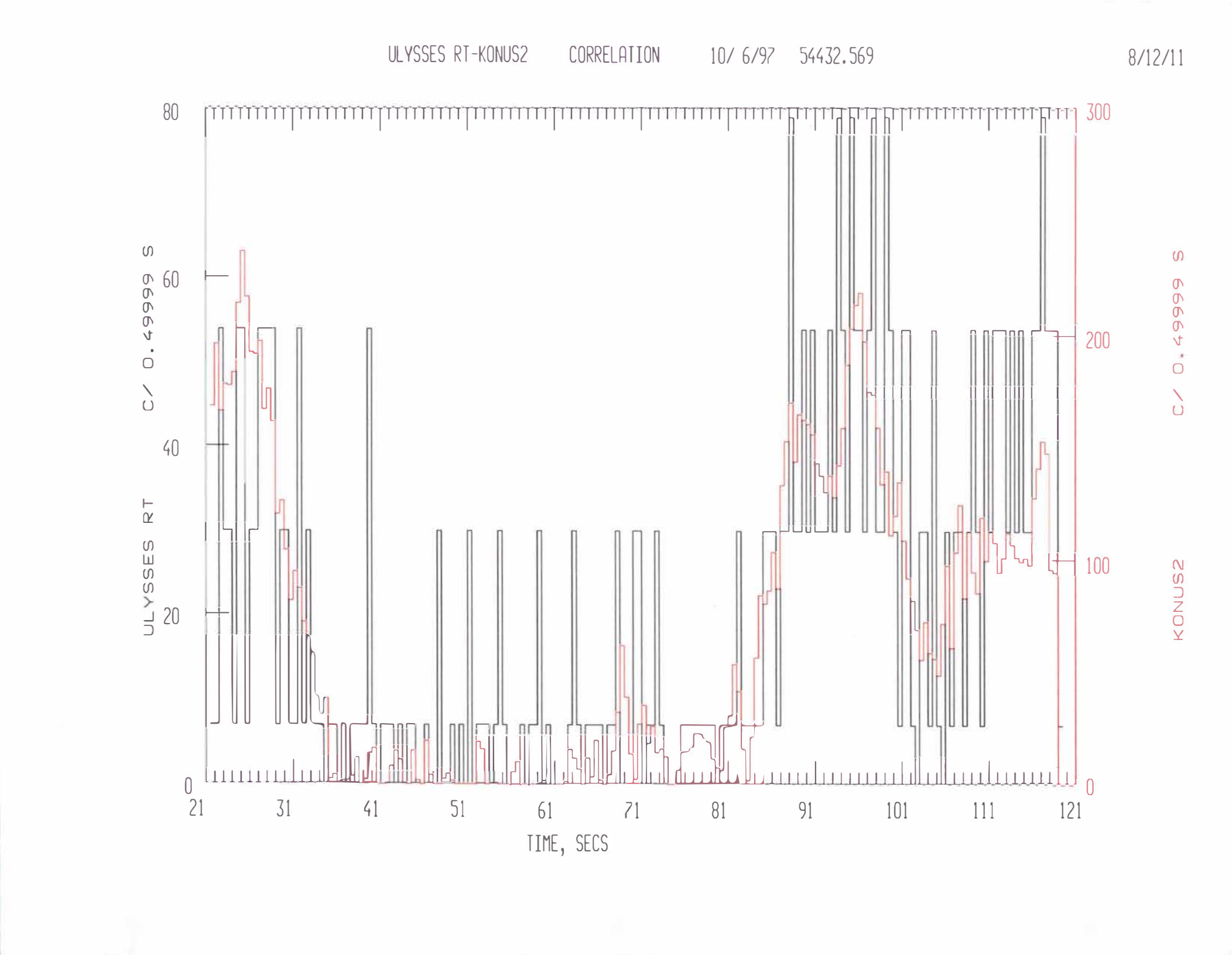
10/06/97 54432.059 s

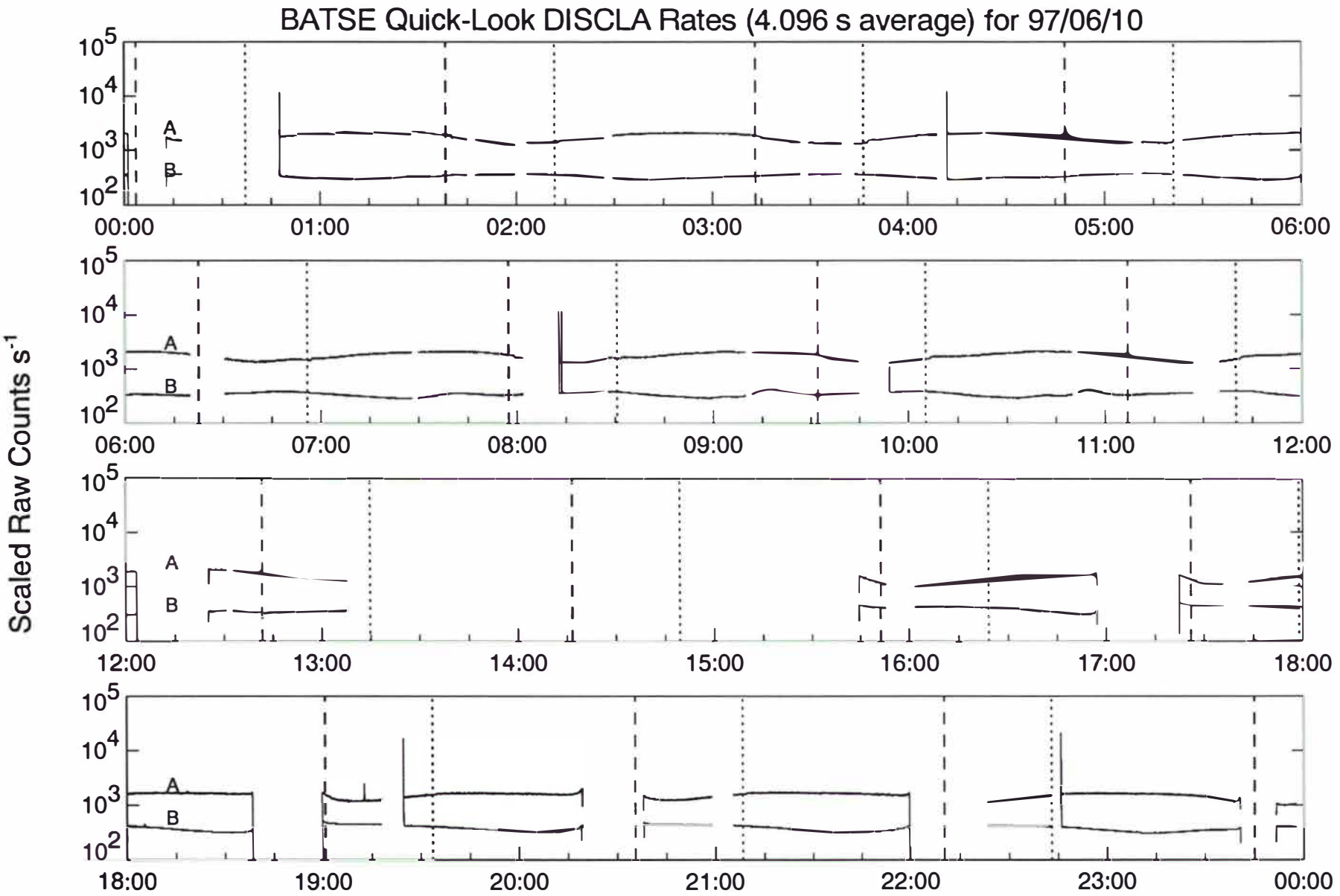
0- 0 keV

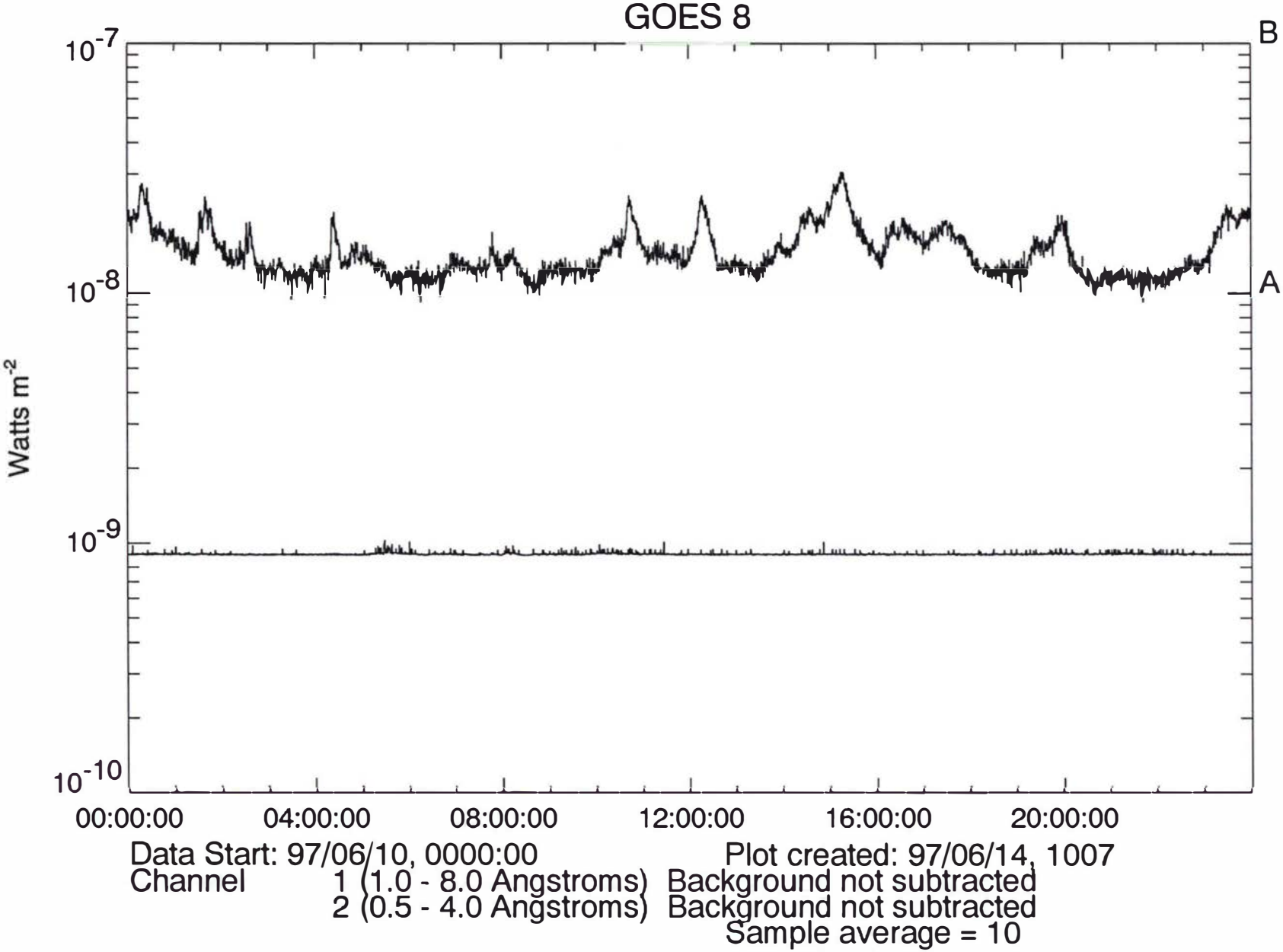


ULYSSES RT-KONUS2 CORRELATION 10/ 6/97 54432.569

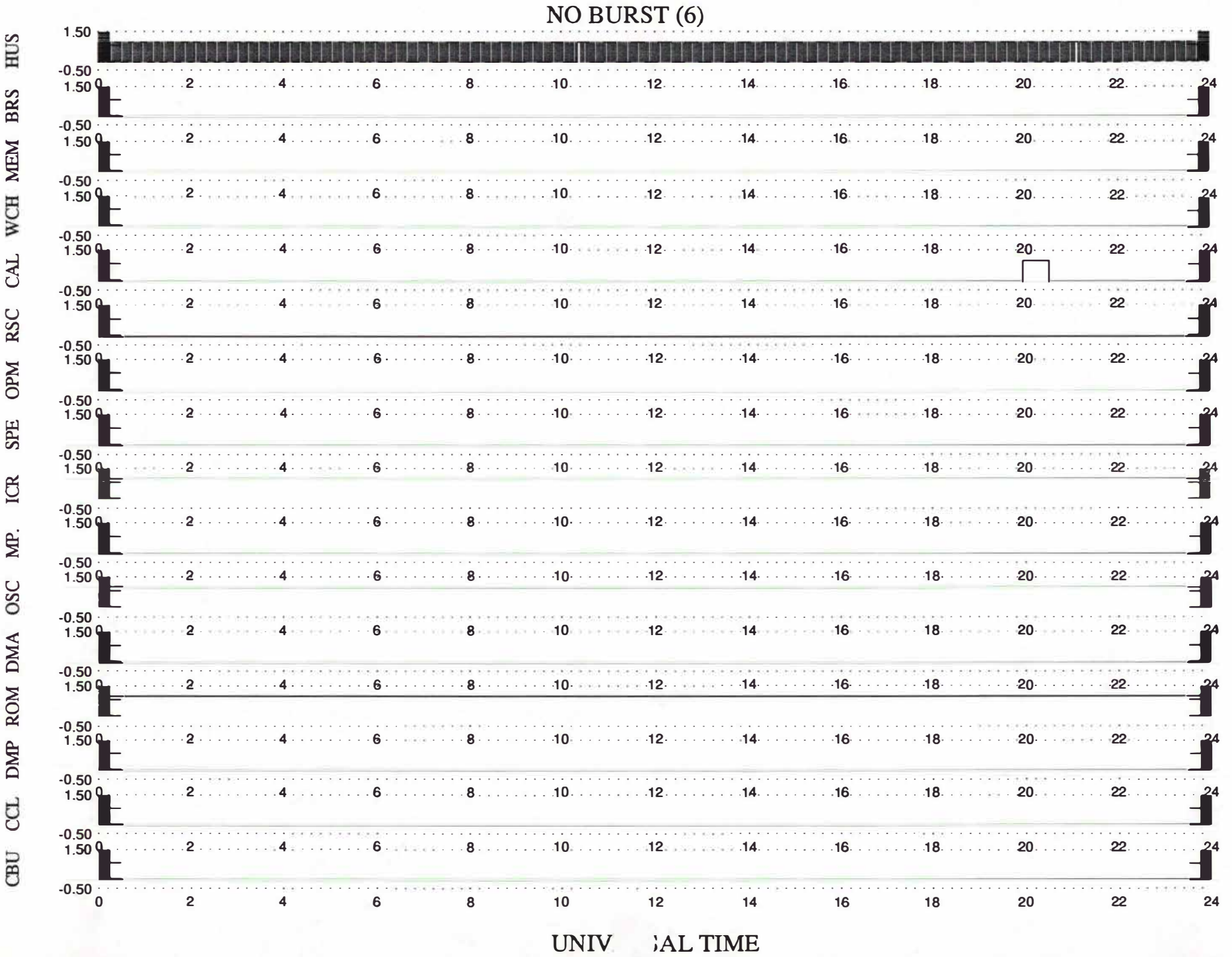



ULYSSES RT-KONUS2 CORRELATION 10/ 6/97 54432.569
8/12/11
80
60
40
20
0
ULYSSES RT C/ 0.49999 S
300
200
100
0
KONUS2 C/ 0.49999 S
21
31
41
51
61
71
81
91
101
111
121
TIME, SECS


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/10
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/14, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

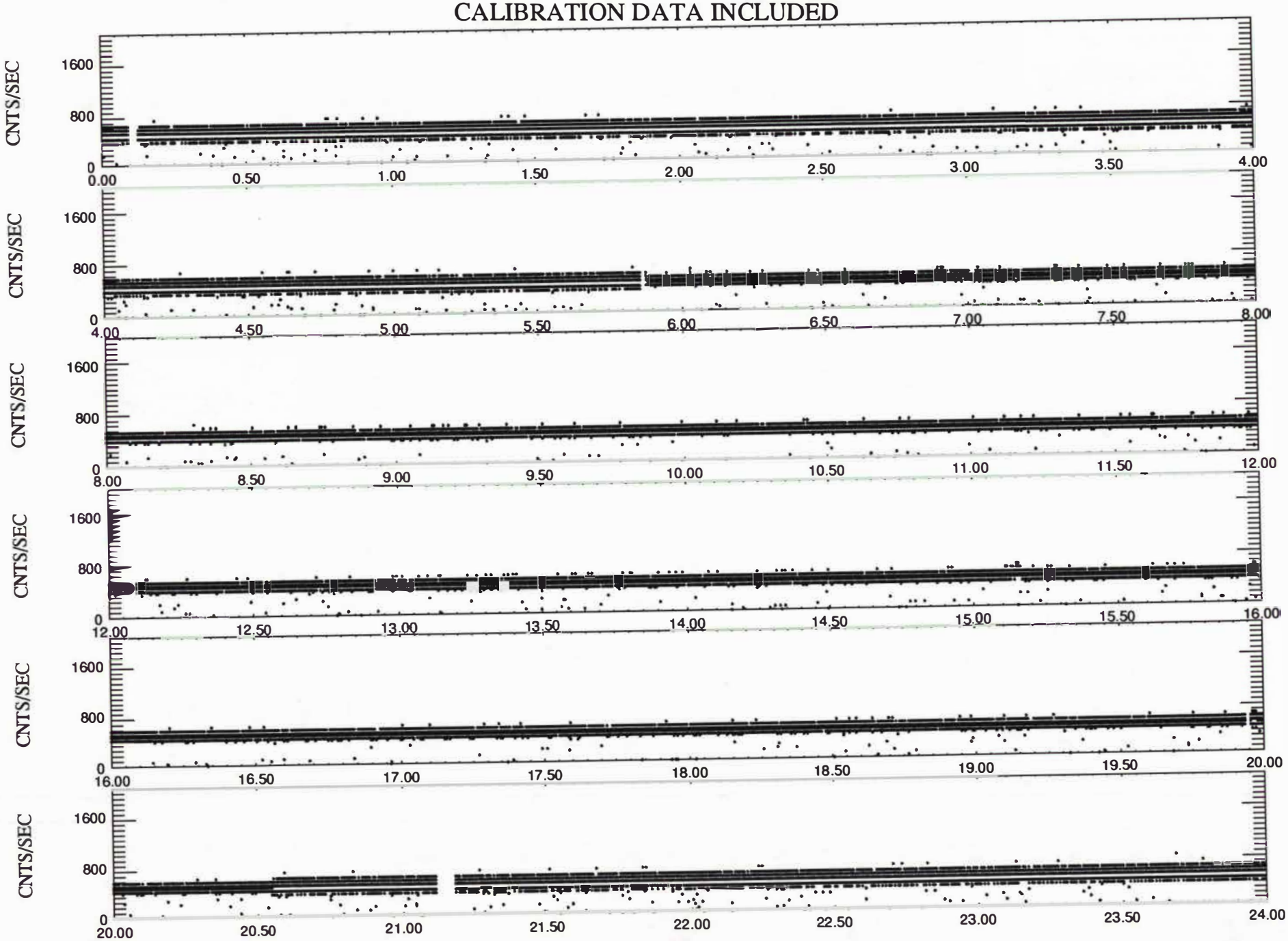

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/10, 0000:00
Plot created: 97/06/14, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 161, year 1997 to day 161, year 1997 10/13/97



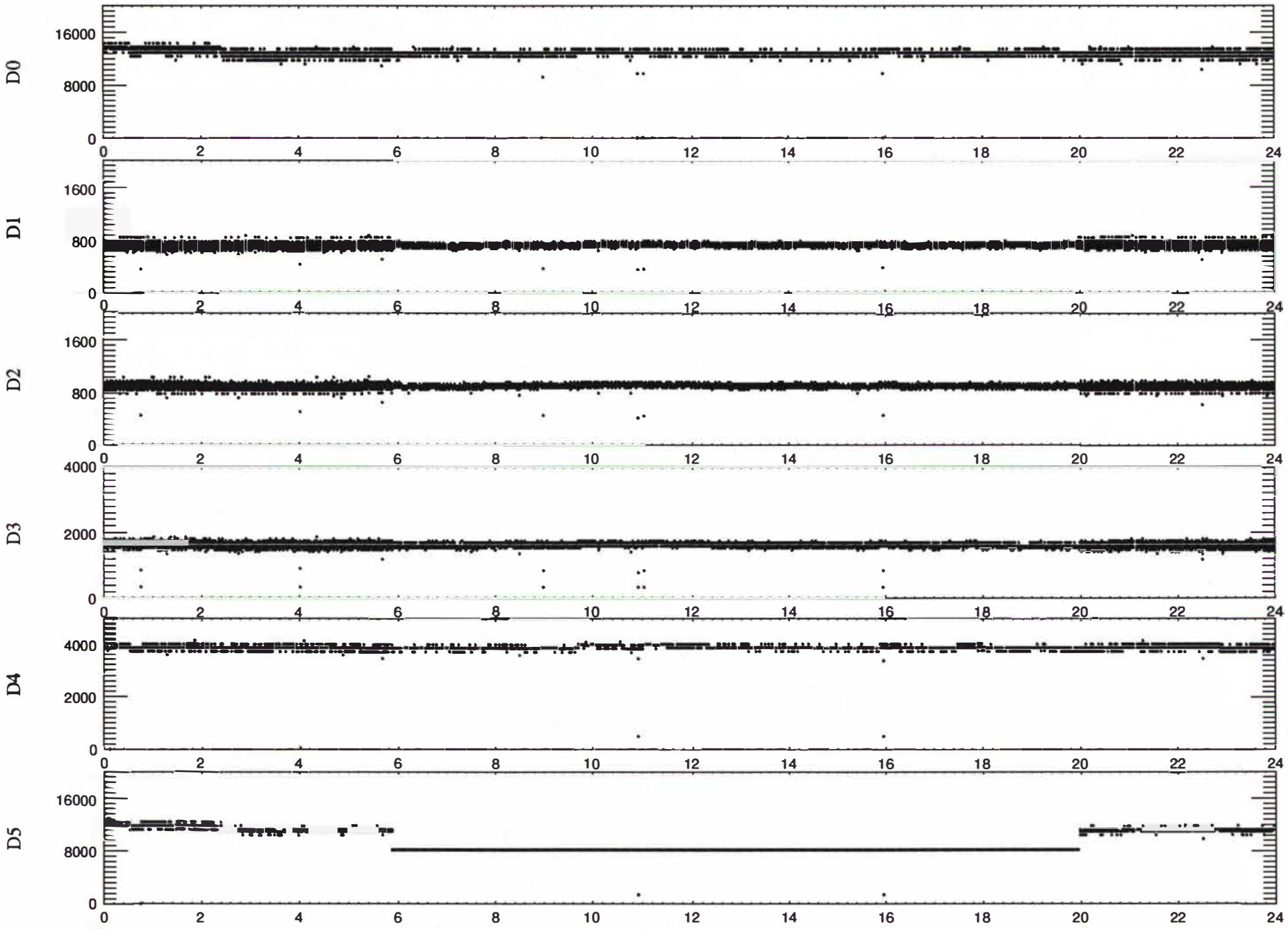
HUS 2A, MODE 1, NOT AVERAGED EDR day 161, year 1997 to day 161, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 161, year 1997 to day 161, year 1997 10/13/97



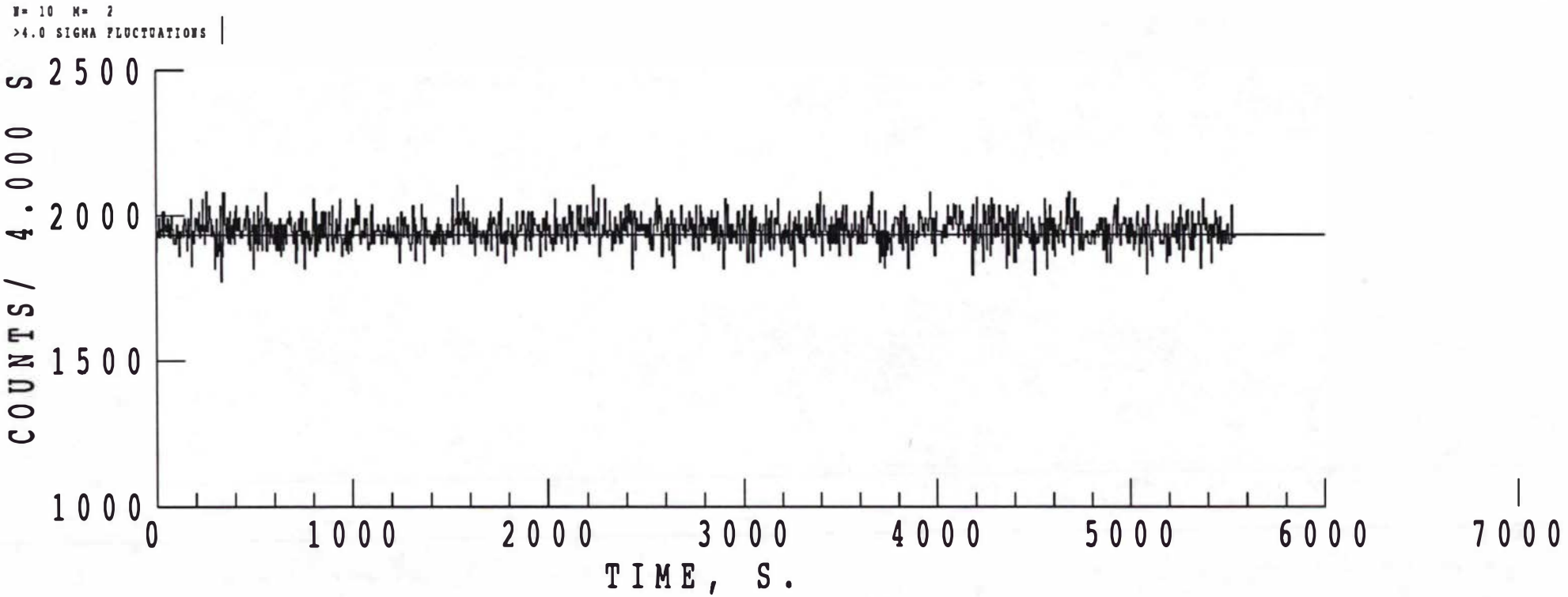
KONUS

ULYSSES RT 04/02/00

11/06/97 27324.244 s

0.500 S INTERVALS REGROUPED BY 8

0- 0 keV



Date: Feb 9 2010

BURST TRIANGULATION CHECKLIST

1. Suzaku Data

☐ 1 second timing error corrected? (Jan 1 – Apr 24 2009)

2. AGILE Data

☐ 1 second timing error corrected?

3. MESSENGER Data

☐ Coarse or fine oscillator?

☐ Timing checked after ~ 1 week?

4. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

5. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

6. For 3 or More Spacecraft events

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

7. For INTEGRAL events

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

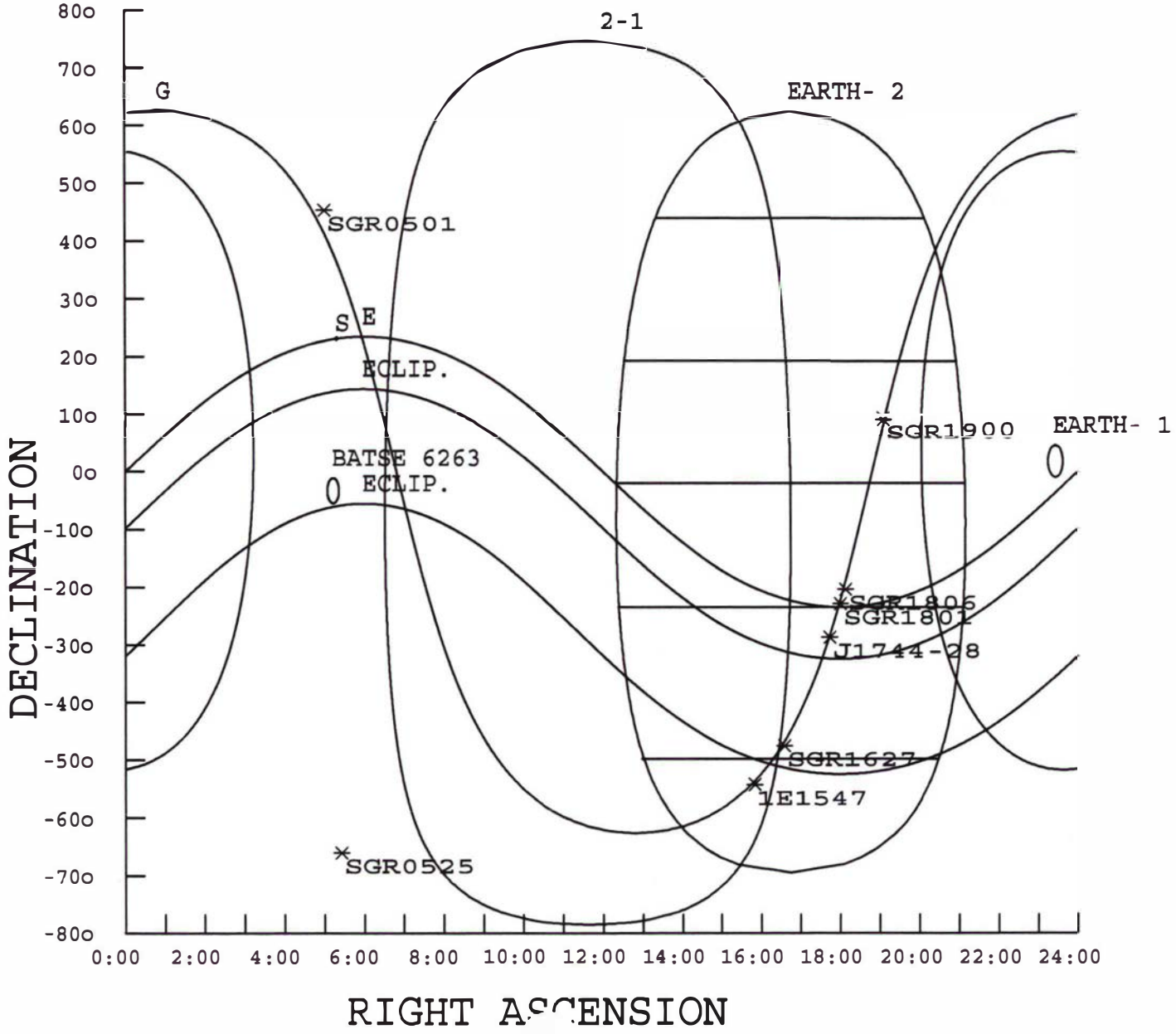
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

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

☑ ACCESS and MBL4 databases updated, with identical times?

EVENT OF JUN 11, 1997 8:21

09/02/2010



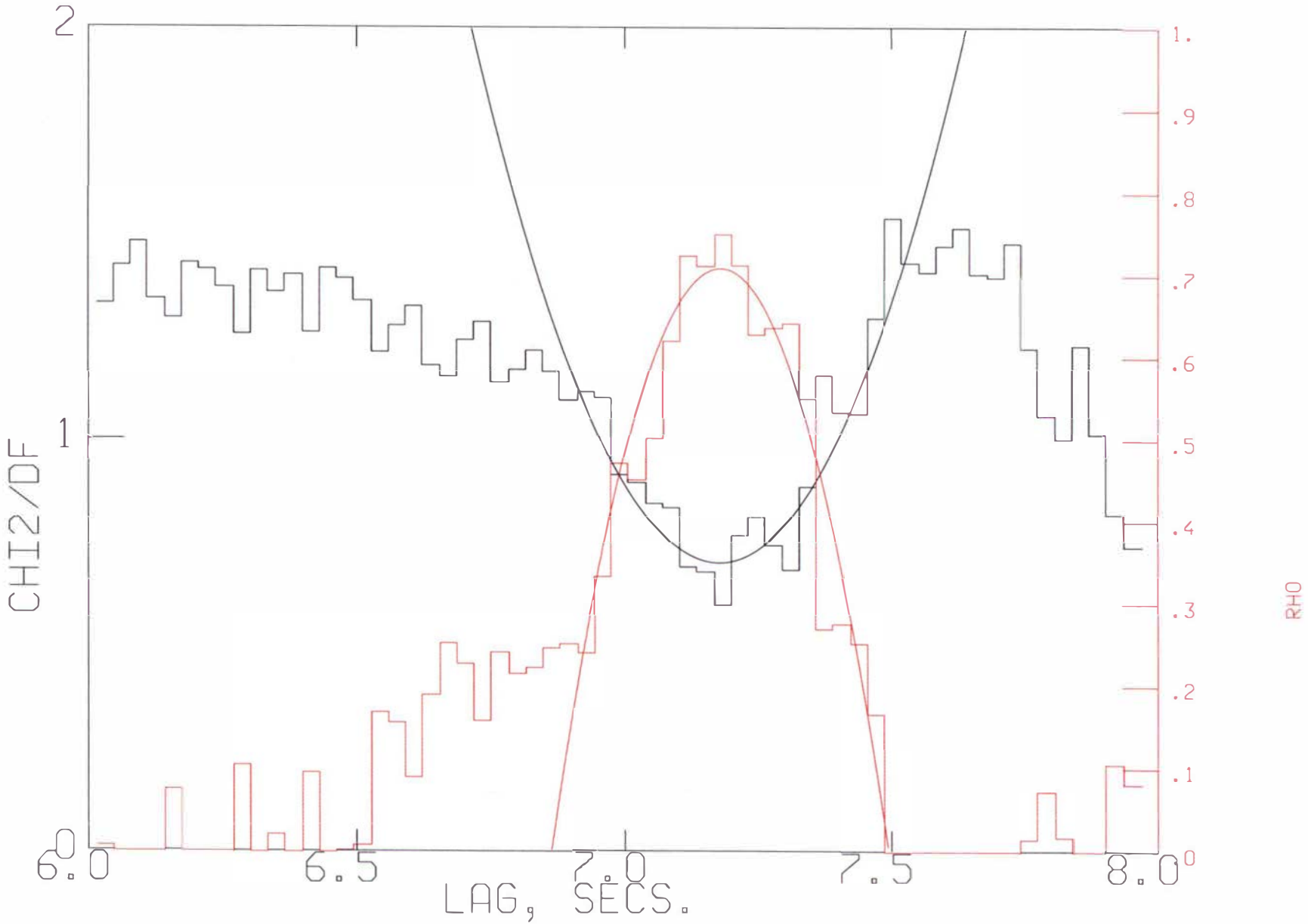
N-M = CORRELATION BETWEEN SATELLITES N AND M

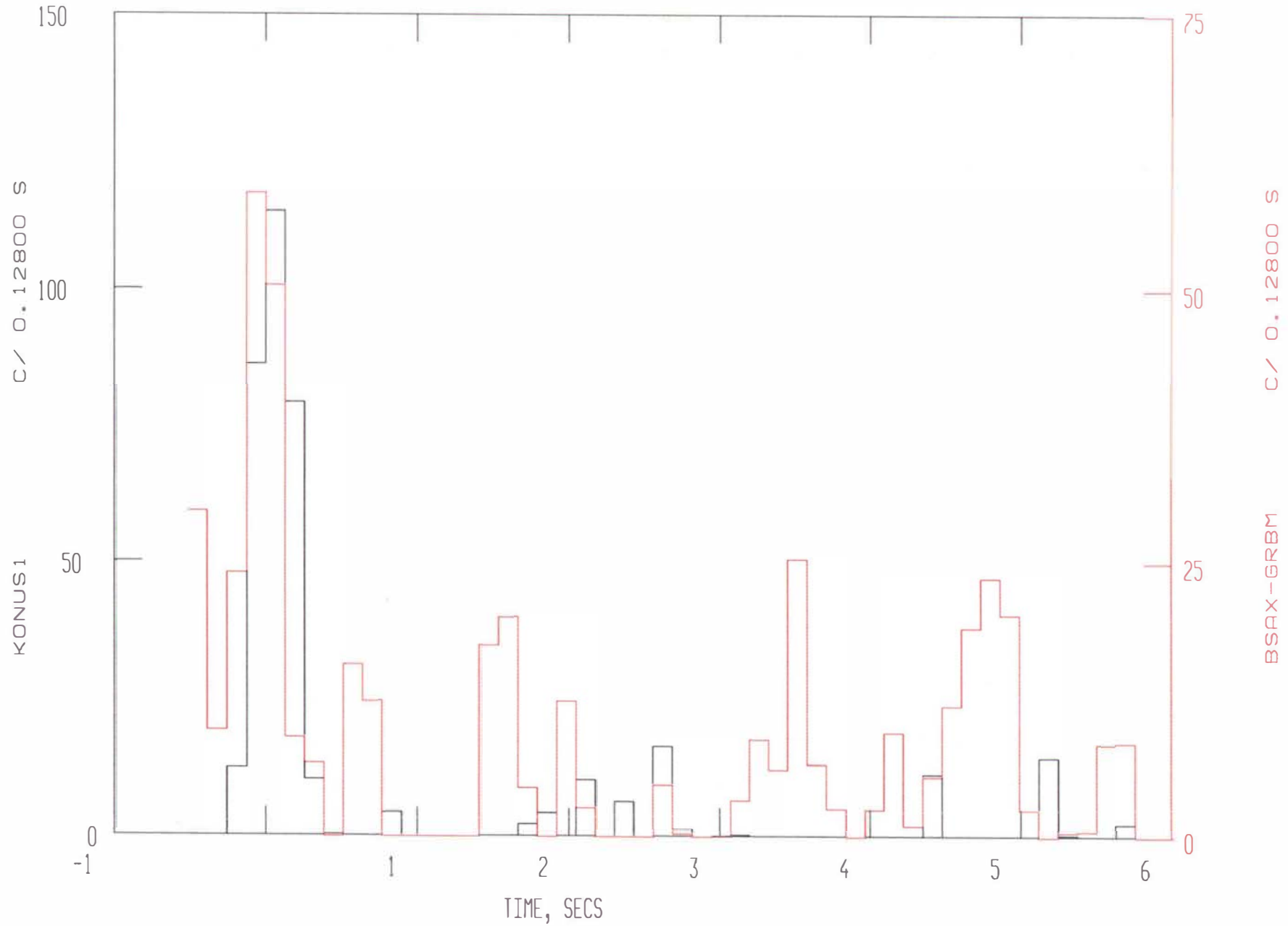
EARTH-N = EARTH AS SEEN FROM SATELLITE N

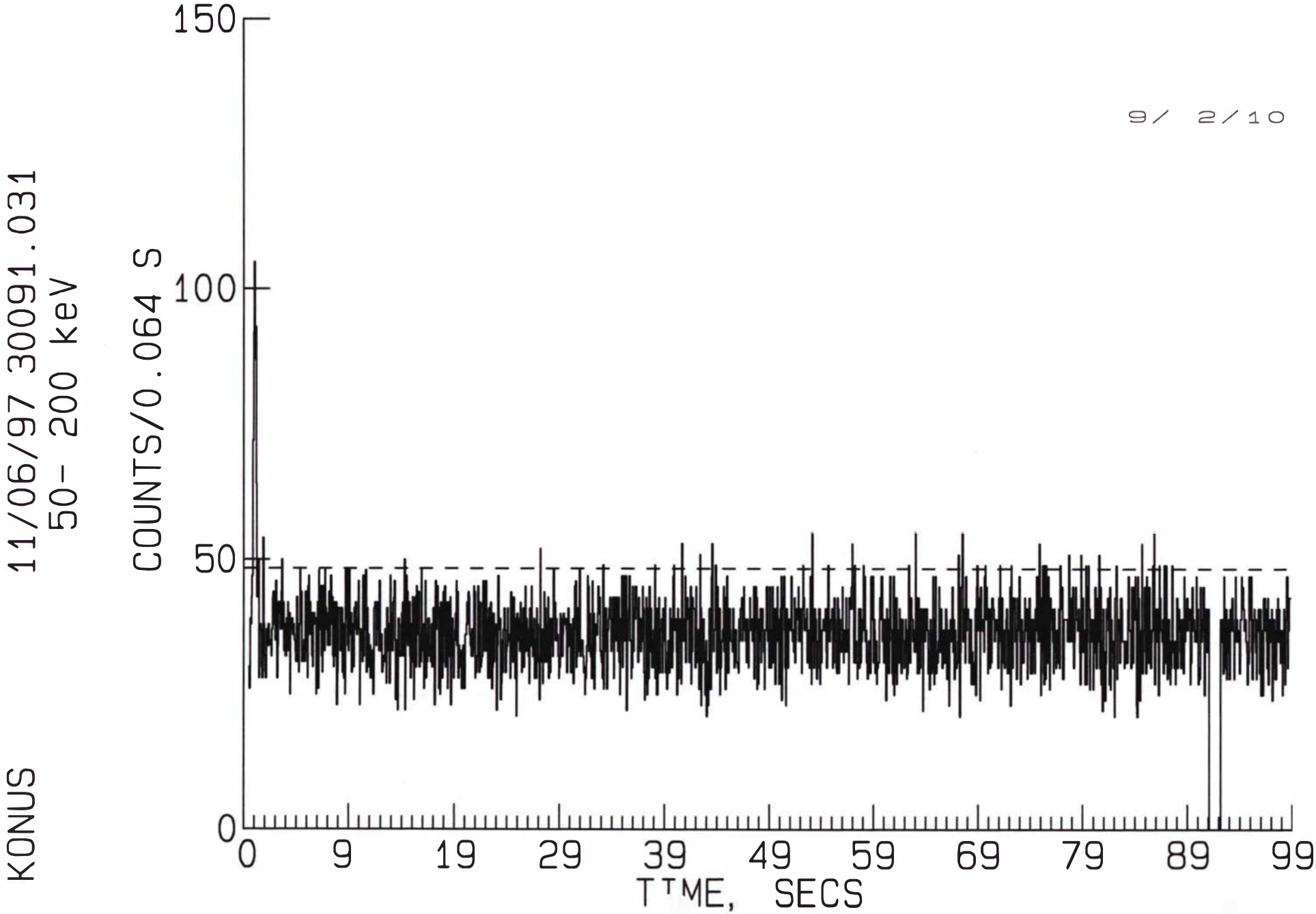
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR

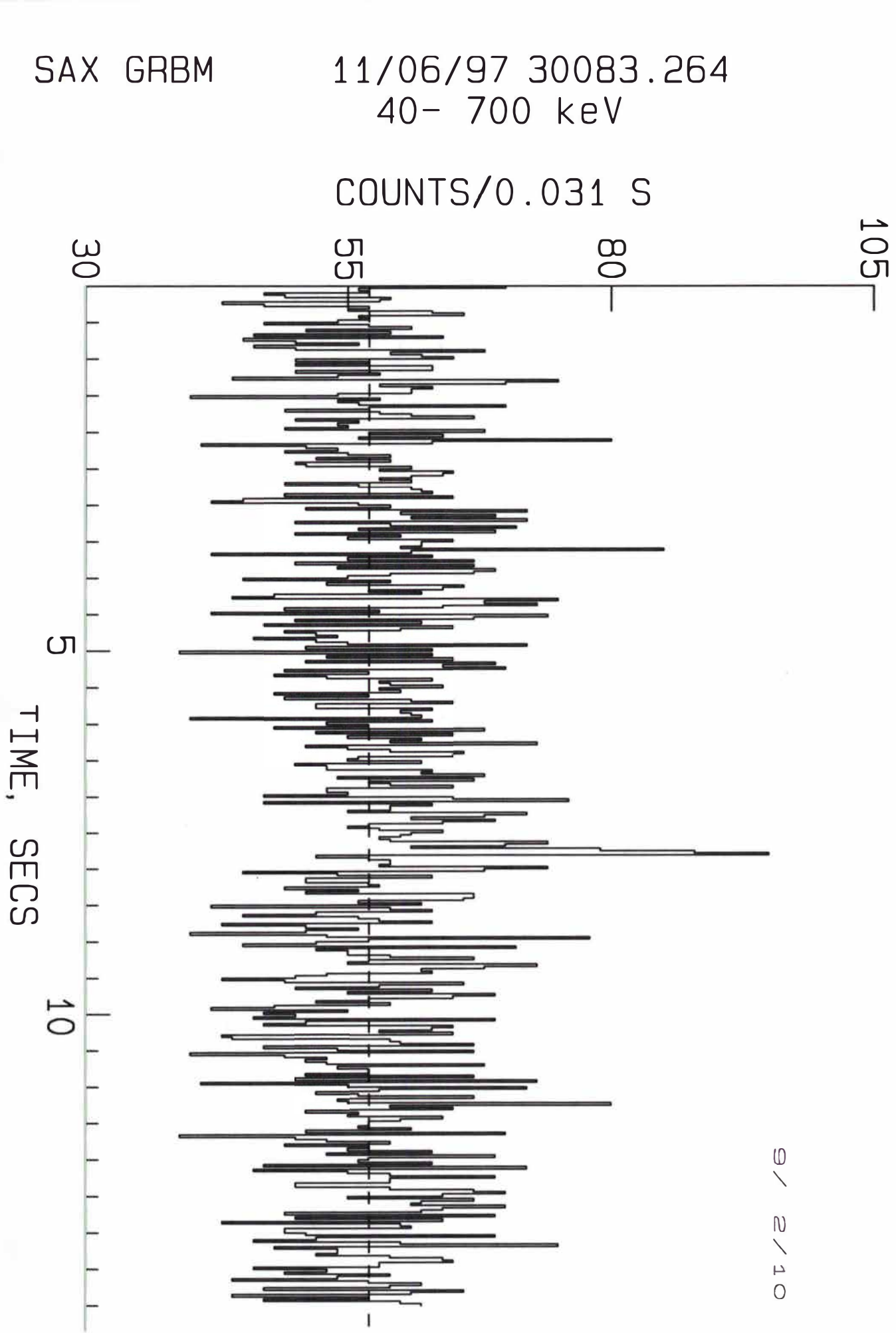
1 KONUS1 2 SAX

KONUS1 -BSAX-GRBM CORRELATION 11/06/97 30091.031




150
100
50
0
75
50
25
0
-1
1
2
3
4
5
6
C/ 0.12800 S
KONUS1
C/ 0.12800 S
BSAX-GRBM
TIME, SECS


KONUS
11/06/97 30091.031
50- 200 keV
COUNTS/0.064 S
150
100
50
0
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
9/ 2/10


SAX GRBM
11/06/97 30083.264
40- 700 keV
COUNTS/0.031 S
30
55
80
105
5
10
TIME, SECS
6/2/10

From WOODSP@ssl.msfc.nasa.gov Thu Jun 12 14:47 PDT 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA08564; Thu, 12 Jun 1997 14:47:21 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 12 Jun 1997 16:47:16 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970612164716.21c69a8a@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6263
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

X)o

****
BATSEARCH PROGRAM
****

BATSE BURST # 6263
EVENT OF 1997 JUN 11 DAY OF YEAR=162
EVENT CROSSING TIME AT BATSE : 30090. S. OR 08:21:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 79.000 -3.000
BATSE PEAK COUNTING RATE: 30500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 6/ 97 IS:
RA= 151.612 DEC= 28.193 DIST= 5.478 AU
BATSE-ULYSSES DISTANCE = 819563110. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -651.44 SECS.
CROSSING TIME AT ULYSSES IS 29439. S. OR 08:10:38 +/- 501.06 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 6/ 97 IS:
RA= 177.076 DEC= 1.937 DIST= 1.108 AU
MARS-BATSE DISTANCE = 165714224. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 78.48 SECS.
CROSSING TIME AT MARS IS 30168. S. OR 08:22:48 +/- 96.19 SECONDS

BATSE BURST TRIGGER
NO.: 6263

TIME: TJD=0610 SECONDS=30090

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=159.3 AZIMUTH=335.1 ERROR=1.5 DEGREES

COMMENTS:
GRB LASTING ~ 2.7 SEC. TWO PULSES, SECOND MUCH BRIGHTER THAN THE
FIRST. VISIBLE ABOVE 300 KEV. POSSIBLE WEAK EMISSION OUT TO
T + 35 SEC.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6263	970611	10610	30090	30500	079	-03	2.7

BATSE BURST# 6263

ULYSSES RT 12/ 6/97

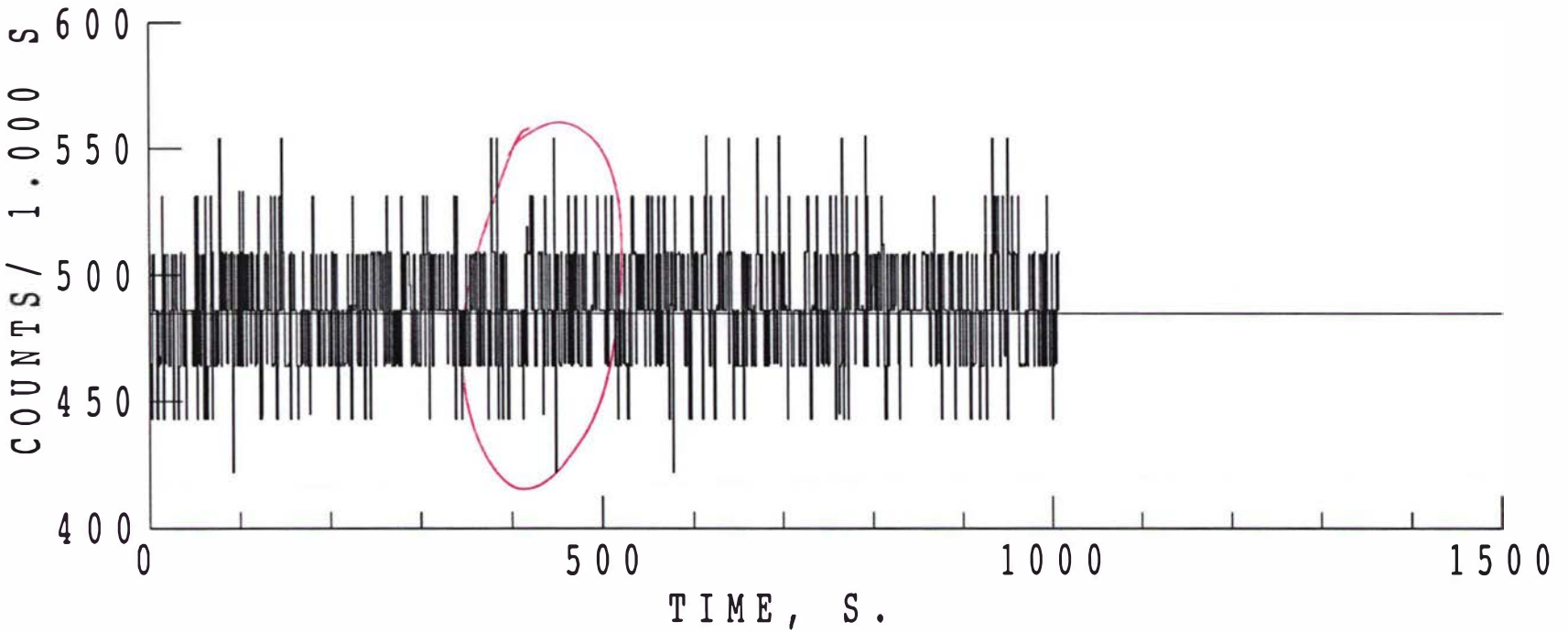
11/ 6/97 28944.264 s

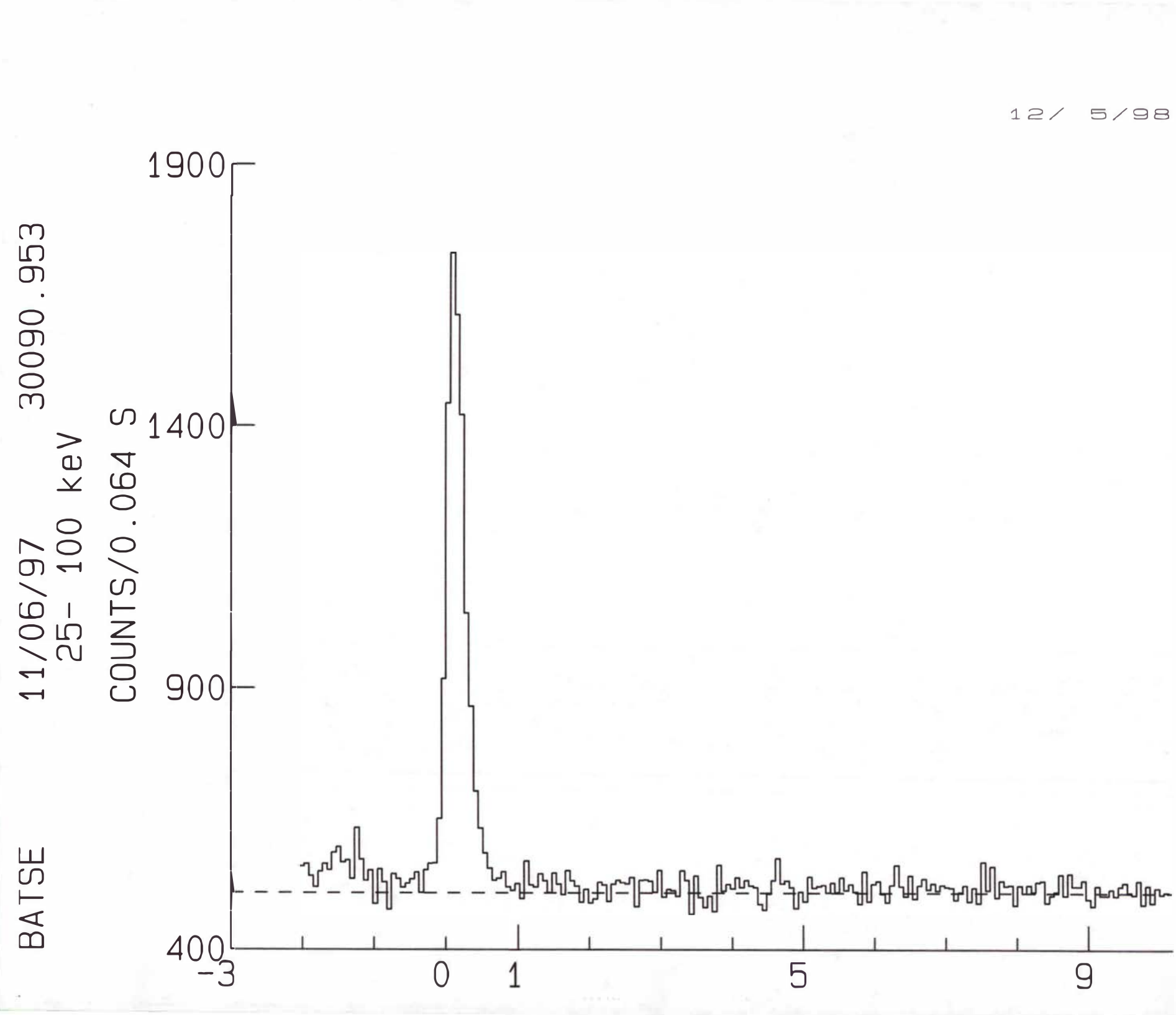
0.500 S INTERVALS REGROUPED BY 2

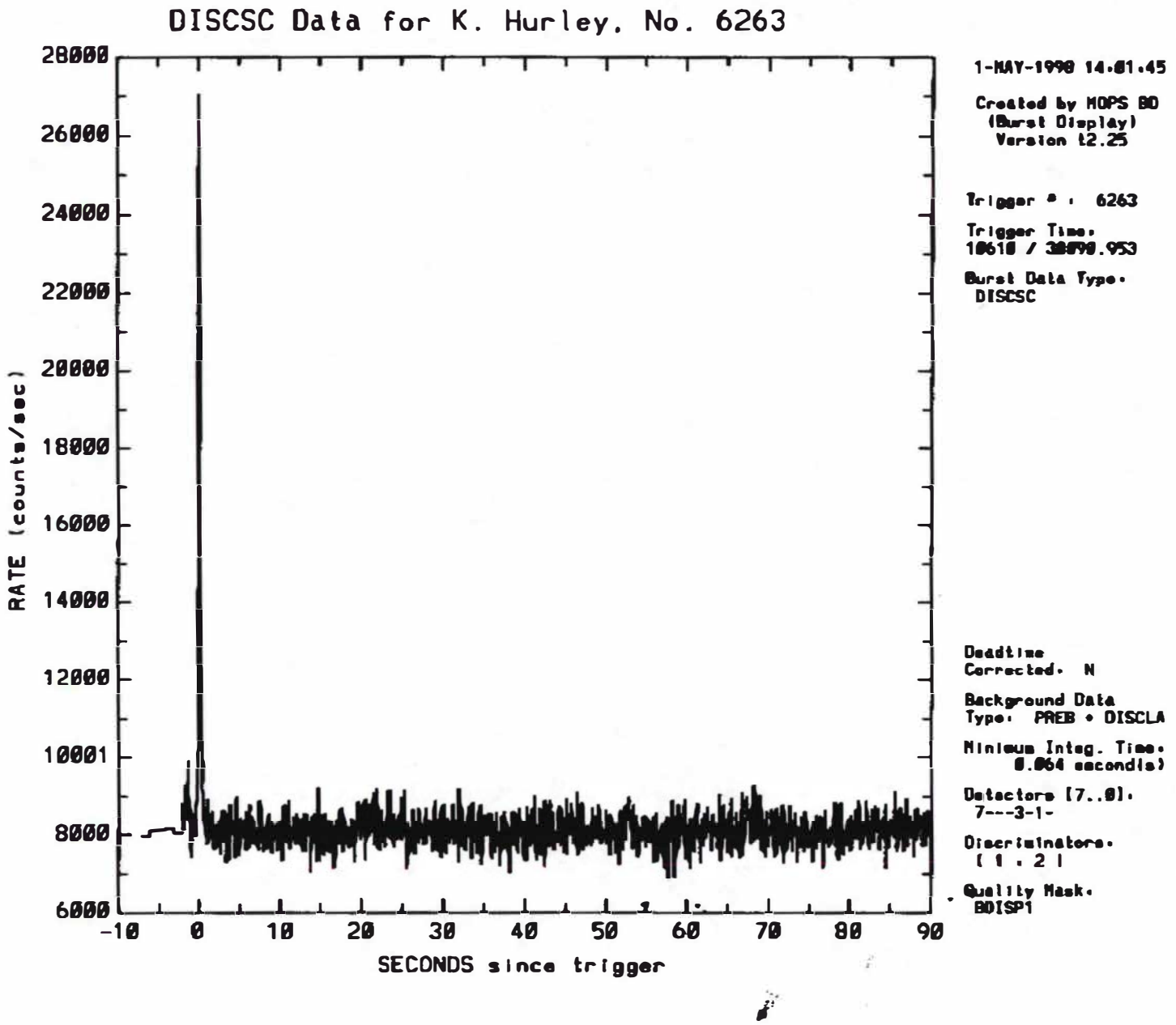
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

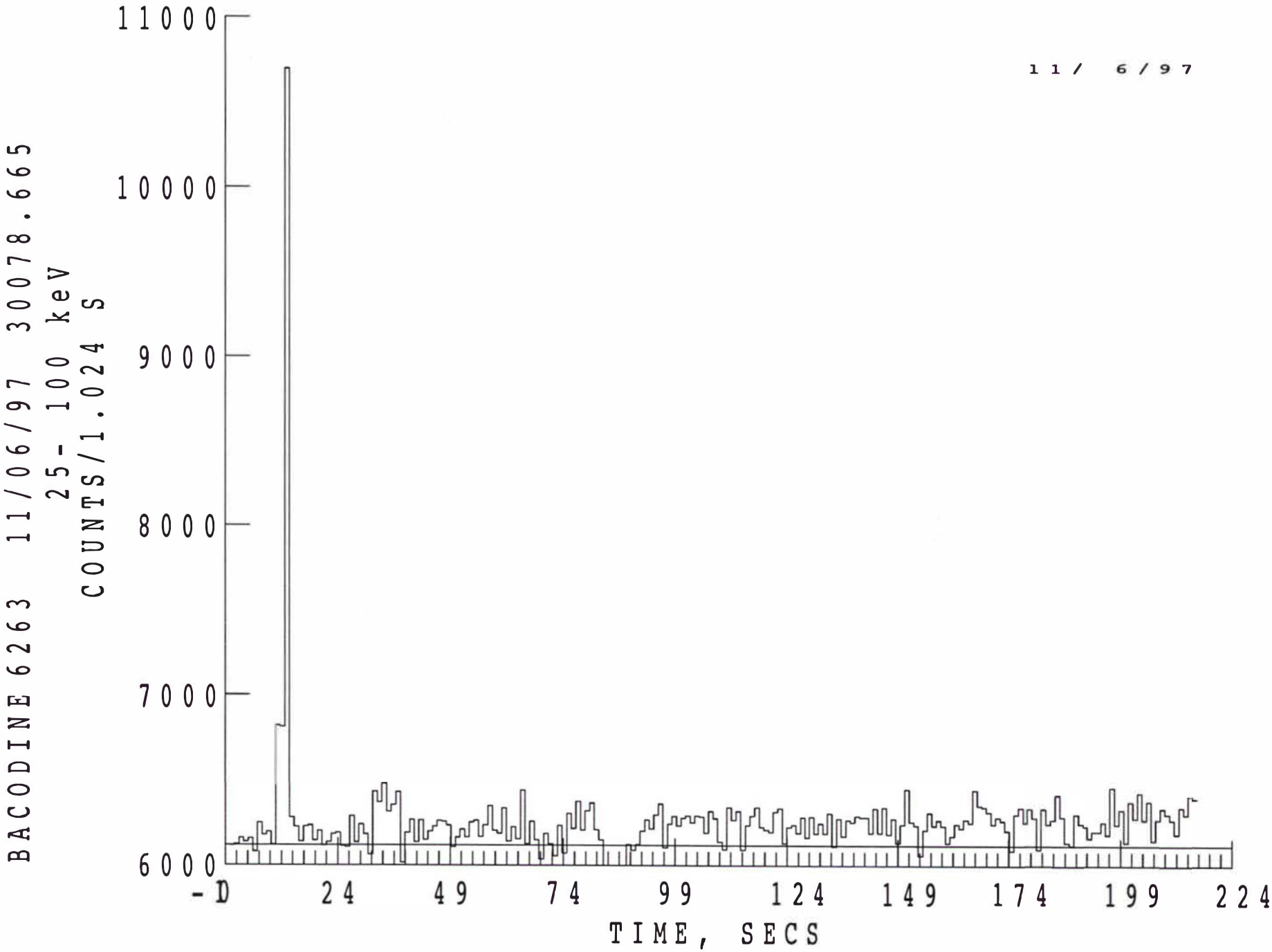
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

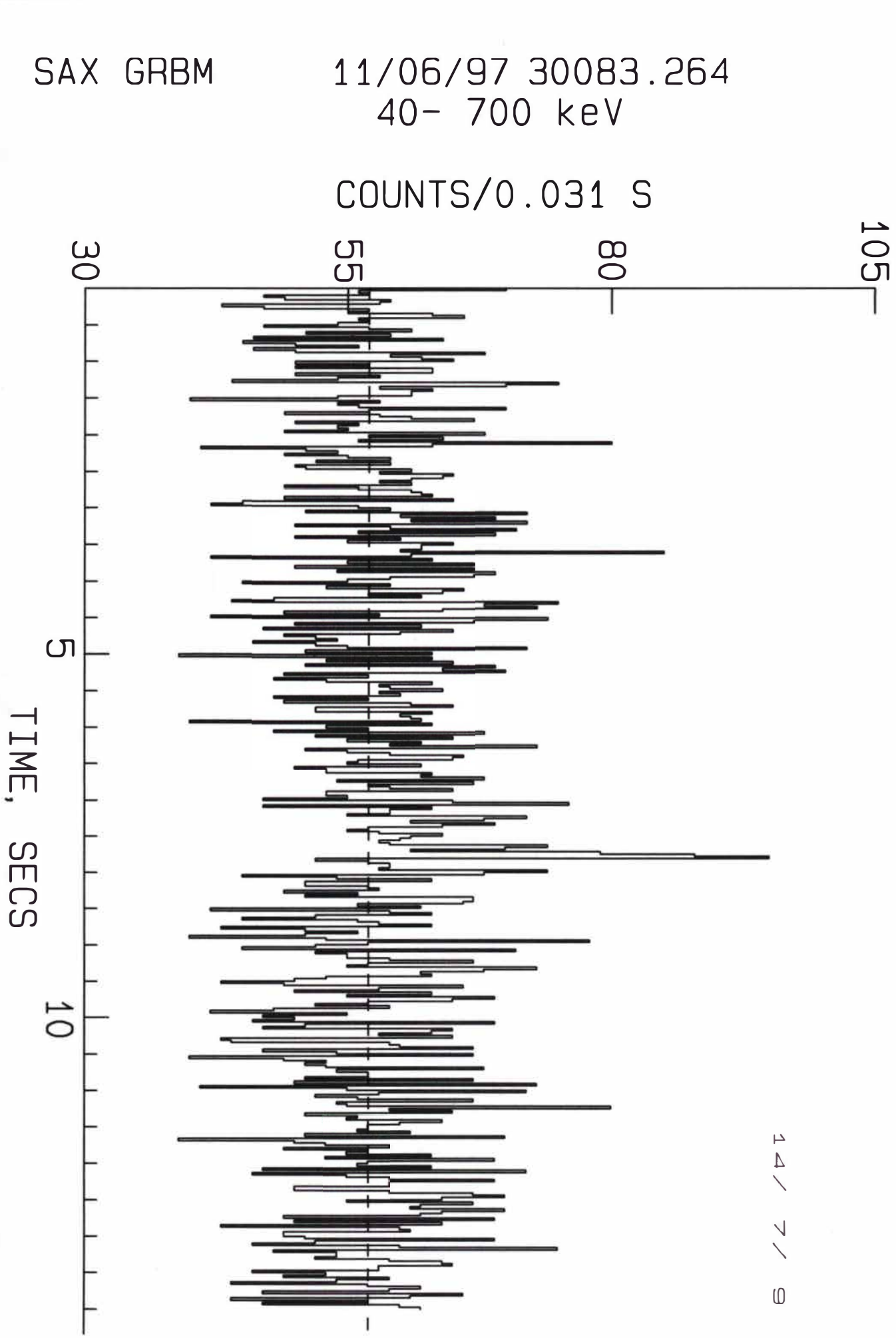



12/ 5/98
BATSE 11/06/97 30090.953
25- 100 keV
COUNTS/0.064 S
1900
1400
900
400
-3
0
1
5
9



05-01-1998 13:17 205 544 5800 BATSE P.03


BACODINE 6263 11/06/97 30078.665
25- 100 keV
COUNTS/1.024 S
11000
10000
9000
8000
7000
6000
11/ 6/97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS


SAX GRBM
11/06/97 30083.264
40- 700 keV
COUNTS/0.031 S
30
55
80
105
5
10
TIME, SECS
14/ 7/ 9

From WOODSP@ssl.msfc.nasa.gov Thu Jun 12 14:44 PDT 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 12 Jun 1997 16:44:14 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6264

TIME: TJD=0610 SECONDS=84009

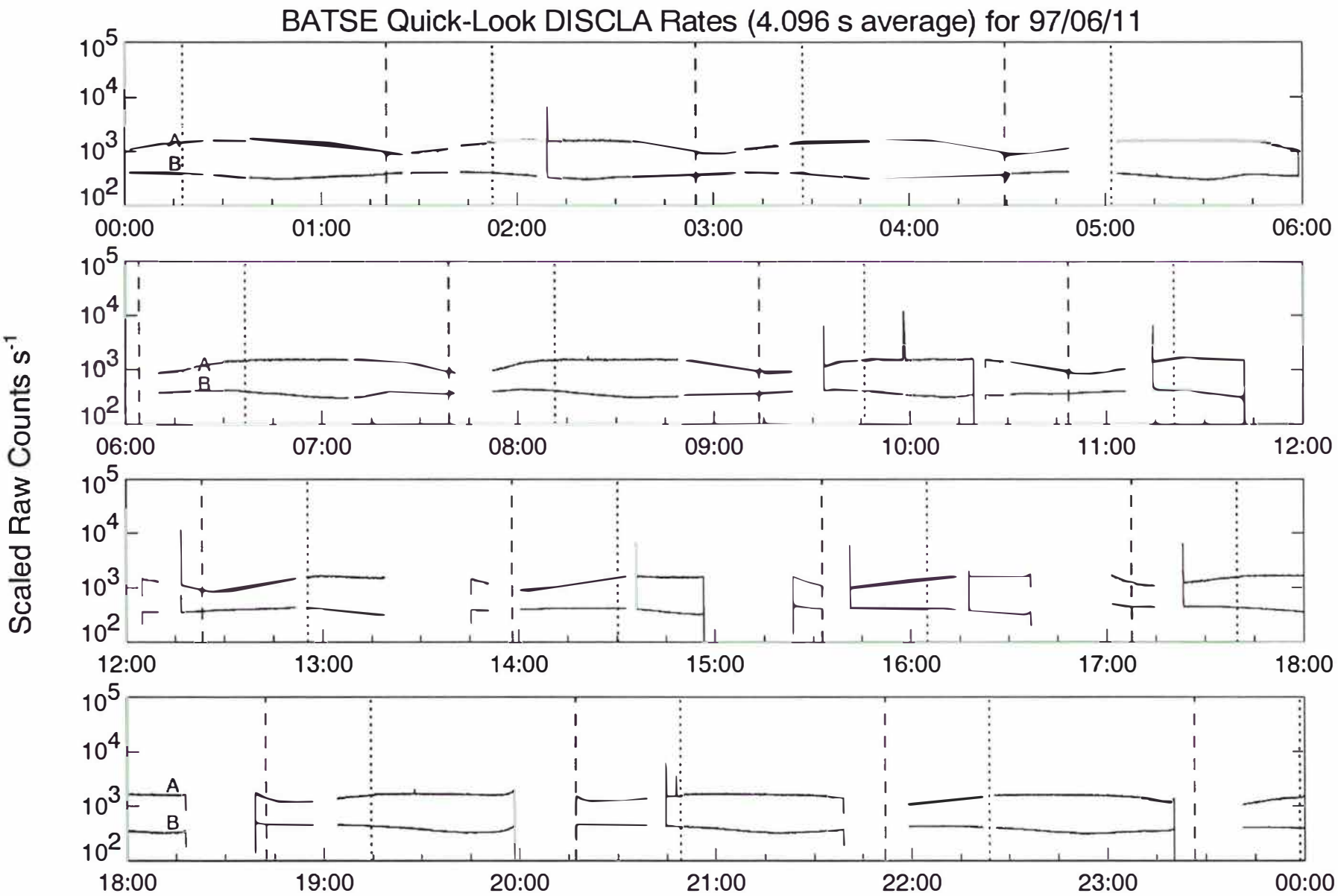
TYPE: SAA ENT SOLAR FLARE TRIGGER SIGNAL:N

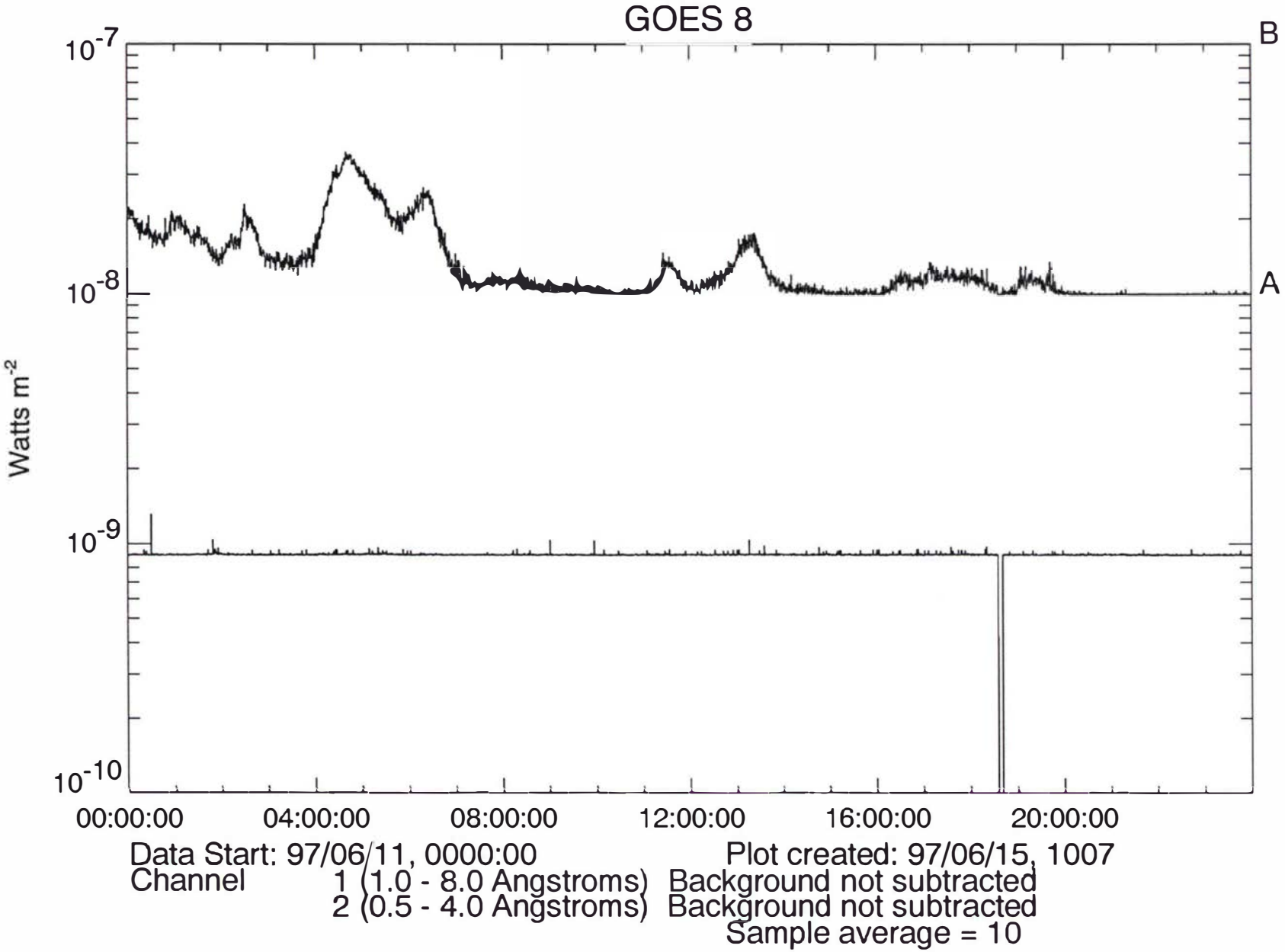
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

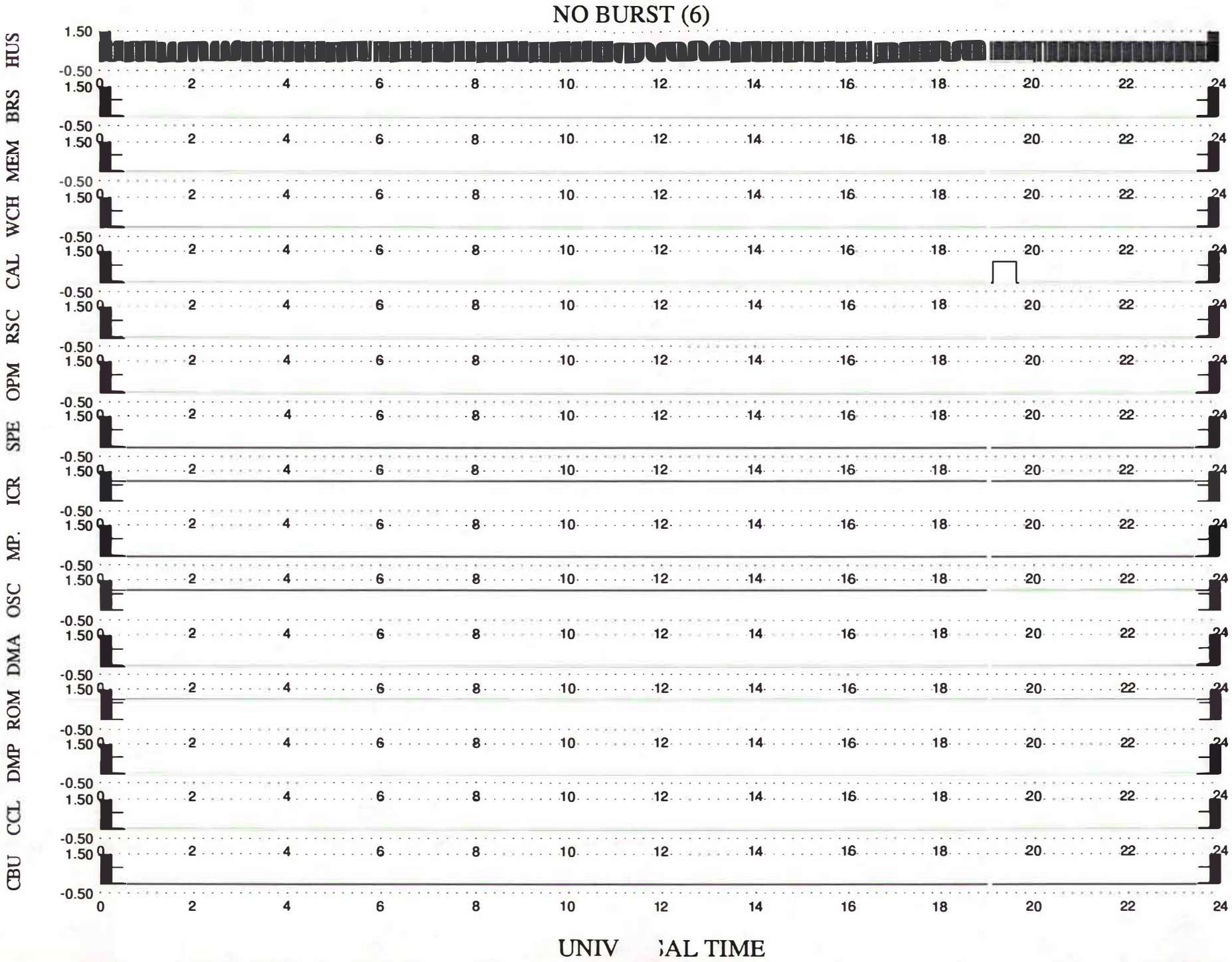
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY, PERTICLE EVENT.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/11
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/15, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

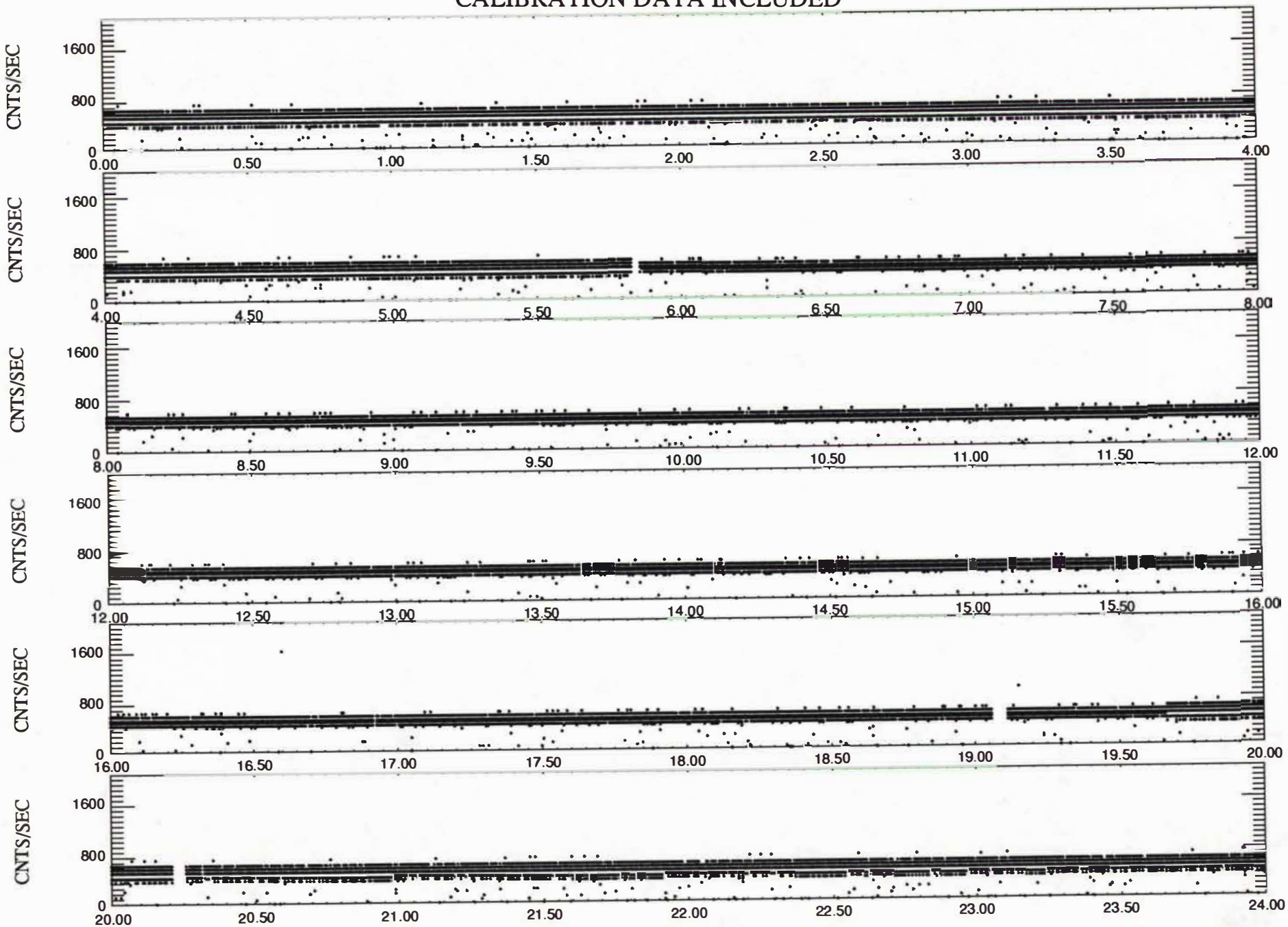

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/11, 0000:00
Plot created: 97/06/15, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 162, year 1997 to day 162, year 1997 10/13/97



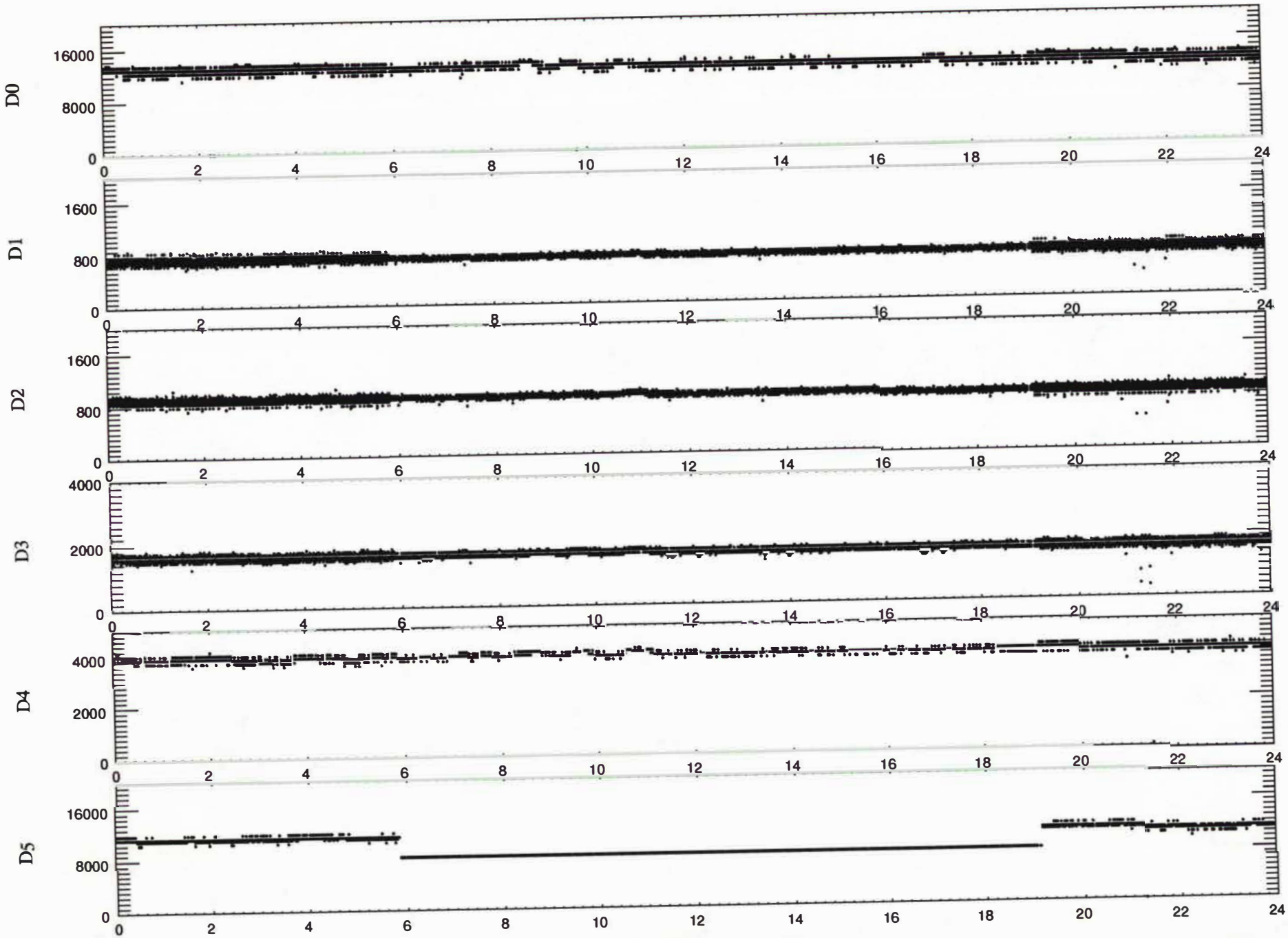
HUS 2A, MODE 1, NOT AVERAGED EDR day 162, year 1997 to day 162, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 162, year 1997 to day 162, year 1997 10/13/97



From RICHARDSON@ssl.msfc.nasa.gov Mon Jun 16 12:34 PDT 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA03313; Mon, 16 Jun 1997 12:34:51 -0700
Date: Mon, 16 Jun 1997 14:34:26 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970616143426.21664867@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6265
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6265
EVENT OF 1997 JUN 12 DAY OF YEAR=163
EVENT CROSSING TIME AT BATSE : 26311. S. OR 07:18:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 273.000 8.000
BATSE PEAK COUNTING RATE: 27000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 6/ 97 IS:
RA= 151.675 DEC= 28.078 DIST= 5.494 AU
BATSE-ULYSSES DISTANCE = 821901823. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1065.77 SECS.
CROSSING TIME AT ULYSSES IS 27377. S. OR 07:36:16 +/- 504.73 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 6/ 97 IS:
RA= 177.427 DEC= 1.757 DIST= 1.115 AU
MARS-BATSE DISTANCE = 166828560. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 51.12 SECS.
CROSSING TIME AT MARS IS 26362. S. OR 07:19:22 +/- 96.98 SECONDS

BATSE BURST TRIGGER

NO.: 6265

TIME: TJD=0611 SECONDS=26311

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=21.9 AZIMUTH=113.3 ERROR=2.7 DEGREES

COMMENTS:
GRB. SINGLE PULSE, DUR.~ 0.3 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6265	970612	10611	26311	27000	273	+08	.3

BATSE BURST# 6265

ULYSSES RT 16/ 6/97

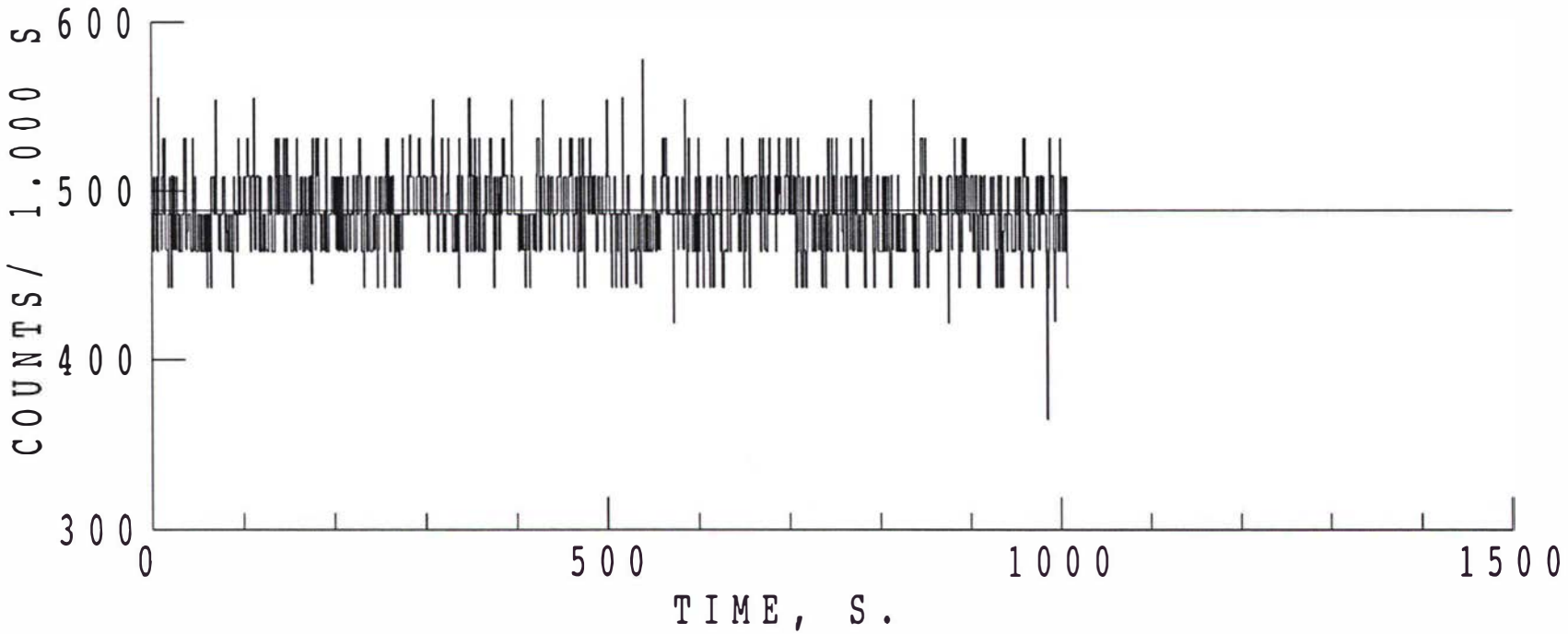
12/ 6/97 26856.240 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLLES.MSFC.NASA.GOV Mon Jun 16 12:36 PDT 1997
Return-Path: <RICHARDSON@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA03337; Mon, 16 Jun 1997 12:36:06 -0700
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Mon, 16 Jun 1997 14:35:52 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970616143553.21664867@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6266
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

RI

****
BATSEARCH PROGRAM
****

BATSE BURST # 6266
EVENT OF 1997 JUN 12 DAY OF YEAR=163
EVENT CROSSING TIME AT BATSE : 52104. S. OR 14:28:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 290.000 44.000
BATSE PEAK COUNTING RATE: 12500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 6/ 97 IS:
RA= 151.695 DEC= 28.042 DIST= 5.499 AU
BATSE-ULYSSES DISTANCE = 822625943. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 404.76 SECS.
CROSSING TIME AT ULYSSES IS 52509. S. OR 14:35:08 +/- 527.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 6/ 97 IS:
RA= 177.427 DEC= 1.757 DIST= 1.115 AU
MARS-BATSE DISTANCE = 166828560. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 141.74 SECS.
CROSSING TIME AT MARS IS 52246. S. OR 14:30:45 +/- 95.58 SECONDS

BATSE BURST TRIGGER

NO.: 6266

TIME: TJD=0611 SECONDS=52104

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=59.5 AZIMUTH=100.4 ERROR=0.7 DEGREES

COMMENTS:
GRB. LONG AND SPIKEY. DUR.~ 50SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6266	970612	10611	52104	12500	290	+44	50

Helio corr removed 18/2/00

Date: Apr 3 '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?

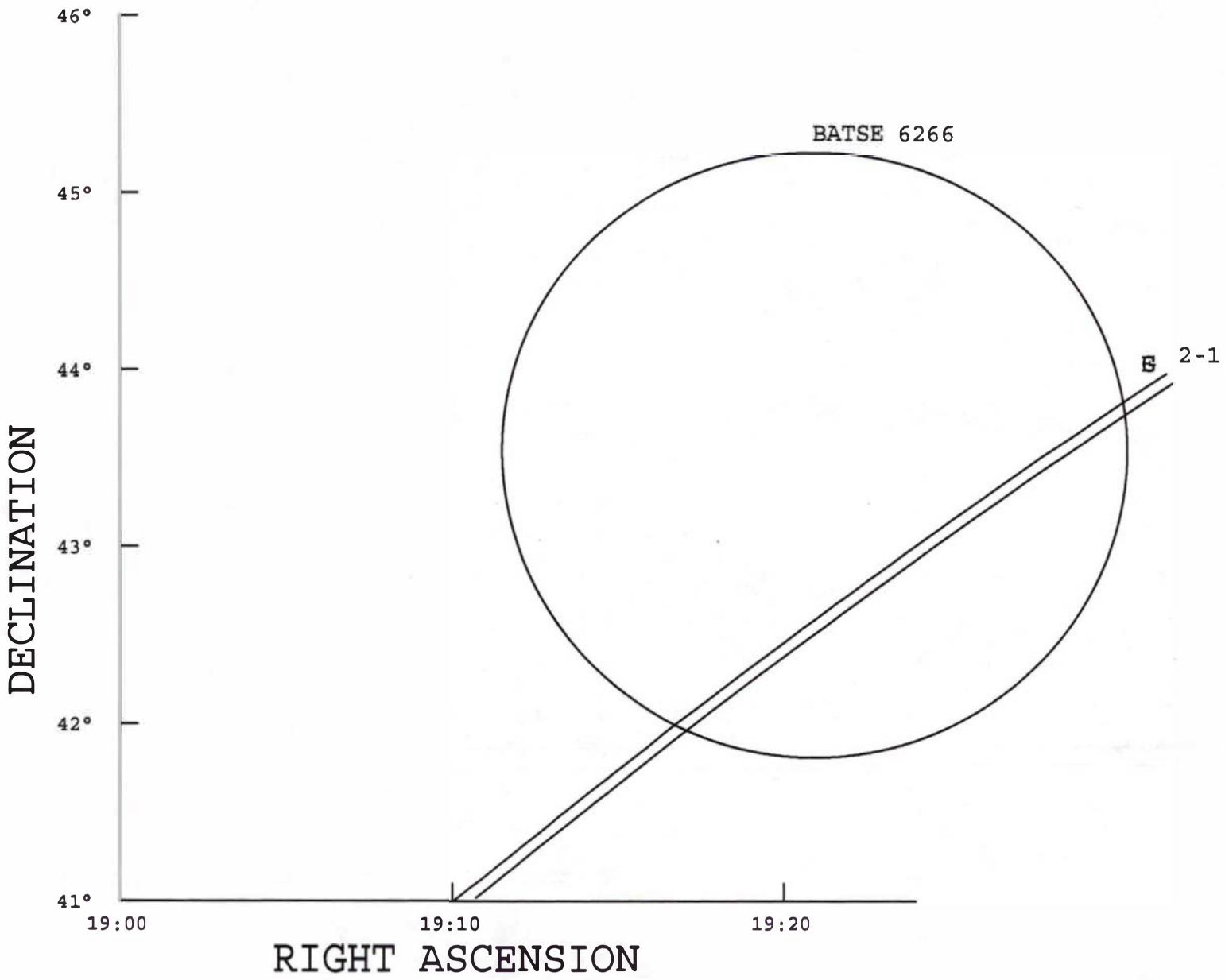
☐ Geocentric time used?

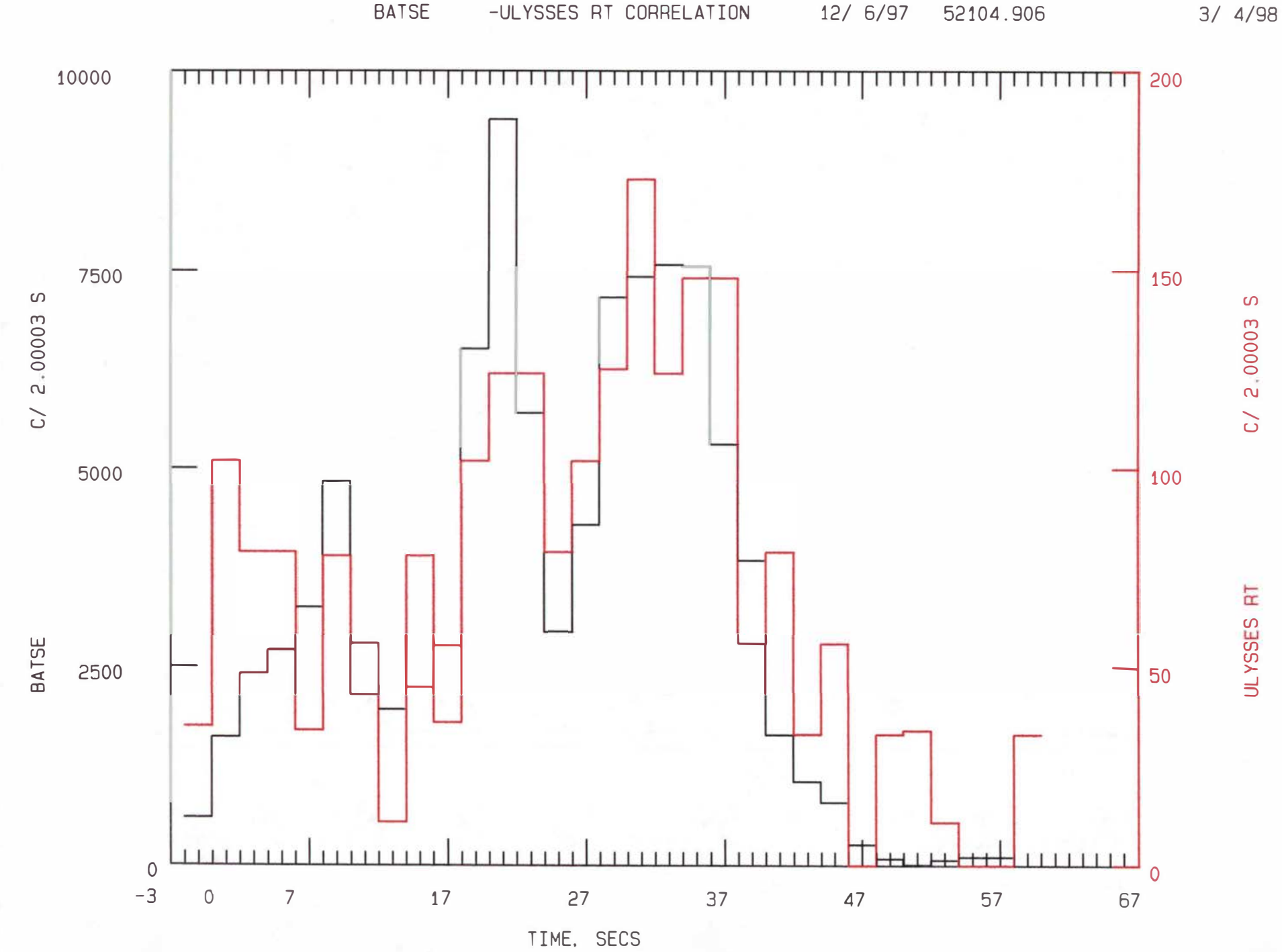
☑ ACCESS database updated?

EVENT OF JUN 12, 1997 14:34

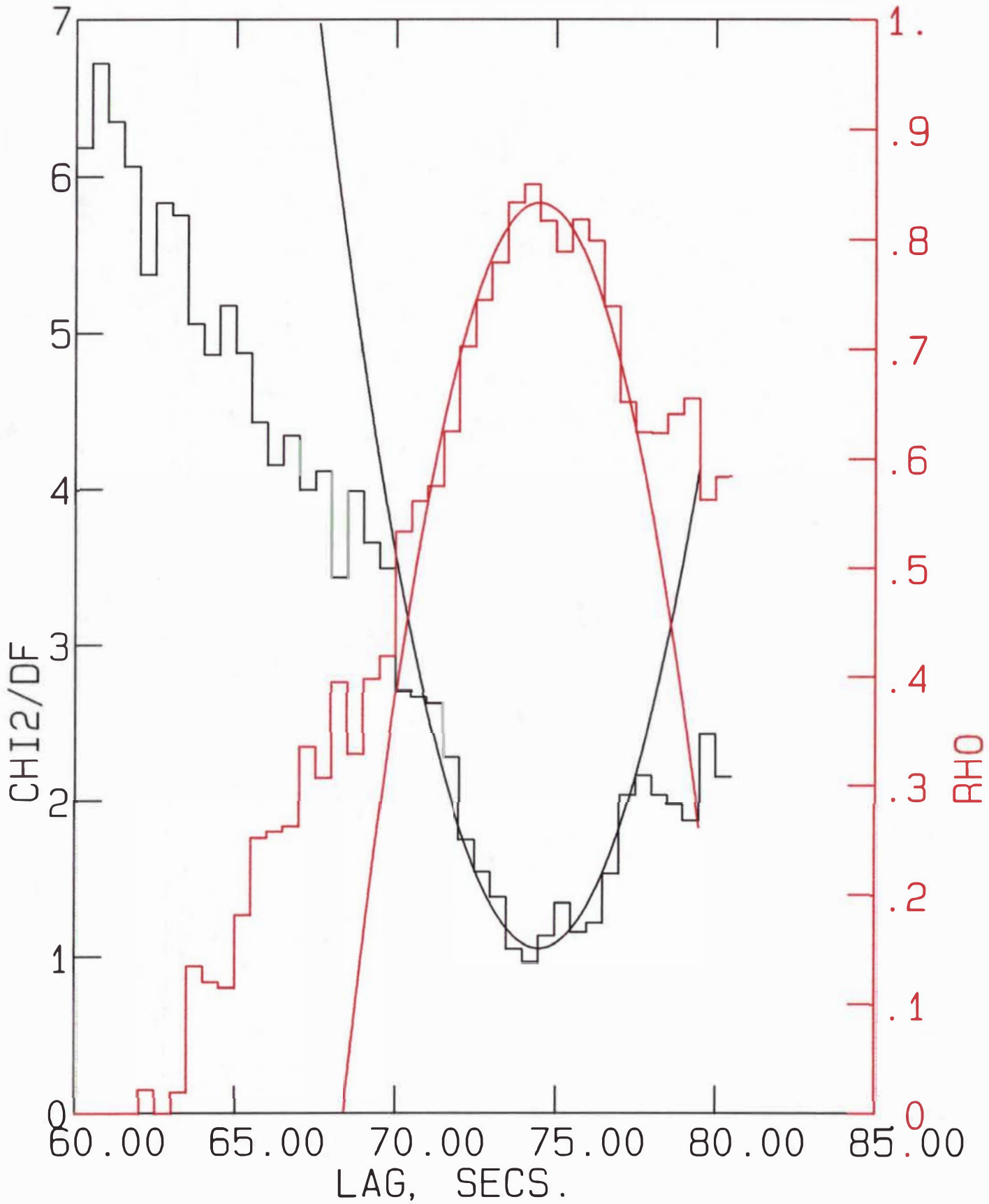
18/ 2/ 0

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




BATSE -ULYSSES RT CORRELATION 12/ 6/97 52104.906 3/ 4/98
10000
7500
5000
2500
0
200
150
100
50
0
C/ 2.00003 S
BATSE
C/ 2.00003 S
ULYSSES RT
-3
0
7
17
27
37
47
57
67
TIME, SECS

BATSE -ULYSSES RT CORRELATION 12/ 6/97 52104.906

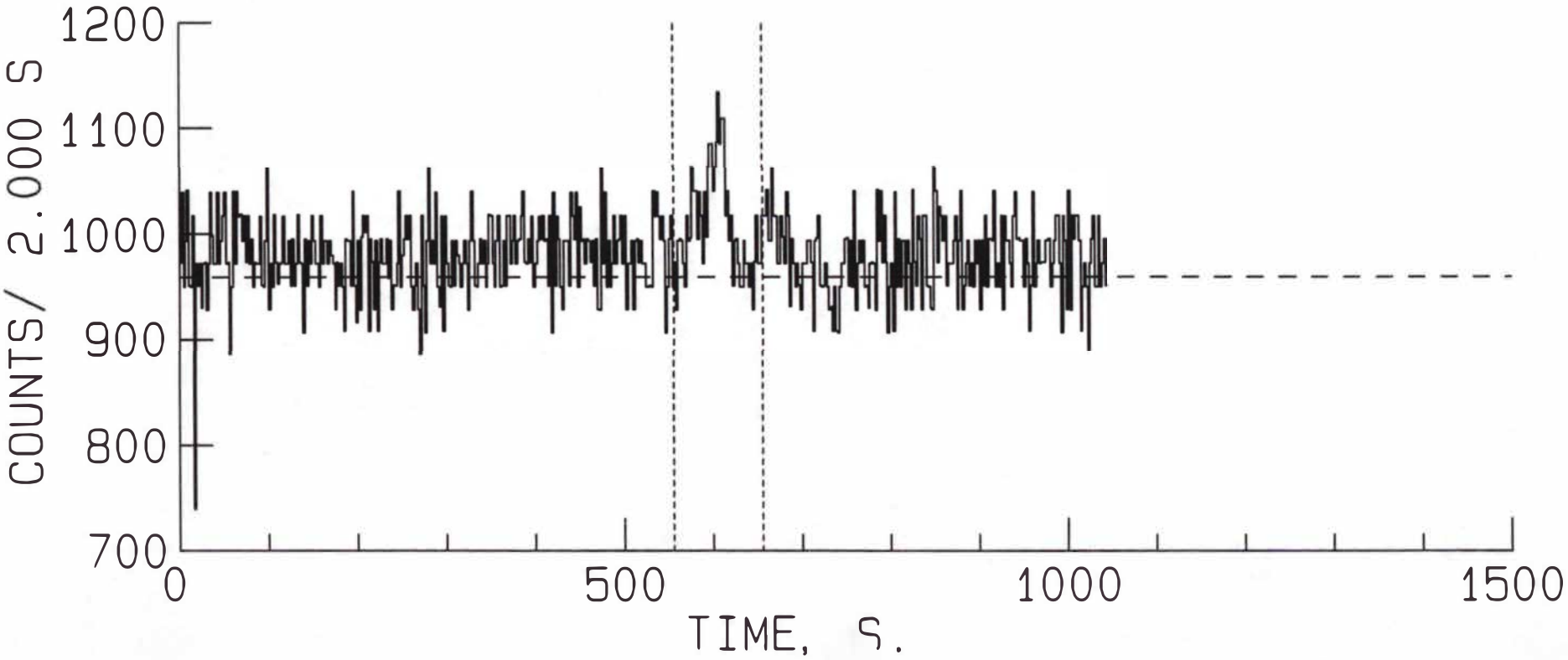


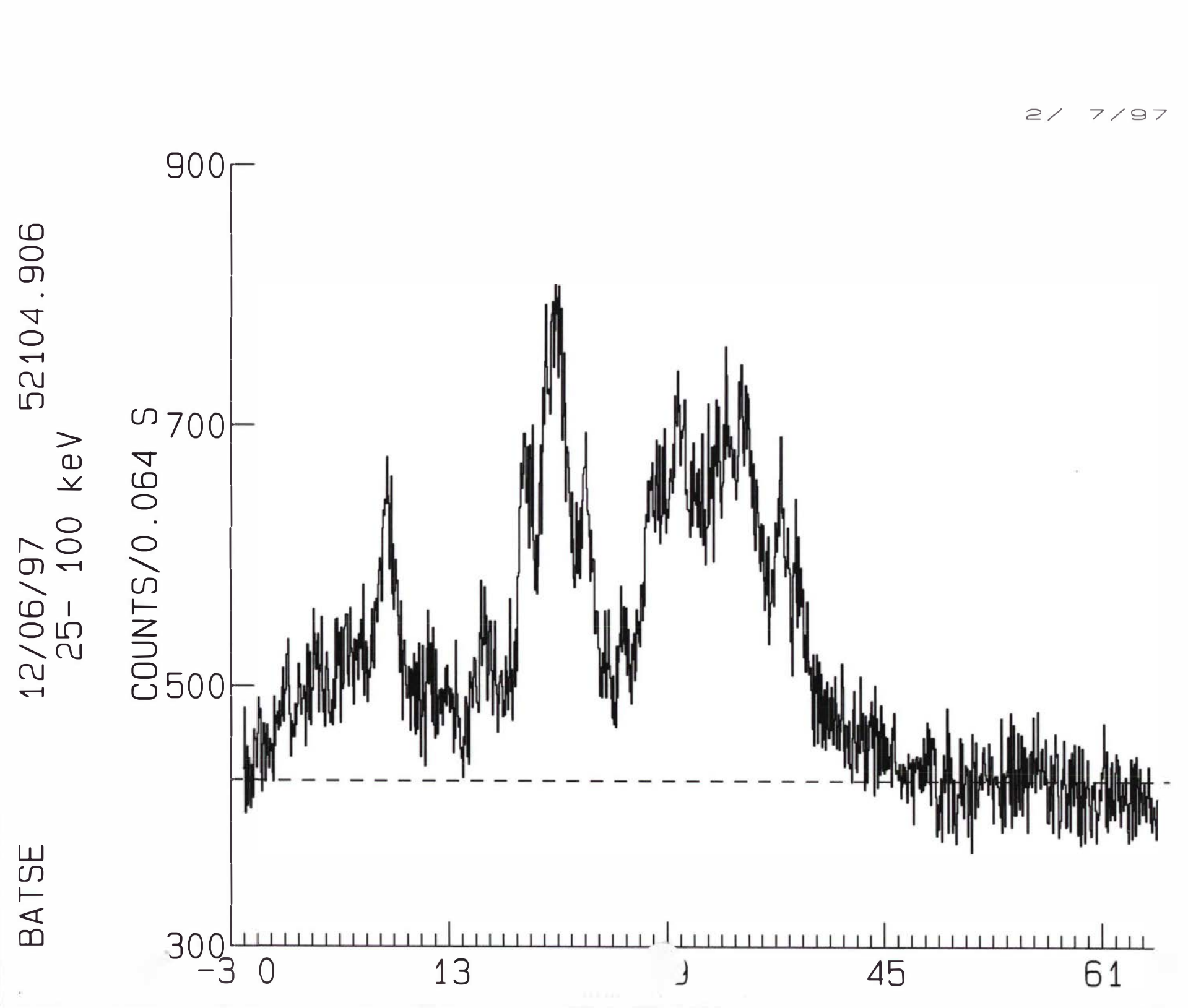
ULYSSES RT 3/ 4/98

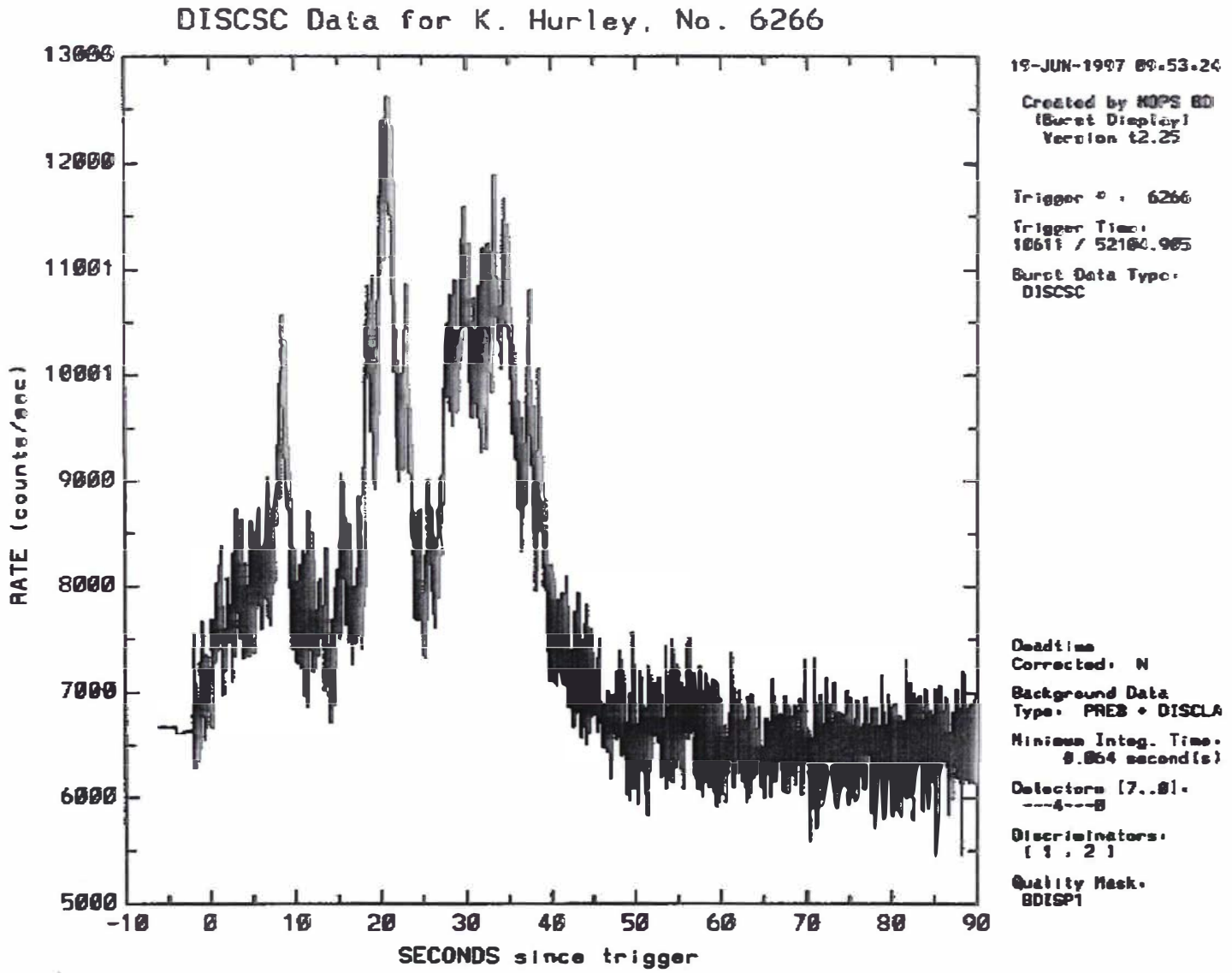
12/ 6/97 51984.031 s

0.500 S INTERVALS REGROUPED BY 4

22- 147 keV




2/ 7/97
BATSE
12/06/97
25- 100 keV
52104.906
COUNTS/0.064 S
900
700
500
300
-3
0
13
45
61


DISCSC Data for K. Hurley, No. 6266
RATE (counts/sec)
SECONDS since trigger
13000
12000
11001
10001
9000
8000
7000
6000
5000
-10
0
10
20
30
40
50
60
70
80
90
19-JUN-1997 09:53:24
Created by MOPS BD
(Burst Display)
Version t2.25
Trigger # : 6266
Trigger Time:
10611 / 52104.905
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
---4---0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1

From RICHARDSON@ssl.msfc.nasa.gov Mon Jun 16 12:47 PDT 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA03441; Mon, 16 Jun 1997 12:47:37 -0700
Date: Mon, 16 Jun 1997 14:47:30 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970616144730.21664867@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6267
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6267
EVENT OF 1997 JUN 12 DAY OF YEAR=163
EVENT CROSSING TIME AT BATSE : 74290. S. OR 20:38:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 118.000 62.000
BATSE PEAK COUNTING RATE: 1700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 6/ 97 IS:
RA= 151.712 DEC= 28.011 DIST= 5.503 AU
BATSE-ULYSSES DISTANCE = 823248553. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2085.48 SECS.
CROSSING TIME AT ULYSSES IS 72205. S. OR 20:03:24 +/- 328.50 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 6/ 97 IS:
RA= 177.427 DEC= 1.757 DIST= 1.115 AU
MARS-BATSE DISTANCE = 166828560. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -147.88 SECS.
CROSSING TIME AT MARS IS 74142. S. OR 20:35:42 +/- 90.89 SECONDS

BATSE BURST TRIGGER

NO.: 6267

TIME: TJD=0611 SECONDS=74290

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=127.9 AZIMUTH=131.1 ERROR=3.5 DEGREES

COMMENTS:
GRB. SINGLE PULSE, DUR.~ 15SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6267	970612	10611	74290	1700	118	+62	15

BATSE BURST# 6267

ULYSSES RT 13/10/97

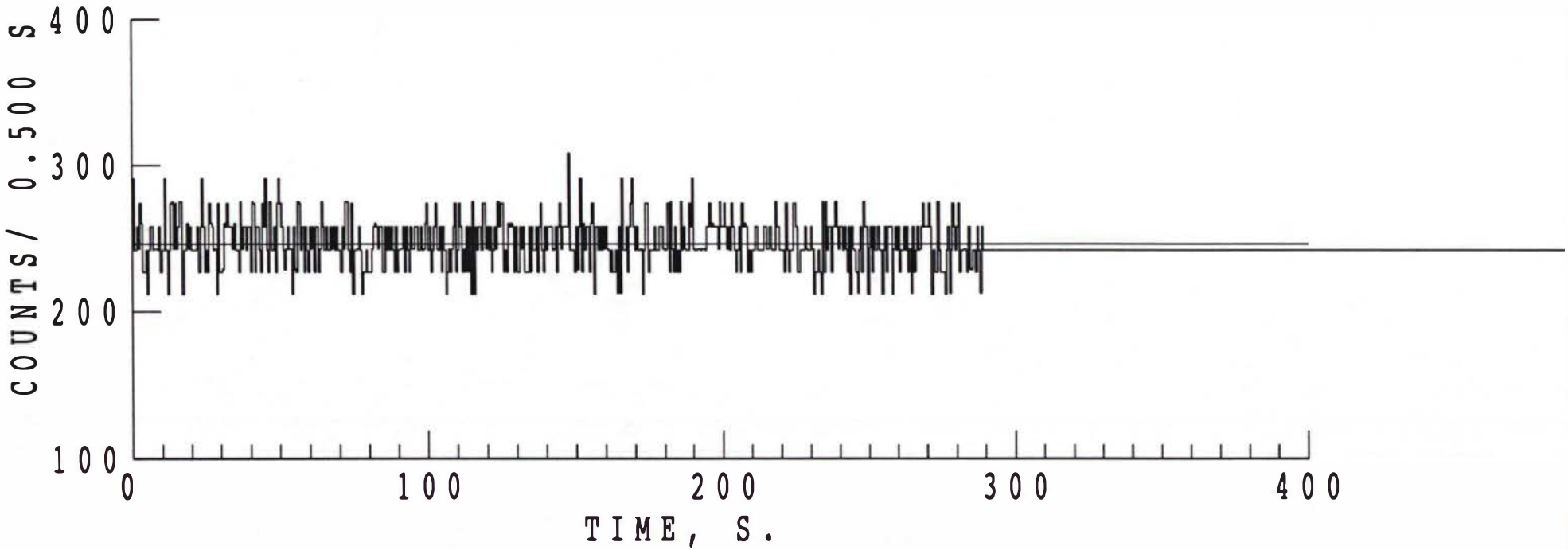
12/ 6/97 71892.016 s

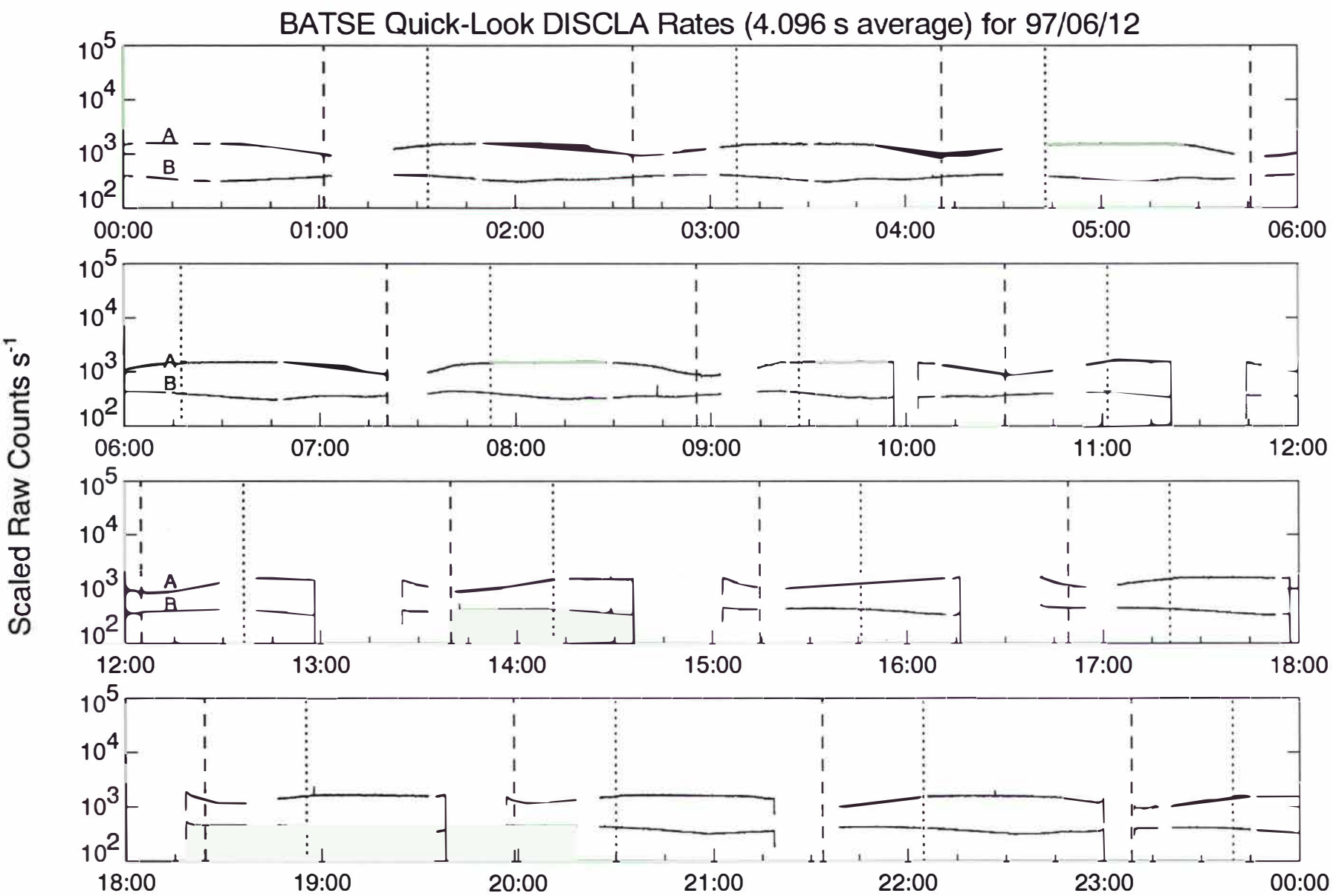
0.250 S INTERVALS REGROUPED BY 2

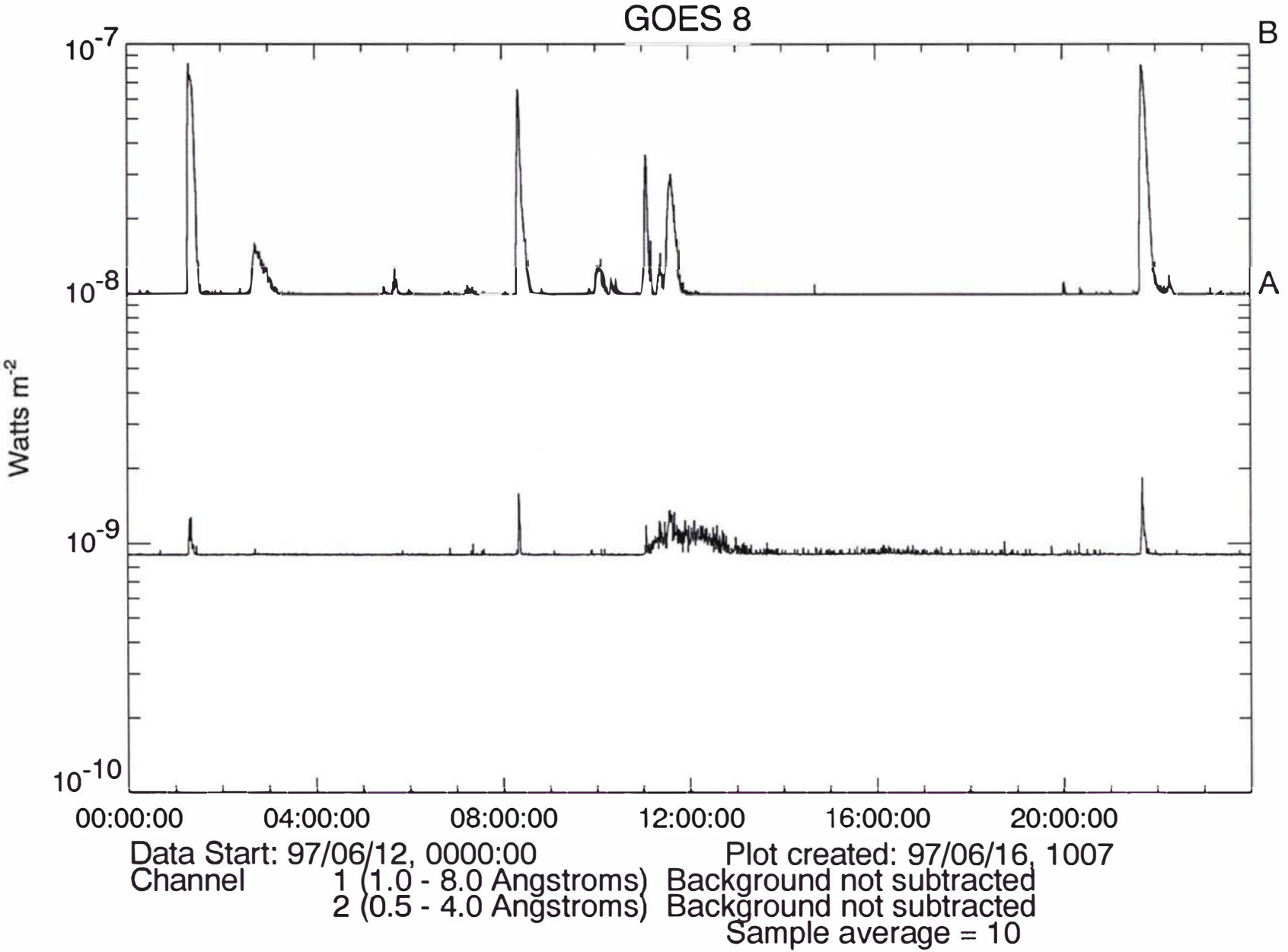
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

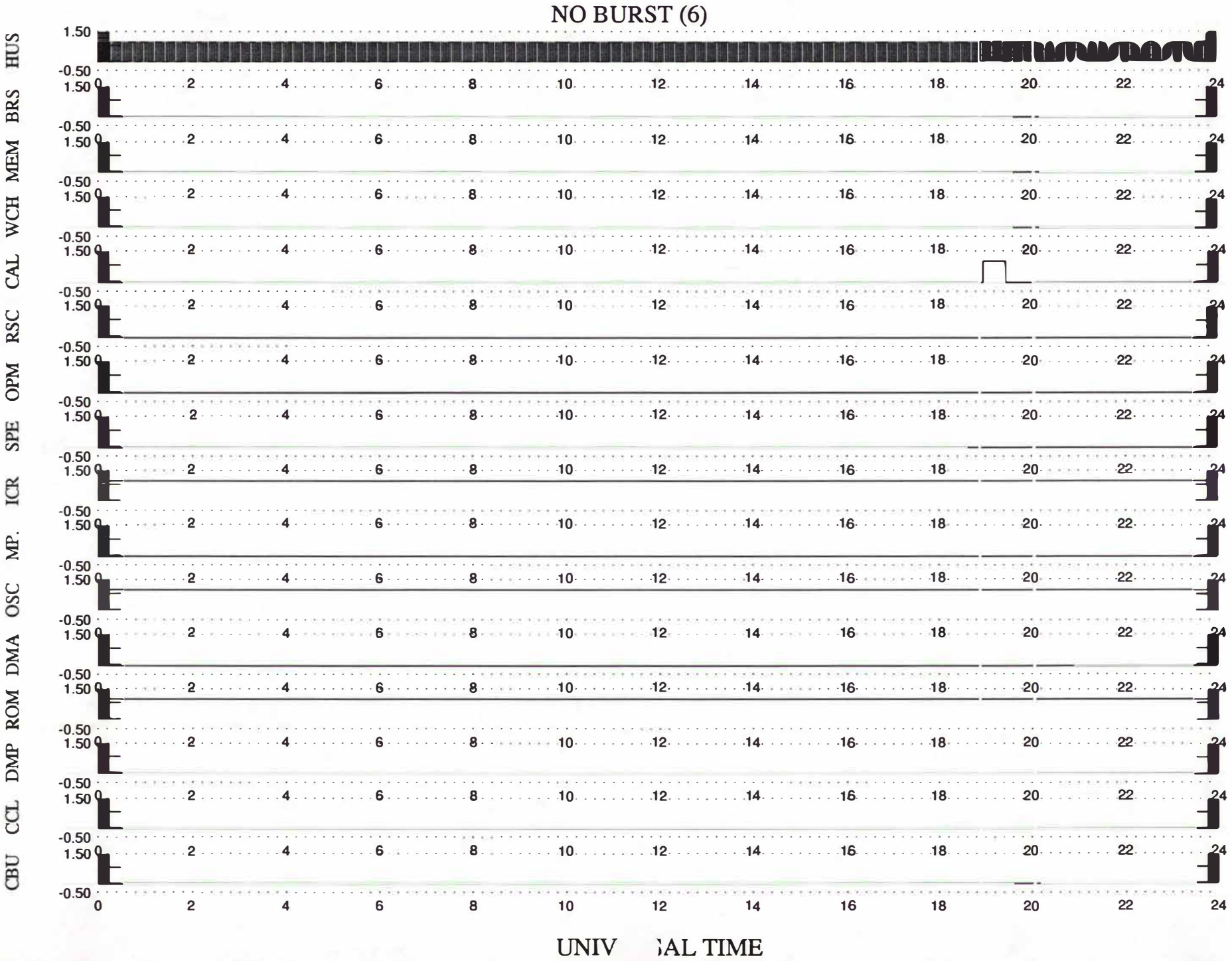
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/12
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/16, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

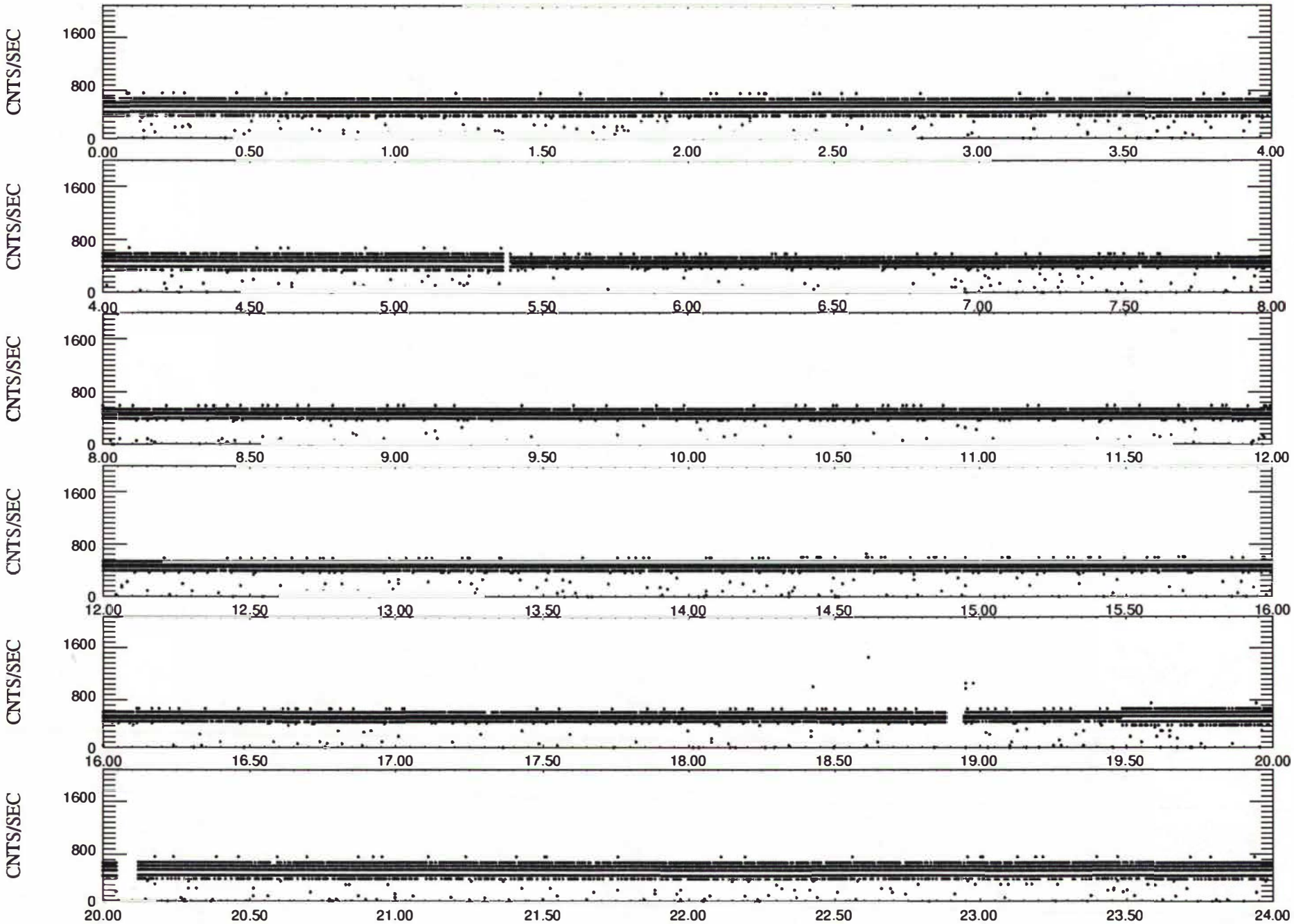

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/12, 0000:00
Plot created: 97/06/16, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 163, year 1997 to day 163, year 1997 10/13/97



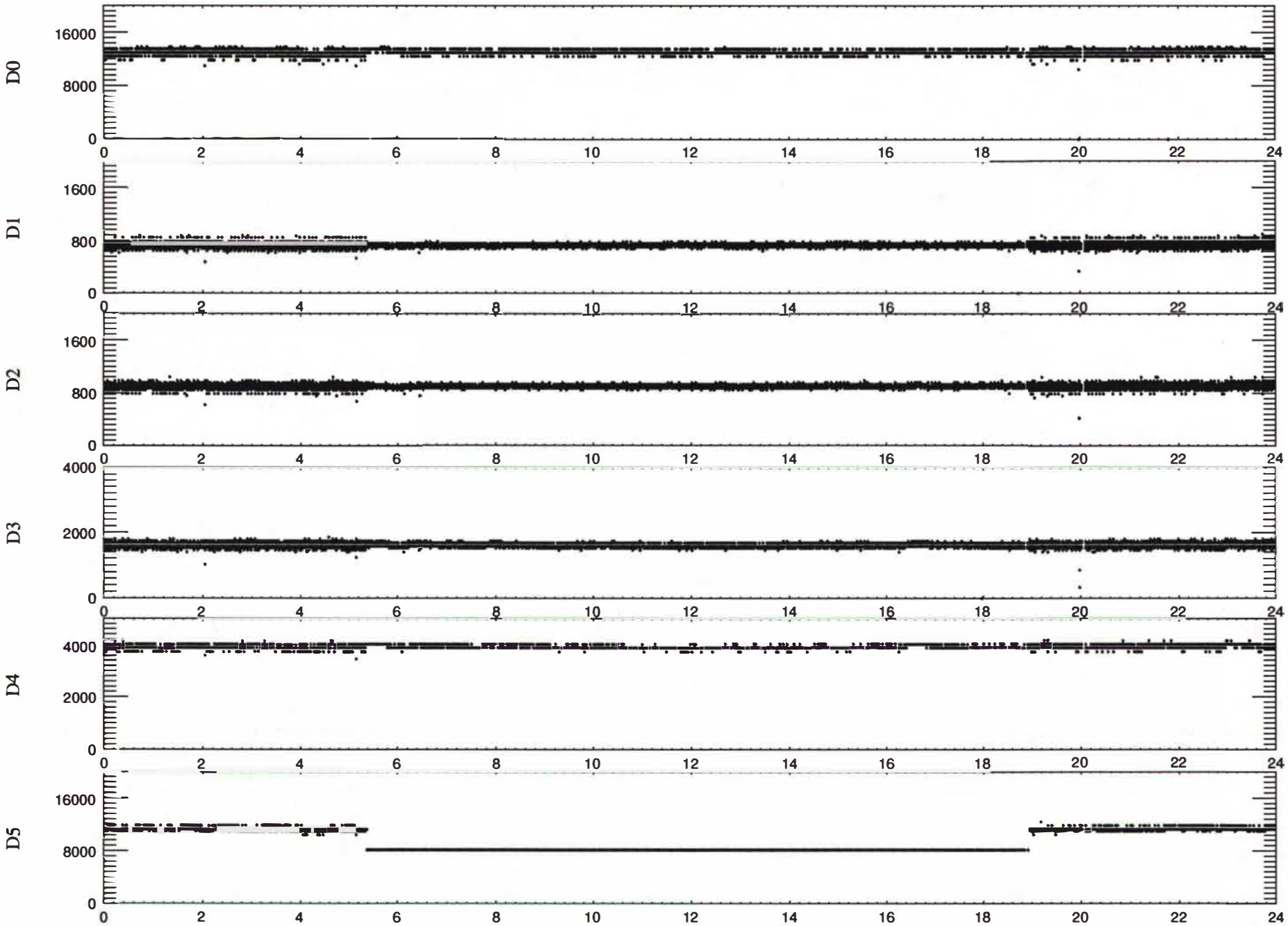
HUS 2A, MODE 1, NOT AVERAGED EDR day 163, year 1997 to day 163, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 163, year 1997 to day 163, year 1997 10/13/97



From SAHI@fender.msfc.nasa.gov Sat Jun 21 09:45 PDT 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA13472; Sat, 21 Jun 1997 09:45:05 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Sat, 21 Jun 1997 11:43:56 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970621114356.228000ae@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6268
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6268
EVENT OF 1997 JUN 13 DAY OF YEAR=164
EVENT CROSSING TIME AT BATSE : 19410. S. OR 05:23:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 107.000 28.000
BATSE PEAK COUNTING RATE: 1000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 6/ 97 IS:
RA= 151.737 DEC= 27.967 DIST= 5.509 AU
BATSE-ULYSSES DISTANCE = 824131037. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2128.06 SECS.
CROSSING TIME AT ULYSSES IS 17282. S. OR 04:48:01 +/- 319.81 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 6/ 97 IS:
RA= 177.784 DEC= 1.574 DIST= 1.123 AU
MARS-BATSE DISTANCE = 167941488. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -169.96 SECS.
CROSSING TIME AT MARS IS 19240. S. OR 05:20:40 +/- 90.09 SECONDS

BATSE BURST TRIGGER
NO.: 6268

TIME: TJD=0612 SECONDS=19410

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=159.6 AZIMUTH=157.5 ERROR=4.2 DEGREES

COMMENTS:BURST. SINGLE PULSE, DUR.>15 SECS. SPARSE DATA. POSSIBLE LONGER
EMISSION AROUND ~T+32 SECS. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6268	970613	10612	19410	1000	107	+28	15

BATSE BURST# 6268

ULYSSES RT 21/ 6/97

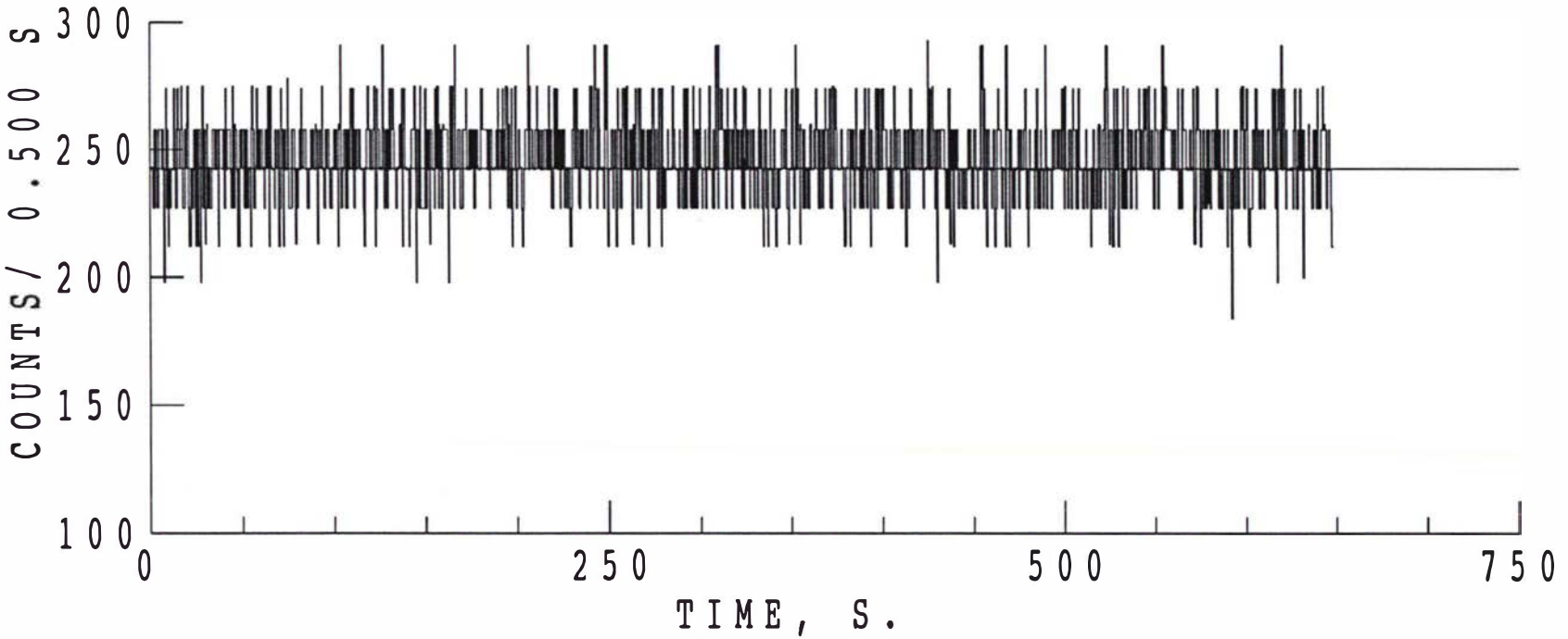
13/ 6/97 16956.131 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Sat Jun 21 09:52 PDT 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA13513; Sat, 21 Jun 1997 09:52:51 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Sat, 21 Jun 1997 11:46:26 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970621114626.228000ae@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6269
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6269
EVENT OF 1997 JUN 13 DAY OF YEAR=164
EVENT CROSSING TIME AT BATSE : 36283. S. OR 10:04:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 200.000 -17.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 6/ 97 IS:
RA= 151.750 DEC= 27.944 DIST= 5.512 AU
BATSE-ULYSSES DISTANCE = 824601205. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.18 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1170.47 SECS.
CROSSING TIME AT ULYSSES IS 35113. S. OR 09:45:12 +/- 464.37 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 6/ 97 IS:
RA= 177.784 DEC= 1.574 DIST= 1.123 AU
MARS-BATSE DISTANCE = 167941488. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=151.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -491.26 SECS.
CROSSING TIME AT MARS IS 35792. S. OR 09:56:31 +/- 39.28 SECONDS

BATSE BURST TRIGGER

NO.: 6269

TIME: TJD=0612 SECONDS=36283

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=69.0 AZIMUTH=218.9 ERROR=4.48 DEGREES

COMMENTS:
BURST. SINGLE PULSE, DUR.~12 SECS, RISE FASTER THAN FALL. NOT VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6269	970613	10612	36283	2000	200	-17	12

BATSE BURST# 6269

ULYSSES RT 21/ 6/97

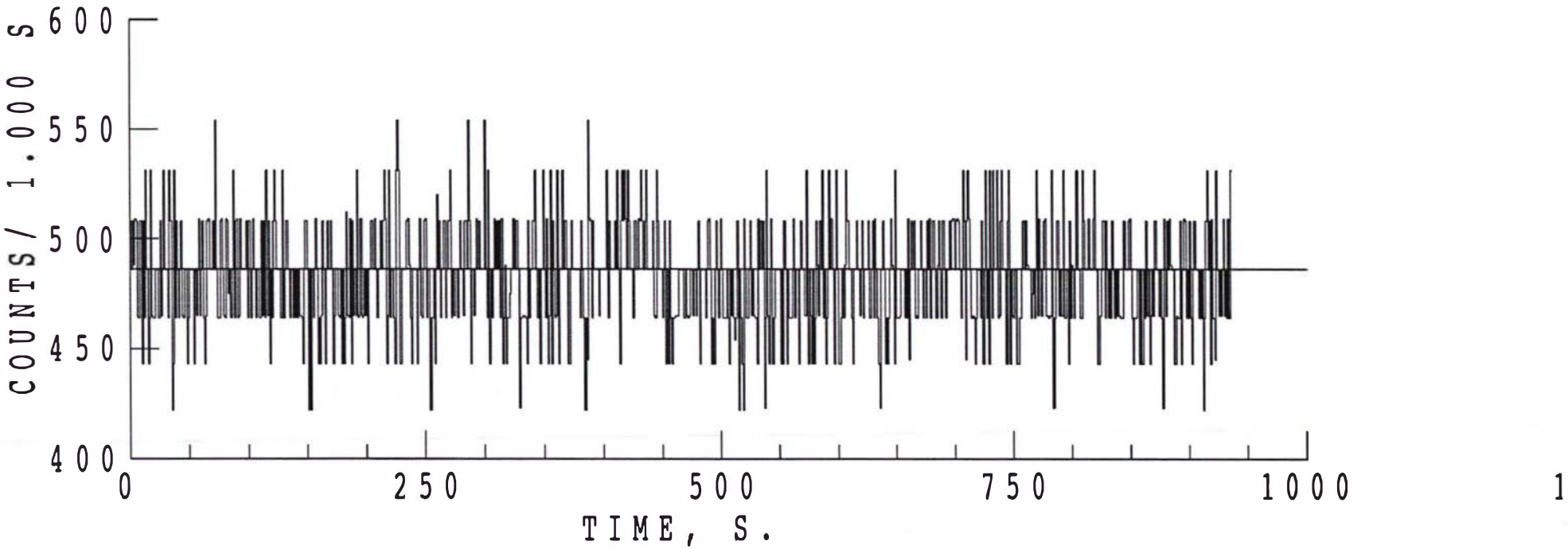
13/ 6/97 34632.332 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Sat Jun 21 09:53 PDT 1997
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA13525; Sat, 21 Jun 1997 09:53:12 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Sat, 21 Jun 1997 11:48:25 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970621114825.228000ae@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6270
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6270
EVENT OF 1997 JUN 13 DAY OF YEAR=164
EVENT CROSSING TIME AT BATSE : 54725. S. OR 15:12:05.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 273.000 25.000
BATSE PEAK COUNTING RATE: 2030 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 6/ 97 IS:
RA= 151.765 DEC= 27.918 DIST= 5.515 AU
BATSE-ULYSSES DISTANCE = 825118454. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 598.36 SECS.
CROSSING TIME AT ULYSSES IS 55323. S. OR 15:22:03 +/- 525.50 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 6/ 97 IS:
RA= 177.784 DEC= 1.574 DIST= 1.123 AU
MARS-BATSE DISTANCE = 167941488. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 39.64 SECS.
CROSSING TIME AT MARS IS 54765. S. OR 15:12:44 +/- 97.62 SECONDS

BATSE BURST TRIGGER
NO.: 6270

TIME: TJD=0612 SECONDS=54725

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=38.5 AZIMUTH=113.4 ERROR=2.96 DEGREES

COMMENTS:
BURST. SINGLE PULSE WITH SUBSTRUCTURE, DUR.~70 SECS, MAX. AT ~T+15 SECS.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6270	970613	10612	54725	2030	273	+25	70

BATSE BURST# 6270

ULYSSES RT 21/ 6/97

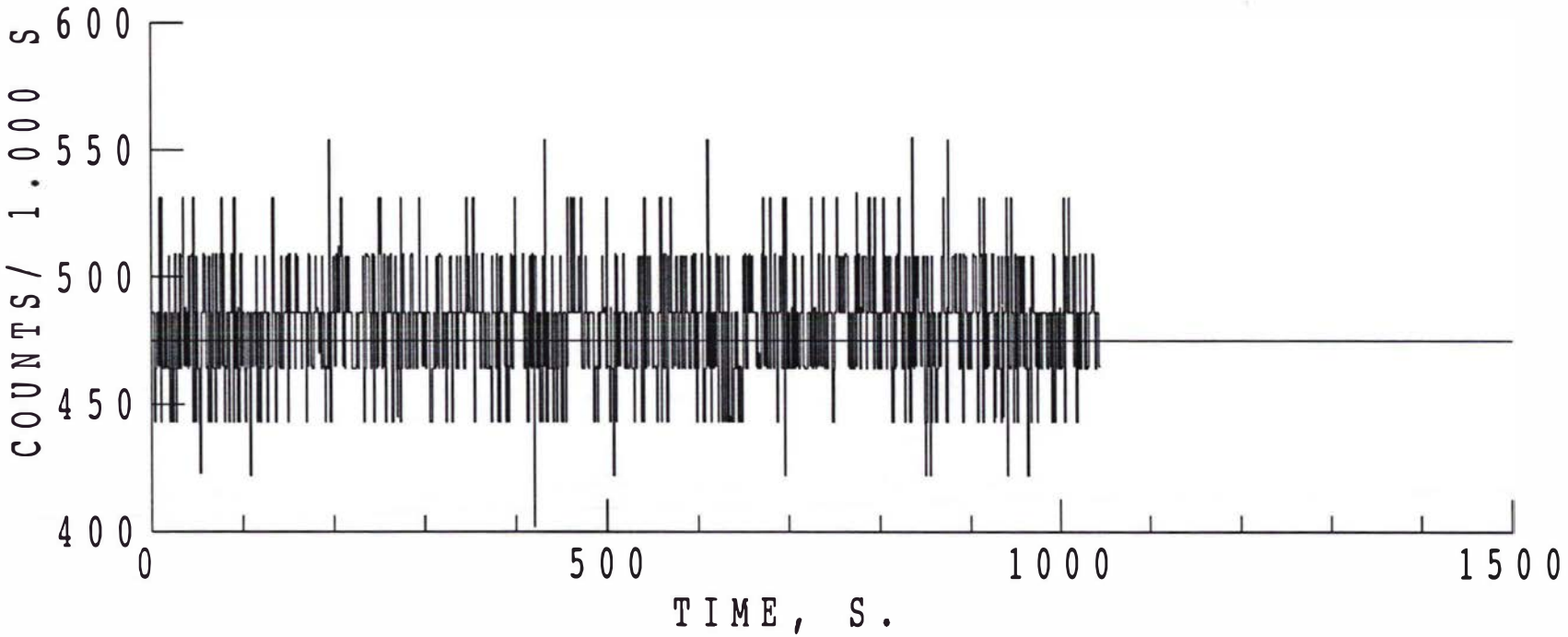
13/ 6/97 54792.062 s

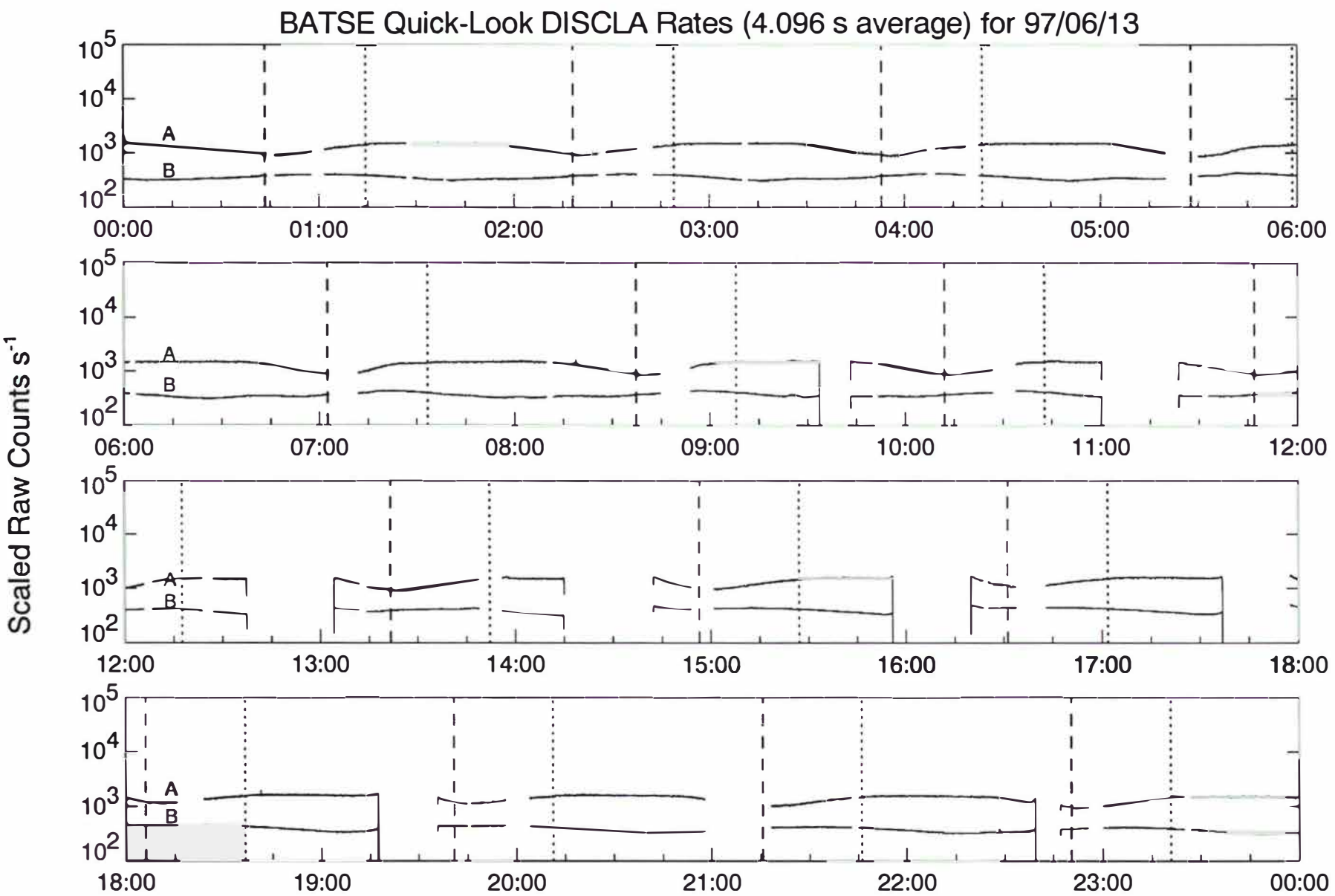
0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

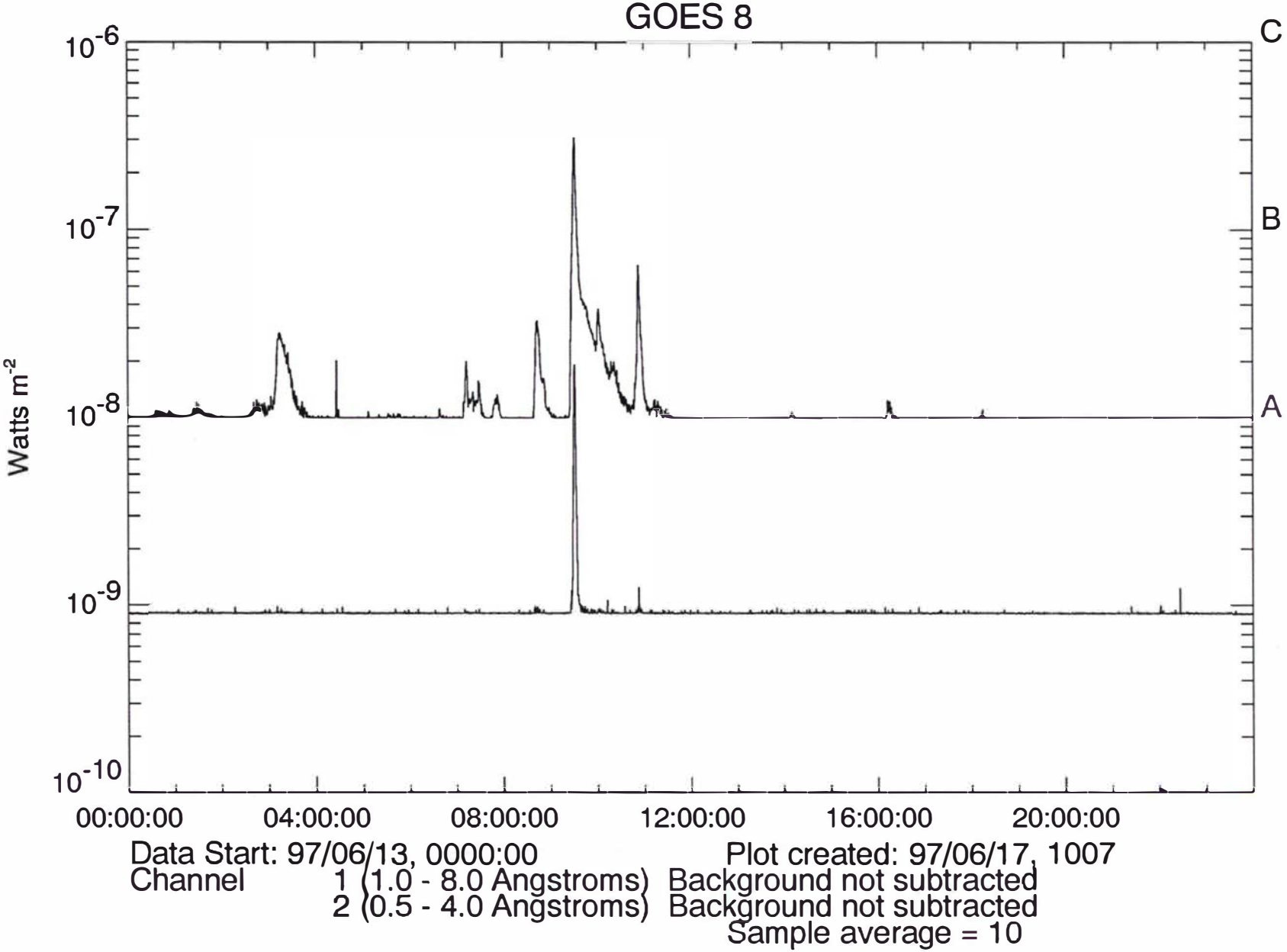




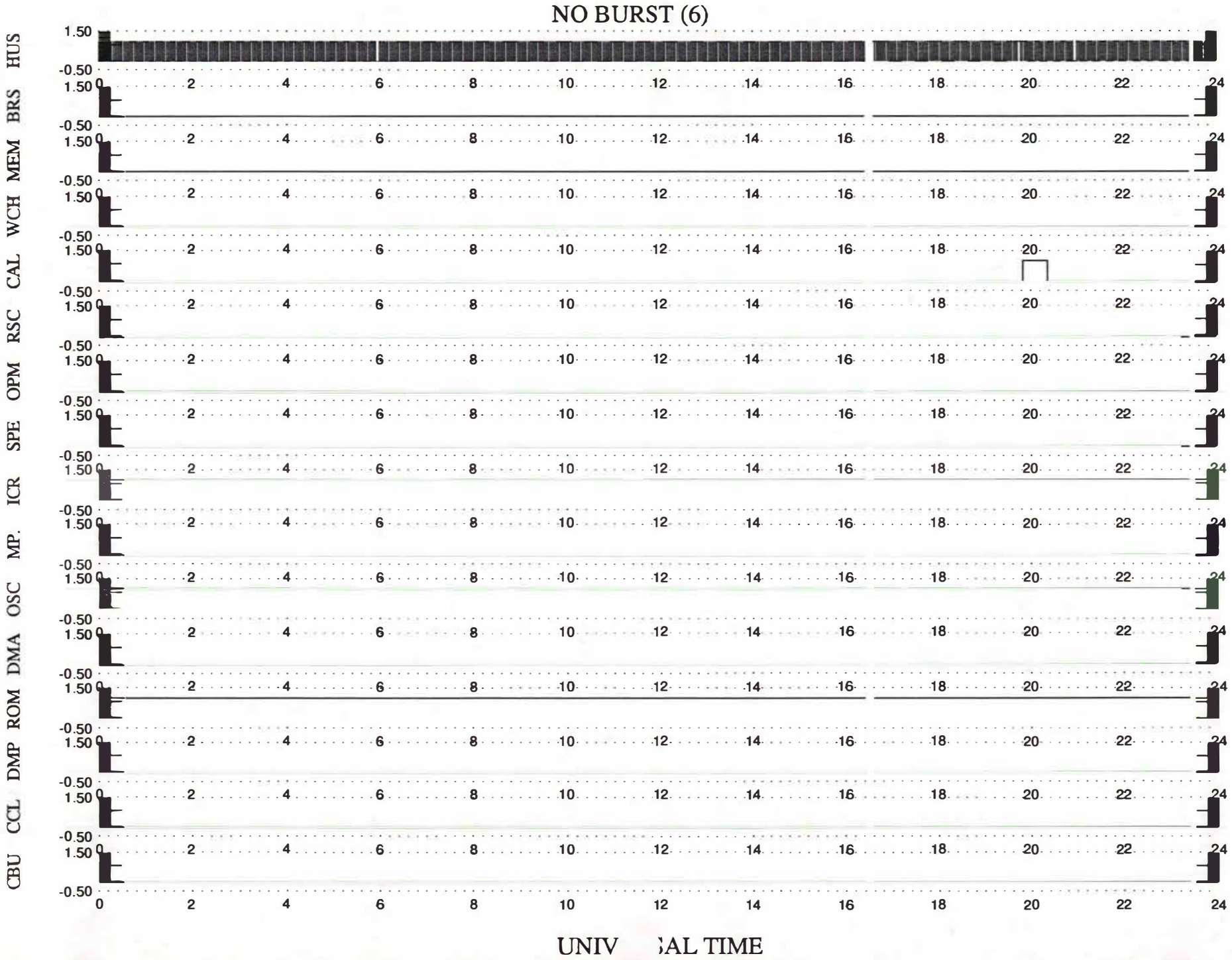
Current Time: 97/06/17, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare

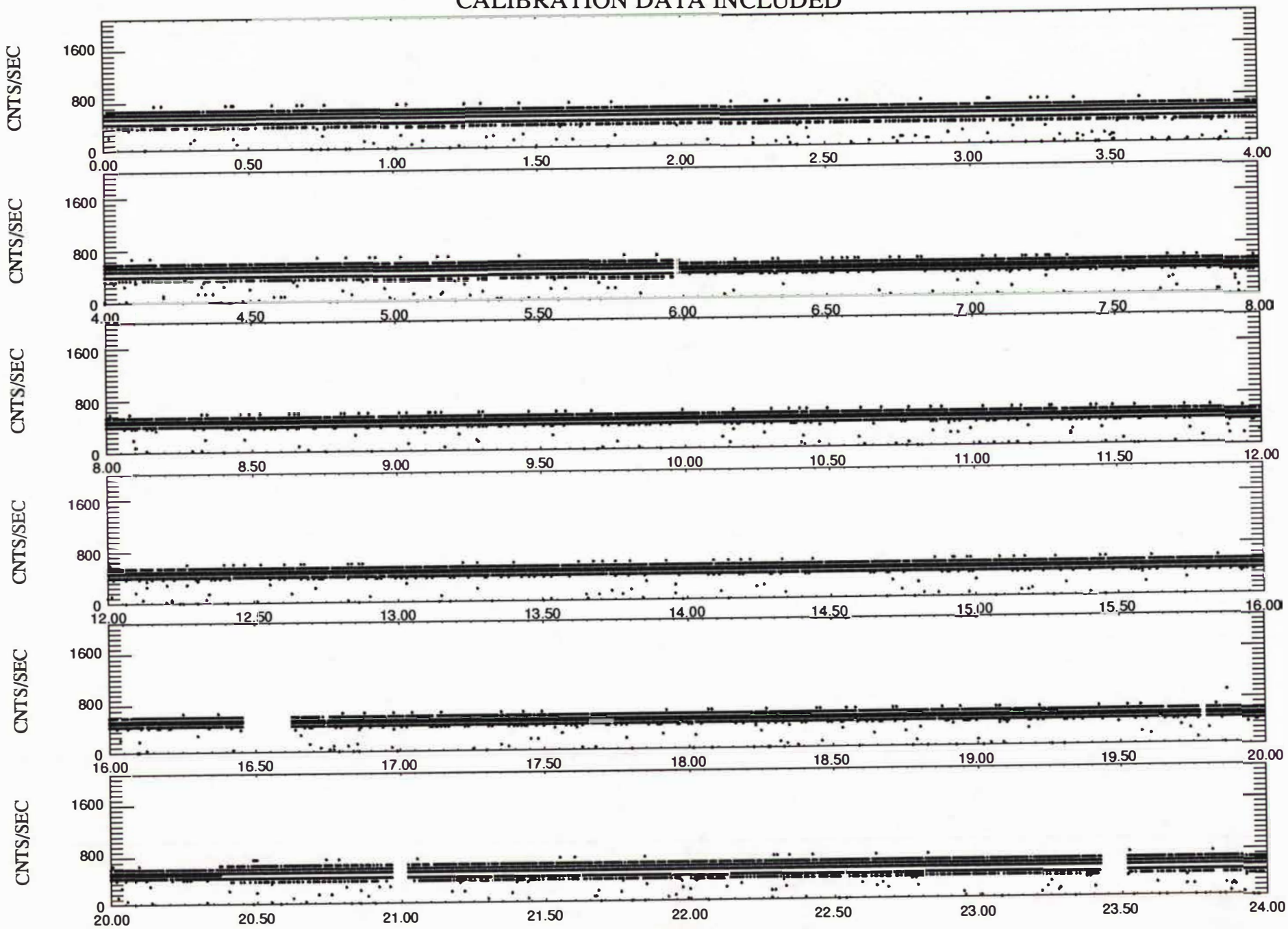

GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/13, 0000:00
Plot created: 97/06/17, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 164, year 1997 to day 164, year 1997 10/13/97



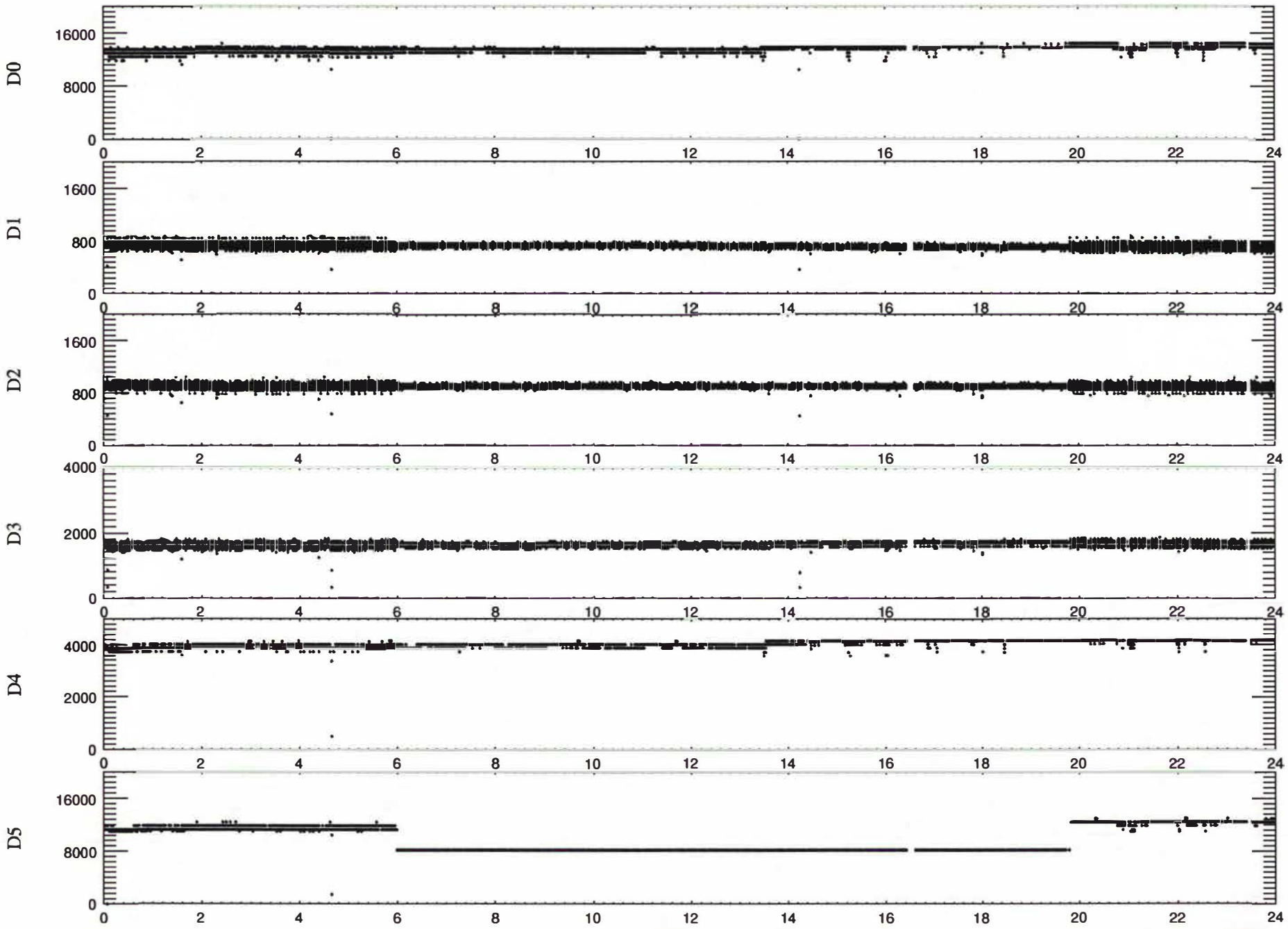
HUS 2A, MODE 1, NOT AVERAGED EDR day 164, year 1997 to day 164, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 164, year 1997 to day 164, year 1997 10/13/97



From RICHARDSON@ssl.msfc.nasa.gov Mon Jun 16 12:49 PDT 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA03475; Mon, 16 Jun 1997 12:49:46 -0700
e: Mon, 16 Jun 1997 14:49:42 -0500 (CDT)
om: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970616144942.21664867@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6271
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6271
EVENT OF 1997 JUN 14 DAY OF YEAR=165
EVENT CROSSING TIME AT BATSE : 28068. S. OR 07:47:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 320.000 -49.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 6/ 97 IS:
RA= 151.813 DEC= 27.835 DIST= 5.527 AU
BATSE-ULYSSES DISTANCE = 826776846. KM.
NGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 23.04 DEG.
GHT TRAVEL TIME ALONG PROJECTED PATH= 2537.92 SECS.
CROSSING TIME AT ULYSSES IS 30606. S. OR 08:30:05 +/- 275.90 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 6/ 97 IS:
RA= 178.145 DEC= 1.390 DIST= 1.130 AU
MARS-BATSE DISTANCE = 169052848. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 301.18 SECS.
CROSSING TIME AT MARS IS 28369. S. OR 07:52:49 +/- 87.34 SECONDS

BATSE BURST TRIGGER
NO.: 6271

TIME: TJD=0613 SECONDS=28068

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=53 AZIMUTH=333.6 ERROR=5.8 DEGREES

COMMENTS:
OCCURRED RIGHT BEFORE A DATA GAP. TWO PULSES, TOTAL DUR. AT LEAST
C. NOT VISIBLE ABOVE 300KEV.

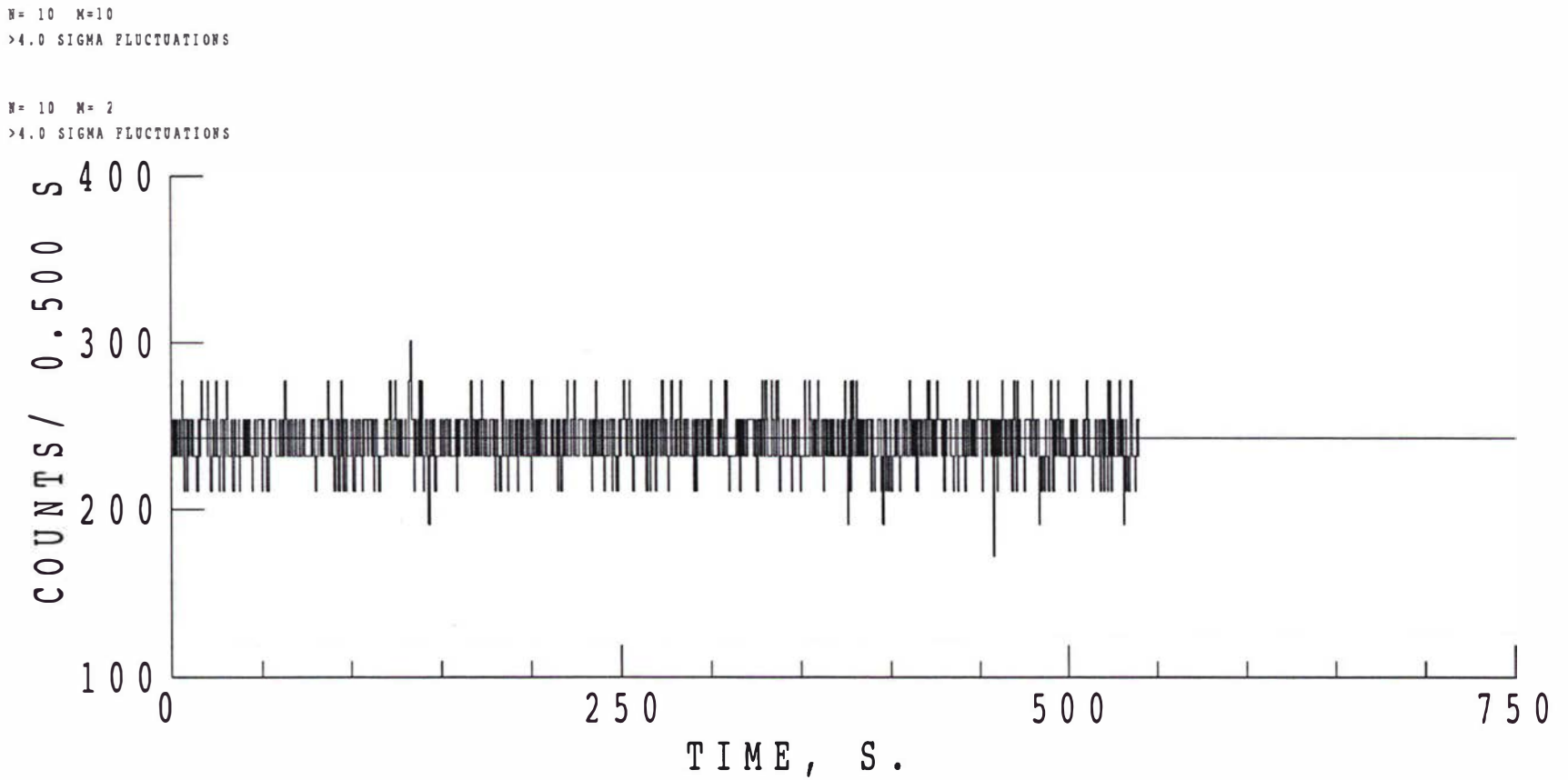
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6271	970614	10613	28068	3500	320	-49	70

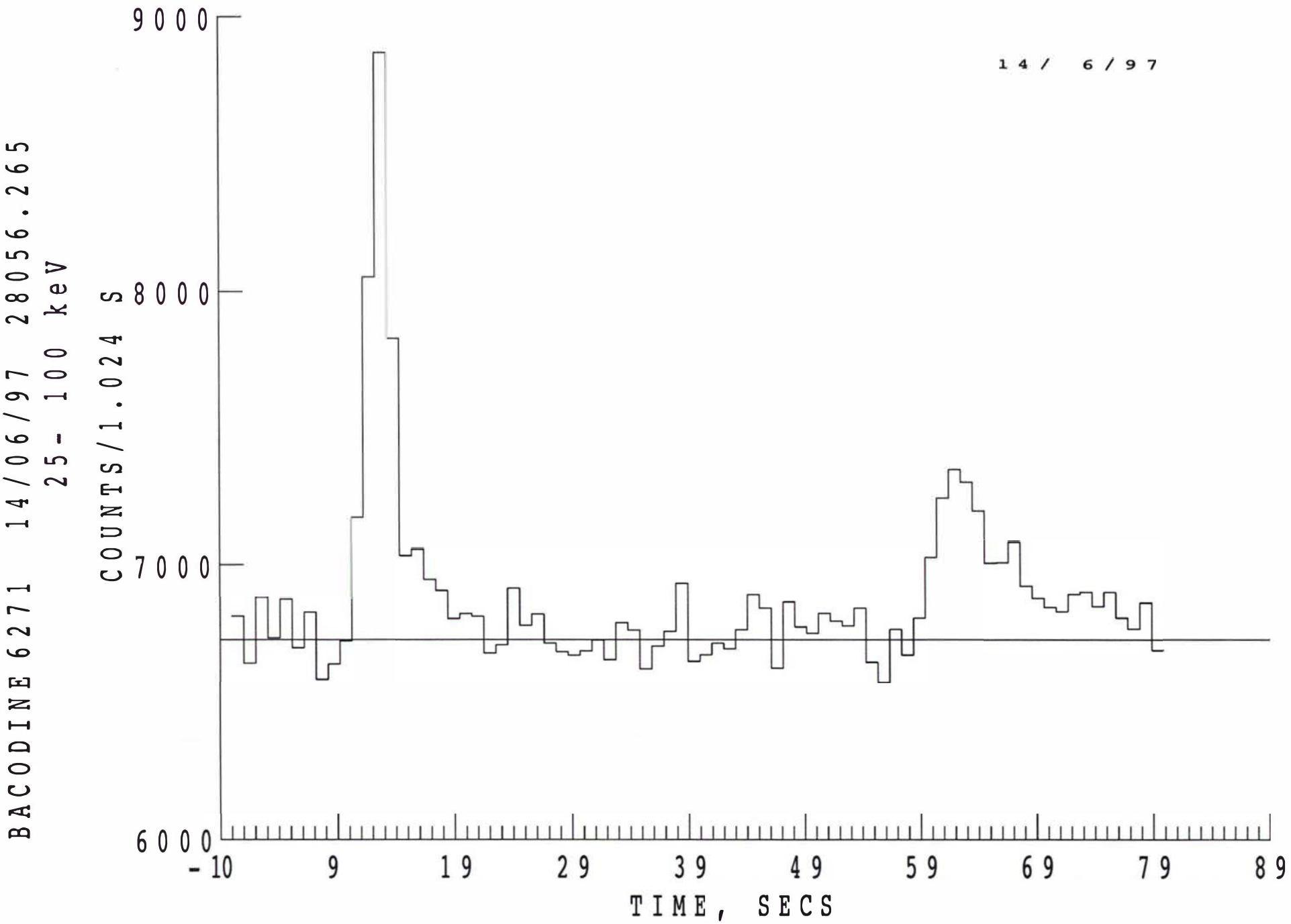
BATSE BURST# 6271

ULYSSES RT 16/ 6/97

14/ 6/97 30348.283 s

0- 0 keV




BACODINE 6271 14/06/97 28056.265
25- 100 keV
COUNTS/1.024 S
9000
8000
7000
6000
14/ 6/97
-10
9
19
29
39
49
59
69
79
89
TIME, SECS

From RICHARDSON@ssl.msfc.nasa.gov Wed Jun 18 10:48 PDT 1997
Return-Path: <RICHARDSON@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA20479; Wed, 18 Jun 1997 10:48:01 -0700
Date: Wed, 18 Jun 1997 12:47:55 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970618124755.21666c8d@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6272
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

RI

****
BATSEARCH PROGRAM
****

BATSE BURST # 6272
EVENT OF 1997 JUN 14 DAY OF YEAR=165
EVENT CROSSING TIME AT BATSE : 83262. S. OR 23:07:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 235.000 62.000
BATSE PEAK COUNTING RATE: 6500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 6/ 97 IS:
RA= 151.858 DEC= 27.759 DIST= 5.537 AU
BATSE-ULYSSES DISTANCE = 828300415. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1273.26 SECS.
CROSSING TIME AT ULYSSES IS 81989. S. OR 22:46:28 +/- 456.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 6/ 97 IS:
RA= 178.145 DEC= 1.390 DIST= 1.130 AU
MARS-BATSE DISTANCE = 169052848. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -156.78 SECS.
CROSSING TIME AT MARS IS 83105. S. OR 23:05:05 +/- 91.66 SECONDS

BATSE BURST TRIGGER
NO.: 6272

TIME: TJD=0613 SECONDS=83262

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.0 AZIMUTH=132.5 ERROR=1.0 DEGREES

COMMENTS:
GRB LONG AND SPIKEY. TOTAL DUR.~160 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6272	970614	10613	83262	6500	235	+62	160

Helio corr removed 18/2/00

Date: Apr 3 '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)?

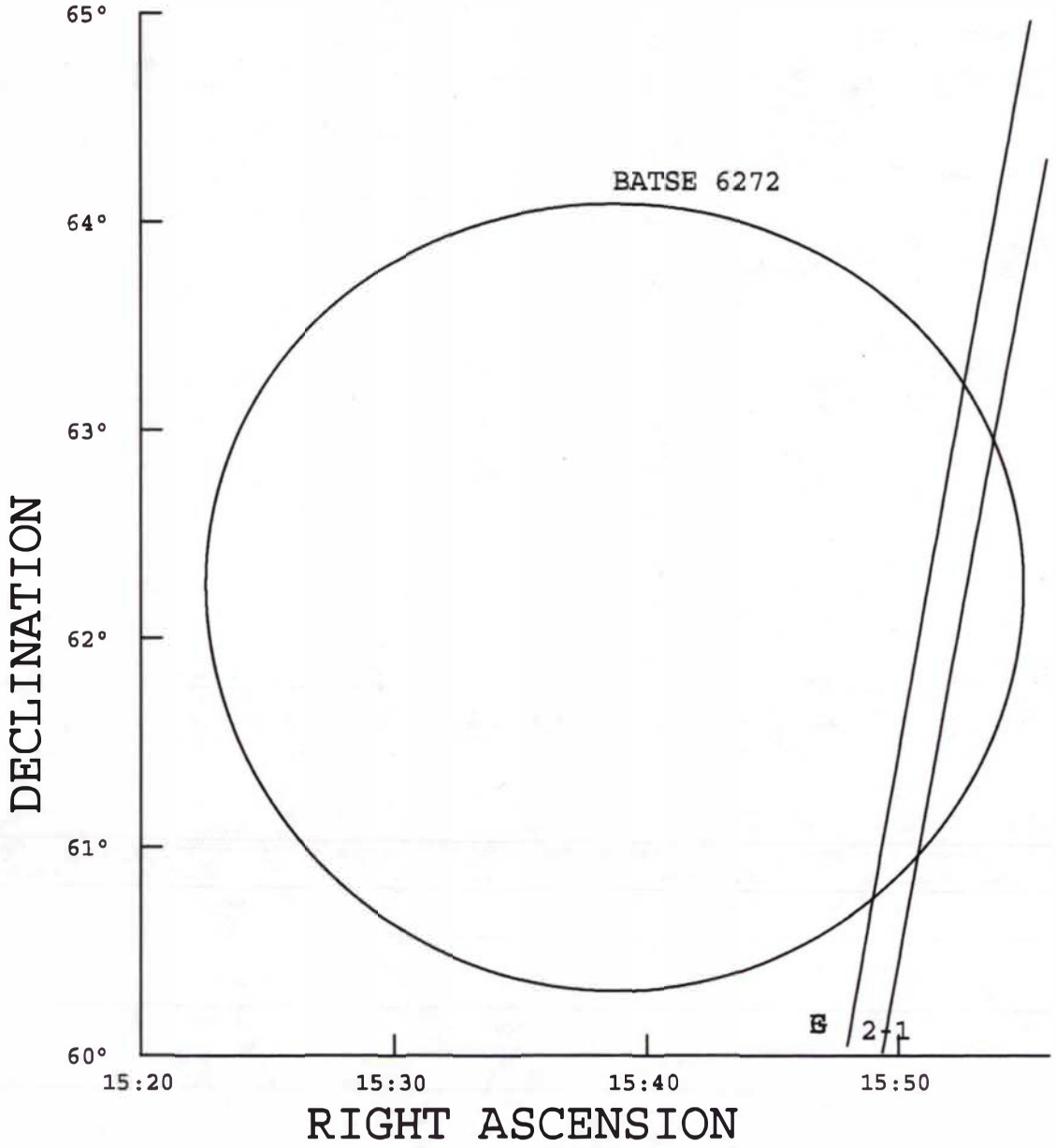
☐ 2000 coordinates used?

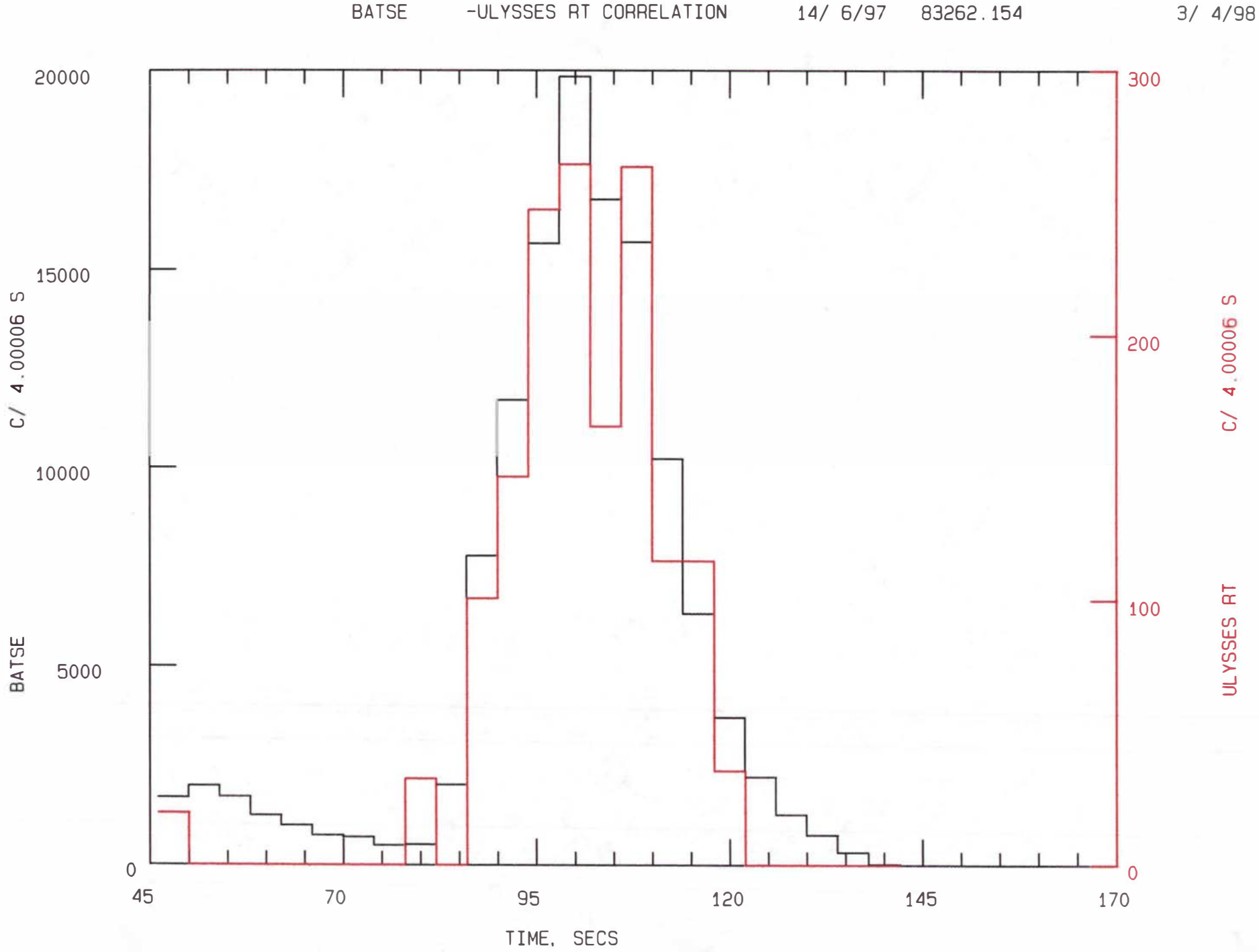
☐ Geocentric time used?

☑ ACCESS database updated?

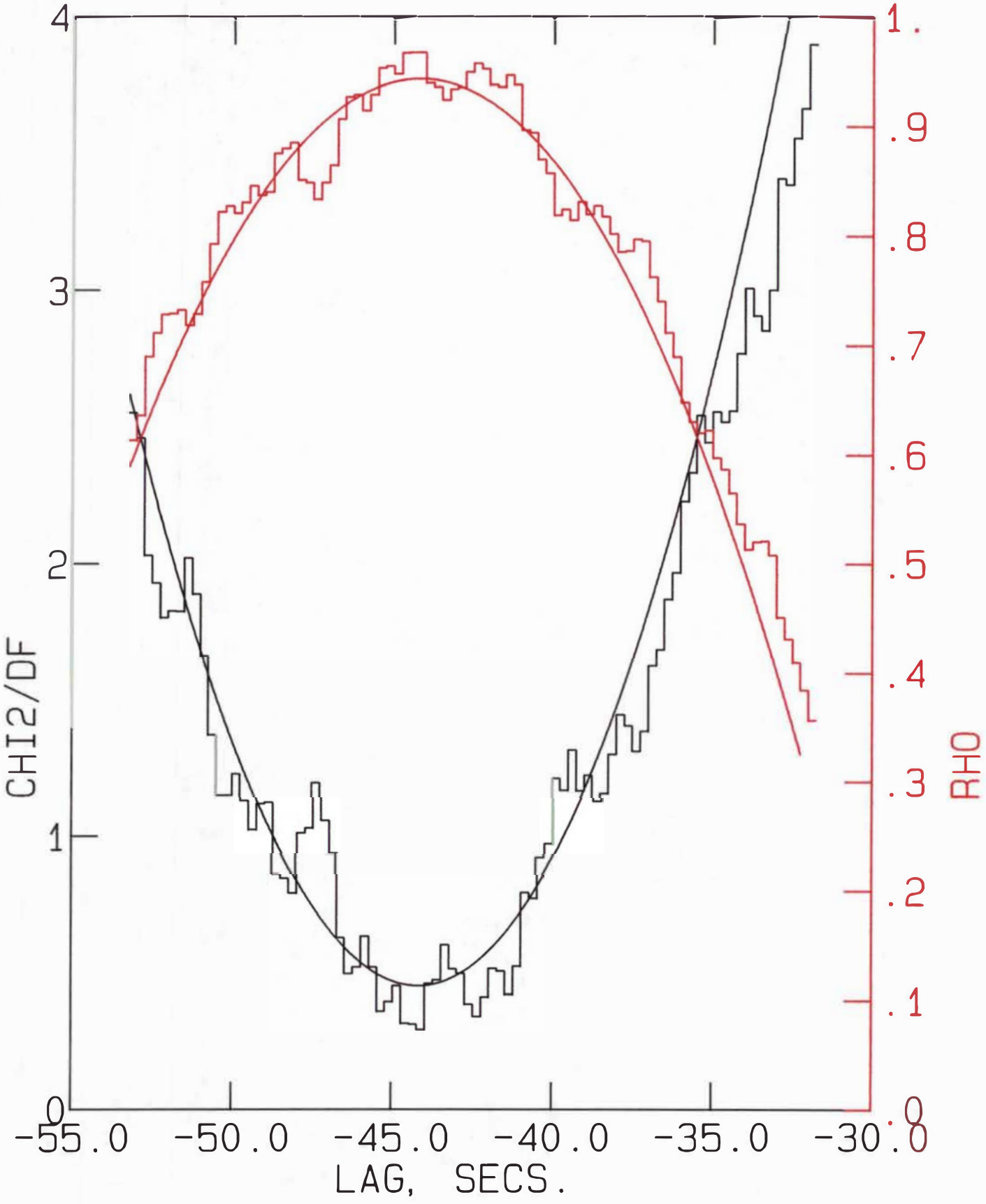
EVENT OF JUN 14, 1997 22:48

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 14/ 6/97 83262.154 3/ 4/98
20000
15000
10000
5000
0
C/ 4.00006 S
BATSE
300
200
100
0
C/ 4.00006 S
ULYSSES RT
45
70
95
120
145
170
TIME, SECS

BATSE -ULYSSES RT CORRELATION 14/ 6/97 83262.154

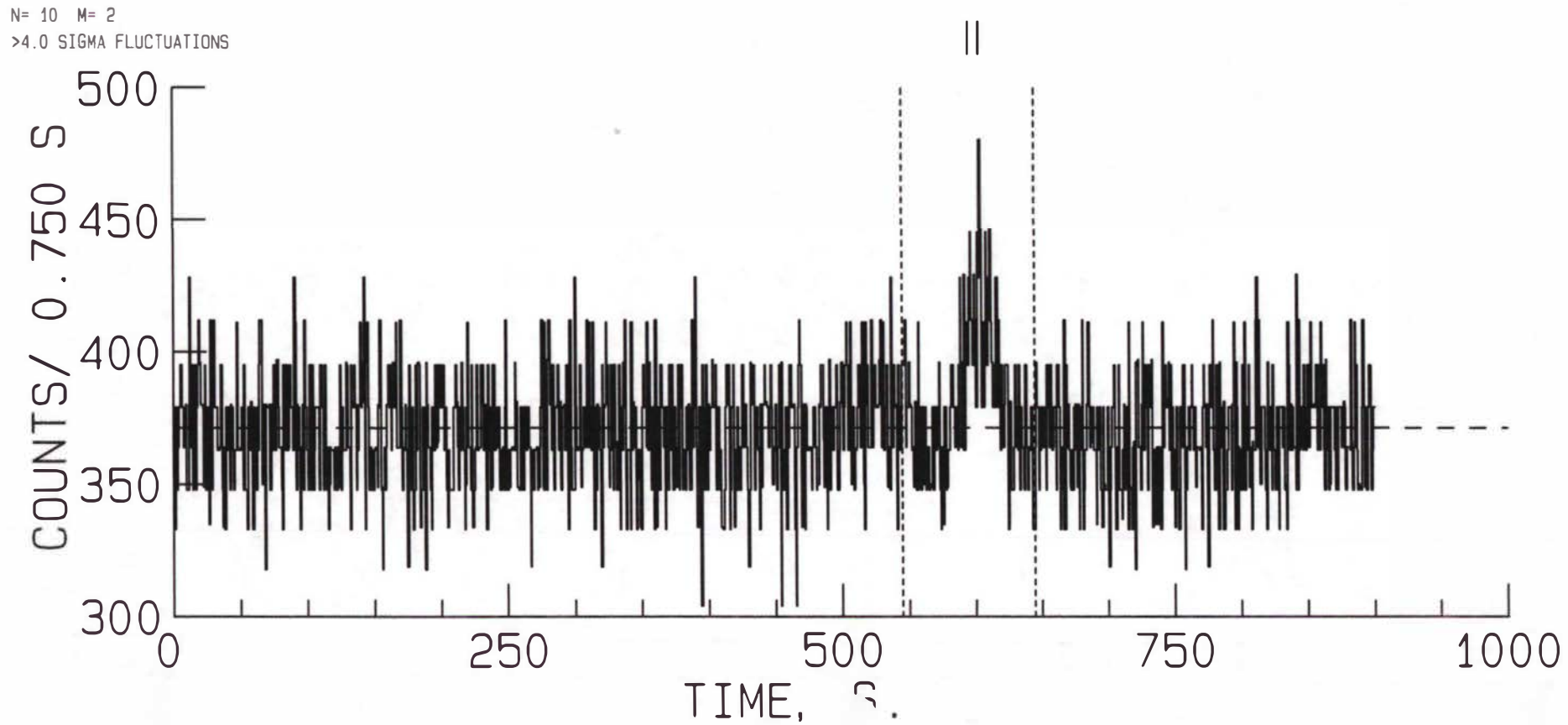


ULYSSES RT 3/ 4/98

14/ 6/97 81540.130 s

0.250 S INTERVALS REGROUPED BY 3

22- 148 keV



BATSE 14/06/97 83262.154

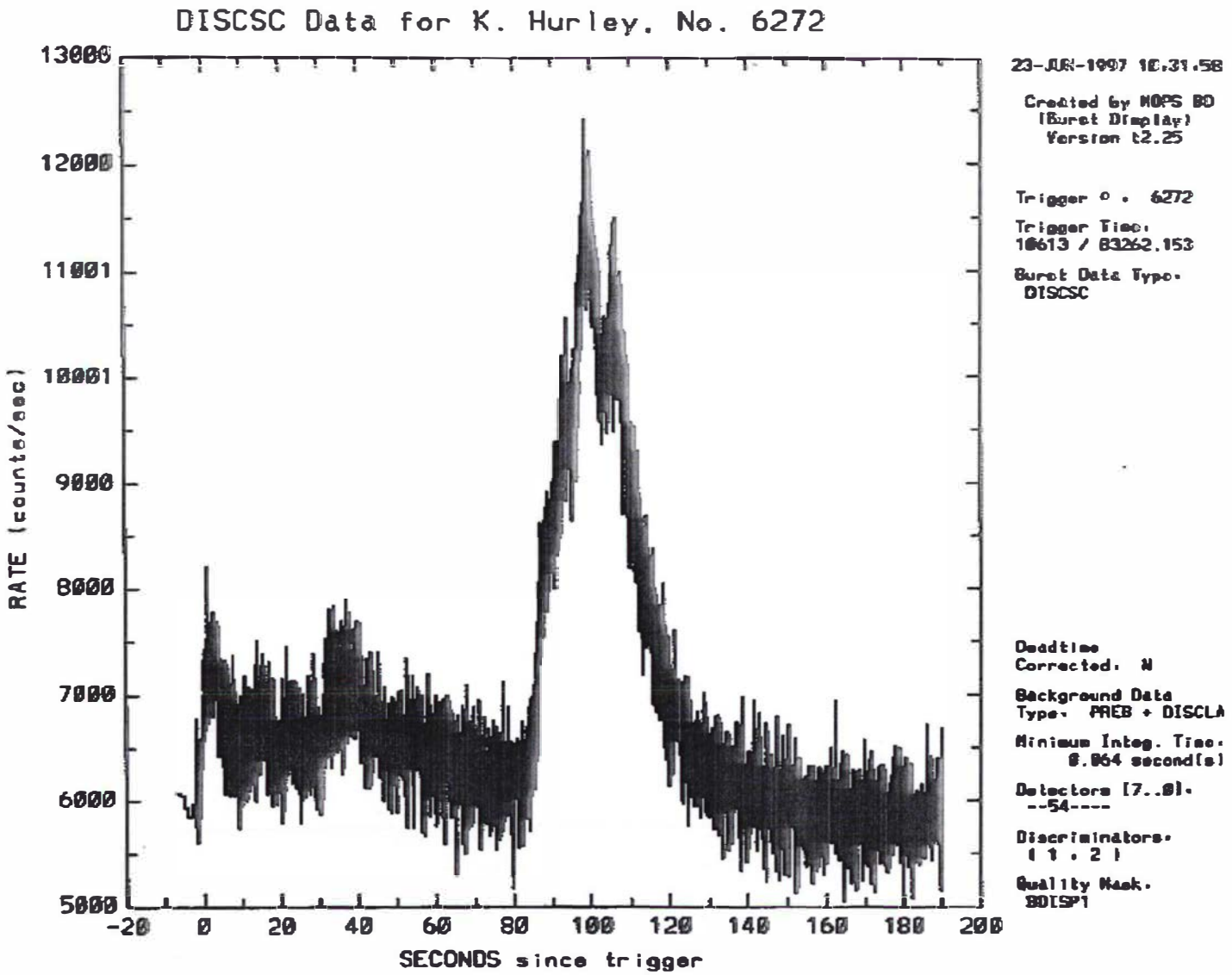
25- 100 keV

COUNTS/0.064 S

300 400 500 600 700 800

-30 29 61 93 125 157

2/ 7/97


DISCSC Data for K. Hurley. No. 6272
RATE (counts/sec)
13000
12000
11001
10001
9000
8000
7000
6000
5000
-20
0
20
40
60
80
100
120
140
160
180
200
SECONDS since trigger
23-JUN-1997 10:31:58
Created by MOPS BD
(Burst Display)
Version t2.25
Trigger # : 6272
Trigger Time:
10613 / 83262.153
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
--54----
Discriminators:
(1 , 2)
Quality Mask:
BDISP1

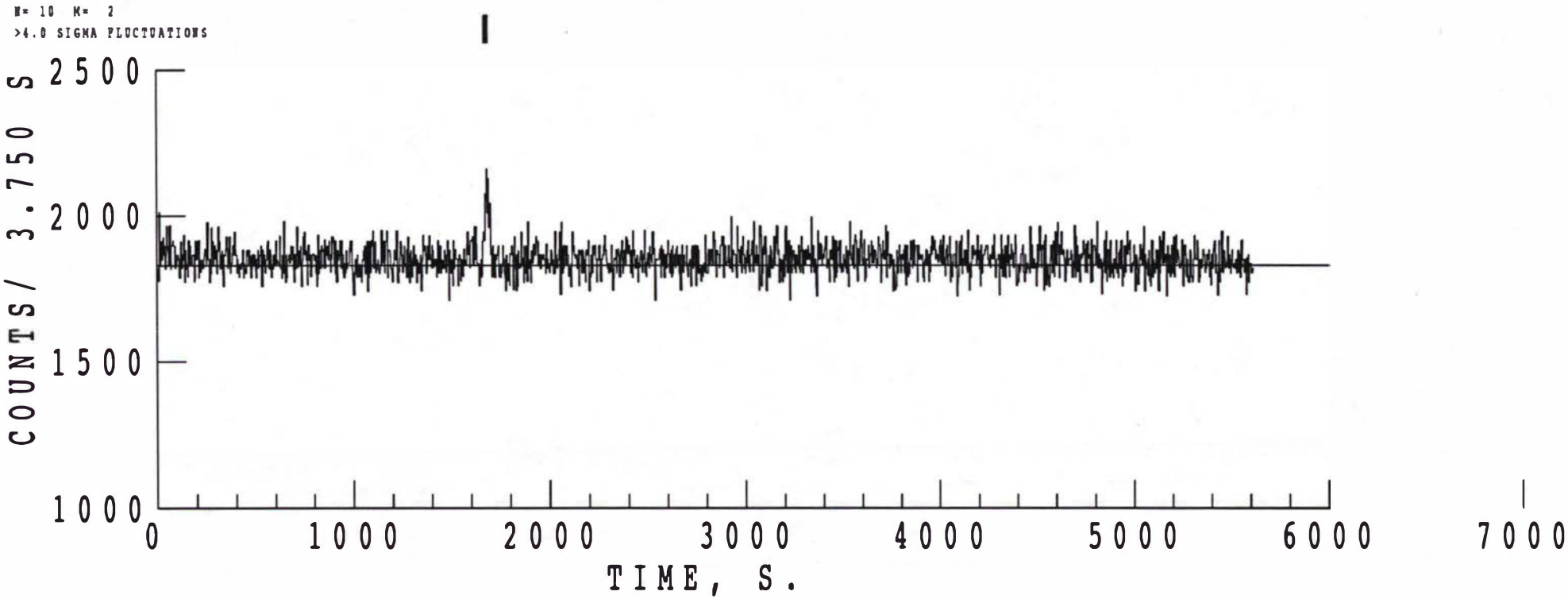
KONUS

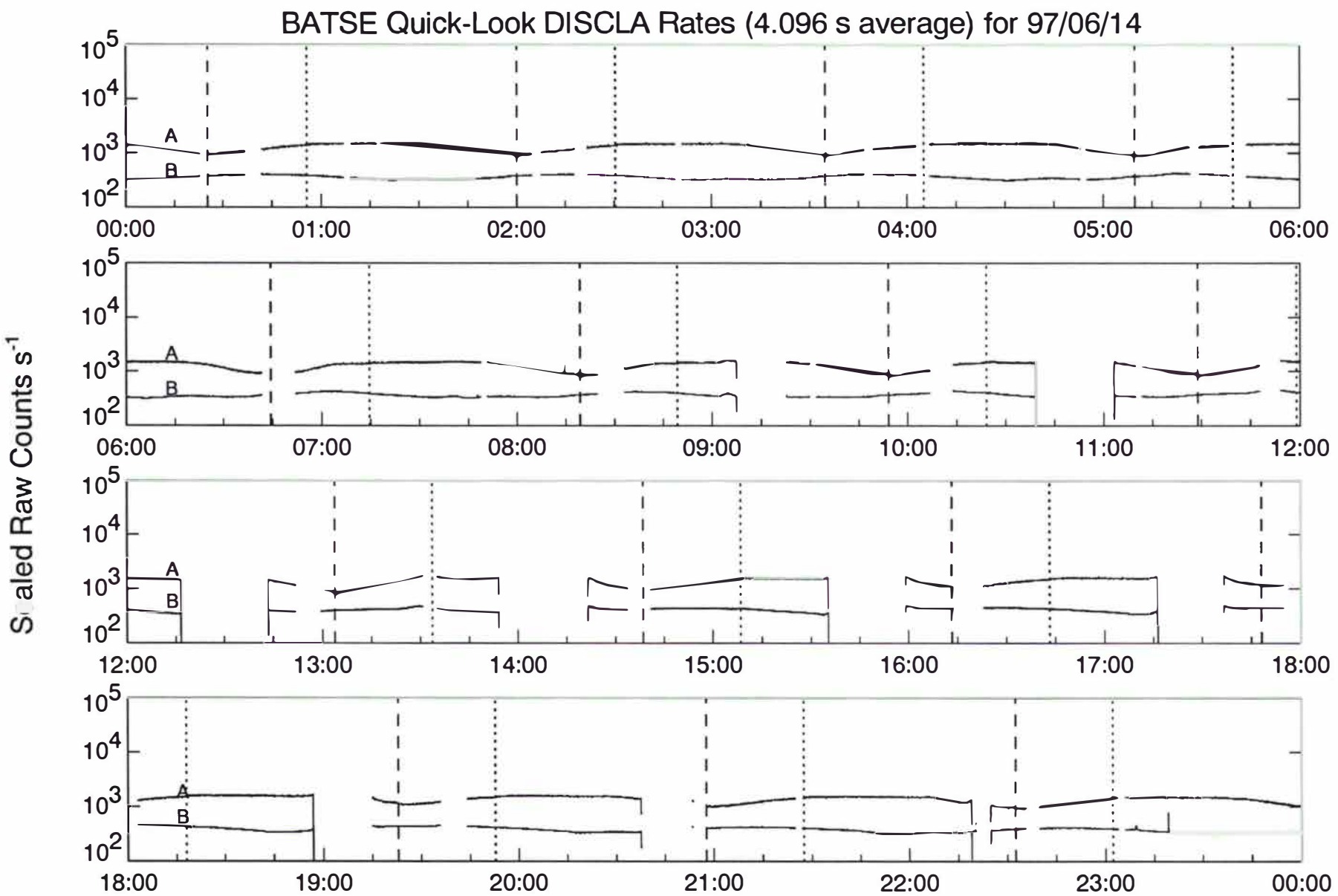
ULYSSES RT 15/02/00

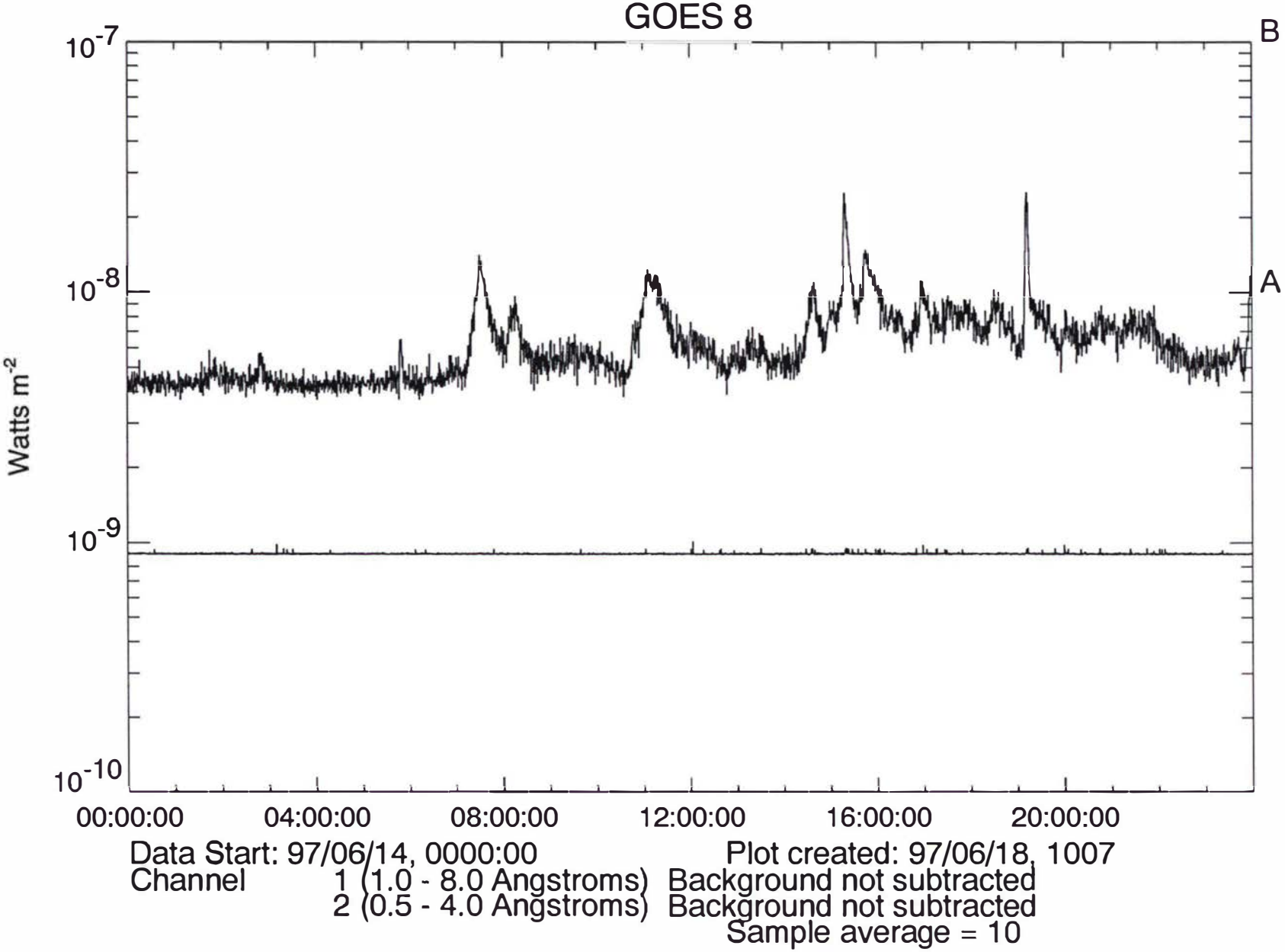
14/06/97 80460.117 s

0.250 S INTERVALS REGROUPED BY 15

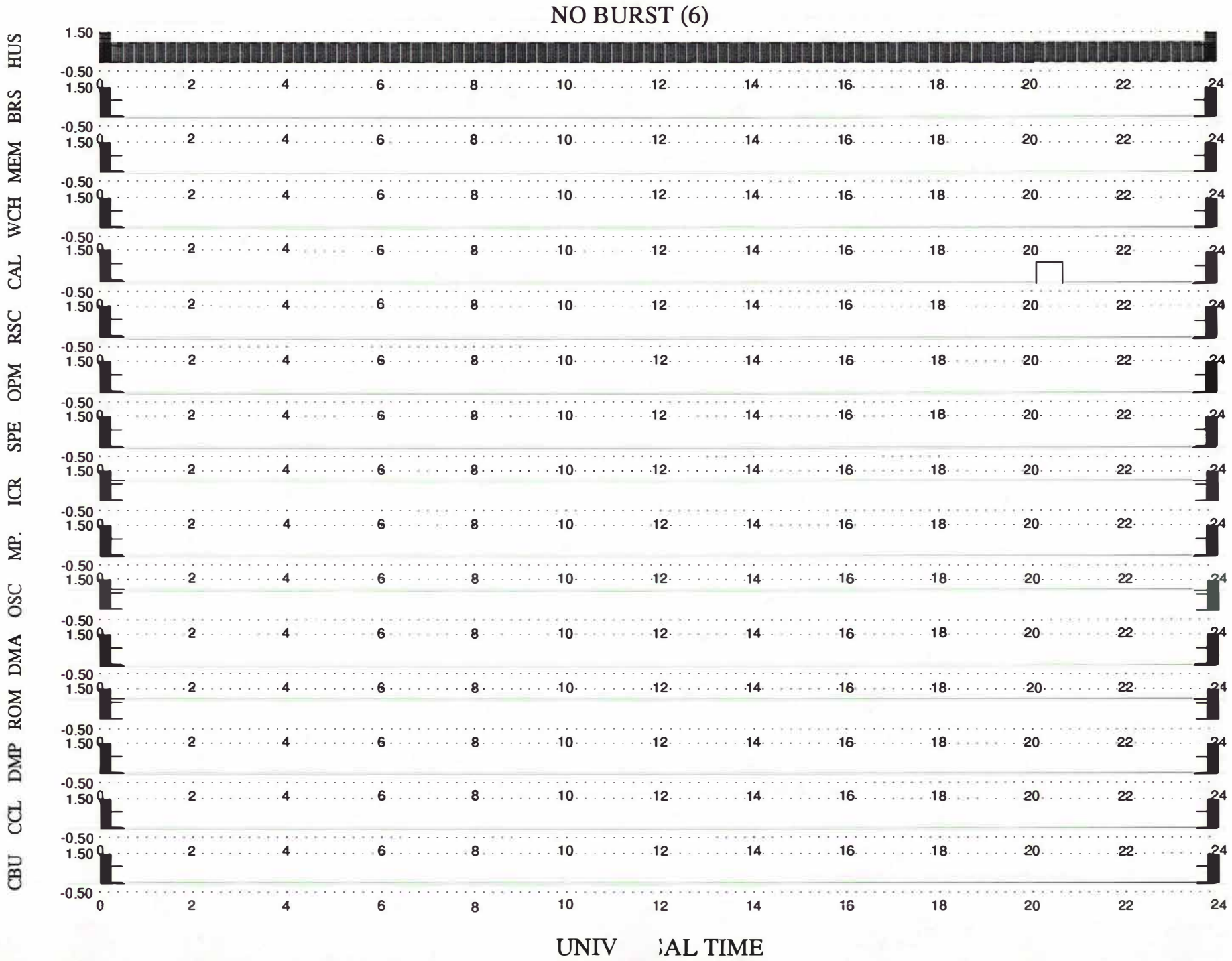
0- 0 keV




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/14
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/18, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

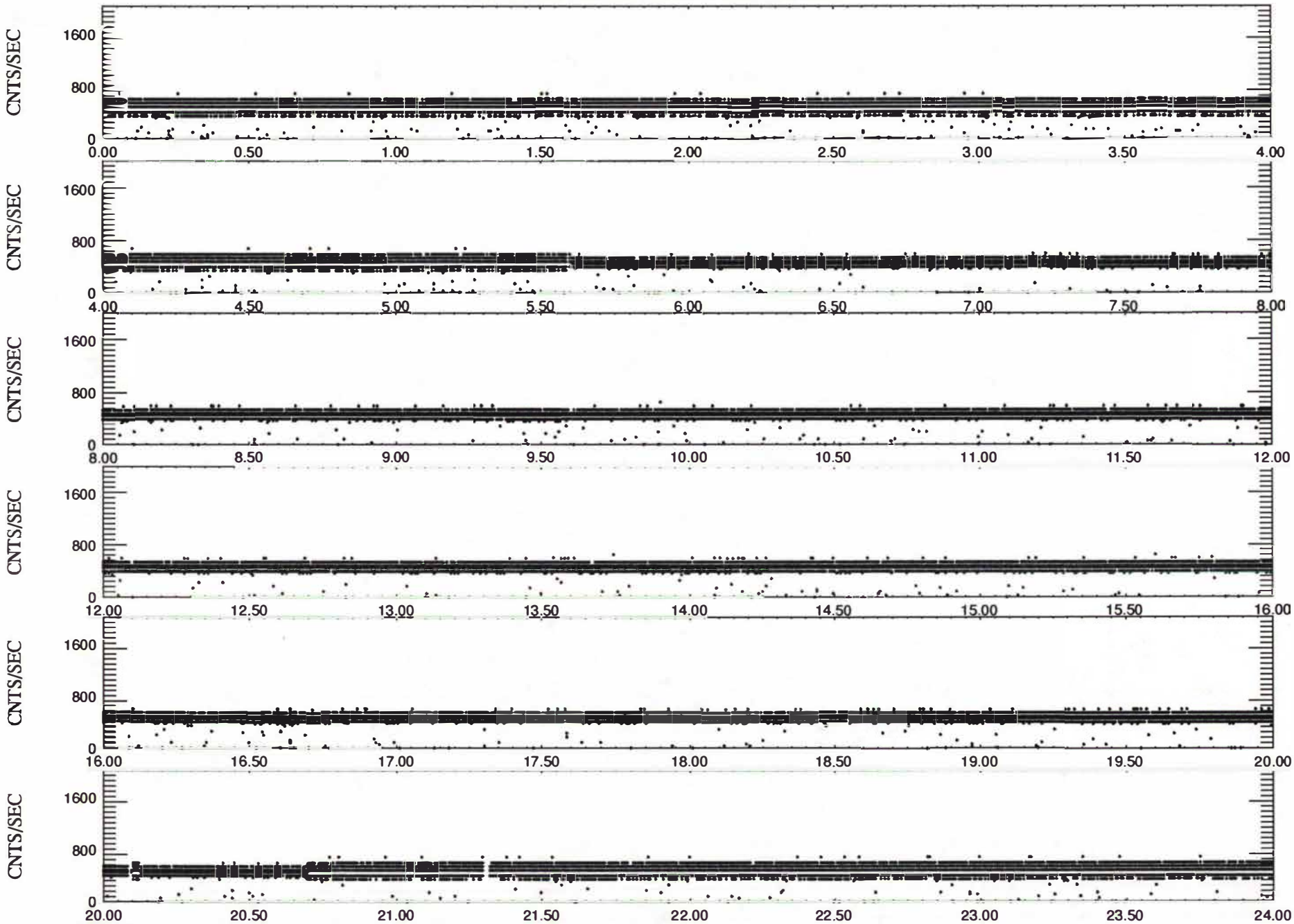

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/14, 0000:00
Plot created: 97/06/18, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 165, year 1997 to day 165, year 1997 10/13/97



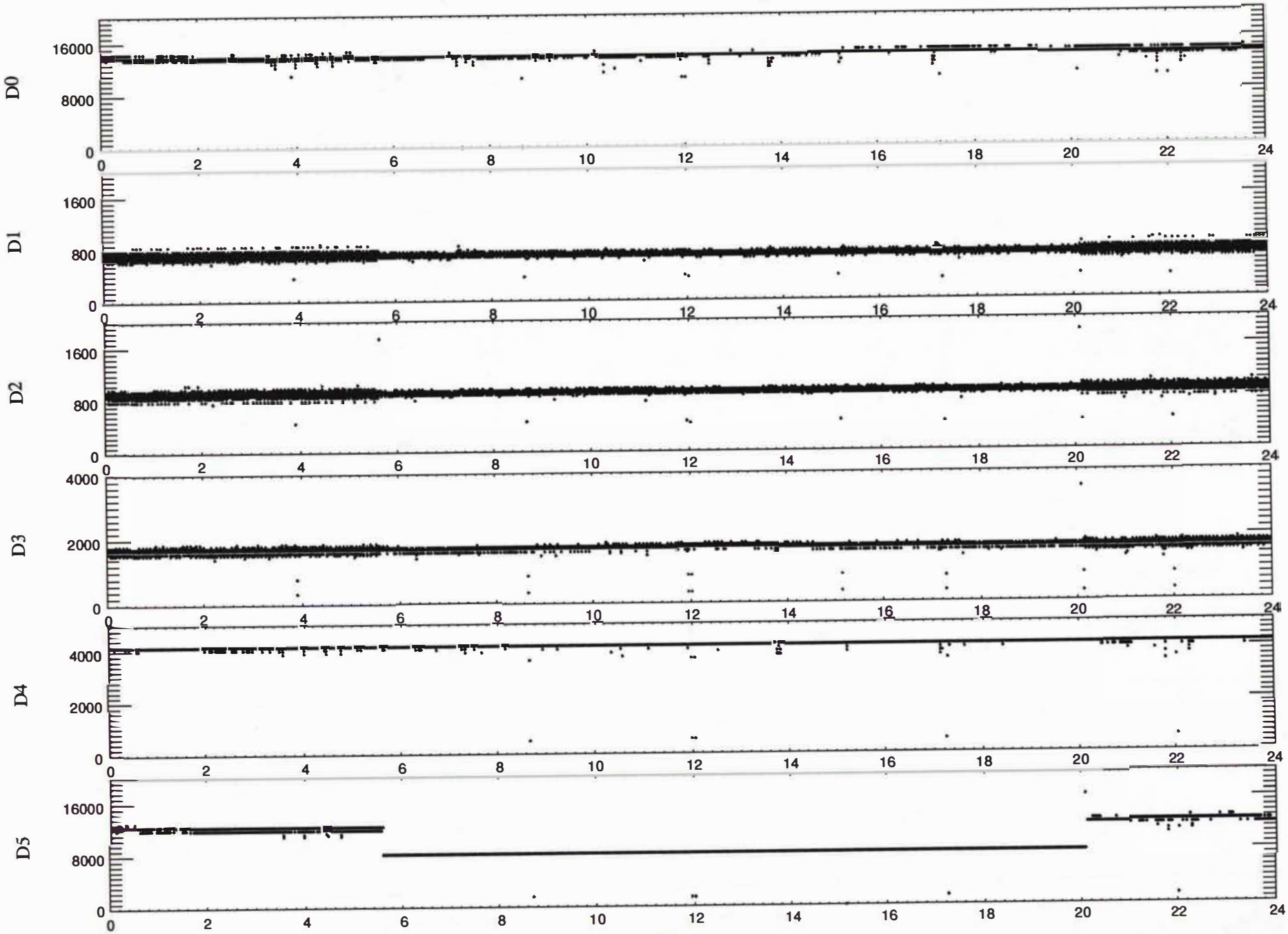
HUS 2A, MODE 1, NOT AVERAGED EDR day 165, year 1997 to day 165, year 1997 10/13/97

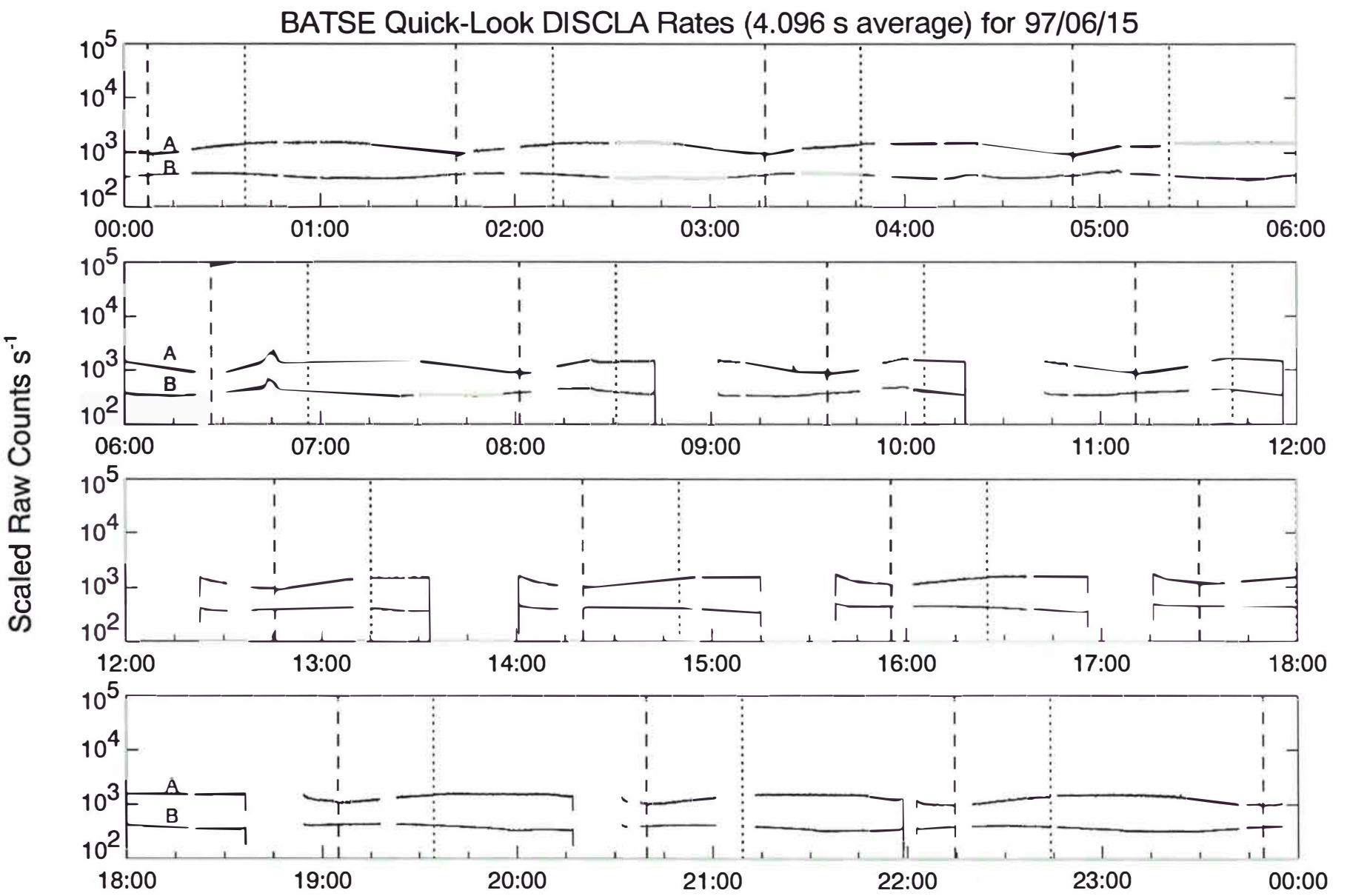
CALIBRATION DATA INCLUDED

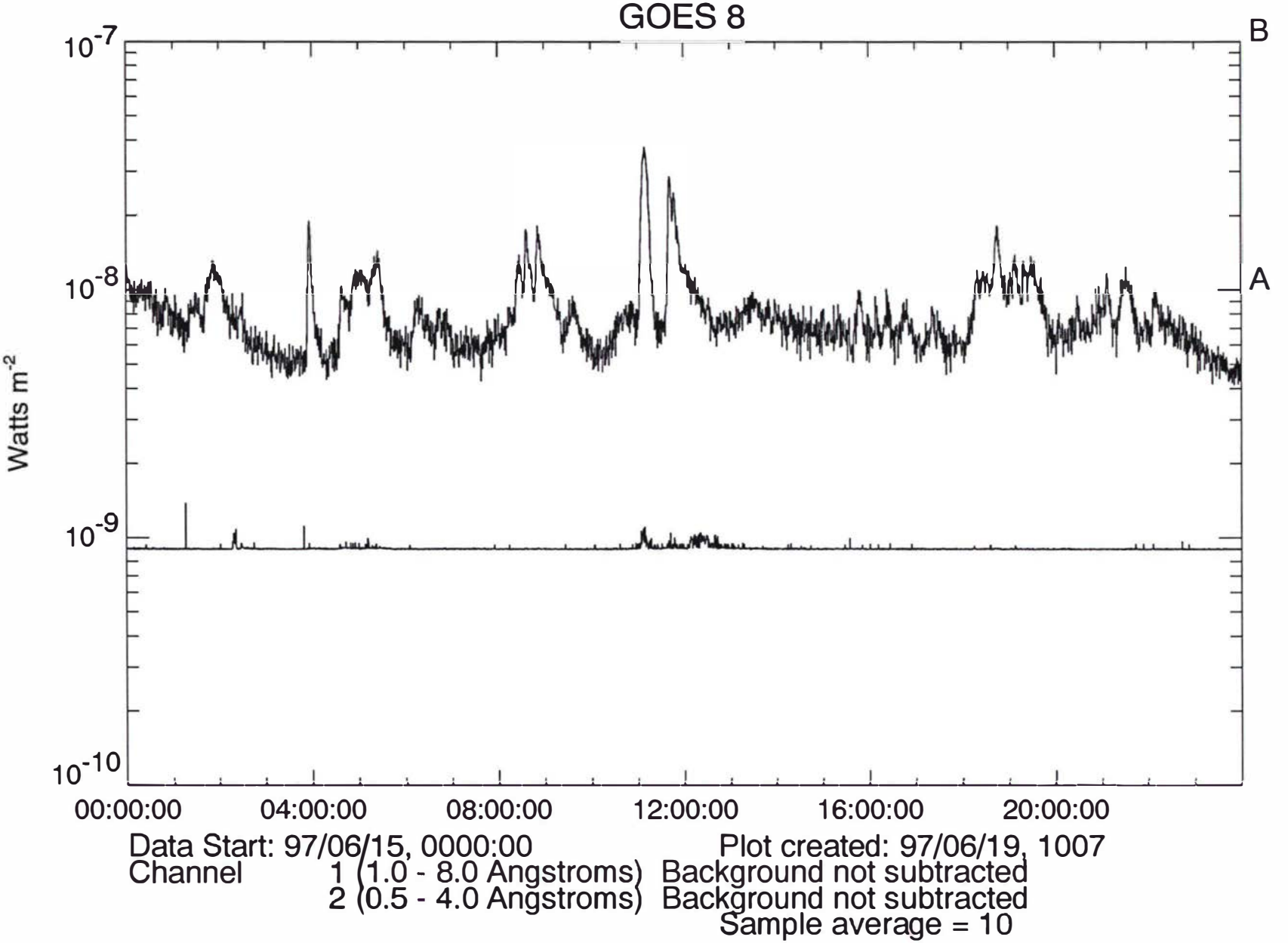


UNIV SAL TIME

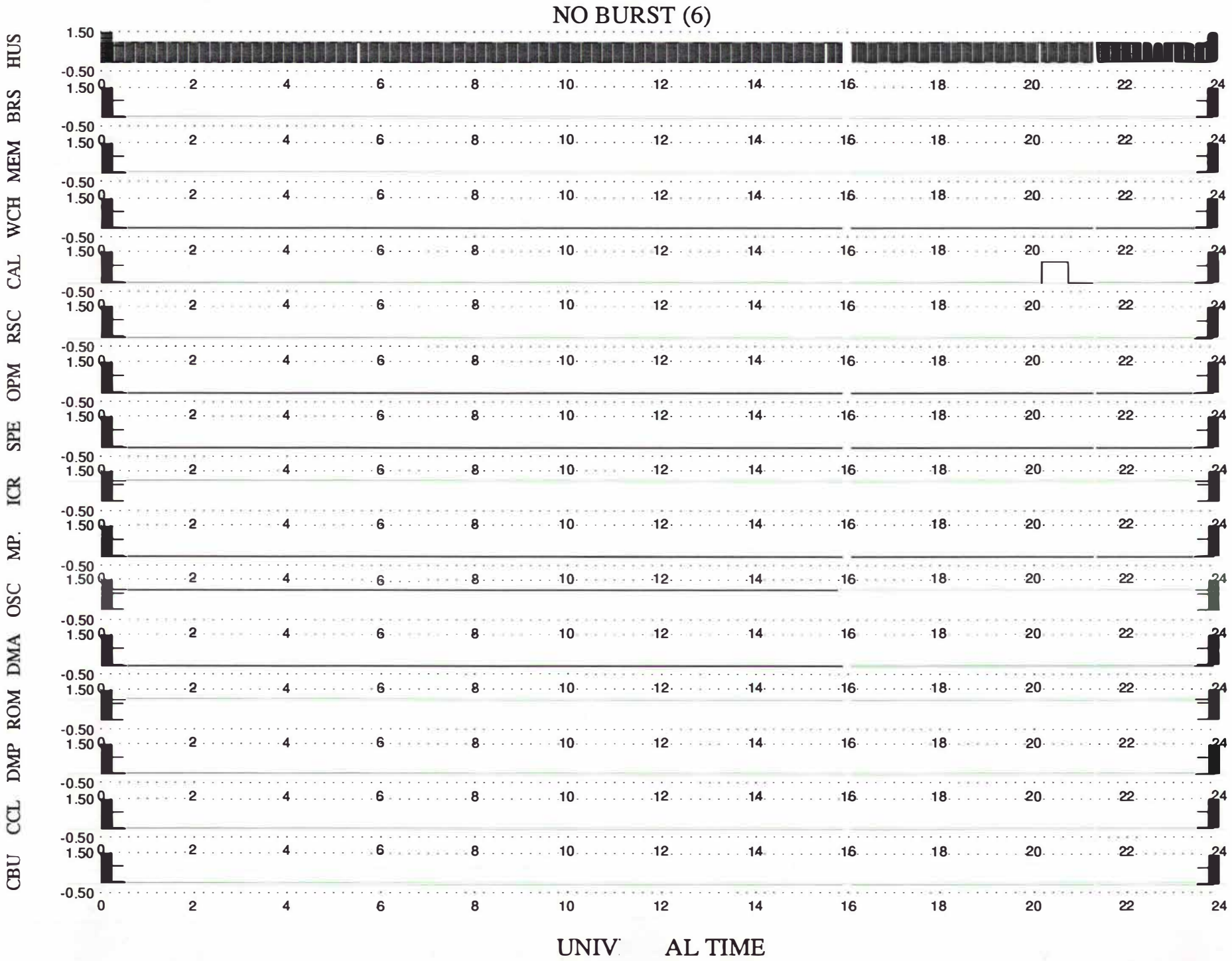
HUS 2B COUNTS / SEC EDR day 165, year 1997 to day 165, year 1997 10/13/97




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/15
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/19, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

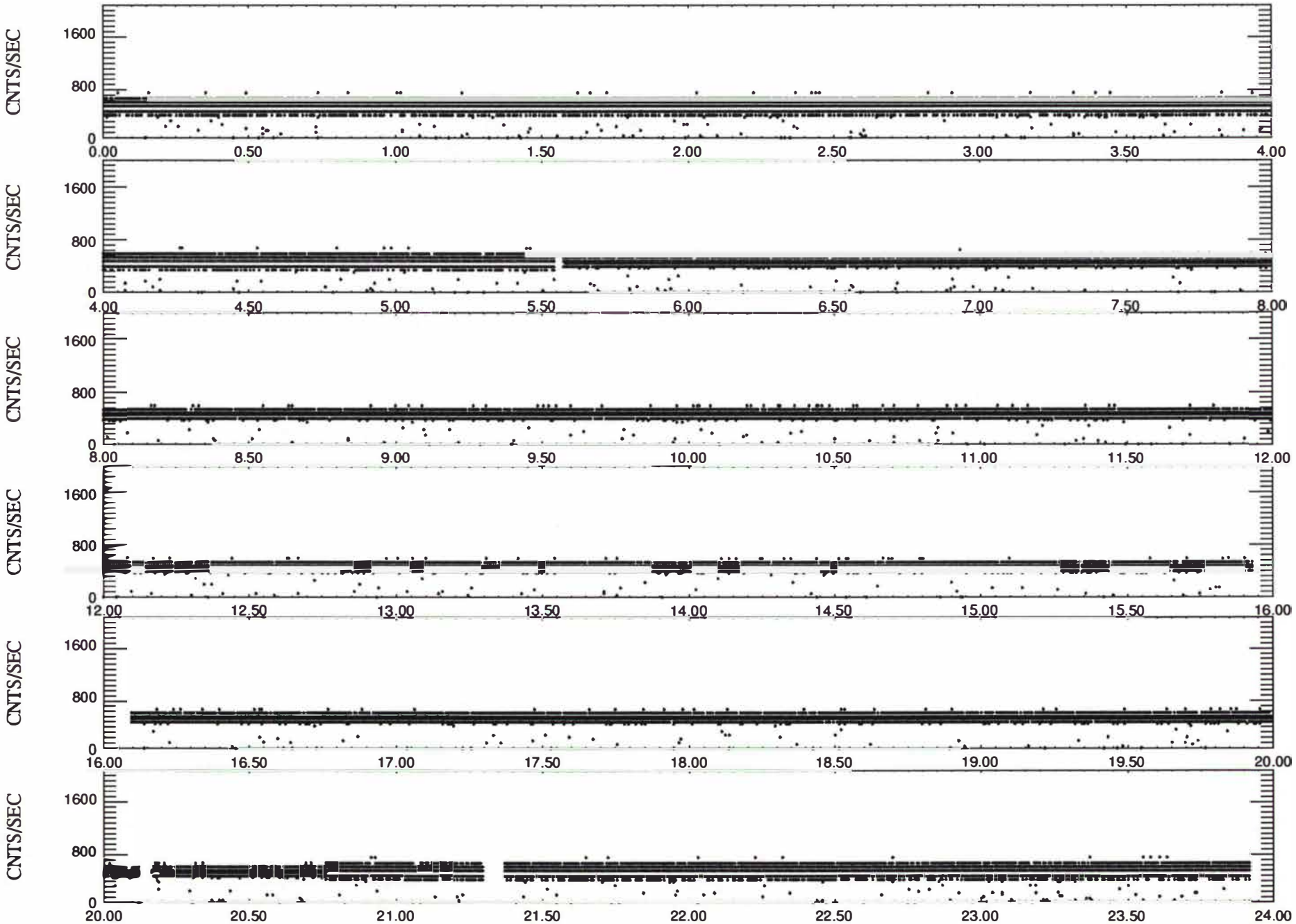

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/15, 0000:00
Plot created: 97/06/19, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 166, year 1997 to day 166, year 1997 10/13/97



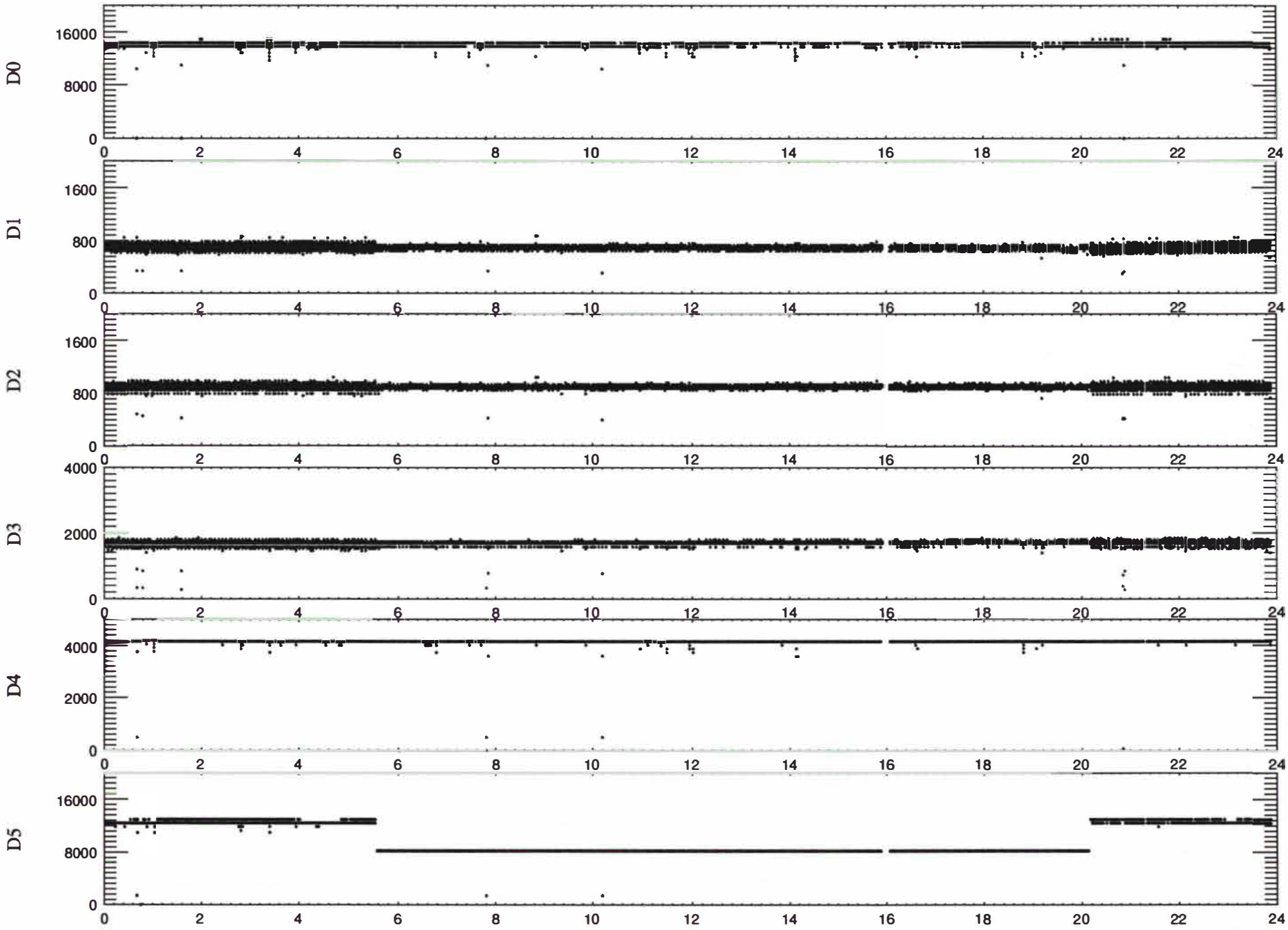
HUS 2A, MODE 1, NOT AVERAGED EDR day 166, year 1997 to day 166, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 166, year 1997 to day 166, year 1997 10/13/97



From SURASAK@ssl.msfc.nasa.gov Tue Jun 17 13:34 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA13398; Tue, 17 Jun 1997 13:34:13 -0700
Date: Tue, 17 Jun 1997 15:34:05 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970617153405.216666ef@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6273
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6273
EVENT OF 1997 JUN 16 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE : 6673. S. OR 01:51:13.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 32.000 33.000
BATSE PEAK COUNTING RATE: 2650 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 6/ 97 IS:
RA= 151.941 DEC= 27.625 DIST= 5.554 AU
BATSE-ULYSSES DISTANCE = 830946510. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 327.97 SECS.
CROSSING TIME AT ULYSSES IS 7001. S. OR 01:56:40 +/- 532.82 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 6/ 97 IS:
RA= 178.883 DEC= 1.015 DIST= 1.145 AU
MARS-BATSE DISTANCE = 171270320. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 46.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 395.72 SECS.
CROSSING TIME AT MARS IS 7069. S. OR 01:57:48 +/- 77.55 SECONDS

BATSE BURST TRIGGER

NO.: 6273

TIME: TJD=0615 SECONDS=6673

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=122.9 AZIMUTH=56.8 ERROR=1.937 DEGREES

COMMENTS:
GRB. SINGLE PULSE.DUR~75S. BARELY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6273	970616	10615	06673	2650	032	+33	75

BATSE BURST# 6273

ULYSSES RT 17/ 6/97

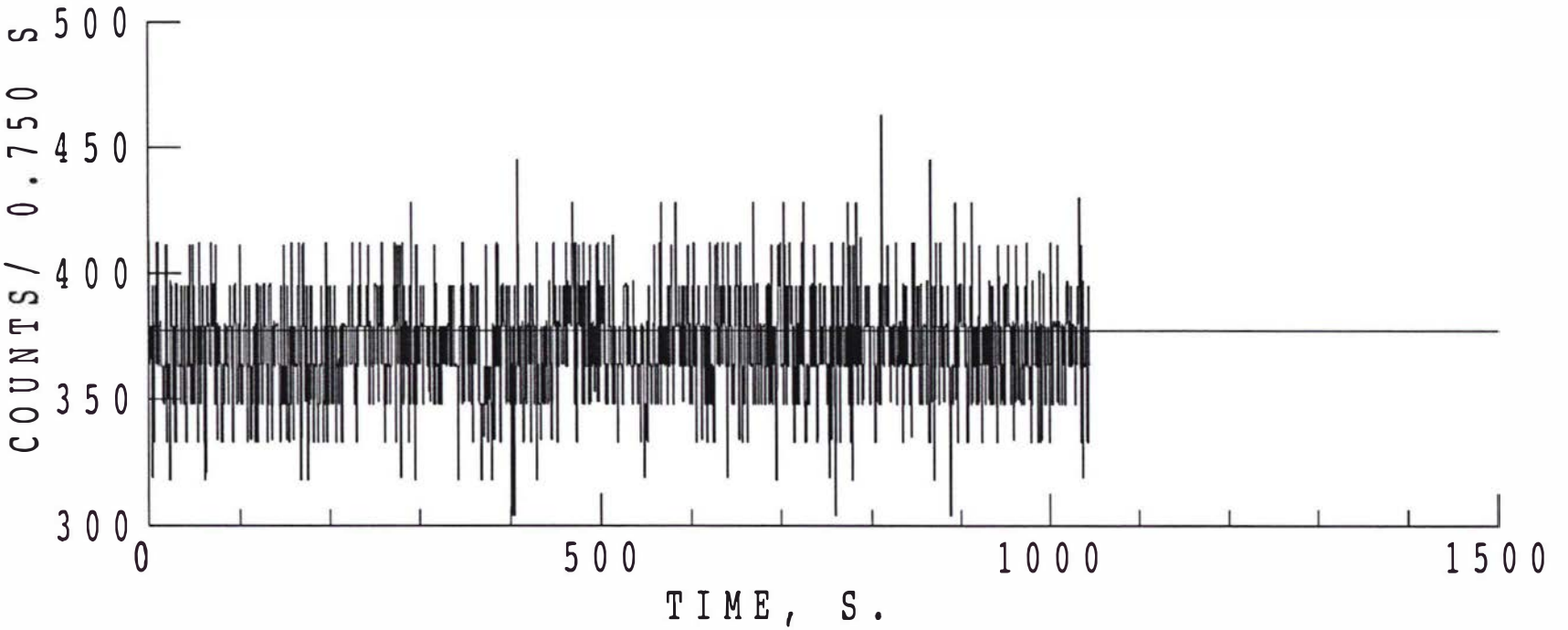
16/ 6/97 6480.015 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLLES.MSFC.NASA.GOV Tue Jun 17 13:36 PDT 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA13444; Tue, 17 Jun 1997 13:36:25 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Tue, 17 Jun 1997 15:36:16 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970617153616.216666ef@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6274
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6274
EVENT OF 1997 JUN 16 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE : 65390. S. OR 18:09:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 20.000 -7.000
BATSE PEAK COUNTING RATE: 40000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 6/ 97 IS:
RA= 151.992 DEC= 27.543 DIST= 5.565 AU
BATSE-ULYSSES DISTANCE = 832548904. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1791.58 SECS.
CROSSING TIME AT ULYSSES IS 67182. S. OR 18:39:41 +/- 445.60 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 6/ 97 IS:
RA= 178.883 DEC= 1.015 DIST= 1.145 AU
MARS-BATSE DISTANCE = 171270320. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 21.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 530.11 SECS.
CROSSING TIME AT MARS IS 65920. S. OR 18:18:40 +/- 45.03 SECONDS

BATSE BURST TRIGGER

NO.: 6274

TIME: TJD=0615 SECONDS=65390

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=106.4 AZIMUTH=14.3 ERROR=0.384 DEGREES

COMMENTS:
GRB. MULTIPLE PEAKS AND LOTS OF STRUCTURE. DUR~130S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6274	970616	10615	65390	40000	020	-07	130

Helio corr removed 18/2/00

Date: Apr 3 '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? NA

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

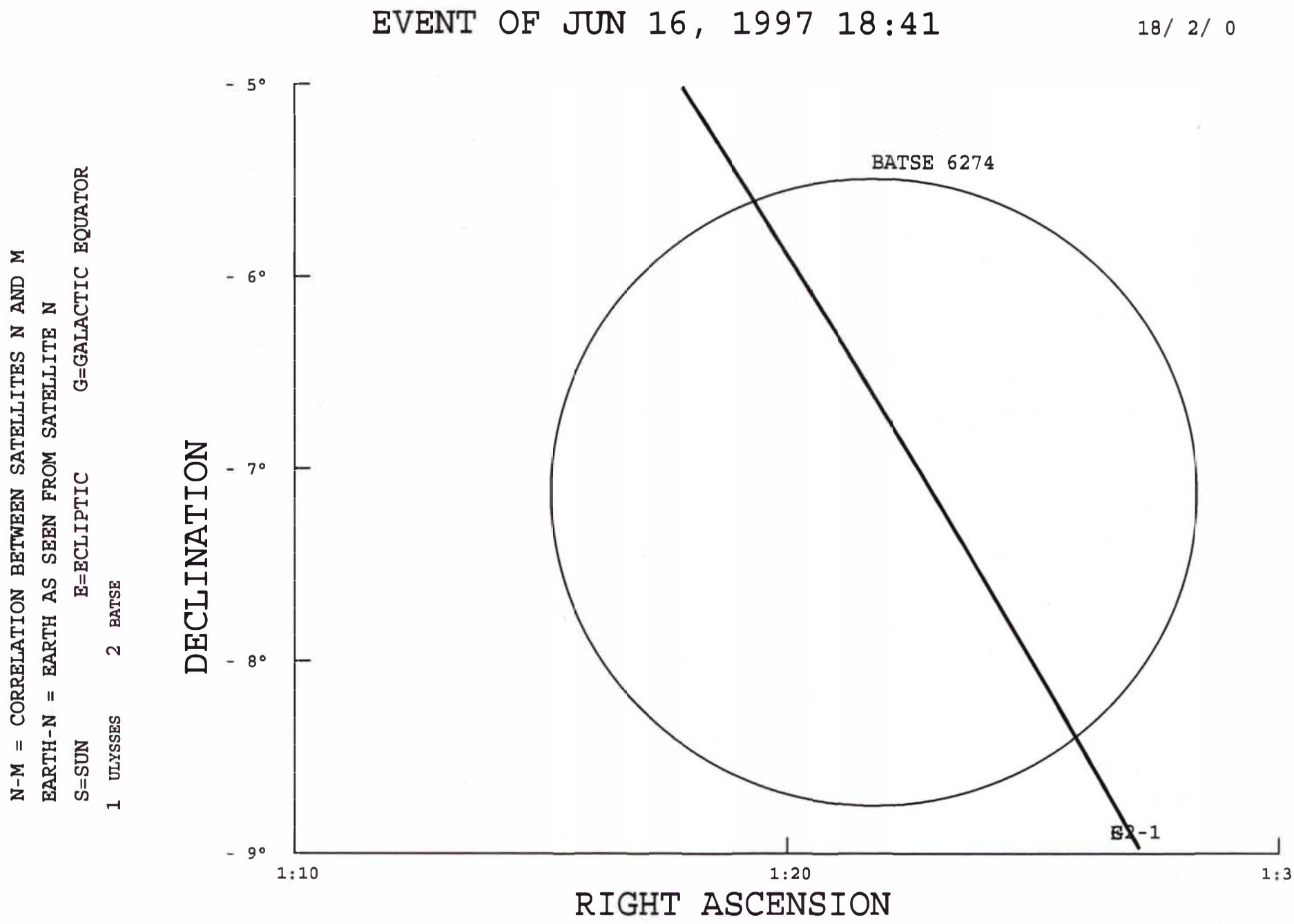
3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

☐ Geocentric time used?

☑ ACCESS database updated?


EVENT OF JUN 16, 1997 18:41
18/ 2/ 0
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE
DECLINATION
- 5°
- 6°
- 7°
- 8°
- 9°
BATSE 6274
E2-1
1:10
1:20
1:3
RIGHT ASCENSION

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

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

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

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

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

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

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

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

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

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

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

970616    167 65390.3 BATSE#6274 STRONG,MULTIPEAK.X-RAY AFTER,IAU6683(13NO@127)
          167 65390.3 BATSE(20.46,-7.16J),X-RAY(19.72,-5.50J) (14NO@112,NOTRIG)
          167 65390.3 BATSE (X-RAY DUBIOUS,IAU6722. NO OPT VARIABLE, IAU6723)

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

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

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

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

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

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

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

970915    258 32870.9 KONUS 25S,HARD (+UL@30900,3100LS,MOD,10S)
       14 258 32873.2 PEAK (200/S,<2S,NO TRIG) (13NO)

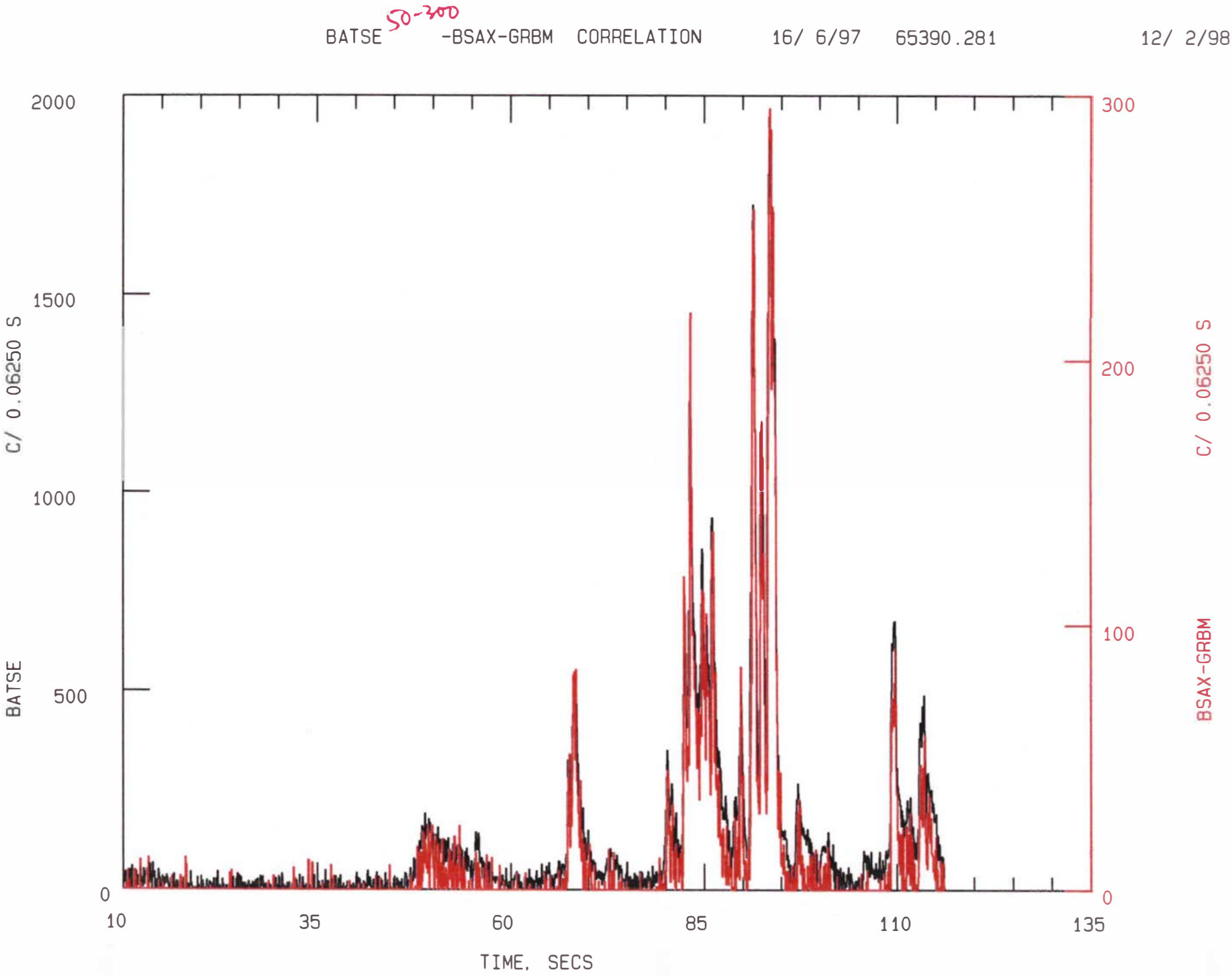
970919    262 65669.5 BATSE#6389 (8048/S)
```

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

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

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

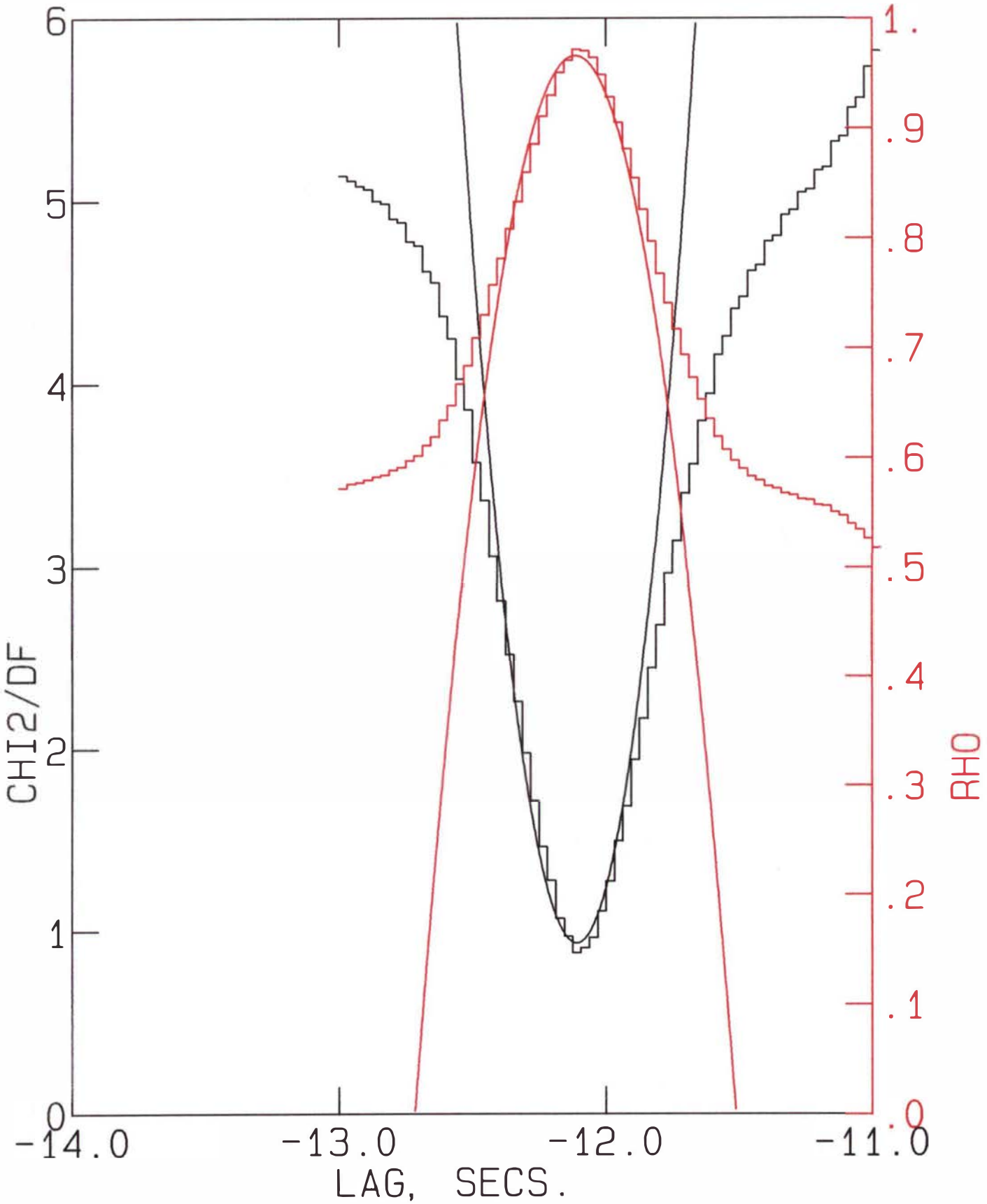
DATE	FL	DAY	TIME	NOTES---(ND=NO DATA,NA=NOT APPARENT & NOT ANALYZED)------REPORTED (NO=DATA CHECKED--SHOWS NO DETECTION)(SR=S. RADIATION BELT) (NR=NORTH RADIATION BELT)(SAA=SOUTH ATLANTIC ANOMALY)	
970111		011	35040.2	BATSE GRB#5773 (8727CTS/2S) (SEE IAU6569,6571,6574,6598)	
		011	35040.2	BEPPO SAX TRIG,INTENSE,50S,3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

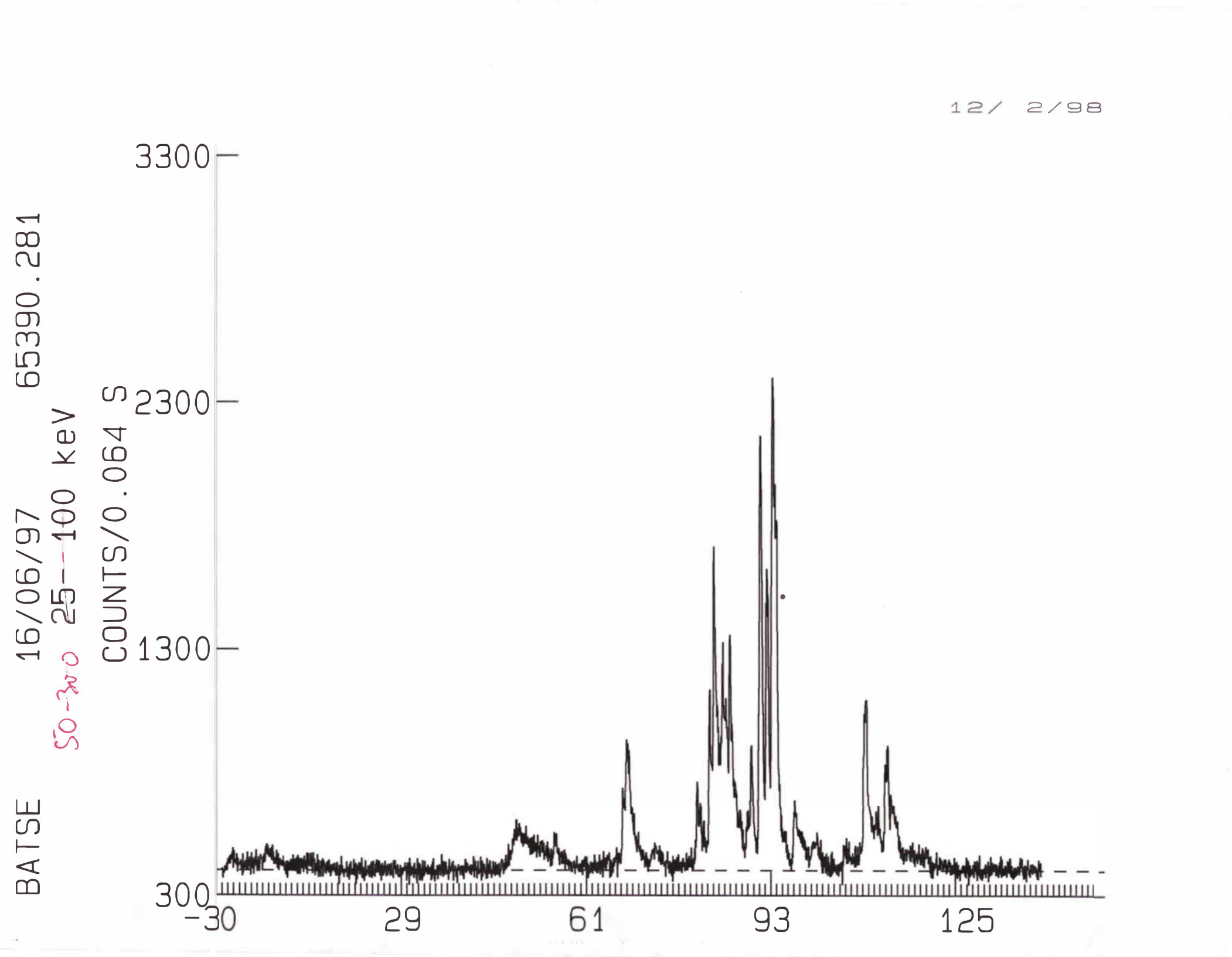

BATSE 50-300 -BSAX-GRBM CORRELATION 16/ 6/97 65390.281 12/ 2/98
2000
1500
1000
500
0
C/ 0.06250 S
BATSE
300
200
100
0
C/ 0.06250 S
BSAX-GRBM
10
35
60
85
110
135
TIME, SECS

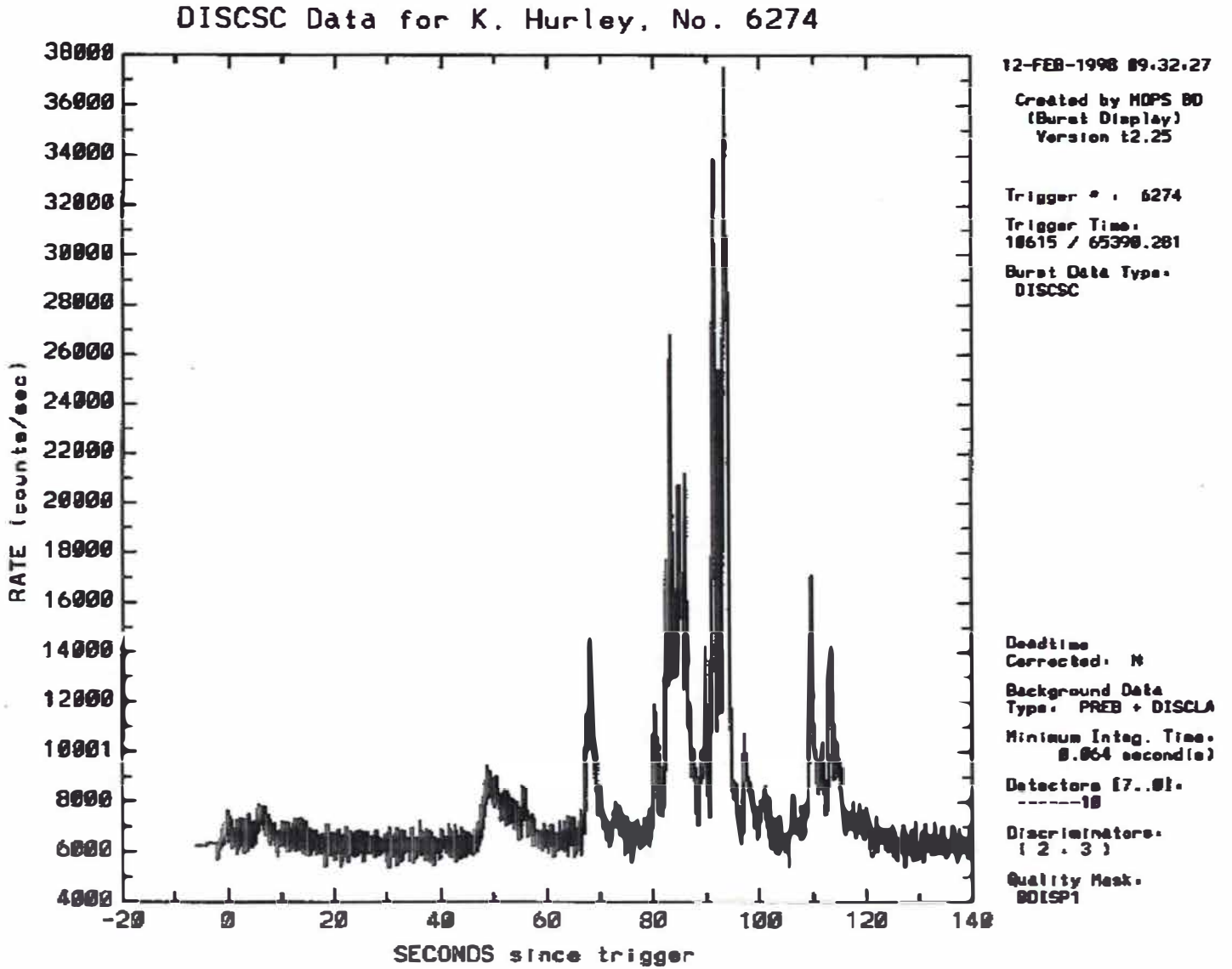
50-300

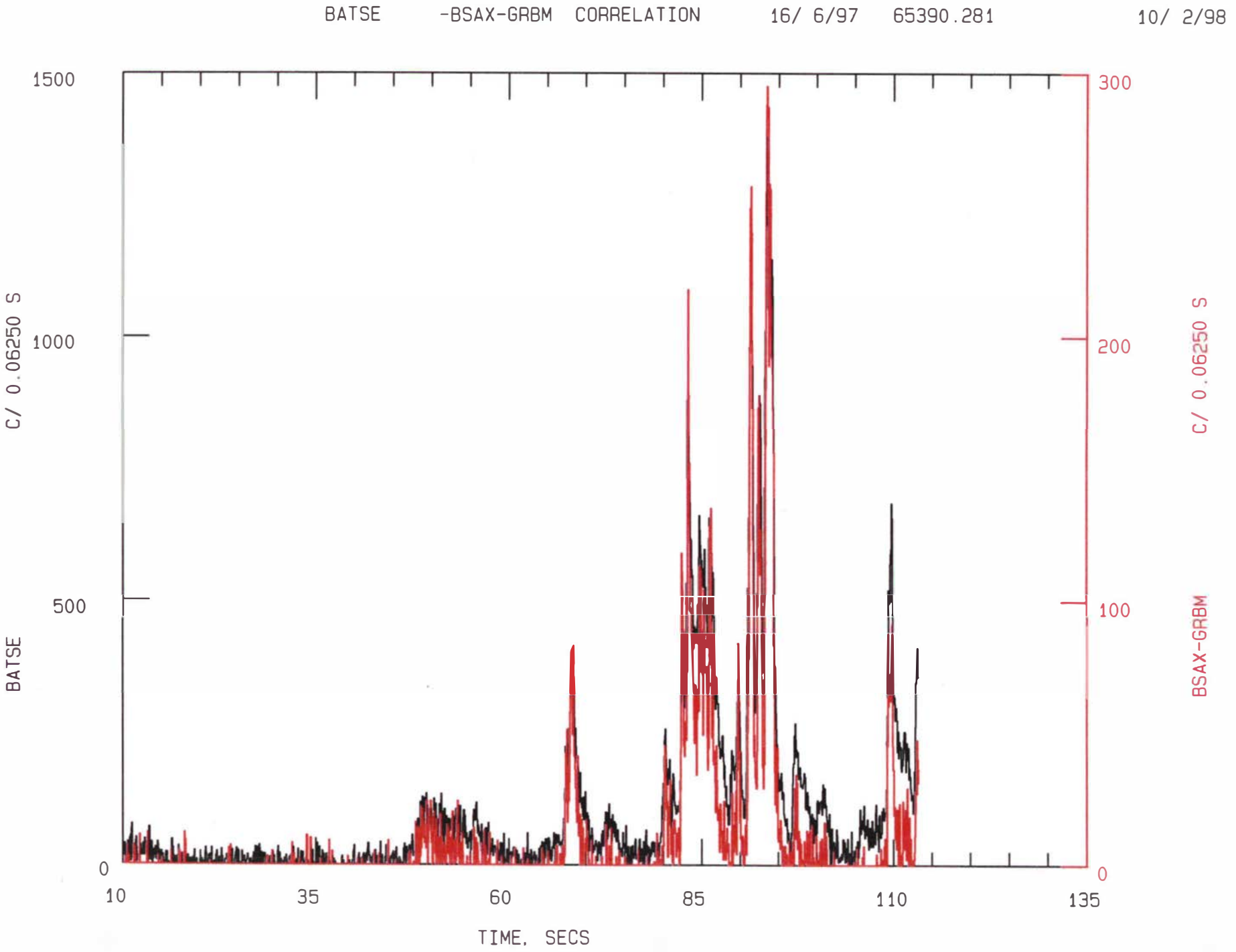
12/ 2/98

BATSE -BSAX-GRBM CORRELATION 16/ 6/97 65390.281

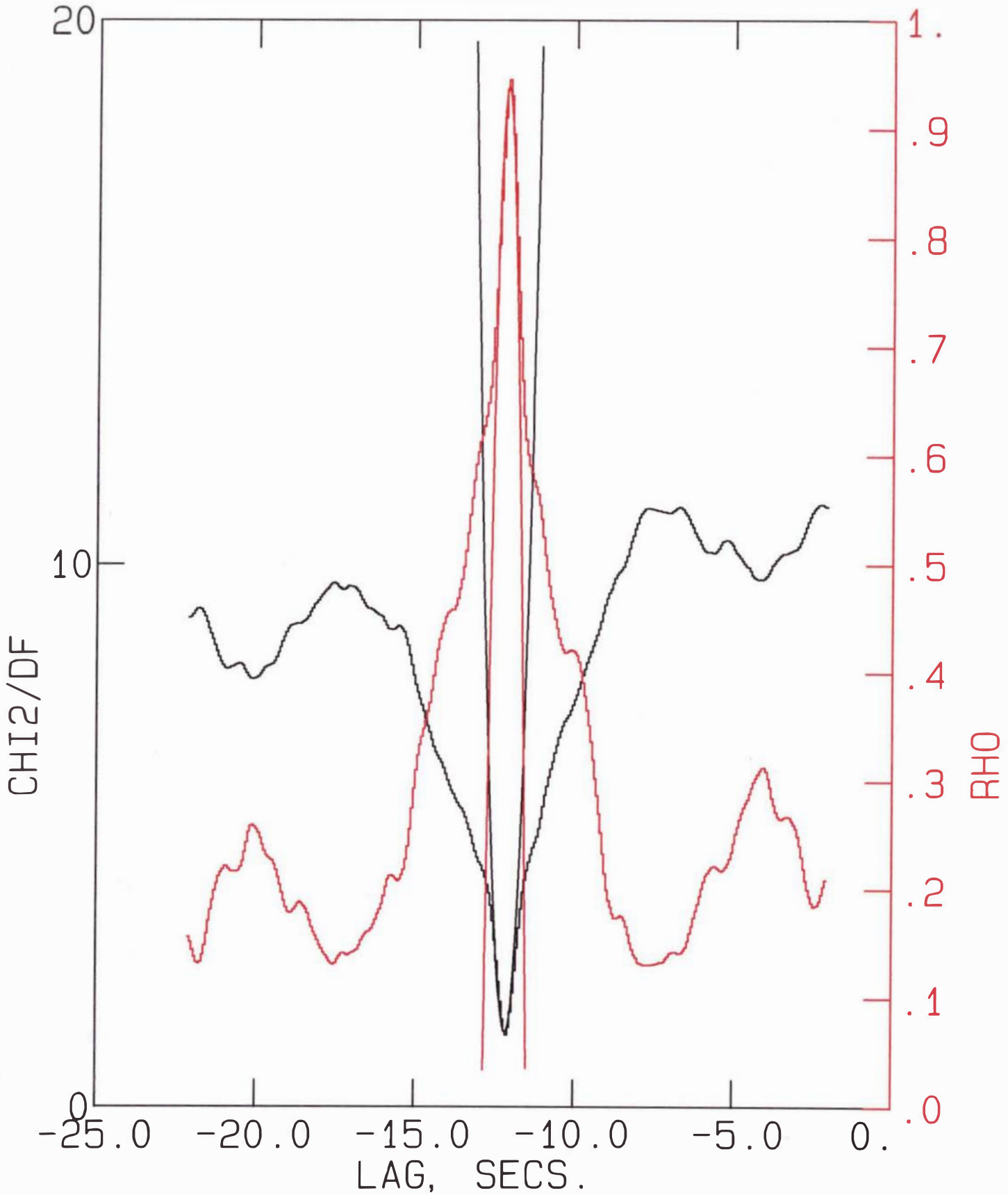


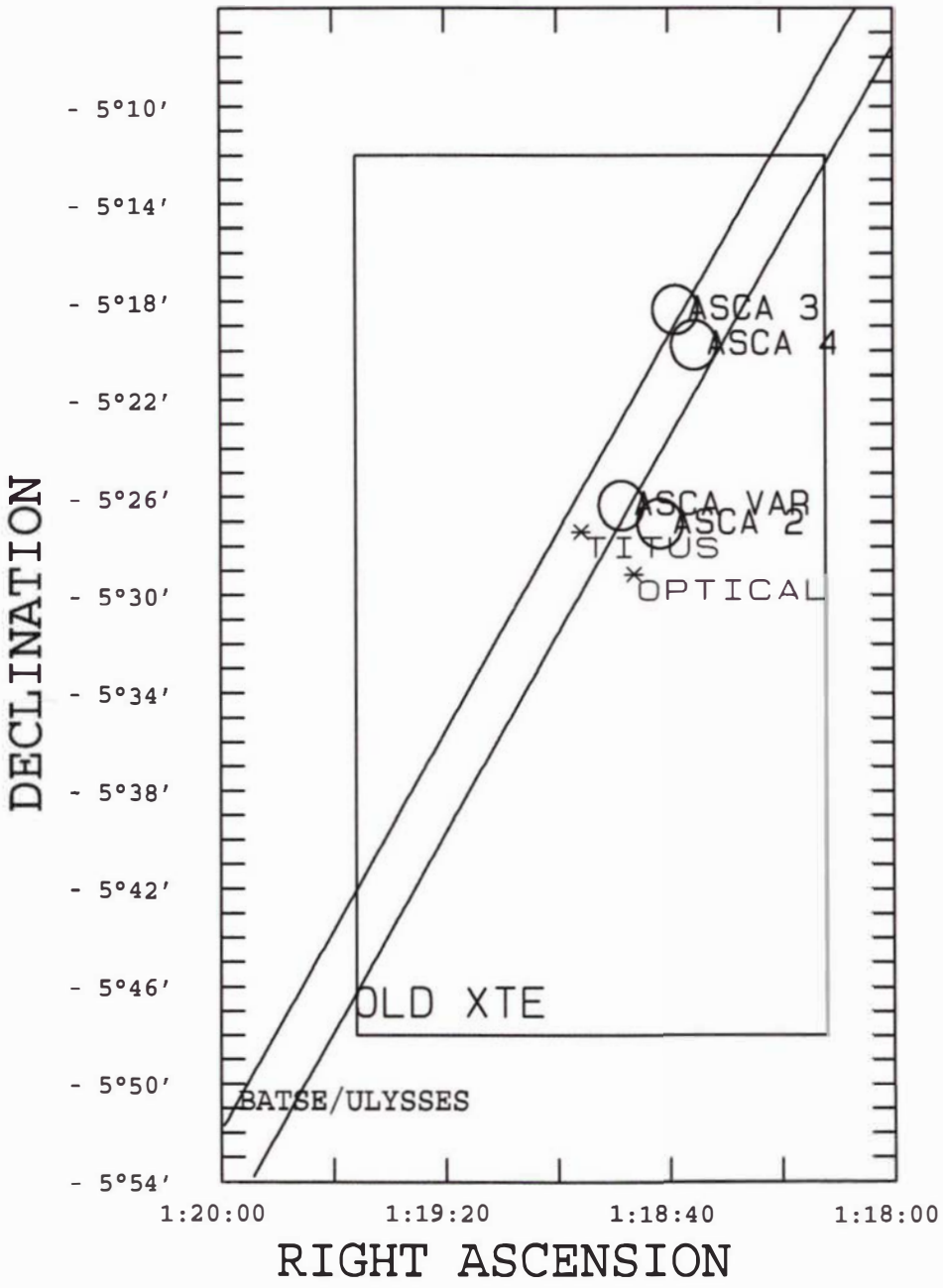

12/ 2/98
BATSE 16/06/97 65390.281
50-300 25--100 keV
COUNTS/0.064 S
3300
2300
1300
300
-30
29
61
93
125

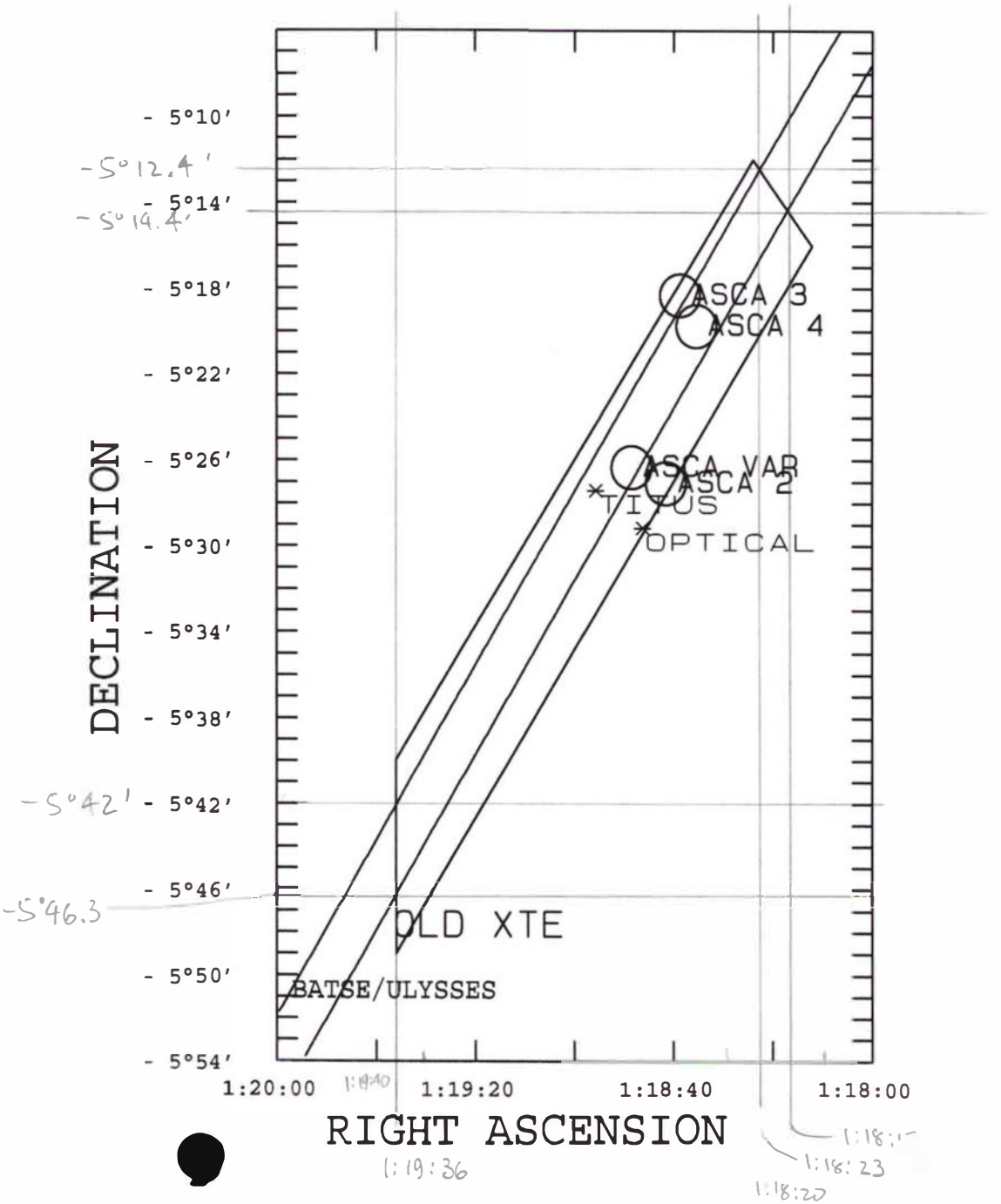

DISCSC Data for K. Hurley, No. 6274
RATE (counts/sec)
38000
36000
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10001
8000
6000
4000
-20
0
20
40
60
80
100
120
140
SECONDS since trigger
12-FEB-1998 09:32:27
Created by HOPS BD
(Burst Display)
Version t2.25
Trigger # : 6274
Trigger Time:
10615 / 65398.281
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
------10
Discriminators:
[2 . 3]
Quality Mask:
BDISP1


BATSE -BSAX-GRBM CORRELATION 16/ 6/97 65390.281 10/ 2/98
1500
1000
500
0
C/ 0.06250 S
BATSE
300
200
100
0
C/ 0.06250 S
BSAX-GRBM
10
35
60
85
110
135
TIME, SECS

BATSE -BSAX-GRBM CORRELATION 16/ 6/97 65390.281




- 5°10′
- 5°14′
- 5°18′
- 5°22′
- 5°26′
- 5°30′
- 5°34′
- 5°38′
- 5°42′
- 5°46′
- 5°50′
- 5°54′
DECLINATION
1:20:00
1:19:20
1:18:40
1:18:00
RIGHT ASCENSION
ASCA 3
ASCA 4
ASCA VAR
ASCA 2
TITUS
OPTICAL
OLD XTE
BATSE/ULYSSES


- 5°10′
-5°12.4′
- 5°14′
-5°14.4′
- 5°18′
- 5°22′
- 5°26′
- 5°30′
- 5°34′
- 5°38′
- 5°42′
-5°42′
- 5°46′
-5°46.3
- 5°50′
- 5°54′
DECLINATION
ASCA 3
ASCA 4
ASCA VAR
ASCA 2
TITUS
OPTICAL
OLD XTE
BATSE/ULYSSES
1:20:00
1:19:40
1:19:20
1:18:40
1:18:00
RIGHT ASCENSION
1:19:36
1:18:23
1:18:20

New NSA source. Variable (~3σ conf) and fading.

4 Sources

	RA	Dec	(2000)
Variable	19.7019	-5.4389	1' error circle .0167
	19.6730	-5.4513	
	19.6614	-5.3055	
	19.6476	-5.3295	

Optical Source from Titus

19.7321	-5.4563	±10"?

NASA TELEFAX



BATSE

MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA 35812
SPACE SCIENCE LABORATORY

From:
Name: Valerie + Marc Mail Code: _____

Phone: _____ FAX No.: 205-544-5800

DATE This is page 1 of 2 pages

To: Kevin Hurley
Name: _____ FAX No.: _____

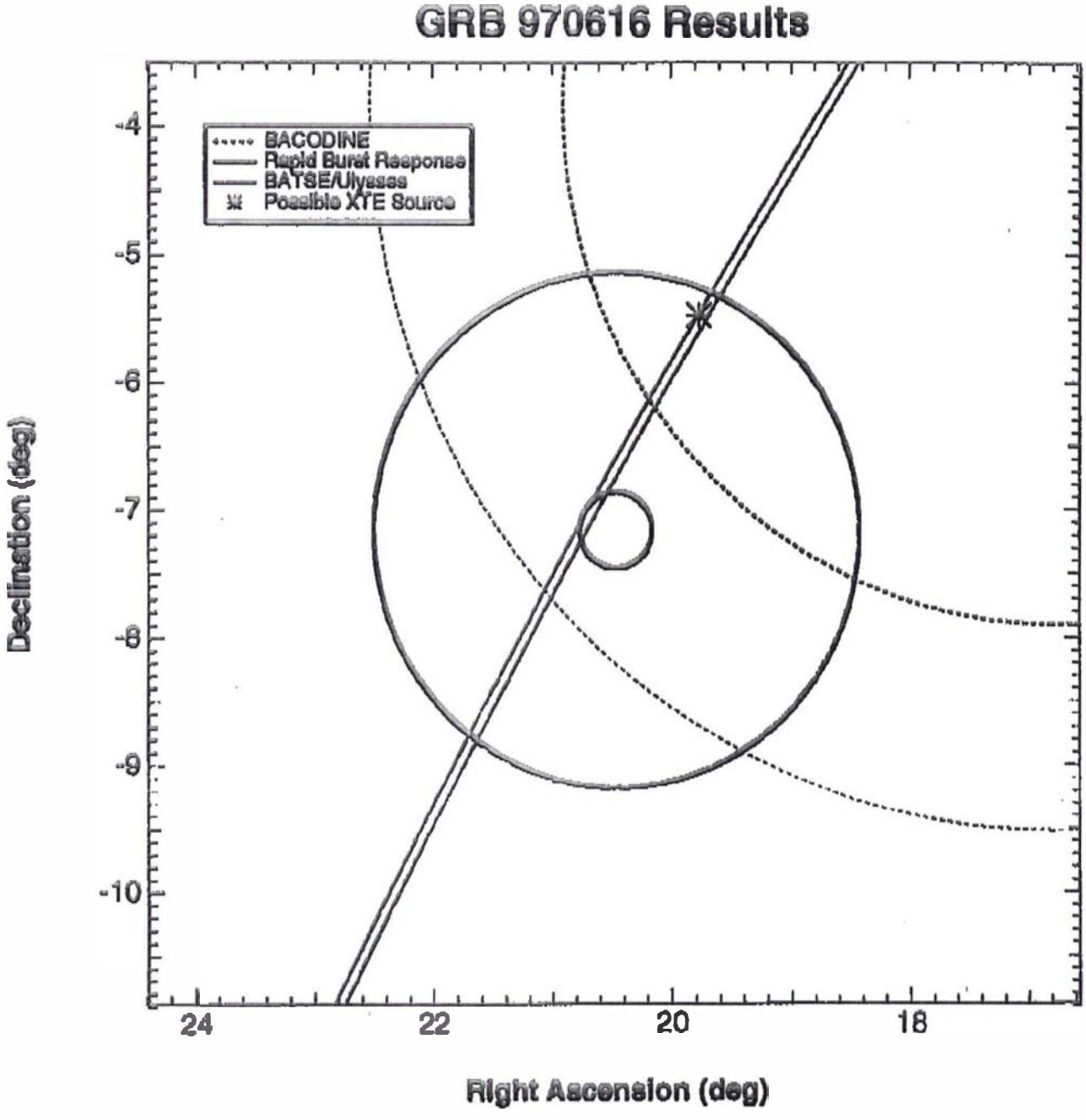
Address: _____

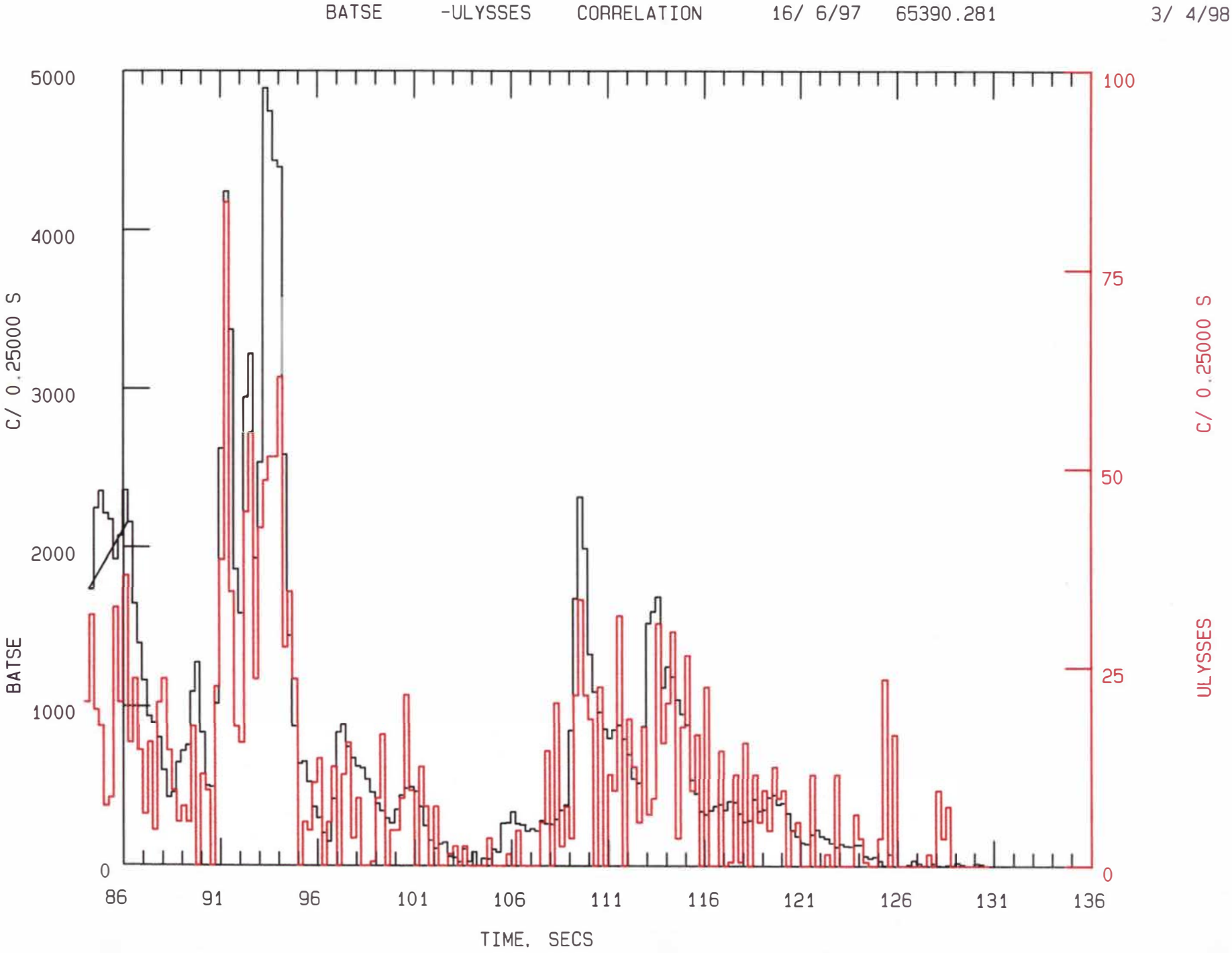
Dear Kevin,

just in case you didn't receive XTE's reported source in the error box of GRB 970616 (the Bloomsday burst).

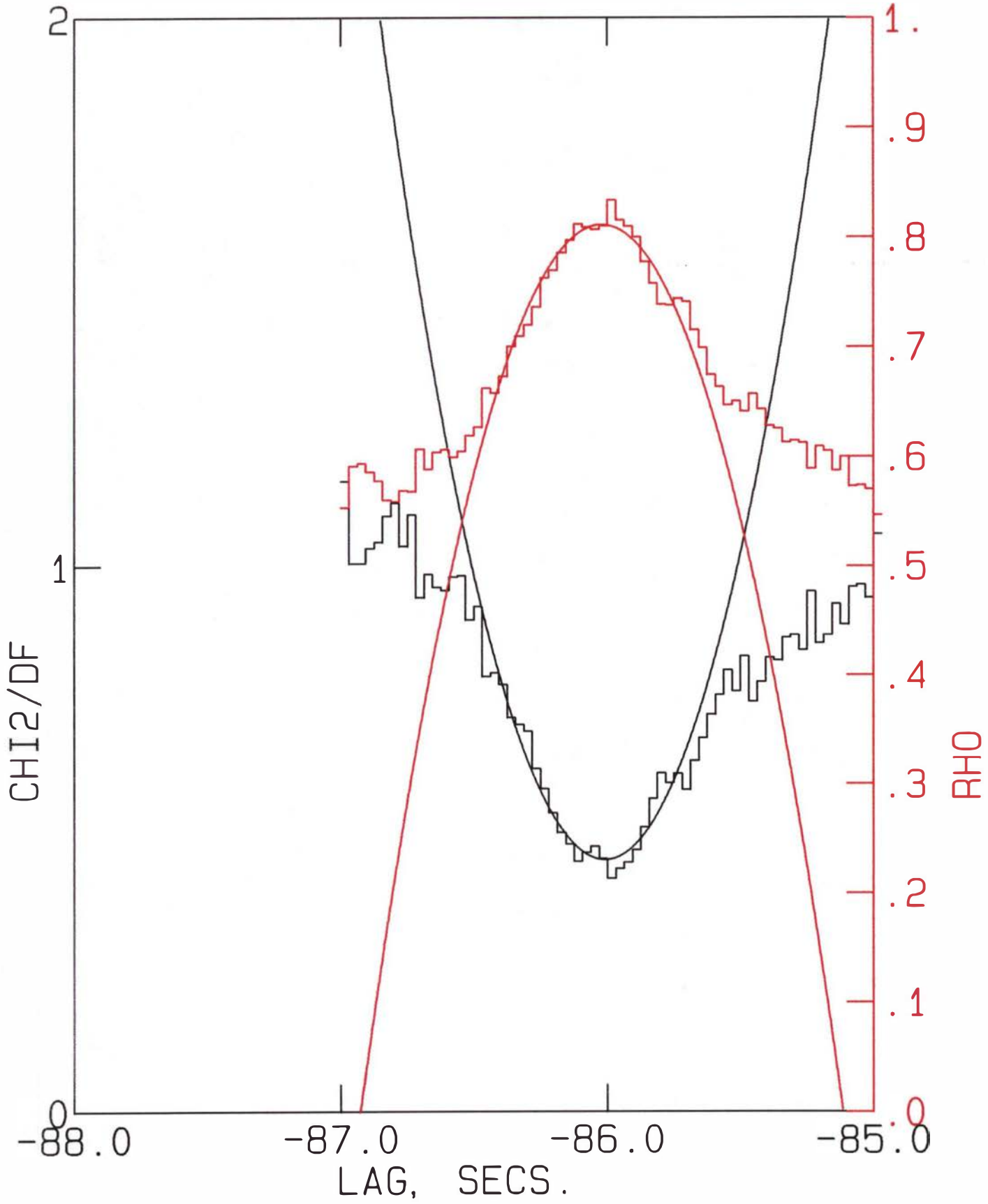
Regards,

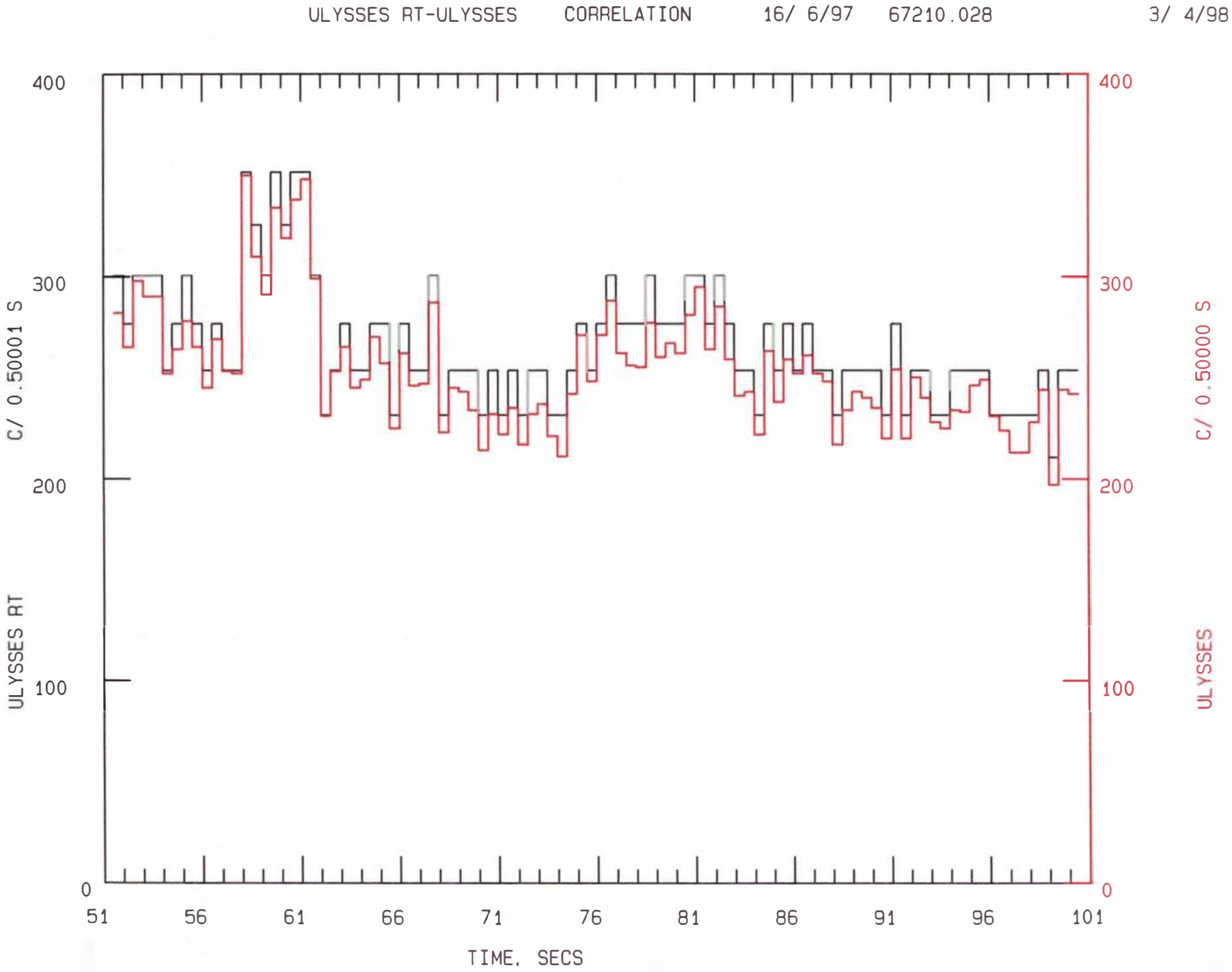
VC.


GRB 970616 Results
BACODINE
Rapid Burst Response
BATSE/Ulysses
Possible XTE Source
-4
-5
-6
-7
-8
-9
-10
24
22
20
18
Declination (deg)
Right Ascension (deg)

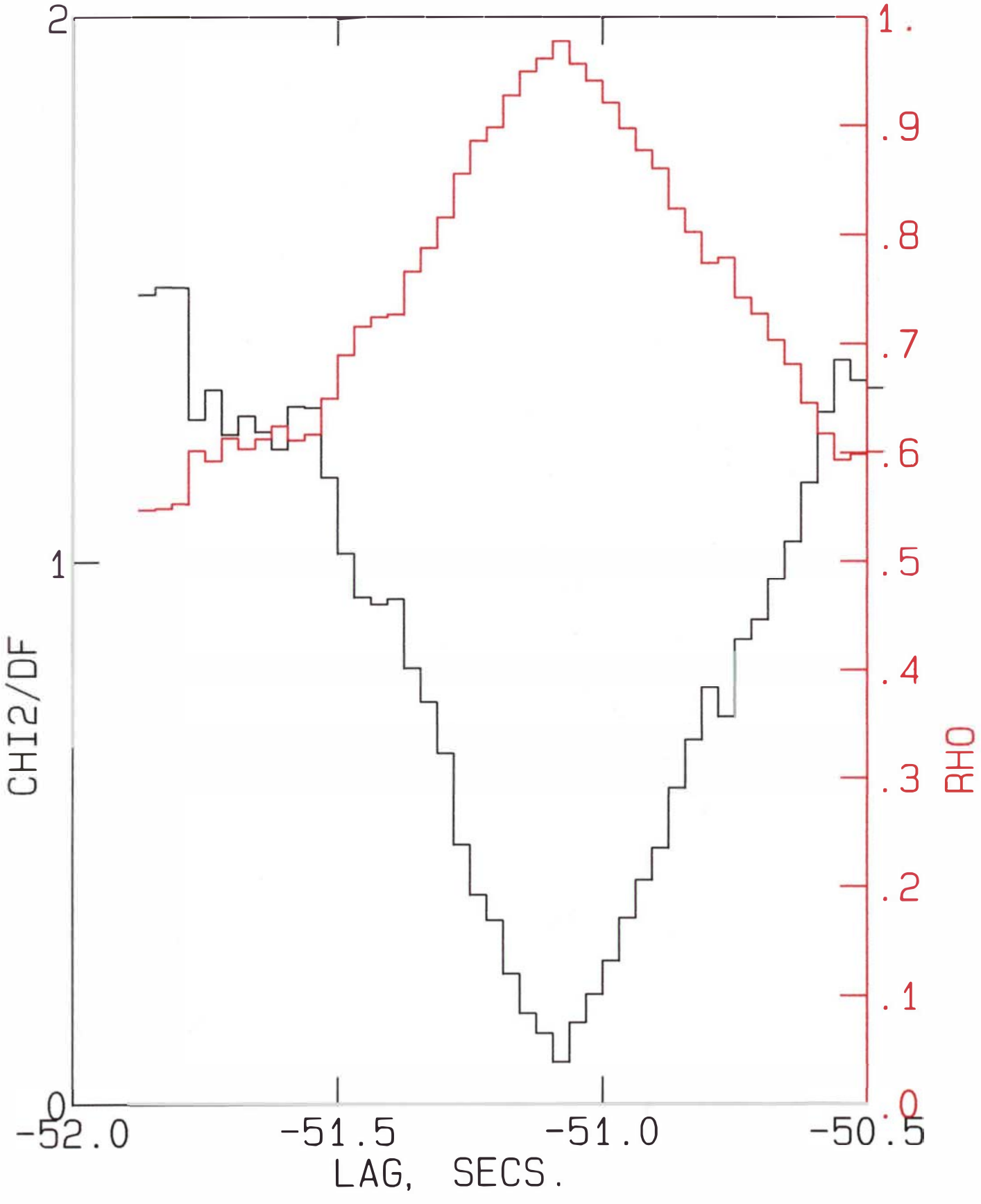

BATSE -ULYSSES CORRELATION 16/ 6/97 65390.281 3/ 4/98
5000
4000
3000
2000
1000
0
C/ 0.25000 S
BATSE
100
75
50
25
0
C/ 0.25000 S
ULYSSES
86
91
96
101
106
111
116
121
126
131
136
TIME, SECS

BATSE -ULYSSES CORRELATION 16/ 6/97 65390.281




ULYSSES RT-ULYSSES CORRELATION 16/ 6/97 67210.028 3/ 4/98
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
51
56
61
66
71
76
81
86
91
96
101
TIME, SECS

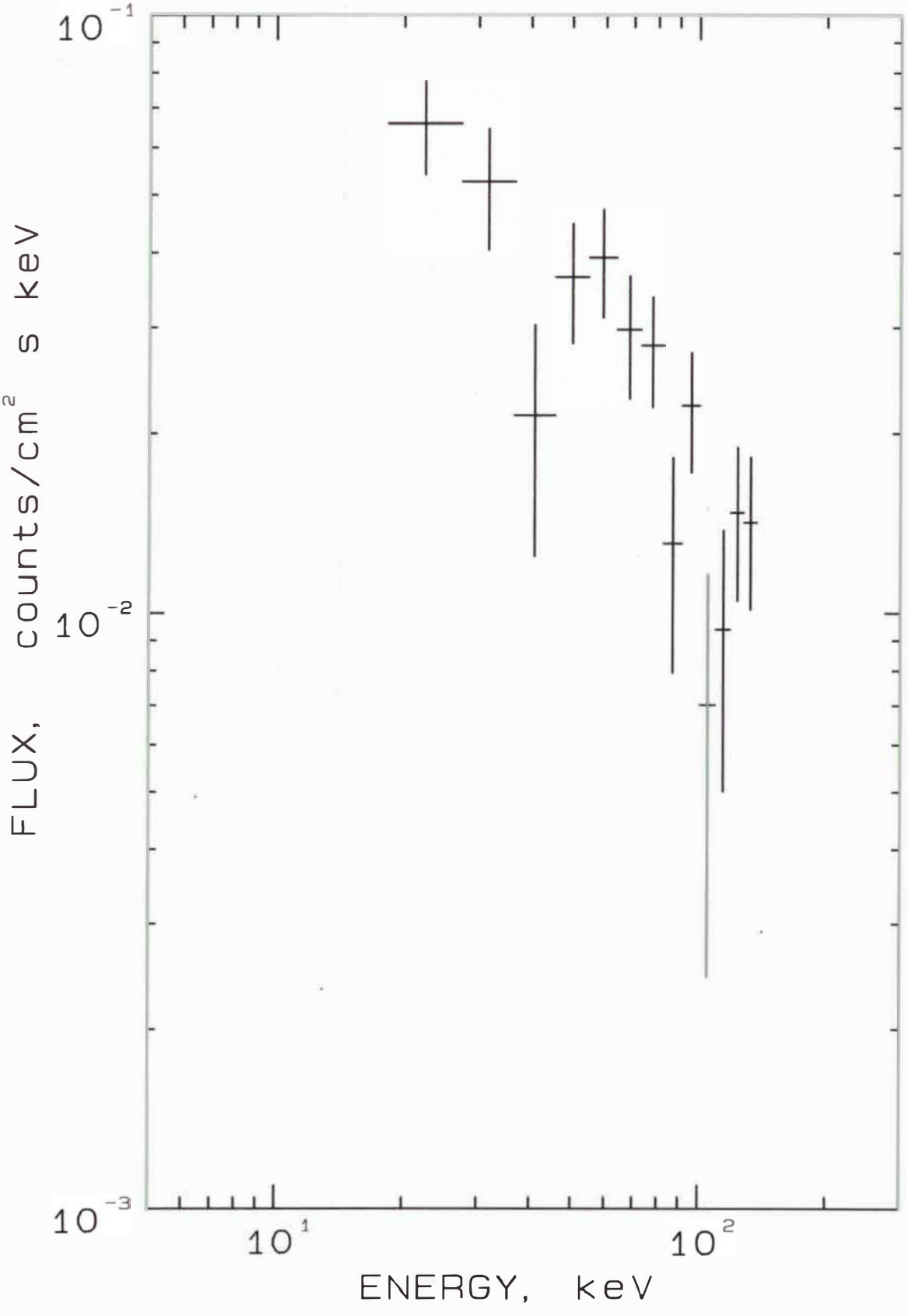
ULYSSES RT-ULYSSES CORRELATION 16/ 6/97 67210.028

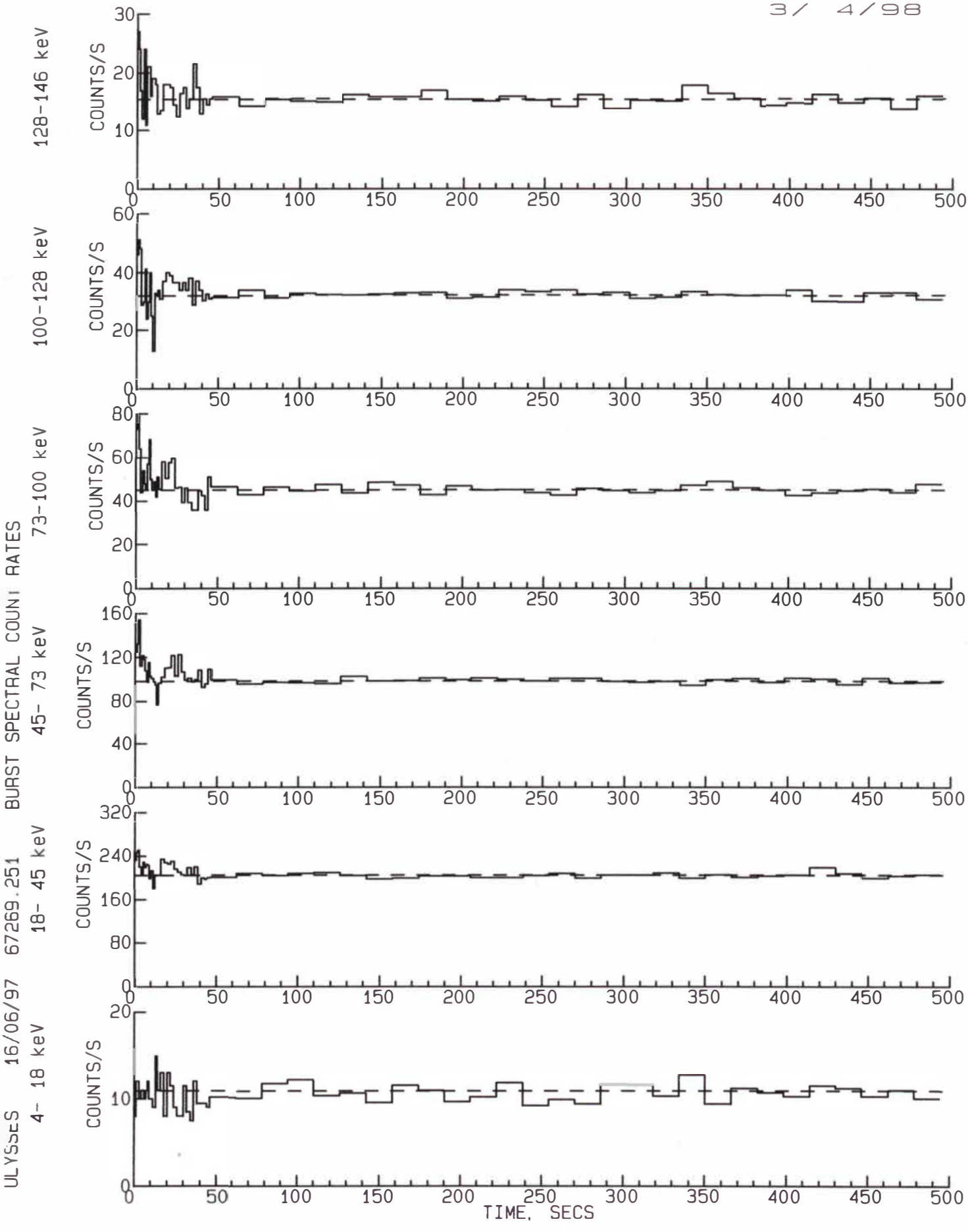


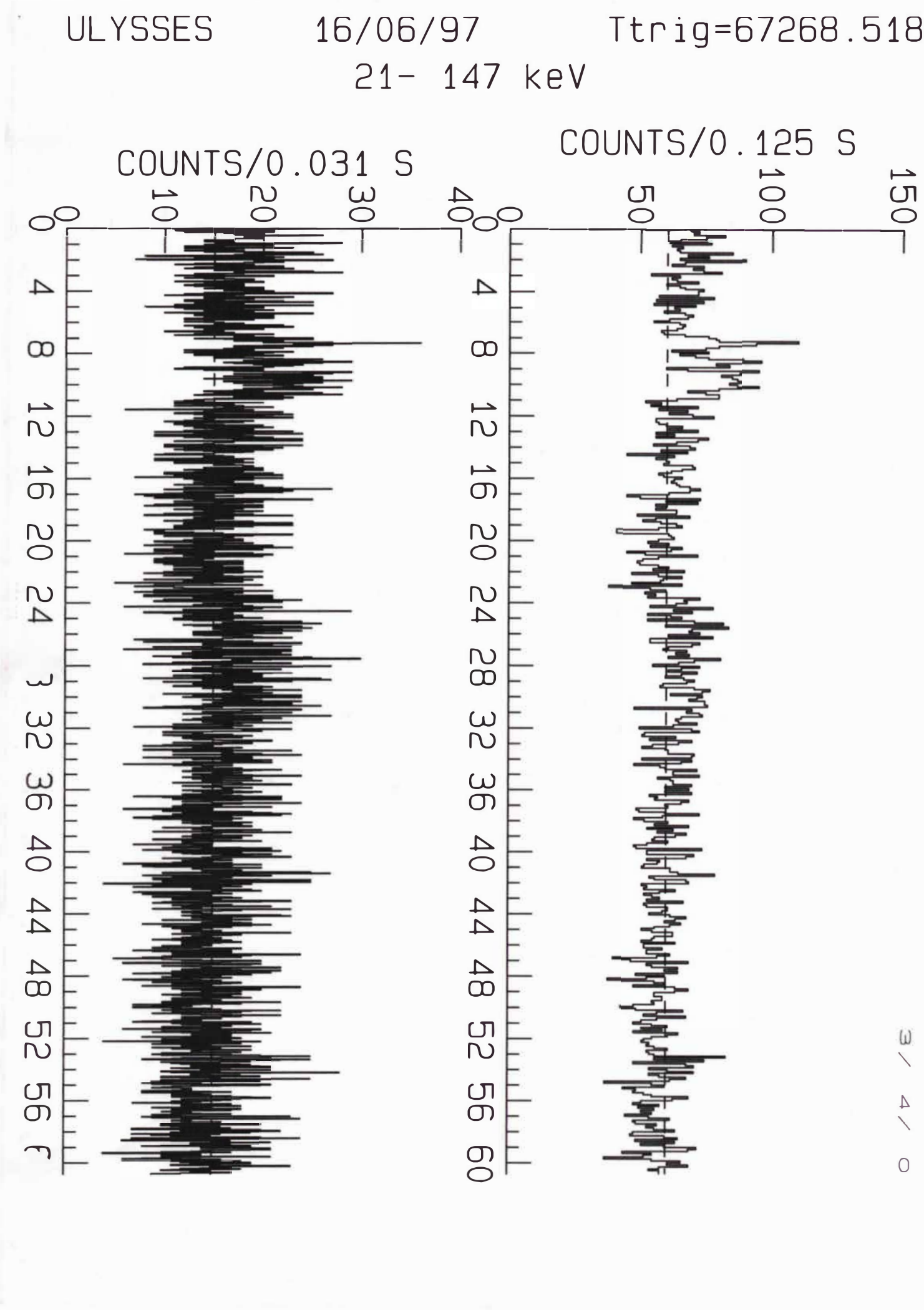
ULYSSES 16/06/97 67269.251

3/ 4/98

SPECTRUM INTEGRATED OVER 30.0 SECONDS. INTERVALS 2 TO 24




3/ 4/98
ULYSSES 16/06/97 67269.251 BURST SPECTRAL COUNT RATES
4- 18 keV
18- 45 keV
45- 73 keV
73-100 keV
100-128 keV
128-146 keV
COUNTS/S
TIME, SECS

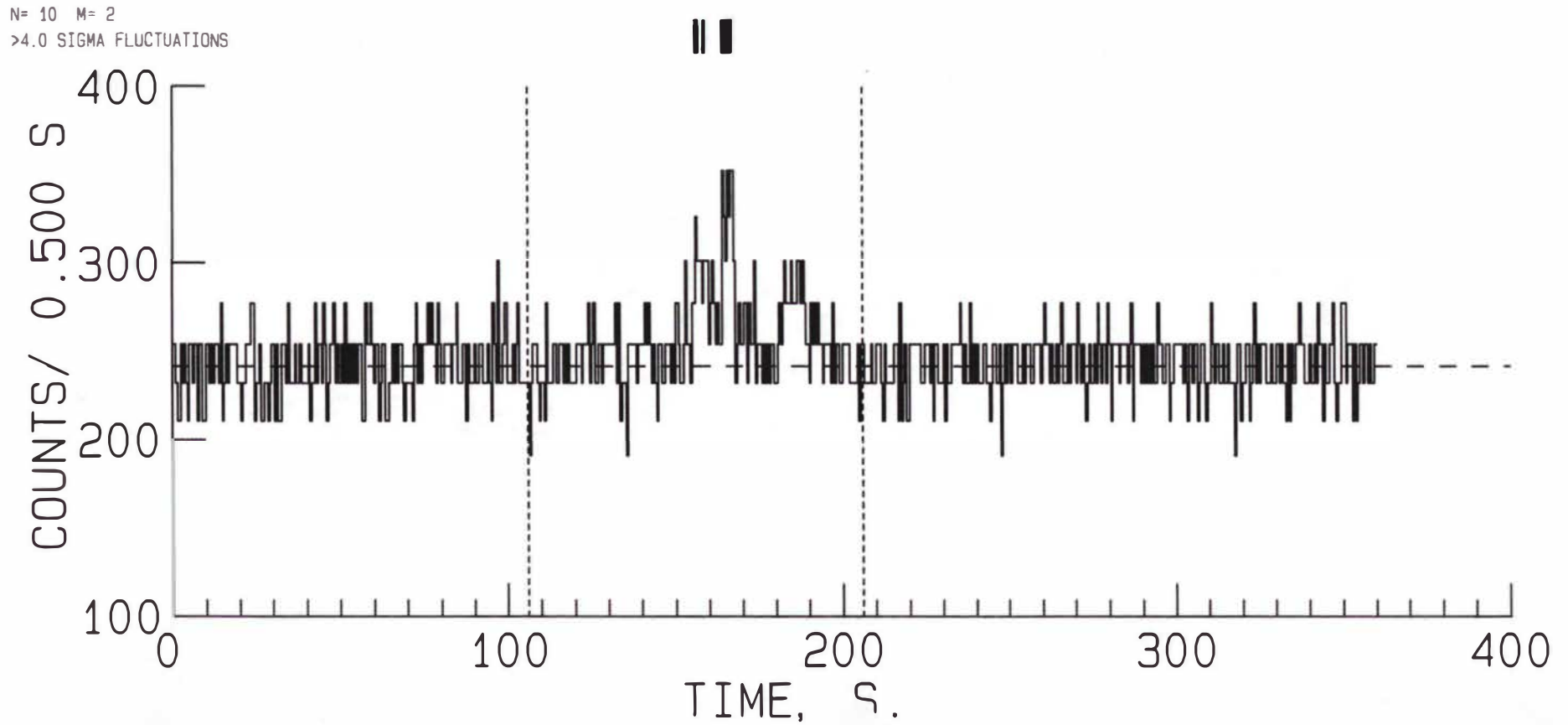

ULYSSES 16/06/97 Ttrig=67268.518
21- 147 keV
COUNTS/0.031 S
COUNTS/0.125 S
0 10 20 30 40
0 50 100 150
0 4 8 12 16 20 24 3 32 36 40 44 48 52 56 f
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60
3/ 4/ 0

ULYSSES RT

3/ 4/98

16/ 6/97 67104.215 s

21- 147 keV

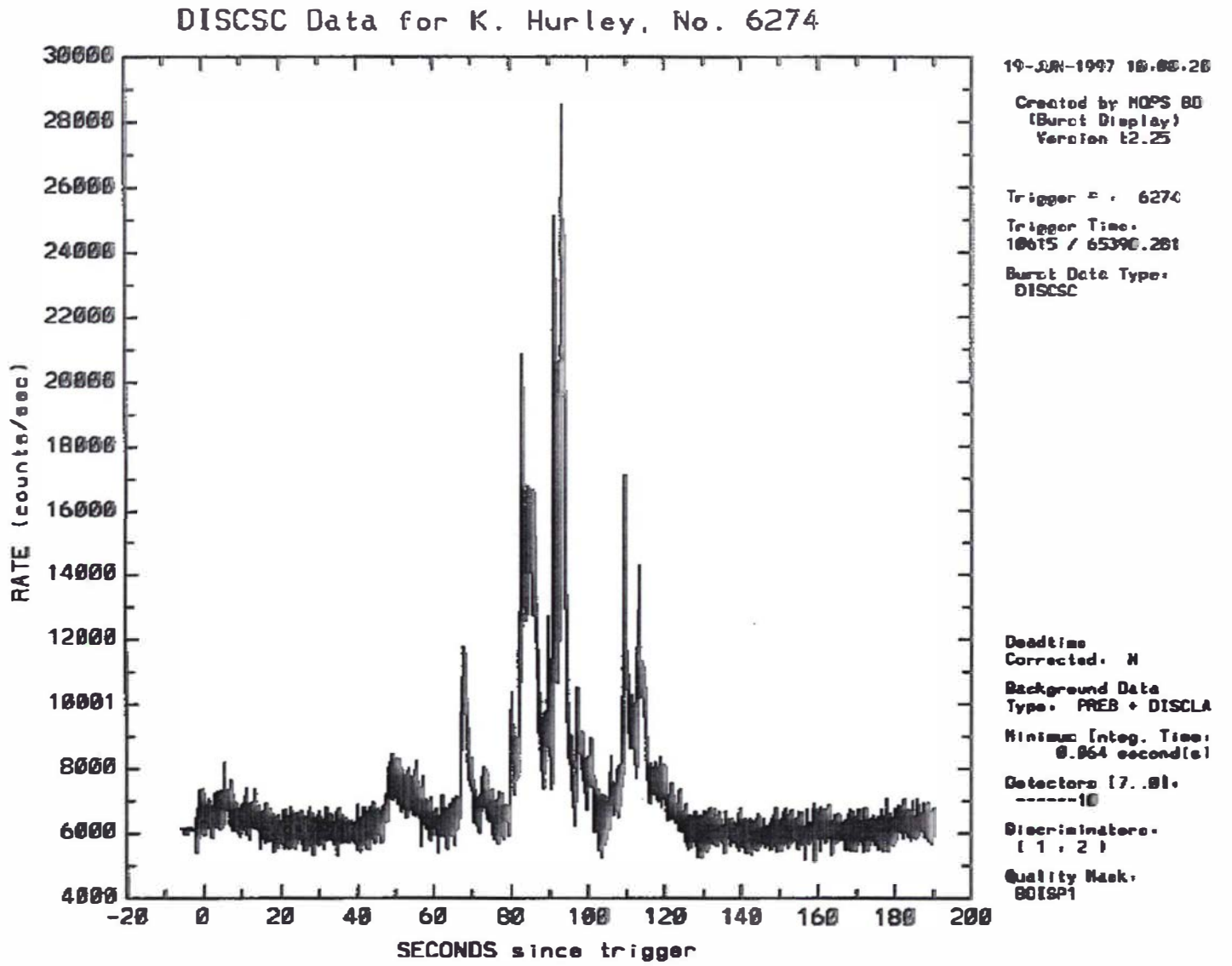


BATSE
16/06/97
65390.281
25- 100 keV
COUNTS/0.064 S
300
800
1300
1800
2300
-30
29
61
93
125

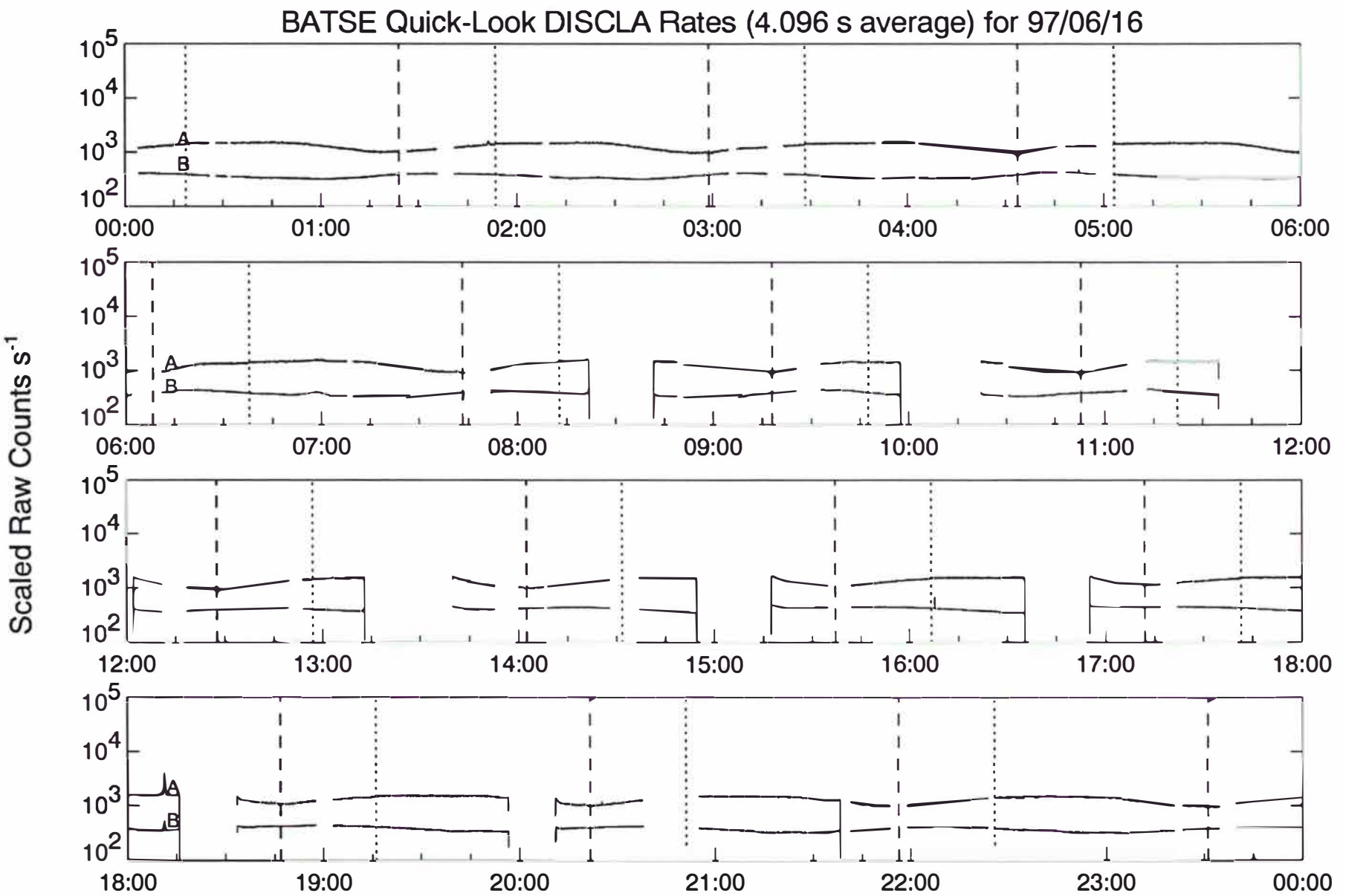
20/ 6/97

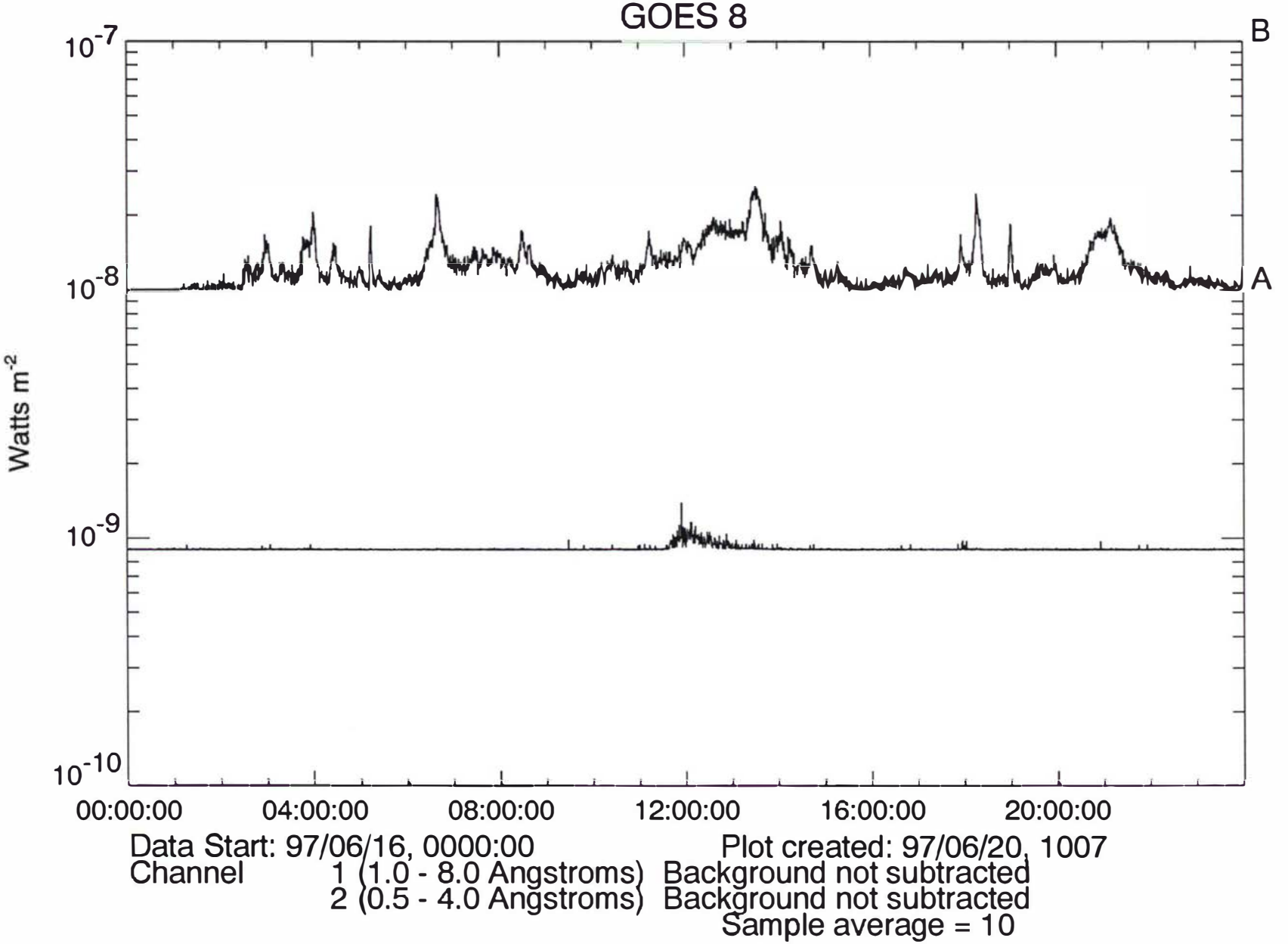
R=95%

06-19-1997 08:22 205 544 5800 BATSE P.01



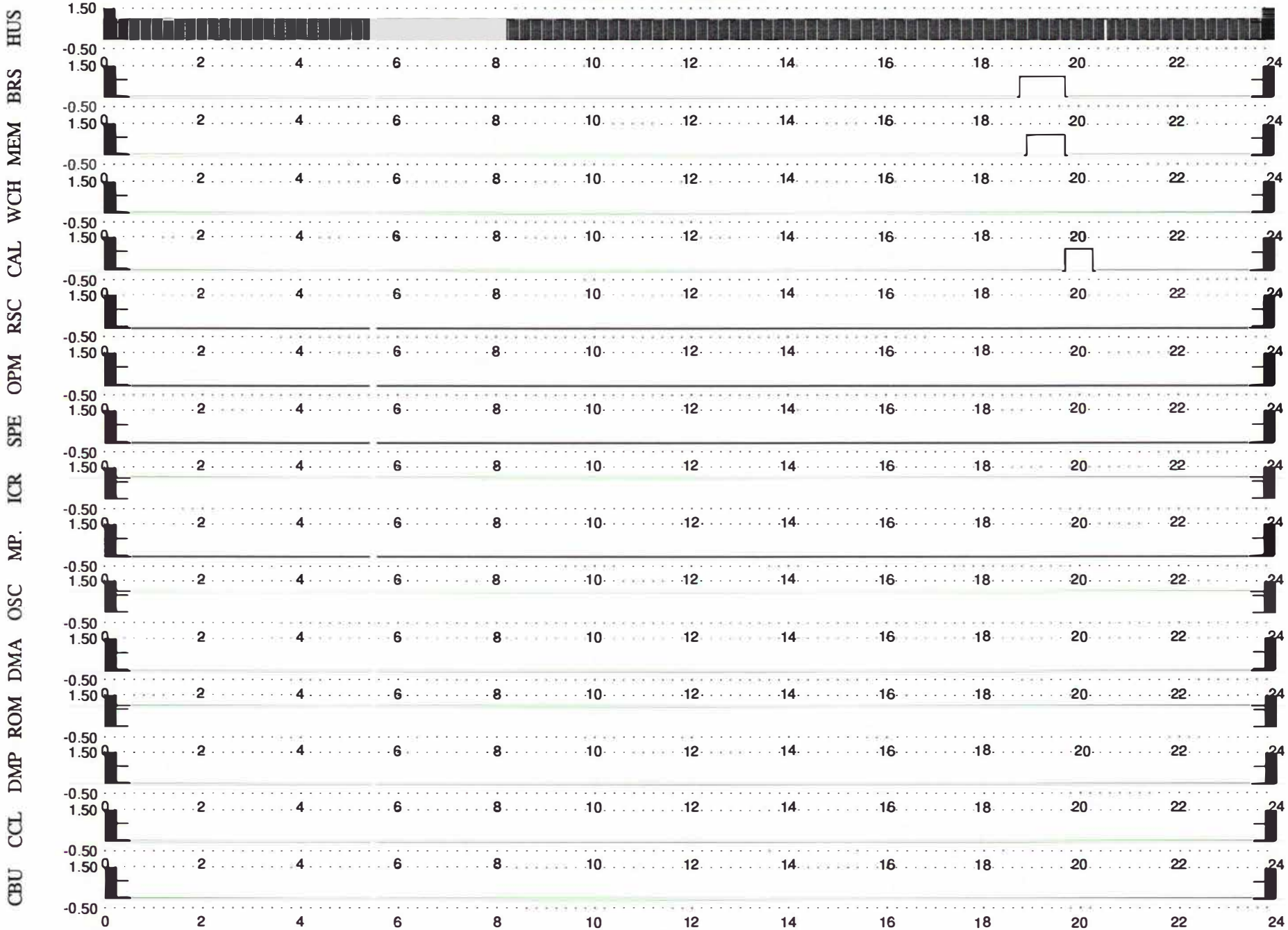
205 544 5800 06-19-97 08:14AM P001 #01


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/16
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/20, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


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

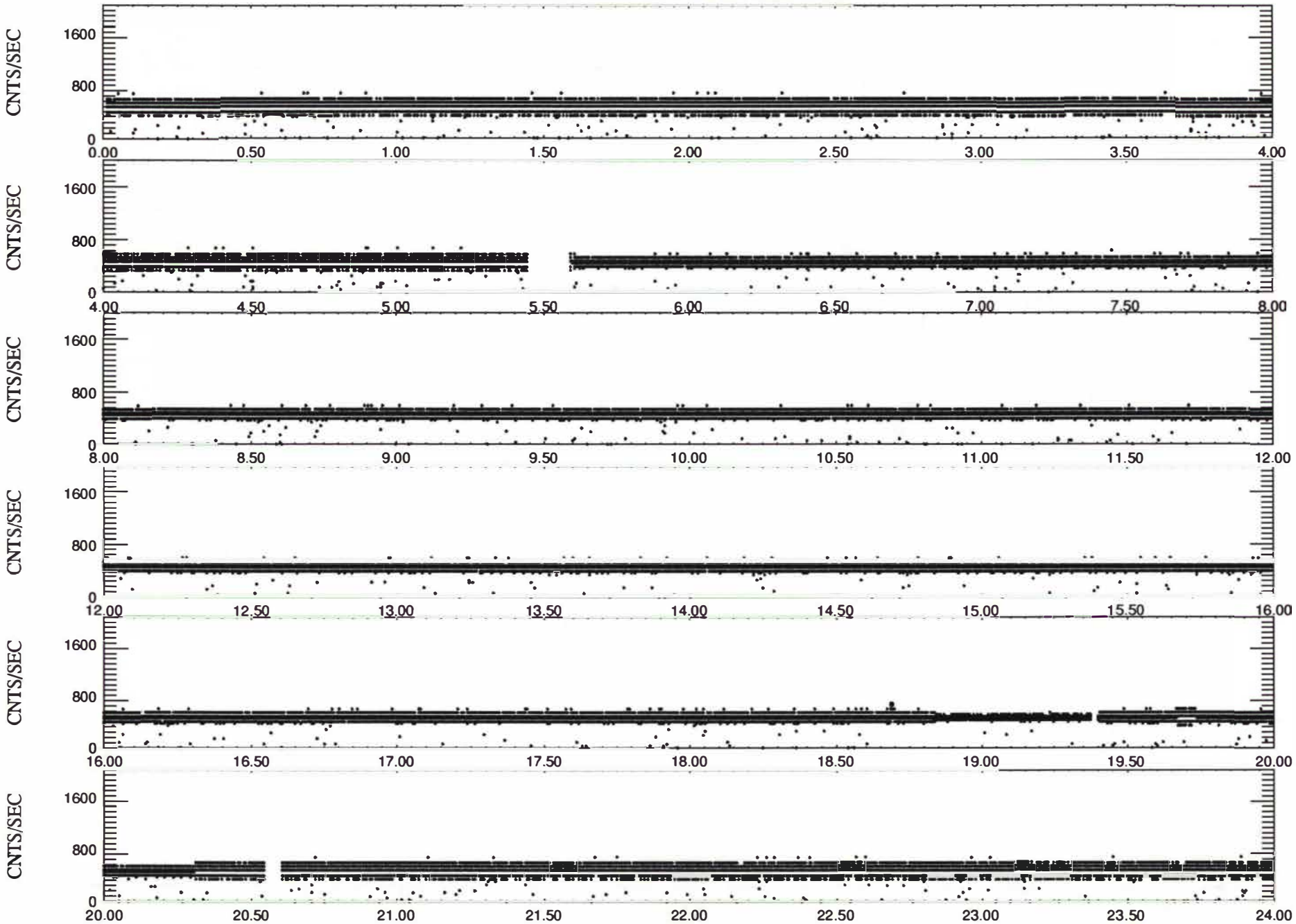
HUS MODES EDR day 167, year 1997 to day 167, year 1997 10/13/97

BURST NUMBER 7



HUS 2A, MODE 1, NOT AVERAGED EDR day 167, year 1997 to day 167, year 1997 10/13/97

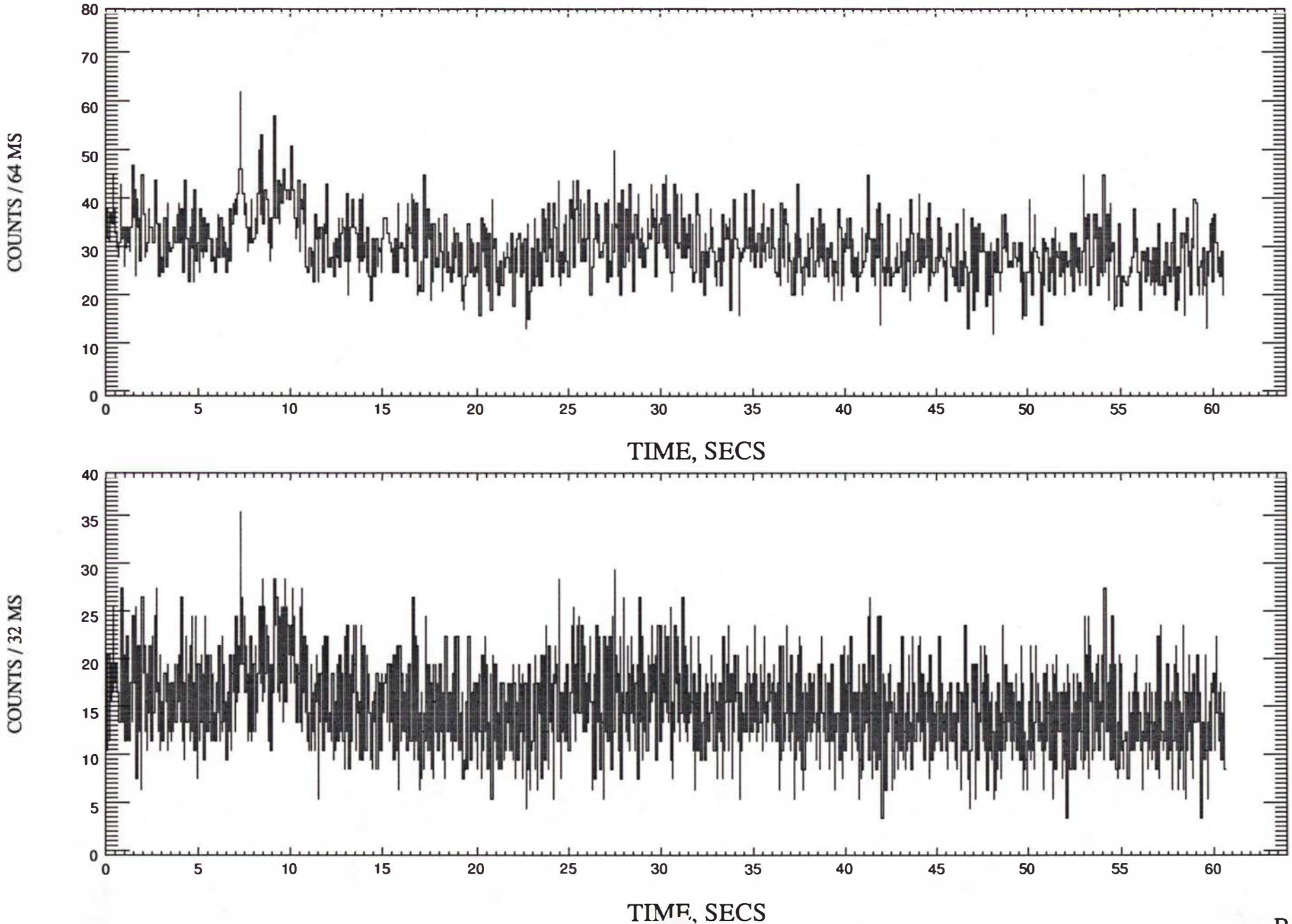
CALIBRATION DATA INCLUDED



UNIV AL TIME

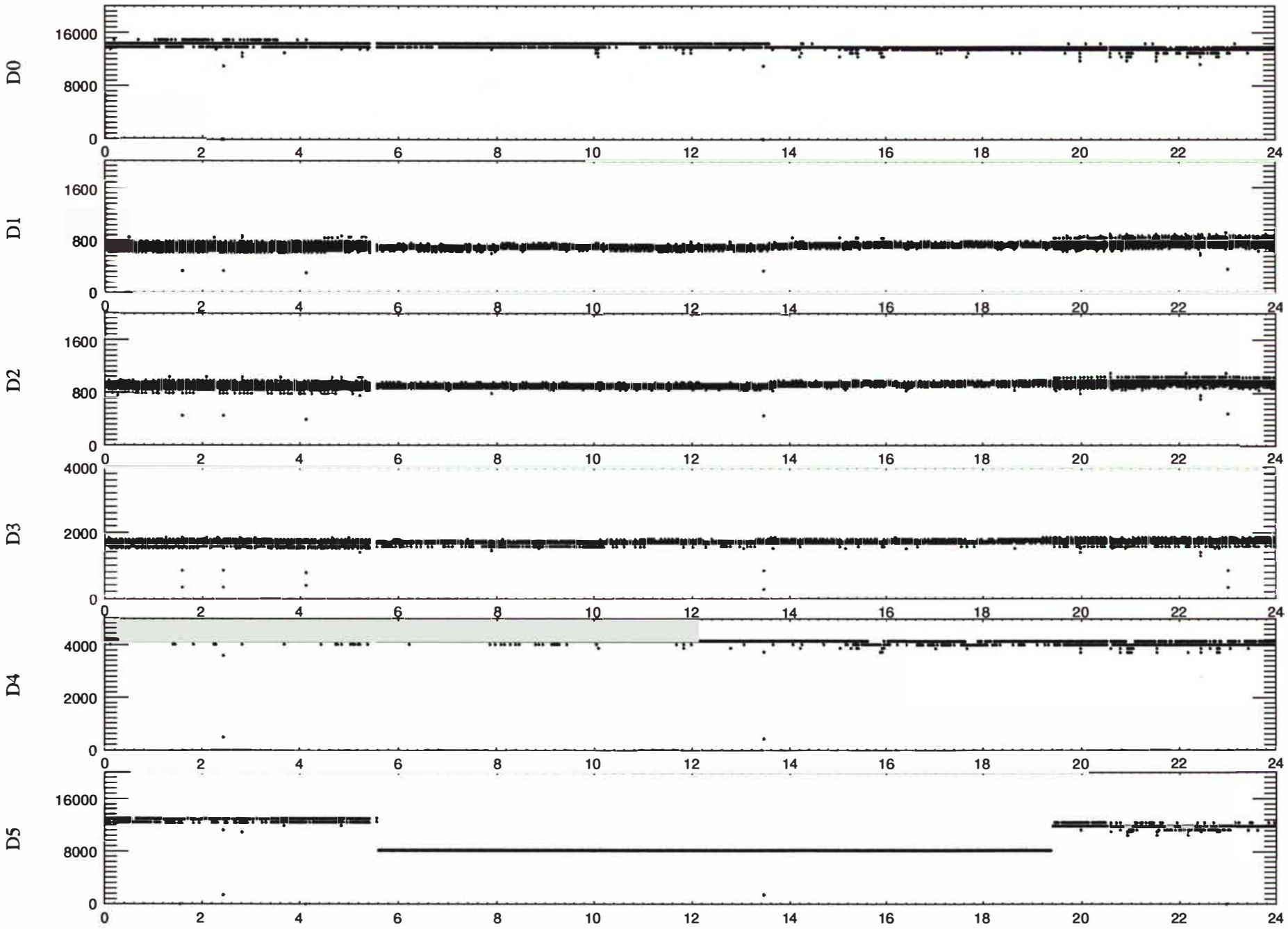
HUS 2A TRIGGERED DATA EDR day 167, year 1997 10/13/97

Burst Counter 7 at UT=18.685747706095 h=67268.692 s 18:41:08.692



B# 1

HUS 2B COUNTS / SEC EDR day 167, year 1997 to day 167, year 1997 10/13/97



From WOODSP@ssl.msfc.nasa.gov Fri Jun 20 13:26 PDT 1997
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA08774; Fri, 20 Jun 1997 13:26:34 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 20 Jun 1997 15:26:29 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970620152629.224012b2@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6275
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

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

 BATSE BURST #     6275
 EVENT OF 1997 JUN 17 DAY OF YEAR=168
 EVENT CROSSING TIME AT BATSE      :   899. S. OR 00:14:59.0
 COORDINATES ARE    0.000    0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 204.000  -73.000
 BATSE PEAK COUNTING RATE:   7500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 17/ 6/  97 IS:
 RA=  152.011 DEC=   27.513 DIST=    5.569 AU
 BATSE-ULYSSES DISTANCE =  833146405. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.62 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  783.93 SECS.
 CROSSING TIME AT ULYSSES    IS  1683. S. OR   00:28:02 +/-  524.80 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 17/ 6/  97 IS:
 RA=  179.259 DEC=    0.826 DIST=    1.152 AU
 MARS-BATSE DISTANCE =  172376208. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.58 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -144.74 SECS.
 CROSSING TIME AT MARS       IS   754. S. OR   00:12:34 +/-   94.41 SECONDS


                BATSE BURST TRIGGER
NO.: 6275

TIME: TJD=0616 SECONDS=899

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=70.7   AZIMUTH=279.6  ERROR=8.2   DEGREES

COMMENTS:
GRB LASTING ~ 0.6 SEC.  SINGLE PULSE WITH POSSIBLE PRECURSOR
@ T - 2 SEC.  VISIBLE ABOVE 300 KEV.


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6275   970617   10616   00899     7500   204   -73    .6
```

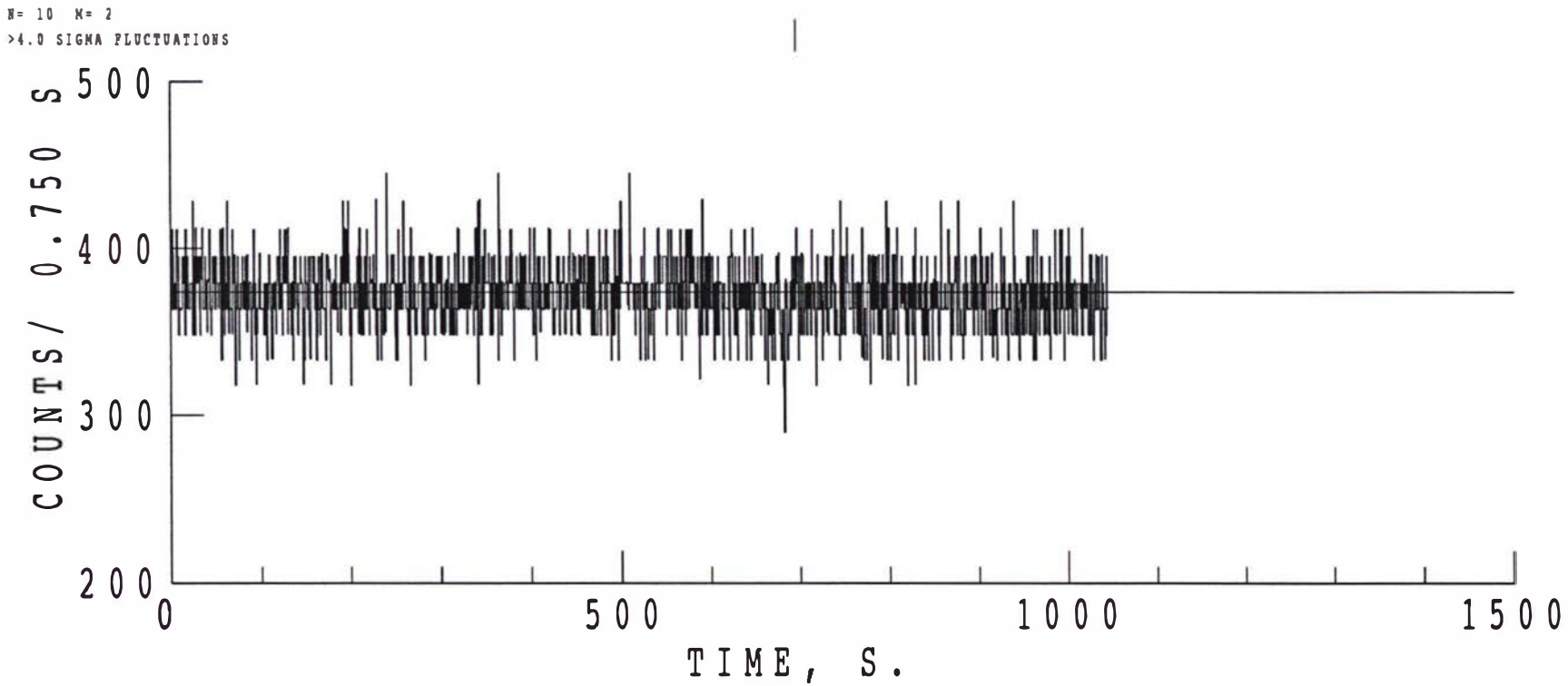
BATSE BURST# 6275

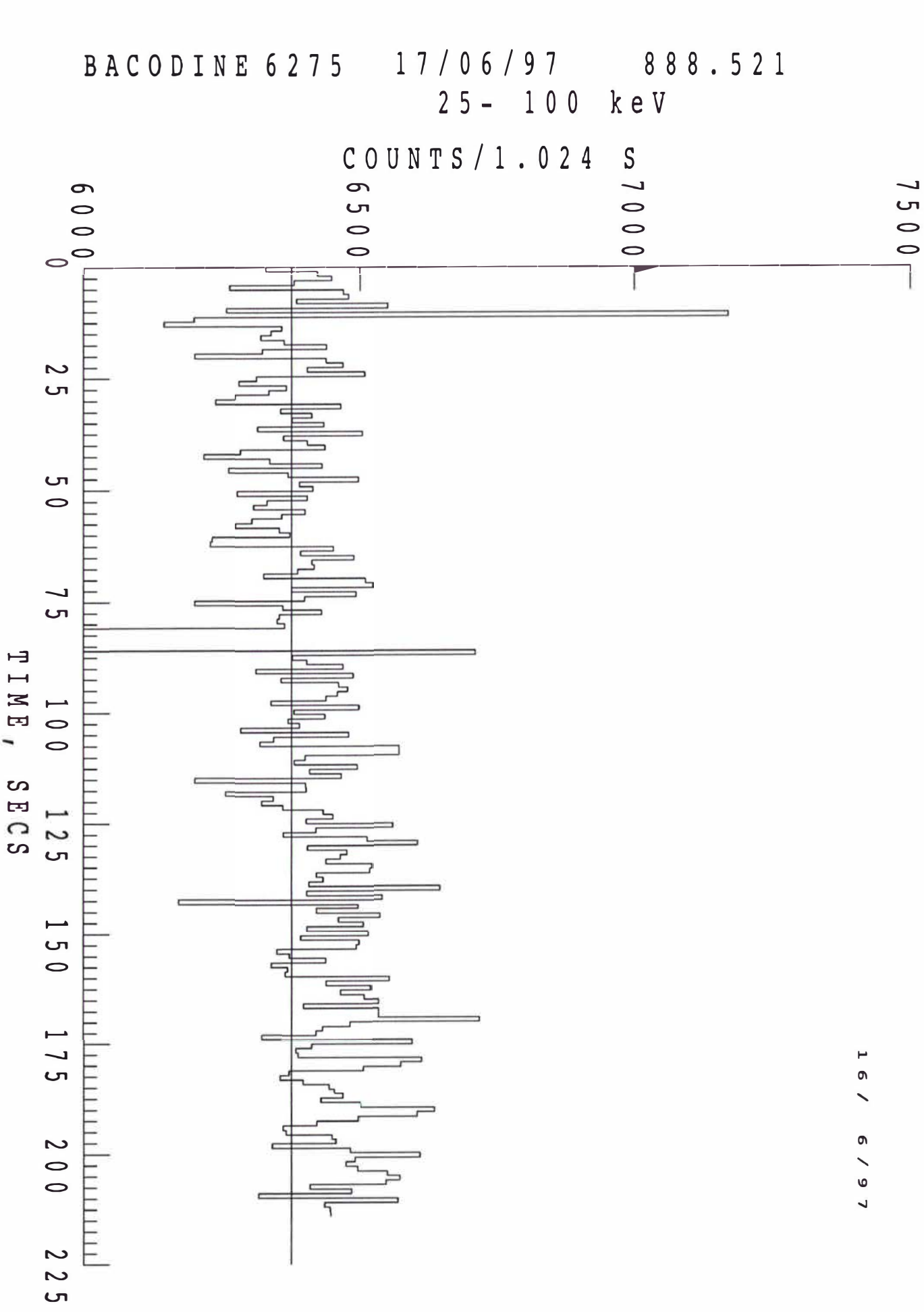
ULYSSES RT 20/ 6/97

17/ 6/97 1152.205 s

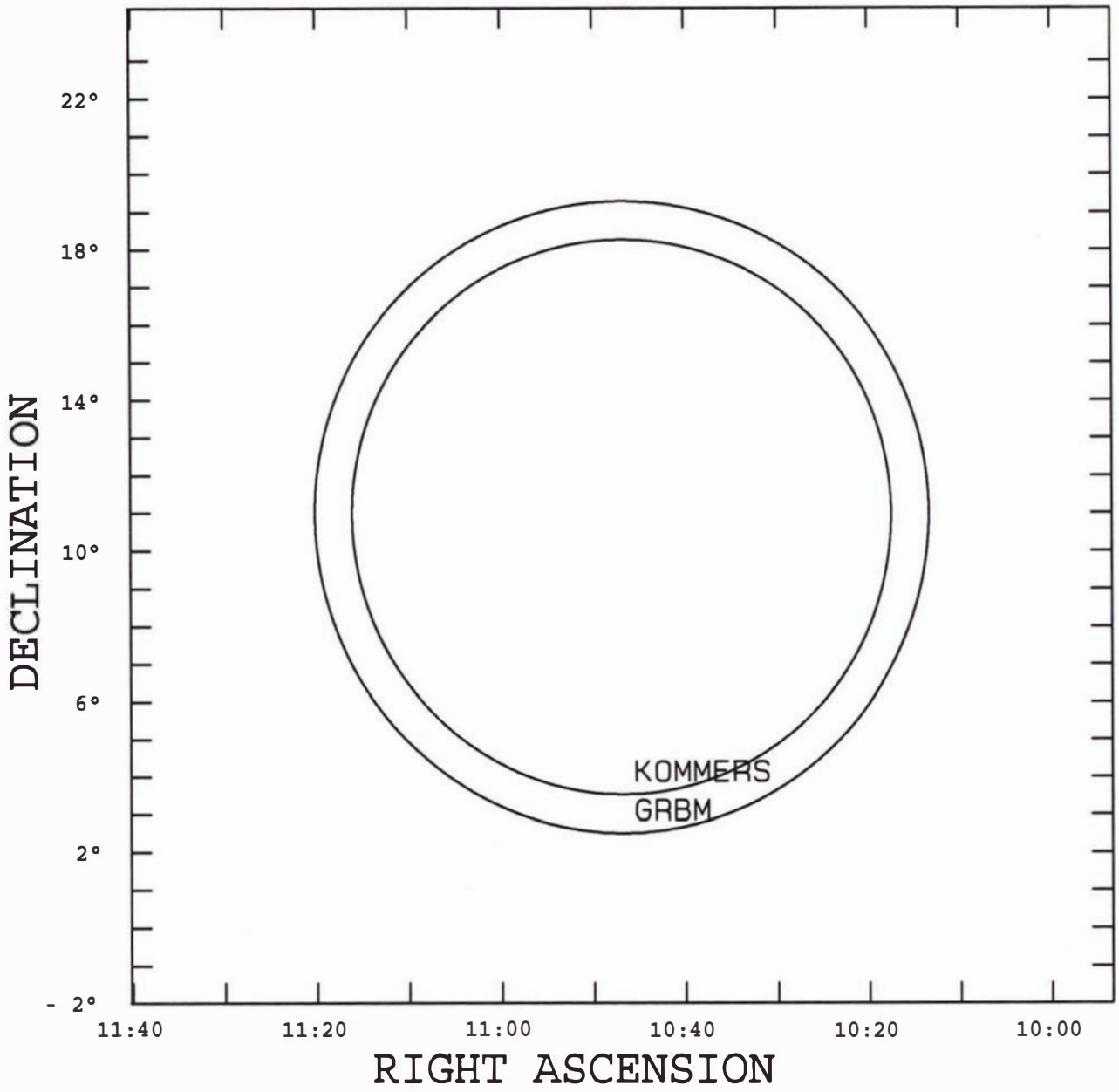
0.250 S INTERVALS REGROUPED BY 3

0- 0 keV




BACODINE 6275 17/06/97 888.521
25- 100 keV
COUNTS/1.024 S
6000
6500
7000
7500
0
25
50
75
100
125
150
175
200
225
TIME, SECS
16/ 6/97

61466 s


22°
18°
14°
10°
6°
2°
- 2°
DECLINATION
11:40
11:20
11:00
10:40
10:20
10:00
RIGHT ASCENSION
KOMMERS
GRBM

SAX

HUS DATA

19/07/05

ULYSSES RT

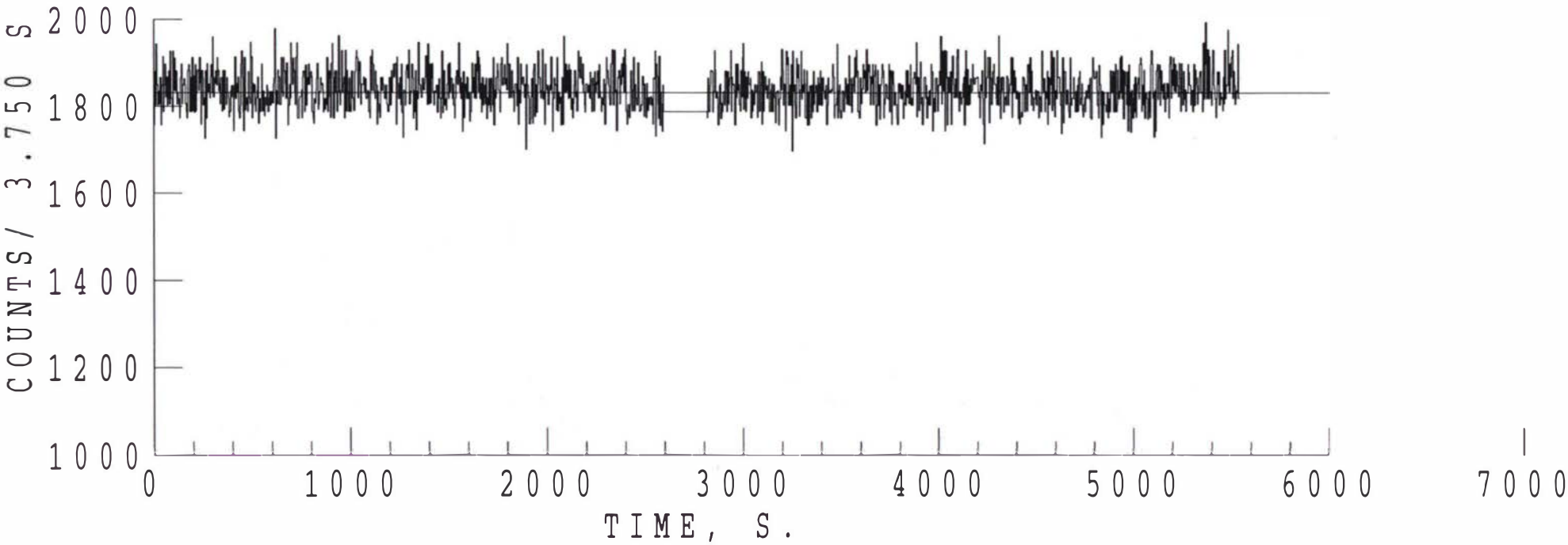
17/06/97 74088.047 s

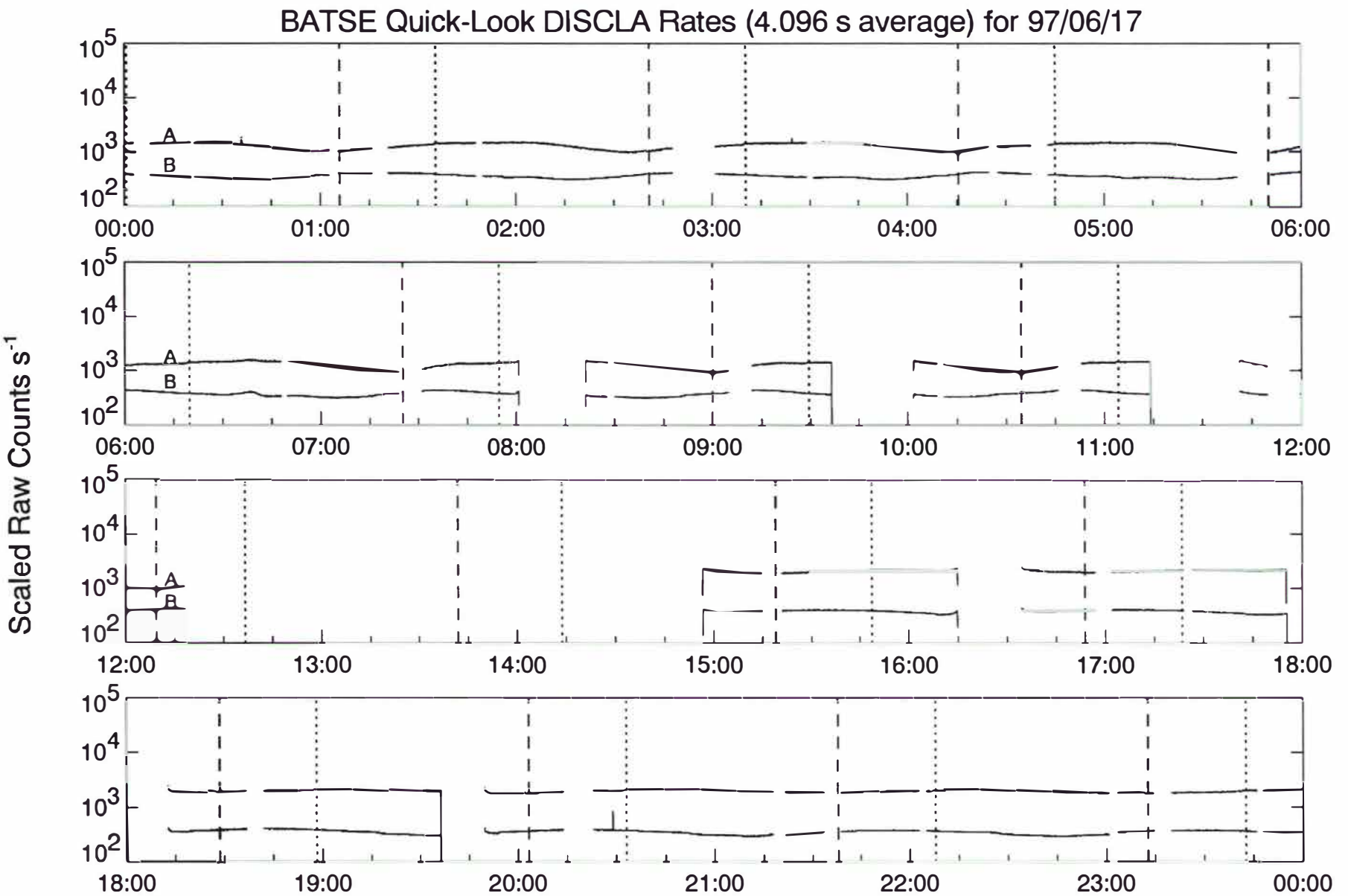
0.250 S INTERVALS REGROUPED BY 15

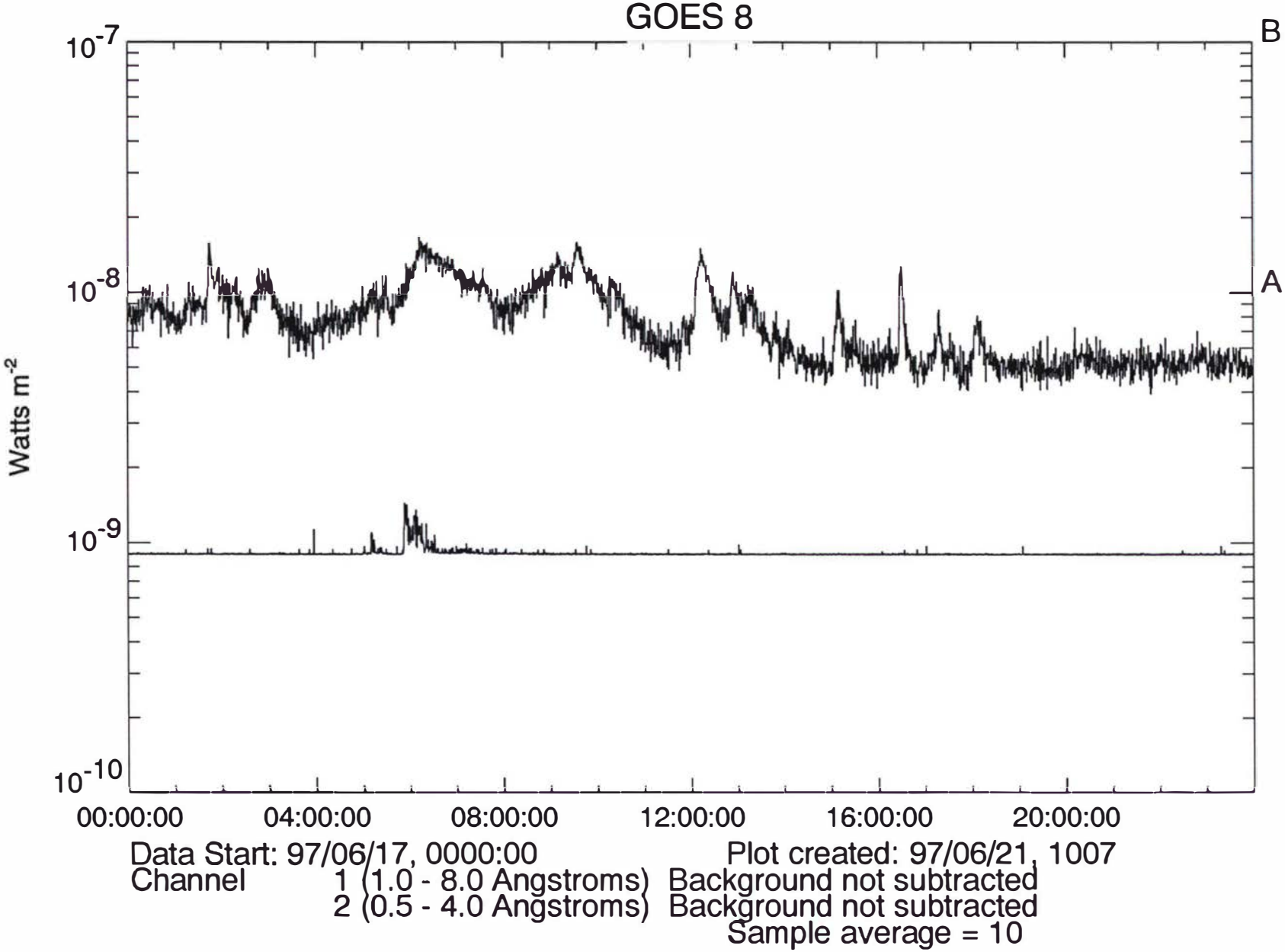
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

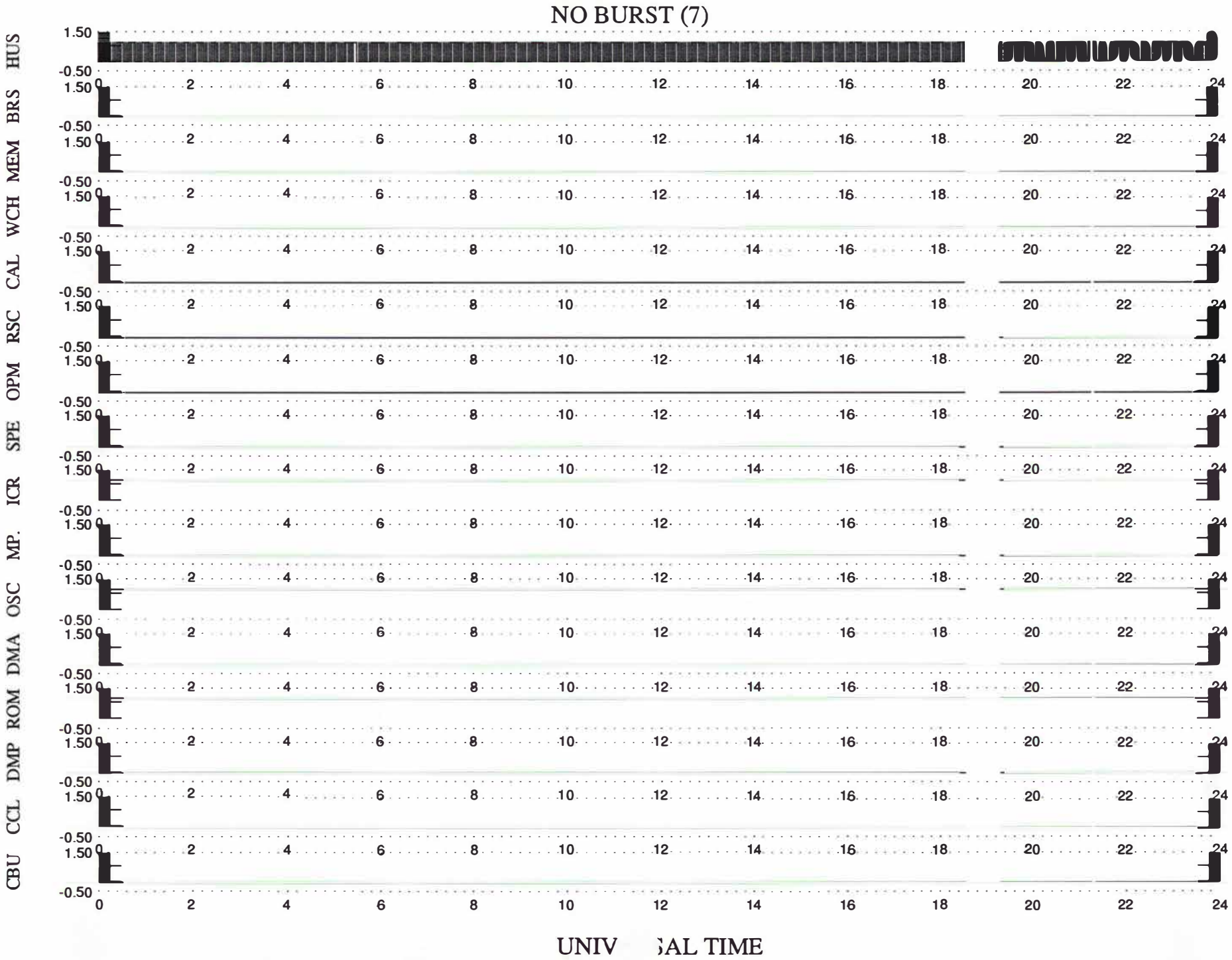
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/17
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/21, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

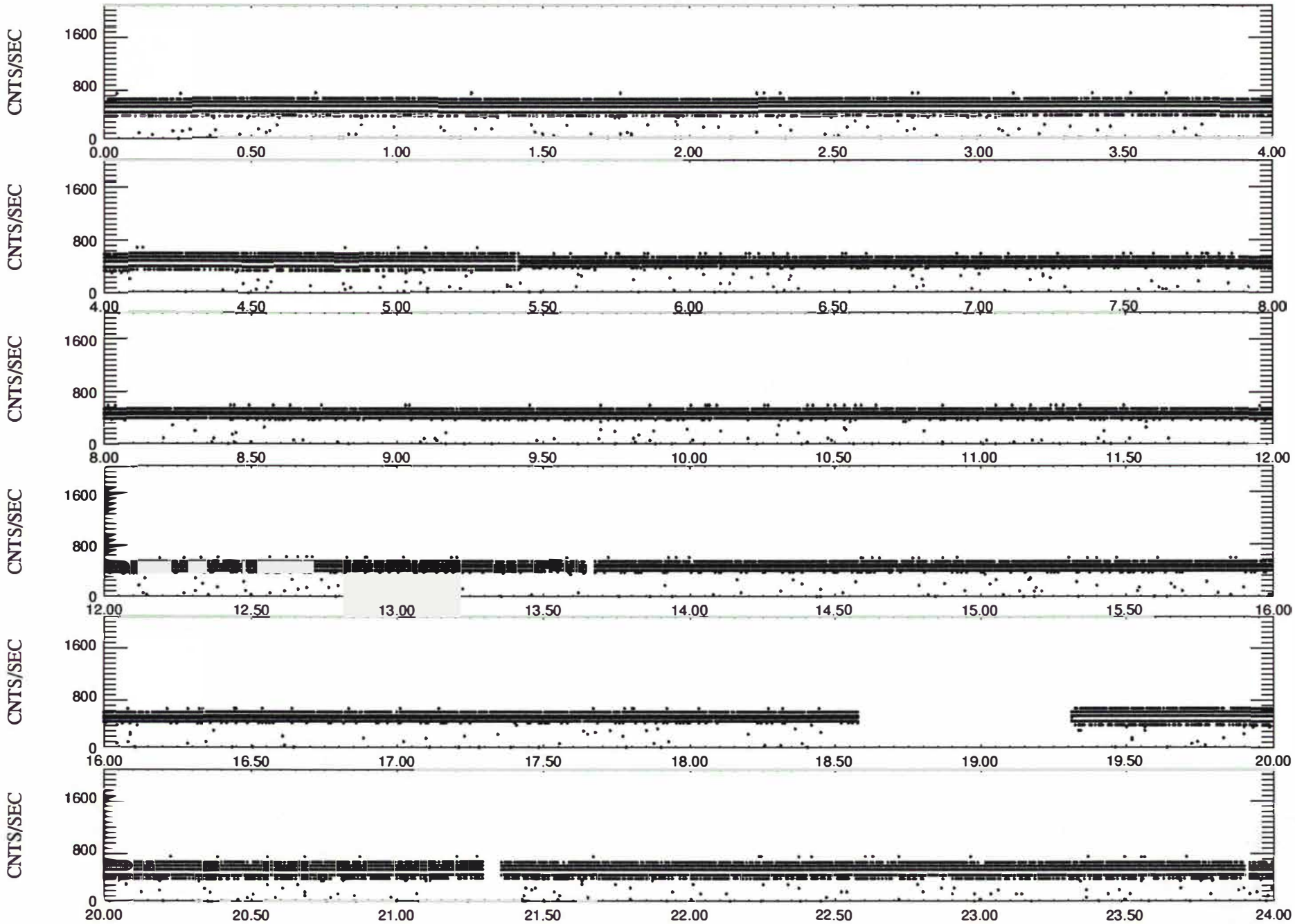

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/17, 0000:00
Plot created: 97/06/21, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 168, year 1997 to day 168, year 1997 10/13/97



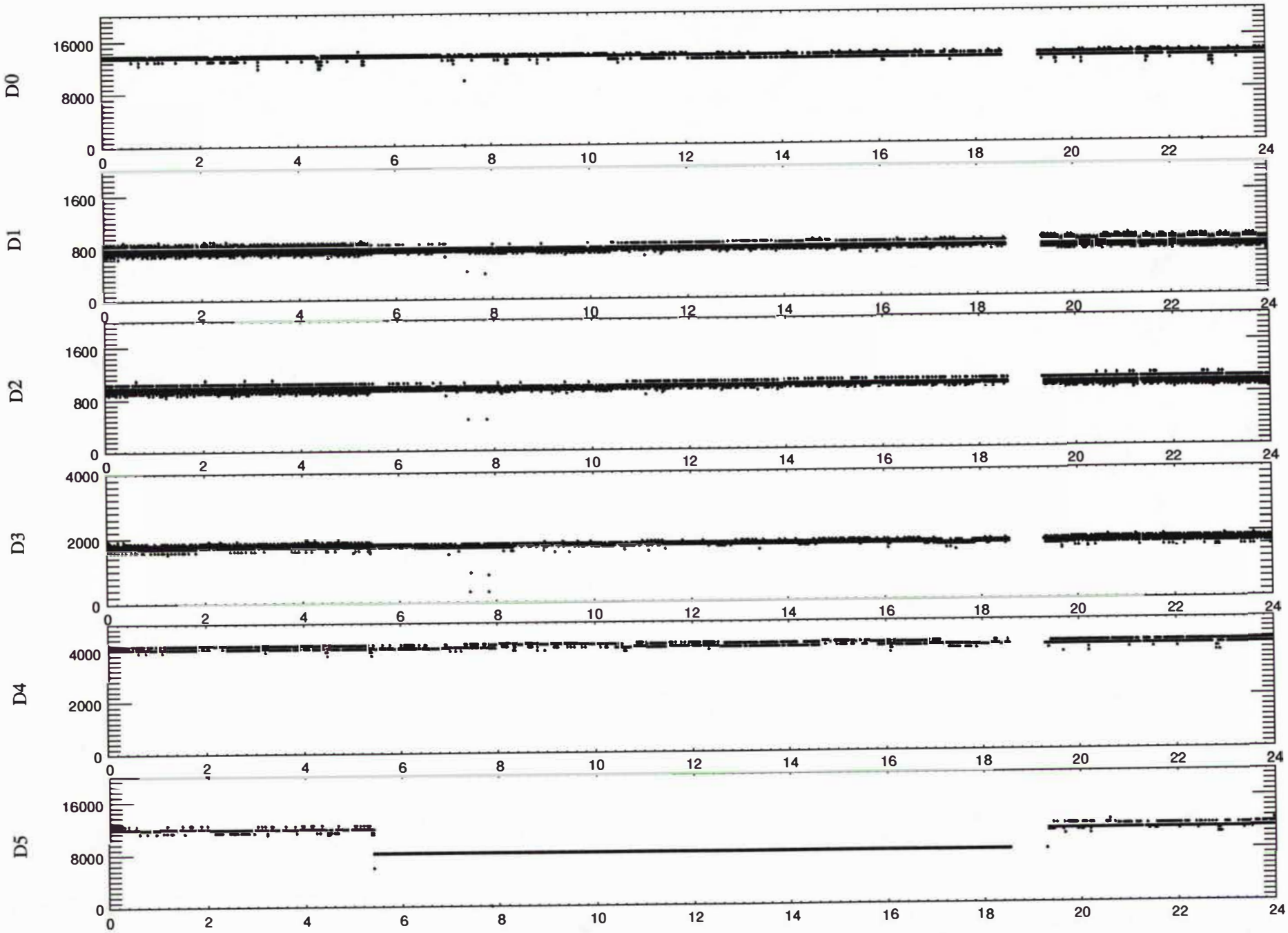
HUS 2A, MODE 1, NOT AVERAGED EDR day 168, year 1997 to day 168, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 168, year 1997 to day 168, year 1997 10/13/97



From SURASAK@ssl.msfc.nasa.gov Fri Jun 20 13:18 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA08443; Fri, 20 Jun 1997 13:18:14 -0700
Date: Fri, 20 Jun 1997 15:18:10 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970620151810.21666eca@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6276
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6276
EVENT OF 1997 JUN 18 DAY OF YEAR=169
EVENT CROSSING TIME AT BATSE : 43528. S. OR 12:05:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 227.000 48.000
BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 6/ 97 IS:
RA= 152.128 DEC= 27.334 DIST= 5.592 AU
BATSE-ULYSSES DISTANCE = 836635749. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1385.23 SECS.
CROSSING TIME AT ULYSSES IS 42143. S. OR 11:42:22 +/- 449.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 6/ 97 IS:
RA= 179.640 DEC= 0.634 DIST= 1.160 AU
MARS-BATSE DISTANCE = 173480064. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -267.03 SECS.
CROSSING TIME AT MARS IS 43261. S. OR 12:01:00 +/- 85.07 SECONDS

BATSE BURST TRIGGER
NO.: 6276

TIME: TJD=0617 SECONDS=43528

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.5 AZIMUTH=266.1 ERROR=3.689 DEGREES

COMMENTS:
GRB. SINGLE PULSE.IN GAP DATA. DUR~50S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6276	970618	10617	43528	3900	227	+48	50

BATSE BURST# 6276

ULYSSES RT 20/ 6/97

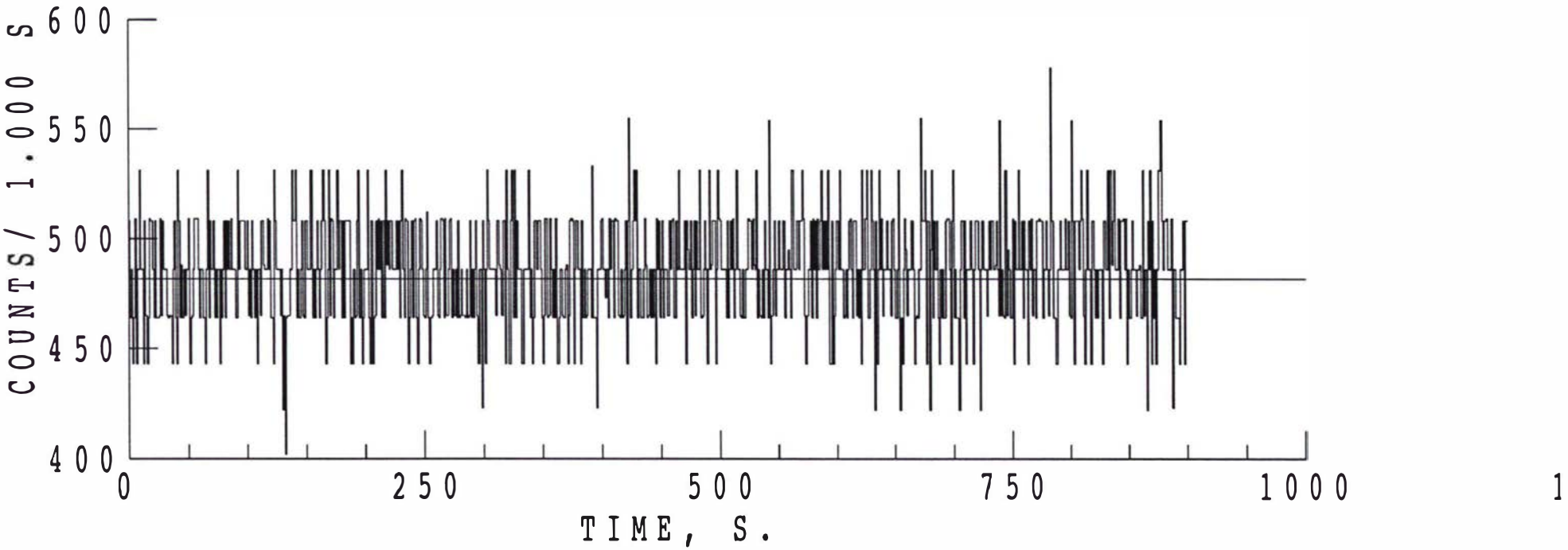
18/ 6/97 41688.430 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From vnp@isac.ernet.in Thu Jul 3 05:18 PDT 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
          id AA32207; Thu, 3 Jul 1997 16:39:08 GMT
   e: Thu, 3 Jul 1997 16:39:07 +0000 (CUT)
x Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: SROSS-C2 GRBs
Mime-Version: 1.0

Dear Prof. Hurley,
Thank you for the messages about GRBs on Jun 18 and Jun 26. We have no GRB event on these dates. SROSS-C2 has recorded events on
21 May 97 at 13: 52:08 UT and
7 Jun 97 at 9 16 27.8 UT
We would like to know whether these events were recorded on Ulysses or BATSE.
I shall be grateful if you could kindly include me on your regular mailing list for GRB messages.
thanking you
regards
padmini

From kraken@rosserv.gsfc.nasa.gov Tue Jun 24 09:01 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 24 Jun 1997 12:03:05 -0500
    bonnard@iolanthe.gsfc.nasa.gov (Bonnard Teegarden)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Re: GRB970618
Cc: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)

>>
>>ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:
>>
>>Ulysses observed the following burst:
>>
>>
>>June 18 1997 19:51 Ulysses time; weak burst, 100 ms long
>>
>>The spacecraft was about 2780 light-seconds from Earth.
>>Was this event detected by anyone else?

I've checked for this burst in TGRS burst and waiting mode data. TGRS has not seen it in either.

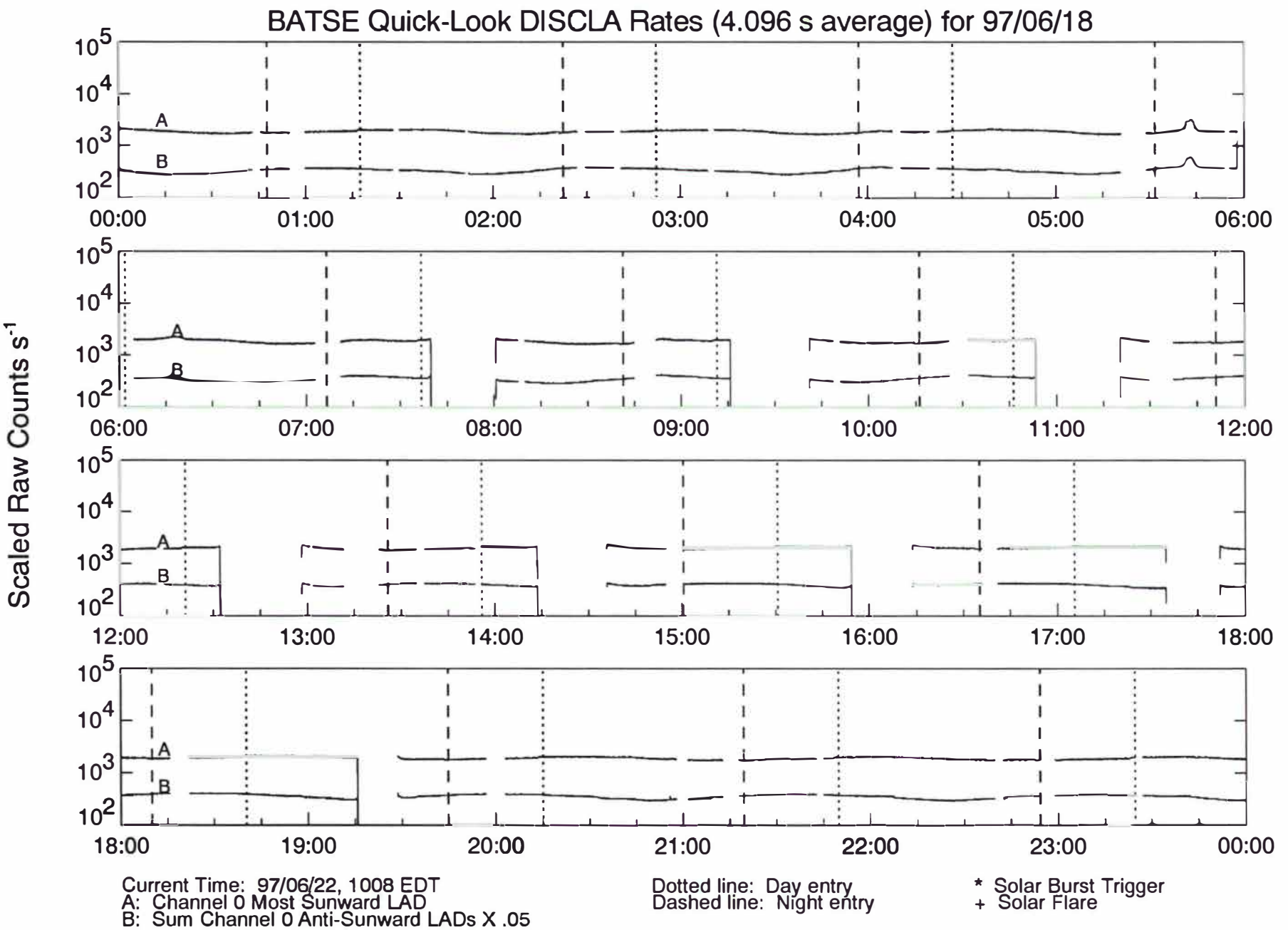
Pete

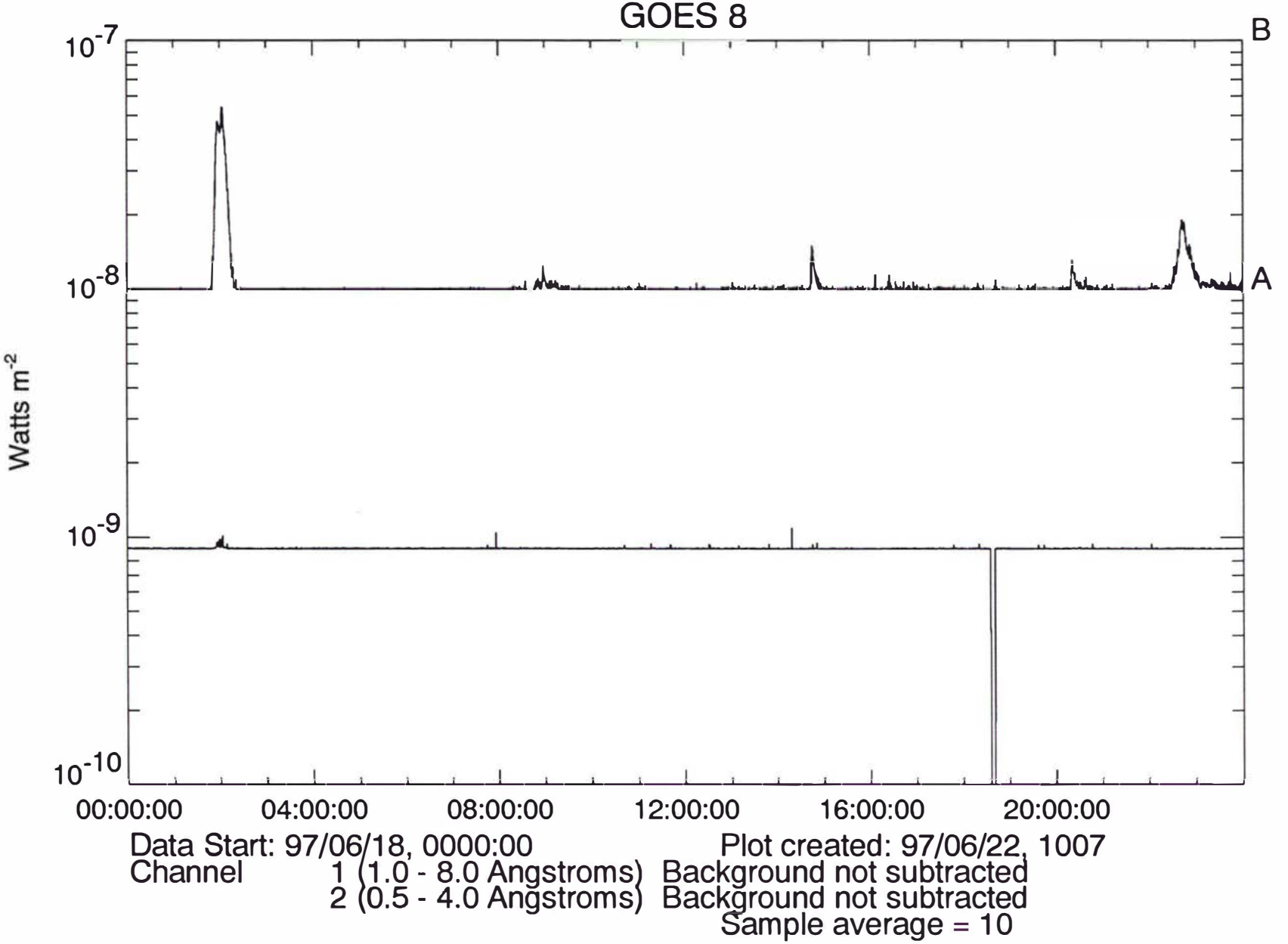
From BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,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

Konus report on recent Ulysses events not seen by BATSE

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

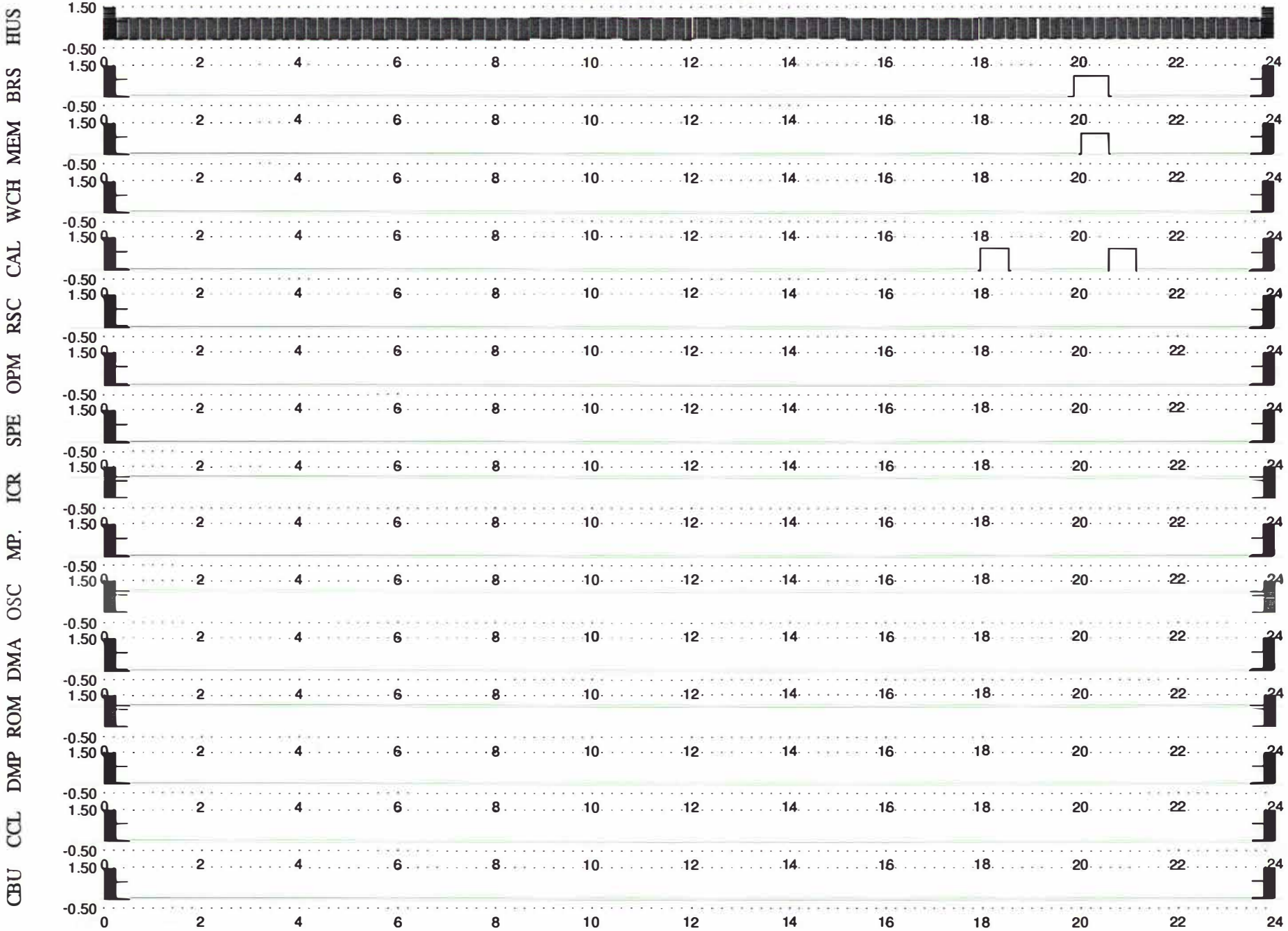
July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
July 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 22:42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


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/18
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/22, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/18, 0000:00
Plot created: 97/06/22, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 169, year 1997 to day 169, year 1997 10/13/97

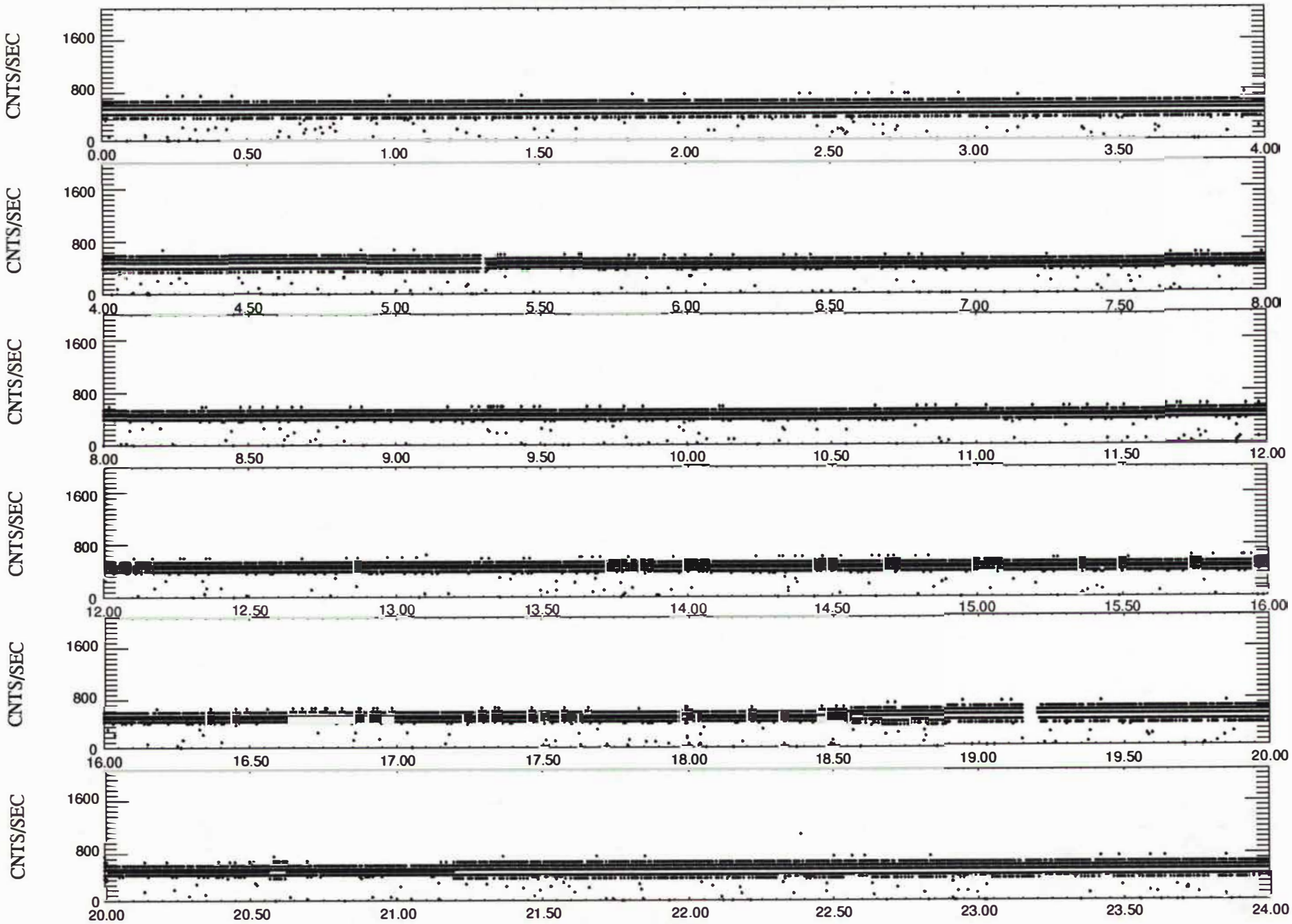
BURST NUMBER 8



UNIV SAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 169, year 1997 to day 169, year 1997 10/13/97

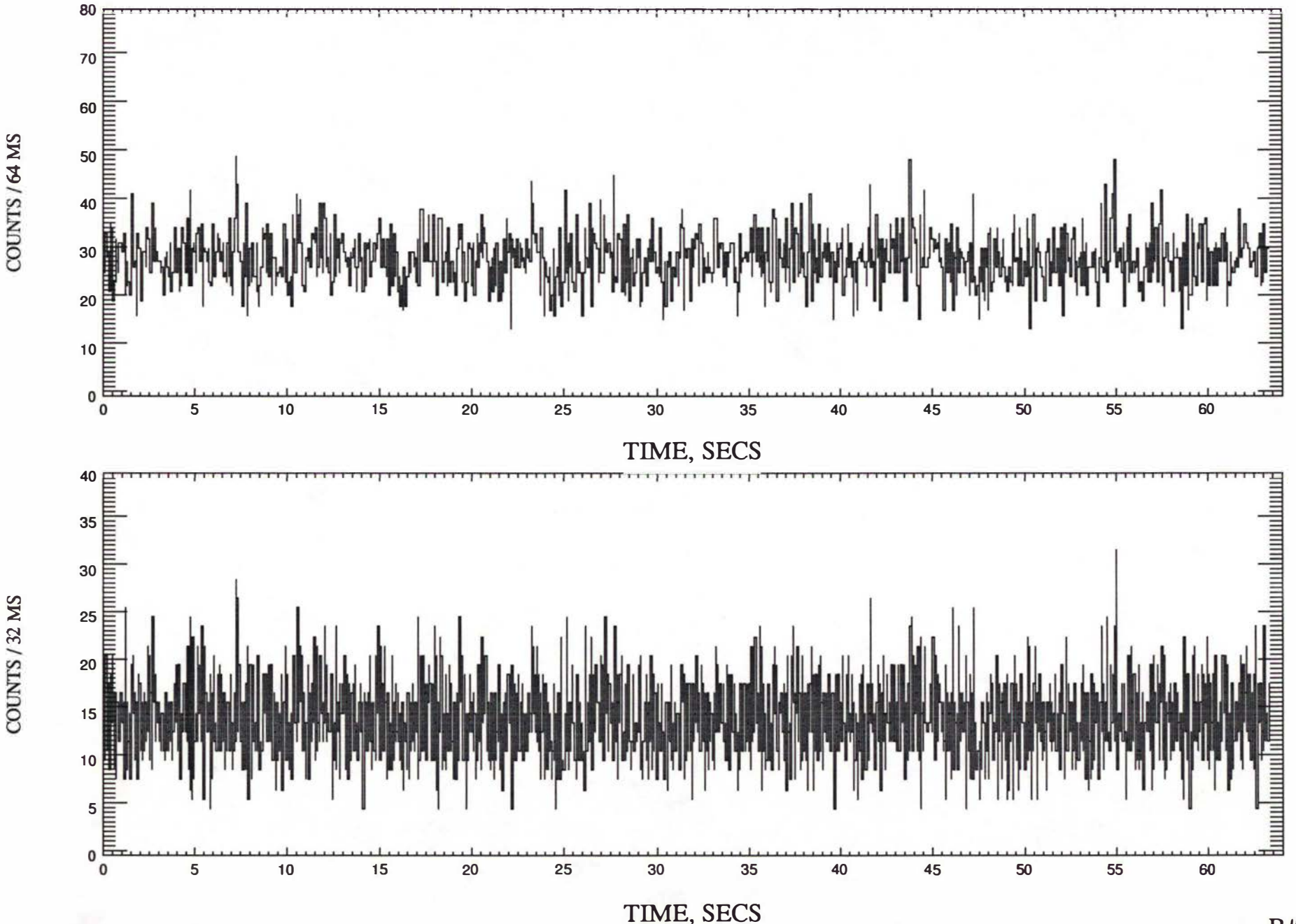
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 169, year 1997 10/13/97

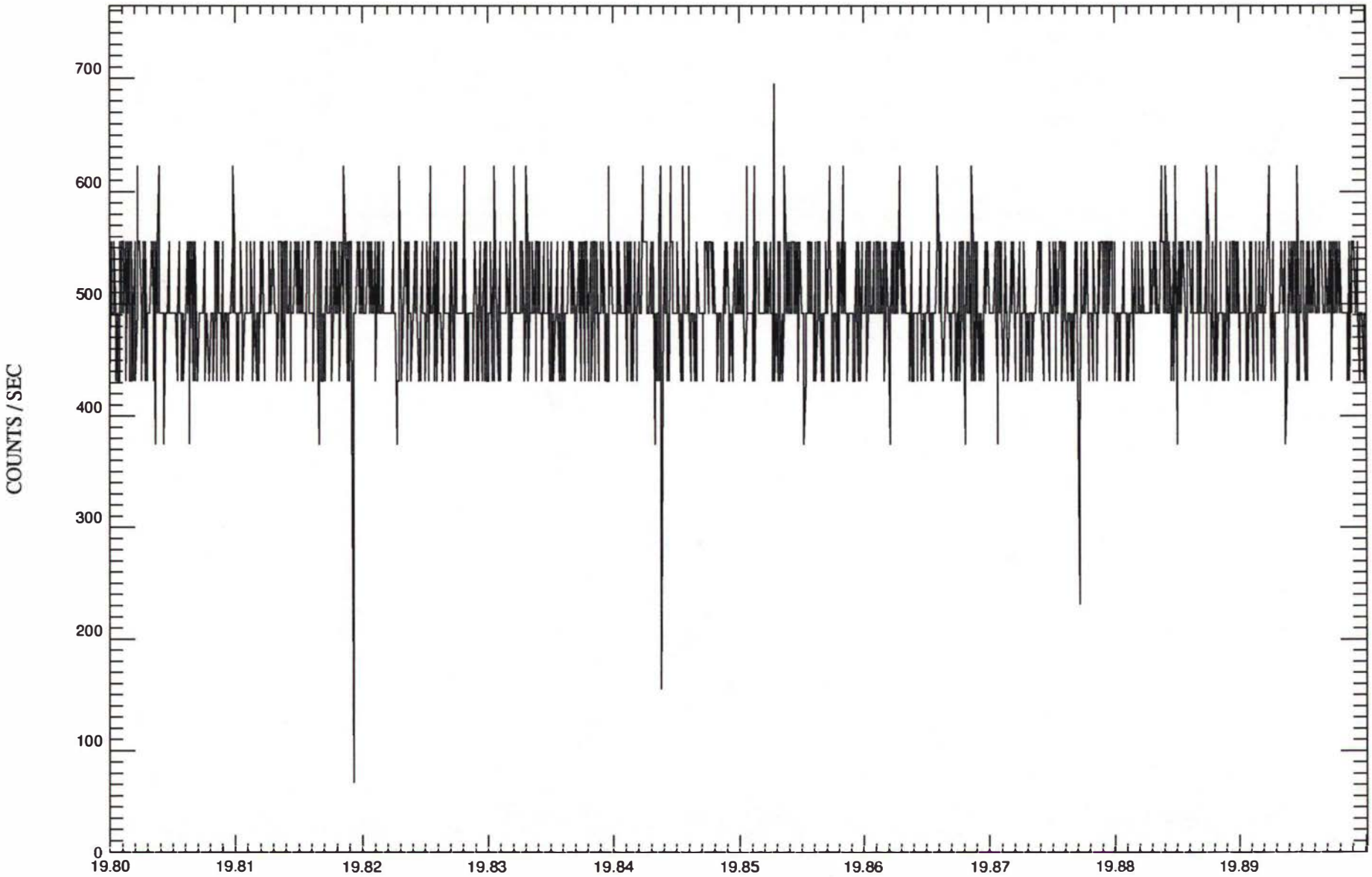
Burst Counter 8 at UT=19.852816958957 h=71470.141 s 19:51:10.141



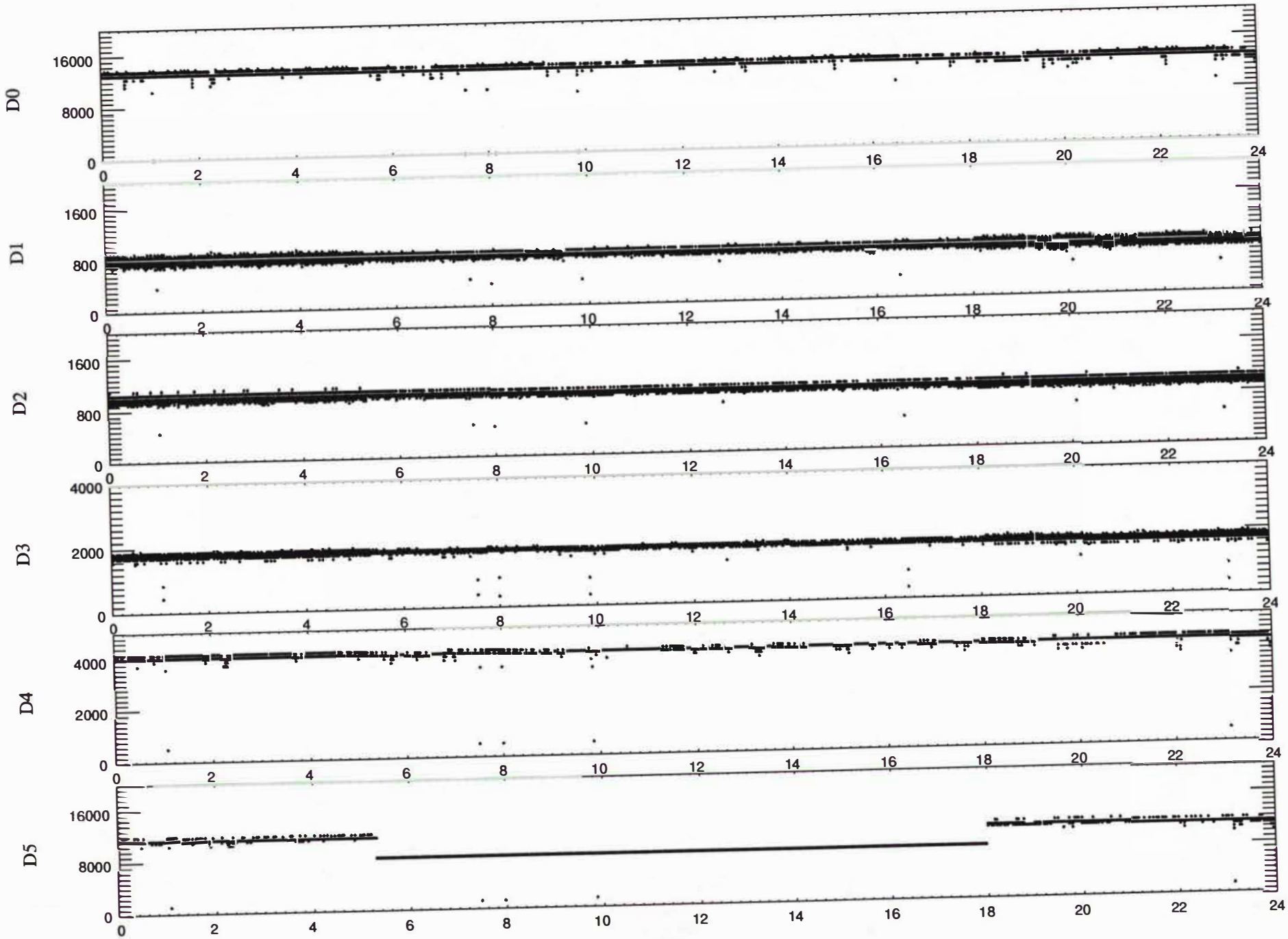
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 169, year 1997 to day 169, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 169, year 1997 to day 169, year 1997 10/13/97



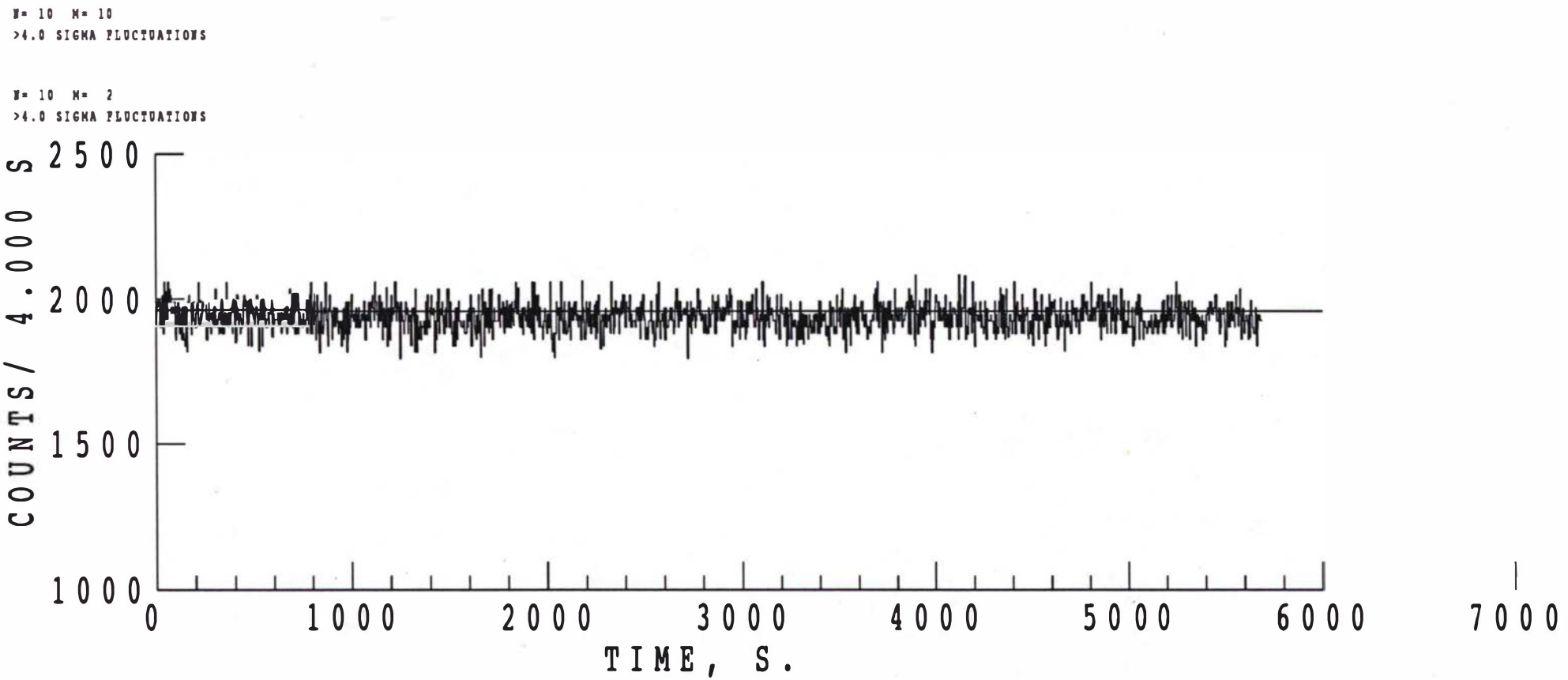
KONUS

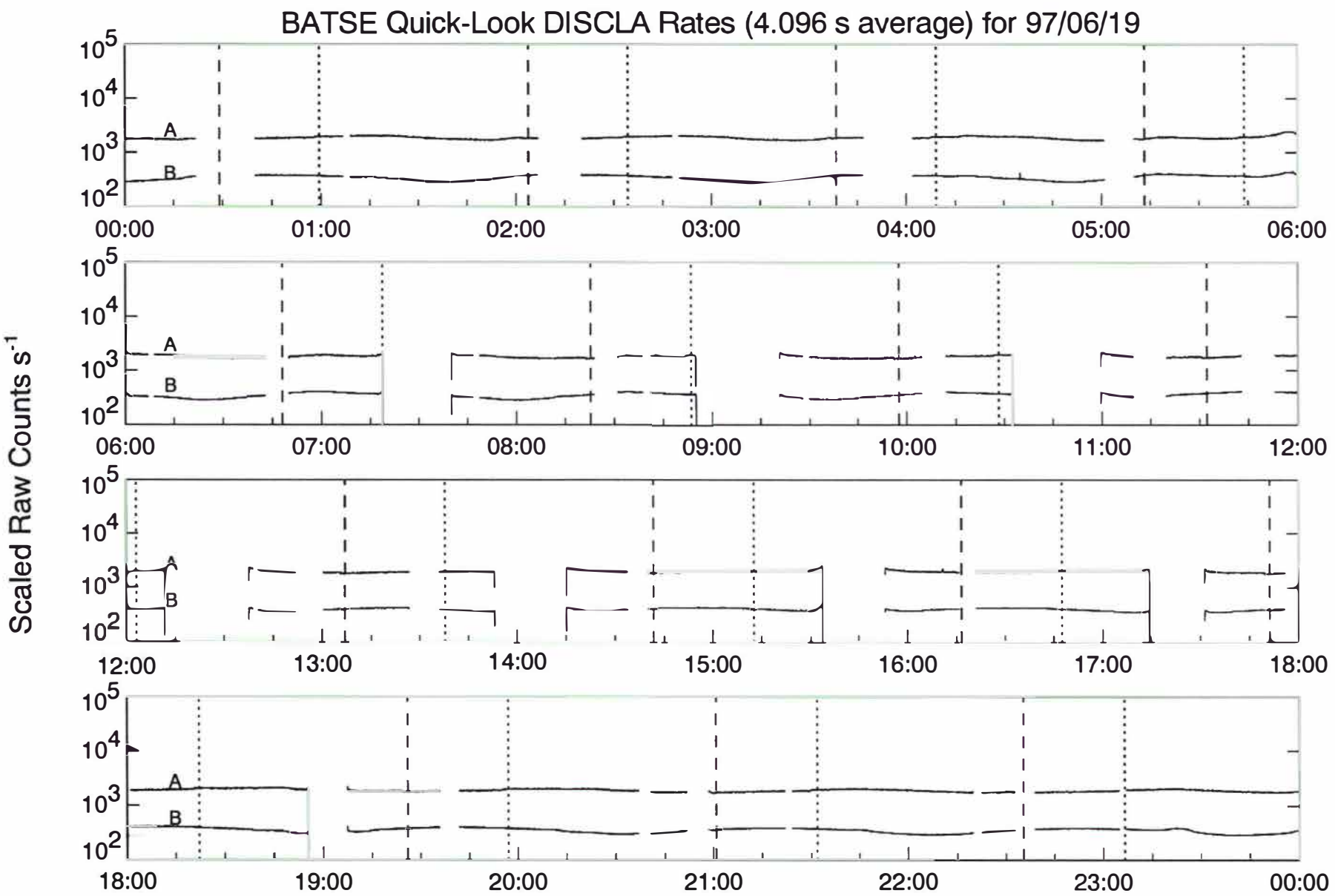
ULYSSES RT 04/02/00

19/06/97 53280.062 s

0.500 S INTERVALS REGROUPED BY 8

0- 0 keV

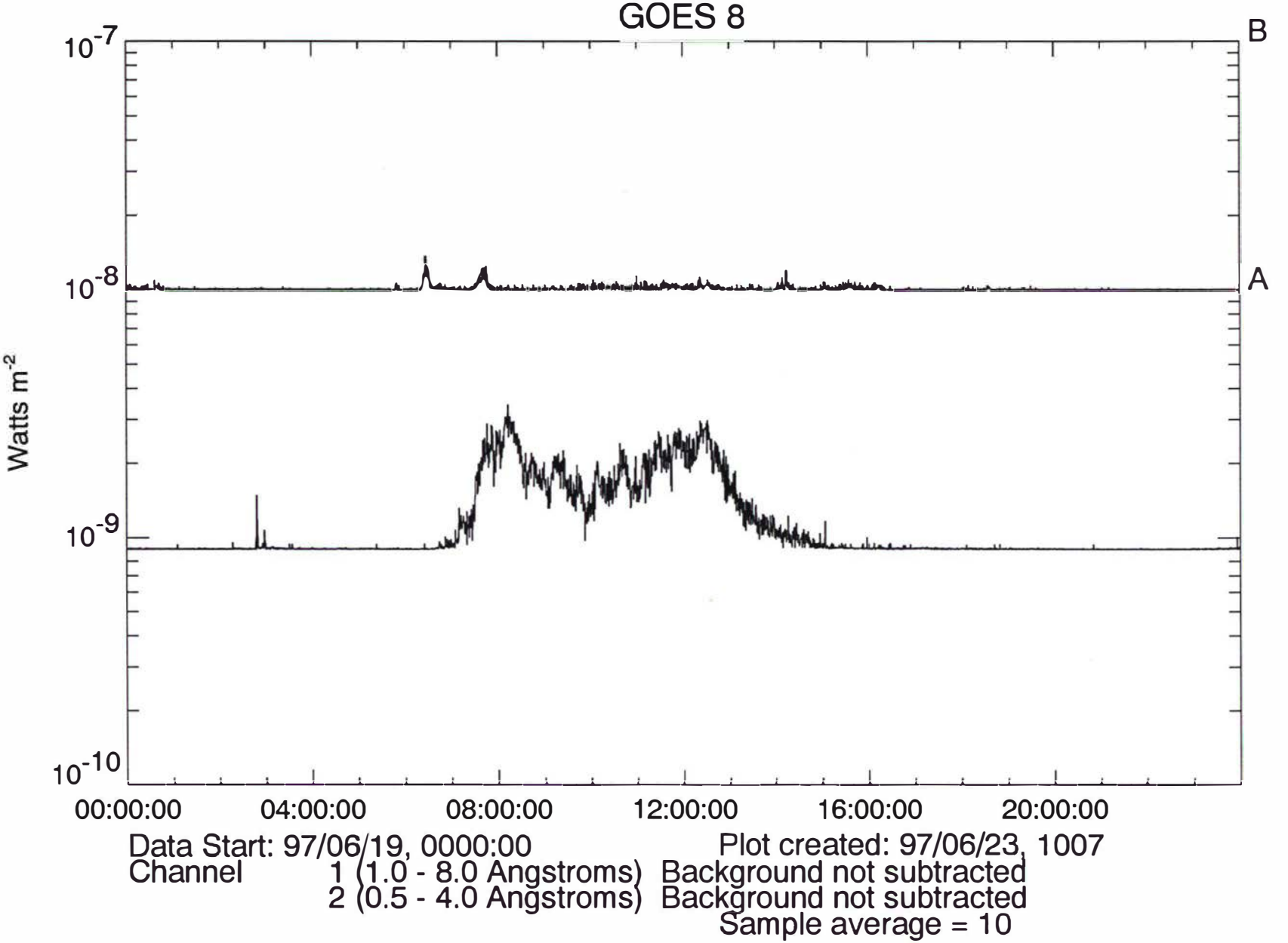




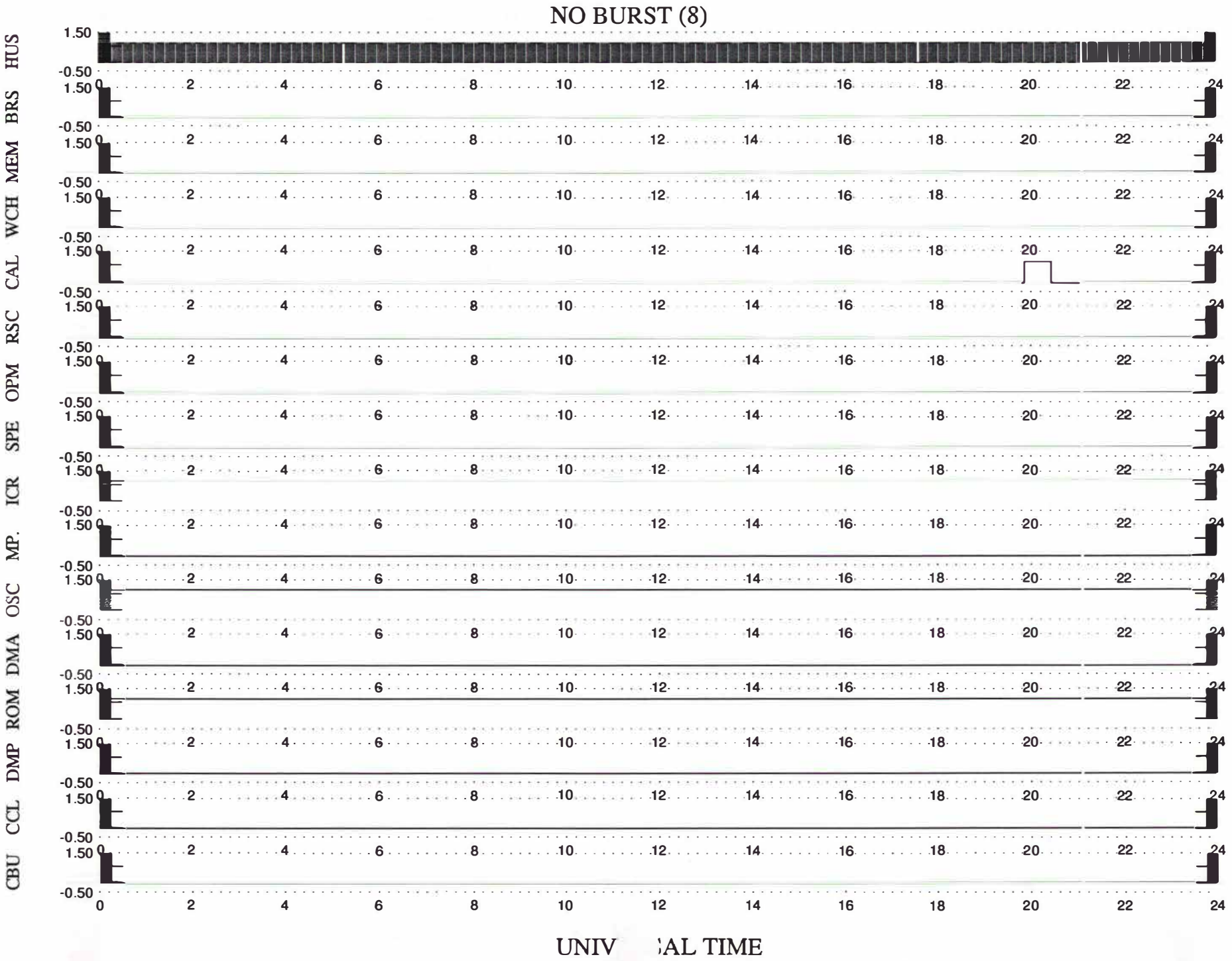
Current Time: 97/06/23, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare

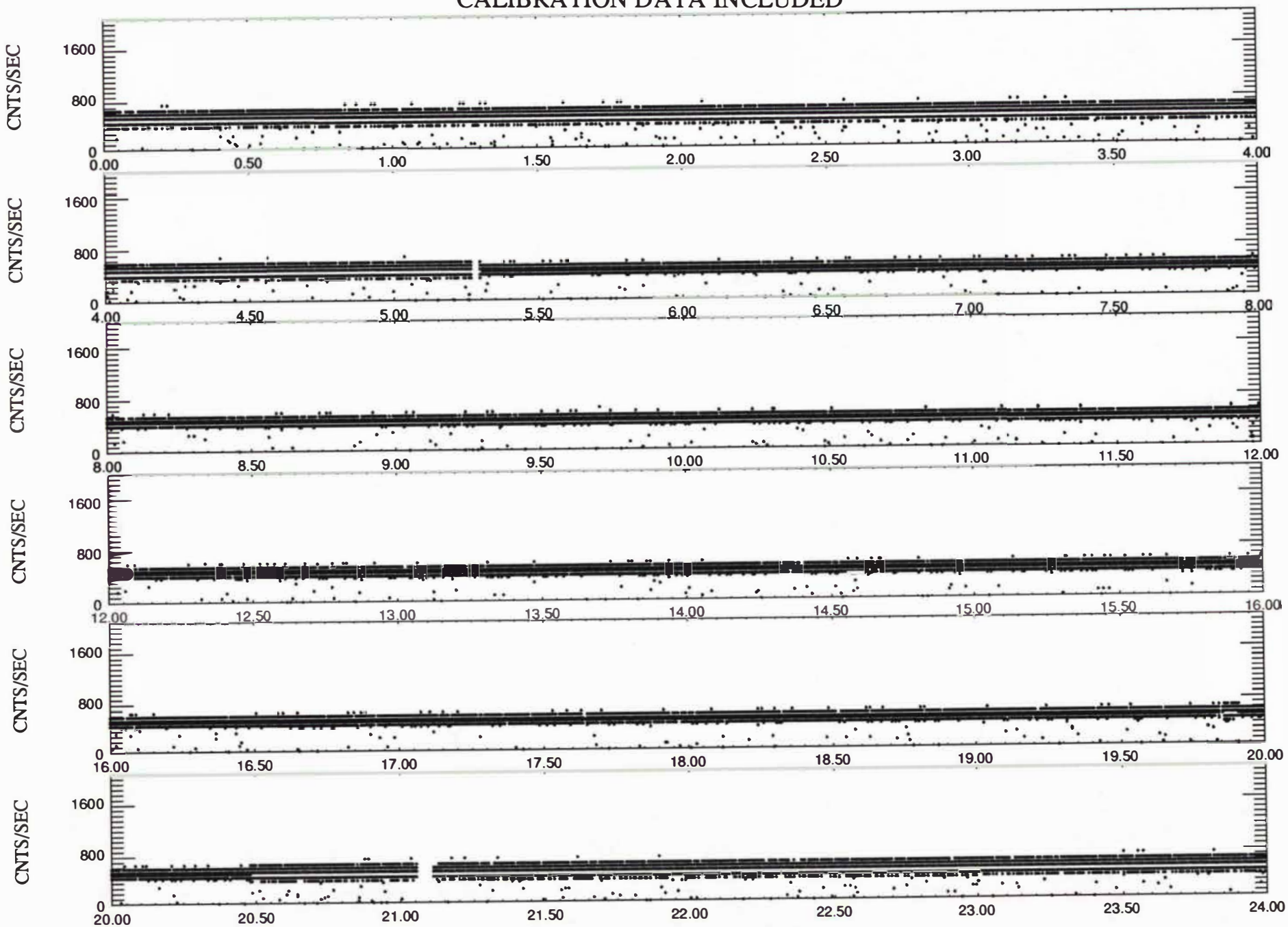

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/19, 0000:00
Plot created: 97/06/23, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 170, year 1997 to day 170, year 1997 10/13/97



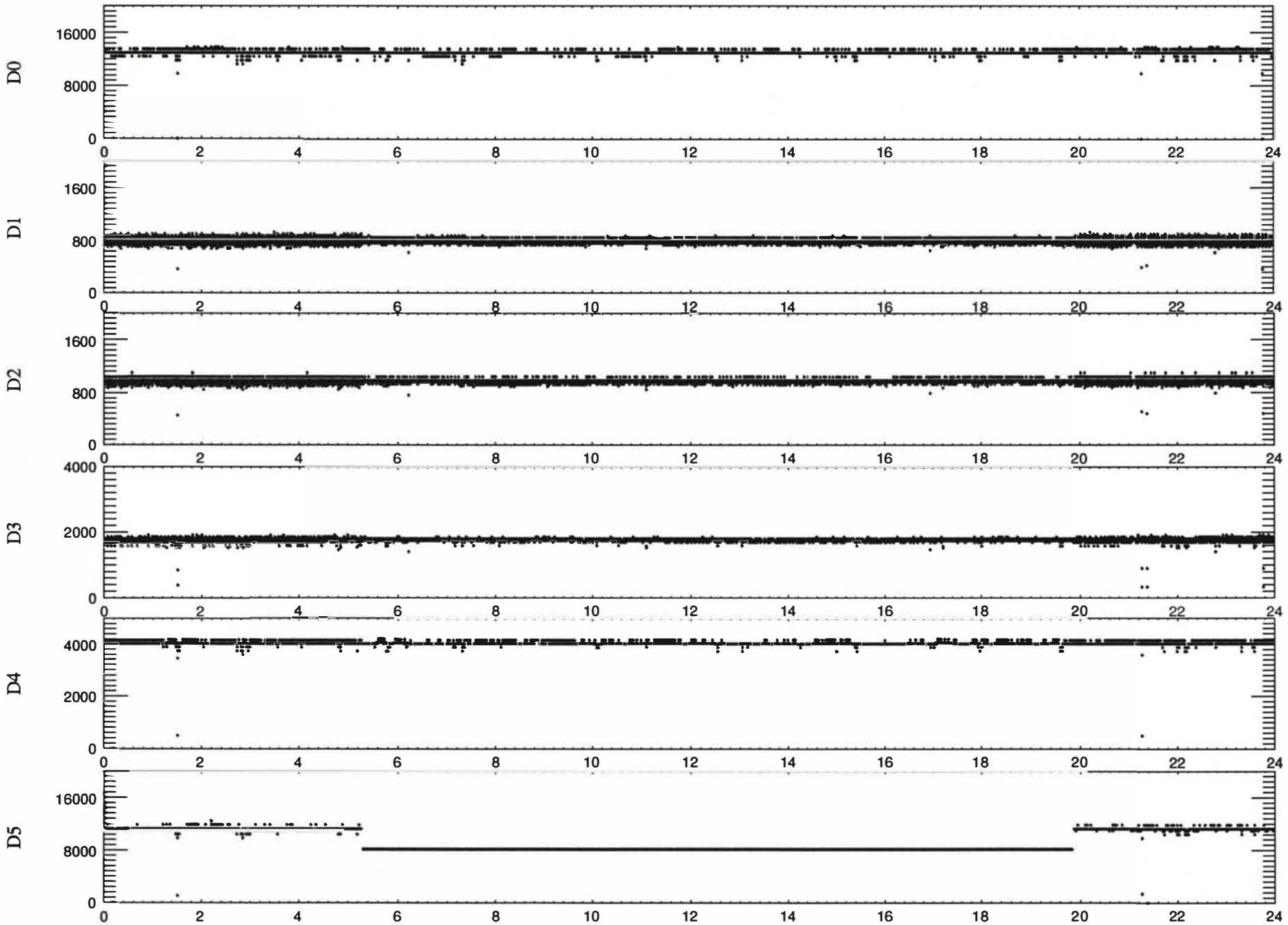
HUS 2A, MODE 1, NOT AVERAGED EDR day 170, year 1997 to day 170, year 1997 10/13/97

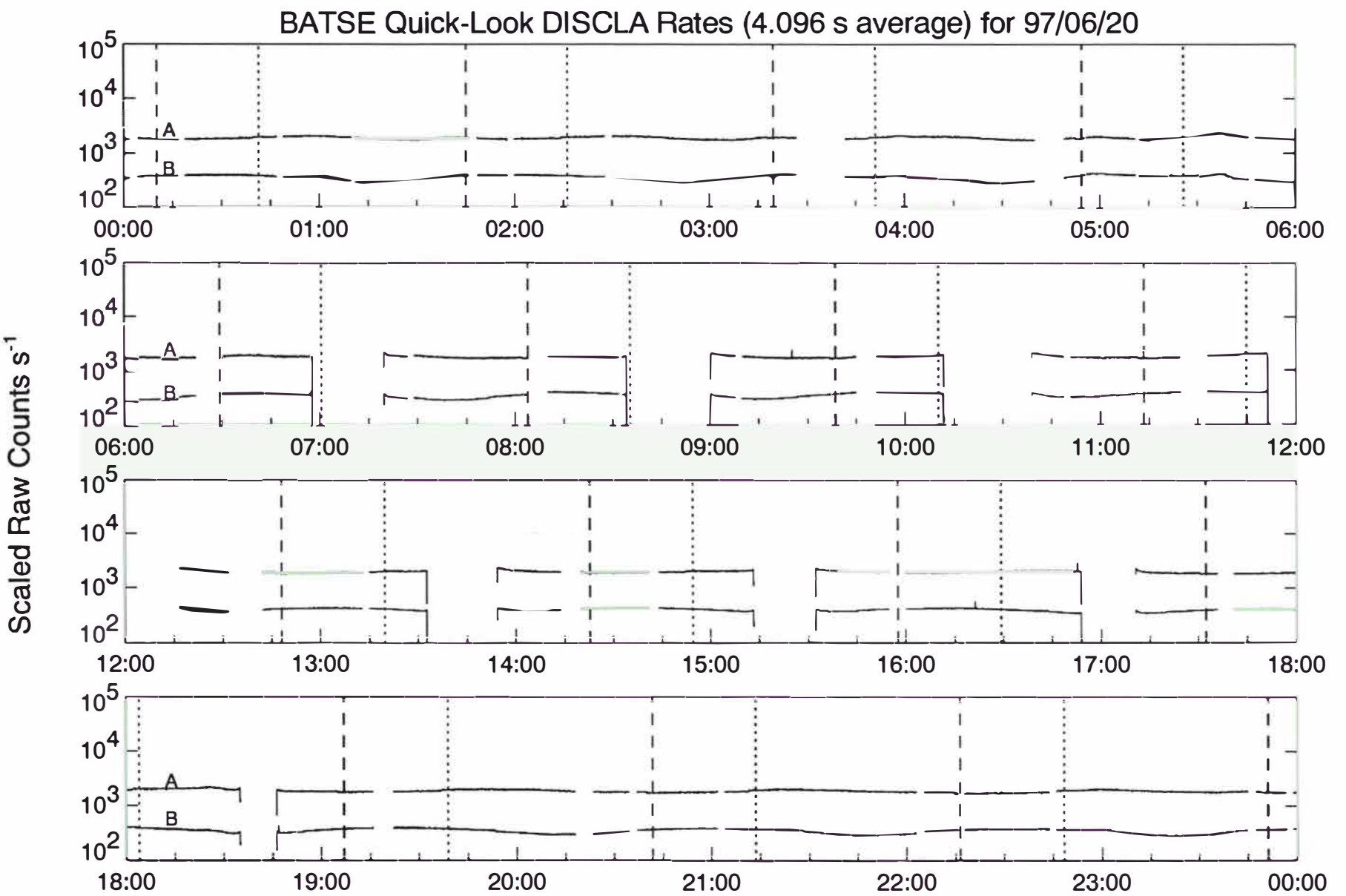
CALIBRATION DATA INCLUDED

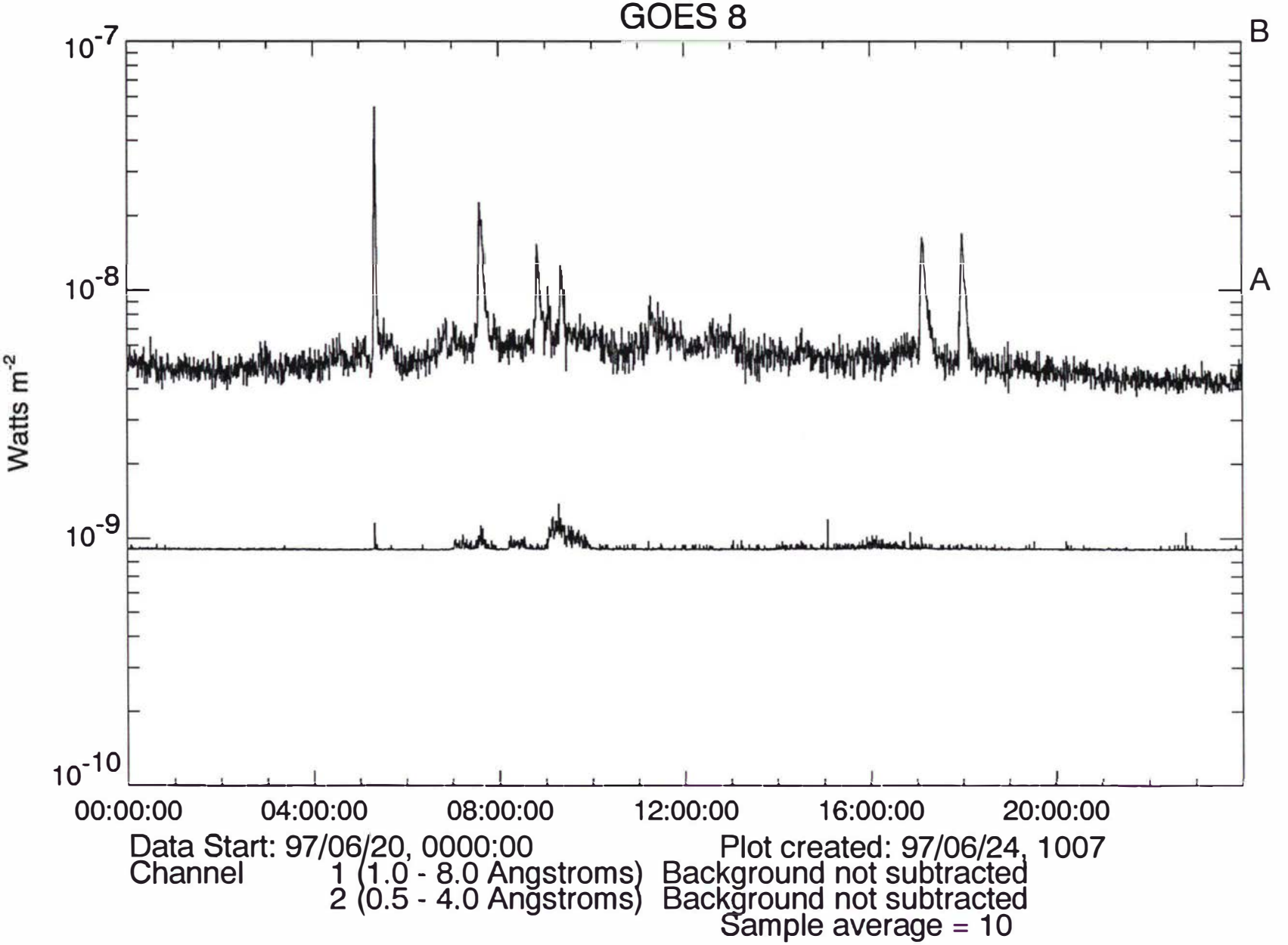


UNIV GAL TIME

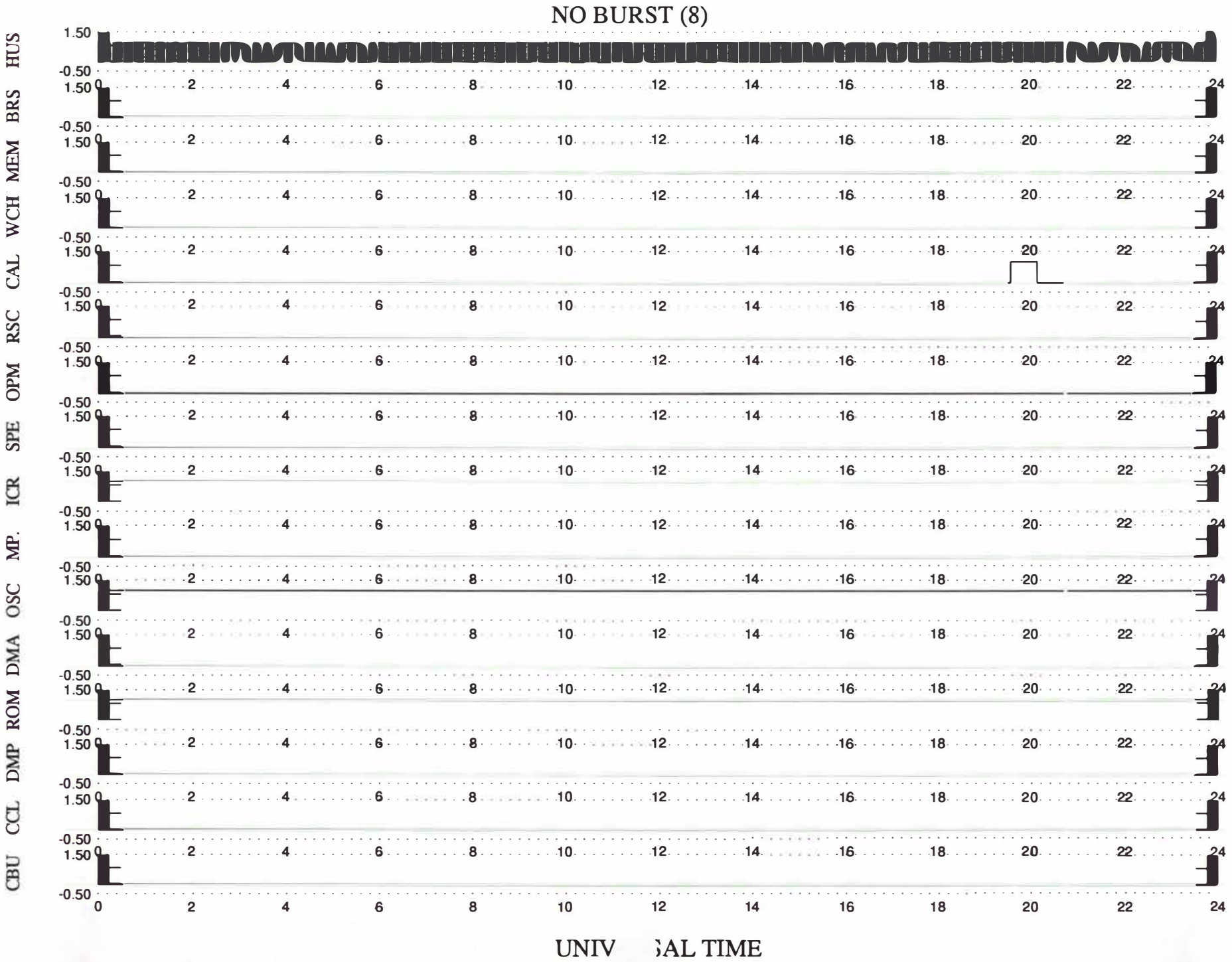
HUS 2B COUNTS / SEC EDR day 170, year 1997 to day 170, year 1997 10/13/97




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/20
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/24, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

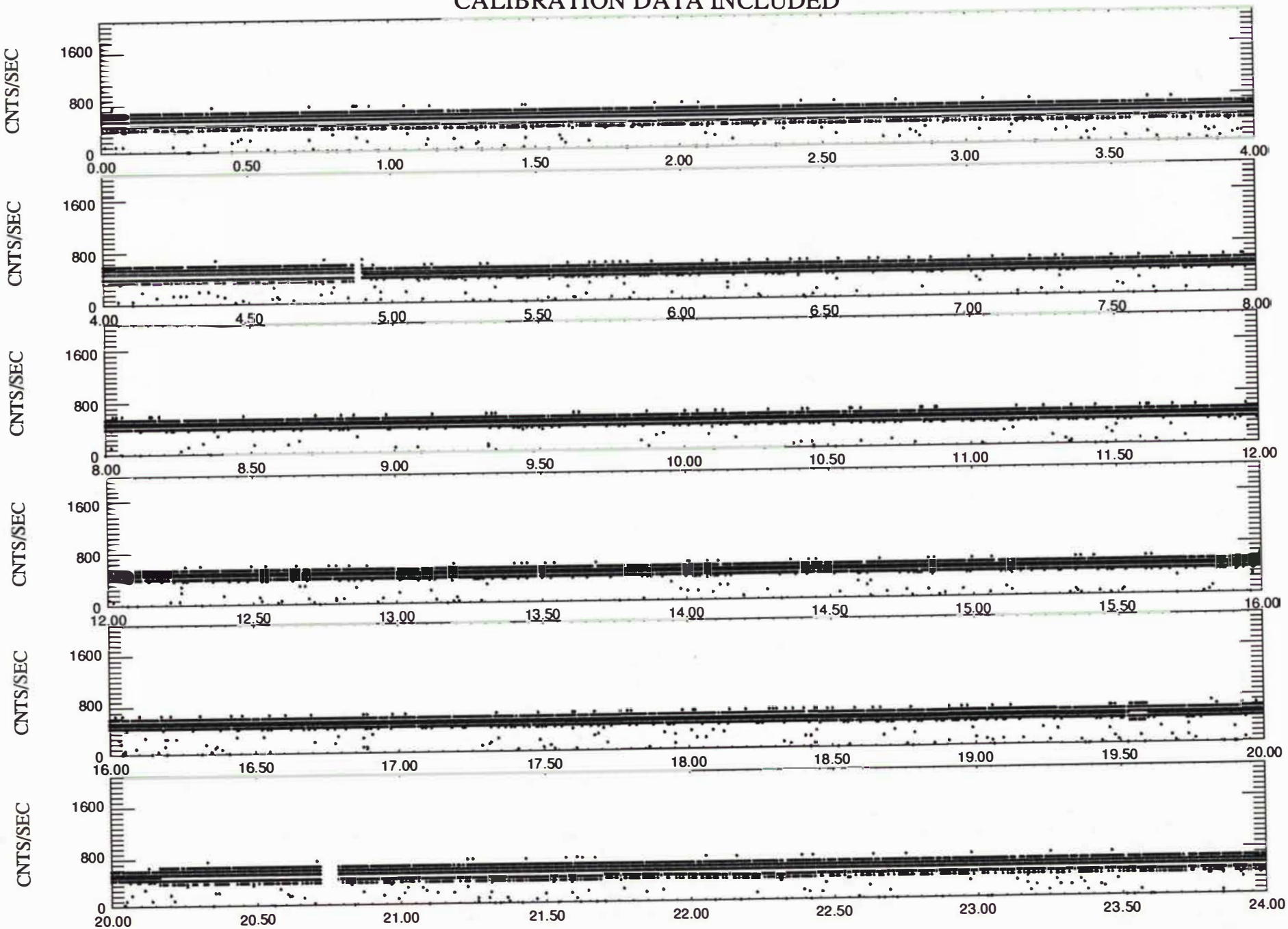

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/20, 0000:00
Plot created: 97/06/24, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 171, year 1997 to day 171, year 1997 10/13/97



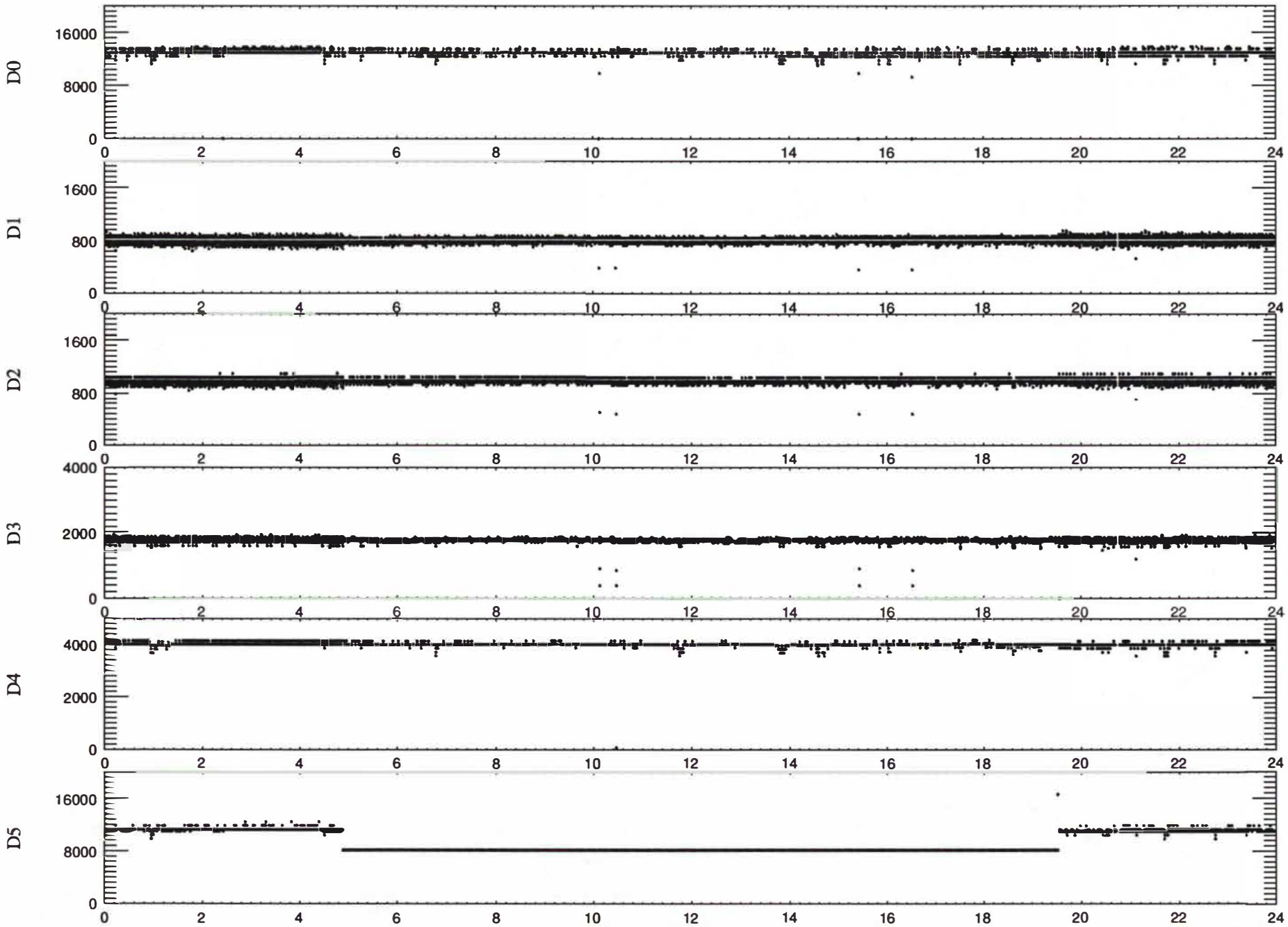
HUS 2A, MODE 1, NOT AVERAGED EDR day 171, year 1997 to day 171, year 1997 10/13/97

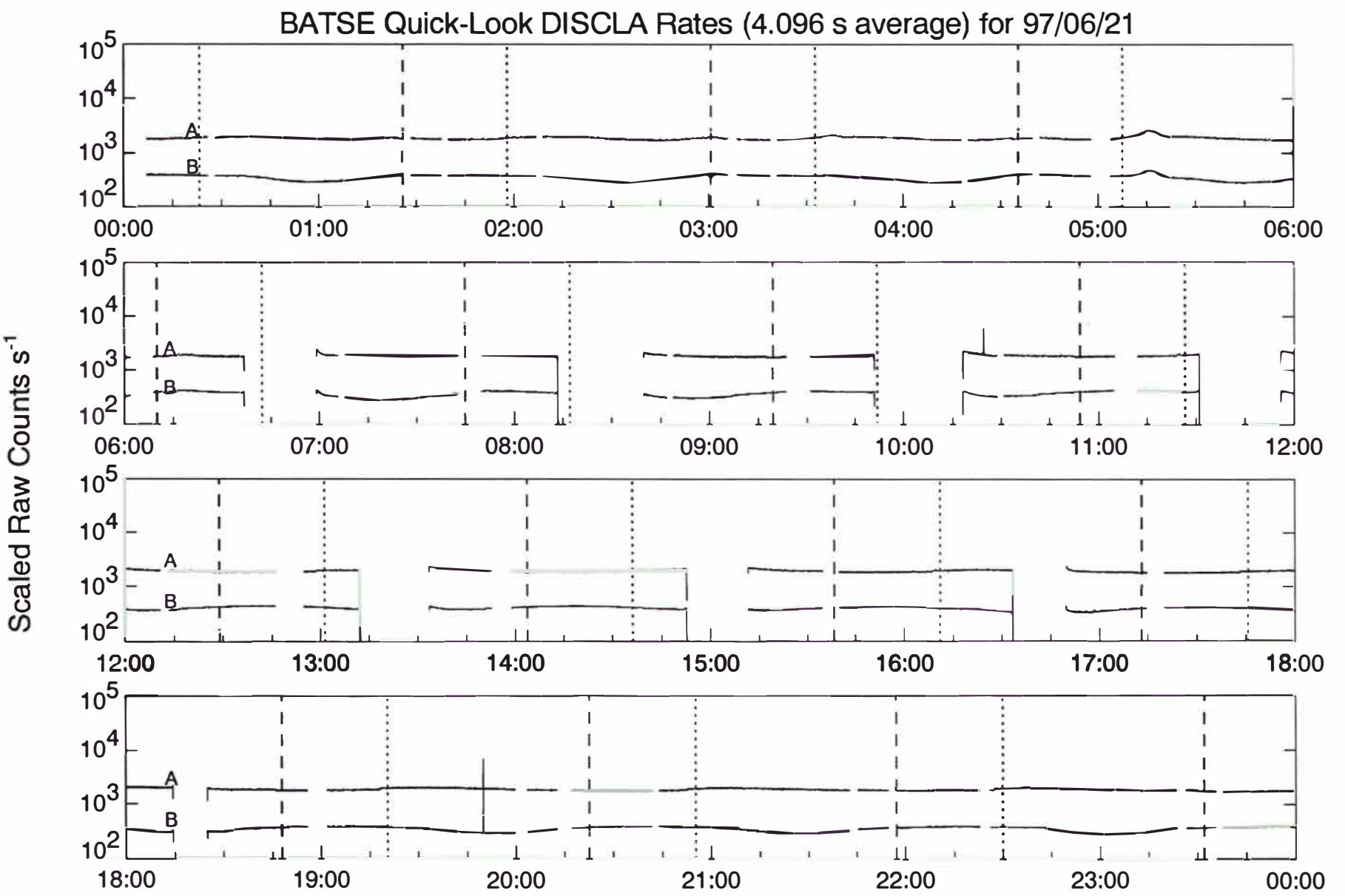
CALIBRATION DATA INCLUDED

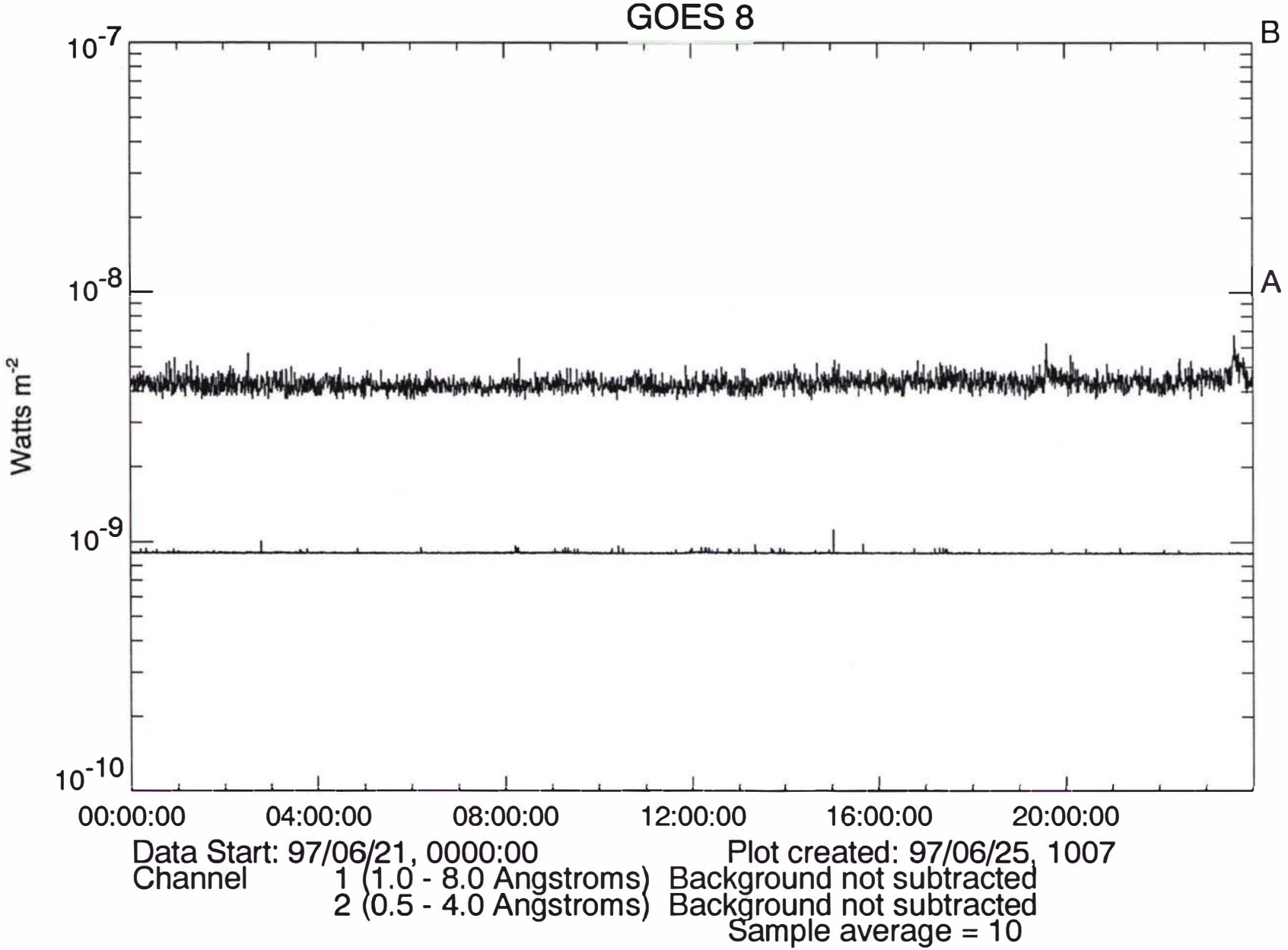


UNIV `AL TIME

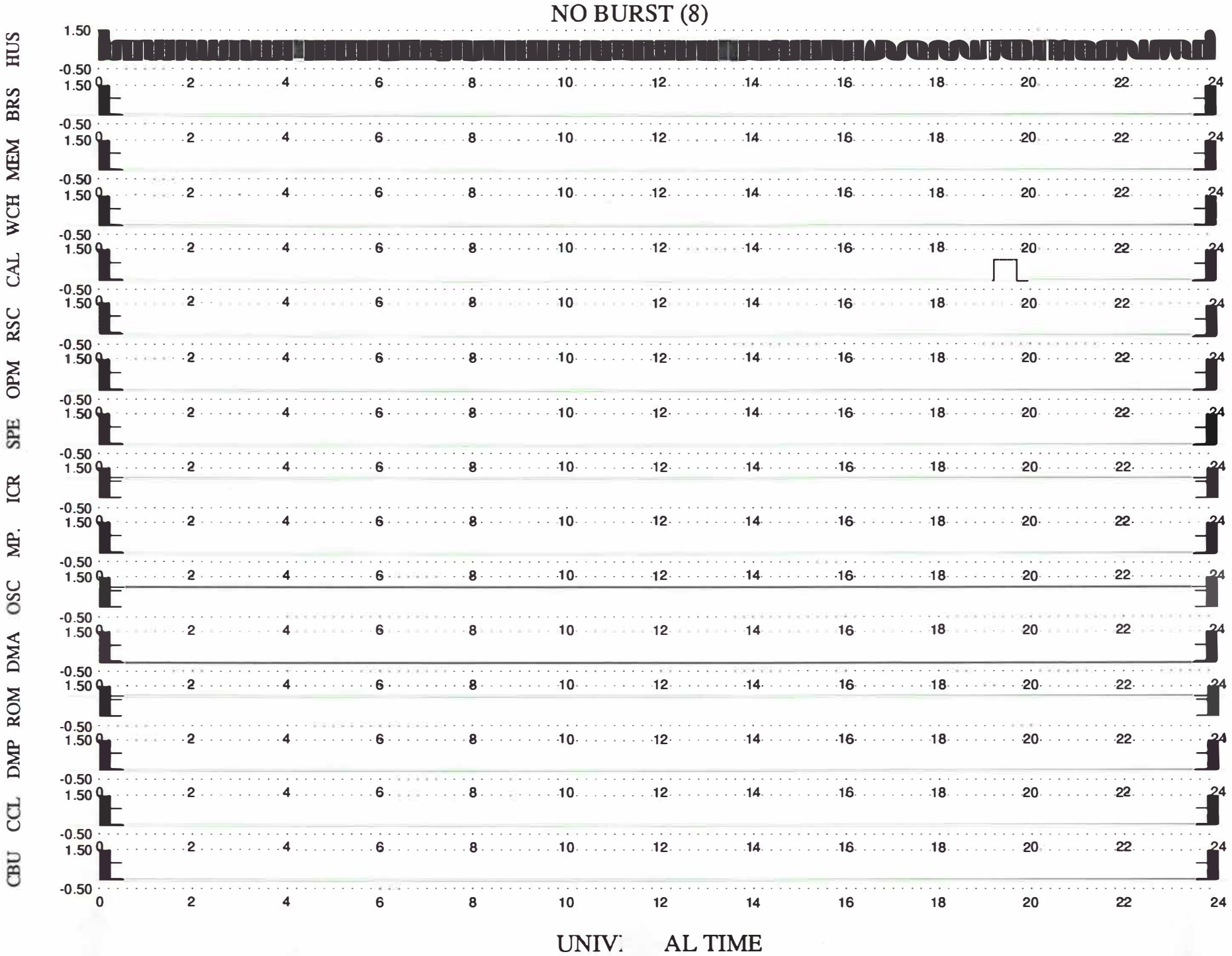
HUS 2B COUNTS / SEC EDR day 171, year 1997 to day 171, year 1997 10/13/97




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/21
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/25, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

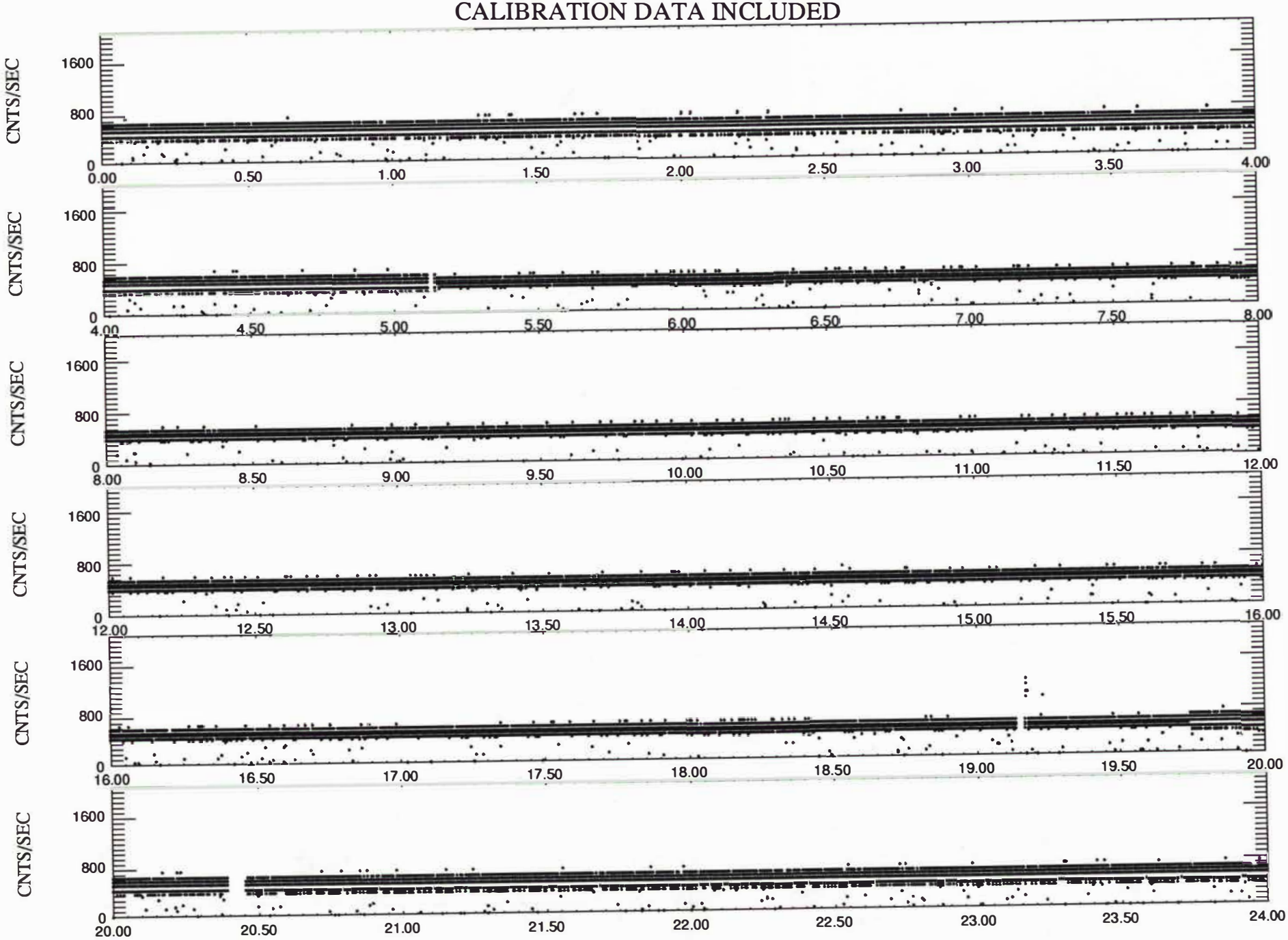

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/21, 0000:00
Plot created: 97/06/25, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 172, year 1997 to day 172, year 1997 10/13/97



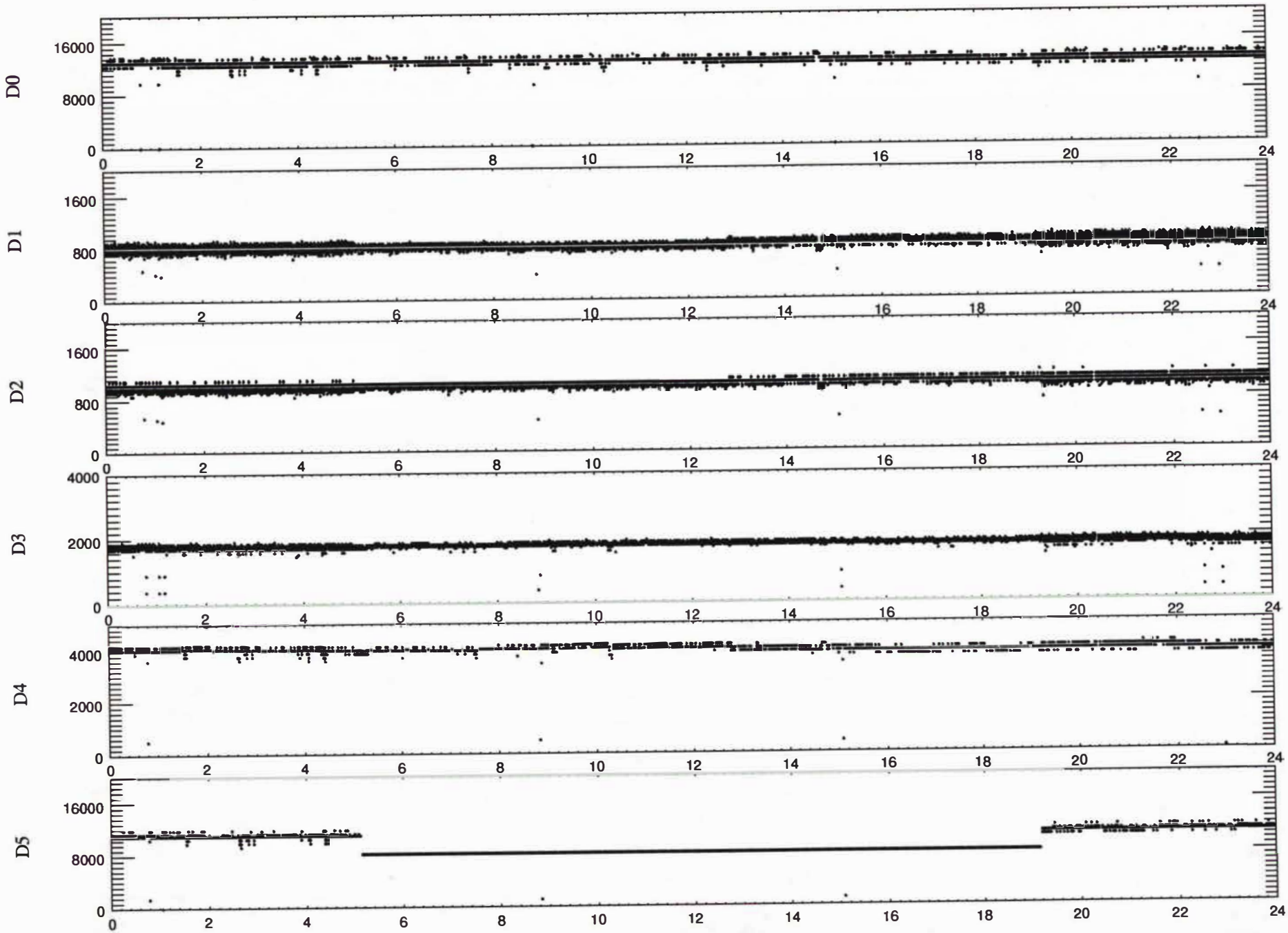
HUS 2A, MODE 1, NOT AVERAGED EDR day 172, year 1997 to day 172, year 1997 10/13/97

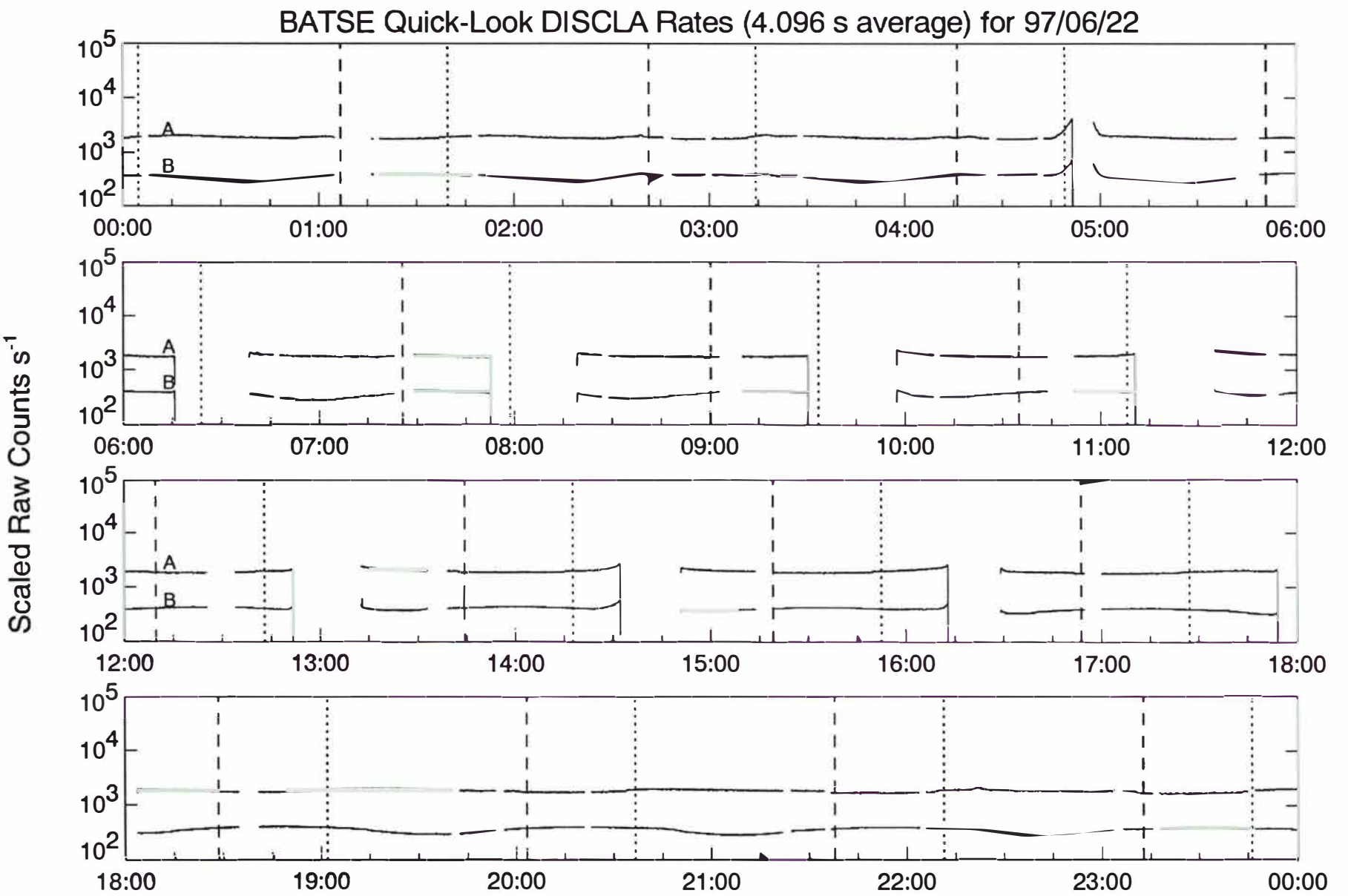
CALIBRATION DATA INCLUDED

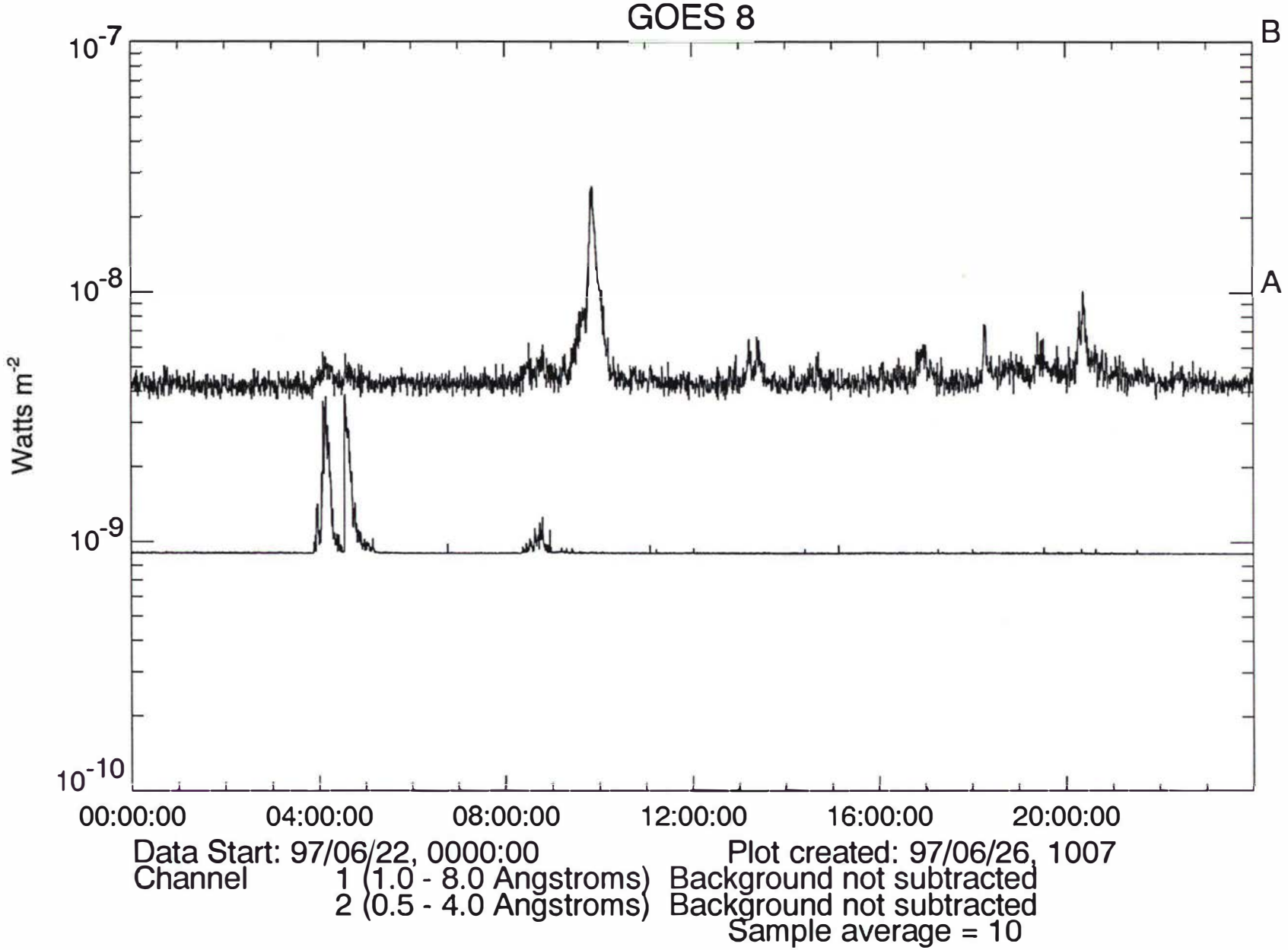


UNIV 'AL TIME

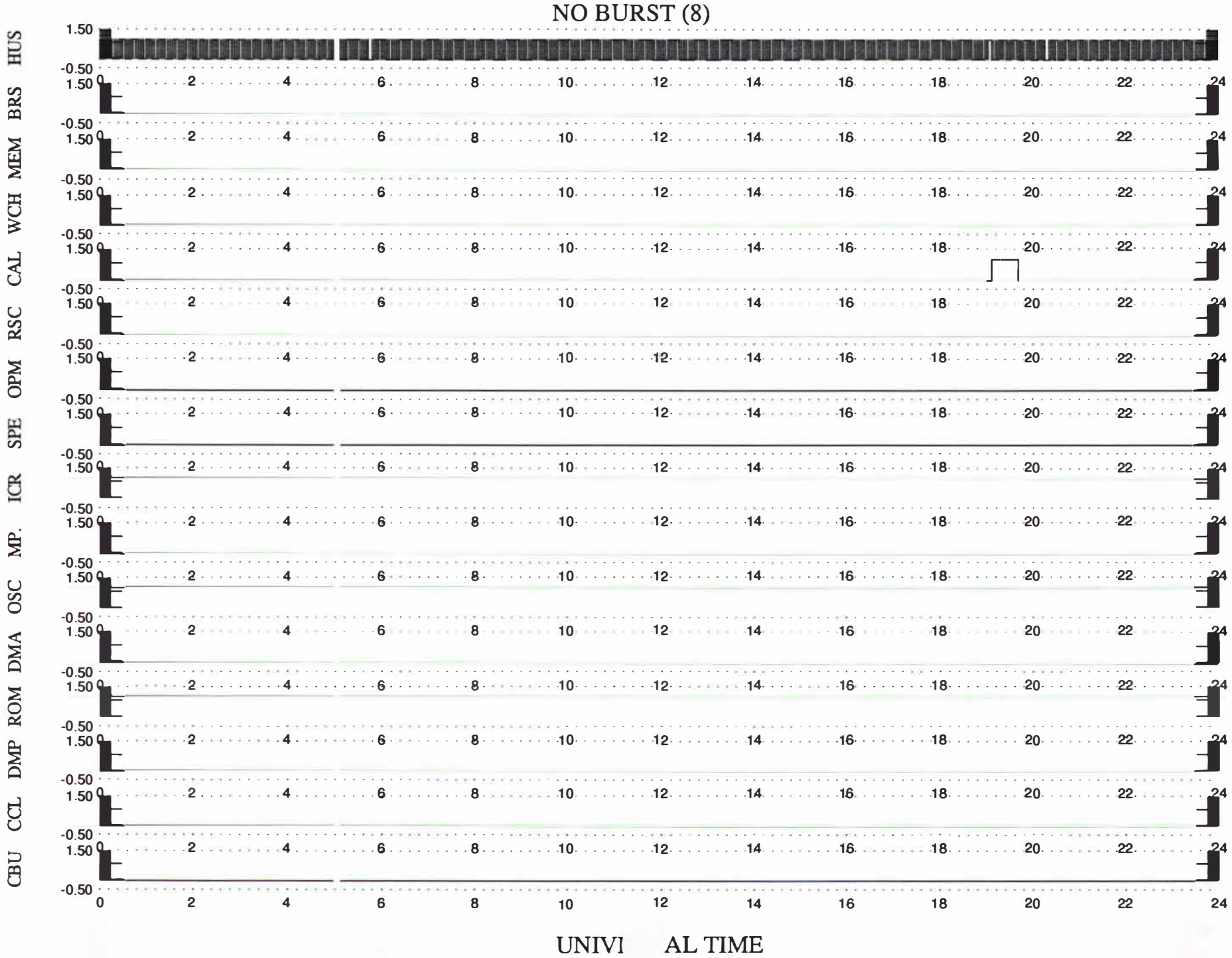
HUS 2B COUNTS / SEC EDR day 172, year 1997 to day 172, year 1997 10/13/97




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/22
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/06/26, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

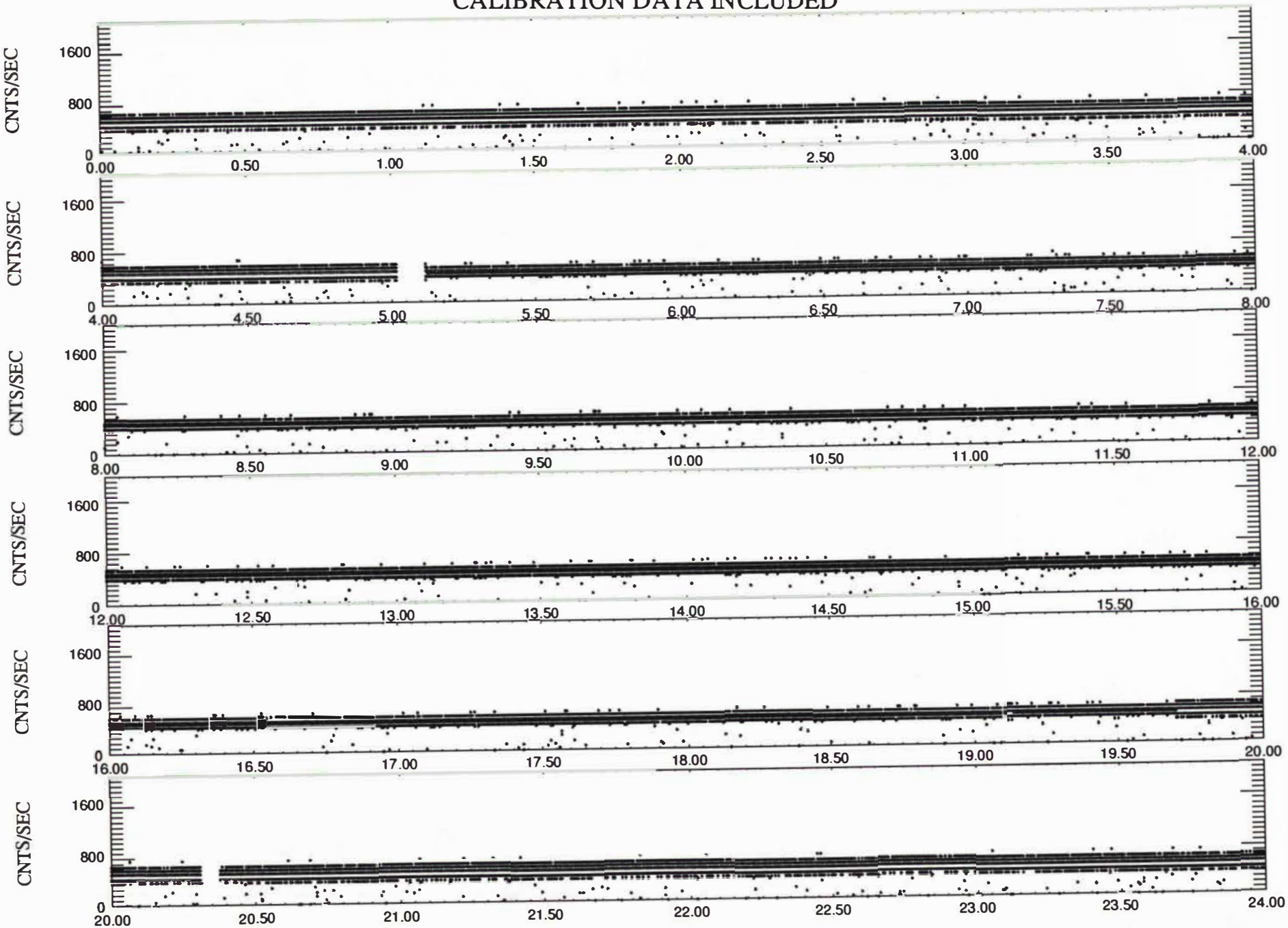

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/22, 0000:00
Plot created: 97/06/26, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 173, year 1997 to day 173, year 1997 10/13/97



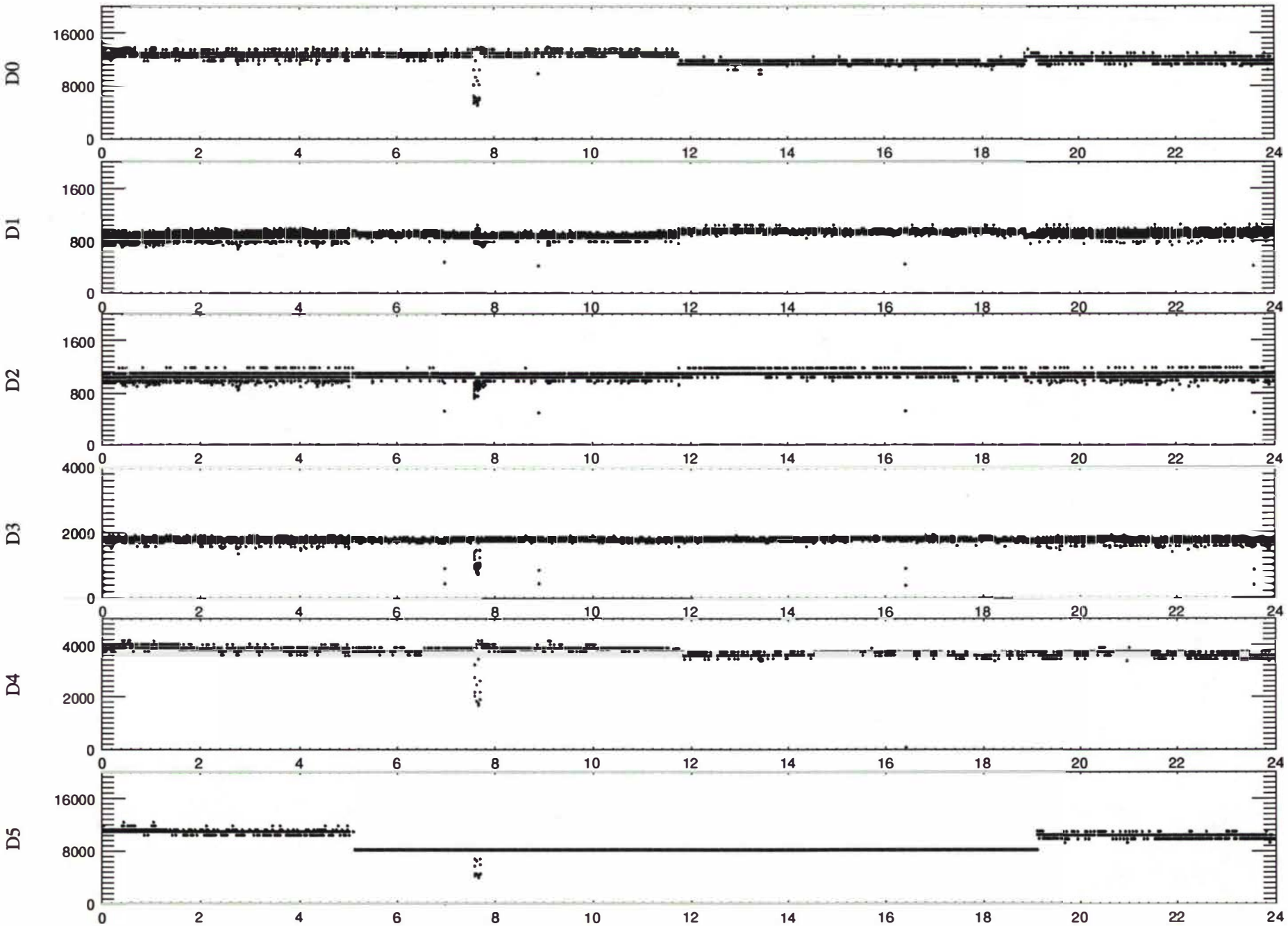
HUS 2A, MODE 1, NOT AVERAGED EDR day 173, year 1997 to day 173, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV SAL TIME

HUS 2B COUNTS / SEC EDR day 173, year 1997 to day 173, year 1997 10/13/97



From WOODSP@SSLLES.MSFC.NASA.GOV Tue Jun 24 11:26 PDT 1997
Return-Path: <WOODSP@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id LAA01017; Tue, 24 Jun 1997 11:26:29 -0700
Date: Tue, 24 Jun 1997 13:26:16 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970624132616.22402ee2@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6277
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6277
EVENT OF 1997 JUN 23 DAY OF YEAR=174
EVENT CROSSING TIME AT BATSE : 19401. S. OR 05:23:21.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 280.000 -40.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 6/ 97 IS:
RA= 152.529 DEC= 26.771 DIST= 5.664 AU
BATSE-ULYSSES DISTANCE = 847366720. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 45.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1994.40 SECS.
CROSSING TIME AT ULYSSES IS 21395. S. OR 05:56:35 +/- 428.02 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 6/ 97 IS:
RA= 181.610 DEC= -0.348 DIST= 1.196 AU
MARS-BATSE DISTANCE = 178966400. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.81 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 64.40 SECS.
CROSSING TIME AT MARS IS 19465. S. OR 05:24:25 +/- 104.02 SECONDS

BATSE BURST TRIGGER

NO.: 6277

TIME: TJD=0622 SECONDS=19401

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=84.7 AZIMUTH=161.6 ERROR=5.4 DEGREES

COMMENTS:
GRB LASTING ~ 0.3 SEC. SINGLE SPIKE WITH SUBSTRUCTURE AND A
HARD SPECTRUM. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6277	970623	10622	19401	6000	280	-40	.3

BATSE BURST# 6277

ULYSSES RT 24/ 6/97

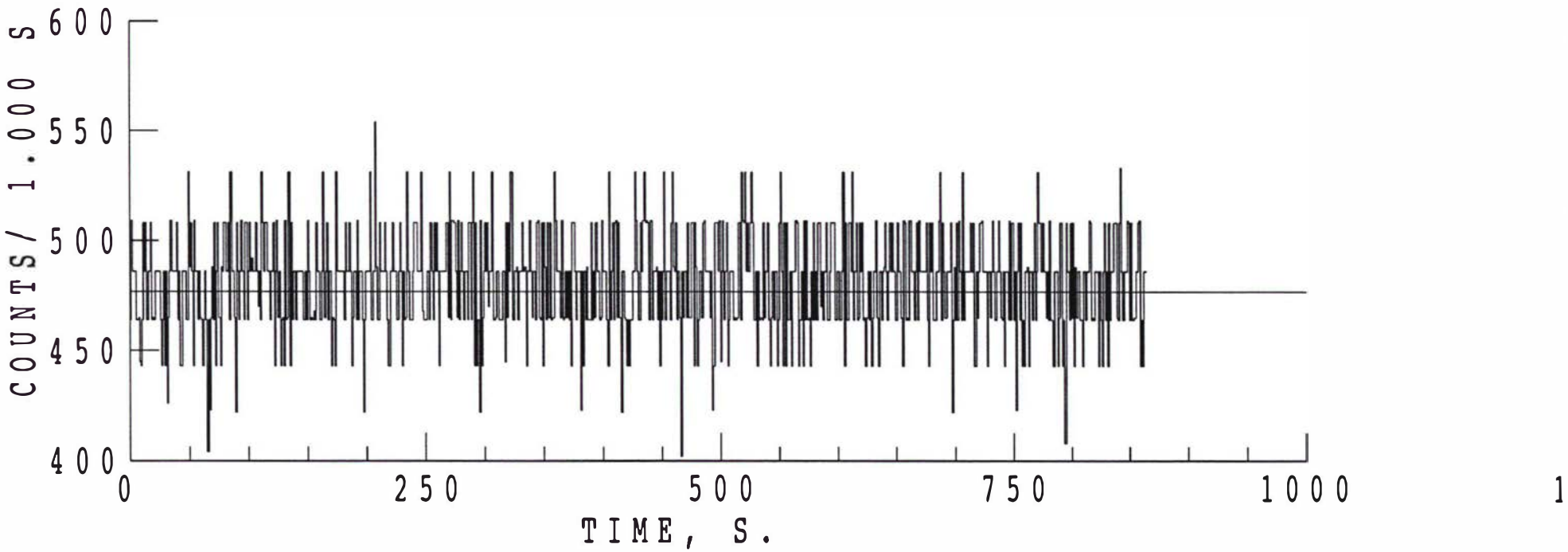
23/ 6/97 20952.195 s

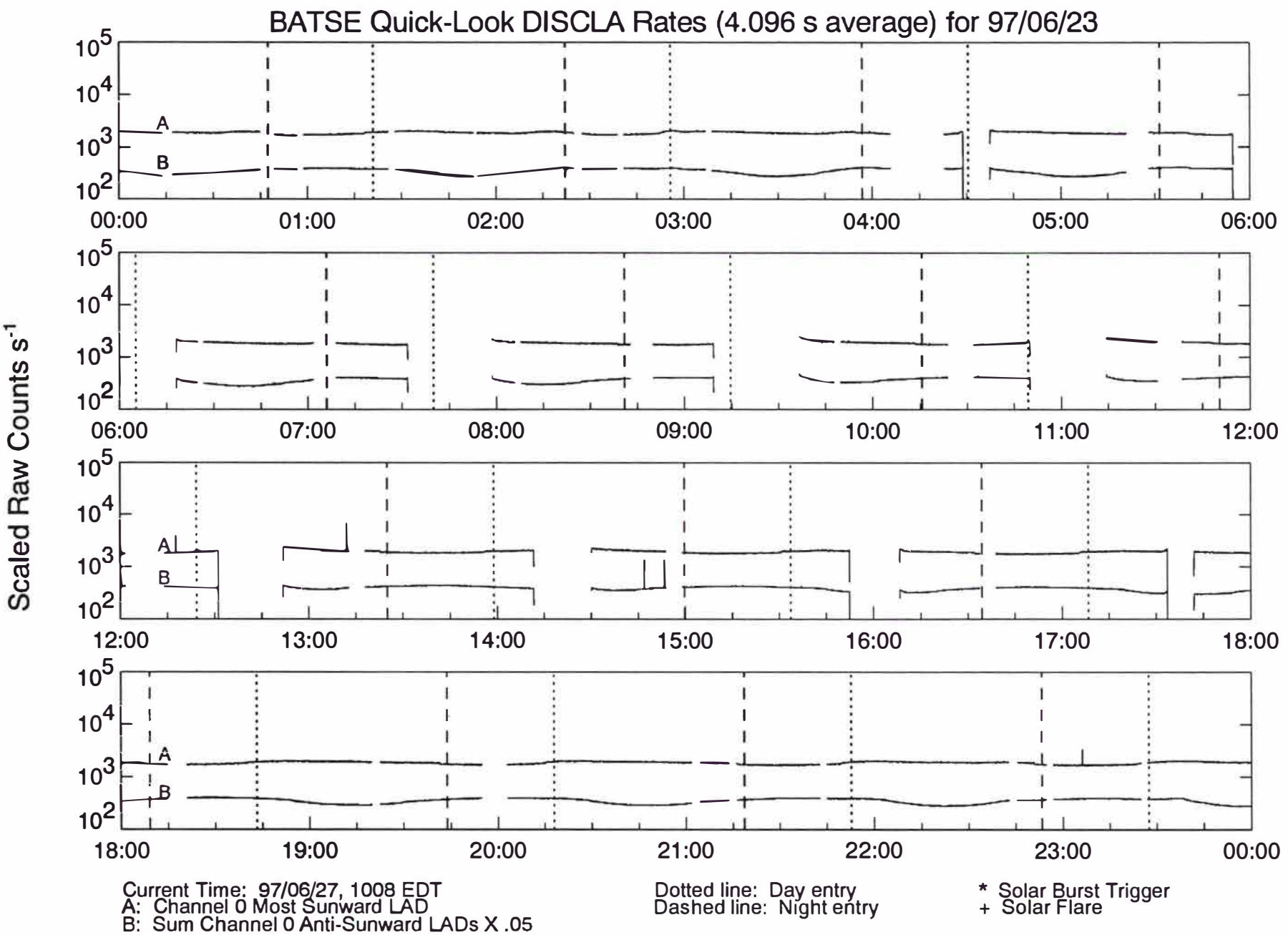
0.500 S INTERVALS REGROUPED BY 2

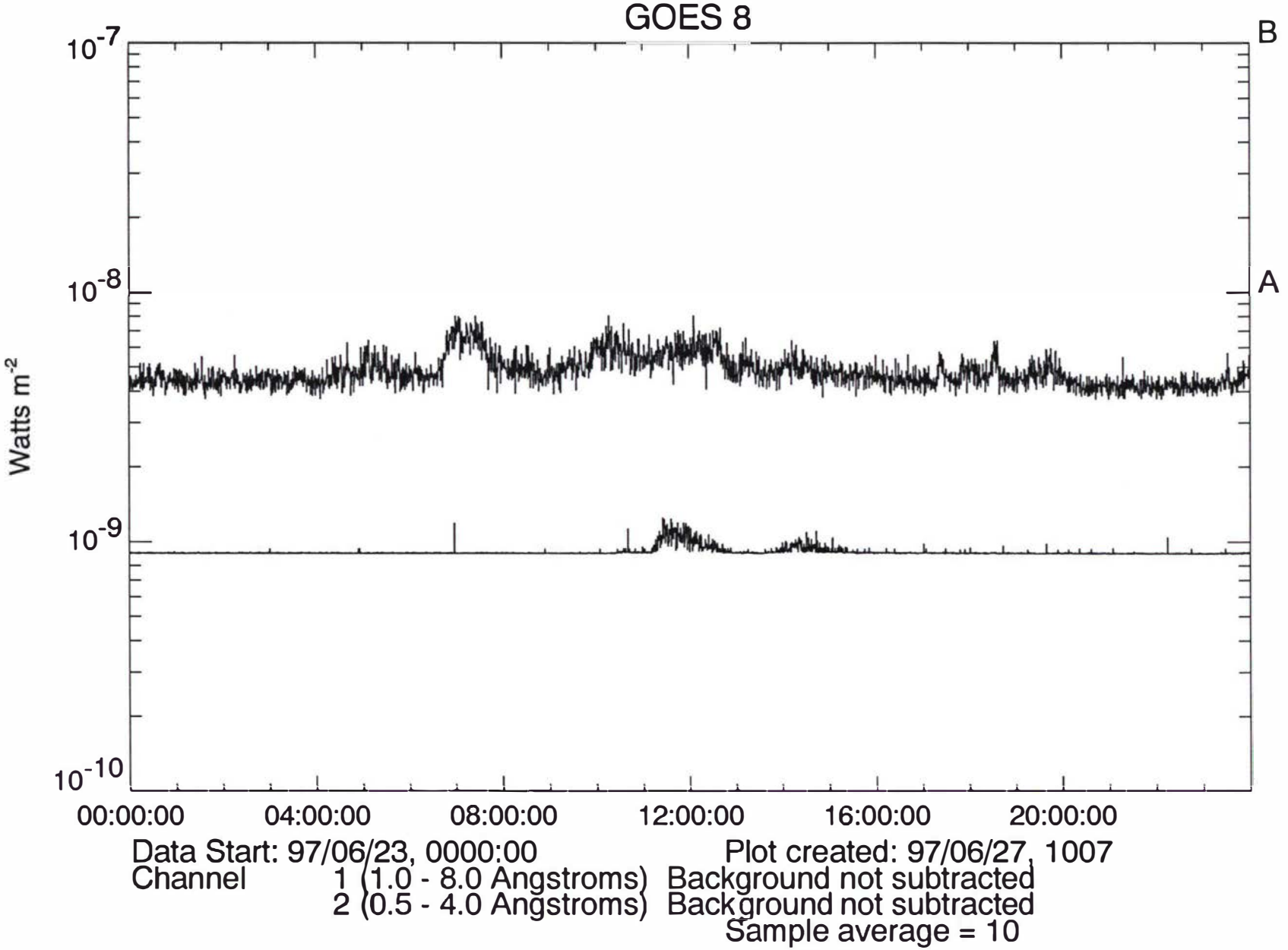
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

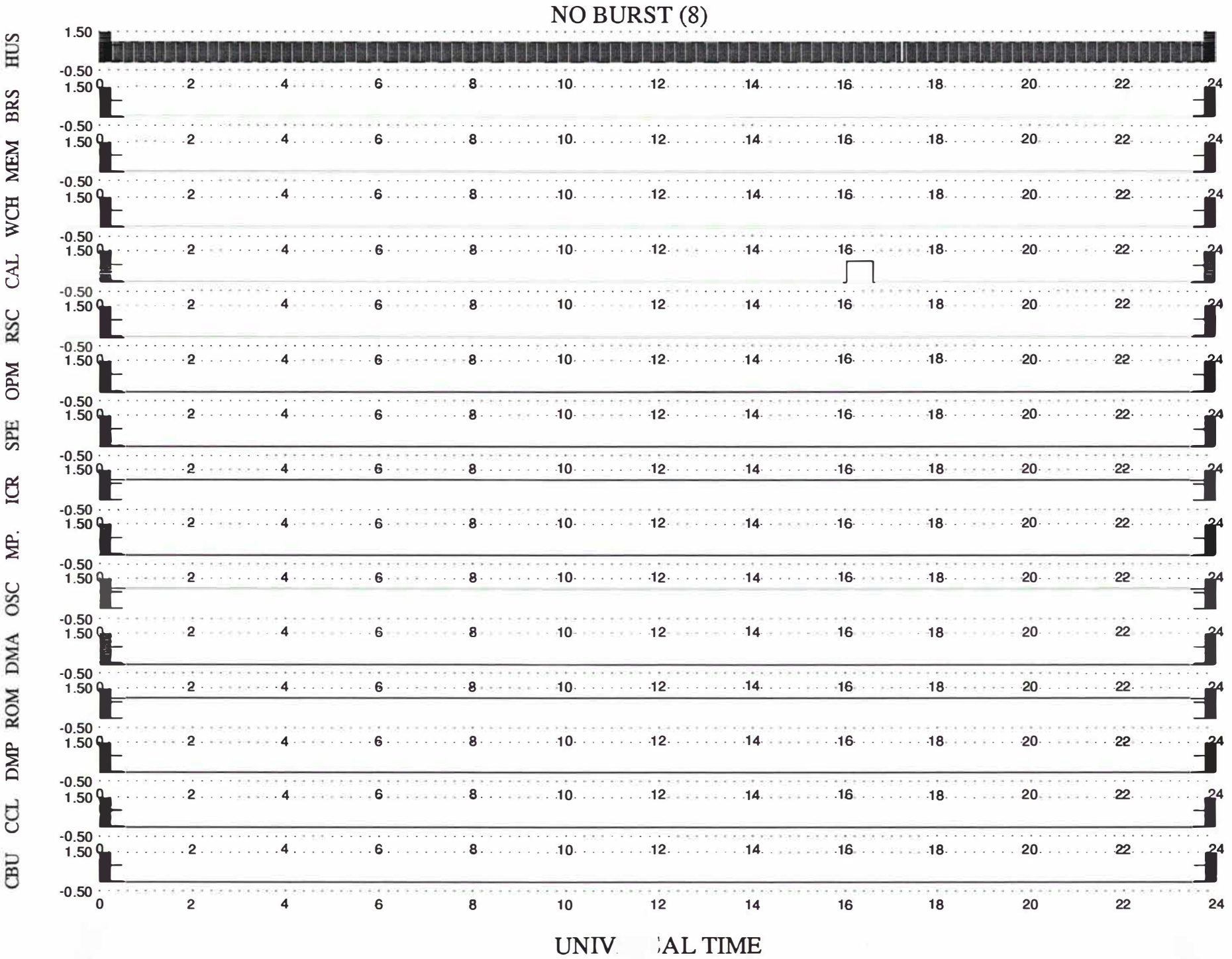
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/23
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/06/27, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

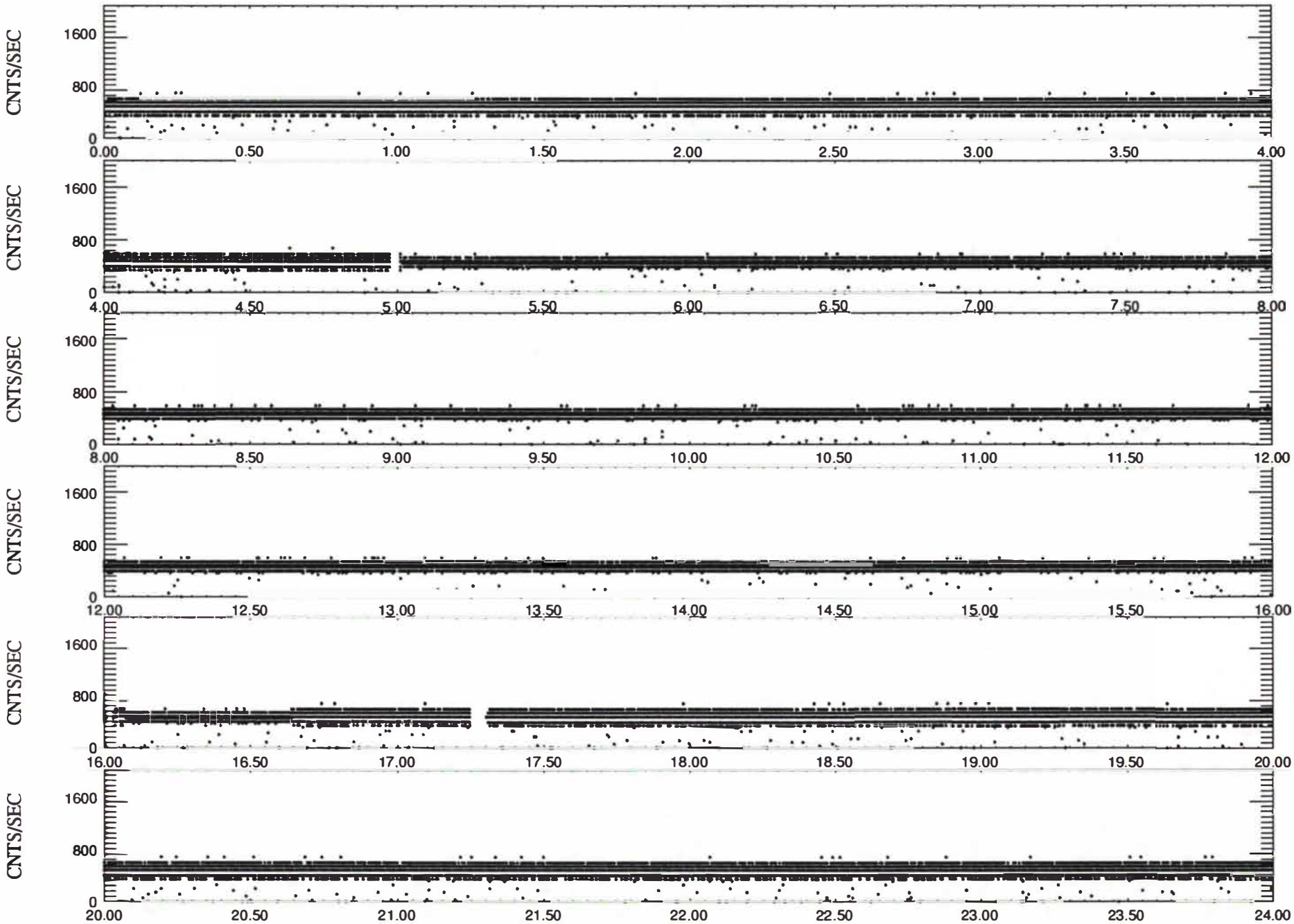

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/23, 0000:00
Plot created: 97/06/27, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 174, year 1997 to day 174, year 1997 10/13/97



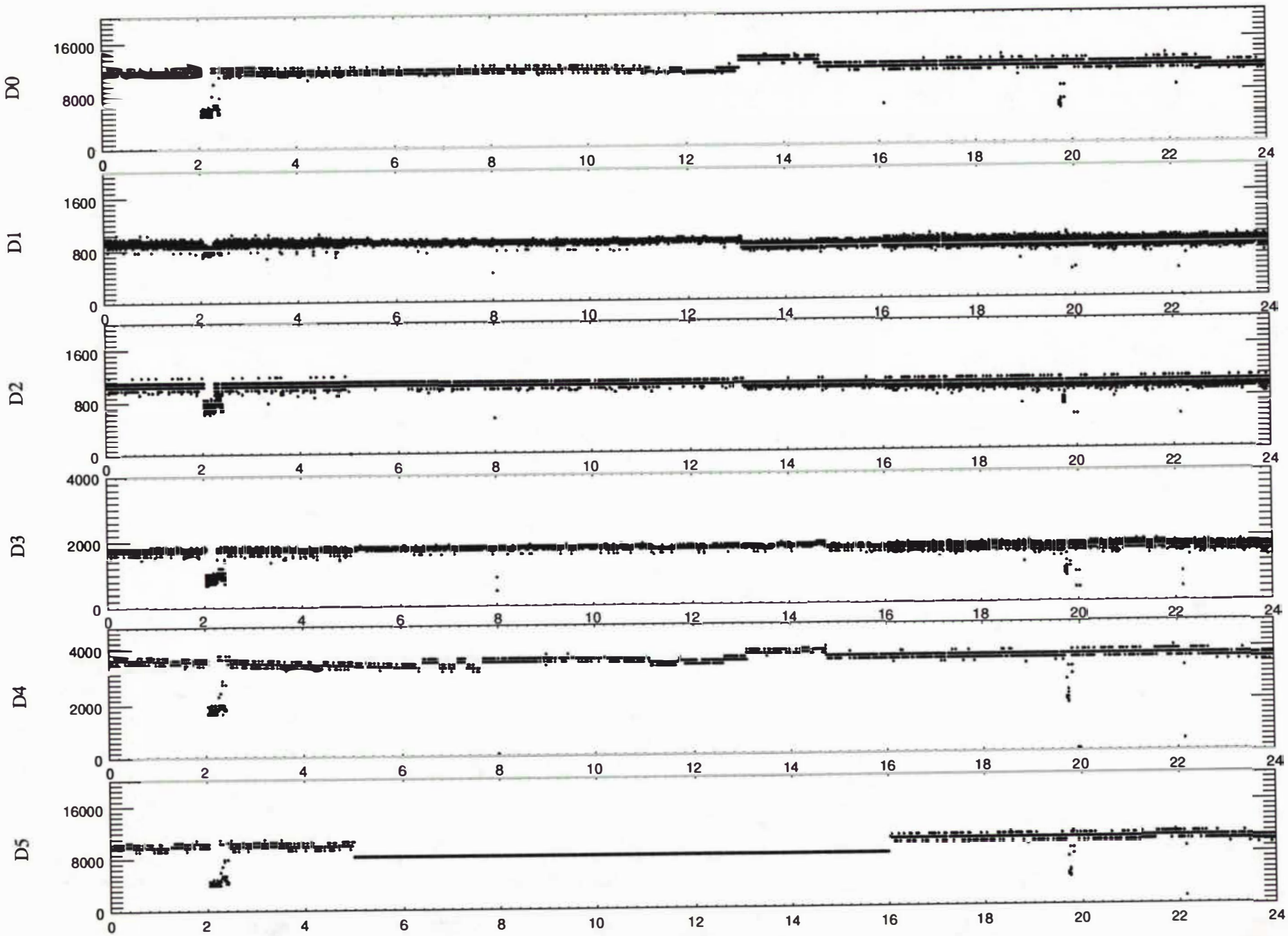
HUS 2A, MODE 1, NOT AVERAGED EDR day 174, year 1997 to day 174, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 174, year 1997 to day 174, year 1997 10/13/97



Date: Mar 29 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events N/A

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events N/A

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

3. For INTEGRAL events N/A

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

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

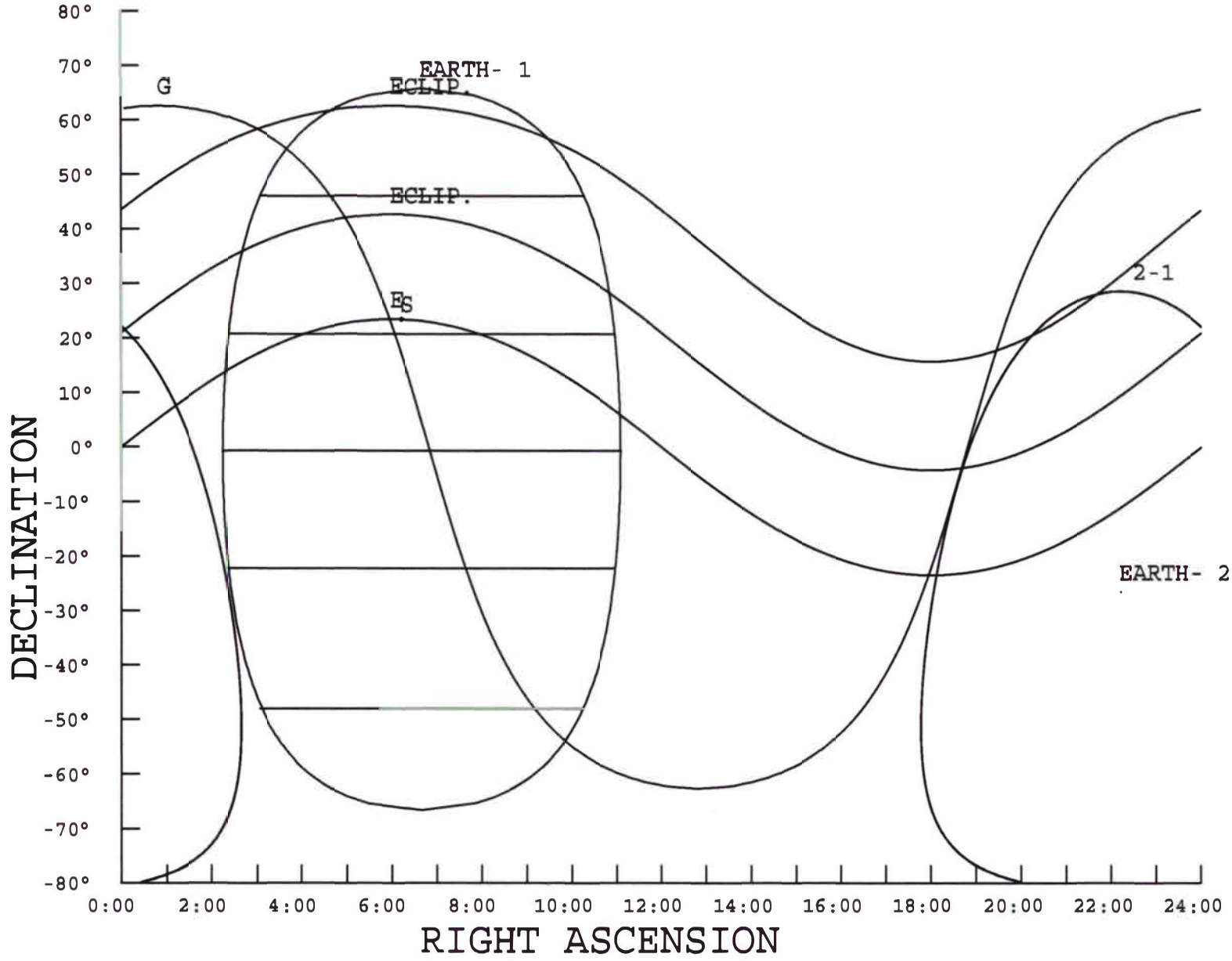
☐ Updated ephemeris used for bursts prior to September 30, 2003?

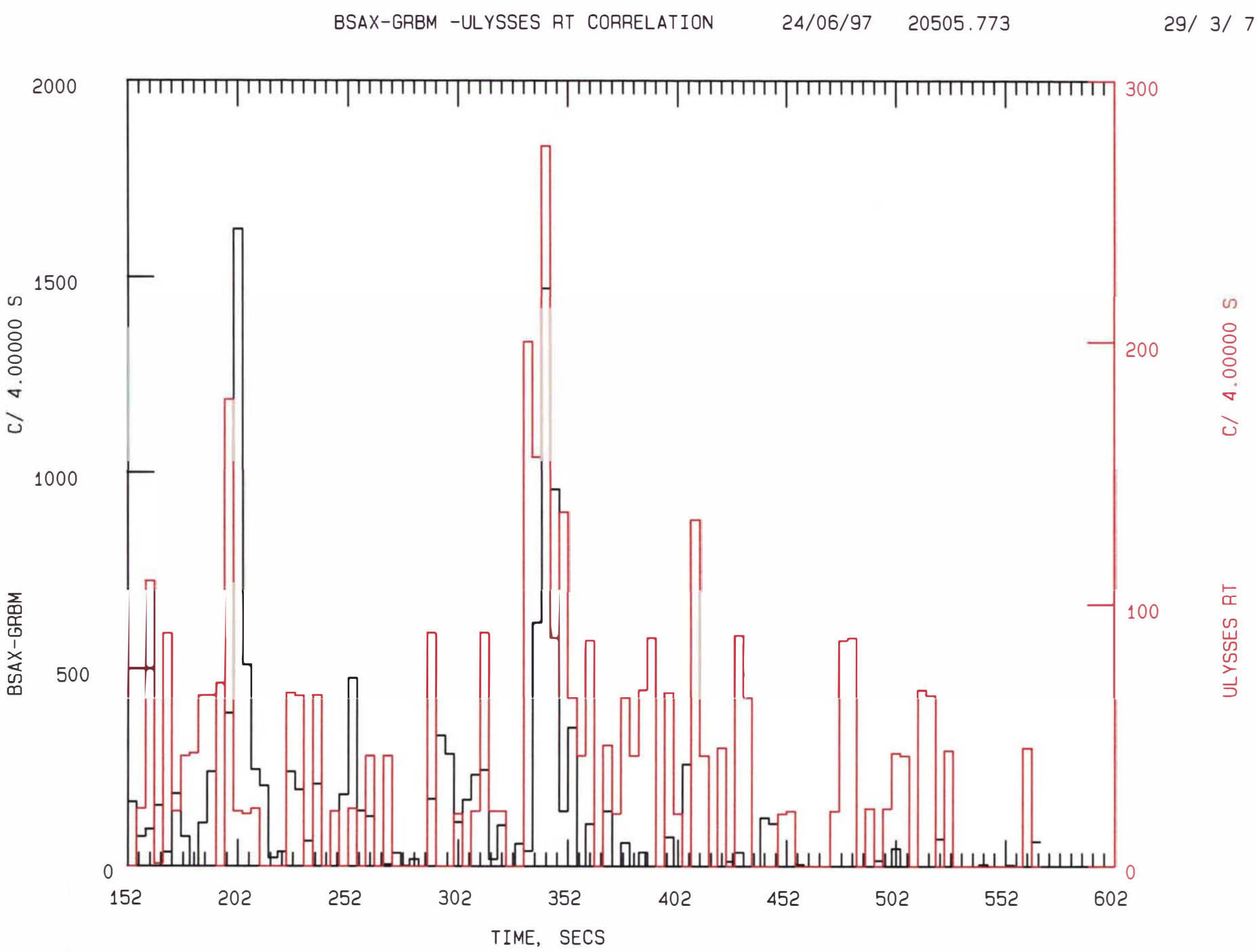
☑ ACCESS and MBL4 databases updated?

EVENT OF JUN 24, 1997 5:41

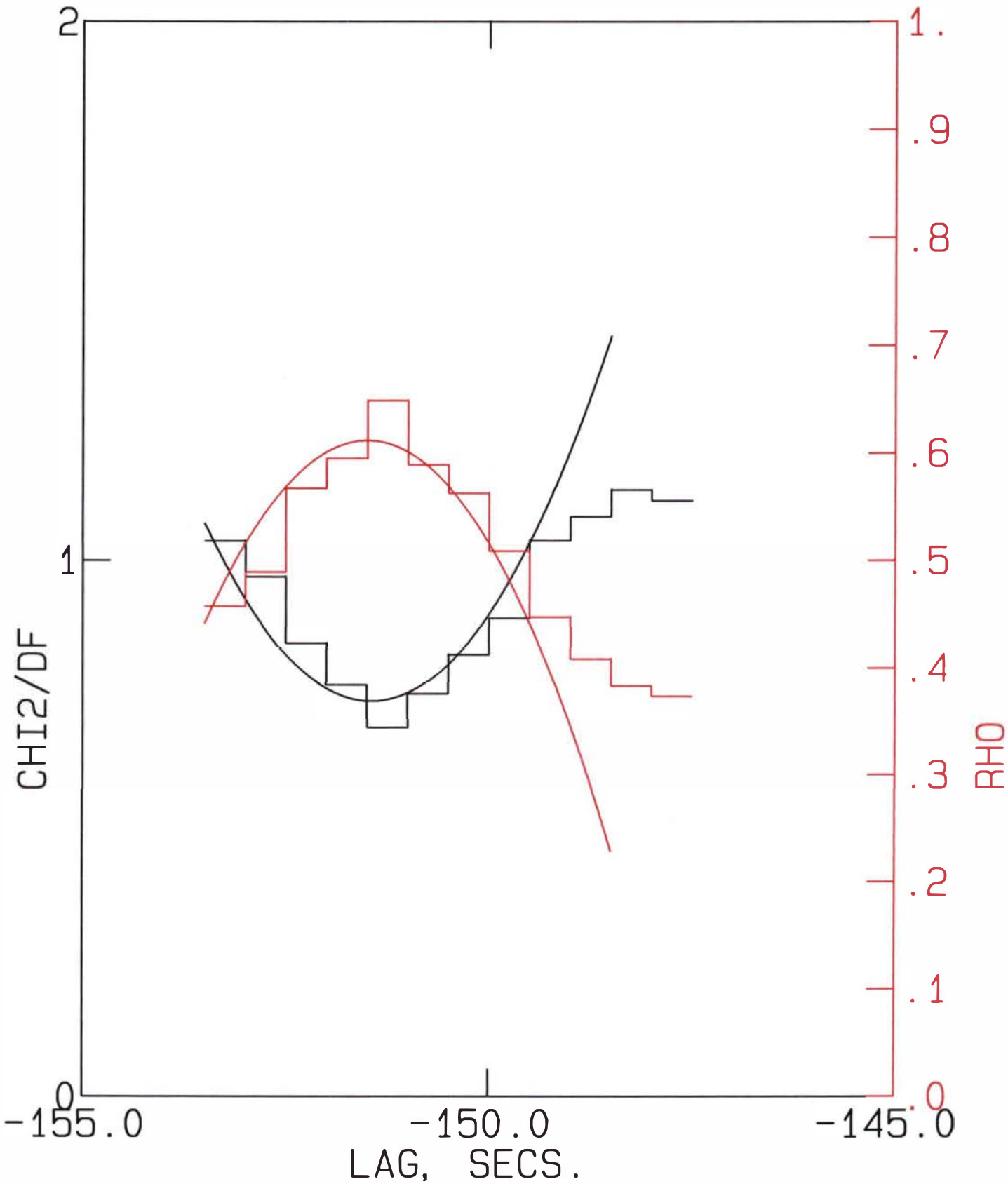
29/ 3/ 7

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




BSAX-GRBM -ULYSSES RT CORRELATION 24/06/97 20505.773 29/ 3/ 7
2000
1500
1000
500
0
C/ 4.00000 S
BSAX-GRBM
300
200
100
0
C/ 4.00000 S
ULYSSES RT
152
202
252
302
352
402
452
502
552
602
TIME, SECS

BSAX-GRBM -ULYSSES RT CORRELATION 24/06/97 20505.773



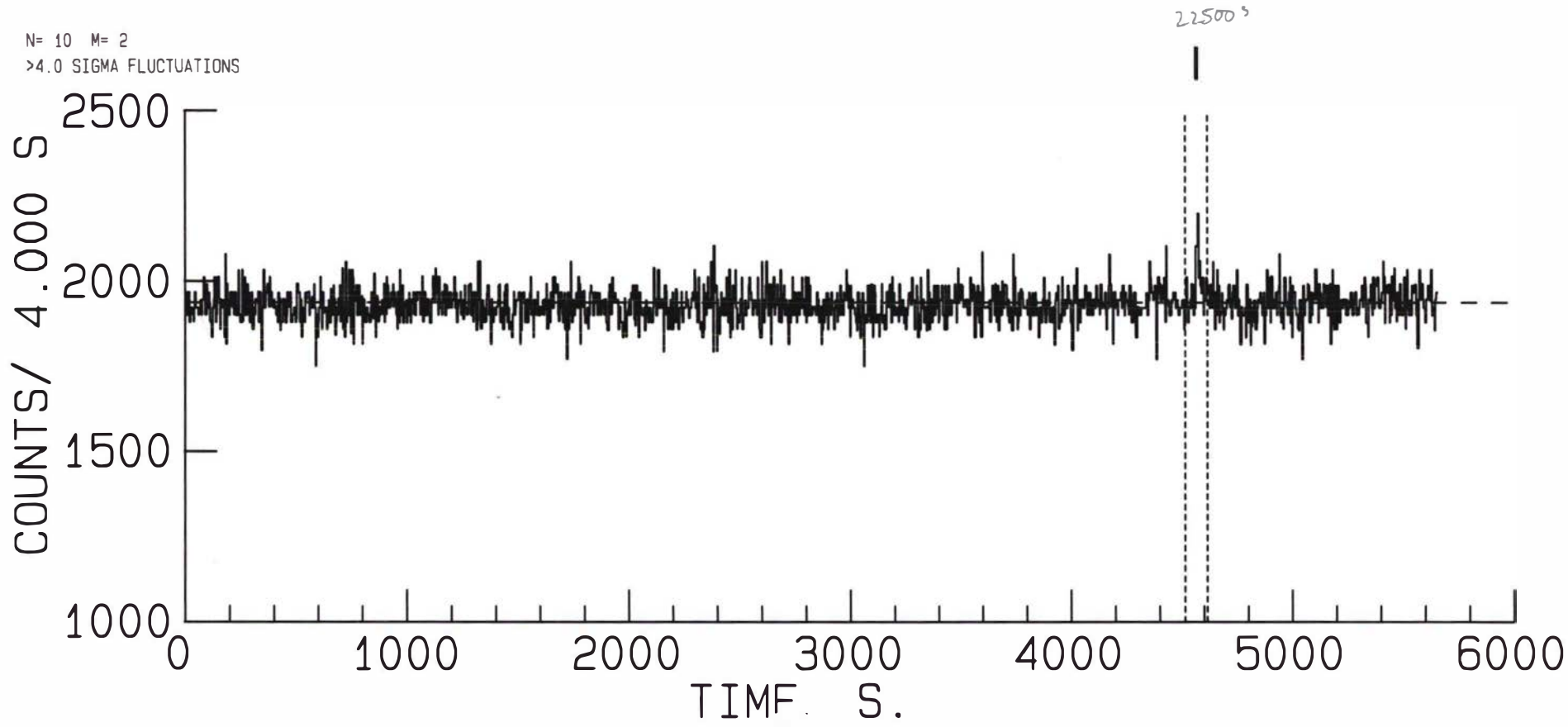
ULYSSES RT

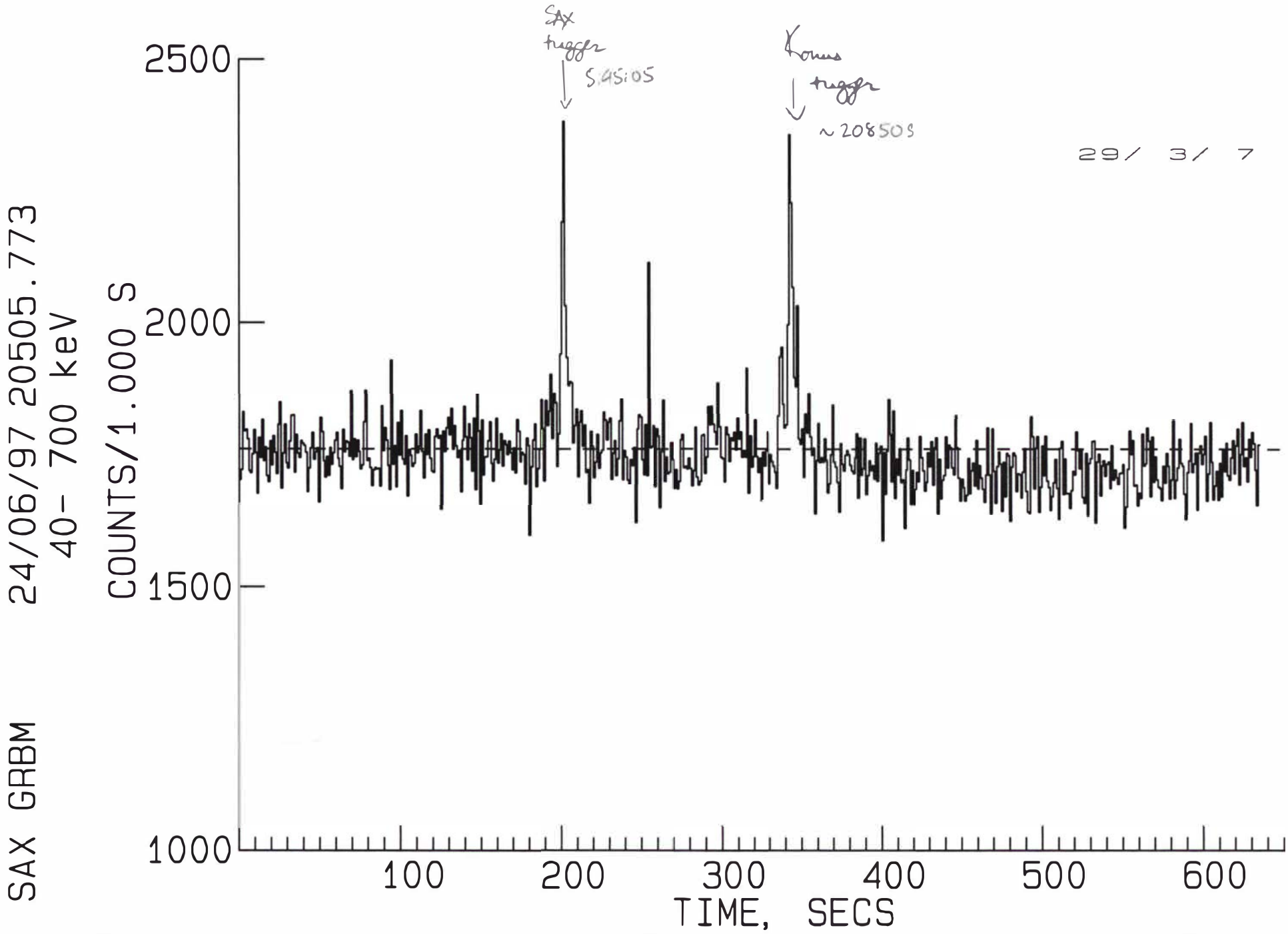
29/ 3/ 7

24/ 6/97 17892.162 s

0.500 S INTERVALS REGROUPED BY 8

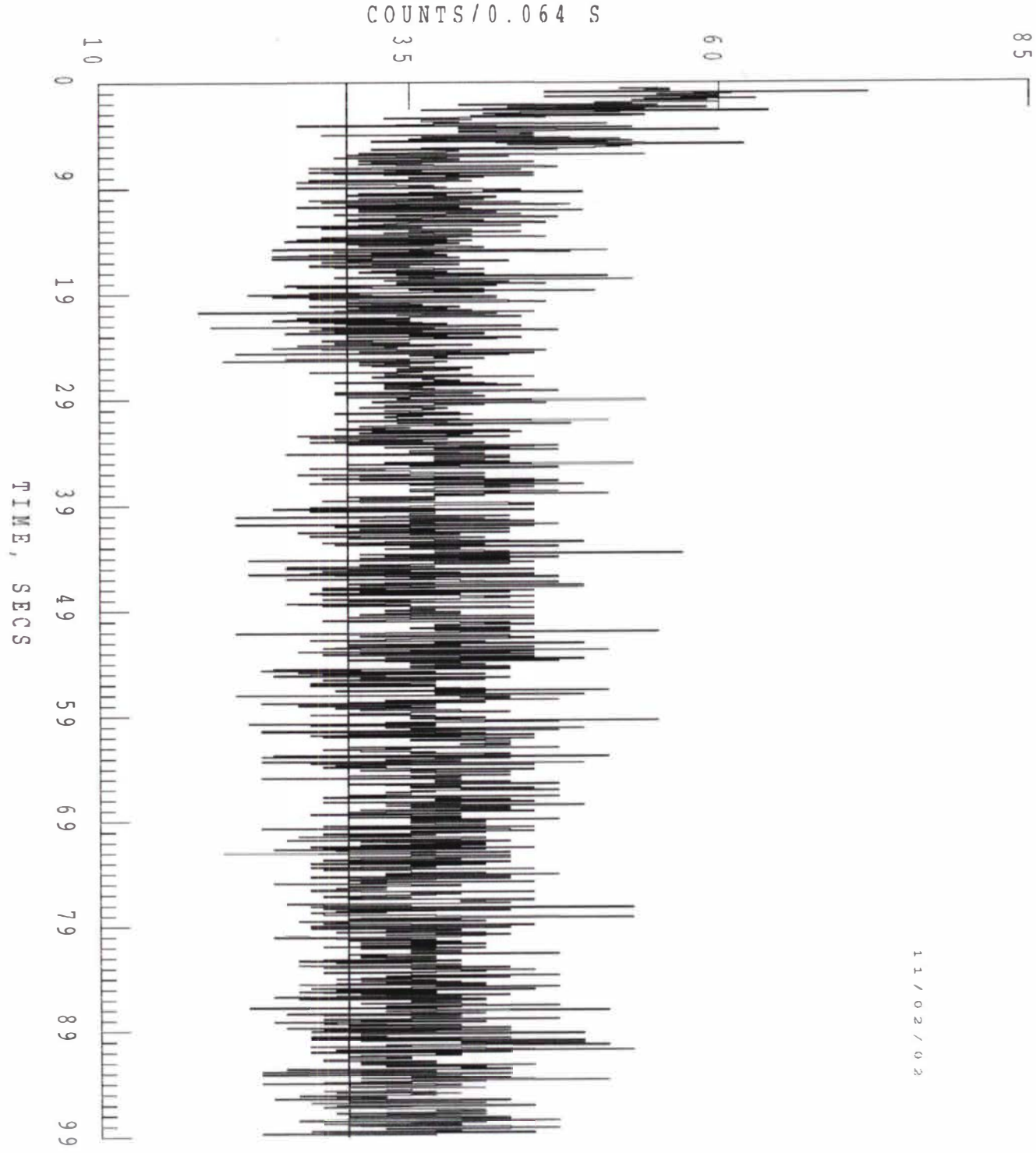
22- 147 keV




SAX
trigger
~20850s
Konus
trigger
~20850s
29/ 3/ 7
SAX GRBM
24/06/97 20505.773
40- 700 keV
COUNTS/1.000 S
2500
2000
1500
1000
100
200
300
400
500
600
TIME, SECS

KONUS2 24/06/97 20849.138

50- 200 keV 05:47:29



Date: Oct 2 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

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

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

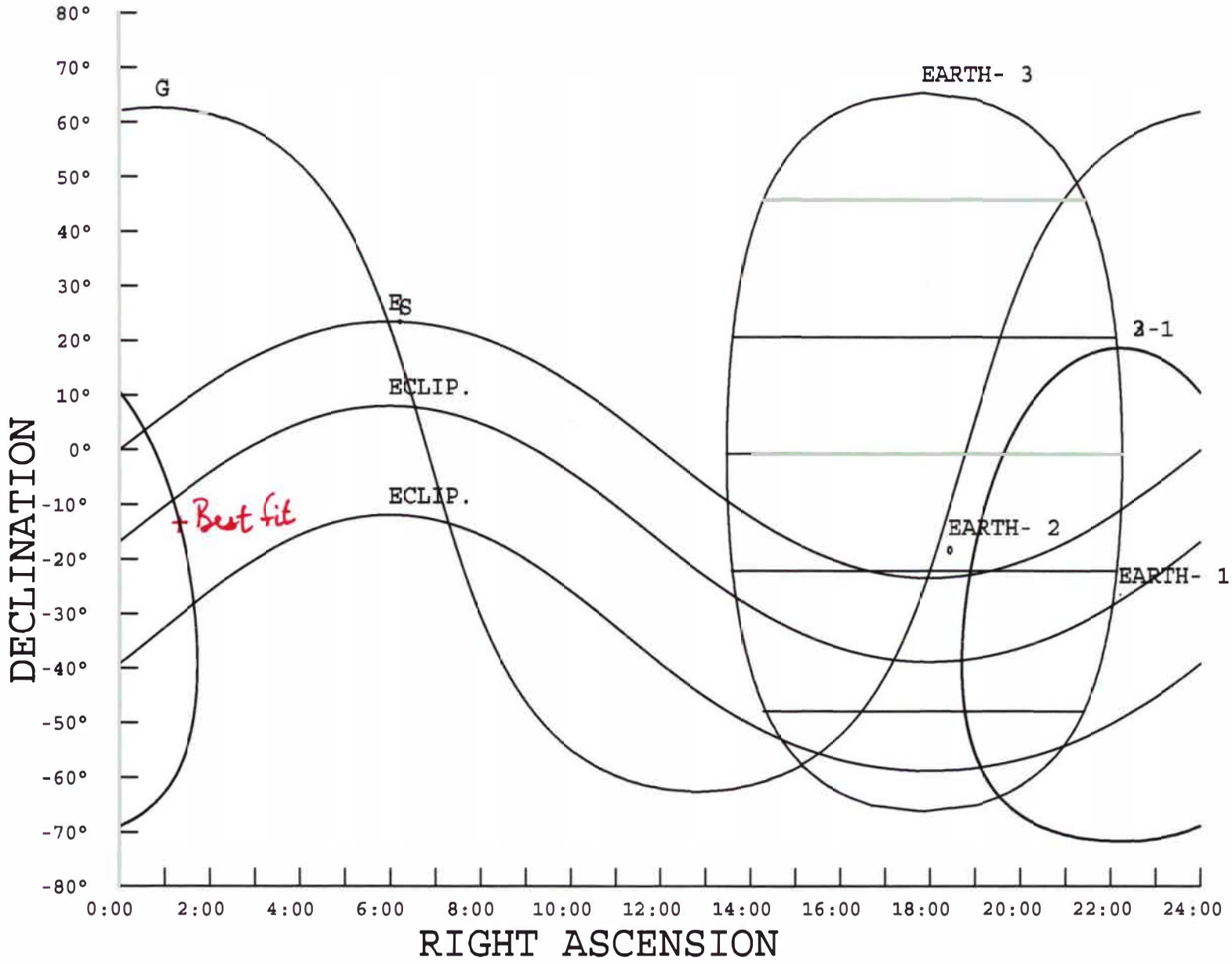
☐ ACCESS and MBL4 databases updated?

SAX added Jan 6

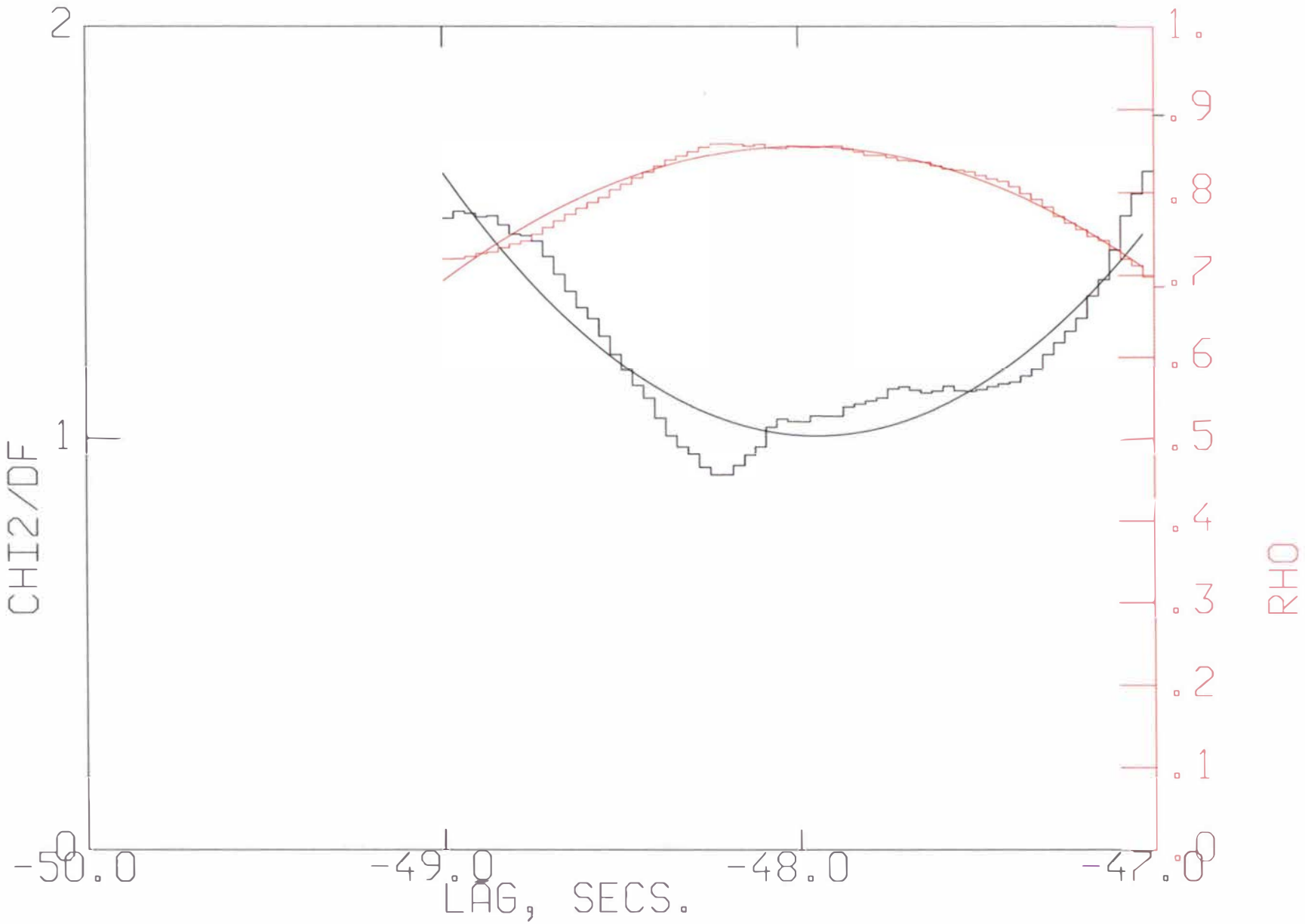
EVENT OF JUN 24, 1997 7:02

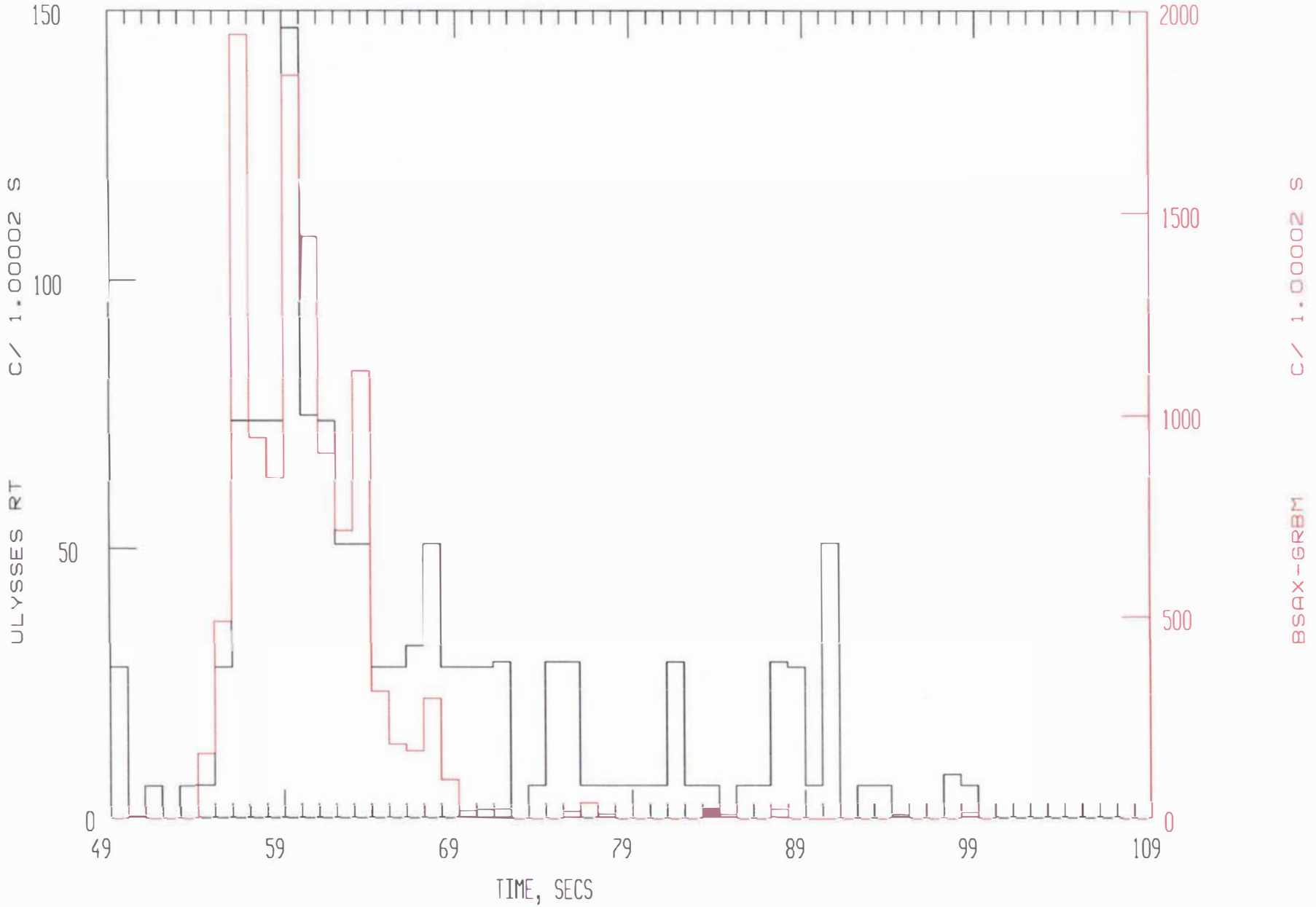
6/ 1/10

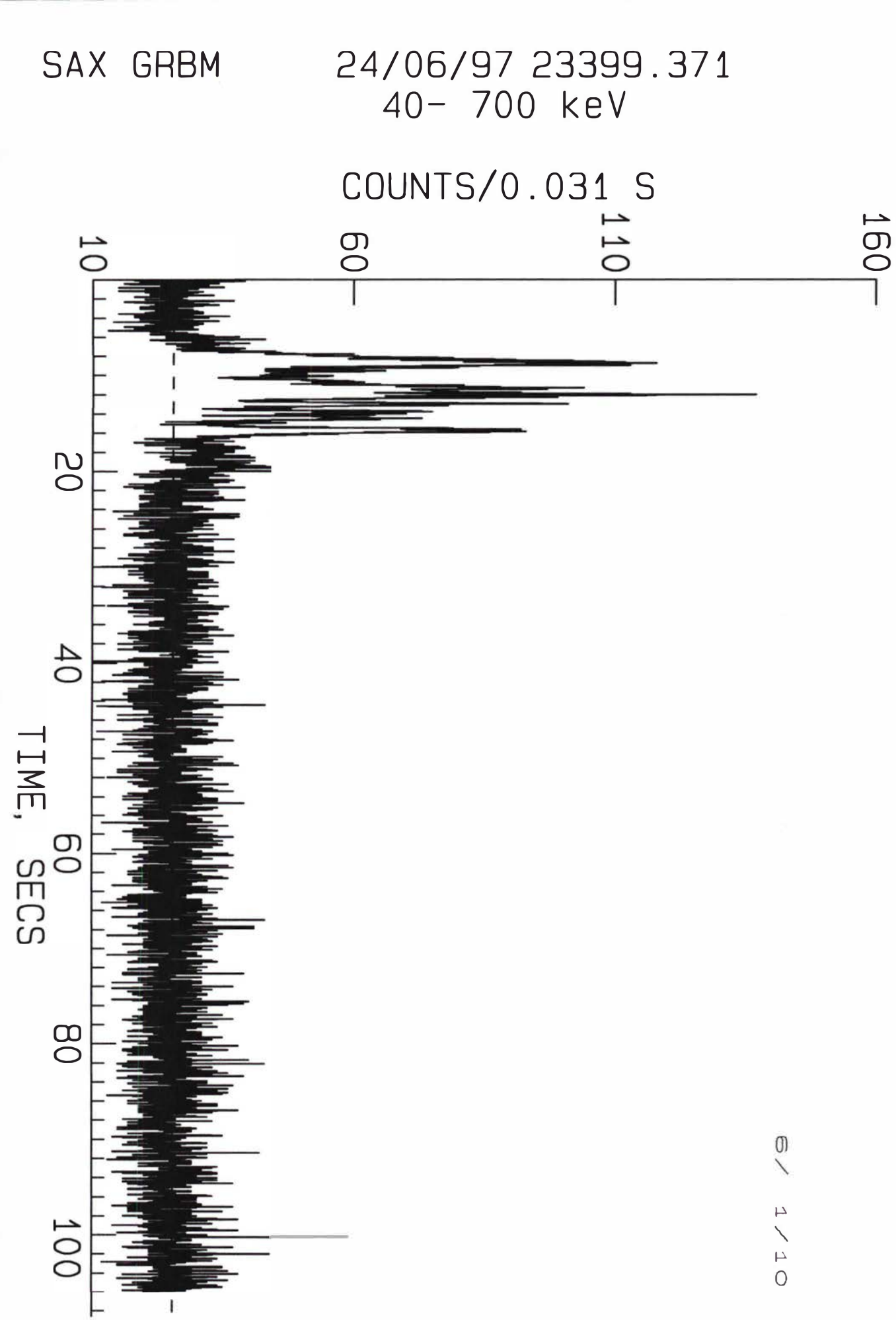
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1 3 SAX

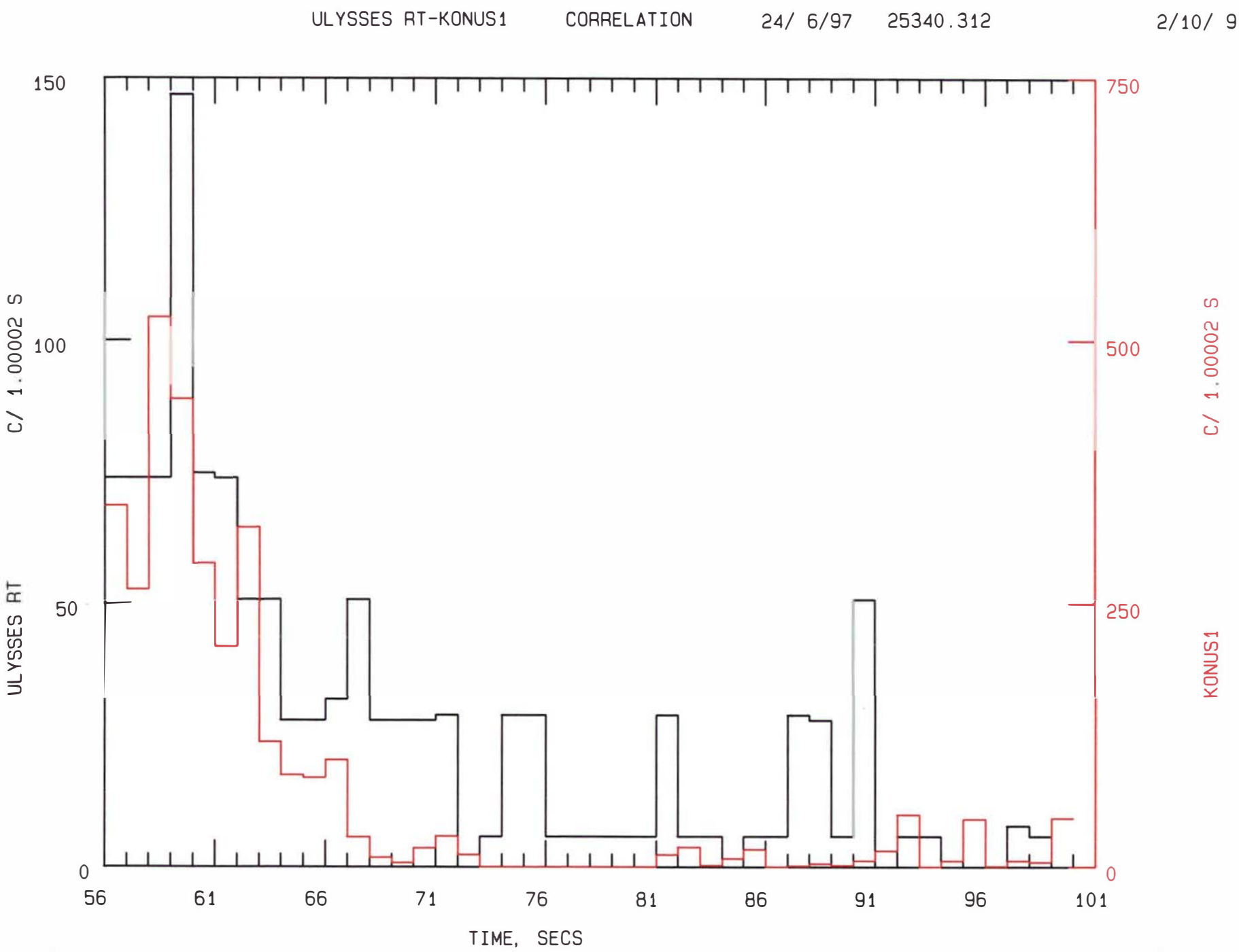


ULYSSES RT-BSAX-GRBM CORRELATION 24/ 6/97 25340.312

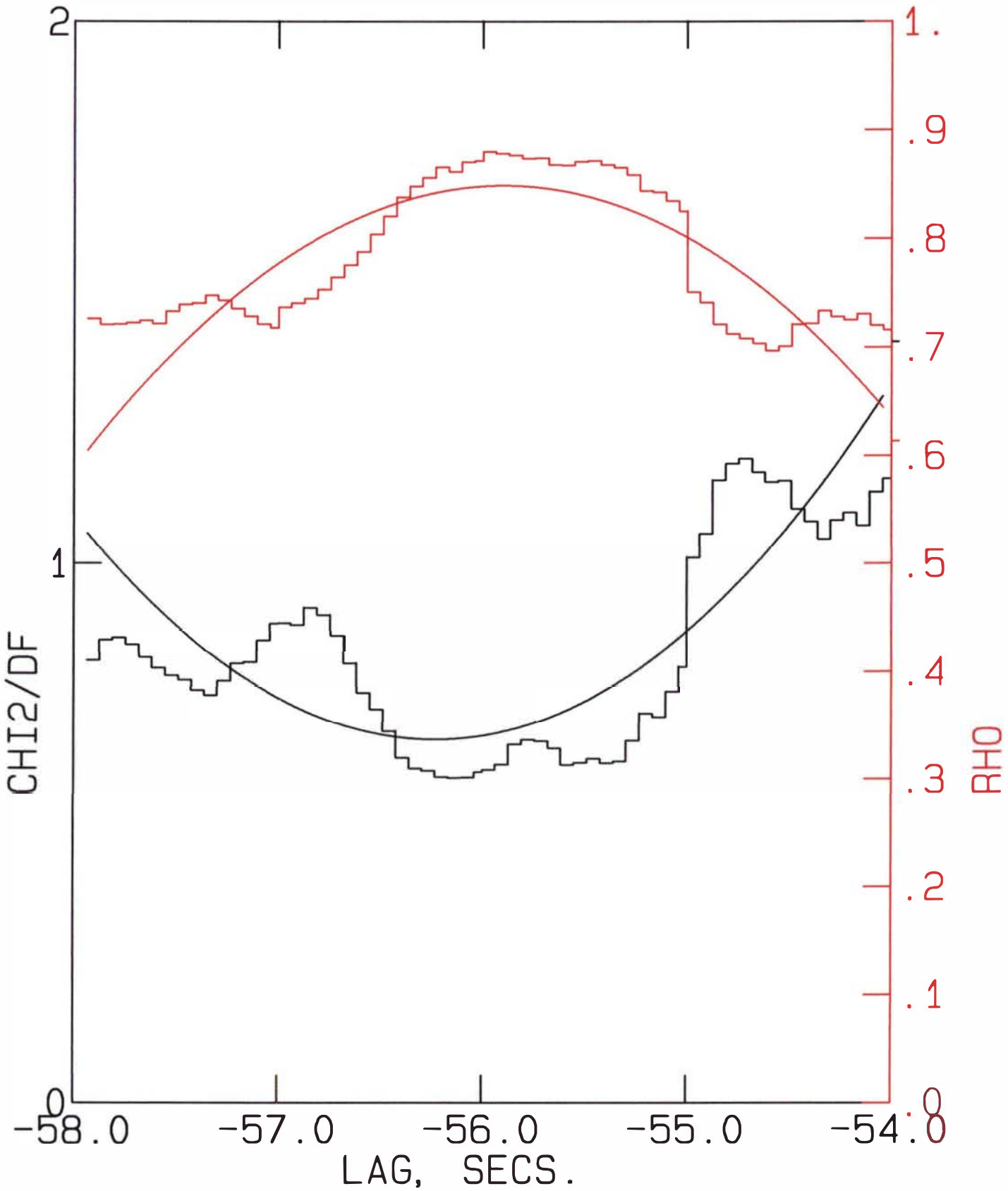



150
100
50
0
C/ 1.00002 S
ULYSSES RT
2000
1500
1000
500
0
C/ 1.00002 S
BSAX-GRBM
49
59
69
79
89
99
109
TIME, SECS


SAX GRBM
24/06/97 23399.371
40- 700 keV
COUNTS/0.031 S
10
60
110
160
20
40
60
80
100
TIME, SECS
6/ 1/10


ULYSSES RT-KONUS1 CORRELATION 24/ 6/97 25340.312 2/10/ 9
150
100
50
0
C/ 1.00002 S
ULYSSES RT
750
500
250
0
C/ 1.00002 S
KONUS1
56
61
66
71
76
81
86
91
96
101
TIME, SECS

ULYSSES RT-KONUS1 CORRELATION 24/ 6/97 25340.312



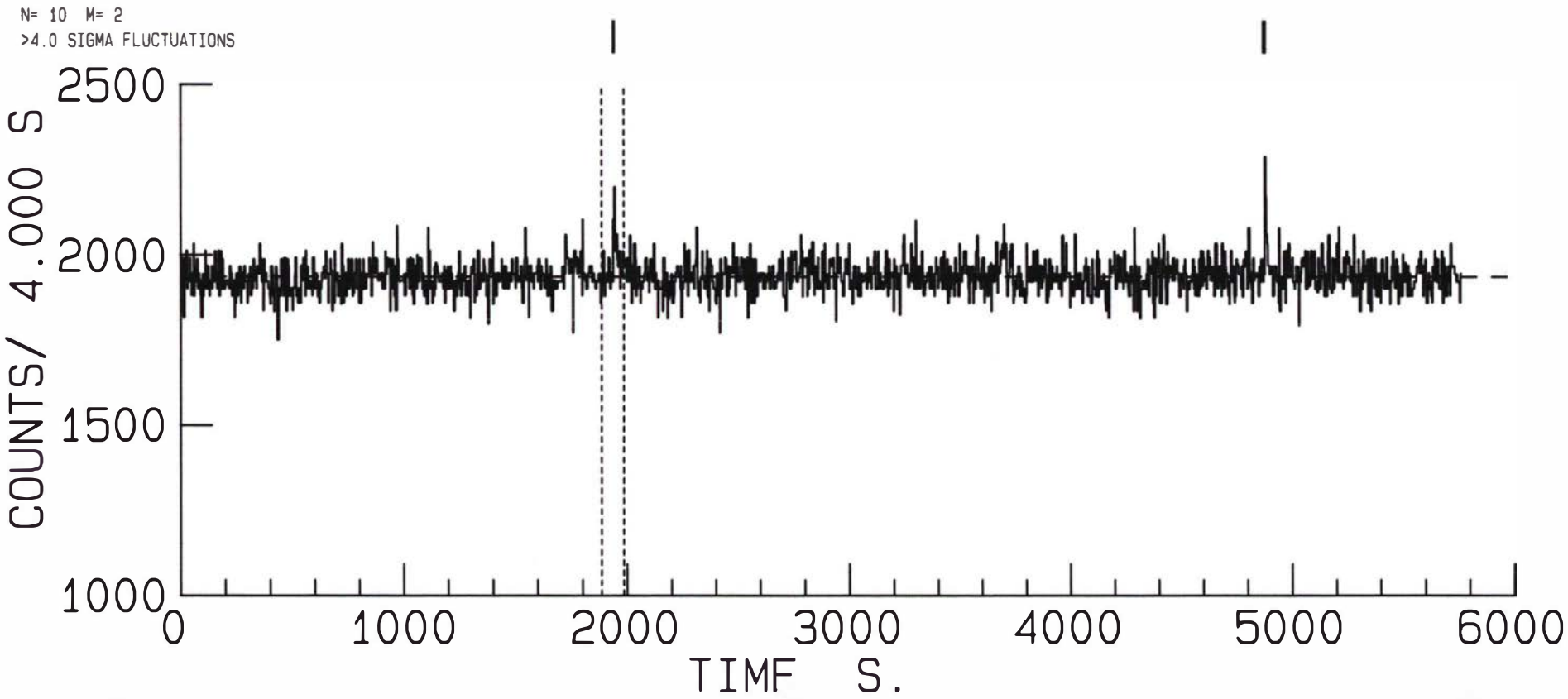
ULYSSES RT

2/10/ 9

24/ 6/97 20520.191 s

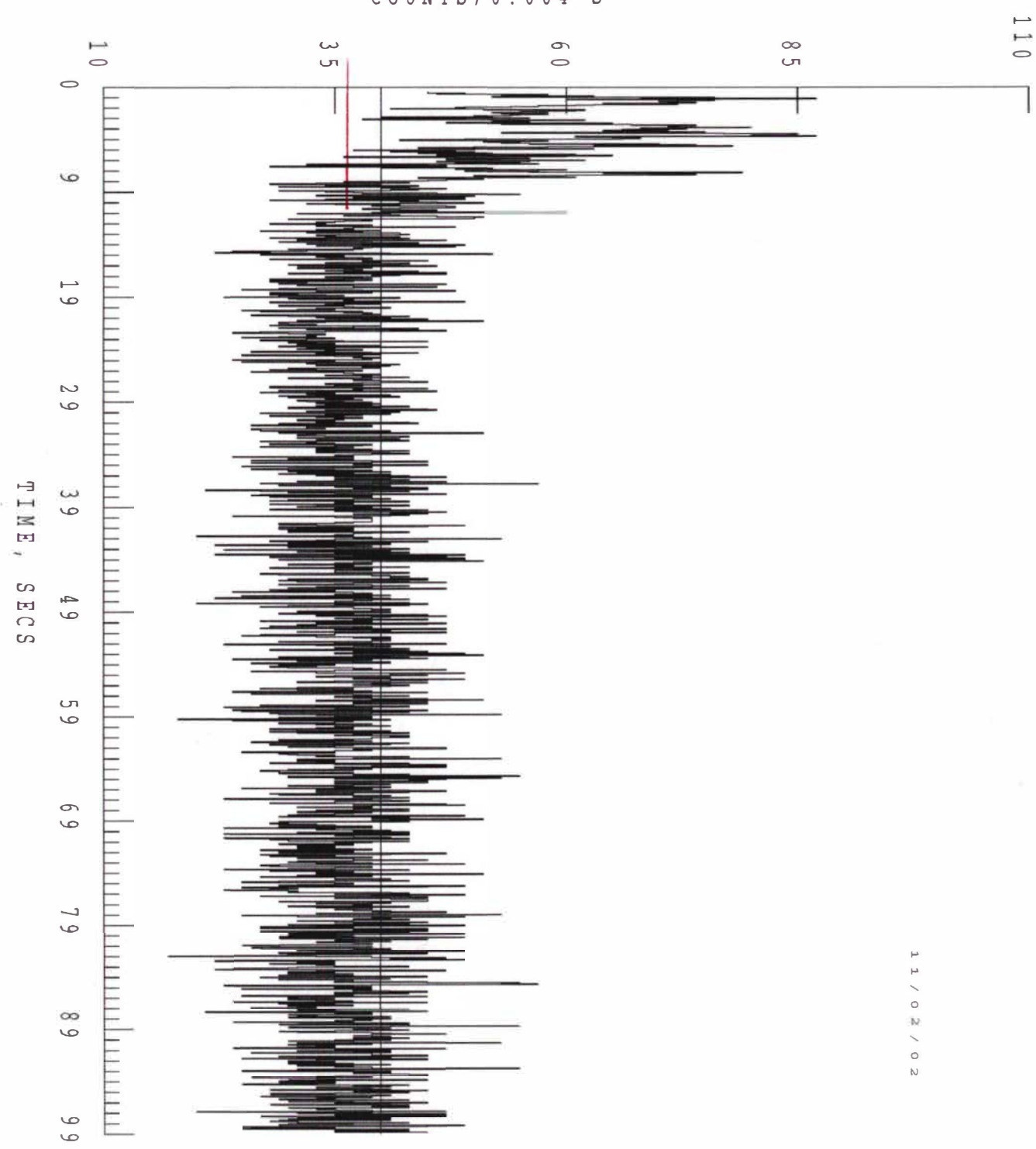
0.500 S INTERVALS REGROUPED BY 8

22- 147 keV



KONUS1 24/06/97 23407.509

50- 200 keV 06:30:07



KONUS1 19970624 23407

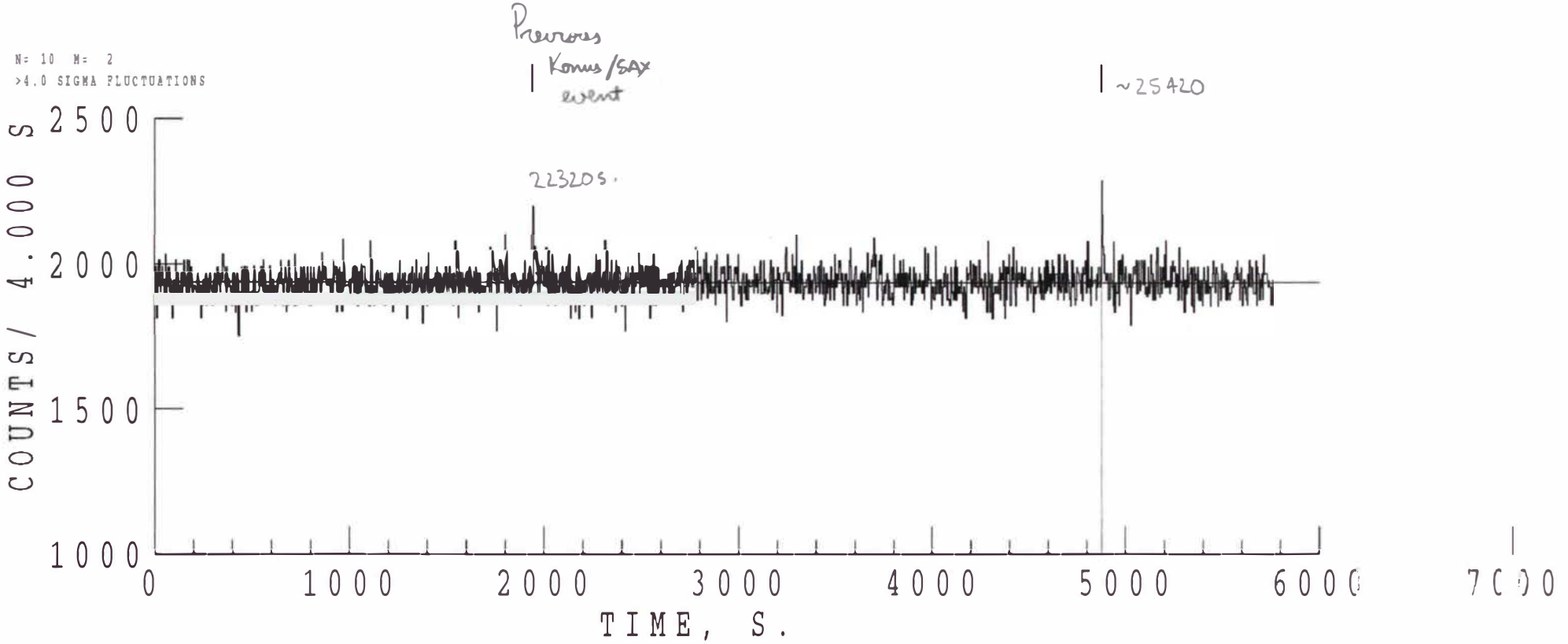
+GRBM

ULYSSES RT 11/02/02

24/06/97 20520.191 s

0.500 S INTERVALS REGROUPED BY 8

0- 0 keV



From SURASAK@ssl.msfc.nasa.gov Wed Jun 25 12:28 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA11508; Wed, 25 Jun 1997 12:28:04 -0700
Date: Wed, 25 Jun 1997 14:27:39 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970625142739.2165f320@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6278
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6278
EVENT OF 1997 JUN 24 DAY OF YEAR=175
EVENT CROSSING TIME AT BATSE : 37722. S. OR 10:28:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 155.000 -45.000
BATSE PEAK COUNTING RATE: 3600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 6/ 97 IS:
RA= 152.639 DEC= 26.627 DIST= 5.682 AU
BATSE-ULYSSES DISTANCE = 850042490. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -892.20 SECS.
CROSSING TIME AT ULYSSES IS 36830. S. OR 10:13:49 +/- 503.72 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 6/ 97 IS:
RA= 182.016 DEC= -0.549 DIST= 1.204 AU
MARS-BATSE DISTANCE = 180056656. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.55 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -382.40 SECS.
CROSSING TIME AT MARS IS 37340. S. OR 10:22:19 +/- 74.60 SECONDS

BATSE BURST TRIGGER
NO.: 6278

TIME: TJD=0623 SECONDS=37722

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=51.8 AZIMUTH=78.7 ERROR=16.75 DEGREES

COMMENTS:
GRB. DUR~0.14S. SINGLE PULSE. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6278	970624	10623	37722	3600	155	-45	.14

BATSE BURST# 6278

ULYSSES RT 25/ 6/97

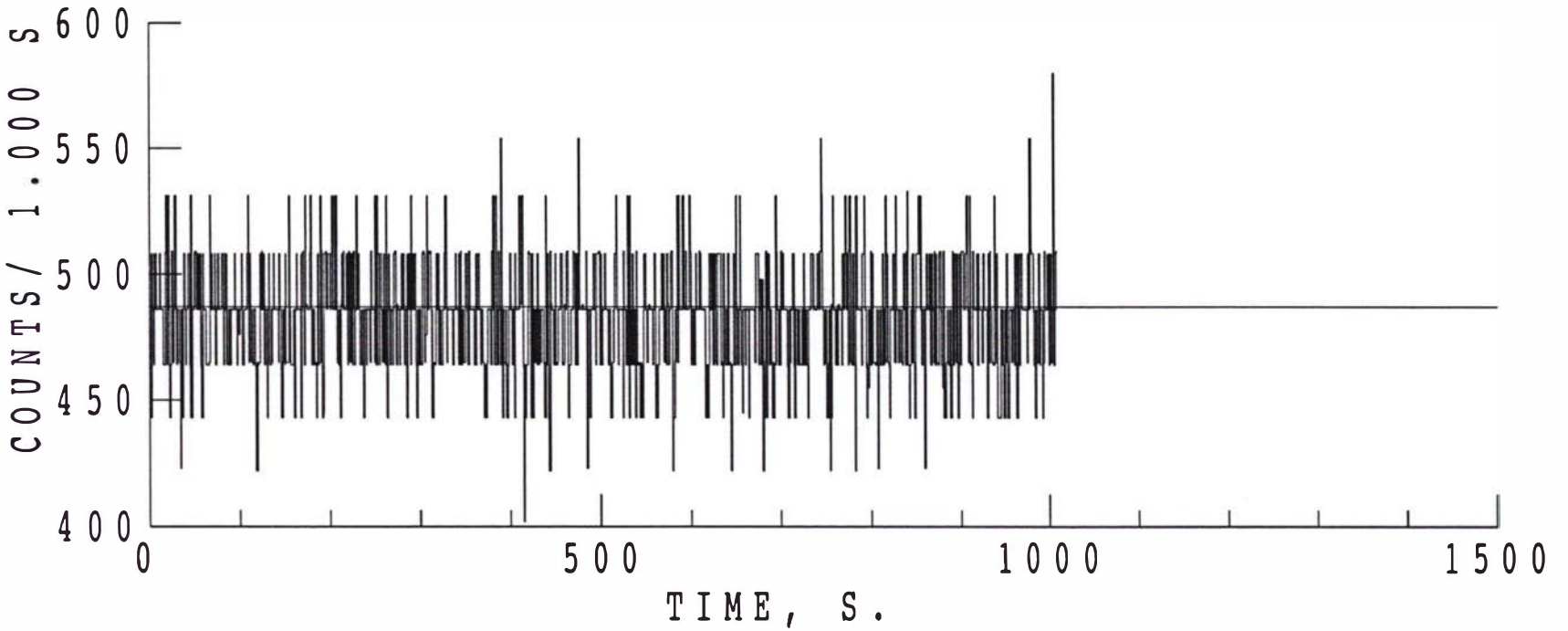
24/ 6/97 36324.375 s

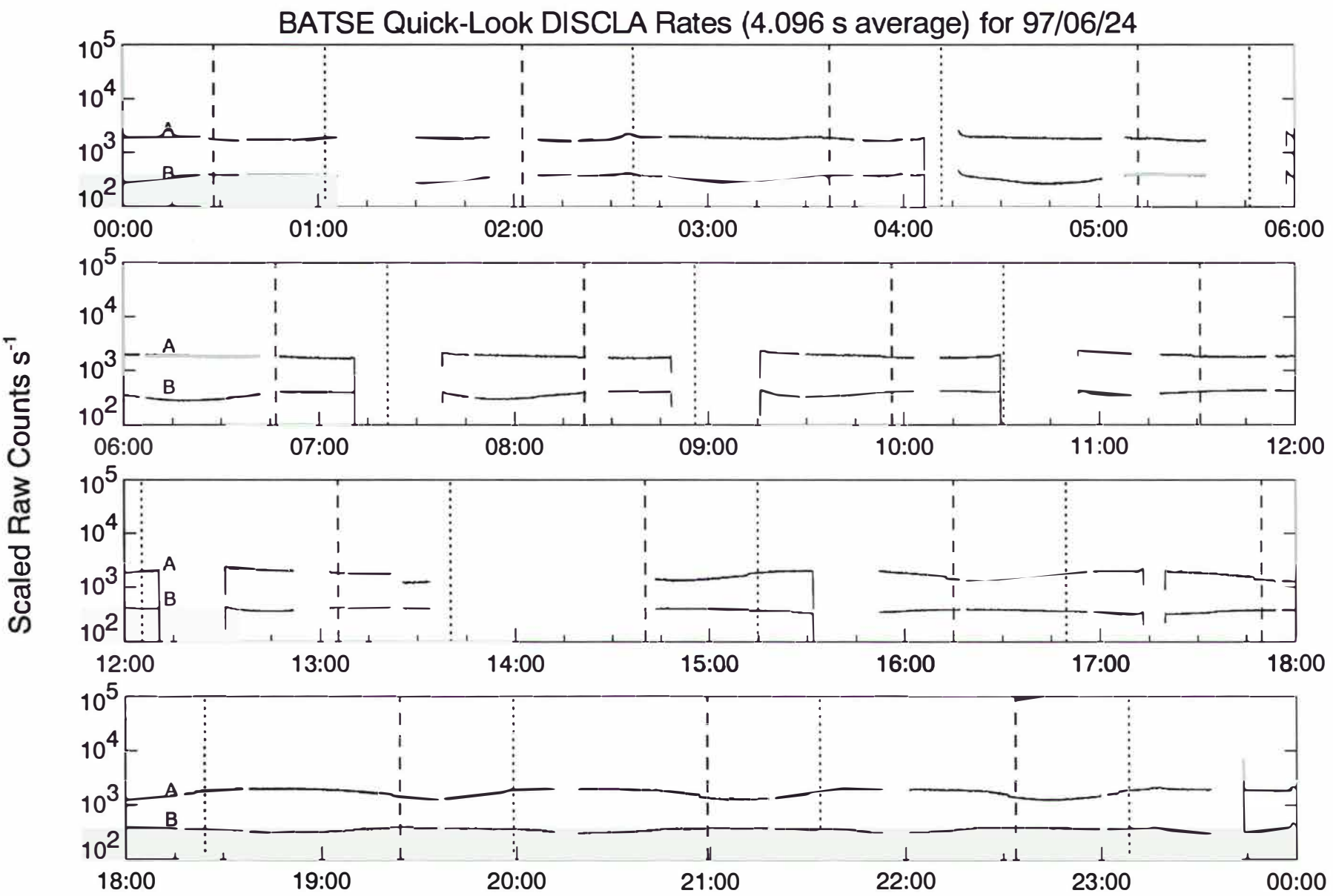
0.500 S INTERVALS REGROUPED BY 2

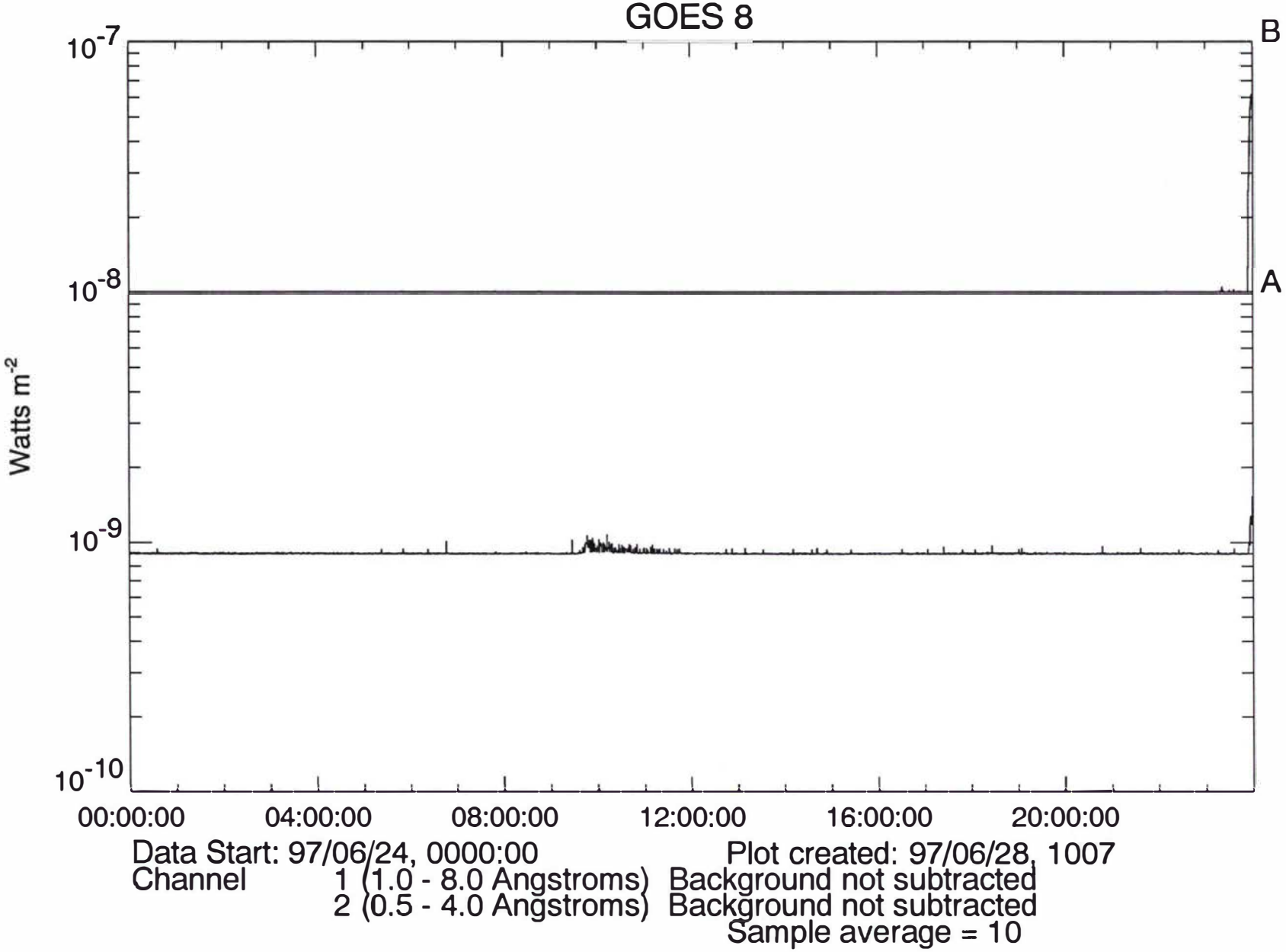
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

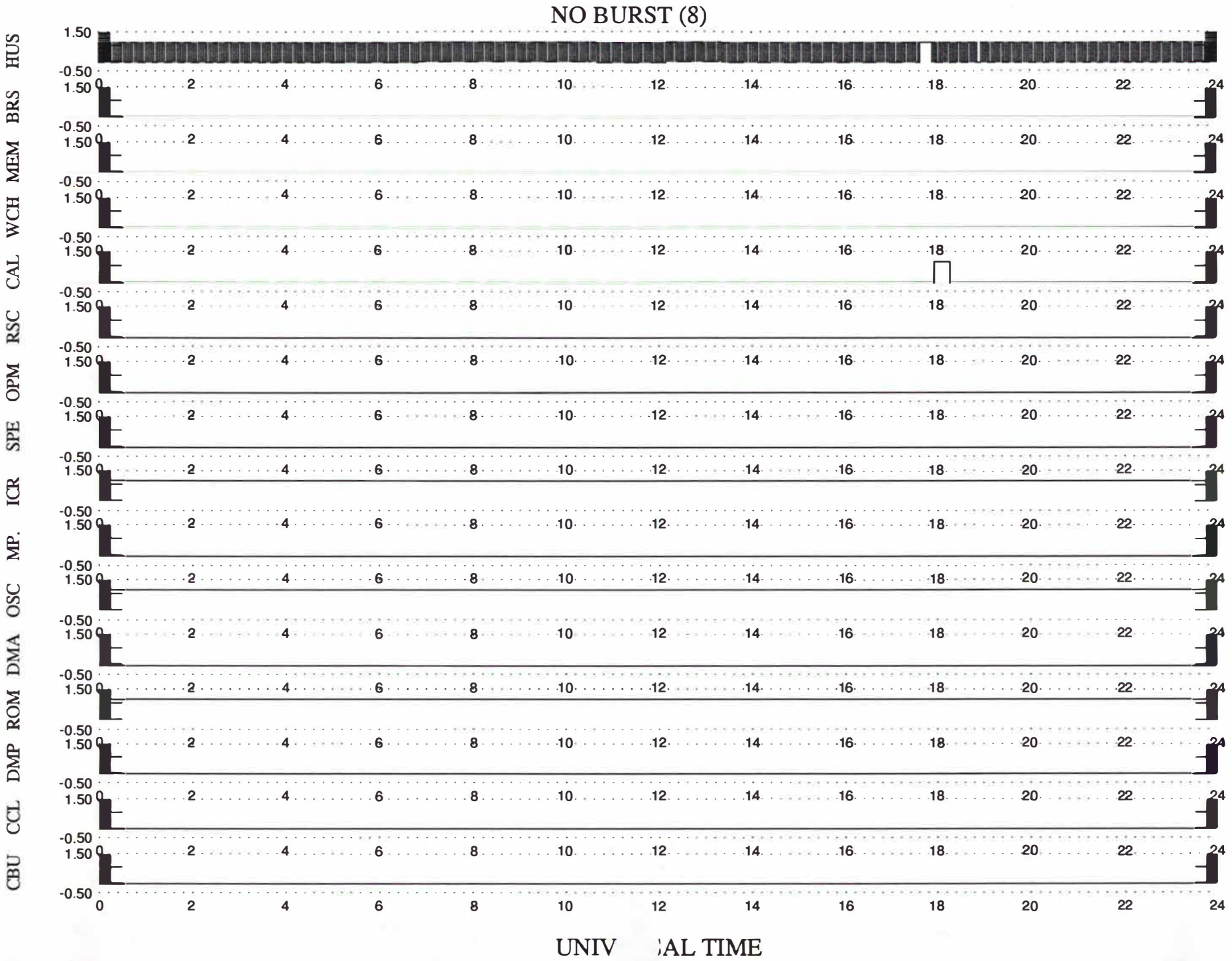
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
UTC
Current Time: 97/06/28, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

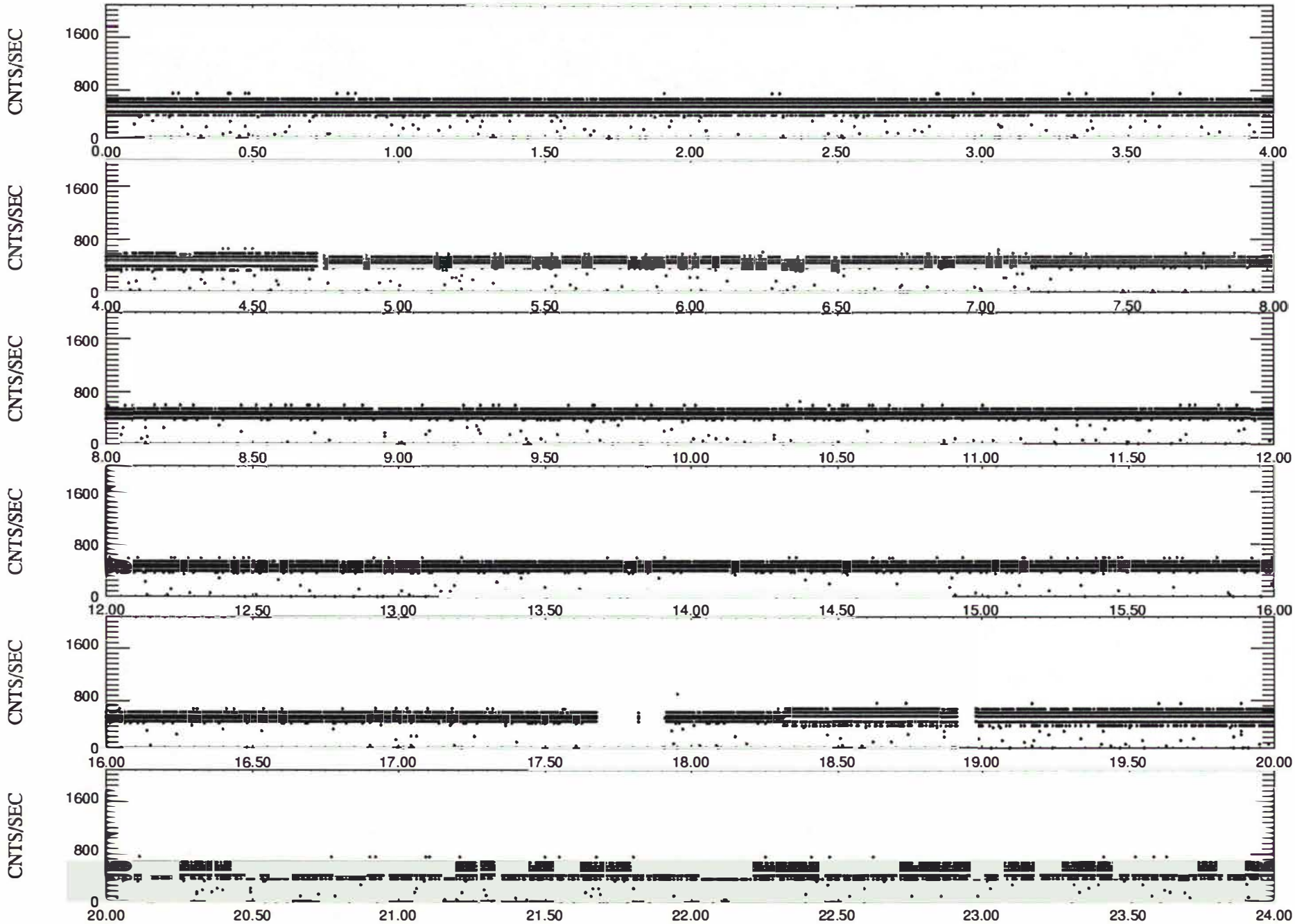

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/24, 0000:00
Plot created: 97/06/28, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 175, year 1997 to day 175, year 1997 10/13/97



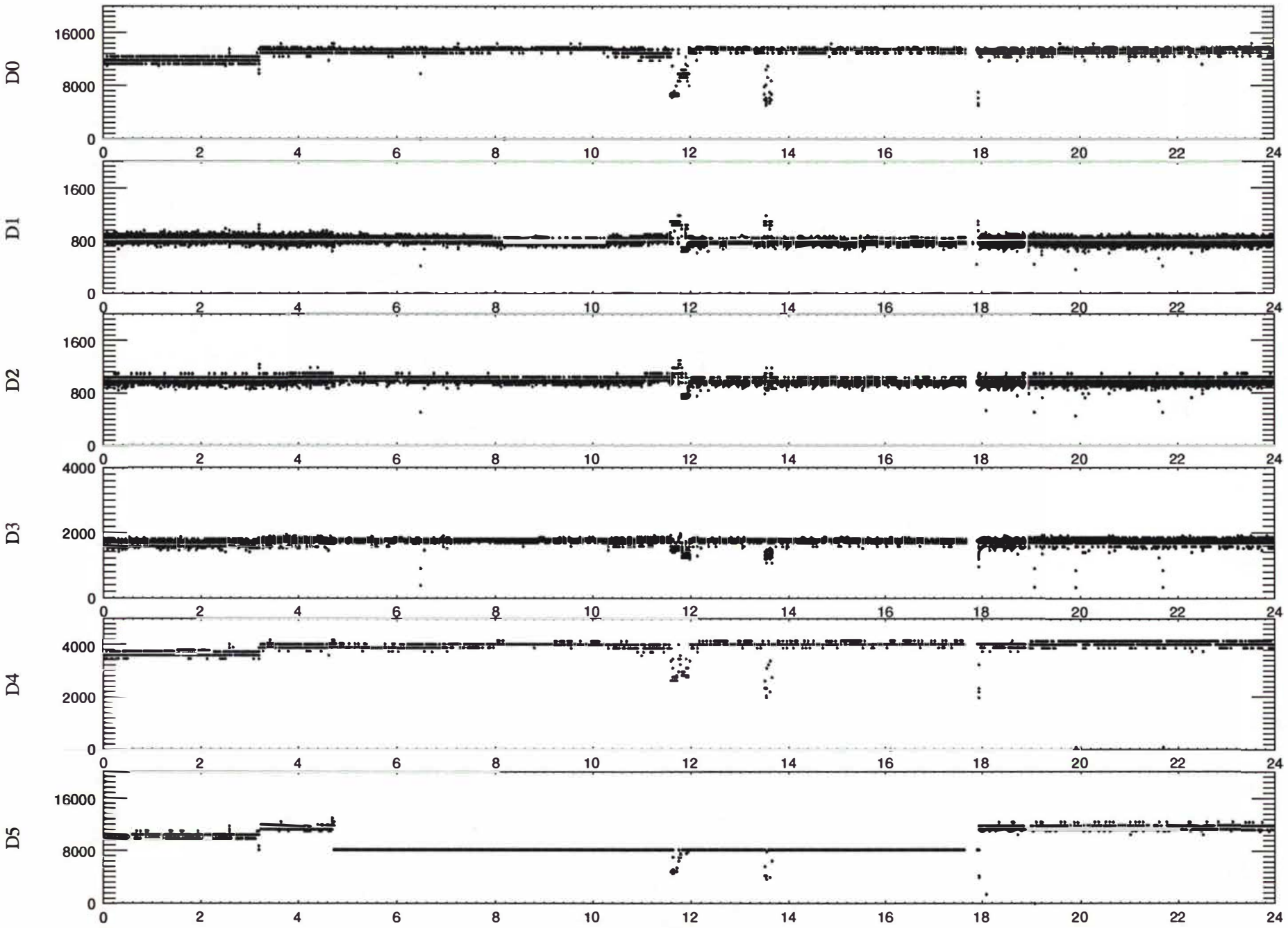
HUS 2A, MODE 1, NOT AVERAGED EDR day 175, year 1997 to day 175, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 175, year 1997 to day 175, year 1997 10/13/97



Date: Nov 5 '08

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

□ Jim Schmidling's stat file correction applied?

□ Final ephemeris used?

□ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

□ Was CHECKMO run to eliminate data gaps?

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

□ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

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

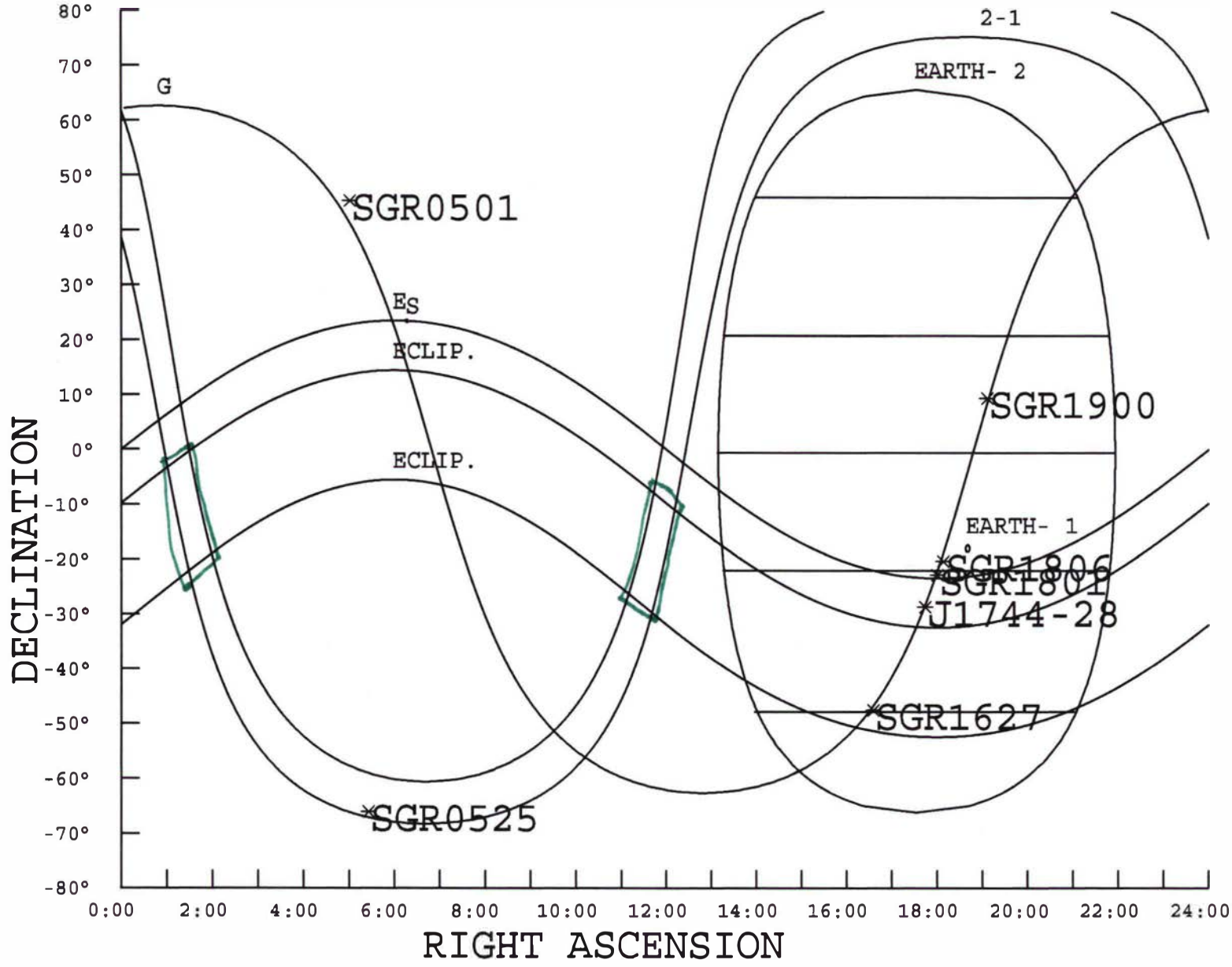
□ Updated ephemeris used for bursts prior to September 30, 2003?

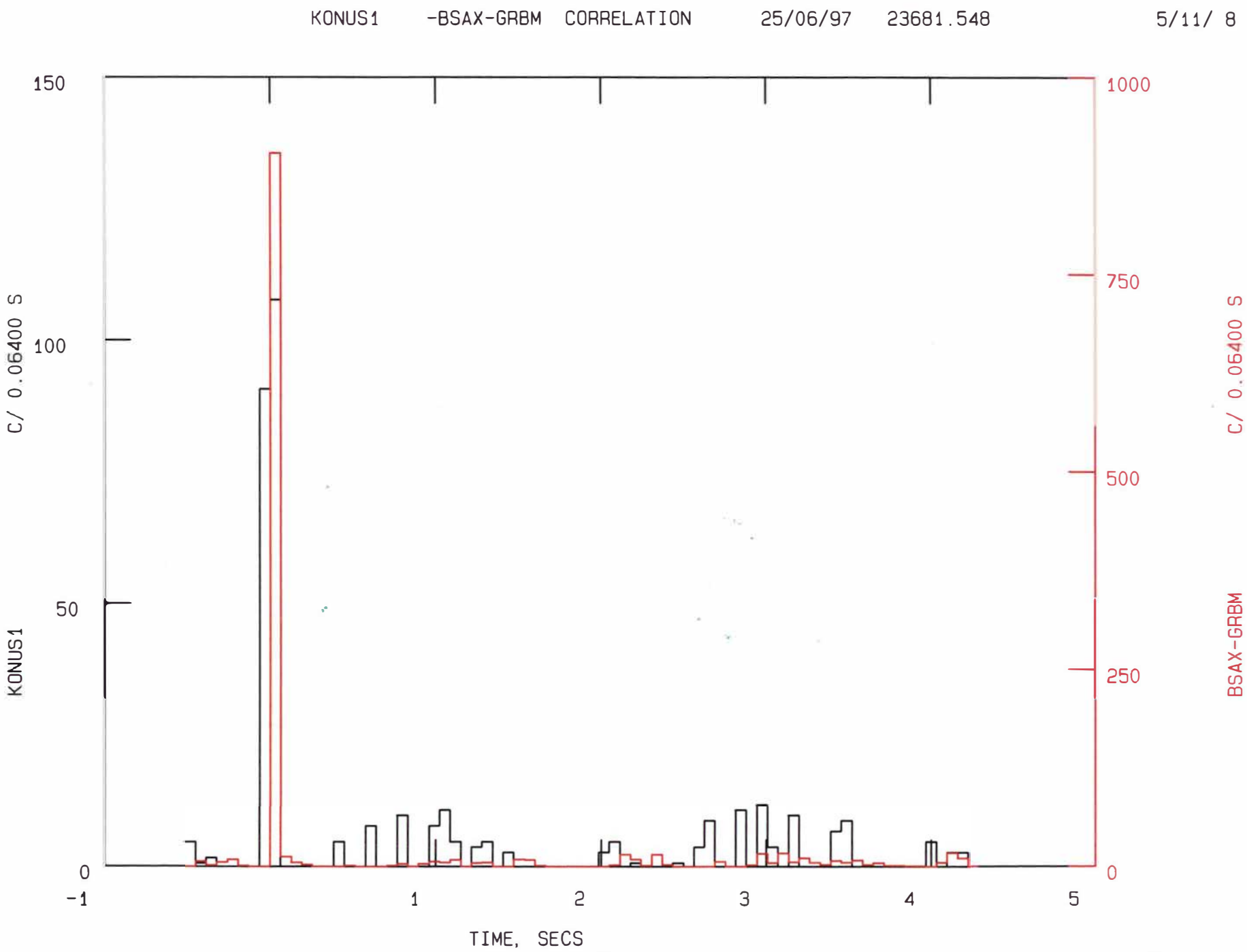
☑ ACCESS and MBL4 databases updated?

EVENT OF JUN 25, 1997 6:34

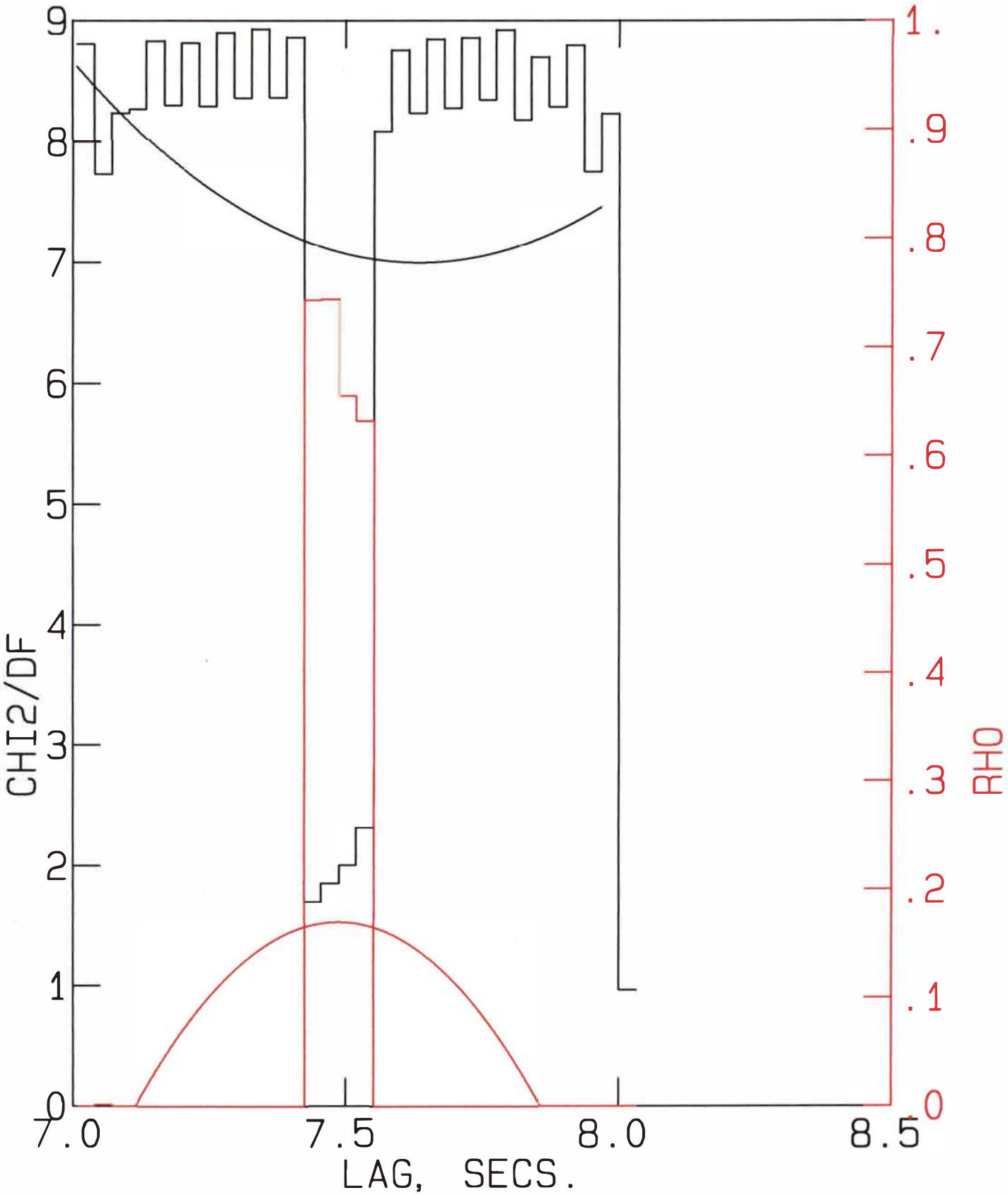
5/11/ 8

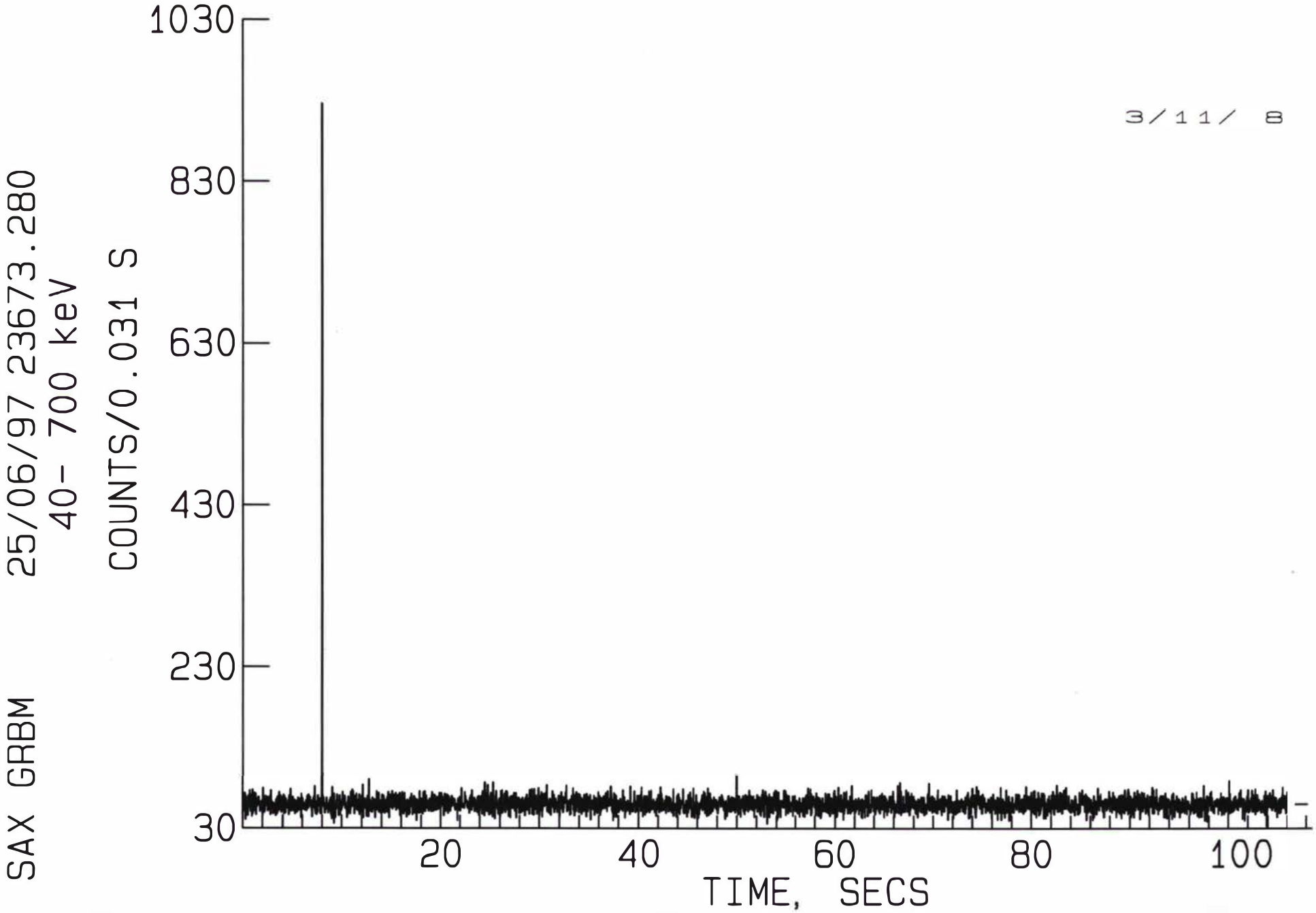
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS1 2 SAX

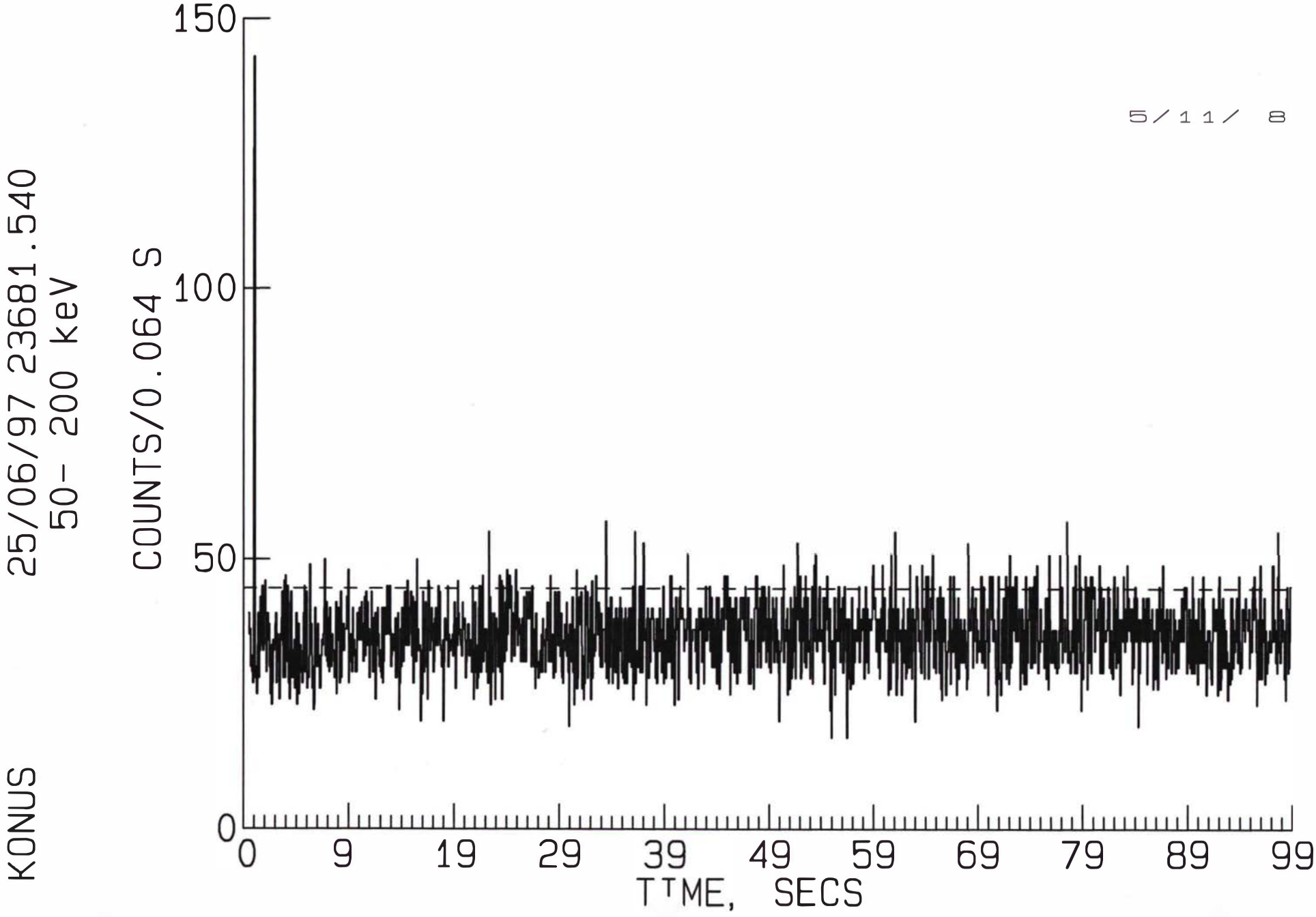



KONUS1 -BSAX-GRBM CORRELATION 25/06/97 23681.548 5/11/ 8
150
100
50
0
1000
750
500
250
0
C/ 0.06400 S
KONUS1
C/ 0.06400 S
BSAX-GRBM
-1
1
2
3
4
5
TIME, SECS

KONUS1 -BSAX-GRBM CORRELATION 25/06/97 23681.548




SAX GRBM
25/06/97 23673.280
40- 700 keV
COUNTS/0.031 S
1030
830
630
430
230
30
3/11/ 8
20
40
60
80
100
TIME, SECS


KONUS
25/06/97 23681.540
50- 200 keV
COUNTS/0.064 S
150
100
50
0
0
9
19
29
39
49
59
69
79
89
99
TTME, SECS
5/11/ 8

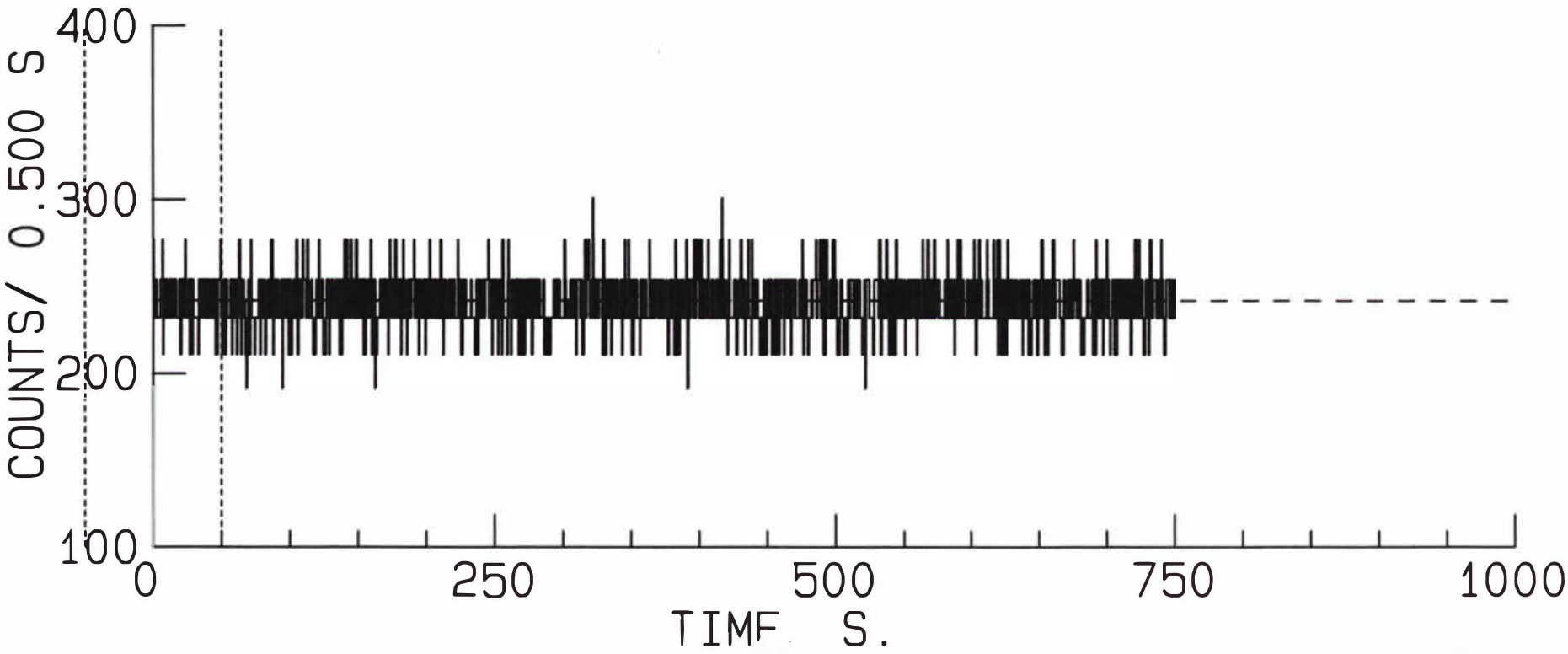
Konus, SAX
.035 s.

ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

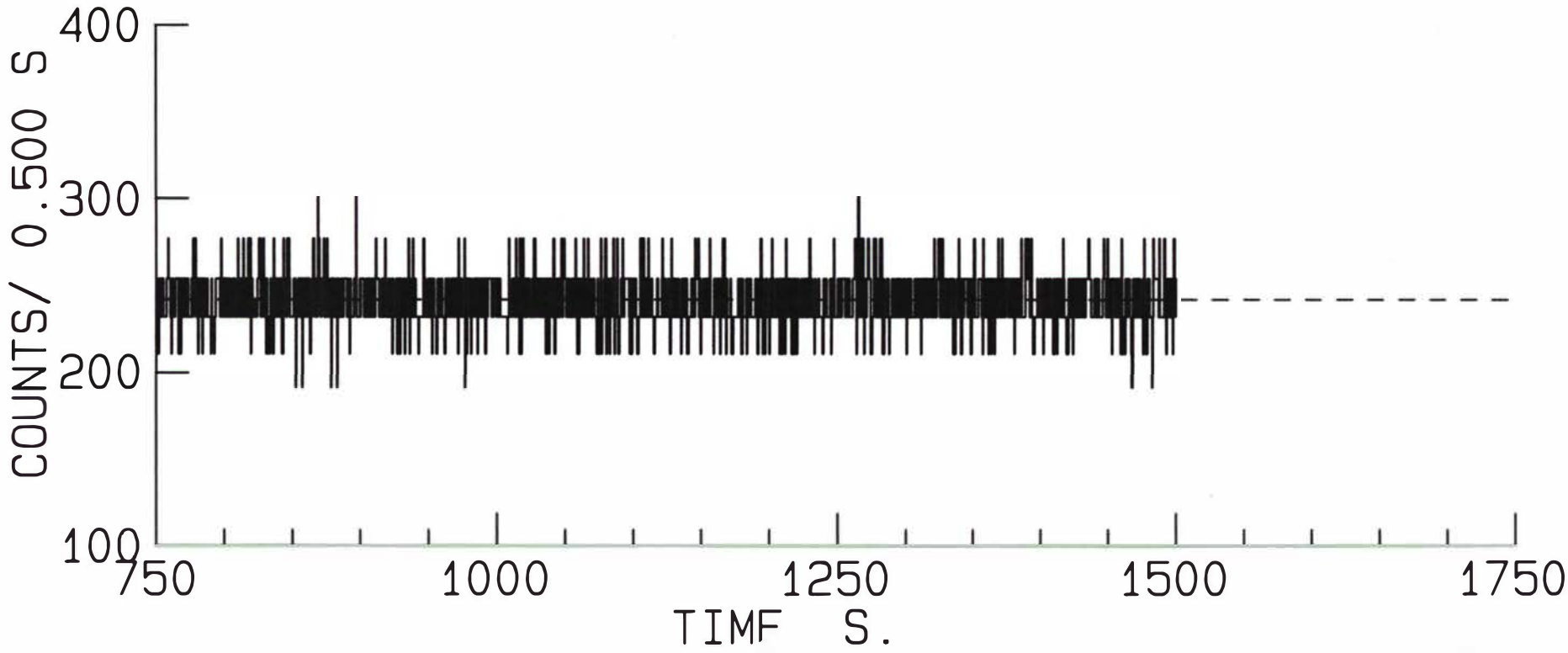


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

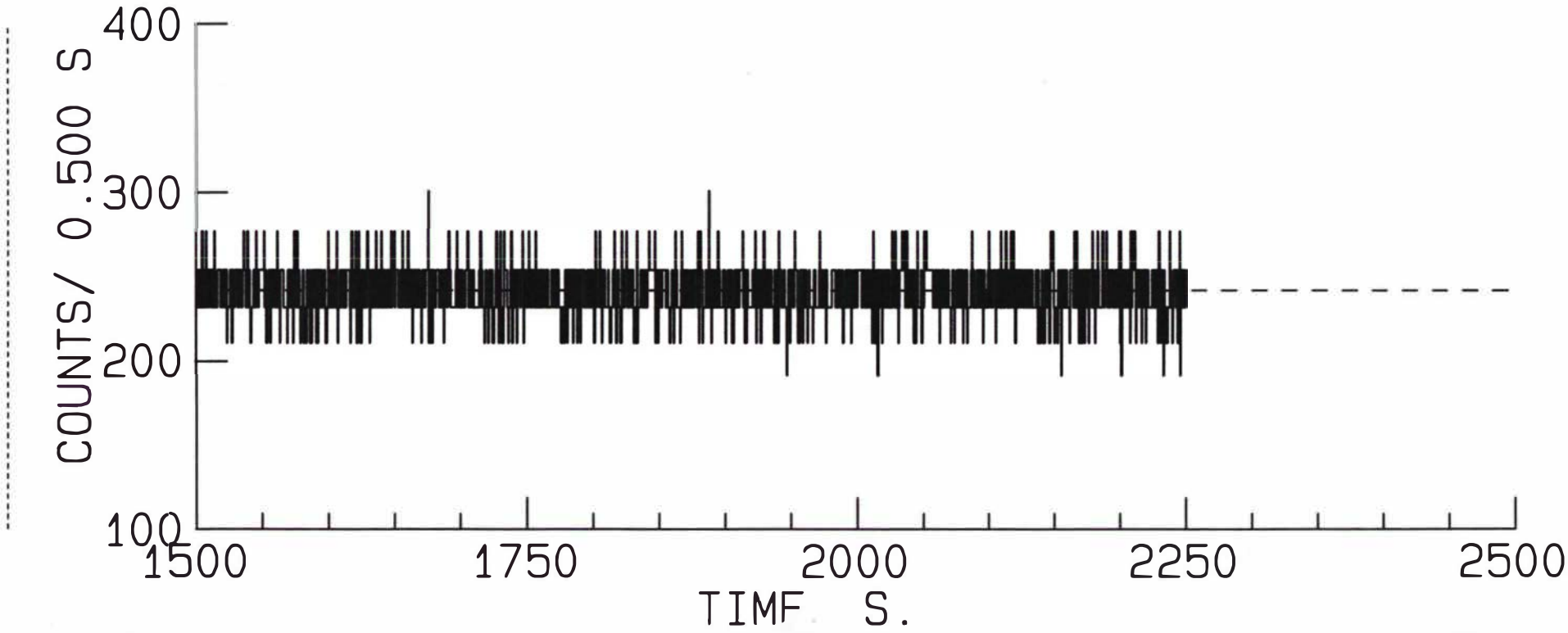


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

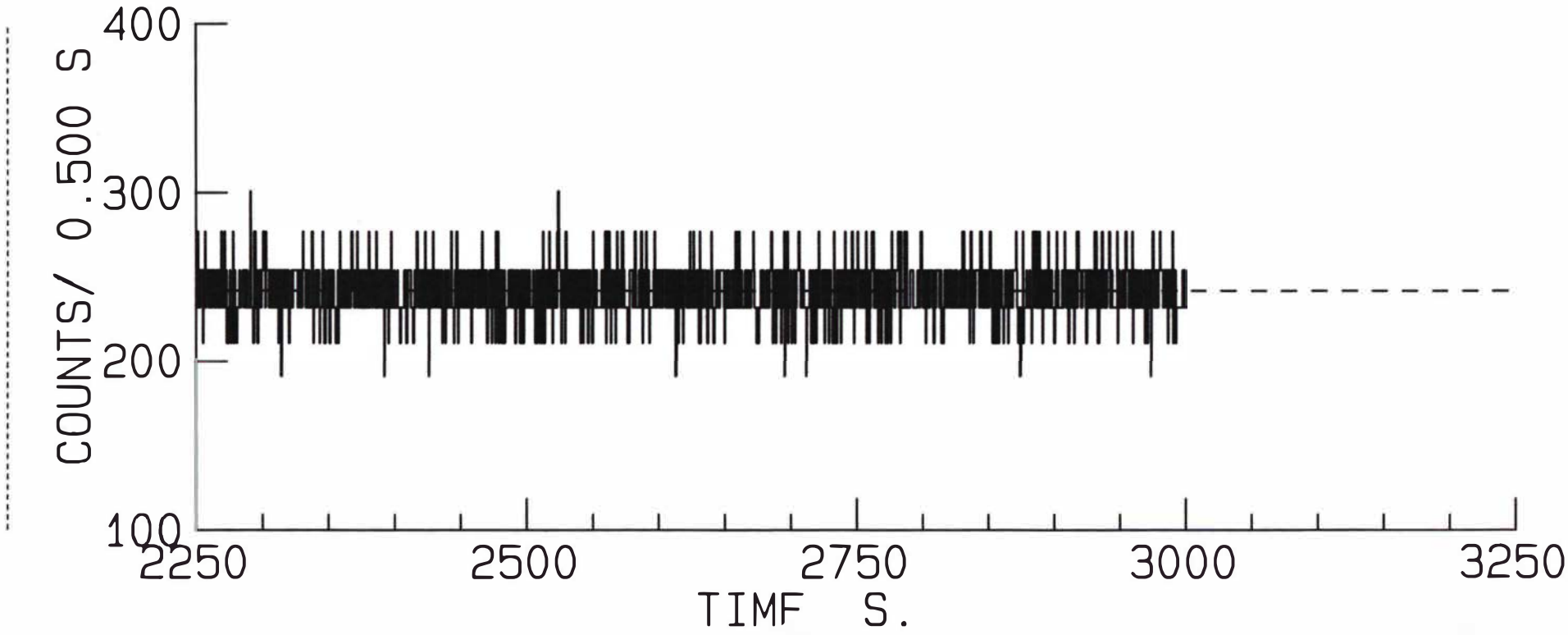


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

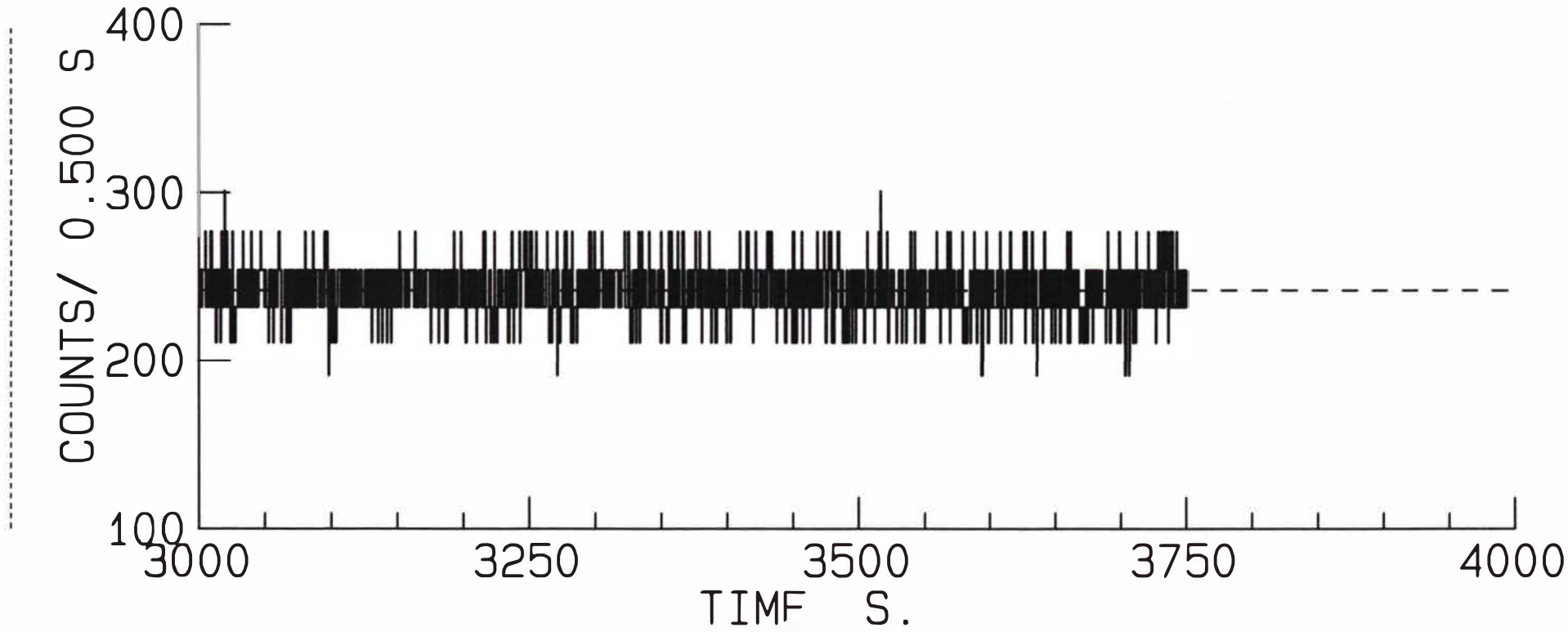


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

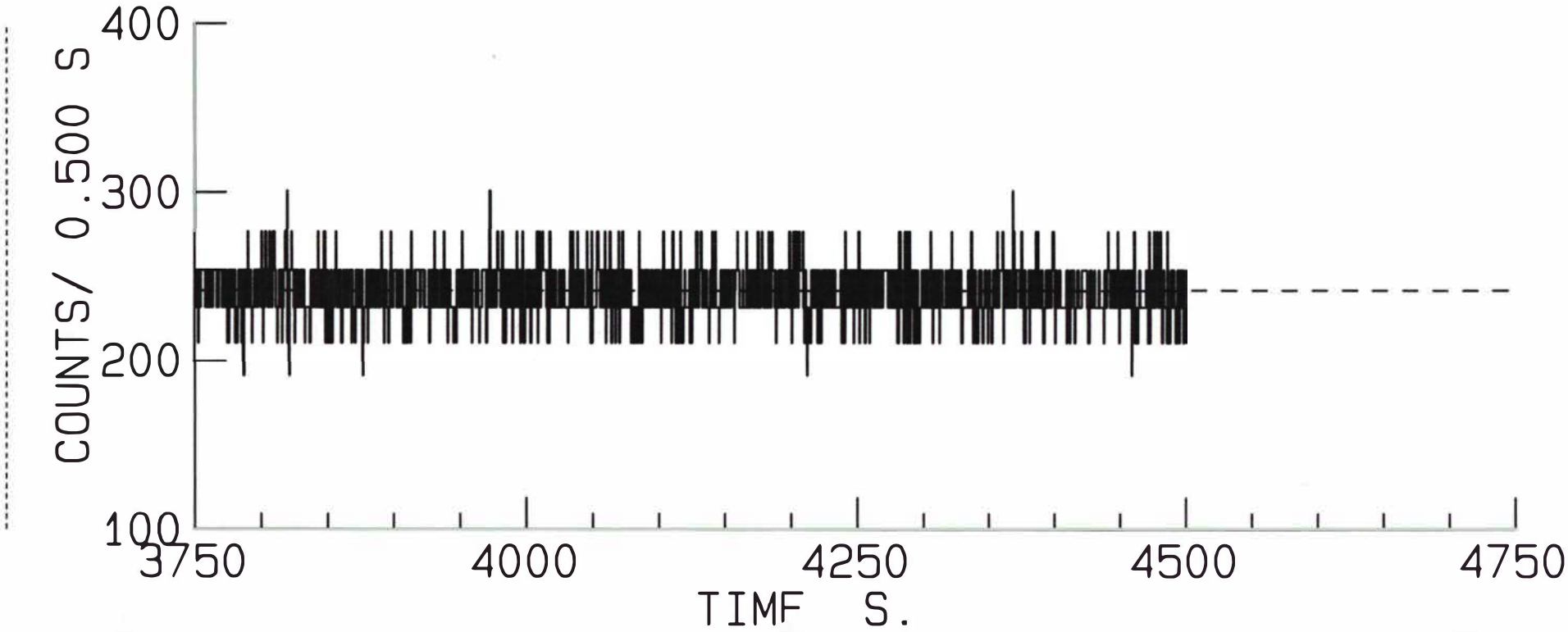


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

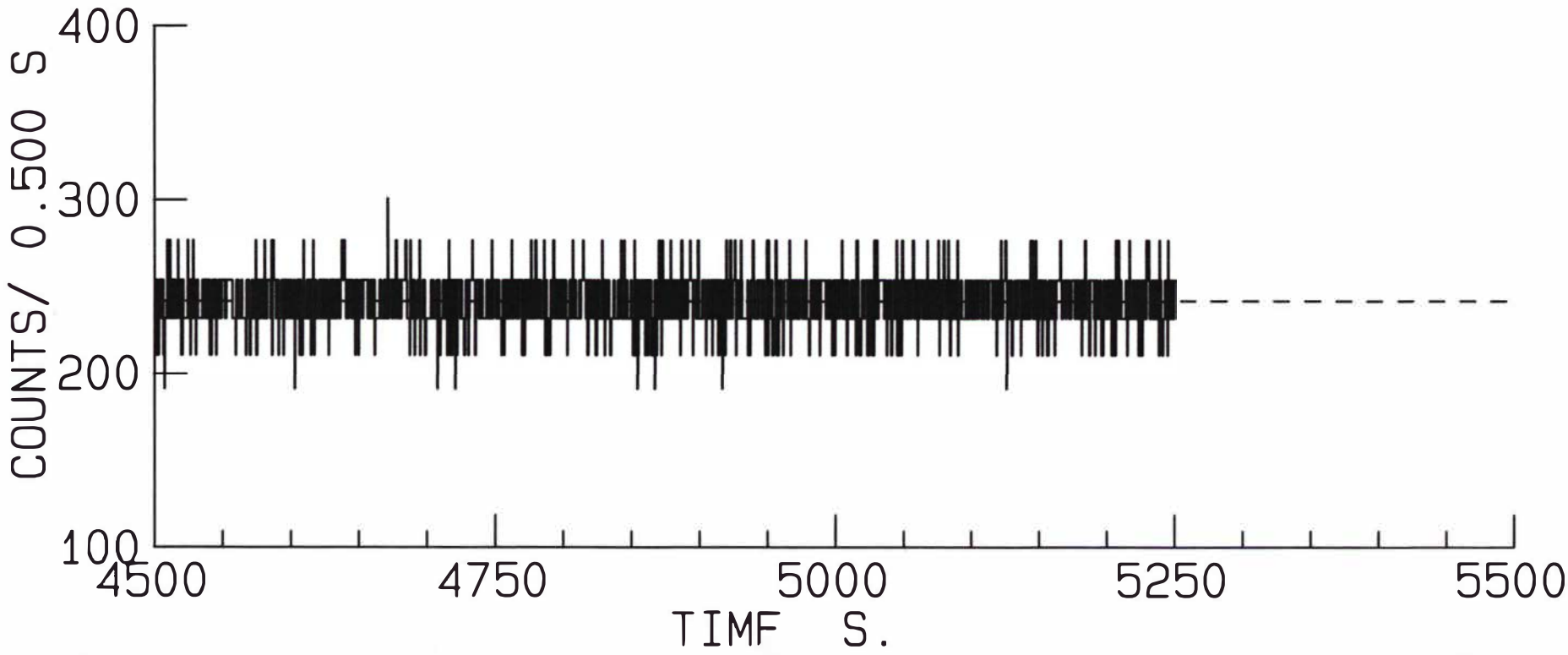


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV

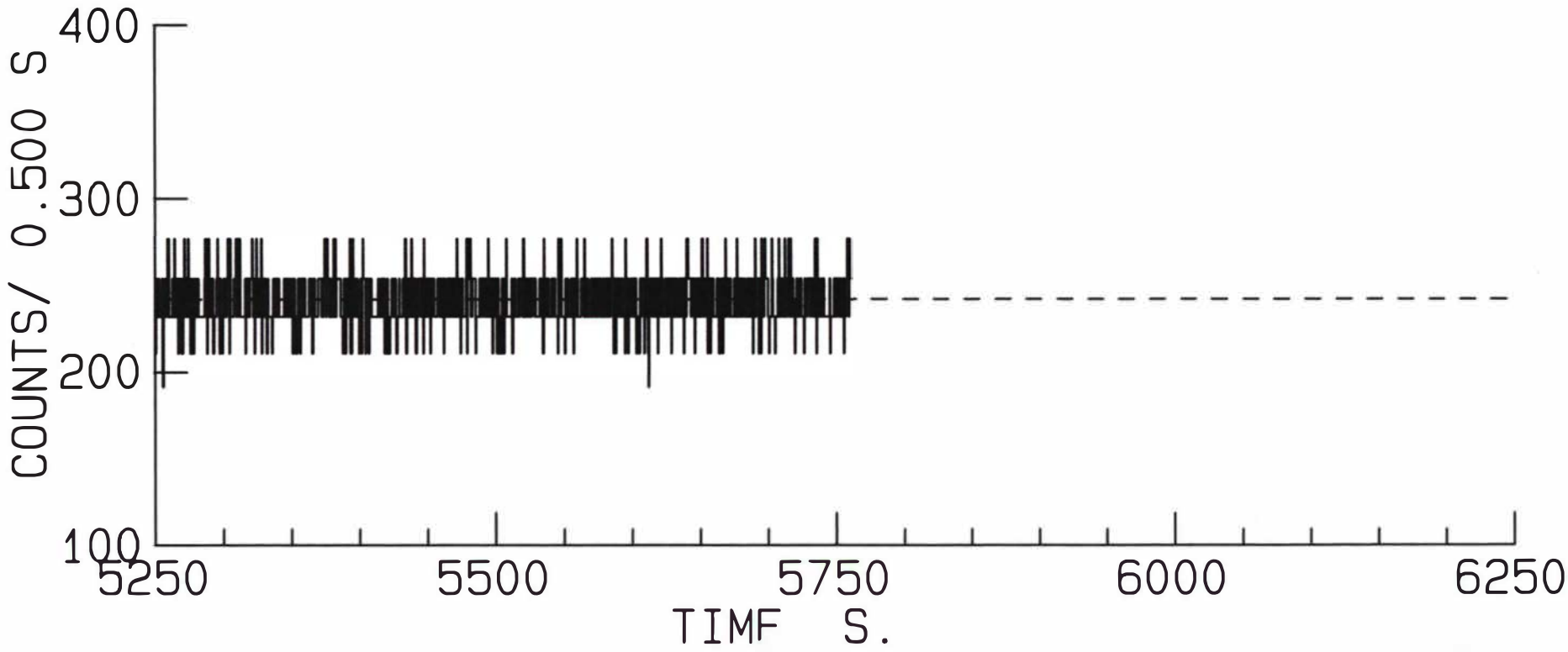


ULYSSES RT

29/10/ 8

25/ 6/97 20808.199 s

22- 147 keV



Date: Oct 5 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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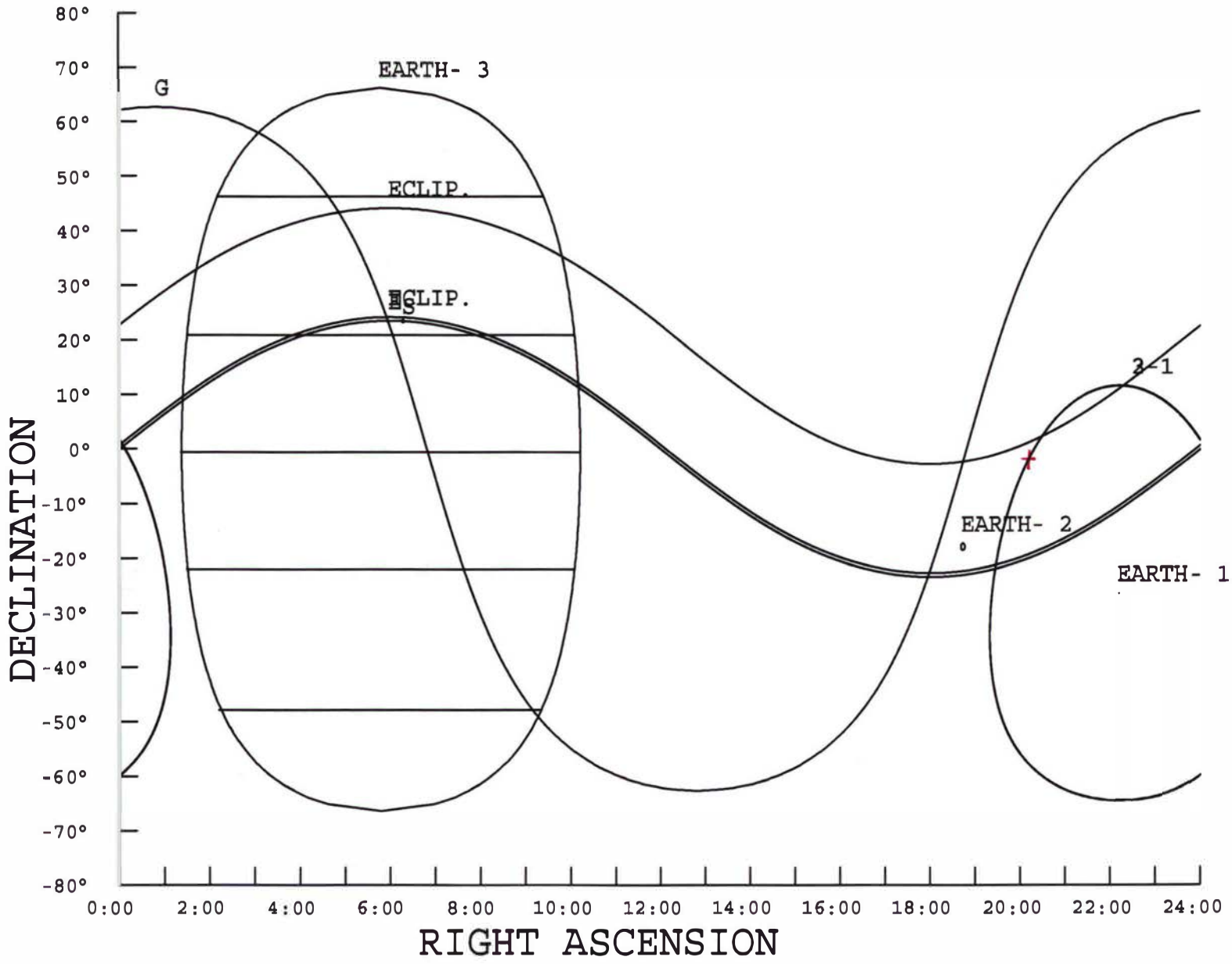
☑ ACCESS and MBL4 databases updated?

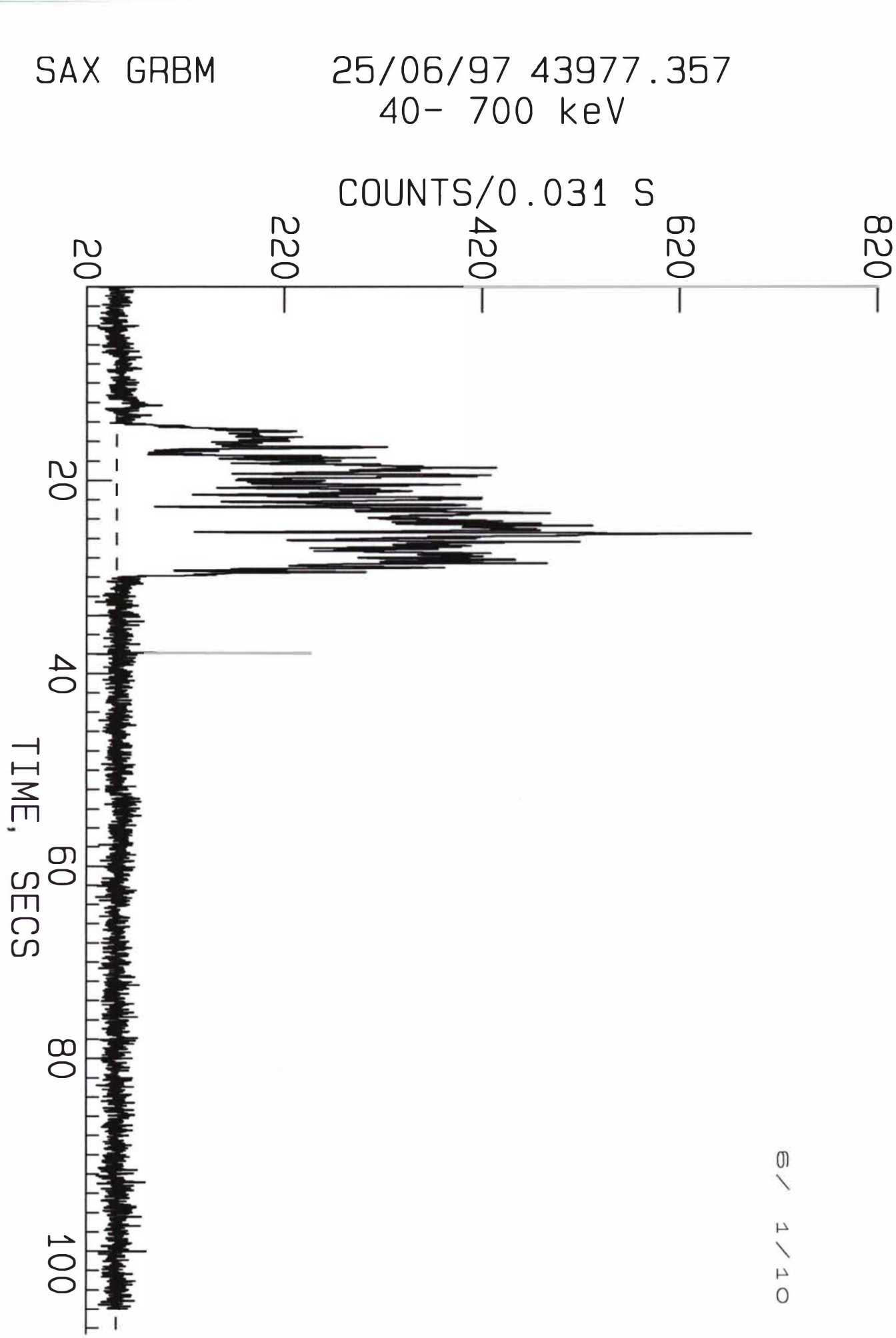
SAX added Jan 6

EVENT OF JUN 25, 1997 12:50

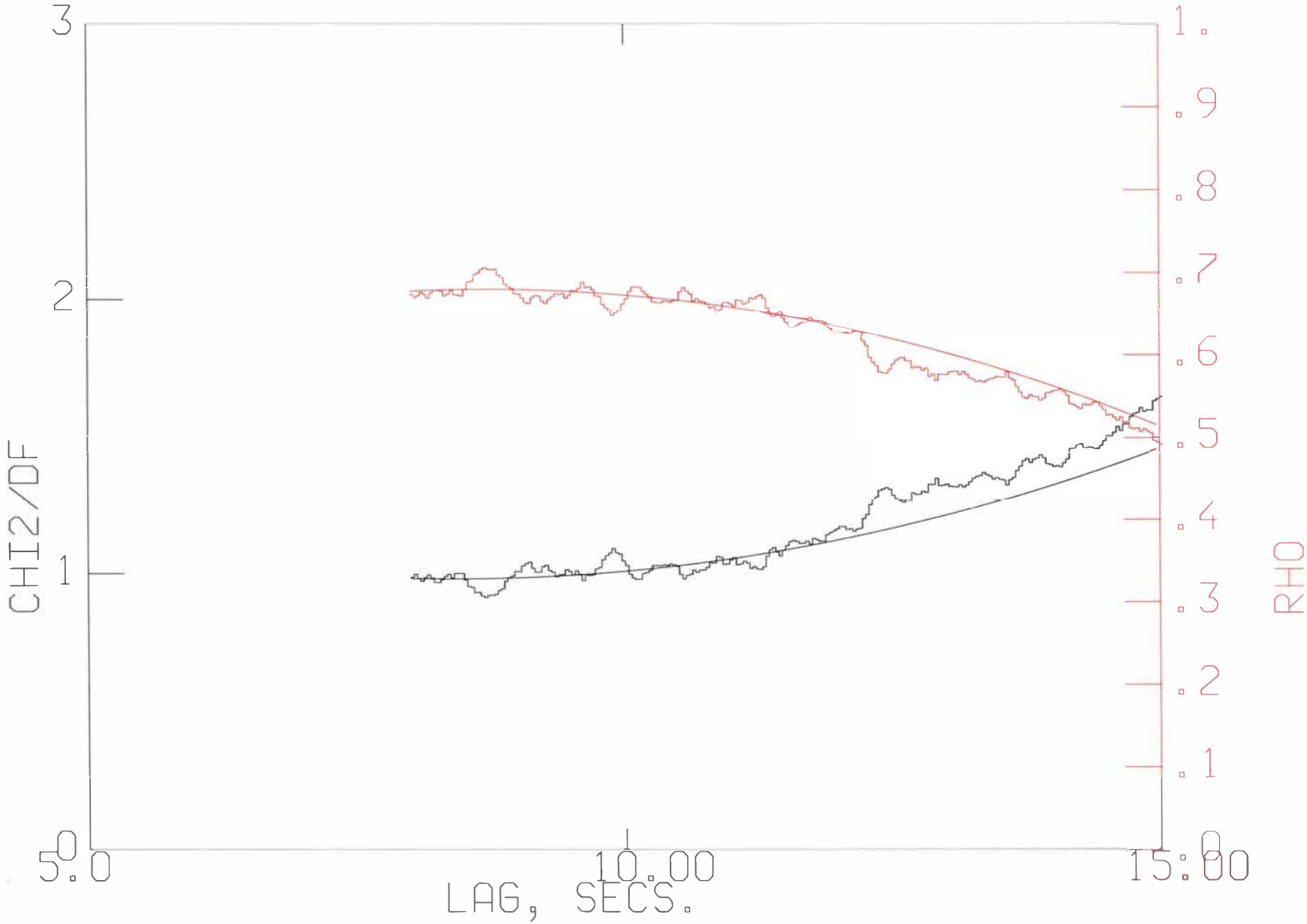
6/ 1/10

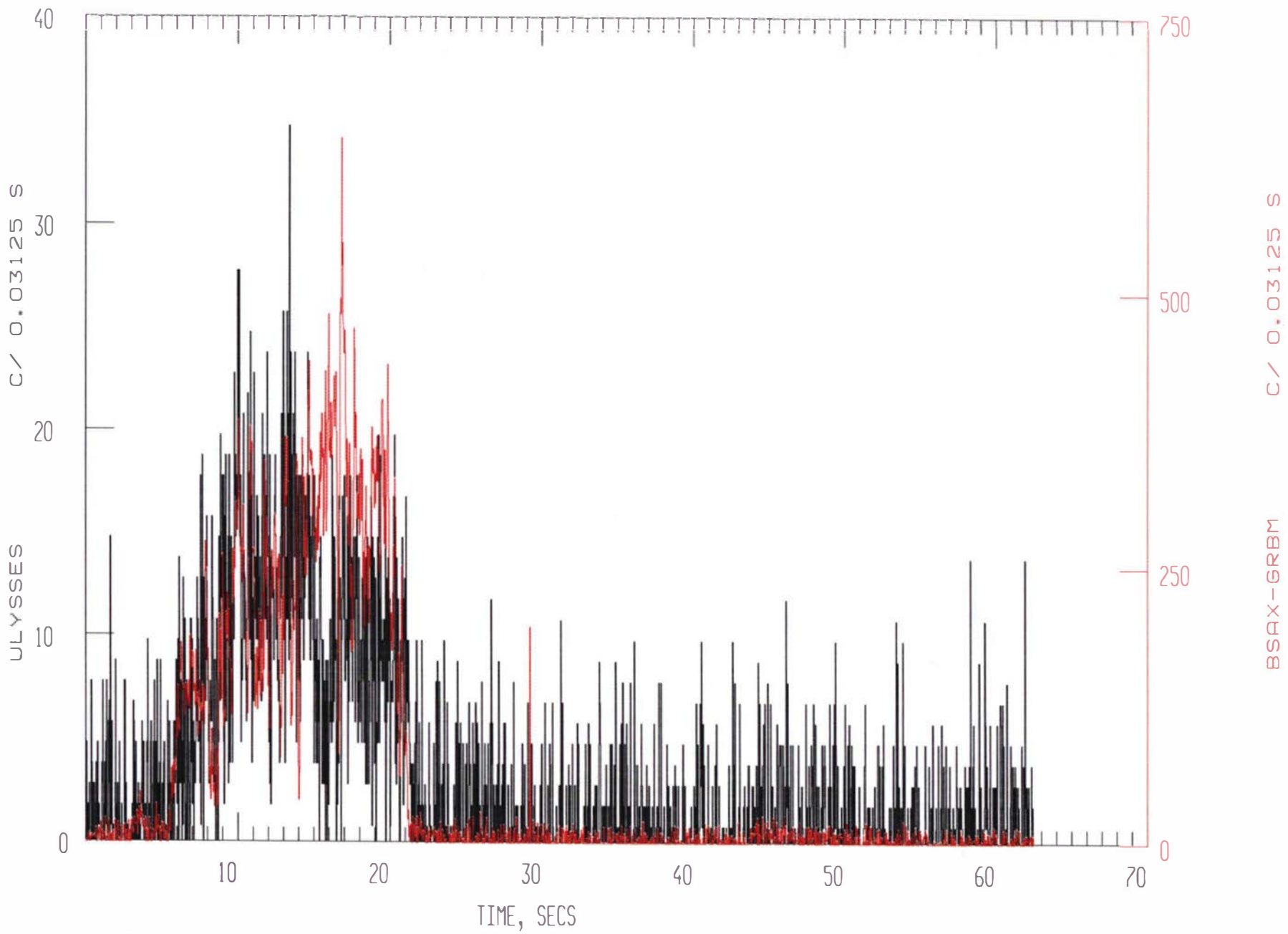
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS2 3 SAX

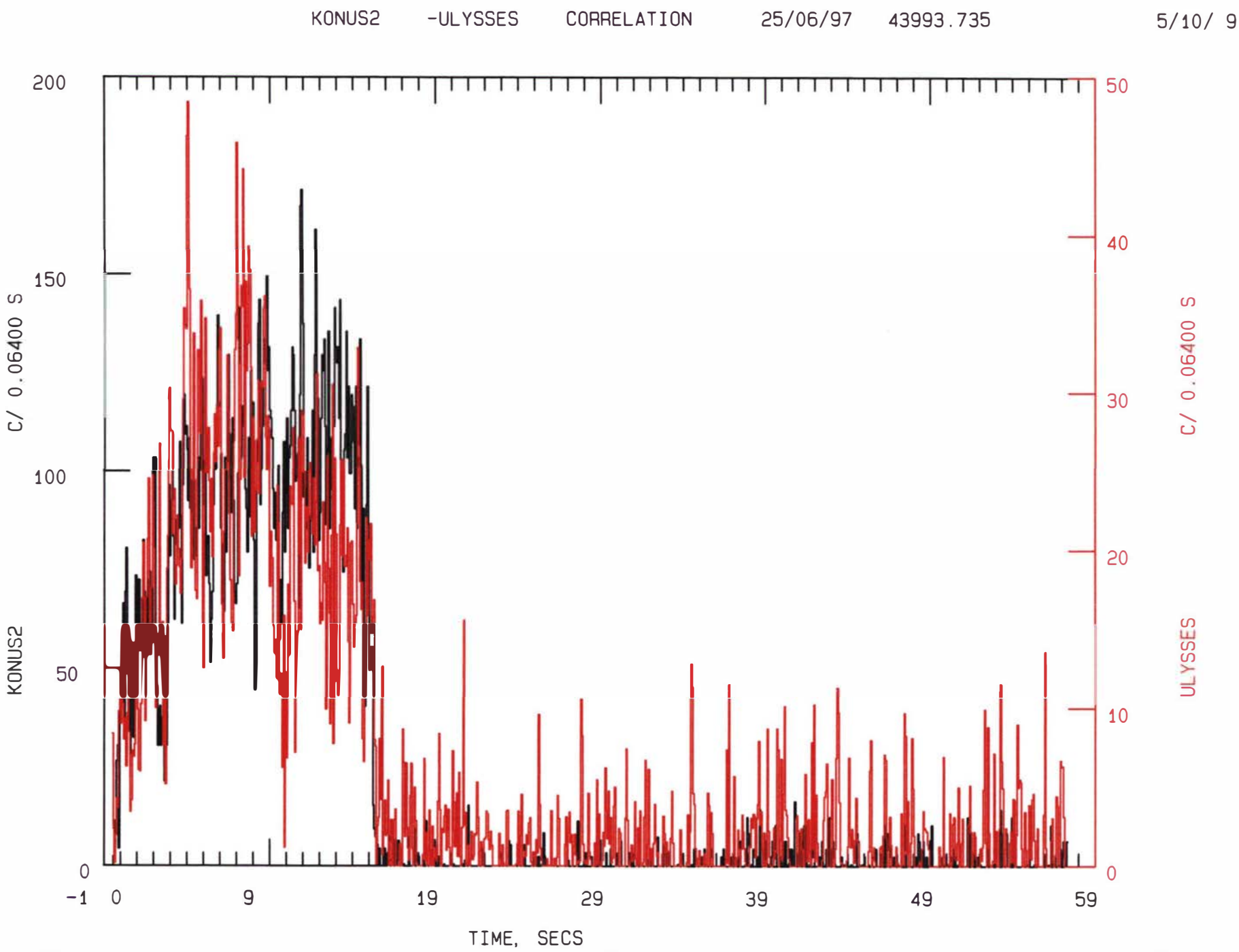



SAX GRBM
25/06/97 43977.357
40- 700 keV
COUNTS/0.031 S
20
220
420
620
820
20
40
60
80
100
TIME, SECS
6/ 1/10

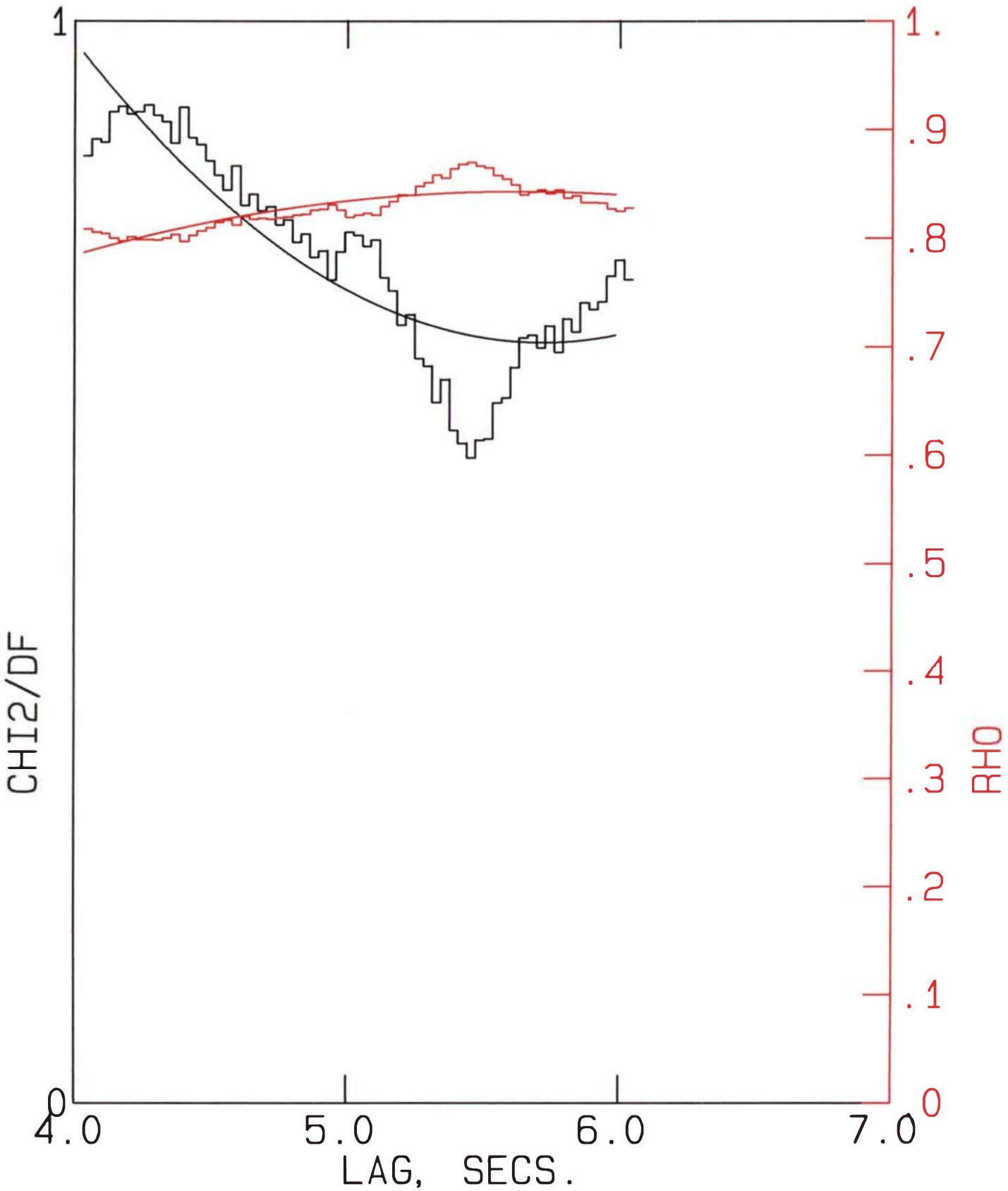
ULYSSES -BSAX-GRBM CORRELATION 25/06/97 46225.807

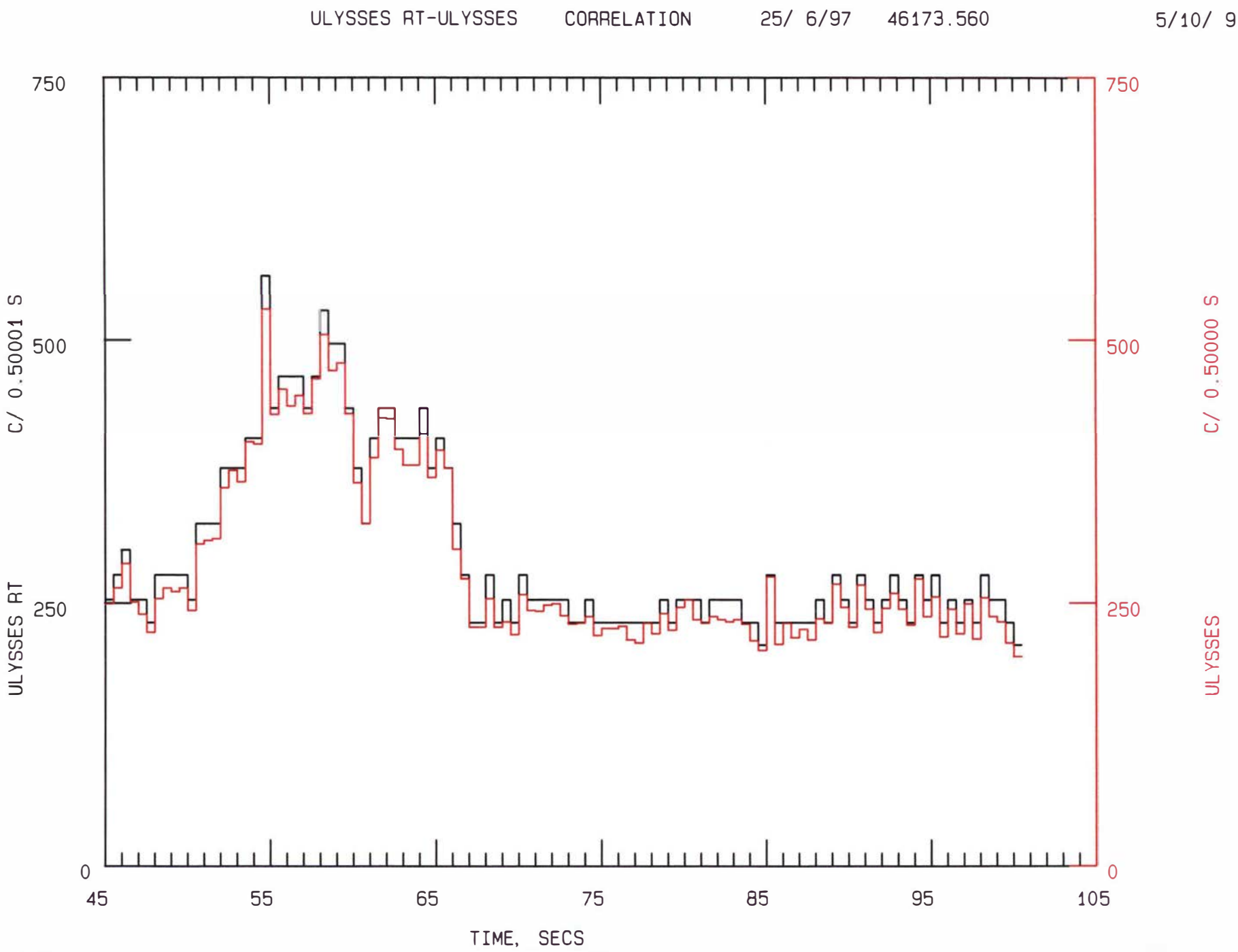


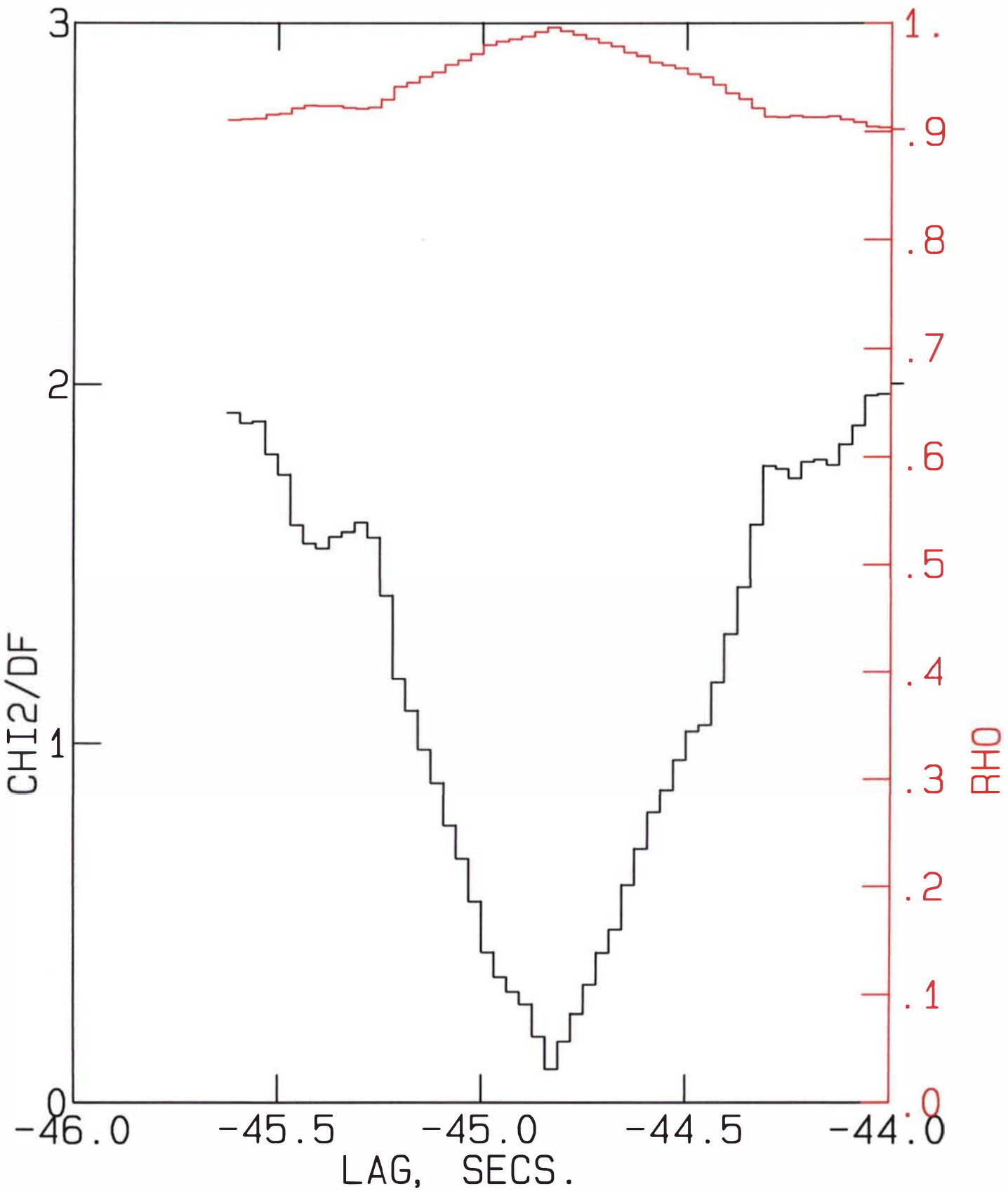

ULYSSES -BSAX-GRBM CORRELATION 25/06/97 46225.807
ULYSSES
C/ 0.03125 S
BSAX-GRBM
C/ 0.03125 S
TIME, SECS
0
10
20
30
40
50
60
70
0
250
500
750
0
10
20
30
40

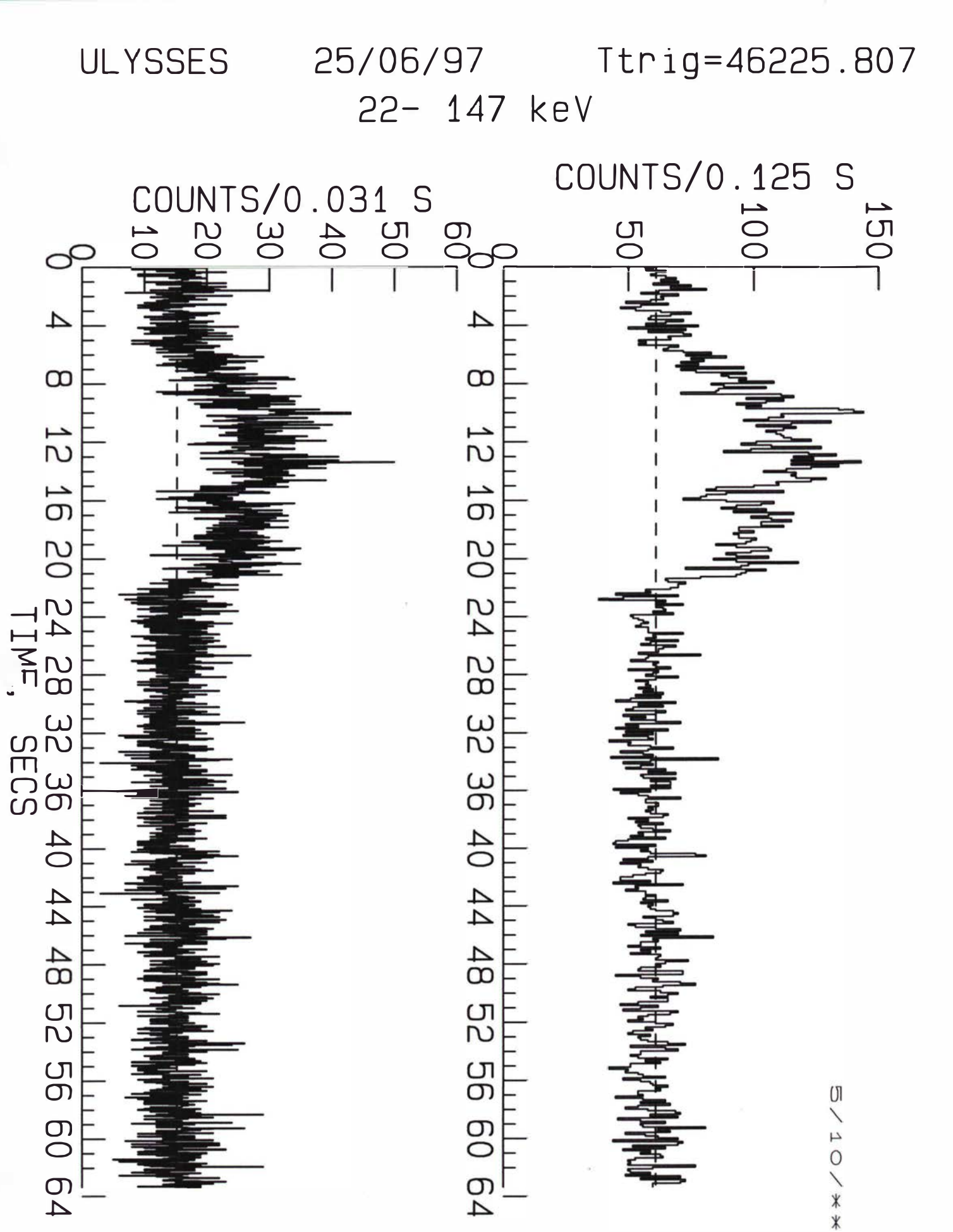

KONUS2 -ULYSSES CORRELATION 25/06/97 43993.735 5/10/ 9
200
150
100
50
0
C/ 0.06400 S
KONUS2
50
40
30
20
10
0
C/ 0.06400 S
ULYSSES
-1
0
9
19
29
39
49
59
TIME, SECS

KONUS2 -ULYSSES CORRELATION 25/06/97 43993.735




ULYSSES RT-ULYSSES CORRELATION 25/ 6/97 46173.560 5/10/ 9
750
500
250
0
C/ 0.50001 S
ULYSSES RT
750
500
250
0
C/ 0.50000 S
ULYSSES
45
55
65
75
85
95
105
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 25/ 6/97 46173.560
CHI2/DF
RHO
LAG, SECS.
3
2
1
0
1.
.9
.8
.7
.6
.5
.4
.3
.2
.1
0
-46.0
-45.5
-45.0
-44.5
-44.0

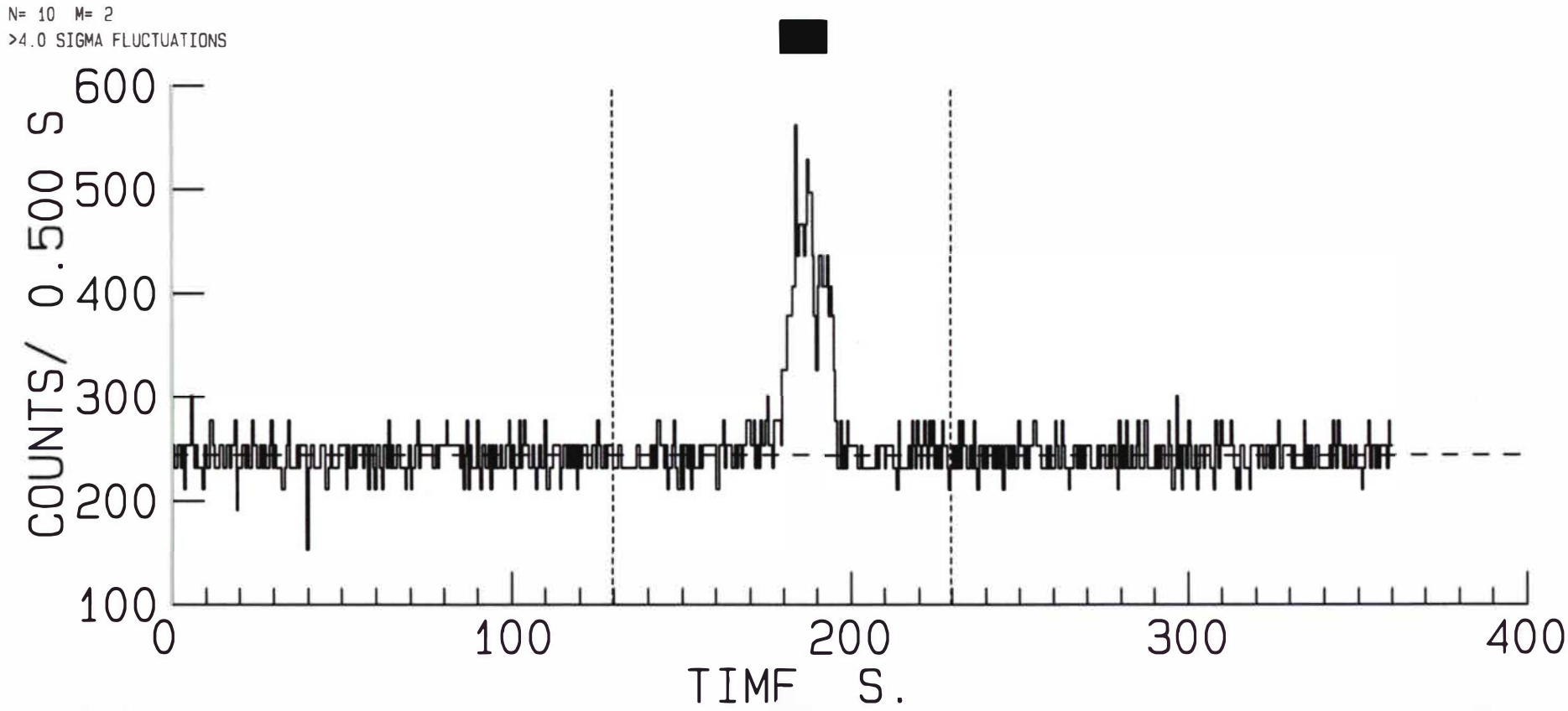

ULYSSES 25/06/97 Ttrig=46225.807
22- 147 keV
COUNTS/0.031 S
COUNTS/0.125 S
TIME, SECS
5/10/**

ULYSSES RT

5/10/ 9

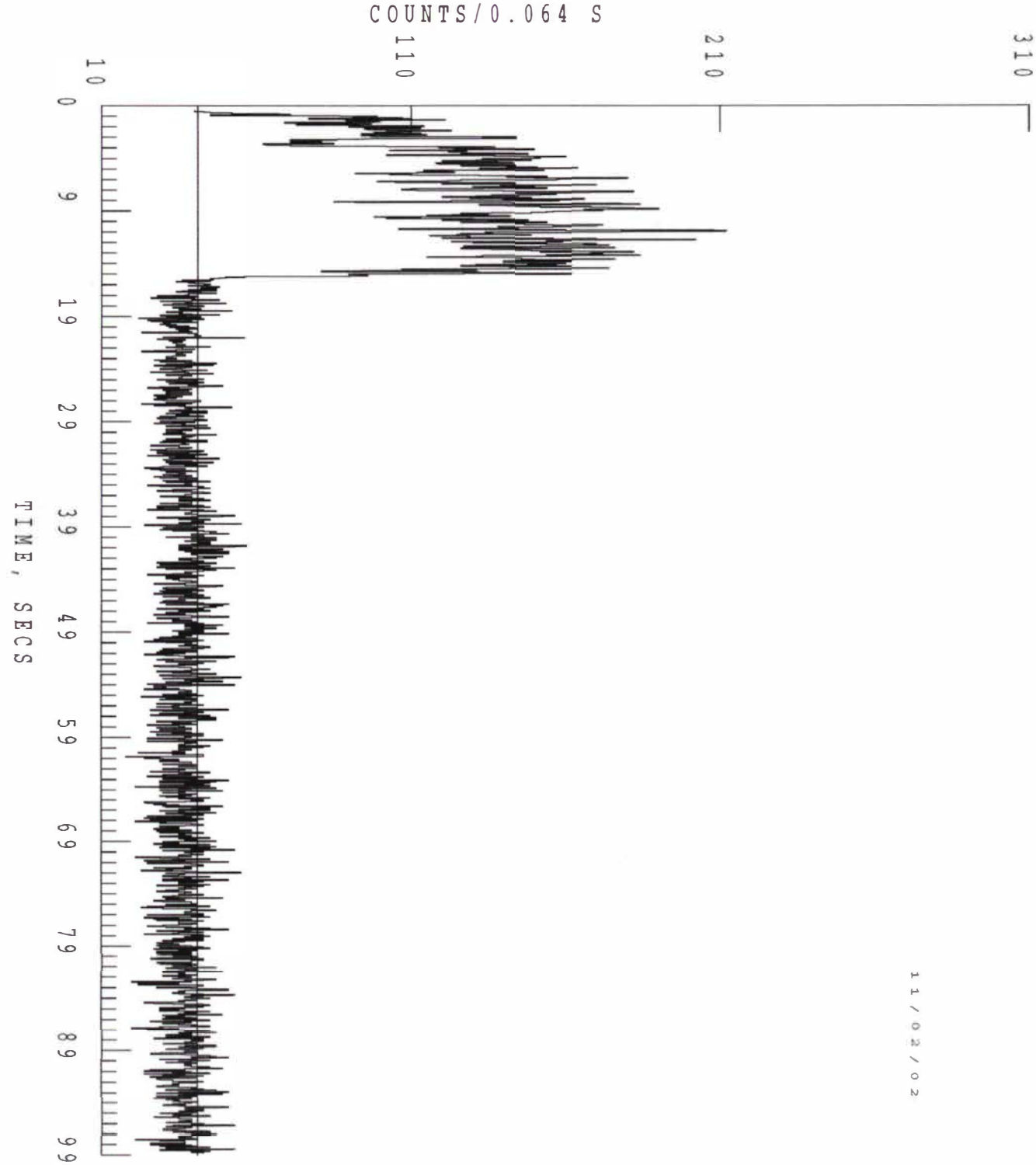
25/ 6/97 46044.488 s

22- 147 keV



KONUS2 25/06/97 43993.735

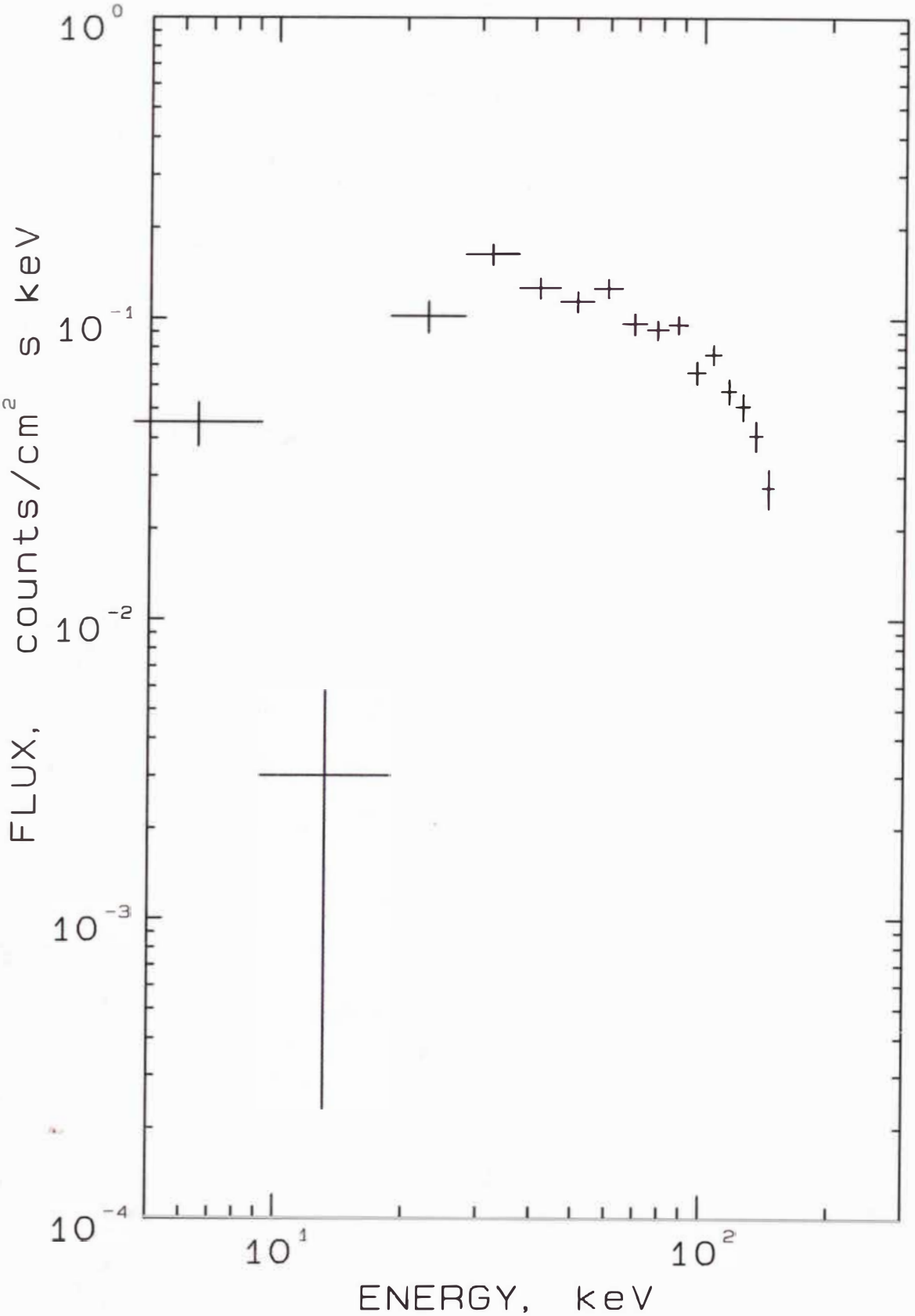
50- 200 keV

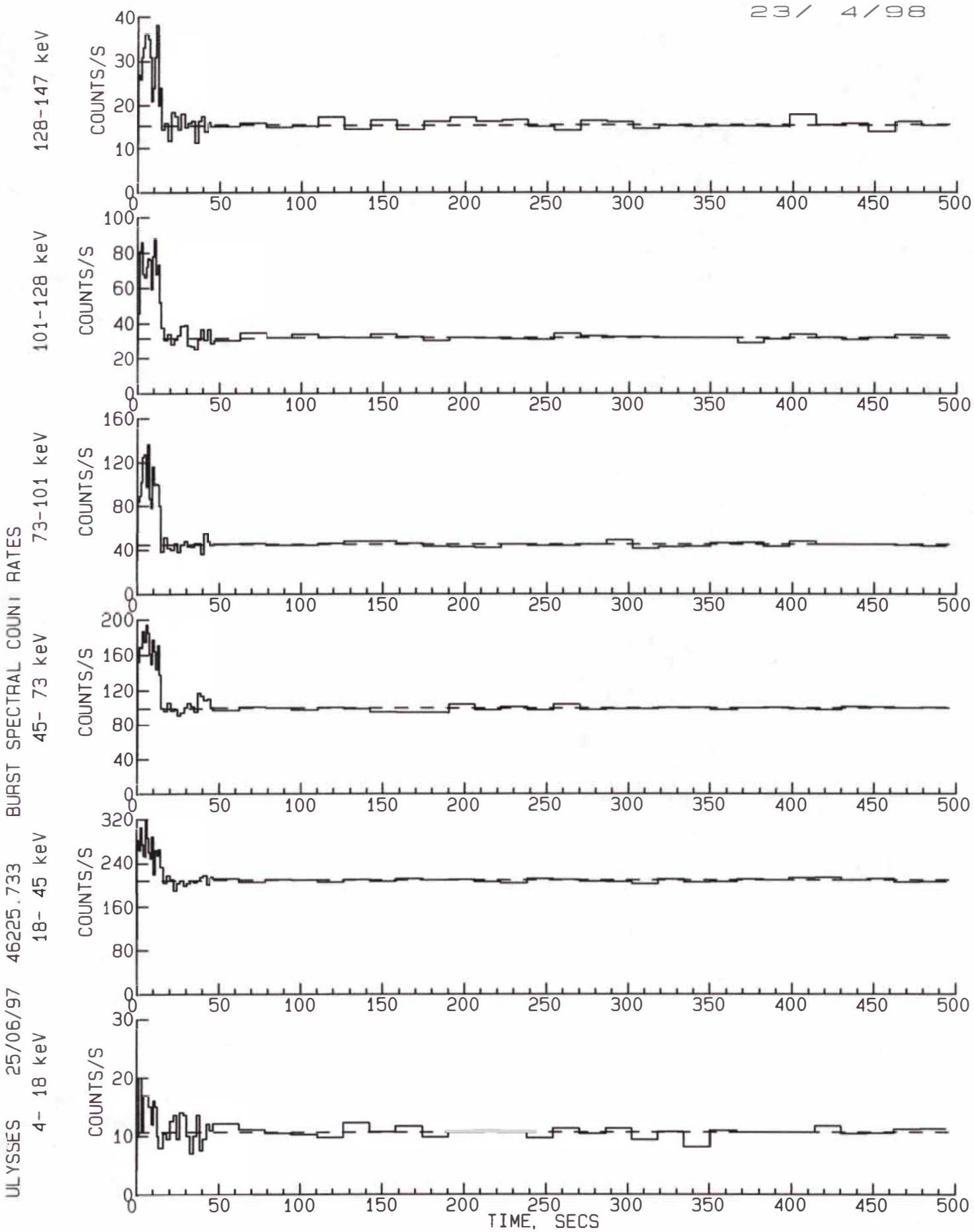


ULYSSES 25/06/97 46225.733

23/ 4/98

SPECTRUM INTEGRATED OVER 30.3 SECONDS, INTERVALS 2 TO 25




23/ 4/98
ULYSSES 25/06/97 46225.733 BURST SPECTRAL COUNT RATES
128-147 keV
101-128 keV
73-101 keV
45- 73 keV
18- 45 keV
4- 18 keV
COUNTS/S
TIME, SECS

From BUTTERWORTH@lheavx.gsfc.nasa.gov Thu Jan 8 11:23 PST 1998
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Thu, 8 Jan 1998 14:22:31 -0500 (EST)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for events recently reported by Ulysses but not by BATSE

Konus summary for events recently reported by Ulysses but not seen by BATSE
==========

June 25 1997 12:50 Ulysses time; moderate burst, 15 s long

Konus triggered at 12:13:13.735 in the North-facing detector. There were 15 seconds of activity, hardening with time, with a sudden end. The event was within a few degrees of the ecliptic, because the North-facing and South-facing detectors saw very similar intensities.

October 9 1997 19:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 18:56:54.951 in the South-facing detector. There was a single peak with substructure, lasting 10 seconds, with the maximum intensity 2 seconds after the trigger.

October 10 1997 23:36 Ulysses time; weak burst, 32 ms long

This event was not detected by Konus.

October 19 1997 14:10 Ulysses time; moderate burst, 10 s long

Konus triggered at 14:55:54.243 in the South-facing detector. There was a single peak lasting 10 seconds with a lot of substructure.

October 28 1997 23:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

October 29 1997 00:47 Ulysses time; weak burst, 64 ms long

Konus triggered at 01:29:11.805 in the North-facing detector. The event

From sprg@ssl.berkeley.edu Mon Nov 3 11:18 PST 1997
Date: Mon, 3 Nov 1997 11:18:08 -0800
From: sprg@ssl.berkeley.edu (Space Physics Research Group Account)
To: khurley@apollo
Subject: GRB Master list

----- Begin Included Message -----

From vnp@isac.ernet.in Mon Nov 3 04:51:54 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
id AA04926; Mon, 3 Nov 1997 14:02:42 GMT
X-Authentication-Warning: sx07.ernet.in: vnp owned process doing -bs
Date: Mon, 3 Nov 1997 14:02:42 +0000 (GMT)
X-Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: GRB Master list
Mime-Version: 1.0

Dear Prof. Hurley,
SROSS-C2 has not recorded any event on 25 Jun 97.

The following SROSS events preceding and following the 7 Jun 97 event may kindly be included in the next update of the GRB Master list
2 FEB 97 7:10:44.273UT confirmed by Ulysses & BATSE (Trig No. 5995)
22 Feb 97 23:53:27.392UT confirmed by Ulysses
26 Feb 97 8:46:34.198 UT confirmed by Ulysses
15 Jul 97 14:21:33.22UT confirmed by Ulysses, DMSP,Wind(TGRS)
?? Aug 97 17:45:2.272UT confirmed by Ulysses,BATSE,RXTE

Regards,
padmini

----- End Included Message -----

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

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

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

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

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

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

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

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

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

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

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

  ,616    167 65390.3 BATSE#6274 STRONG,MULTIPEAK.X-RAY AFTER,IAU6683(13NO@127)
          167 65390.3 BATSE(20.46,-7.16J),X-RAY(19.72,-5.50J) (14NO@112,NOTRIG)
          167 65390.3 BATSE (X-RAY DUBIOUS,IAU6722. NO OPT VARIABLE, IAU6723)

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

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

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

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

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

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

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

  ,915    258 32870.9 KONUS 25S,HARD (+UL@30900,3100LS,MOD,10S)
      14 258 32873.2 PEAK (200/S,<2S,NO TRIG) (13NO)

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

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

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

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

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

From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue Nov 4 12:54 PST 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 4 Nov 1997 15:48:10 -0500 (EST)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus report on recent events seen by Ulysses but not by BATSE

Konus report on recent events seen by Ulysses, but not BATSE
==========

June 25 1997 12:50 Ulysses time; moderate burst, 15 s long

Konus triggered at 12:13:13.735 in the North-facing detector. There were
15 seconds of activity, hardening with time, with a sudden end. The event
must have been within a few degrees of the ecliptic, because the North-facing
and South-facing detectors saw very similar intensities.

October 9 1997 19:14 Ulysses time; moderate burst, 10 s long

Konus triggered at 18:56:54.951 in the South-facing detector. There was a
single peak with substructure, lasting 10 seconds, with the maximum
intensity 2 seconds after the trigger.

October 10 1997 23:36 " " ; weak burst, 32 ms long

This event was not detected by Konus.

October 28 1997 23:04 Ulysses time; weak burst, 64 ms long

This event was not detected by Konus.

October 29 1997 00:47 Ulysses time; weak burst, 64 ms long

Konus triggered at 01:29:11.805 in the North-facing detector. The event
lasted more than 120 seconds and was within a few degrees of the ecliptic.

November 1 1997 07:14 Ulysses time; moderate burst, 10 s long

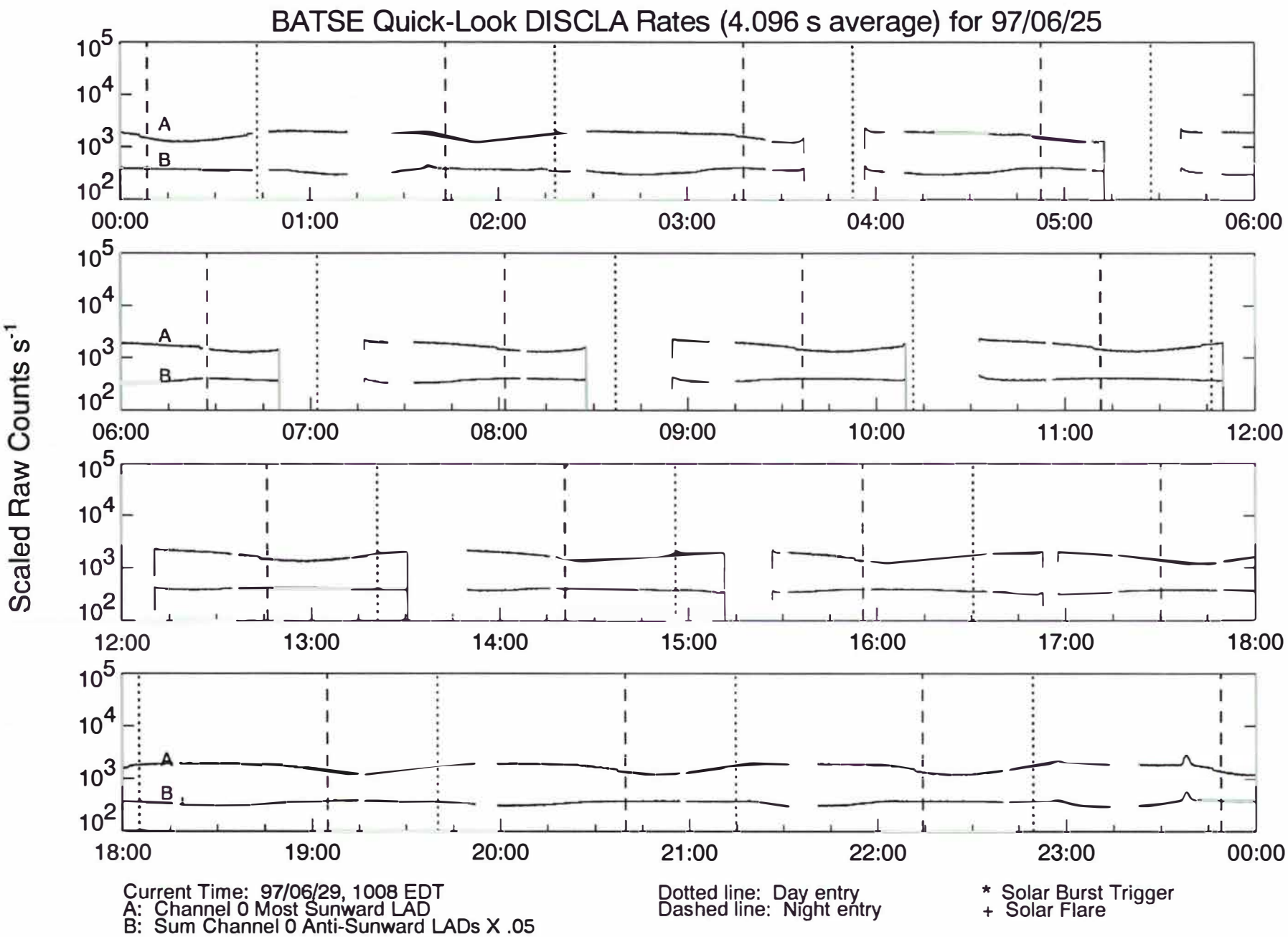
Konus triggered at 06:31:24.526 in the North-facing detector. The event

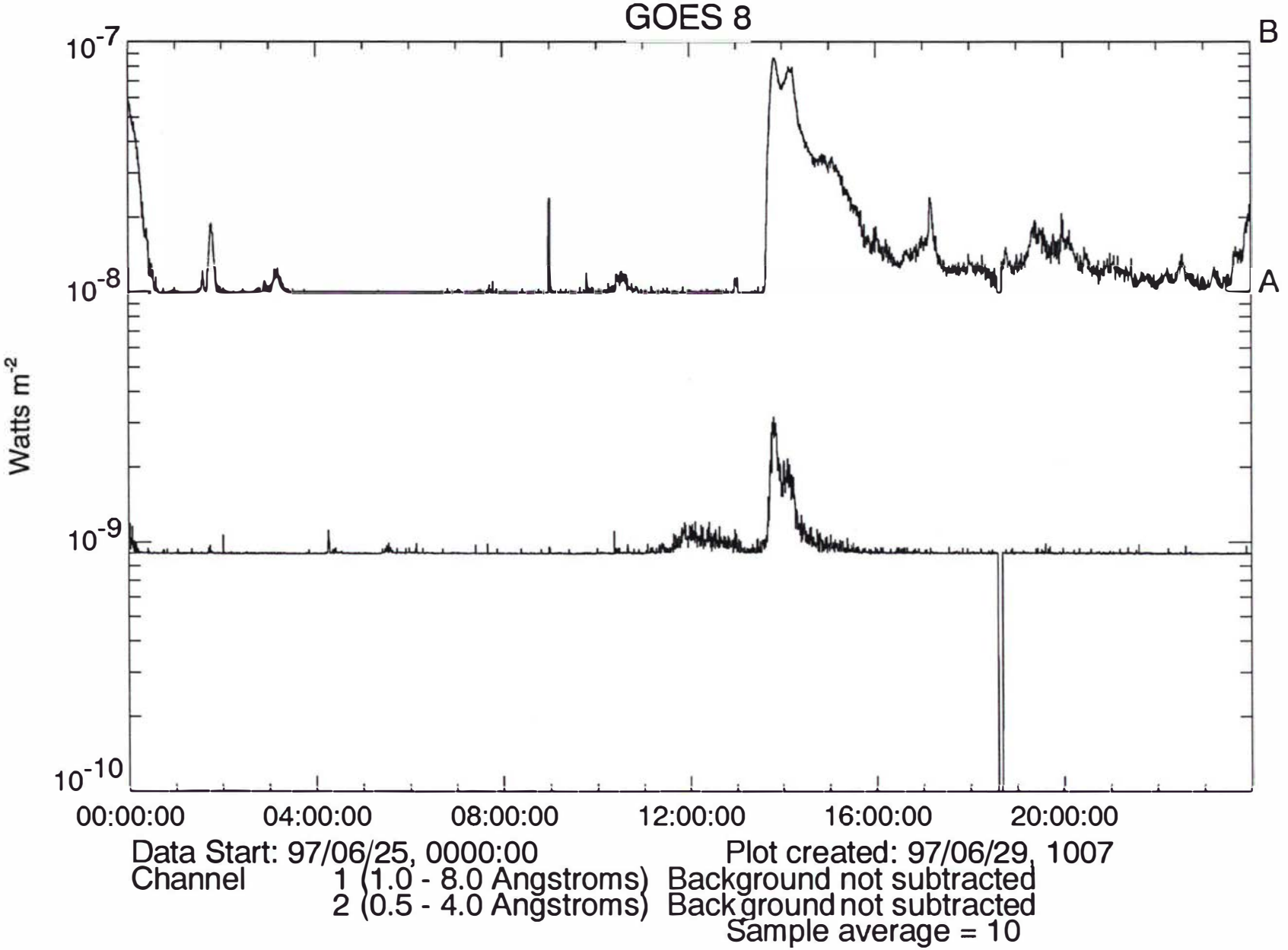
From kraken@rosserv.gsfc.nasa.gov Thu Oct 30 10:27 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 30 Oct 1997 14:31:38 -0500
    khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Re: GRB 970625

>ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:
>
>Ulysses observed the following burst:
>
>
>June 25 1997 12:50 Ulysses time; moderate burst, 15 s long
>
>The spacecraft was about 2900 light-seconds from Earth.
>Was this event detected by anyone else?
>

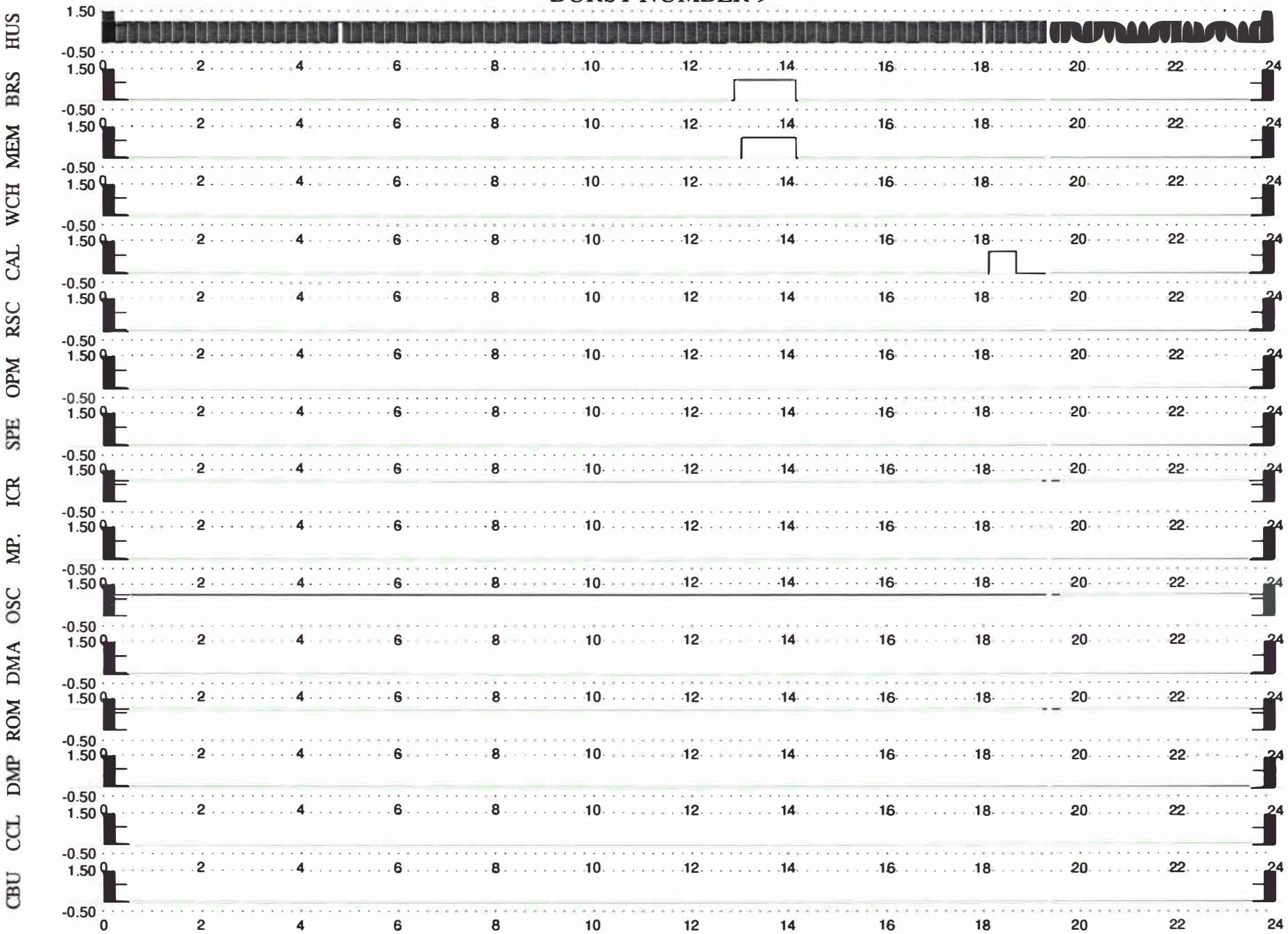
Yes, TGRS sees a burst near this time. It is TGRS #576, trigger
at 43995 s.   20 s duration, 470 ct/s peak (100-300 keV) and
15 s duration, 150 cts/s peak (35-100 keV).

Pete


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/25
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/29, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

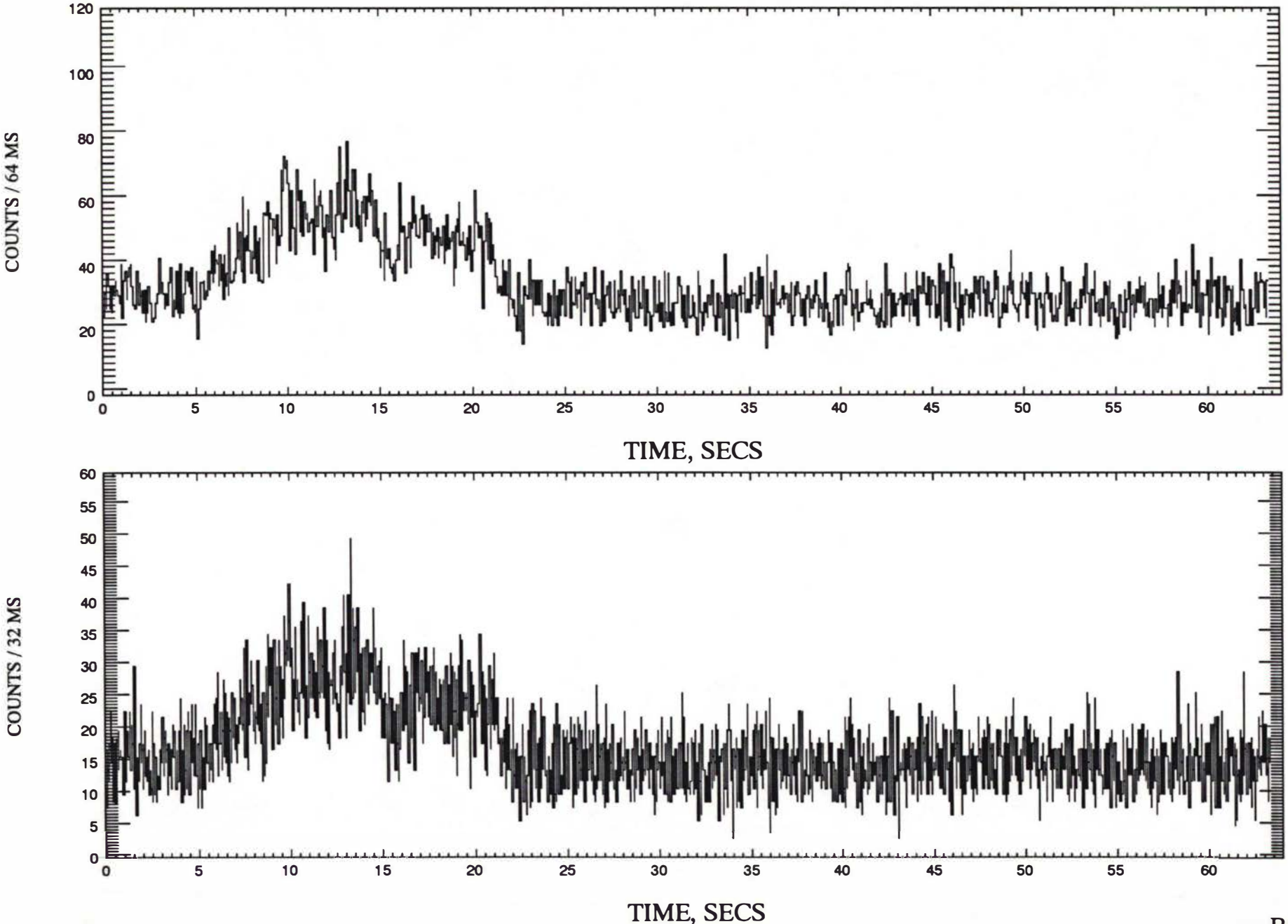

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/25, 0000:00
Plot created: 97/06/29, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

BURST NUMBER 9



HUS 2A TRIGGERED DATA EDR day 176, year 1997 10/29/97

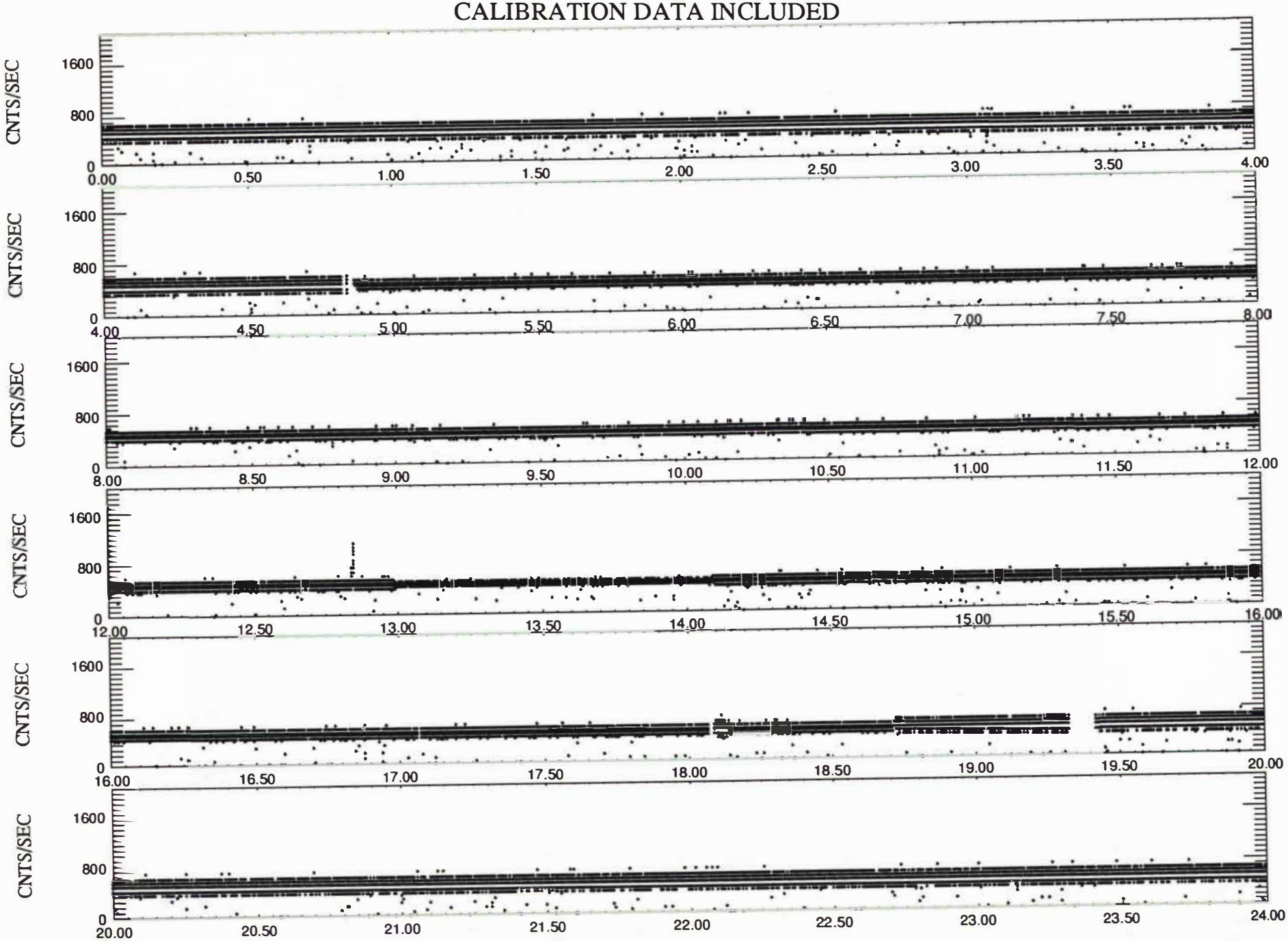
Burst Counter 9 at UT=12.840481262207 h=46225.733 s 12:50:25.733



B# 1

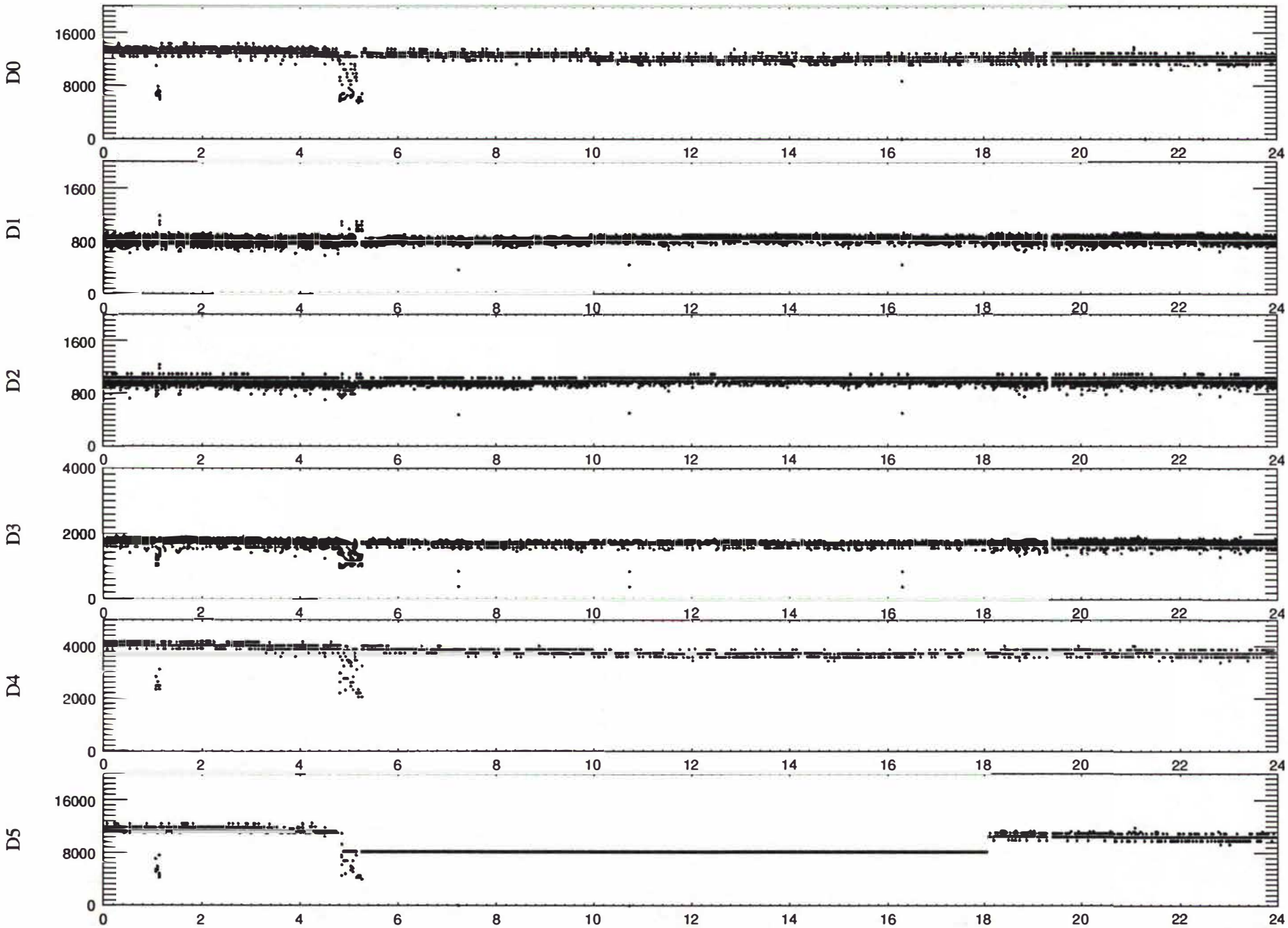
HUS 2A, MODE 1, NOT AVERAGED EDR day 176, year 1997 to day 176, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV 'AL TIME

HUS 2B COUNTS / SEC EDR day 176, year 1997 to day 176, year 1997 10/13/97



Date: Nov 5 '08

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

□ Jim Schmidling's stat file correction applied?

□ Final ephemeris used?

□ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

□ Was CHECKMO run to eliminate data gaps?

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

□ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

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

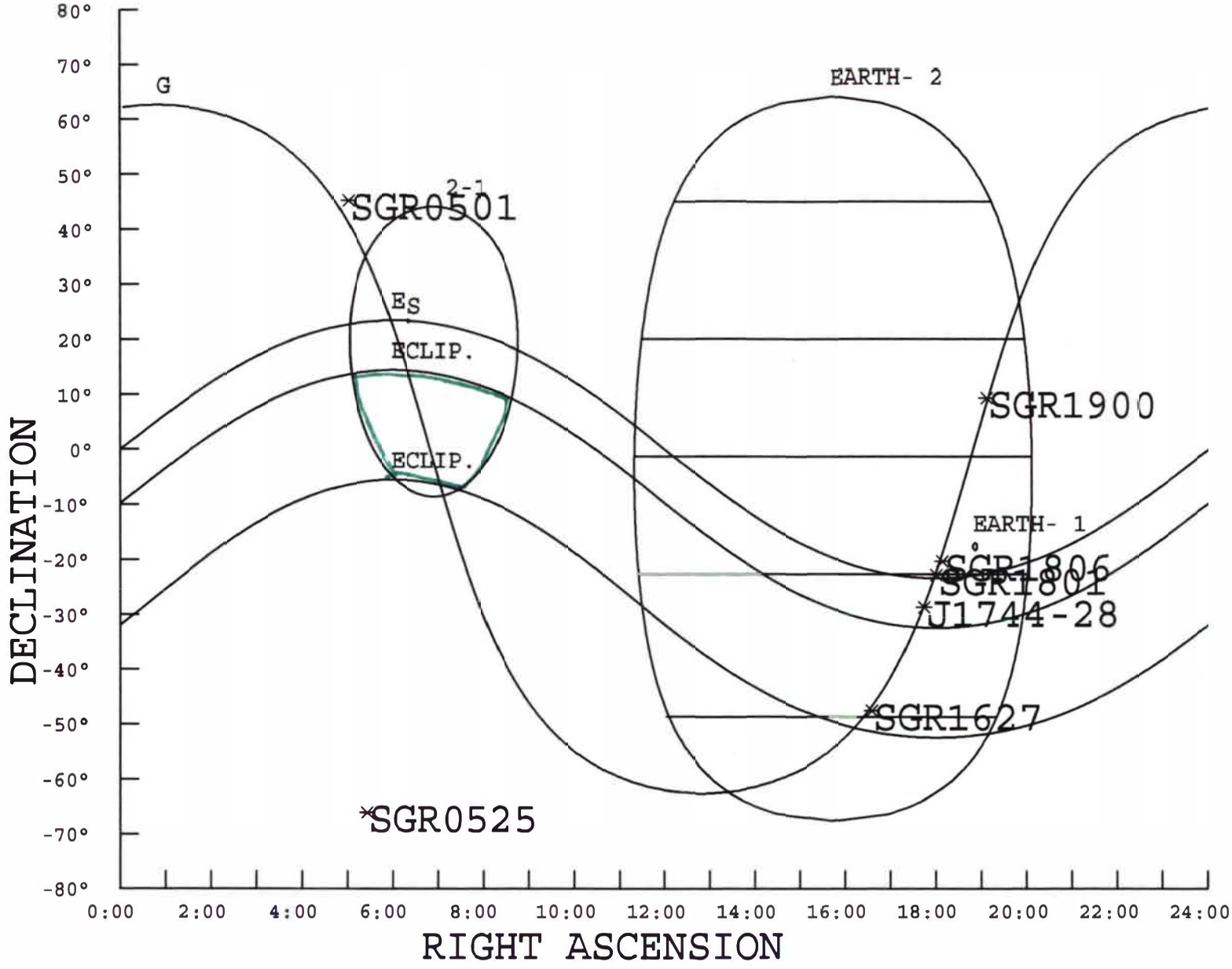
□ Updated ephemeris used for bursts prior to September 30, 2003?

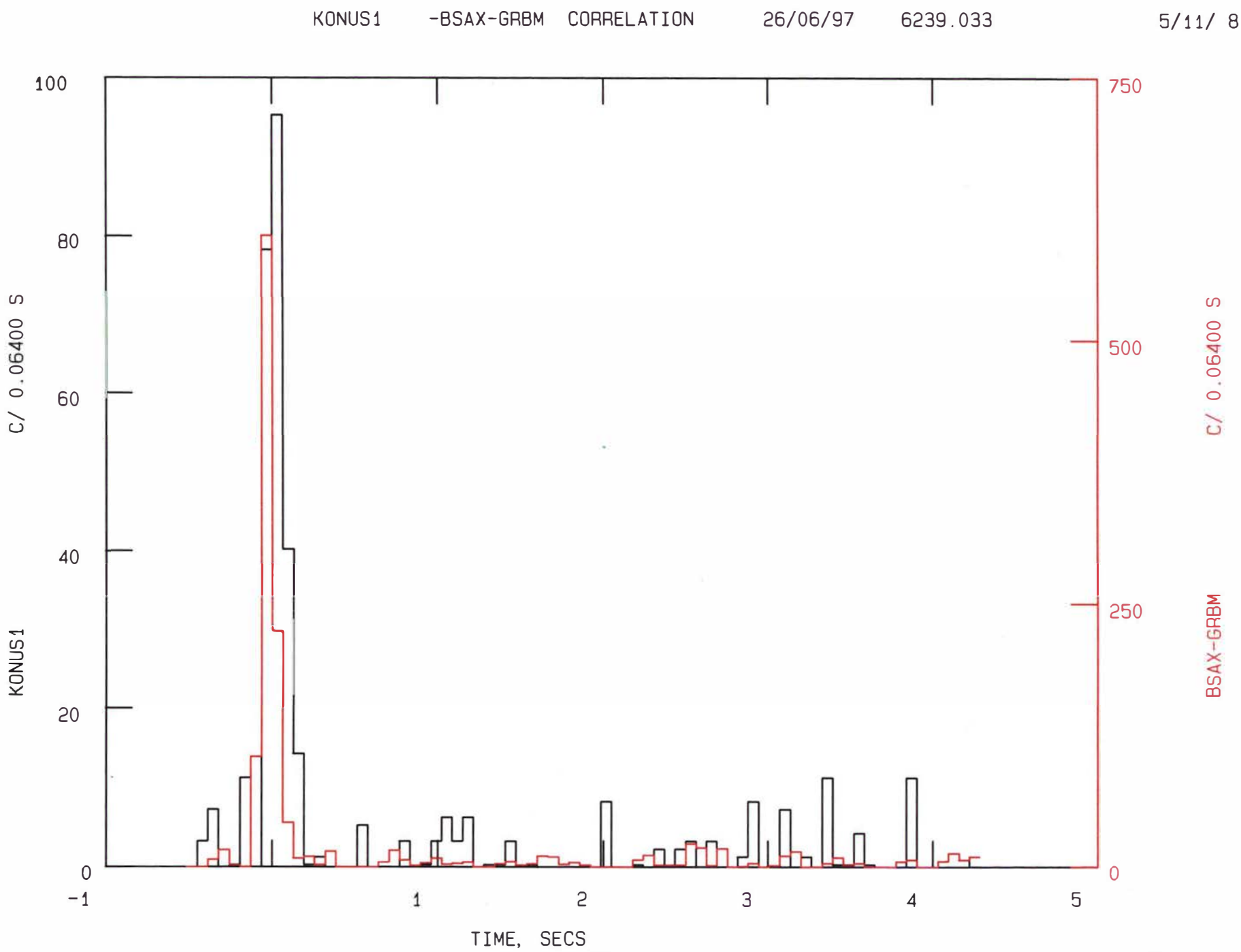
☑ ACCESS and MBL4 databases updated?

EVENT OF JUN 26, 1997 1:43

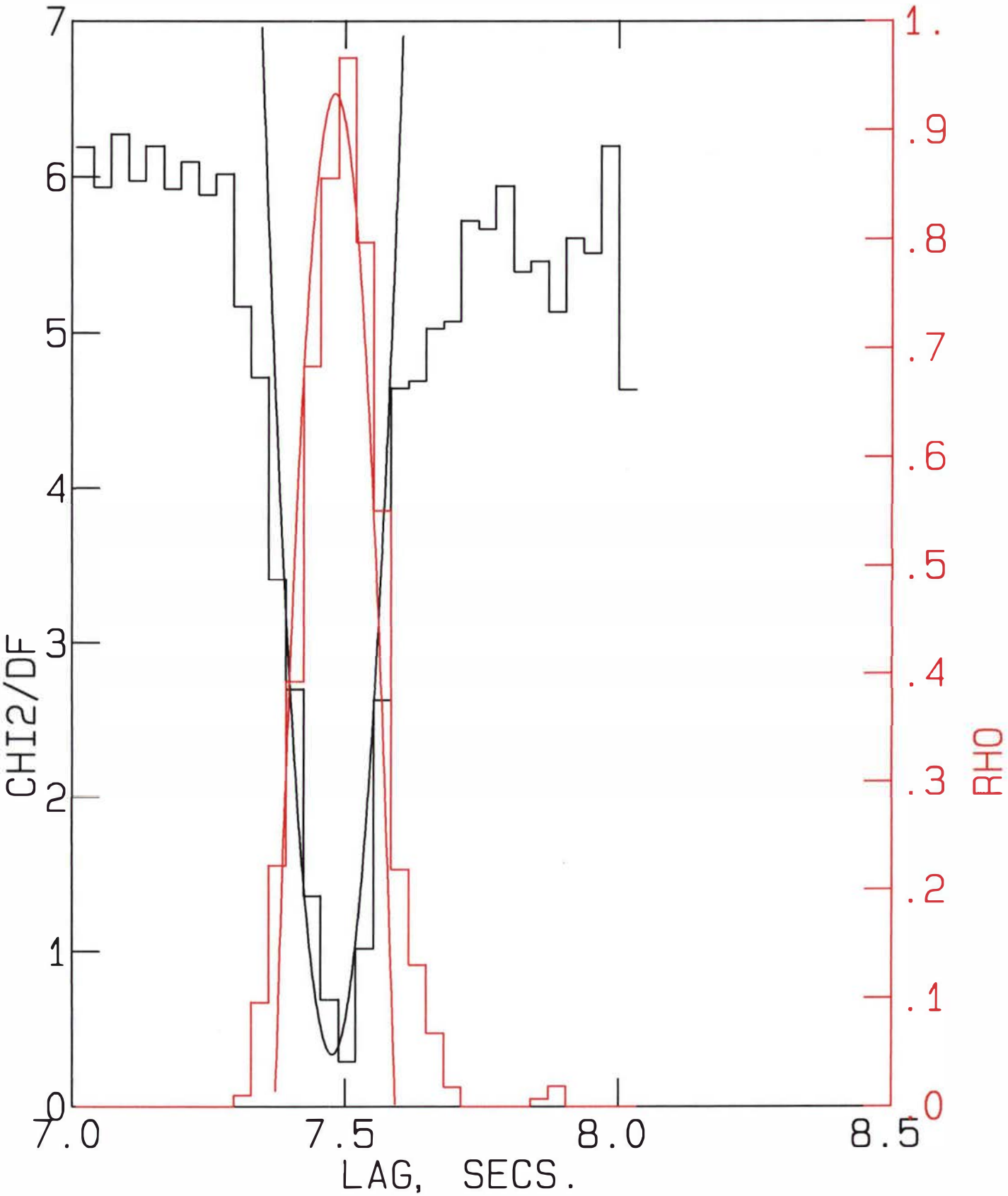
5/11/ 8

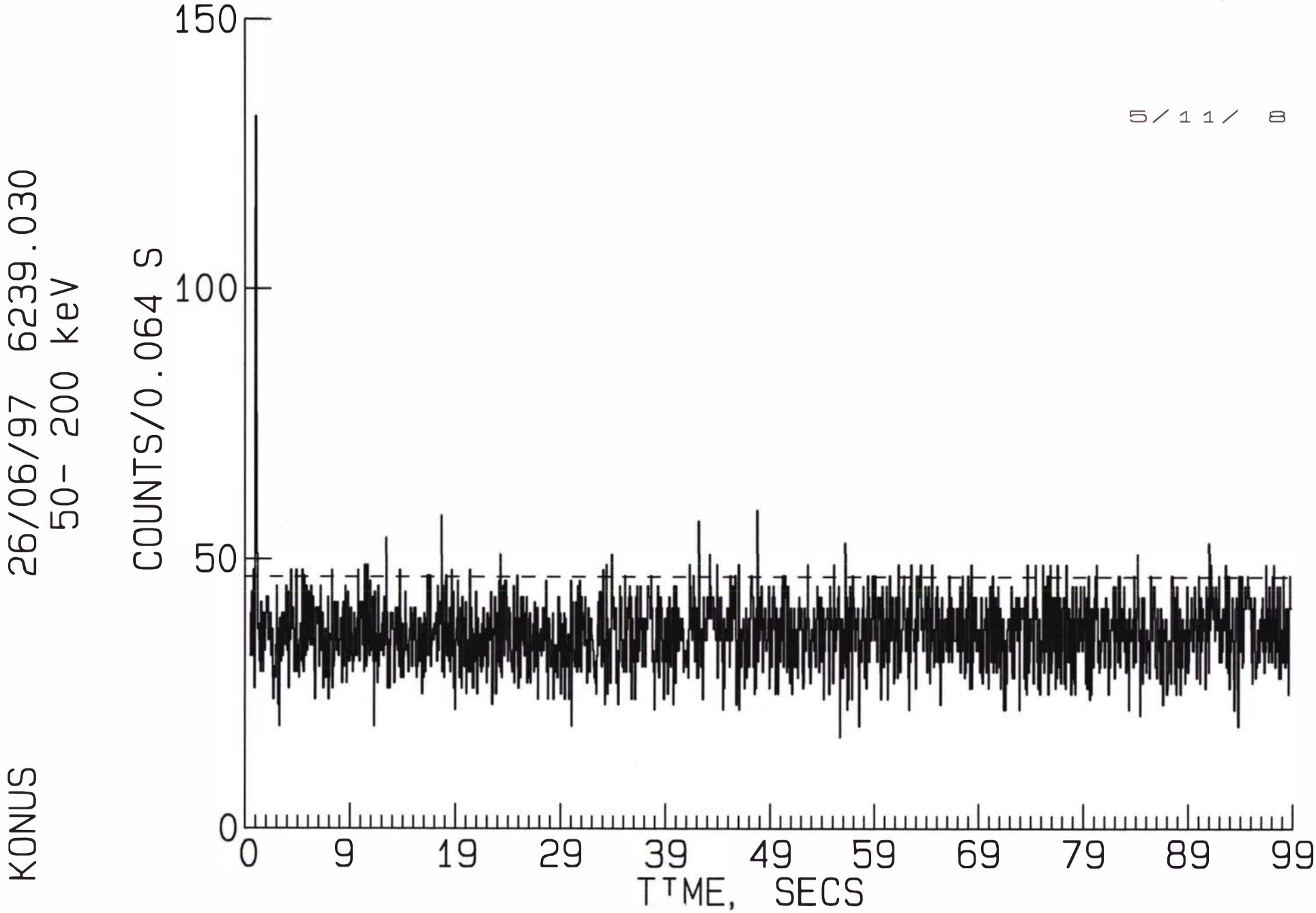
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS1 2 SAX

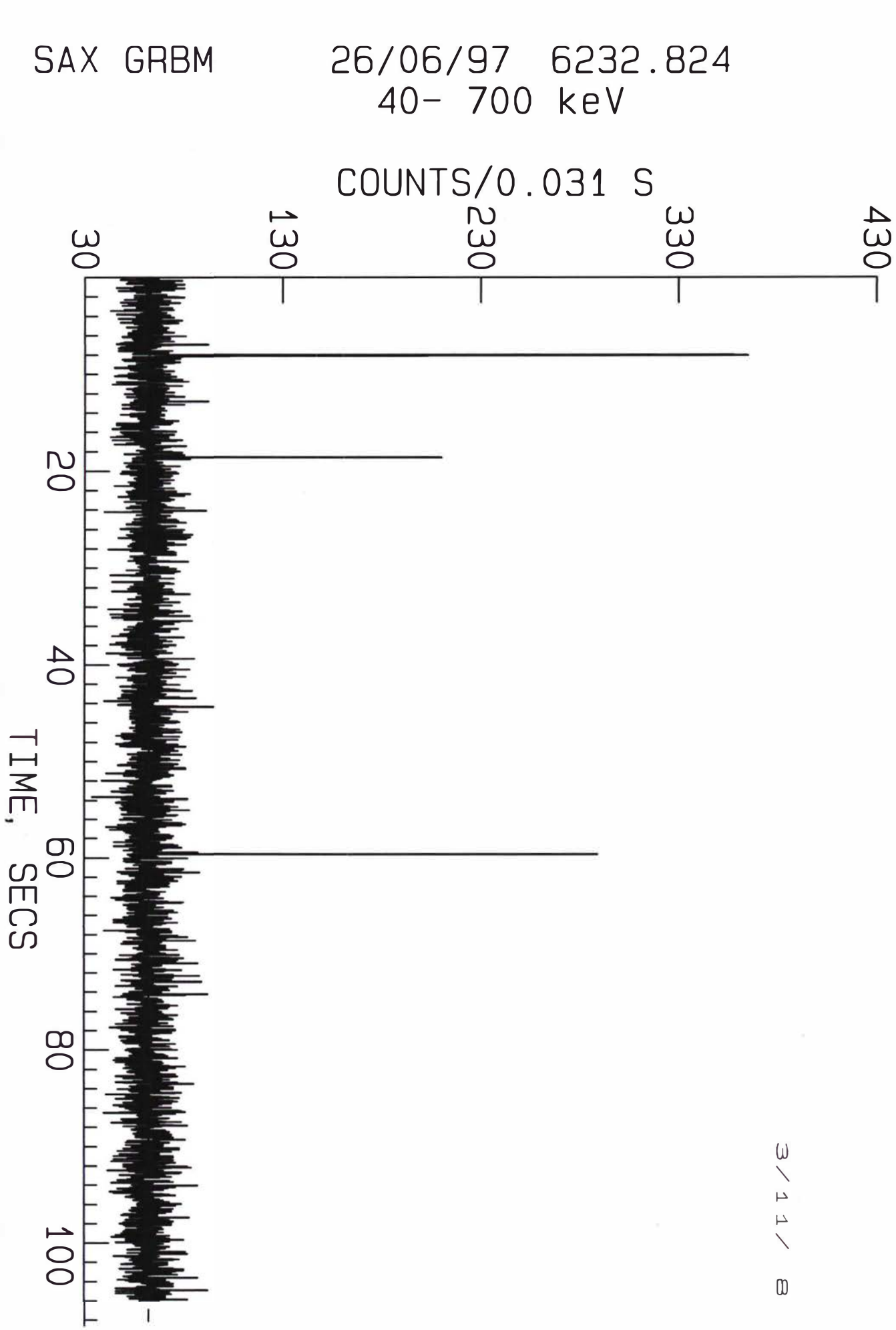



KONUS1 -BSAX-GRBM CORRELATION 26/06/97 6239.033 5/11/ 8
100
80
60
40
20
0
C/ 0.06400 S
KONUS1
750
500
250
0
C/ 0.06400 S
BSAX-GRBM
-1
1
2
3
4
5
TIME, SECS

KONUS1 -BSAX-GRBM CORRELATION 26/06/97 6239.033




KONUS
26/06/97 6239.030
50- 200 keV
COUNTS/0.064 S
150
100
50
0
0
9
19
29
39
49
59
69
79
89
99
TTME, SECS
5/11/ 8


SAX GRBM
26/06/97 6232.824
40- 700 keV
COUNTS/0.031 S
30
130
230
330
430
20
40
60
80
100
TIME, SECS
3/11/ 8

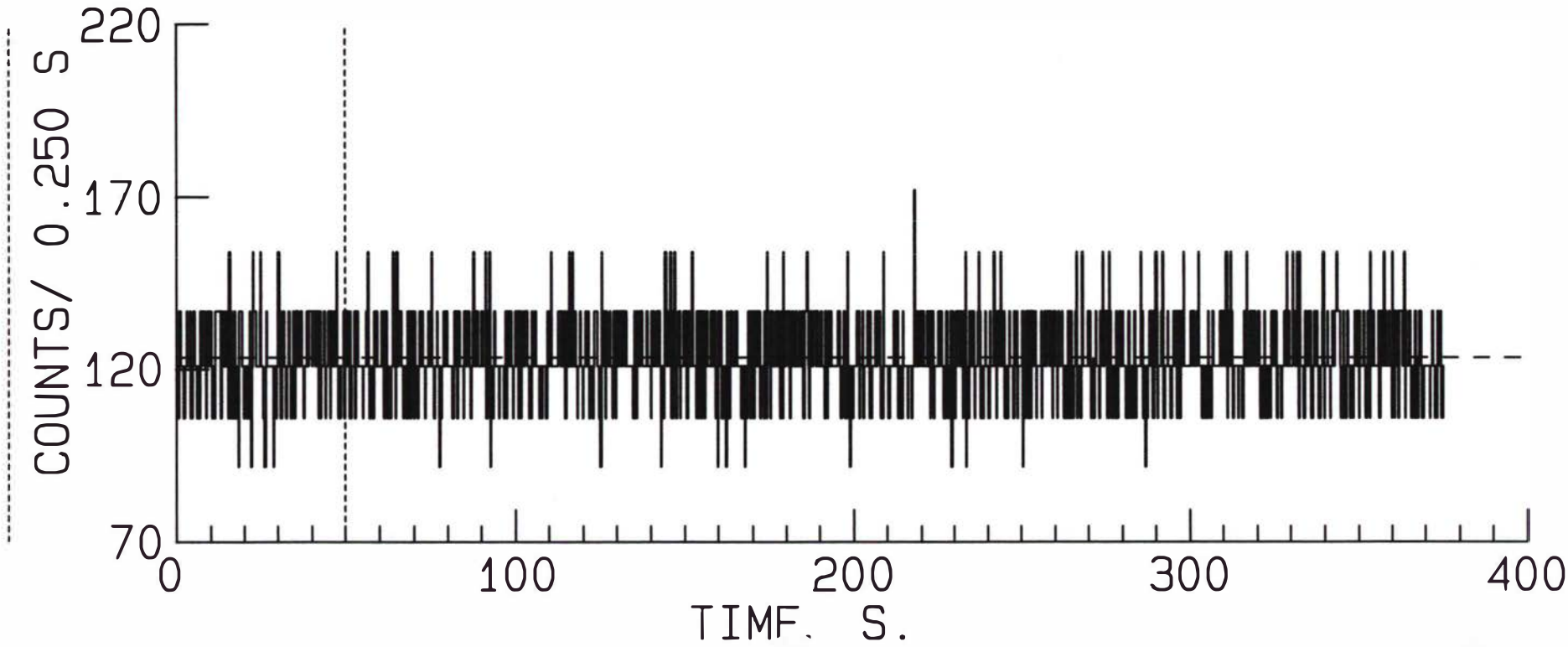
Konus, SAX .15 s

ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

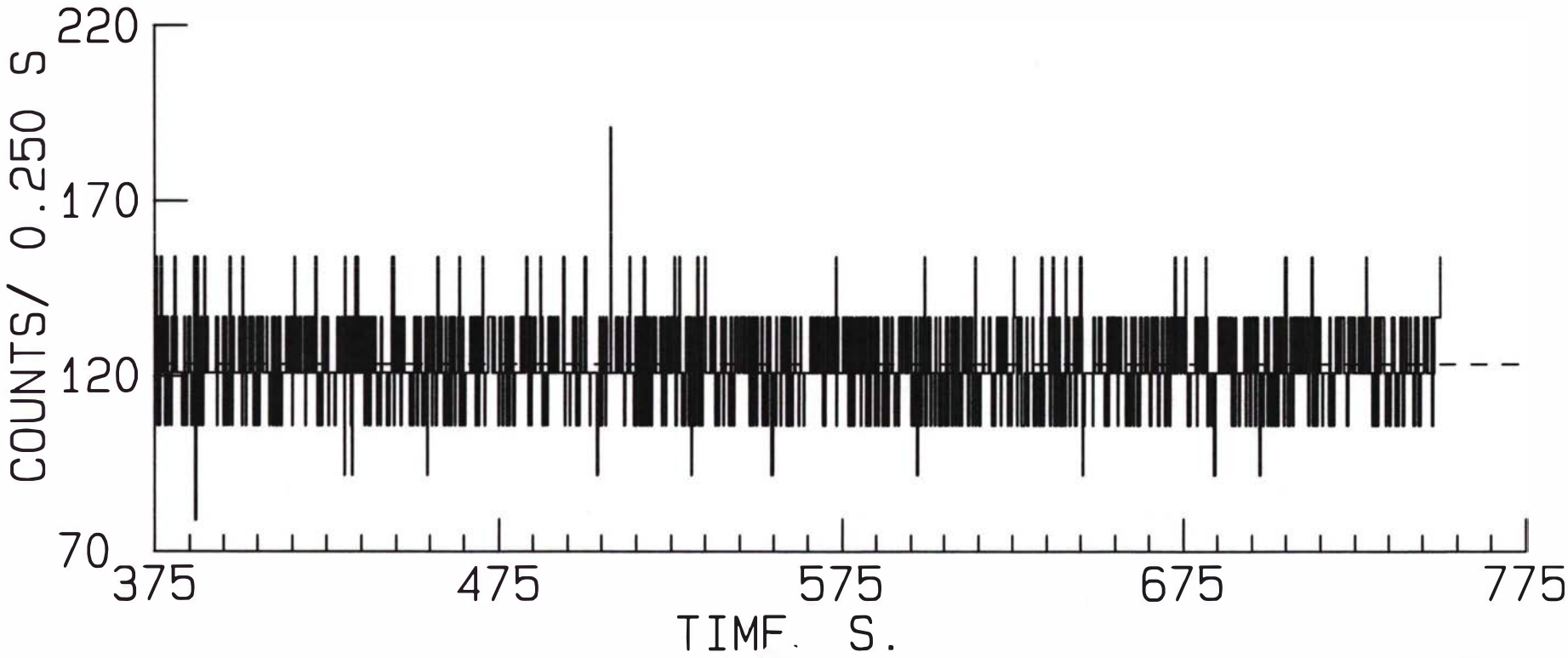


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

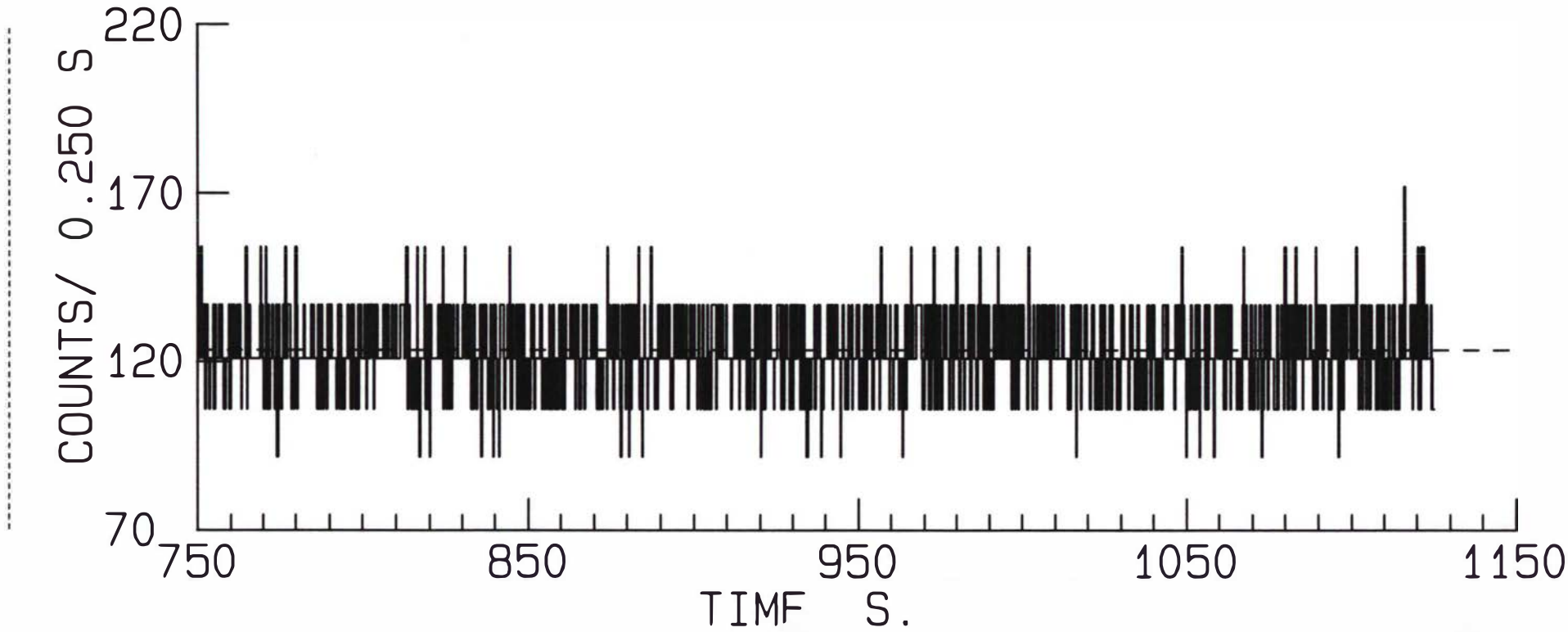


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

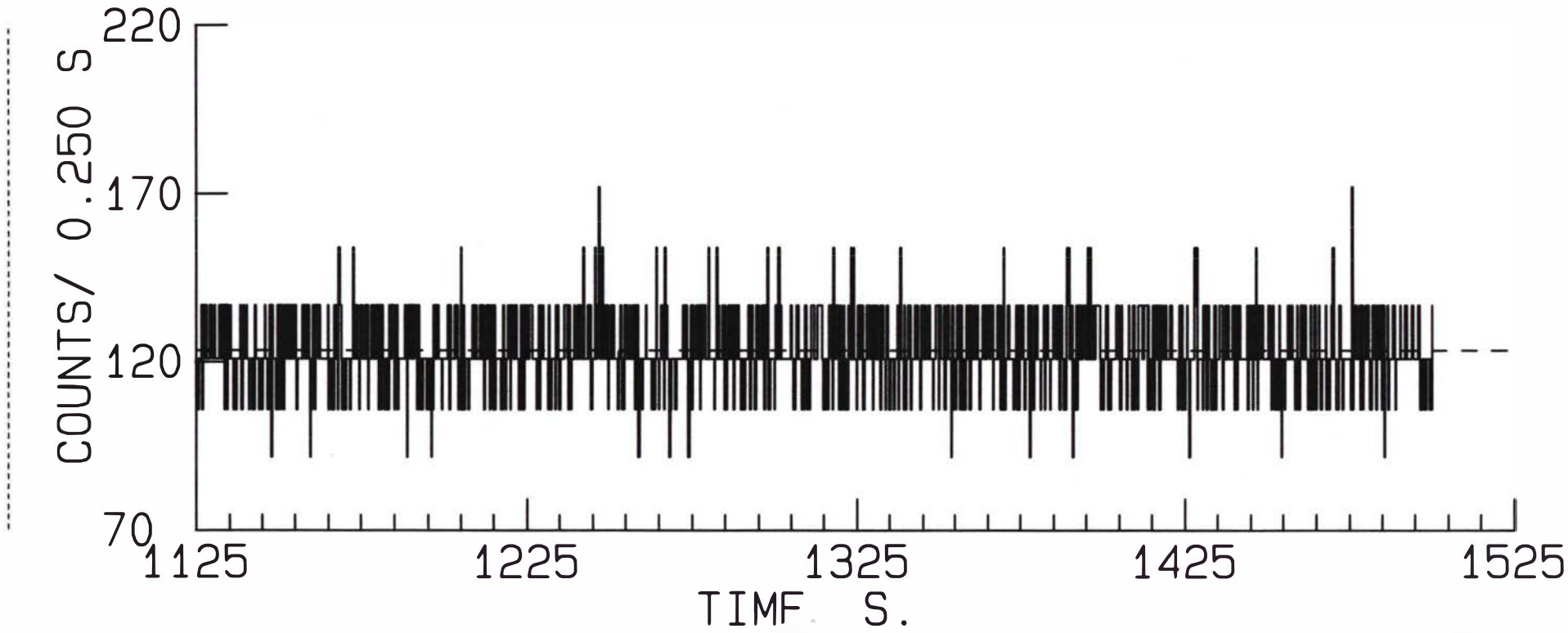


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

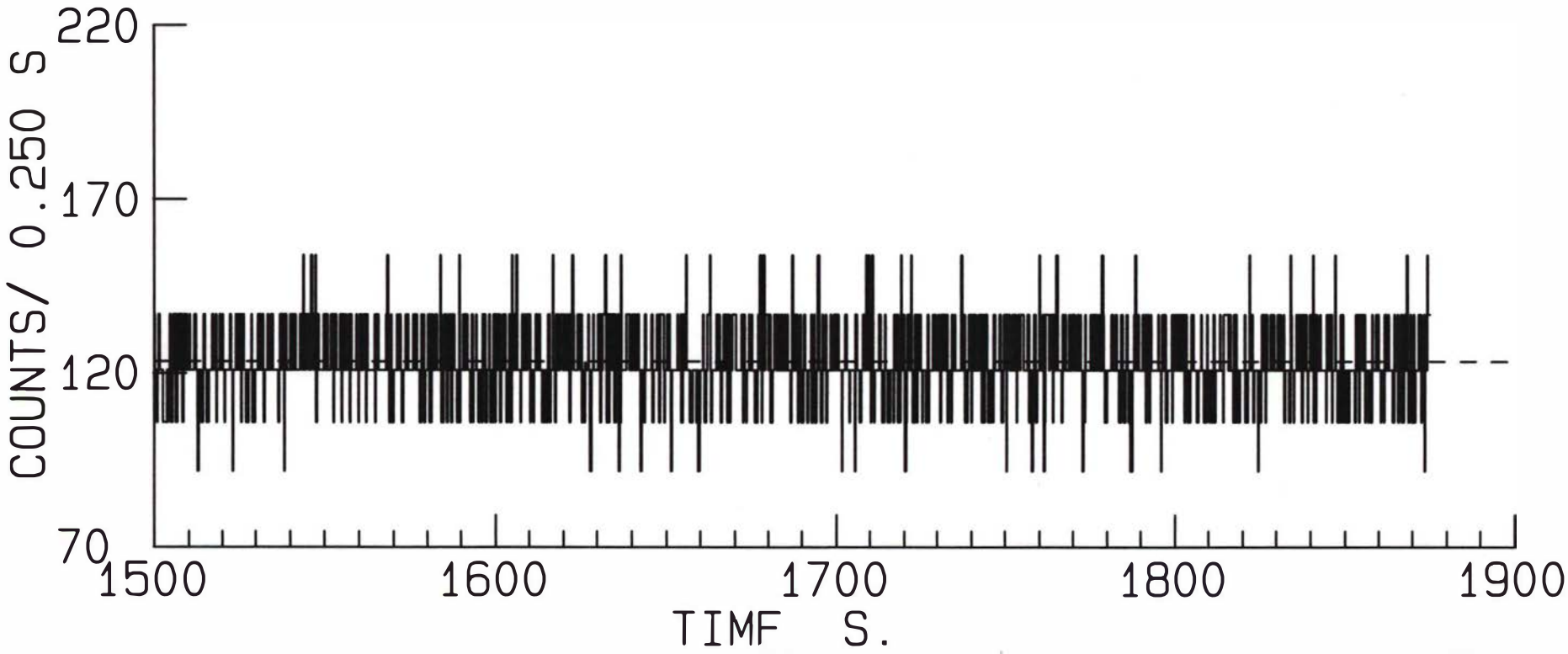


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

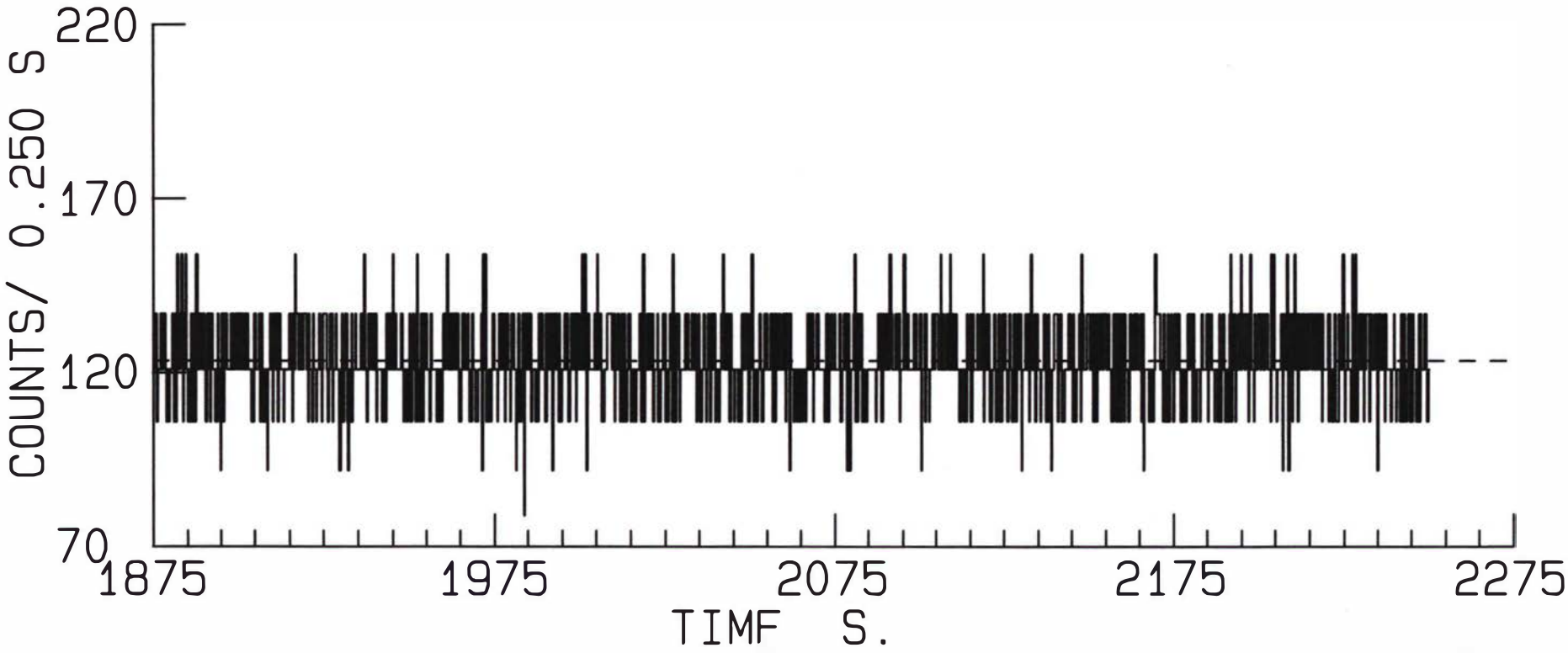


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

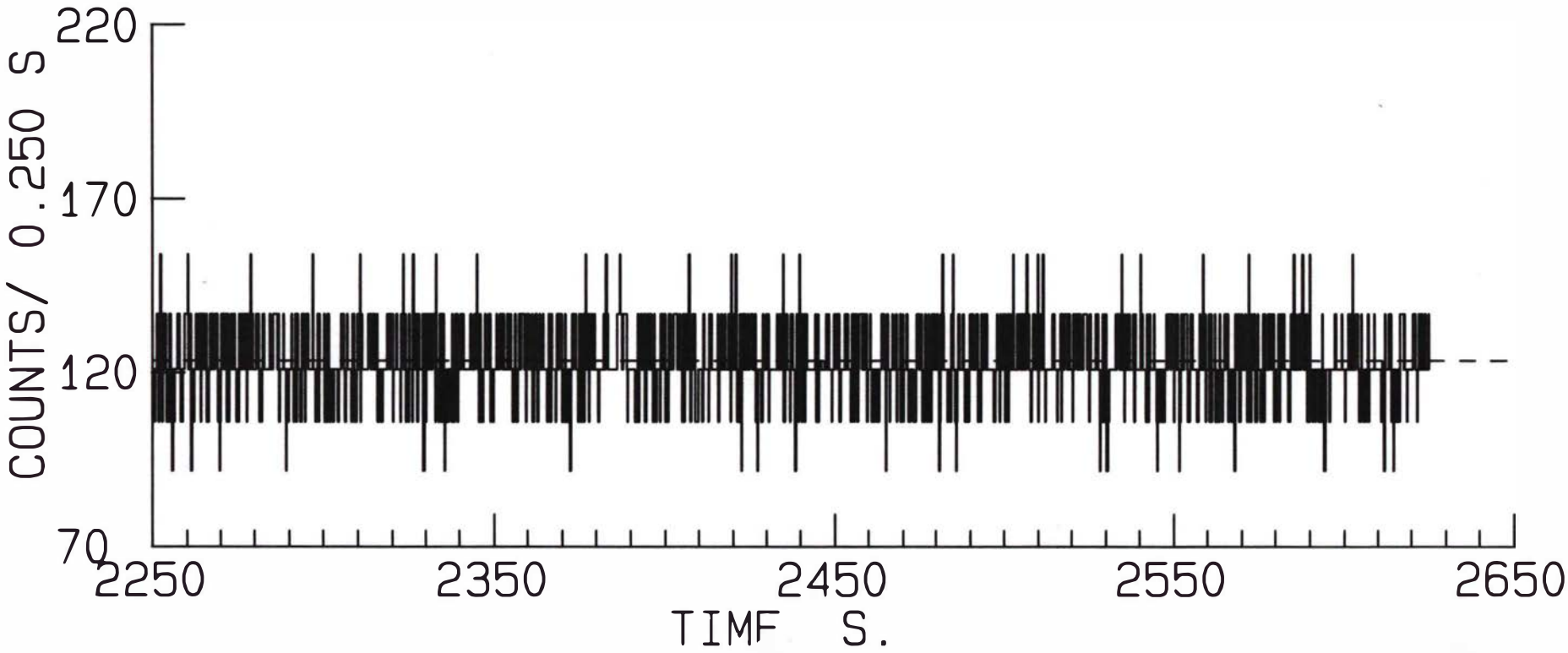


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

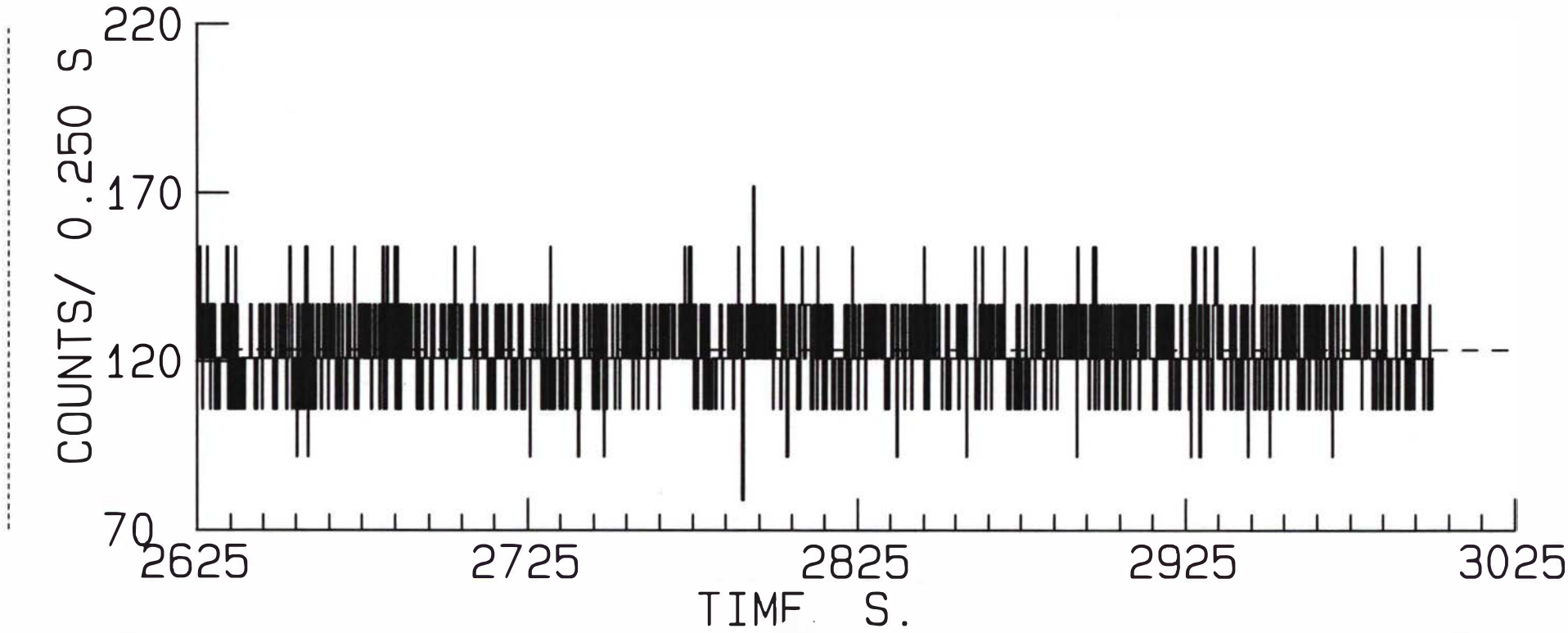


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

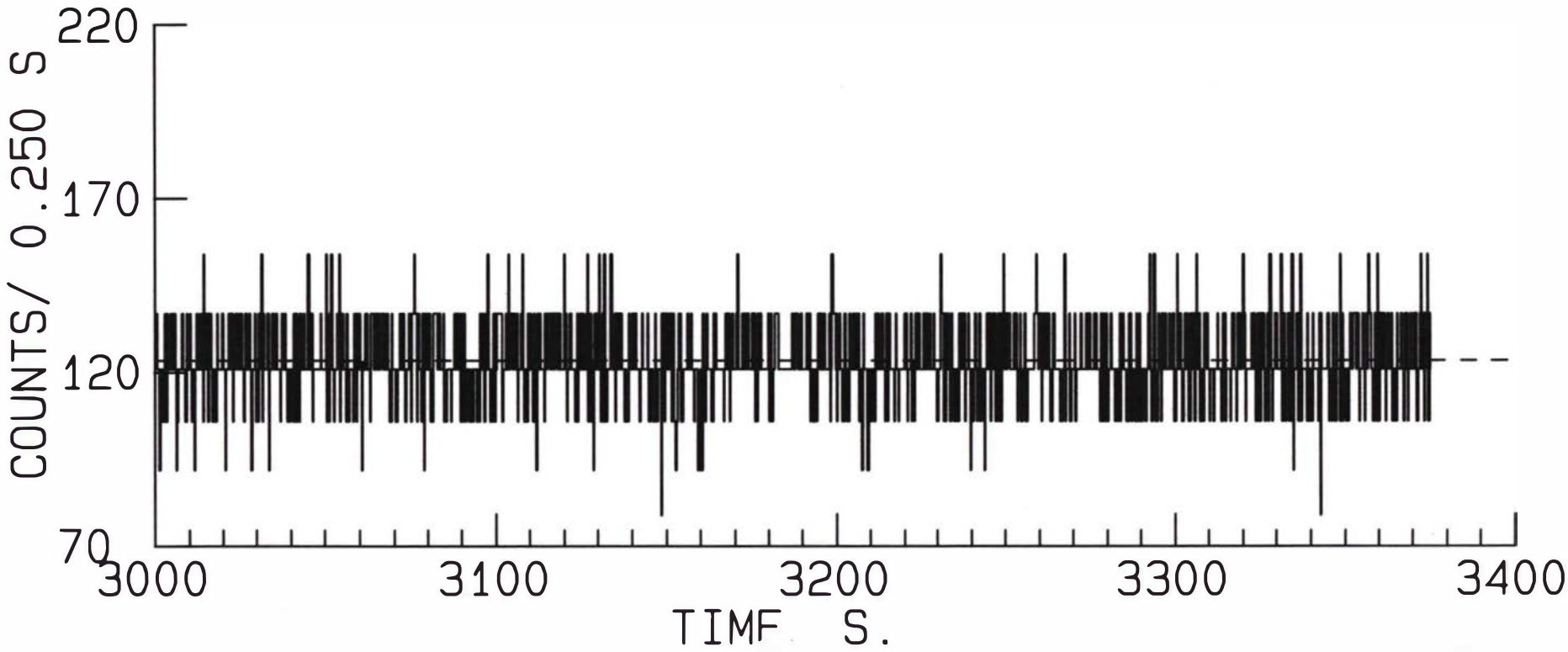


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

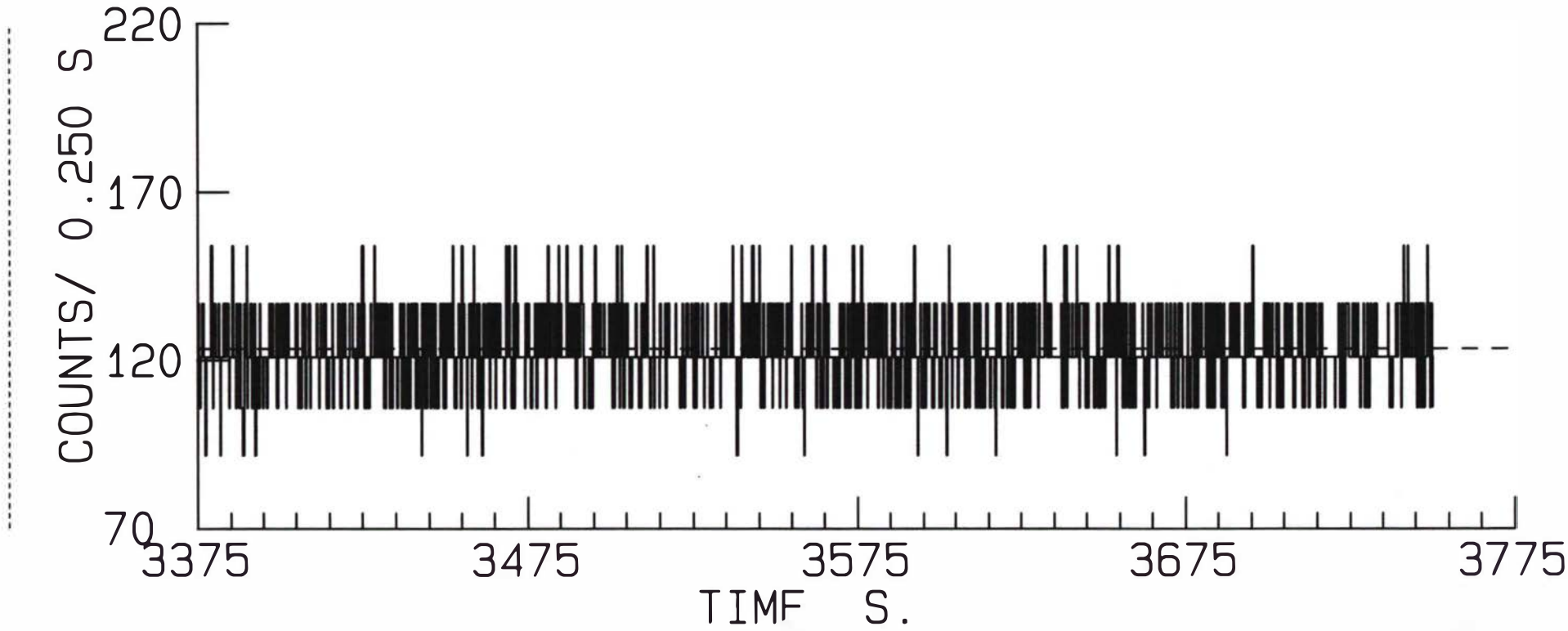


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

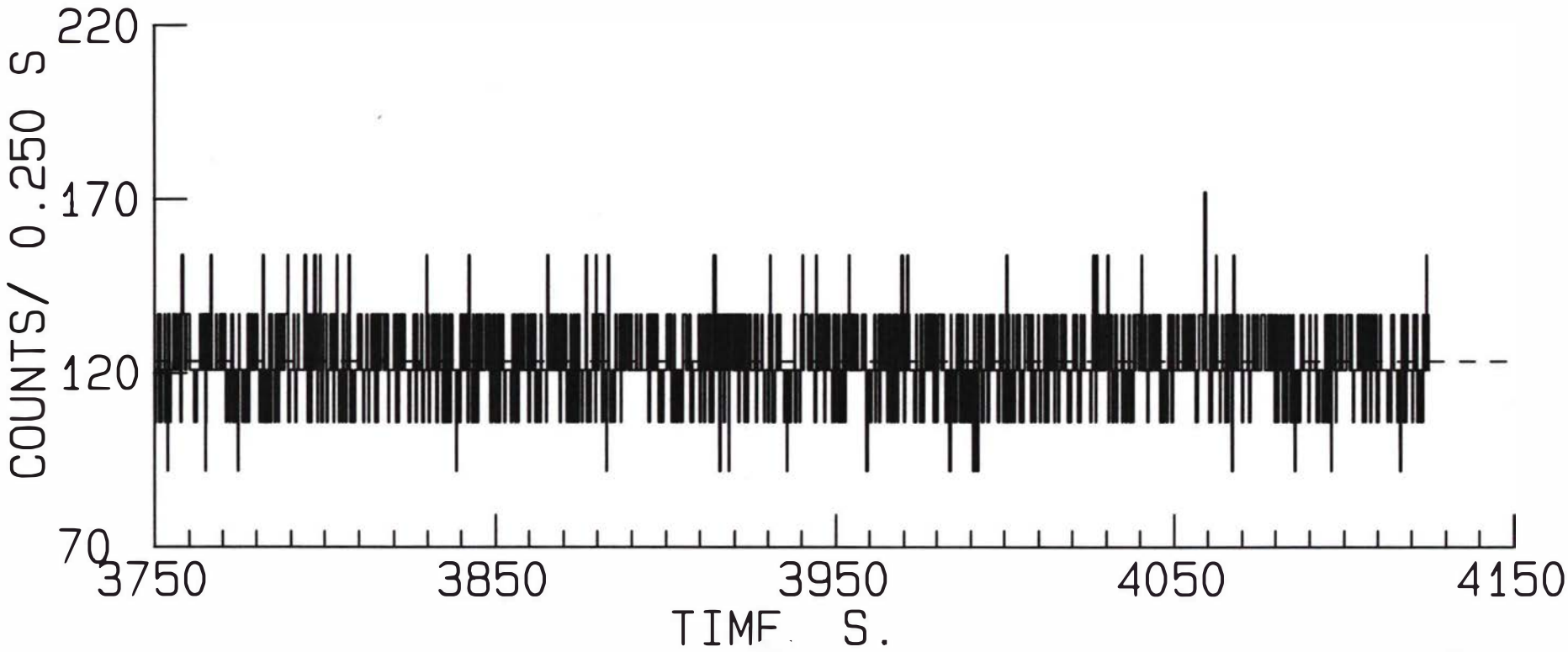


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

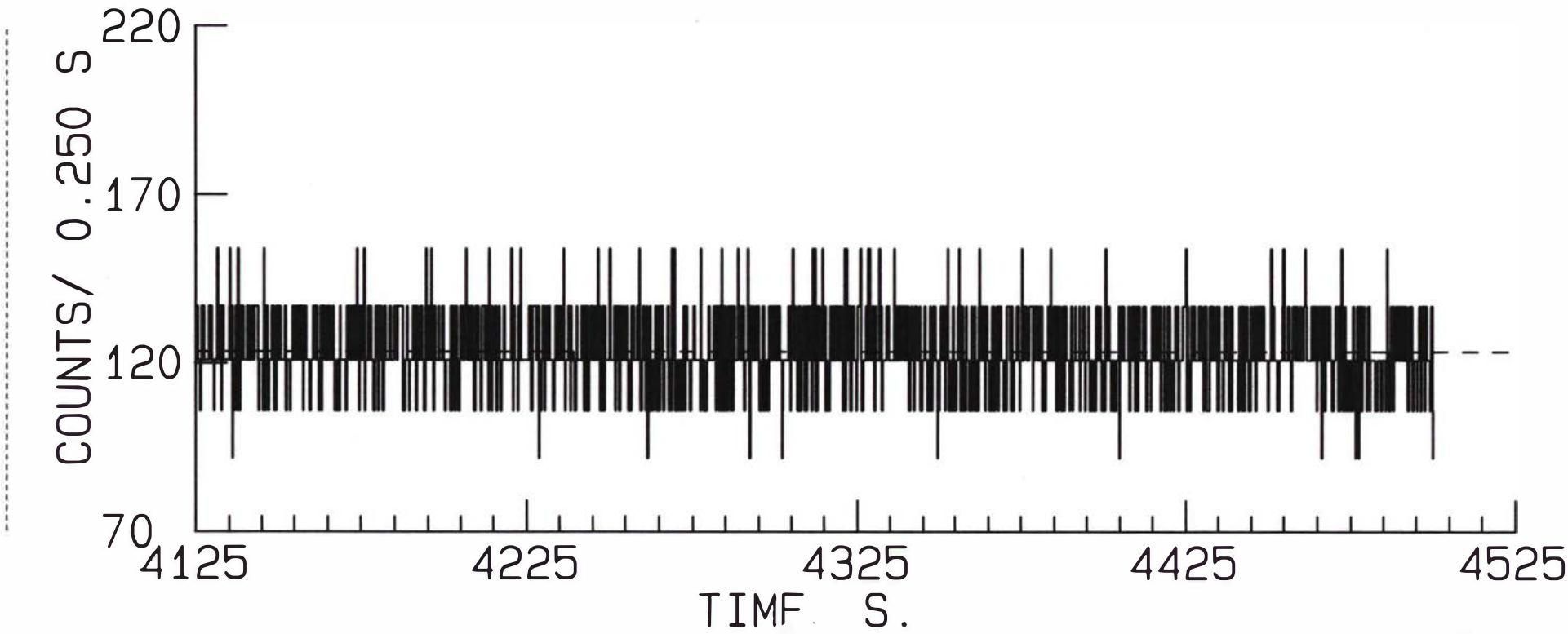


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

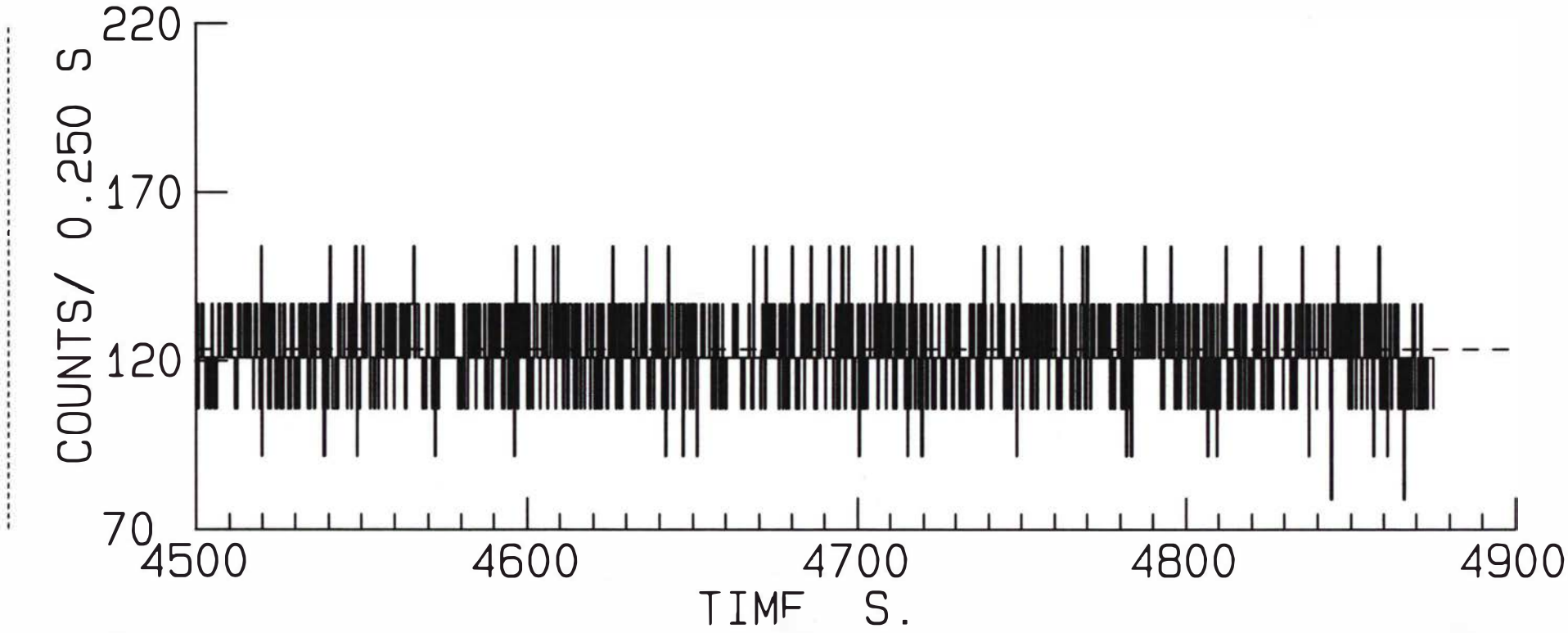


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

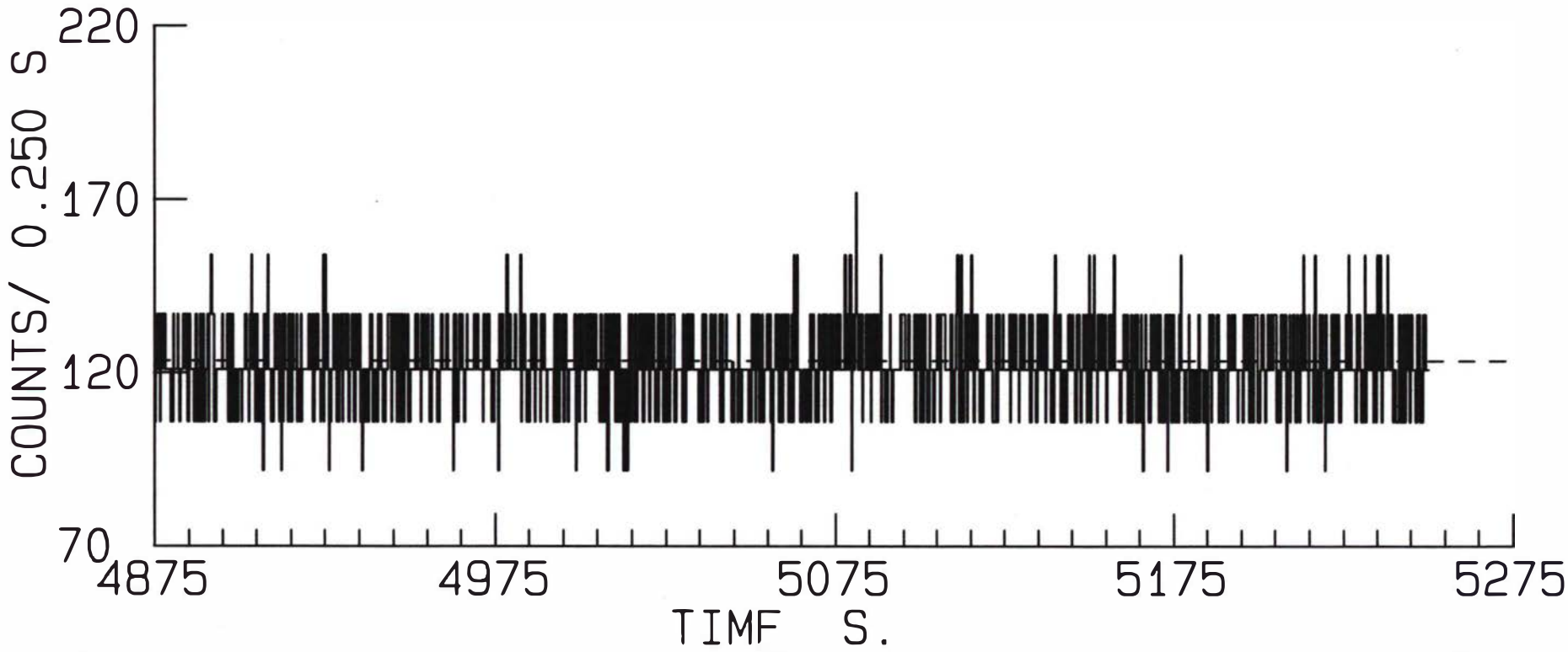


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

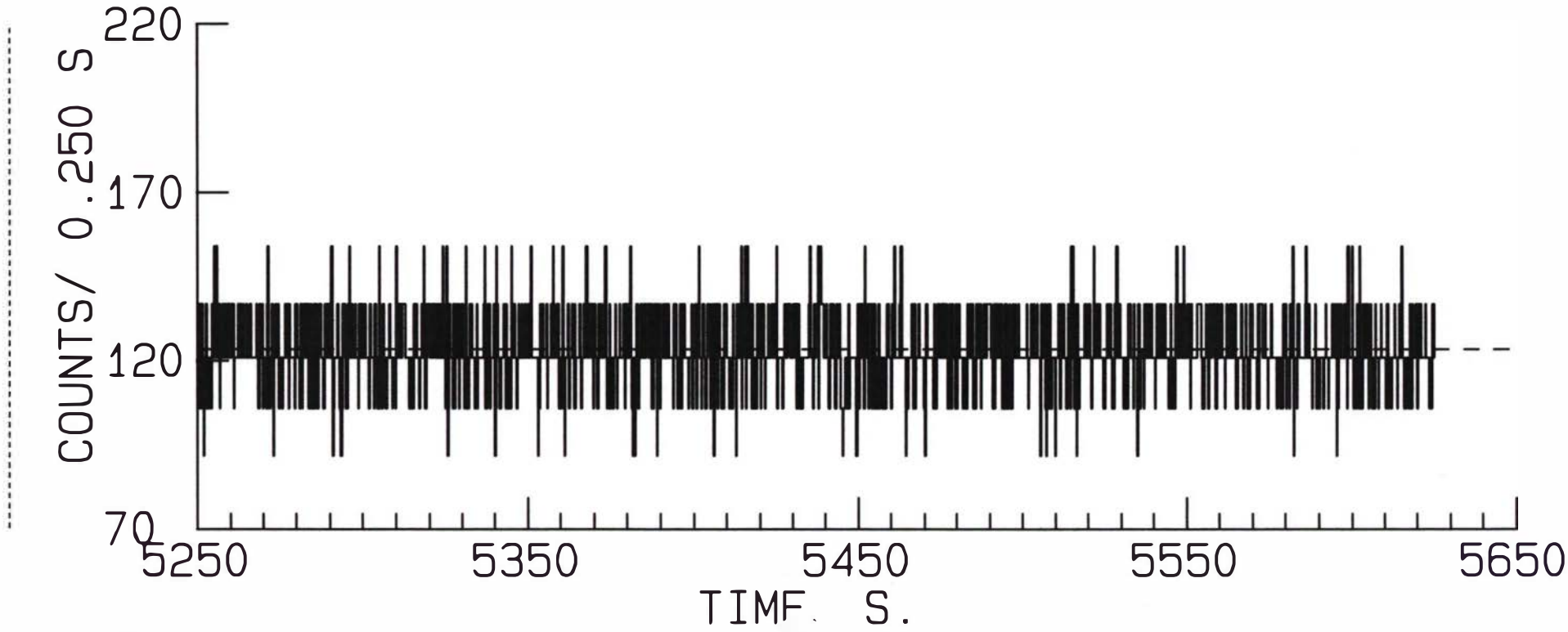


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV

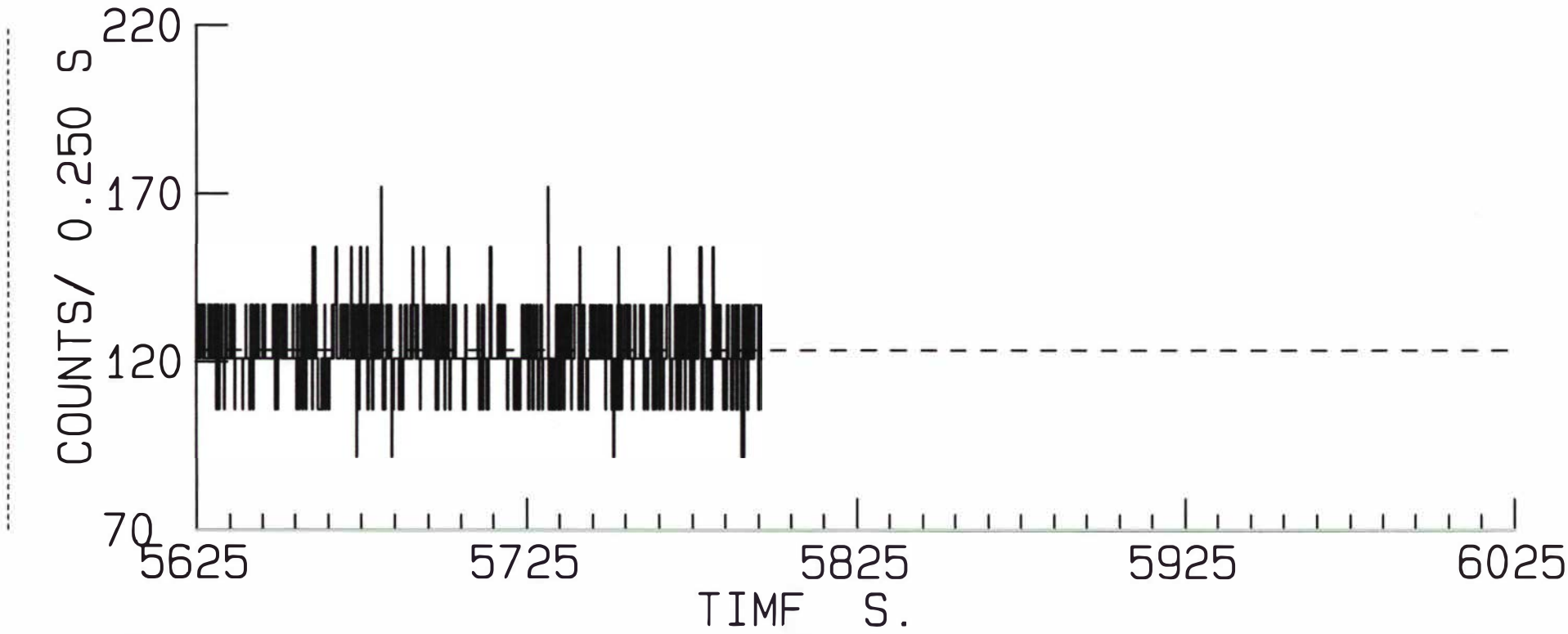


ULYSSES RT

29/10/ 8

26/ 6/97 3348.001 s

22- 148 keV



From kraken@rosserv.gsfc.nasa.gov Mon Jul 7 10:20 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Mon, 7 Jul 1997 13:20:55 -0400
    khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hi Kevin,

In response to your requests about confirmation of recent Ulysses bursts not seen by BATSE, here are some results from TGRS:

Ulysses burst	TGRS sees?	TGRS characteristics
June 26, 1997 04:28 Ulysses time	NO BUT	430 cts/s peak in FASTRATE data at 970627 17210 s. <=1 sec long energy range: 100-300 keV. Not seen in other energy ranges/data
June 27, 1997 21:29 Ulysses time	YES!	TGRS #578 (triggered event) occurred at 79613 secs. 100-300 keV: 10 s duration; 240 cts/s peak 35-100 keV: 20 s duration; 40 cts/s peak
June 29, 1997 04:26 Ulysses time (probably SGR 1806-20)	NO	No peak found in waiting mode or burst mode data

I hope this is helpful.

Pete

From vnp@isac.ernet.in Thu Jul 3 05:18 PDT 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
          id AA32207; Thu, 3 Jul 1997 16:39:08 GMT
   e: Thu, 3 Jul 1997 16:39:07 +0000 (CUT)
X Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: SROSS-C2 GRBs
Mime-Version: 1.0

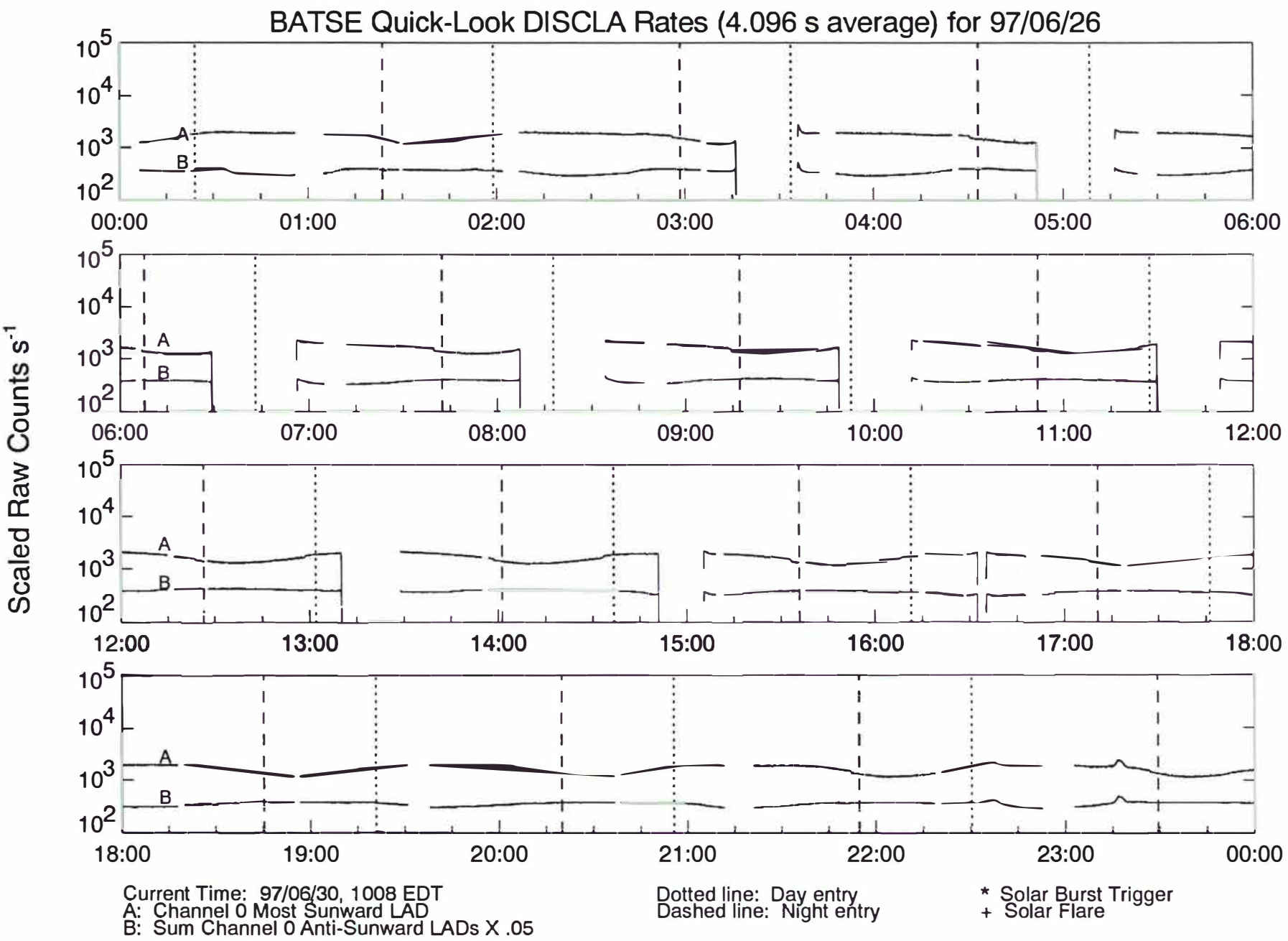
Dear Prof. Hurley,
Thank you for the messages about GRBs on Jun 18 and Jun 26. We have no GRB event on these dates. SROSS-C2 has recorded events on
21 May 97 at 13: 52:08 UT and
7 Jun 97 at 9 16 27.8 UT
We would like to know whether these events were recorded on Ulysses or BATSE.
I shall be grateful if you could kindly include me on your regular mailing list for GRB messages.
thanking you
regards
padmini

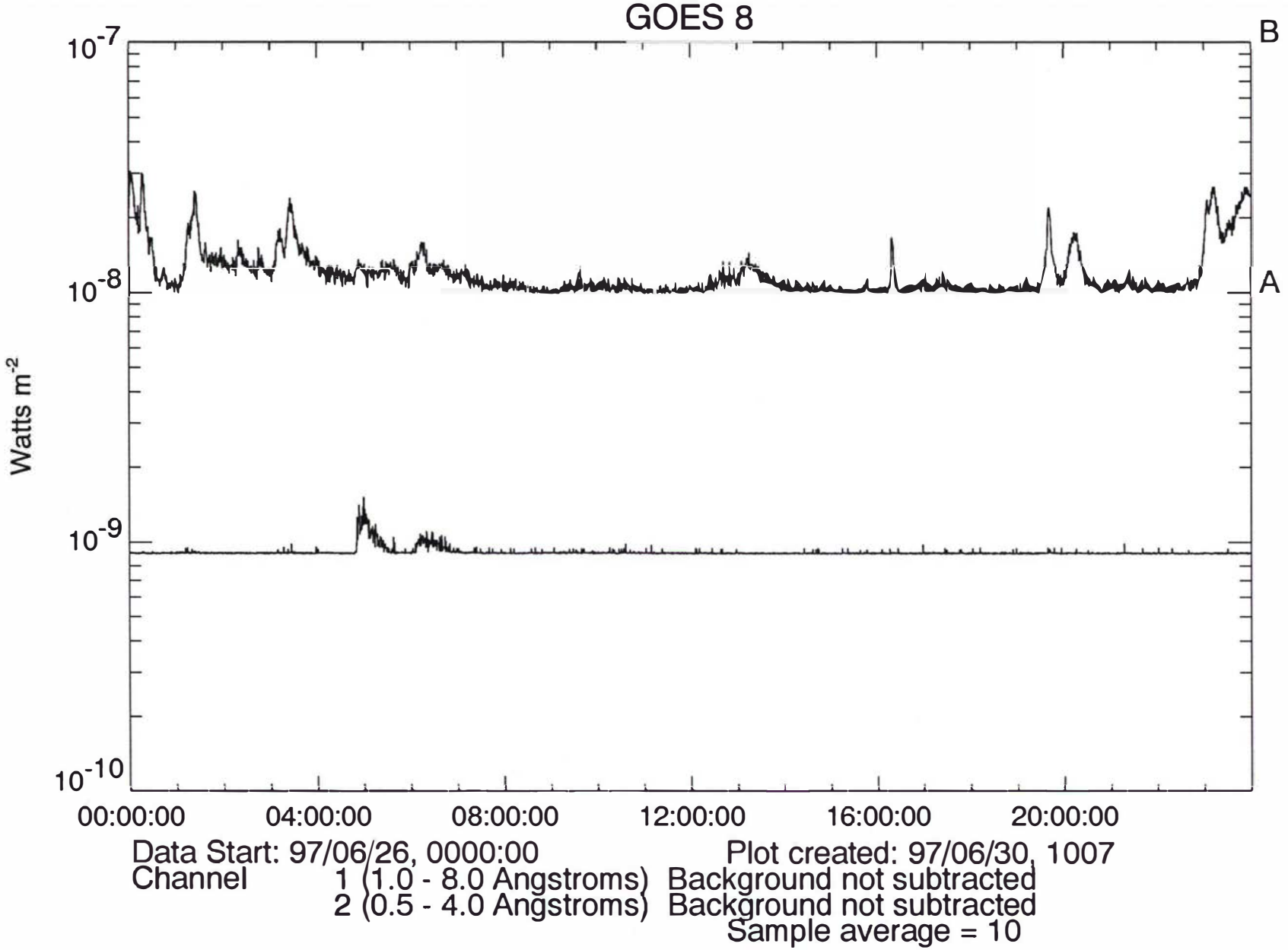
From BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,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

Konus report on recent Ulysses events not seen by BATSE

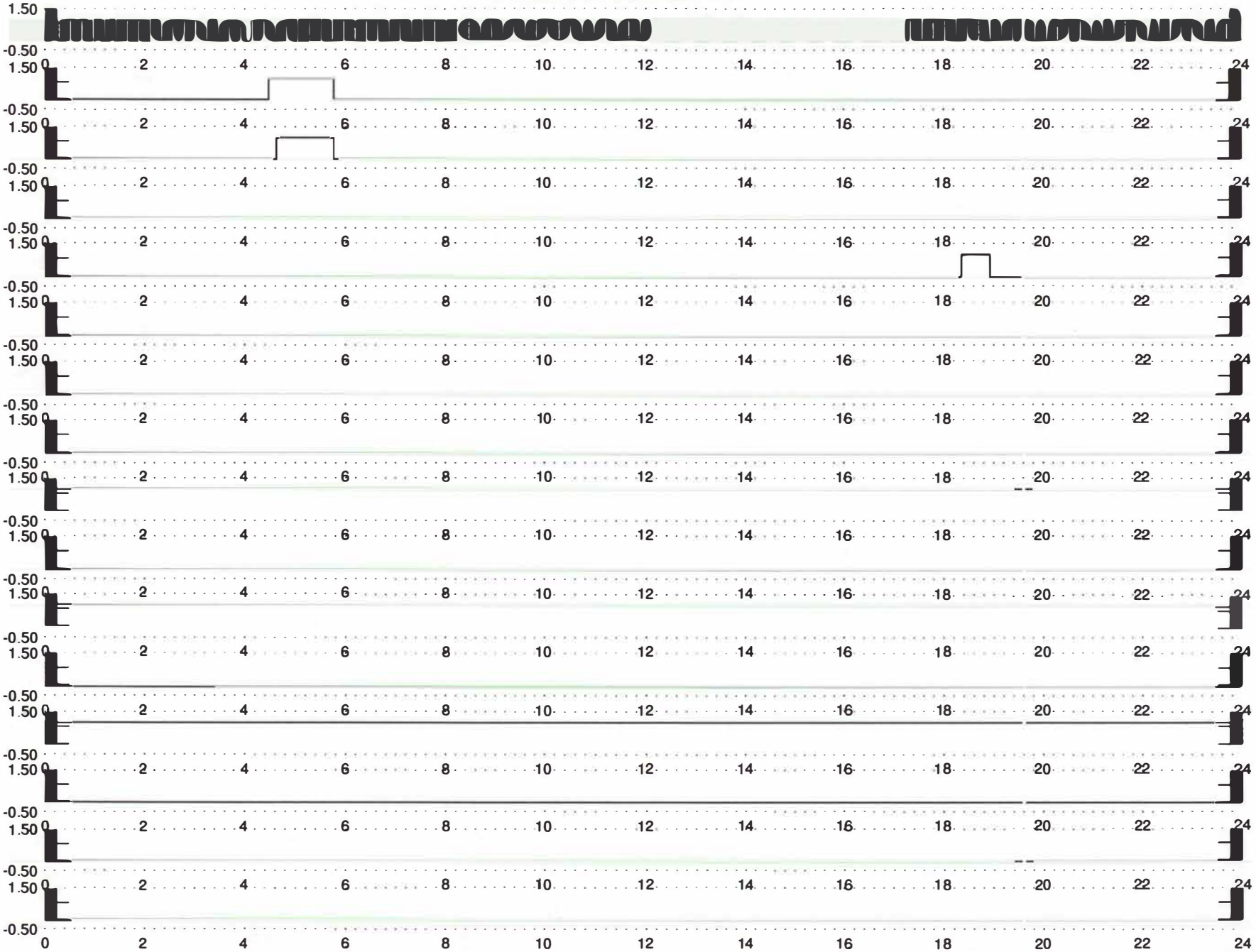
Ulysses event (1997)		Konus observation
Mar 25 17:49	moderate 15 s long	trigger at 17:36:22.800 North detector two peaks, with the first stronger and harder. each peak lasted 20 s, separated by 20 s without emission
Mar 29 12:23	weak 100 ms long	not detected
May 21 15:23	weak 100 ms long	not detected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

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


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/26
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/06/30, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

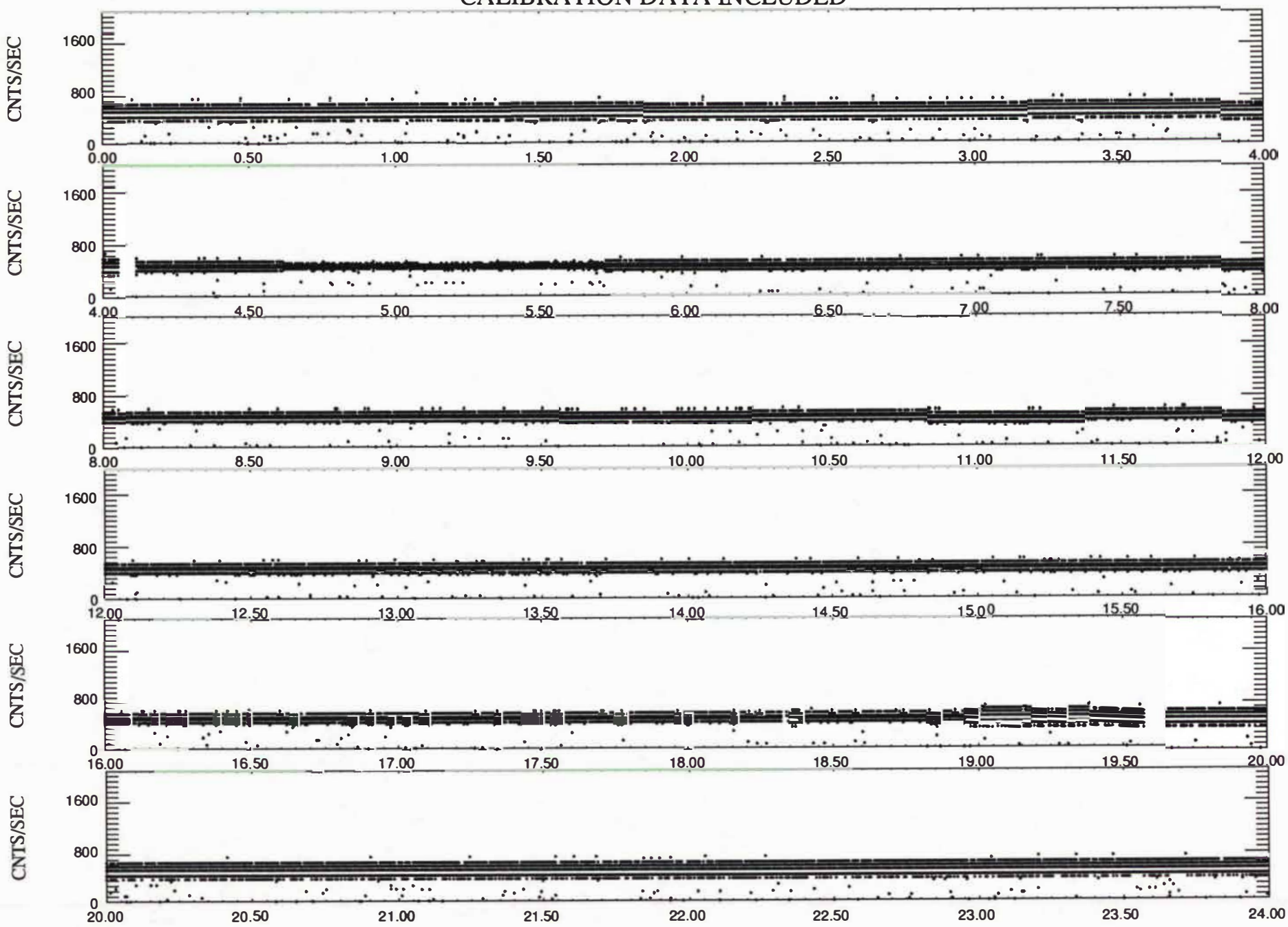

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/26, 0000:00
Plot created: 97/06/30, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

BURST NUMBER 10



HUS 2A, MODE 1, NOT AVERAGED EDR day 177, year 1997 to day 177, year 1997 10/13/97

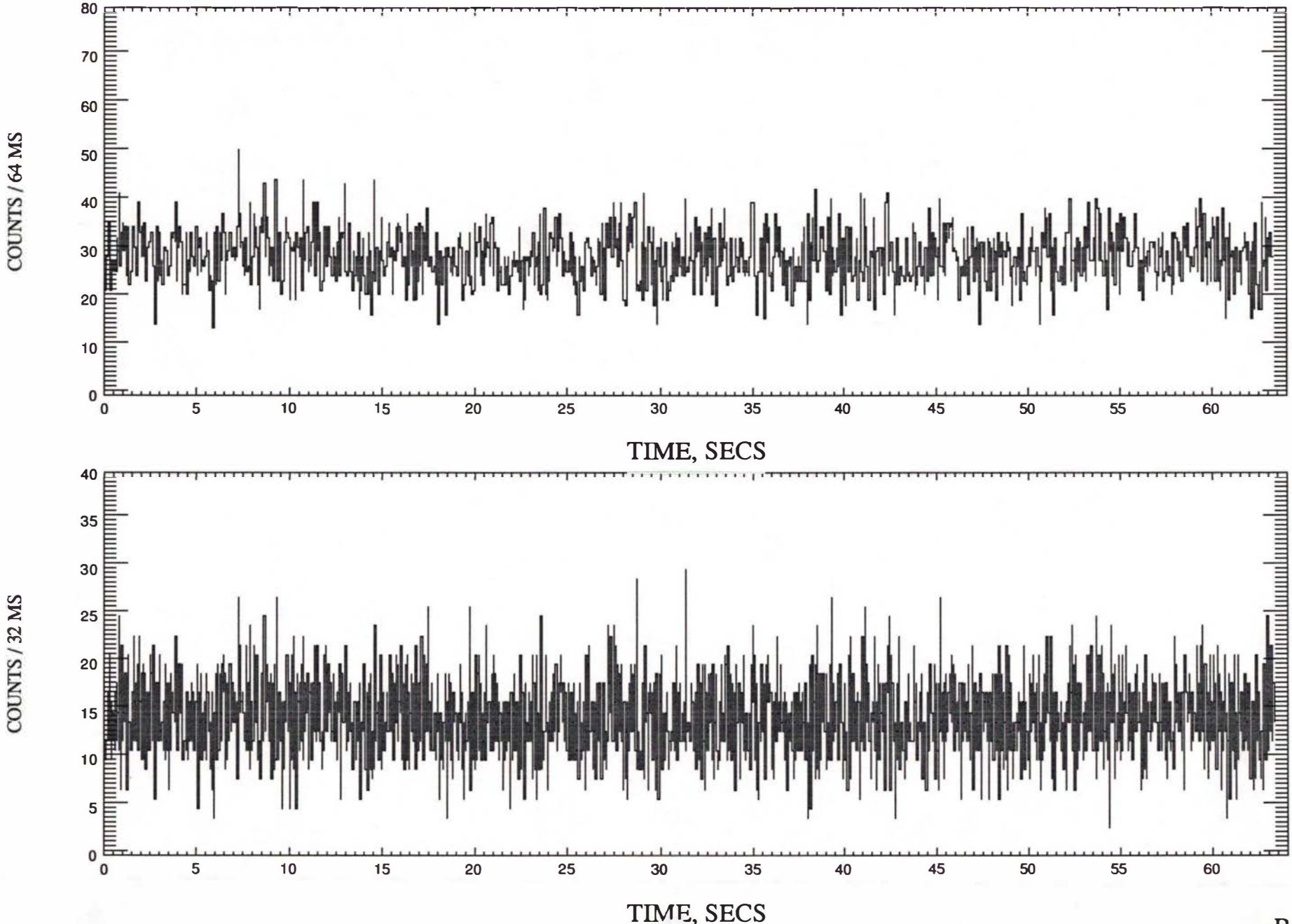
CALIBRATION DATA INCLUDED



UNIV 'AL TIME

HUS 2A TRIGGERED DATA EDR day 177, year 1997 10/13/97

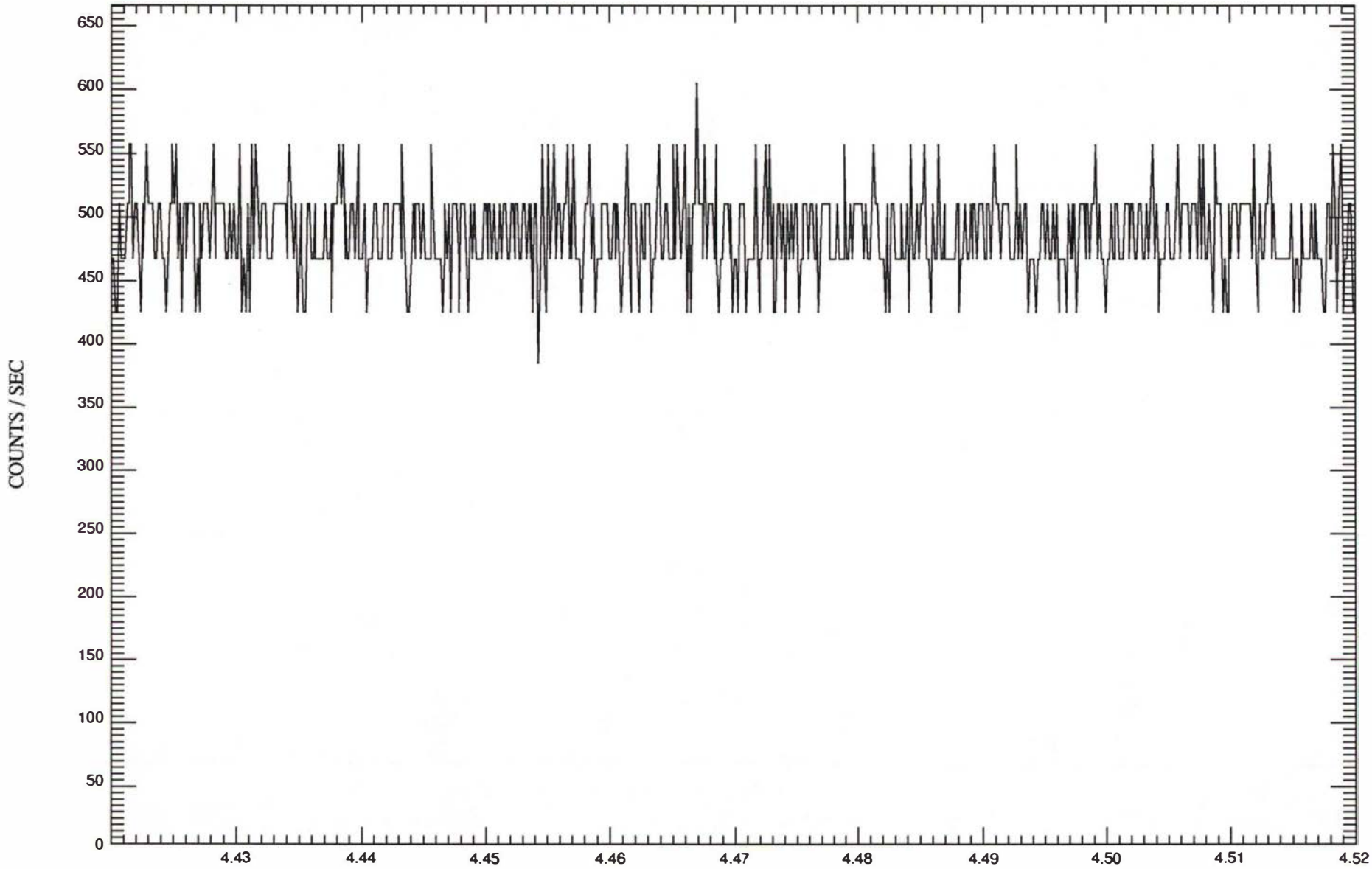
Burst Counter 10 at UT= 4.467016080221 h=16081.258 s 04:28:01.258



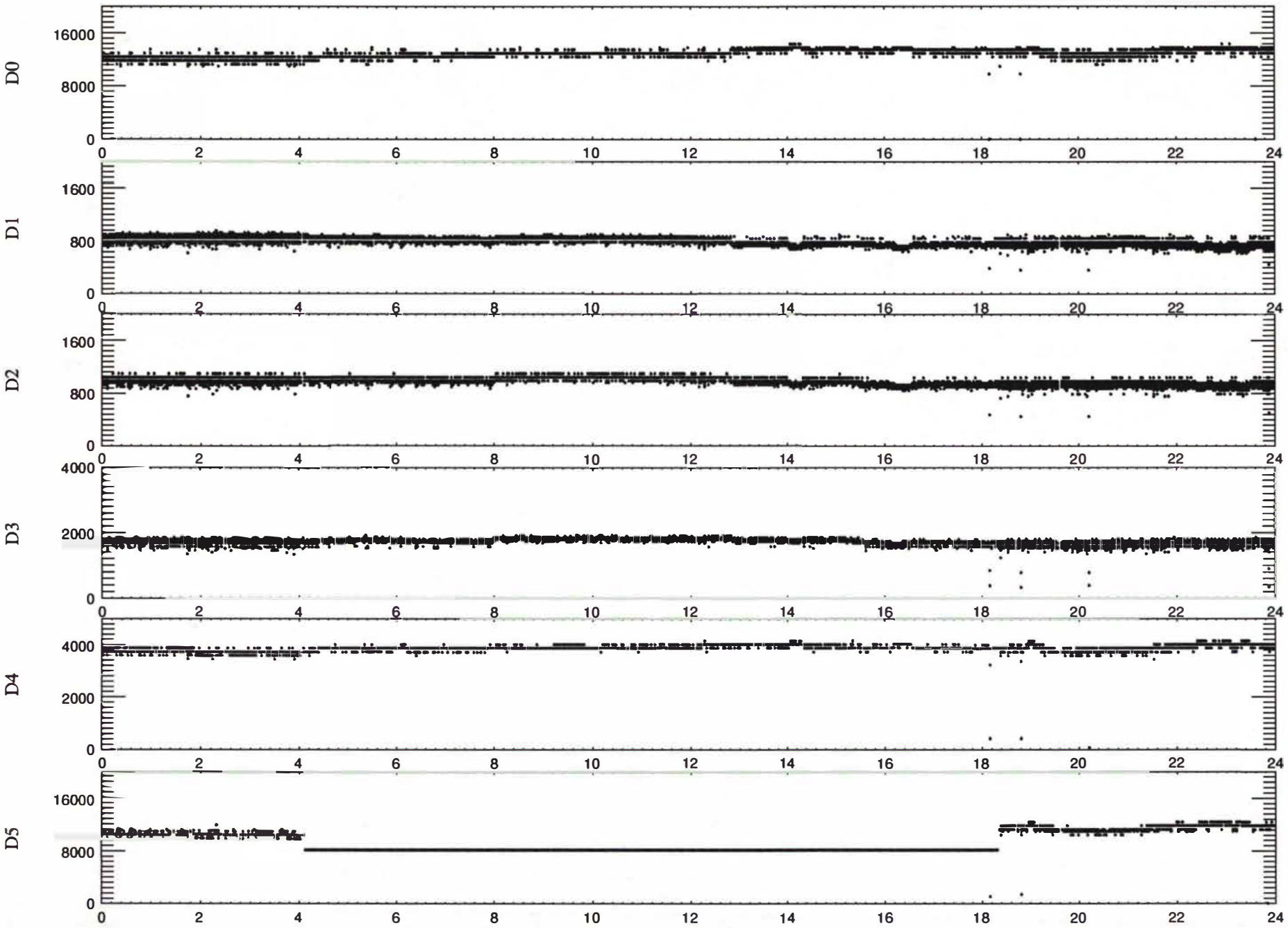
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 177, year 1997 to day 177, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 177, year 1997 to day 177, year 1997 10/13/97



From SURASAK@ssl.msfc.nasa.gov Mon Jun 30 12:04 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA12523; Mon, 30 Jun 1997 12:04:41 -0700
Date: Mon, 30 Jun 1997 14:04:36 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970630140436.21668eaa@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6279
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

RI

****
BATSEARCH PROGRAM
****

BATSE BURST # 6279
EVENT OF 1997 JUN 27 DAY OF YEAR=178
EVENT CROSSING TIME AT BATSE : 3865. S. OR 01:04:25.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 228.000 40.000
BATSE PEAK COUNTING RATE: 4100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 6/ 97 IS:
RA= 152.884 DEC= 26.317 DIST= 5.720 AU
BATSE-ULYSSES DISTANCE = 855703694. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1316.83 SECS.
CROSSING TIME AT ULYSSES IS 2548. S. OR 00:42:28 +/- 469.67 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 6/ 97 IS:
RA= 183.261 DEC= -1.161 DIST= 1.225 AU
MARS-BATSE DISTANCE = 183312304. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -324.69 SECS.
CROSSING TIME AT MARS IS 3540. S. OR 00:59:00 +/- 85.03 SECONDS

BATSE BURST TRIGGER
NO.: 6279

TIME: TJD=0626 SECONDS=3865

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=140.3 AZIMUTH=325.4 ERROR=1.606 DEGREES

COMMENTS:
GRB. DOUBLE PULSES. DUR~30S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6279	970627	10626	03865	4100	228	+40	30

Helio corr removed 18/2/00

Date: Apr 3 '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?

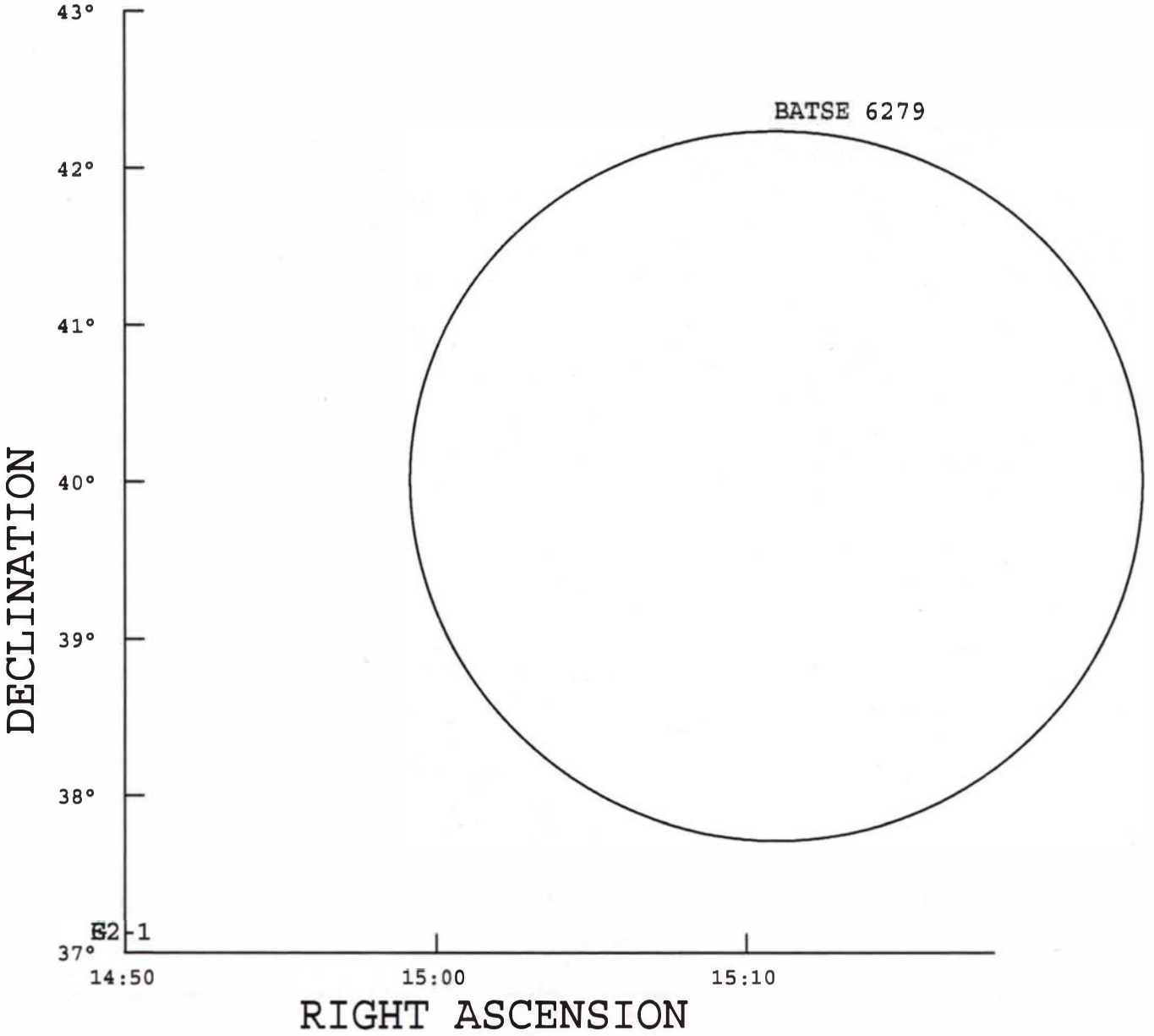
☐ Geocentric time used?

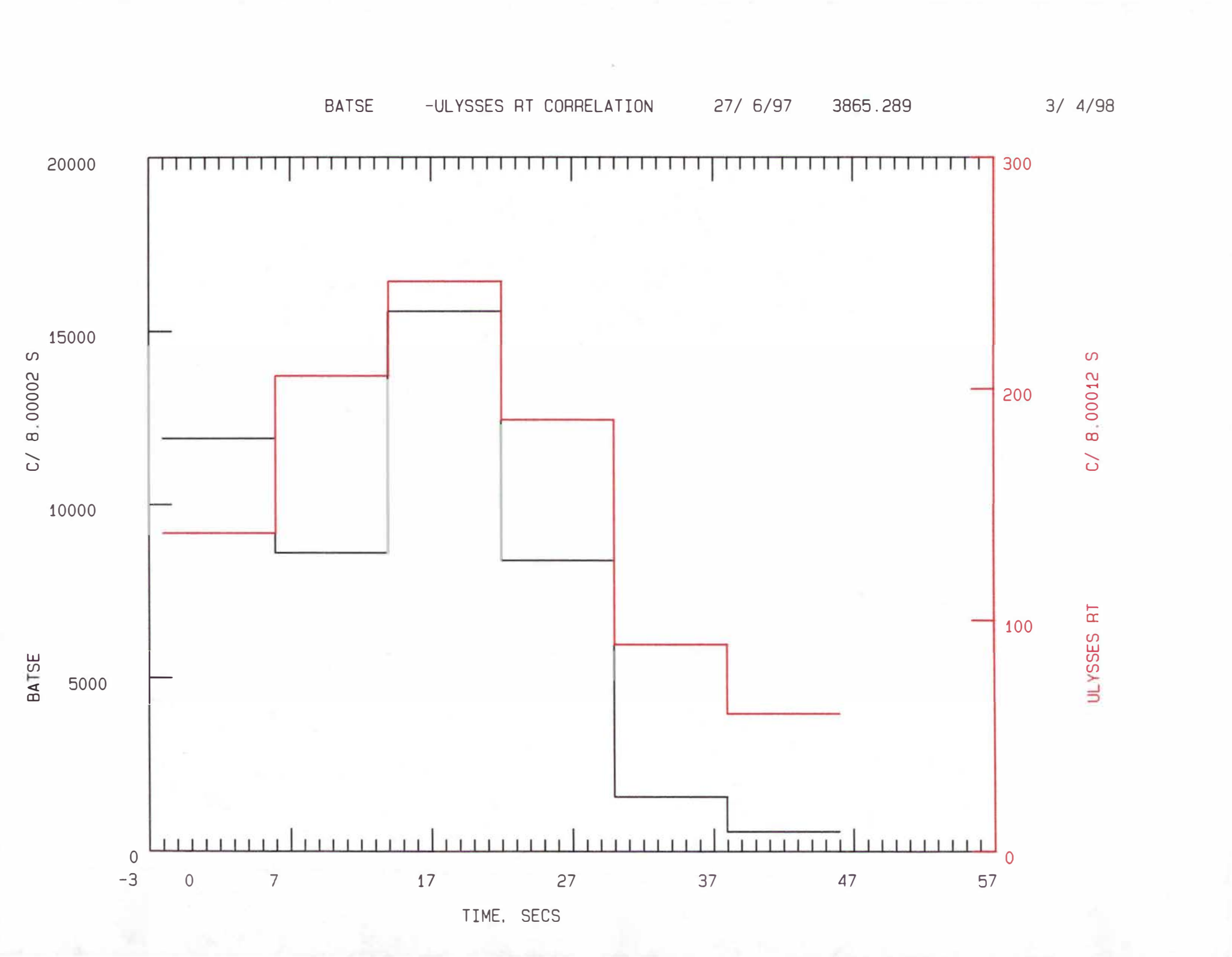
☑ ACCESS database updated?

EVENT OF JUN 27, 1997 0:45

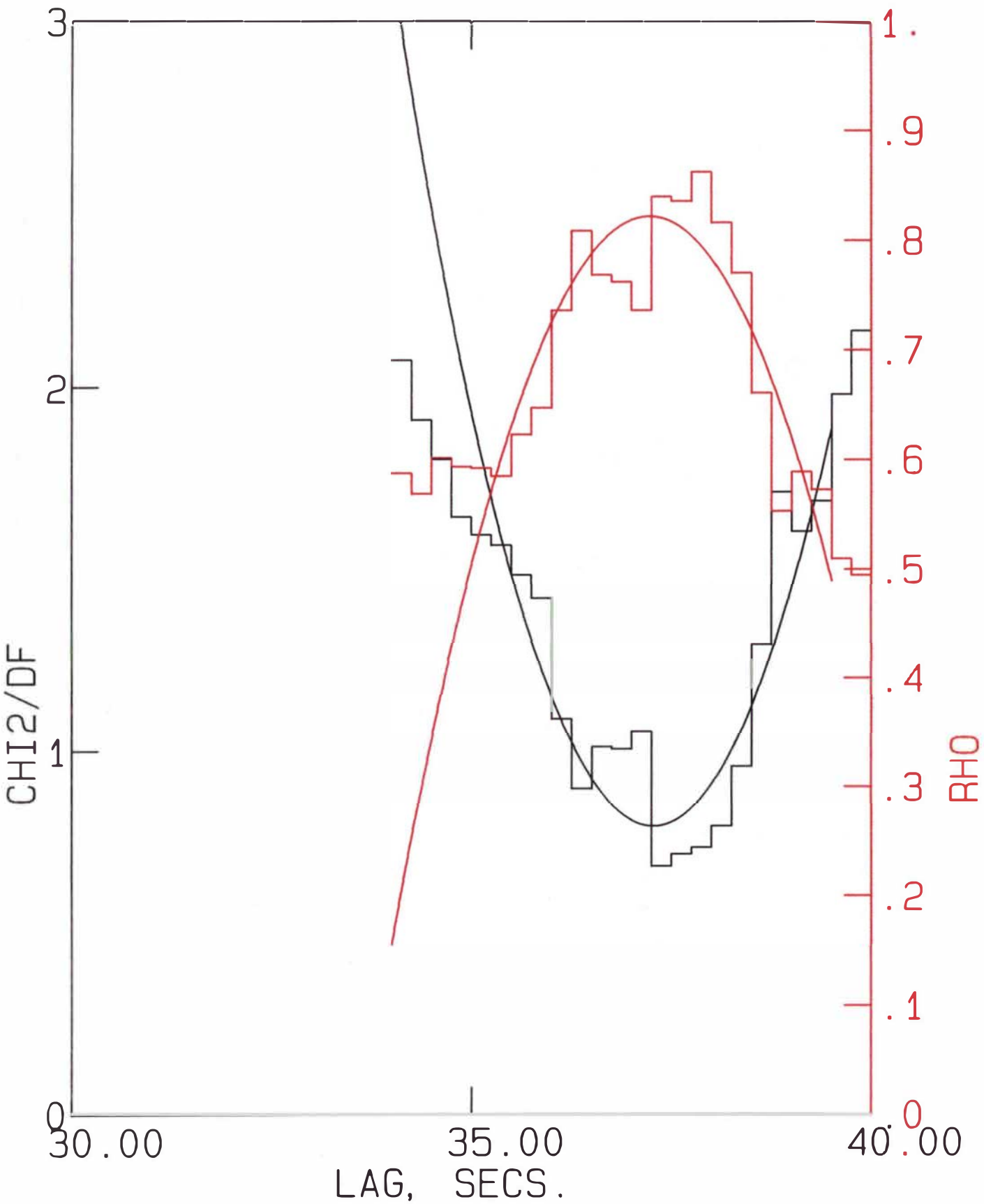
18/ 2/ 0

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




BATSE -ULYSSES RT CORRELATION 27/ 6/97 3865.289 3/ 4/98
20000
15000
10000
5000
0
BATSE
C/ 8.00002 S
300
200
100
0
ULYSSES RT
C/ 8.00012 S
-3
0
7
17
27
37
47
57
TIME, SECS

BATSE -ULYSSES RT CORRELATION 27/ 6/97 3865.289

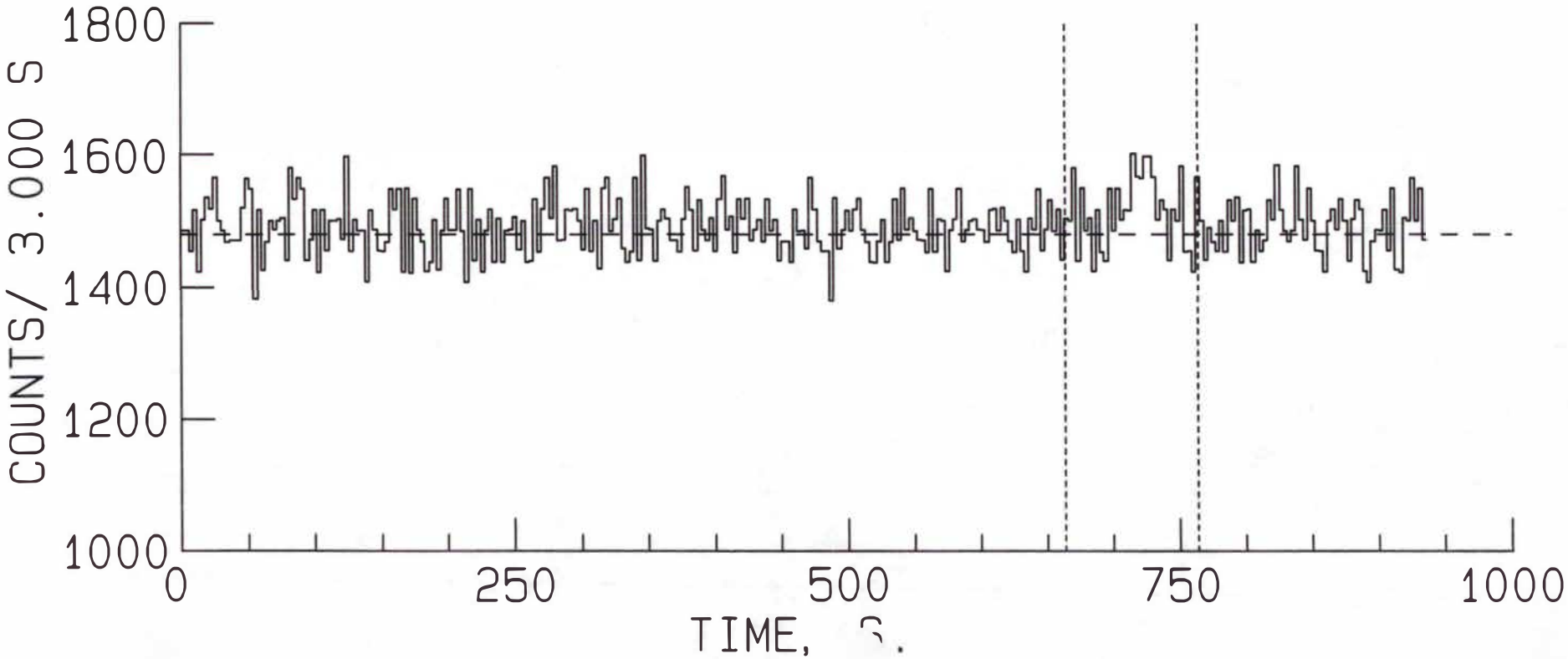


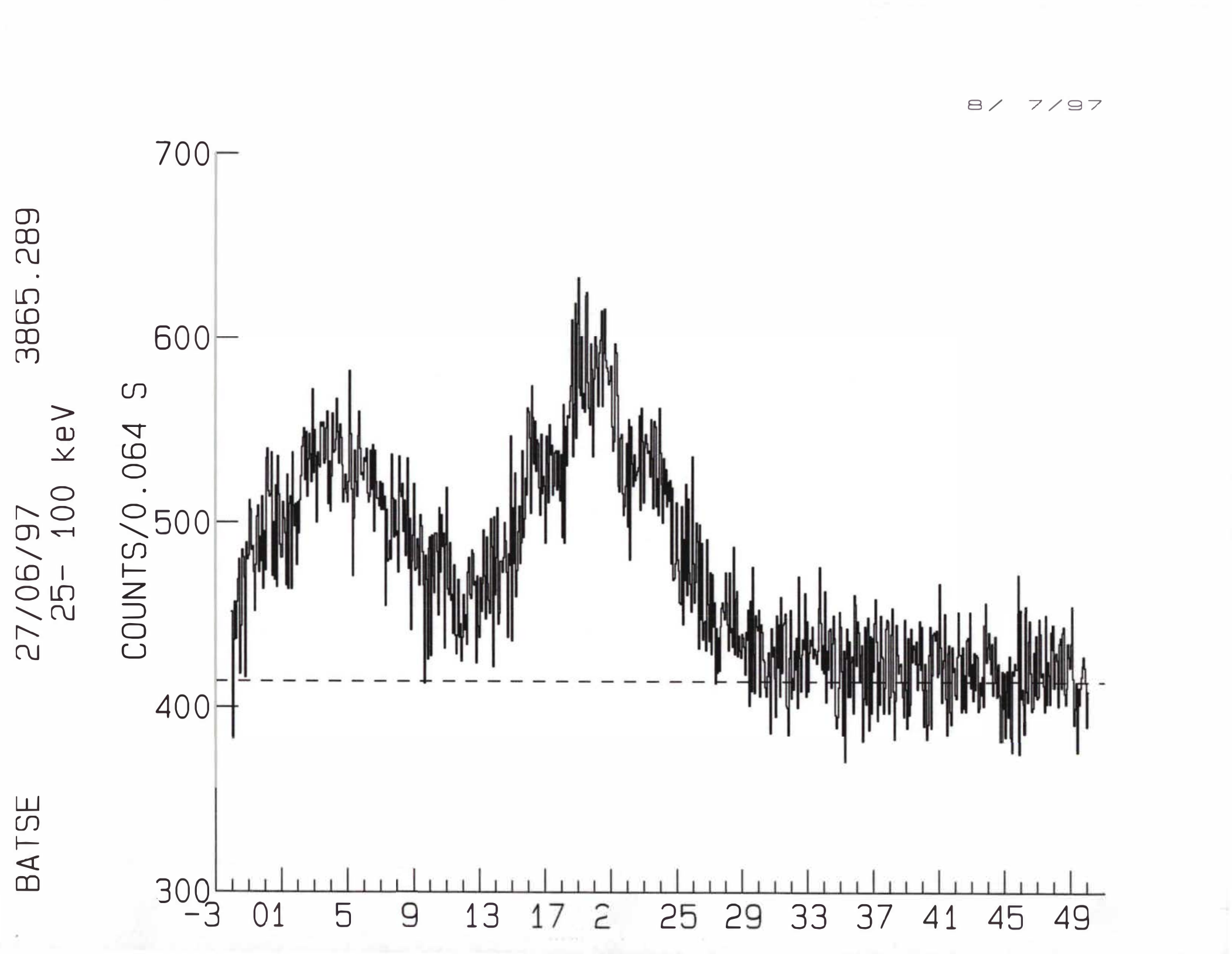
ULYSSES RT 3/ 4/98

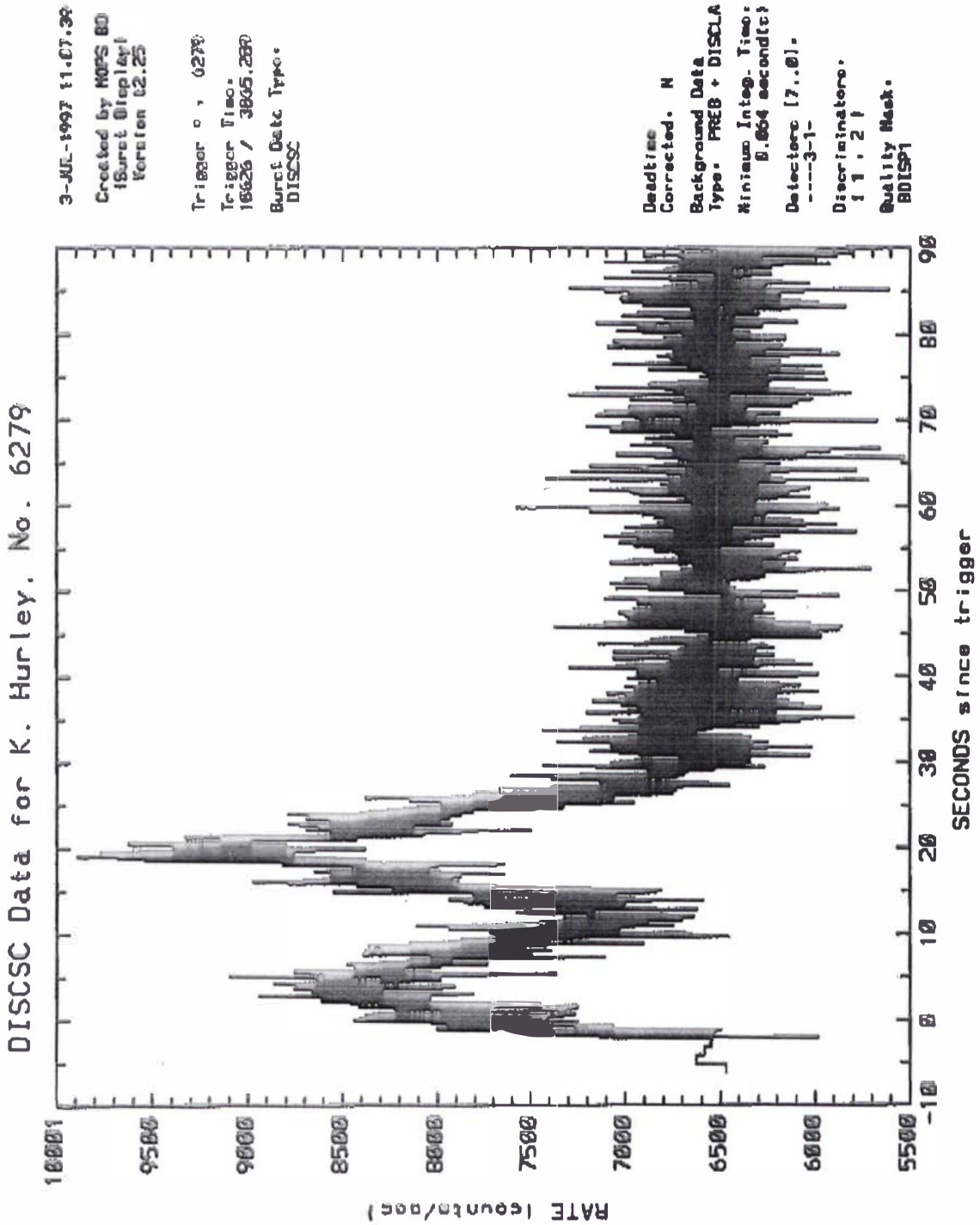
27/ 6/97 2088.239 s

0.250 S INTERVALS REGROUPED BY 12

22- 147 keV




8/ 7/97
BATSE
27/06/97
25- 100 keV
3865.289
COUNTS/0.064 S
700
600
500
400
300
-3
01
5
9
13
17
2
25
29
33
37
41
45
49


3-JUL-1997 11:07:39
Created by MOPS BD
(Burst Display)
Version 02.25
Trigger # : 6279
Trigger Time:
19626.7 / 3805.280
Burst Data Type:
DISCSC
Deadtime
Corrected. N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
----3-1-
Discriminators:
1 1 . 2 1
Quality Mask:
BDISP1
DISCSC Data for K. Hurley. No. 6279
RATE (counts/sec)
SECONDS since trigger
100001
9500
9000
8500
8000
7500
7000
6500
6000
5500
-10
0
10
20
30
40
50
60
70
80
90

From SURASAK@ssl.msfc.nasa.gov Mon Jun 30 12:06 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA12578; Mon, 30 Jun 1997 12:06:39 -0700
Date: Mon, 30 Jun 1997 14:06:35 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970630140635.21668eaa@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6280
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

RI

BATSE BURST # 6280
EVENT OF 1997 JUN 27 DAY OF YEAR=178
EVENT CROSSING TIME AT BATSE : 25966. S. OR 07:12:46.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 121.000 42.000
BATSE PEAK COUNTING RATE: 4600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 6/ 97 IS:
RA= 152.909 DEC= 26.287 DIST= 5.724 AU
BATSE-ULYSSES DISTANCE = 856249619. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=149.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2461.82 SECS.
CROSSING TIME AT ULYSSES IS 23504. S. OR 06:31:44 +/- 264.02 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 6/ 97 IS:
RA= 183.261 DEC= -1.161 DIST= 1.225 AU
MARS-BATSE DISTANCE = 183312304. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -203.17 SECS.
CROSSING TIME AT MARS IS 25763. S. OR 07:09:22 +/- 97.04 SECONDS

BATSE BURST TRIGGER

NO.: 6280

TIME: TJD=0626 SECONDS=25966

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=70 AZIMUTH=353.3 ERROR=0.9 DEGREES

COMMENTS:
GRB. DUR~100S. SINGLE PULSE WITH STRUCTURES. BARELY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6280	970627	10626	25966	4600	121	+42	100

Helio corr removed @ 18/2/00

Date: Apr 3 '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)?

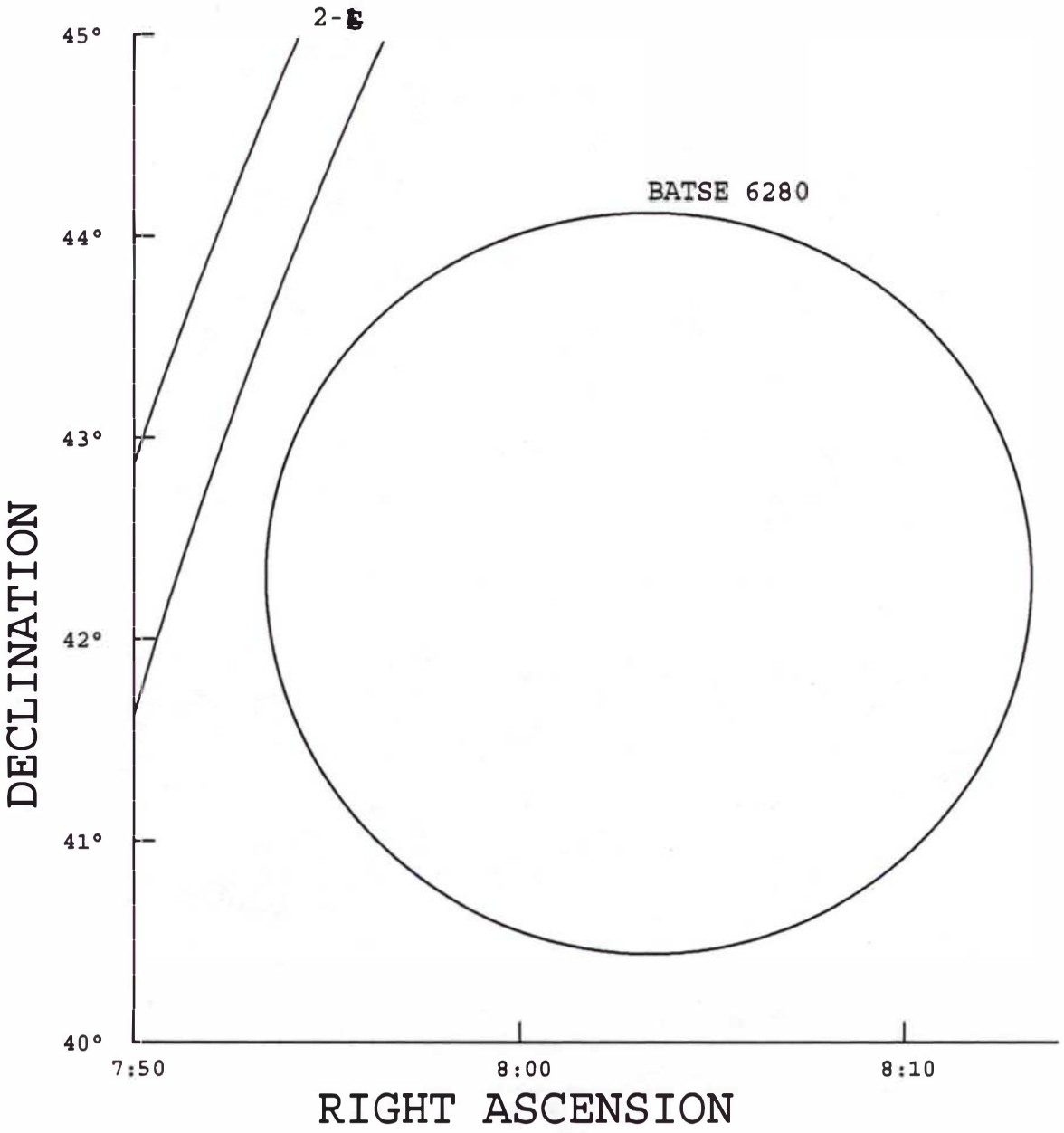
☐ 2000 coordinates used?

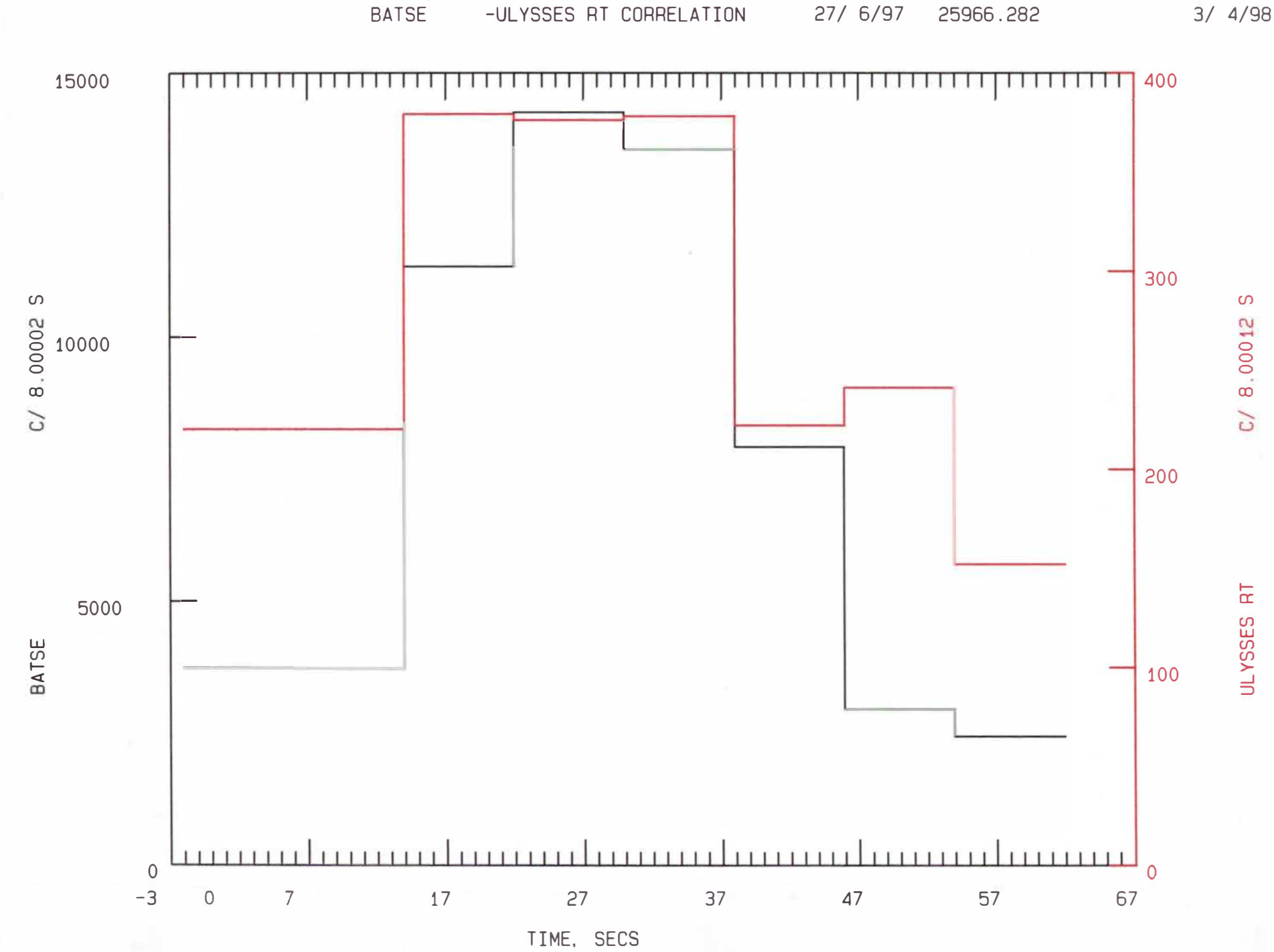
☐ Geocentric time used?

☑ ACCESS database updated?

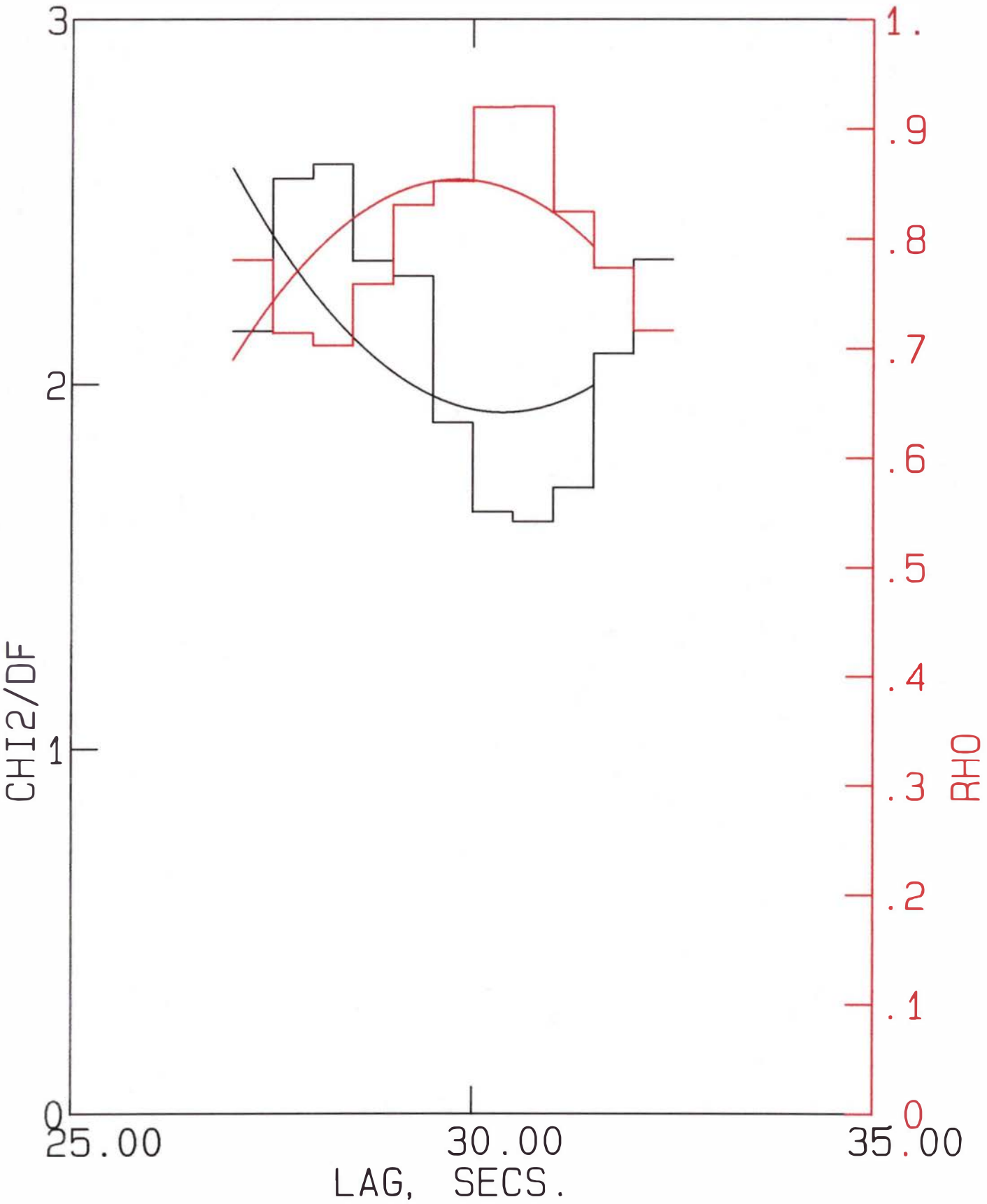
EVENT OF JUN 27, 1997 6:32

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 27/ 6/97 25966.282 3/ 4/98
15000
10000
5000
0
C/ 8.00002 S
BATSE
400
300
200
100
0
C/ 8.000012 S
ULYSSES RT
-3
0
7
17
27
37
47
57
67
TIME, SECS

BATSE -ULYSSES RT CORRELATION 27/ 6/97 25966.282

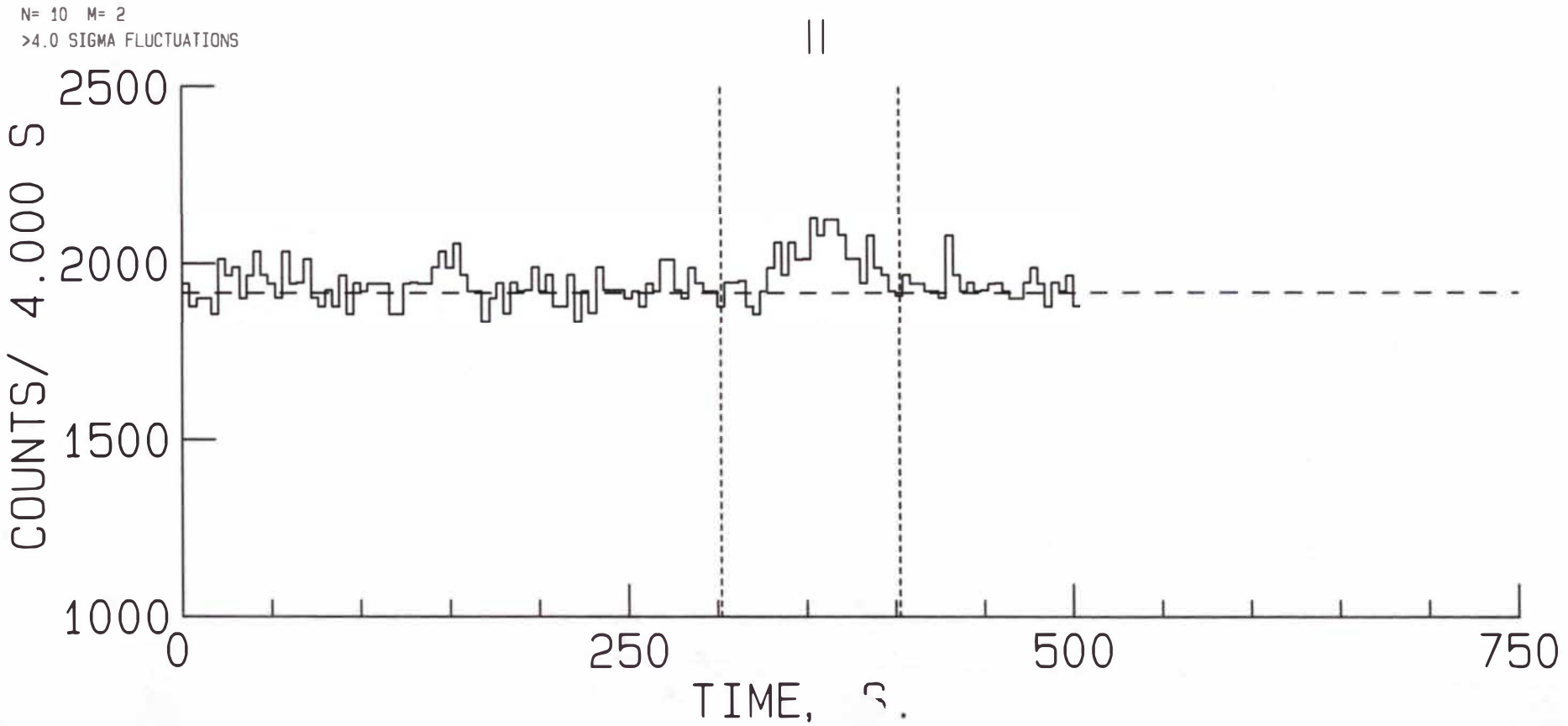


ULYSSES RT 3/ 4/98

27/ 6/97 23256.232 s

0.500 S INTERVALS REGROUPED BY 8

22- 147 keV



BATSE 27/06/97 25966.282

25- 100 keV

COUNTS/0.064 S

300 400 500 600 700

-30 0 13 29 45 61 77

8/ 7/97

DISCSC Data for K. Hurley, No. 6280
RATE (counts/sec)
SECONDS since trigger
3-DEC-1997 11:05:55
Created by MDOS BD
Burst Display
Version 12.25
Trigger # : 6280
Trigger Time:
18026 / 25966.261
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
----2-0
Discriminators:
[1, 2]
Quality Mask:
BDISP1

From SURASAK@SSLLES.MSFC.NASA.GOV Mon Jun 30 12:09 PDT 1997
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA12644; Mon, 30 Jun 1997 12:09:35 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Mon, 30 Jun 1997 14:09:26 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970630140927.21668eaa@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6281
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6281
EVENT OF 1997 JUN 27 DAY OF YEAR=178
EVENT CROSSING TIME AT BATSE : 72802. S. OR 20:13:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 285.000 -18.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 6/ 97 IS:
RA= 152.962 DEC= 26.223 DIST= 5.731 AU
BATSE-ULYSSES DISTANCE = 857400821. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2024.45 SECS.
CROSSING TIME AT ULYSSES IS 74826. S. OR 20:47:06 +/- 431.48 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 6/ 97 IS:
RA= 183.261 DEC= -1.161 DIST= 1.225 AU
MARS-BATSE DISTANCE = 183312304. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.21 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 114.46 SECS.
CROSSING TIME AT MARS IS 72916. S. OR 20:15:16 +/- 106.02 SECONDS

BATSE BURST TRIGGER
NO.: 6281

TIME: TJD=0626 SECONDS=72802

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=137.3 AZIMUTH=174.8 ERROR=21.86 DEGREES

COMMENTS:
GRB. DUR~0.1S. SINGLE PEAK. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6281	970627	10626	72802	3500	285	-18	.1

BATSE BURST# 6281

ULYSSES RT 30/ 6/97

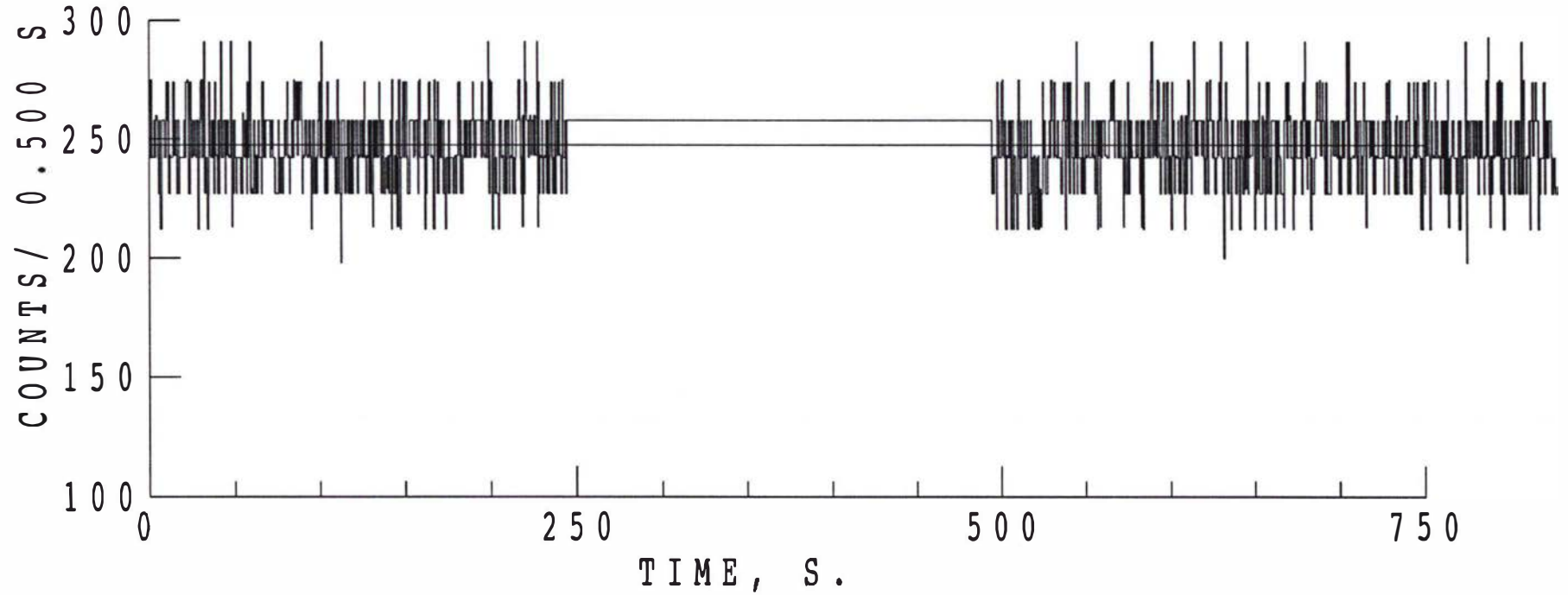
27/ 6/97 74412.078 s

0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From TERRELL@nisdp0.lanl.gov Wed Jul 23 09:45 PDT 1997
From: TERRELL@nisdp0.lanl.gov
Date: Wed, 23 Jul 1997 10:45:37 -0600
To: khurley@sunspot.ssl.berkeley.edu, bonnard@rosserv.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, chryssa.kouveliotou@msfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, henze@fender.msfc.nasa.gov
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: DMSP GRB 970607 DETECTION

From: jterrell@lanl.gov (James Terrell) 970723
To: khurley@sunspot.ssl.berkeley.edu,butterworth@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it,cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in,scott@rosserv.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov,yosimori@rikkyo.ac.jp,
bonnard@rosserv.gsfc.nasa.gov,chryssa.kouveliotou@msfc.nasa.gov,
henze@fender.msfc.nasa.gov
Subj: DMSP GRB detection: 970607

DMSP13 detected an apparent GRB on 970607 with peak at 33388.6, lasting <6sec.
DMSP14 detected the same burst, with peak at 33388.7, lasting <6sec.
These simultaneous detections apparently correspond to the GRB detected by Ulysses at 33360 UT (09:16).

Neither spacecraft detected GRB 970627 reported by Ulysses, and by BeppoSAX at 79610 UT (DMSP 13 was in the south radiation belt at that time).

If anyone did not receive my last message (dated 970624), regarding detection of GRB 970218, 970421, and 970602, please let me know.

From feroci@saturn.ias.fra.cnr.it Wed Jul 9 10:05 PDT 1997
Date: Wed, 9 Jul 1997 19:02:54 +0200 (DFT)
From: Marco Feroci <feroci@saturn.ias.fra.cnr.it>
To: bonnard@rosserv.gsfc.nasa.gov,
        Paul Butterworth <butterworth@lheavx.gsfc.nasa.gov>,
        cline@lheavx.gsfc.nasa.gov, feroci@saturn.ias.fra.cnr.it,
        filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
        jterrell@lanl.gov, Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>,
        kmarar@isac.ernet.in, scott@rosserv.gsfc.nasa.gov,
        yosimori@rikkyo.ac.jp
Subject: GRB 970627
Mime-Version: 1.0

Dear all

the following event:
June 27 1997 21:29 Ulysses time; strong burst, 20 s long

is presumably coincident with the GRB detected by the BeppoSAX GRBM on
June 27 1997 22:06:50 UT

Best regards,
Marco Feroci and Filippo Frontera
on behalf of the BeppoSAX/GRBM team

Marco Feroci
Istituto di Astrofisica Spaziale - C.N.R.
Tel: +39-6-9424589
Via E. Fermi 21, I-00044 Frascati, ITALY
Fax : +39-6-9416847
E-mail: feroci@saturn.ias.fra.cnr.it

From kraken@rosserv.gsfc.nasa.gov Mon Jul 7 10:20 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Mon, 7 Jul 1997 13:20:55 -0400
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hi Kevin,

In response to your requests about confirmation of recent Ulysses bursts not seen by BATSE, here are some results from TGRS:

Ulysses burst	TGRS sees?	TGRS characteristics
June 26, 1997 04:28 Ulysses time	NO BUT	430 cts/s peak in FASTRATE data at 970627 17210 s. <=1 sec long energy range: 100-300 keV. Not seen in other energy ranges/data
June 27, 1997 21:29 Ulysses time	YES!	TGRS #578 (triggered event) occurred at 79613 secs. 100-300 keV: 10 s duration; 240 cts/s peak 35-100 keV: 20 s duration; 40 cts/s peak
June 29, 1997 04:26 Ulysses time (probably SGR 1806-20)	NO	No peak found in waiting mode or burst mode data

I hope this is helpful.

Pete

Date: Oct 5 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

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

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

☑ ACCESS and MBL4 databases updated?

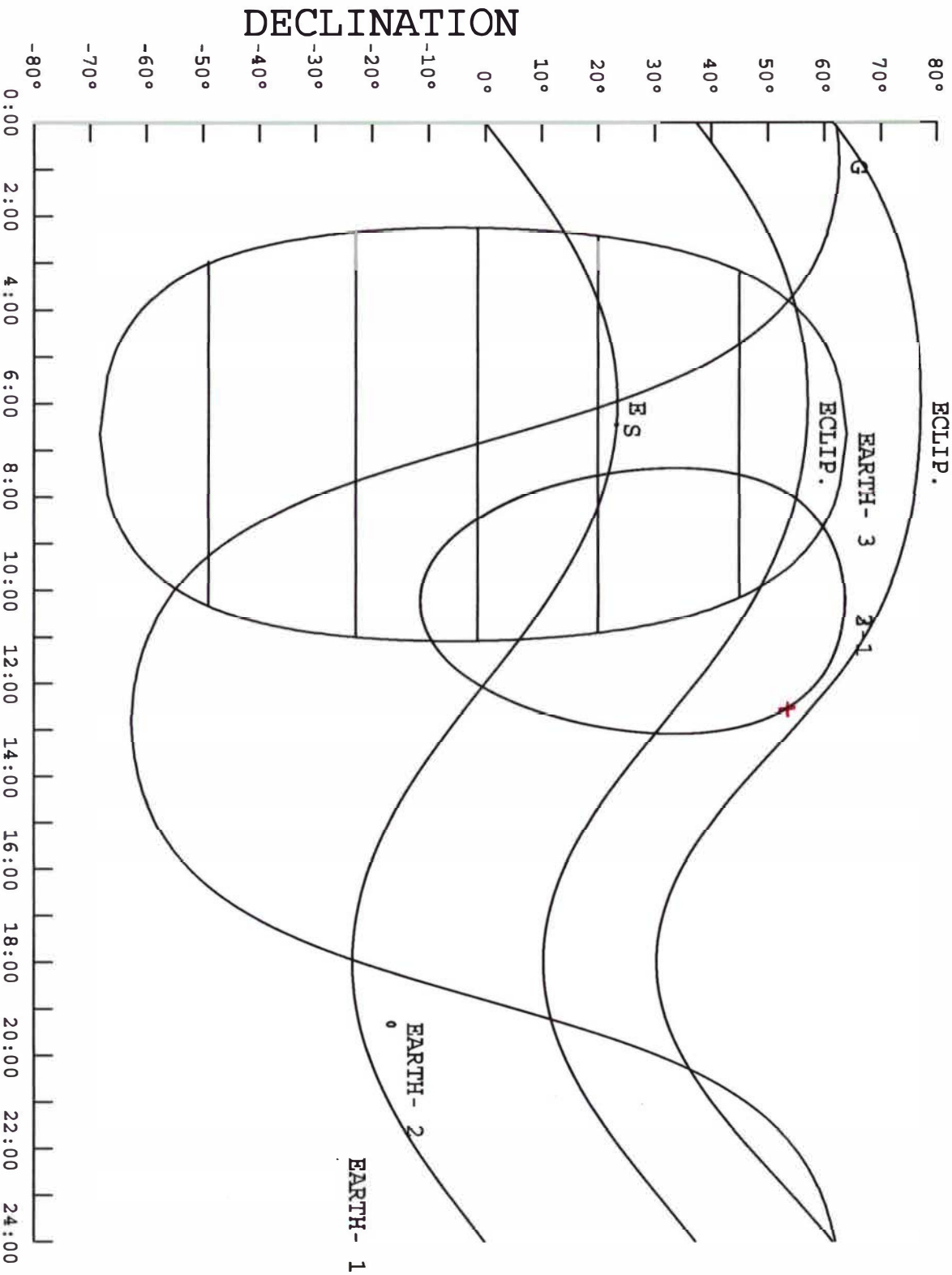
SAX added Jan 6

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

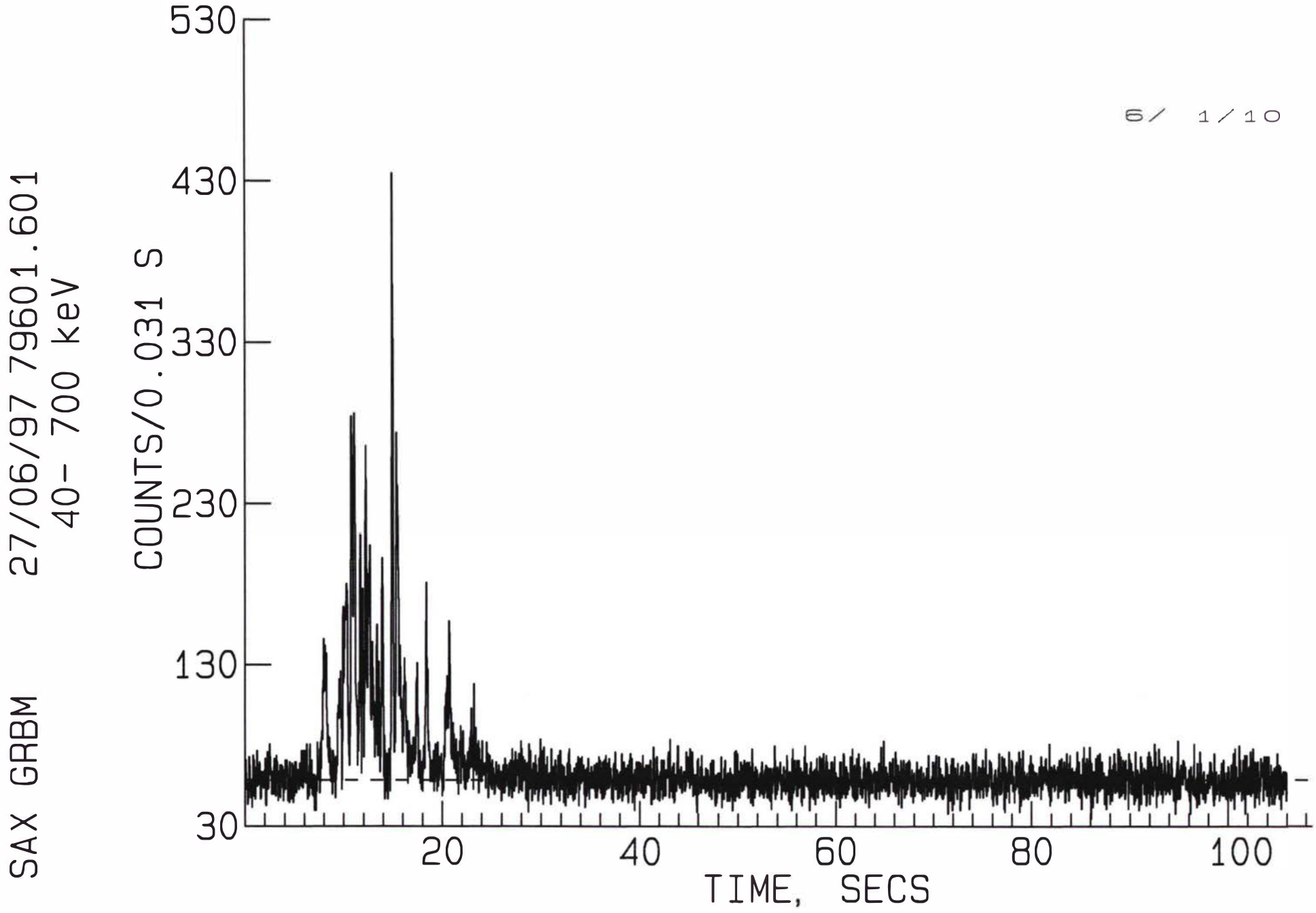
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR

1 ULYSSES 2 KONUS2 3 SAX

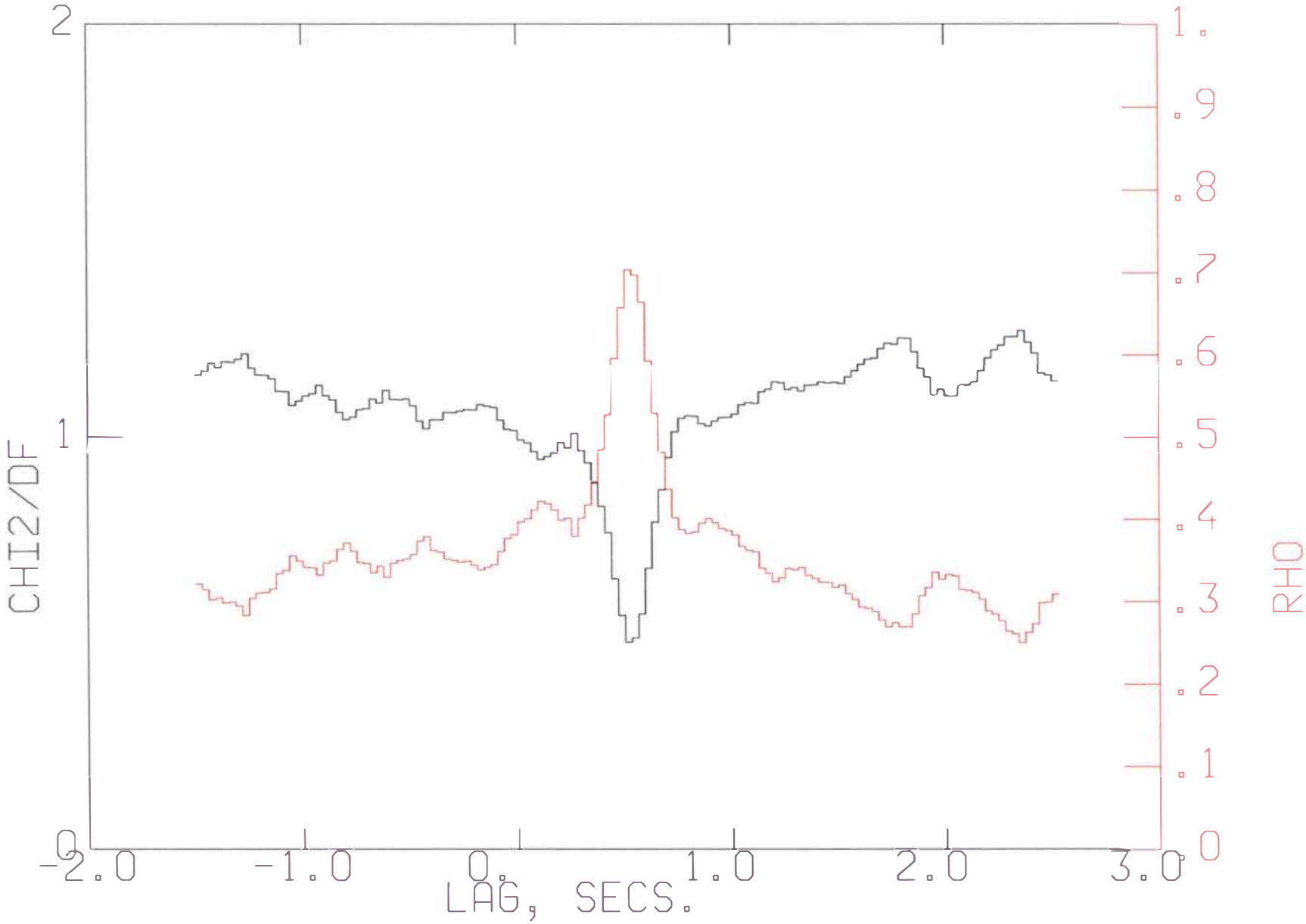


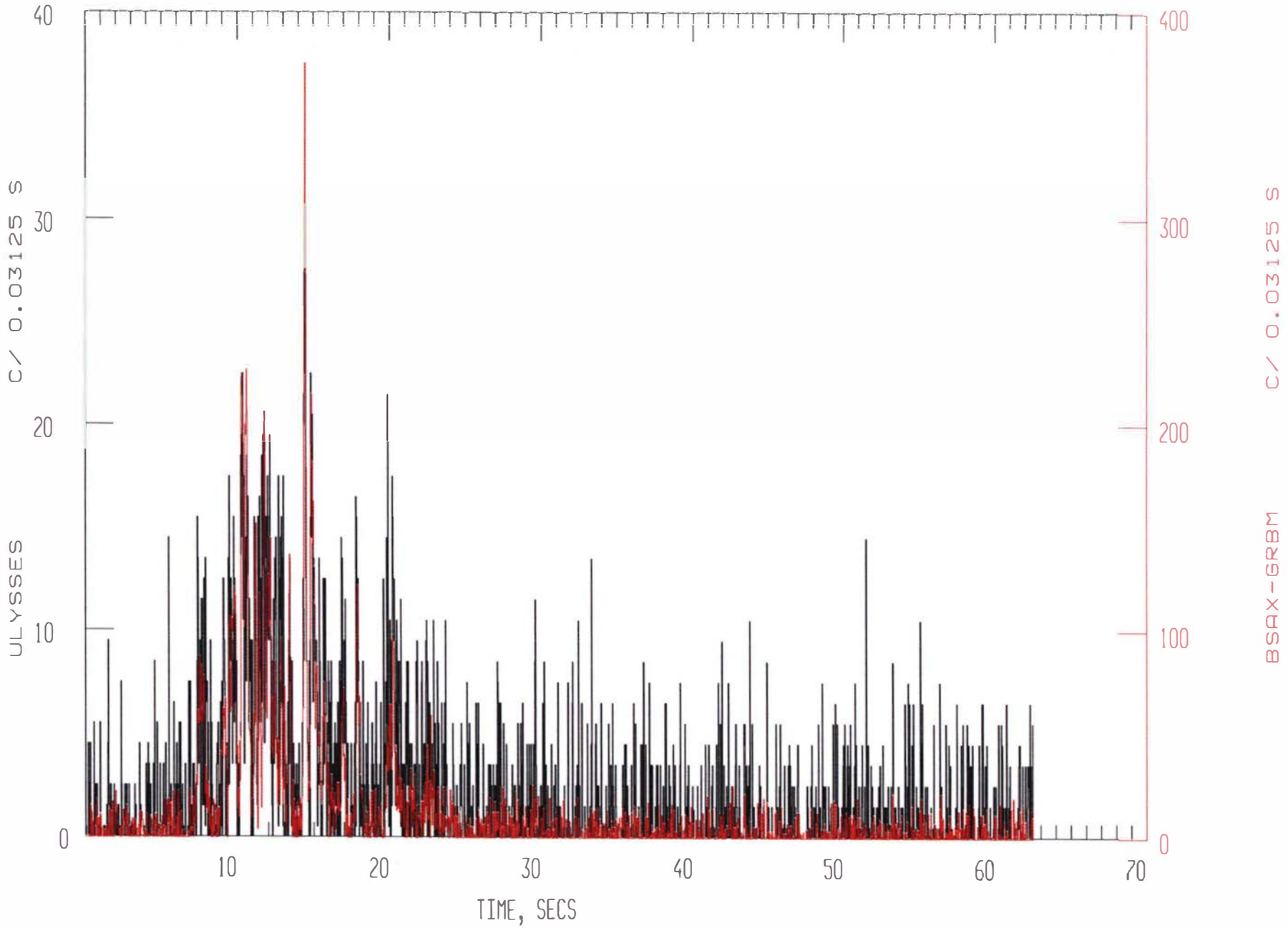
EVENT OF JUN 27, 1997 21:29

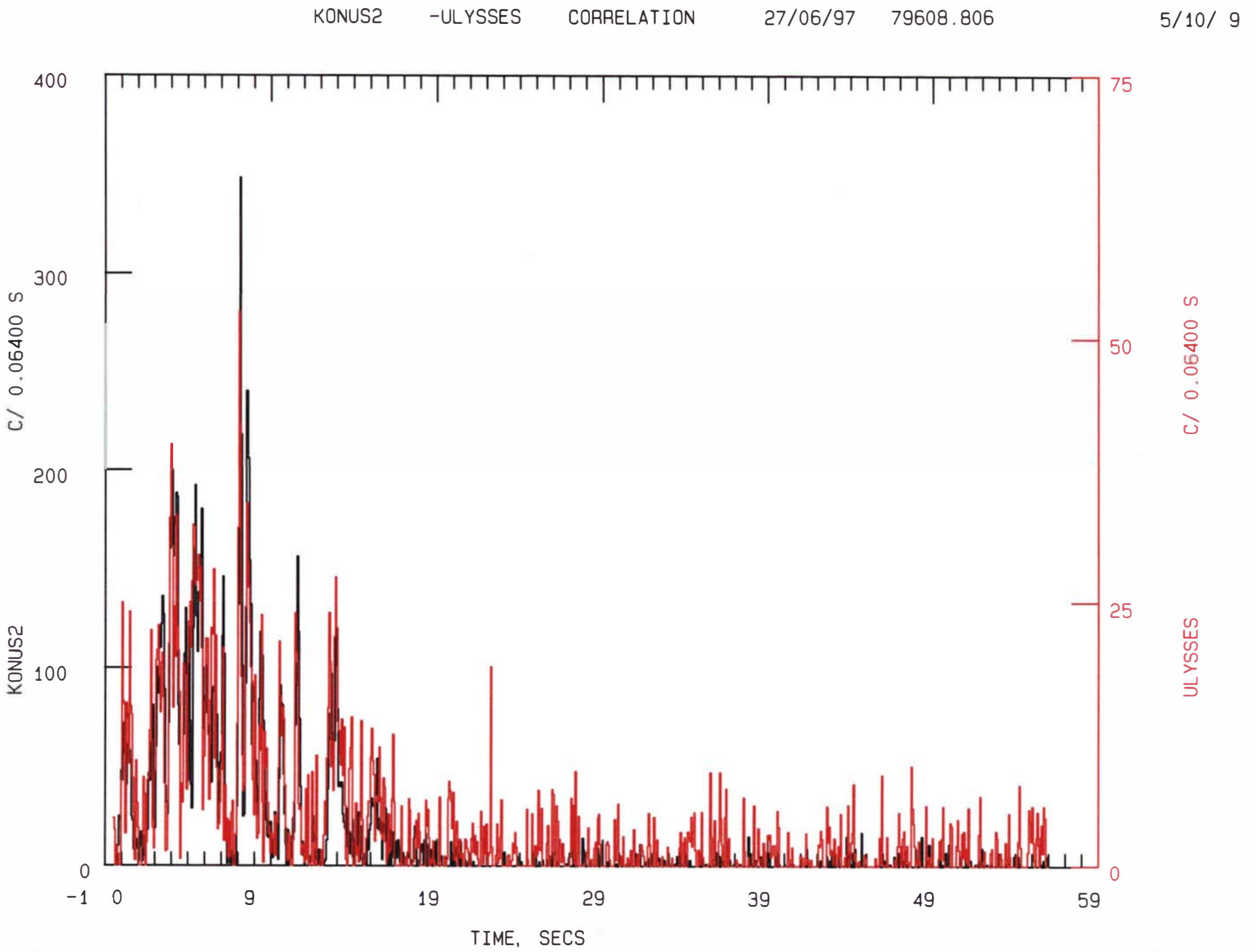
6/ 1/10


SAX GRBM
27/06/97 79601.601
40- 700 keV
COUNTS/0.031 S
530
430
330
230
130
30
20
40
60
80
100
TIME, SECS
6/ 1/10

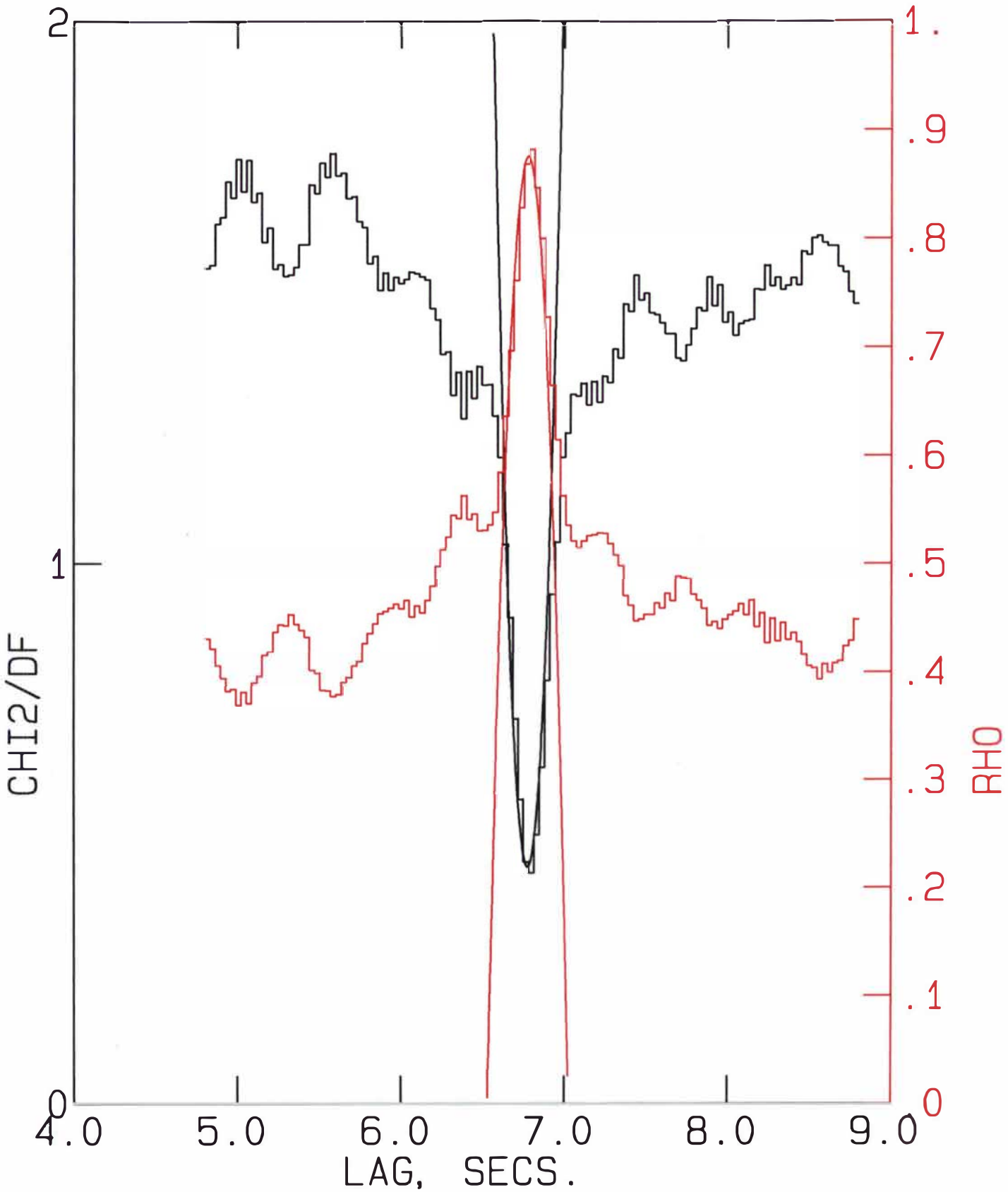
ULYSSES -BSAX-GRBM CORRELATION 27/06/97 77348.669




ULYSSES -BSAX-GRBM CORRELATION 27/06/97 77348.669
ULYSSES
C/ 0.03125 S
BSAX-GRBM
C/ 0.03125 S
TIME, SECS
0
10
20
30
40
50
60
70
100
200
300
400


KONUS2 -ULYSSES CORRELATION 27/06/97 79608.806
5/10/ 9
400
300
200
100
0
C/ 0.06400 S
KONUS2
75
50
25
0
C/ 0.06400 S
ULYSSES
-1
0
9
19
29
39
49
59
TIME, SECS

KONUS2 -ULYSSES CORRELATION 27/06/97 79608.806

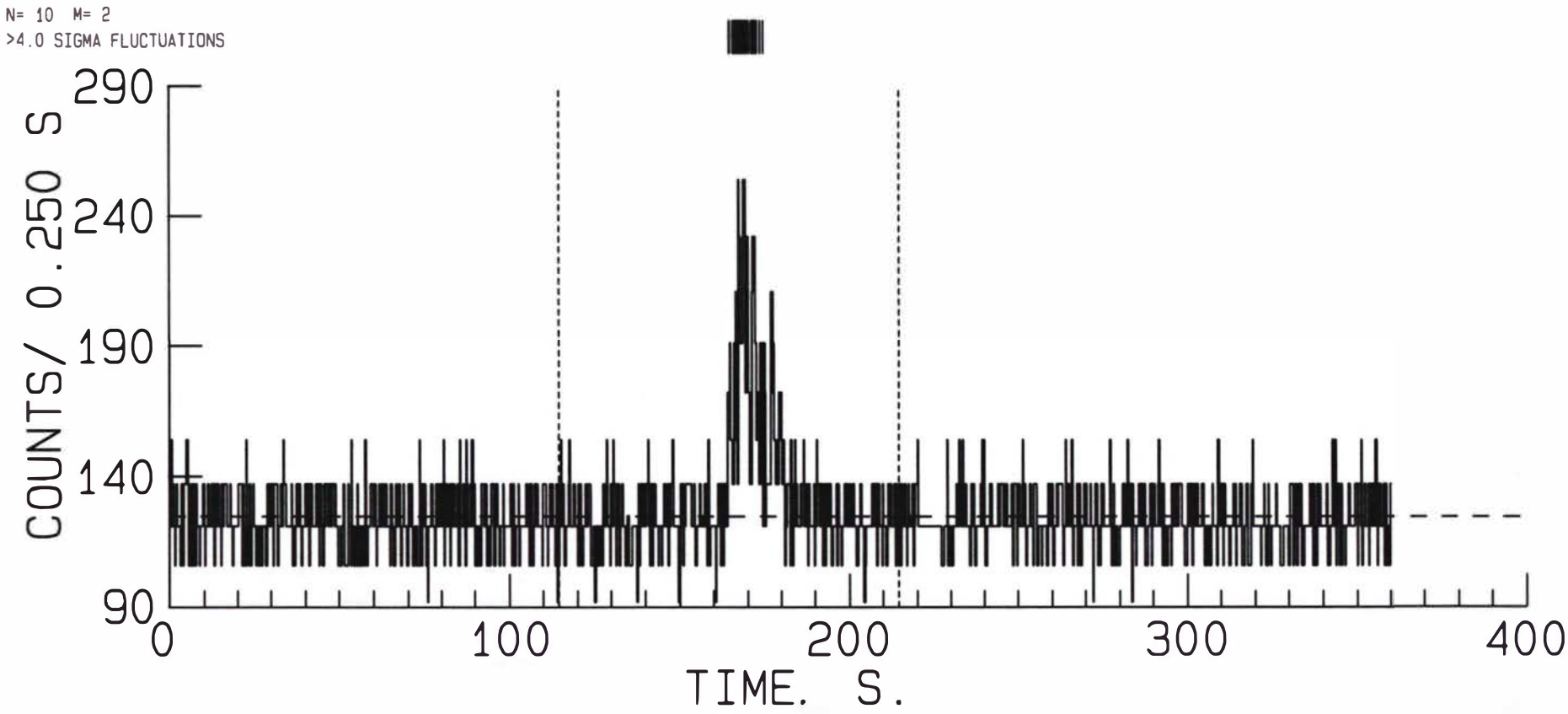


ULYSSES RT

5/10/ 9

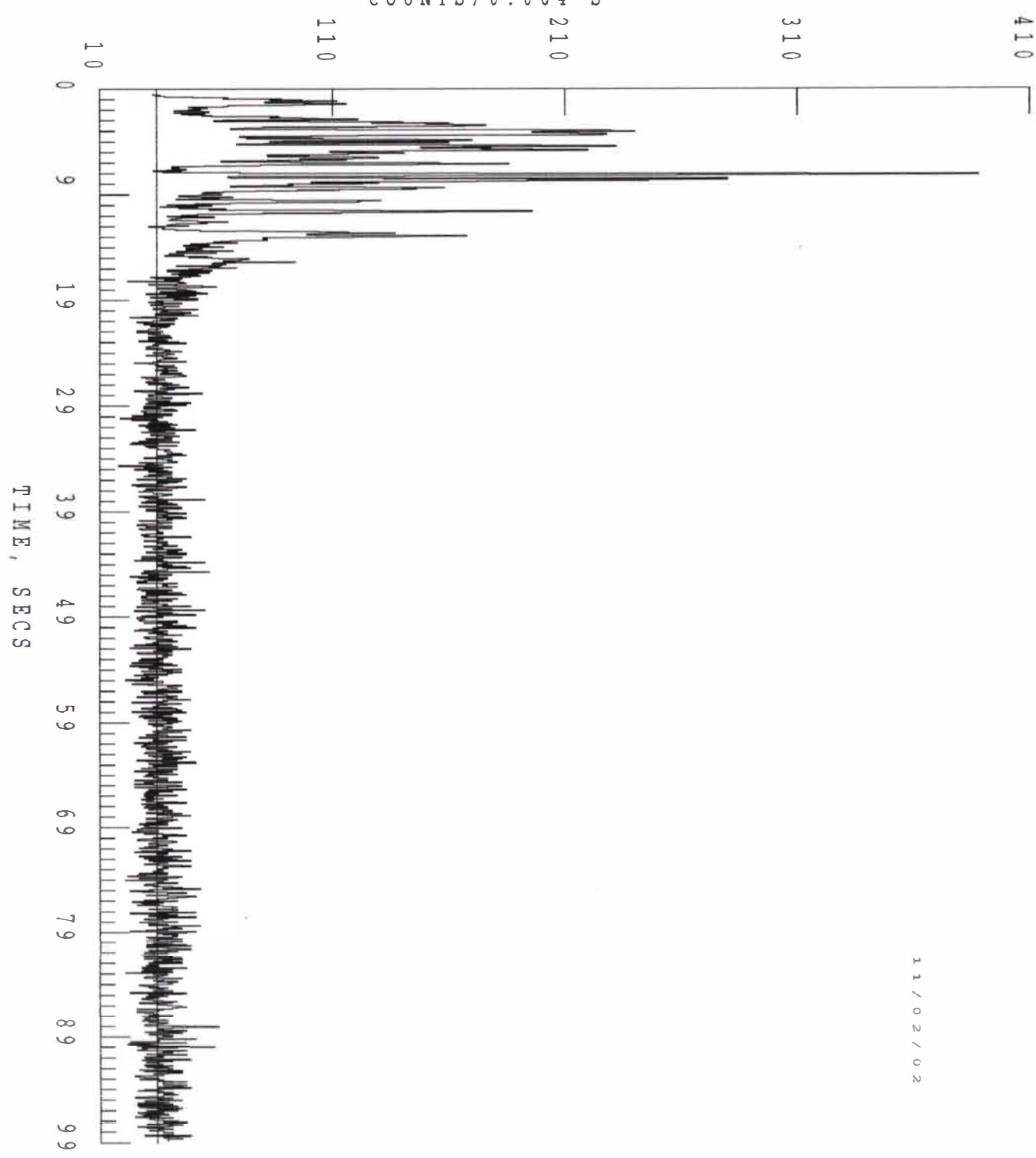
27/ 6/97 77184.109 s

22- 147 keV



KONUS2 27/06/97 79608.806

50- 200 keV



KONUS2 19970627 79608

ULYSSES RT

11/02/02

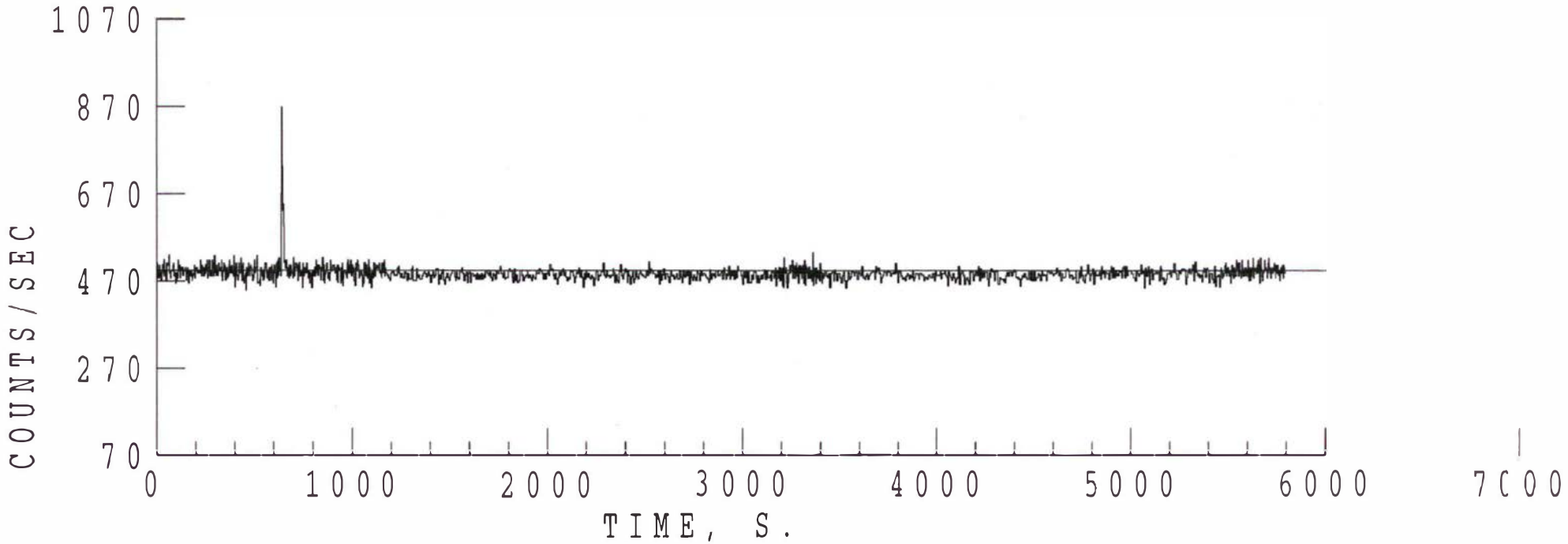
27/06/97 76716.102 s

INTERVALS REGROUPED BY 11

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

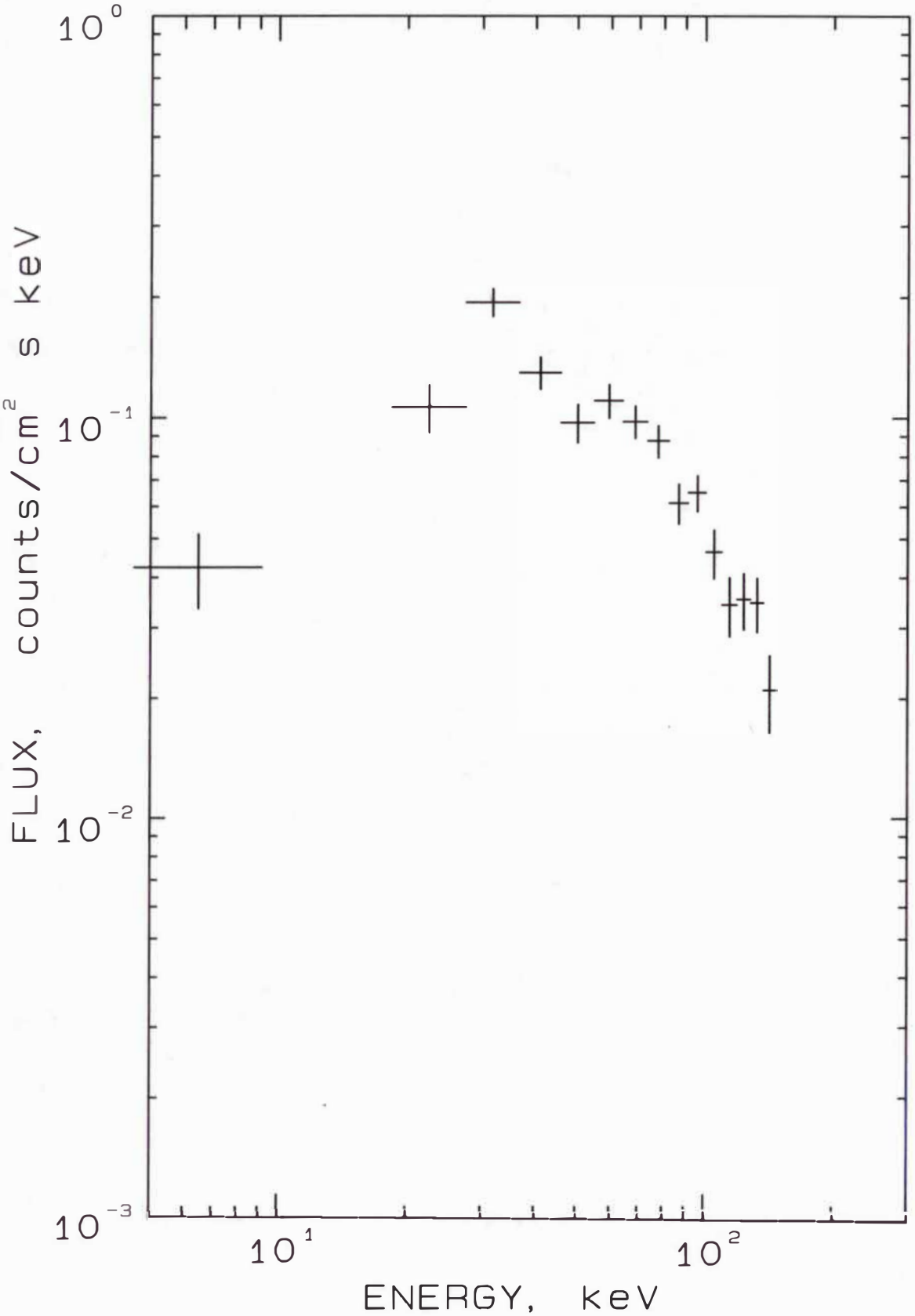
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

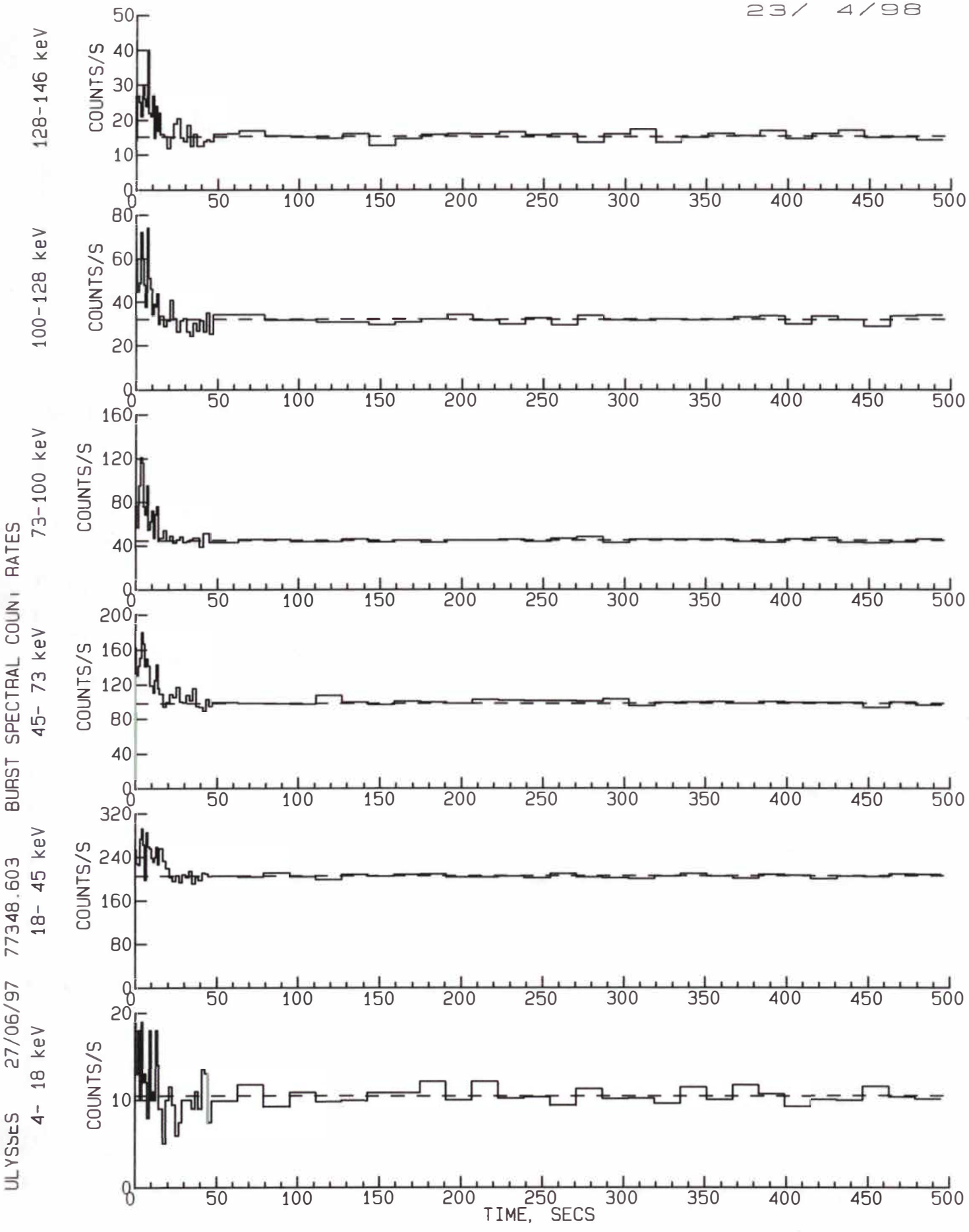


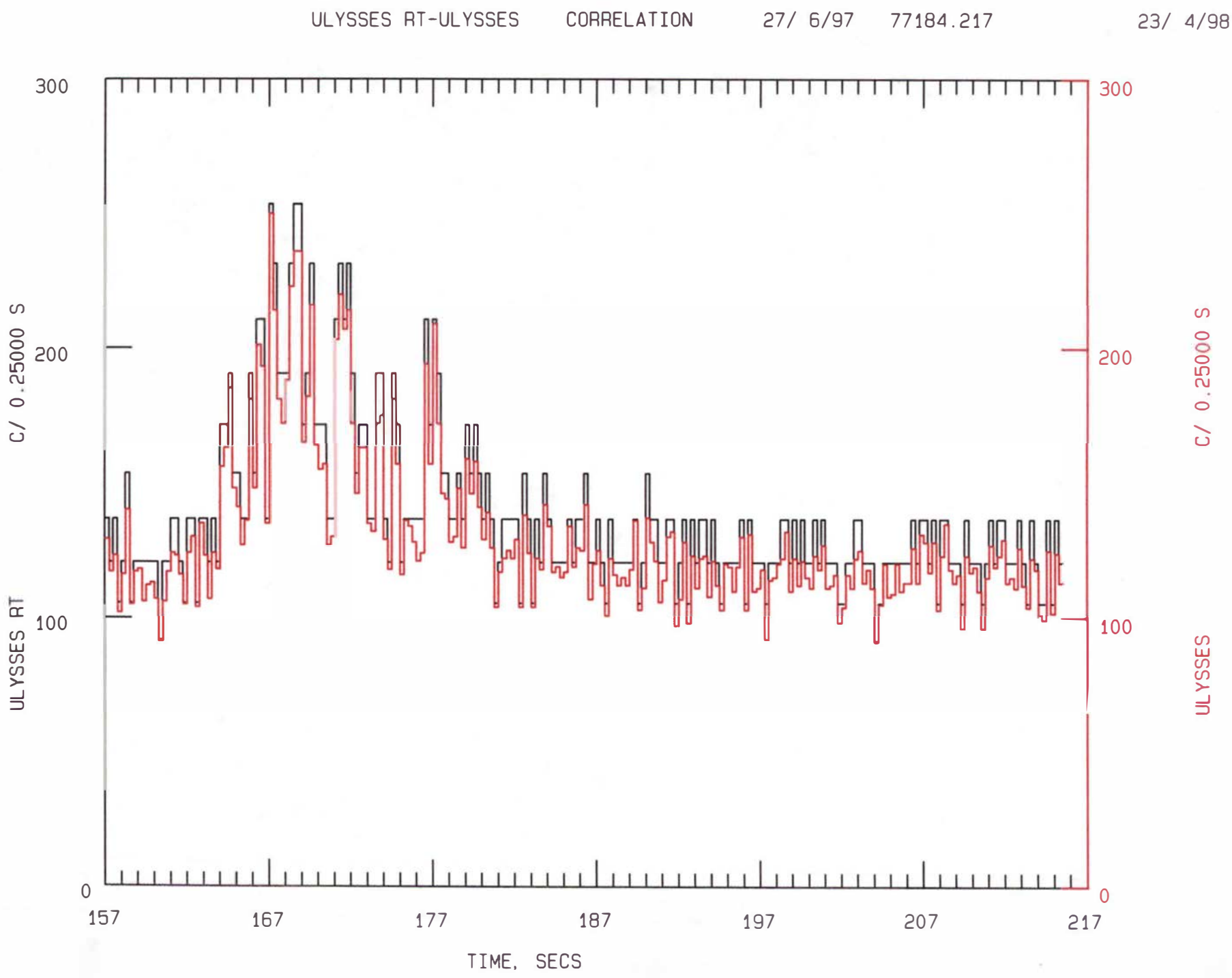
ULYSSES 27/06/97 77348.603

23/ 4/98

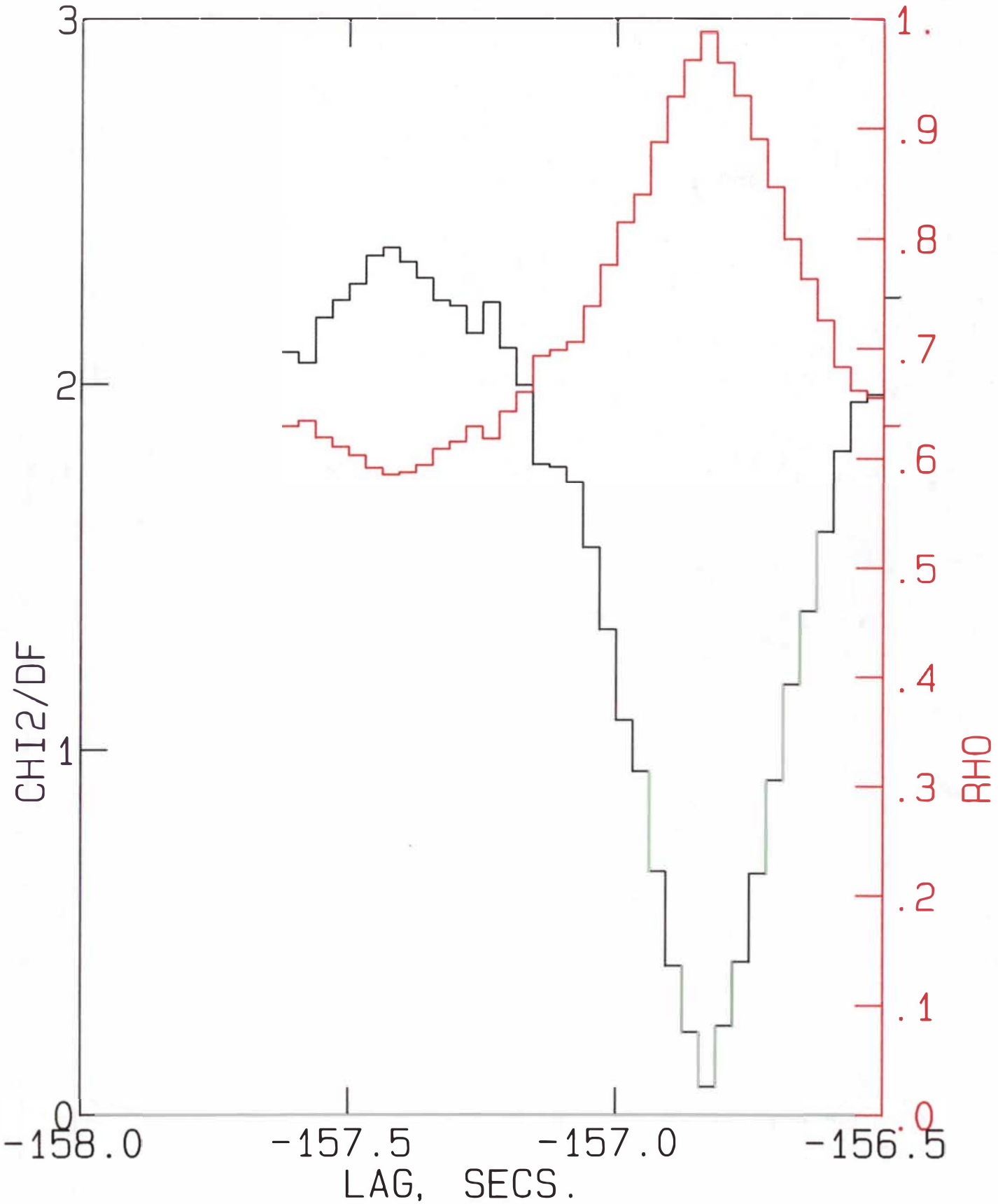
SPECTRUM INTEGRATED OVER 20.8 SECONDS, INTERVALS 2 TO 20

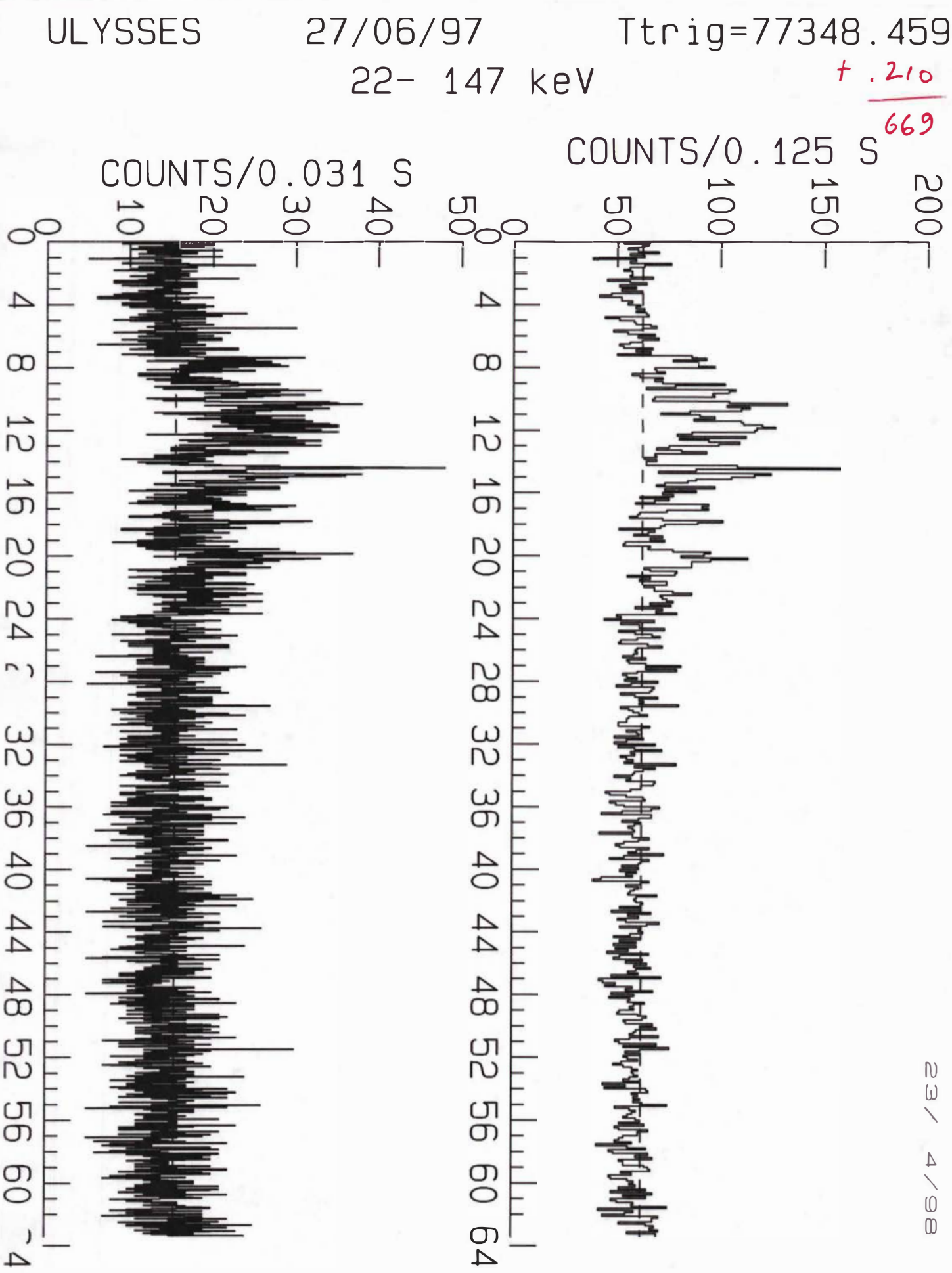



23/ 4/98
ULYSSES 27/06/97 77348.603 BURST SPECTRAL COUNT RATES
4- 18 keV
18- 45 keV
45- 73 keV
73-100 keV
100-128 keV
128-146 keV
COUNTS/S
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 27/ 6/97 77184.217 23/ 4/98
300
200
100
0
C/ 0.25000 S
ULYSSES RT
157
167
177
187
197
207
217
TIME, SECS
ULYSSES

ULYSSES RT-ULYSSES CORRELATION 27/ 6/97 77184.217



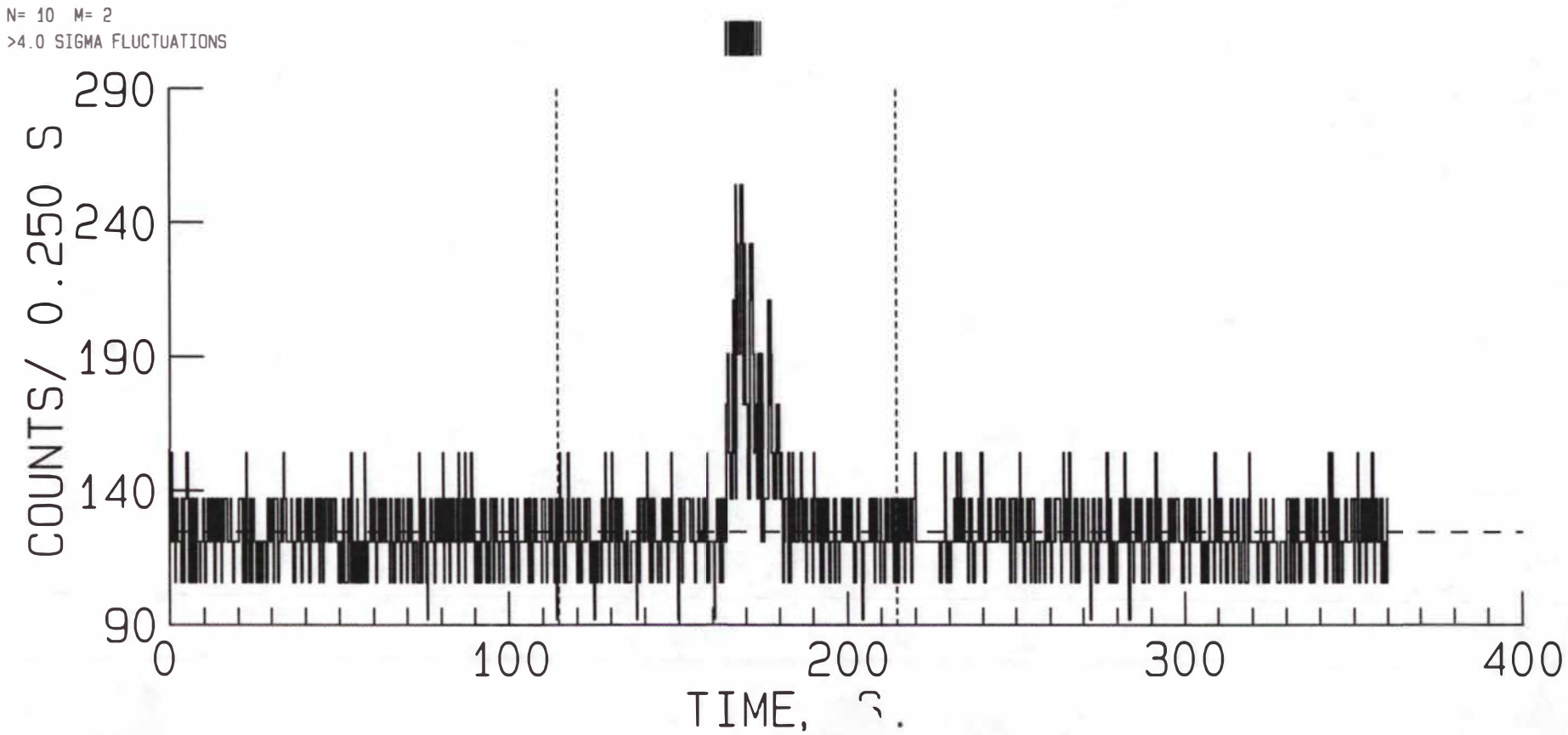

ULYSSES 27/06/97 Ttrig=77348.459
22- 147 keV
+.210
669
COUNTS/0.031 S
COUNTS/0.125 S
0 10 20 30 40 50
0 50 100 150 200
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
0 4 8 12 16 20 24 32 36 40 44 48 52 56 60 -4
23/ 4/98

ULYSSES RT

23/ 4/98

27/ 6/97 77184.110 s

22- 147 keV



From SURASAK@ssl.msfc.nasa.gov Mon Jun 30 09:55 PDT 1997
Date: Mon, 30 Jun 1997 11:54:55 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6282

TIME: TJD=0626 SECONDS=80472

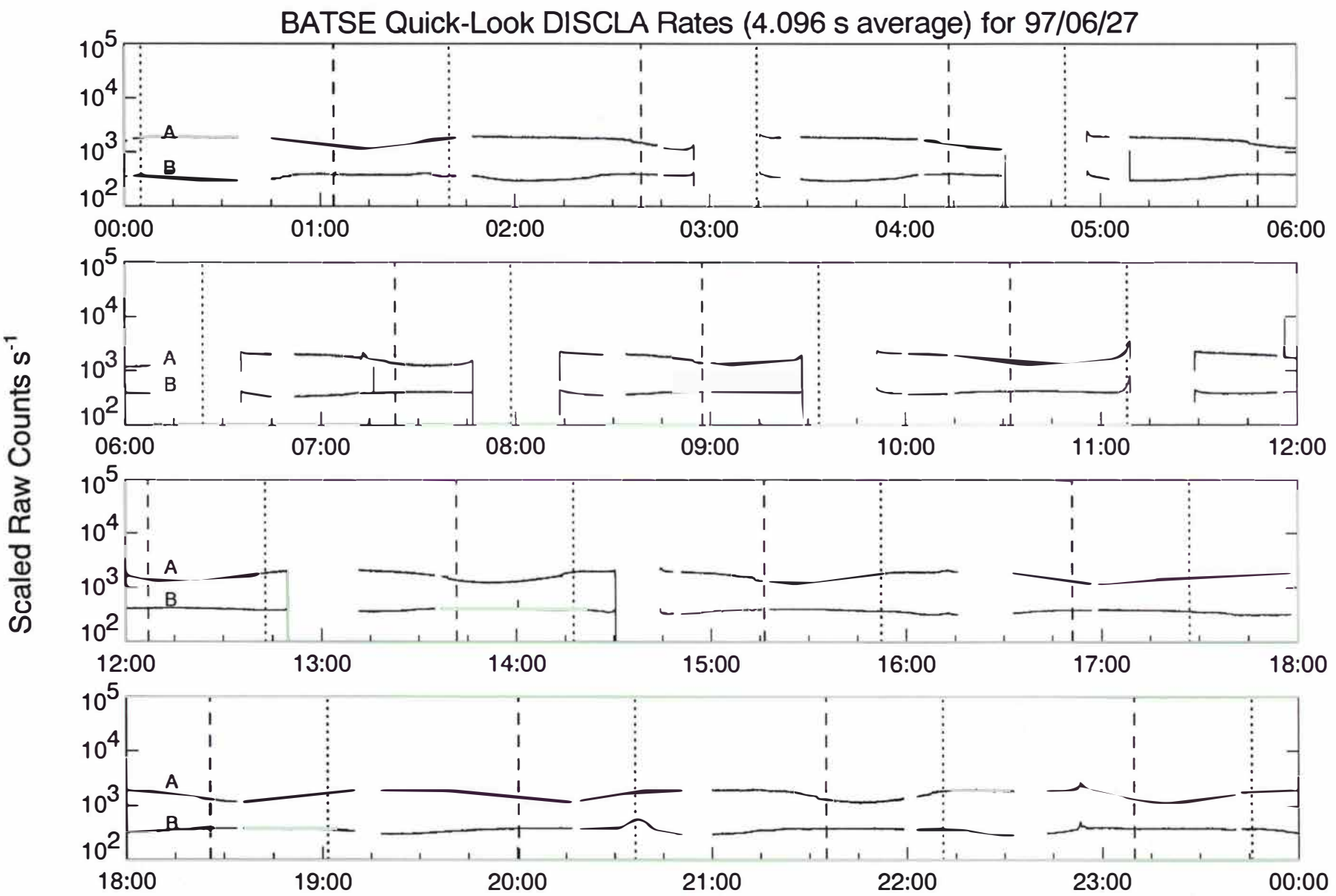
TYPE: PARTICLE SOLAR FLARE TRIGGER SIGNAL:

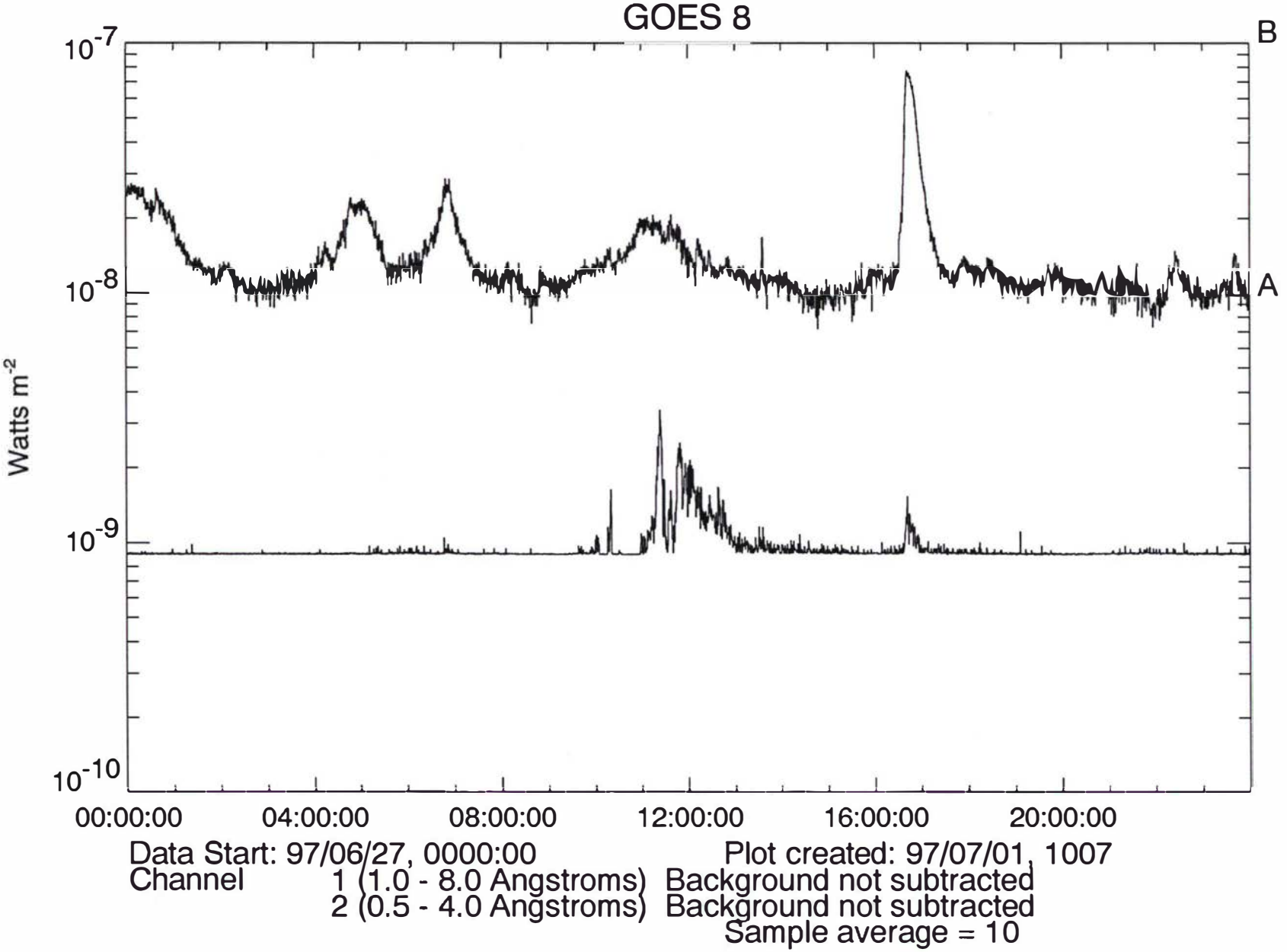
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

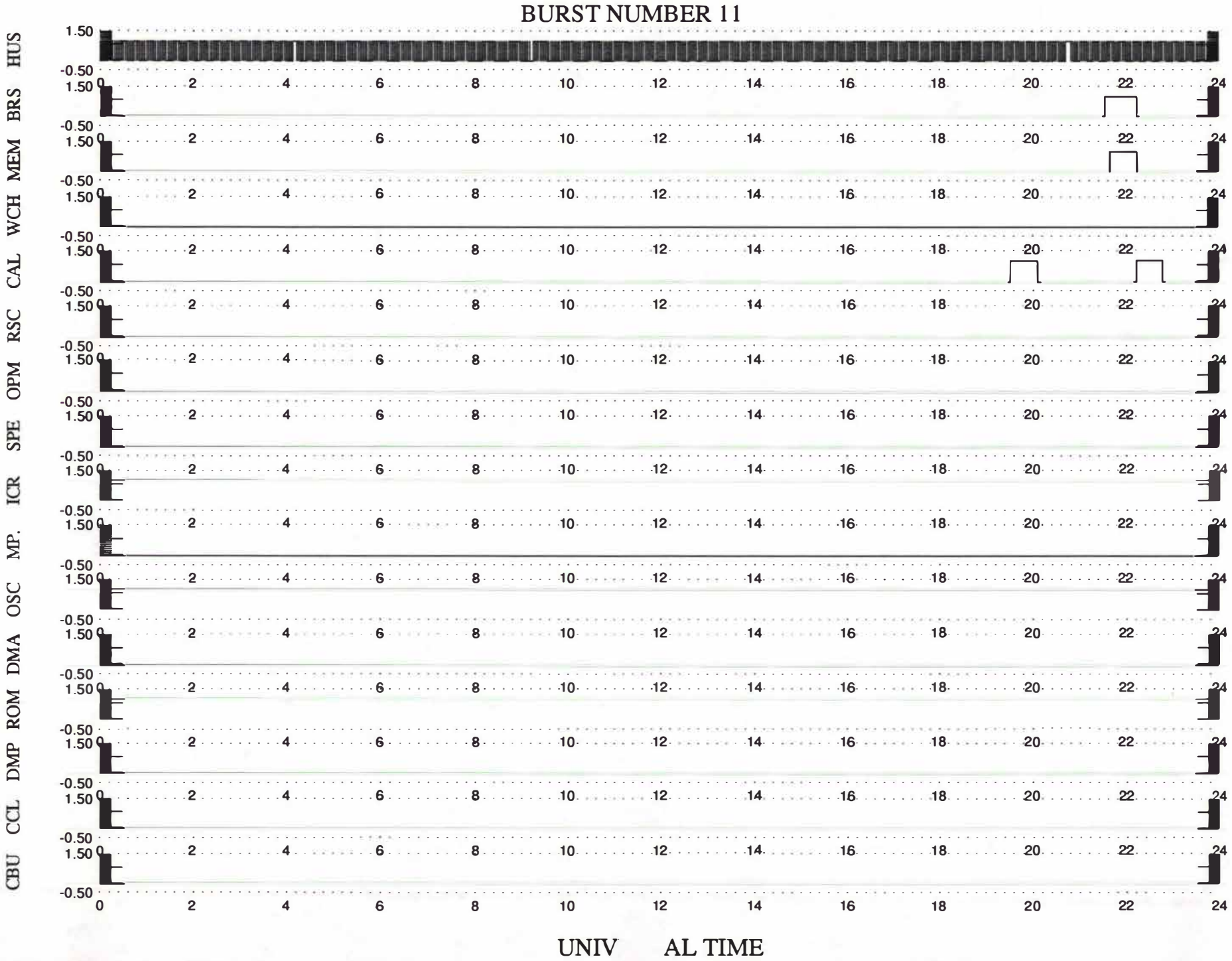
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/27
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/01, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

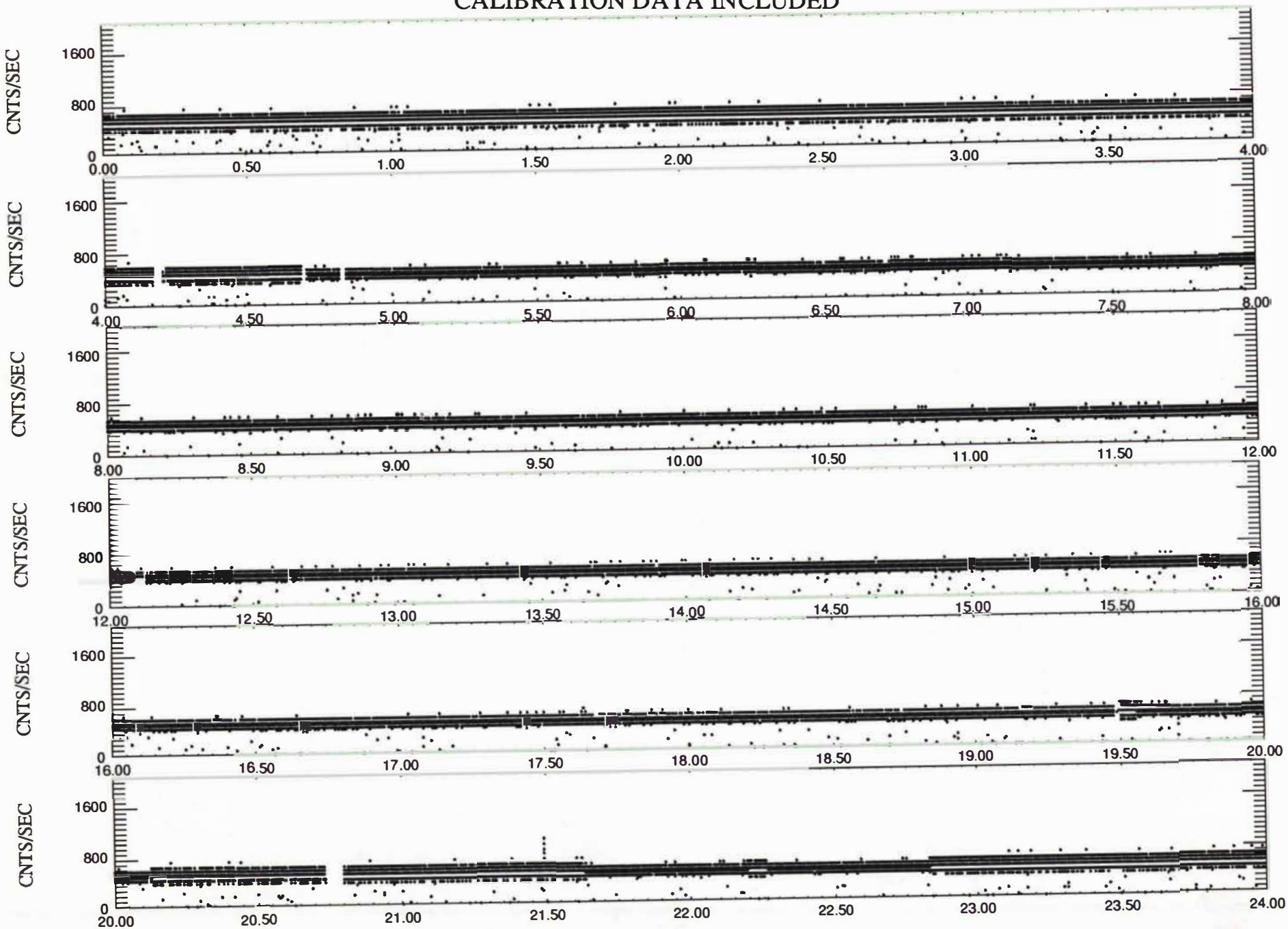

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/27, 0000:00
Plot created: 97/07/01, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 178, year 1997 to day 178, year 1997 10/13/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 178, year 1997 to day 178, year 1997 10/13/97

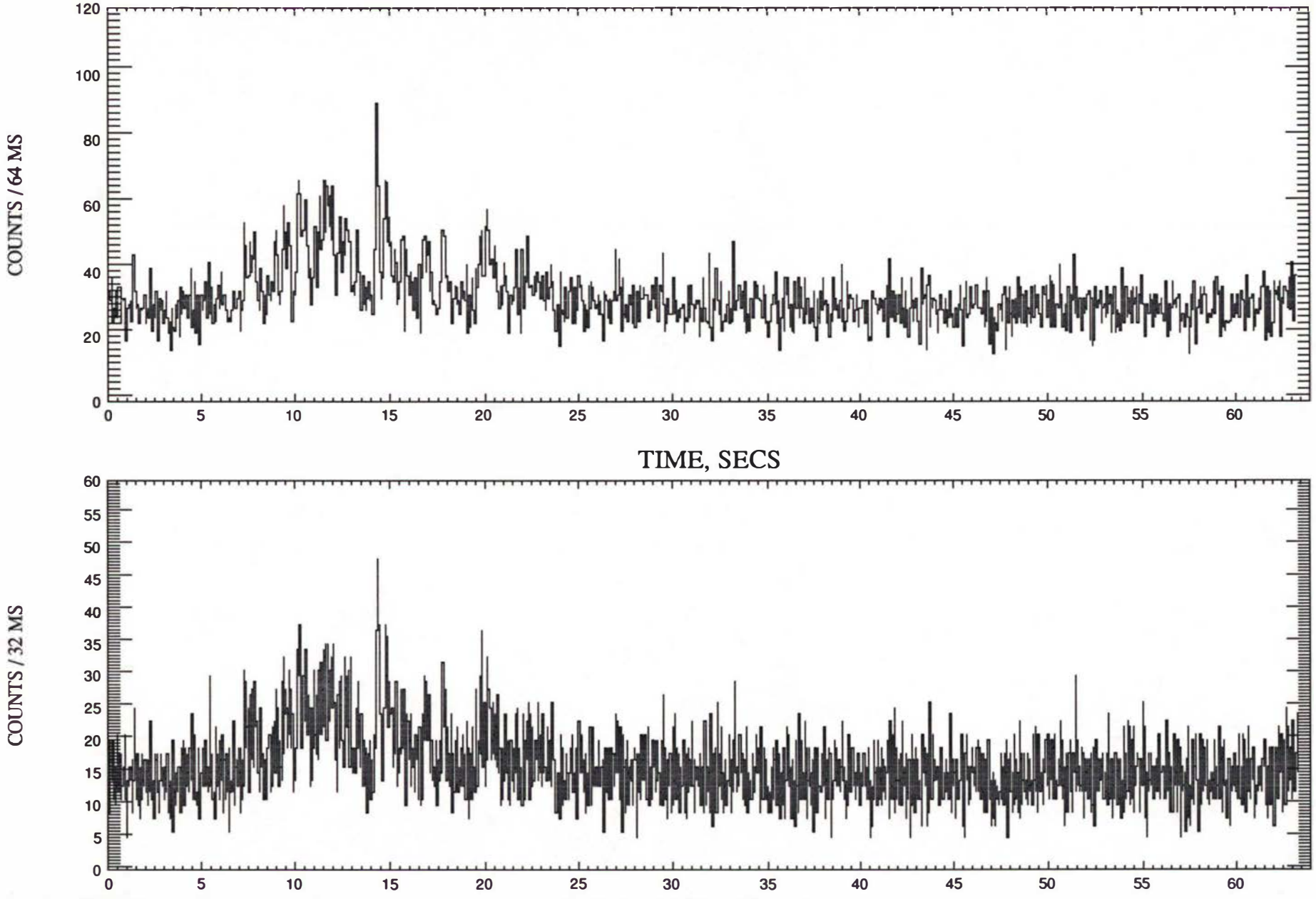
CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 178, year 1997 10/13/97

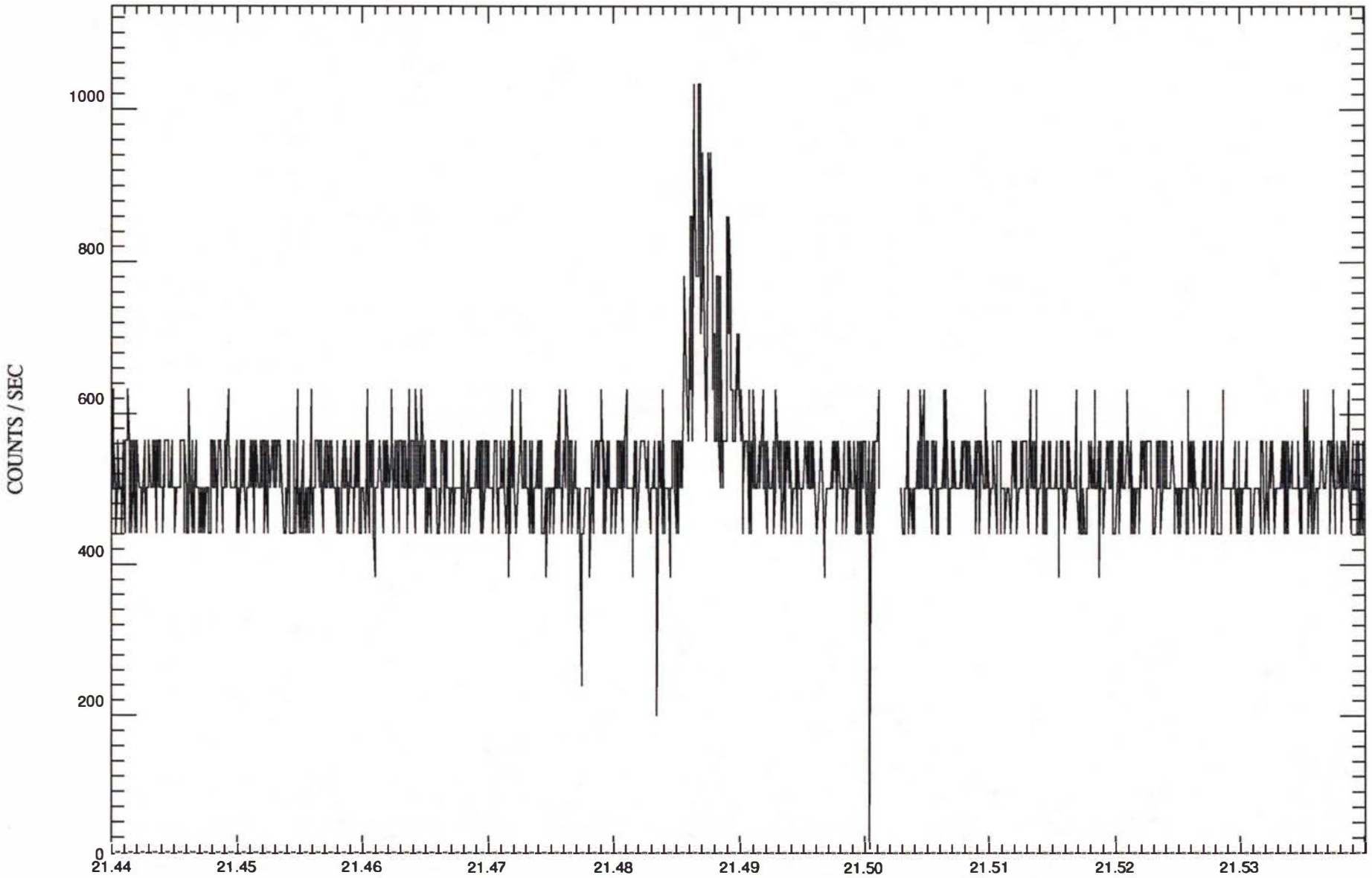
Burst Counter 11 at UT=21.485723063151 h=77348.603 s 21:29:08.603



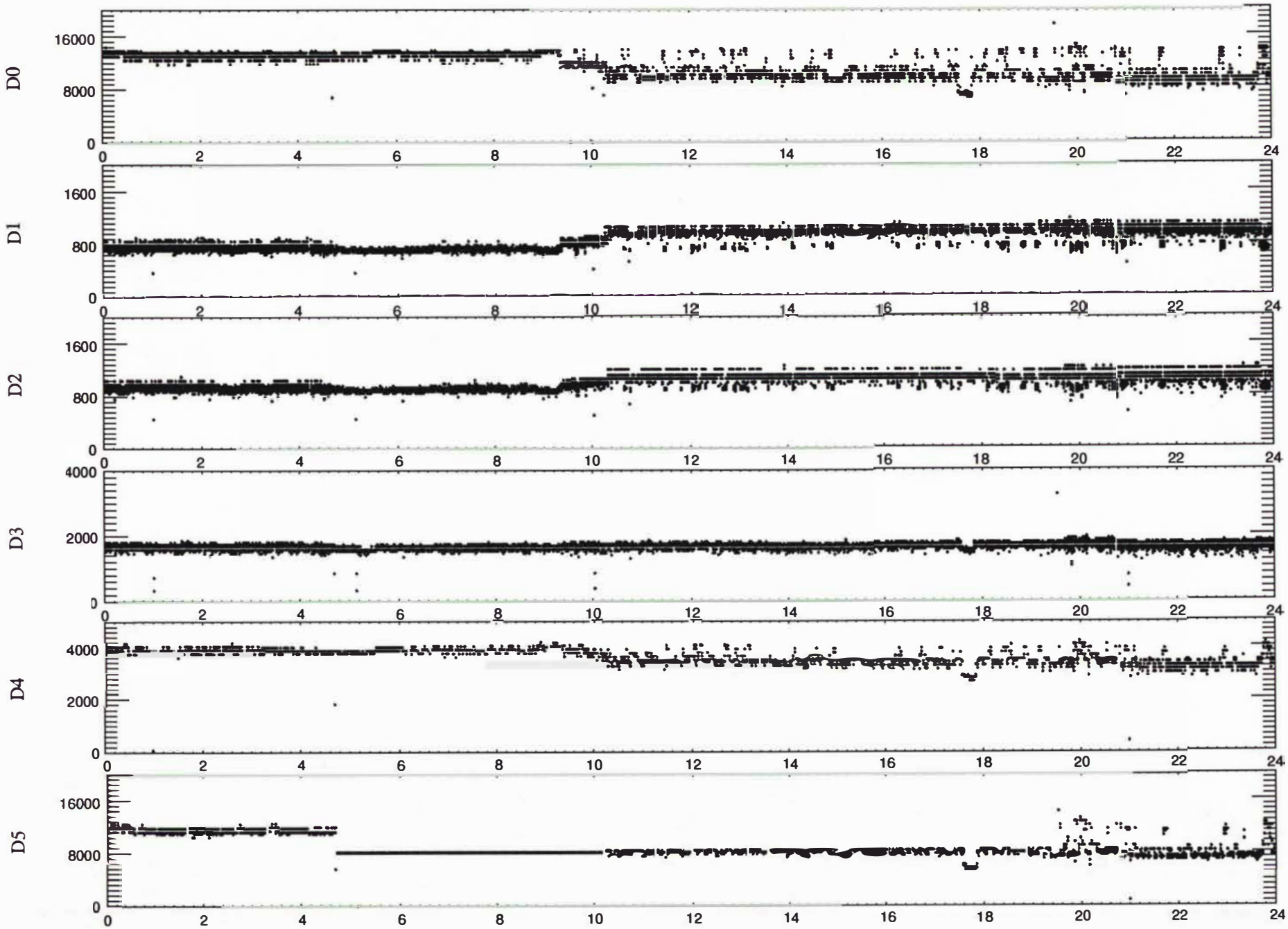
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 178, year 1997 to day 178, year 1997 10/13/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 178, year 1997 to day 178, year 1997 10/13/97



Date: Oct 05 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

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

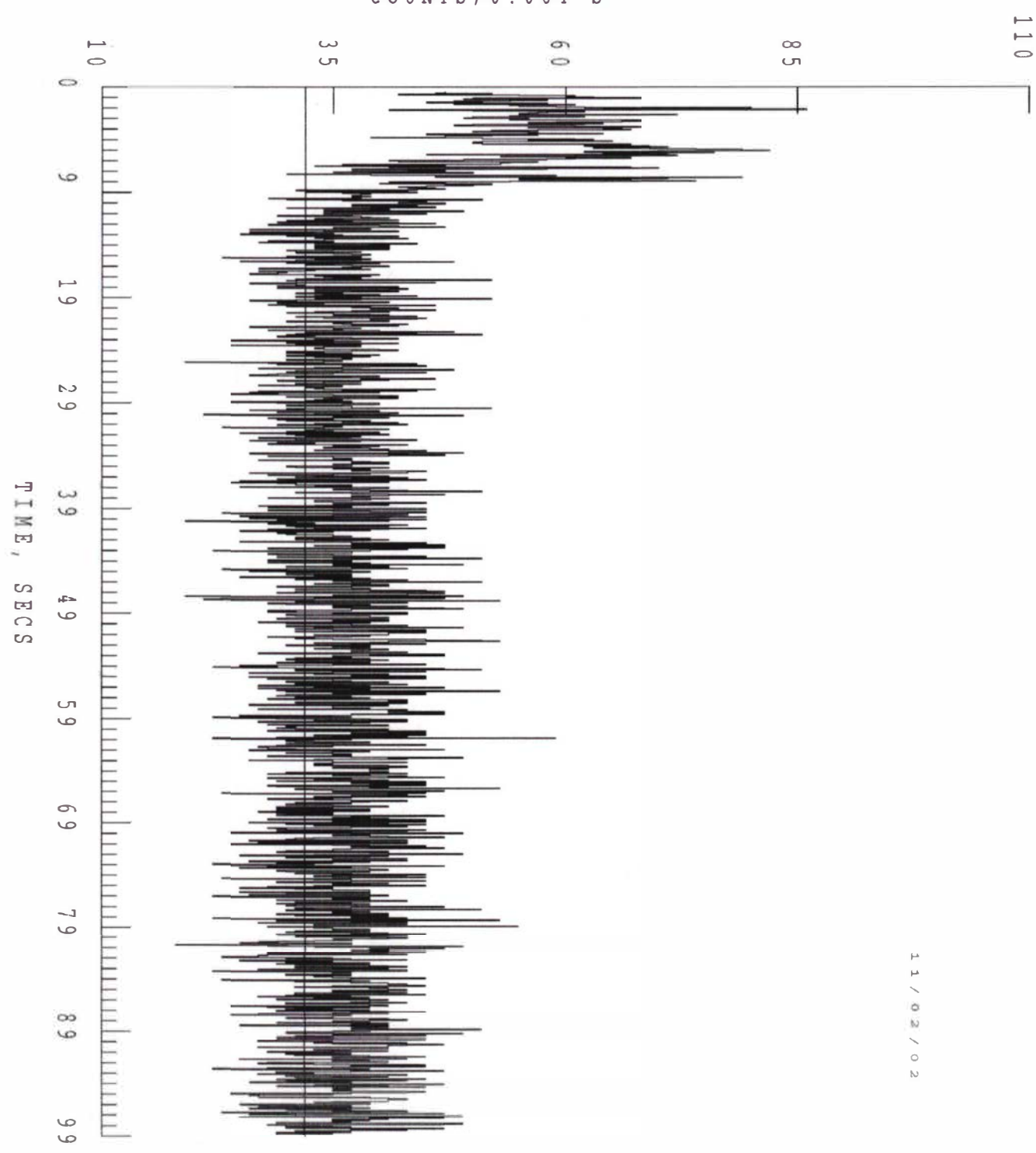
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

SAX added Dec 23 '09

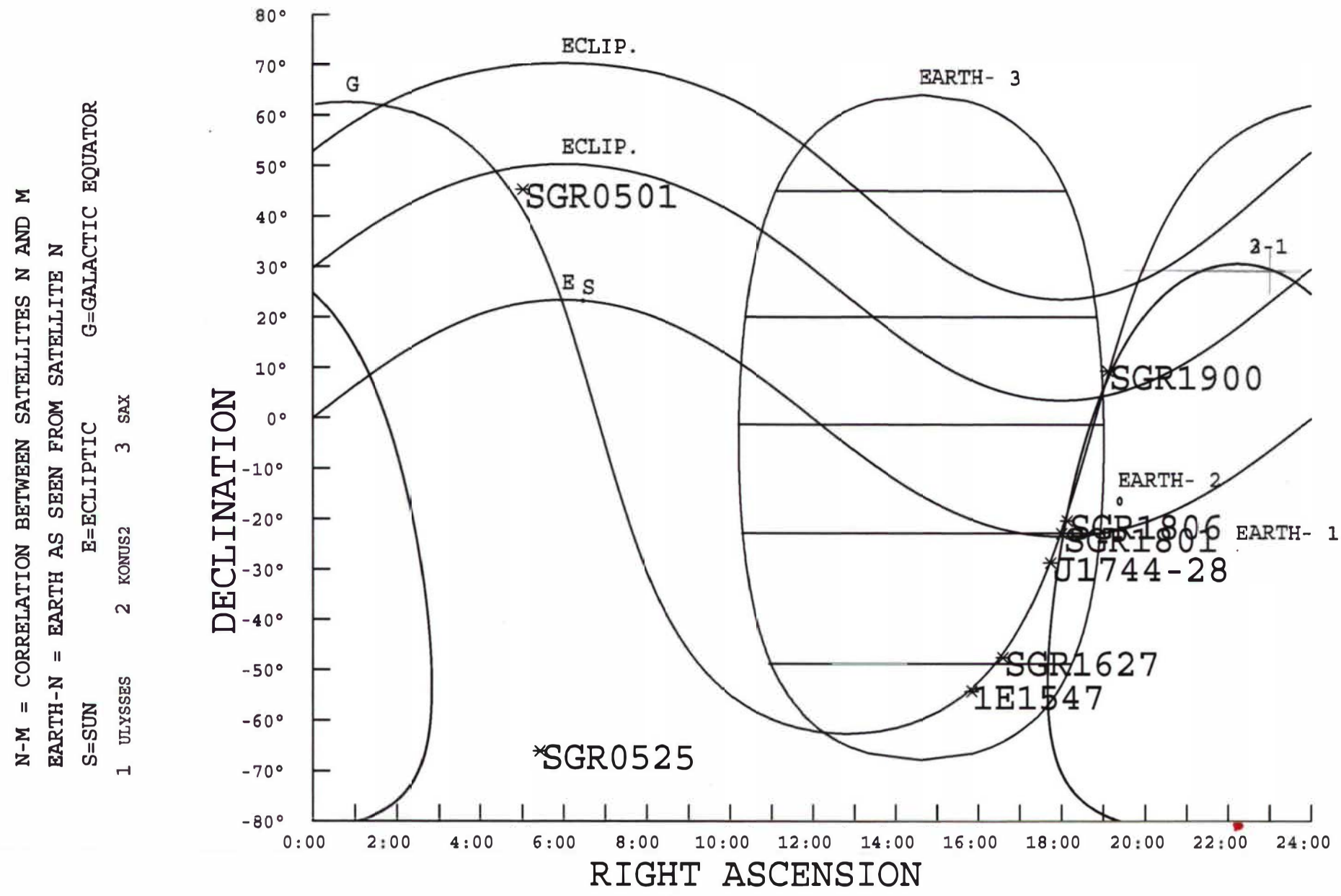
KONUS2 28/06/97 12471.338

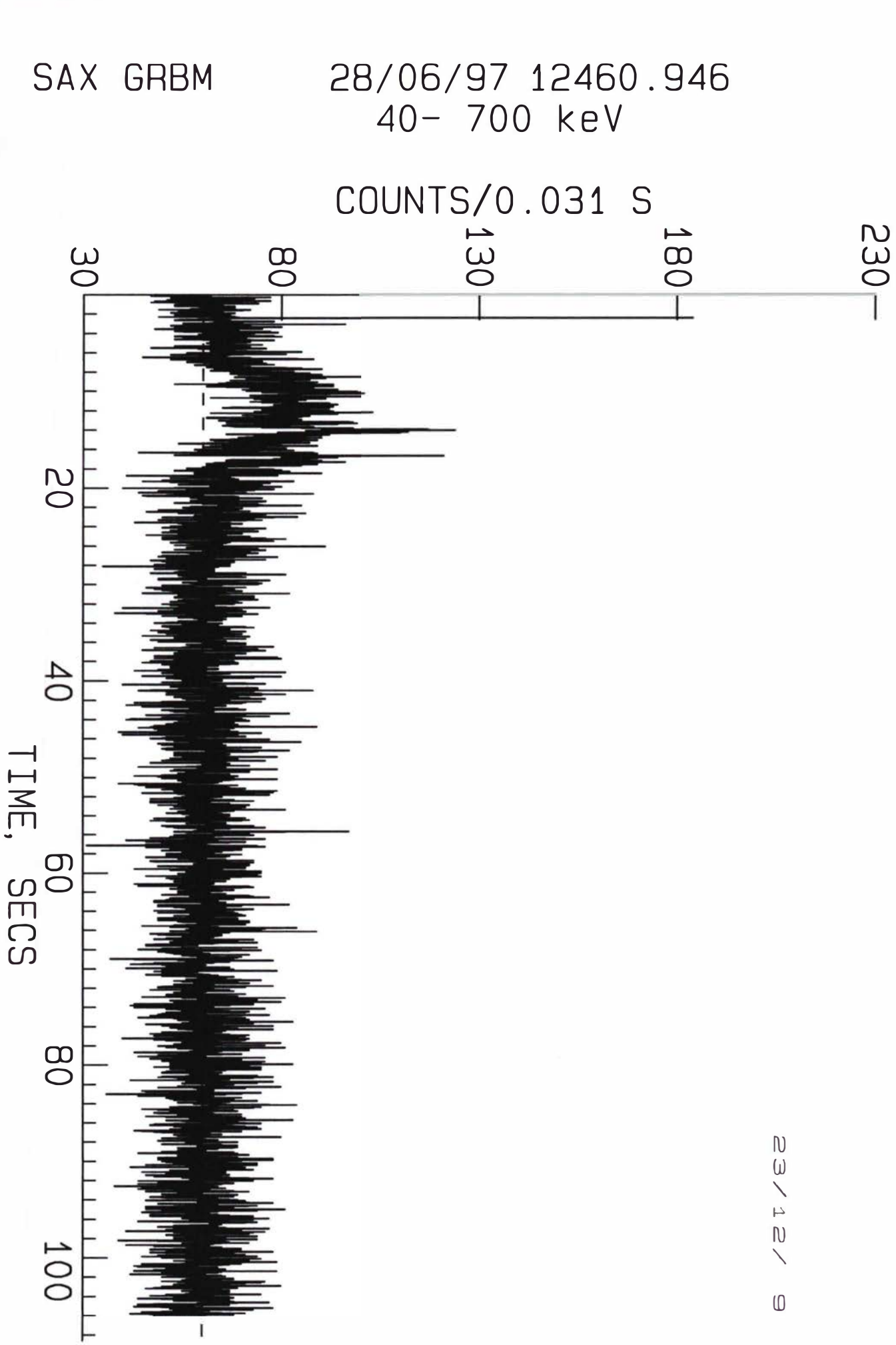
50- 200 keV



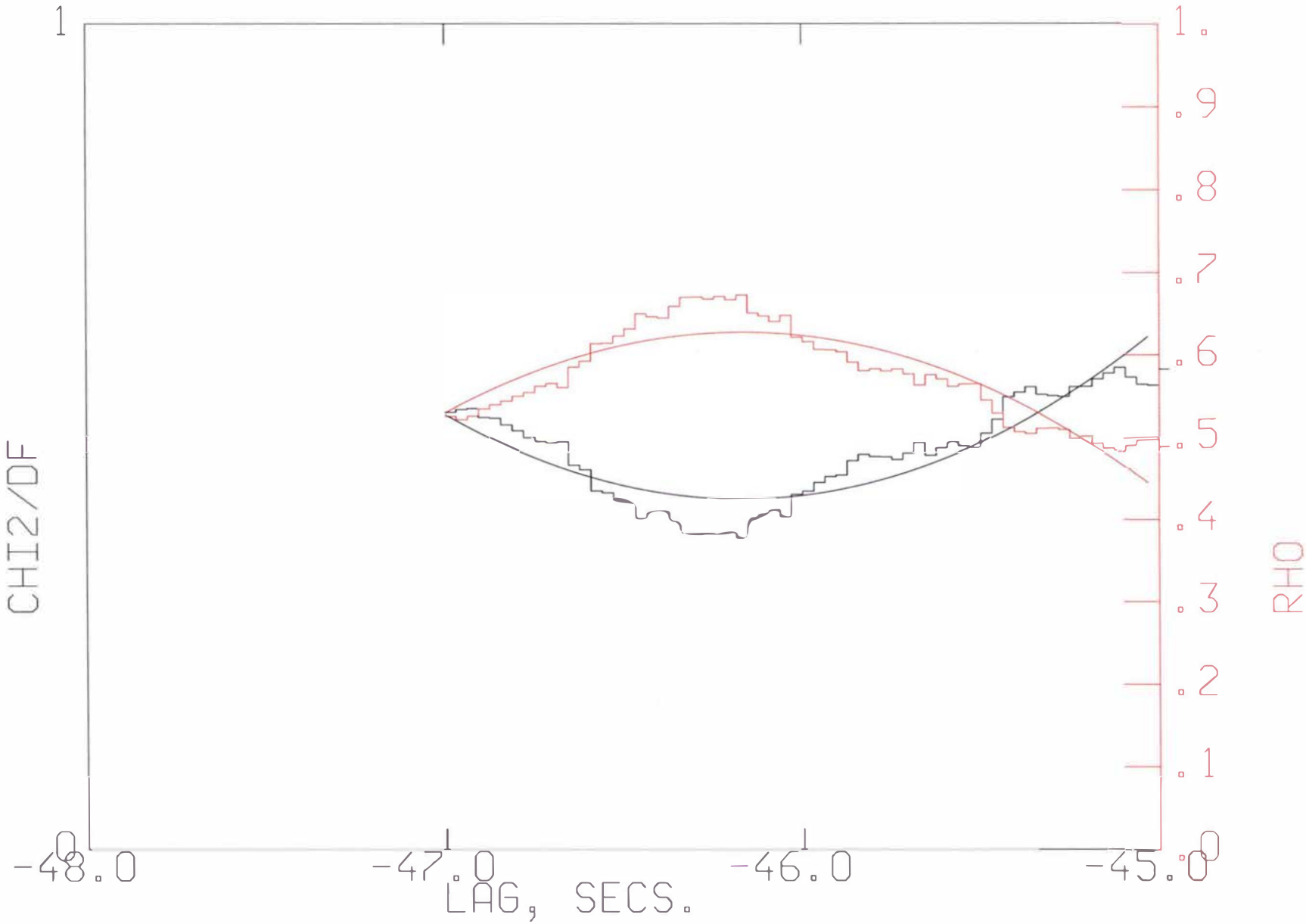
EVENT OF JUN 28, 1997 3:52

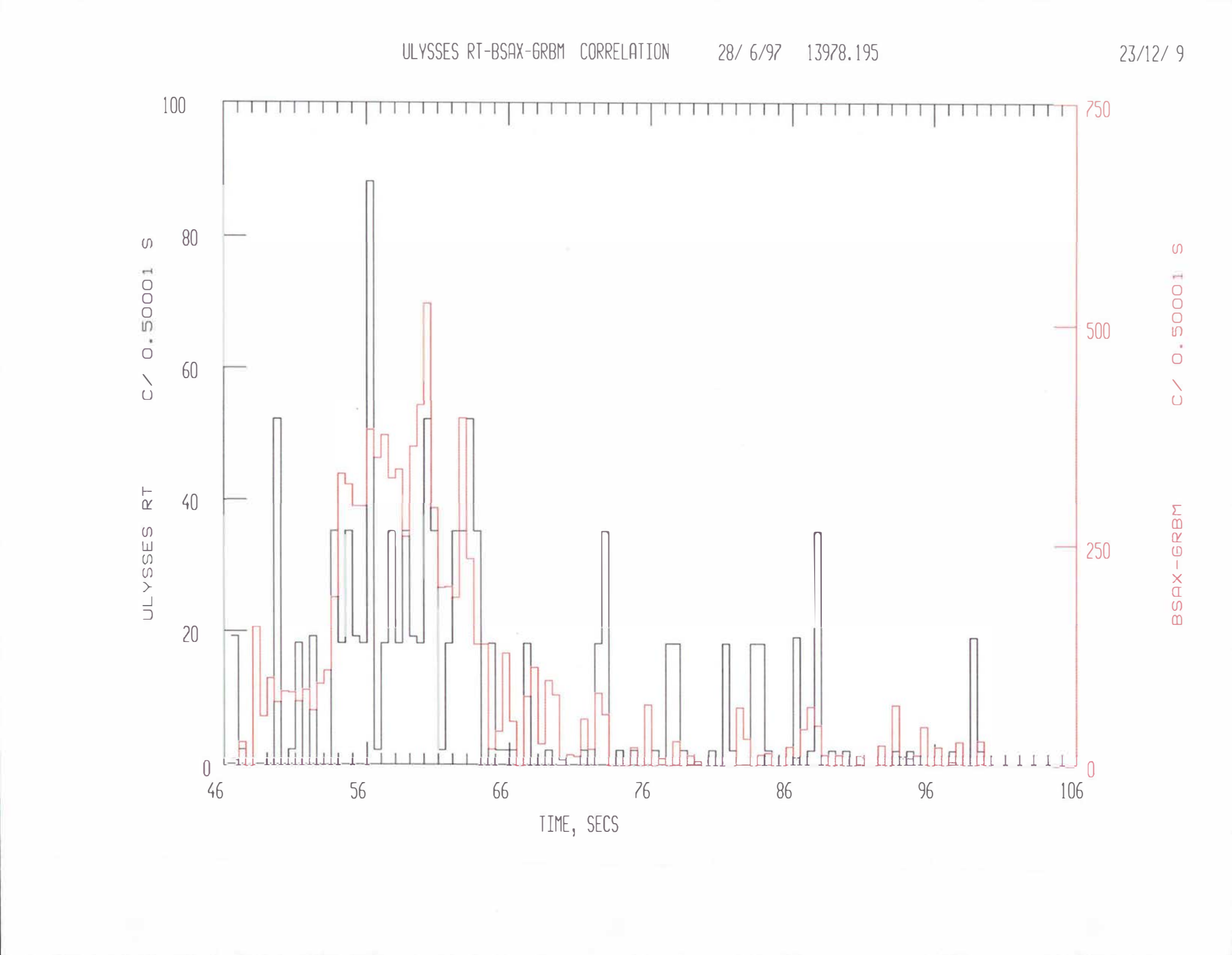
23/12/ 9



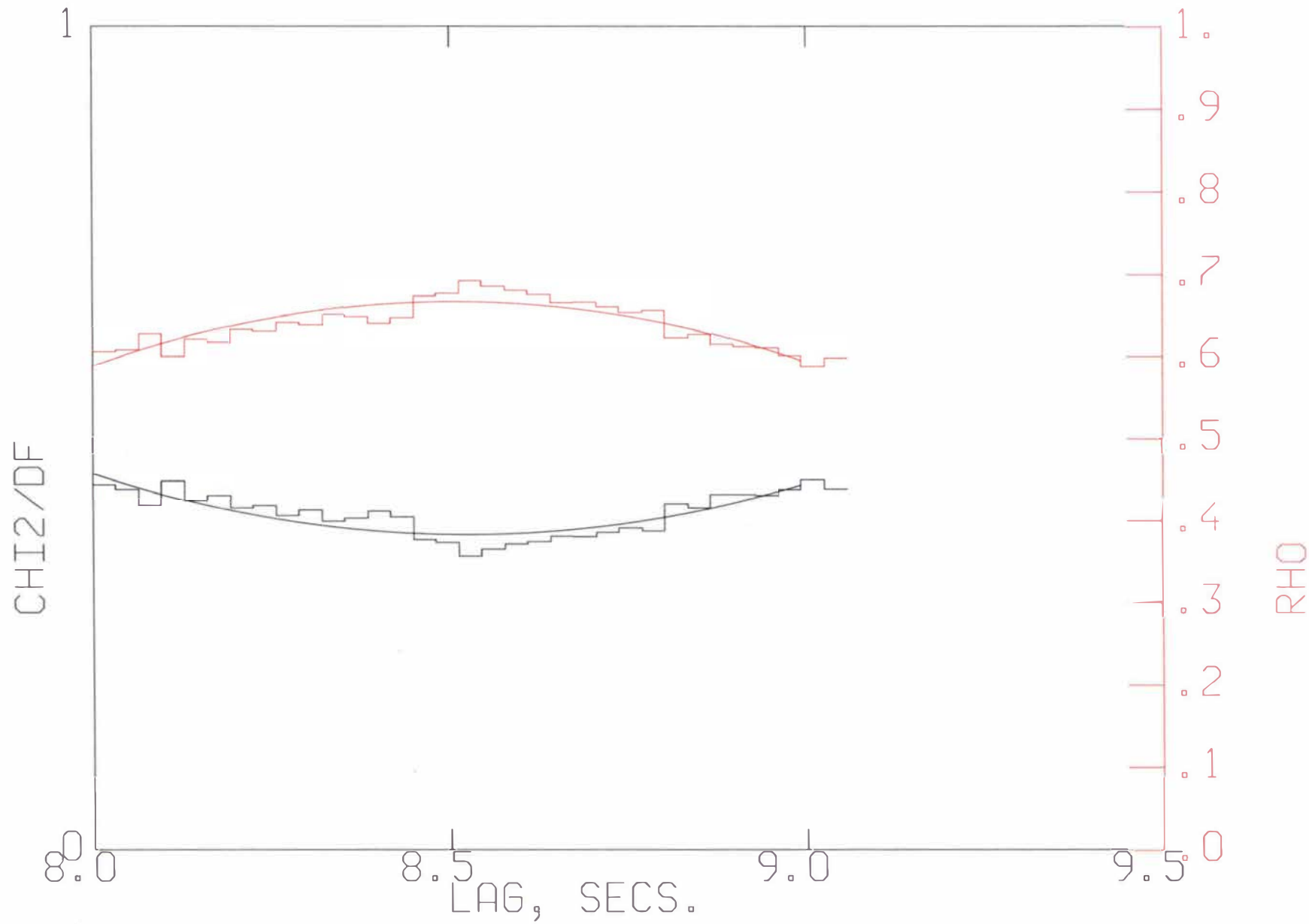

SAX GRBM
28/06/97 12460.946
40- 700 keV
COUNTS/0.031 S
30
80
130
180
230
20
40
60
80
100
TIME, SECS
23/12/ 0

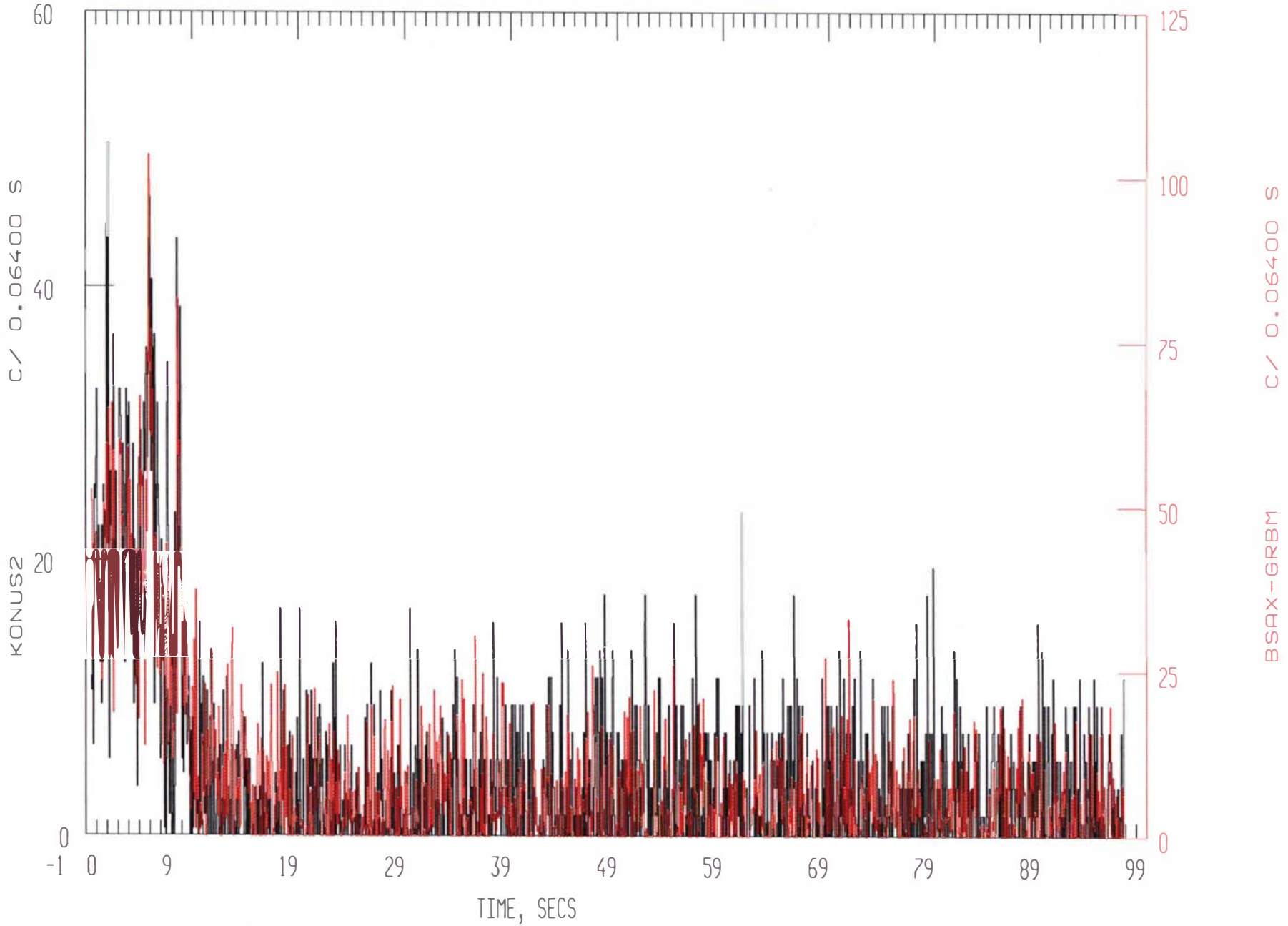
ULYSSES RT-BSAX-GRBM CORRELATION 28/ 6/97 13978.195

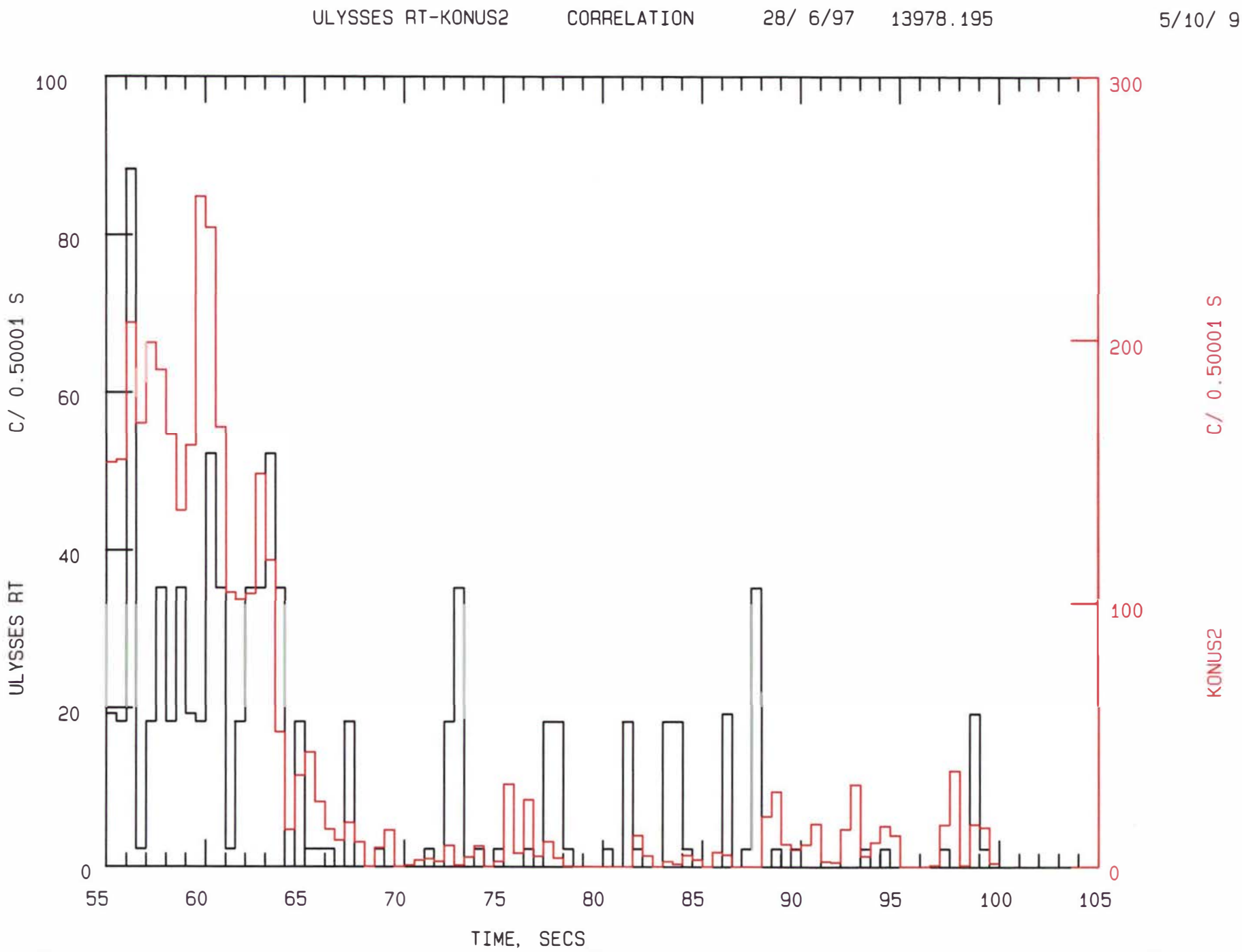



ULYSSES RT-BSAX-GRBM CORRELATION 28/ 6/97 13978.195
23/12/ 9
ULYSSES RT C/ 0.50001 S
BSAX-GRBM C/ 0.50001 S
TIME, SECS
0
20
40
60
80
100
250
500
750
46
56
66
76
86
96
106

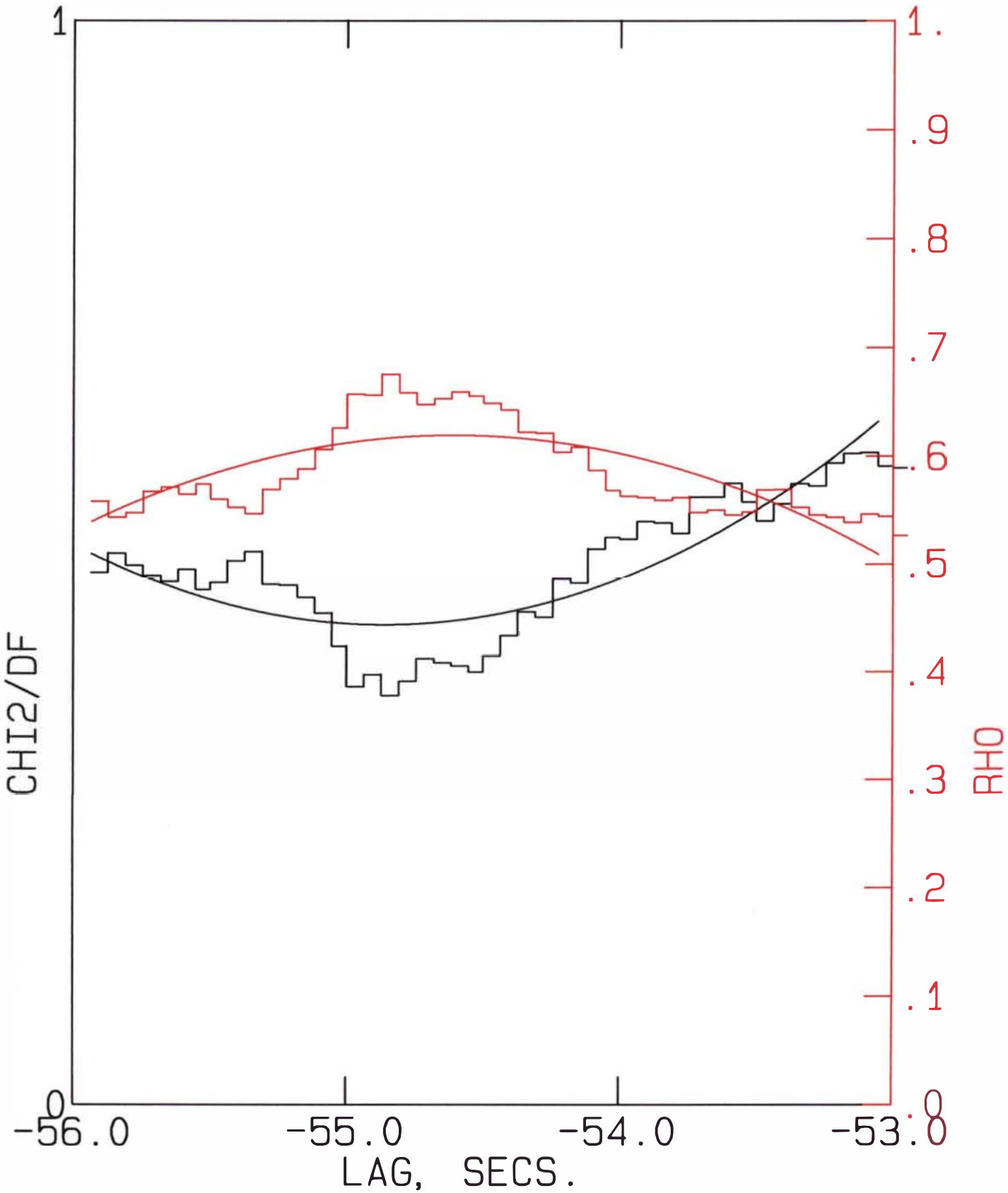
KONUS2 -BSAX-GRBM CORRELATION 28/06/97 12471.338




60
40
20
0
-1
0
9
19
29
39
49
59
69
79
89
99
125
100
75
50
25
0
C/ 0.06400 S
KONUS2
C/ 0.06400 S
BSAX-GRBM
TIME, SECS


ULYSSES RT-KONUS2 CORRELATION 28/ 6/97 13978.195 5/10/ 9
100
80
60
40
20
0
C/ 0.50001 S
ULYSSES RT
300
200
100
0
C/ 0.50001 S
KONUS2
55
60
65
70
75
80
85
90
95
100
105
TIME, SECS

ULYSSES RT-KONUS2 CORRELATION 28/ 6/97 13978.195



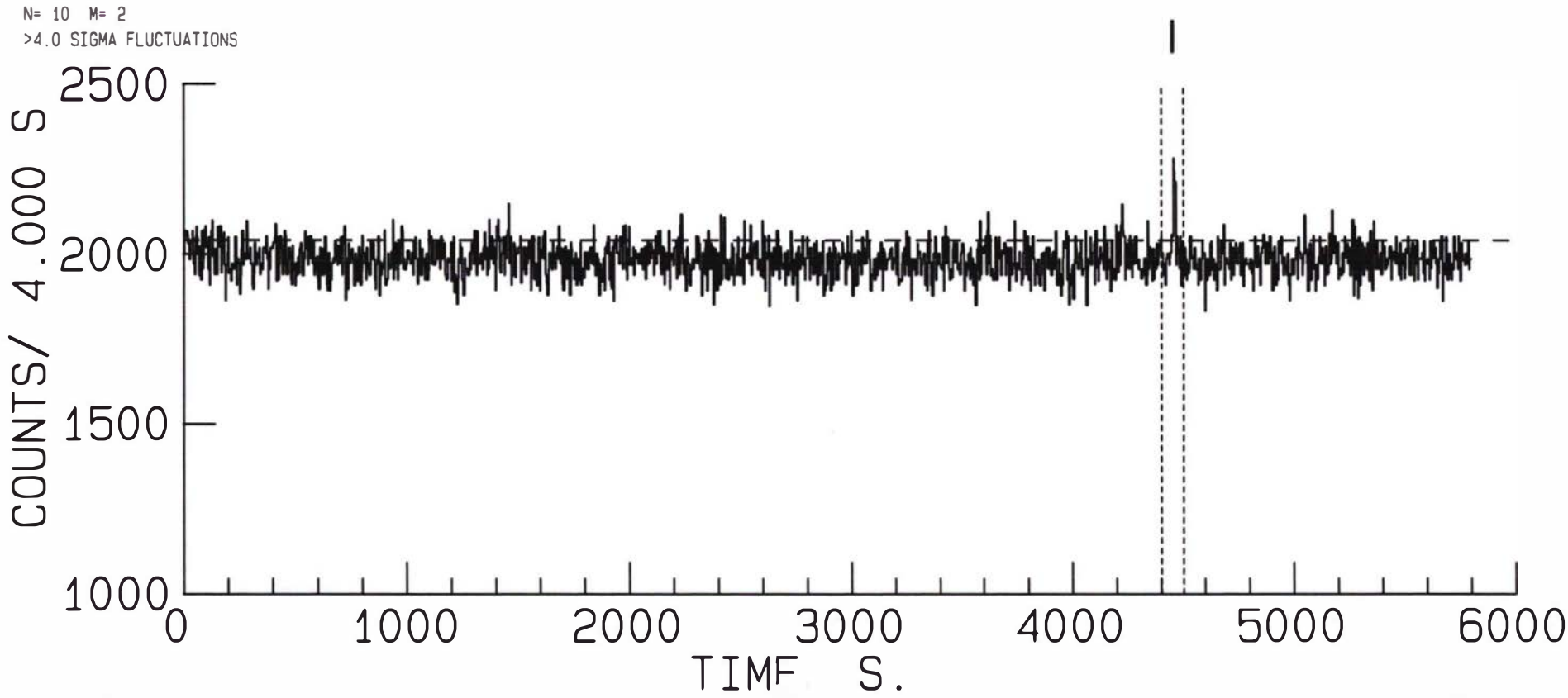
ULYSSES RT

5/10/ 9

28/ 6/97 9576.077 s

0.250 S INTERVALS REGROUPED BY 16

22- 147 keV



From HENZE@fender.msfc.nasa.gov Mon Jun 30 13:25 PDT 1997
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA13401; Mon, 30 Jun 1997 13:25:45 -0700
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 30 Jun 1997 15:25:29 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970630152529.228007b8@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6283
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6283
EVENT OF 1997 JUN 28 DAY OF YEAR=179
EVENT CROSSING TIME AT BATSE : 26572. S. OR 07:22:52.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 24.000 6.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 6/ 97 IS:
RA= 153.007 DEC= 26.168 DIST= 5.738 AU
BATSE-ULYSSES DISTANCE = 858384528. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1476.63 SECS.
CROSSING TIME AT ULYSSES IS 28049. S. OR 07:47:28 +/- 498.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 6/ 97 IS:
RA= 183.685 DEC= -1.367 DIST= 1.233 AU
MARS-BATSE DISTANCE = 184392256. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 20.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 575.02 SECS.
CROSSING TIME AT MARS IS 27147. S. OR 07:32:27 +/- 46.64 SECONDS

BATSE BURST TRIGGER

NO.: 6283

TIME: TJD=0627 SECONDS=26572

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=069.3 AZIMUTH=092.1 ERROR=002.8 DEGREES

COMMENTS:
SINGLE PULSE, DUR. ~18 S. NOT VISIBLE ABOVE 300 KEV.
HV TURNOFF (SAA) AT ~T+212 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6283	970628	10627	26572	3500	024	+06	18

Helio corr removed 15/2/00

Date: Oct 17 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- [ ] 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? N/A
- [x] Does T_0 in data file agree with T_0 in plot?
- [x] BATSE ephemeris for T_0?
- [x] Error circle position and radius from public catalog used?
- [ ] If MER data were used, is a 30 ms systematic error included? N/A

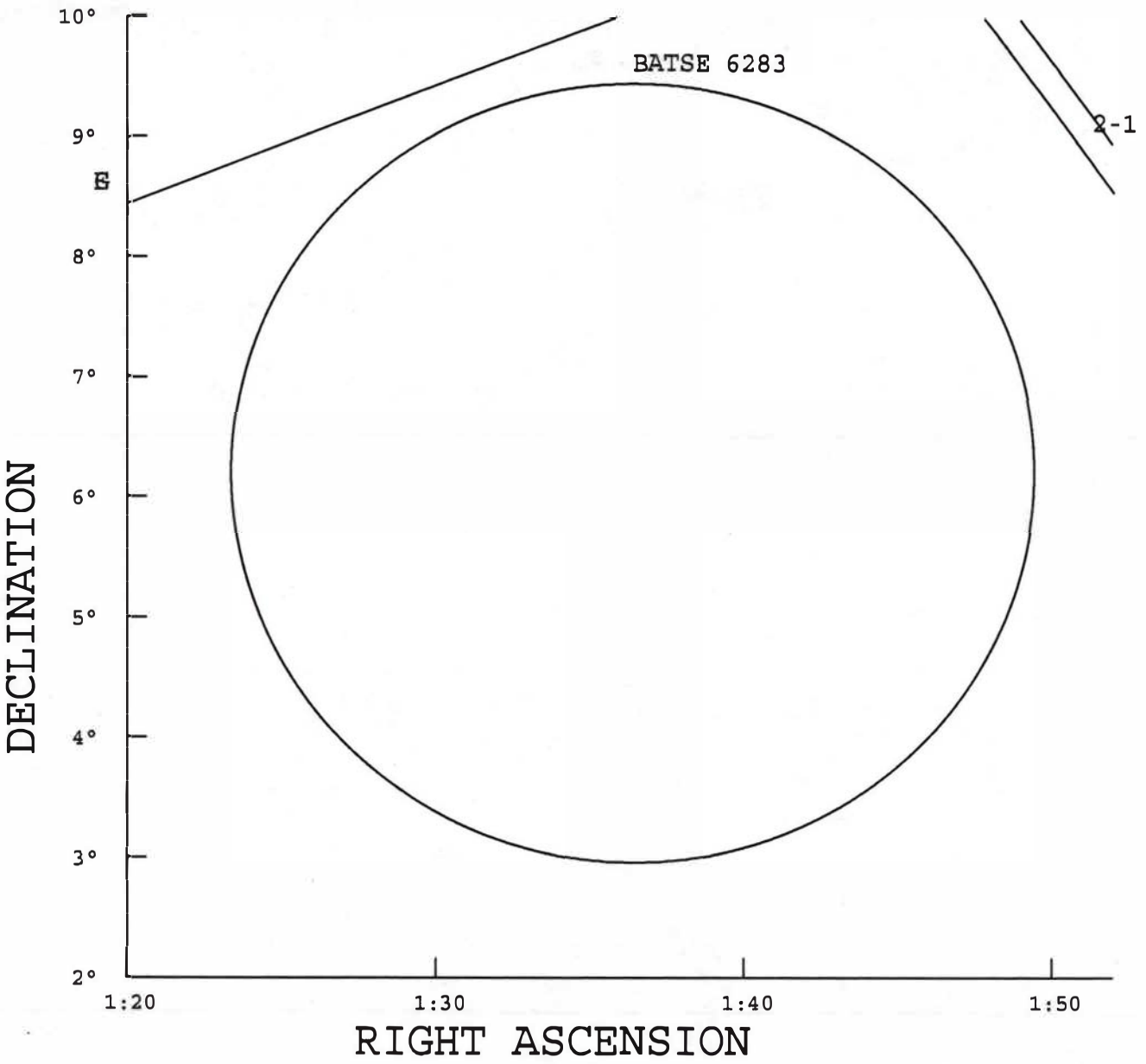
3. PVO Data

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

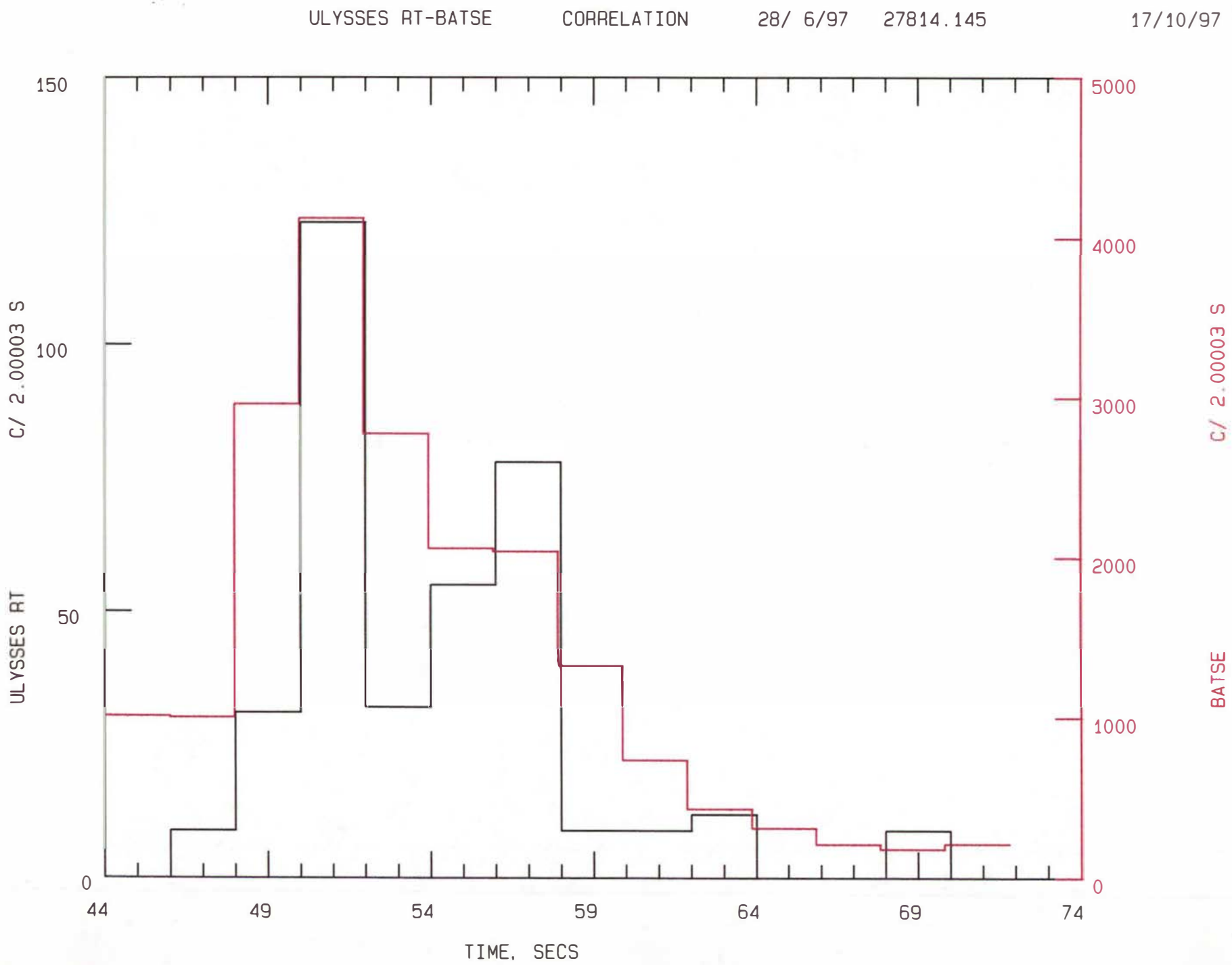
- [x] ACCESS database updated? Not yet

EVENT OF JUN 28, 1997 7:43

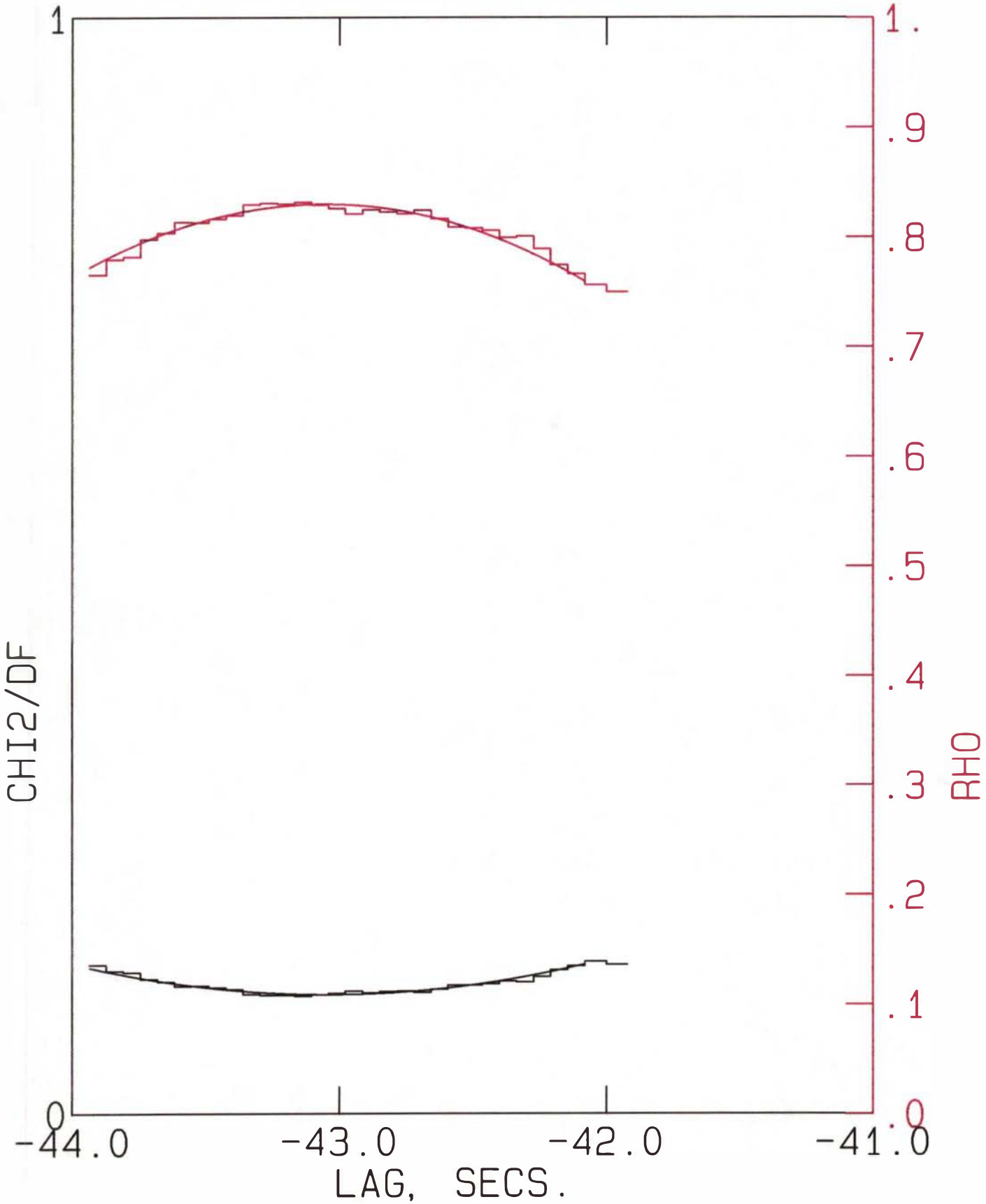
18/ 2/ 0



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


ULYSSES RT-BATSE CORRELATION 28/ 6/97 27814.145 17/10/97
150
100
50
0
C/ 2.00003 S
ULYSSES RT
5000
4000
3000
2000
1000
0
C/ 2.00003 S
BATSE
44
49
54
59
64
69
74
TIME, SECS

ULYSSES RT-BATSE CORRELATION 28/ 6/97 27814.145



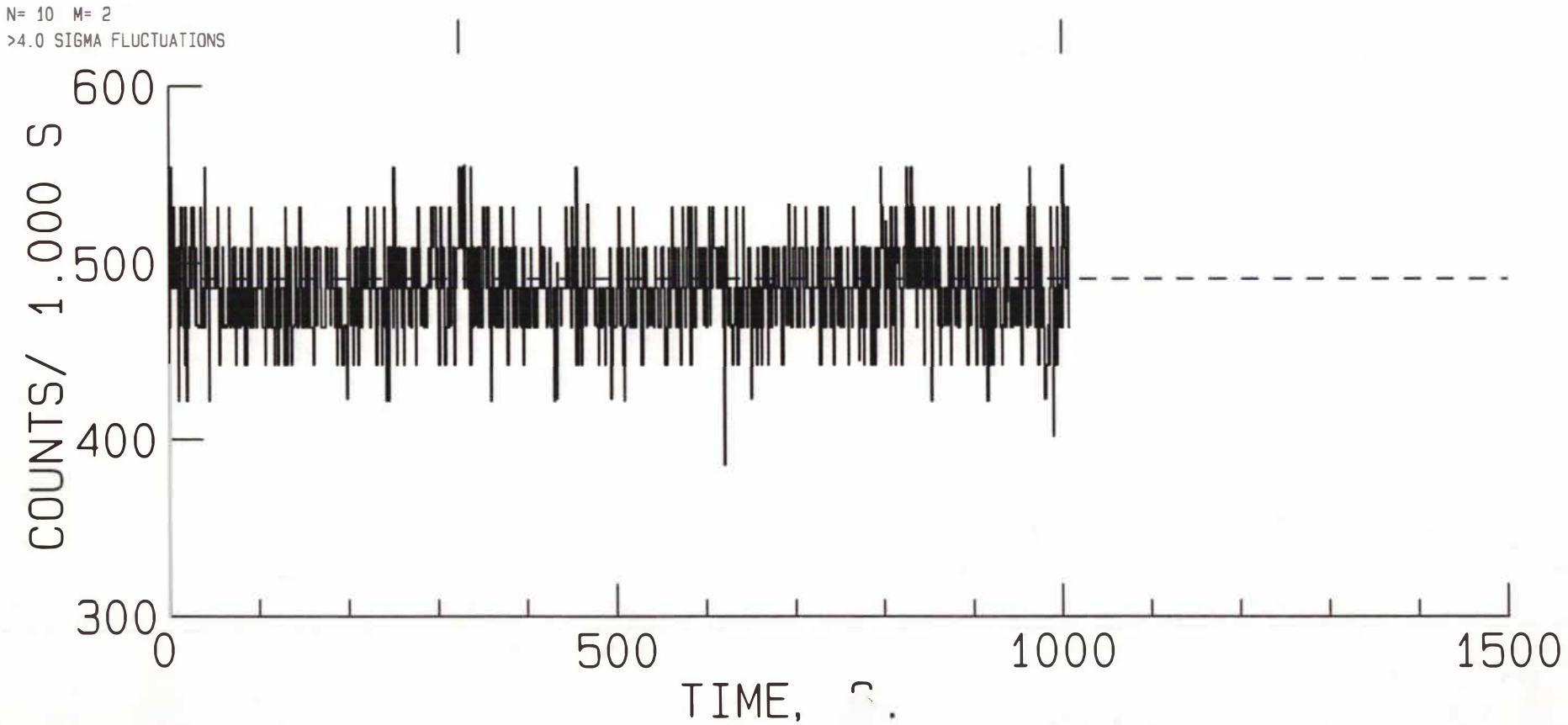
ULYSSES RT

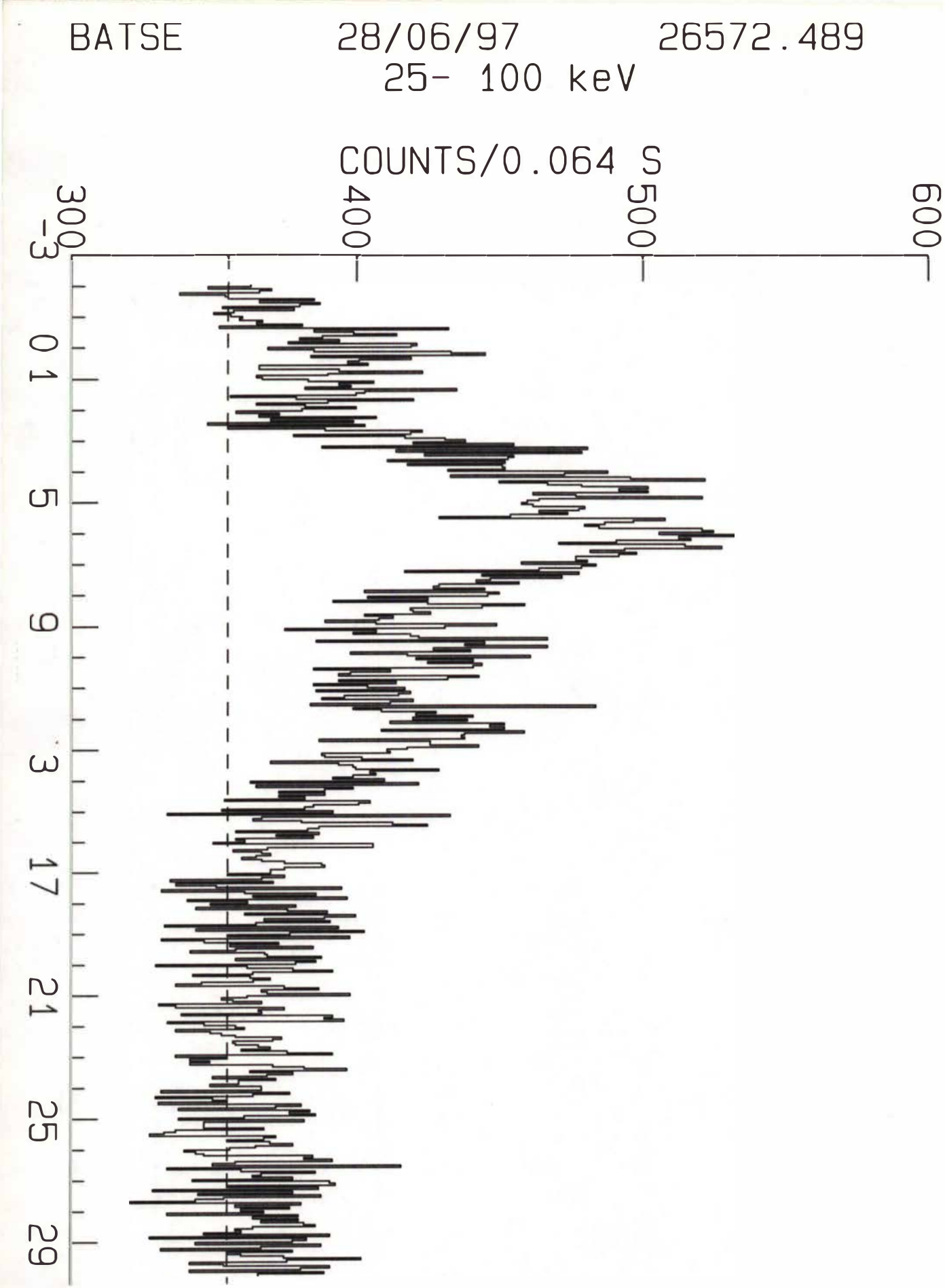
17/10/97

28/ 6/97 27540.281 s

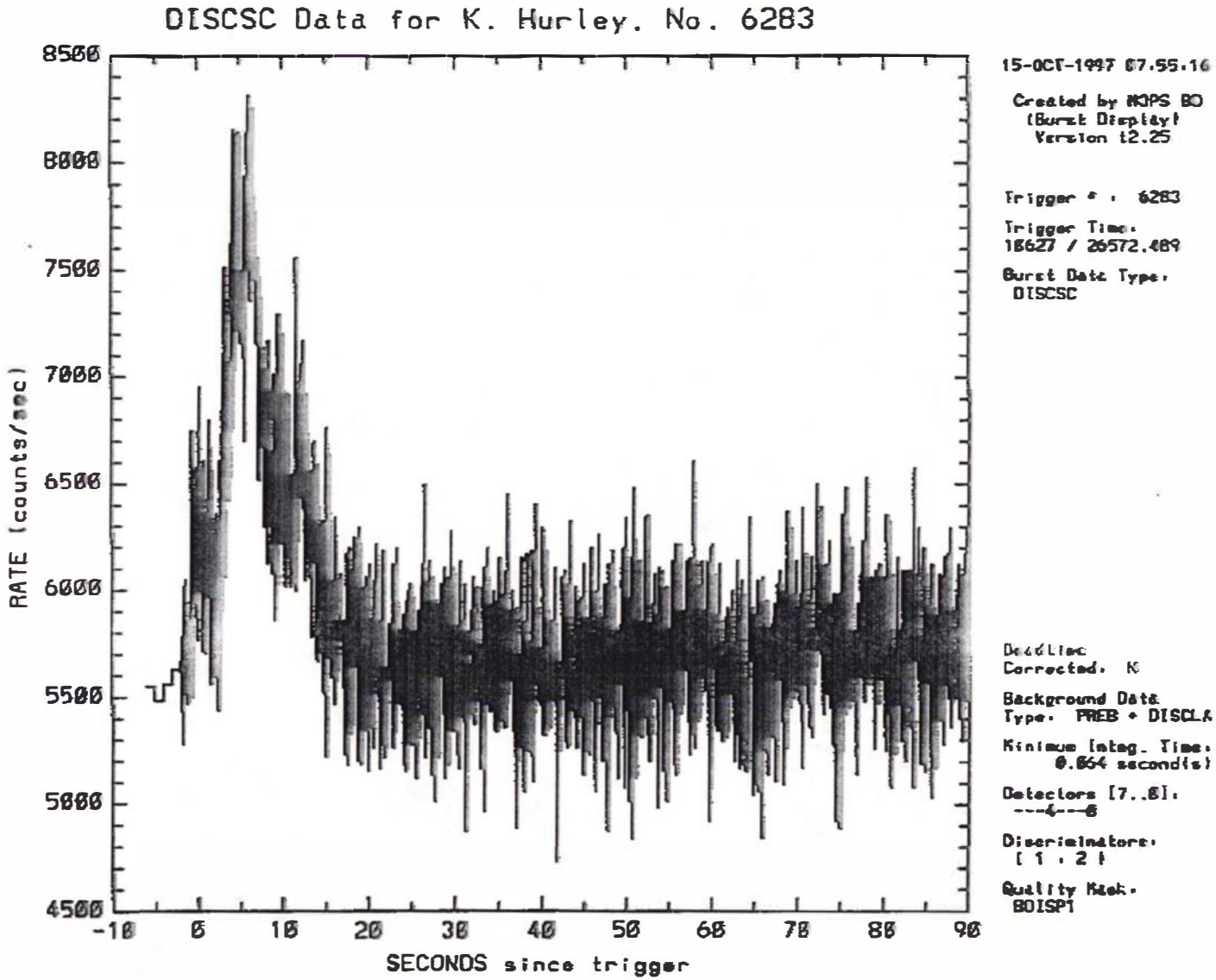
0.500 S INTERVALS REGROUPED BY 2

22- 147 keV




BATSE
28/06/97
26572.489
25- 100 keV
COUNTS/0.064 S
300
400
500
600
-3
0
1
5
9
3
17
21
25
29

17/10/97


DISCSC Data for K. Hurley. No. 6283
RATE (counts/sec)
8500
8000
7500
7000
6500
6000
5500
5000
4500
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
15-OCT-1997 07.55.16
Created by NRPS BD
(Burst Display)
Version 12.25
Trigger # : 6283
Trigger Time:
16627 / 26572.489
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
---4---0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1

From HENZE@fender.msfc.nasa.gov Mon Jun 30 13:27 PDT 1997
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA13445; Mon, 30 Jun 1997 13:27:34 -0700
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 30 Jun 1997 15:27:20 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970630152720.228007b8@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6284
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

         ****
         BATSEARCH PROGRAM
         ****

 BATSE BURST #   6284
 EVENT OF 1997 JUN 28 DAY OF YEAR=179
 EVENT CROSSING TIME AT BATSE   : 50716. S. OR 14:05:16.0
 COORDINATES ARE   0.000   0.000   6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 298.000 -38.000
 BATSE PEAK COUNTING RATE: 3600   C/S

 EVENT CROSSING TIME AT ULYSSES   WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 28/ 6/ 97 IS:
 RA= 153.035 DEC=   26.135 DIST=   5.742 AU
 BATSE-ULYSSES DISTANCE = 858977107. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 31.74 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2436.73 SECS.
 CROSSING TIME AT ULYSSES   IS 53153. S. OR   14:45:52 +/- 348.70 SECONDS

 EVENT CROSSING TIME AT MARS   WILL BE FOUND
 POSITION OF MARS ON 28/ 6/ 97 IS:
 RA= 183.685 DEC=   -1.367 DIST=   1.233 AU
 MARS-BATSE DISTANCE = 184392256. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 71.96 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 190.48 SECS.
 CROSSING TIME AT MARS   IS 50906. S. OR   14:08:26 +/- 104.43 SECONDS

                BATSE BURST TRIGGER
NO.: 6284

TIME: TJD=0627 SECONDS=50716

TYPE: BURST   SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.4 AZIMUTH=172.7 ERROR=010.8 DEGREES

COMMENTS:
SINGLE SPIKE, DUR. ~0.4 S. WEAKLY VISIBLE ABOVE 300 KEV.
HV TURNOFF (SAA) AT ~T+288 S.

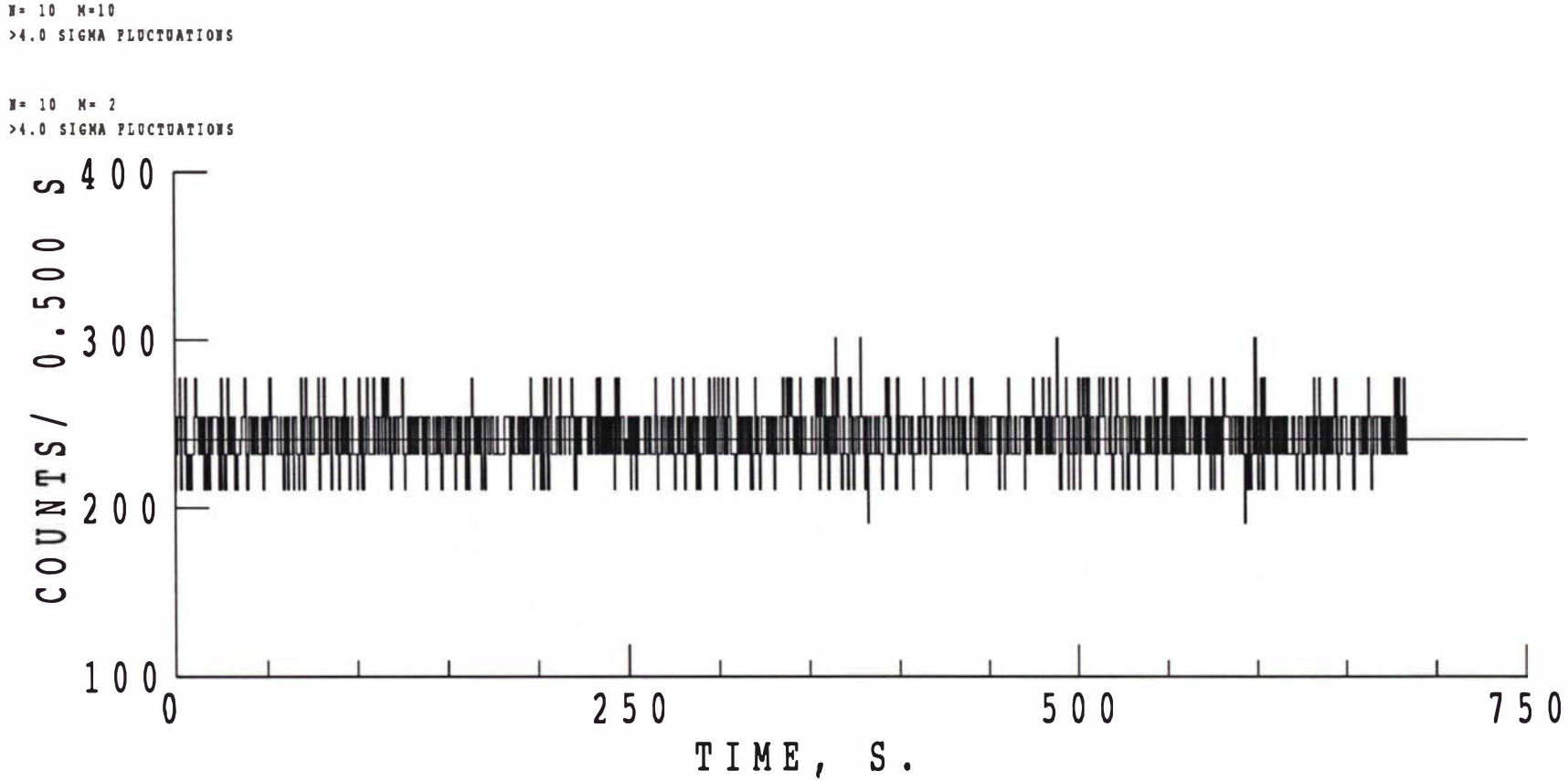
 BATSE #   Date   TJD   SoD   Max ct/s   RA   Dec Dur (s)
   6284   970628   10627   50716   3600   298   -38   .4

BATSE BURST# 6284

ULYSSES RT 13/10/97

28/ 6/97 52812.078 s

0- 0 keV



From HENZE@fender.msfc.nasa.gov Mon Jun 30 13:29 PDT 1997
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id NAA13486; Mon, 30 Jun 1997 13:29:21 -0700
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 30 Jun 1997 15:28:41 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970630152841.228007b8@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6285
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6285
EVENT OF 1997 JUN 28 DAY OF YEAR=179
EVENT CROSSING TIME AT BATSE : 74795. S. OR 20:46:35.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 46.000 -24.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 6/ 97 IS:
RA= 153.063 DEC= 26.102 DIST= 5.746 AU
BATSE-ULYSSES DISTANCE = 859563836. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1203.26 SECS.
CROSSING TIME AT ULYSSES IS 75998. S. OR 21:06:38 +/- 520.11 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 6/ 97 IS:
RA= 183.685 DEC= -1.367 DIST= 1.233 AU
MARS-BATSE DISTANCE = 184392256. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 48.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 409.40 SECS.
CROSSING TIME AT MARS IS 75204. S. OR 20:53:24 +/- 85.91 SECONDS

BATSE BURST TRIGGER

NO.: 6285

TIME: TJD=0627 SECONDS=74795

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=039.7 AZIMUTH=120.3 ERROR=002.6 DEGREES

COMMENTS:
SINGLE MAIN PULSE, DUR. ~25 S. PRECURSOR AT ~T-28 S, DUR. ~8 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6285	970628	10627	74795	3000	046	-24	50

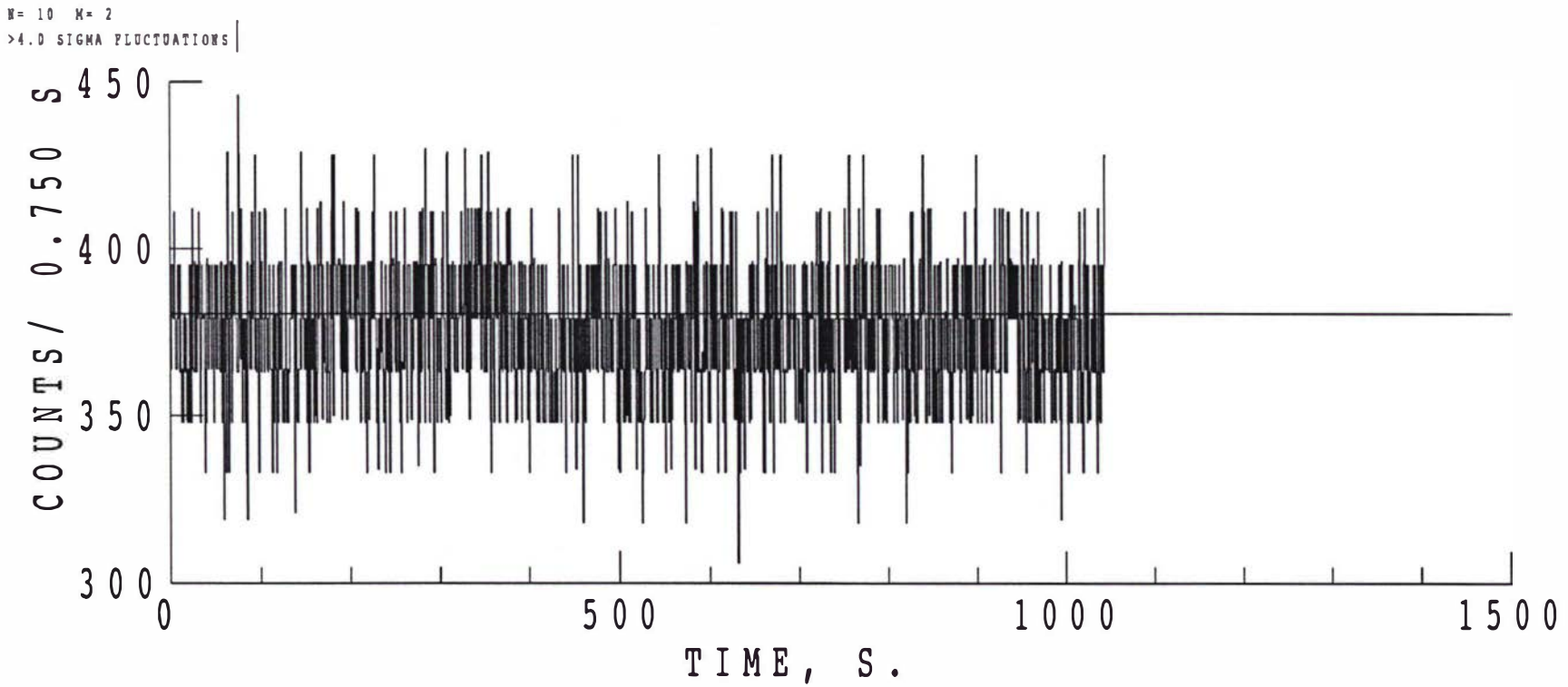
BATSE BURST# 6285

ULYSSES RT 30/ 6/97

28/ 6/97 75492.094 s

0.250 S INTERVALS REGROUPED BY 3

0- 0 keV



From HENZE@fender.msfc.nasa.gov Mon Jun 30 12:34 PDT 1997
Date: Mon, 30 Jun 1997 14:33:44 -0500 (CDT)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, lmm@egret.gsfc.nasa.gov,
mops@osse.nrl.navy.mil, grove@osse.nrl.navy.mil,
matz@osse.nrl.navy.mil, share@osse.nrl.navy.mil,
messina@osse.nrl.navy.mil, sandora@osse.nrl.navy.mil
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6286

TIME: TJD=0627 SECONDS=78953

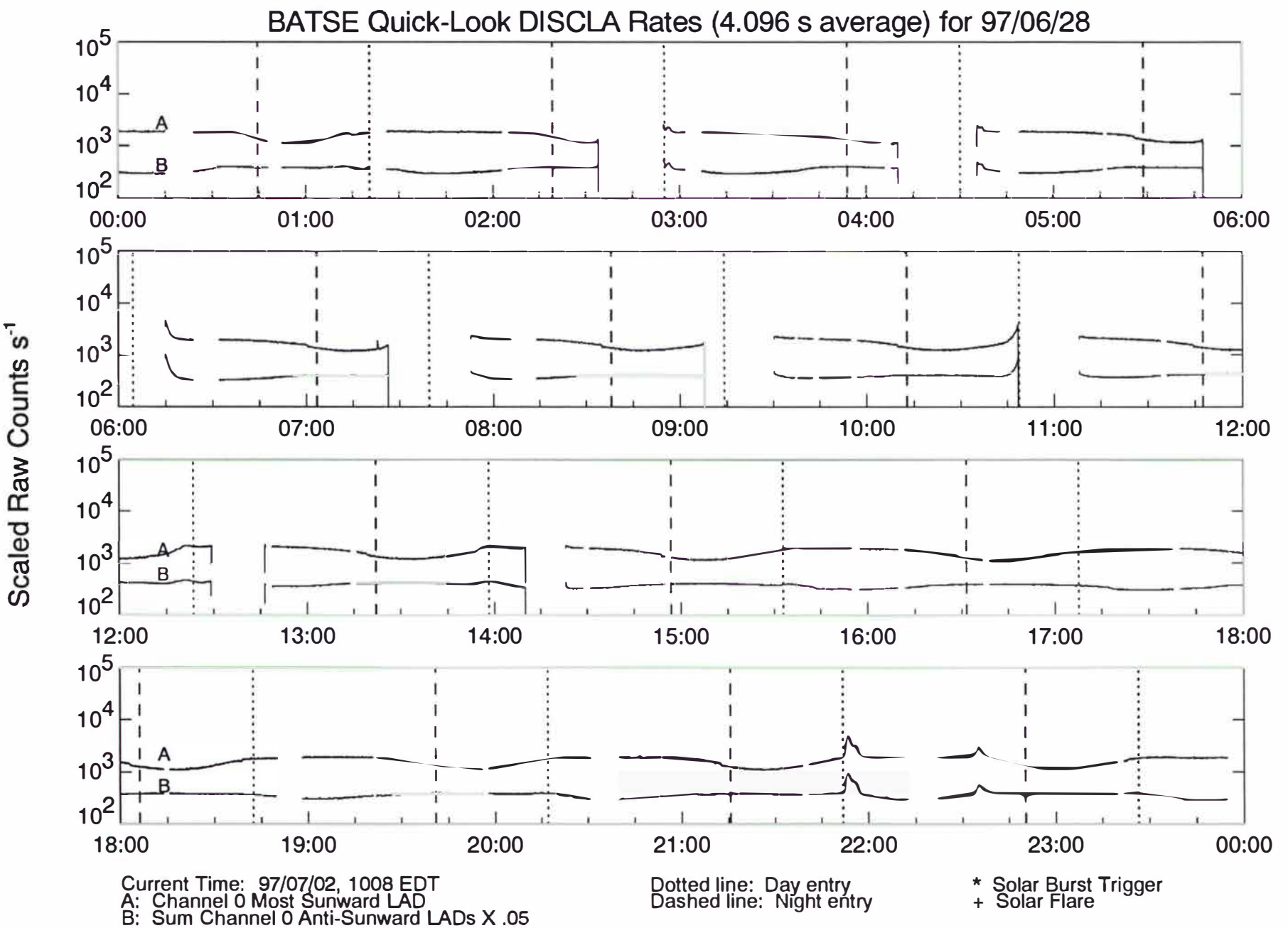
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

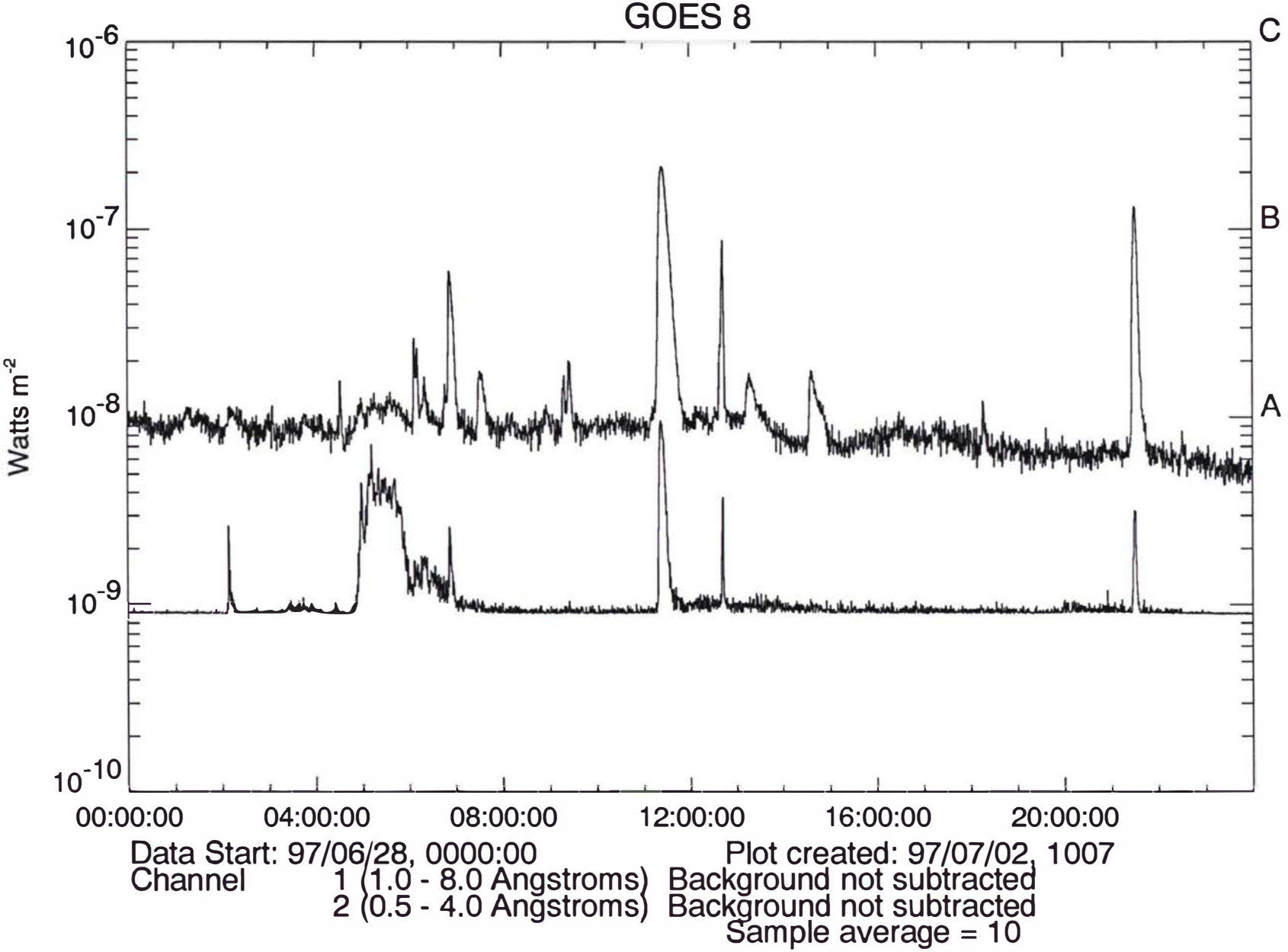
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

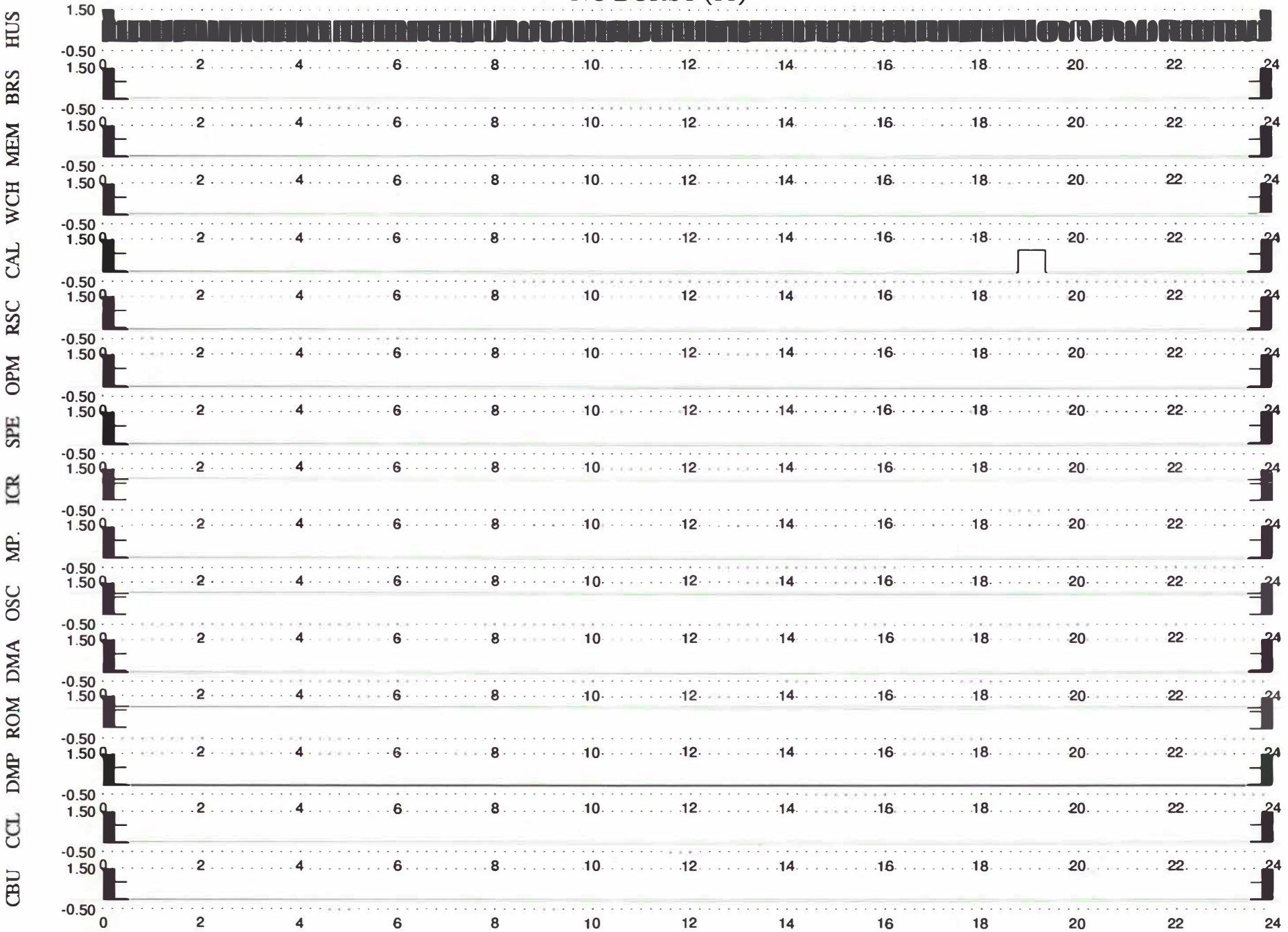
COMMENTS:
PARTICLE EVENT


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/28
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/02, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/28, 0000:00
Plot created: 97/07/02, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 179, year 1997 to day 179, year 1997 10/13/97

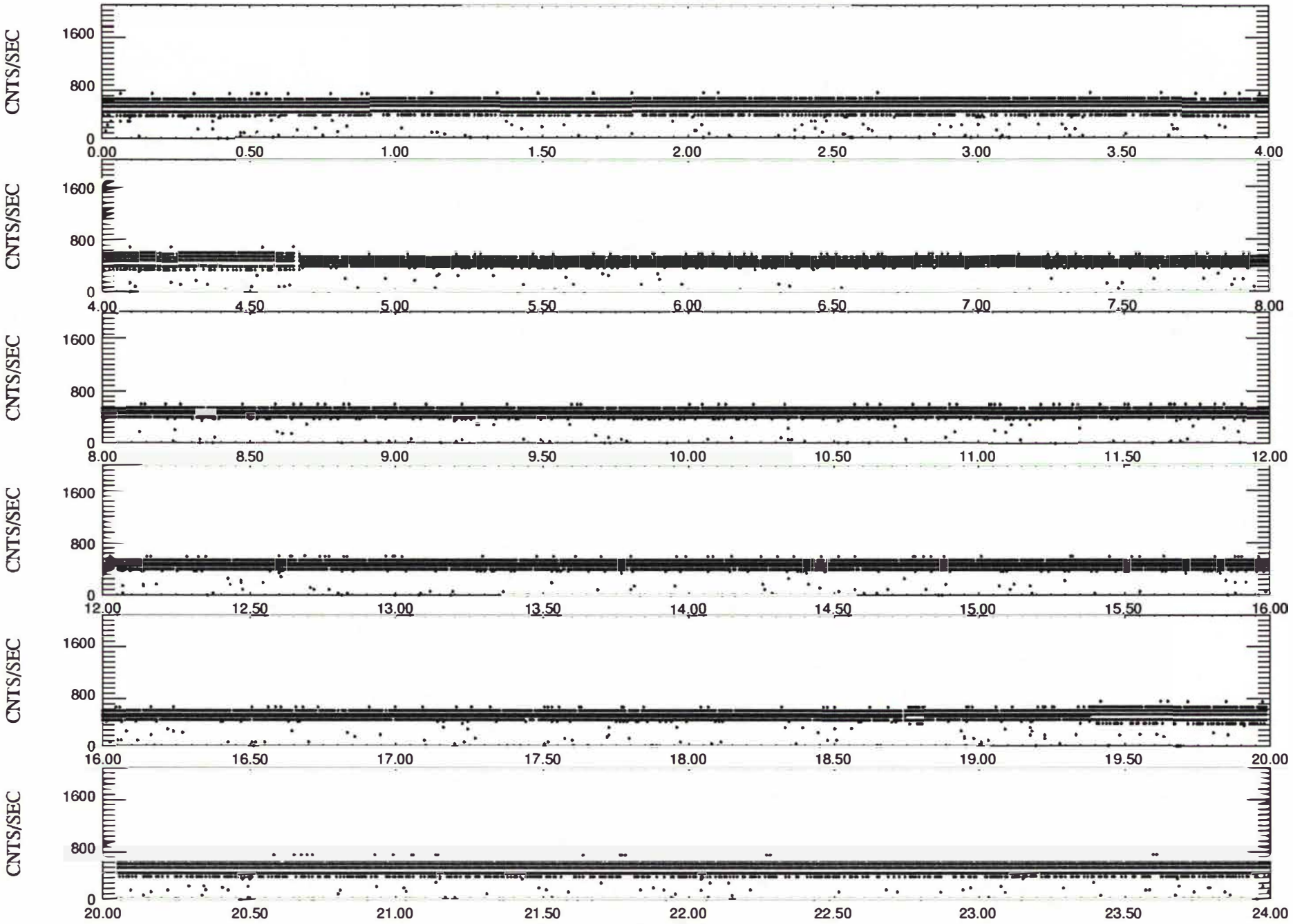
NO BURST (11)



UNIV AL TIME

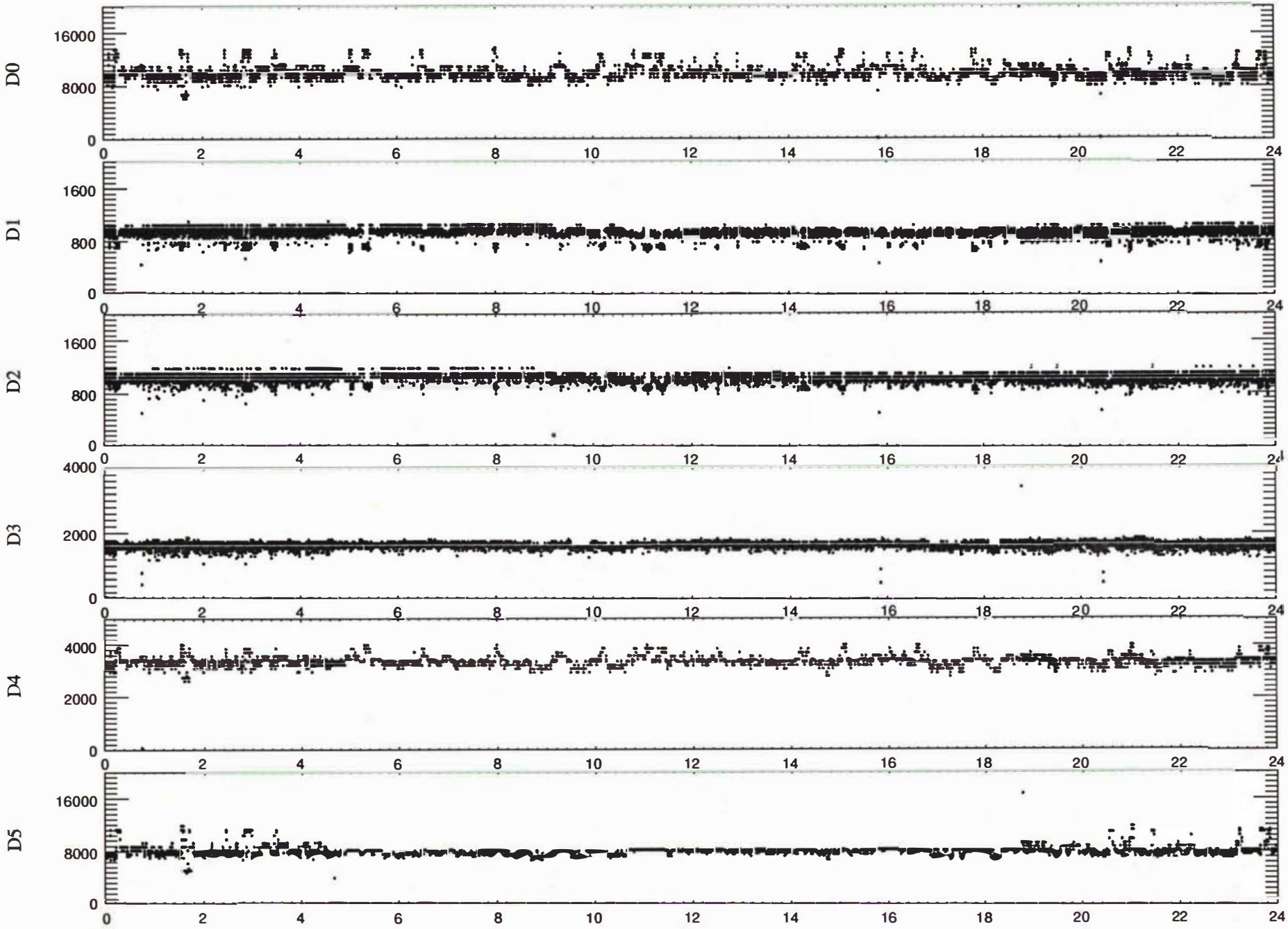
HUS 2A, MODE 1, NOT AVERAGED EDR day 179, year 1997 to day 179, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV 'AL TIME

HUS 2B COUNTS / SEC EDR day 179, year 1997 to day 179, year 1997 10/13/97



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

    GE BURST #      6287
B.ENT OF 1997 JUN 29 DAY OF YEAR=180
EVENT CROSSING TIME AT BATSE     : 23491. S. OR 06:31:31.0
COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 272.200  -20.400
BATSE PEAK COUNTING RATE: 0         C/S

EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 6/  97 IS:
RA=  152.997 DEC=   26.167 DIST=    5.737 AU
BATSE-ULYSSES DISTANCE =  858293085. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL    DIRECTION= 55.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1615.14 SECS.
CROSSING TIME AT ULYSSES    IS 25106. S. OR   06:58:26 +/-  484.93 SECONDS

EVENT CROSSING TIME AT MARS       WILL BE FOUND
POSITION OF MARS ON 29/ 6/  97 IS:
RA=  184.111 DEC=   -1.575 DIST=    1.240 AU
MARS-BATSE DISTANCE =  185471904. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 92.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=  -25.25 SECS.
CROSSING TIME AT MARS       IS 23466. S. OR   06:31:05 +/-  106.94 SECONDS
```

From WOODSP@ssl.msfc.nasa.gov Tue Jul 1 09:30 PDT 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 1 Jul 1997 11:29:42 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6287 Trigga

TIME: TJD=0628 SECONDS=23491

06:31:31

TYPE: SGR SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142.6 AZIMUTH=193.0 ERROR=1.2 DEGREES

COMMENTS:
SGR ~~(1806~~-20) LASTING ~ 5 SEC. EXTREMELY BRIGHT MAIN PULSE WITH SUBSTRUCTURE. PRECURSOR @ T - 3 SEC. VISIBLE ABOVE 100 KEV.

New SGR

From WOODSP@SSLLES.MSFC.NASA.GOV Tue Jul 1 09:35 PDT 1997
Return-Path: <WOODSP@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA20871; Tue, 1 Jul 1997 09:35:30 -0700
Date: Tue, 1 Jul 1997 11:35:19 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970701113519.224078ae@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6288
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6288
EVENT OF 1997 JUN 29 DAY OF YEAR=180
EVENT CROSSING TIME AT BATSE : 51399. S. OR 14:16:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 30.000 25.000
BATSE PEAK COUNTING RATE: 8700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 6/ 97 IS:
RA= 153.136 DEC= 26.016 DIST= 5.756 AU
BATSE-ULYSSES DISTANCE = 861086763. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 746.37 SECS.
CROSSING TIME AT ULYSSES IS 52145. S. OR 14:29:05 +/- 542.88 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 6/ 97 IS:
RA= 184.112 DEC= -1.575 DIST= 1.240 AU
MARS-BATSE DISTANCE = 185469440. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 34.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 511.43 SECS.
CROSSING TIME AT MARS IS 51910. S. OR 14:25:10 +/- 68.20 SECONDS

BATSE BURST TRIGGER
NO.: 6288

TIME: TJD=0628 SECONDS=51399

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=74.0 AZIMUTH=72.0 ERROR=1.8 DEGREES

COMMENTS:
GRB LASTING ~ 20 SEC. SINGLE PULSE WITH MULTIPLE PEAKS. NOT
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6288	970629	10628	51399	8700	030	+25	20

Helio corr removed 18/2/00

Date: Apr 4 3 '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?

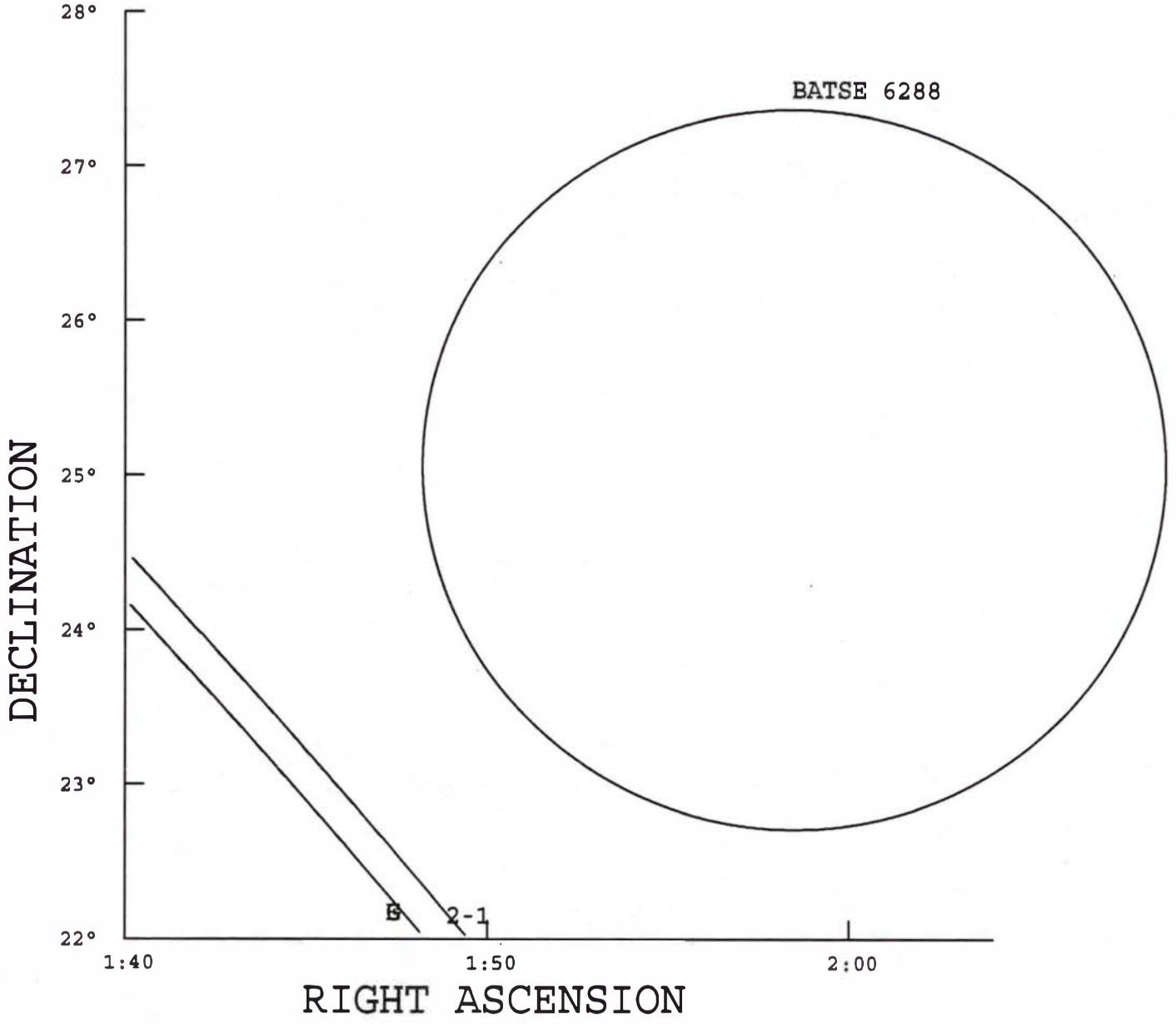
☐ Geocentric time used?

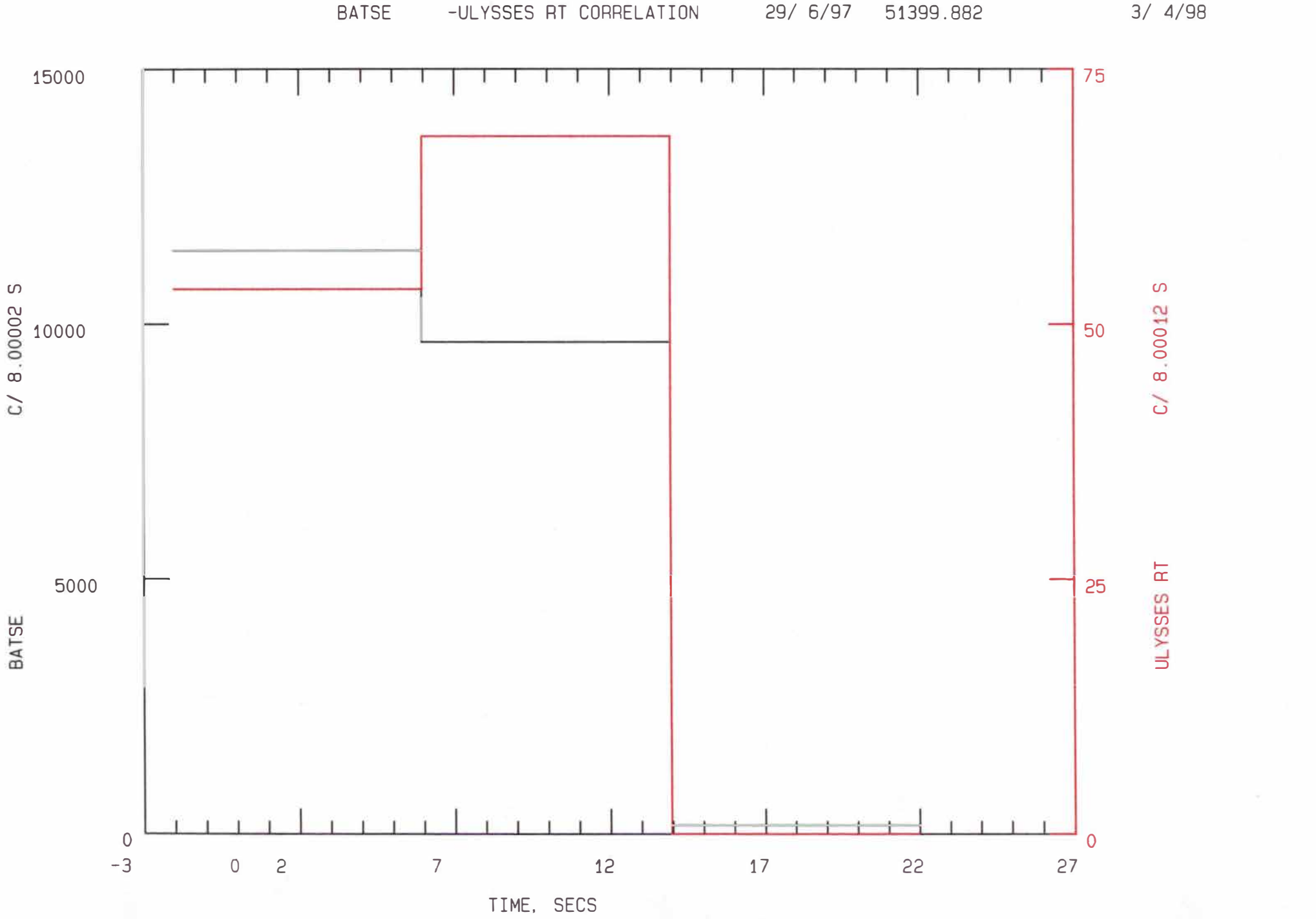
☑ ACCESS database updated?

EVENT OF JUN 29, 1997 14:31

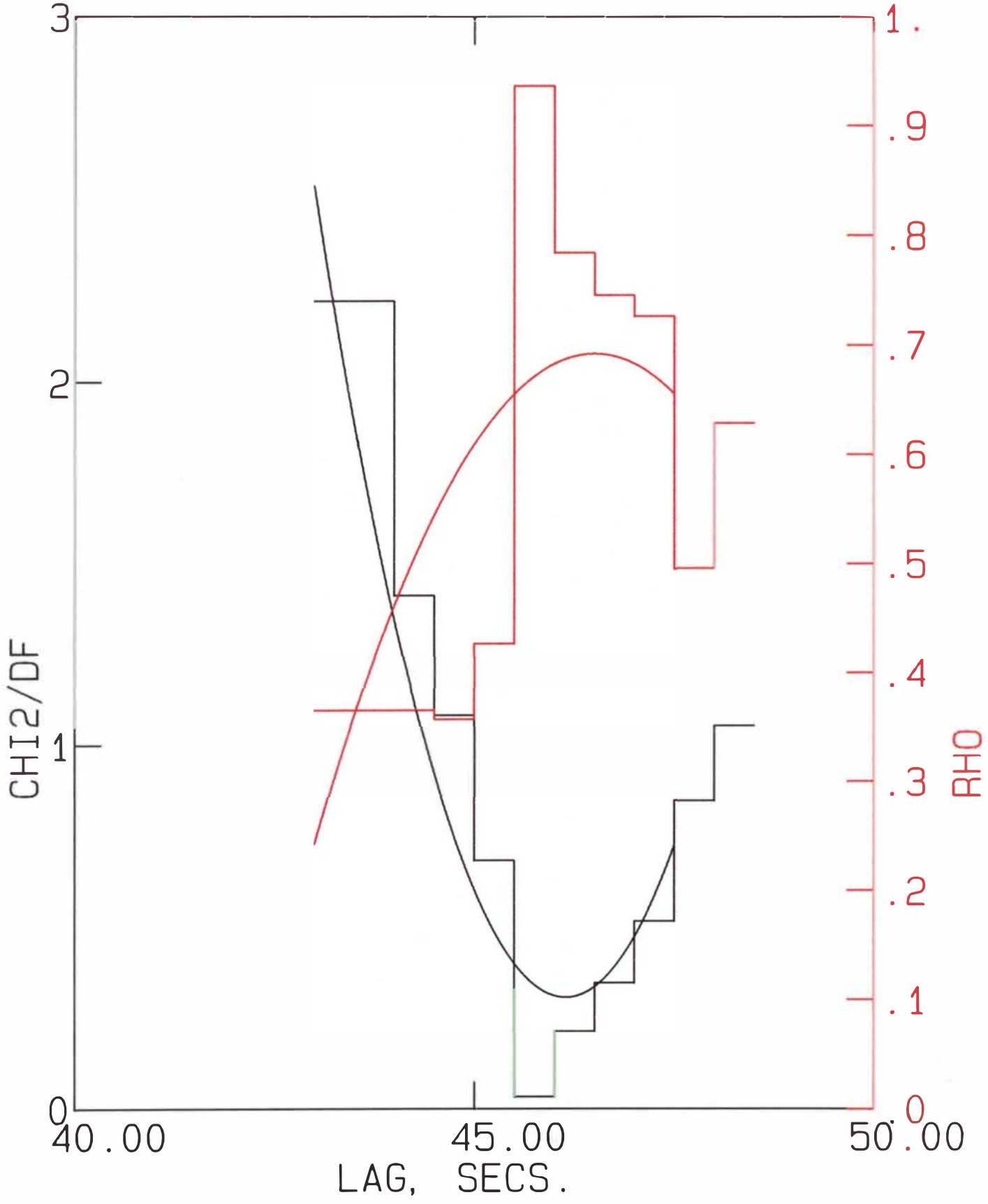
18/ 2/ 0

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




BATSE -ULYSSES RT CORRELATION 29/ 6/97 51399.882 3/ 4/98
15000
10000
5000
0
C/ 8.00002 S
BATSE
75
50
25
0
C/ 8.00012 S
ULYSSES RT
-3
0
2
7
12
17
22
27
TIME, SECS

BATSE -ULYSSES RT CORRELATION 29/ 6/97 51399.882

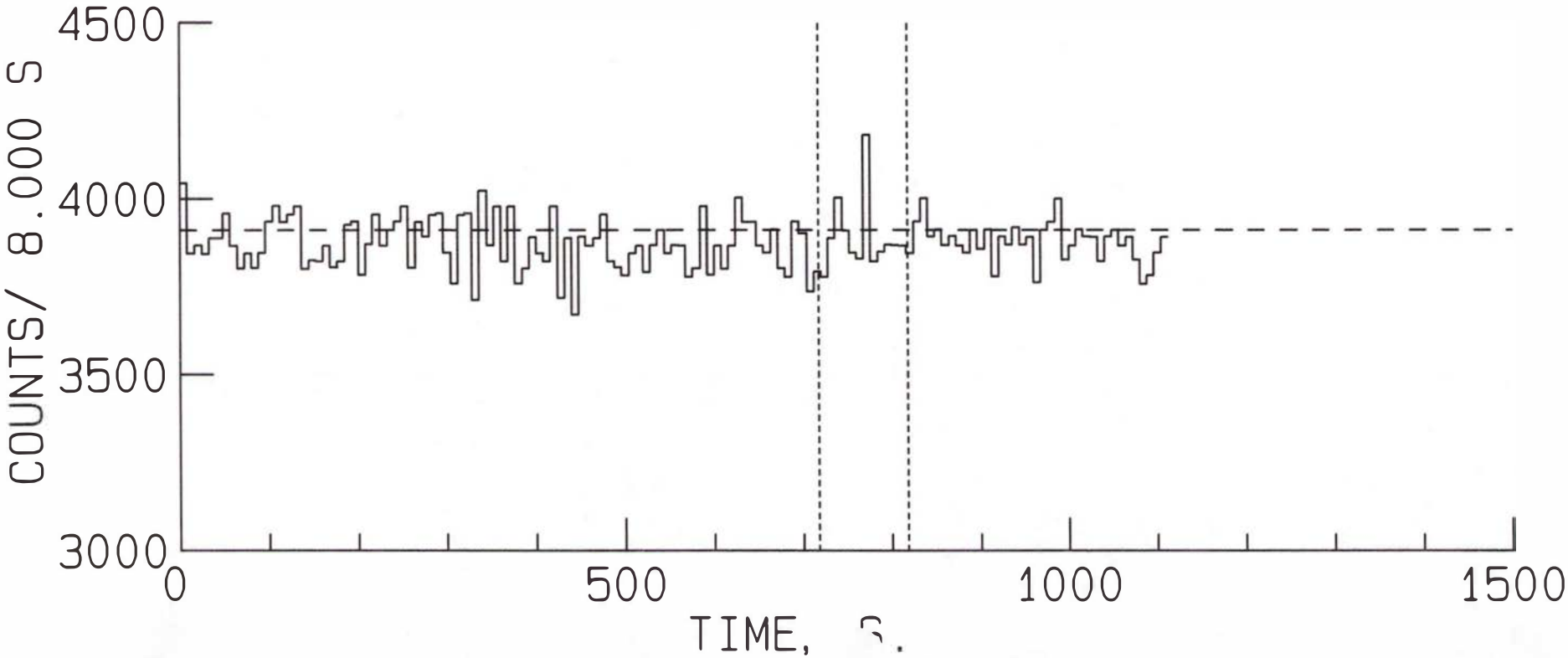


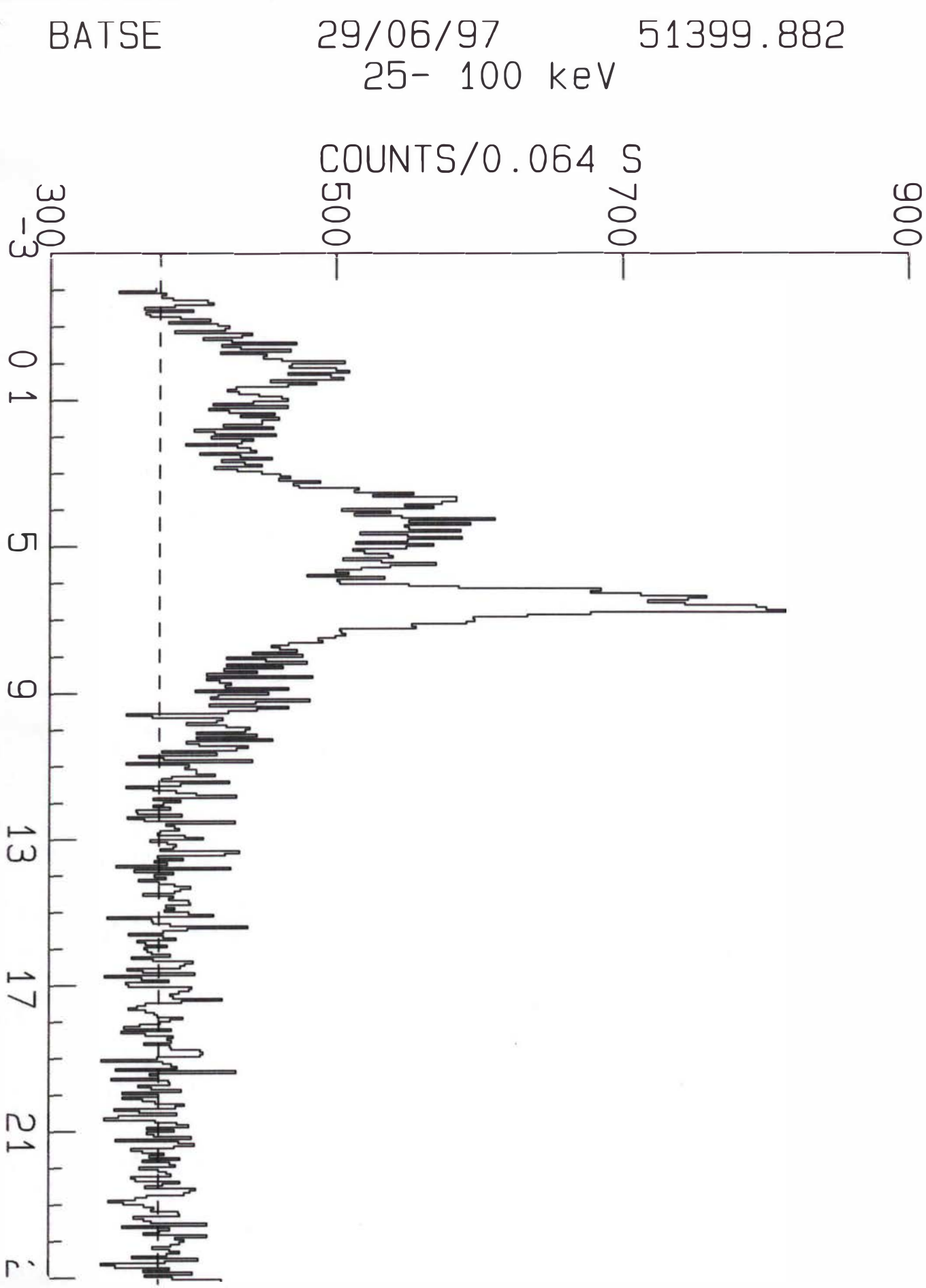
ULYSSES RT 3/ 4/98

29/ 6/97 51588.064 s

0.500 S INTERVALS REGROUPED BY 16

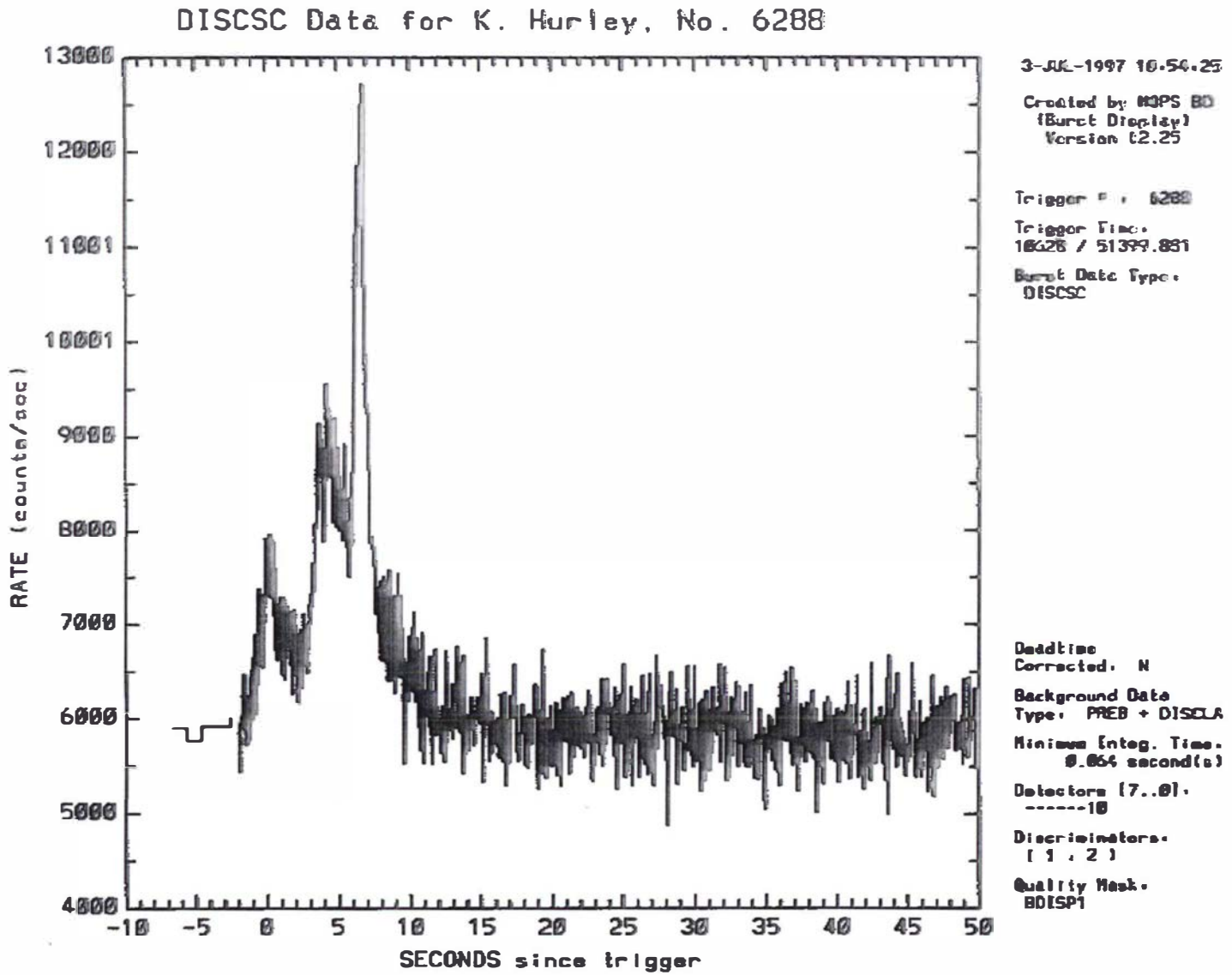
22- 148 keV




BATSE 29/06/97 51399.882
25- 100 keV
COUNTS/0.064 S
300
500
700
900
-3
0
1
5
9
13
17
21
2
9/ 7/97

R=95%

07-03-1997 13:02 205 544 5800 BATSE P.02



205 544 5800 07-03-97 11:54AM P002 #10

KONUS

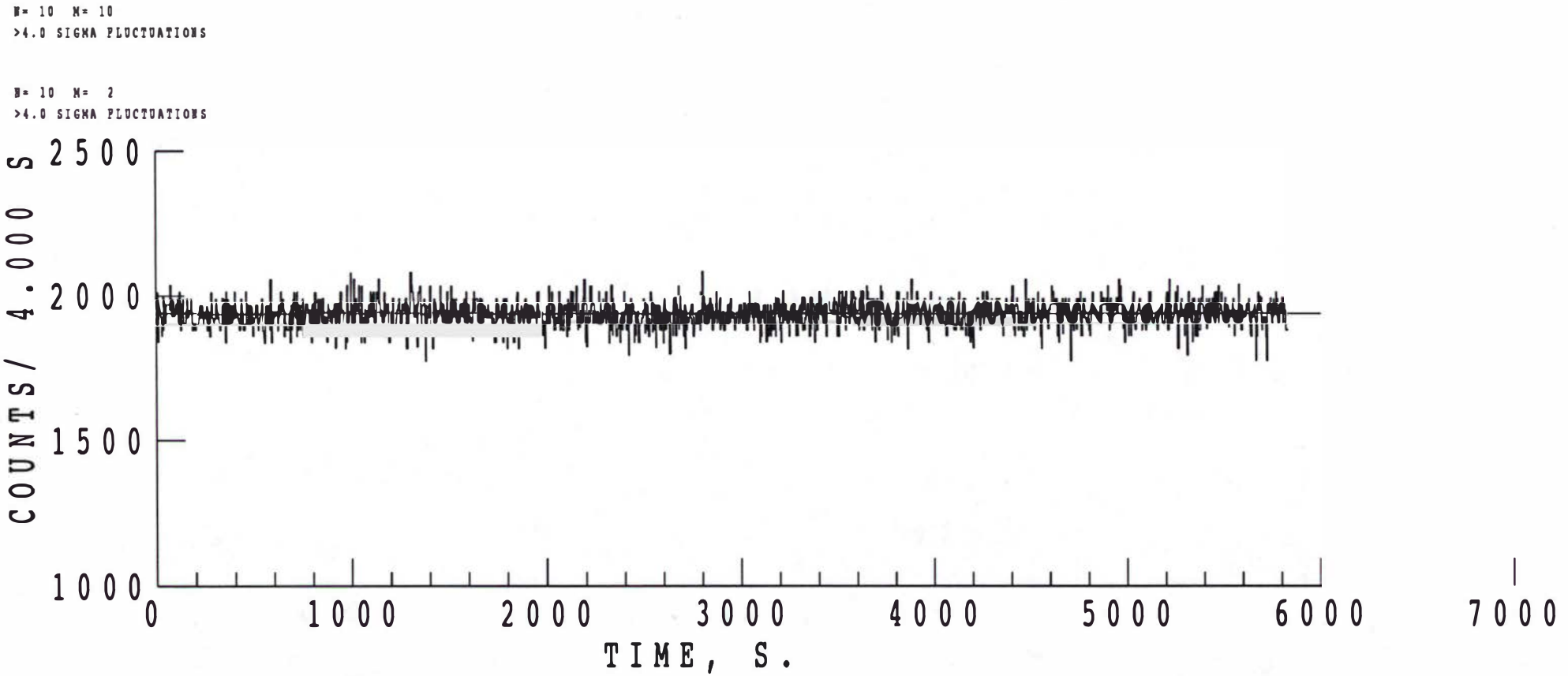
ULYSSES RT

15/02/00

29/06/97 57456.137 s

0.500 S INTERVALS REGROUPED BY 8

0- 0 keV



From WOODSP@ssl.msfc.nasa.gov Tue Jul 1 09:34 PDT 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 1 Jul 1997 11:34:10 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6289

TIME: TJD=0628 SECONDS=77775

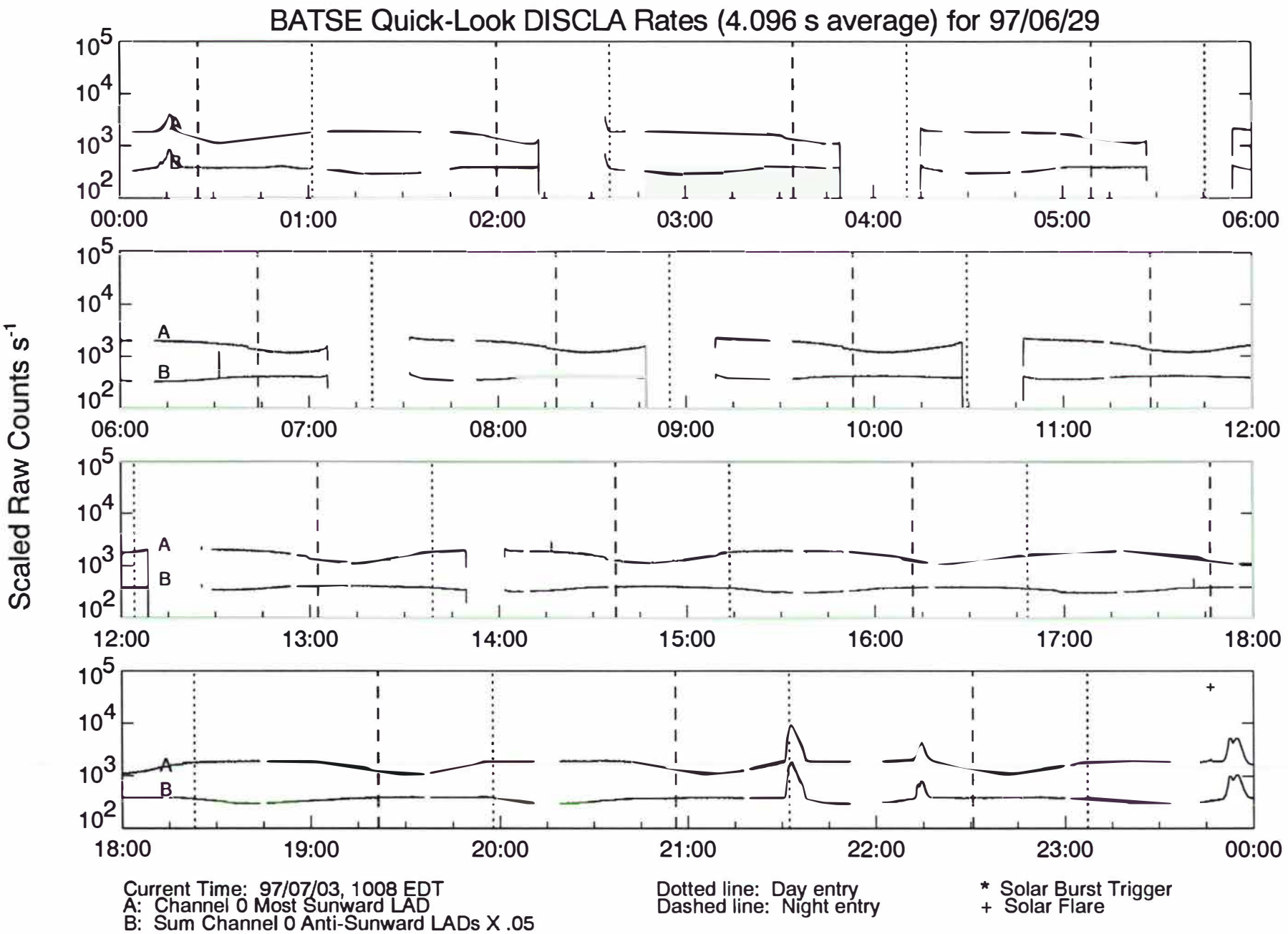
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

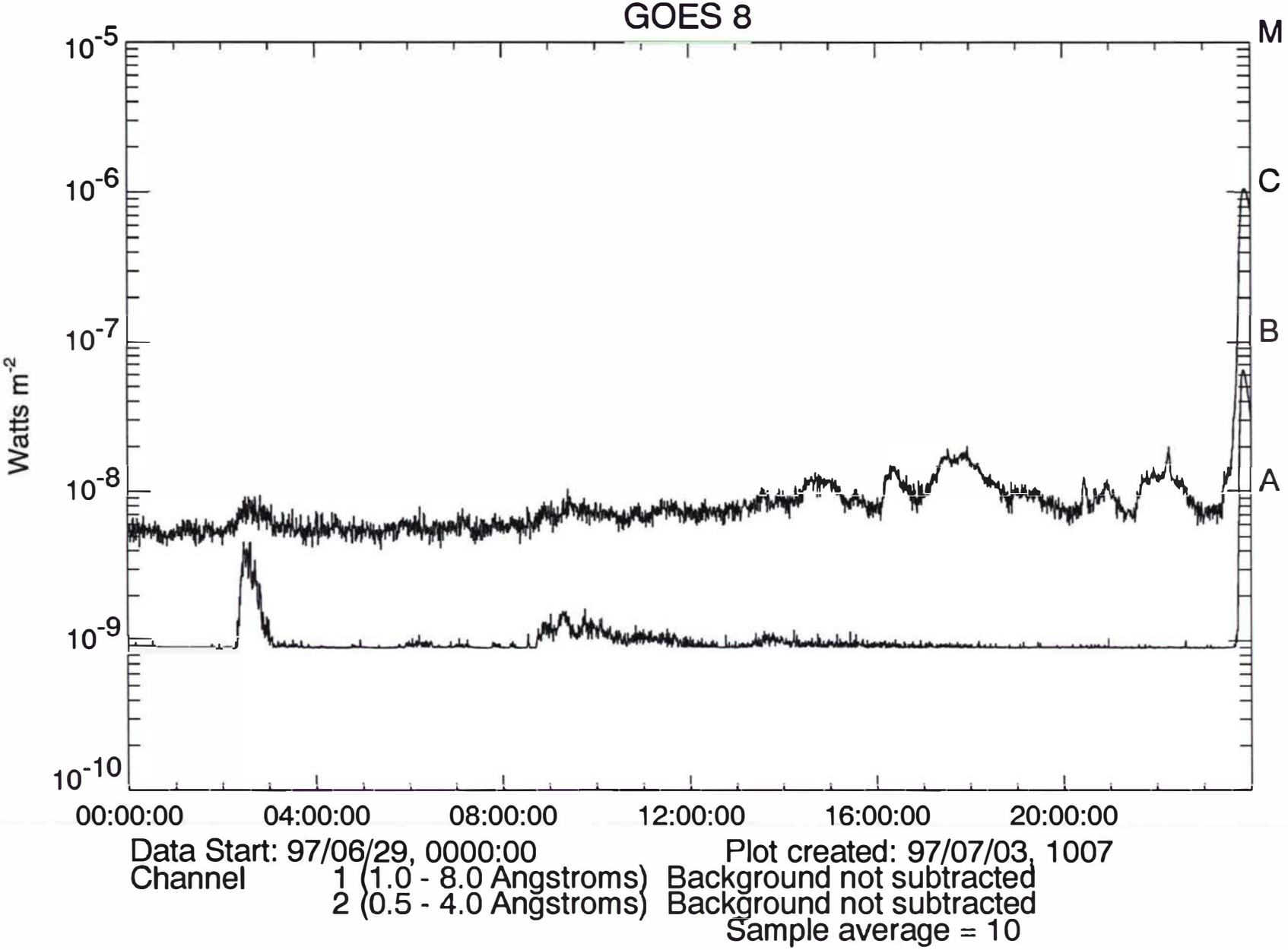
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

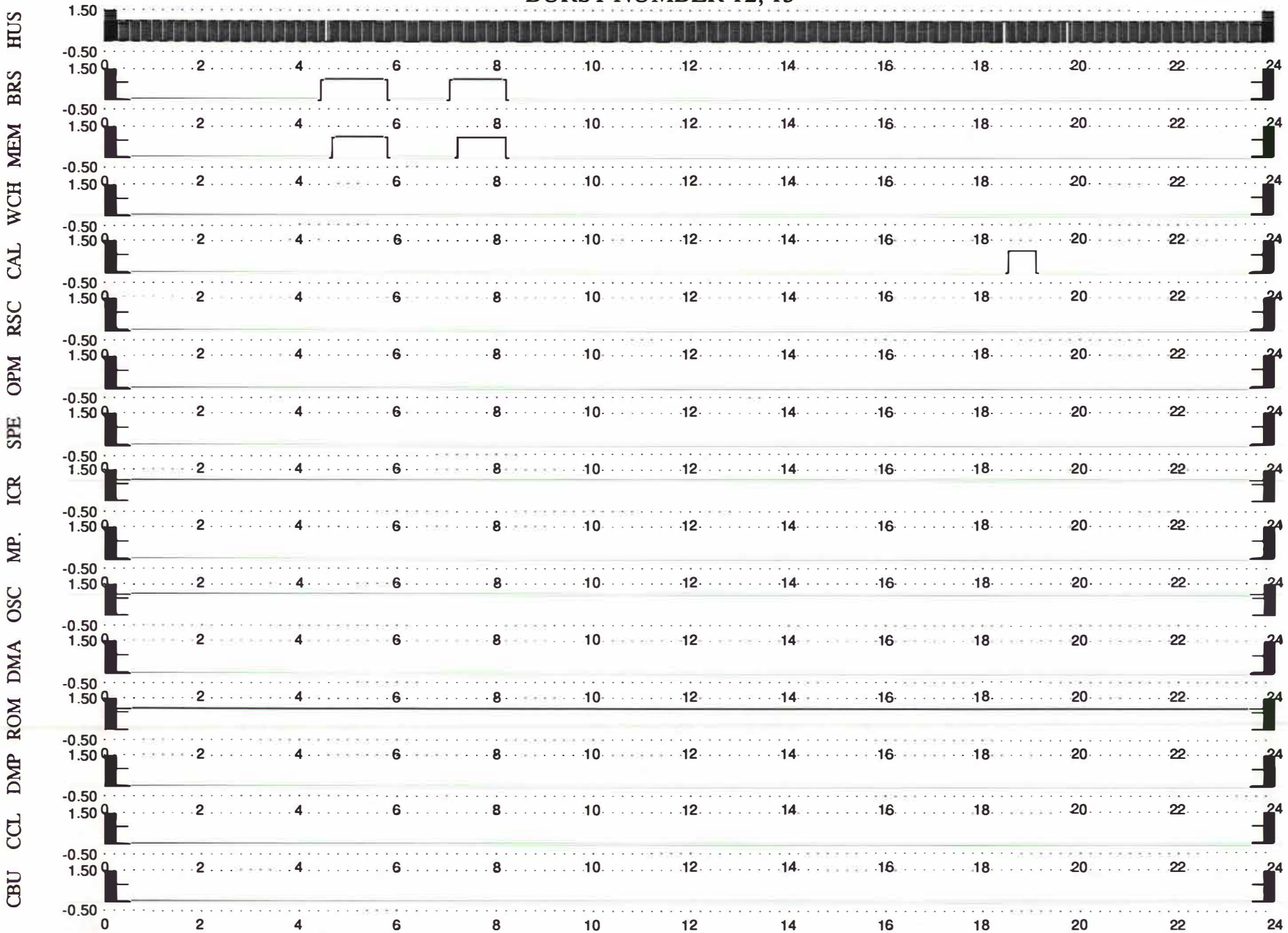
COMMENTS:
PARTICLE EVENT.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/29
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
+
Current Time: 97/07/03, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
M
C
B
A
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/29, 0000:00
Plot created: 97/07/03, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 180, year 1997 to day 180, year 1997 10/13/97

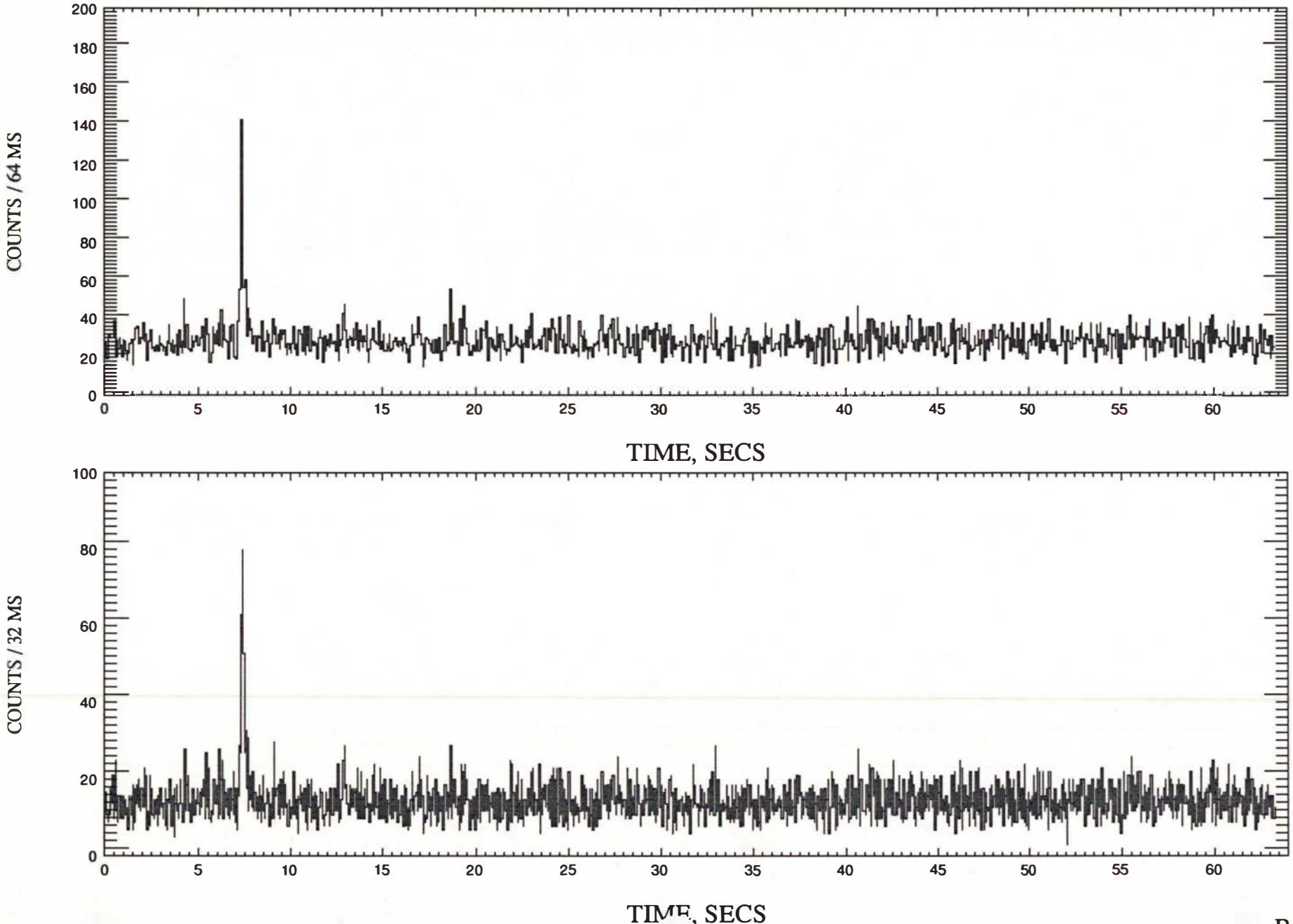
BURST NUMBER 12, 13



UNIV AL TIME

HUS 2A TRIGGERED DATA EDR day 180, year 1997 10/13/97

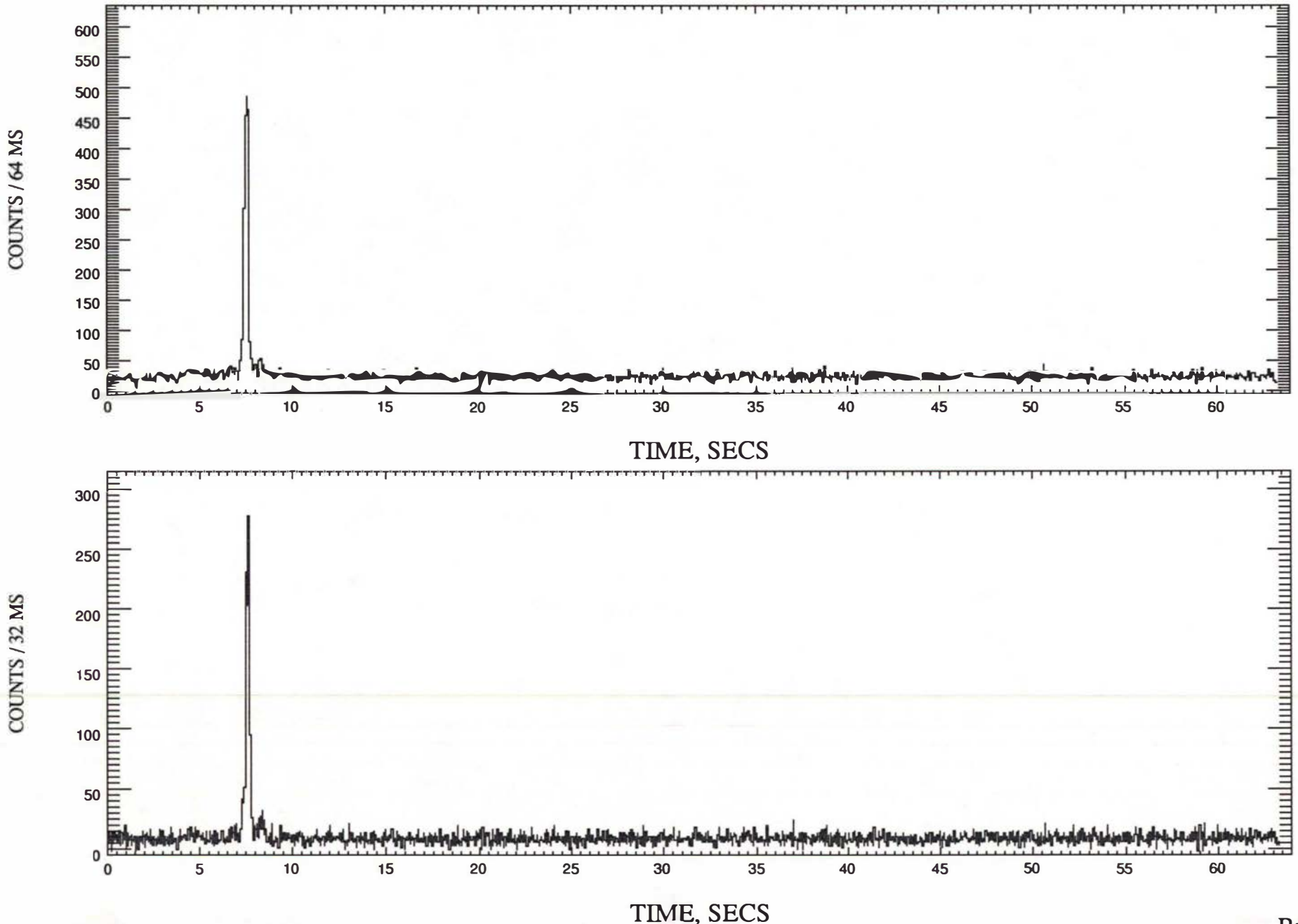
Burst Counter 12 at UT= 4.436179546780 h=15970.246 s 04:26:10.246



B# 1

HUS 2A TRIGGERED DATA EDR day 180, year 1997 10/13/97

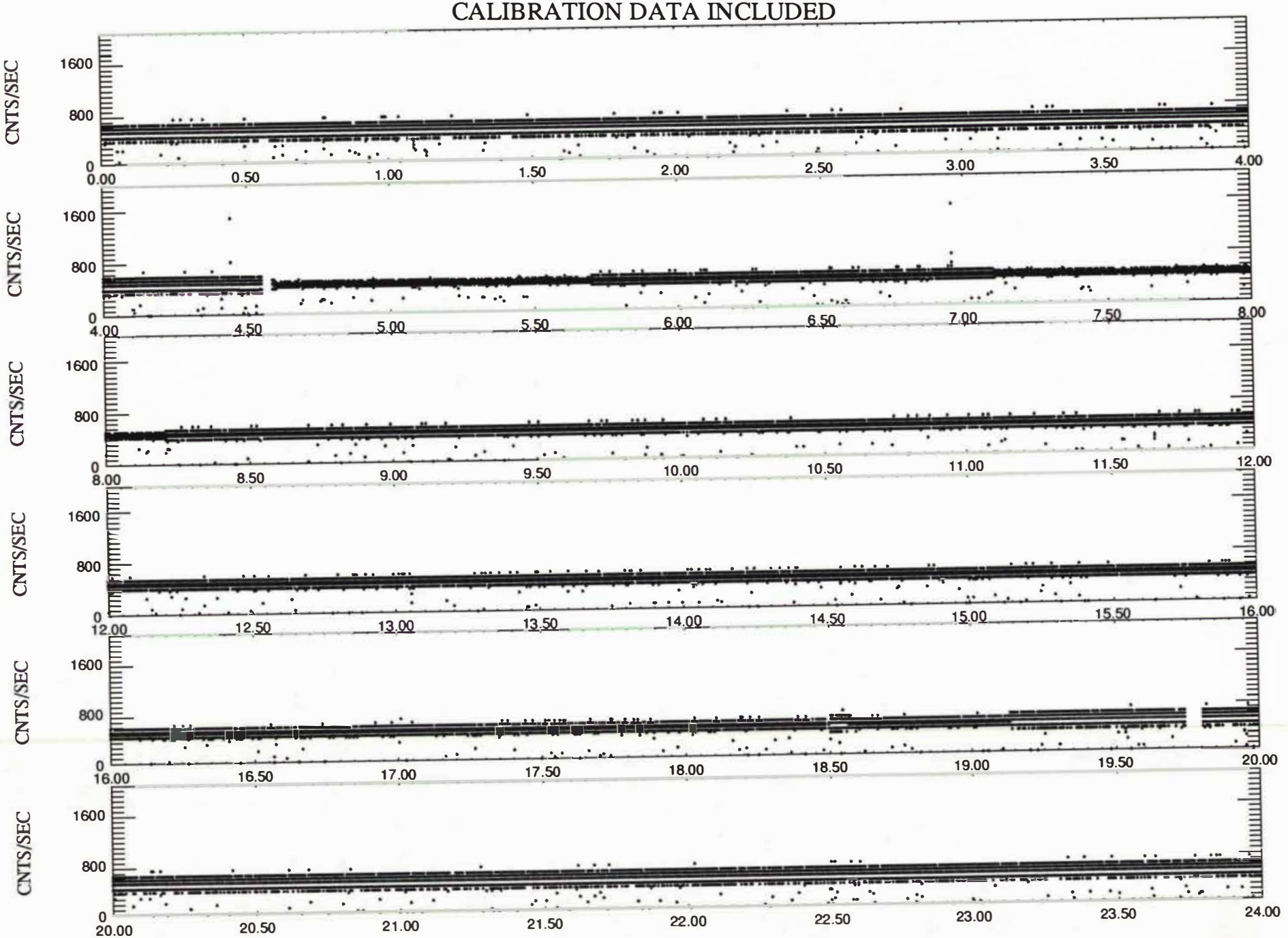
Burst Counter 13 at UT= 6.955296749539 h=25039.068 s 06:57:19.068



B# 2

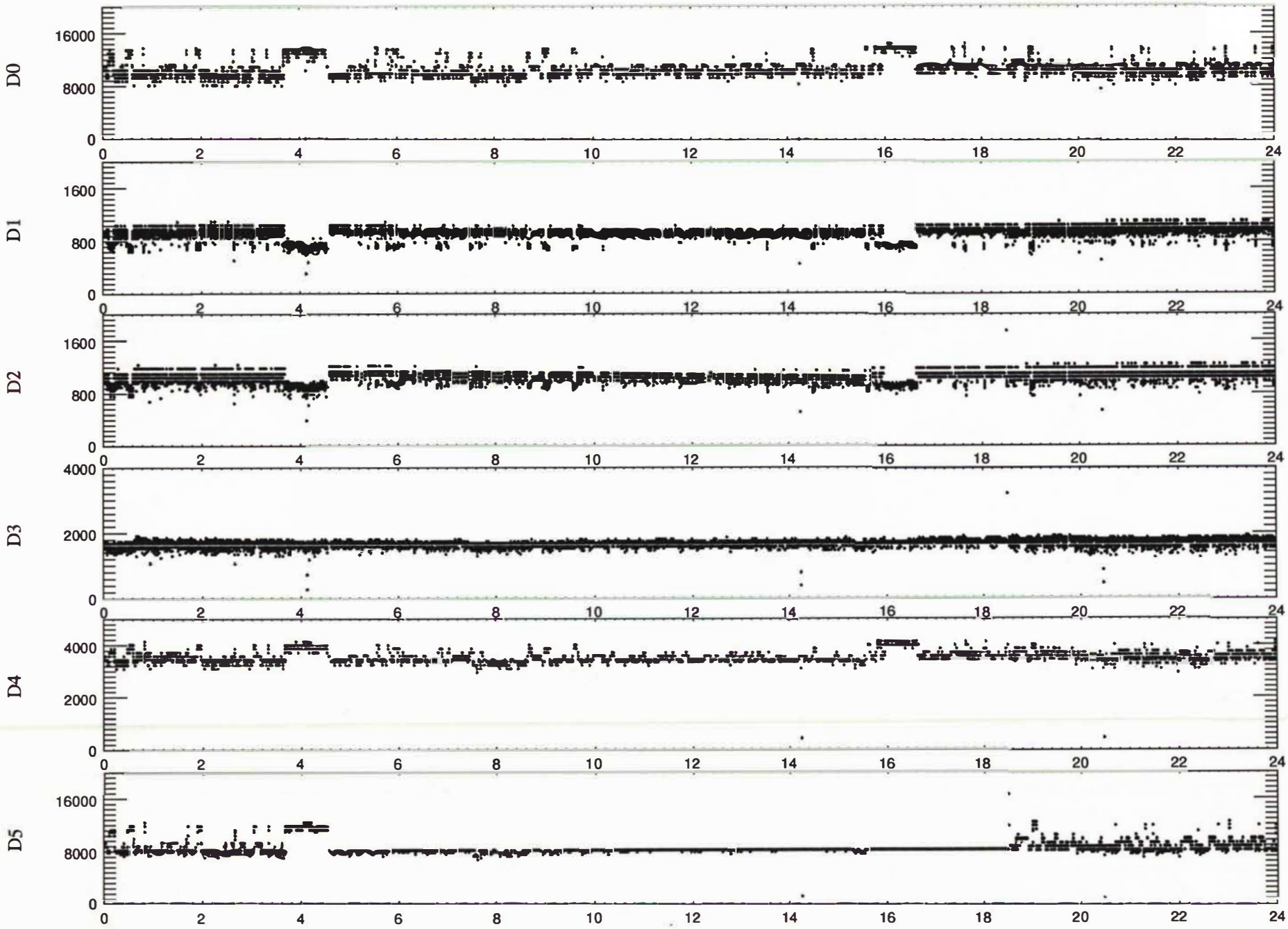
HUS 2A, MODE 1, NOT AVERAGED EDR day 180, year 1997 to day 180, year 1997 10/13/97

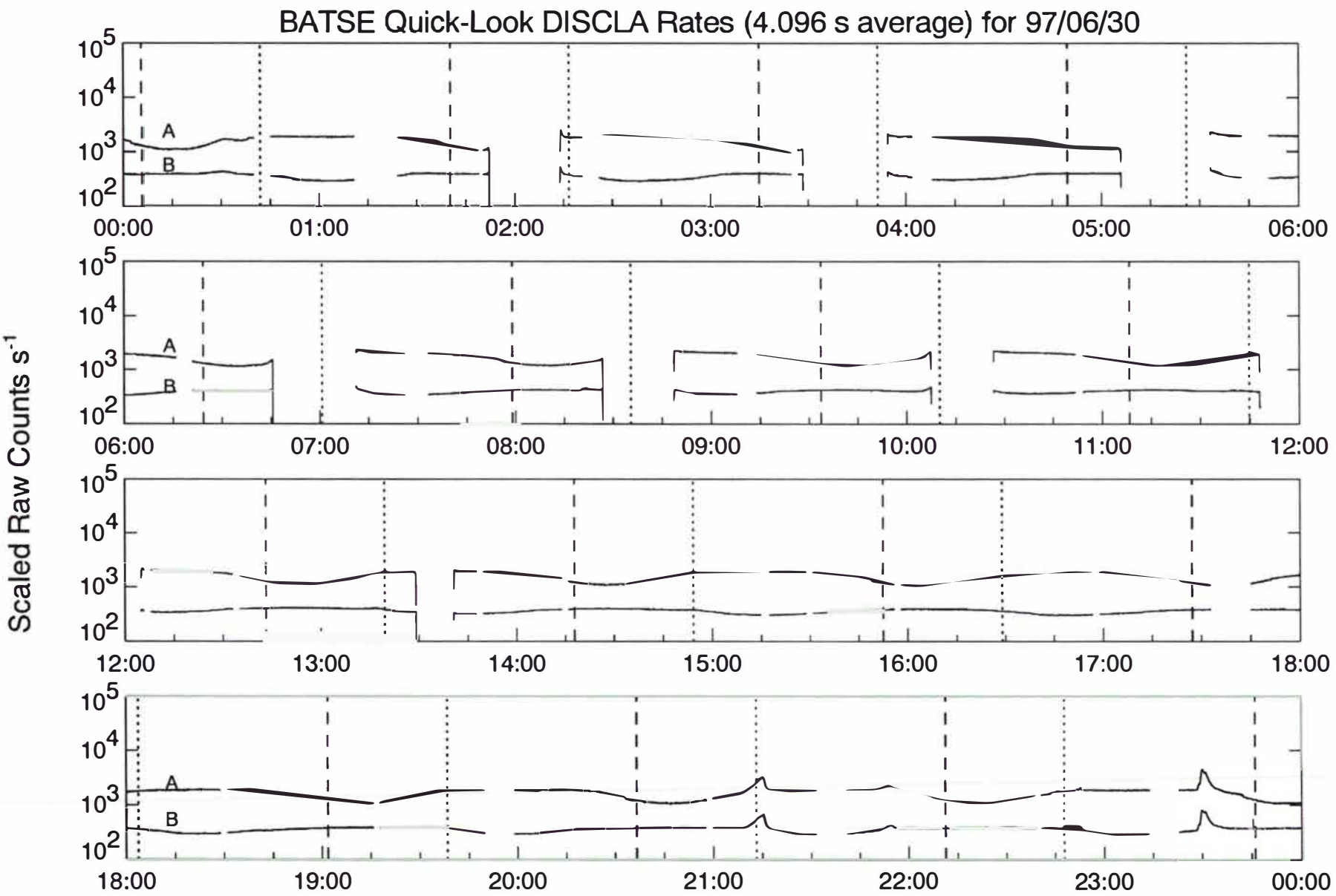
CALIBRATION DATA INCLUDED

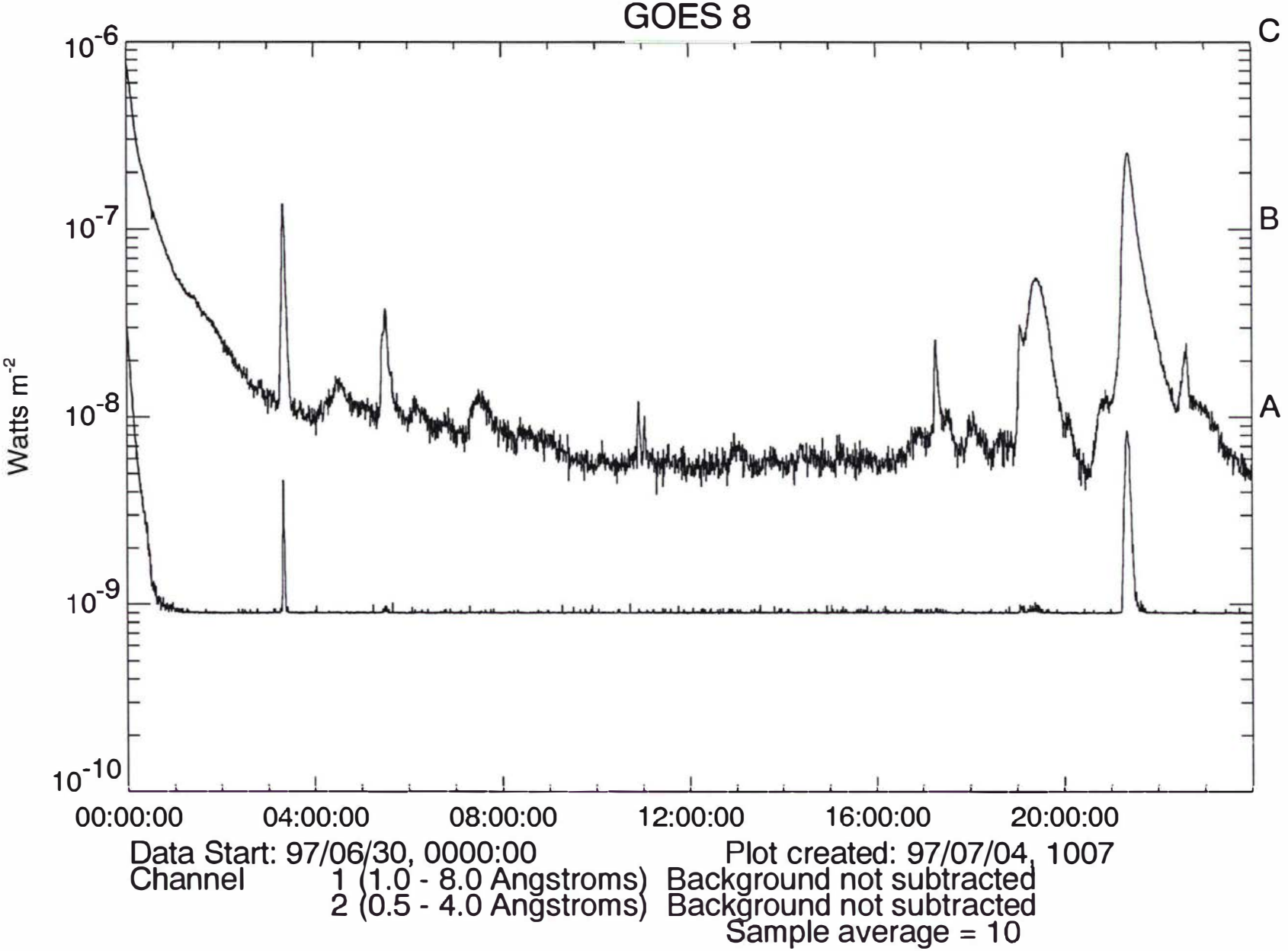


UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 180, year 1997 to day 180, year 1997 10/13/97




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/06/30
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/07/04, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/06/30, 0000:00
Plot created: 97/07/04, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

From RICHARDSON@ssl.msfc.nasa.gov Tue Jul 1 09:25 PDT 1997
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Tue, 1 Jul 1997 11:24:29 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6290

TIME: TJD=0629 SECONDS=76498

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From RICHARDSON@SSLLES.MSFC.NASA.GOV Wed Jul 2 12:38 PDT 1997
Date: Wed, 2 Jul 1997 14:36:52 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@pandora.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6291

TIME: TJD=0629 SECONDS=84517

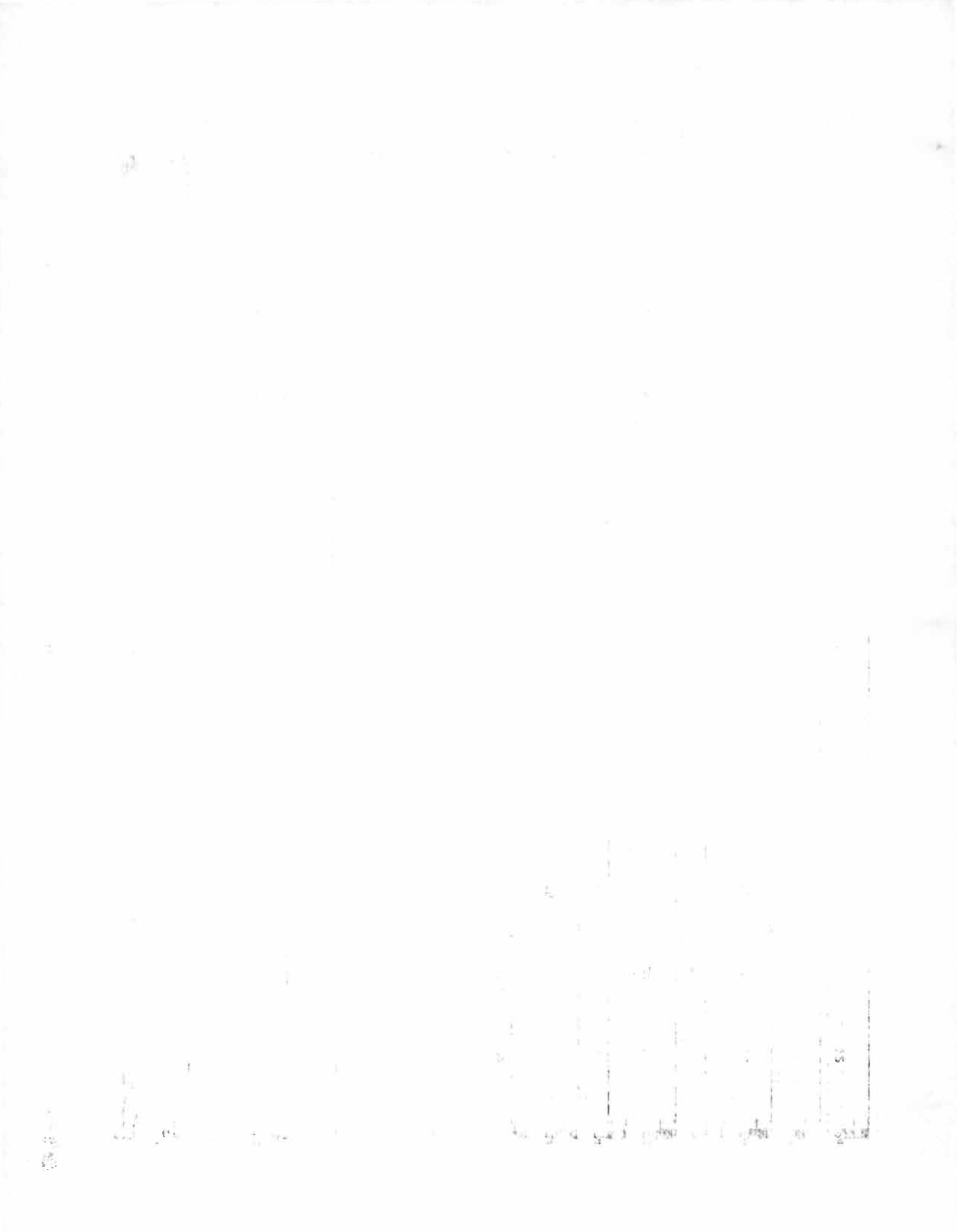
TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

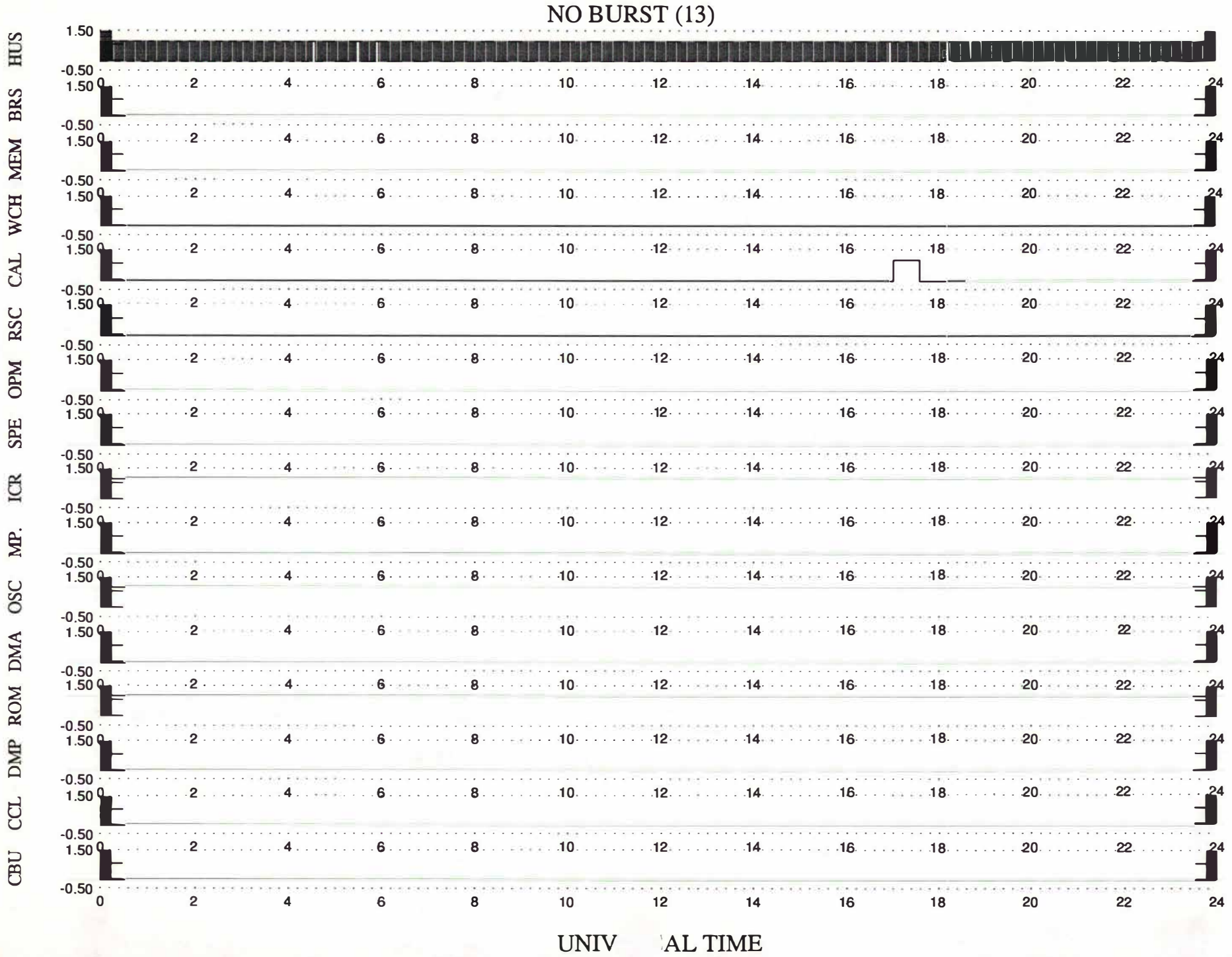
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

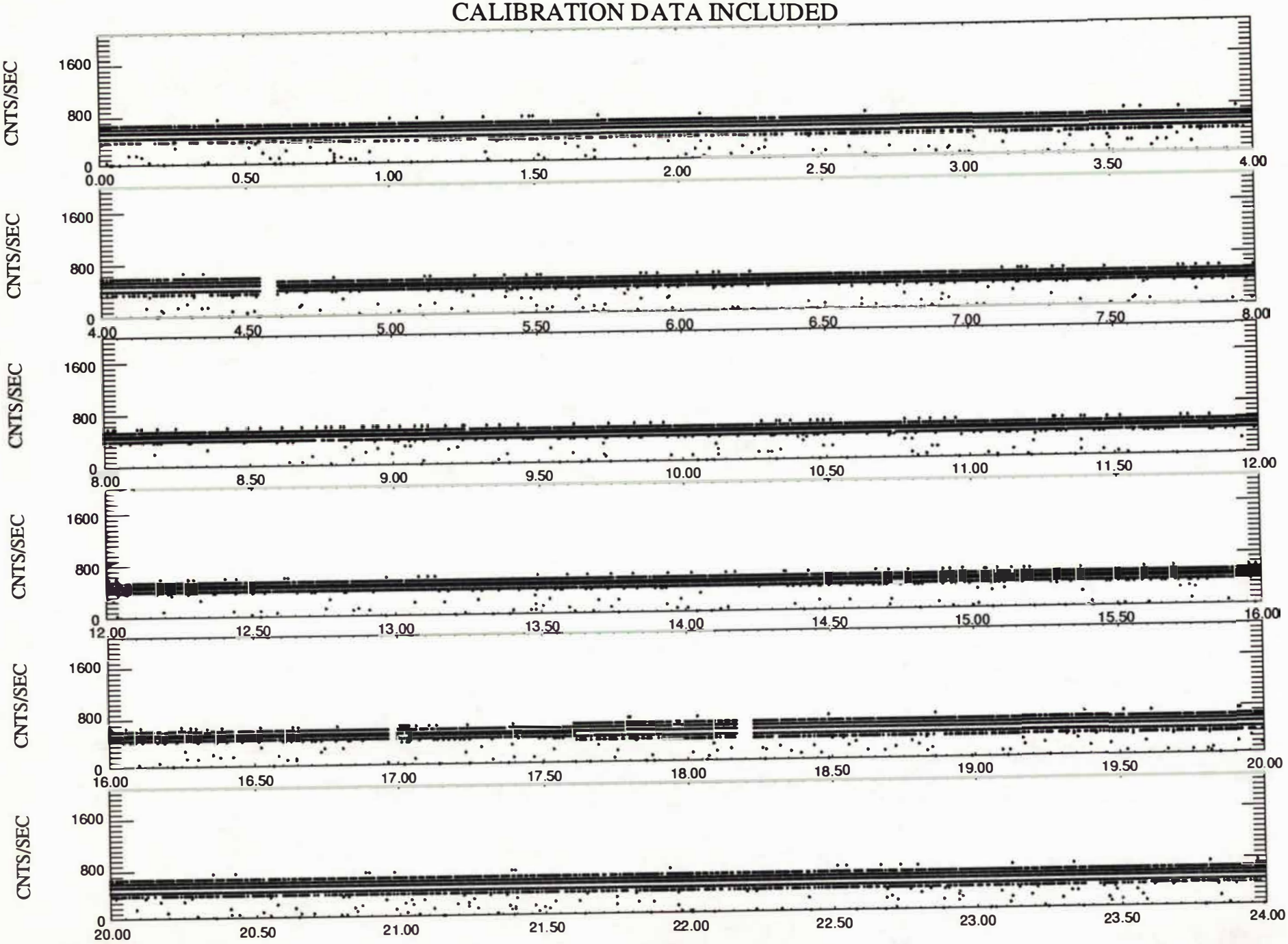


HUS MODES EDR day 181, year 1997 to day 181, year 1997 10/13/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 181, year 1997 to day 181, year 1997 10/13/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 181, year 1997 to day 181, year 1997 10/13/97

