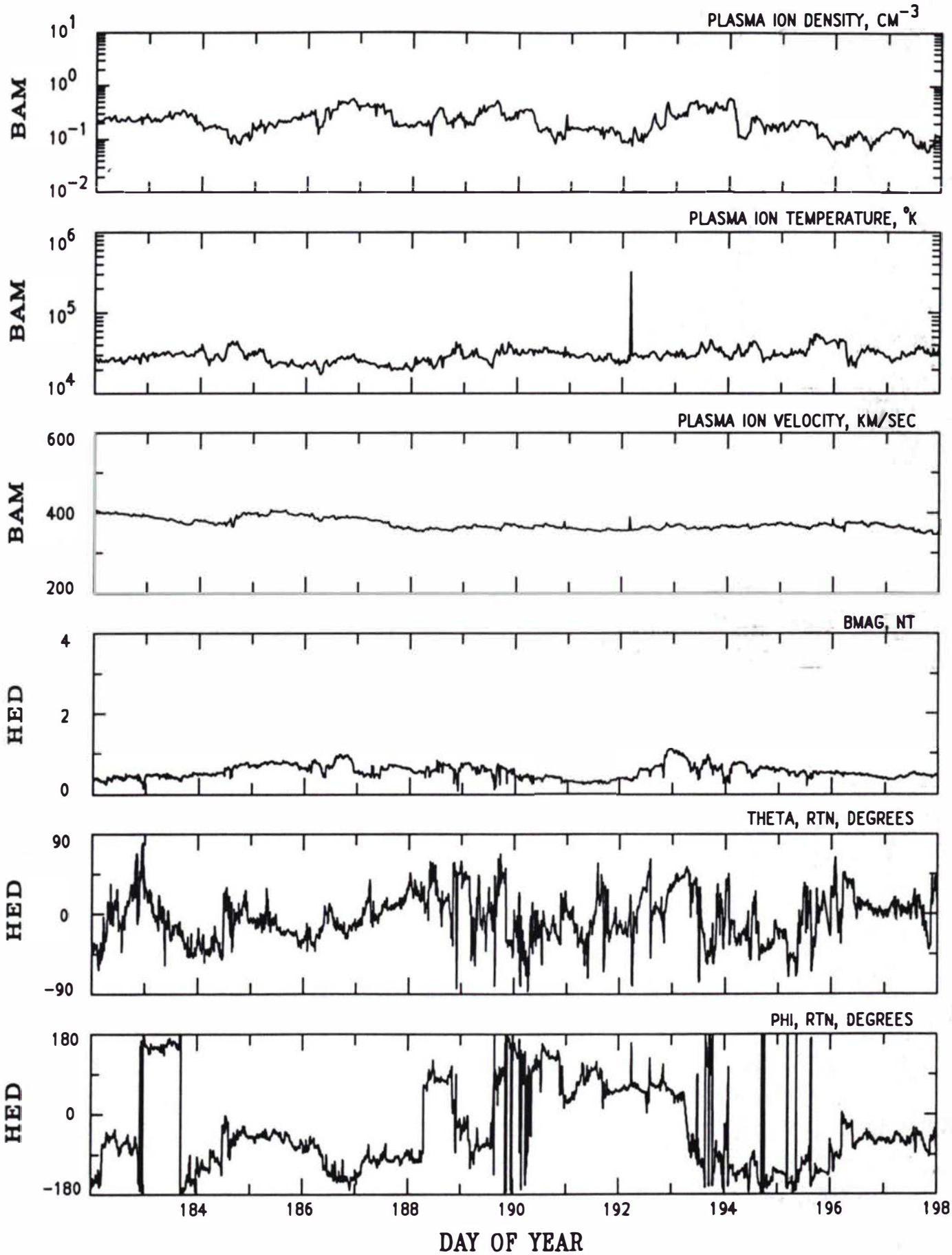
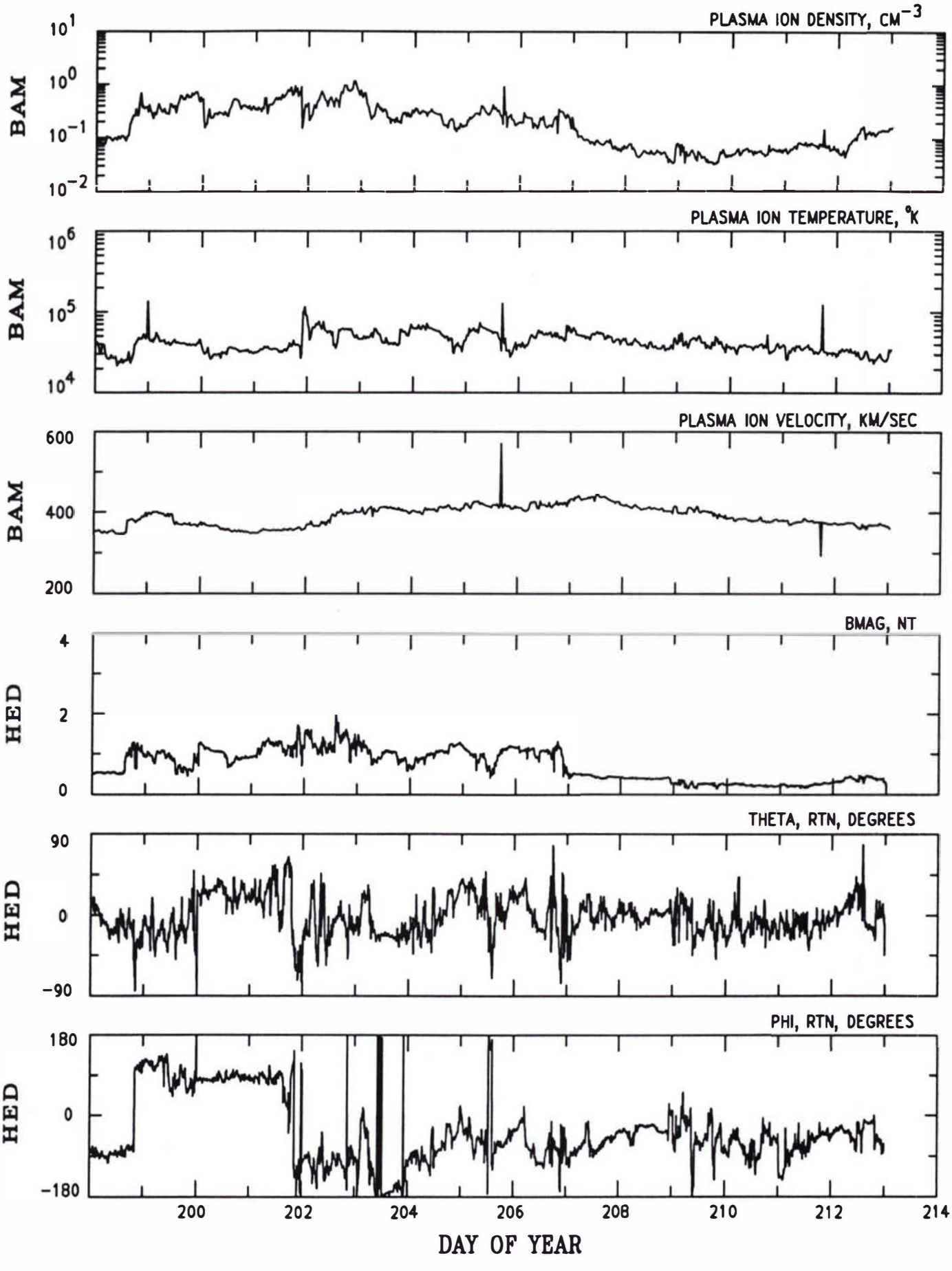
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 182 JUL 1 00:00:00.000 – 97 198 JUL 17 00:00:00.000



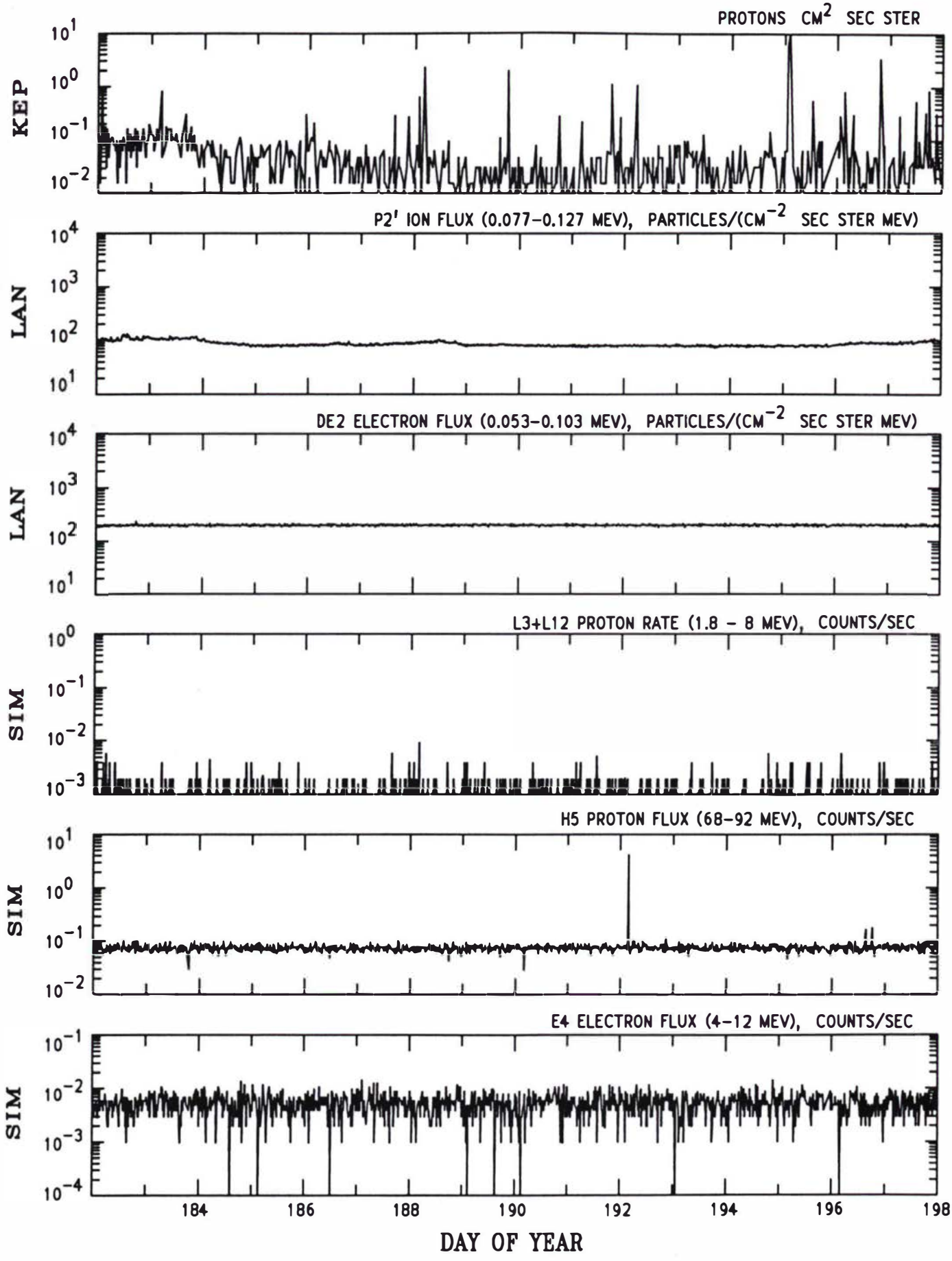
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 198 JUL 17 00:00:00.000 – 97 214 AUG 2 00:00:00.000



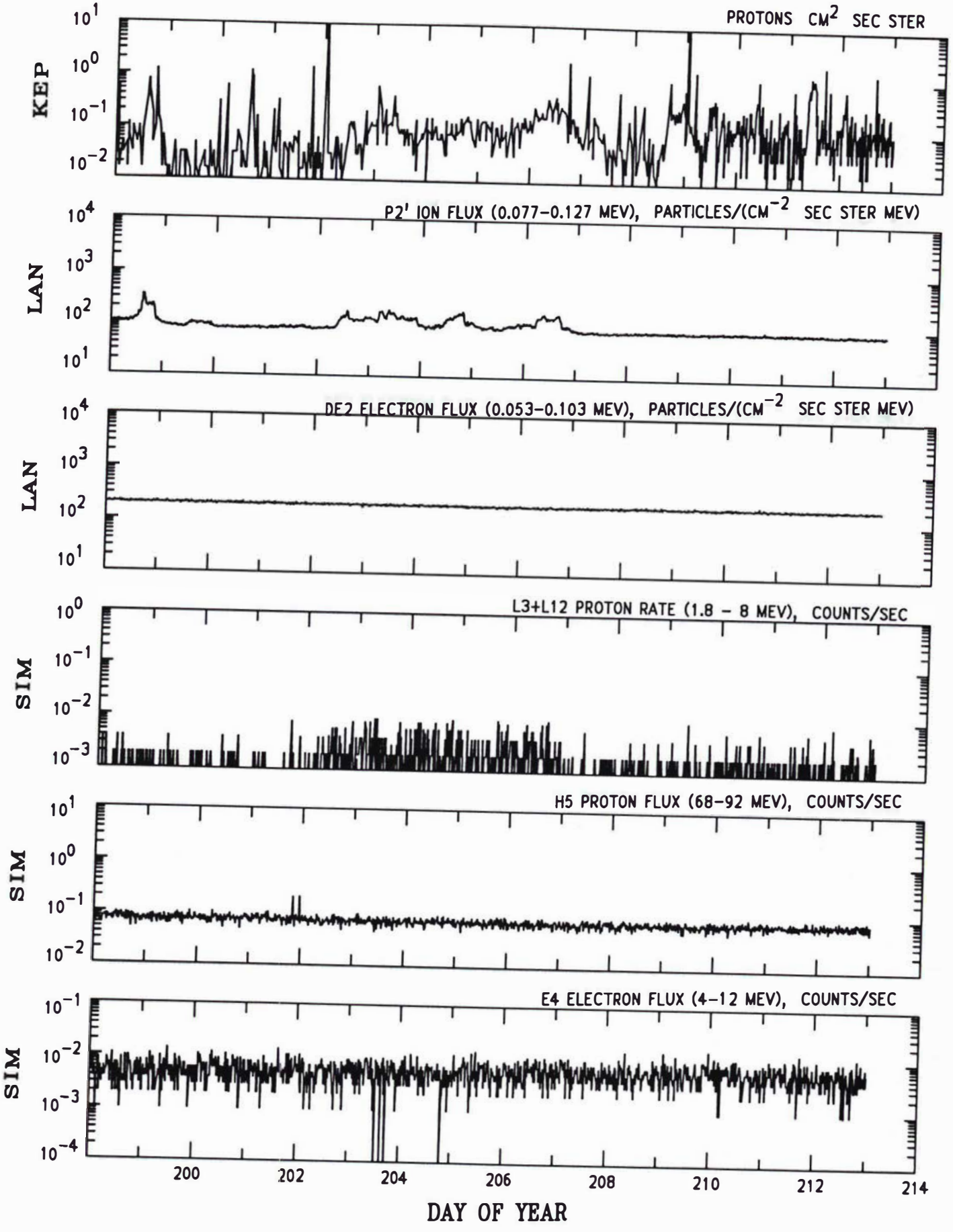
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 182 JUL 1 00:00:00.000 – 97 198 JUL 17 00:00:00.000



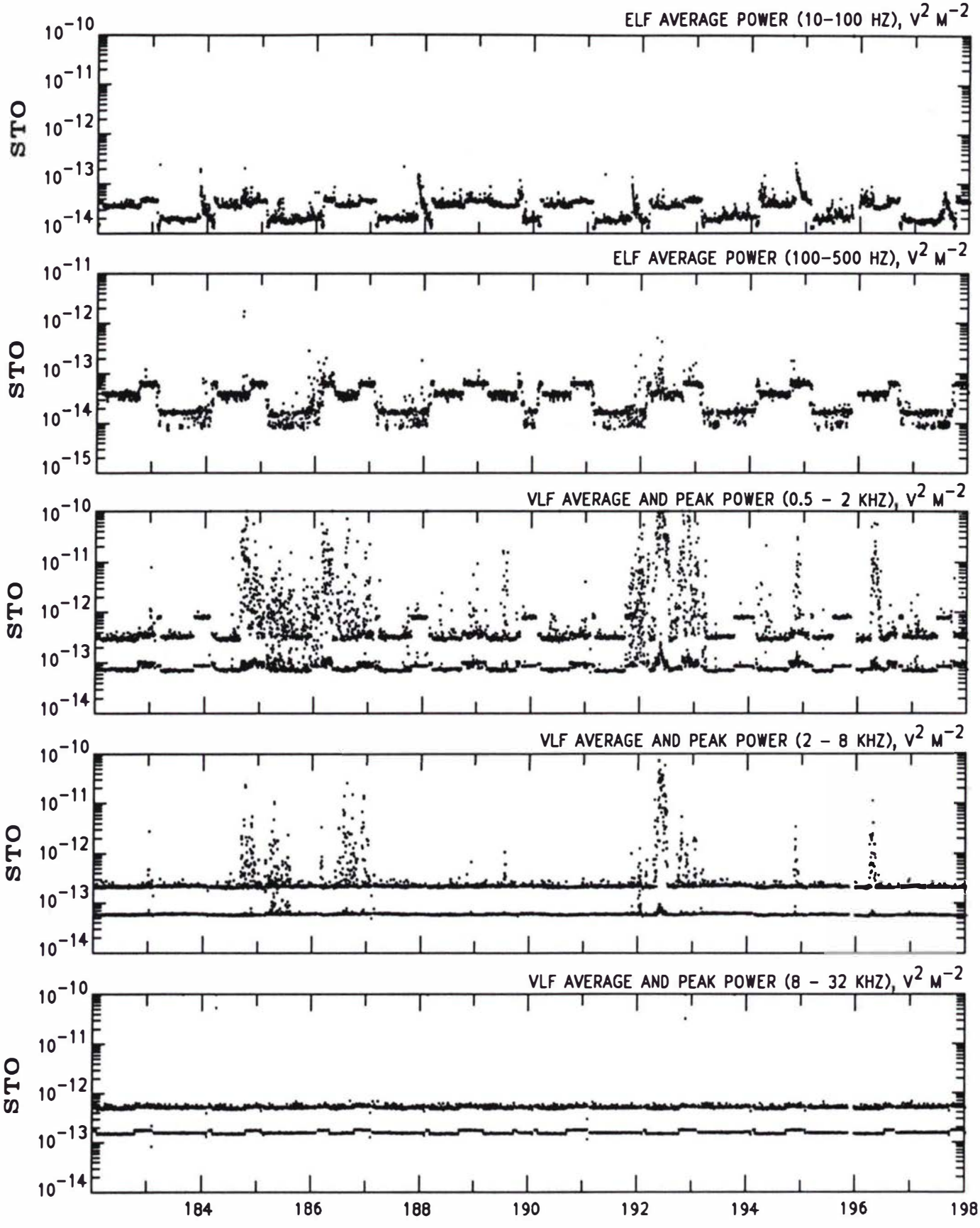
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 198 JUL 17 00:00:00.000 – 97 214 AUG 2 00:00:00.000



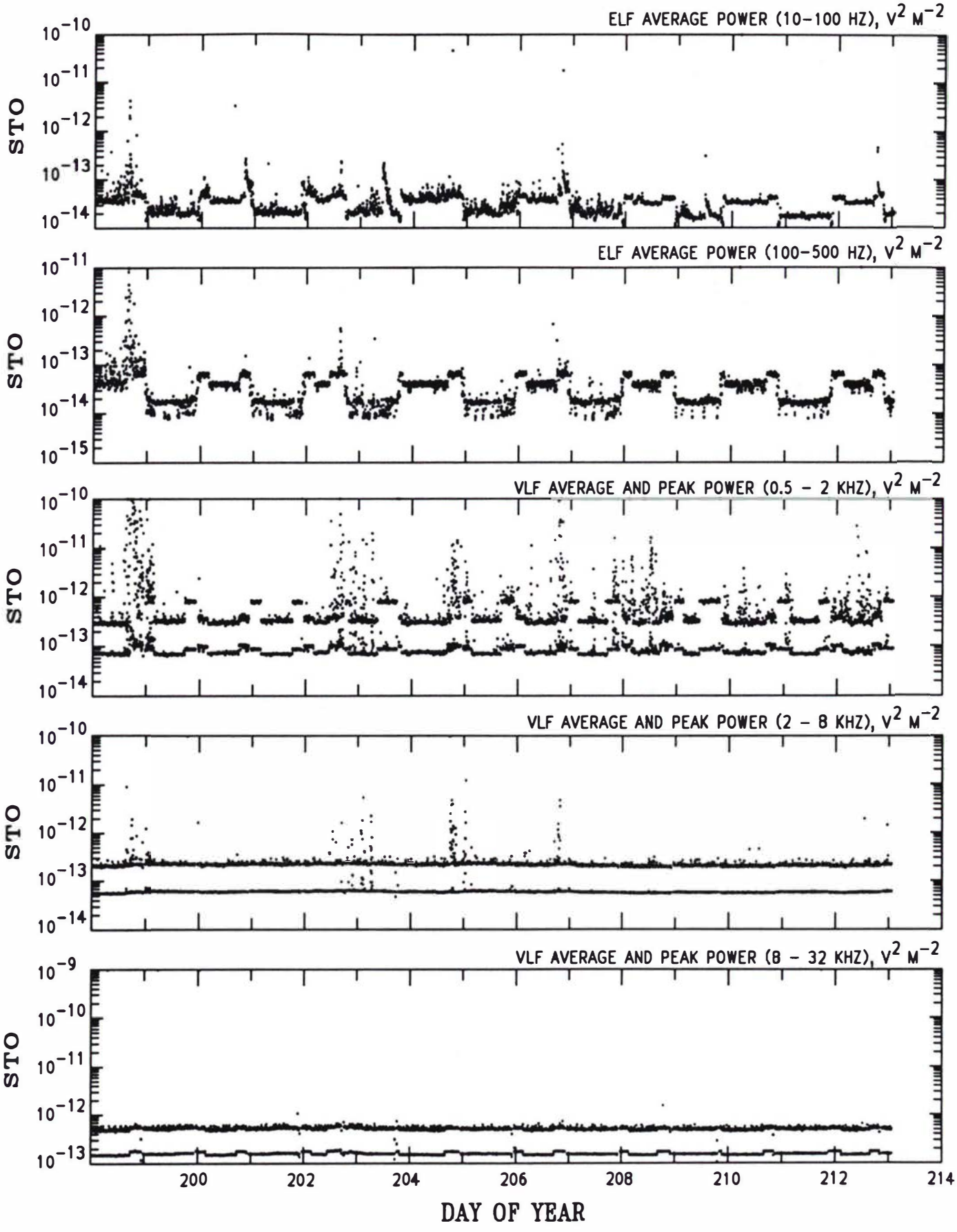
ULYSSES CDR - PLASMA WAVE

97 182 JUL 1 00:00:00.000 - 97 198 JUL 17 00:00:00.000



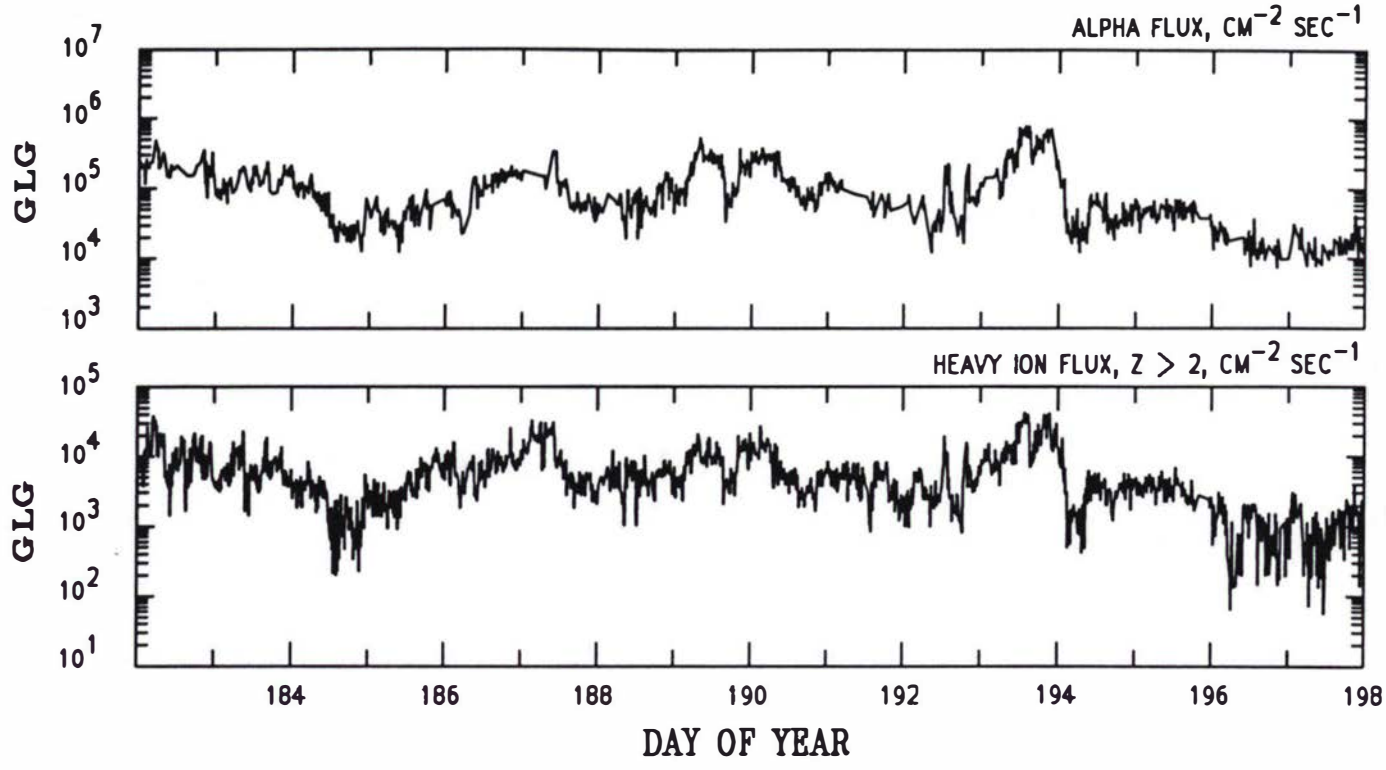
ULYSSES CDR - PLASMA WAVE

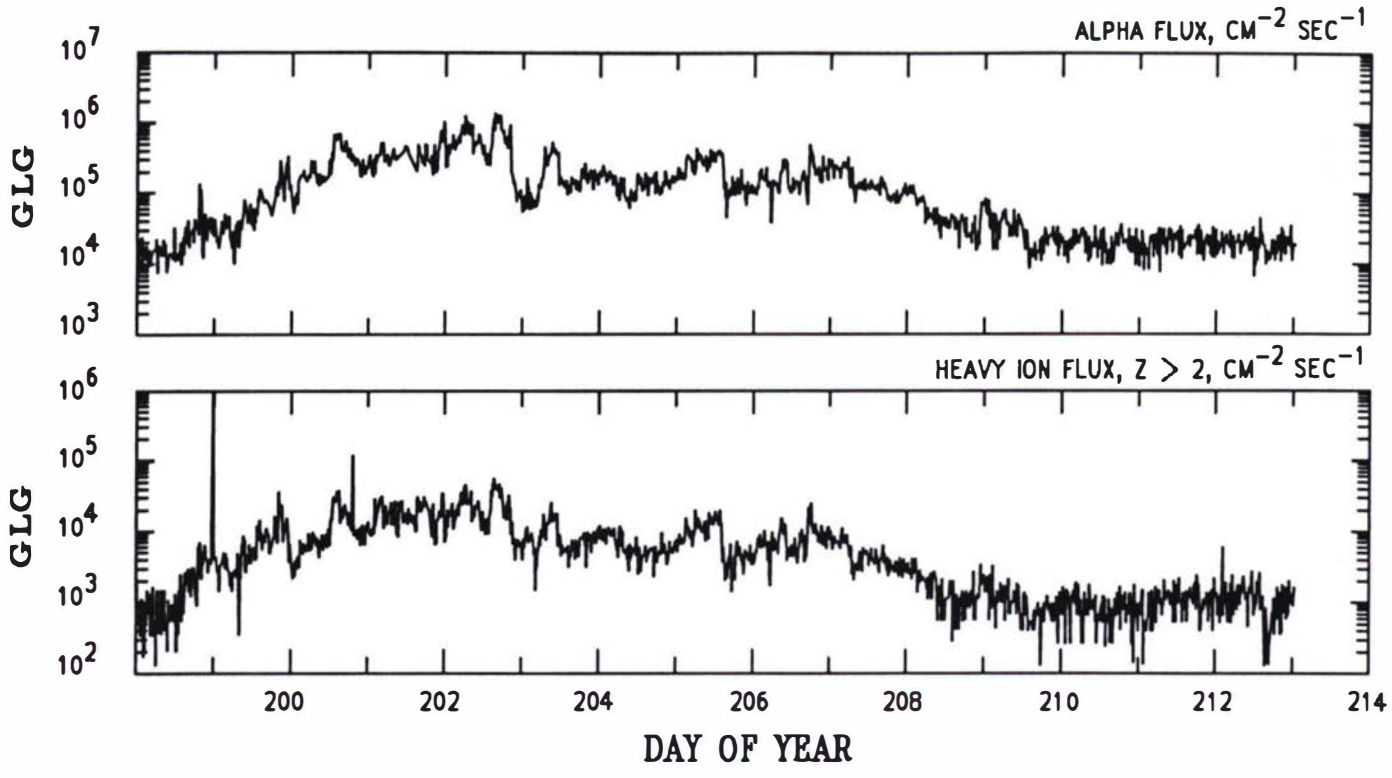
97 198 JUL 17 00:00:00.000 - 97 214 AUG 2 00:00:00.000

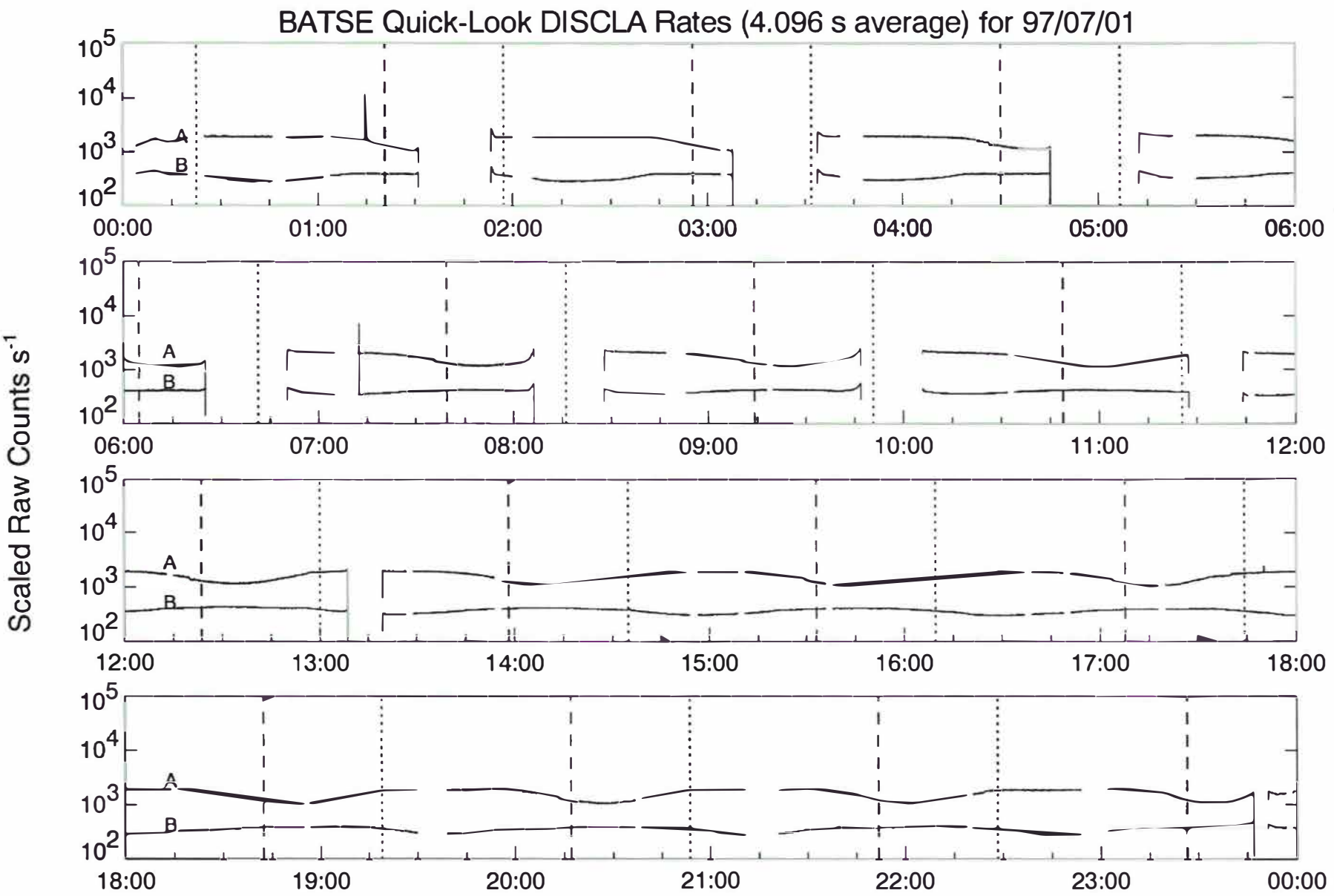


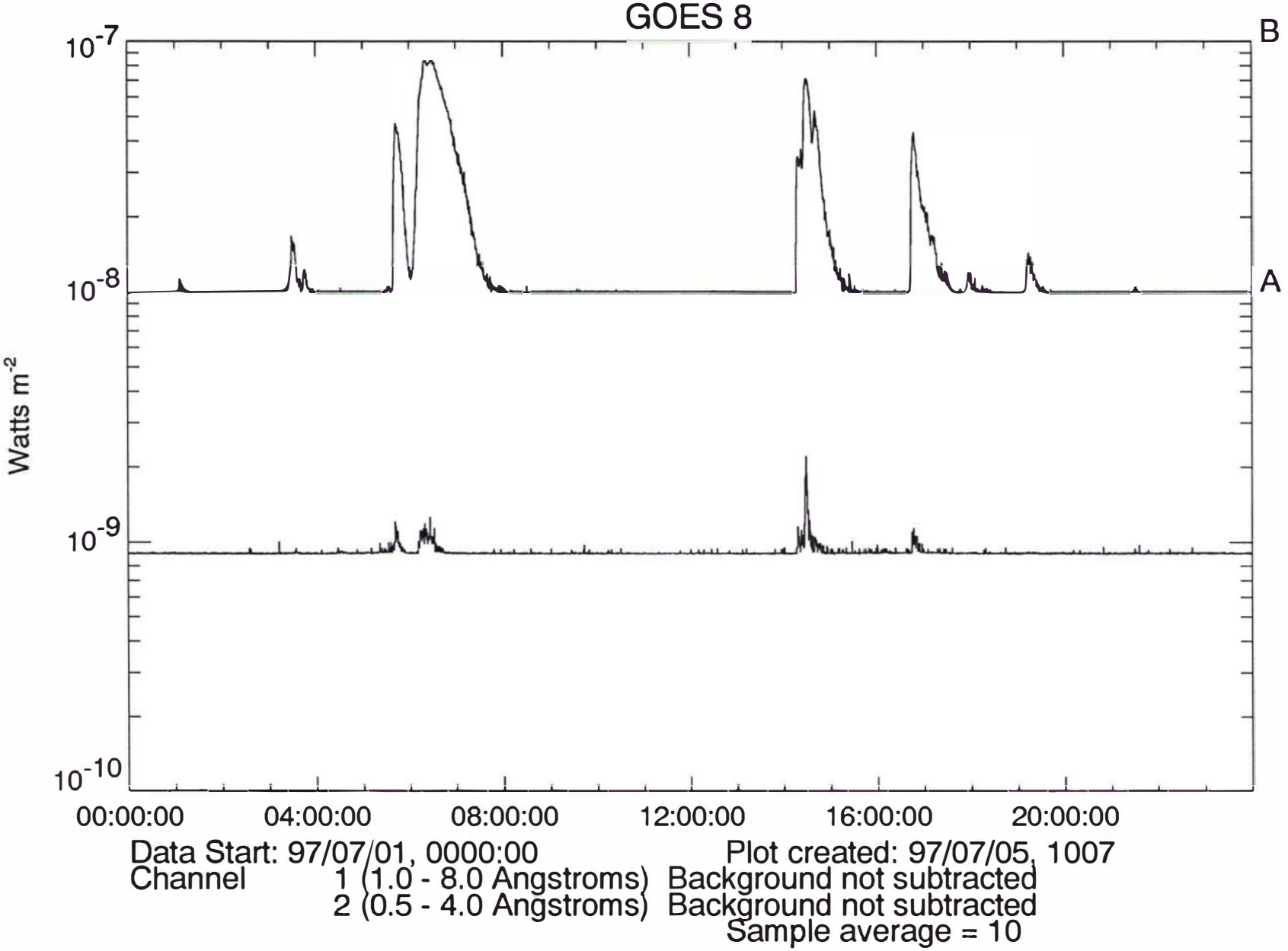
ULYSSES CDR - SOLAR WIND ION COMPOSITION

97 182 JUL 1 00:00:00.000 - 97 198 JUL 17 00:00:00.000




ULYSSES CDR - SOLAR WIND ION COMPOSITION
97 198 JUL 17 00:00:00.000 - 97 214 AUG 2 00:00:00.000
ALPHA FLUX, CM^{-2} SEC^{-1}
GLG
10^7
10^6
10^5
10^4
10^3
HEAVY ION FLUX, Z > 2, CM^{-2} SEC^{-1}
GLG
10^6
10^5
10^4
10^3
10^2
200
202
204
206
208
210
212
214
DAY OF YEAR


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/01
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
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: 97/07/05, 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
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: 97/07/01, 0000:00
Plot created: 97/07/05, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

KONUS 19970701 24552

ULYSSES RT 08/12/11

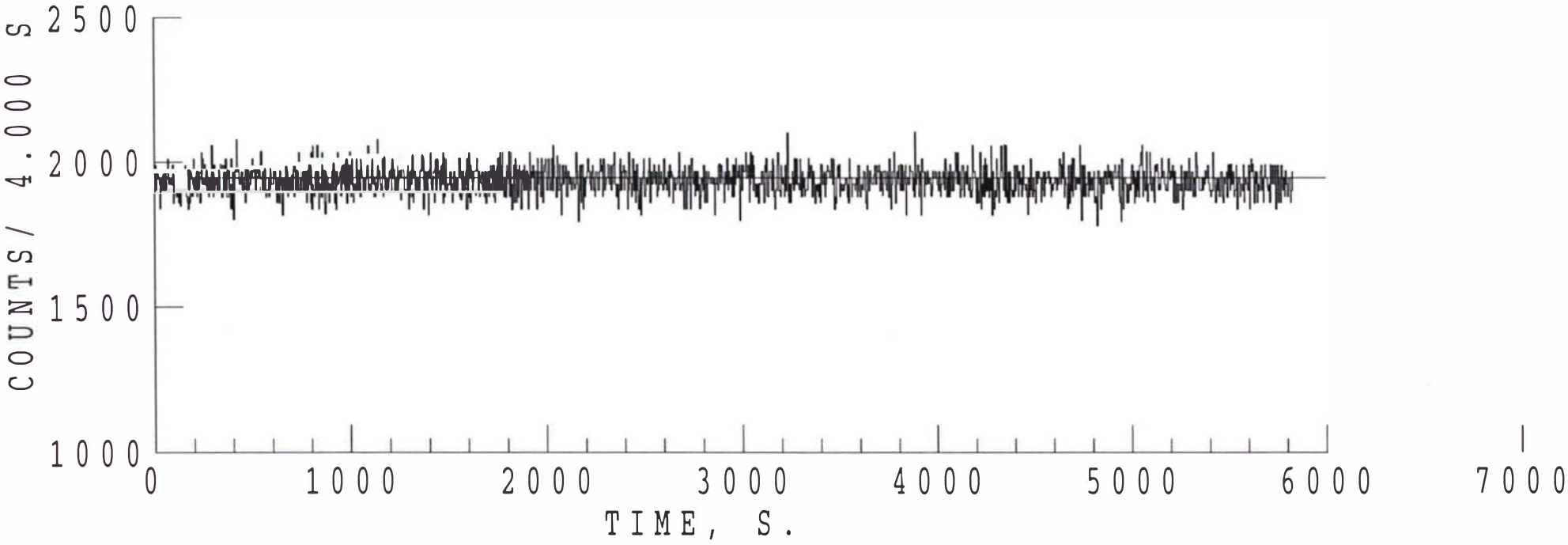
01/07/97 21636.225 s

0.500 S INTERVALS REGROUPED BY 8

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 Wed Jul 2 09:31 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 JAA00556; Wed, 2 Jul 1997 09:31:51 -0700
Date: Wed, 2 Jul 1997 11:31:24 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970702113124.21669e2a@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6292
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

No - too weak

****
BATSEARCH PROGRAM
****

BATSE BURST # 6292
EVENT OF 1997 JUL 1 DAY OF YEAR=182
EVENT CROSSING TIME AT BATSE : 40546. S. OR 11:15:46.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 273.000 32.000
BATSE PEAK COUNTING RATE: 7700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 7/ 97 IS:
RA= 153.328 DEC= 25.795 DIST= 5.782 AU
BATSE-ULYSSES DISTANCE = 864939986. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 425.25 SECS.
CROSSING TIME AT ULYSSES IS 40971. S. OR 11:22:51 +/- 551.89 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 7/ 97 IS:
RA= 184.978 DEC= -1.995 DIST= 1.254 AU
MARS-BATSE DISTANCE = 187615136. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -6.76 SECS.
CROSSING TIME AT MARS IS 40539. S. OR 11:15:39 +/- 108.54 SECONDS

BATSE BURST TRIGGER
NO.: 6292

TIME: TJD=0630 SECONDS=40546

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

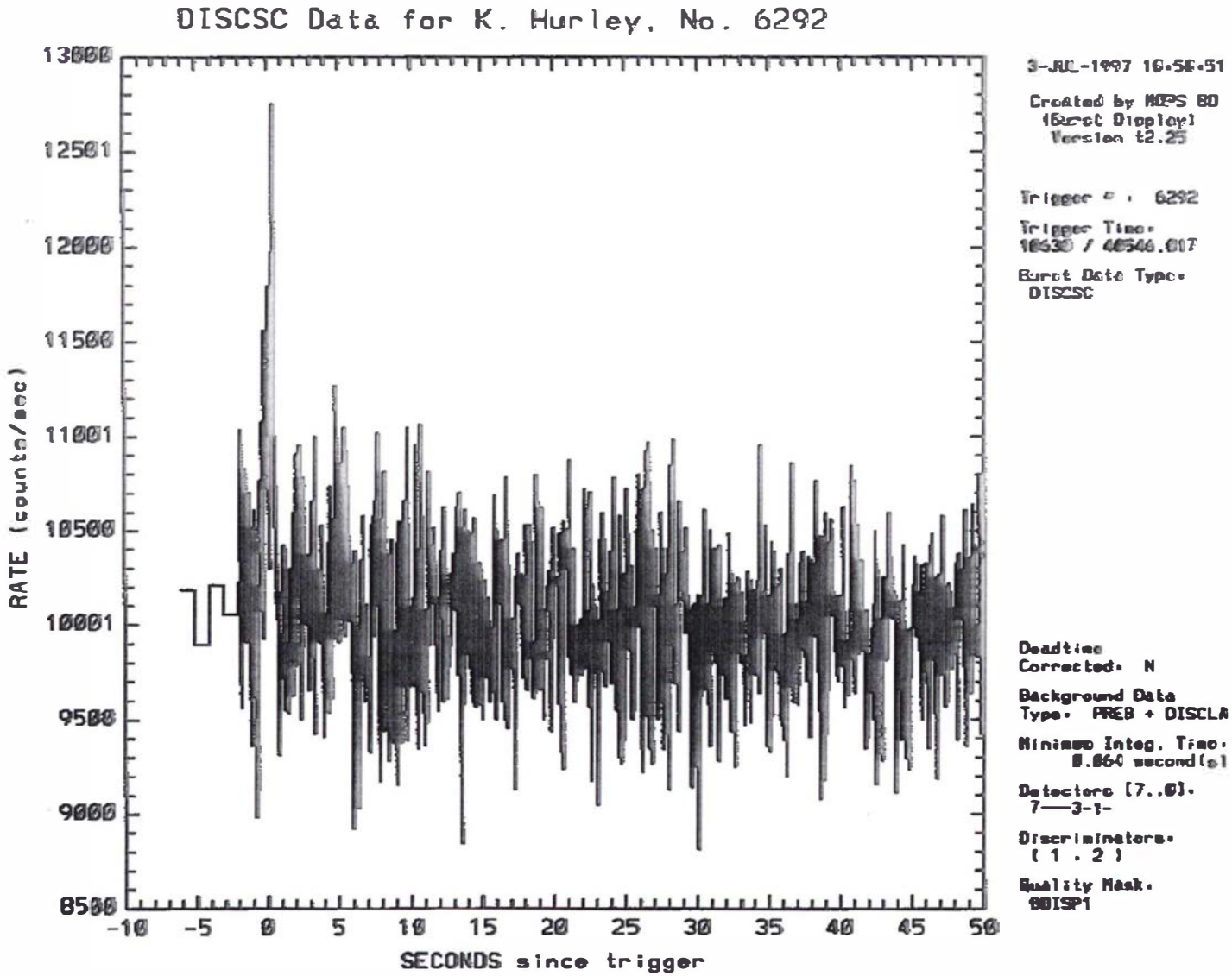
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=168.5 AZIMUTH=33.1 ERROR=7.177 DEGREES

COMMENTS:
GRB. DUR~1.8S. SINGLE PULSE. VISIBLE ABOVE 300 KEV.

Content-Length: 1215
X-Lines: 15
Status: RO

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6292	970701	10630	40546	7700	273	+32	1.8


DISCSC Data for K. Hurley, No. 6292
RATE (counts/sec)
13000
12501
12000
11500
11001
10500
10001
9500
9000
8500
-10
-5
0
5
10
15
20
25
30
35
40
45
50
SECONDS since trigger
3-JUL-1997 16:56:51
Created by MOPS BD
(Burst Display)
Version t2.25
Trigger # : 6292
Trigger Time:
10630 / 40546.017
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
7——3-1-
Discriminators:
(1 . 2)
Quality Mask:
@DISP1

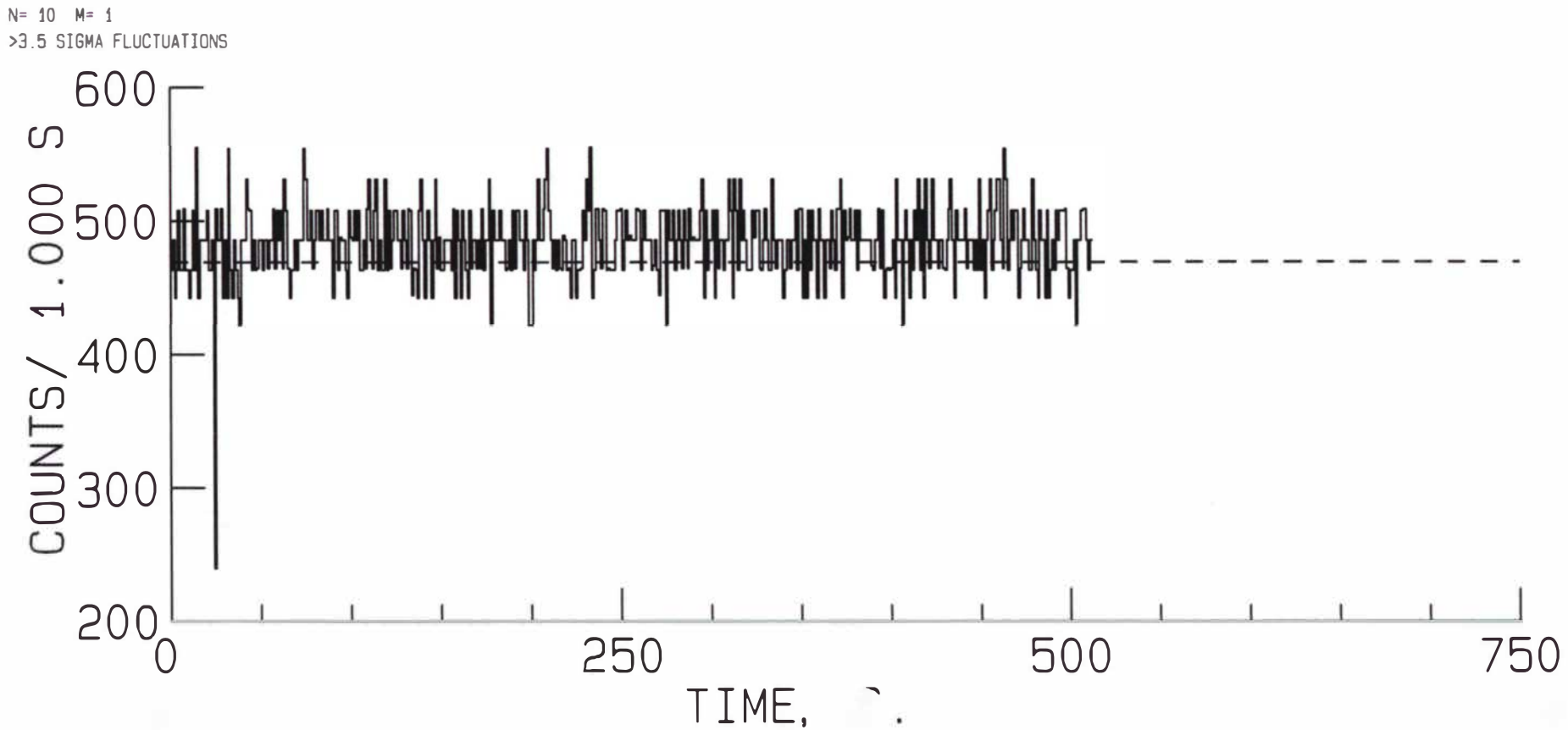
ULYSSES RT

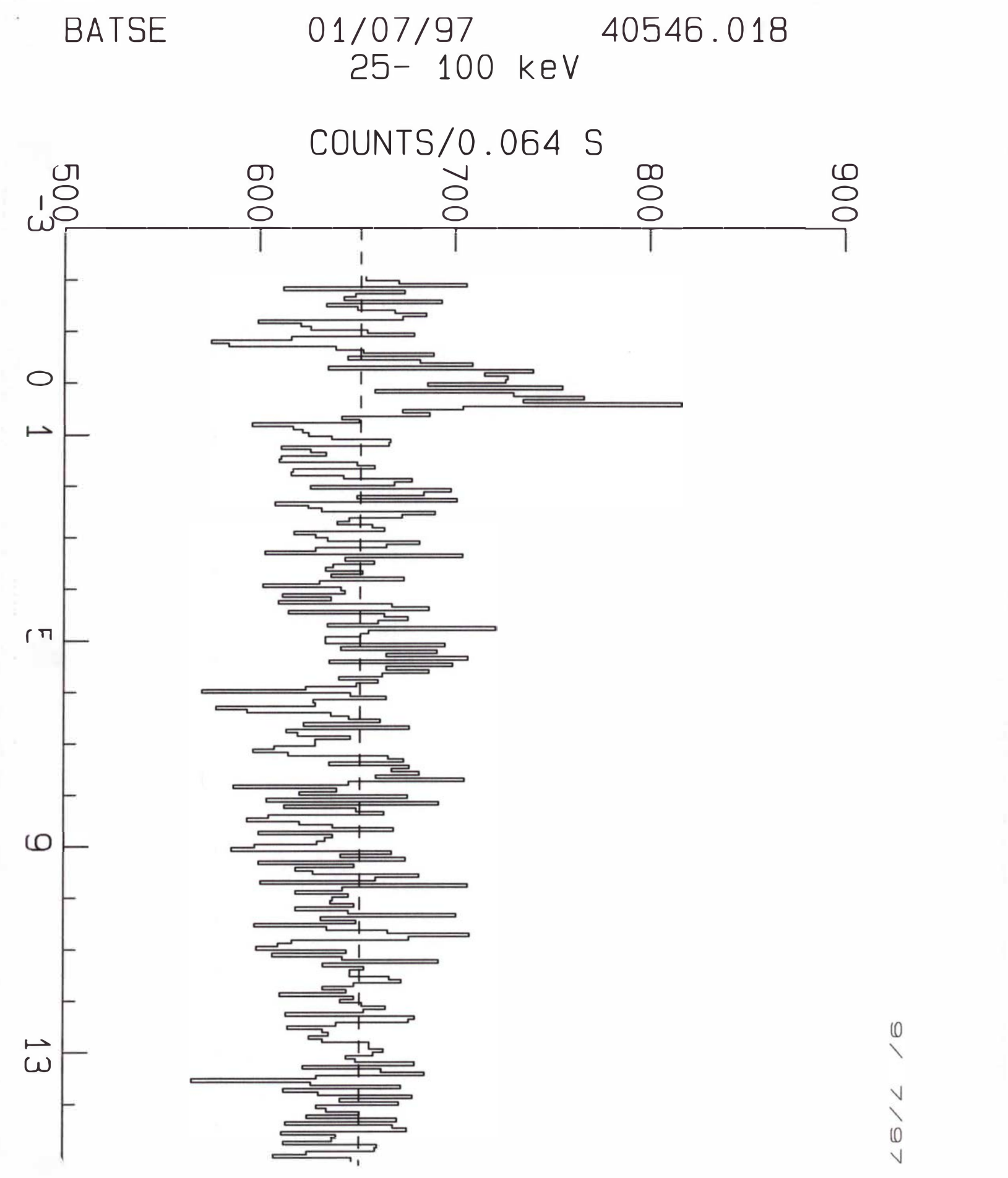
9/ 7/97

1/ 7/97 40356.444 s

0.500 S INTERVALS REGROUPED BY 2

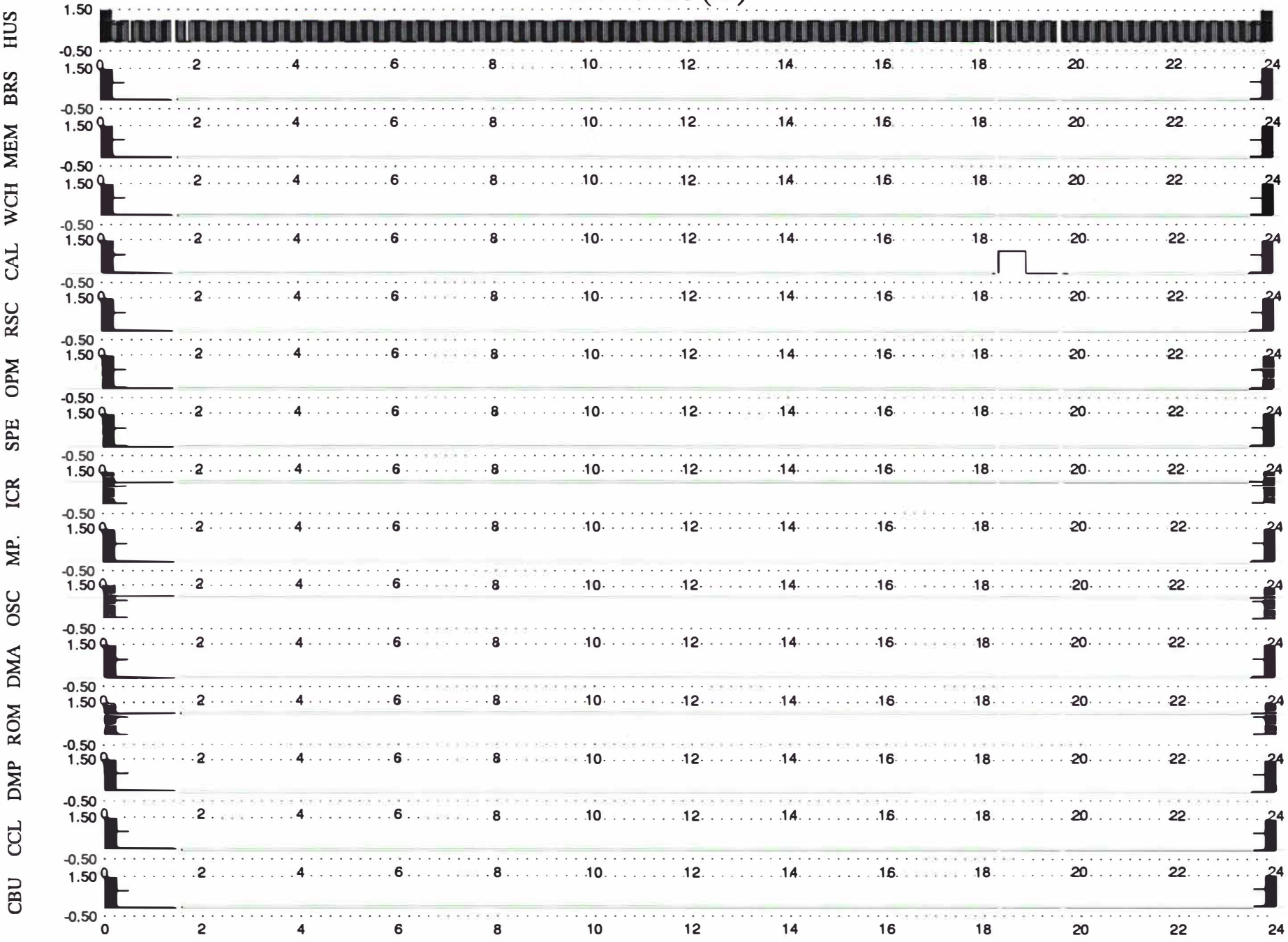
22- 147 keV




BATSE 01/07/97 40546.018
25- 100 keV
COUNTS/0.064 S
500
600
700
800
900
-3
0
1
6
13
9/ 7/97

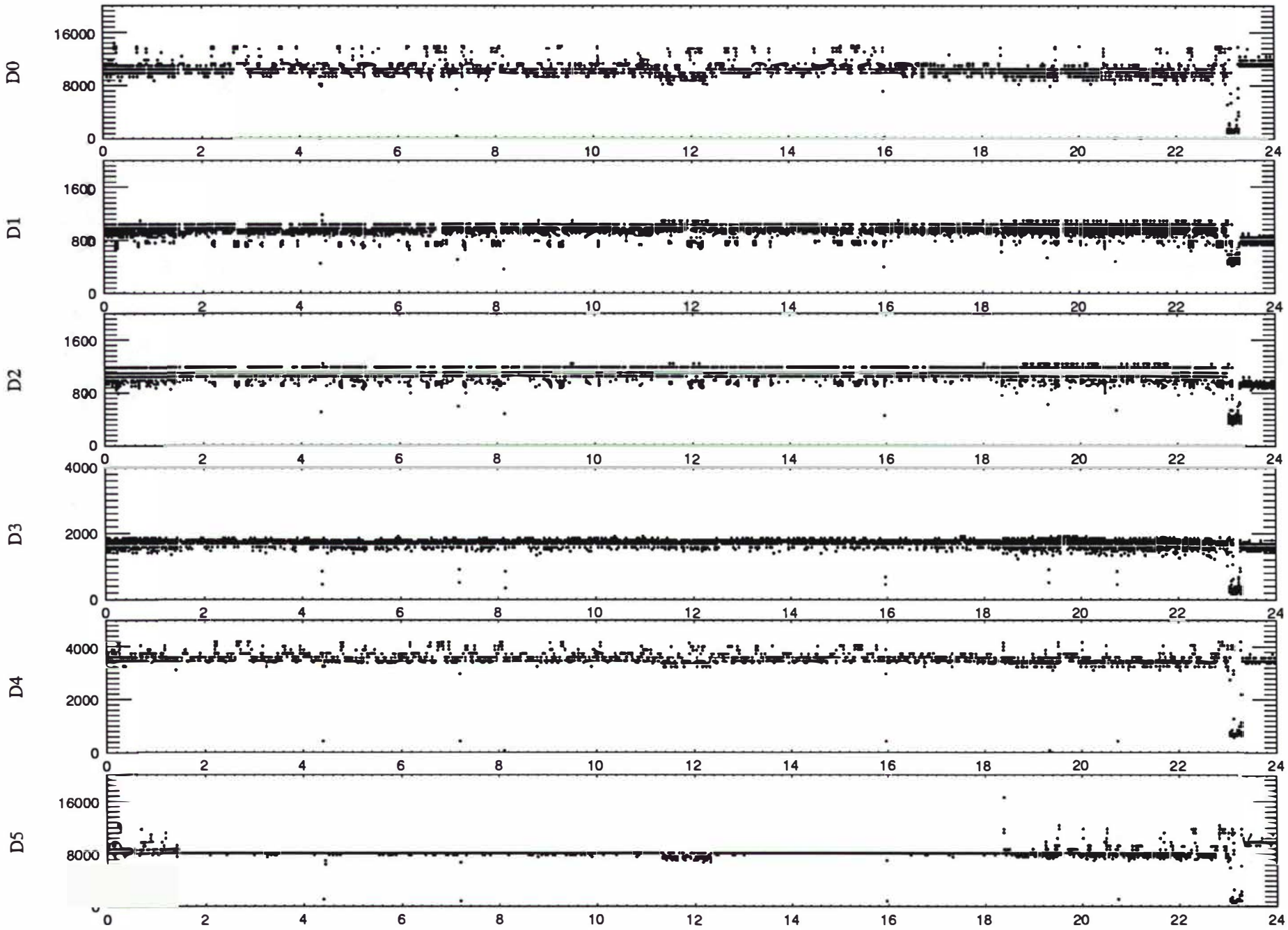
HUS MODES EDR day 182, year 1997 to day 182, year 1997 10/24/97

NO BURST (13)



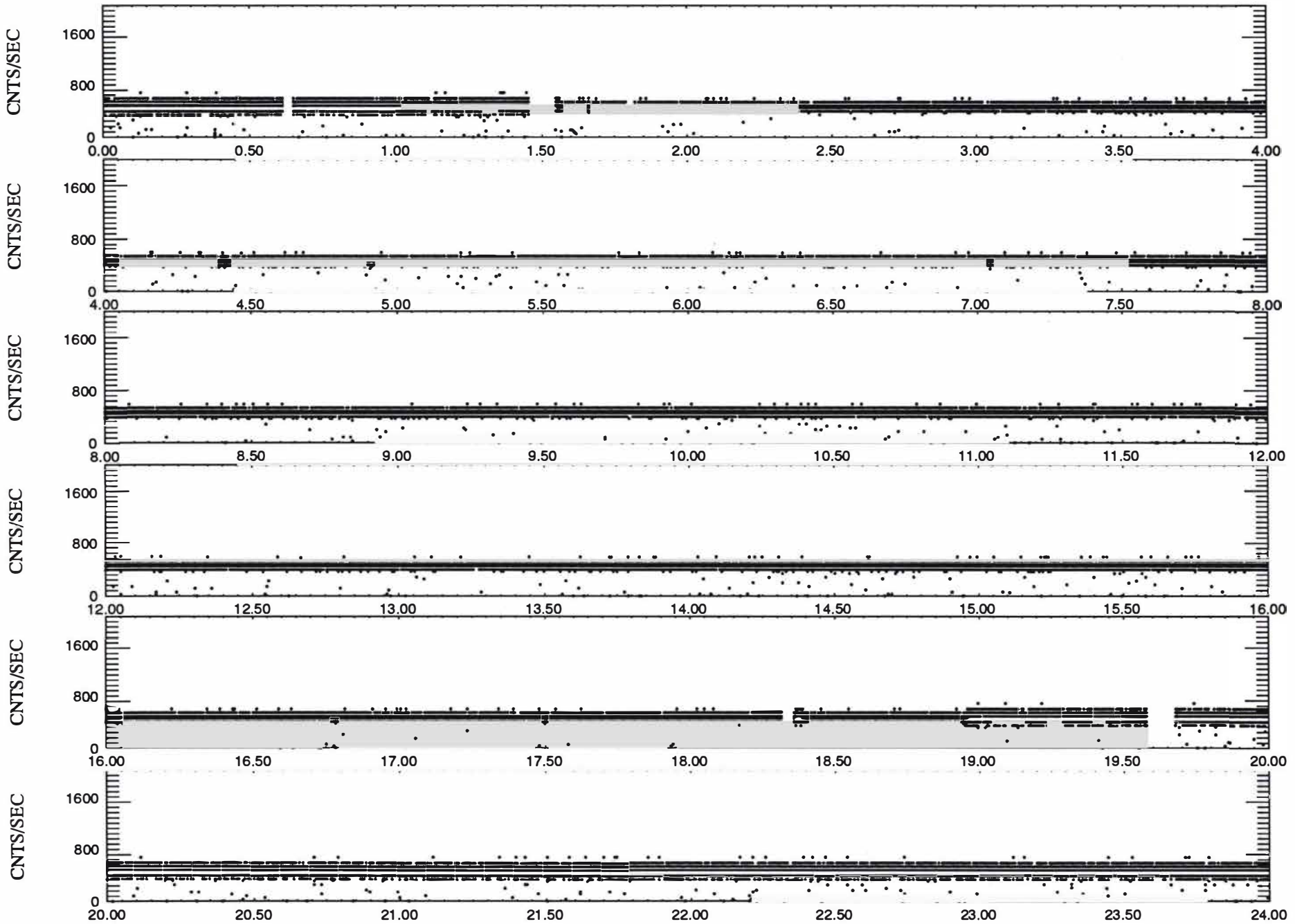
UNIV[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 182, year 1997 to day 182, year 1997 10/24/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 182, year 1997 to day 182, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

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

Konus report on recent Ulysses events not seen by BATSE

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

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

From kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 22 Aug 1997 17:22:32 -0400
To: hurley@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

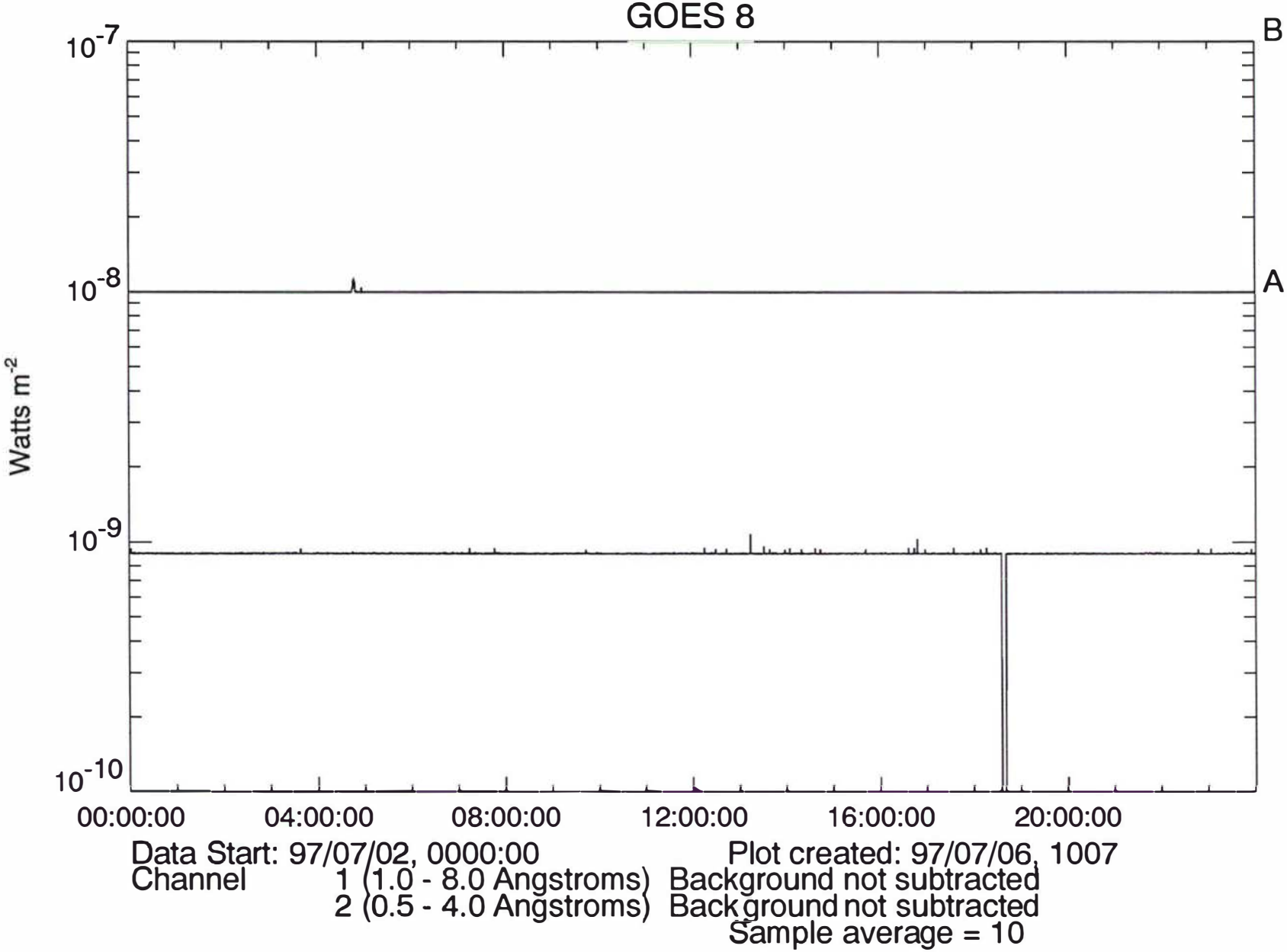
Hi Kevin,

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

Here are the details.

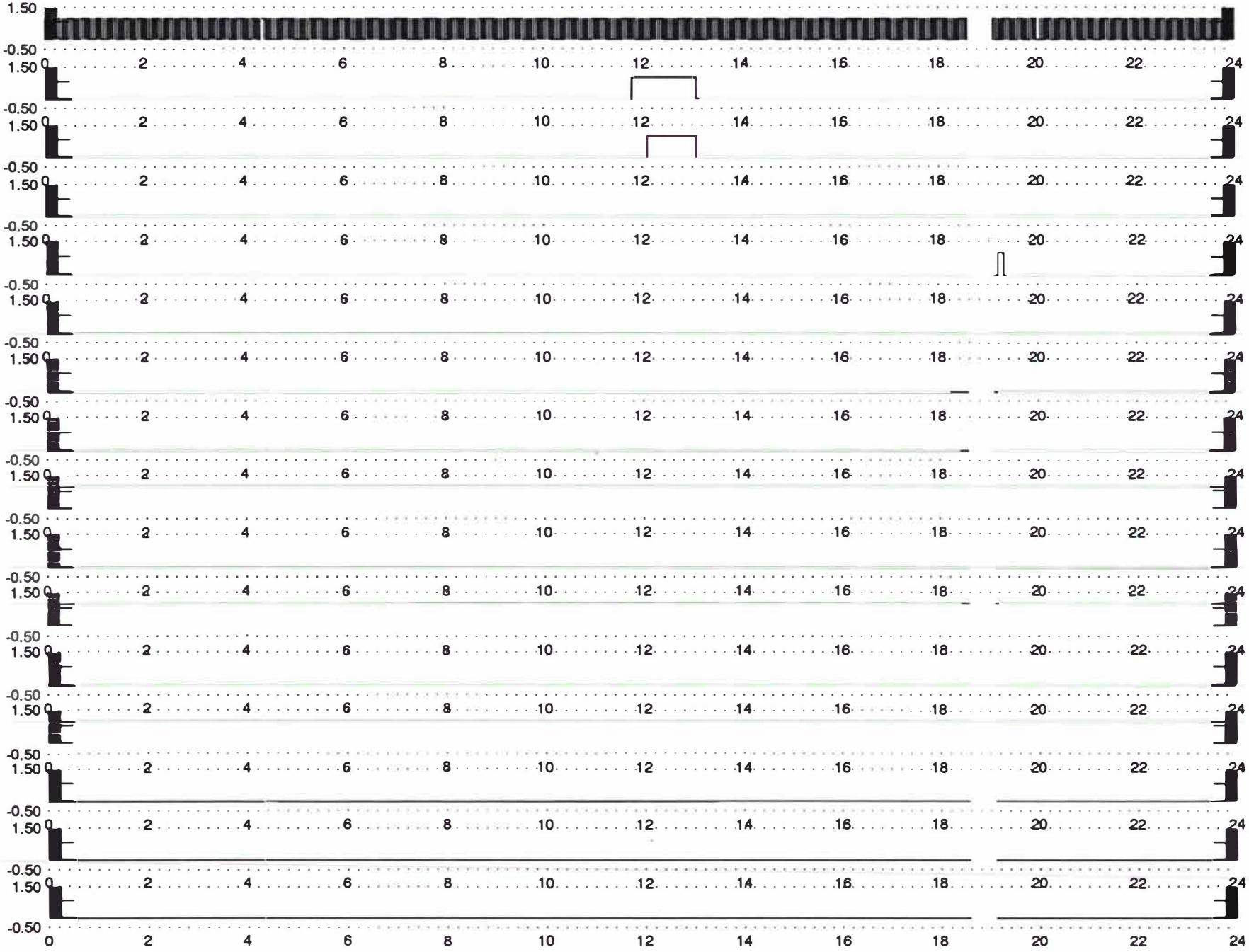
Pete

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


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: 97/07/02, 0000:00
Plot created: 97/07/06, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

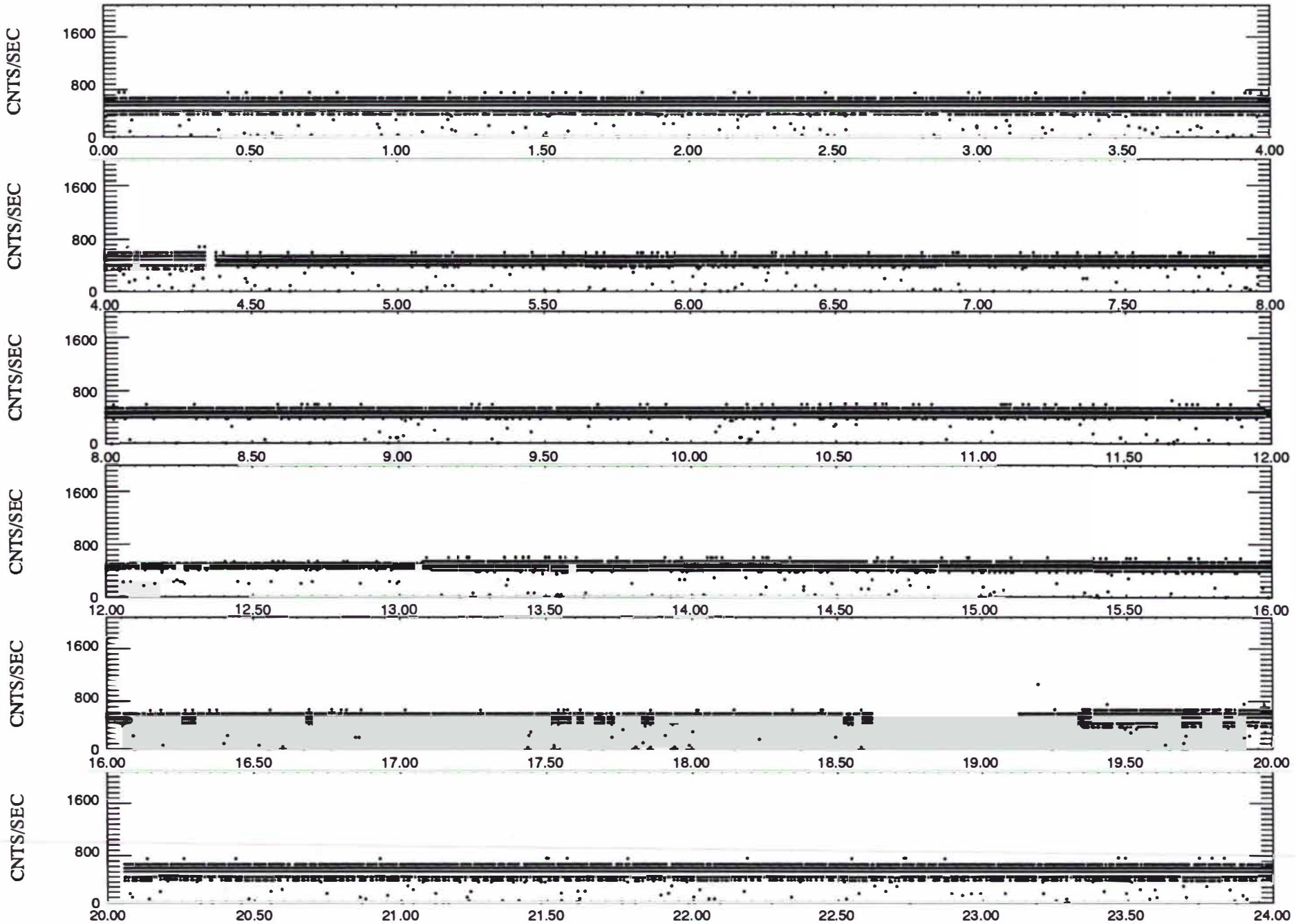
HUS MODES EDR day 183, year 1997 to day 183, year 1997 10/24/97

BURST NUMBER 14



HUS 2A, MODE 1, NOT AVERAGED EDR day 183, year 1997 to day 183, year 1997 10/24/97

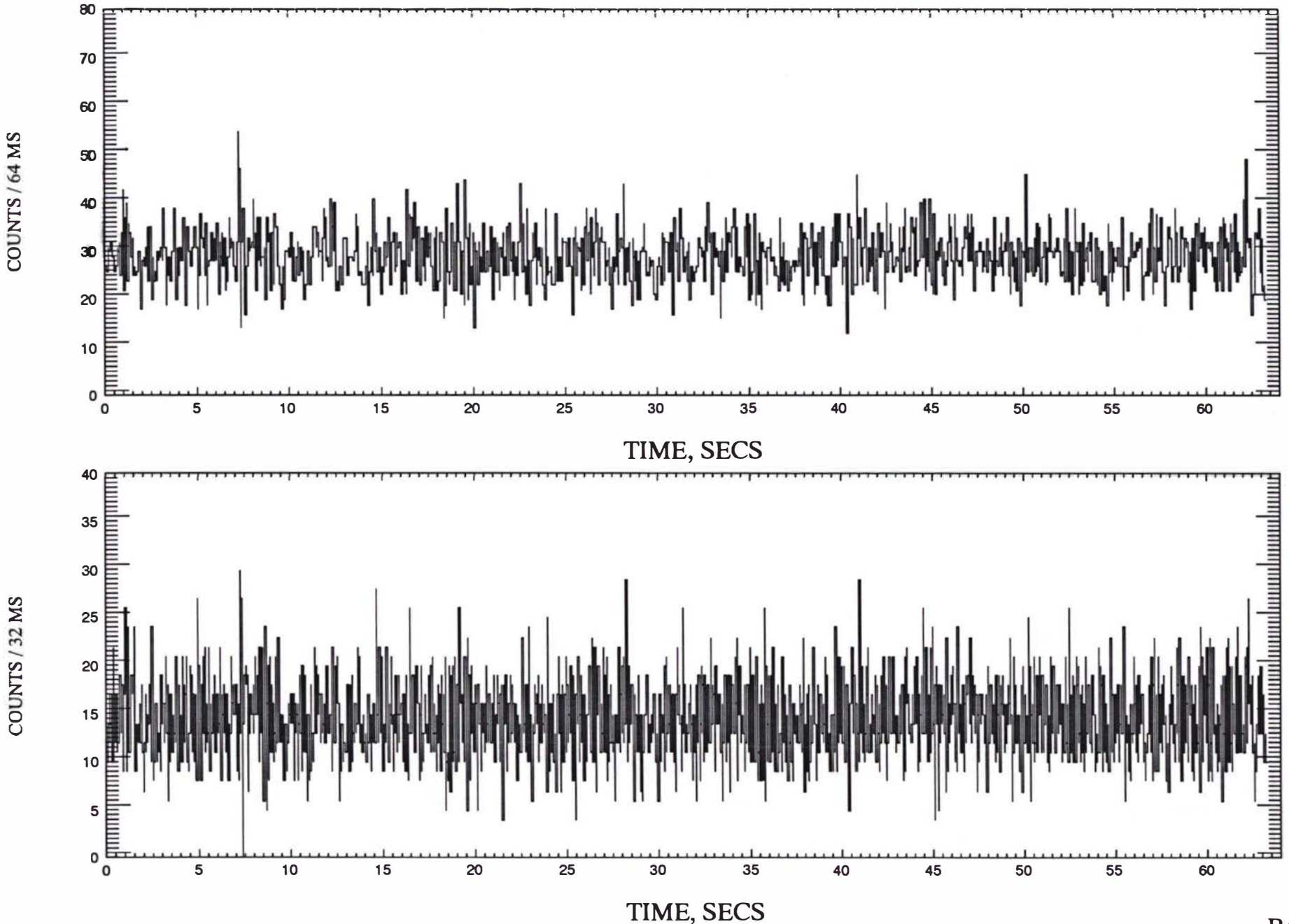
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 183, year 1997 10/24/97

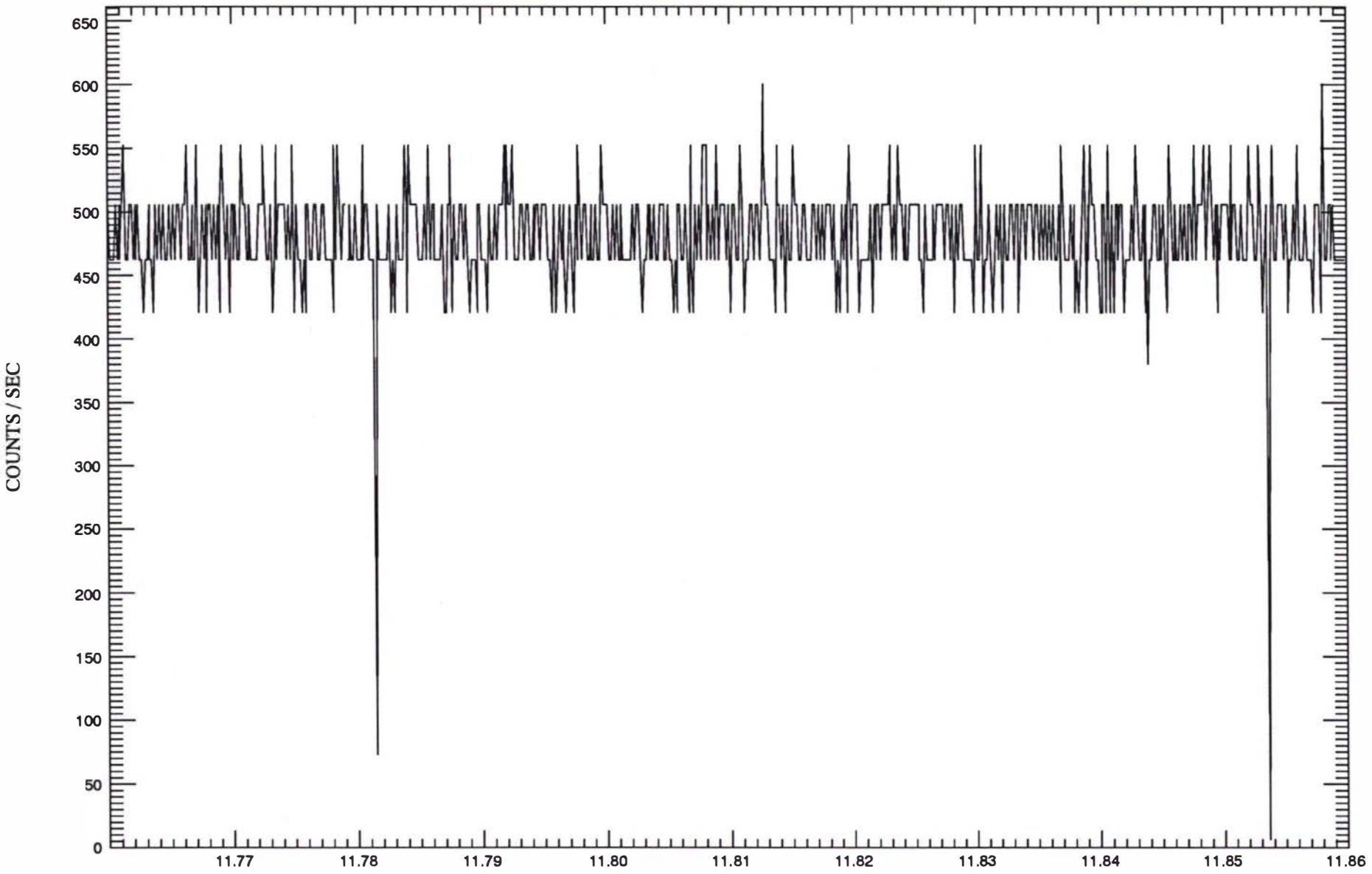
Burst Counter 14 at UT=11.812800390455 h=42526.081 s 11:48:46.081



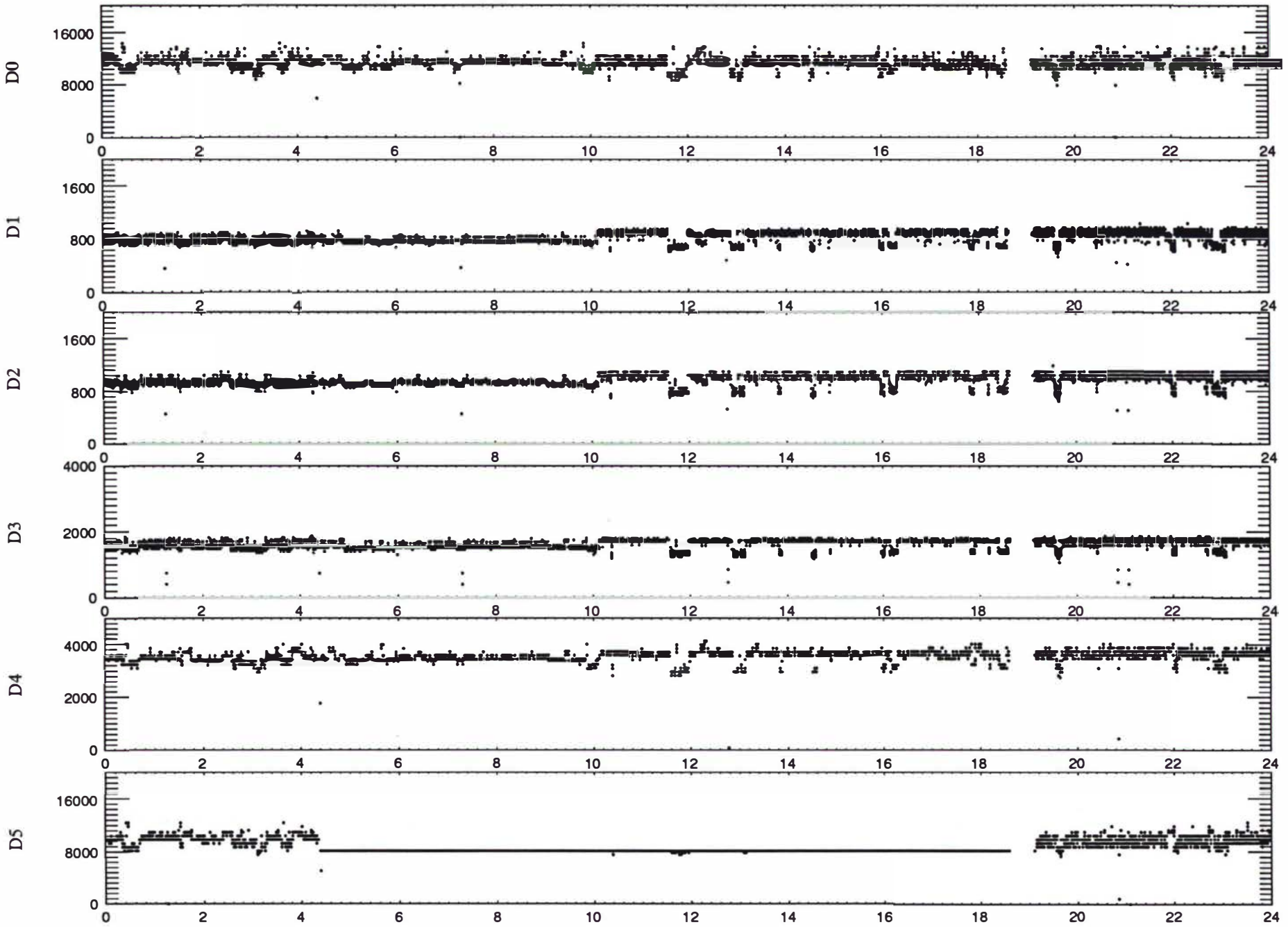
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 183, year 1997 to day 183, year 1997 10/24/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 183, year 1997 to day 183, year 1997 10/24/97



SAX

HUS DATA

19/07/05

ULYSSES RT

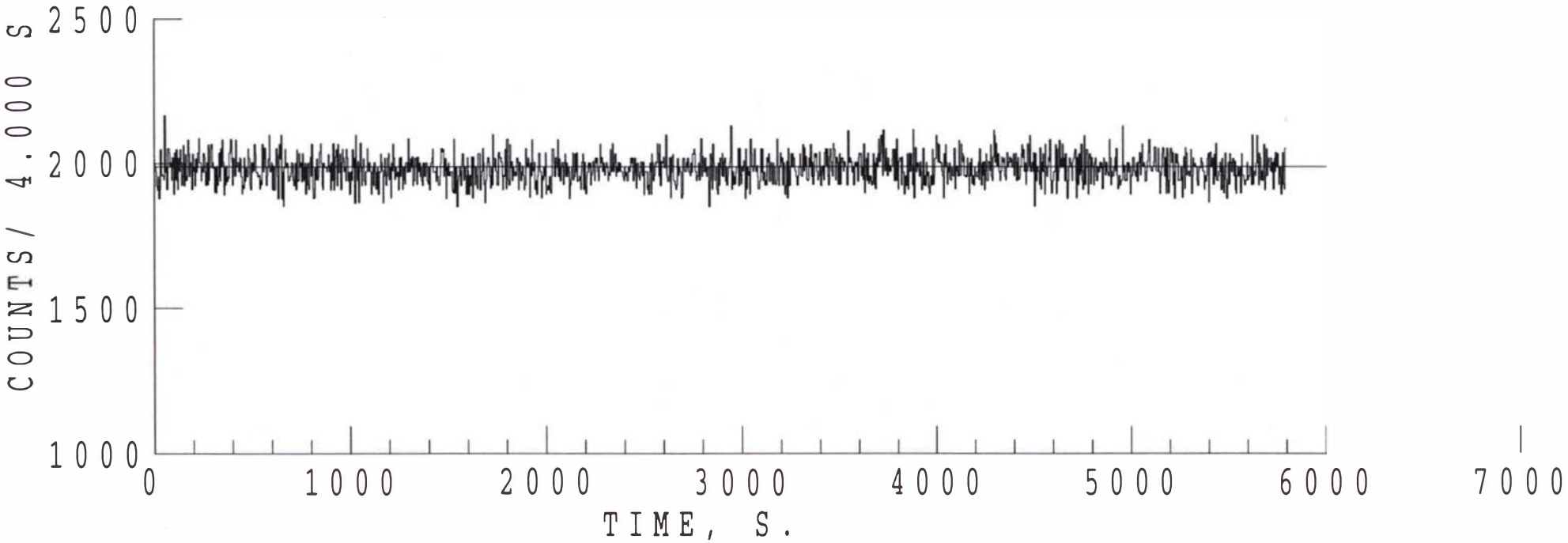
03/07/97 76248.109 s

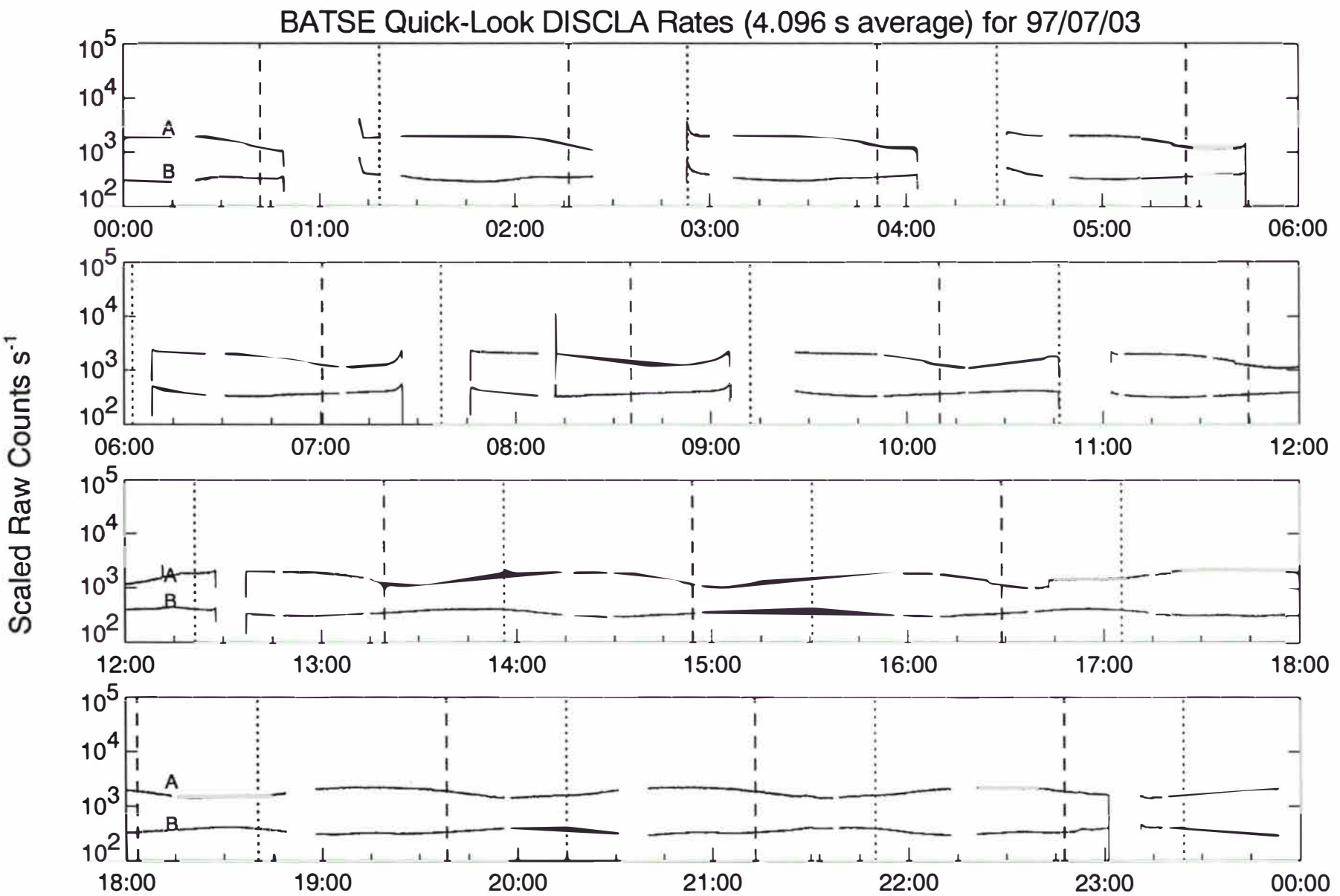
0.250 S INTERVALS REGROUPED BY 16

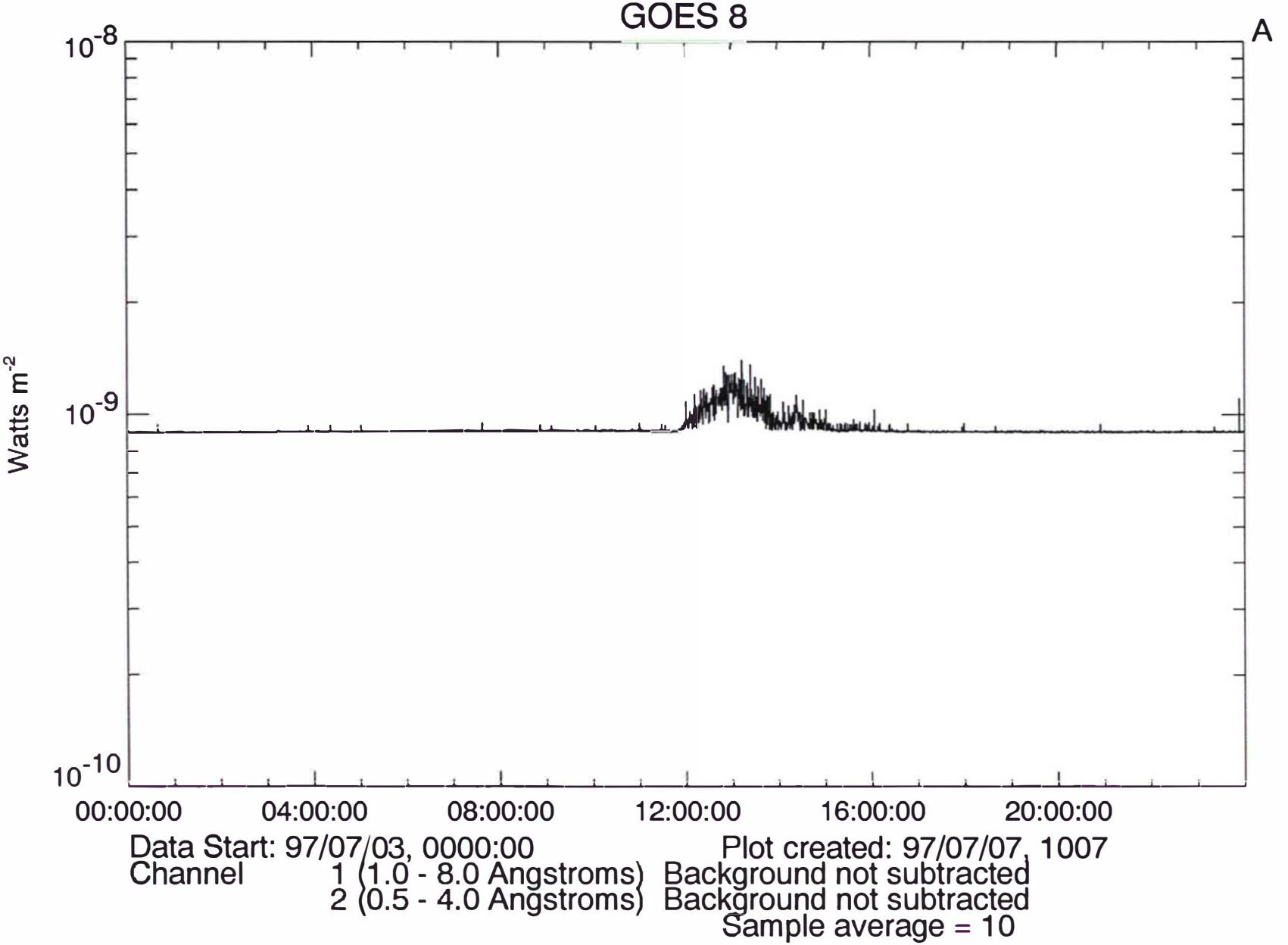
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

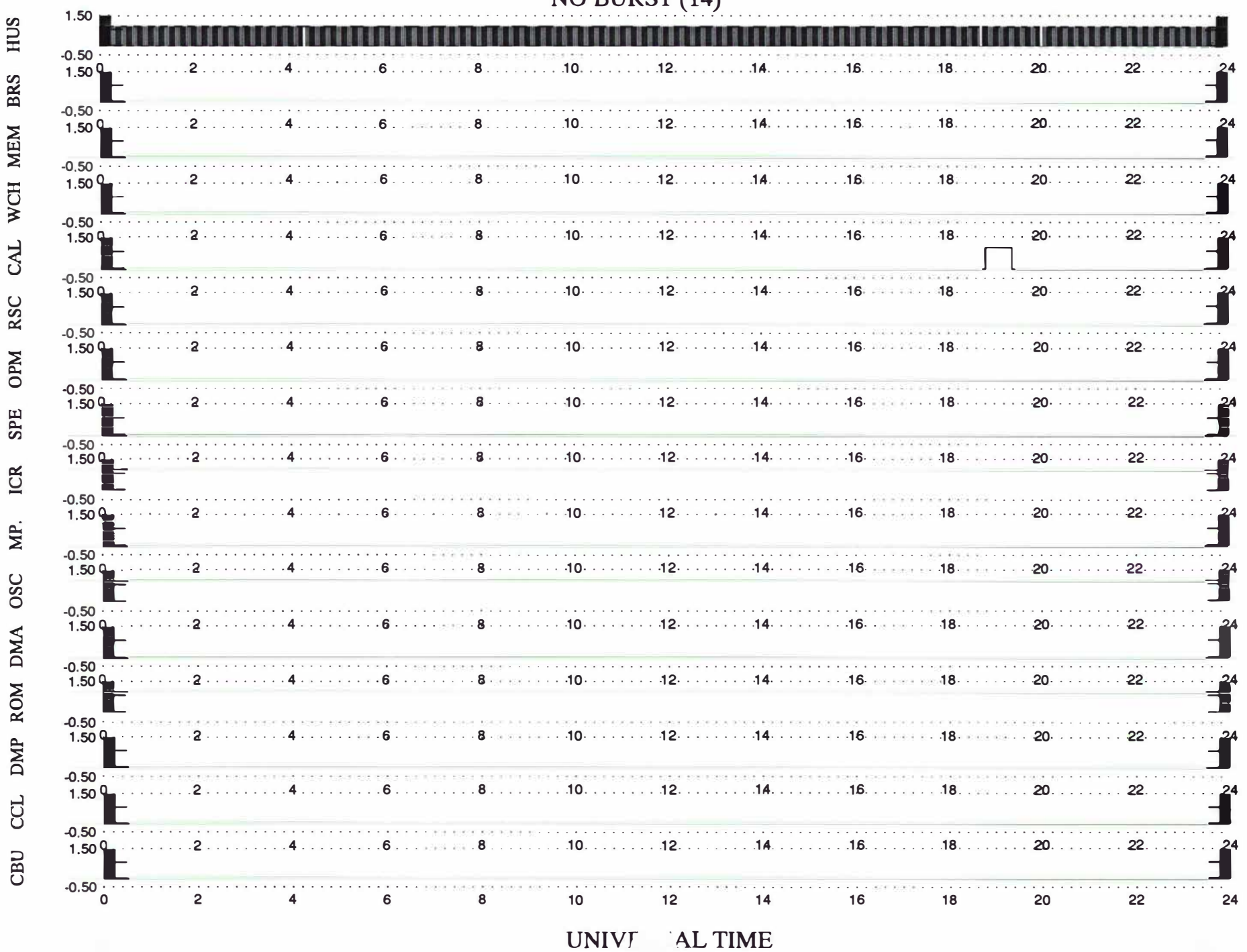
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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

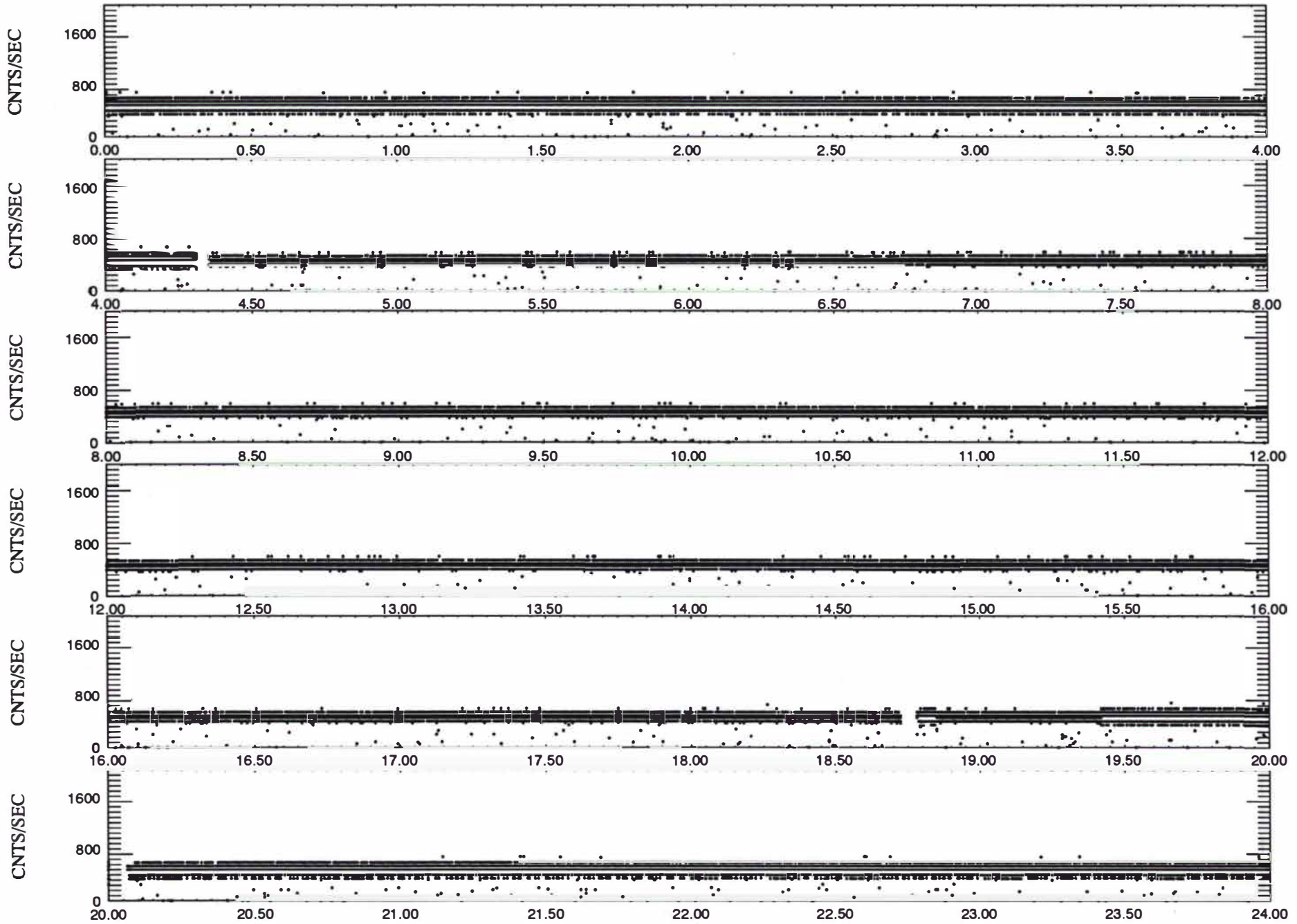

GOES 8
A
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/03, 0000:00
Plot created: 97/07/07, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 184, year 1997 to day 184, year 1997 10/24/97



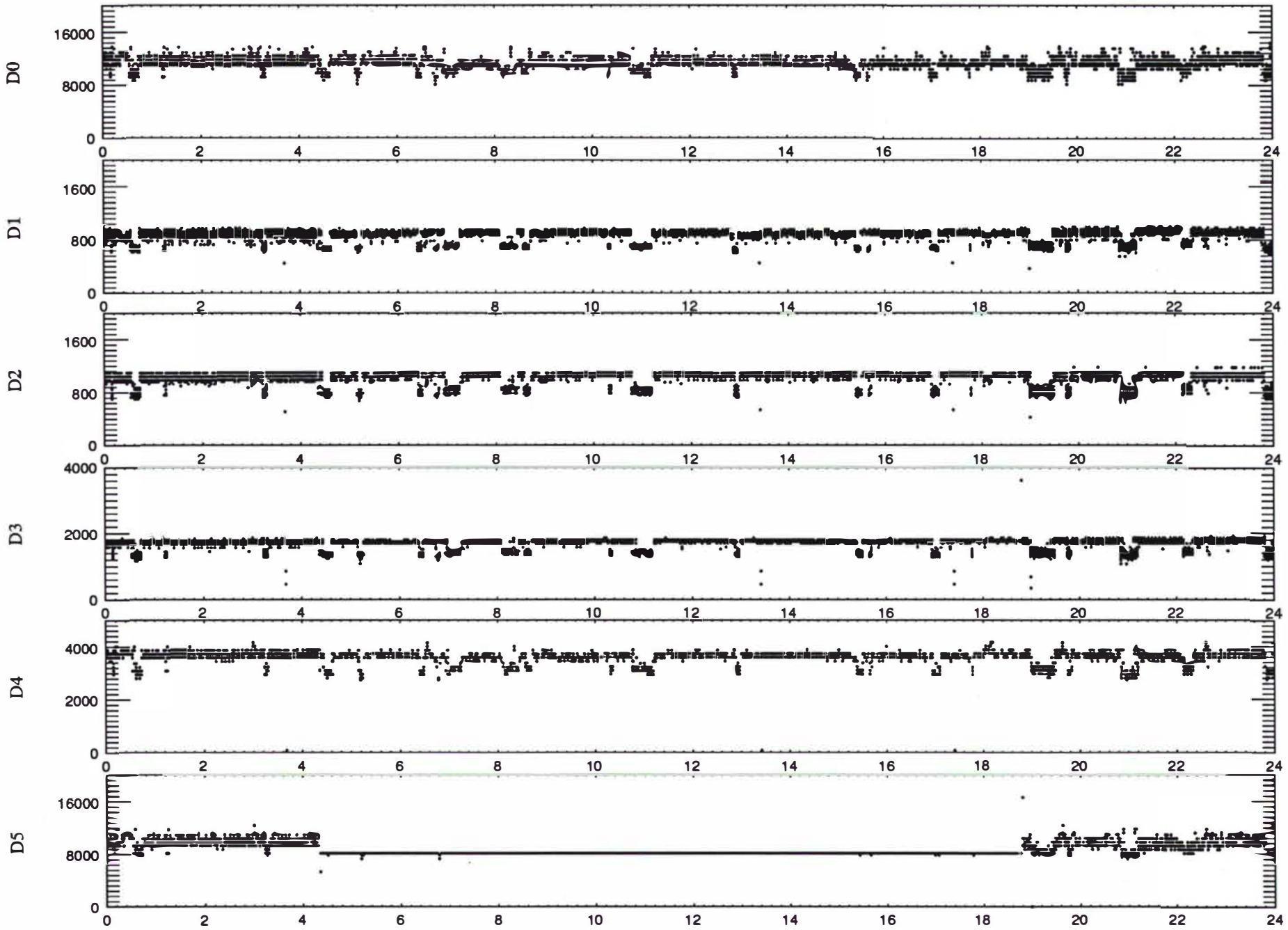
HUS 2A, MODE 1, NOT AVERAGED EDR day 184, year 1997 to day 184, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 184, year 1997 to day 184, year 1997 10/24/97



From HENZE@SSLLES.MSFC.NASA.GOV Mon Jul 7 13:03 PDT 1997
Return-Path: <HENZE@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA14306; Mon, 7 Jul 1997 13:03:16 -0700
Date: Mon, 7 Jul 1997 15:03:05 -0500 (CDT)
From: HENZE@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970707150306.2240a4b6@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6293
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6293
EVENT OF 1997 JUL 4 DAY OF YEAR=185
EVENT CROSSING TIME AT BATSE : 4096. S. OR 01:08:16.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 75.000 -16.000
BATSE PEAK COUNTING RATE: 665000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 7/ 97 IS:
RA= 153.601 DEC= 25.491 DIST= 5.816 AU
BATSE-ULYSSES DISTANCE = 870108052. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -153.41 SECS.
CROSSING TIME AT ULYSSES IS 3943. S. OR 01:05:42 +/- 550.86 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 7/ 97 IS:
RA= 186.305 DEC= -2.634 DIST= 1.275 AU
MARS-BATSE DISTANCE = 190810336. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 70.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 214.00 SECS.
CROSSING TIME AT MARS IS 4310. S. OR 01:11:49 +/- 107.32 SECONDS

BATSE BURST TRIGGER
NO.: 6293

TIME: TJD=0633 SECONDS=04096

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=014.4 AZIMUTH=089.0 ERROR=004.1 DEGREES

COMMENTS:
STRONG SPIKE, DUR. ~0.2 S, FOLLWED BY PROBABLE WEAKER EMISSION, TOTAL DUR. ~20 S
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6293	970704	10633	04096	665000	075	-16	.2

Helio corr removed 18/2/00

Date: Apr 6 '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?

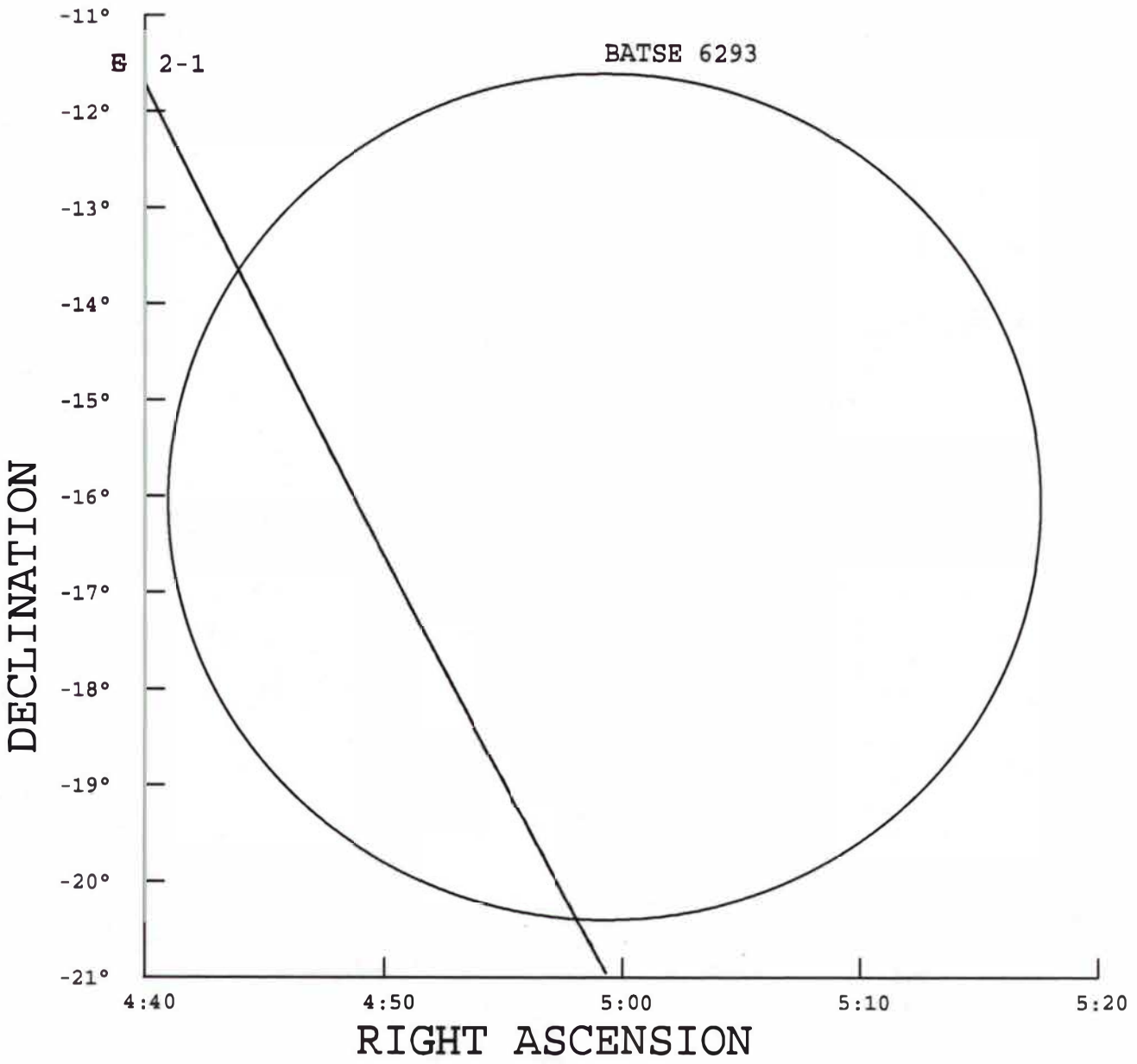
☐ Geocentric time used?

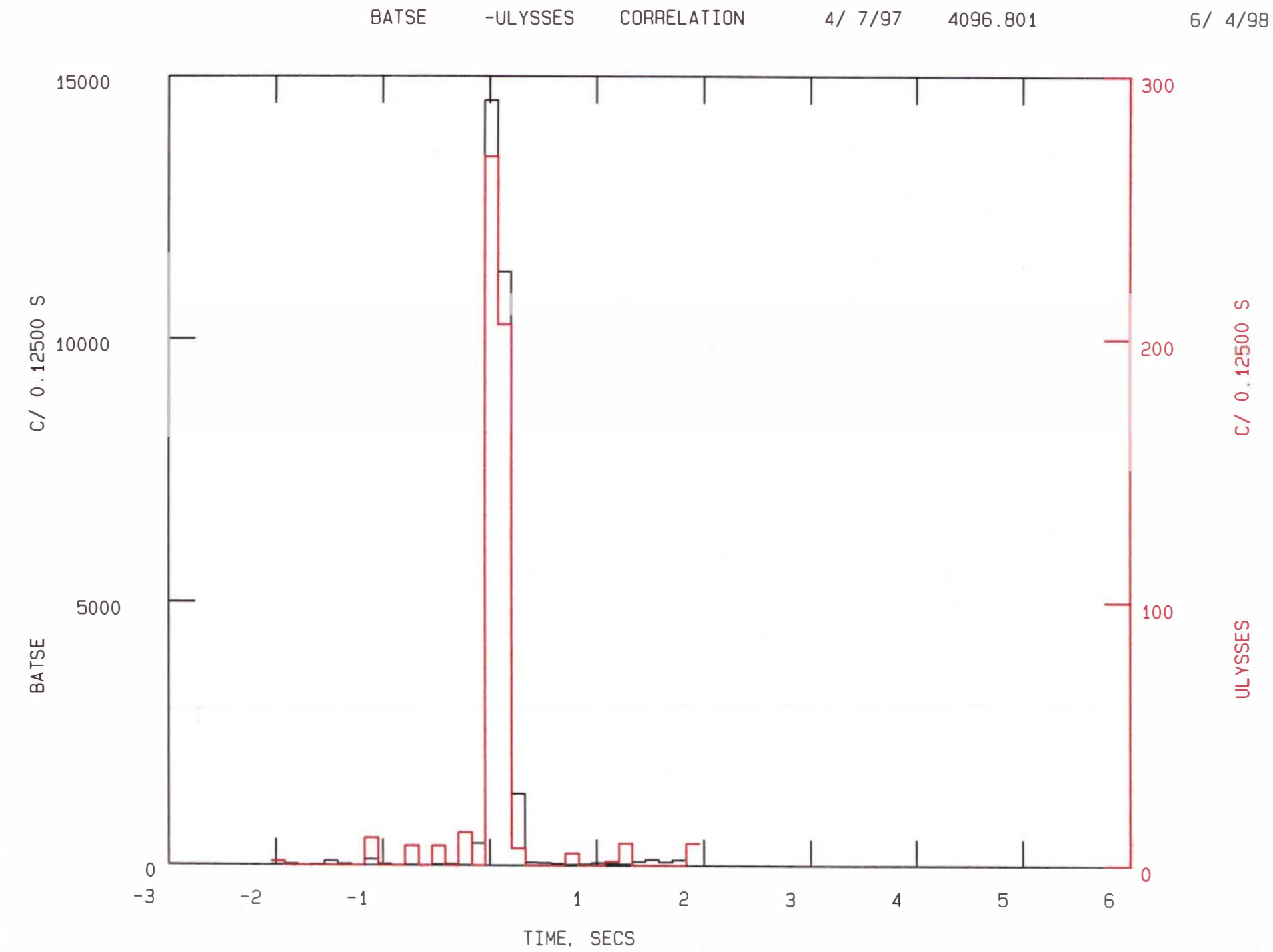
☑ ACCESS database updated?

EVENT OF JUL 4, 1997 1:08

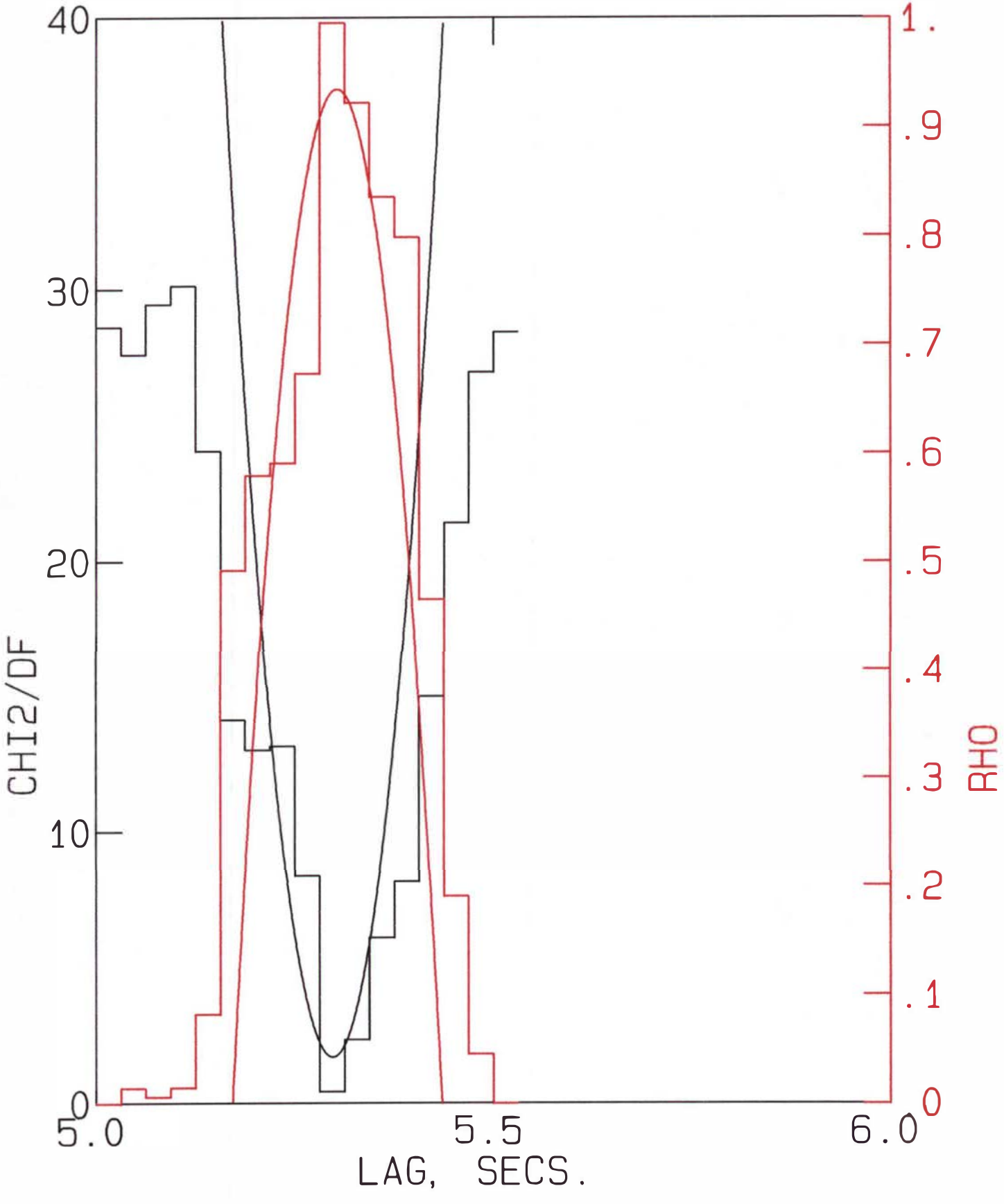
18/ 2/ 0

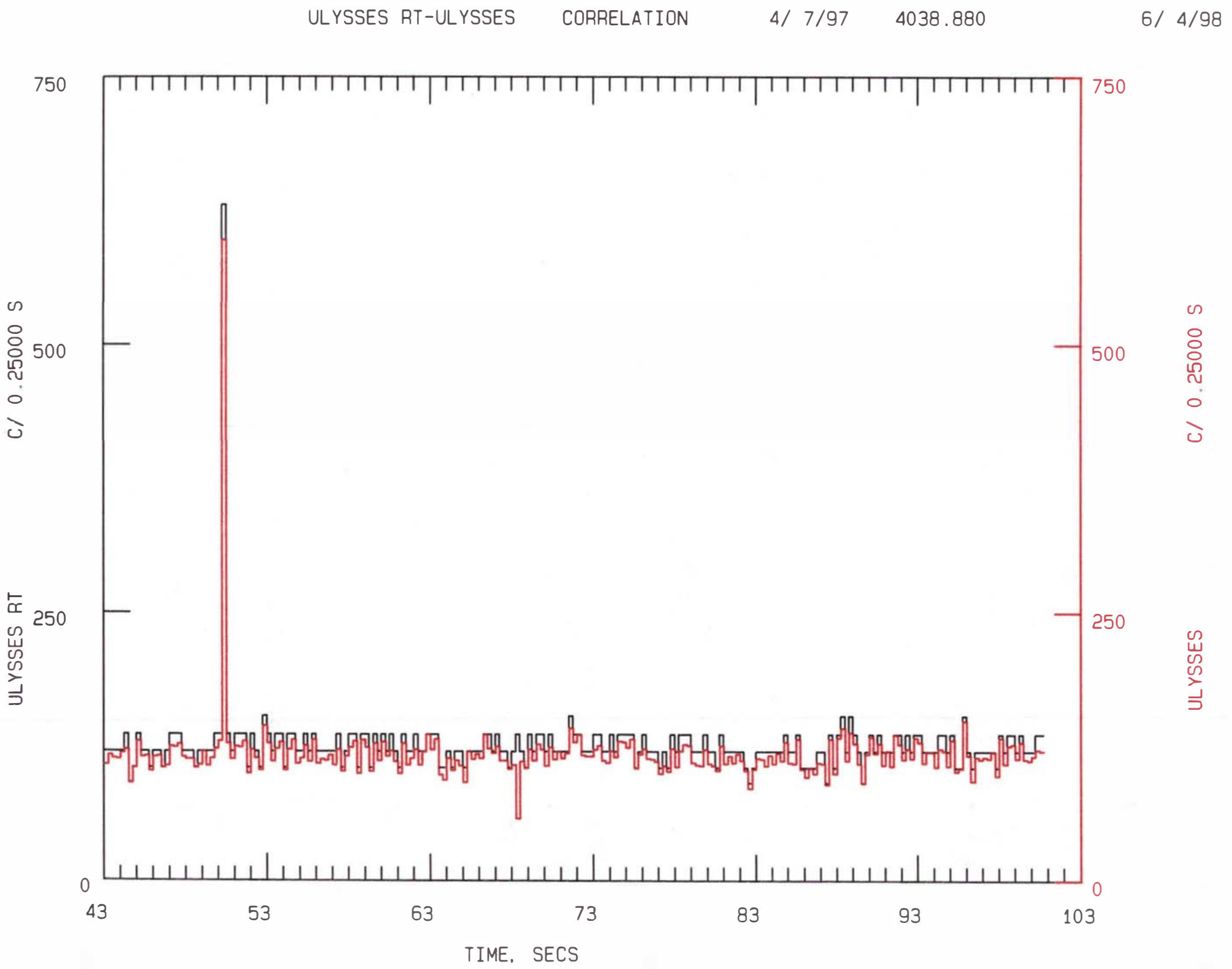
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE



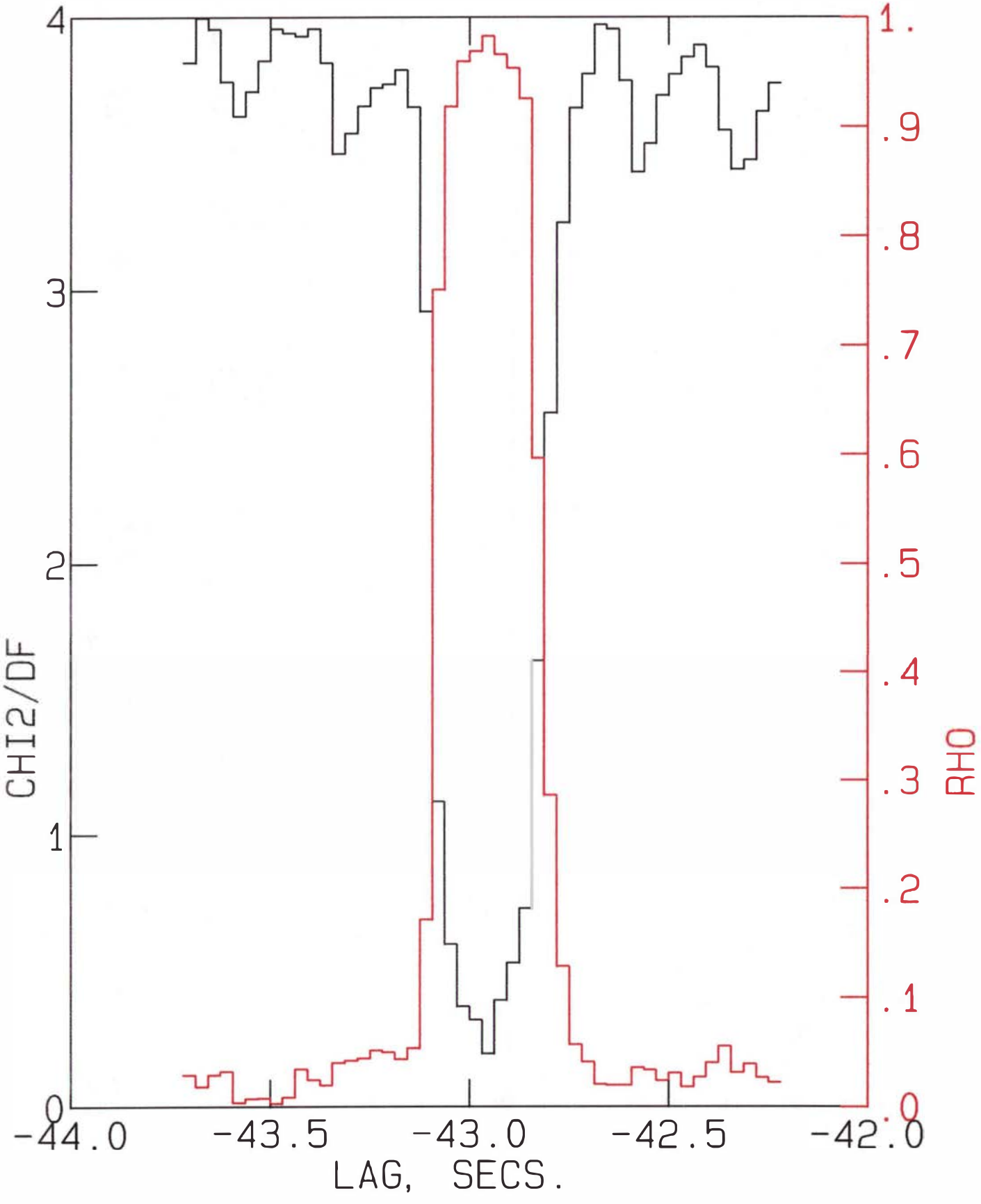

BATSE -ULYSSES CORRELATION 4/ 7/97 4096.801 6/ 4/98
15000
10000
5000
0
C/ 0.12500 S
BATSE
300
200
100
0
C/ 0.12500 S
ULYSSES
-3
-2
-1
1
2
3
4
5
6
TIME, SECS

BATSE -ULYSSES CORRELATION 4/ 7/97 4096.801




ULYSSES RT-ULYSSES CORRELATION 4/ 7/97 4038.880 6/ 4/98
750
500
250
0
C/ 0.25000 S
ULYSSES RT
43
53
63
73
83
93
103
TIME, SECS
ULYSSES

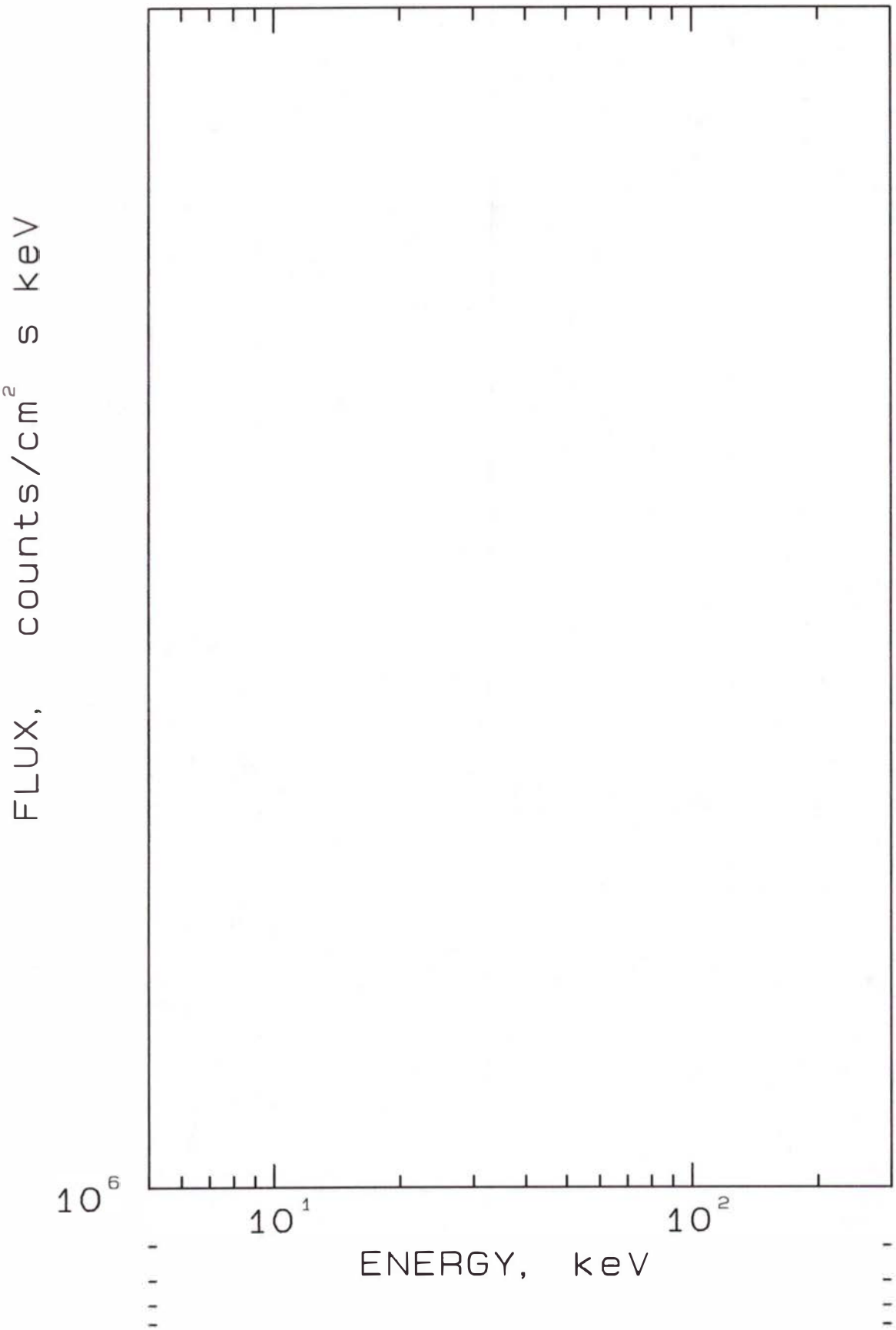
ULYSSES RT-ULYSSES CORRELATION 4/ 7/97 4038.880

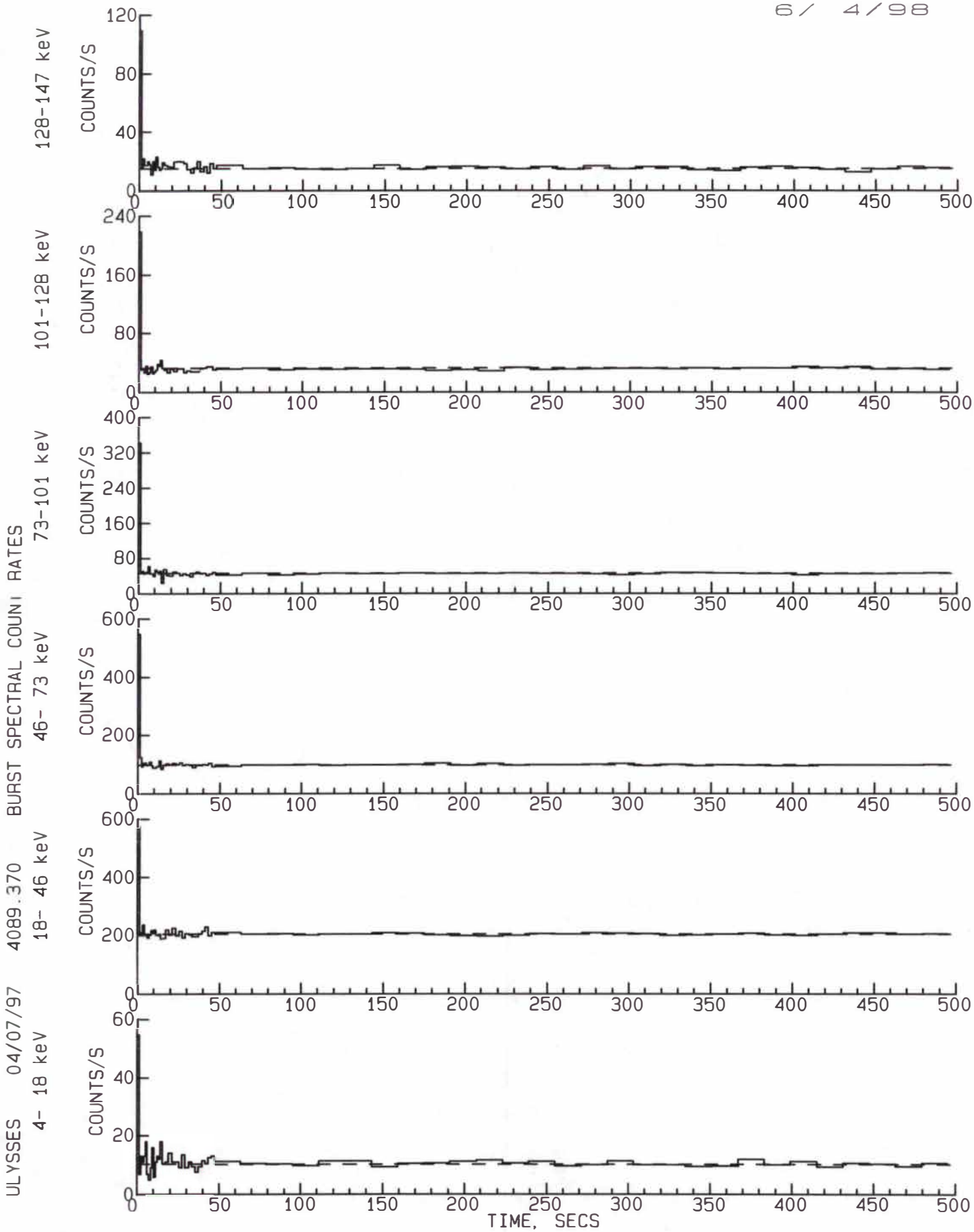


6/ 4/98

ULYSSES 04/07/97 4089.370

SPECTRUM INTEGRATED OVER 10.2 SECONDS, INTERVALS 2 TO 12




6/ 4/98
ULYSSES 04/07/97 4089.370 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 04/07/97 Ttrig= 4089.226

22- 148 keV

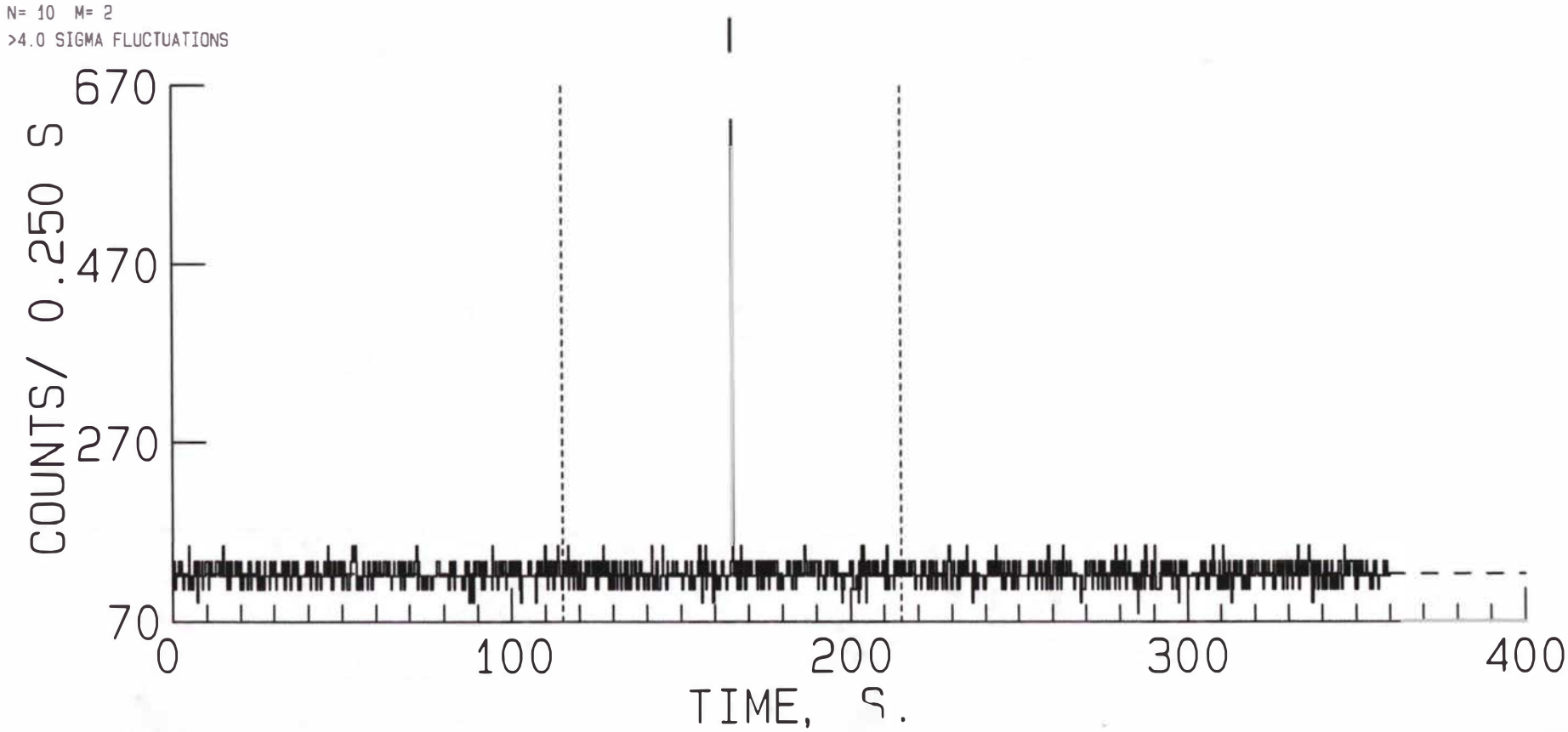
6/ 4/98

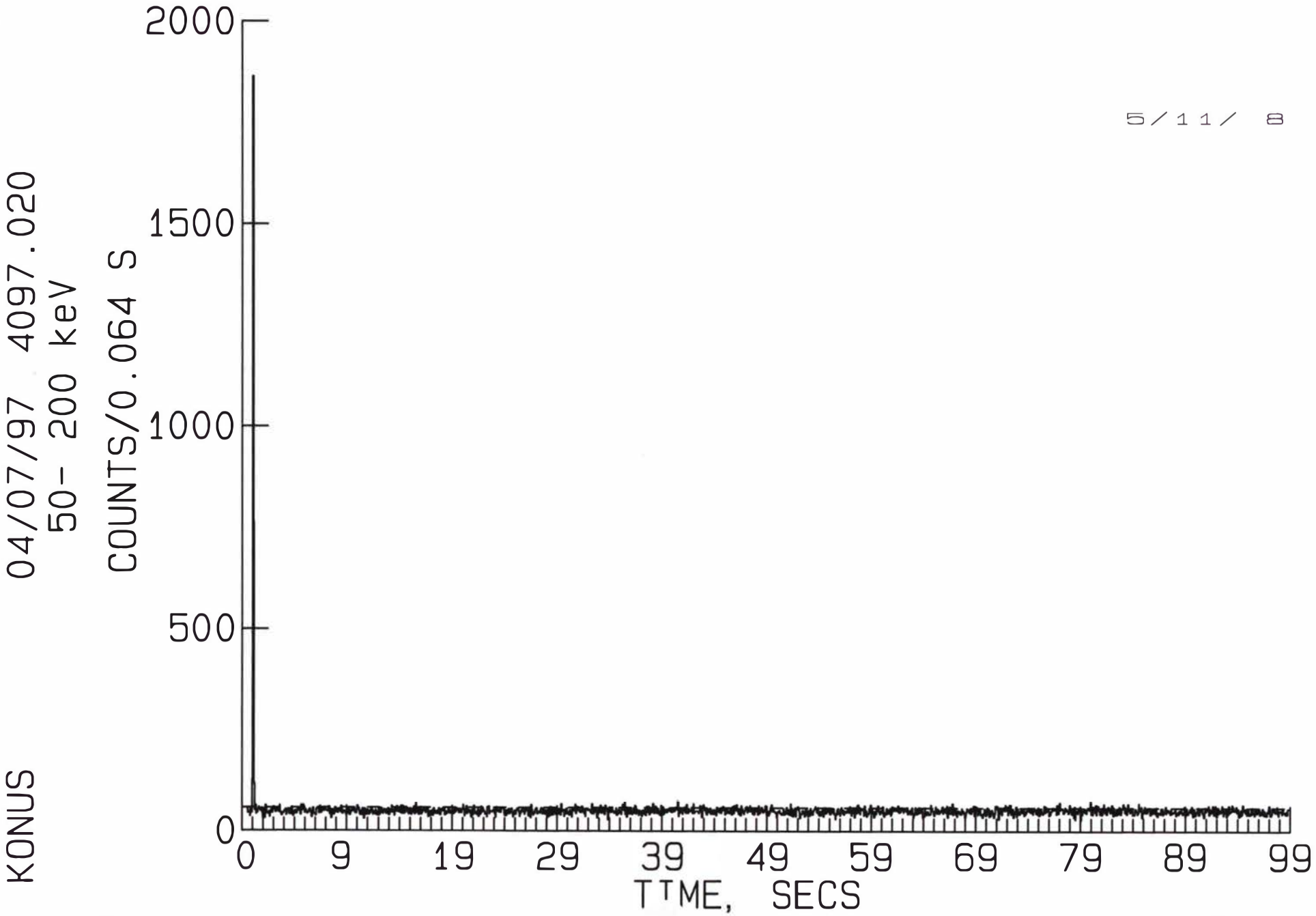
ULYSSES RT

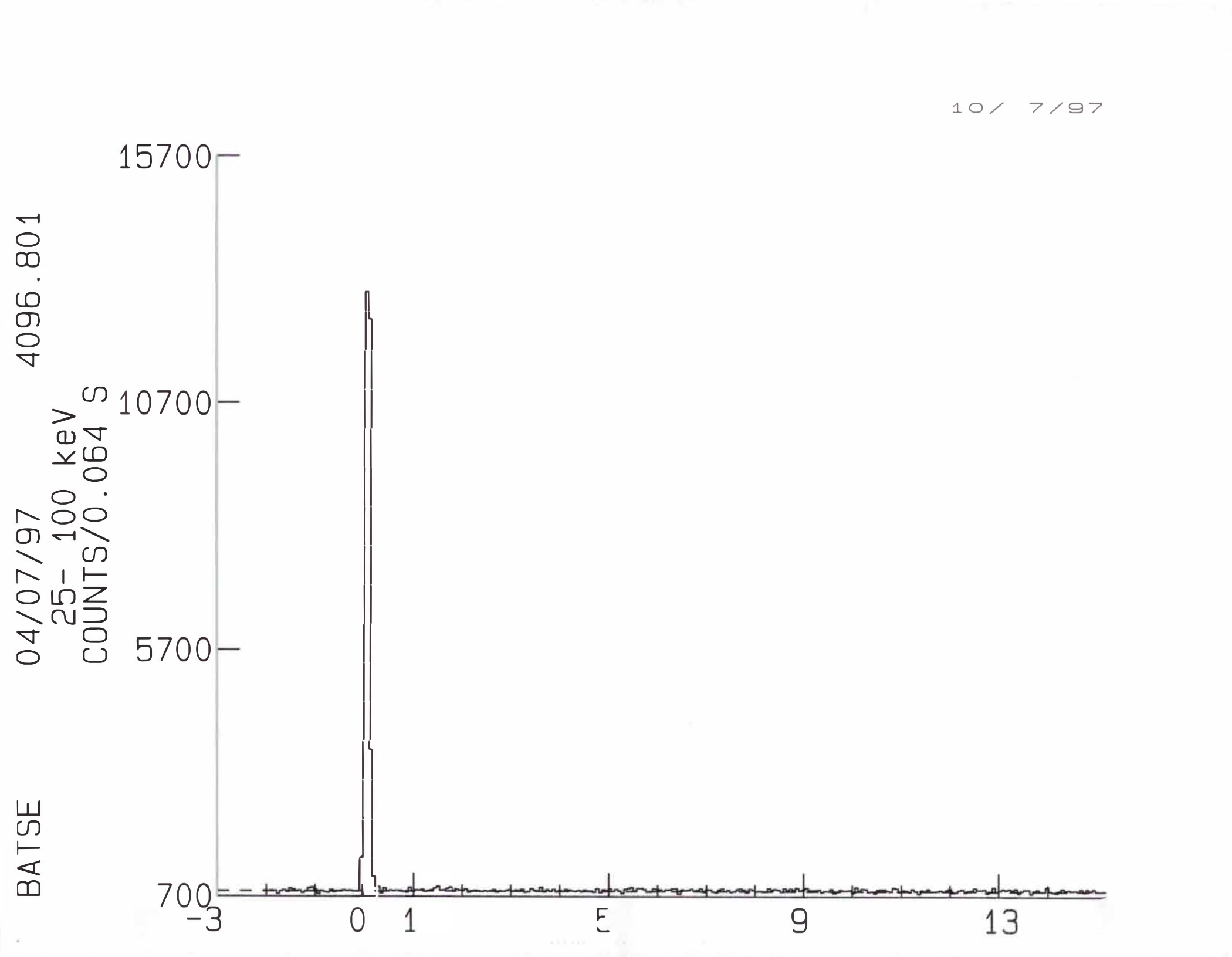
6/ 4/98

4/ 7/97 3924.026 s

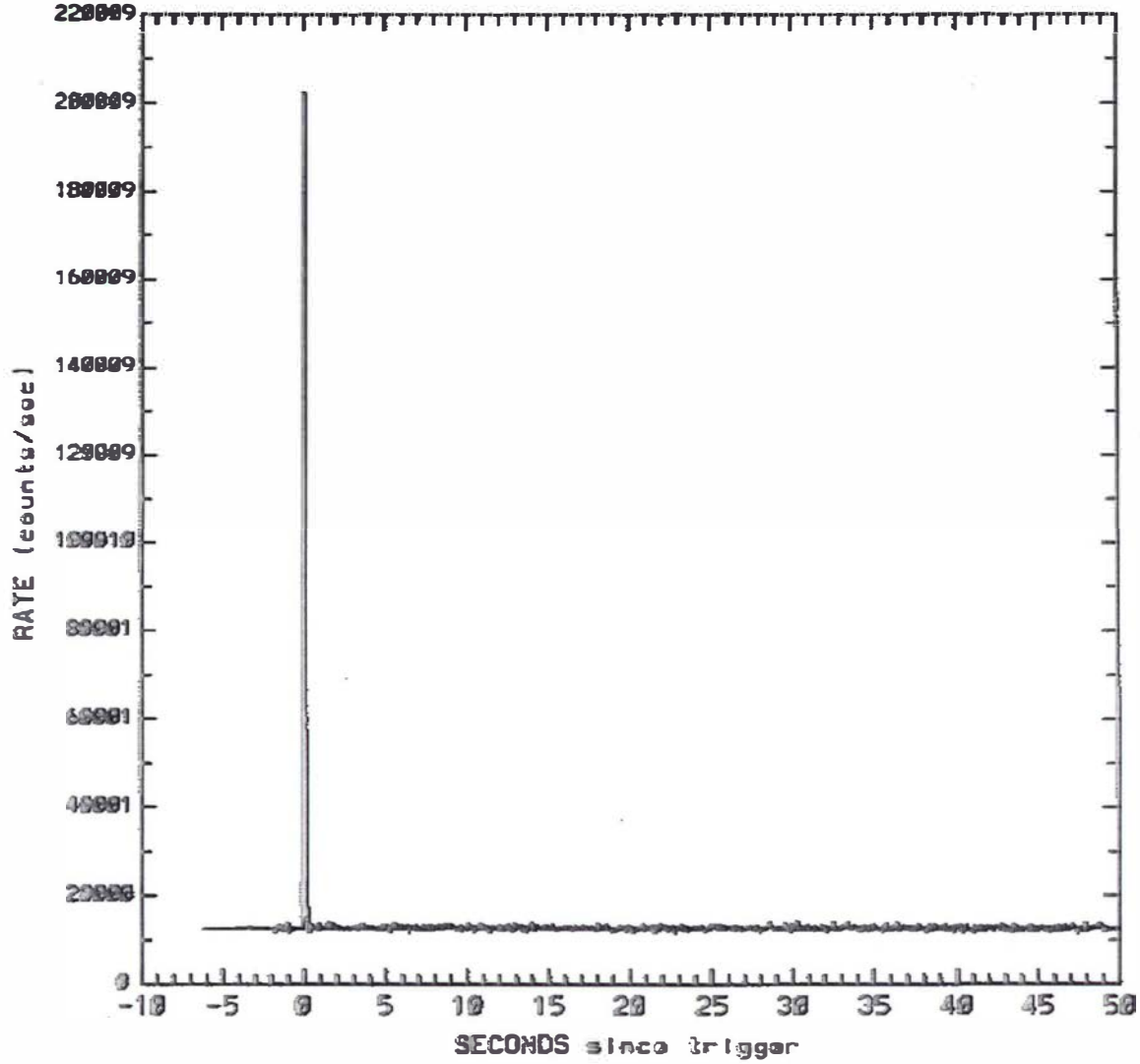
22- 148 keV




KONUS
04/07/97 4097.020
50- 200 keV
COUNTS/0.064 S
2000
1500
1000
500
0
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
5/11/ 8


10/ 7/97
BATSE
04/07/97
25- 100 keV
COUNTS/0.064 S
4096.801
15700
10700
5700
700
-3
0
1
5
9
13

DISCSC Data for K. Hurley, No. 6293



18-JUL-1997 19:22.51

Created by MOPS BD
(Burst Display)
Version 2.25

Trigger # : 6293

Trigger Time:
19633 / 4096.881

Burst Data Type:
DISCSC

Condition
Corrected: N

Background Data
Type: FREE + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors (7..0):
-0-4-2-0

Discriminators:
[1 : 2]

Quality Mask:
BDISP1

From HENZE@ssl.msfc.nasa.gov Mon Jul 7 13:05 PDT 1997
Return-Path: <HENZE@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA14326; Mon, 7 Jul 1997 13:04:58 -0700
From: HENZE@ssl.msfc.nasa.gov
Date: Mon, 7 Jul 1997 15:04:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970707150449.2240a4b6@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6294
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6294
EVENT OF 1997 JUL 4 DAY OF YEAR=185
EVENT CROSSING TIME AT BATSE : 46368. S. OR 12:52:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 211.000 -60.000
BATSE PEAK COUNTING RATE: 2400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 7/ 97 IS:
RA= 153.654 DEC= 25.434 DIST= 5.823 AU
BATSE-ULYSSES DISTANCE = 871068861. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 372.79 SECS.
CROSSING TIME AT ULYSSES IS 46741. S. OR 12:59:00 +/- 555.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 7/ 97 IS:
RA= 186.305 DEC= -2.634 DIST= 1.275 AU
MARS-BATSE DISTANCE = 190810336. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -314.16 SECS.
CROSSING TIME AT MARS IS 46054. S. OR 12:47:33 +/- 91.33 SECONDS

BATSE BURST TRIGGER
NO.: 06294

TIME: TJD=0633 SECONDS=46368

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=086.3 AZIMUTH=223.3 ERROR=008.6 DEGREES

COMMENTS:
SINGLE PULSE WITH TWO PEAKS, DUR. ~30 S. NOT VISIBLE ABOVE 300 KEV.
DATA GAP FROM ~T+8 S TO ~T+131 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6294	970704	10633	46368	2400	211	-60	30

BATSE BURST# 6294

ULYSSES RT 7/ 7/97

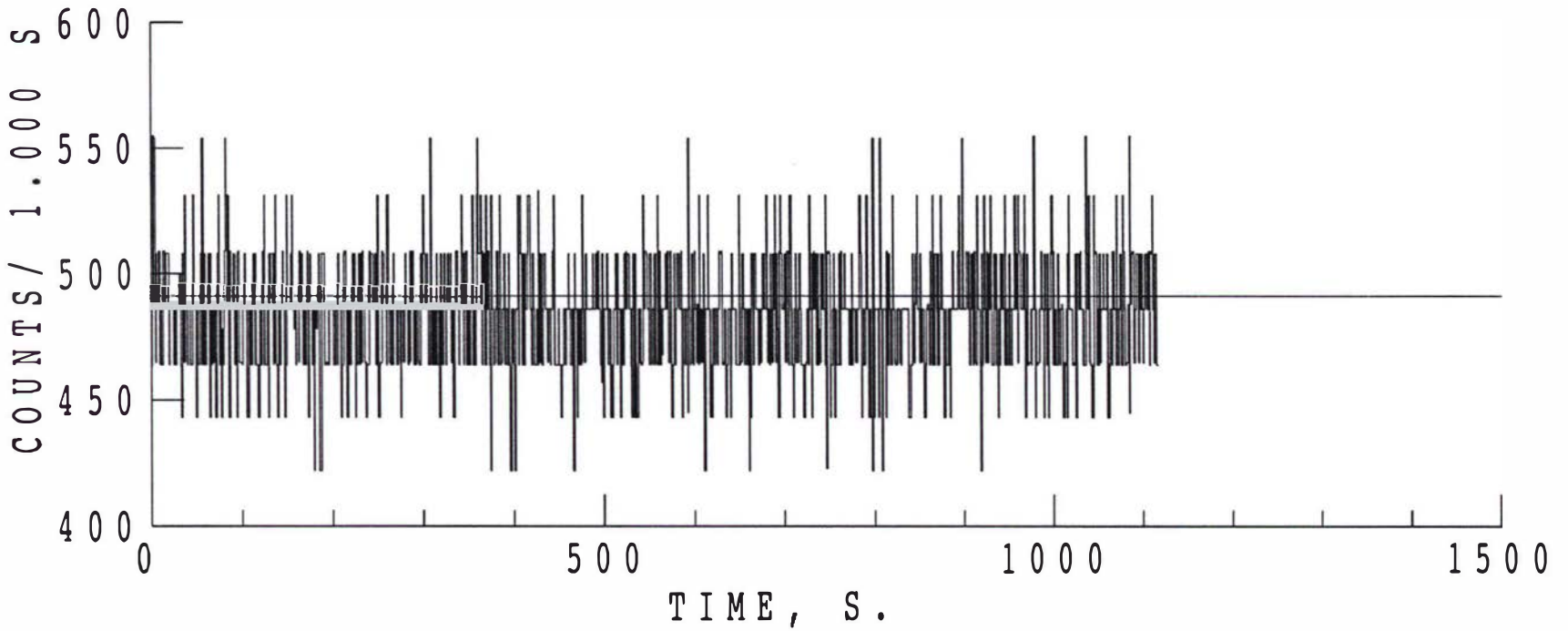
4/ 7/97 46188.016 s

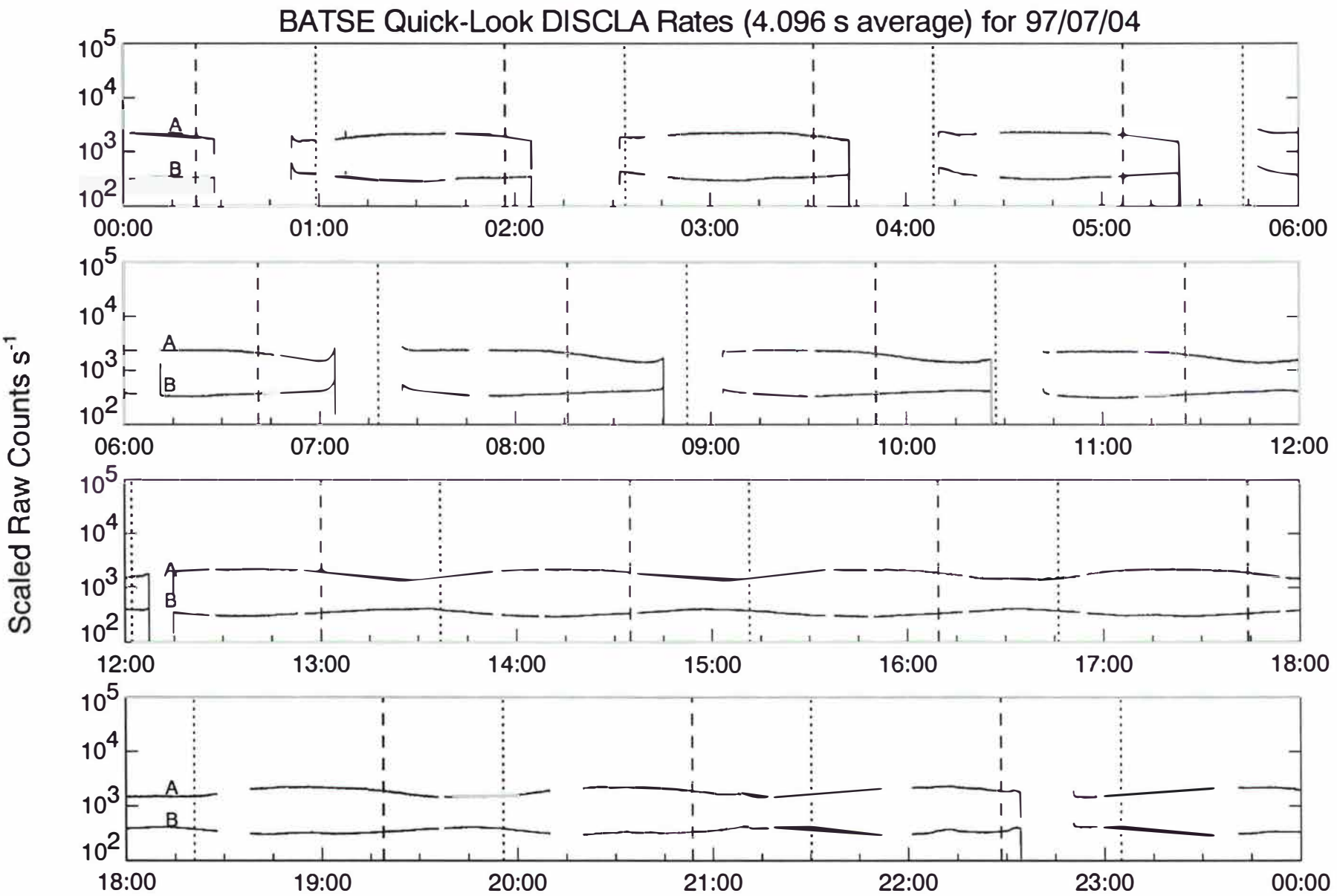
0.500 S INTERVALS REGROUPED BY 2

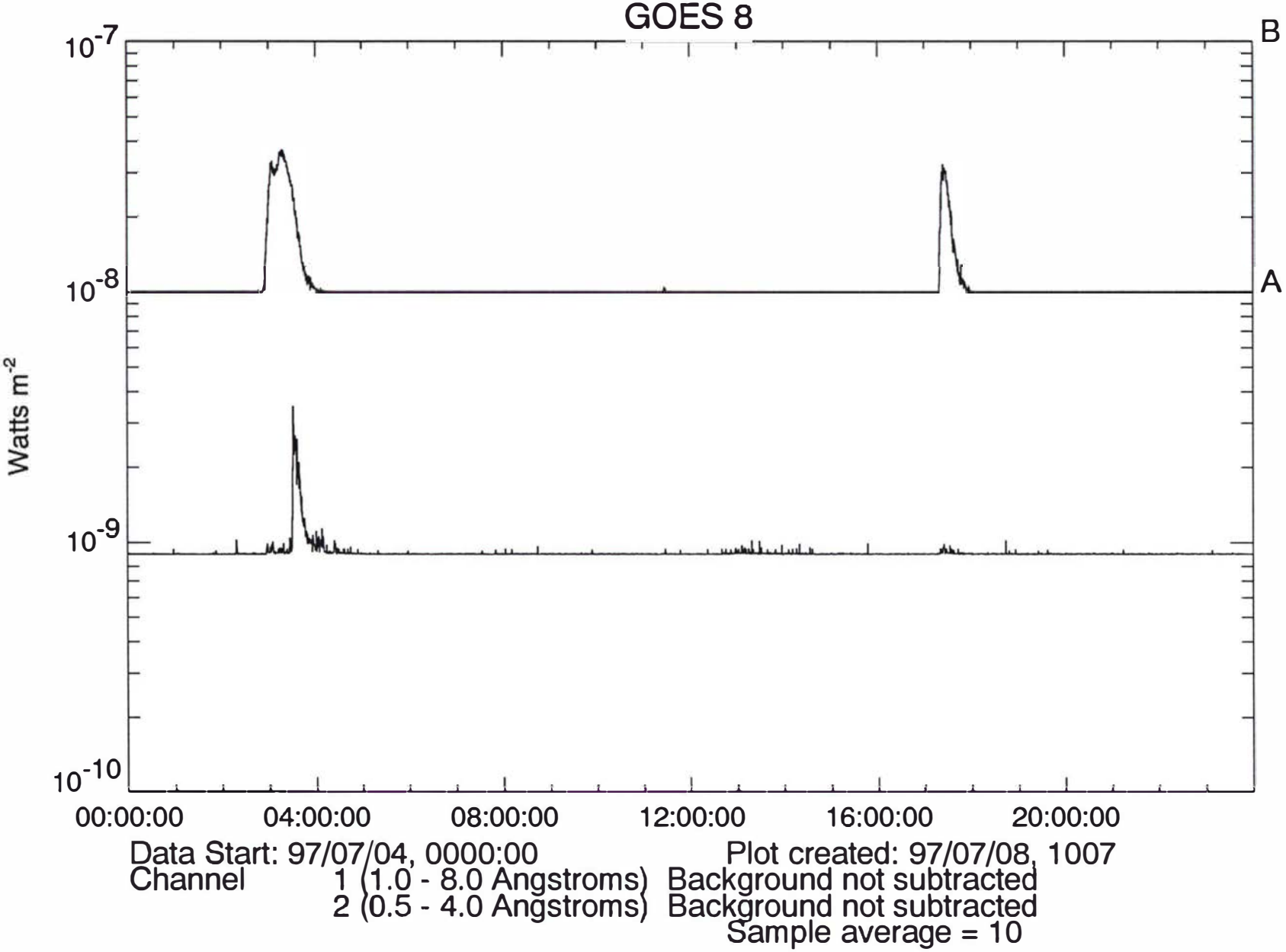
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

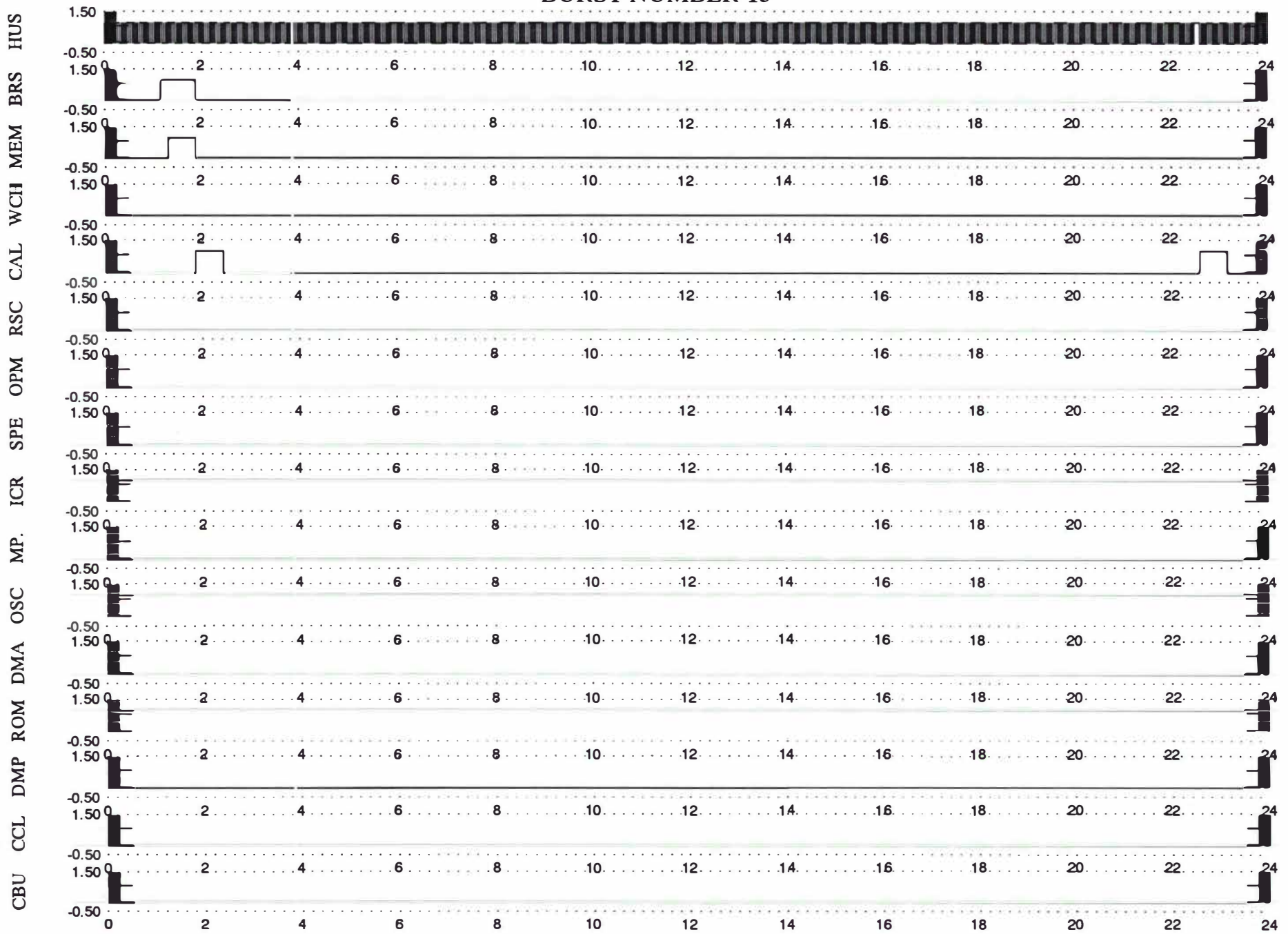



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/04
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/08, 1008 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: 97/07/04, 0000:00
Plot created: 97/07/08, 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 185, year 1997 to day 185, year 1997 10/24/97

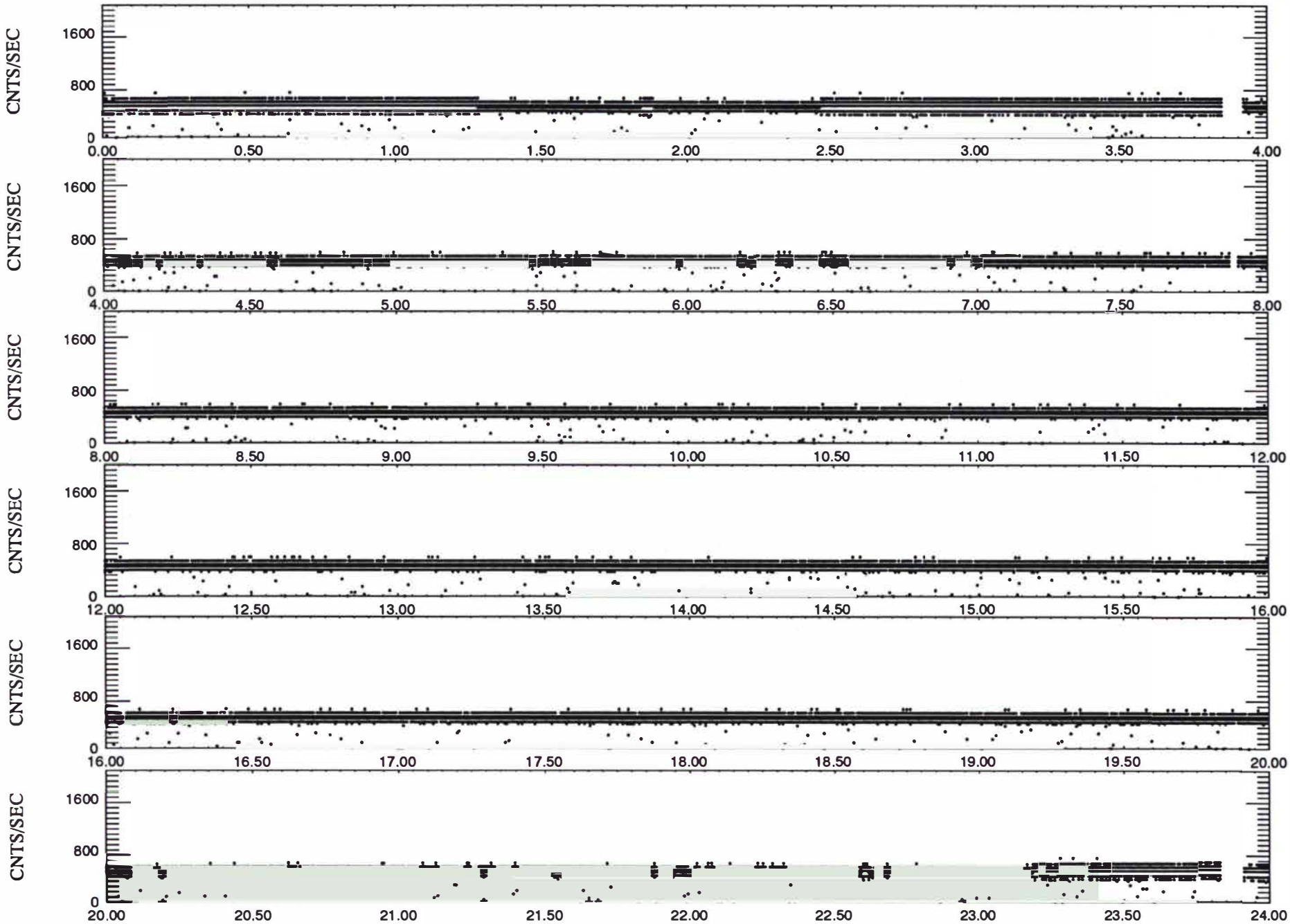
BURST NUMBER 15



UNIV AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 185, year 1997 to day 185, year 1997 10/24/97

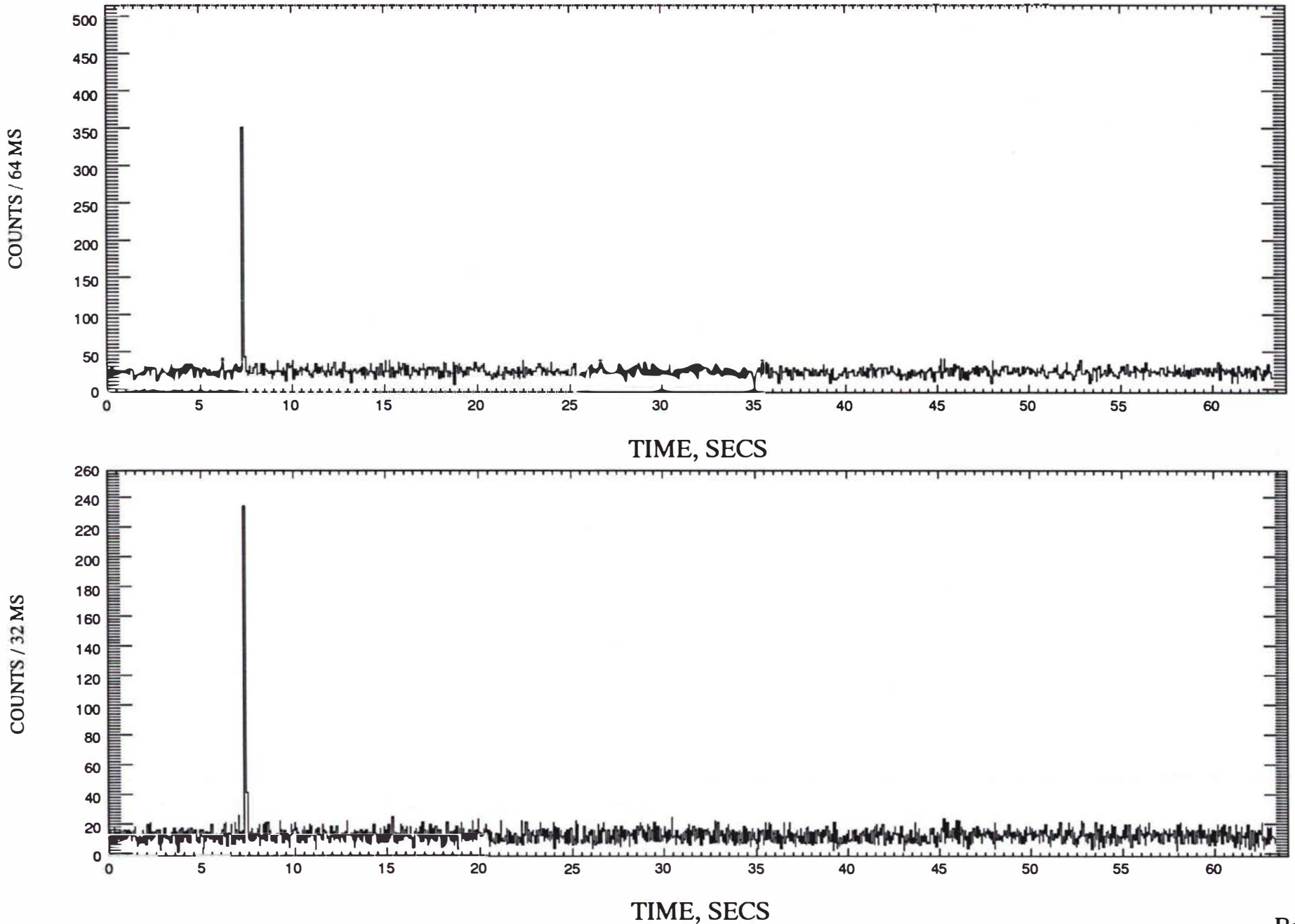
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

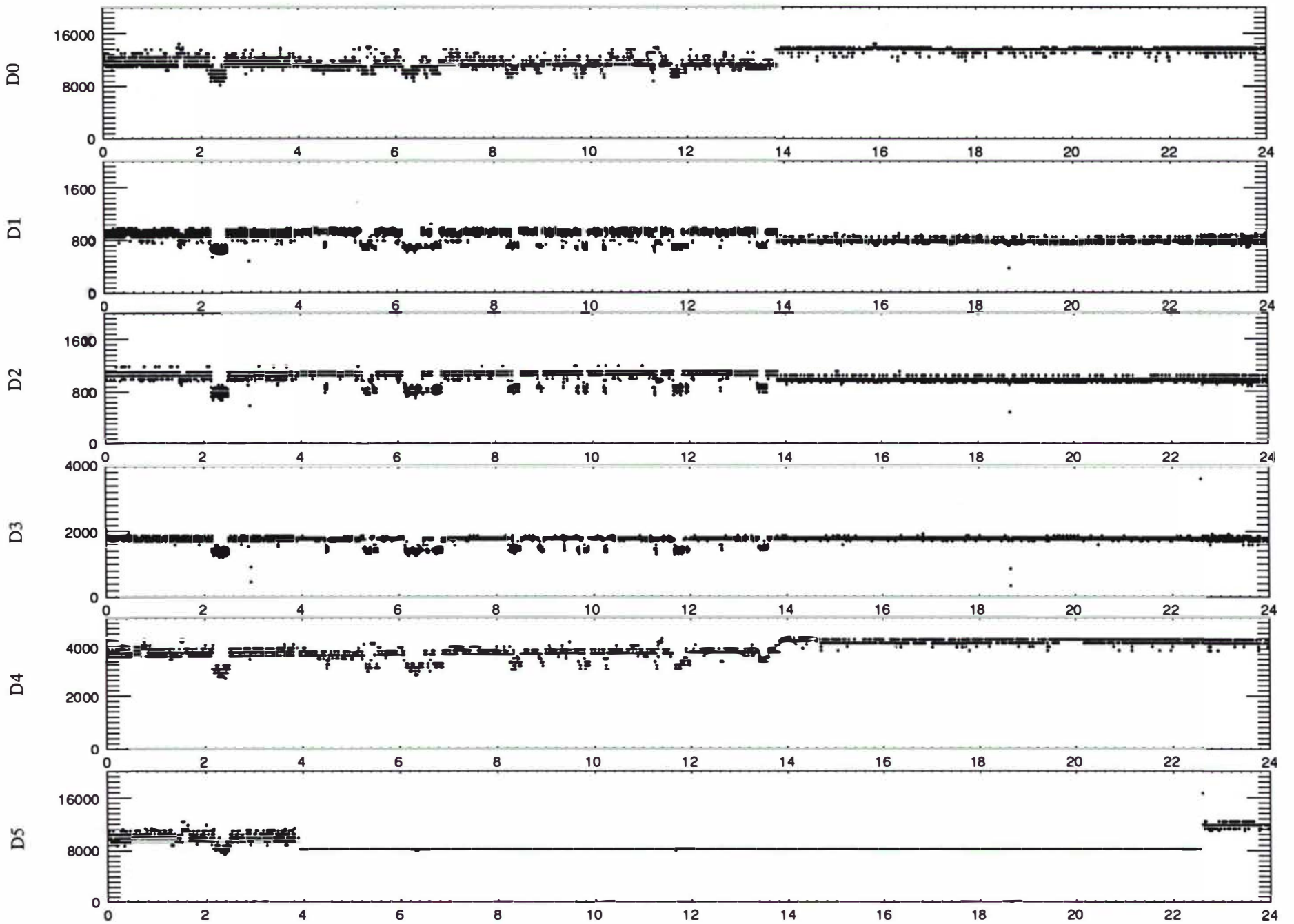
HUS 2A TRIGGERED DATA EDR day 185, year 1997 10/24/97

Burst Counter 15 at UT= 1.135936105516 h= 4089.370 s 01:08:09.370



B# 1

HUS 2B COUNTS / SEC EDR day 185, year 1997 to day 185, year 1997 10/24/97



KONUS

ULYSSES RT 04/02/00

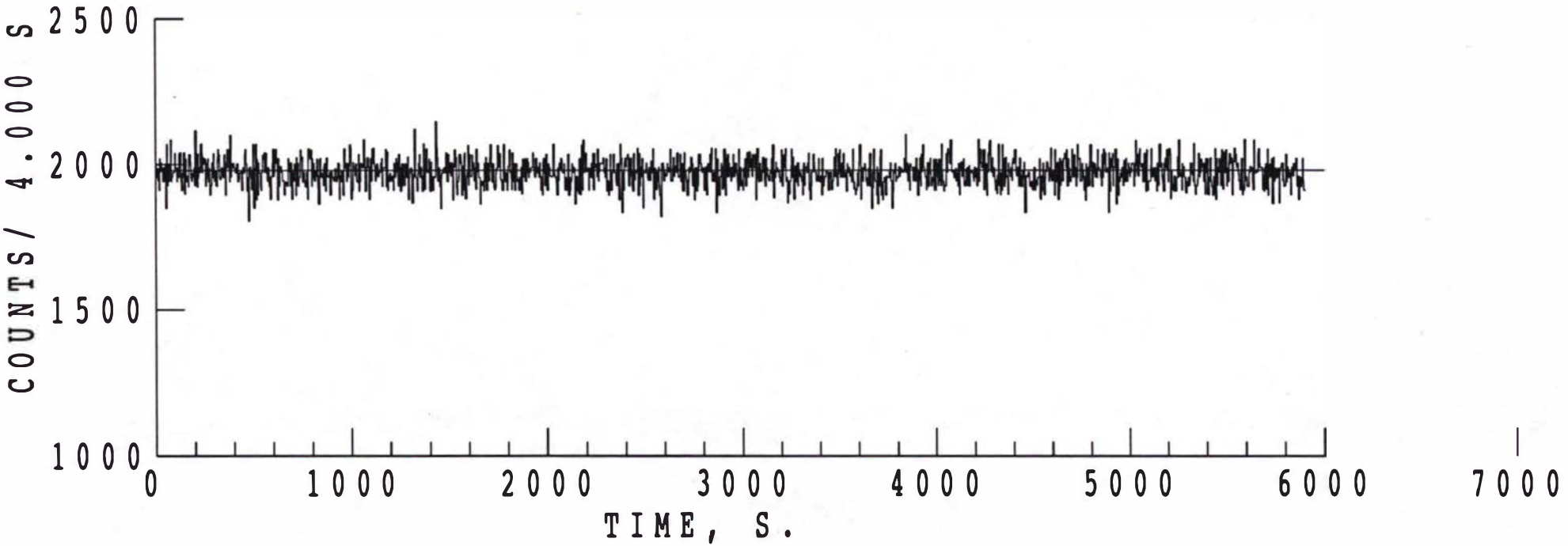
05/07/97 15804.168 s

0.250 S INTERVALS REGROUPED BY 16

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



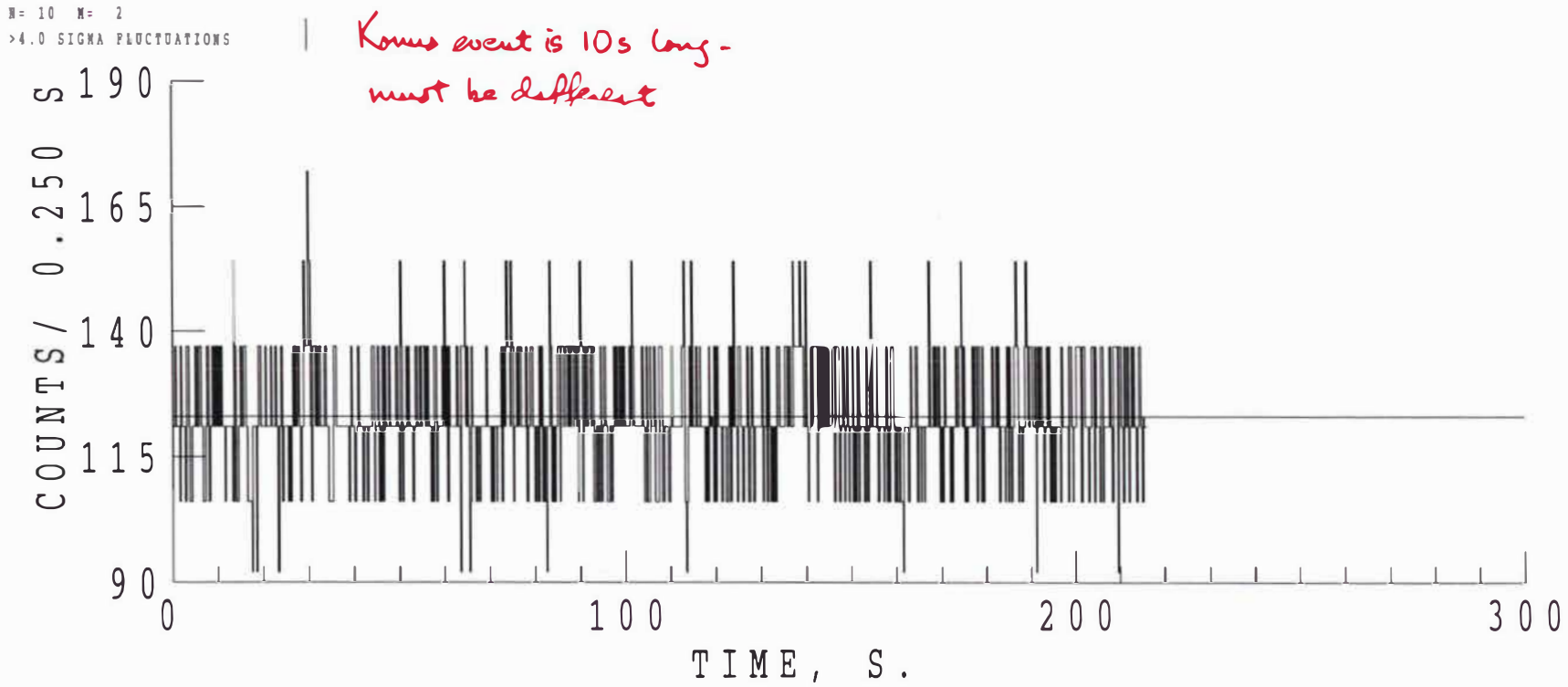
KONUS 19970705 17204

ULYSSES RT

12/12/11

05/07/97 17100.182 s

0- 0 keV



Date: Dec 12 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?

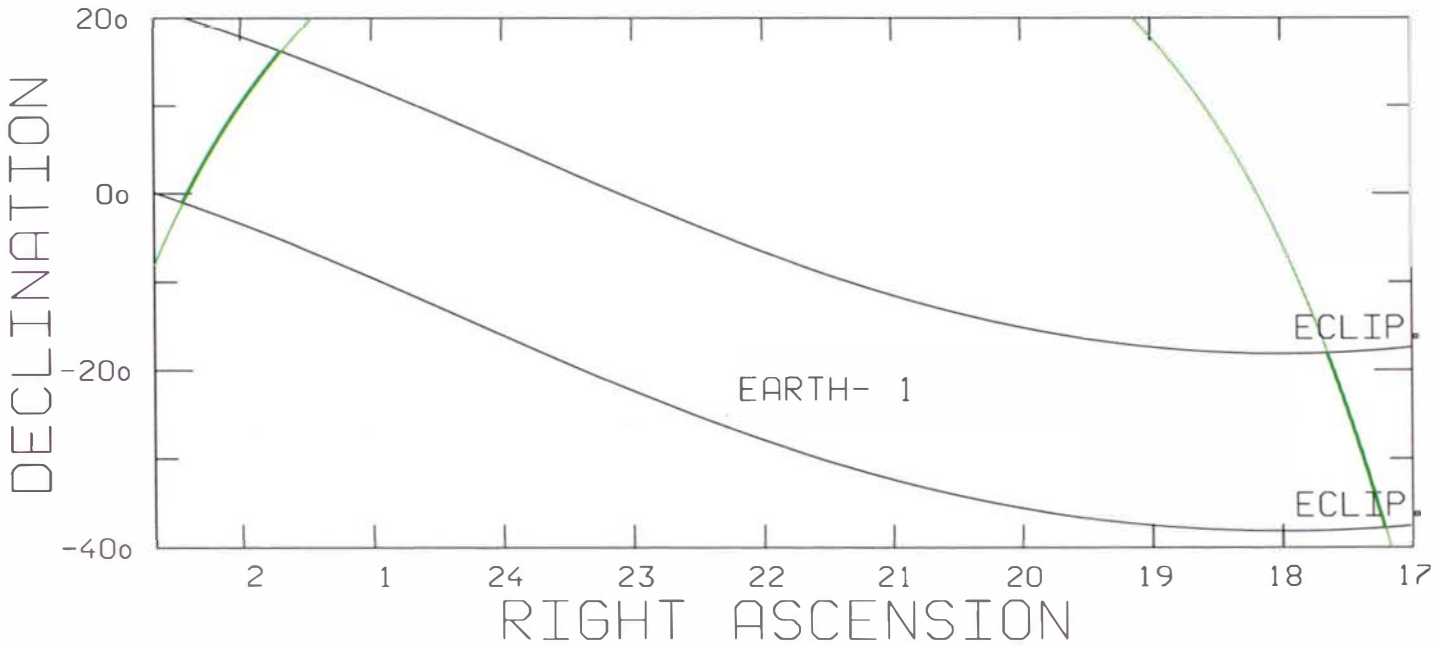
3. For INTEGRAL events

☐ 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?

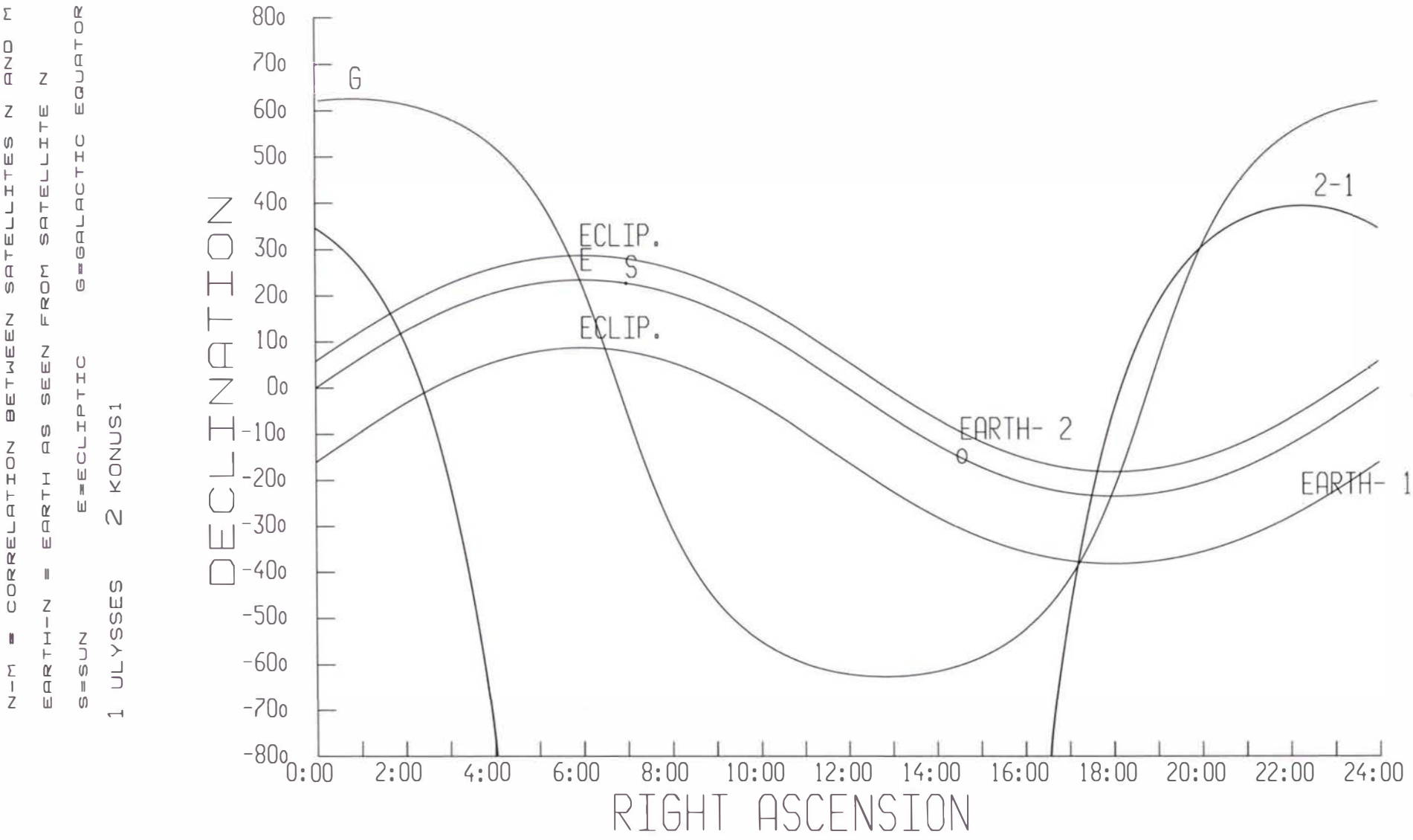
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated with identical times?

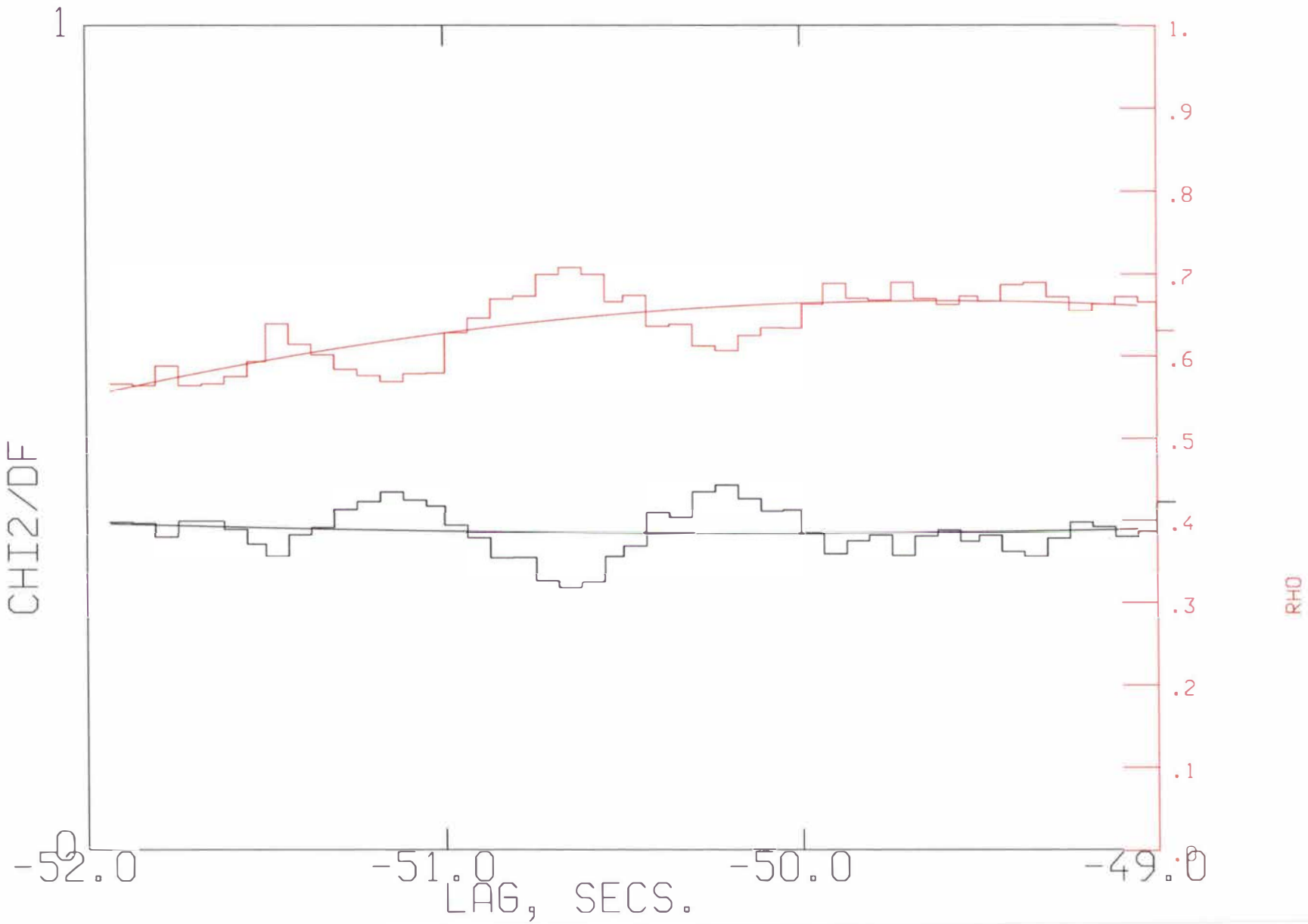

20o
0o
-20o
-40o
DECLINATION
ECLIP.
EARTH- 1
ECLIP.
2
1
24
23
22
21
20
19
18
17
RIGHT ASCENSION

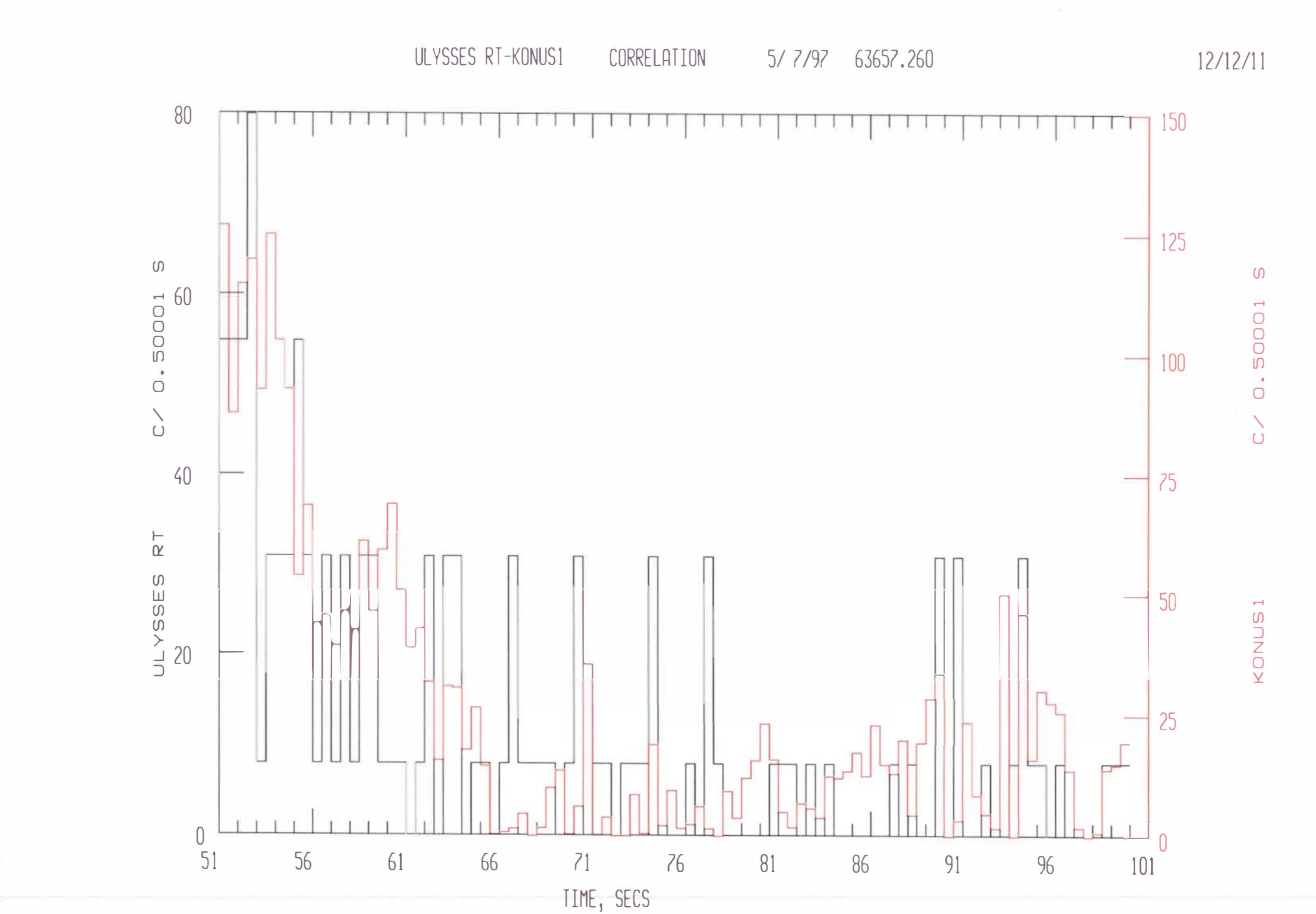
EVENT OF JUL 5, 1997 17:40

12/12/2011



ULYSSES RT-KONUS1 CORRELATION 5/ 7/97 63657.260




ULYSSES RT-KONUS1 CORRELATION 5/ 7/97 63657.260
12/12/11
ULYSSES RT
C/ 0.50001 S
KONUS1
C/ 0.50001 S
TIME, SECS
0
20
40
60
80
0
25
50
75
100
125
150
51
56
61
66
71
76
81
86
91
96
101

KONUS1 05/07/97 62459.481

50 200 keV

COUNTS/0.064 S

10 35 60 85

0 9 19 29 39 49 59 69 79 89 99

TIME, SECS

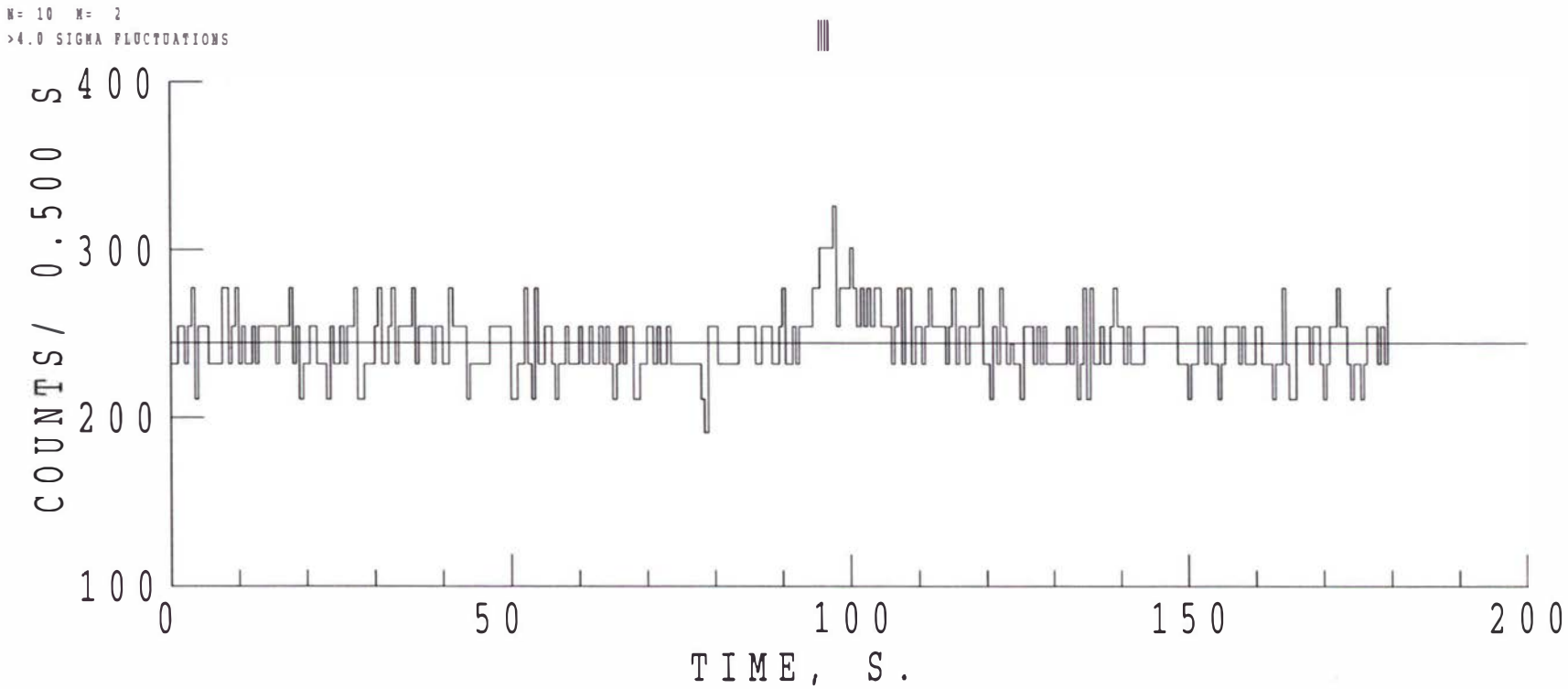
11/02/02

KONUS 19970705 63707

ULYSSES RT 08/12/11

05/07/97 63612.219 s

0- 0 keV



KONUS1 19970705 62459

ULYSSES RT 11/02/02

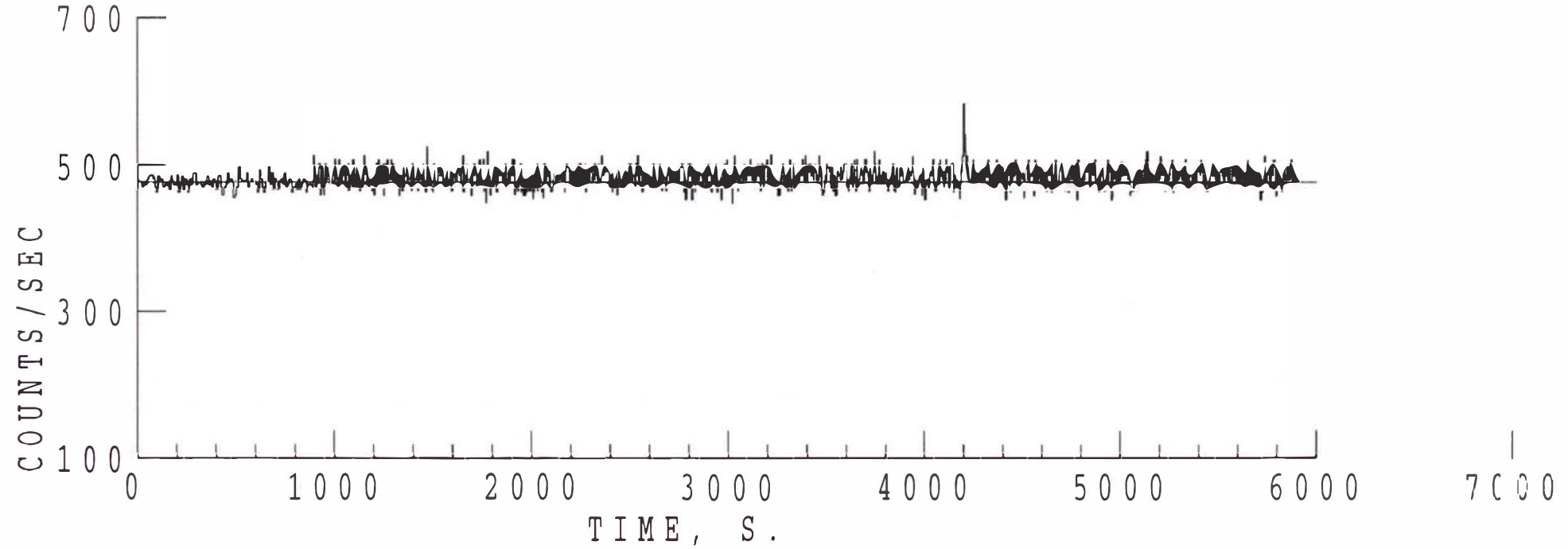
05/07/97 59508.172 s

INTERVALS REGROUPED BY 8

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From kraken@rosserv.gsfc.nasa.gov Wed Jul 30 08:15 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 30 Jul 1997 11:15:53 -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

Hi Kevin,

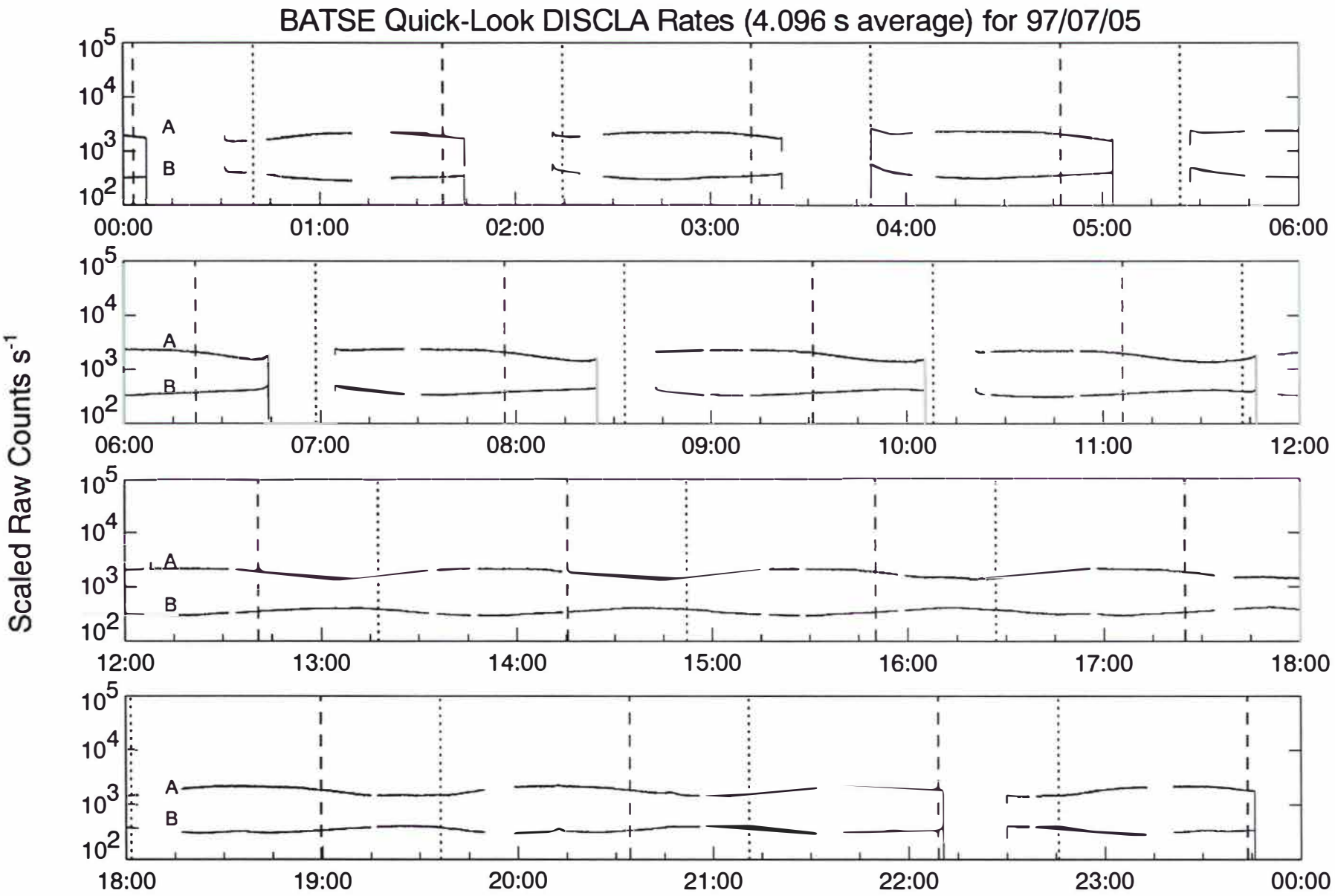
Here are the results of a search through TGRS data for the Ulysses bursts you emailed Bonnard about recently:

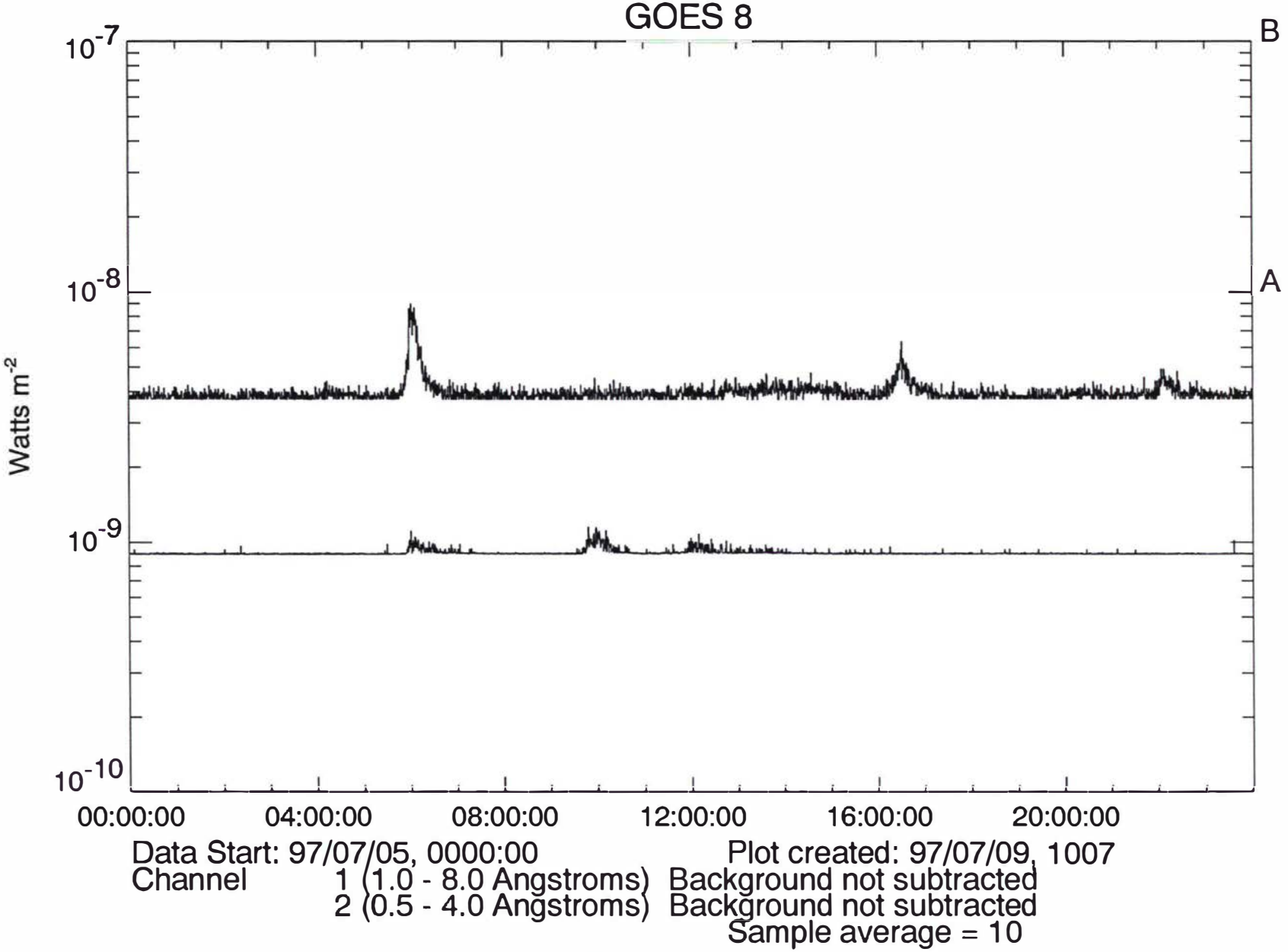
Ulysses burst	TGRS sees?	TGRS characteristics
July 2, 1997 11:49; week 100ms burst	YES	TGRS #582 occurred at 40631s >1/2 sec, 165 cts/s peak (100-300 keV)
July 5, 1997 15:31; weak 100ms burst	NO	
July 9, 1997 10:56; weak 100ms burst	NO	

So there you have it. Apologies for this belated reply. I'll be out of town the next two weeks, so if more Ulysses bursts come in I'll look for them when I return.

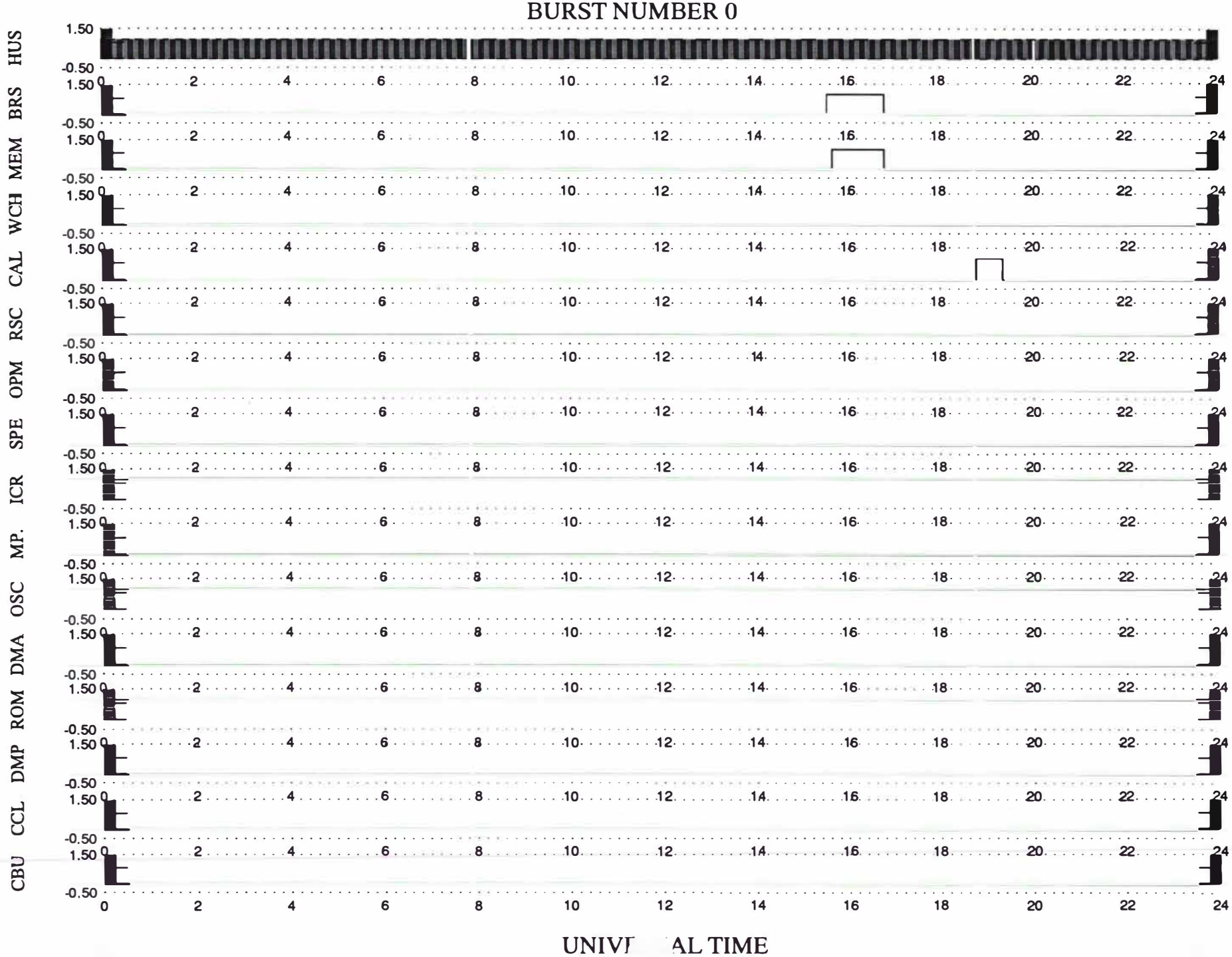
Take care,

Pete


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

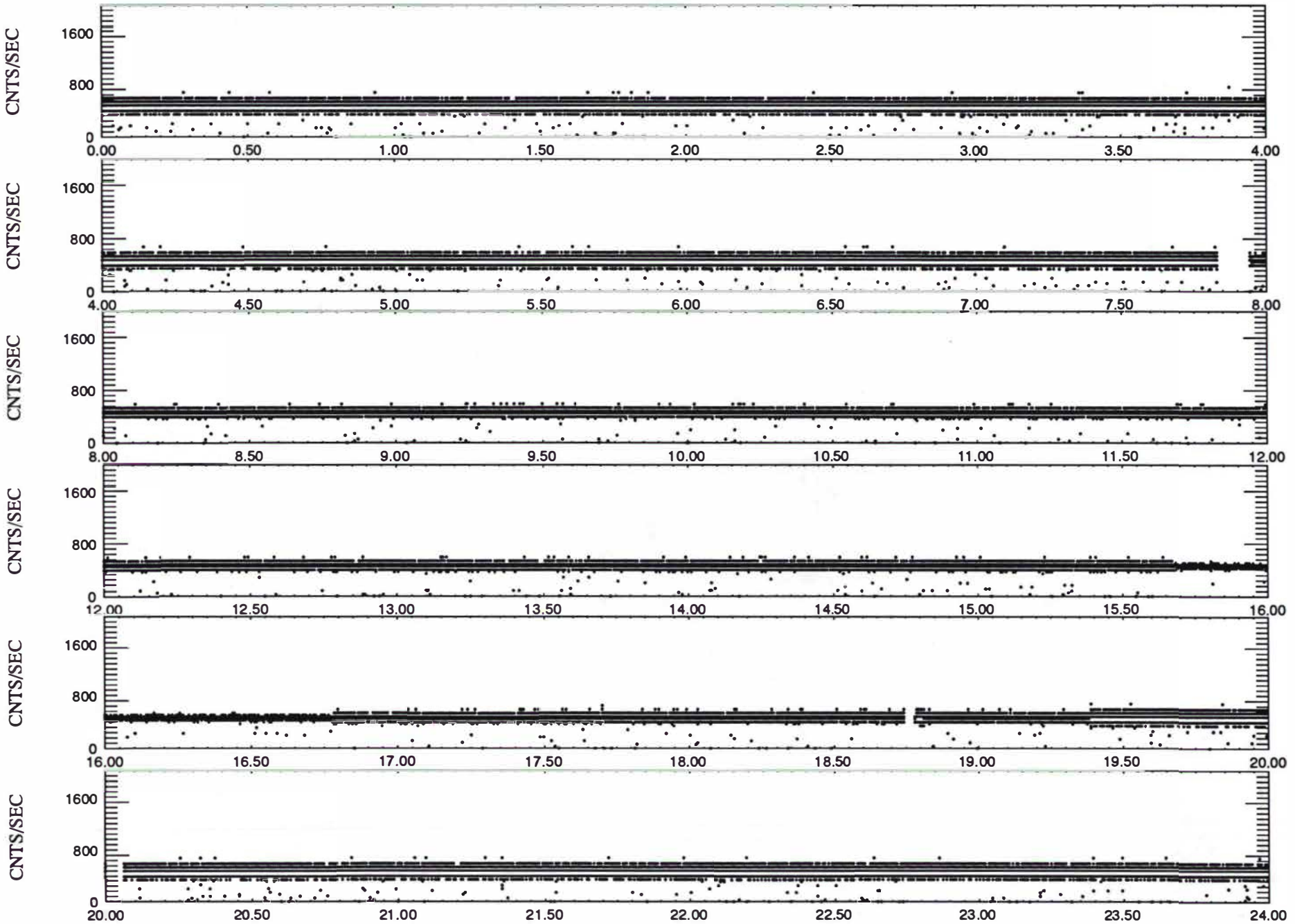

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/05, 0000:00
Plot created: 97/07/09, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 186, year 1997 to day 186, year 1997 10/24/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 186, year 1997 to day 186, year 1997 10/24/97

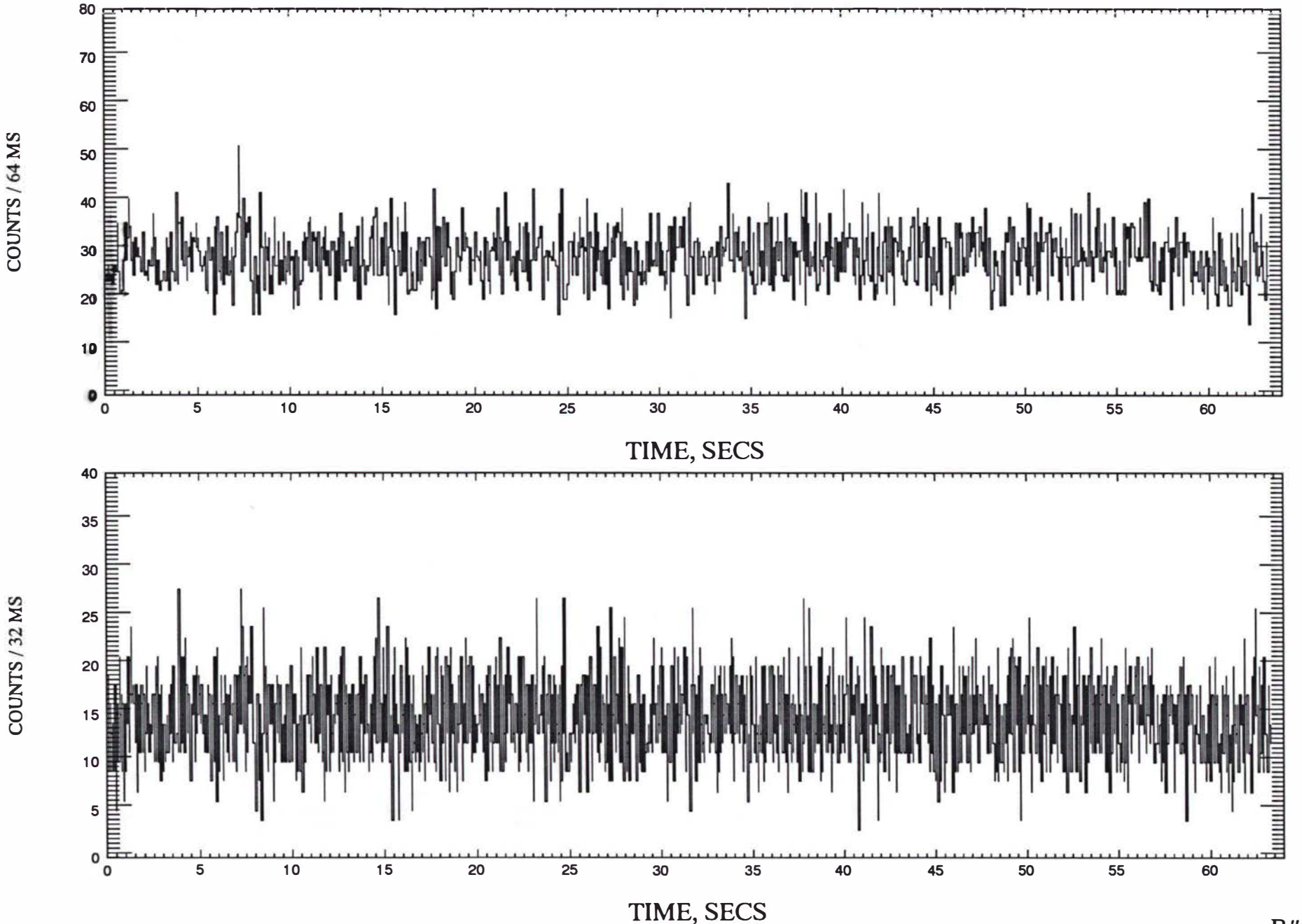
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 186, year 1997 10/24/97

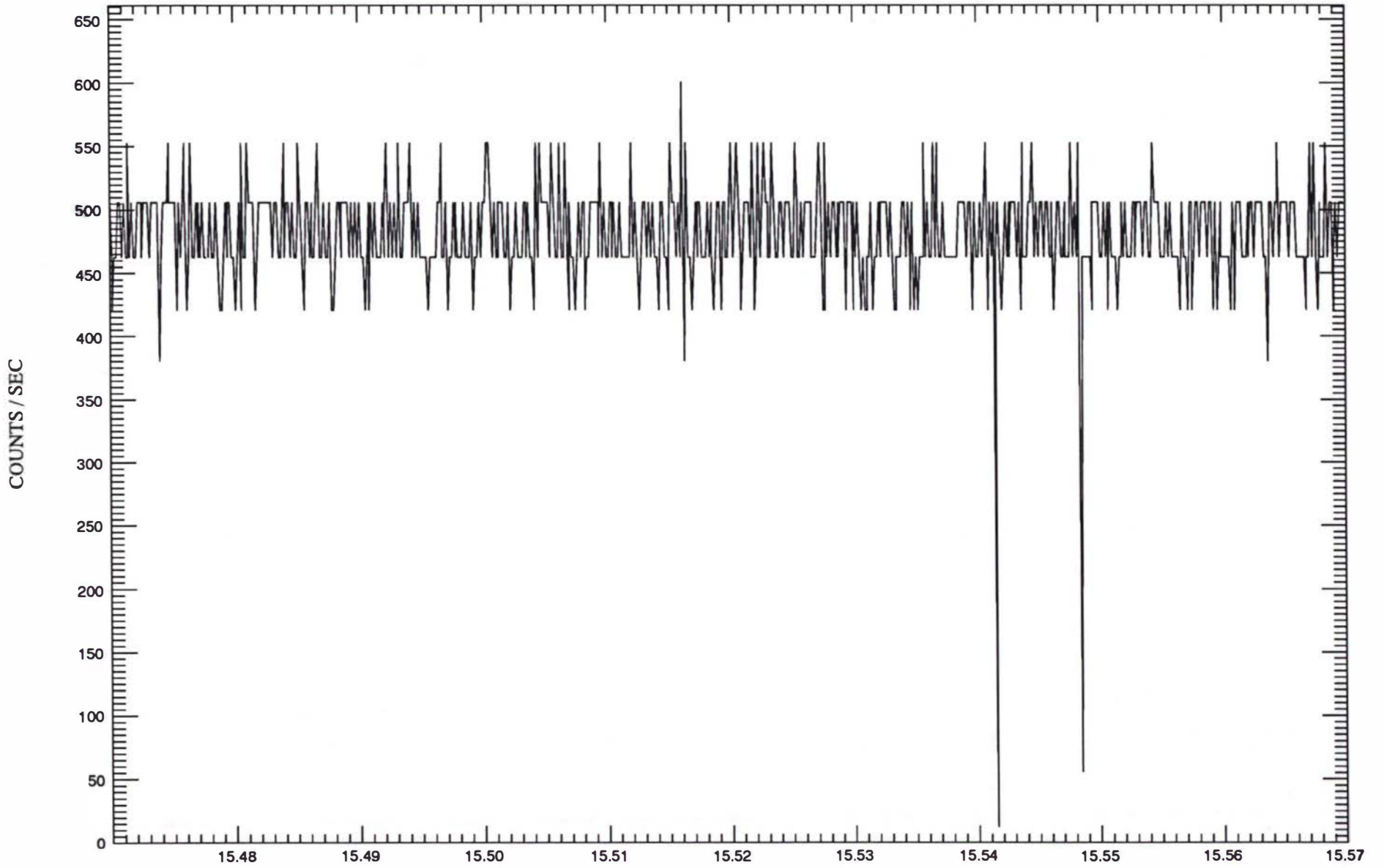
Burst Counter 0 at UT=15.516250097487 h=55858.500 s 15:30:58.500



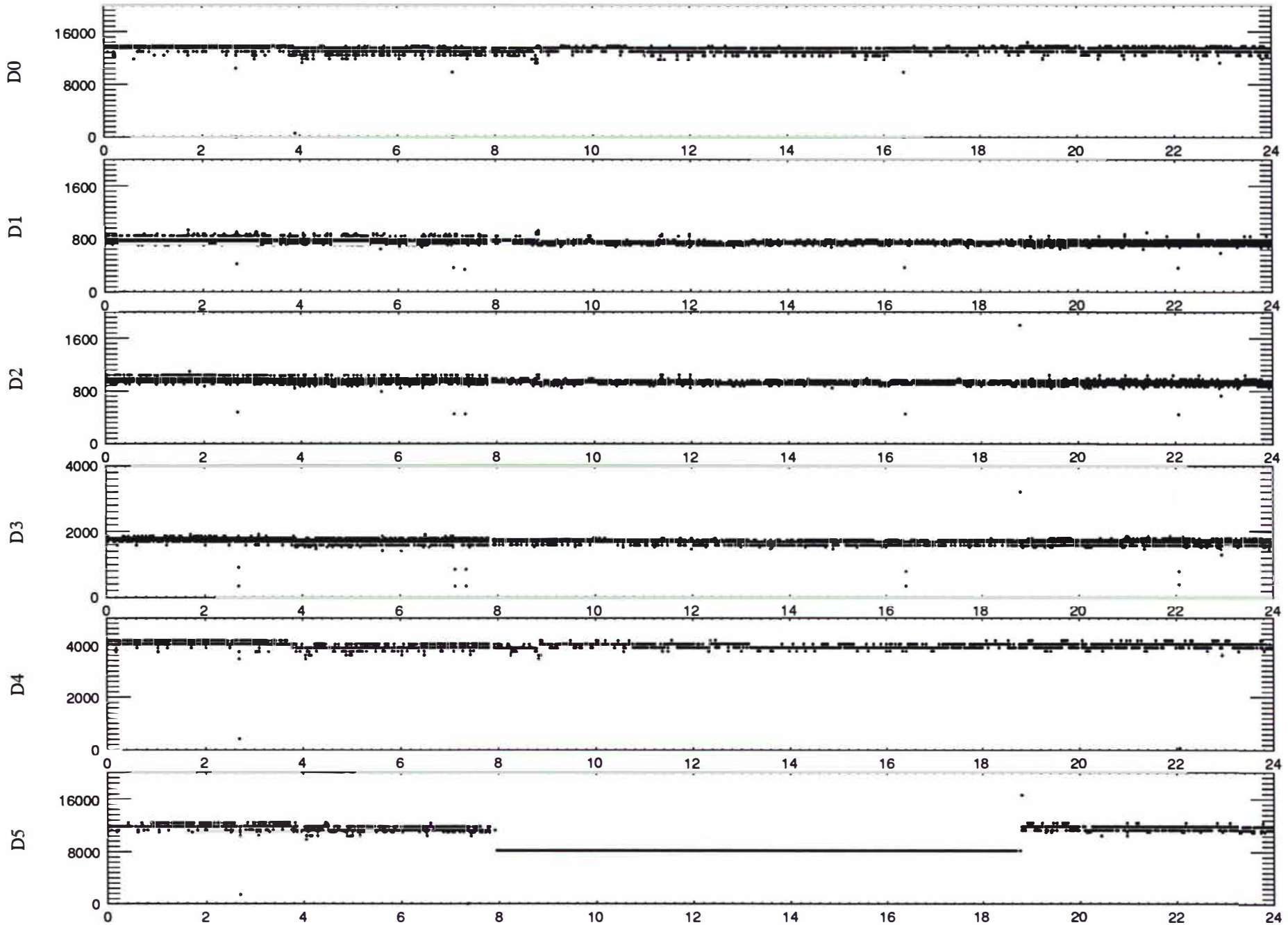
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 186, year 1997 to day 186, year 1997 10/24/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 186, year 1997 to day 186, year 1997 10/24/97



Date: Oct 7 '0

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?

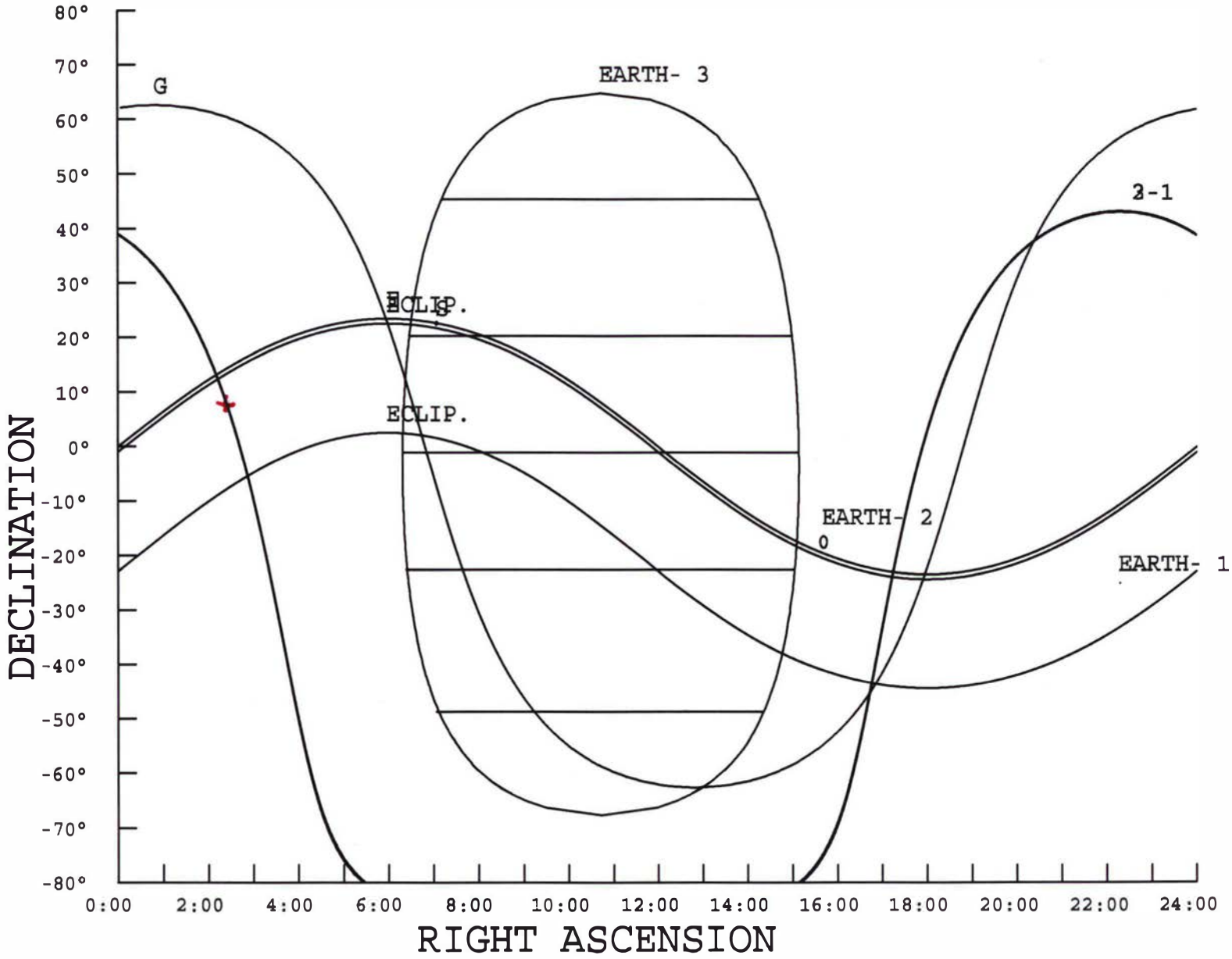
☑ ACCESS and MBL4 databases updated?

SAX added Jan 6

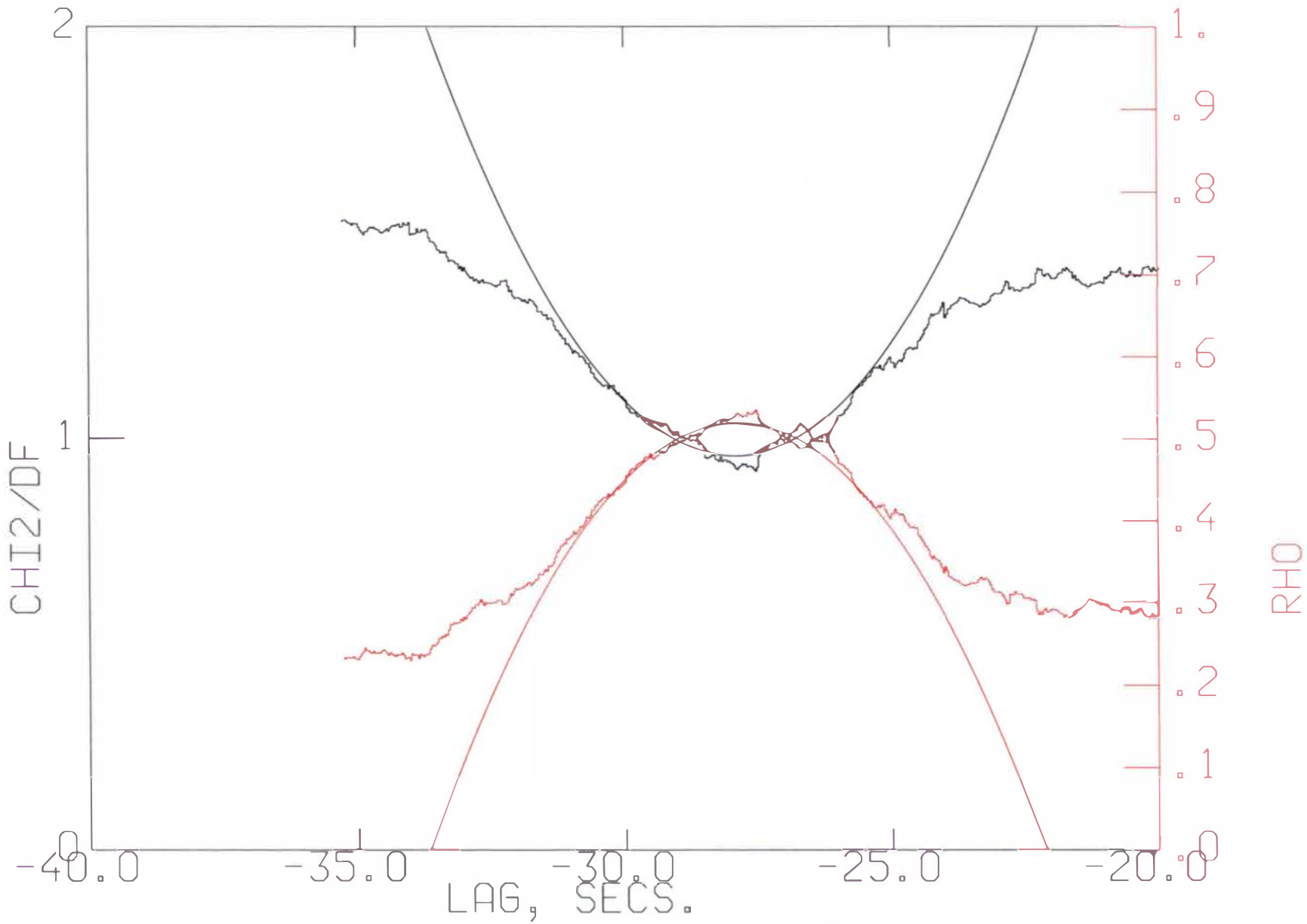
EVENT OF JUL 6, 1997 21:57

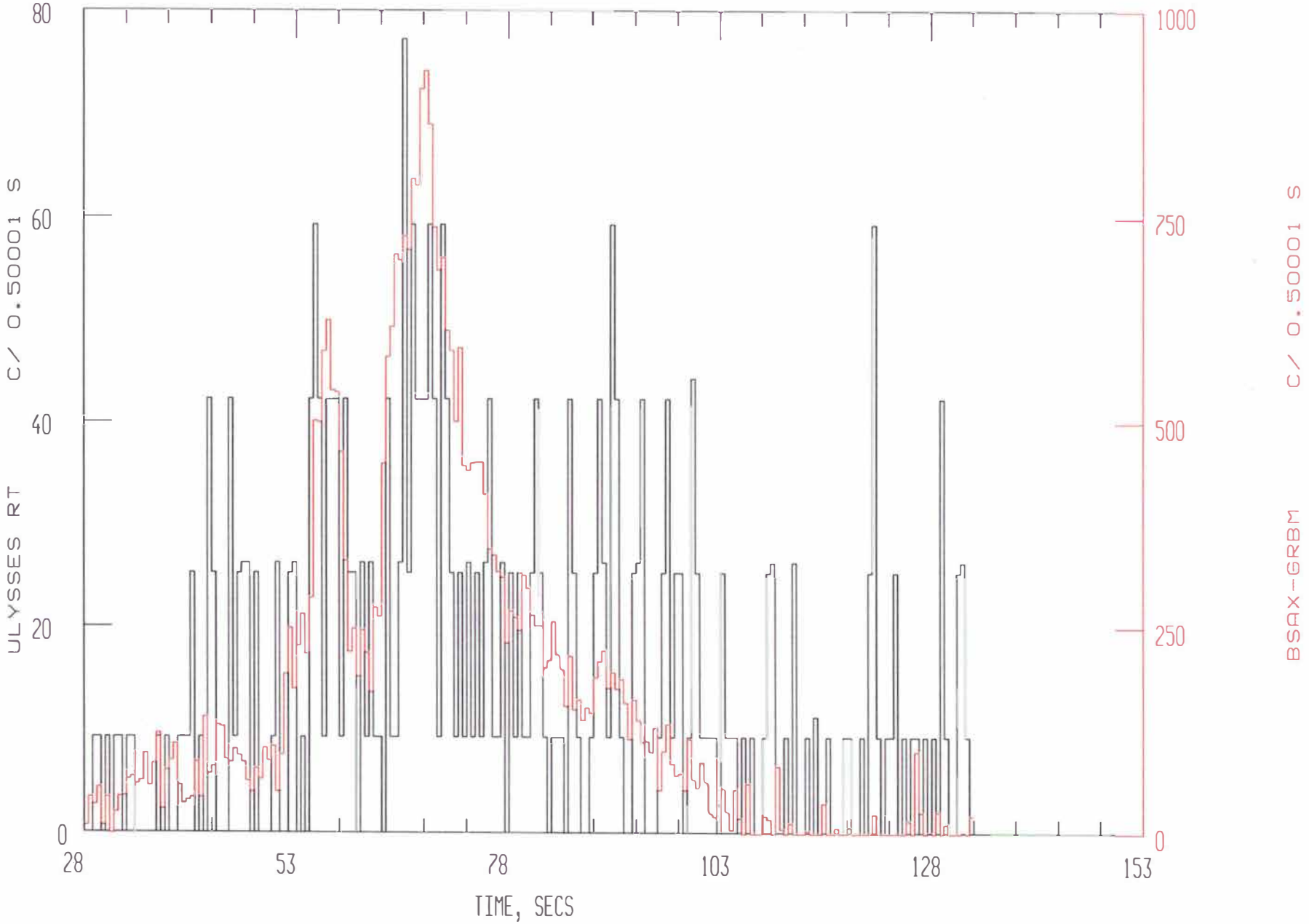
6/ 1/10

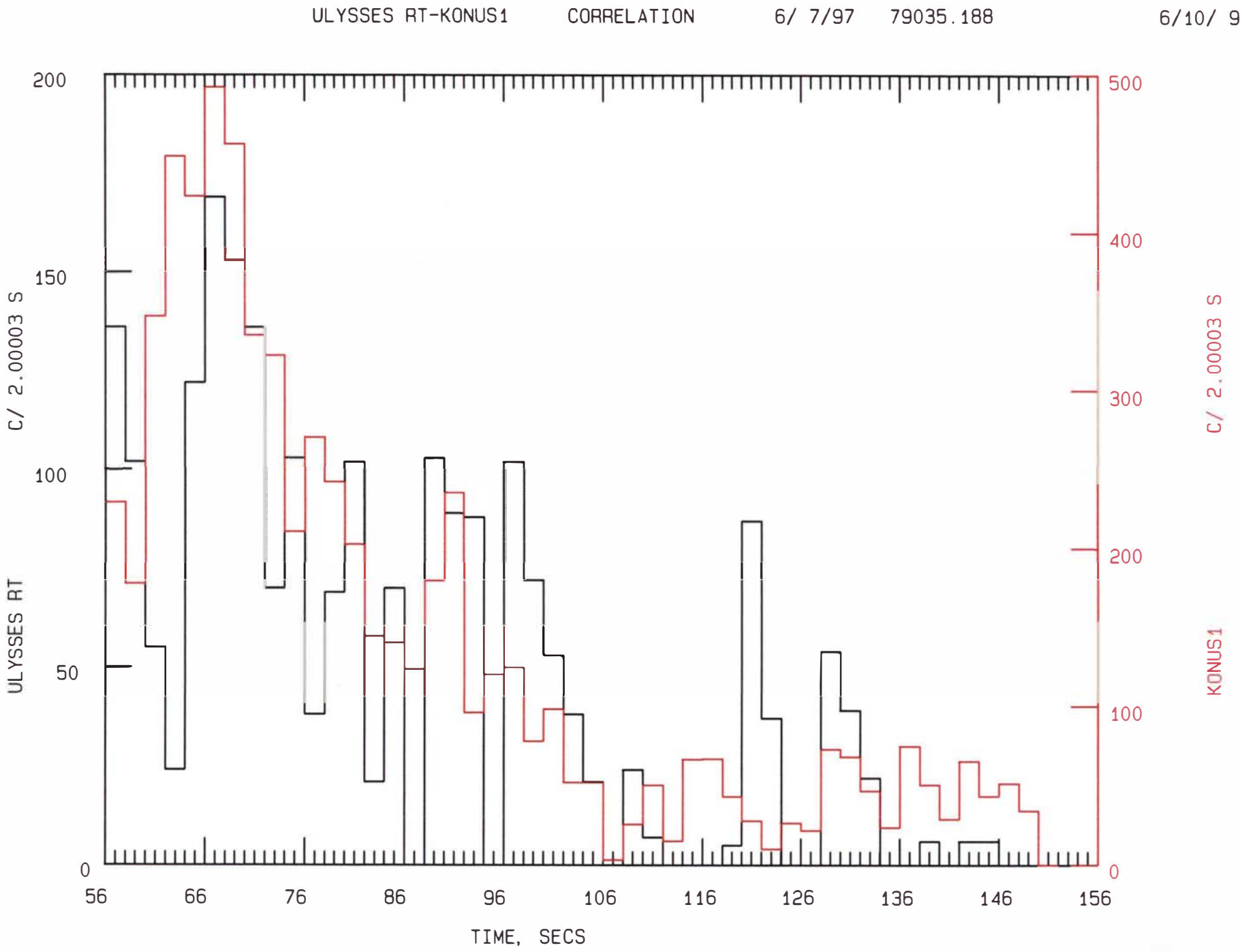
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1 3 SAX



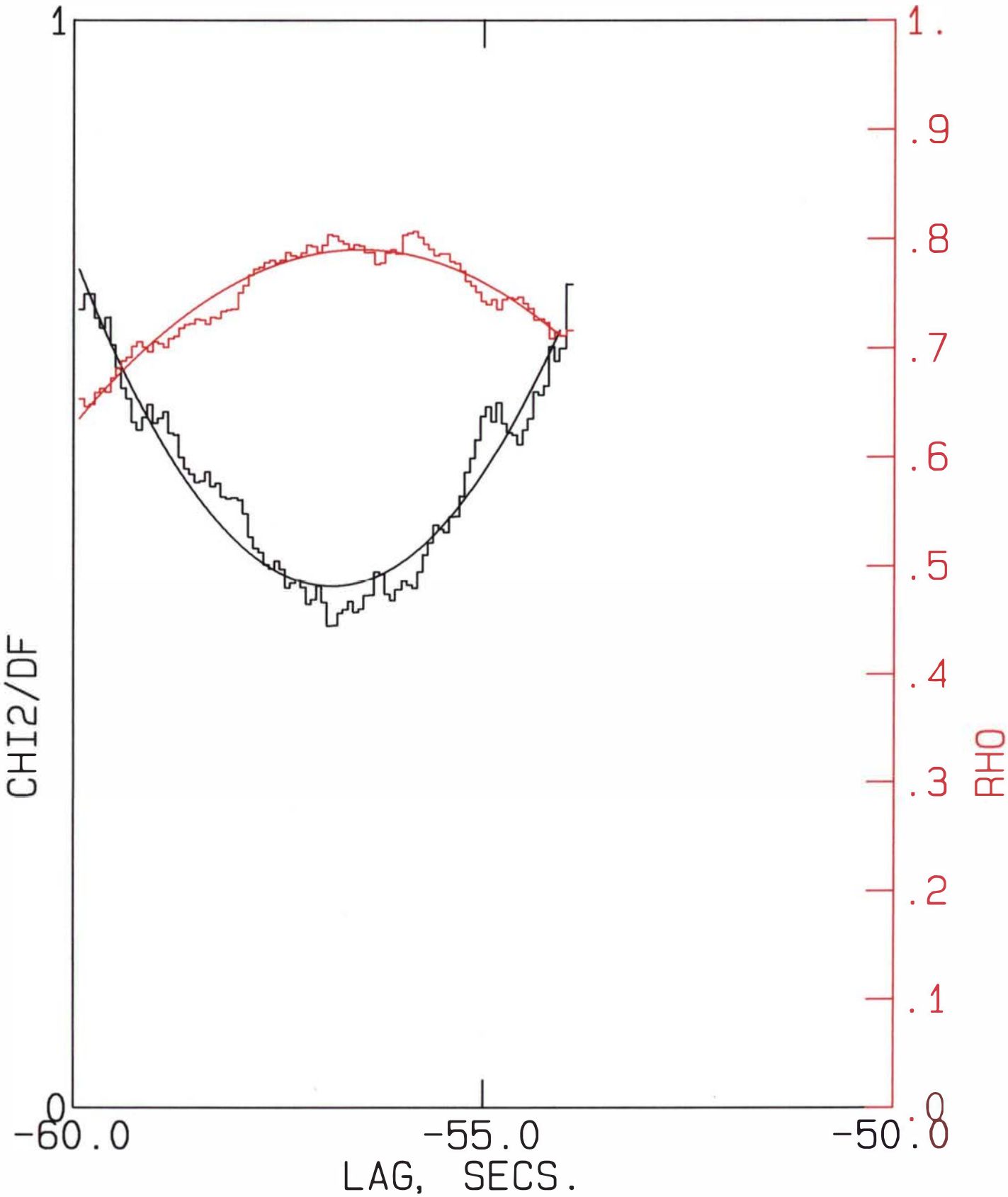
ULYSSES RT-BSAX-GRBM CORRELATION 6/ 7/97 79035.188




80
60
40
20
0
ULYSSES RT C/ 0.50001 S
1000
750
500
250
0
BSAX-GRBM C/ 0.50001 S
28
53
78
103
128
153
TIME, SECS


ULYSSES RT-KONUS1 CORRELATION 6/ 7/97 79035.188 6/10/ 9
200
150
100
50
0
C/ 2.00003 S
ULYSSES RT
500
400
300
200
100
0
C/ 2.00003 S
KONUS1
56
66
76
86
96
106
116
126
136
146
156
TIME, SECS

ULYSSES RT-KONUS1 CORRELATION 6/ 7/97 79035.188



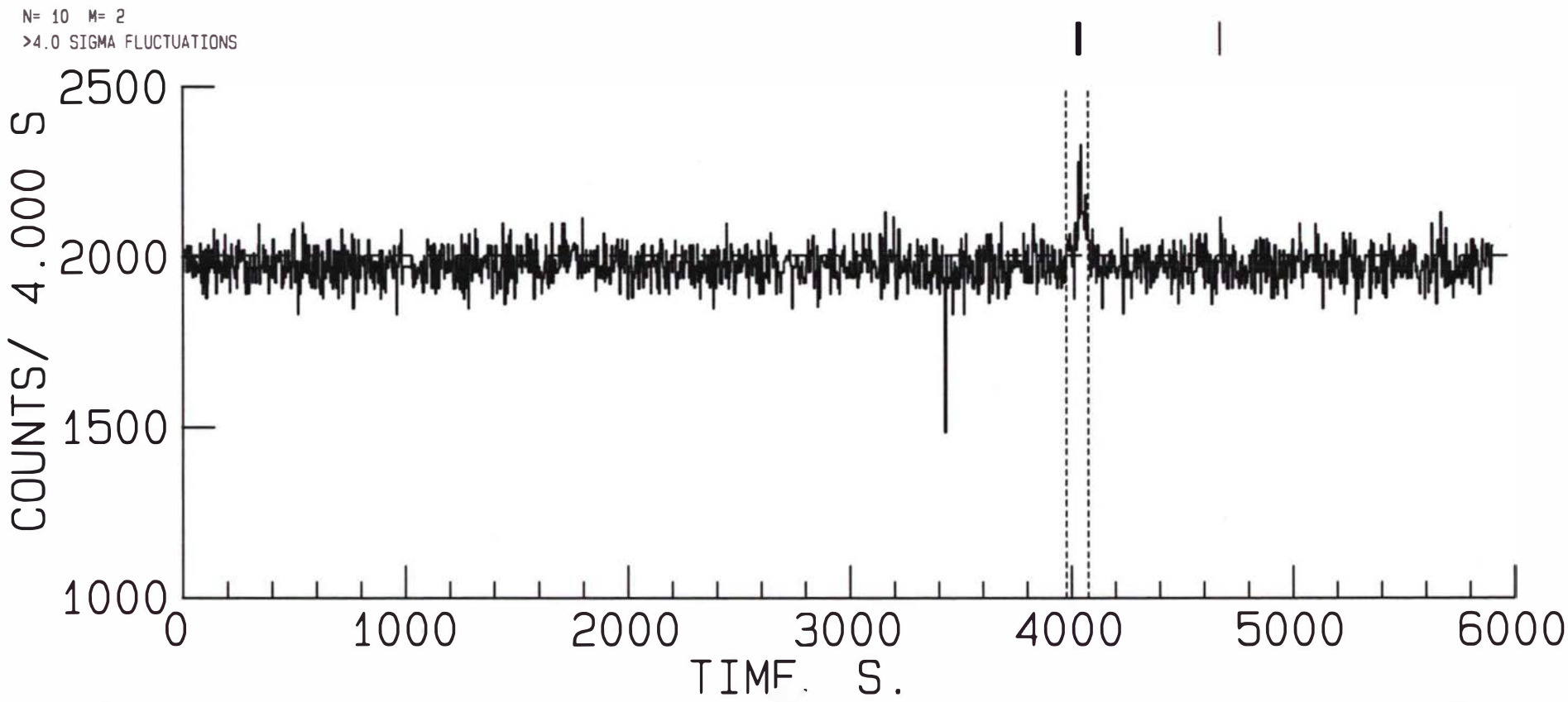
ULYSSES RT

6/10/ 9

6/ 7/97 75060.102 s

0.250 S INTERVALS REGROUPED BY 16

21- 148 keV



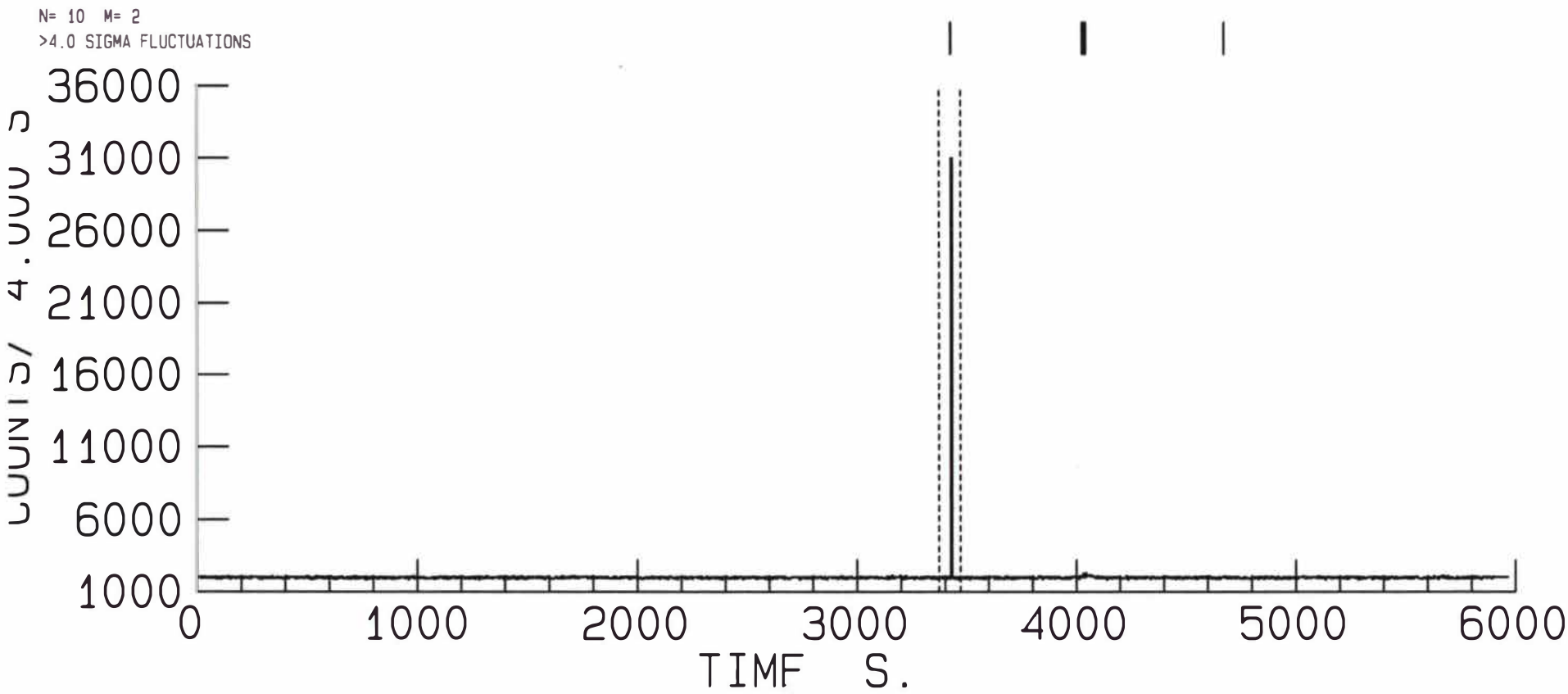
ULYSSES RT

6/10/ 9

6/ 7/97 75060.102 s

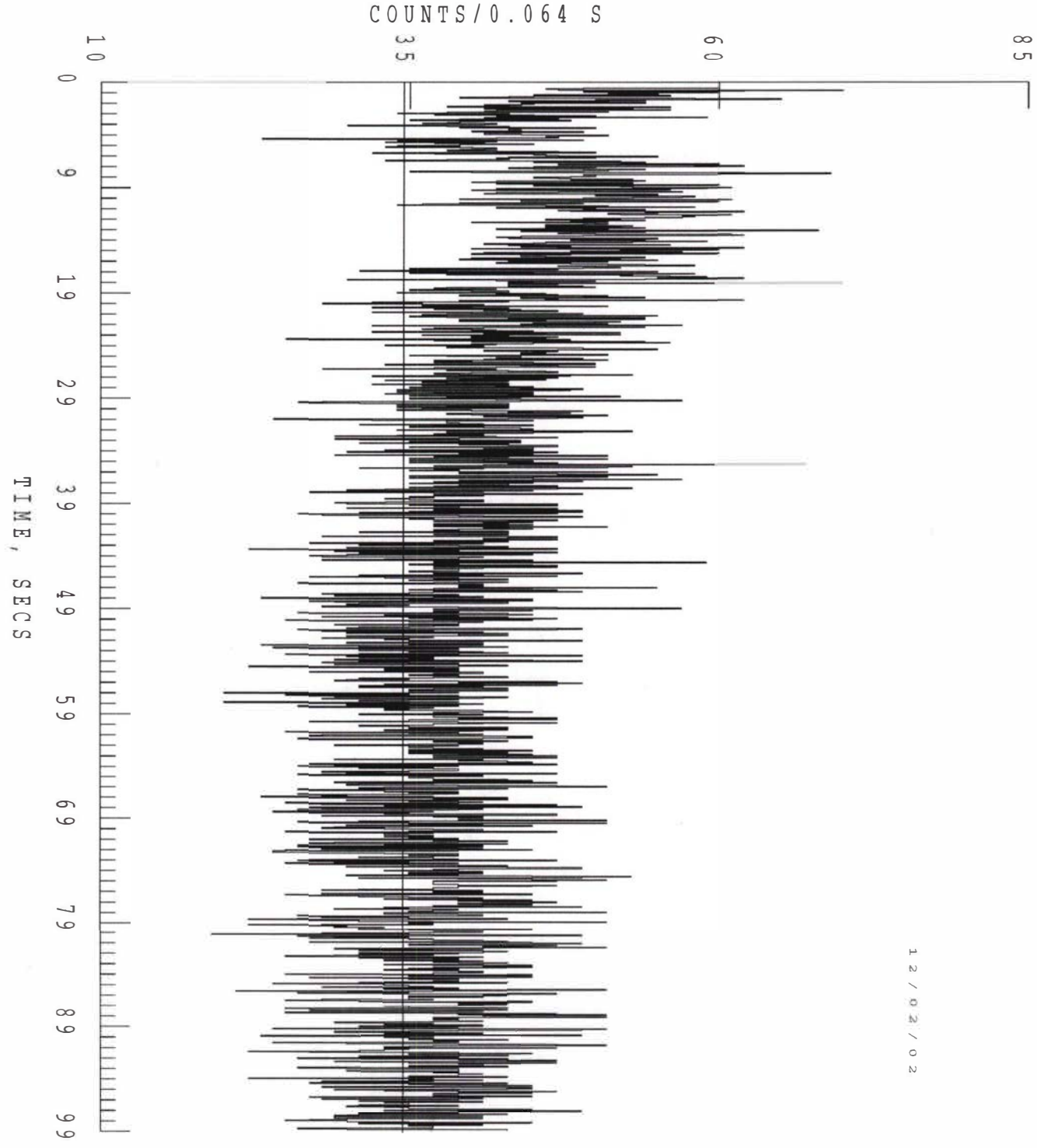
0.250 S INTERVALS REGROUPED BY 16

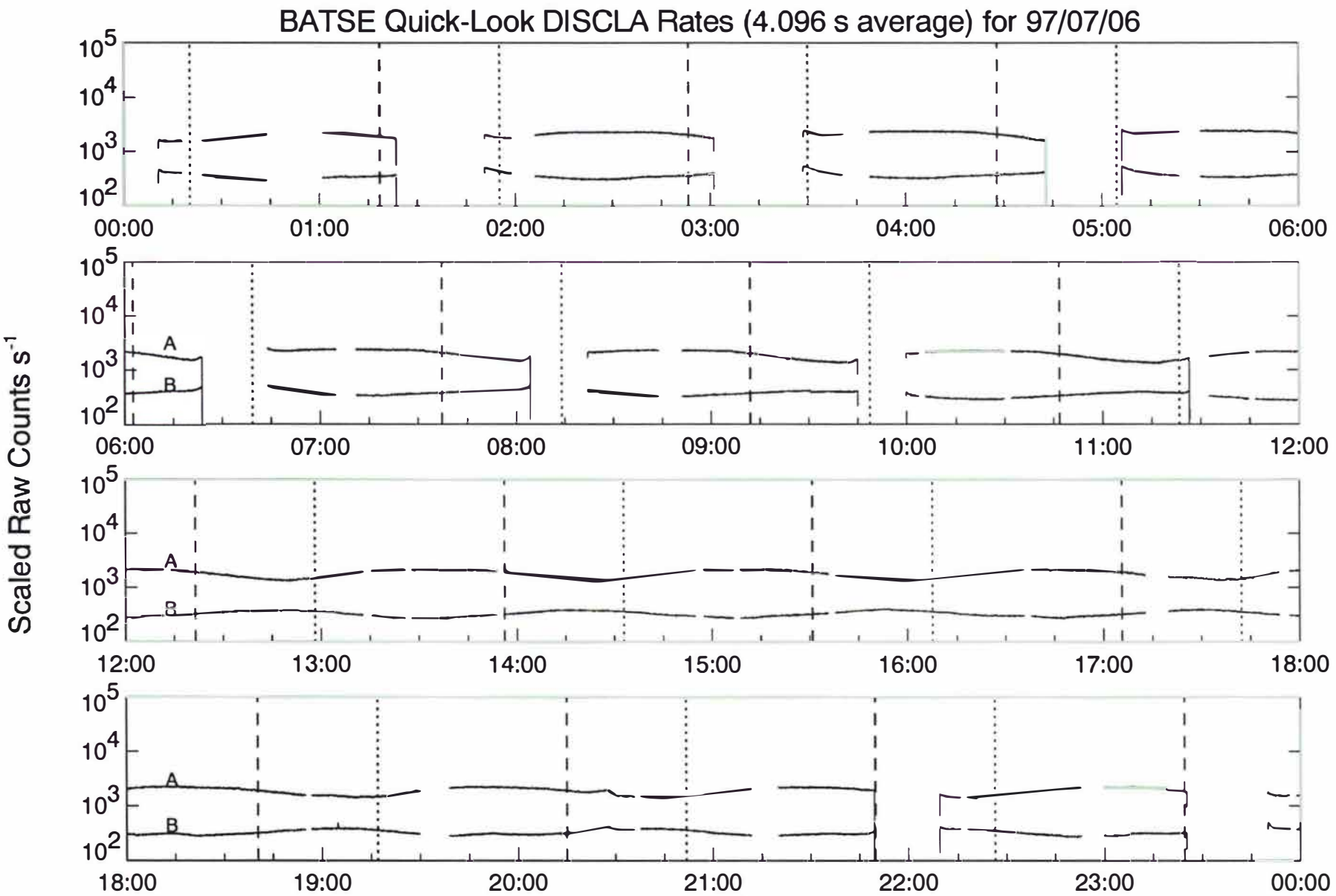
21- 148 keV

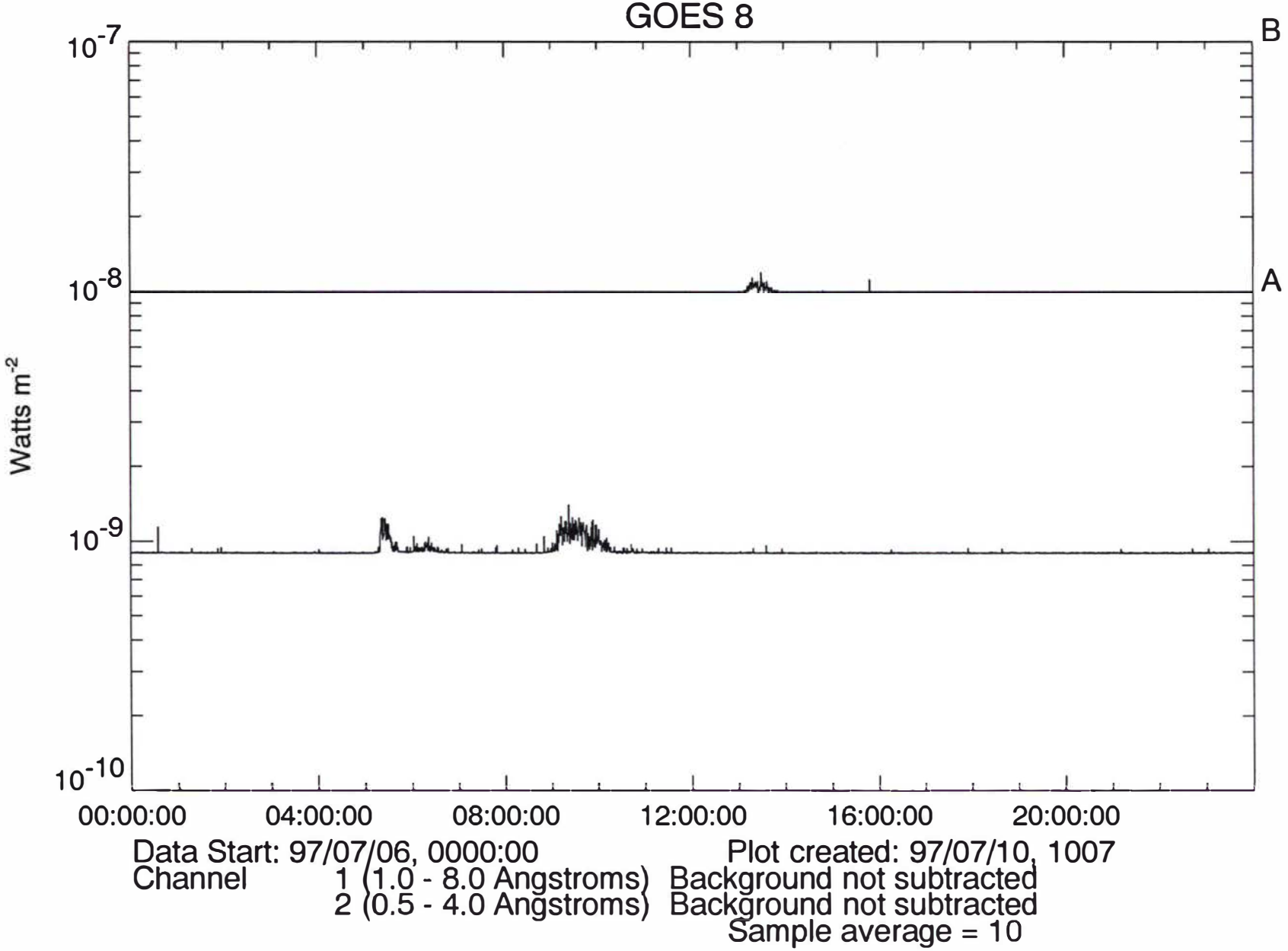


KONUS1 06/07/97 78014.733

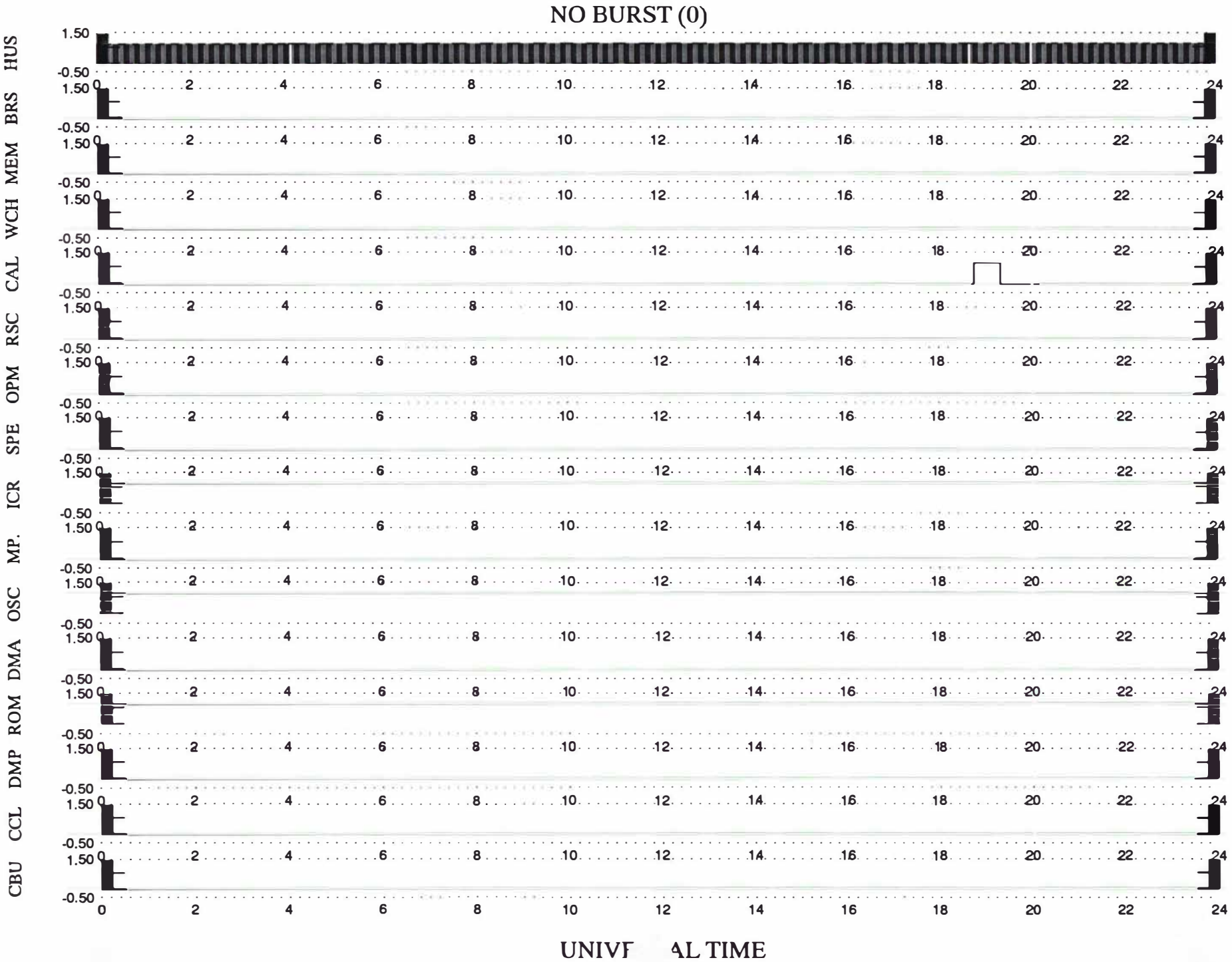
50- 200 keV




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/06
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
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: 97/07/10, 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

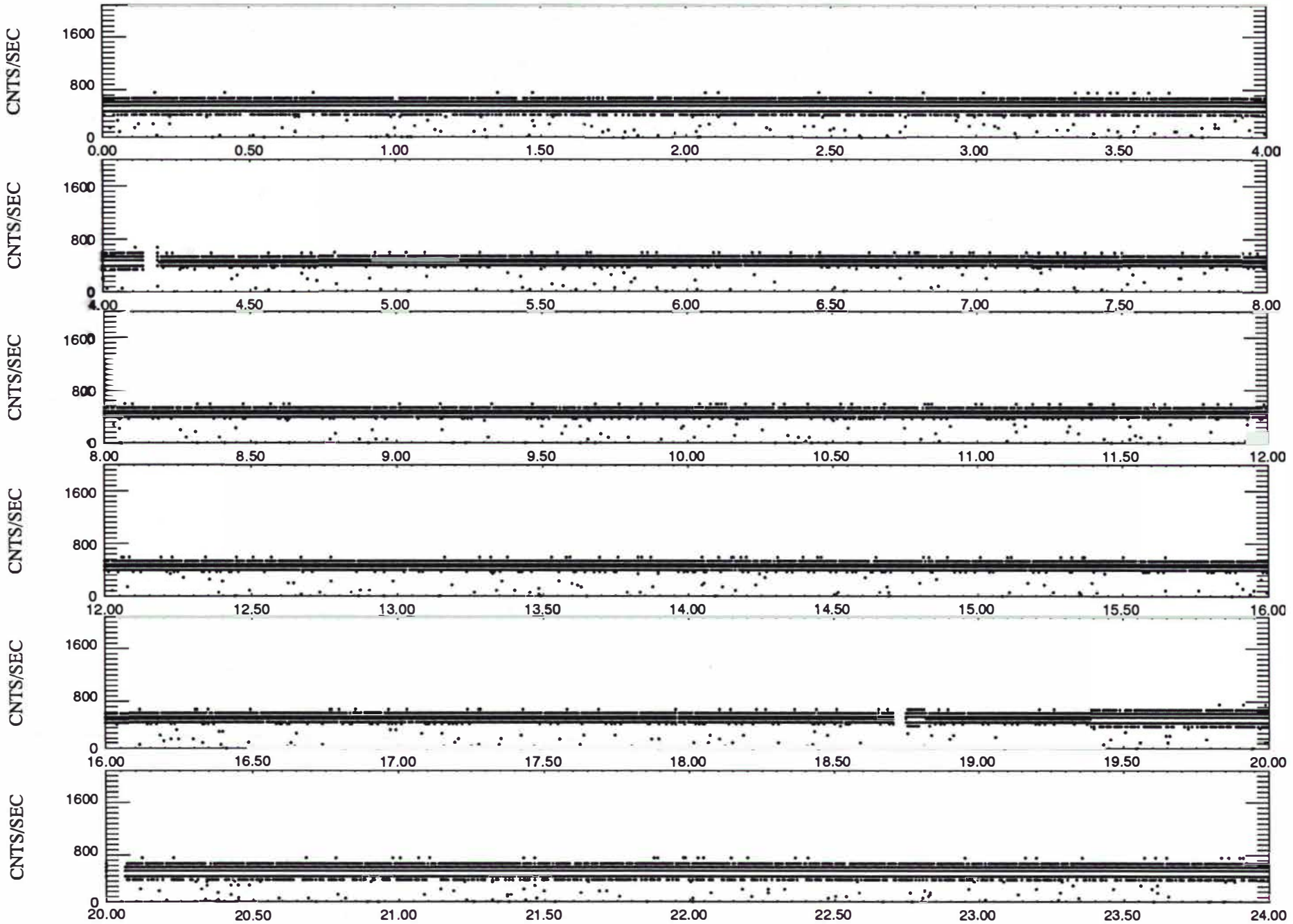

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/06, 0000:00
Plot created: 97/07/10, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 187, year 1997 to day 187, year 1997 10/24/97



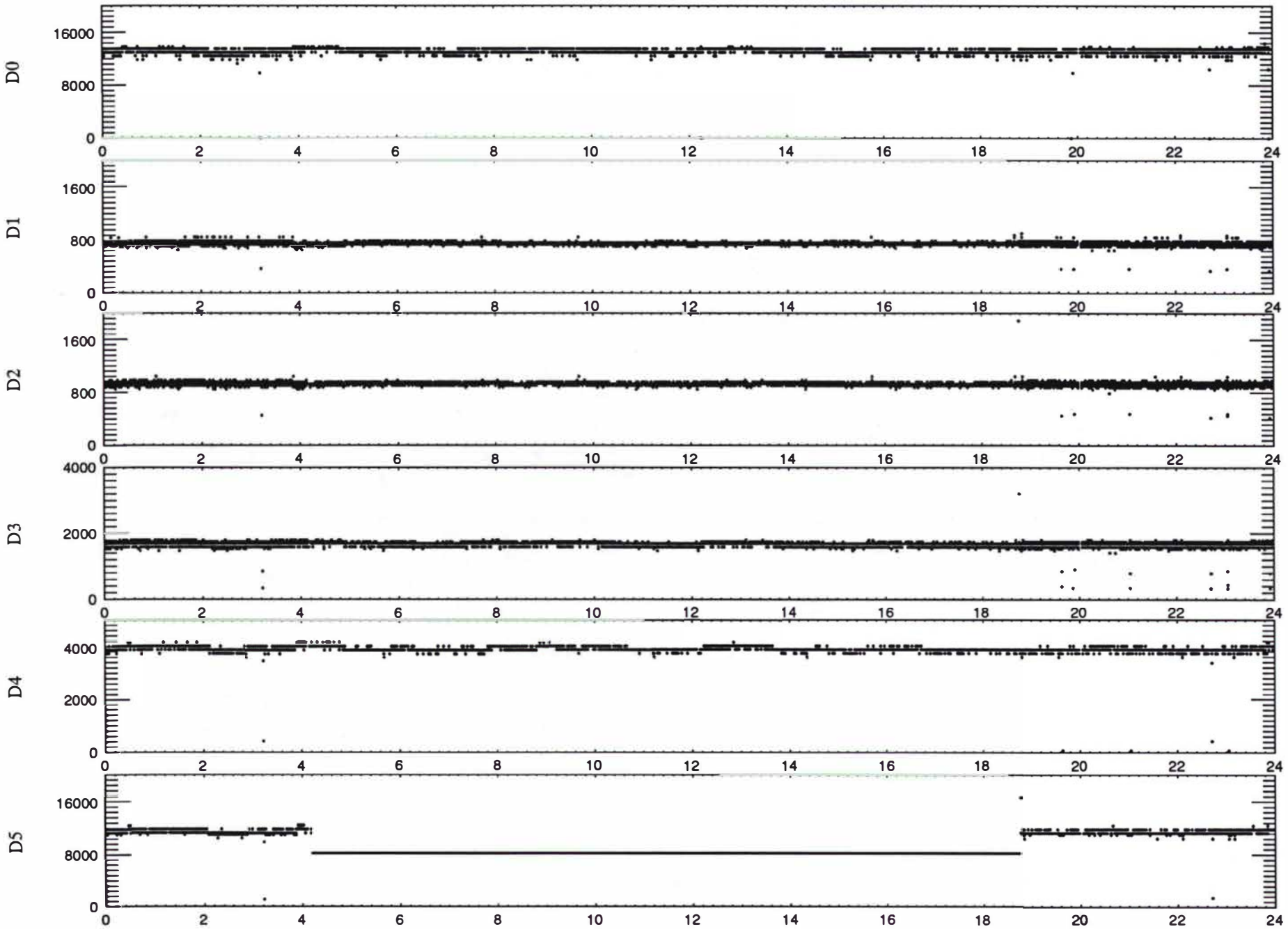
HUS 2A, MODE 1, NOT AVERAGED EDR day 187, year 1997 to day 187, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 187, year 1997 to day 187, year 1997 10/24/97



From WOODSP@ssl.msfc.nasa.gov Tue Jul 8 09:20 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 JAA20631; Tue, 8 Jul 1997 09:20:28 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 8 Jul 1997 11:20:19 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970708112019.22408ad3@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6295
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6295
EVENT OF 1997 JUL 7 DAY OF YEAR=188
EVENT CROSSING TIME AT BATSE : 7855. S. OR 02:10:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 192.000 7.000
BATSE PEAK COUNTING RATE: 7300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 97 IS:
RA= 153.936 DEC= 25.135 DIST= 5.856 AU
BATSE-ULYSSES DISTANCE = 875986614. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2218.43 SECS.
CROSSING TIME AT ULYSSES IS 5637. S. OR 01:33:56 +/- 346.48 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 97 IS:
RA= 187.666 DEC= -3.283 DIST= 1.297 AU
MARS-BATSE DISTANCE = 193974800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=168.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -634.80 SECS.
CROSSING TIME AT MARS IS 7220. S. OR 02:00:20 +/- 12.09 SECONDS

BATSE BURST TRIGGER

NO.: 6295

TIME: TJD=0636 SECONDS=7855

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.7 AZIMUTH=290.1 ERROR=1.5 DEGREES

COMMENTS:
GRB LASTING ~ 260 SEC. MULTIPLE PEAKS. SUBSTRUCTURE EVIDENT
WITHIN PULSES. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6295	970707	10636	07855	7300	192	+07	260

BATSE BURST# 6295

ULYSSES RT 8/ 7/97

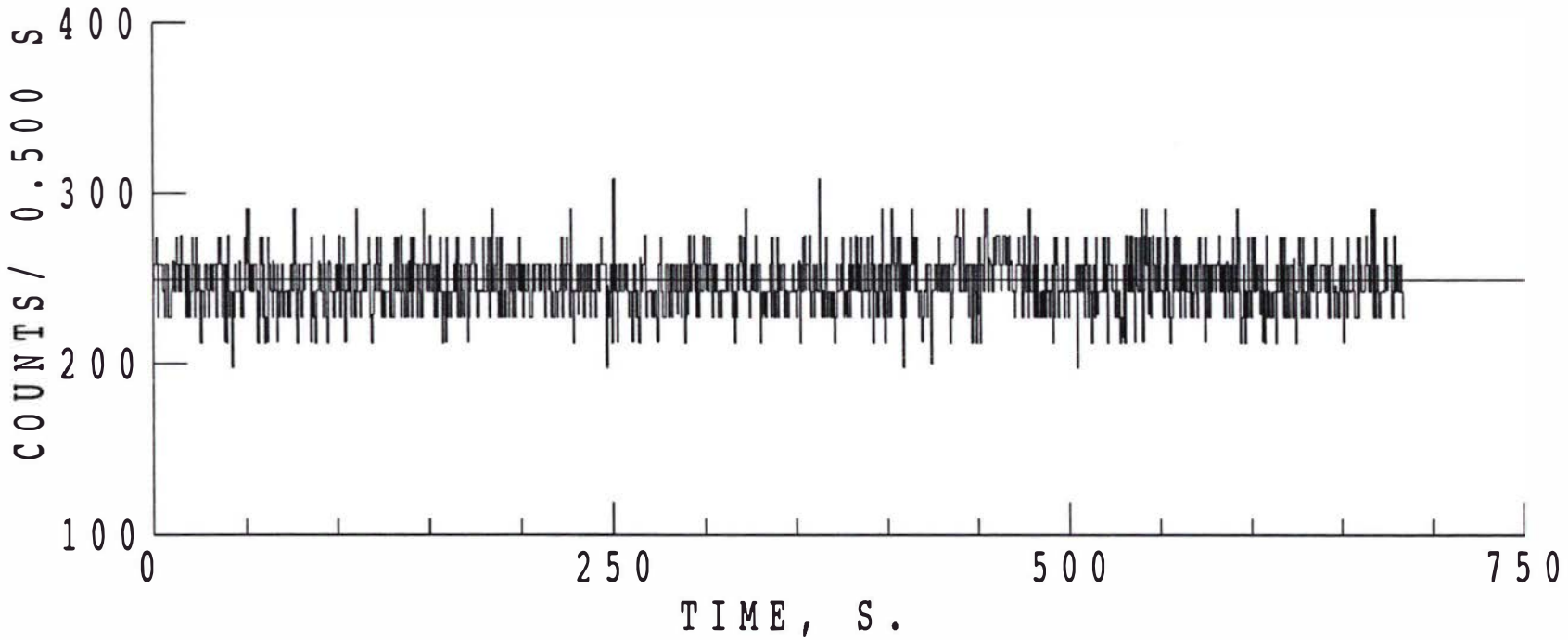
7/ 7/97 5292.050 s

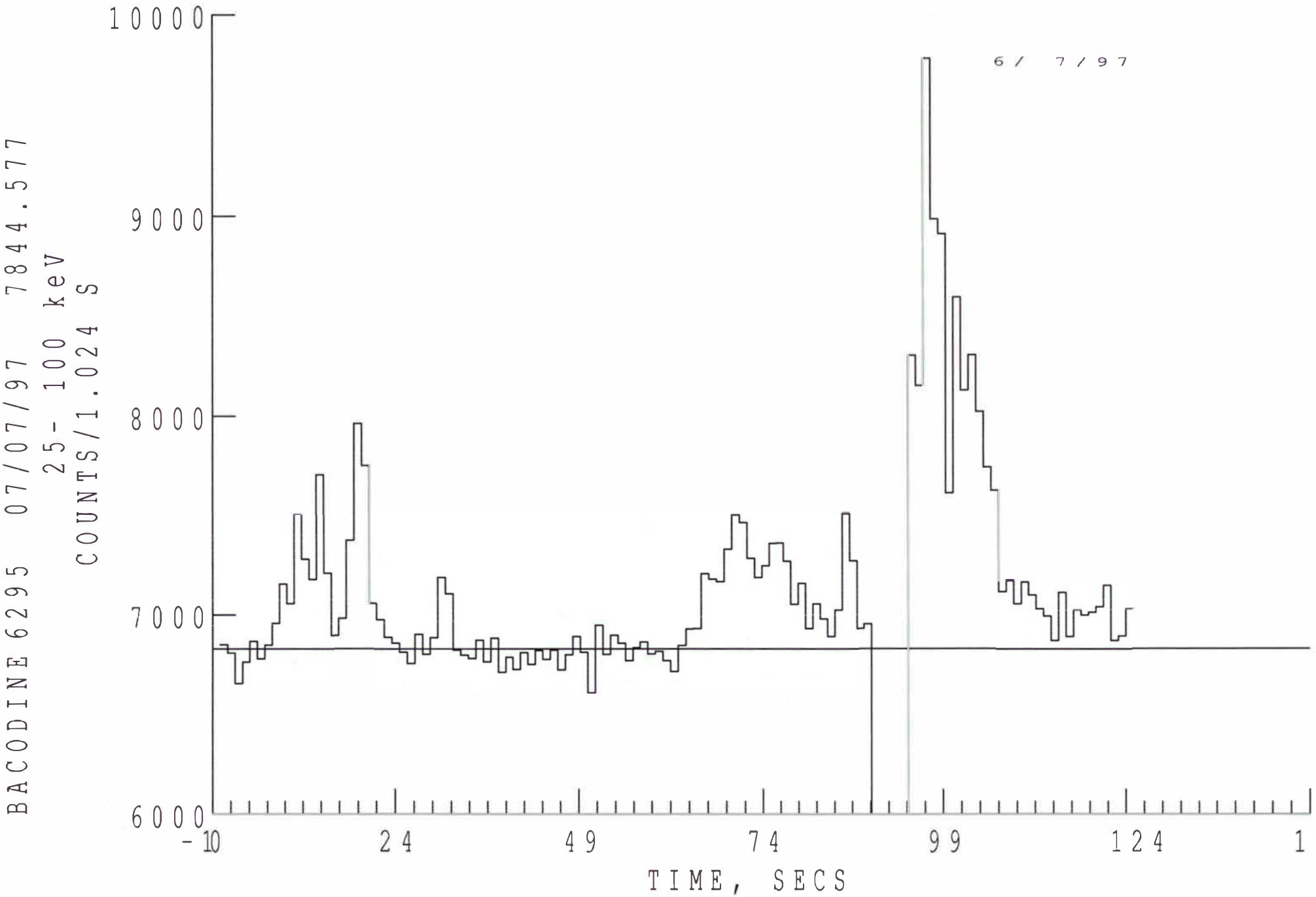
0.250 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6295 07/07/97 7844.577
25- 100 keV
COUNTS/1.024 S
10000
9000
8000
7000
6000
6/ 7/97
-10
24
49
74
99
124
1
TIME, SECS

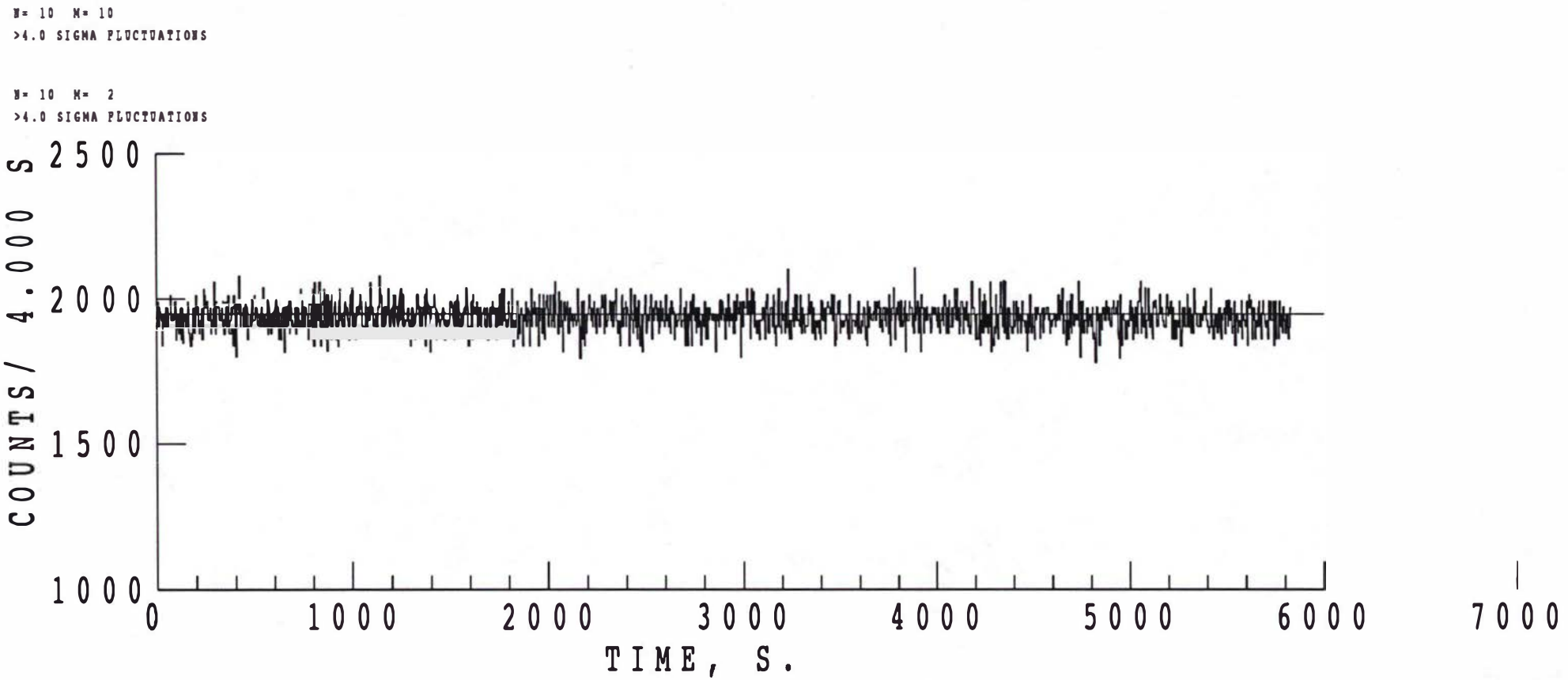
KONUS

ULYSSES RT 15/02/00

01/07/97 21636.225 s

0.500 S INTERVALS REGROUPED BY 8

0- 0 keV



From WOODSP@ssl.msfc.nasa.gov Tue Jul 8 09:22 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 JAA20657; Tue, 8 Jul 1997 09:22:00 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 8 Jul 1997 11:21:50 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970708112151.22408ad3@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6296
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6296
EVENT OF 1997 JUL 7 DAY OF YEAR=188
EVENT CROSSING TIME AT BATSE : 68912. S. OR 19:08:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 345.000 -13.000
BATSE PEAK COUNTING RATE: 3100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 97 IS:
RA= 154.016 DEC= 25.052 DIST= 5.864 AU
BATSE-ULYSSES DISTANCE = 877317080. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 15.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2814.59 SECS.
CROSSING TIME AT ULYSSES IS 71727. S. OR 19:55:26 +/- 231.85 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 97 IS:
RA= 187.666 DEC= -3.283 DIST= 1.297 AU
MARS-BATSE DISTANCE = 193974800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 27.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 572.46 SECS.
CROSSING TIME AT MARS IS 69484. S. OR 19:18:04 +/- 61.05 SECONDS

BATSE BURST TRIGGER
NO.: 6296

TIME: TJD=0636 SECONDS=68912

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

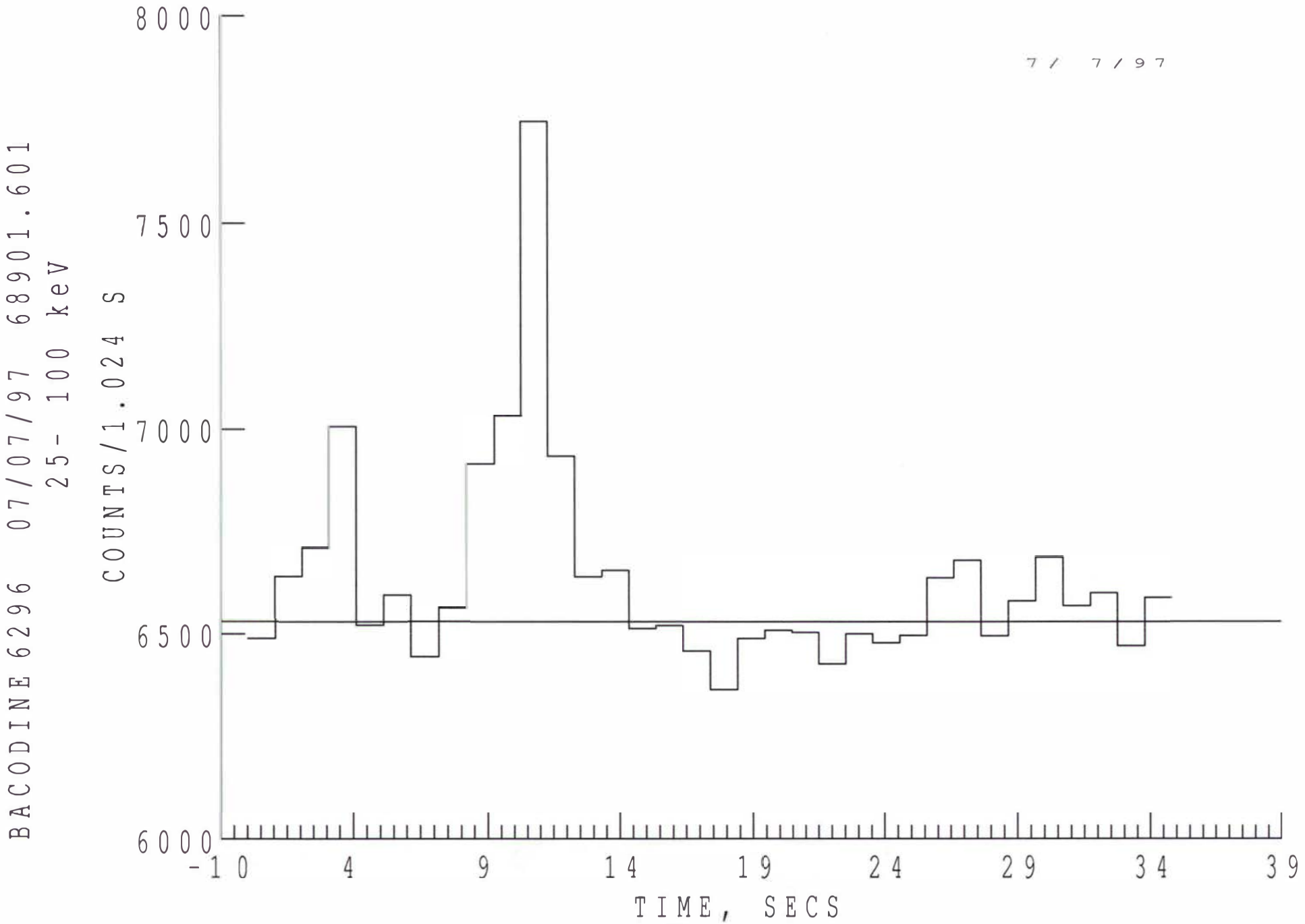
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=98.2 AZIMUTH=125.2 ERROR=13 DEGREES

COMMENTS:
GRB LASTING ~ 10 SEC. TWO PULSES. TRIGGERED PULSE SHOWS
SUBSTRUCTURE. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6296	970707	10636	68912	3100	345	-13	10


BACODINE 6296 07/07/97 68901.601
25- 100 keV
COUNTS/1.024 S
8000
7500
7000
6500
6000
7/ 7/97
-10
4
9
14
19
24
29
34
39
TIME, SECS

BATSE BURST# 6296

ULYSSES RT 8/ 7/97

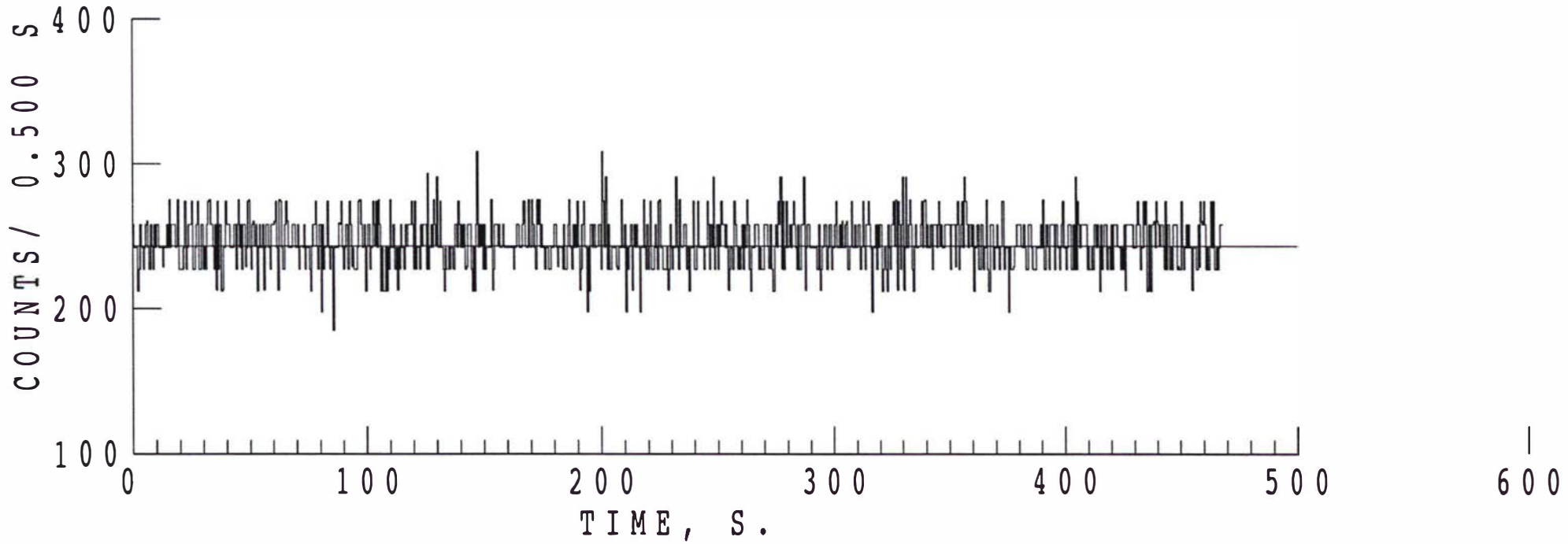
7/ 7/97 71496.062 s

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 WOODSP@ssl.msfc.nasa.gov Tue Jul 8 09:27 PDT 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 8 Jul 1997 11:26:21 -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.: 6297

TIME: TJD=0636 SECONDS=81633

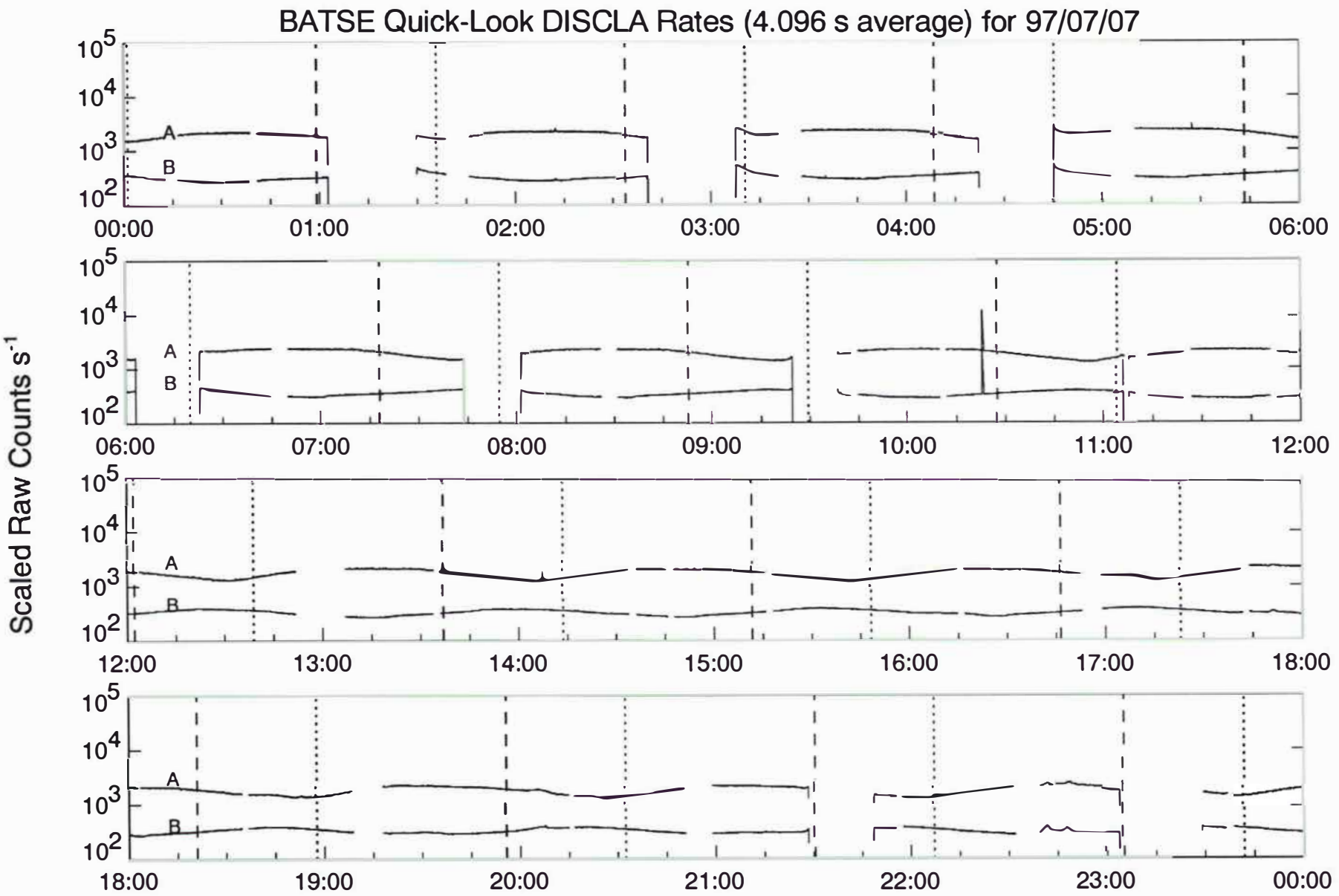
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

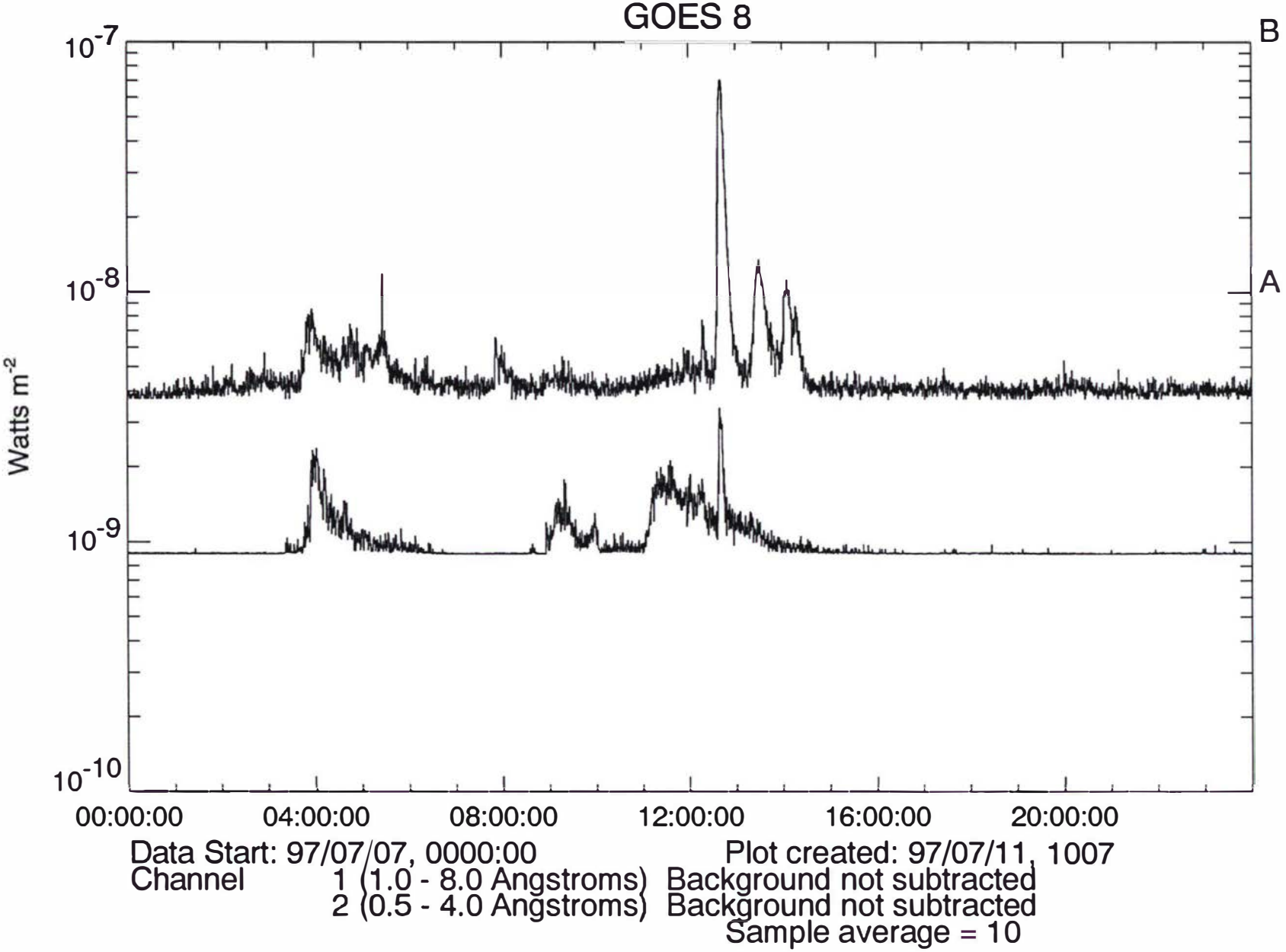
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

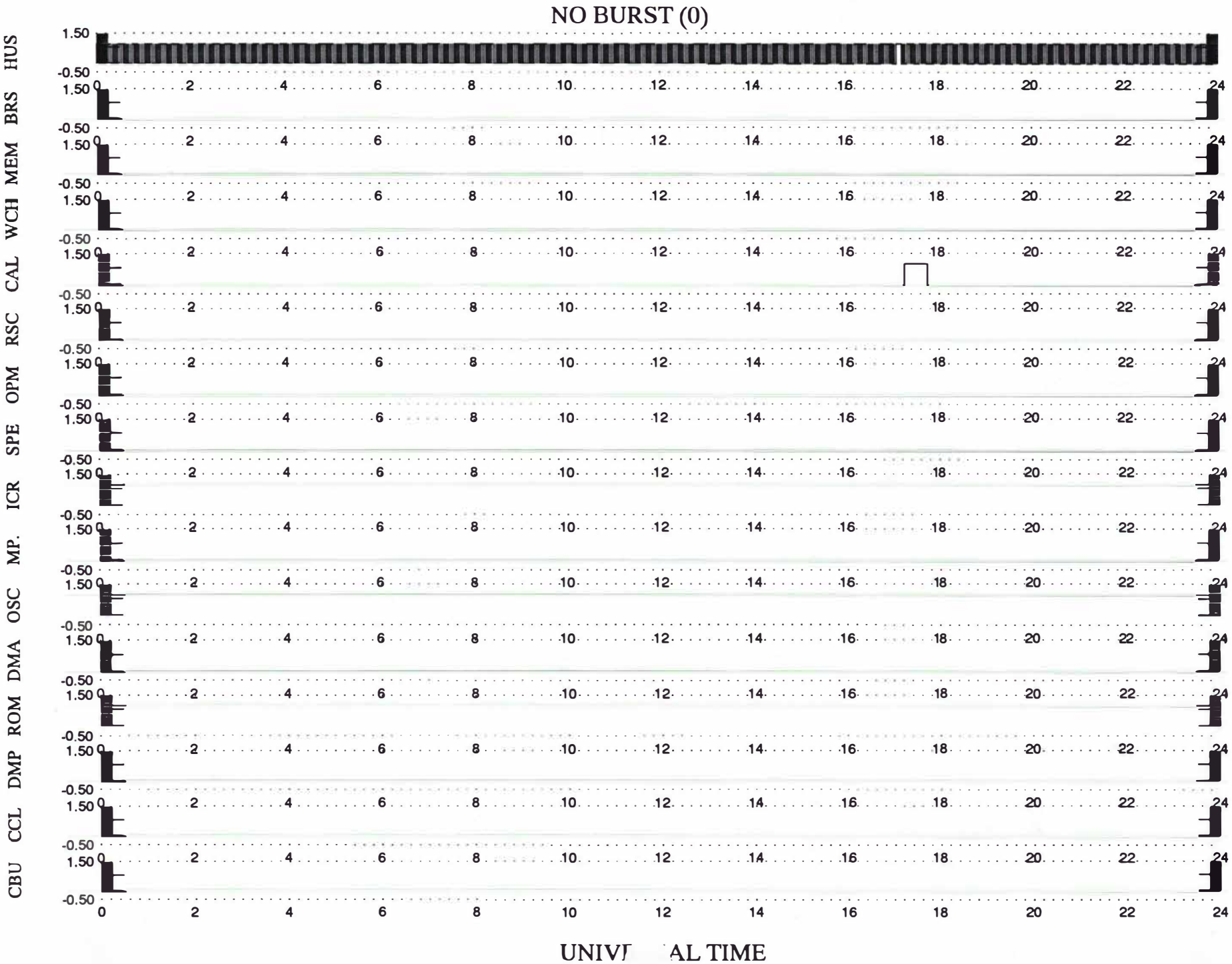
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.


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

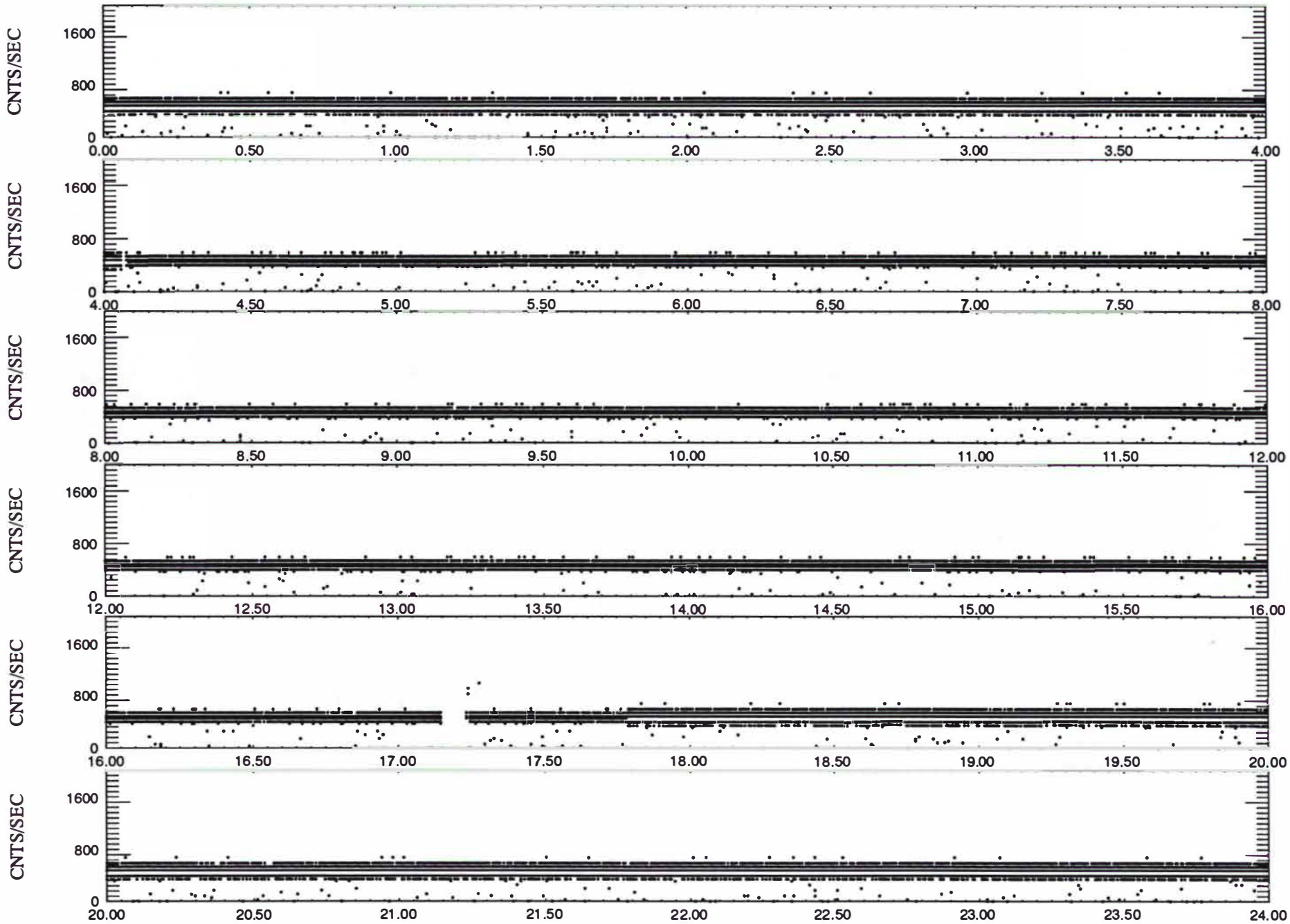

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/07, 0000:00
Plot created: 97/07/11, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 188, year 1997 to day 188, year 1997 10/24/97



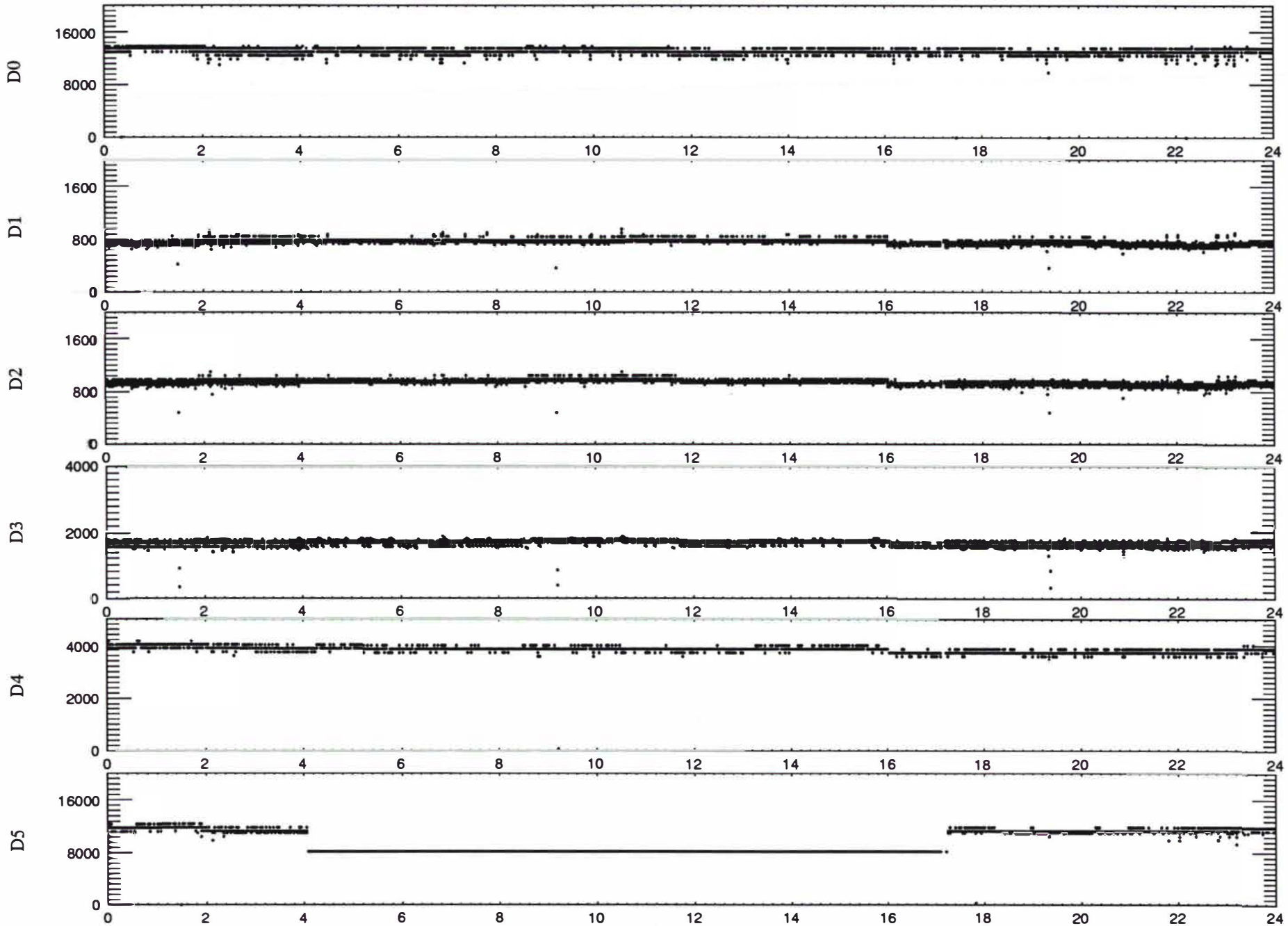
HUS 2A, MODE 1, NOT AVERAGED EDR day 188, year 1997 to day 188, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVF[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 188, year 1997 to day 188, year 1997 10/24/97



From WOODSP@SSLLES.MSFC.NASA.GOV Wed Jul 9 11:48 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 LAA02630; Wed, 9 Jul 1997 11:48:32 -0700
Date: Wed, 9 Jul 1997 13:48:20 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970709134820.2240bec4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6298
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6298
EVENT OF 1997 JUL 8 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 12717. S. OR 03:31:57.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 141.000 -21.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 7/ 97 IS:
RA= 154.056 DEC= 25.012 DIST= 5.869 AU
BATSE-ULYSSES DISTANCE = 877966869. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.27 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1969.88 SECS.
CROSSING TIME AT ULYSSES IS 10747. S. OR 02:59:07 +/- 396.32 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 7/ 97 IS:
RA= 188.127 DEC= -3.502 DIST= 1.304 AU
MARS-BATSE DISTANCE = 195022256. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -426.67 SECS.
CROSSING TIME AT MARS IS 12290. S. OR 03:24:50 +/- 78.78 SECONDS

BATSE BURST TRIGGER
NO.: 6298

TIME: TJD=0637 SECONDS=12717

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

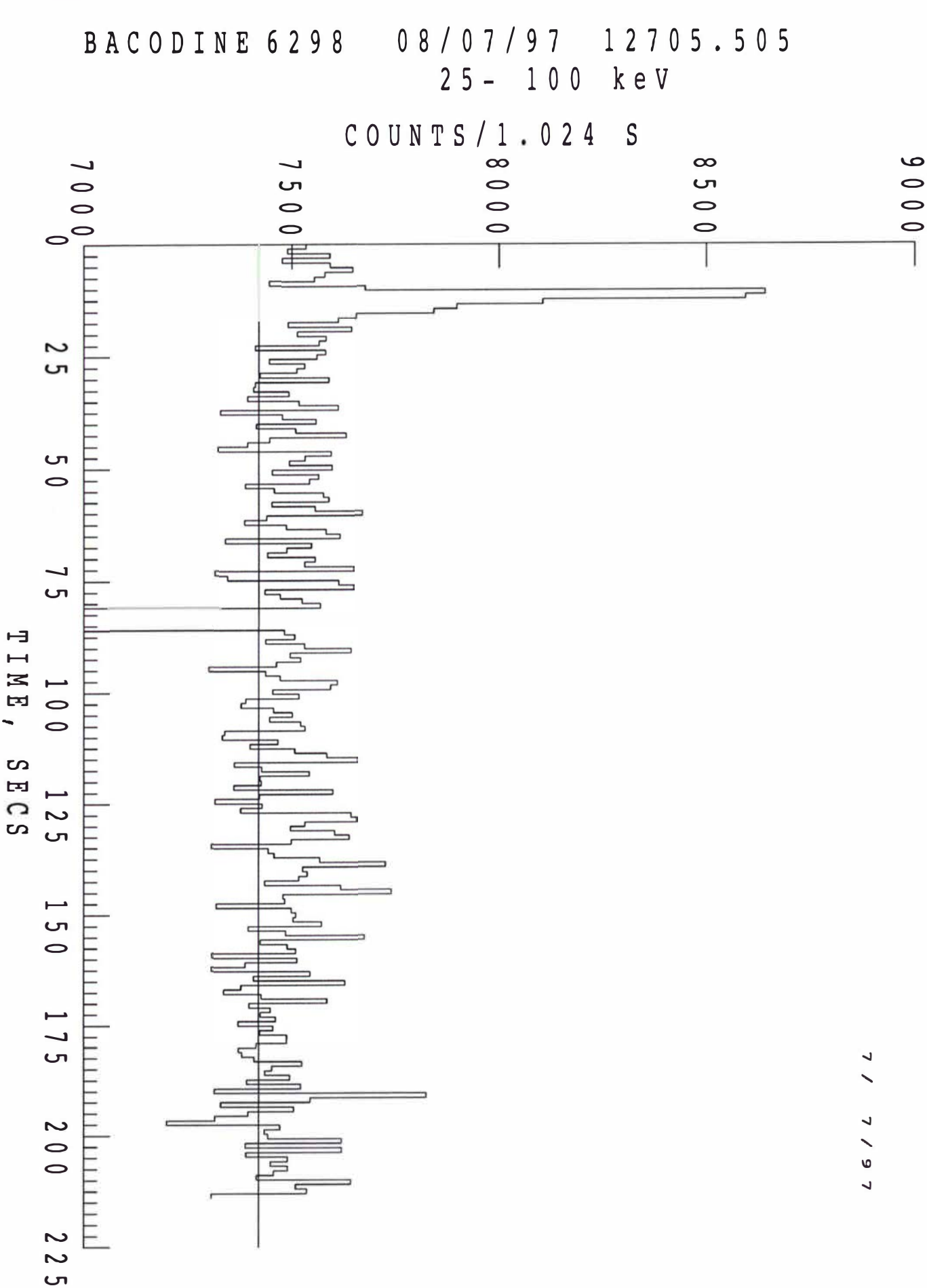
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=48.3 AZIMUTH=277.8 ERROR=12 DEGREES

COMMENTS:
GRB LASTING ~ 10 SEC. SINGLE WEAK PULSE. NOT VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6298	970708	10637	12717	2000	141	-21	10


BACODINE 6298 08/07/97 12705.505
25- 100 keV
COUNTS/1.024 S
7000
7500
8000
8500
9000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
7/7/97

BATSE BURST# 6298

ULYSSES RT 9/ 7/97

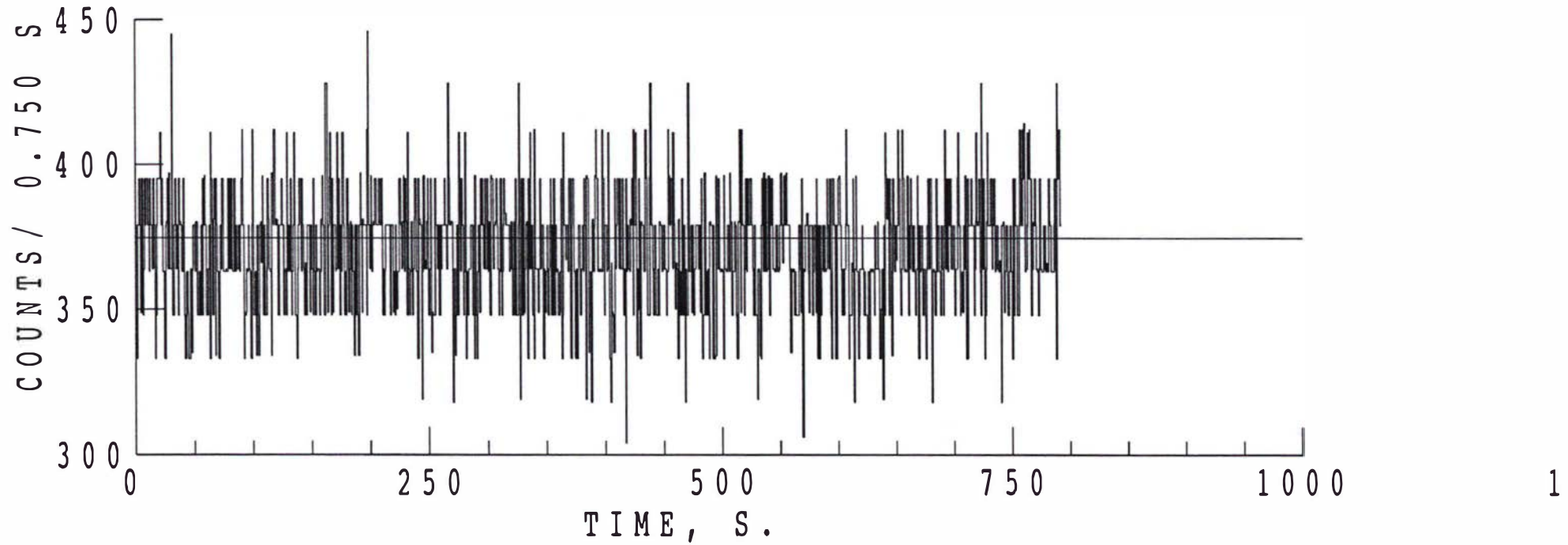
8/ 7/97 10368.110 s

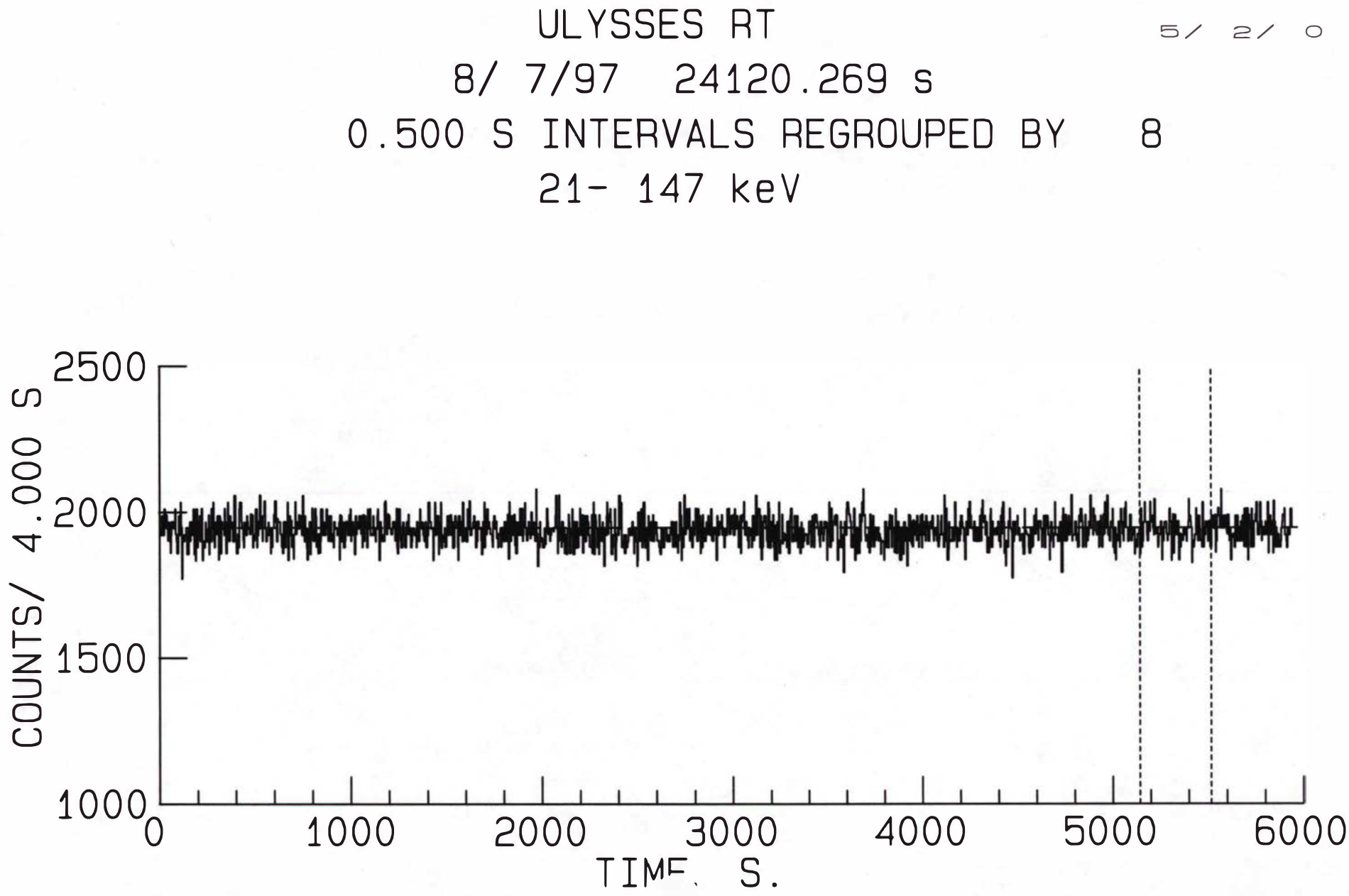
0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




ULYSSES RT
5/ 2/ 0
8/ 7/97 24120.269 s
0.500 S INTERVALS REGROUPED BY 8
21- 147 keV
COUNTS/ 4.000 S
2500
2000
1500
1000
0
1000
2000
3000
4000
5000
6000
TIME, S.

From WOODSP@SSLLES.MSFC.NASA.GOV Wed Jul 9 11:50 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 LAA02655; Wed, 9 Jul 1997 11:50:00 -0700
Date: Wed, 9 Jul 1997 13:49:46 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970709134946.2240bec4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6299
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6299
EVENT OF 1997 JUL 8 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 49577. S. OR 13:46:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 154.000 -54.000
BATSE PEAK COUNTING RATE: 13500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 7/ 97 IS:
RA= 154.105 DEC= 24.962 DIST= 5.874 AU
BATSE-ULYSSES DISTANCE = 878759185. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -561.22 SECS.
CROSSING TIME AT ULYSSES IS 49016. S. OR 13:36:55 +/- 540.97 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 7/ 97 IS:
RA= 188.127 DEC= -3.502 DIST= 1.304 AU
MARS-BATSE DISTANCE = 195022256. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -348.07 SECS.
CROSSING TIME AT MARS IS 49229. S. OR 13:40:28 +/- 90.13 SECONDS

BATSE BURST TRIGGER
NO.: 6299

TIME: TJD=0637 SECONDS=49577

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

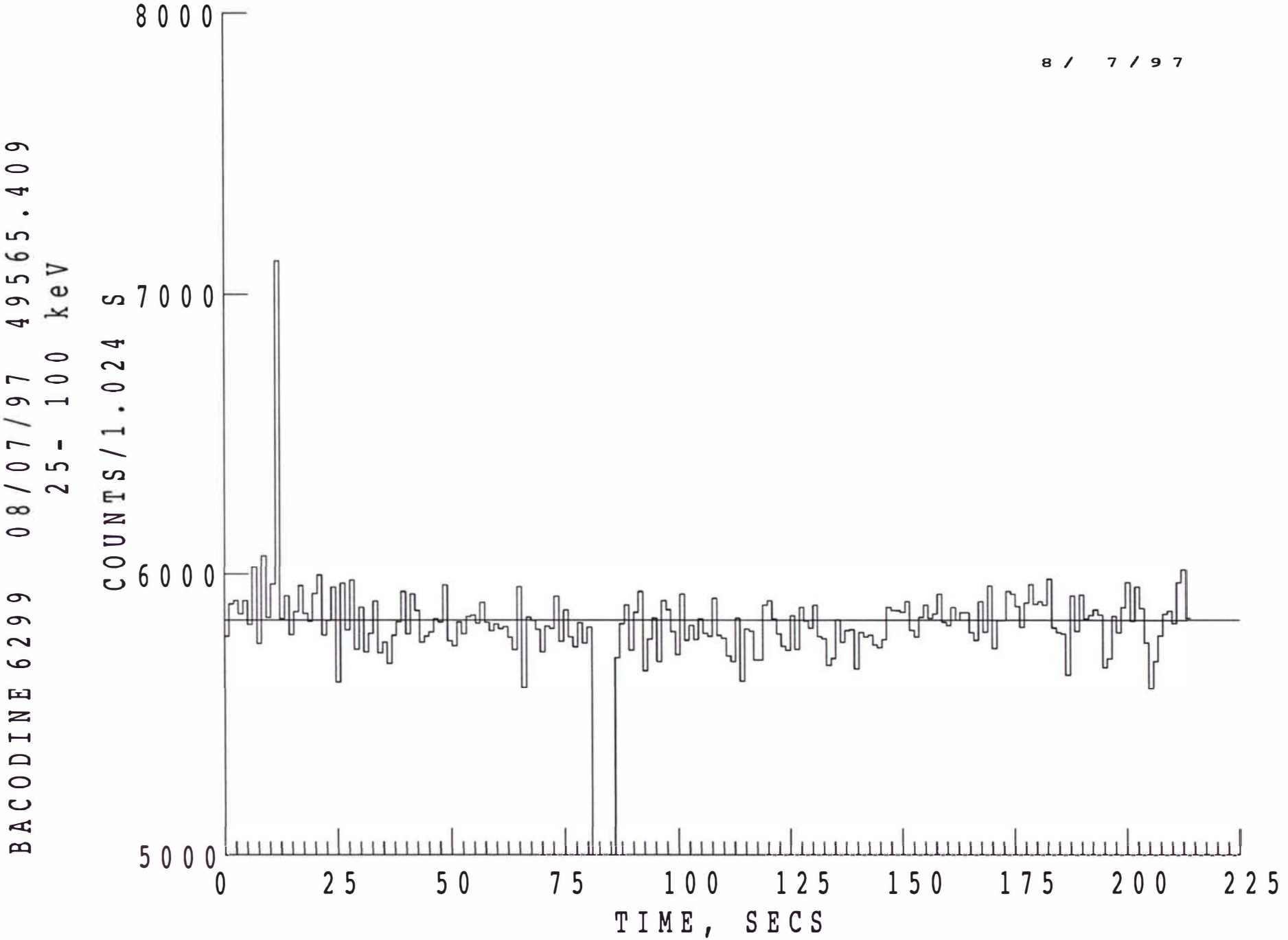
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=58.2 AZIMUTH=236.3 ERROR=3.8 DEGREES

COMMENTS:
GRB LASTING ~ 0.25 SEC. SINGLE PULSE. MARGINALLY VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6299	970708	10637	49577	13500	154	-54	.25


8 / 7 / 97
BACODINE 6299 08/07/97 49565.409
25- 100 keV
COUNTS/1.024 S
8000
7000
6000
5000
0
25
50
75
100
125
150
175
200
225
TIME, SECS

BATSE BURST# 6299

ULYSSES RT 9/ 7/97

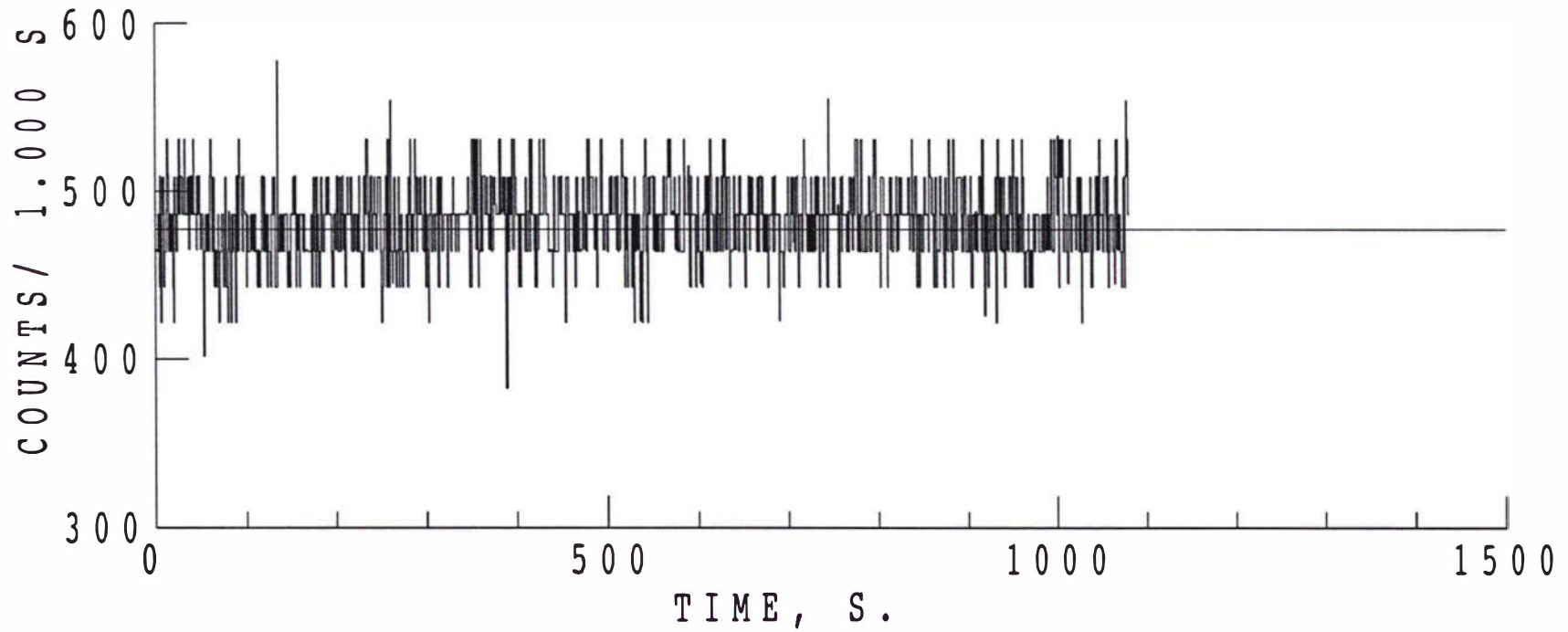
8/ 7/97 48492.051 s

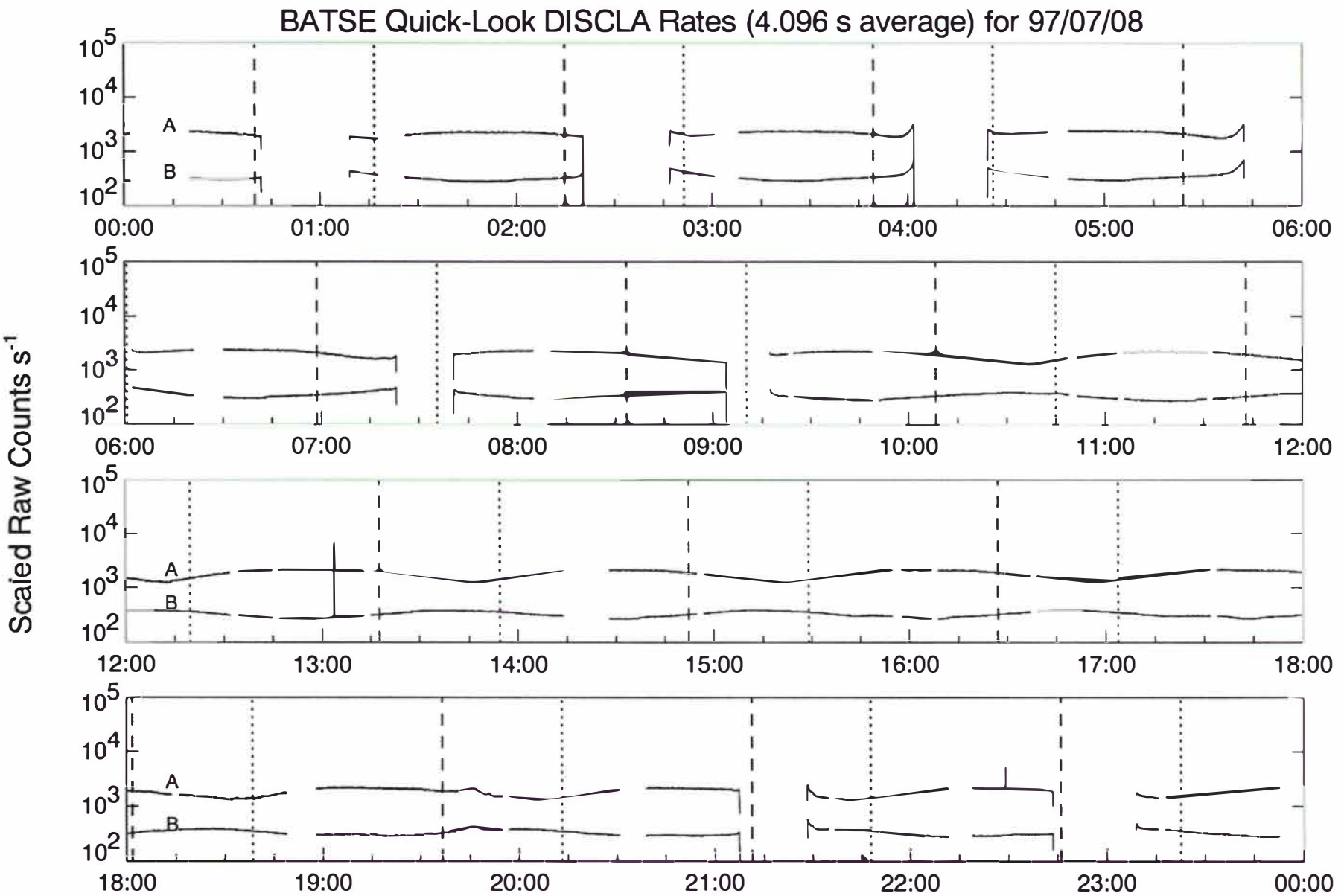
0.500 S INTERVALS REGROUPED BY 2

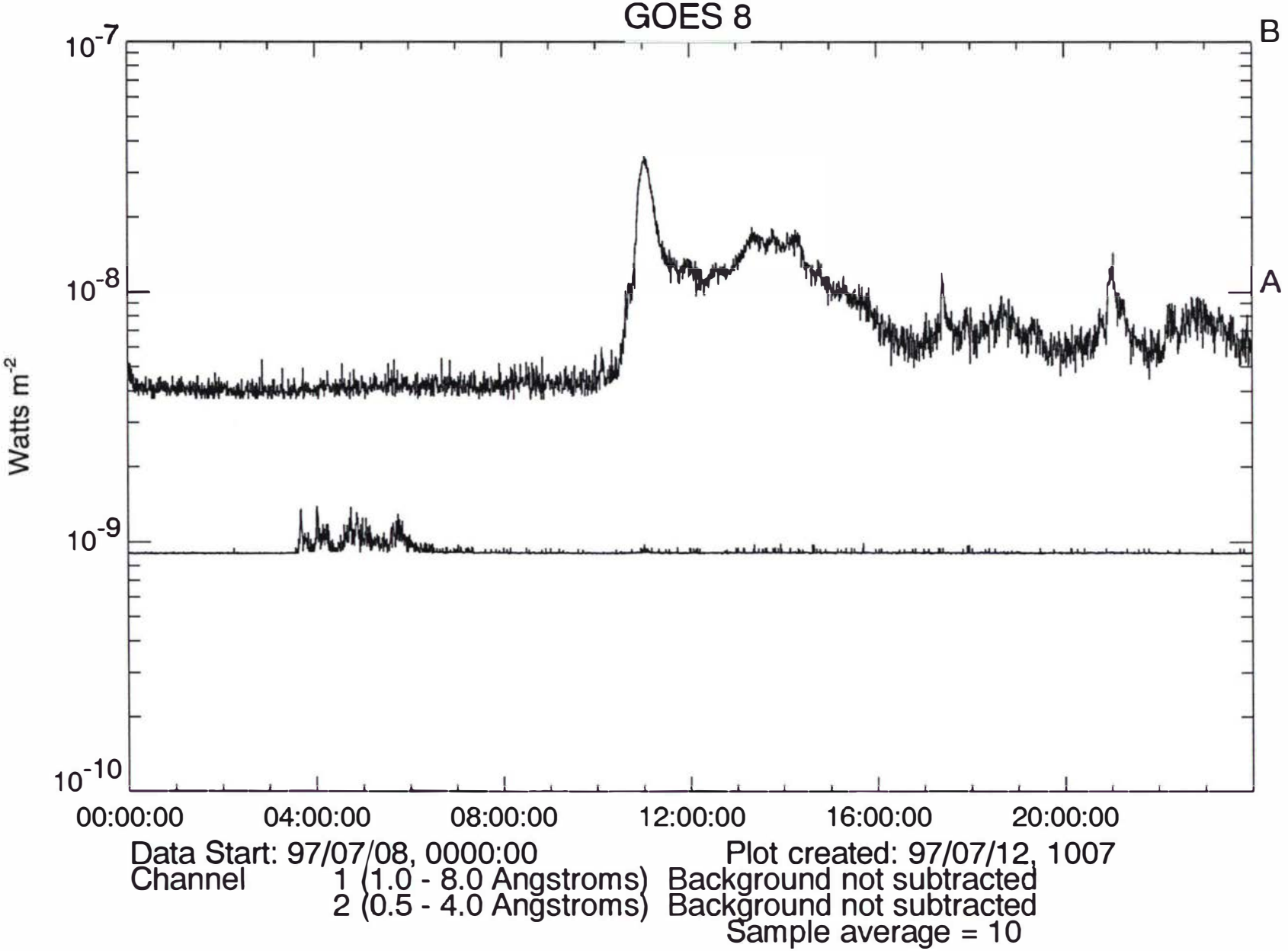
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

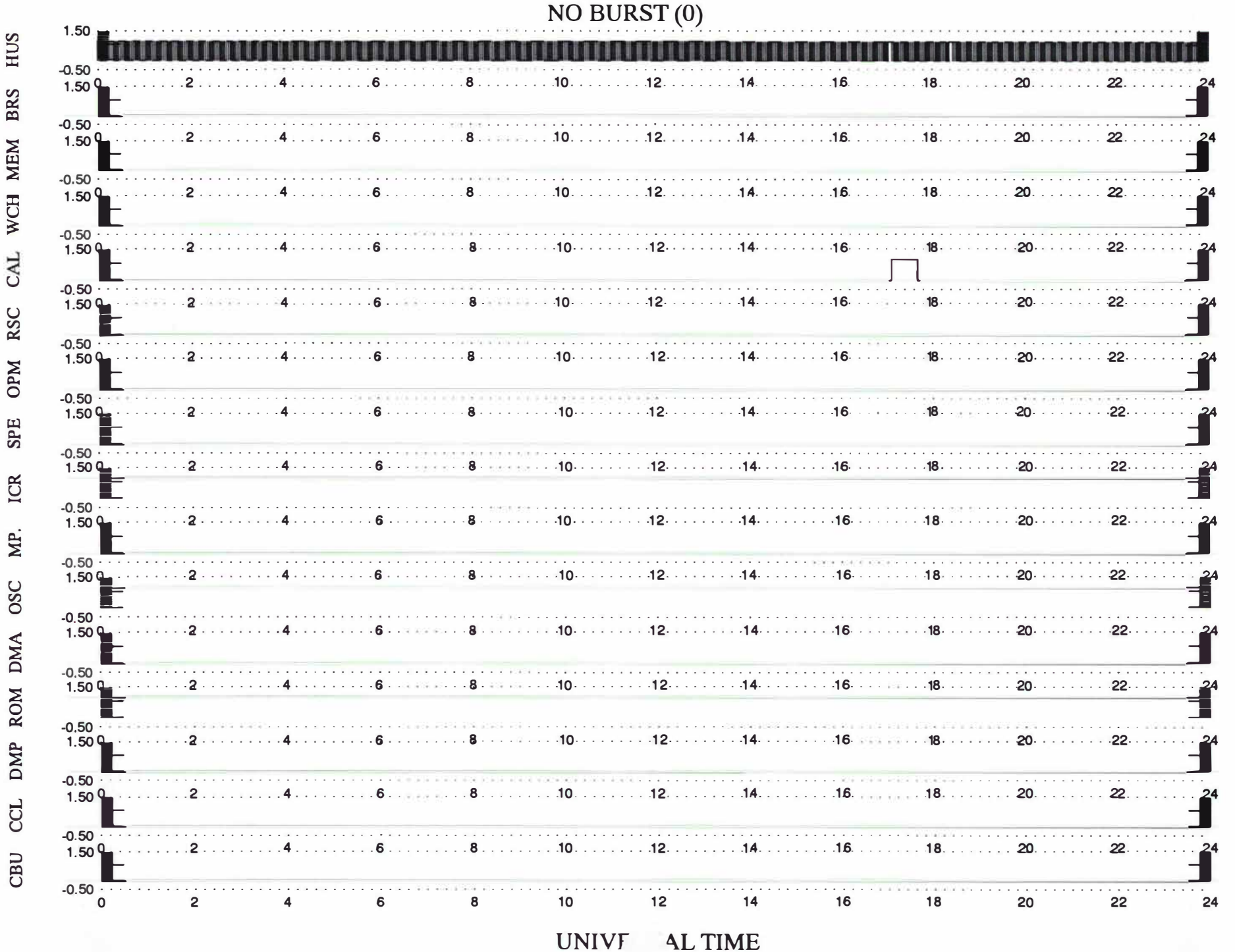
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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

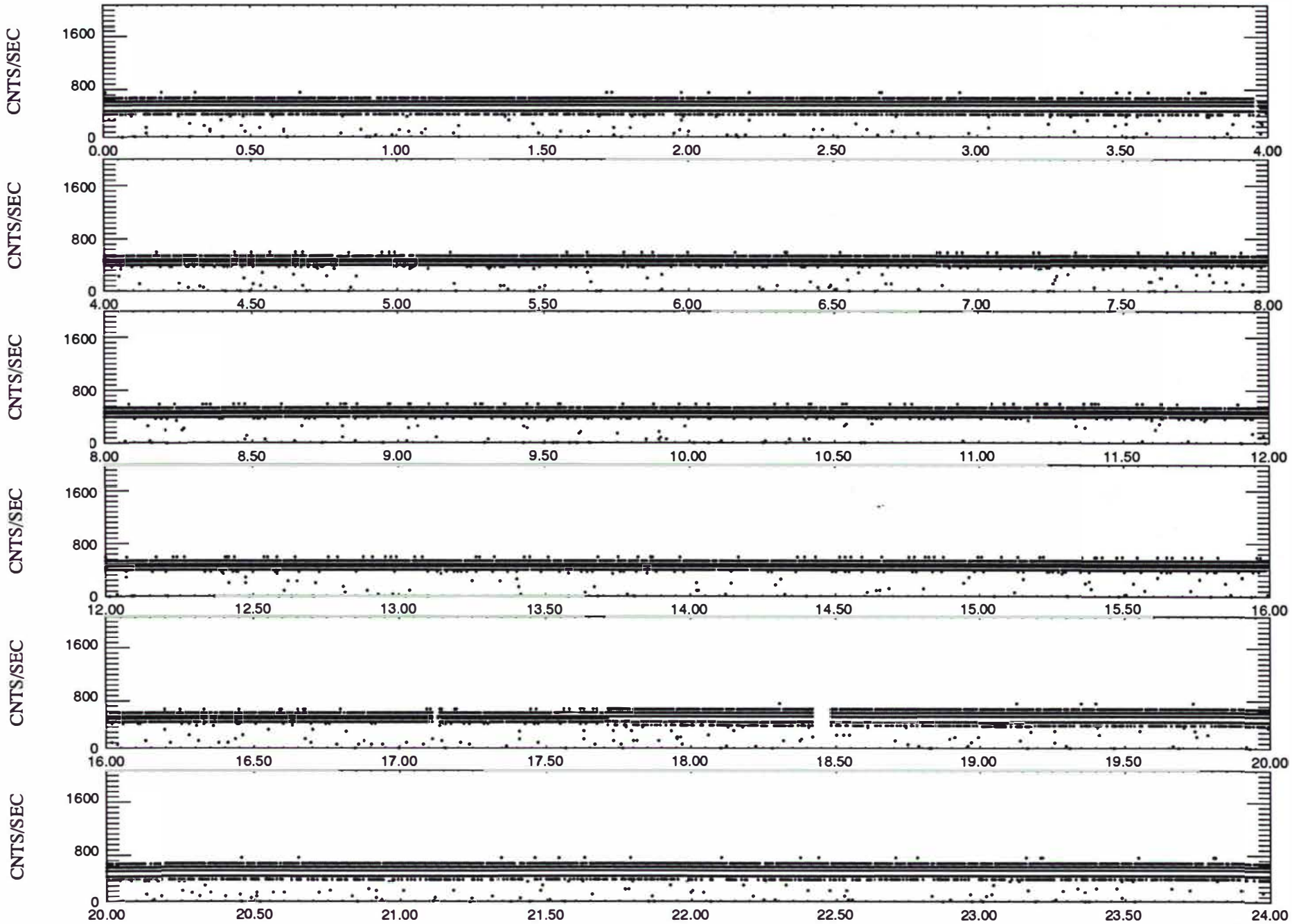

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/08, 0000:00
Plot created: 97/07/12, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 189, year 1997 to day 189, year 1997 10/24/97



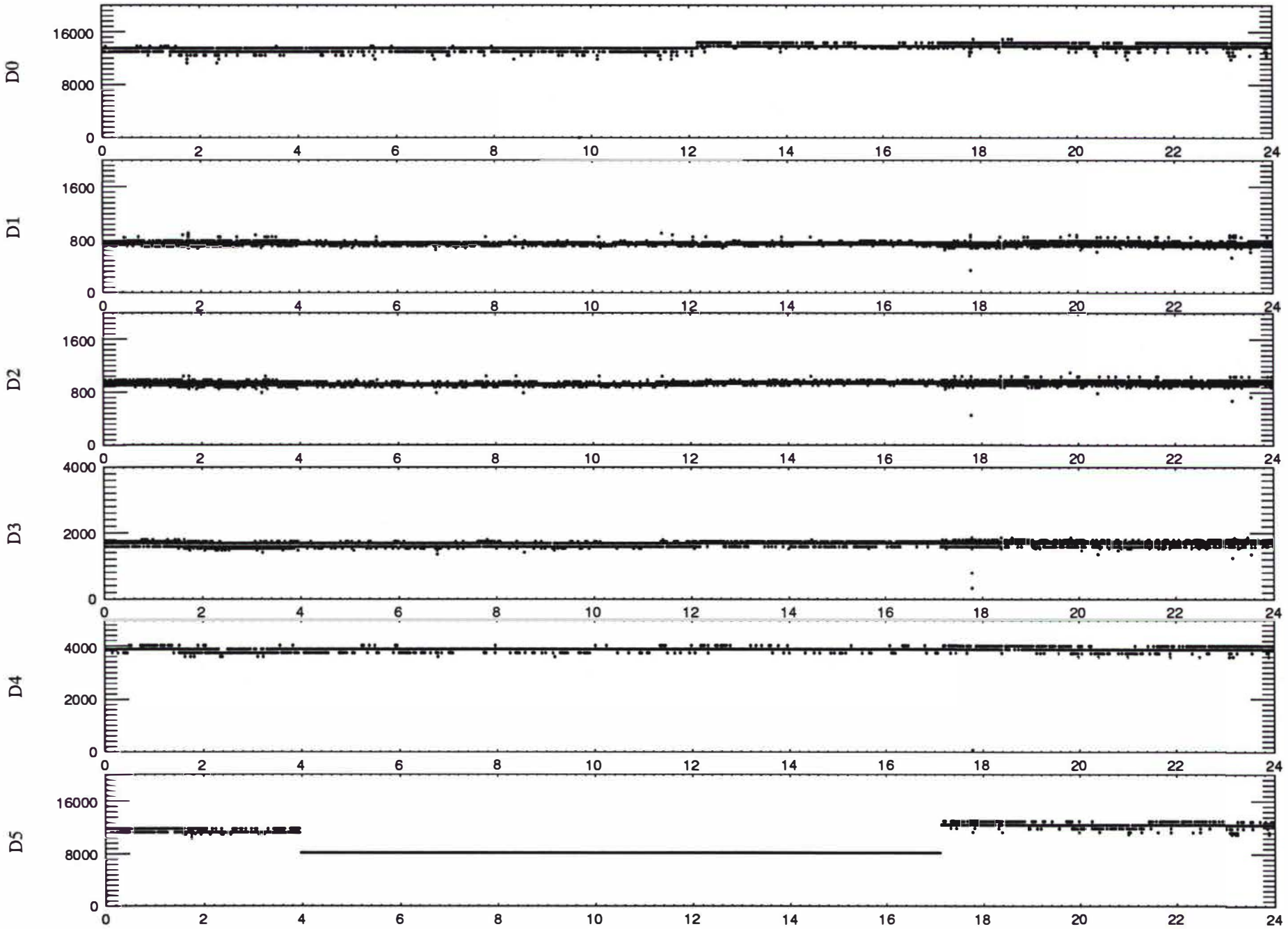
HUS 2A, MODE 1, NOT AVERAGED EDR day 189, year 1997 to day 189, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 189, year 1997 to day 189, year 1997 10/24/97



From SURASAK@ssl.msfc.nasa.gov Thu Jul 10 09:38 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 JAA10893; Thu, 10 Jul 1997 09:38:05 -0700
Date: Thu, 10 Jul 1997 11:37:59 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970710113759.2166a82d@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6300
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6300
EVENT OF 1997 JUL 9 DAY OF YEAR=190
EVENT CROSSING TIME AT BATSE : 24908. S. OR 06:55:08.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 263.000 32.000
BATSE PEAK COUNTING RATE: 1750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 7/ 97 IS:
RA= 154.186 DEC= 24.879 DIST= 5.883 AU
BATSE-ULYSSES DISTANCE = 880070391. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 73.91 SECS.
CROSSING TIME AT ULYSSES IS 24982. S. OR 06:56:21 +/- 560.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 7/ 97 IS:
RA= 188.592 DEC= -3.721 DIST= 1.311 AU
MARS-BATSE DISTANCE = 196065856. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -126.27 SECS.
CROSSING TIME AT MARS IS 24782. S. OR 06:53:01 +/- 109.49 SECONDS

BATSE BURST TRIGGER

NO.: 6300

TIME: TJD=0638 SECONDS=24908

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=167.4 AZIMUTH=354 ERROR=5.15 DEGREES

COMMENTS:
GRB. DUR~12S. MULTI-PEAK. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6300	970709	10638	24908	1750	263	+32	12

BATSE BURST# 6300

ULYSSES RT 10/ 7/97

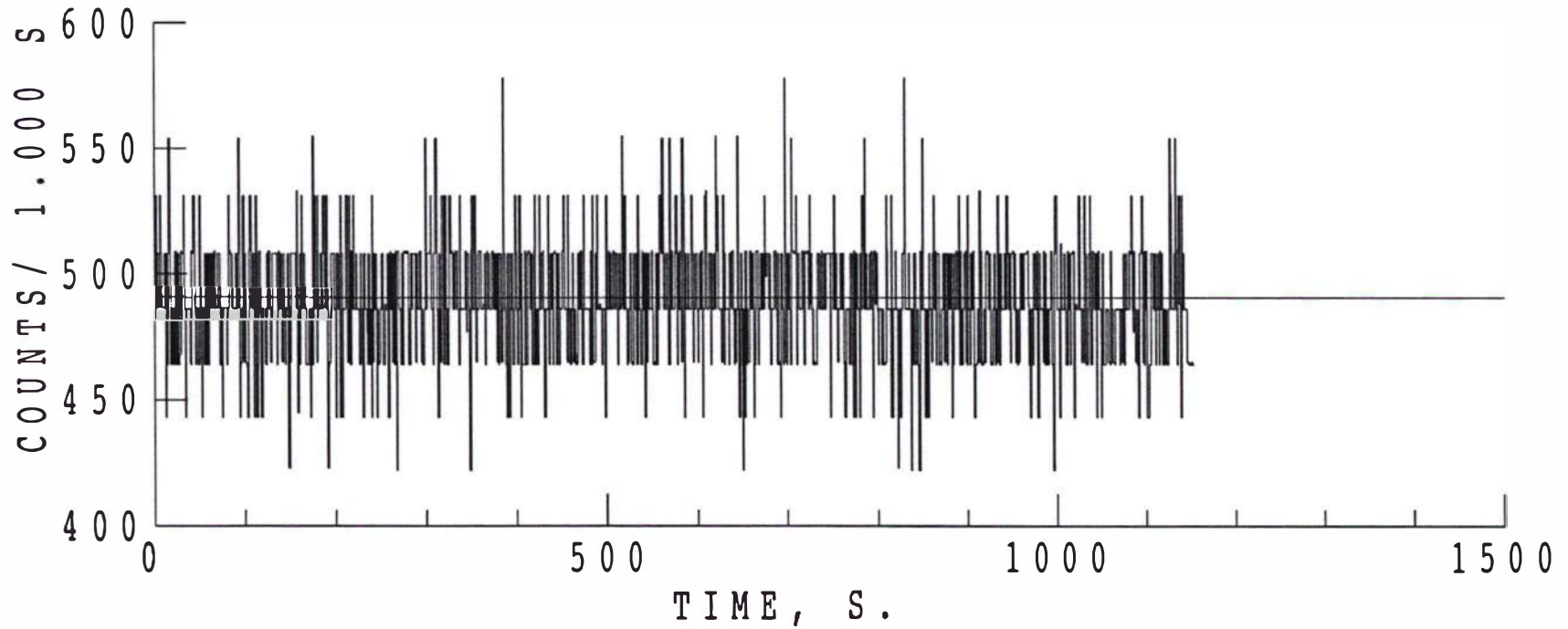
9/ 7/97 24408.271 s

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



July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
J 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 BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

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

From kraken@rosserv.gsfc.nasa.gov Wed Jul 30 08:15 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 30 Jul 1997 11:15:53 -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

Hi Kevin,

Here are the results of a search through TGRS data for the Ulysses bursts you emailed Bonnard about recently:

Ulysses burst	TGRS sees?	TGRS characteristics
July 2, 1997 11:49; week 100ms burst	YES	TGRS #582 occurred at 40631s >1/2 sec, 165 cts/s peak (100-300 keV)
July 5, 1997 15:31; weak 100ms burst	NO	
July 9, 1997 10:56; weak 100ms burst	NO	

So there you have it. Apologies for this belated reply. I'll be out of town the next two weeks, so if more Ulysses bursts come in I'll look for them when I return.

Take care,

Pete

From SURASAK@ssl.msfc.nasa.gov Fri Jul 11 11:04 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 LAA22065; Fri, 11 Jul 1997 11:04:18 -0700
Date: Fri, 11 Jul 1997 13:04:04 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970711130404.2166aab3@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6301
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

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

 BATSE BURST #     6301
 EVENT OF 1997 JUL  9 DAY OF YEAR=190
 EVENT CROSSING TIME AT BATSE      : 48668. S. OR 13:31:08.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 316.000  -31.000
 BATSE PEAK COUNTING RATE:   5200    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON  9/ 7/  97 IS:
 RA=  154.218 DEC=   24.847 DIST=    5.886 AU
 BATSE-ULYSSES DISTANCE =  880574086. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 17.21 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2805.84 SECS.
 CROSSING TIME AT ULYSSES    IS 51474. S. OR   14:17:53 +/-  243.45 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON  9/ 7/  97 IS:
 RA=  188.592 DEC=   -3.721 DIST=    1.311 AU
 MARS-BATSE DISTANCE =  196065856. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.91 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  317.97 SECS.
 CROSSING TIME AT MARS       IS 48986. S. OR   13:36:25 +/-  104.05 SECONDS


                BATSE BURST TRIGGER
NO.: 6301

TIME: TJD=0638 SECONDS=48668

TYPE: BURST                     SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=110.9  AZIMUTH=155.9  ERROR=3.982 DEGREES

COMMENTS:
GRB. DUR~1.5S. DOUBLE PEAKS. VISIBLE ABOVE 300 KEV.
LOCATION IS PROBLEMATIC!


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6301   970709   10638   48668     5200   316   -31   1.5
```

BATSE BURST# 6301

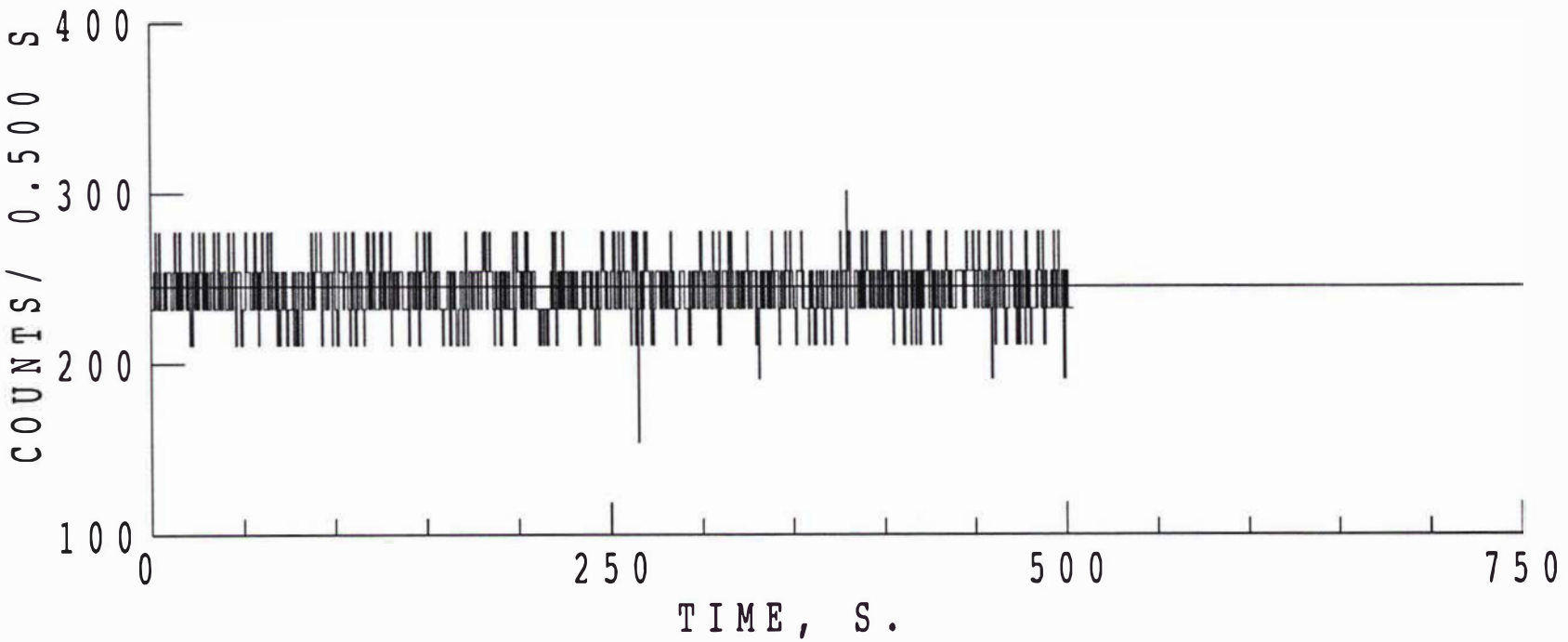
ULYSSES RT 11/ 7/97

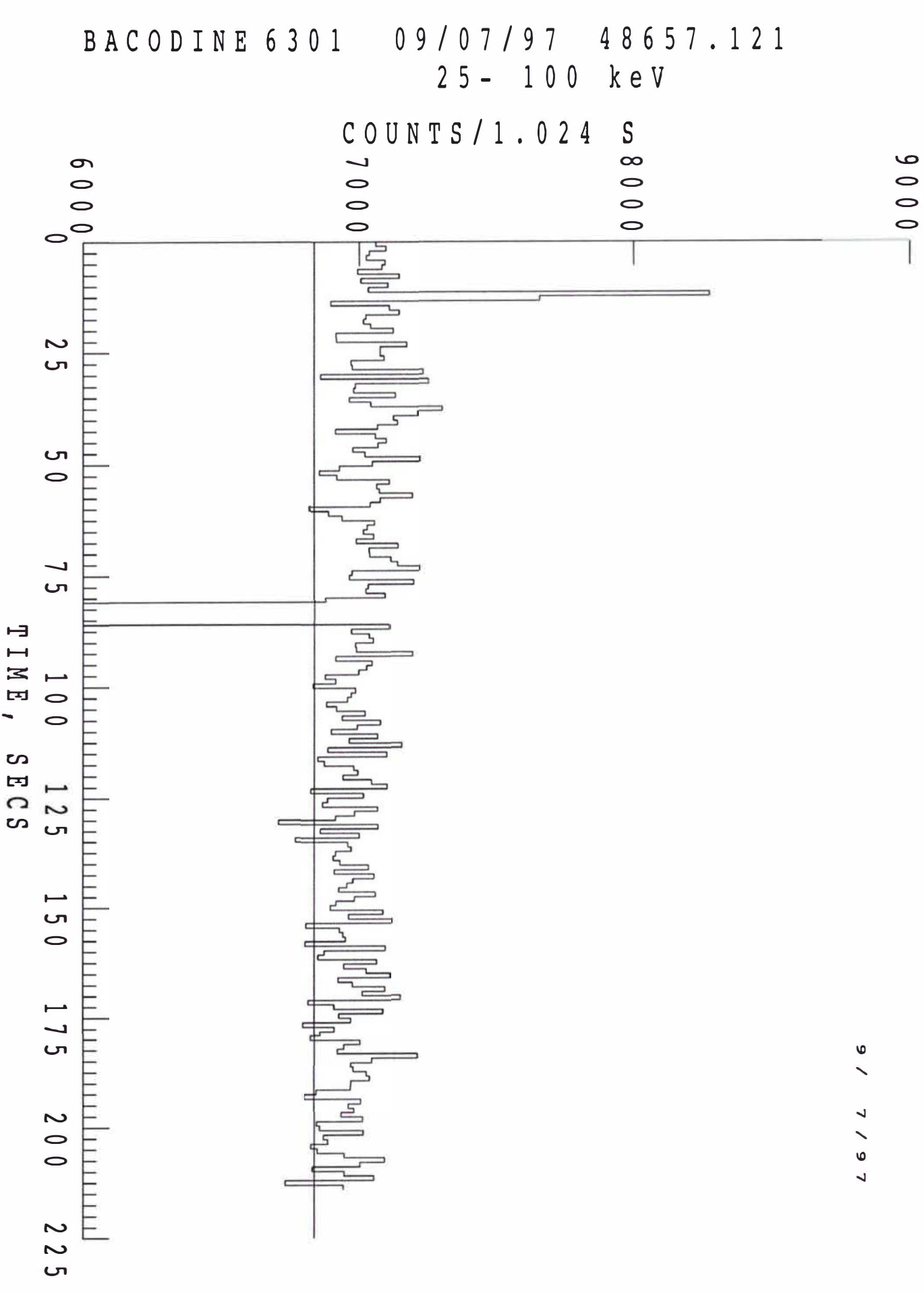
9/ 7/97 51228.078 s

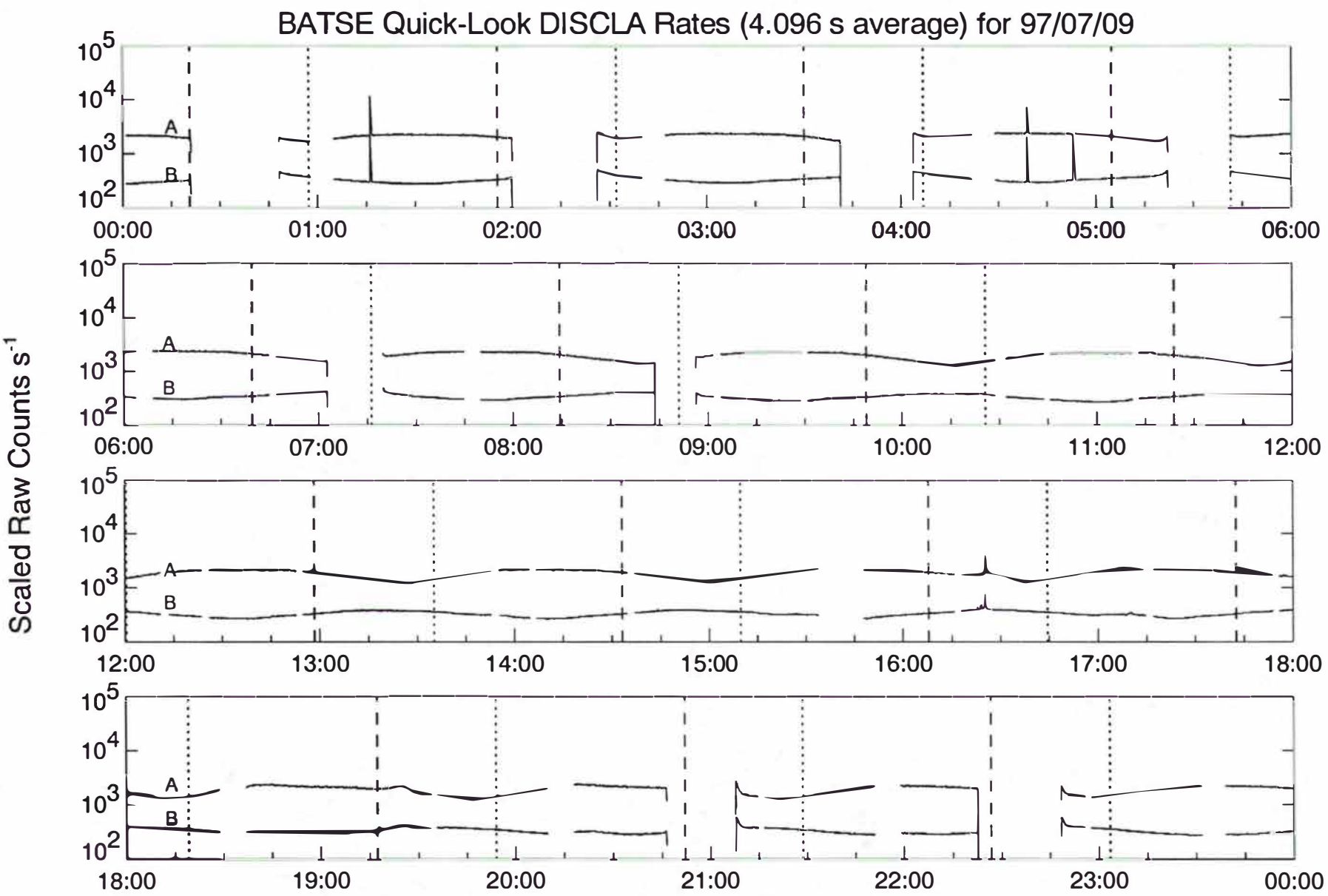
0- 0 keV

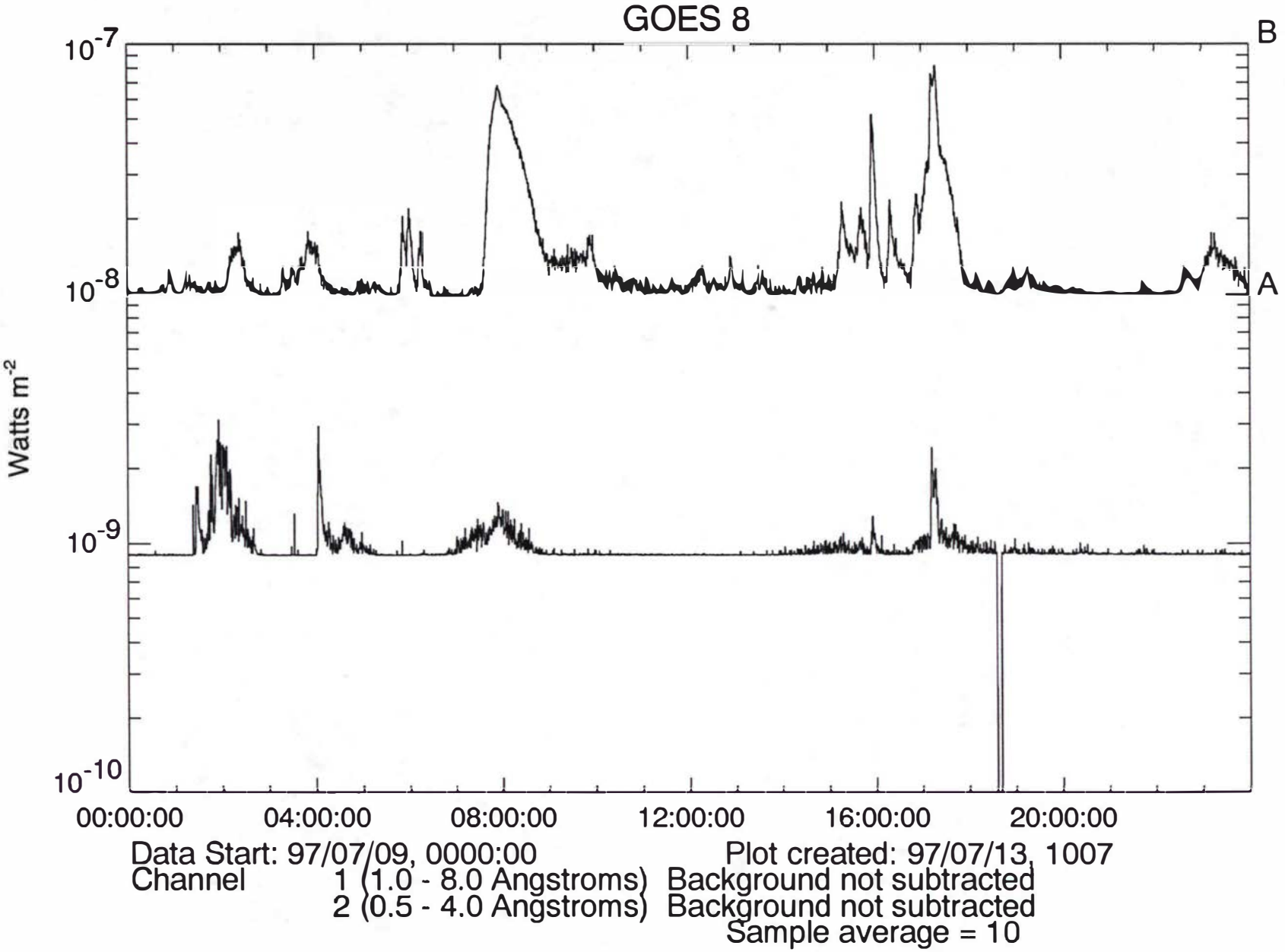
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

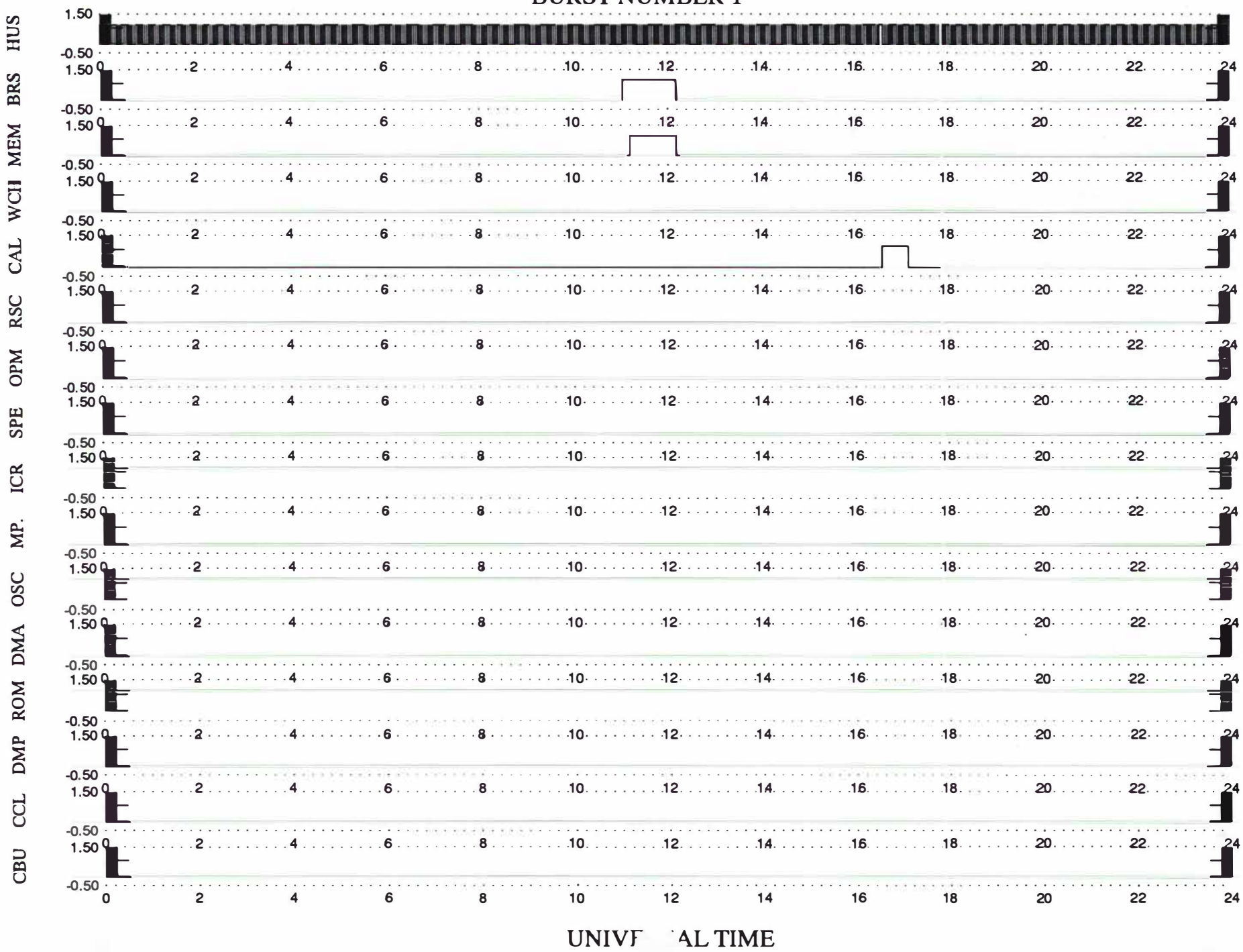



BACODINE 6301 09/07/97 48657.121
25- 100 keV
COUNTS/1.024 S
6000
7000
8000
9000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
9/7/97


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

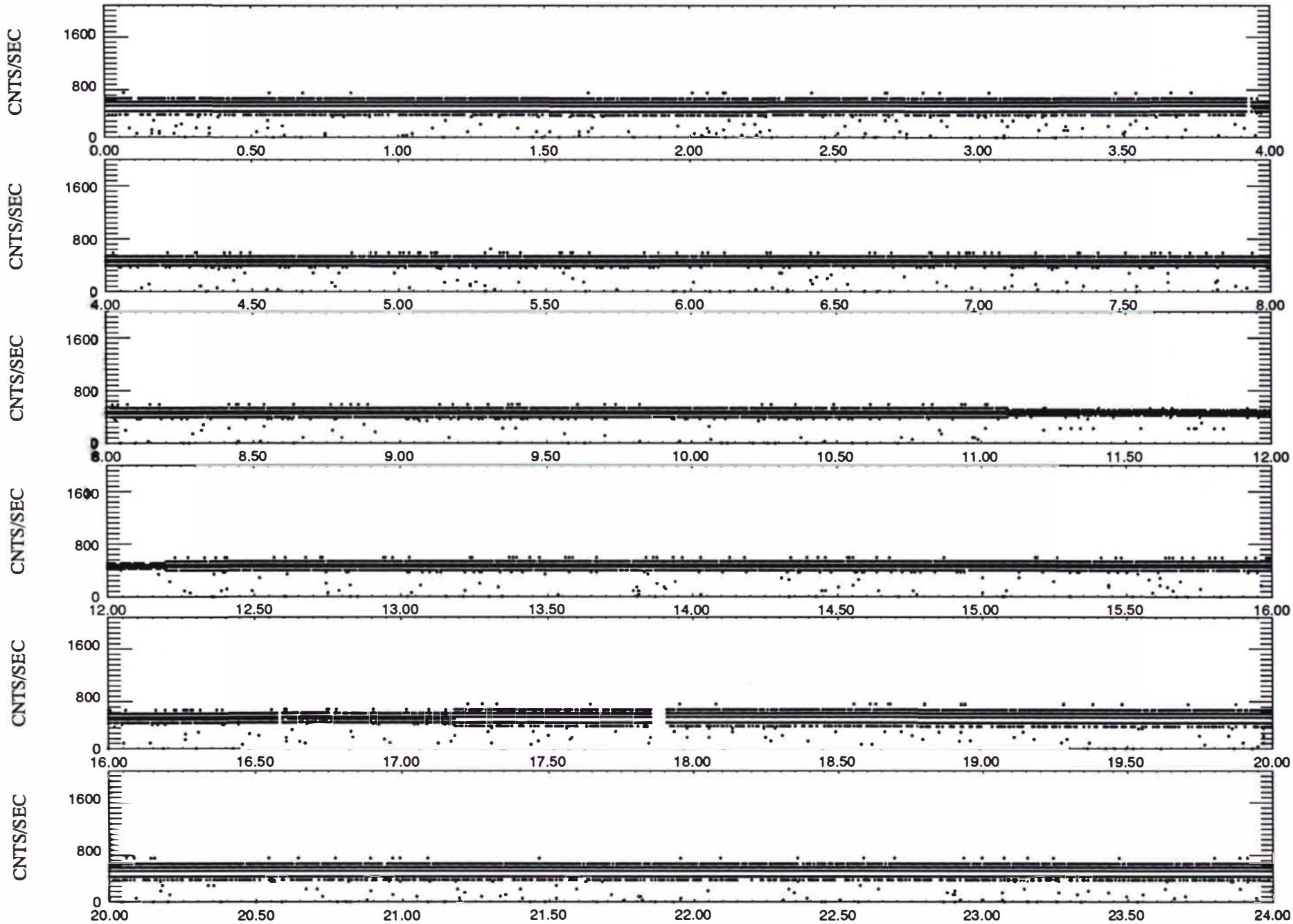

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/09, 0000:00
Plot created: 97/07/13, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 190, year 1997 to day 190, year 1997 10/24/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 190, year 1997 to day 190, year 1997 10/24/97

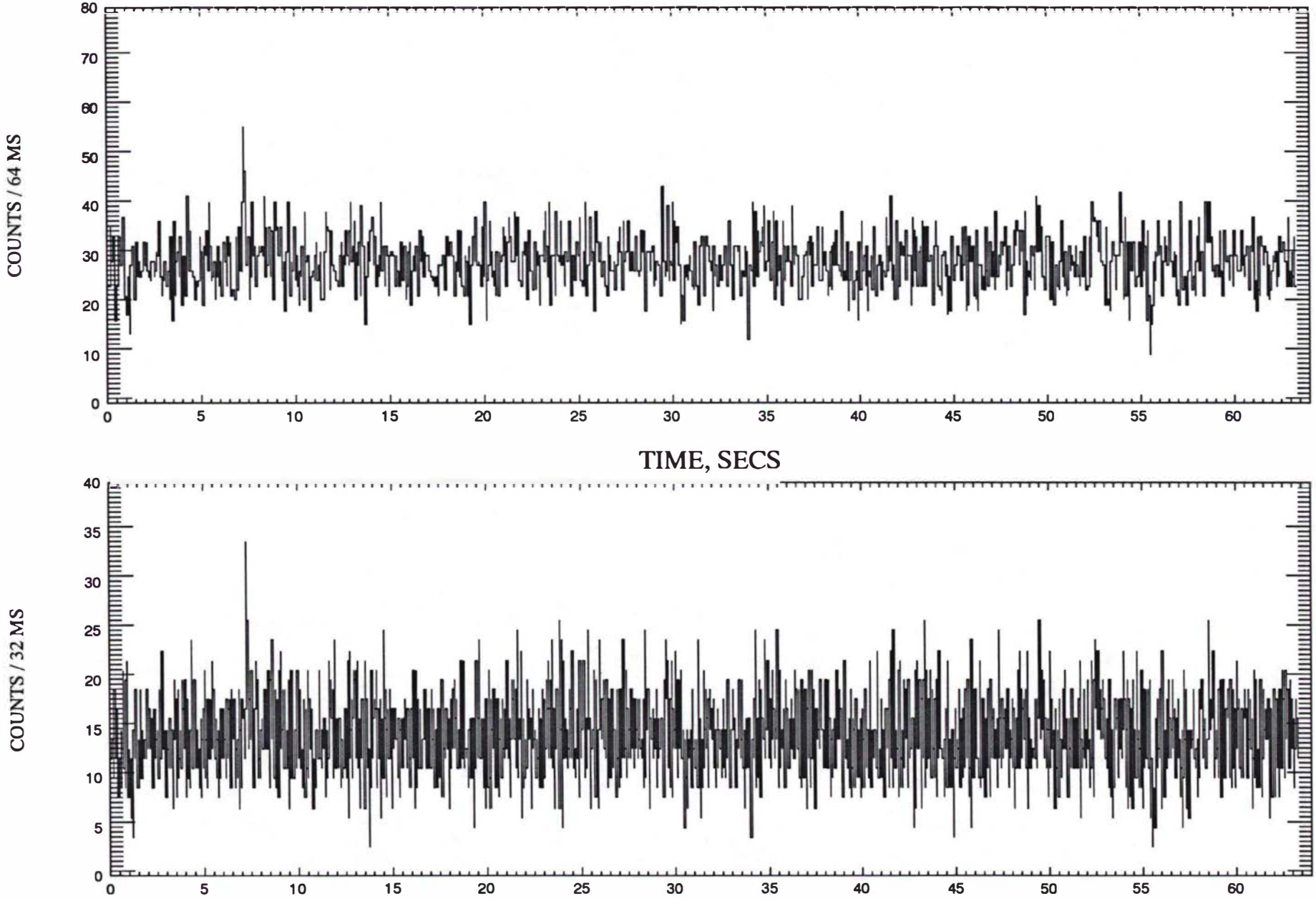
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 190, year 1997 10/24/97

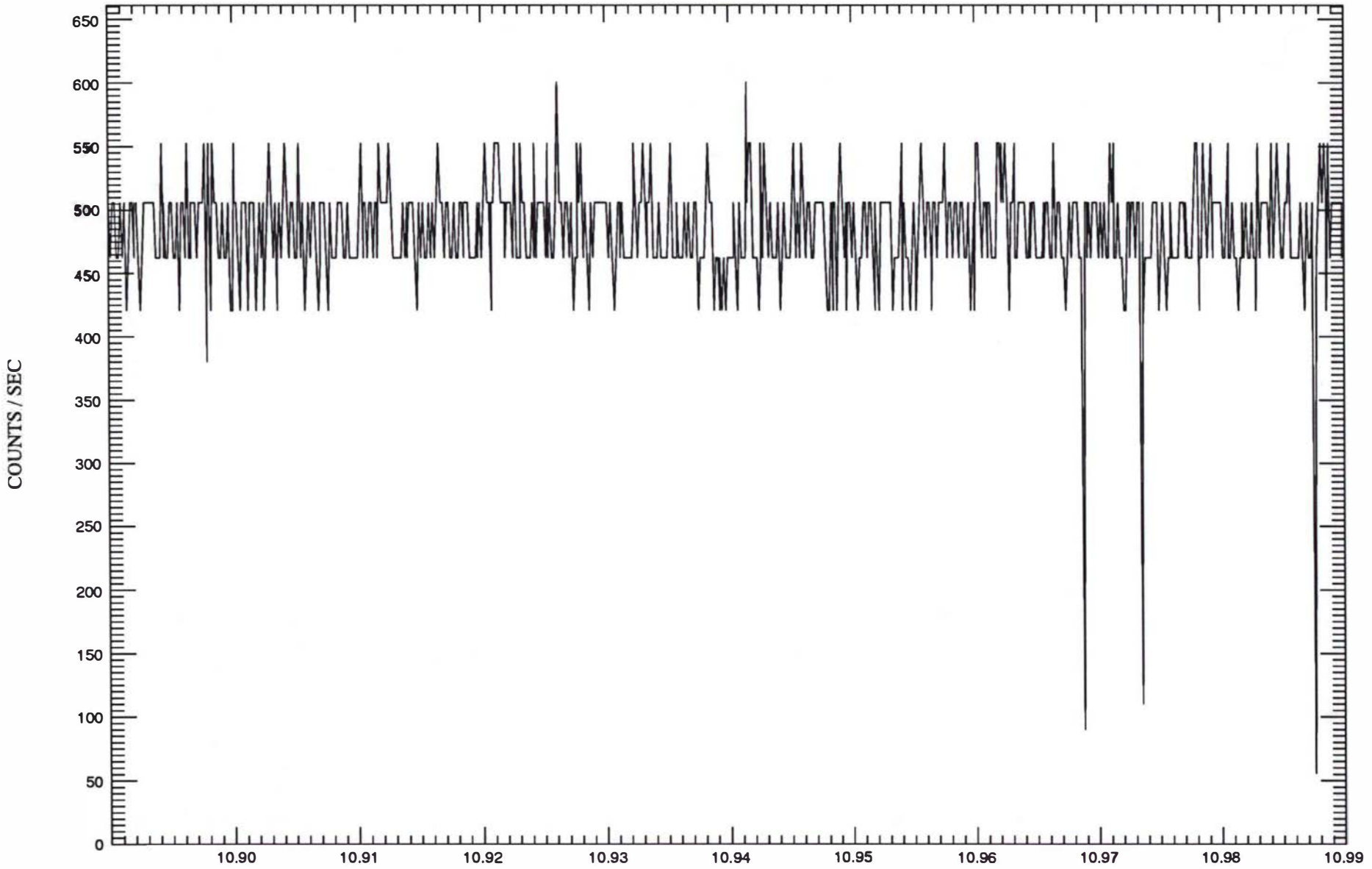
Burst Counter 1 at UT=10.941580806308 h=39389.691 s 10:56:29.691



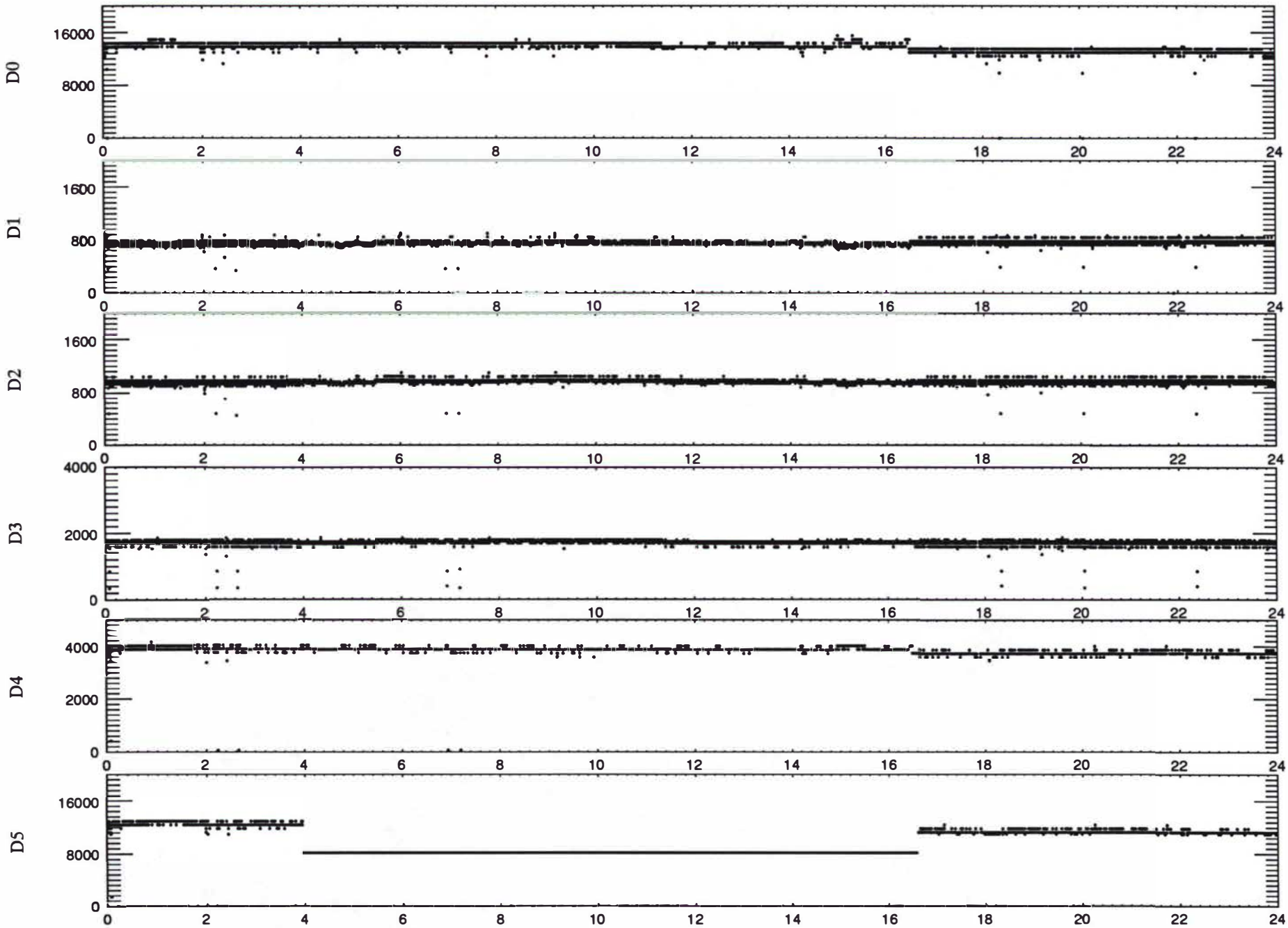
B# 1

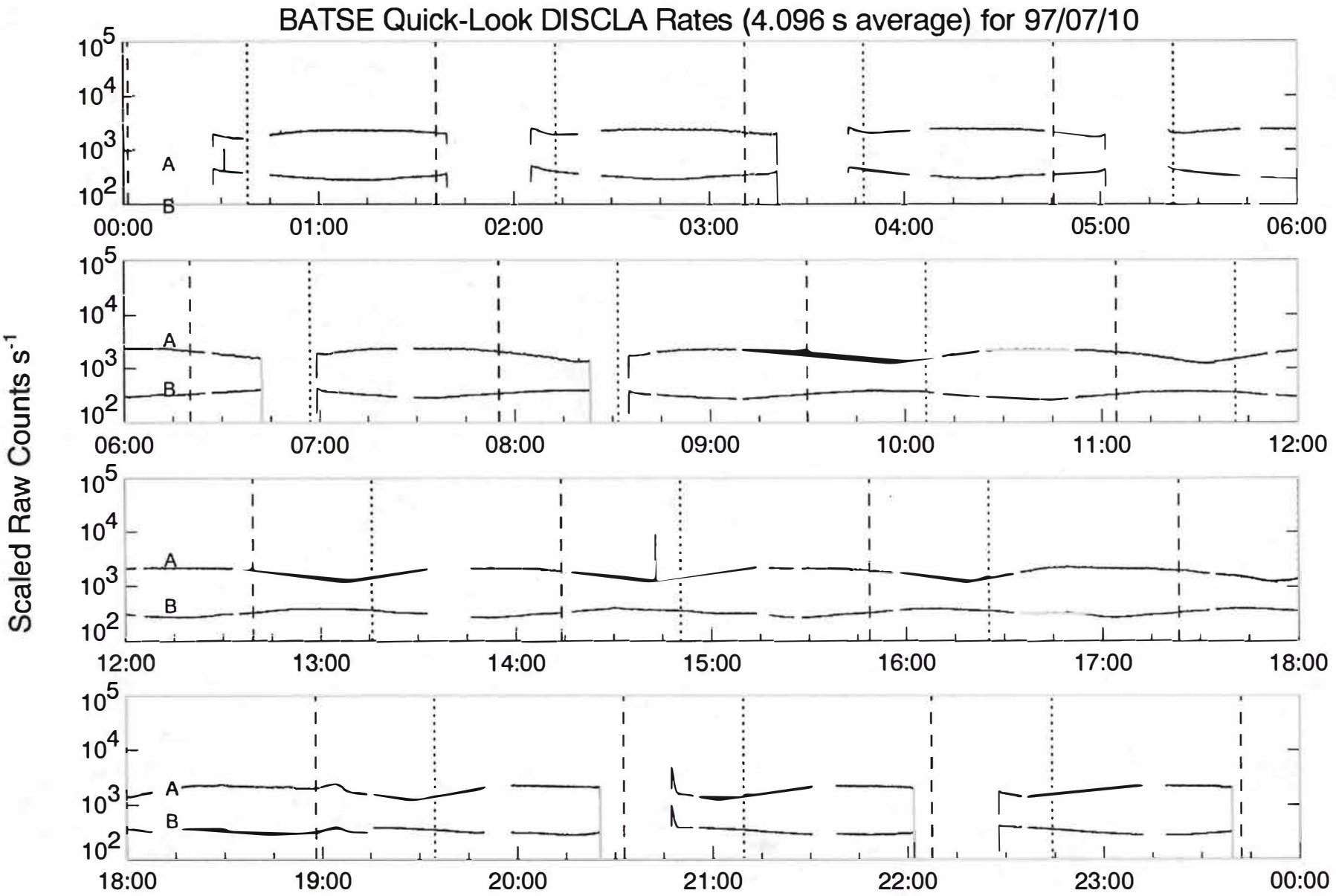
HUS 2A, MODE 1, NOT AVERAGED EDR day 190, year 1997 to day 190, year 1997 10/24/97

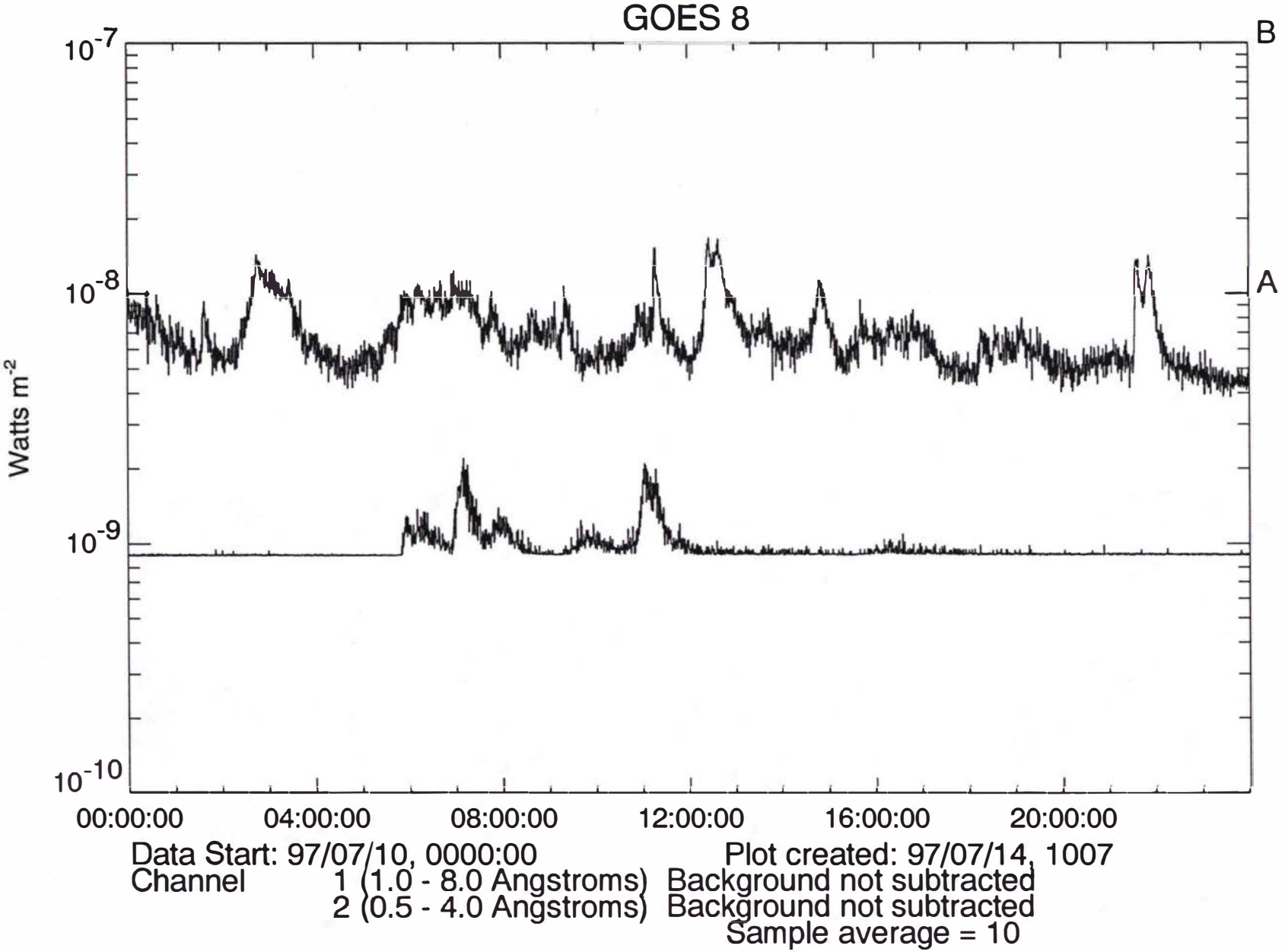
CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 190, year 1997 to day 190, year 1997 10/24/97

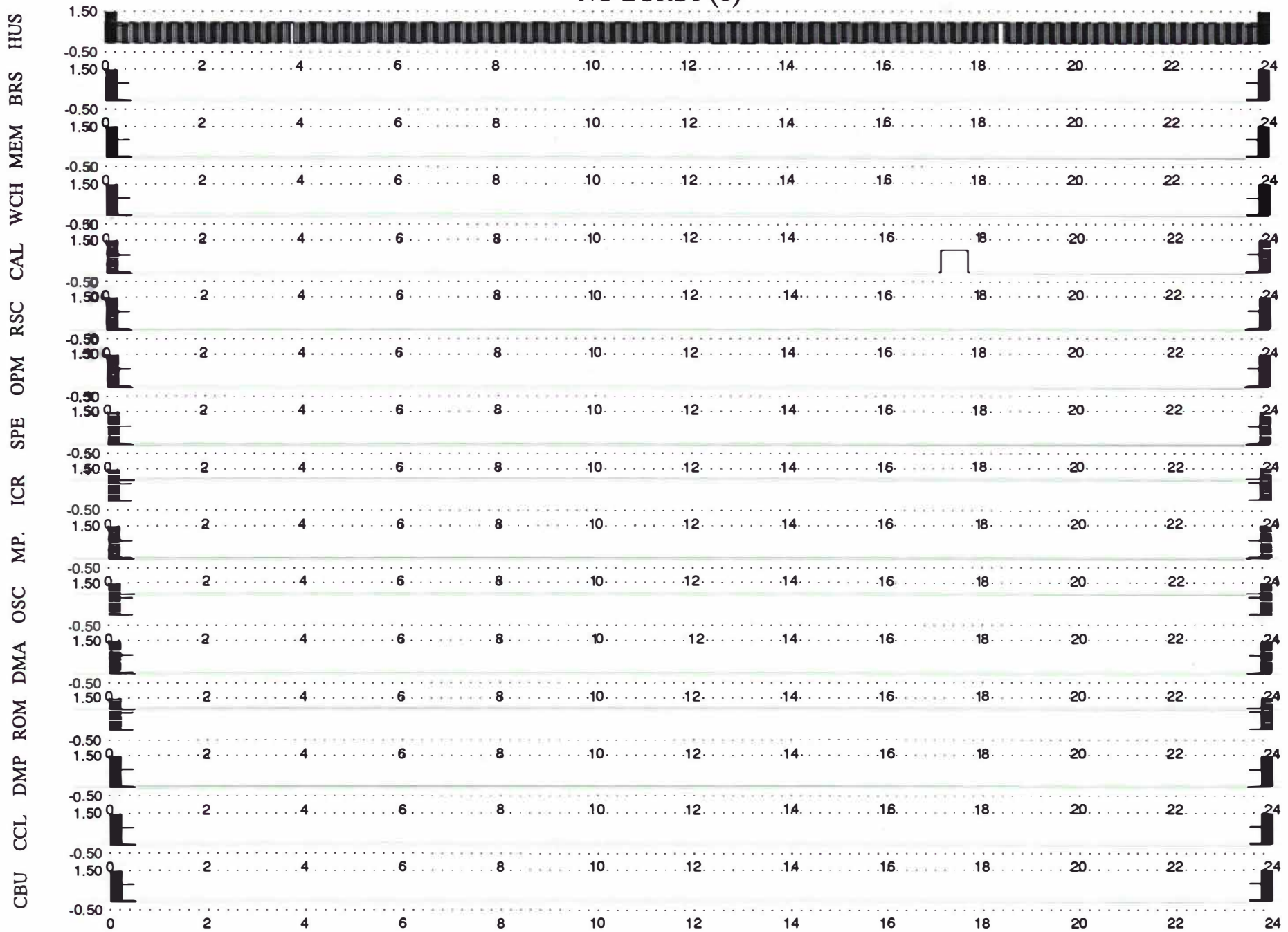



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/10
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/07/14, 1008 EDT
A: Channel 0 Most 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: 97/07/10, 0000:00
Plot created: 97/07/14, 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 191, year 1997 to day 191, year 1997 10/24/97

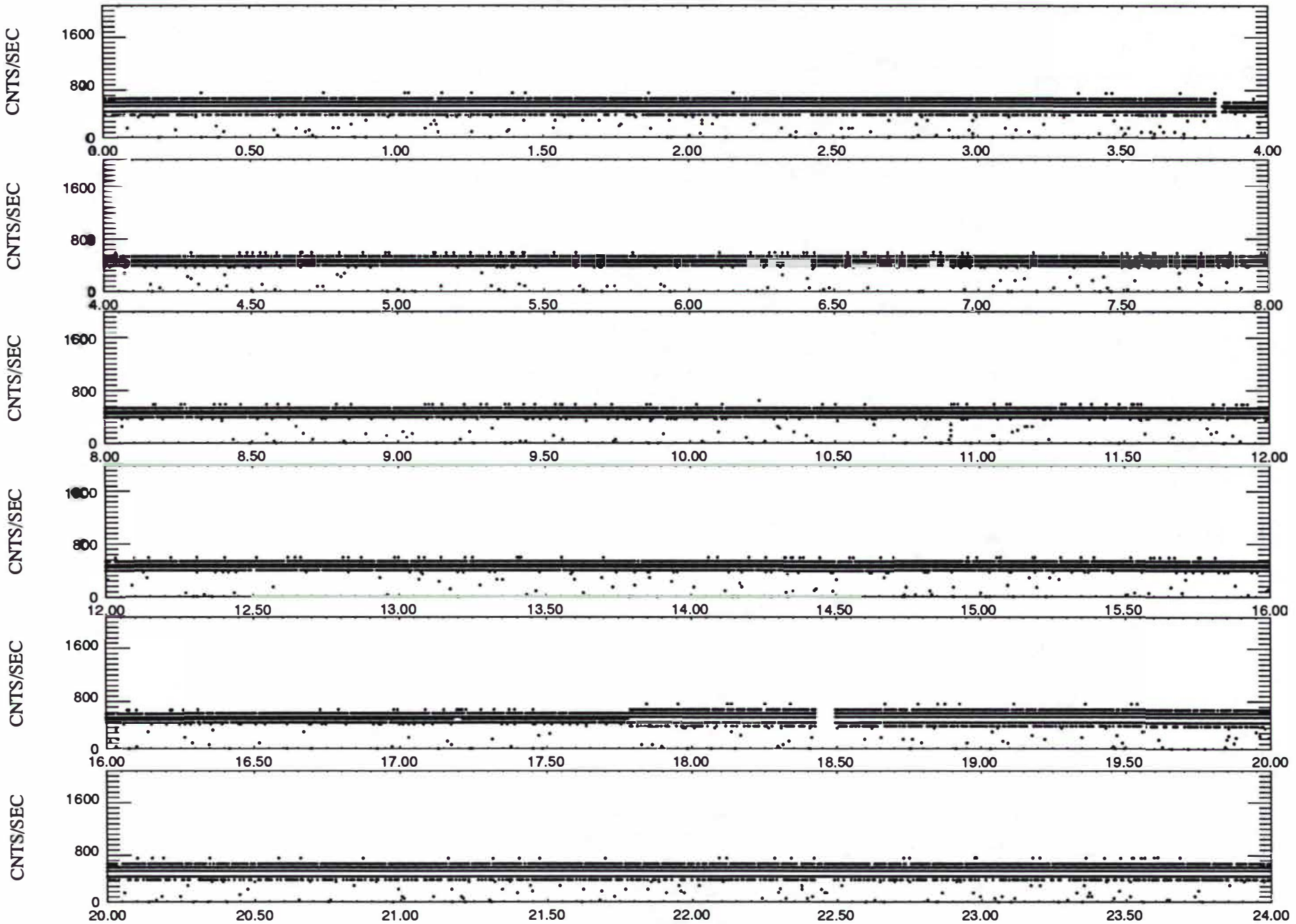
NO BURST (1)



UNIVERSAL TIME

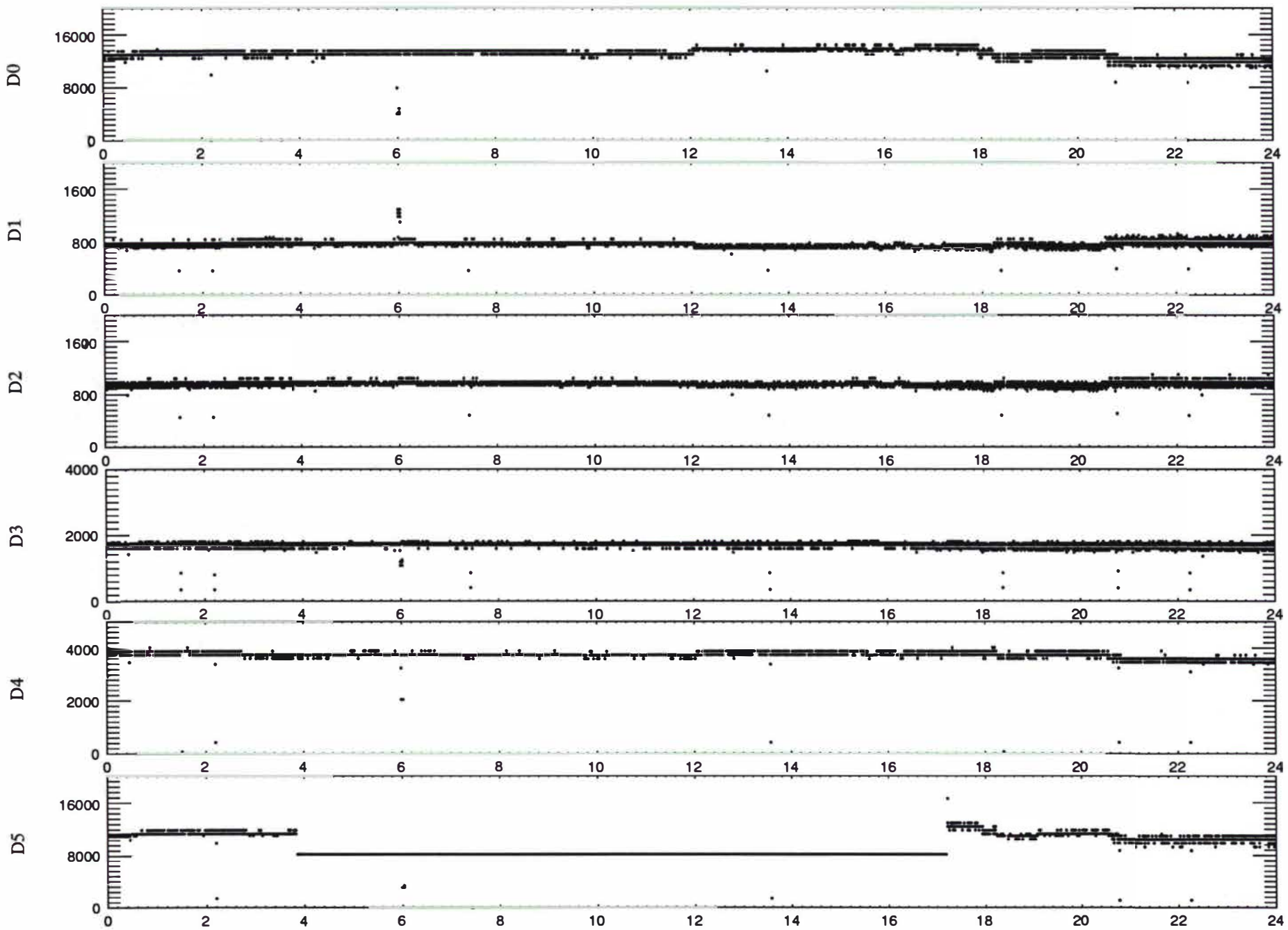
HUS 2A, MODE 1, NOT AVERAGED EDR day 191, year 1997 to day 191, year 1997 10/24/97

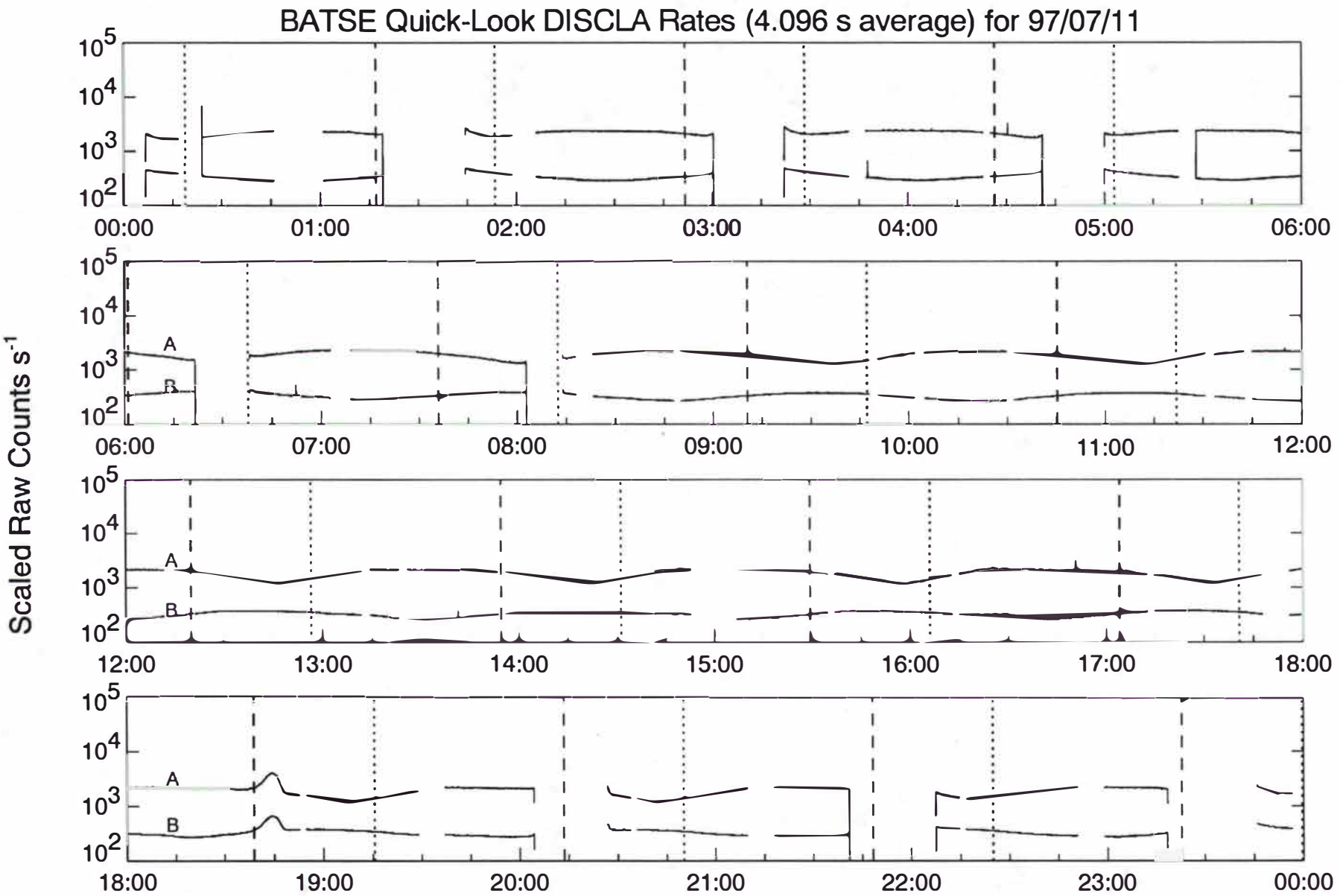
CALIBRATION DATA INCLUDED

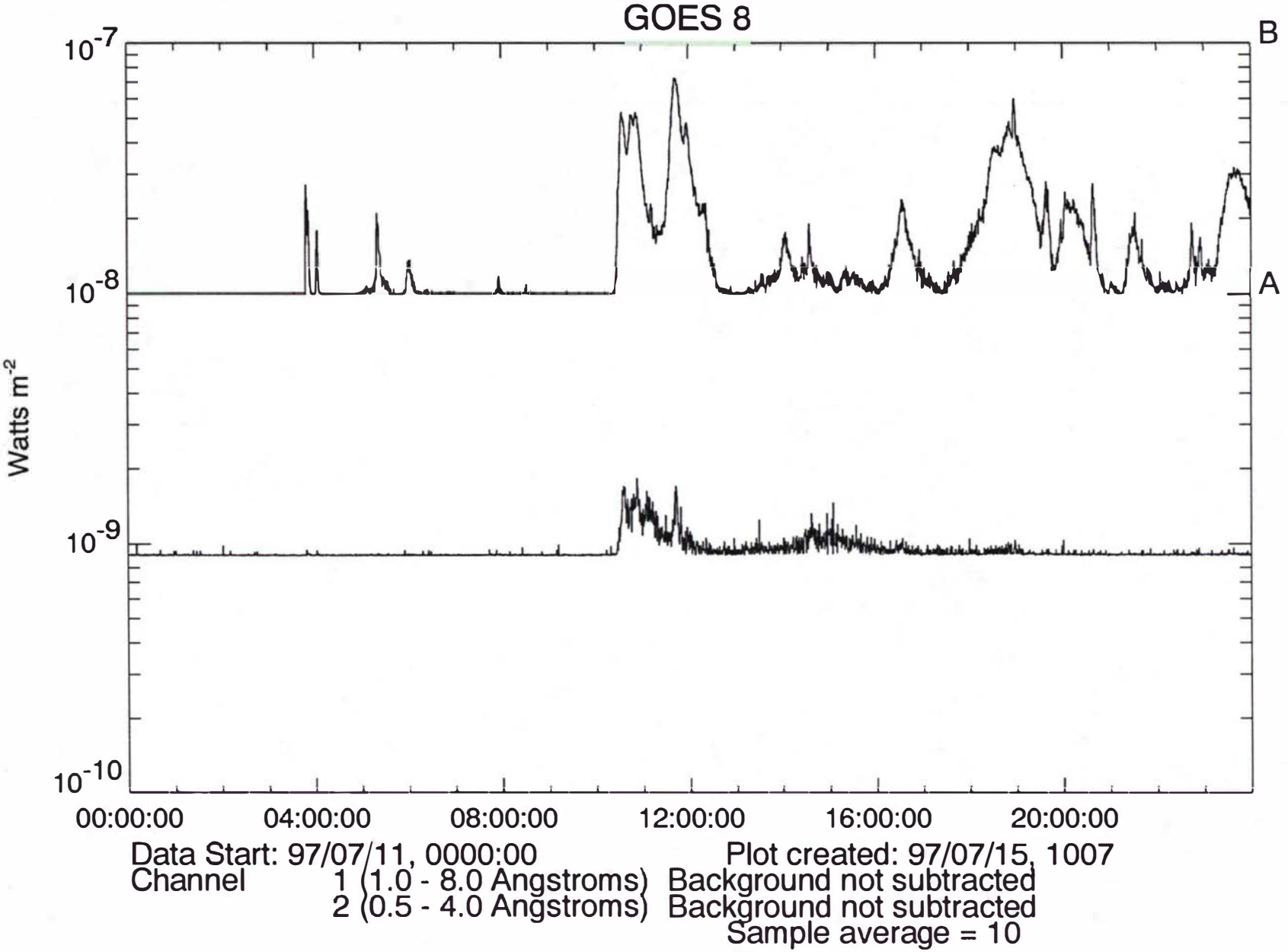


UNIVERSAL TIME

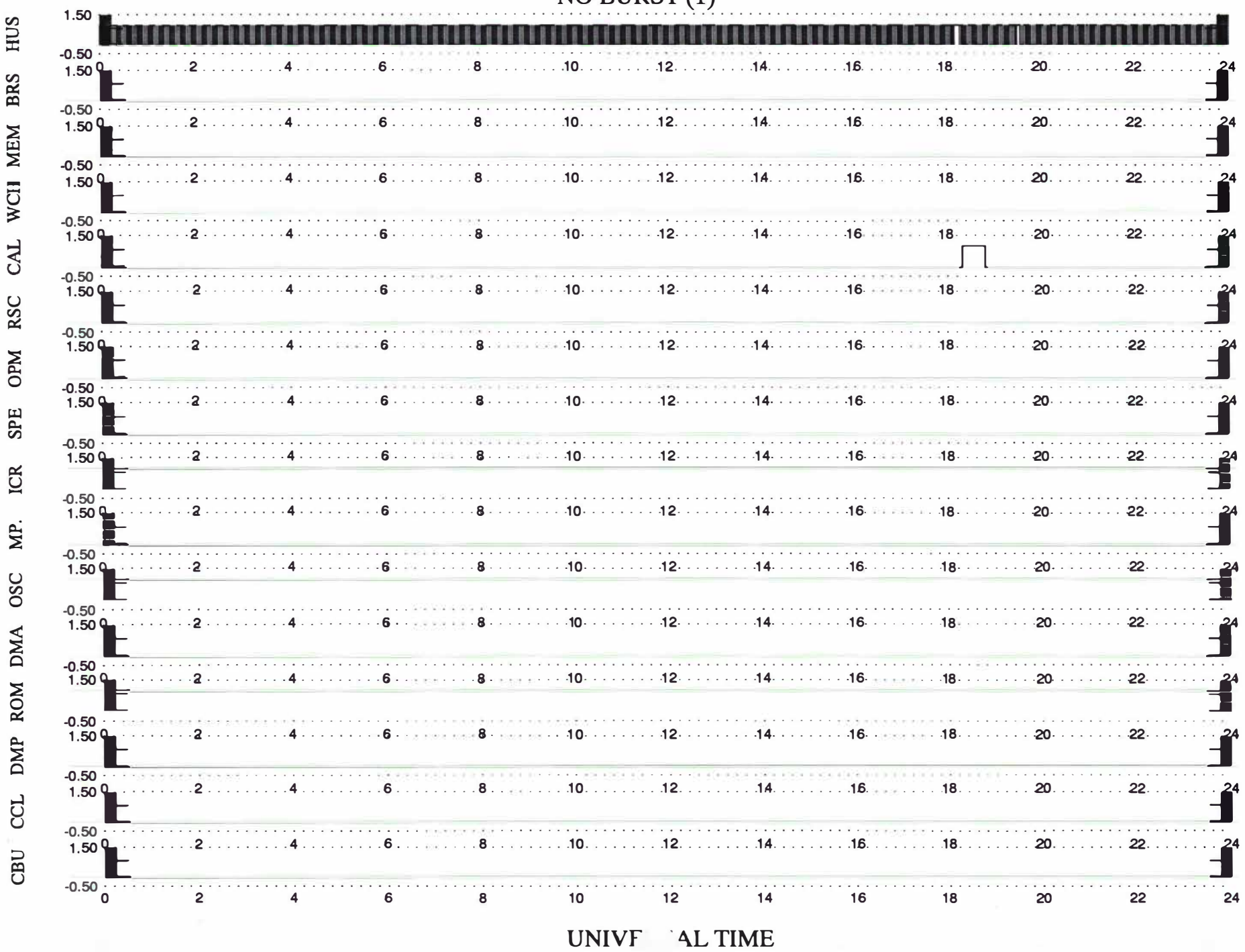
HUS 2B COUNTS / SEC EDR day 191, year 1997 to day 191, year 1997 10/24/97




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

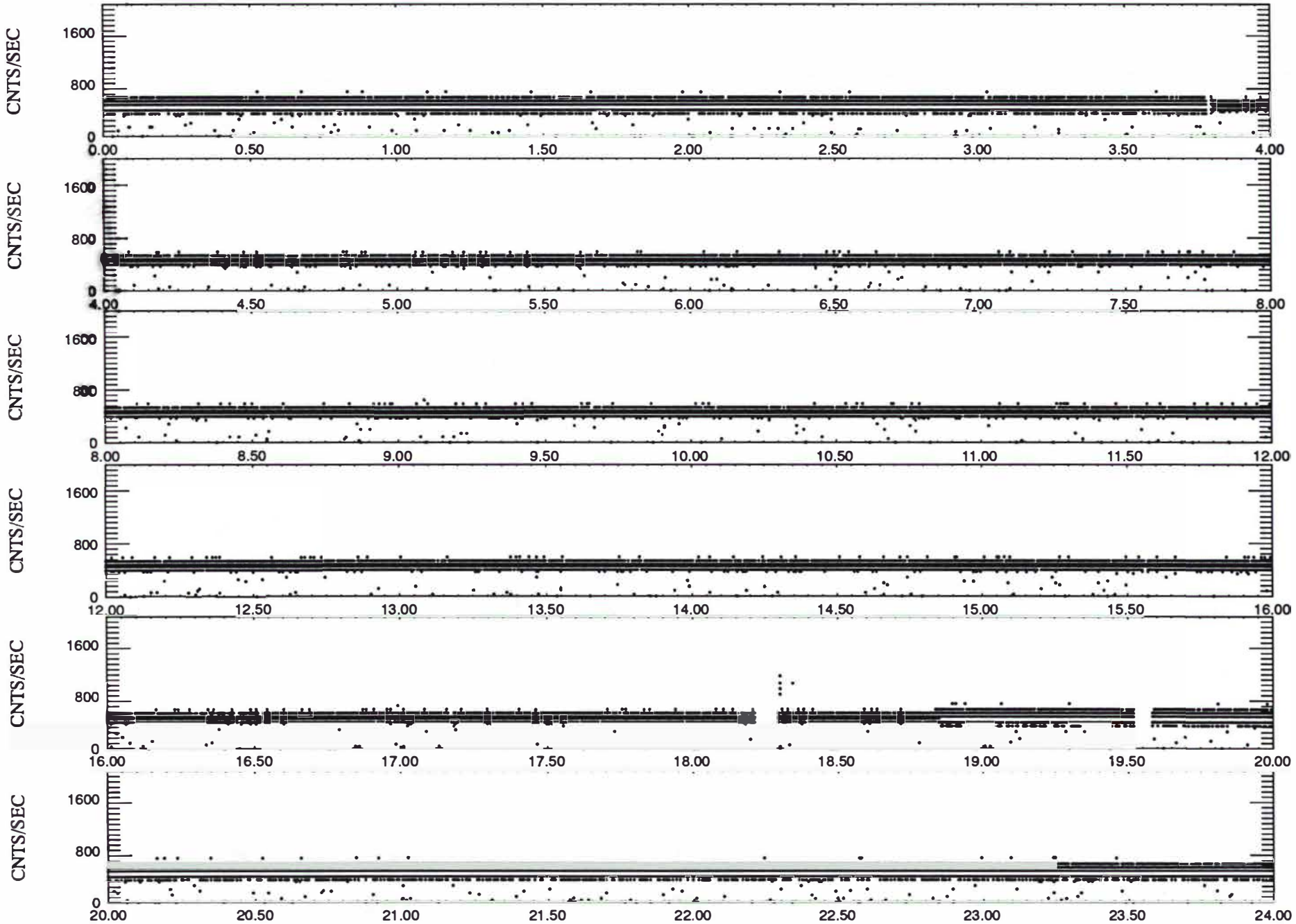

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/11, 0000:00
Plot created: 97/07/15, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 192, year 1997 to day 192, year 1997 10/24/97



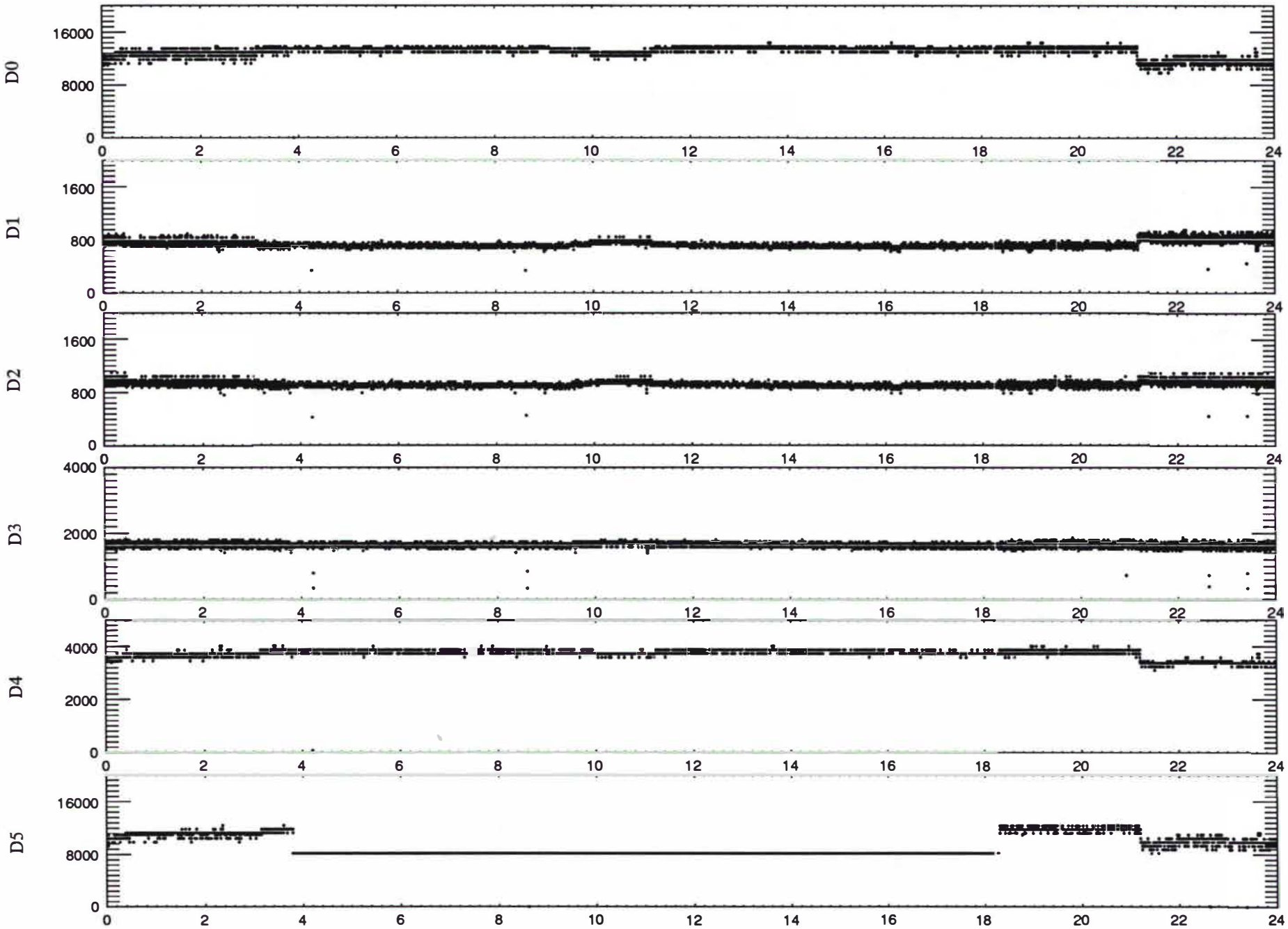
HUS 2A, MODE 1, NOT AVERAGED EDR day 192, year 1997 to day 192, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 192, year 1997 to day 192, year 1997 10/24/97



From RICHARDSON@ssl.msfc.nasa.gov Mon Jul 14 09:30 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 JAA08329; Mon, 14 Jul 1997 09:30:52 -0700
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Mon, 14 Jul 1997 11:30:47 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970714113047.2240dd5d@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6302
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6302
EVENT OF 1997 JUL 12 DAY OF YEAR=193
EVENT CROSSING TIME AT BATSE : 46507. S. OR 12:55:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 20.000 -32.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 7/ 97 IS:
RA= 154.568 DEC= 24.502 DIST= 5.922 AU
BATSE-ULYSSES DISTANCE = 885876333. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2249.60 SECS.
CROSSING TIME AT ULYSSES IS 48757. S. OR 13:32:36 +/- 416.81 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 7/ 97 IS:
RA= 190.007 DEC= -4.385 DIST= 1.331 AU
MARS-BATSE DISTANCE = 199172688. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 37.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 526.33 SECS.
CROSSING TIME AT MARS IS 47033. S. OR 13:03:53 +/- 78.38 SECONDS

BATSE BURST TRIGGER

NO.: 6302

TIME: TJD=0641 SECONDS=46507

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.8 AZIMUTH=133.7 ERROR=4.5 DEGREES

COMMENTS:
GRB. SINGLE, SHORT, WEAK SPIKE. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6302	970712	10641	46507	2200	020	-32	.8

BATSE BURST# 6302

ULYSSES RT 14/ 7/97

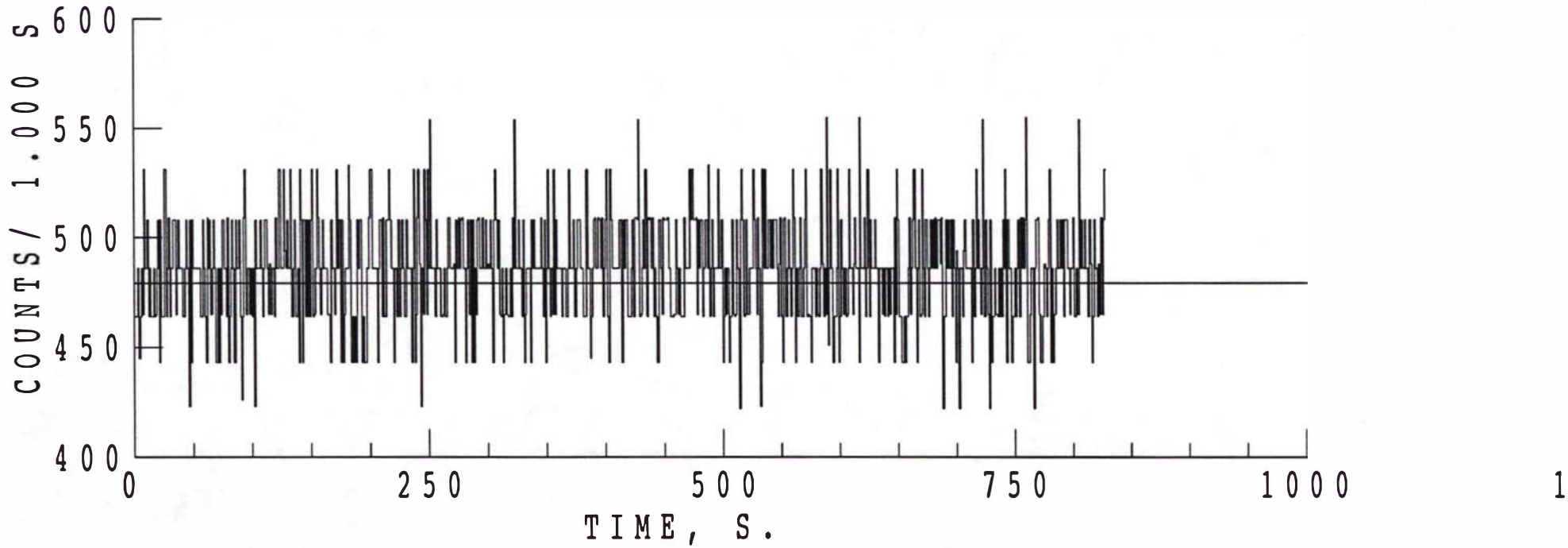
12/ 7/97 48348.055 s

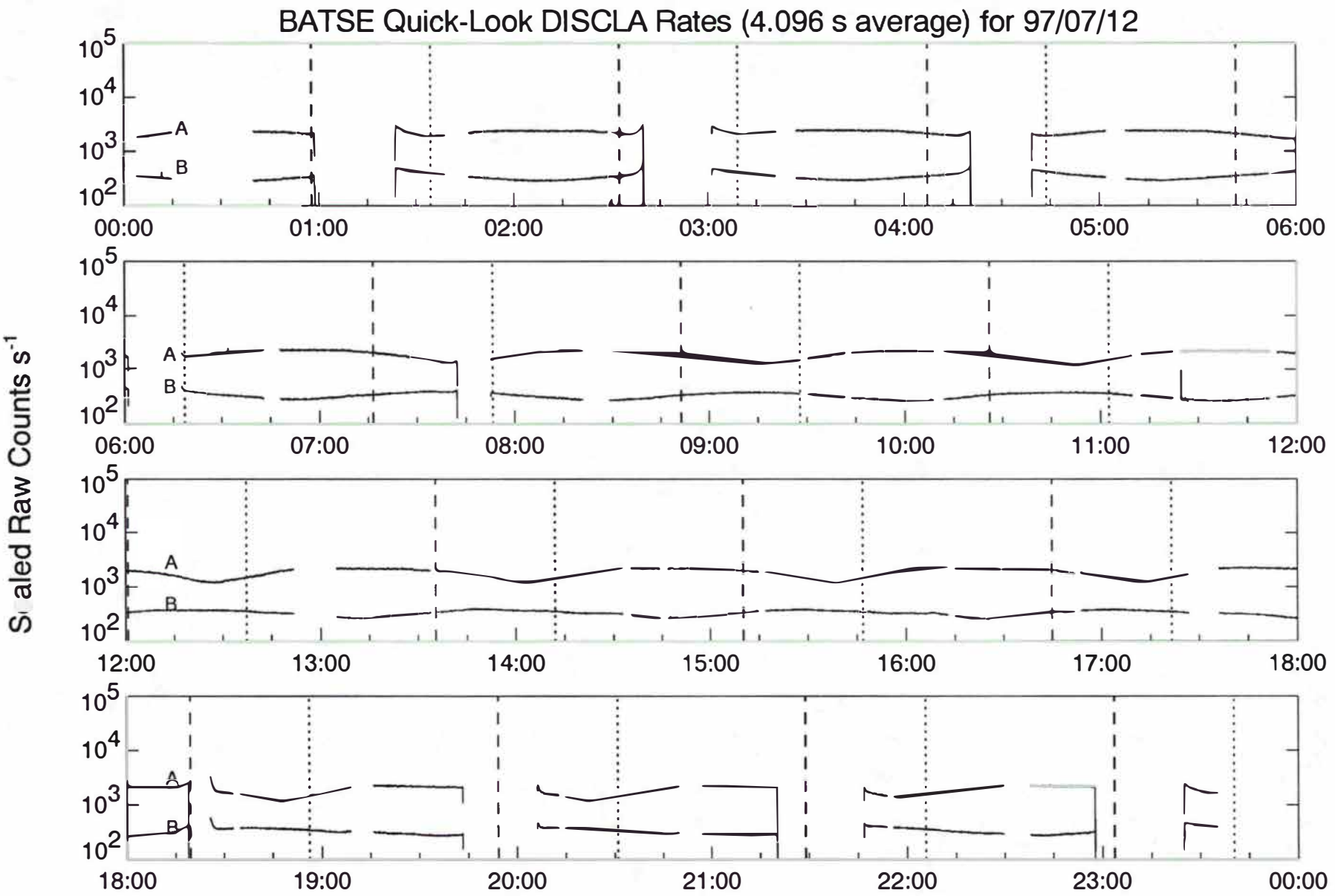
0.500 S INTERVALS REGROUPED BY 2

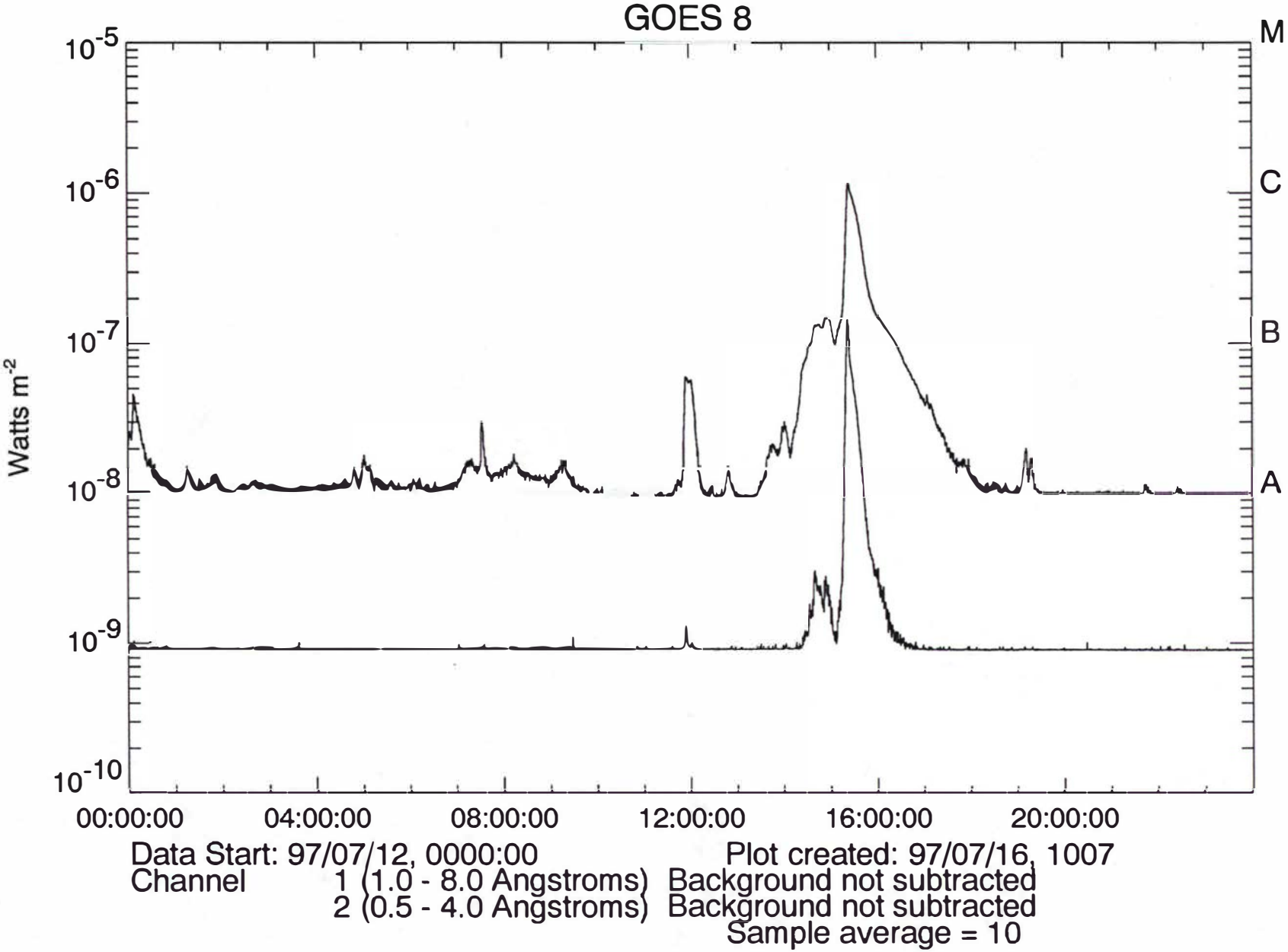
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

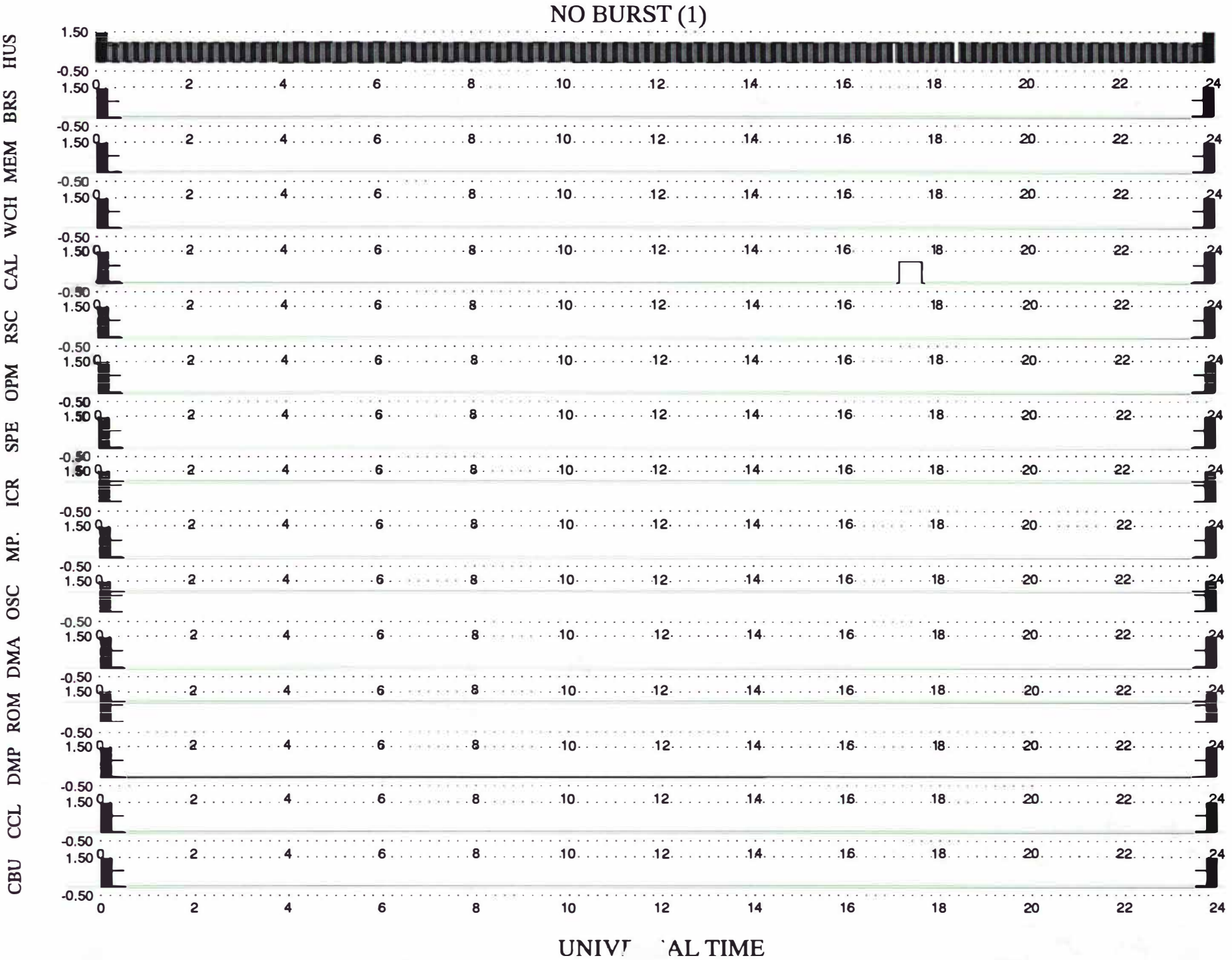
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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

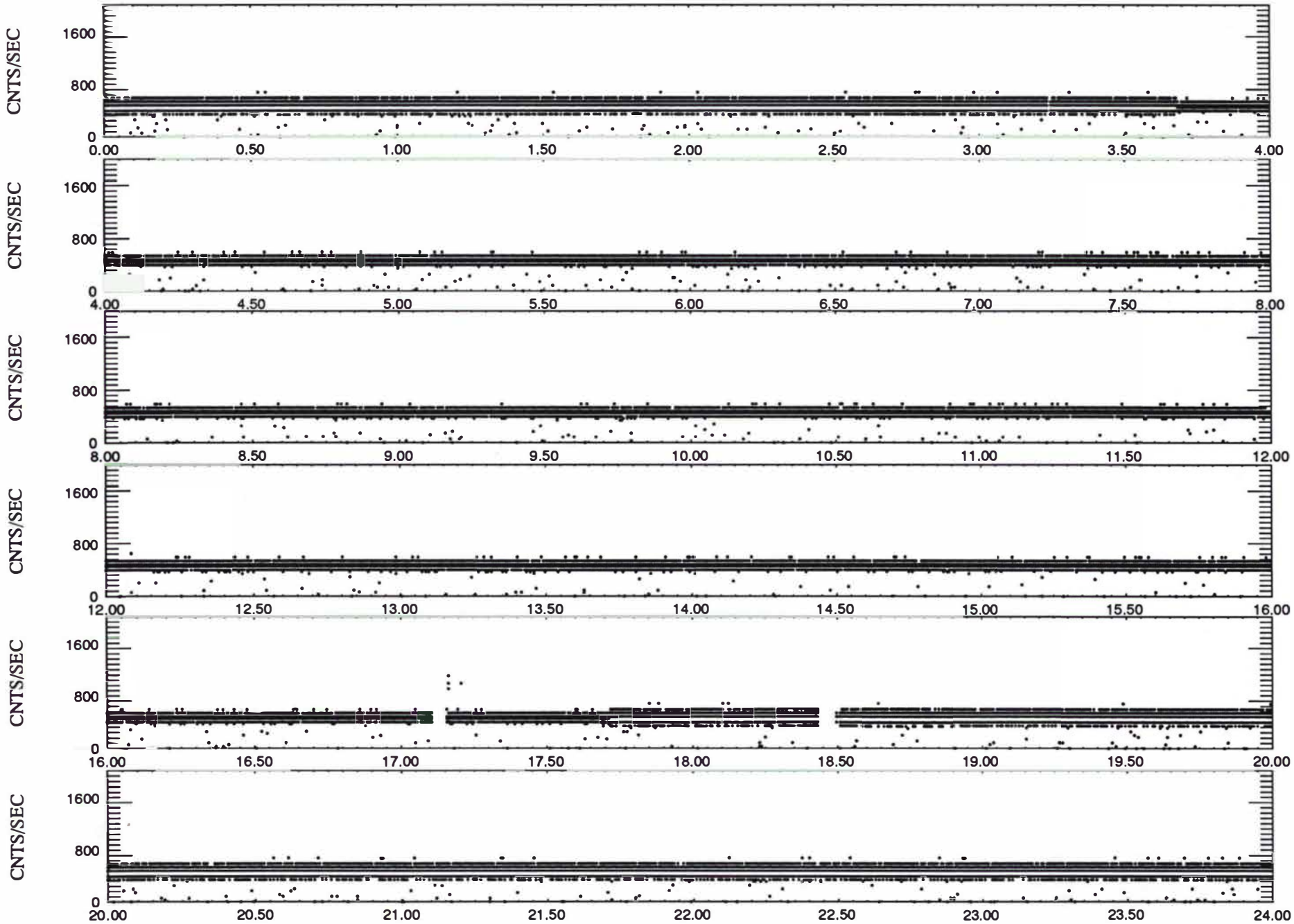

GOES 8
M
C
B
A
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/12, 0000:00
Plot created: 97/07/16, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 193, year 1997 to day 193, year 1997 10/24/97



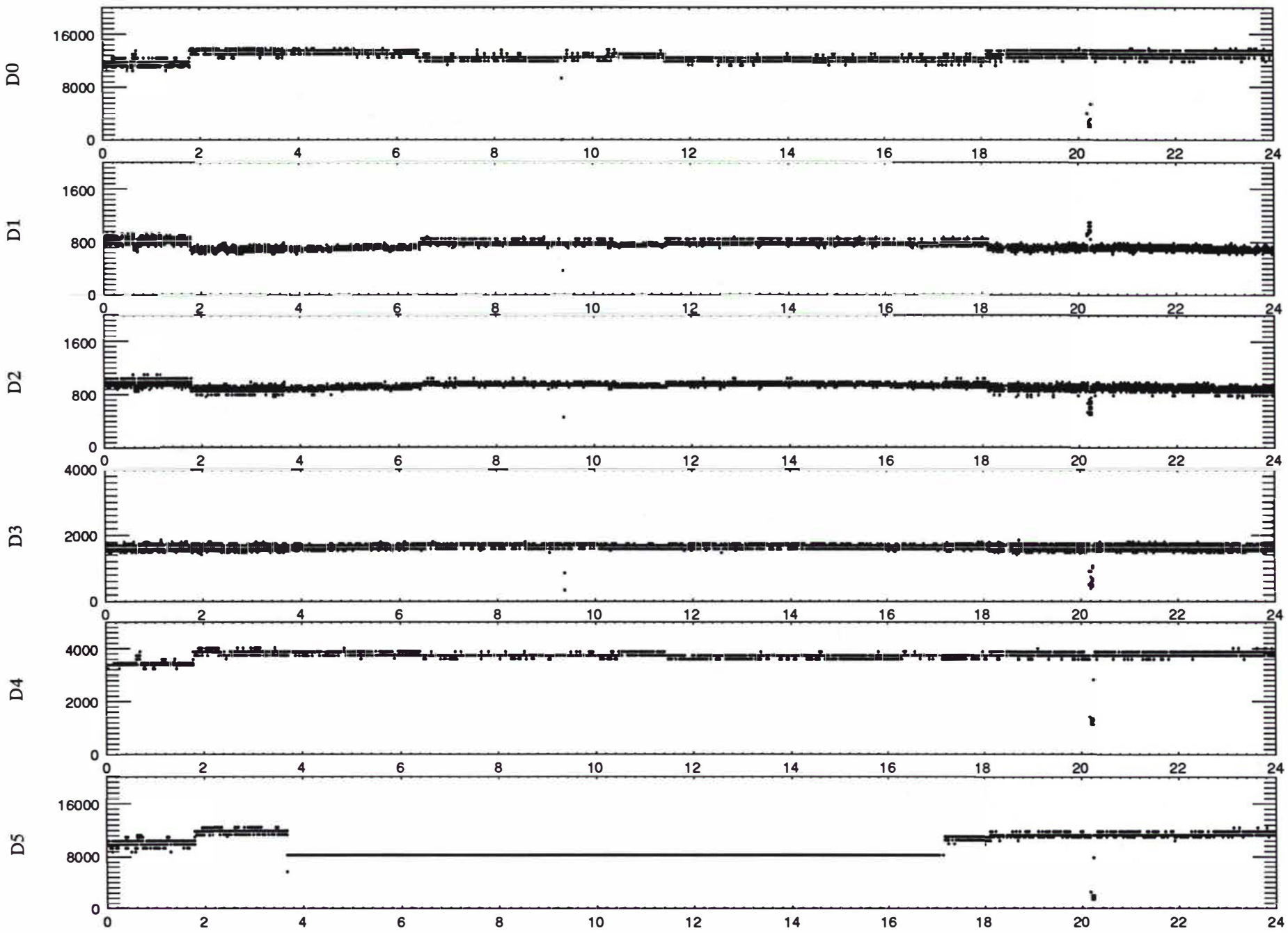
HUS 2A, MODE 1, NOT AVERAGED EDR day 193, year 1997 to day 193, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 193, year 1997 to day 193, year 1997 10/24/97



From WOODSP@SSLLES.MSFC.NASA.GOV Mon Jul 14 11:20 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 LAA09606; Mon, 14 Jul 1997 11:20:05 -0700
Date: Mon, 14 Jul 1997 13:19:53 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970714131953.2240dea2@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6303
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6303
EVENT OF 1997 JUL 13 DAY OF YEAR=194
EVENT CROSSING TIME AT BATSE : 22587. S. OR 06:16:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 161.000 -14.000
BATSE PEAK COUNTING RATE: 11000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 97 IS:
RA= 154.654 DEC= 24.418 DIST= 5.930 AU
BATSE-ULYSSES DISTANCE = 887130685. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2302.47 SECS.
CROSSING TIME AT ULYSSES IS 20285. S. OR 05:38:04 +/- 337.75 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 97 IS:
RA= 190.485 DEC= -4.608 DIST= 1.338 AU
MARS-BATSE DISTANCE = 200200080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=149.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -575.19 SECS.
CROSSING TIME AT MARS IS 22012. S. OR 06:06:51 +/- 50.17 SECONDS

BATSE BURST TRIGGER
NO.: 6303

TIME: TJD=0642 SECONDS=22587

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=68.8 AZIMUTH=280.0 ERROR=0.8 DEGREES

COMMENTS:
GRB LASTING ~ 50 SEC. SINGLE PULSE WITH SMOOTH PROFILE.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6303	970713	10642	22587	11000	161	-14	50

Helio corr removed 13/2/00

Date: Apr 6 '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?

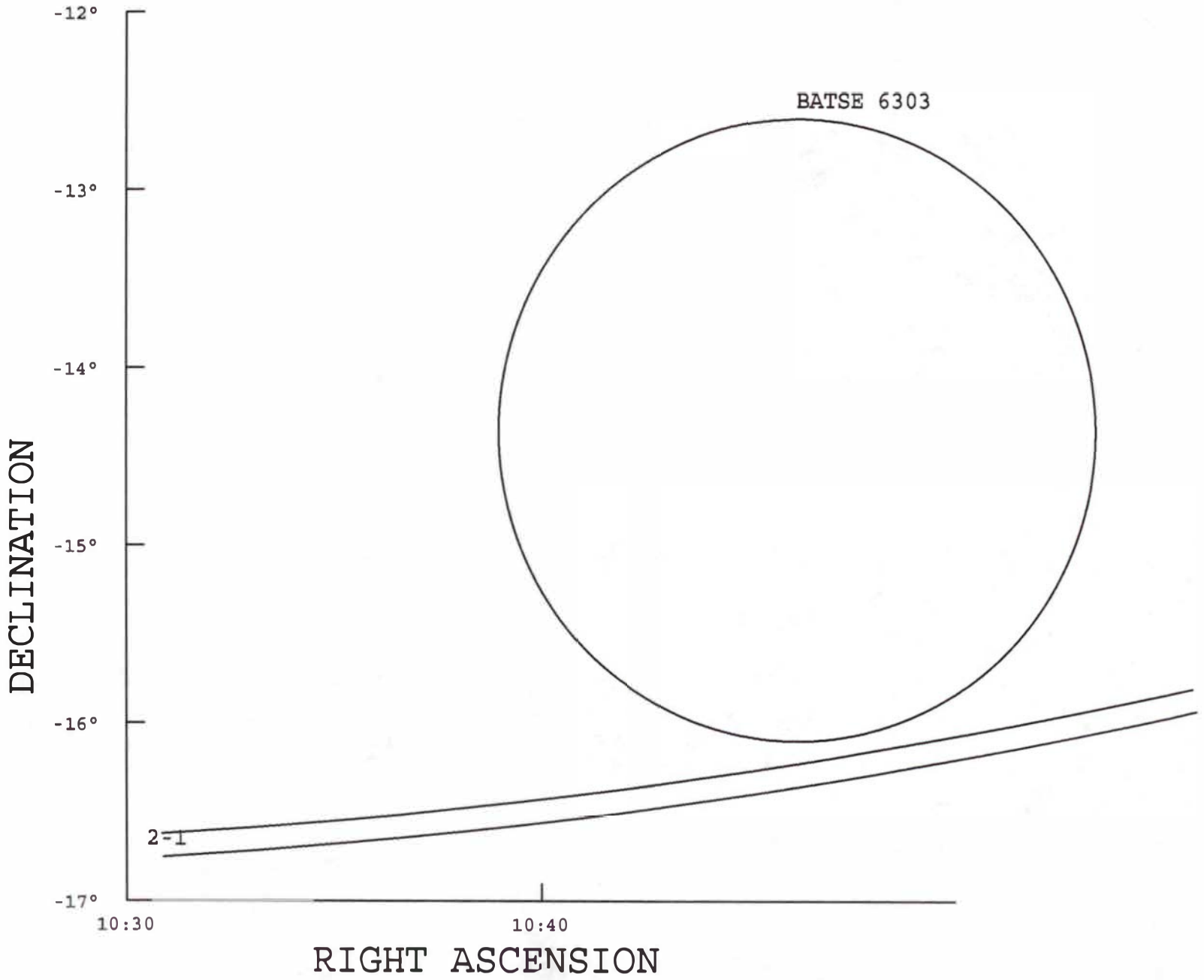
☐ Geocentric time used?

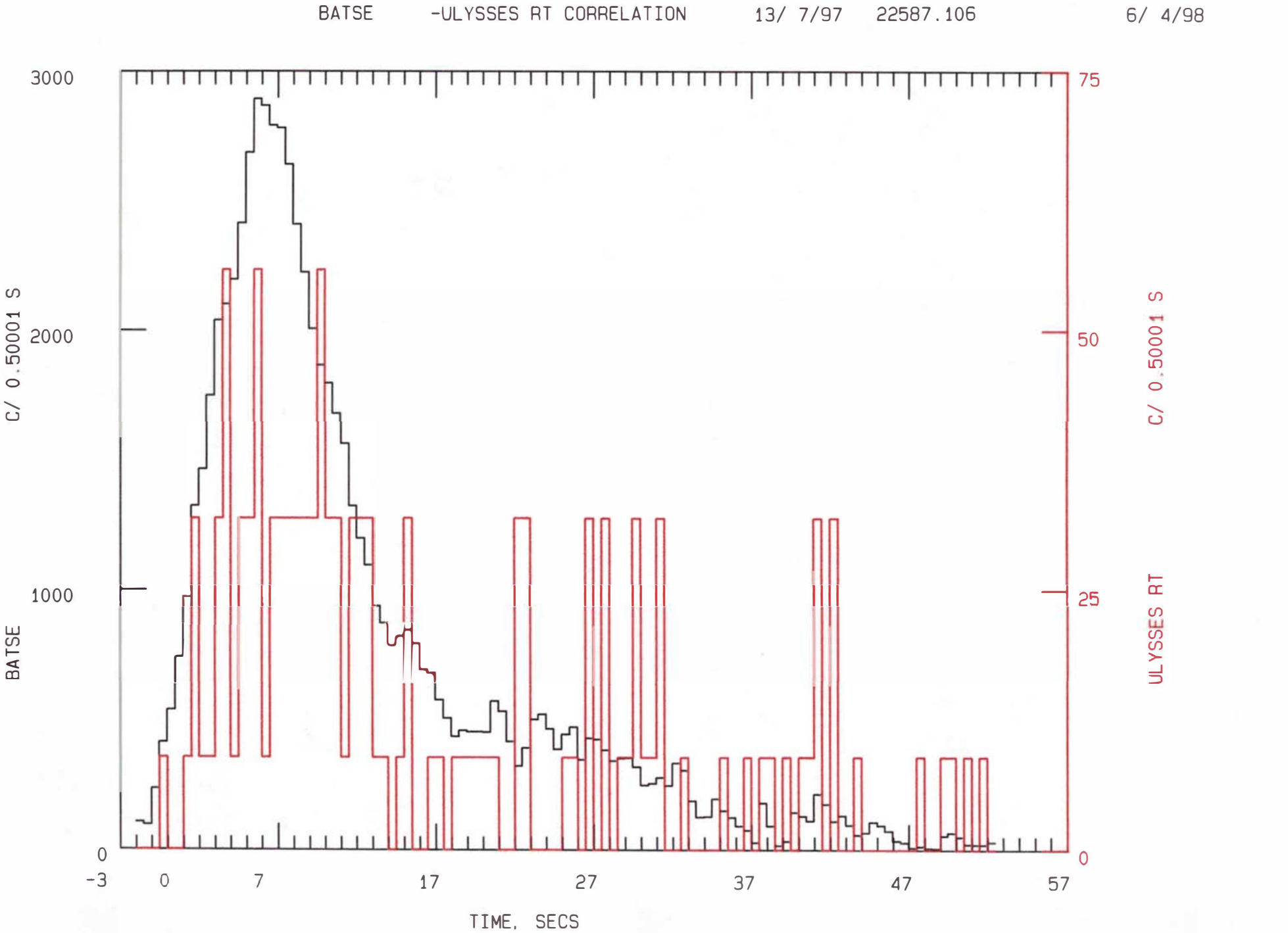
☑ ACCESS database updated?

EVENT OF JUL 13, 1997 5:38

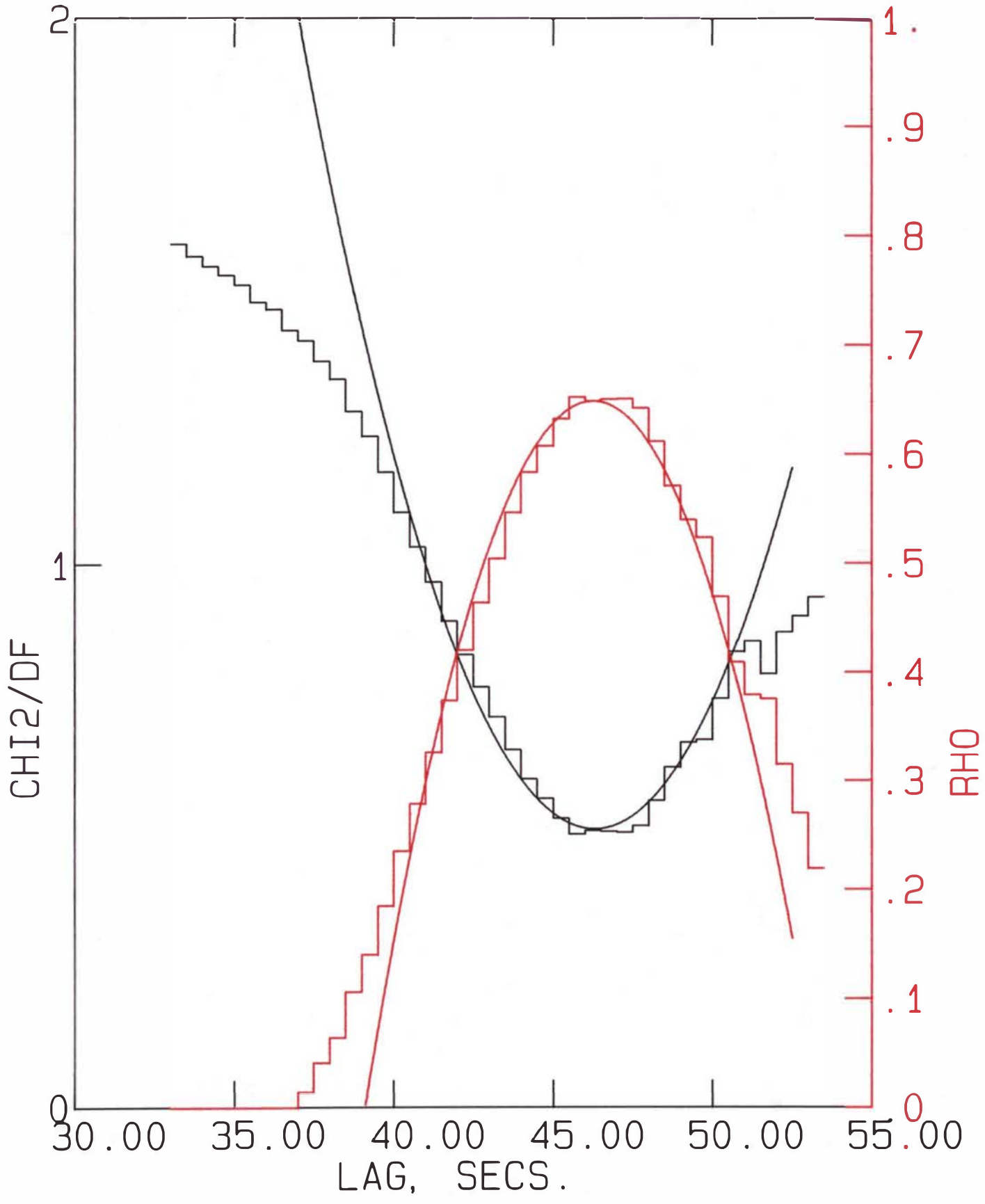
6/ 4/98

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




BATSE -ULYSSES RT CORRELATION 13/ 7/97 22587.106 6/ 4/98
3000
2000
1000
0
C/ 0.50001 S
BATSE
75
50
25
0
C/ 0.50001 S
ULYSSES RT
-3
0
7
17
27
37
47
57
TIME, SECS

BATSE -ULYSSES RT CORRELATION 13/ 7/97 22587.106



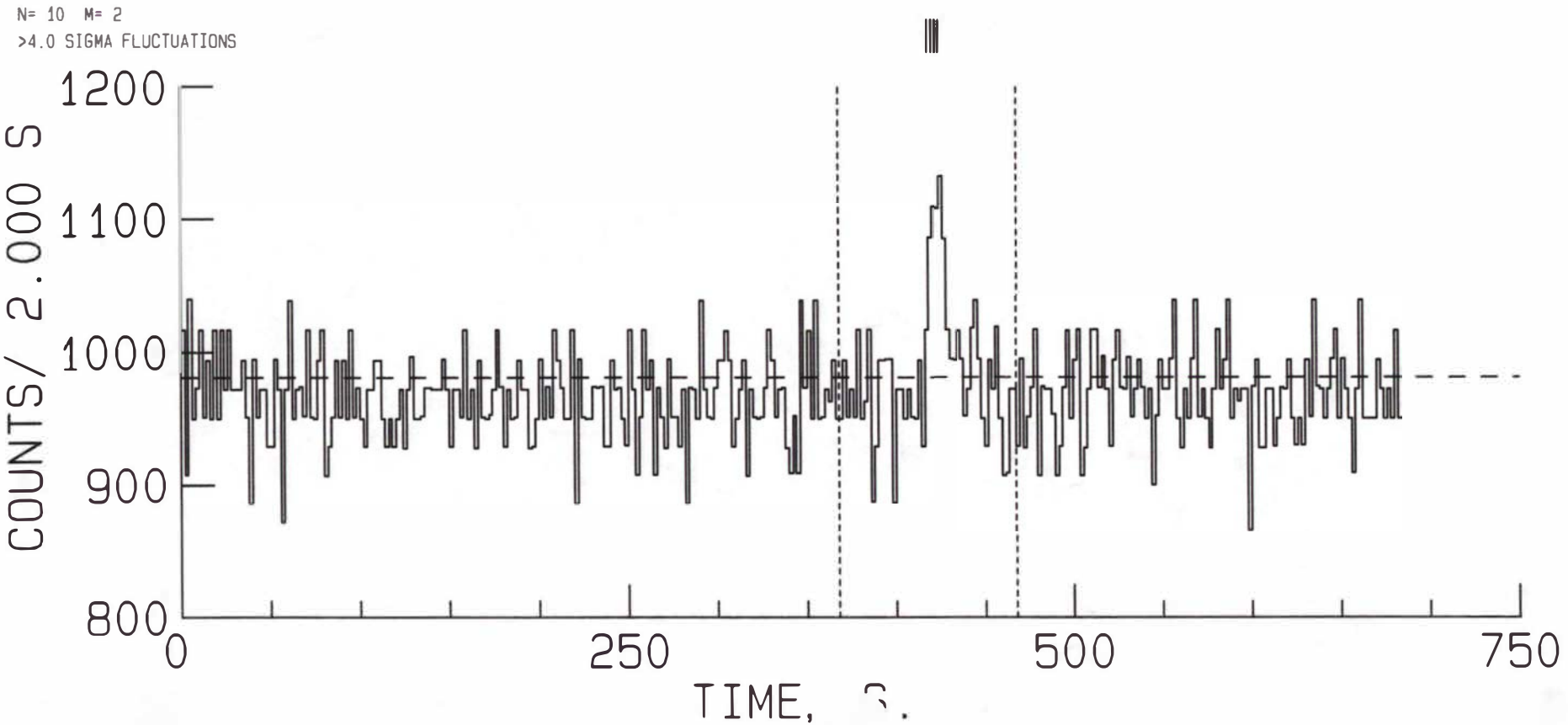
ULYSSES RT

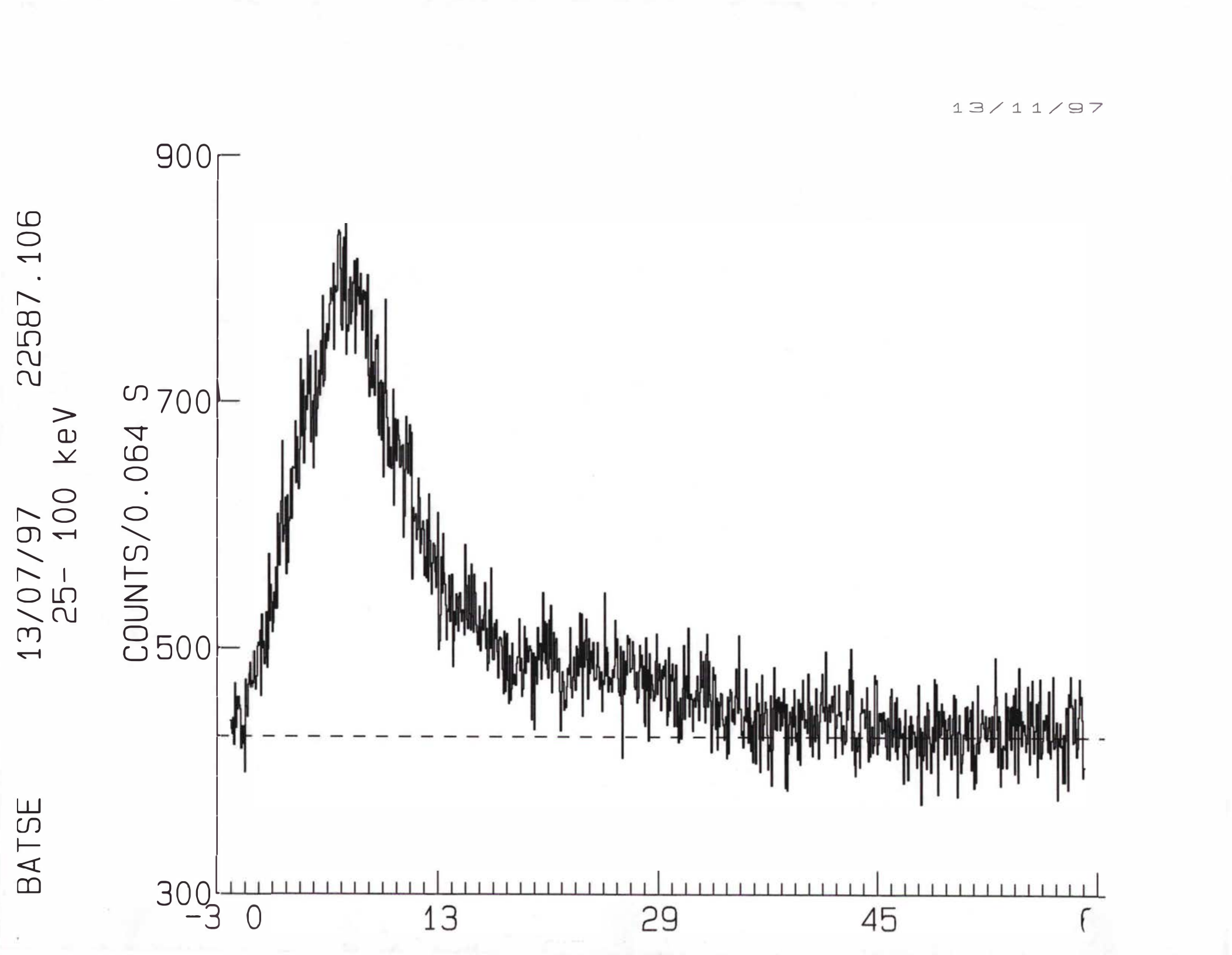
6/ 4/98

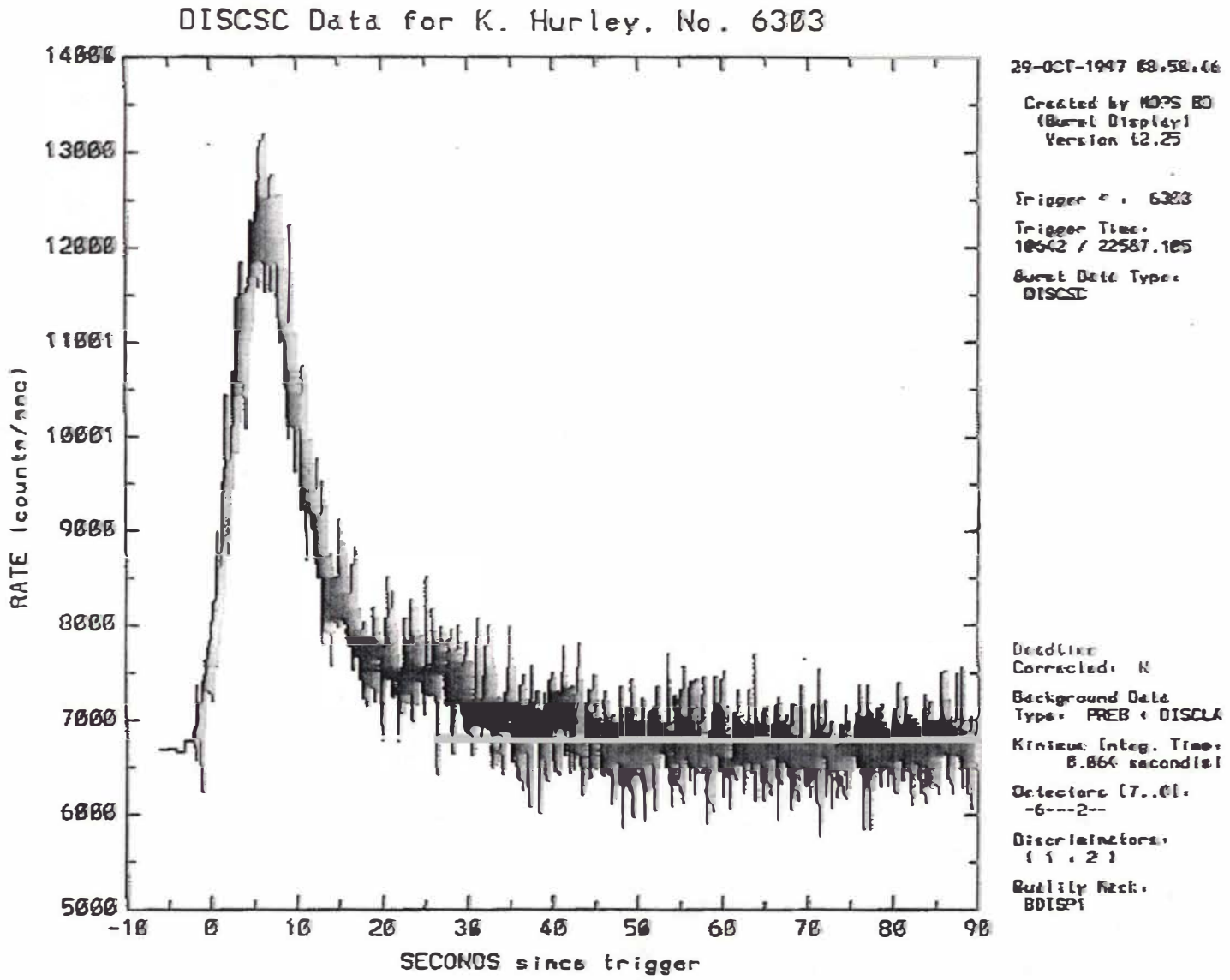
13/ 7/97 19944.231 s

0.500 S INTERVALS REGROUPED BY 4

21- 146 keV




13/11/97
BATSE
13/07/97
25- 100 keV
22587.106
COUNTS/0.064 S
900
700
500
300
-3
0
13
29
45


DISCSC Data for K. Hurley. No. 6303
RATE (counts/sec)
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
29-OCT-1997 08:58:46
Created by MOPS BD
(Burst Display)
Version 12.25
Trigger # : 6303
Trigger Time:
10642 / 22587.105
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors (7..0):
-6---2--
Discriminators:
(1 , 2)
Quality Mask:
BDISP1

From WOODSP@SSLLES.MSFC.NASA.GOV Mon Jul 14 11:23 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 LAA09712; Mon, 14 Jul 1997 11:23:13 -0700
e: Mon, 14 Jul 1997 13:22:56 -0500 (CDT)
om: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970714132256.2240dea2@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6304
Content-Type: text
Content-Length: 1135
Status: R

****
BATSEARCH PROGRAM
****

BATSE BURST # 6304
EVENT OF 1997 JUL 13 DAY OF YEAR=194
EVENT CROSSING TIME AT BATSE : 55042. S. OR 15:17:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 275.000 59.000
BATSE PEAK COUNTING RATE: 2700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 97 IS:
RA= 154.700 DEC= 24.375 DIST= 5.934 AU
BATSE-ULYSSES DISTANCE = 887774839. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.72 DEG.
IGHT TRAVEL TIME ALONG PROJECTED PATH= -346.65 SECS.
OSSING TIME AT ULYSSES IS 54695. S. OR 15:11:35 +/- 555.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 97 IS:
RA= 190.485 DEC= -4.608 DIST= 1.338 AU
MARS-BATSE DISTANCE = 200200080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 13.21 SECS.
CROSSING TIME AT MARS IS 55055. S. OR 15:17:35 +/- 116.12 SECONDS

BATSE BURST TRIGGER

NO.: 6304

TIME: TJD=0642 SECONDS=55042

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=142.4 AZIMUTH=22.5 ERROR=3.7 DEGREES

COMMENTS:
LASTING ~ 70 SEC. SINGLE PULSE WITH EXTENDED WEAK TAIL.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6304	970713	10642	55042	2700	275	+59	70

BATSE BURST# 6304

ULYSSES RT 24/10/97

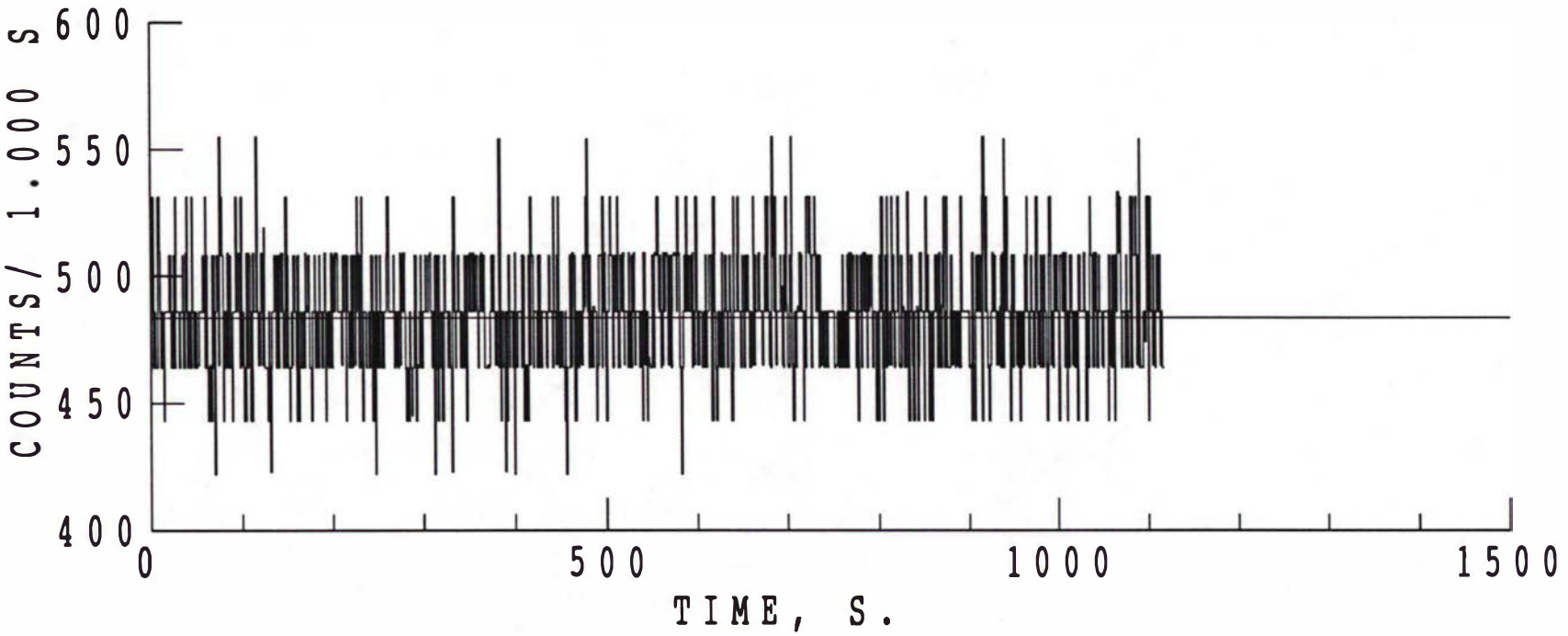
13/ 7/97 54144.129 s

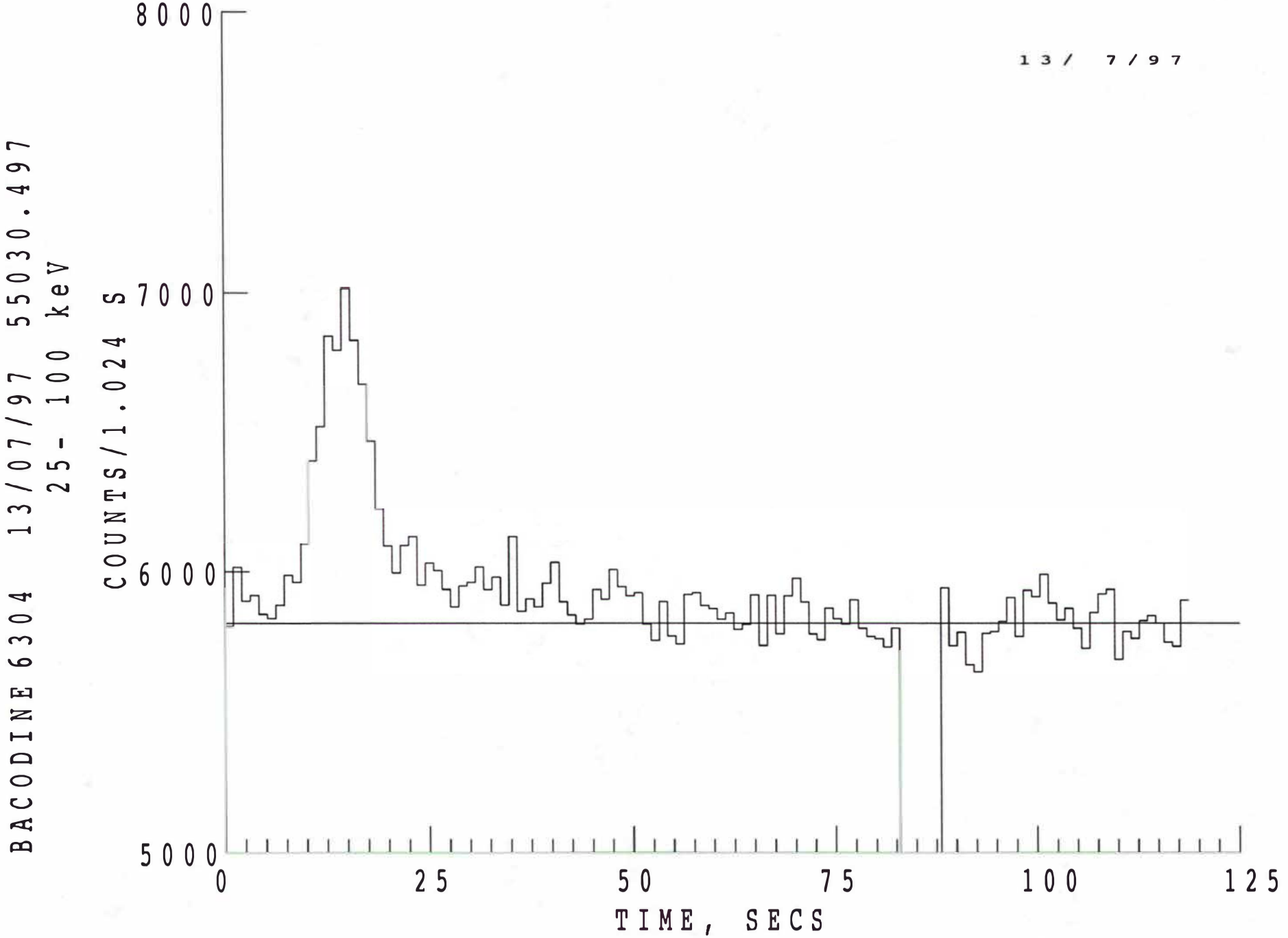
0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6304 13/07/97 55030.497
25- 100 keV
COUNTS/1.024 S
8000
7000
6000
5000
13/ 7/97
0
25
50
75
100
125
TIME, SECS

From WOODSP@ssl.msfc.nasa.gov Mon Jul 14 11:25 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 LAA09779; Mon, 14 Jul 1997 11:25:19 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 14 Jul 1997 13:25:11 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970714132511.2240dea2@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6305
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6305
EVENT OF 1997 JUL 13 DAY OF YEAR=194
EVENT CROSSING TIME AT BATSE : 75437. S. OR 20:57:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 127.000 59.000
BATSE PEAK COUNTING RATE: 2600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 97 IS:
RA= 154.728 DEC= 24.347 DIST= 5.937 AU
BATSE-ULYSSES DISTANCE = 888180377. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2277.48 SECS.
CROSSING TIME AT ULYSSES IS 73160. S. OR 20:19:19 +/- 344.39 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 97 IS:
RA= 190.485 DEC= -4.608 DIST= 1.338 AU
MARS-BATSE DISTANCE = 200200080. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -107.06 SECS.
CROSSING TIME AT MARS IS 75330. S. OR 20:55:29 +/- 112.81 SECONDS

BATSE BURST TRIGGER

NO.: 6305

TIME: TJD=0642 SECONDS=75437

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.7 AZIMUTH=358.9 ERROR=4 DEGREES

COMMENTS:
GRB LASTING ~ 16 SEC. SINGLE PULSE WITHOUT VISIBLE SUBSTRUCTURE.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6305	970713	10642	75437	2600	127	+59	16

BATSE BURST# 6305

ULYSSES RT 14/ 7/97

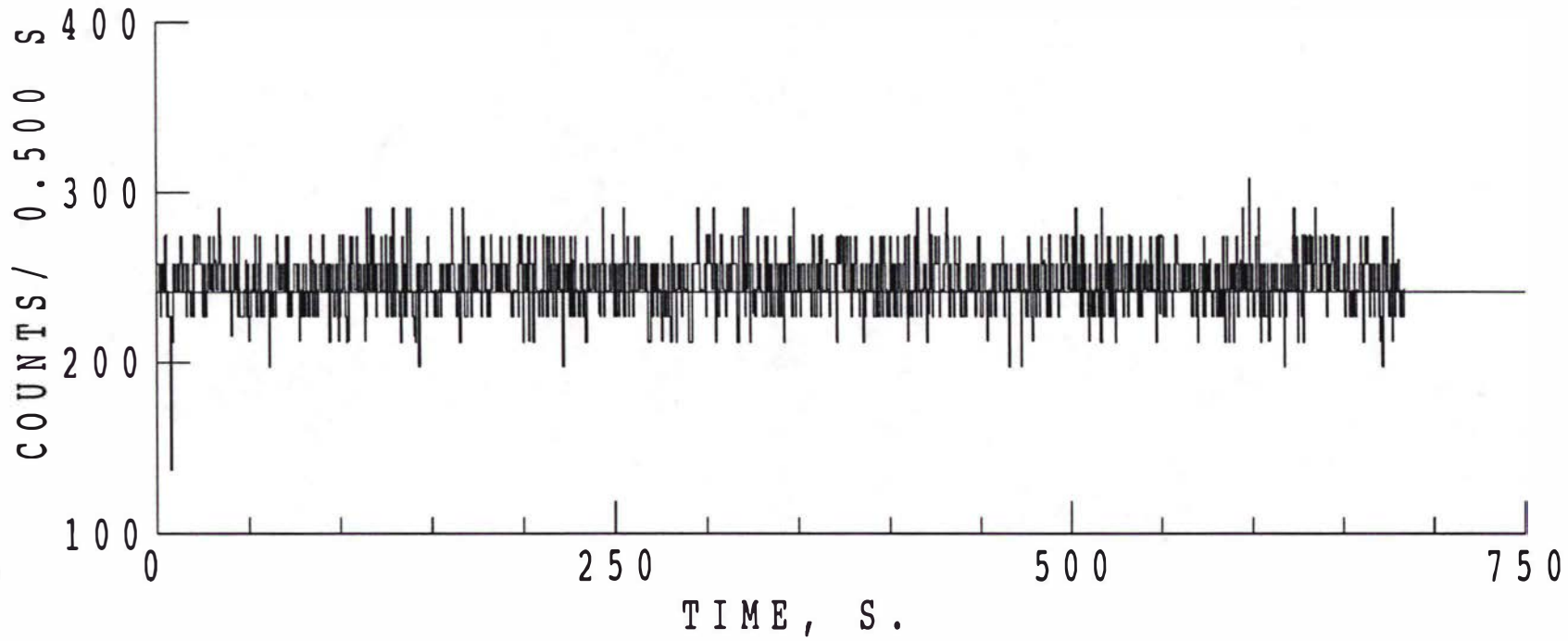
13/ 7/97 72828.094 s

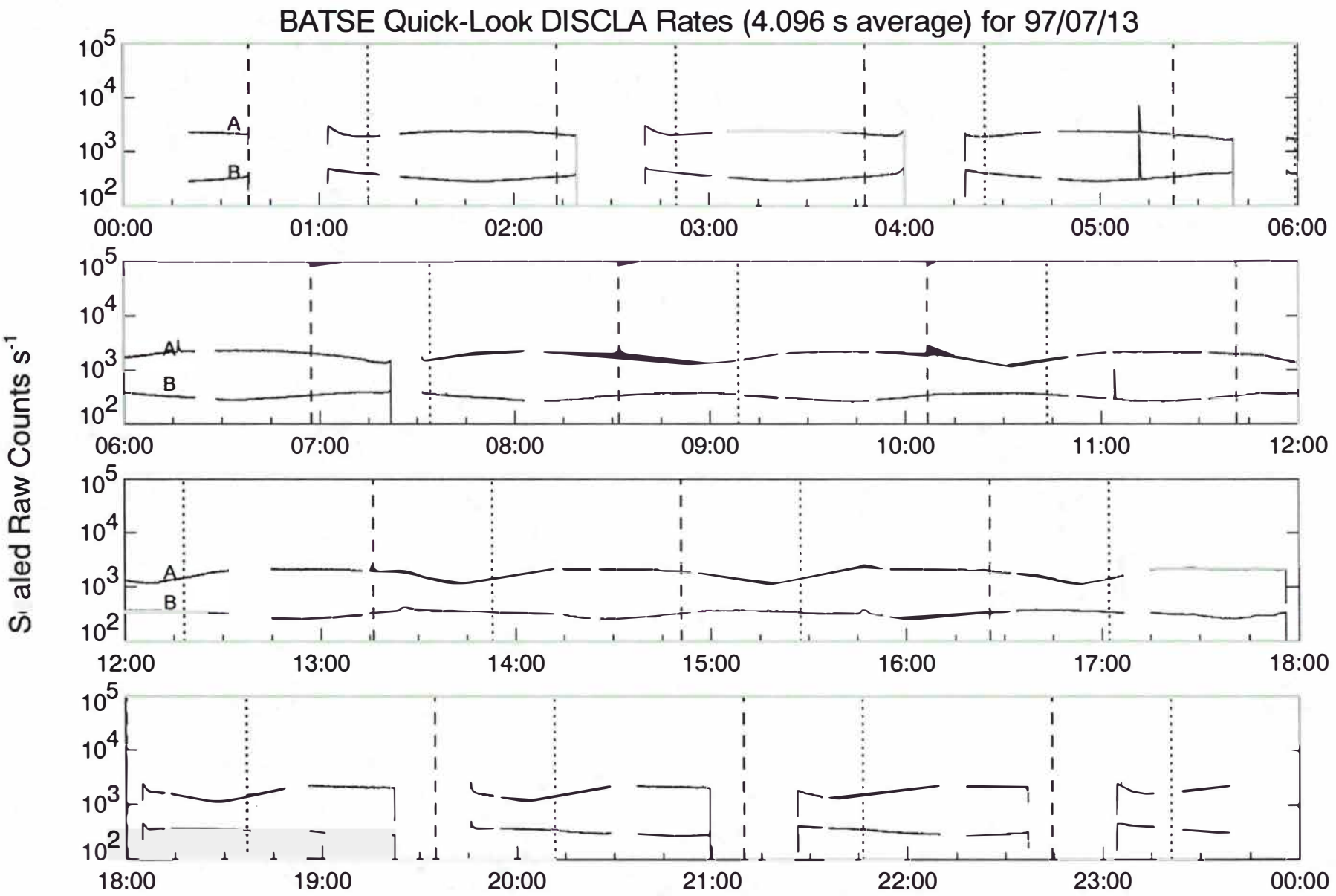
0.250 S INTERVALS REGROUPED BY 2

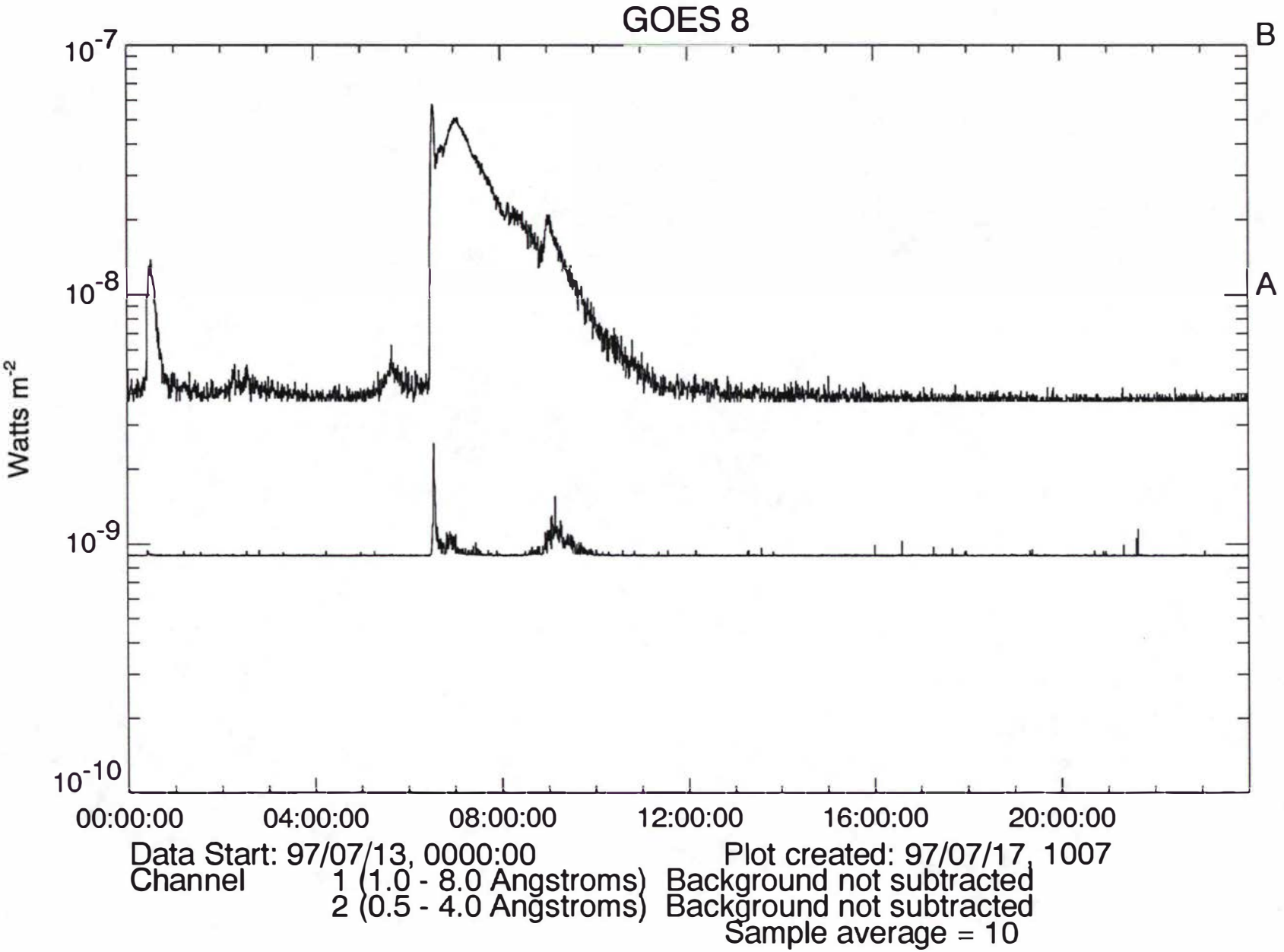
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

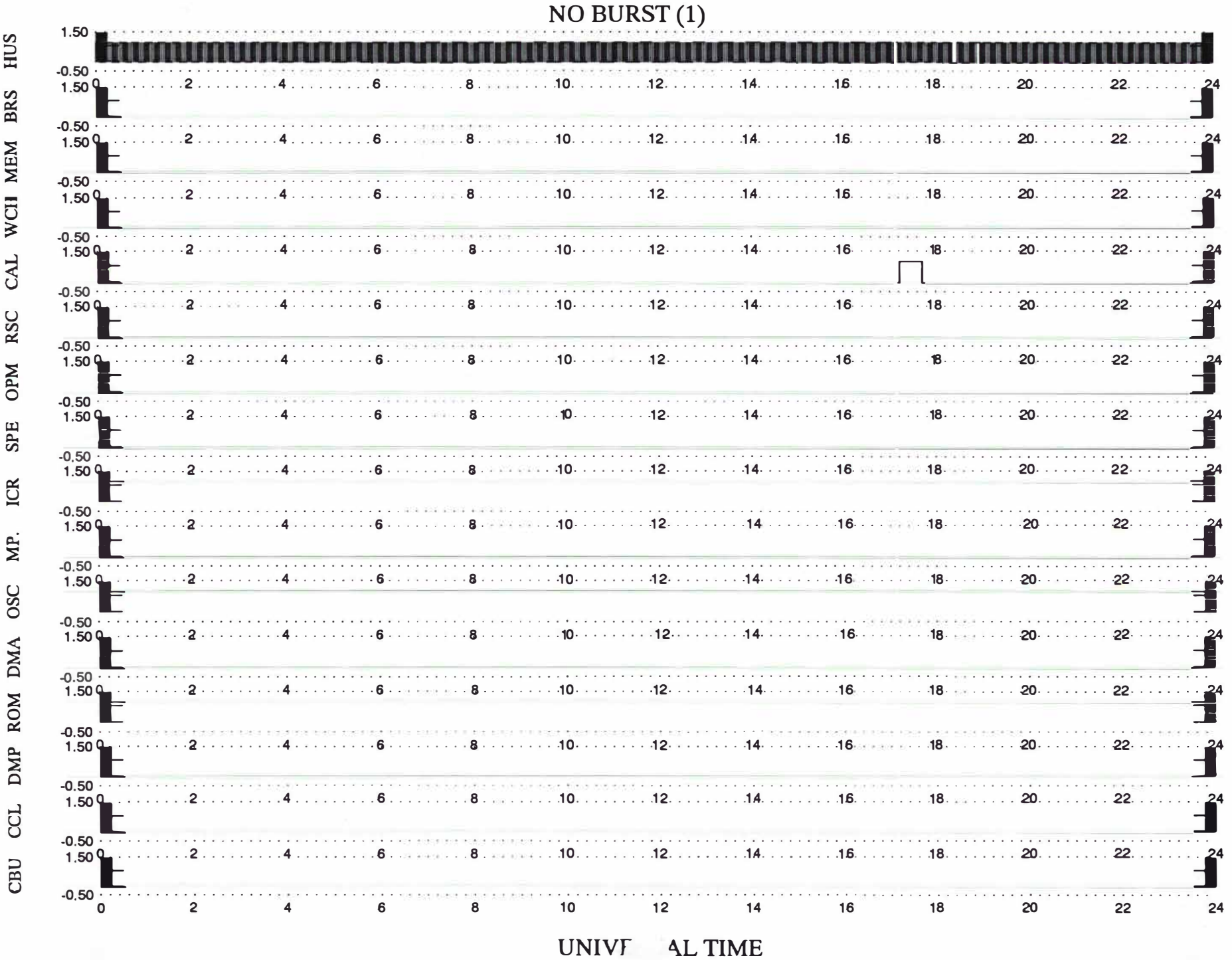
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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

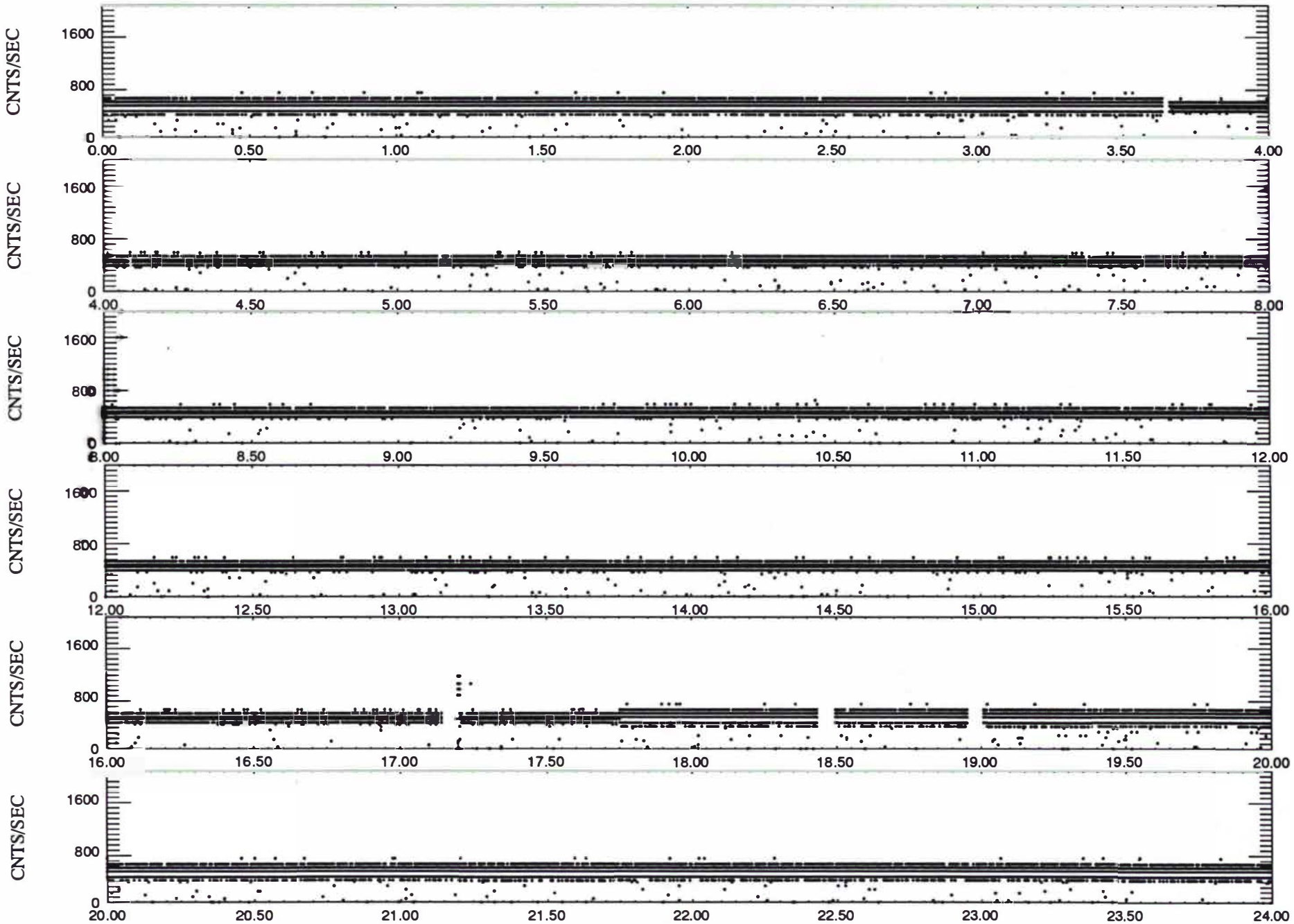

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/13, 0000:00
Plot created: 97/07/17, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 194, year 1997 to day 194, year 1997 10/24/97



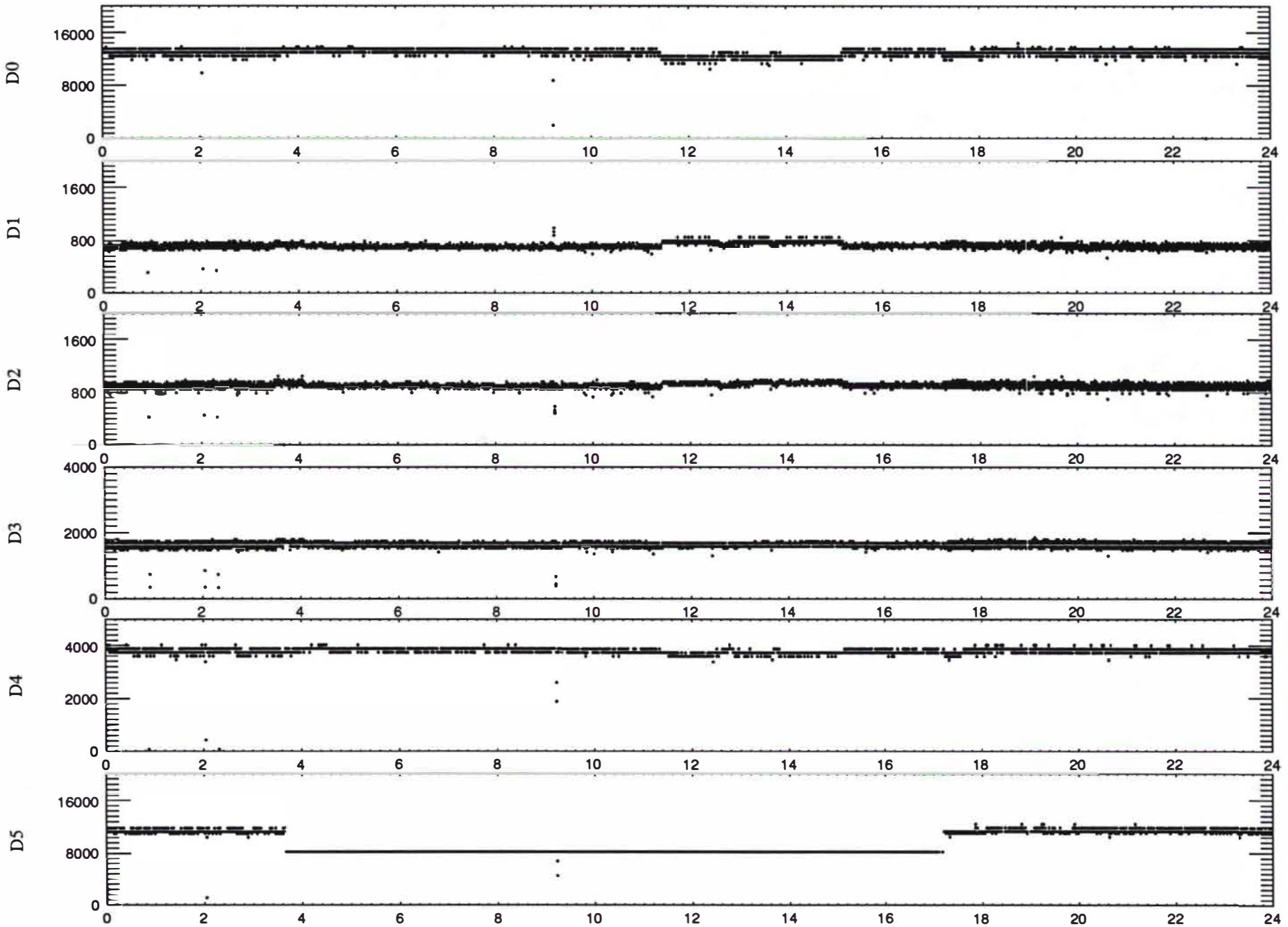
HUS 2A, MODE 1, NOT AVERAGED EDR day 194, year 1997 to day 194, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 194, year 1997 to day 194, year 1997 10/24/97



From kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 22 Aug 1997 17:22:32 -0400
To: hurley@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,

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

Here are the details.

Pete

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

July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
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 BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

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

From SURASAK@SSLLES.MSFC.NASA.GOV Wed Jul 16 08:39 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 IAA26953; Wed, 16 Jul 1997 08:39:40 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Wed, 16 Jul 1997 10:39:32 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970716103932.2166ae68@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6306
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6306
EVENT OF 1997 JUL 14 DAY OF YEAR=195
EVENT CROSSING TIME AT BATSE : 10676. S. OR 02:57:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 12.000 32.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 7/ 97 IS:
RA= 154.758 DEC= 24.319 DIST= 5.940 AU
BATSE-ULYSSES DISTANCE = 888601538. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1176.69 SECS.
CROSSING TIME AT ULYSSES IS 11853. S. OR 03:17:32 +/- 540.19 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 7/ 97 IS:
RA= 190.967 DEC= -4.831 DIST= 1.345 AU
MARS-BATSE DISTANCE = 201223312. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 27.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 597.06 SECS.
CROSSING TIME AT MARS IS 11273. S. OR 03:07:53 +/- 62.31 SECONDS

BATSE BURST TRIGGER

NO.: 6306

TIME: TJD=0643 SECONDS=10676

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

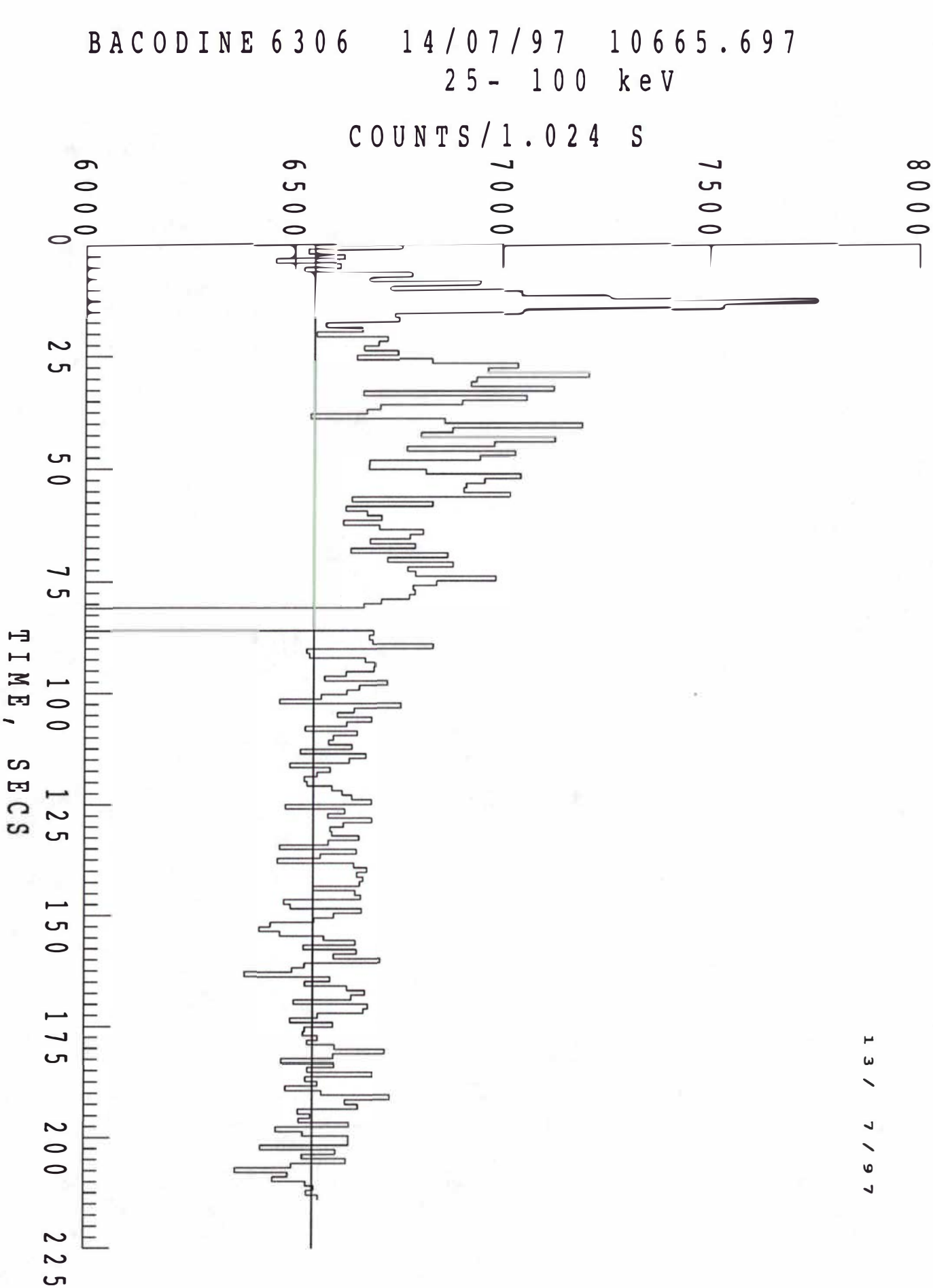
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=90.8 AZIMUTH=73.1 ERROR=3.385 DEGREES

COMMENTS:
GRB. DUR~90S. MULTI-PEAK. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6306	970714	10643	10676	7500	012	+32	90


BACODINE 6306 14/07/97 10665.697
25- 100 keV
COUNTS/1.024 S
6000
6500
7000
7500
8000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
13/ 7/97

BATSE BURST# 6306

ULYSSES RT 16/ 7/97

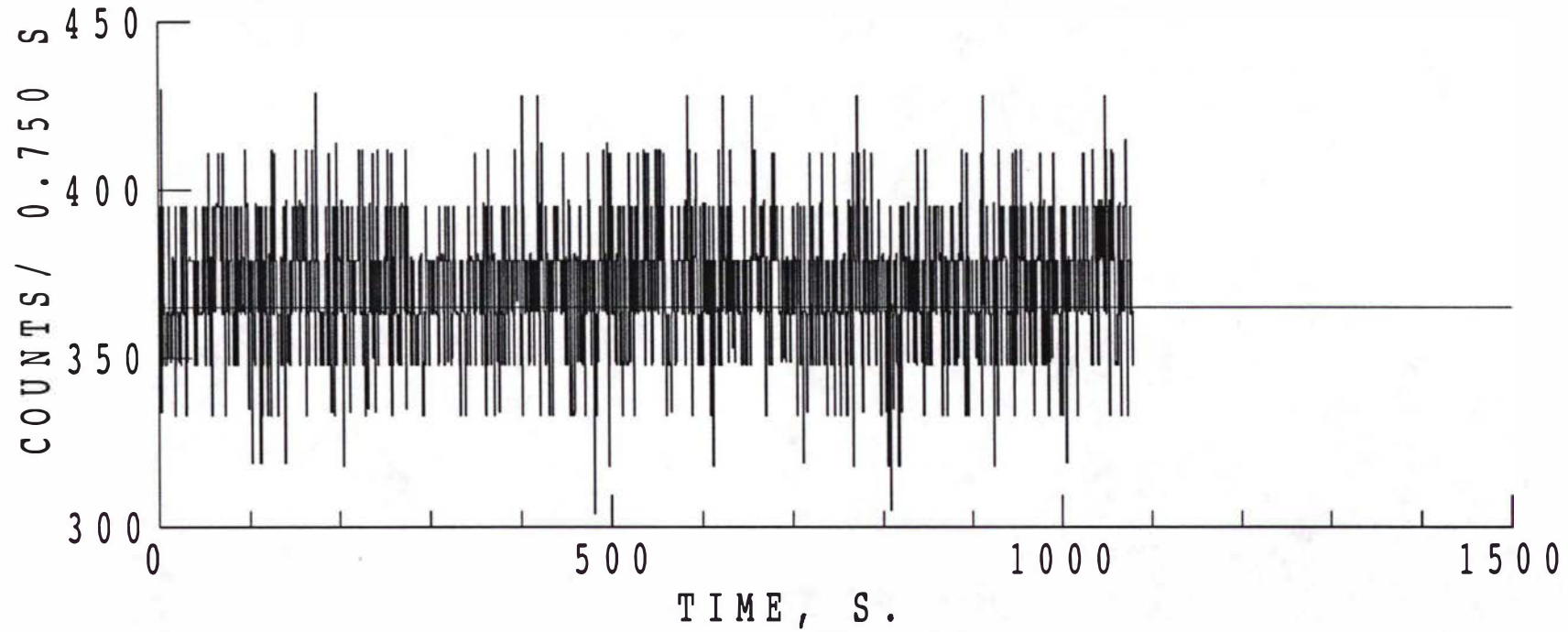
14/ 7/97 11304.135 s

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@ssl.msfc.nasa.gov Wed Jul 16 14:58 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 OAA02069; Wed, 16 Jul 1997 14:58:09 -0700
Date: Wed, 16 Jul 1997 16:58:02 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970716165802.2166bcla@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6307
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6307
EVENT OF 1997 JUL 14 DAY OF YEAR=195
EVENT CROSSING TIME AT BATSE : 38817. S. OR 10:46:57.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 6.000 -29.000
BATSE PEAK COUNTING RATE: 6400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 7/ 97 IS:
RA= 154.798 DEC= 24.281 DIST= 5.944 AU
BATSE-ULYSSES DISTANCE = 889150531. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 28.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2613.79 SECS.
CROSSING TIME AT ULYSSES IS 41431. S. OR 11:30:30 +/- 333.04 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 7/ 97 IS:
RA= 190.967 DEC= -4.831 DIST= 1.345 AU
MARS-BATSE DISTANCE = 201223312. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 34.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 555.36 SECS.
CROSSING TIME AT MARS IS 39372. S. OR 10:56:12 +/- 73.88 SECONDS

BATSE BURST TRIGGER

NO.: 6307

TIME: TJD=0643 SECONDS=38817

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

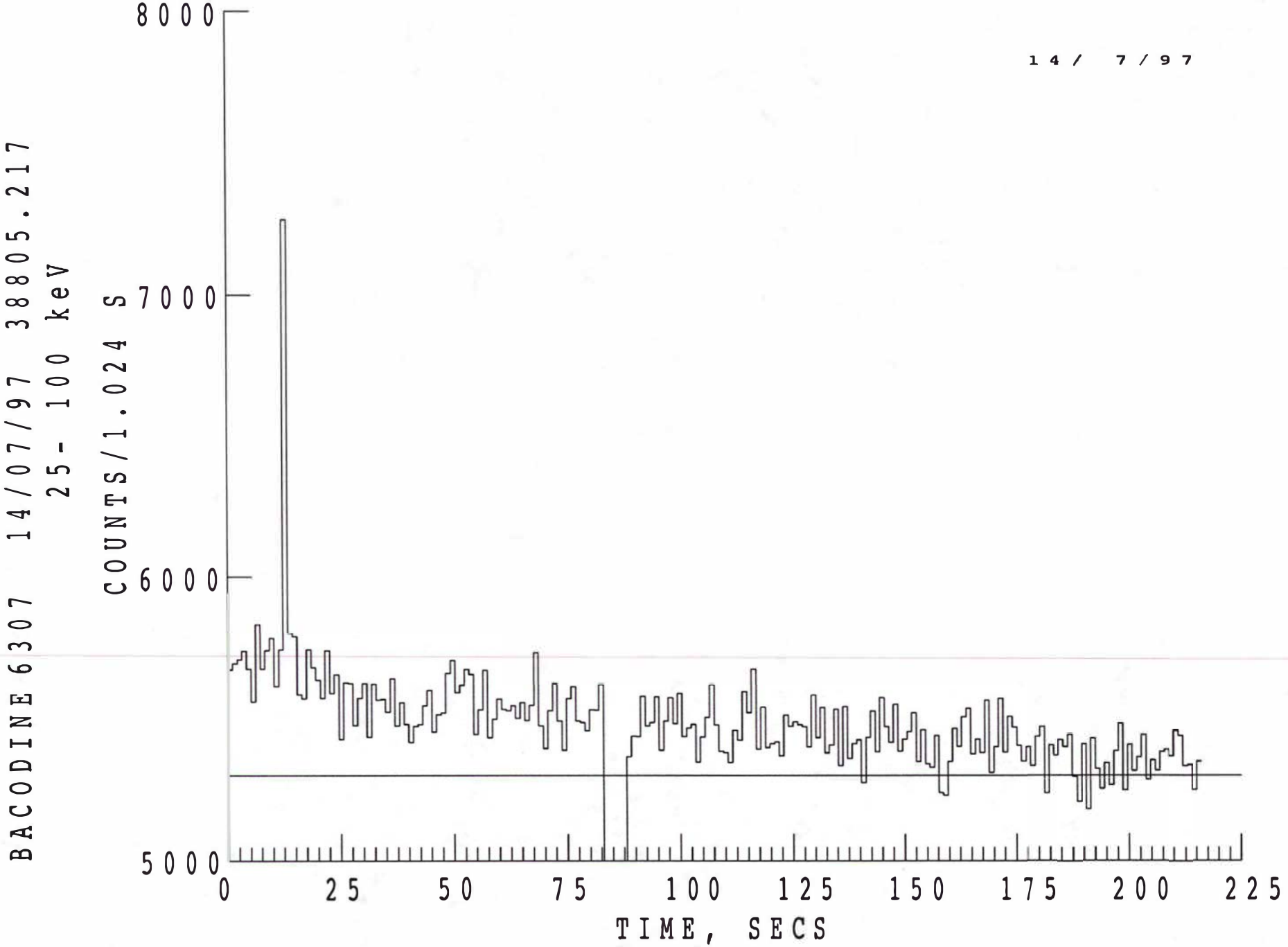
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=73.7 AZIMUTH=133.5 ERROR=2.79 DEGREES

COMMENTS:
GRB. DUR~1S. SINGLE PULSE WITH SUBSTRUCTURE. VISIBLE ABOVE 300 KEV.
CYGX-1 SET DURING BURST.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6307	970714	10643	38817	6400	006	-29	1


BACODINE 6307 14/07/97 38805.217
25- 100 keV
COUNTS/1.024 S
8000
7000
6000
5000
14/ 7/97
0
25
50
75
100
125
150
175
200
225
TIME, SECS

BATSE BURST# 6307

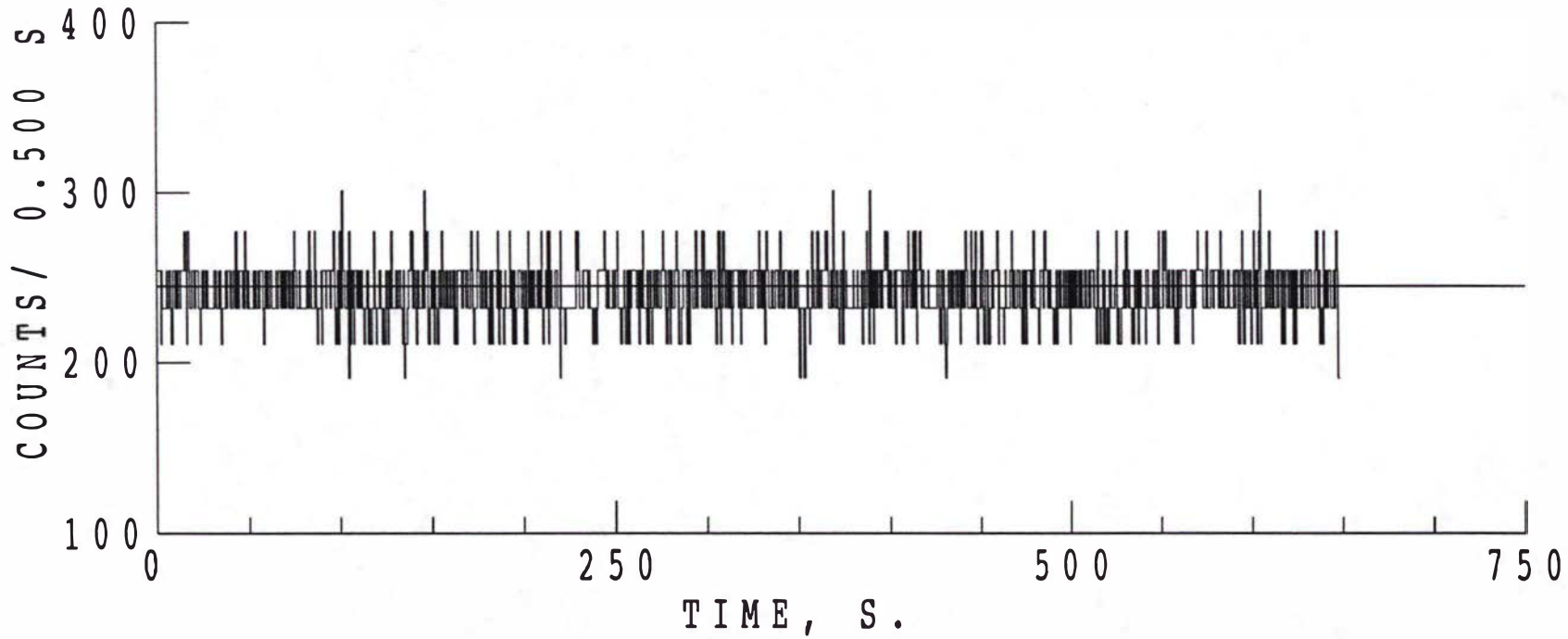
ULYSSES RT 16/ 7/97

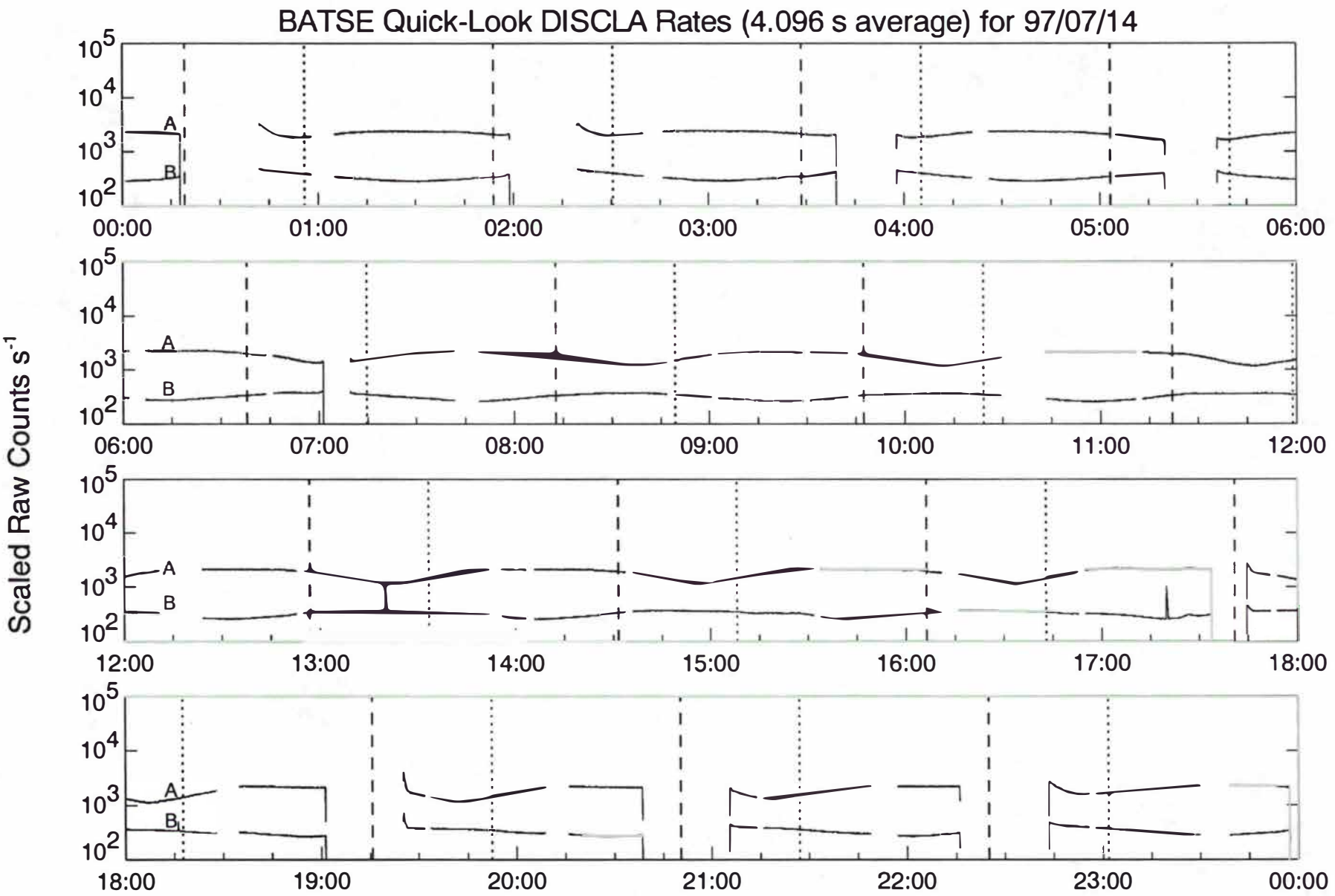
14/ 7/97 41112.480 s

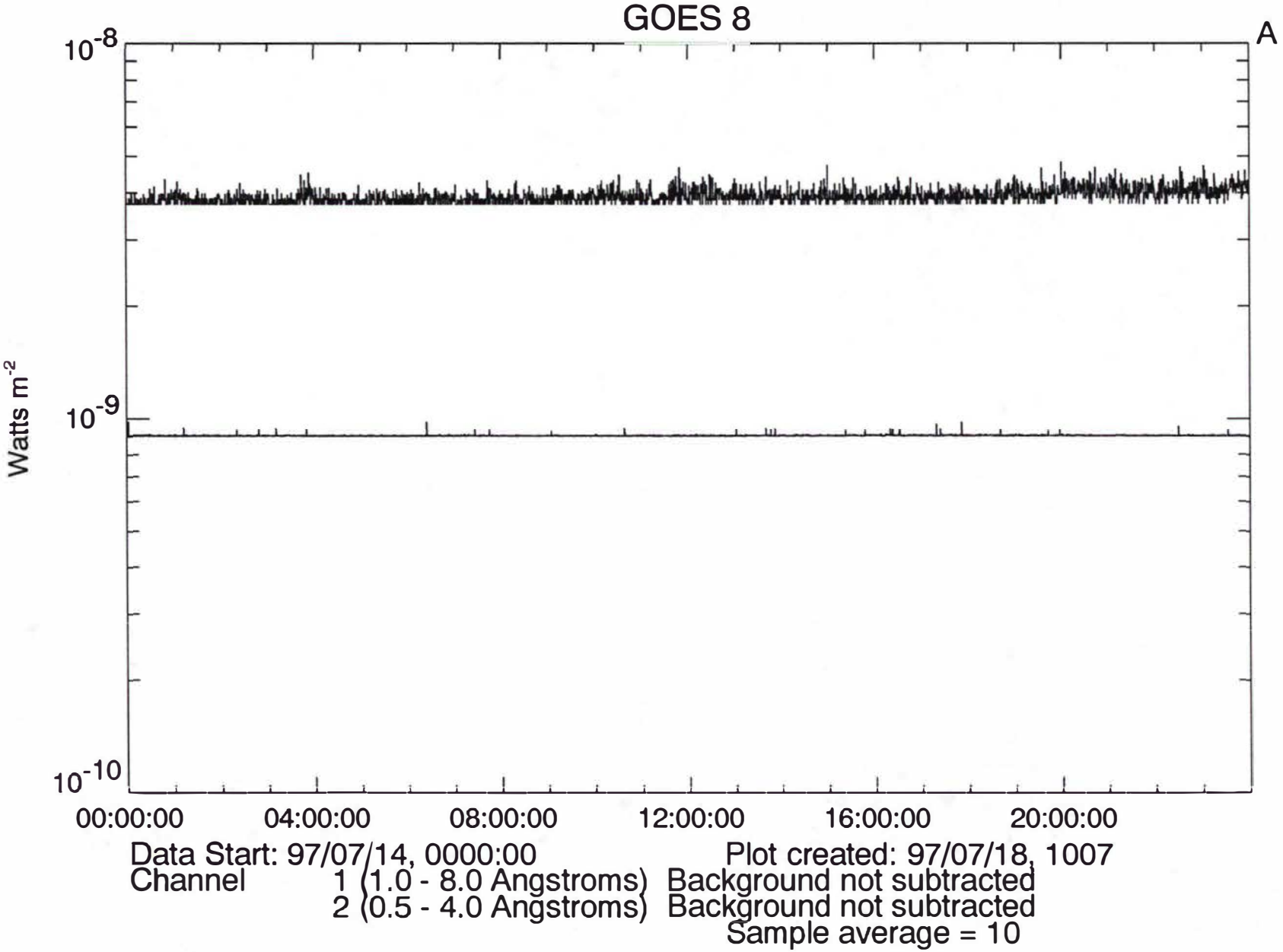
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

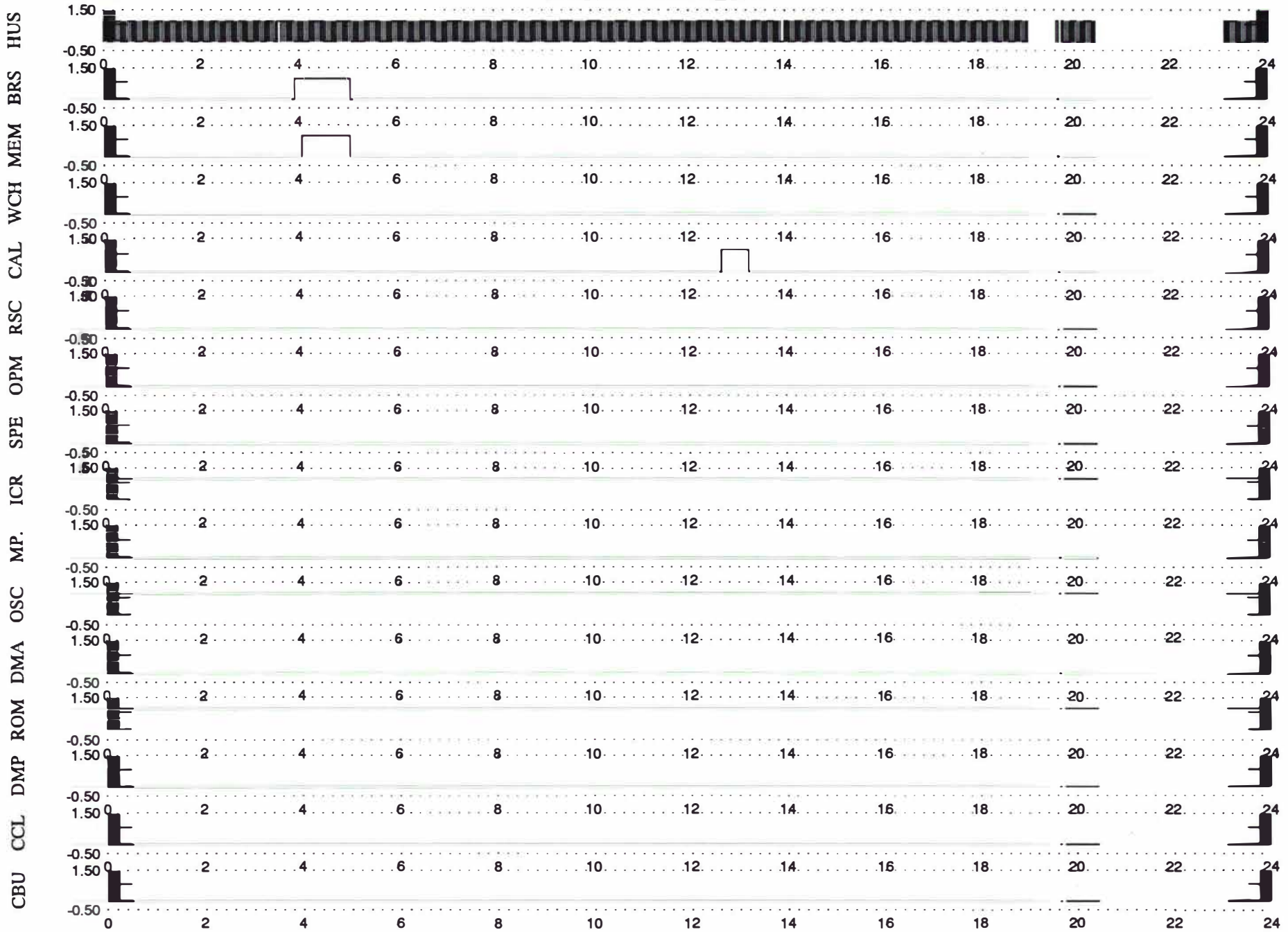



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/14
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/07/18, 1008 EDT
A: Channel 0 Most 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
A
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: 97/07/14, 0000:00
Plot created: 97/07/18, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

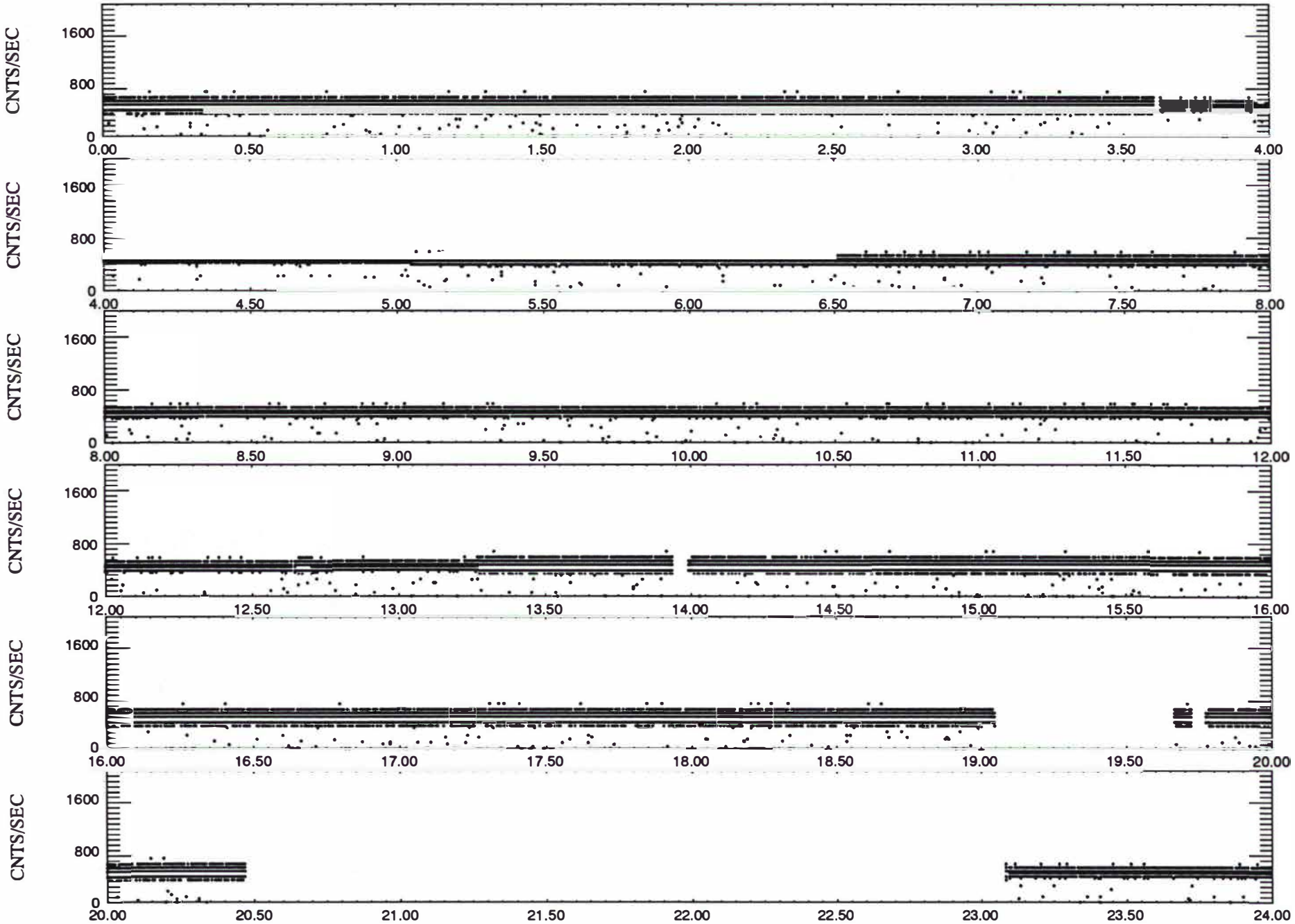
HUS MODES EDR day 195, year 1997 to day 195, year 1997 10/24/97

BURST NUMBER 2



HUS 2A, MODE 1, NOT AVERAGED EDR day 195, year 1997 to day 195, year 1997 10/24/97

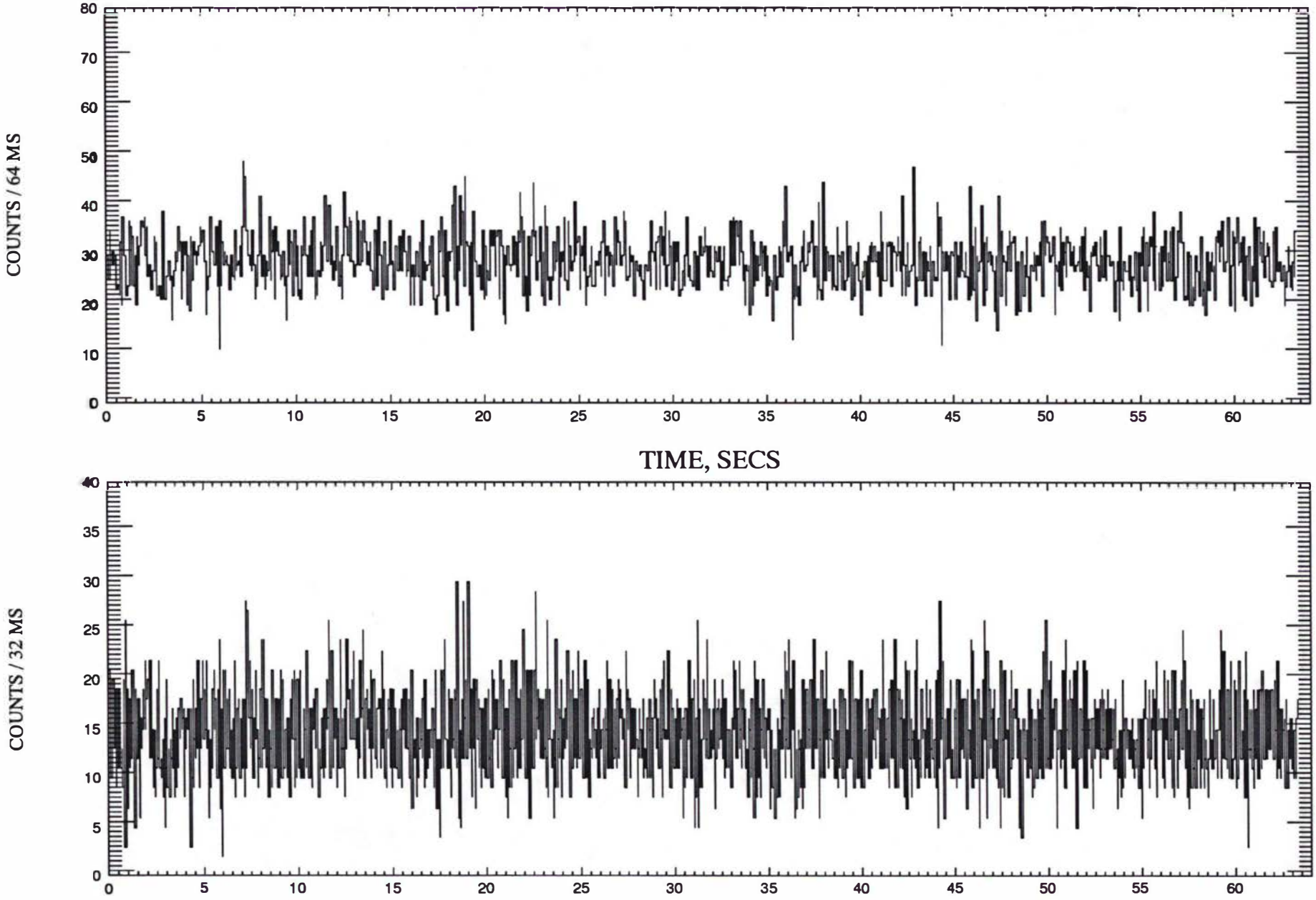
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 195, year 1997 10/24/97

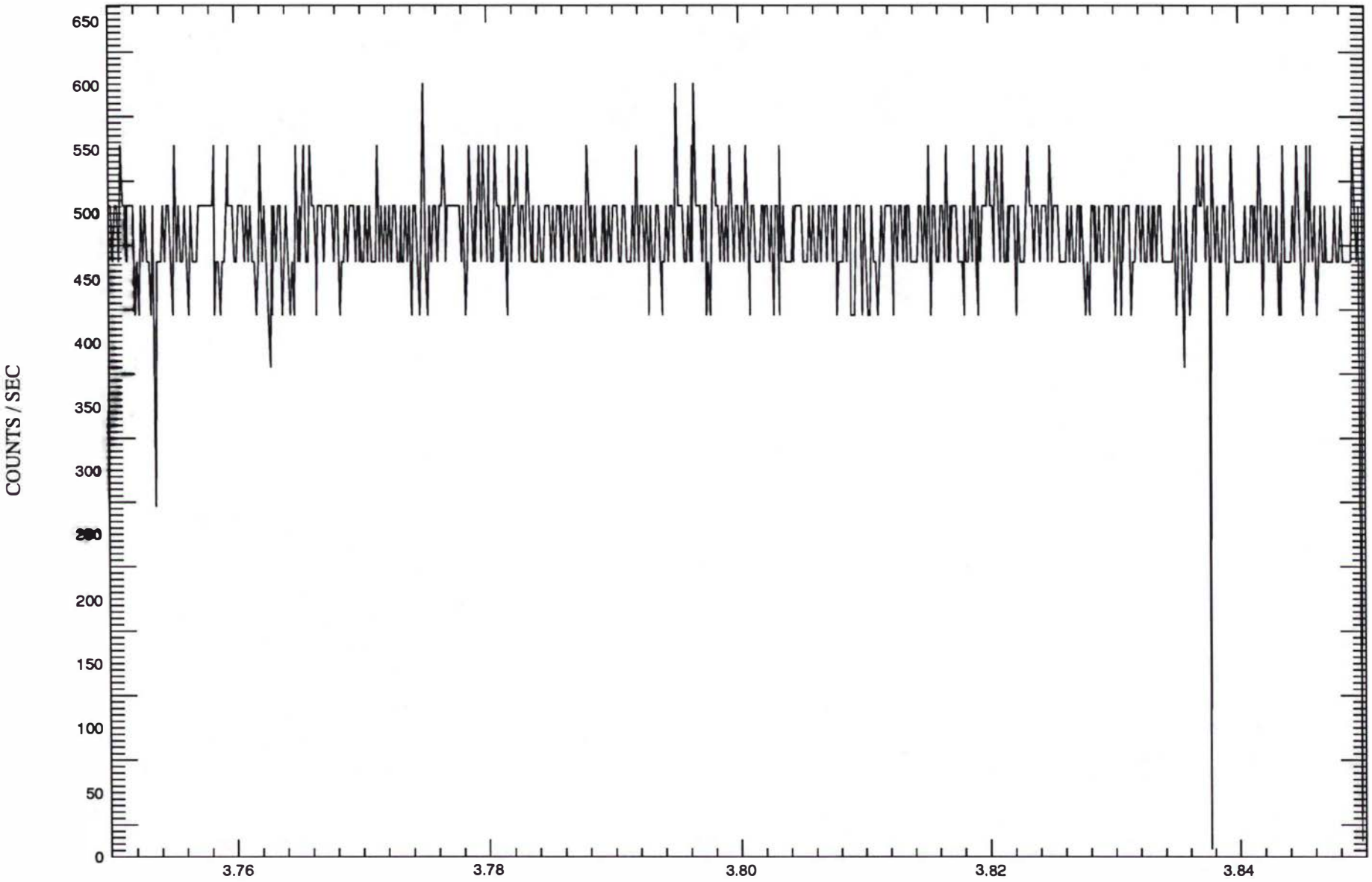
Burst Counter 2 at UT= 3.795146848891 h=13662.529 s 03:47:42.529



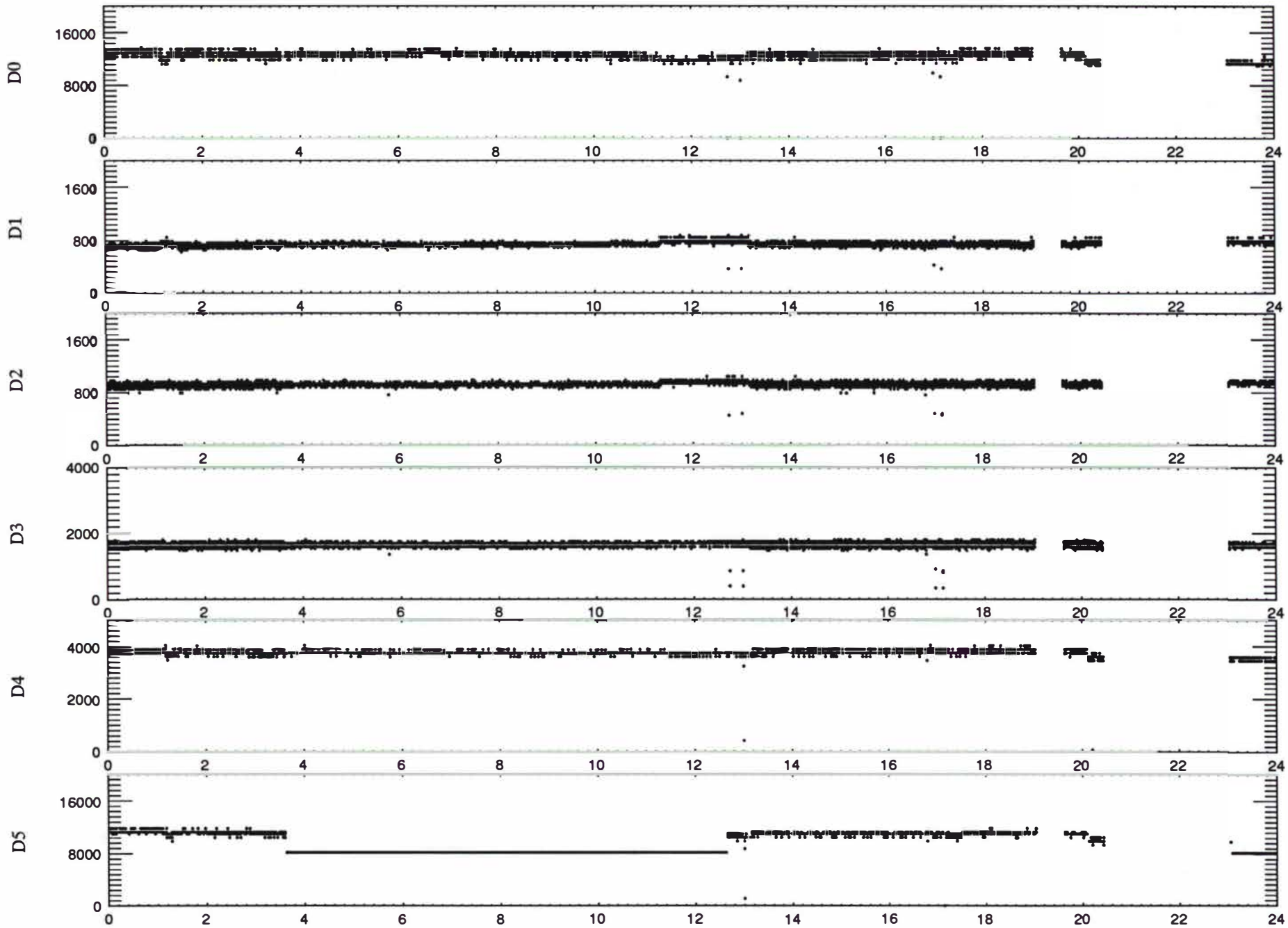
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 195, year 1997 to day 195, year 1997 10/24/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 195, year 1997 to day 195, year 1997 10/24/97



Date: Oct 7 '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?

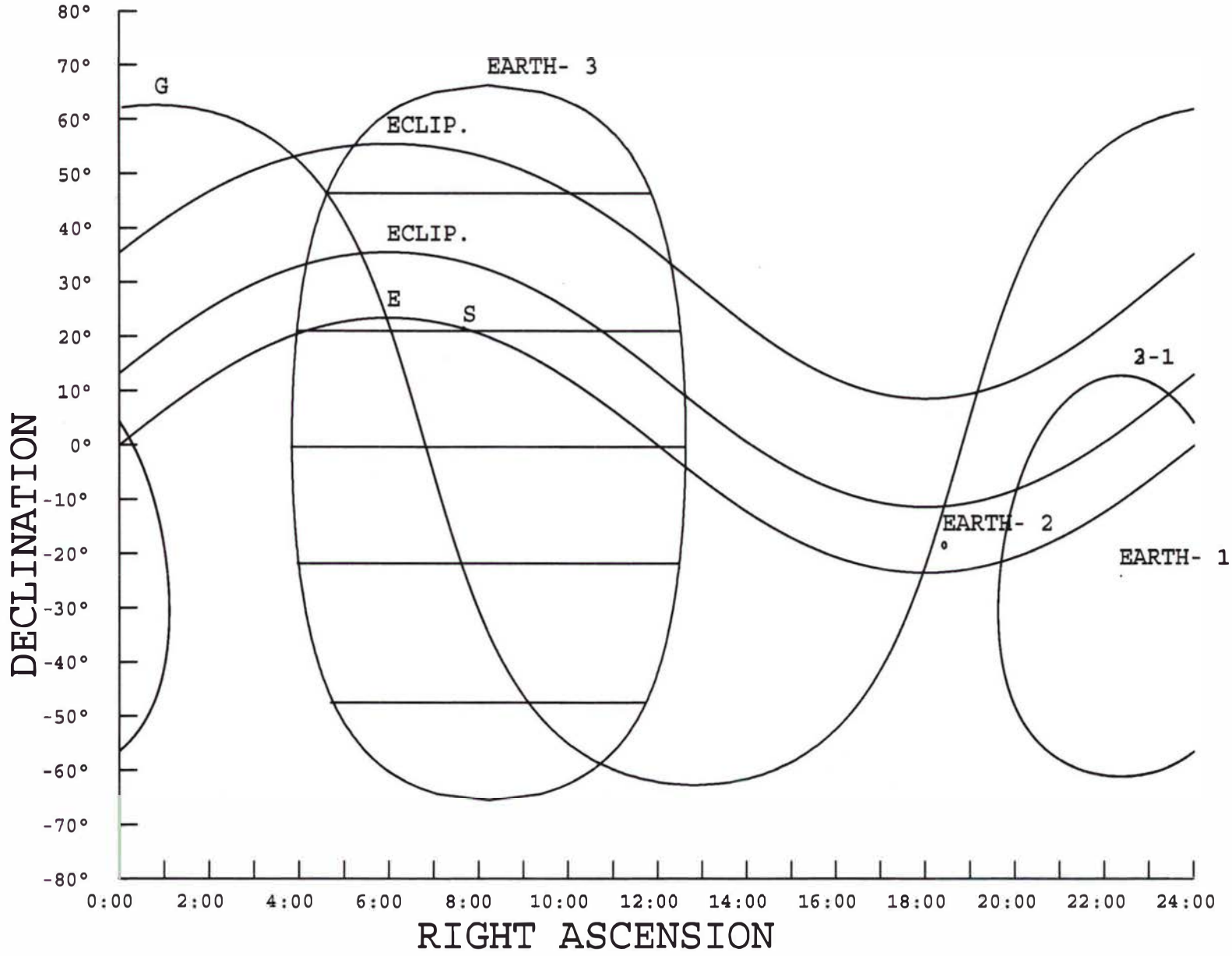
☑ ACCESS and MBL4 databases updated?

SAX added Jan 7

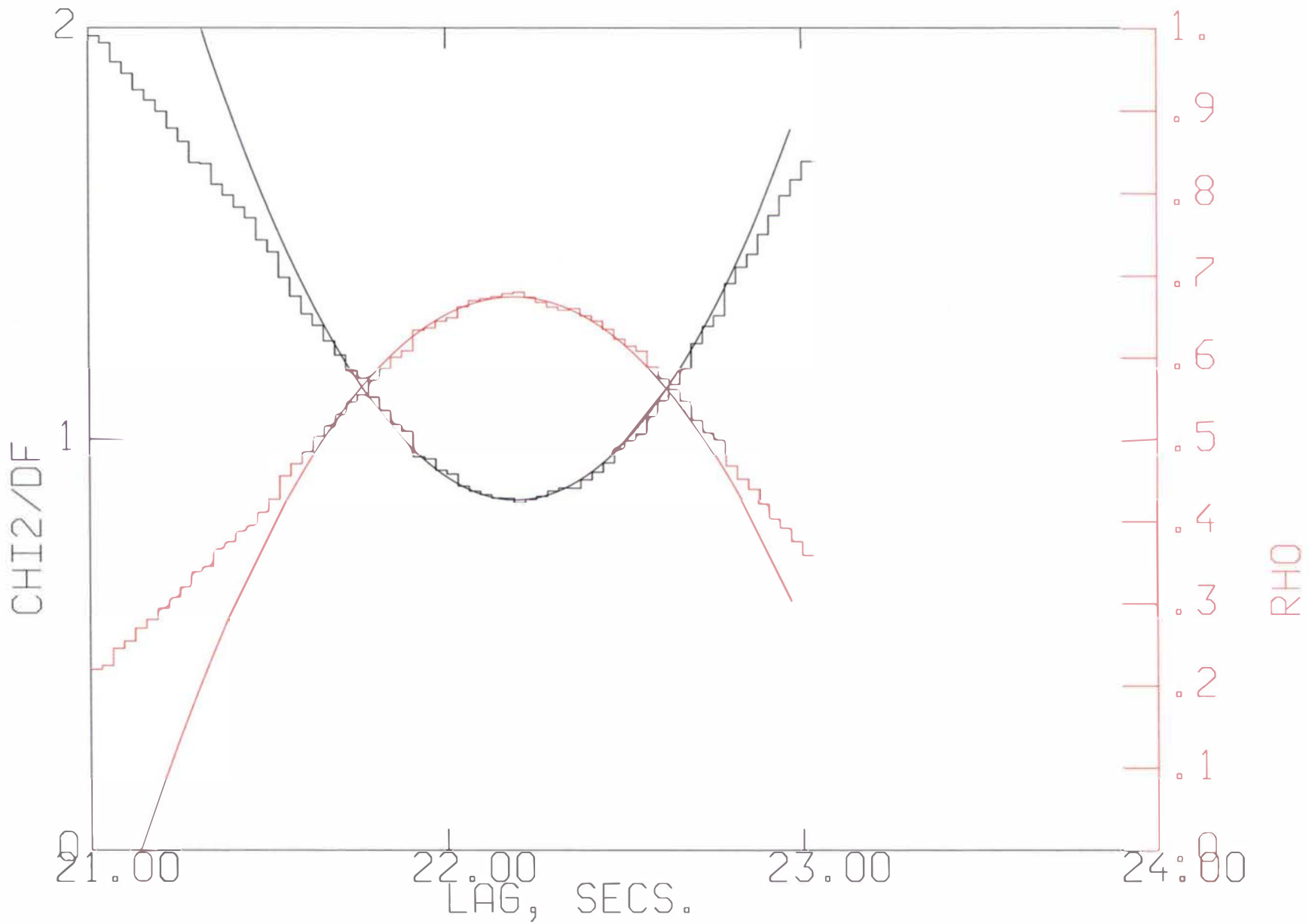
EVENT OF JUL 15, 1997 15:01

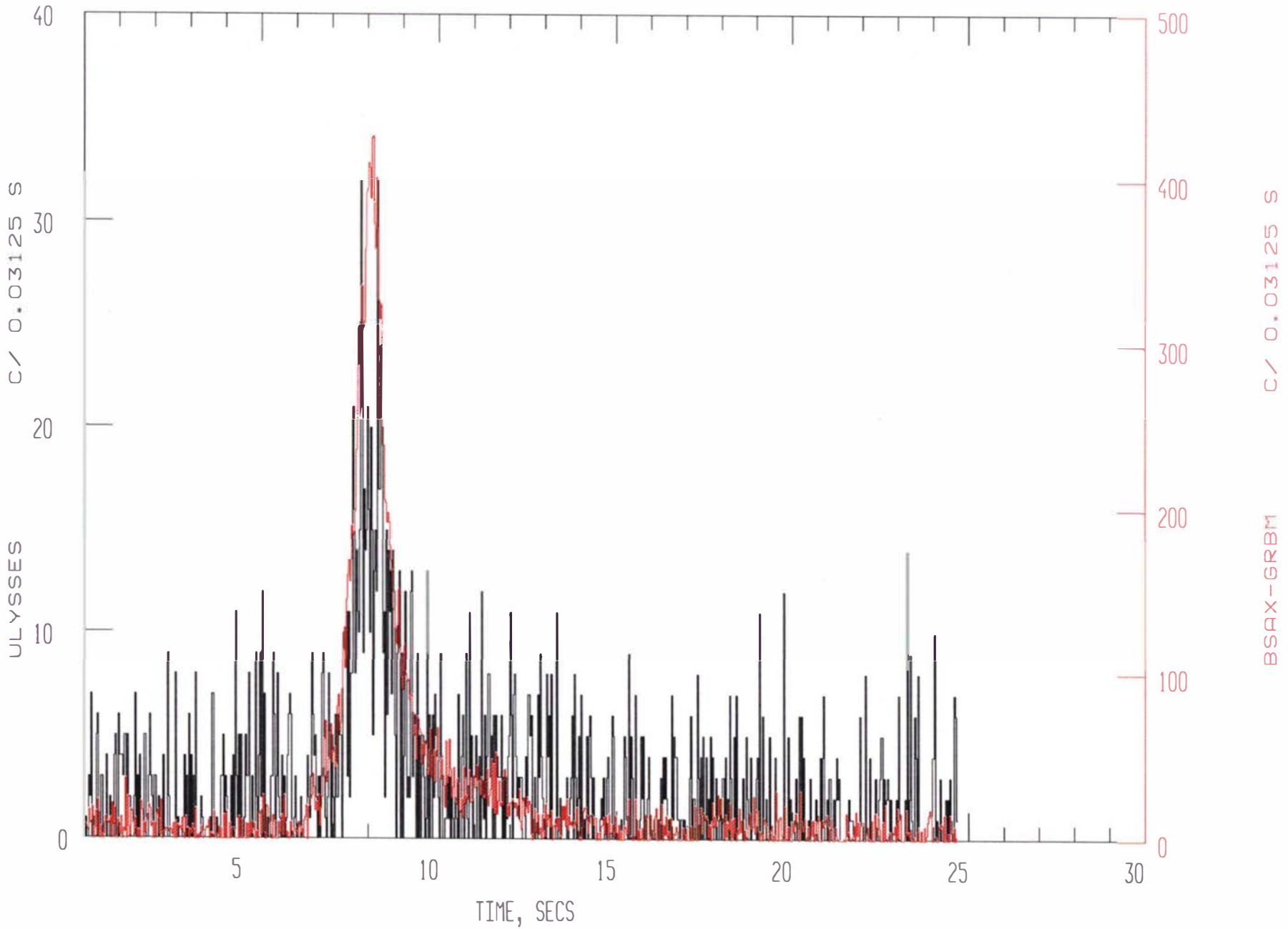
7/ 1/10

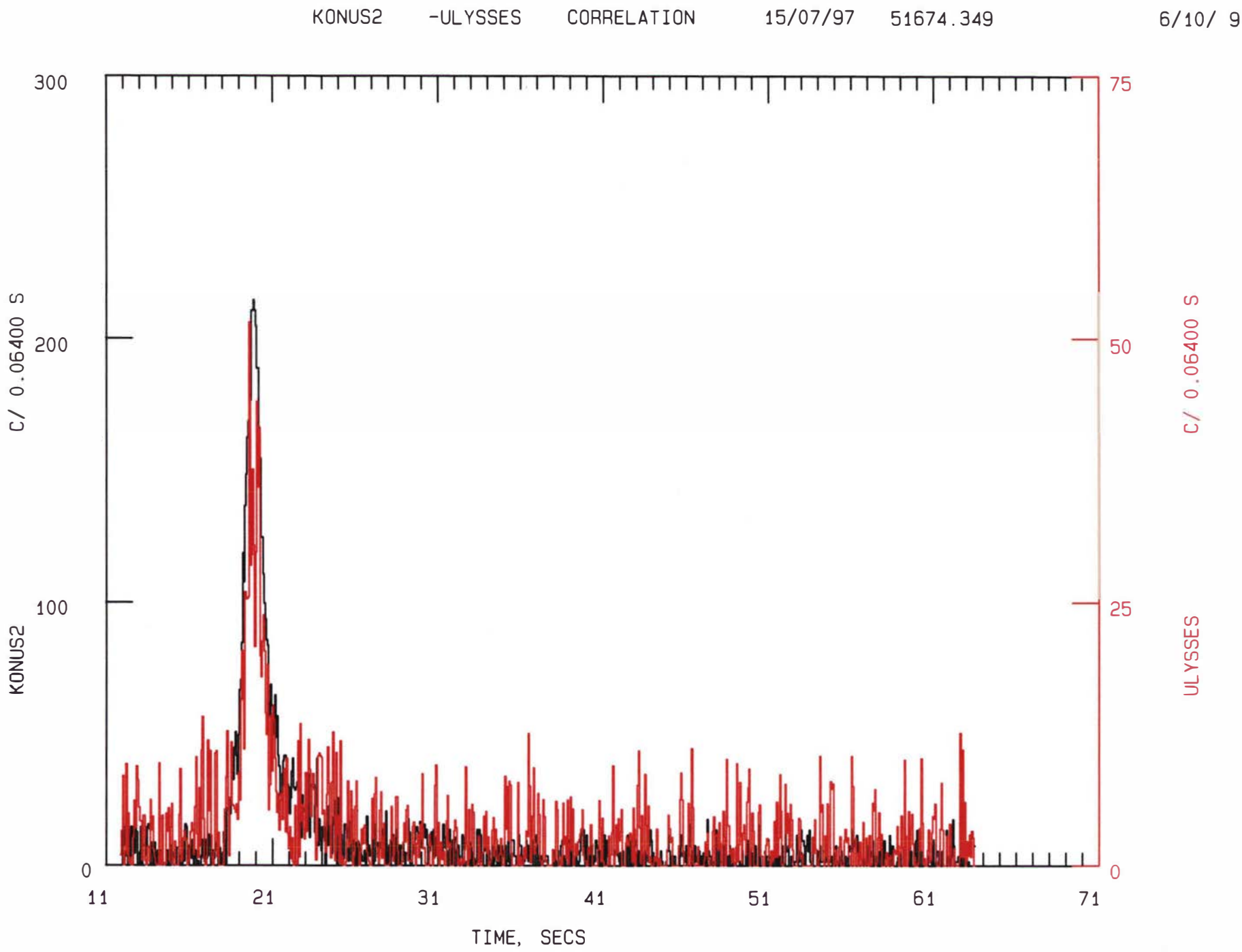
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS2 3 SAX



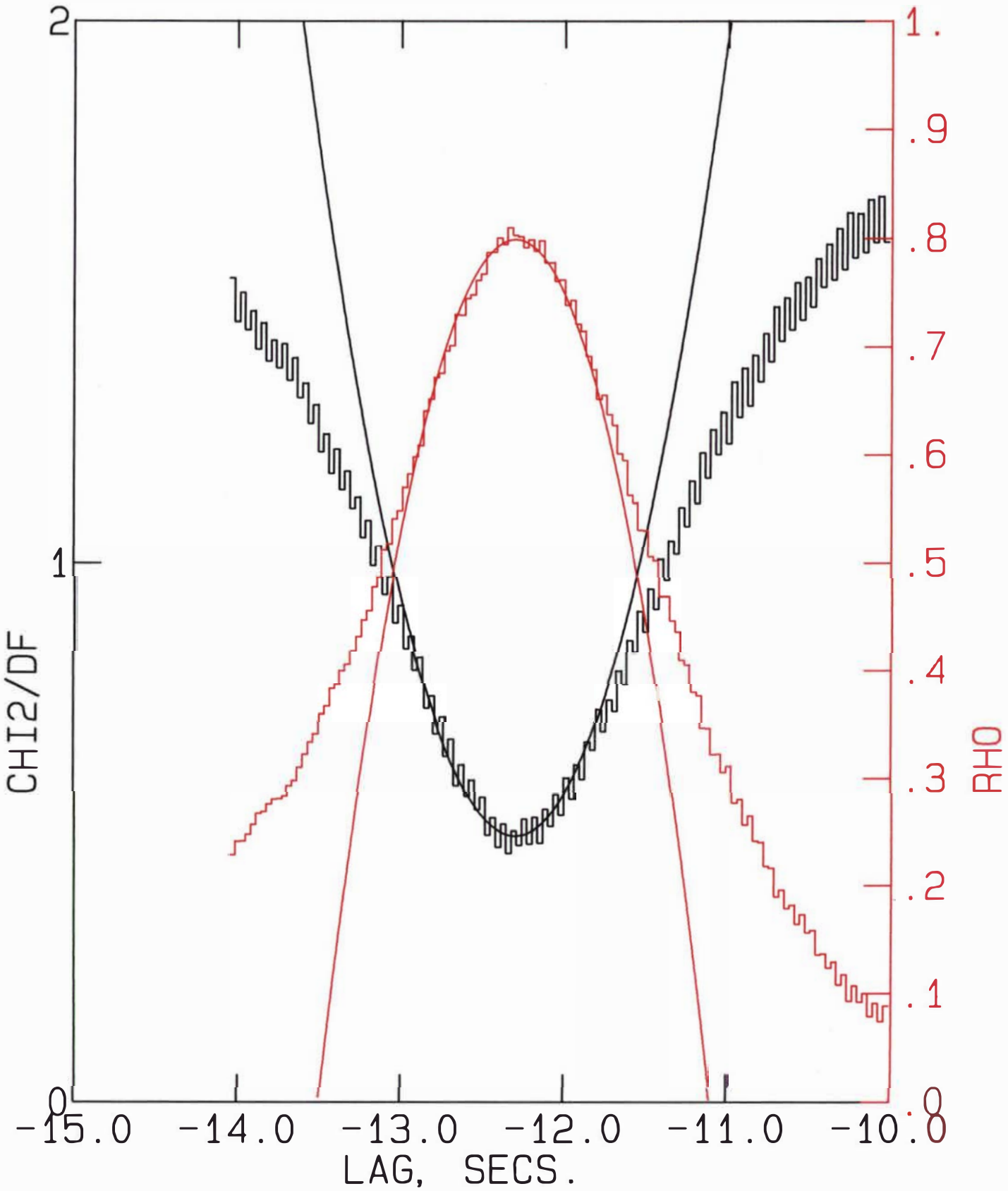
ULYSSES -BSAX-GRBM CORRELATION 15/07/97 54062.369

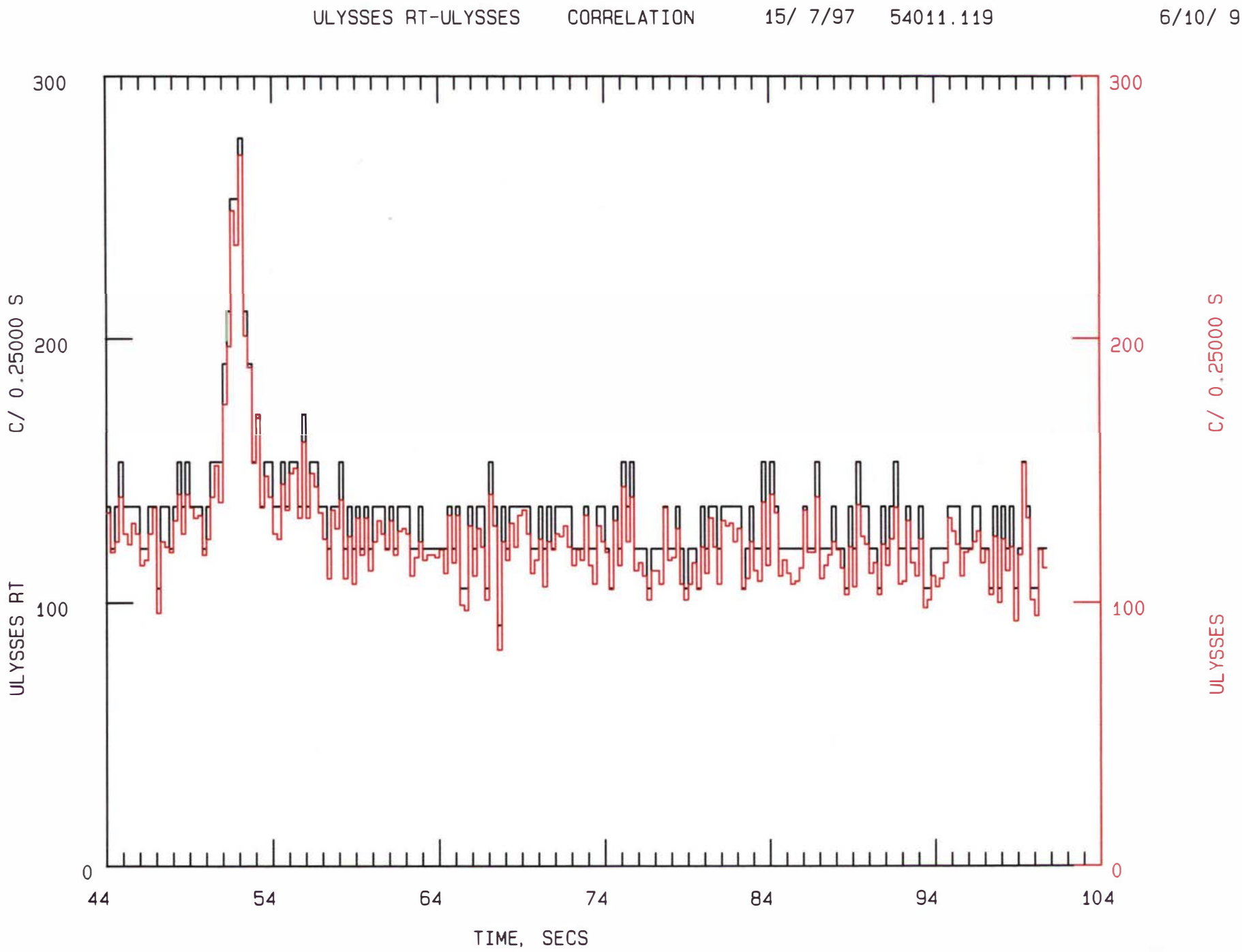



ULYSSES -BSAX-GRBM CORRELATION 15/07/97 54062.369
ULYSSES
C/ 0.03125 S
BSAX-GRBM
C/ 0.03125 S
TIME, SECS
0
10
20
30
40
100
200
300
400
500
5
10
15
20
25
30

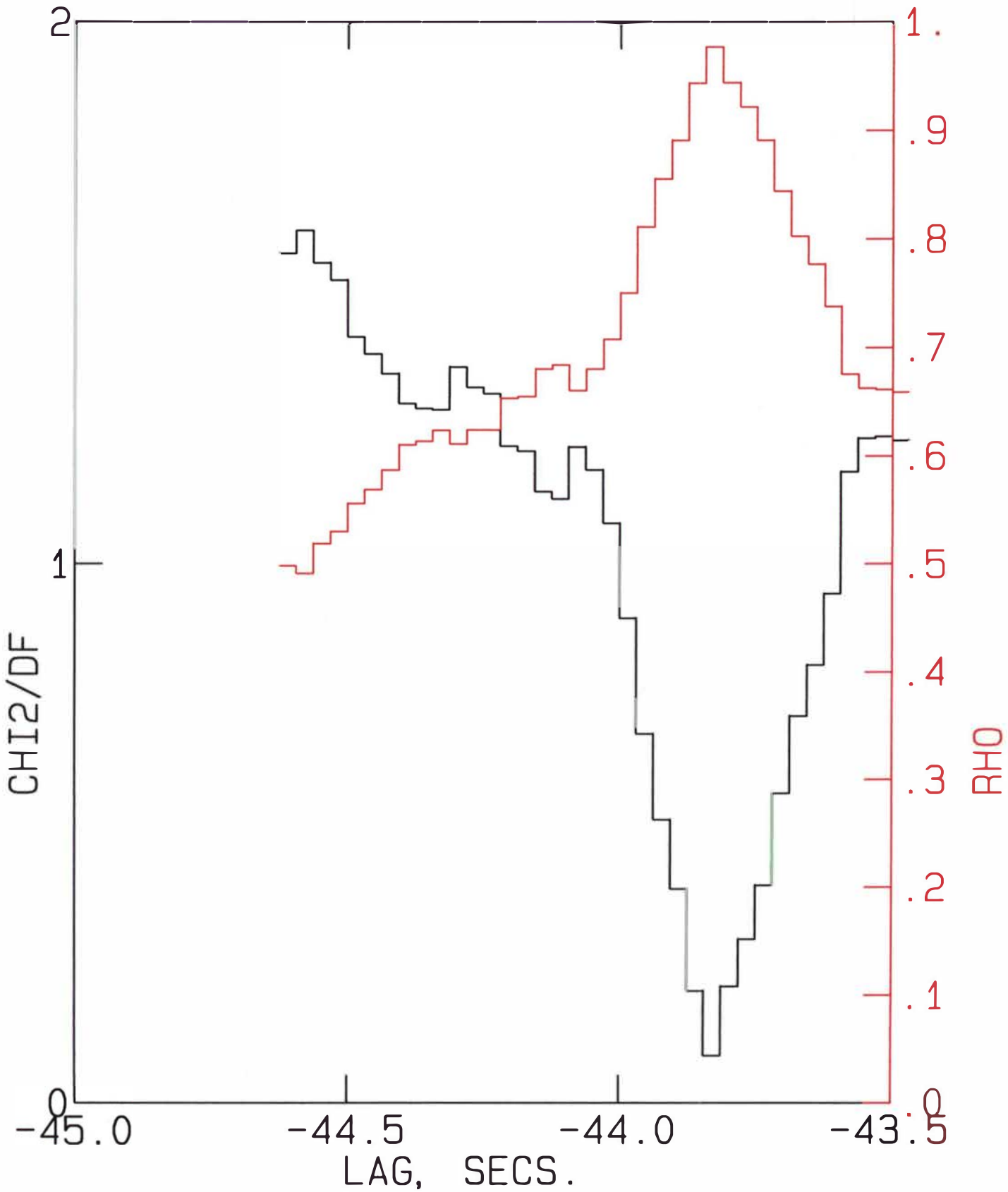

KONUS2 -ULYSSES CORRELATION 15/07/97 51674.349 6/10/ 9
300
200
100
0
C/ 0.06400 S
KONUS2
75
50
25
0
C/ 0.06400 S
ULYSSES
11
21
31
41
51
61
71
TIME, SECS

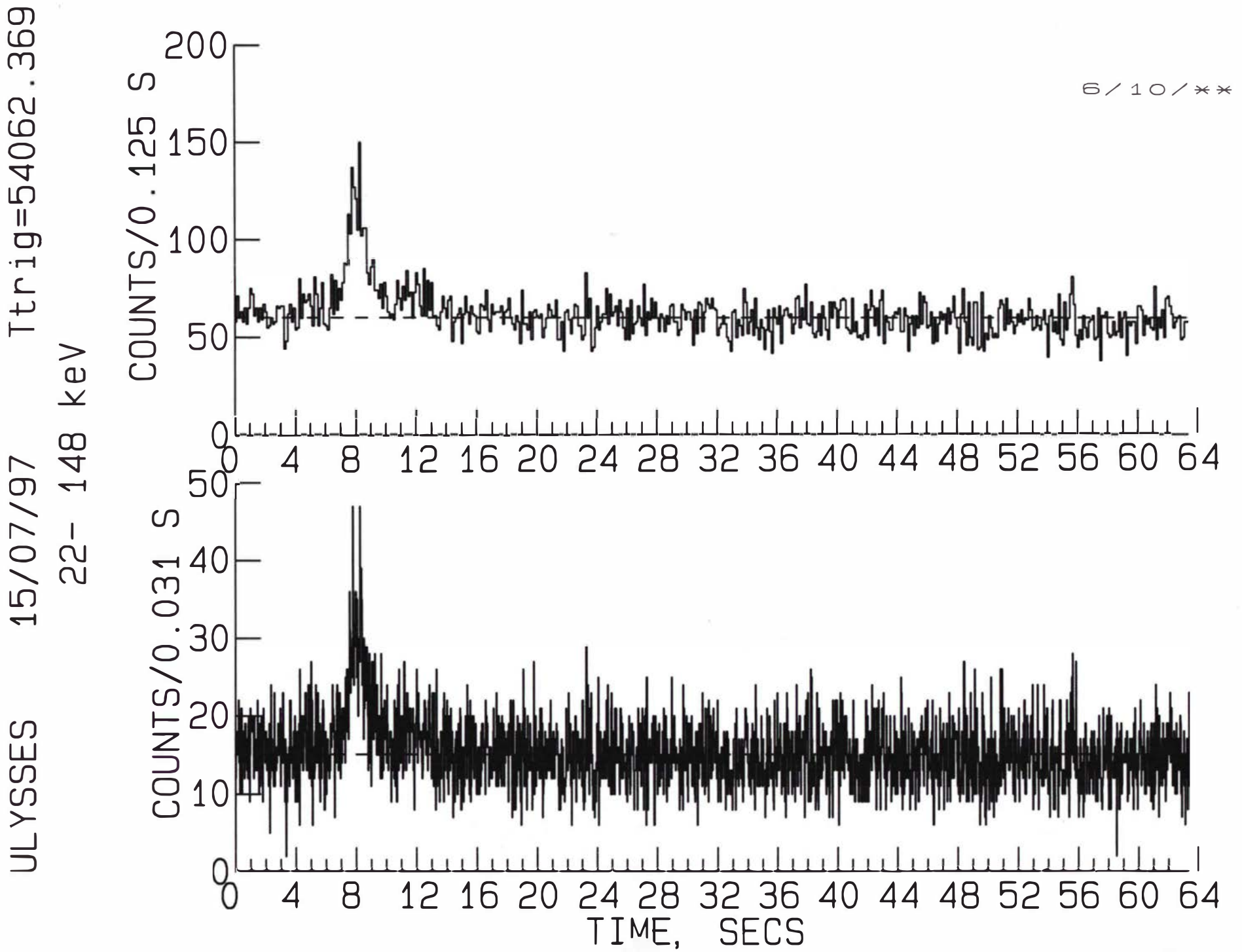
KONUS2 -ULYSSES CORRELATION 15/07/97 51674.349




ULYSSES RT-ULYSSES CORRELATION 15/ 7/97 54011.119 6/10/ 9
300
200
100
0
C/ 0.25000 S
ULYSSES RT
44
54
64
74
84
94
104
TIME, SECS
ULYSSES

ULYSSES RT-ULYSSES CORRELATION 15/ 7/97 54011.119



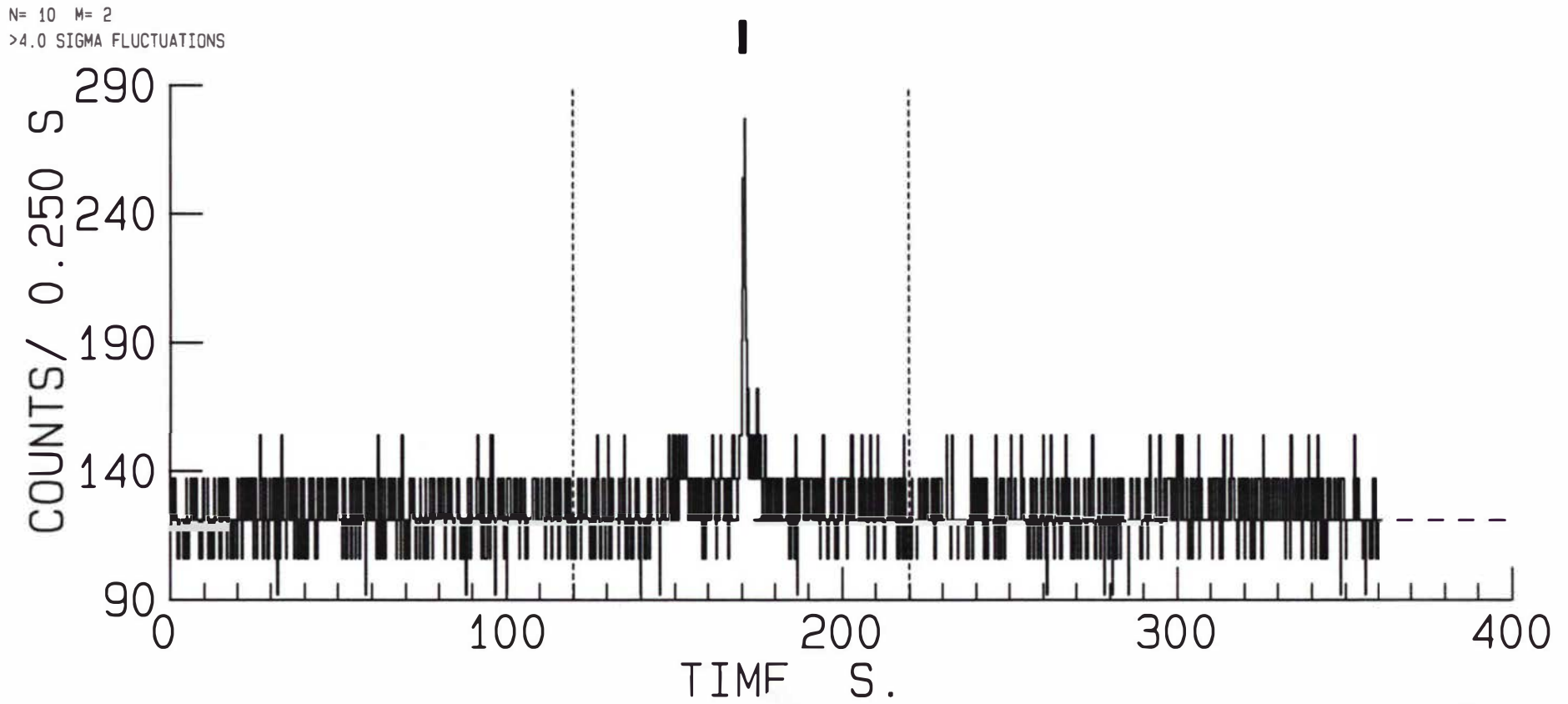

ULYSSES 15/07/97 Ttrig=54062.369
22- 148 keV
6/10/**
COUNTS/0.125 S
200
150
100
50
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
COUNTS/0.031 S
50
40
30
20
10
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
TIME, SECS

ULYSSES RT

6/10/ 9

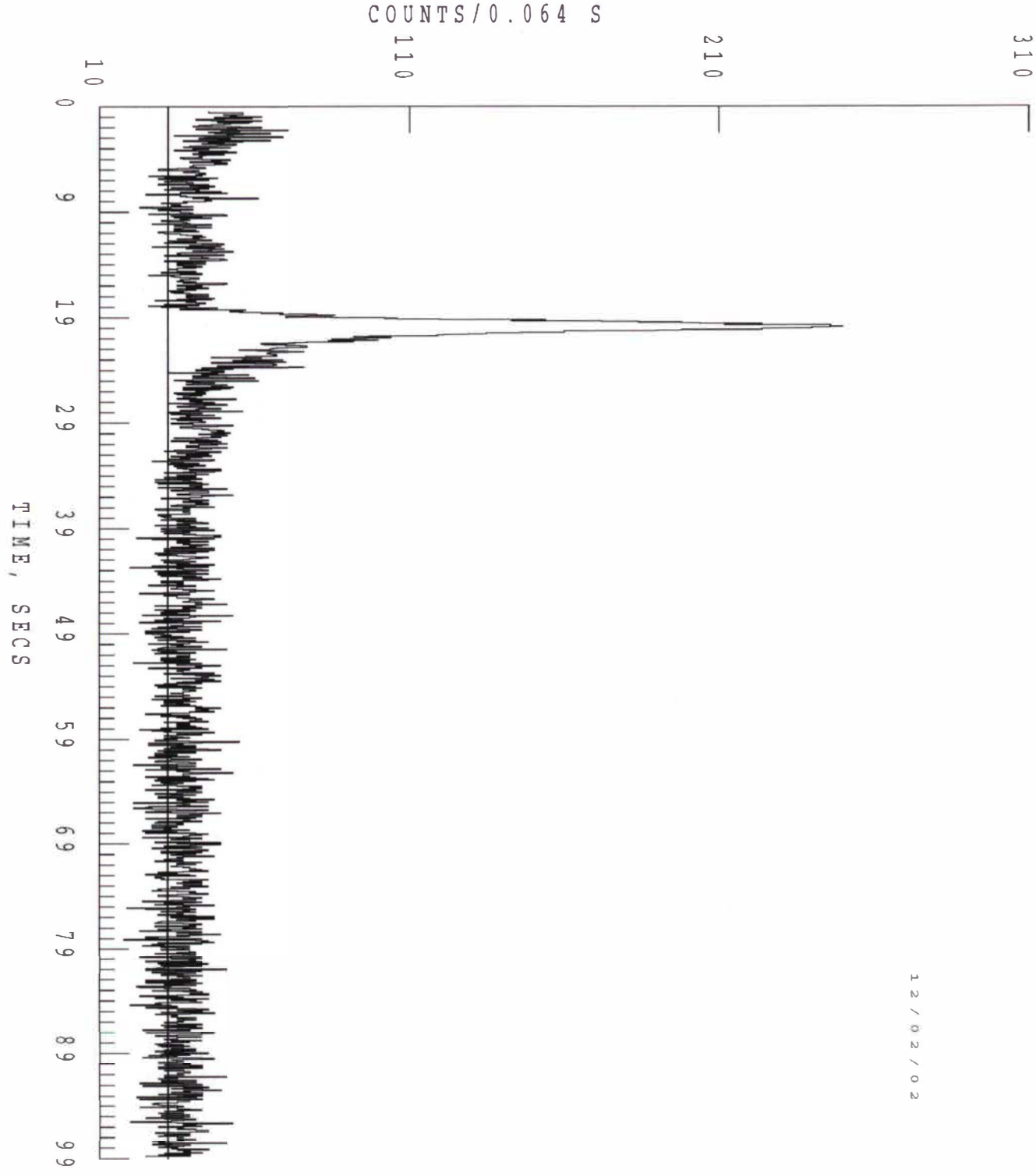
15/ 7/97 53892.129 s

22- 148 keV



KONUS2 15/07/97 51674.349

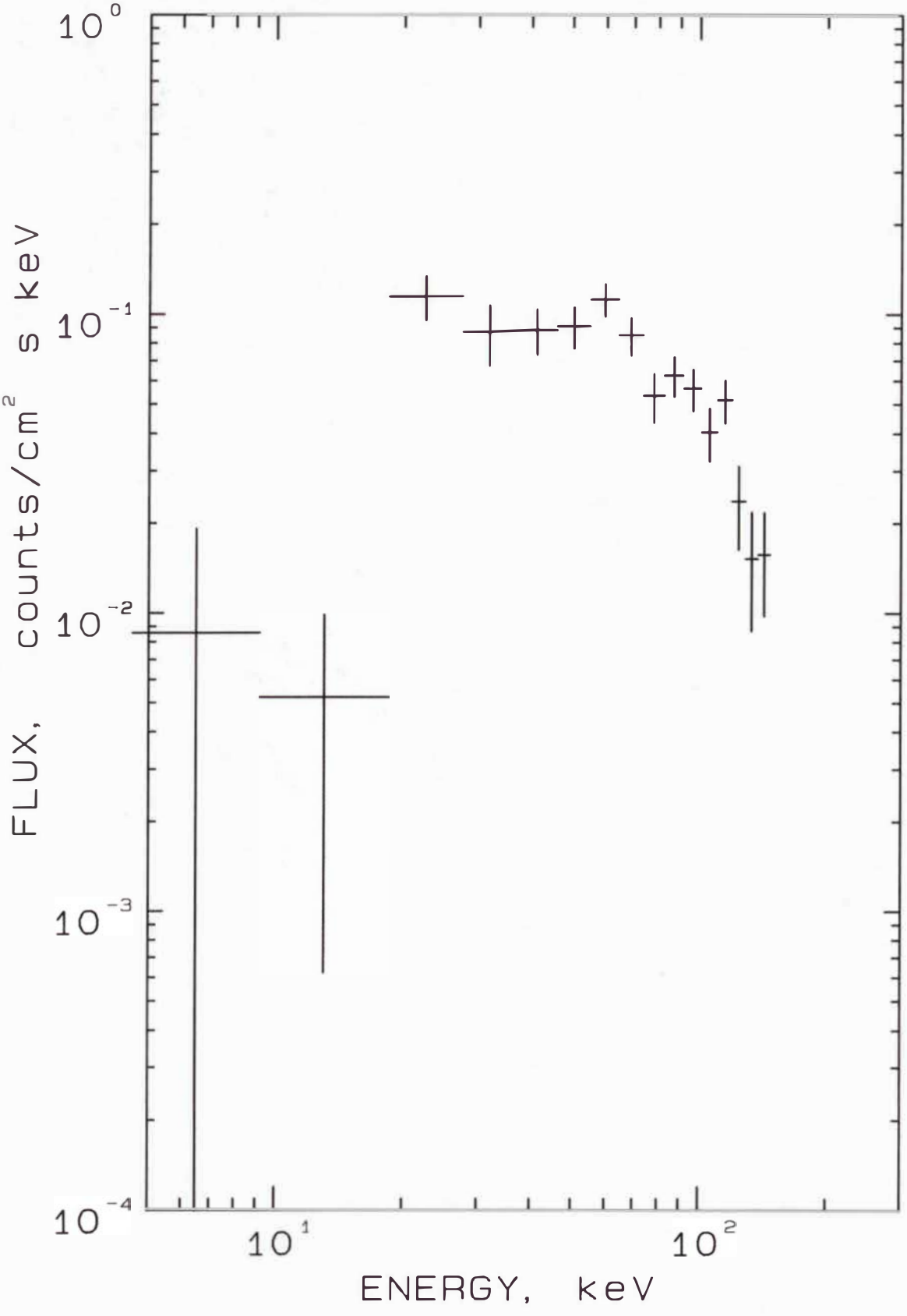
50- 200 keV

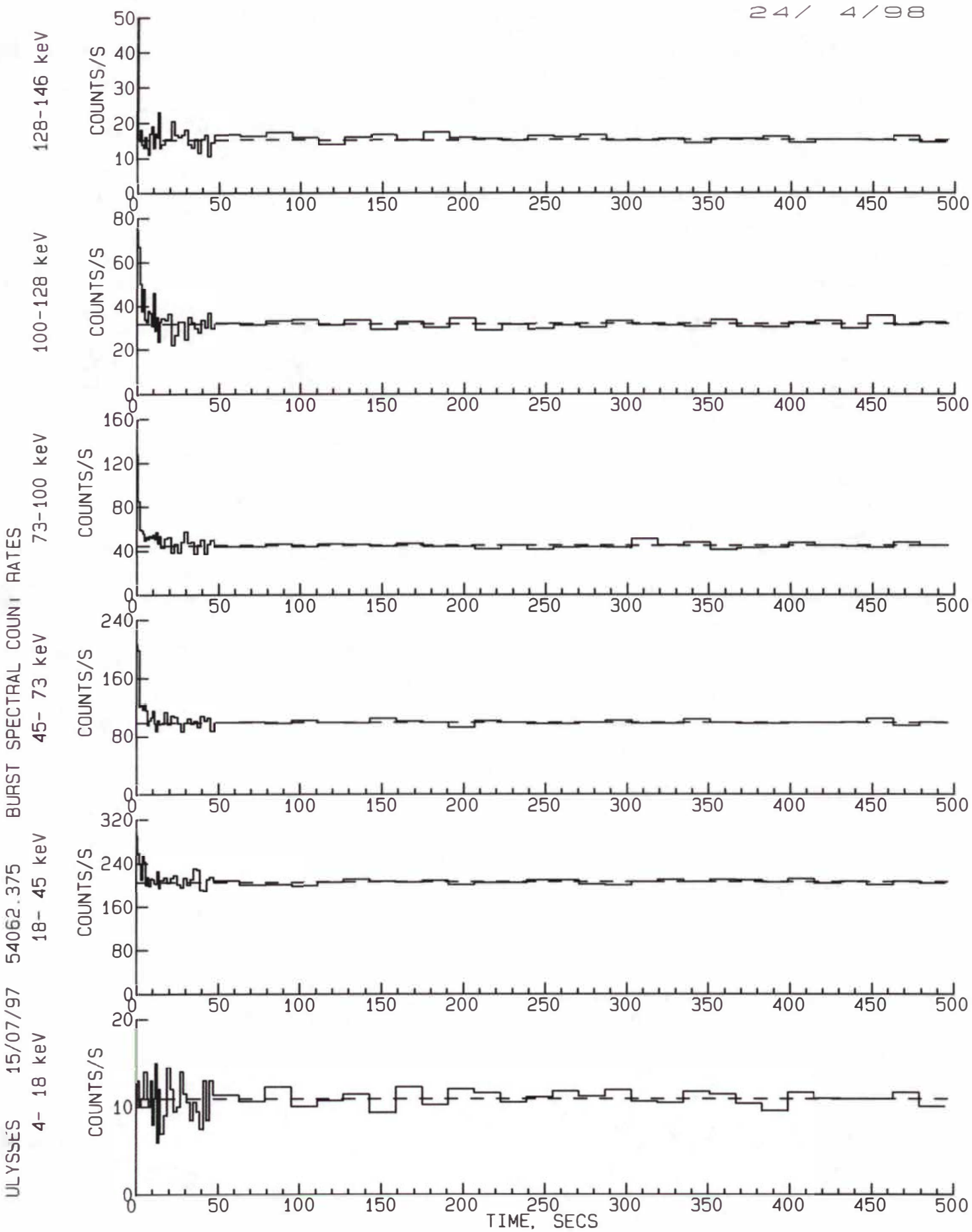


ULYSSES 15/07/97 54062.375

24/ 4/98

SPECTRUM INTEGRATED OVER 10.8 SECONDS, INTERVALS 2 TO 13




24/ 4/98
ULYSSES 15/07/97 54062.375 BURST SPECTRAL COUNT RATES
128-146 keV
100-128 keV
73-100 keV
45- 73 keV
18- 45 keV
4- 18 keV
COUNTS/S
TIME, SECS

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)
[illegible] Aug 97 17:45:2.272UT confirmed by Ulysses,BATSE,RXTE

Regards,
padmini

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

From vnp@isac.ernet.in Wed Sep 24 03:44 PDT 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
          id AA23708; Wed, 24 Sep 1997 14:07:17 GMT
    ıthentication-Warning: sx07.ernet.in: vnp owned process doing -bs
Date: Wed, 24 Sep 1997 14:07:17 +0000 (GMT)
X-Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: SROSS-C2 GRB970715
Mime-Version: 1.0

Dear Prof. Hurley,
SROSS-C2 recorded a GRB lasting 2 s on 15 July 97 at 14:21:33.22UT.
Has anyone else seen this event??
Regards,
padmini

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.

14:21:34

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).

P13 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 kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
D[illegible]: Fri, 22 Aug 1997 17:22:32 -0400
[illegible]hurley@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,

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

Here are the details.

Pete

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

July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
[illegible] 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 BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

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

From SAHI@fender.msfc.nasa.gov Fri Jul 18 08:26 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 IAA17719; Fri, 18 Jul 1997 08:26:50 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 18 Jul 1997 10:26:37 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970718102637.228014fb@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6308
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6308
EVENT OF 1997 JUL 15 DAY OF YEAR=196
EVENT CROSSING TIME AT BATSE : 44582. S. OR 12:23:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 271.000 -65.000
BATSE PEAK COUNTING RATE: 1600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 7/ 97 IS:
RA= 154.928 DEC= 24.159 DIST= 5.955 AU
BATSE-ULYSSES DISTANCE = 890933046. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1605.97 SECS.
CROSSING TIME AT ULYSSES IS 46188. S. OR 12:49:47 +/- 508.52 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 97 IS:
RA= 191.452 DEC= -5.056 DIST= 1.352 AU
MARS-BATSE DISTANCE = 202242304. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -105.40 SECS.
CROSSING TIME AT MARS IS 44477. S. OR 12:21:16 +/- 114.08 SECONDS

BATSE BURST TRIGGER

NO.: 6308

TIME: TJD=0644 SECONDS=44582

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=94.2 AZIMUTH=197.2 ERROR=11 DEGREES

COMMENTS:
BURST, SINGLE PULSE, DUR.~8 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6308	970715	10644	44582	1600	271	-65	8

BATSE BURST# 6308

ULYSSES RT 18/ 7/97

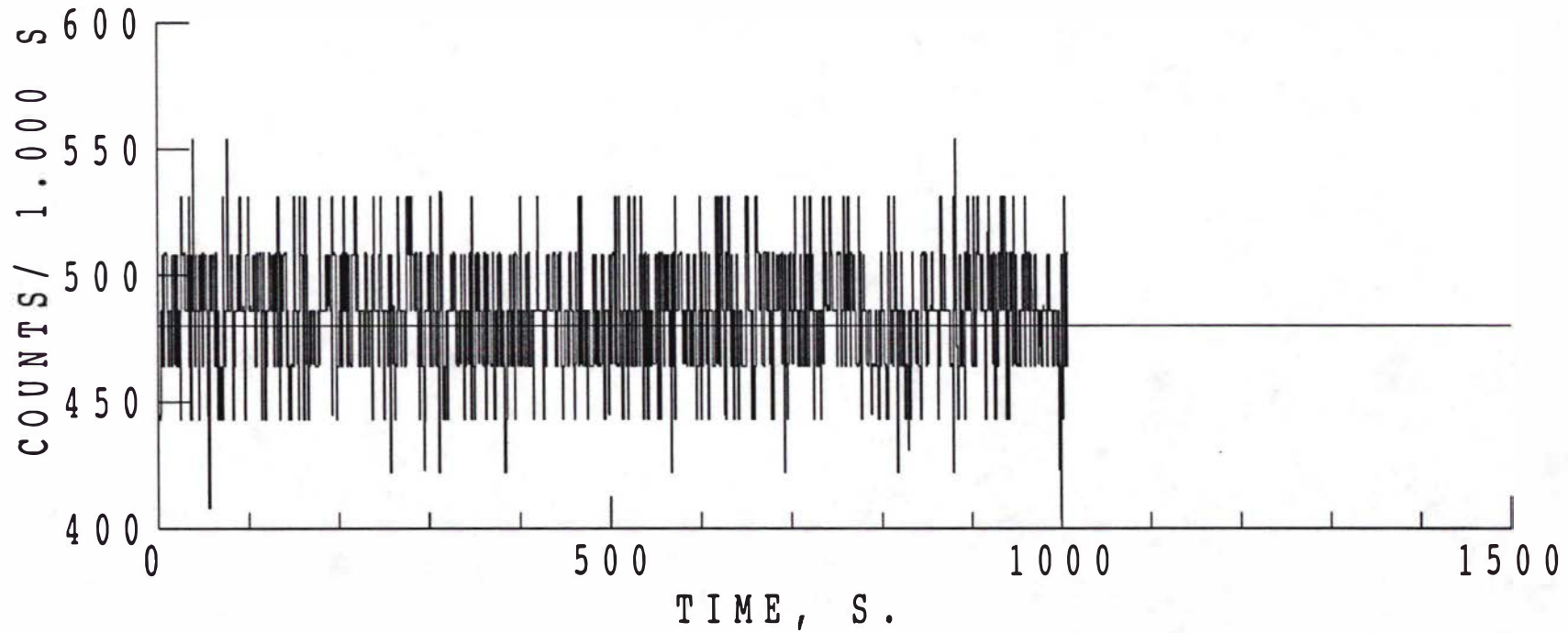
15/ 7/97 45684.035 s

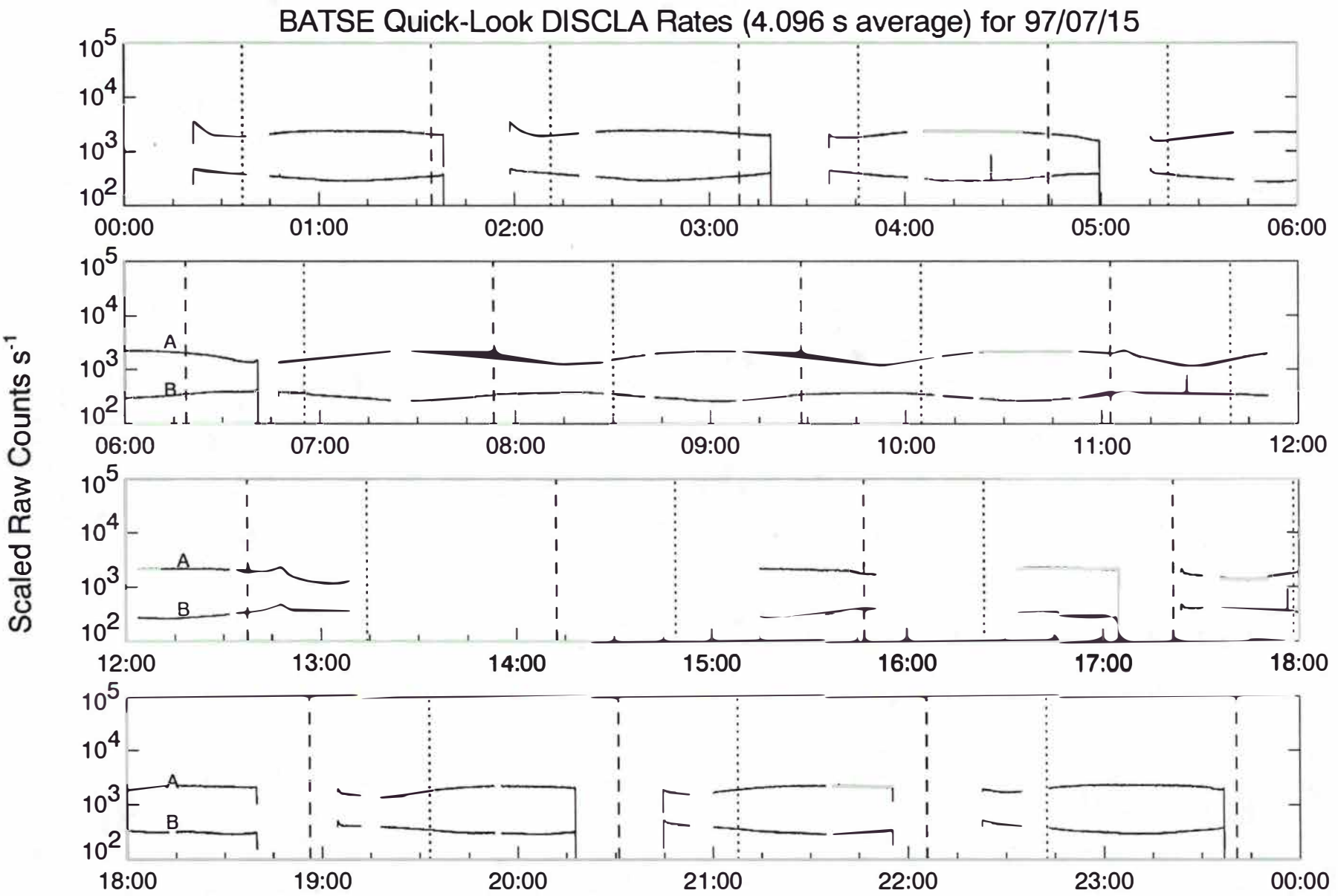
0.500 S INTERVALS REGROUPED BY 2

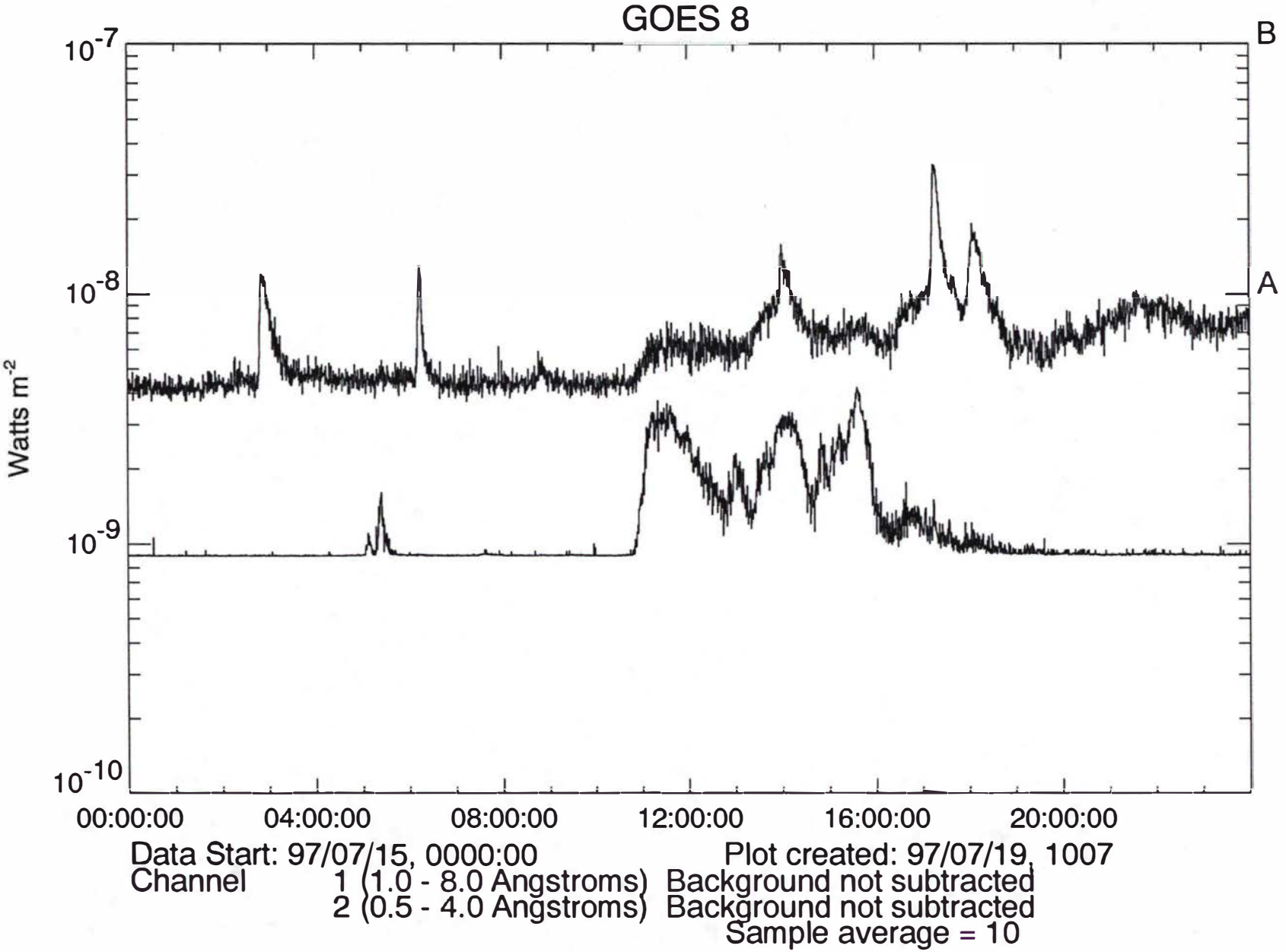
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

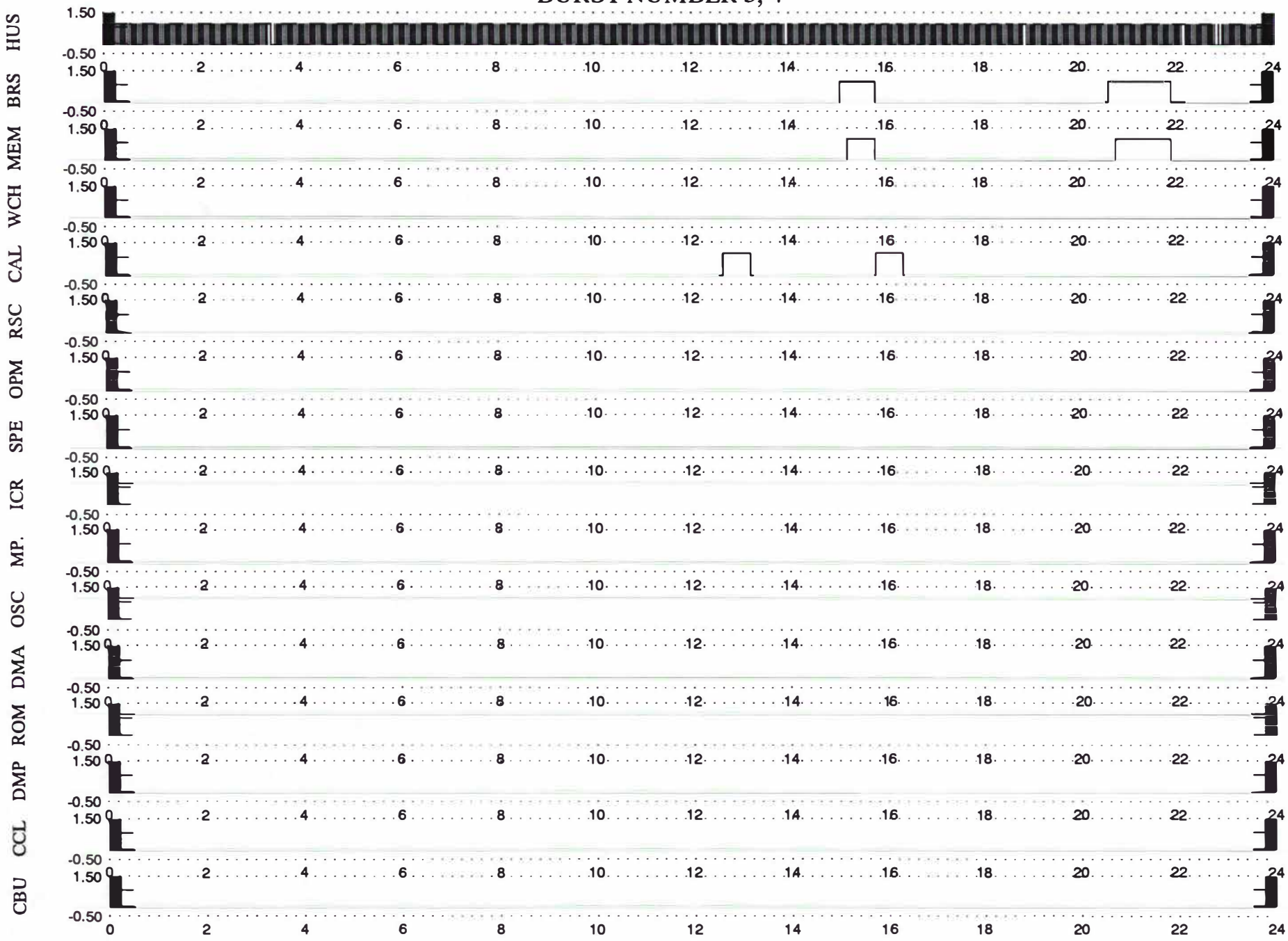



BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/15
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/07/19, 1008 EDT
A: Channel 0 Most 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: 97/07/15, 0000:00
Plot created: 97/07/19, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

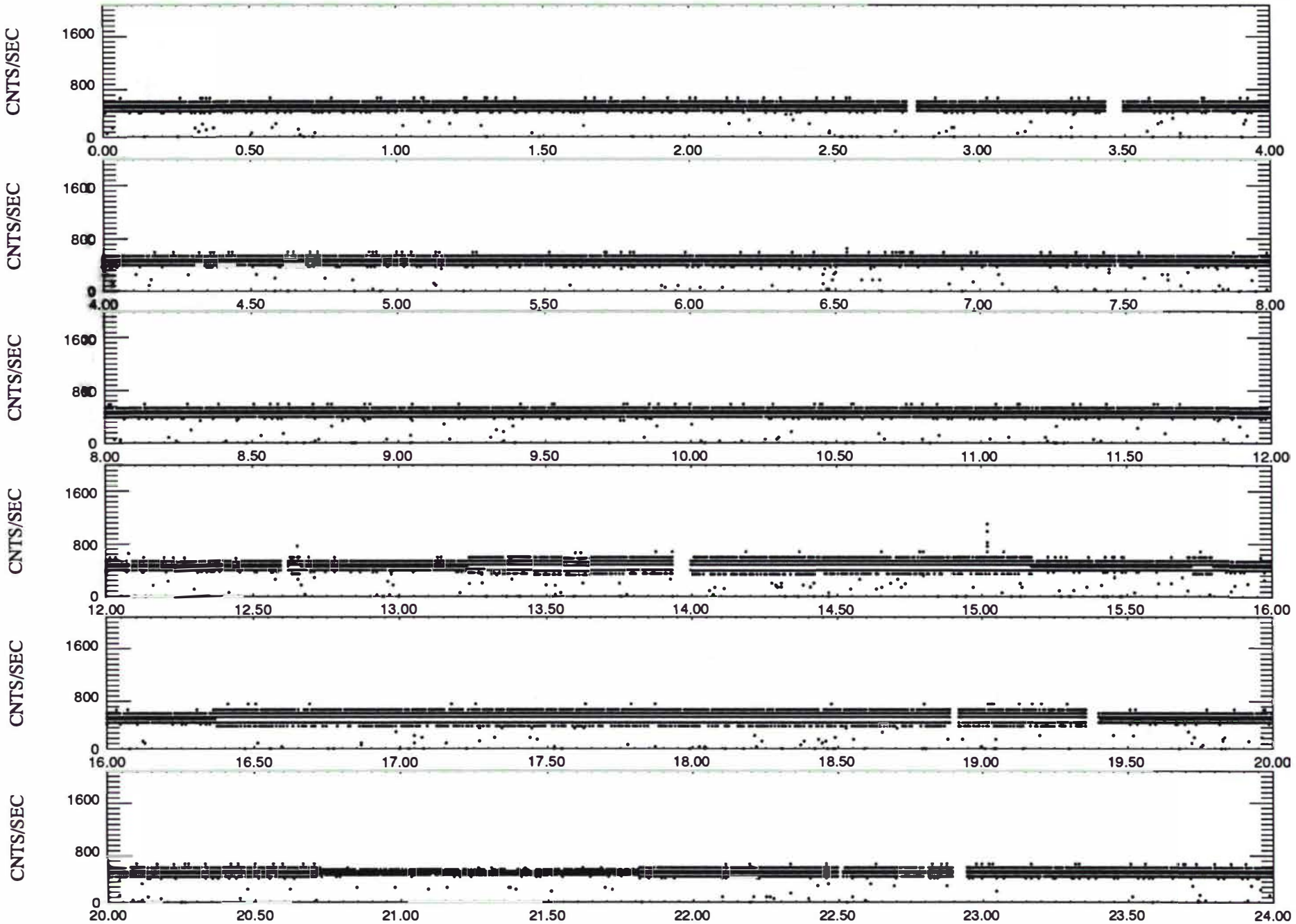
HUS MODES EDR day 196, year 1997 to day 196, year 1997 10/24/97

BURST NUMBER 3, 4



HUS 2A, MODE 1, NOT AVERAGED EDR day 196, year 1997 to day 196, year 1997 10/24/97

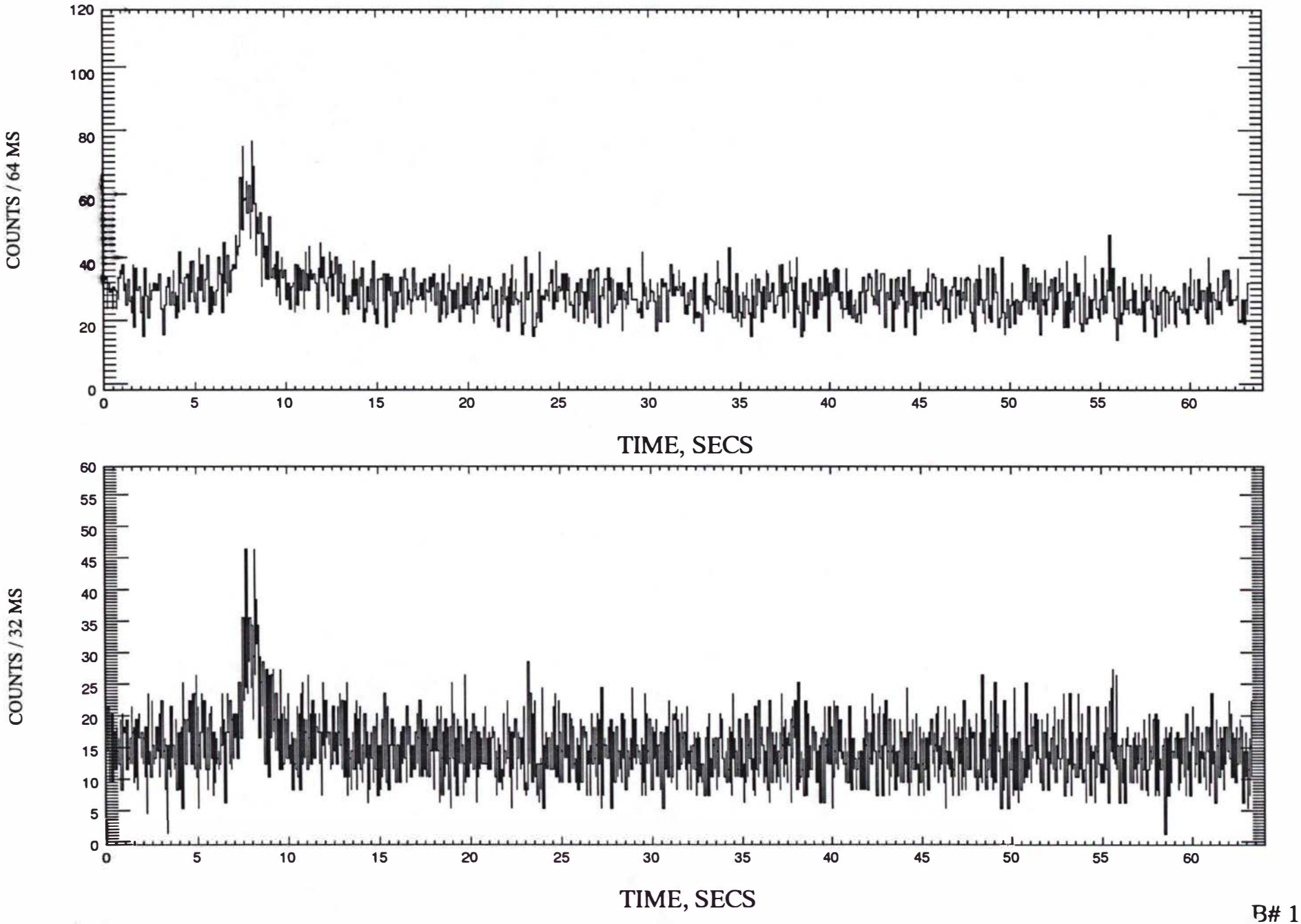
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 196, year 1997 10/24/97

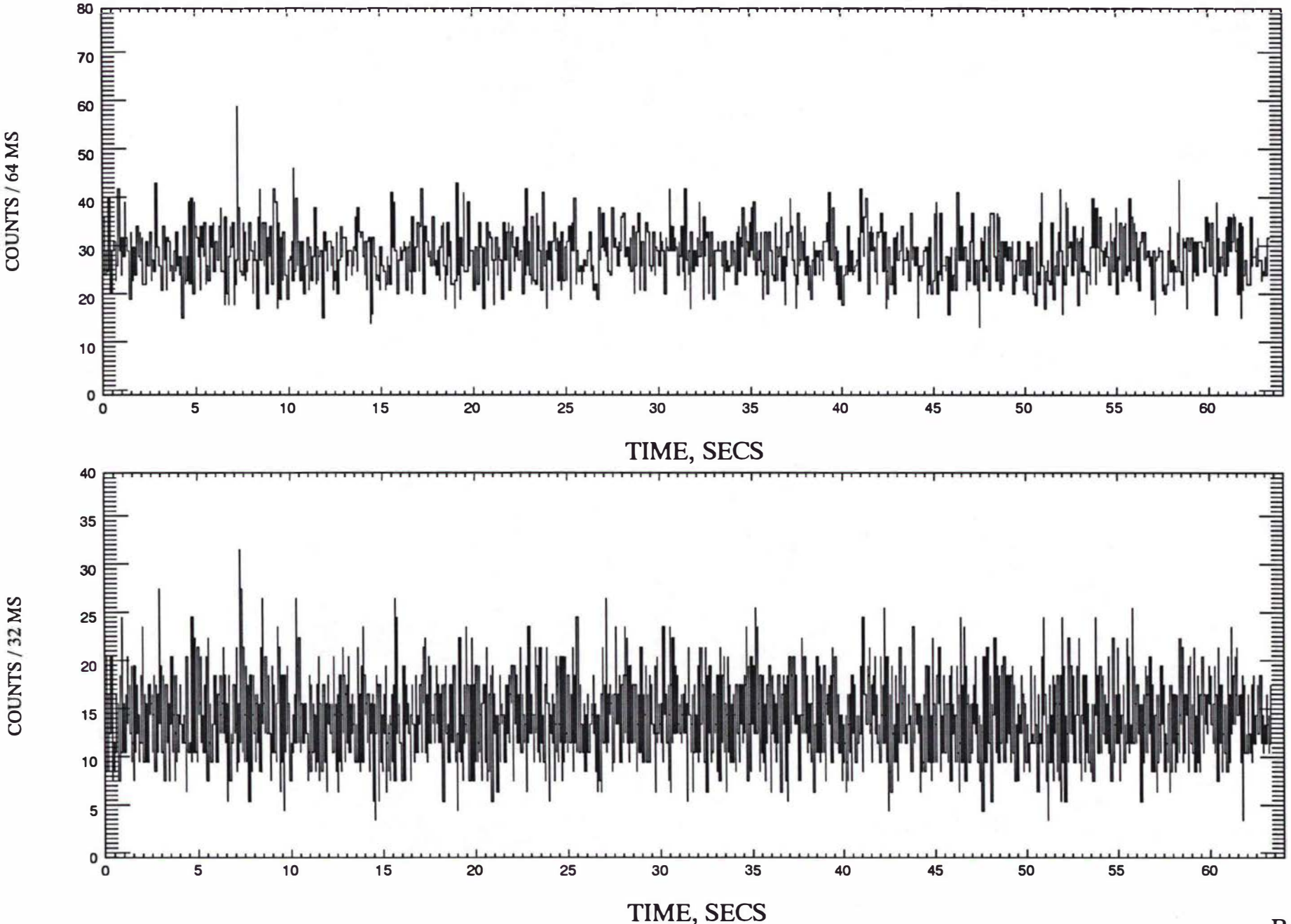
Burst Counter 3 at UT=15.017326414320 h=54062.375 s 15:01:02.375



B# 1

HUS 2A TRIGGERED DATA EDR day 196, year 1997 10/24/97

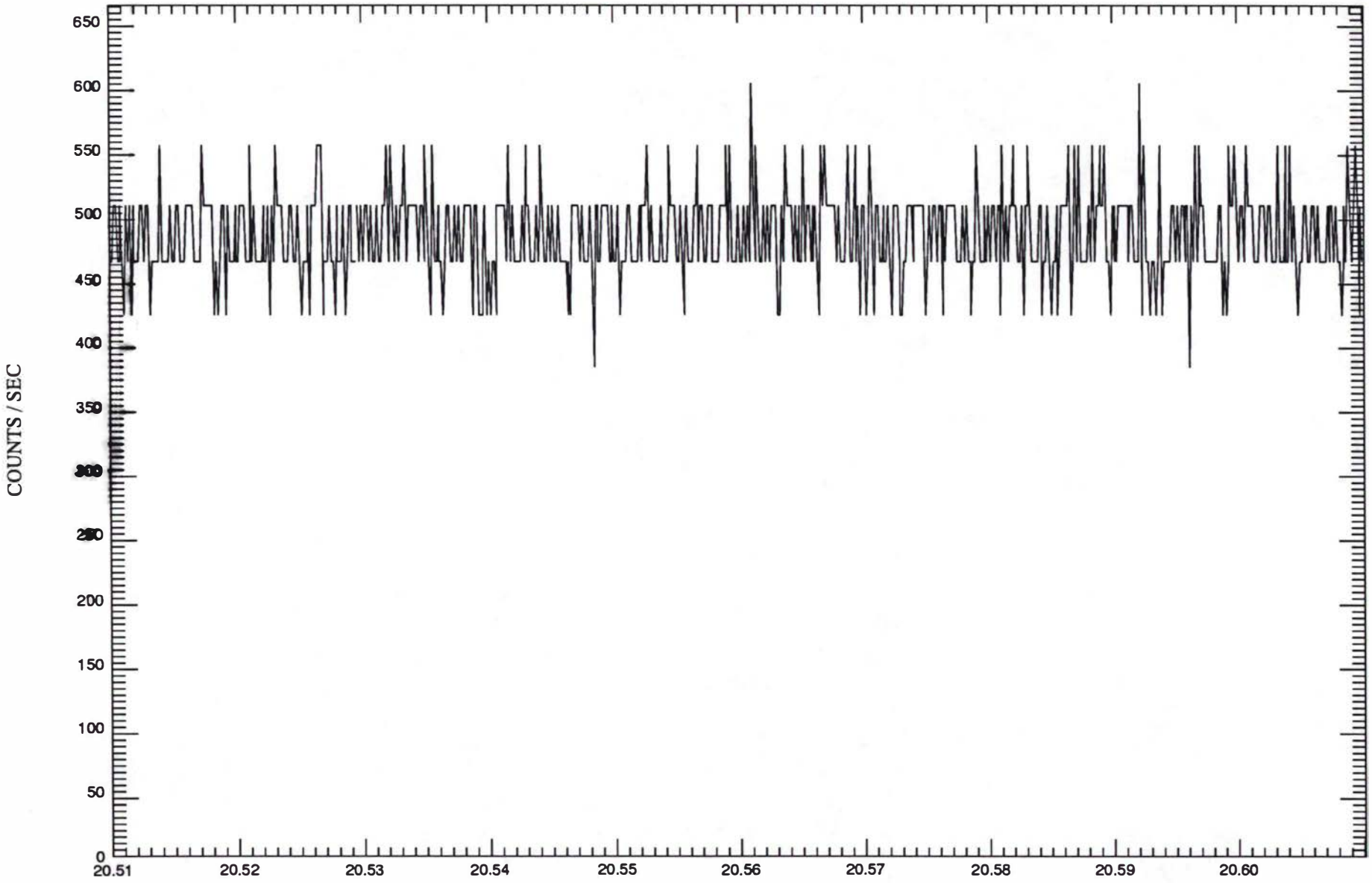
Burst Counter 4 at UT=20.561210721334 h=74020.359 s 20:33:40.359



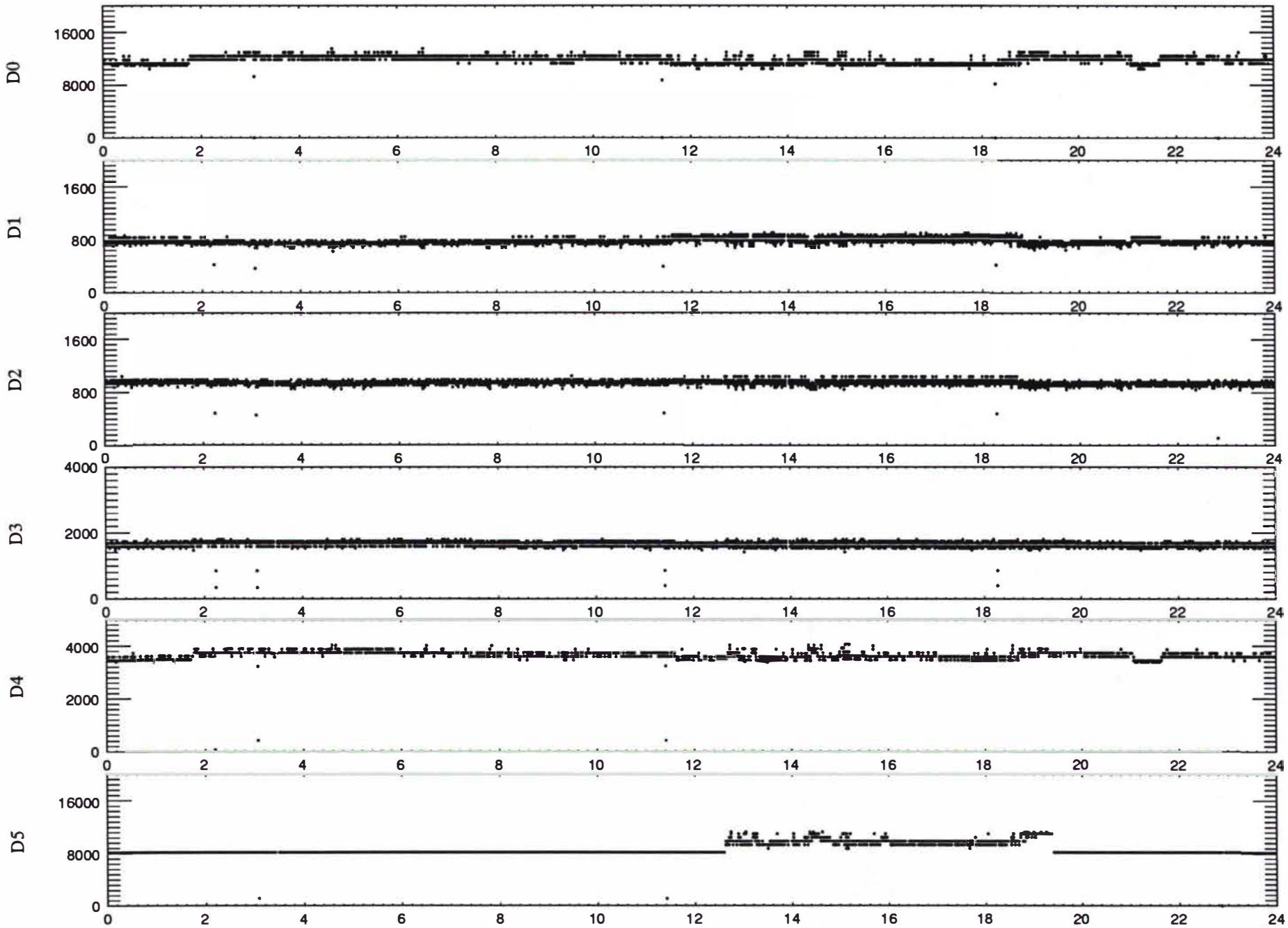
B# 2

HUS 2A, MODE 1, NOT AVERAGED EDR day 196, year 1997 to day 196, year 1997 10/24/97

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 196, year 1997 to day 196, year 1997 10/24/97



From SURASAK@ssl.msfc.nasa.gov Thu Jul 17 09:32 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 JAA07833; Thu, 17 Jul 1997 09:32:09 -0700
Date: Thu, 17 Jul 1997 11:31:59 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970717113159.2166b6ca@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6309
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6309
EVENT OF 1997 JUL 16 DAY OF YEAR=197
EVENT CROSSING TIME AT BATSE : 15212. S. OR 04:13:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 114.000 -58.000
BATSE PEAK COUNTING RATE: 2650 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 7/ 97 IS:
RA= 155.009 DEC= 24.082 DIST= 5.963 AU
BATSE-ULYSSES DISTANCE = 892025610. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 91.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -56.61 SECS.
CROSSING TIME AT ULYSSES IS 15155. S. OR 04:12:35 +/- 565.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 7/ 97 IS:
RA= 191.941 DEC= -5.281 DIST= 1.359 AU
MARS-BATSE DISTANCE = 203257088. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.85 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -127.66 SECS.
CROSSING TIME AT MARS IS 15084. S. OR 04:11:24 +/- 113.67 SECONDS

BATSE BURST TRIGGER

NO.: 6309

TIME: TJD=0645 SECONDS=15212

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

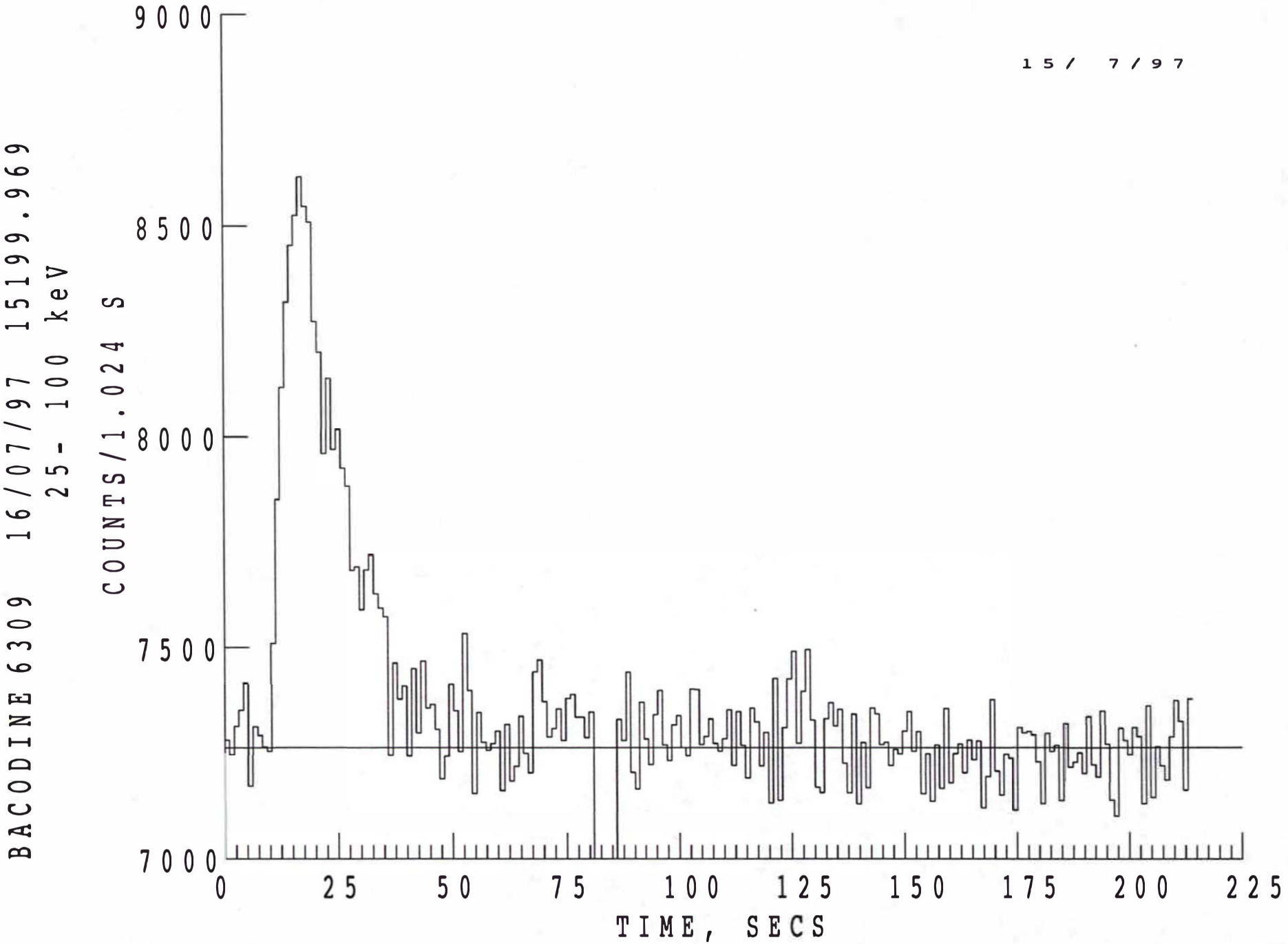
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=152.2 AZIMUTH=251.9 ERROR=3.018 DEGREES

COMMENTS:
GRB. DUR~27S. SINGLE PULSE. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6309	970716	10645	15212	2650	114	-58	27


BACODINE 6309 16/07/97 15199.969
25- 100 keV
COUNTS/1.024 S
9000
8500
8000
7500
7000
15/ 7/97
0
25
50
75
100
125
150
175
200
225
TIME, SECS

BATSE BURST# 6309

ULYSSES RT 24/10/97

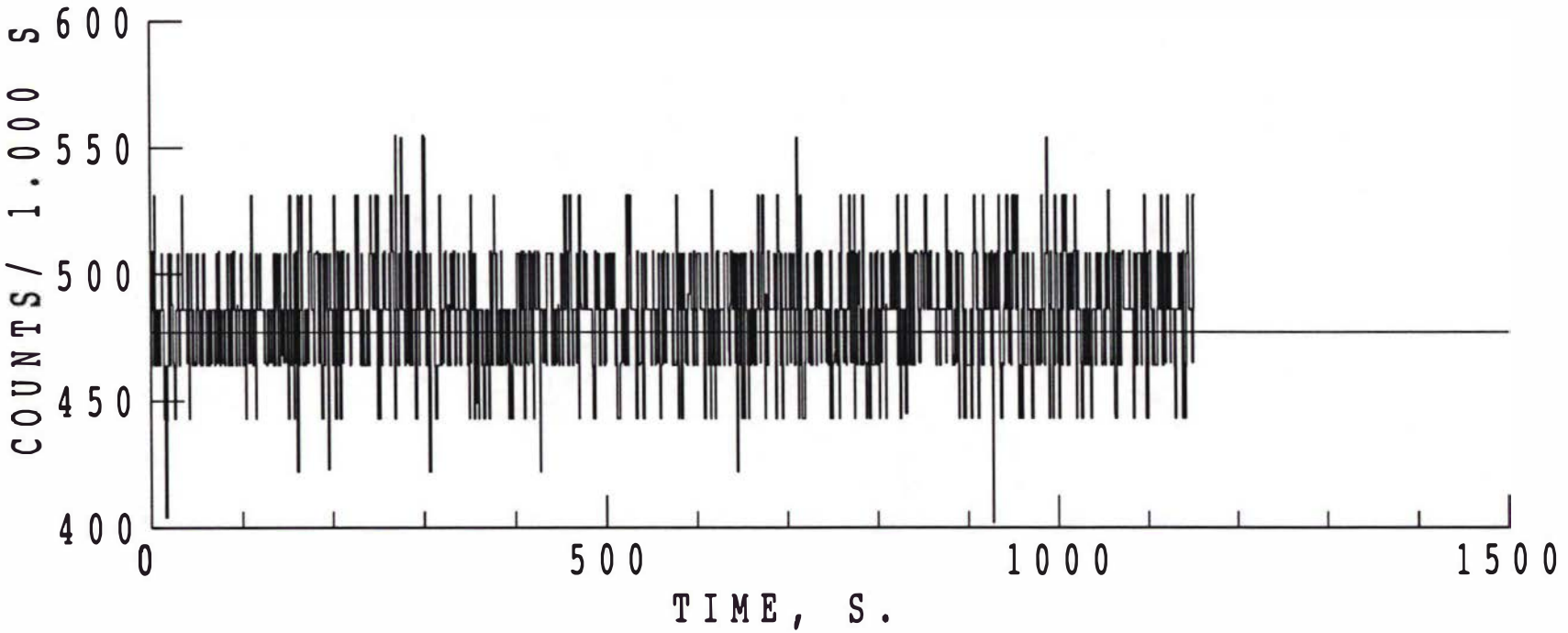
16/ 7/97 14580.173 s

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



SAX

HUS DATA

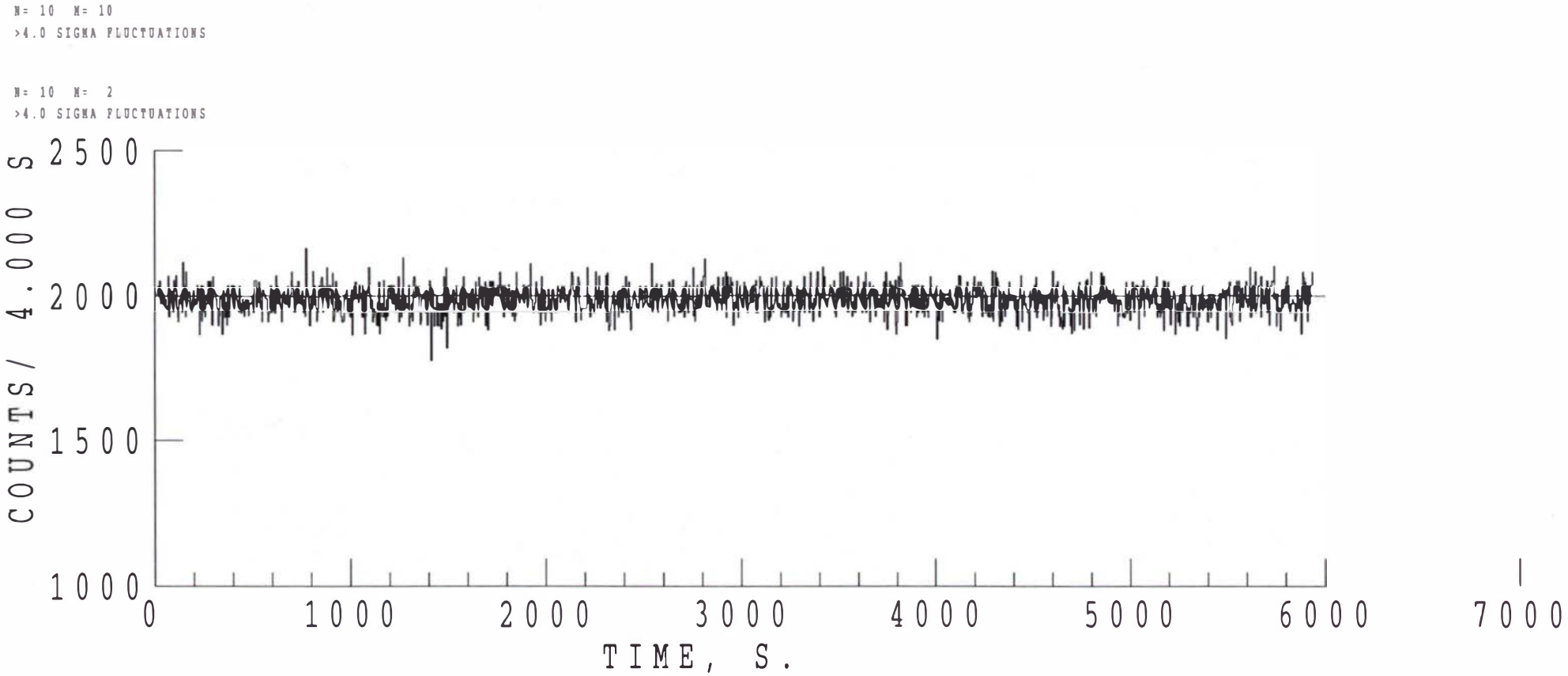
19/07/05

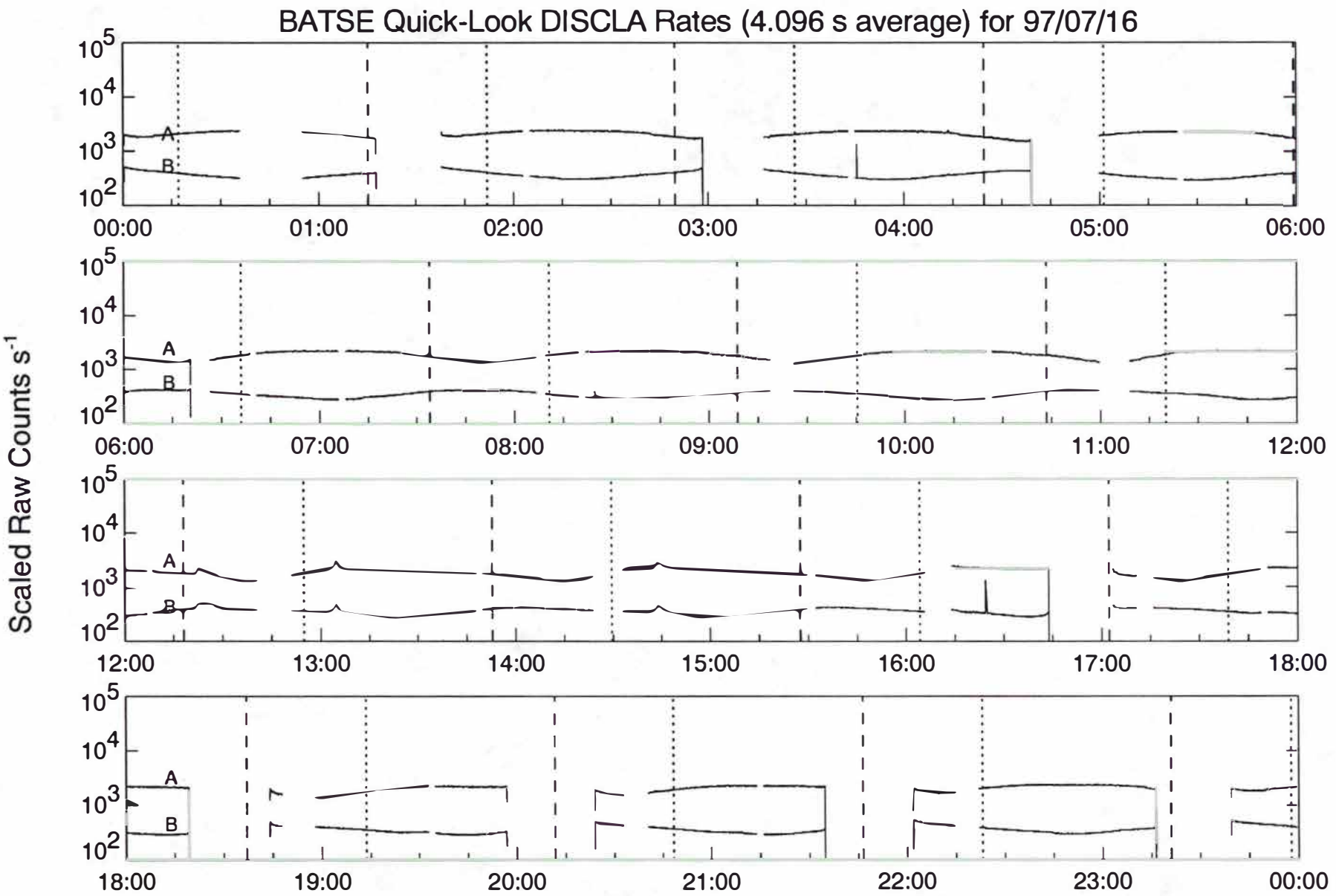
ULYSSES RT

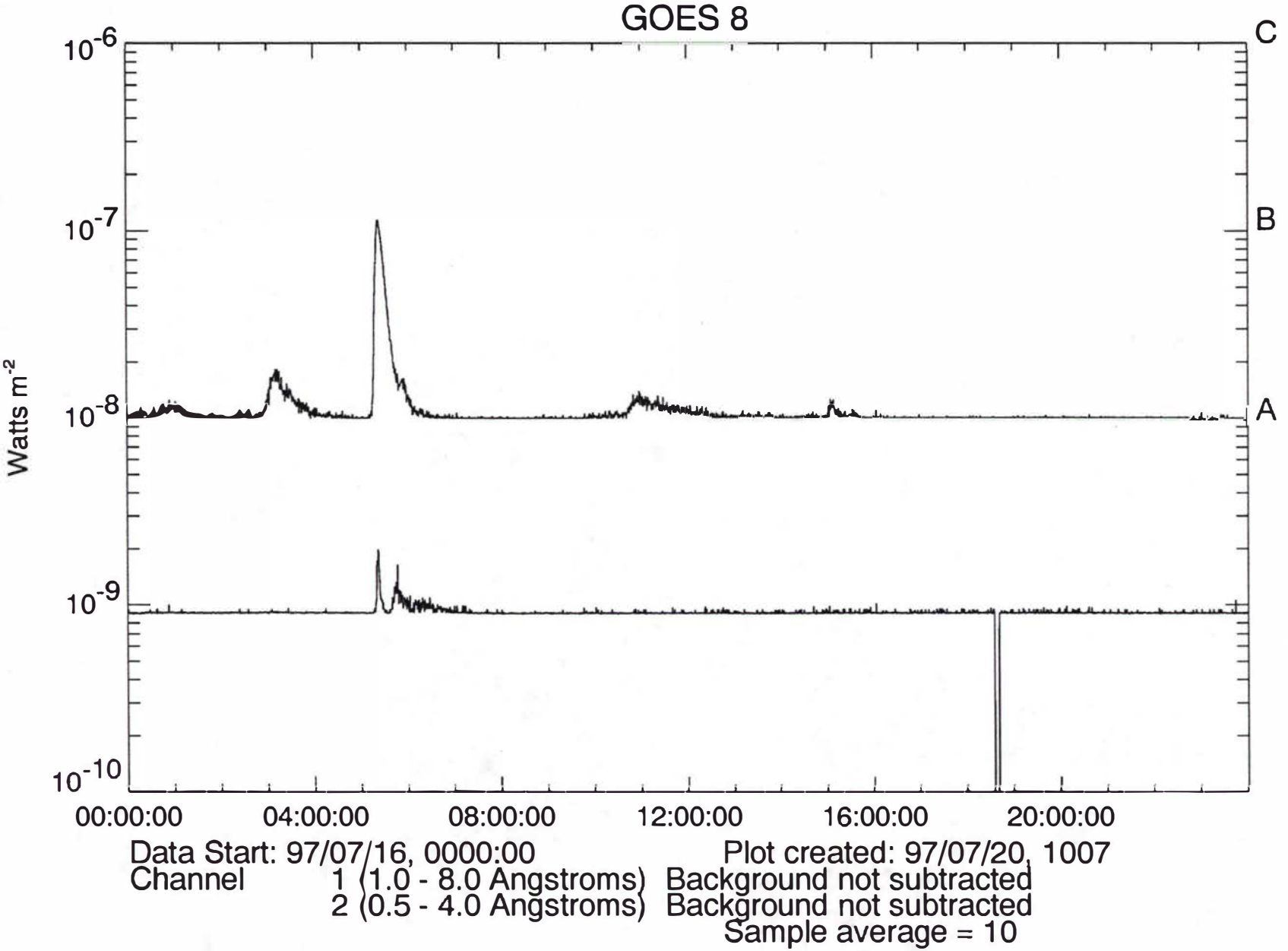
16/07/97 57492.148 s

0.250 S INTERVALS REGROUPED BY 16

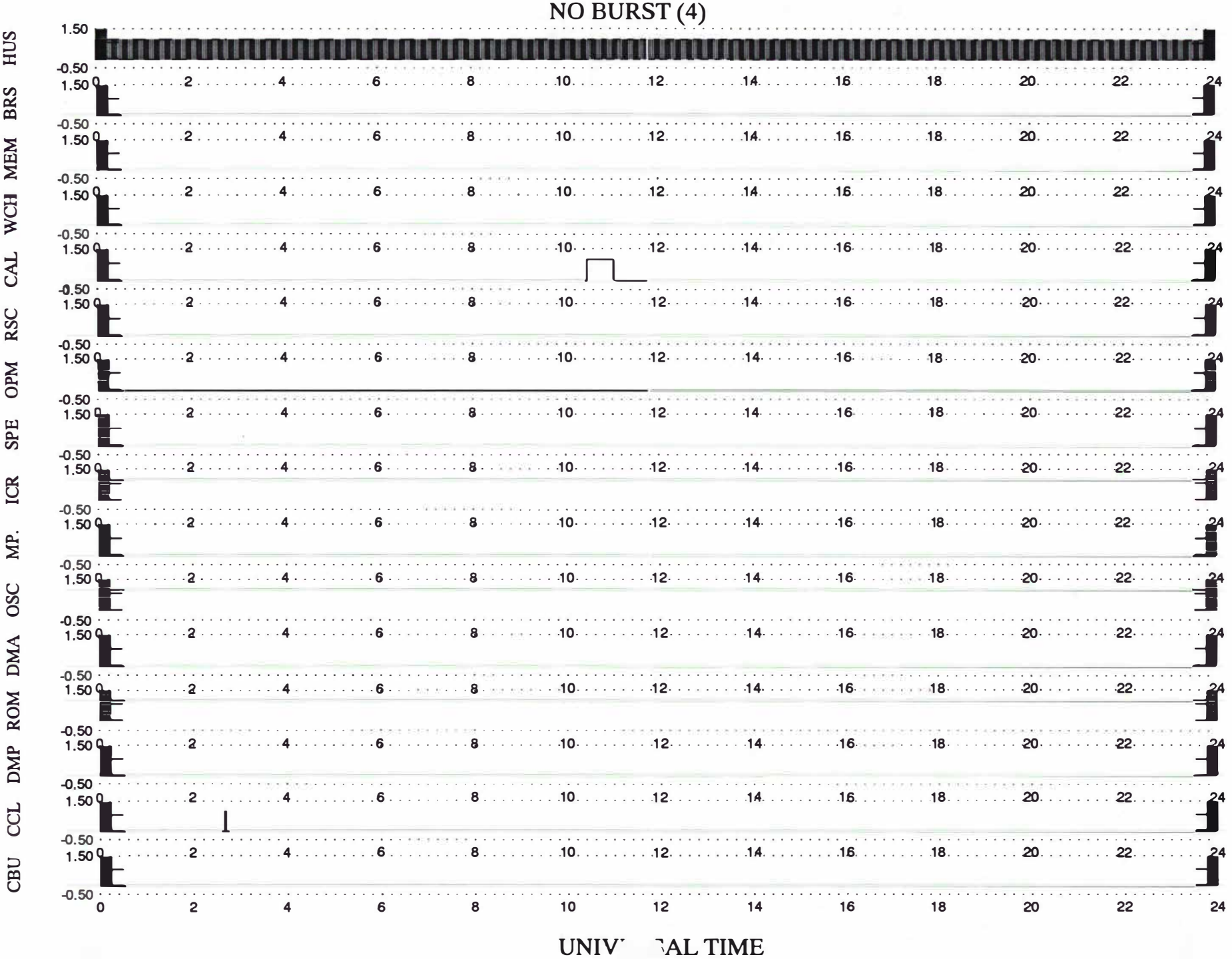
0- 0 keV




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

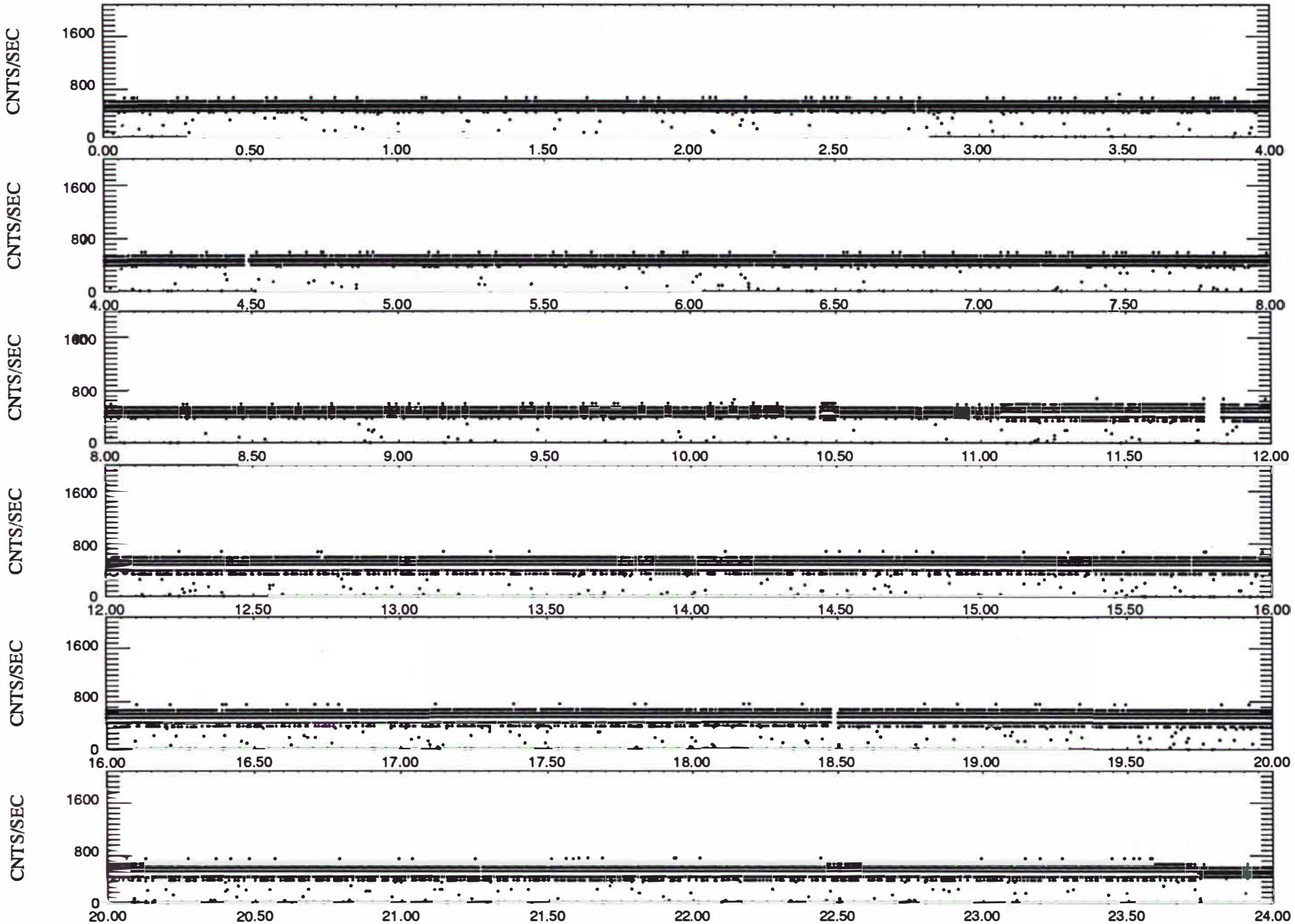

GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/16, 0000:00
Plot created: 97/07/20, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 197, year 1997 to day 197, year 1997 10/24/97



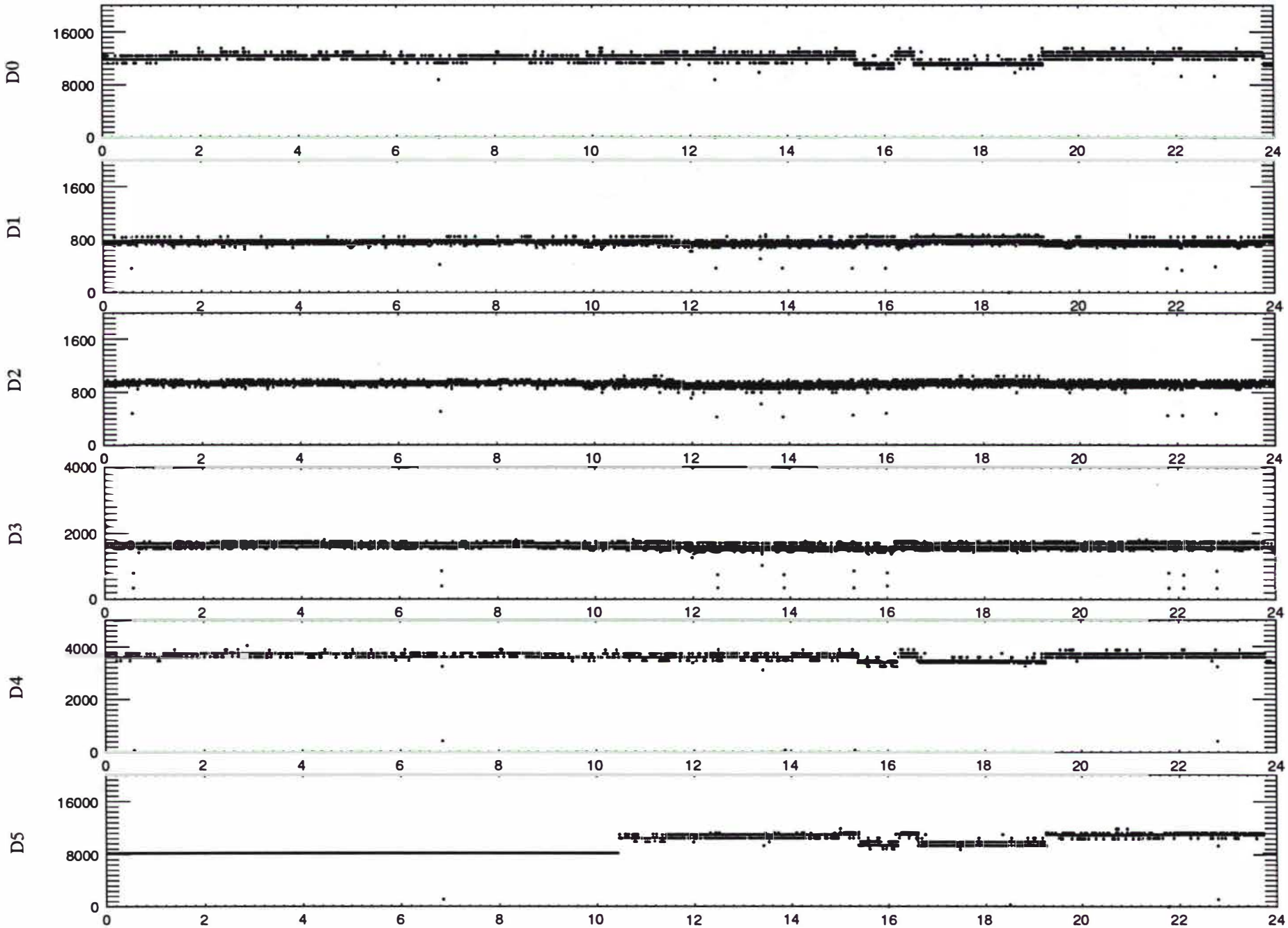
HUS 2A, MODE 1, NOT AVERAGED EDR day 197, year 1997 to day 197, year 1997 10/24/97

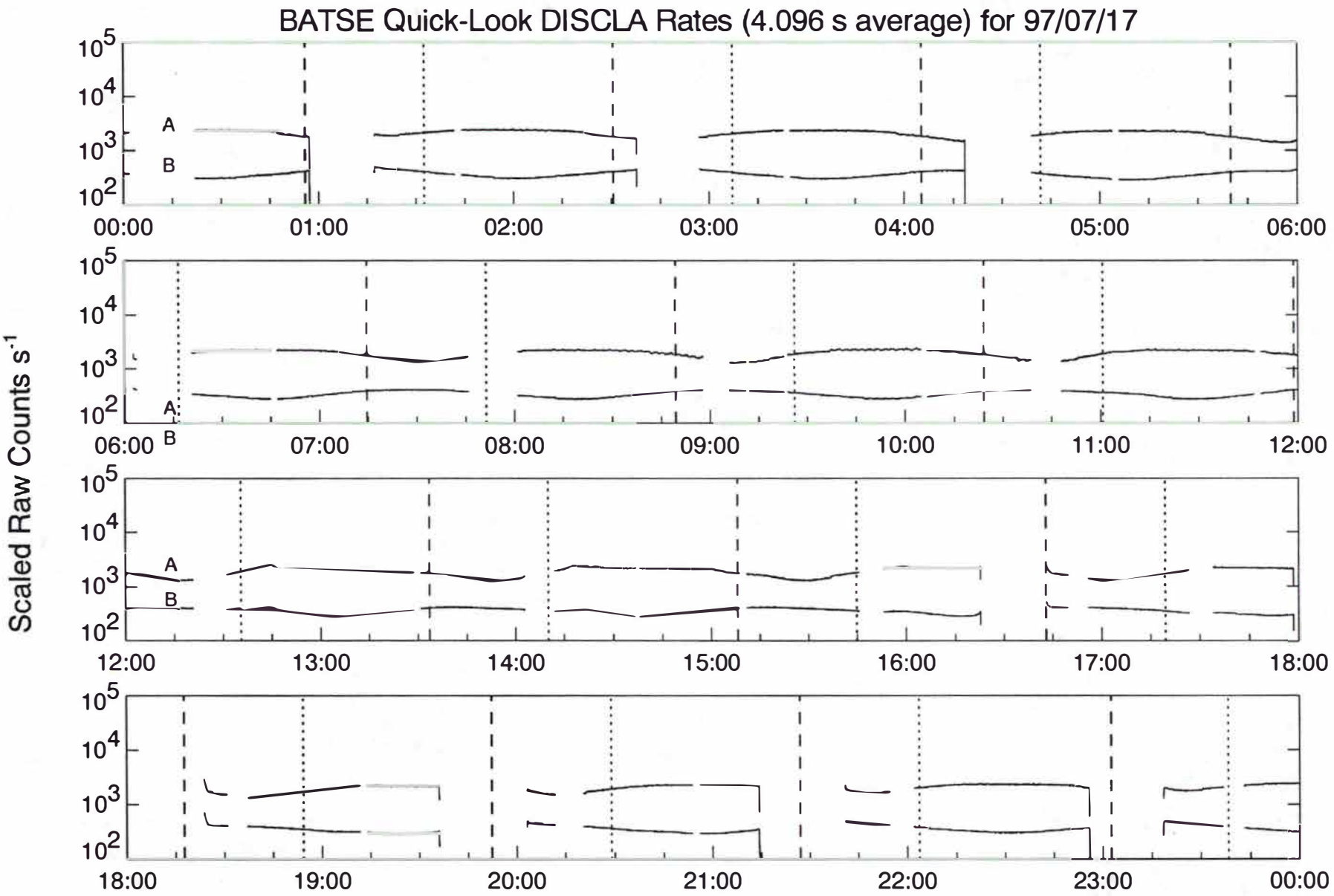
CALIBRATION DATA INCLUDED

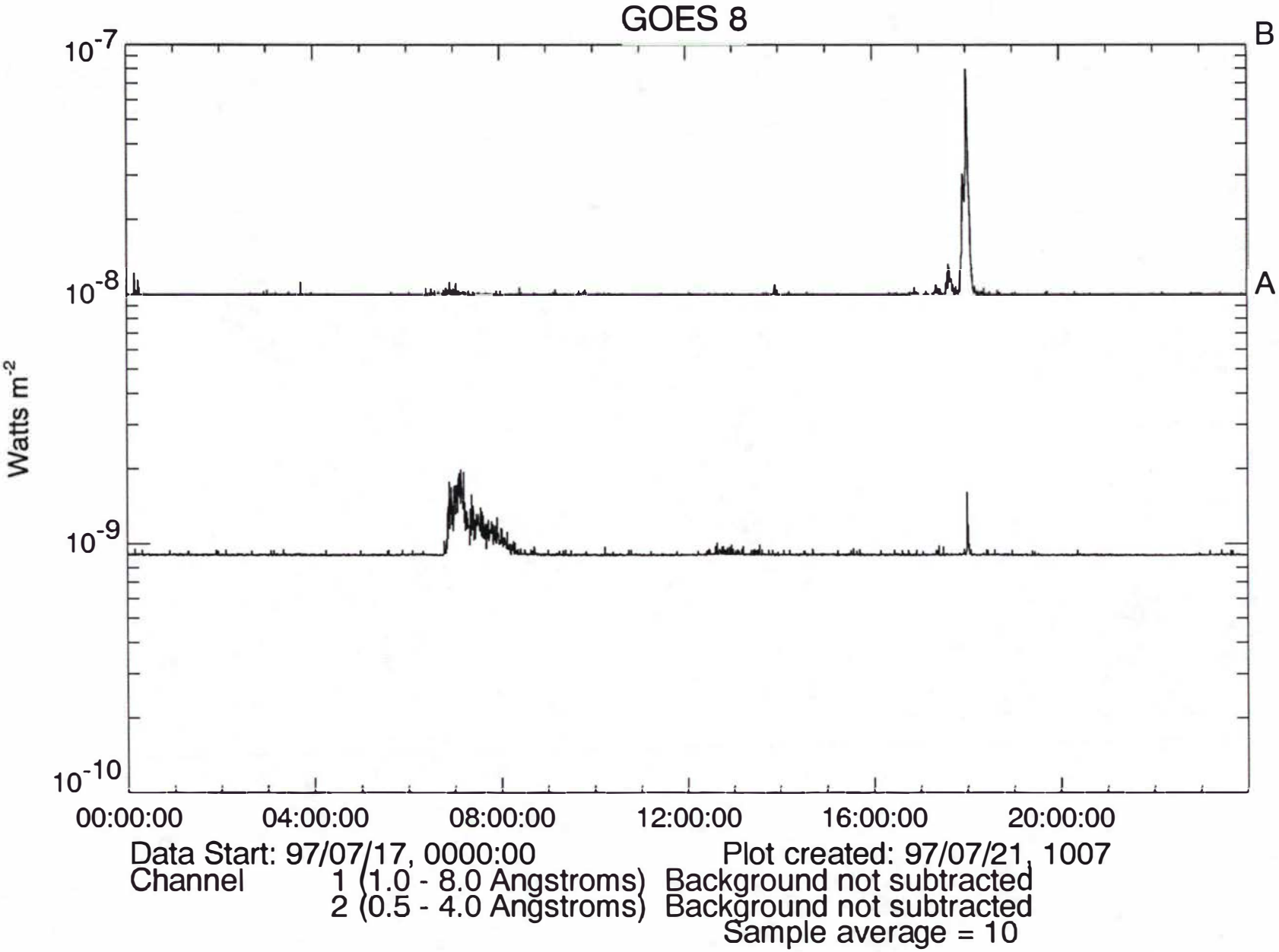


UNIVERSAL TIME

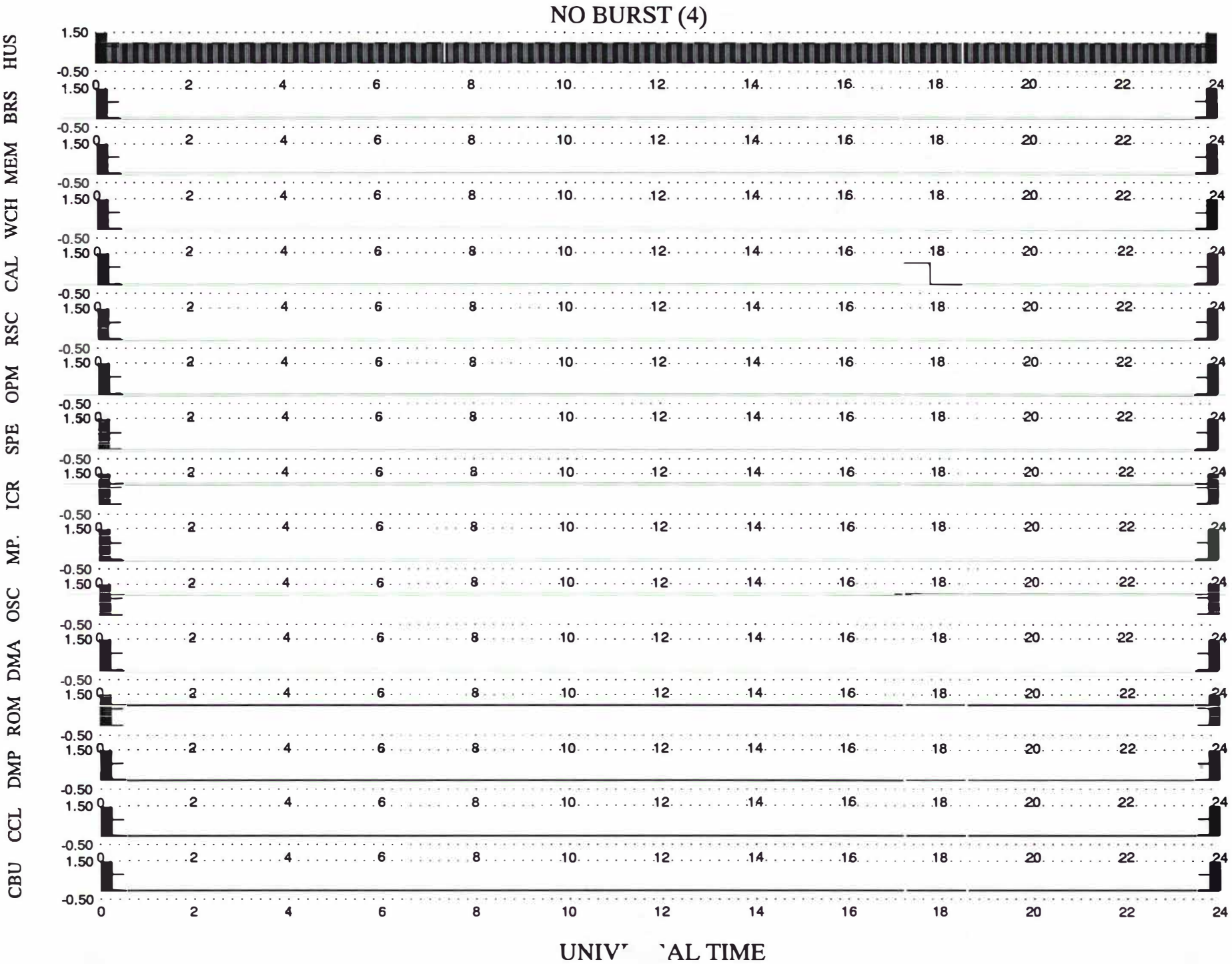
HUS 2B COUNTS / SEC EDR day 197, year 1997 to day 197, year 1997 10/24/97




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

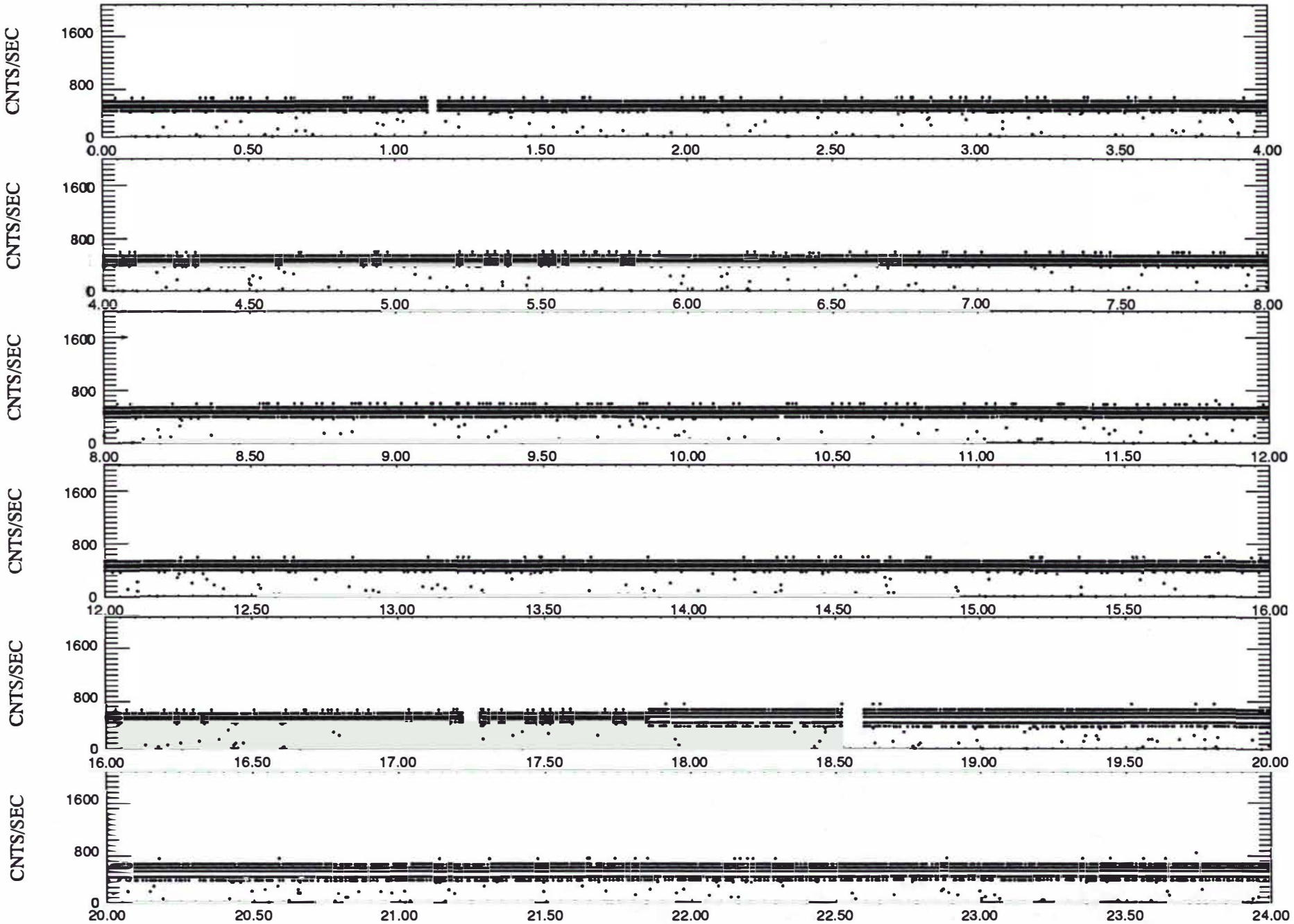

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/17, 0000:00
Plot created: 97/07/21, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 198, year 1997 to day 198, year 1997 10/24/97



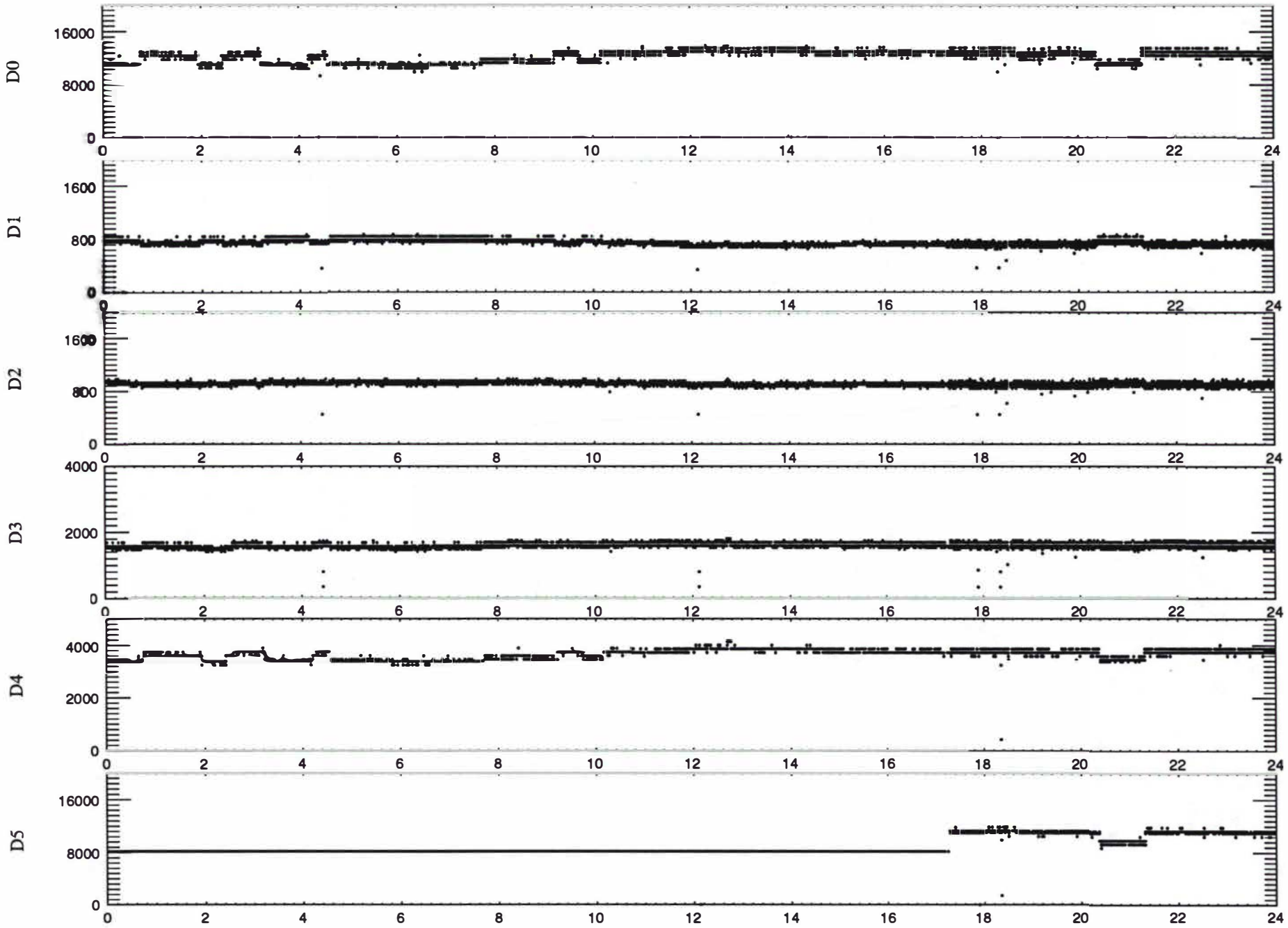
HUS 2A, MODE 1, NOT AVERAGED EDR day 198, year 1997 to day 198, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 198, year 1997 to day 198, year 1997 10/24/97



From SURASAK@SSLLES.MSFC.NASA.GOV Thu Jul 24 08:23 PDT 1997
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Thu, 24 Jul 1997 10:22:59 -0500 (CDT)
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.: 6310

TIME: TJD=0647 SECONDS=38624

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!

Date: Dec 16 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?

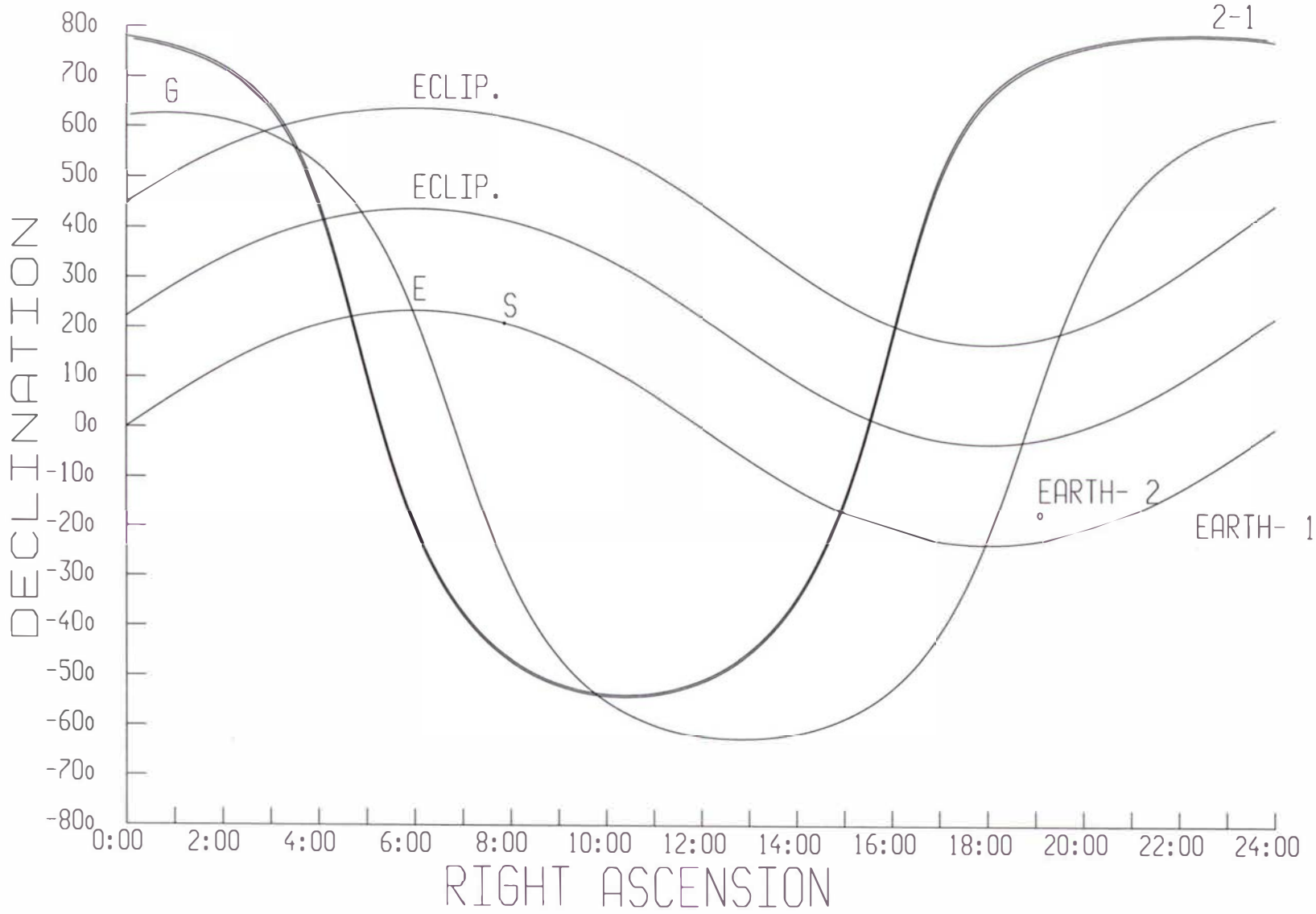
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated with identical times?

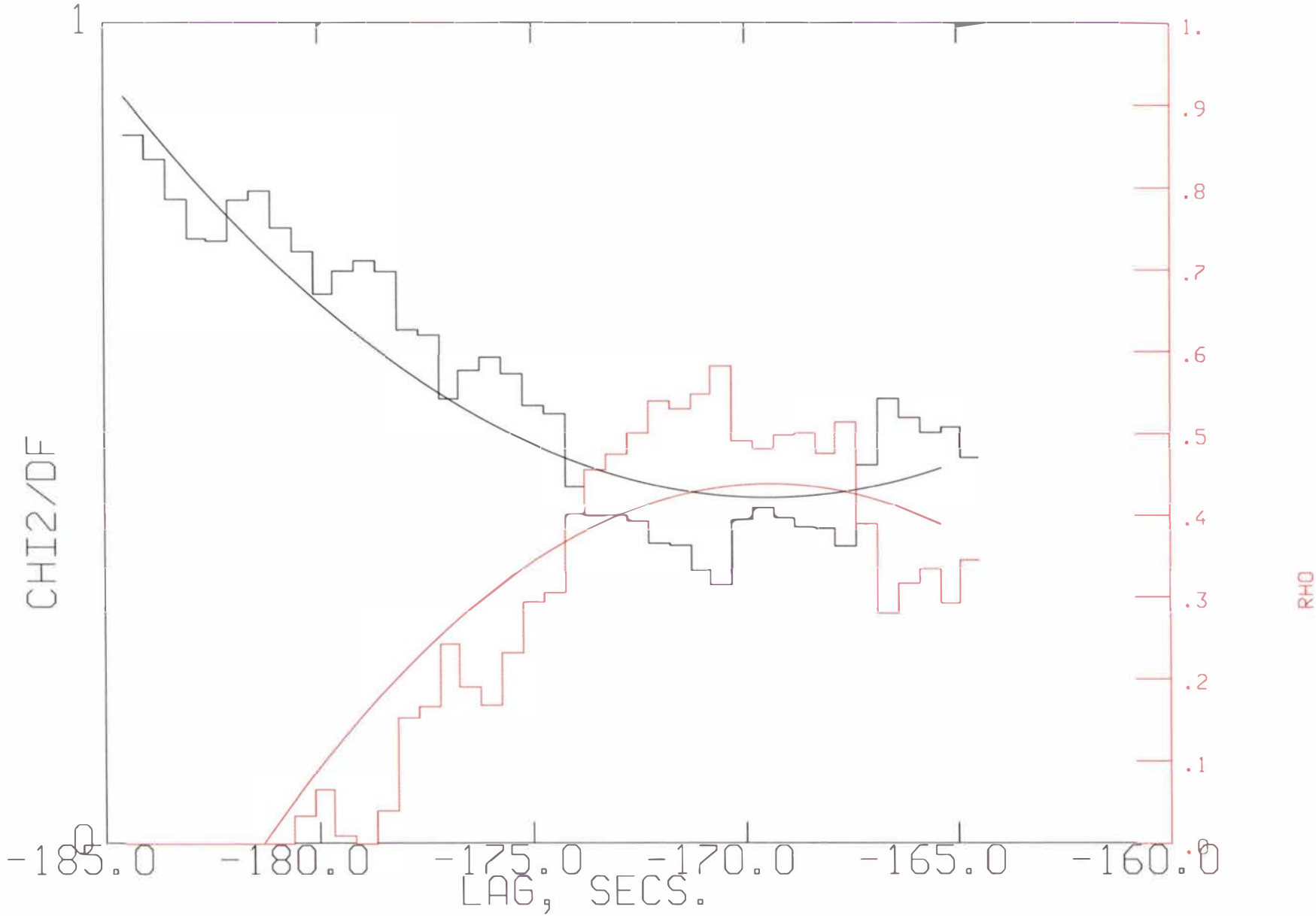
EVENT OF JUL 18, 1997 11:54

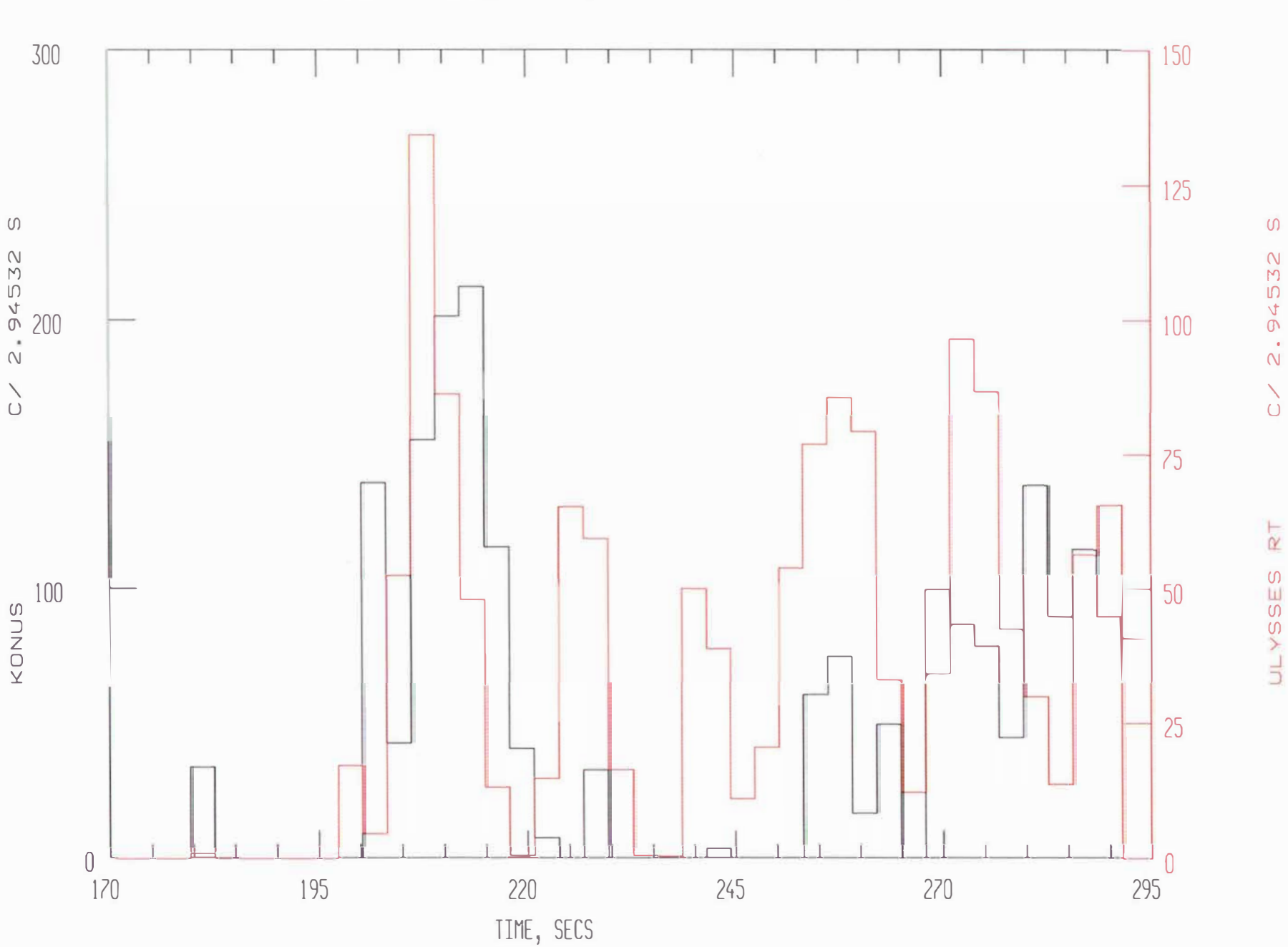
16/12/2011

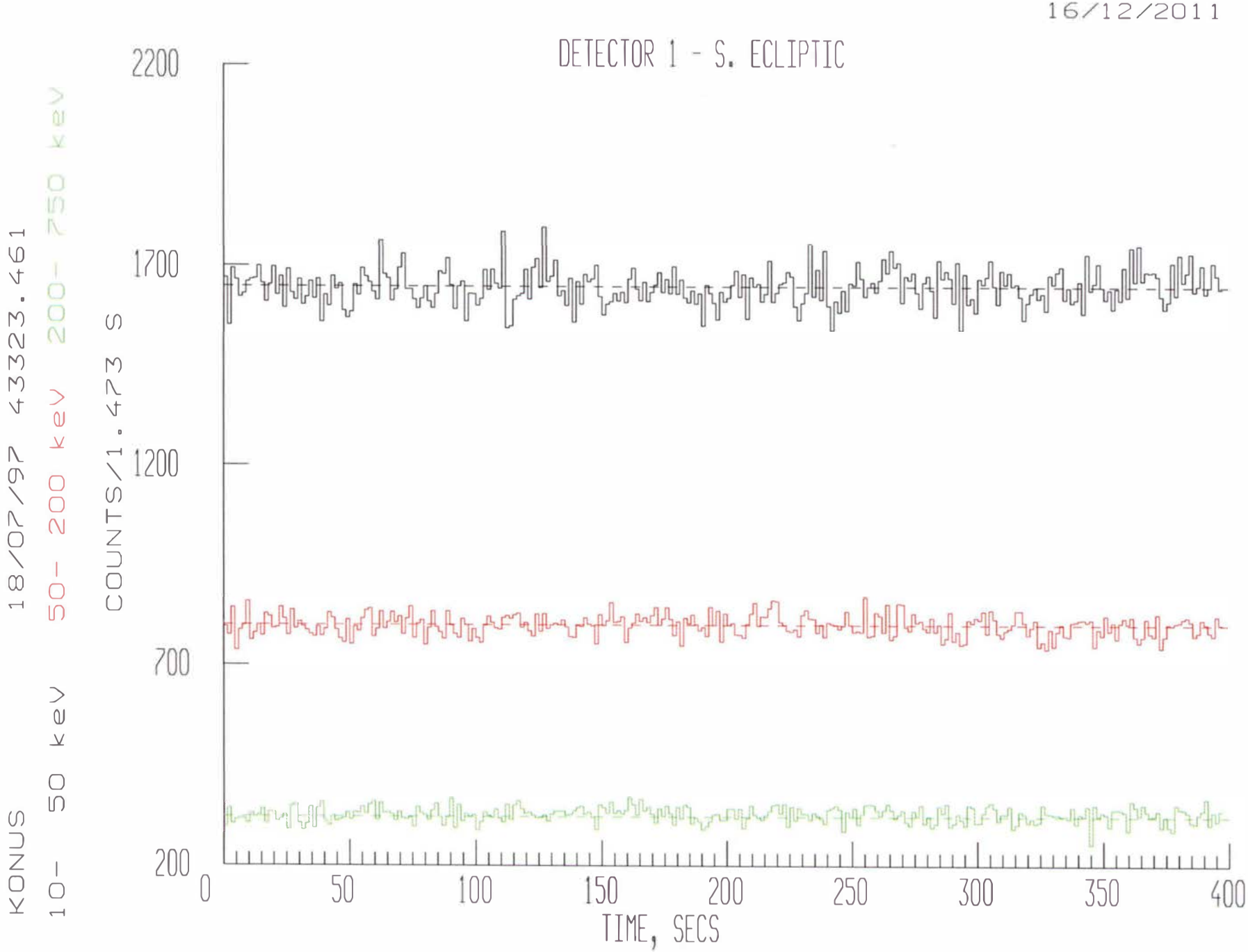
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS

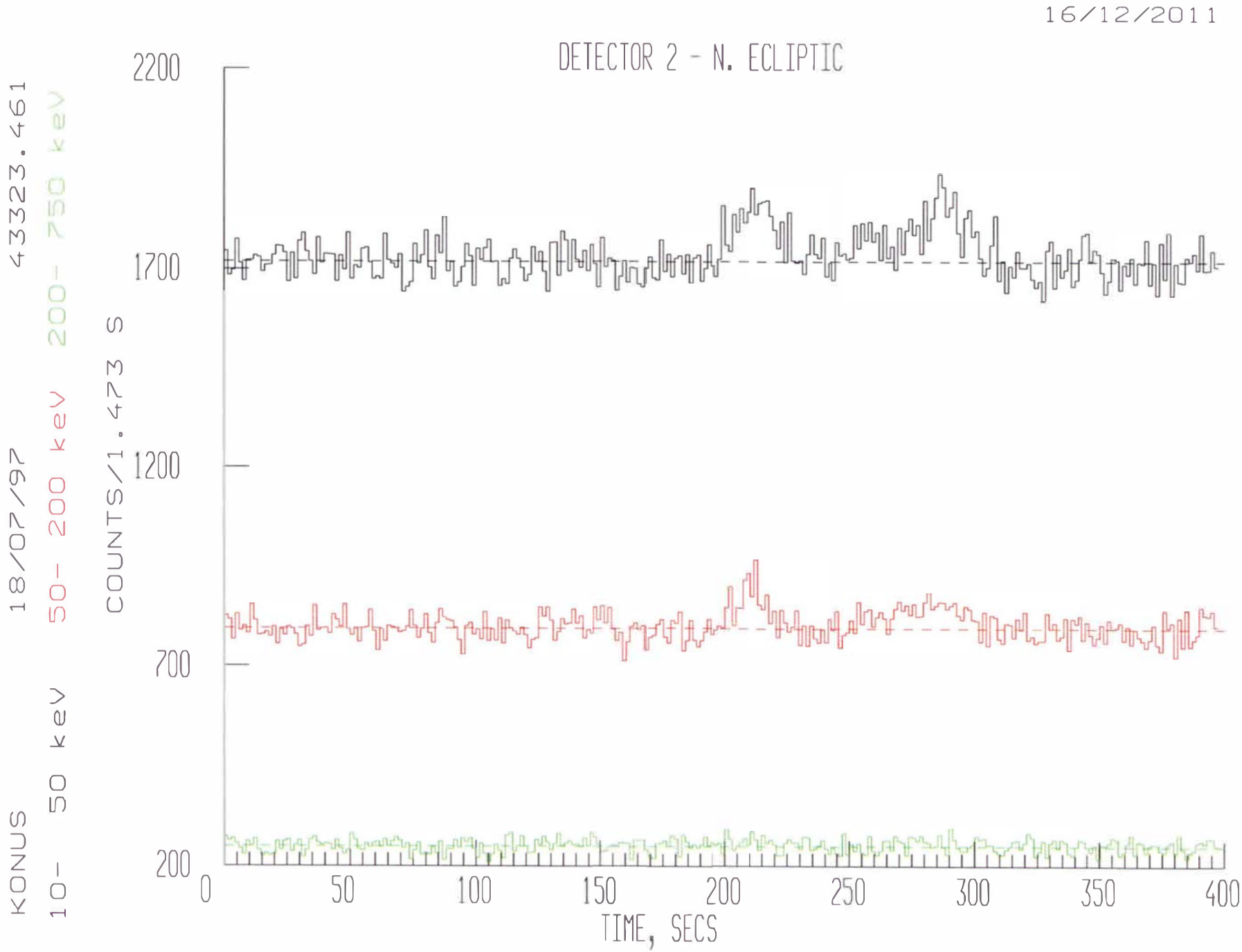


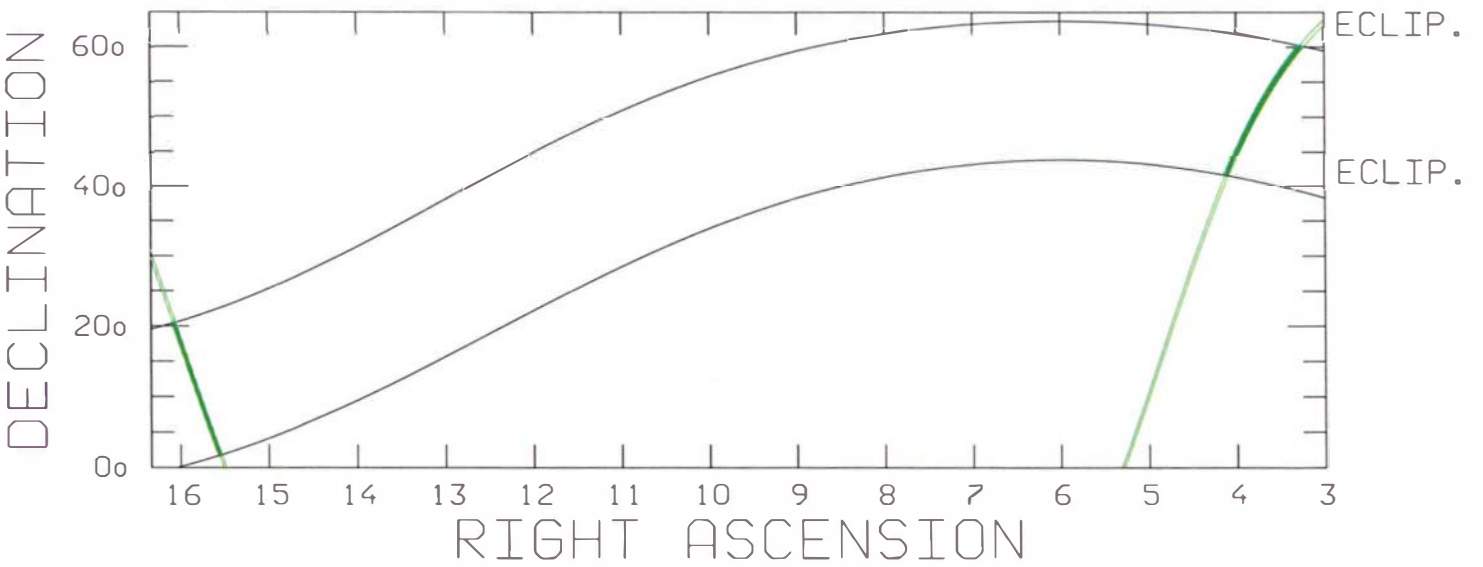
KONUS -ULYSSES RT CORRELATION 18/07/97 43323.461




KONUS -ULYSSES RT CORRELATION 18/07/97 43323.461 16/12/11
300
200
100
0
KONUS
C/ 2.94532 S
150
125
100
75
50
25
0
ULYSSES RT
C/ 2.94532 S
170
195
220
245
270
295
TIME, SECS


16/12/2011
DETECTOR 1 - S. ECLIPTIC
KONUS 18/07/97 43323.461
10- 50 keV 50- 200 keV 200- 750 keV
COUNTS/1.473 S
2200
1700
1200
700
200
0
50
100
150
200
250
300
350
400
TIME, SECS


16/12/2011
DETECTOR 2 - N. ECLIPTIC
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
18/07/97
43323.461
COUNTS/1.473 S
2200
1700
1200
700
200
0
50
100
150
200
250
300
350
400
TIME, SECS


DECLINATION
60o
40o
20o
0o
16
15
14
13
12
11
10
9
8
7
6
5
4
3
RIGHT ASCENSION
ECLIP.
ECLIP.

KONUS 19970718 42900

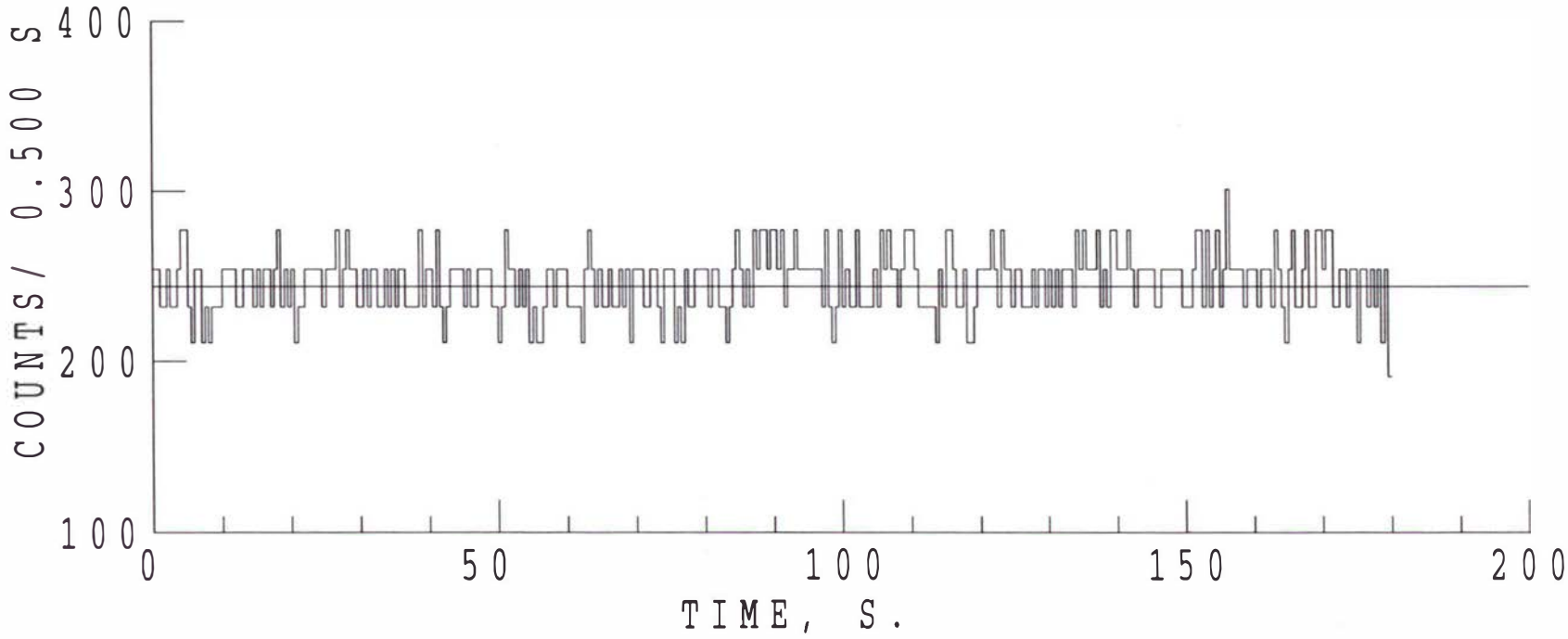
ULYSSES RT 08/12/11

18/07/97 42804.449 s

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

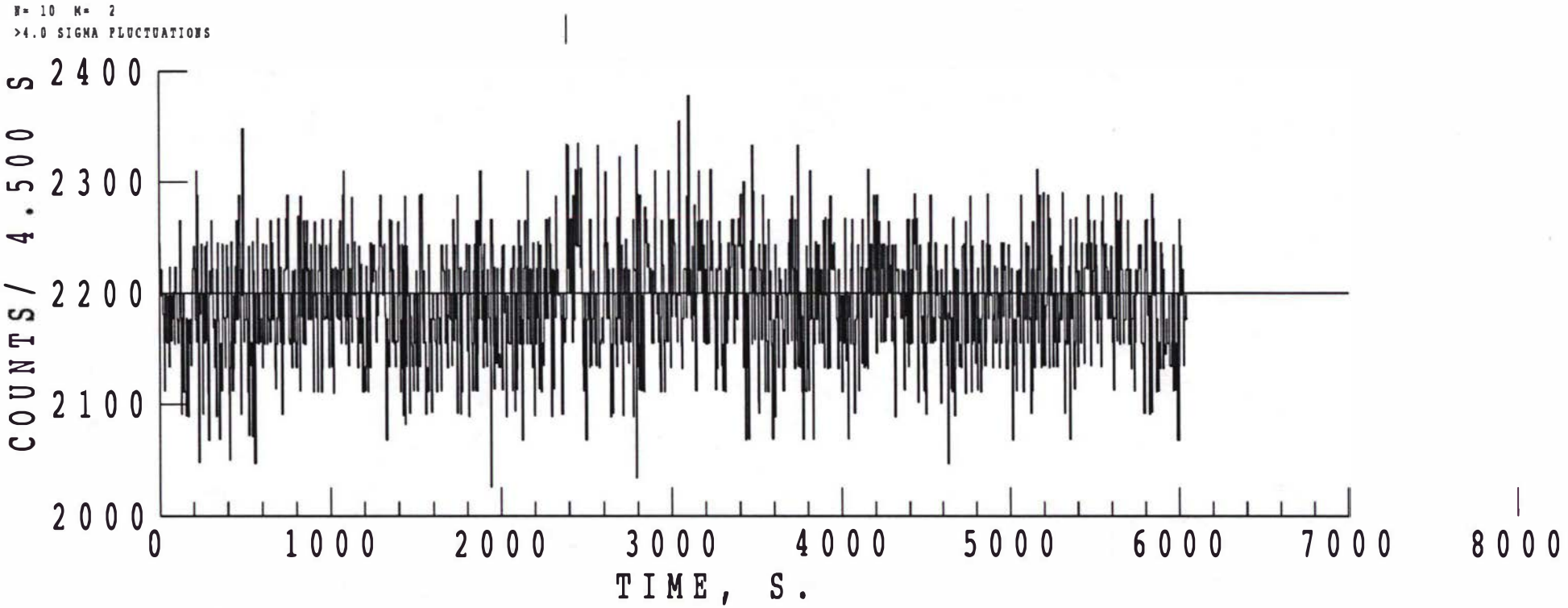
ULYSSES RT

15/02/00

18/07/97 40500.426 s

0.500 S INTERVALS REGROUPED BY 9

0- 0 keV



From SURASAK@SSLLES.MSFC.NASA.GOV Thu Jul 24 08:25 PDT 1997
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Thu, 24 Jul 1997 10:24:23 -0500 (CDT)
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.: 6311

TIME: TJD=0647 SECONDS=42243

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 Jul 24 08:29 PDT 1997
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Thu, 24 Jul 1997 10:28:40 -0500 (CDT)
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.: 6312

TIME: TJD=0647 SECONDS=50318

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!

Date: Jan 7 '10

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?

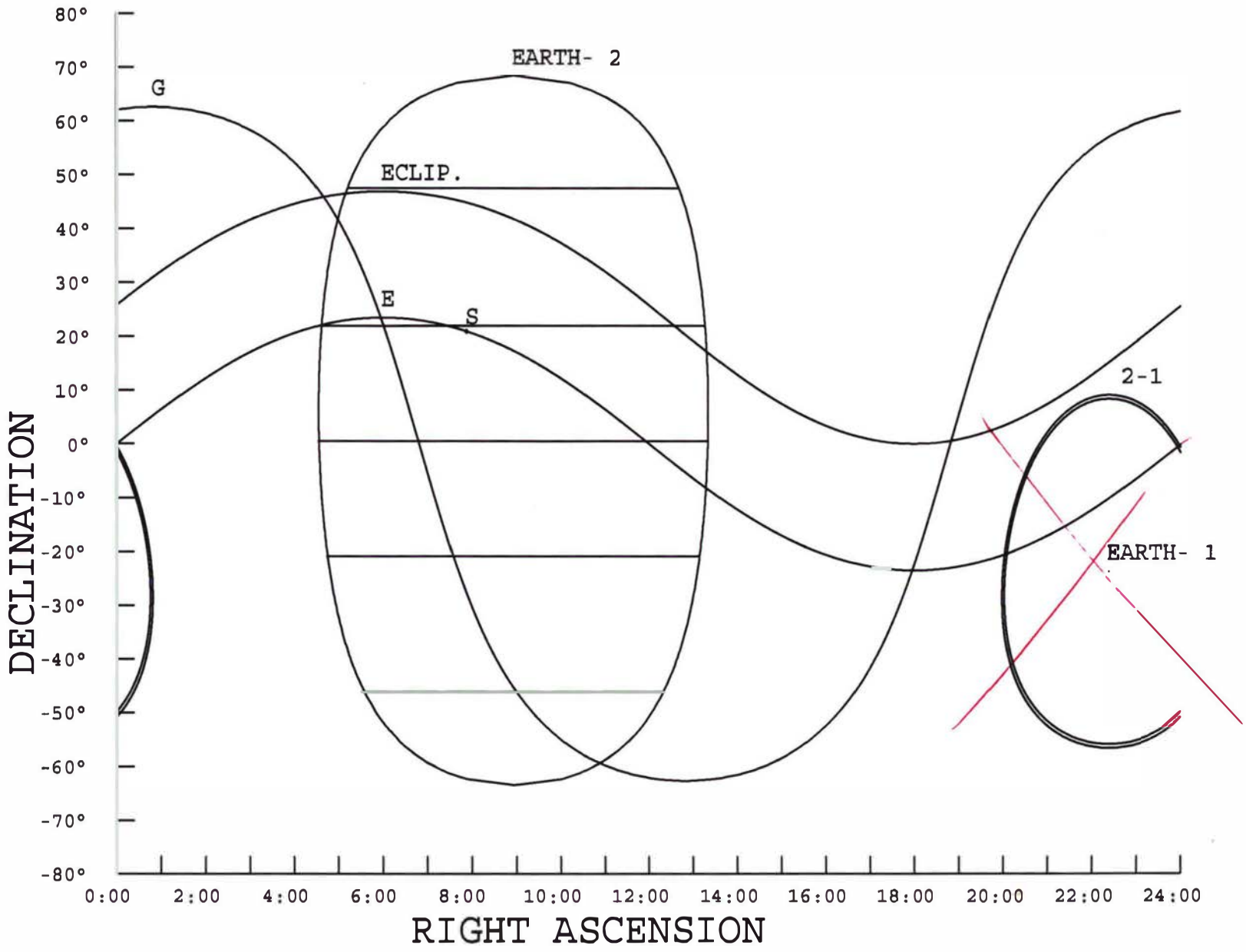
□ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

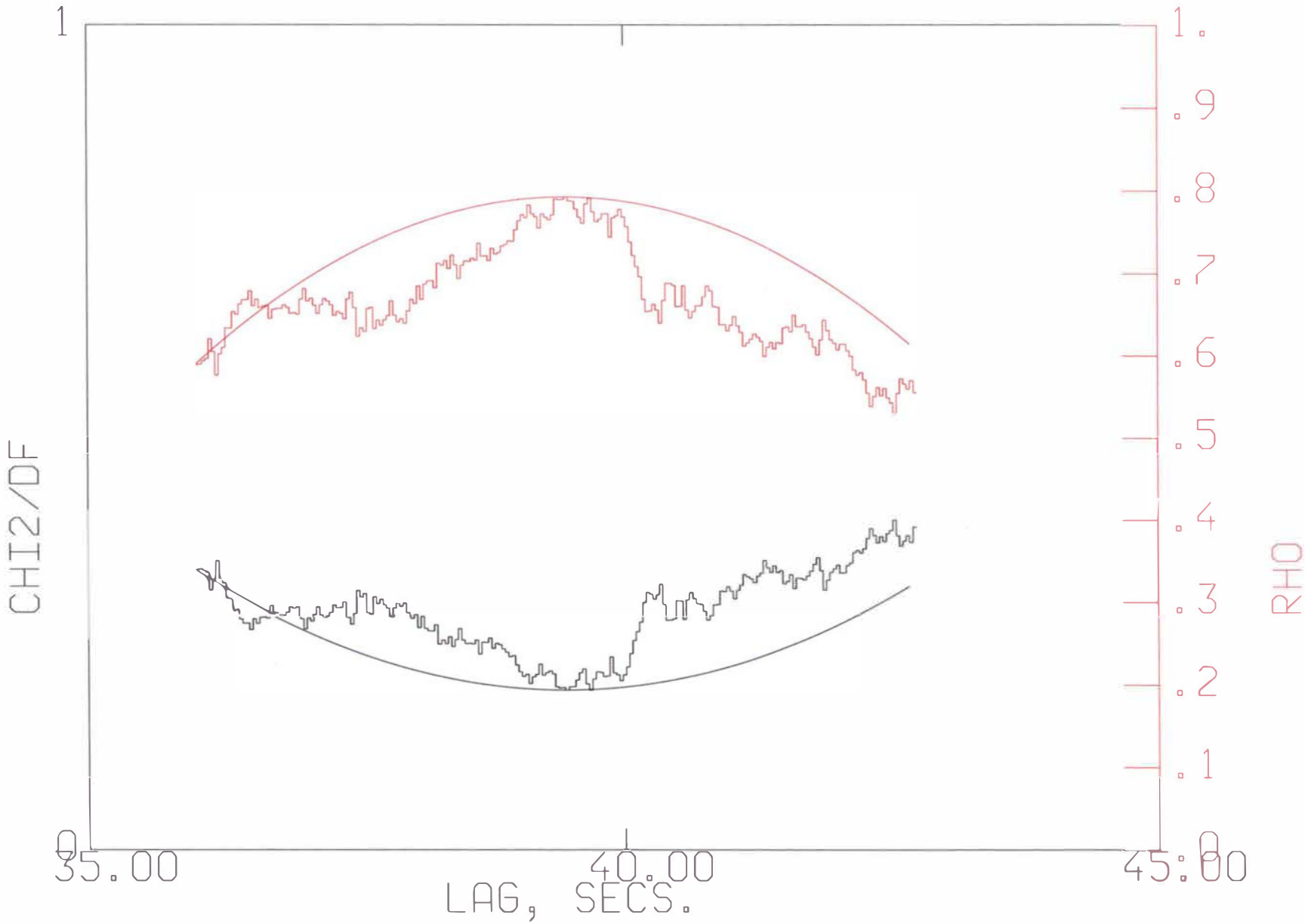
EVENT OF JUL 18, 1997 16:59

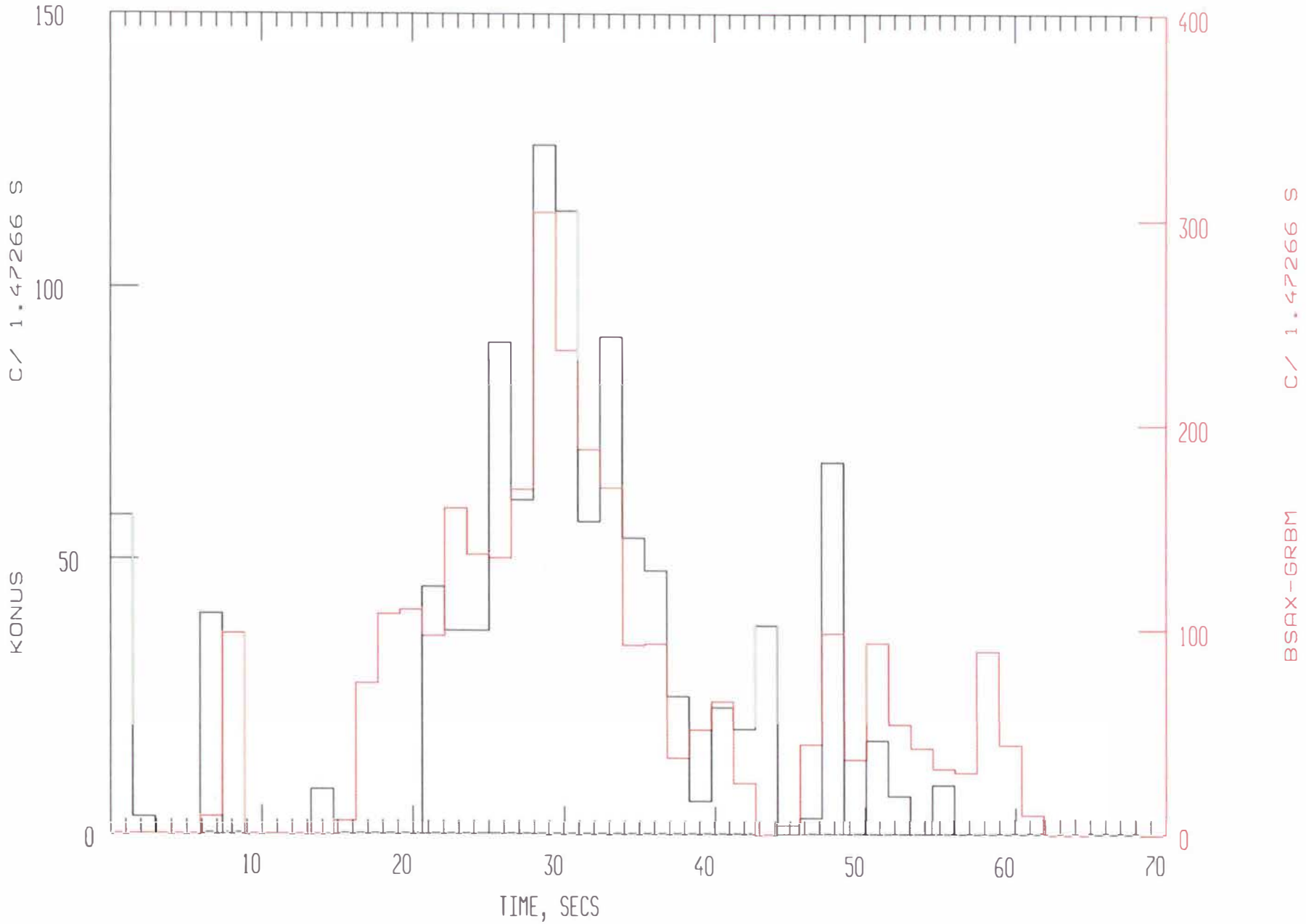
7/ 1/10

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

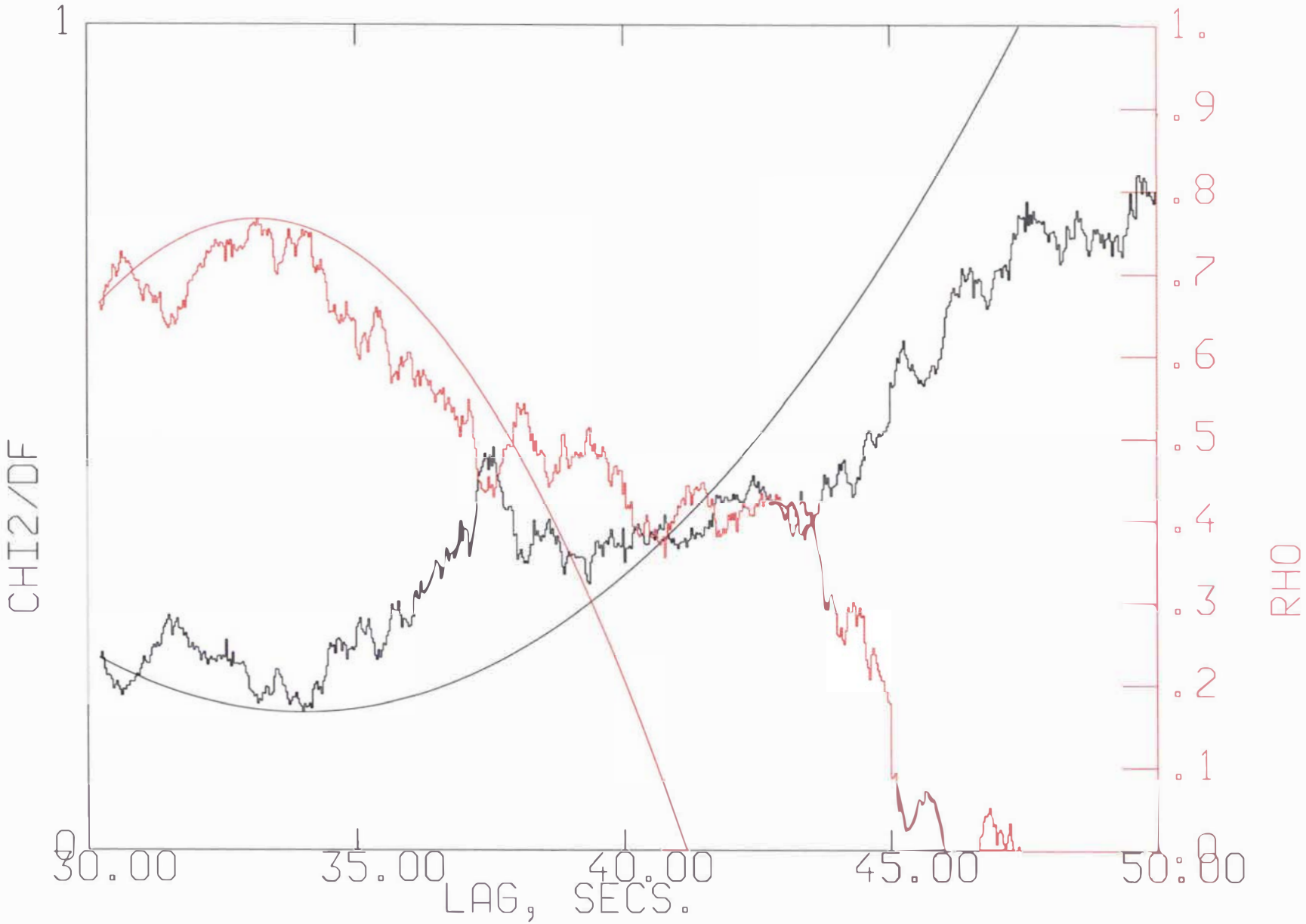


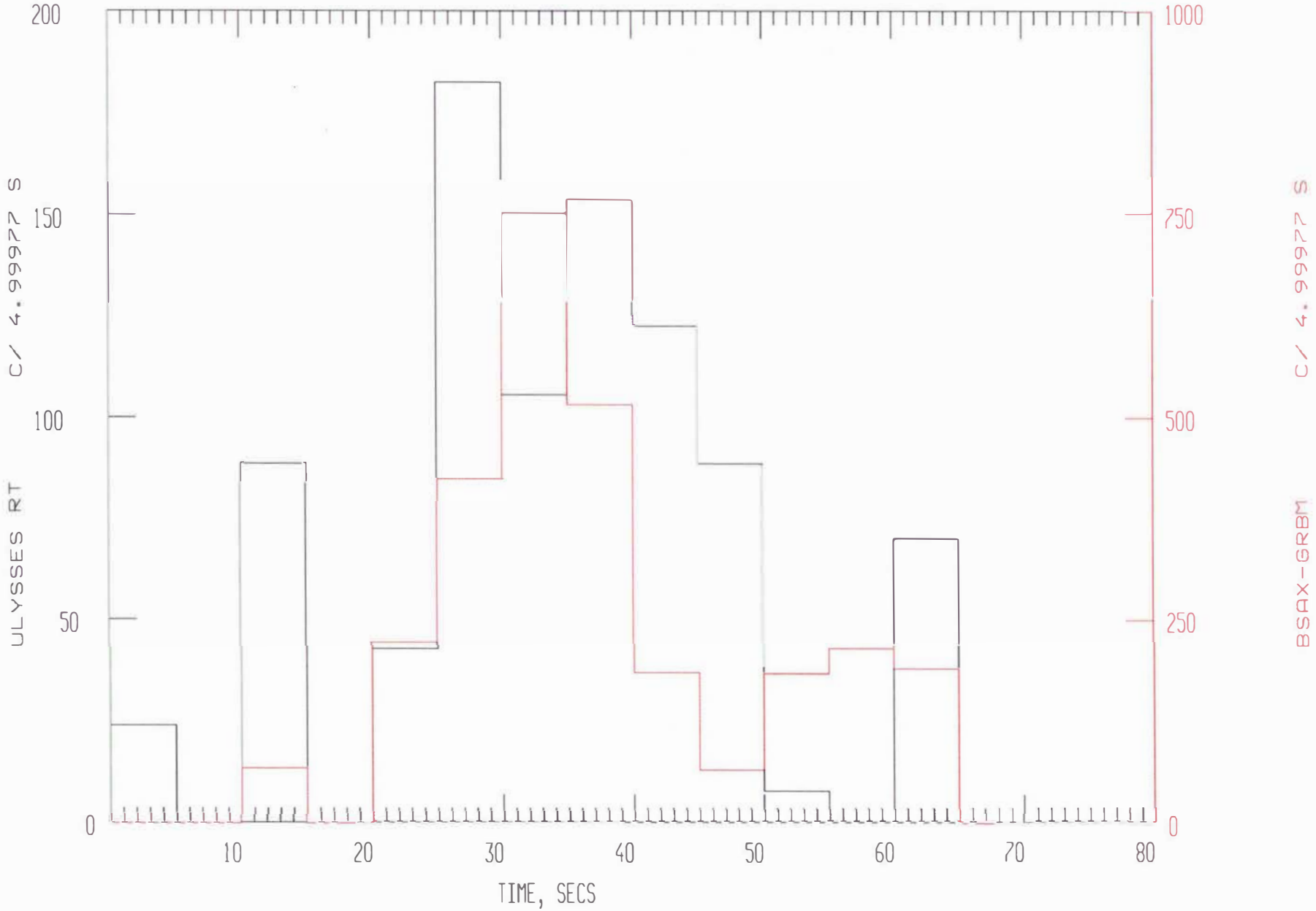
KONUS -BSAX-GRBM CORRELATION 18/07/97 58657.285




150
100
50
0
KONUS
C/ 1.47266 S
400
300
200
100
0
BSAX-GRBM
C/ 1.47266 S
10
20
30
40
50
60
70
TIME, SECS

ULYSSES RT-BSAX-GRBM CORRELATION 18/ 7/97 61169.922




200
150
100
50
0
C/ 4.99977 S
ULYSSES RT
1000
750
500
250
0
C/ 4.99977 S
BSAX-GRBM
10
20
30
40
50
60
70
80
TIME, SECS

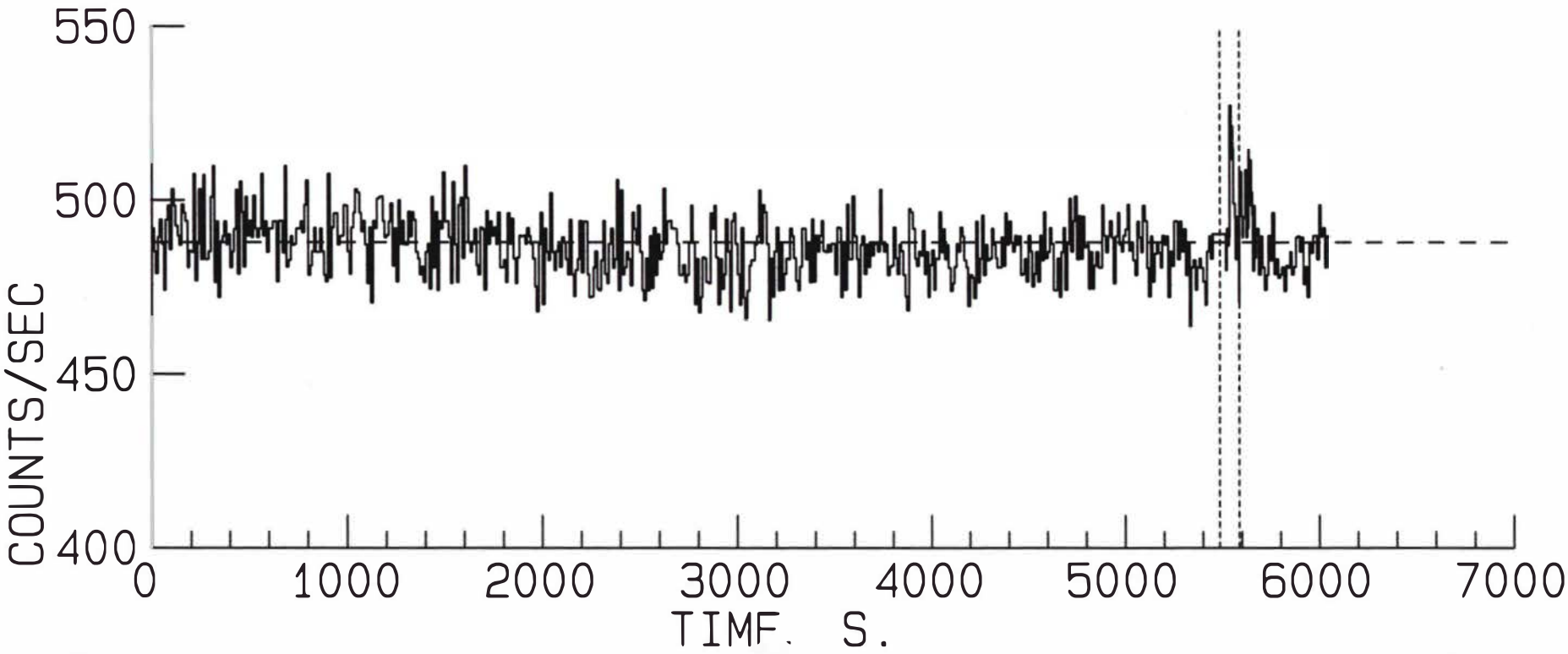
ULYSSES RT

6/10/ 9

18/ 7/97 55656.102 s

INTERVALS REGROUPED BY 20

21- 147 keV



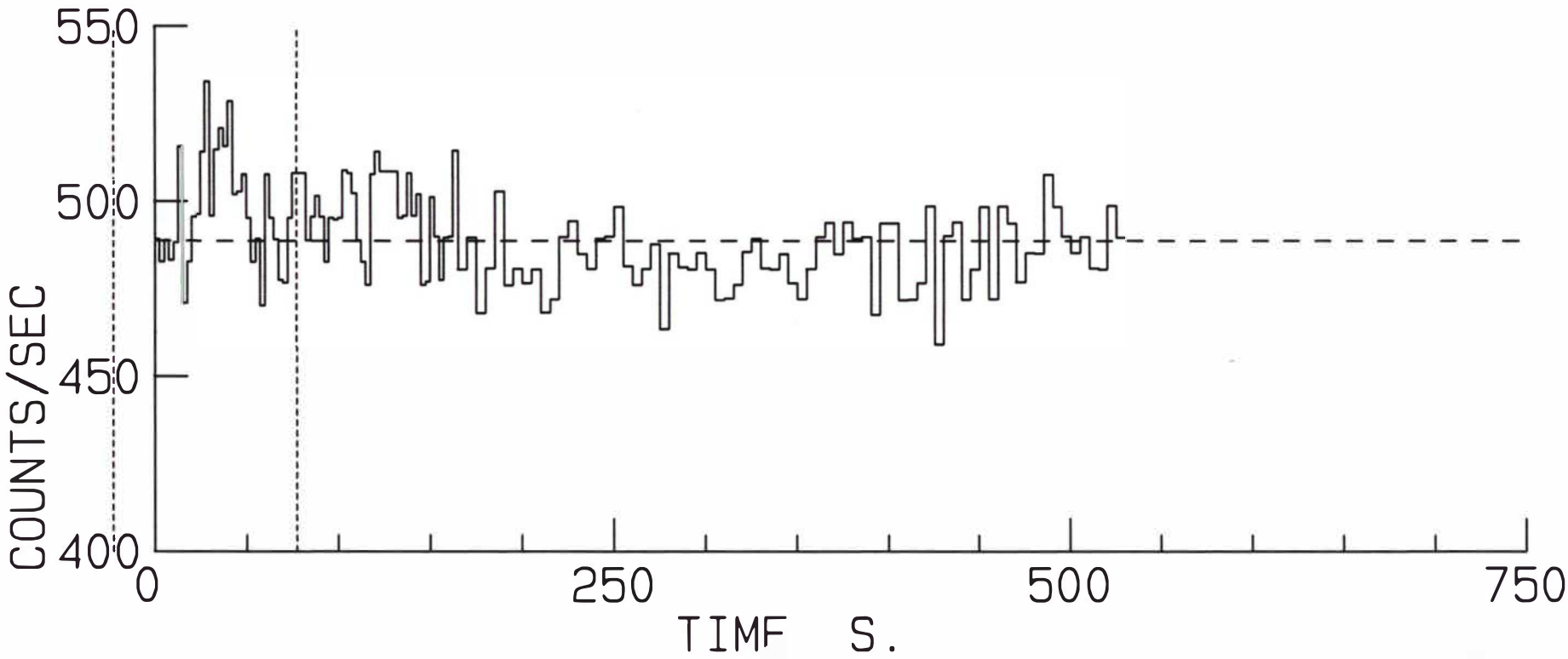
ULYSSES RT

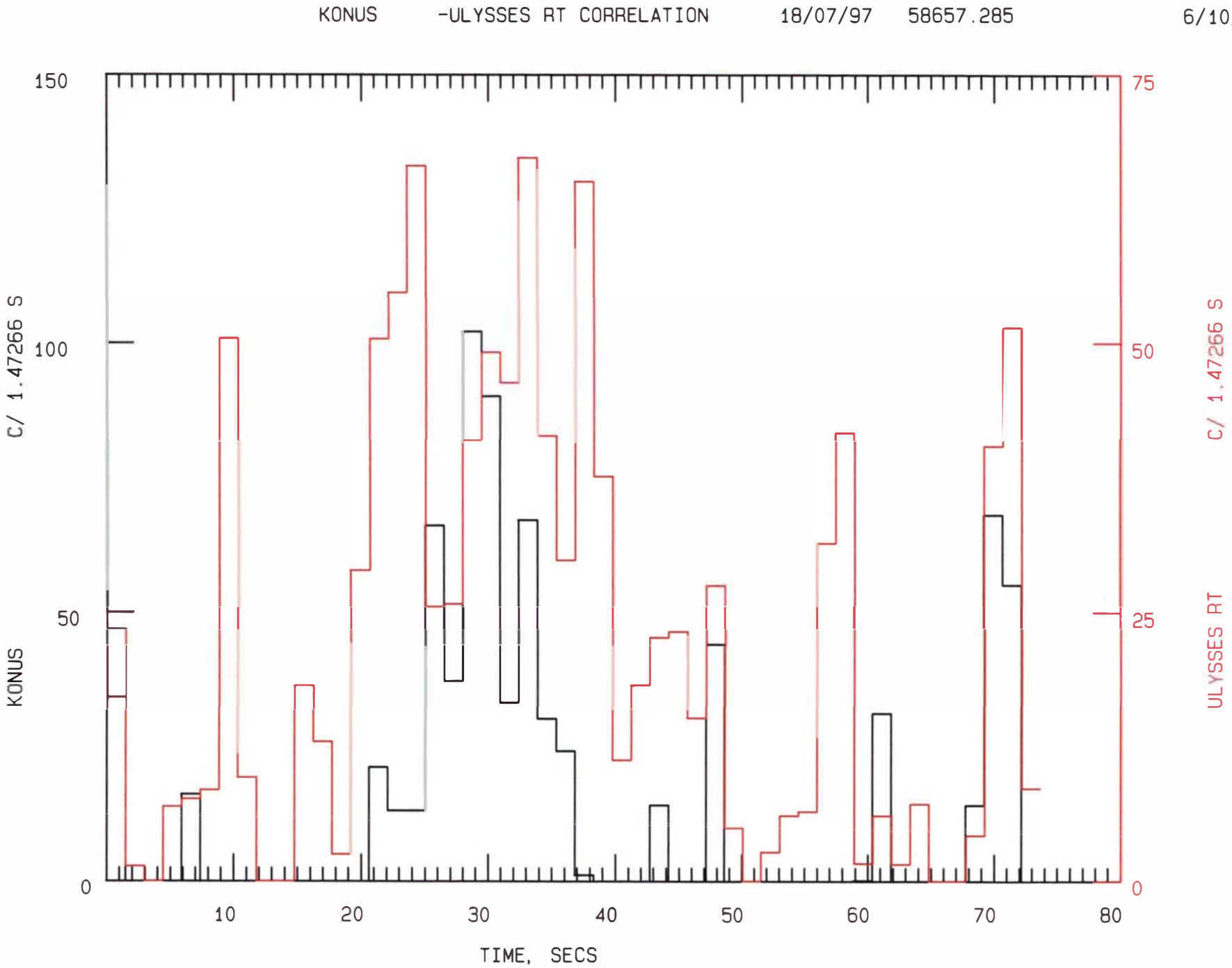
6/10/ 9

18/ 7/97 61169.664 s

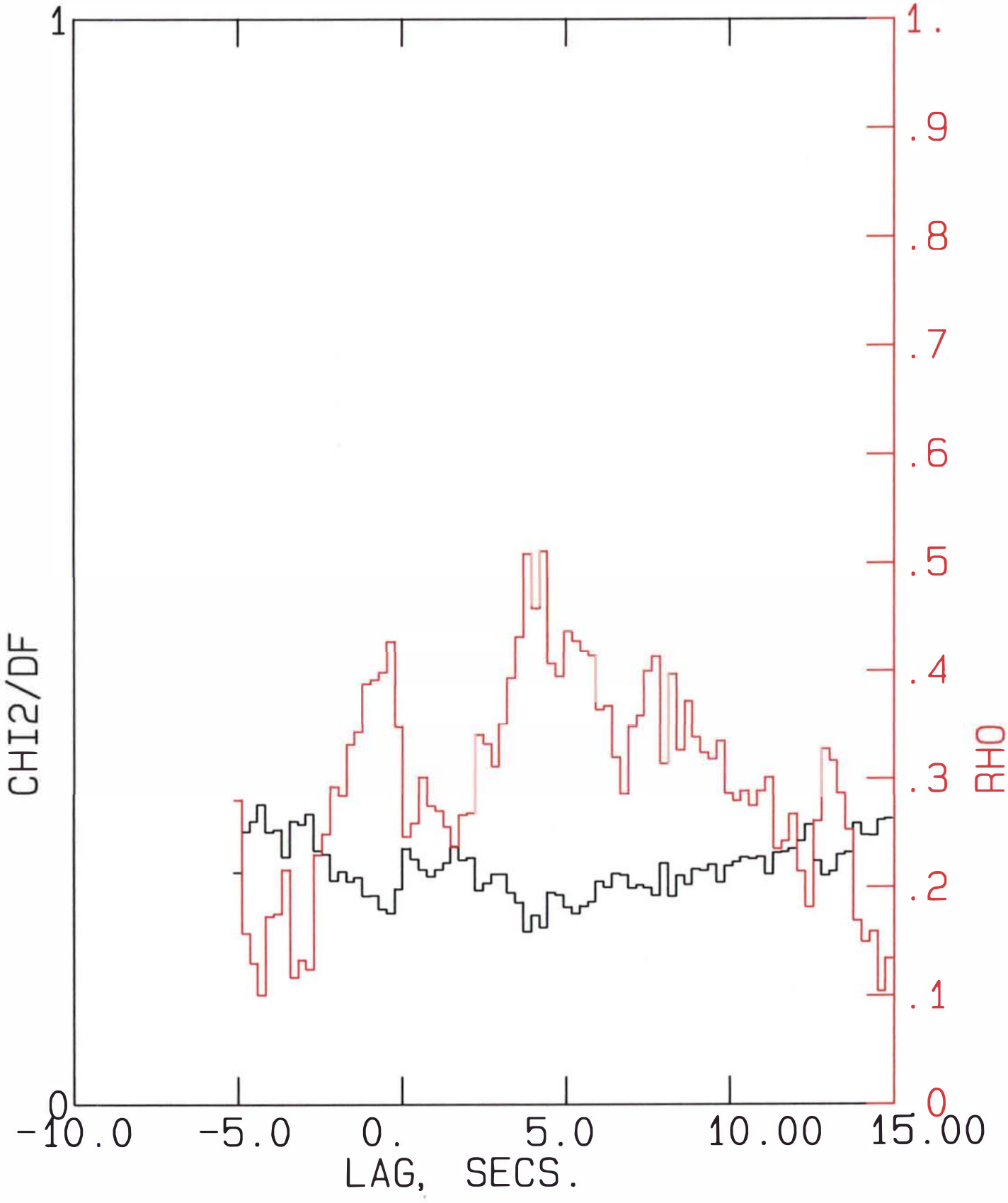
INTERVALS REGROUPED BY 10

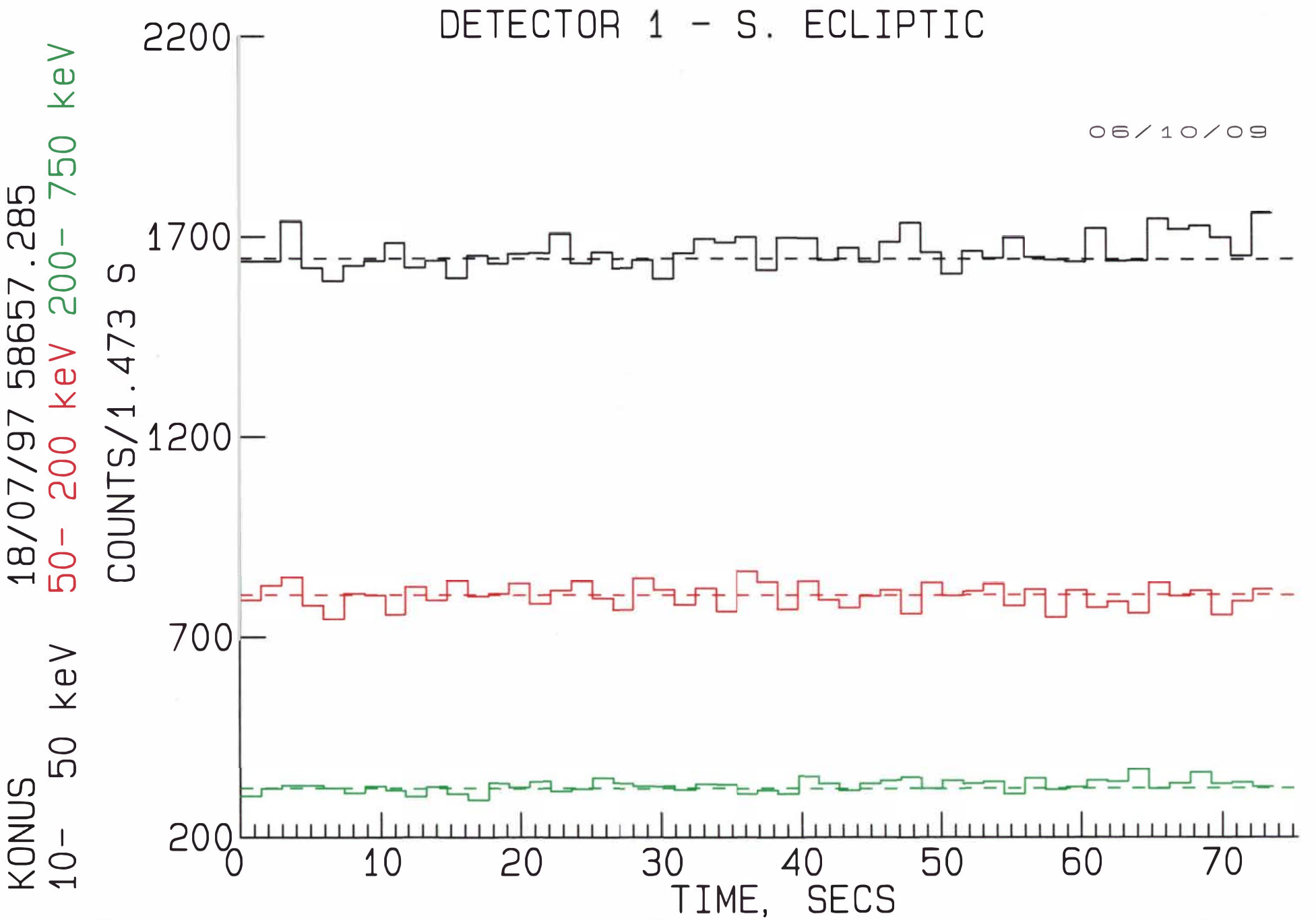
21- 147 keV

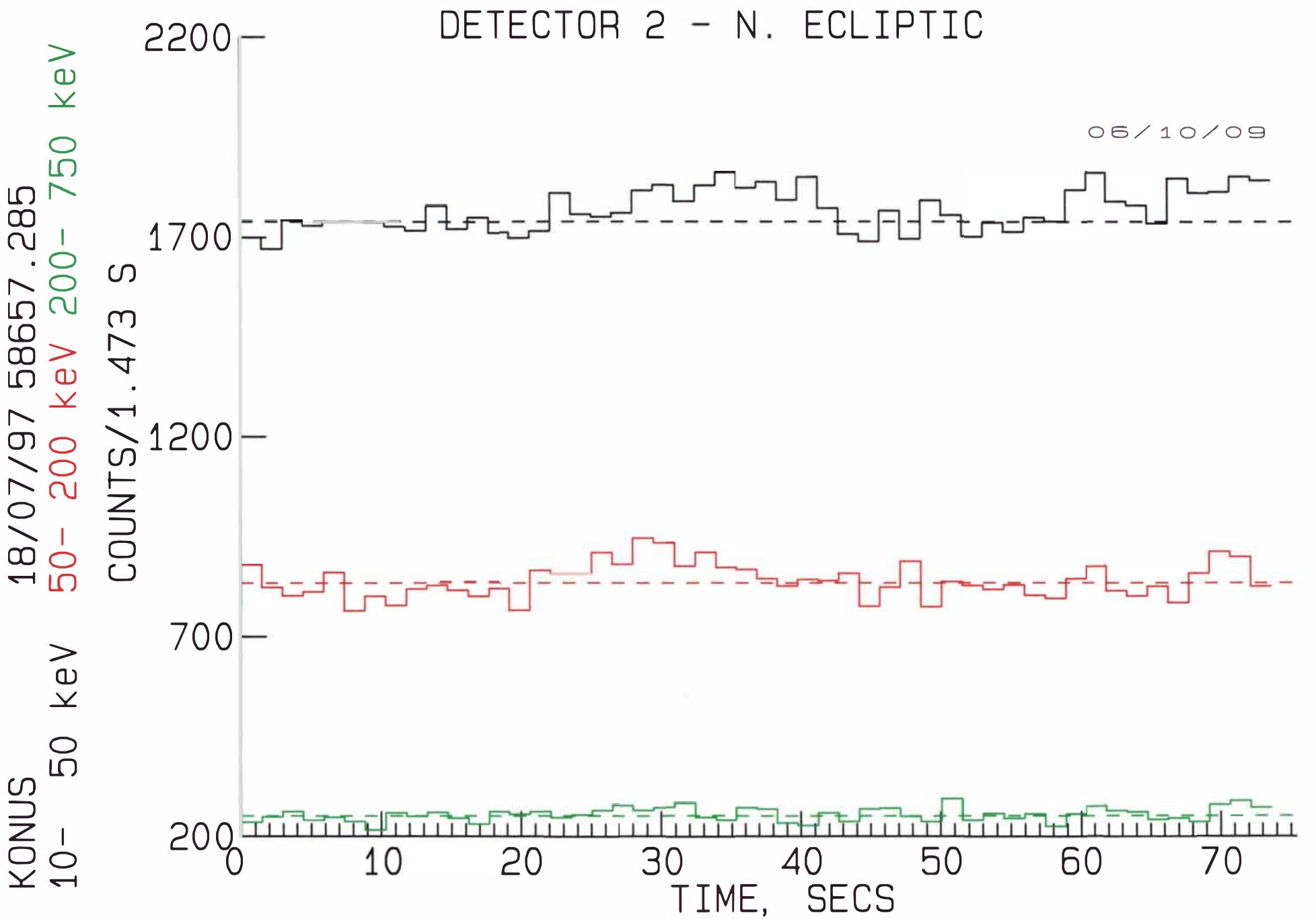


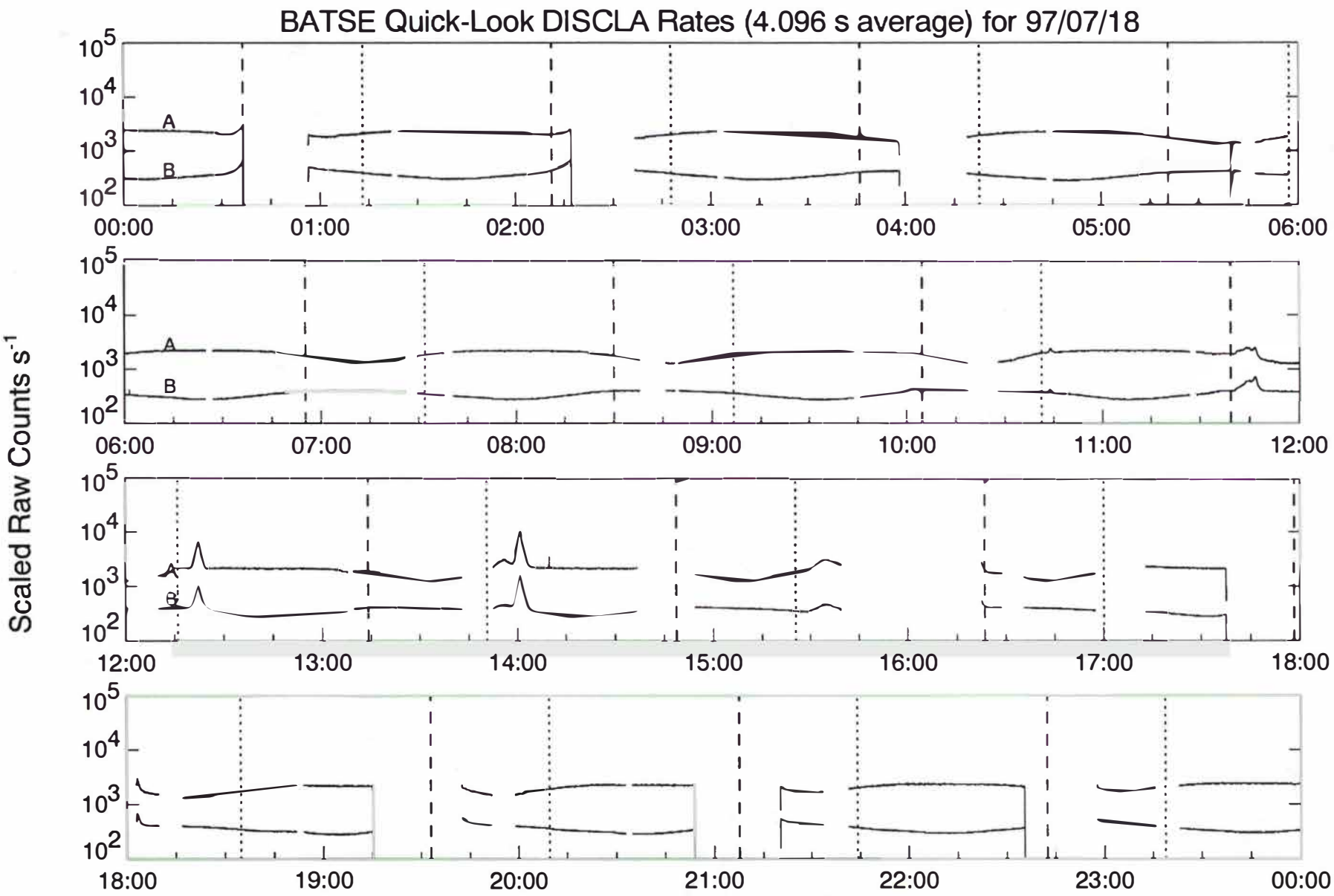

KONUS -ULYSSES RT CORRELATION 18/07/97 58657.285 6/10/ 9
150
100
50
0
C/ 1.47266 S
KONUS
75
50
25
0
C/ 1.47266 S
ULYSSES RT
10
20
30
40
50
60
70
80
TIME, SECS

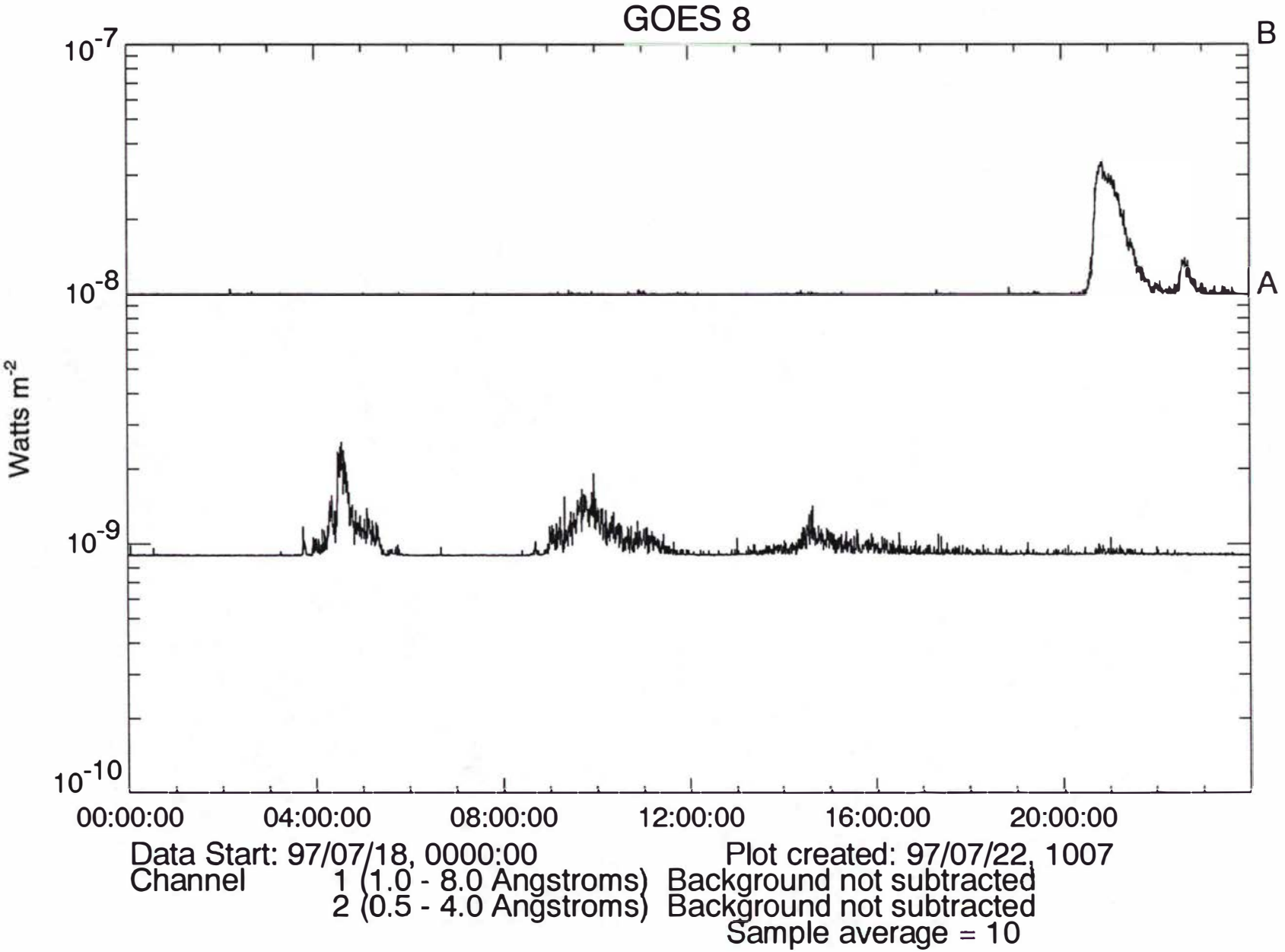
KONUS -ULYSSES RT CORRELATION 18/07/97 58657.285




DETECTOR 1 - S. ECLIPTIC
06/10/09
KONUS
10- 50 keV 50- 200 keV 200- 750 keV
18/07/97 58657.285
COUNTS/1.473 S
2200
1700
1200
700
200
0
10
20
30
40
50
60
70
TIME, SECS

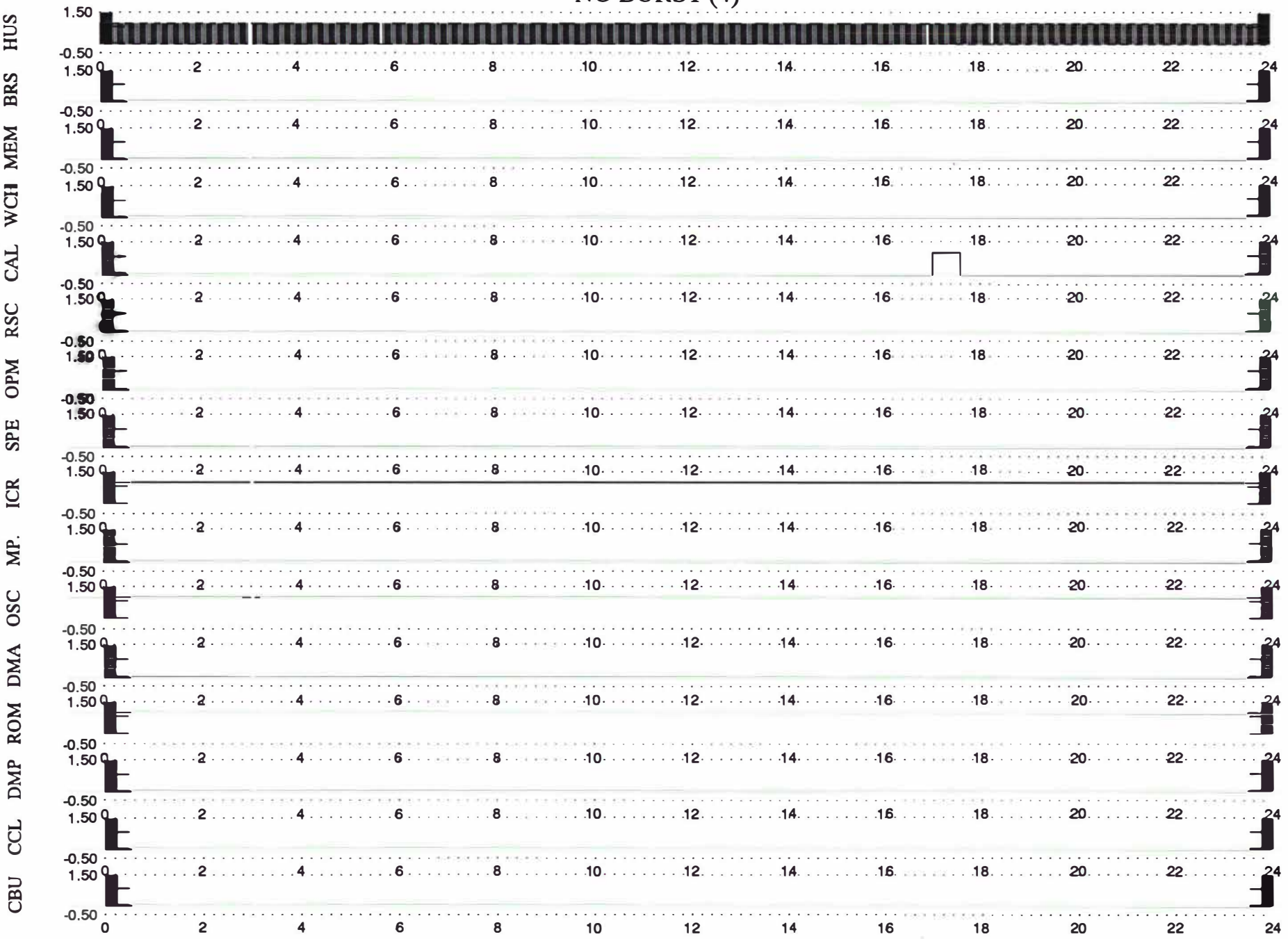

DETECTOR 2 - N. ECLIPTIC
06/10/09
KONUS
10- 50 keV 50- 200 keV 200- 750 keV
18/07/97 58657.285
COUNTS/1.473 S
2200
1700
1200
700
200
0
10
20
30
40
50
60
70
TIME, SECS


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/18
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: 97/07/22, 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: 97/07/18, 0000:00
Plot created: 97/07/22, 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 199, year 1997 to day 199, year 1997 10/24/97

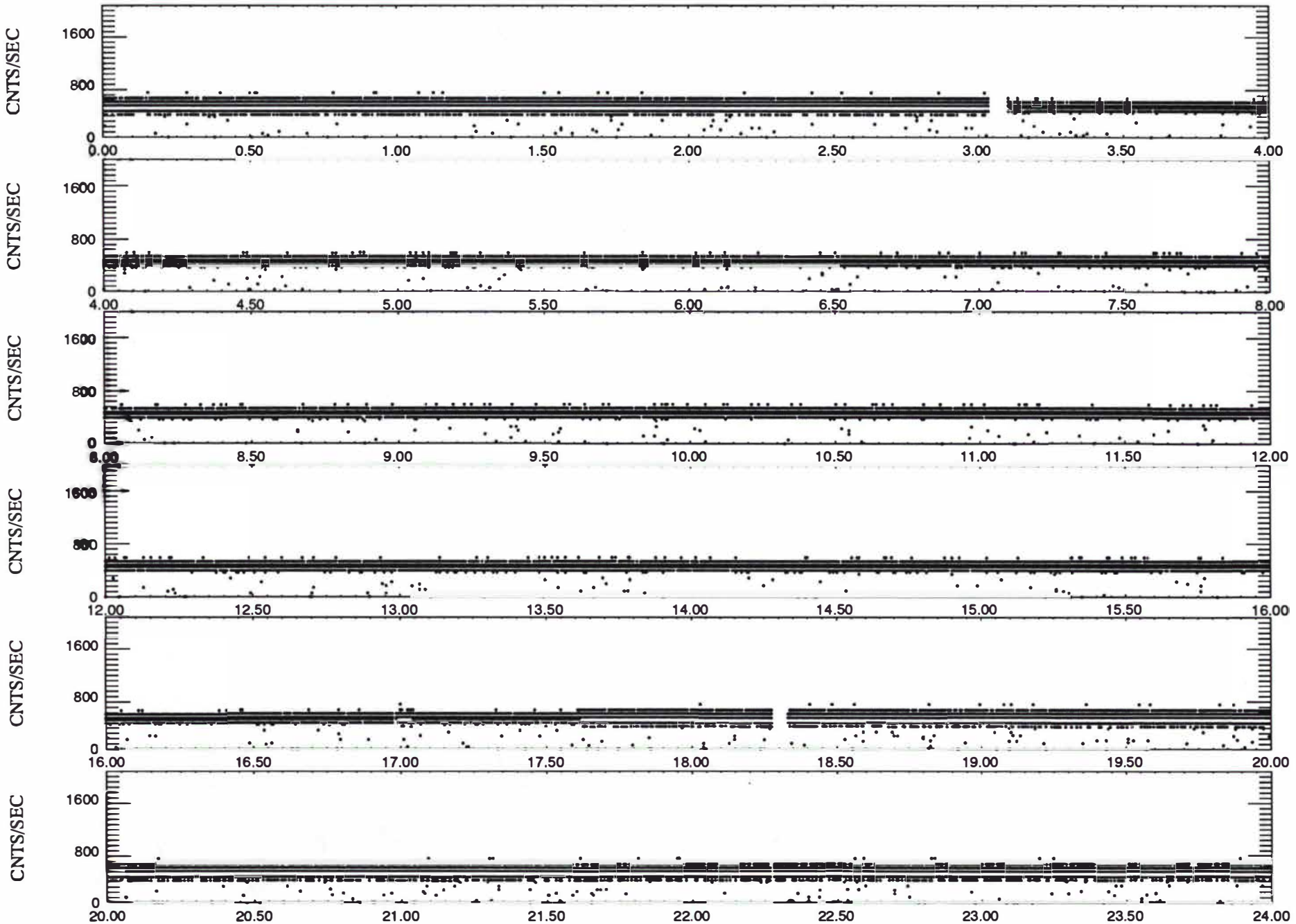
NO BURST (4)



UNIV[illegible]AL TIME

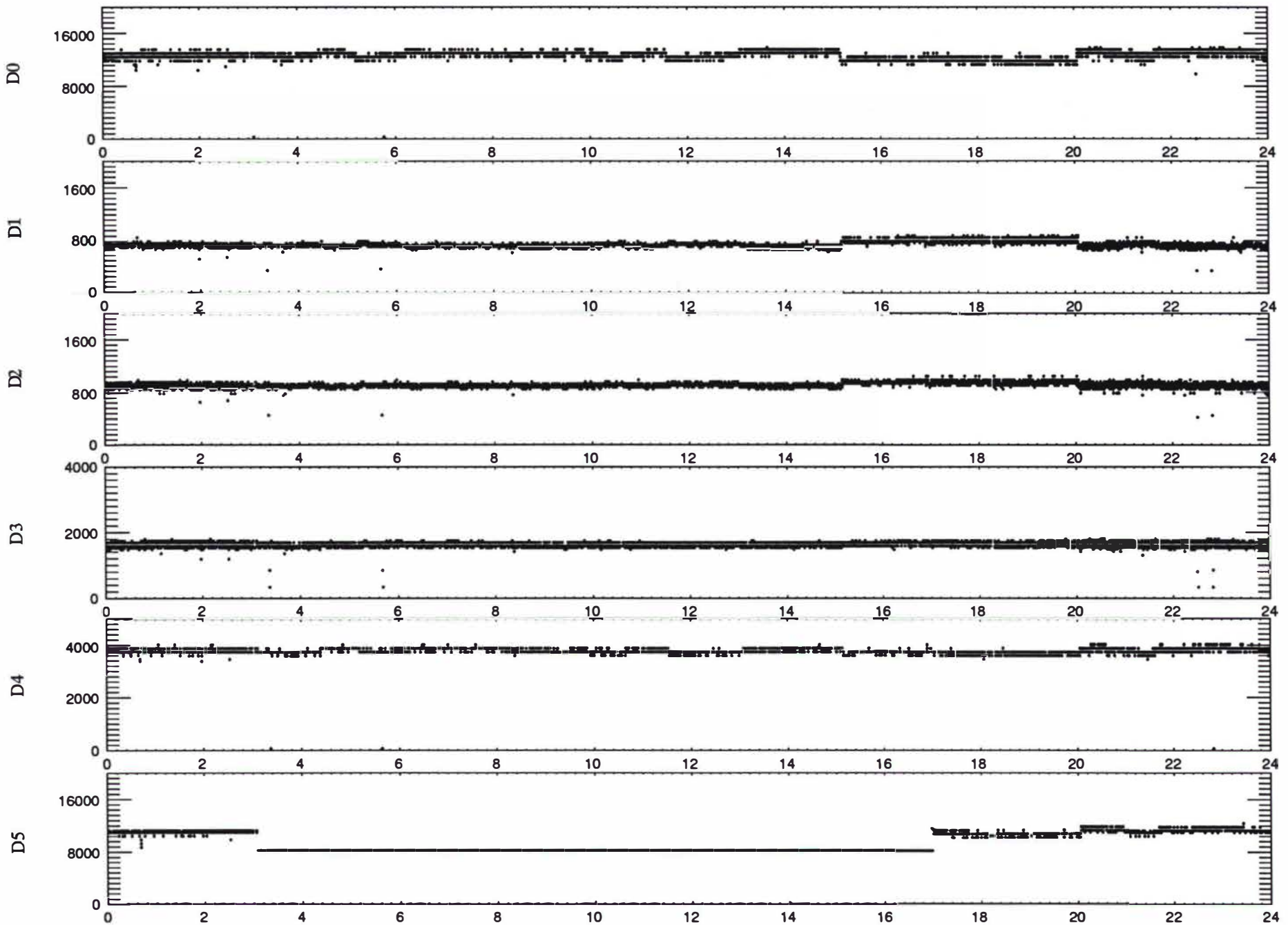
HUS 2A, MODE 1, NOT AVERAGED EDR day 199, year 1997 to day 199, year 1997 10/24/97

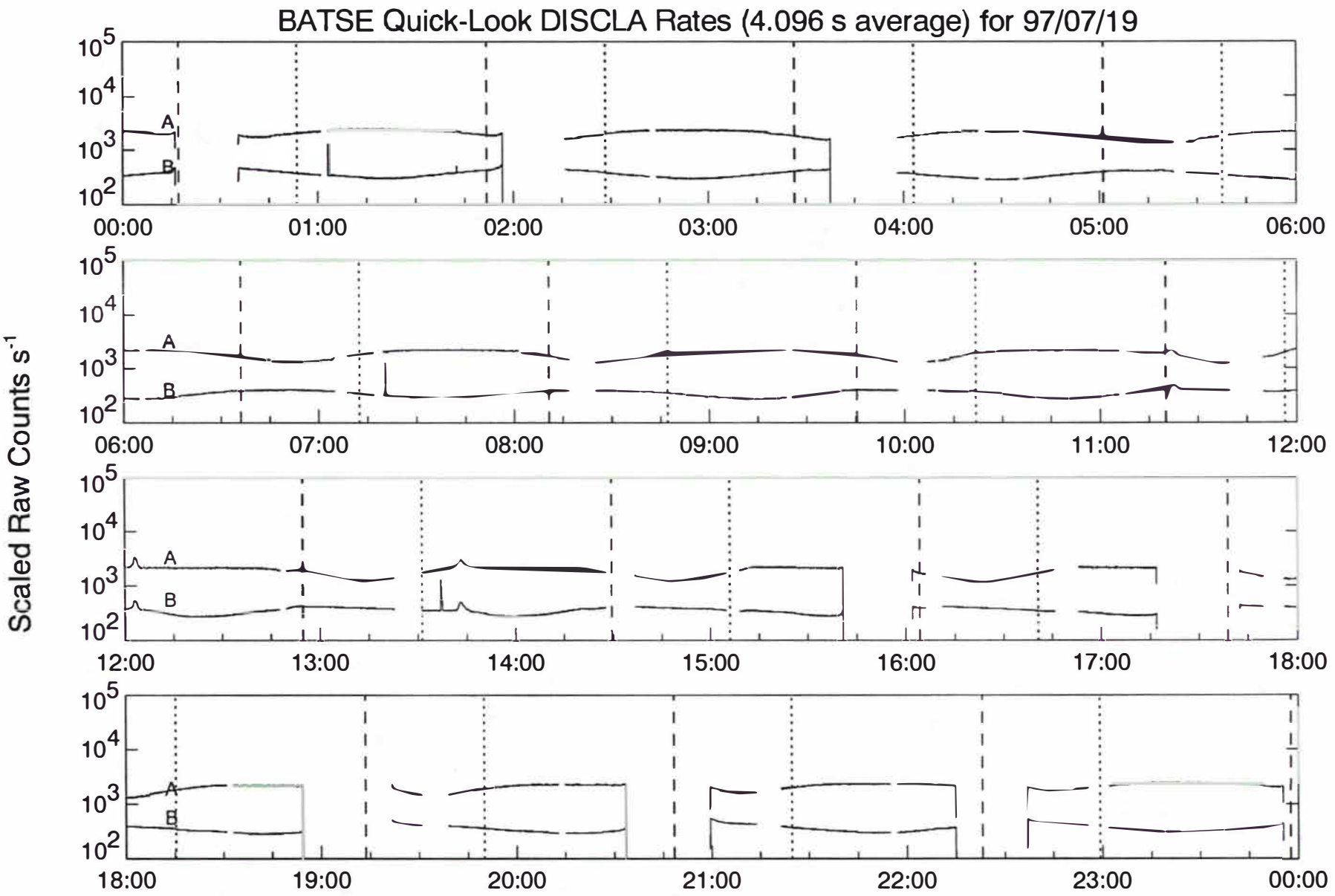
CALIBRATION DATA INCLUDED

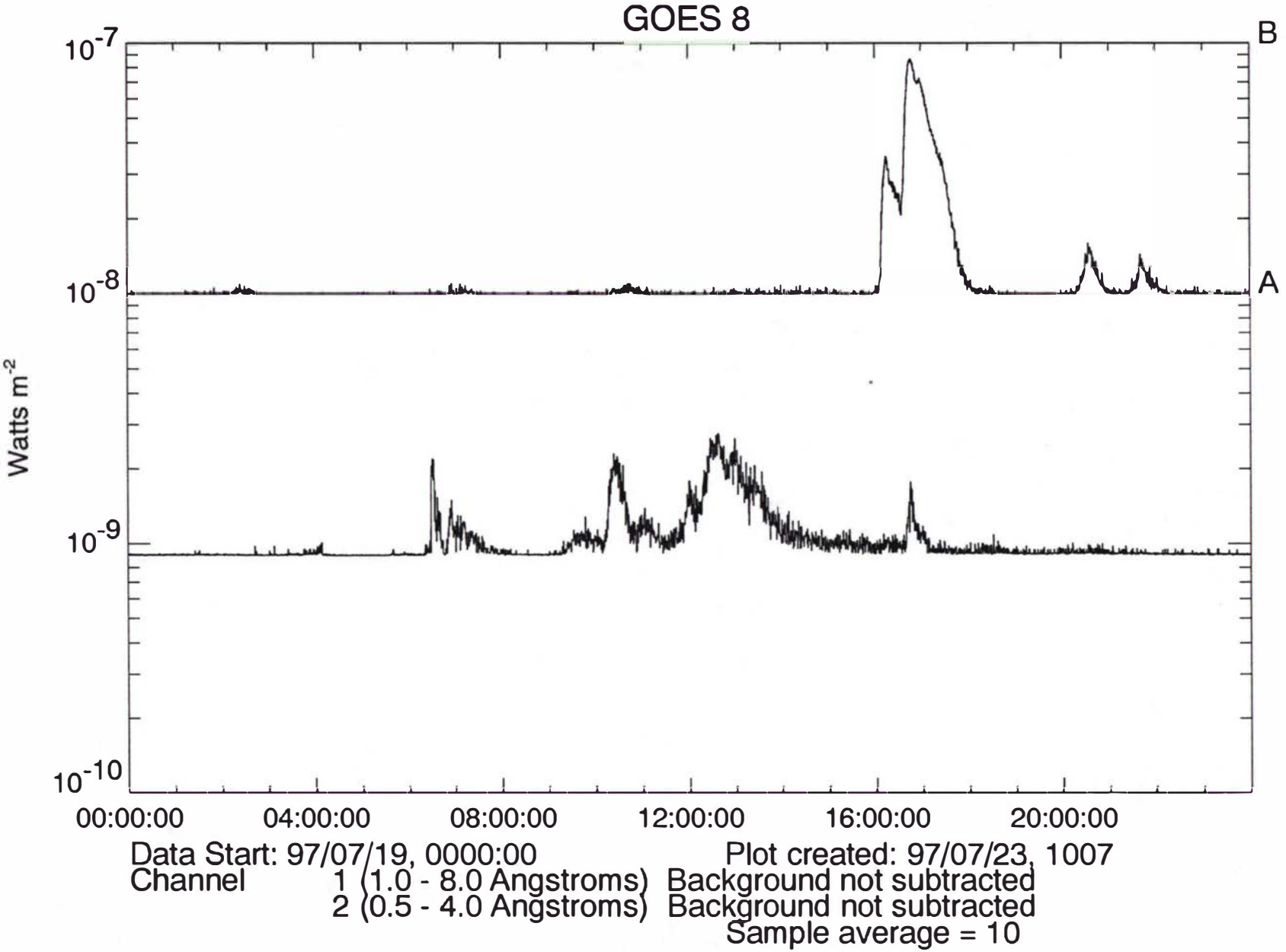


UNIVERSAL TIME

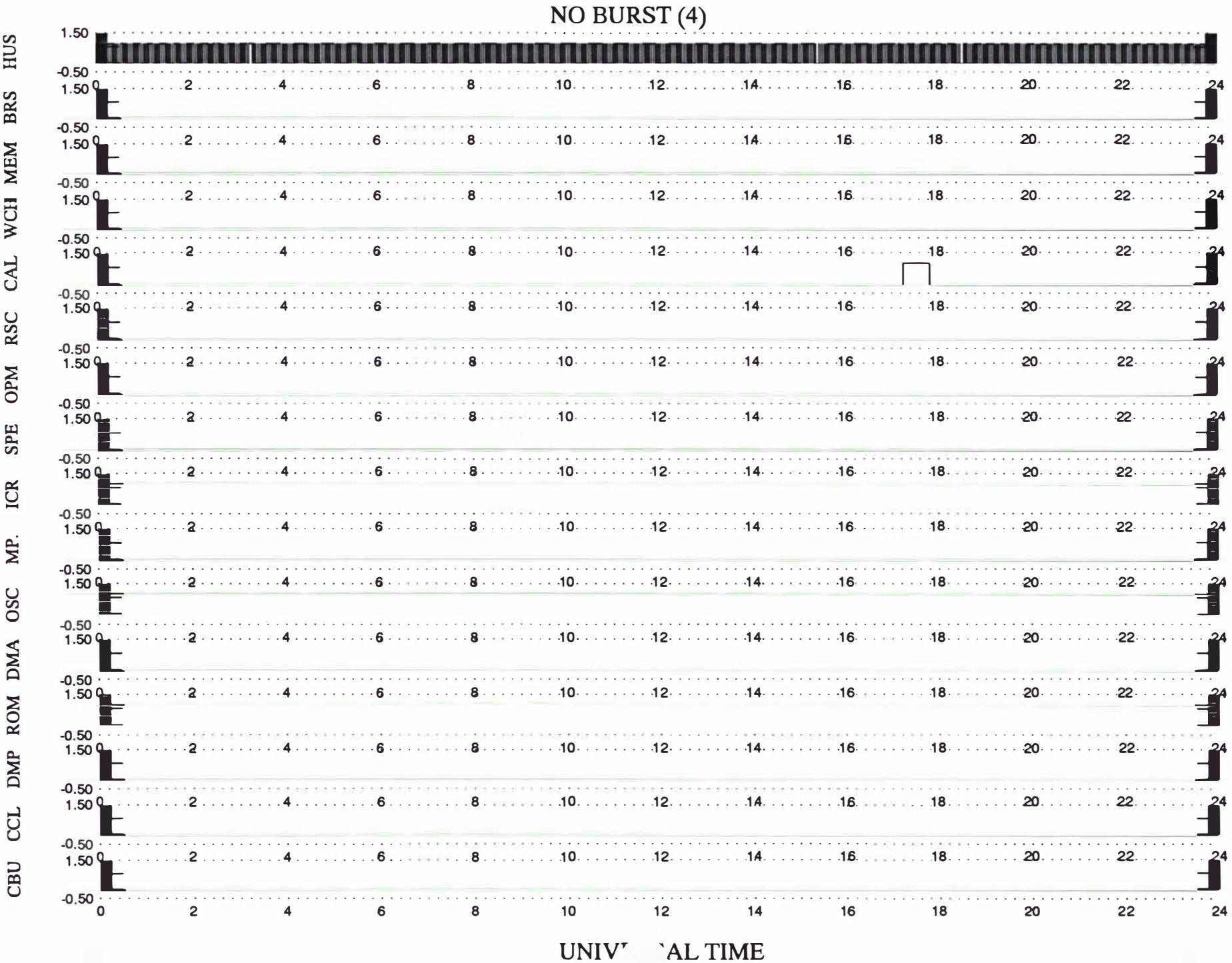
HUS 2B COUNTS / SEC EDR day 199, year 1997 to day 199, year 1997 10/24/97




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

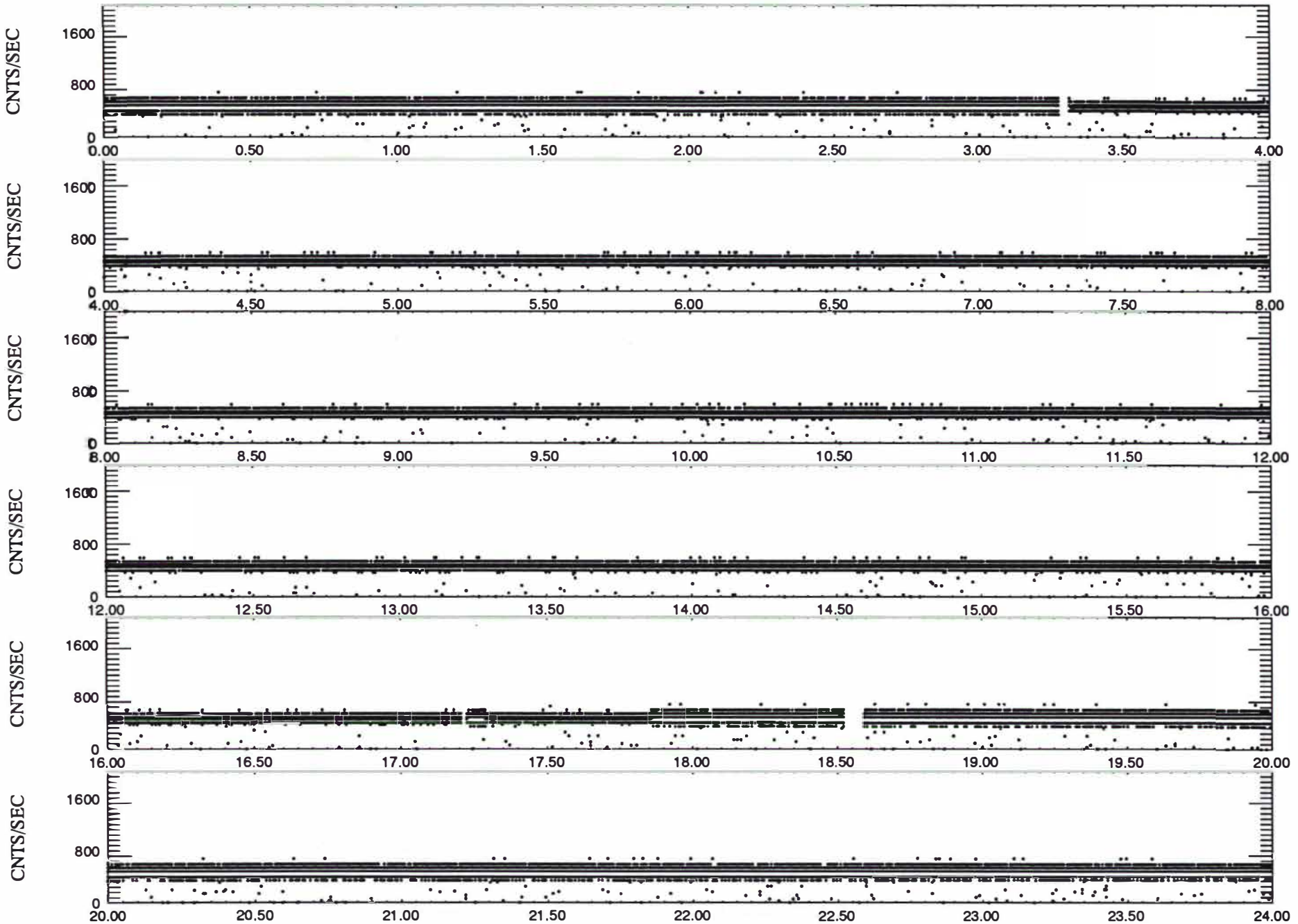

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/19, 0000:00
Plot created: 97/07/23, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 200, year 1997 to day 200, year 1997 10/24/97



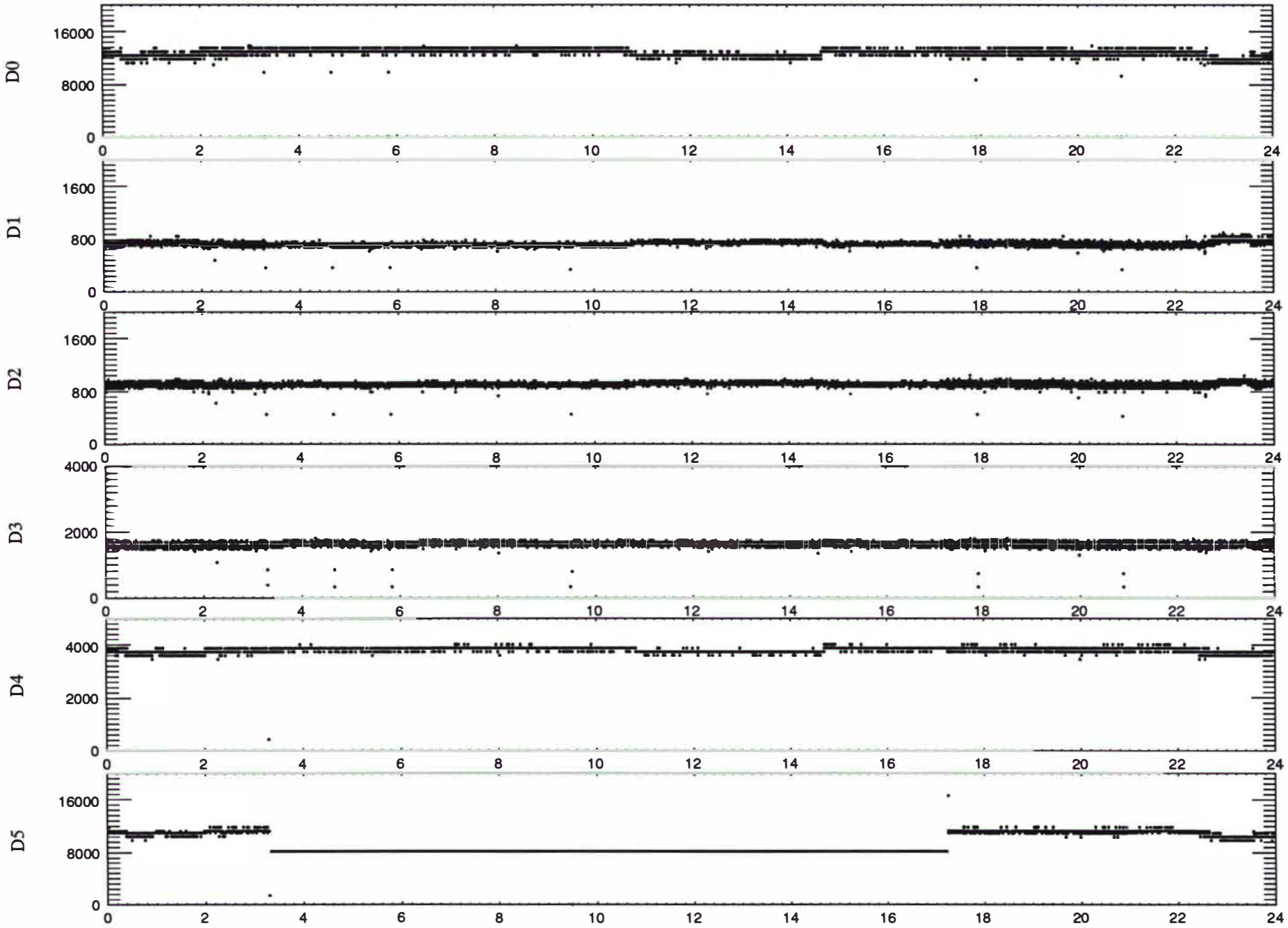
HUS 2A, MODE 1, NOT AVERAGED EDR day 200, year 1997 to day 200, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 200, year 1997 to day 200, year 1997 10/24/97



From SAHI@fender.msfc.nasa.gov Mon Jul 21 13:49 PDT 1997
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 21 Jul 1997 15:48:14 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.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.: 6313

TIME: TJD=0649 SECONDS=47885

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

KONUS

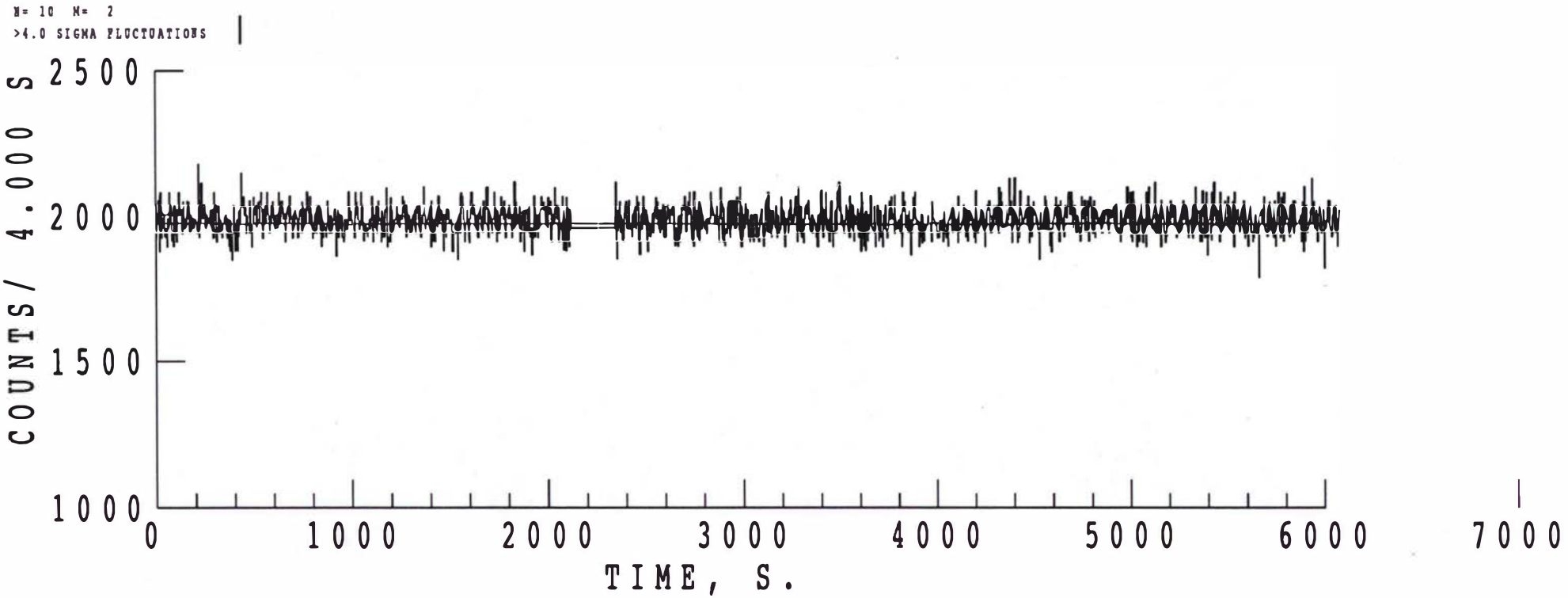
ULYSSES RT

15/02/00

20/07/97 65484.184 s

0.250 S INTERVALS REGROUPED BY 16

0- 0 keV



From SAHI@fender.msfc.nasa.gov Mon Jul 21 13:56 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 NAA08459; Mon, 21 Jul 1997 13:56:34 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 21 Jul 1997 15:56:25 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970721155625.20a000aa@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6314
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6314
EVENT OF 1997 JUL 20 DAY OF YEAR=201
EVENT CROSSING TIME AT BATSE : 80786. S. OR 22:26:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 230.000 -33.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 7/ 97 IS:
RA= 155.608 DEC= 23.539 DIST= 6.013 AU
BATSE-ULYSSES DISTANCE = 899472397. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 89.39 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 31.94 SECS.
CROSSING TIME AT ULYSSES IS 80818. S. OR 22:26:57 +/- 571.36 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 7/ 97 IS:
RA= 193.927 DEC= -6.188 DIST= 1.386 AU
MARS-BATSE DISTANCE = 207273968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=137.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -506.53 SECS.
CROSSING TIME AT MARS IS 80279. S. OR 22:17:59 +/- 74.01 SECONDS

BATSE BURST TRIGGER
NO.: 6314

TIME: TJD=0649 SECONDS=80786

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=119.1 AZIMUTH=140.1 ERROR=6.4 DEGREES

COMMENTS:
BURST, SINGLE SPIKE, DUR.~10 SECS, MAX. AT TRIGGER. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6314	970720	10649	80786	2000	230	-33	10

BATSE BURST# 6314

ULYSSES RT 22/ 7/97

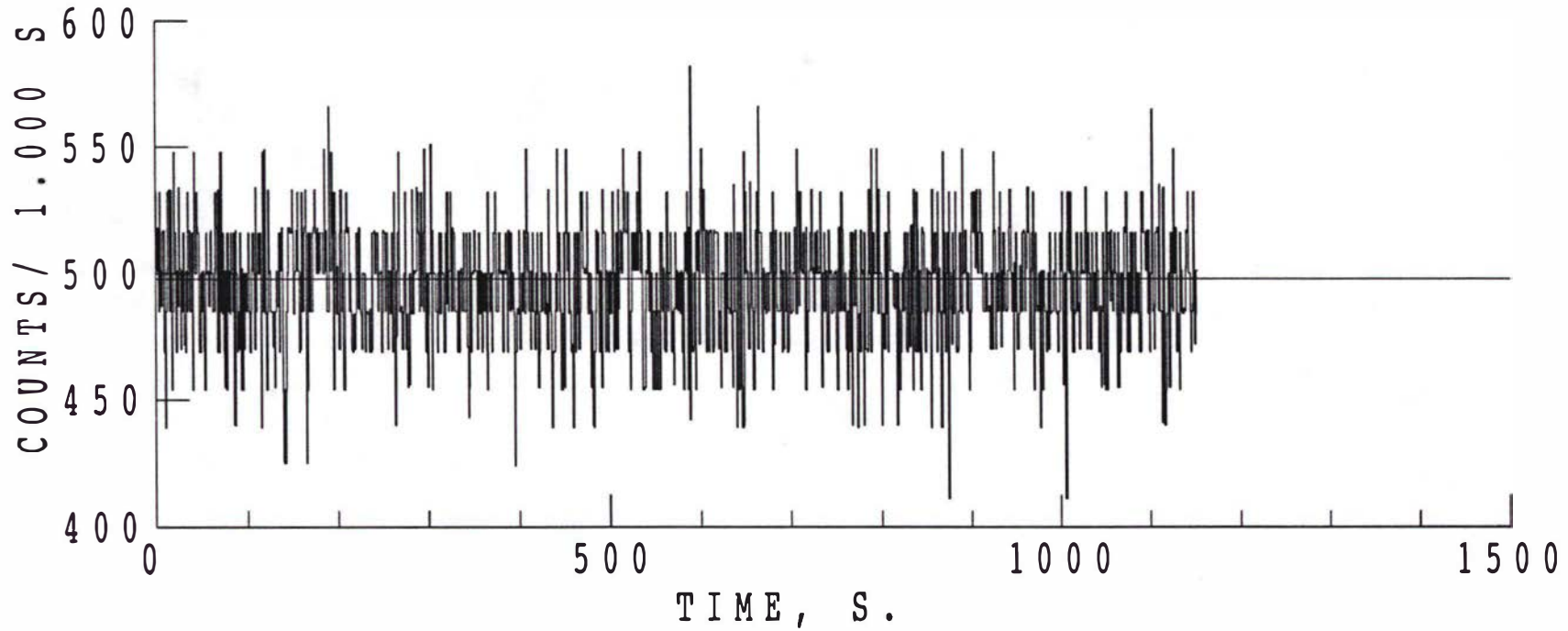
20/ 7/97 80244.094 s

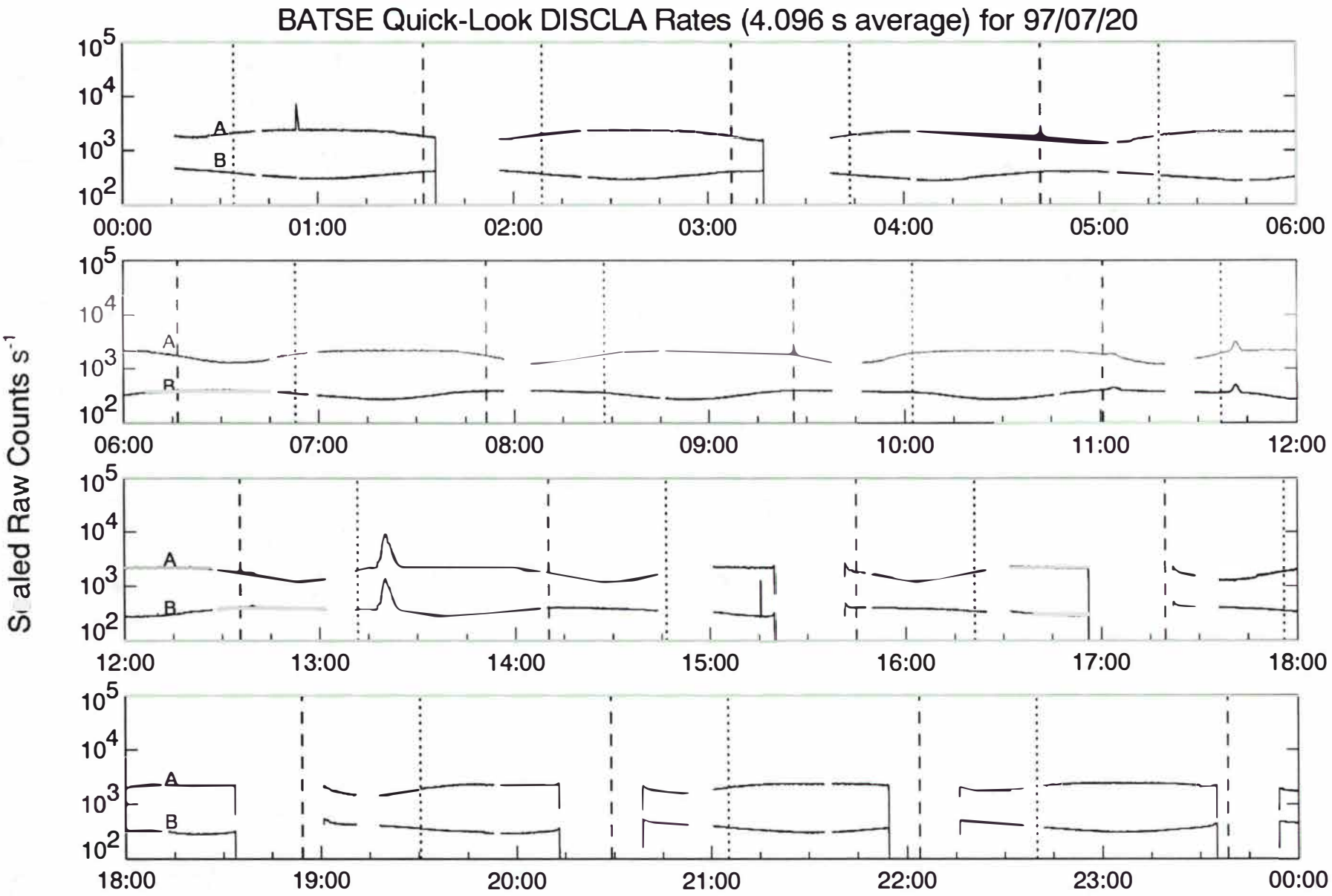
0.250 S INTERVALS REGROUPED BY 4

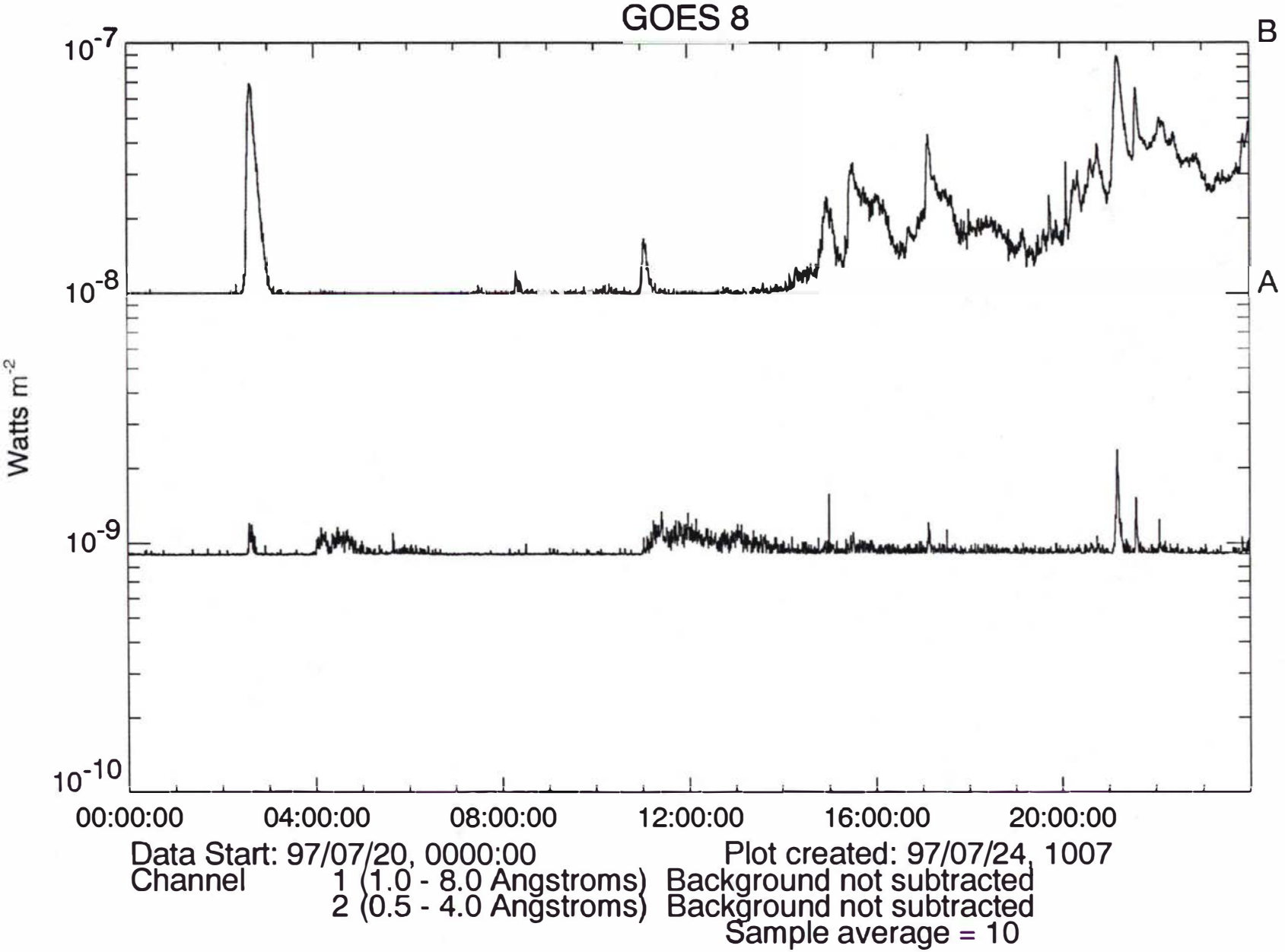
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

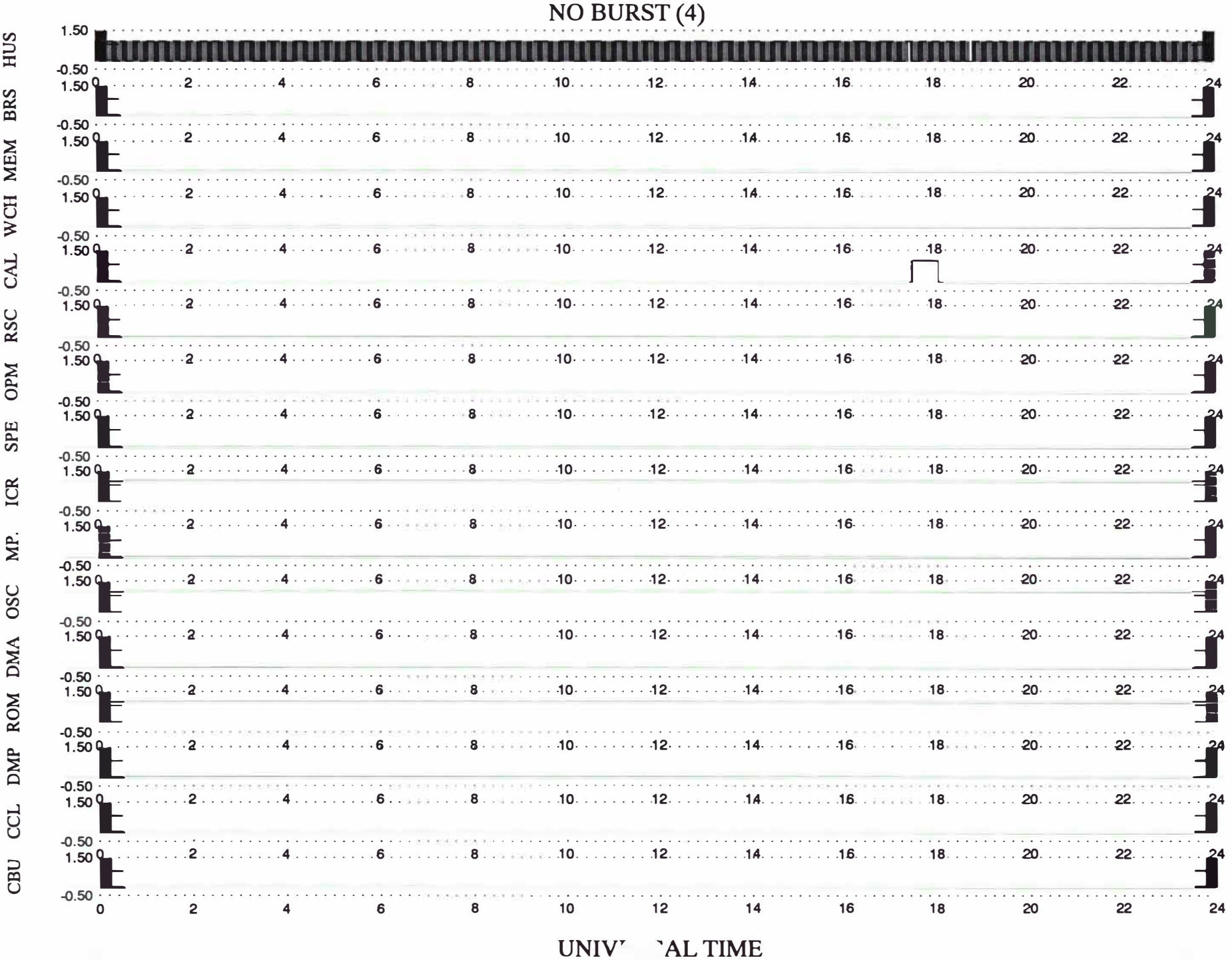
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/20
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: 97/07/24, 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

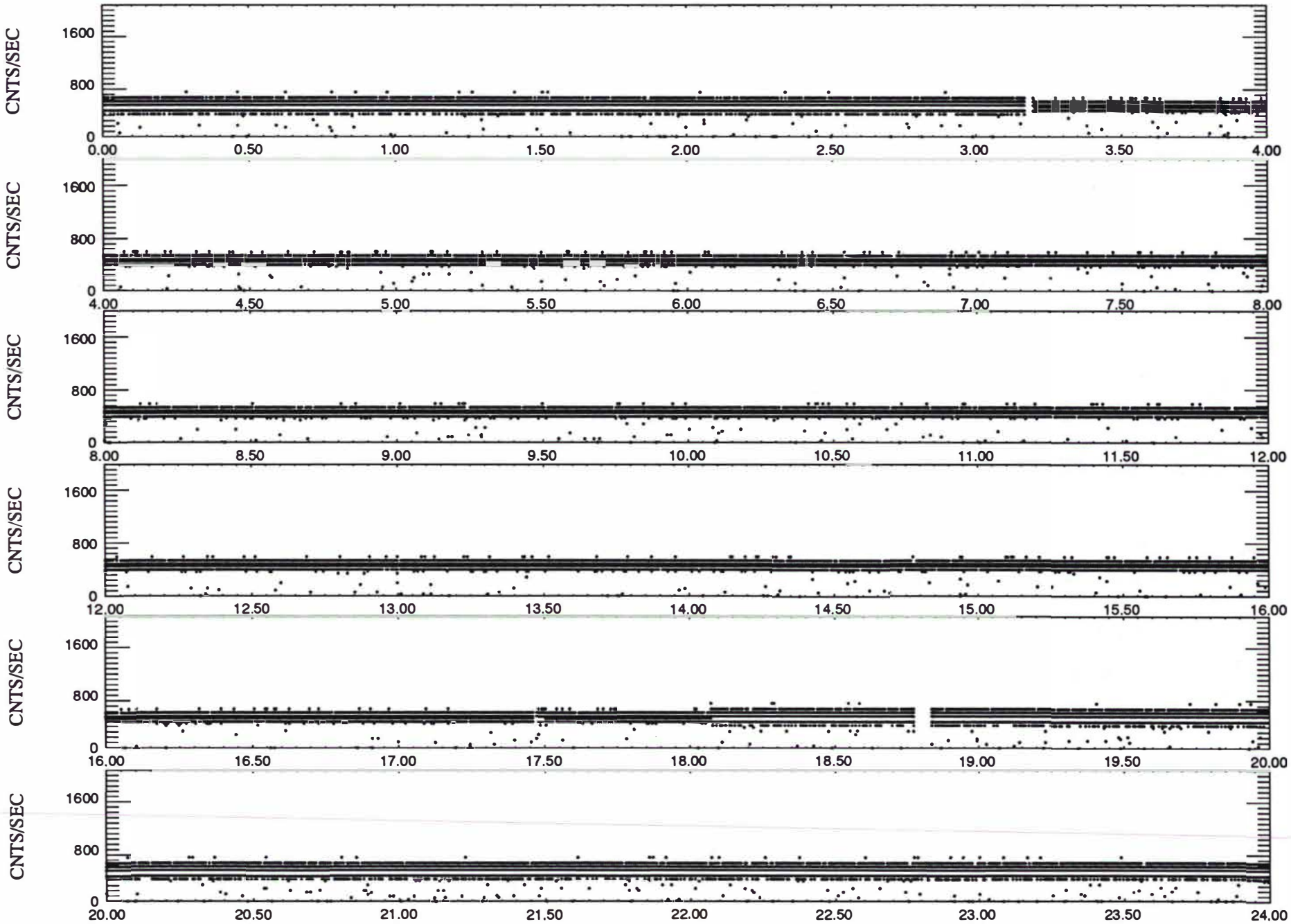

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/20, 0000:00
Plot created: 97/07/24, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 201, year 1997 to day 201, year 1997 10/24/97



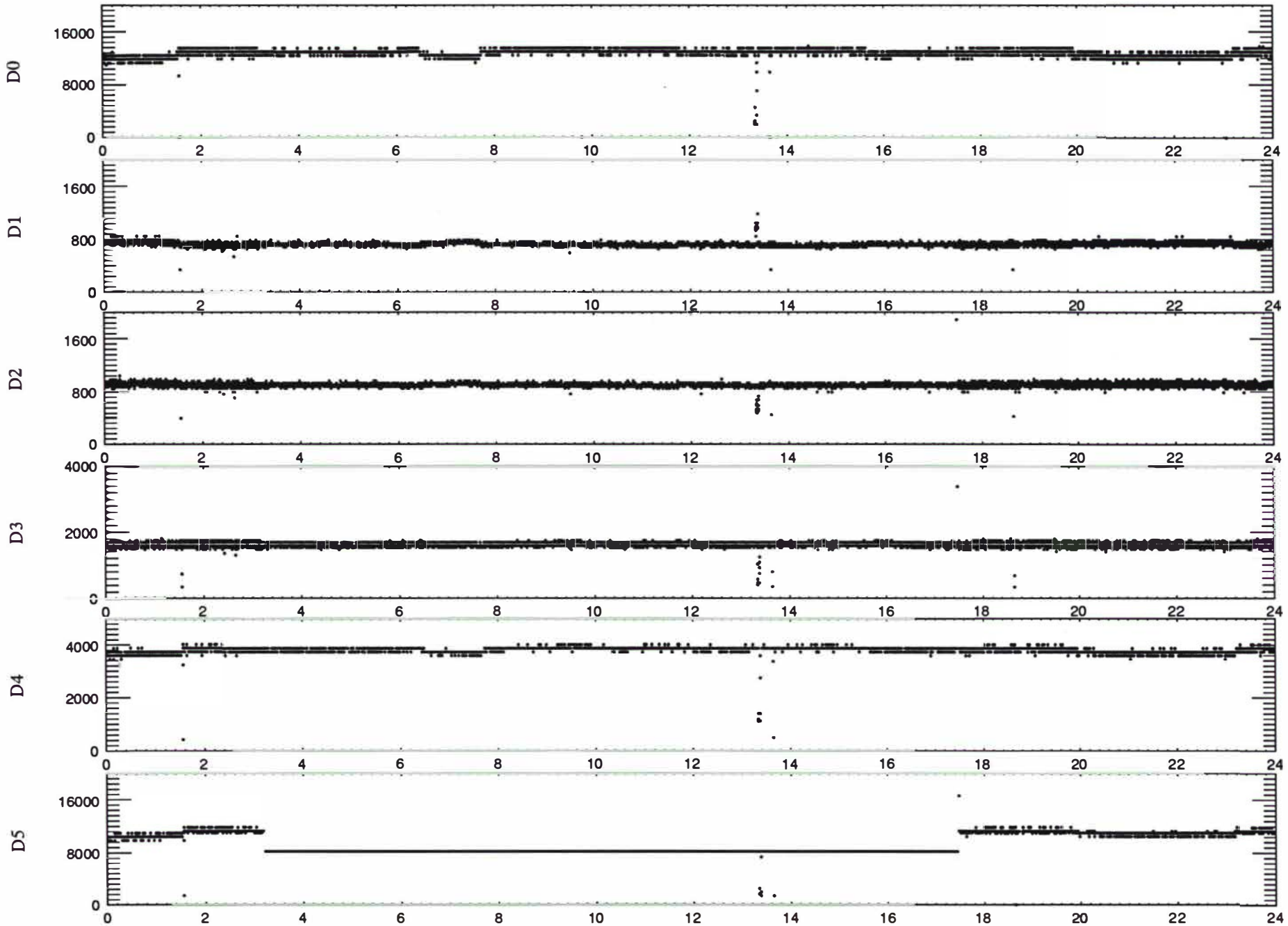
HUS 2A, MODE 1, NOT AVERAGED EDR day 201, year 1997 to day 201, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 201, year 1997 to day 201, year 1997 10/24/97



Date: Dec 12 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

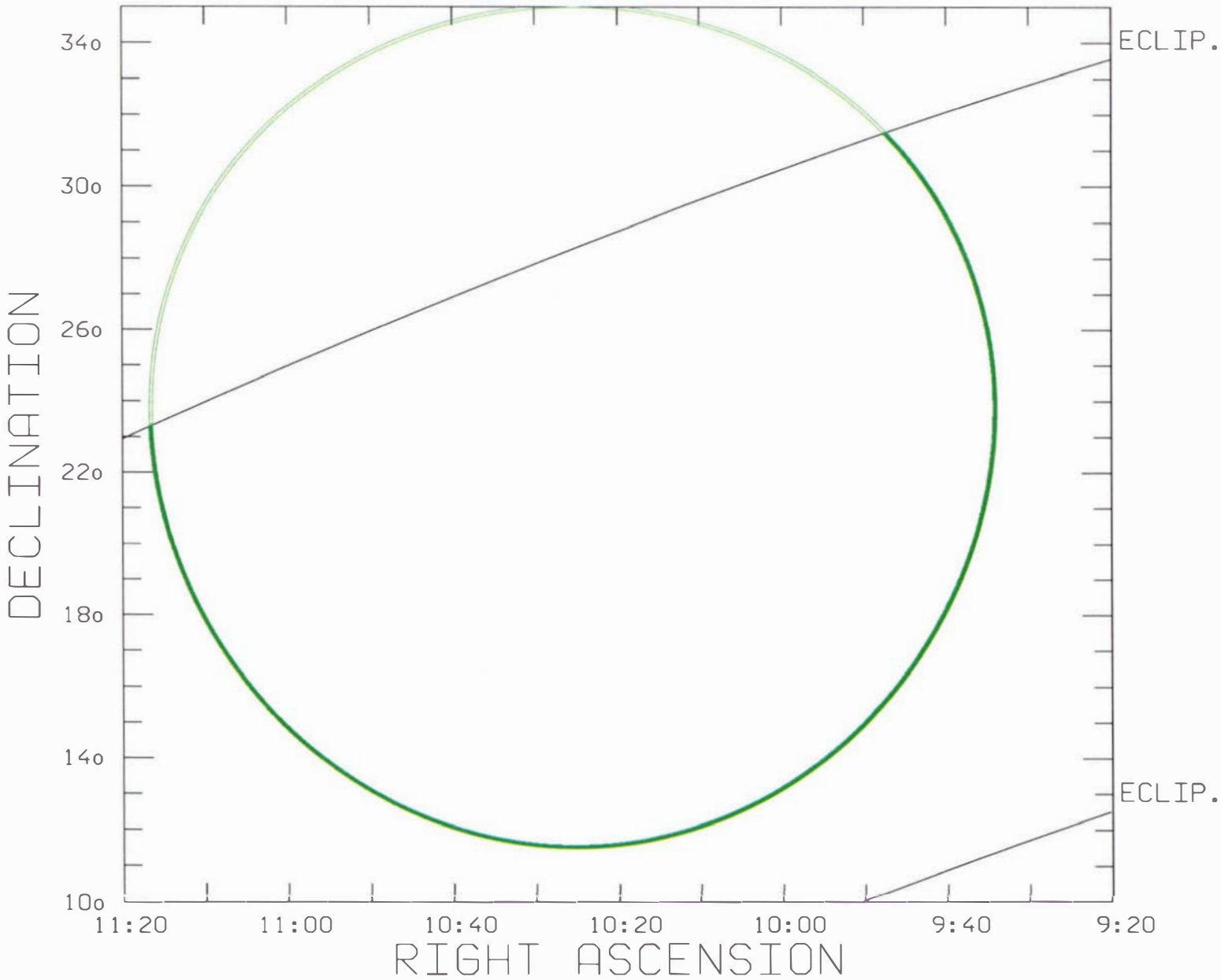
☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

☐ 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?

GRB970721 ~84615 S 12/12/2011

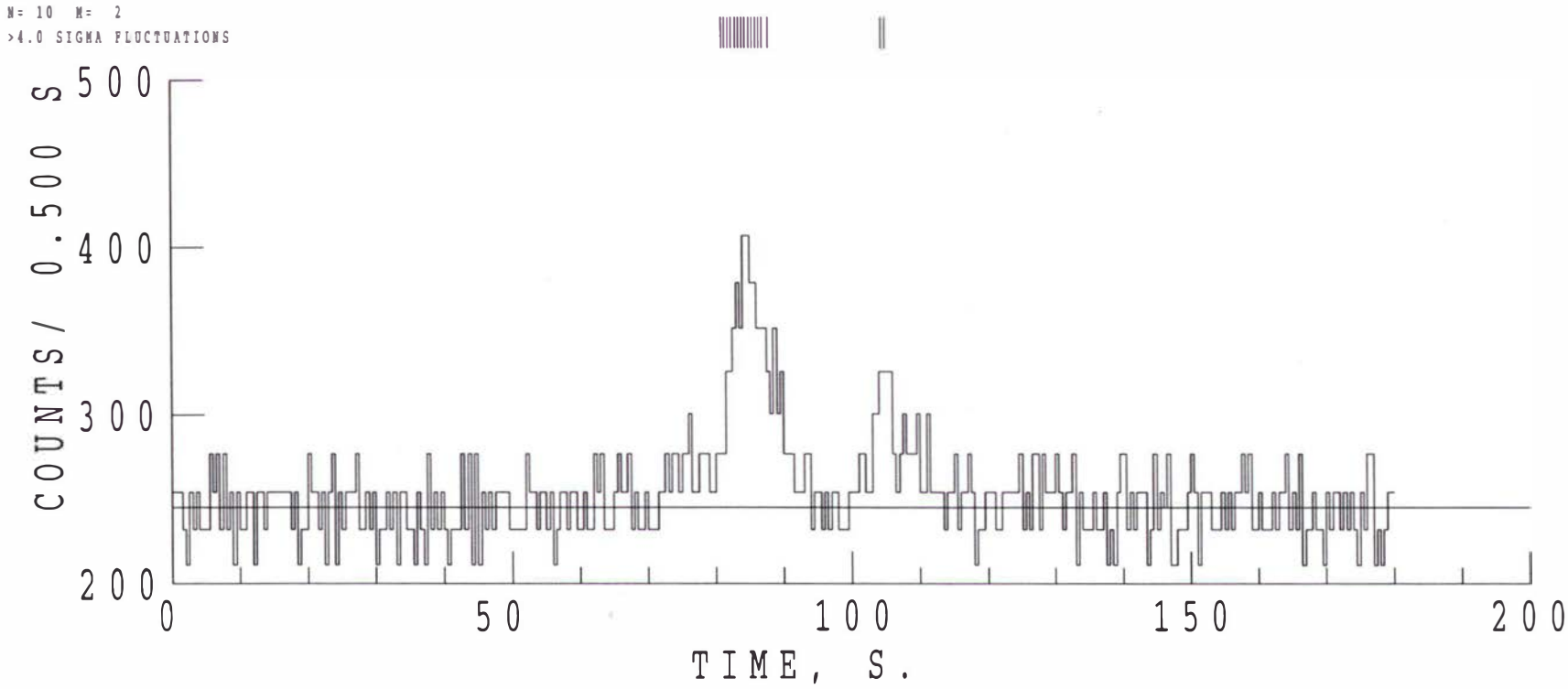


KONUS 19970721 81731

ULYSSES RT 08/12/11

21/07/97 81648.352 s

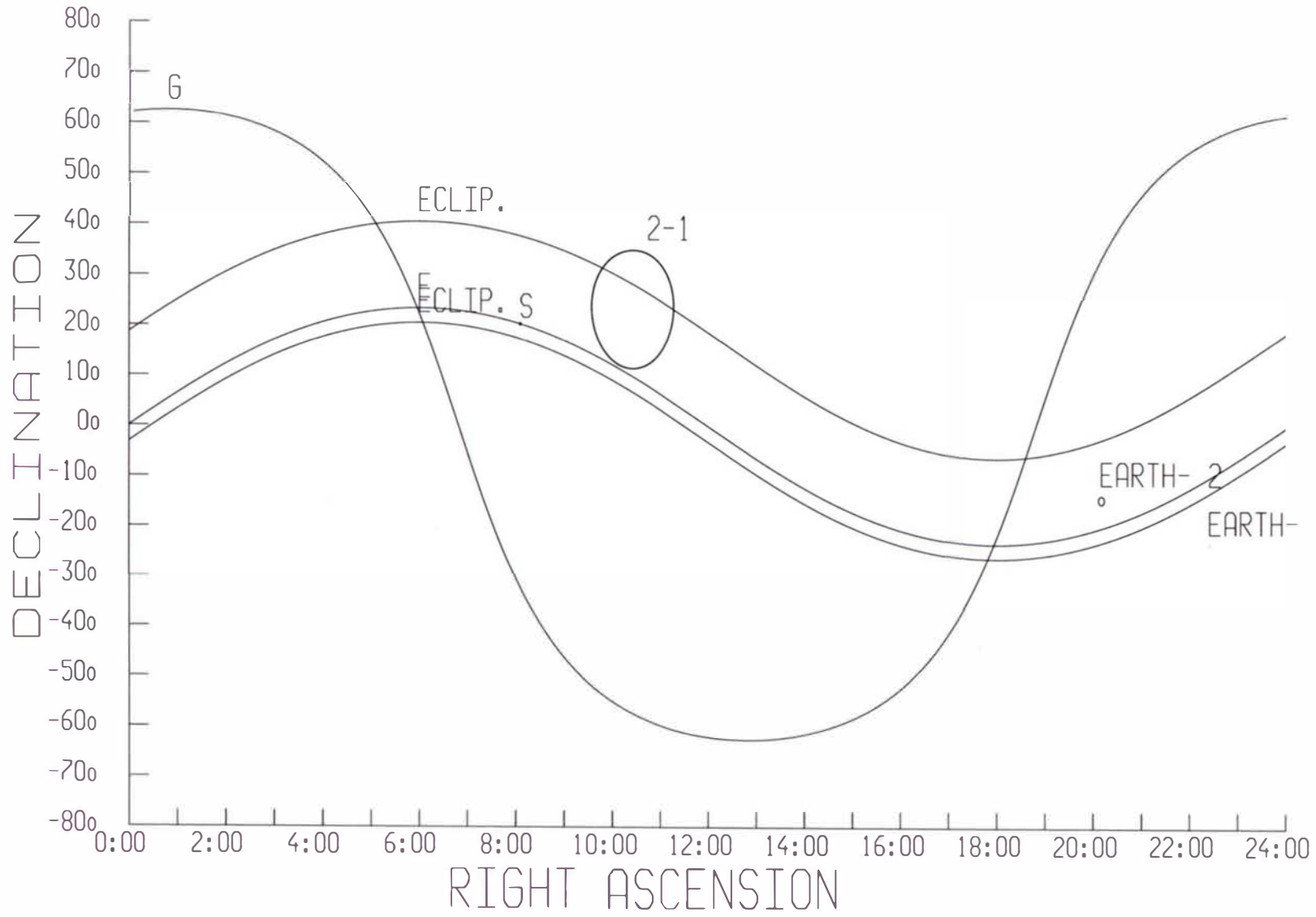
0- 0 keV



EVENT OF JUL 21, 1997 22:41

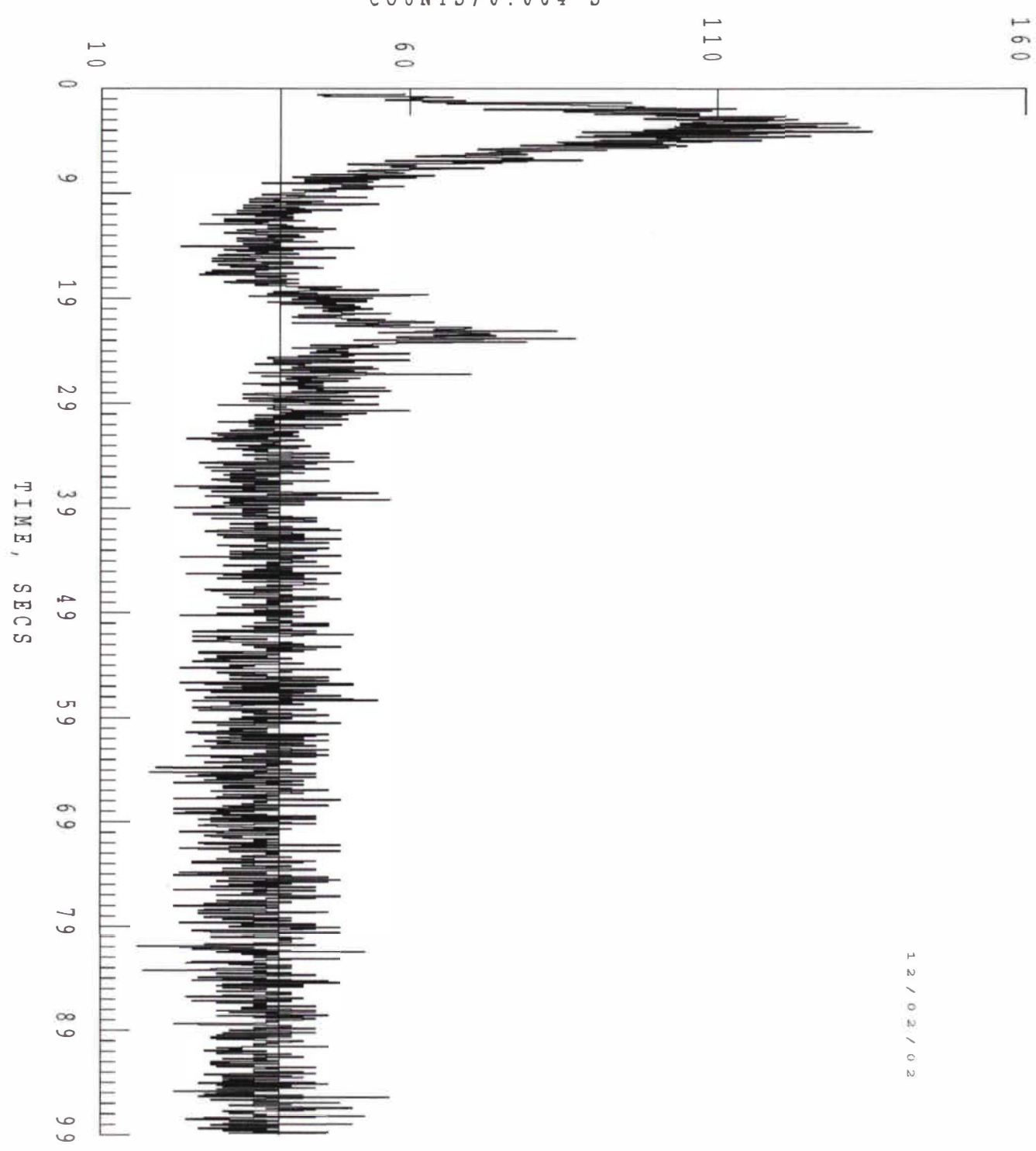
12/12/2011

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



KONUS2 21/07/97 84667.124

50- 200 keV



KONUS2 19970721 84667

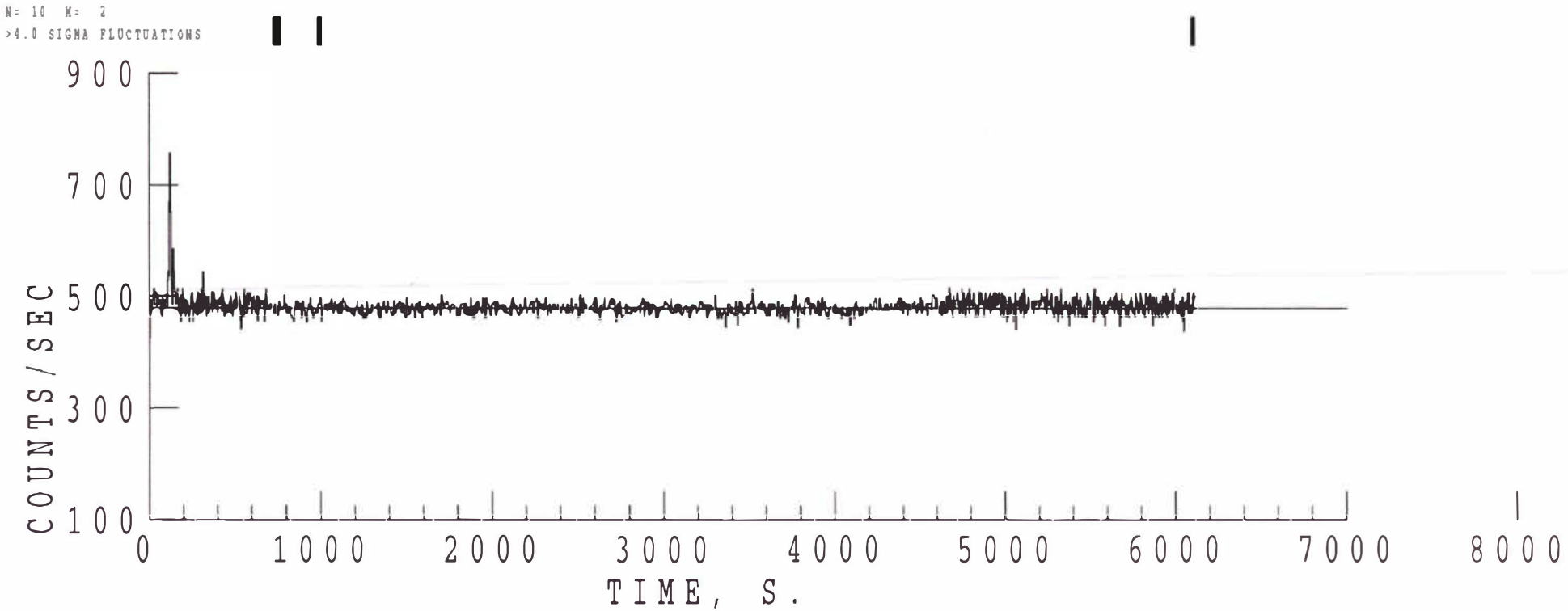
ULYSSES RT

12/02/02

21/07/97 81612.352 s

INTERVALS REGROUPED BY 6

0- 0 keV



From yosimori@rikkyo.ac.jp Tue Dec 8 02:01 PST 1998
Date: Tue, 8 Dec 1998 19:00:54 +0900 (JST)
From: "M. Yoshimori" <yosimori@rikkyo.ac.jp>
To: khurley@sunspot.ssl.berkeley.edu
bject: Yohkoh gamma-ray burst events

Dear Dr.Hurley,

Yohkoh recorded the following four gamma-ray burst events.

1. 1996 Nov.30 05:13:52 UT

2. 1997 May 17 09:13:52 UT

3. 1997 July 21 23:31:12 UT

4. 1998 Jan. 25 20:39:28 UT

If you obtained their locations, please let me know.

Thank you in advance for it.

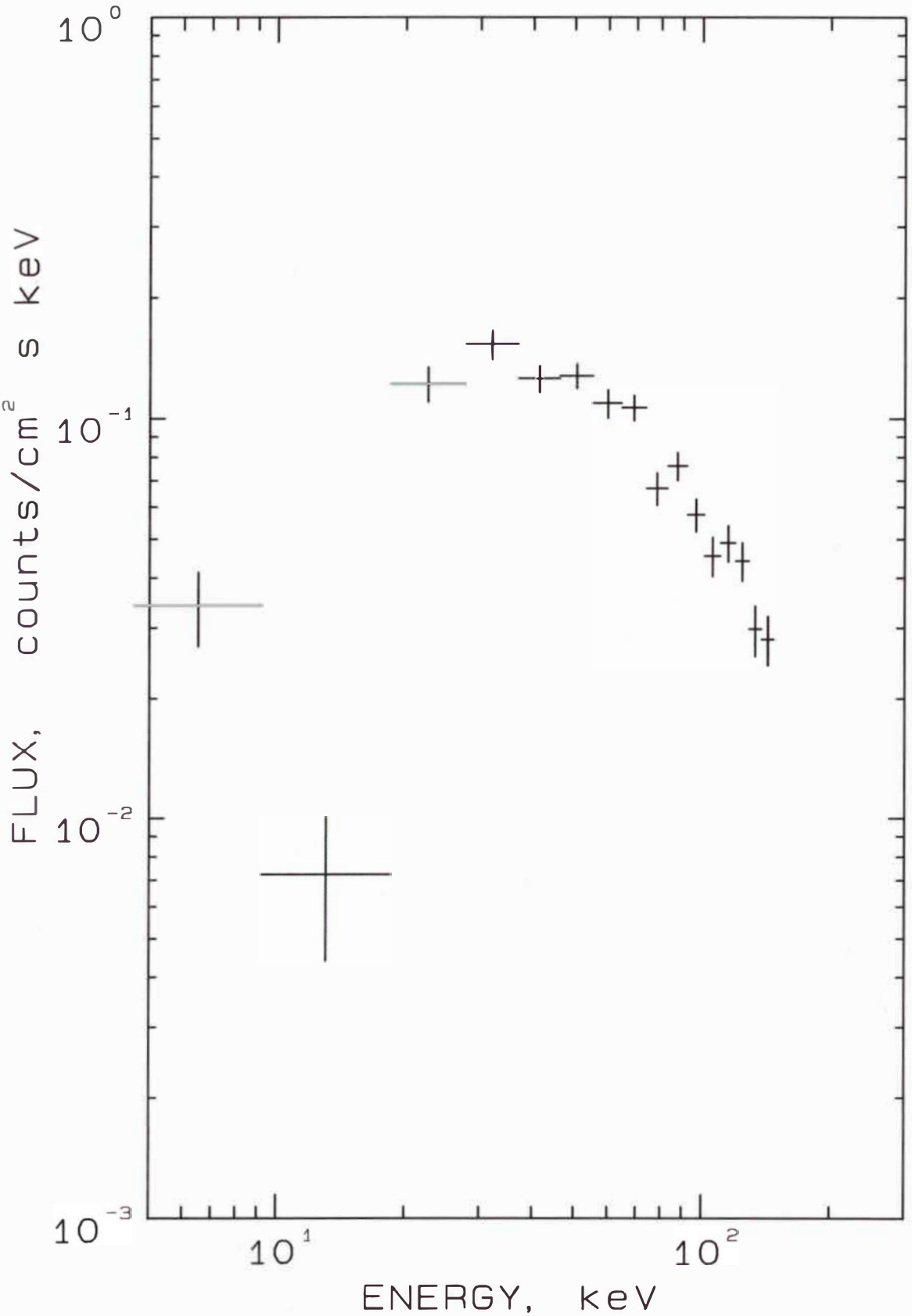
Regards,

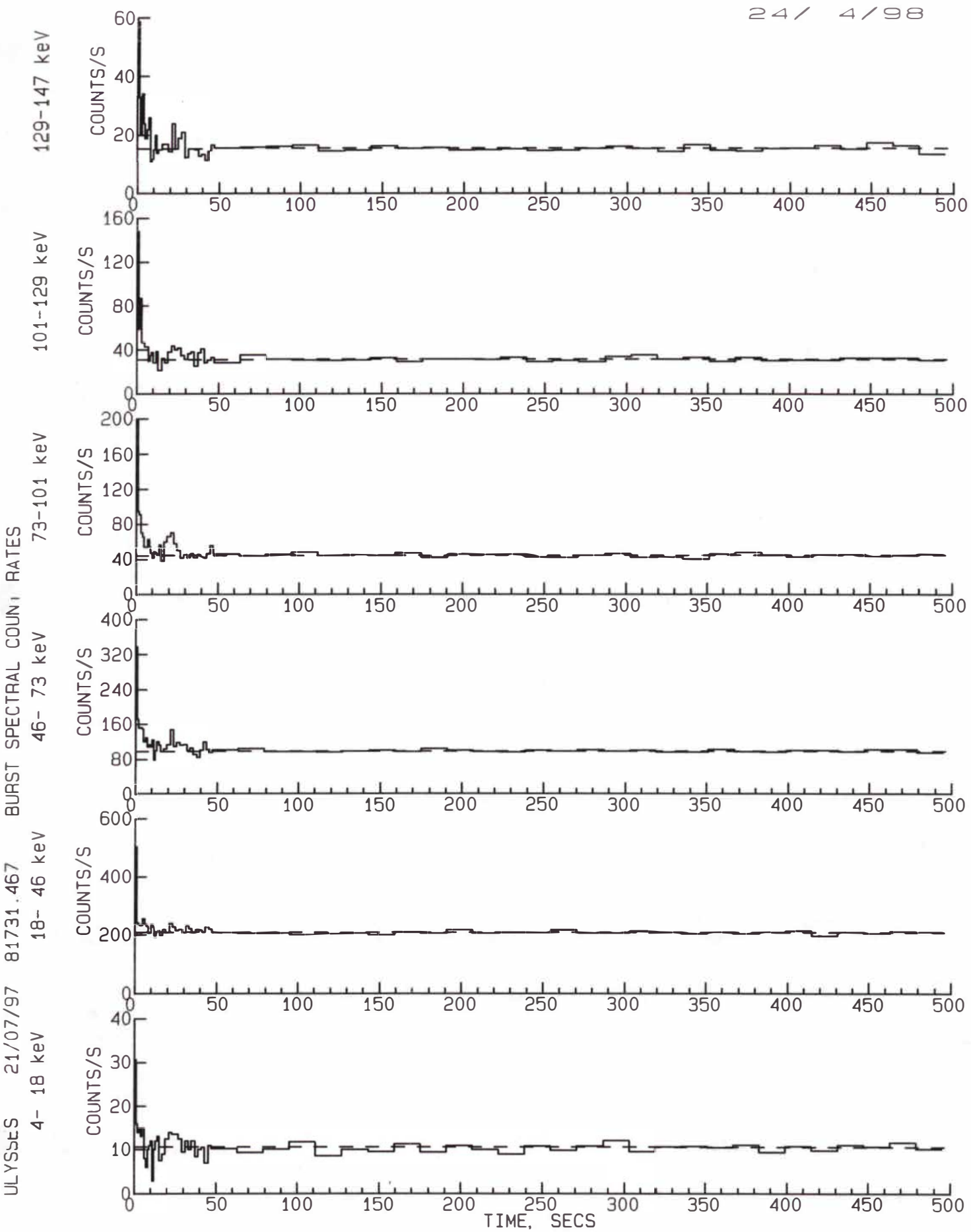
M.Yoshimori

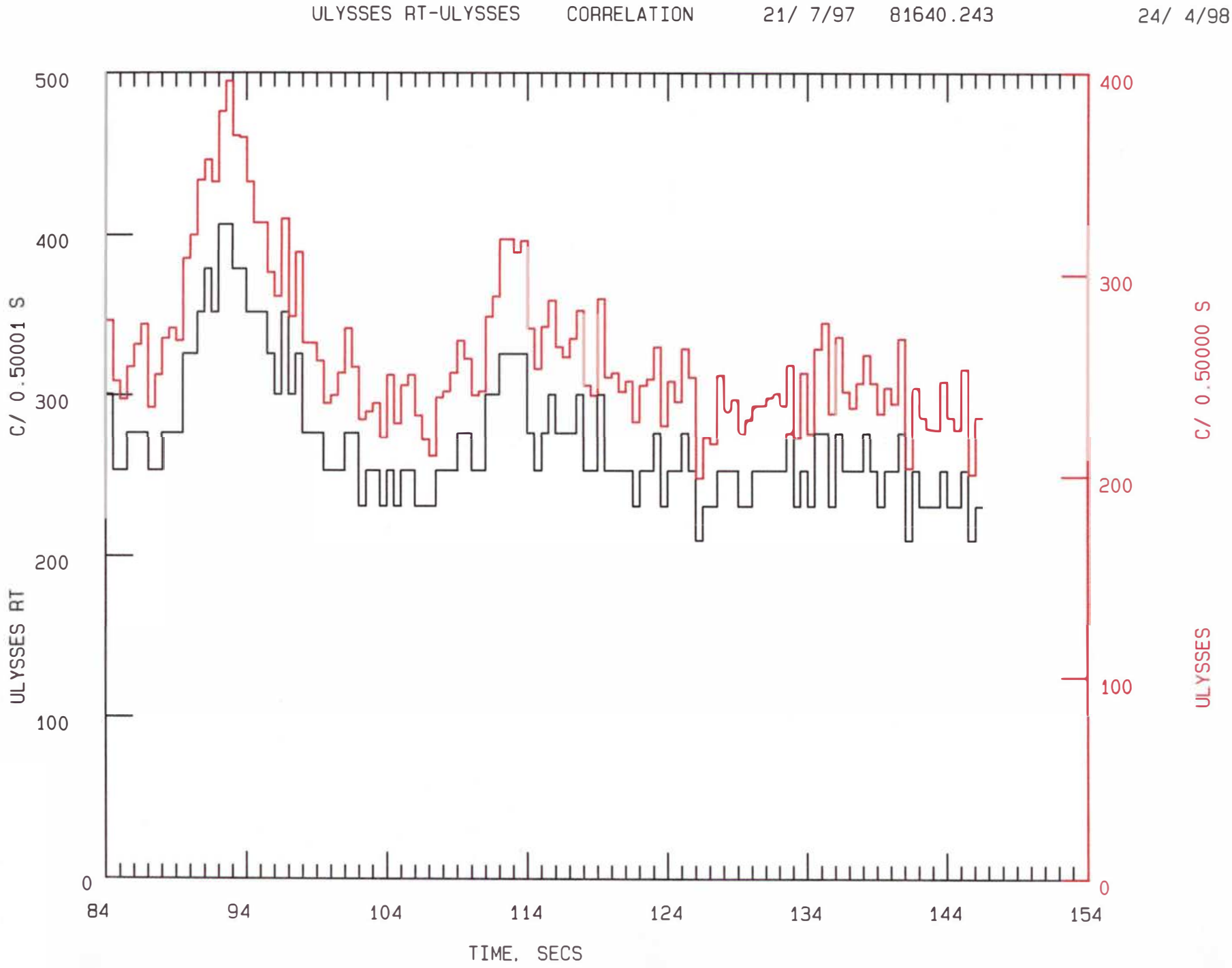
ULYSSES 21/07/97 81731.467

24/ 4/98

SPECTRUM INTEGRATED OVER 30.9 SECONDS, INTERVALS 2 TO 25

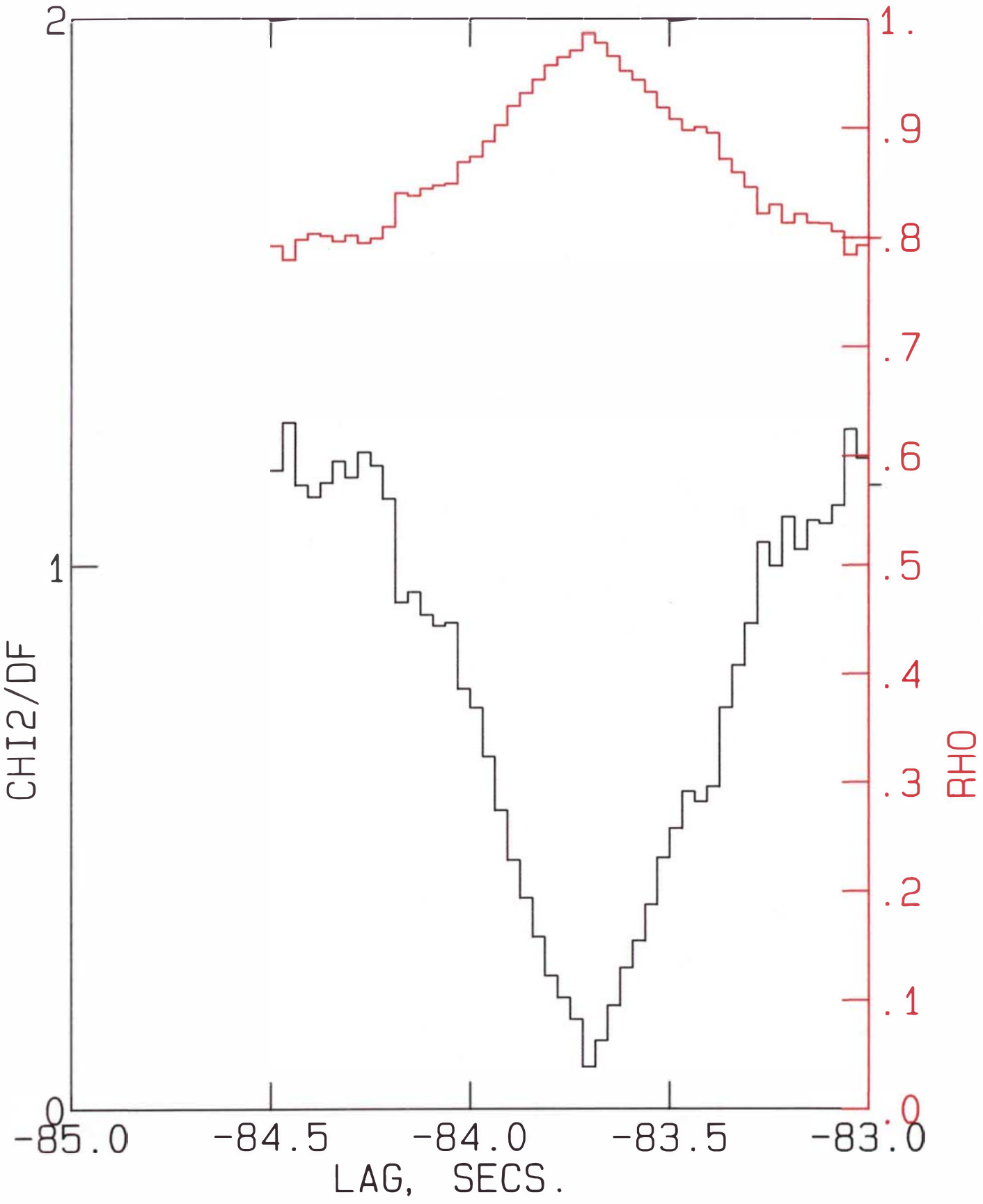



24/ 4/98
ULYSSES 21/07/97 81731.467 BURST SPECTRAL COUNT RATES
4- 18 keV
18- 46 keV
46- 73 keV
73-101 keV
101-129 keV
129-147 keV
COUNTS/S
TIME, SECS


ULYSSES RT-ULYSSES CORRELATION 21/ 7/97 81640.243 24/ 4/98
500
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
84
94
104
114
124
134
144
154
TIME, SECS

24/ 4/98

ULYSSES RT-ULYSSES CORRELATION 21/ 7/97 81640.243



ULYSSES 21/07/97 Ttrig=81731.369

22- 148 keV

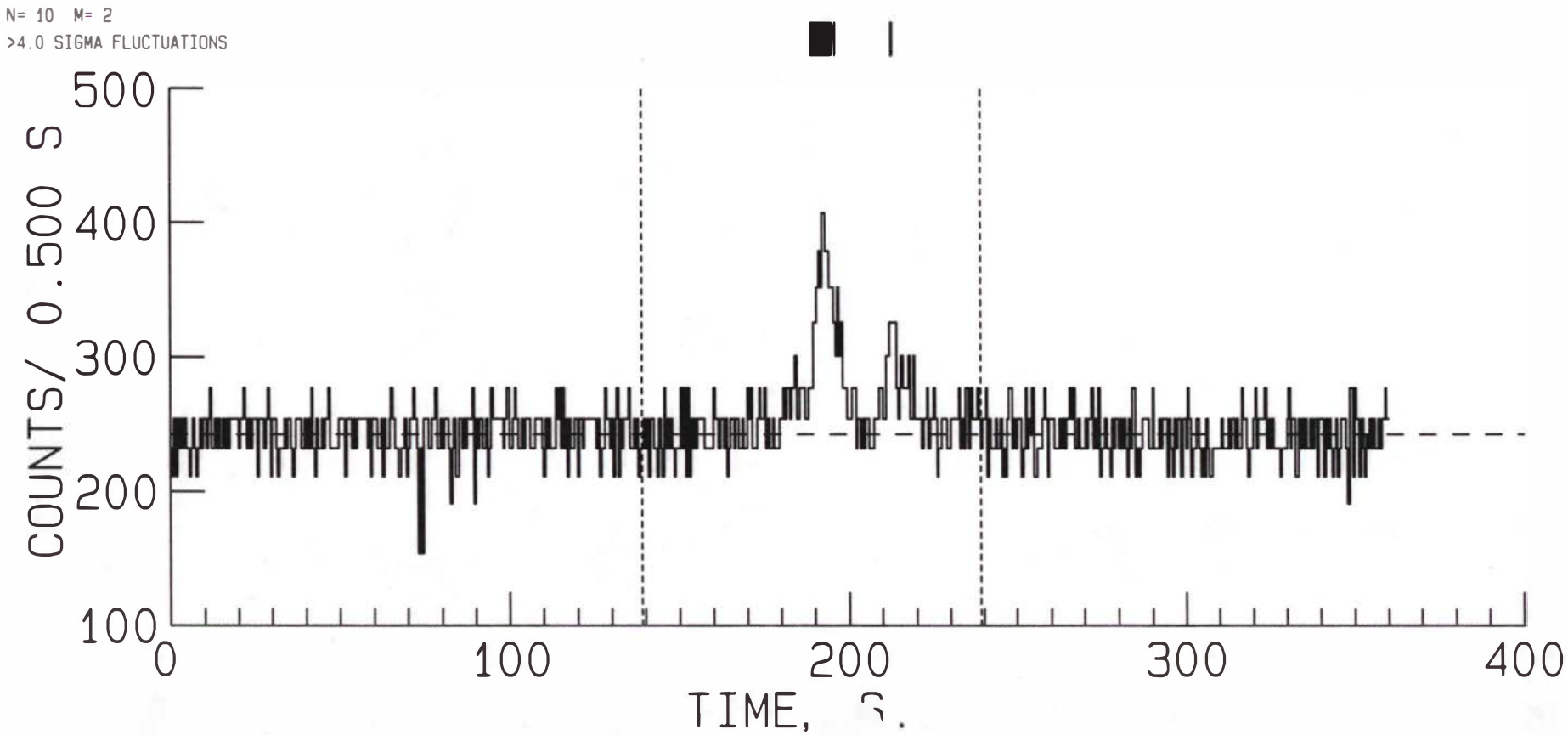
24/ 4/98

ULYSSES RT

24/ 4/98

21/ 7/97 81540.350 s

22- 148 keV



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).

23:31:12

?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 kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 22 Aug 1997 17:22:32 -0400
To: .hurley@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,

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

Here are the details.

Pete

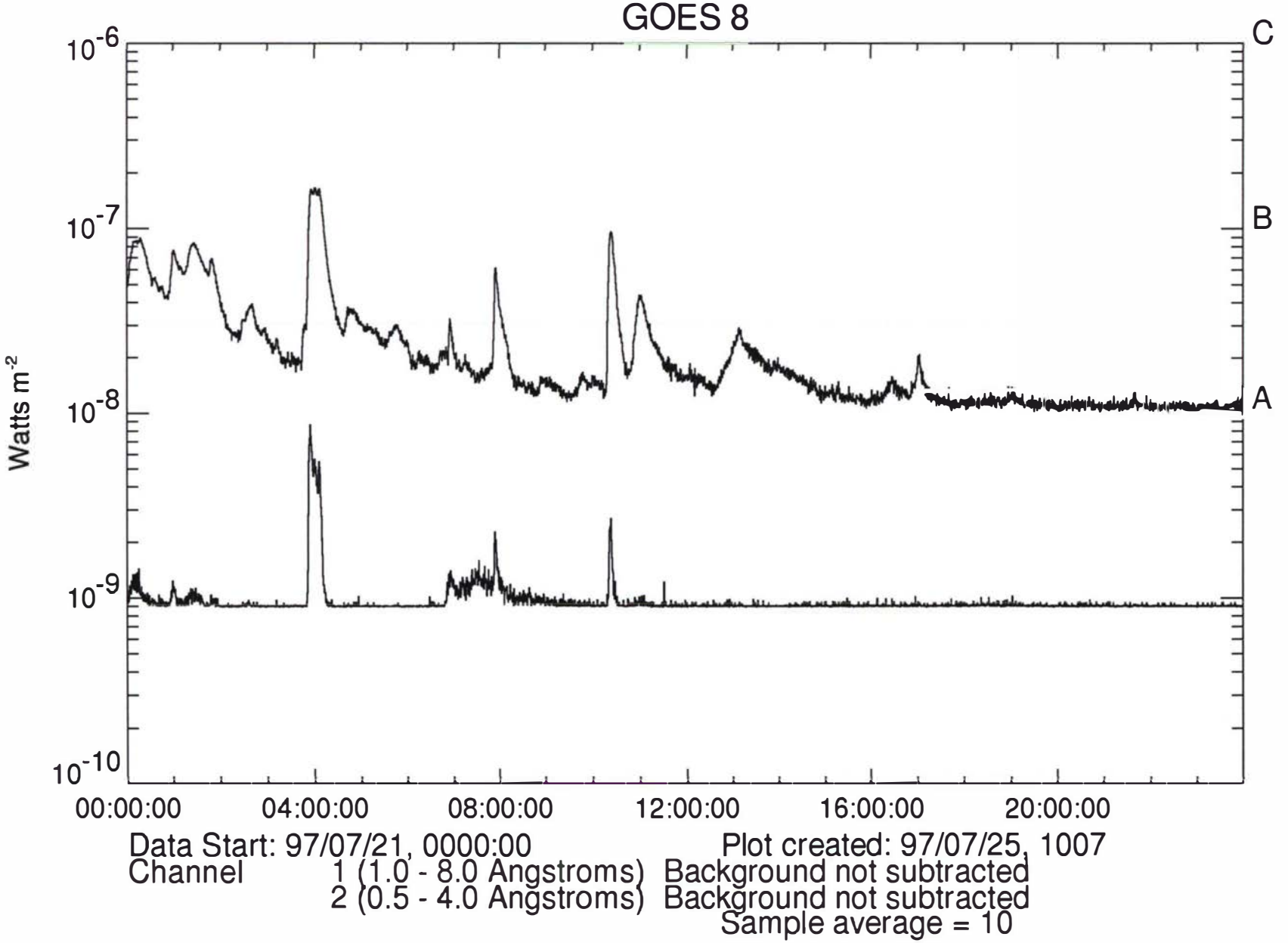
Ulysses burst	TGRS sees?	TGRS characteristics
3/25/97 17:49	YES! TGRS #547	63384 s. 300 cts/s peak 15s dur. (100-300 keV) 100 cts/s peak 15s dur. (35-100 keV)
3/29/97 12:23	NO	
7/2/97 11:49	YES BUT TGRS #582	40631 s. 175 cts/s peak 1s dur. 100-300 keV NOT SEEN in 35-100 keV
7/5/97 15:31	NO	
7/9/97 10:56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

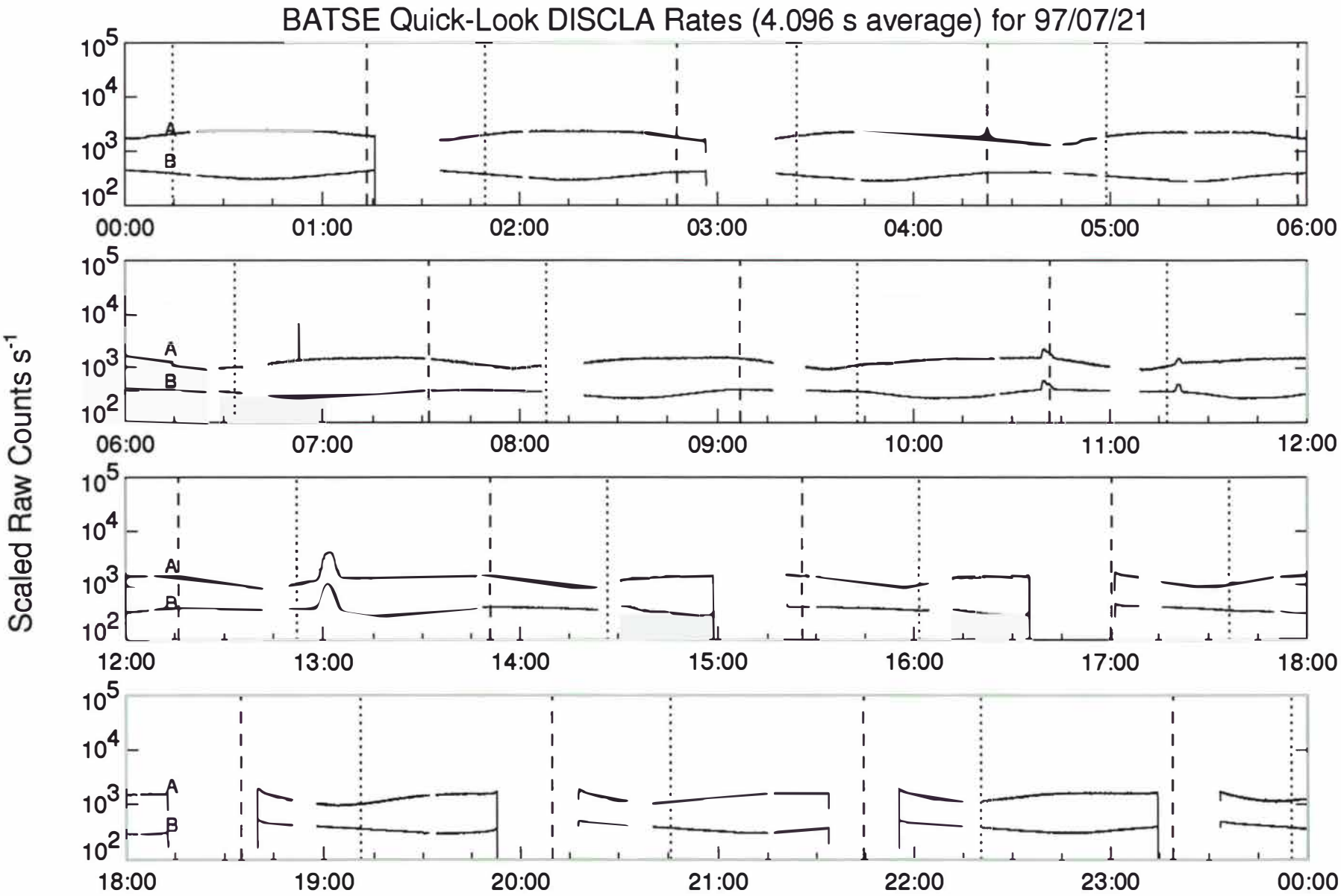
July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
J 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 22:42	moderate 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 BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

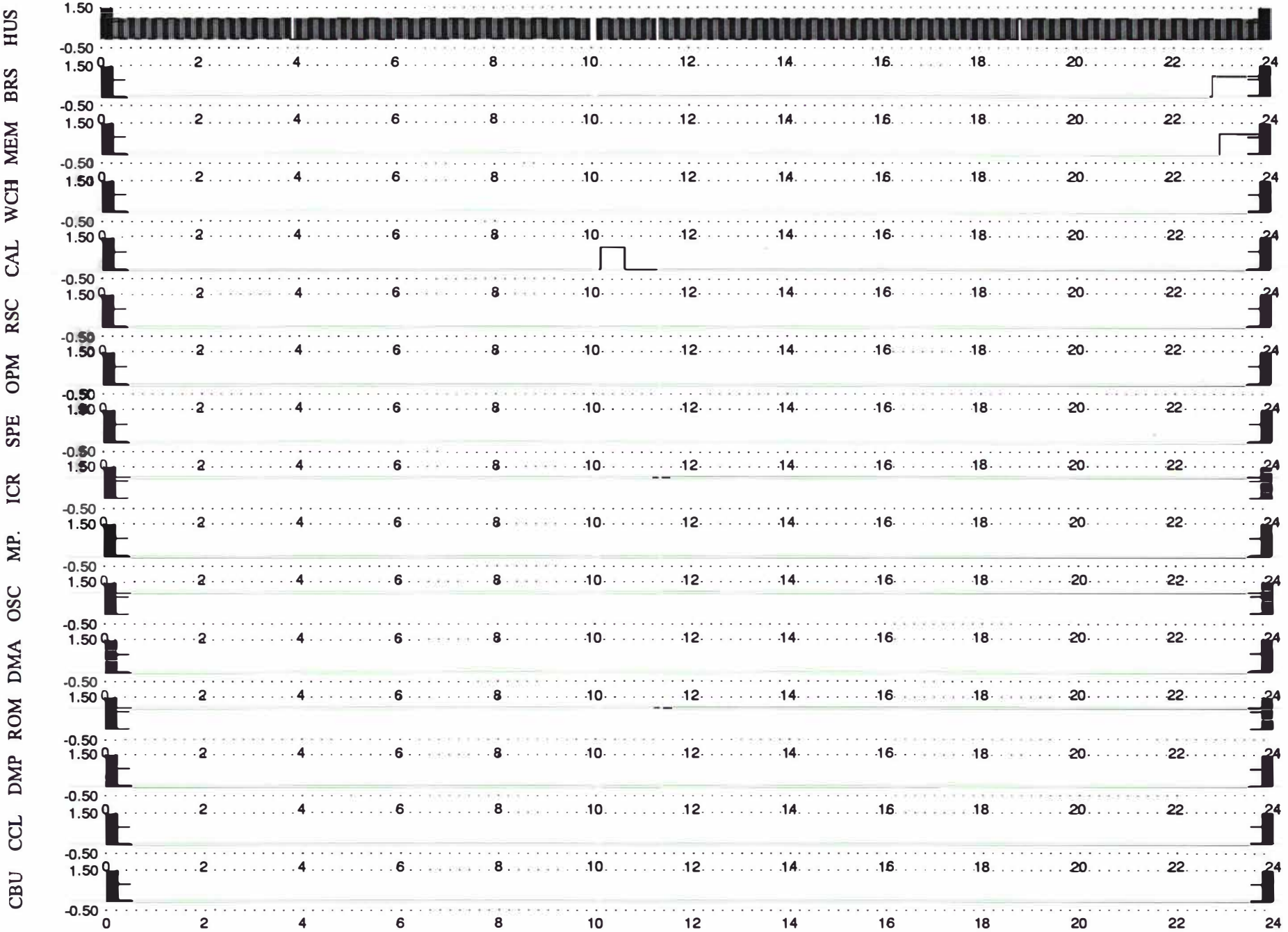
Ulysses event (1997)		Konus observation
Mar 25 17:49	moderate 15 s long	trigger at 17:36:22.800 North detector two peaks, with the first stronger and harder. each peak lasted 20 s, separated by 20 s without emission
Mar 29 12:23	weak 100 ms long	not detected
May 21 15:23	weak 100 ms long	not detected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


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: 97/07/21, 0000:00
Plot created: 97/07/25, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/21
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/25, 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

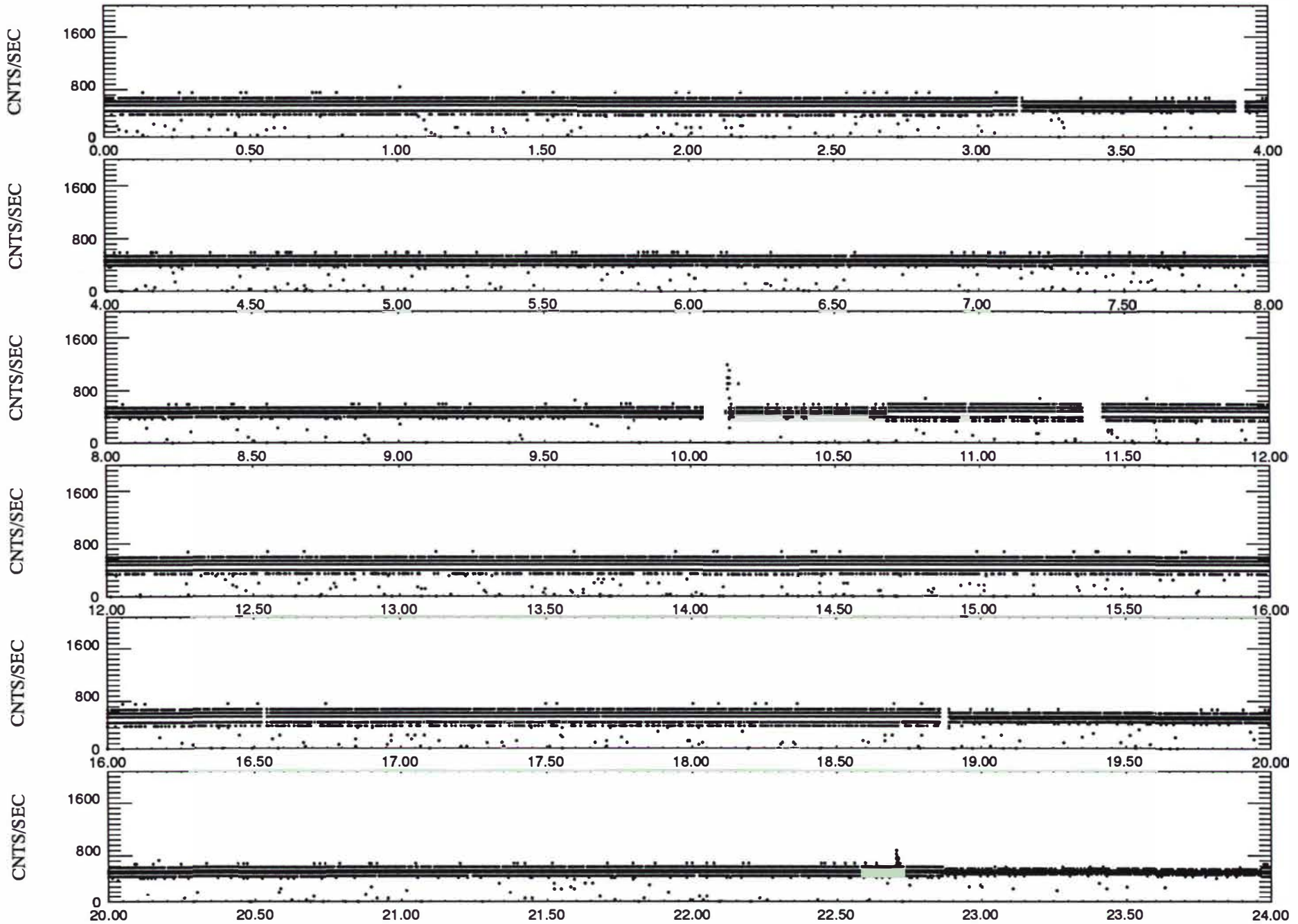
HUS MODES EDR day 202, year 1997 to day 202, year 1997 10/24/97

BURST NUMBER 5



HUS 2A, MODE 1, NOT AVERAGED EDR day 202, year 1997 to day 202, year 1997 10/24/97

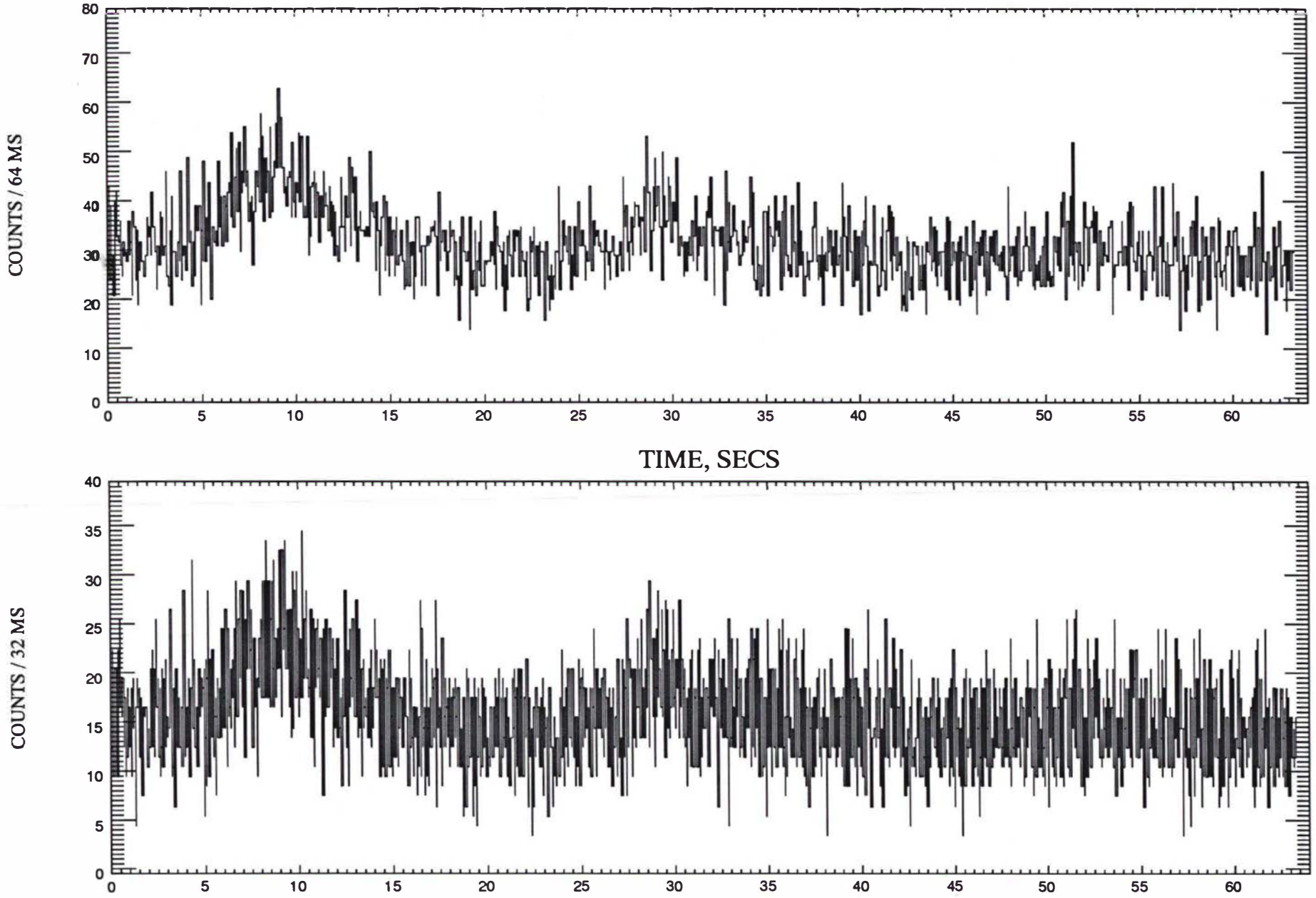
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

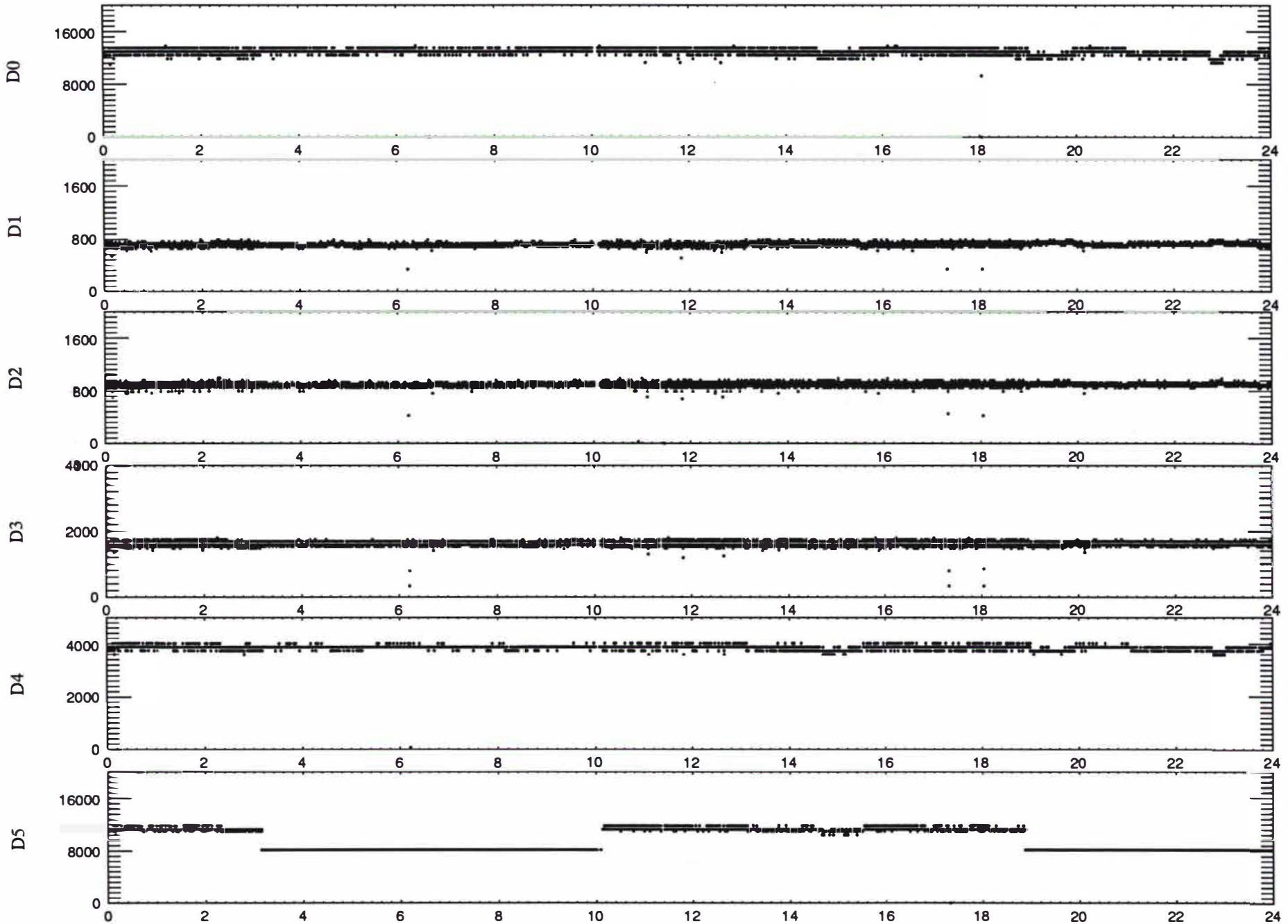
HUS 2A TRIGGERED DATA EDR day 202, year 1997 10/24/97

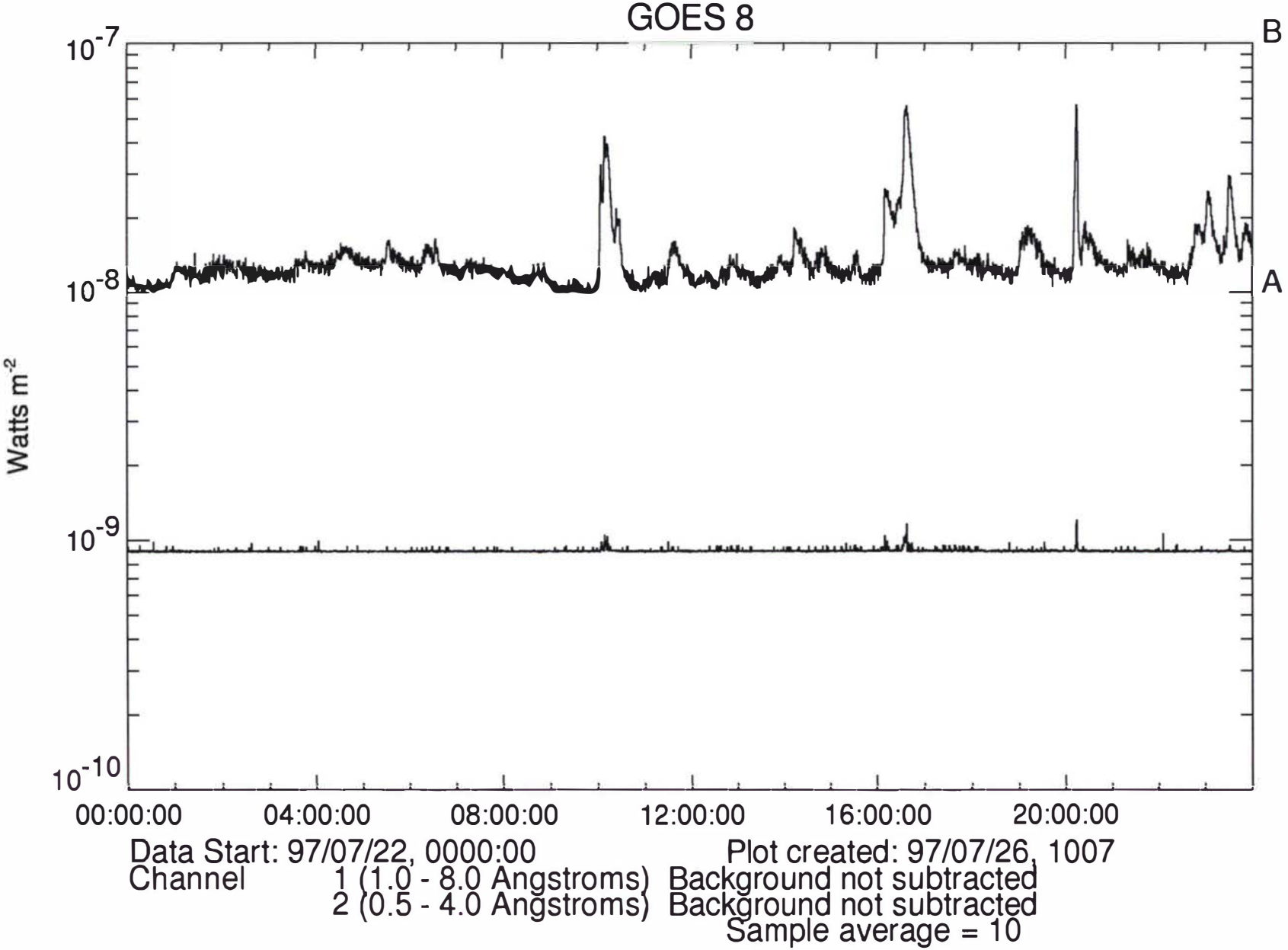
Burst Counter 5 at UT=22.703185365465 h=81731.467 s 22:42:11.467

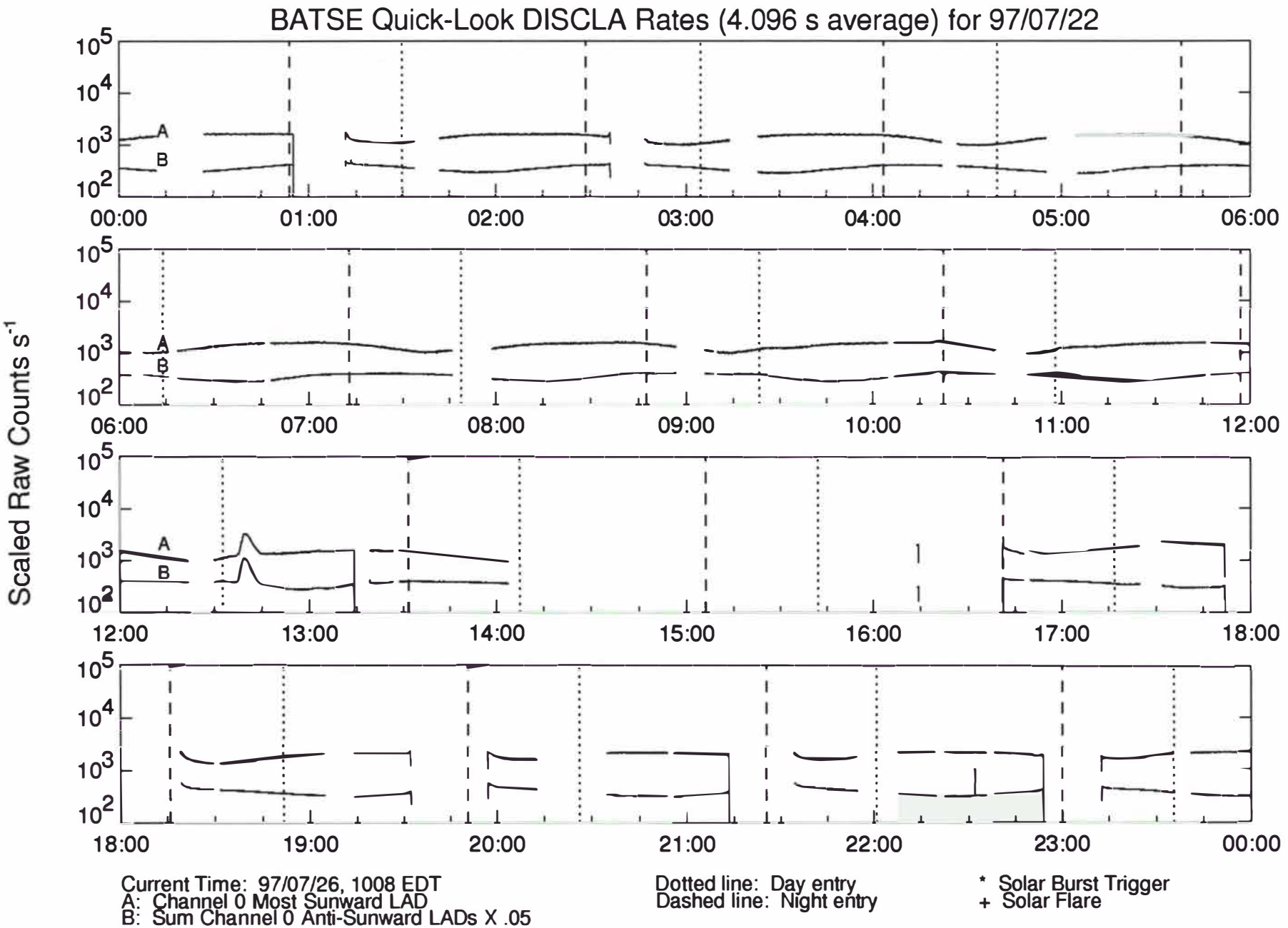


B# 1

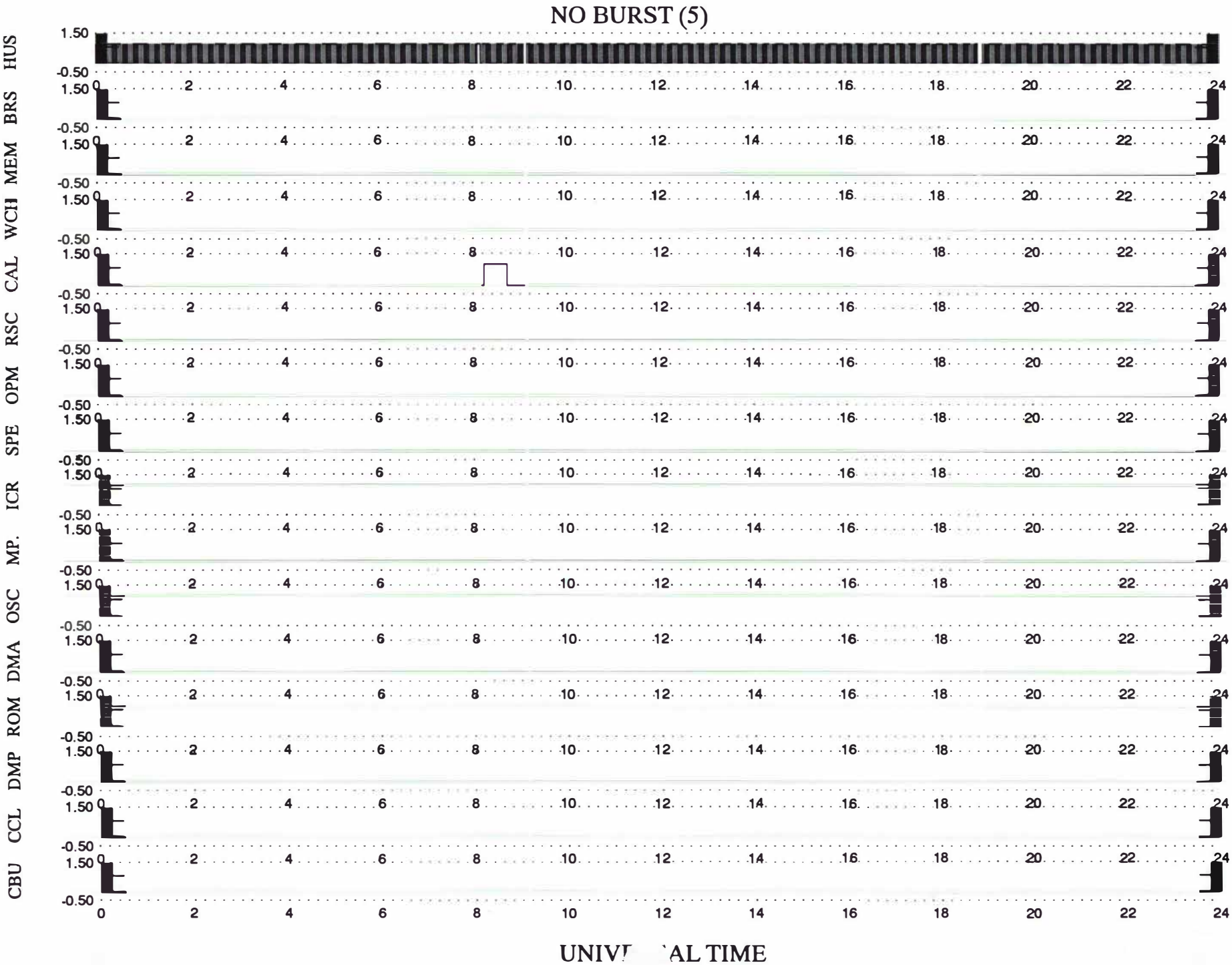
HUS 2B COUNTS / SEC EDR day 202, year 1997 to day 202, year 1997 10/24/97




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: 97/07/22, 0000:00
Plot created: 97/07/26, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

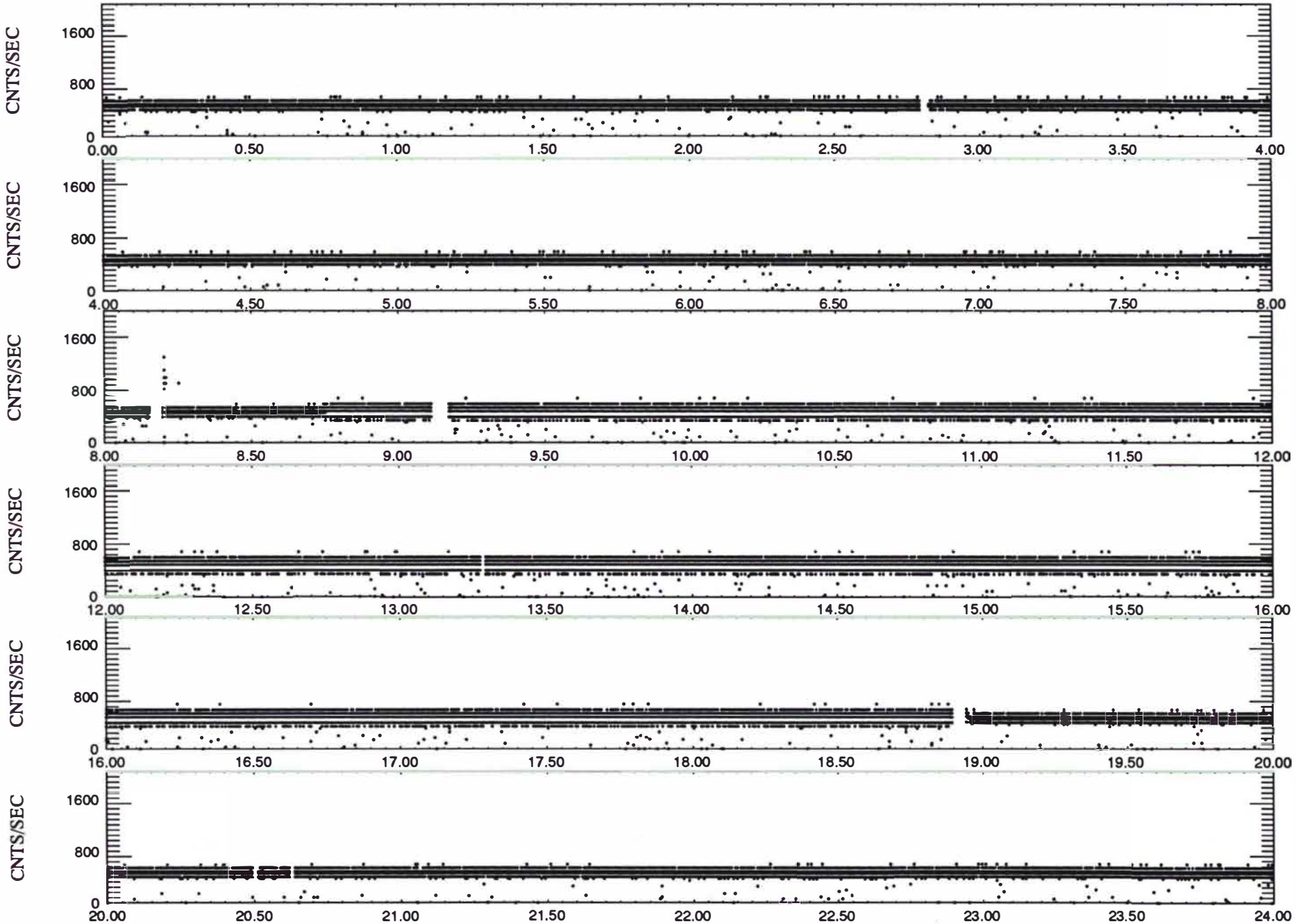

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/22
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/07/26, 1008 EDT
A: Channel 0 Most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

HUS MODES EDR day 203, year 1997 to day 203, year 1997 10/24/97



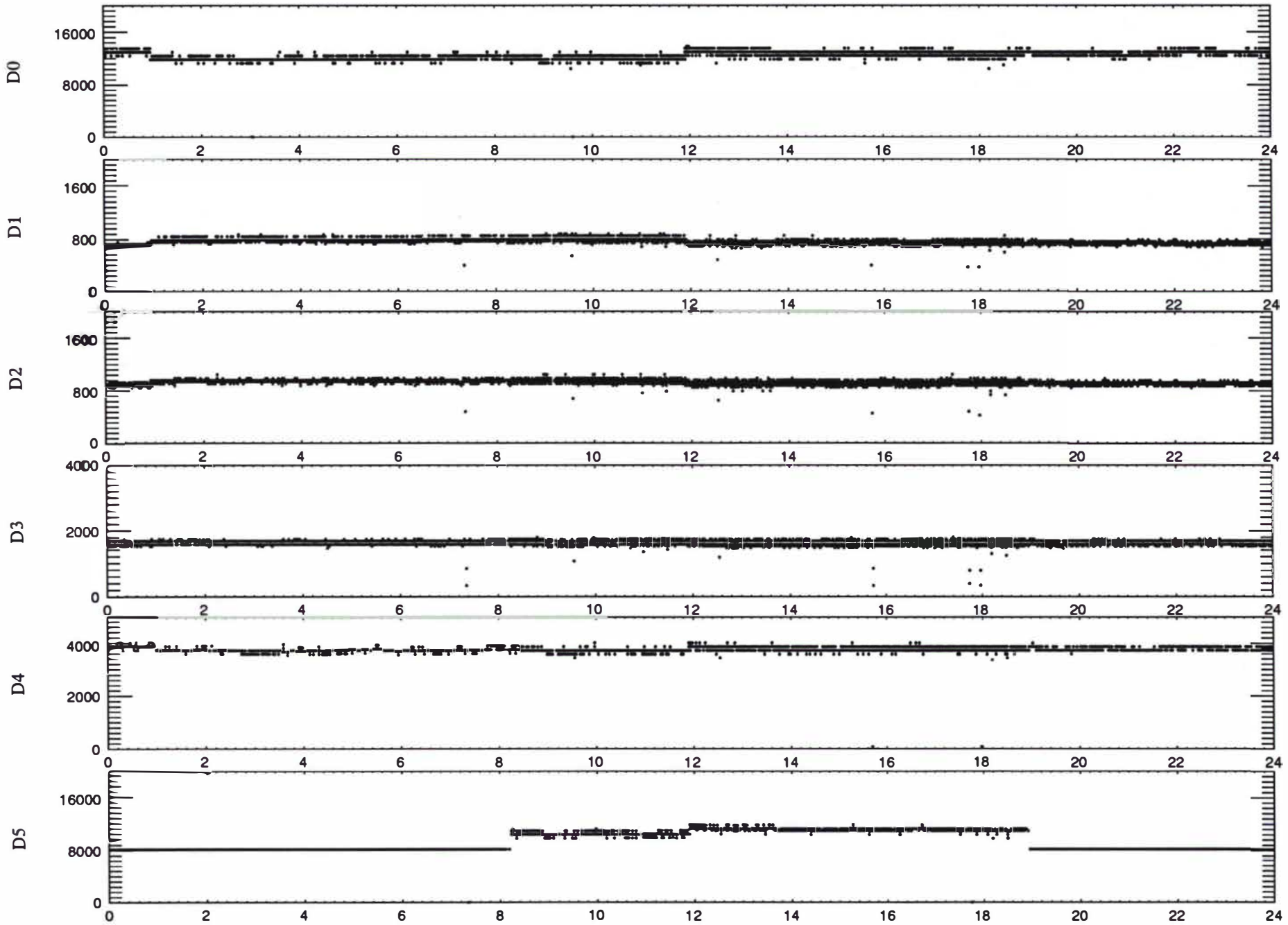
HUS 2A, MODE 1, NOT AVERAGED EDR day 203, year 1997 to day 203, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 203, year 1997 to day 203, year 1997 10/24/97



From kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 22 Aug 1997 17:22:32 -0400
To: hurley@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,

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

Here are the details.

Pete

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

July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
J 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 BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

Ulysses event (1997)		Konus observation
Mar 25 17:49	moderate 15 s long	trigger at 17:36:22.800 North detector two peaks, with the first stronger and harder. each peak lasted 20 s, separated by 20 s without emission
Mar 29 12:23	weak 100 ms long	not detected
May 21 15:23	weak 100 ms long	not detected
June 1 00:17	weak 100 ms long	not detected
June 1 19:33	moderate 25 s long	trigger at 19:19:30.567 North detector two strong peaks, 20 s apart first peak much harder event lasted 50 seconds in total
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June 8 01:44	weak 2 s long	not detected
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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
June 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

From RICHARDSON@SSLLES.MSFC.NASA.GOV Fri Jul 25 11:14 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 LAA14172; Fri, 25 Jul 1997 11:14:26 -0700
Date: Fri, 25 Jul 1997 13:14:16 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970725131416.20402908@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6315
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6315
EVENT OF 1997 JUL 23 DAY OF YEAR=204
EVENT CROSSING TIME AT BATSE : 18651. S. OR 05:10:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 115.000 -33.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 7/ 97 IS:
RA= 155.903 DEC= 23.279 DIST= 6.035 AU
BATSE-ULYSSES DISTANCE = 902807229. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1105.27 SECS.
CROSSING TIME AT ULYSSES IS 17546. S. OR 04:52:25 +/- 519.56 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 7/ 97 IS:
RA= 195.450 DEC= -6.873 DIST= 1.405 AU
MARS-BATSE DISTANCE = 210242608. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -142.59 SECS.
CROSSING TIME AT MARS IS 18508. S. OR 05:08:28 +/- 117.05 SECONDS

BATSE BURST TRIGGER

NO.: 6315

TIME: TJD=0652 SECONDS=18651

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=44.0 AZIMUTH=309.5 ERROR=0.7 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR.~ 35 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6315	970723	10652	18651	7500	115	-33	35

Helio corr removed 18/2/00

Date: Apr 6 '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)?

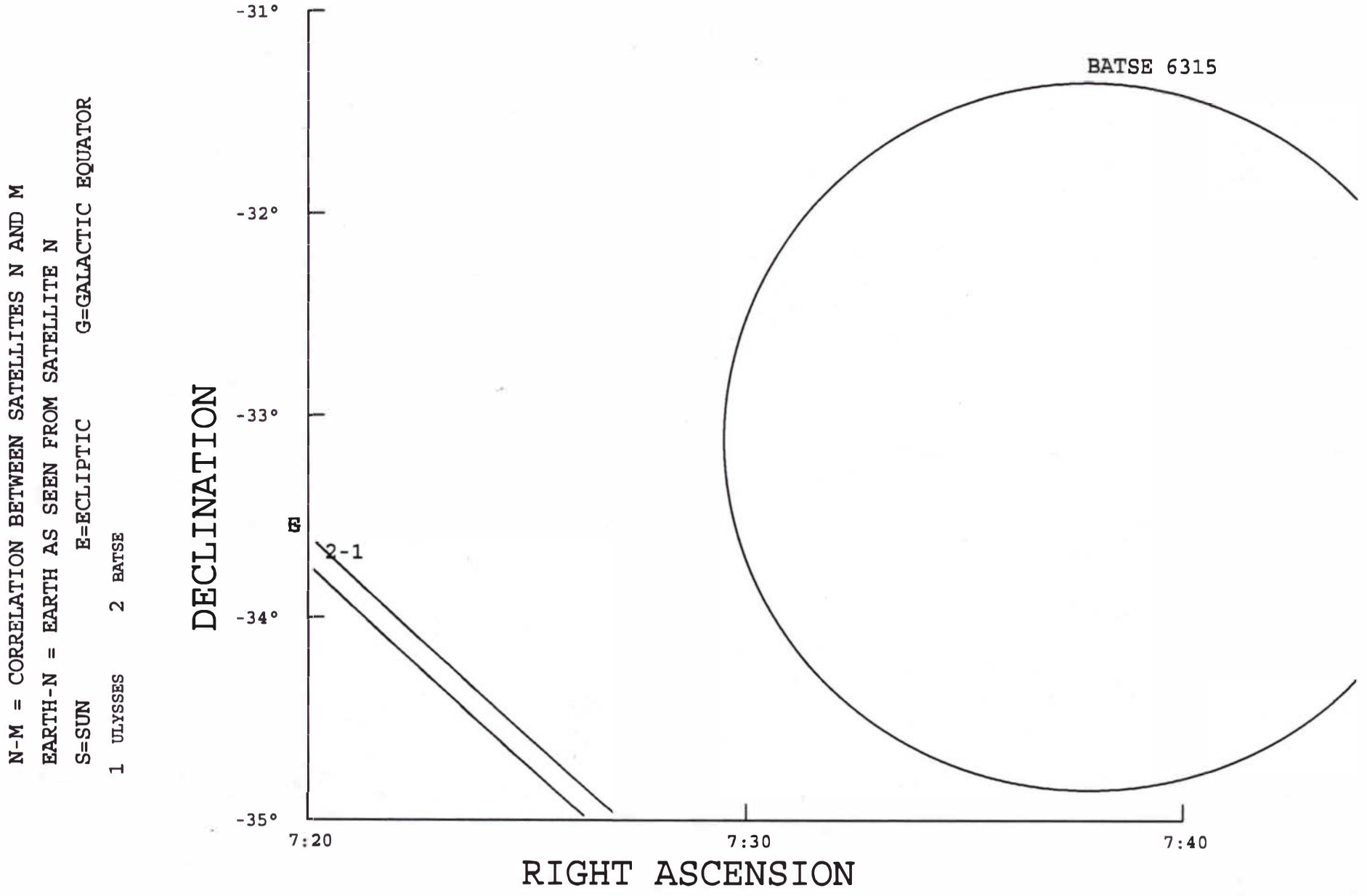
☐ 2000 coordinates used?

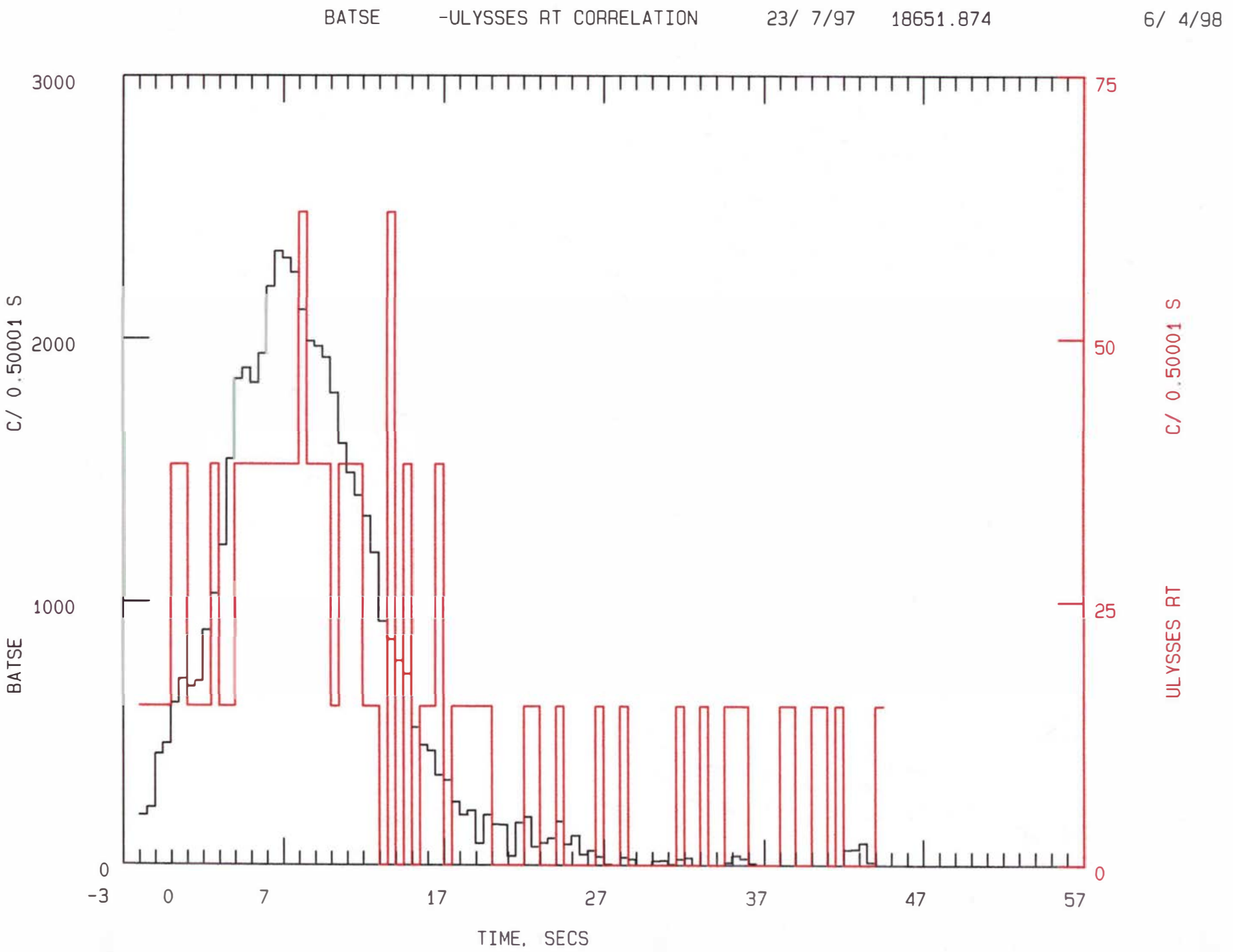
☐ Geocentric time used?

☑ ACCESS database updated?

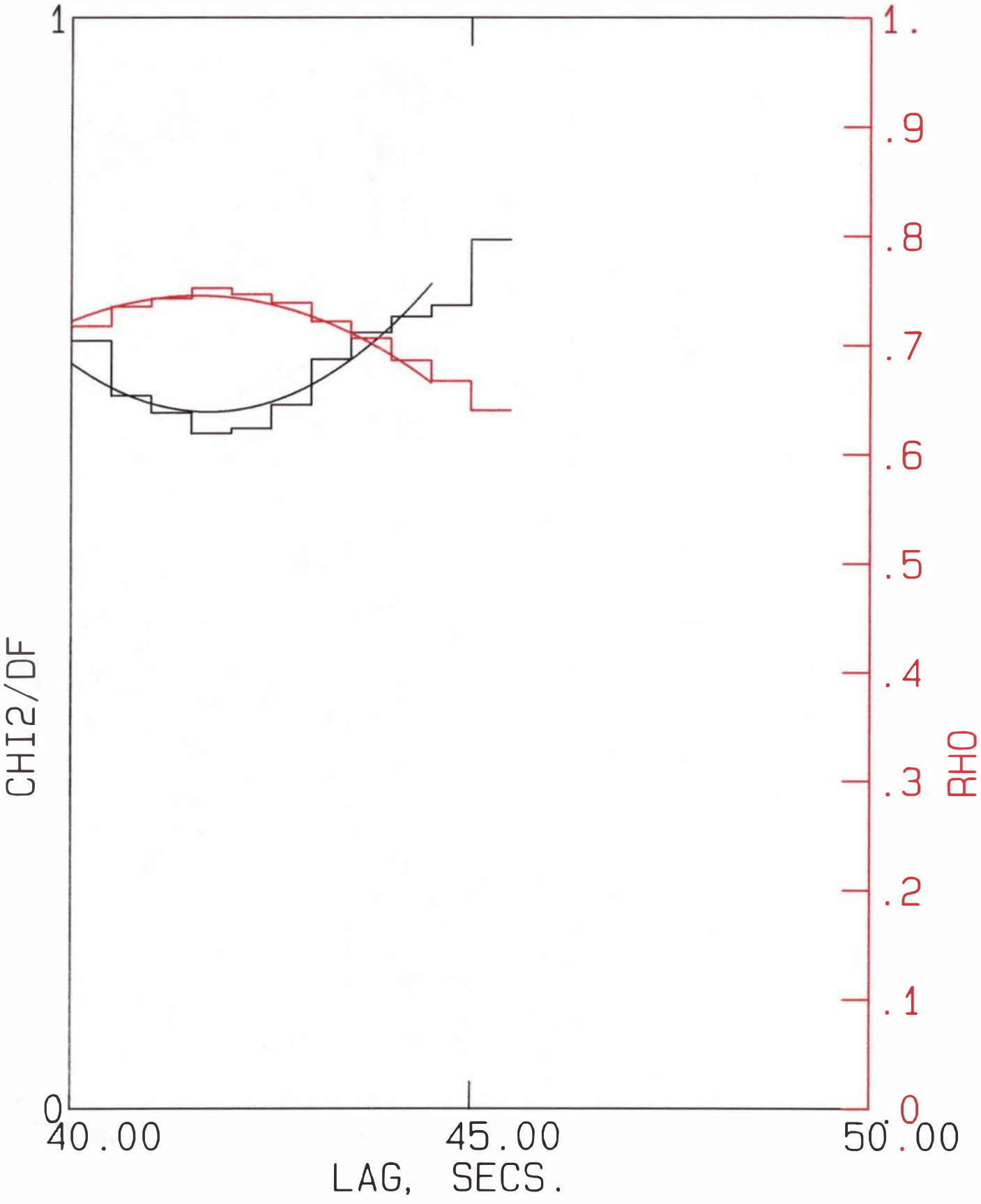
EVENT OF JUL 23, 1997 4:54

18/ 2/ 0




BATSE -ULYSSES RT CORRELATION 23/ 7/97 18651.874 6/ 4/98
3000
2000
1000
0
C/ 0.50001 S
BATSE
75
50
25
0
C/ 0.50001 S
ULYSSES RT
-3
0
7
17
27
37
47
57
TIME, SECS

BATSE -ULYSSES RT CORRELATION 23/ 7/97 18651.874

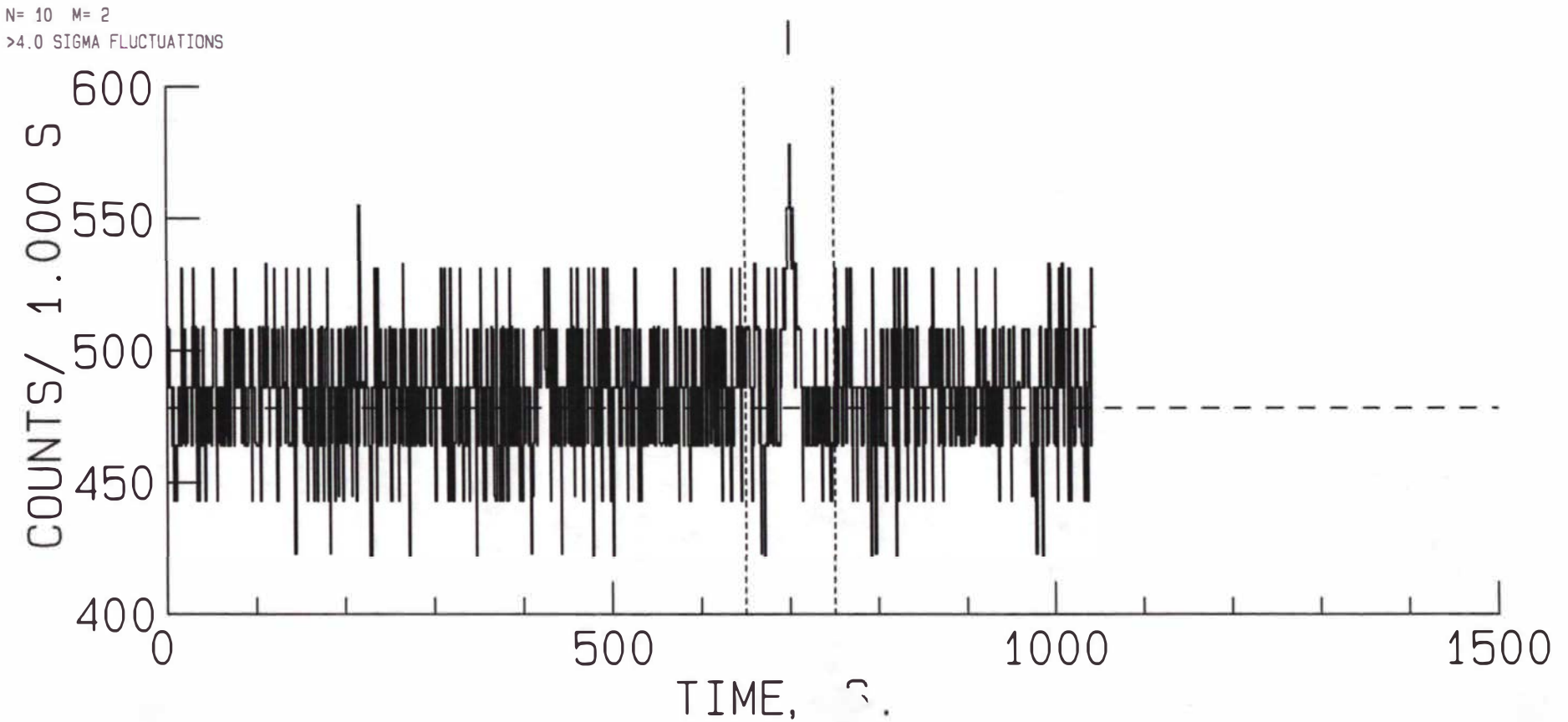


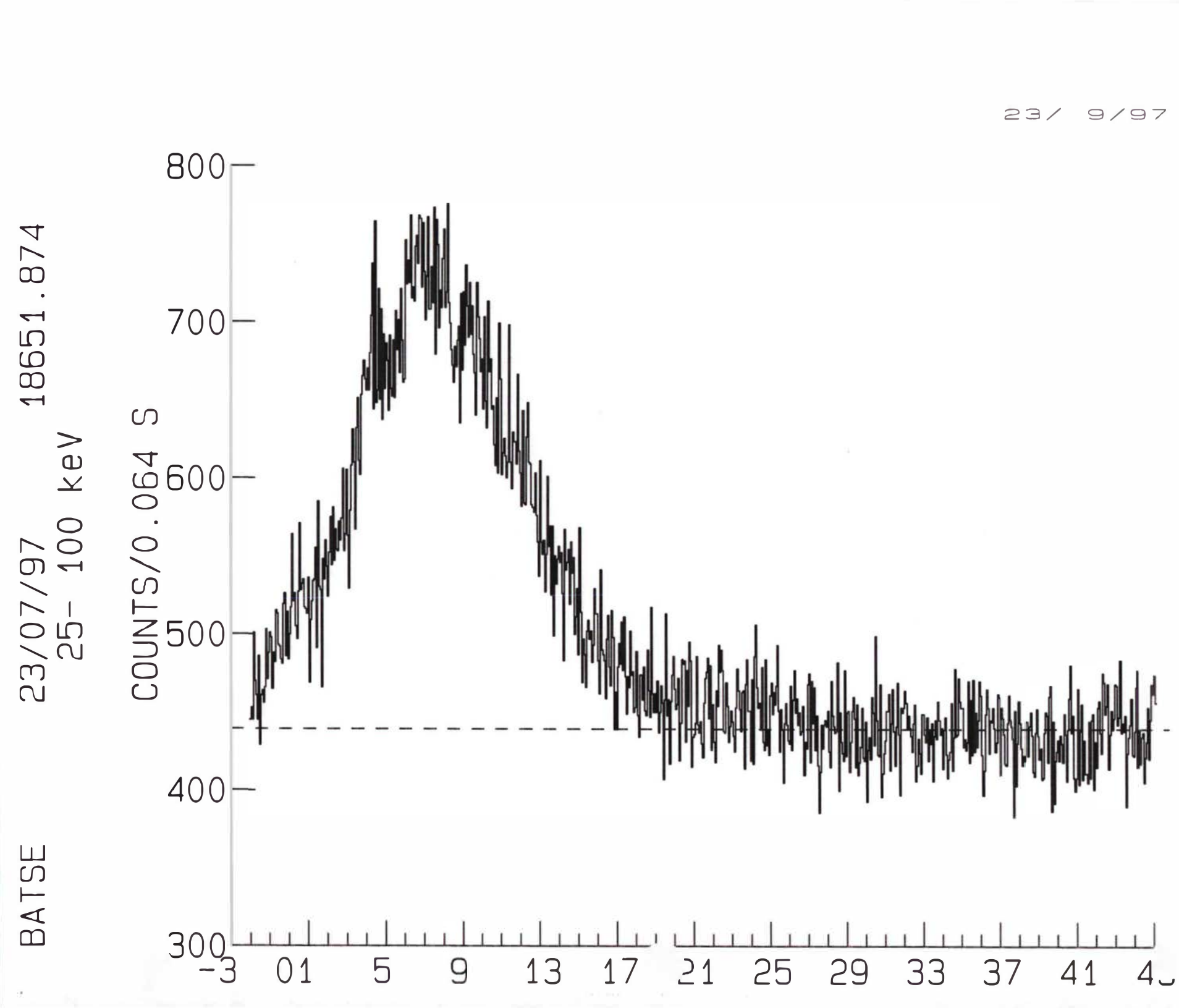
ULYSSES RT 6/ 4/98

23/ 7/97 17028.136 s

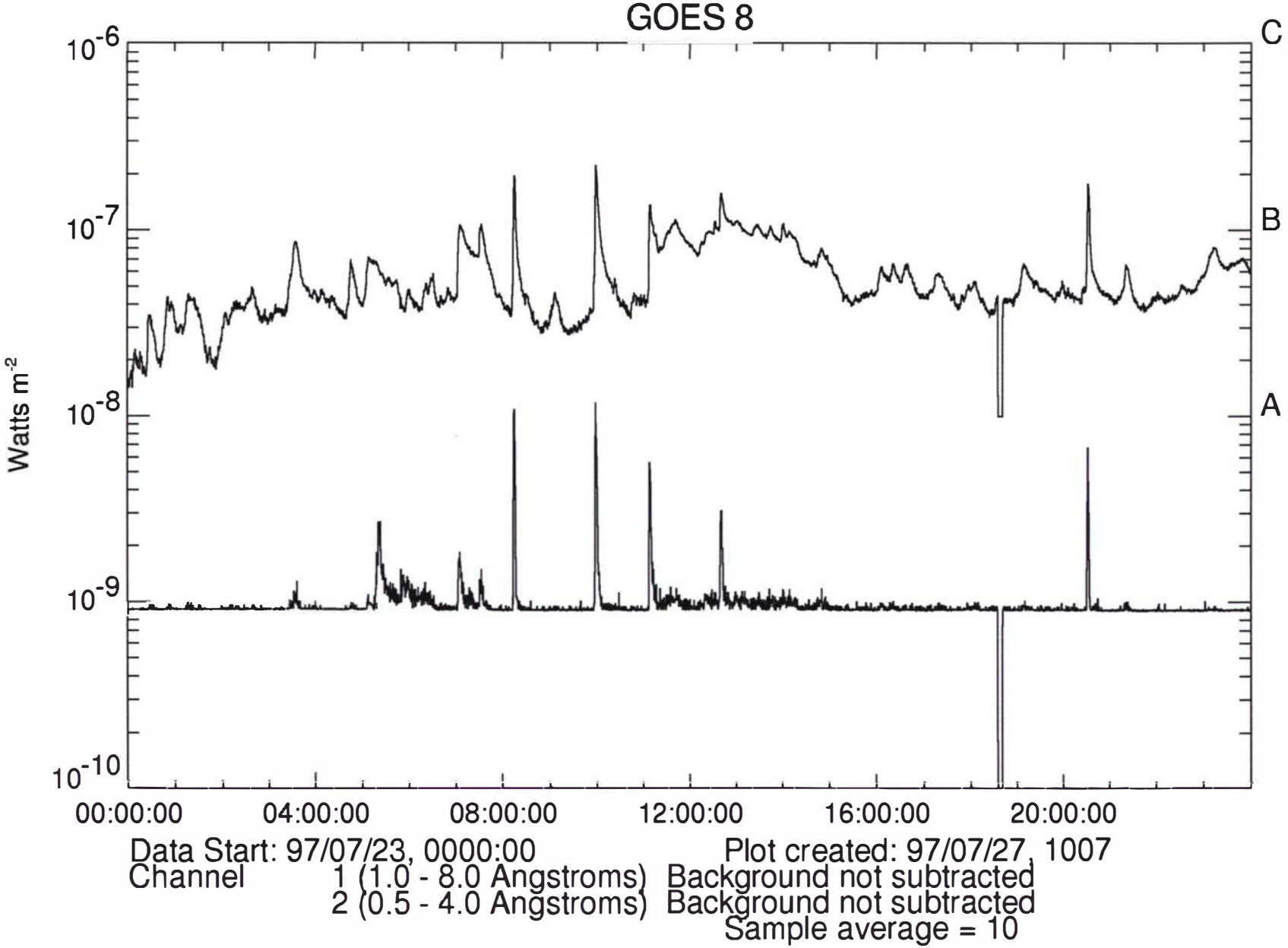
0.500 S INTERVALS REGROUPED BY 2

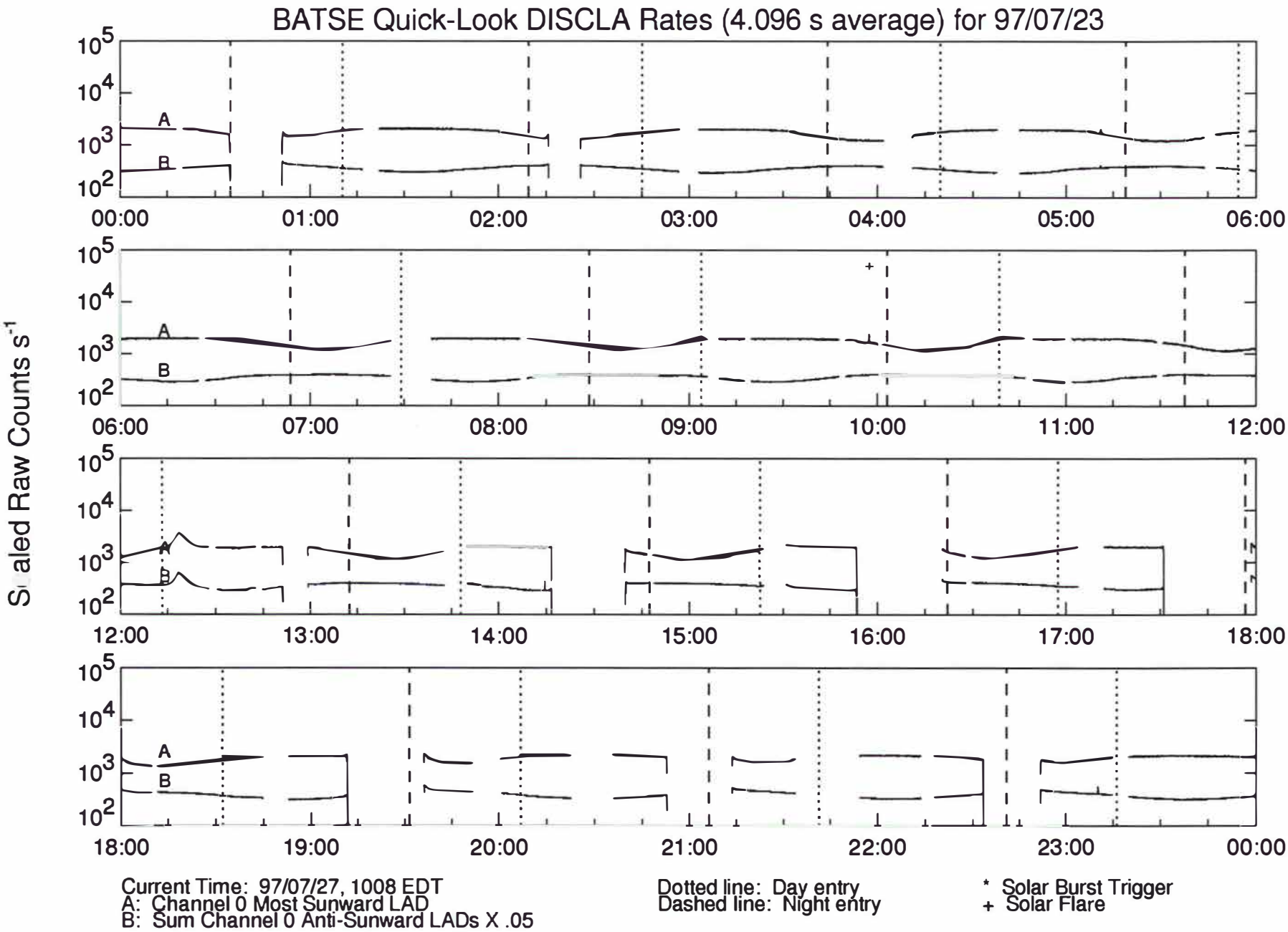
22- 147 keV




23/ 9/97
BATSE
23/07/97
25- 100 keV
18651.874
COUNTS/0.064 S
800
700
600
500
400
300
-3
01
5
9
13
17
21
25
29
33
37
41

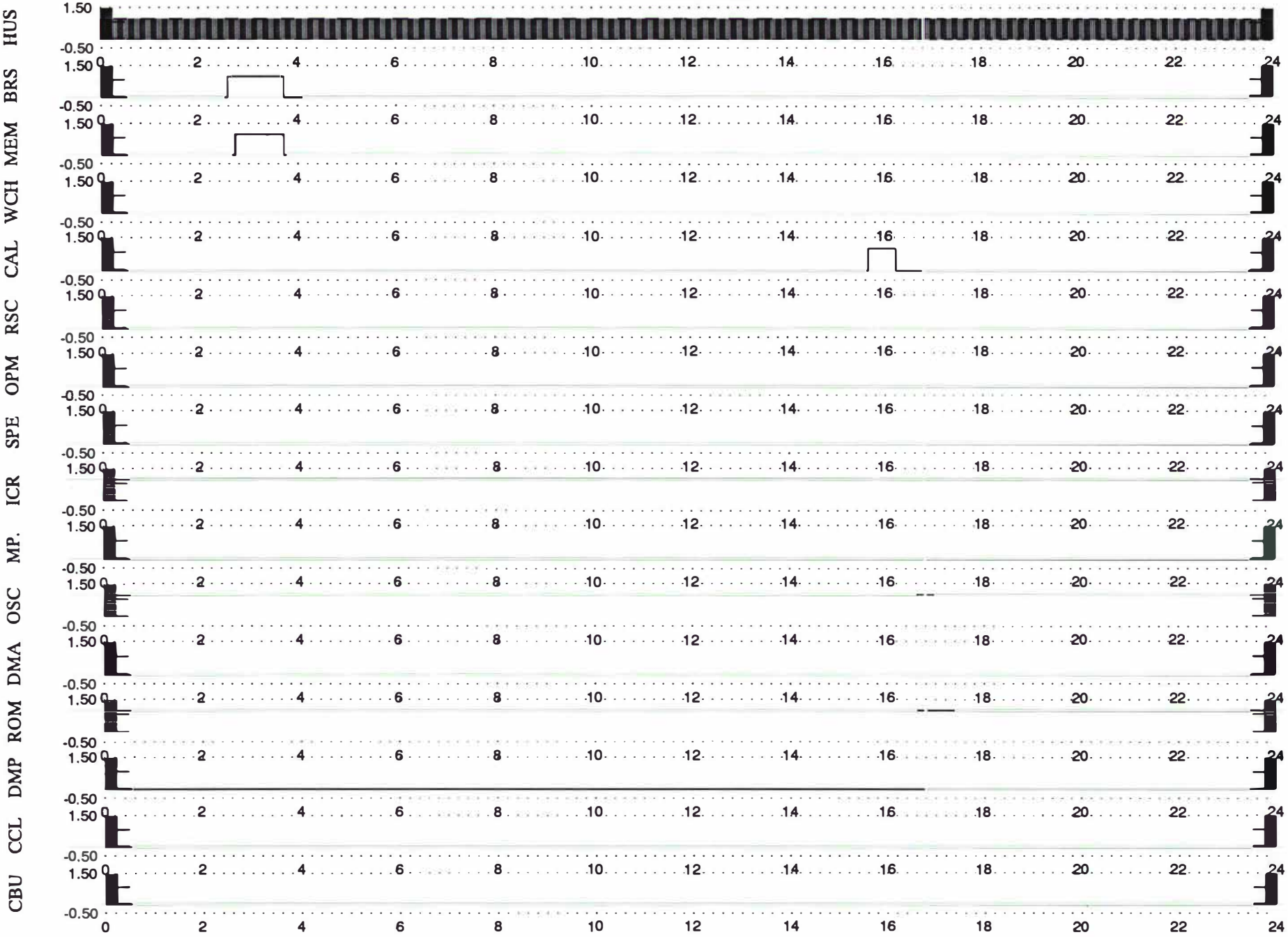
DISCSC Data for K. Hurley, No. 6315
RATE (counts/bin)
SECONDS since trigger
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
-10 -5 0 5 10 15 20 25 30 35 40 45 50 55 60
IE-AUG-1997 09:13:50
Created by KDPS 80
(Burst Display)
Version 02.25
Trigger # : 6315
Trigger Time:
10652 / 10651.873
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: POLY + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
-6---2--
Discriminators:
[1 : 2]
Quality Mask:
00150


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: 97/07/23, 0000:00
Plot created: 97/07/27, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/23
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
00:00
Current Time: 97/07/27, 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

HUS MODES EDR day 204, year 1997 to day 204, year 1997 10/24/97

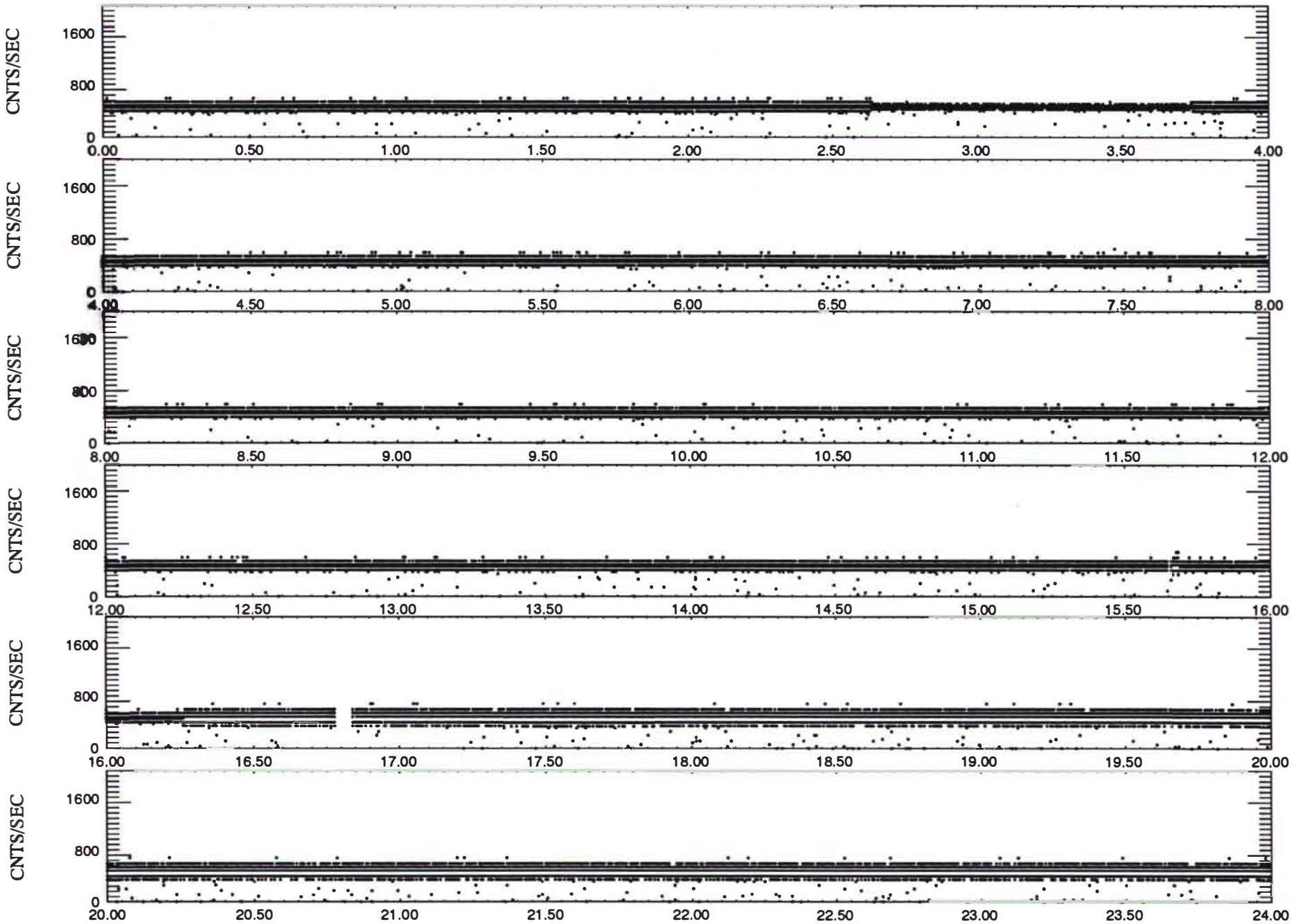
BURST NUMBER 6



UNIVERSAL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 204, year 1997 to day 204, year 1997 10/24/97

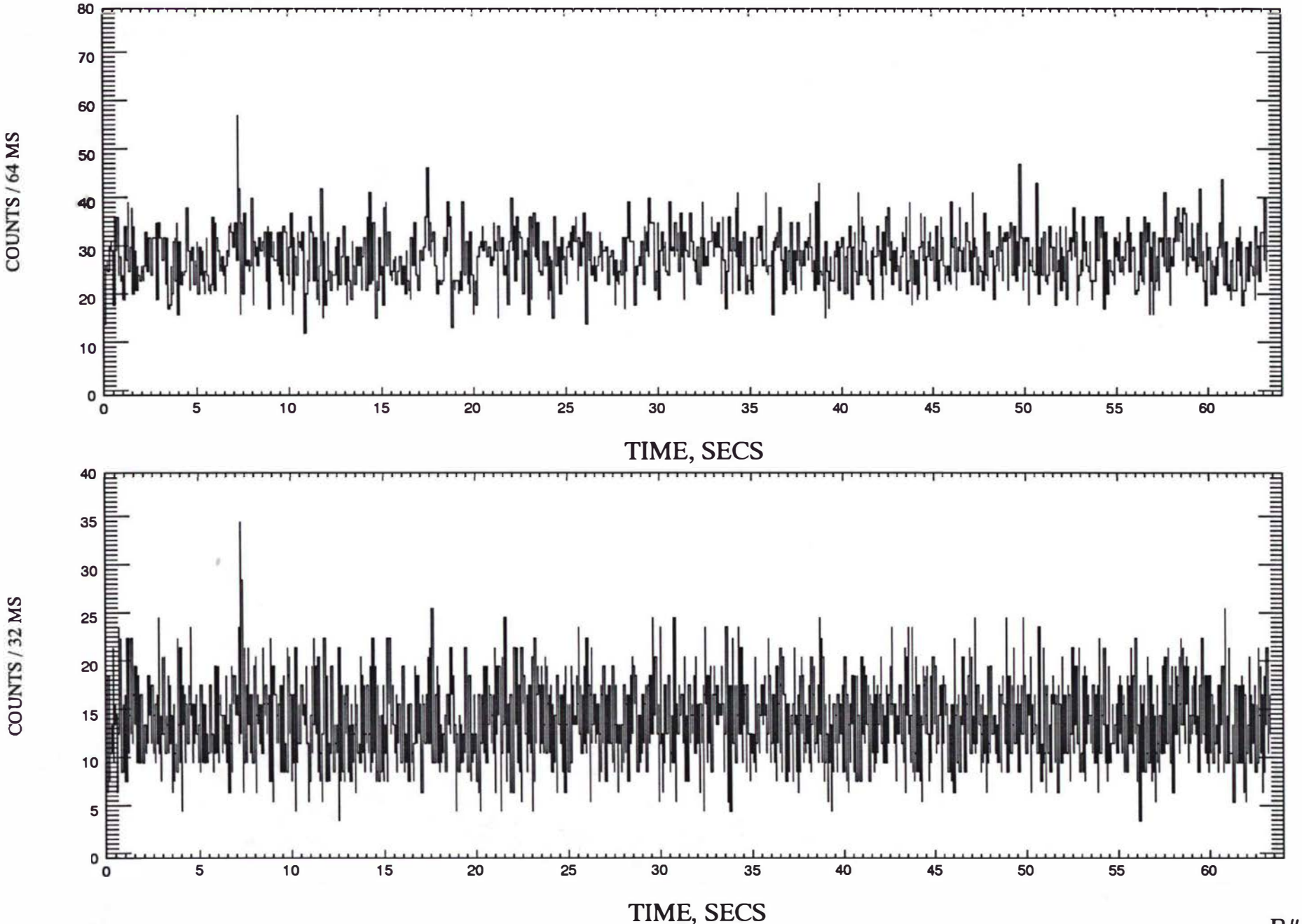
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 204, year 1997 10/24/97

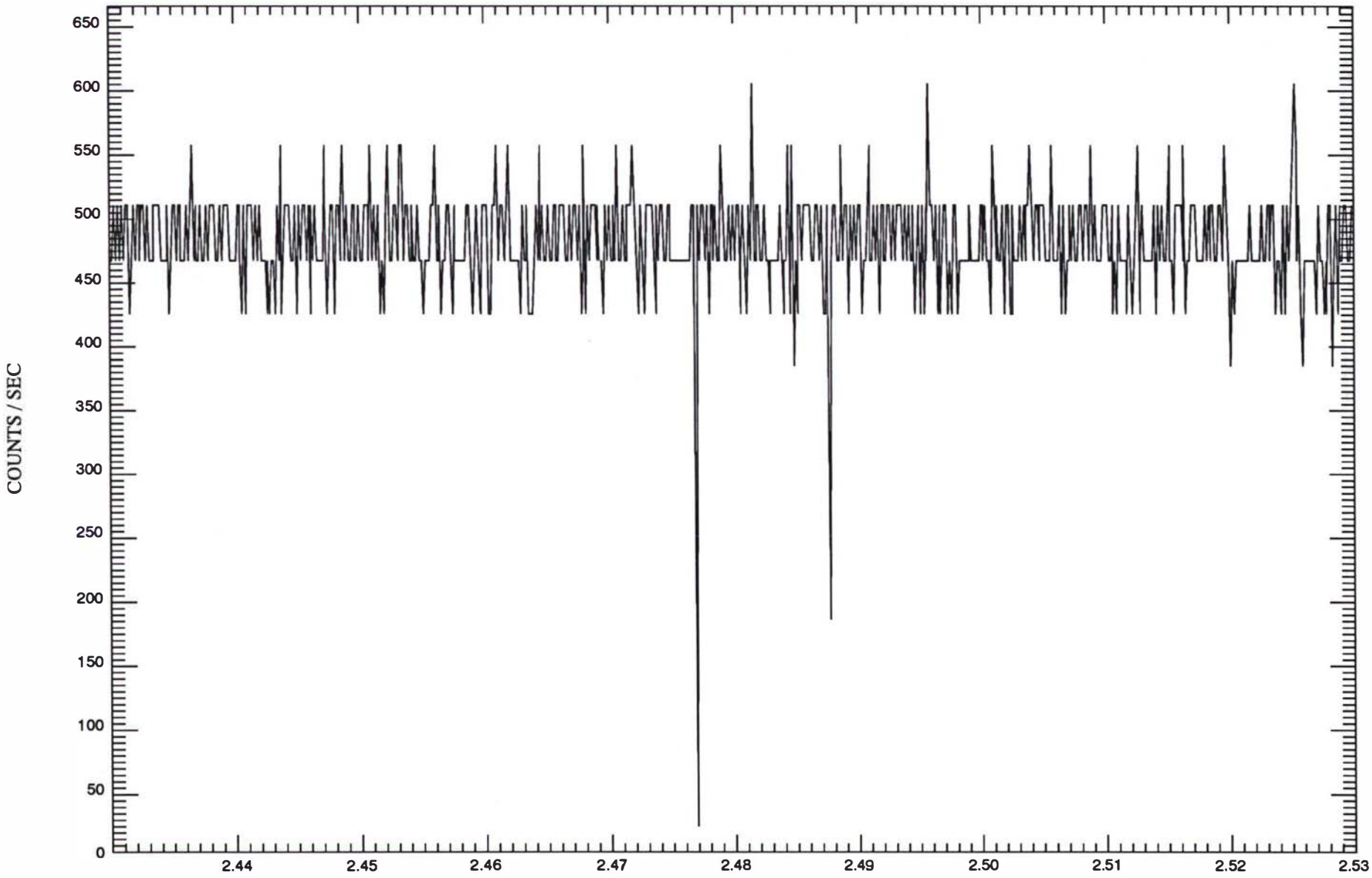
Burst Counter 6 at UT= 2.481677928501 h= 8934.041 s 02:28:54.041



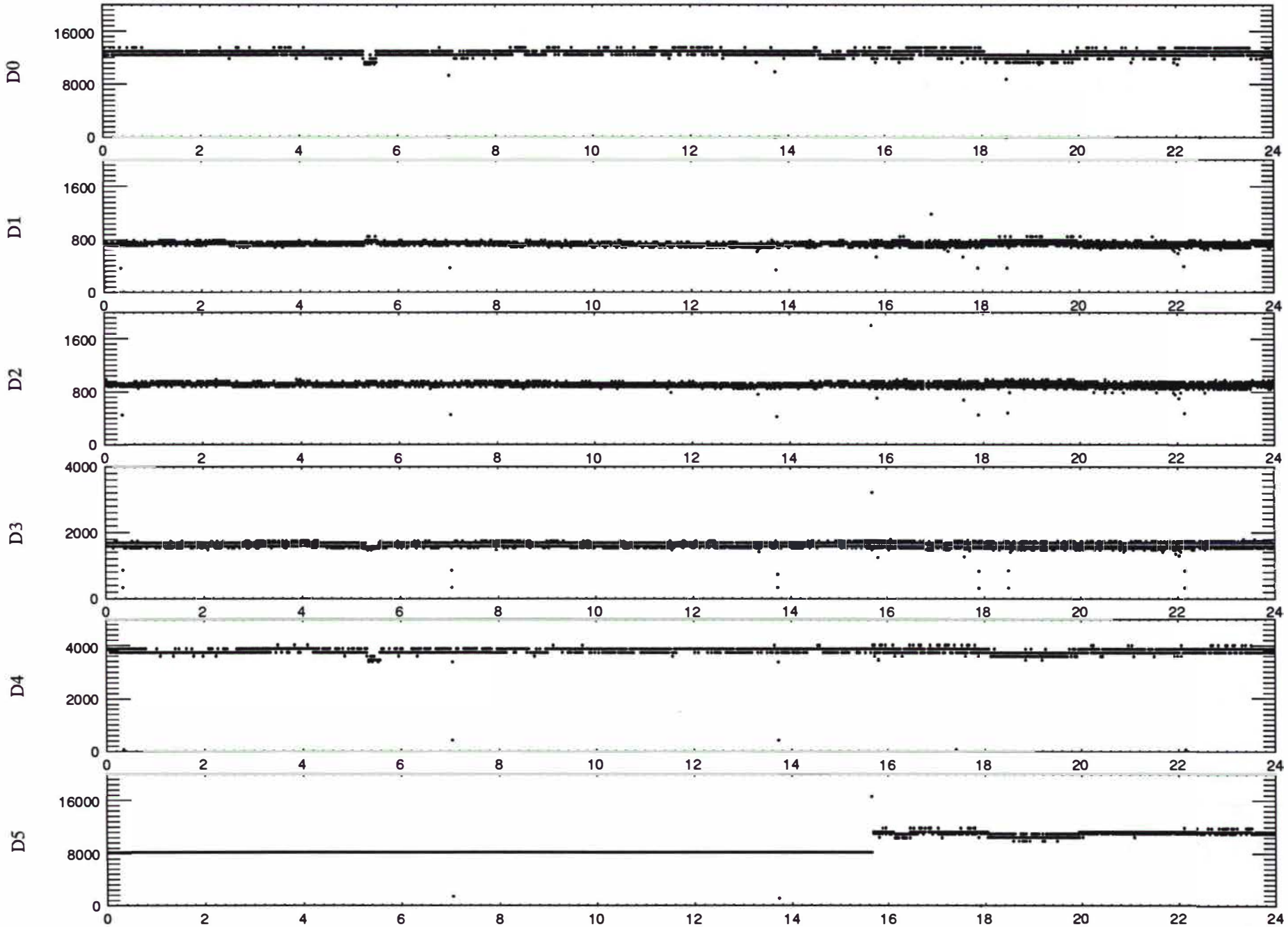
B# 1

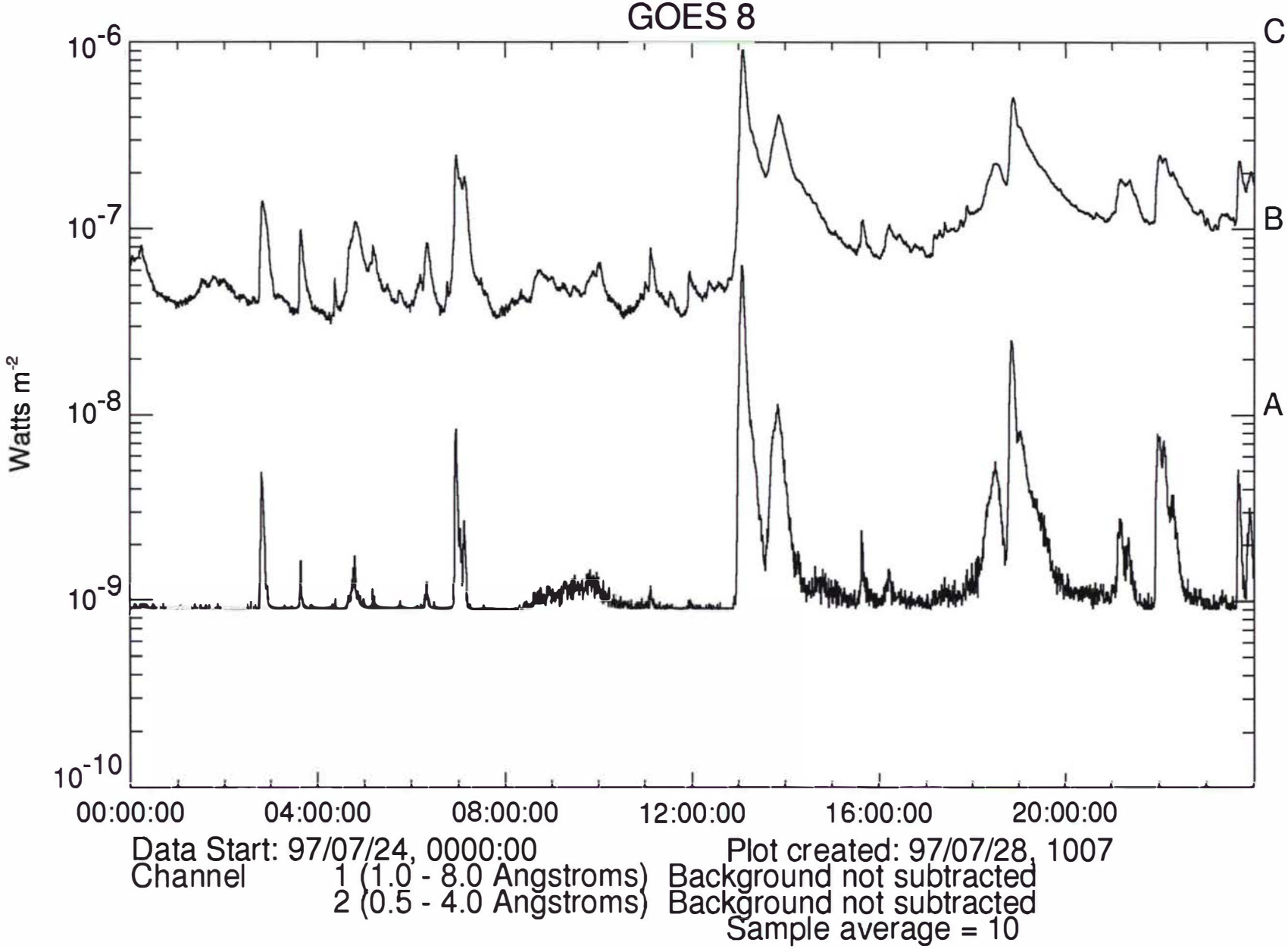
HUS 2A, MODE 1, NOT AVERAGED EDR day 204, year 1997 to day 204, year 1997 10/24/97

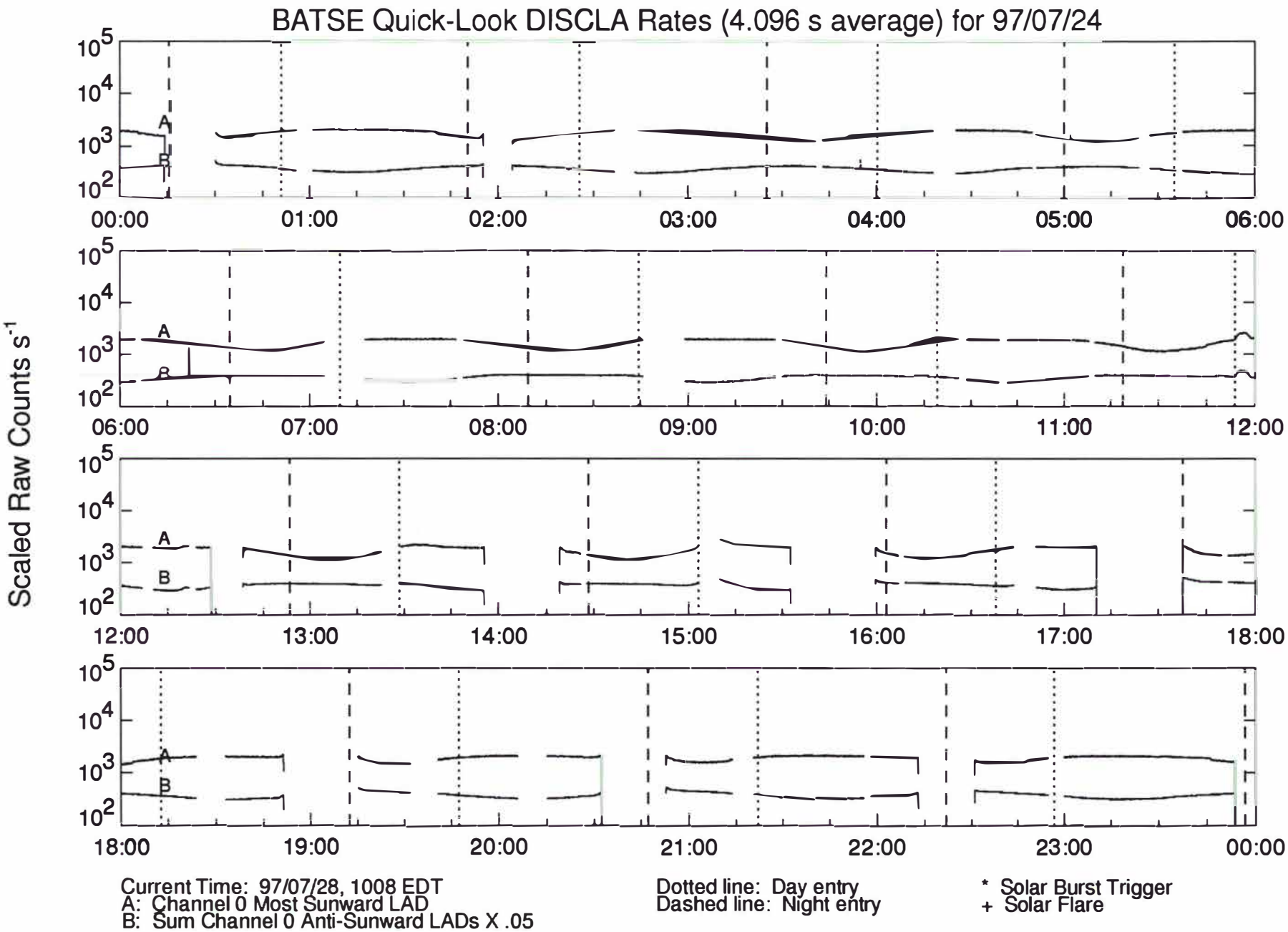
CALIBRATION DATA INCLUDED



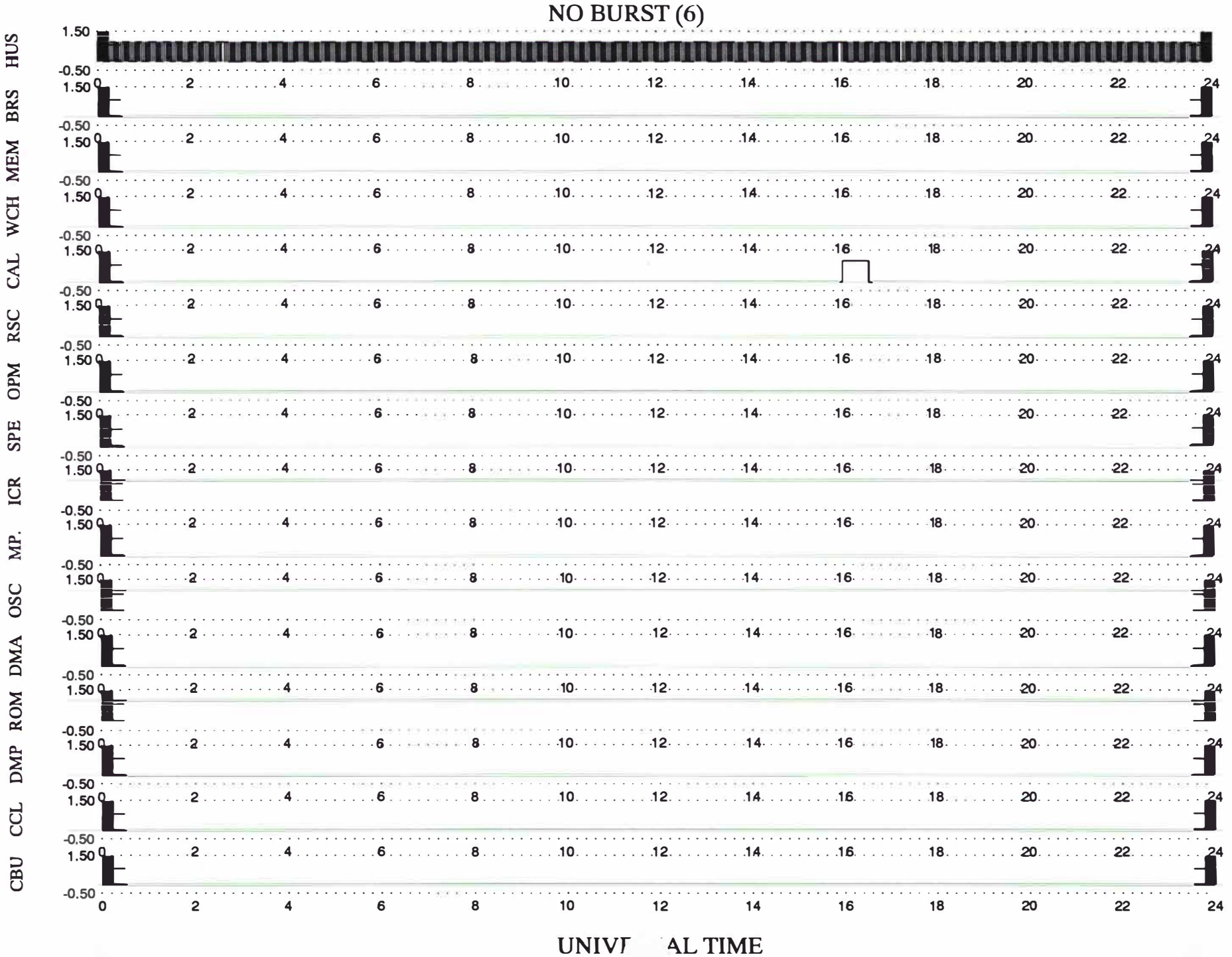
HUS 2B COUNTS / SEC EDR day 204, year 1997 to day 204, year 1997 10/24/97




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: 97/07/24, 0000:00
Plot created: 97/07/28, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

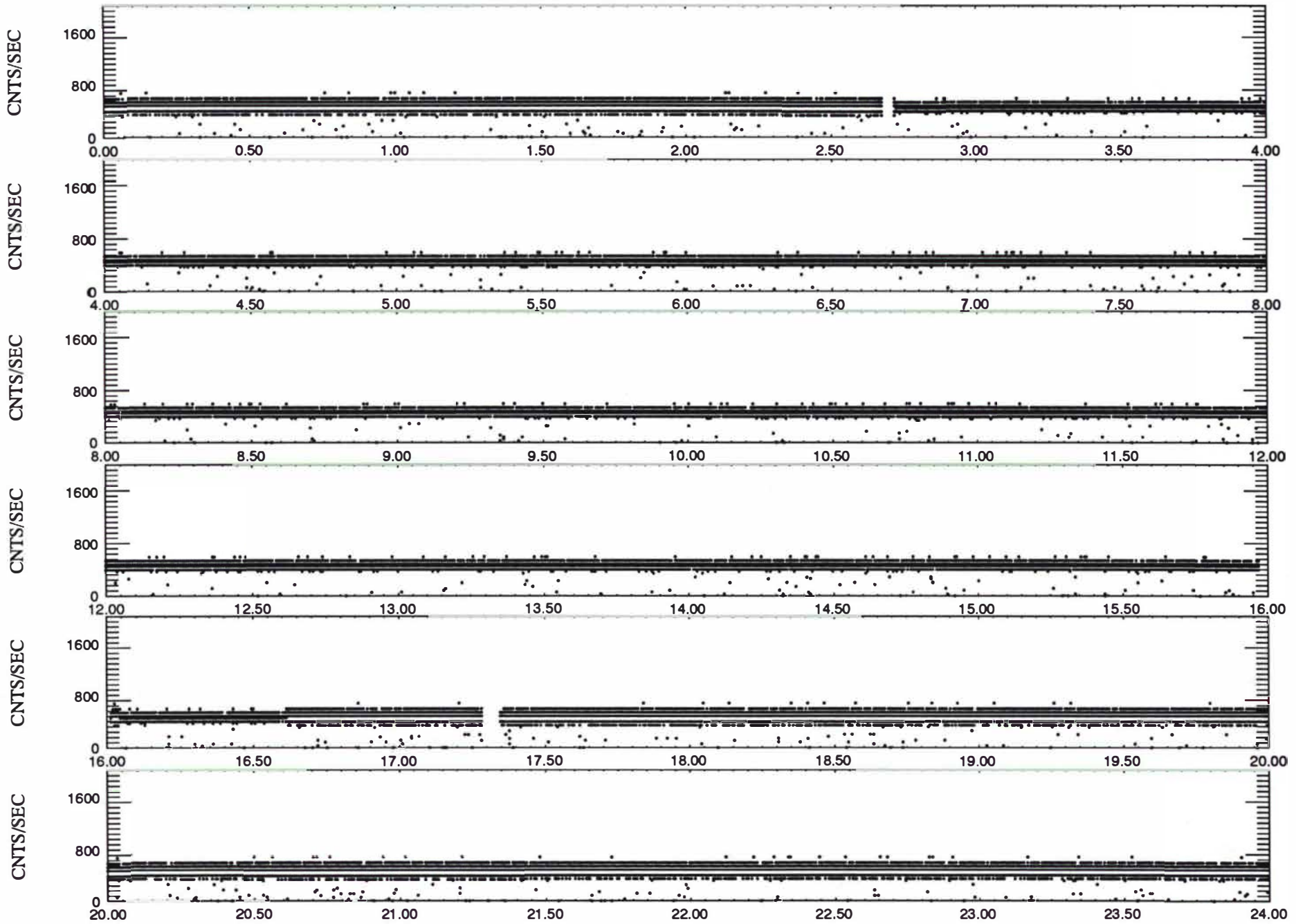

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/28, 1008 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

HUS MODES EDR day 205, year 1997 to day 205, year 1997 10/24/97



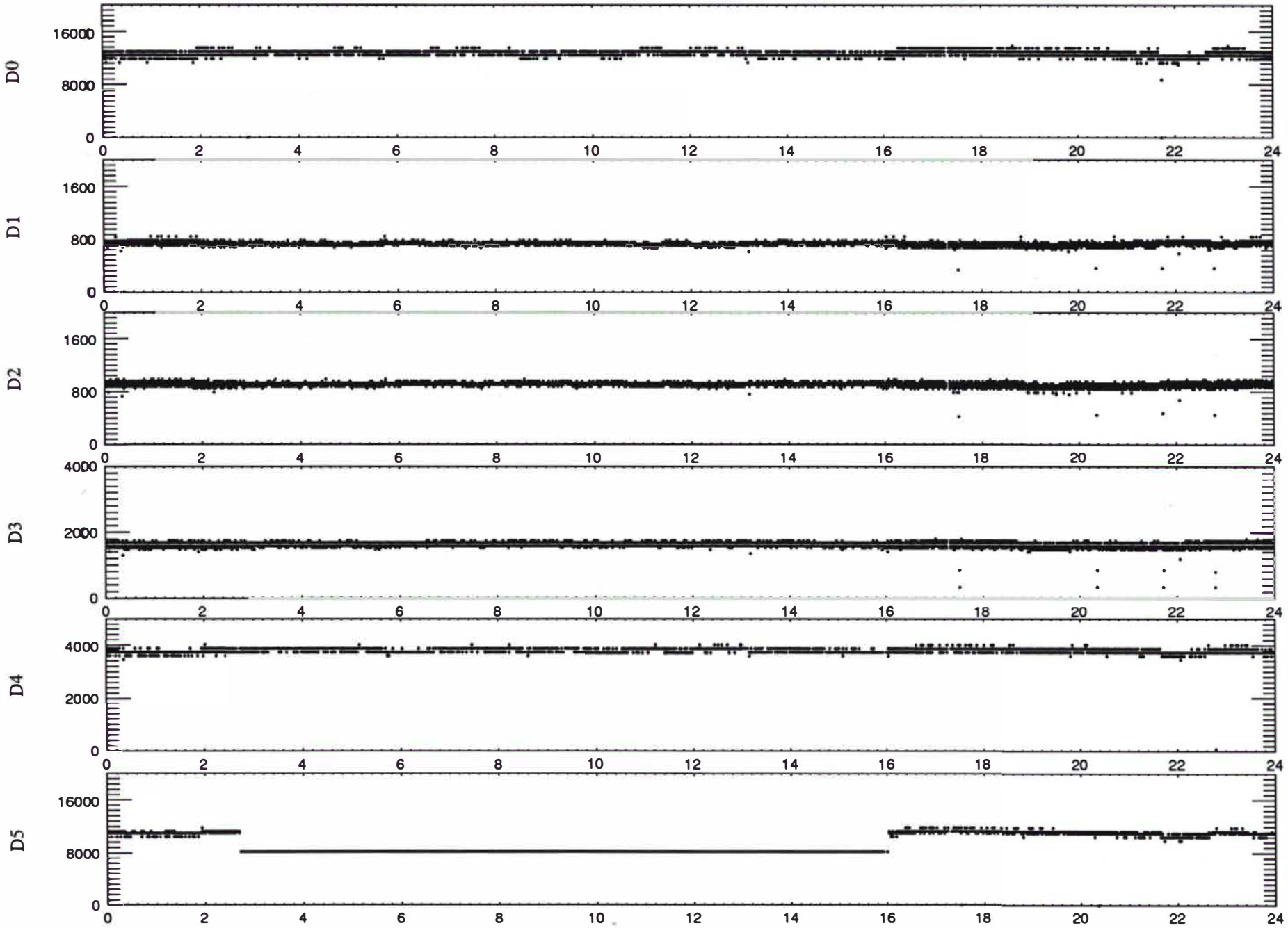
HUS 2A, MODE 1, NOT AVERAGED EDR day 205, year 1997 to day 205, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVE AL TIME

HUS 2B COUNTS / SEC EDR day 205, year 1997 to day 205, year 1997 10/24/97



From SAHI@fender.msfc.nasa.gov Mon Jul 28 10:16 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 KAA28896; Mon, 28 Jul 1997 10:16:22 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 28 Jul 1997 12:13:59 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970728121359.20a005ec@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6317
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

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

 BATSE BURST #    6317
 EVENT OF 1997 JUL 25 DAY OF YEAR=206
 EVENT CROSSING TIME AT BATSE     : 17470. S. OR 04:51:10.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 286.000   49.000
 BATSE PEAK COUNTING RATE:   3500    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 25/ 7/  97 IS:
 RA=  156.164 DEC=   23.055 DIST=    6.053 AU
 BATSE-ULYSSES DISTANCE =  905576662. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.77 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=  275.32 SECS.
 CROSSING TIME AT ULYSSES    IS 17745. S. OR   04:55:45 +/-  576.44 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 25/ 7/  97 IS:
 RA=  196.481 DEC=   -7.332 DIST=    1.418 AU
 MARS-BATSE DISTANCE =  212200896. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.79 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=   64.31 SECS.
 CROSSING TIME AT MARS       IS 17534. S. OR   04:52:14 +/-  123.36 SECONDS

                BATSE BURST TRIGGER
NO.: 6317

TIME: TJD=0654 SECONDS=17470

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=131.5  AZIMUTH=106.8  ERROR=5.4   DEGREES

COMMENTS:
BURST, SINGLE PULSE WITH SUBSTRUCTURE, DUR.~50 SECS.
NOT VISIBLE ABOVE 300 KEV.


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6317   970725   10654   17470     3500   286   +49     50
```

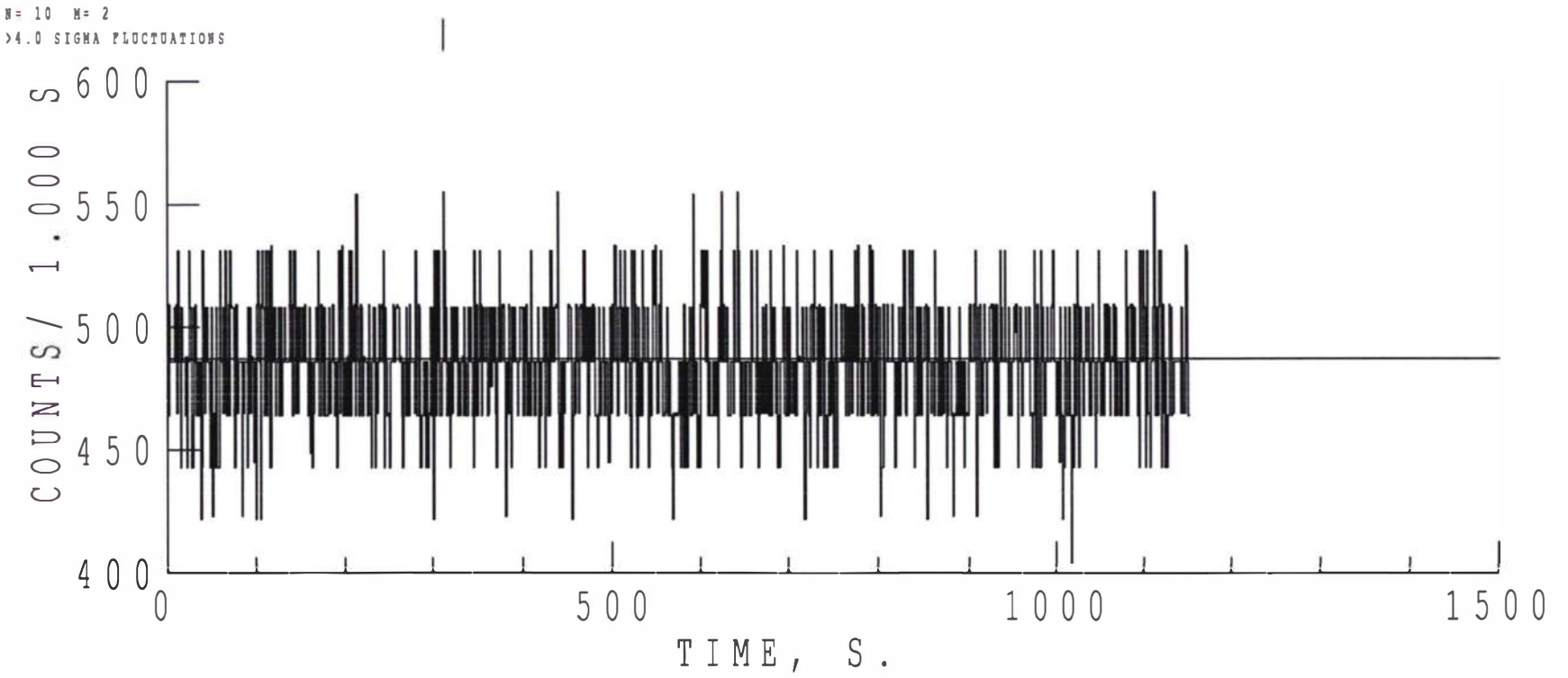
BATSE BURST# 6317

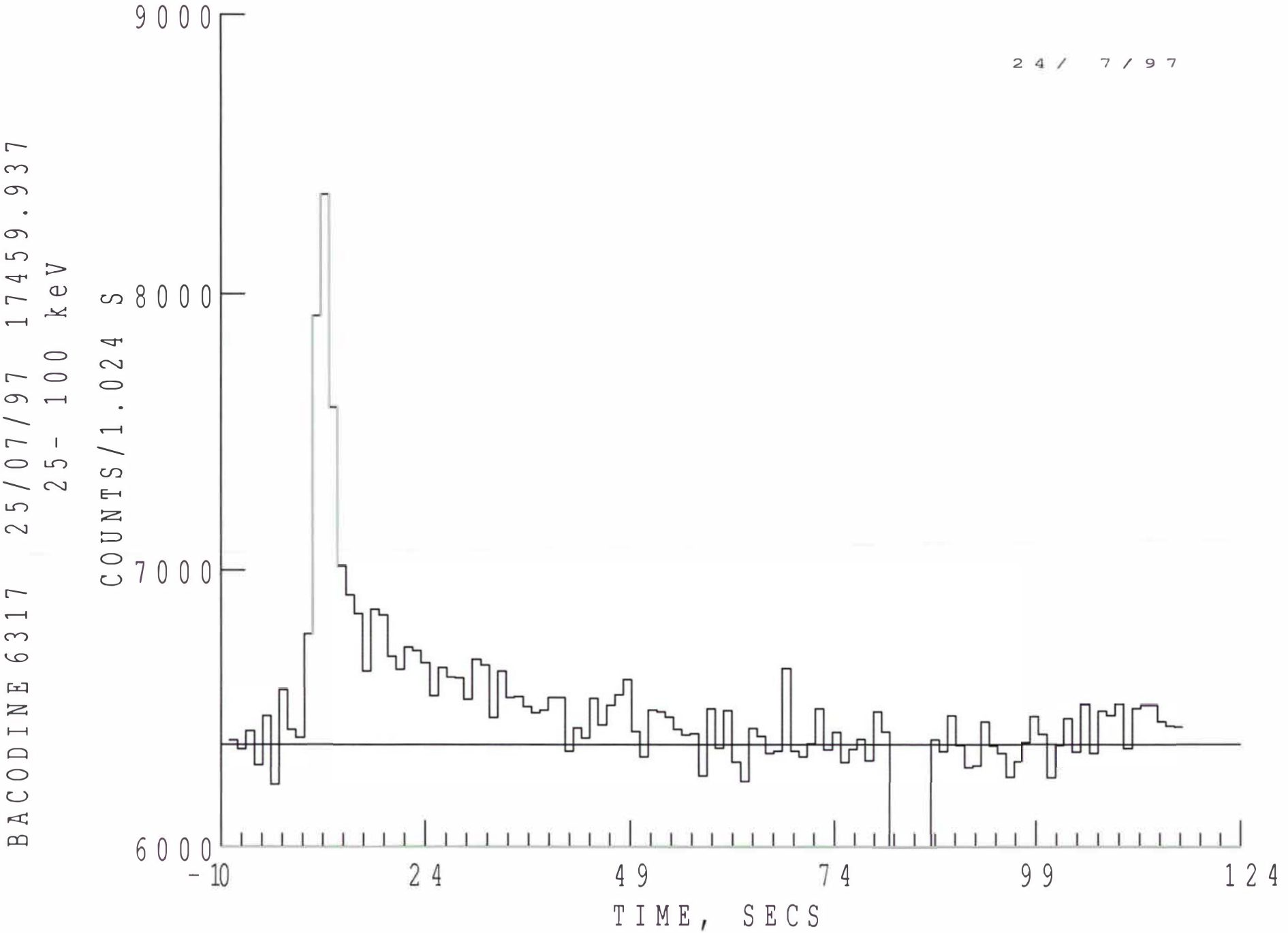
ULYSSES RT 29/ 7/97

25/ 7/97 17172.133 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV




BACODINE 6317 25/07/97 17459.937
25- 100 keV
COUNTS/1.024 S
9000
8000
7000
6000
24/ 7/97
-10
24
49
74
99
124
TIME, SECS

From SAHI@fender.msfc.nasa.gov Mon Jul 28 10:09 PDT 1997
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 28 Jul 1997 12:09:27 -0500 (CDT)
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,
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.: 6318

TIME: TJD=0654 SECONDS=41703

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From SAHI@fender.msfc.nasa.gov Mon Jul 28 10:16 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 KAA28910; Mon, 28 Jul 1997 10:16:46 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 28 Jul 1997 12:15:24 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970728121524.20a005ec@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6319
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

Too weak
Two possible RI's

****
BATSEARCH PROGRAM
****

BATSE BURST # 6319
EVENT OF 1997 JUL 25 DAY OF YEAR=206
EVENT CROSSING TIME AT BATSE : 82237. S. OR 22:50:37.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 13.000 36.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 7/ 97 IS:
RA= 156.263 DEC= 22.971 DIST= 6.060 AU
BATSE-ULYSSES DISTANCE = 906591186. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 68.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1111.43 SECS.
CROSSING TIME AT ULYSSES IS 83348. S. OR 23:09:08 +/- 555.16 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 7/ 97 IS:
RA= 196.481 DEC= -7.332 DIST= 1.418 AU
MARS-BATSE DISTANCE = 212200896. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 28.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 620.01 SECS.
CROSSING TIME AT MARS IS 82857. S. OR 23:00:57 +/- 68.70 SECONDS

BATSE BURST TRIGGER
NO.: 6319

TIME: TJD=0654 SECONDS=82237

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=73.2 AZIMUTH=127.8 ERROR=2.9 DEGREES

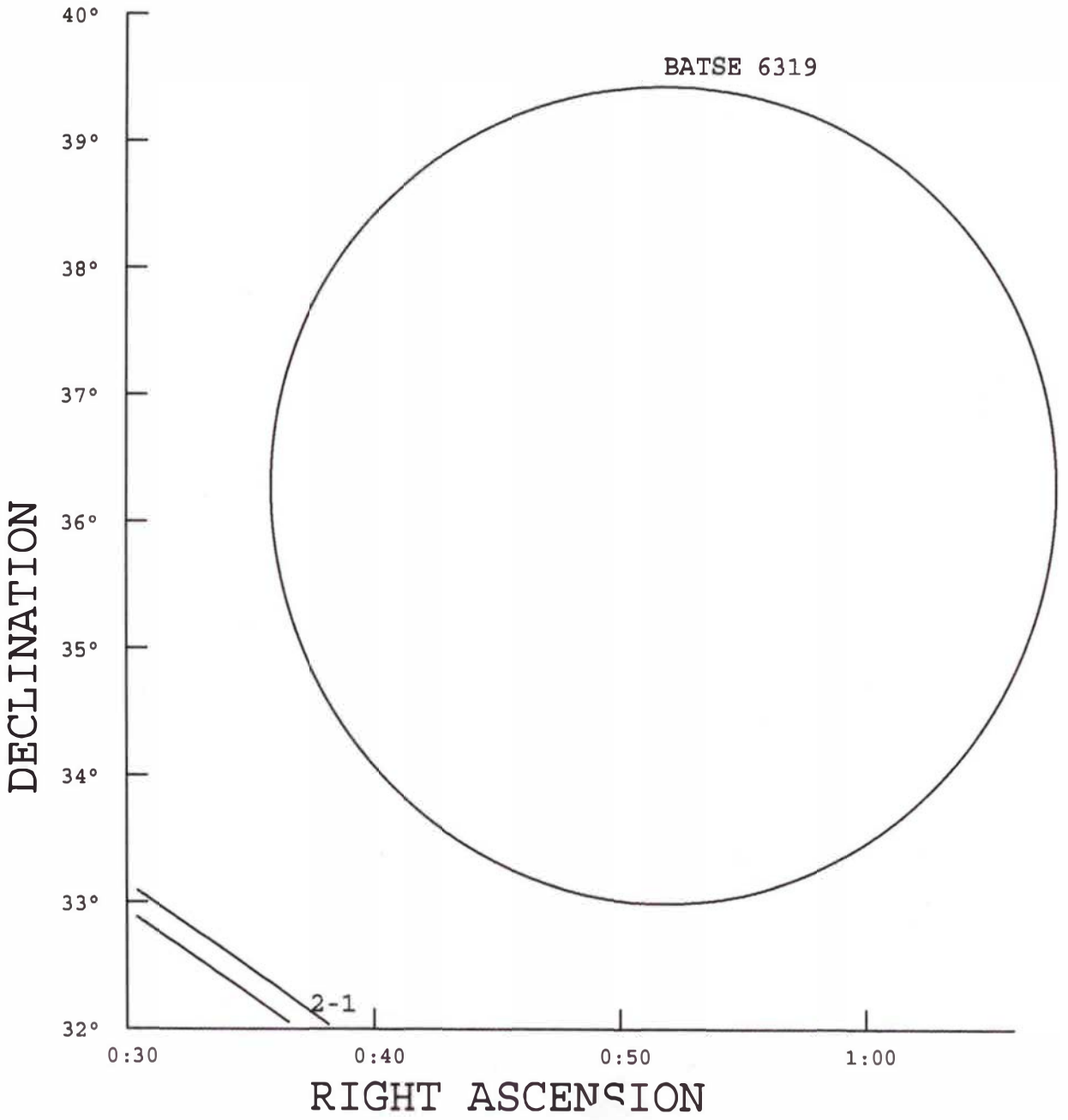
COMMENTS:
BURST, DOUBLE PEAK, DUR.~30 SECS, FIRST IS STRONGER THAN SECOND, EACH
HAS DUR.~10 SECS. NOT VISIBLE ABOVE 300 KEV.

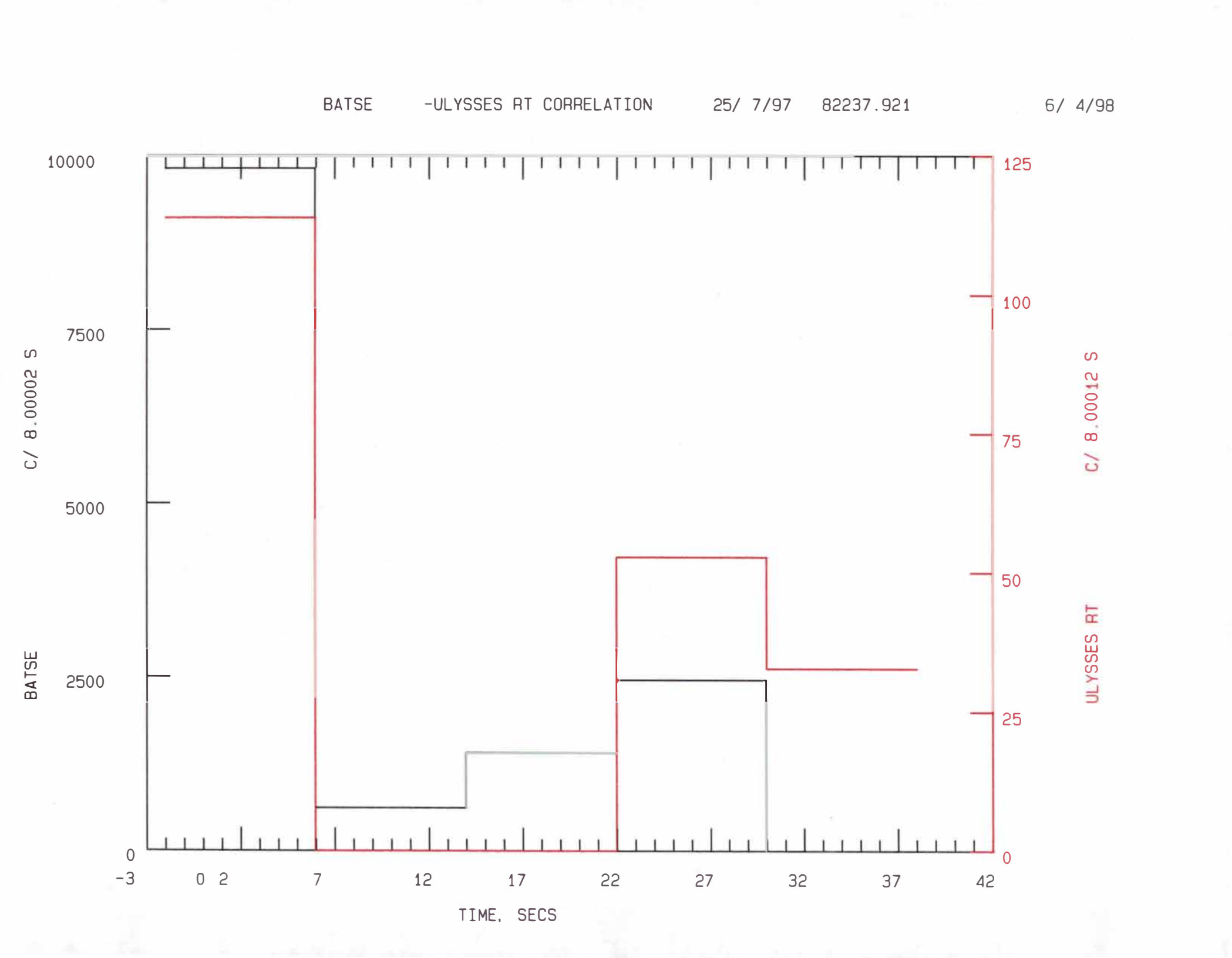
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6319	970725	10654	82237	4500	013	+36	30

EVENT OF JUL 25, 1997 23:12

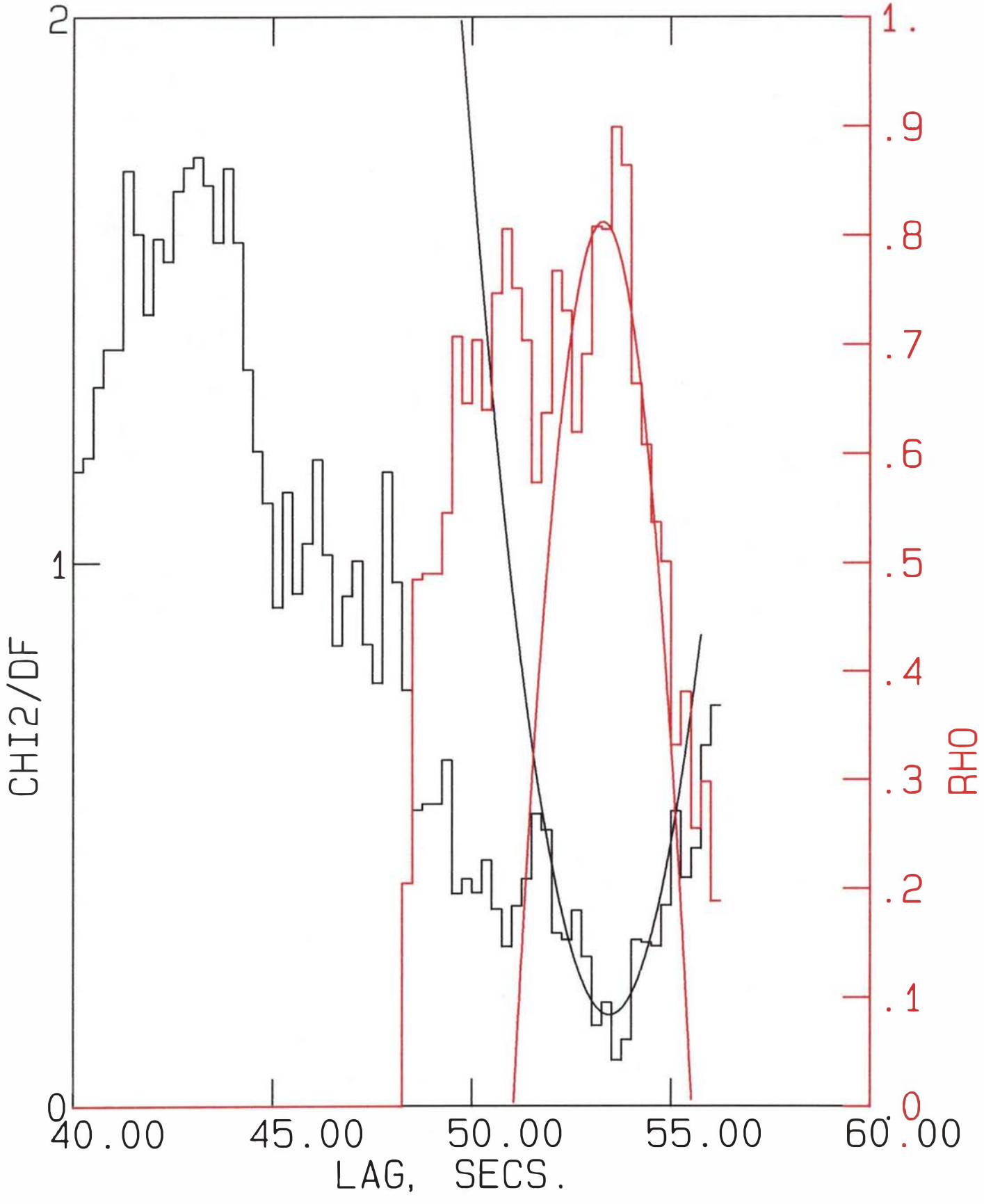
6/ 4/98

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




BATSE -ULYSSES RT CORRELATION 25/ 7/97 82237.921 6/ 4/98
10000
7500
5000
2500
0
BATSE
C/ 8.00002 S
125
100
75
50
25
0
ULYSSES RT
C/ 8.00012 S
-3
0 2
7
12
17
22
27
32
37
42
TIME, SECS

BATSE -ULYSSES RT CORRELATION 25/ 7/97 82237.921



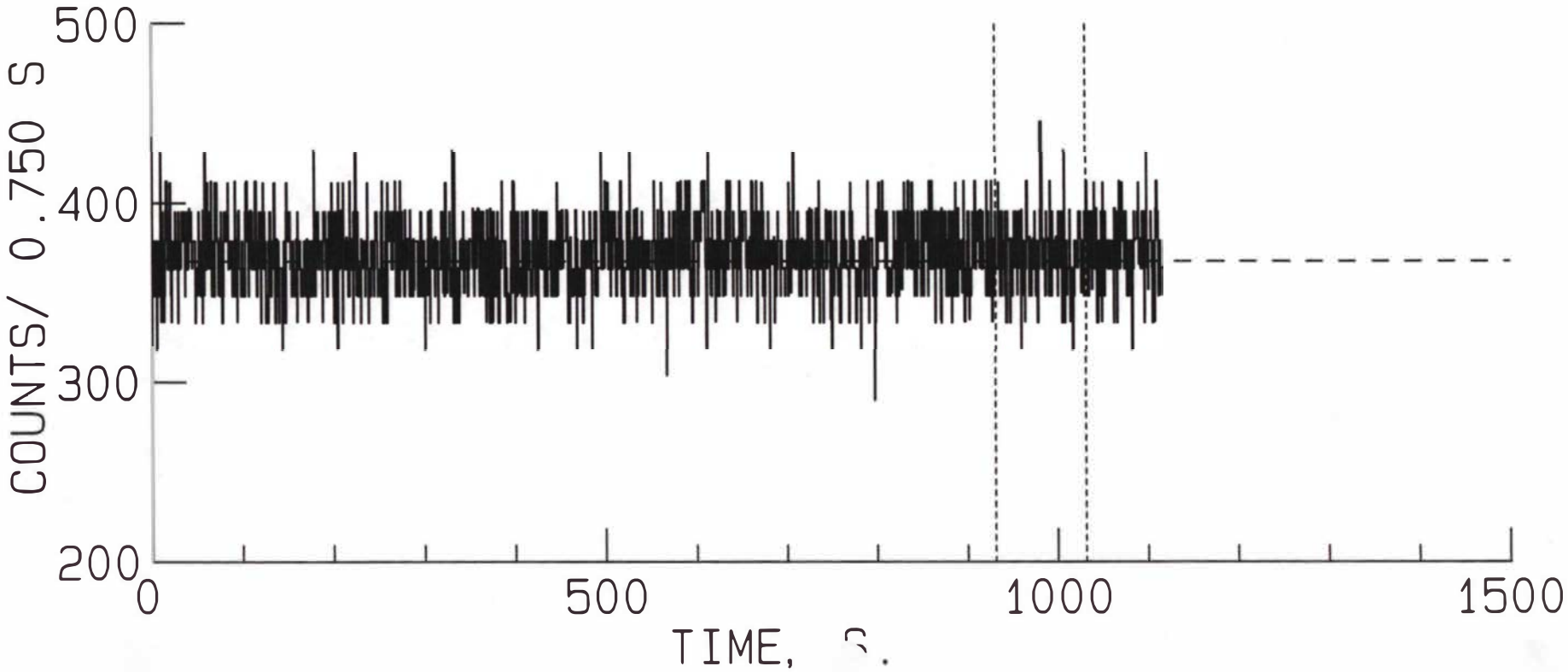
ULYSSES RT

6/ 4/98

25/ 7/97 82800.140 s

0.250 S INTERVALS REGROUPED BY 3

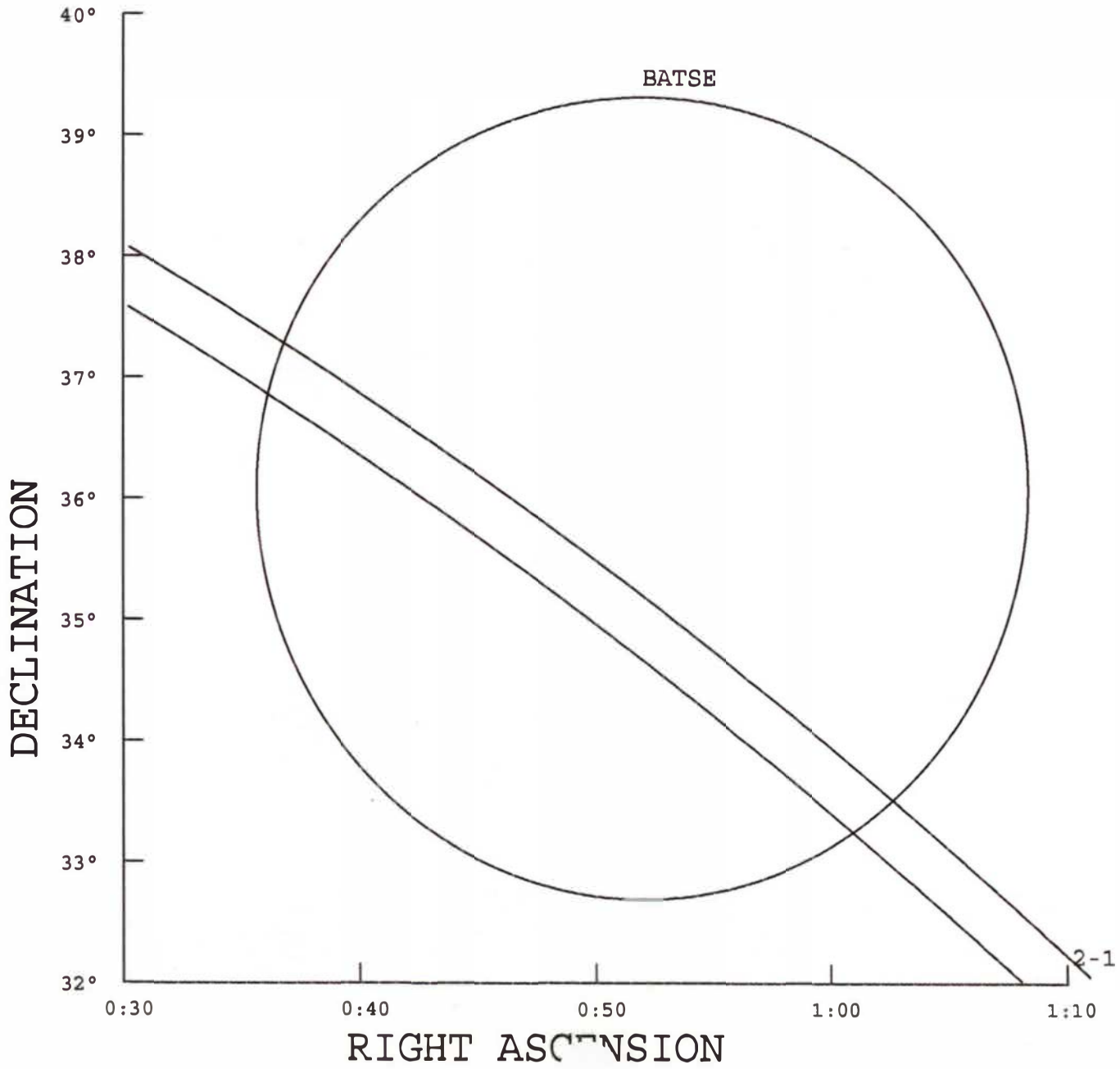
21- 147 keV

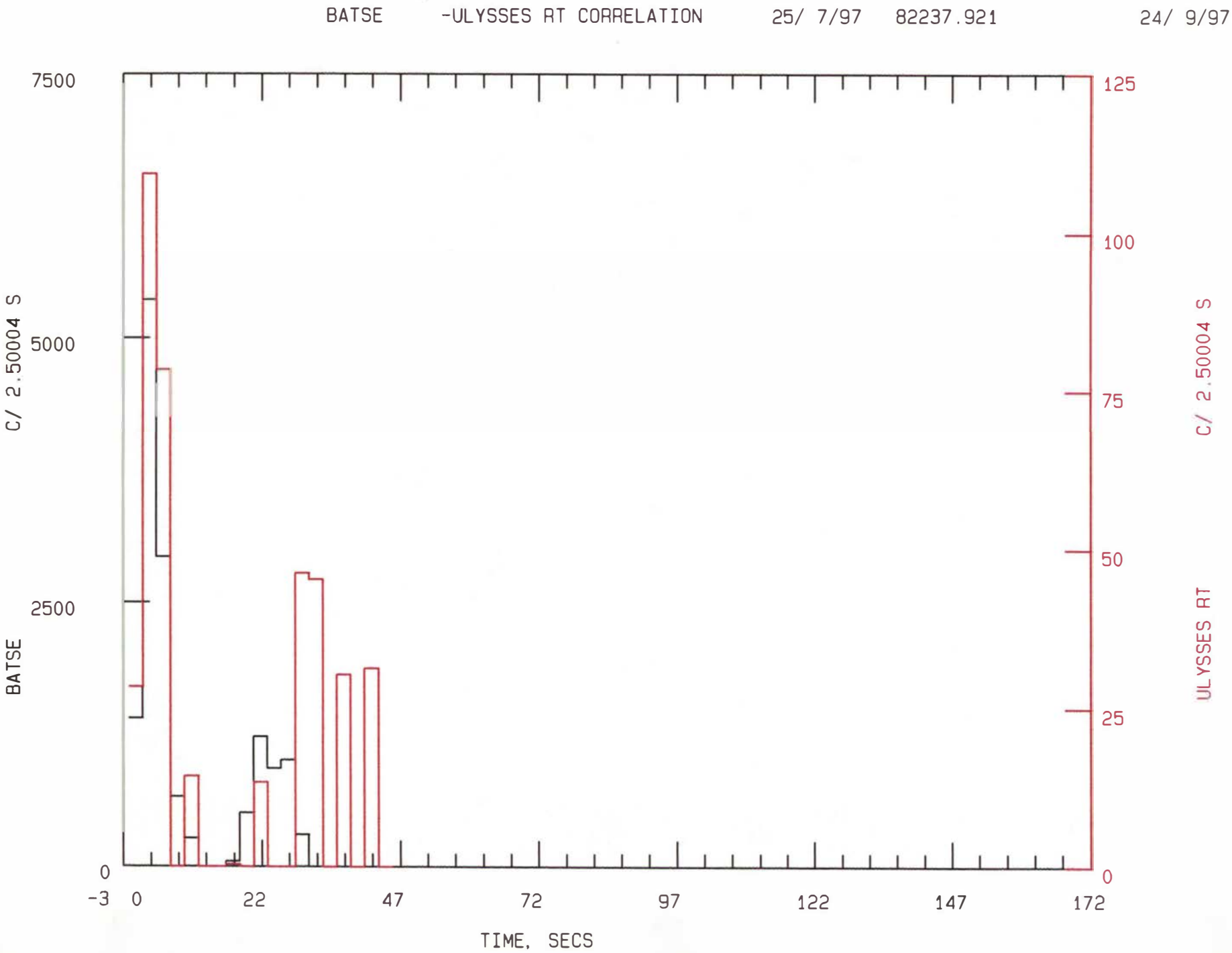


EVENT OF JUL 25, 1997 23:08

24/ 9/97

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




BATSE -ULYSSES RT CORRELATION 25/ 7/97 82237.921 24/ 9/97
7500
5000
2500
0
C/ 2.50004 S
BATSE
125
100
75
50
25
0
C/ 2.50004 S
ULYSSES RT
-3
0
22
47
72
97
122
147
172
TIME, SECS

BATSE BURST# 6319

ULYSSES RT 29/ 7/97

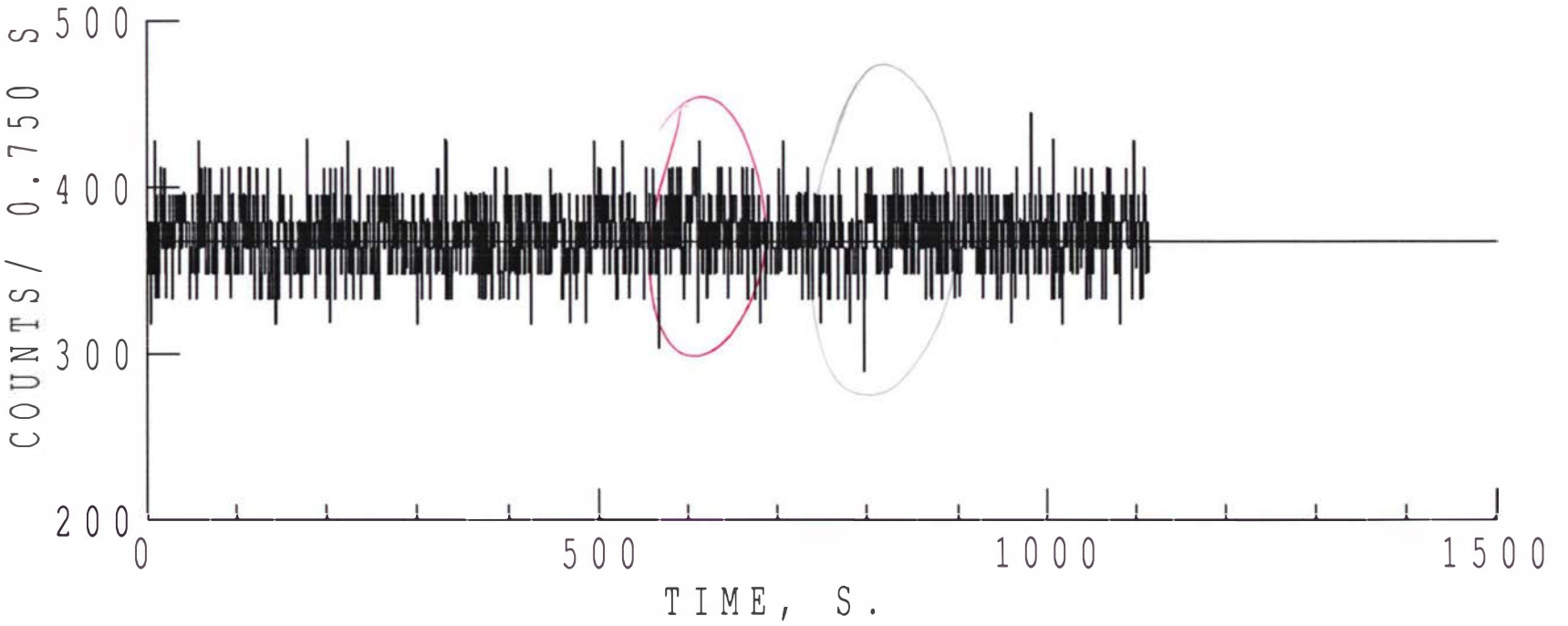
25/ 7/97 82800.141 s

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



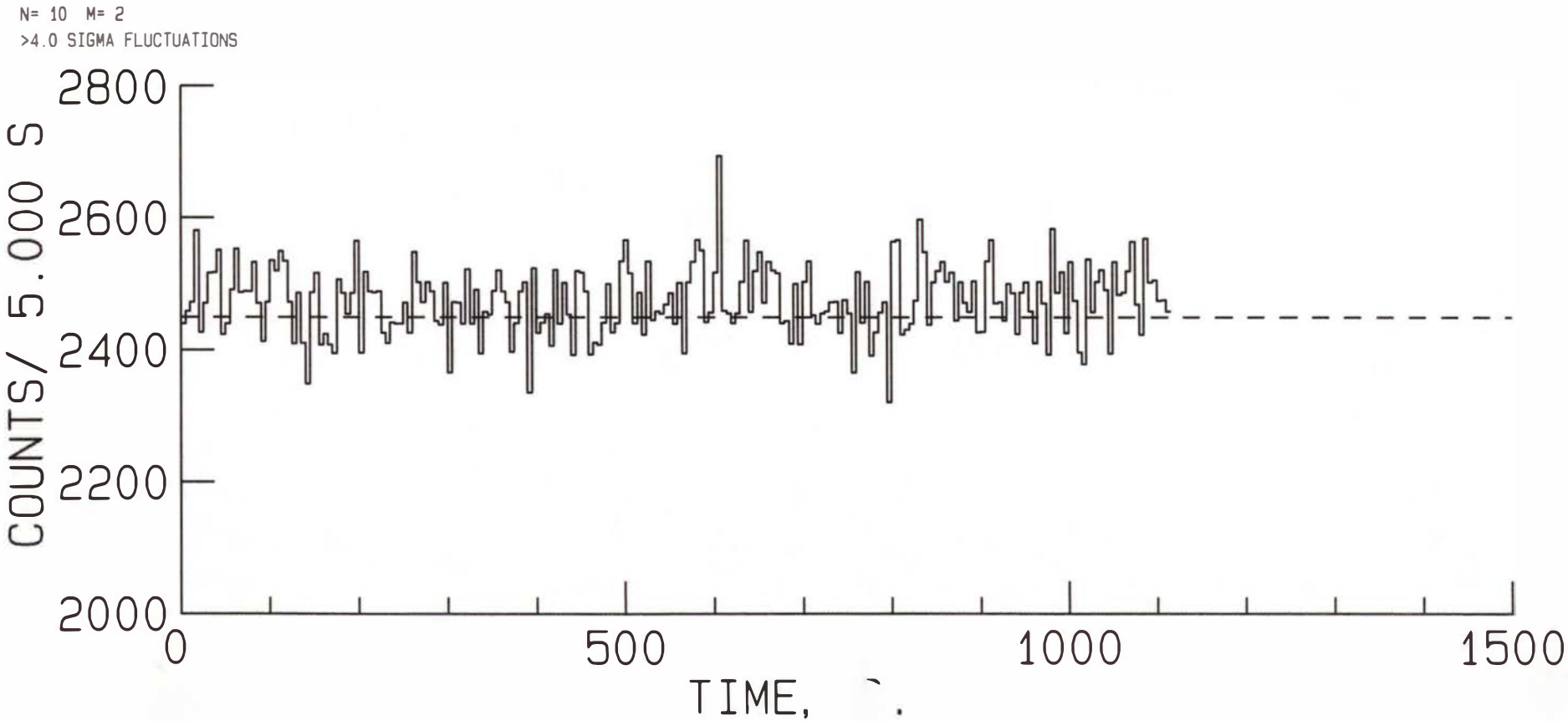
ULYSSES RT

24/ 9/97

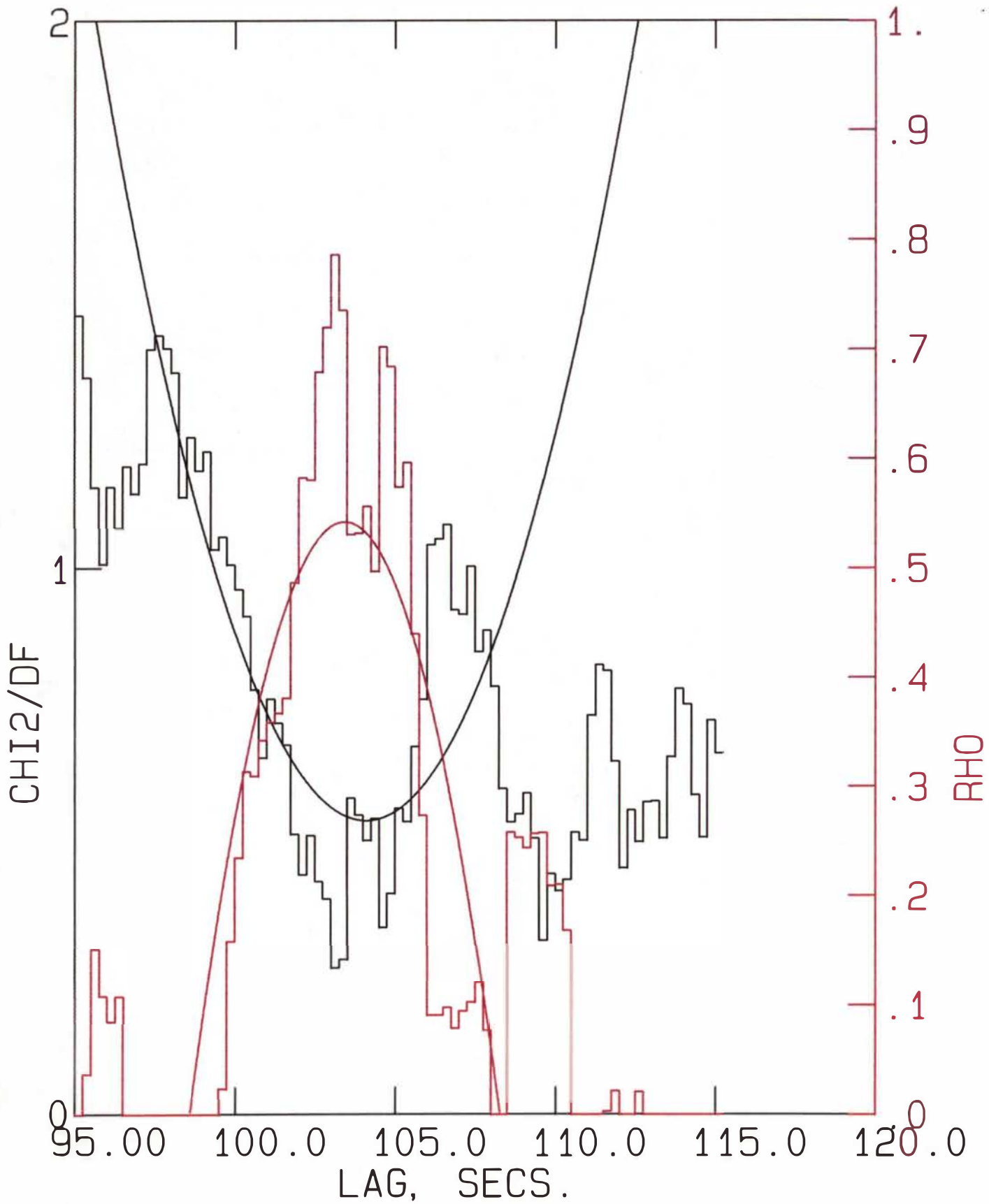
25/ 7/97 82800.140 s

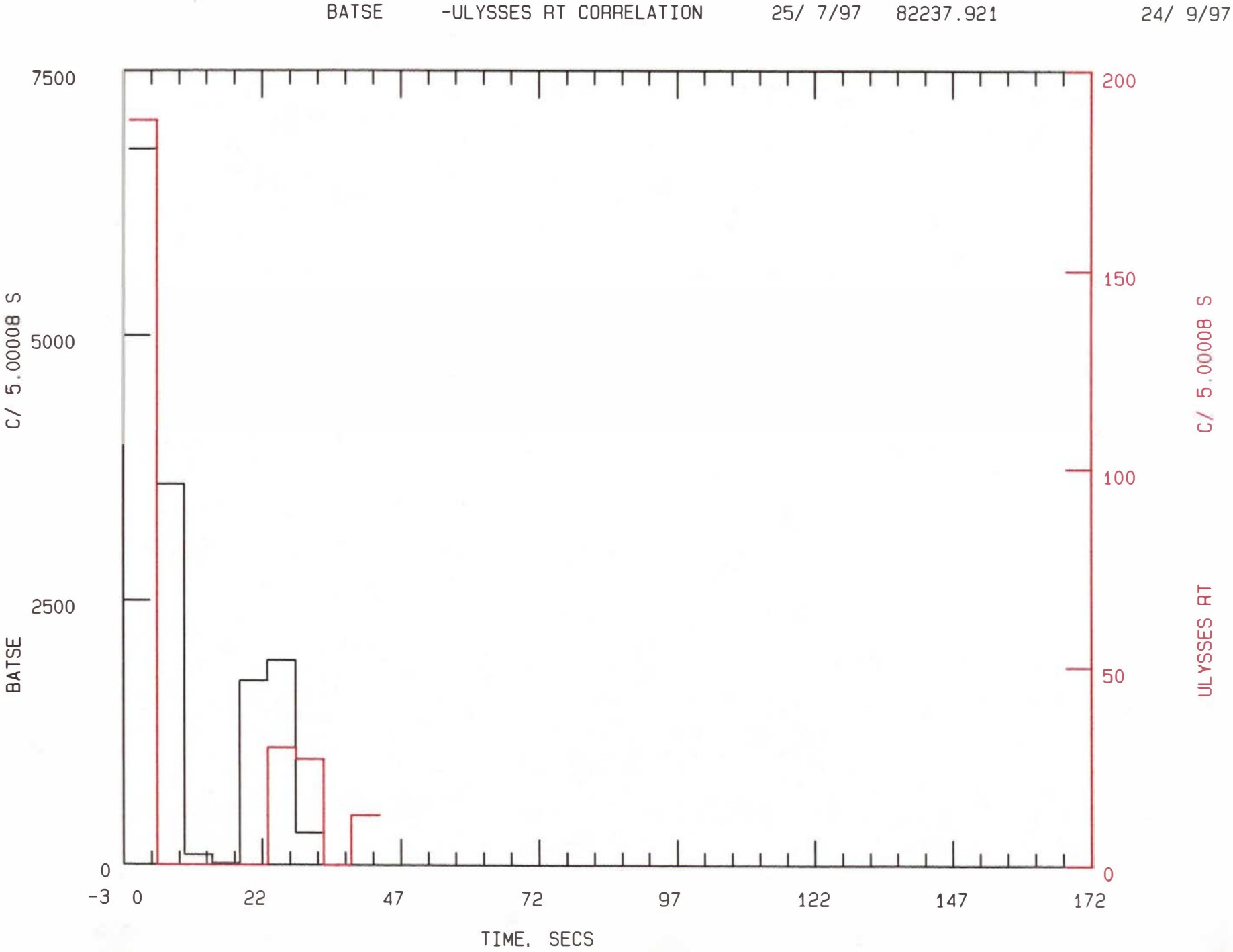
0.250 S INTERVALS REGROUPED BY 20

22- 147 keV



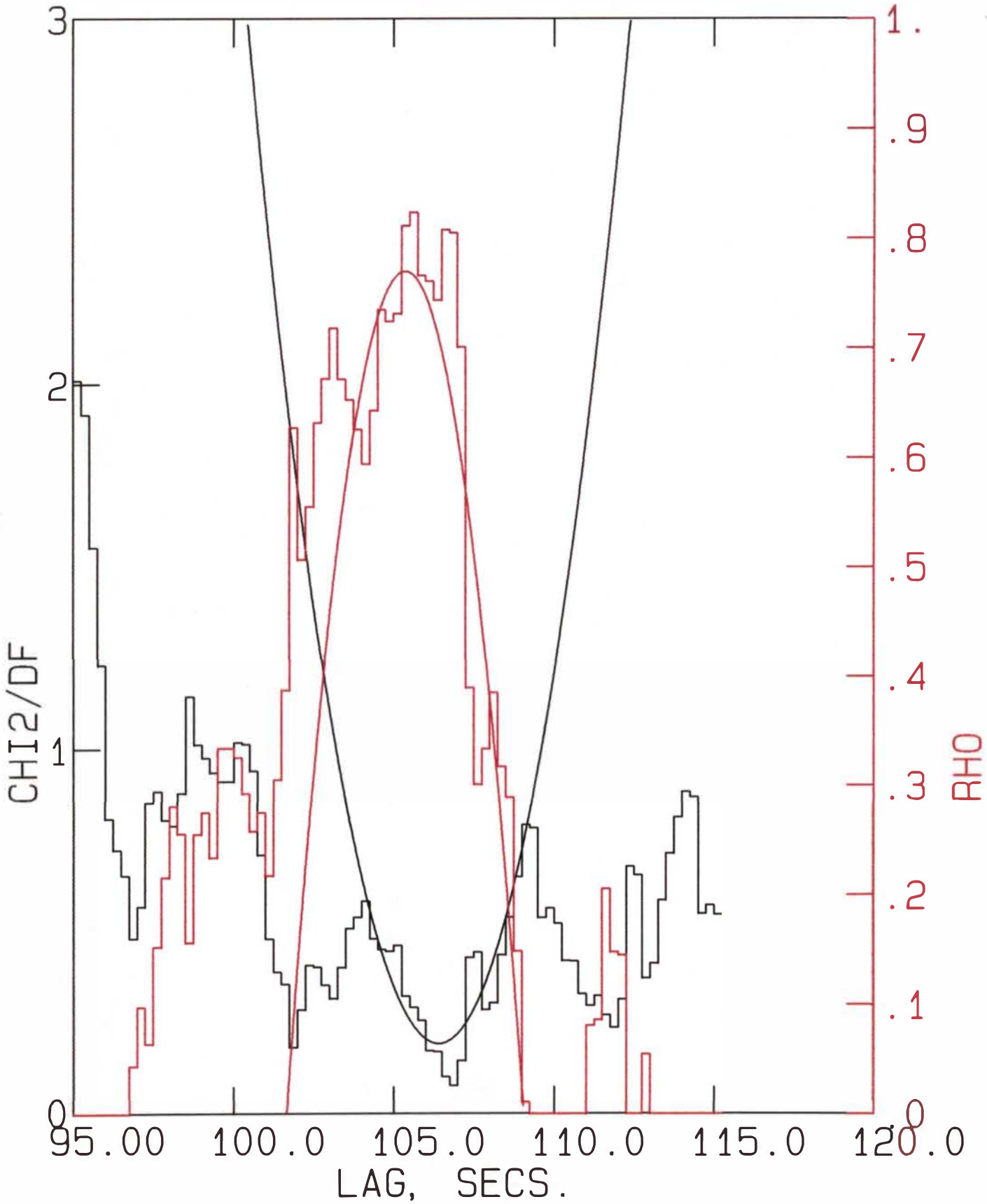
BATSE -ULYSSES RT CORRELATION 25/ 7/97 82237.921

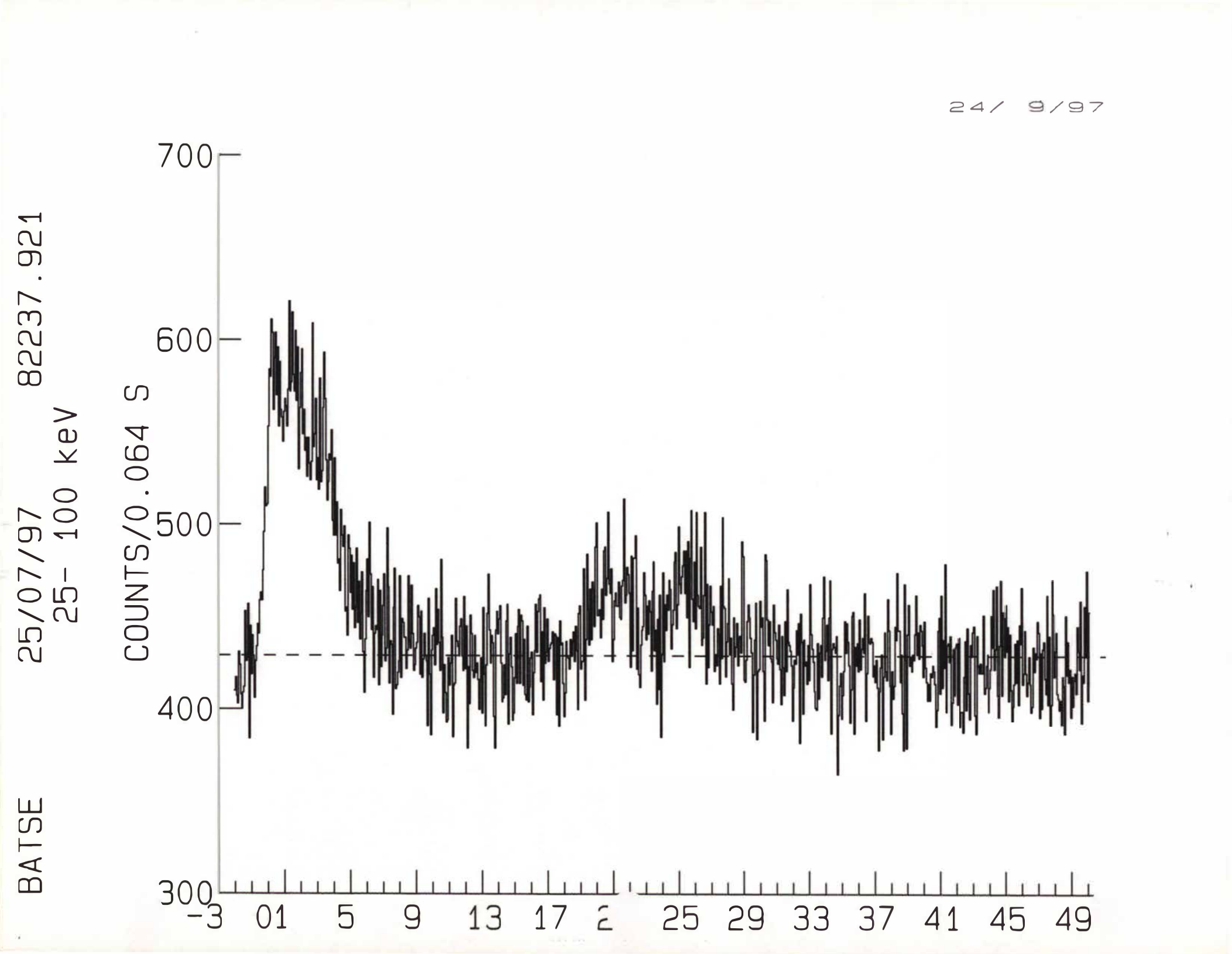



BATSE -ULYSSES RT CORRELATION 25/ 7/97 82237.921 24/ 9/97
7500
5000
2500
0
C/ 5.00008 S
BATSE
200
150
100
50
0
C/ 5.00008 S
ULYSSES RT
-3
0
22
47
72
97
122
147
172
TIME, SECS

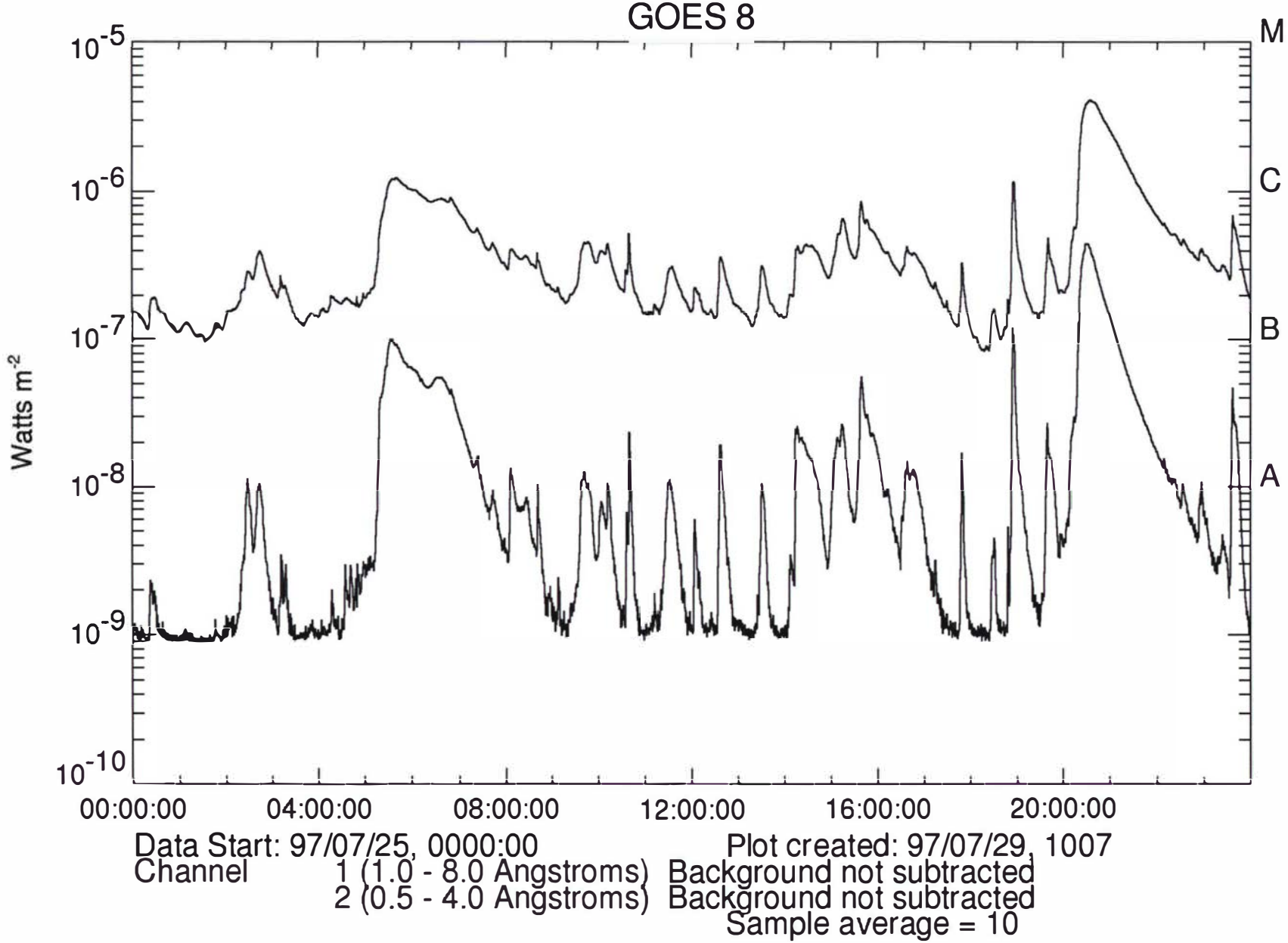
24/ 9/97

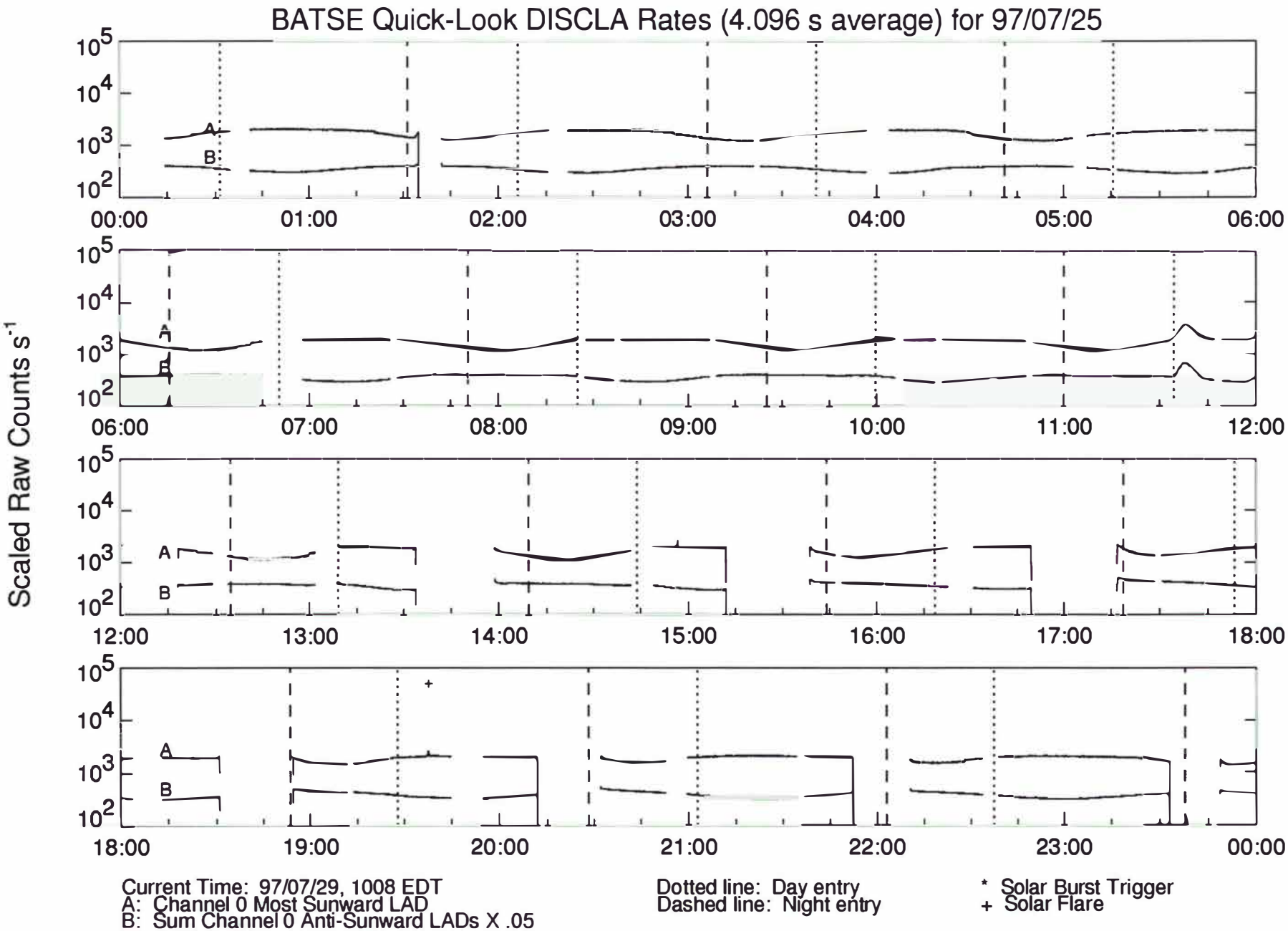
BATSE -ULYSSES RT CORRELATION 25/ 7/97 82237.921




24/ 9/97
BATSE
25/07/97
25- 100 keV
82237.921
COUNTS/0.064 S
700
600
500
400
300
-3
01
5
9
13
17
25
29
33
37
41
45
49

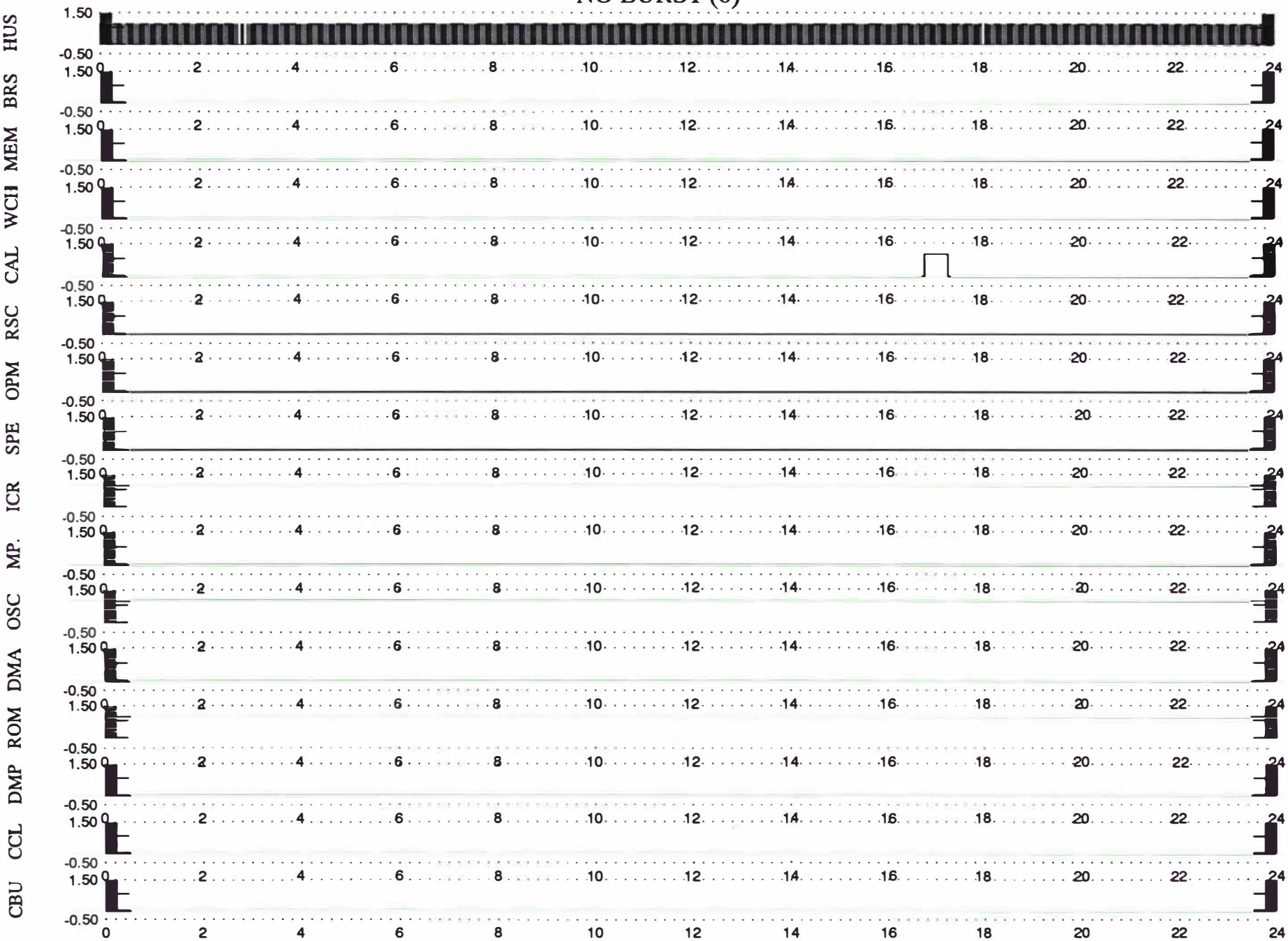
DISCSC Data for K. Hurley, No. 6319
RATE (counts/bin)
SECONDS since trigger
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
-10
0
10
20
30
40
50
60
70
80
90
10-AUG-1997 08:40:03
Created by XDAS 3D
IDL-based Display
Version 12.25
Trigger # 6319
Trigger Time:
19990 / 82237.921
Burst Data Type:
DISCSC
Detectors
Corrected: N
Background Data
Type: FREE & DISCS
Minimum Interp. Time:
0.864 seconds)
Detectors [7,0]:
--5X----
Discriminators:
[1 , 2]
Quality Mask:
0015A1


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: 97/07/25, 0000:00
Plot created: 97/07/29, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/25
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/07/29, 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

HUS MODES EDR day 206, year 1997 to day 206, year 1997 10/24/97

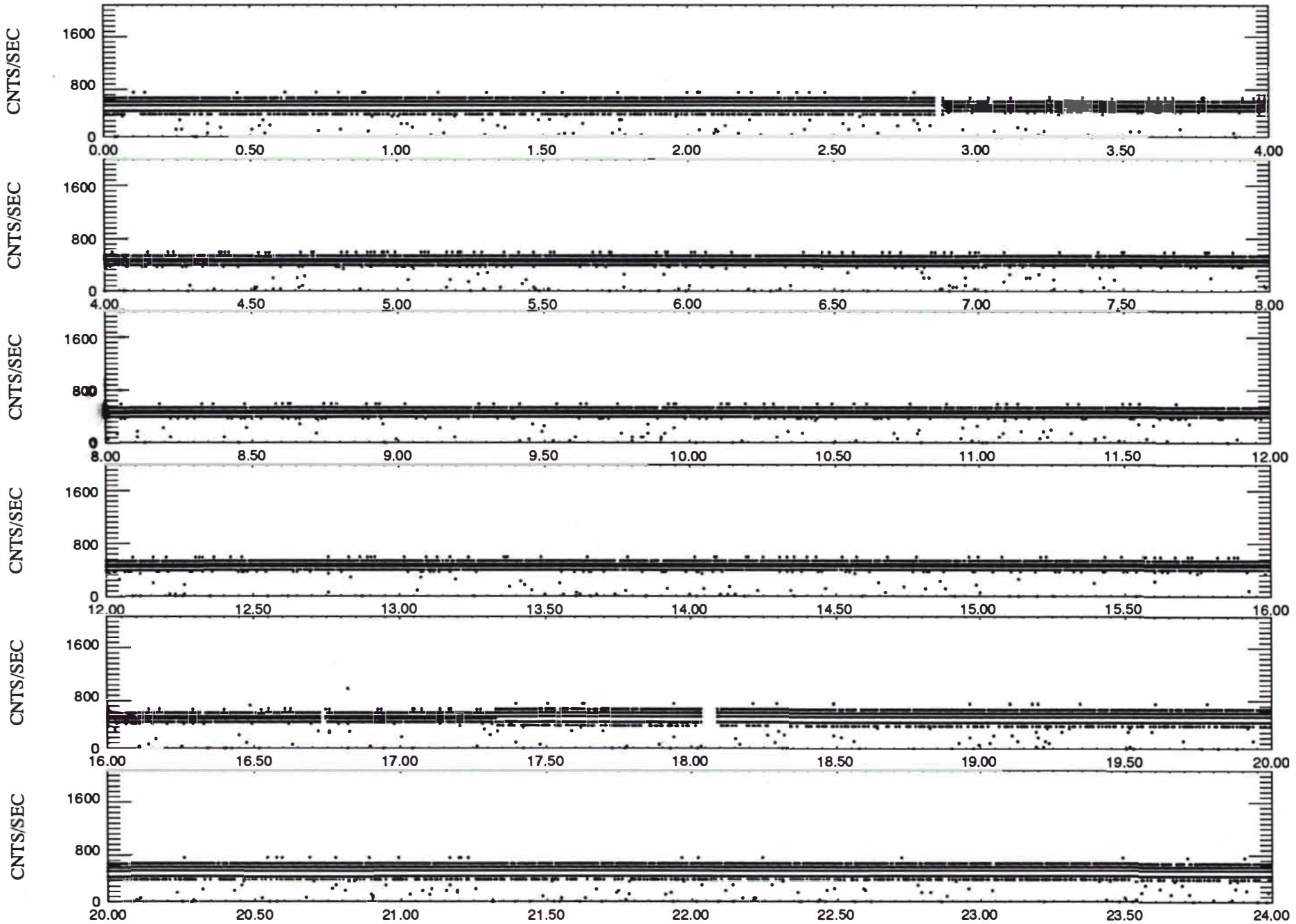
NO BURST (6)



UNIVERSAL TIME

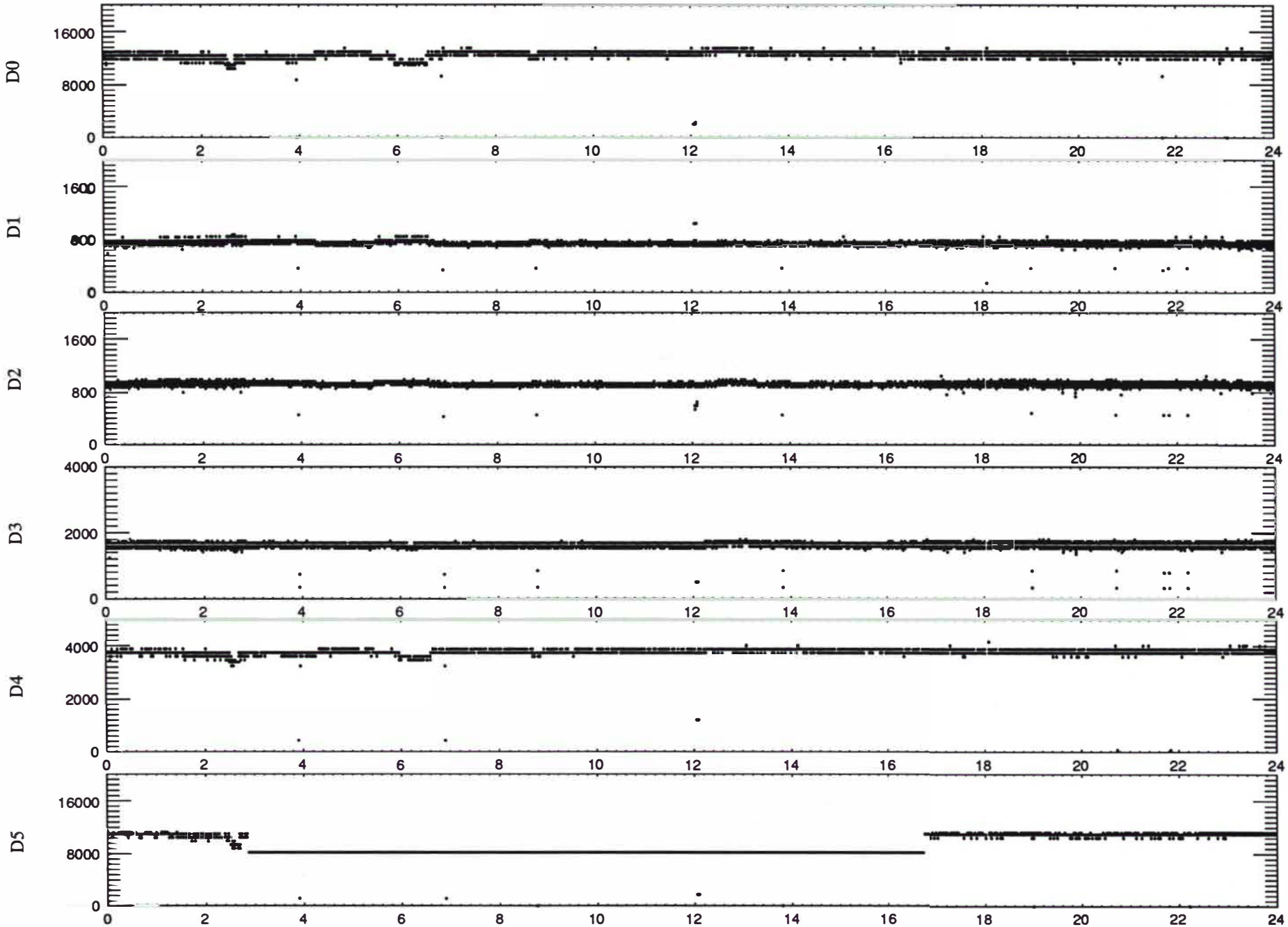
HUS 2A, MODE 1, NOT AVERAGED EDR day 206, year 1997 to day 206, year 1997 10/24/97

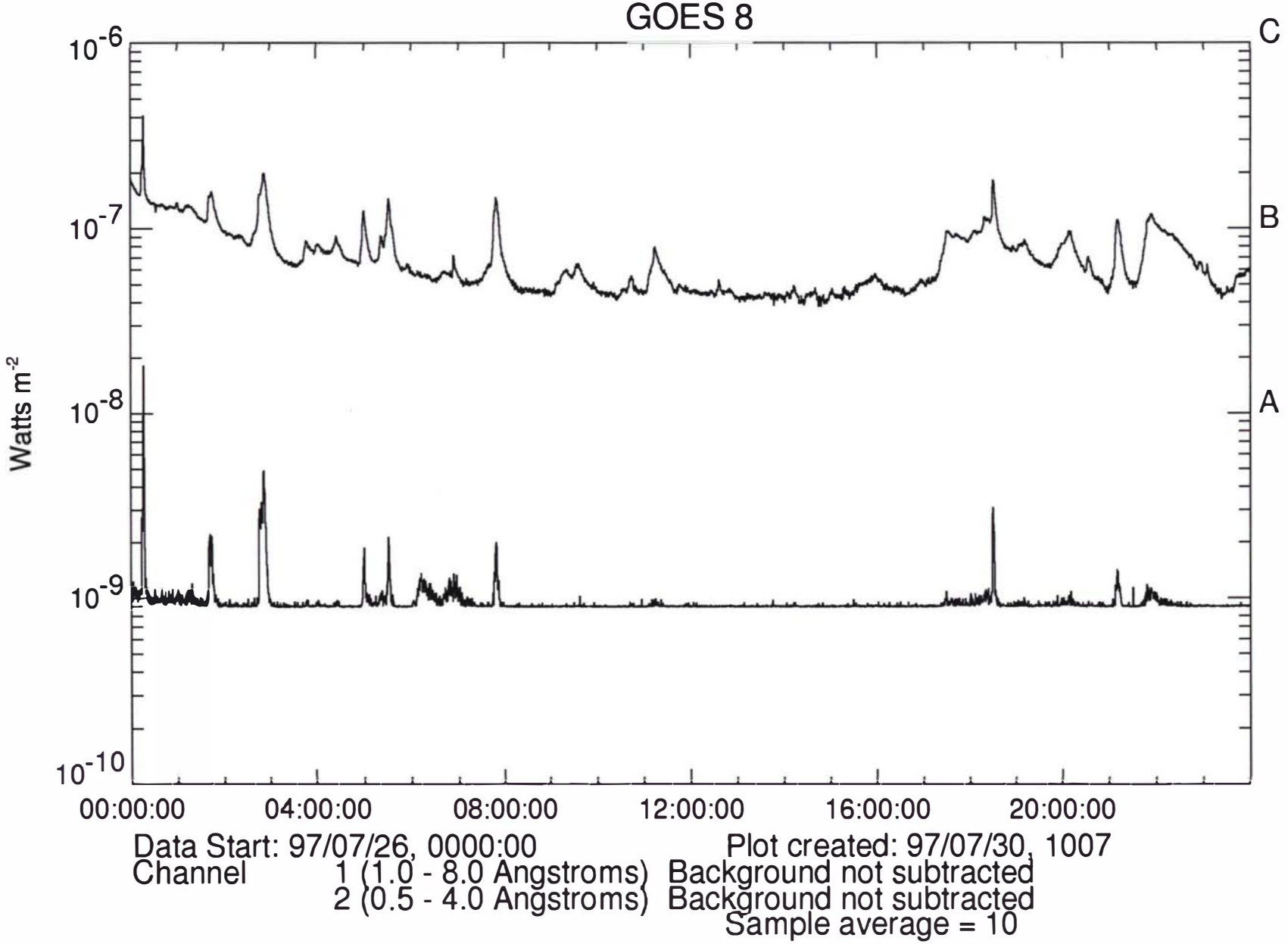
CALIBRATION DATA INCLUDED

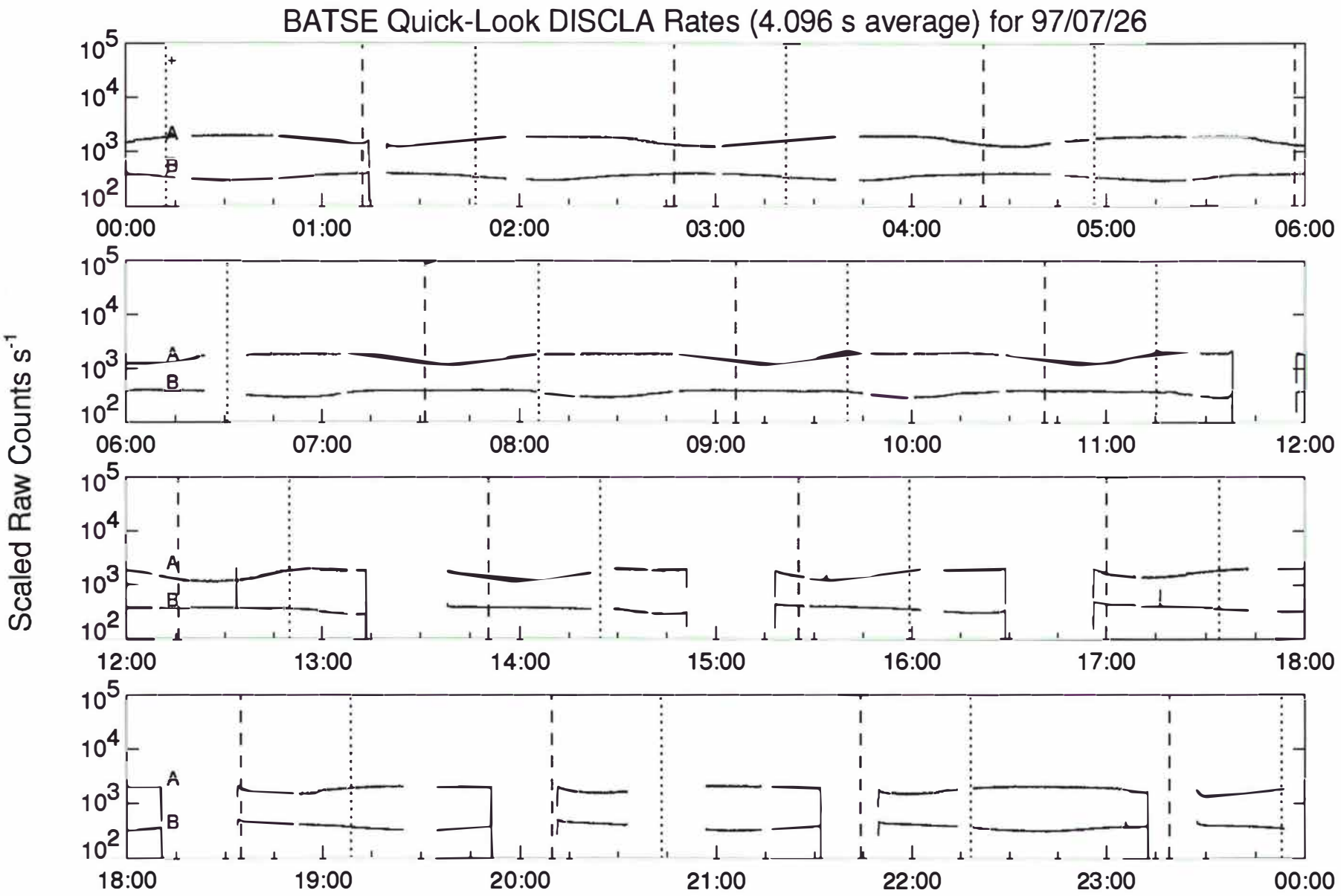


UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 206, year 1997 to day 206, year 1997 10/24/97

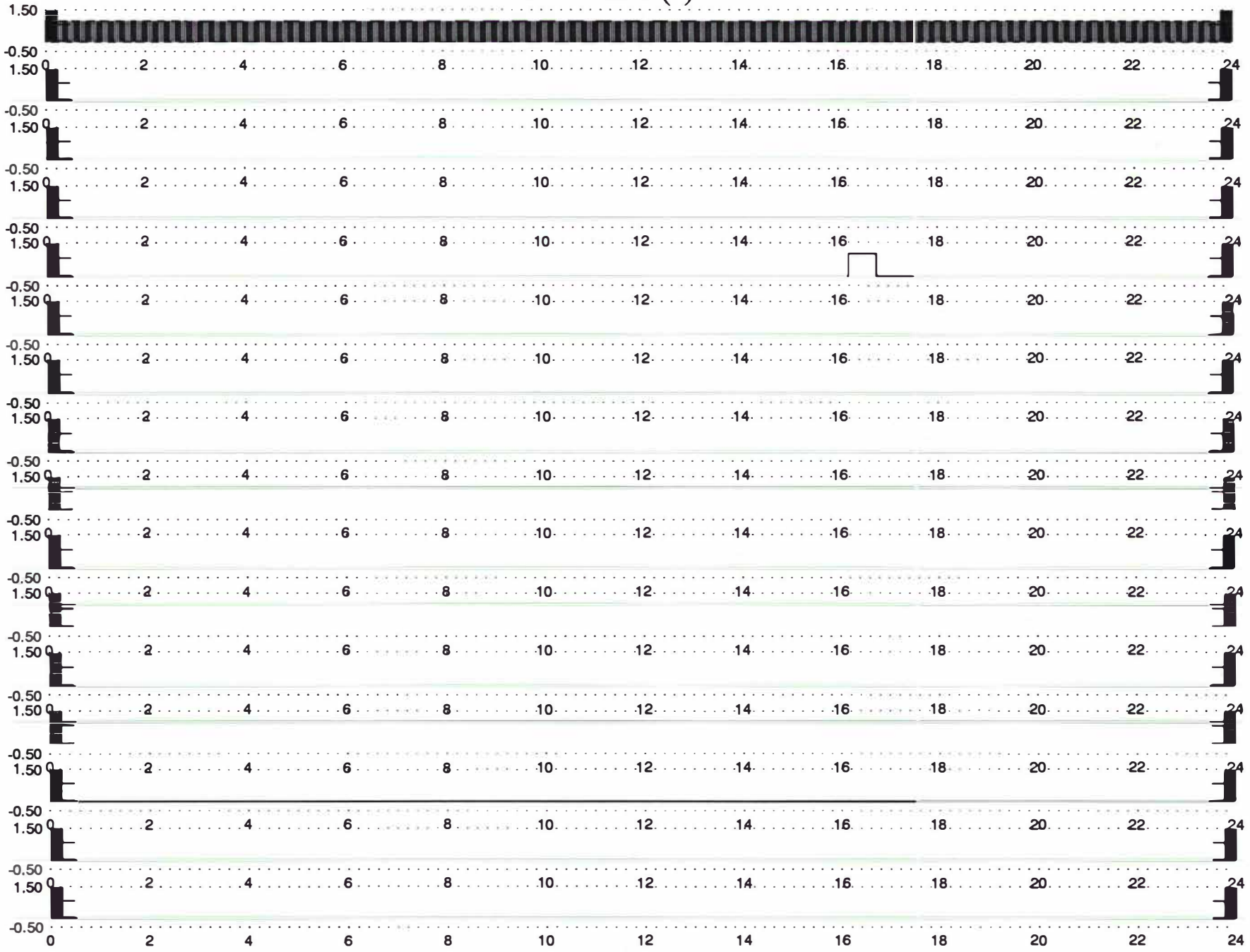



GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/26, 0000:00
Plot created: 97/07/30, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/26
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
+
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/30, 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

HUS MODES EDR day 207, year 1997 to day 207, year 1997 10/24/97

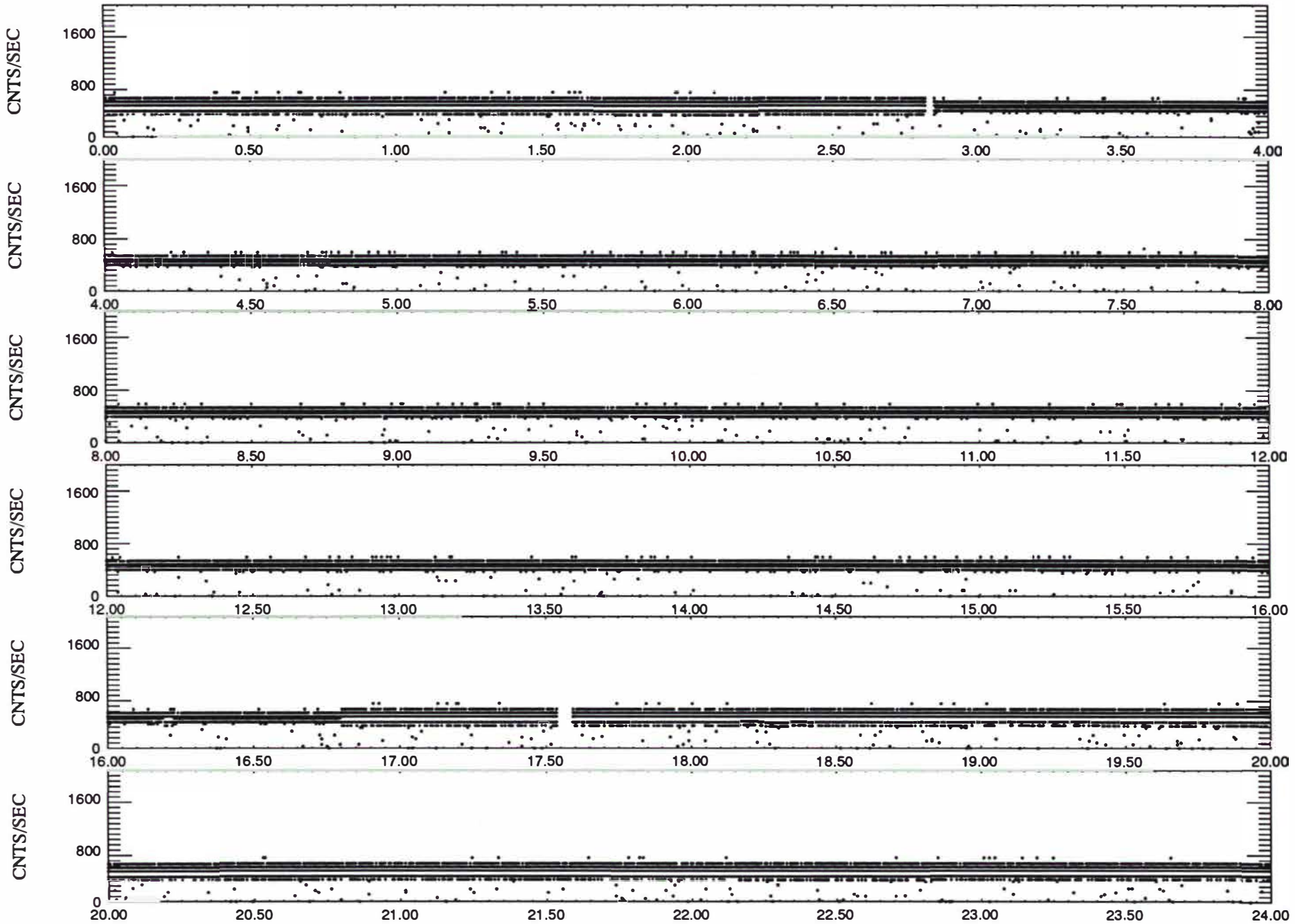
NO BURST (6)



UNIVERSAL TIME

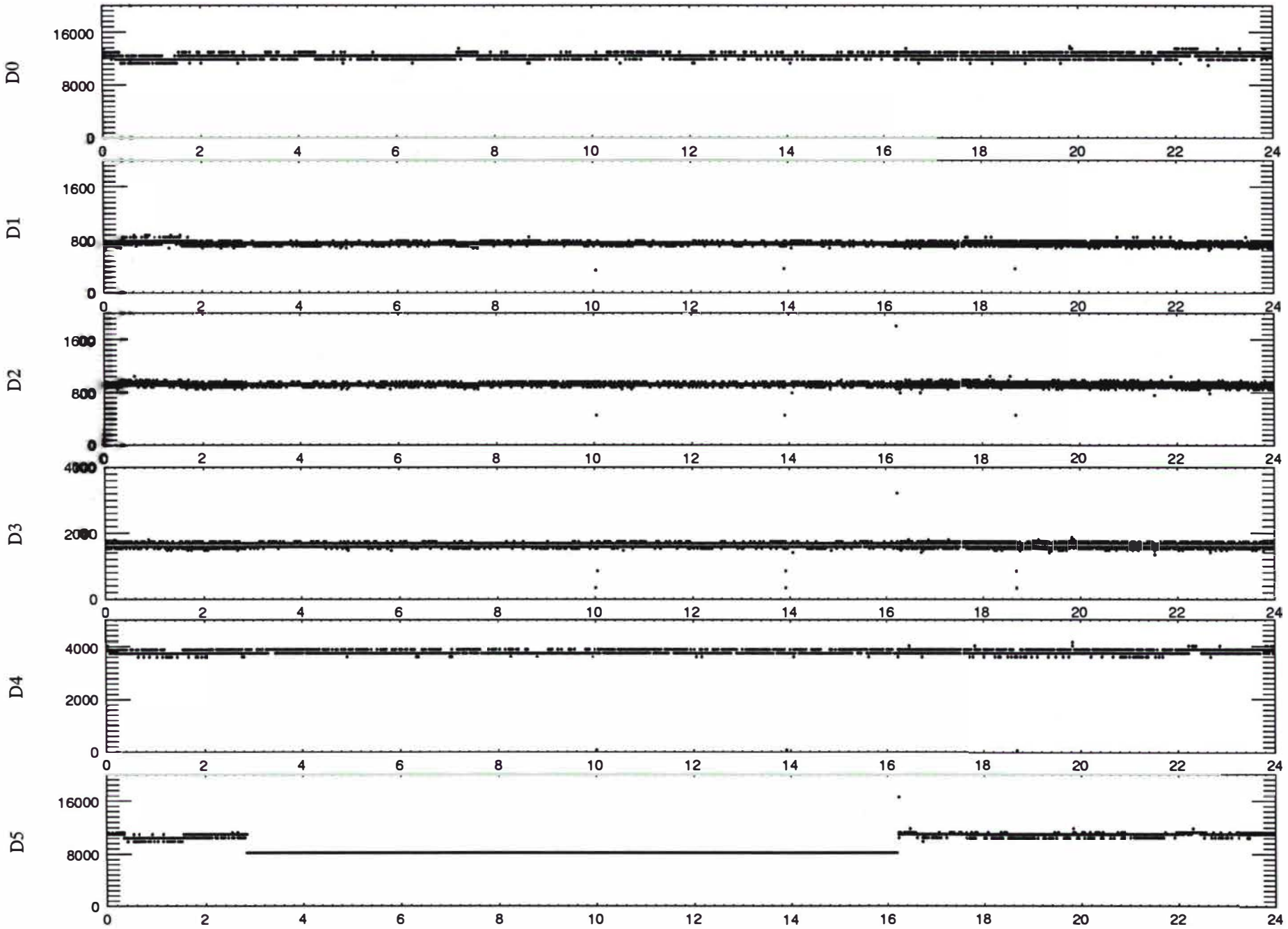
HUS 2A, MODE 1, NOT AVERAGED EDR day 207, year 1997 to day 207, year 1997 10/24/97

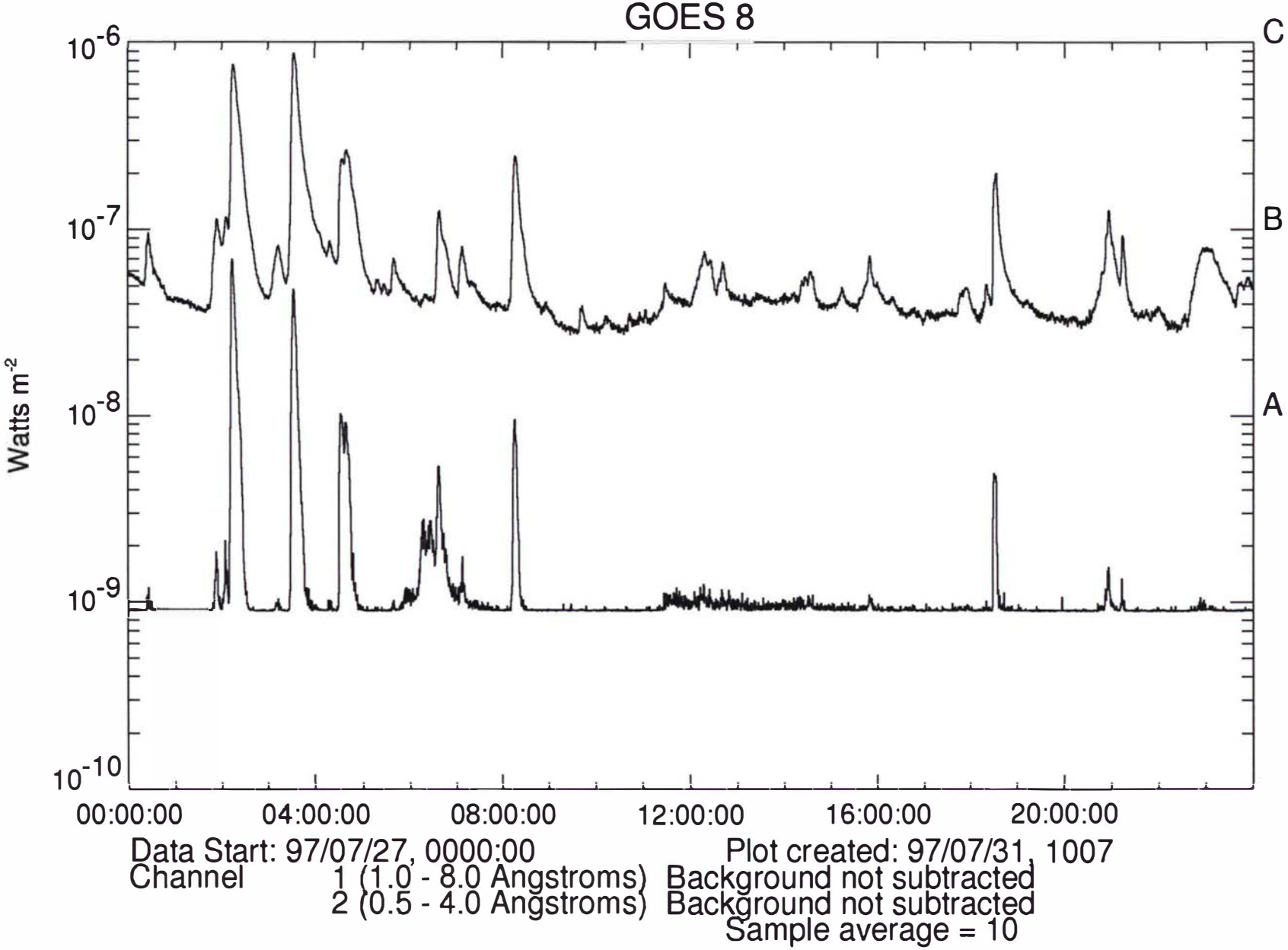
CALIBRATION DATA INCLUDED

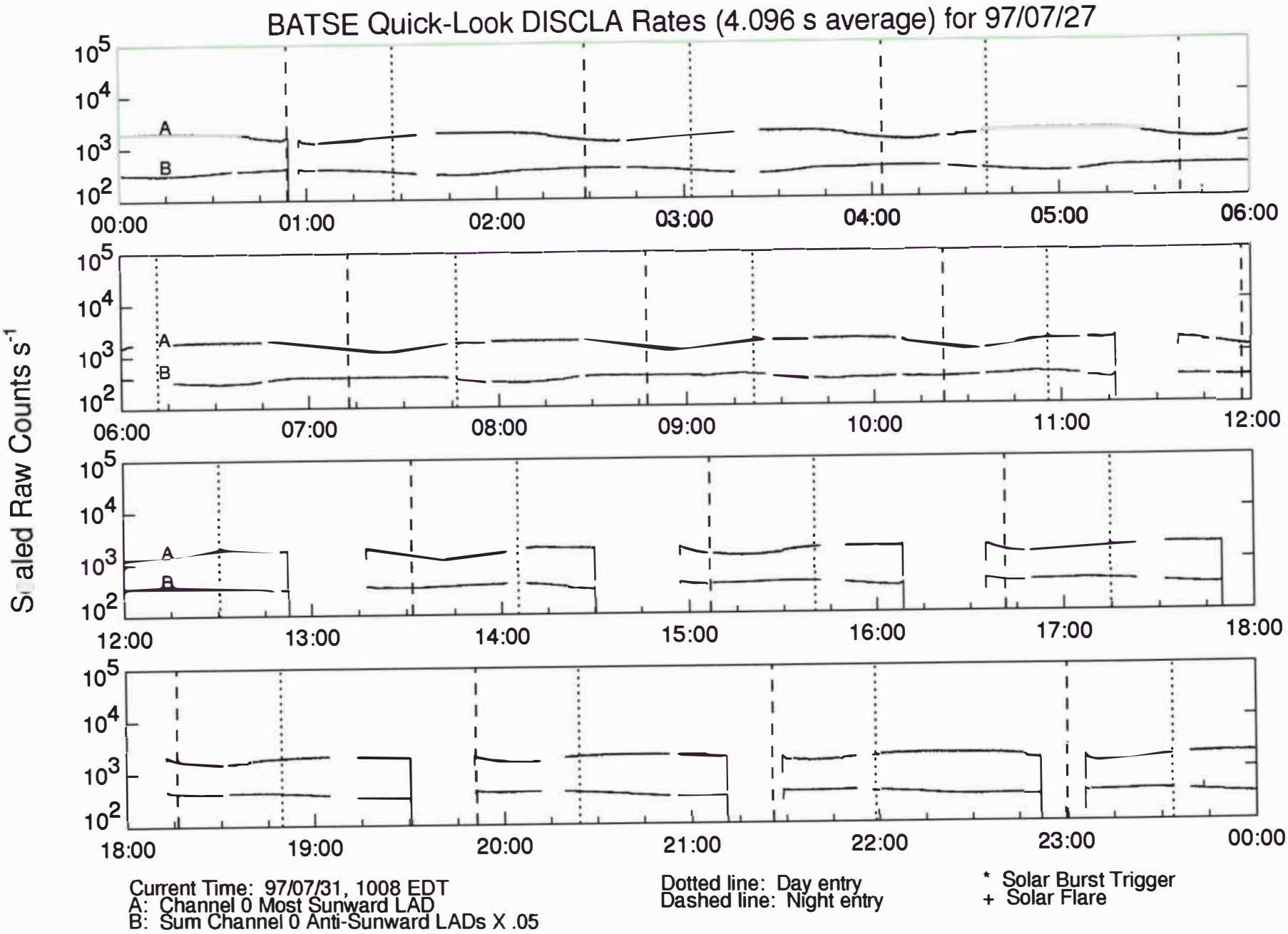


UNIVERSAL TIME

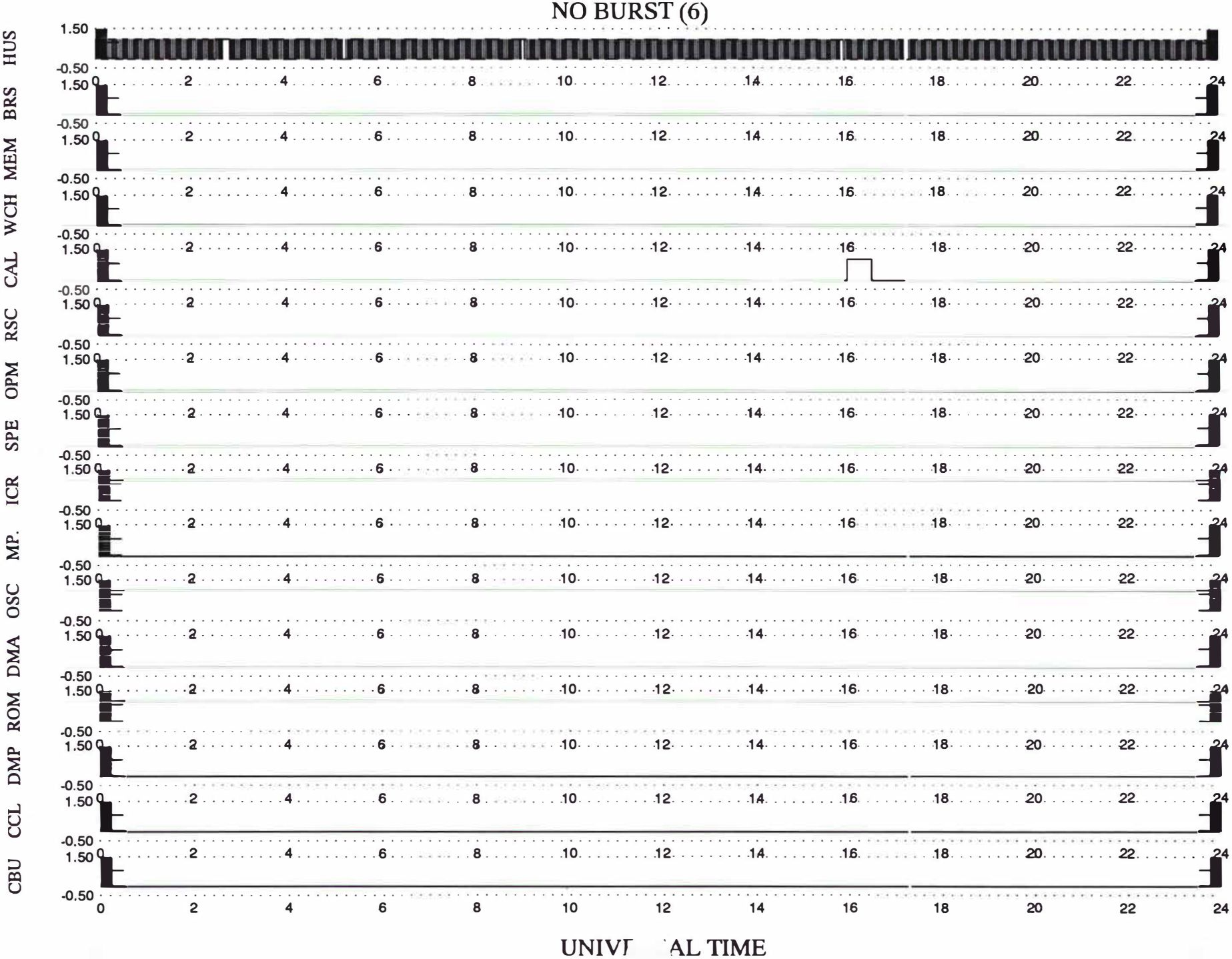
HUS 2B COUNTS / SEC EDR day 207, year 1997 to day 207, year 1997 10/24/97




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: 97/07/27, 0000:00
Plot created: 97/07/31, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

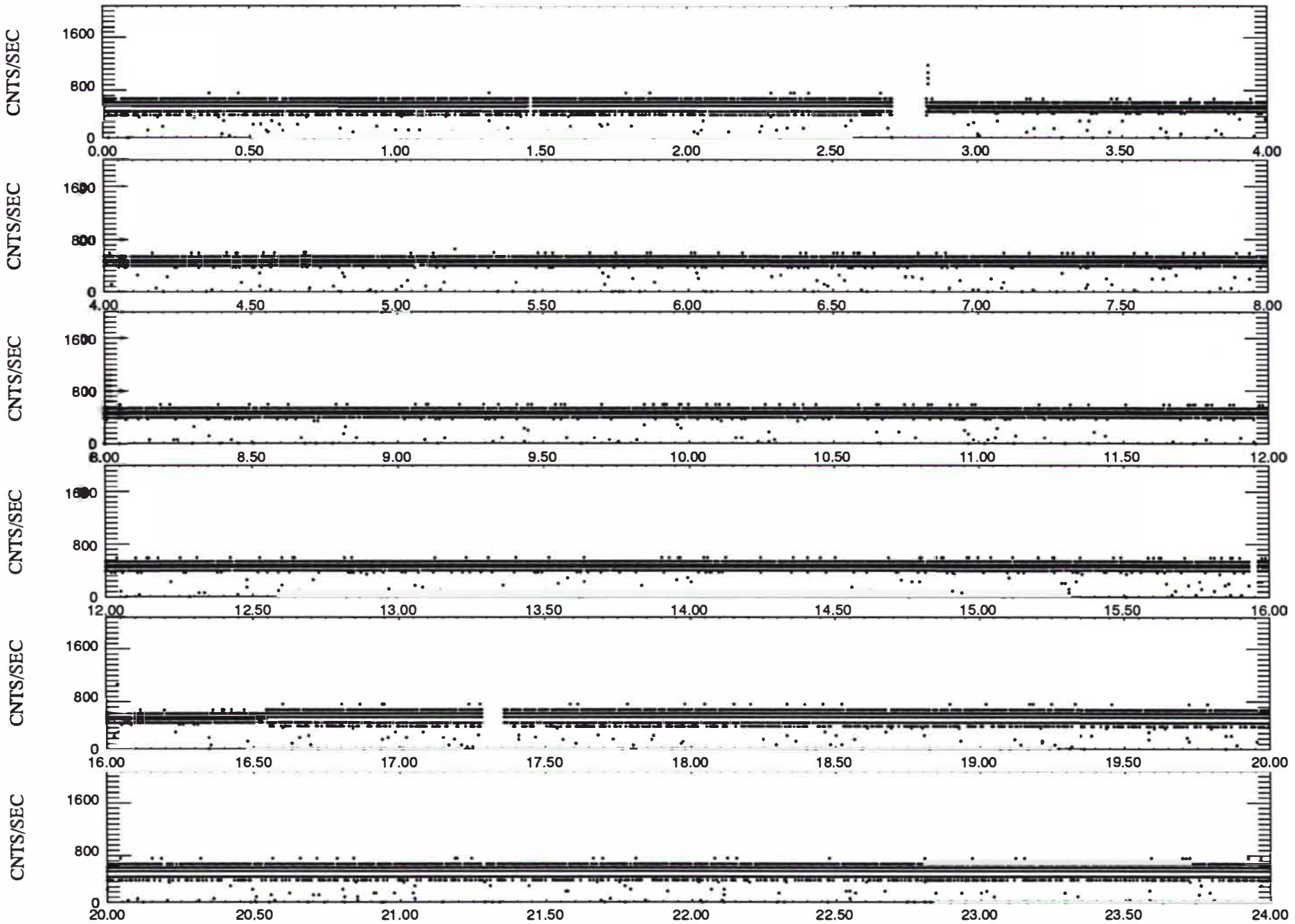

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/27
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/07/31, 1008 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

HUS MODES EDR day 208, year 1997 to day 208, year 1997 10/24/97



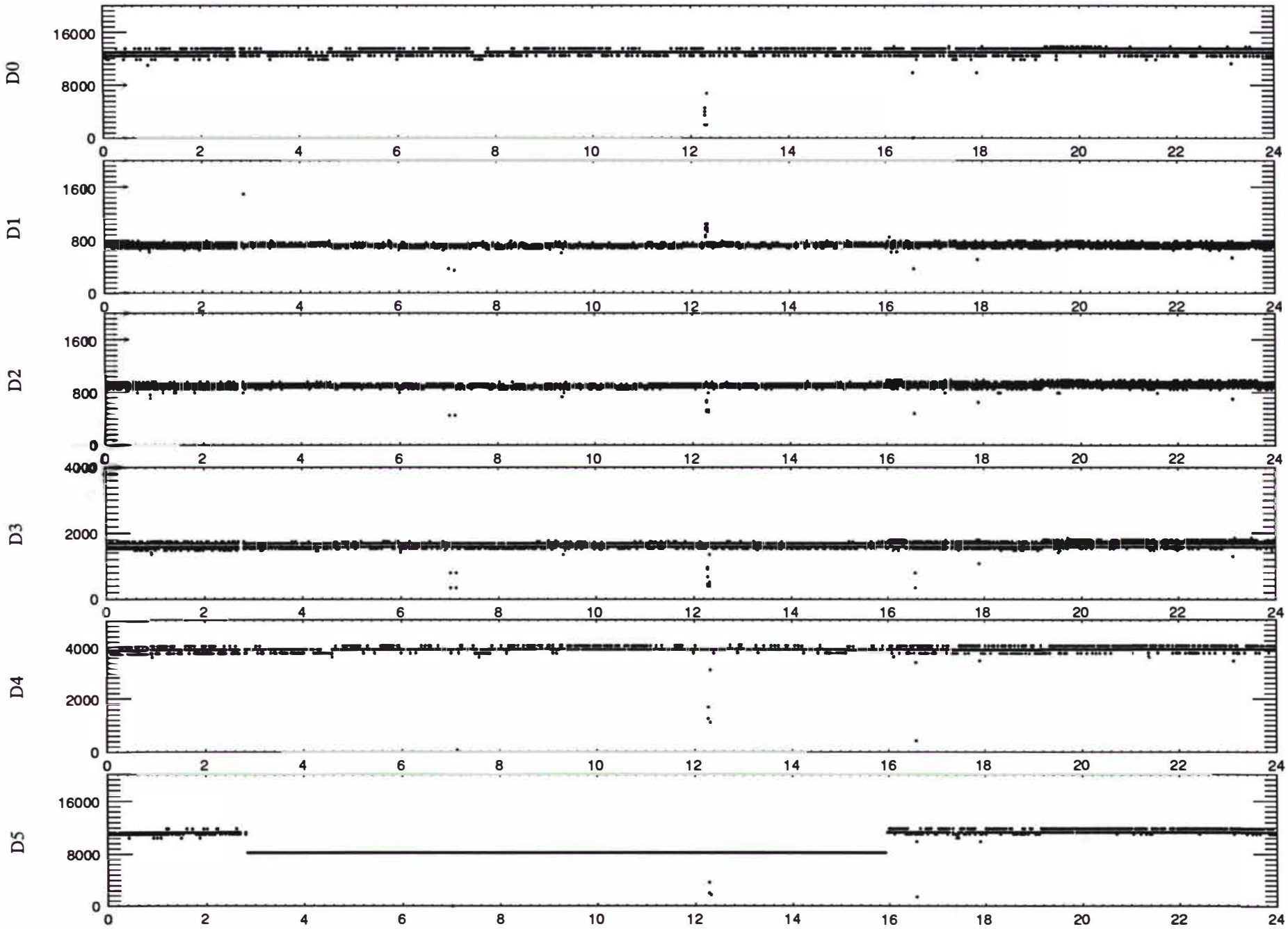
HUS 2A, MODE 1, NOT AVERAGED EDR day 208, year 1997 to day 208, year 1997 10/24/97

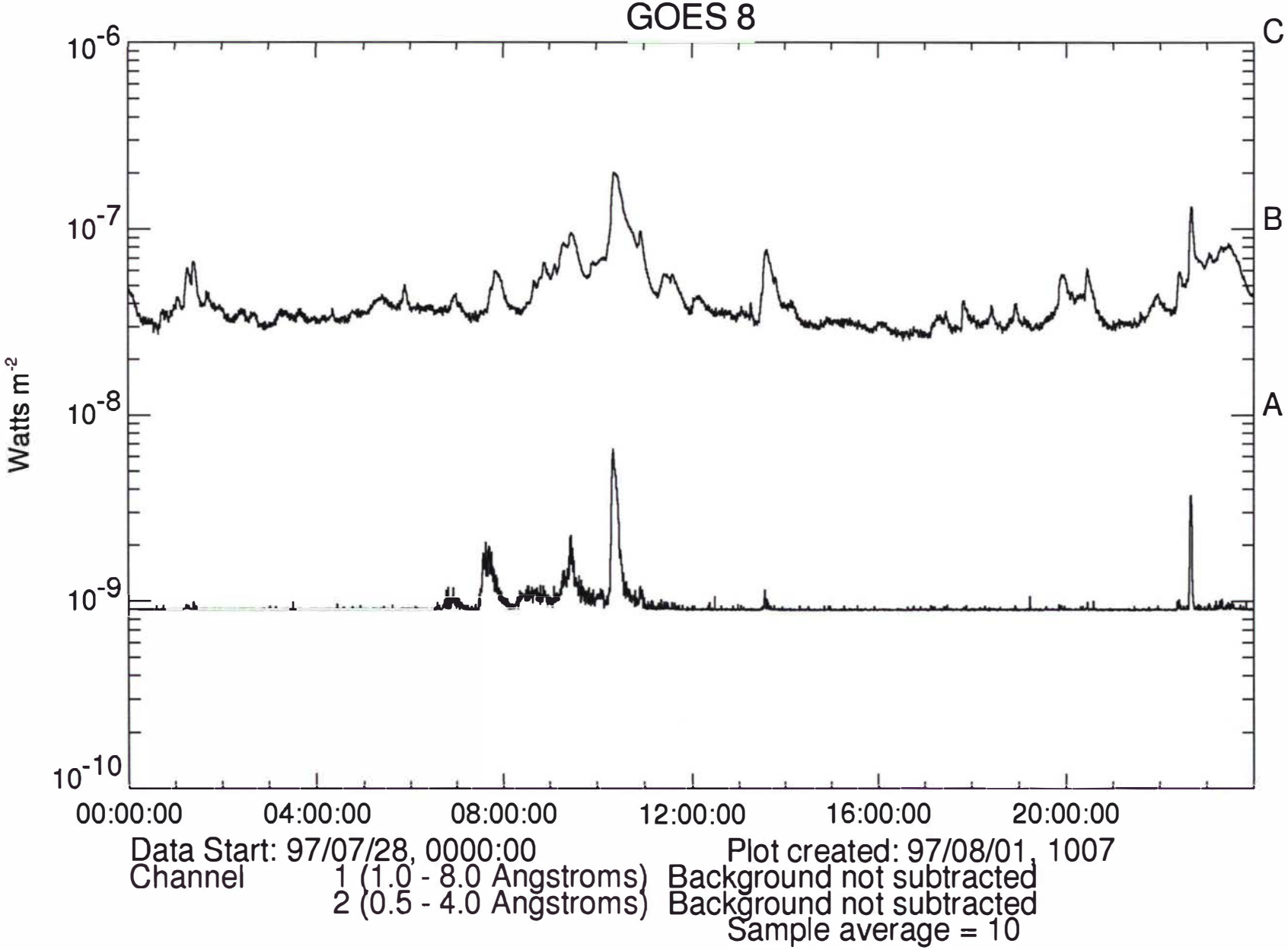
CALIBRATION DATA INCLUDED

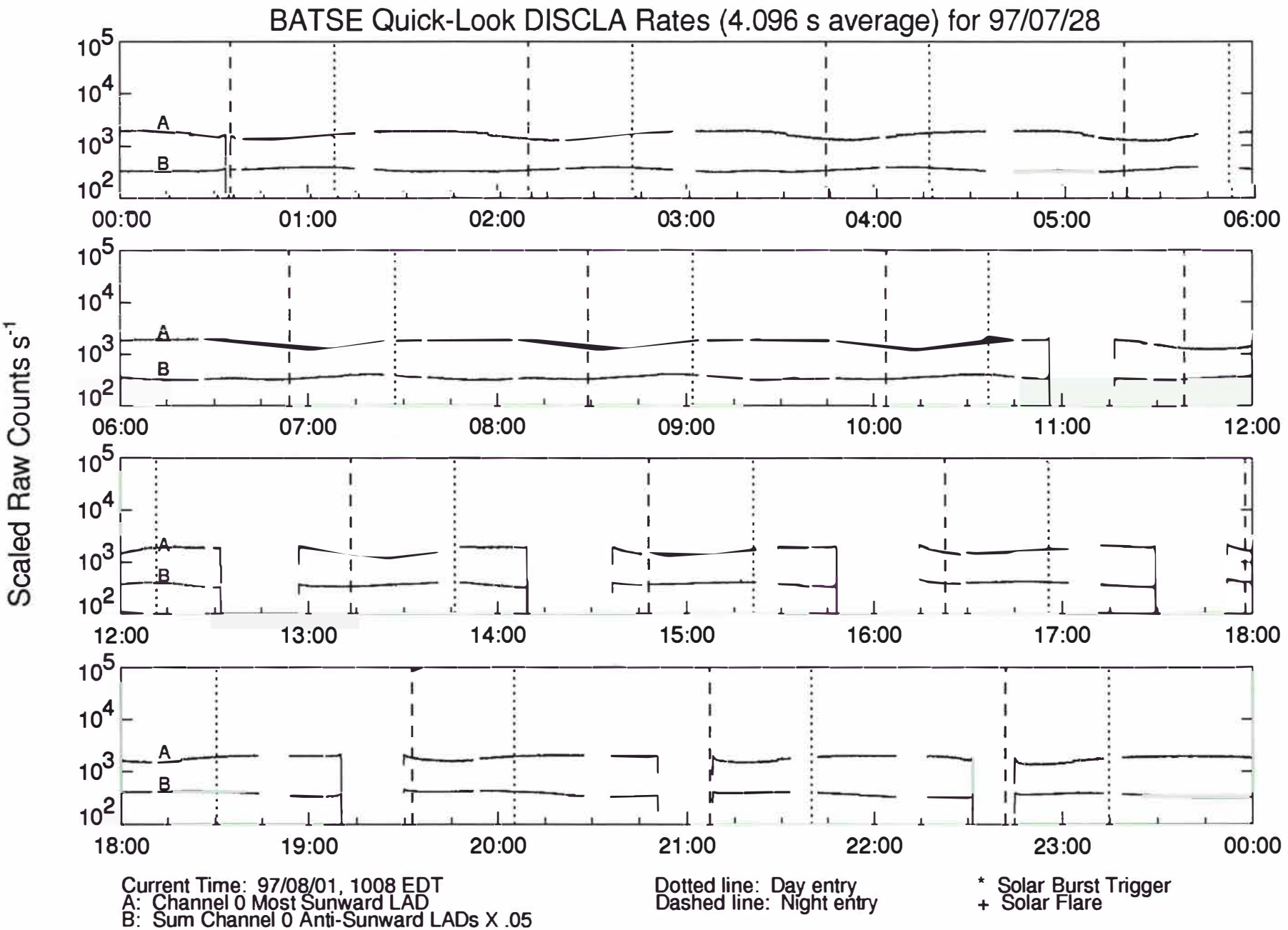


UNIVERSAL TIME

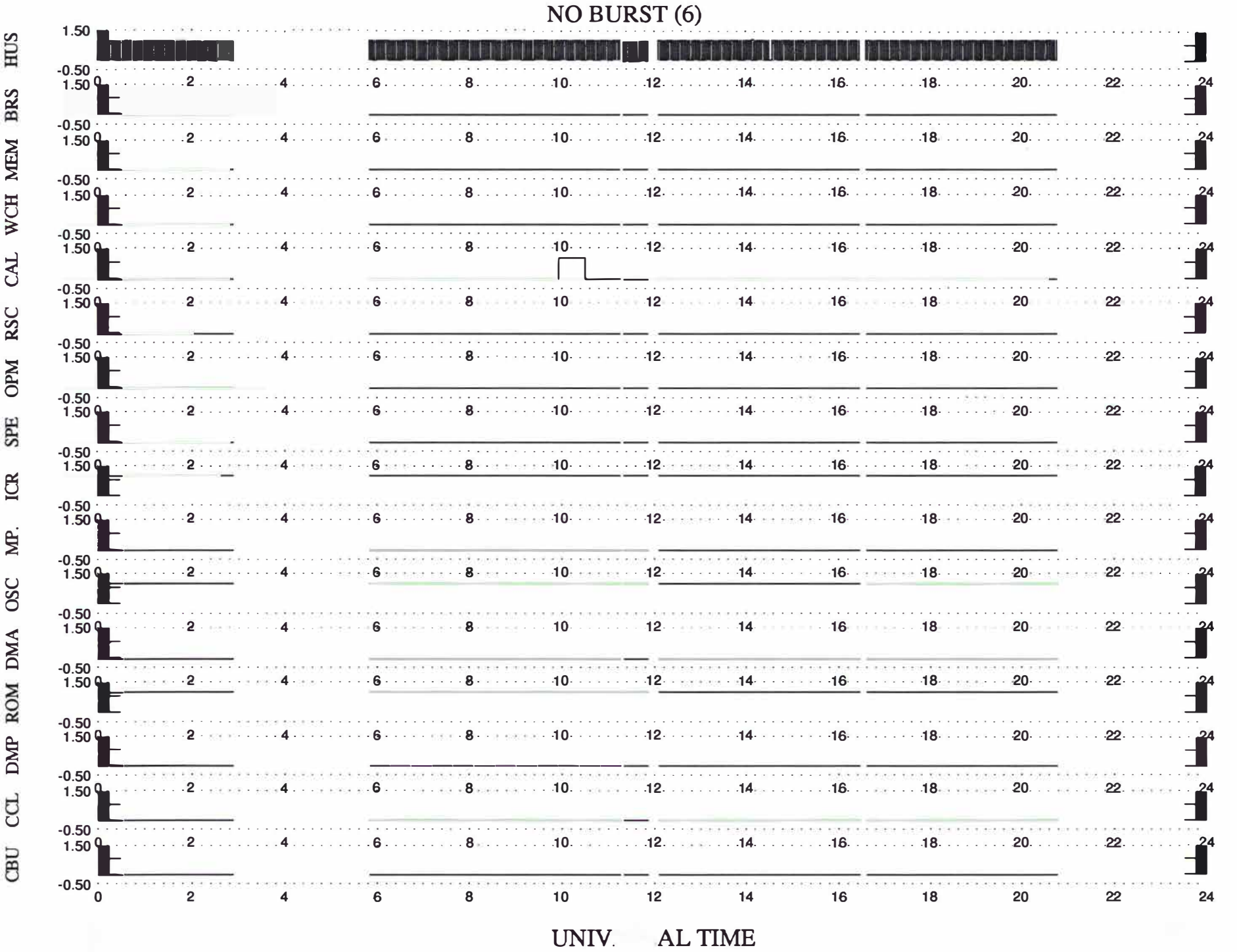
HUS 2B COUNTS / SEC EDR day 208, year 1997 to day 208, year 1997 10/24/97



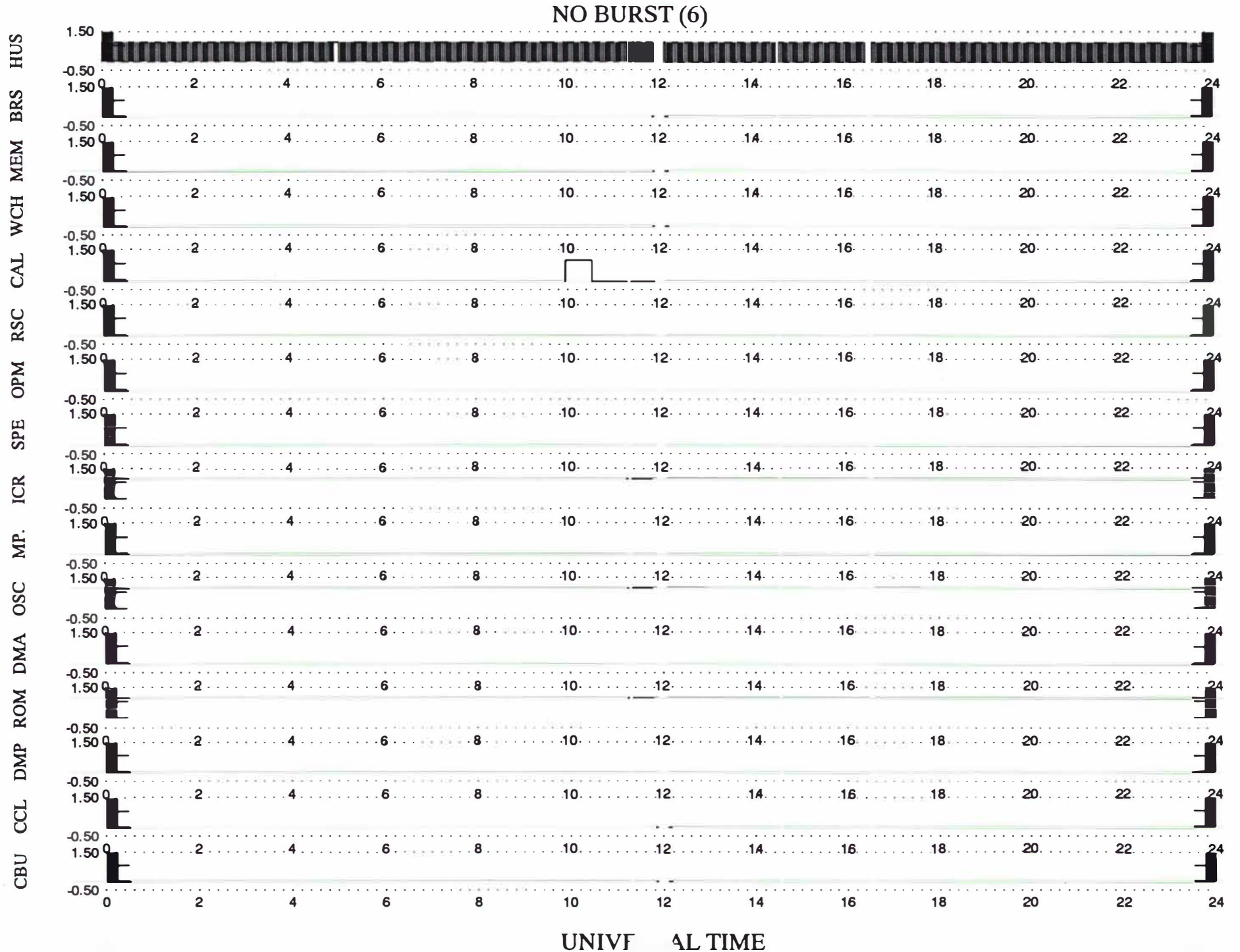

GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/07/28, 0000:00
Plot created: 97/08/01, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/28
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/08/01, 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

HUS MODES QEDR day 209, year 1997 to day 209, year 1997 7/30/97

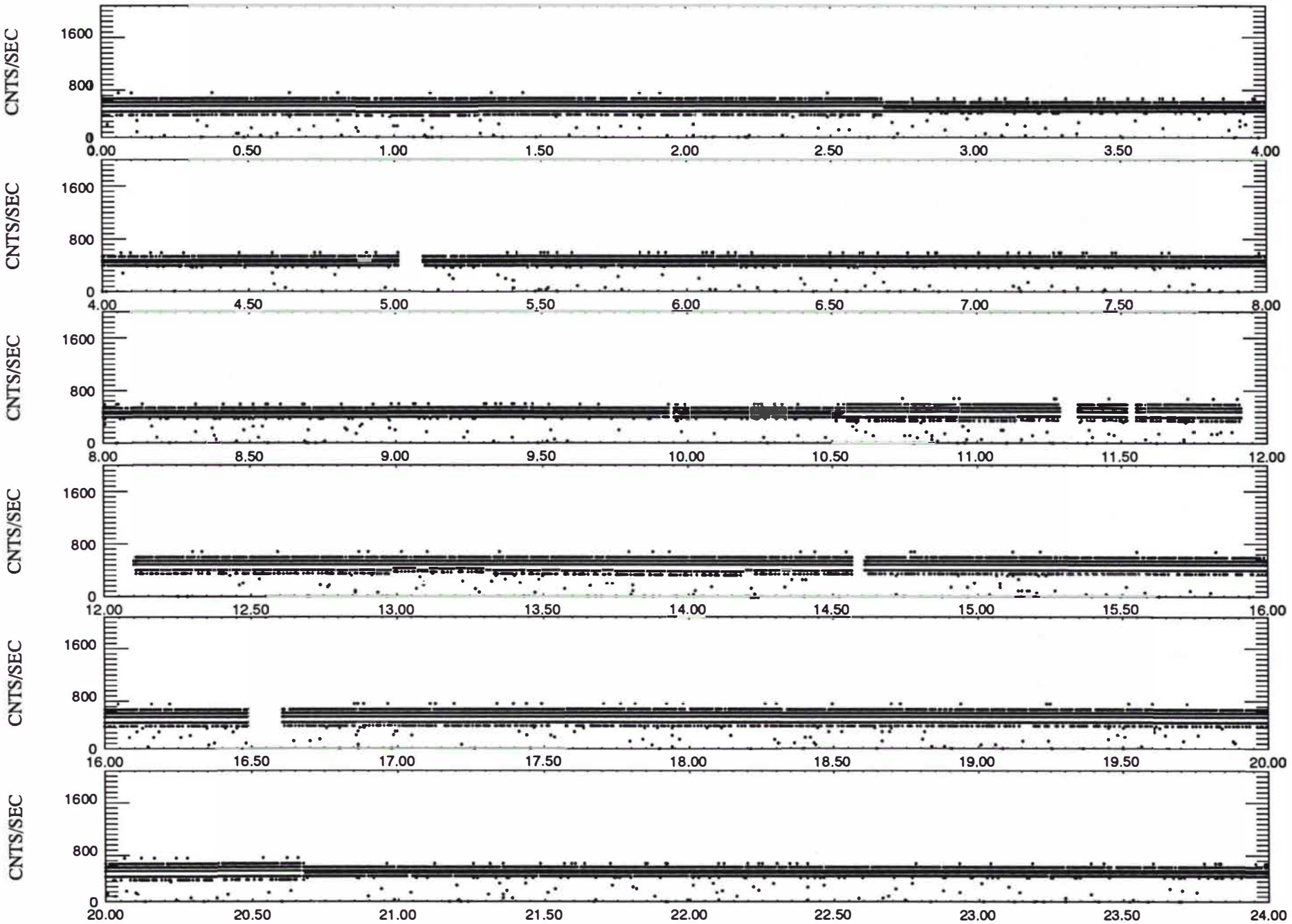


HUS MODES EDR day 209, year 1997 to day 209, year 1997 10/24/97



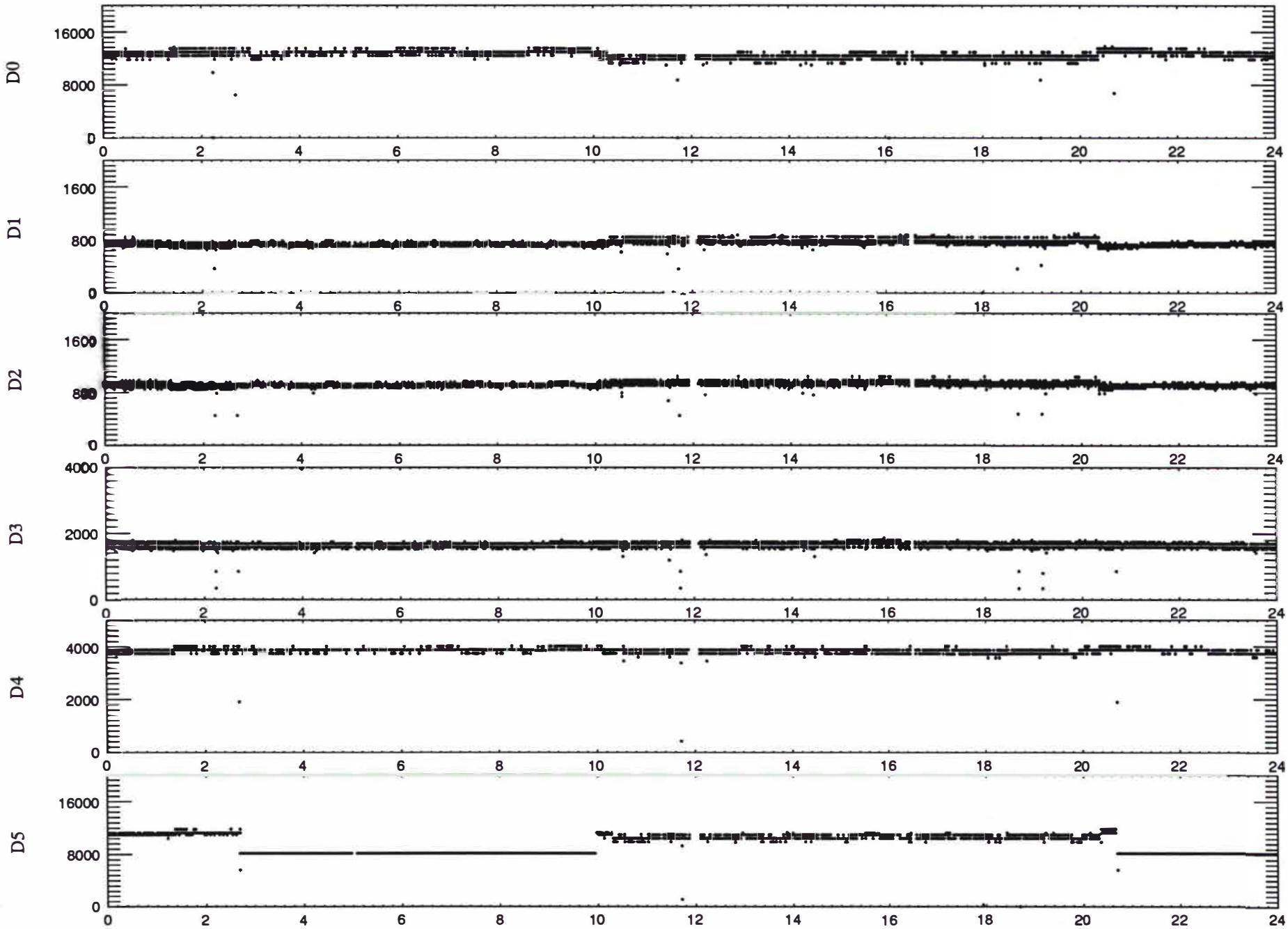
HUS 2A, MODE 1, NOT AVERAGED EDR day 209, year 1997 to day 209, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 209, year 1997 to day 209, year 1997 10/24/97



July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
J 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 BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 22 13:34 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 22 Aug 1997 16:27:57 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Konus summary for recent Ulysses events not seen by BATSE

Konus report on recent Ulysses events not seen by BATSE

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

From kraken@rosserv.gsfc.nasa.gov Fri Aug 22 14:22 PDT 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 22 Aug 1997 17:22:32 -0400
To: hurley@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

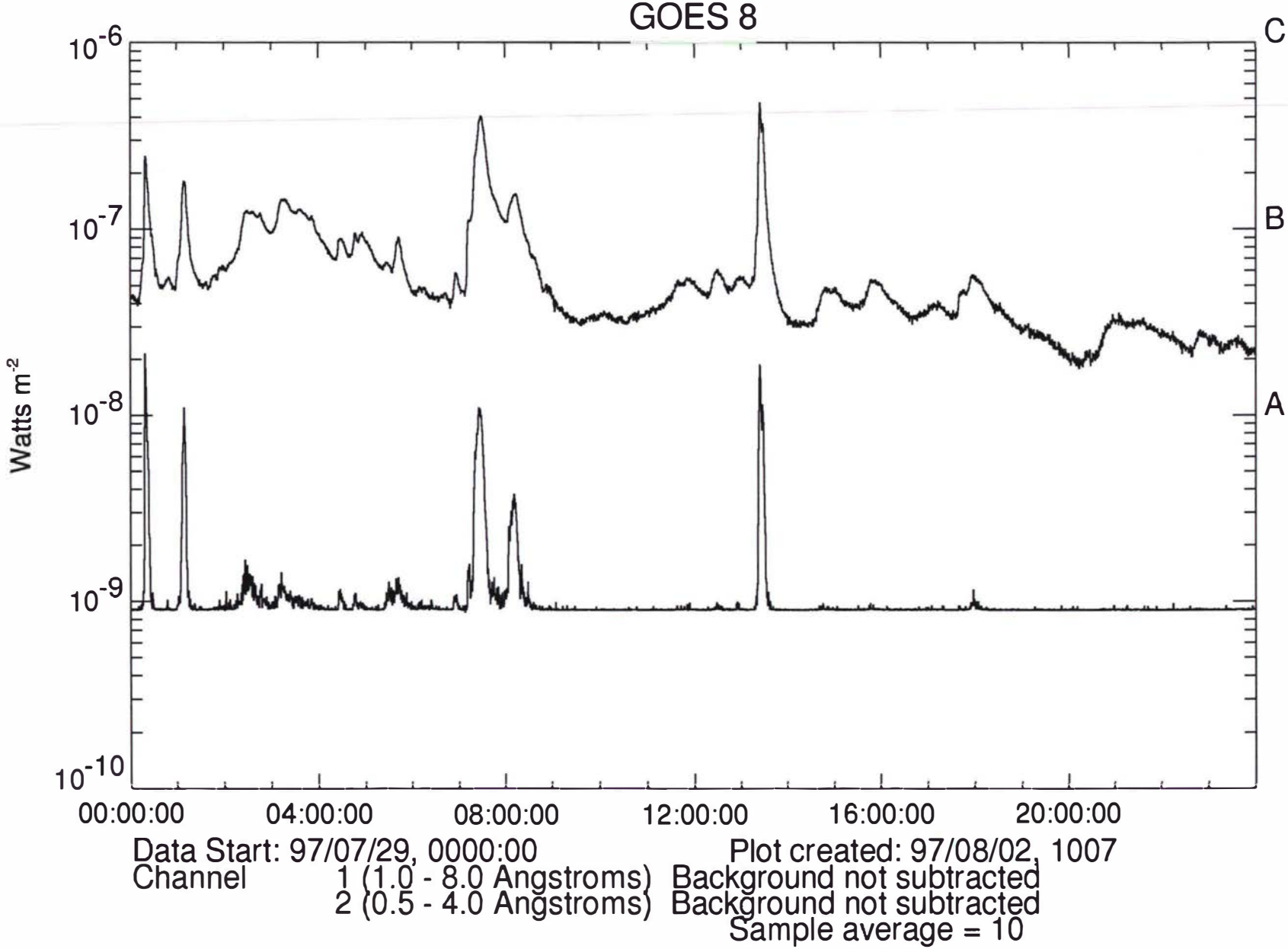
Hi Kevin,

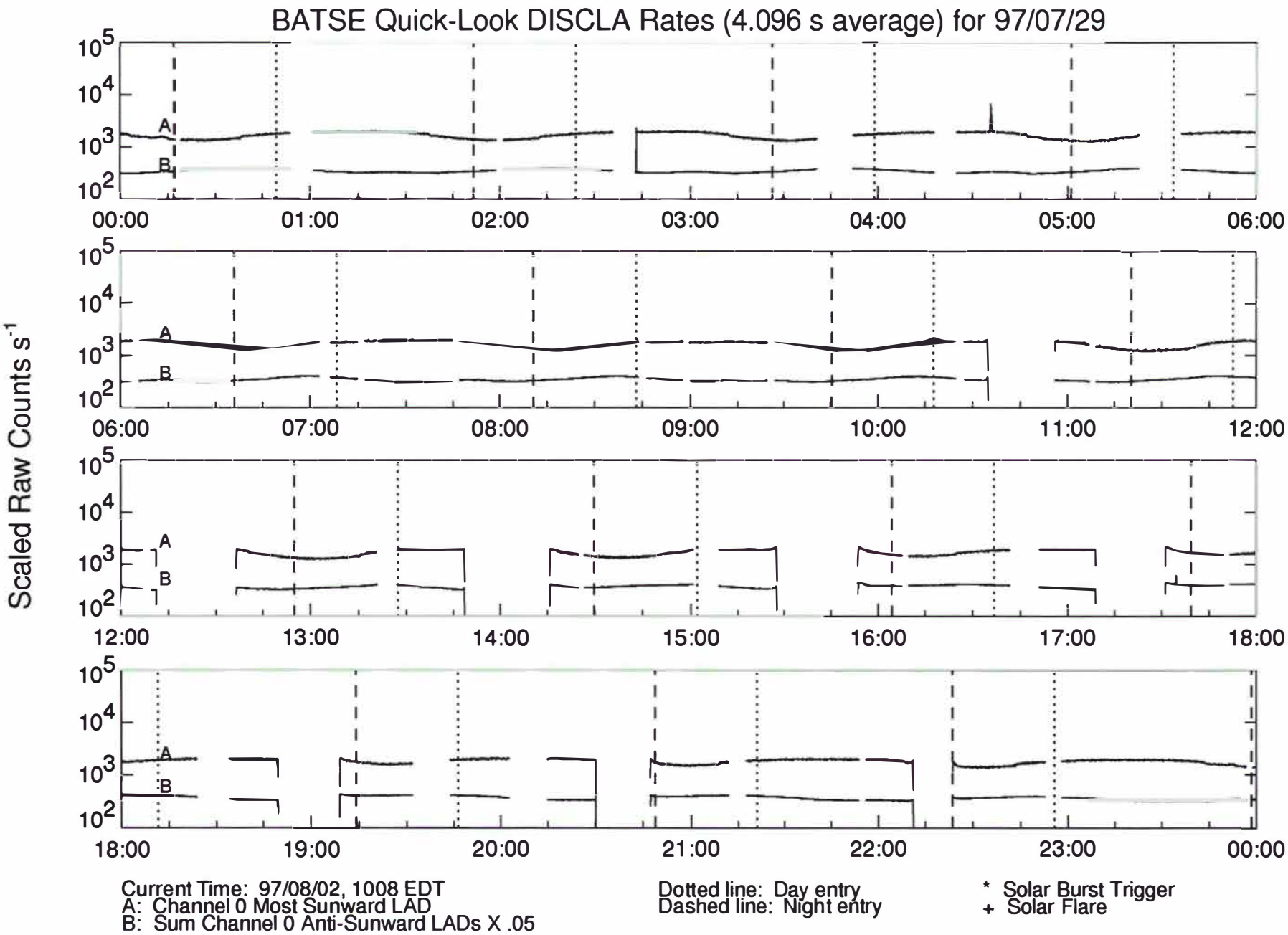
Here are the results of a search through TGRS data for various Ulysses bursts that you've emailed Bonnard about. In summary, out of the 12 Ulysses bursts you mentioned, 3 were found as TGRS triggered events, and 1 was a triggered event but should be considered a questionable one since it was not detected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

Here are the details.

Pete

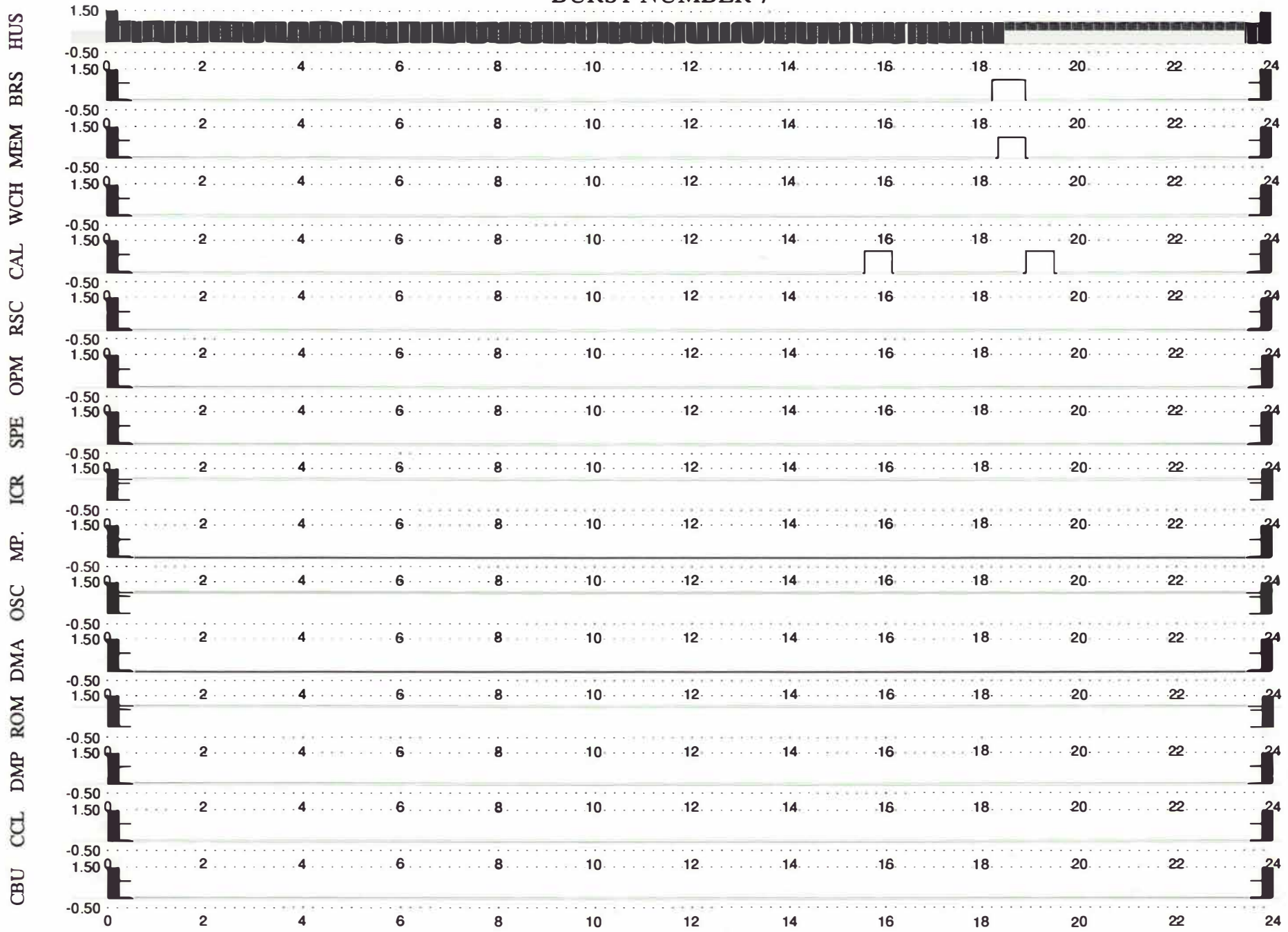
Ulysses burst	TGRS sees?	TGRS characteristics
3/25/97 17:49	YES! TGRS #547	63384 s. 300 cts/s peak 15s dur. (100-300 keV) 100 cts/s peak 15s dur. (35-100 keV)
3/29/97 12:23	NO	
7/2/97 11:49	YES BUT TGRS #582	40631 s. 175 cts/s peak 1s dur. 100-300 keV NOT SEEN in 35-100 keV
7/5/97 15:31	NO	
7/9/97 10:56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


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: 97/07/29, 0000:00
Plot created: 97/08/02, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/29
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: 97/08/02, 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

HUS MODES EDR day 210, year 1997 to day 210, year 1997 10/24/97

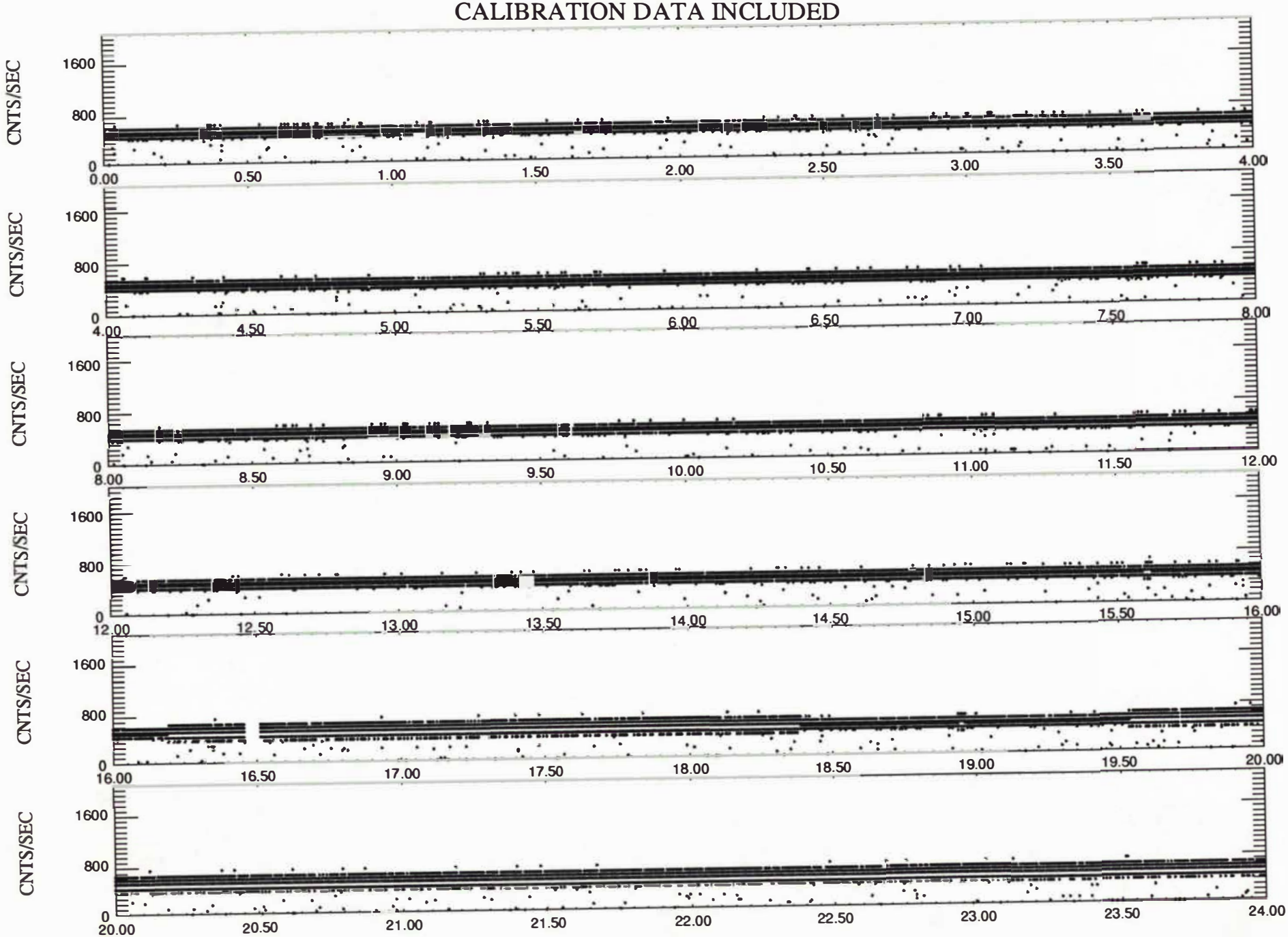
BURST NUMBER 7



UNIVI AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 210, year 1997 to day 210, year 1997 10/24/97

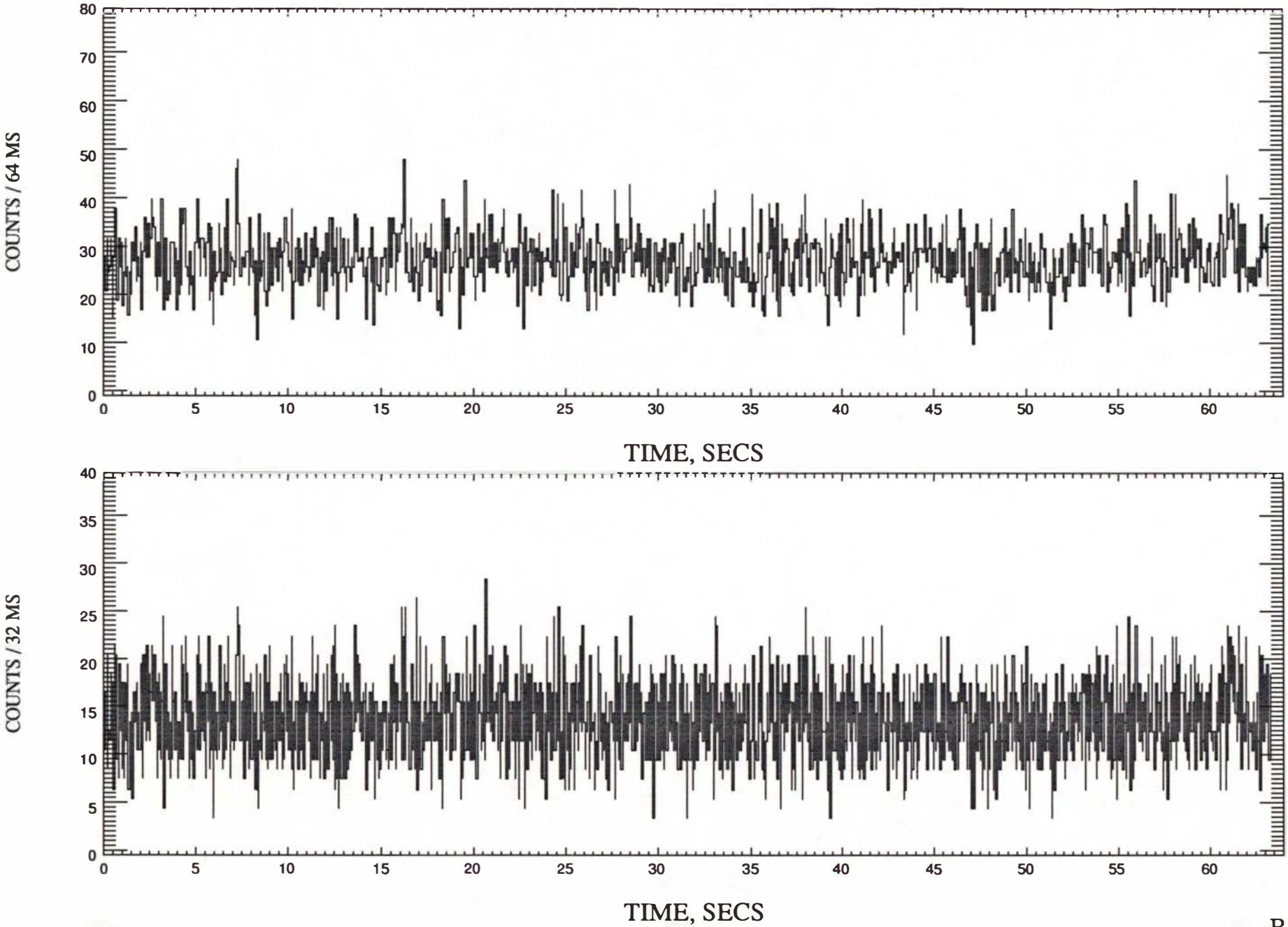
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 210, year 1997 10/24/97

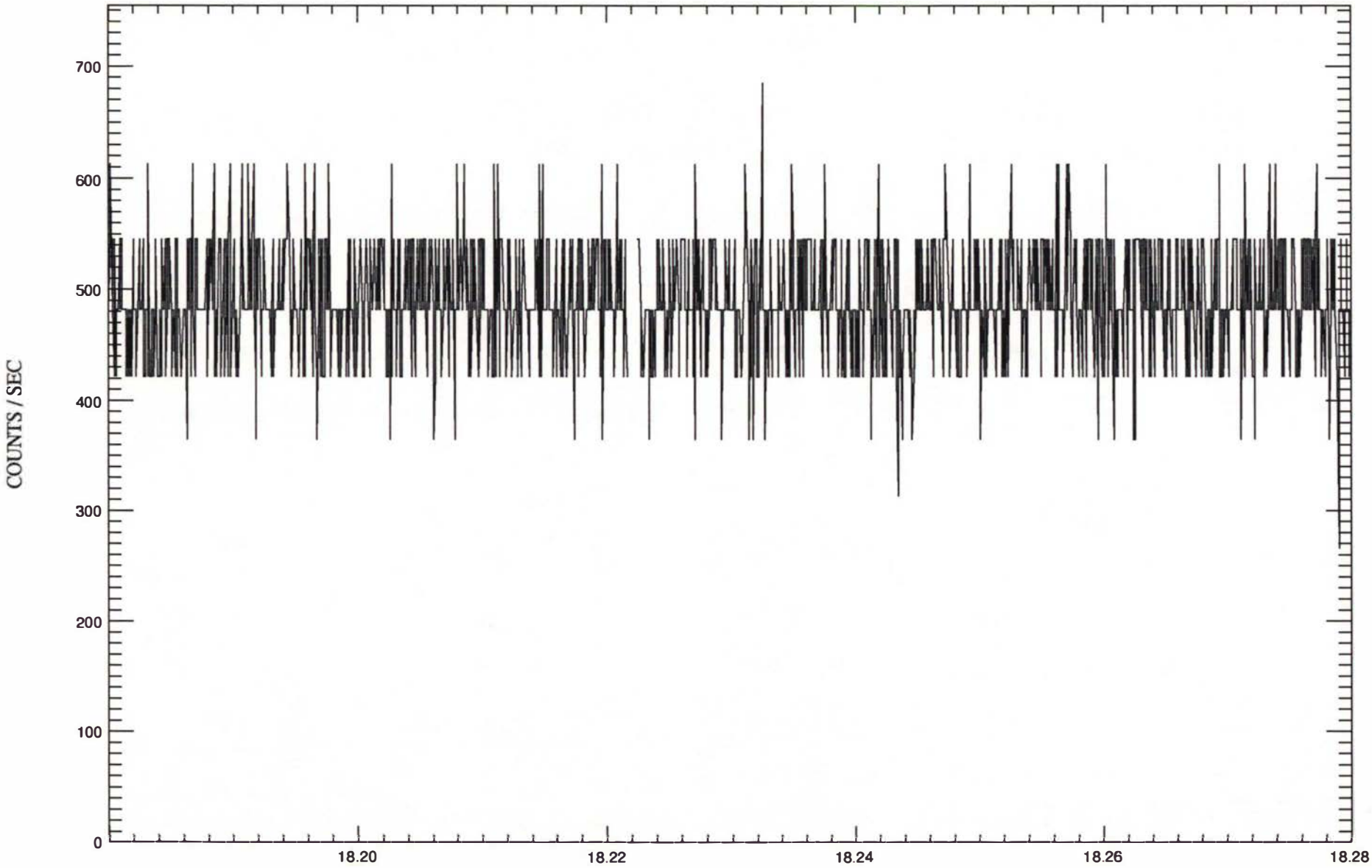
Burst Counter 7 at UT=18.232512414720 h=65637.045 s 18:13:57.045



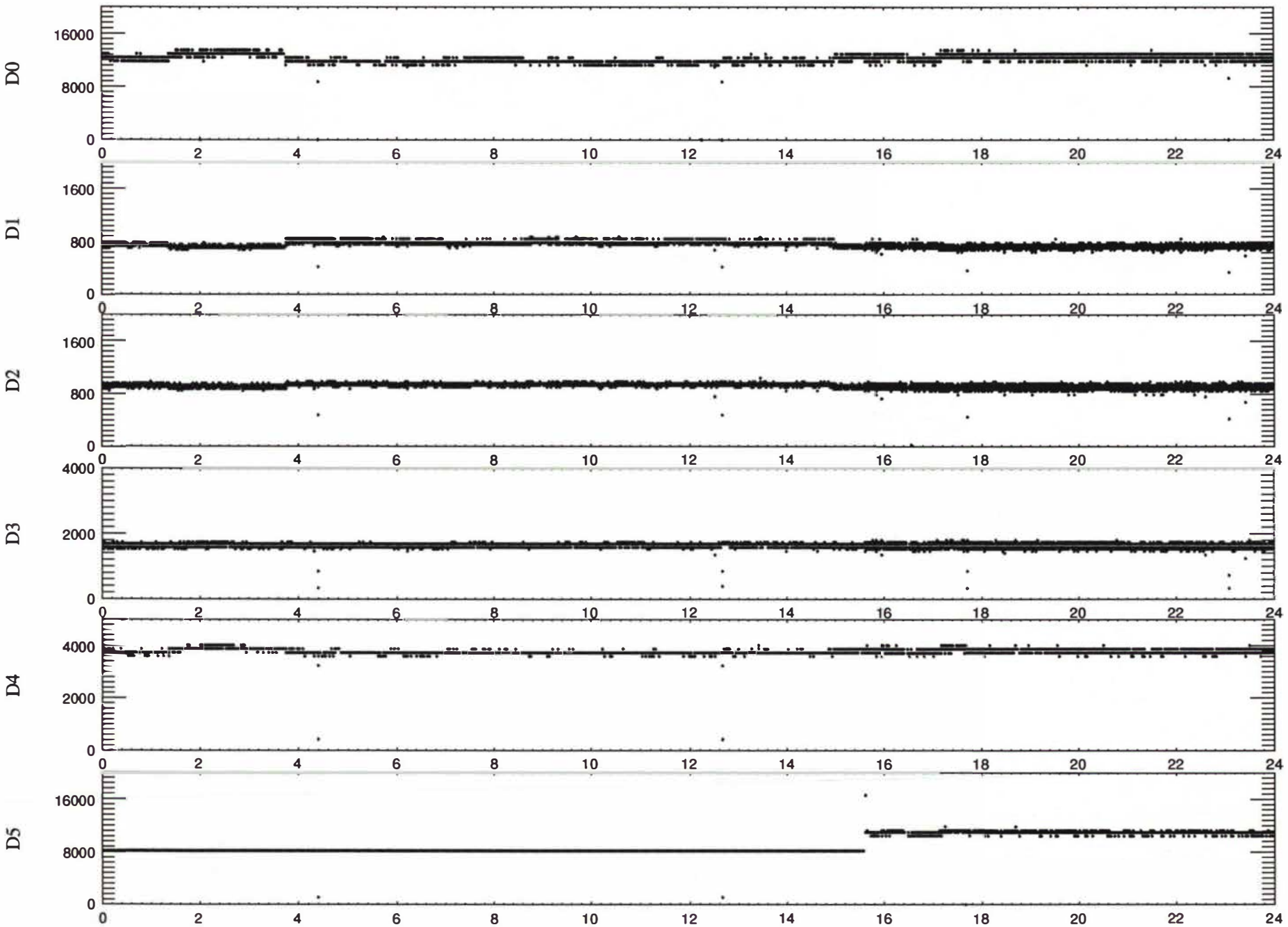
B# 1

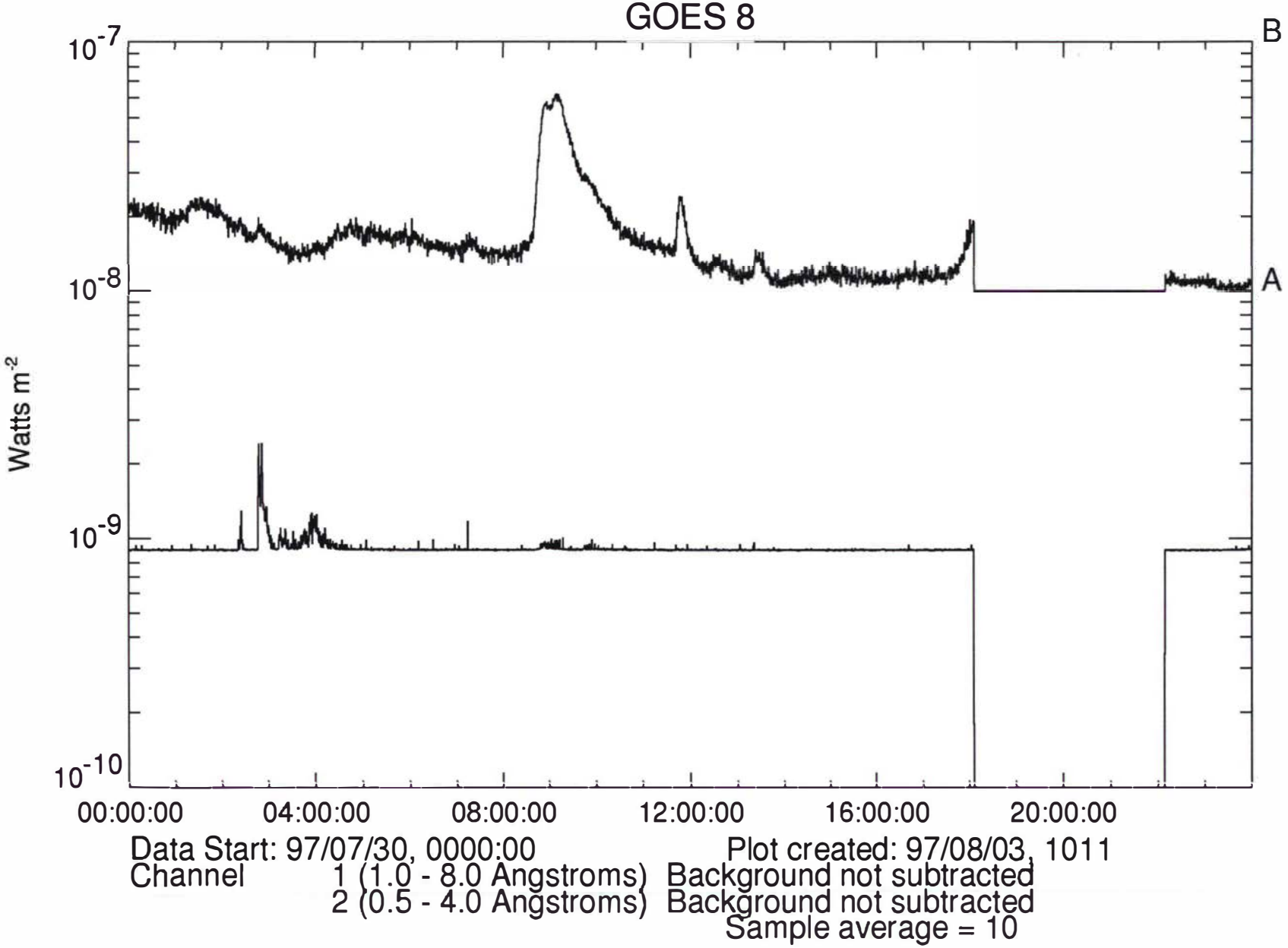
HUS 2A, MODE 1, NOT AVERAGED EDR day 210, year 1997 to day 210, year 1997 10/24/97

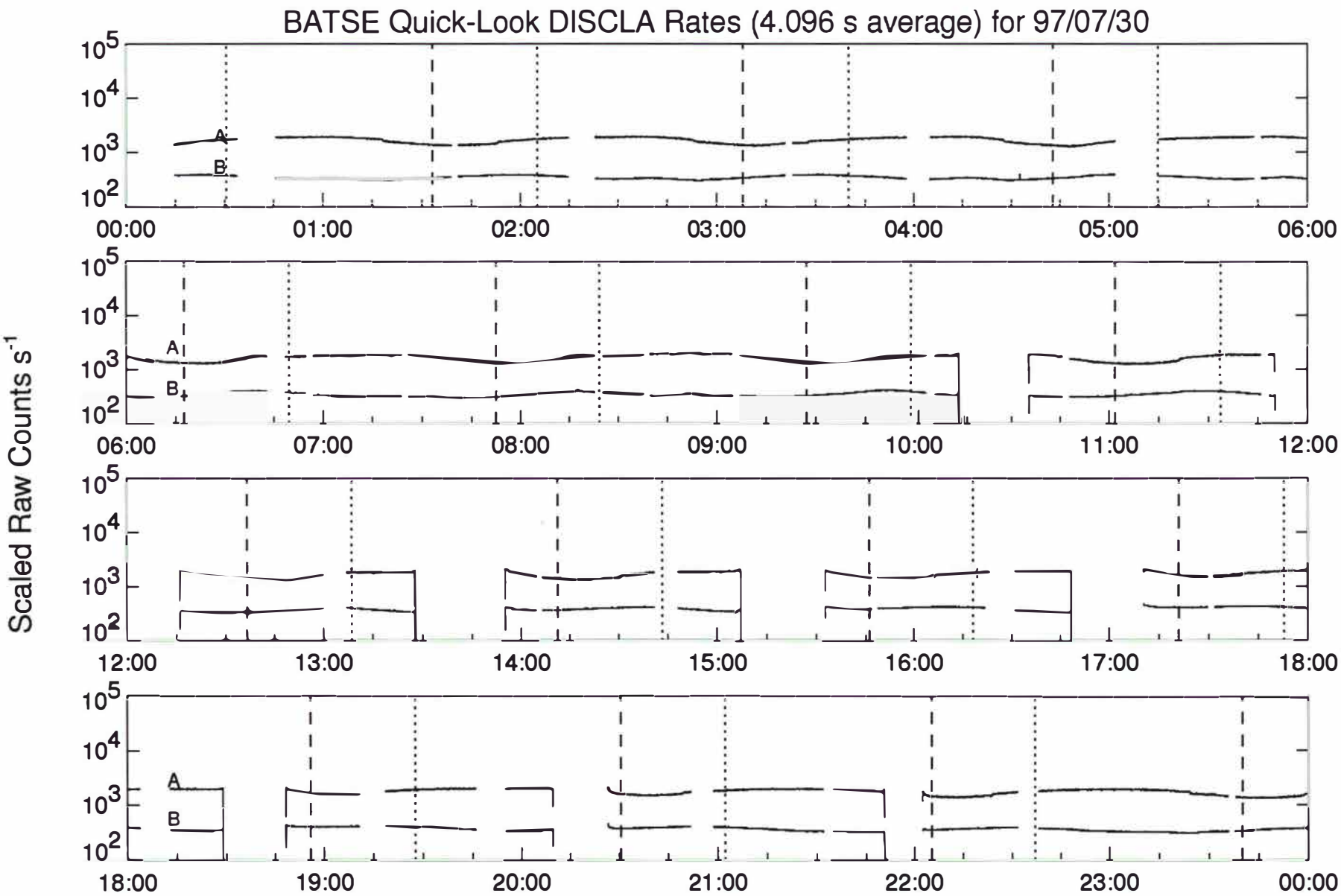
CALIBRATION DATA INCLUDED



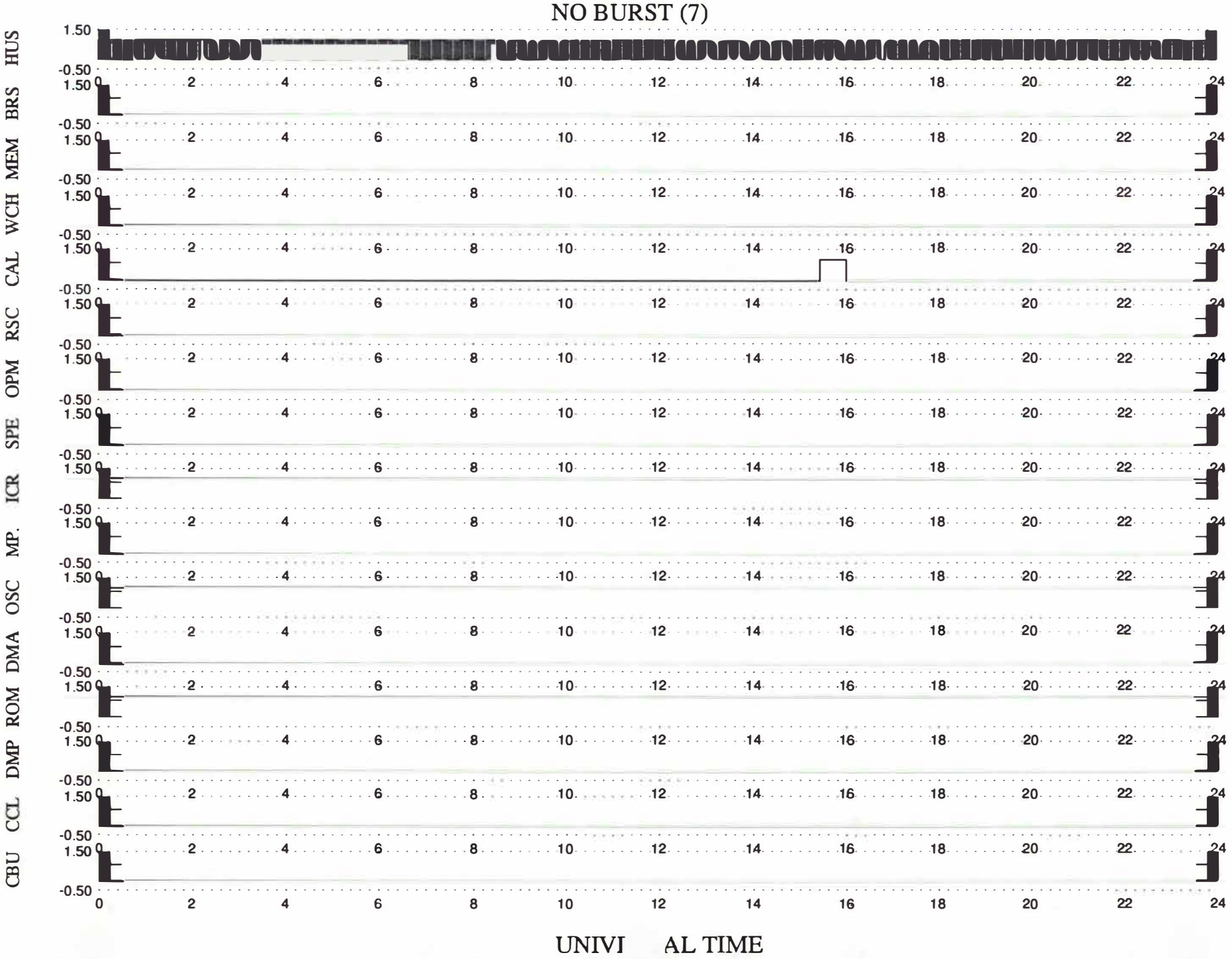
HUS 2B COUNTS / SEC EDR day 210, year 1997 to day 210, year 1997 10/24/97




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: 97/07/30, 0000:00
Plot created: 97/08/03, 1011
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

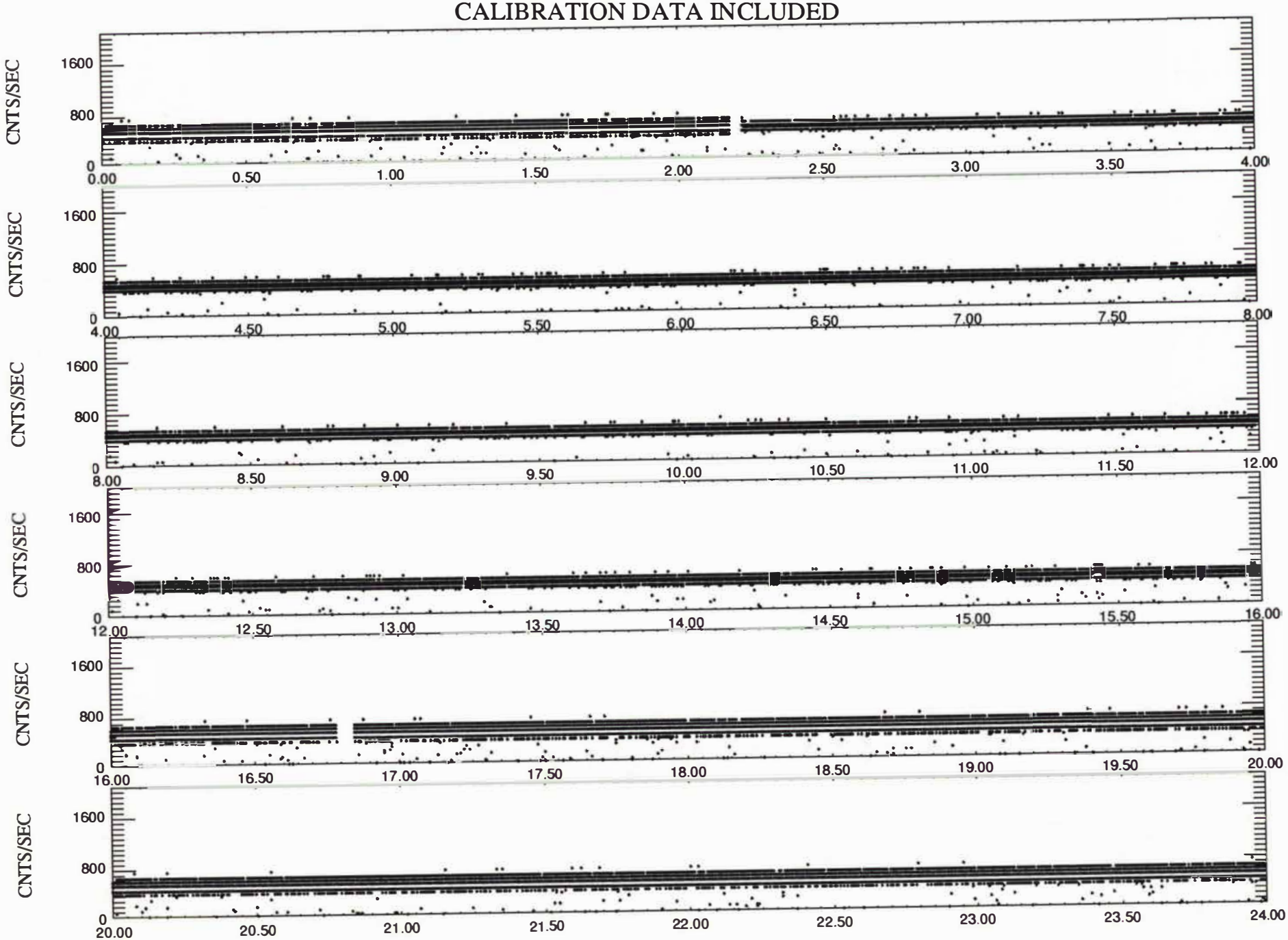

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/30
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/03, 1012 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 211, year 1997 to day 211, year 1997 10/24/97



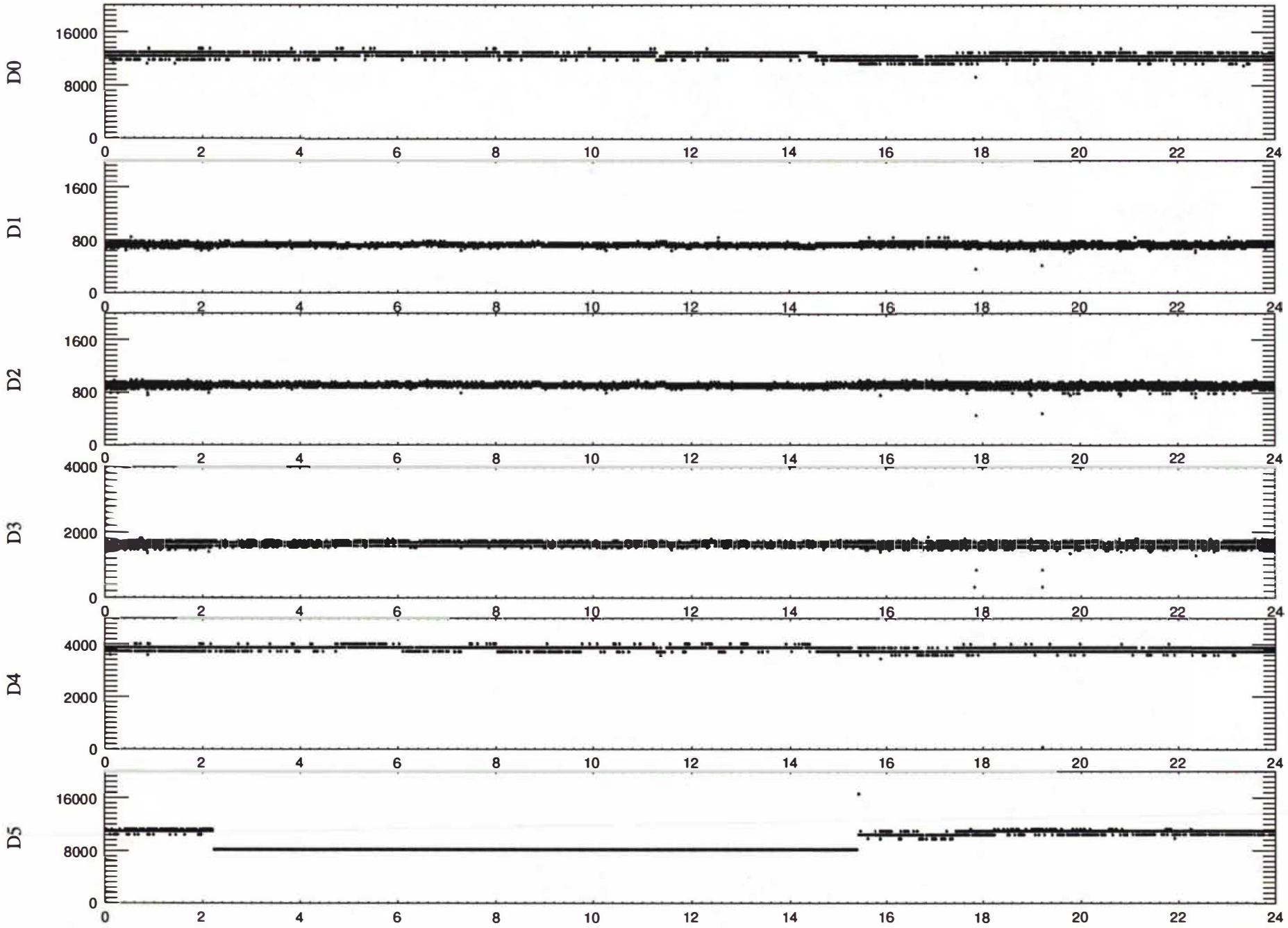
HUS 2A, MODE 1, NOT AVERAGED EDR day 211, year 1997 to day 211, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 211, year 1997 to day 211, year 1997 10/24/97



From WOODSP@ssl.msfc.nasa.gov Mon Aug 4 09:37 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 JAA05536; Mon, 4 Aug 1997 09:37:27 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 4 Aug 1997 11:37:17 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970804113717.204024d6@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6320
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6320
EVENT OF 1997 JUL 31 DAY OF YEAR=212
EVENT CROSSING TIME AT BATSE : 72484. S. OR 20:08:04.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 259.000 -58.000
BATSE PEAK COUNTING RATE: 4900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 7/ 97 IS:
RA= 157.136 DEC= 22.248 DIST= 6.114 AU
BATSE-ULYSSES DISTANCE = 914586109. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 65.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1287.18 SECS.
CROSSING TIME AT ULYSSES IS 73771. S. OR 20:29:31 +/- 549.75 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 7/ 97 IS:
RA= 199.650 DEC= -8.716 DIST= 1.457 AU
MARS-BATSE DISTANCE = 217974944. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -287.59 SECS.
CROSSING TIME AT MARS IS 72196. S. OR 20:03:16 +/- 111.57 SECONDS

BATSE BURST TRIGGER

NO.: 6320

TIME: TJD=0660 SECONDS=72484

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.3 AZIMUTH=257.6 ERROR=2.2 DEGREES

COMMENTS:
GRB LASTING ~ 60 SEC. THREE PEAKS, EACH SUCCESSIVE PEAK SOFTER
THAN THE ONE BEFORE IT. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6320	970731	10660	72484	4900	259	-58	60

BATSE BURST# 6320

ULYSSES RT 4/ 8/97

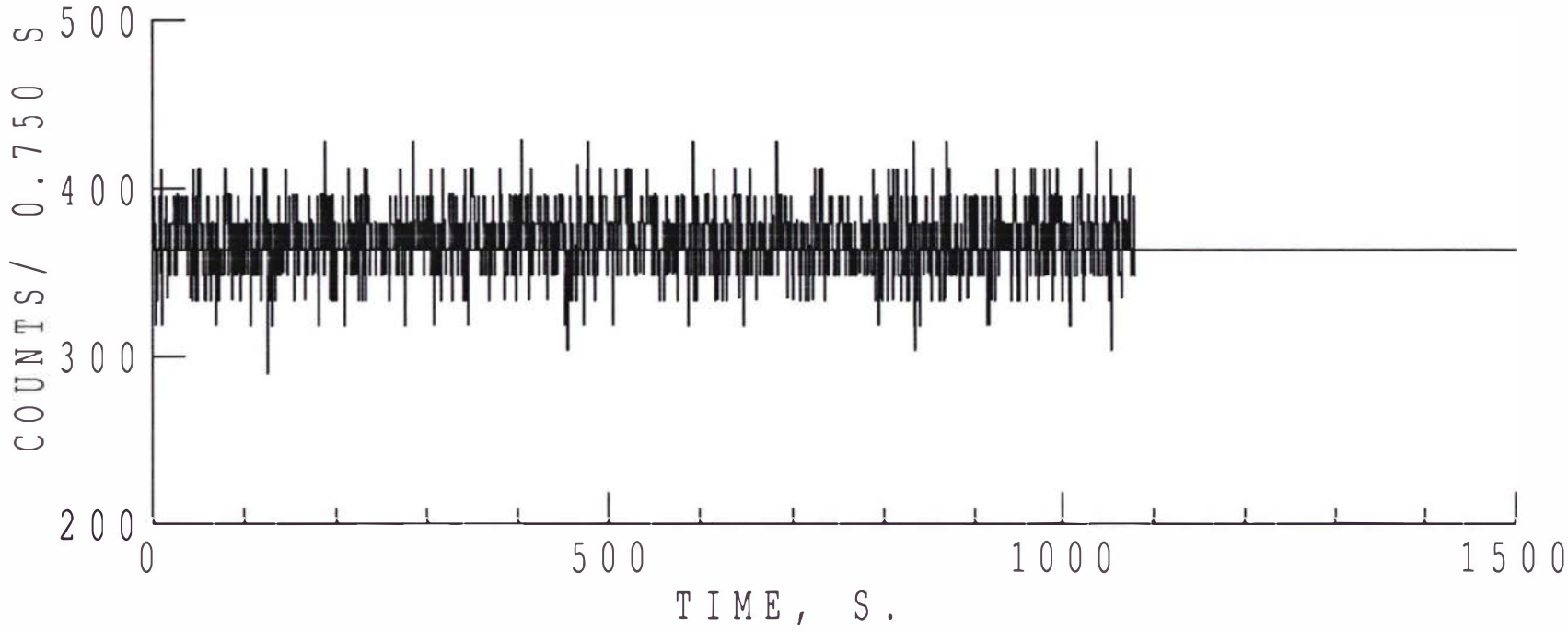
31/ 7/97 73224.008 s

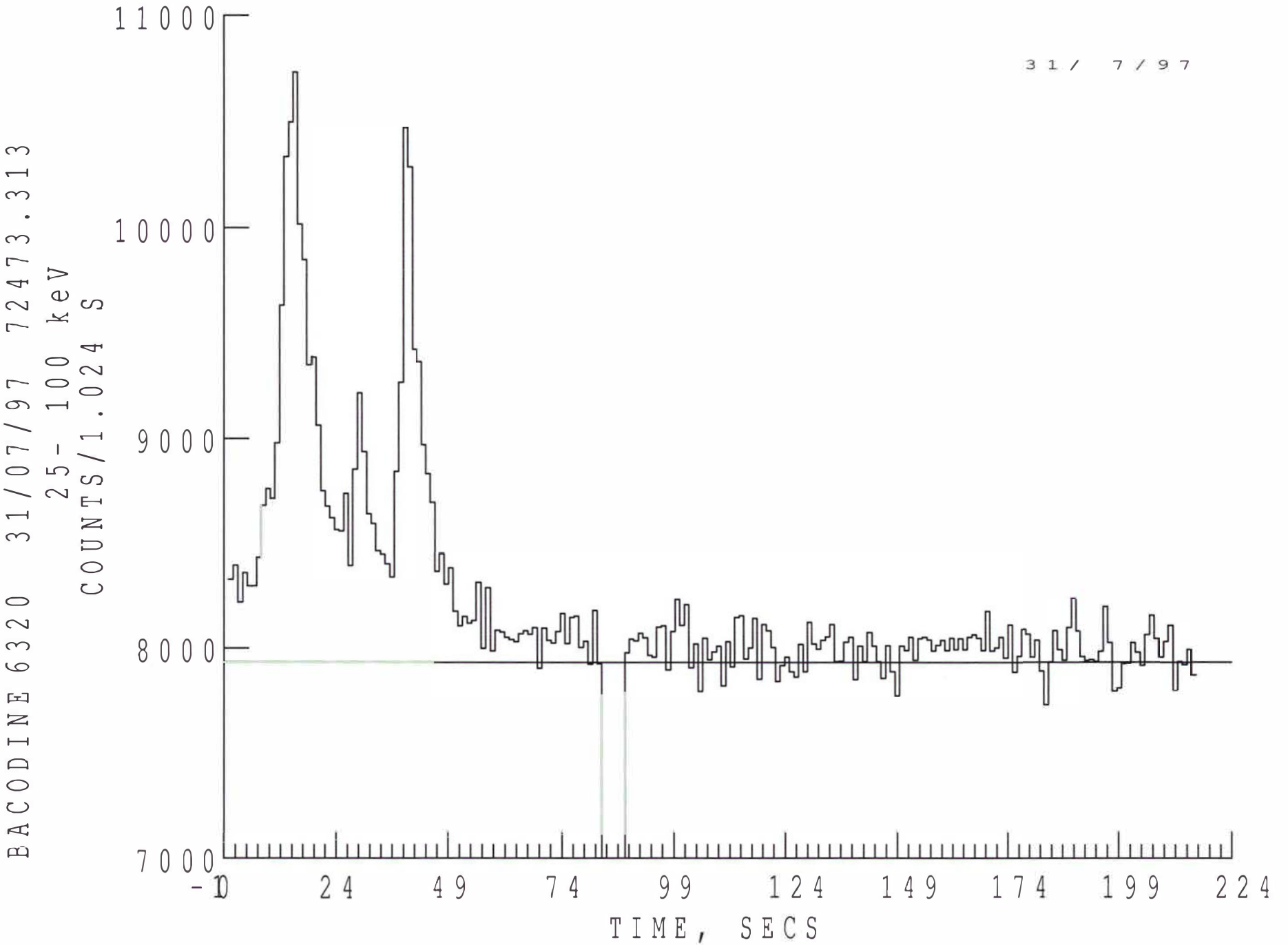
0.250 S INTERVALS REGROUPED BY 3

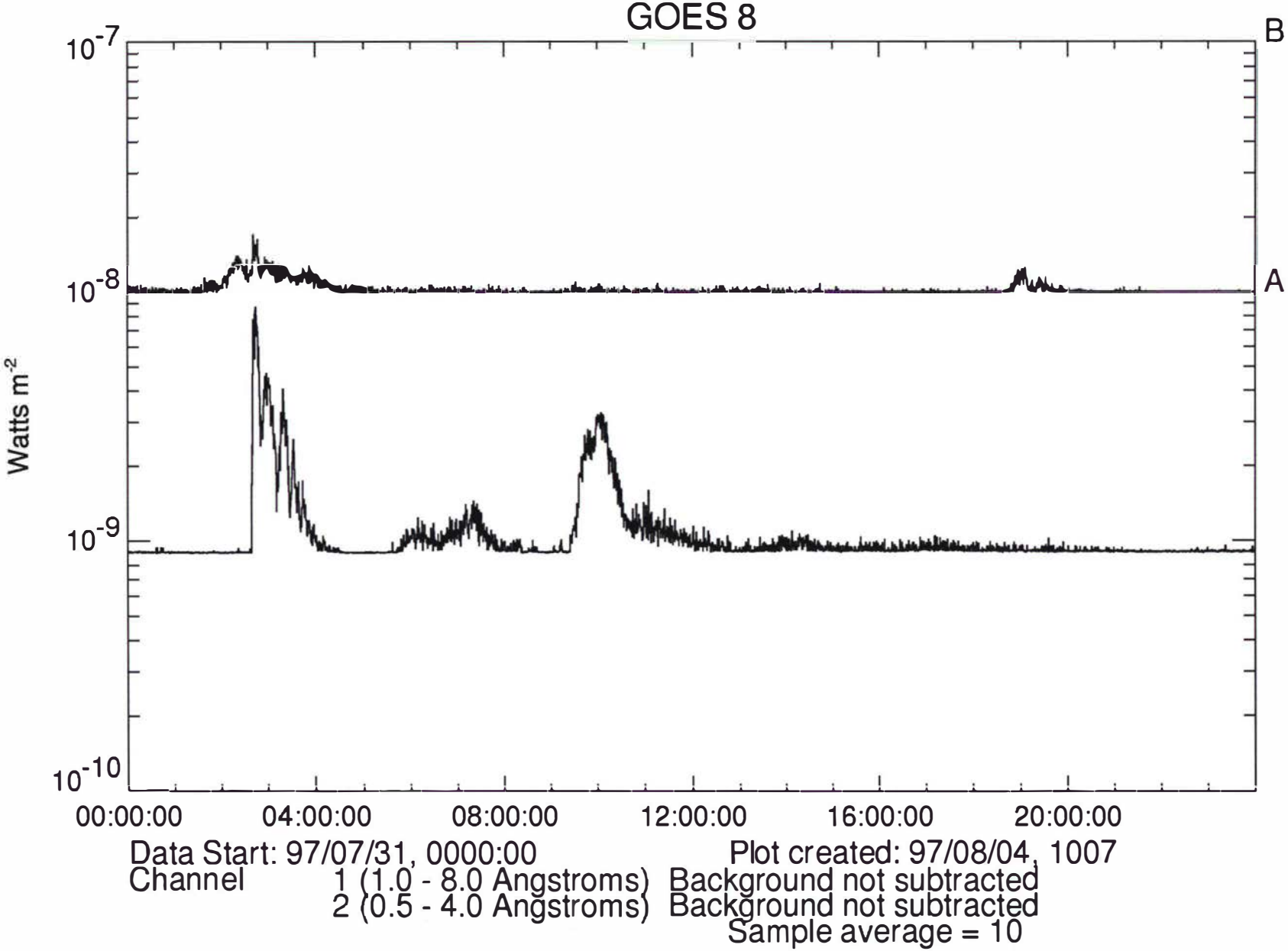
0- 0 keV

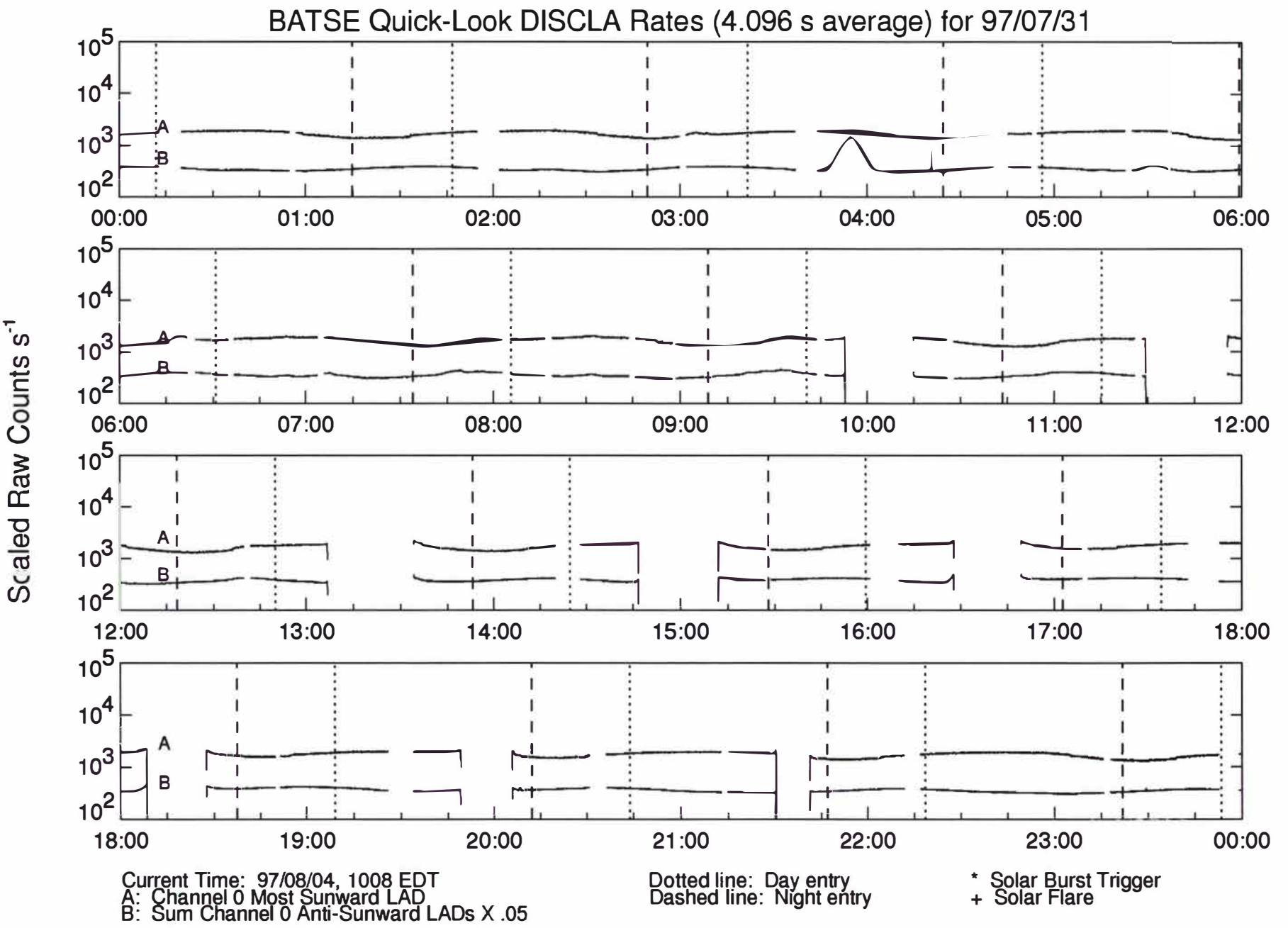
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

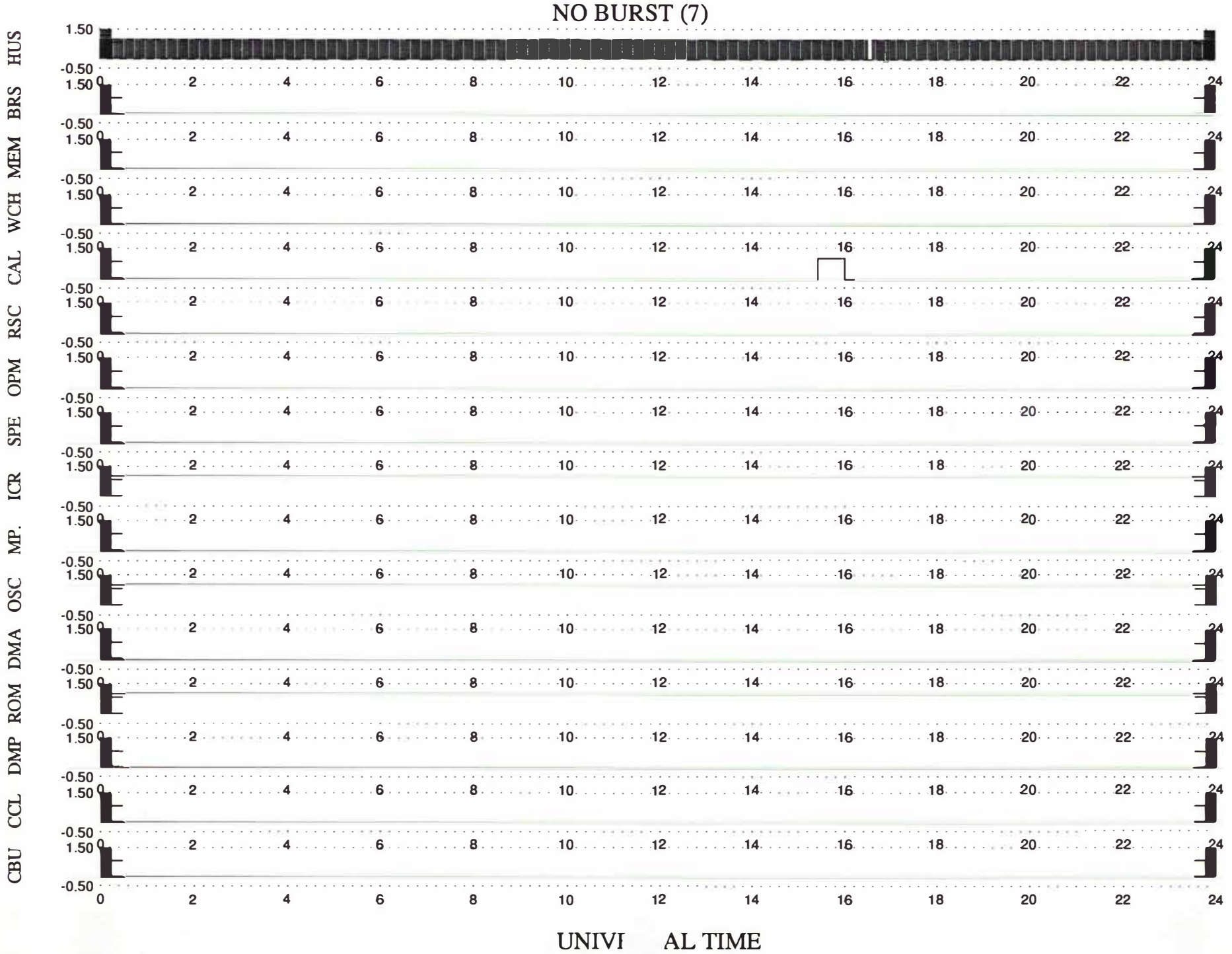



BACODINE 6320 31/07/97 72473.313
25- 100 keV
COUNTS/1.024 S
11000
10000
9000
8000
7000
31/ 7/97
-1
0
24
49
74
99
124
149
174
199
224
TIME, SECS


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: 97/07/31, 0000:00
Plot created: 97/08/04, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/07/31
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: 97/08/04, 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

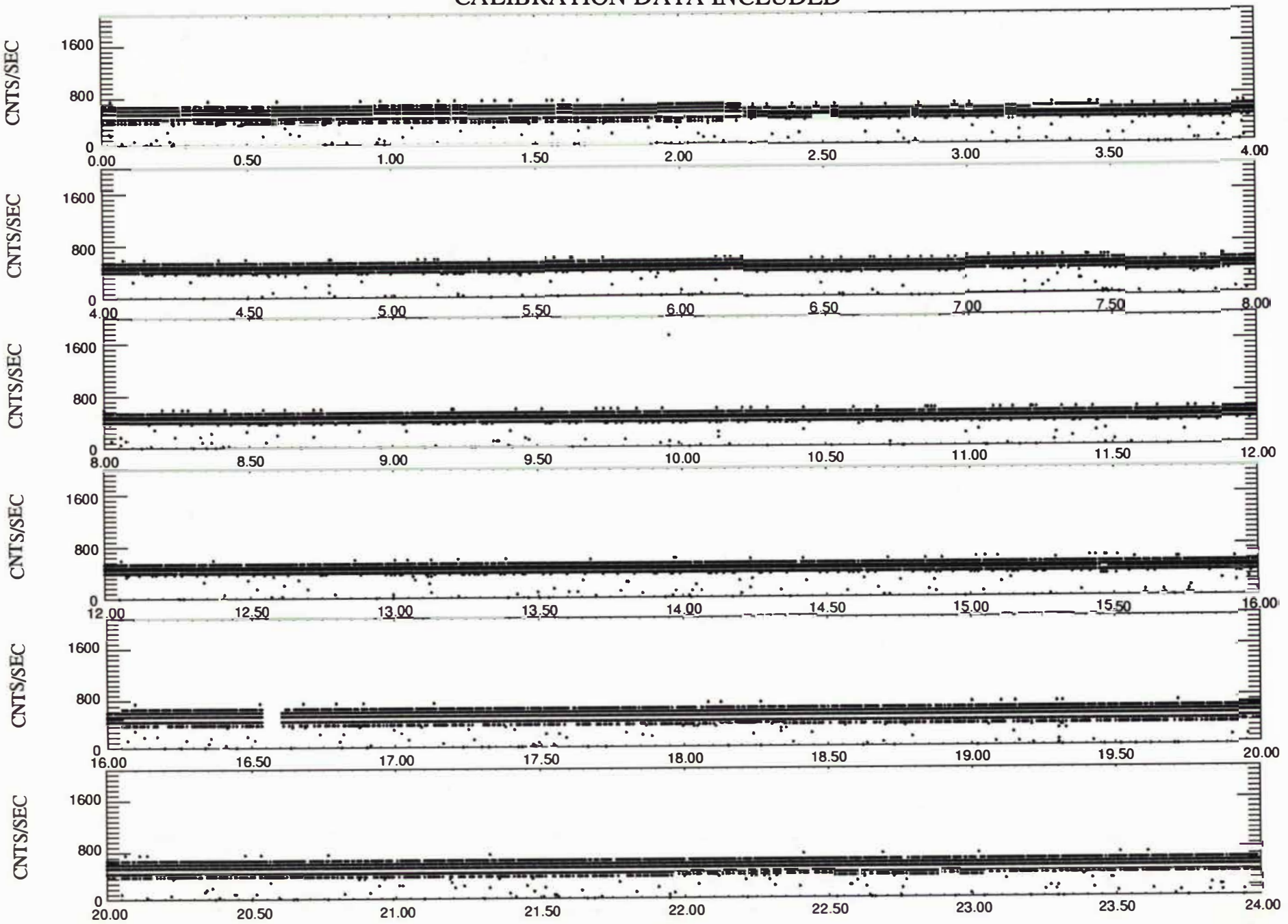
HUS MODES EDR day 212, year 1997 to day 212, year 1997 10/24/97





HUS 2A, MODE 1, NOT AVERAGED EDR day 212, year 1997 to day 212, year 1997 10/24/97

CALIBRATION DATA INCLUDED



UNIV! 'AL TIME



HUS 2B COUNTS / SEC EDR day 212, year 1997 to day 212, year 1997 10/24/97

