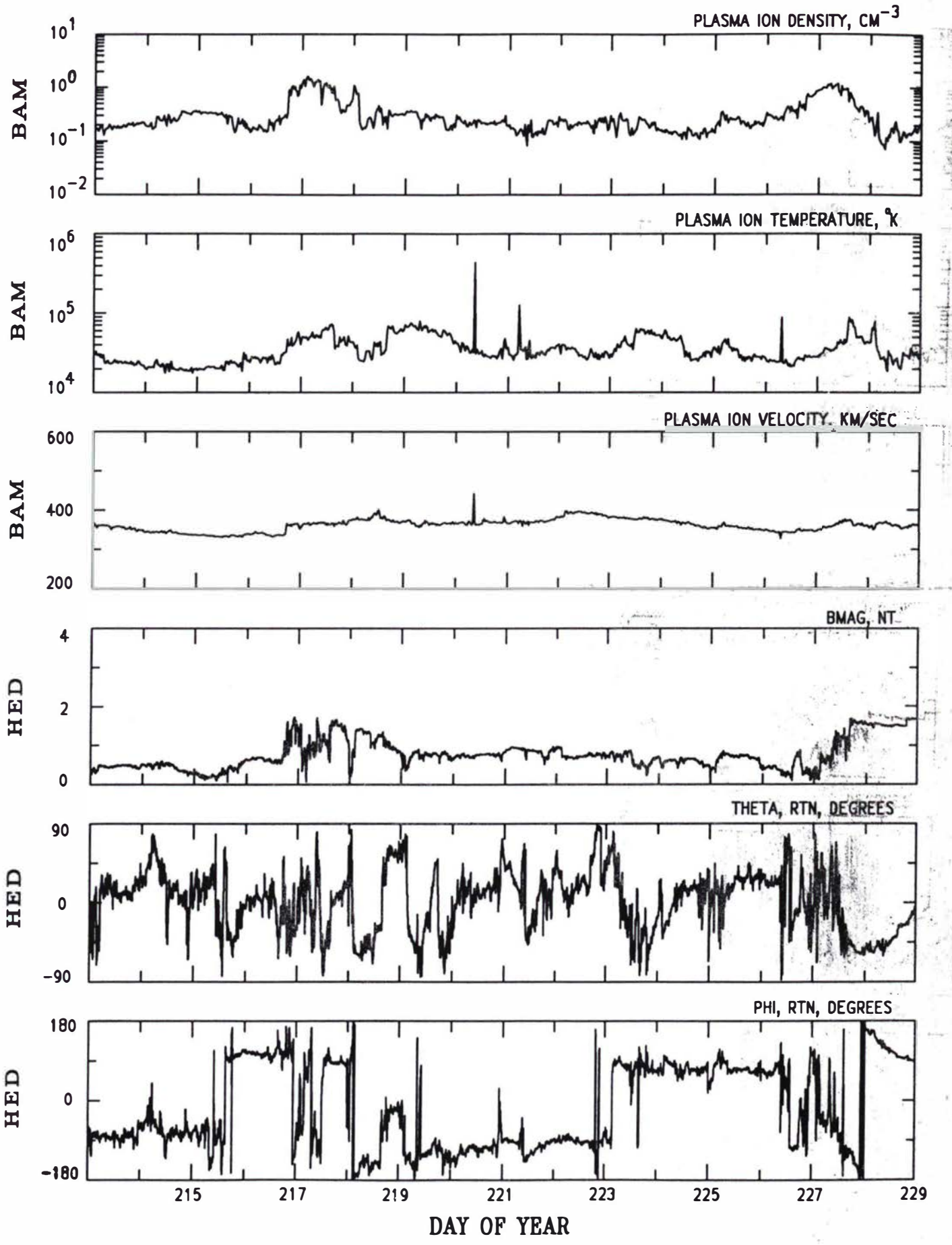
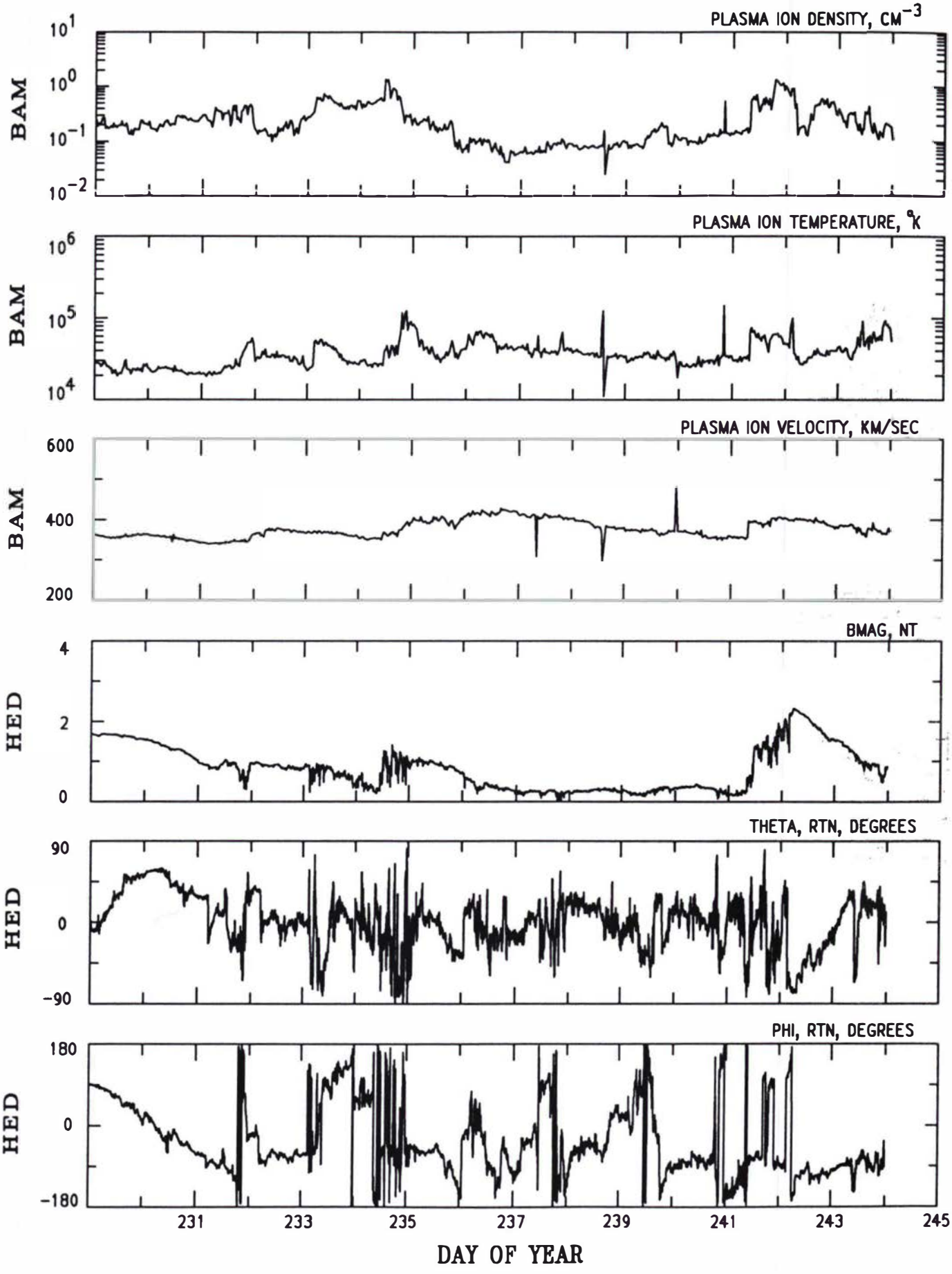
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 213 AUG 1 00:00:00.000 – 97 229 AUG 17 00:00:00.000



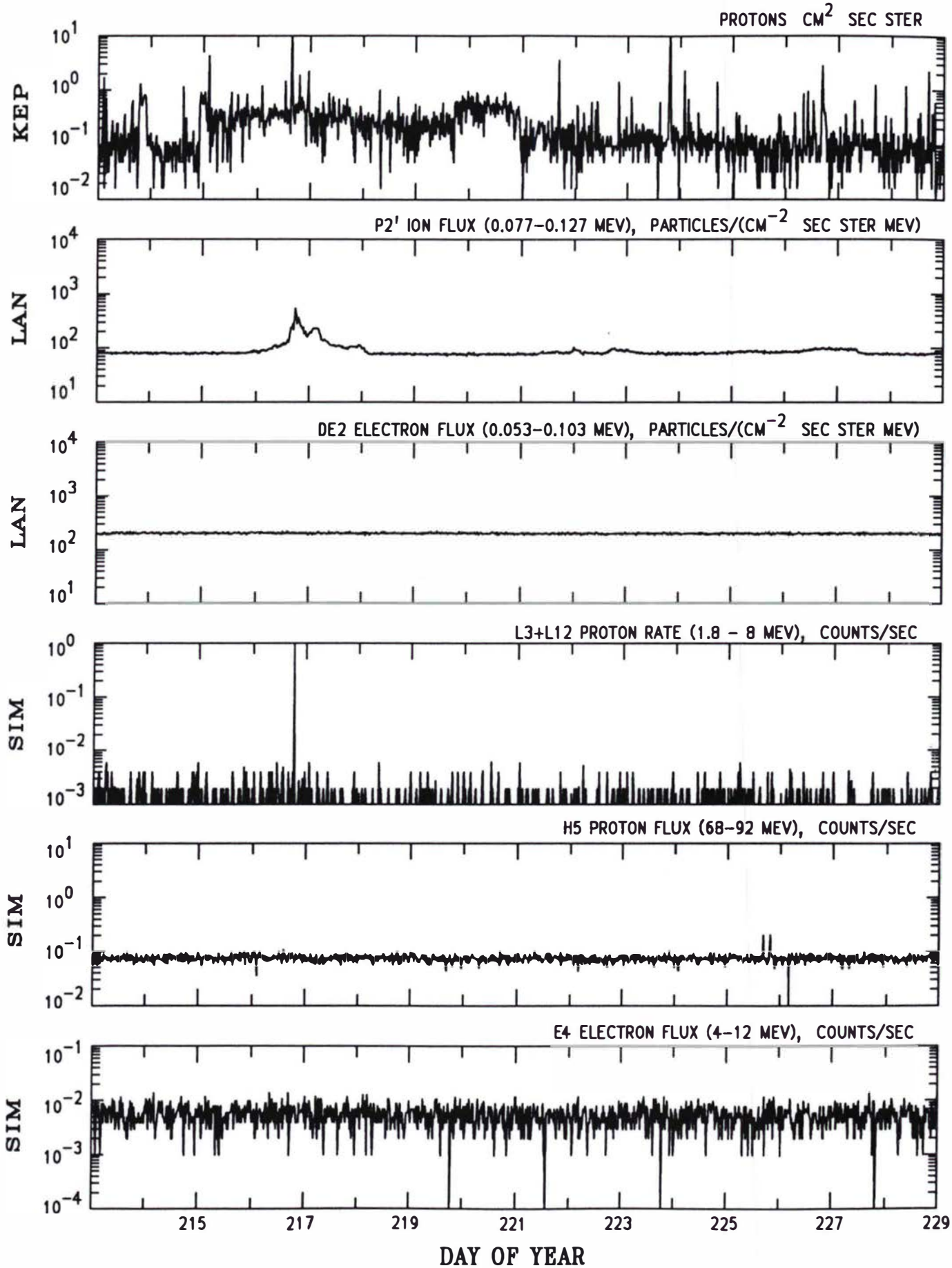
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 229 AUG 17 00:00:00.000 – 97 245 SEP 2 00:00:00.000



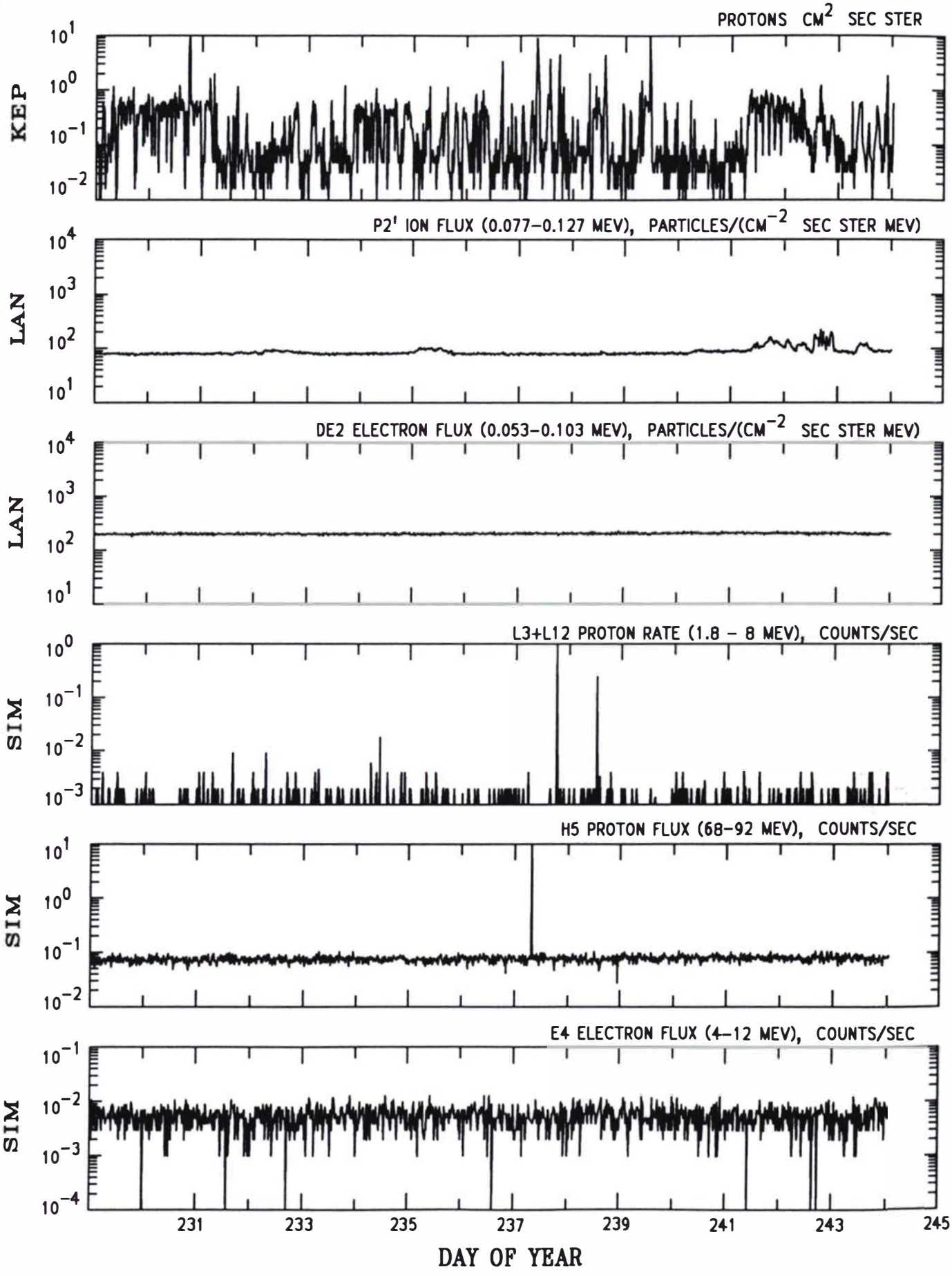
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 213 AUG 1 00:00:00.000 – 97 229 AUG 17 00:00:00.000



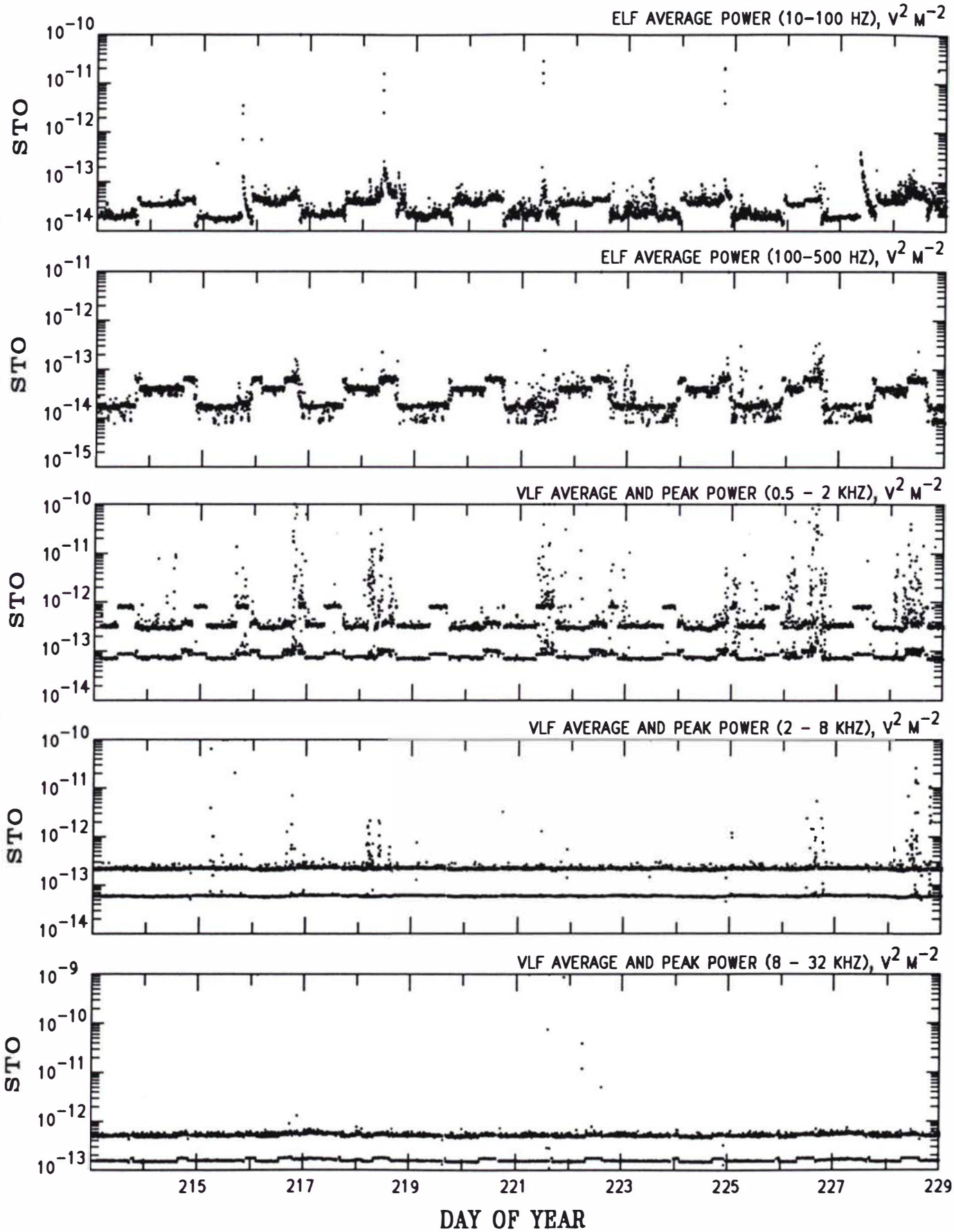
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 229 AUG 17 00:00:00.000 - 97 245 SEP 2 00:00:00.000



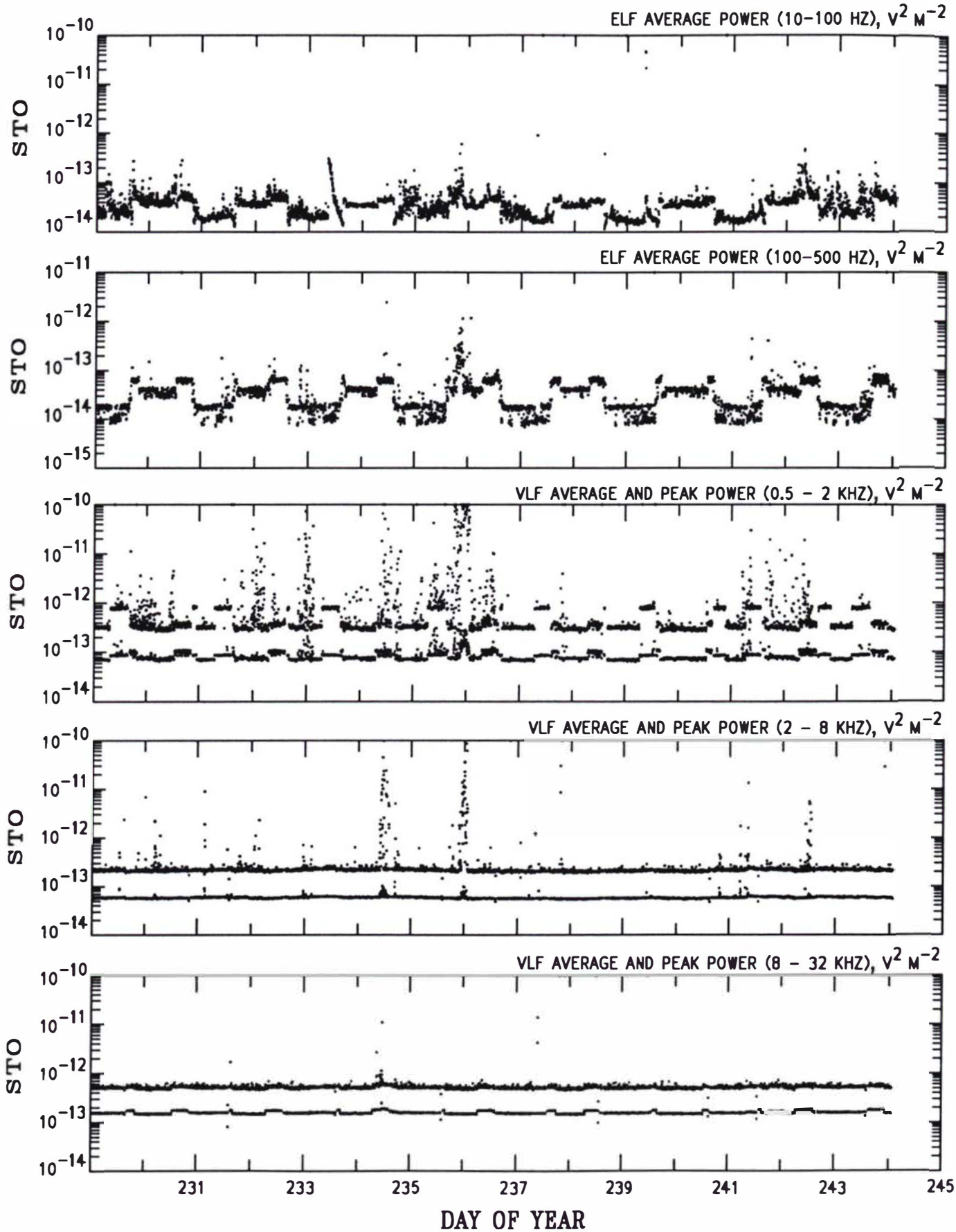
ULYSSES CDR - PLASMA WAVE

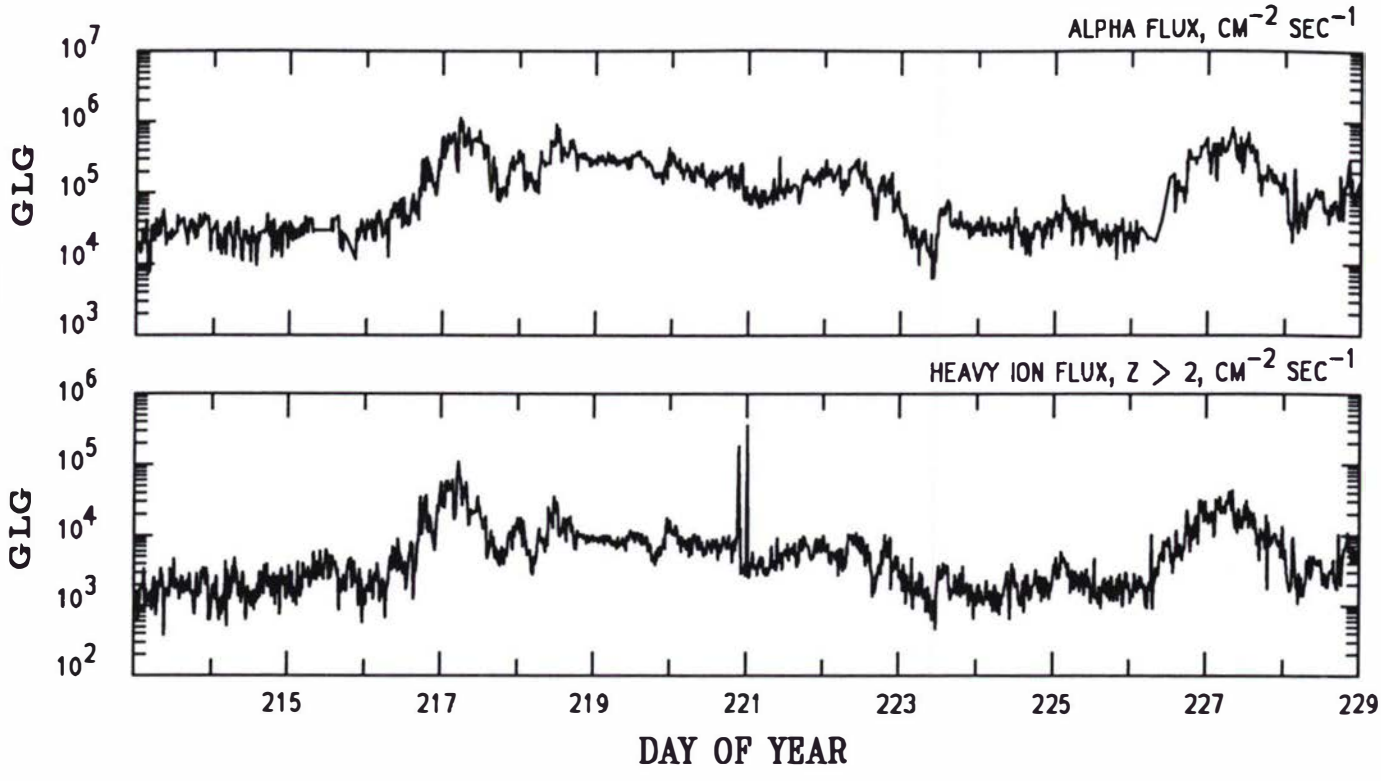
97 213 AUG 1 00:00:00.000 - 97 229 AUG 17 00:00:00.000



ULYSSES CDR - PLASMA WAVE

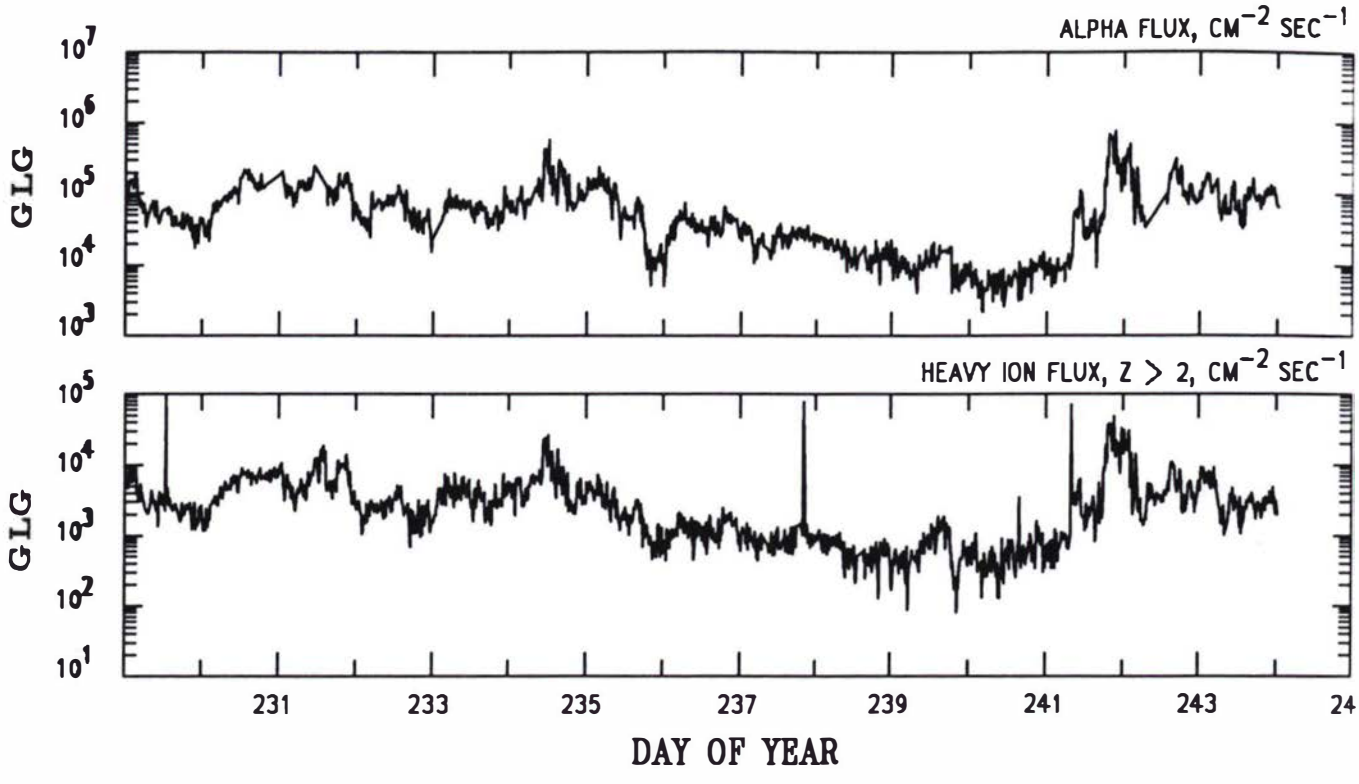
97 229 AUG 17 00:00:00.000 - 97 245 SEP 2 00:00:00.000




ULYSSES CDR – SOLAR WIND ION COMPOSITION
97 213 AUG 1 00:00:00.000 – 97 229 AUG 17 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
215
217
219
221
223
225
227
229
DAY OF YEAR

ULYSSES CDR – SOLAR WIND ION COMPOSITION

97 229 AUG 17 00:00:00.000 – 97 245 SEP 2 00:00:00.000



From RICHARDSON@SSLLES.MSFC.NASA.GOV Mon Aug 4 10:27 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 KAA06111; Mon, 4 Aug 1997 10:27:32 -0700
Date: Mon, 4 Aug 1997 12:27:21 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970804122721.2040226b@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6321
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6321
EVENT OF 1997 AUG 1 DAY OF YEAR=213
EVENT CROSSING TIME AT BATSE : 22905. S. OR 06:21:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 101.000 30.000
BATSE PEAK COUNTING RATE: 13000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 8/ 97 IS:
RA= 157.115 DEC= 22.265 DIST= 6.112 AU
BATSE-ULYSSES DISTANCE = 914410697. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1940.76 SECS.
CROSSING TIME AT ULYSSES IS 20964. S. OR 05:49:24 +/- 429.05 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 8/ 97 IS:
RA= 200.190 DEC= -8.947 DIST= 1.463 AU
MARS-BATSE DISTANCE = 218922192. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 156.55 SECS.
CROSSING TIME AT MARS IS 23062. S. OR 06:24:21 +/- 126.21 SECONDS

BATSE BURST TRIGGER

NO.: 6321

TIME: TJD=0661 SECONDS=22905

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=45.2 AZIMUTH=47.2 ERROR=0.8 DEGREES

COMMENTS:
GRB. MULTIPLE PULSES WITH STRUCTURE. DUR.~40SEC. SLIGHTLY VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6321	970801	10661	22905	13000	101	+30	40

Helio corr removed 18/2/00

Date: Apr 7 '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)?

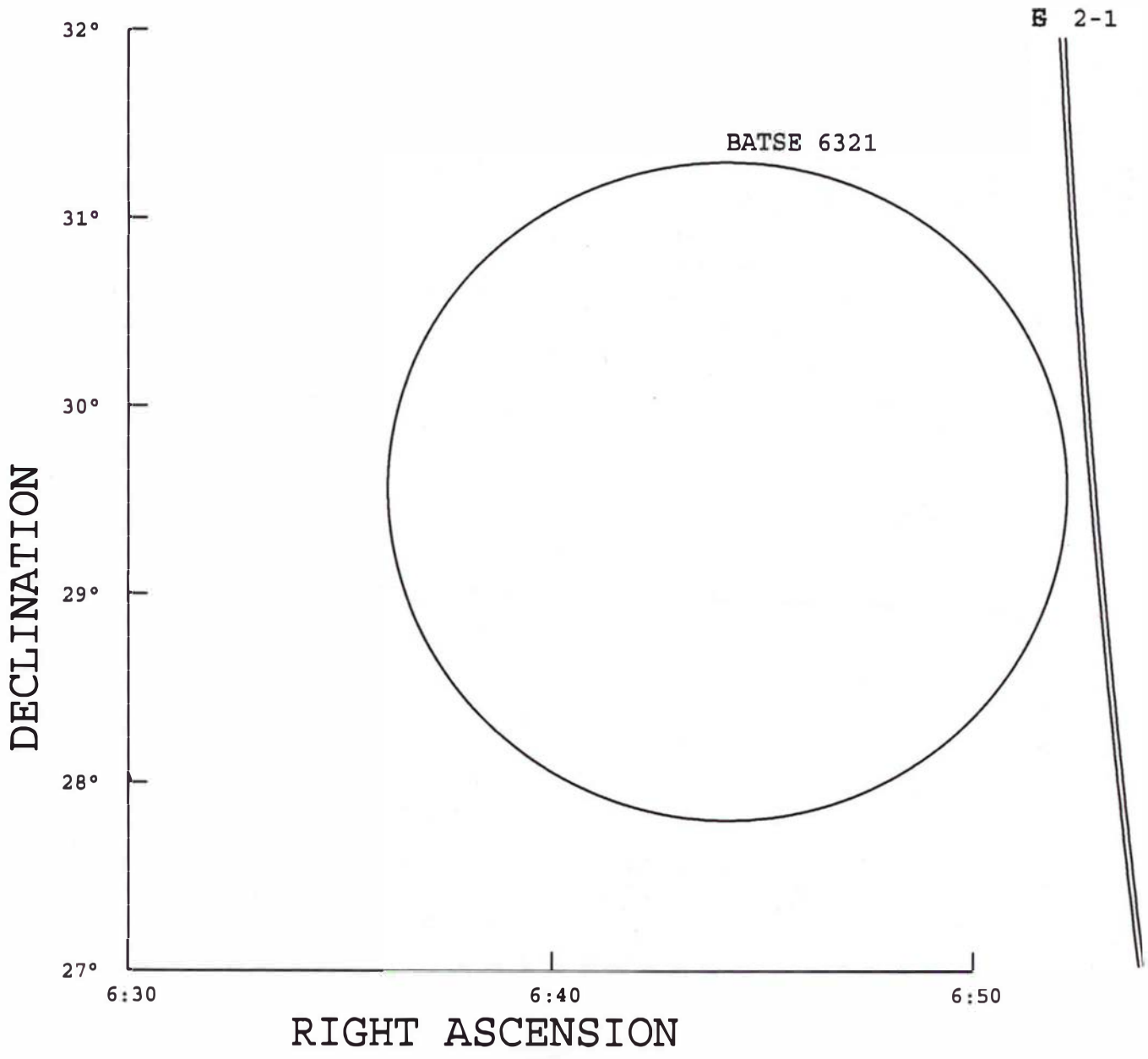
☐ 2000 coordinates used?

☐ Geocentric time used?

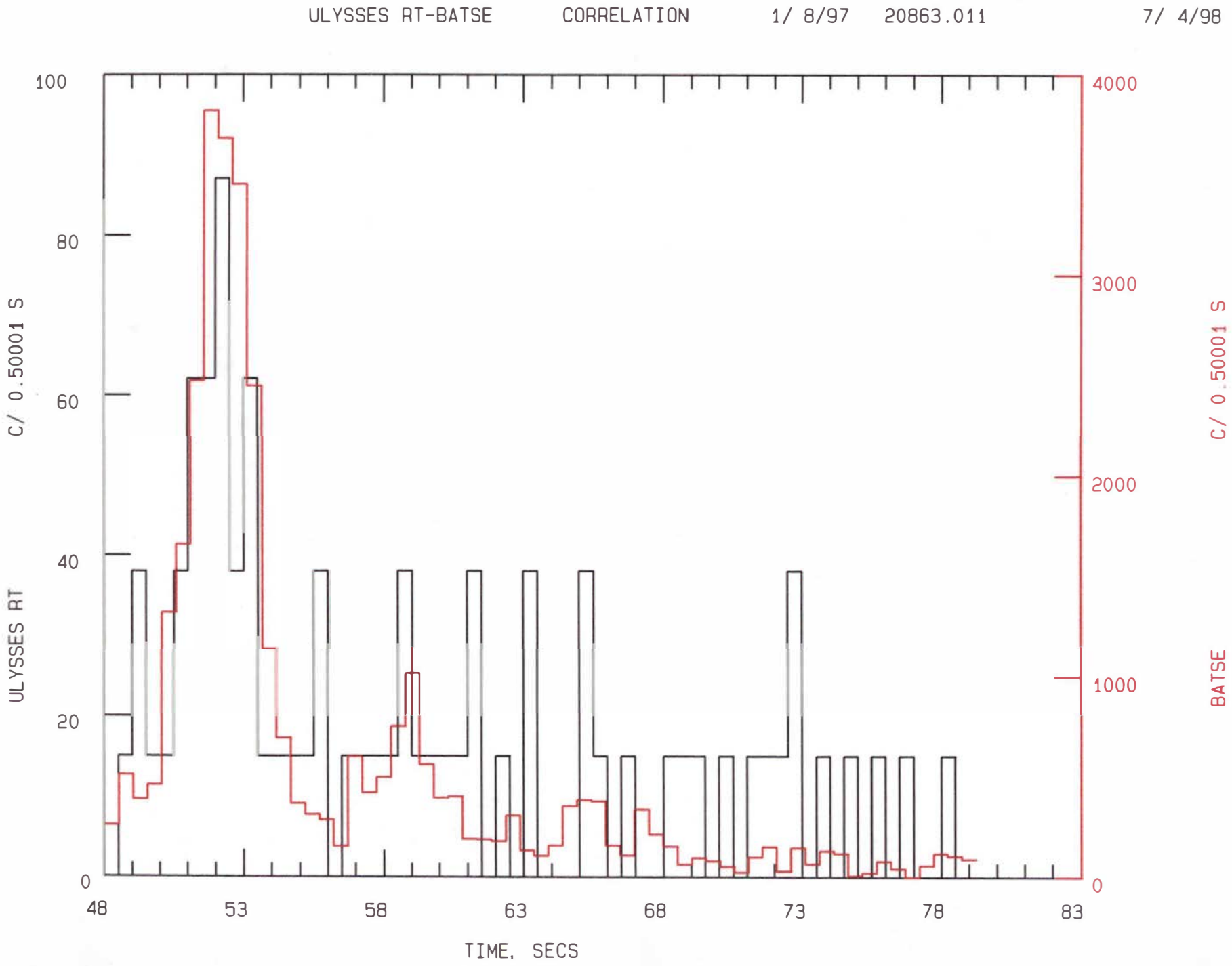
☑ ACCESS database updated?

EVENT OF AUG 1, 1997 5:47

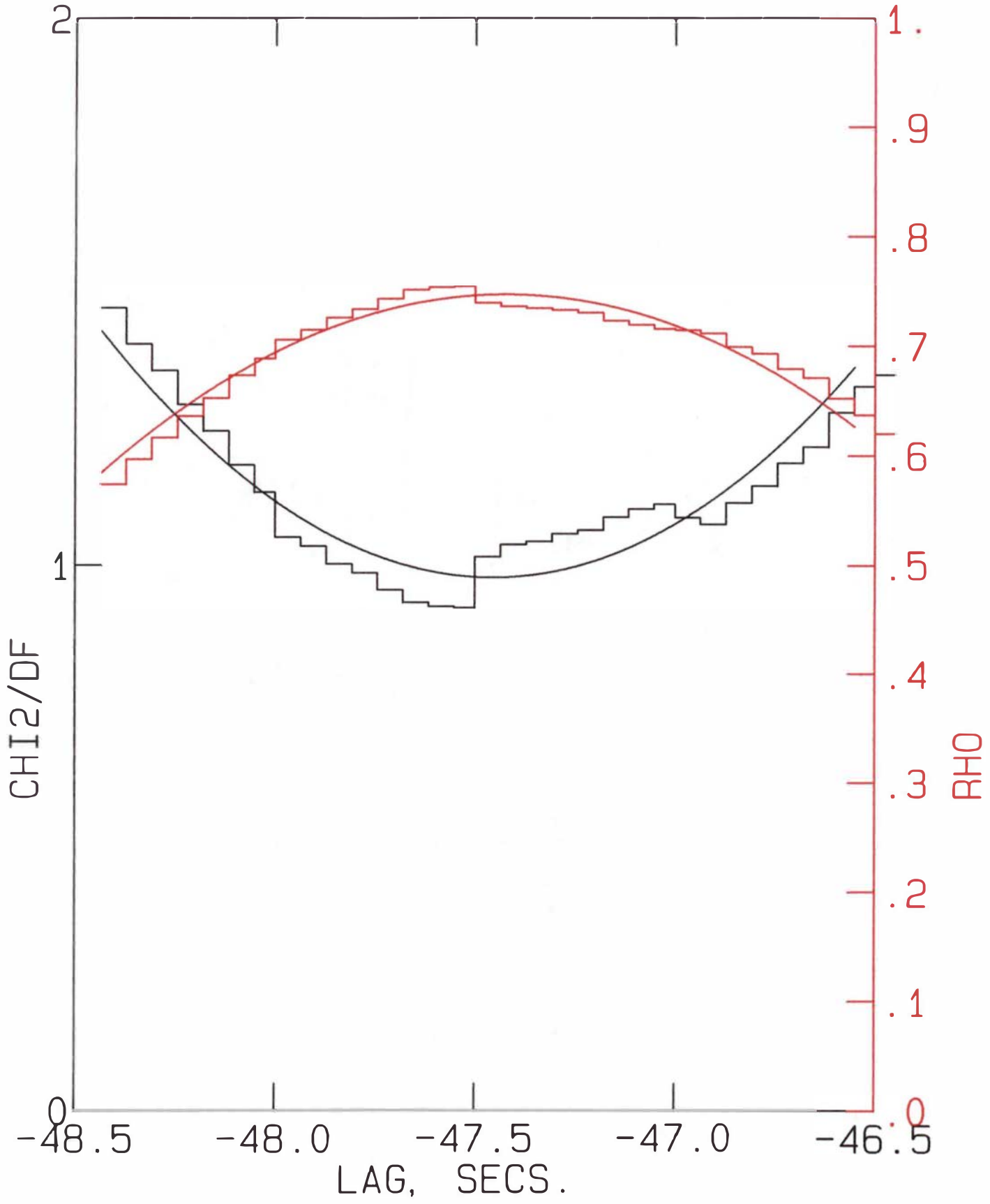
18/ 2/ 0



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


ULYSSES RT-BATSE CORRELATION 1/ 8/97 20863.011 7/ 4/98
100
80
60
40
20
0
C/ 0.50001 S
ULYSSES RT
4000
3000
2000
1000
0
C/ 0.50001 S
BATSE
48
53
58
63
68
73
78
83
TIME, SECS

ULYSSES RT-BATSE CORRELATION 1/ 8/97 20863.011



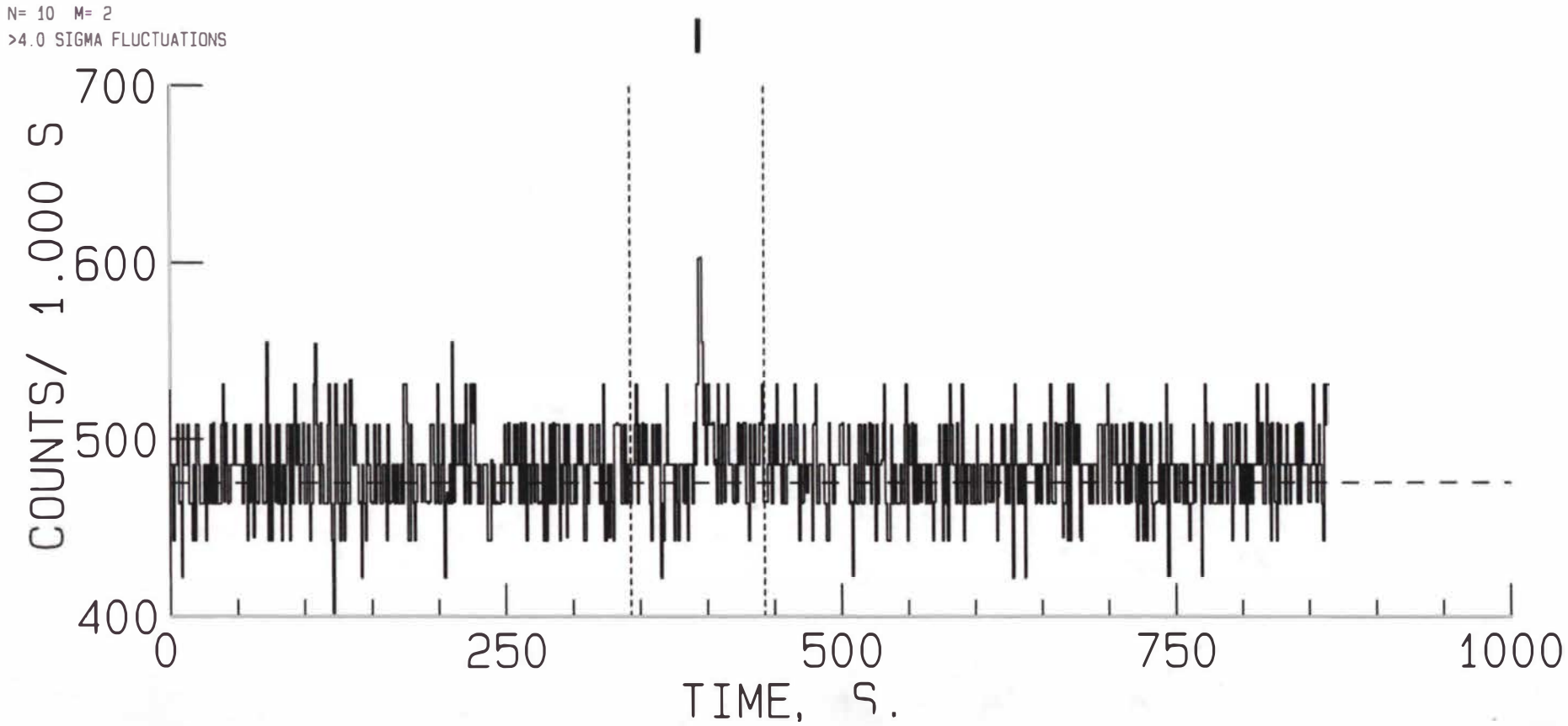
ULYSSES RT

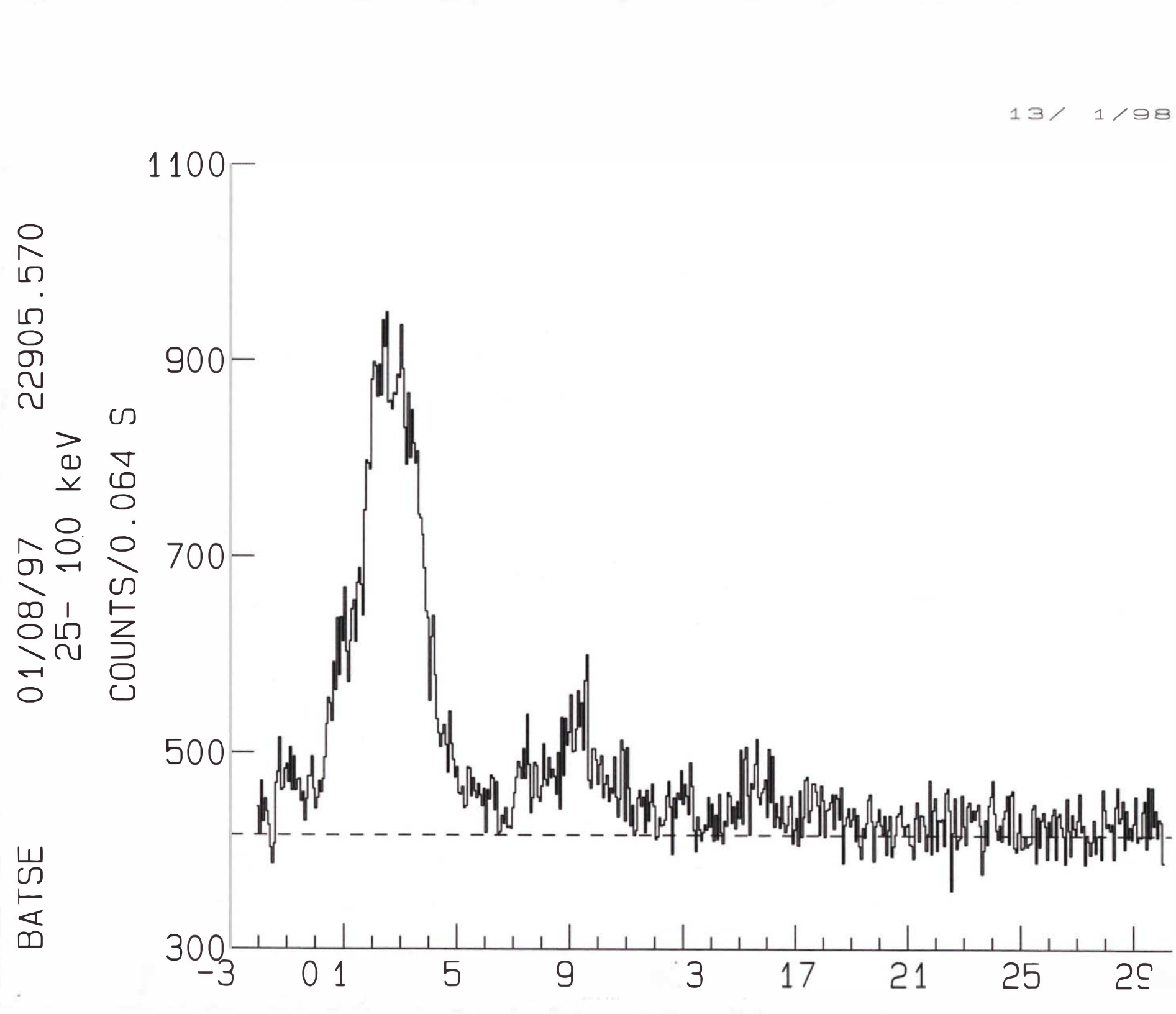
7/ 4/98

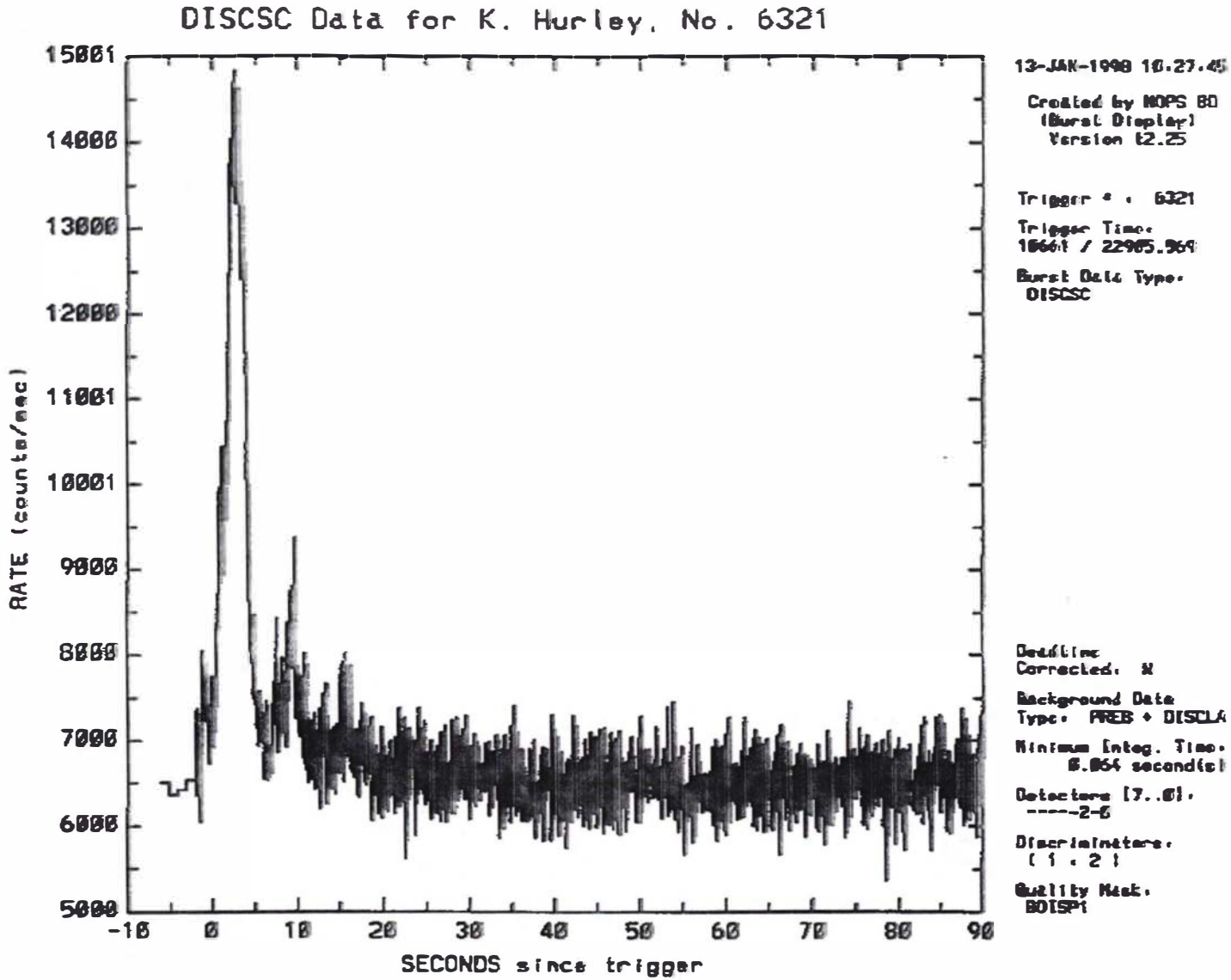
1/ 8/97 20520.114 s

0.500 S INTERVALS REGROUPED BY 2

22- 147 keV




13/ 1/98
BATSE 01/08/97 22905.570
25- 100 keV
COUNTS/0.064 S
1100
900
700
500
300
-3
0 1
5
9
3
17
21
25
29


DISCSC Data for K. Hurley, No. 6321
RATE (counts/msec)
15001
14000
13000
12000
11001
10001
9000
8000
7000
6000
5000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
13-JAN-1998 10:27:45
Created by MOPS 80
(Burst Display)
Version 02.25
Trigger # : 6321
Trigger Time:
10661 / 22905.969
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
-----2-0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1

BATSE time corrected 10/02

Date: July 9 2002

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. BATSE Data

☐ BATSE ephemeris for T_0?

☐ Error circle position and radius from public catalog used?

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

3. NEAR Data

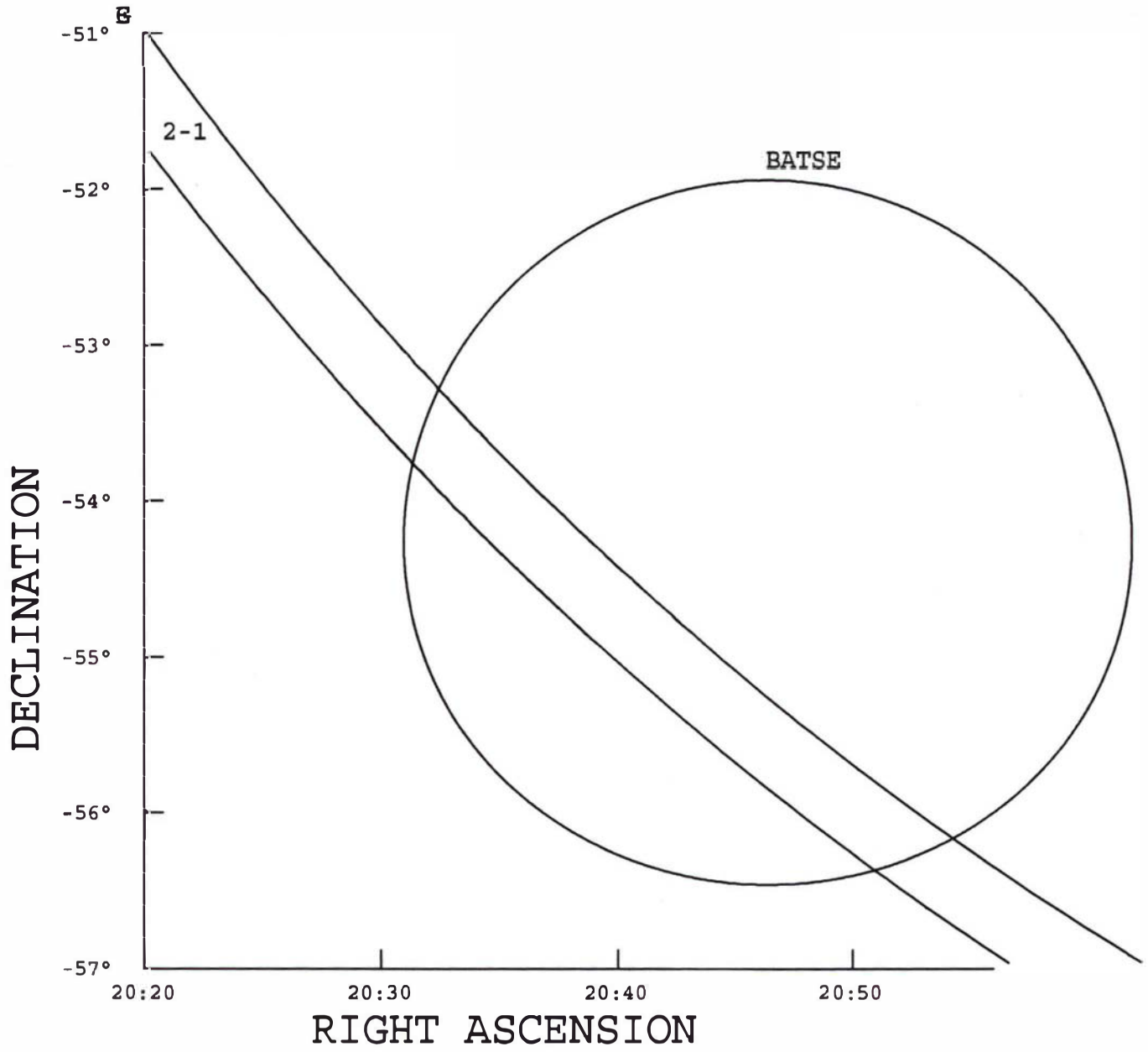
☐ Final, correct time used? (Files postmarked vwx@bocc1, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)

☐ BATSE >100 keV data used for NEAR correlation?

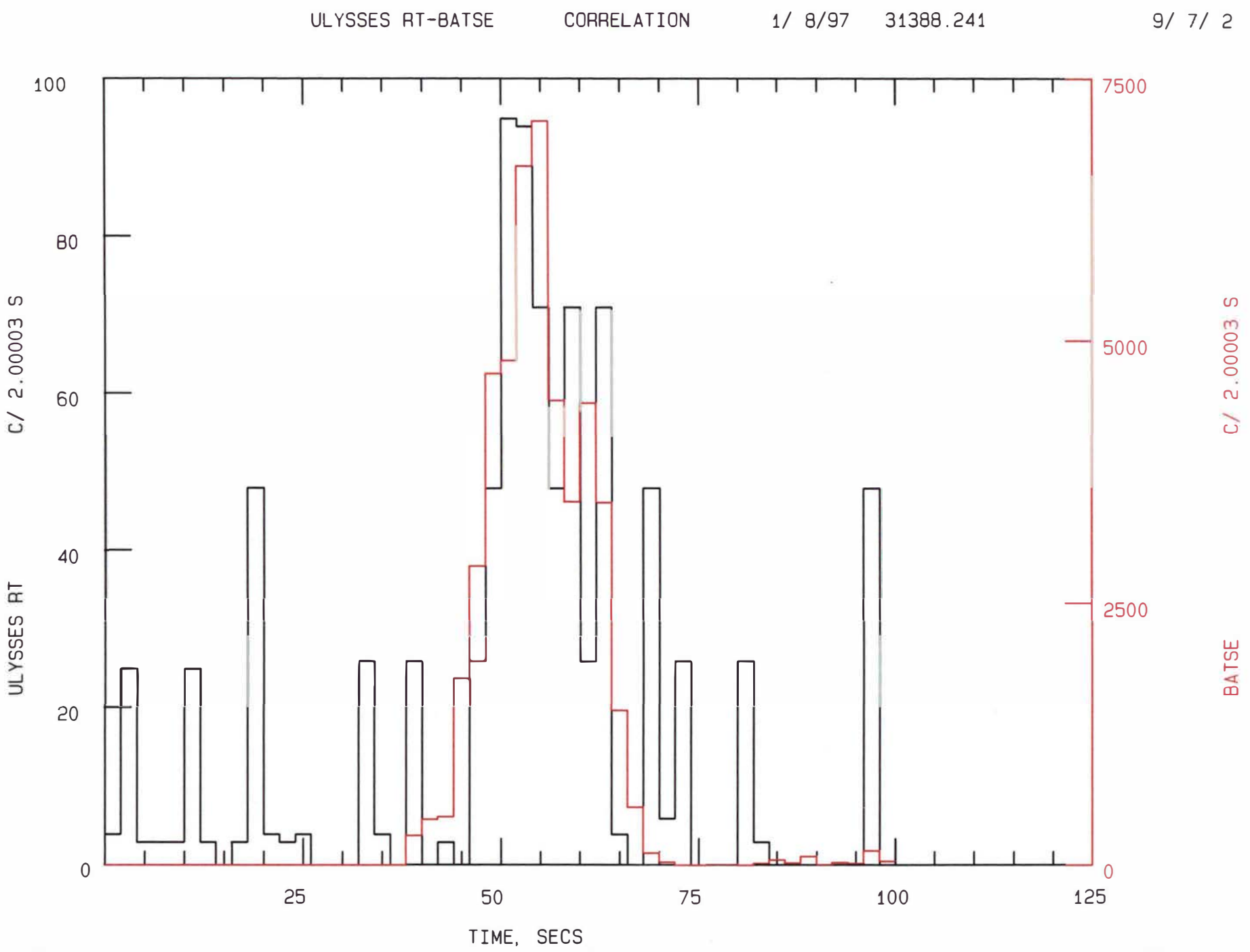
☑ ACCESS database updated?

EVENT OF AUG 1, 1997 8:04

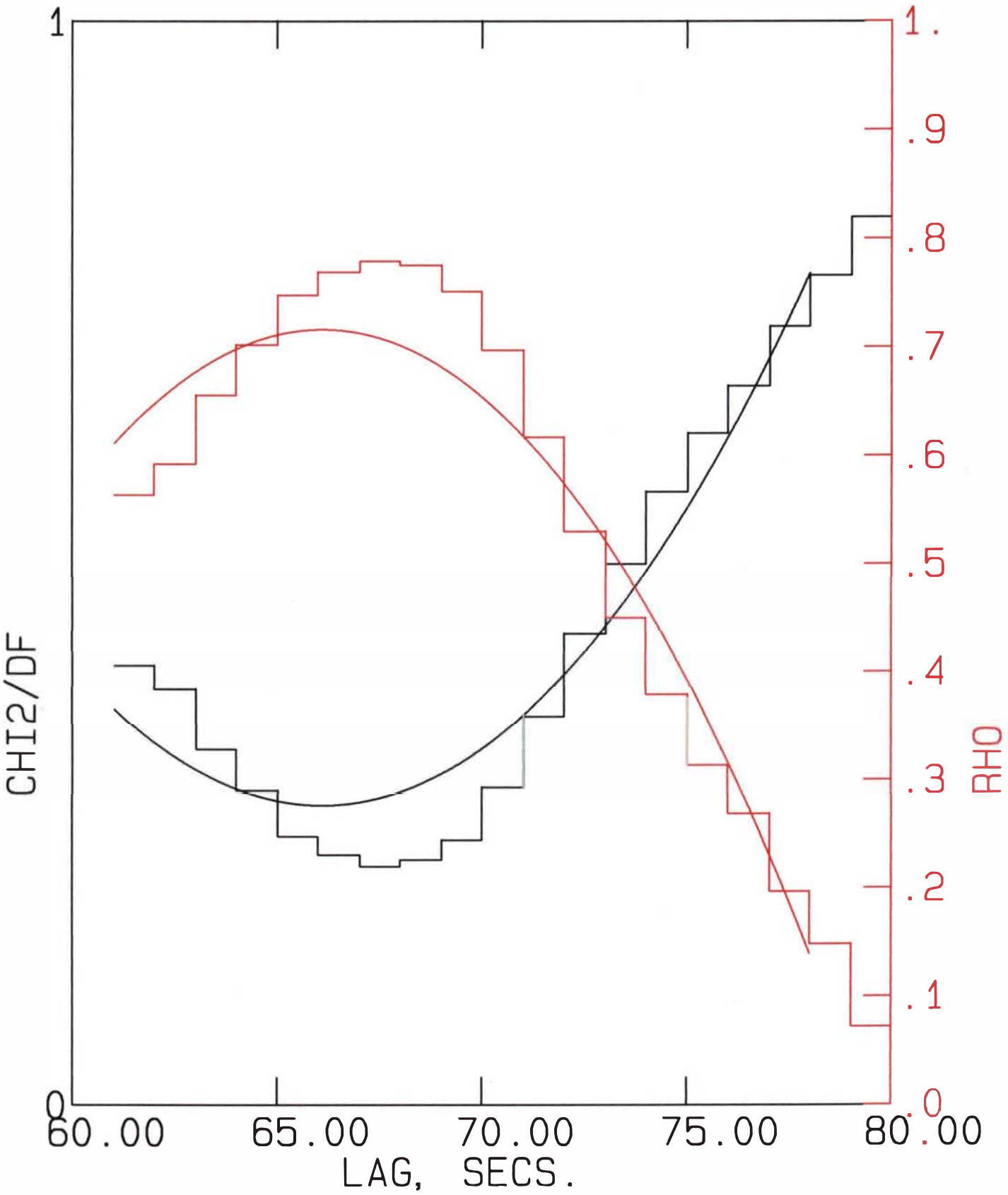
9/ 7/ 2



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


ULYSSES RT-BATSE CORRELATION 1/ 8/97 31388.241 9/ 7/ 2
100
80
60
40
20
0
C/ 2.00003 S
ULYSSES RT
7500
5000
2500
0
C/ 2.00003 S
BATSE
25
50
75
100
125
TIME, SECS

ULYSSES RT-BATSE CORRELATION 1/ 8/97 31388.241

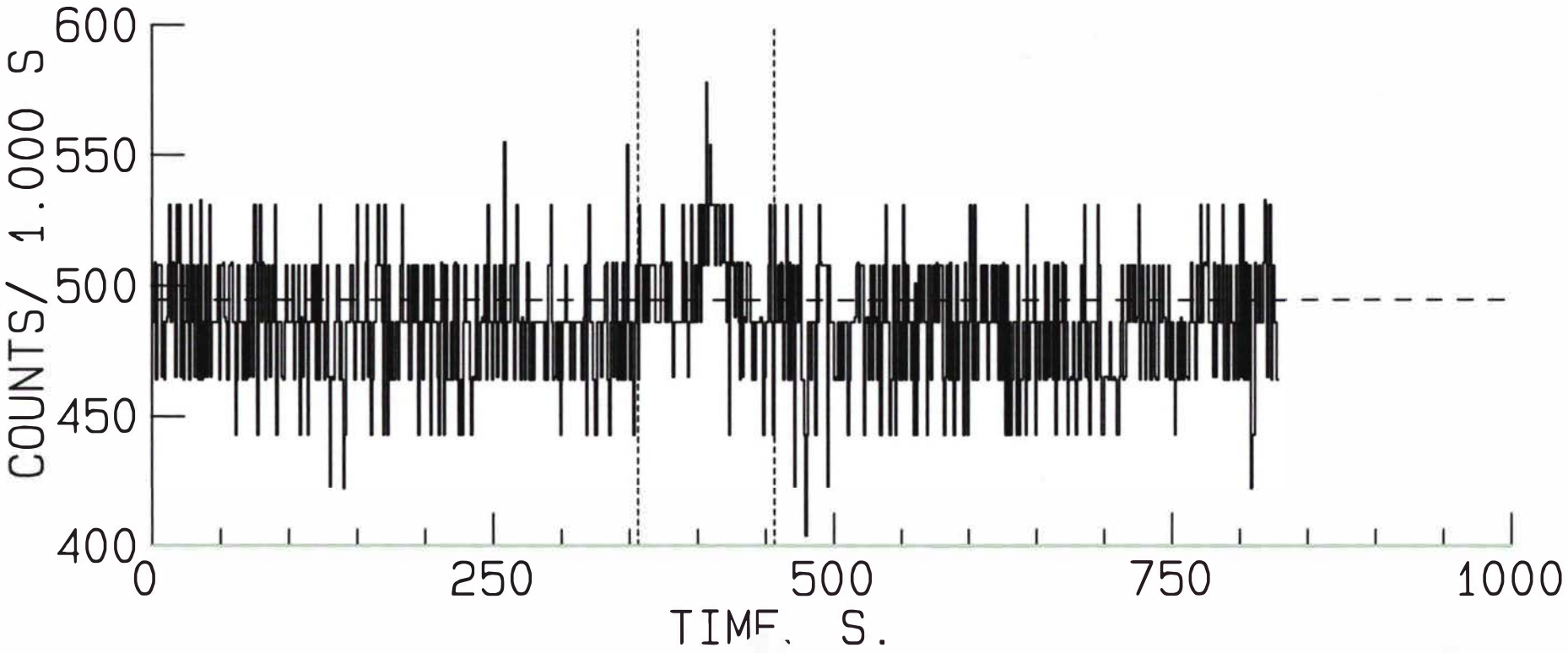


ULYSSES RT 9/ 7/ 2

1/ 8/97 31032.238 s

0.500 S INTERVALS REGROUPED BY 2

22- 147 keV



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
    khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: Ulysses bursts seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hi Kevin,

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

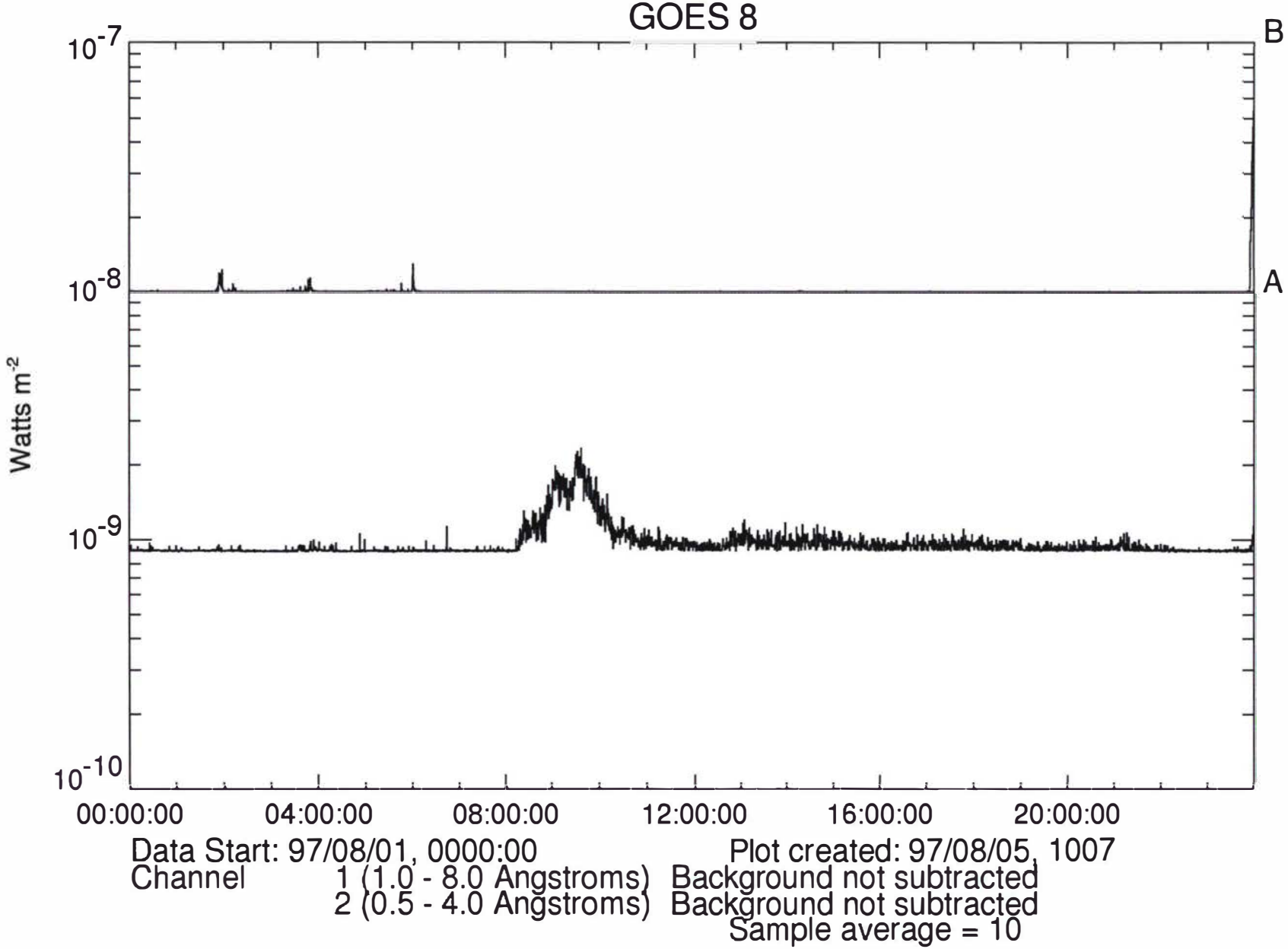
Ulysses burst	TGRS sees?	TGRS characteristics
3/25/97 17:49	YES! TGRS #547	63384 s. 300 cts/s peak 15s dur. (100-300 keV) 100 cts/s peak 15s dur. (35-100 keV)
3/29/97 12:23	NO	
7/2/97 11:49	YES BUT TGRS #582	40631 s. 175 cts/s peak 1s dur. 100-300 keV NOT SEEN in 35-100 keV
7/5/97 15:31	NO	
7/9/97 10:56	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	

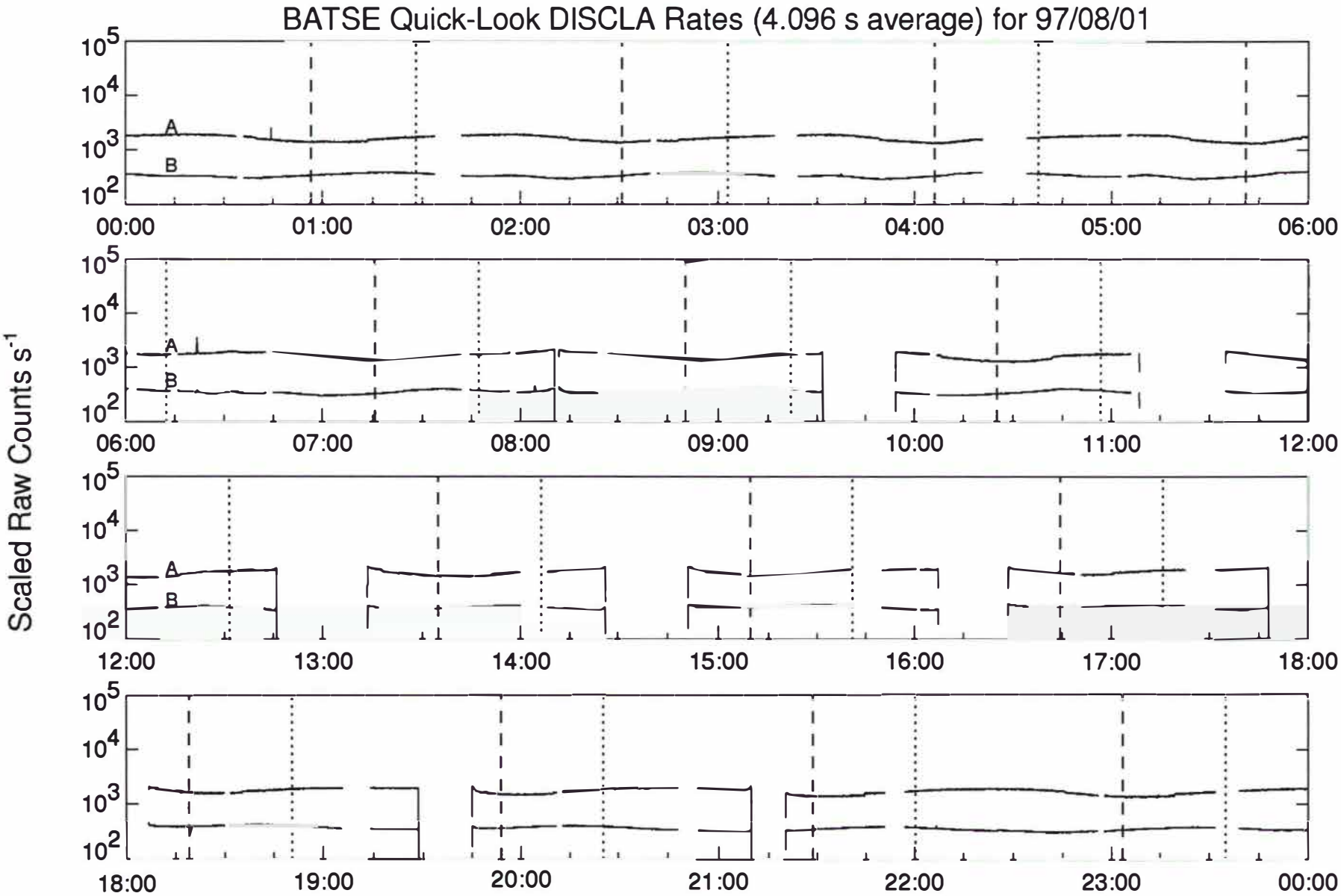
July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
J 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 22:42	moderate 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
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: 97/08/01, 0000:00
Plot created: 97/08/05, 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 97/08/01
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/05, 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

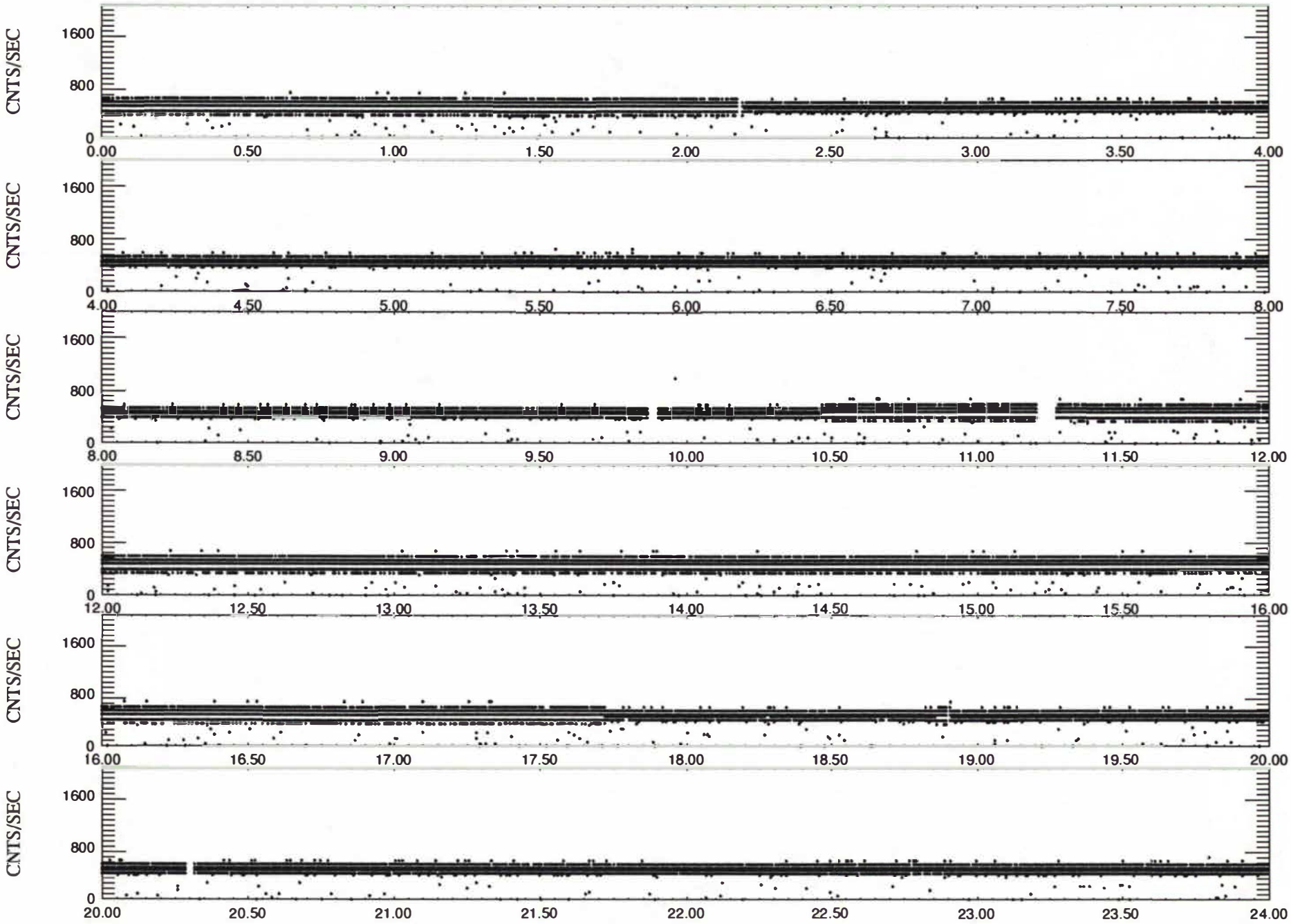
BURST NUMBER 8



UNIV! AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 213, year 1997 to day 213, year 1997 1/6/98

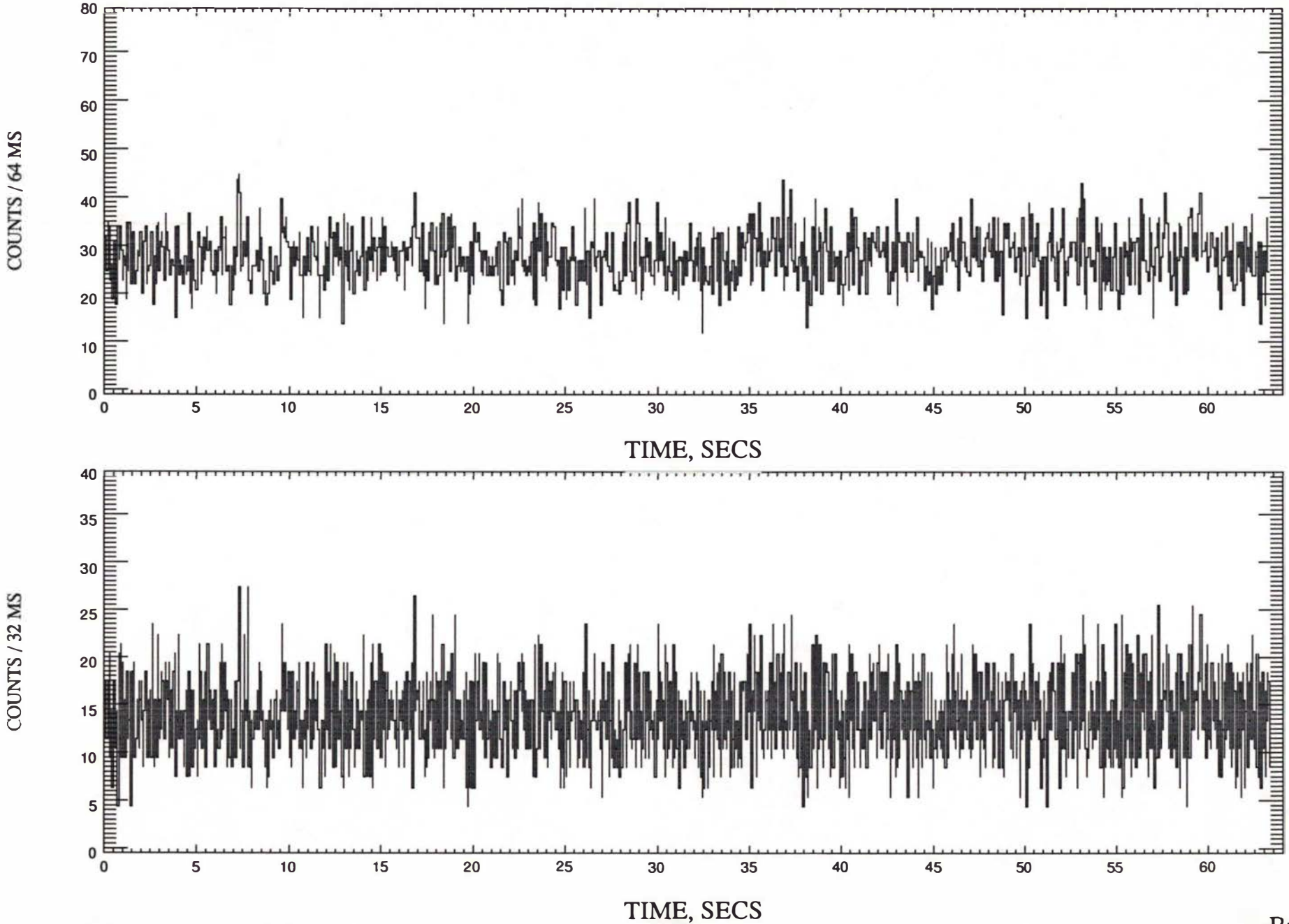
CALIBRATION DATA INCLUDED



UNIV[illegible]AL TIME

HUS 2A TRIGGERED DATA EDR day 213, year 1997 1/7/98

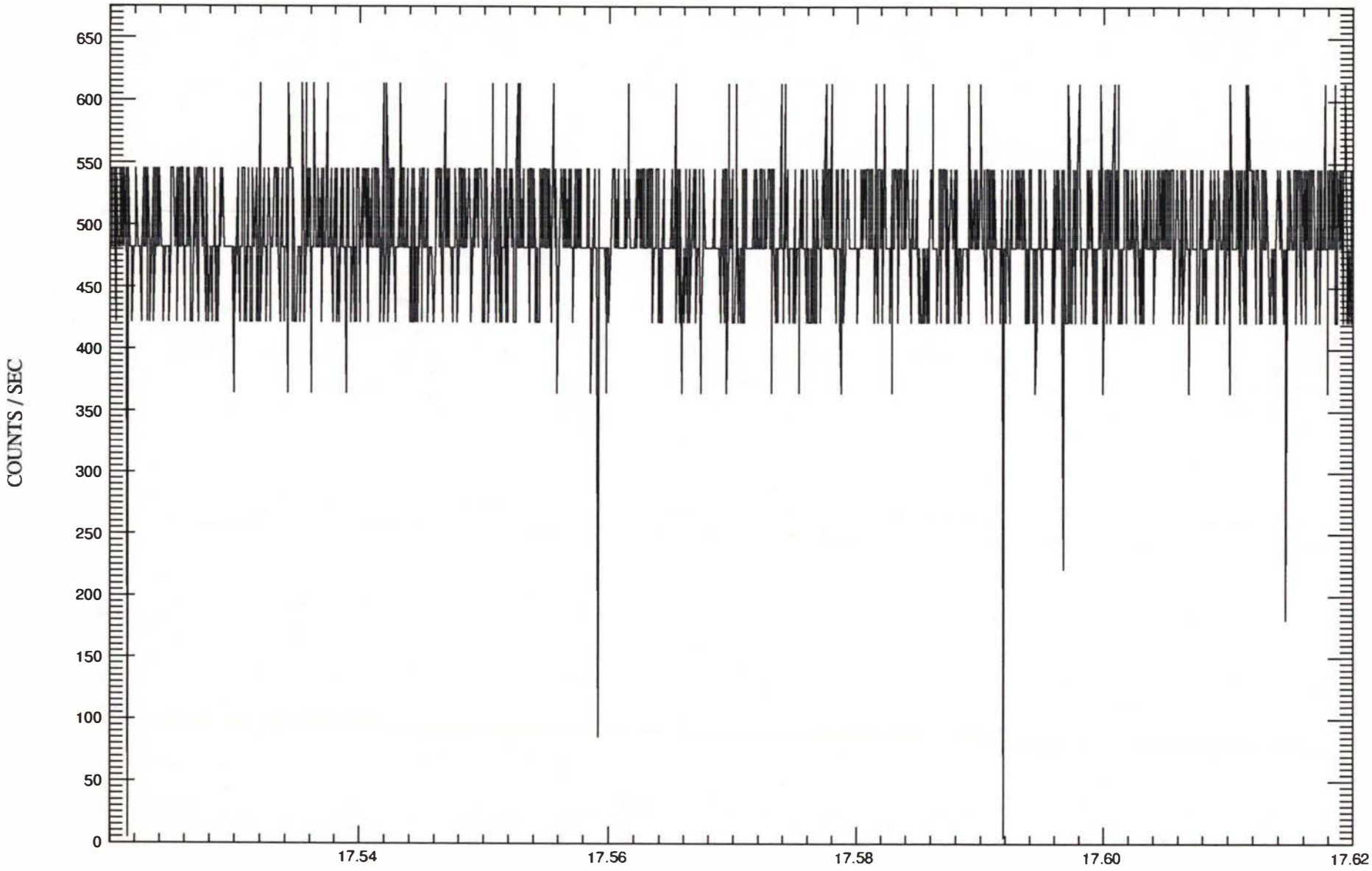
Burst Counter 8 at UT=17.569715338813 h=63250.975 s 17:34:10.975



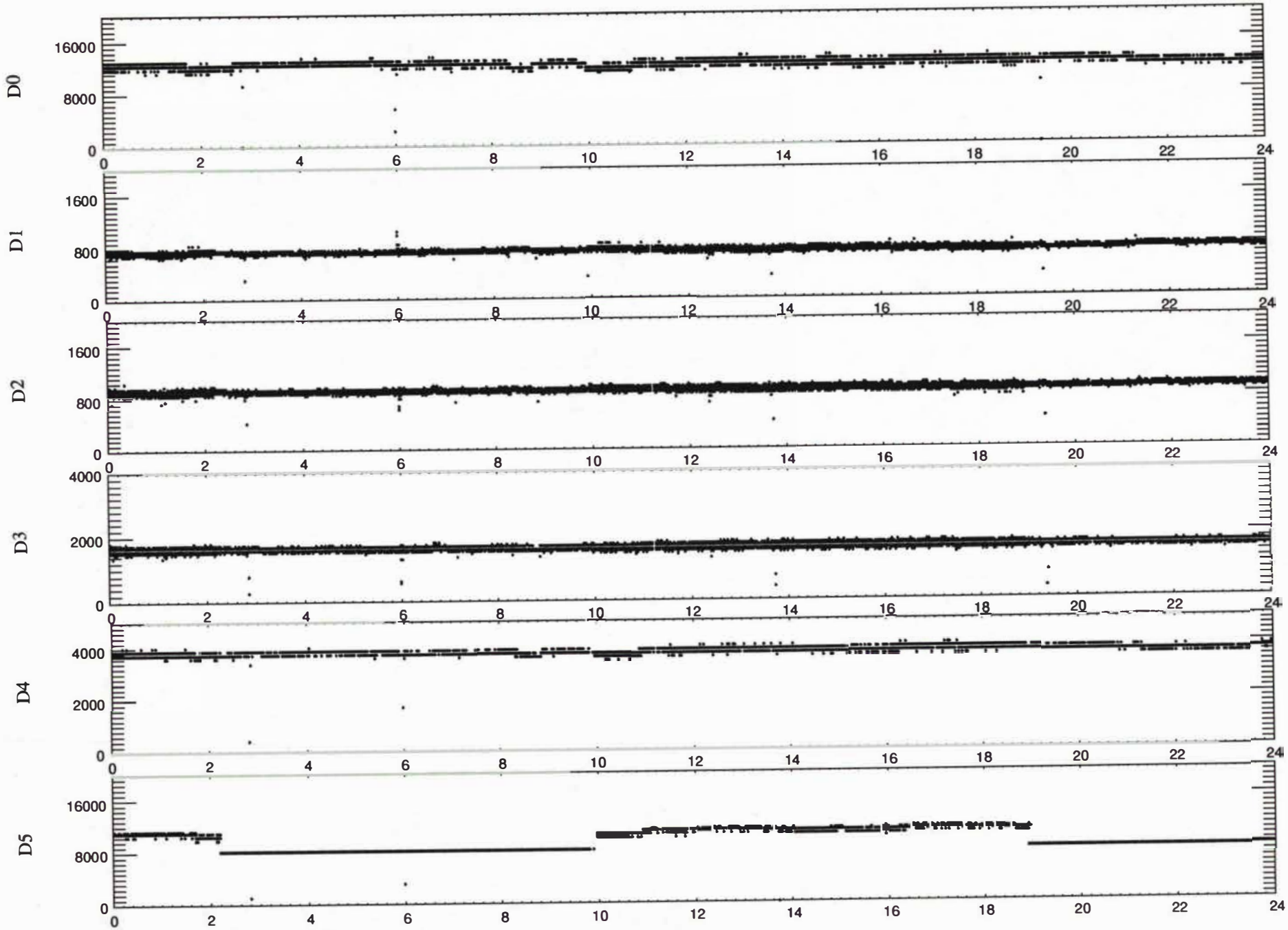
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 213, year 1997 to day 213, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 213, year 1997 to day 213, year 1997 1/6/98



From RICHARDSON@ssl.msfc.nasa.gov Mon Aug 4 10:28 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 KAA06145; Mon, 4 Aug 1997 10:28:46 -0700
n: RICHARDSON@ssl.msfc.nasa.gov
Date: Mon, 4 Aug 1997 12:28:41 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970804122841.2040226b@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6322
Content-Type: text
Content-Length: 1135
Status: R

****
BATSEARCH PROGRAM
****

BATSE BURST # 6322
EVENT OF 1997 AUG 2 DAY OF YEAR=214
EVENT CROSSING TIME AT BATSE : 12328. S. OR 03:25:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 215.000 3.000
BATSE PEAK COUNTING RATE: 8000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 8/ 97 IS:
RA= 157.235 DEC= 22.168 DIST= 6.119 AU
BATSE-ULYSSES DISTANCE = 915393406. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1566.49 SECS.
CROSSING TIME AT ULYSSES IS 10762. S. OR 02:59:21 +/- 481.25 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 8/ 97 IS:
RA= 200.732 DEC= -9.178 DIST= 1.470 AU
MARS-BATSE DISTANCE = 219864992. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=161.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -694.58 SECS.
CROSSING TIME AT MARS IS 11633. S. OR 03:13:53 +/- 30.32 SECONDS

BATSE BURST TRIGGER
NO.: 6322

TIME: TJD=0662 SECONDS=12328

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=139.9 AZIMUTH=345.0 ERROR=2.2 DEGREES

COMMENTS:
GRB. LOTS OF STRUCTURE. DUR.~6.5 SEC. NOT VISIBLE ABOVE 300KEV.

SE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6322	970802	10662	12328	8000	215	+03	6.5

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

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

..0405    095U85440   UL@23:44@2200LS,MOD BURST, 5SEC (SEE NEXT LINE)
970406    096  1060.9 KONUS (MOD.STRONG,MULT.PKS,15S) (13:NR, SECONDARY PEAKS?)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BATSE BURST# 6322

ULYSSES RT 4/ 8/97

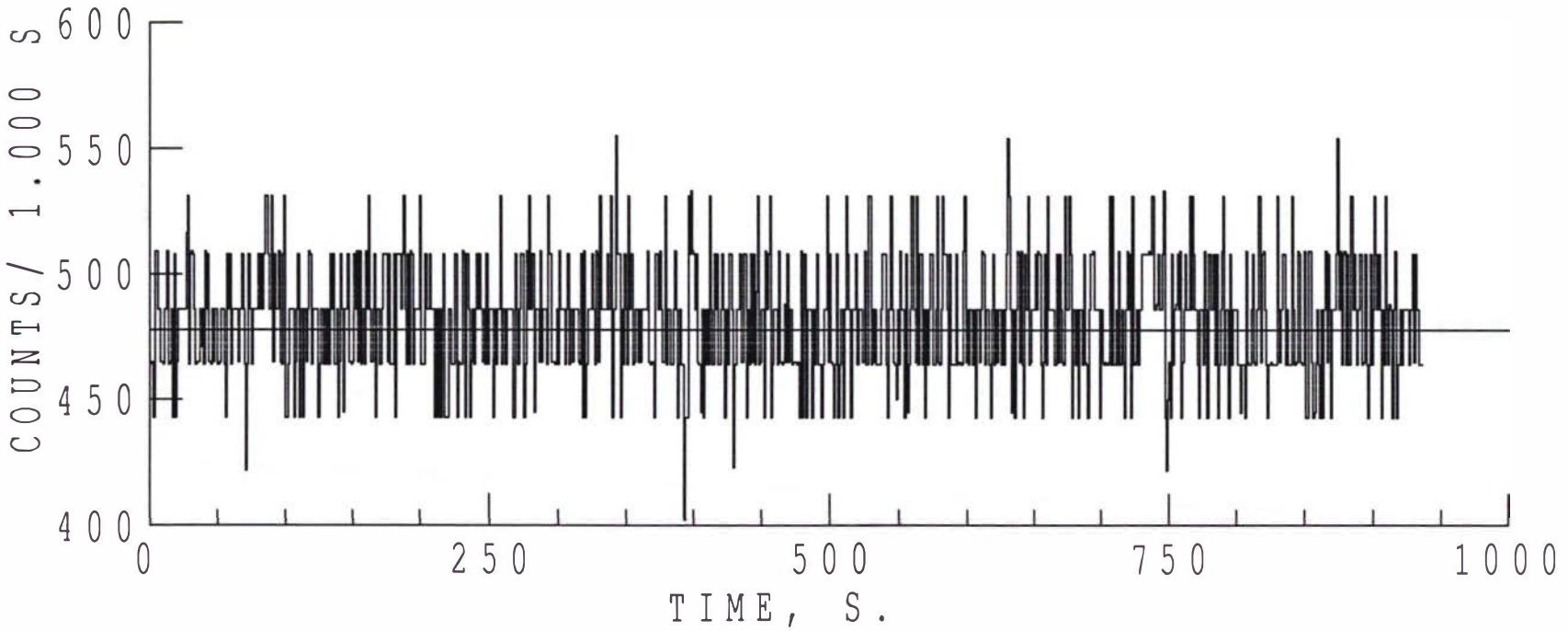
2/ 8/97 10296.488 s

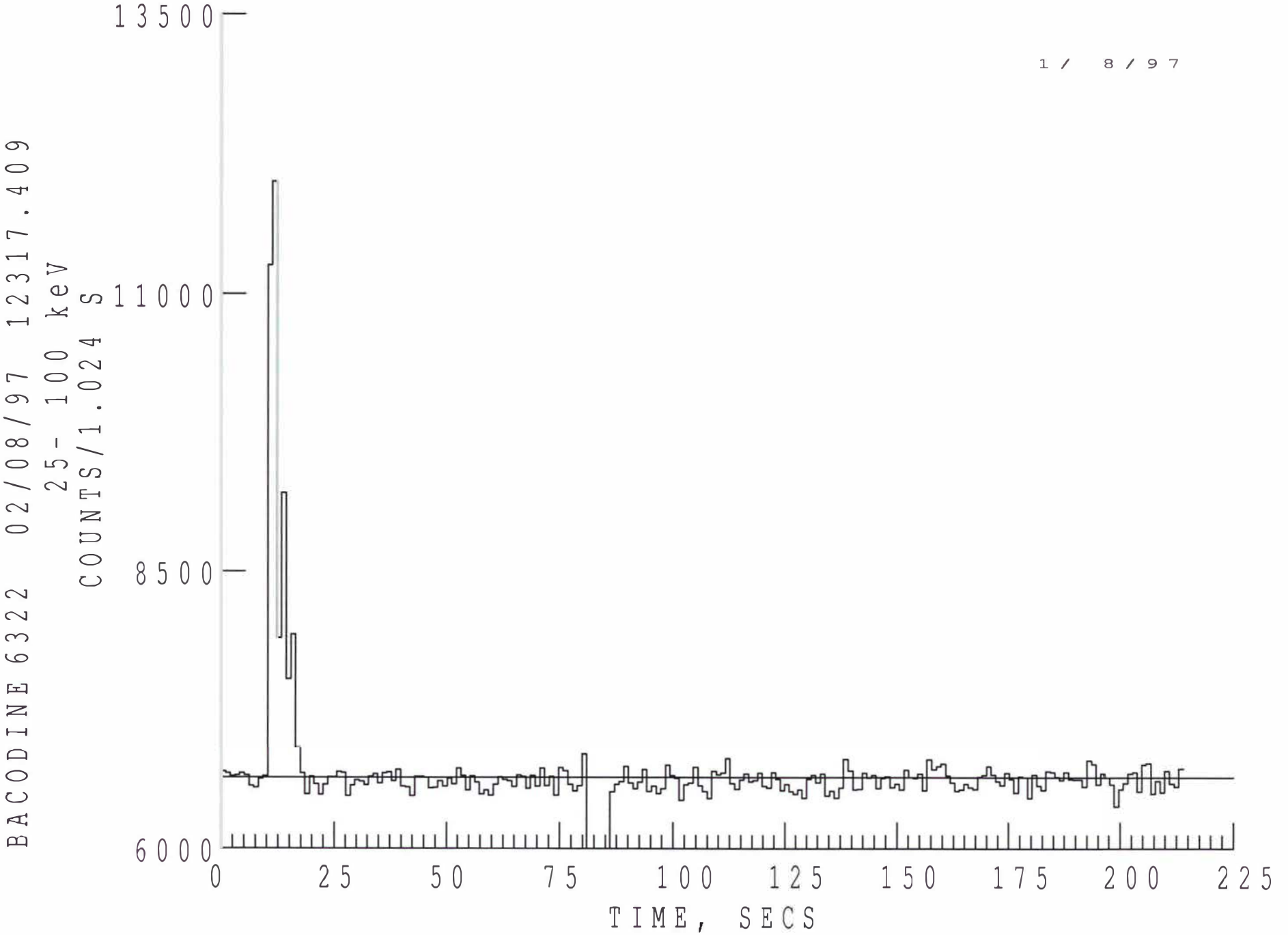
0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6322 02/08/97 123117.409
25- 100 keV
COUNTS/1.024 S
13500
11000
8500
6000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
1/ 8/97

From RICHARDSON@ssl.msfc.nasa.gov Mon Aug 4 10:30 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 KAA06173; Mon, 4 Aug 1997 10:30:11 -0700
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Mon, 4 Aug 1997 12:30:07 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970804123007.2040226b@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6323
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6323
EVENT OF 1997 AUG 2 DAY OF YEAR=214
EVENT CROSSING TIME AT BATSE : 60901. S. OR 16:55:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 102.000 -2.000
BATSE PEAK COUNTING RATE: 5500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 8/ 97 IS:
RA= 157.312 DEC= 22.106 DIST= 6.123 AU
BATSE-ULYSSES DISTANCE = 916009525. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1569.94 SECS.
CROSSING TIME AT ULYSSES IS 59331. S. OR 16:28:51 +/- 481.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 8/ 97 IS:
RA= 200.732 DEC= -9.178 DIST= 1.470 AU
MARS-BATSE DISTANCE = 219864992. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 105.77 SECS.
CROSSING TIME AT MARS IS 61007. S. OR 16:56:46 +/- 127.60 SECONDS

BATSE BURST TRIGGER
NO.: 6323

TIME: TJD=0662 SECONDS=60901

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=27.5 AZIMUTH=1.3 ERROR=4.3 DEGREES

COMMENTS:
GRB. THREE MAIN PULSES WITH STRUCTURE. DUR.~ 25 SEC.
NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6323	970802	10662	60901	5500	102	-02	25

BACODINE# 6323

ULYSSES RT 4/ 8/97

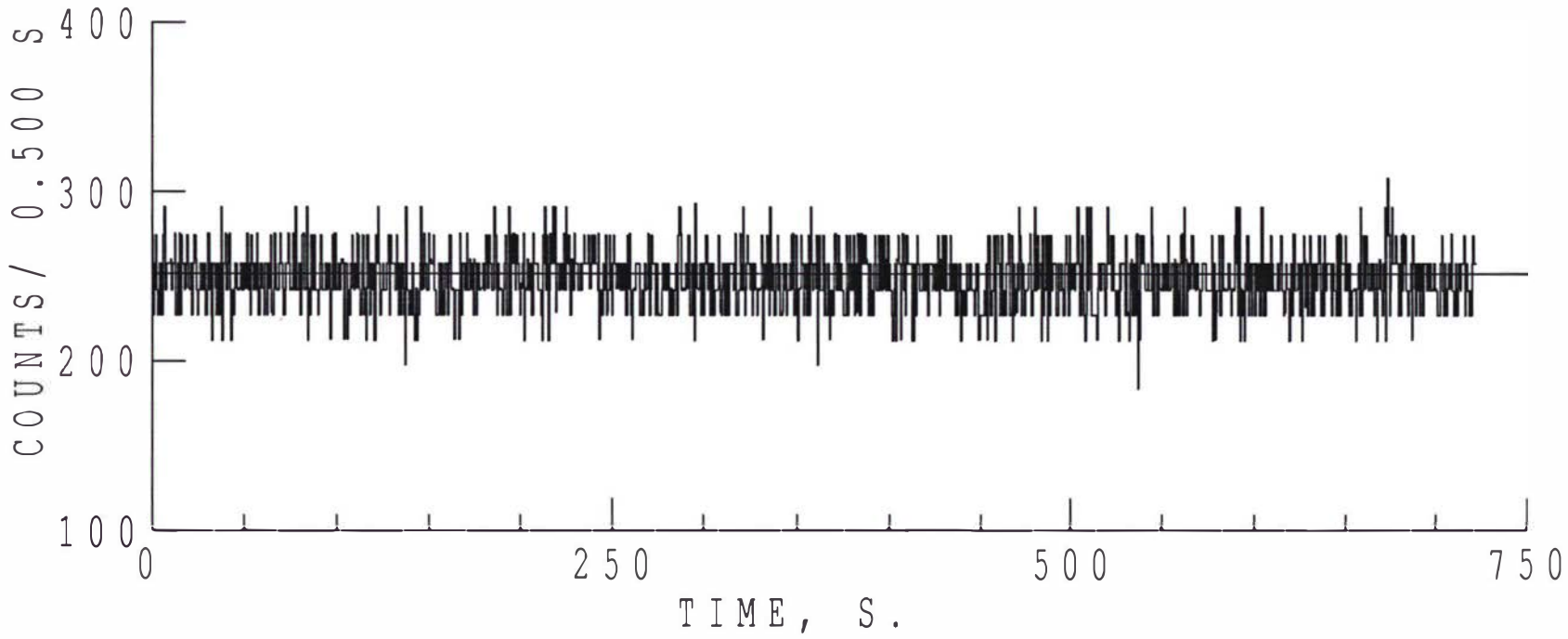
2/ 8/97 58929.305 s

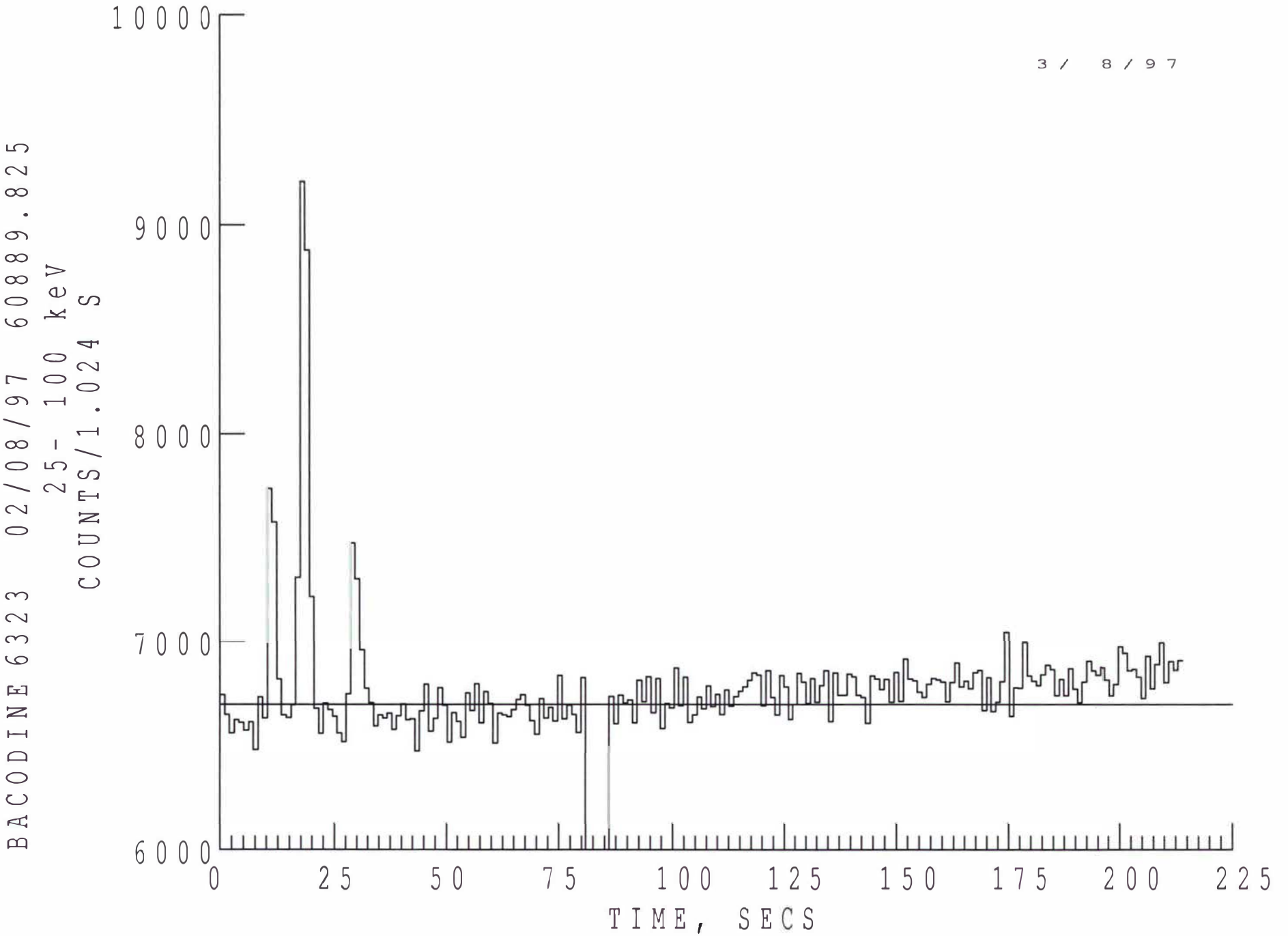
0.250 S INTERVALS REGROUPED BY 2

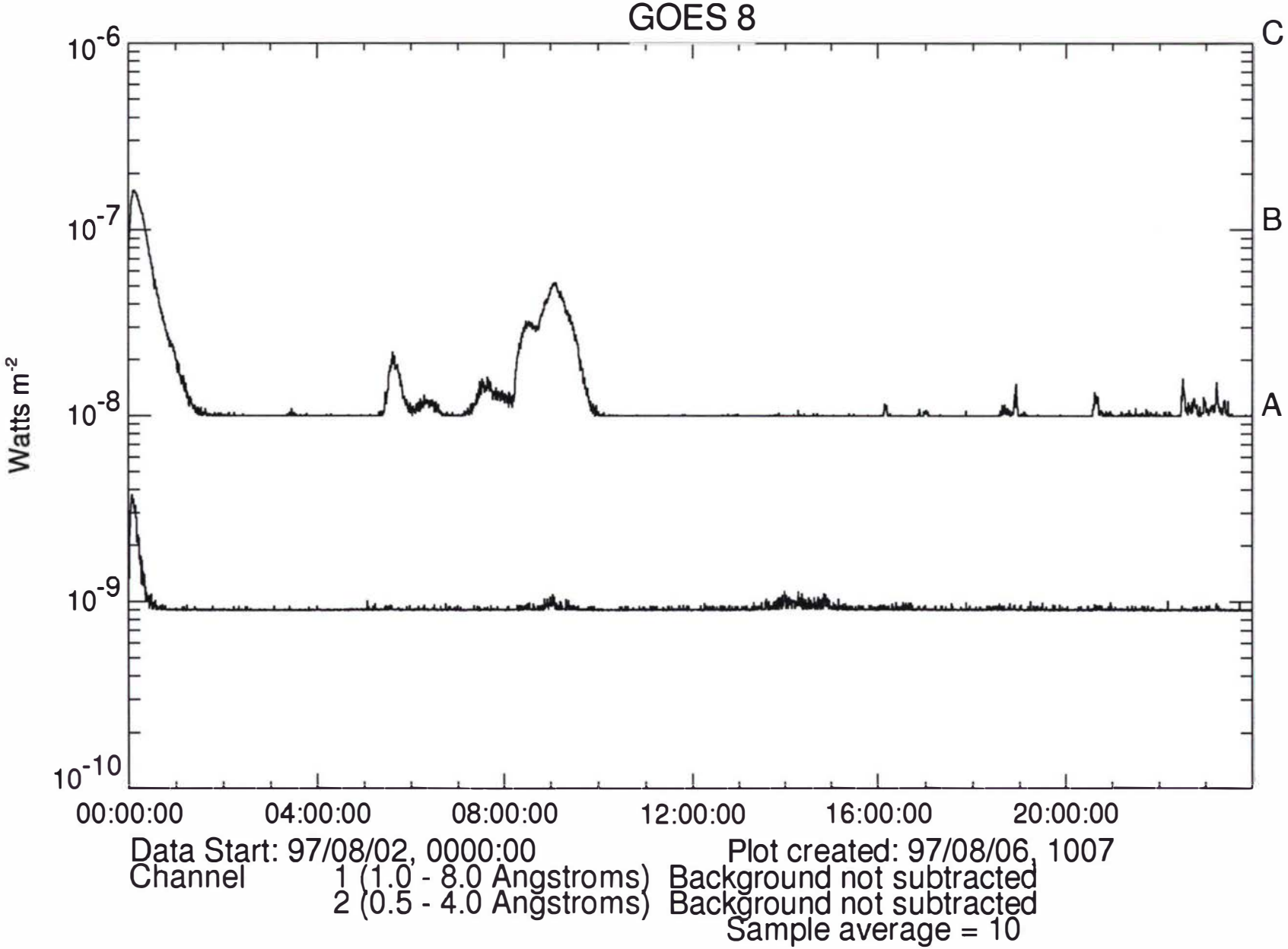
0- 0 keV

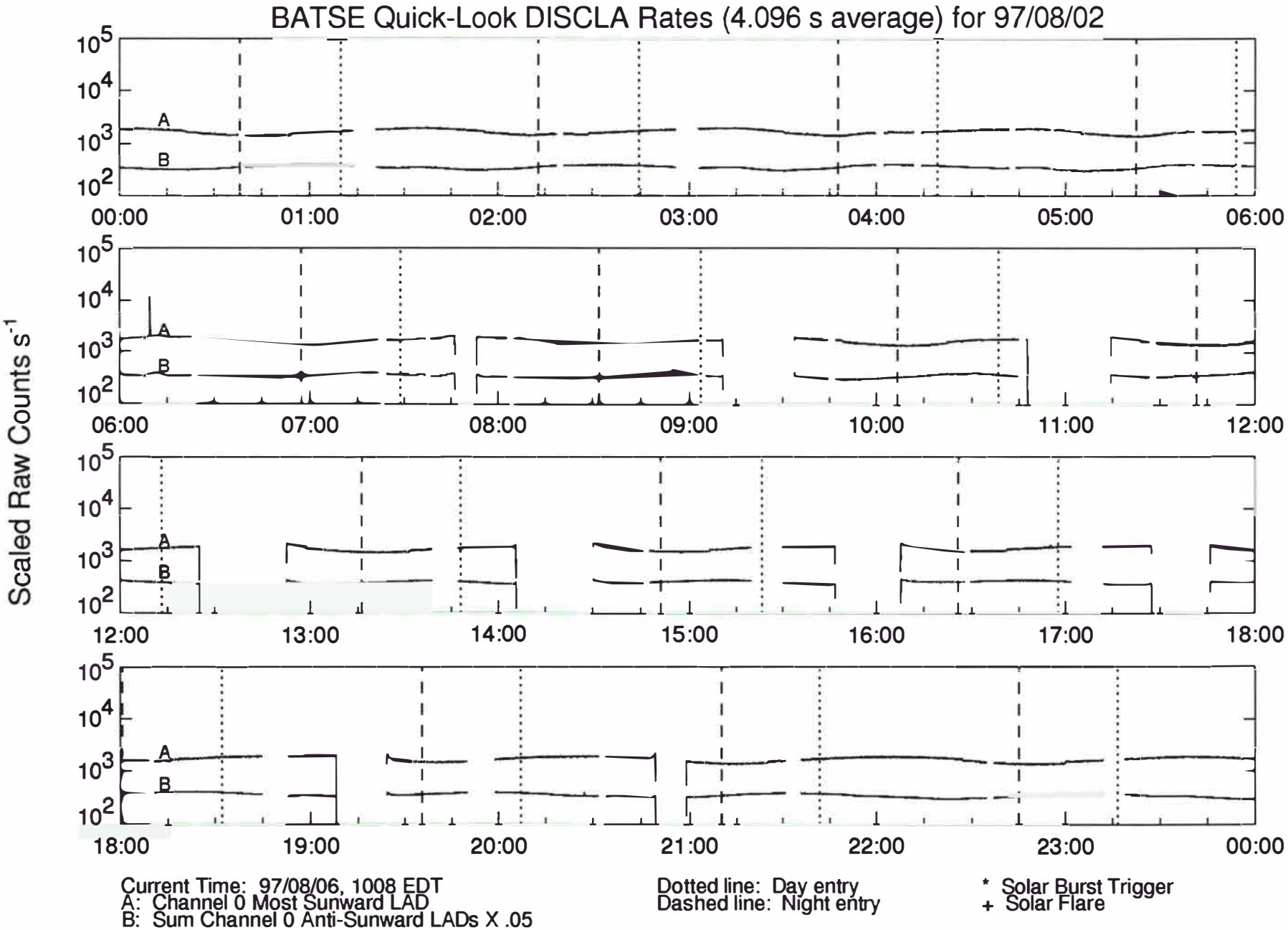
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

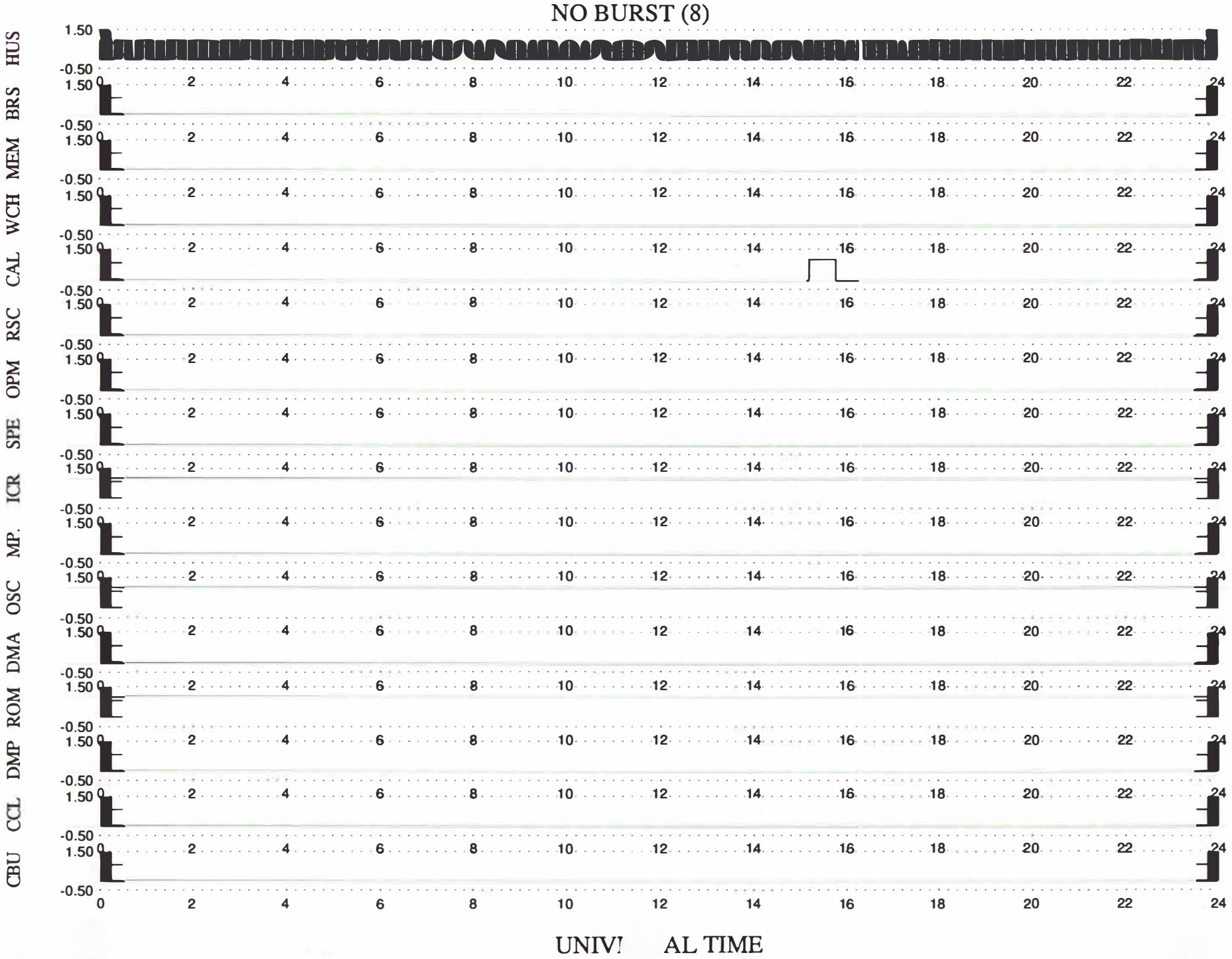



BACODINE 6323 02/08/97 60889.825
25- 100 keV
COUNTS/1.024 S
10000
9000
8000
7000
6000
0
25
50
75
100
125
150
175
200
225
TIME, SECS
3 / 8 / 97


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: 97/08/02, 0000:00
Plot created: 97/08/06, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

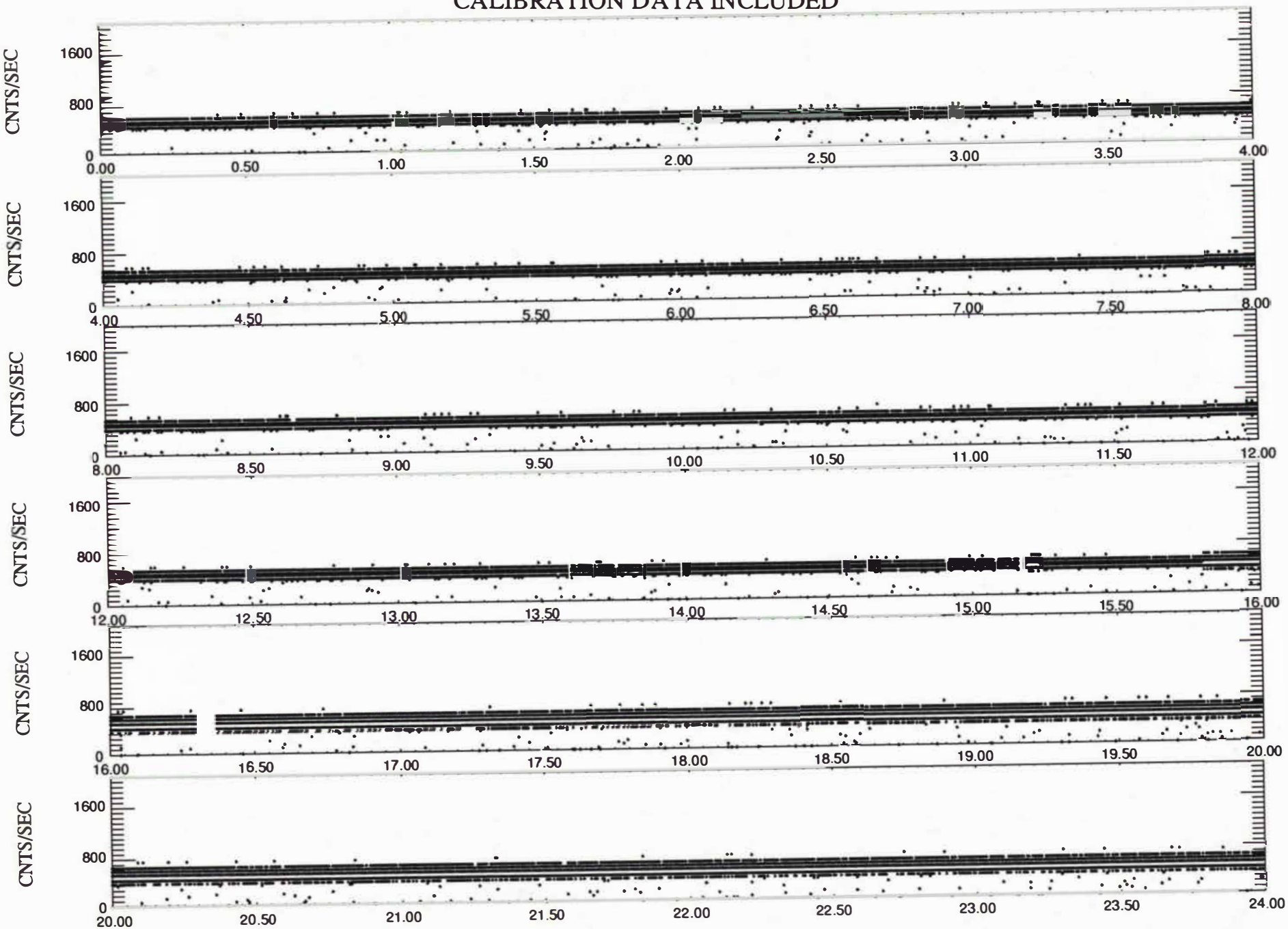

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/02
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/08/06, 1008 EDT
A: Channel 0 Most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

HUS MODES EDR day 214, year 1997 to day 214, year 1997 1/6/98



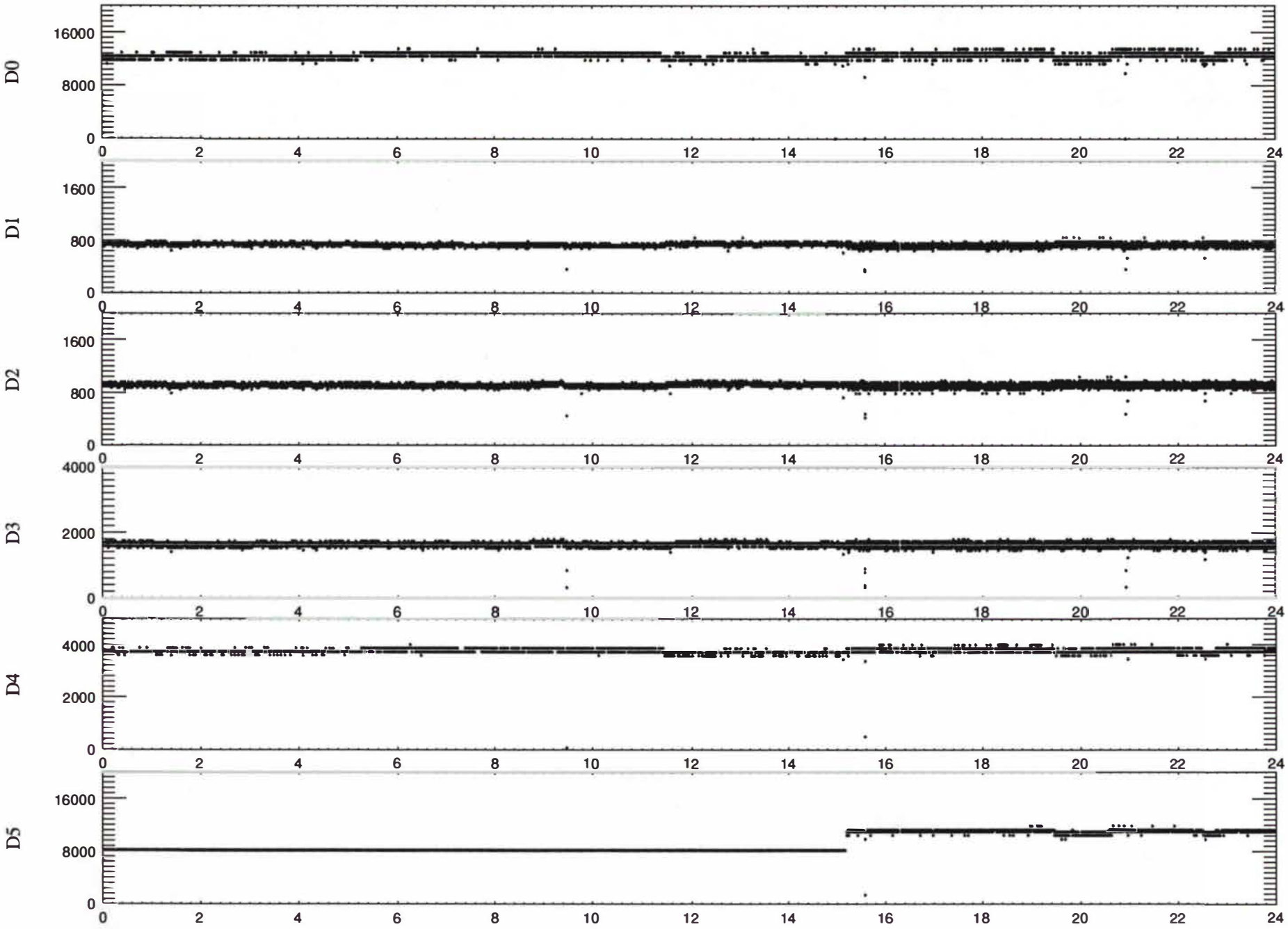
HUS 2A, MODE 1, NOT AVERAGED EDR day 214, year 1997 to day 214, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 214, year 1997 to day 214, year 1997 1/6/98



From SAHI@fender.msfc.nasa.gov Mon Aug 4 09:59 PDT 1997
From: SAHI@fender.msfc.nasa.gov
Date: Mon, 4 Aug 1997 11:58:37 -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.: 6324

TIME: TJD=0663 SECONDS=61602

TYPE: SAA ENT SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From SAHI@fender.msfc.nasa.gov Tue Aug 5 12:42 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 MAA16861; Tue, 5 Aug 1997 12:42:56 -0700
n: SAHI@fender.msfc.nasa.gov
Date: Tue, 5 Aug 1997 14:42:31 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970805144231.20a01797@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6325
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6325
EVENT OF 1997 AUG 3 DAY OF YEAR=215
EVENT CROSSING TIME AT BATSE : 66536. S. OR 18:28:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 146.000 60.000
BATSE PEAK COUNTING RATE: 22000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 8/ 97 IS:
RA= 157.460 DEC= 21.988 DIST= 6.131 AU
BATSE-ULYSSES DISTANCE = 917148314. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2382.08 SECS.
CROSSING TIME AT ULYSSES IS 64154. S. OR 17:49:13 +/- 347.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 8/ 97 IS:
RA= 201.278 DEC= -9.410 DIST= 1.476 AU
MARS-BATSE DISTANCE = 220803264. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -102.65 SECS.
CROSSING TIME AT MARS IS 66433. S. OR 18:27:13 +/- 125.06 SECONDS

BATSE BURST TRIGGER
NO.: 6325

TIME: TJD=0663 SECONDS=66536

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

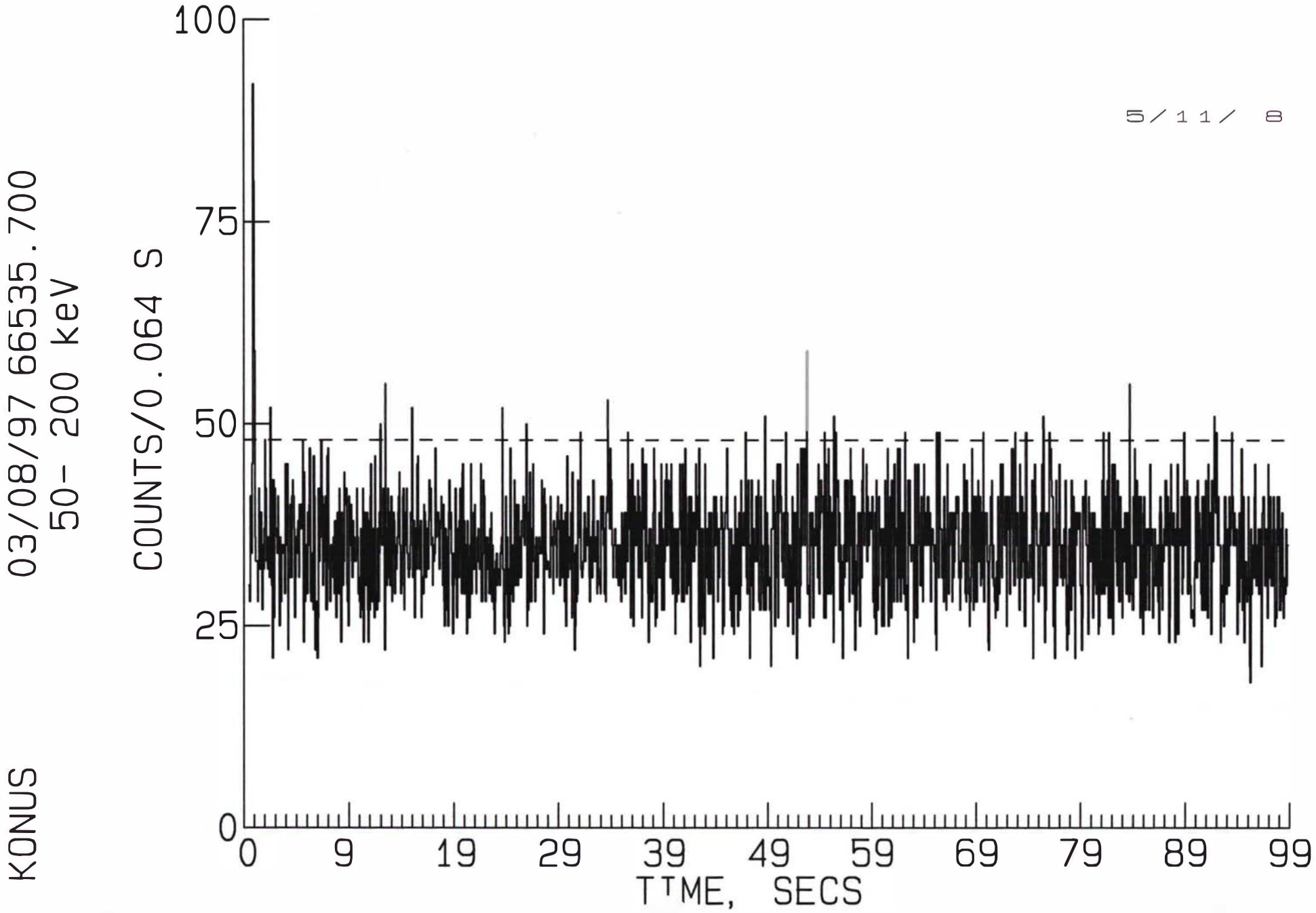
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=87.9 AZIMUTH=51.2 ERROR=2.16 DEGREES

COMMENTS:
FAST, DUR.~0.3 SECS. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6325	970803	10663	66536	22000	146	+60	.3

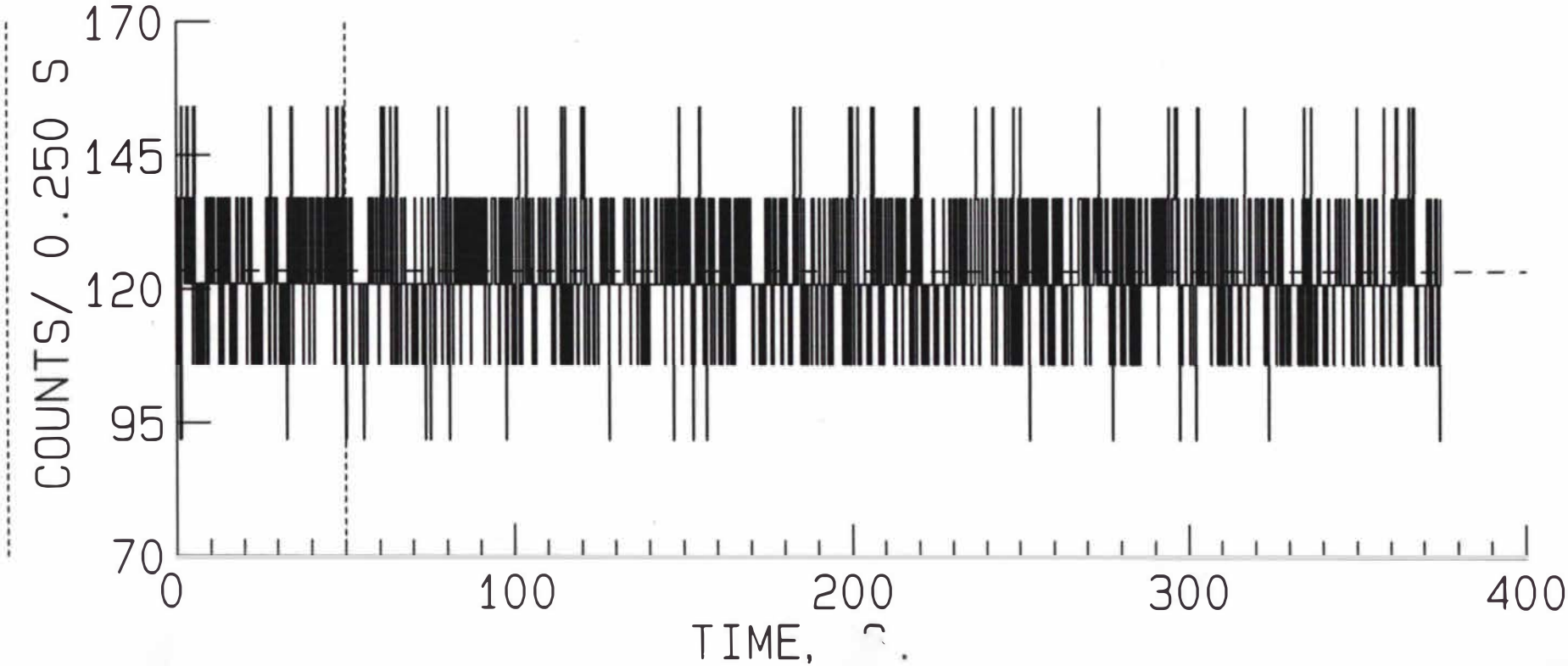

KONUS
03/08/97 66535.700
50- 200 keV
COUNTS/0.064 S
100
75
50
25
0
0
9
19
29
39
49
59
69
79
89
99
TTME, SECS
5/11/ 8

ULYSSES RT

12/ 1/98

3/ 8/97 63792.100 s

22- 147 keV

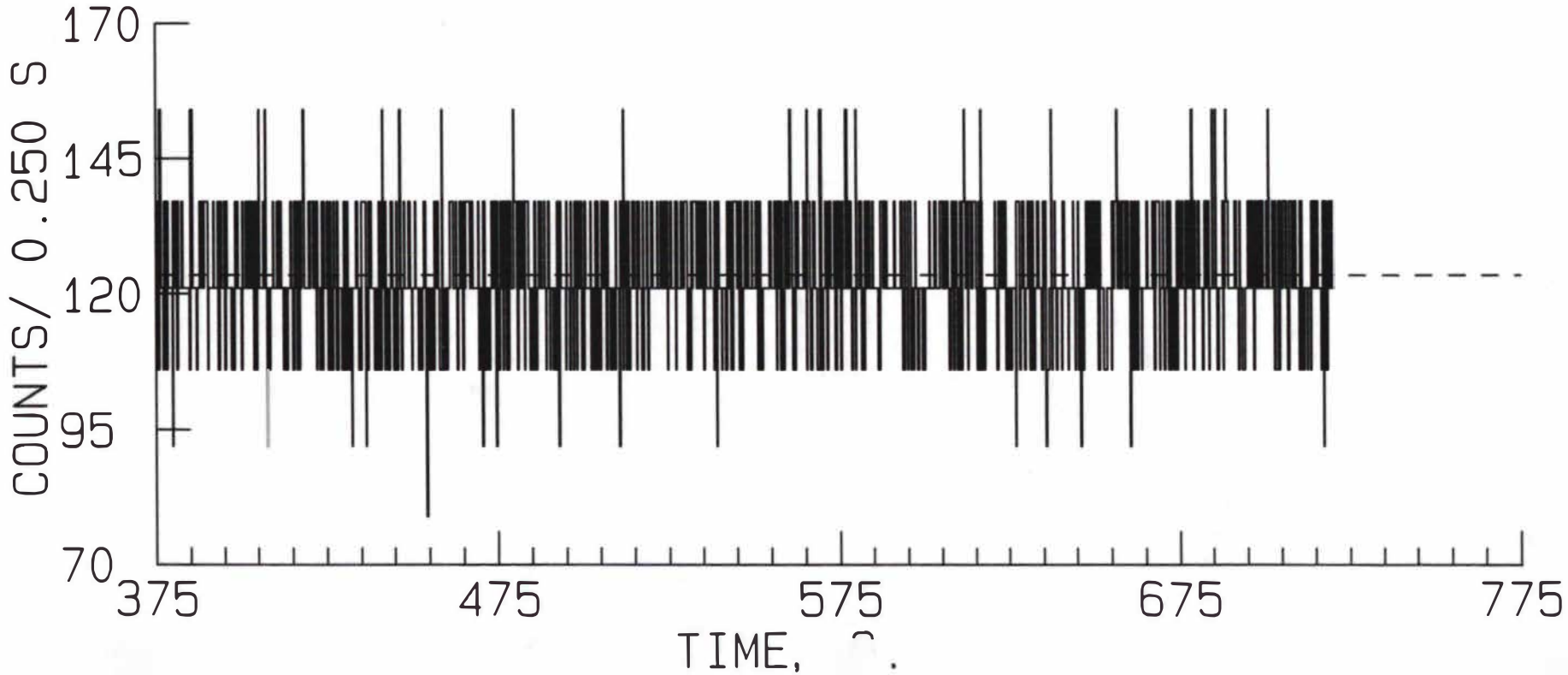


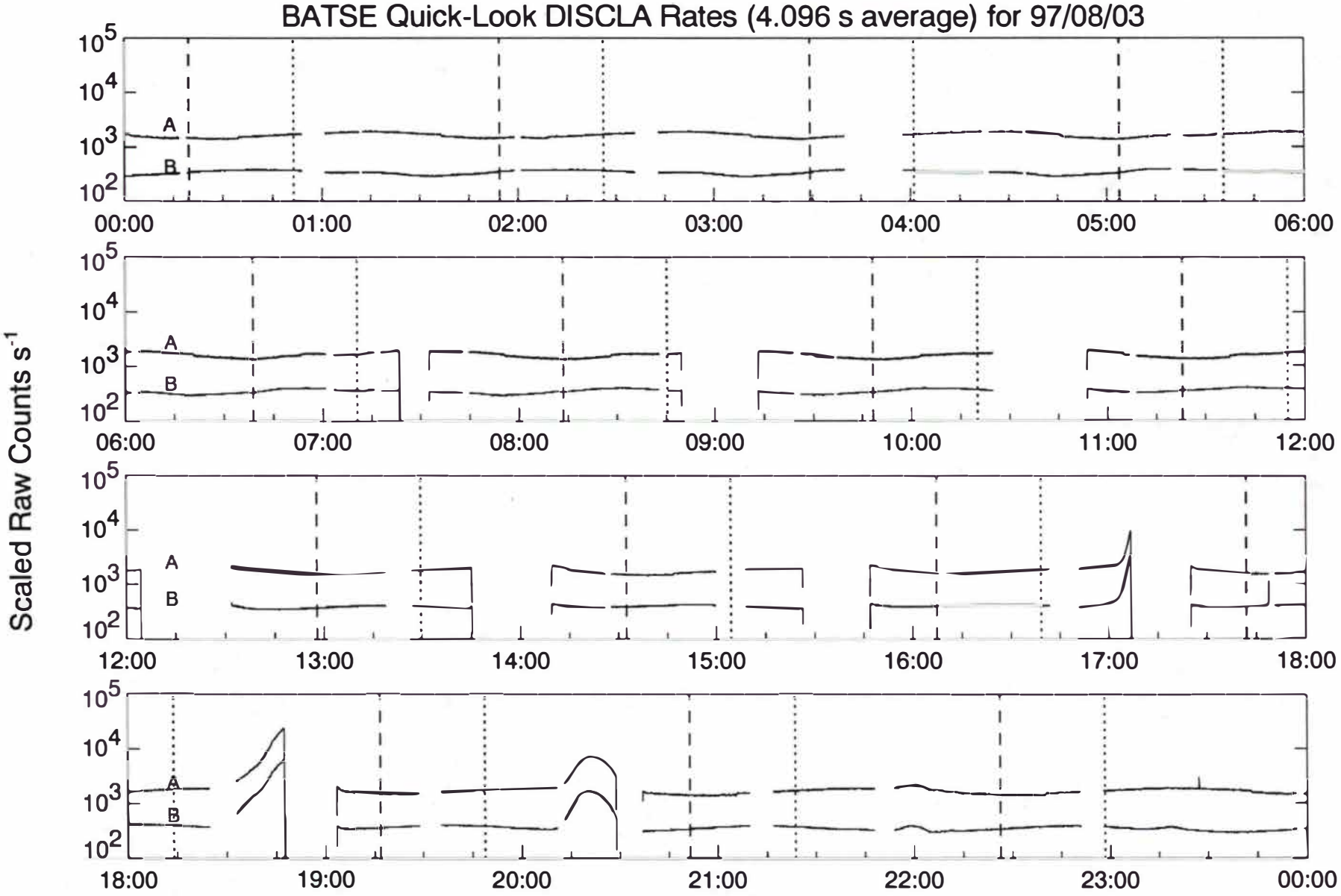
ULYSSES RT

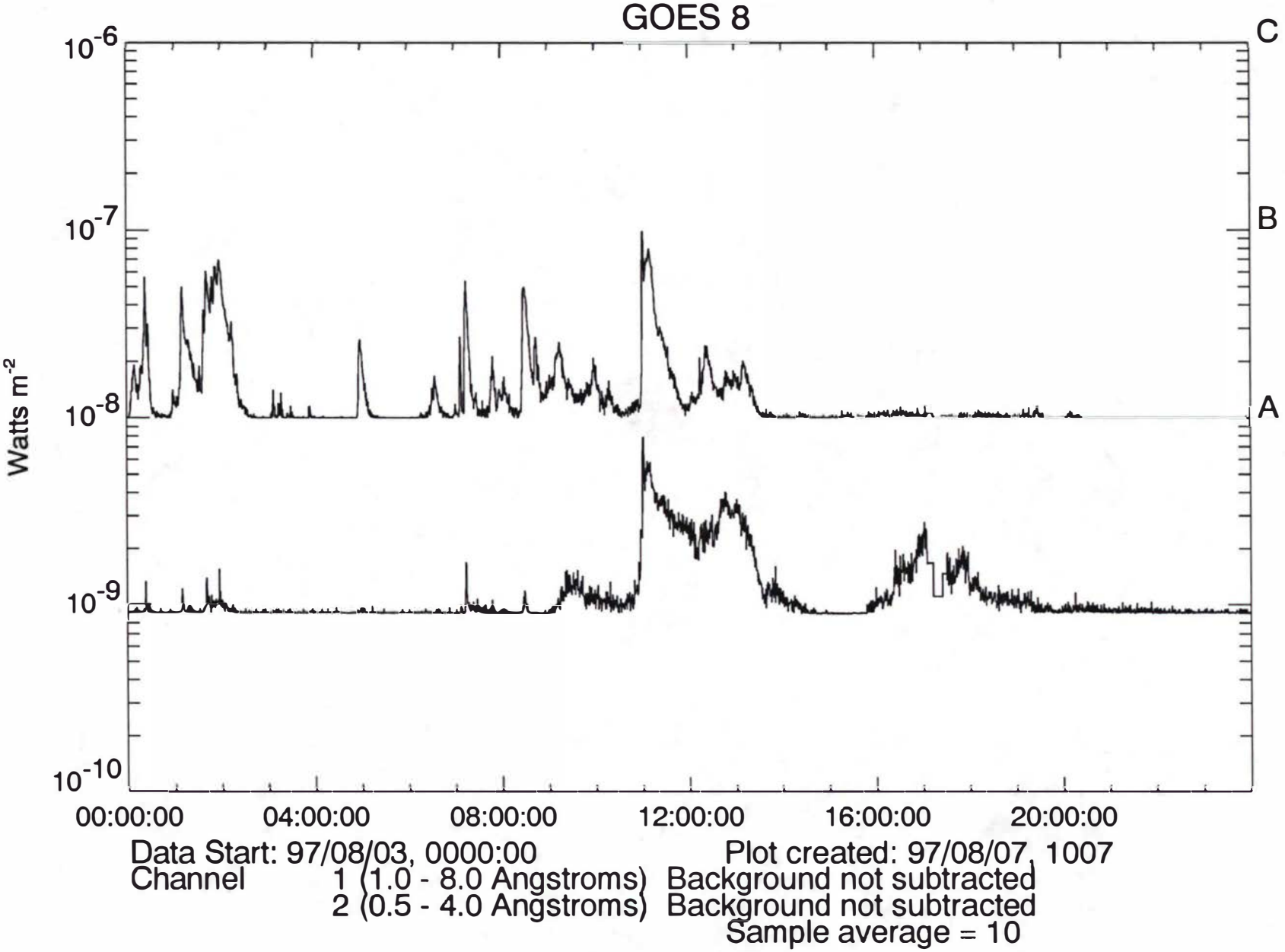
12/ 1/98

3/ 8/97 63792.100 s

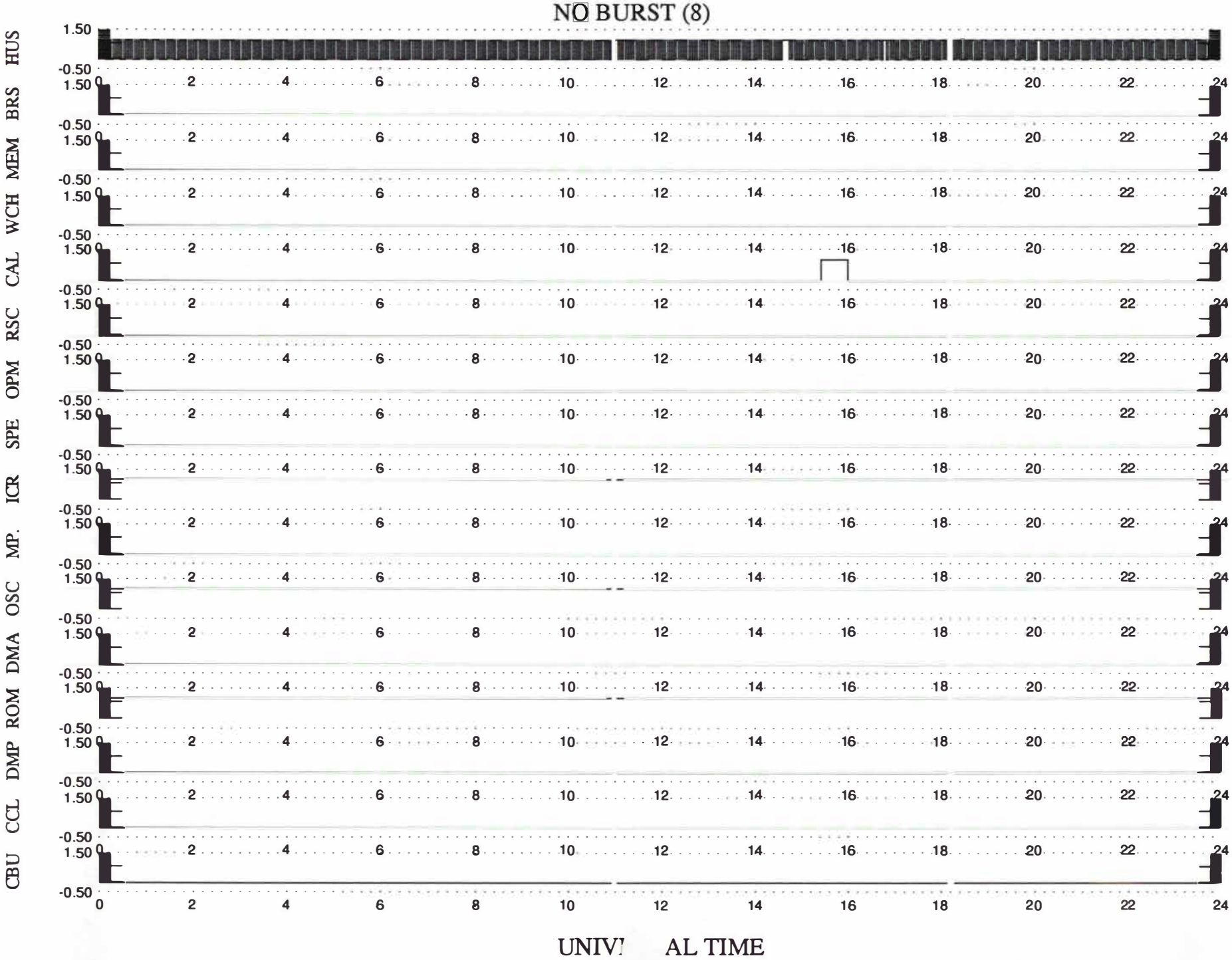
22- 147 keV




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/03
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: 97/08/07, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

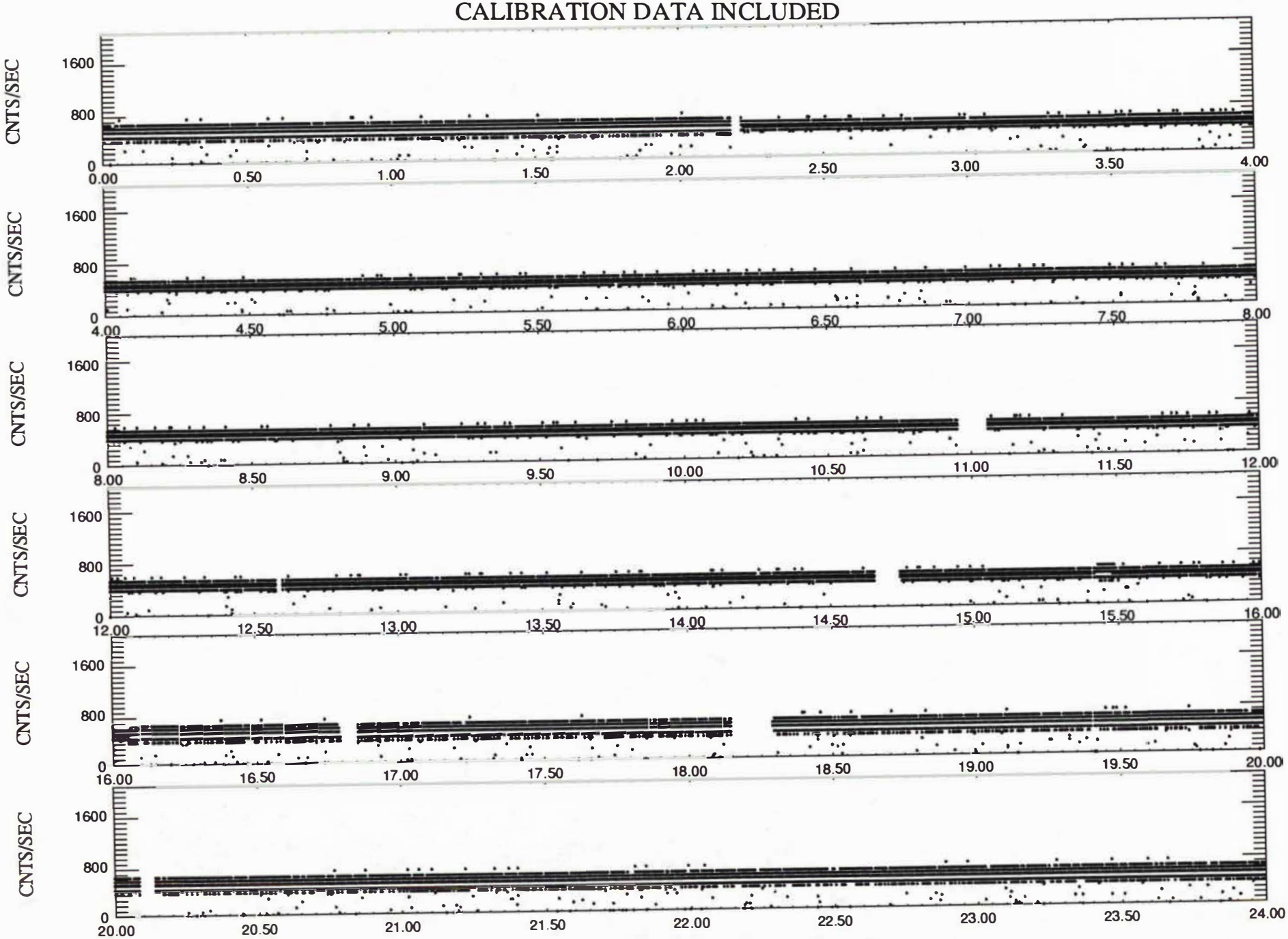

GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/08/03, 0000:00
Plot created: 97/08/07, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average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

HUS MODES EDR day 215, year 1997 to day 215, year 1997 1/6/98



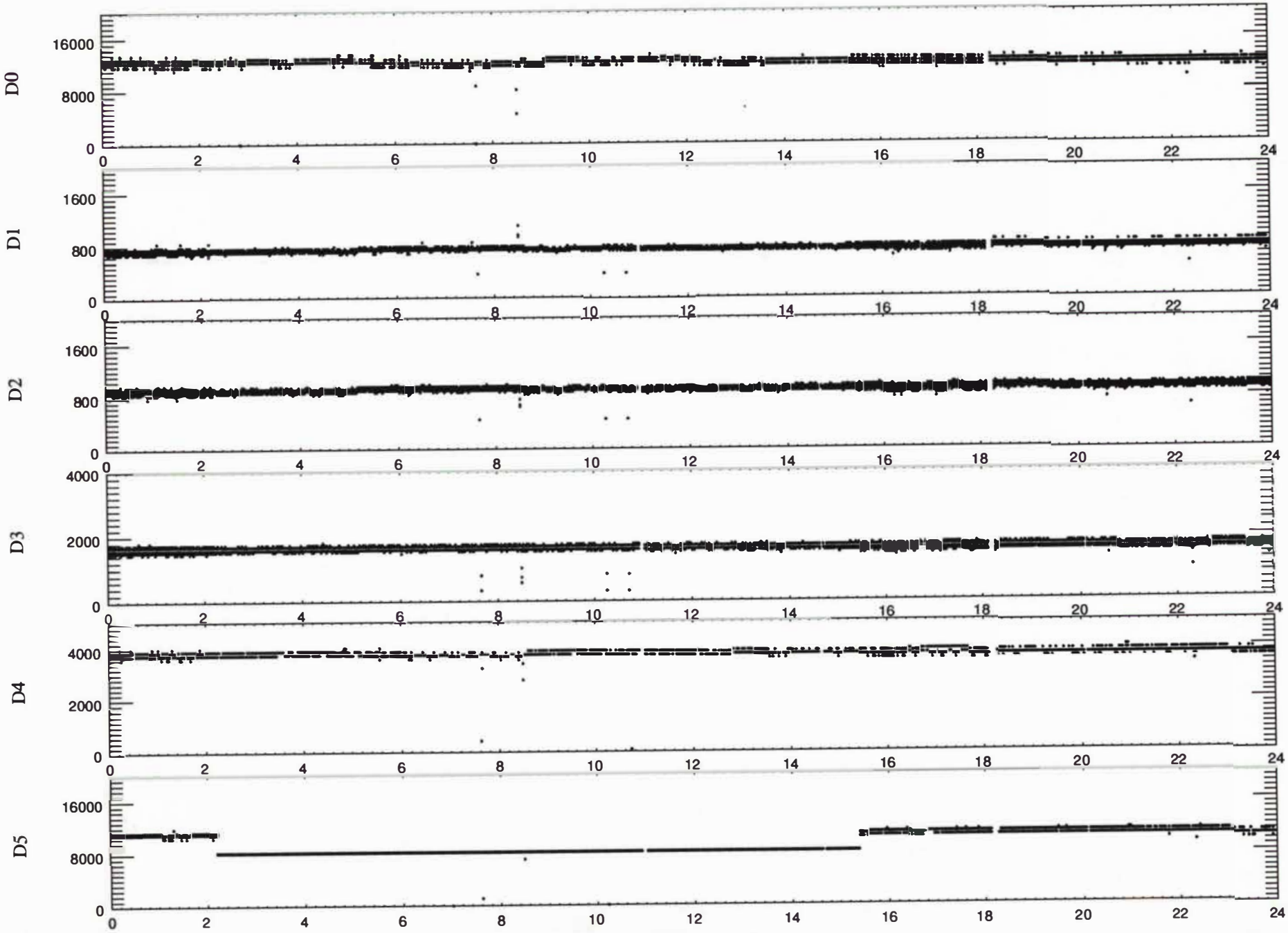
HUS 2A, MODE 1, NOT AVERAGED EDR day 215, year 1997 to day 215, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 215, year 1997 to day 215, year 1997 1/6/98



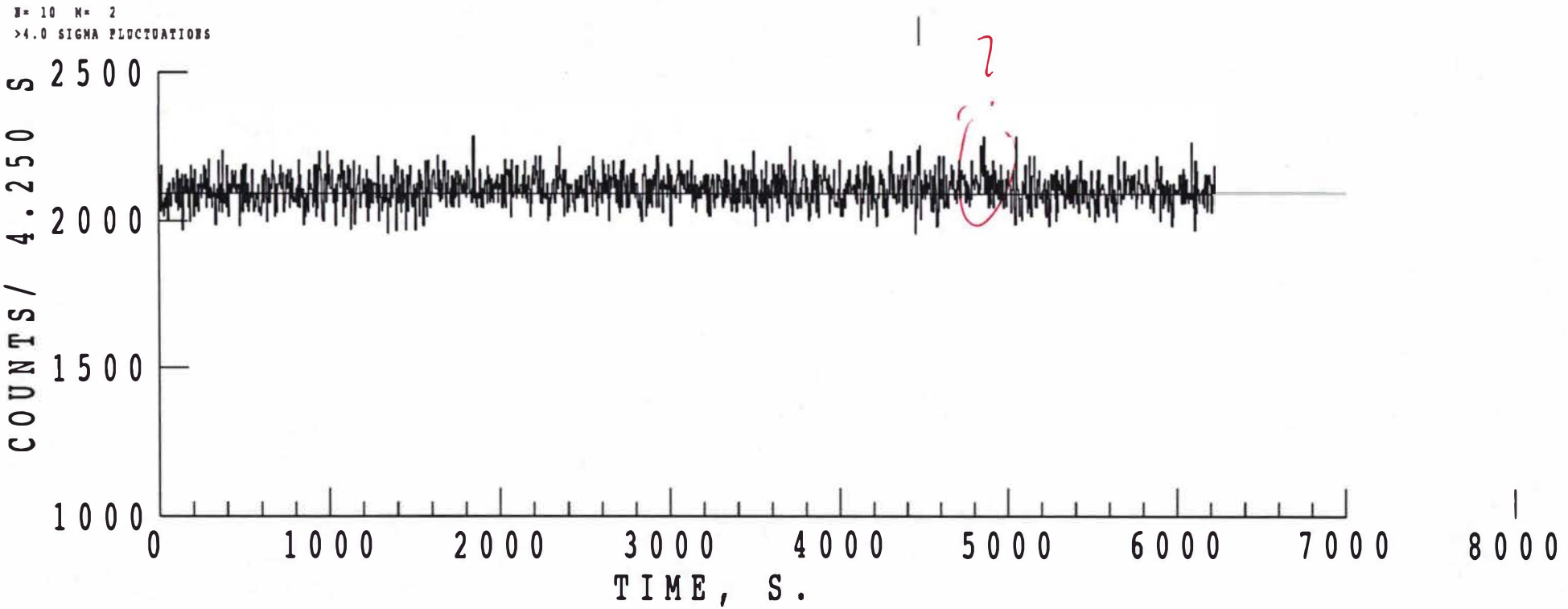
KONUS

ULYSSES RT 04/02/00

04/08/97 56592.008 s

0.250 S INTERVALS REGROUPED BY 17

0- 0 keV



KONUS 19970804 61392

ULYSSES RT

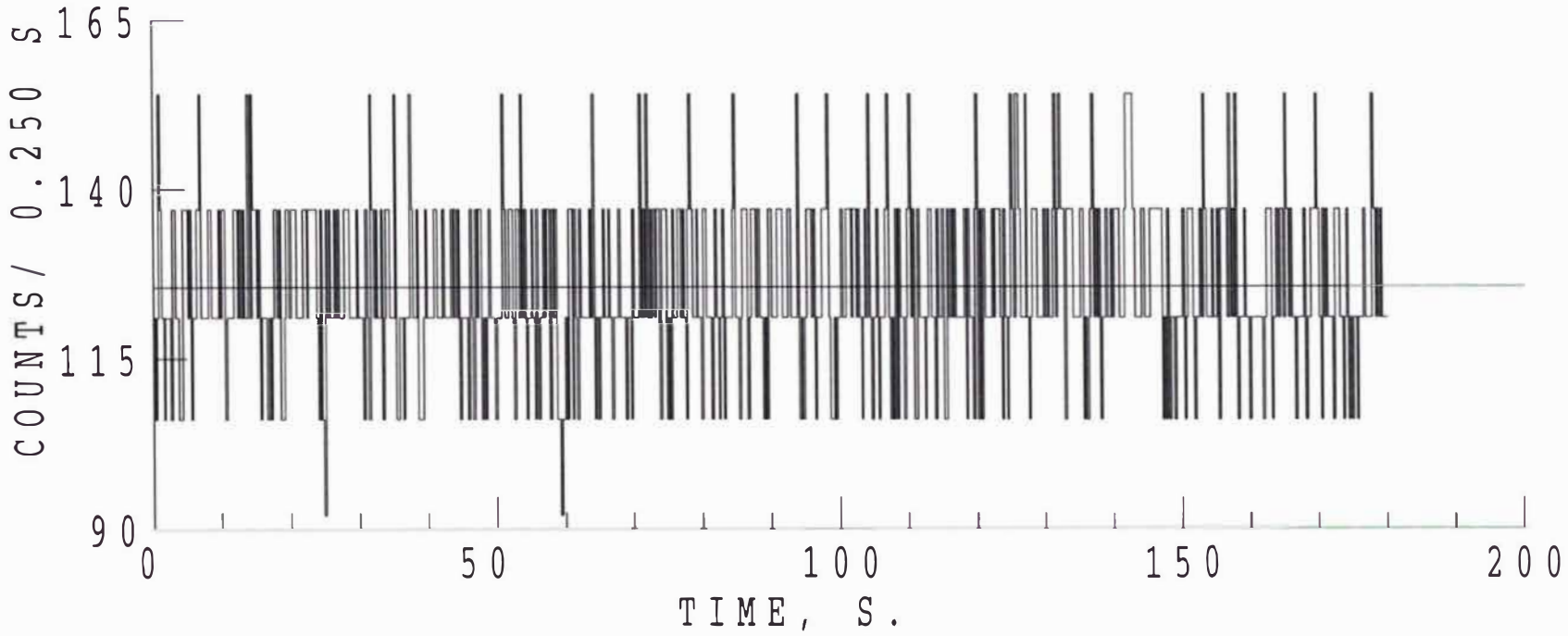
12/12/11

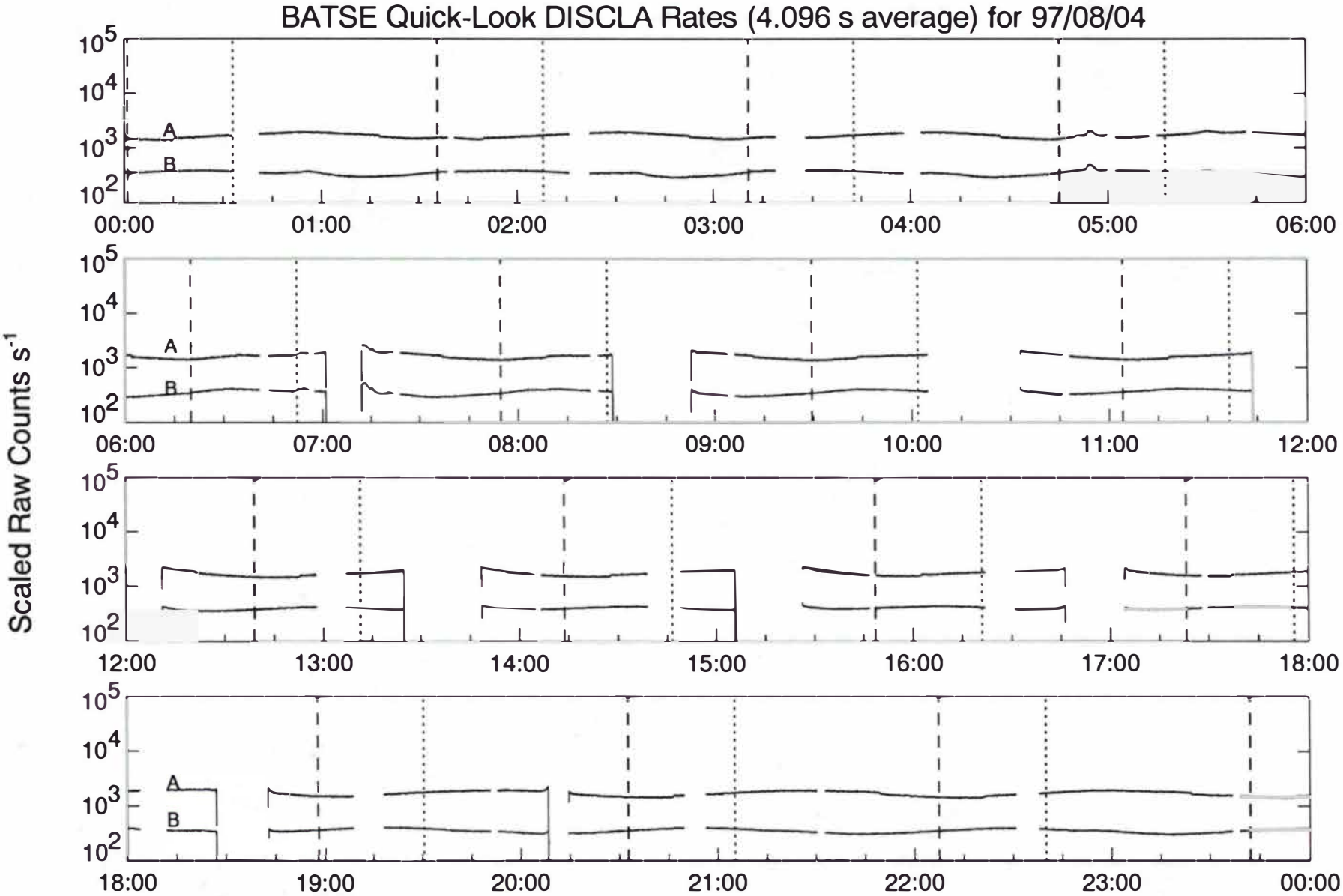
04/08/97 61308.062 s

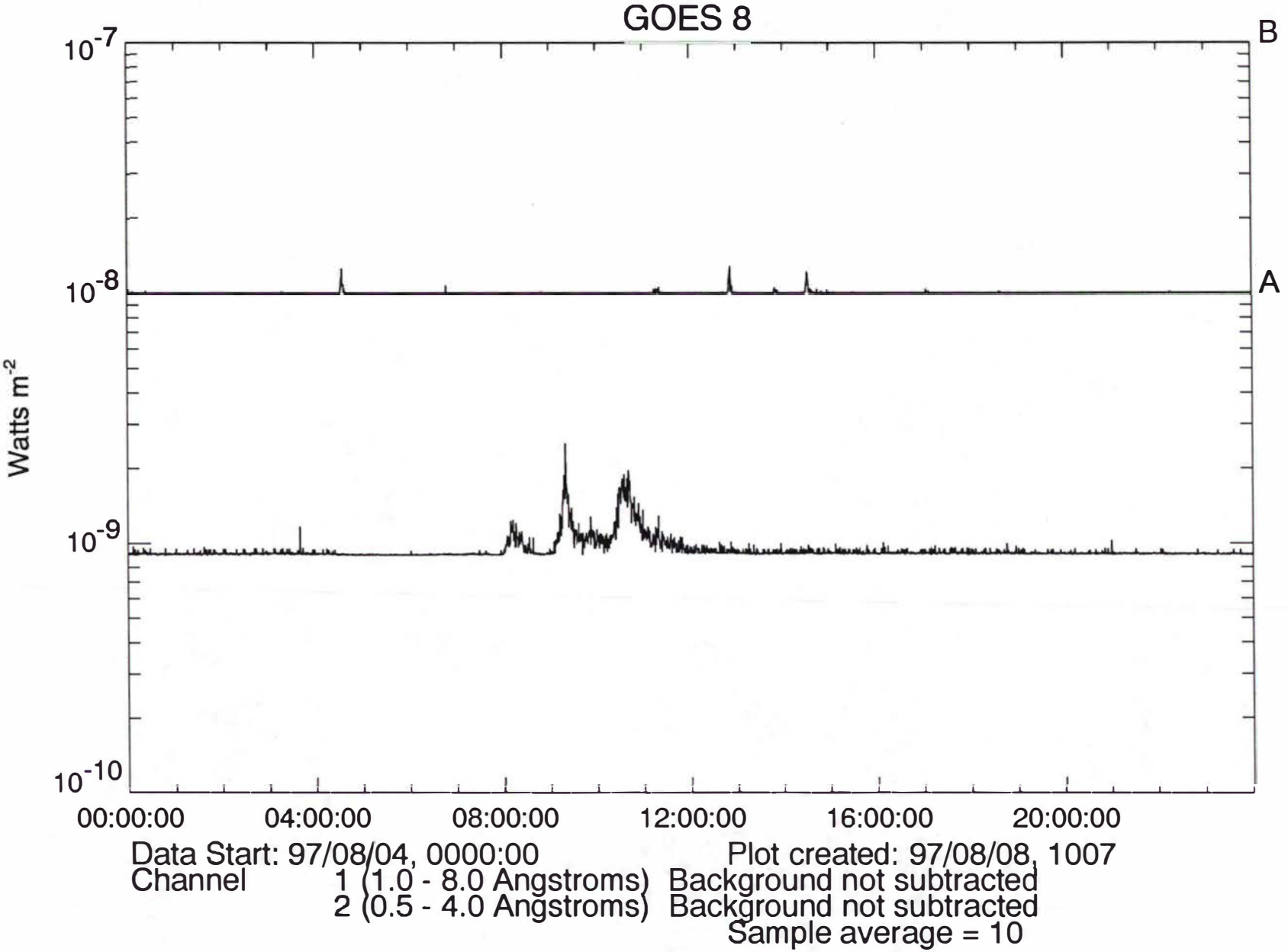
0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

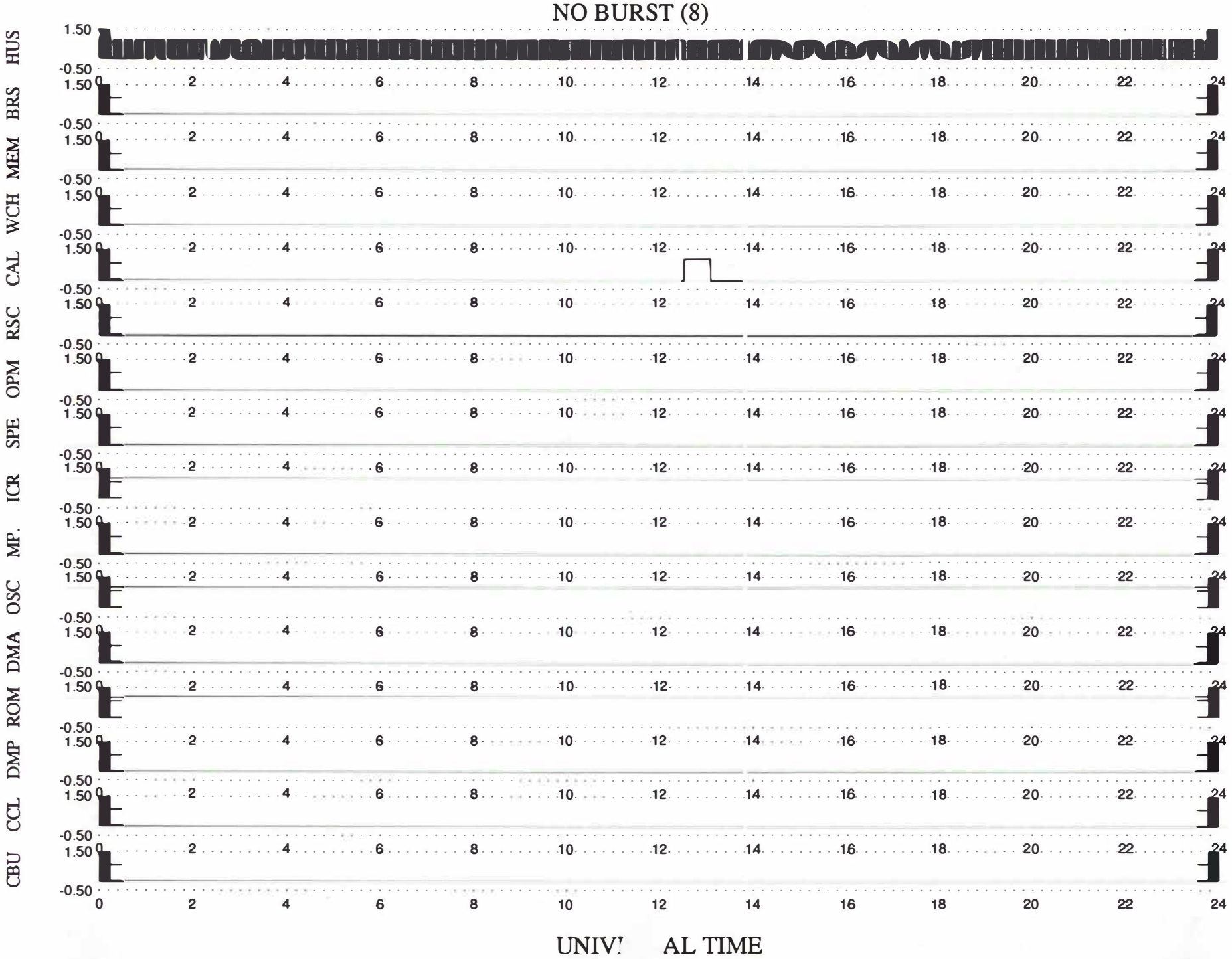
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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

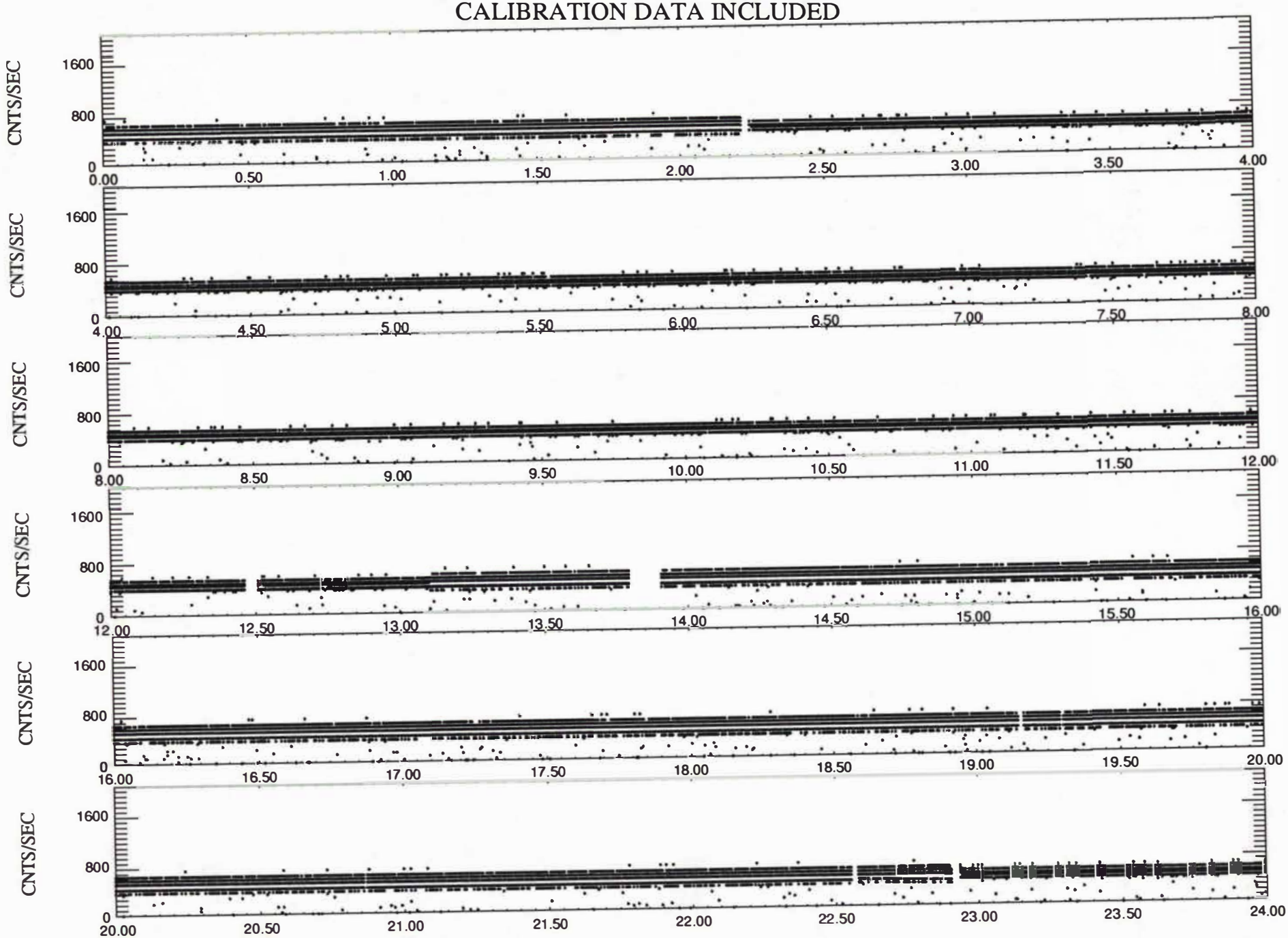

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/08/04, 0000:00
Plot created: 97/08/08, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 216, year 1997 to day 216, year 1997 1/6/98



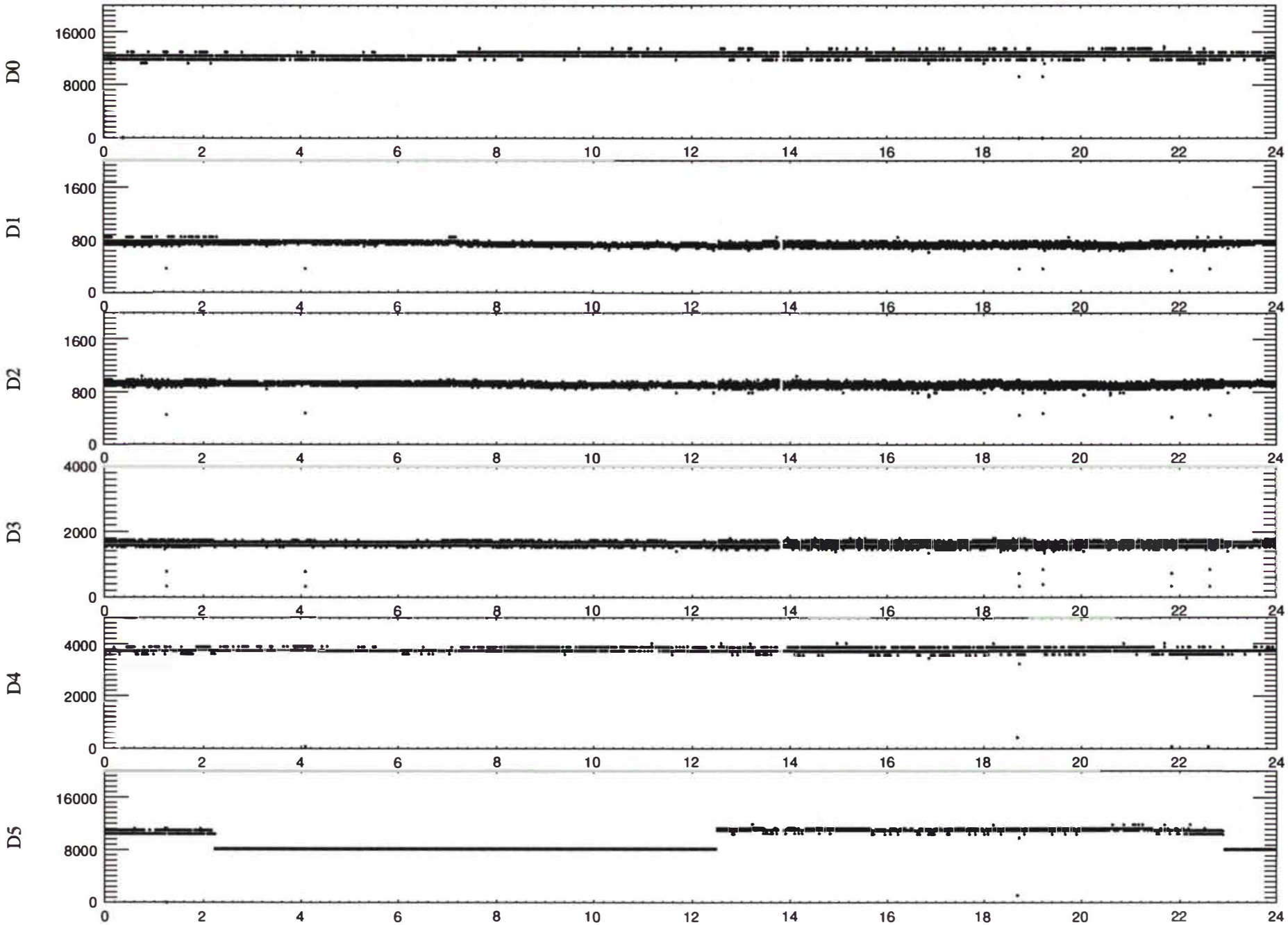
HUS 2A, MODE 1, NOT AVERAGED EDR day 216, year 1997 to day 216, year 1997 1/6/98

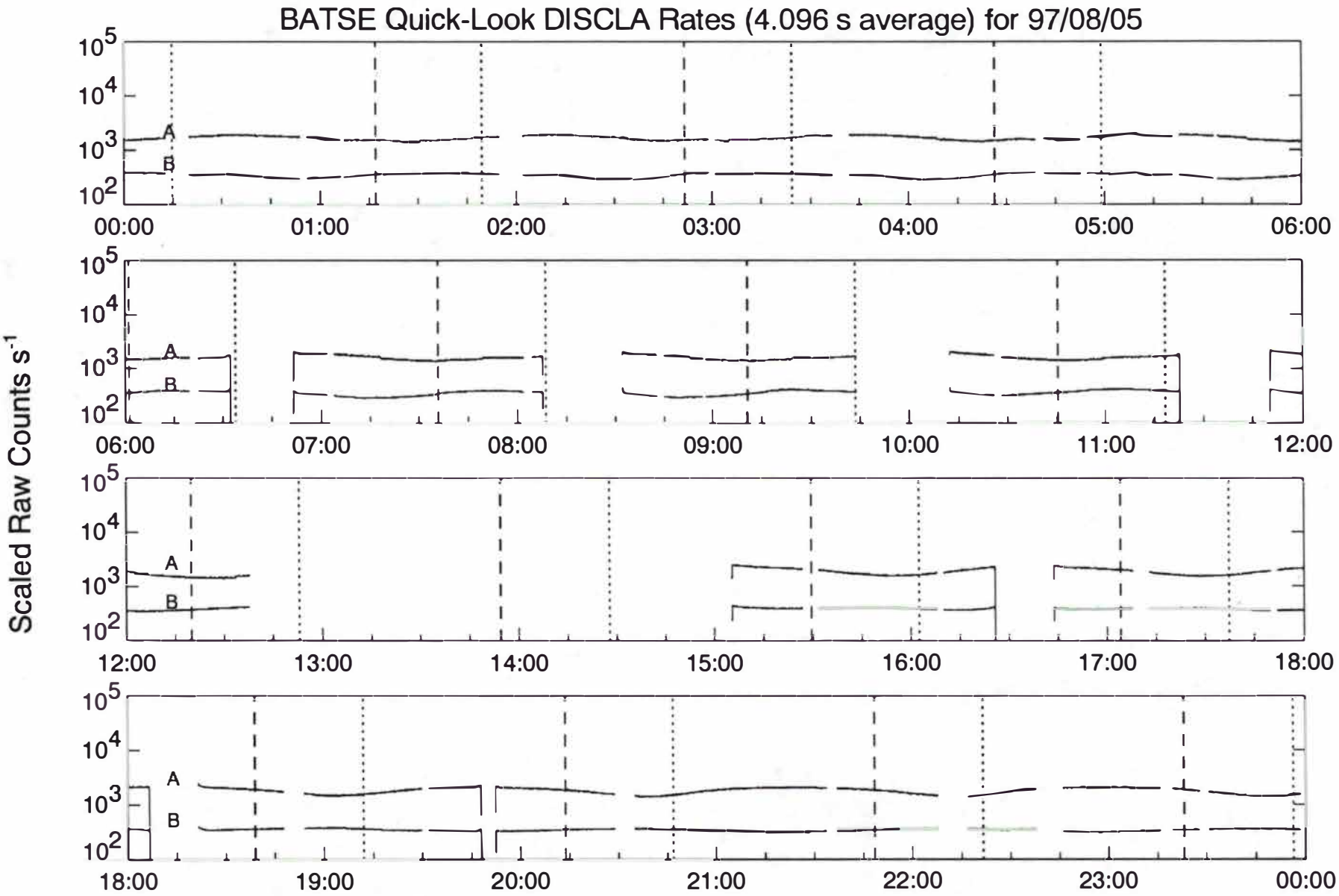
CALIBRATION DATA INCLUDED



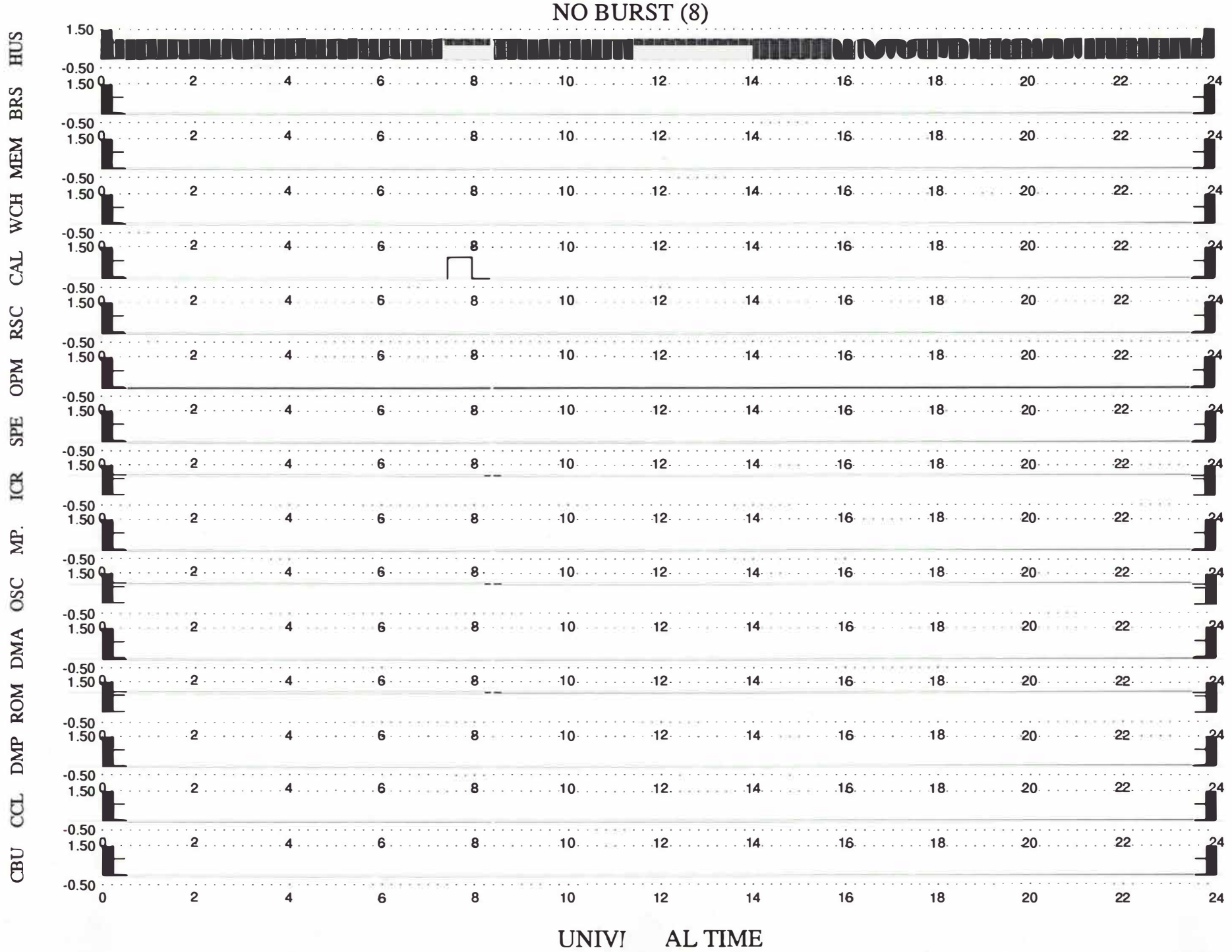
UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 216, year 1997 to day 216, year 1997 1/6/98



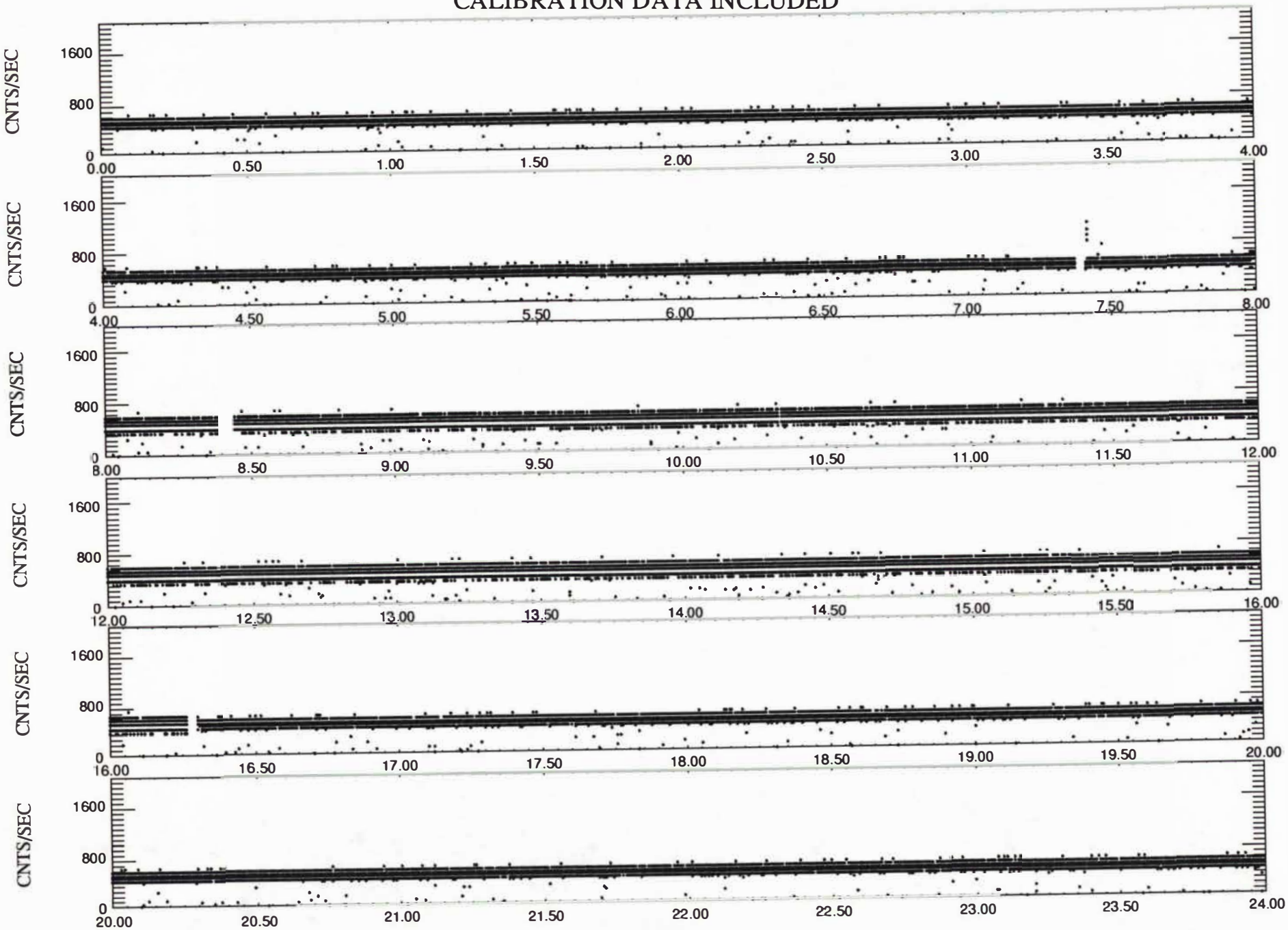

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/05
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/09, 1007 EDT
A: Channel 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 217, year 1997 to day 217, year 1997 1/6/98



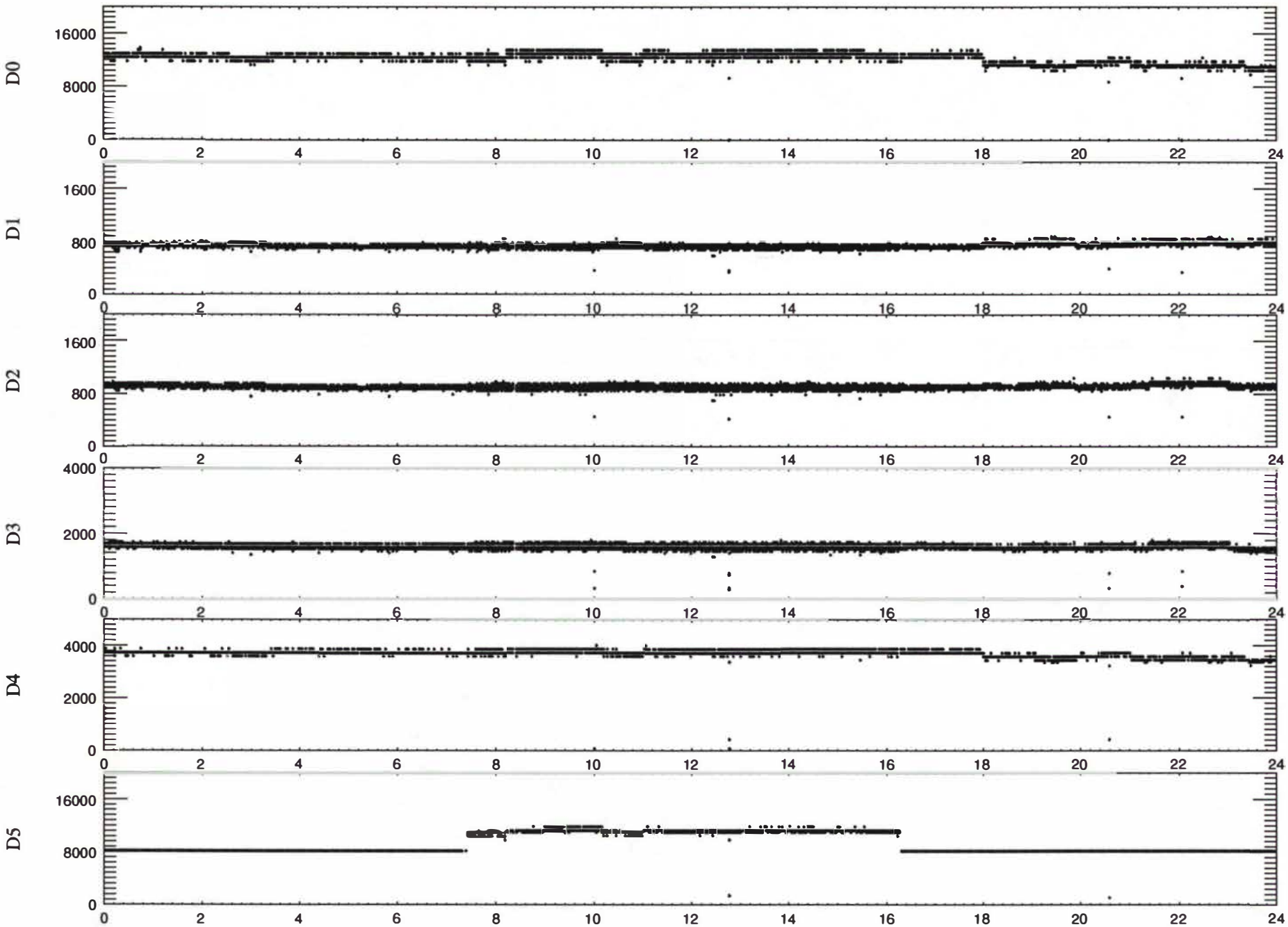
HUS 2A, MODE 1, NOT AVERAGED EDR day 217, year 1997 to day 217, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 217, year 1997 to day 217, year 1997 1/6/98



KONUS

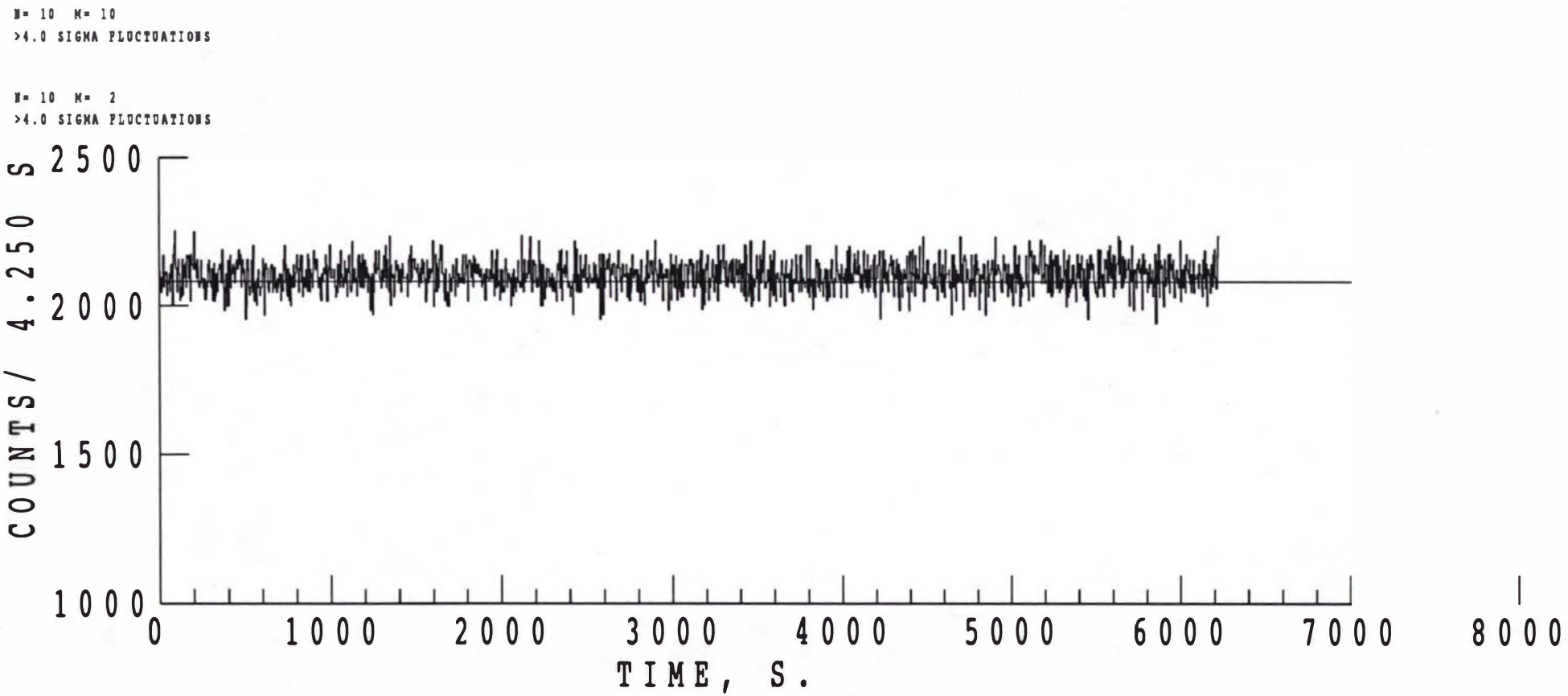
ULYSSES RT

15/02/00

06/08/97 46872.133 s

0.250 S INTERVALS REGROUPED BY 17

0- 0 keV



KONUS

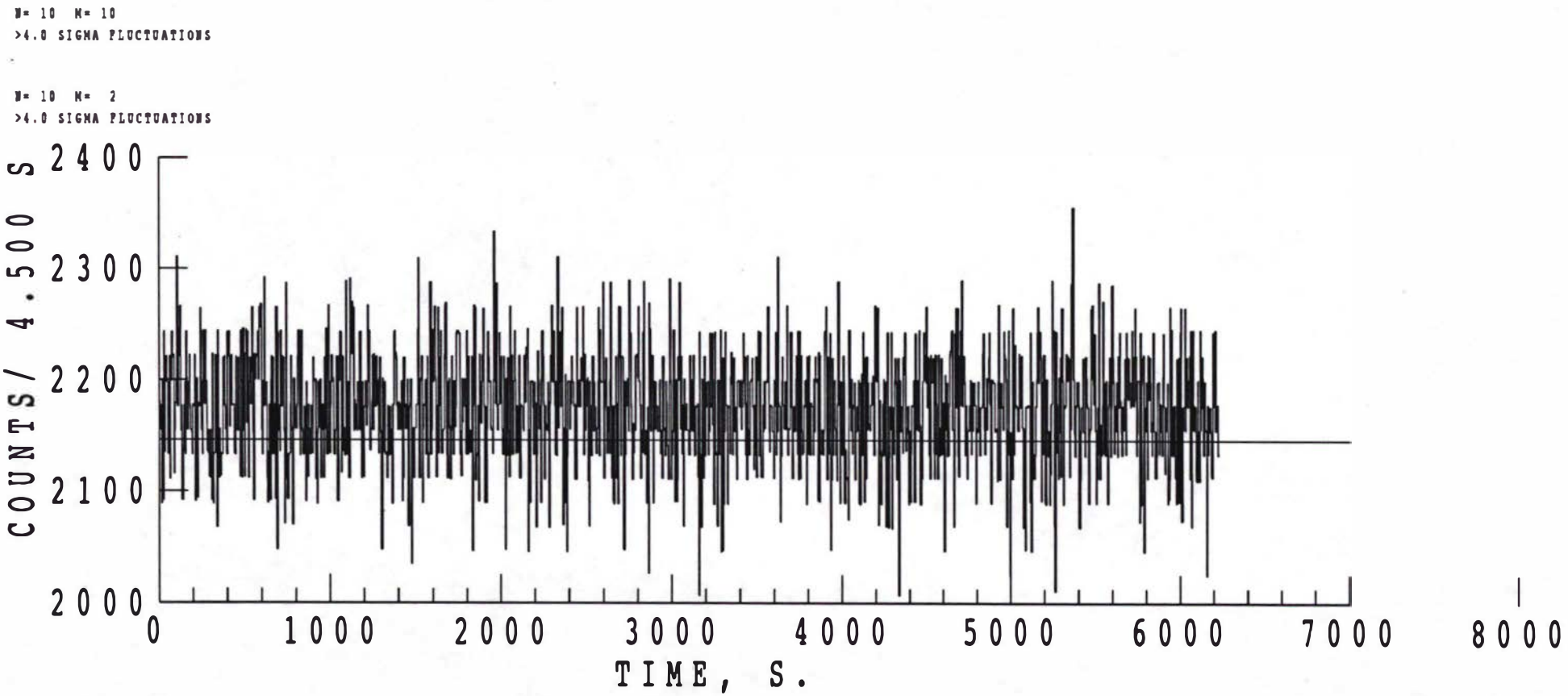
ULYSSES RT

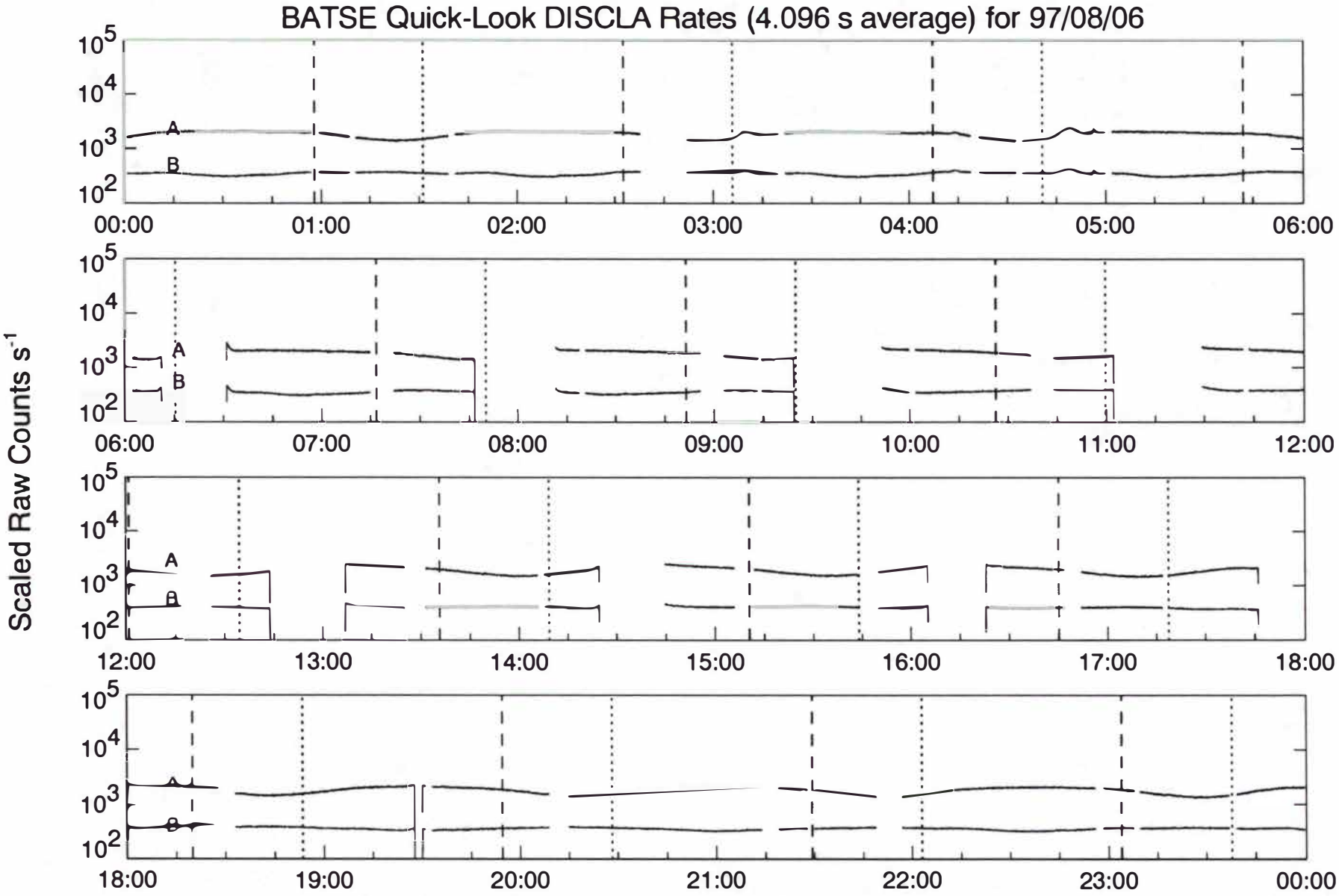
04/02/00

06/08/97 70272.148 s

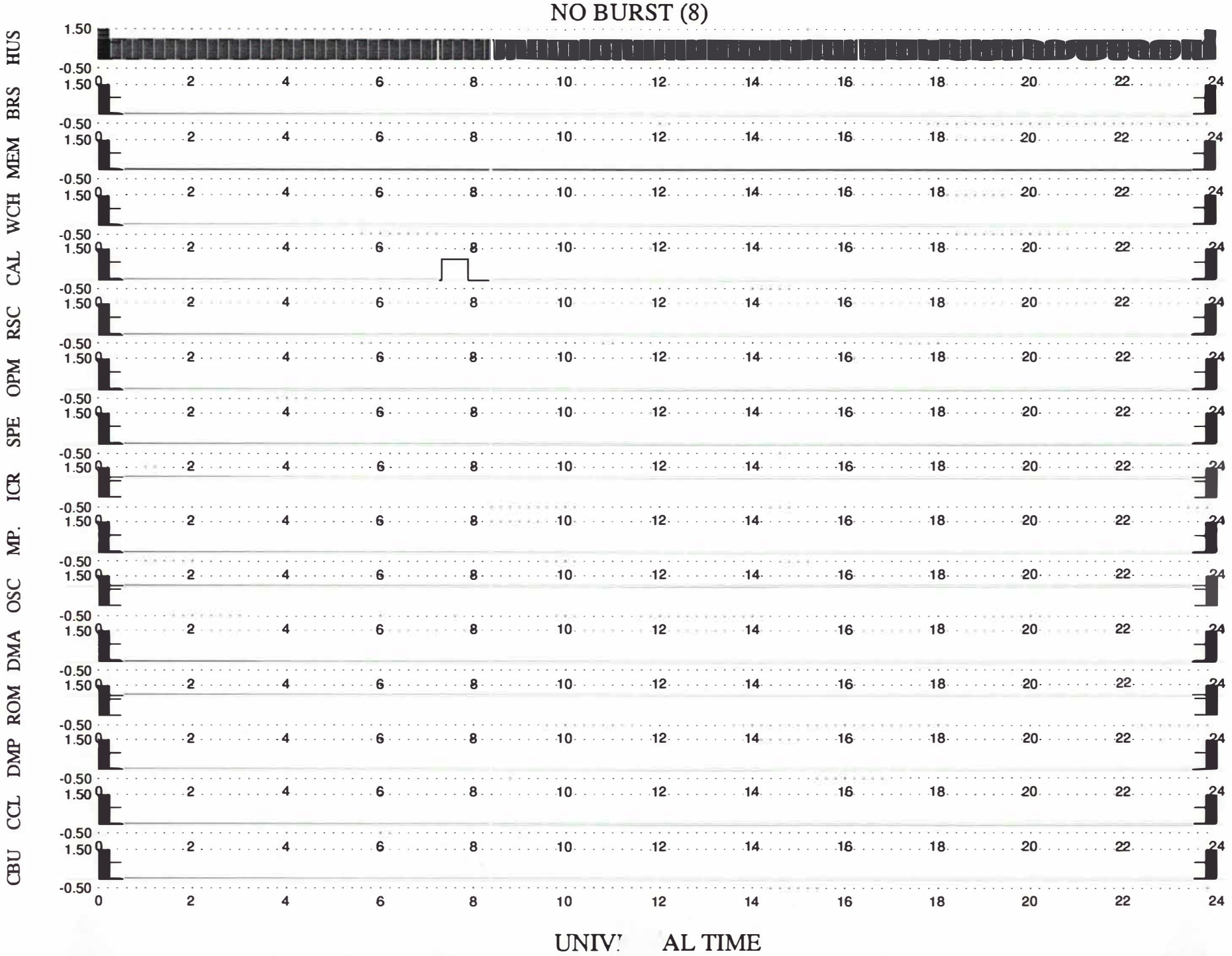
0.500 S INTERVALS REGROUPED BY 9

0- 0 keV



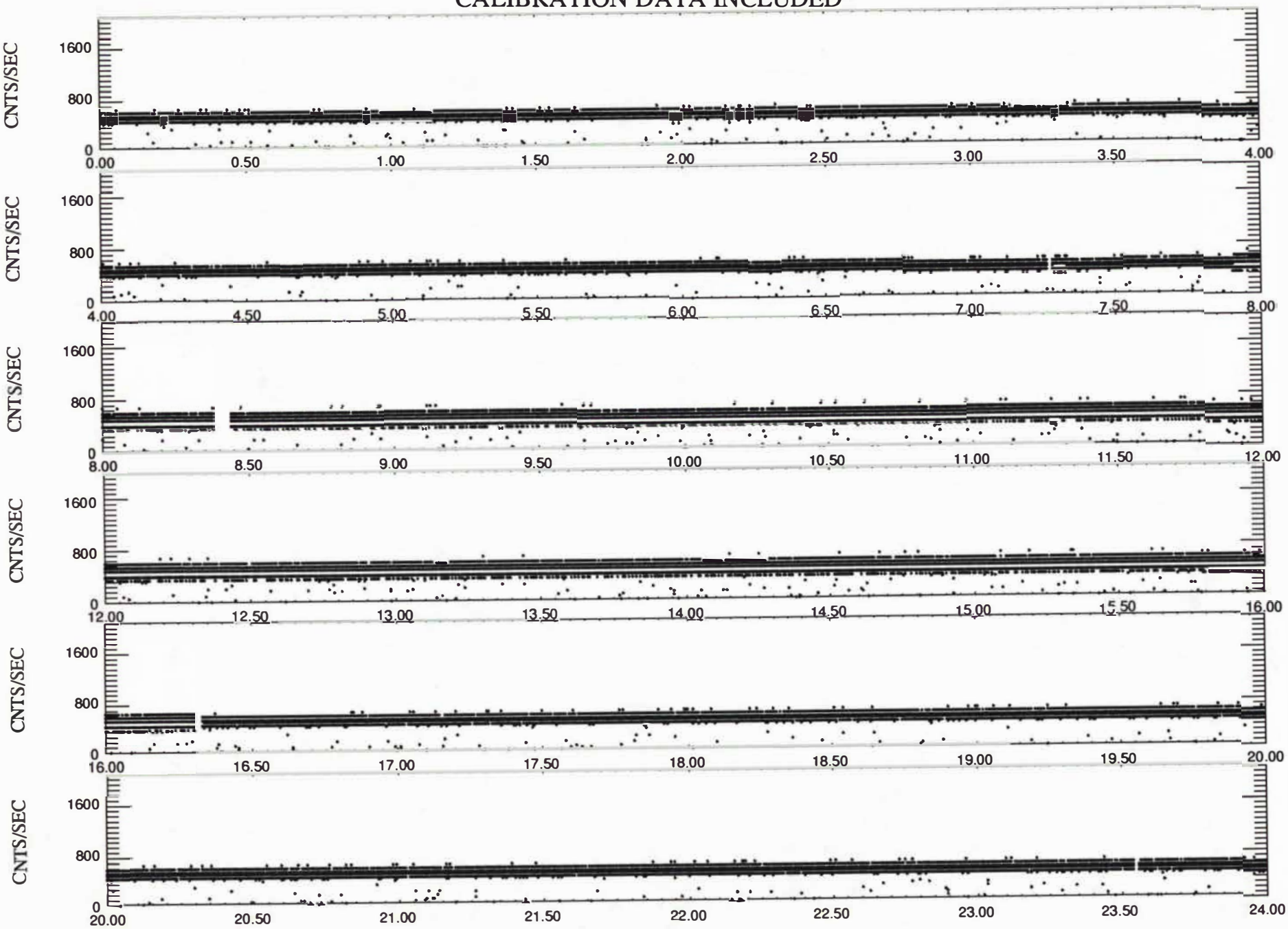

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/06
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/10, 1008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

HUS MODES EDR day 218, year 1997 to day 218, year 1997 1/6/98



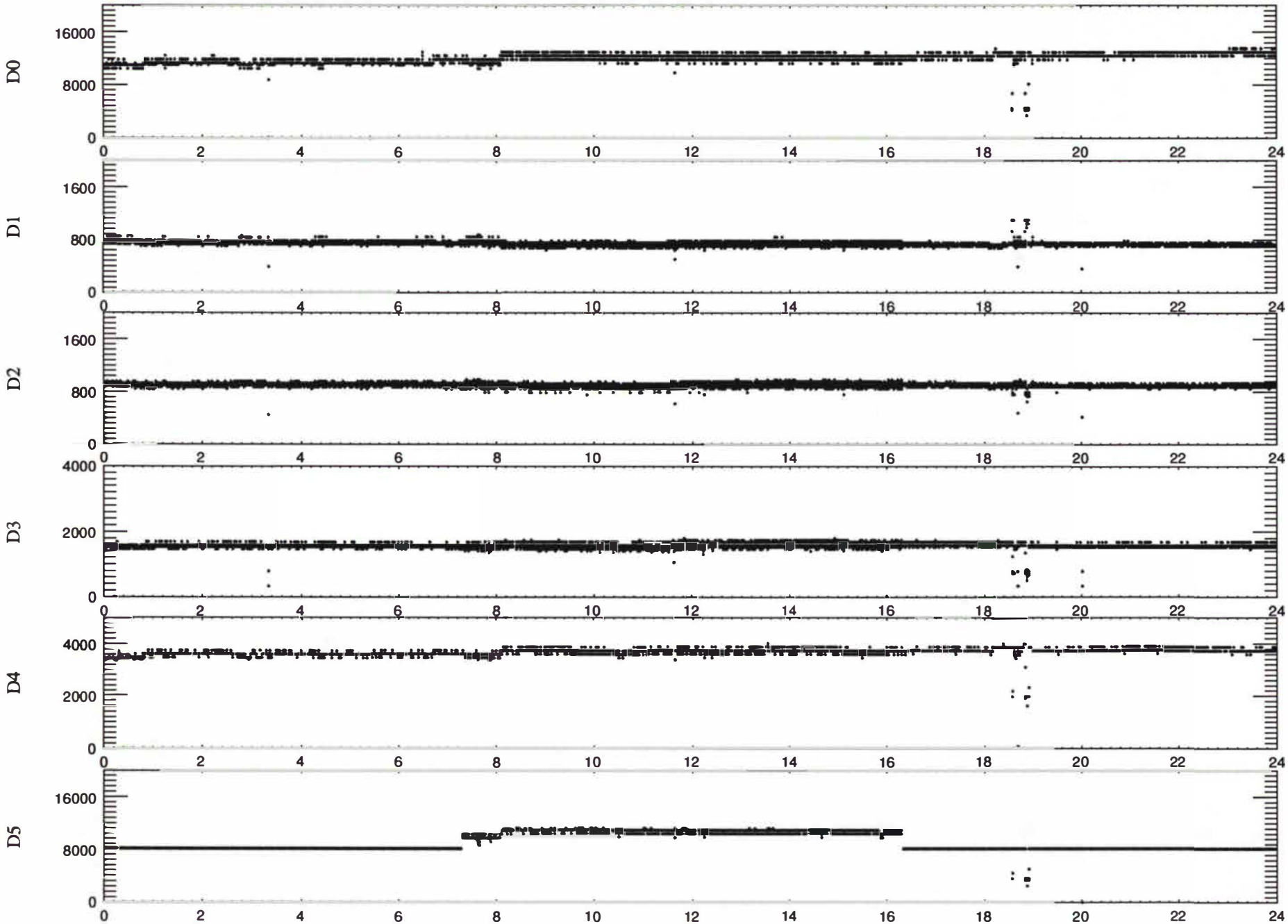
HUS 2A, MODE 1, NOT AVERAGED EDR day 218, year 1997 to day 218, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 218, year 1997 to day 218, year 1997 1/6/98



From SURASAK@ssl.msfc.nasa.gov Fri Aug 8 13:14 PDT 1997
Date: Fri, 8 Aug 1997 15:12:57 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@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.: 6326

TIME: TJD=0667 SECONDS=8008

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!

From SURASAK@ssl.msfc.nasa.gov Fri Aug 8 13:16 PDT 1997
Date: Fri, 8 Aug 1997 15:14:37 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@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.: 6327

TIME: TJD=0667 SECONDS=20994

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT!

From SURASAK@ssl.msfc.nasa.gov Fri Aug 8 14:11 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 OAA16161; Fri, 8 Aug 1997 14:11:30 -0700
Date: Fri, 8 Aug 1997 16:11:25 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970808161125.202030f7@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6328
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6328
EVENT OF 1997 AUG 7 DAY OF YEAR=219
EVENT CROSSING TIME AT BATSE : 29892. S. OR 08:18:12.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 225.000 -41.000
BATSE PEAK COUNTING RATE: 2510 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 8/ 97 IS:
RA= 157.959 DEC= 21.596 DIST= 6.154 AU
BATSE-ULYSSES DISTANCE = 920694939. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 91.85 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -99.04 SECS.
CROSSING TIME AT ULYSSES IS 29793. S. OR 08:16:32 +/- 581.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 8/ 97 IS:
RA= 203.492 DEC= -10.335 DIST= 1.501 AU
MARS-BATSE DISTANCE = 224509952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=143.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -605.44 SECS.
CROSSING TIME AT MARS IS 29287. S. OR 08:08:06 +/- 67.33 SECONDS

BATSE BURST TRIGGER

NO.: 6328

TIME: TJD=0667 SECONDS=29892

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=36.7 AZIMUTH=14.0 ERROR=2.95 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR~90S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6328	970807	10667	29892	2510	225	-41	90

BATSE BURST# 6328

ULYSSES RT 8/ 8/97

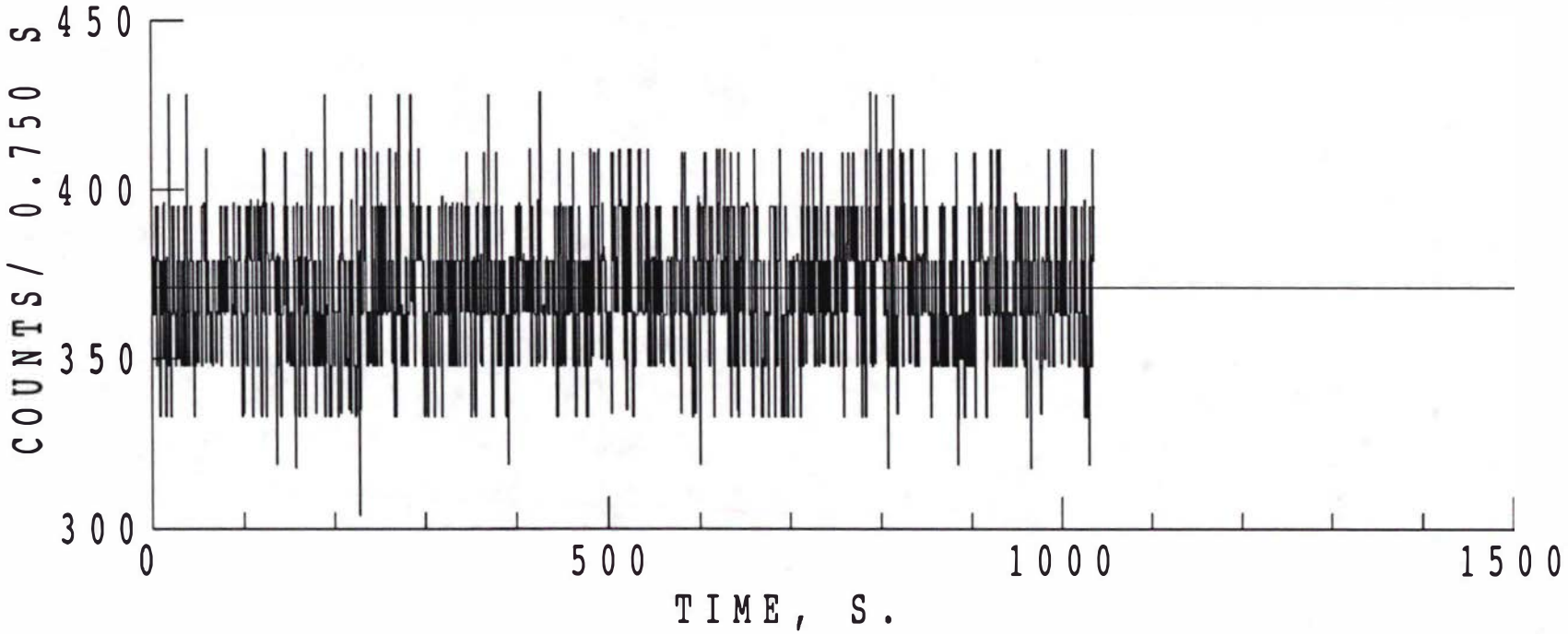
7/ 8/97 29196.172 s

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



KONUS

04/02/00

ULYSSES RT

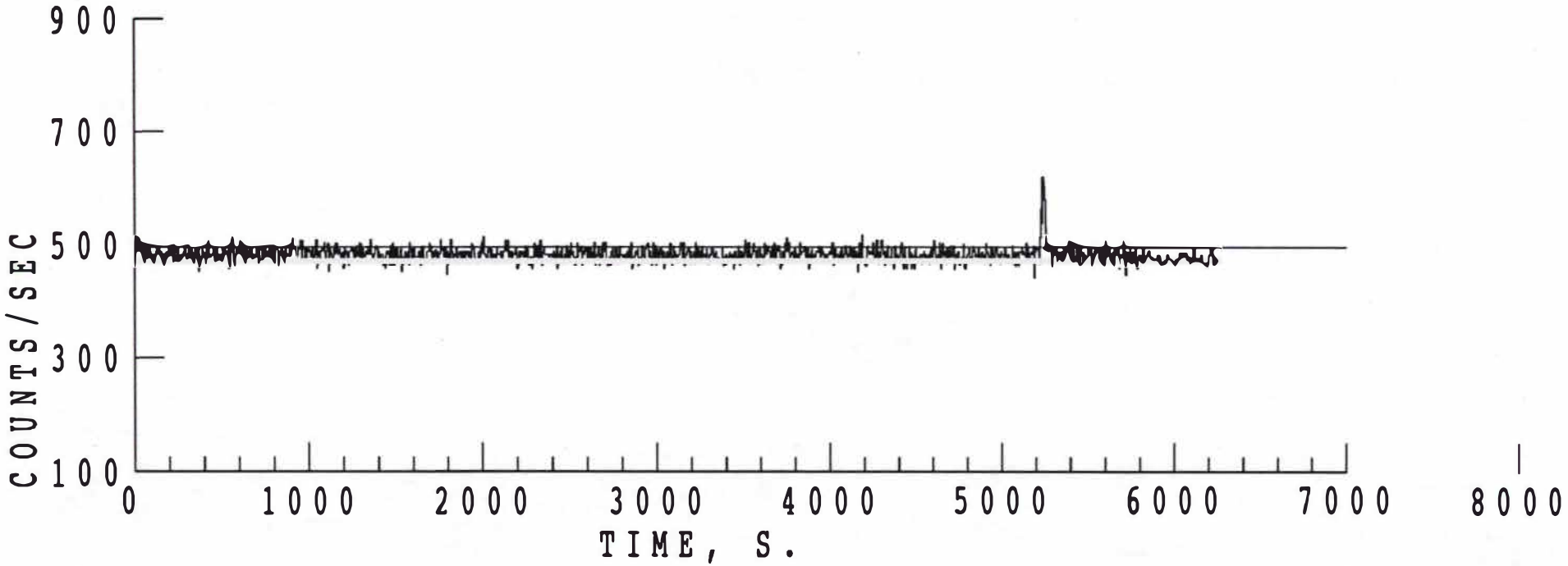
07/08/97 63180.062 s

INTERVALS REGROUPED BY 9

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 Fri Aug 8 12:45 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 MAA15415; Fri, 8 Aug 1997 12:45:41 -0700
Date: Fri, 8 Aug 1997 14:45:33 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970808144533.202030e9@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6329
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6329
EVENT OF 1997 AUG 7 DAY OF YEAR=219
EVENT CROSSING TIME AT BATSE : 66309. S. OR 18:25:09.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 289.000 -39.000
BATSE PEAK COUNTING RATE: 24000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 8/ 97 IS:
RA= 158.018 DEC= 21.550 DIST= 6.157 AU
BATSE-ULYSSES DISTANCE = 921087067. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 45.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2166.66 SECS.
CROSSING TIME AT ULYSSES IS 68476. S. OR 19:01:15 +/- 461.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 8/ 97 IS:
RA= 203.492 DEC= -10.335 DIST= 1.501 AU
MARS-BATSE DISTANCE = 224509952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -129.39 SECS.
CROSSING TIME AT MARS IS 66180. S. OR 18:22:59 +/- 126.10 SECONDS

BATSE BURST TRIGGER

NO.: 6329

TIME: TJD=0667 SECONDS=66309

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=22.3 AZIMUTH=124.9 ERROR=0.309 DEGREES

COMMENTS:
GRB. DUR~70S. SINGLE PULSE WITH SUBSTRUCTURE. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6329	970807	10667	66309	24000	289	-39	70

Helio corr removed 18/2/00

Date: Apr 7 '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? N/A

☑ 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

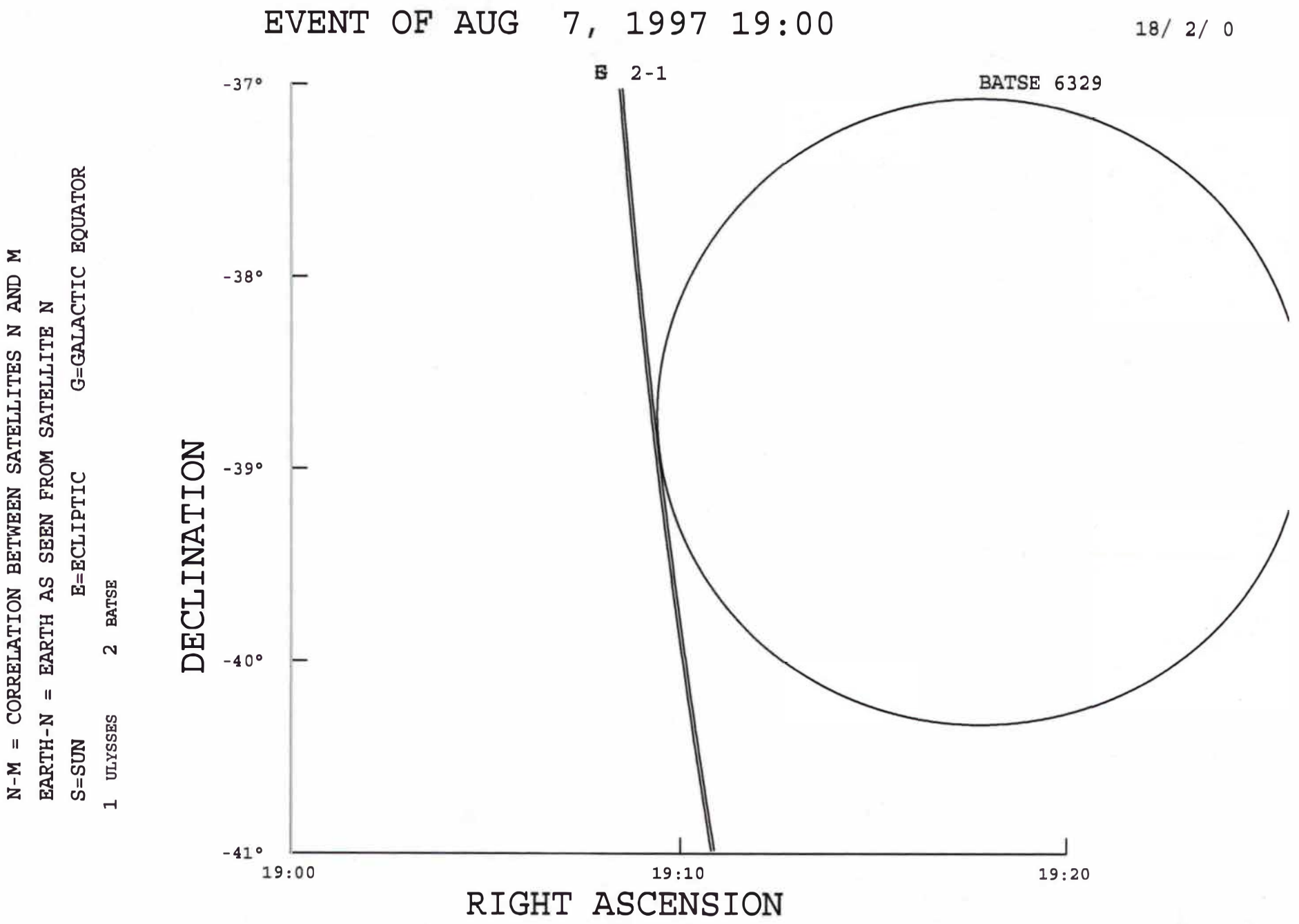
3. PVO Data

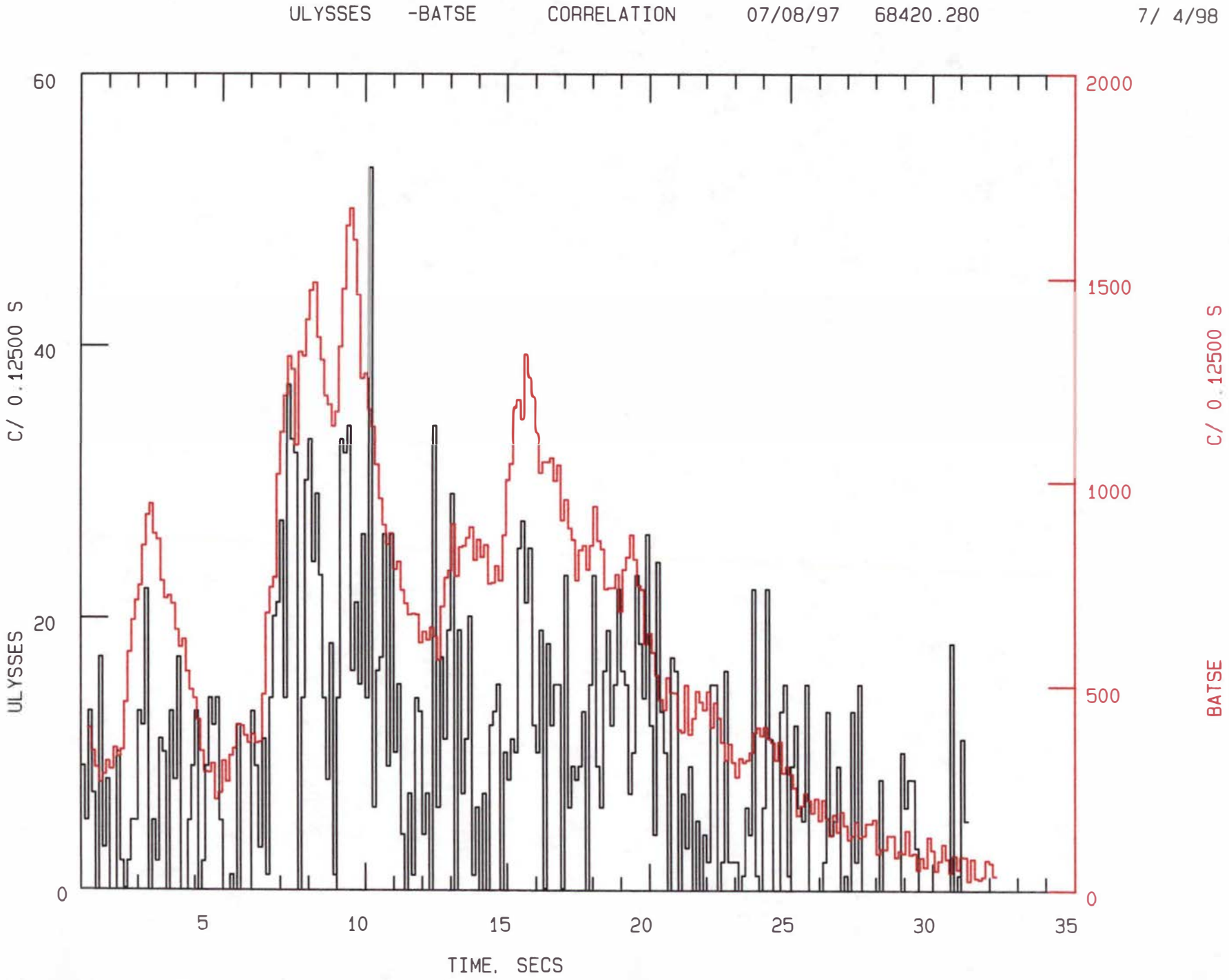
☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

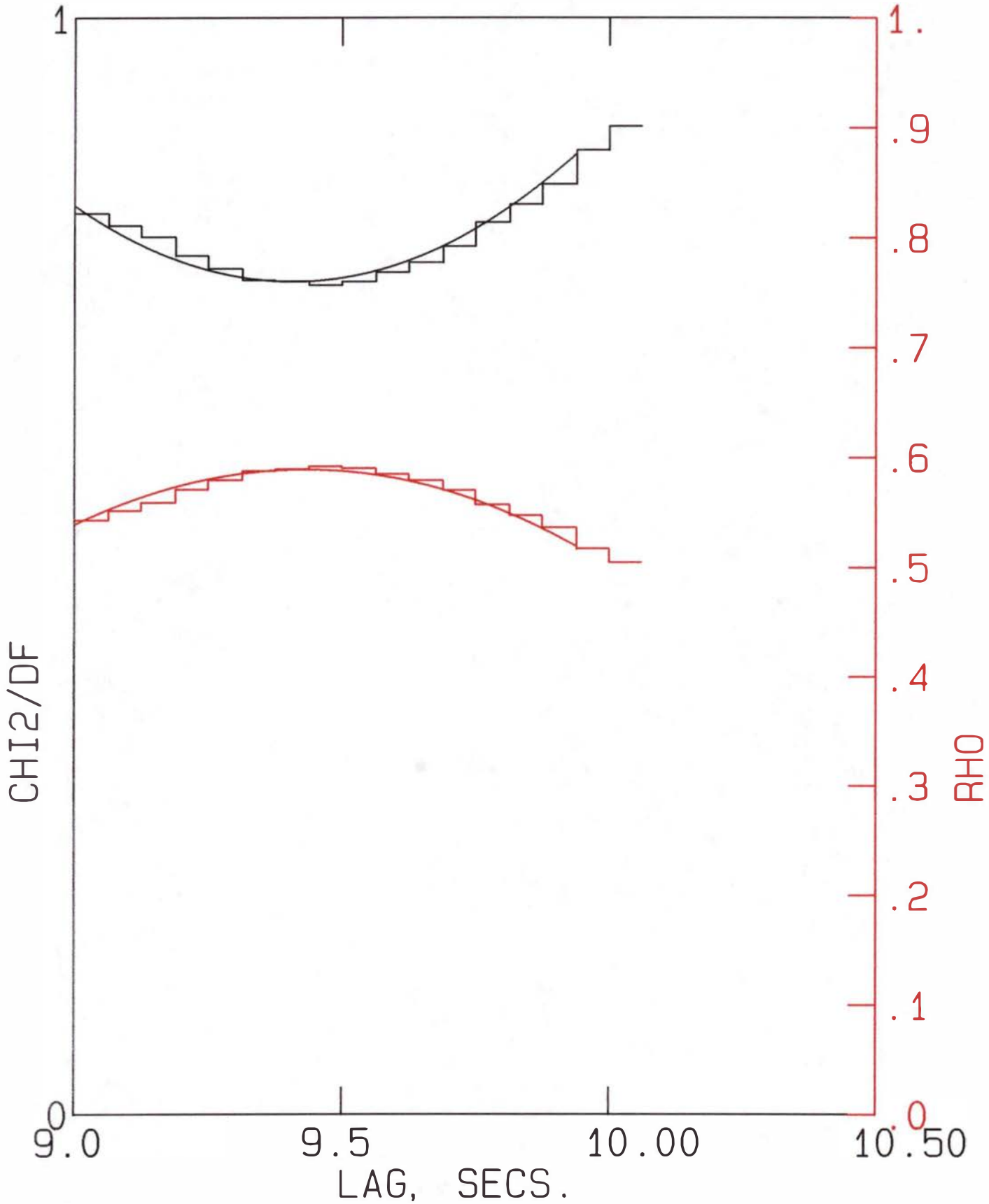
☐ Geocentric time used?

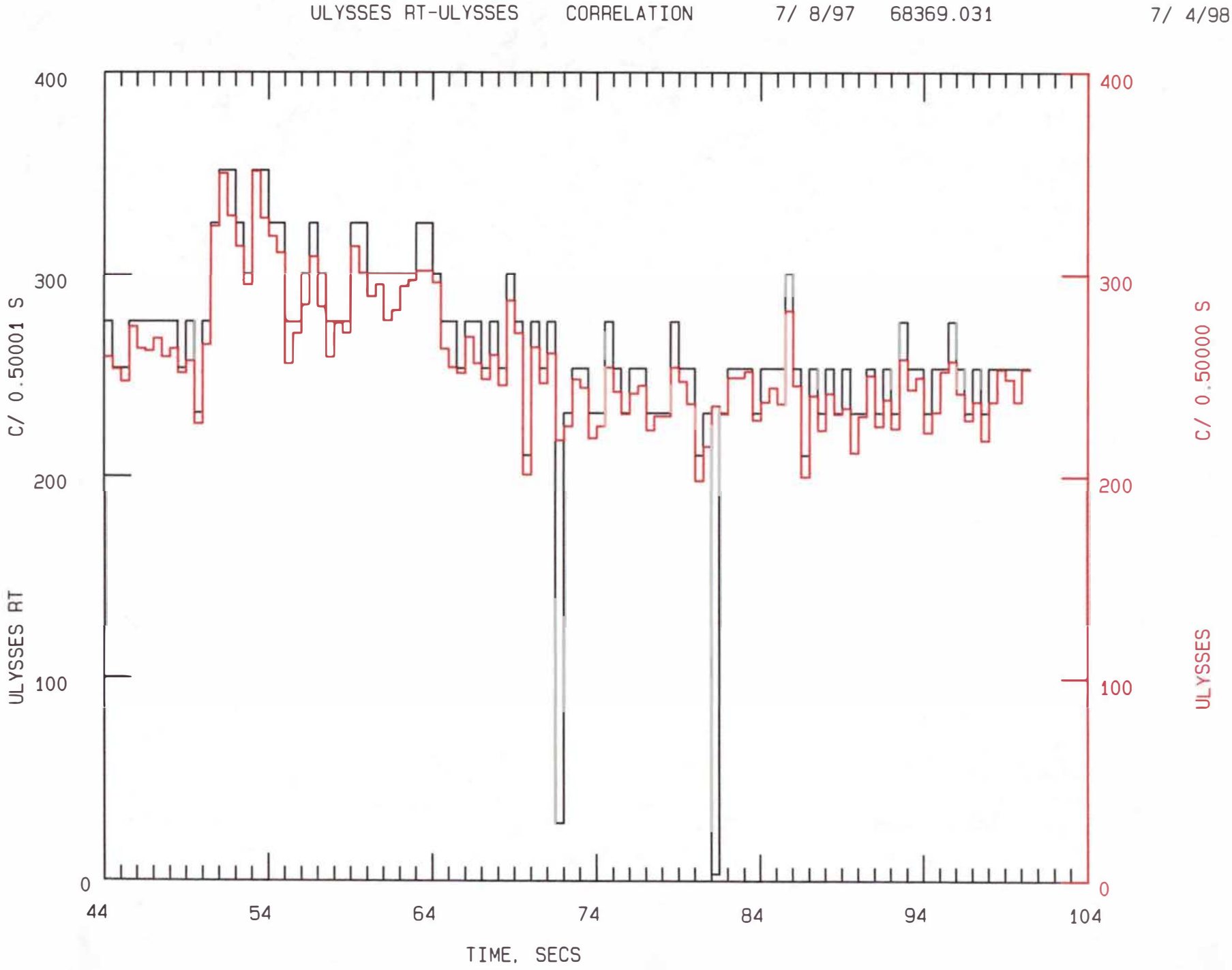
☑ ACCESS database updated?


EVENT OF AUG 7, 1997 19:00
18/ 2/ 0
E 2-1
BATSE 6329
-37°
-38°
-39°
-40°
-41°
DECLINATION
19:00
19:10
19:20
RIGHT ASCENSION
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE

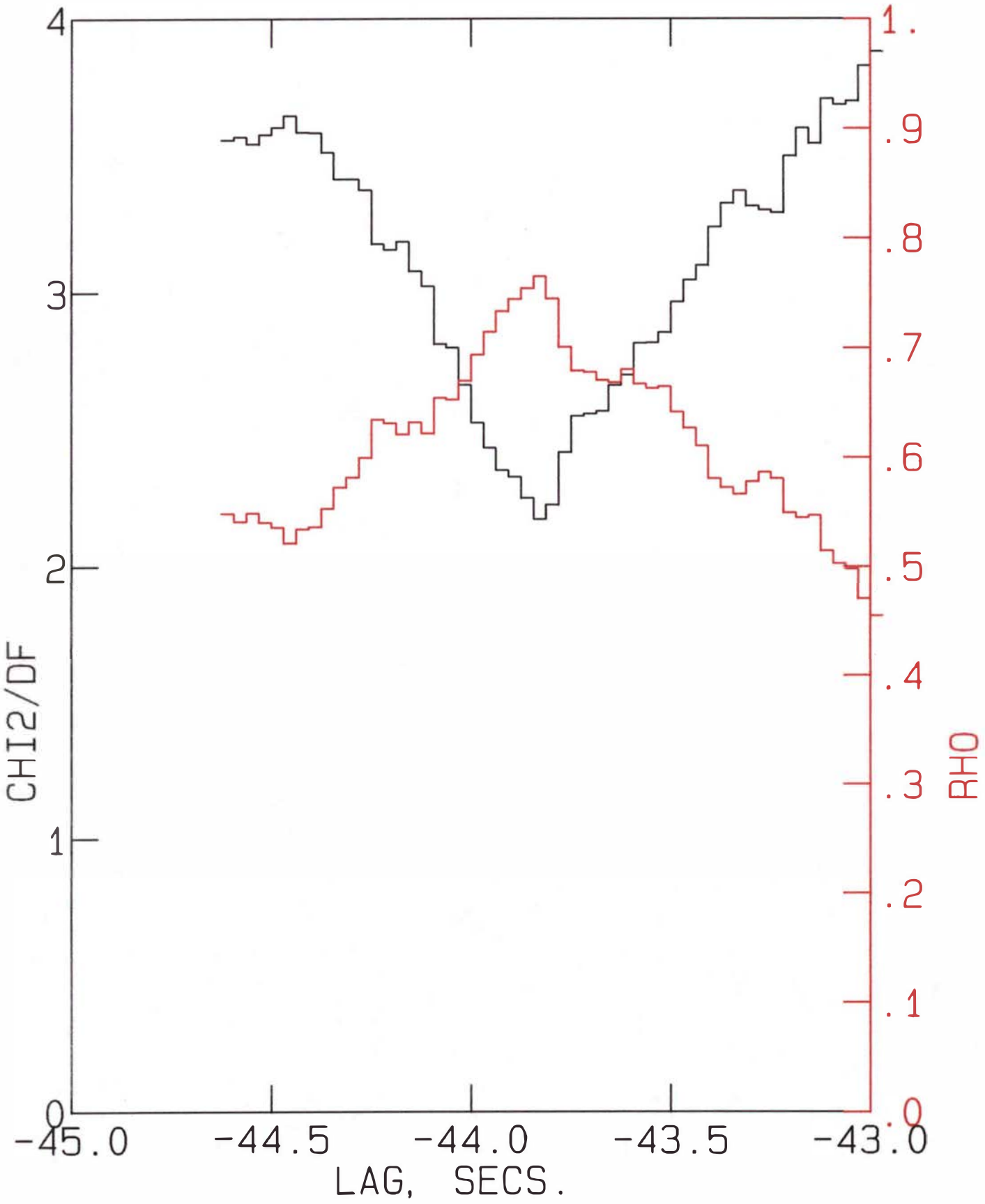

ULYSSES -BATSE CORRELATION 07/08/97 68420.280 7/ 4/98
60
40
20
0
2000
1500
1000
500
0
C/ 0.12500 S
ULYSSES
C/ 0.12500 S
BATSE
5
10
15
20
25
30
35
TIME. SECS

ULYSSES -BATSE CORRELATION 07/08/97 68420.280




ULYSSES RT-ULYSSES CORRELATION 7/ 8/97 68369.031 7/ 4/98
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
44
54
64
74
84
94
104
TIME, SECS

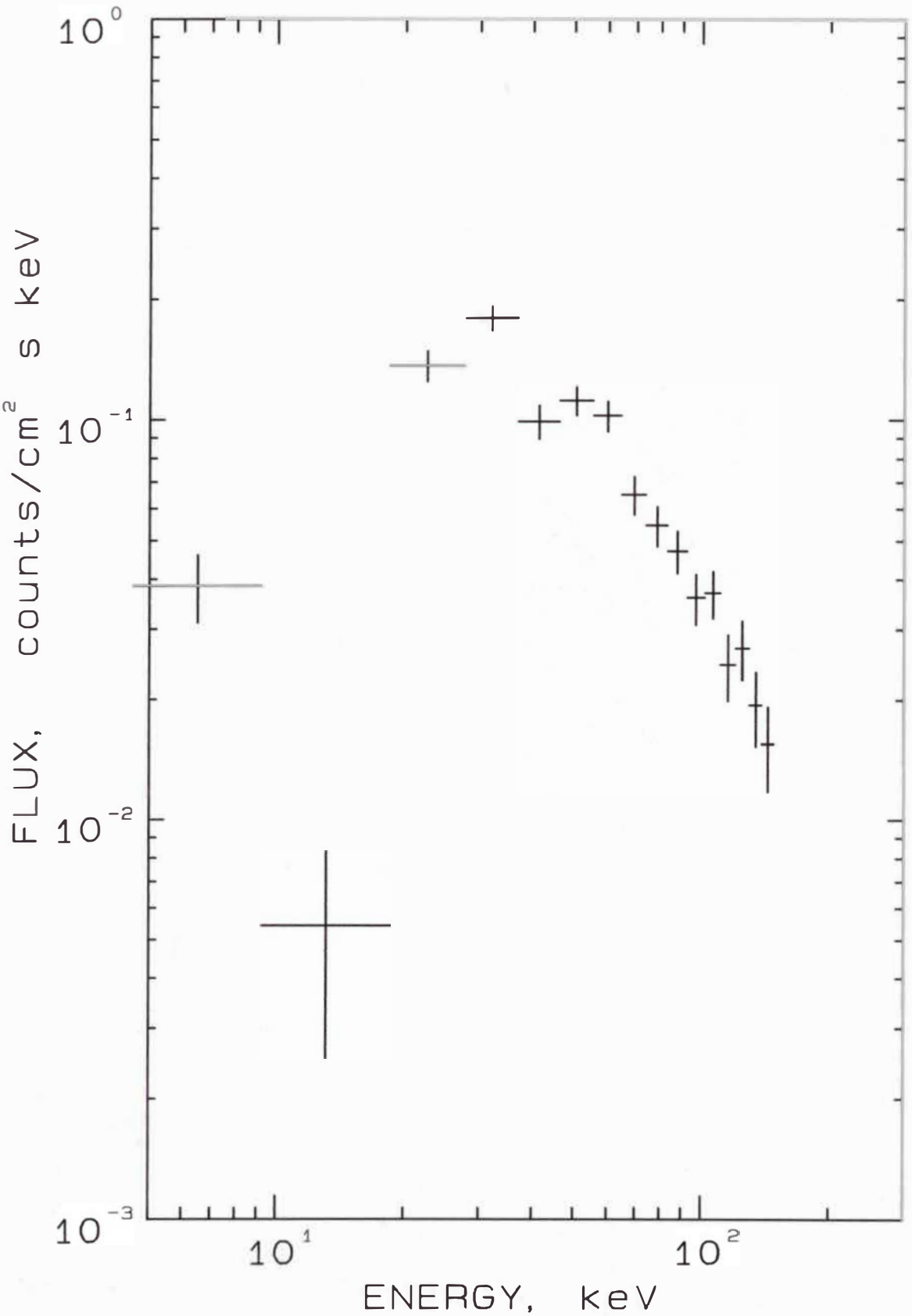
ULYSSES RT-ULYSSES CORRELATION 7/ 8/97 68369.031

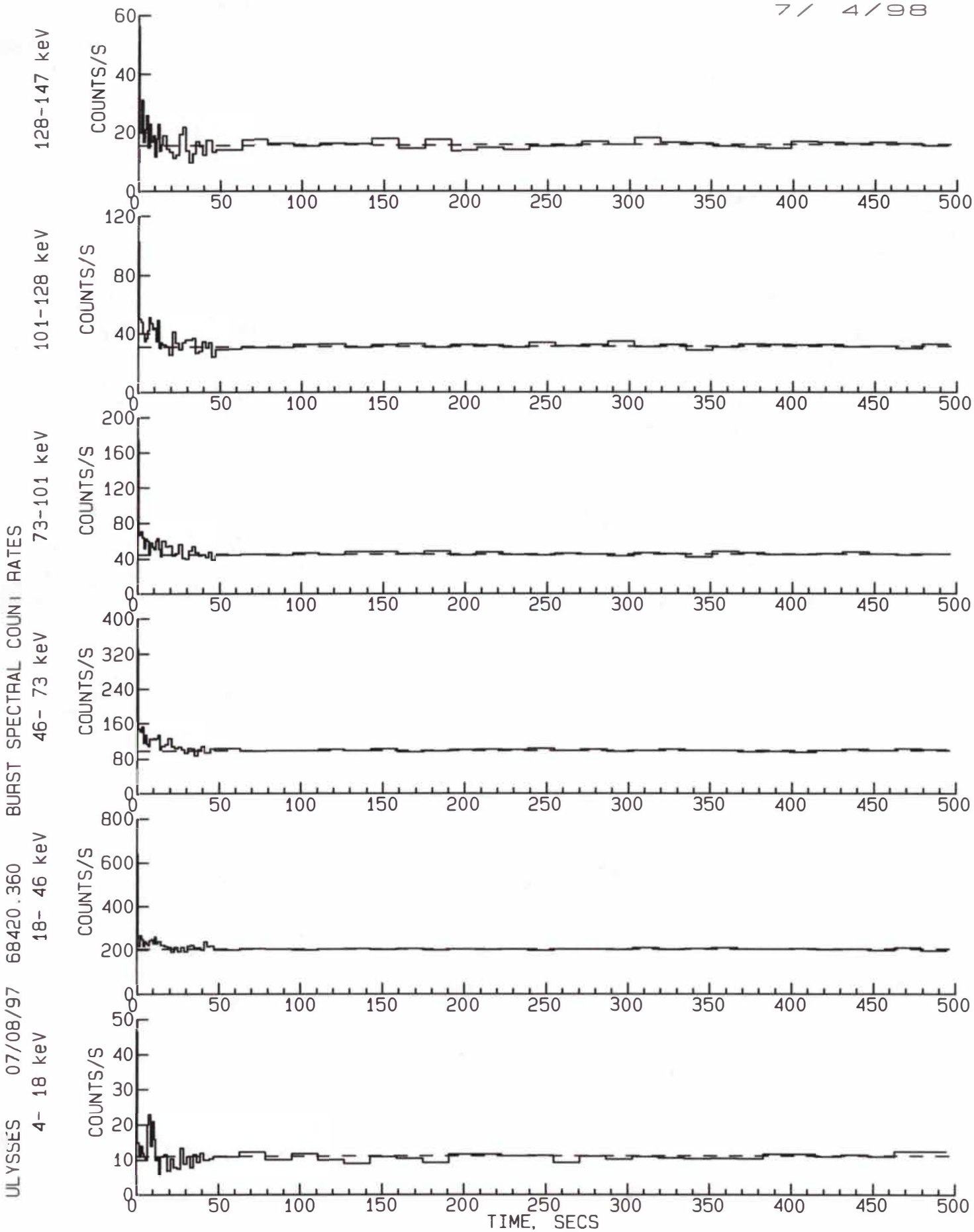


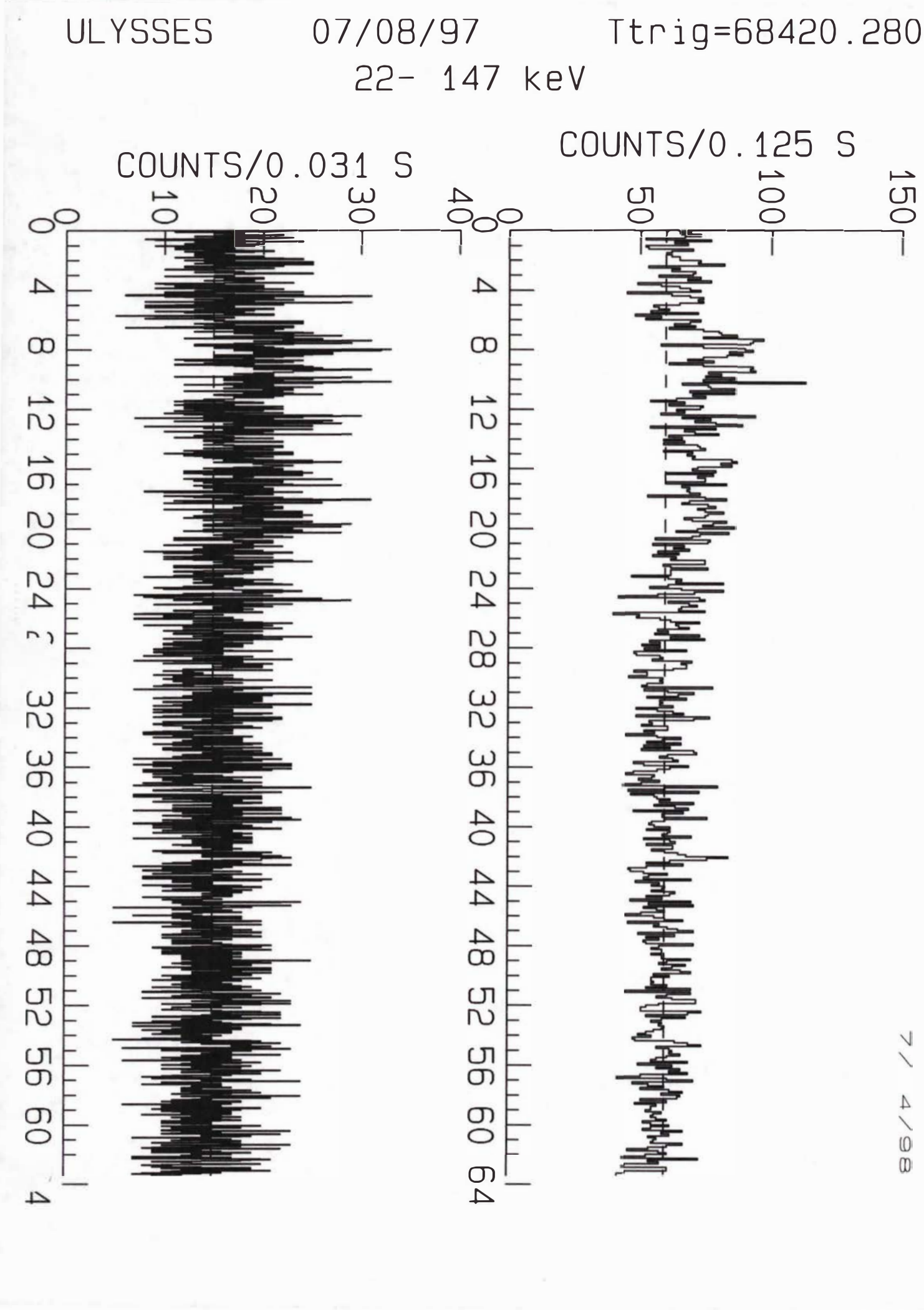
ULYSSES 07/08/97 68420.360

7/ 4/98

SPECTRUM INTEGRATED OVER 30.8 SECONDS, INTERVALS 2 TO 25




7/ 4/98
ULYSSES 07/08/97 68420.360 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

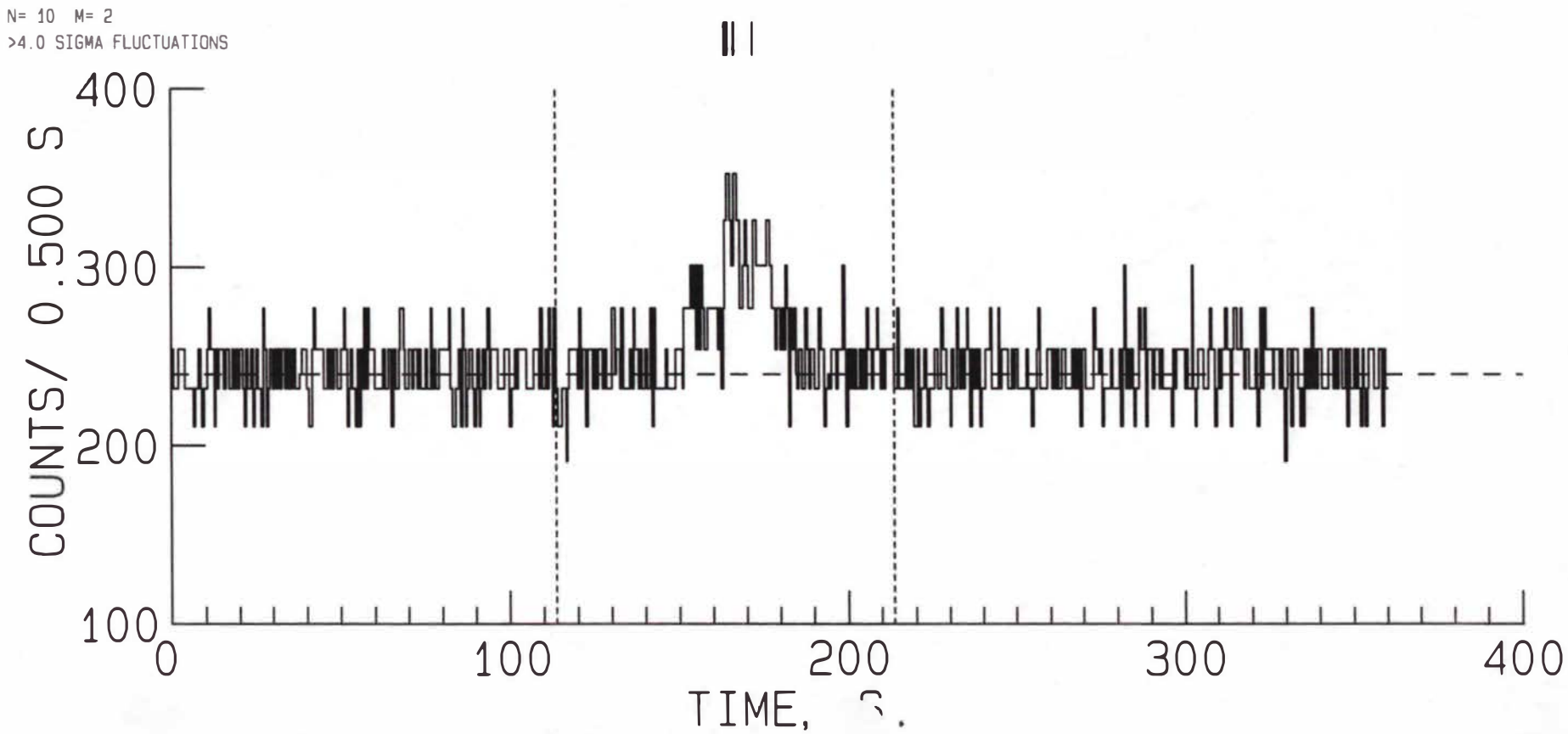

ULYSSES 07/08/97 Ttrig=68420.280
22- 147 keV
COUNTS/0.031 S
COUNTS/0.125 S
7/ 4/98

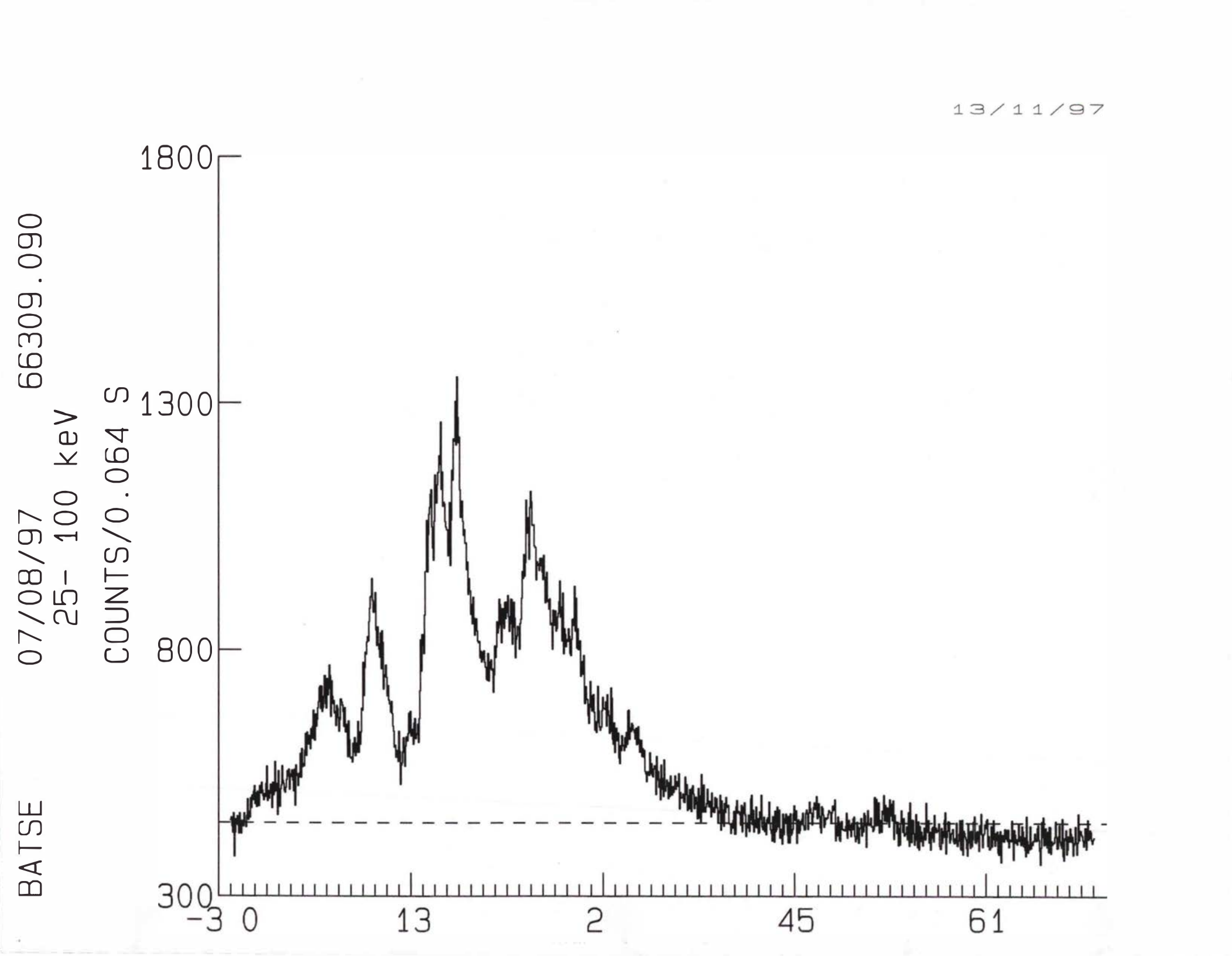
ULYSSES RT

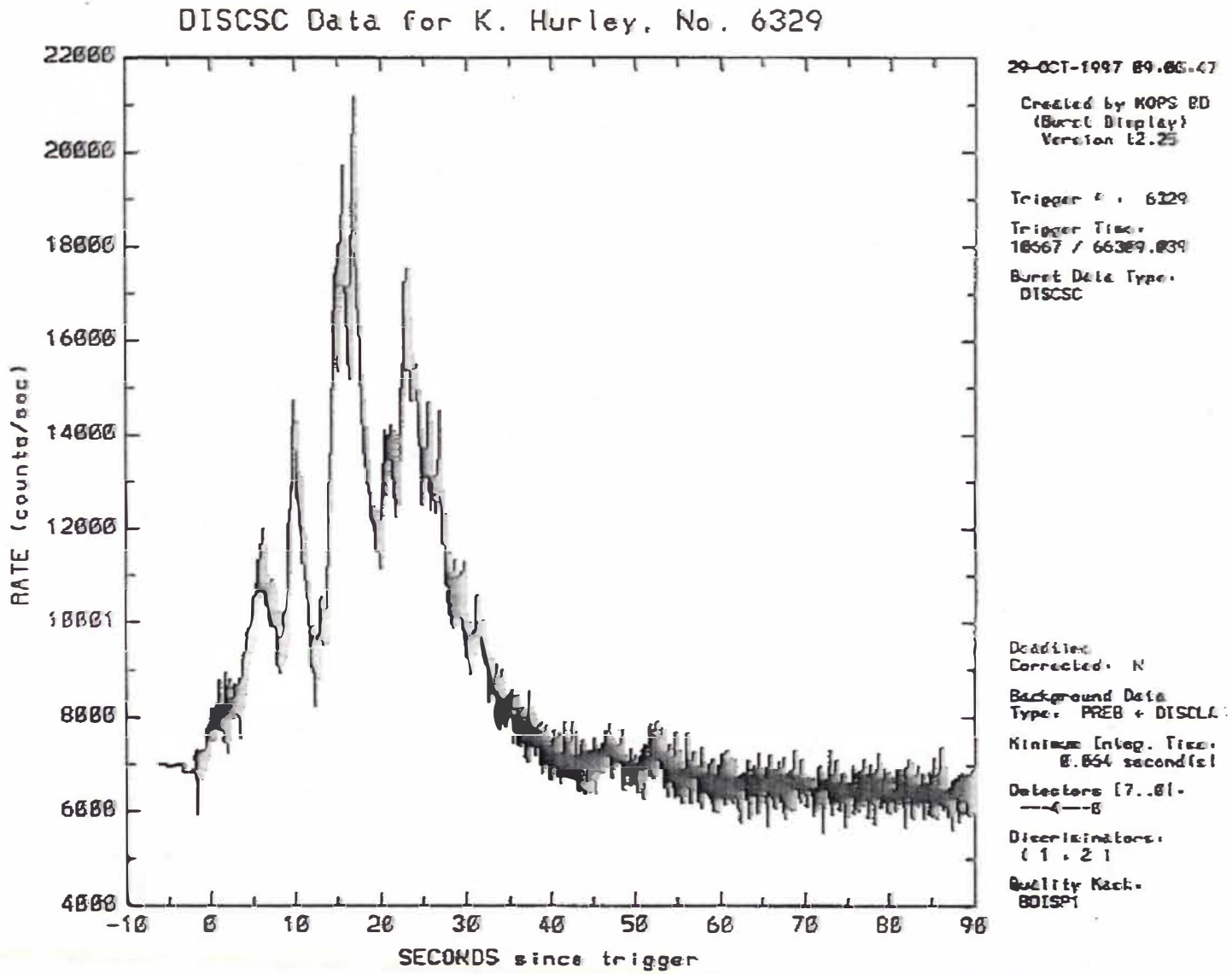
7/ 8/97 68256.118 s

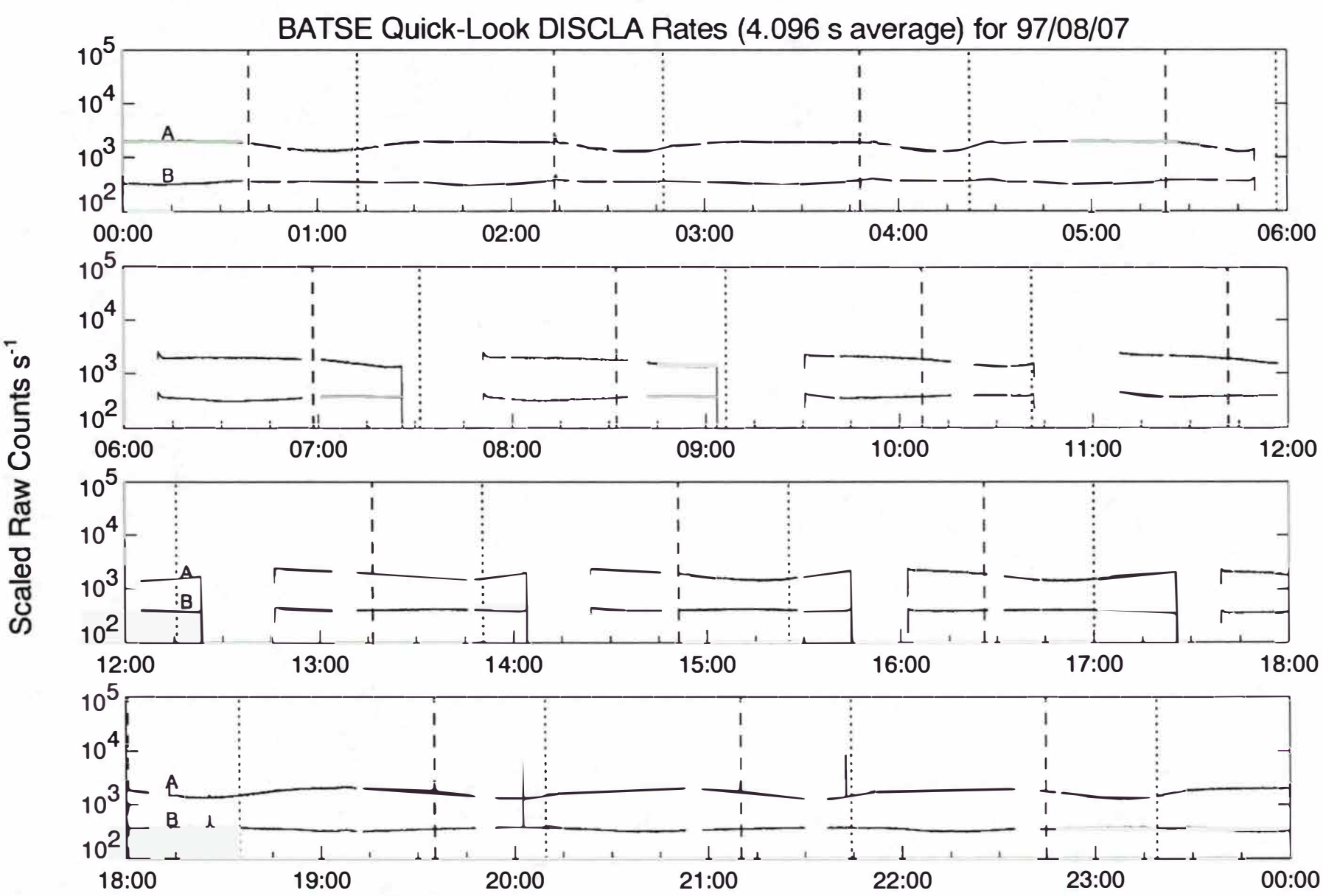
22- 147 keV

7/ 4/98



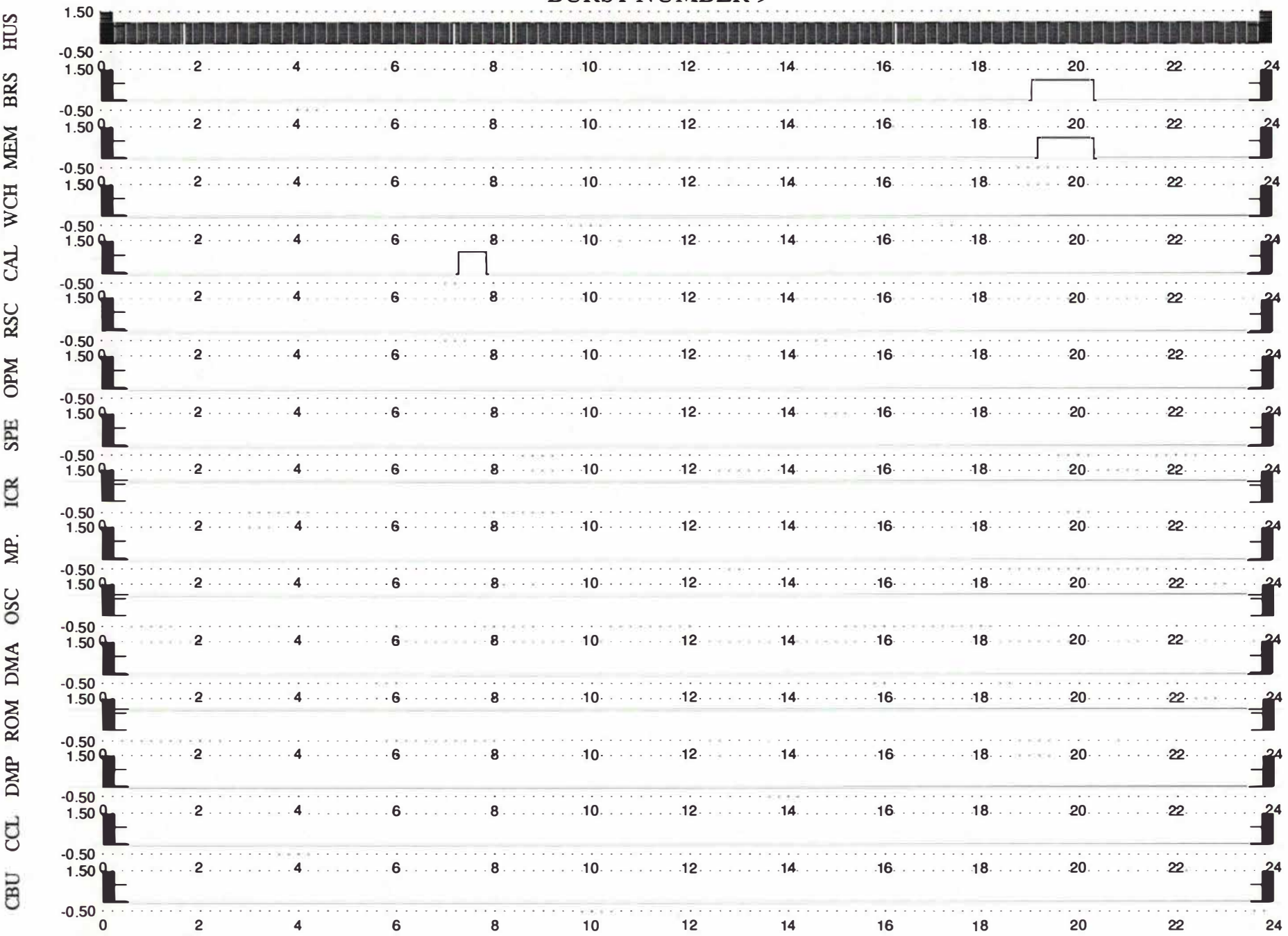

13/11/97
BATSE 07/08/97 66309.090
25- 100 keV
COUNTS/0.064 S
1800
1300
800
300
-3 0
13
2
45
61


DISCSC Data for K. Hurley, No. 6329
RATE (counts/sec)
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
29-OCT-1997 09:06:47
Created by KOPS BD
(Burst Display)
Version 02.25
Trigger # : 6329
Trigger Time:
10567 / 66309.839
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
---4---0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/07
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: 97/08/11, 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

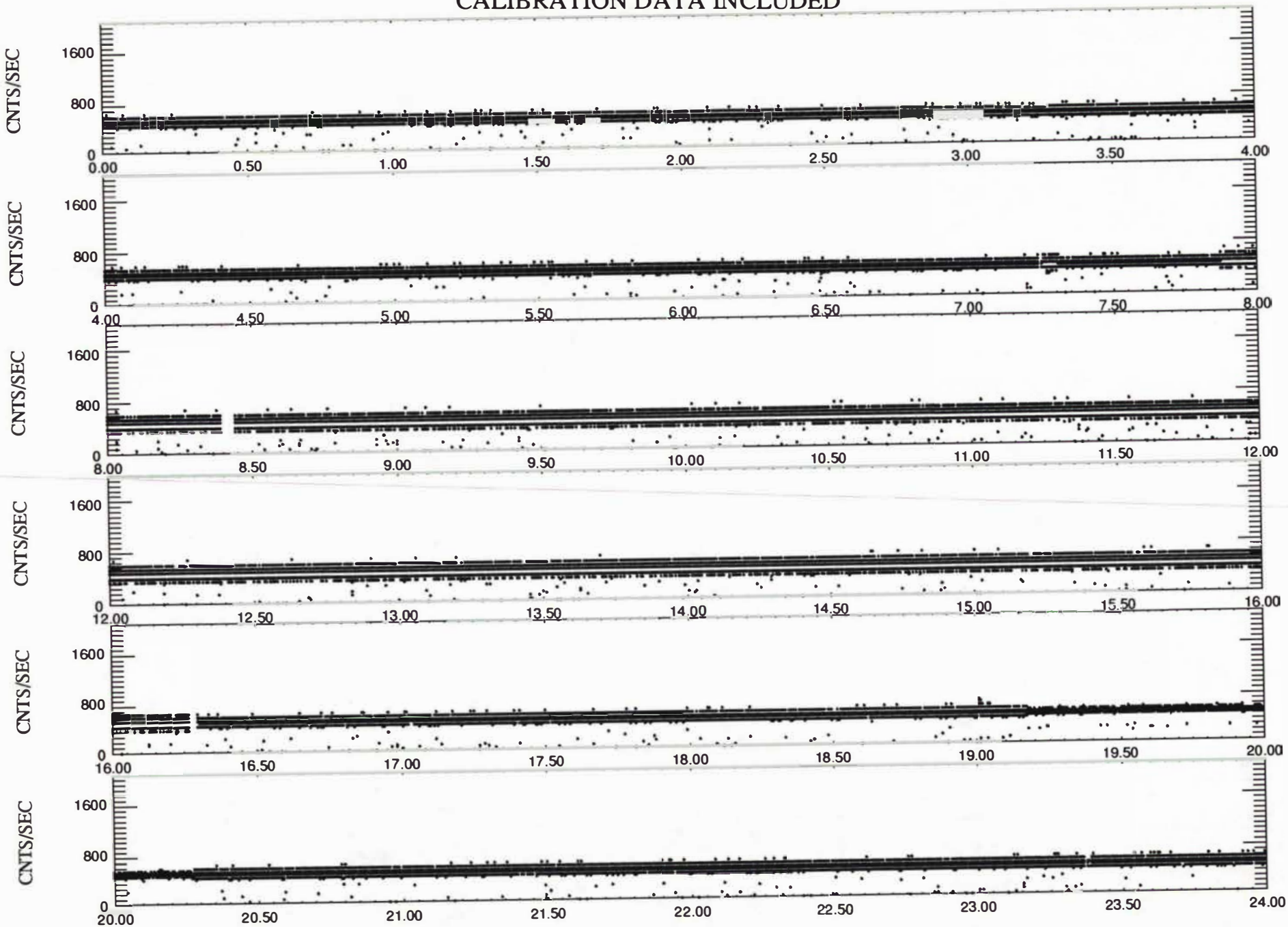
HUS MODES EDR day 219, year 1997 to day 219, year 1997 1/6/98

BURST NUMBER 9



HUS 2A, MODE 1, NOT AVERAGED EDR day 219, year 1997 to day 219, year 1997 1/6/98

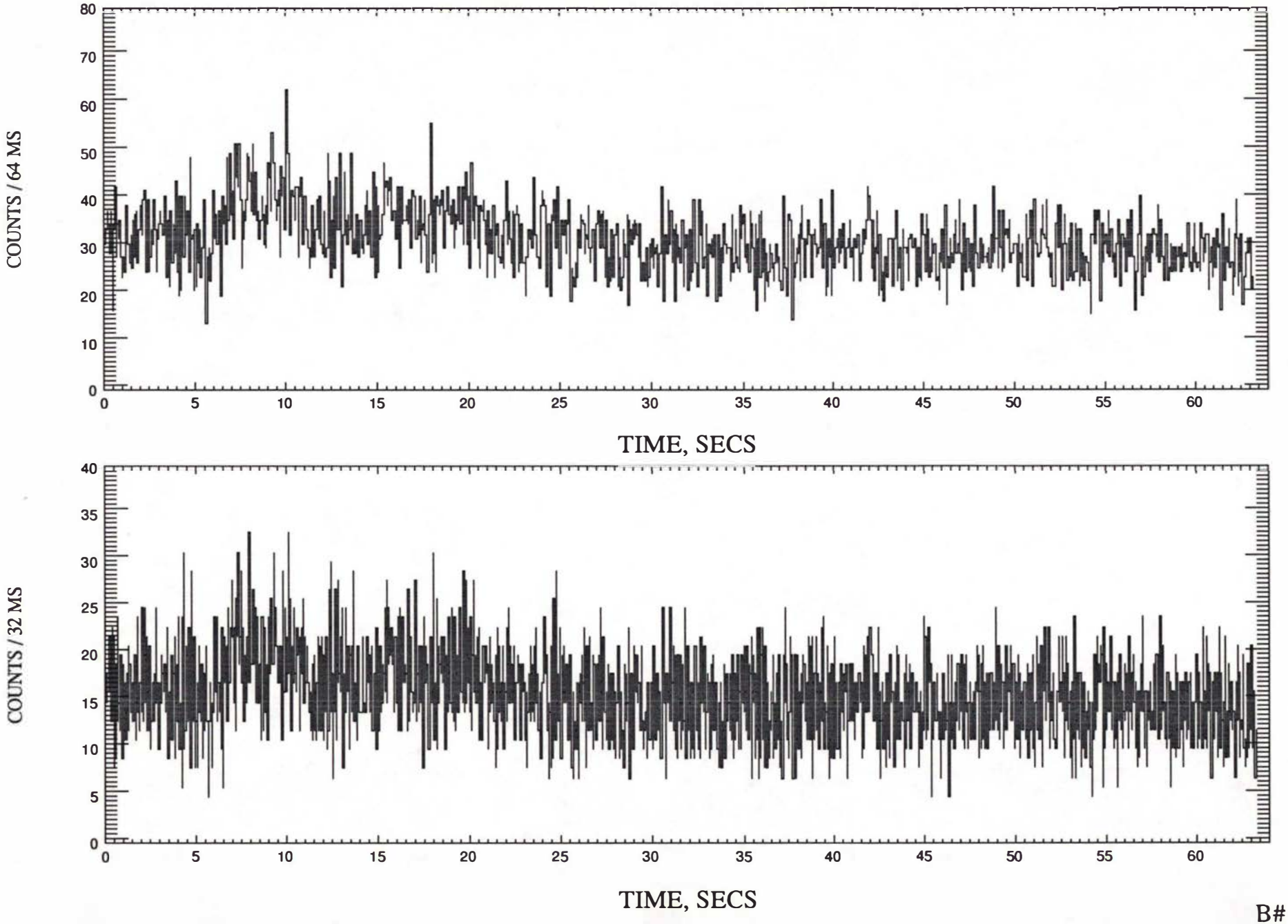
CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

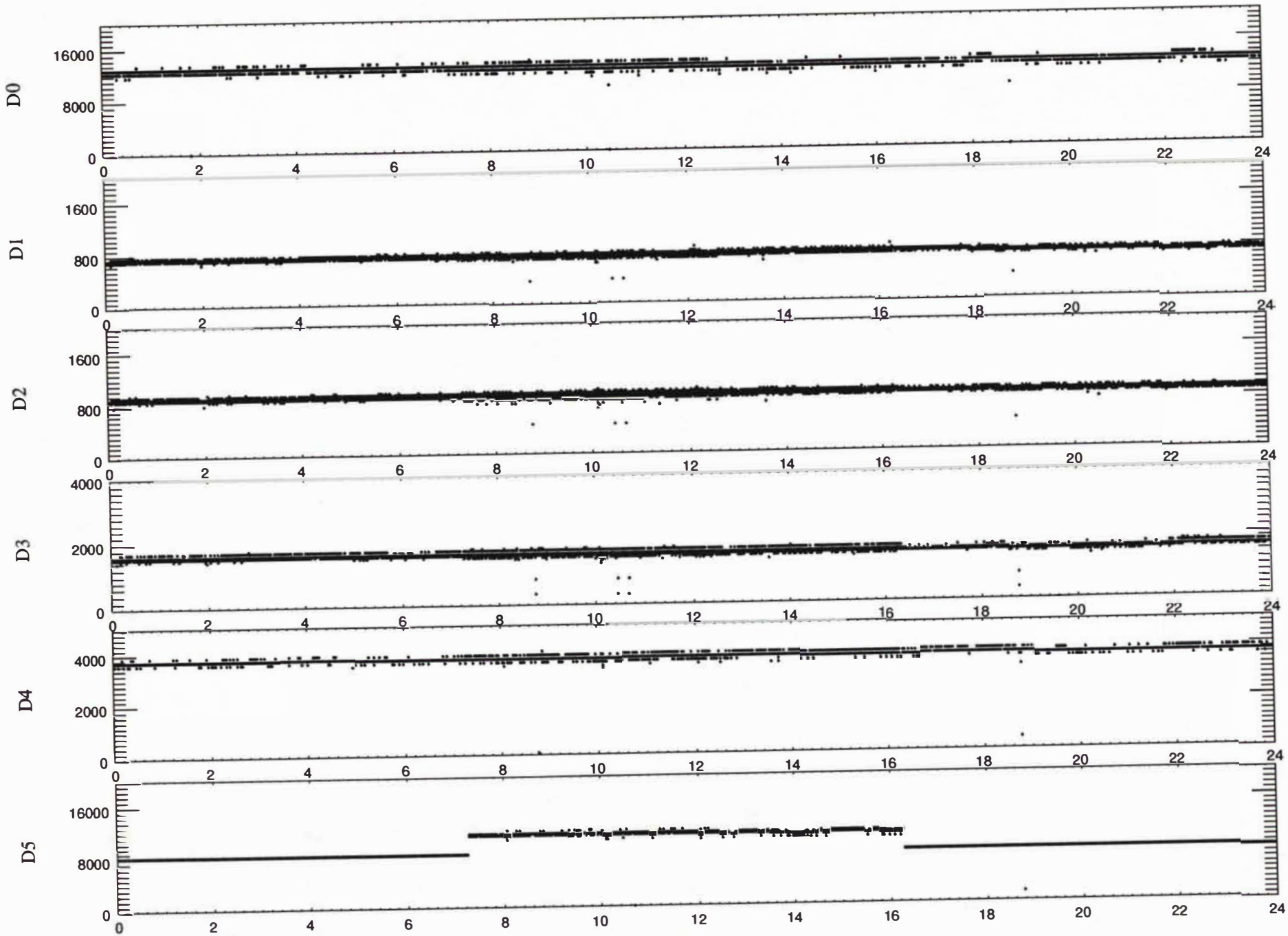
HUS 2A TRIGGERED DATA EDR day 219, year 1997 1/7/98

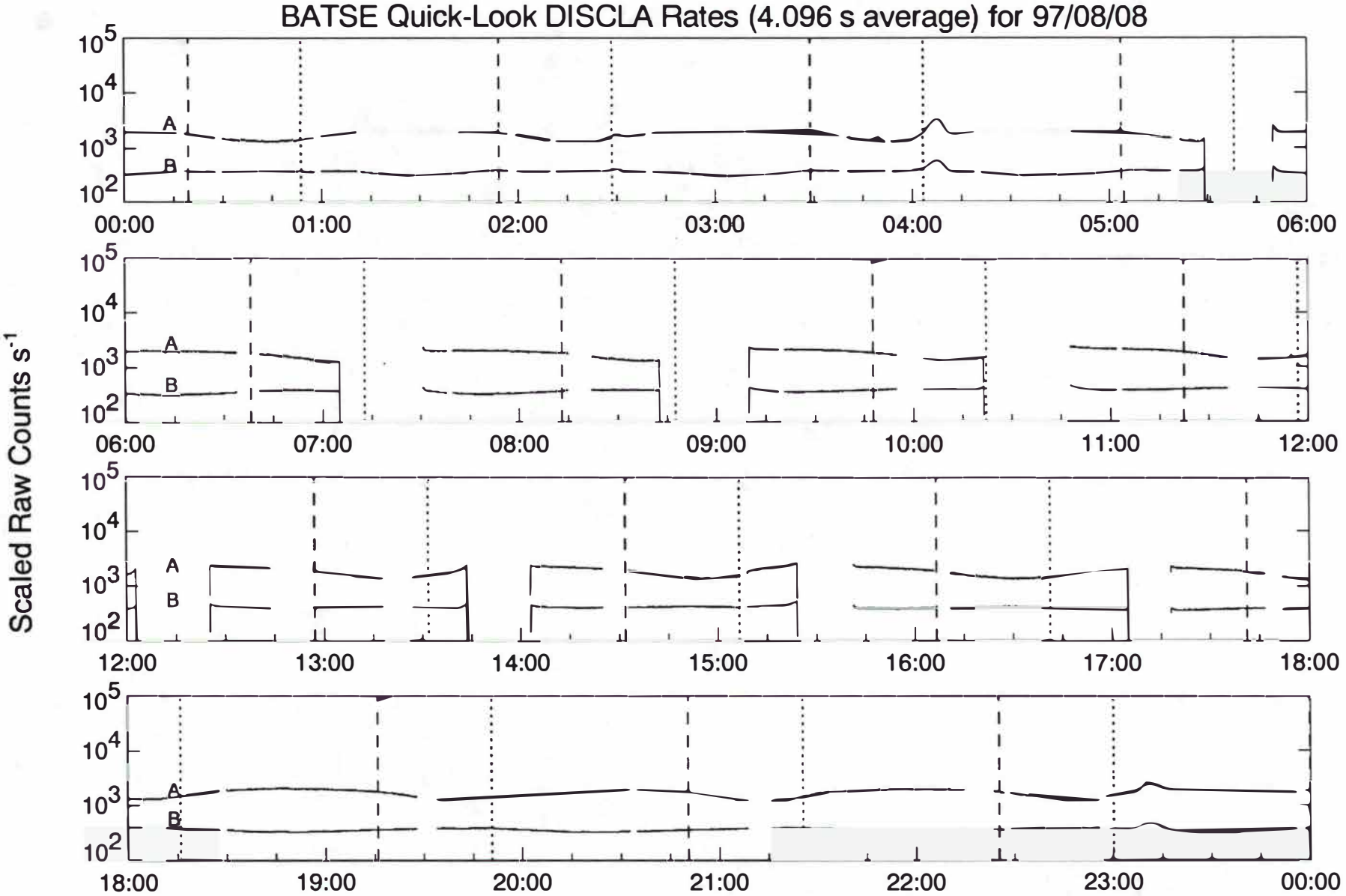
Burst Counter 9 at UT=19.005655644735 h=68420.360 s 19:00:20.360



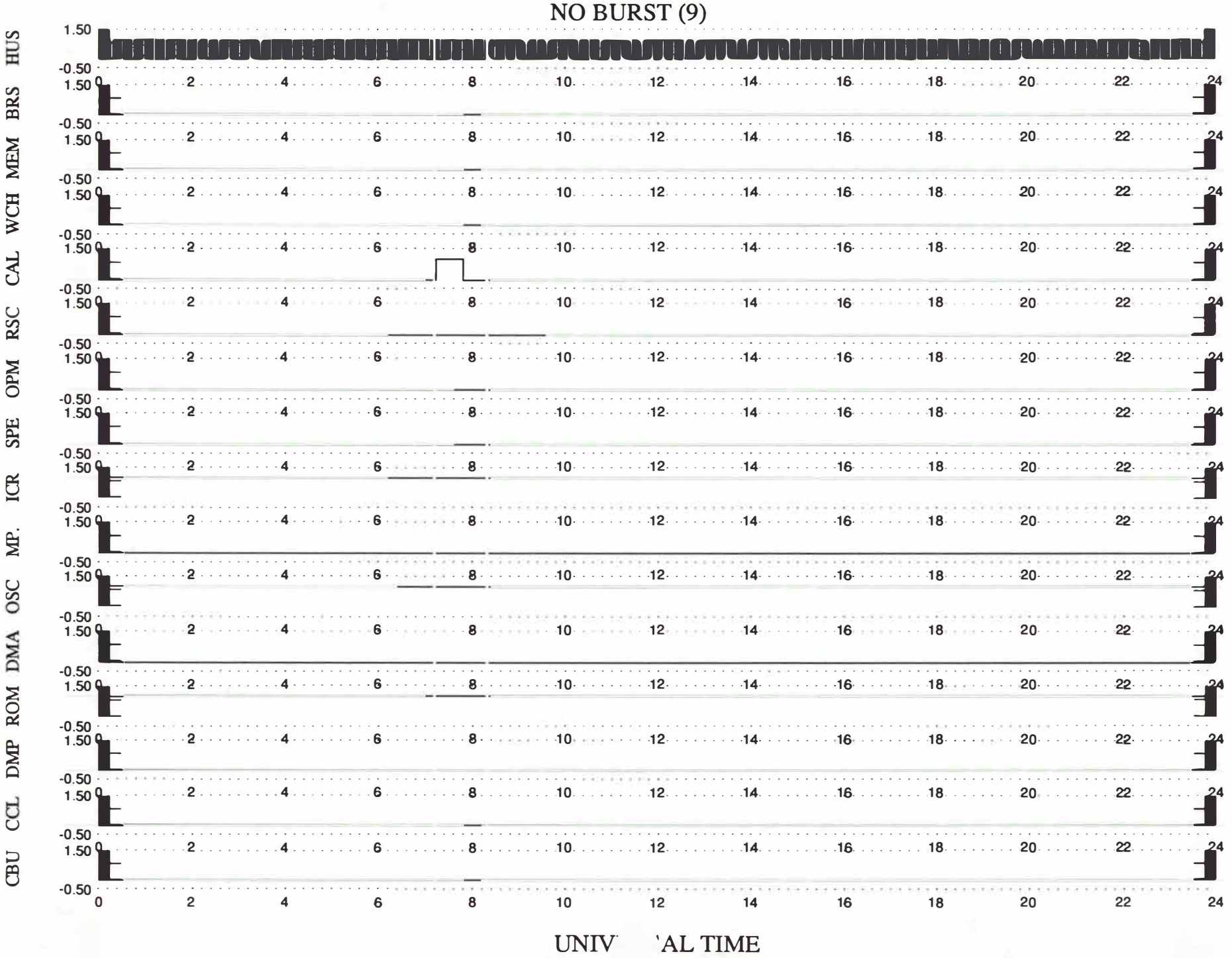
B# 1

HUS 2B COUNTS / SEC EDR day 219, year 1997 to day 219, year 1997 1/6/98



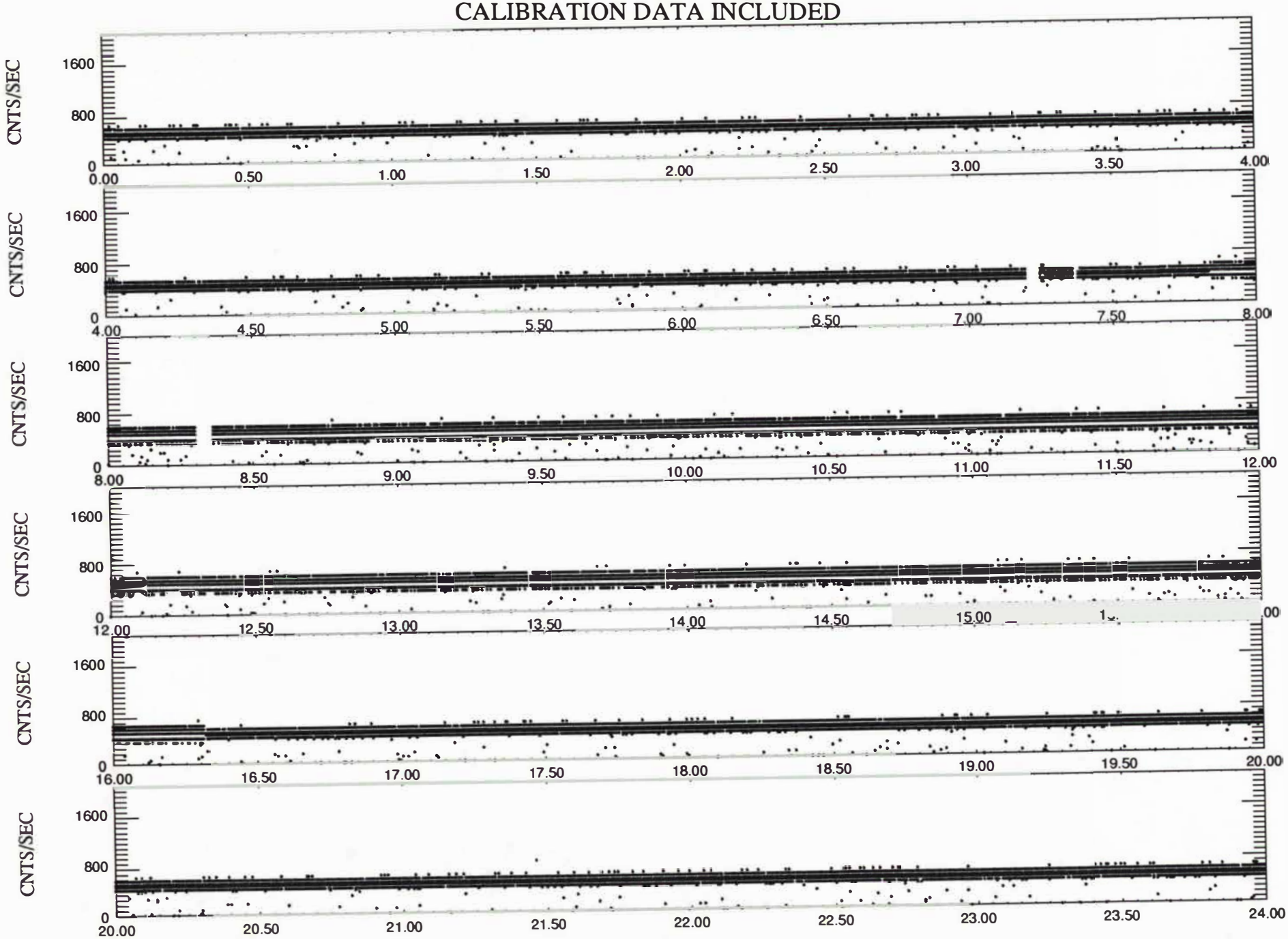

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/08
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/12, 1008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

HUS MODES EDR day 220, year 1997 to day 220, year 1997 1/6/98



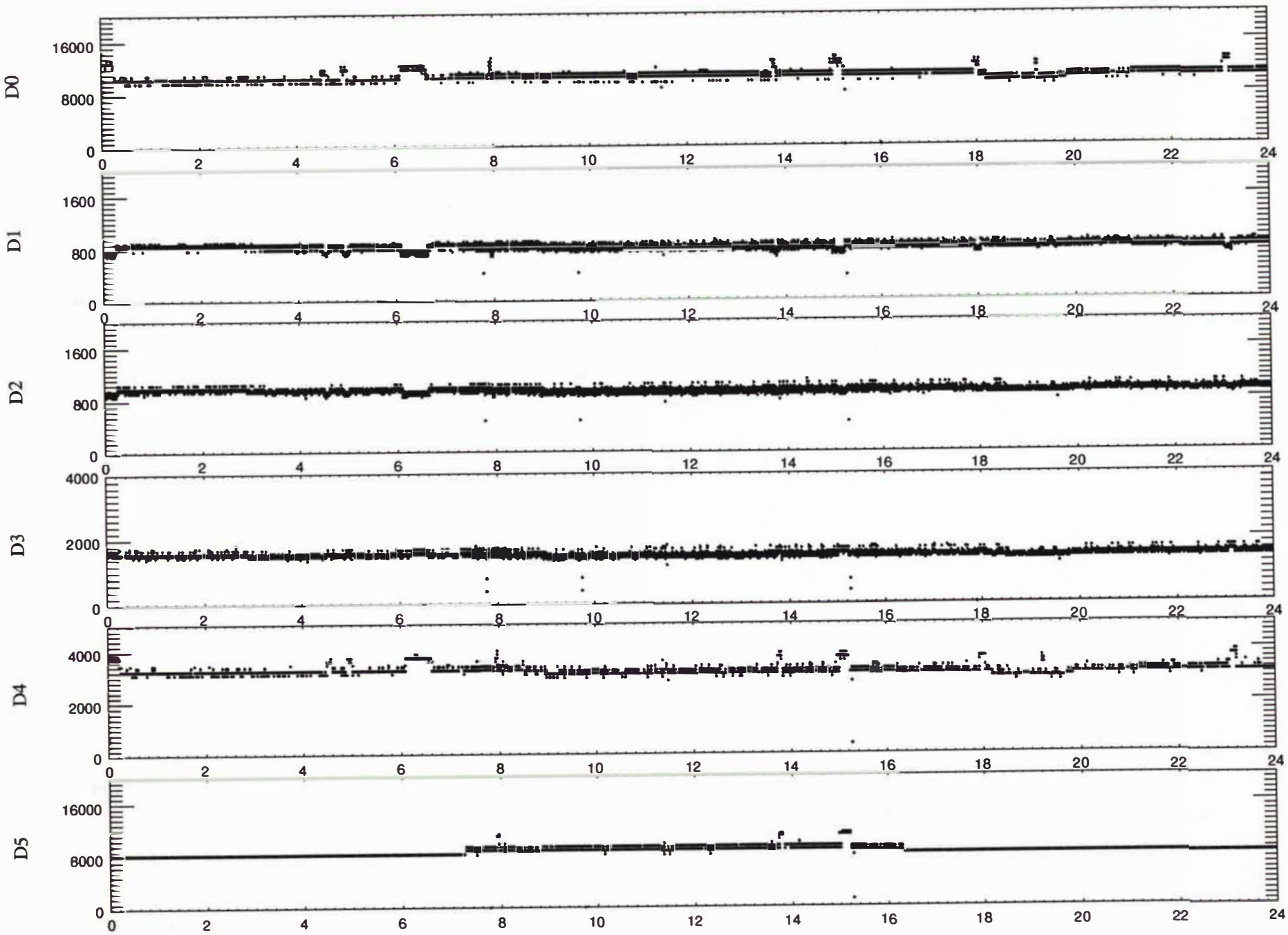
HUS 2A, MODE 1, NOT AVERAGED EDR day 220, year 1997 to day 220, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 220, year 1997 to day 220, year 1997 1/6/98



From SURASAK@ssl.msfc.nasa.gov Mon Aug 11 12:26 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 MAA29370; Mon, 11 Aug 1997 12:26:36 -0700
Date: Mon, 11 Aug 1997 14:26:30 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970811142630.202030e9@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6330
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6330
EVENT OF 1997 AUG 9 DAY OF YEAR=221
EVENT CROSSING TIME AT BATSE : 9953. S. OR 02:45:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 184.000 67.000
BATSE PEAK COUNTING RATE: 1900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 8/ 97 IS:
RA= 158.208 DEC= 21.403 DIST= 6.165 AU
BATSE-ULYSSES DISTANCE = 922293054. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=131.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2041.10 SECS.
CROSSING TIME AT ULYSSES IS 7912. S. OR 02:11:51 +/- 418.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 8/ 97 IS:
RA= 204.618 DEC= -10.797 DIST= 1.513 AU
MARS-BATSE DISTANCE = 226334800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -141.03 SECS.
CROSSING TIME AT MARS IS 9812. S. OR 02:43:31 +/- 126.63 SECONDS

BATSE BURST TRIGGER
NO.: 6330

TIME: TJD=0669 SECONDS=9953

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=112.0 AZIMUTH=276.6 ERROR=9.696 DEGREES

COMMENTS:
GRB. DUR~7S. SINGLE PULSE. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6330	970809	10669	09953	1900	184	+67	7

BATSE BURST# 6330

ULYSSES RT 11/ 8/97

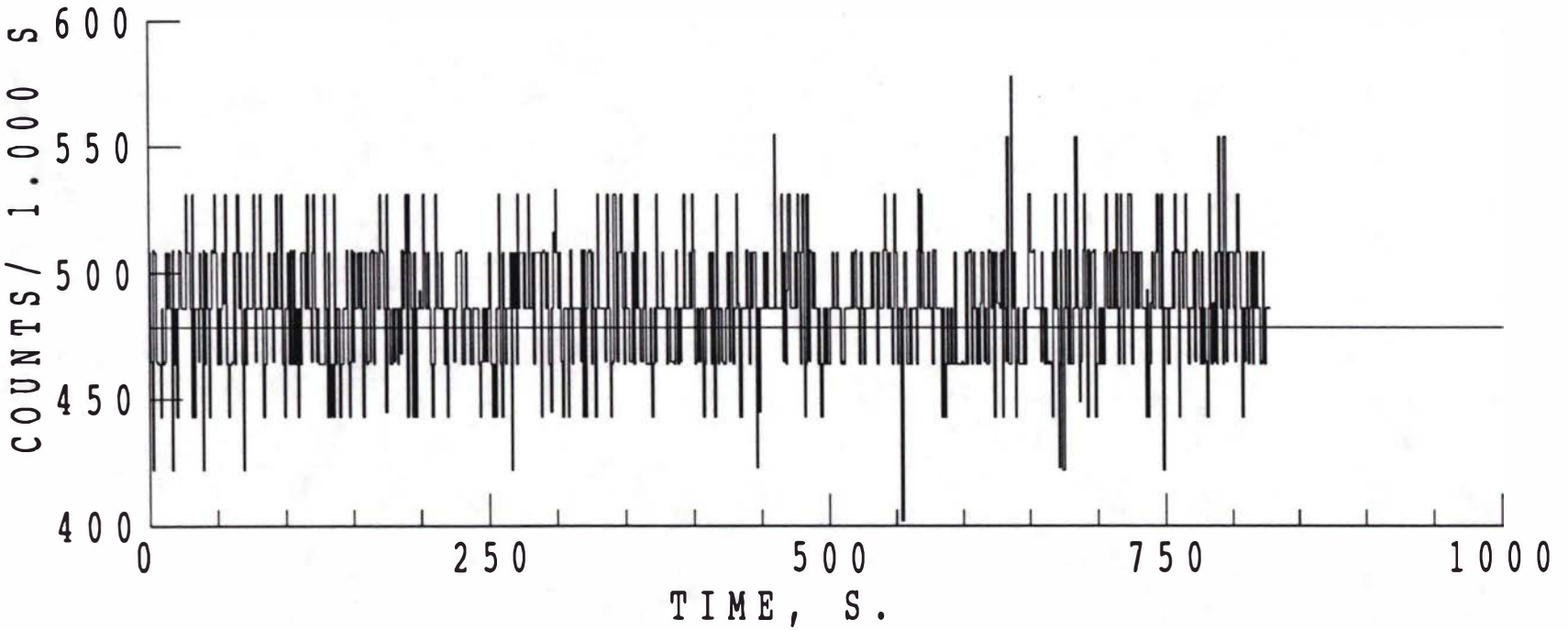
9/ 8/97 7488.406 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@ssl.msfc.nasa.gov Mon Aug 11 12:28 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA29398; Mon, 11 Aug 1997 12:28:32 -0700
Date: Mon, 11 Aug 1997 14:28:28 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970811142828.202030e9@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6331
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6331
EVENT OF 1997 AUG 9 DAY OF YEAR=221
EVENT CROSSING TIME AT BATSE : 56297. S. OR 15:38:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 159.000 -65.000
BATSE PEAK COUNTING RATE: 2650 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 8/ 97 IS:
RA= 158.284 DEC= 21.345 DIST= 6.168 AU
BATSE-ULYSSES DISTANCE = 922751451. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -196.12 SECS.
CROSSING TIME AT ULYSSES IS 56101. S. OR 15:35:00 +/- 580.32 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 8/ 97 IS:
RA= 204.618 DEC= -10.797 DIST= 1.513 AU
MARS-BATSE DISTANCE = 226334800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -347.39 SECS.
CROSSING TIME AT MARS IS 55950. S. OR 15:32:29 +/- 111.10 SECONDS

BATSE BURST TRIGGER

NO.: 6331

TIME: TJD=0669 SECONDS=56297

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

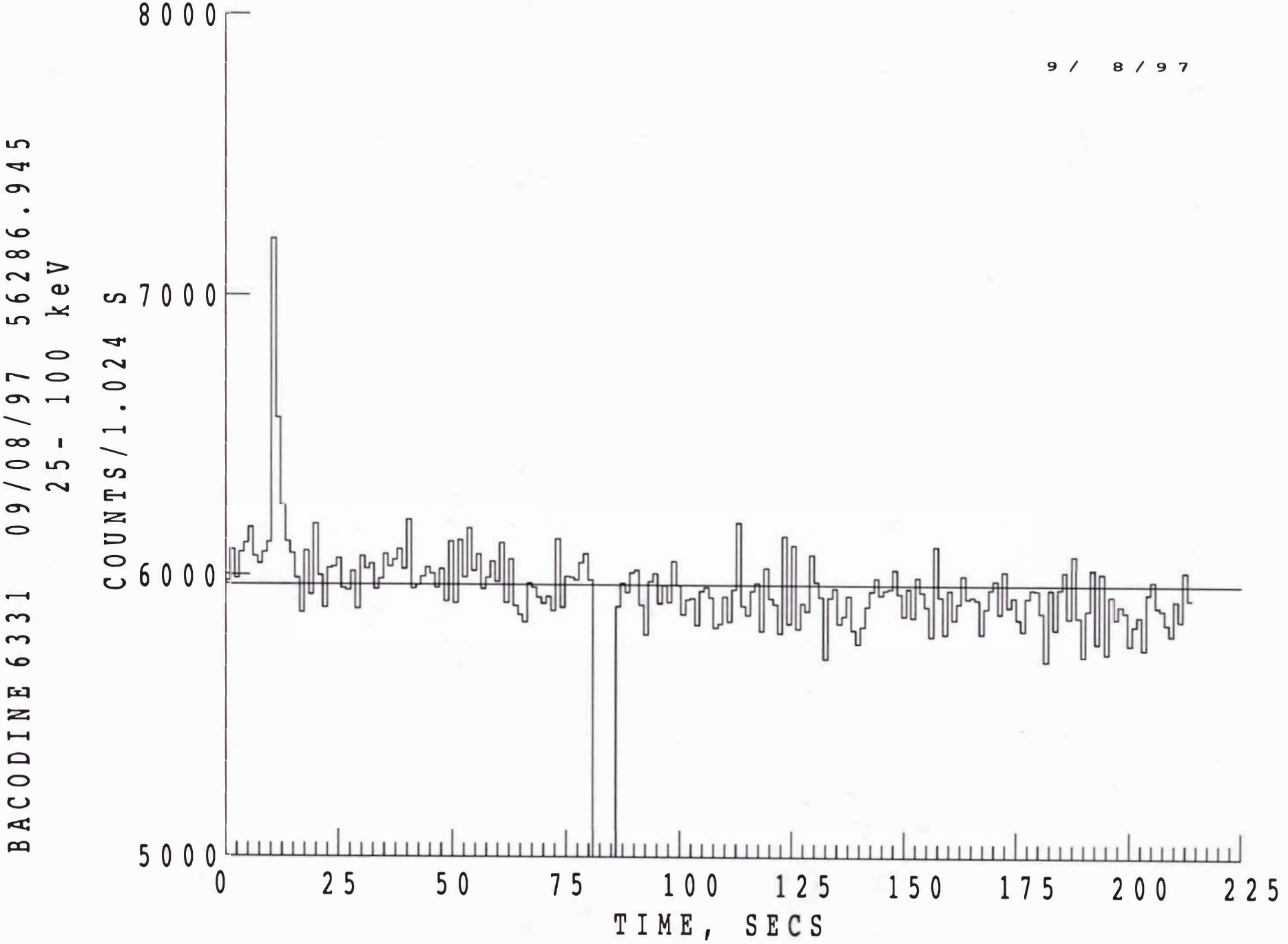
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=72.0 AZIMUTH=47.0 ERROR=8.798 DEGREES

COMMENTS:
GRB. DUR~2SEC. SINGLE PULSE. BARELY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6331	970809	10669	56297	2650	159	-65	2


9/ 8/97
BACODINE 6331 09/08/97 56286.945
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# 6331

ULYSSES RT 11/ 8/97

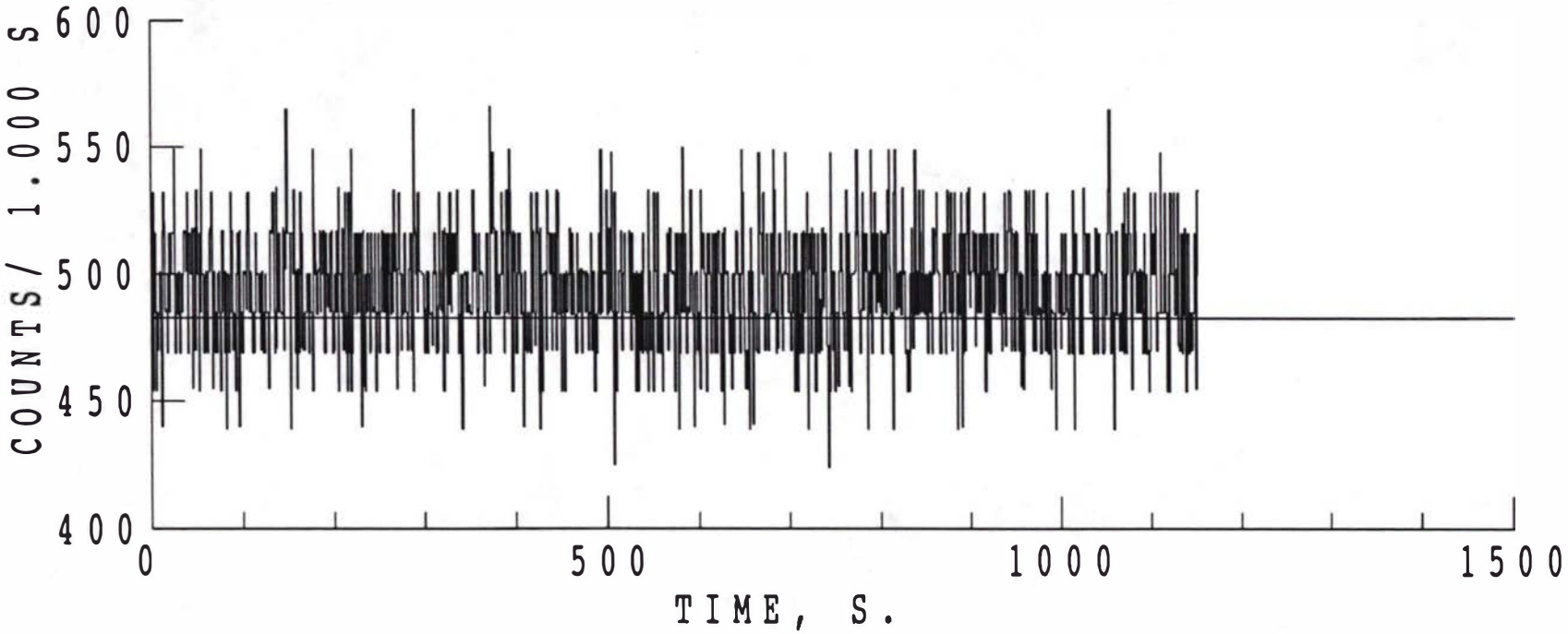
9/ 8/97 55512.211 s

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



From SURASAK@ssl.msfc.nasa.gov Mon Aug 11 12:15 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 MAA29246; Mon, 11 Aug 1997 12:15:41 -0700
Date: Mon, 11 Aug 1997 14:15:22 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
        cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
        bacodine@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
Message-Id: <970811141523.2020384b@SSLLES.MSFC.NASA.GOV>
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1296
Status: R

BATSE BURST TRIGGER

NO.: 6332

TIME: TJD=0669 SECONDS=59581

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.3 AZIMUTH=337.0 ERROR=0.231 DEGREES

COMMENTS:
SOLAR FLARE. DUR~130S. GOES C8.5, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE
STRART AT T-30S. WEAKLY VISIBLE ABOVE 100 KEV.

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

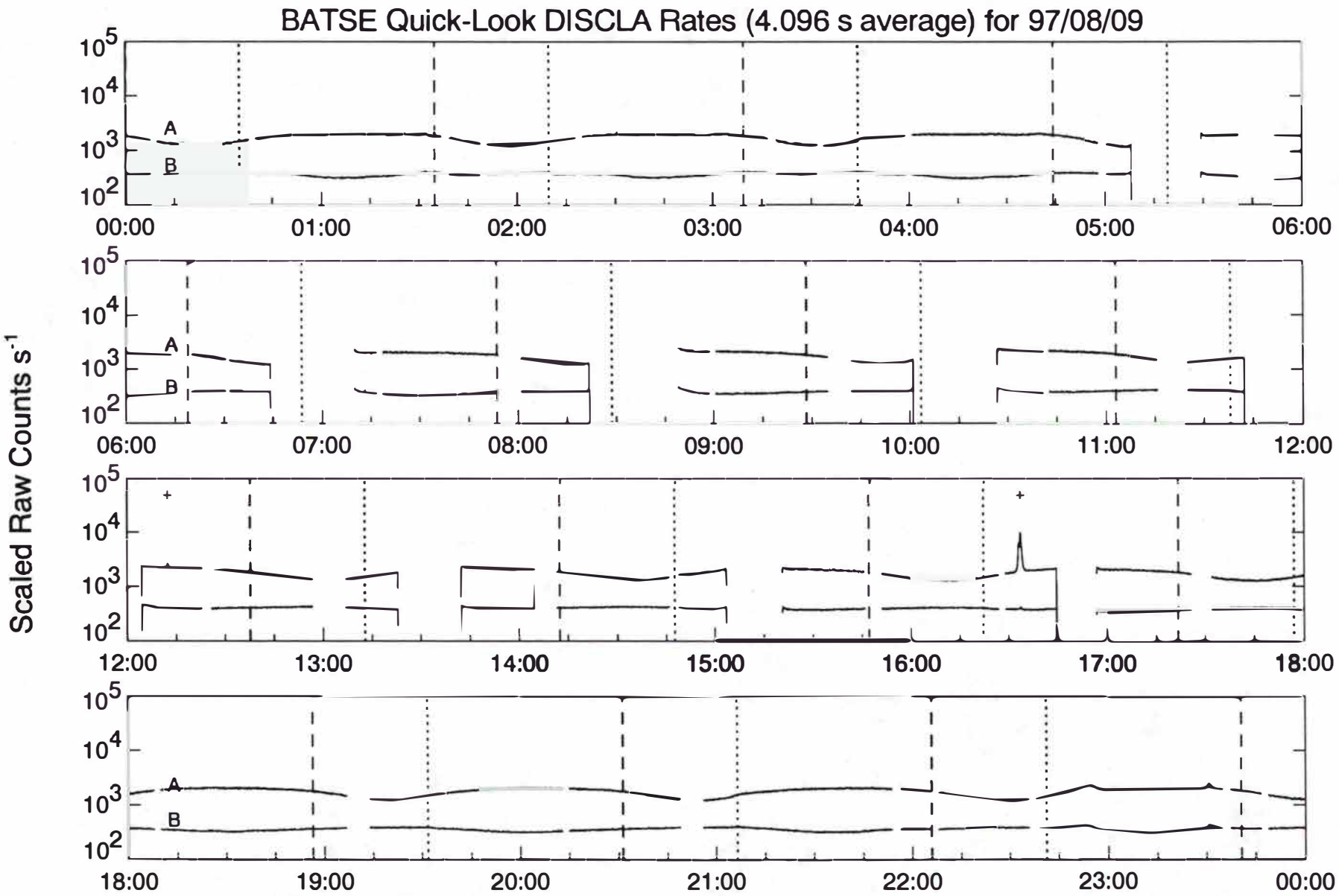
Ulysses burst	TGRS sees?	TGRS characteristics
3/25/97 17:49	YES! TGRS #547	63384 s. 300 cts/s peak 15s dur. (100-300 keV) 100 cts/s peak 15s dur. (35-100 keV)
3/29/97 12:23	NO	
7/2/97 11:49	YES BUT TGRS #582	40631 s. 175 cts/s peak 1s dur. 100-300 keV NOT SEEN in 35-100 keV
7/5/97 15:31	NO	
7/9/97 10:56	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	

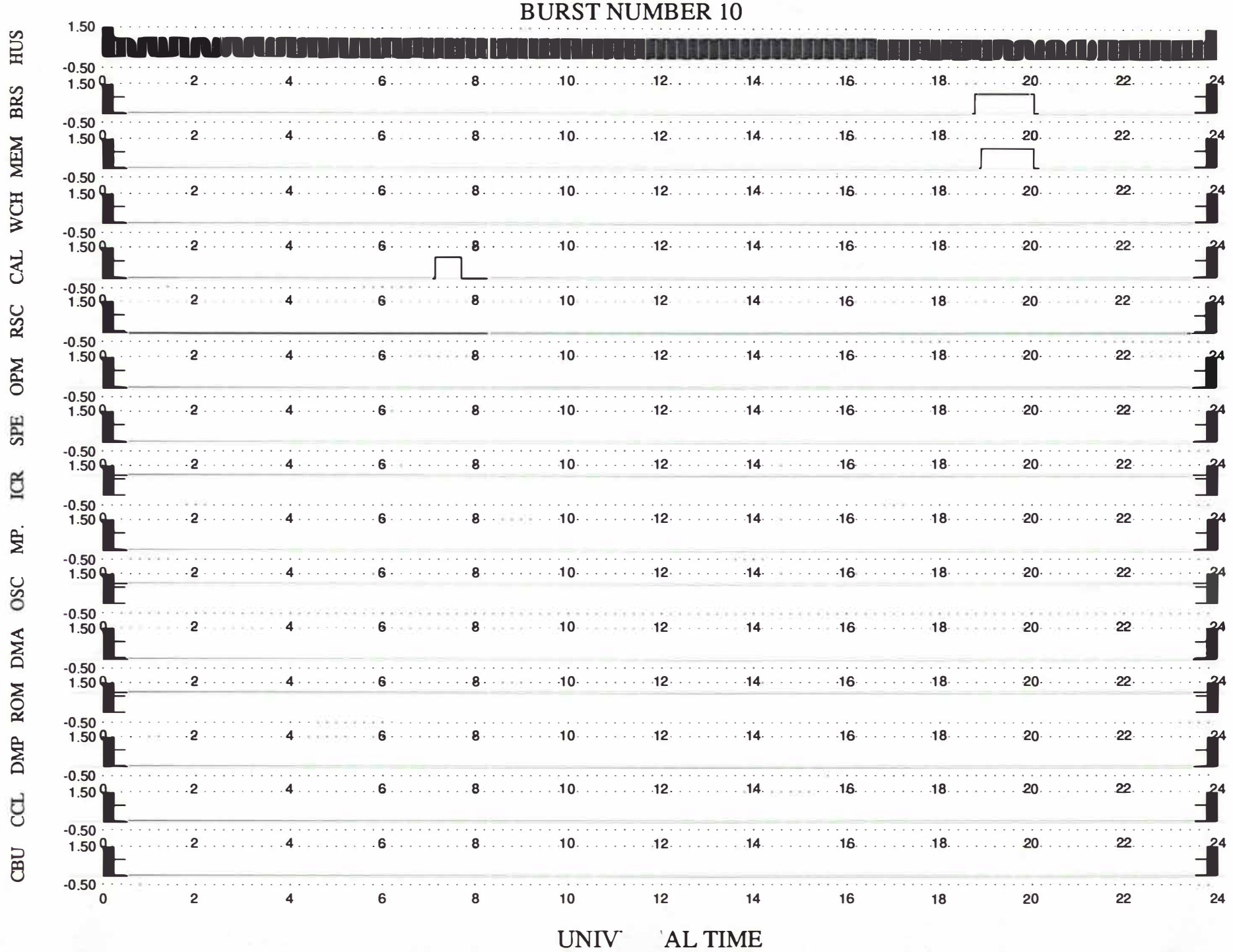
July 5 15:31	weak 100 ms long	not detected
July 9 10:56	weak 100 ms long	not detected
[illegible] 14 03:48	weak 100 ms long	not detected
July 15 15:01	moderate 5 s long	trigger at 14:21:14.349 North detector strong, hard, main peak 20 s after trigger. main peak bell-shaped with 3 s half-width
July 21 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

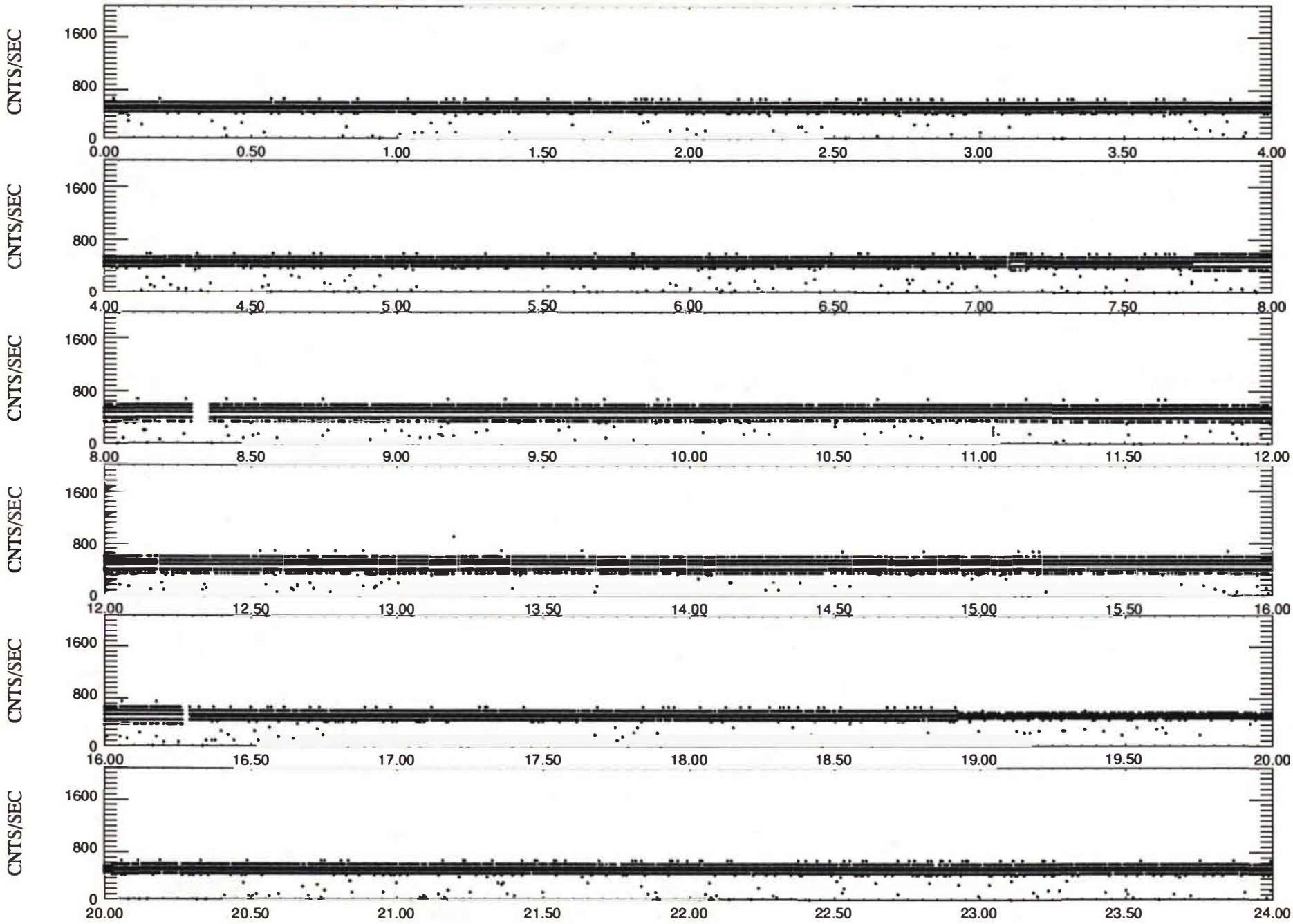
Ulysses event (1997)		Konus observation
Mar 25 17:49	moderate 15 s long	trigger at 17:36:22.800 North detector two peaks, with the first stronger and harder. each peak lasted 20 s, separated by 20 s without emission
Mar 29 12:23	weak 100 ms long	not detected
May 21 15:23	weak 100 ms long	not detected
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


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


BURST NUMBER 10
HUS
BRS
MEM
WCH
CAL
RSC
OPM
SPE
ICR
MP.
OSC
DMA
ROM
DMP
CCL
CBU
1.50
-0.50
0
2
4
6
8
10
12
14
16
18
20
22
24
UNIV AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 221, year 1997 to day 221, year 1997 1/6/98

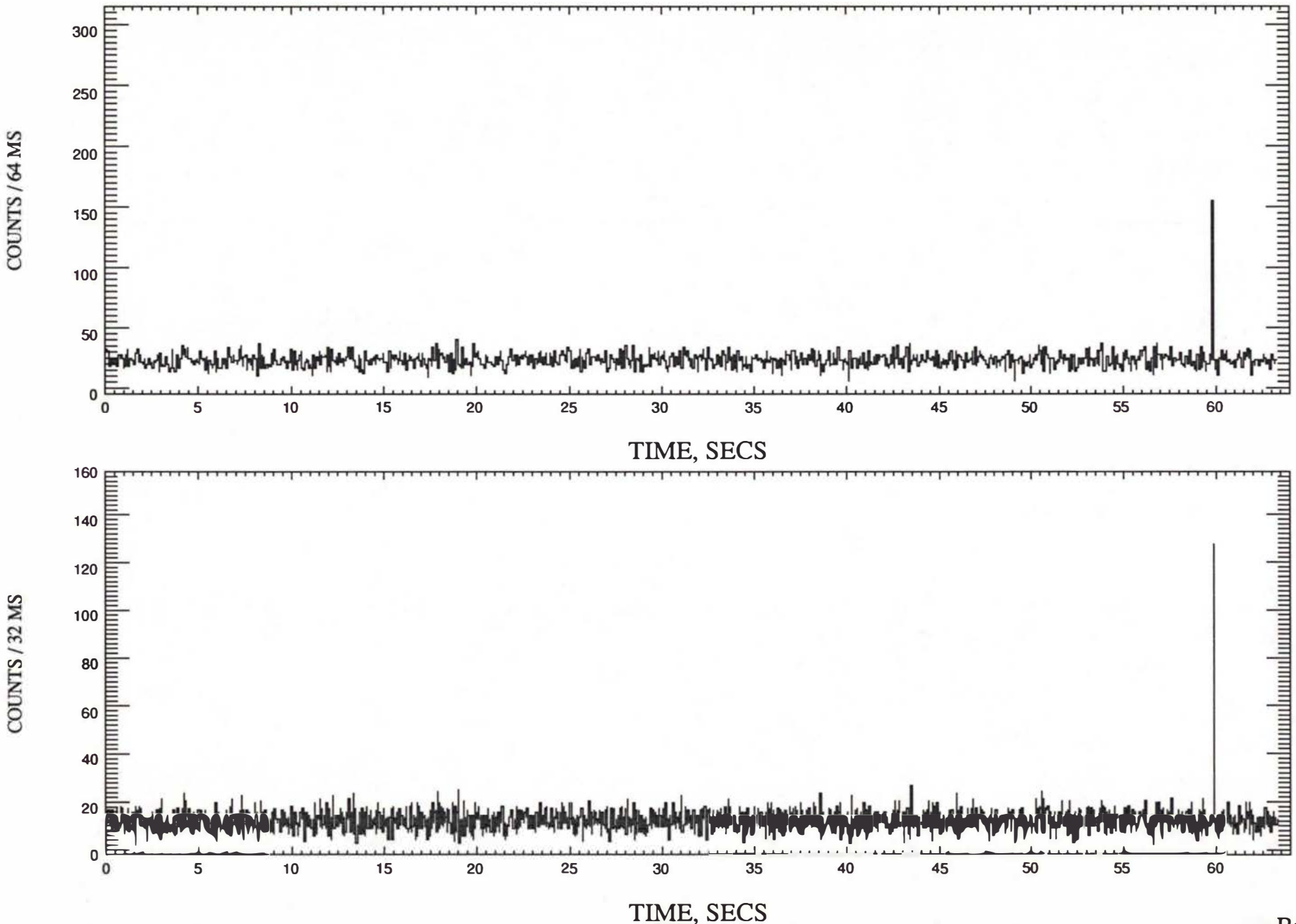
CALIBRATION DATA INCLUDED



UNIV `AL TIME

HUS 2A TRIGGERED DATA EDR day 221, year 1997 1/7/98

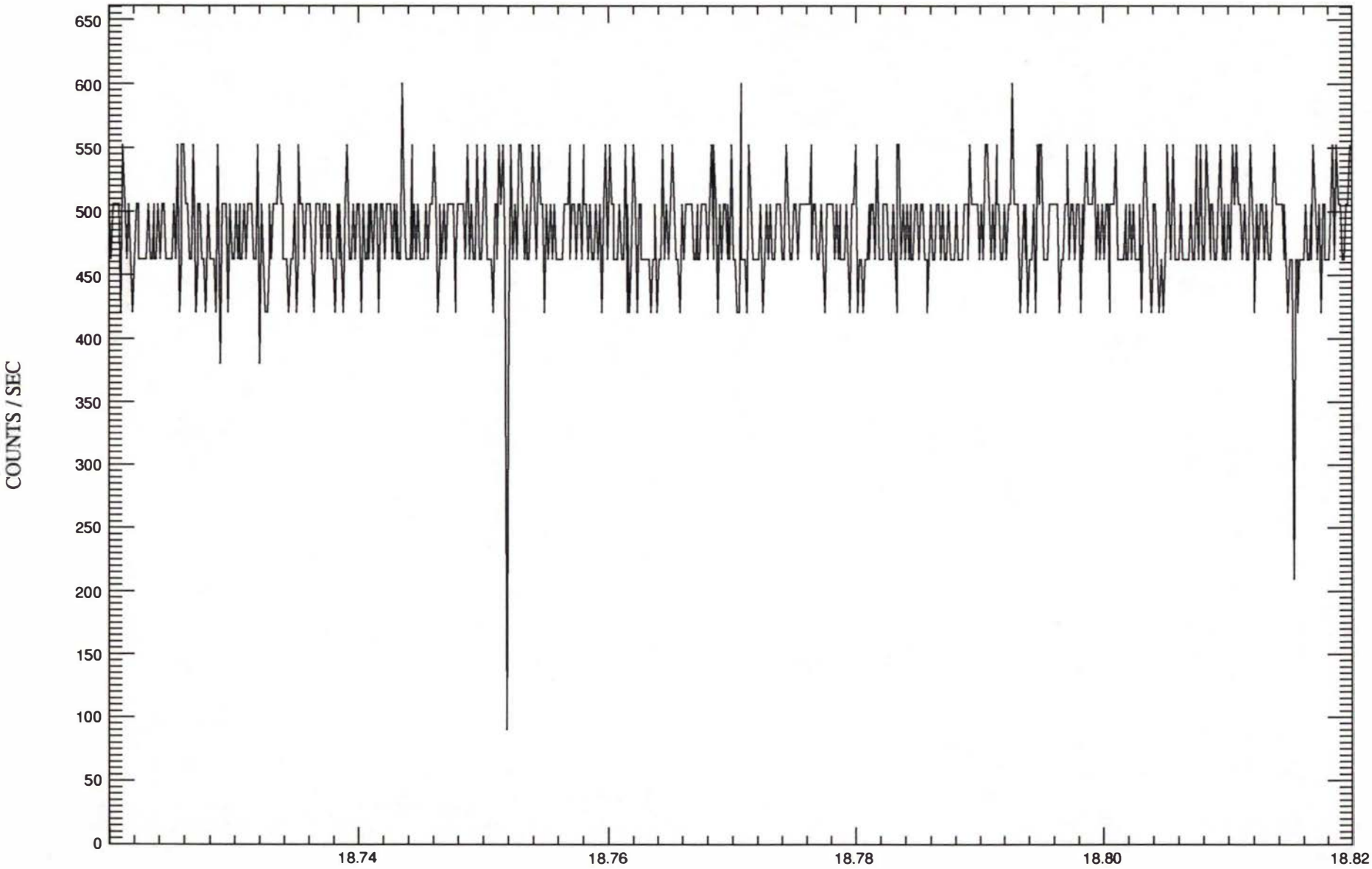
Burst Counter 10 at UT=18.771620563931 h=67577.834 s 18:46:17.834



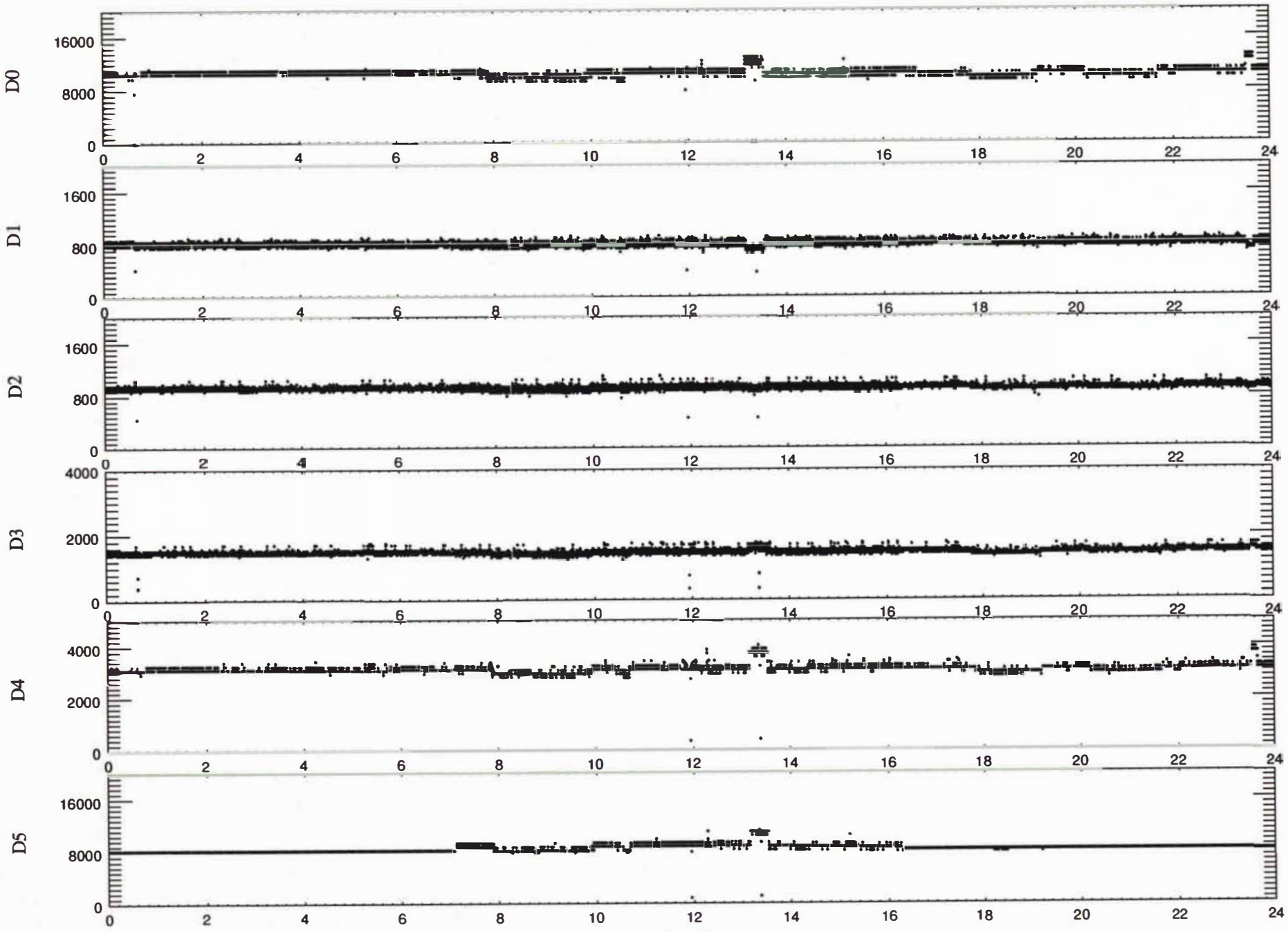
B# 1

HUS 2A, MODE 1, NOT AVERAGED EDR day 221, year 1997 to day 221, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 221, year 1997 to day 221, year 1997 1/6/98



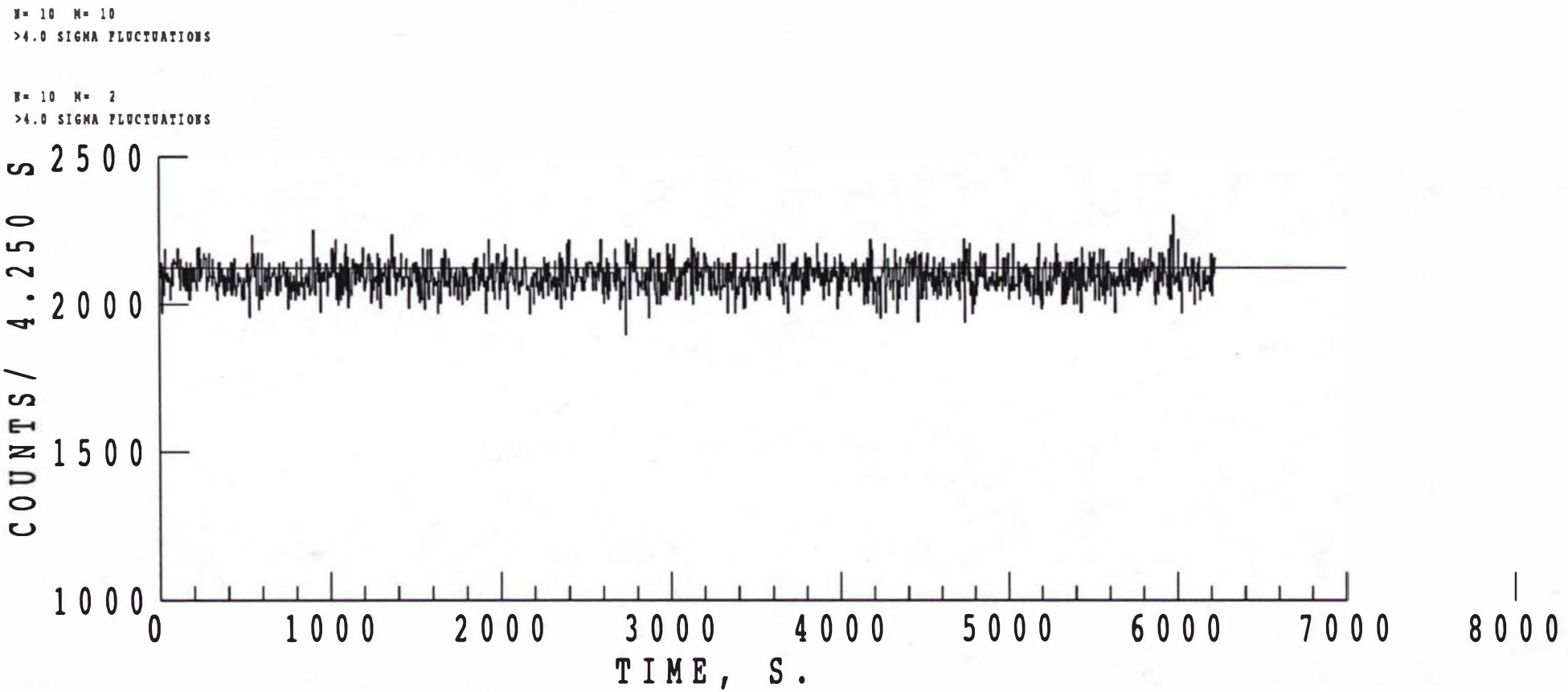
KONUS

ULYSSES RT 04/02/00

10/08/97 55044.199 s

0.250 S INTERVALS REGROUPED BY 17

0- 0 keV



From SURASAK@ssl.msfc.nasa.gov Thu Aug 14 08:29 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 IAA00752; Thu, 14 Aug 1997 08:29:56 -0700
Date: Thu, 14 Aug 1997 8:23:43 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970814082343.20203a48@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6333
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6333
EVENT OF 1997 AUG 10 DAY OF YEAR=222
EVENT CROSSING TIME AT BATSE : 78359. S. OR 21:45:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 307.000 -29.000
BATSE PEAK COUNTING RATE: 8100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 8/ 97 IS:
RA= 158.462 DEC= 21.209 DIST= 6.175 AU
BATSE-ULYSSES DISTANCE = 923795794. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 29.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2683.63 SECS.
CROSSING TIME AT ULYSSES IS 81043. S. OR 22:30:42 +/- 353.68 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 8/ 97 IS:
RA= 205.186 DEC= -11.027 DIST= 1.519 AU
MARS-BATSE DISTANCE = 227240000. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 62.94 SECS.
CROSSING TIME AT MARS IS 78422. S. OR 21:47:01 +/- 132.10 SECONDS

BATSE BURST TRIGGER

NO.: 6333

TIME: TJD=0670 SECONDS=78359

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=36.0 AZIMUTH=148.7 ERROR=2.423 DEGREES

COMMENTS:
GRB. DUR~80S. DOUBLE PULSE WITH SUBSTRUCTURE. THE SECOND PULSE STARTED AT T+45S
NOT VISIBLE ABOVE 300 KEV. IN DATA GAP.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6333	970810	10670	78359	8100	307	-29	80

BATSE BURST# 6333

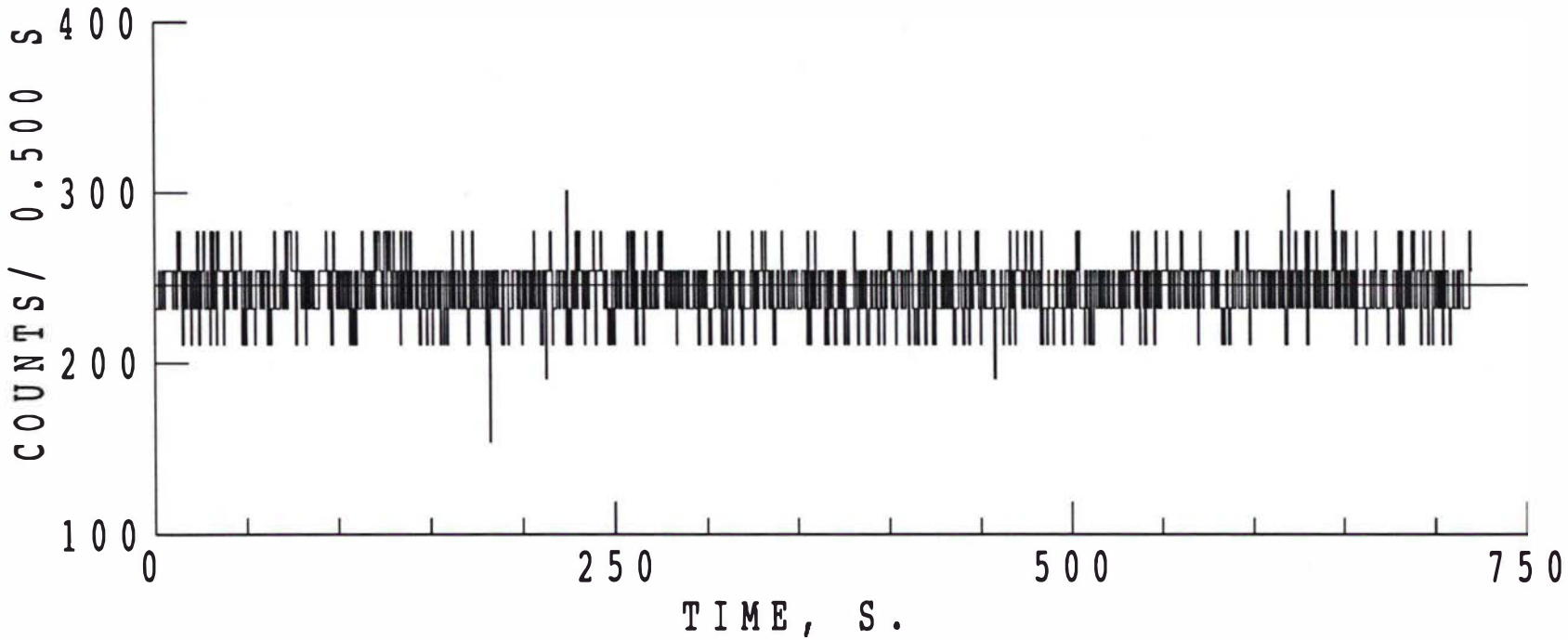
ULYSSES RT 7/ 1/98

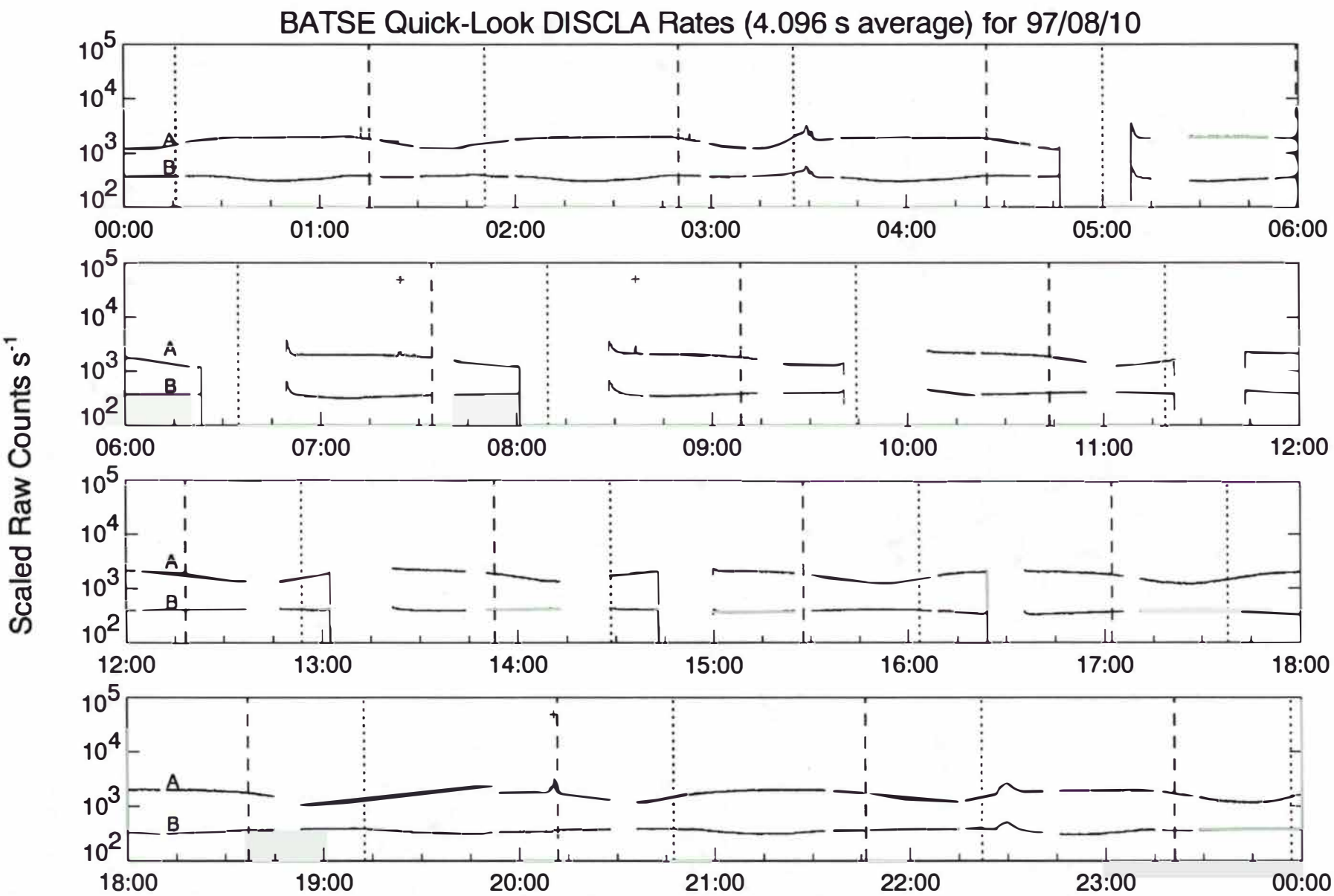
10/ 8/97 80676.242 s

0- 0 keV

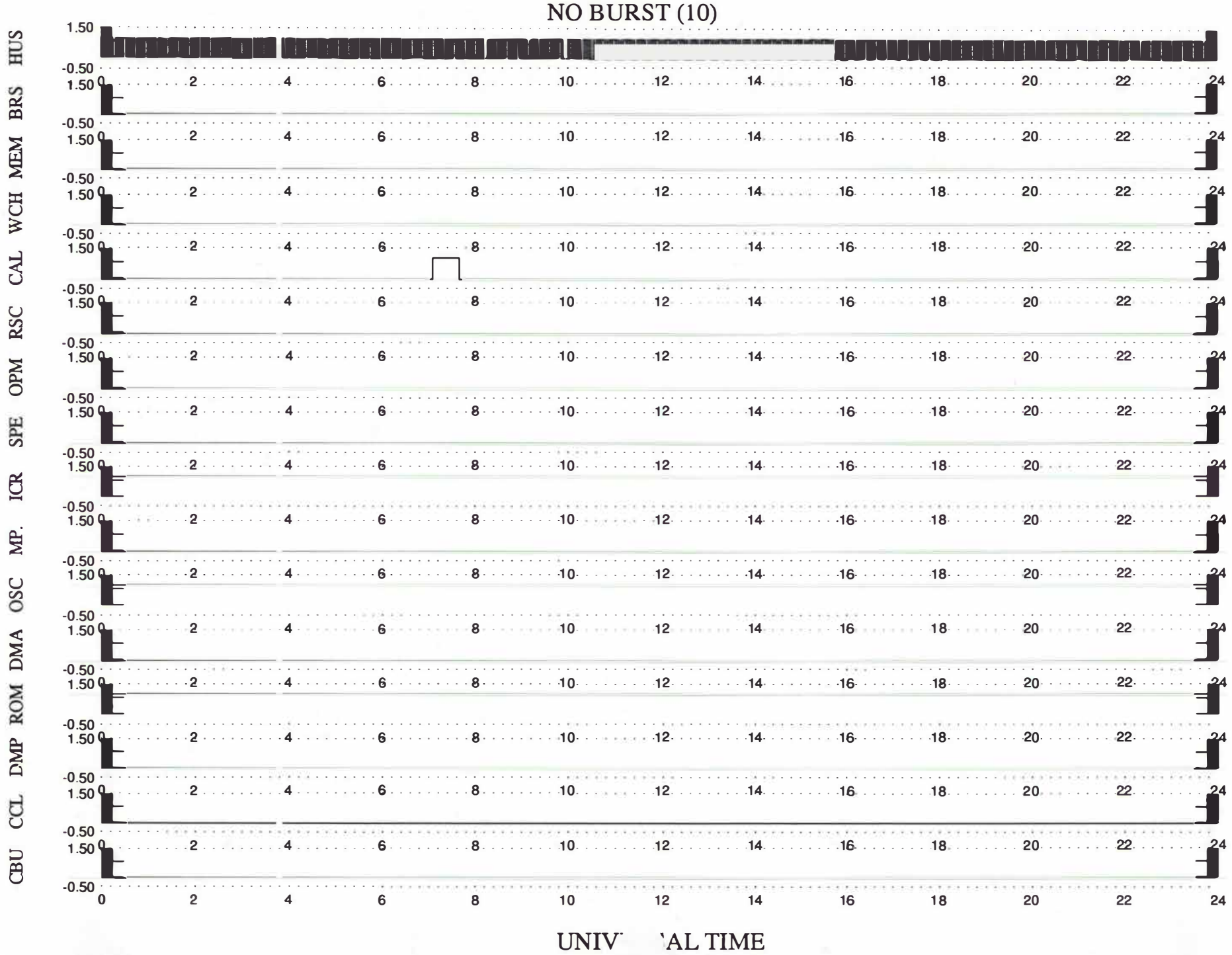
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



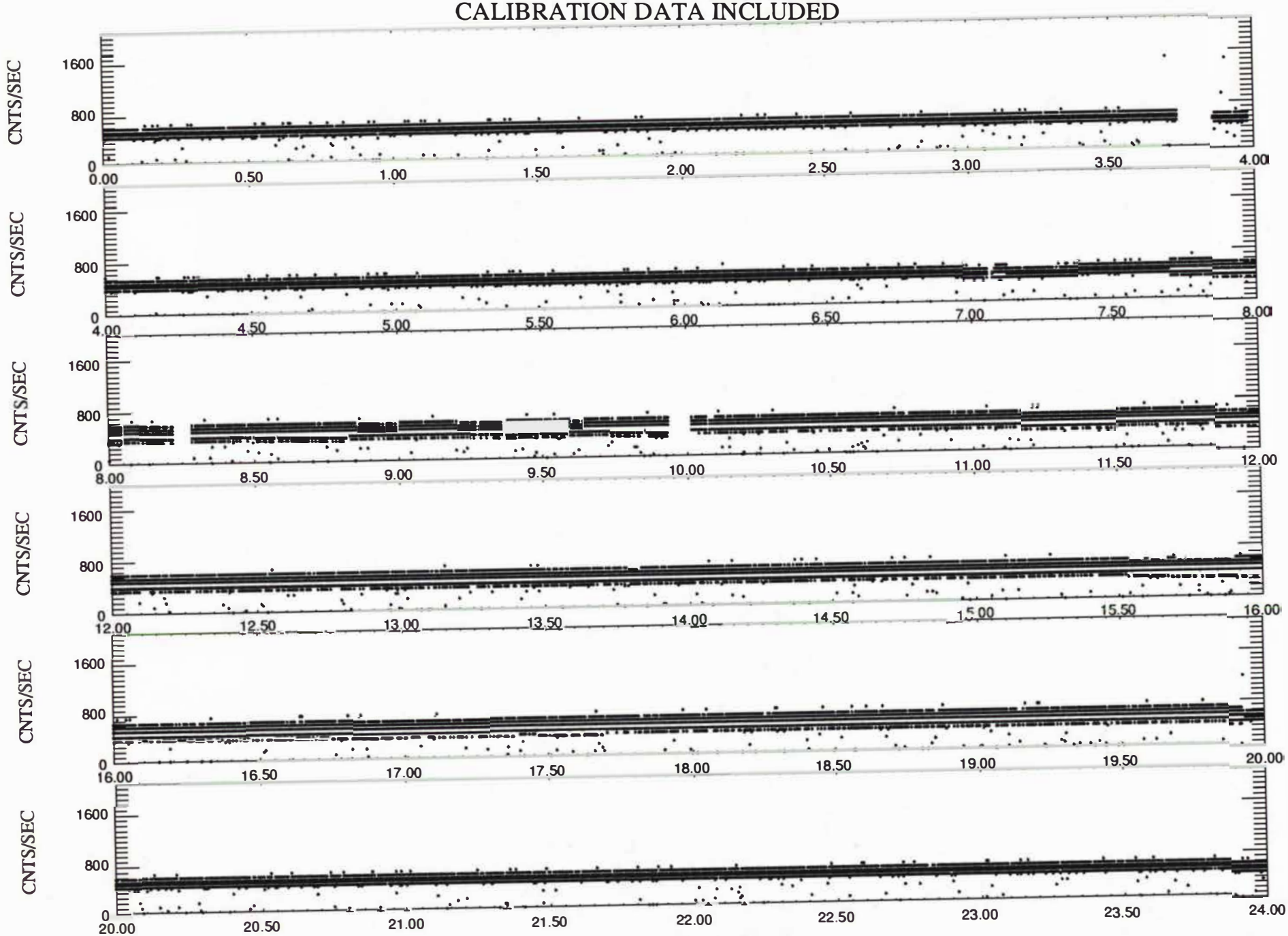

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/10
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/14, 1008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

HUS MODES EDR day 222, year 1997 to day 222, year 1997 1/6/98



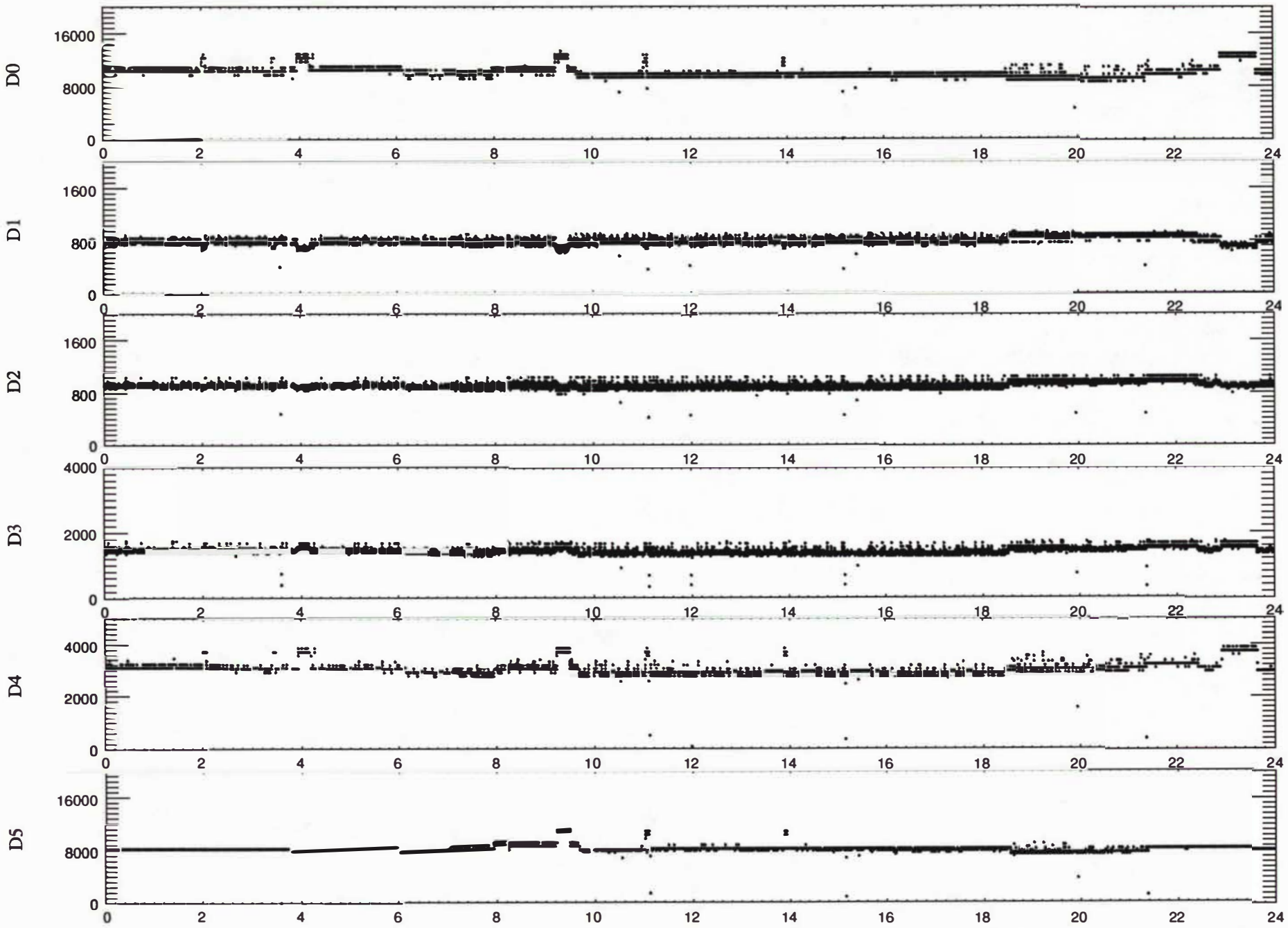
HUS 2A, MODE 1, NOT AVERAGED EDR day 222, year 1997 to day 222, year 1997 1/6/98

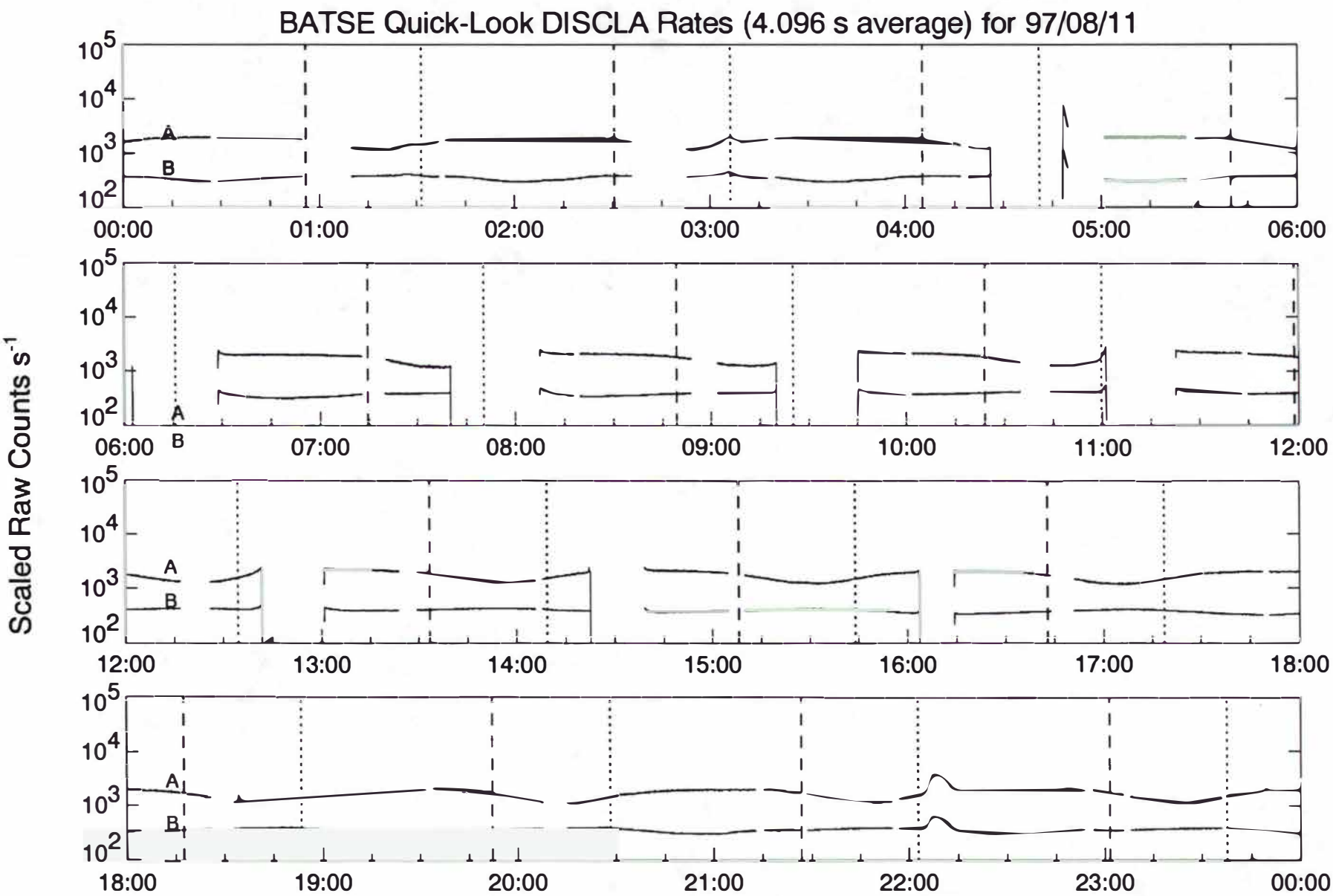
CALIBRATION DATA INCLUDED



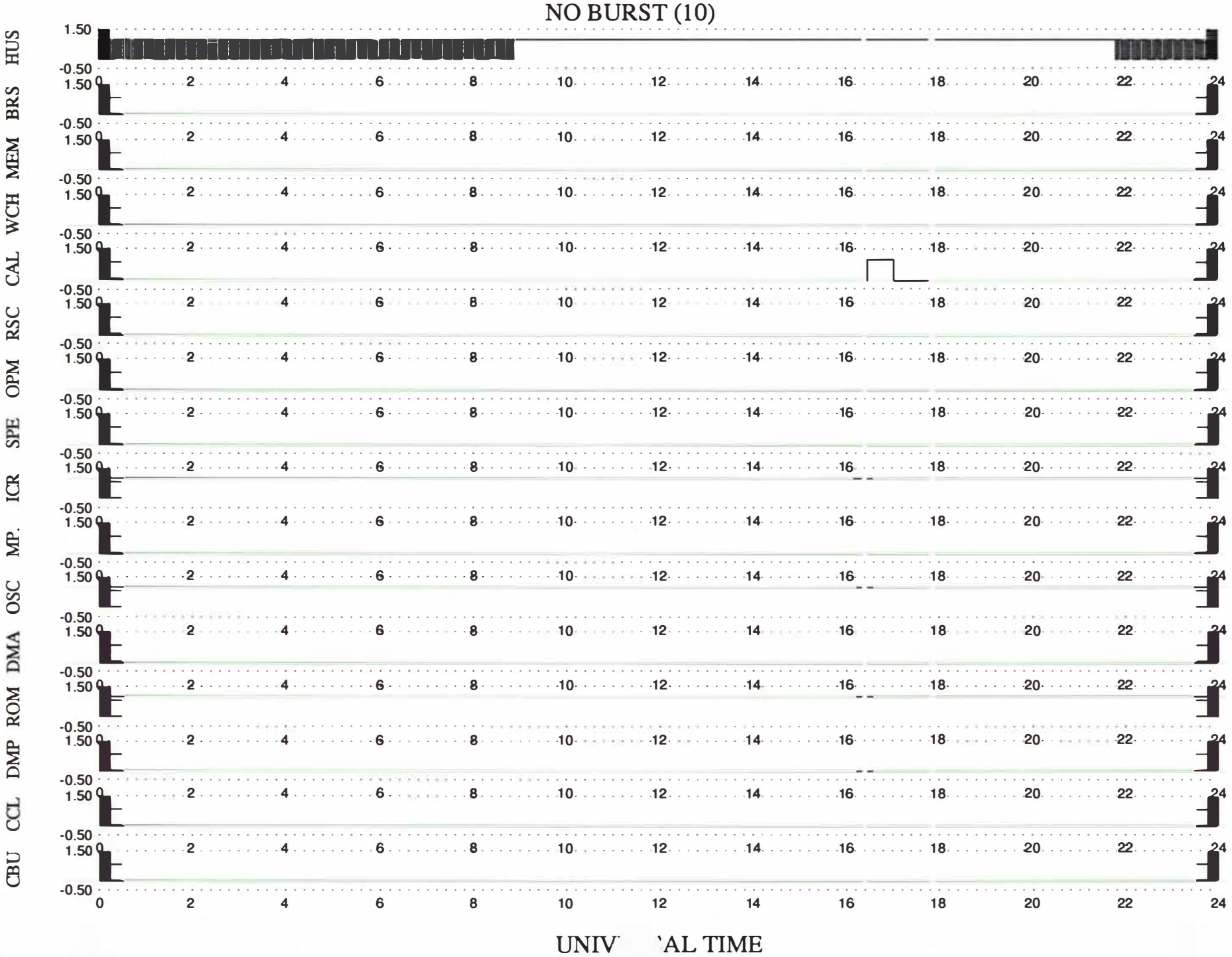
UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 222, year 1997 to day 222, year 1997 1/6/98



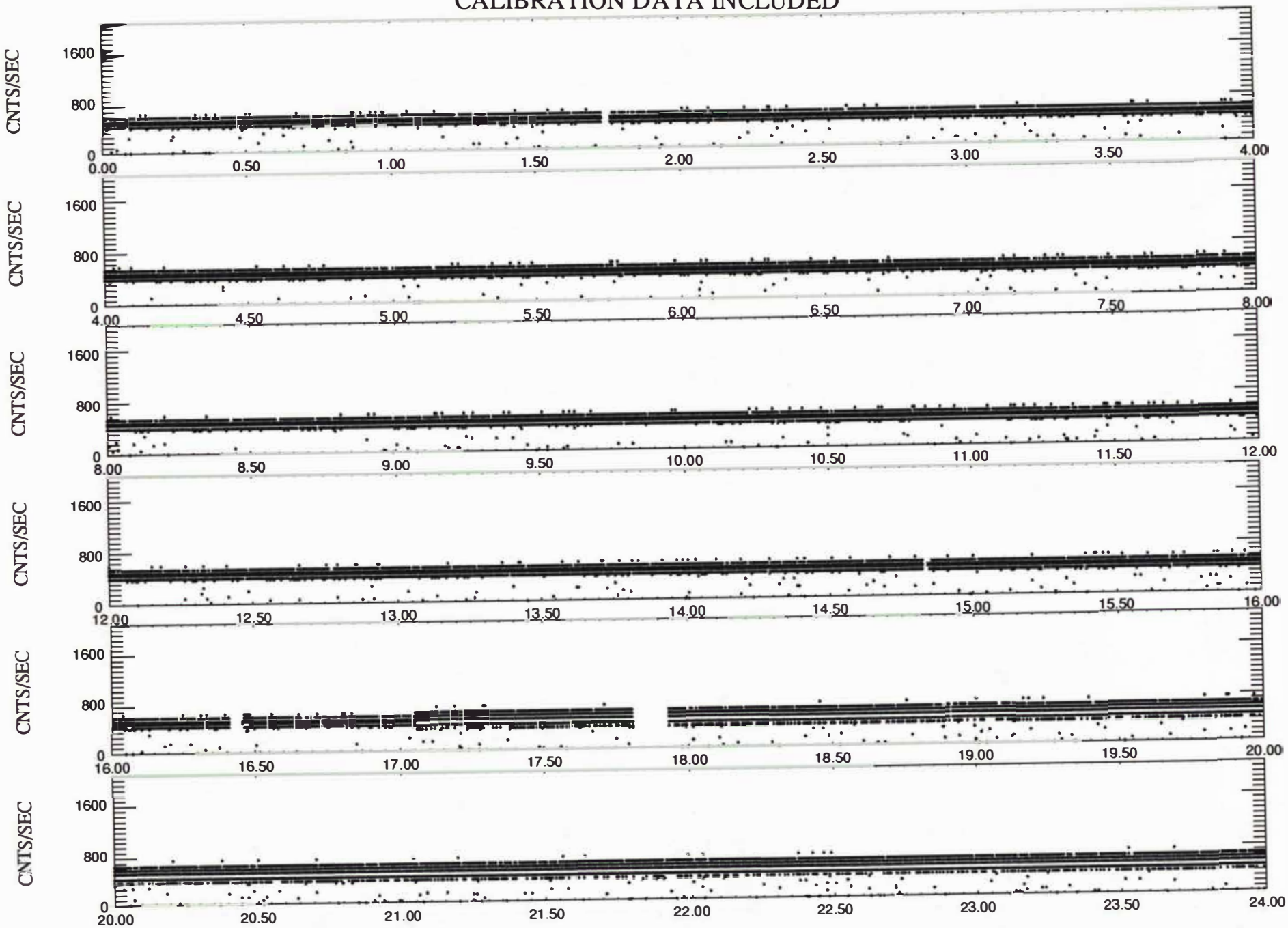

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/11
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/15, 1007 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 223, year 1997 to day 223, year 1997 1/6/98



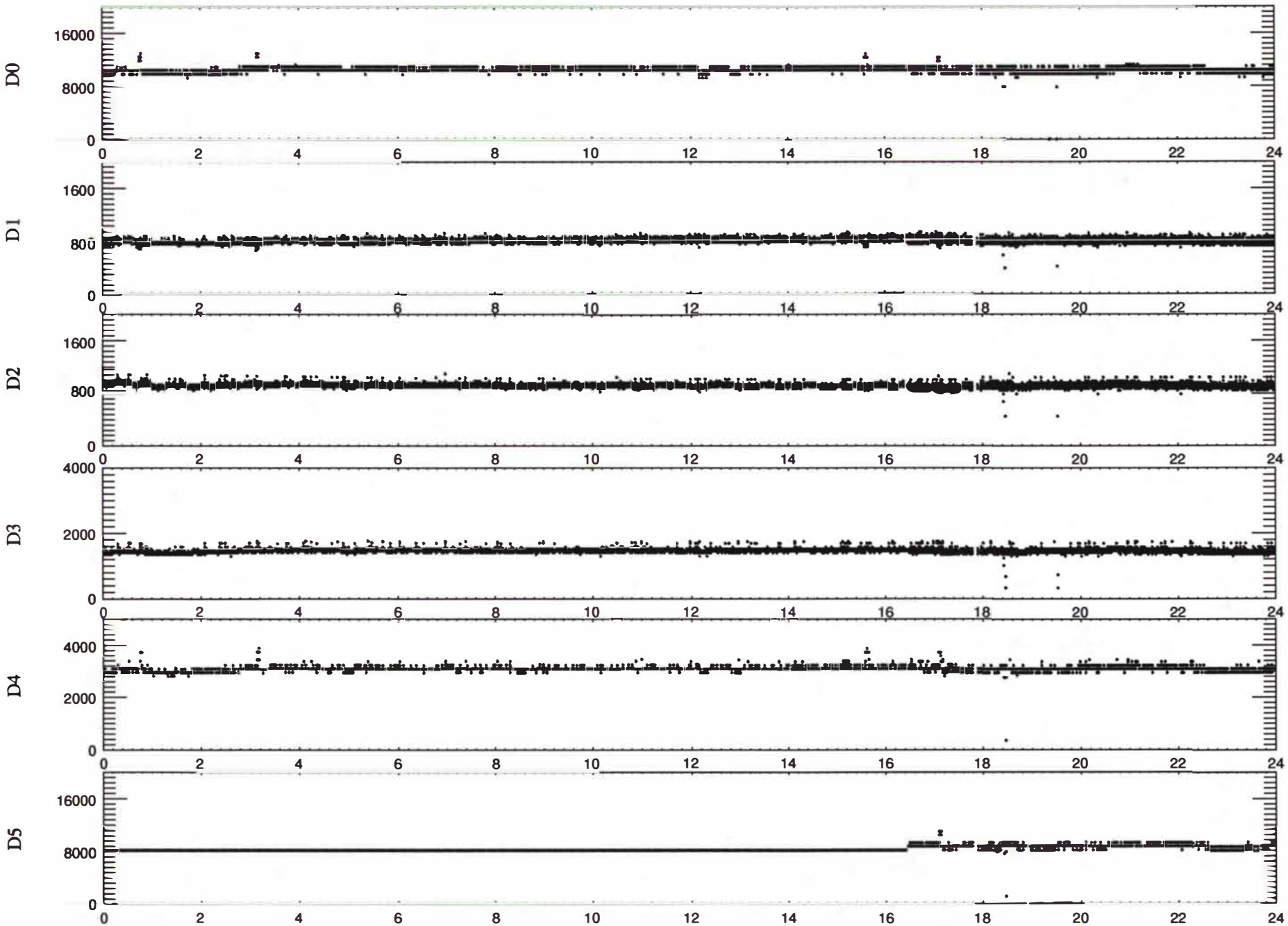
HUS 2A, MODE 1, NOT AVERAGED EDR day 223, year 1997 to day 223, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 223, year 1997 to day 223, year 1997 1/6/98



KONUS + GRBM

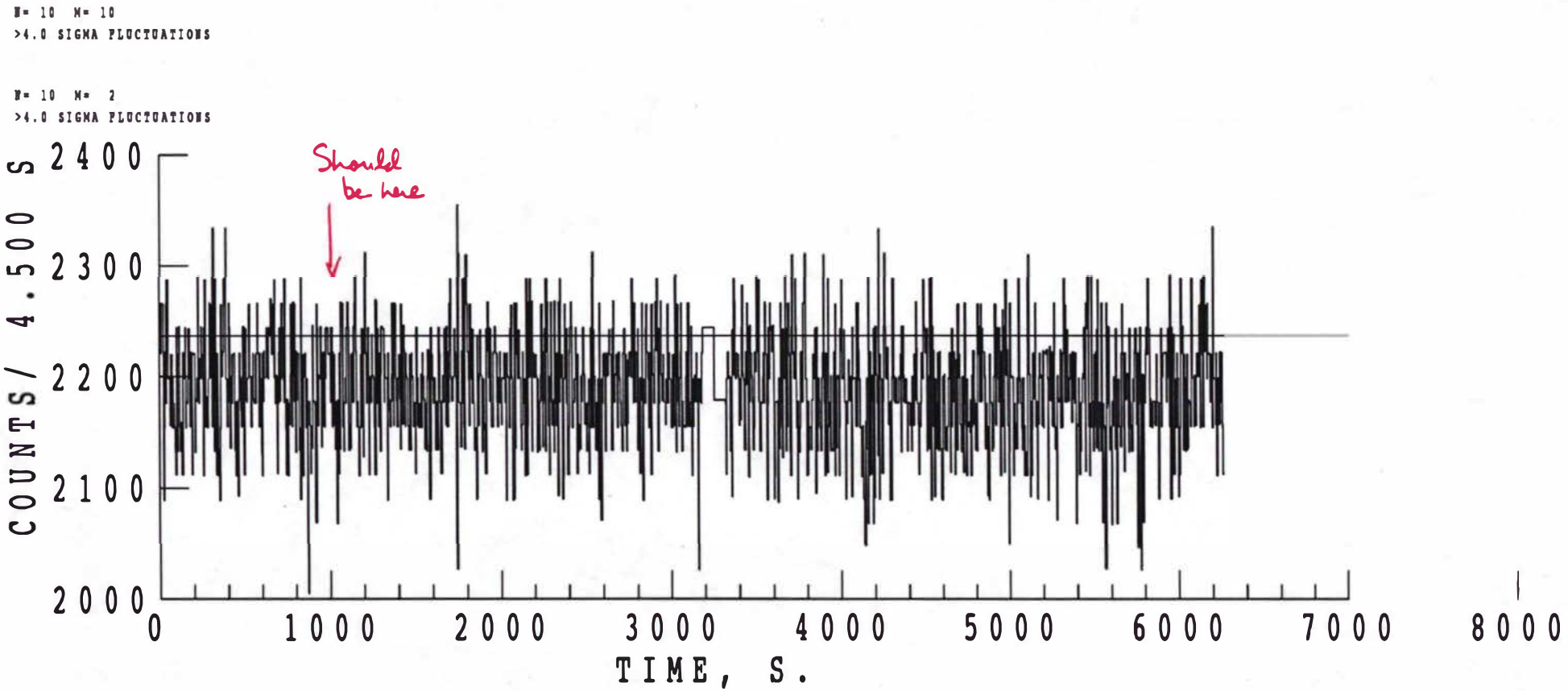
04/02/00

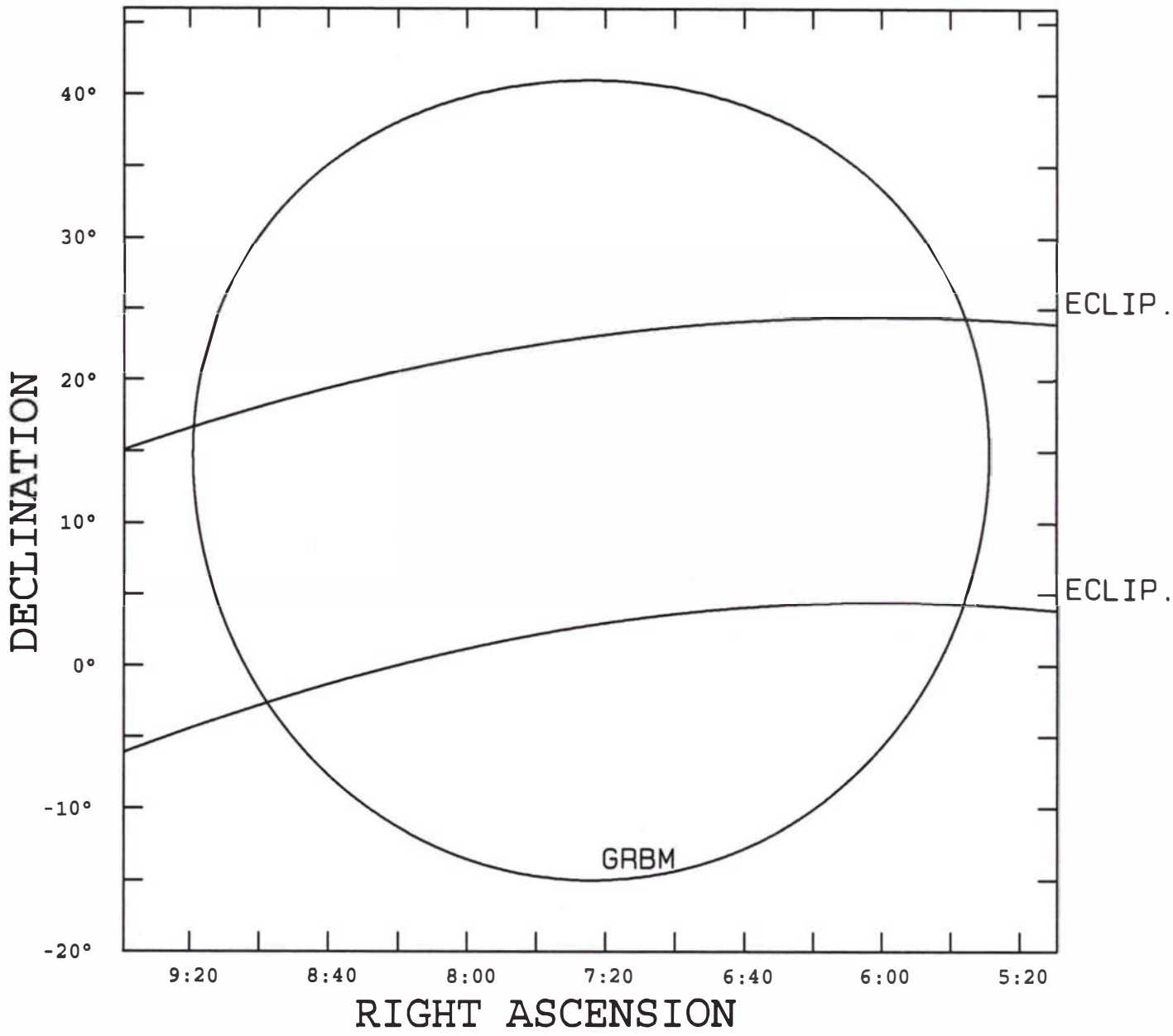
ULYSSES RT

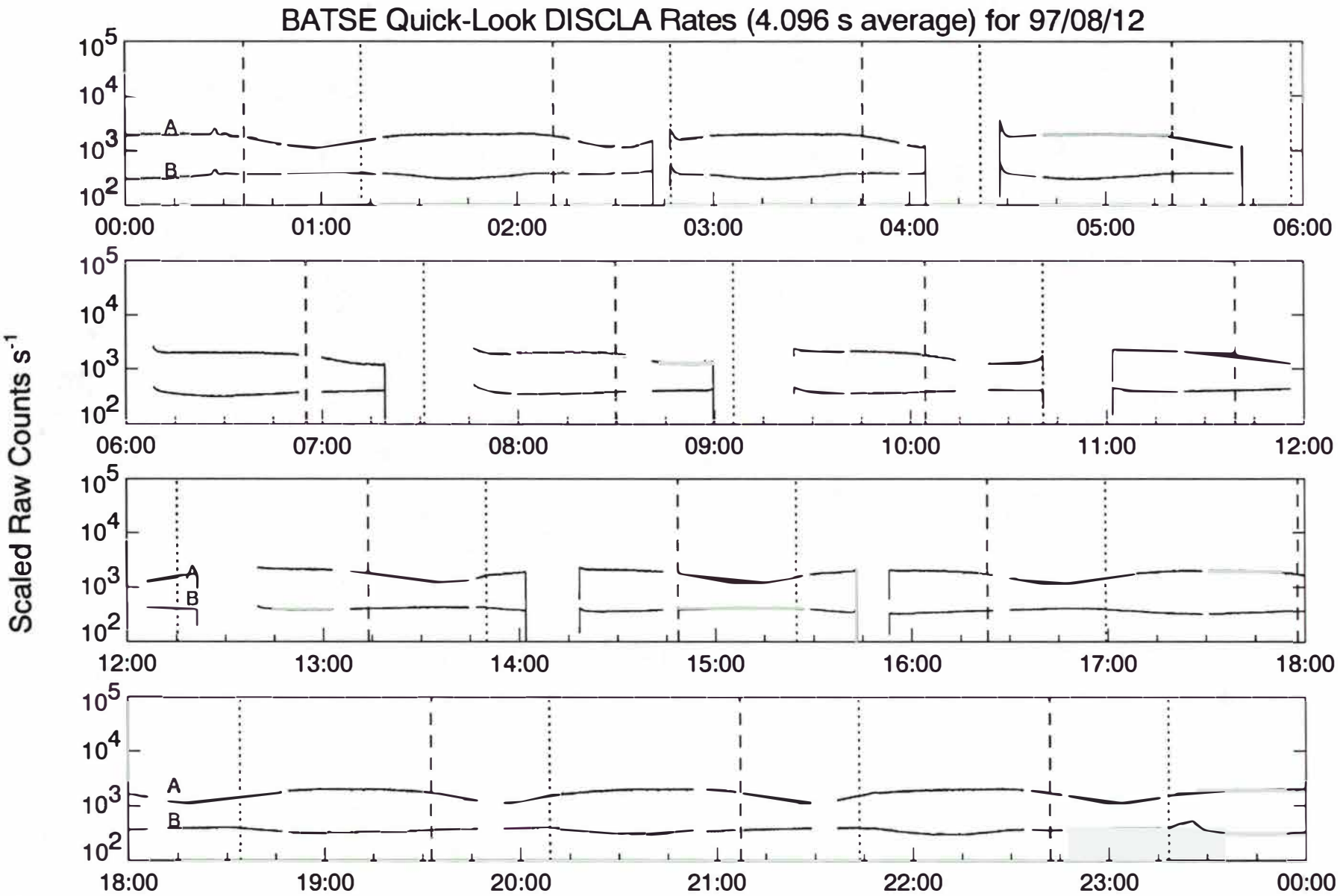
12/08/97 10008.412 s

0.500 S INTERVALS REGROUPED BY 9

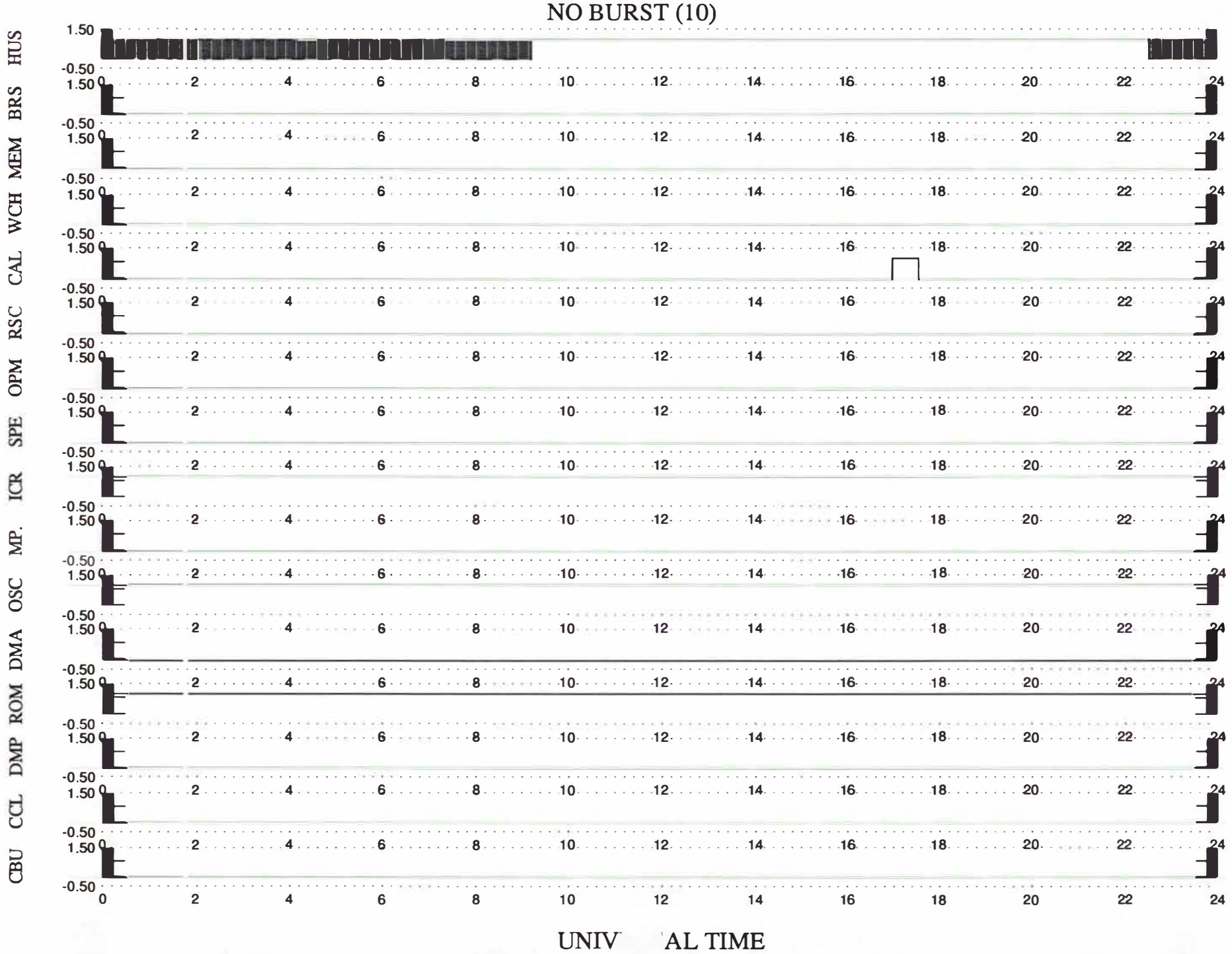
0- 0 keV




DECLINATION
40°
30°
20°
10°
0°
-10°
-20°
ECLIP.
ECLIP.
GRBM
9:20
8:40
8:00
7:20
6:40
6:00
5:20
RIGHT ASCENSION

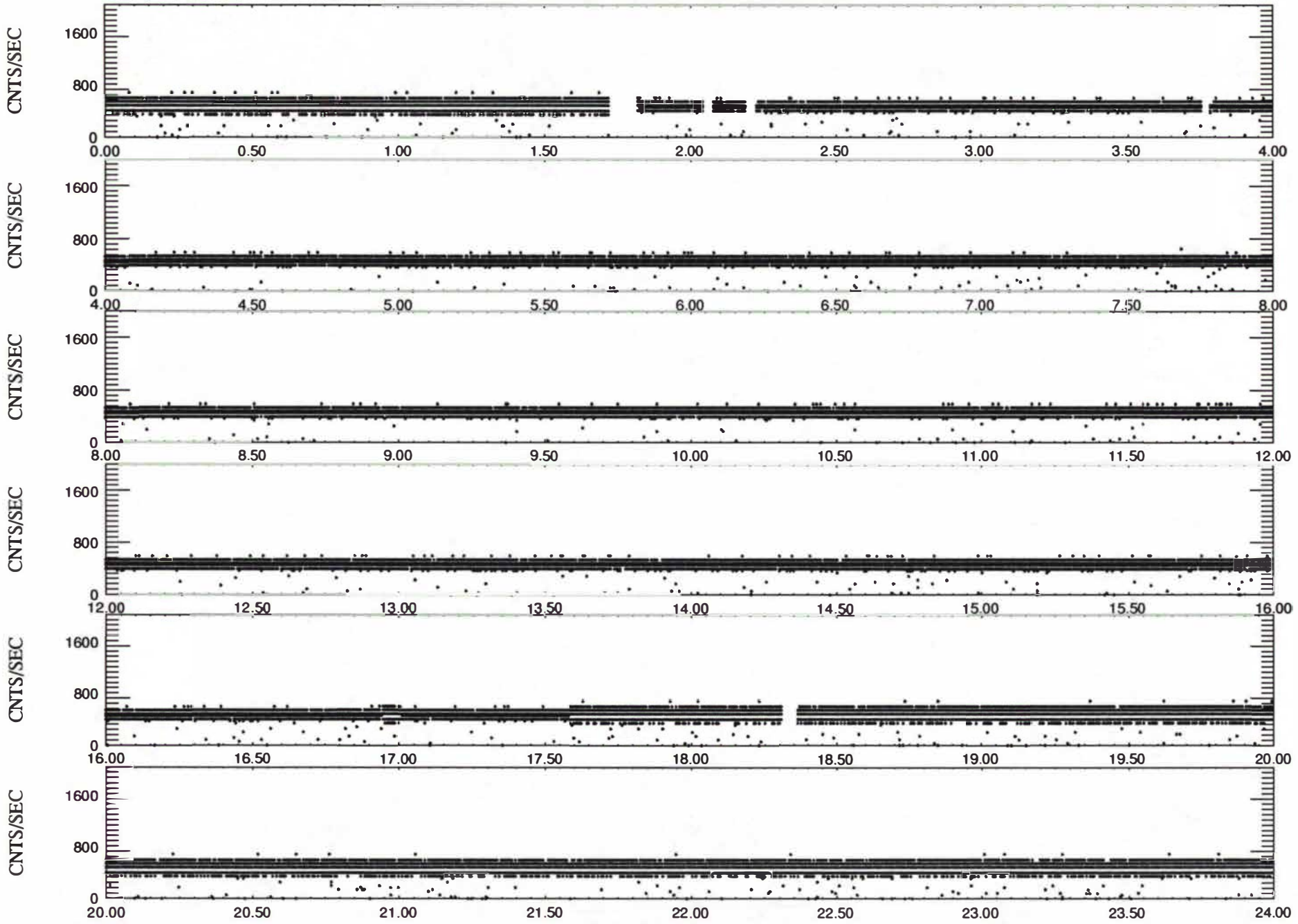

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/12
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/16, 1008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

HUS MODES EDR day 224, year 1997 to day 224, year 1997 1/6/98



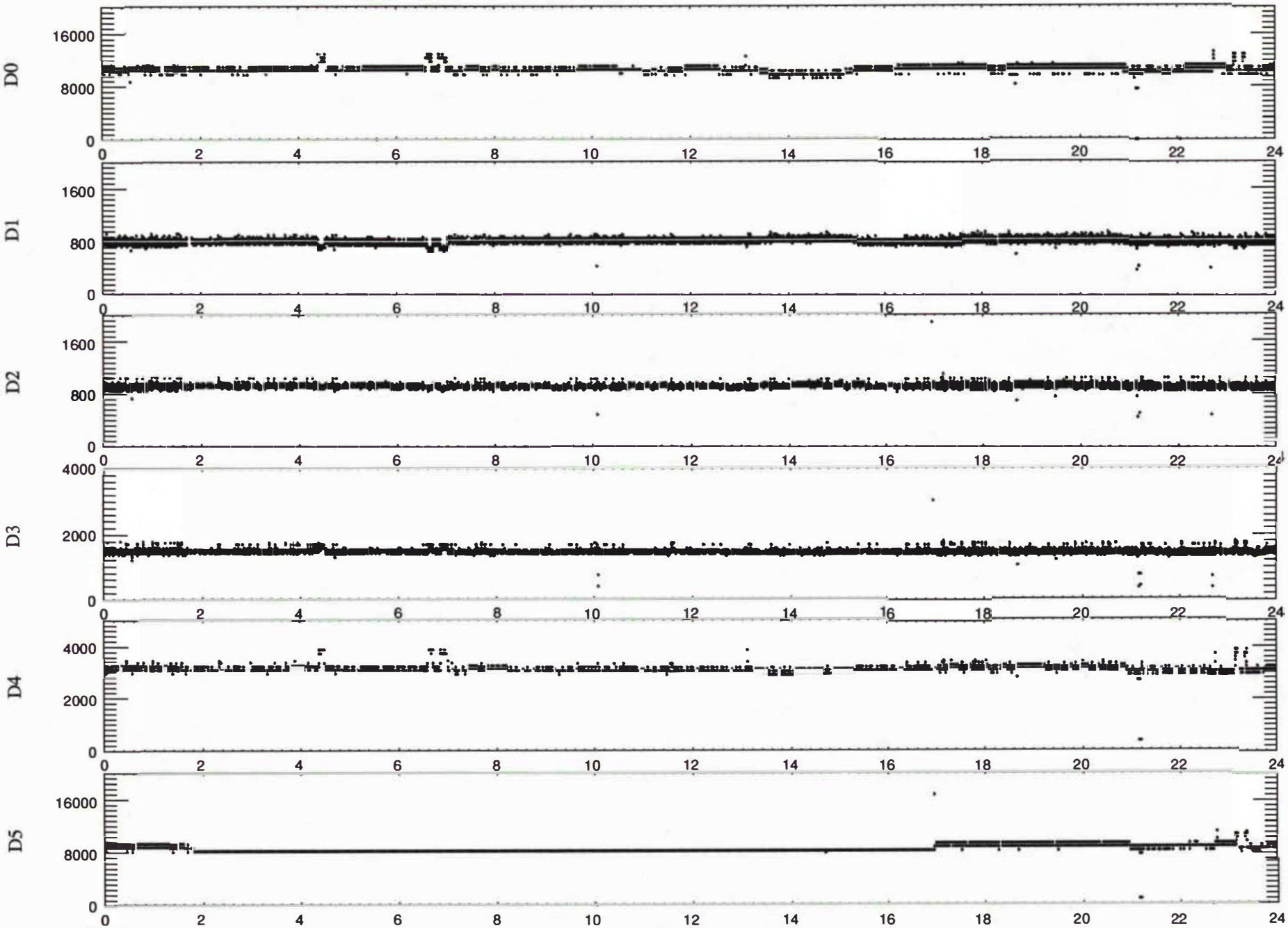
HUS 2A, MODE 1, NOT AVERAGED EDR day 224, year 1997 to day 224, year 1997 1/6/98

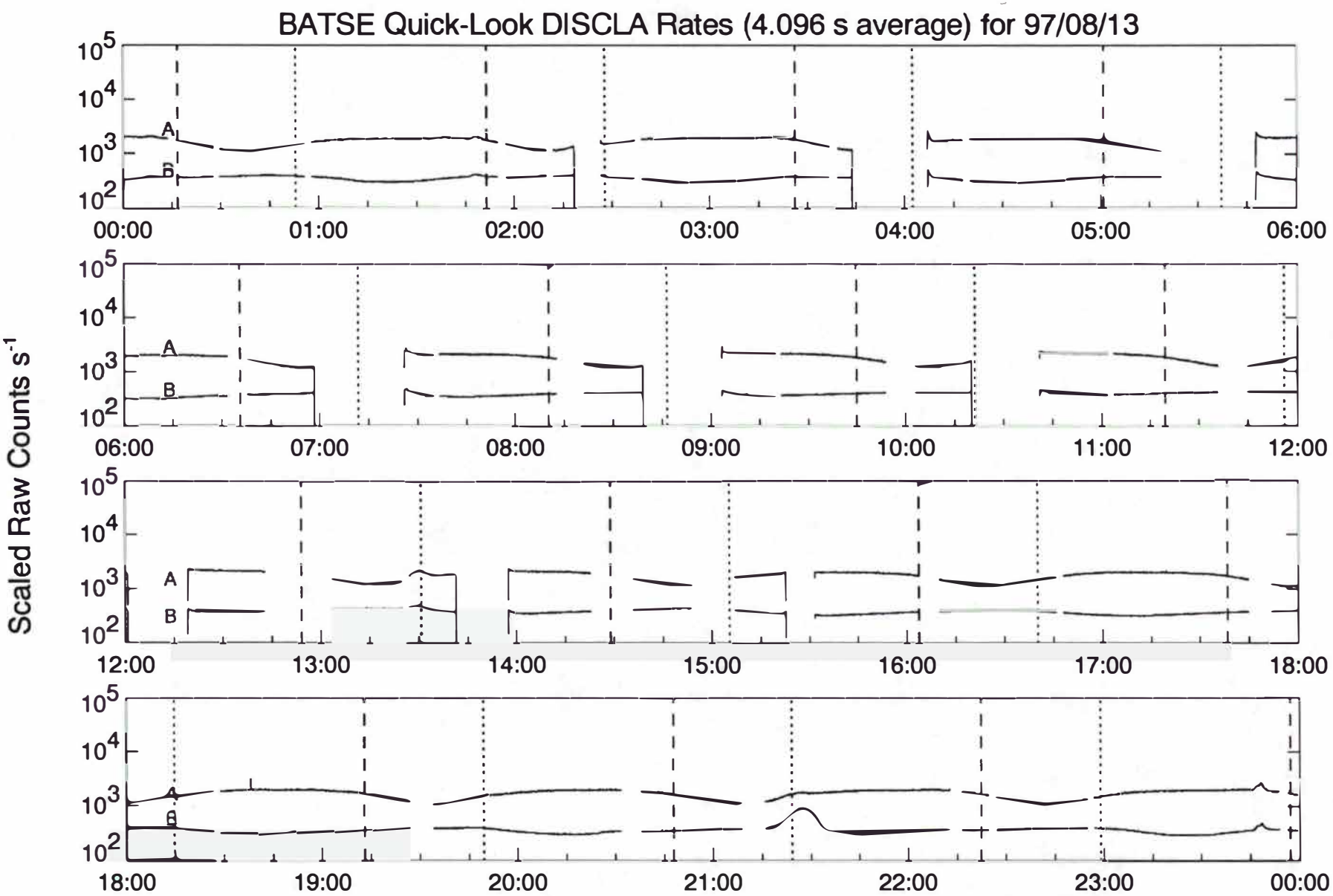
CALIBRATION DATA INCLUDED



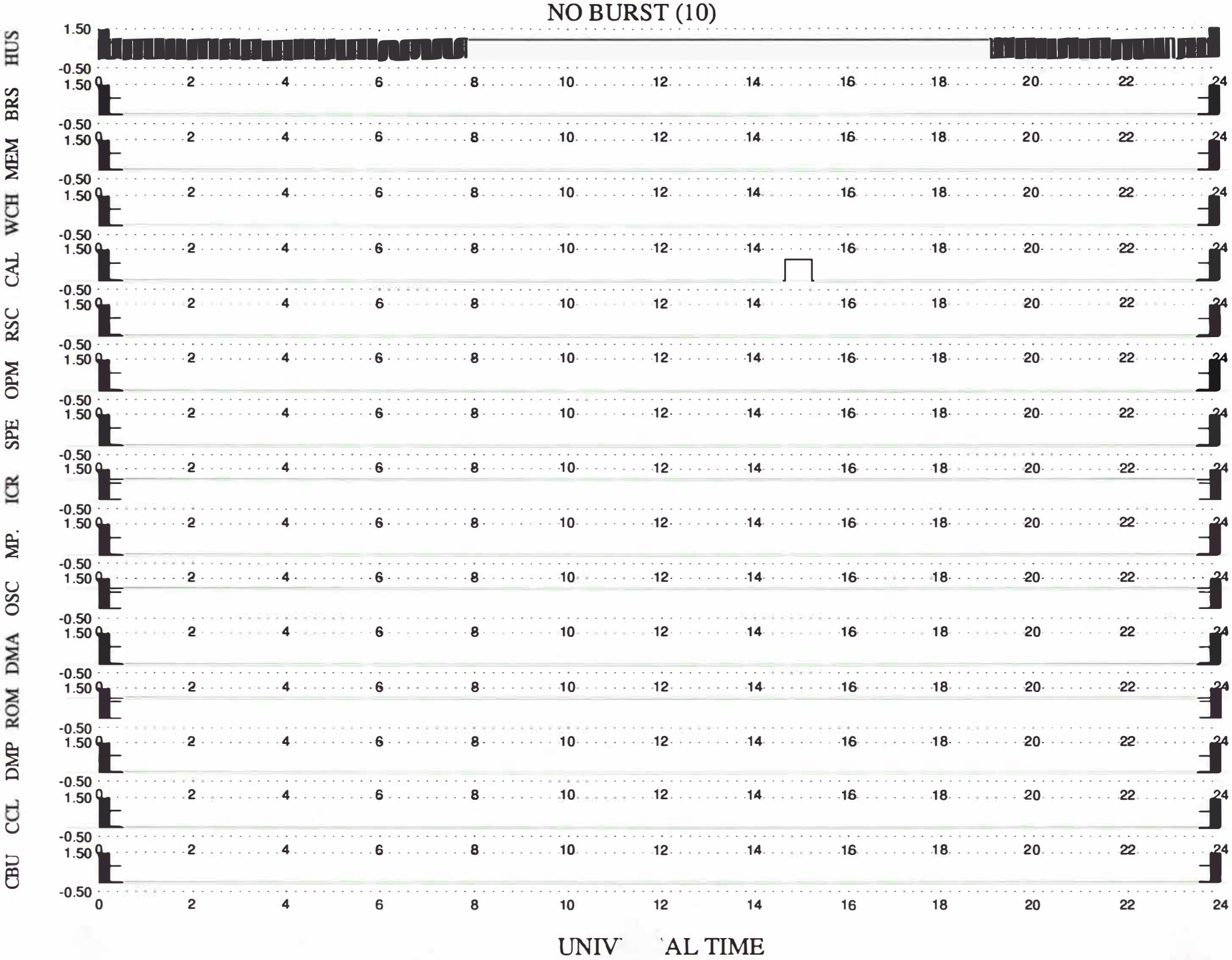
UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 224, year 1997 to day 224, year 1997 1/6/98



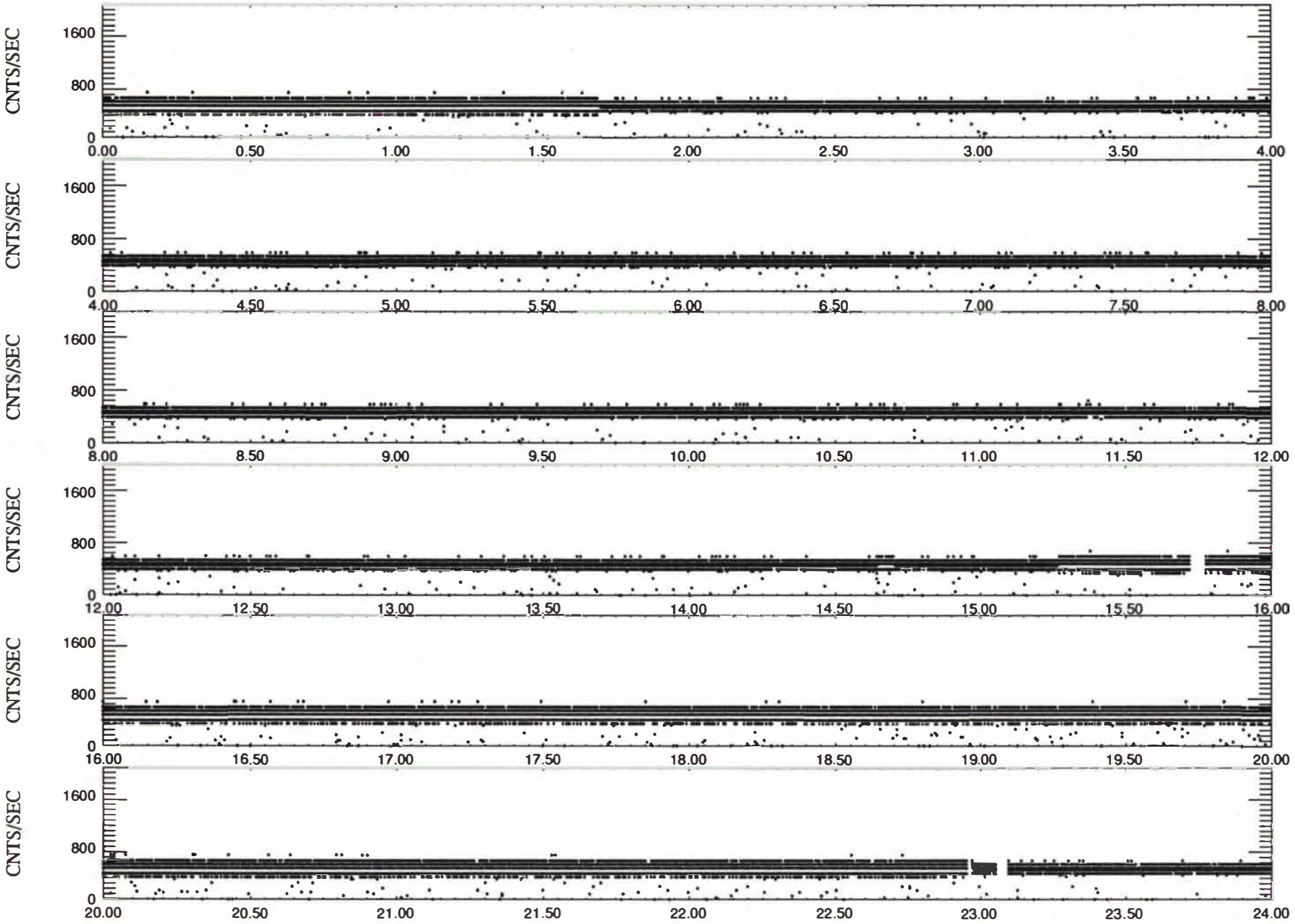

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/13
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/17, 1008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

HUS MODES EDR day 225, year 1997 to day 225, year 1997 1/6/98



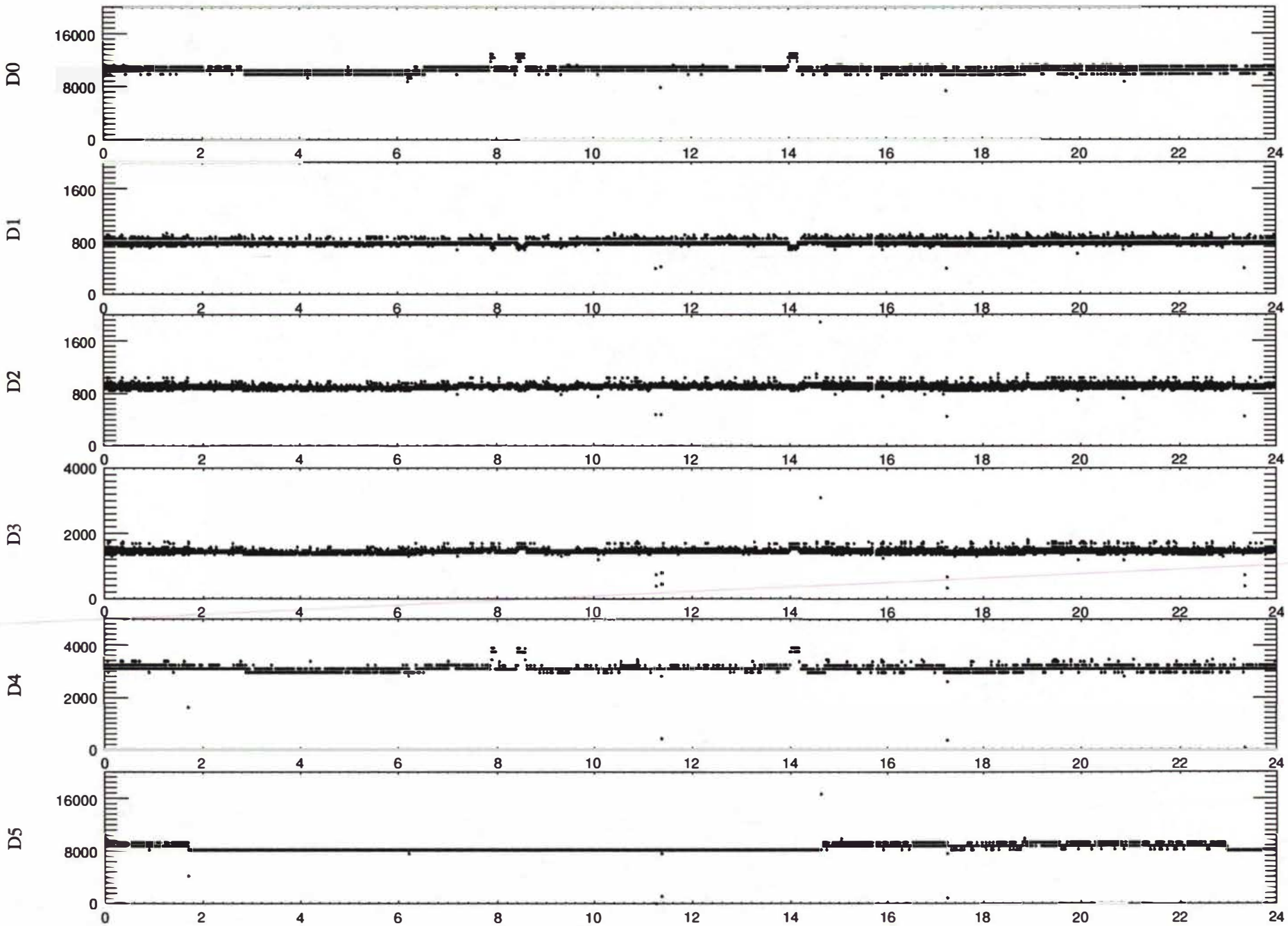
HUS 2A, MODE 1, NOT AVERAGED EDR day 225, year 1997 to day 225, year 1997 1/6/98

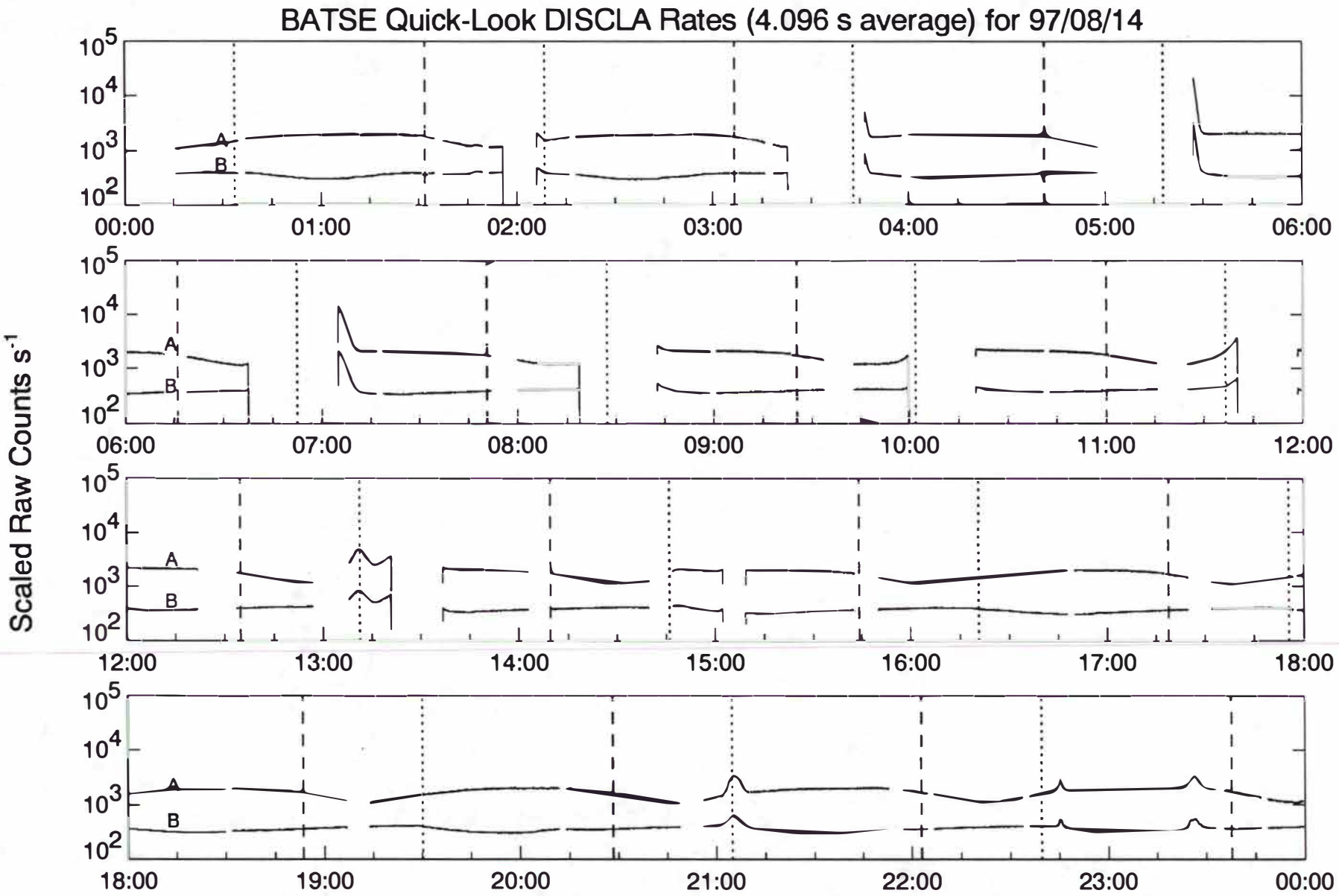
CALIBRATION DATA INCLUDED



UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 225, year 1997 to day 225, year 1997 1/6/98




BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/14
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
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: 97/08/18, 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

From HENZE@ssl.msfc.nasa.gov Mon Aug 18 11:29 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 LAA27973; Mon, 18 Aug 1997 11:29:08 -0700
From: HENZE@ssl.msfc.nasa.gov
Date: Mon, 18 Aug 1997 13:29:03 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970818132903.20409205@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6334
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6334
EVENT OF 1997 AUG 14 DAY OF YEAR=226
EVENT CROSSING TIME AT BATSE : 1057. S. OR 00:17:37.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 307.000 38.000
BATSE PEAK COUNTING RATE: 1500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 8/ 97 IS:
RA= 158.904 DEC= 20.875 DIST= 6.191 AU
BATSE-ULYSSES DISTANCE = 926139357. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1253.28 SECS.
CROSSING TIME AT ULYSSES IS 2310. S. OR 00:38:30 +/- 559.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 8/ 97 IS:
RA= 207.488 DEC= -11.945 DIST= 1.543 AU
MARS-BATSE DISTANCE = 230812688. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 196.20 SECS.
CROSSING TIME AT MARS IS 1253. S. OR 00:20:53 +/- 132.23 SECONDS

BATSE BURST TRIGGER

NO.: 6334

TIME: TJD=0674 SECONDS=01057

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=075.5 AZIMUTH=220.0 ERROR=014.9 DEGREES

COMMENTS:
SINGLE WEAK PULSE, DUR. ~40 S. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6334	970814	10674	01057	1500	307	+38	40

BATSE BURST# 6334

ULYSSES RT 18/ 8/97

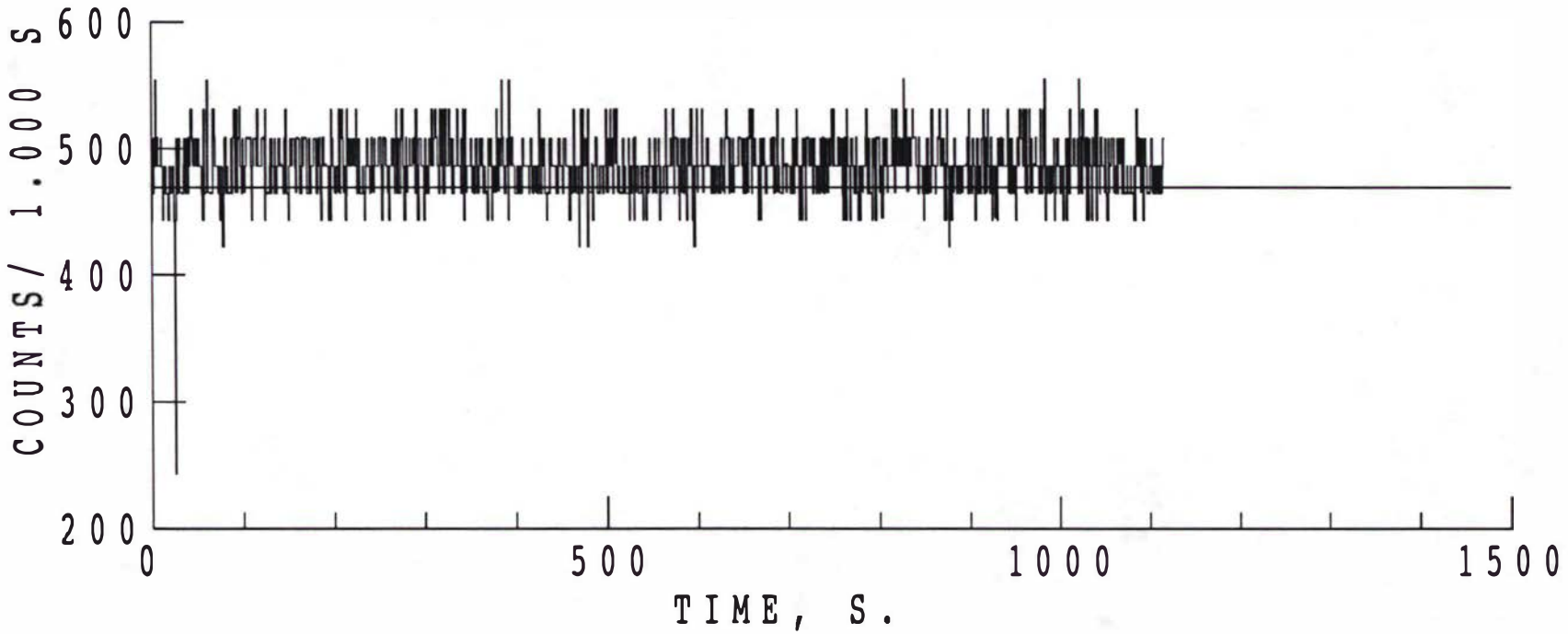
14/ 8/97 1764.253 s

0.500 S INTERVALS REGROUPED BY 2

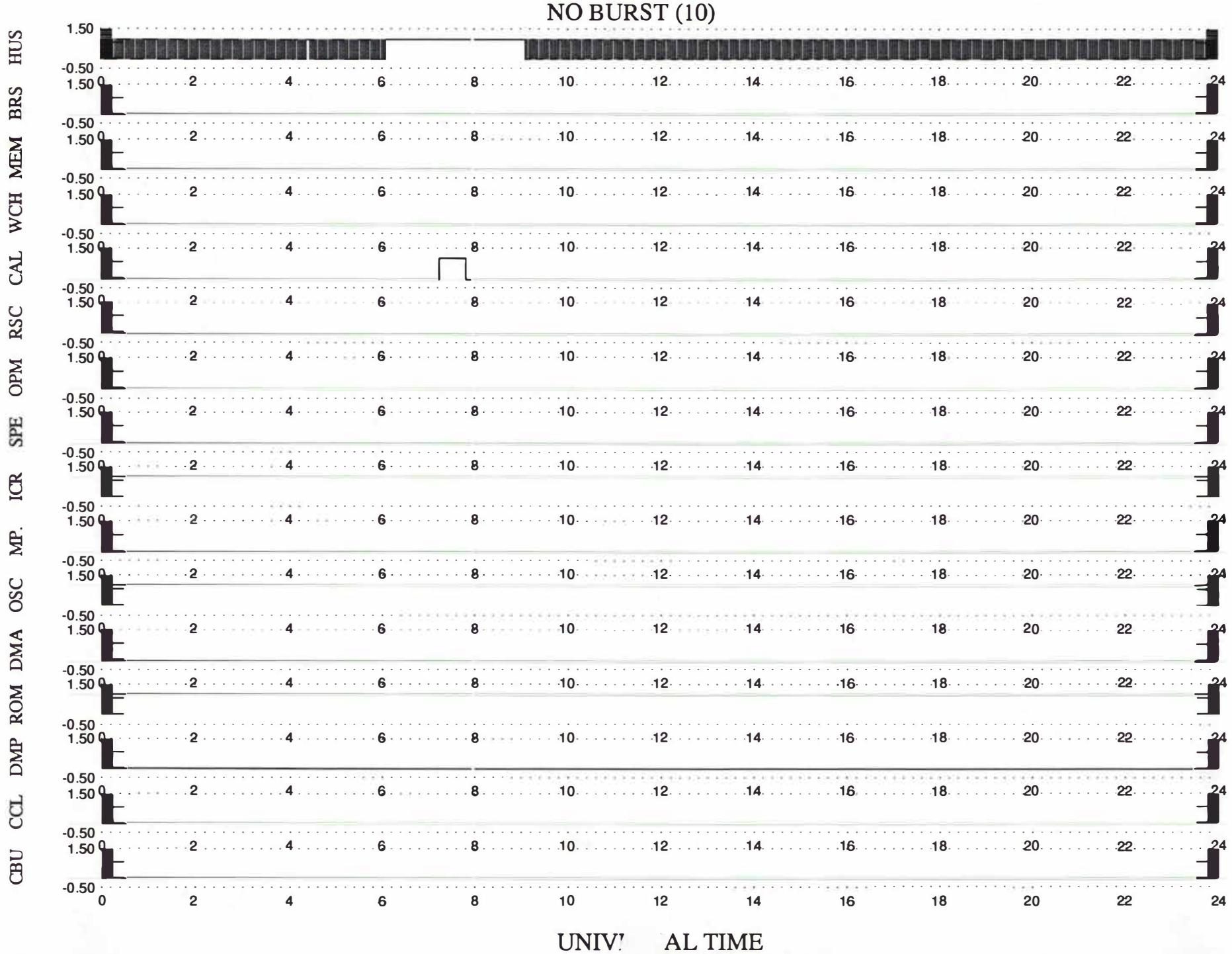
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

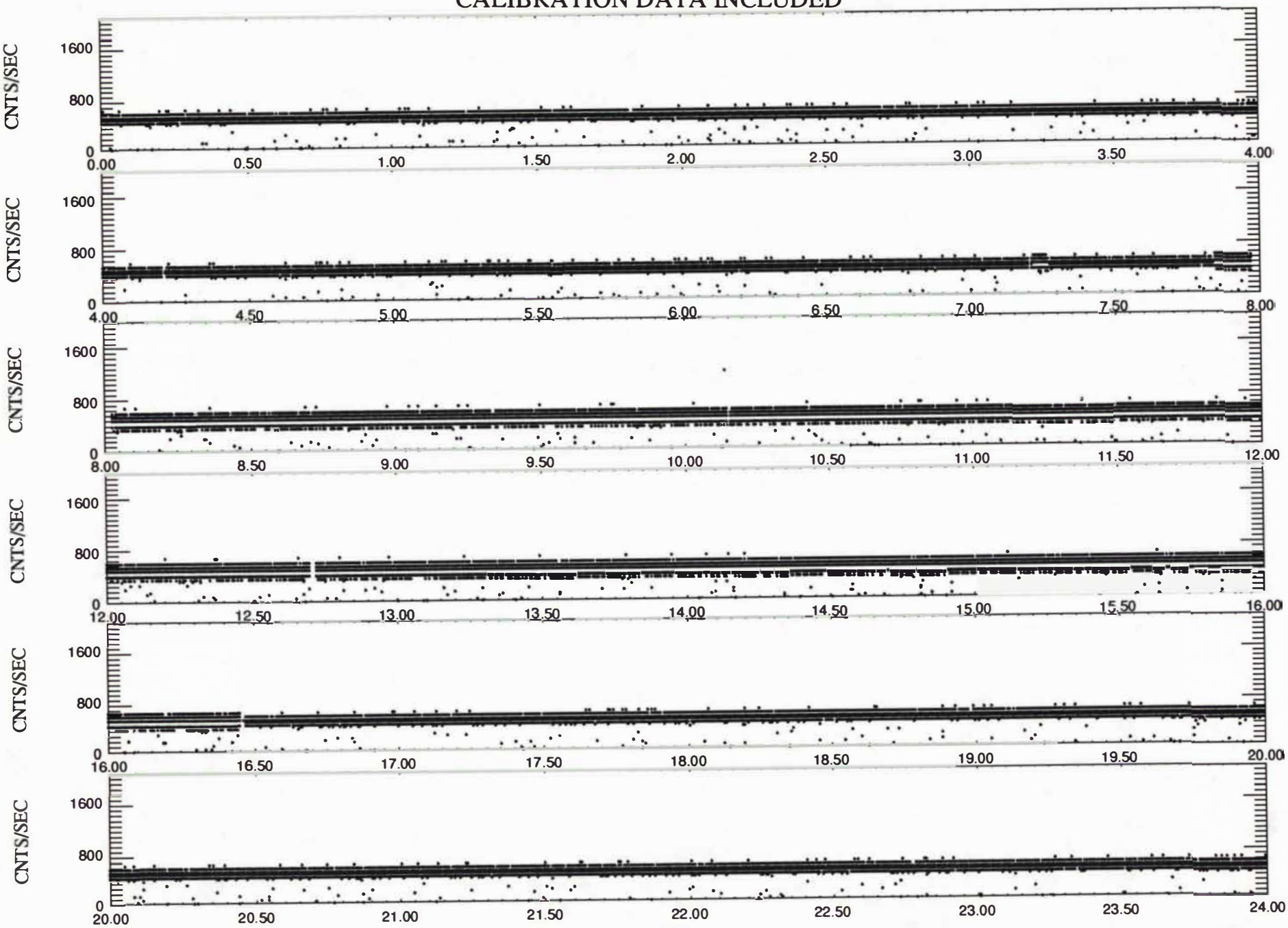


HUS MODES EDR day 226, year 1997 to day 226, year 1997 1/6/98



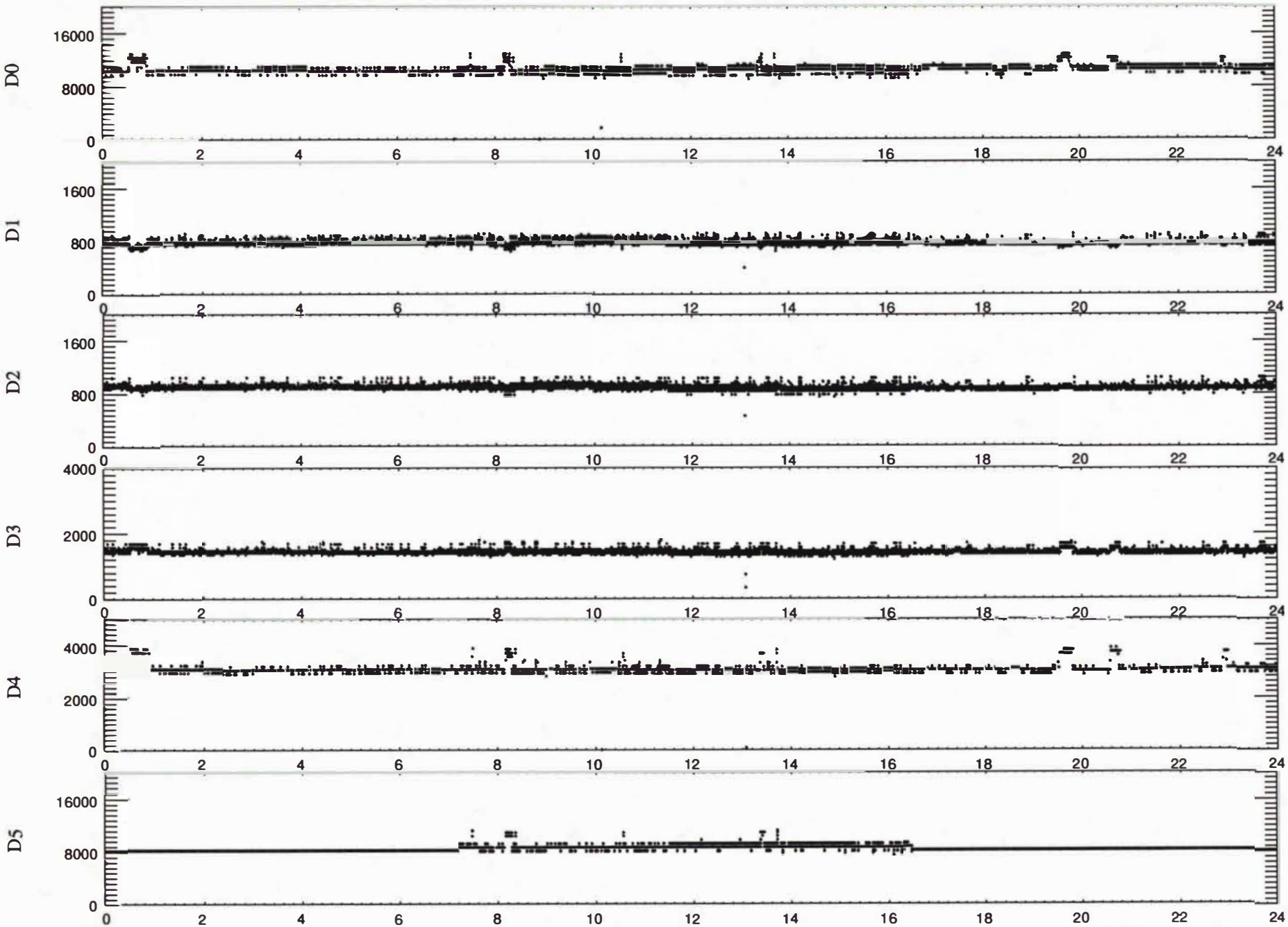
HUS 2A, MODE 1, NOT AVERAGED EDR day 226, year 1997 to day 226, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 226, year 1997 to day 226, year 1997 1/6/98



HUS DATA

ULYSSES RT

18/ 8/97

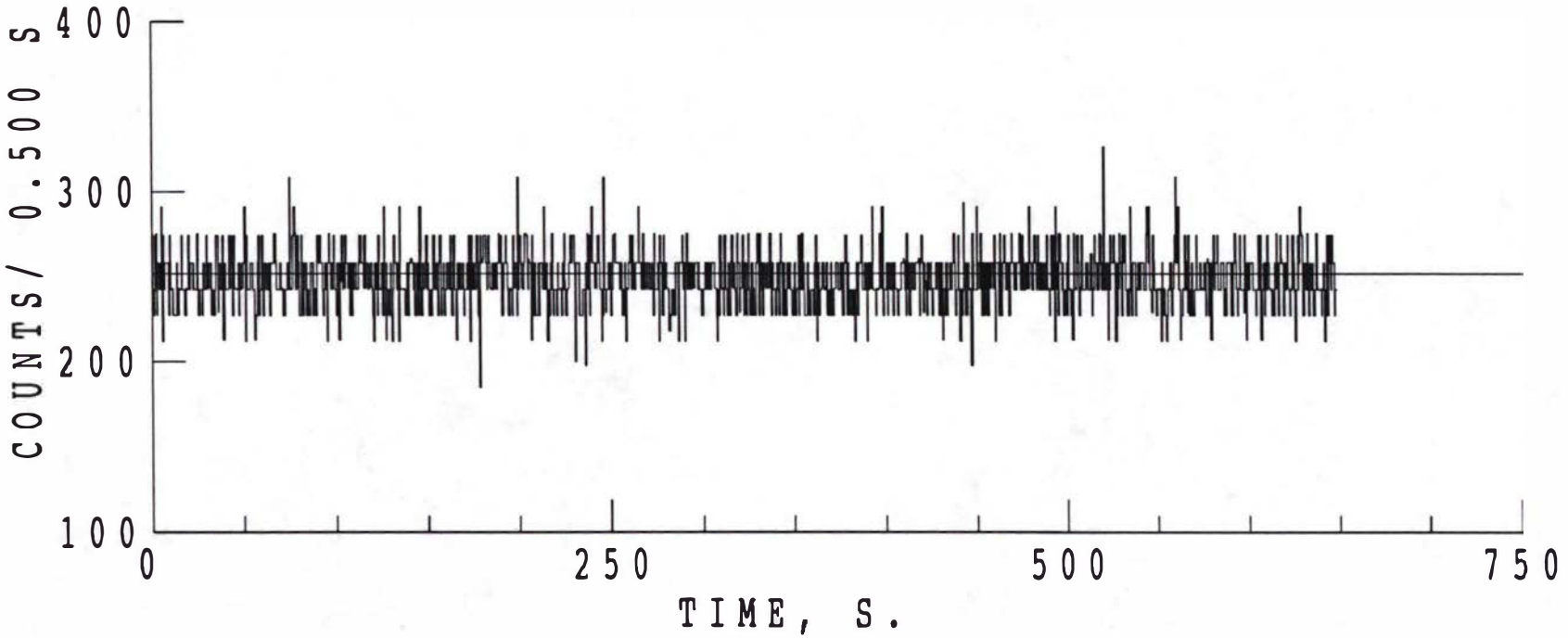
15/ 8/97 33012.090 s

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 HENZE@ssl.msfc.nasa.gov Mon Aug 18 11:31 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 LAA28021; Mon, 18 Aug 1997 11:31:40 -0700
From: HENZE@ssl.msfc.nasa.gov
Date: Mon, 18 Aug 1997 13:31:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970818133135.20409205@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6335
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

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

 BATSE BURST #    6335
 EVENT OF 1997 AUG 15 DAY OF YEAR=227
 EVENT CROSSING TIME AT BATSE     : 43624. S. OR 12:07:04.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 234.000   82.000
 BATSE PEAK COUNTING RATE:  11300    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 15/ 8/  97 IS:
 RA=  159.117 DEC=   20.715 DIST=    6.197 AU
 BATSE-ULYSSES DISTANCE =  927144251. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.60 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1188.26 SECS.
 CROSSING TIME AT ULYSSES    IS 42436. S. OR   11:47:15 +/-  527.67 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 15/ 8/  97 IS:
 RA=  208.071 DEC=  -12.174 DIST=    1.549 AU
 MARS-BATSE DISTANCE =  231693952. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.04 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=   66.83 SECS.
 CROSSING TIME AT MARS       IS 43691. S. OR   12:08:10 +/-  134.69 SECONDS


                BATSE BURST TRIGGER
NO.: 6335

TIME: TJD=0675 SECONDS=43624

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=110.2  AZIMUTH=256.4  ERROR=000.8 DEGREES

COMMENTS:
TWO MAIN PULSES + FOLLOWING SOFT EMISSION. FIRST PULSE HARDER, MAX AT ~T+1 S.
SECOND PULSE MAX AT ~T+98 S.  TOTAL DUR. OF TWO MAIN PULSES ~125 S.  FOLLOWING
EMISSION FROM ~T+140 TO ~T+170 S. FIRST PULSE VISIBLE ABOVE 300 KEV, SECOND IS
MARGINAL.


 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   6335   970815   10675   43624    11300   234   +82    125
```

Helio corr removed

Date: Feb 3 '99

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? N/A

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

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

2. BATSE Data

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

☐ BATSE ephemeris for T_0?

☐ Error circle position and radius from public catalog used?

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

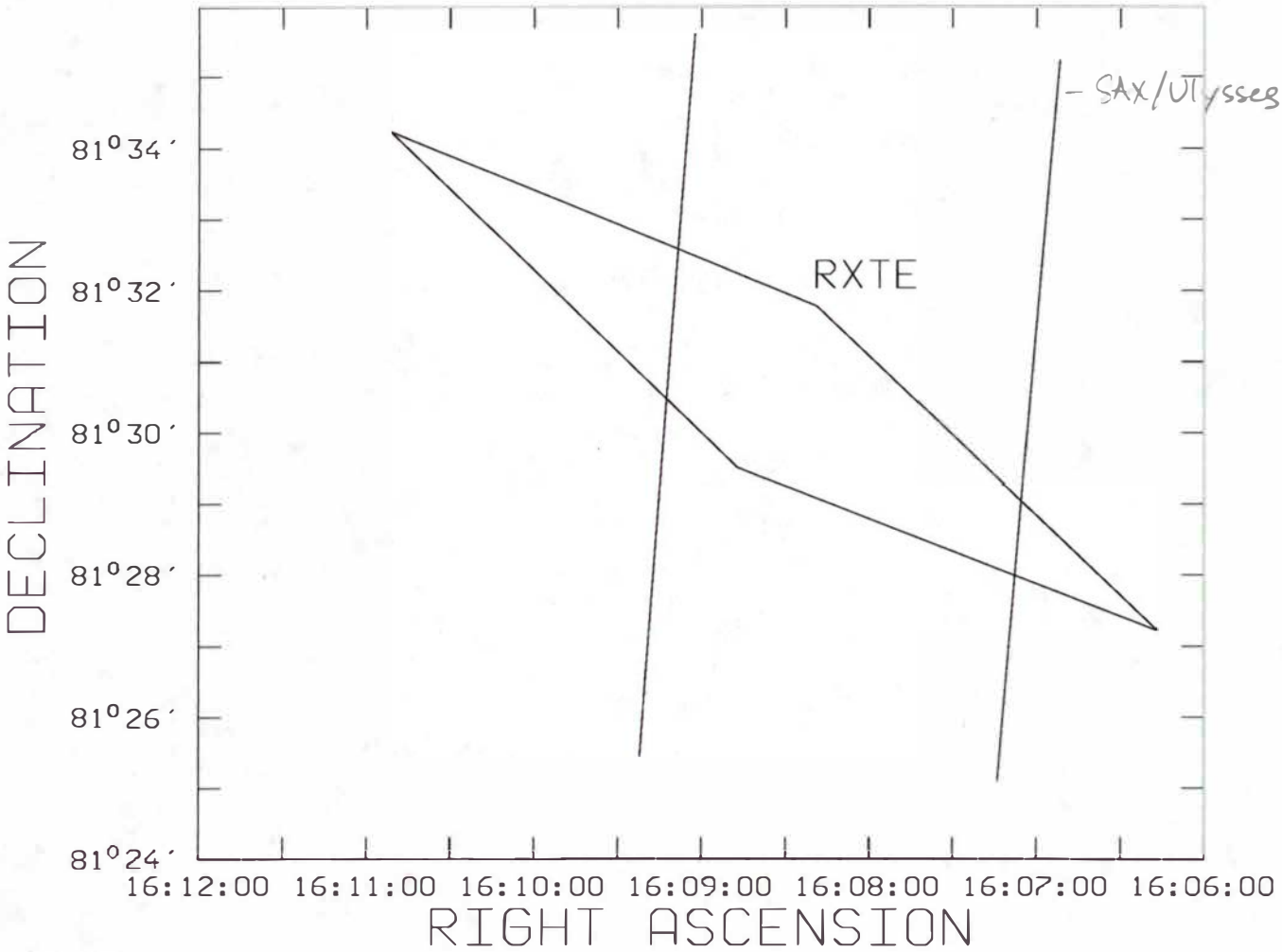
3. PVO Data

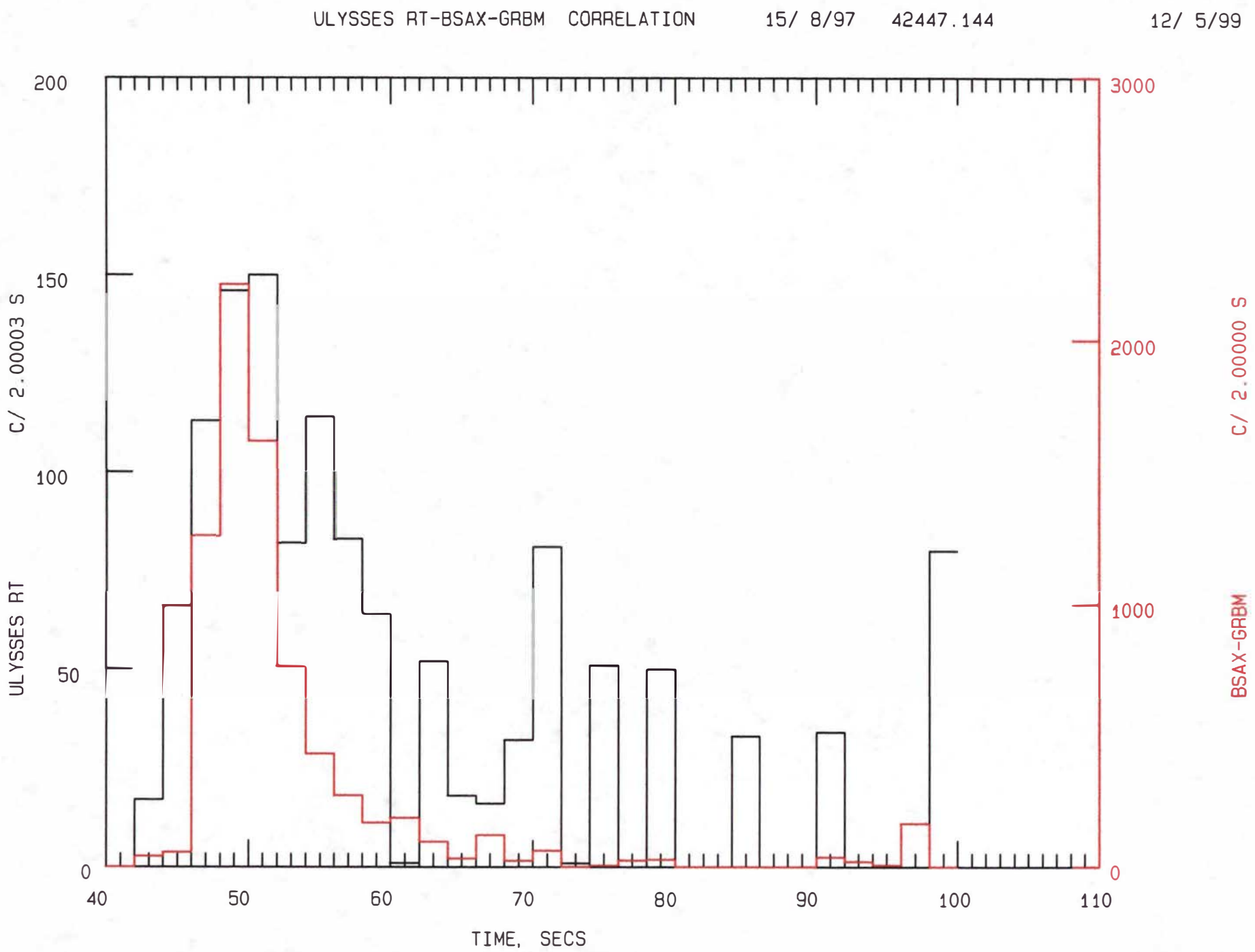
☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

☐ Geocentric time used?

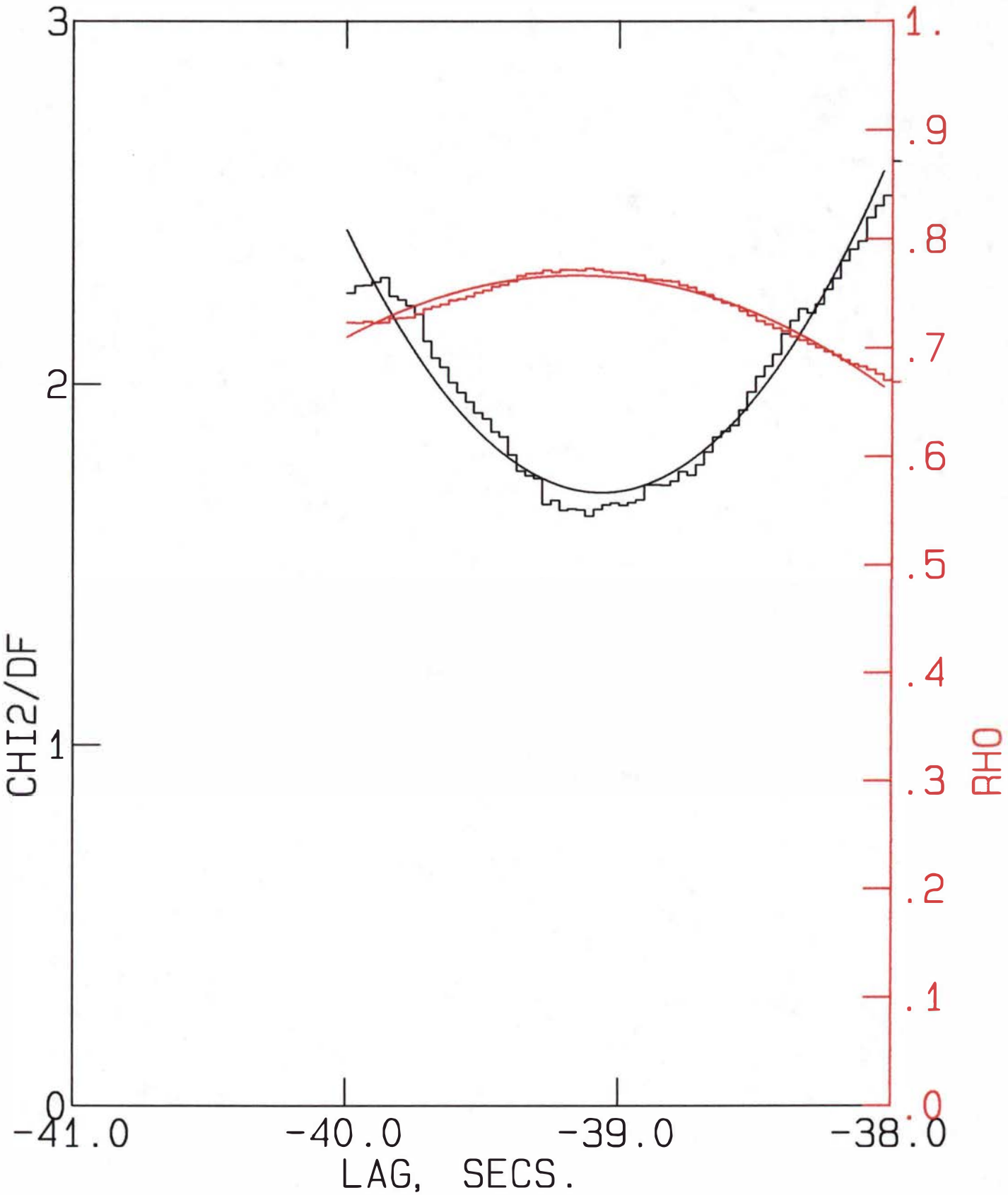
☑ ACCESS database updated?


- SAX/UTysses
RXTE
81°34'
81°32'
81°30'
81°28'
81°26'
81°24'
DECLINATION
16:12:00
16:11:00
16:10:00
16:09:00
16:08:00
16:07:00
16:06:00
RIGHT ASCENSION


ULYSSES RT-BSAX-GRBM CORRELATION 15/ 8/97 42447.144 12/ 5/99
200
150
100
50
0
C/ 2.00003 S
ULYSSES RT
3000
2000
1000
0
C/ 2.00000 S
BSAX-GRBM
40
50
60
70
80
90
100
110
TIME, SECS

12/ 5/99

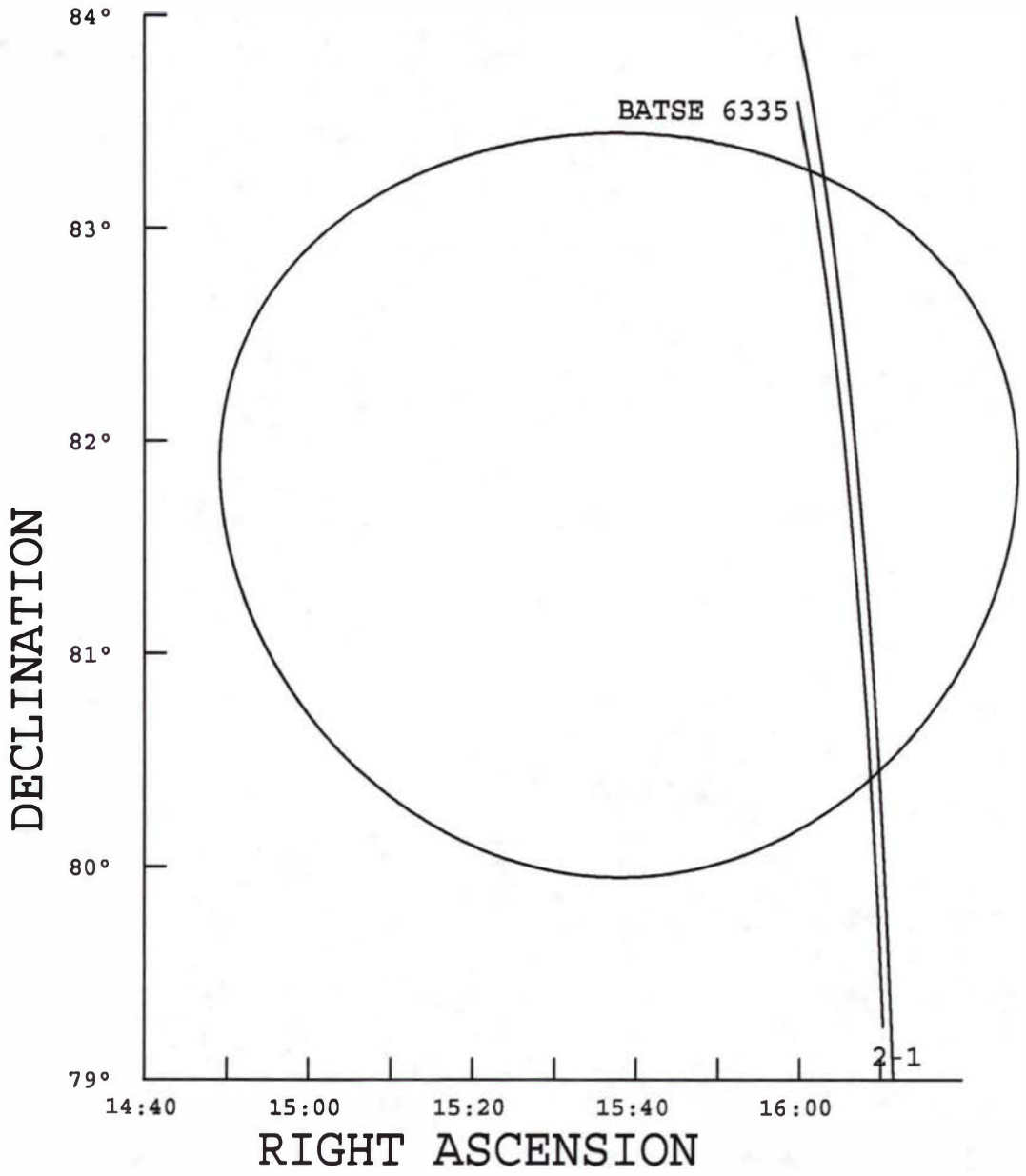
ULYSSES RT-BSAX-GRBM CORRELATION 15/ 8/97 42447.144



EVENT OF AUG 15, 1997 11:47

3/ 2/99

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

From dfrail@aoc.nrao.edu Wed Oct 29 10:05 PST 1997
Date: Wed, 29 Oct 1997 11:05:07 -0700 (MST)
From: Dale Frail <dfrail@aoc.nrao.edu>
To: khurley@sunspot.ssl.berkeley.edu
ject: Re: 970815

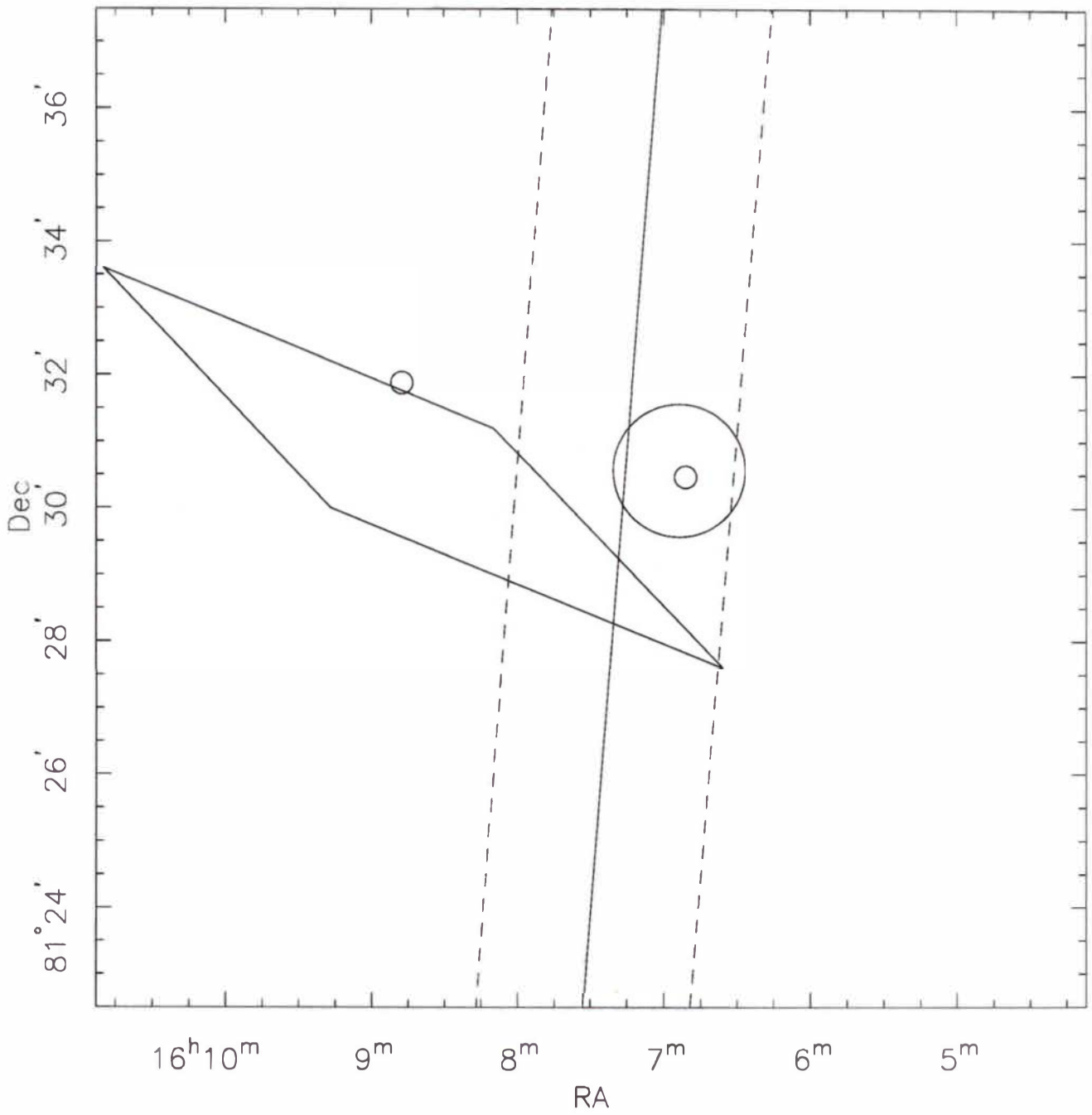
Thanks. It sounds to me that you rule out the ROSAT source on
the edge of the RXTE and instead it is the ROSAT/ASCA source
with the most promise. I've enclosed my plot file with the
ROSAT sources on it.

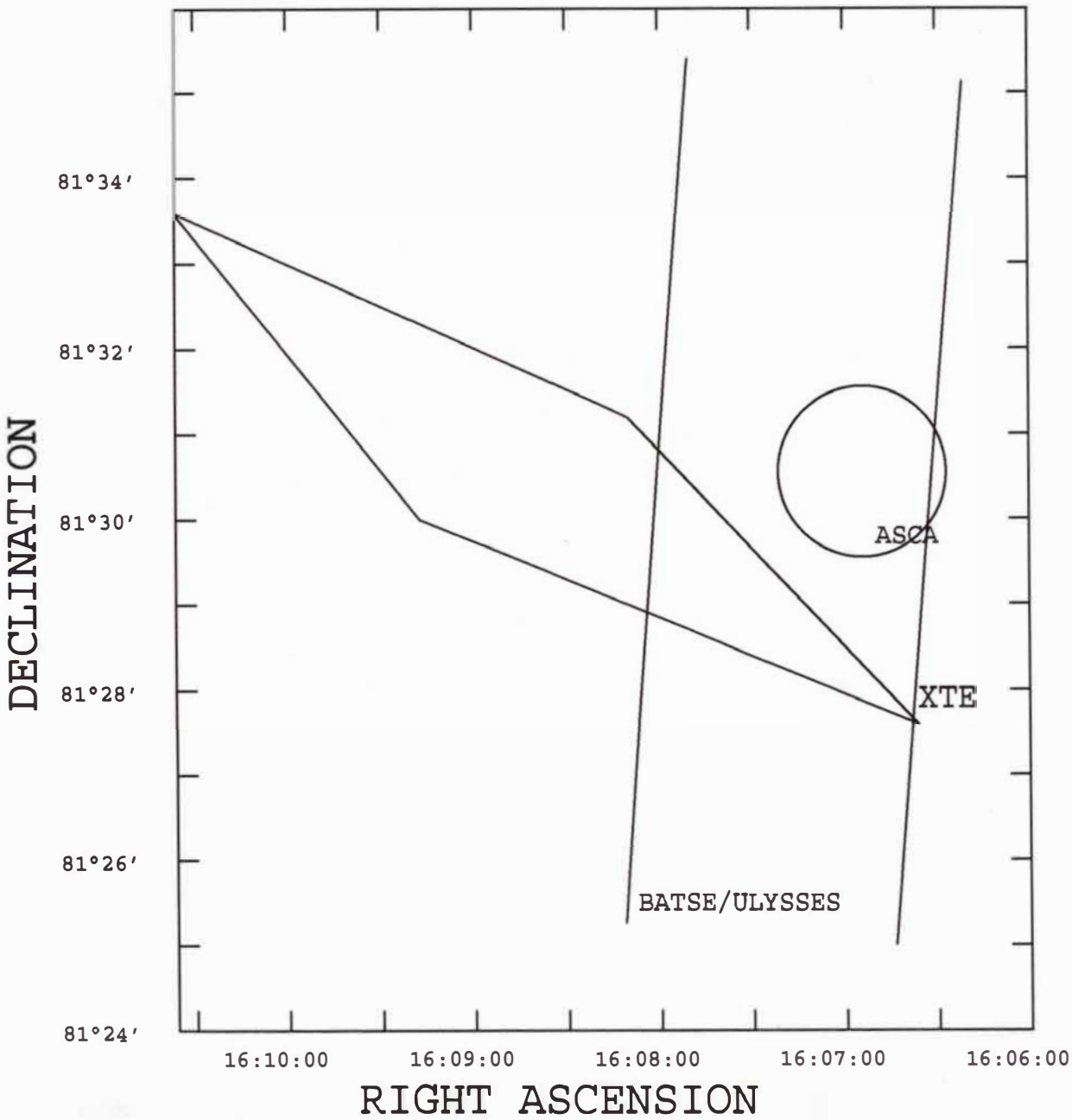
http://www.nrao.edu/~dfrail/grbvla/g970815/g970815.html is
a summary of the radio effort so far. Short summary: nothing seen.
I'll post the results of a deeper search here as soon as I can.

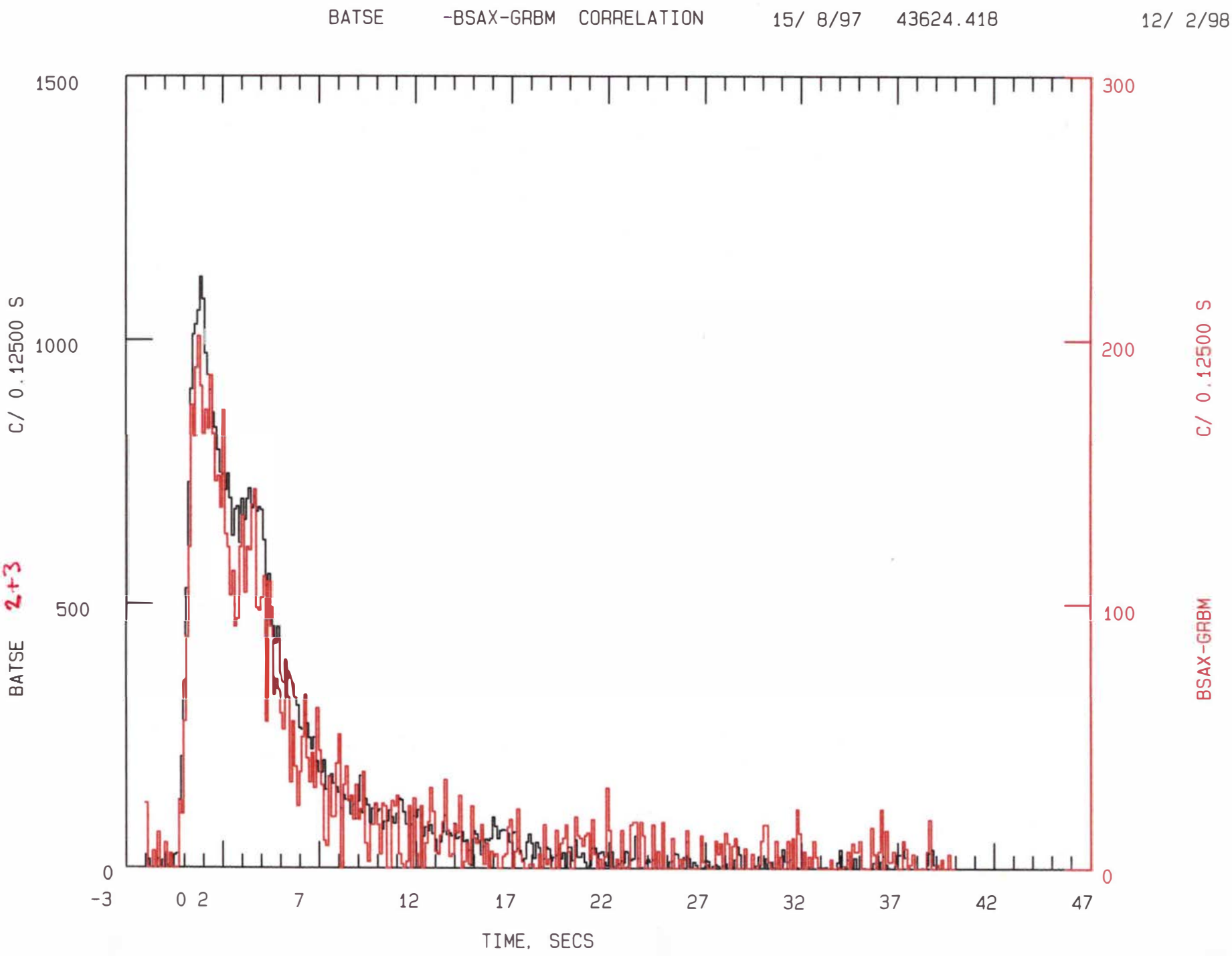
Cheers,
Dale

<This message contains 1 attachments (not printed)>

GRB970815

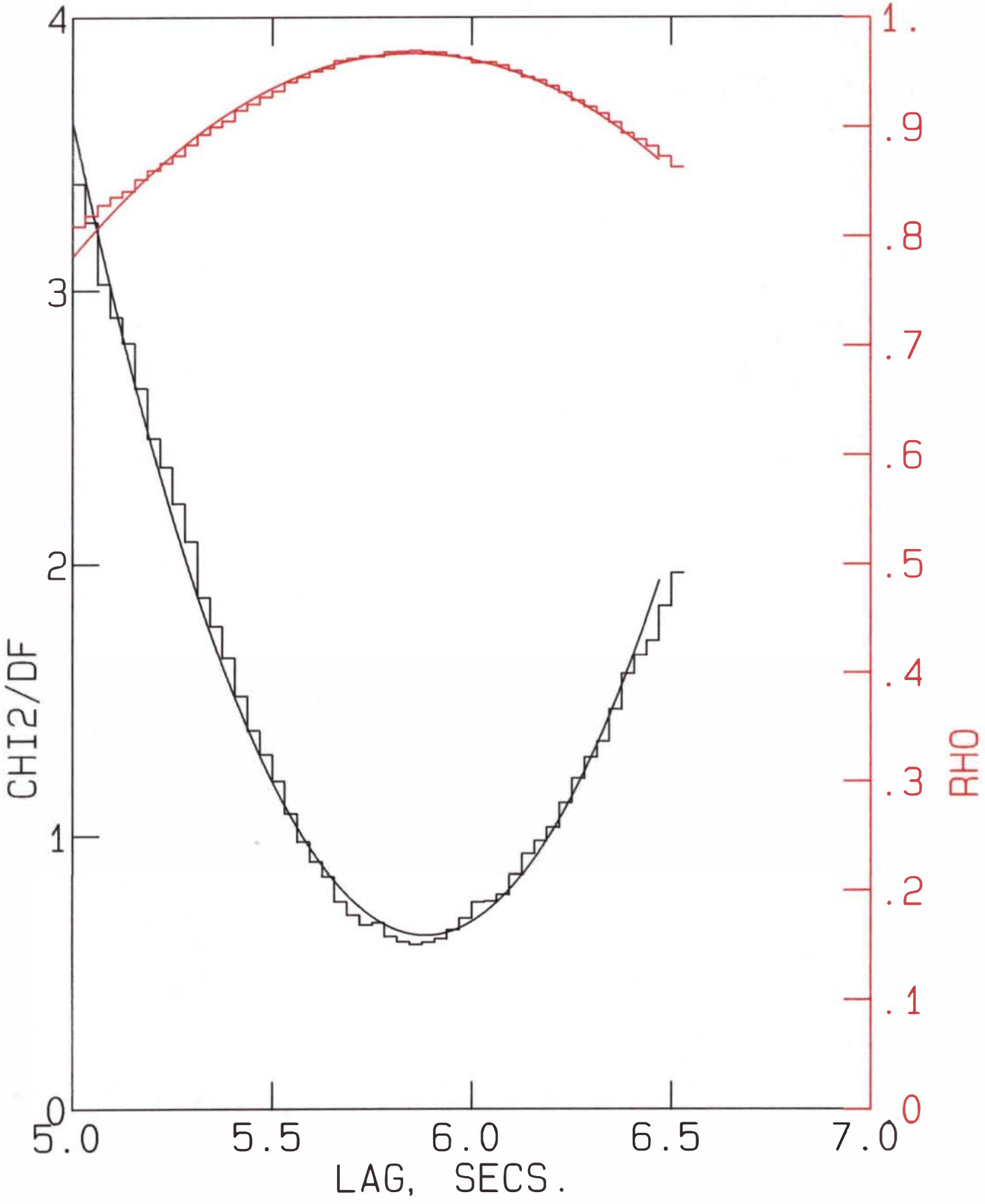


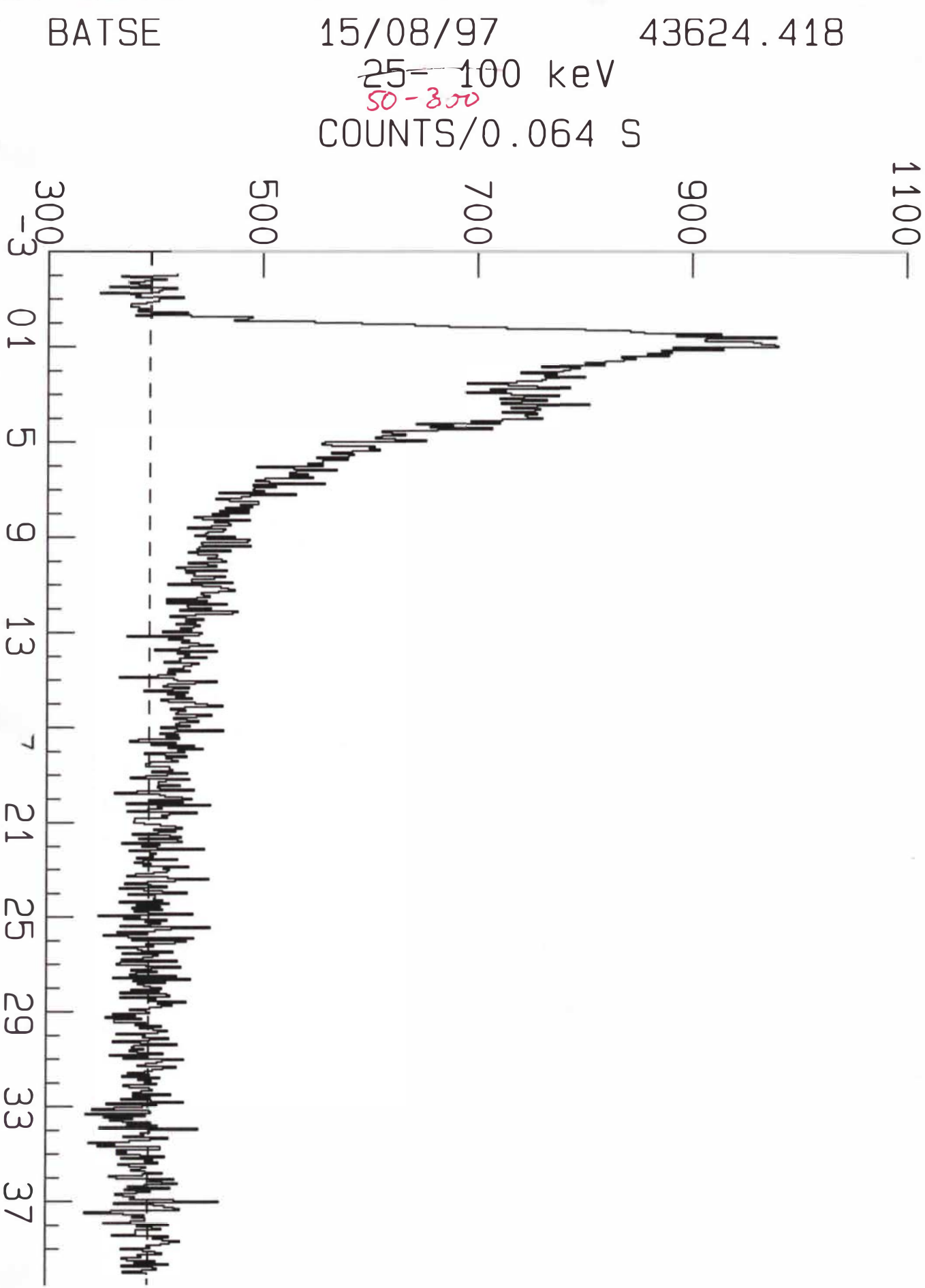

DECLINATION
81°34′
81°32′
81°30′
81°28′
81°26′
81°24′
ASCA
XTE
BATSE/ULYSSES
16:10:00
16:09:00
16:08:00
16:07:00
16:06:00
RIGHT ASCENSION


BATSE -BSAX-GRBM CORRELATION 15/ 8/97 43624.418 12/ 2/98
1500
1000
500
0
300
200
100
0
C/ 0.12500 S
BATSE 2+3
C/ 0.12500 S
BSAX-GRBM
-3
0 2
7
12
17
22
27
32
37
42
47
TIME, SECS

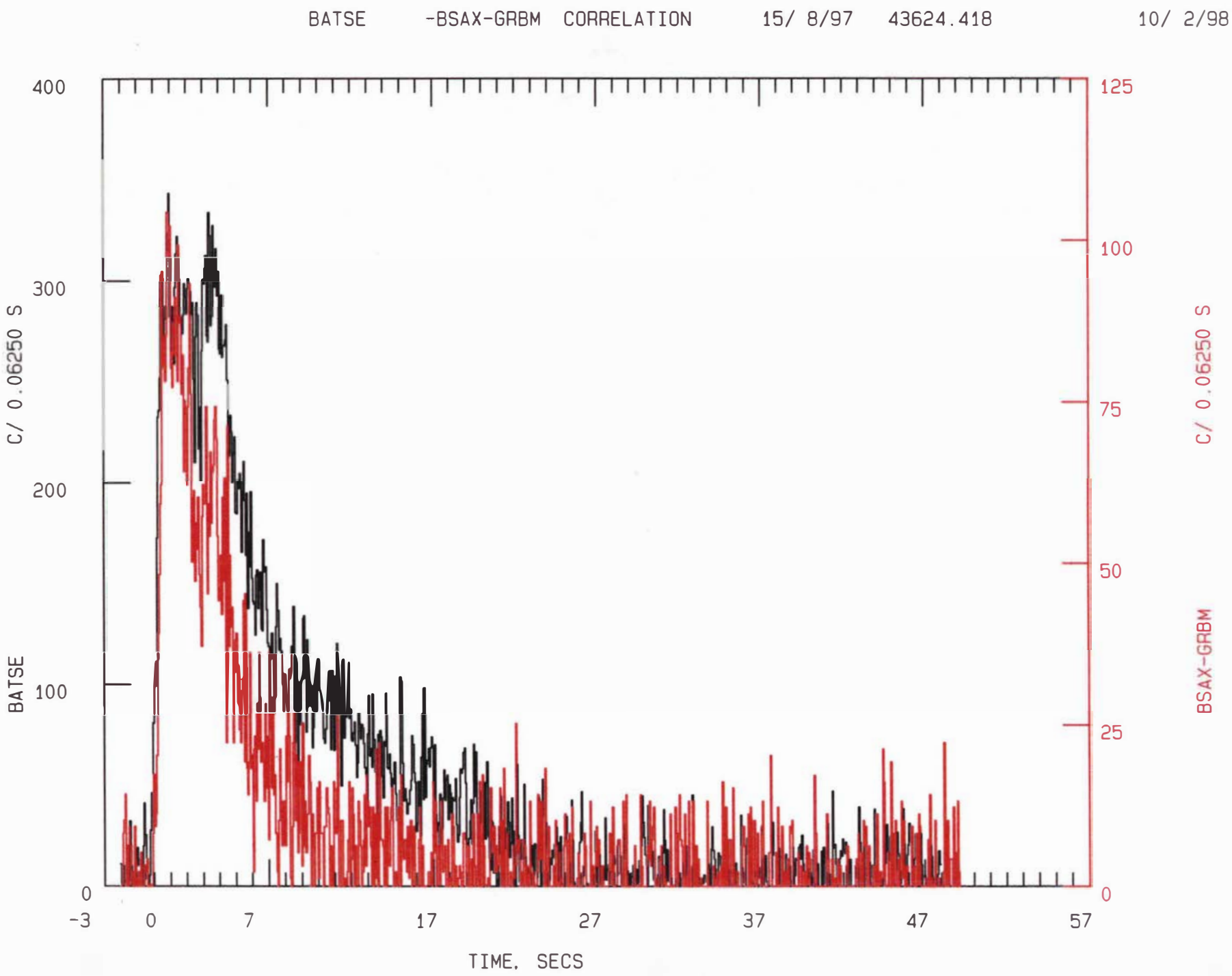
12/ 2/98

BATSE 2+3 -BSAX-GRBM CORRELATION 15/ 8/97 43624.418

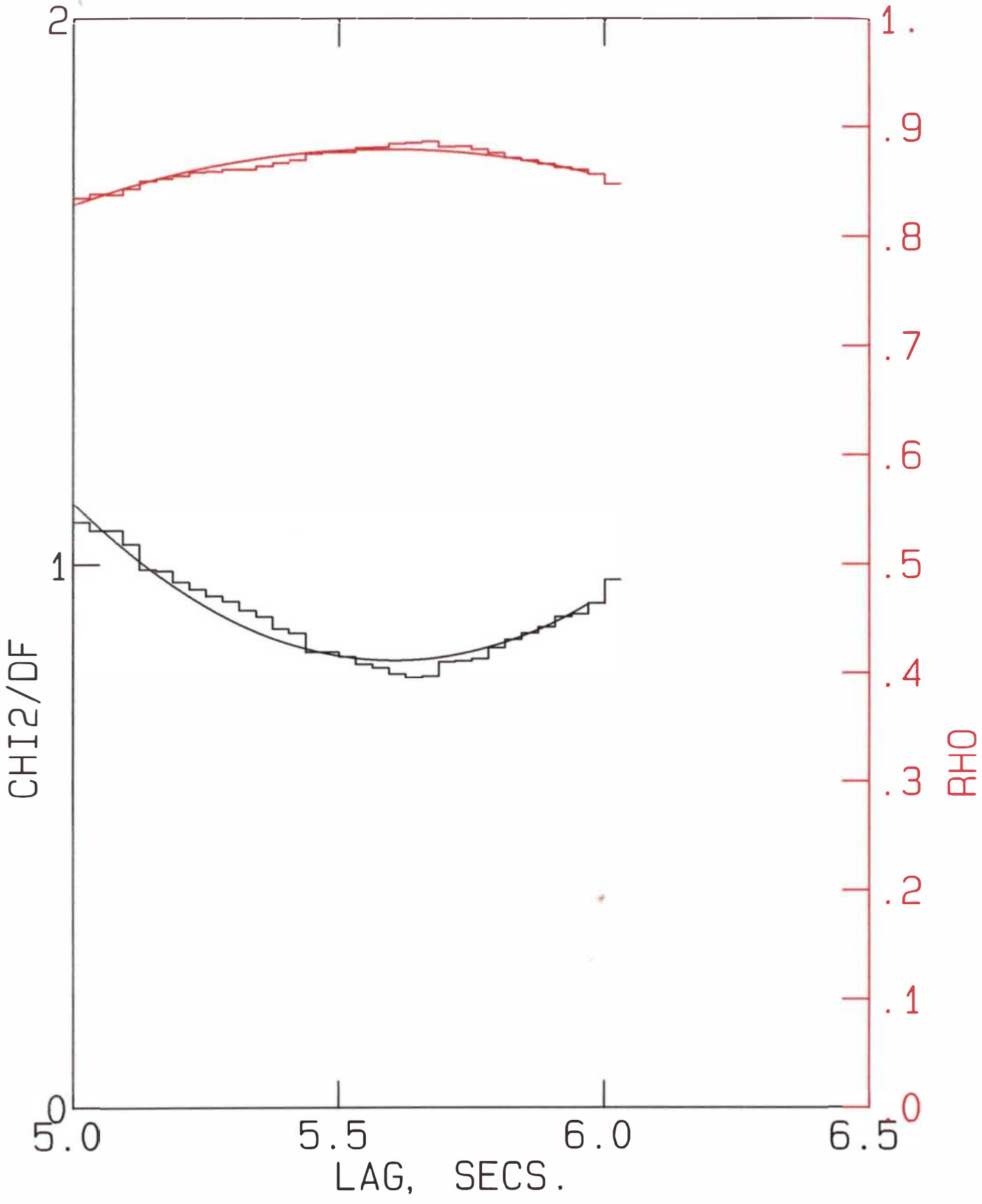


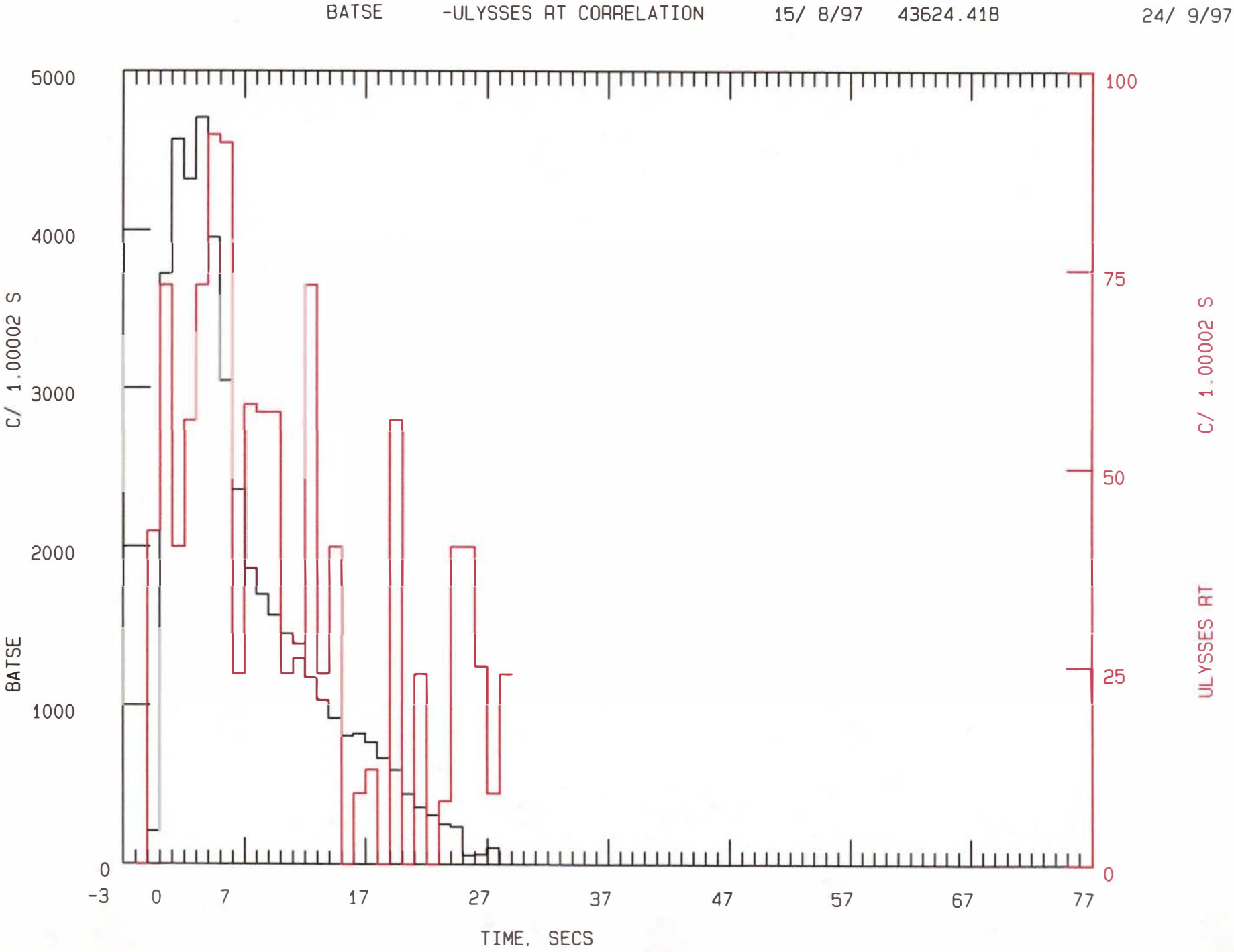

BATSE 15/08/97 43624.418
25- 100 keV
50-300
COUNTS/0.064 S
300
500
700
900
1100
-3
01
5
9
13
17
21
25
29
33
37

12/ 2/98


BATSE -BSAX-GRBM CORRELATION 15/ 8/97 43624.418 10/ 2/98
400
300
200
100
0
C/ 0.06250 S
BATSE
125
100
75
50
25
0
C/ 0.06250 S
BSAX-GRBM
-3
0
7
17
27
37
47
57
TIME, SECS

BATSE -BSAX-GRBM CORRELATION 15/ 8/97 43624.418




BATSE -ULYSSES RT CORRELATION 15/ 8/97 43624.418 24/ 9/97
5000
4000
3000
2000
1000
0
C/ 1.00002 S
BATSE
100
75
50
25
0
C/ 1.00002 S
ULYSSES RT
-3
0
7
17
27
37
47
57
67
77
TIME, SECS

Date: Apr 7 '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? N/A

☑ 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?

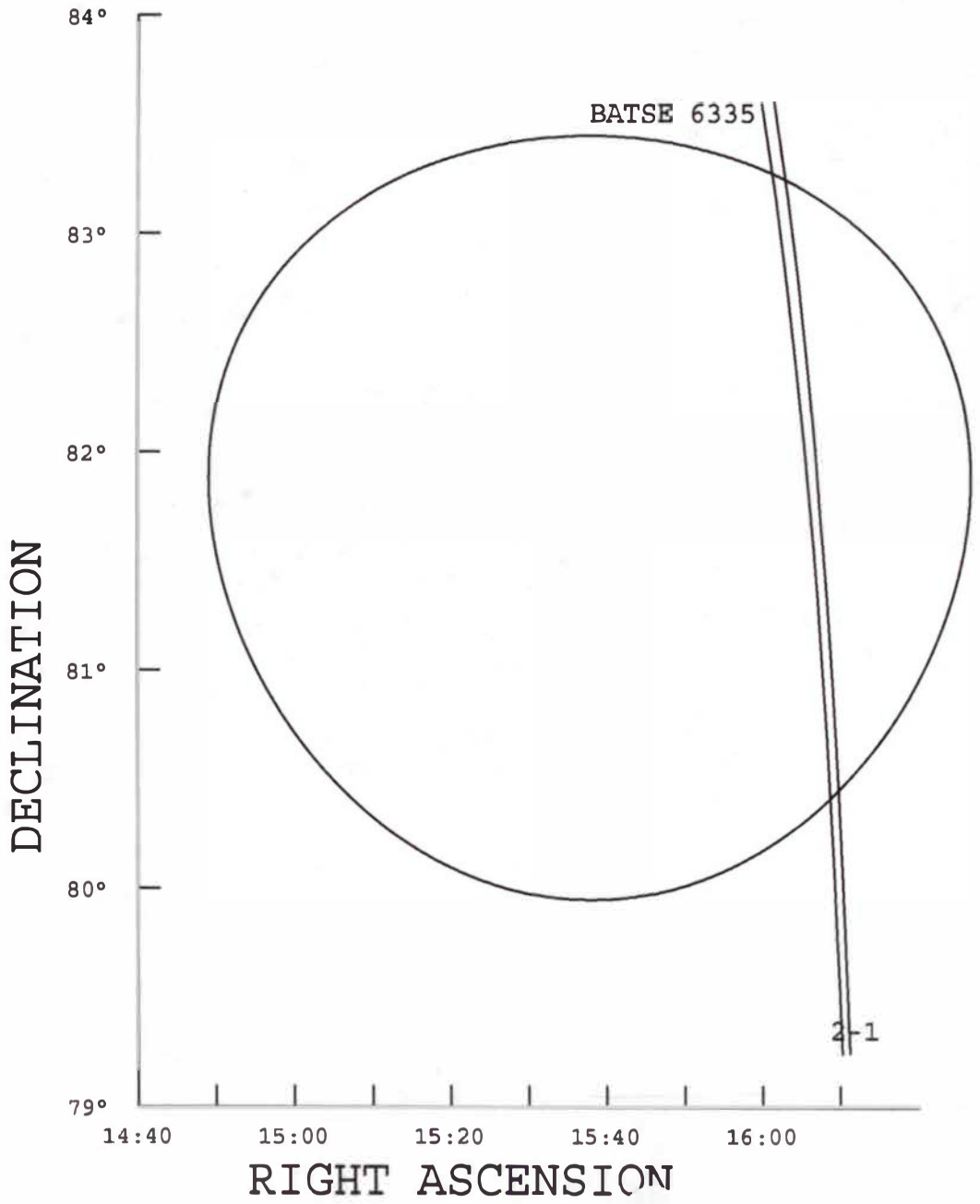
☐ Geocentric time used?

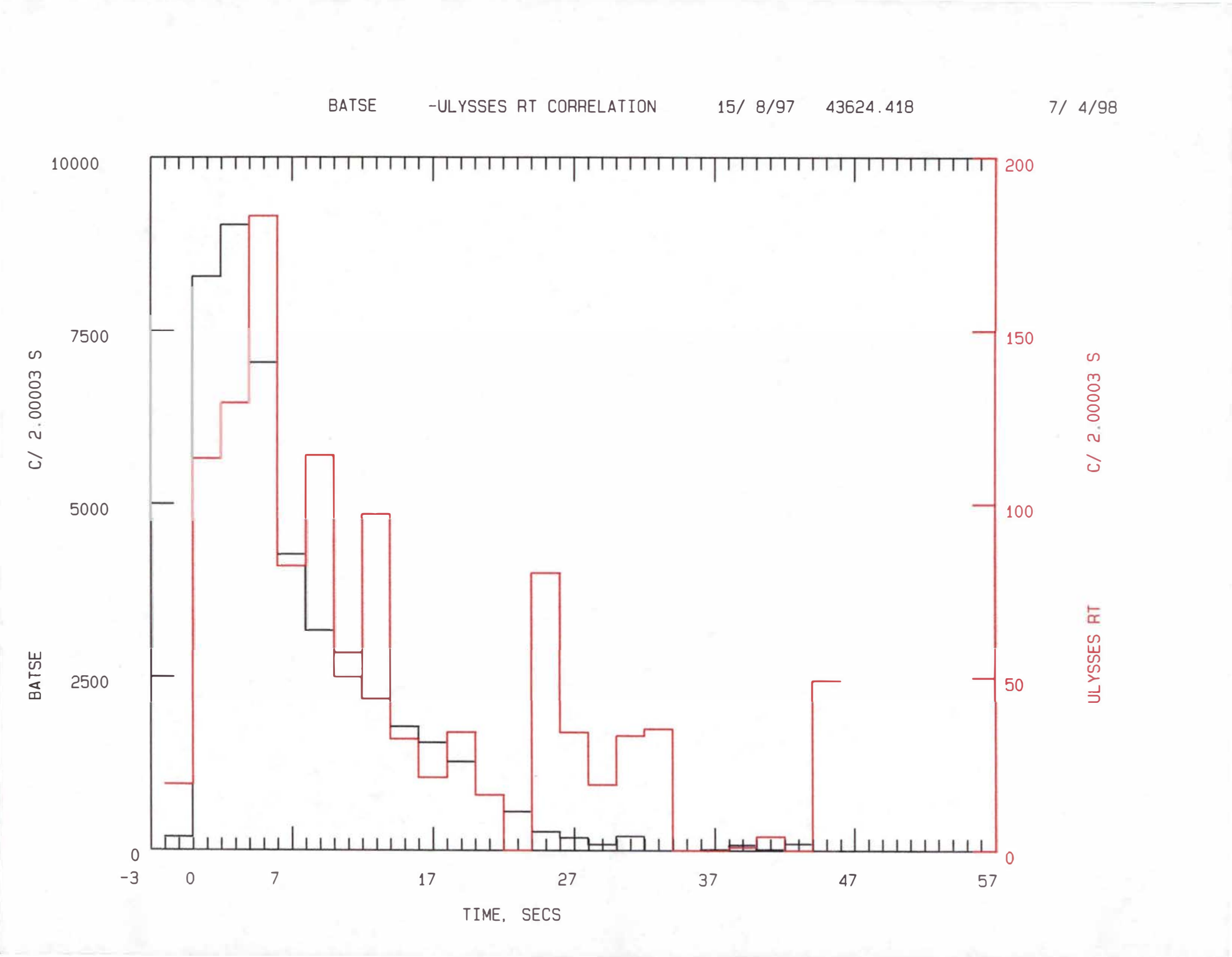
☑ ACCESS database updated?

EVENT OF AUG 15, 1997 11:47

7/ 4/98

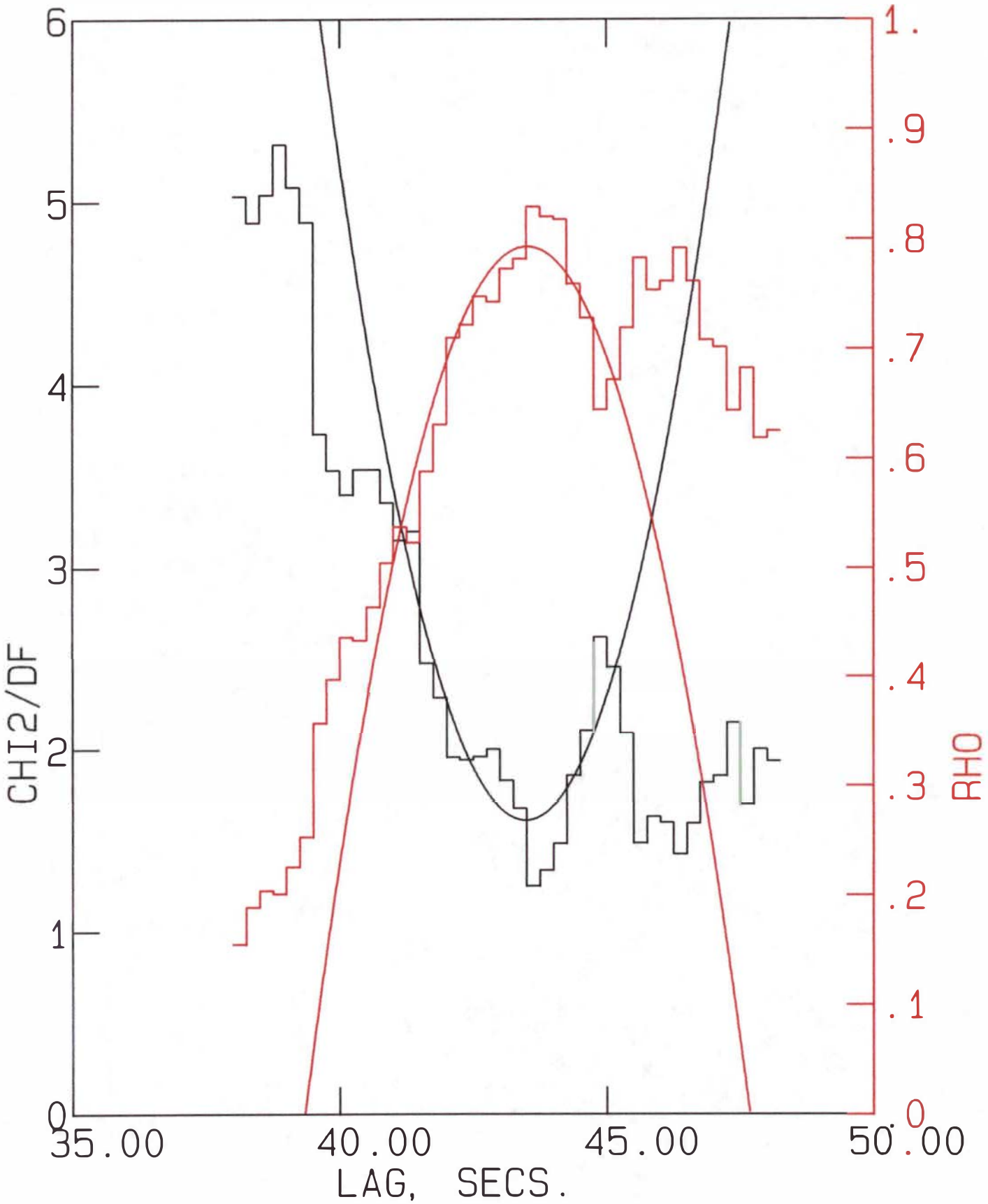
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




BATSE -ULYSSES RT CORRELATION 15/ 8/97 43624.418 7/ 4/98
10000
7500
5000
2500
0
C/ 2.00003 S
BATSE
200
150
100
50
0
C/ 2.00003 S
ULYSSES RT
-3
0
7
17
27
37
47
57
TIME, SECS

7/ 4/98

BATSE -ULYSSES RT CORRELATION 15/ 8/97 43624.418

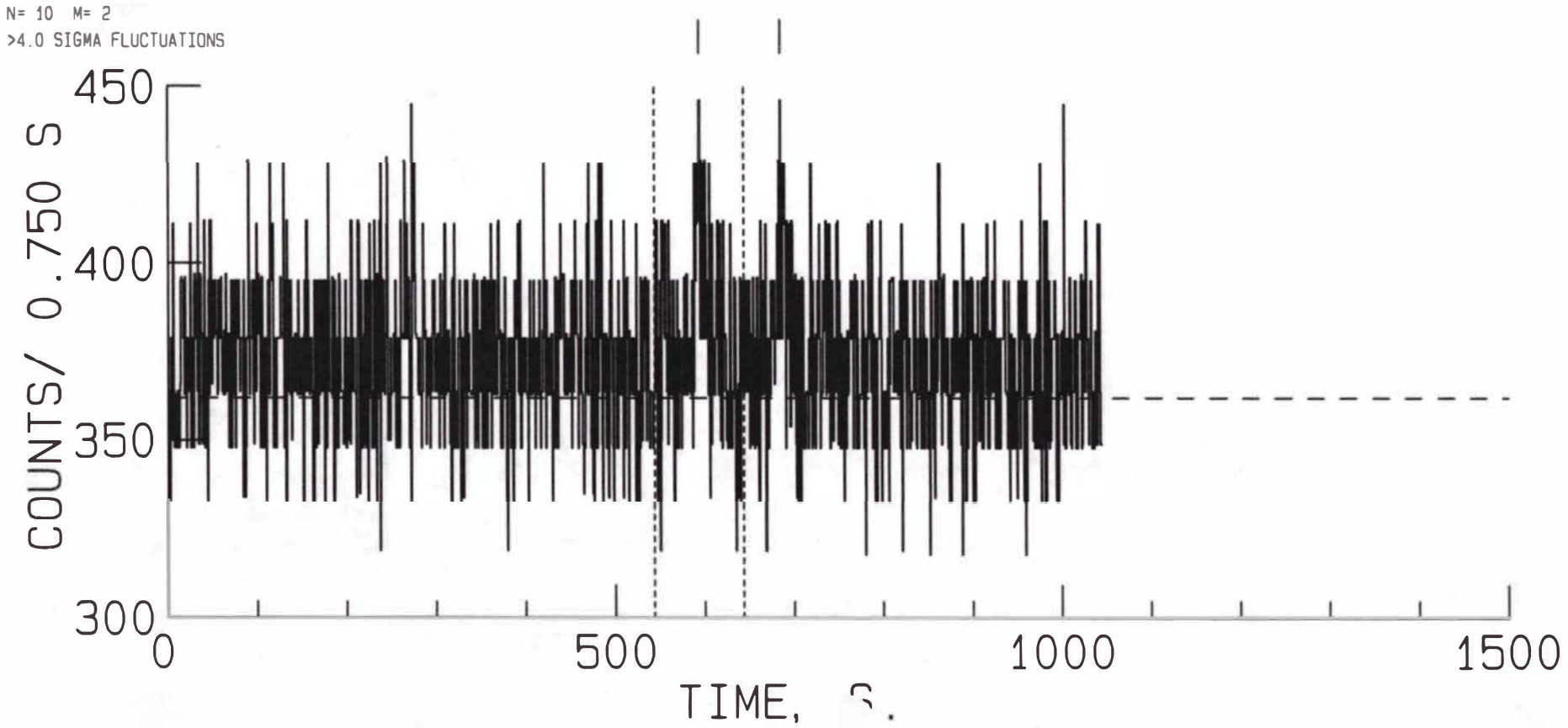


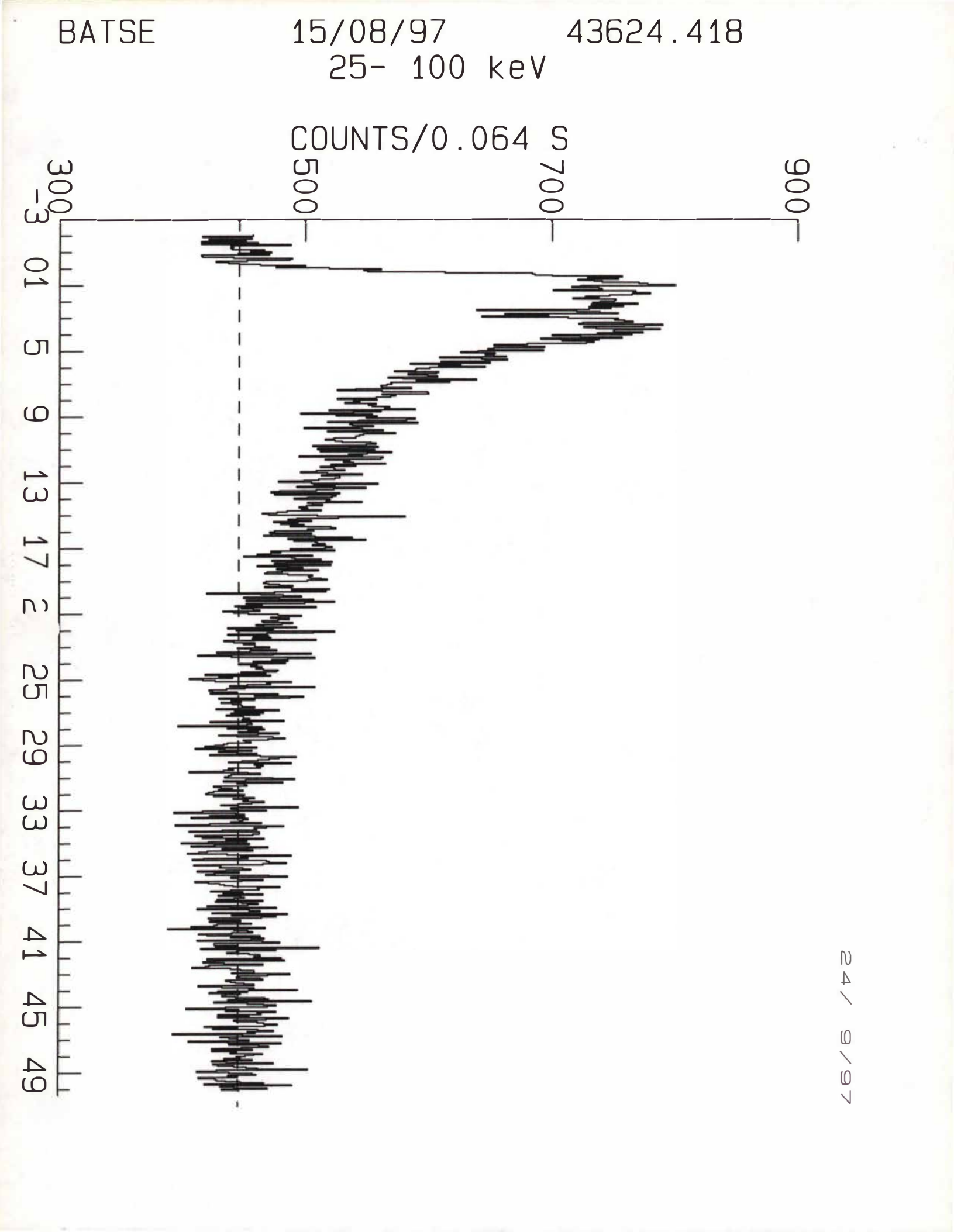
ULYSSES RT 7/ 4/98

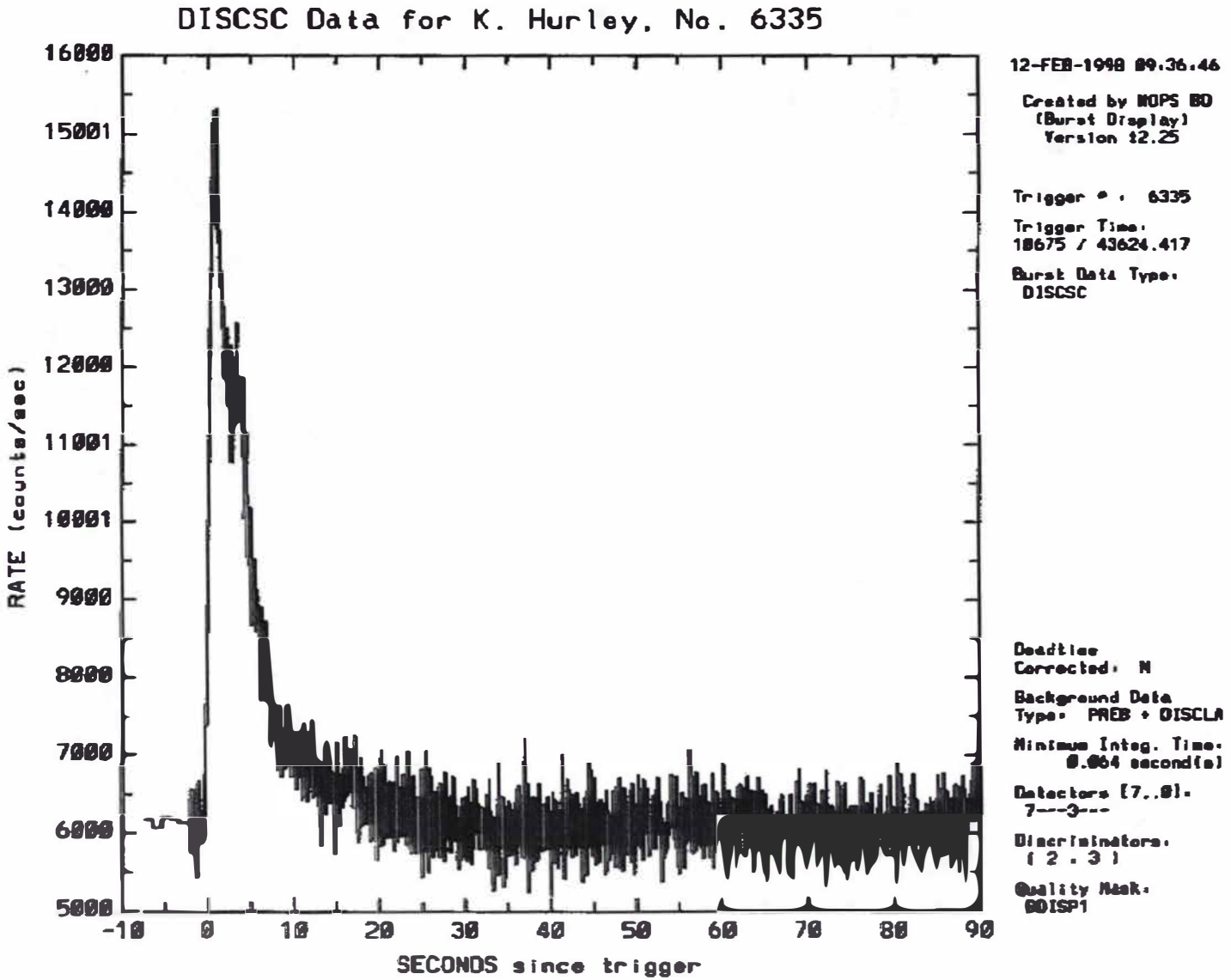
15/ 8/97 41904.192 s

0.250 S INTERVALS REGROUPED BY 3

22- 147 keV




BATSE 15/08/97 43624.418
25- 100 keV
COUNTS/0.064 S
300
500
700
900
-3
01
5
9
13
17
21
25
29
33
37
41
45
49
24/ 9/97


DISCSC Data for K. Hurley, No. 6335
RATE (counts/sec)
16000
15001
14000
13000
12000
11001
10001
9000
8000
7000
6000
5000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
12-FEB-1998 09:36:46
Created by MOPS BD
(Burst Display)
Version 12.25
Trigger # : 6335
Trigger Time:
18675 / 43624.417
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
7---3---
Discriminators:
(2 . 3)
Quality Mask:
GDISP1

DISCSC Data for K. Hurley, No. 6335
RATE (counts/sec)
SECONDS since trigger
12501
12000
11500
11001
10500
10001
9500
9000
8500
8000
7500
7000
6500
6000
5500
-10
0
10
20
30
40
50
60
70
80
90
Created by MDPS BD
Burst Display
Version 12.25
Trigger # : 6335
Trigger Time:
16425 / 43626.417
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCSC
Minimum Integ. Time:
0.064 seconds
Detectors [7,0]:
7---3---
Discriminators:
[1 , 2]
Quality (Best,
BDISP1

ASCA	$16^h 07^m$	$81° 30.5'$ (J2000)	241.75	81.51	.025
RITE (IAUC)	$16^h 06^m 36^s$	$81° 27' 36''$	241.65	81.46	
	16 10 50	81 33 36	242.71	81.56	
	16 08 10	81 31 12	242.04	81.52	
	16 09 17	81 30 00	242.32	81.50	

BATSE

$\alpha = 159.652$ $\delta = 20.562$ $R = 68.574 \pm 0.049$

---

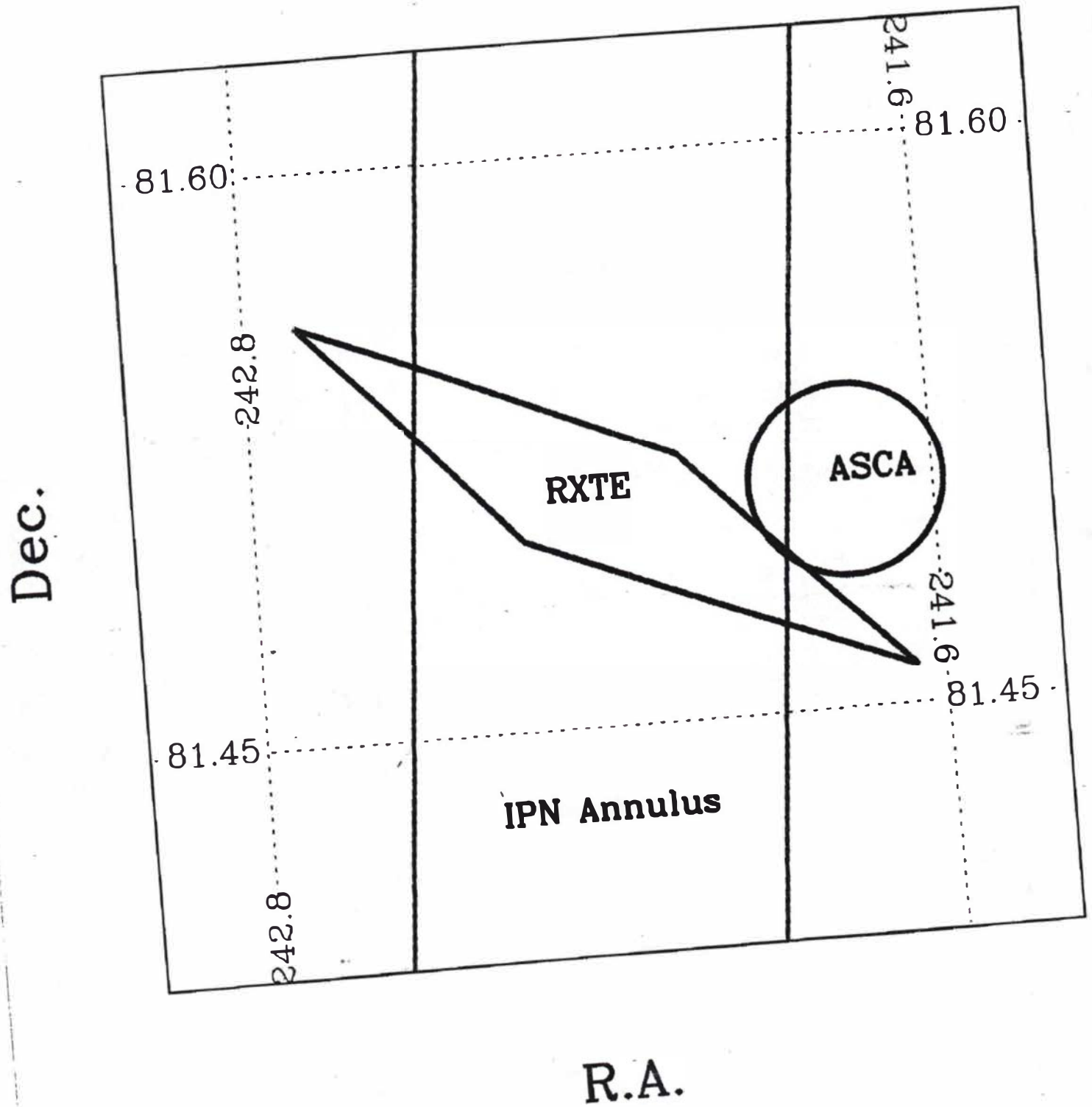
mail FILE. txt -> dasmith@~~nit~~space.mit.edu, jgj
Save MSO files
Save Frontera -> SAX/Frontera
Save jernigan's msgs to ~/rt/u/imsk/150897

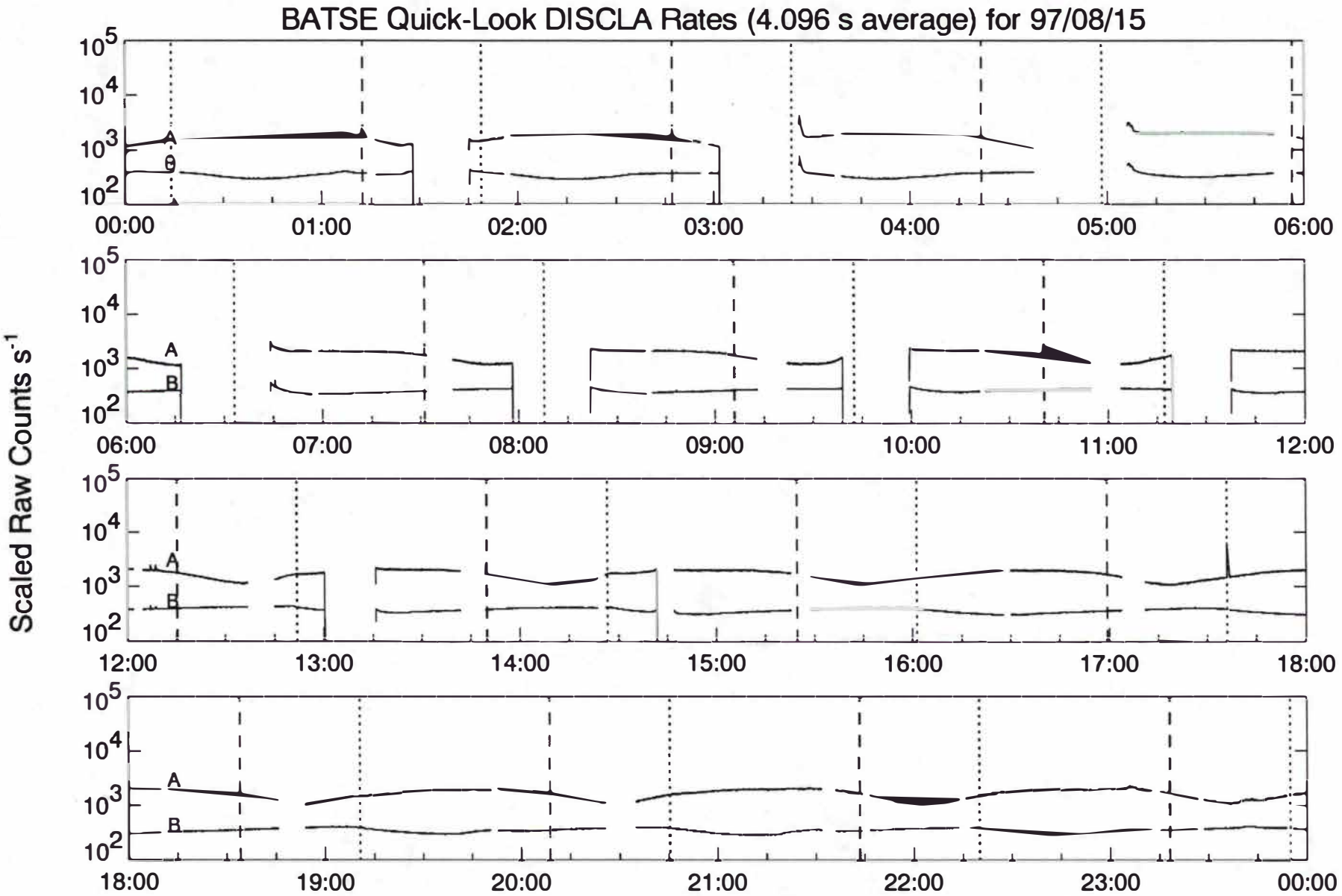
---

2 peaks - moderately intense in BATSE
But probable soft X ray excess
2 Crab 2-12 keV in 2nd peak

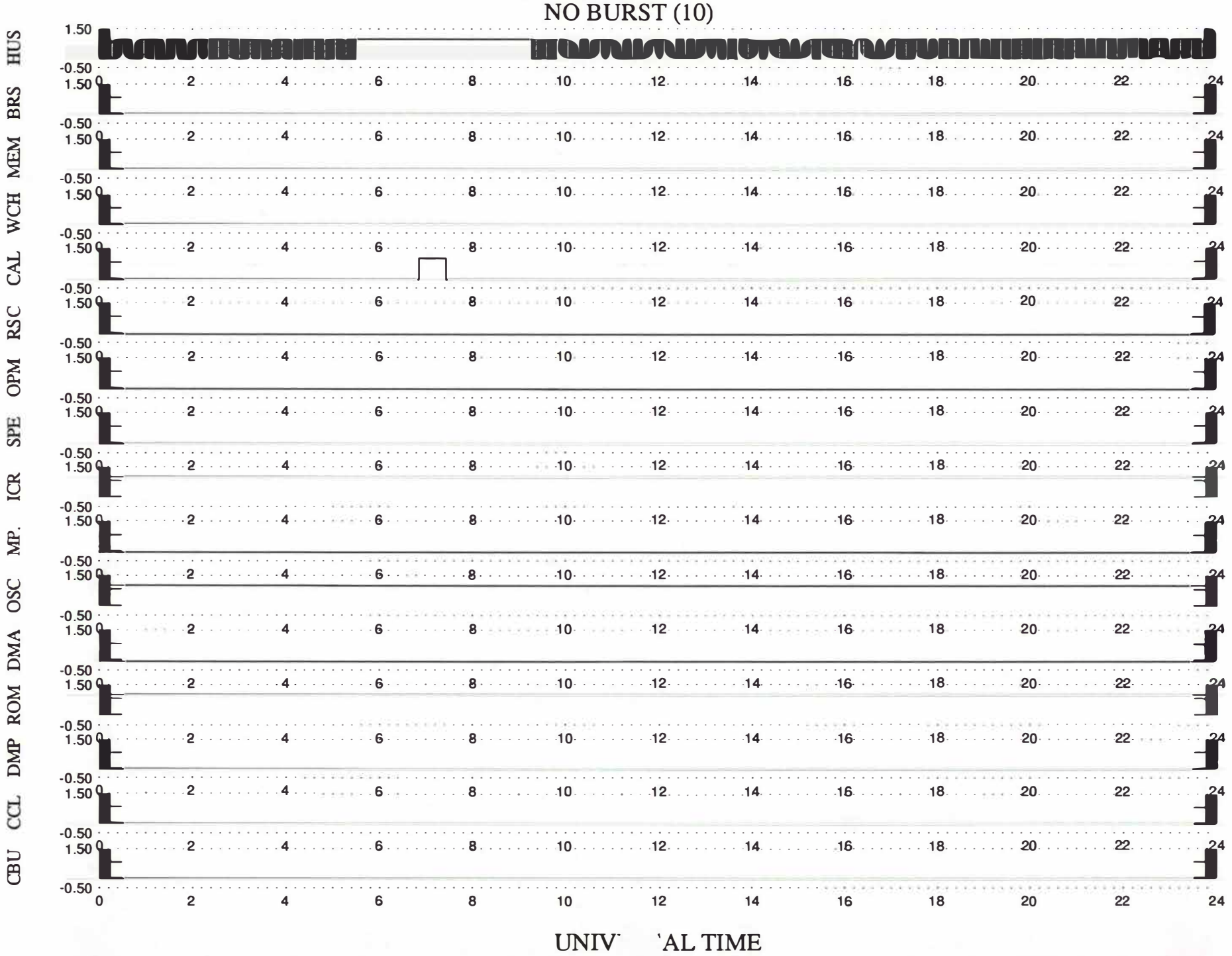
Grewer
Laros
Jernigan

To: Carlo Graziani (FAX 970-920-1167)
From: Cole Miller (Ph. 773-702-9751)



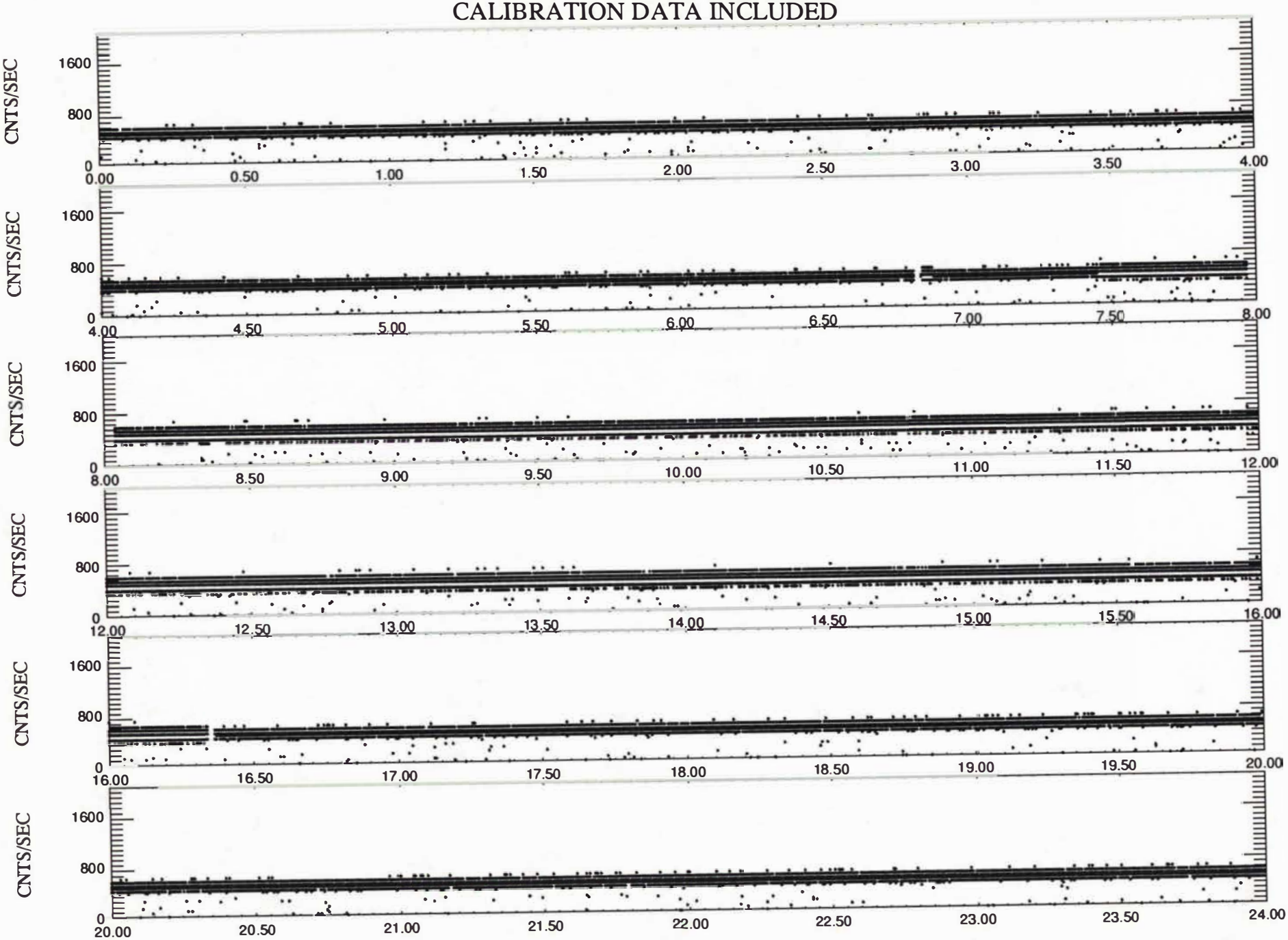

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/15
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/19, 1008 EDT
A: Channel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

HUS MODES EDR day 227, year 1997 to day 227, year 1997 1/6/98



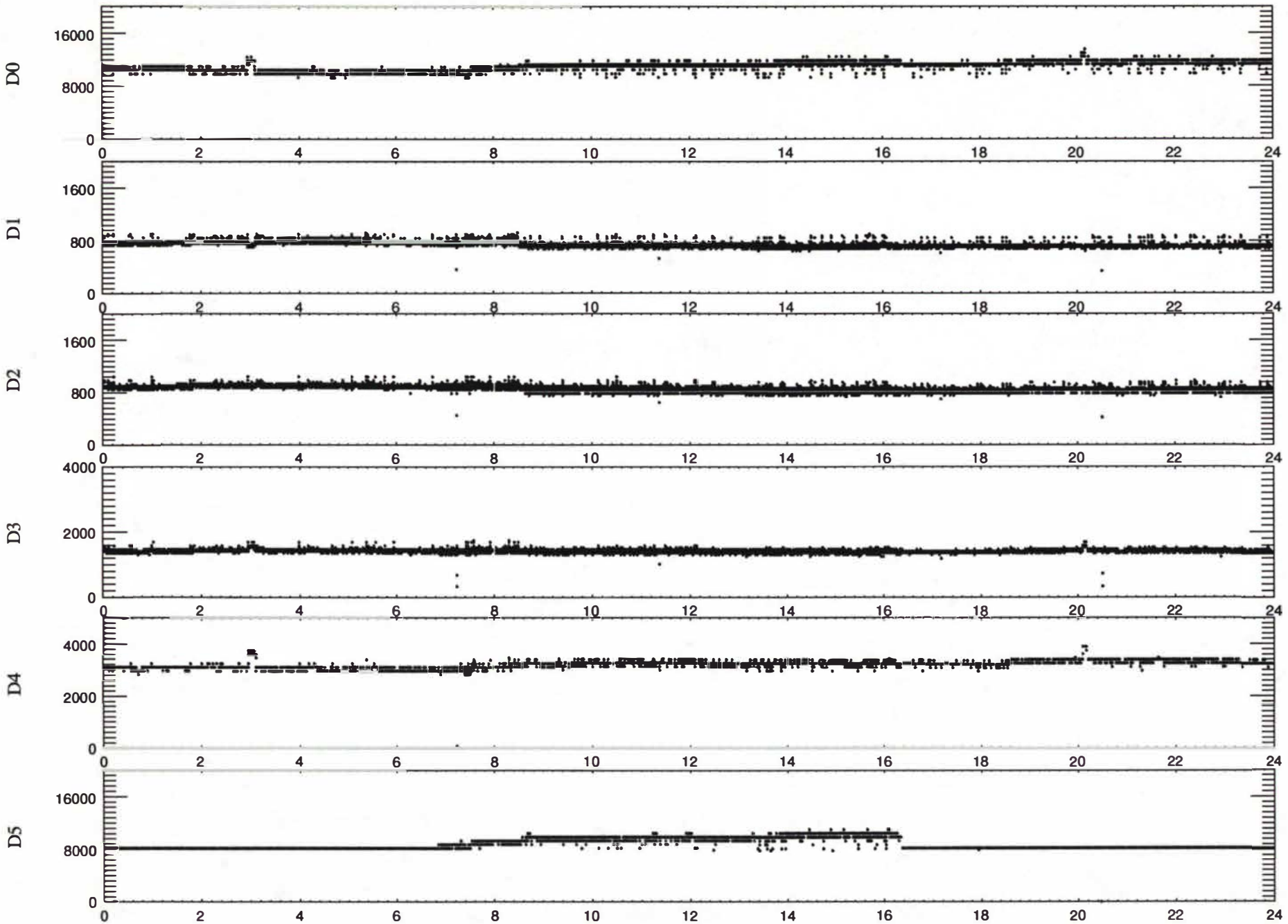
HUS 2A, MODE 1, NOT AVERAGED EDR day 227, year 1997 to day 227, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV `AL TIME

HUS 2B COUNTS / SEC EDR day 227, year 1997 to day 227, year 1997 1/6/98



From SURASAK@ssl.msfc.nasa.gov Mon Aug 18 14:46 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 OAA00381; Mon, 18 Aug 1997 14:46:41 -0700
Date: Mon, 18 Aug 1997 16:46:37 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970818164637.2020508e@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6336
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6336
EVENT OF 1997 AUG 16 DAY OF YEAR=228
EVENT CROSSING TIME AT BATSE : 8264. S. OR 02:17:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 92.000 45.000
BATSE PEAK COUNTING RATE: 55300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 8/ 97 IS:
RA= 159.202 DEC= 20.652 DIST= 6.200 AU
BATSE-ULYSSES DISTANCE = 927524180. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1564.82 SECS.
CROSSING TIME AT ULYSSES IS 6699. S. OR 01:51:39 +/- 489.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 8/ 97 IS:
RA= 208.658 DEC= -12.402 DIST= 1.555 AU
MARS-BATSE DISTANCE = 232570528. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.50 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 358.18 SECS.
CROSSING TIME AT MARS IS 8622. S. OR 02:23:42 +/- 124.91 SECONDS

BATSE BURST TRIGGER

NO.: 6336

TIME: TJD=0676 SECONDS=8264

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=161.9 AZIMUTH=263.4 ERROR=0.396 DEGREES

COMMENTS:
GRB. DUR~13S STRONG SINGLE PULSE WITH SUBSTRUCTURE. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6336	970816	10676	08264	55300	092	+45	13

Helio corr removed 18/2/00

Date: April 7 '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? N/A

☑ 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?

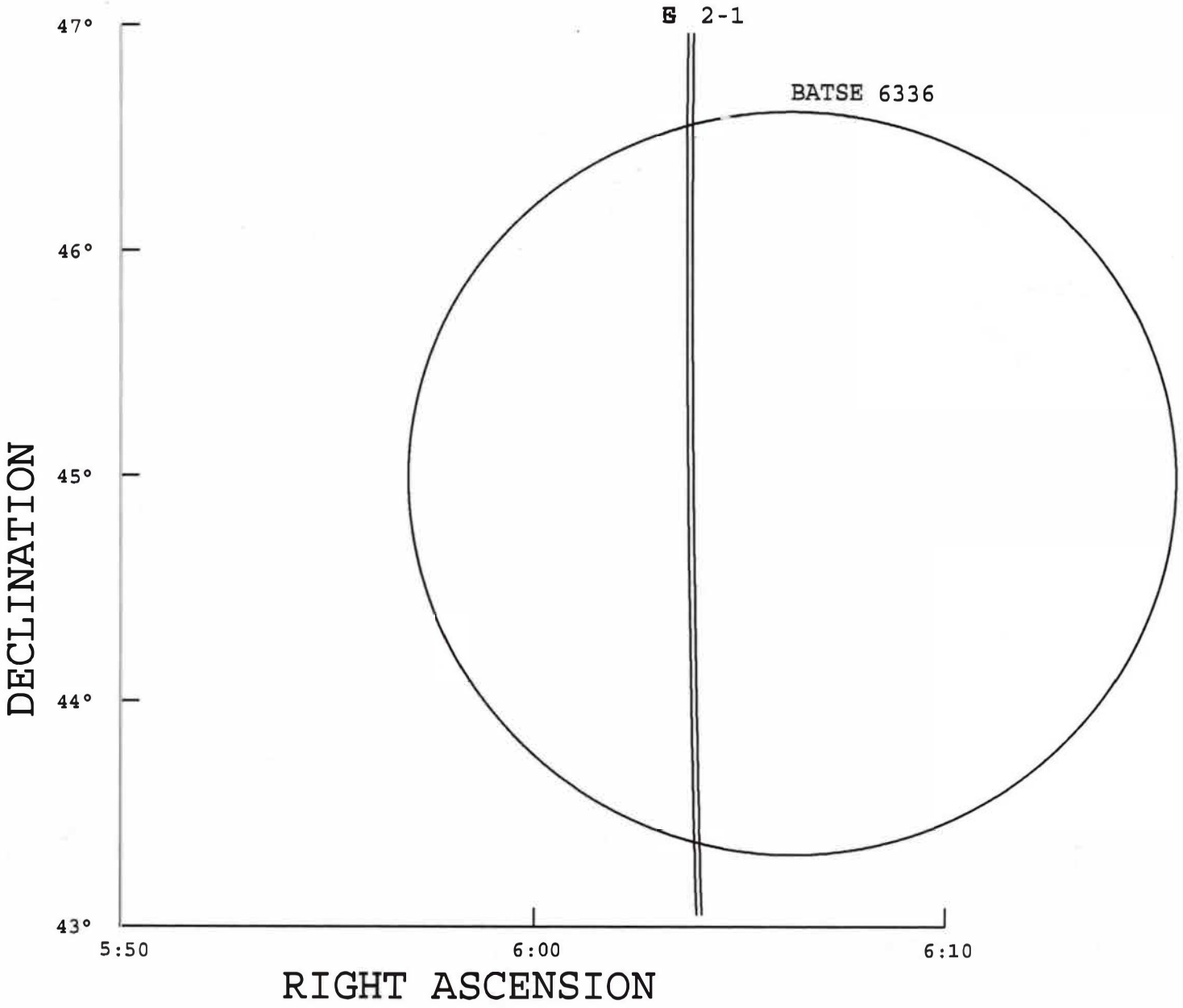
☐ Geocentric time used?

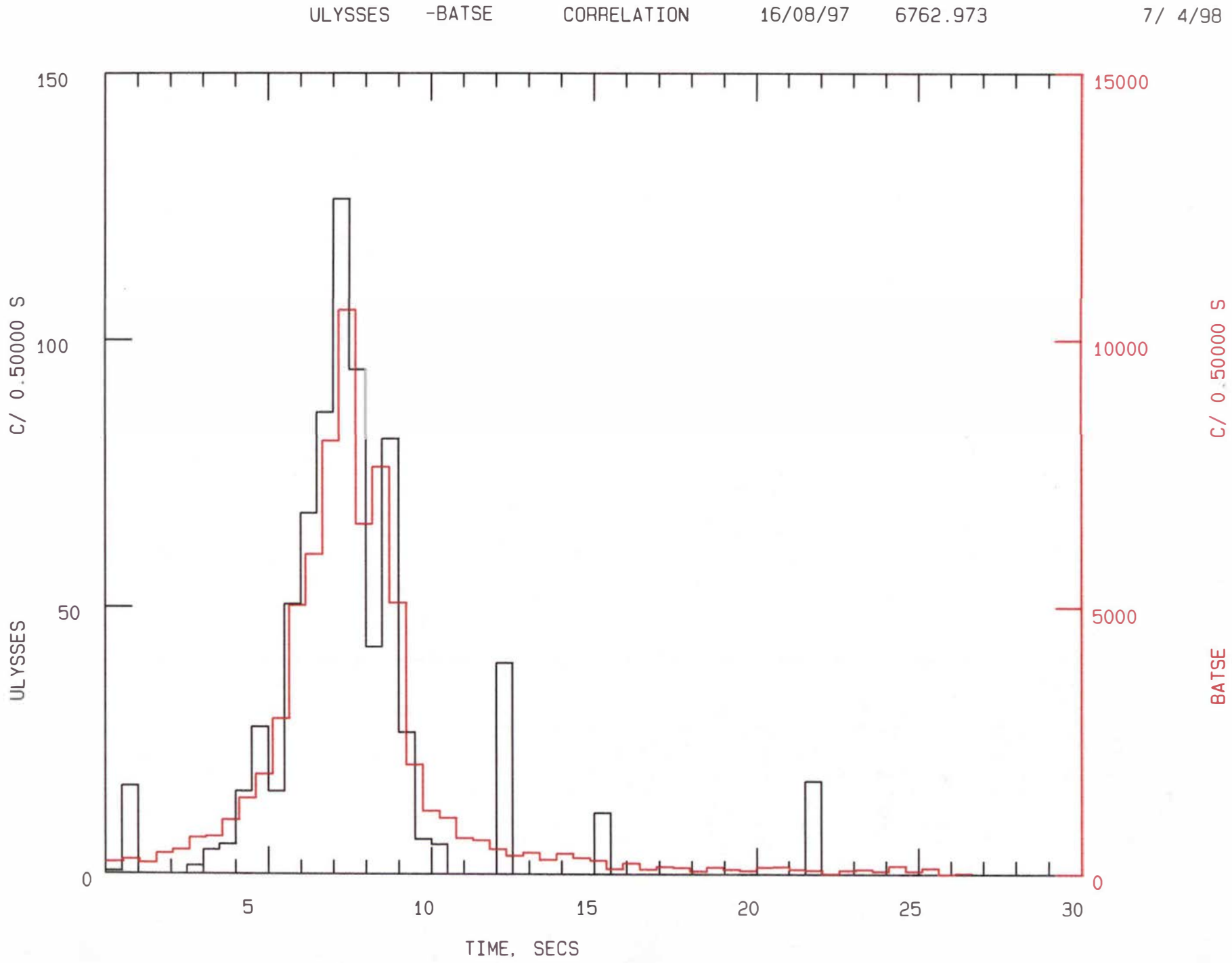
☑ ACCESS database updated?

EVENT OF AUG 16, 1997 1:52

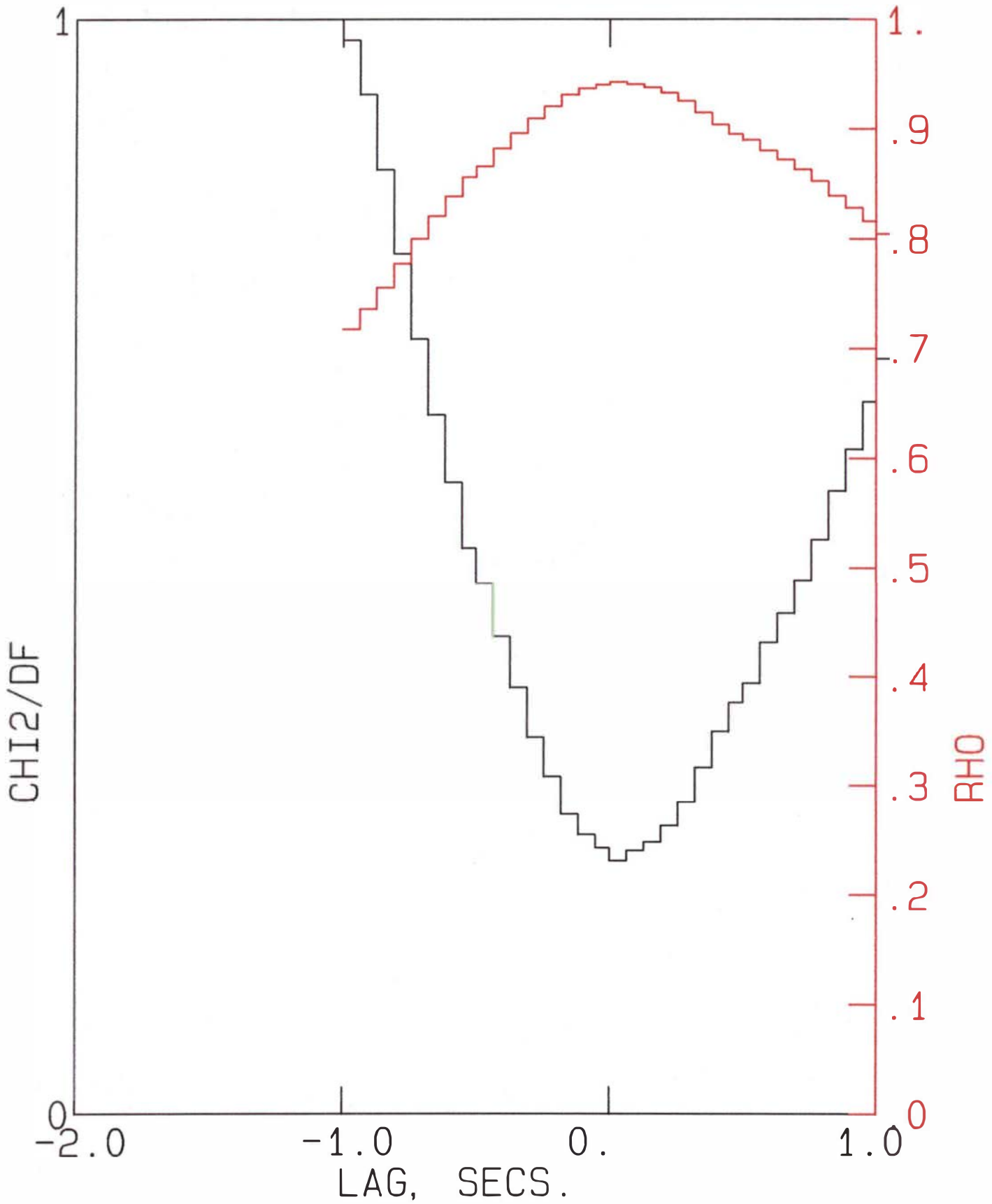
18/ 2/ 0

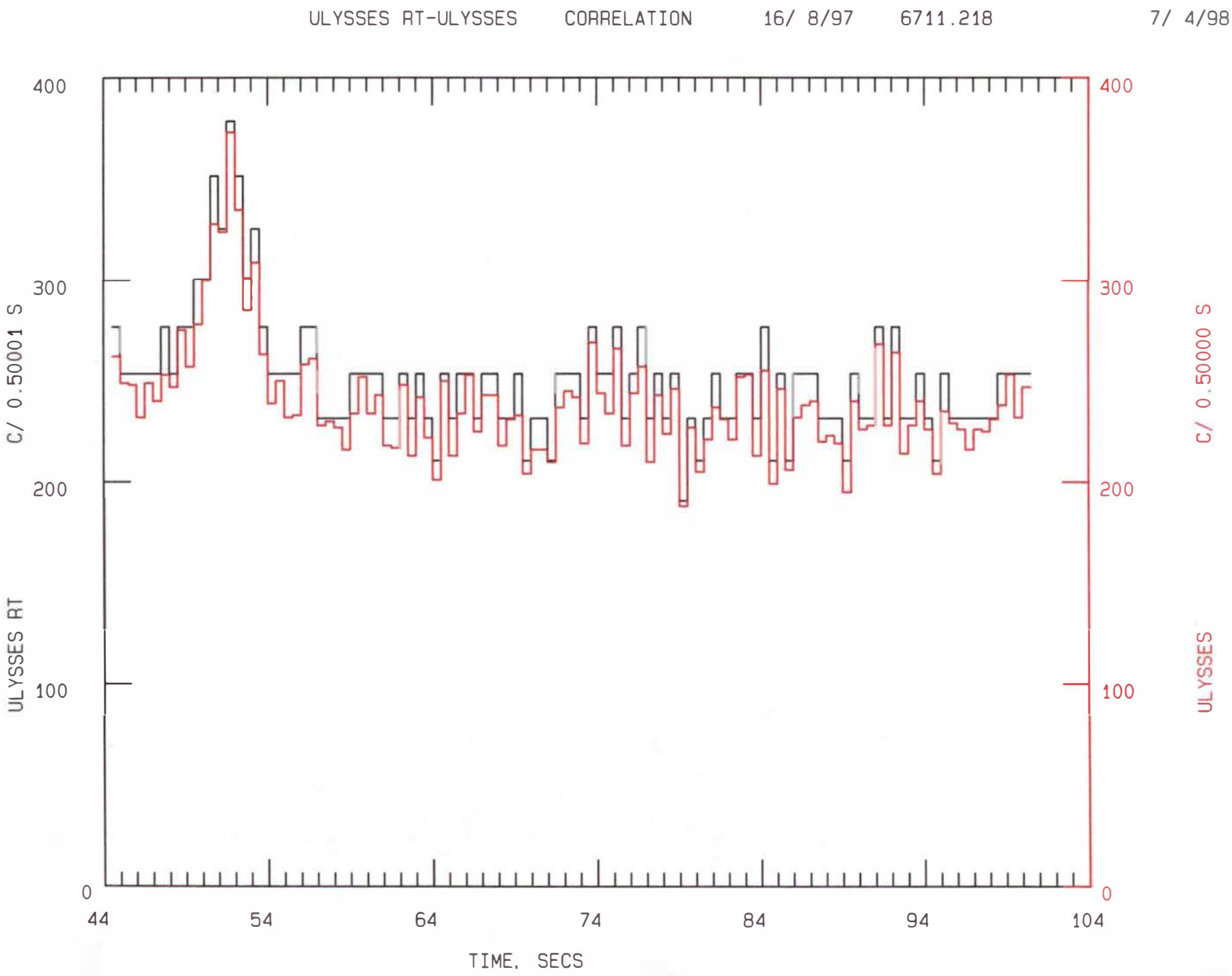
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




ULYSSES -BATSE CORRELATION 16/08/97 6762.973 7/ 4/98
150
100
50
0
C/ 0.50000 S
ULYSSES
15000
10000
5000
0
C/ 0.50000 S
BATSE
5
10
15
20
25
30
TIME, SECS

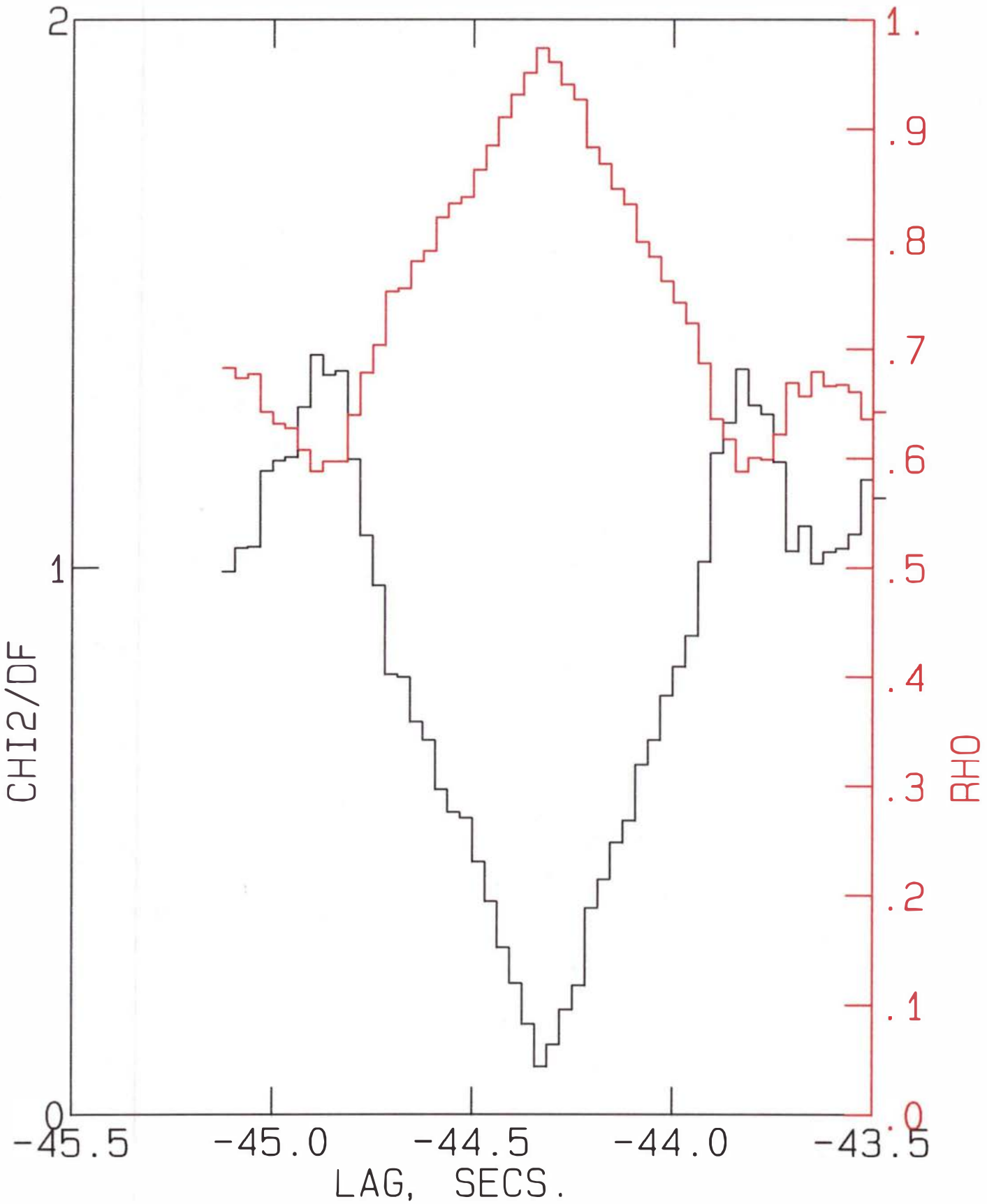
ULYSSES -BATSE CORRELATION 16/08/97 6762.973




ULYSSES RT-ULYSSES CORRELATION 16/ 8/97 6711.218 7/ 4/98
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
44
54
64
74
84
94
104
TIME, SECS

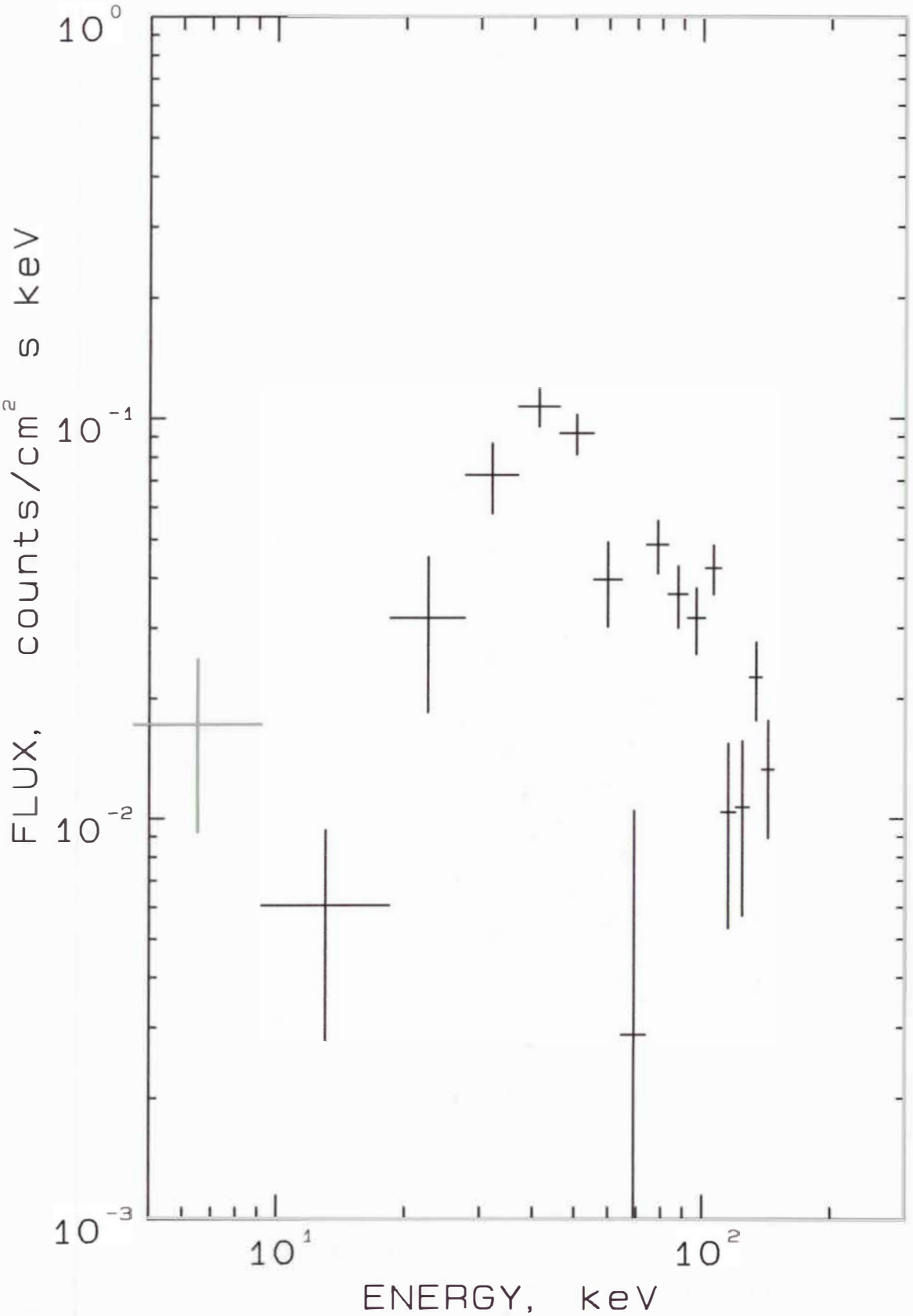
7/ 4/98

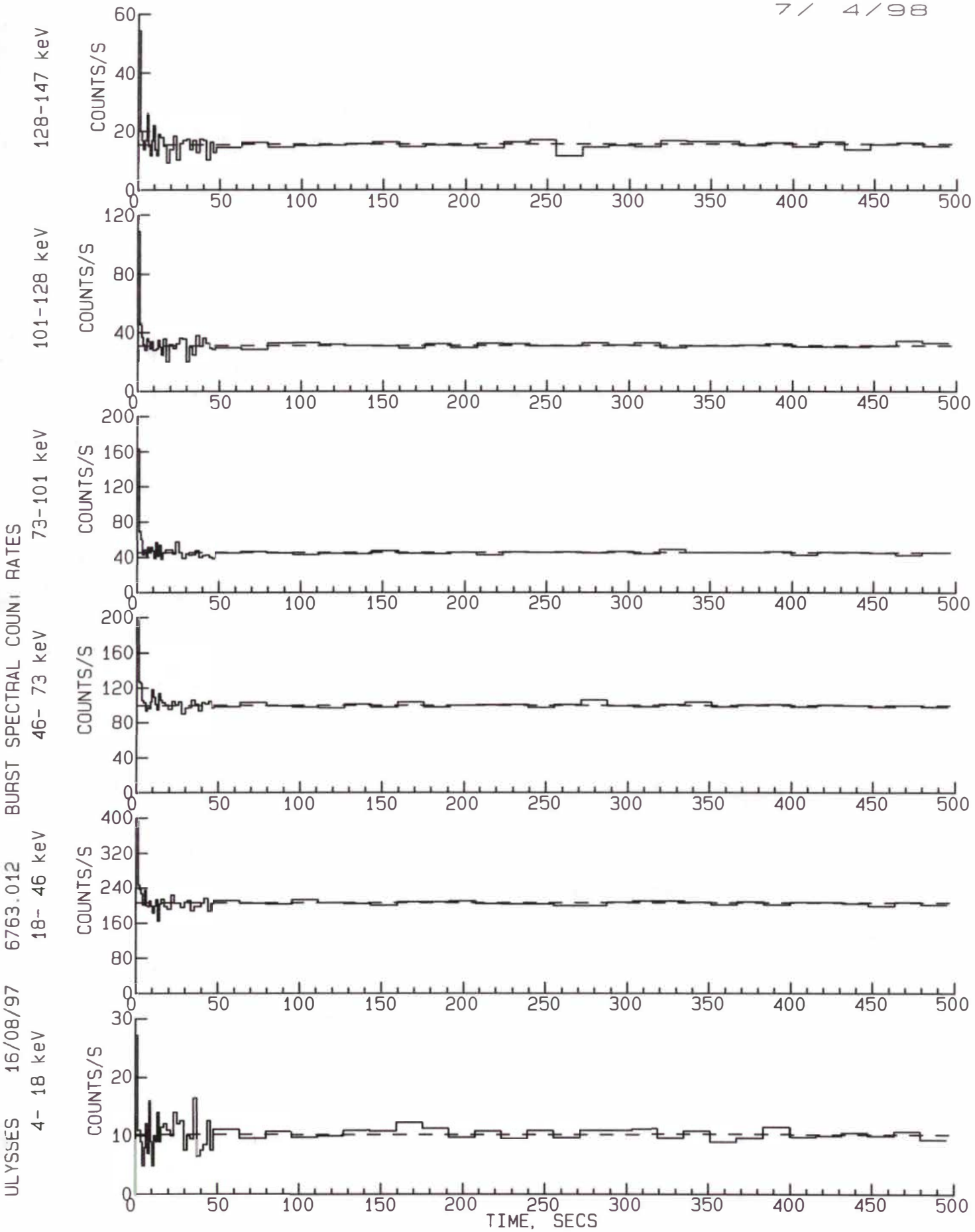
ULYSSES RT-ULYSSES CORRELATION 16/ 8/97 6711.218



ULYSSES 16/08/97 6763.012

SPECTRUM INTEGRATED OVER 21.3 SECONDS, INTERVALS 2 TO 20




7/ 4/98
ULYSSES 16/08/97 6763.012 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 16/08/97 Ttrig= 6762.973

22- 147 keV

COUNTS/0.031 S

COUNTS/0.125 S

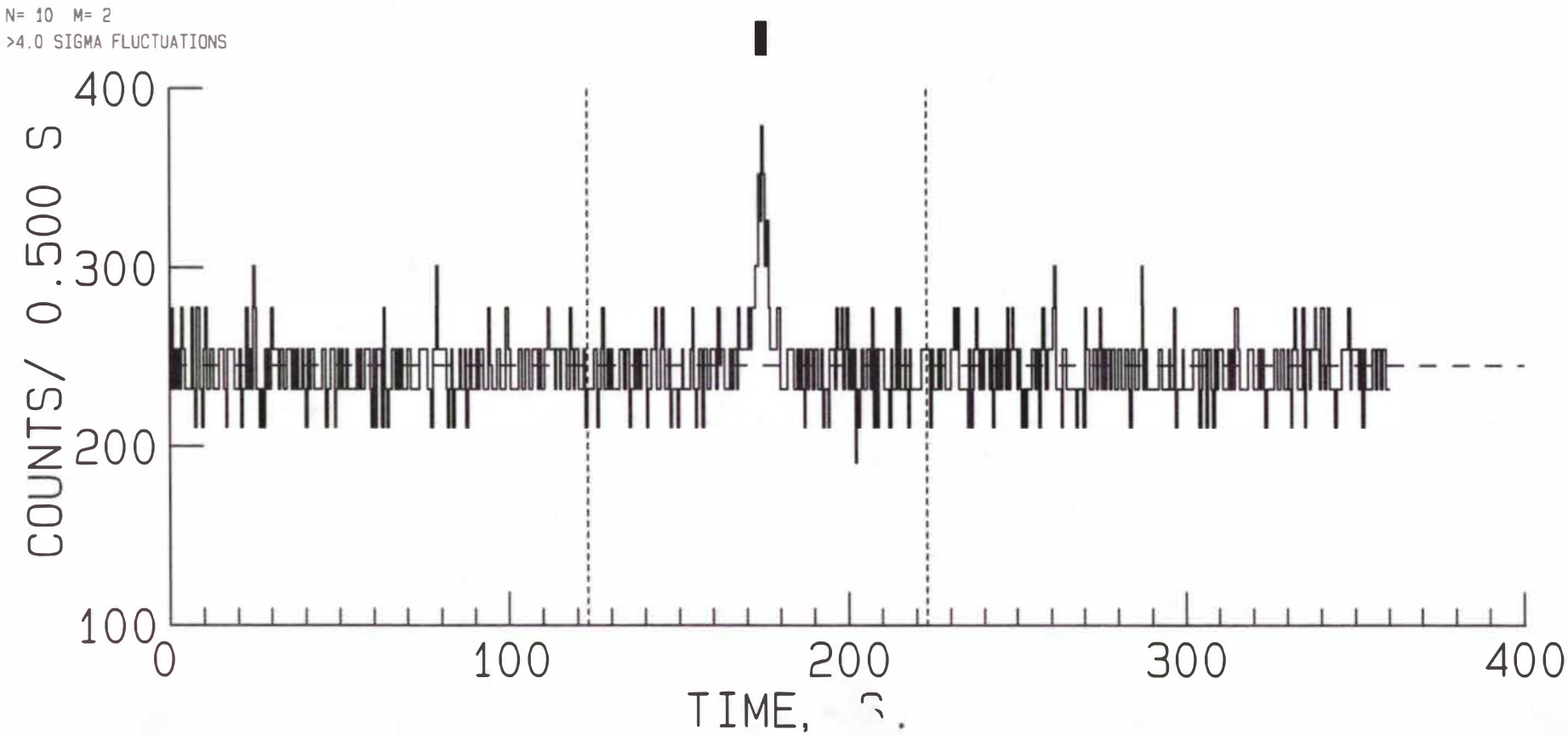
7/ 4/98

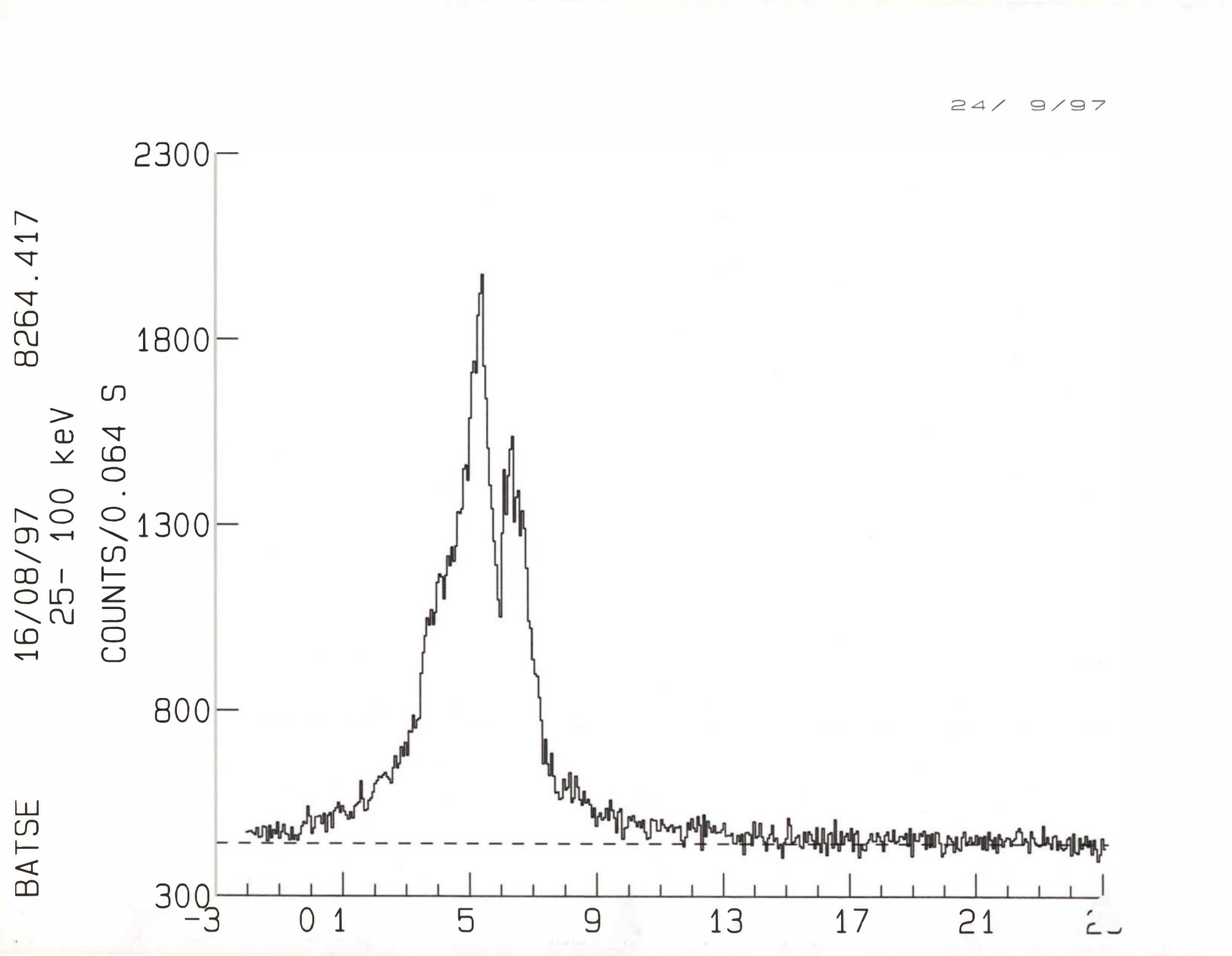
ULYSSES RT

7/ 4/98

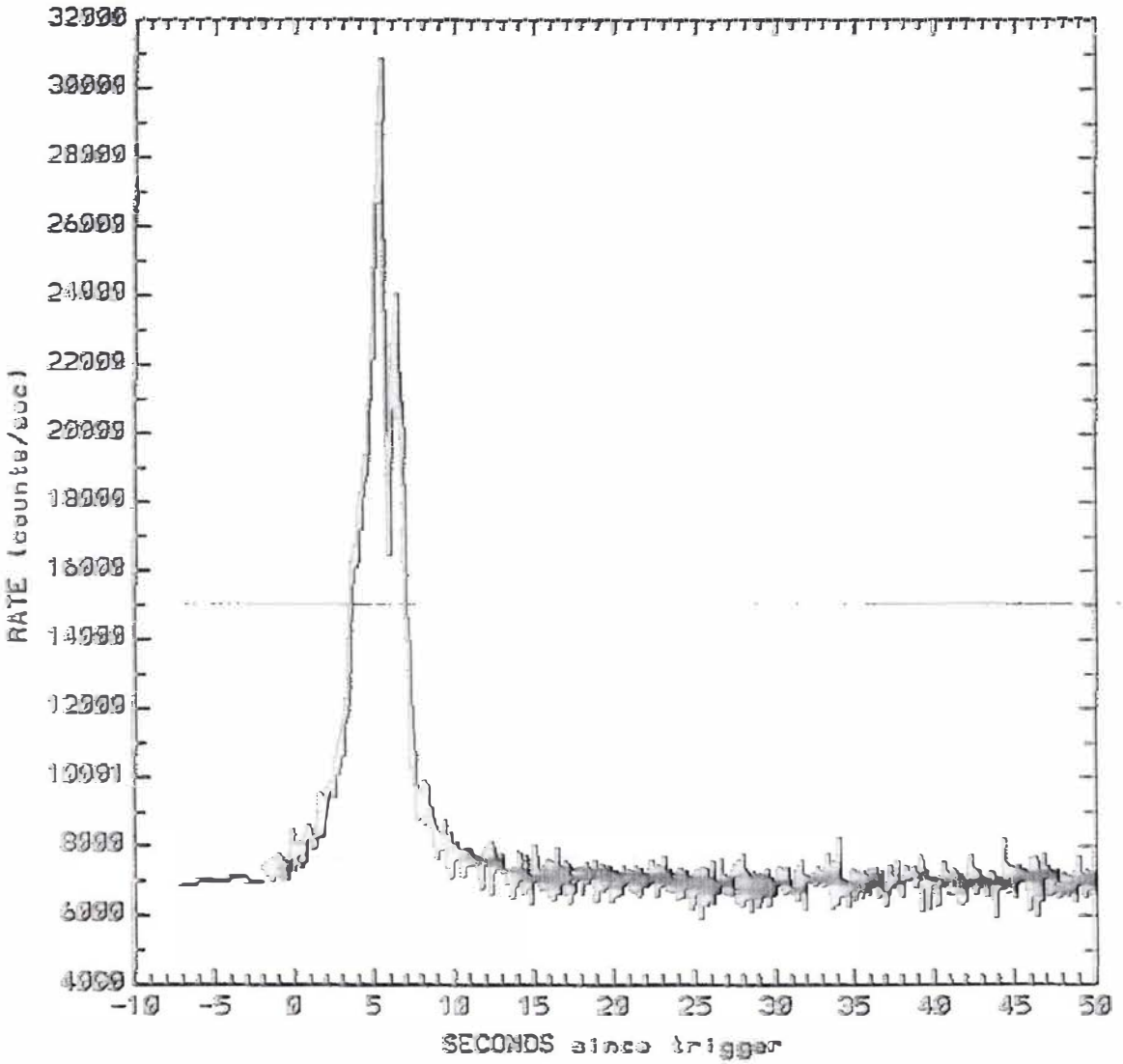
16/ 8/97 6588.270 s

22- 147 keV




24/ 9/97
BATSE
16/08/97
25- 100 keV
8264.417
COUNTS/0.064 S
2300
1800
1300
800
300
-3
0 1
5
9
13
17
21

DISCSC Data for K. Hurley, No. 6336



28-AUG-1997 11:33:33

Created by MOPS ED
(Burst Display)
Version 2.25

Trigger # : 6336

Trigger Time:
19678 / 8264.417

Burst Data Type:
DISCSC

Condition
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds)

Detectors [7..0]:
7---3---

Discriminators:
[1 , 2]

Quality Mask:
EDISP1

From BUTTERWORTH@lheavx.gsfc.nasa.gov Thu Aug 28 11:17 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Thu, 28 Aug 1997 14:10:26 -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: Ulysses event of 970816 was not detected by Konus-Wind

Hi Everyone,

This event was not detected by Konus.

Paul.

Date: Thu, 28 Aug 1997 09:22:36 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199708281622.JAA15719@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
        butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
        kmarar@isac.ernet.in, vnp@isac.ernet.in,
        bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
        yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
        henze@fender.msfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov
Subject: GRB970816
MIME-Version: 1.0
Content-Type: text/plain; charset=US-ASCII

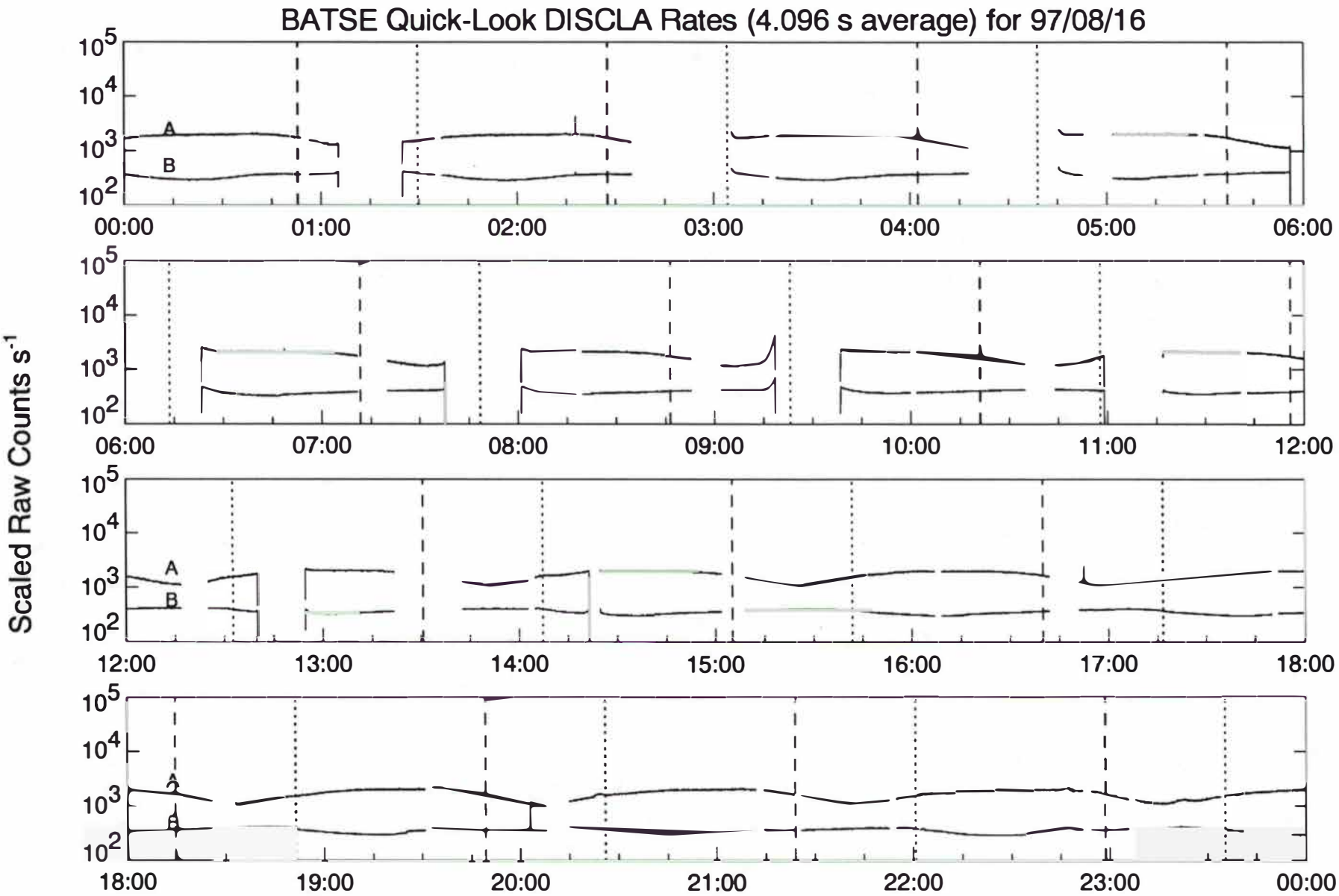
ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses observed the following burst:

August 16 1997 23:29 Ulysses time; weak burst, 100 ms long

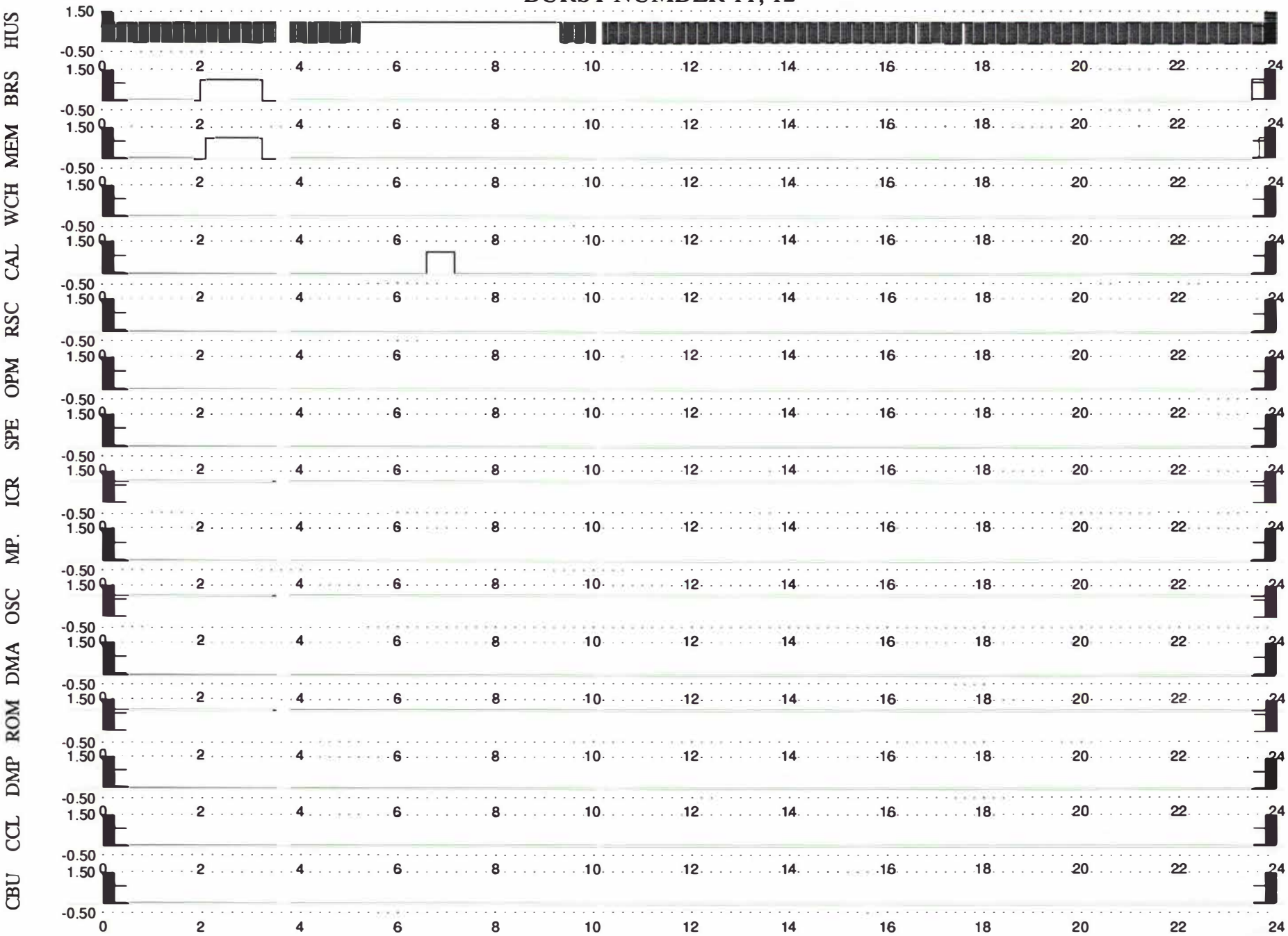
The spacecraft was about 3100 light-seconds from Earth.
Was this event detected by anyone else?

CC: ulyssesbursts alias list
    (barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczyski, marar, teegarden, t


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

HUS MODES EDR day 228, year 1997 to day 228, year 1997 1/6/98

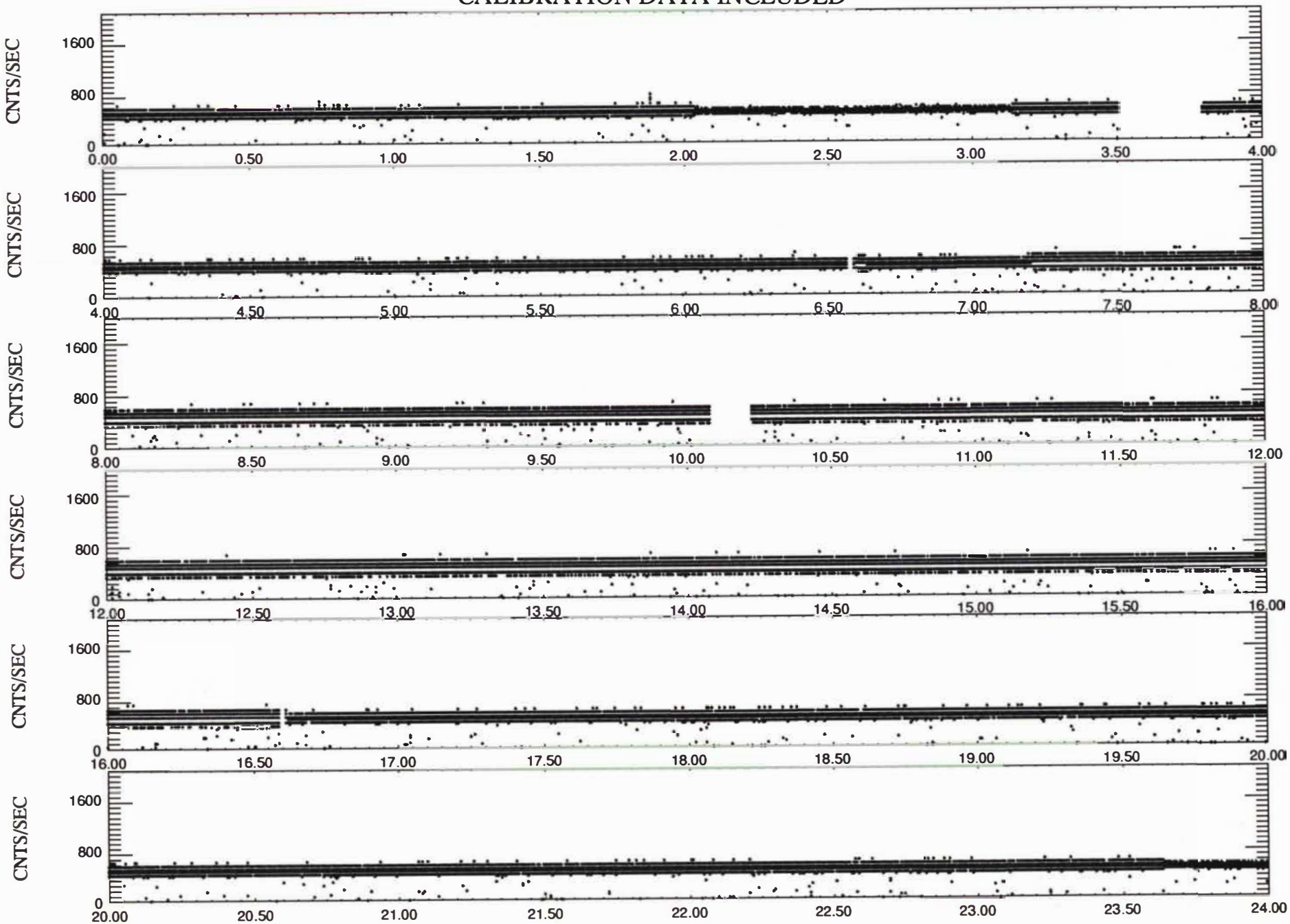
BURST NUMBER 11, 12



UNIV AL TIME

HUS 2A, MODE 1, NOT AVERAGED EDR day 228, year 1997 to day 228, year 1997 1/6/98

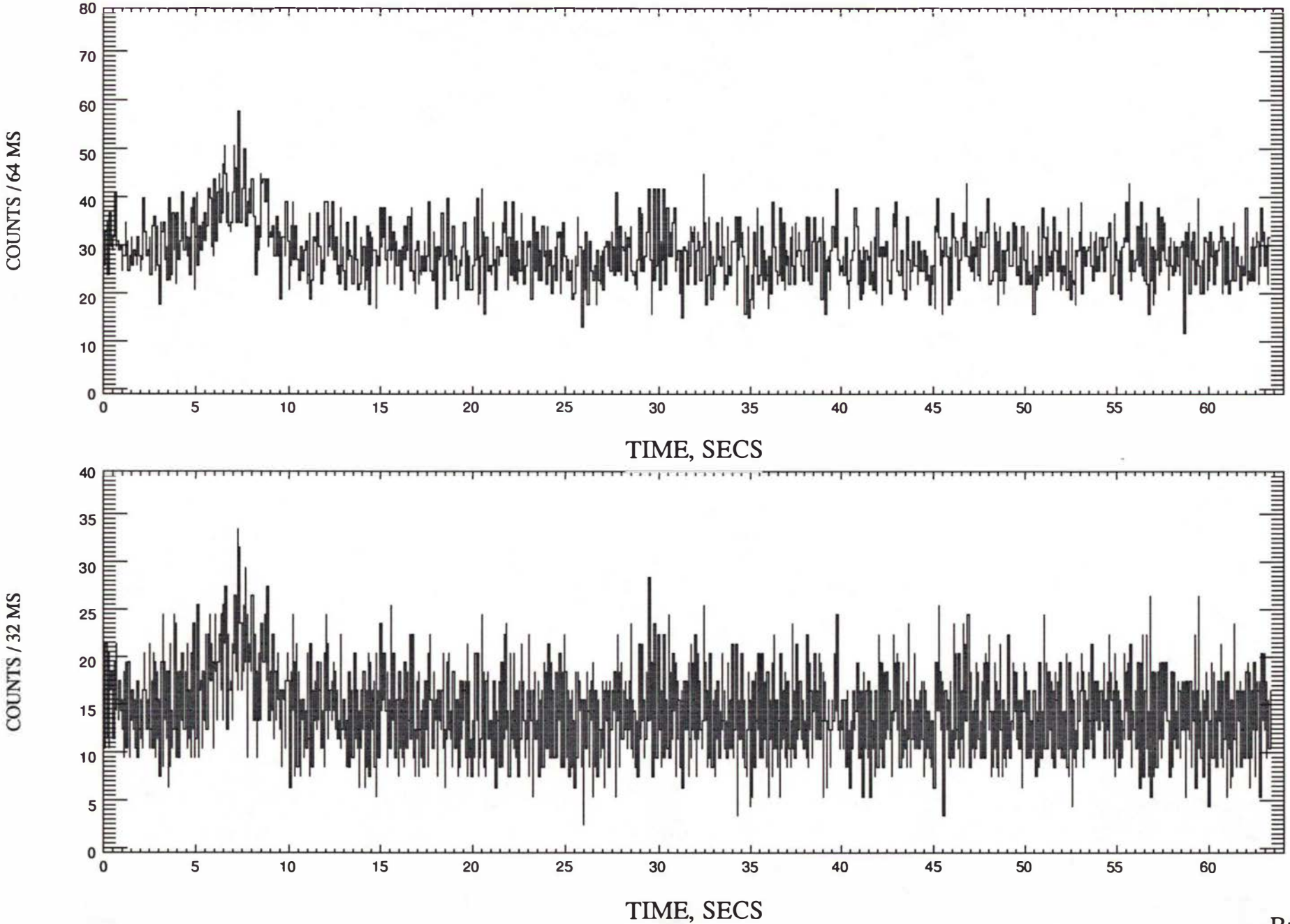
CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2A TRIGGERED DATA EDR day 228, year 1997 1/7/98

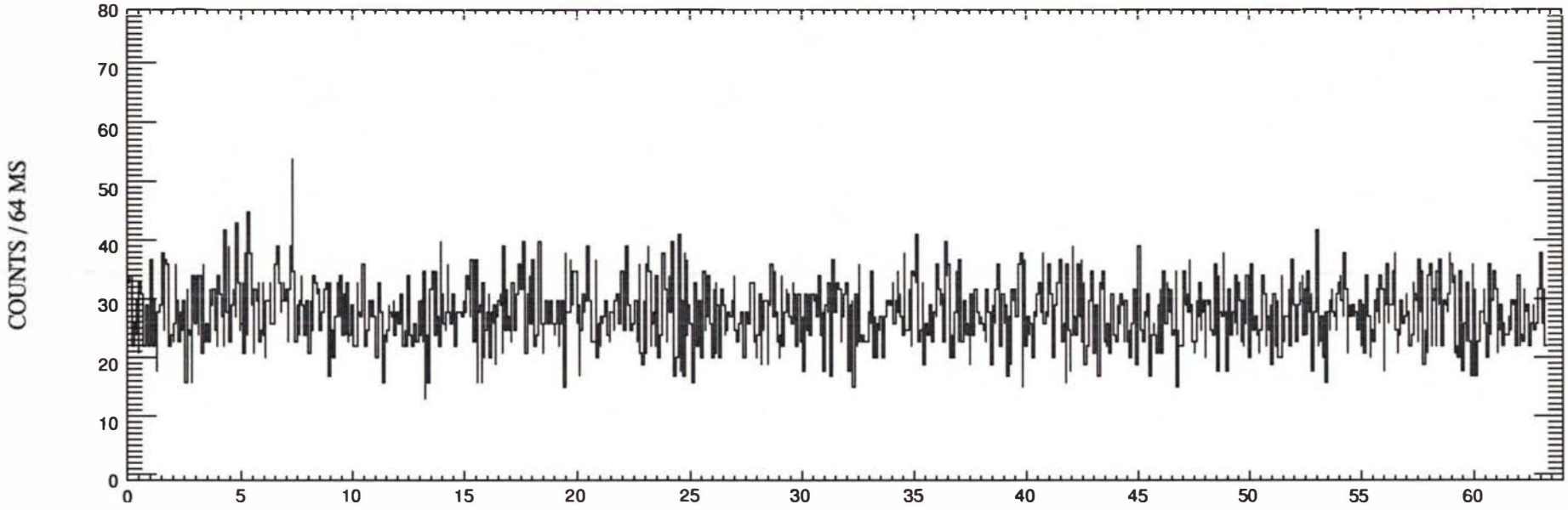
Burst Counter 11 at UT= 1.878614523146 h= 6763.012 s 01:52:43.012

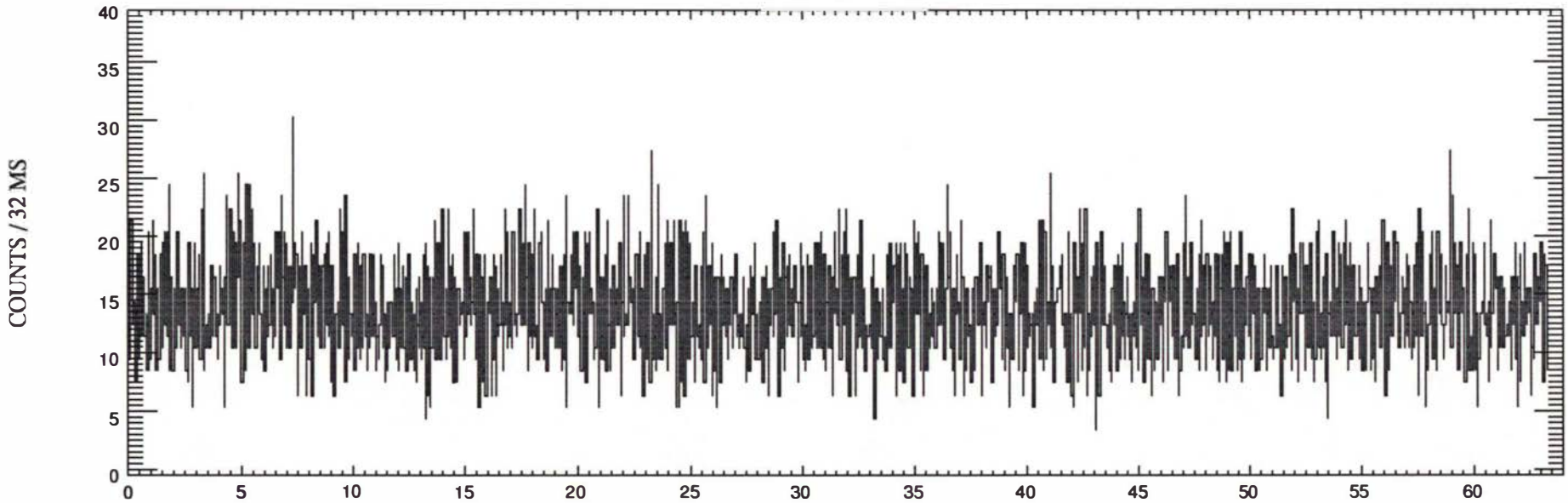


B# 1

HUS 2A TRIGGERED DATA EDR day 228, year 1997 1/7/98

Burst Counter 12 at UT=23.477122963799 h=84517.643 s 23:28:37.643

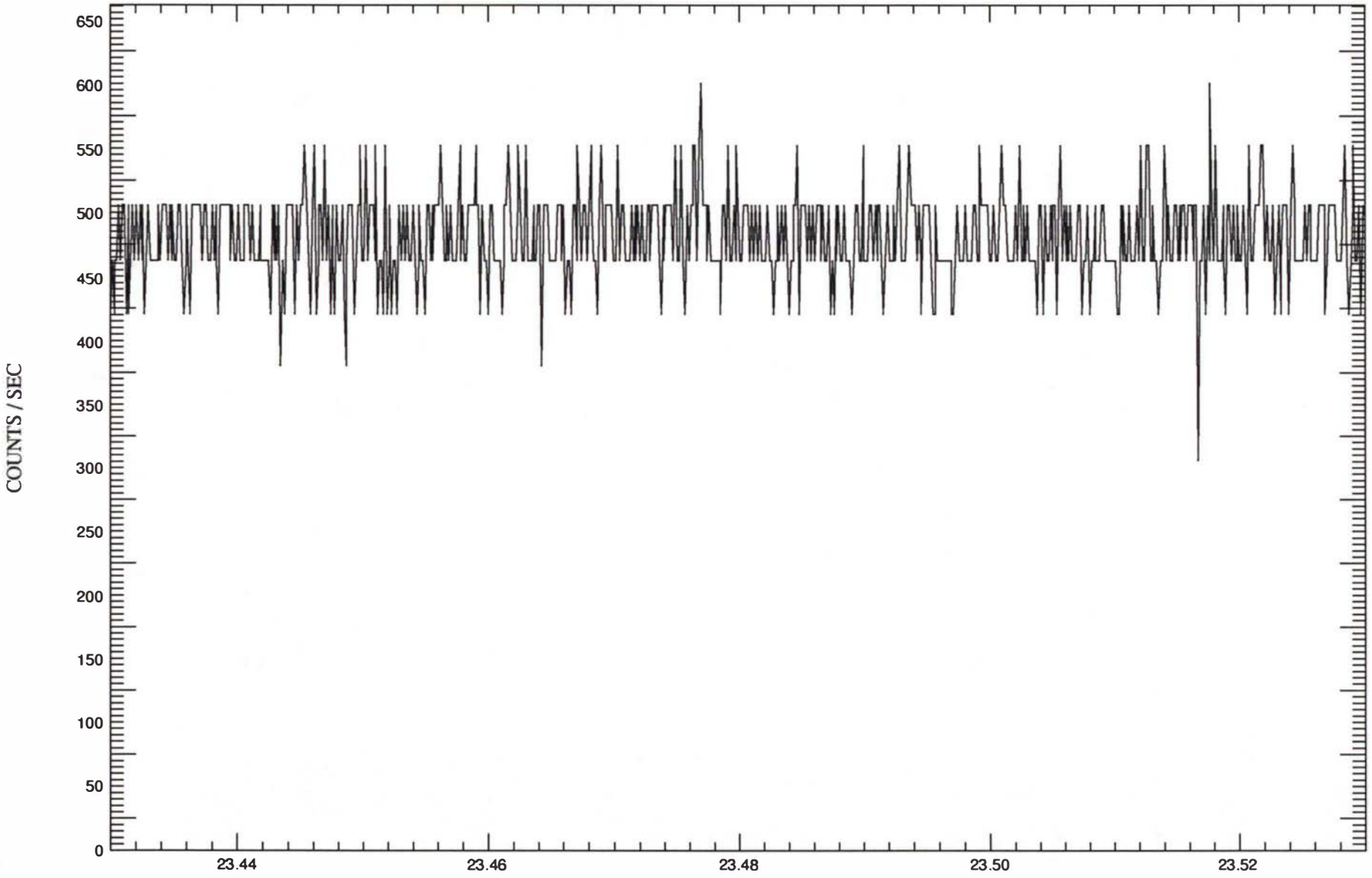




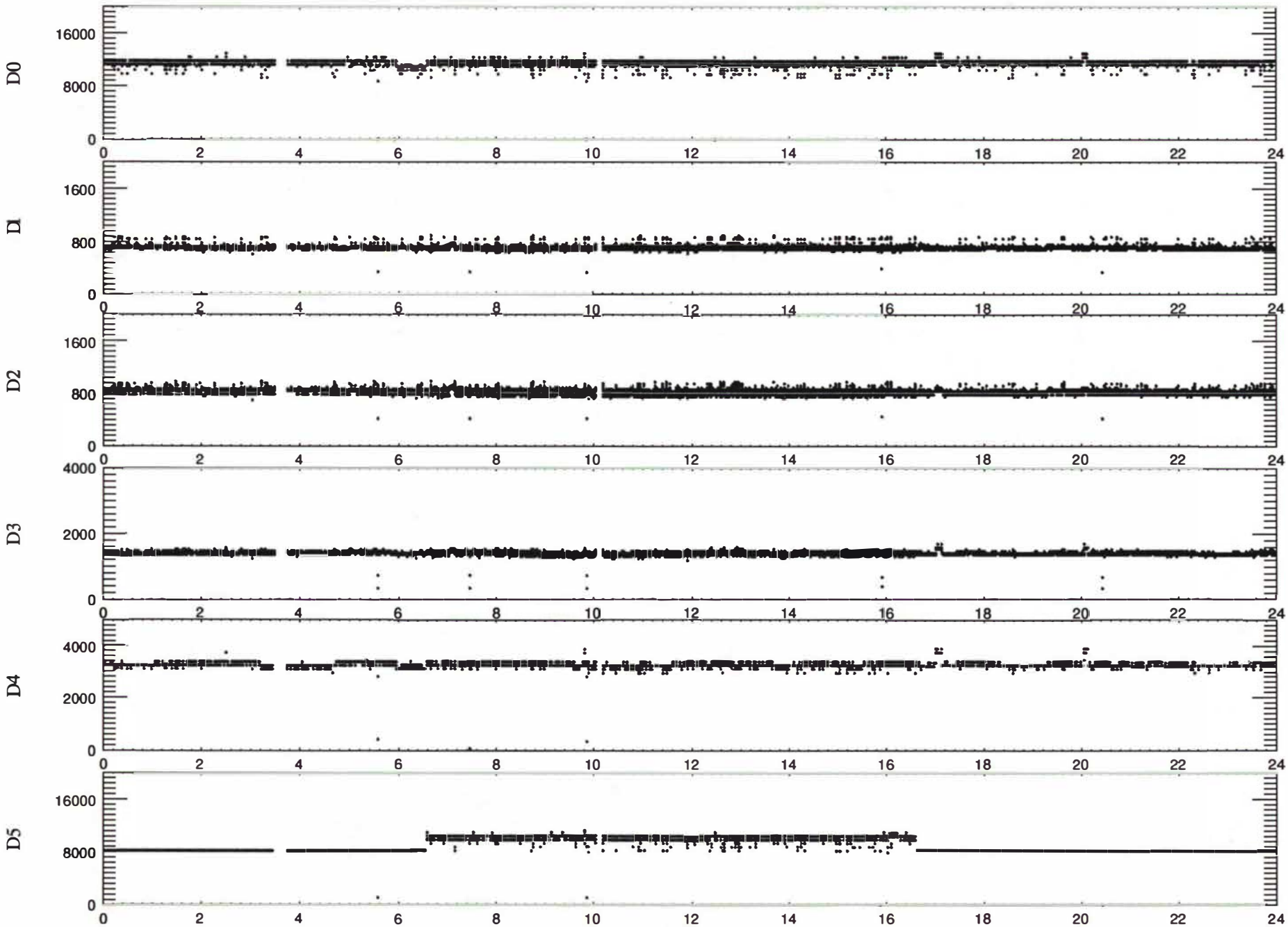
B# 2

HUS 2A, MODE 1, NOT AVERAGED EDR day 228, year 1997 to day 228, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 228, year 1997 to day 228, year 1997 1/6/98



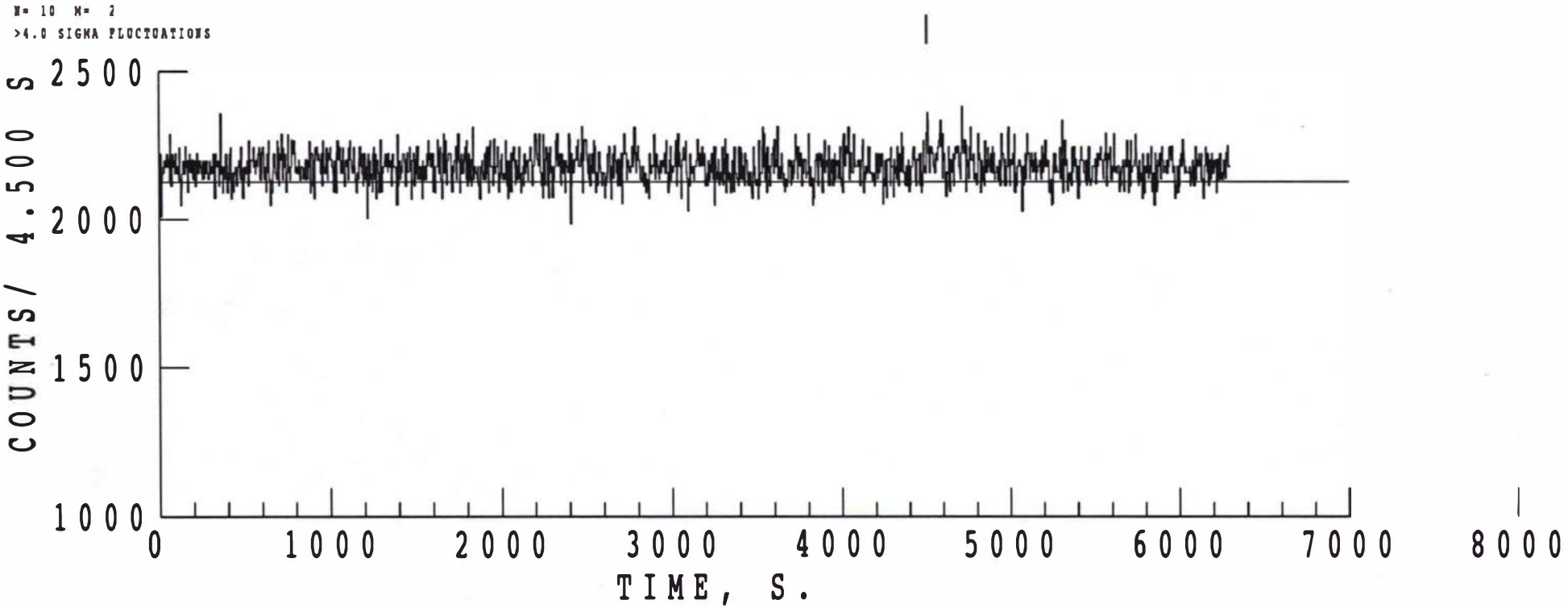
KONUS

ULYSSES RT 04/02/00

17/08/97 17172.371 s

0.500 S INTERVALS REGROUPED BY 9

0- 0 keV



KONUS 19970817 21772

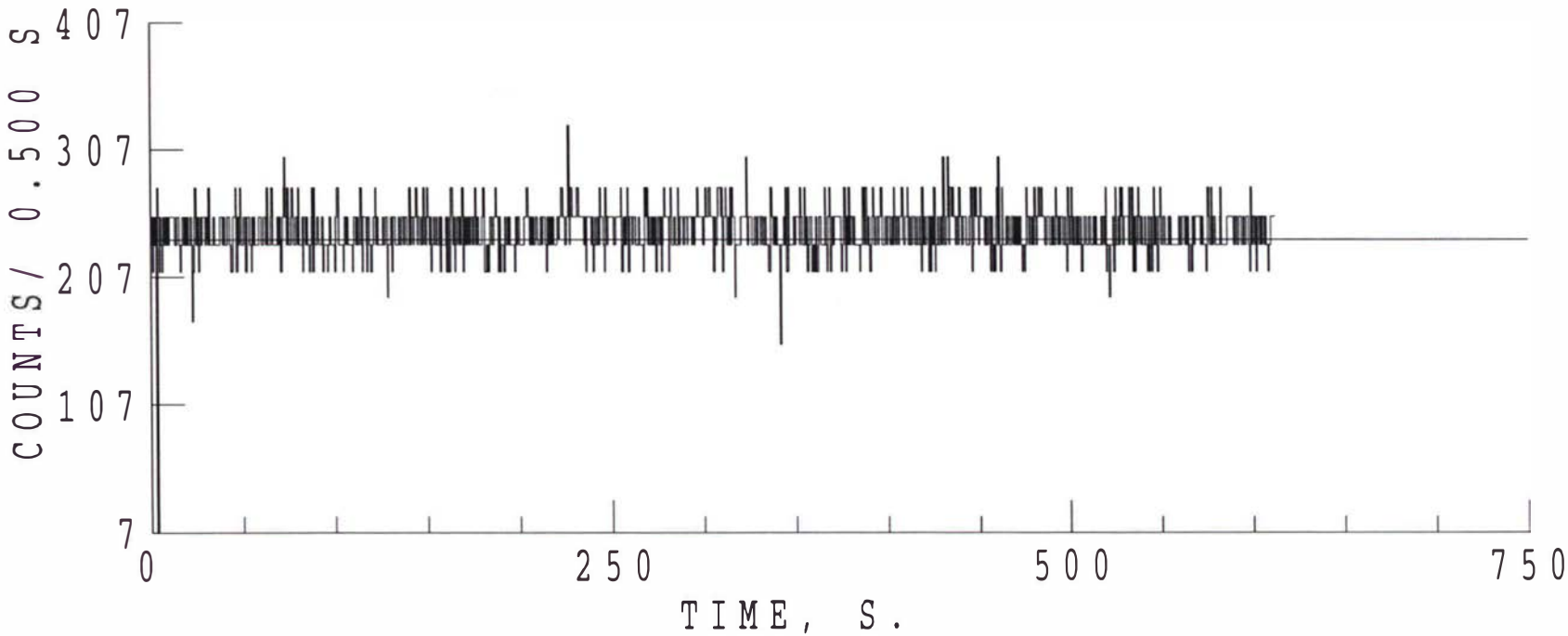
ULYSSES RT 12/12/11

17/08/97 21456.416 s

0- 0 keV

M= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

M= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@ssl.msfc.nasa.gov Tue Aug 19 12:06 PDT 1997
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id MAA07882; Tue, 19 Aug 1997 12:06:44 -0700
Date: Tue, 19 Aug 1997 14:06:40 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970819140640.20205250@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6337
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6337
EVENT OF 1997 AUG 17 DAY OF YEAR=229
EVENT CROSSING TIME AT BATSE : 30509. S. OR 08:28:29.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 277.000 37.000
BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 8/ 97 IS:
RA= 159.382 DEC= 20.519 DIST= 6.205 AU
BATSE-ULYSSES DISTANCE = 928284324. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 420.49 SECS.
CROSSING TIME AT ULYSSES IS 30929. S. OR 08:35:29 +/- 588.99 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 8/ 97 IS:
RA= 209.247 DEC= -12.629 DIST= 1.560 AU
MARS-BATSE DISTANCE = 233442480. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -127.29 SECS.
CROSSING TIME AT MARS IS 30382. S. OR 08:26:21 +/- 131.44 SECONDS

BATSE BURST TRIGGER

NO.: 6337

TIME: TJD=0677 SECONDS=30509

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=64.7 AZIMUTH=241.9 ERROR=1.783 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR~100S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6337	970817	10677	30509	3900	277	+37	100

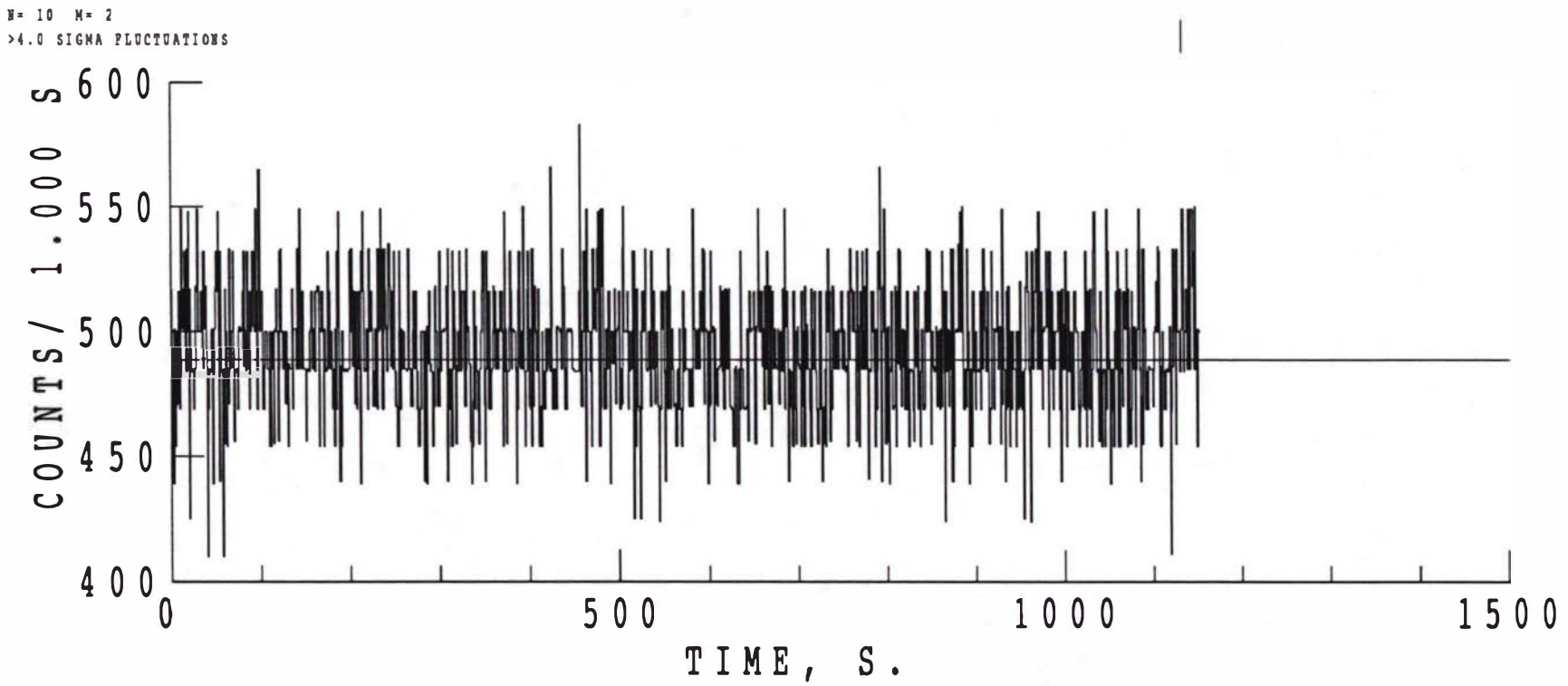
BATSE BURST# 6337

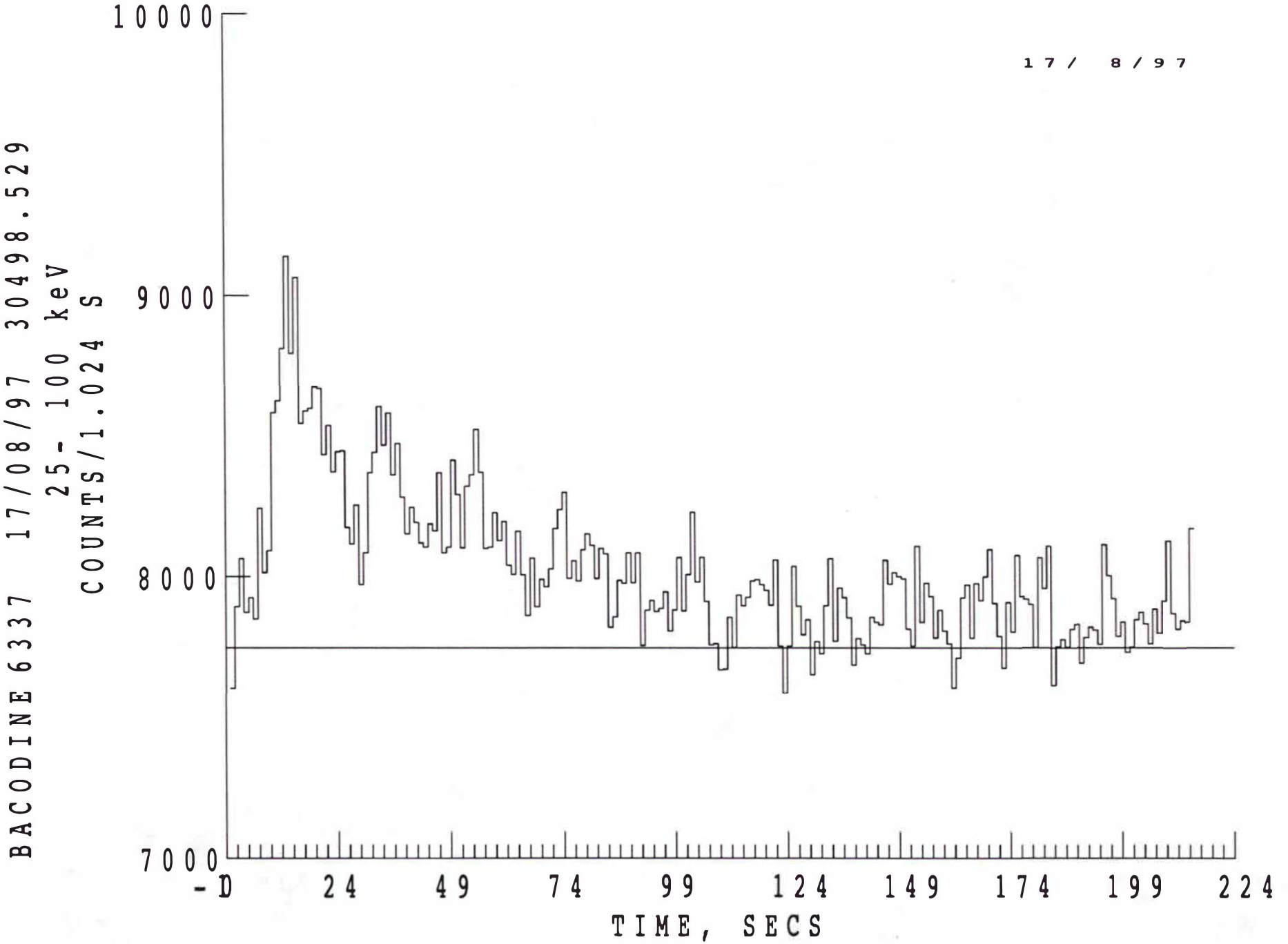
ULYSSES RT 19/ 8/97

17/ 8/97 30348.023 s

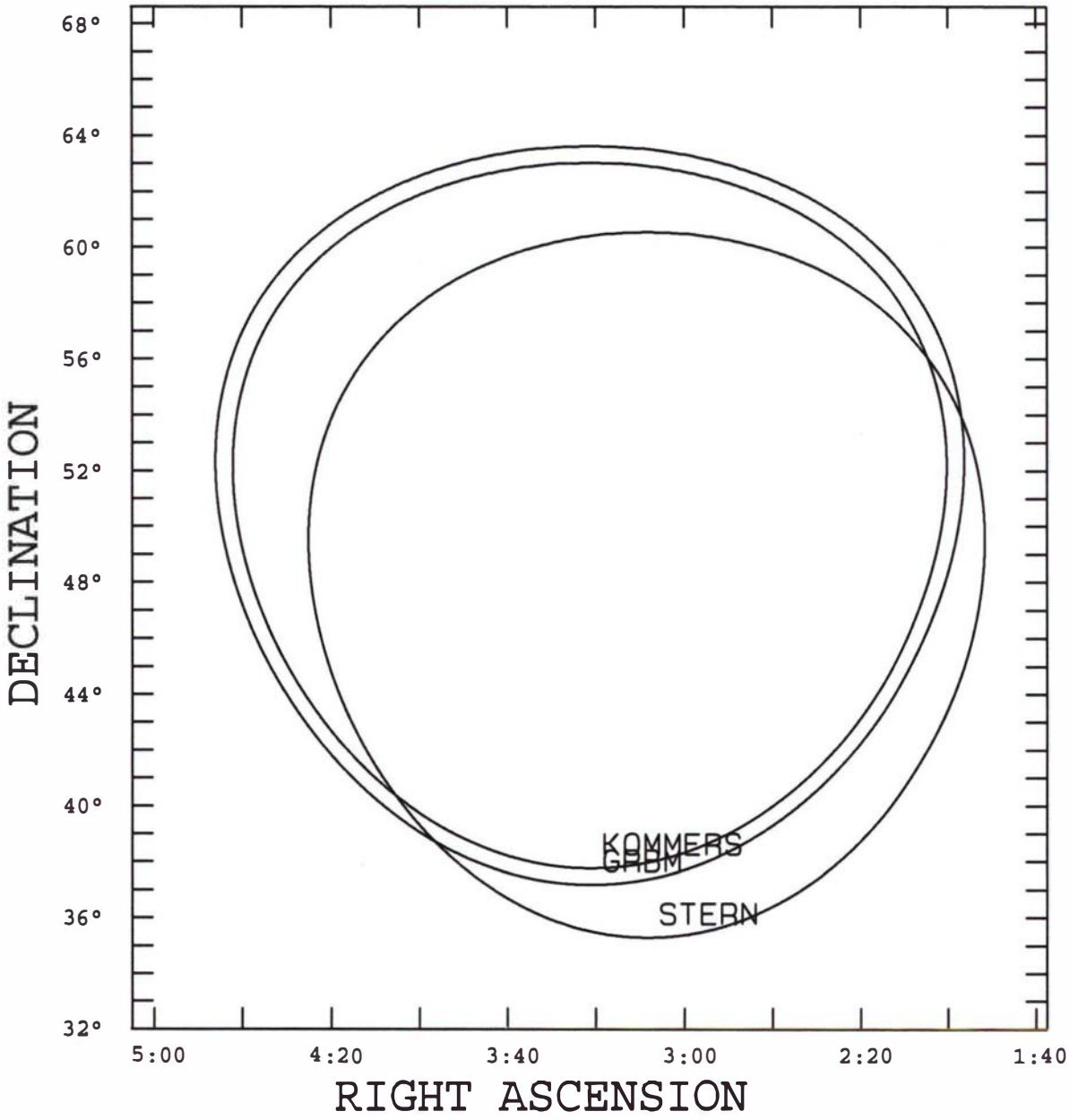
0.250 S INTERVALS REGROUPED BY 4

0- 0 keV




BACODINE 6337 17/08/97 30498.529
25- 100 keV
COUNTS/1.024 S
10000
9000
8000
7000
17/ 8/97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

69699 s


68°
64°
60°
56°
52°
48°
44°
40°
36°
32°
DECLINATION
5:00
4:20
3:40
3:00
2:20
1:40
RIGHT ASCENSION
KOMMERS
GROM
STERN

From HENZE@fender.msfc.nasa.gov Wed Aug 20 09:56 PDT 1997
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA15879; Wed, 20 Aug 1997 09:56:44 -0700
From: HENZE@fender.msfc.nasa.gov
Date: Wed, 20 Aug 1997 11:50:51 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970820115051.20a0207a@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6338
Content-Type: text
Content-Length: 1122
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6338
EVENT OF 1997 AUG 17 DAY OF YEAR=229
EVENT CROSSING TIME AT BATSE : 86288. S. OR 23:58:08.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 246.000 51.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
POSITION OF ULYSSES ON 17/ 8/ 97 IS:
RA= 159.475 DEC= 20.450 DIST= 6.208 AU
BATSE-ULYSSES DISTANCE = 928658456. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -951.81 SECS.
CROSSING TIME AT ULYSSES IS 85336. S. OR 23:42:16 +/- 547.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 8/ 97 IS:
RA= 209.247 DEC= -12.629 DIST= 1.560 AU
MARS-BATSE DISTANCE = 233442480. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -250.82 SECS.
CROSSING TIME AT MARS IS 86037. S. OR 23:53:57 +/- 124.18 SECONDS

BATSE BURST TRIGGER

NO.: 6338

TIME: TJD=0677 SECONDS=86288

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=079.9 AZIMUTH=264.6 ERROR=009.0 DEGREES

COMMENTS:
WEAK SINGLE SPIKE, DUR. ~0.2 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6338	970817	10677	86288	5000	246	+51	.2

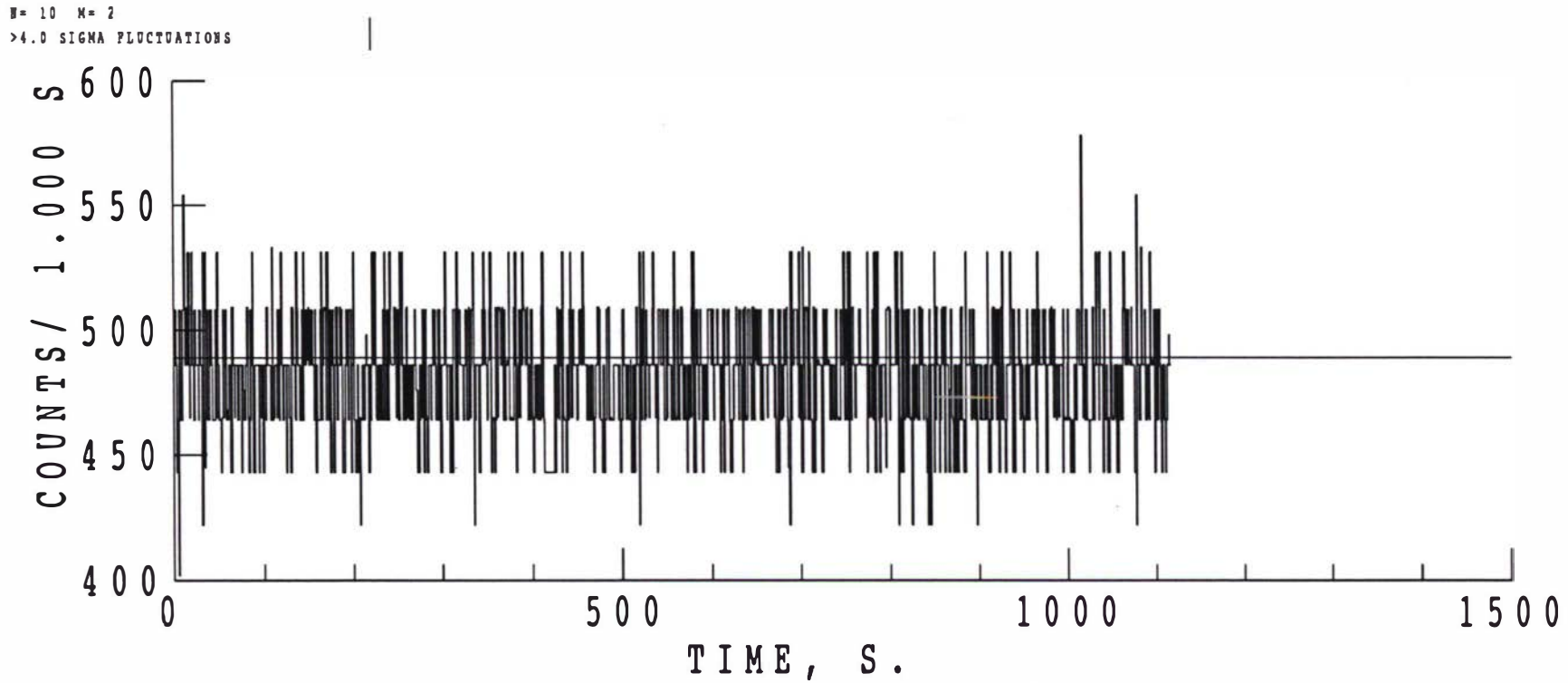
BATSE BURST# 6338

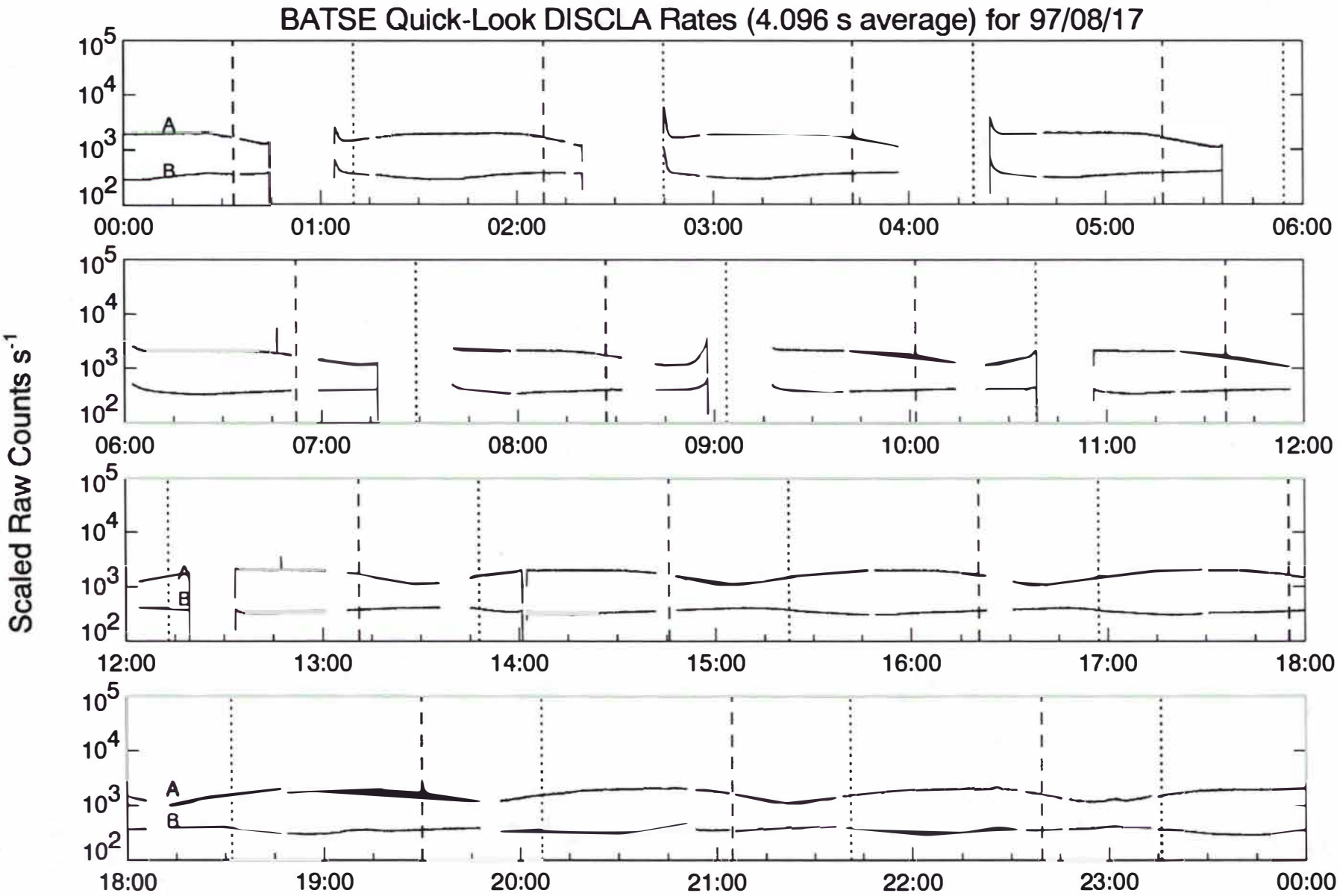
ULYSSES RT 7/ 1/98

17/ 8/97 84780.141 s

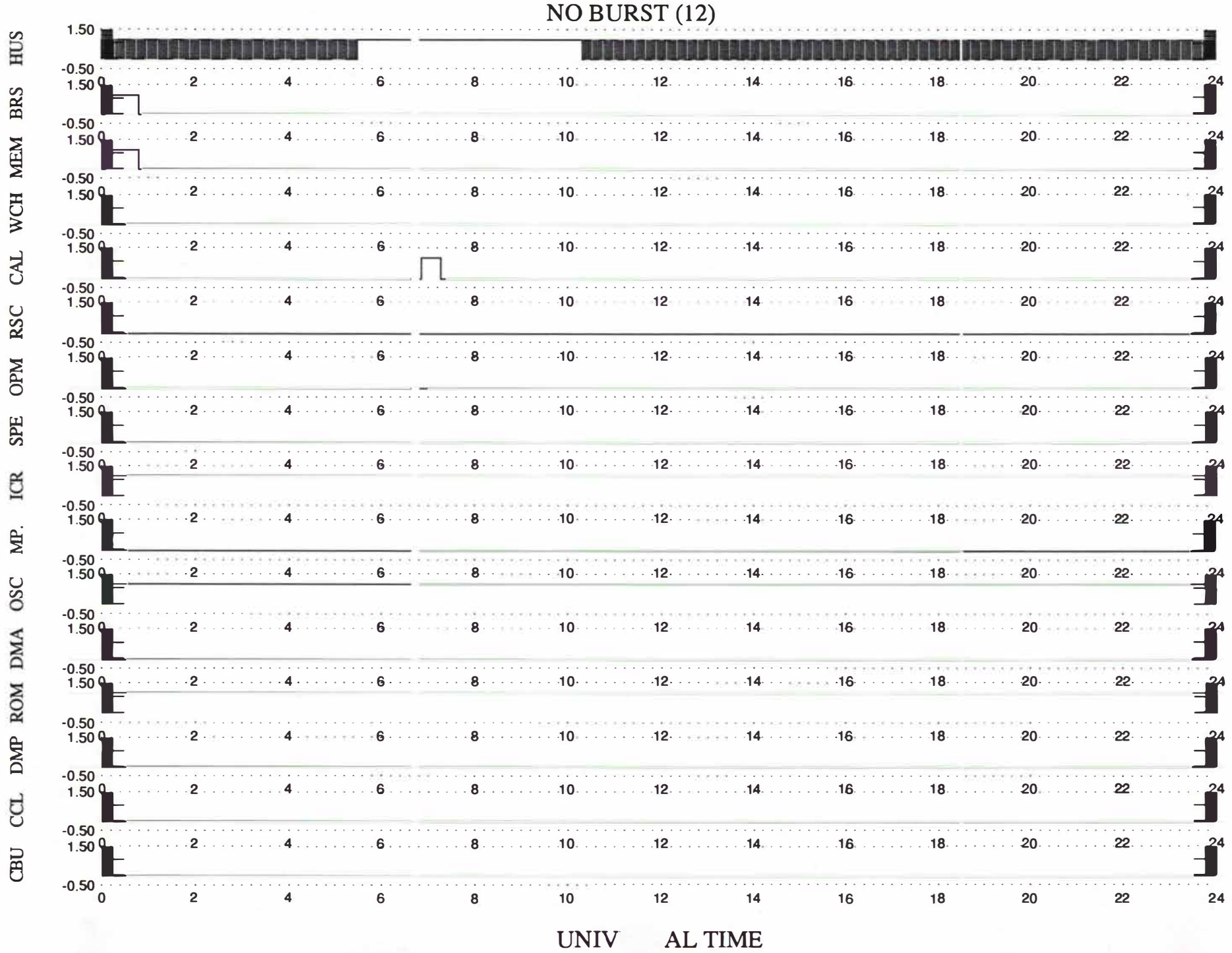
0.500 S INTERVALS REGROUPED BY 2

0- 0 keV



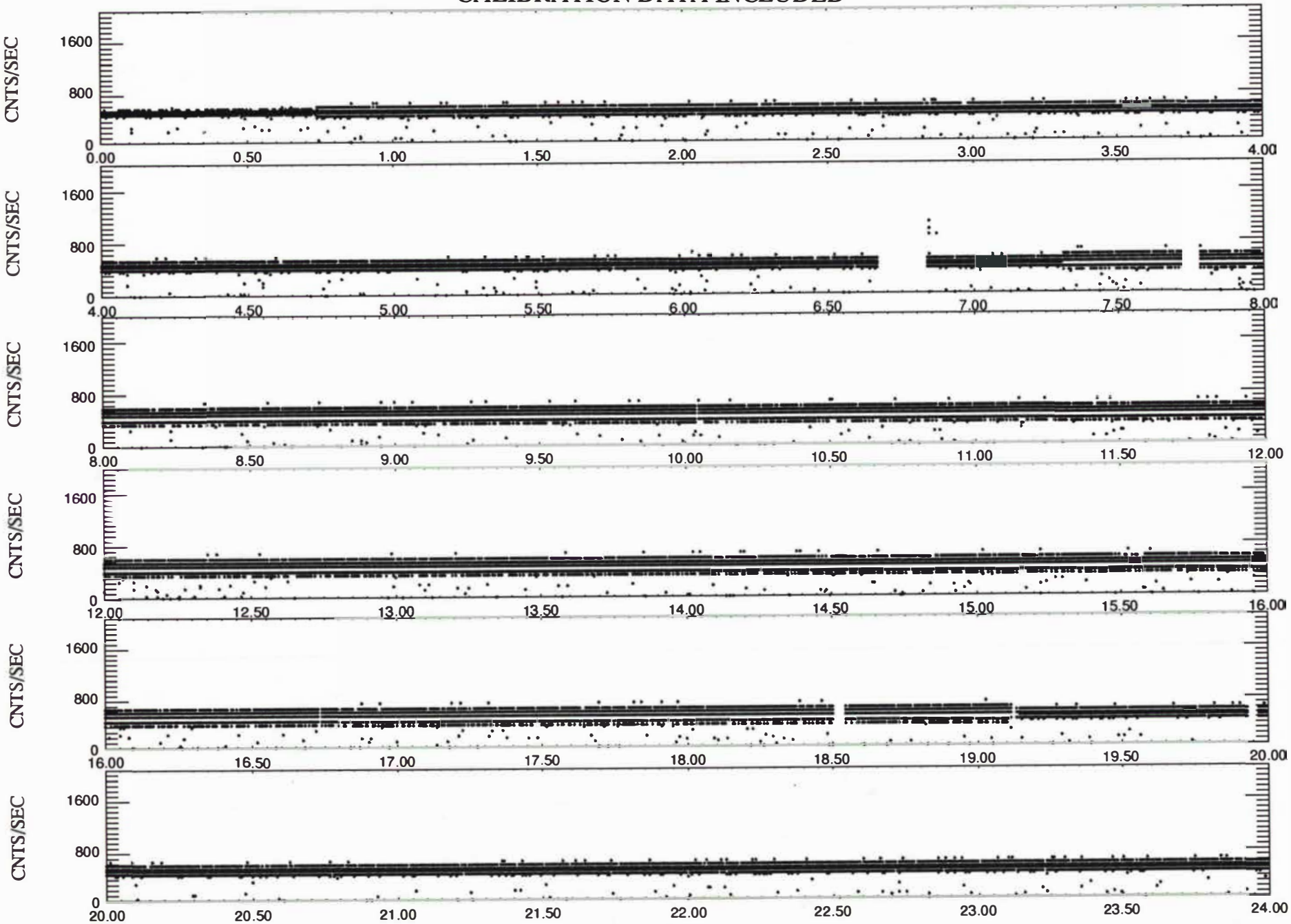

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/17
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/21, 1008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

HUS MODES EDR day 229, year 1997 to day 229, year 1997 1/6/98



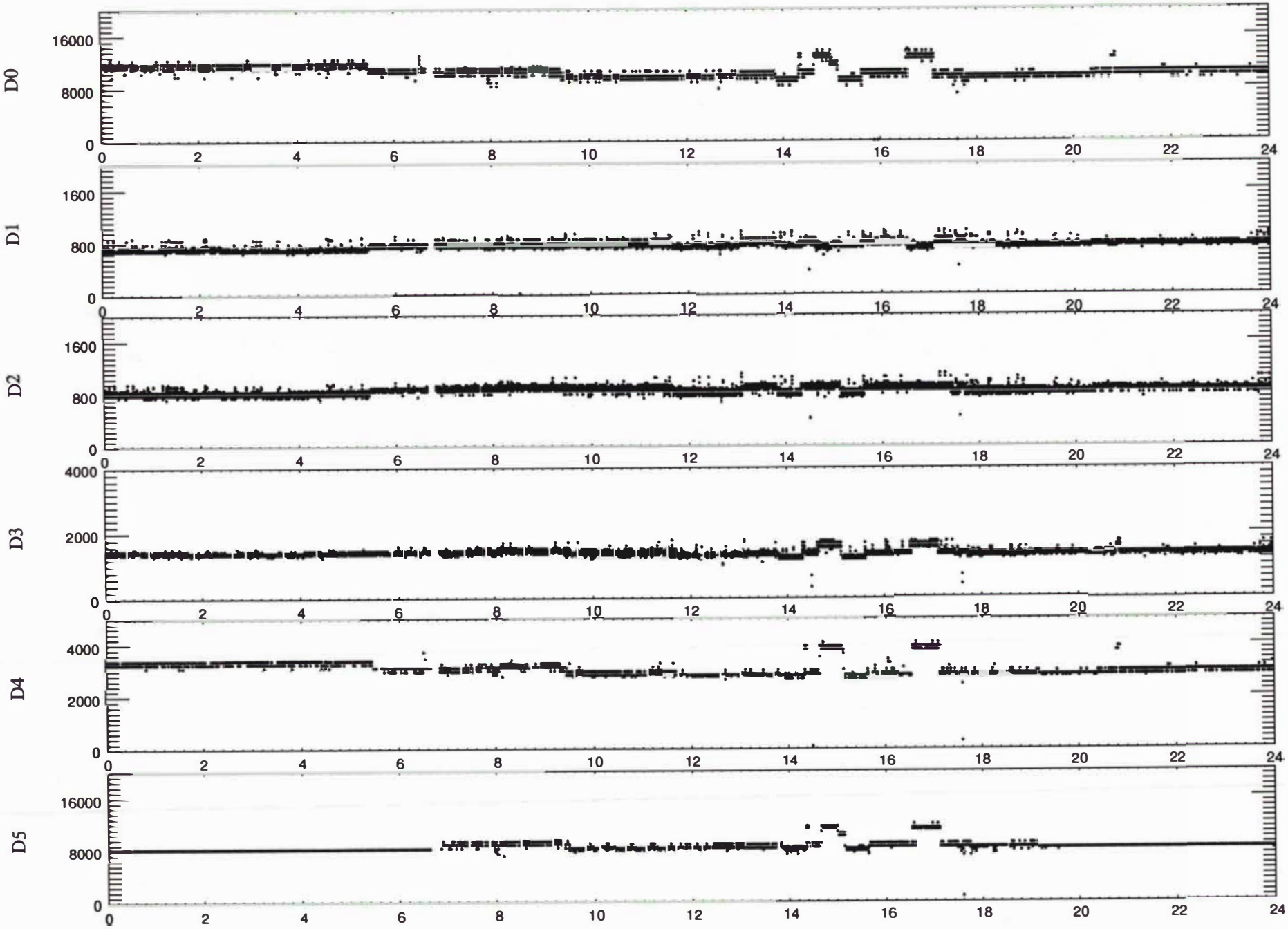
HUS 2A, MODE 1, NOT AVERAGED EDR day 229, year 1997 to day 229, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 229, year 1997 to day 229, year 1997 1/6/98



From kouveliotou@eagles.msfc.nasa.gov Fri Aug 22 10:16 PDT 1997
From: kouveliotou@eagles.msfc.nasa.gov
Date: Fri, 22 Aug 1997 12:18:12 -0500
To: khurley@sunspot.ssl.berkeley.edu
ject: the 'noise' event
X-VMS-To: HURLEY

Hi Kevin,

one more thing: the event I mentioned over the phone happened at :

8/18/97 UT 70683s RA=196deg dec=-37 deg dur ~200s peak = 9500c/s

soft: up to 60 keV

cheers
CK

HUS DATA

ULYSSES RT

28/ 8/97

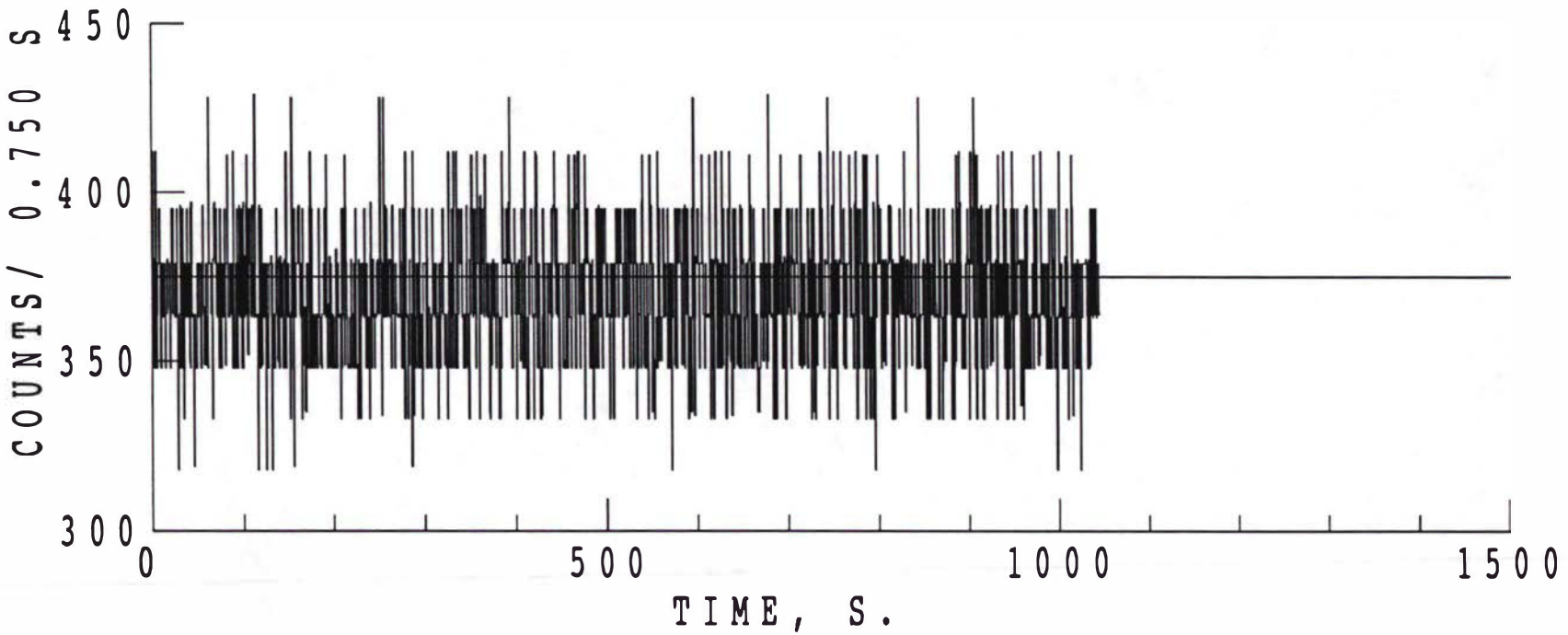
18/ 8/97 68940.195 s

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 Tue Aug 19 12:09 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 MAA07927; Tue, 19 Aug 1997 12:09:00 -0700
Date: Tue, 19 Aug 1997 14:08:56 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970819140856.20205250@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6339
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6339
EVENT OF 1997 AUG 18 DAY OF YEAR=230
EVENT CROSSING TIME AT BATSE : 65227. S. OR 18:07:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 320.000 19.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 8/ 97 IS:
RA= 159.584 DEC= 20.370 DIST= 6.210 AU
BATSE-ULYSSES DISTANCE = 929069507. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 43.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2236.86 SECS.
CROSSING TIME AT ULYSSES IS 67464. S. OR 18:44:23 +/- 456.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 8/ 97 IS:
RA= 209.839 DEC= -12.856 DIST= 1.566 AU
MARS-BATSE DISTANCE = 234309840. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 304.93 SECS.
CROSSING TIME AT MARS IS 65532. S. OR 18:12:11 +/- 129.57 SECONDS

BATSE BURST TRIGGER
NO.: 6339

TIME: TJD=0678 SECONDS=65227

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=69.3 AZIMUTH=197.6 ERROR=2.299 DEGREES

COMMENTS:
GRB. DUR~19S. SINGLE PULSE WITH MULTIPEAK. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6339	970818	10678	65227	10000	320	+19	19

BATSE BURST# 6339

ULYSSES RT 19/ 8/97

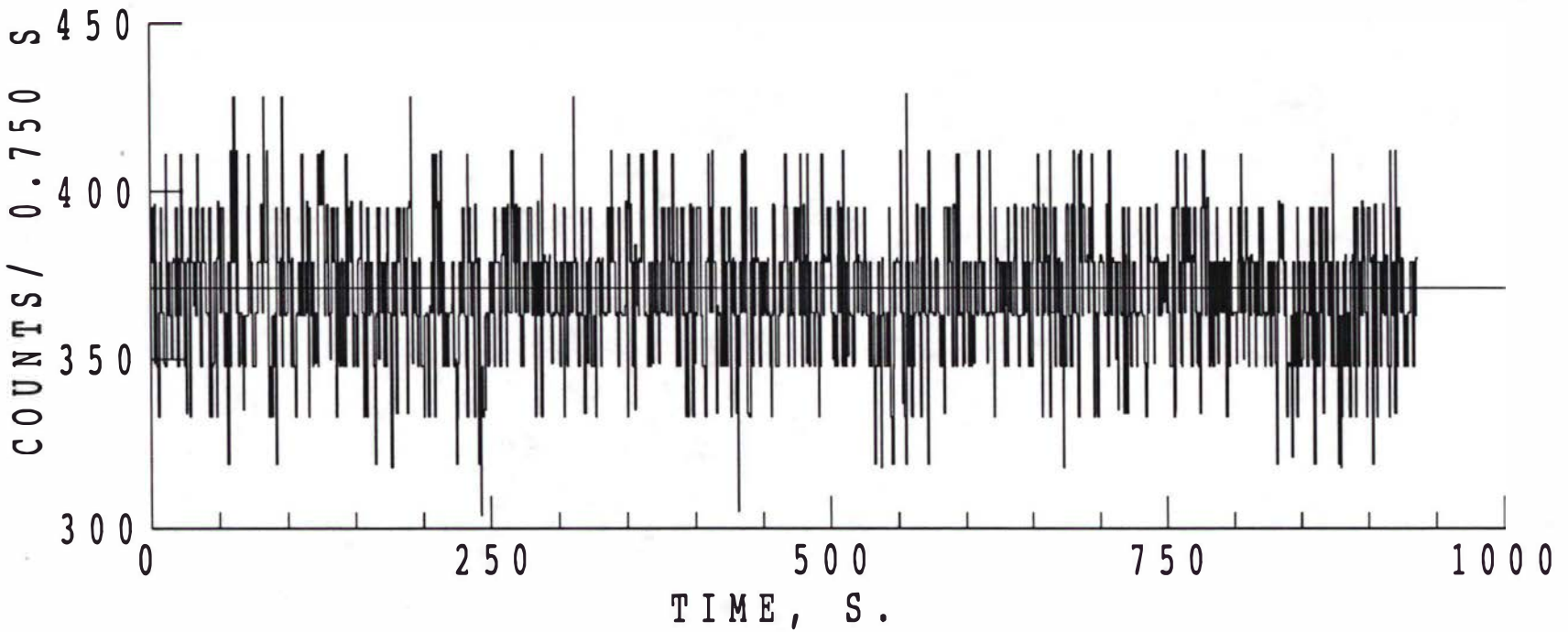
18/ 8/97 66996.172 s

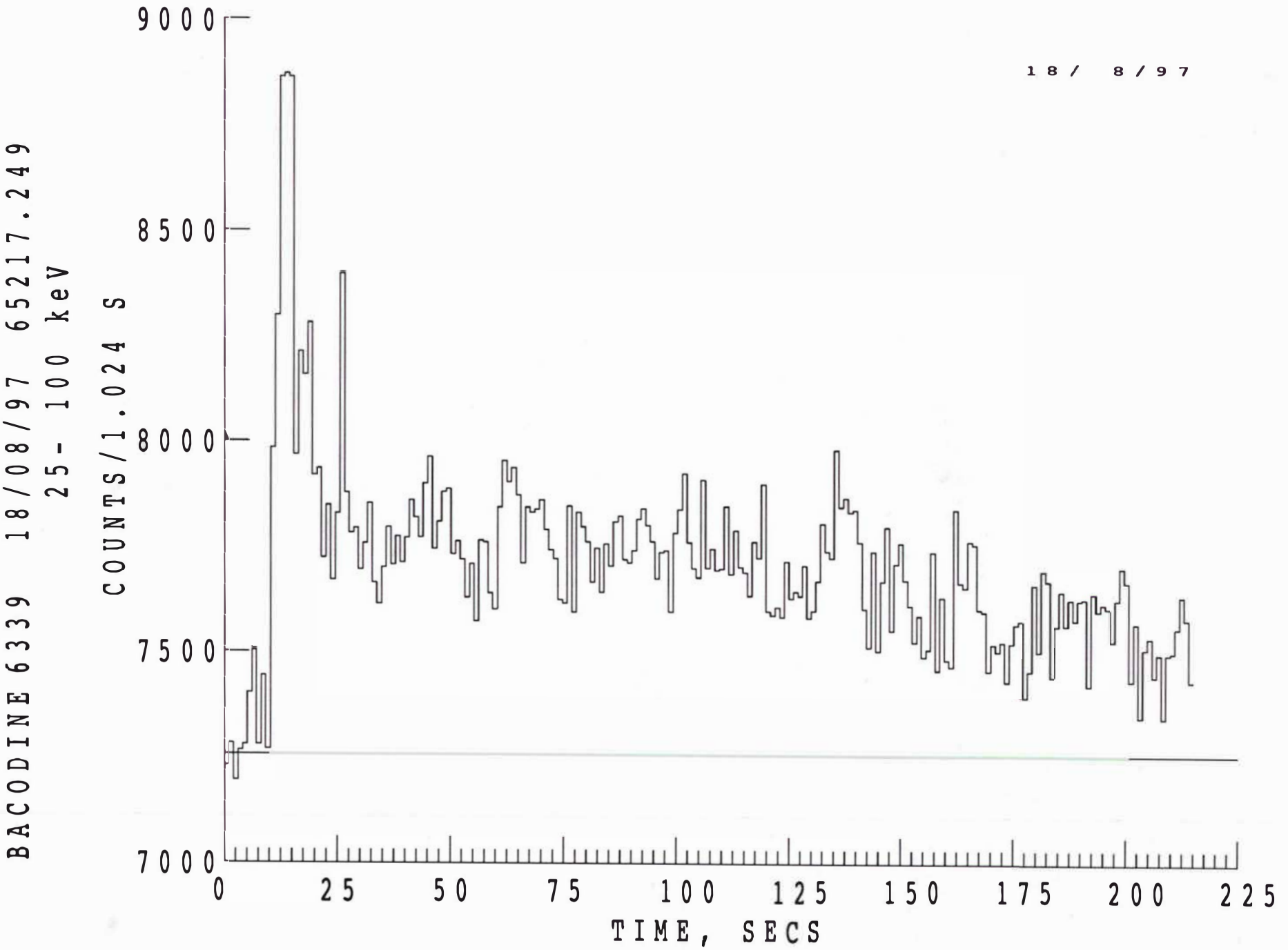
0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6339 18/08/97 65217.249
25- 100 keV
COUNTS/1.024 S
9000
8500
8000
7500
7000
18/ 8/97
0
25
50
75
100
125
150
175
200
225
TIME, SECS

From SURASAK@ssl.msfc.nasa.gov Thu Aug 21 07:00 PDT 1997
Date: Thu, 21 Aug 1997 8:59:48 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@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.: 6340

TIME: TJD=0678 SECONDS=70683

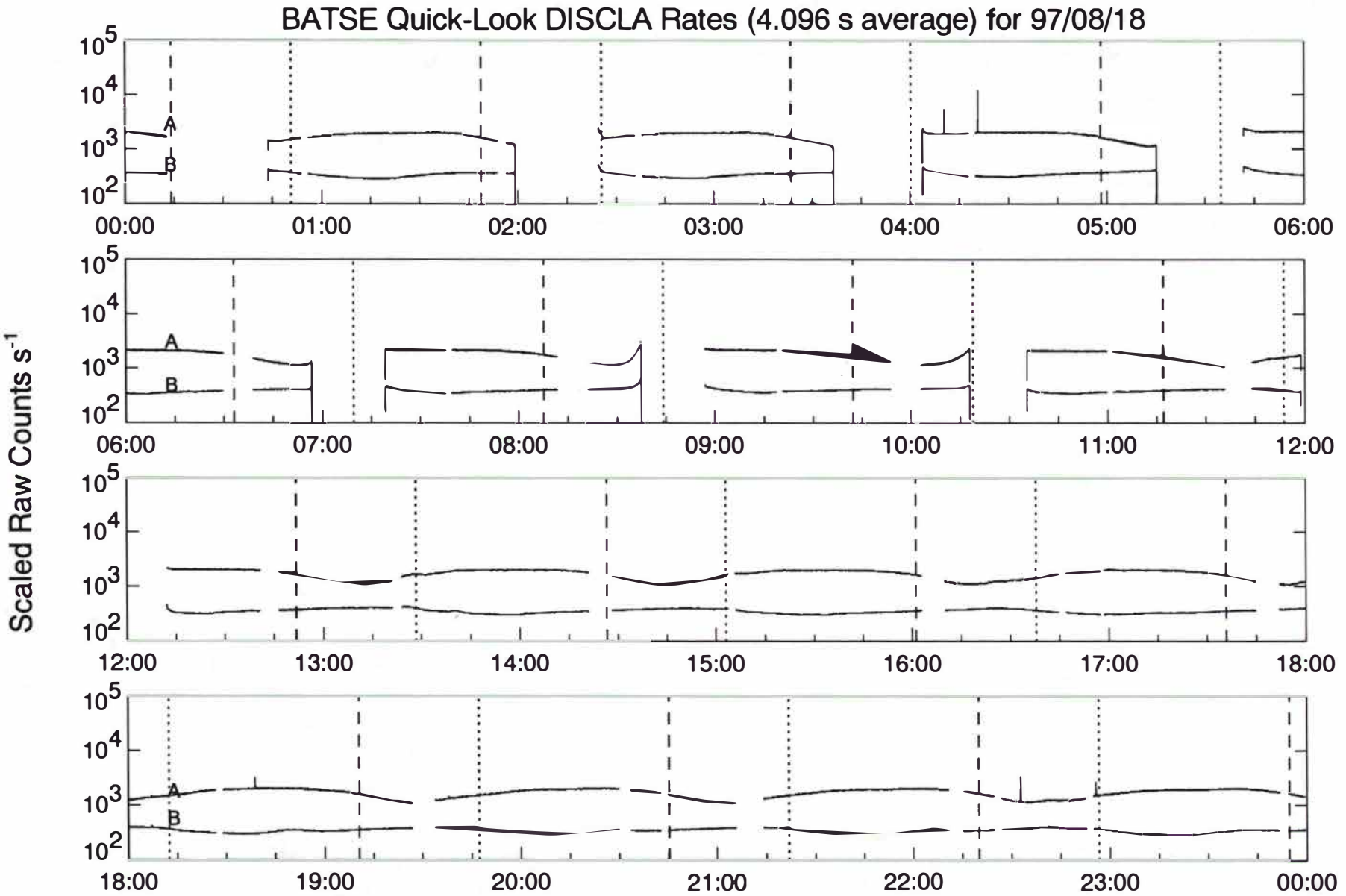
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=59.3 AZIMUTH=10.8 ERROR=0.673 DEGREES

COMMENTS:
UNKNOWN. PROBABLY PARTICLE. SINGLE PULSE. DUR~140S. NOT VISIBLE IN
CHANEL 4.

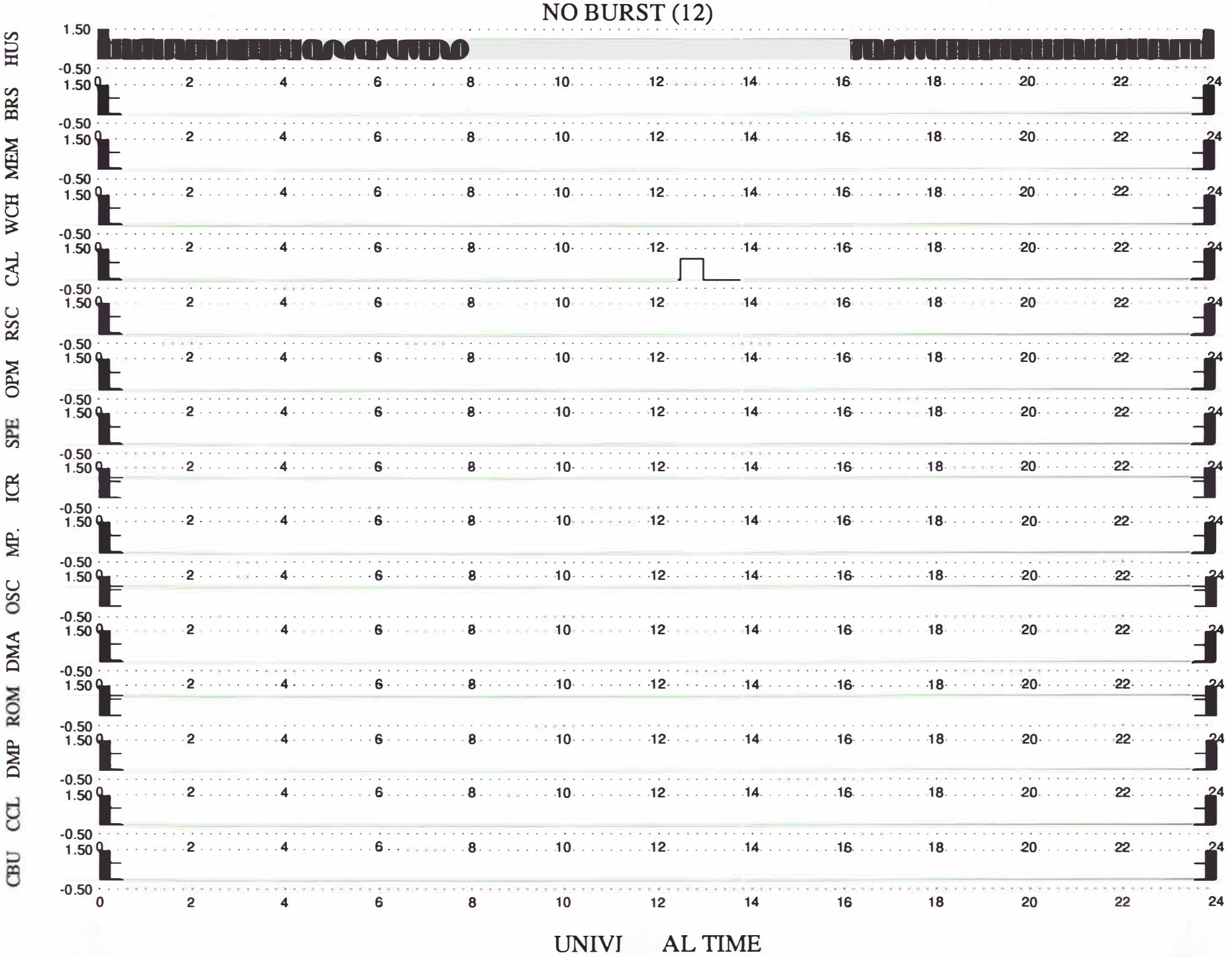


Current Time: 97/08/22, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

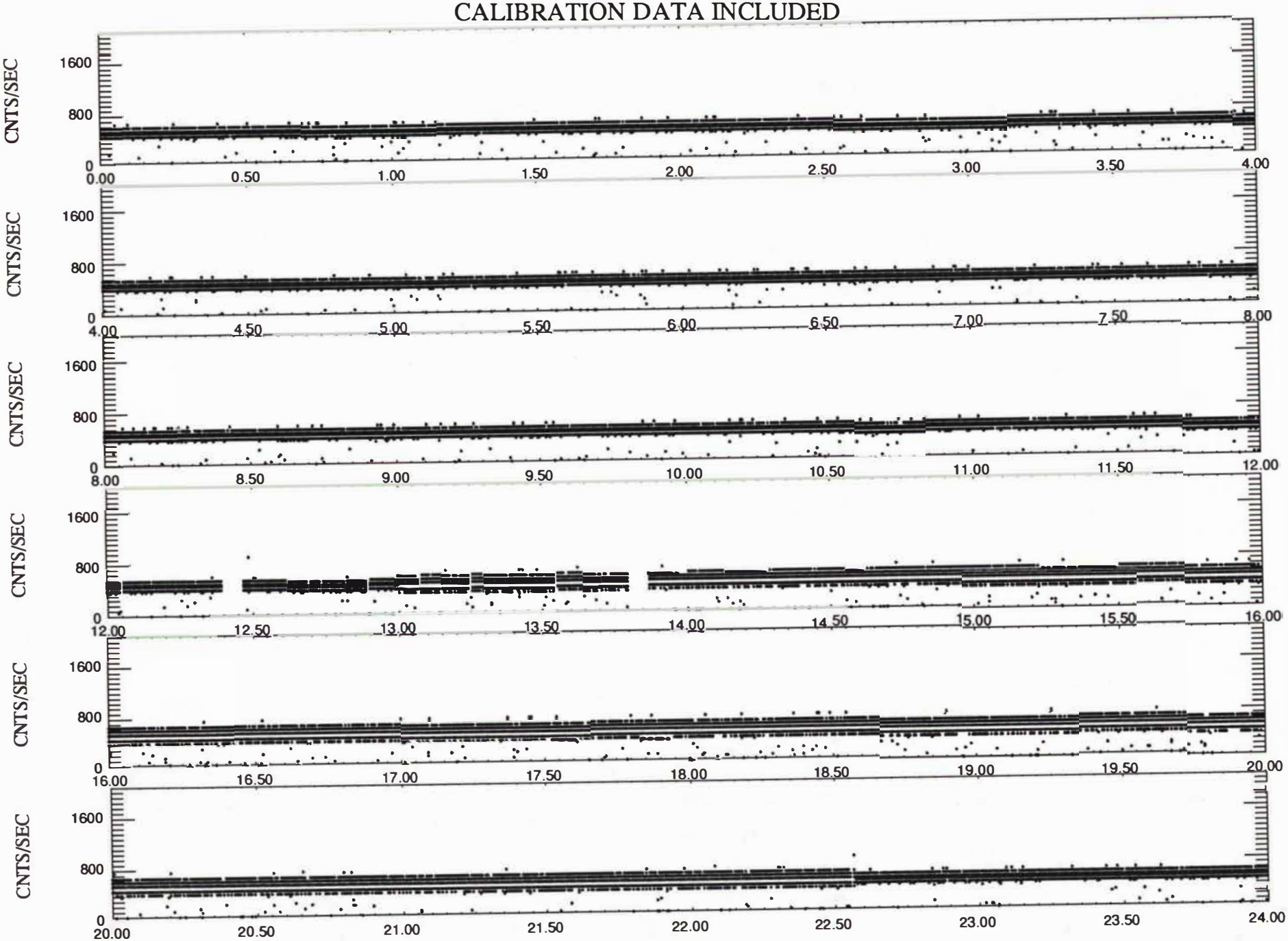
* Solar Burst Trigger
\+ Solar Flare

HUS MODES EDR day 230, year 1997 to day 230, year 1997 1/6/98



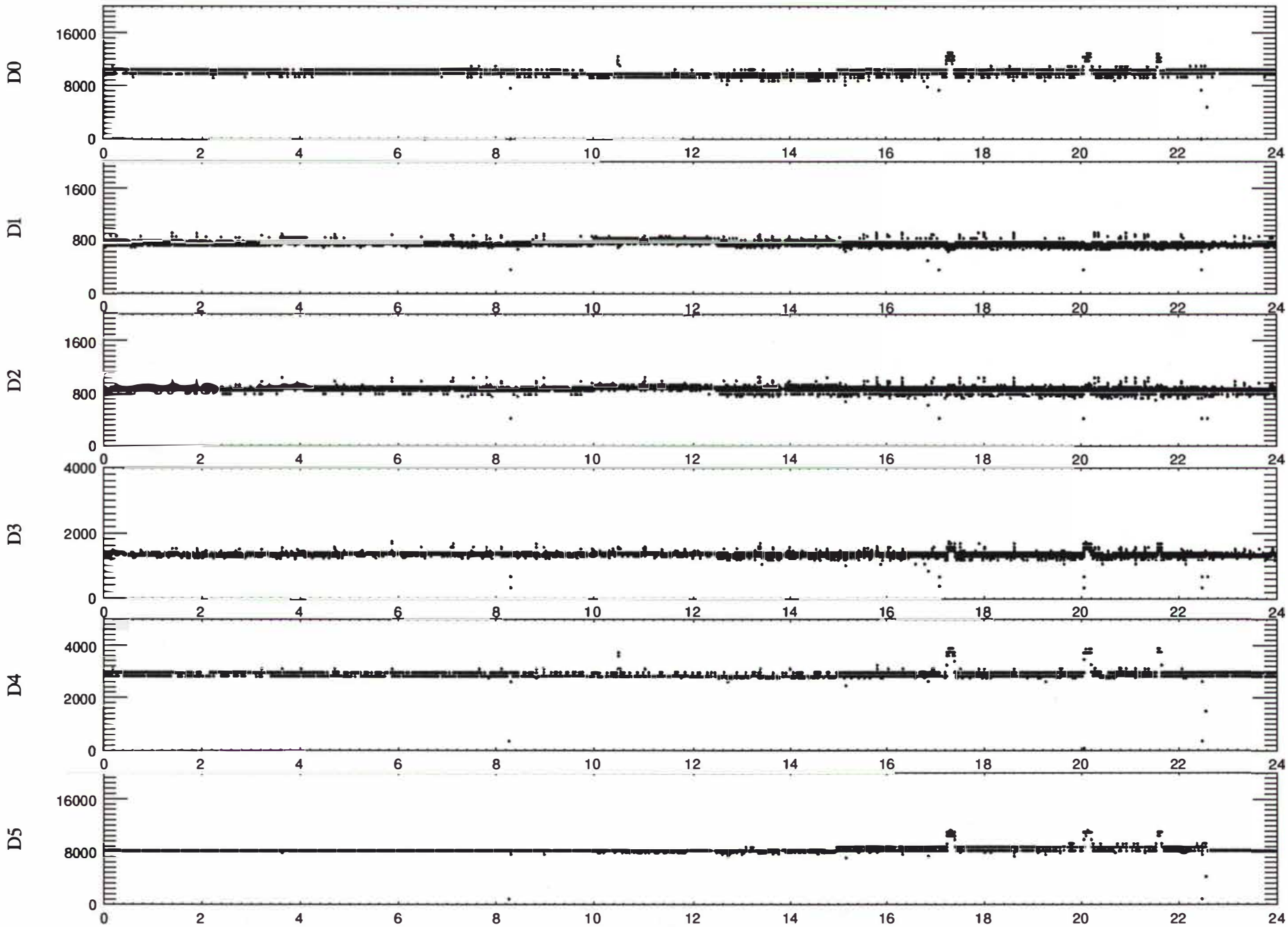
HUS 2A, MODE 1, NOT AVERAGED EDR day 230, year 1997 to day 230, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 230, year 1997 to day 230, year 1997 1/6/98



SAX

HUS DATA

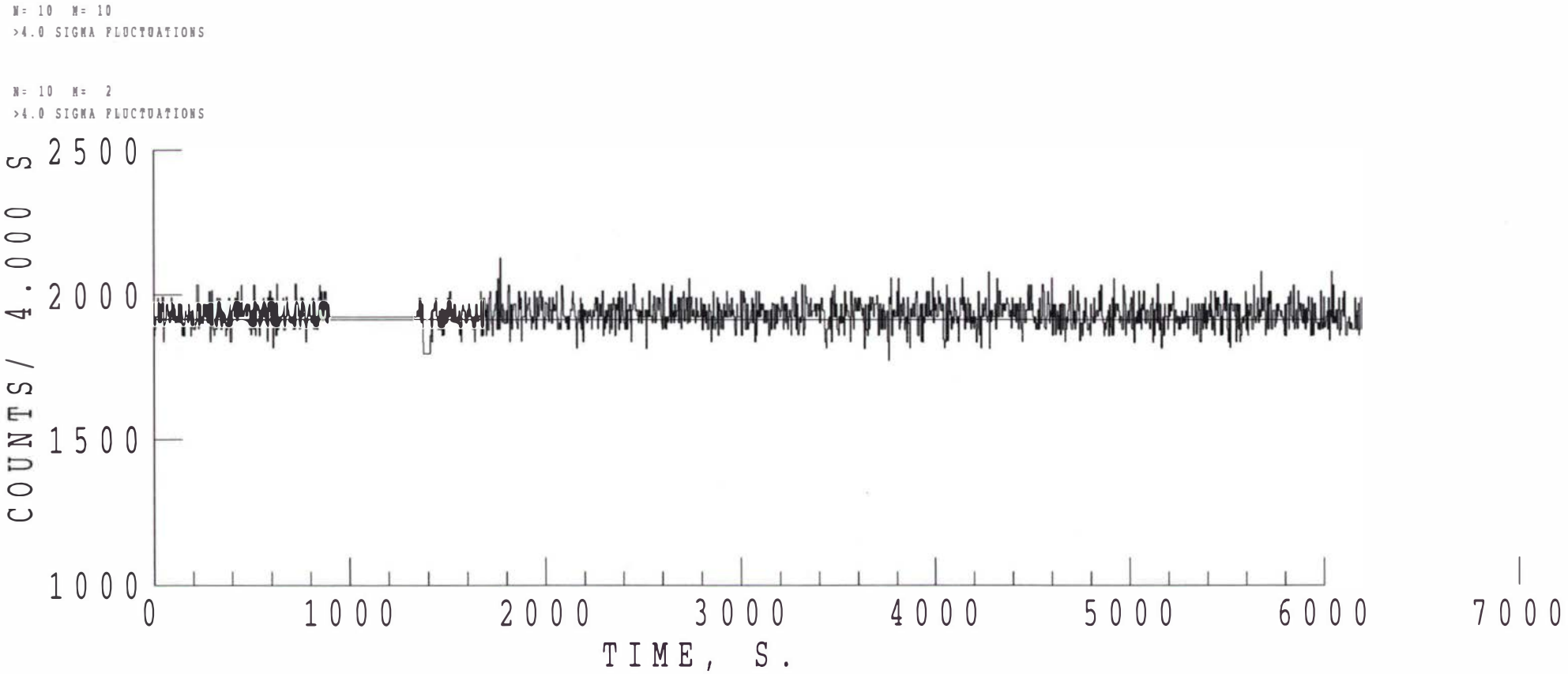
19/07/05

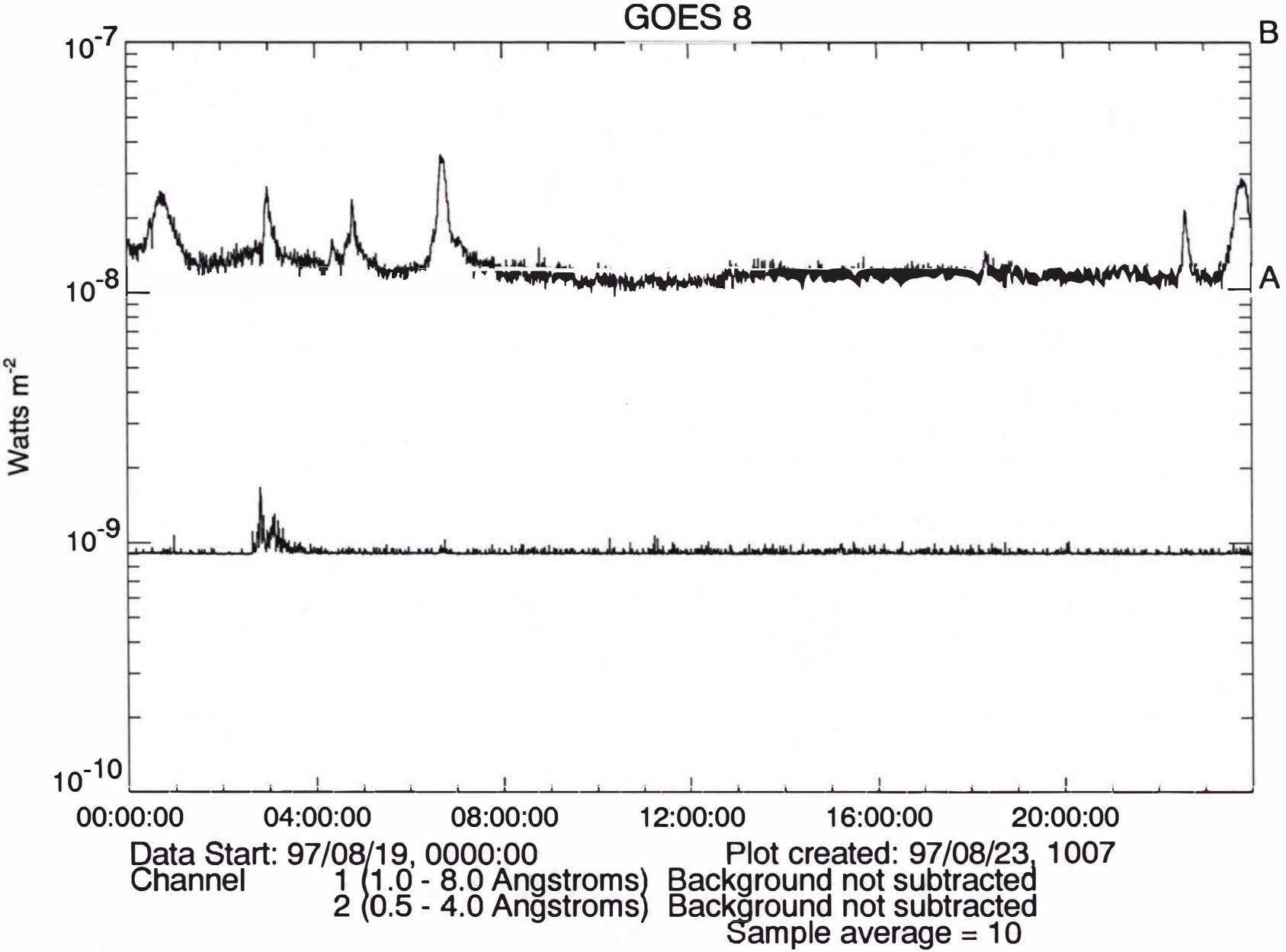
ULYSSES RT

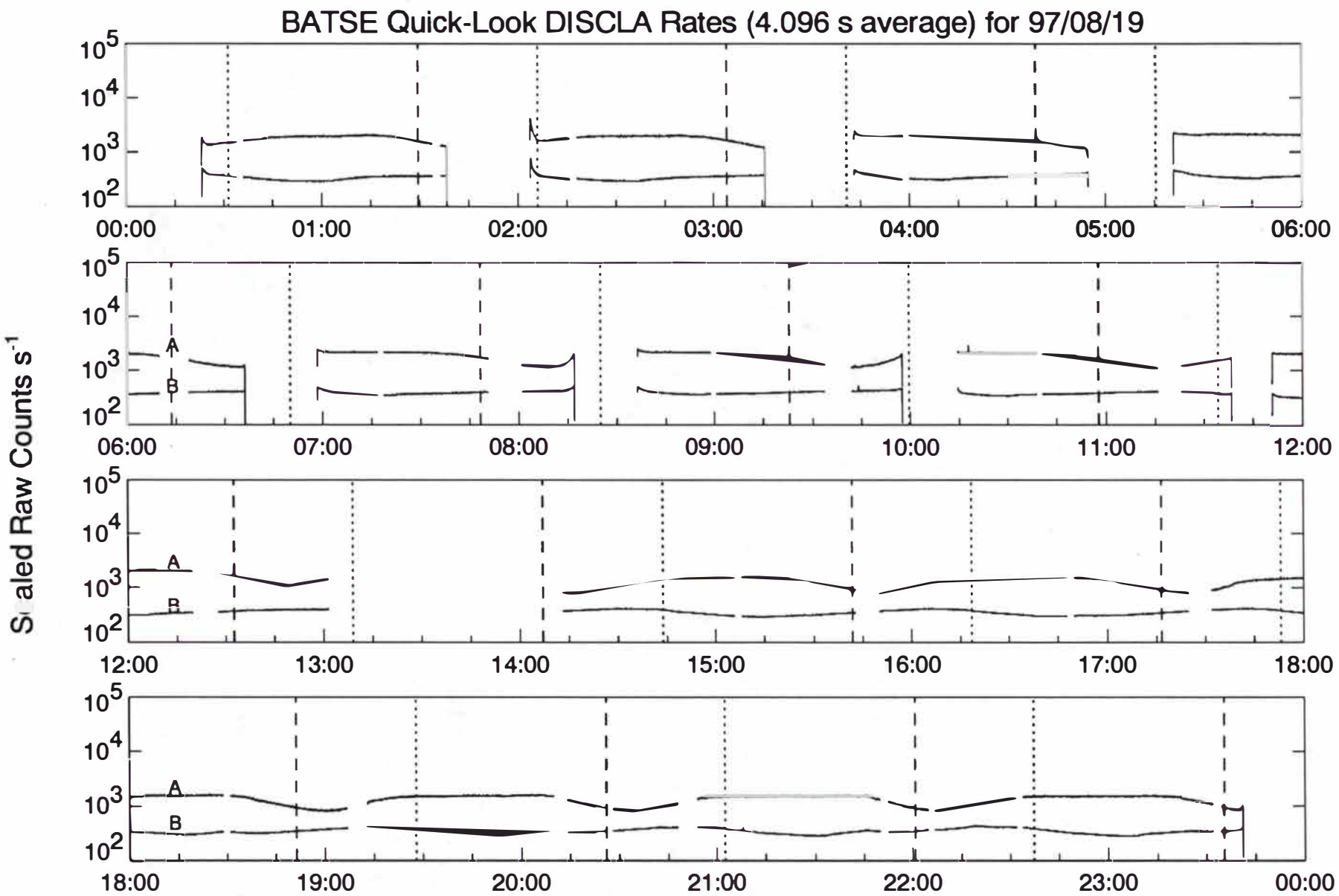
19/08/97 12564.280 s

0.500 S INTERVALS REGROUPED BY 8

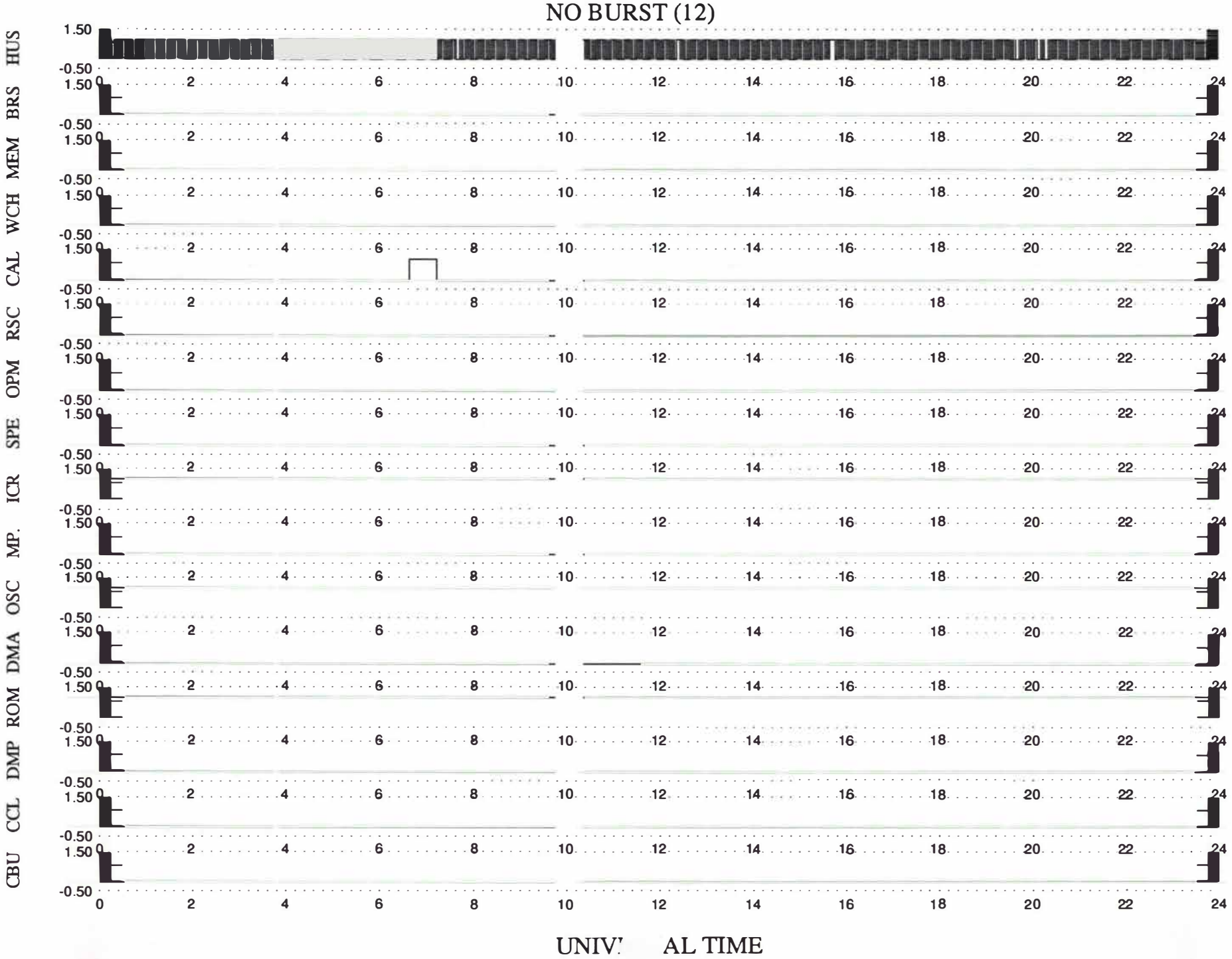
0- 0 keV




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: 97/08/19, 0000:00
Plot created: 97/08/23, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

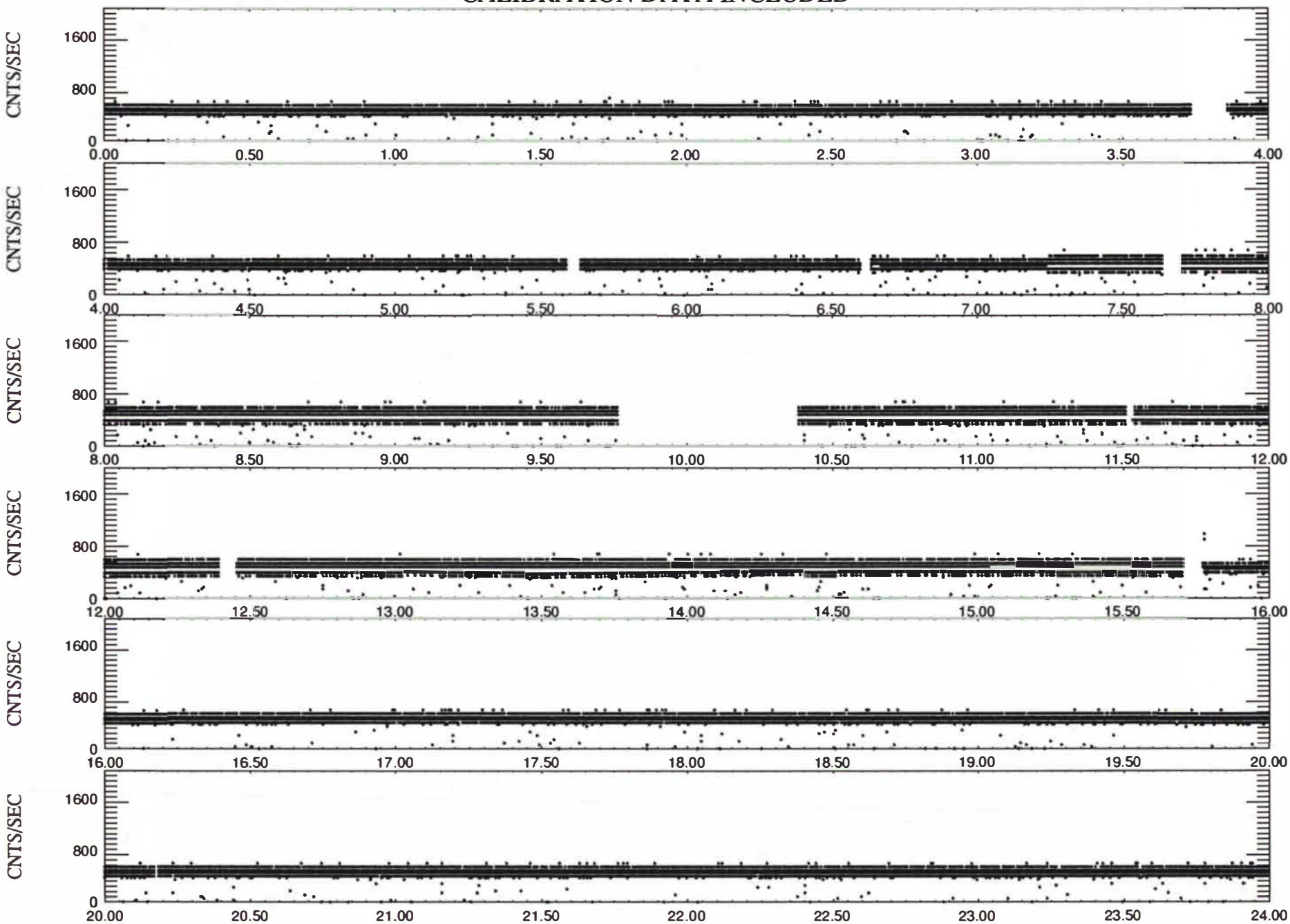

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/19
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/08/23, 1008 EDT
A: Channel 0 Most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

HUS MODES EDR day 231, year 1997 to day 231, year 1997 1/6/98



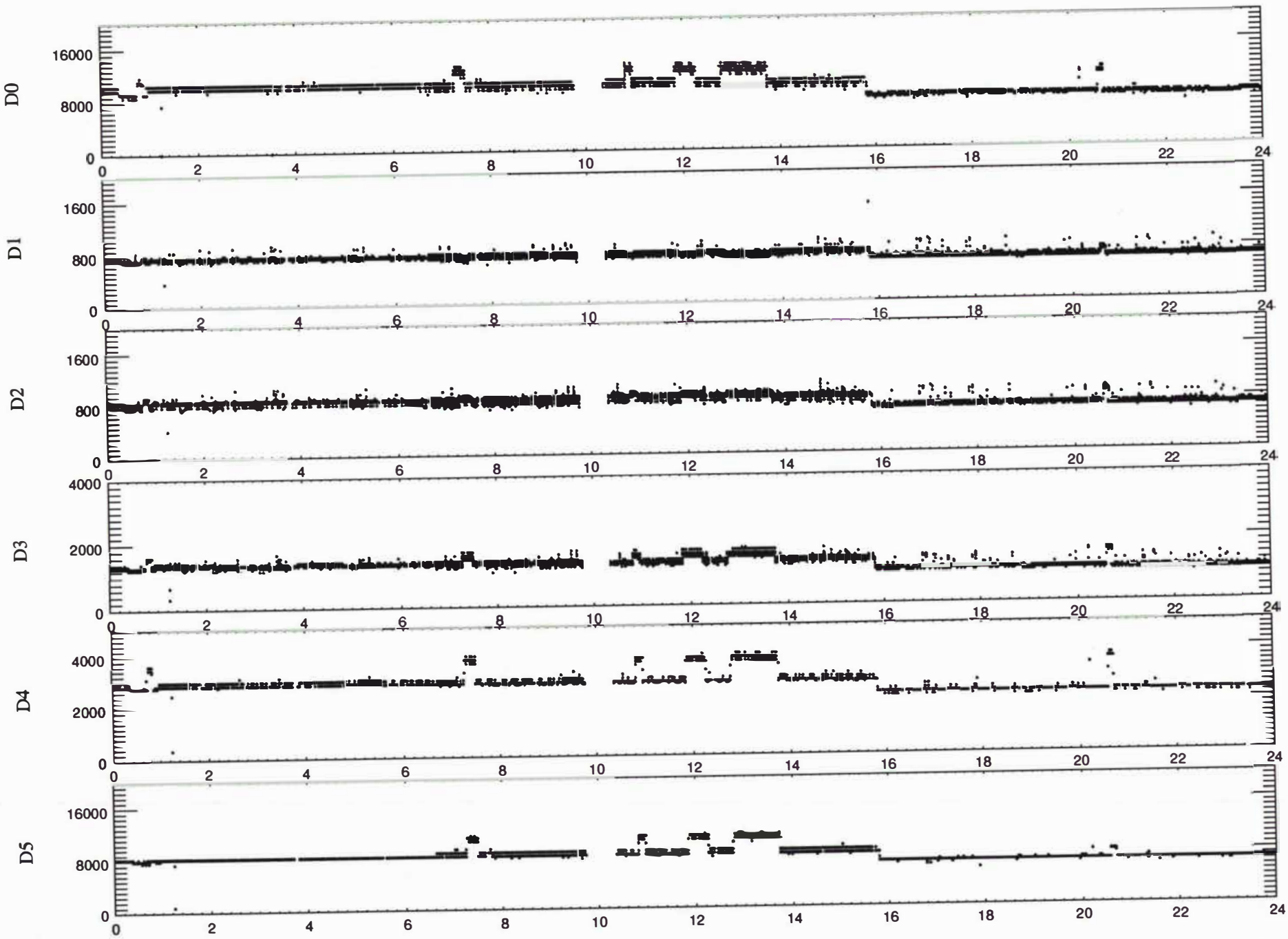
HUS 2A, MODE 1, NOT AVERAGED EDR day 231, year 1997 to day 231, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 231, year 1997 to day 231, year 1997 1/6/98



From SURASAK@ssl.msfc.nasa.gov Thu Aug 21 11:45 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 LAA26137; Thu, 21 Aug 1997 11:45:24 -0700
Date: Thu, 21 Aug 1997 13:45:20 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970821134520.2020592f@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6341
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6341
EVENT OF 1997 AUG 20 DAY OF YEAR=232
EVENT CROSSING TIME AT BATSE : 20220. S. OR 05:37:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 95.000 69.000
BATSE PEAK COUNTING RATE: 11700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 8/ 97 IS:
RA= 159.797 DEC= 20.214 DIST= 6.215 AU
BATSE-ULYSSES DISTANCE = 929823801. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1444.67 SECS.
CROSSING TIME AT ULYSSES IS 18775. S. OR 05:12:55 +/- 504.56 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 8/ 97 IS:
RA= 211.034 DEC= -13.307 DIST= 1.578 AU
MARS-BATSE DISTANCE = 236031024. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 68.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 289.69 SECS.
CROSSING TIME AT MARS IS 20510. S. OR 05:41:49 +/- 131.50 SECONDS

BATSE BURST TRIGGER

NO.: 6341

TIME: TJD=0680 SECONDS=20220

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

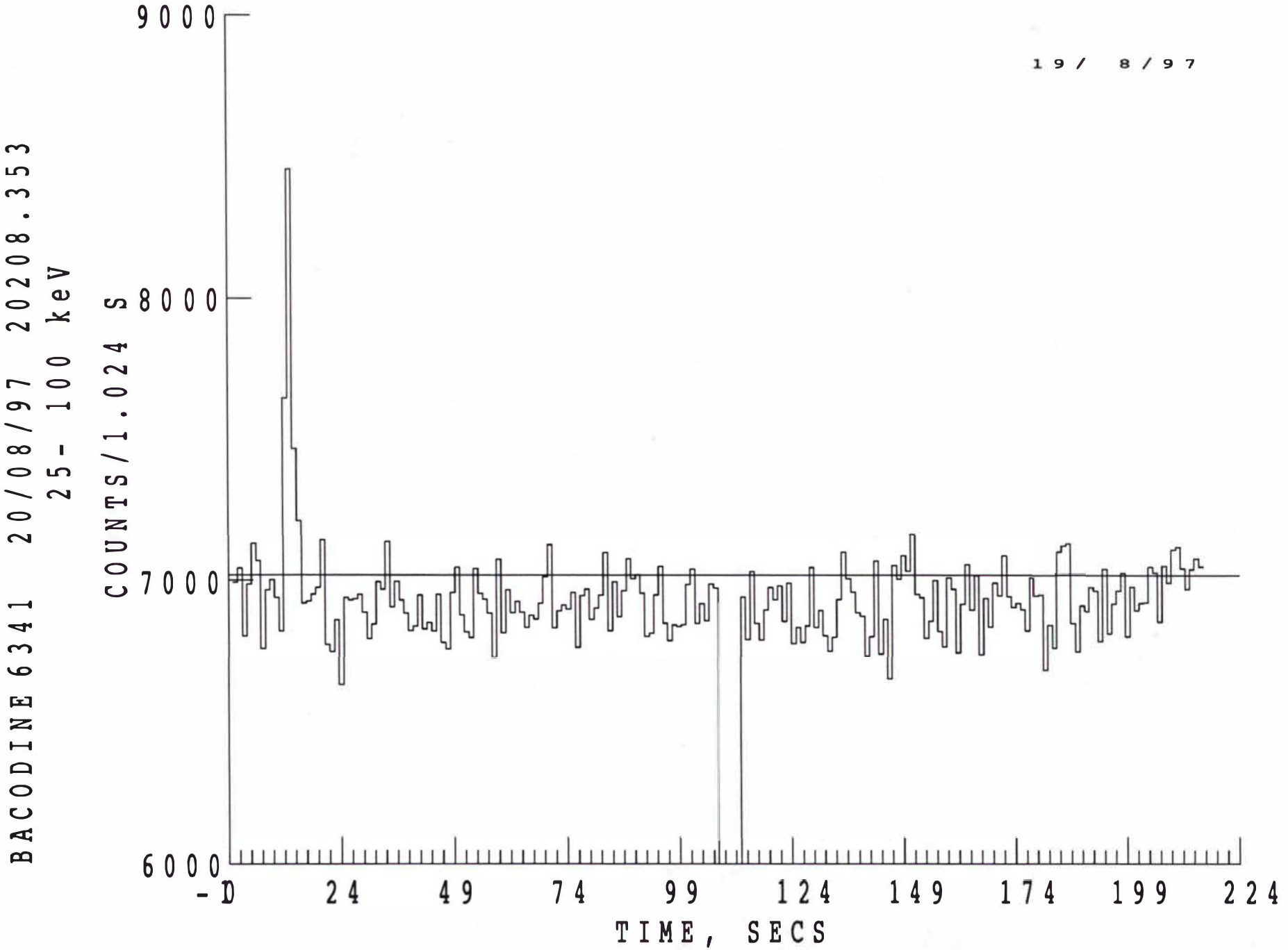
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=137.6 AZIMUTH=311.9 ERROR=2.895 DEGREES

COMMENTS:
GRB. DUR~2S. SINGLE PULSE. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6341	970820	10680	20220	11700	095	+69	2


BACODINE 6341 20/08/97 20208.353
25- 100 keV
COUNTS/1.024 S
9000
8000
7000
6000
19/ 8/97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

BATSE BURST# 6341

ULYSSES RT 21/ 8/97

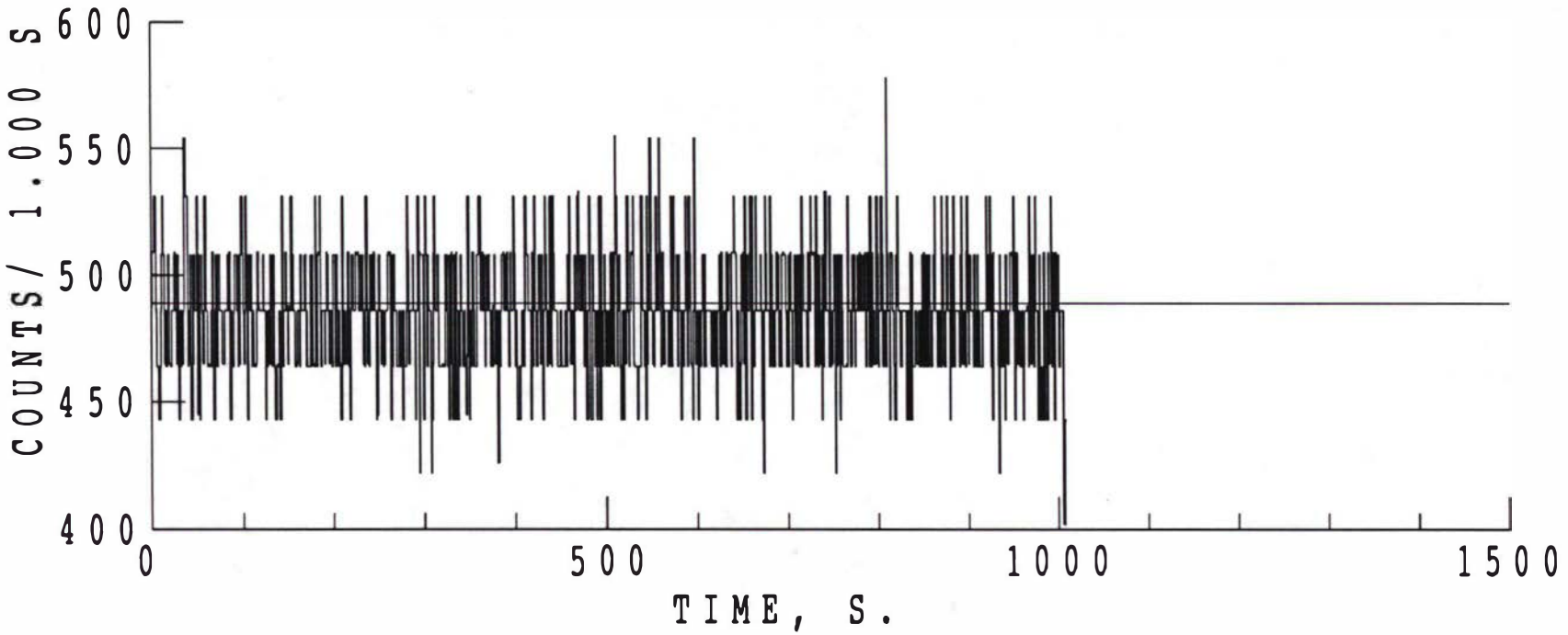
20/ 8/97 18288.328 s

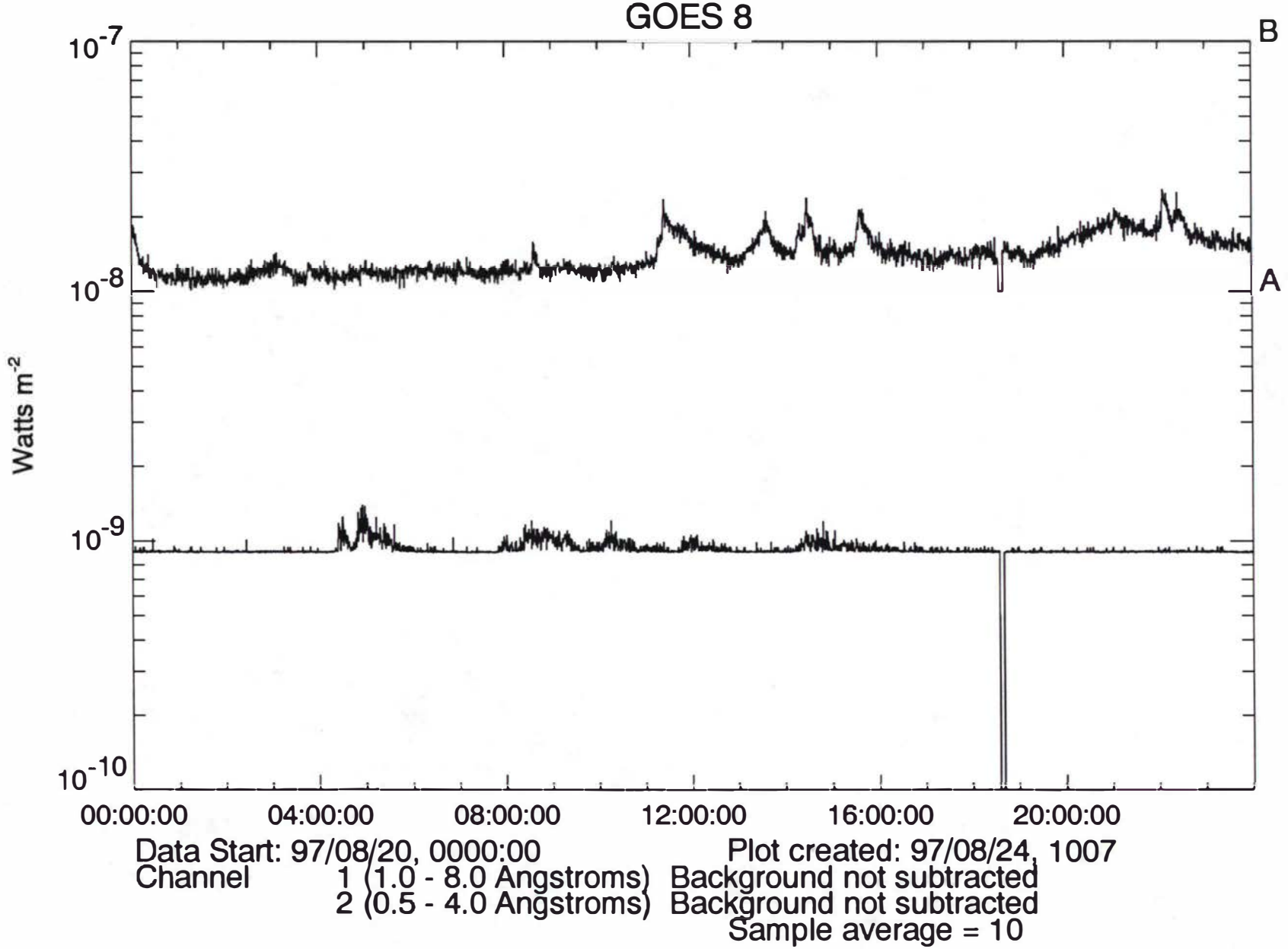
0.500 S INTERVALS REGROUPED BY 2

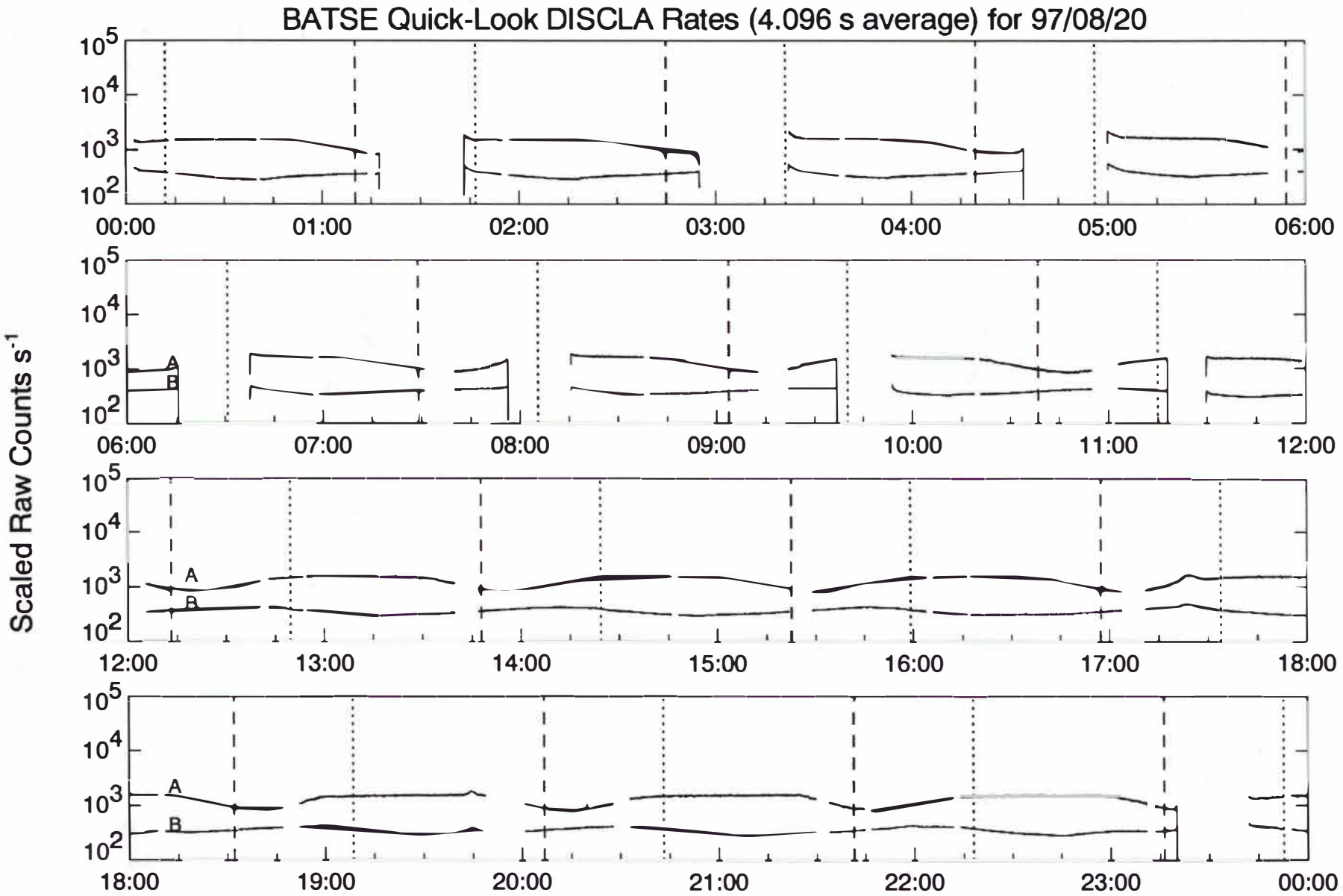
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

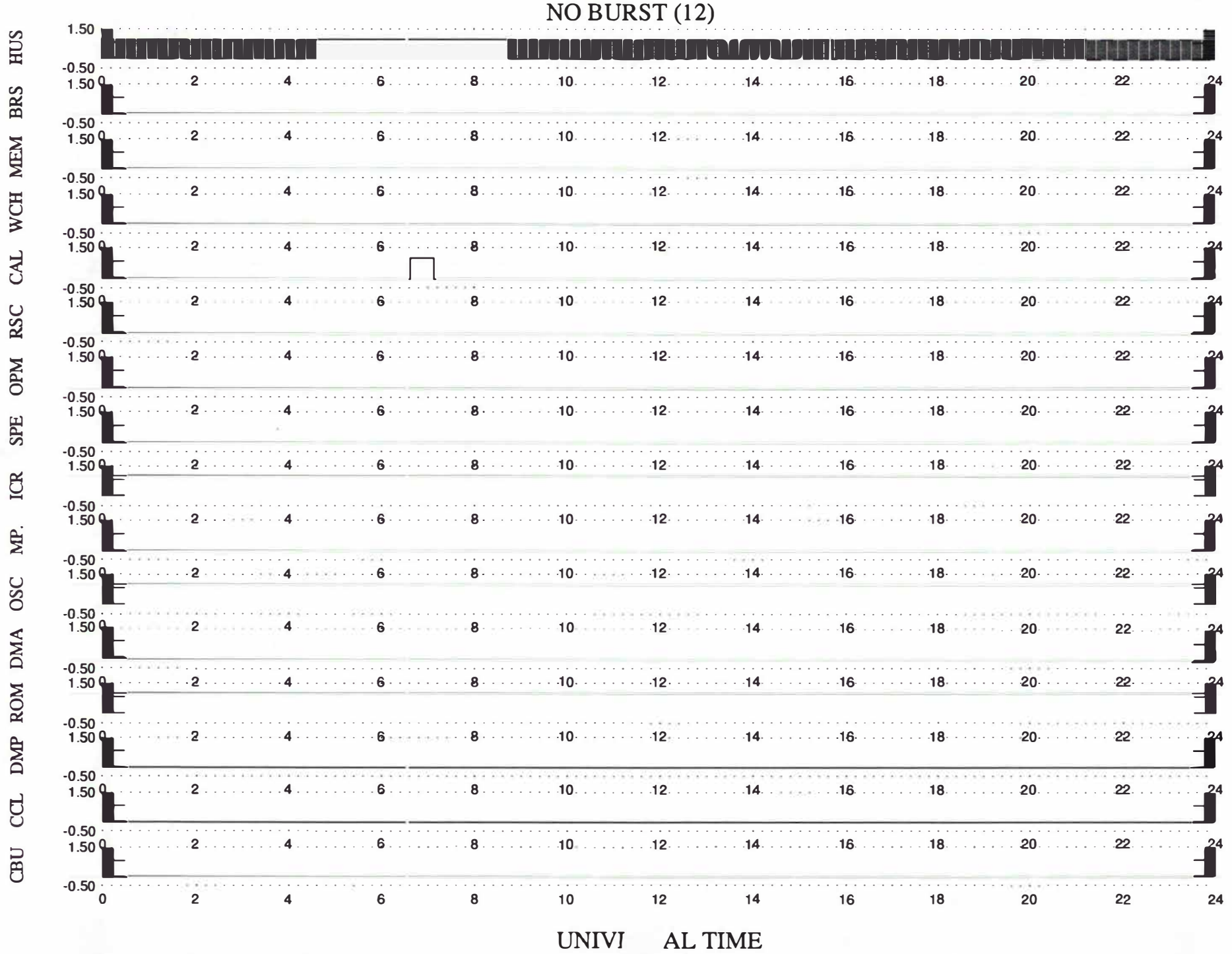
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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: 97/08/20, 0000:00
Plot created: 97/08/24, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

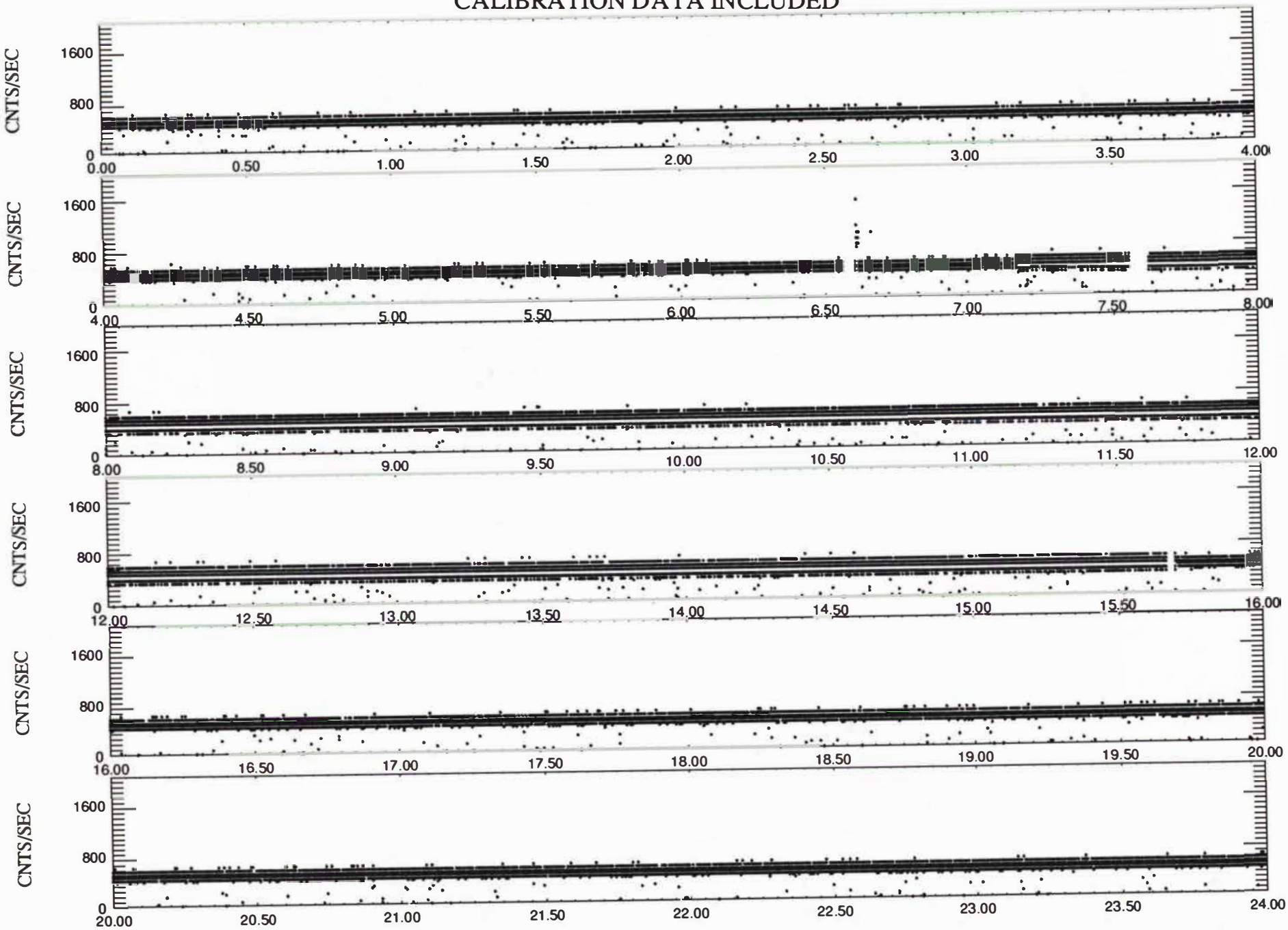

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/20
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
A
B
Current Time: 97/08/24, 1008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

HUS MODES EDR day 232, year 1997 to day 232, year 1997 1/6/98



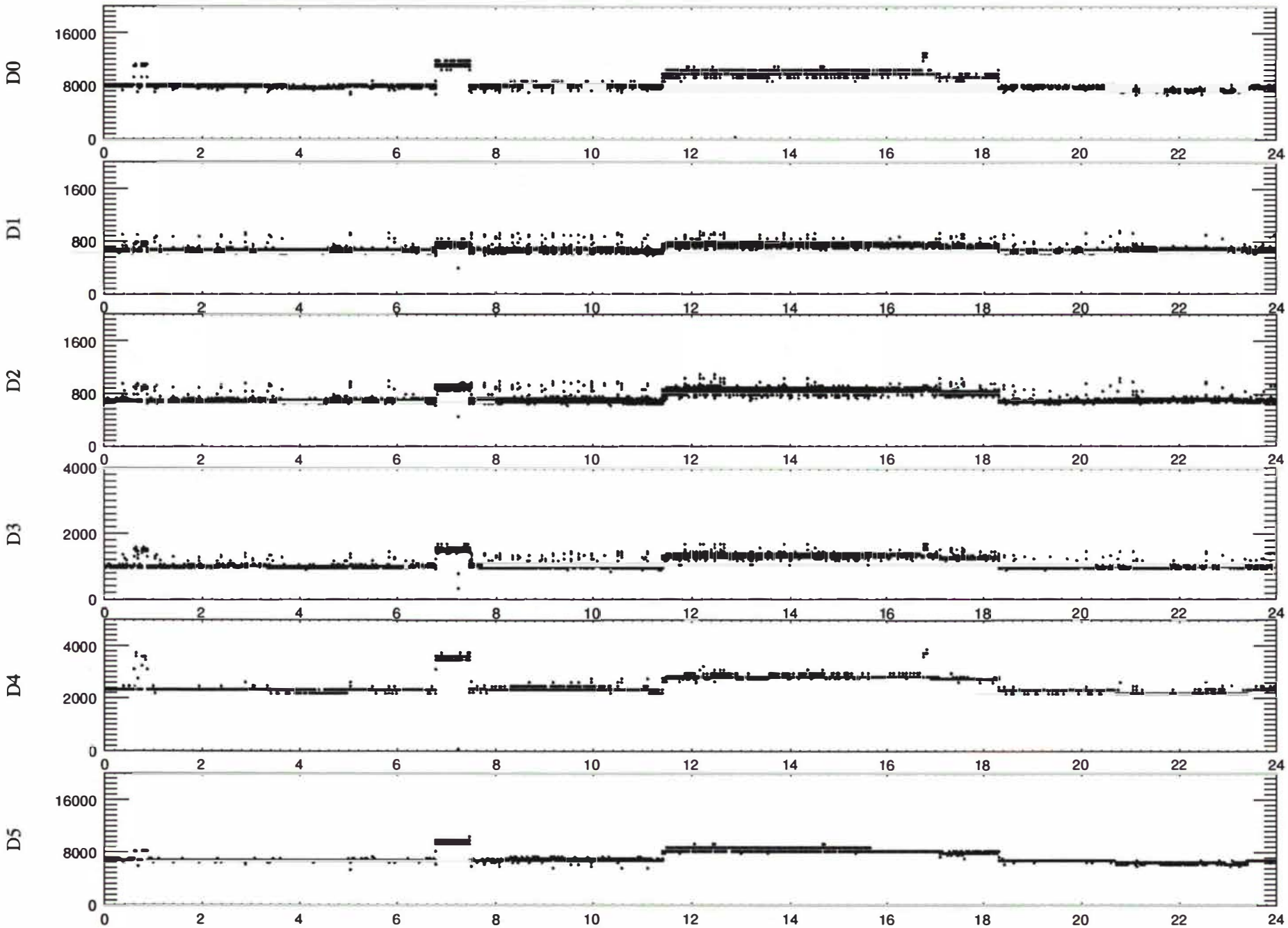
HUS 2A, MODE 1, NOT AVERAGED EDR day 232, year 1997 to day 232, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 232, year 1997 to day 232, year 1997 1/6/98



Date: Mar 28 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events N/A

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events N/A

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

3. For INTEGRAL events N/A

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

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

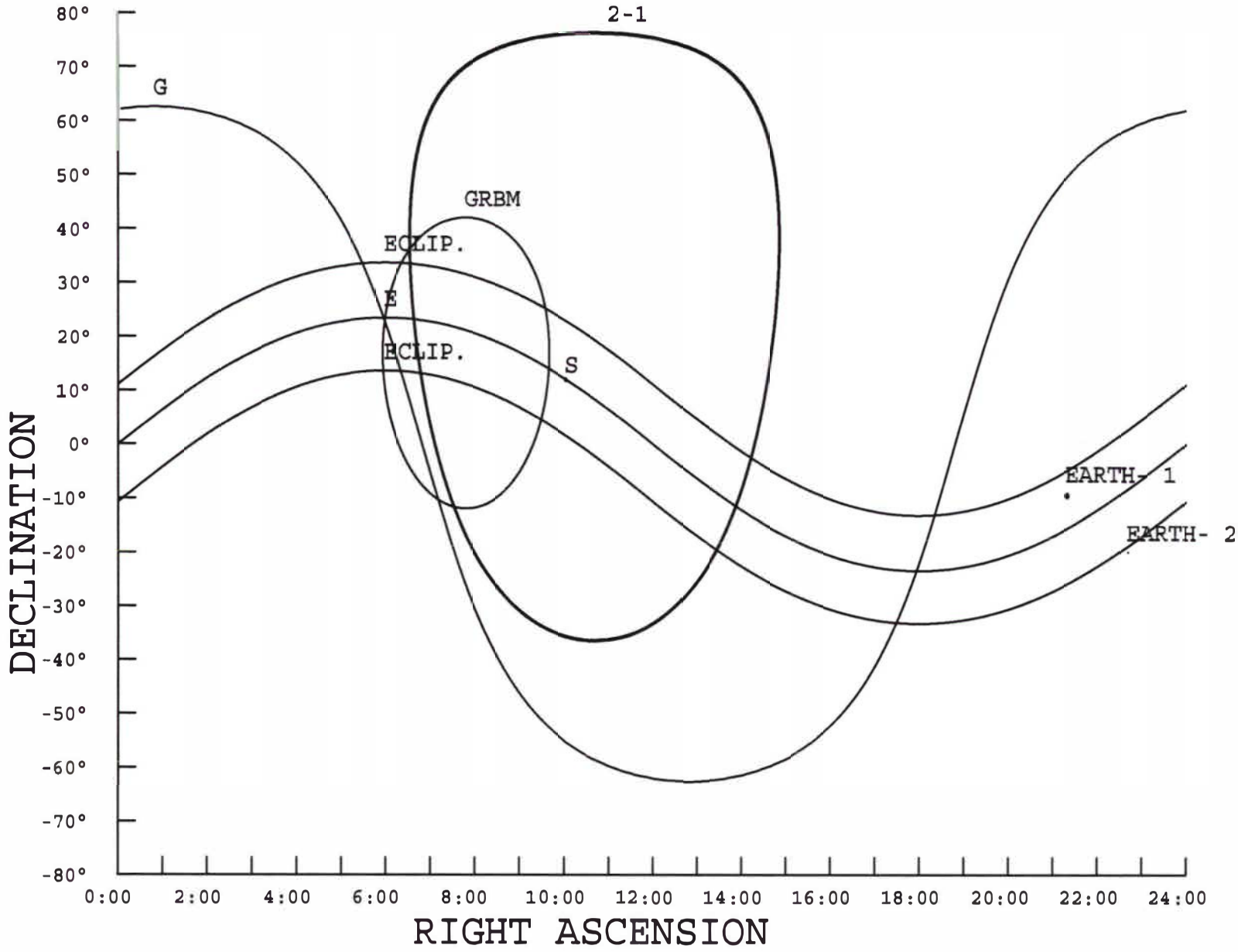
☐ Updated ephemeris used for bursts prior to September 30, 2003?

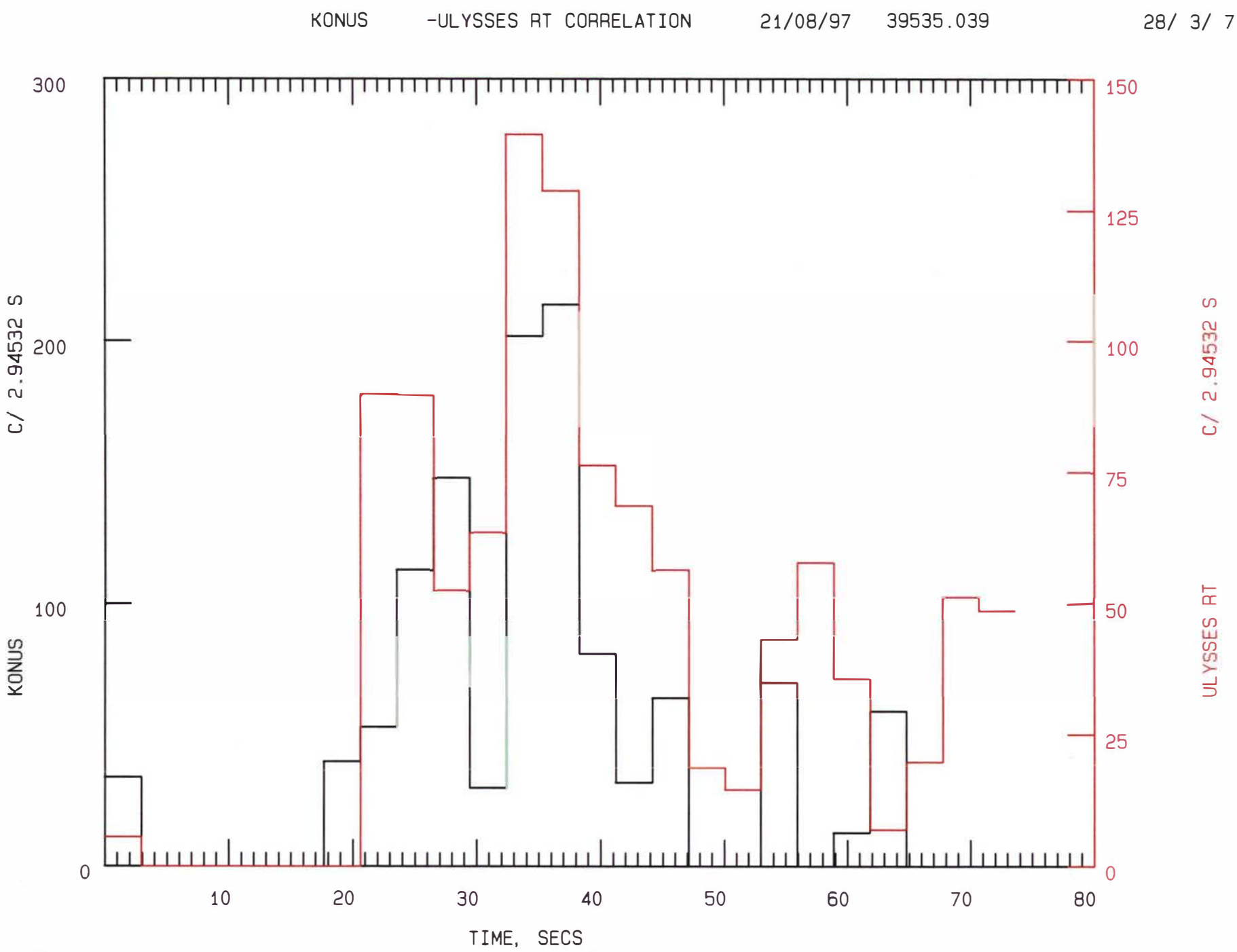
☑ ACCESS and MBL4 databases updated?

EVENT OF AUG 21, 1997 10:58

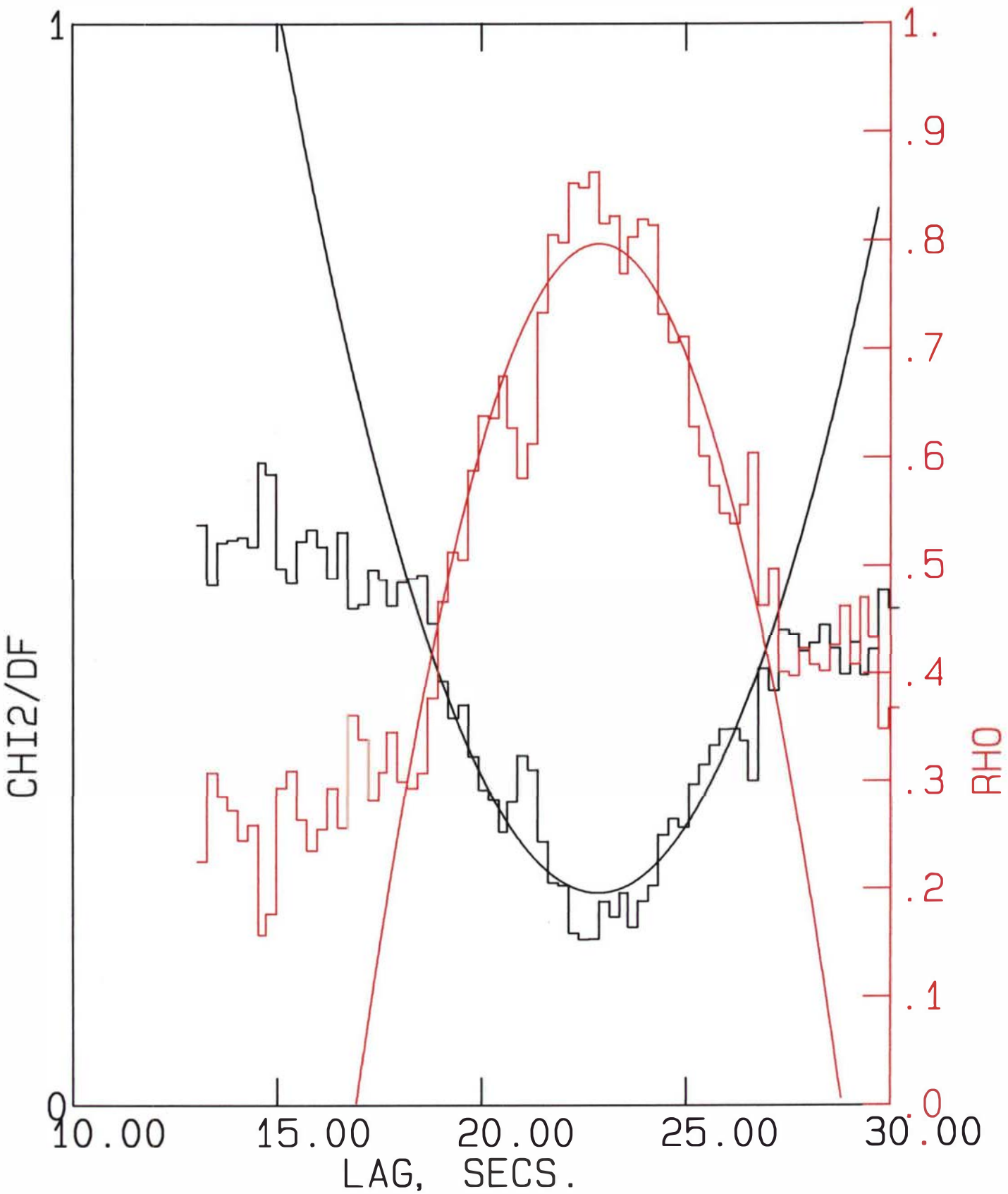
28/ 3/ 7

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




KONUS -ULYSSES RT CORRELATION 21/08/97 39535.039 28/ 3/ 7
300
200
100
0
C/ 2.94532 S
KONUS
150
125
100
75
50
25
0
C/ 2.94532 S
ULYSSES RT
10
20
30
40
50
60
70
80
TIME, SECS

KONUS -ULYSSES RT CORRELATION 21/08/97 39535.039

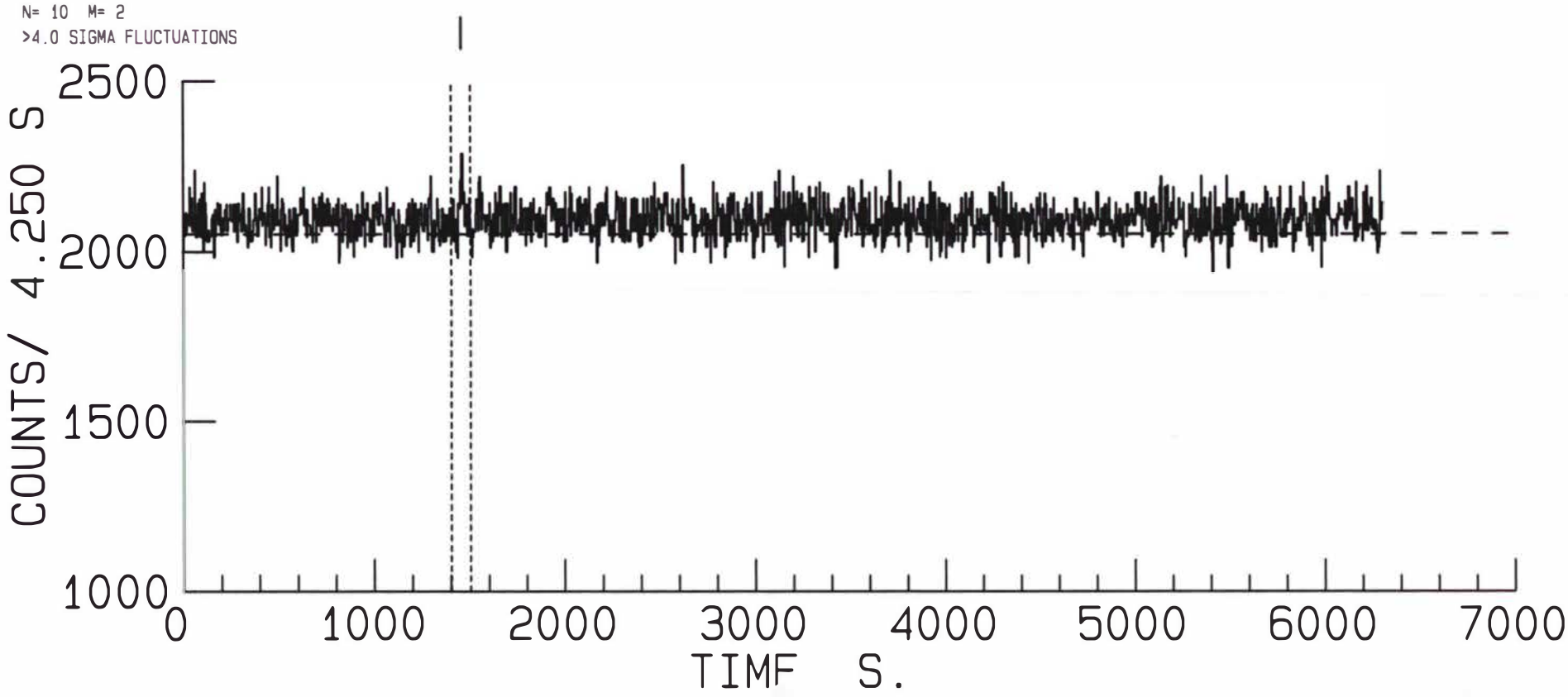


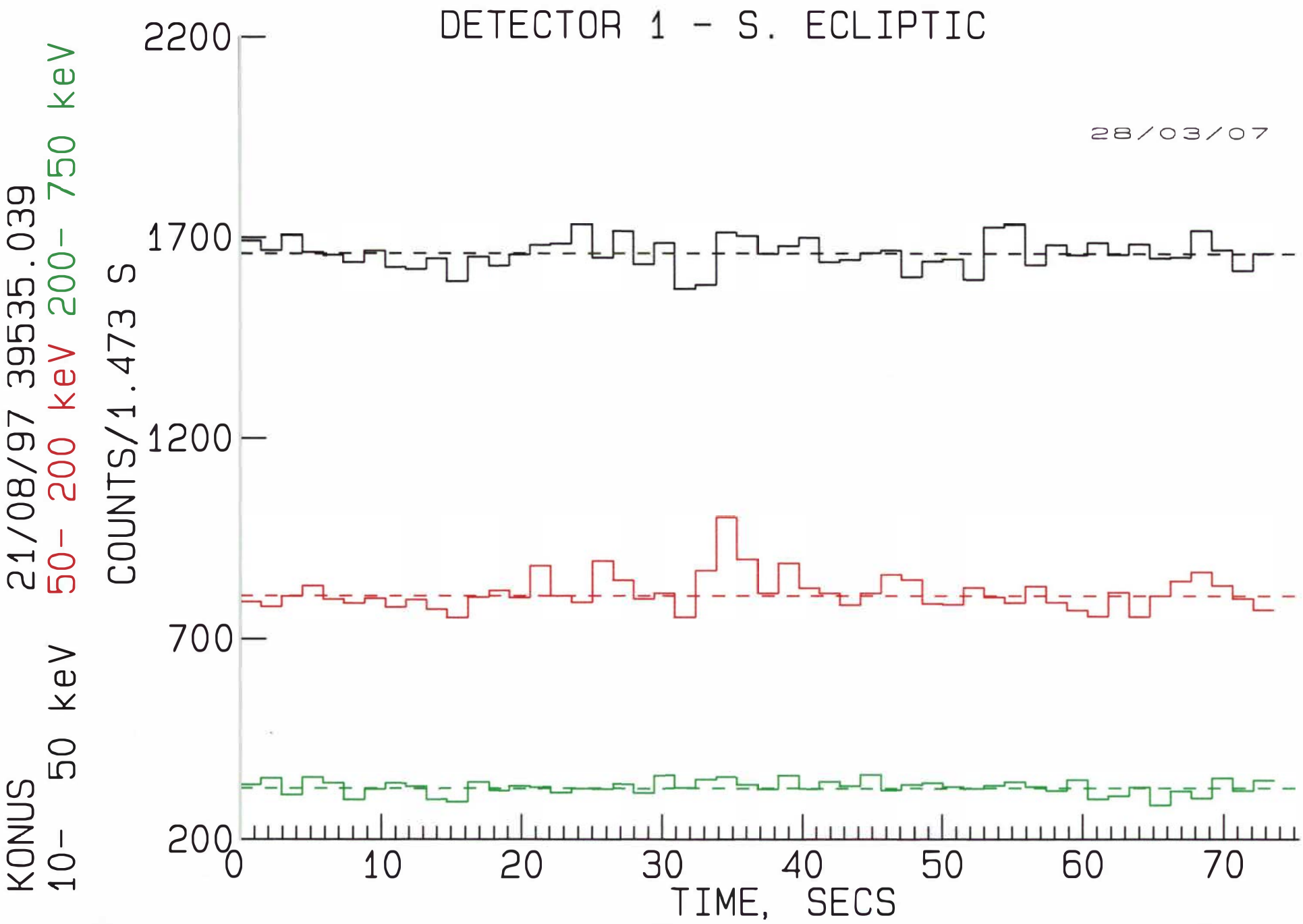
ULYSSES RT 28/ 3/ 7

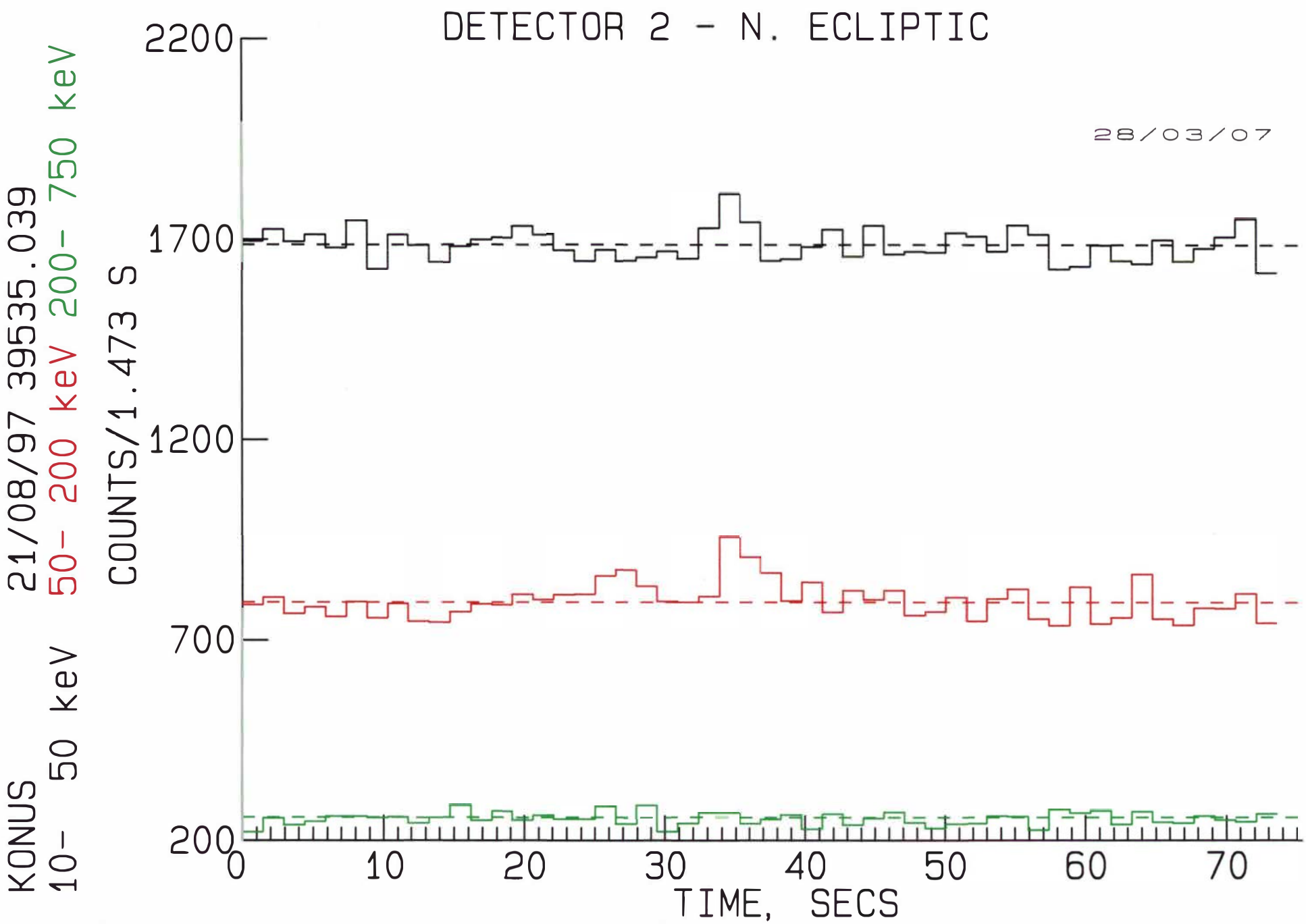
21/ 8/97 36396.016 s

0.250 S INTERVALS REGROUPED BY 17

22- 147 keV




DETECTOR 1 - S. ECLIPTIC
28/03/07
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
21/08/97 39535.039
COUNTS/1.473 S
2200
1700
1200
700
200
0
10
20
30
40
50
60
70
TIME, SECS


DETECTOR 2 - N. ECLIPTIC
28/03/07
KONUS
10- 50 keV 50- 200 keV 200- 750 keV
21/08/97 39535.039
COUNTS/1.473 S
2200
1700
1200
700
200
0
10
20
30
40
50
60
70
TIME, SECS

From SURASAK@ssl.msfc.nasa.gov Fri Aug 22 13:10 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 NAA06678; Fri, 22 Aug 1997 13:10:57 -0700
Date: Fri, 22 Aug 1997 15:10:51 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970822151051.20205e73@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6342
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6342
EVENT OF 1997 AUG 21 DAY OF YEAR=233
EVENT CROSSING TIME AT BATSE : 53402. S. OR 14:50:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 226.000 -77.000
BATSE PEAK COUNTING RATE: 6700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 8/ 97 IS:
RA= 159.996 DEC= 20.069 DIST= 6.220 AU
BATSE-ULYSSES DISTANCE = 930456185. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 771.06 SECS.
CROSSING TIME AT ULYSSES IS 54173. S. OR 15:02:53 +/- 583.66 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 8/ 97 IS:
RA= 211.636 DEC= -13.531 DIST= 1.583 AU
MARS-BATSE DISTANCE = 236884944. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -347.55 SECS.
CROSSING TIME AT MARS IS 53054. S. OR 14:44:14 +/- 117.92 SECONDS

BATSE BURST TRIGGER

NO.: 6342

TIME: TJD=0681 SECONDS=53402

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=48.1 AZIMUTH=111.0 ERROR=6.732 DEGREES

COMMENTS:
GRB.DUR~0.12S. DOUBLE PULSES. VISIBLE ABOVE 300 KEV. THE OTHER PULSE AT T+11 S
IS UNRELATED. POSSIBLY SYSTEMATIC EFFECT.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6342	970821	10681	53402	6700	226	-77	.12

BATSE BURST# 6342

ULYSSES RT 22/ 8/97

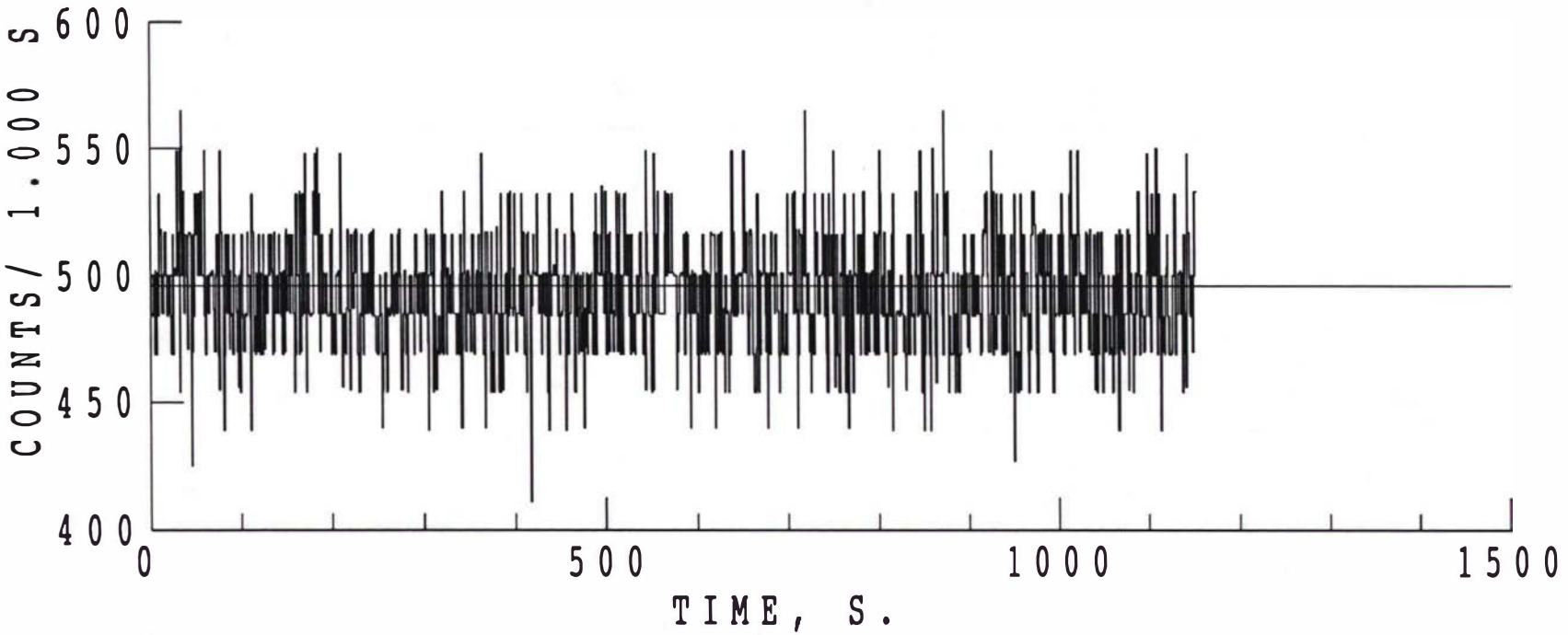
21/ 8/97 53604.207 s

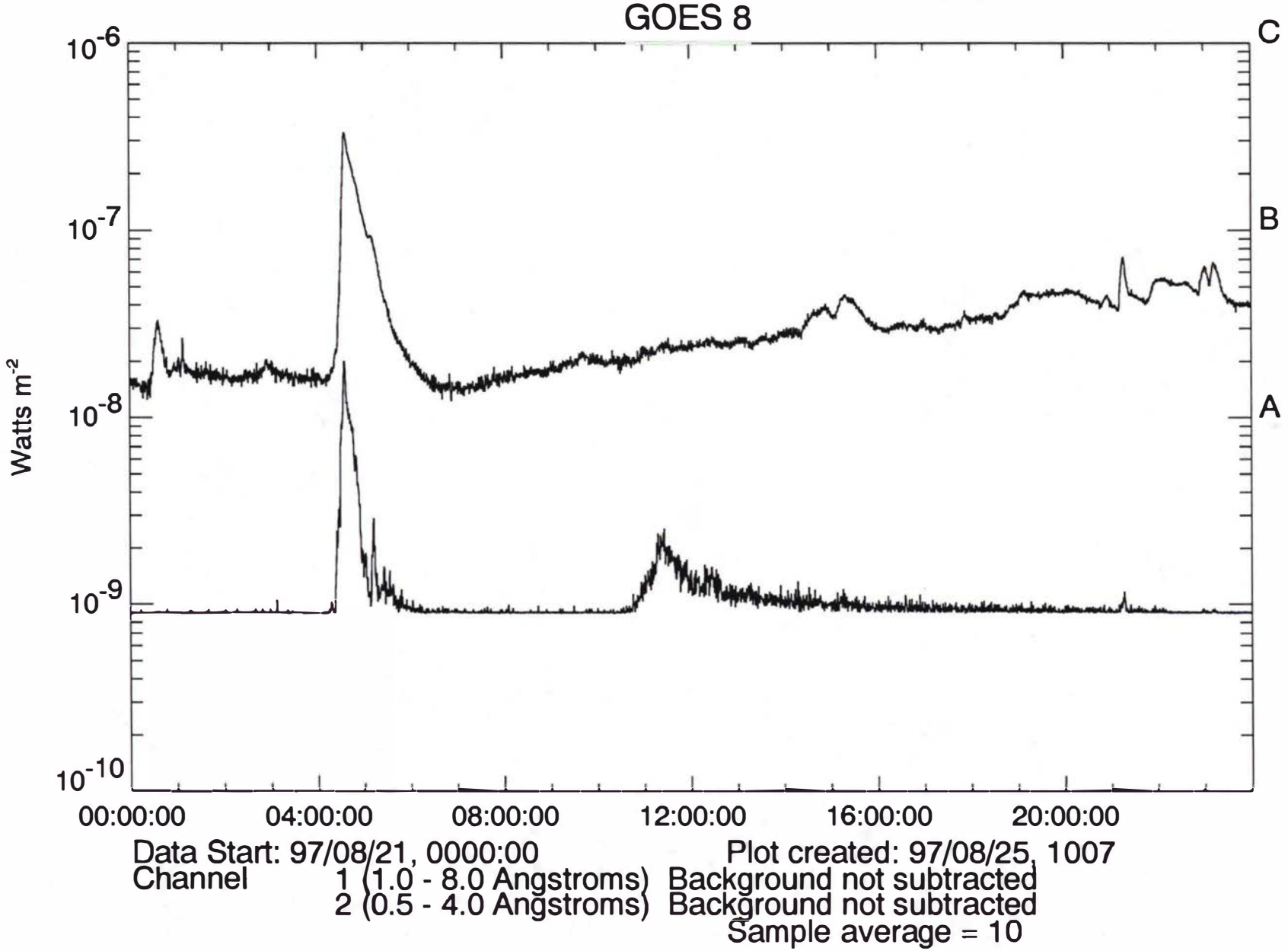
0.250 S INTERVALS REGROUPED BY 4

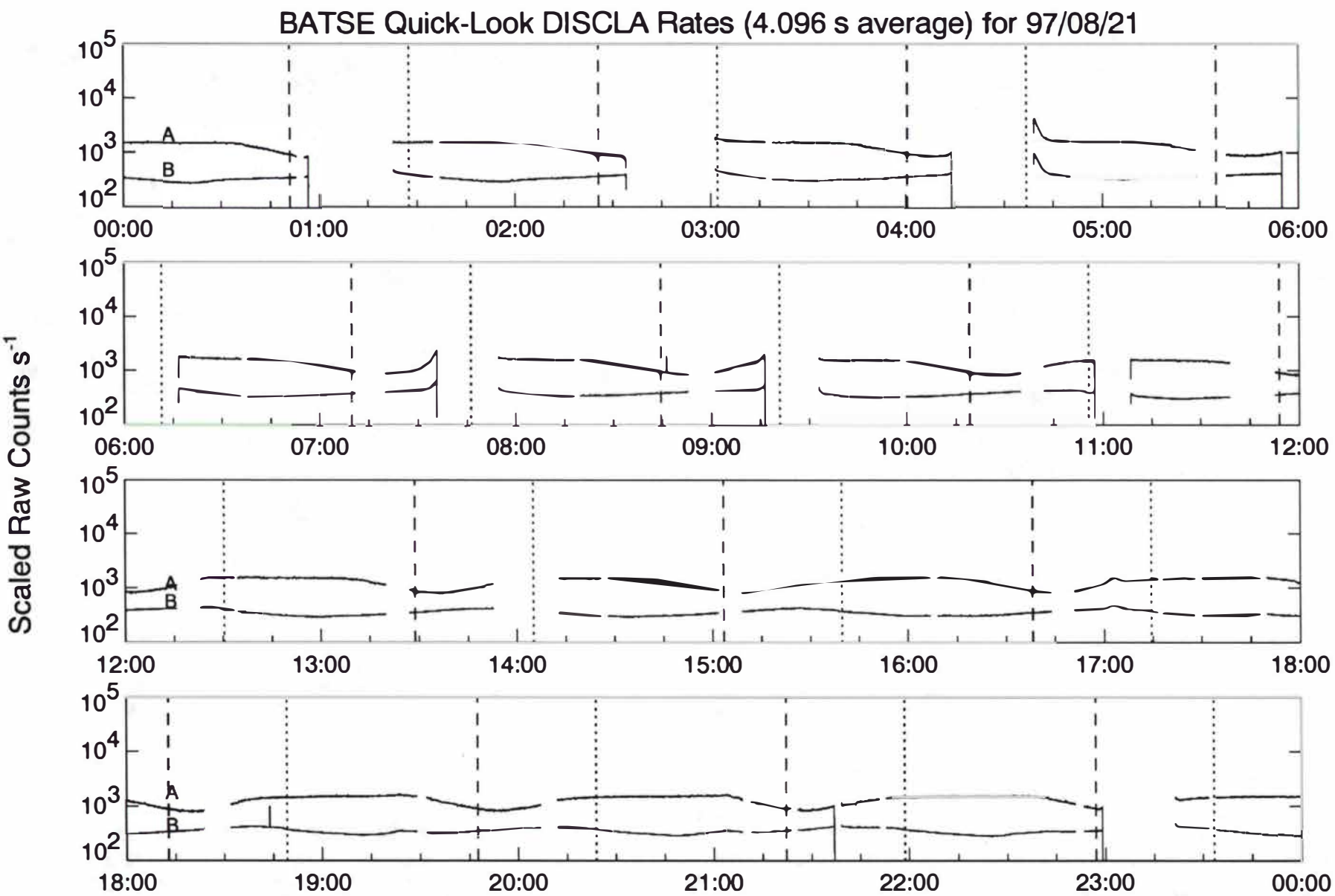
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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: 97/08/21, 0000:00
Plot created: 97/08/25, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

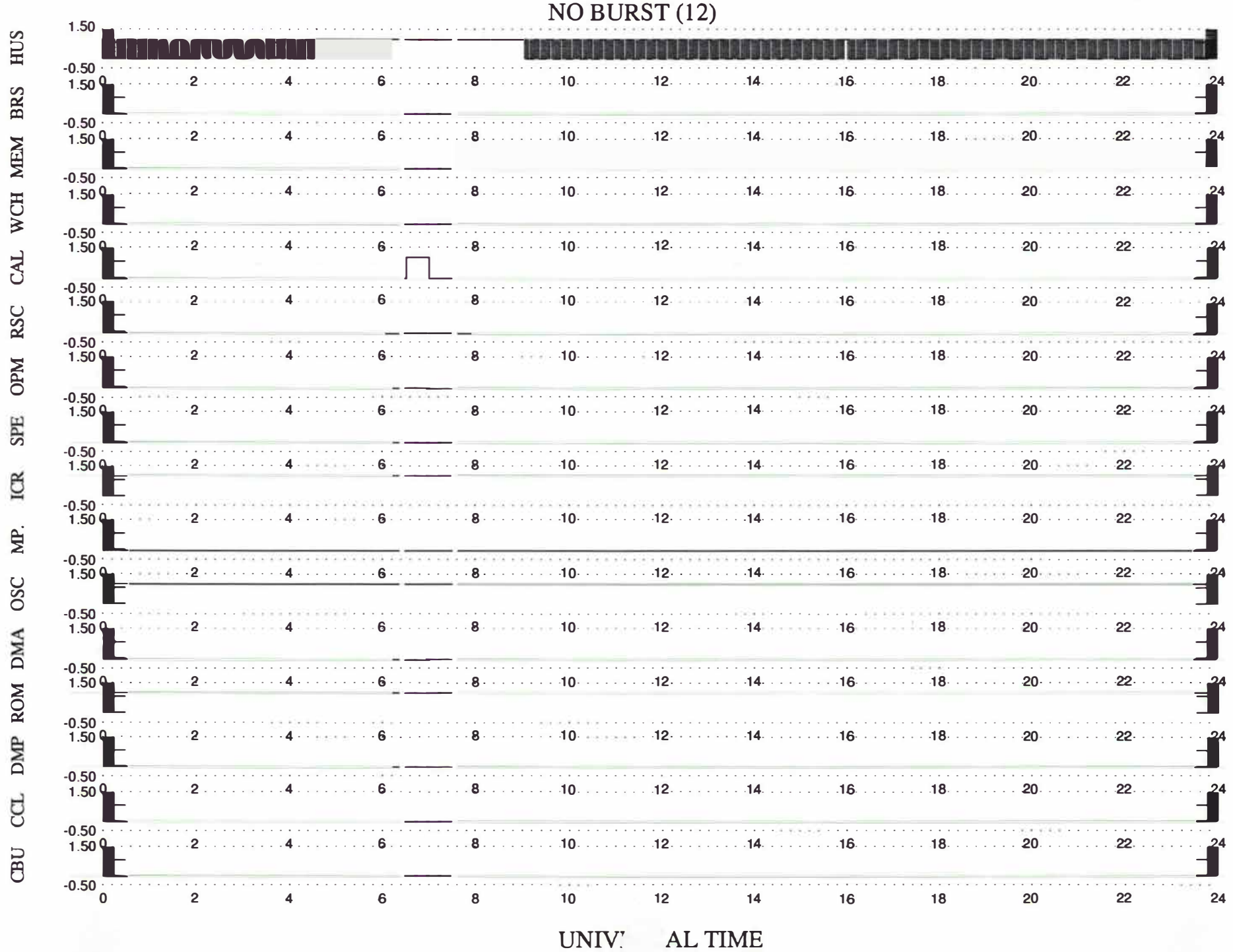


Current Time: 97/08/25, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

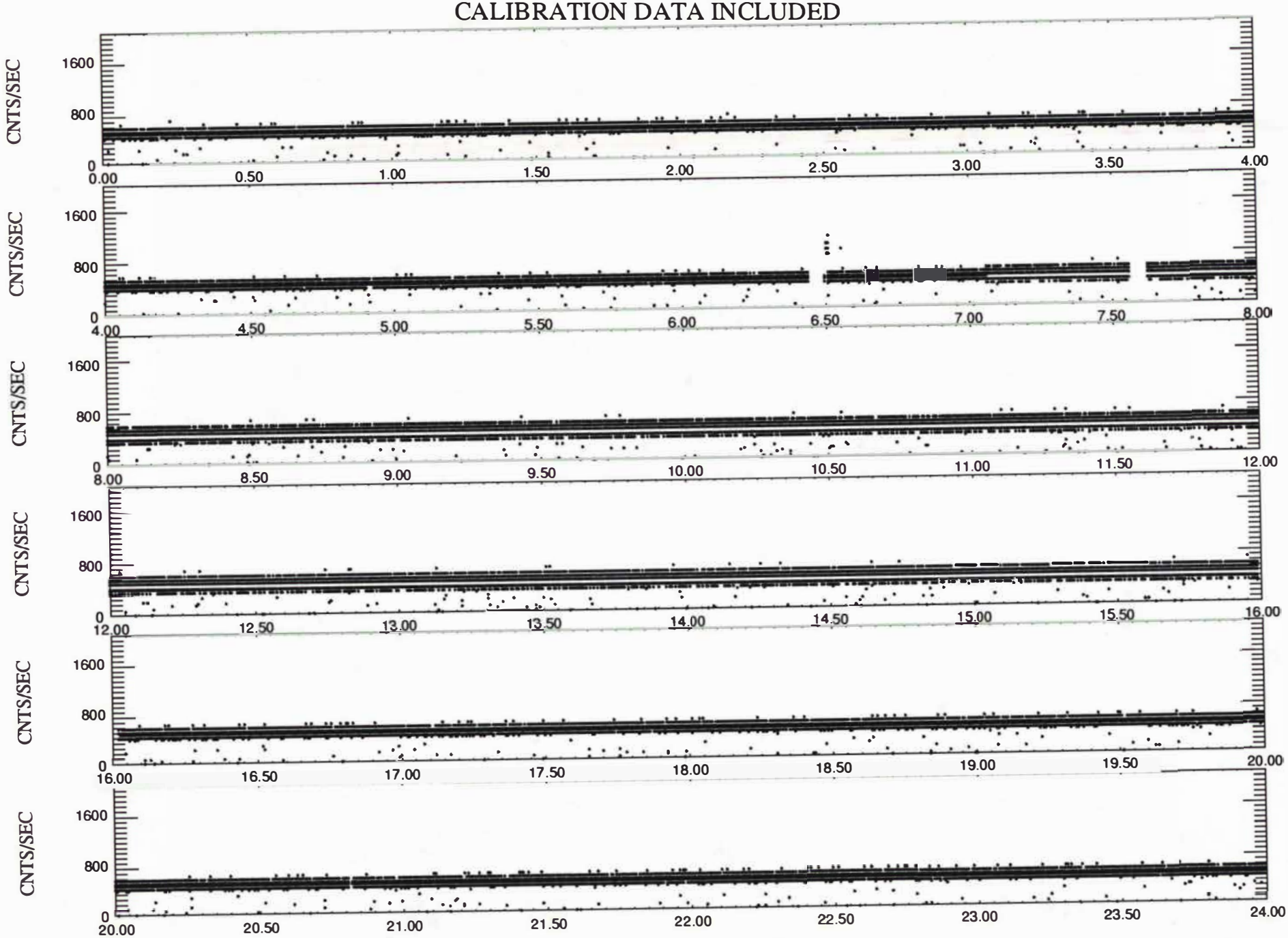
* Solar Burst Trigger
\+ Solar Flare

HUS MODES EDR day 233, year 1997 to day 233, year 1997 1/6/98



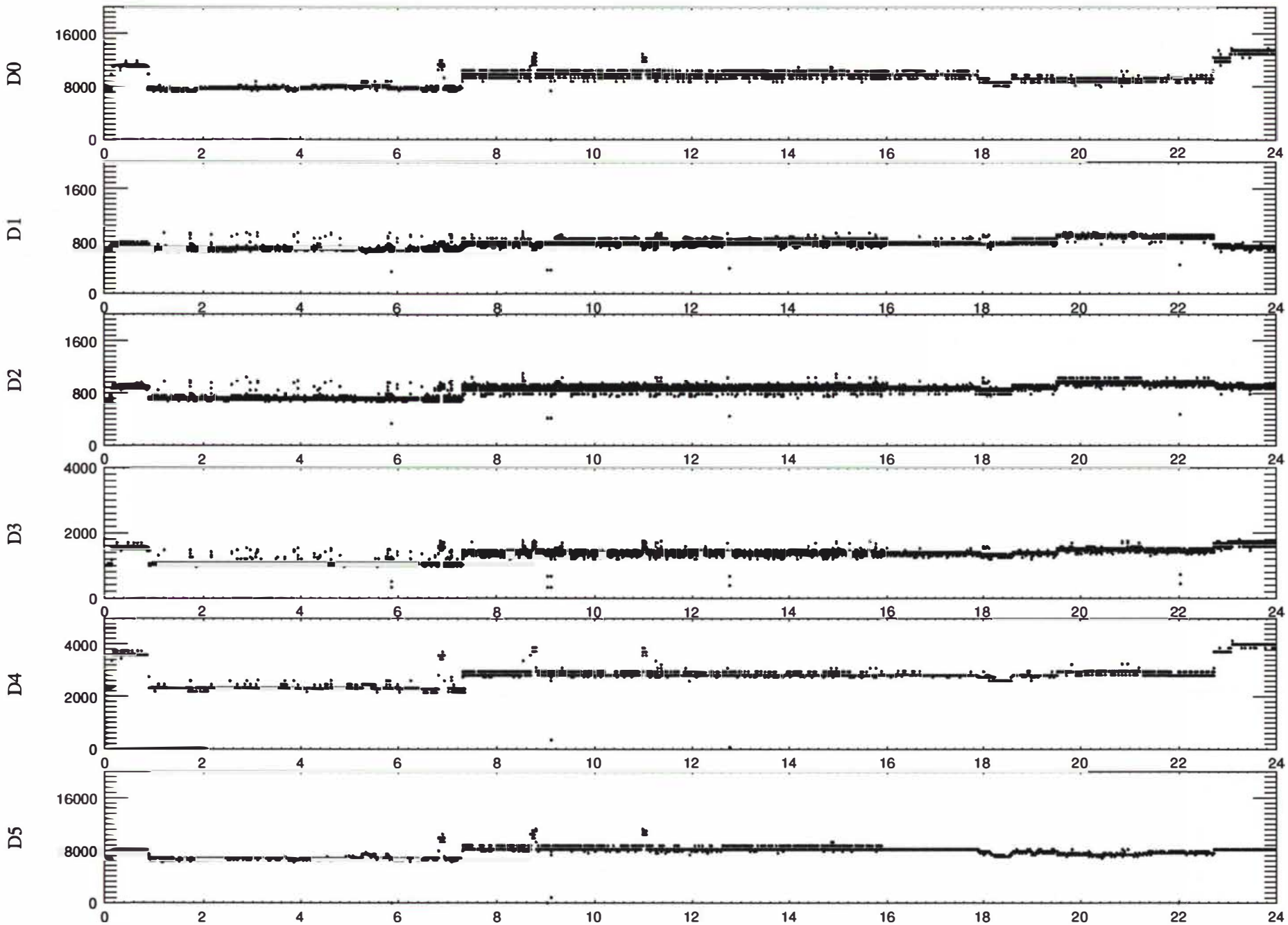
HUS 2A, MODE 1, NOT AVERAGED EDR day 233, year 1997 to day 233, year 1997 1/6/98

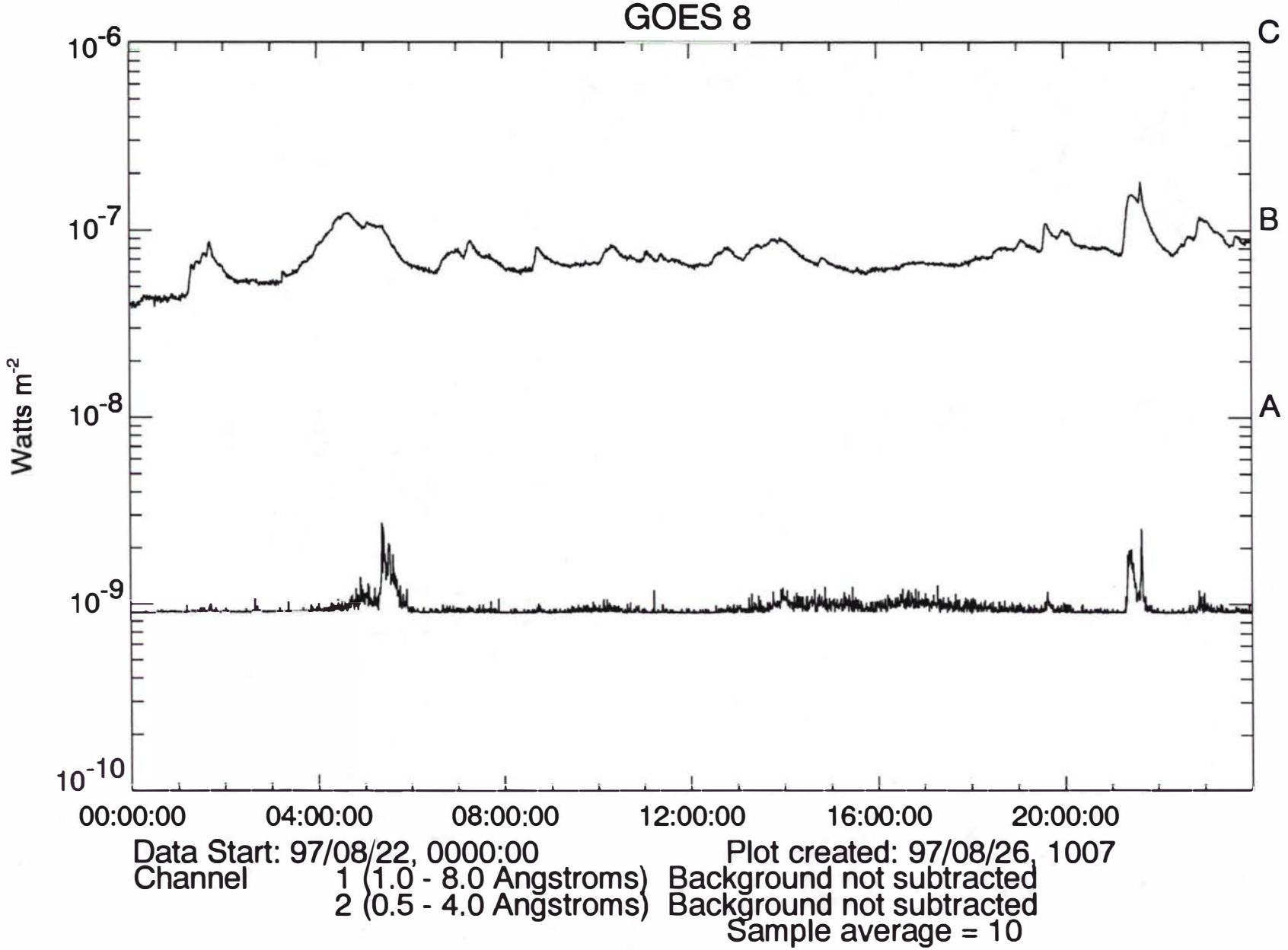
CALIBRATION DATA INCLUDED

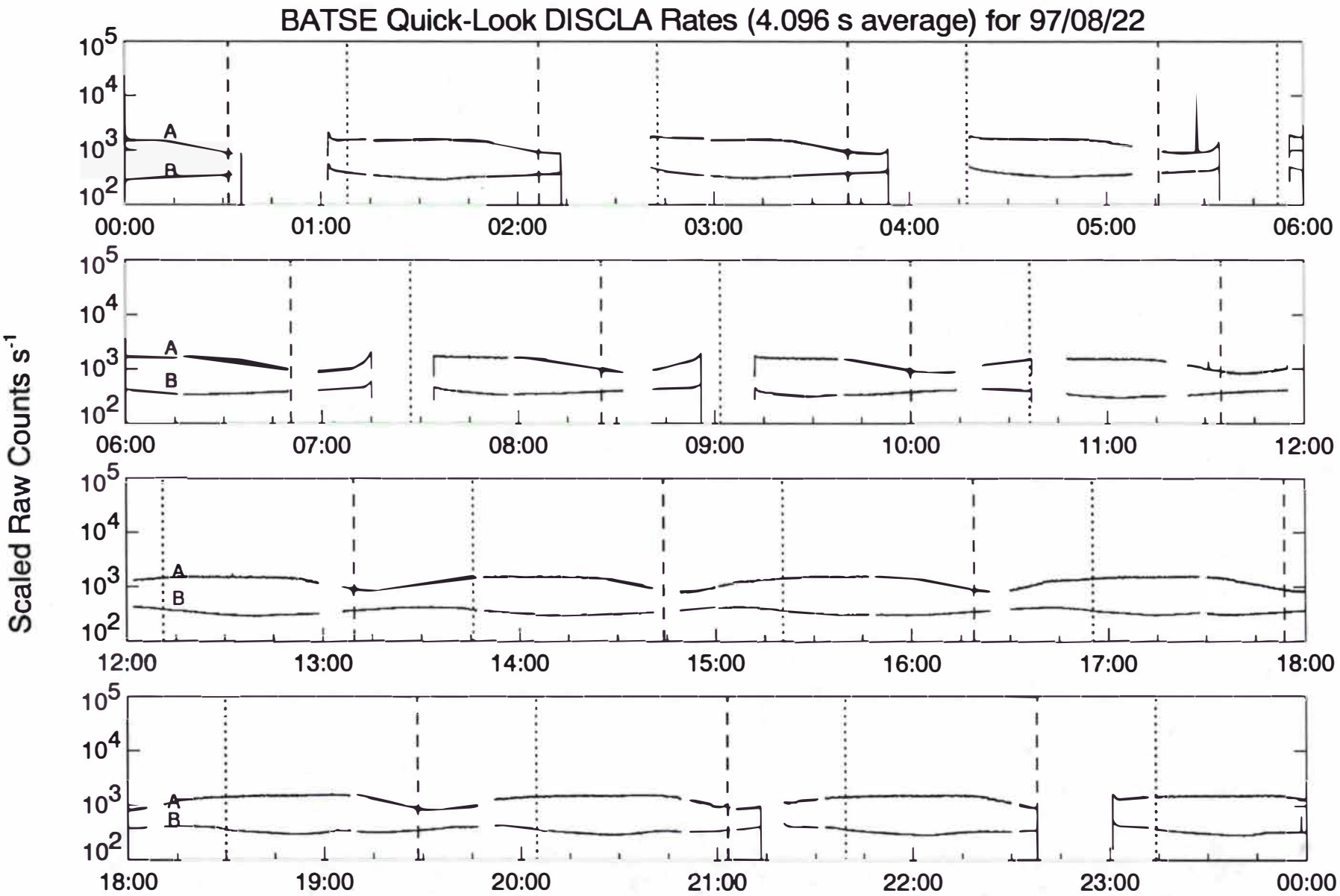


UNIV! AL TIME

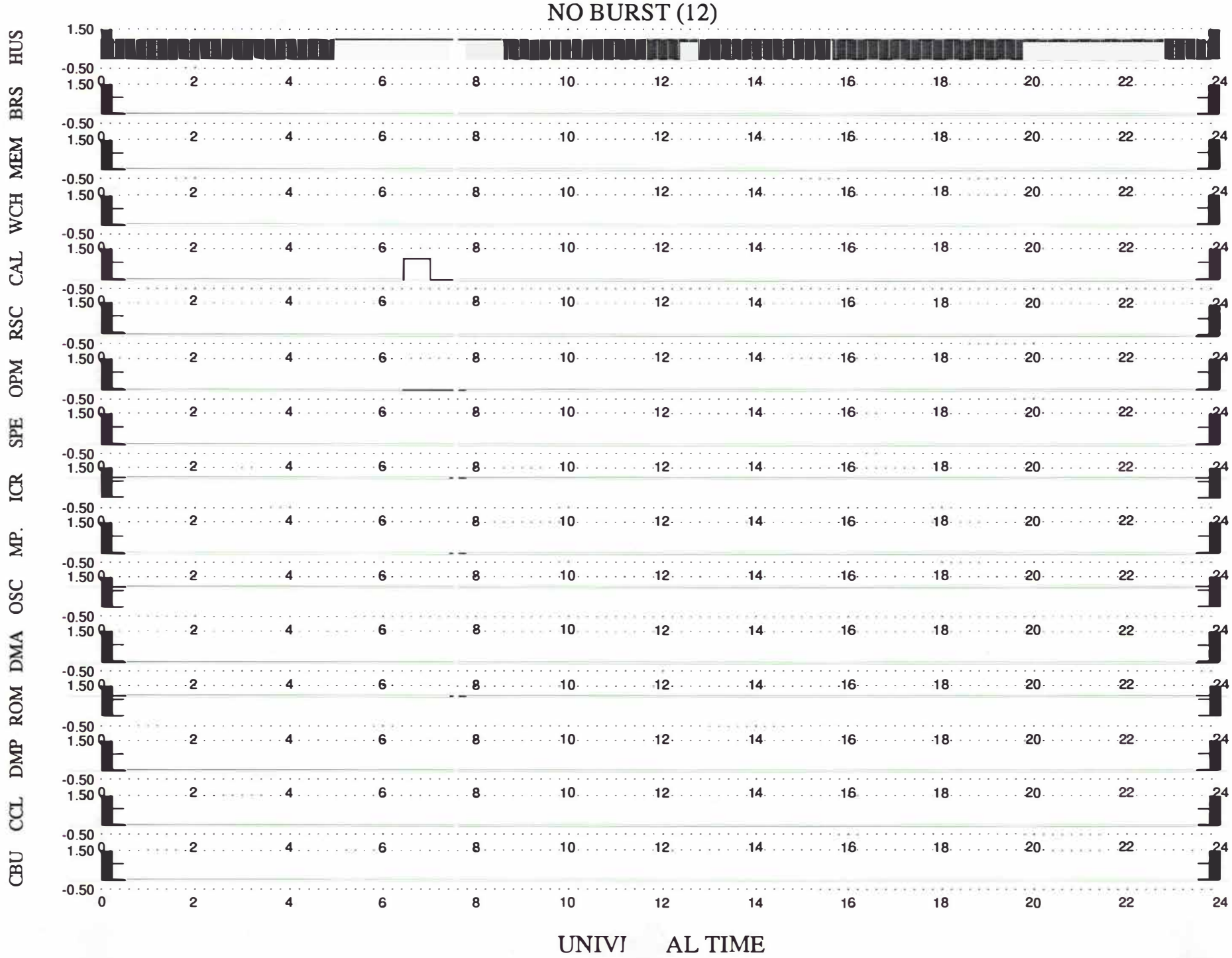
HUS 2B COUNTS / SEC EDR day 233, year 1997 to day 233, year 1997 1/6/98




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: 97/08/22, 0000:00
Plot created: 97/08/26, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

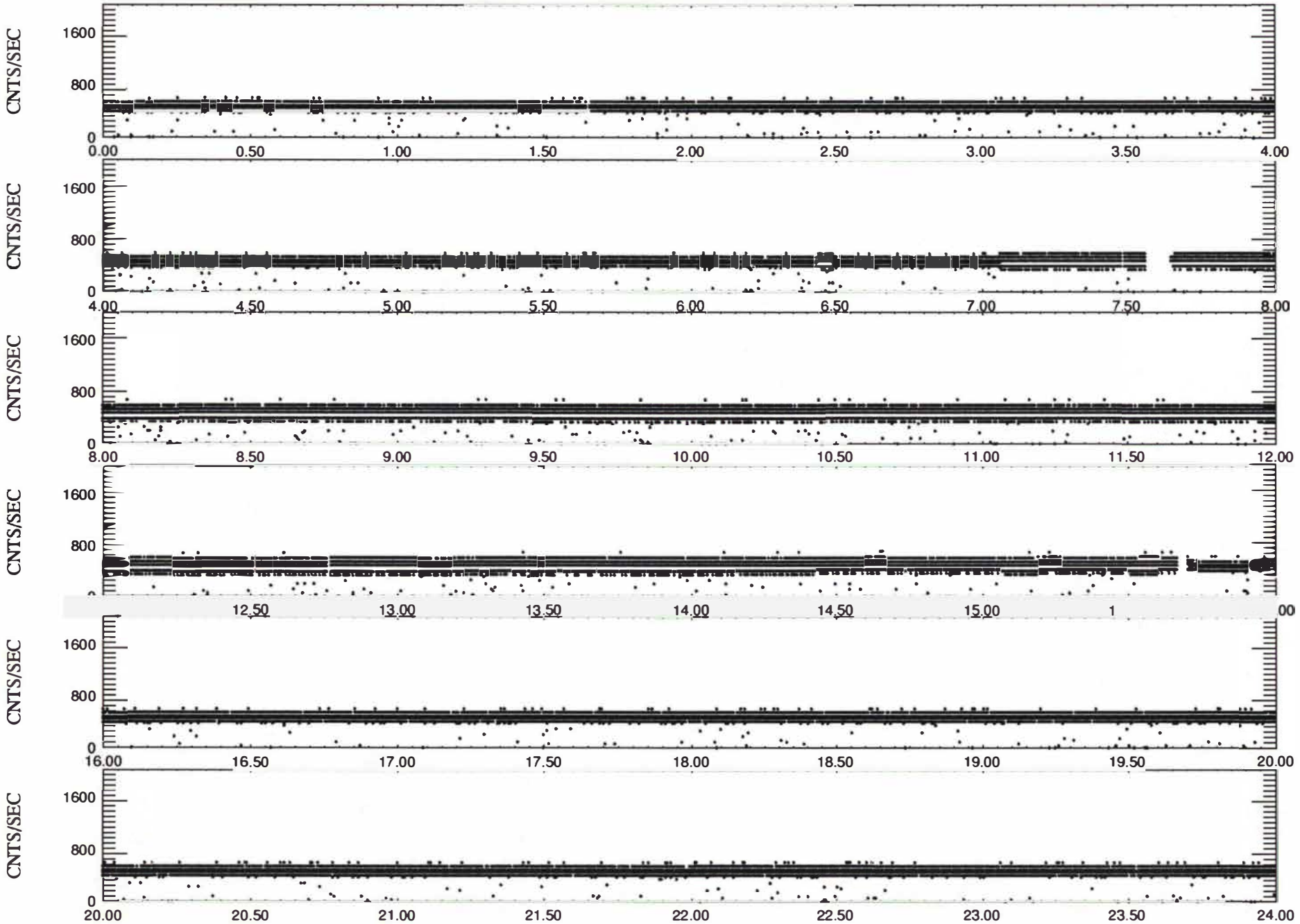

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/22
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/26, 1009 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 234, year 1997 to day 234, year 1997 1/6/98



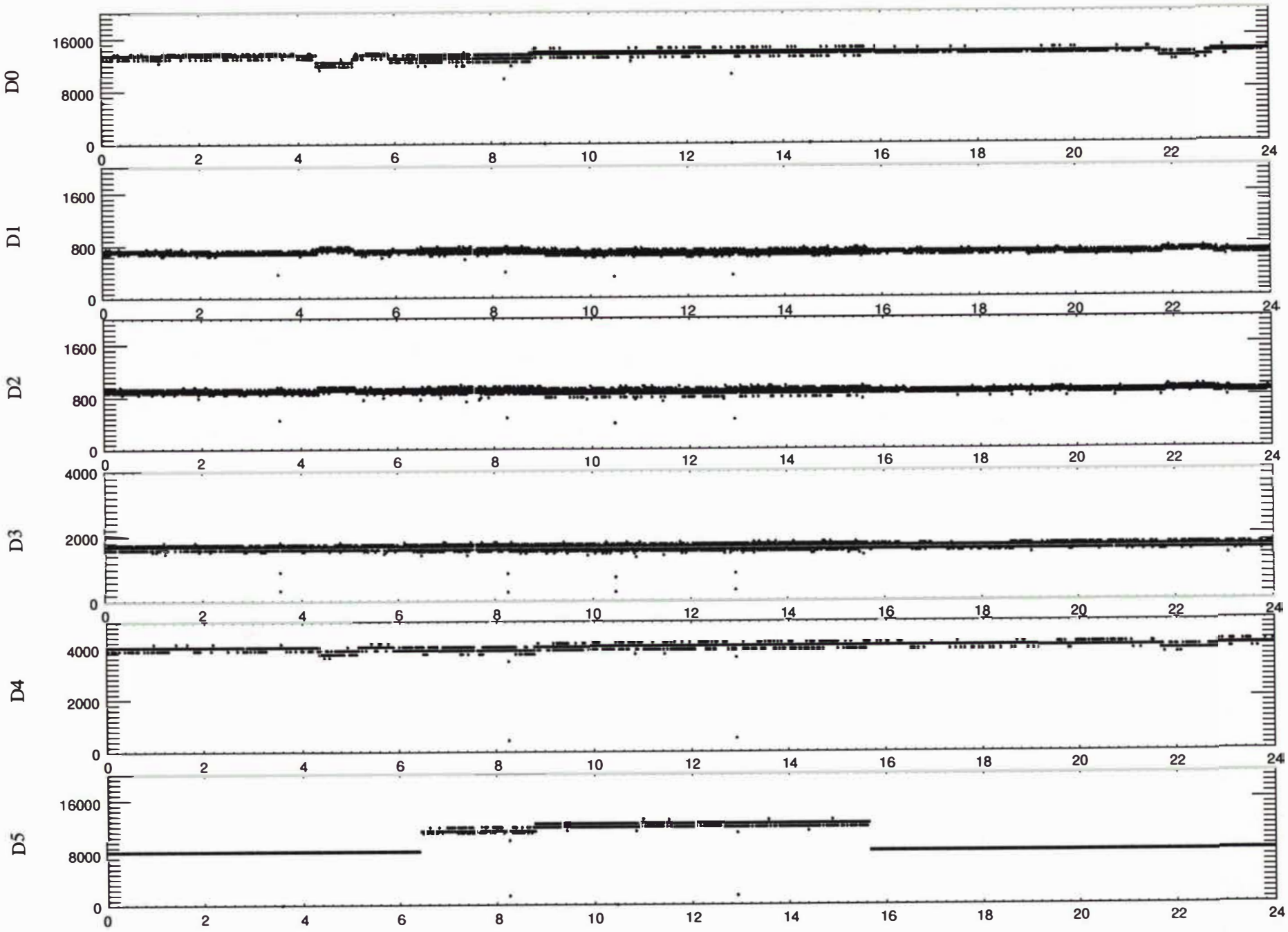
HUS 2A, MODE 1, NOT AVERAGED EDR day 234, year 1997 to day 234, year 1997 1/6/98

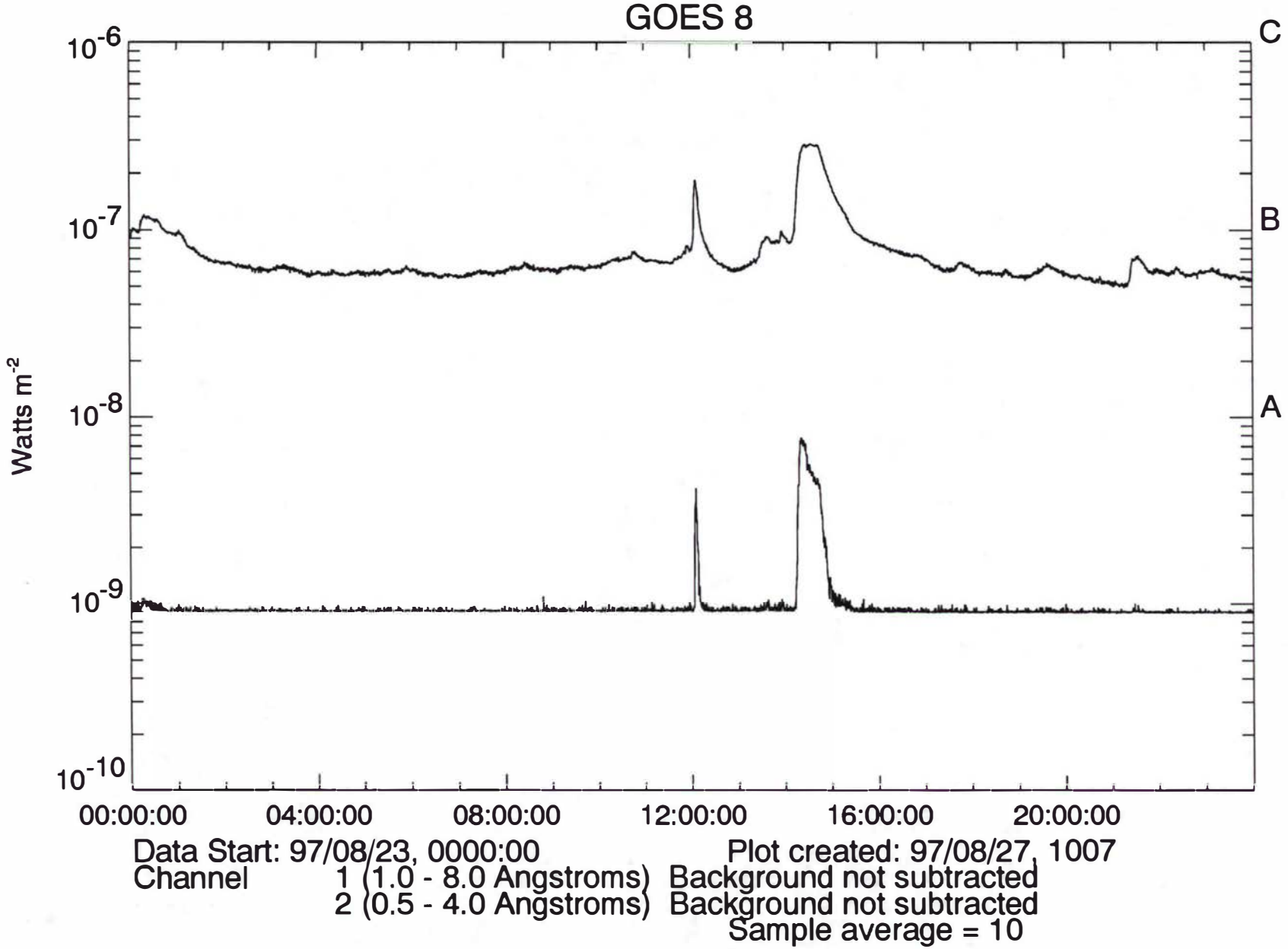
CALIBRATION DATA INCLUDED

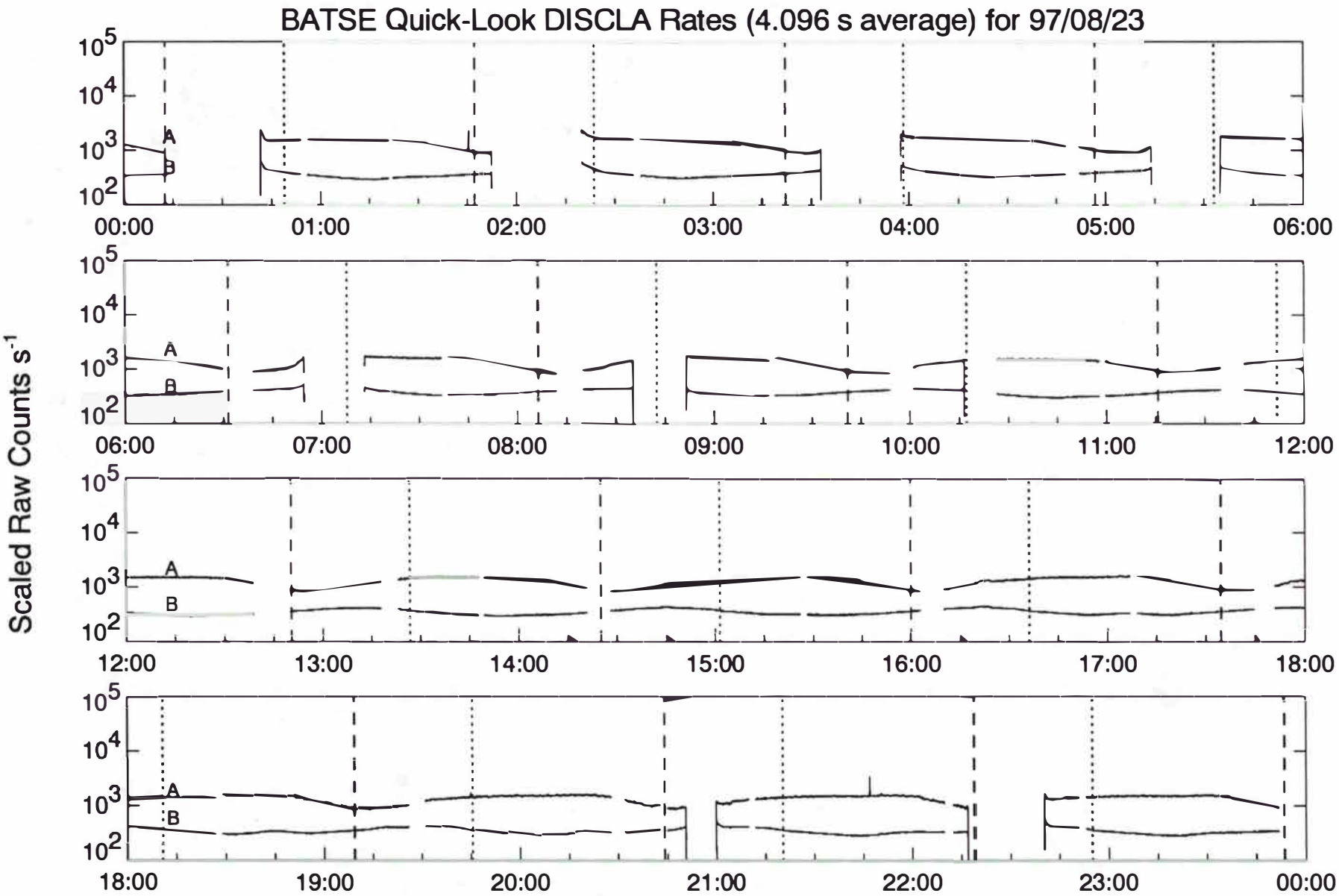


UNIV' 'AL TIME

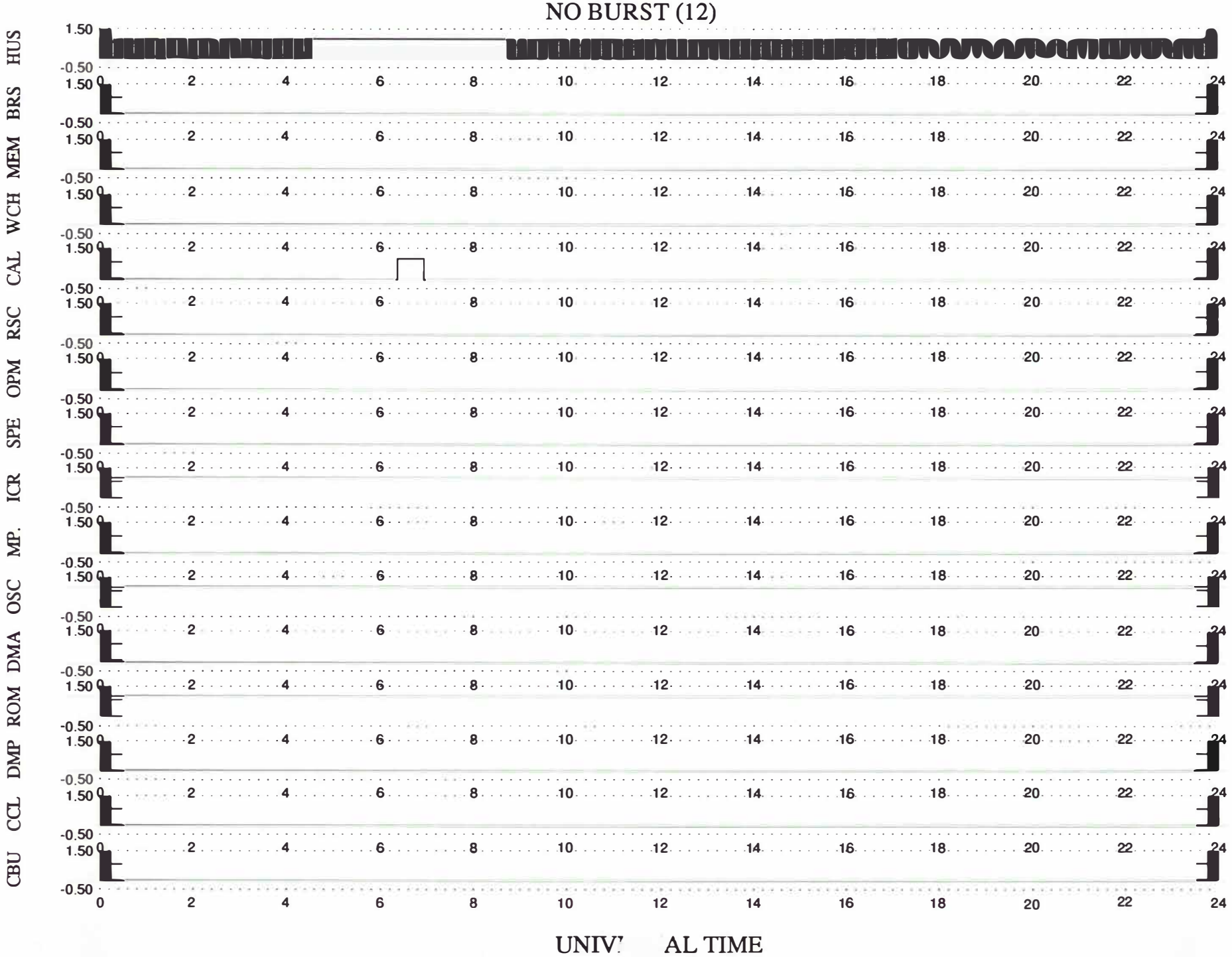
HUS 2B COUNTS / SEC EDR day 234, year 1997 to day 234, year 1997 1/6/98




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: 97/08/23, 0000:00
Plot created: 97/08/27, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

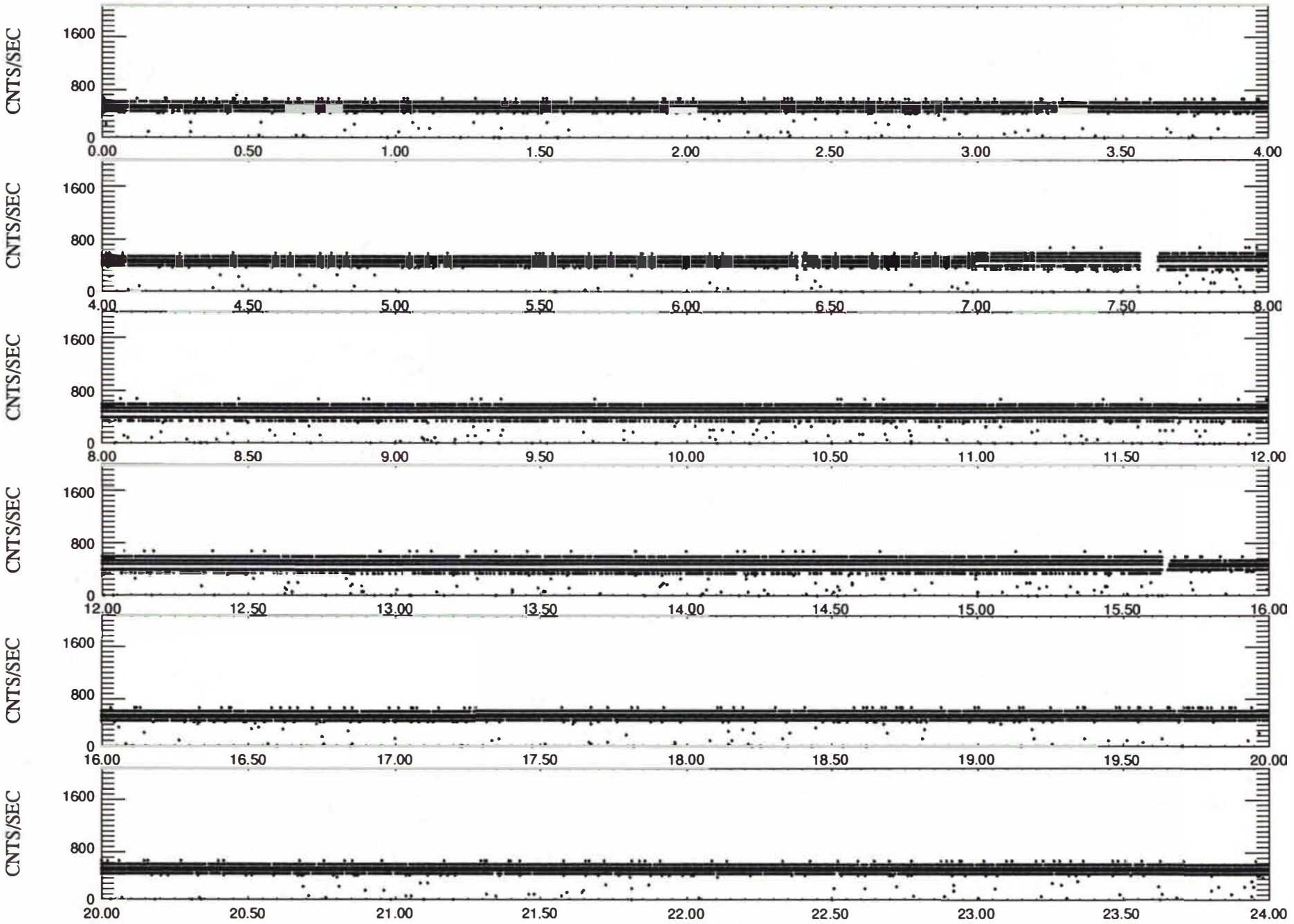

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/23
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/27, 1008 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 235, year 1997 to day 235, year 1997 1/6/98



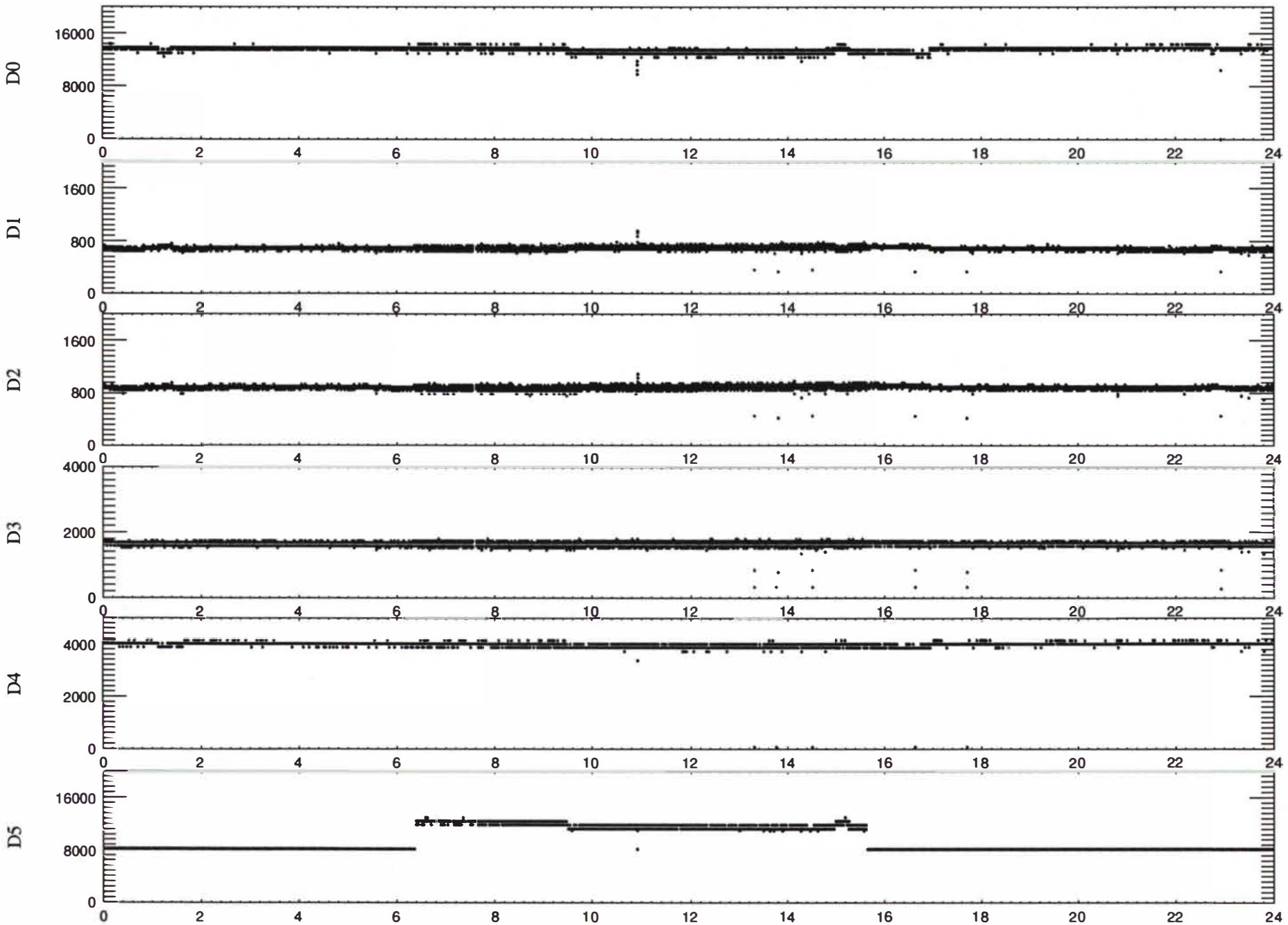
HUS 2A, MODE 1, NOT AVERAGED EDR day 235, year 1997 to day 235, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV[illegible]AL TIME

HUS 2B COUNTS / SEC EDR day 235, year 1997 to day 235, year 1997 1/6/98



From SURASAK@SSLLES.MSFC.NASA.GOV Wed Aug 27 07:43 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 HAA13342; Wed, 27 Aug 1997 07:43:09 -0700
From: SURASAK@SSLLES.MSFC.NASA.GOV
Date: Wed, 27 Aug 1997 9:42:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970827094257.202068e8@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6343
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6343
EVENT OF 1997 AUG 24 DAY OF YEAR=236
EVENT CROSSING TIME AT BATSE : 20976. S. OR 05:49:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 192.000 33.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 8/ 97 IS:
RA= 160.375 DEC= 19.796 DIST= 6.226 AU
BATSE-ULYSSES DISTANCE = 931475132. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=148.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2660.82 SECS.
CROSSING TIME AT ULYSSES IS 18315. S. OR 05:05:15 +/- 288.13 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 8/ 97 IS:
RA= 213.460 DEC= -14.200 DIST= 1.600 AU
MARS-BATSE DISTANCE = 239420464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -497.60 SECS.
CROSSING TIME AT MARS IS 20478. S. OR 05:41:18 +/- 100.89 SECONDS

BATSE BURST TRIGGER
NO.: 6343

TIME: TJD=0684 SECONDS=20976

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.7 AZIMUTH=340.9 ERROR=6.848 DEGREES

COMMENTS:
GRB. SPIKE, DUR~0.005S, FOLLOWED BY WEAKER PULSE; TOTAL DUR~0.1S.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6343	970824	10684	20976	5000	192	+33	.1

BATSE BURST# 6343

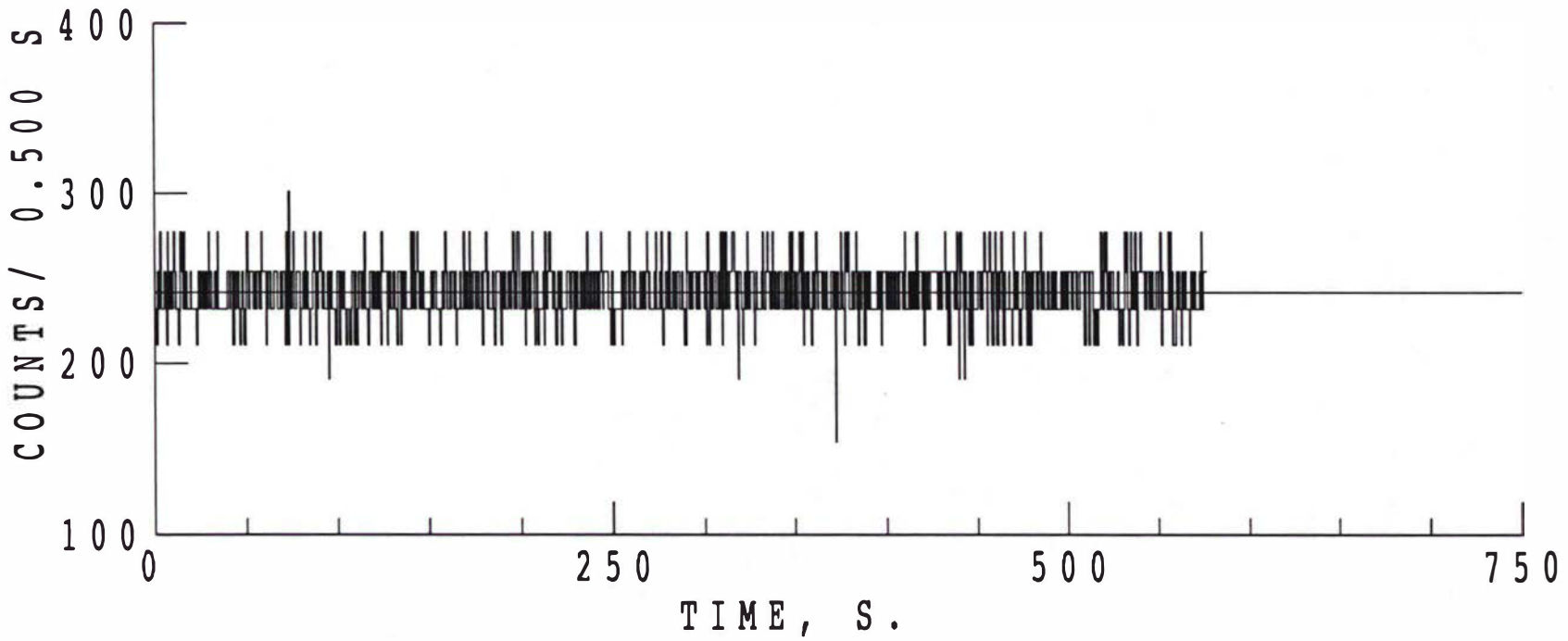
ULYSSES RT 27/ 8/97

24/ 8/97 18036.248 s

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 Thu Aug 28 07:16 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 HAA23625; Thu, 28 Aug 1997 07:16:09 -0700
Date: Thu, 28 Aug 1997 9:16:03 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970828091603.20206d1b@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6344
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6344
EVENT OF 1997 AUG 24 DAY OF YEAR=236
EVENT CROSSING TIME AT BATSE : 62594. S. OR 17:23:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 222.000 39.000
BATSE PEAK COUNTING RATE: 5800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 8/ 97 IS:
RA= 160.444 DEC= 19.746 DIST= 6.228 AU
BATSE-ULYSSES DISTANCE = 931635136. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=124.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1743.38 SECS.
CROSSING TIME AT ULYSSES IS 60851. S. OR 16:54:10 +/- 470.15 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 8/ 97 IS:
RA= 213.460 DEC= -14.200 DIST= 1.600 AU
MARS-BATSE DISTANCE = 239420464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -471.72 SECS.
CROSSING TIME AT MARS IS 62122. S. OR 17:15:22 +/- 104.72 SECONDS

BATSE BURST TRIGGER

NO.: 6344

TIME: TJD=0684 SECONDS=62594

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=72.8 AZIMUTH=316.8 ERROR=3.286 DEGREES

COMMENTS:
GRB. COMPLEX WITH MULTIPLE PULSES. DUR~100S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6344	970824	10684	62594	5800	222	+39	100

BATSE BURST# 6344

ULYSSES RT 28/ 8/97

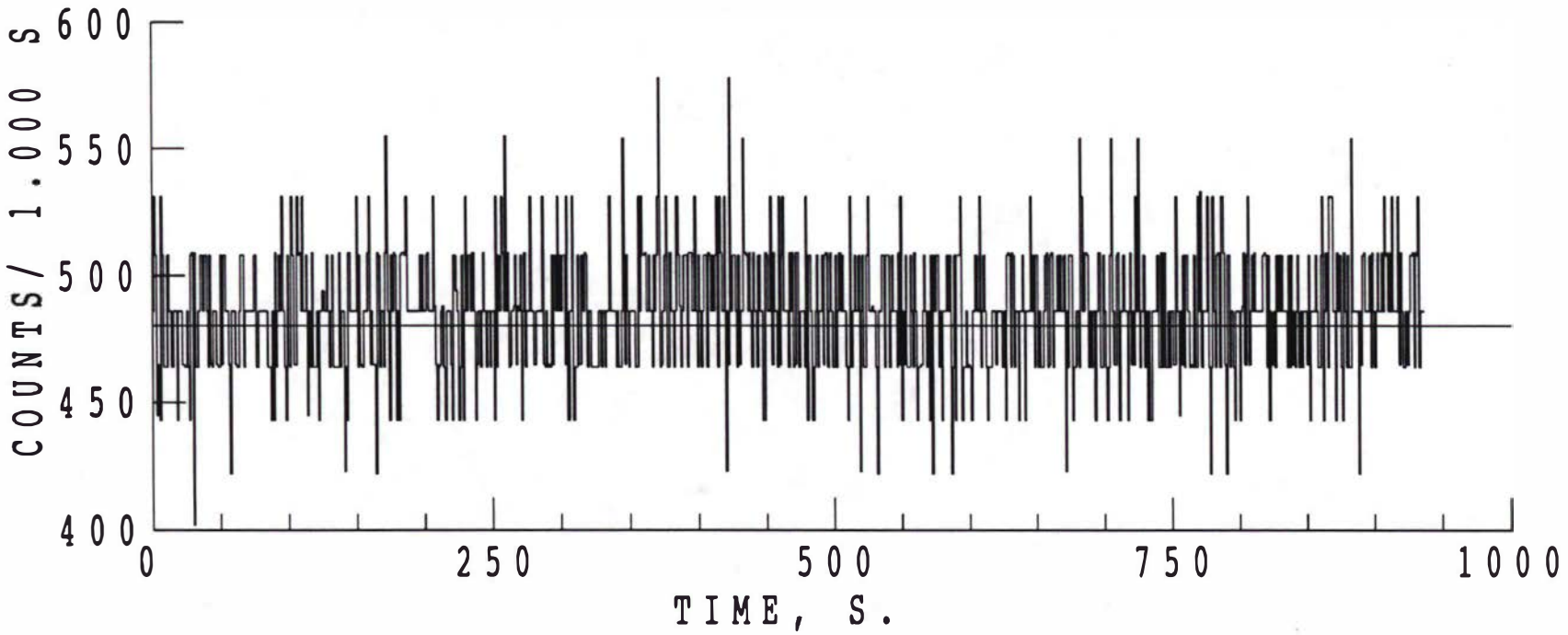
24/ 8/97 60372.227 s

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



Date: 07 Oct 09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

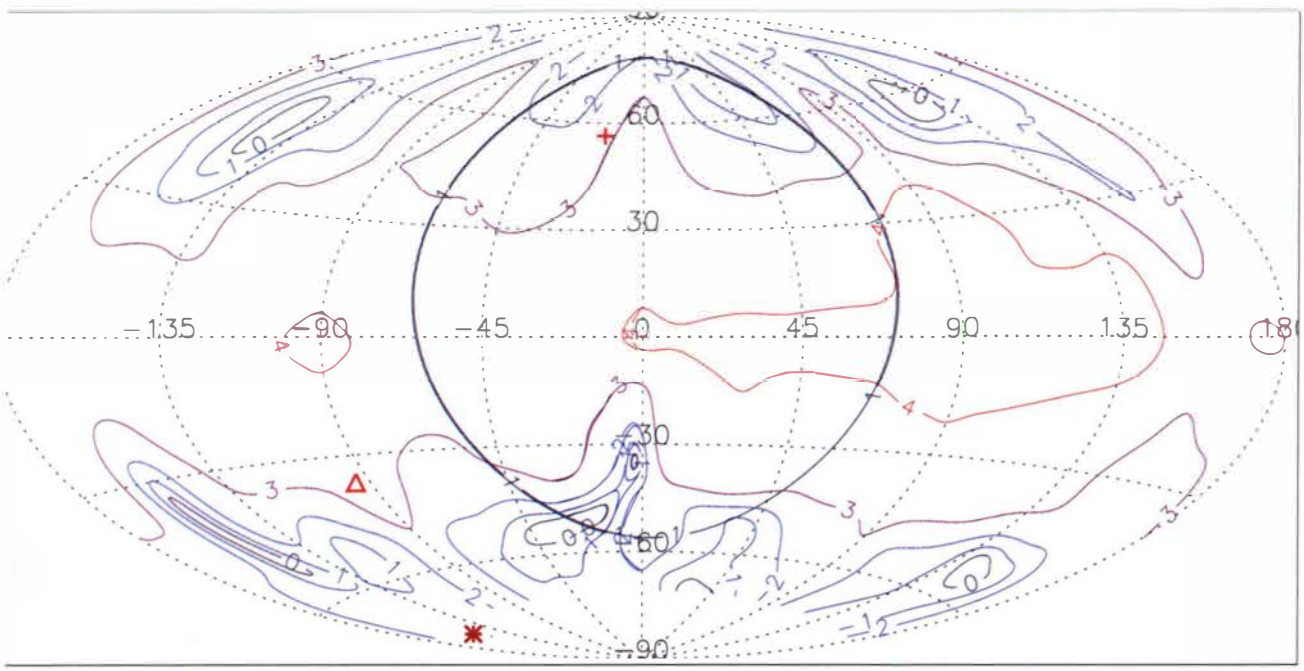
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

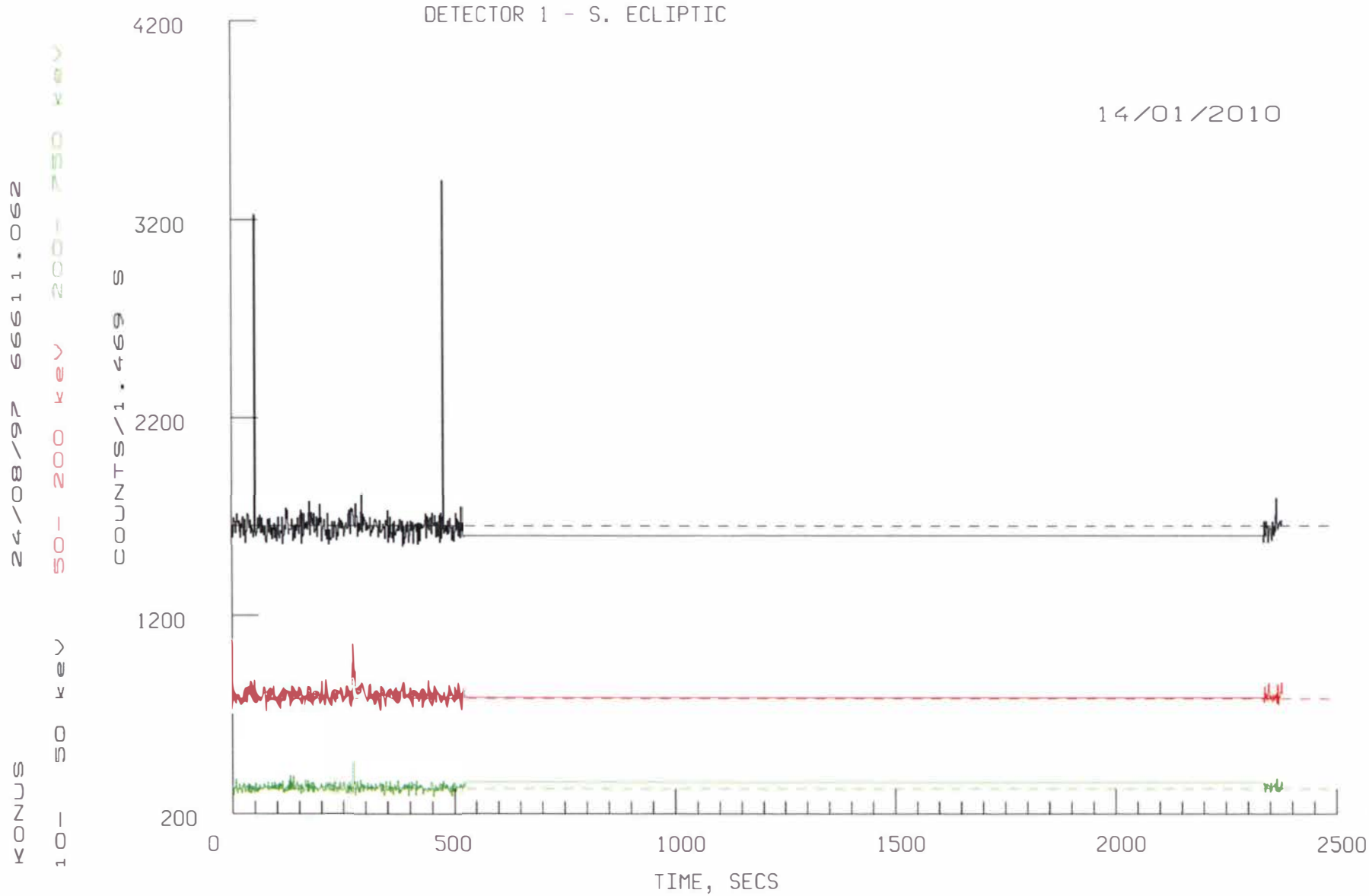
☐ Updated ephemeris used for bursts prior to September 30, 2003?

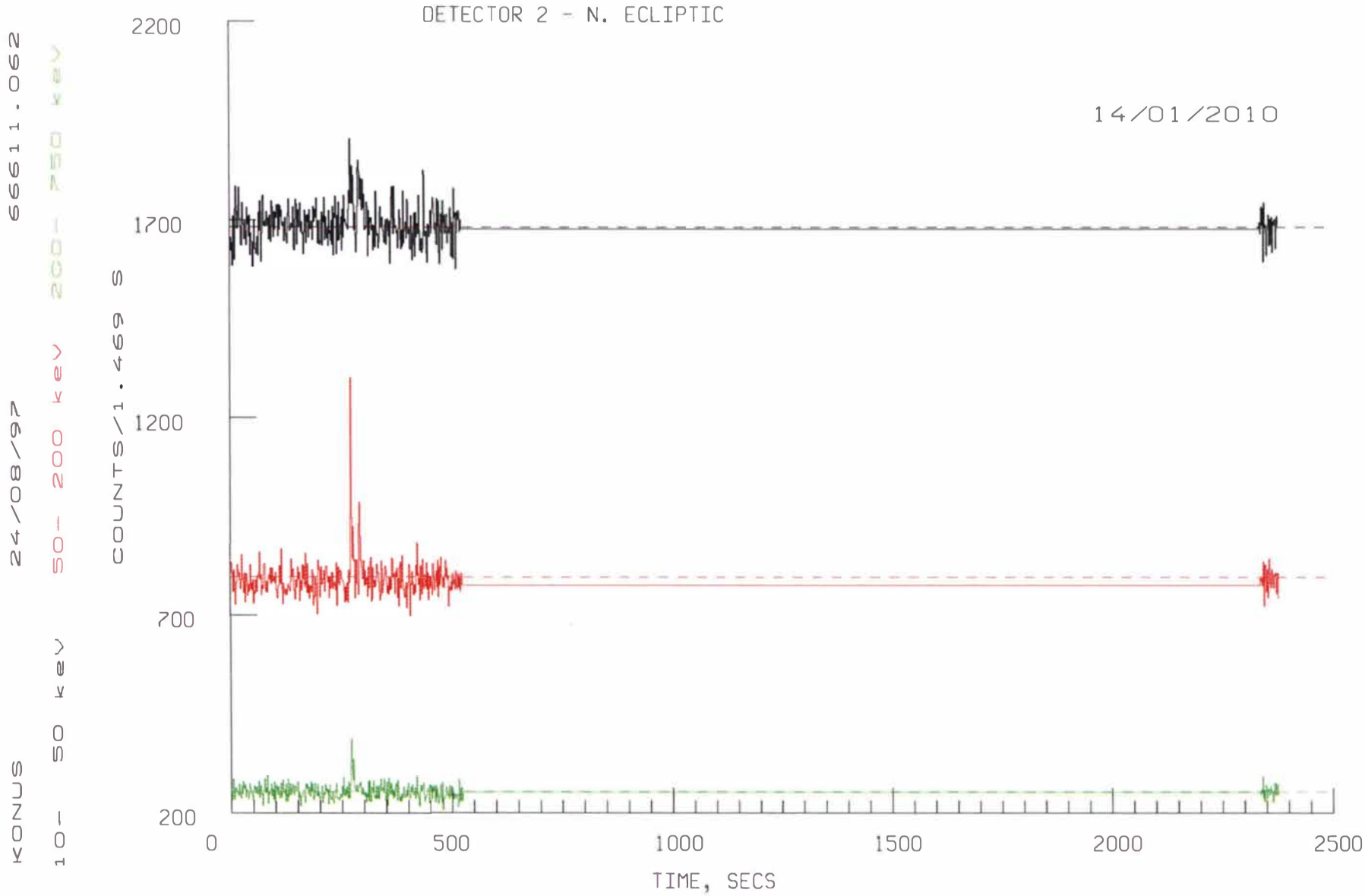
☑ ACCESS and MBL4 databases updated?

UKS triangulation, Konus EL, and SAX Earth-blocking are inconsistent. Use UK Δ, Konus EL, and SAX Earth-blocking

BeppoSAX Local Sky



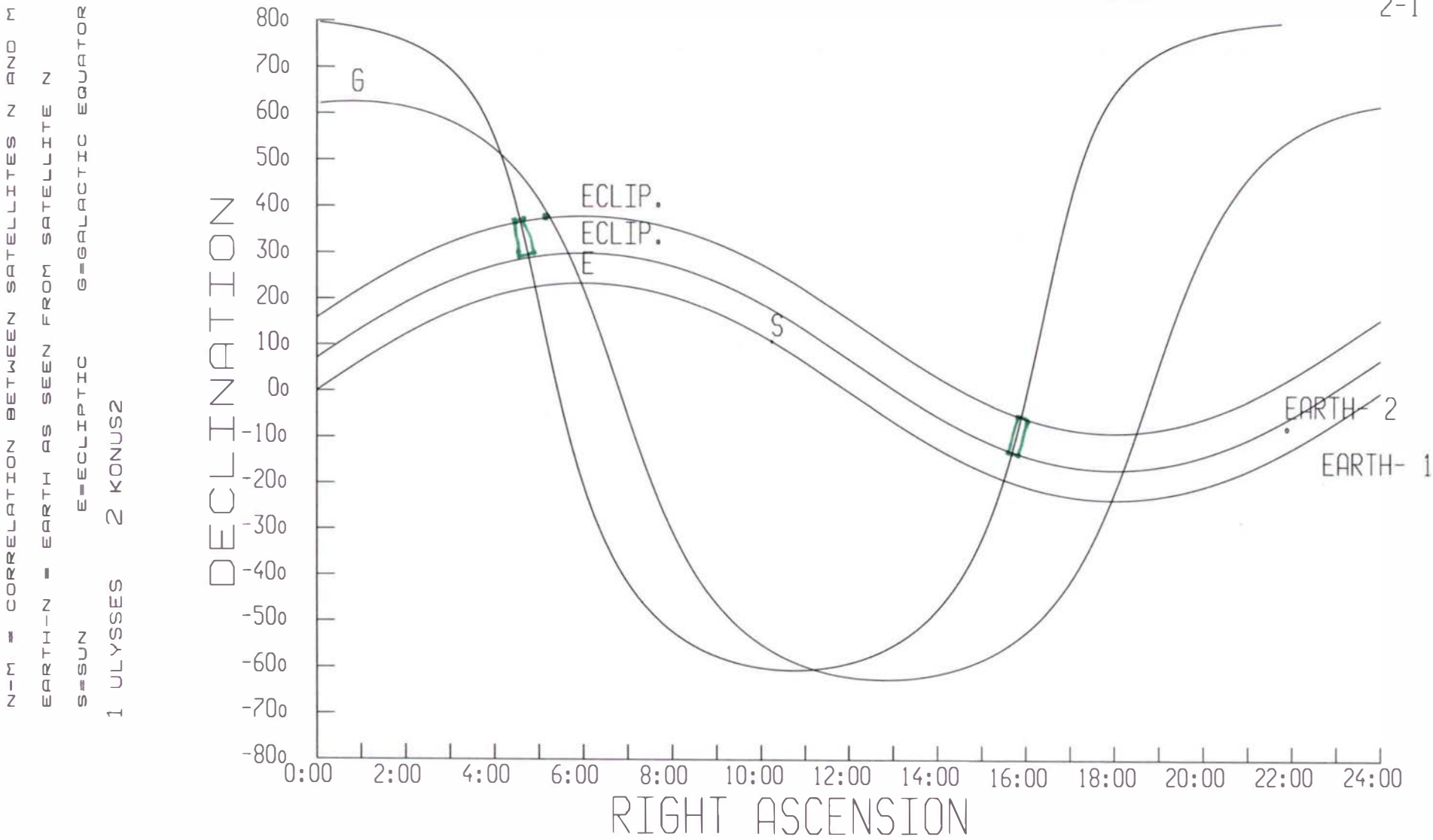

DETECTOR 1 - S. ECLIPTIC
14/01/2010
4200
3200
2200
1200
200
0
500
1000
1500
2000
2500
TIME, SECS
COUNTS/1.469 S
KONUS
24/08/97 66611.062
10 - 50 keV
50 - 200 keV
> 200 keV


DETECTOR 2 - N. ECLIPTIC
14/01/2010
KONUS
24/08/97
666111.062
10 - 50 keV
50 - 200 keV
200 - 750 keV
COUNTS/1.469 S
2200
1700
1200
700
200
0
500
1000
1500
2000
2500
TIME, SECS

EVENT OF AUG 24, 1997 18:24 - ignoring SAX

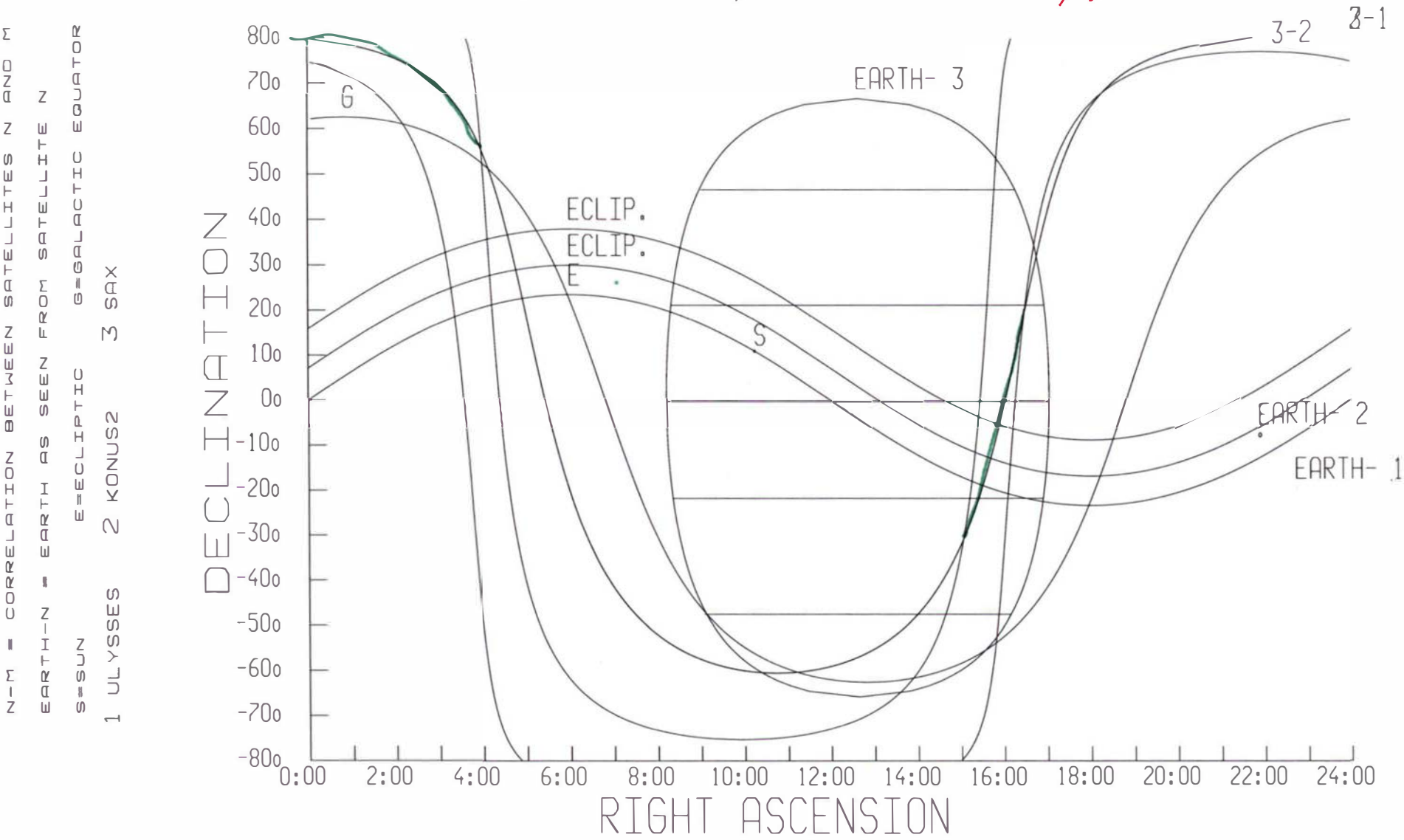
13/01/2010

2-1



EVENT OF AUG 24, 1997 18:24 - U,K,S

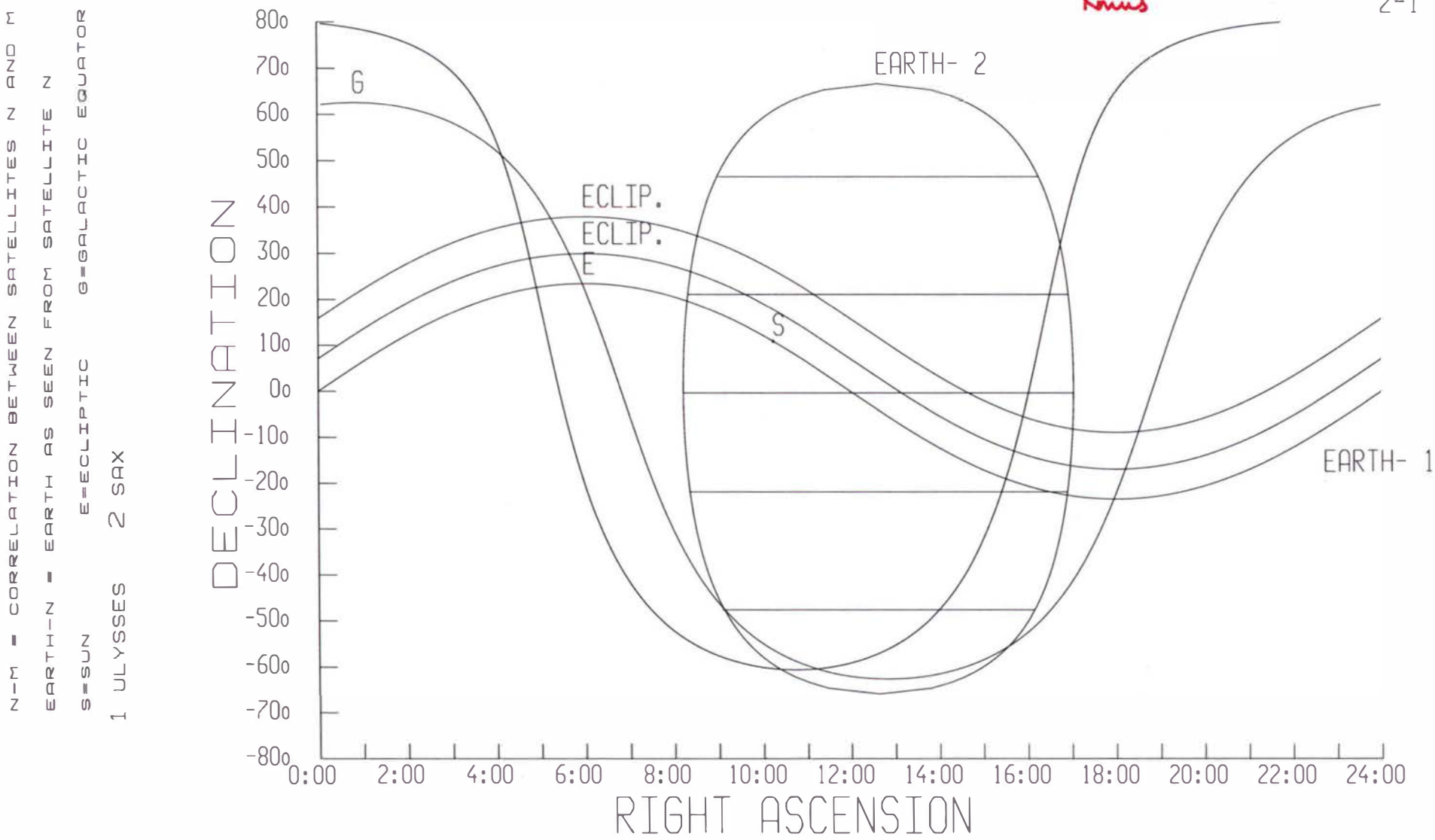
13/01/2010

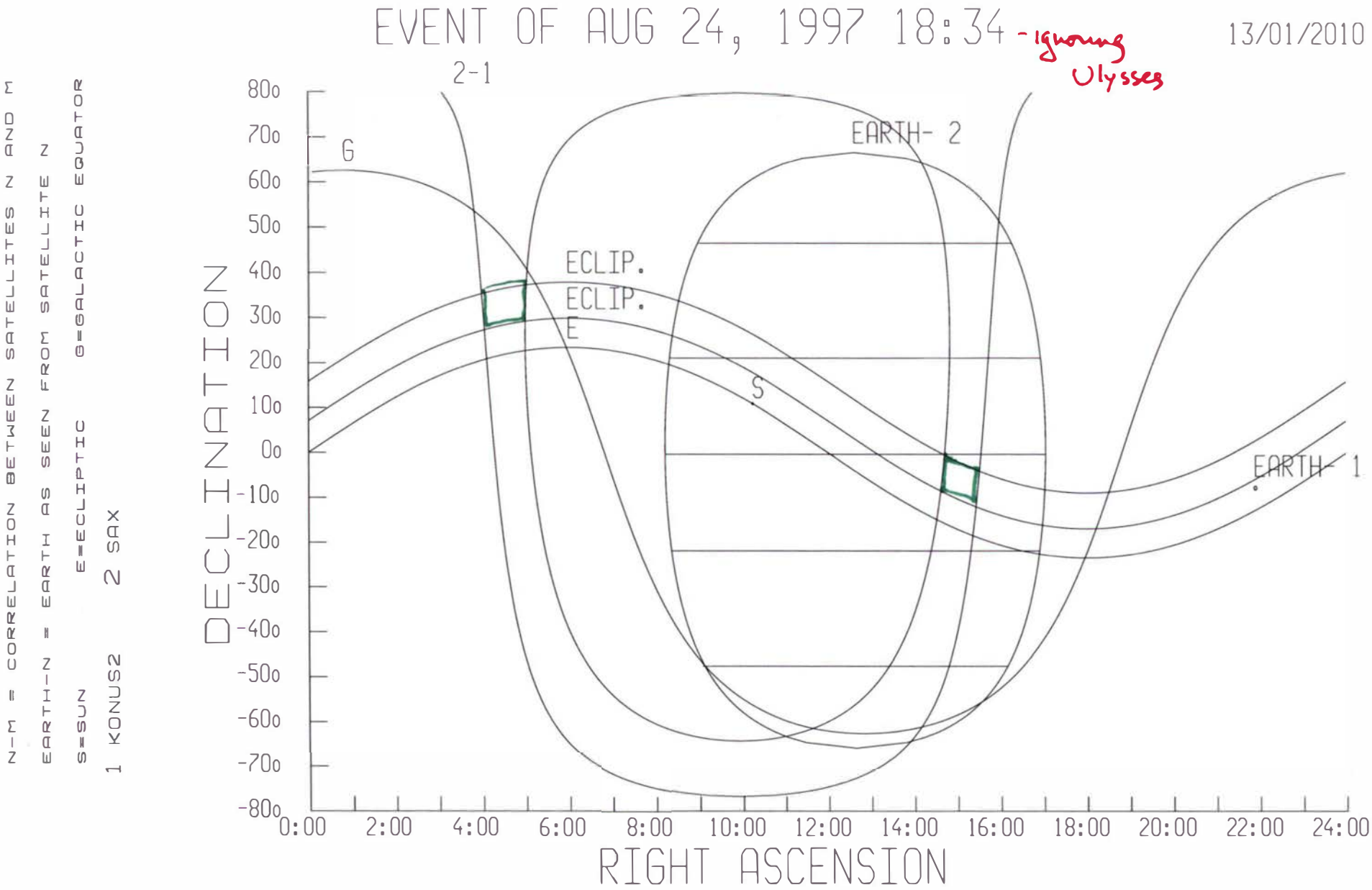


EVENT OF AUG 24, 1997 18:24 - ignoring Konus

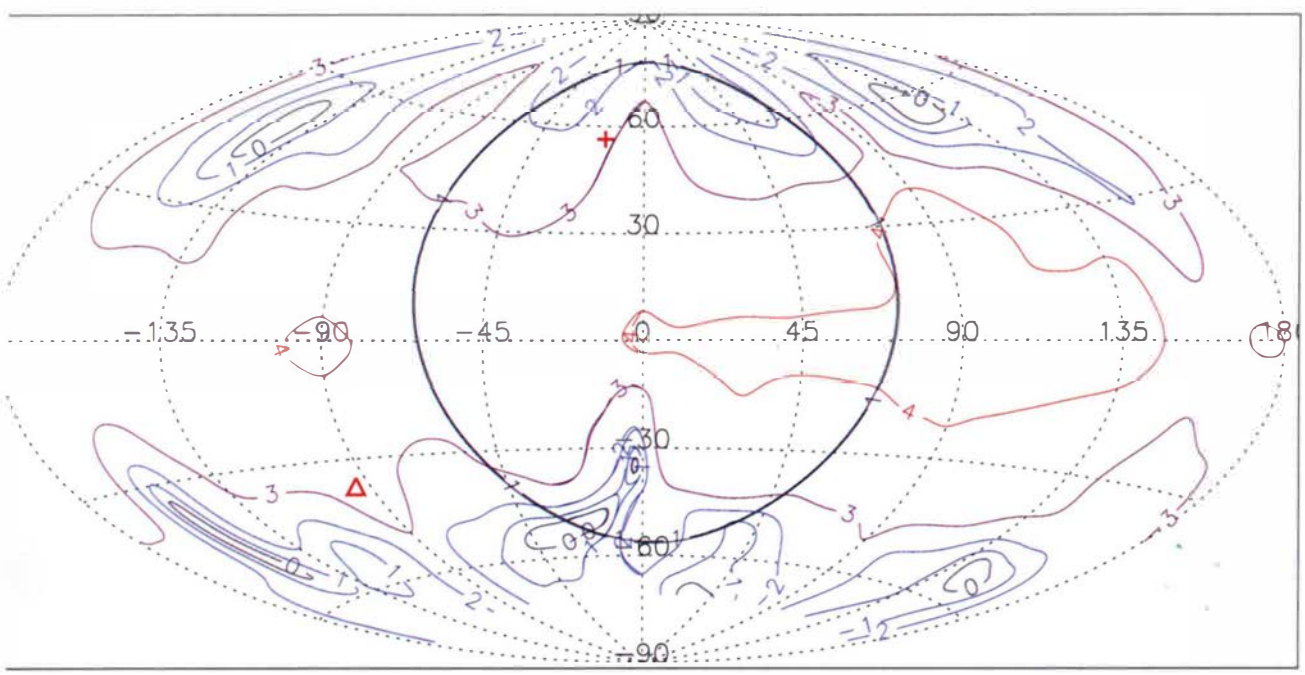
13/01/2010

2-1




EVENT OF AUG 24, 1997 18:34 - ignoring Ulysses
13/01/2010
2-1
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS2 2 SAX
G
EARTH- 2
ECLIP.
ECLIP.
E
S
EARTH- 1
DECLINATION
80o
70o
60o
50o
40o
30o
20o
10o
0o
-10o
-20o
-30o
-40o
-50o
-60o
-70o
-80o
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
24:00
RIGHT ASCENSION

BeppoSAX Local Sky

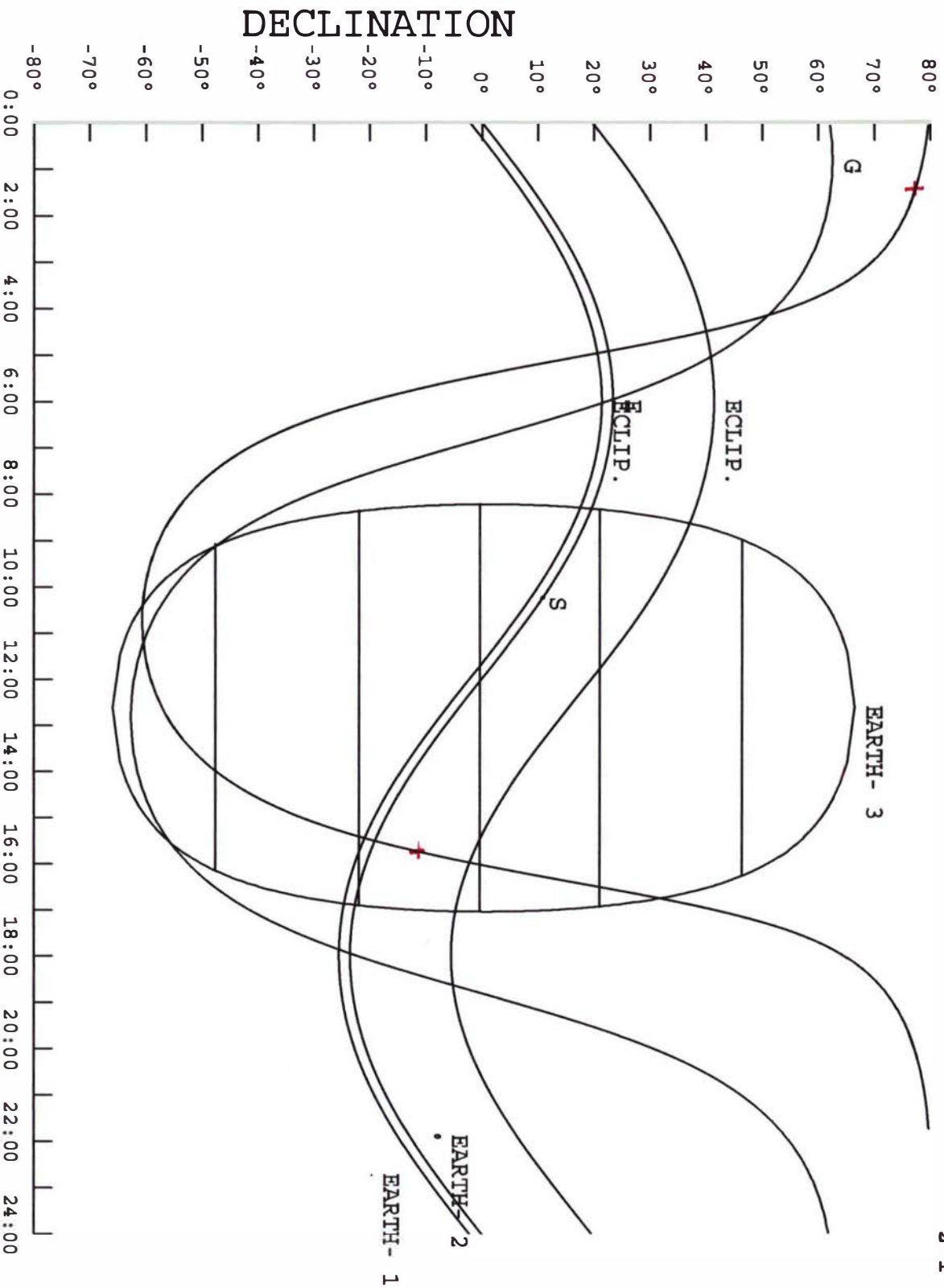


N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN E=ECLIPTIC G=GALACTIC EQUATOR

1 ULYSSES 2 KONUS2 3 SAX

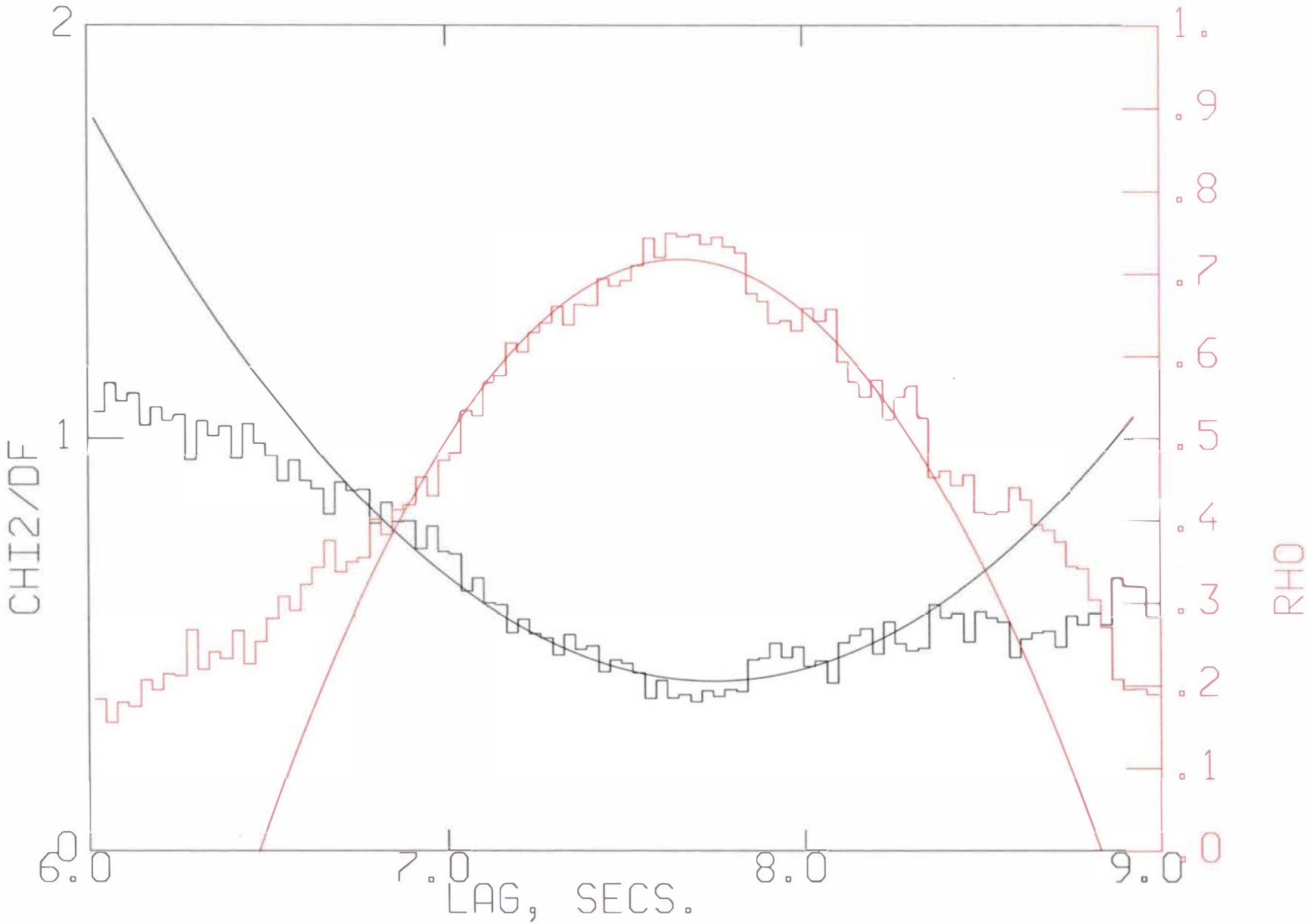


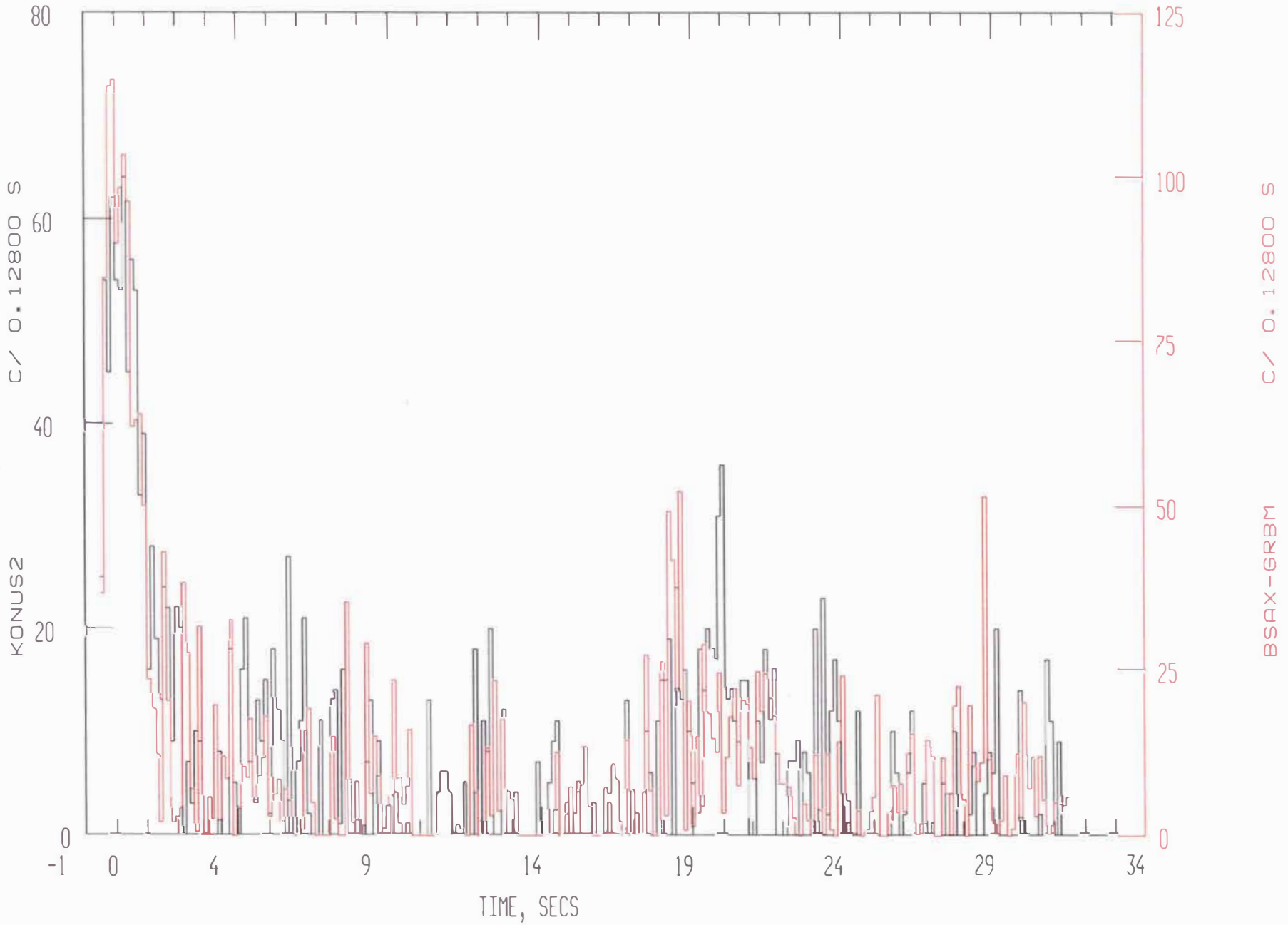
EVENT OF AUG 24, 1997 18:24

7/ 1/10

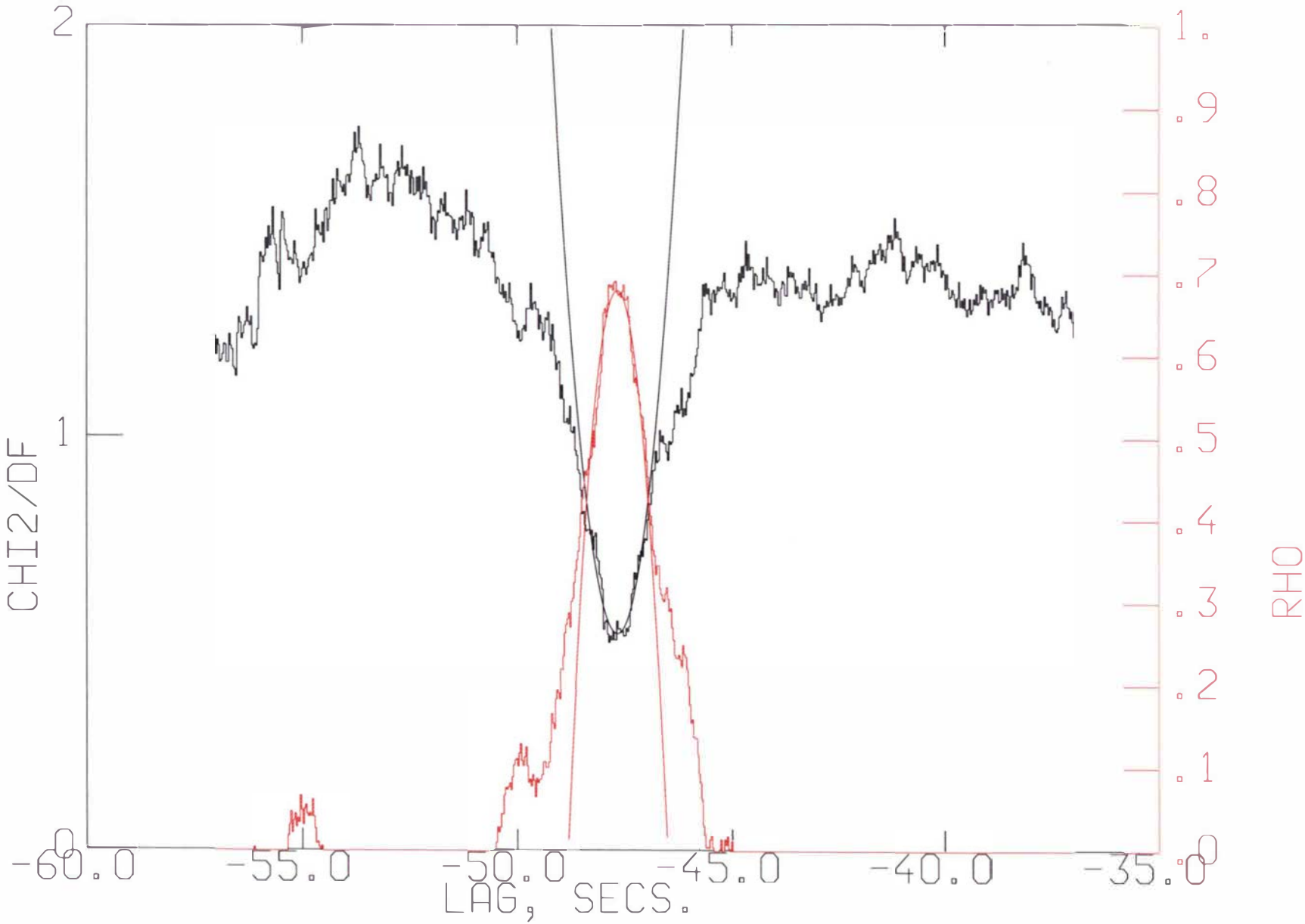
3-1

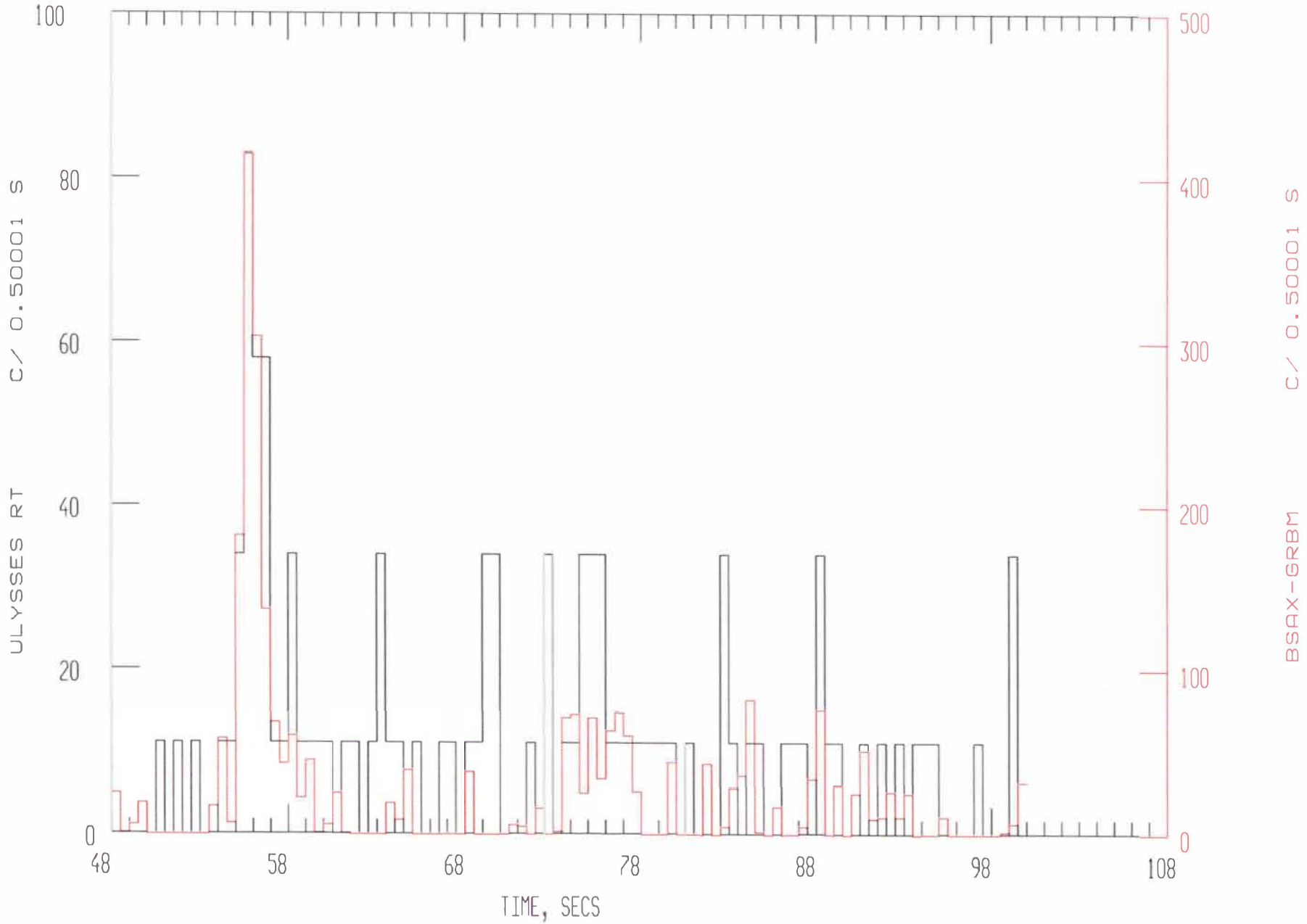
KONUS2 -BSAX-GRBM CORRELATION 24/08/97 66883.530

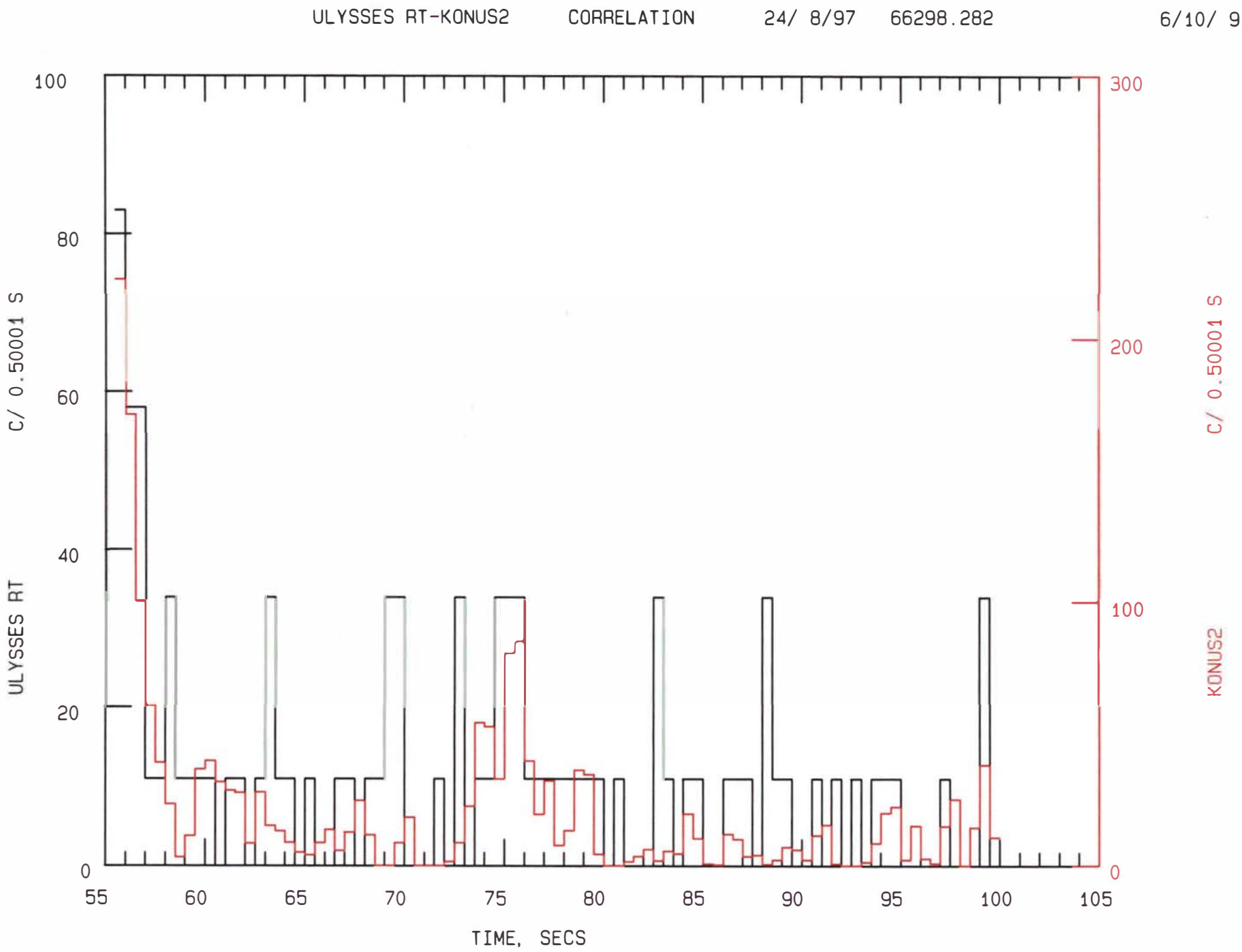



80
60
40
20
0
C/ 0.12800 S
KONUS2
125
100
75
50
25
0
C/ 0.12800 S
BSAX-GRBM
-1
0
4
9
14
19
24
29
34
TIME, SECS

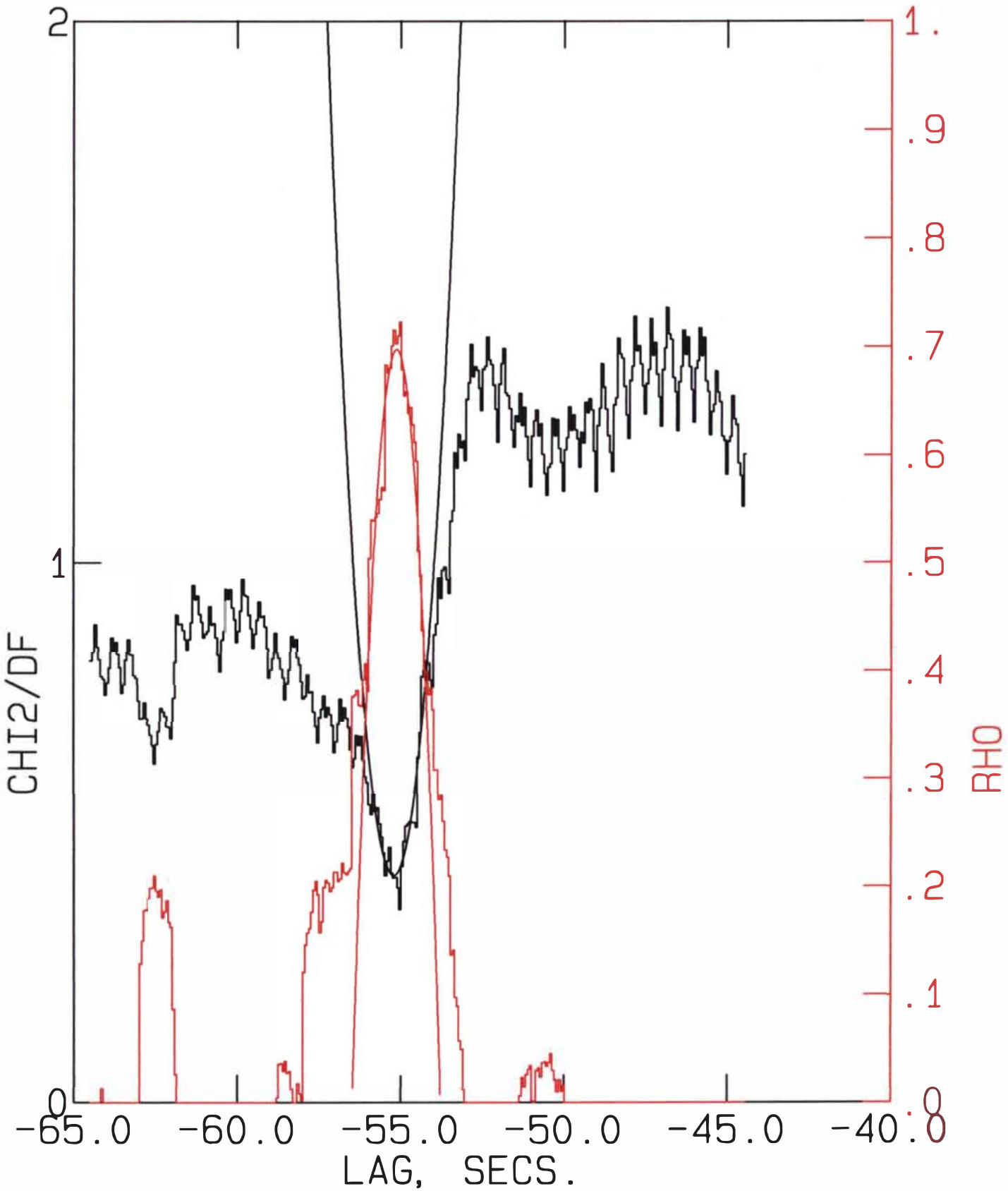
ULYSSES RT-BSAX-GRBM CORRELATION 24/ 8/97 66298.282




100
80
60
40
20
0
ULYSSES RT C/ 0.50001 S
500
400
300
200
100
0
BSAX-GRBM C/ 0.50001 S
48
58
68
78
88
98
108
TIME, SECS


ULYSSES RT-KONUS2 CORRELATION 24/ 8/97 66298.282 6/10/ 9
100
80
60
40
20
0
C/ 0.50001 S
ULYSSES RT
300
200
100
0
C/ 0.50001 S
KONUS2
55
60
65
70
75
80
85
90
95
100
105
TIME, SECS

ULYSSES RT-KONUS2 CORRELATION 24/ 8/97 66298.282



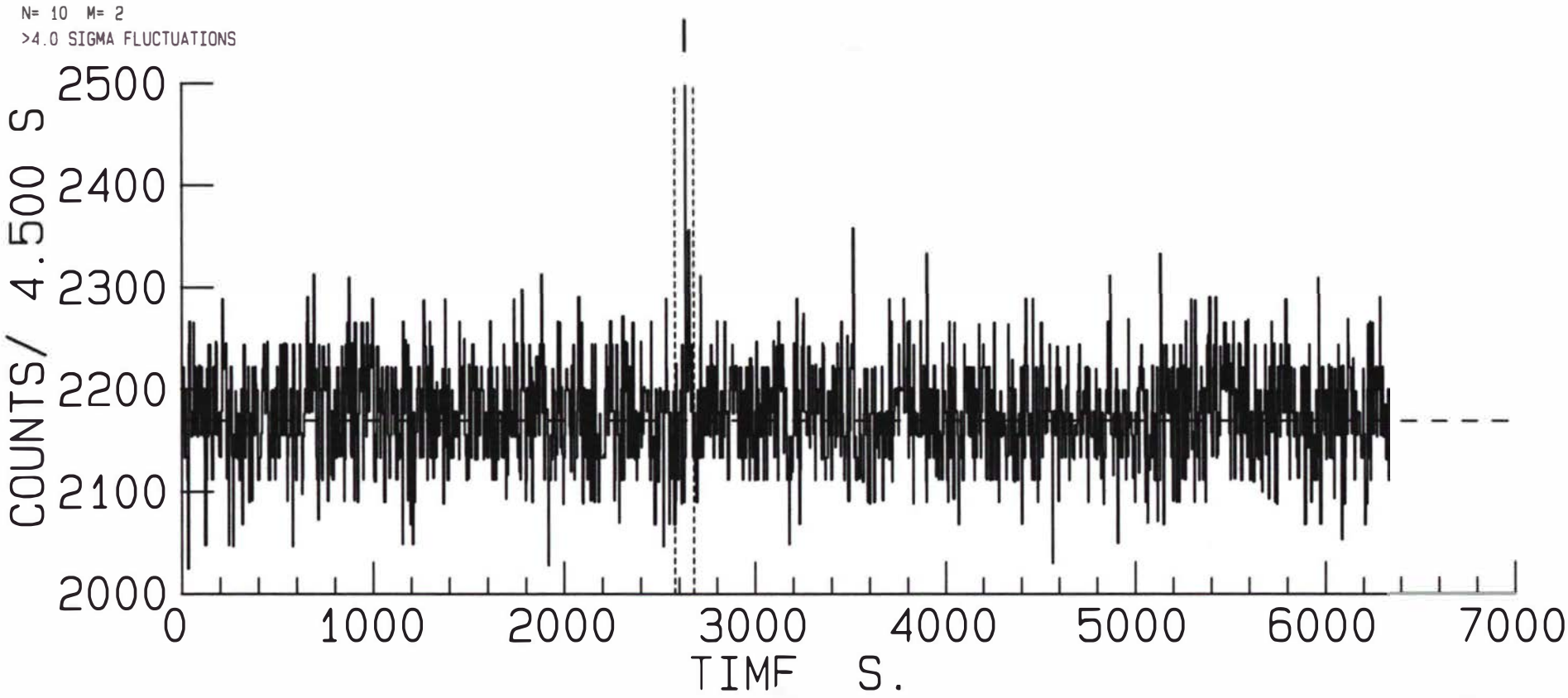
ULYSSES RT

6/10/ 9

24/ 8/97 63720.266 s

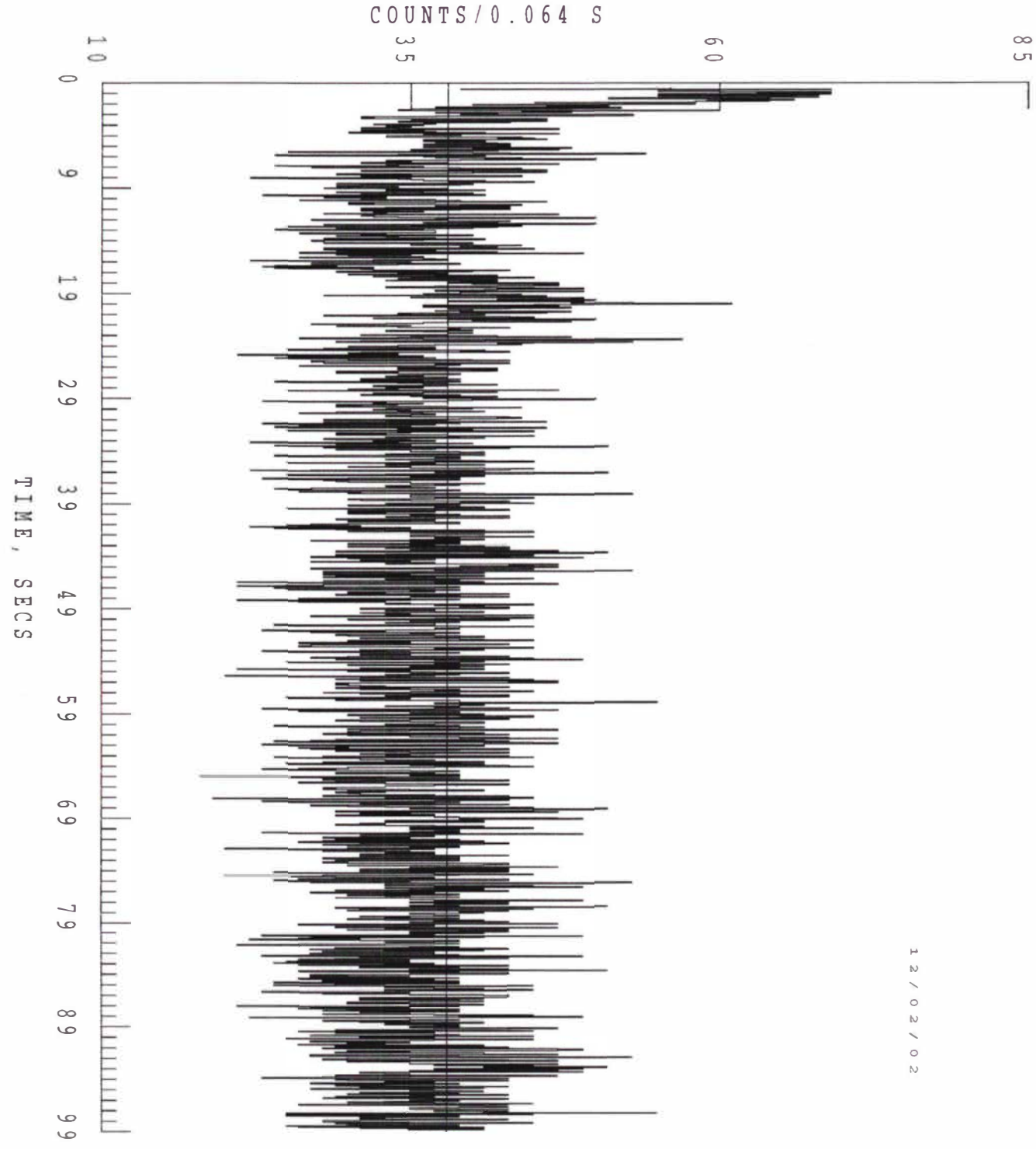
0.500 S INTERVALS REGROUPED BY 9

22- 147 keV

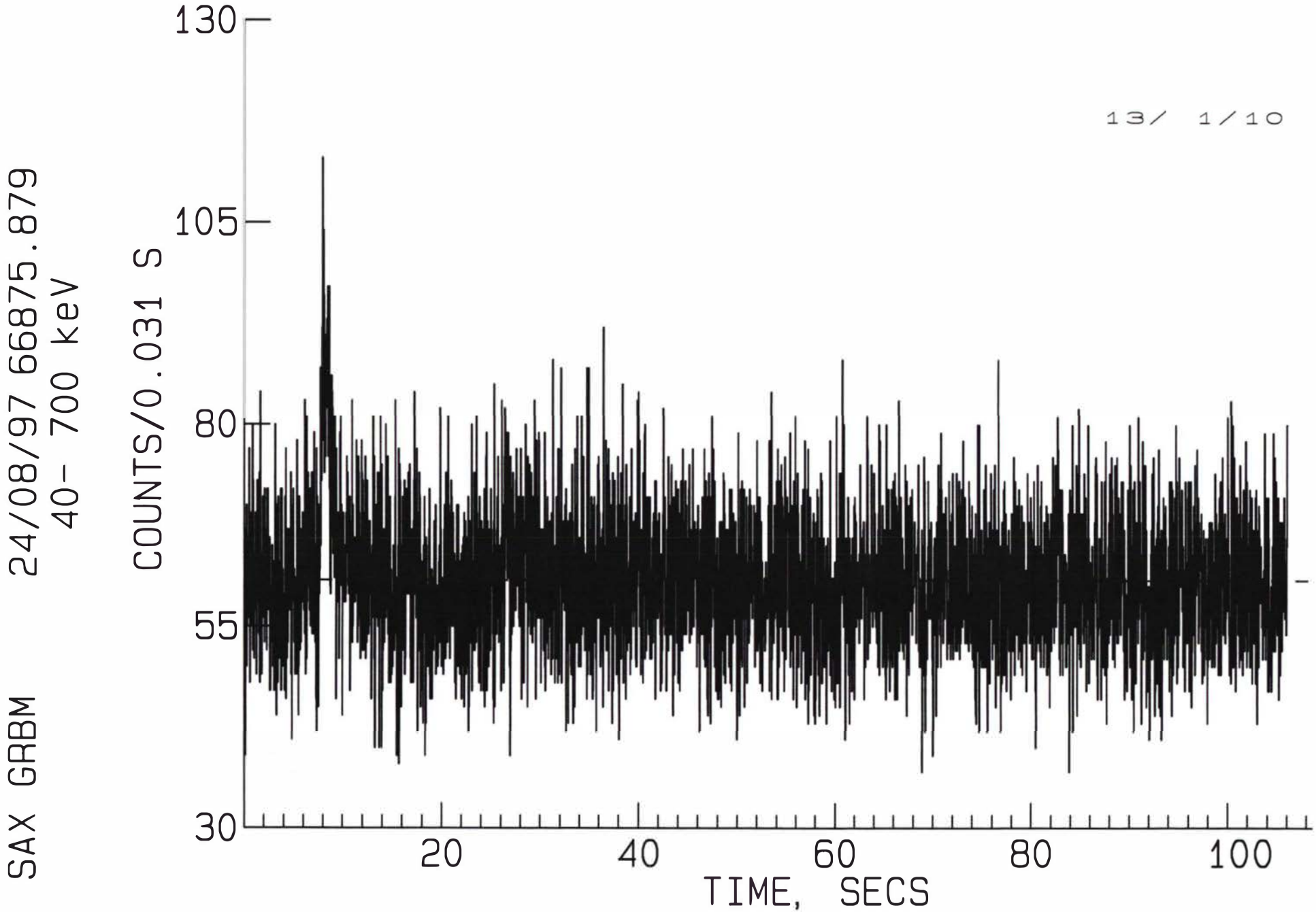


KONUS2 24/08/97 66883.530

50- 200 keV



12/02/02


SAX GRBM
24/08/97 66875.879
40- 700 keV
COUNTS/0.031 S
130
105
80
55
30
20
40
60
80
100
TIME, SECS
13/ 1/10

From SURASAK@ssl.msfc.nasa.gov Wed Aug 27 07:44 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 HAA13370; Wed, 27 Aug 1997 07:44:34 -0700
Date: Wed, 27 Aug 1997 9:44:29 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970827094429.202068e8@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6345
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6345
EVENT OF 1997 AUG 24 DAY OF YEAR=236
EVENT CROSSING TIME AT BATSE : 76518. S. OR 21:15:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 115.000 37.000
BATSE PEAK COUNTING RATE: 2450 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 8/ 97 IS:
RA= 160.468 DEC= 19.729 DIST= 6.228 AU
BATSE-ULYSSES DISTANCE = 931688779. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=136.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2269.83 SECS.
CROSSING TIME AT ULYSSES IS 74248. S. OR 20:37:28 +/- 384.08 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 8/ 97 IS:
RA= 213.460 DEC= -14.200 DIST= 1.600 AU
MARS-BATSE DISTANCE = 239420464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 208.87 SECS.
CROSSING TIME AT MARS IS 76727. S. OR 21:18:46 +/- 137.00 SECONDS

BATSE BURST TRIGGER
NO.: 6345

TIME: TJD=0684 SECONDS=76518

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=139 AZIMUTH=4.2 ERROR=7.053 DEGREES

COMMENTS:
GRB. SINGLE PULSE. DUR~26S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6345	970824	10684	76518	2450	115	+37	26

BATSE BURST# 6345

ULYSSES RT 27/ 8/97

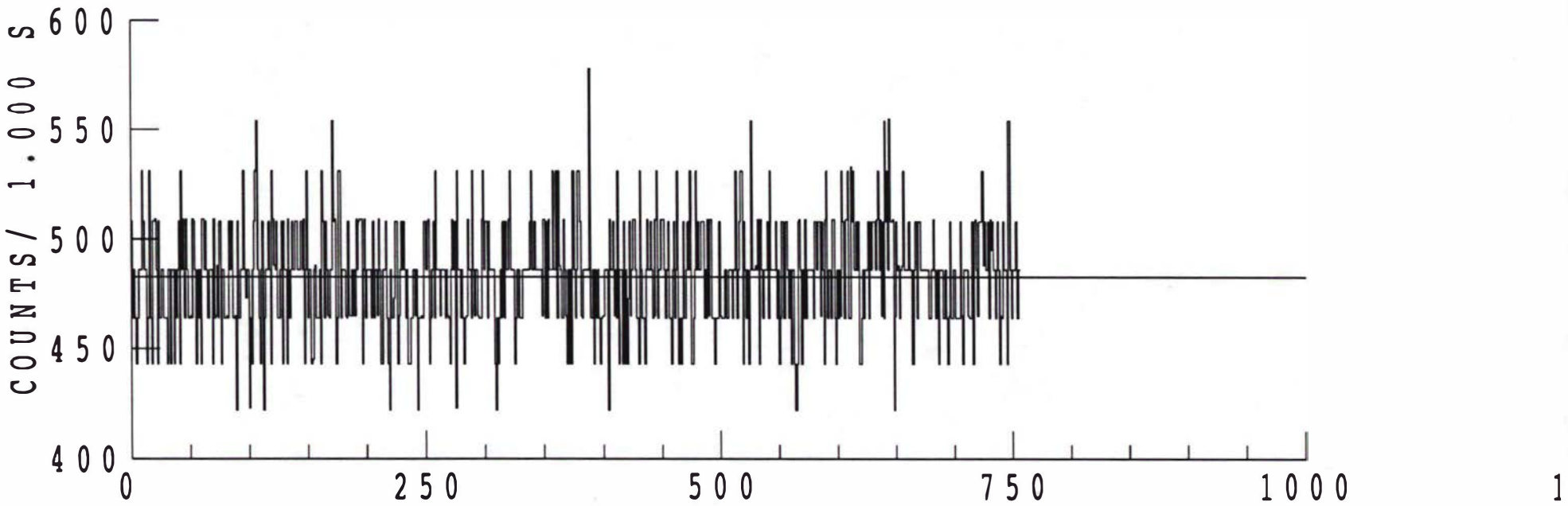
24/ 8/97 73872.383 s

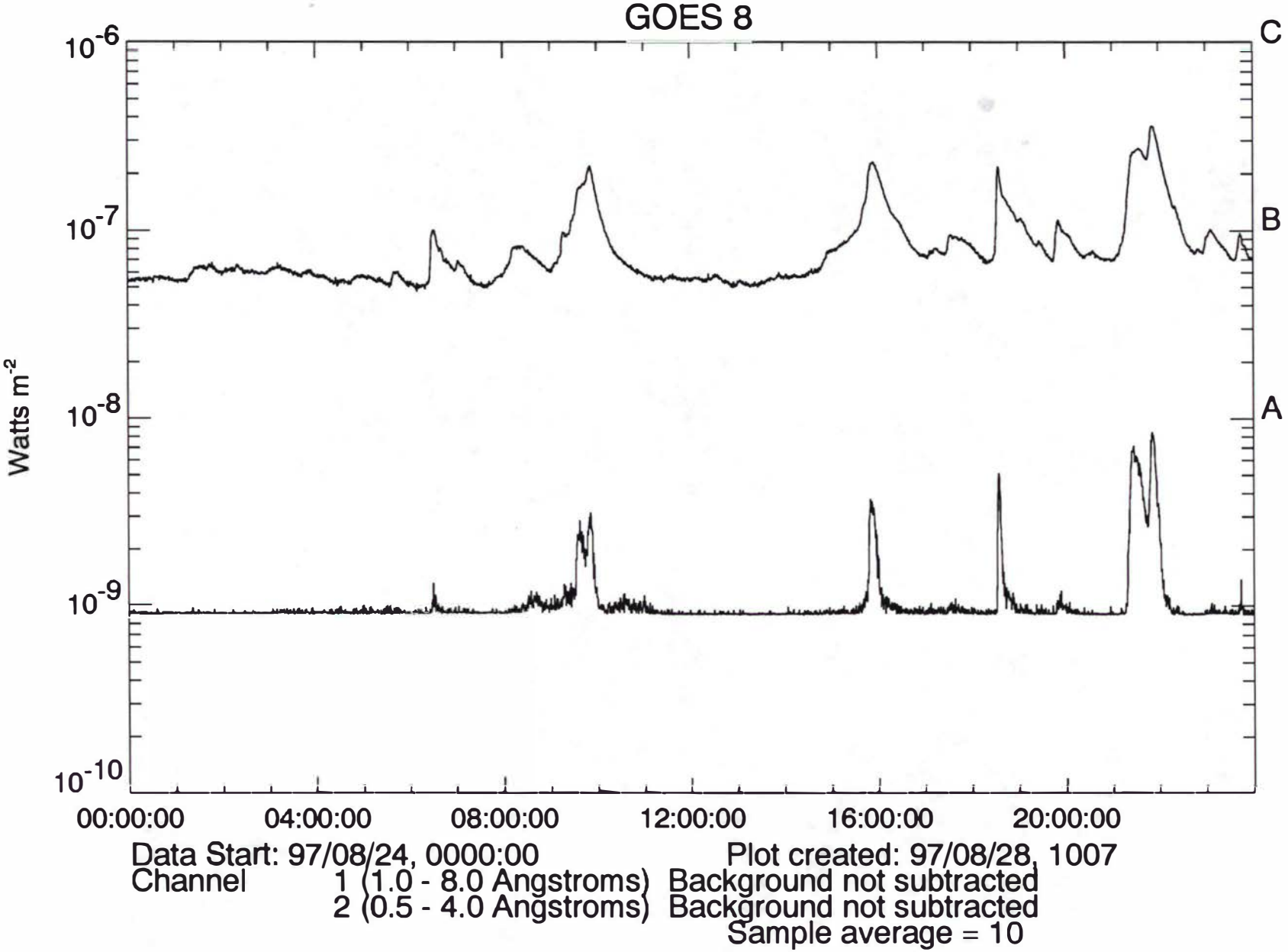
0.500 S INTERVALS REGROUPED BY 2

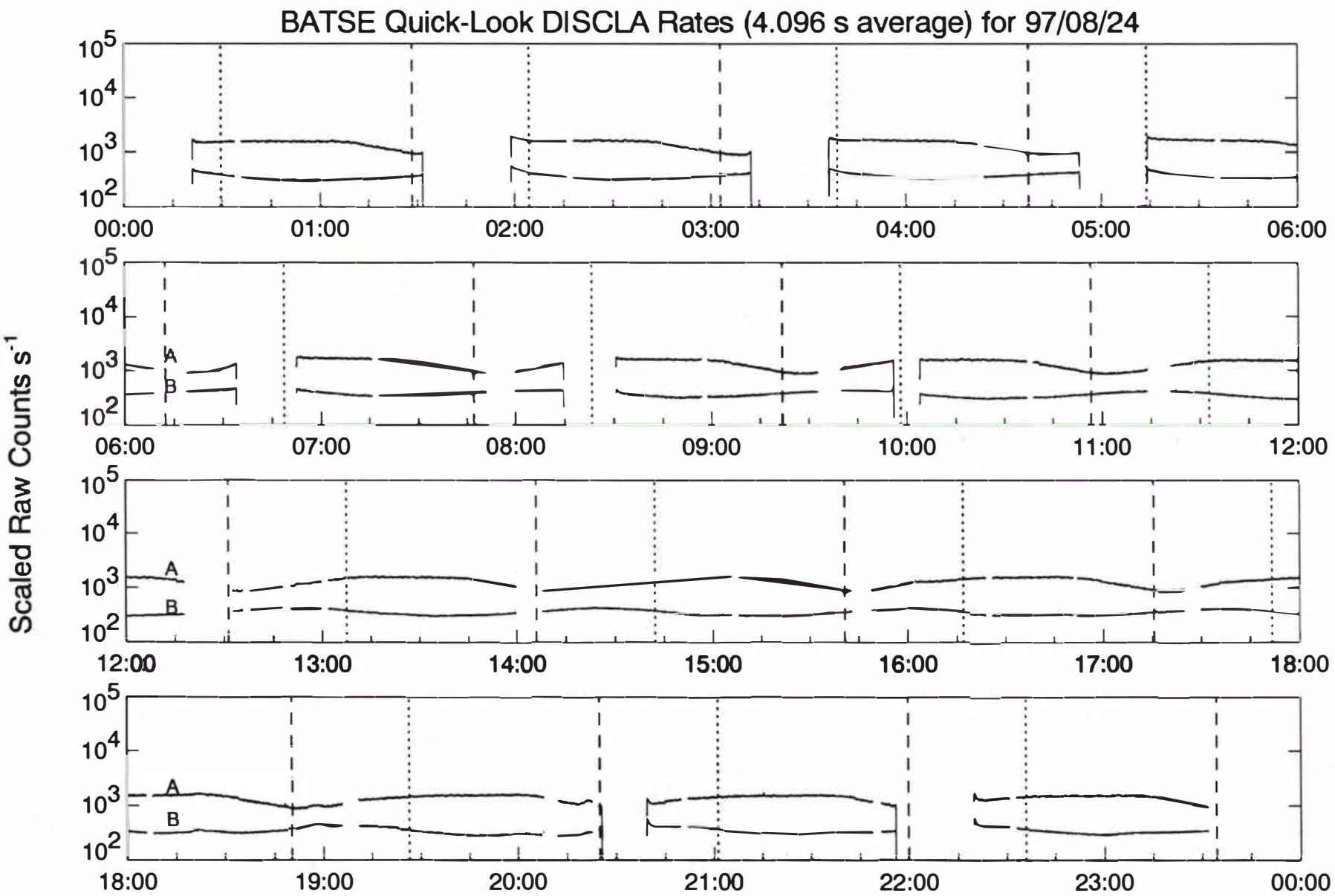
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

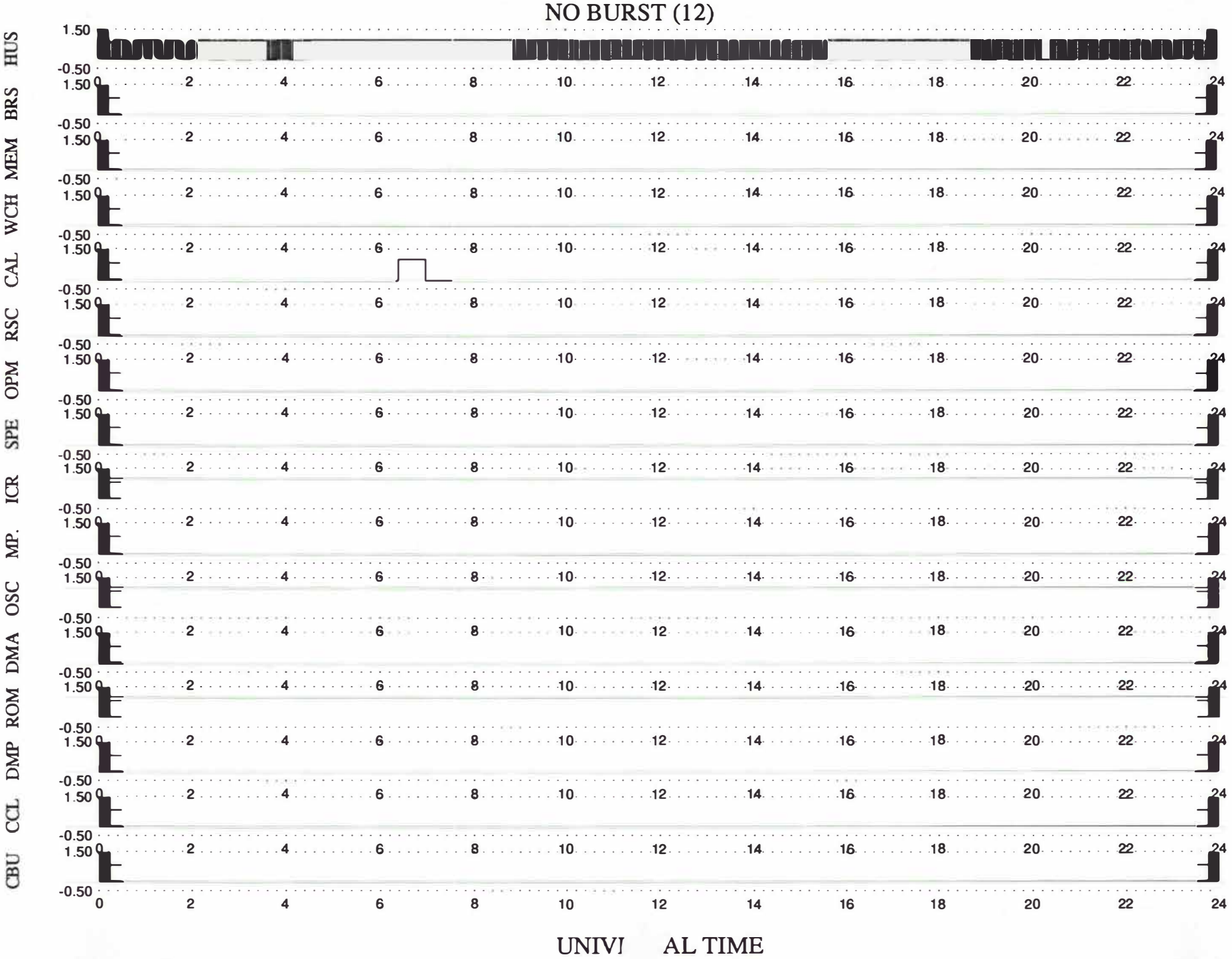
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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: 97/08/24, 0000:00
Plot created: 97/08/28, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

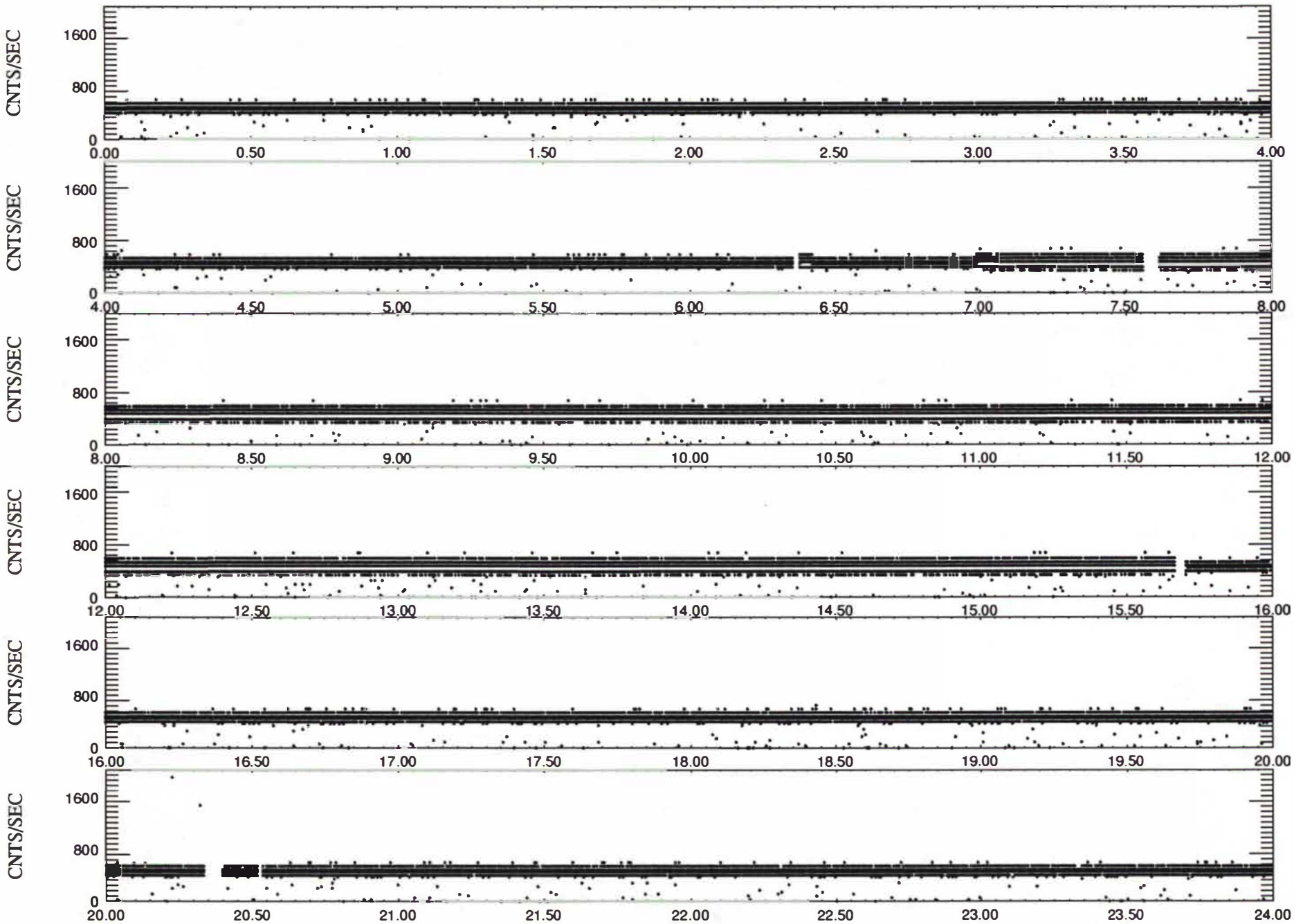

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
00:00
01:00
02:00
03:00
04:00
05:00
06:00
A
B
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/08/28, 1008 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 236, year 1997 to day 236, year 1997 1/6/98



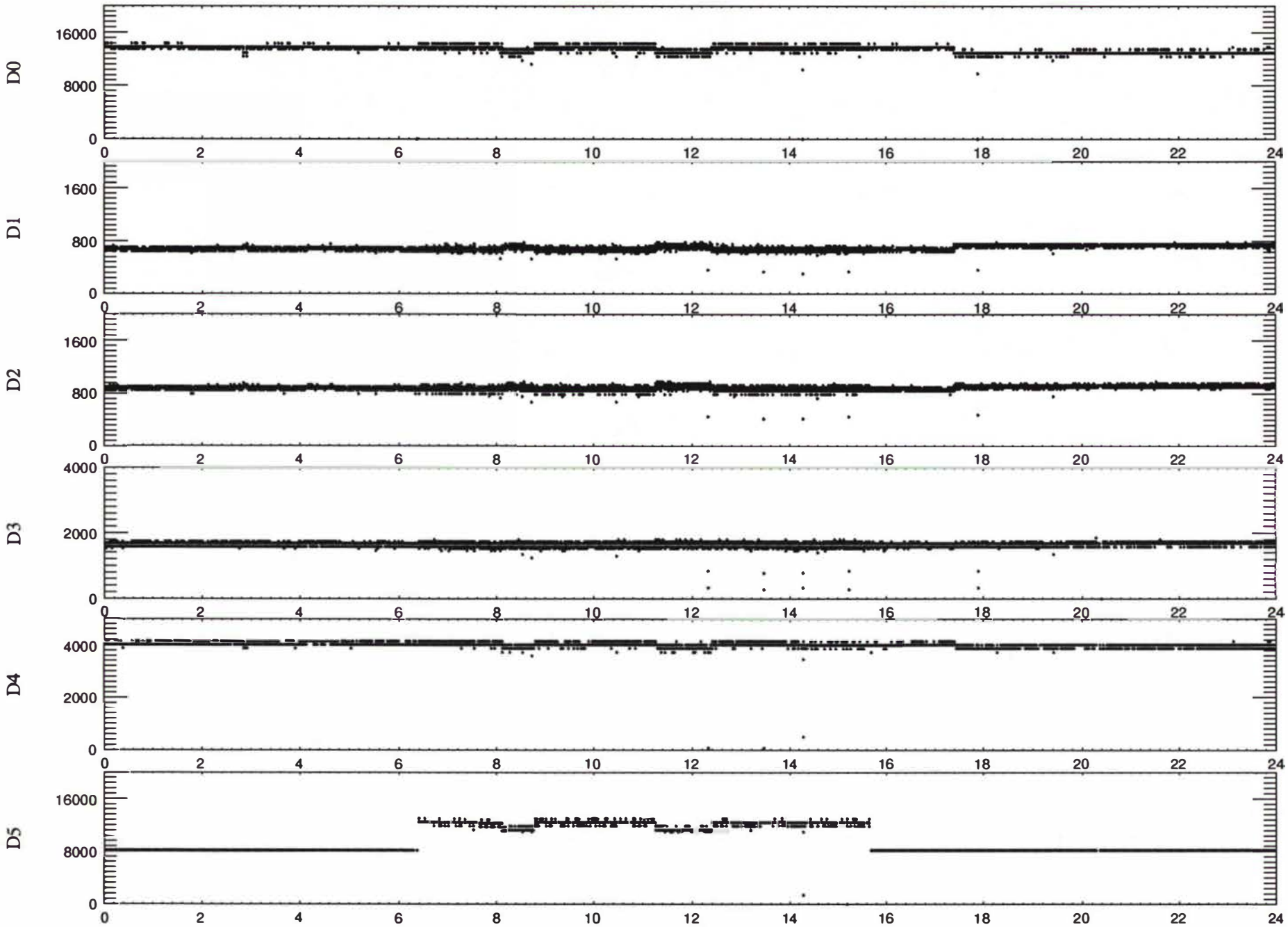
HUS 2A, MODE 1, NOT AVERAGED EDR day 236, year 1997 to day 236, year 1997 1/6/98

CALIBRATION DATA INCLUDED

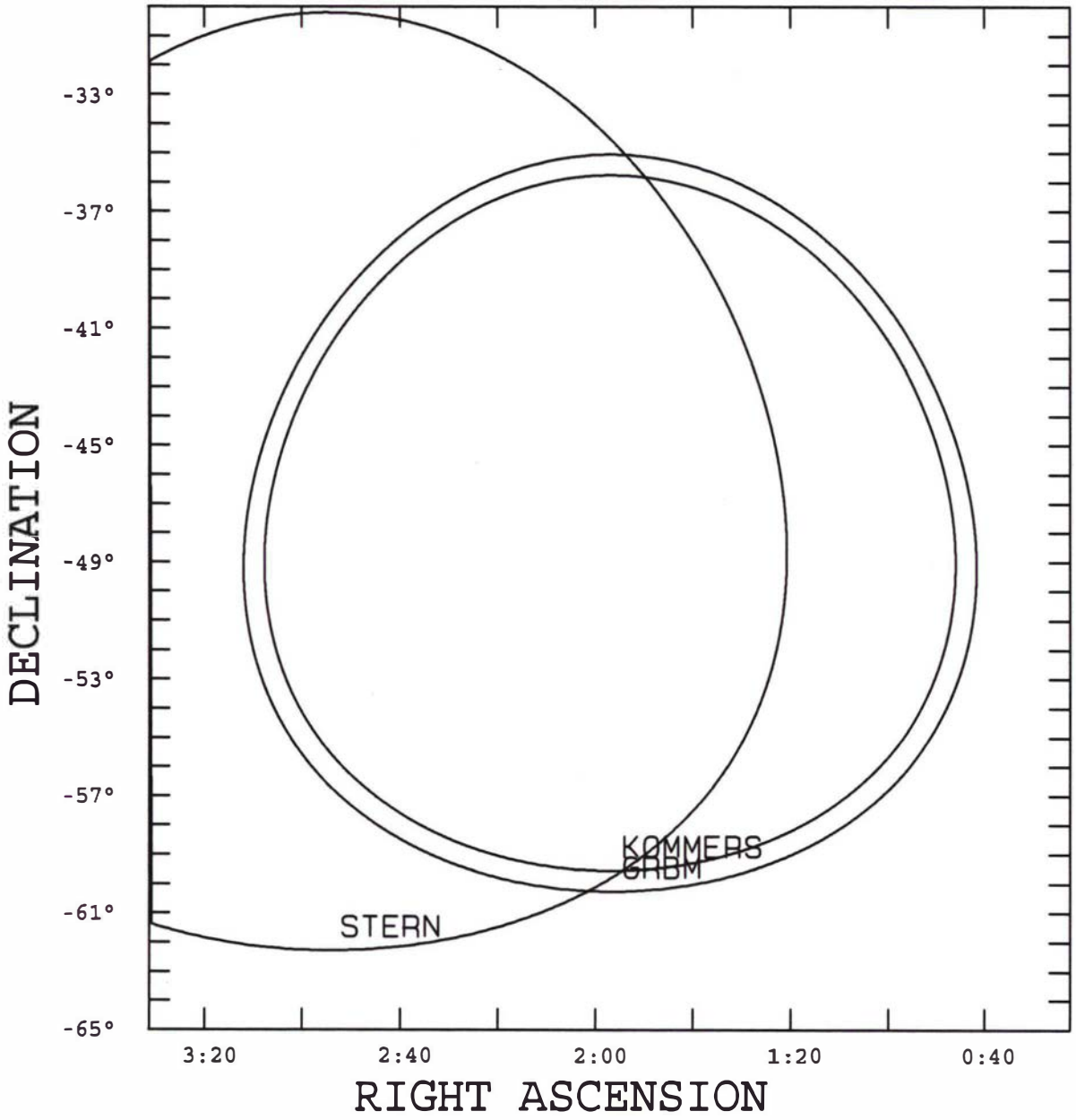


UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 236, year 1997 to day 236, year 1997 1/6/98



40634 s


DECLINATION
-33°
-37°
-41°
-45°
-49°
-53°
-57°
-61°
-65°
3:20
2:40
2:00
1:20
0:40
RIGHT ASCENSION
KOMMERS
GRBM
STERN

From WOODSP@ssl.msfc.nasa.gov Wed Aug 27 11:36 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 LAA15864; Wed, 27 Aug 1997 11:36:14 -0700
m: WOODSP@ssl.msfc.nasa.gov
e: Wed, 27 Aug 1997 13:36:09 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970827133609.2040c6ed@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6346
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6346
EVENT OF 1997 AUG 25 DAY OF YEAR=237
EVENT CROSSING TIME AT BATSE : 79379. S. OR 22:02:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 89.000 -10.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 8/ 97 IS:
RA= 160.617 DEC= 19.622 DIST= 6.230 AU
BATSE-ULYSSES DISTANCE = 931997659. KM.
NGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.55 DEG.
GHT TRAVEL TIME ALONG PROJECTED PATH= -728.15 SECS.
CROSSING TIME AT ULYSSES IS 78651. S. OR 21:50:50 +/- 563.67 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 8/ 97 IS:
RA= 214.075 DEC= -14.421 DIST= 1.606 AU
MARS-BATSE DISTANCE = 240257088. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 404.58 SECS.
CROSSING TIME AT MARS IS 79784. S. OR 22:09:43 +/- 126.25

BATSE BURST TRIGGER

NO.: 6346

TIME: TJD=0685 SECONDS=79379

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=134.4 AZIMUTH=85.0 ERROR=2.7 DEGREES

COMMENTS:
C LASTING ~ 120 SEC. SINGLE PULSE WITH EXTENDED TAIL. NOT
BLE ABOVE 300 KEV.

Date: 16 Feb 00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. BATSE Data

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. NEAR Data N/A

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

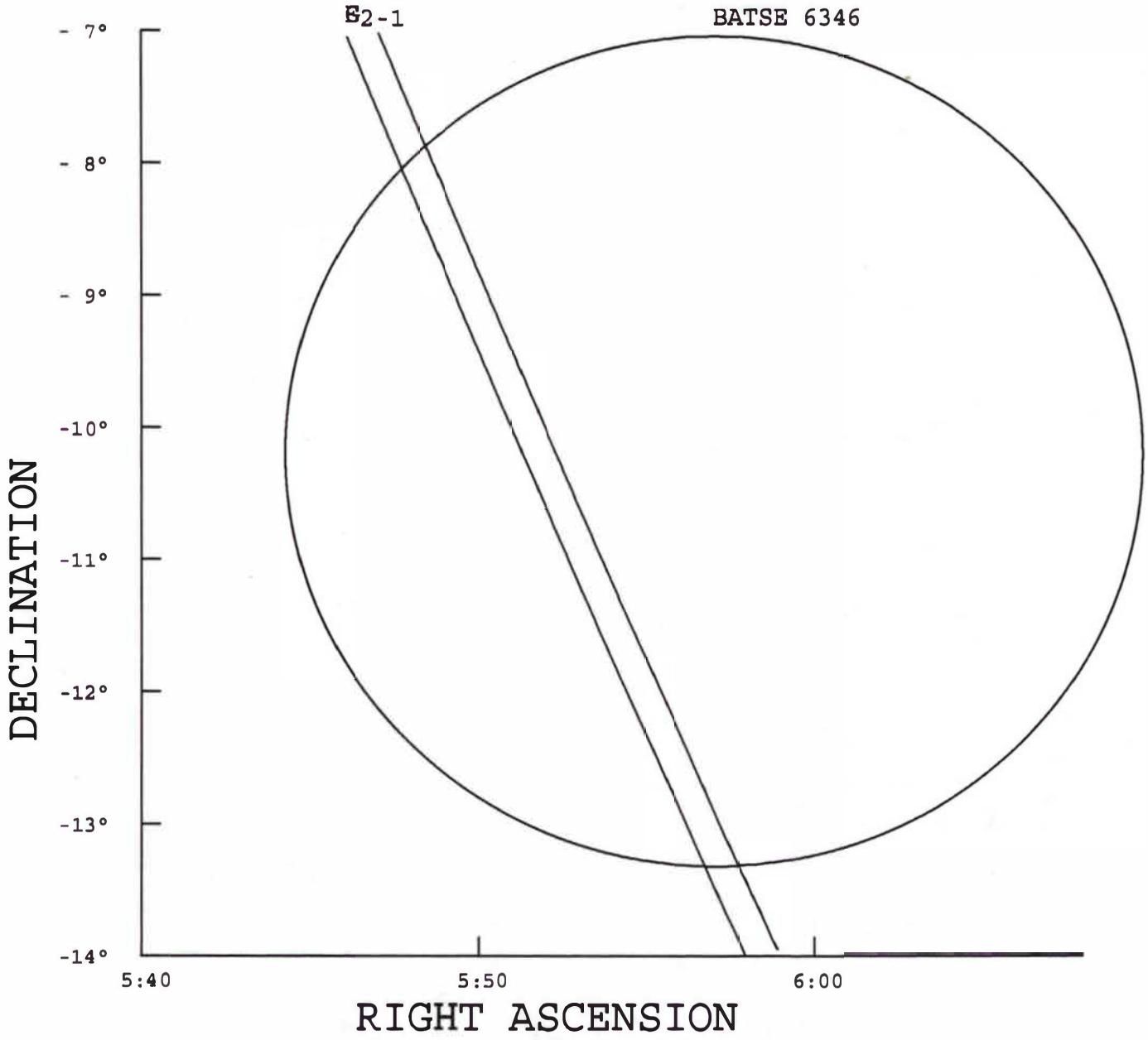
☐ BATSE >100 keV data used for NEAR correlation?

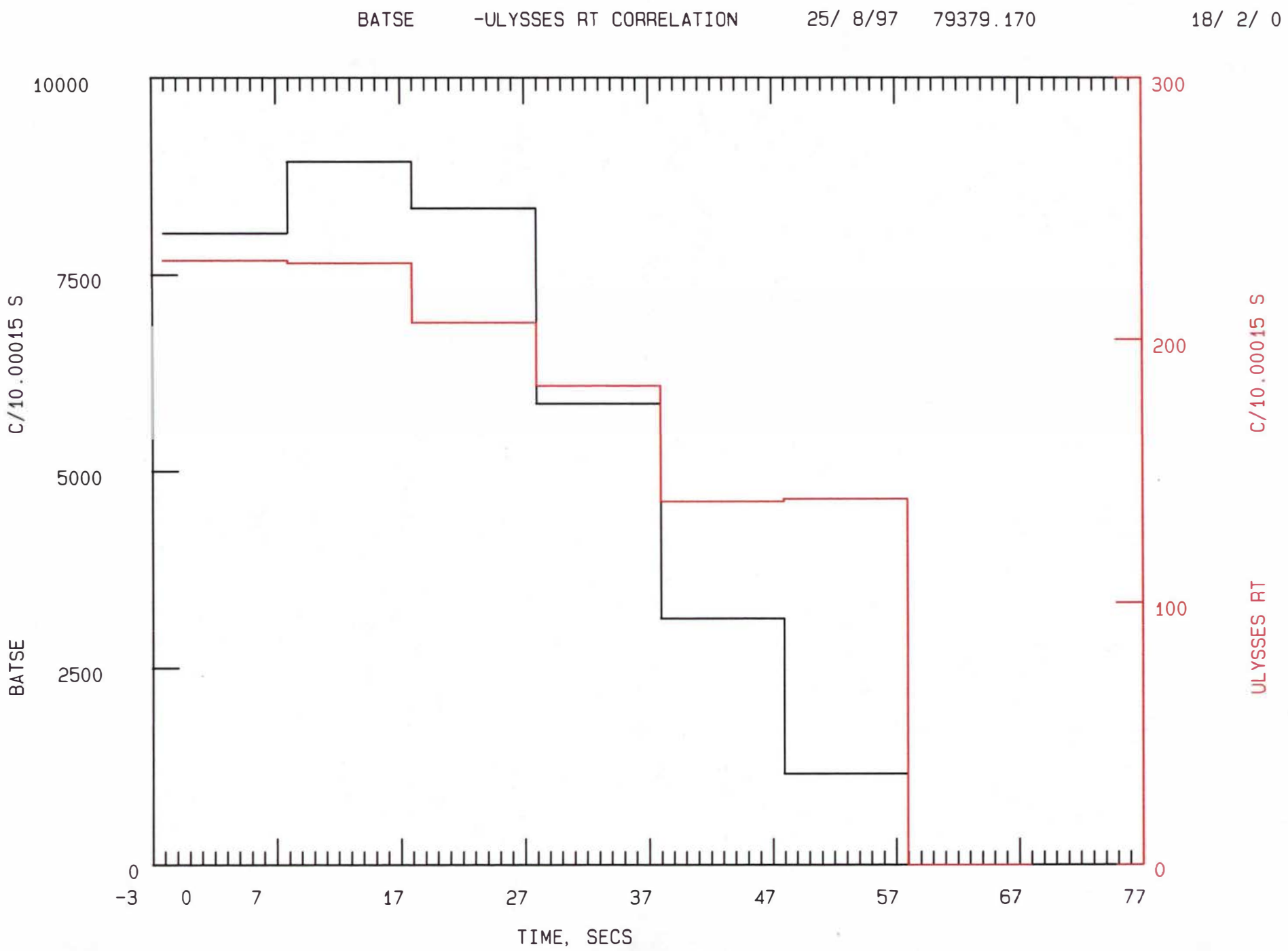
☑ ACCESS database updated?

EVENT OF AUG 25, 1997 22:02

18/ 2/ 0

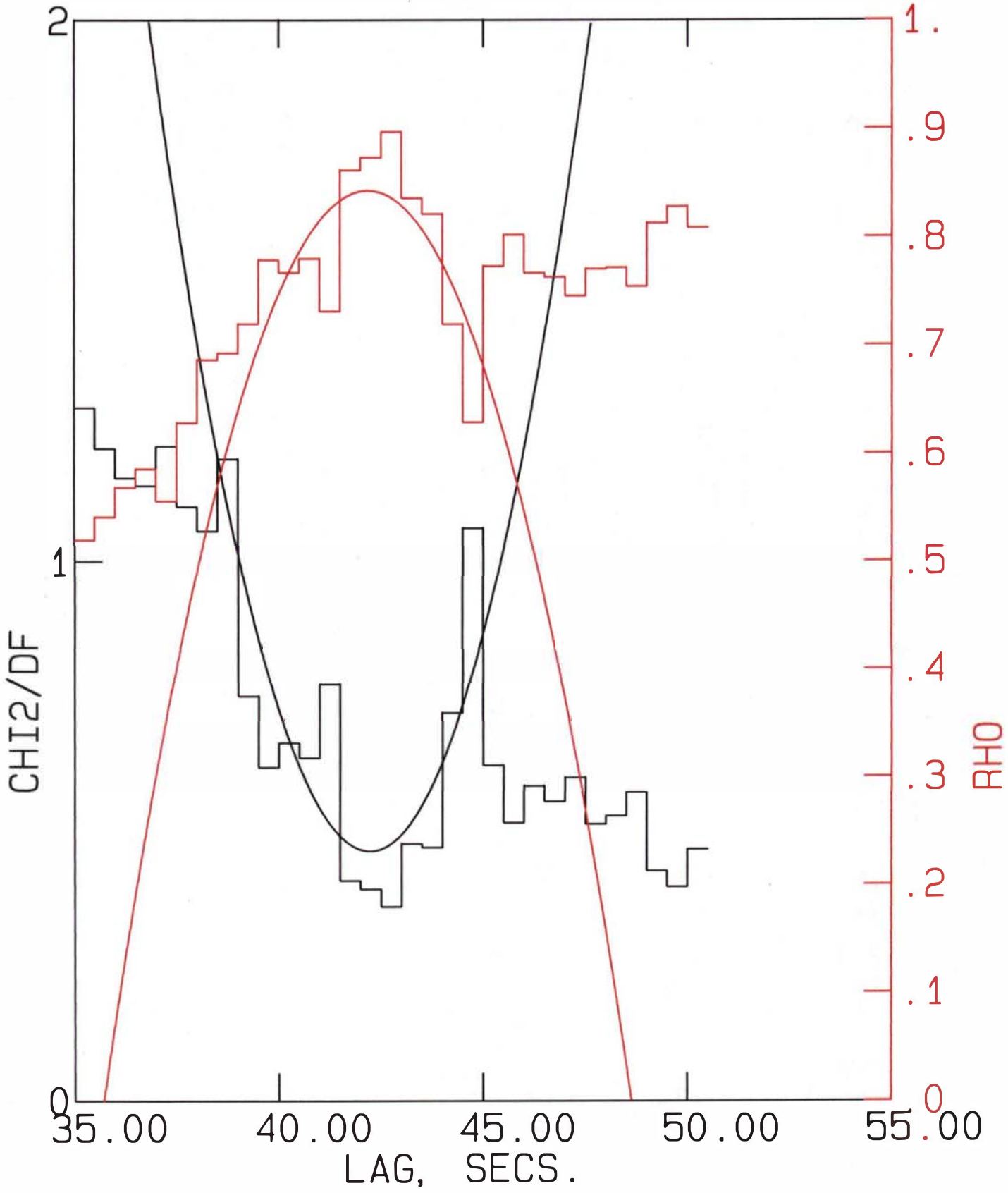
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 BATSE 2 ULYSSES




BATSE -ULYSSES RT CORRELATION 25/ 8/97 79379.170 18/ 2/ 0
10000
7500
5000
2500
0
C/10.00015 S
BATSE
300
200
100
0
C/10.00015 S
ULYSSES RT
-3
0
7
17
27
37
47
57
67
77
TIME, SECS

18/ 2/ 0

BATSE -ULYSSES RT CORRELATION 25/ 8/97 79379.170



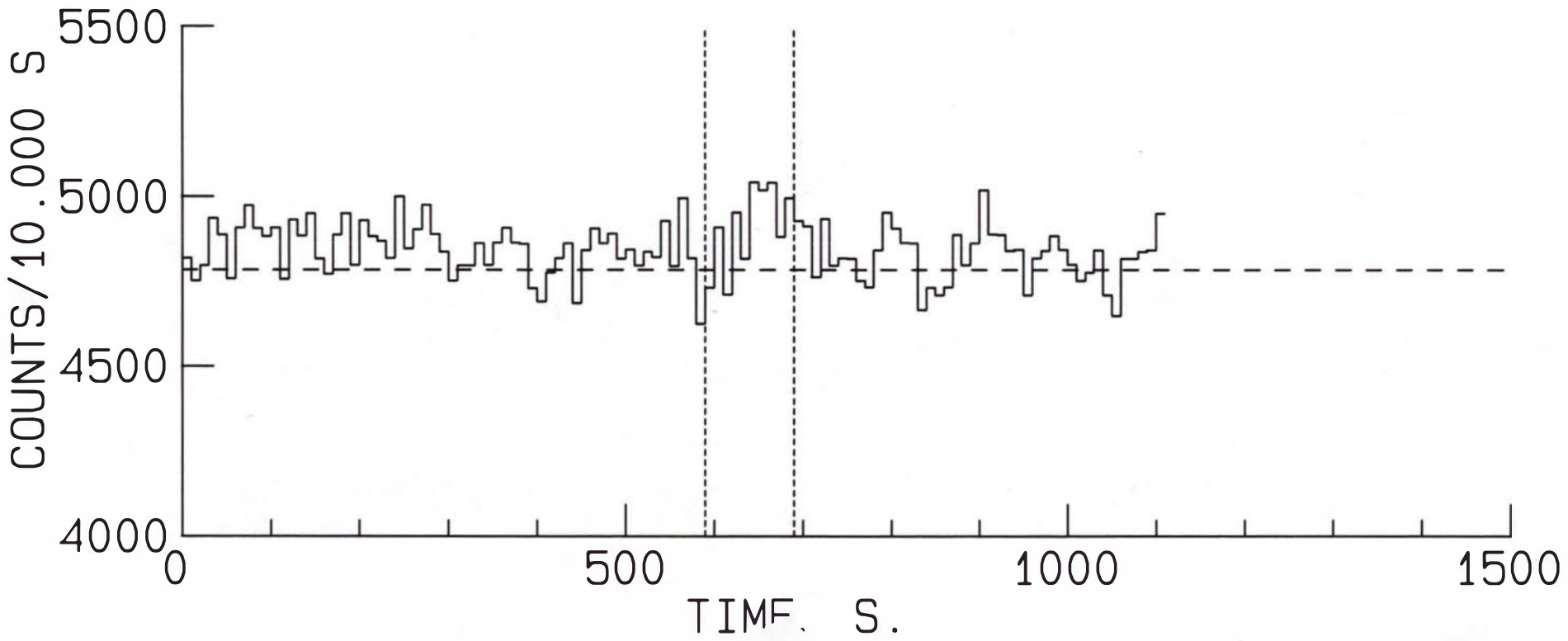
ULYSSES RT

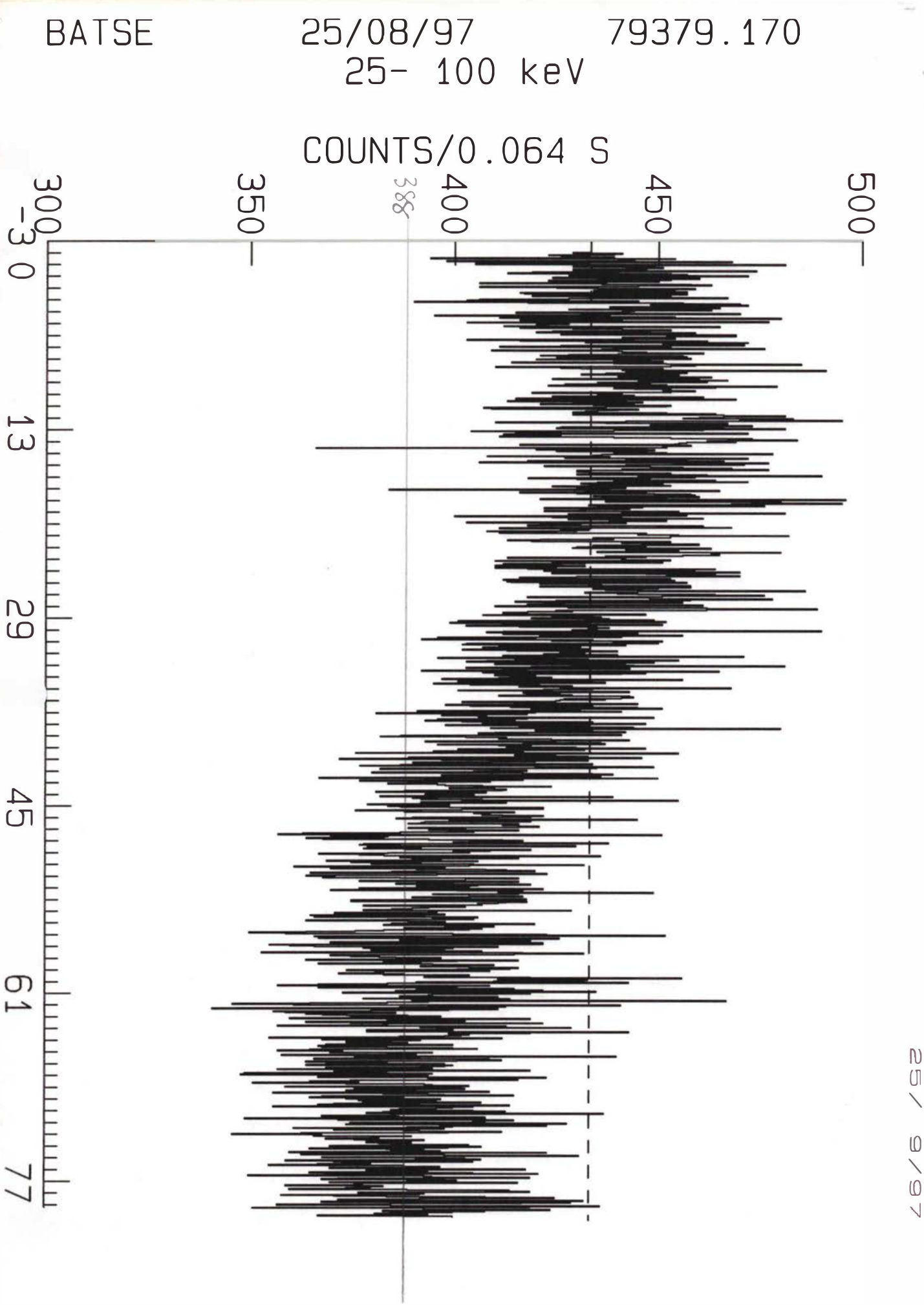
18/ 2/ 0

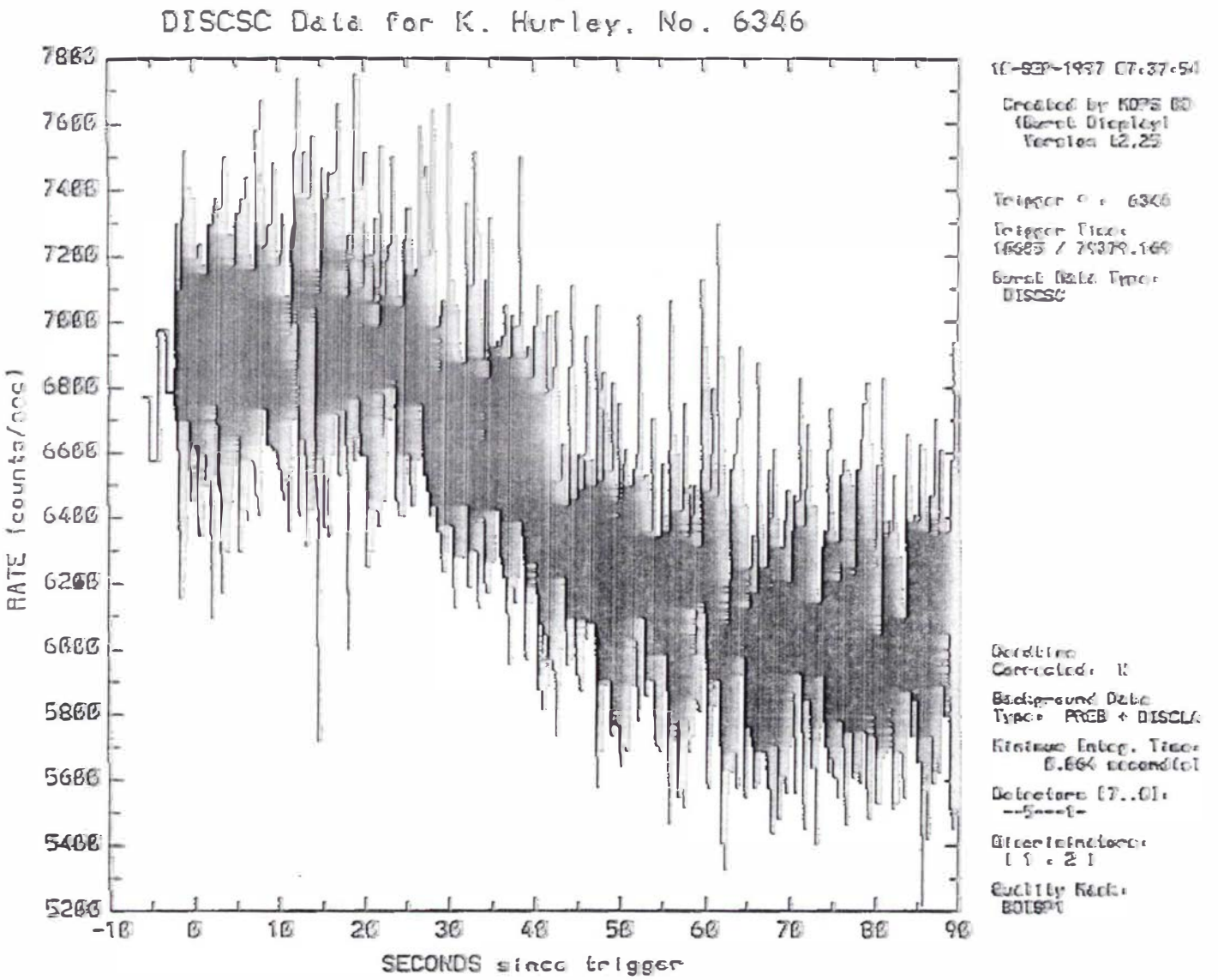
25/ 8/97 78084.406 s

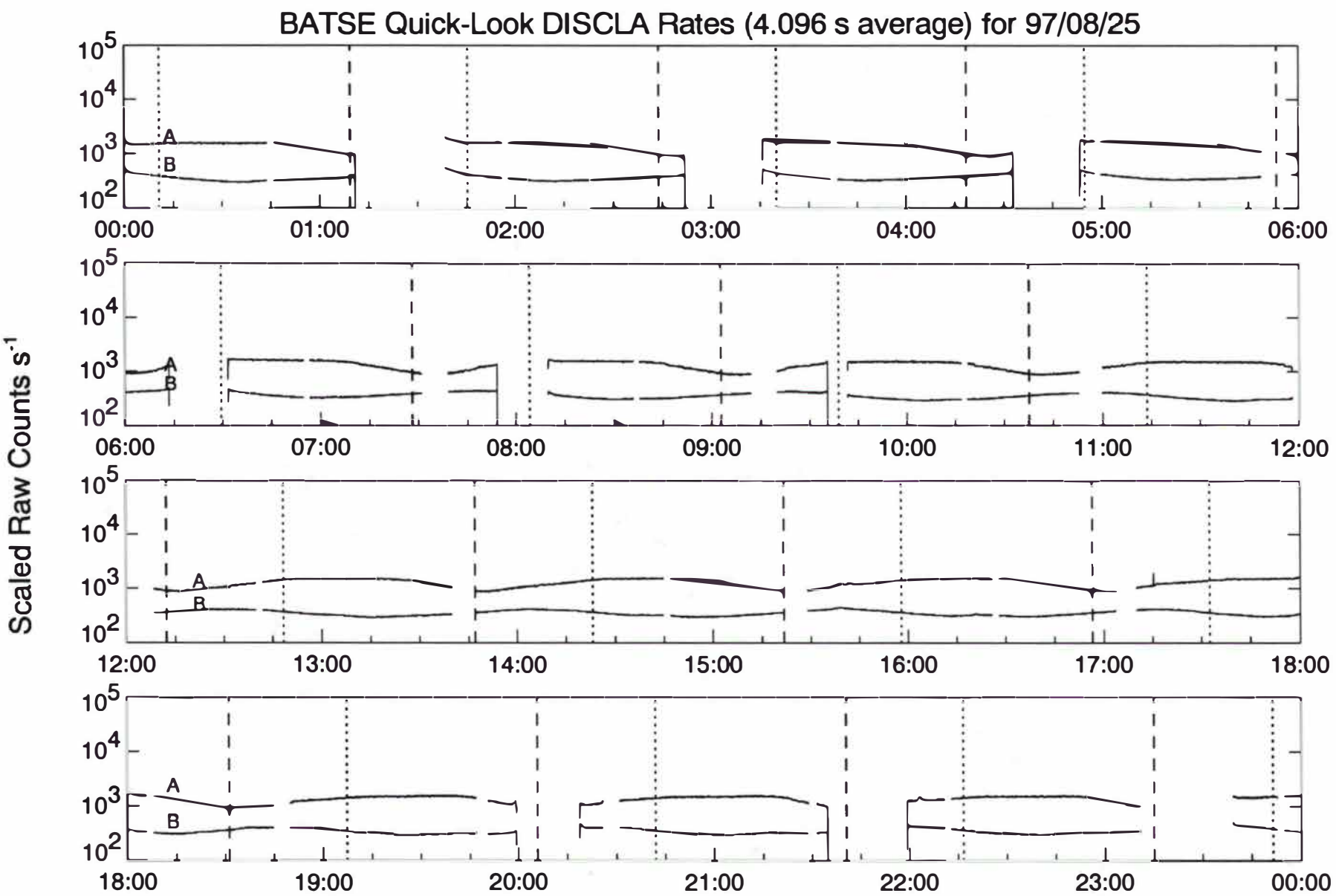
0.500 S INTERVALS REGROUPED BY 20

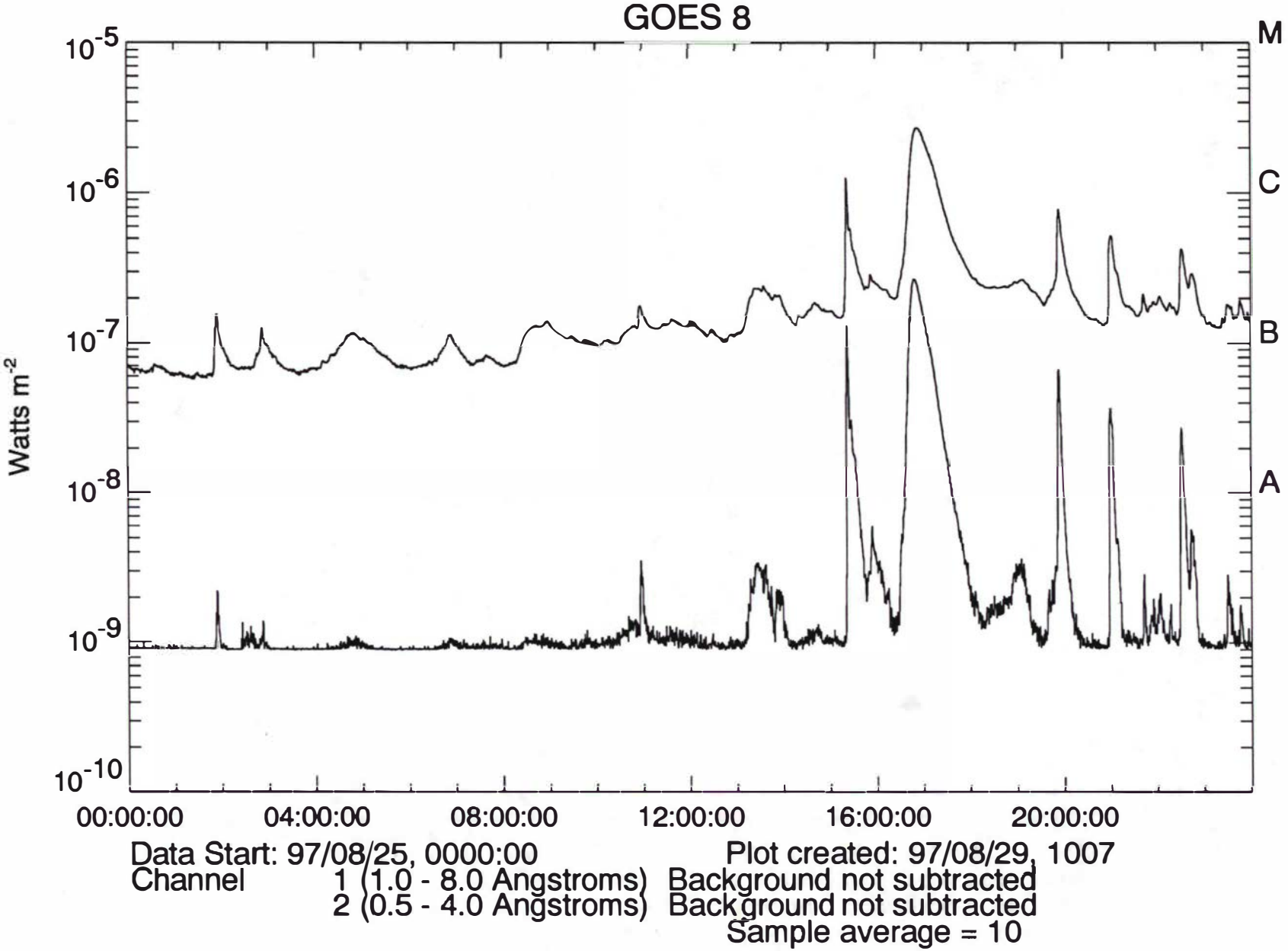
21- 147 keV




BATSE 25/08/97 79379.170
25- 100 keV
COUNTS/0.064 S
300
350
388
400
450
500
-30
0
13
29
45
61
77
25/ 9/97

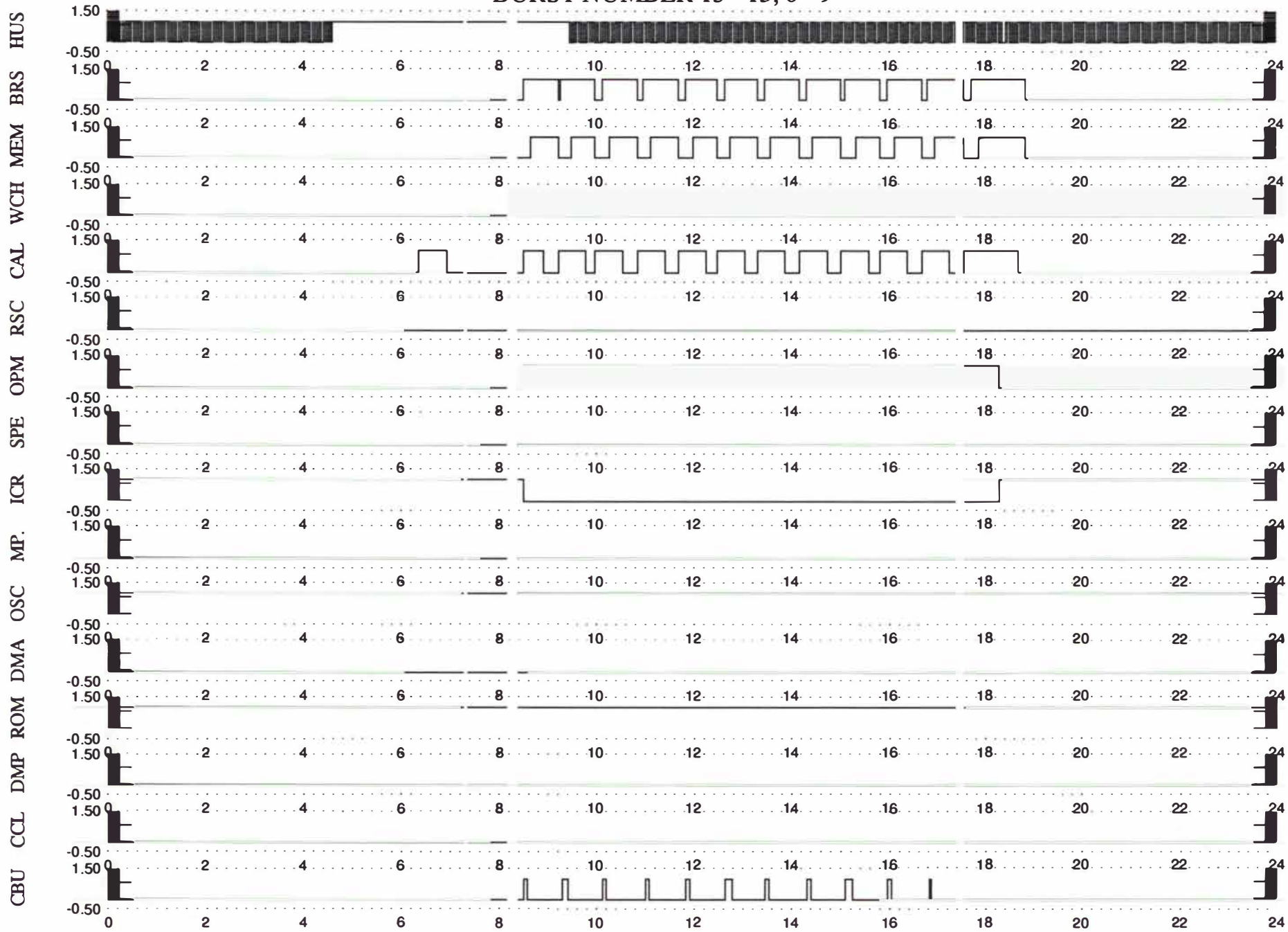

DISCSC Data for K. Hurley, No. 6346
RATE (counts/sec)
SECONDS since trigger
10-Sep-1997 07:37:54
Created by KDPS BD
(Burst Display)
Version 02.25
Trigger # : 6346
Trigger Time:
16685 / 79379.169
Burst Data Type:
DISCSC
Deadtime
Corrected: Y
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
--5---1-
Discriminators:
[1 : 2]
Quality Rank:
BDIS*1


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/25
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
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: 97/08/29, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare


GOES 8
M
C
B
A
Watts m-2
10-5
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: 97/08/25, 0000:00
Plot created: 97/08/29, 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 237, year 1997 to day 237, year 1997 1/6/98

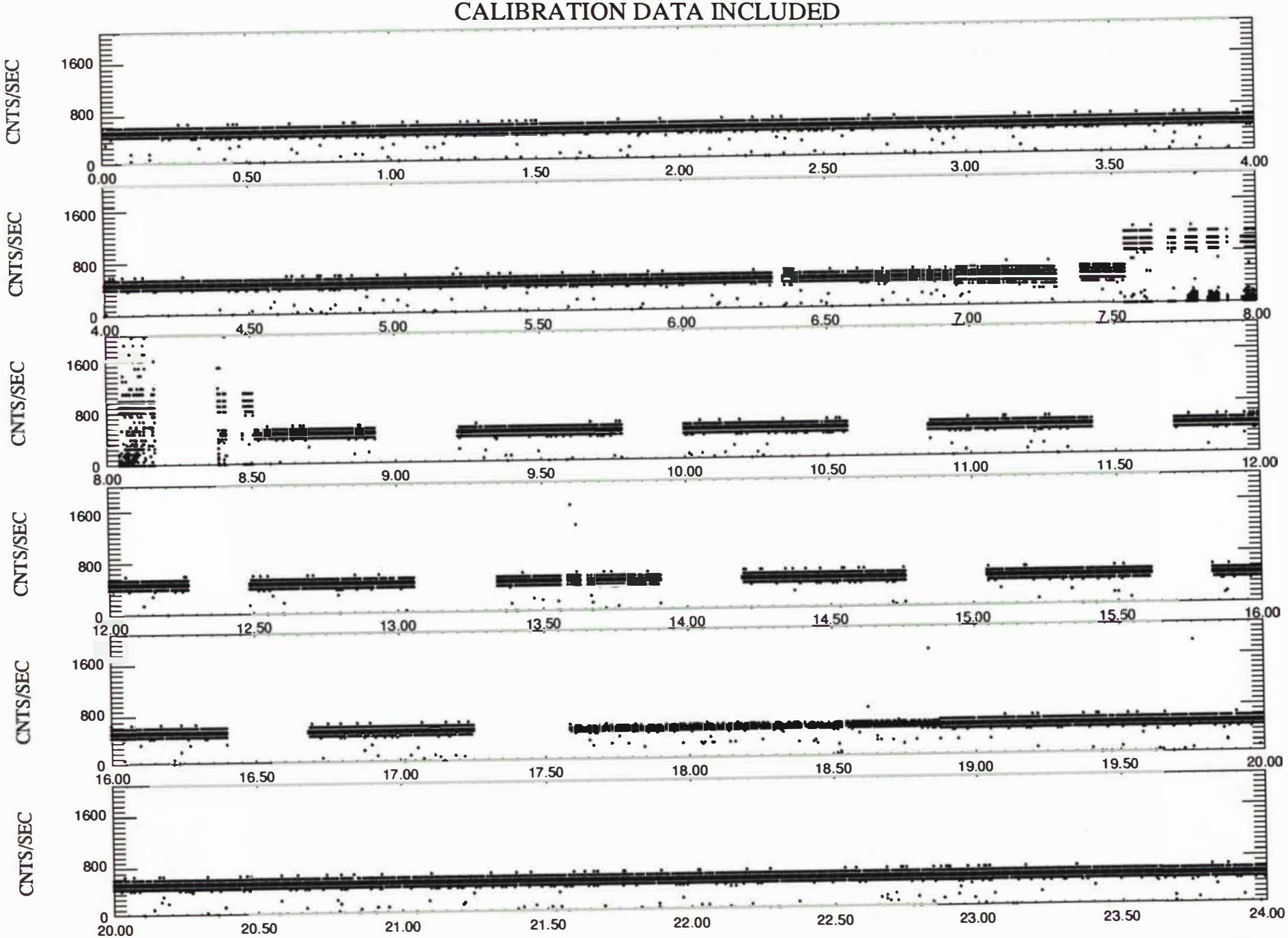
BURST NUMBER 13 - 15, 0 - 9



UNIV! AL TIME

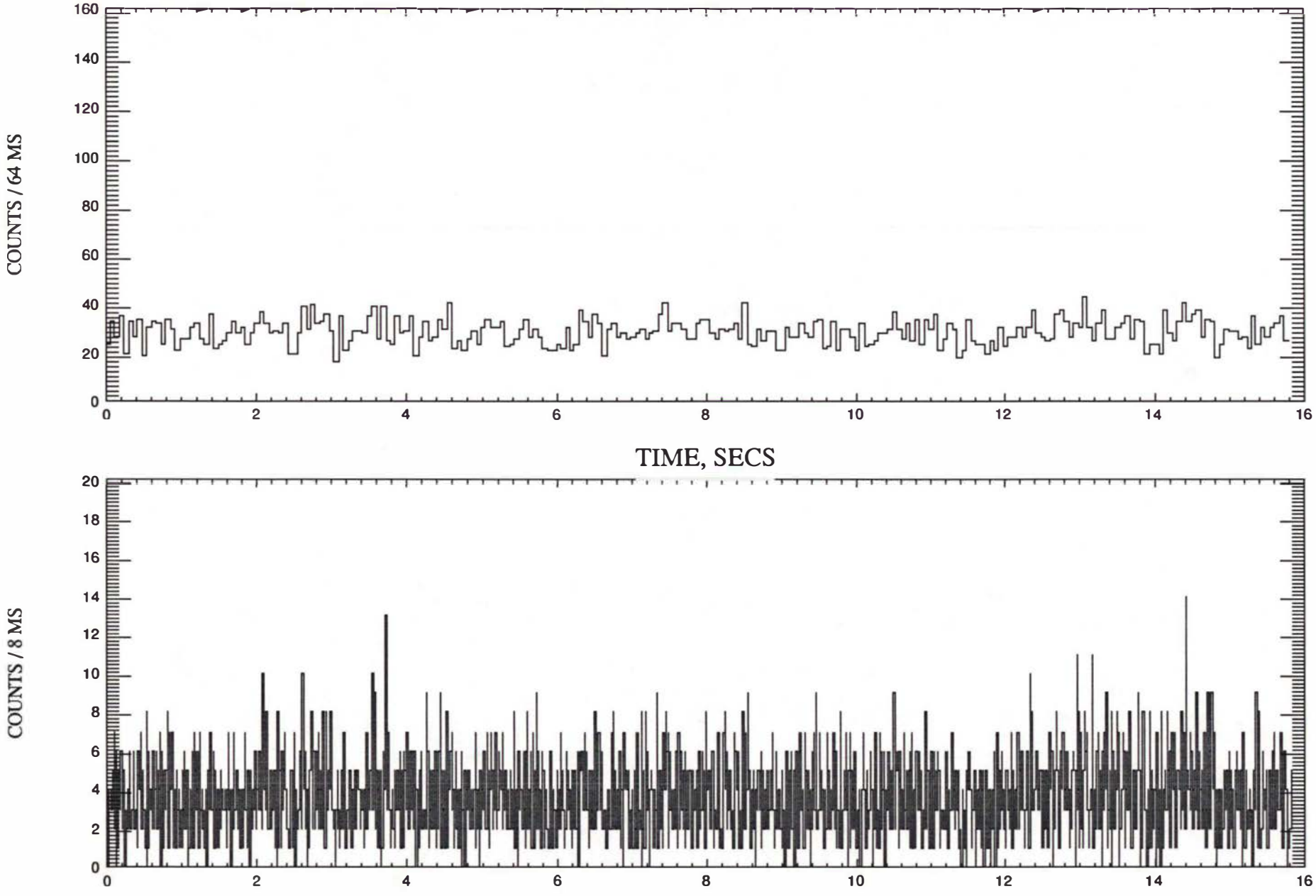
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

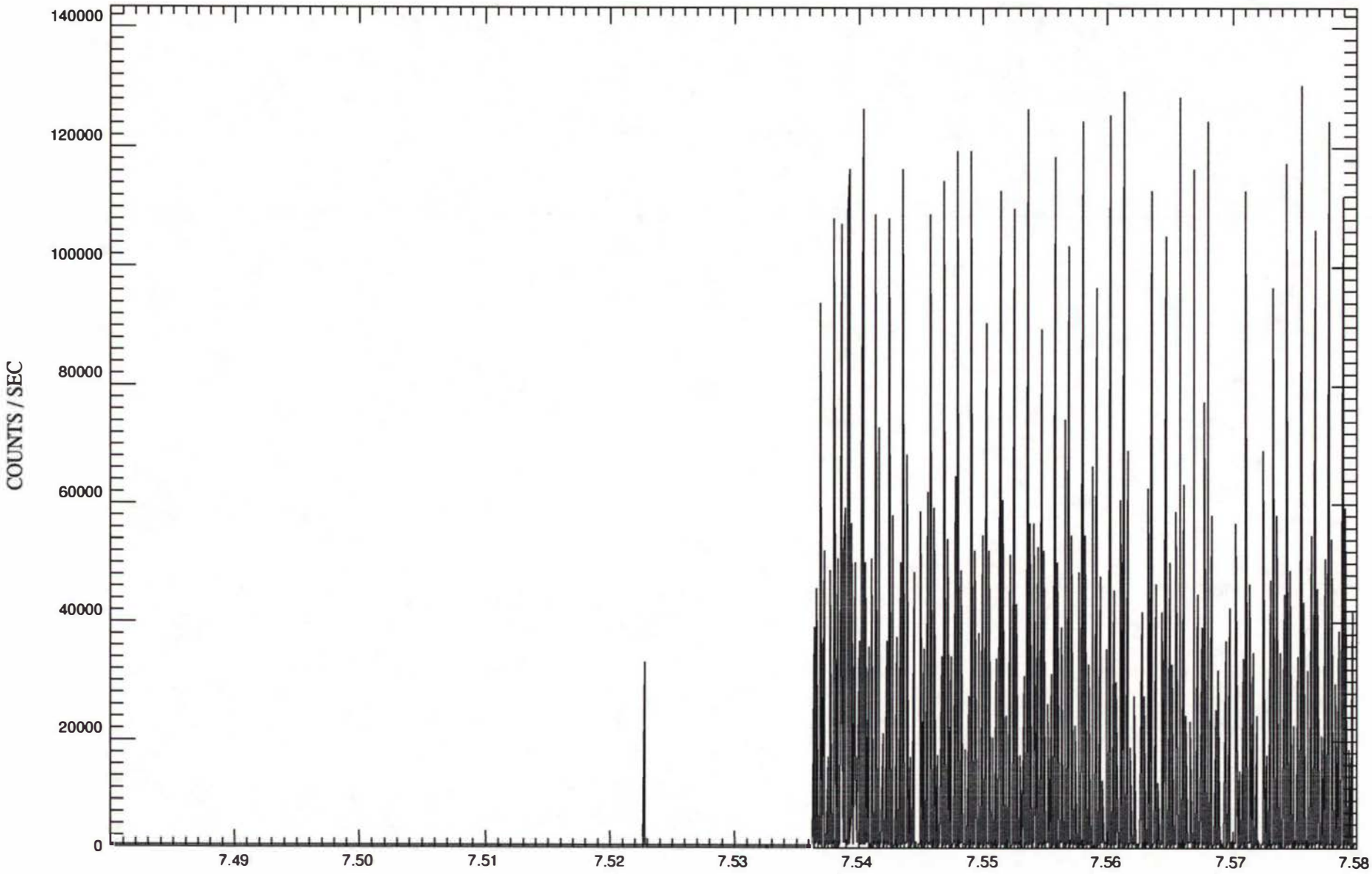
Burst Counter 14 at UT= 7.526280835470 h=27094.611 s 07:31:34.611



B# 1

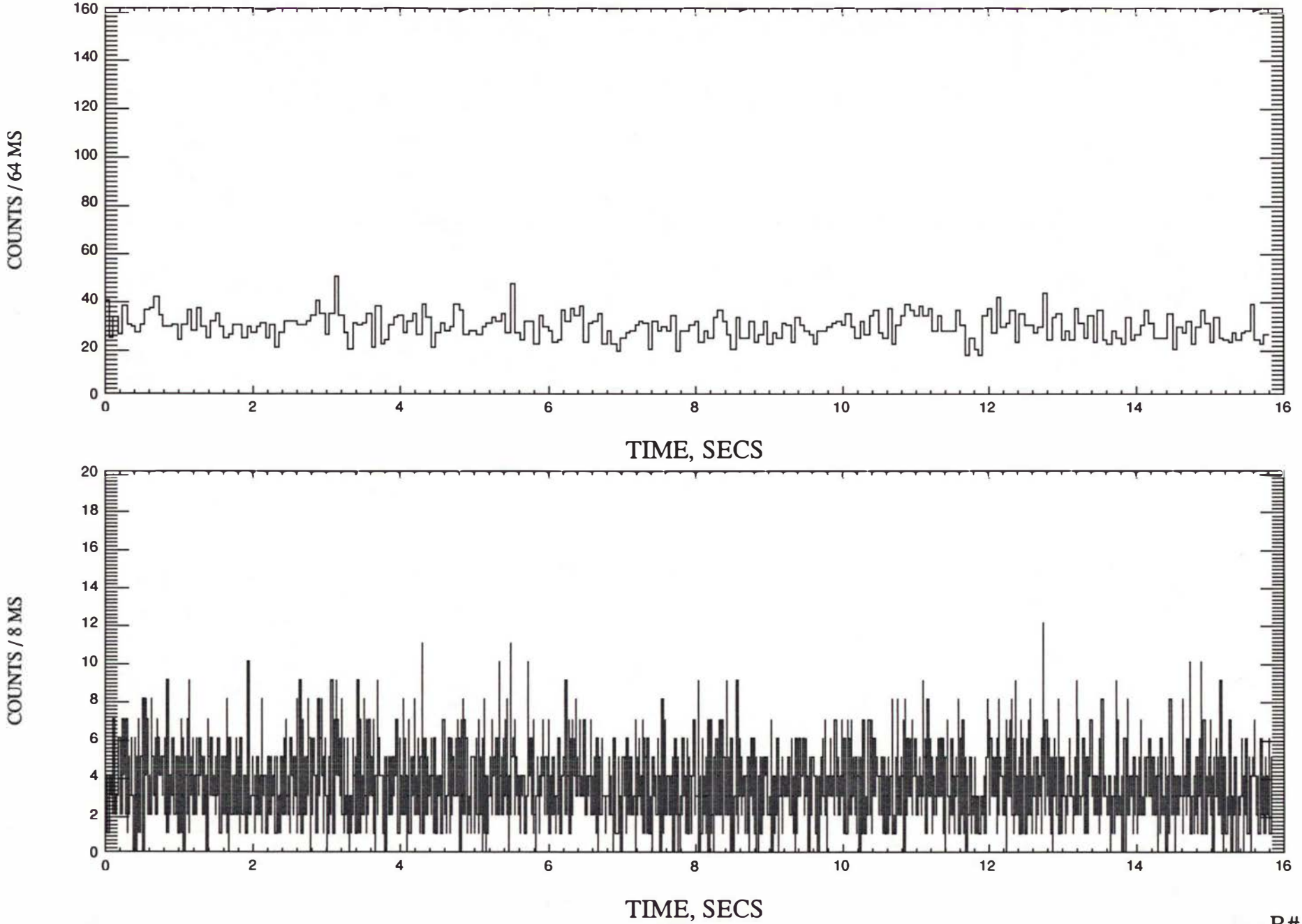
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

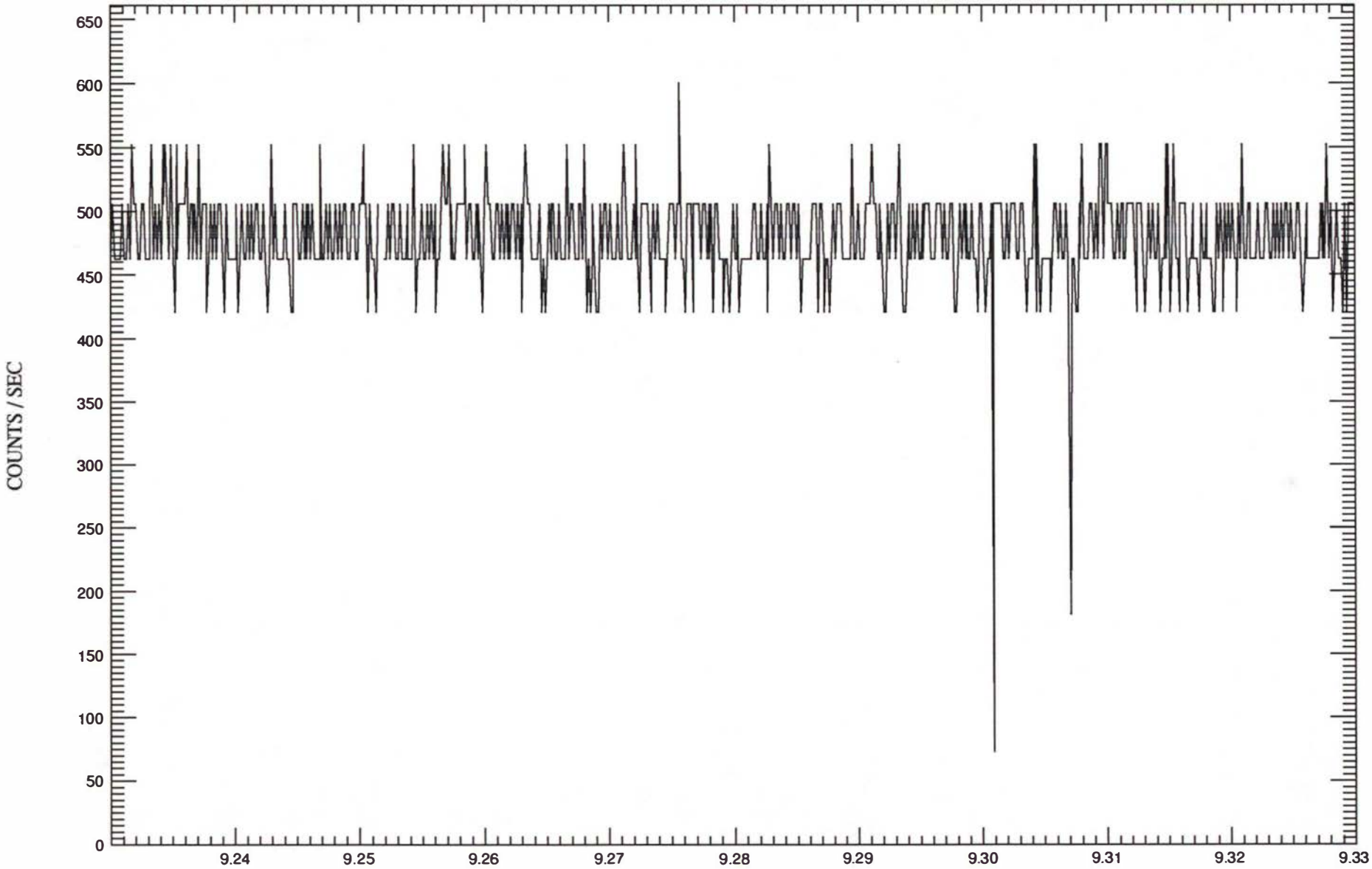
Burst Counter 15 at UT= 9.284078182644 h=33422.681 s 09:17:02.681



B# 2

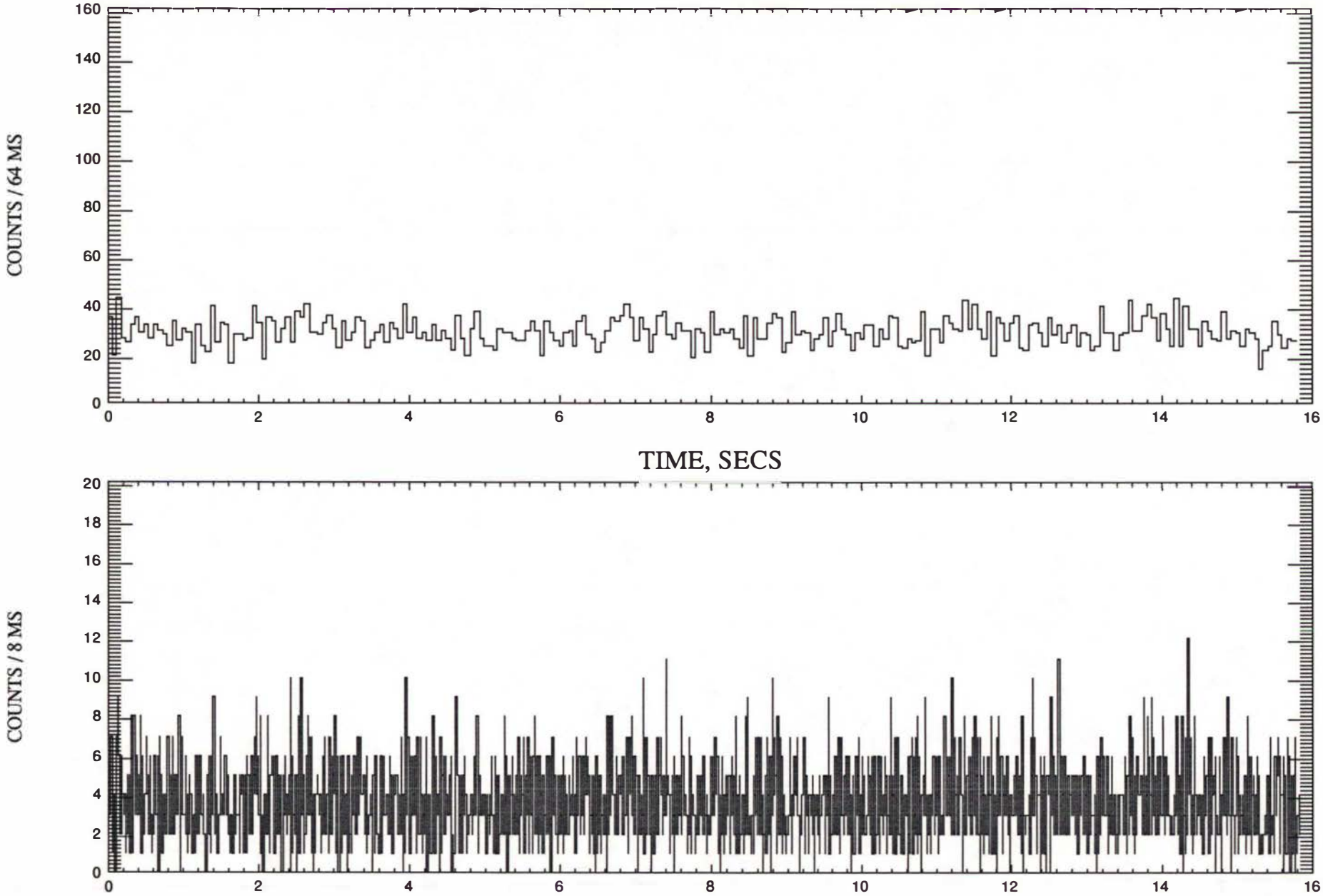
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

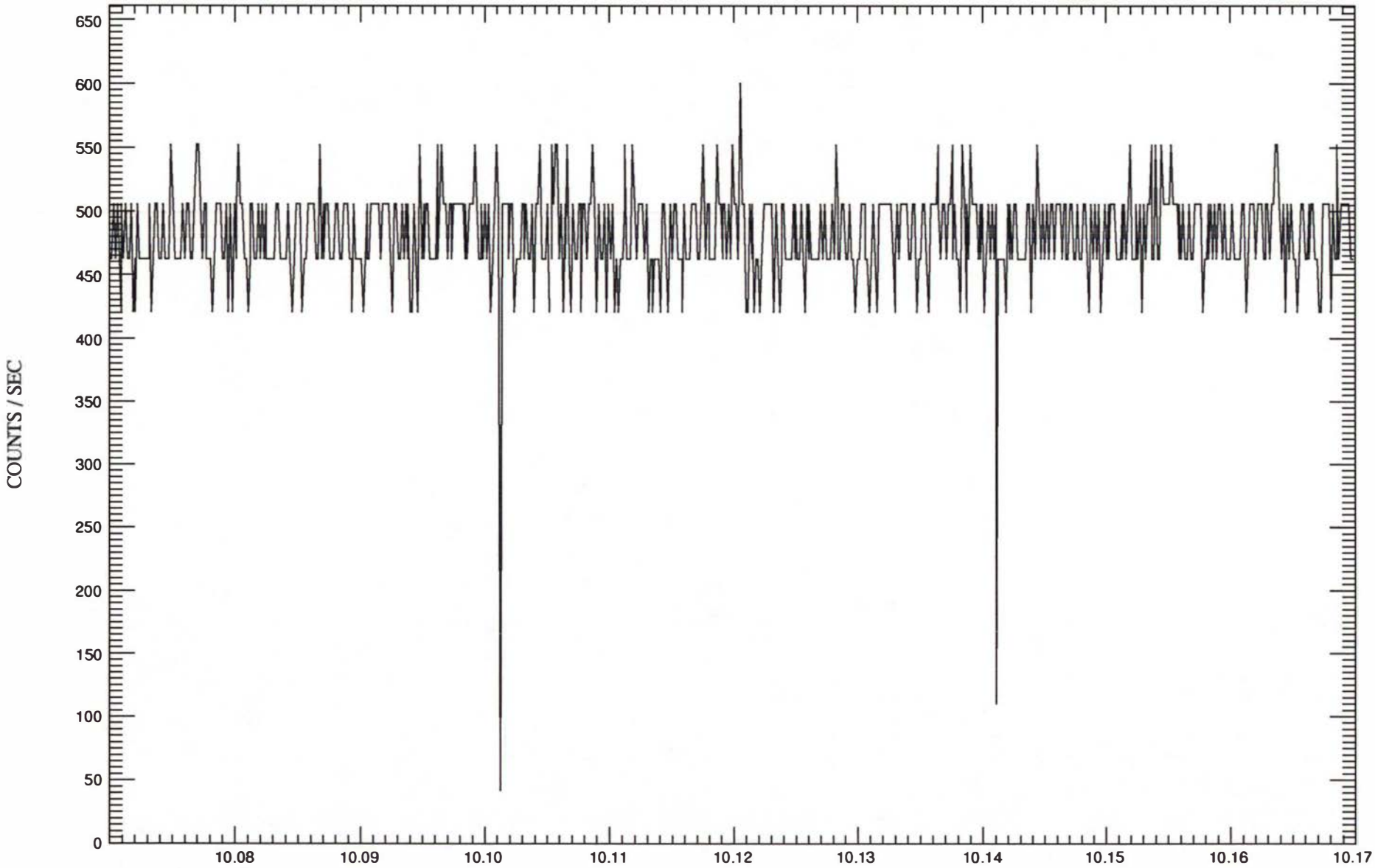
Burst Counter 0 at UT=10.117421201070 h=36422.716 s 10:07:02.716



B# 3

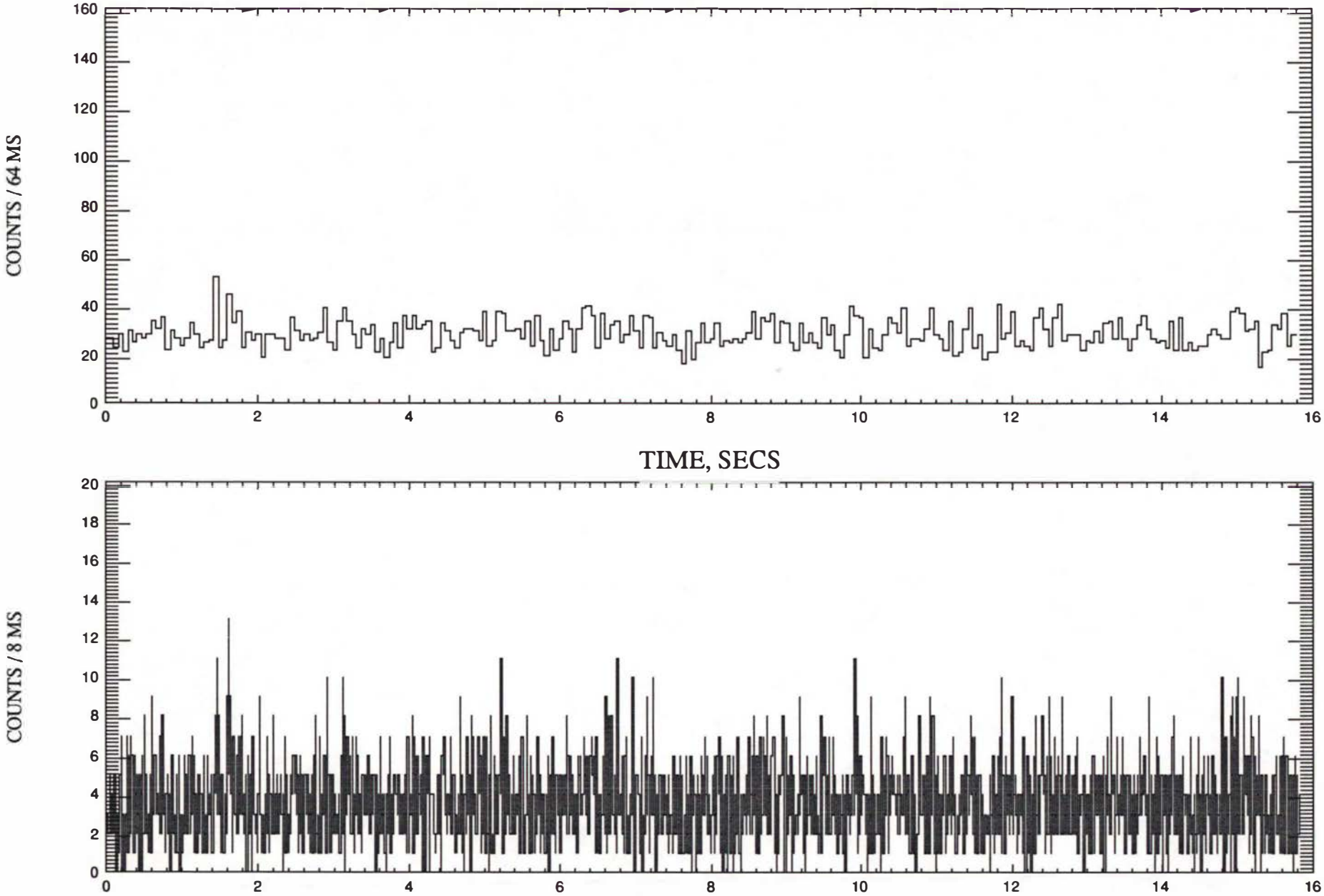
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

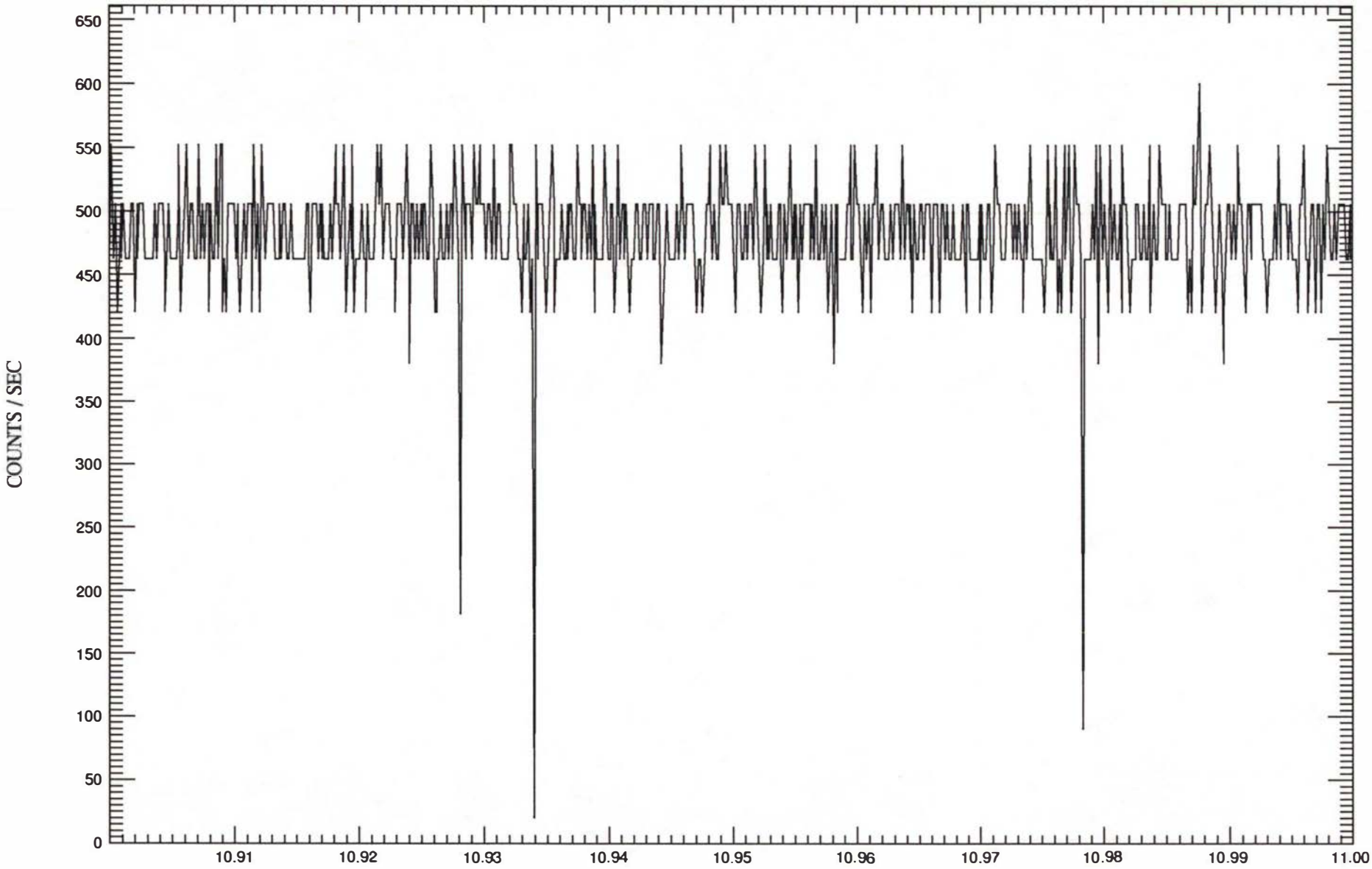
Burst Counter 1 at UT=10.950764219496 h=39422.751 s 10:57:02.751



B# 4

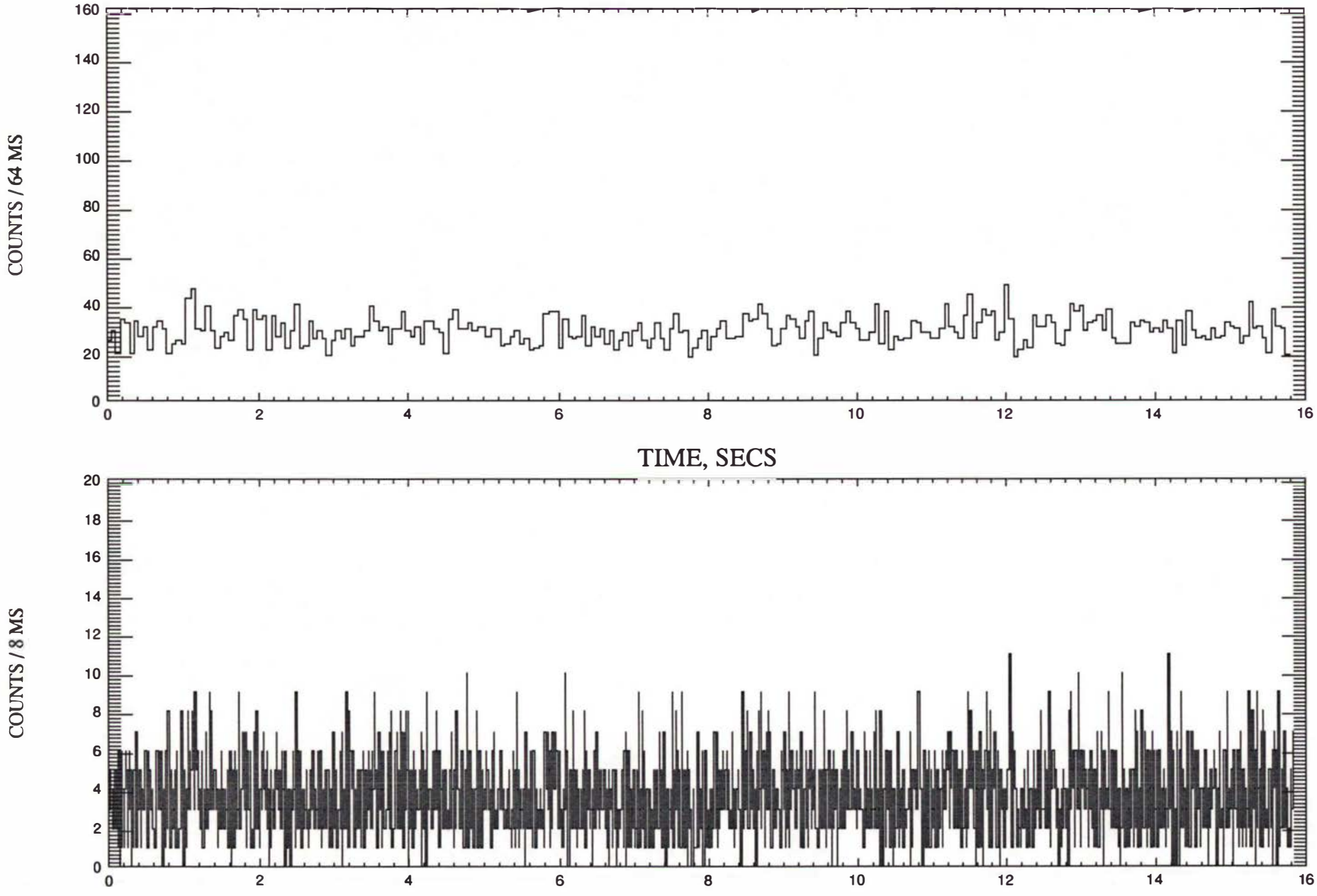
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

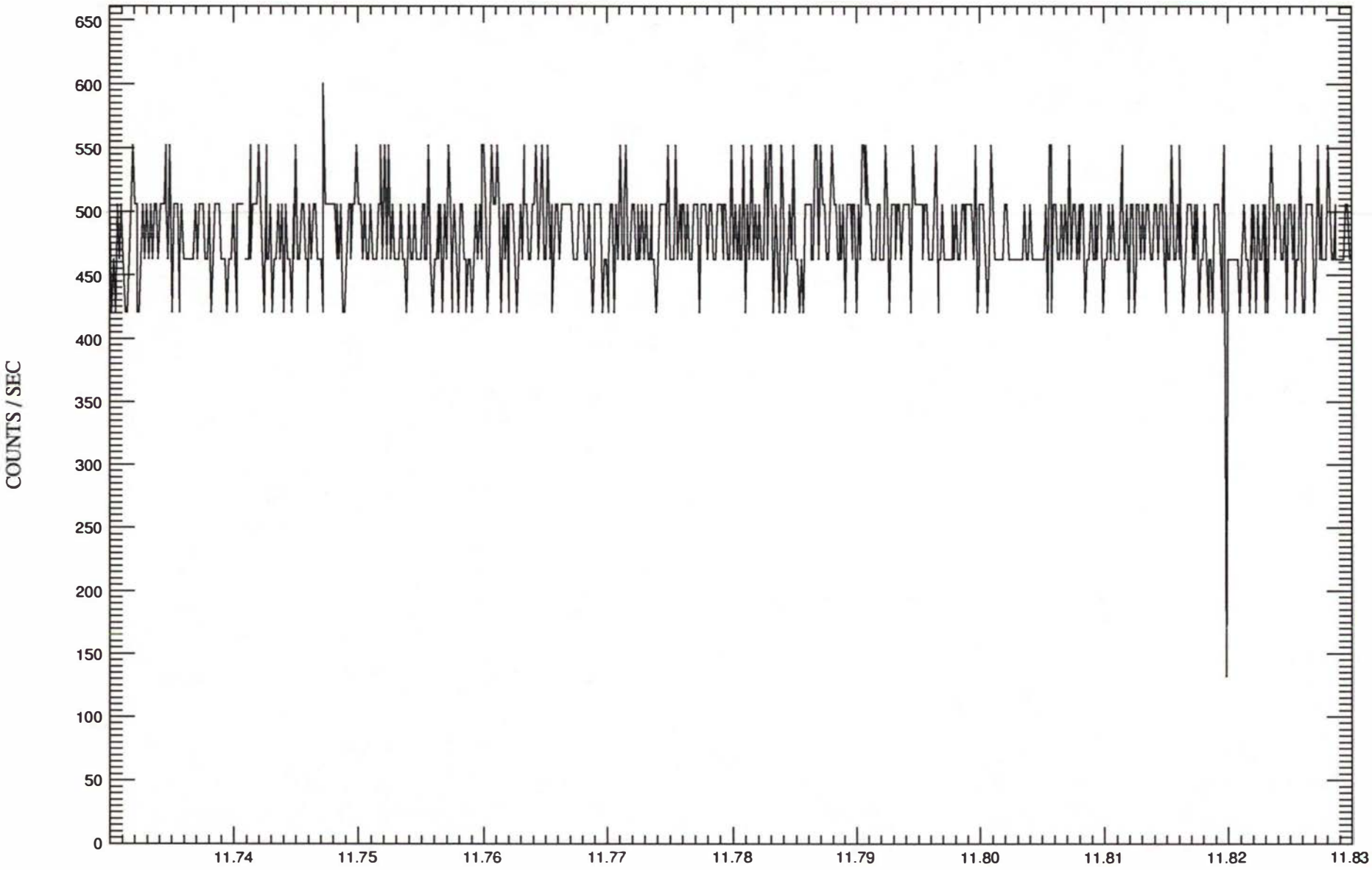
Burst Counter 2 at UT=11.784107237922 h=42422.786 s 11:47:02.786



B# 5

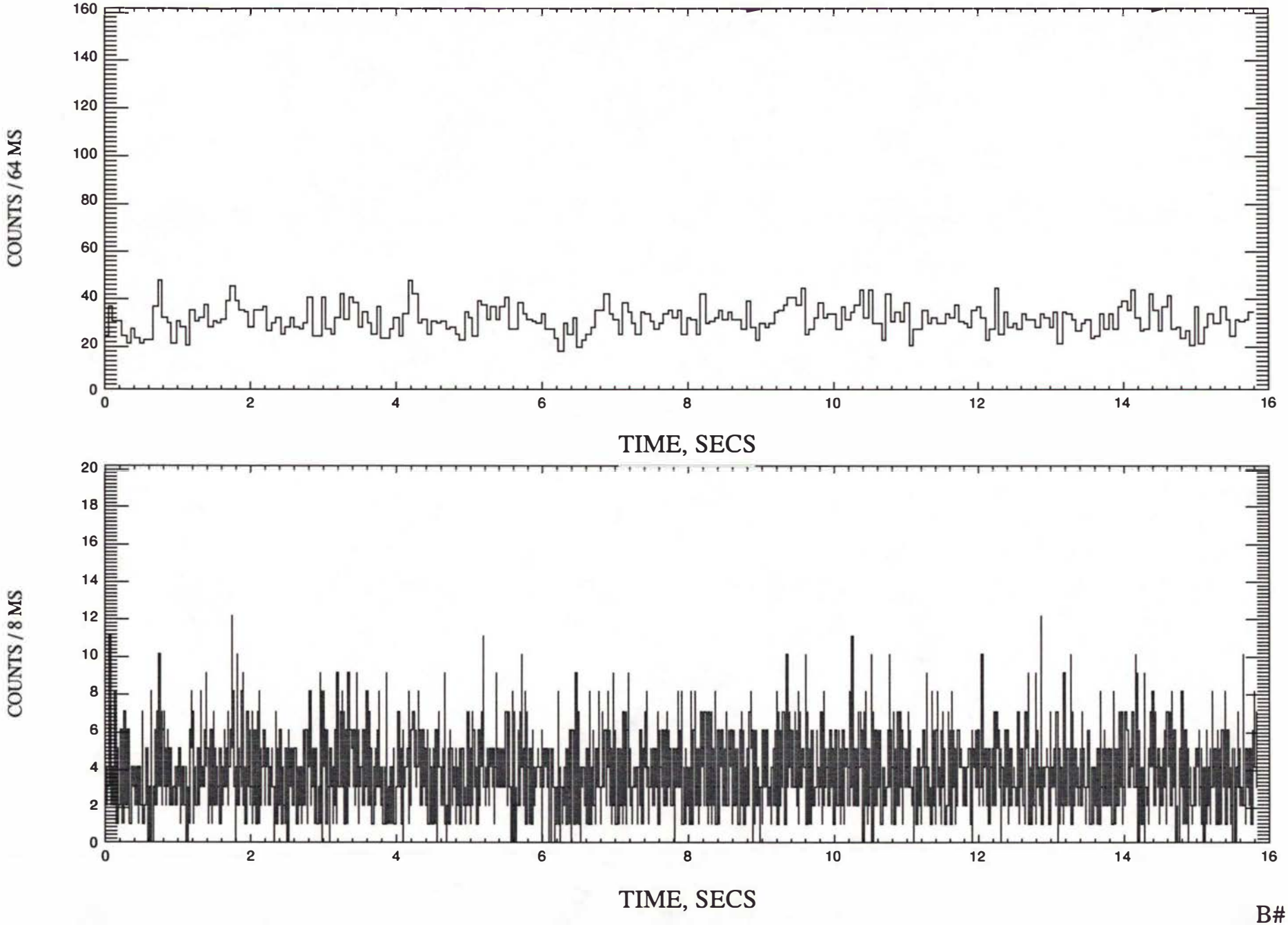
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

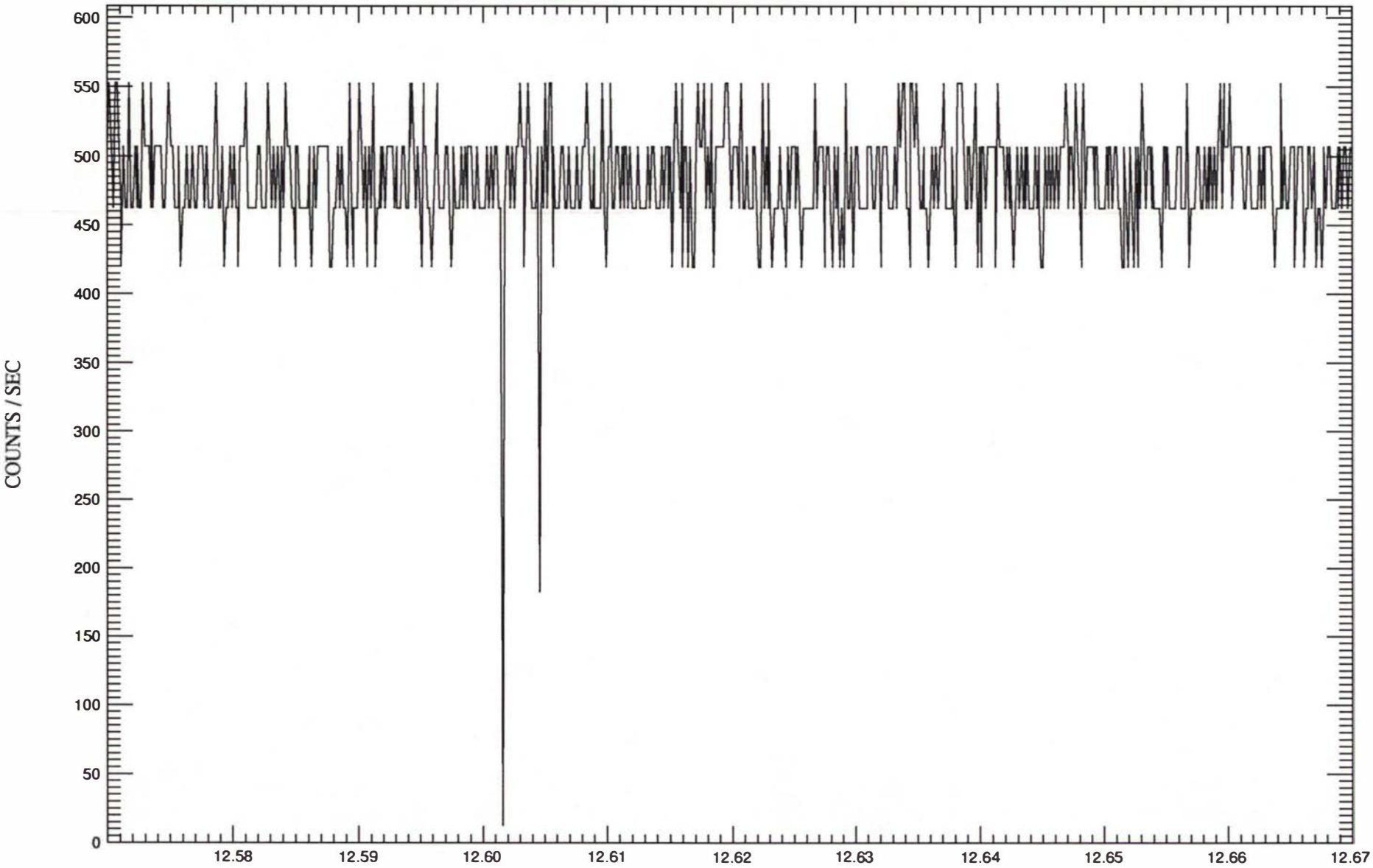
Burst Counter 3 at UT=12.617449451023 h=45422.818 s 12:37:02.818



B# 6

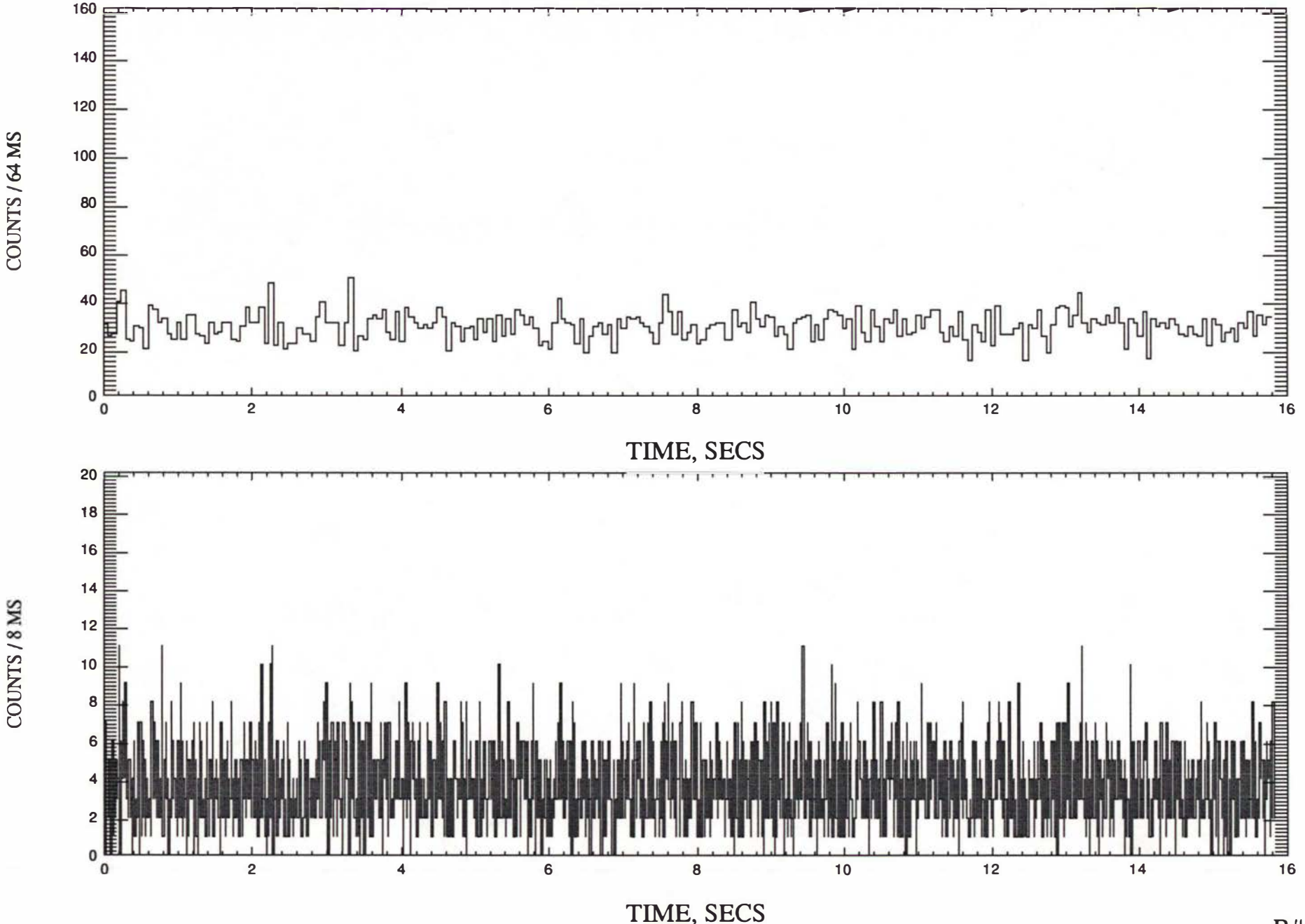
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

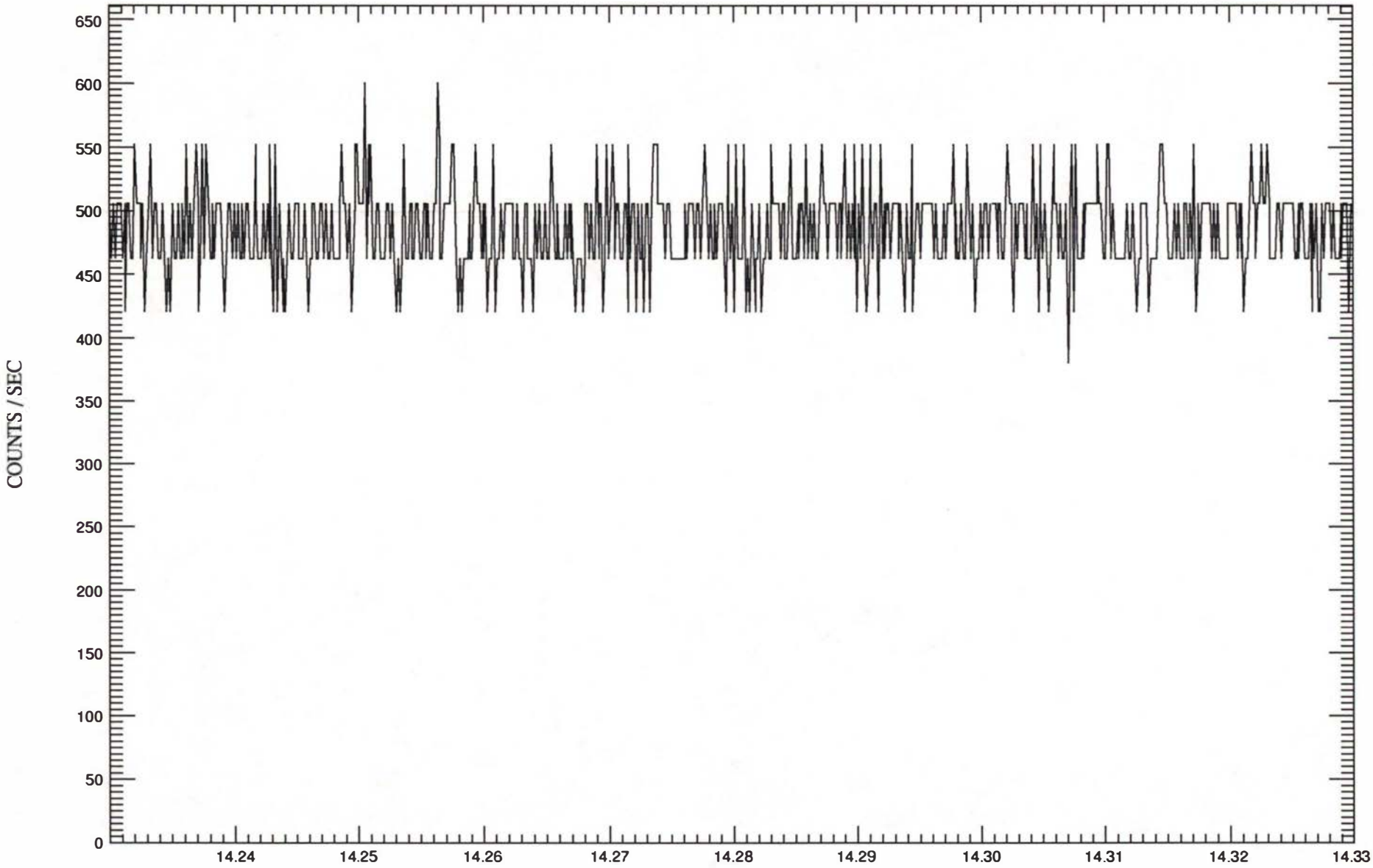
Burst Counter 5 at UT=14.284135487874 h=51422.888 s 14:17:02.888



B# 7

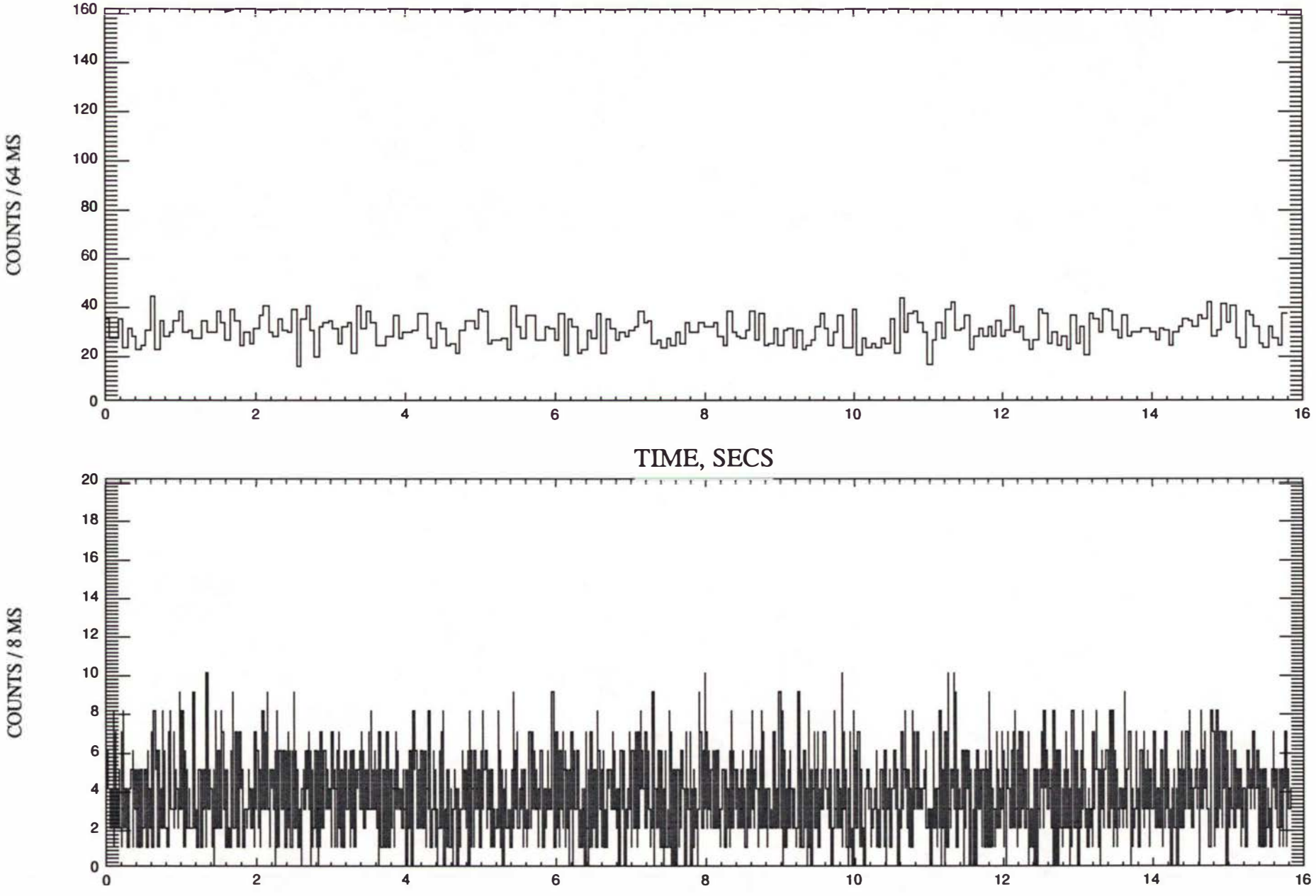
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

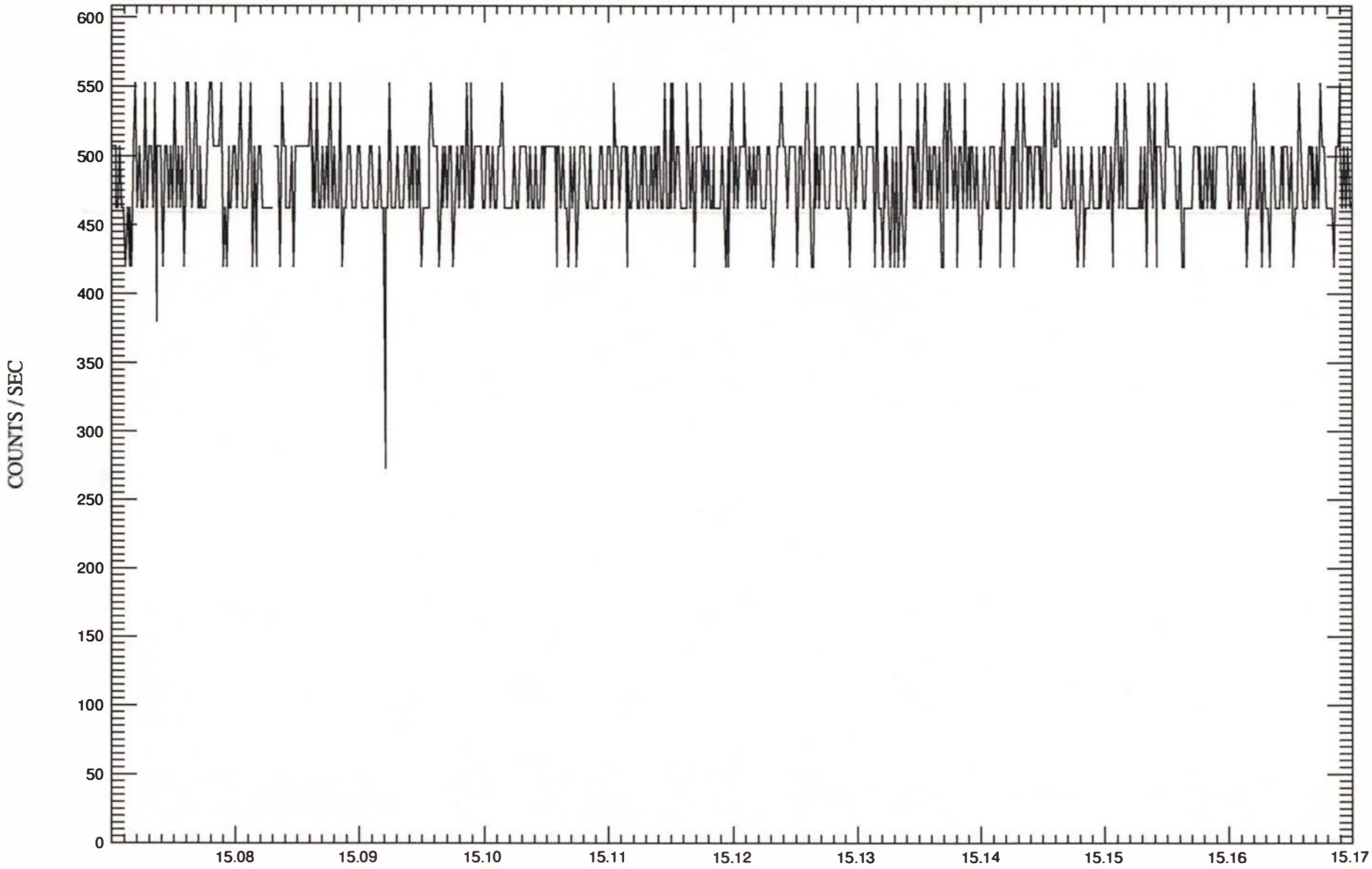
Burst Counter 6 at UT=15.117477700975 h=54422.920 s 15:07:02.920



B# 8

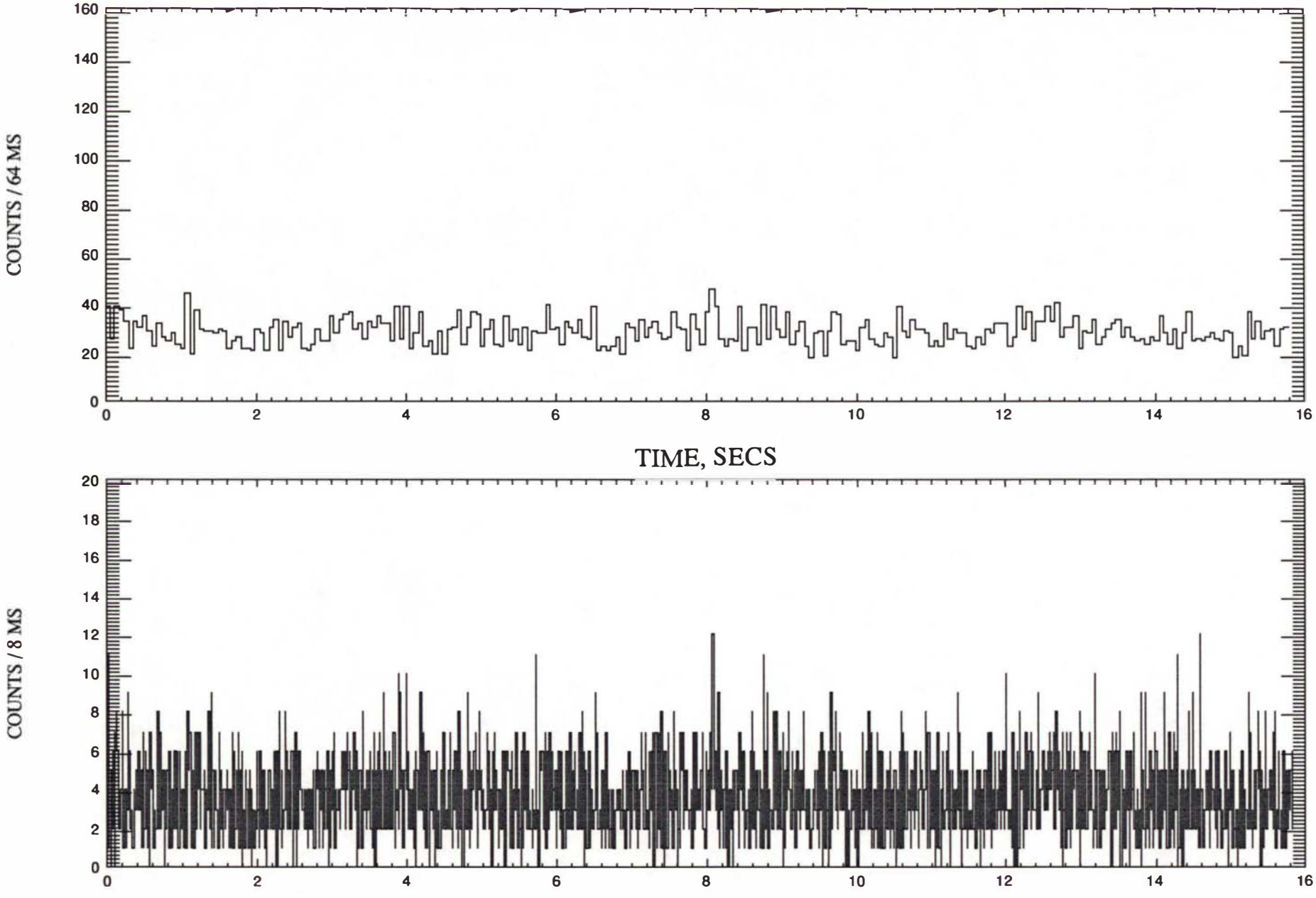
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

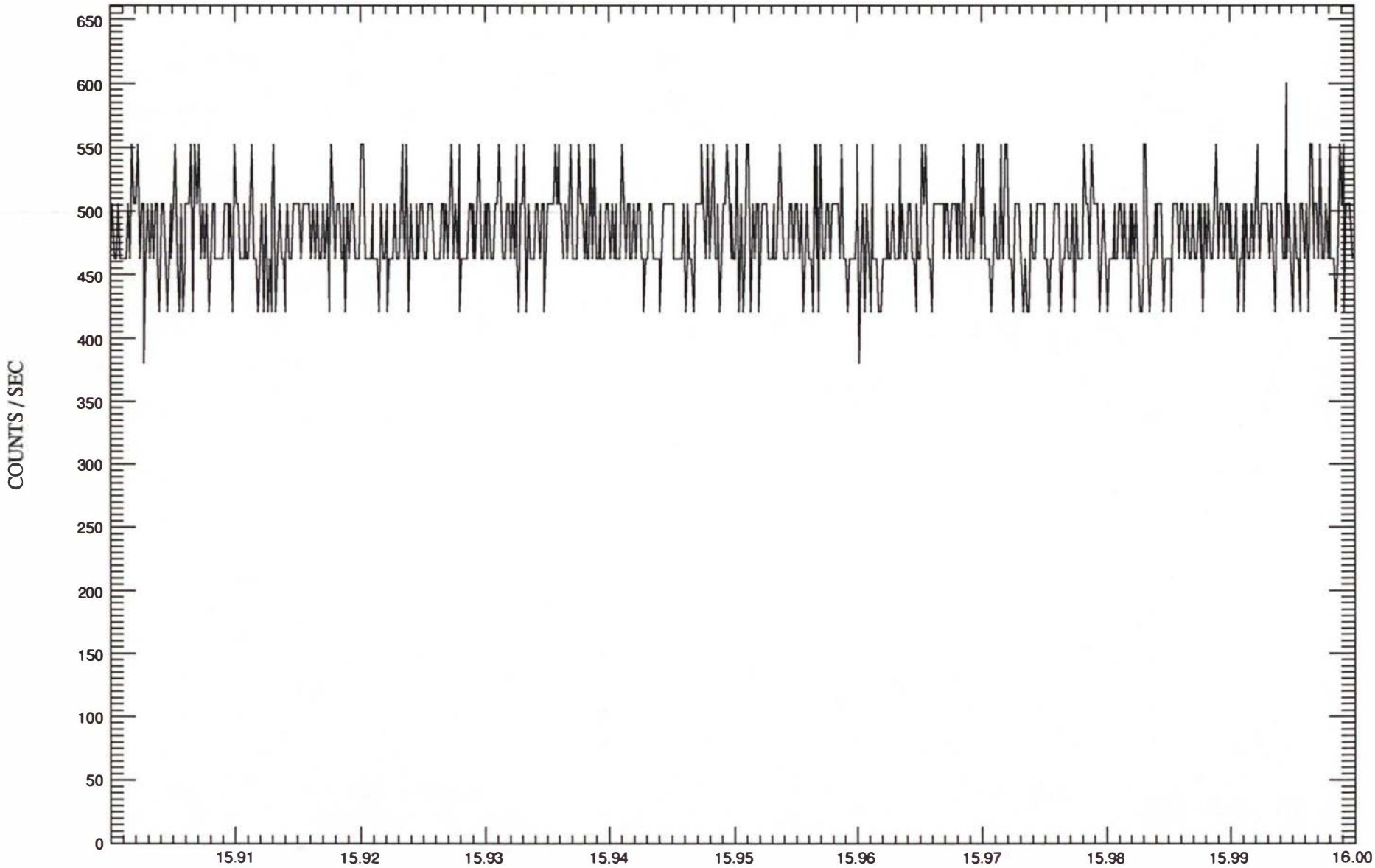
Burst Counter 7 at UT=15.950820719401 h=57422.955 s 15:57:02.955



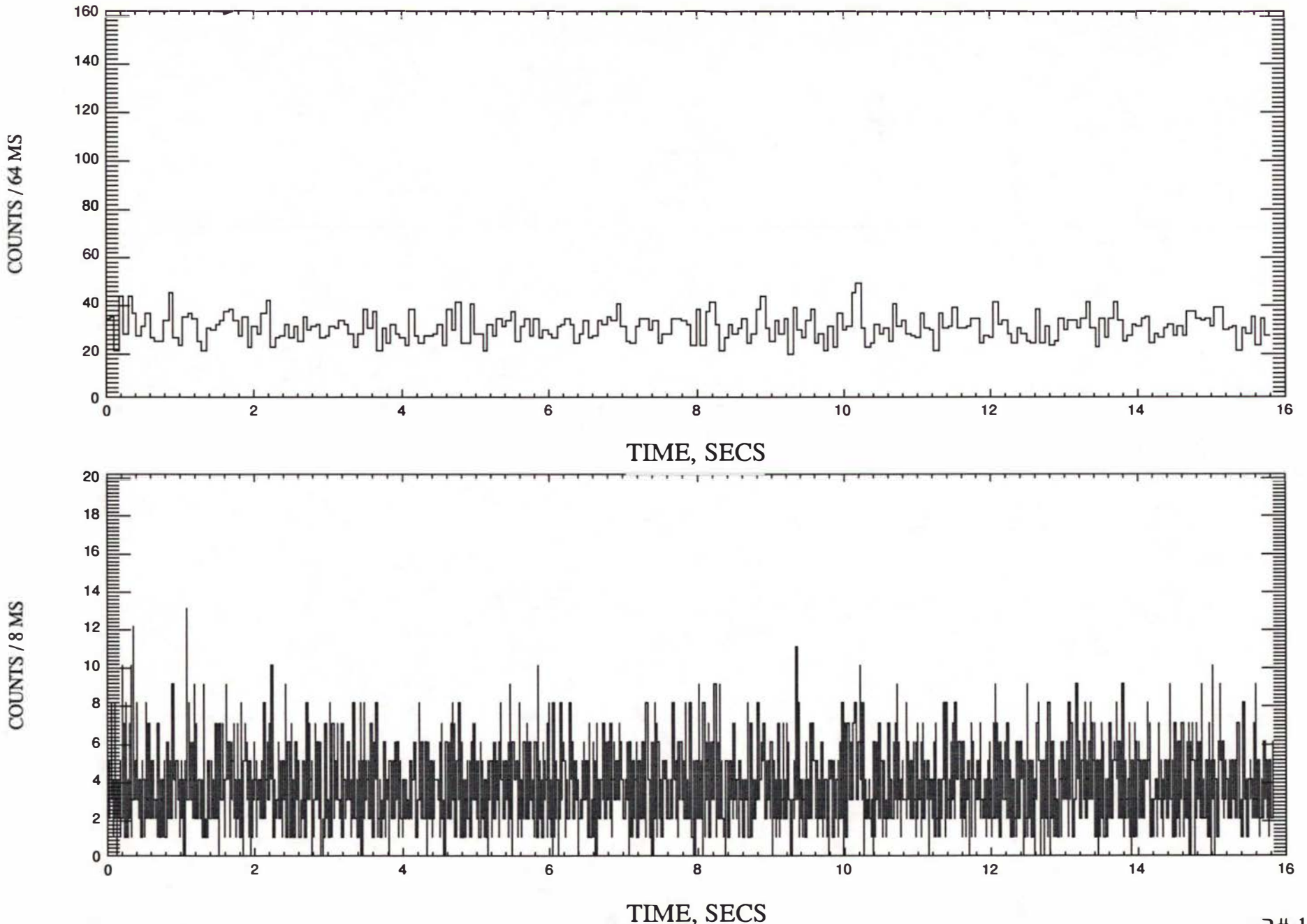
B# 9

HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED

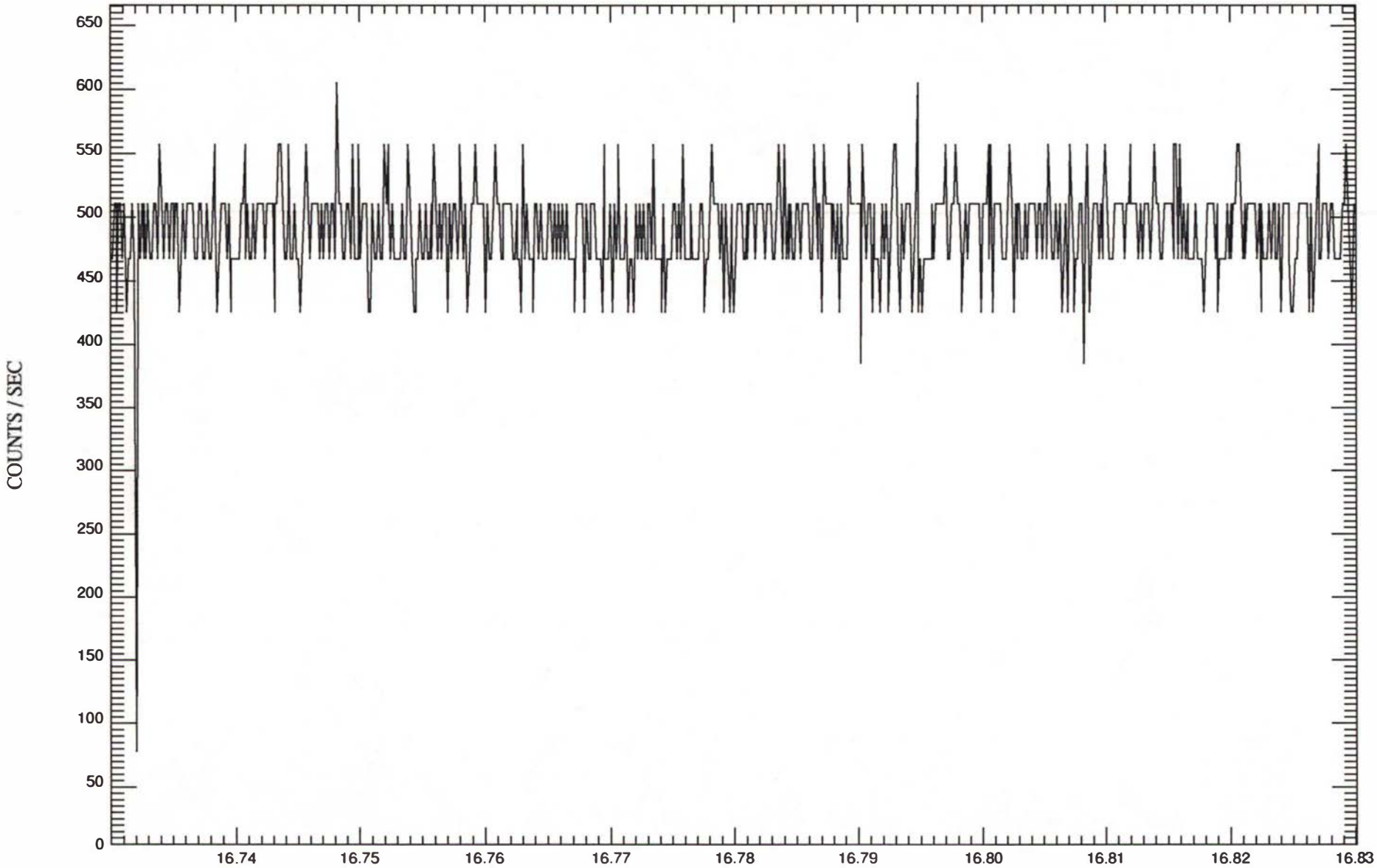


Burst Counter 8 at UT=16.784198460049 h=60423.114 s 16:47:03.114



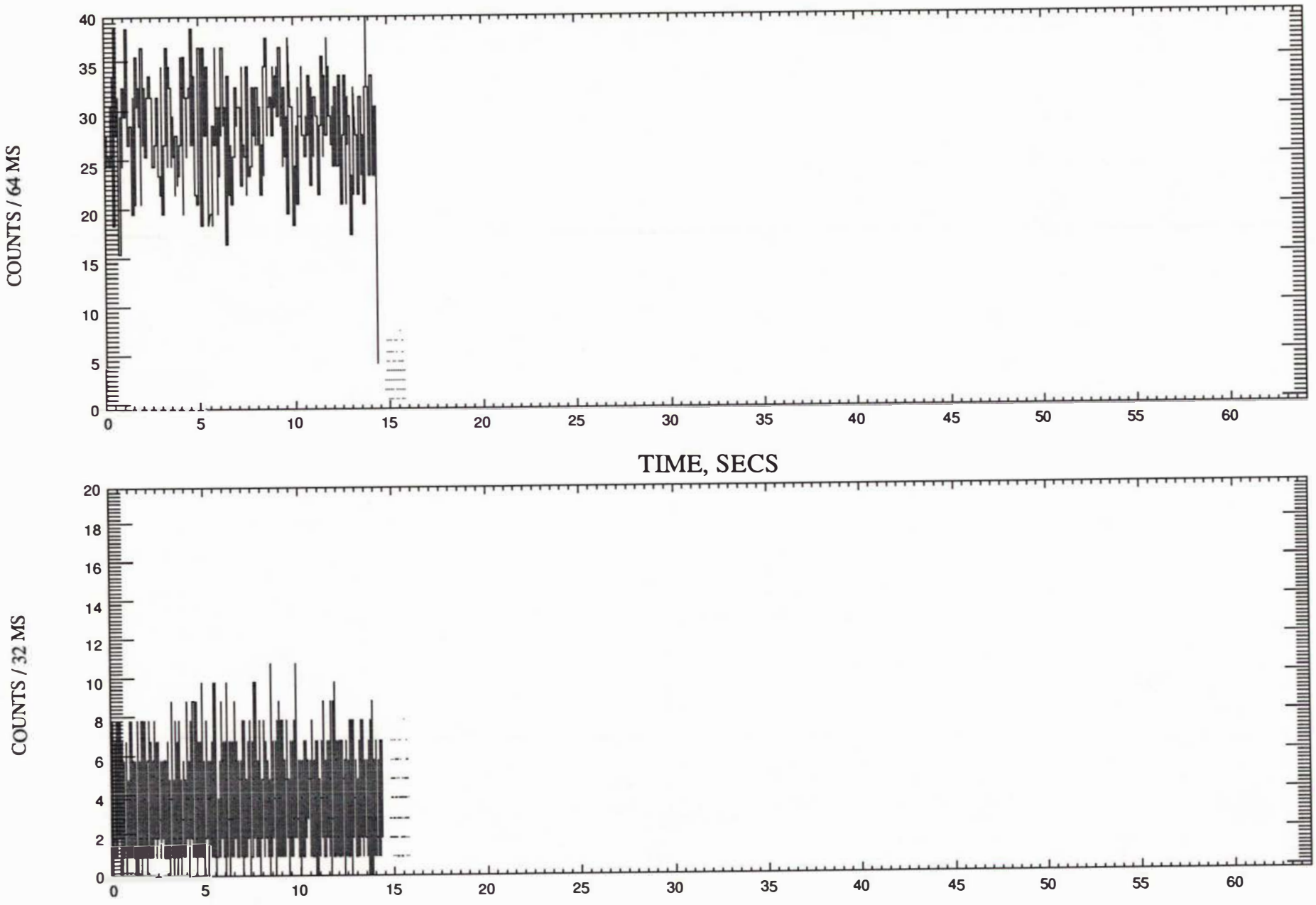
HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 237, year 1997 1/7/98

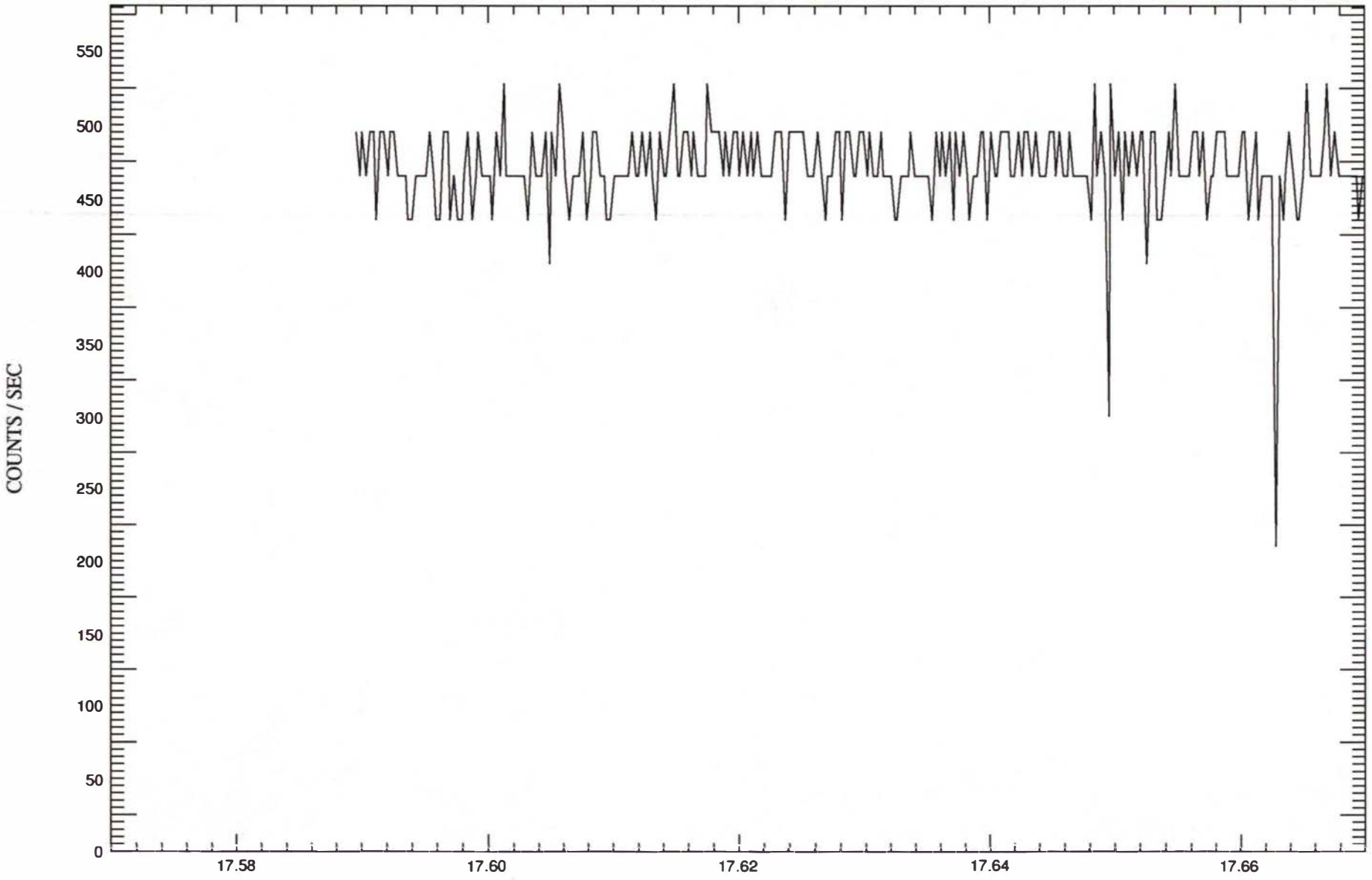
Burst Counter 9 at UT=17.617506785923 h=63423.024 s 17:37:03.024



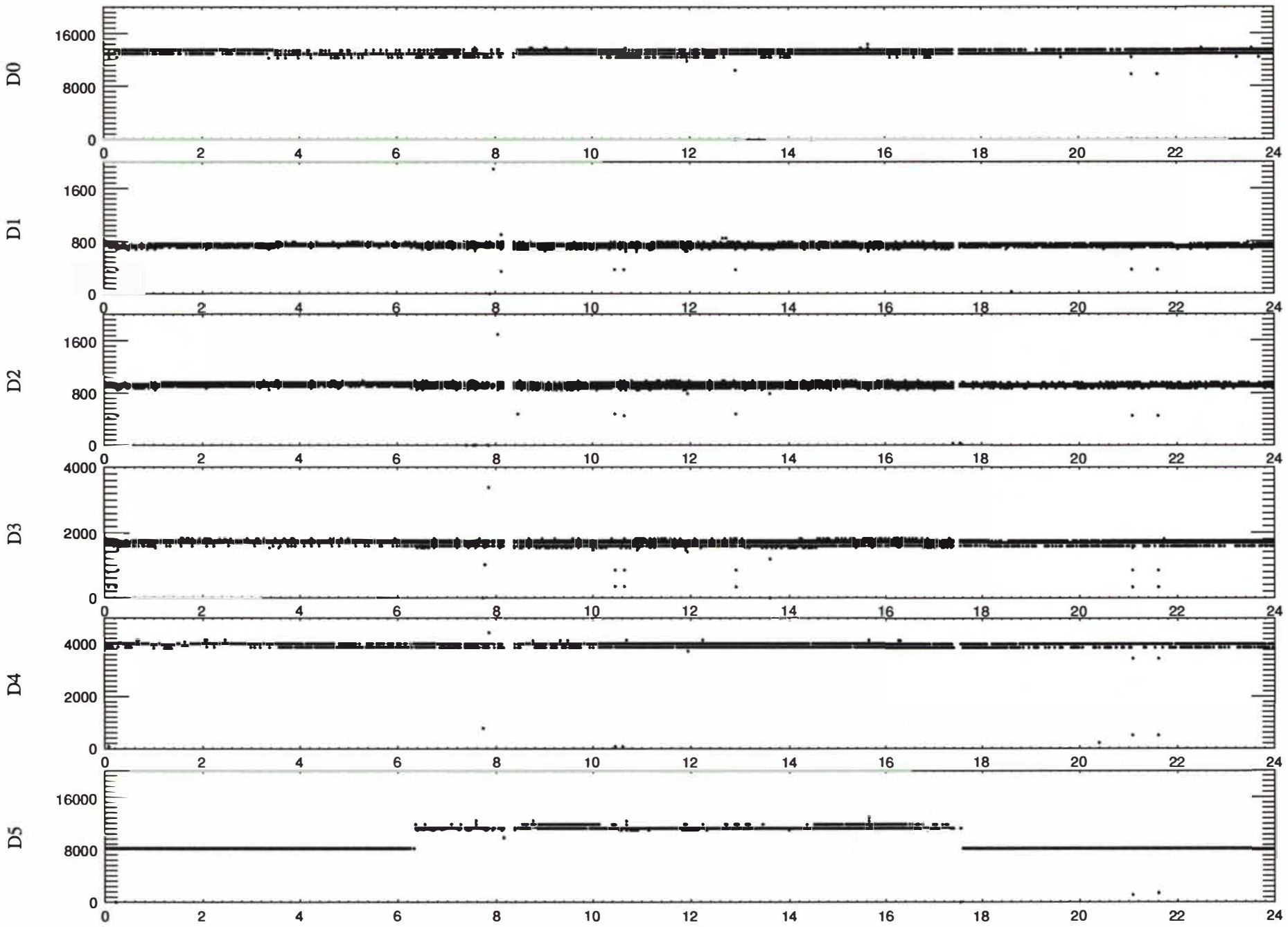
R# 11

HUS 2A, MODE 1, NOT AVERAGED EDR day 237, year 1997 to day 237, year 1997 1/7/98

CALIBRATION DATA INCLUDED



HUS 2B COUNTS / SEC EDR day 237, year 1997 to day 237, year 1997 1/6/98



From RICHARDSON@SSLLES.MSFC.NASA.GOV Thu Aug 28 10:53 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 KAA26009; Thu, 28 Aug 1997 10:52:56 -0700
Date: Thu, 28 Aug 1997 12:52:44 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970828125244.2040d89b@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6347
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6347
EVENT OF 1997 AUG 26 DAY OF YEAR=238
EVENT CROSSING TIME AT BATSE : 35100. S. OR 09:45:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 168.000 -3.000
BATSE PEAK COUNTING RATE: 6500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 8/ 97 IS:
RA= 160.688 DEC= 19.572 DIST= 6.231 AU
BATSE-ULYSSES DISTANCE = 932126704. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=156.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2847.27 SECS.
CROSSING TIME AT ULYSSES IS 32253. S. OR 08:57:32 +/- 223.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 8/ 97 IS:
RA= 214.692 DEC= -14.641 DIST= 1.612 AU
MARS-BATSE DISTANCE = 241089264. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -543.60 SECS.
CROSSING TIME AT MARS IS 34556. S. OR 09:35:56 +/- 94.64 SECONDS

BATSE BURST TRIGGER

NO.: 6347

TIME: TJD=0686 SECONDS=35100

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

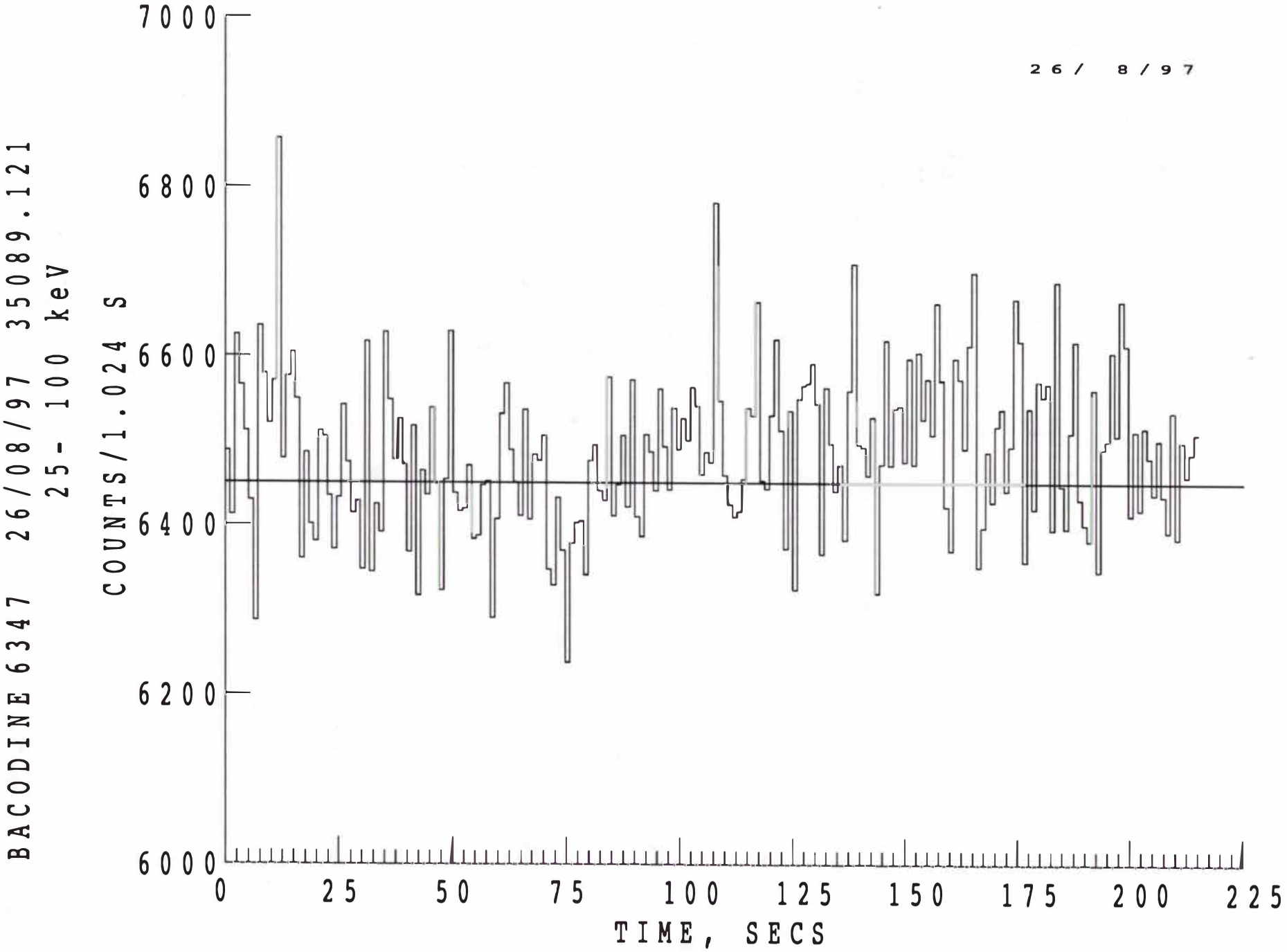
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=78 AZIMUTH=24 ERROR=8.2 DEGREES

COMMENTS:
GRB SINGLE PULSE WITH STRUCTURE. DUR.~0.5 SEC. SLIGHTLY VISIBLE ABOVE 300KEV.
WEAKLY VISIBLE BELOW 50KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6347	970826	10686	35100	6500	168	-03	.5


BACODINE 6347 26/08/97 35089.121
25- 100 keV
COUNTS/1.024 S
7000
6800
6600
6400
6200
6000
26/ 8/97
0
25
50
75
100
125
150
175
200
225
TIME, SECS

BATSE BURST# 6347

ULYSSES RT 28/ 8/97

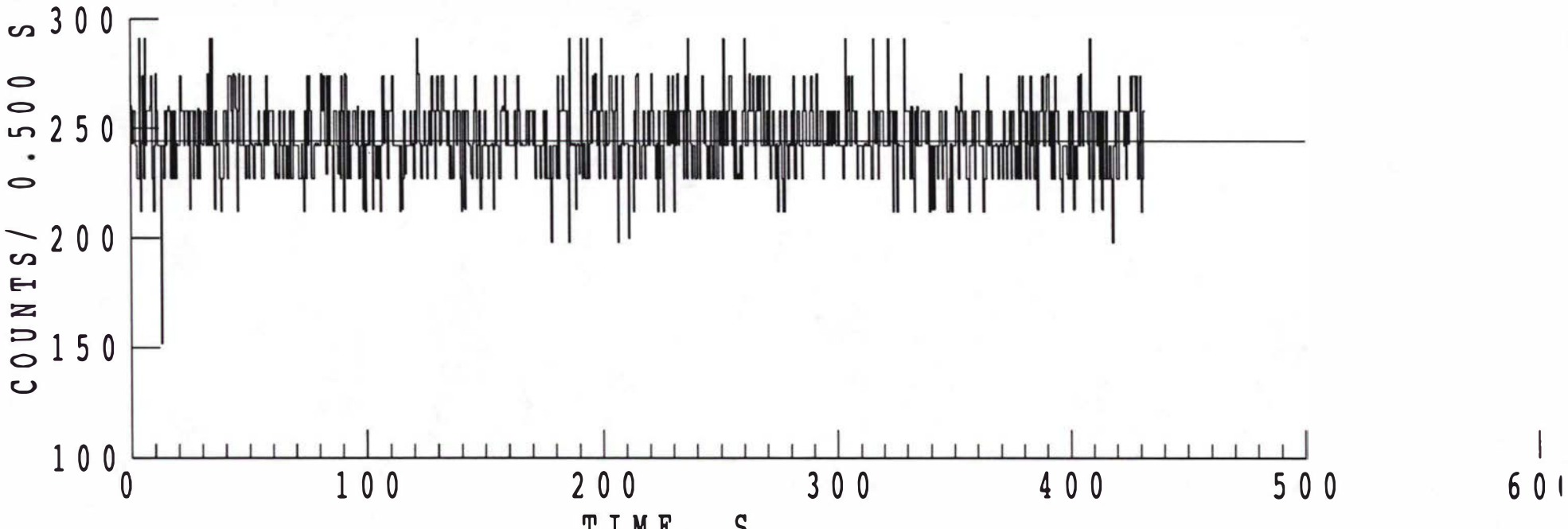
26/ 8/97 32040.115 s

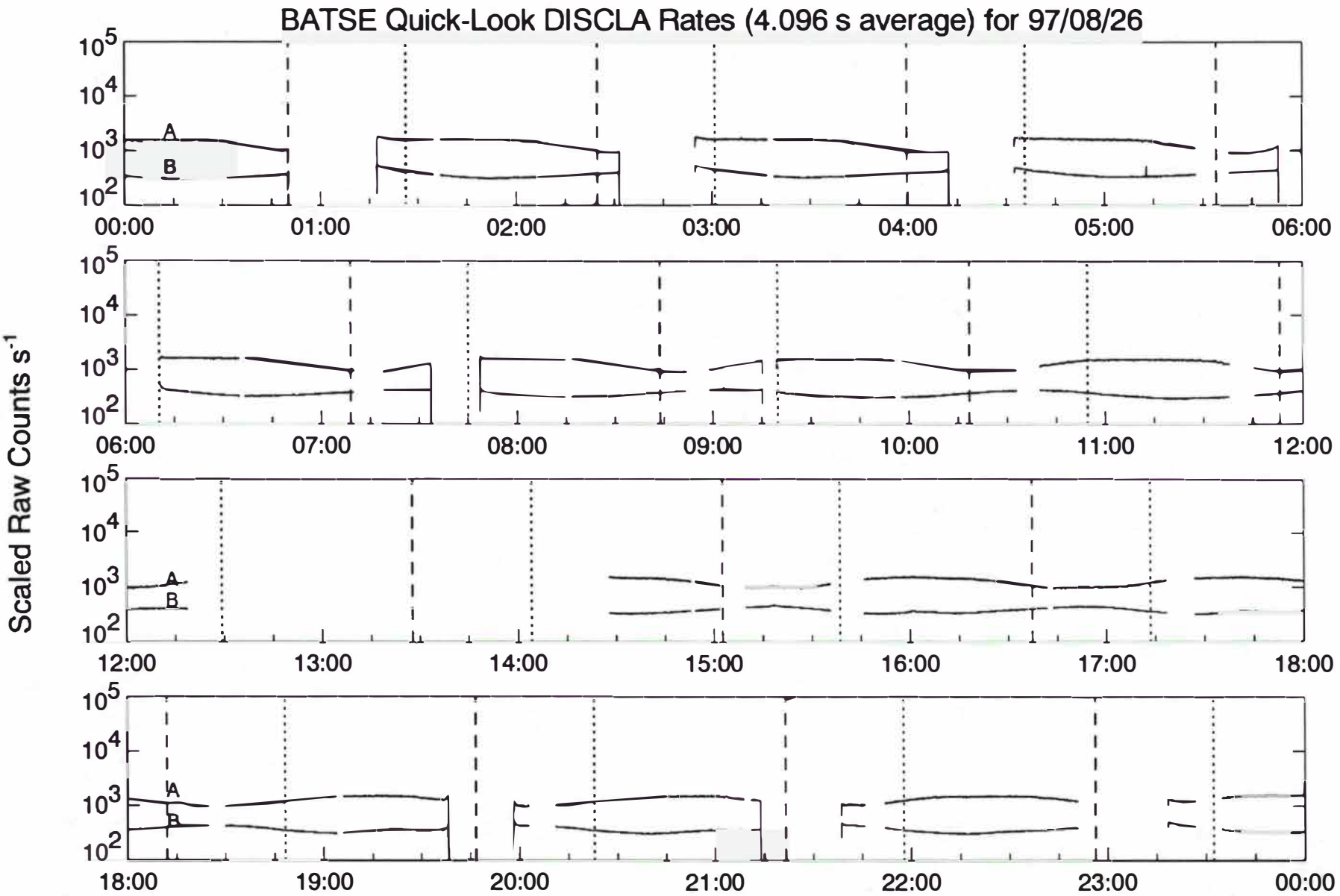
0.250 S INTERVALS REGROUPED BY 2

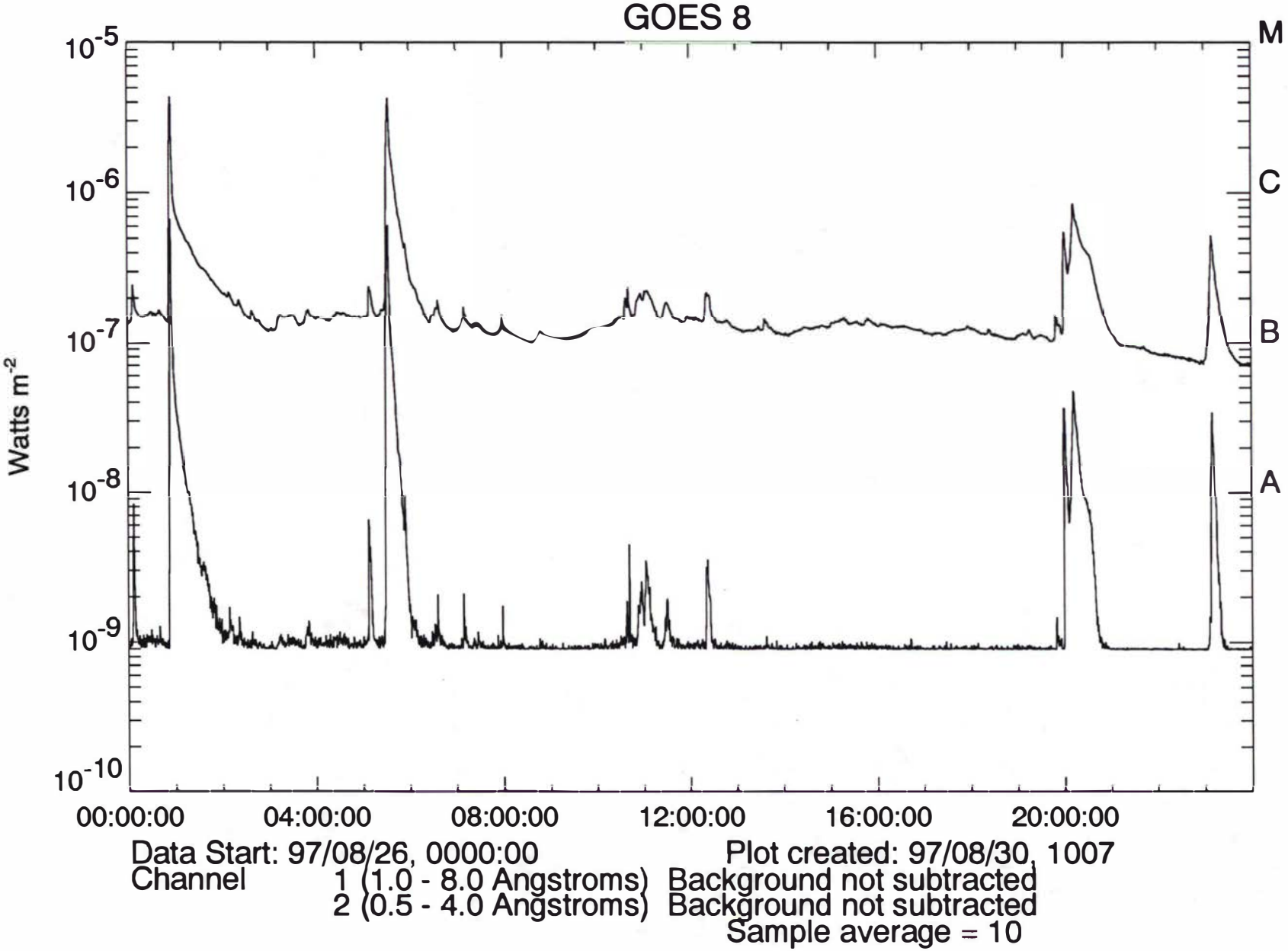
0- 0 keV

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


GOES 8
M
C
B
A
Watts m-2
10-5
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: 97/08/26, 0000:00
Plot created: 97/08/30, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

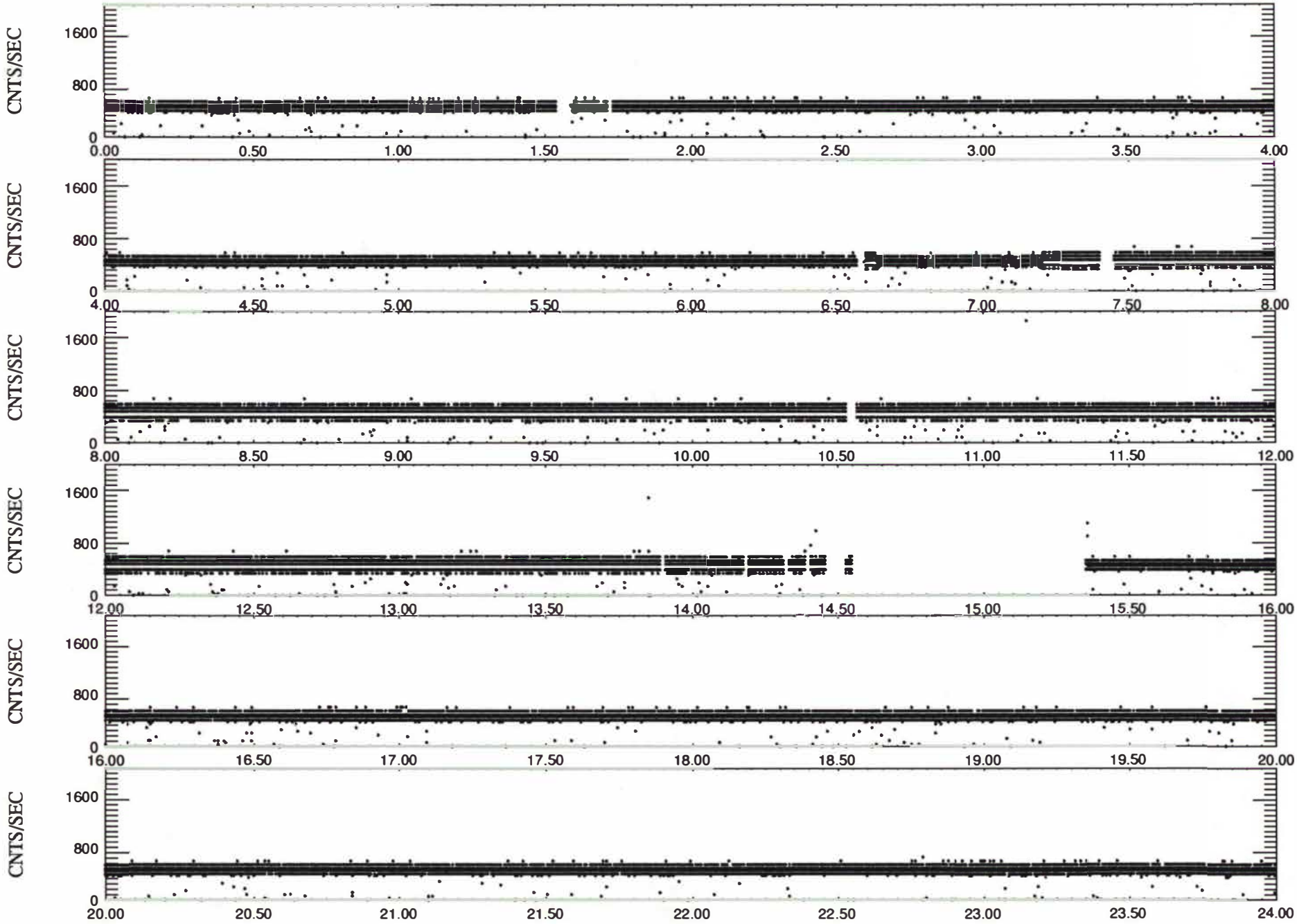
Print Messages


```
%%[ Error: Message: process(0x357b60, 'Unnamed process', runnable)
Error: /nocurrentpoint
Command: 'lineto'
Ostack: 635 229
Estack:
  at: '.array_exec_cont' {/nocurrentpoint *'standarderroraction'}
  at: '.psparse_token' file(?,W,R) ptr0x00096228
  at: '.packedarray_exec_cont' {... packedarray{5} 'if' 'end' currexecfile 'cvx'
 *'exec'}
  at: '.stopped_cont'
  at: '.packedarray_exec_cont' {packedarray{23} *'stopped' packedarray{5} 'if'}
  at: '.end_exec'
Dstack:
  dictionary[105/200]
  package(NeWSprint)
  dictionary[367/367]
635 229
]%%
```

Displays, but makes a bad .ps file.

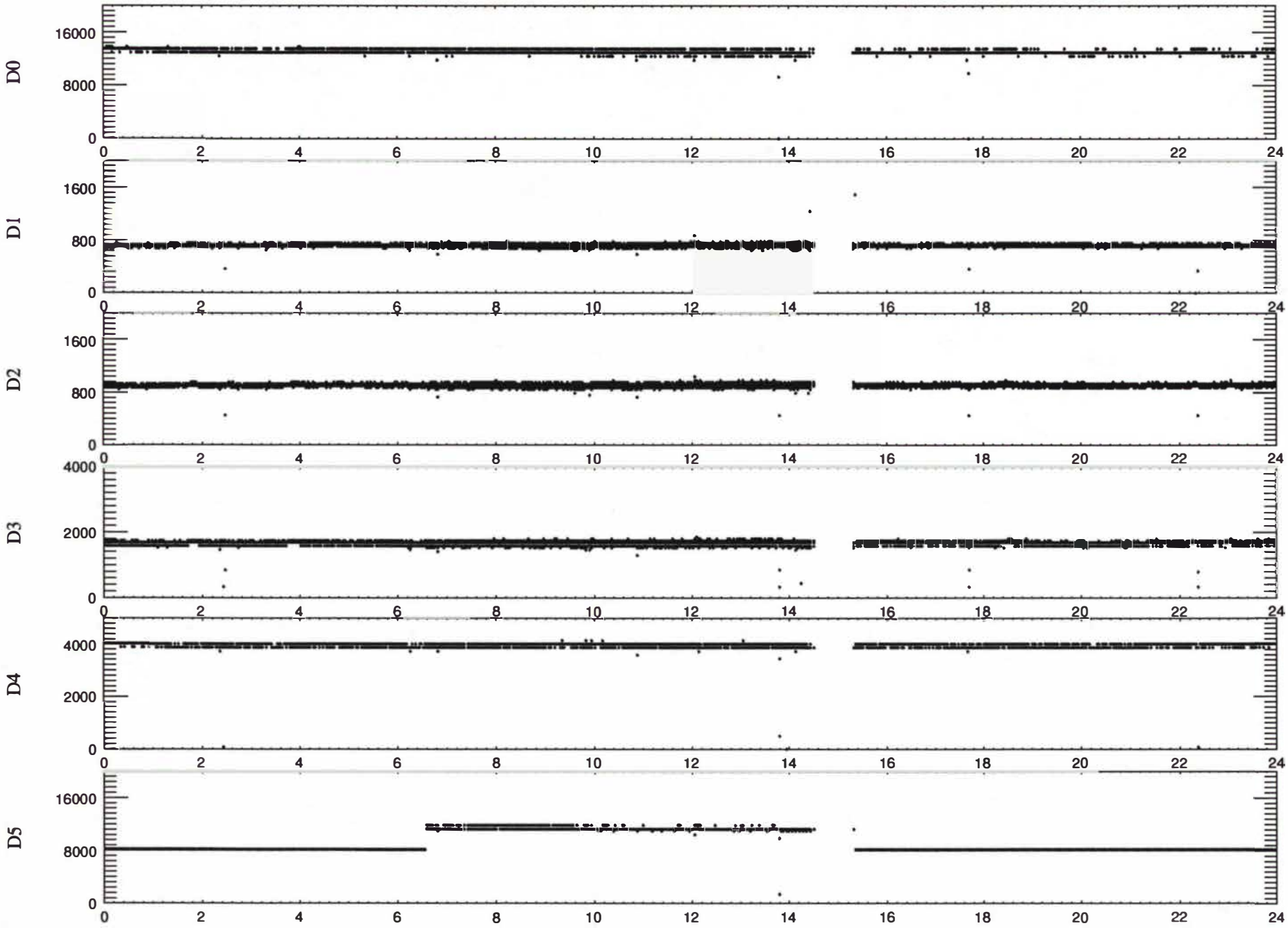
HUS 2A, MODE 1, NOT AVERAGED EDR day 238, year 1997 to day 238, year 1997 1/6/98

CALIBRATION DATA INCLUDED

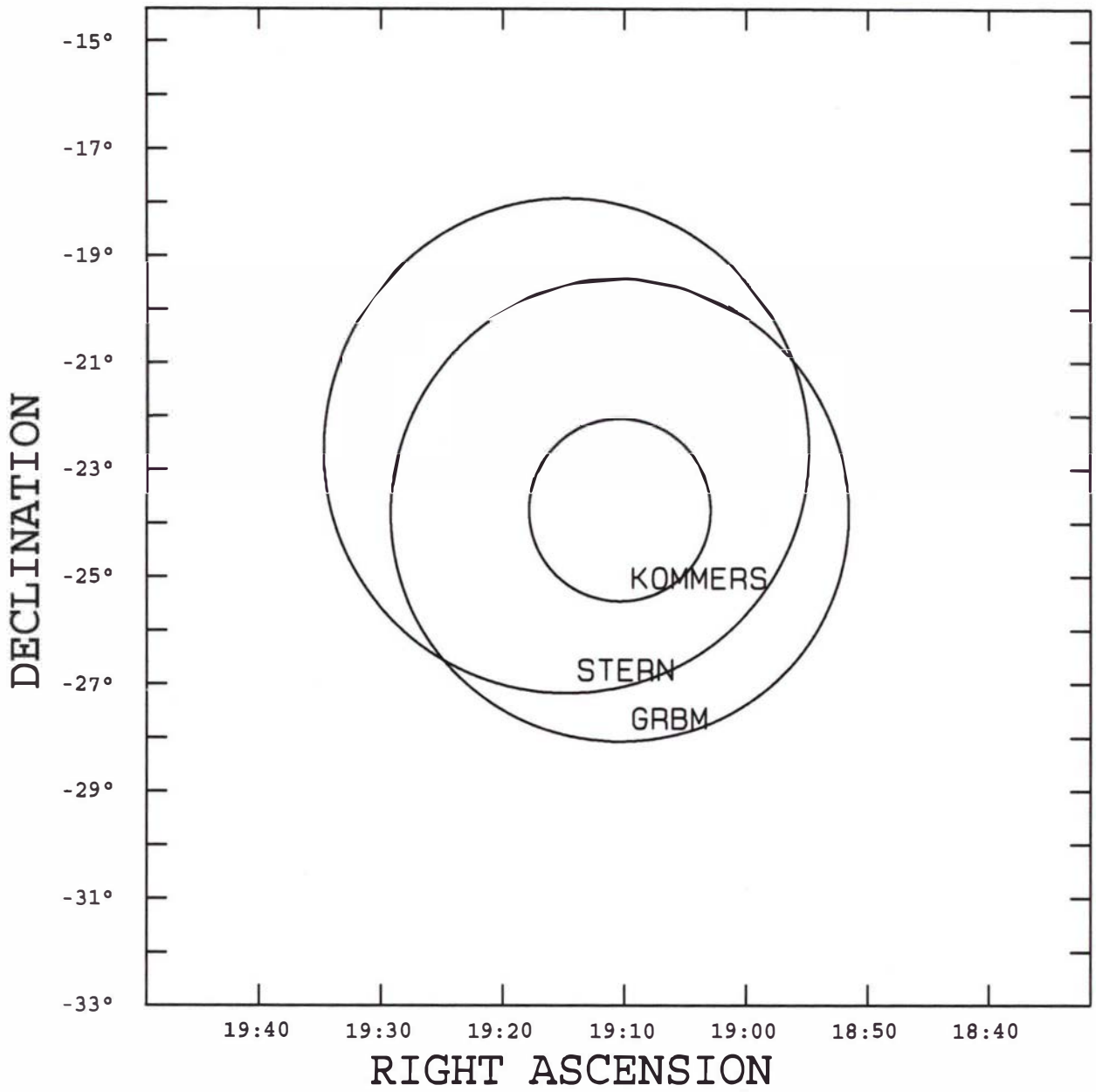


UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 238, year 1997 to day 238, year 1997 1/6/98



25901



*SGR1806

*SGR1

From WOODSP@ssl.msfc.nasa.gov Fri Aug 29 08:55 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 IAA05061; Fri, 29 Aug 1997 08:55:04 -0700
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 29 Aug 1997 10:54:52 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970829105452.2040d4f4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6349
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6349
EVENT OF 1997 AUG 27 DAY OF YEAR=239
EVENT CROSSING TIME AT BATSE : 35750. S. OR 09:55:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 135.000 -52.000
BATSE PEAK COUNTING RATE: 7200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 8/ 97 IS:
RA= 160.833 DEC= 19.468 DIST= 6.232 AU
BATSE-ULYSSES DISTANCE = 932373451. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -808.06 SECS.
CROSSING TIME AT ULYSSES IS 34942. S. OR 09:42:21 +/- 559.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 8/ 97 IS:
RA= 215.313 DEC= -14.860 DIST= 1.617 AU
MARS-BATSE DISTANCE = 241917120. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -243.88 SECS.
CROSSING TIME AT MARS IS 35506. S. OR 09:51:46 +/- 129.84 SECONDS

BATSE BURST TRIGGER

NO.: 6349

TIME: TJD=0687 SECONDS=35750

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

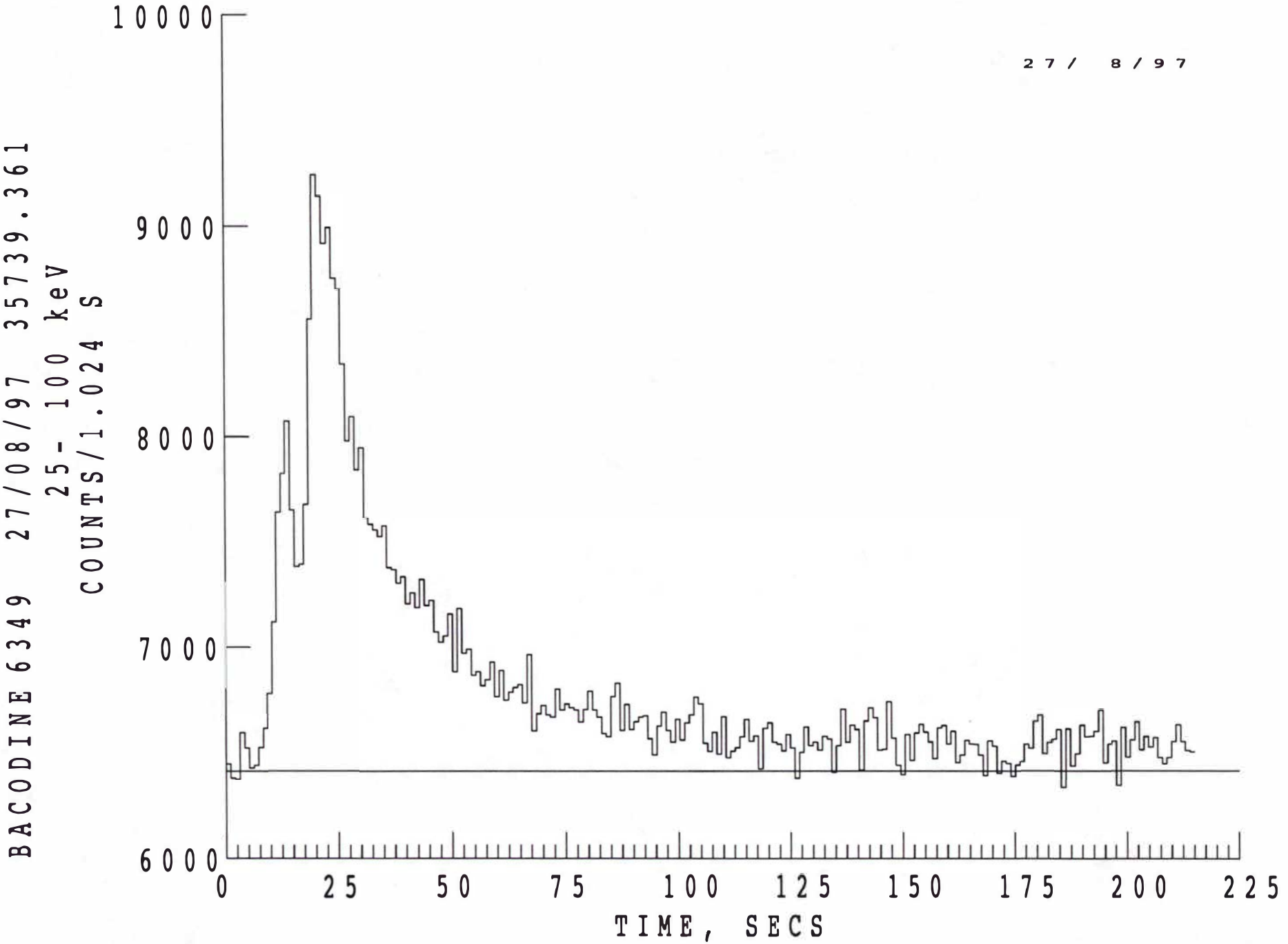
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=71.2 AZIMUTH=355.6 ERROR=0.8 DEGREES

COMMENTS:
GRB LASTING ~ 200 SEC. SINGLE PULSE WITH THREE PEAKS AND EXPONENTIAL
DECAY. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6349	970827	10687	35750	7200	135	-52	200


BACODINE 6349 27/08/97 35739.361
25- 100 keV
COUNTS/1.024 S
27/ 8/97
10000
9000
8000
7000
6000
0
25
50
75
100
125
150
175
200
225
TIME, SECS

BATSE BURST# 6349

ULYSSES RT 29/ 8/97

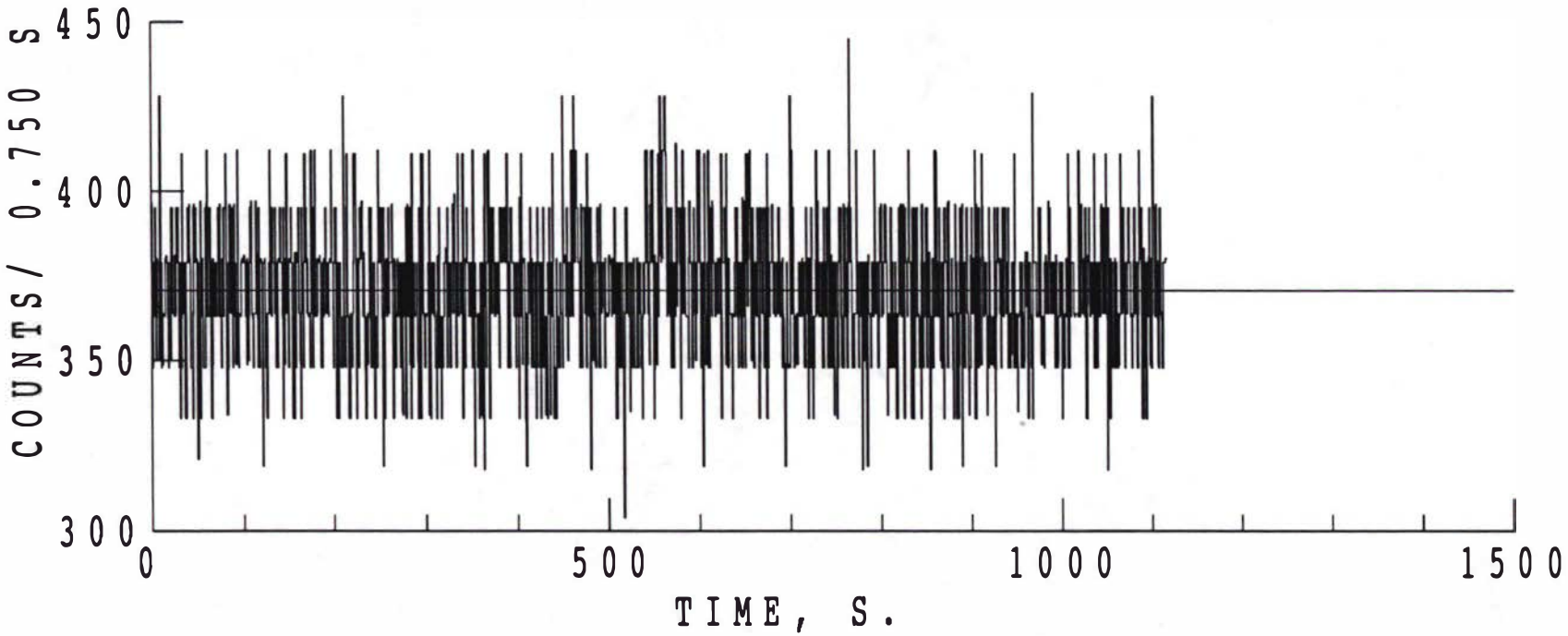
27/ 8/97 34380.125 s

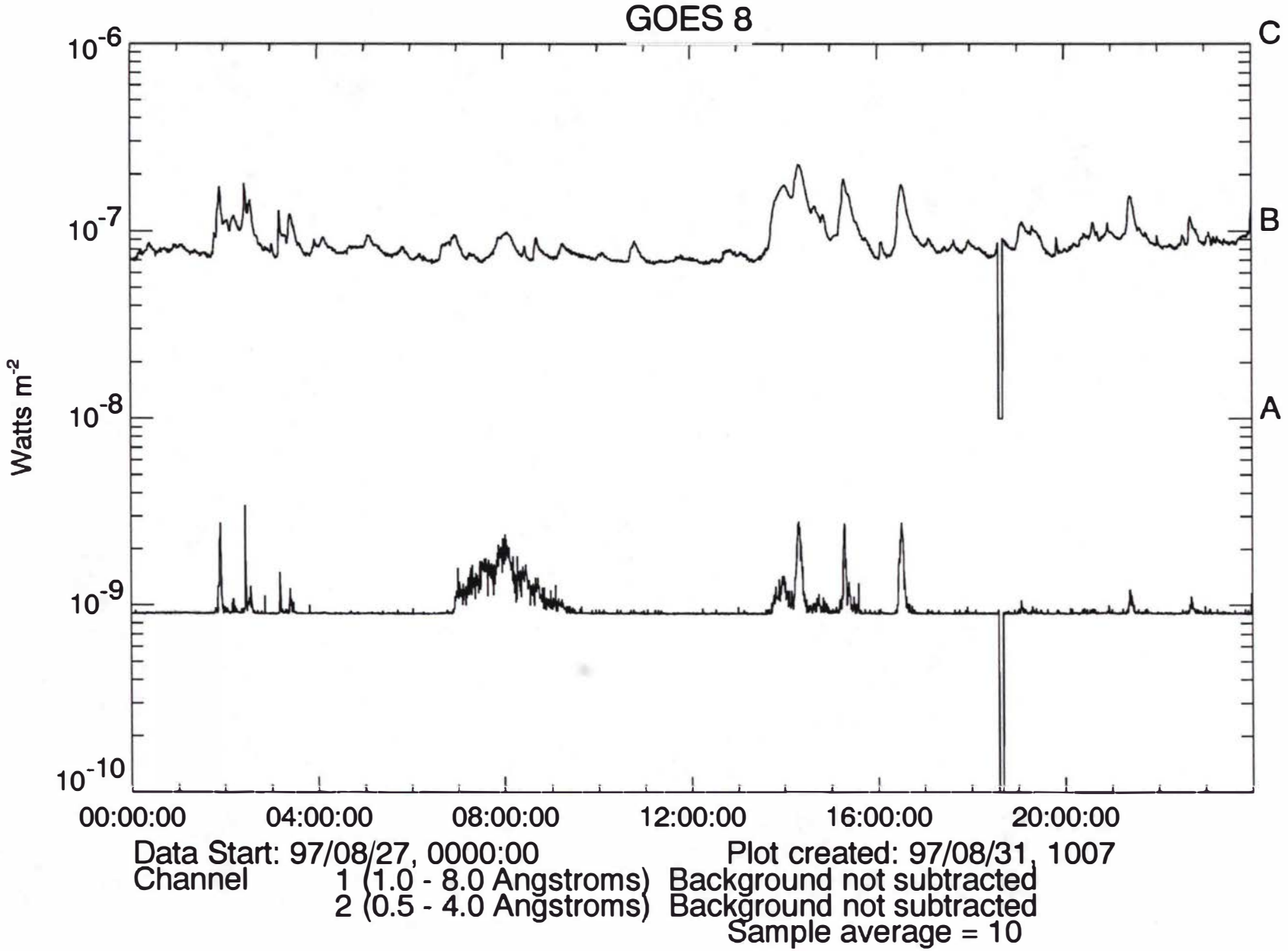
0.250 S INTERVALS REGROUPED BY 3

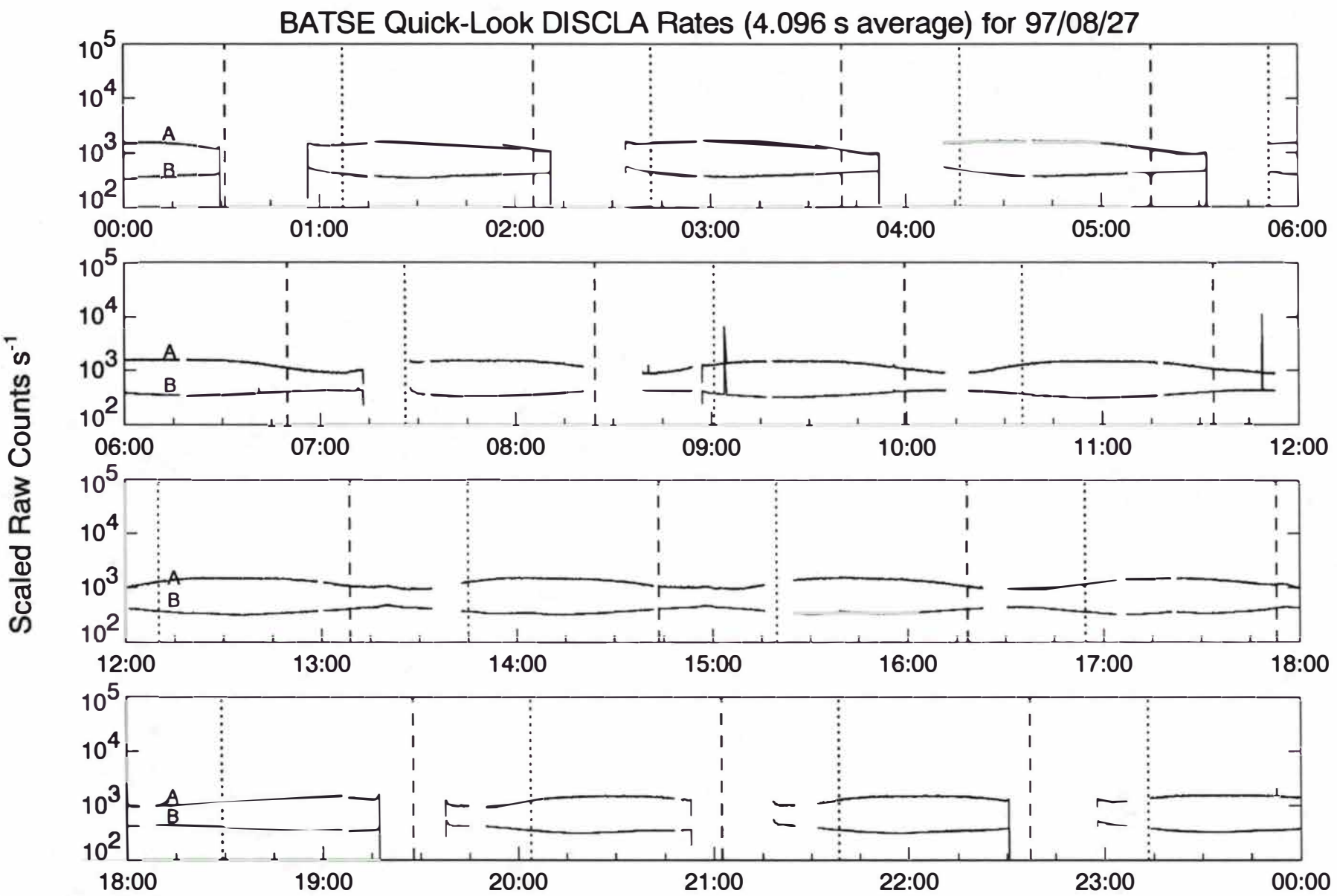
0- 0 keV

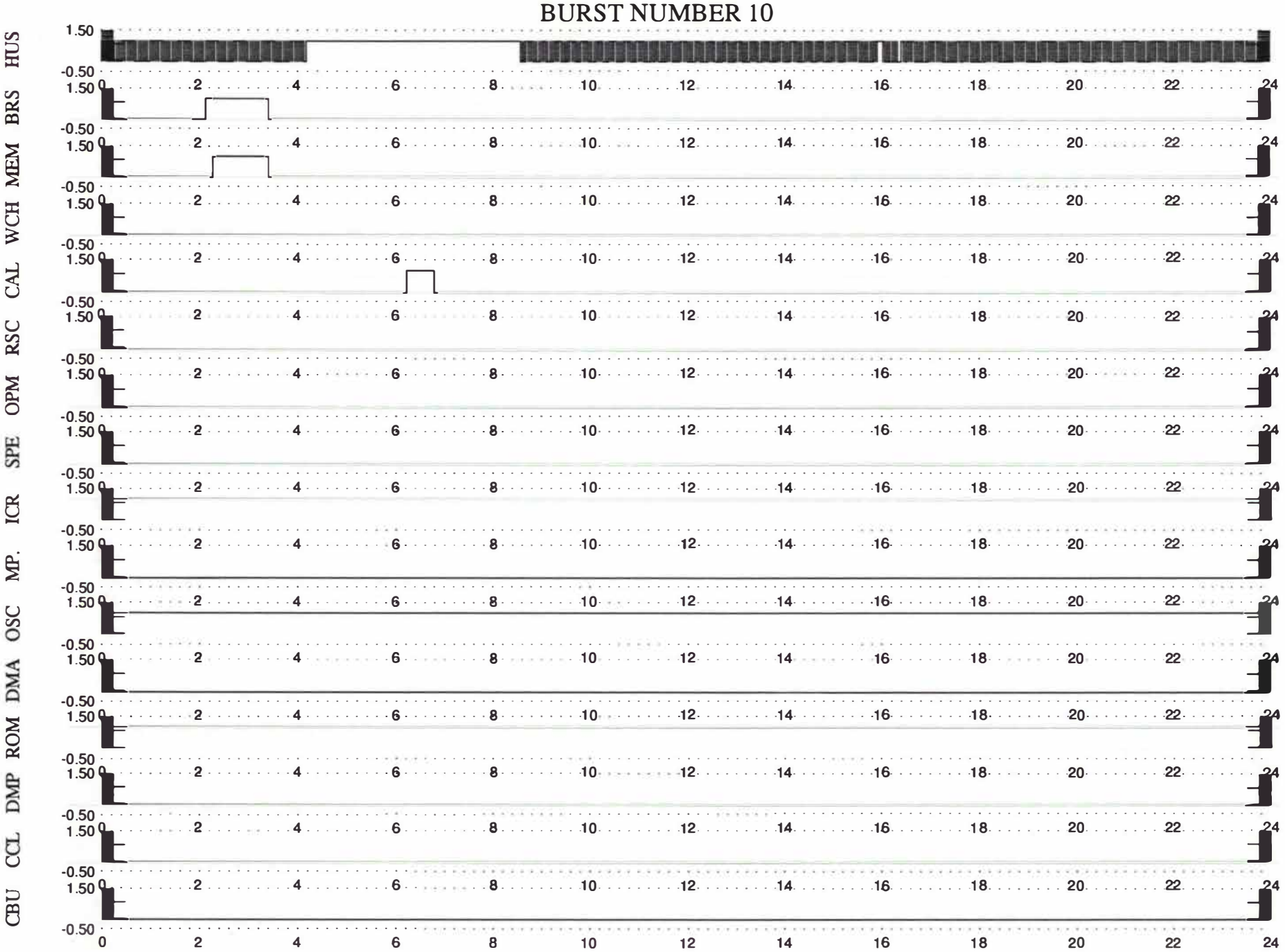
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



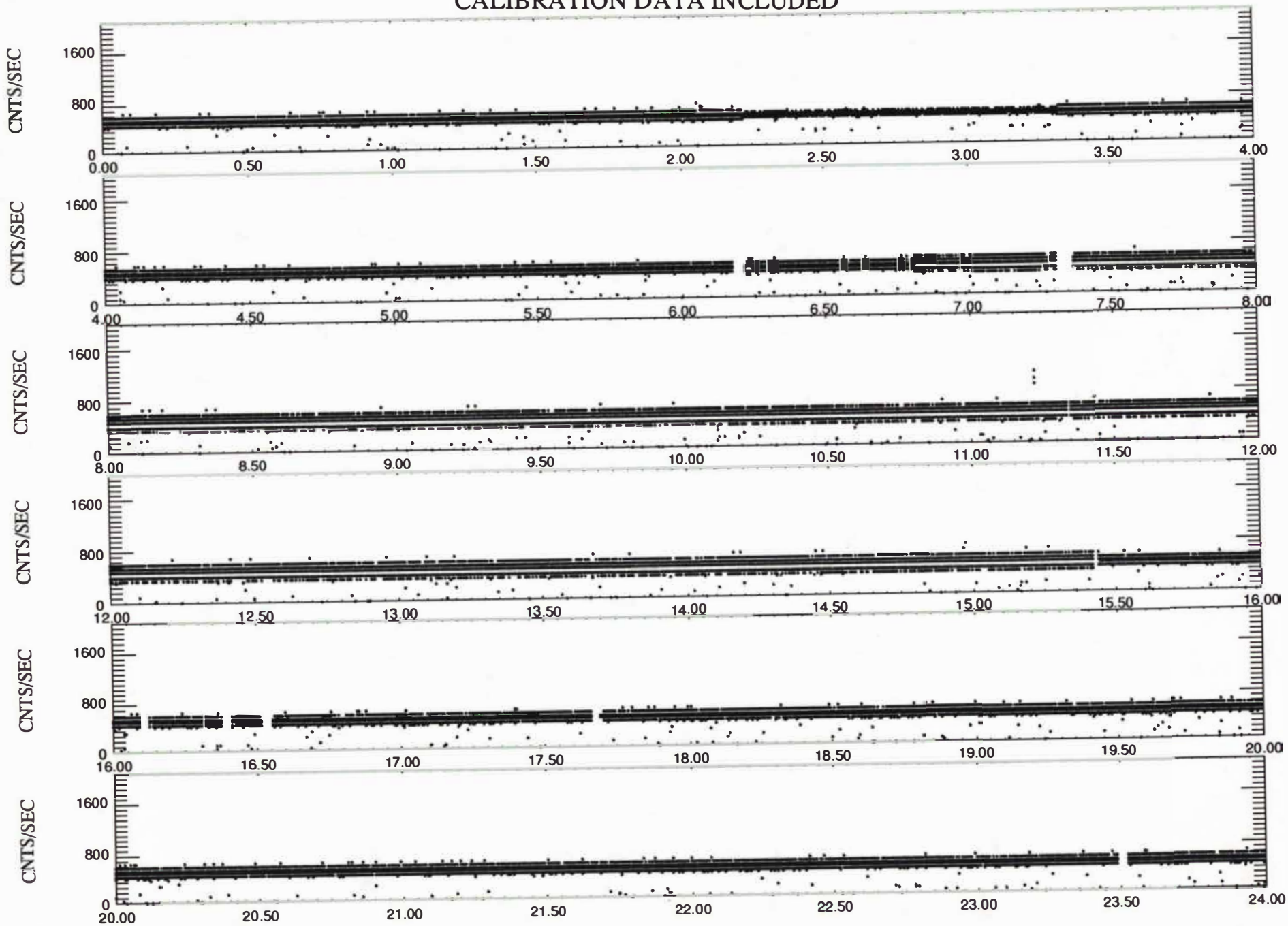

GOES 8
C
B
A
Watts m-2
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/08/27, 0000:00
Plot created: 97/08/31, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/27
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: 97/08/31, 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


BURST NUMBER 10
HUS
BRS
MEM
WCH
CAL
RSC
OPM
SPE
ICR
MP.
OSC
DMA
ROM
DMP
CCL
CBU
1.50
-0.50
0
2
4
6
8
10
12
14
16
18
20
22
24
UNIVI AL TIME

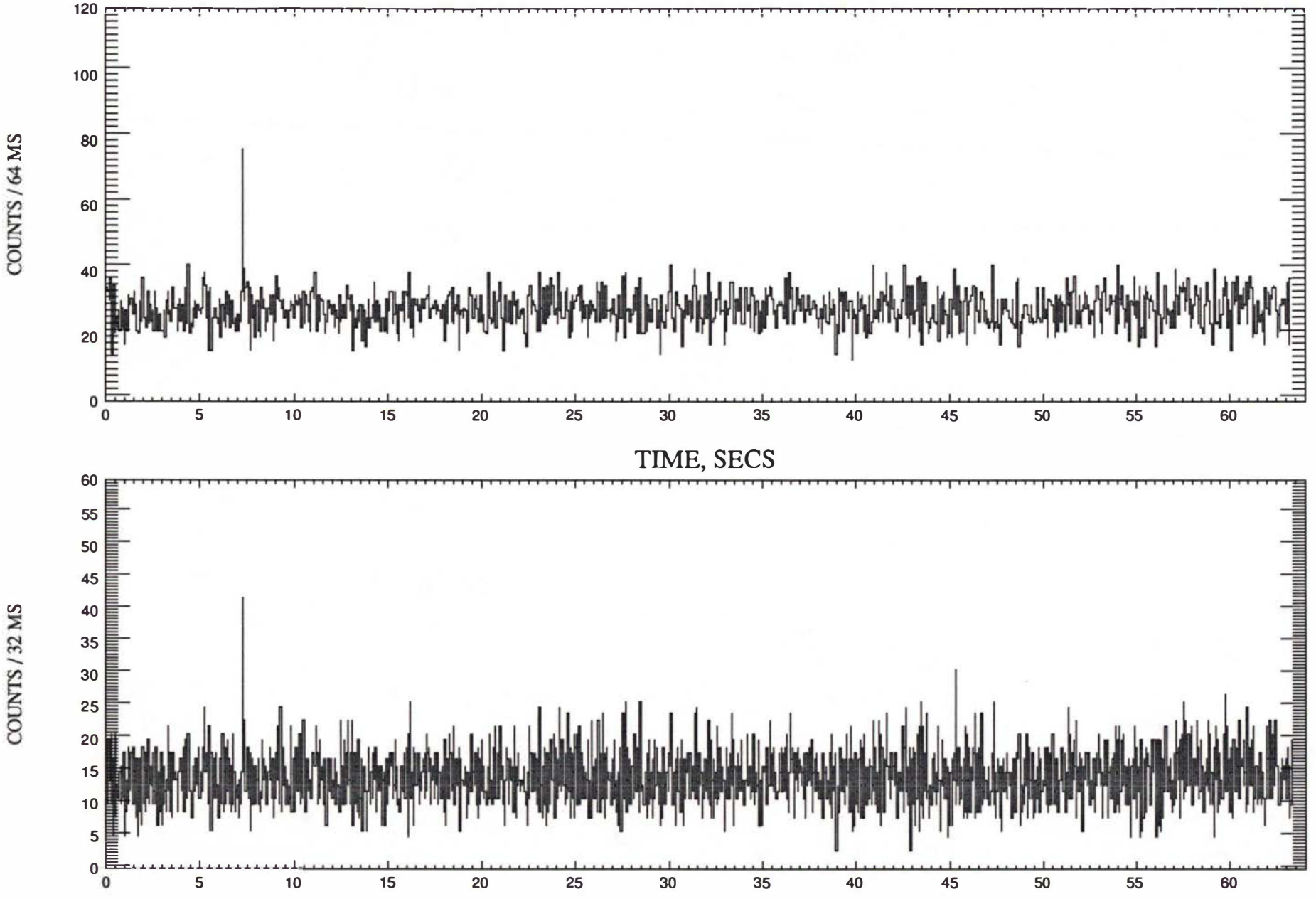
HUS 2A, MODE 1, NOT AVERAGED EDR day 239, year 1997 to day 239, year 1997 1/6/98

CALIBRATION DATA INCLUDED



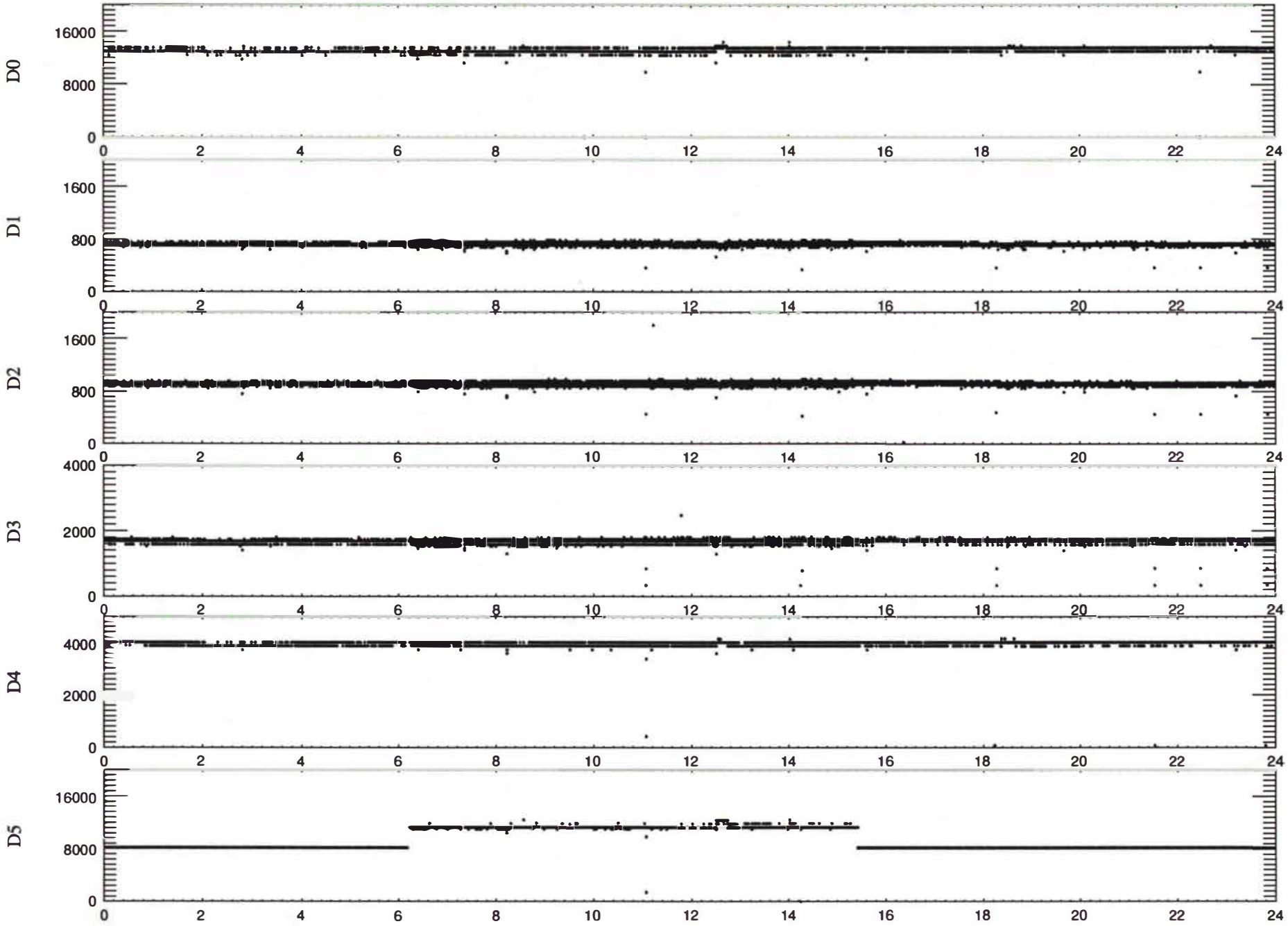
UNIV AL TIME

Burst Counter 10 at UT= 2.050772137112 h= 7382.780 s 02:03:02.780



B# 1

HUS 2B COUNTS / SEC EDR day 239, year 1997 to day 239, year 1997 1/6/98



From HENZE@SSLLES.MSFC.NASA.GOV Fri Aug 29 15:35 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 PAA09319; Fri, 29 Aug 1997 15:35:07 -0700
Date: Fri, 29 Aug 1997 17:34:55 -0500 (CDT)
From: HENZE@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970829173455.2040d022@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6350
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6350
EVENT OF 1997 AUG 28 DAY OF YEAR=240
EVENT CROSSING TIME AT BATSE : 63876. S. OR 17:44:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 269.000 59.000
BATSE PEAK COUNTING RATE: 28000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 8/ 97 IS:
RA= 161.025 DEC= 19.332 DIST= 6.234 AU
BATSE-ULYSSES DISTANCE = 932643240. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.69 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -416.18 SECS.
CROSSING TIME AT ULYSSES IS 63460. S. OR 17:37:39 +/- 578.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 8/ 97 IS:
RA= 215.937 DEC= -15.078 DIST= 1.623 AU
MARS-BATSE DISTANCE = 242740624. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 94.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -61.43 SECS.
CROSSING TIME AT MARS IS 63815. S. OR 17:43:34 +/- 139.24 SECONDS

BATSE BURST TRIGGER
NO.: 6350

TIME: TJD=0688 SECONDS=63876

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=134.9 AZIMUTH=178.9 ERROR=000.6 DEGREES

COMMENTS:
COMPLEX, DUR. ~110 S, MAX AT ~T+26 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6350	970828	10688	63876	28000	269	+59	110

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 Tue Oct 28 03:26 PST 1997
From: vnp@isac.ernet.in
>Received: from sx07 by isac.ernet.in (AIX 3.2/UCB 5.64/4.03)
id AA26745; Tue, 28 Oct 1997 15:52:21 GMT
uthentication-Warning: sx07.ernet.in: vnp owned process doing -bs
Date: Tue, 28 Oct 1997 15:52:20 +0000 (GMT)
X-Sender: vnp@sx07
To: khurley@sunspot.ssl.berkeley.edu
Subject: SROSS GRB970828
Mime-Version: 1.0

Dear Prof. Hurley,
SROSS-C2 recorded a GRB on 28 Aug 97 at 17:45:02.27 UT.
Has anyone seen this event?
Regards,
padmini

Helio corr removed 18/2/00

Date: Apr 7 '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? N/A

☑ 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?

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

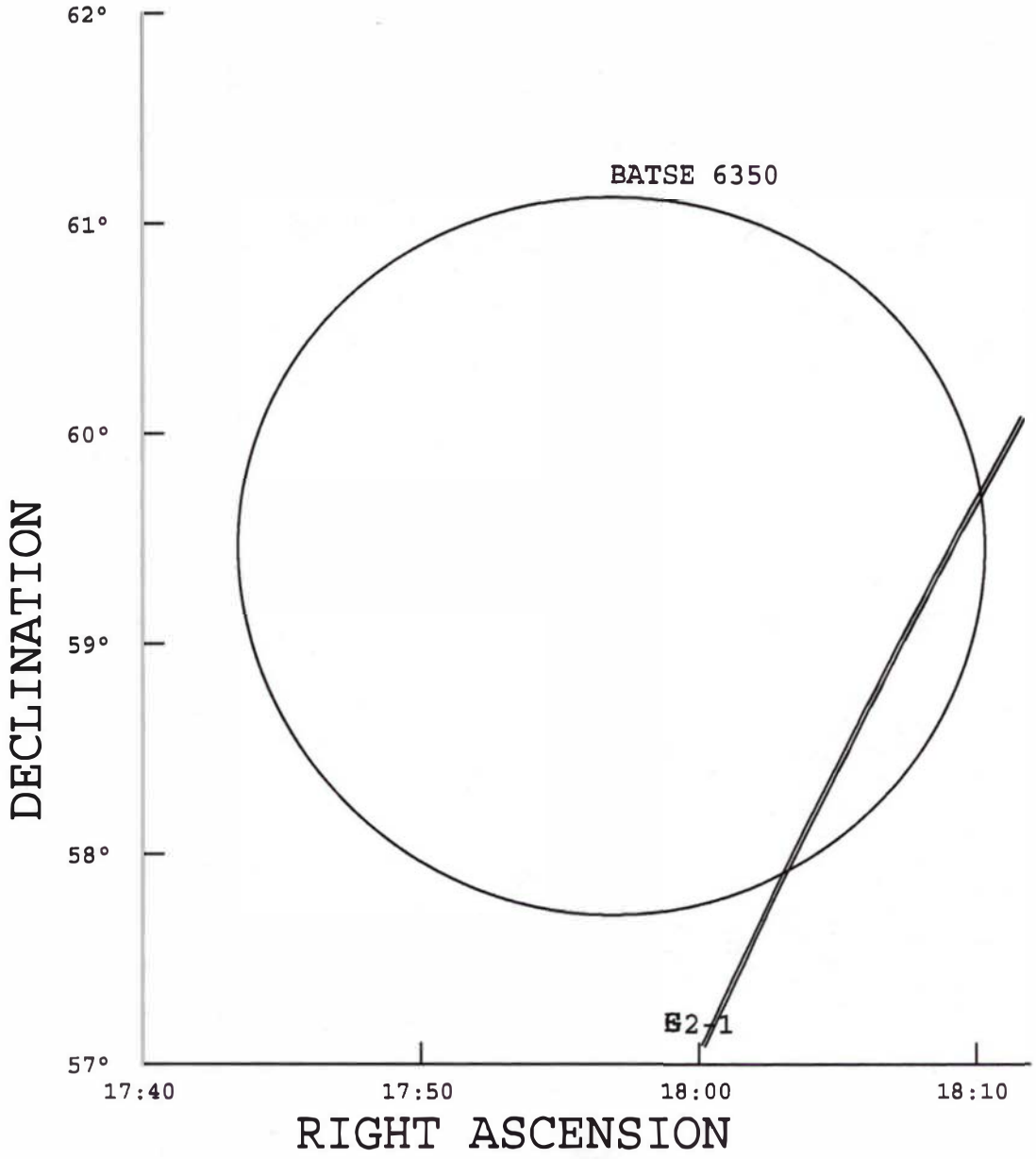
☐ 2000 coordinates used?

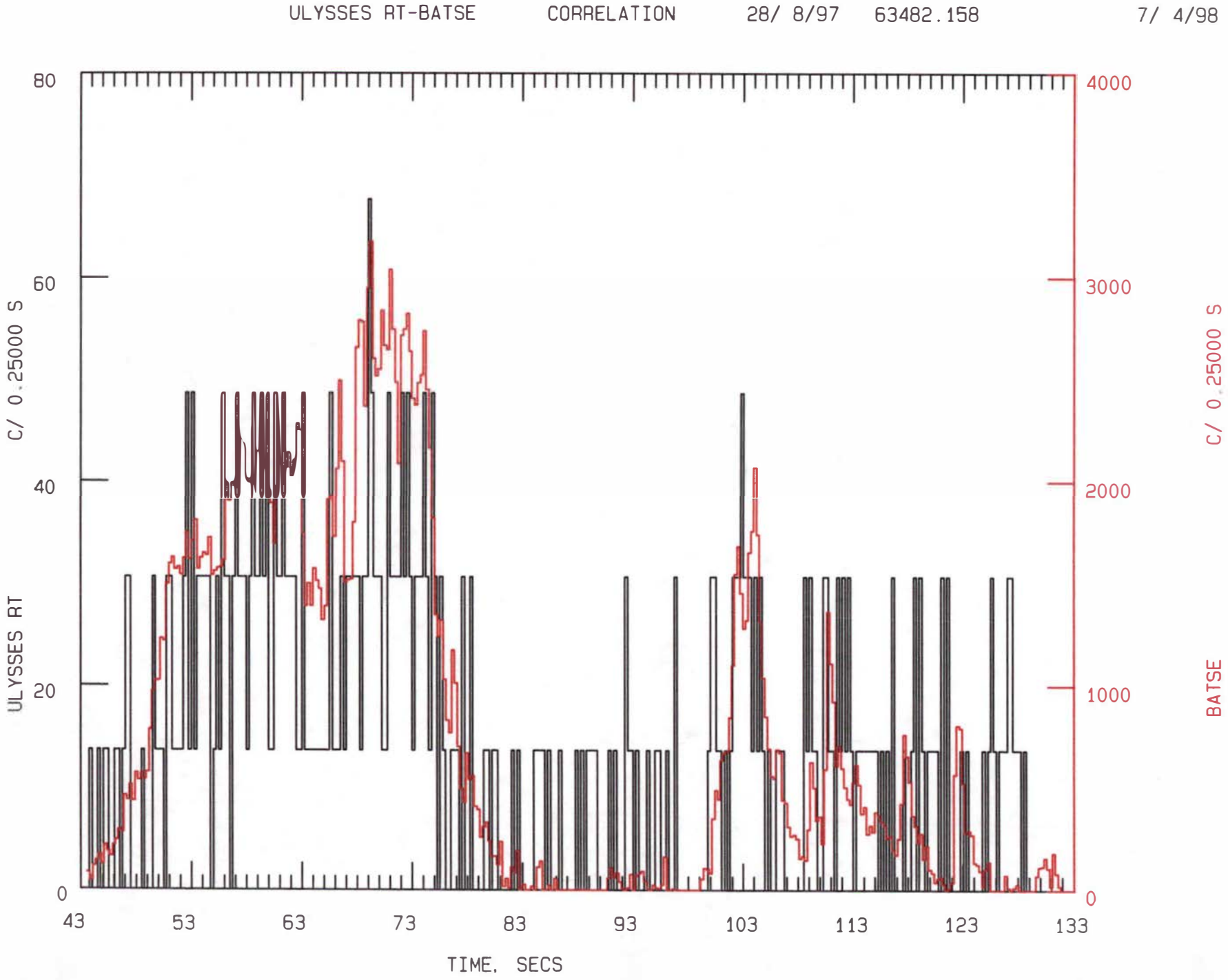
☐ Geocentric time used?

☑ ACCESS database updated?

EVENT OF AUG 28, 1997 17:38

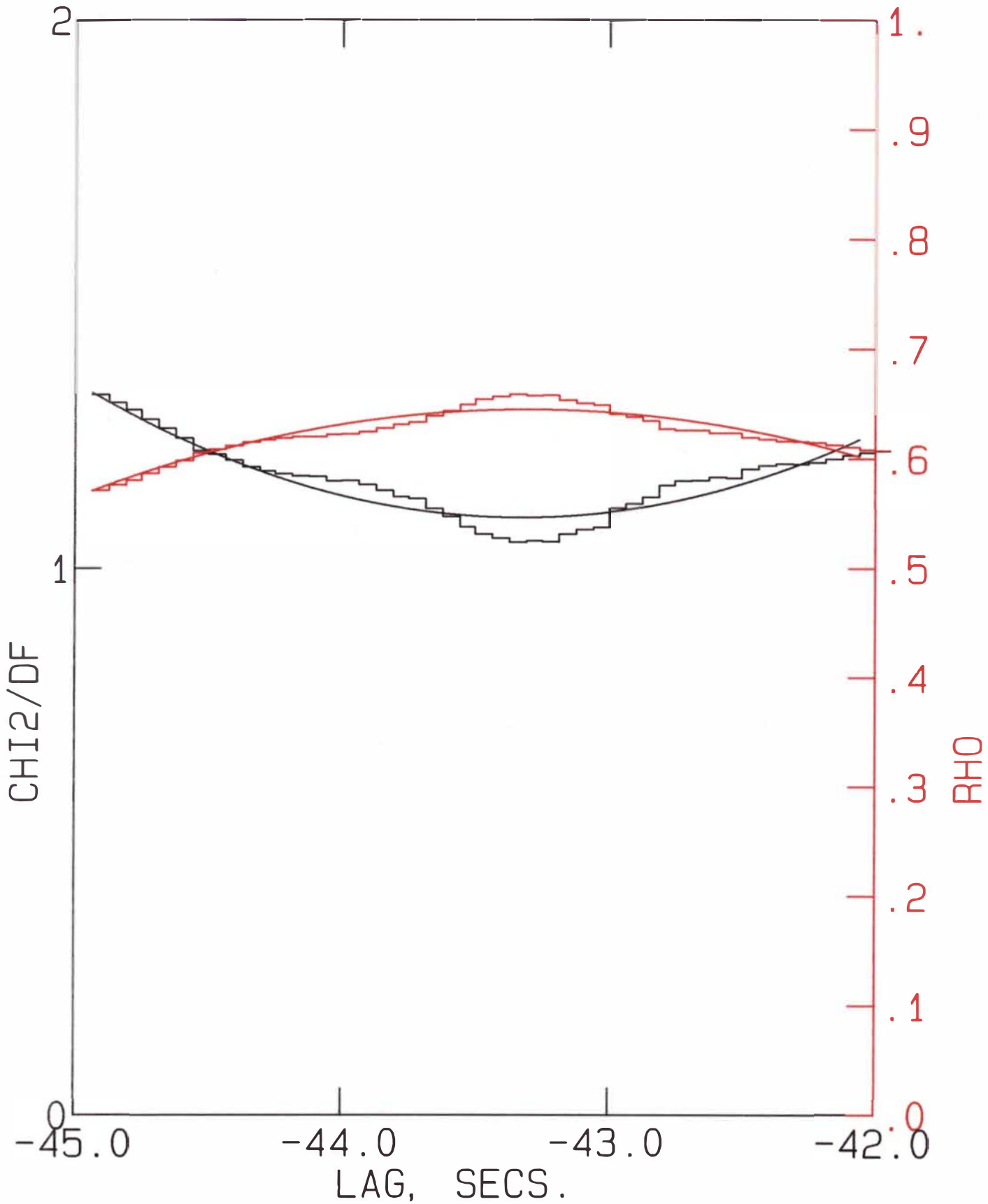
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




ULYSSES RT-BATSE CORRELATION 28/ 8/97 63482.158 7/ 4/98
80
60
40
20
0
C/ 0.25000 S
ULYSSES RT
4000
3000
2000
1000
0
C/ 0.25000 S
BATSE
43
53
63
73
83
93
103
113
123
133
TIME. SECS

7/ 4/98

ULYSSES RT-BATSE CORRELATION 28/ 8/97 63482.158

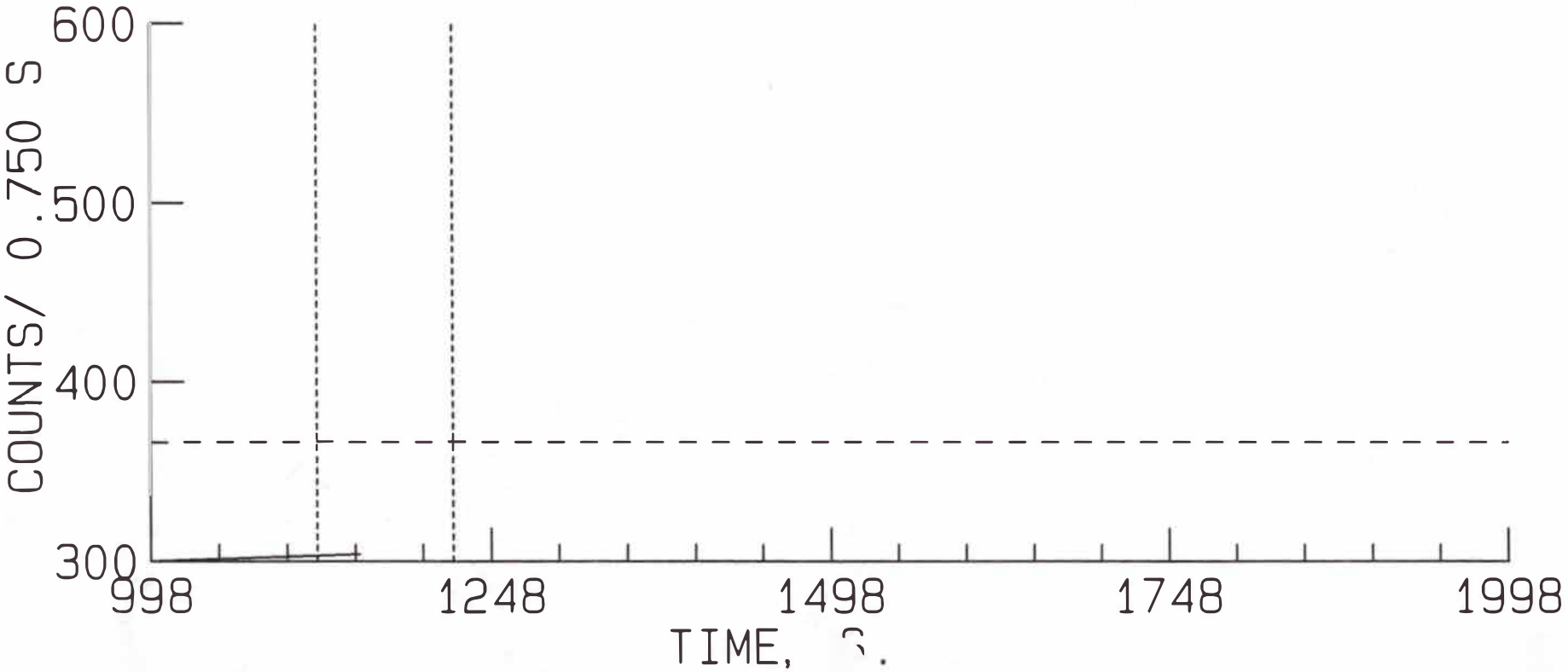


ULYSSES RT 7/ 4/98

28/ 8/97 62892.179 s

0.250 S INTERVALS REGROUPED BY 3

22- 148 keV

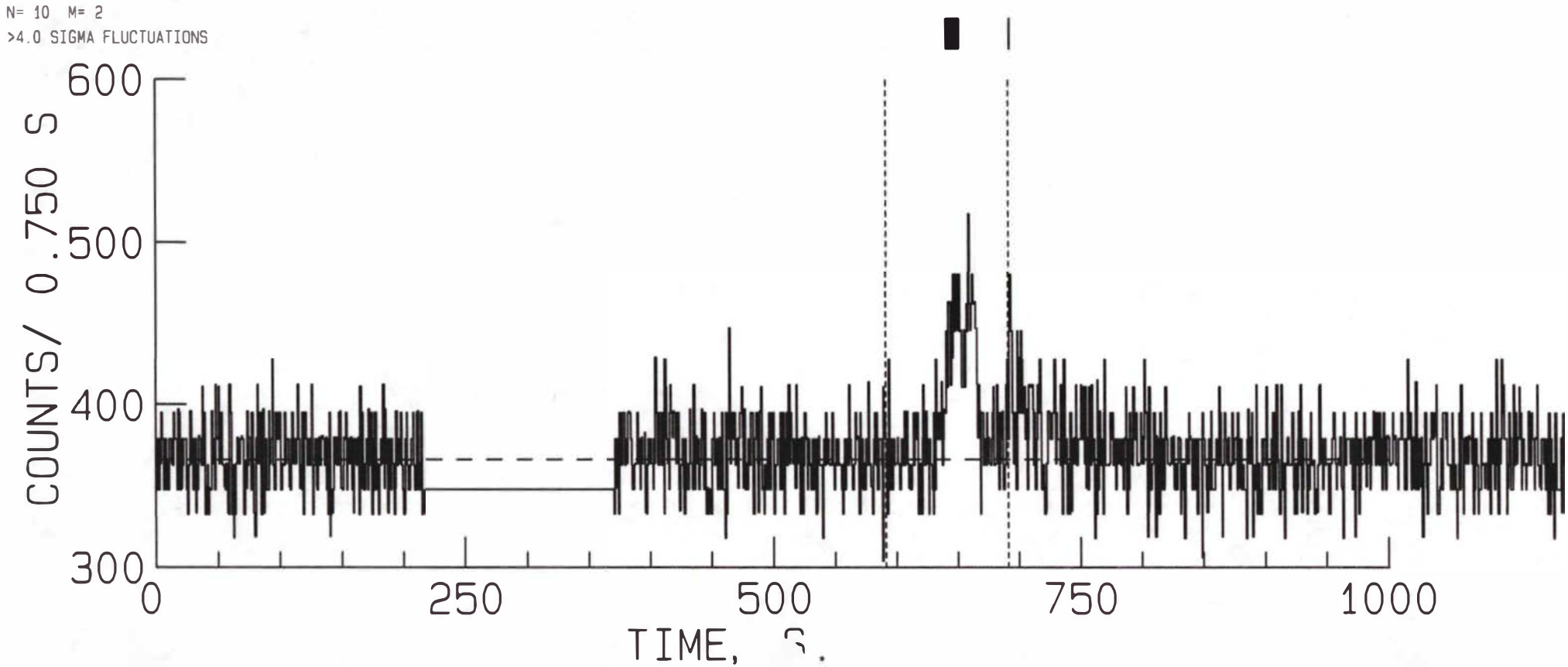


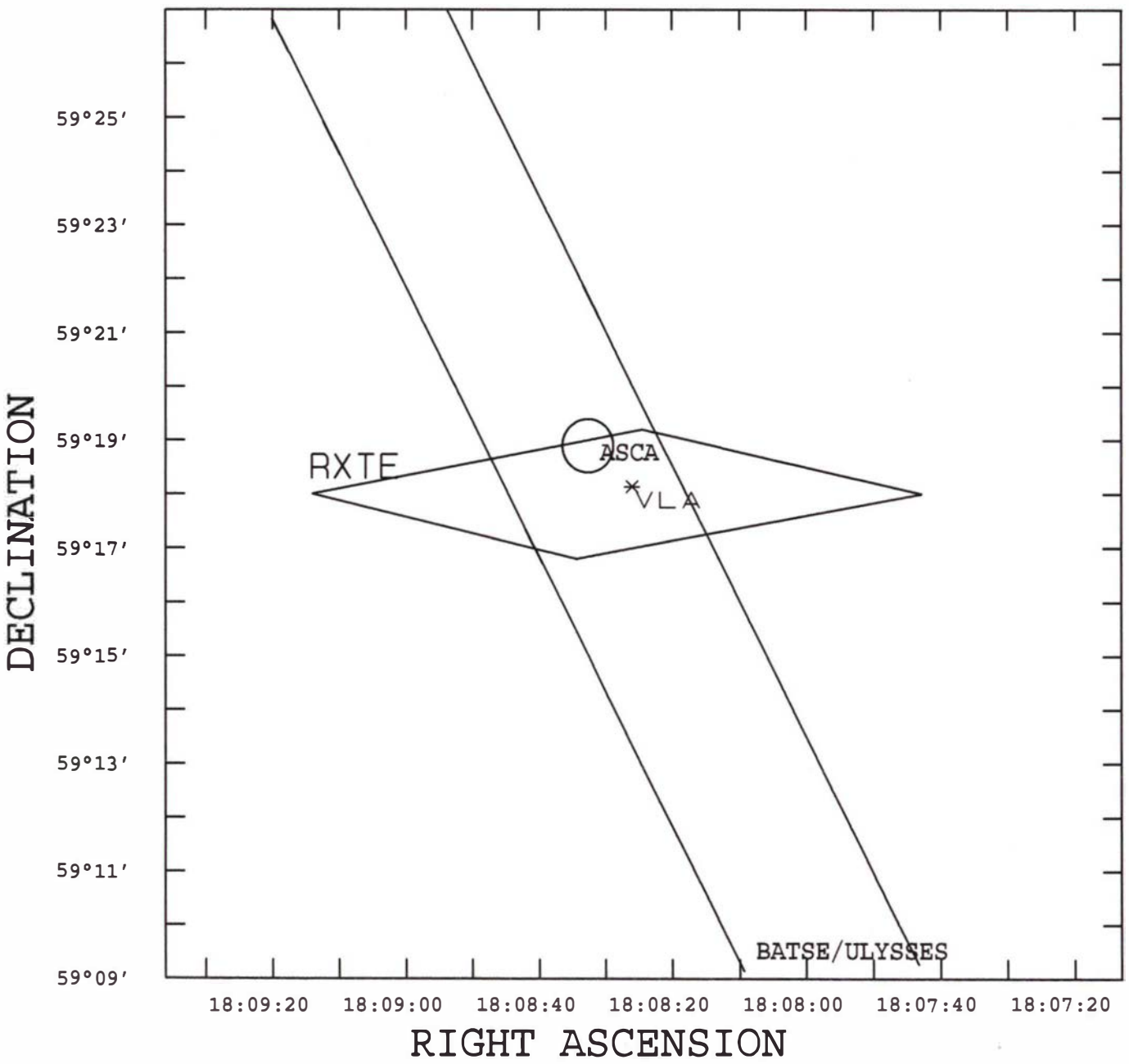
ULYSSES RT 7/ 4/98

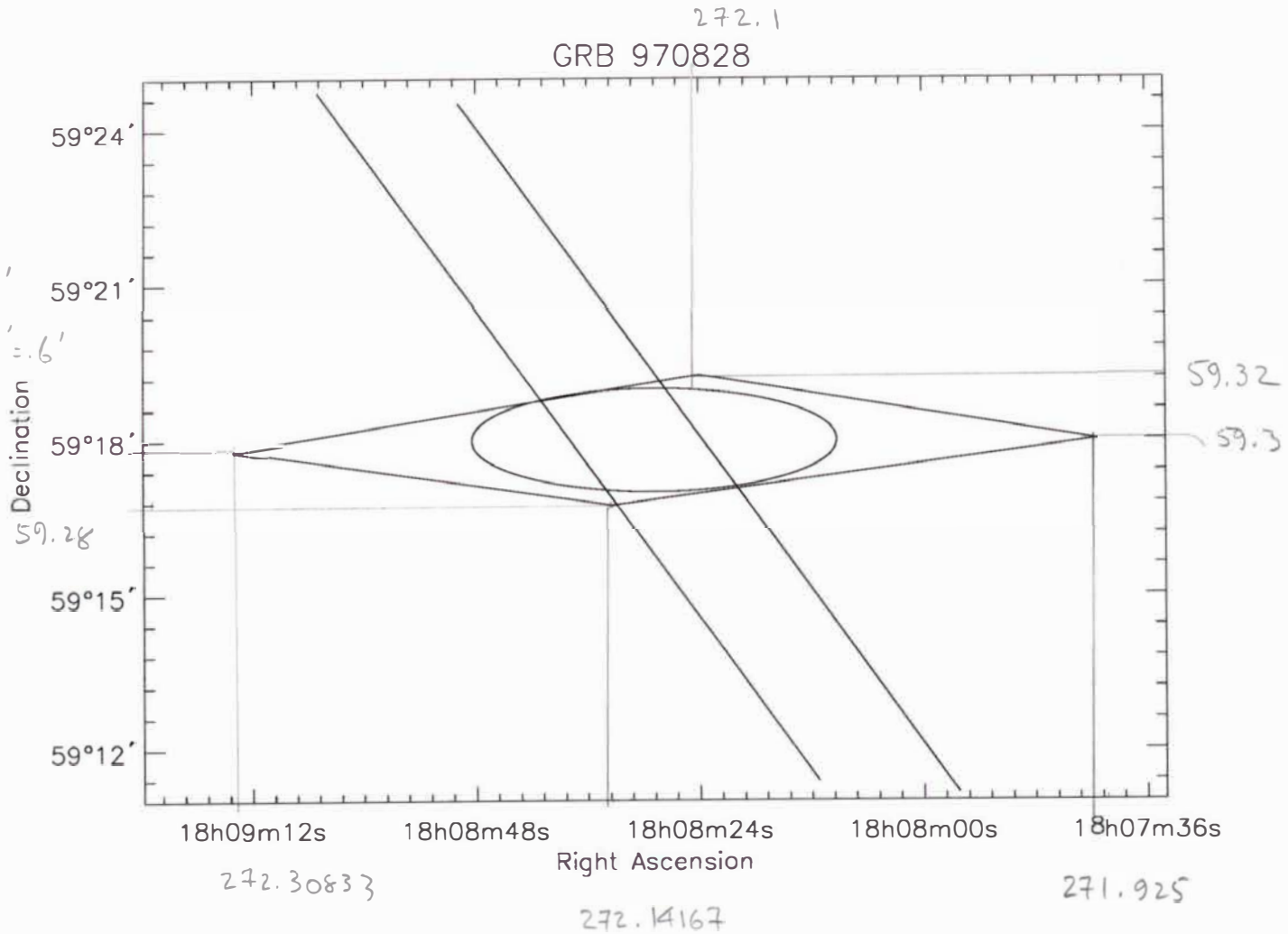
28/ 8/97 62892.179 s

0.250 S INTERVALS REGROUPED BY 3

22- 148 keV




DECLINATION
59°25′
59°23′
59°21′
59°19′
59°17′
59°15′
59°13′
59°11′
59°09′
RXTE
ASCA
VLA
BATSE/ULYSSES
18:09:20
18:09:00
18:08:40
18:08:20
18:08:00
18:07:40
18:07:20
RIGHT ASCENSION



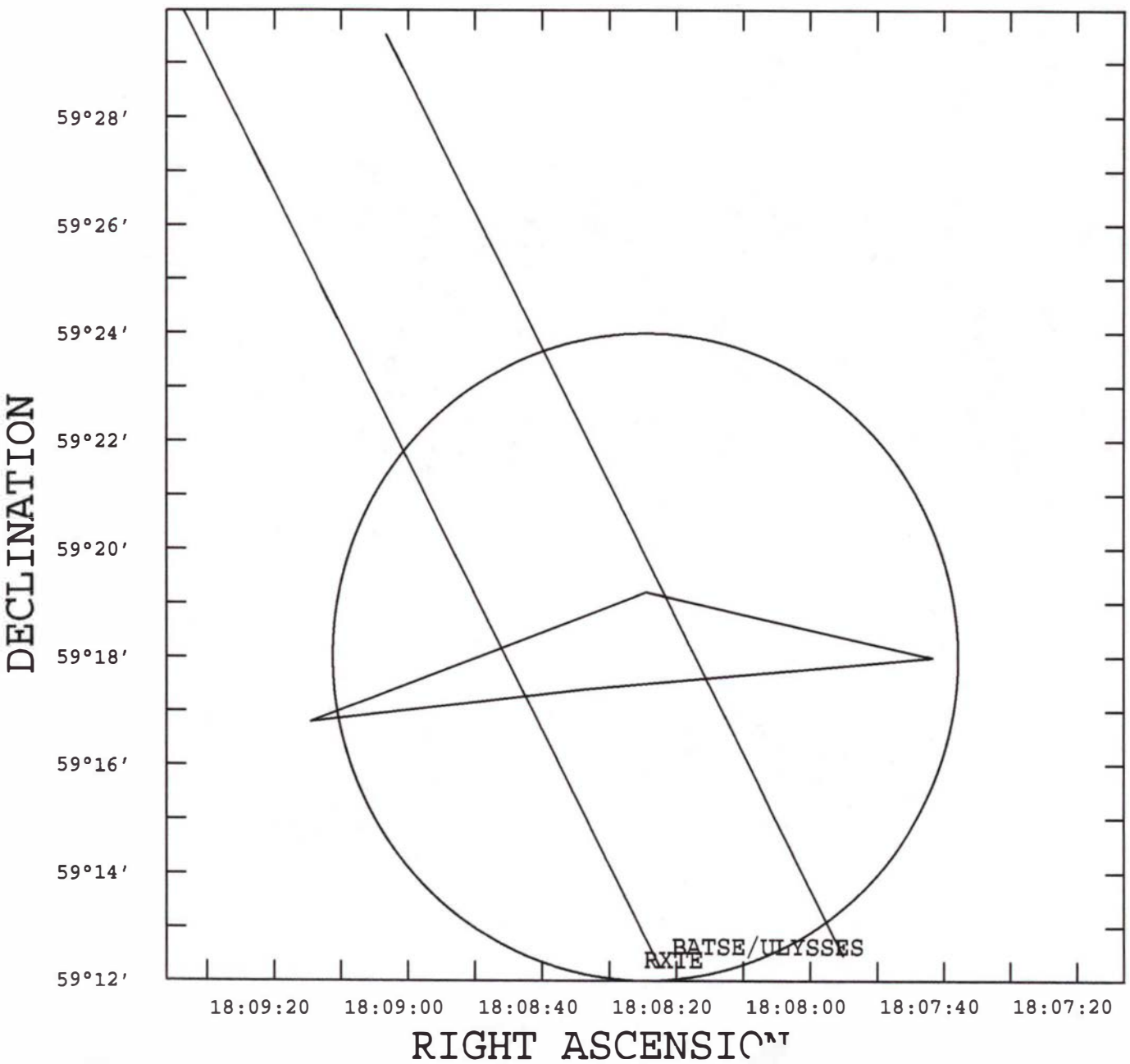
5 ticks = 3′

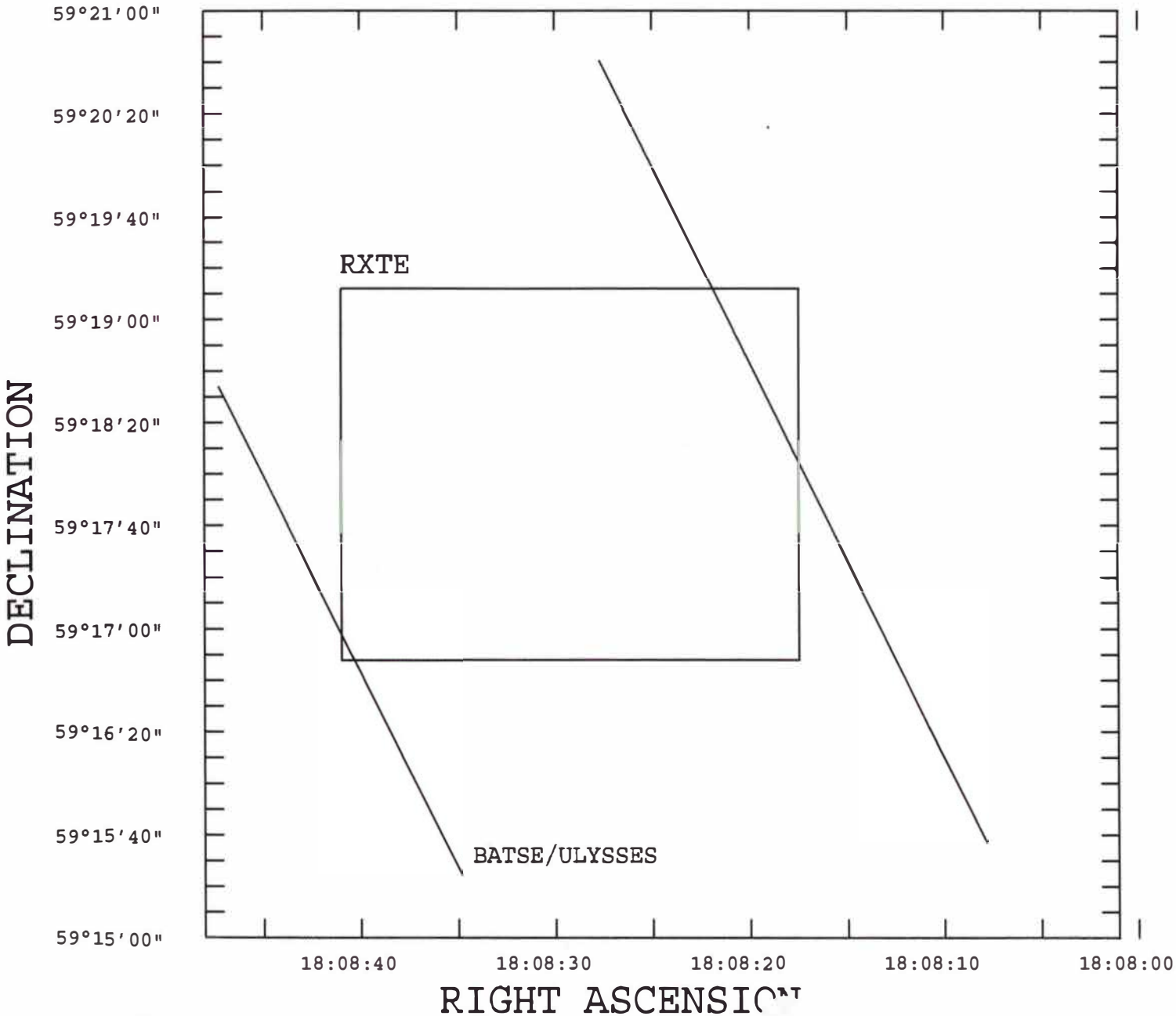
1 tick = $\frac{3}{5}$′ = .6′

59.3°

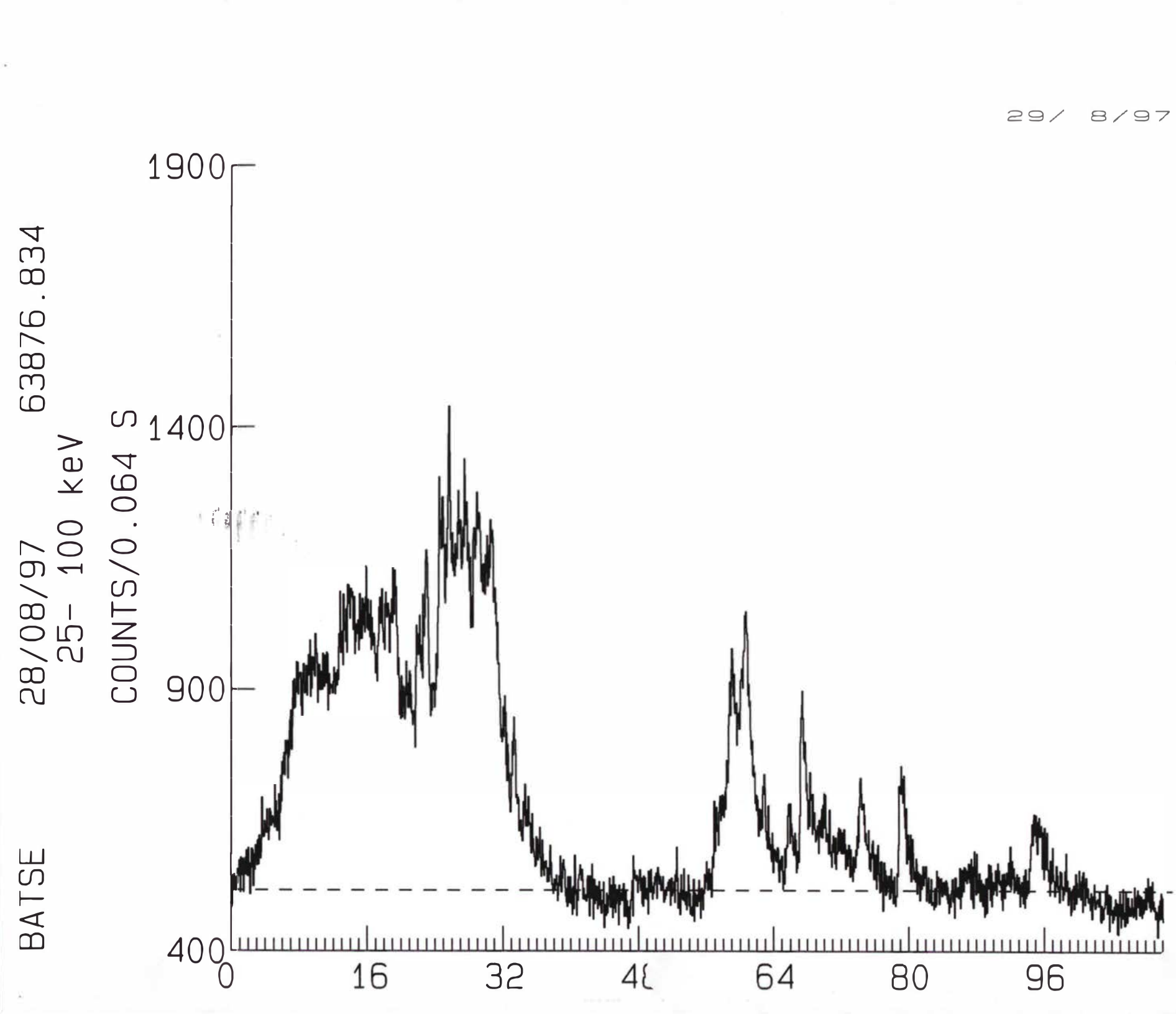
10 ticks = 24 s

1 tick = 2.4 s

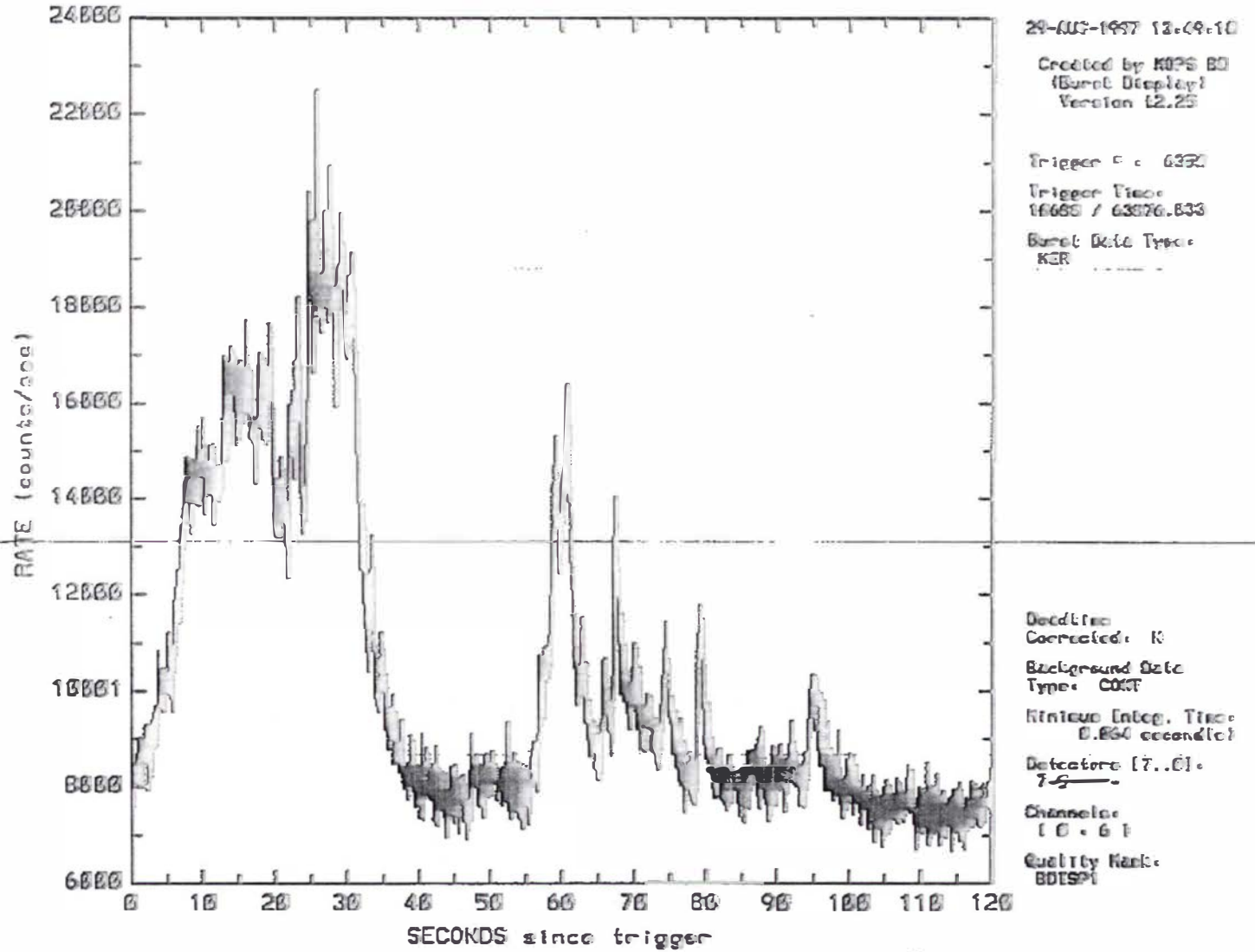

DECLINATION
59°28′
59°26′
59°24′
59°22′
59°20′
59°18′
59°16′
59°14′
59°12′
18:09:20
18:09:00
18:08:40
18:08:20
18:08:00
18:07:40
18:07:20
RIGHT ASCENSION
RXTE
BATSE/ULYSSES

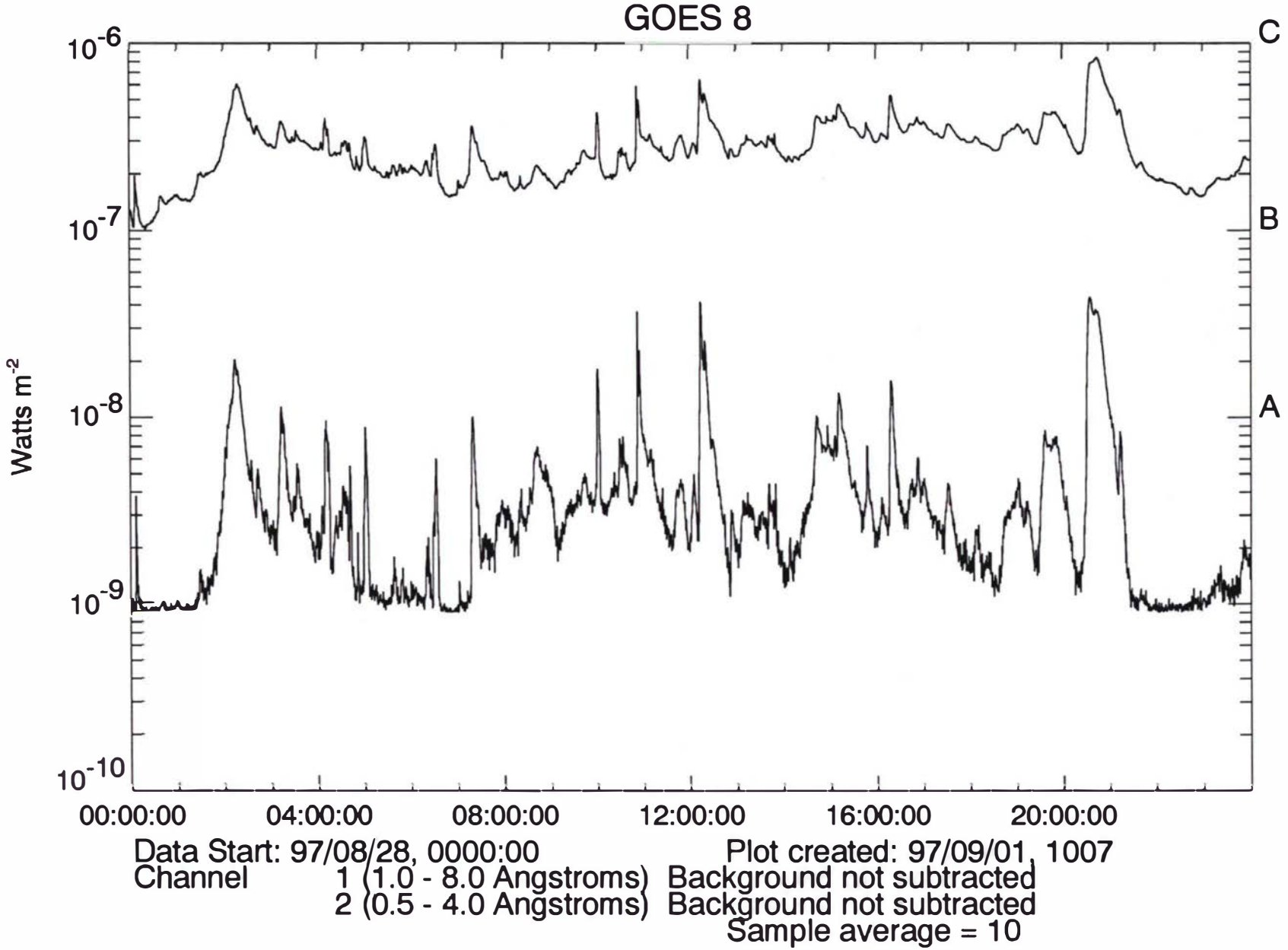


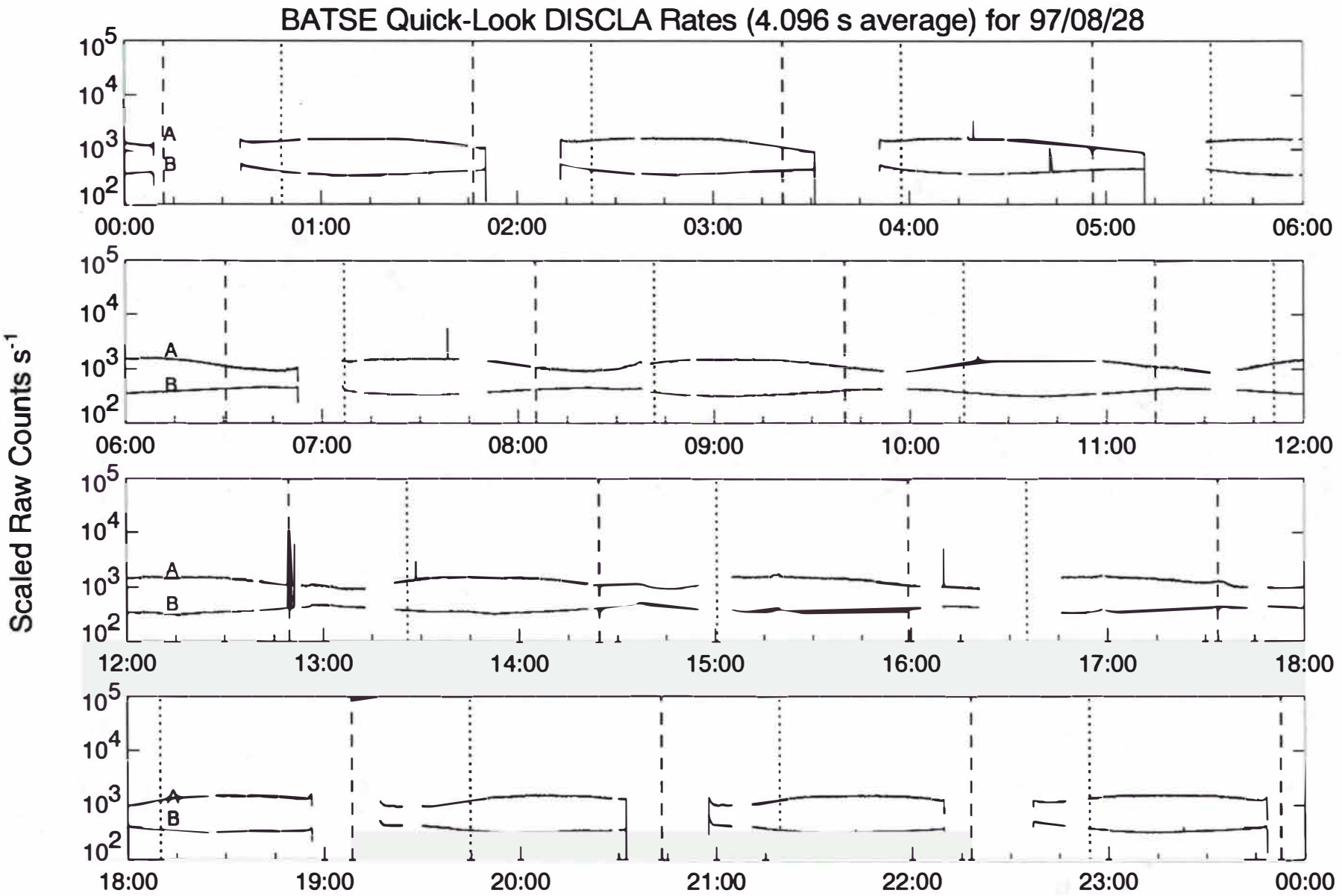
TO DON LAMB
970 920 1167


29/ 8/97
BATSE 28/08/97 63876.834
25- 100 keV
COUNTS/0.064 S
1900
1400
900
400
0
16
32
64
80
96

R=96%
08-29-1997 13:03 205 544 5800 BATSE P.01
205 544 5800 08-29-97 12:00PM FUOI #39

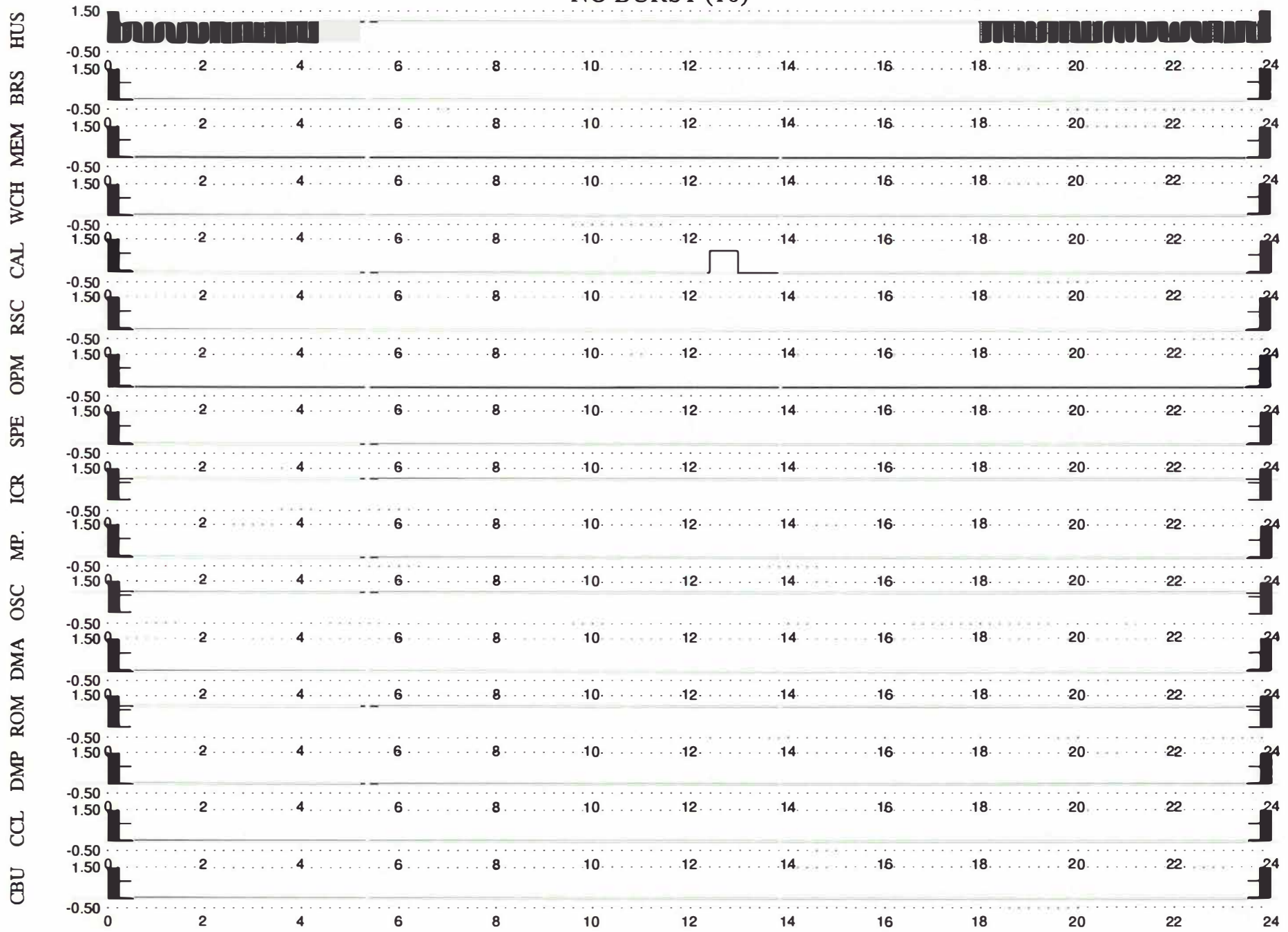



GOES 8
C
B
A
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/08/28, 0000:00
Plot created: 97/09/01, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/28
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
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: 97/09/01, 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 EDR day 240, year 1997 to day 240, year 1997 1/6/98

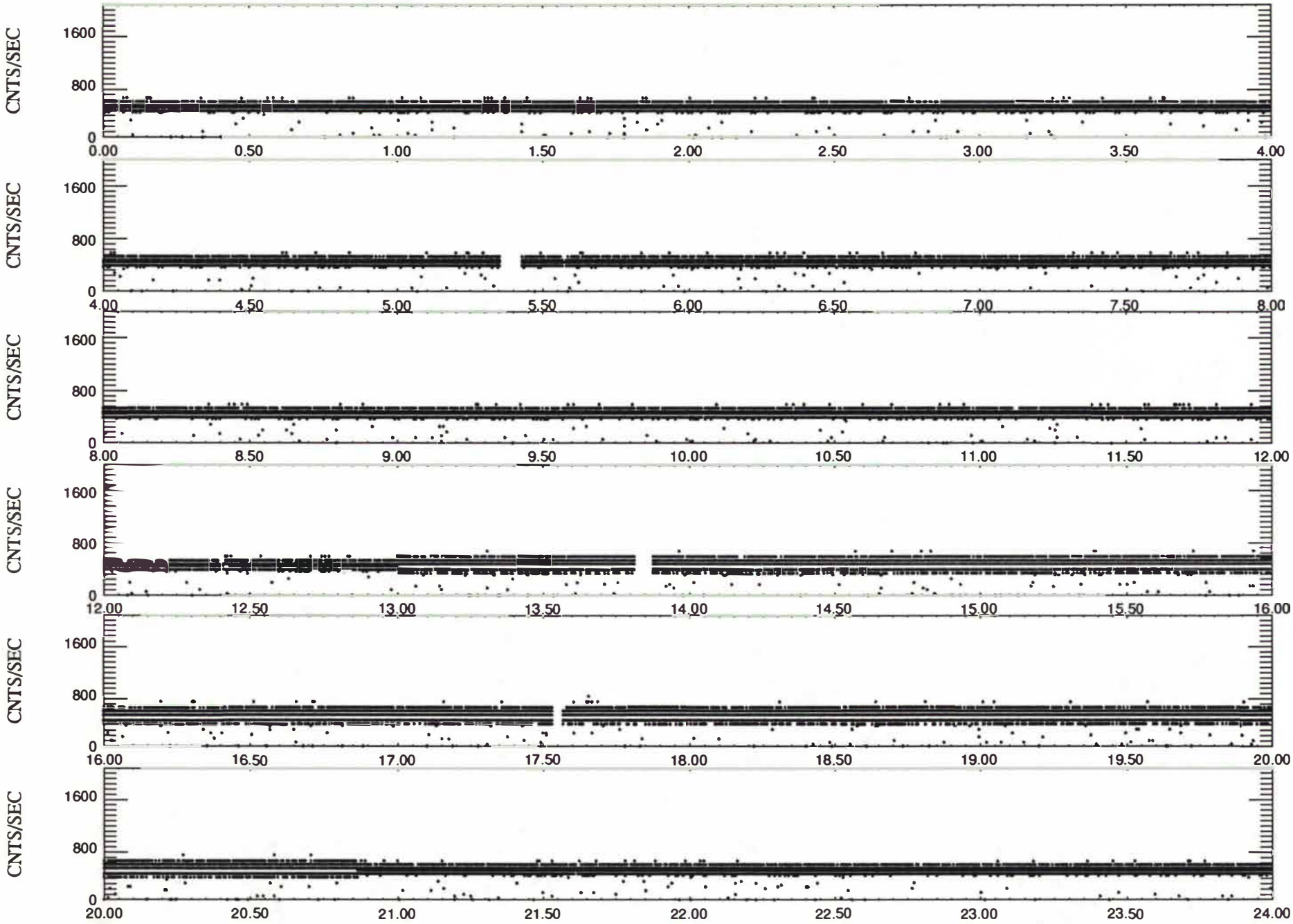
NO BURST (10)



UNIVERSAL TIME

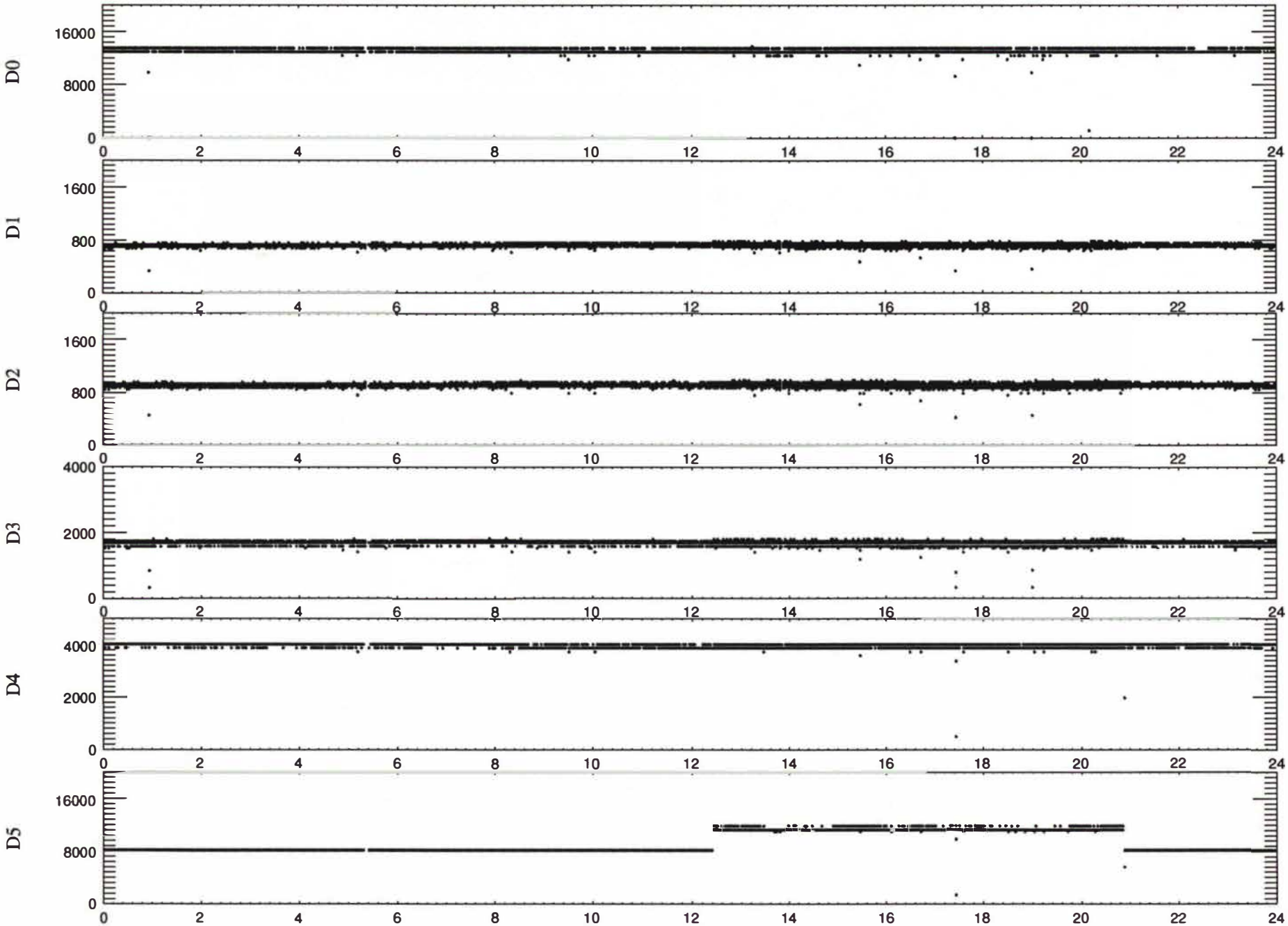
HUS 2A, MODE 1, NOT AVERAGED EDR day 240, year 1997 to day 240, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIVF AL TIME

HUS 2B COUNTS / SEC EDR day 240, year 1997 to day 240, year 1997 1/6/98



From SAHI@fender.msfc.nasa.gov Tue Sep 2 12:47 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 MAA03243; Tue, 2 Sep 1997 12:47:48 -0700
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 2 Sep 1997 14:47:22 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970902144722.20a02abb@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6351
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6351
EVENT OF 1997 AUG 29 DAY OF YEAR=241
EVENT CROSSING TIME AT BATSE : 34178. S. OR 09:29:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 226.000 2.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 8/ 97 IS:
RA= 161.119 DEC= 19.266 DIST= 6.235 AU
BATSE-ULYSSES DISTANCE = 932751455. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=114.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1281.87 SECS.
CROSSING TIME AT ULYSSES IS 32896. S. OR 09:08:16 +/- 522.73 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 8/ 97 IS:
RA= 216.565 DEC= -15.295 DIST= 1.628 AU
MARS-BATSE DISTANCE = 243559760. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=160.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -765.10 SECS.
CROSSING TIME AT MARS IS 33413. S. OR 09:16:52 +/- 35.82 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6351	970829	10689	34178	3000	226	+02	50

BATSE BURST TRIGGER
NO.: 6351

TIME: TJD=0689 SECONDS=34178

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=136.9 AZIMUTH=283.5 ERROR=2.92 DEGREES

COMMENTS:
BURST, DUR.~50 SECS. FIRST PEAK AT ~T+1 SECS, SECOND PEAK AT ~T+18 SECS.
WEAKLY VISIBLE ABOVE 300 KEV.

BATSE BURST# 6351

ULYSSES RT 2/ 9/97

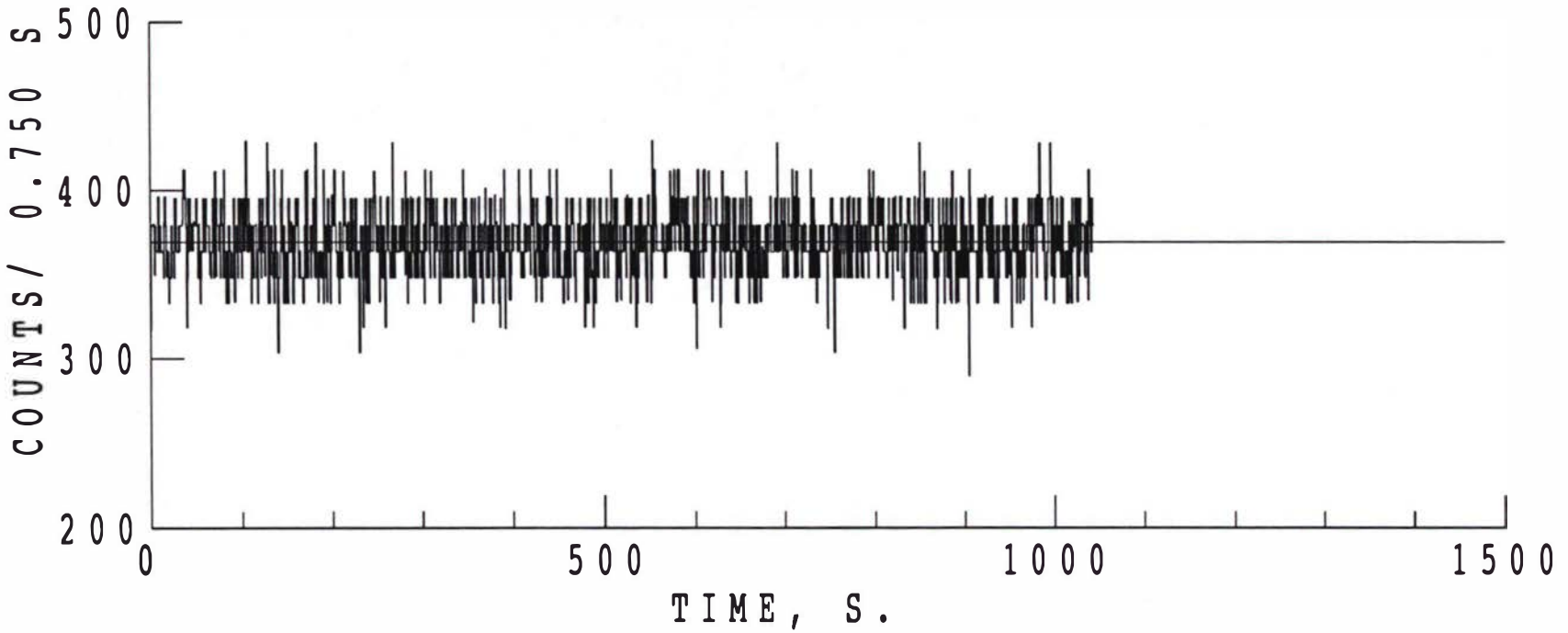
29/ 8/97 32364.062 s

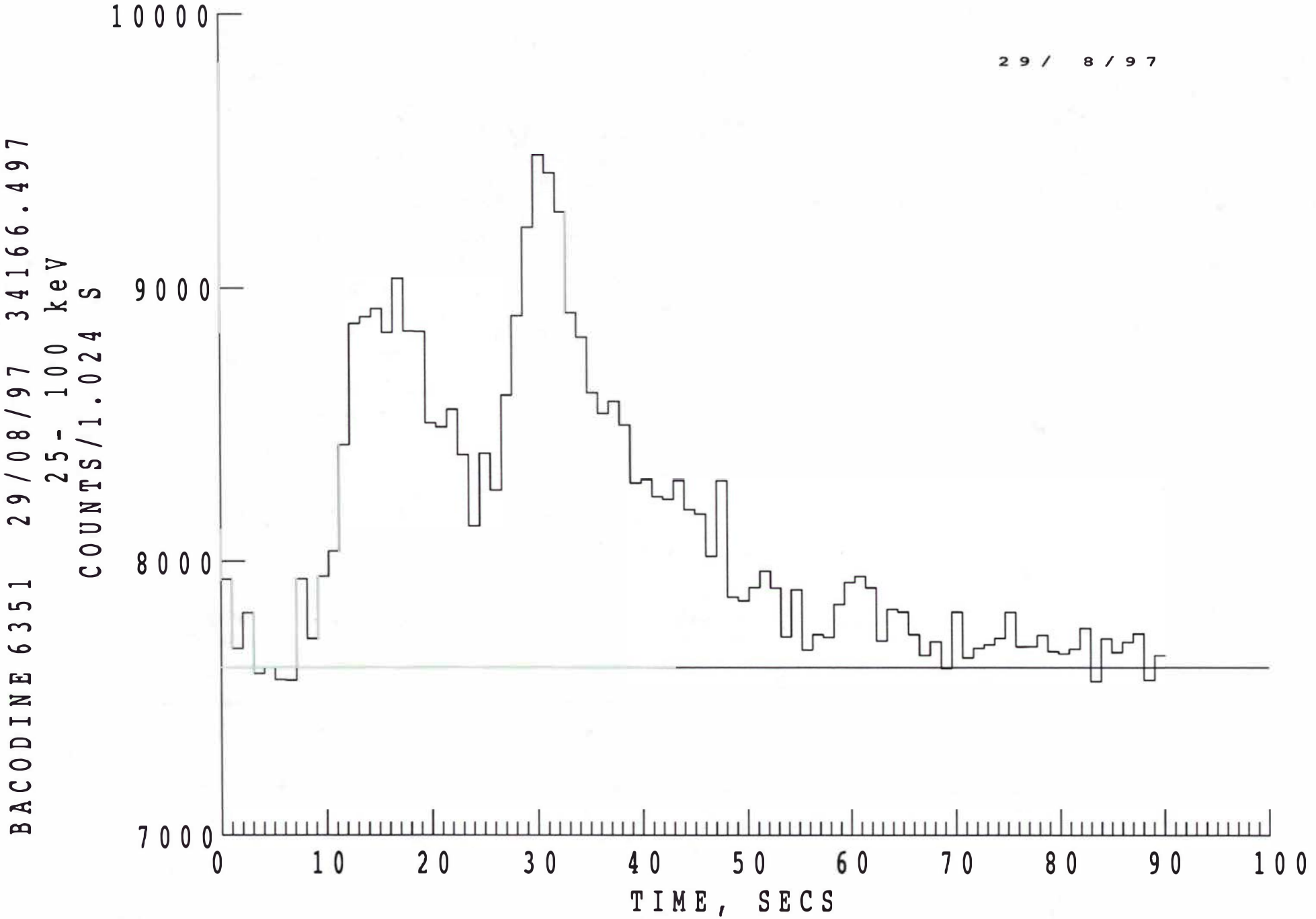
0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




BACODINE 6351 29/08/97 341166.497
25- 100 keV
COUNTS/1.024 S
29/ 8/97
10000
9000
8000
7000
0
10
20
30
40
50
60
70
80
90
100
TIME, SECS

From SAHI@fender.msfc.nasa.gov Tue Sep 2 12:43 PDT 1997
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 2 Sep 1997 14:42:37 -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.: 6352

TIME: TJD=0689 SECONDS=66904

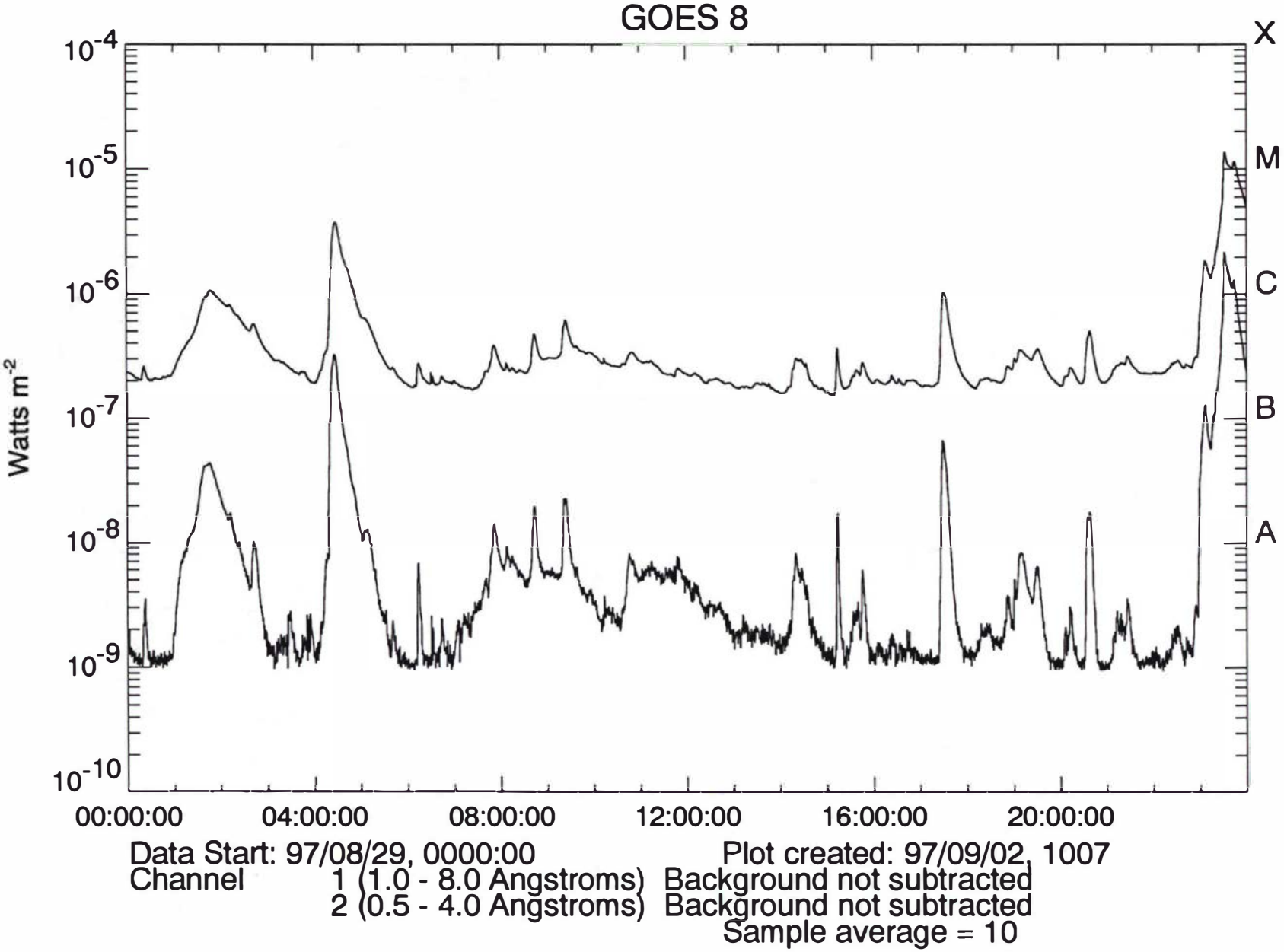
TYPE: ELECTRONS SOLAR FLARE TRIGGER SIGNAL:N

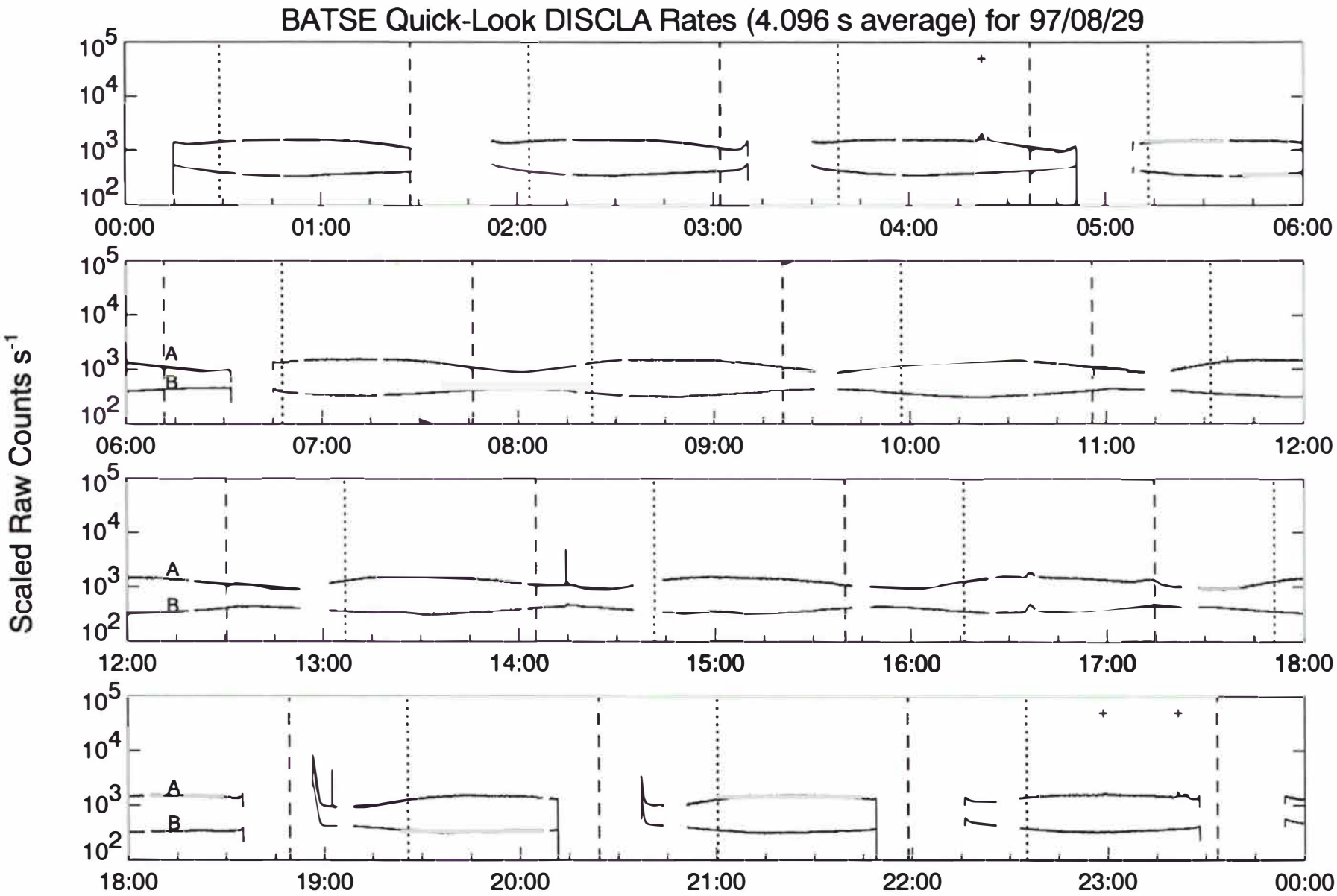
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

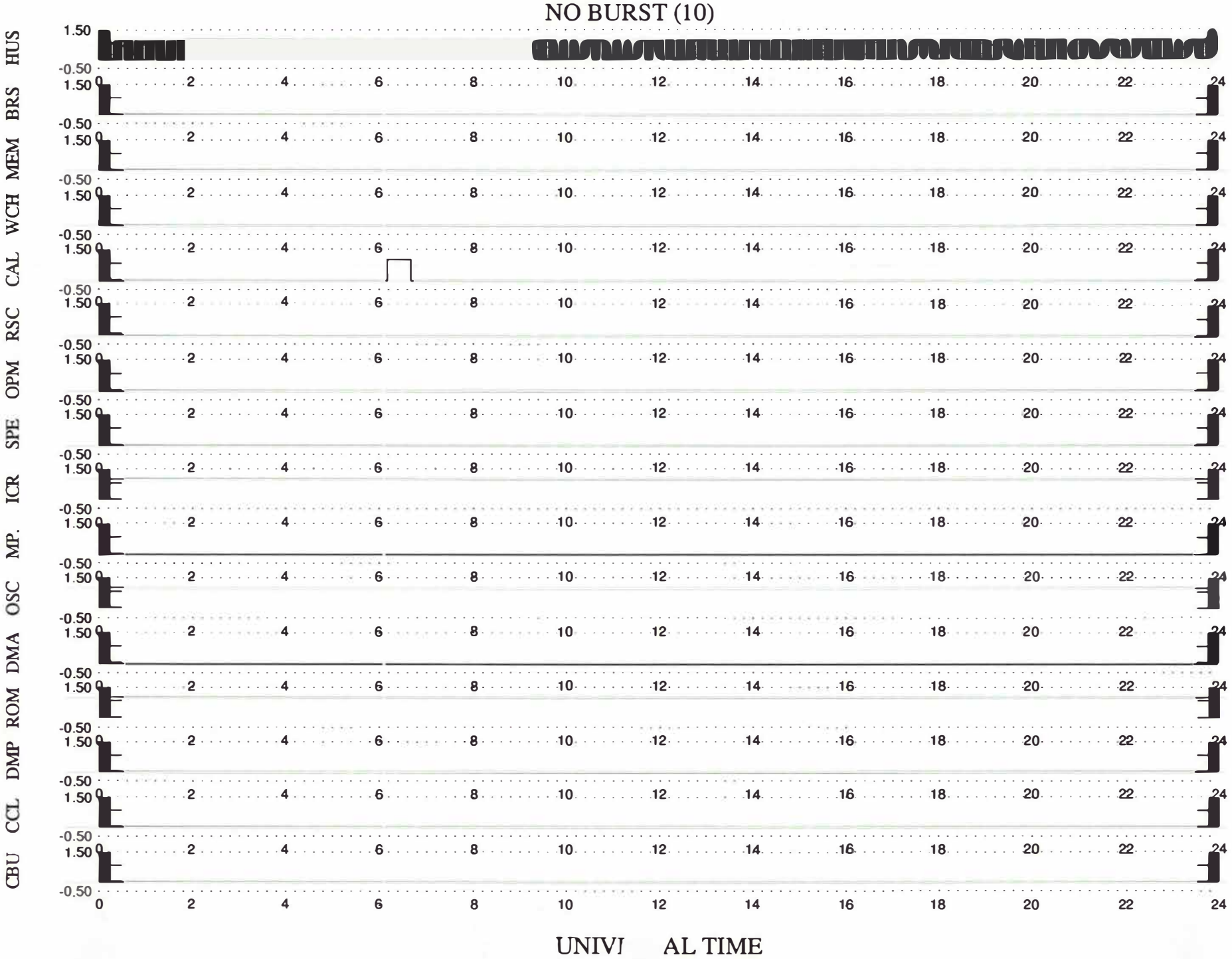
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA, TRIGGERED UPON SAA ENTRY.


GOES 8
X
M
C
B
A
Watts m-2
10-4
10-5
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: 97/08/29, 0000:00
Plot created: 97/09/02, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

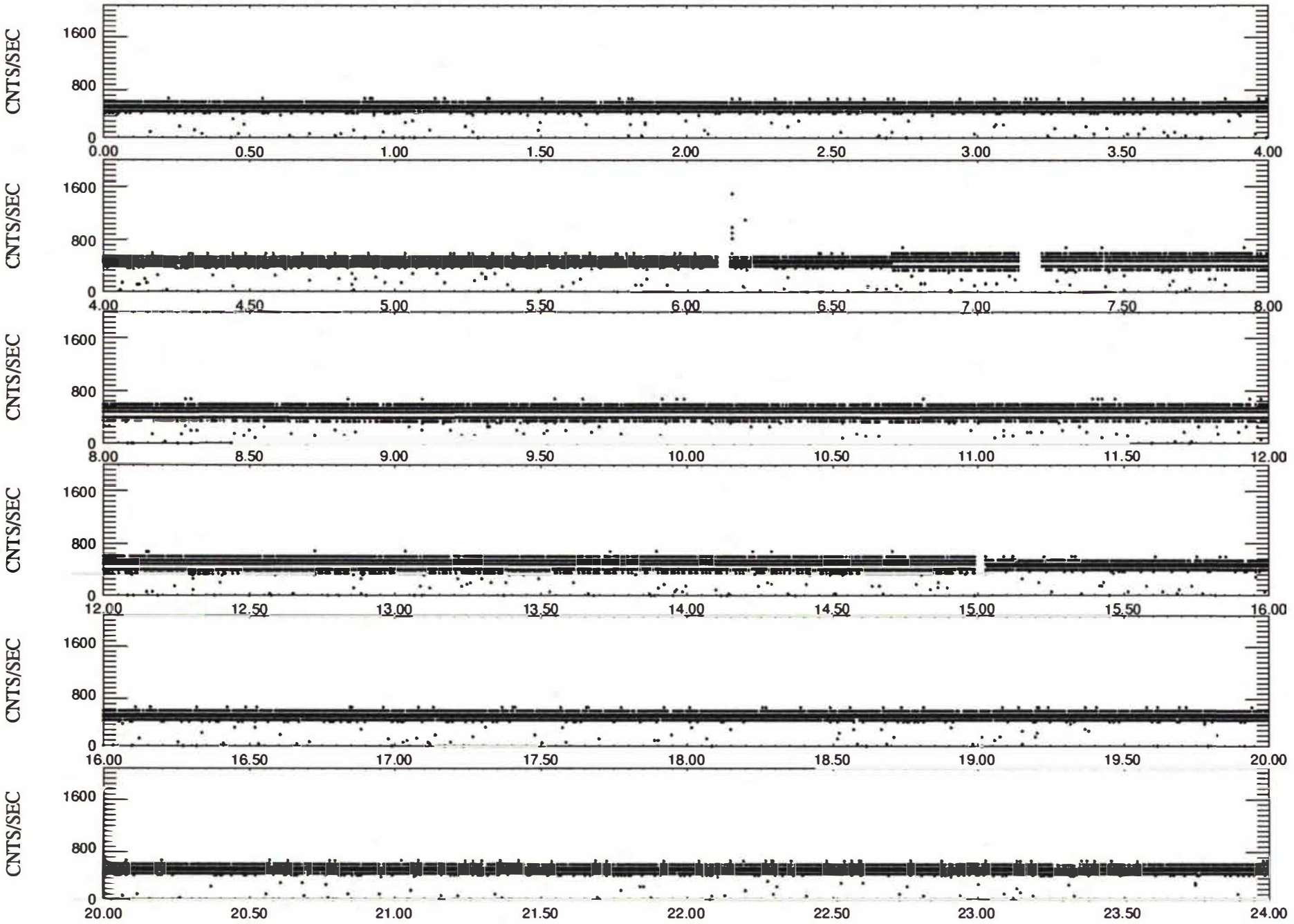

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/29
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/09/02, 1008 EDT
A: Channel 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 241, year 1997 to day 241, year 1997 1/6/98



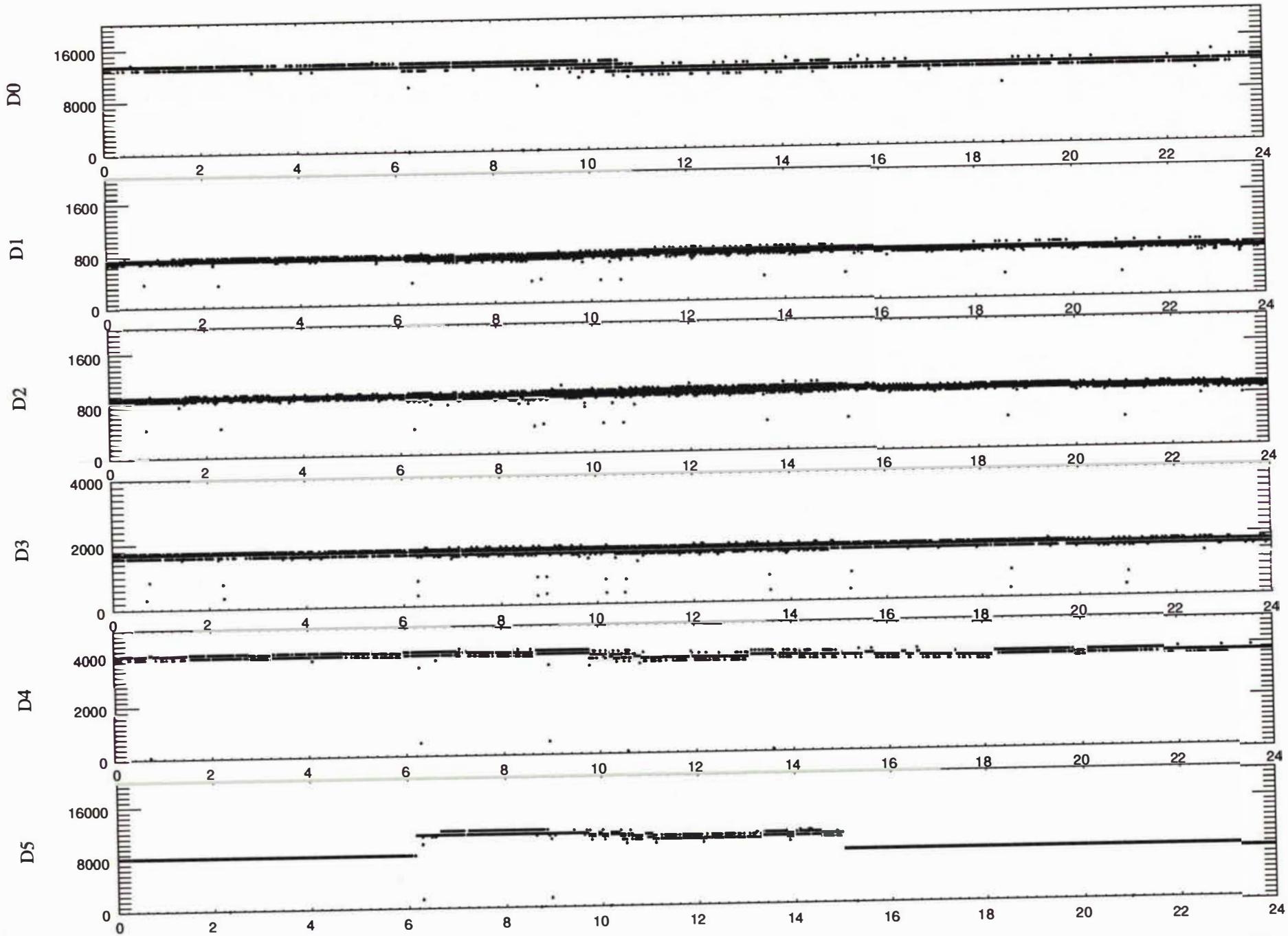
HUS 2A, MODE 1, NOT AVERAGED EDR day 241, year 1997 to day 241, year 1997 1/6/98

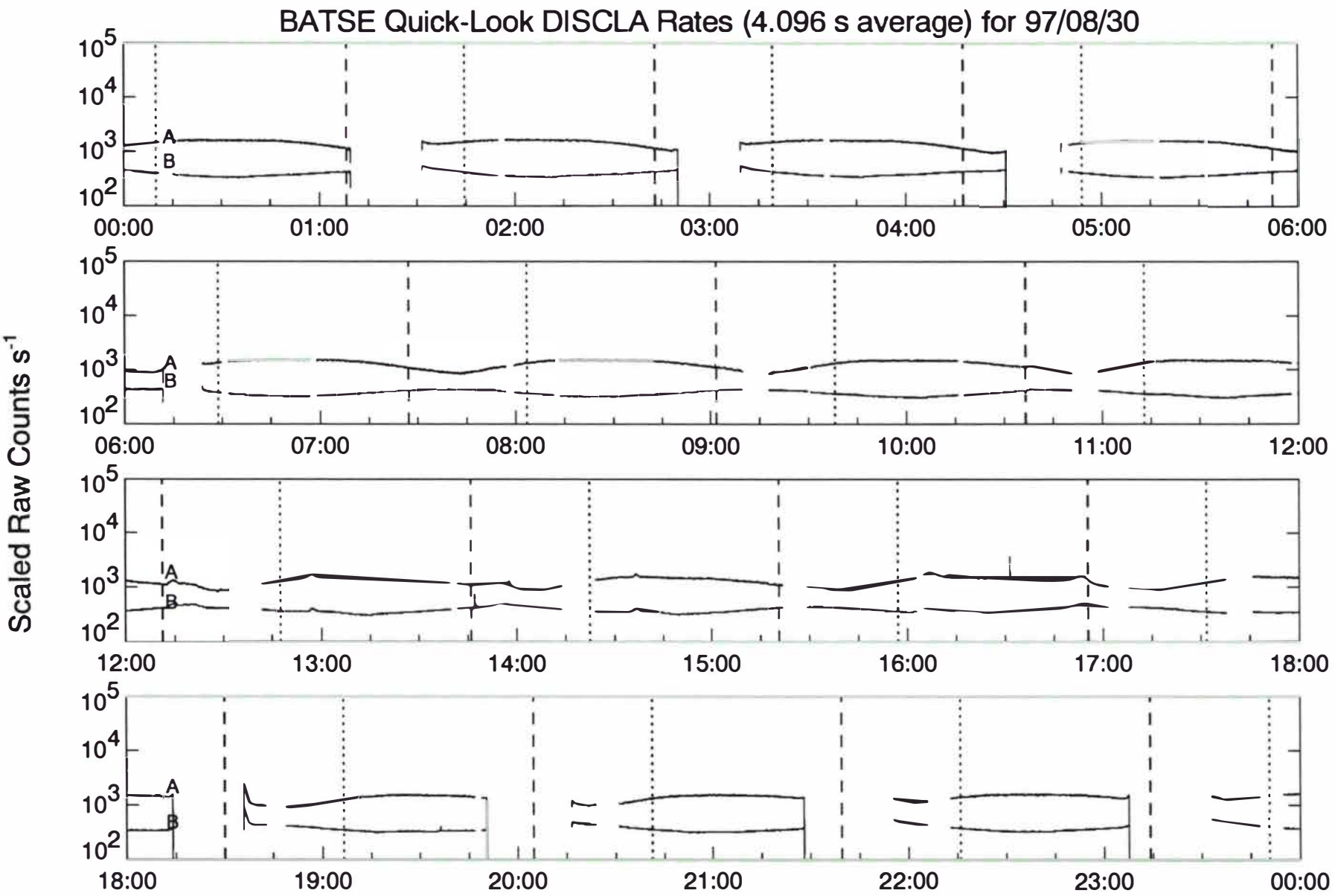
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 241, year 1997 to day 241, year 1997 1/6/98

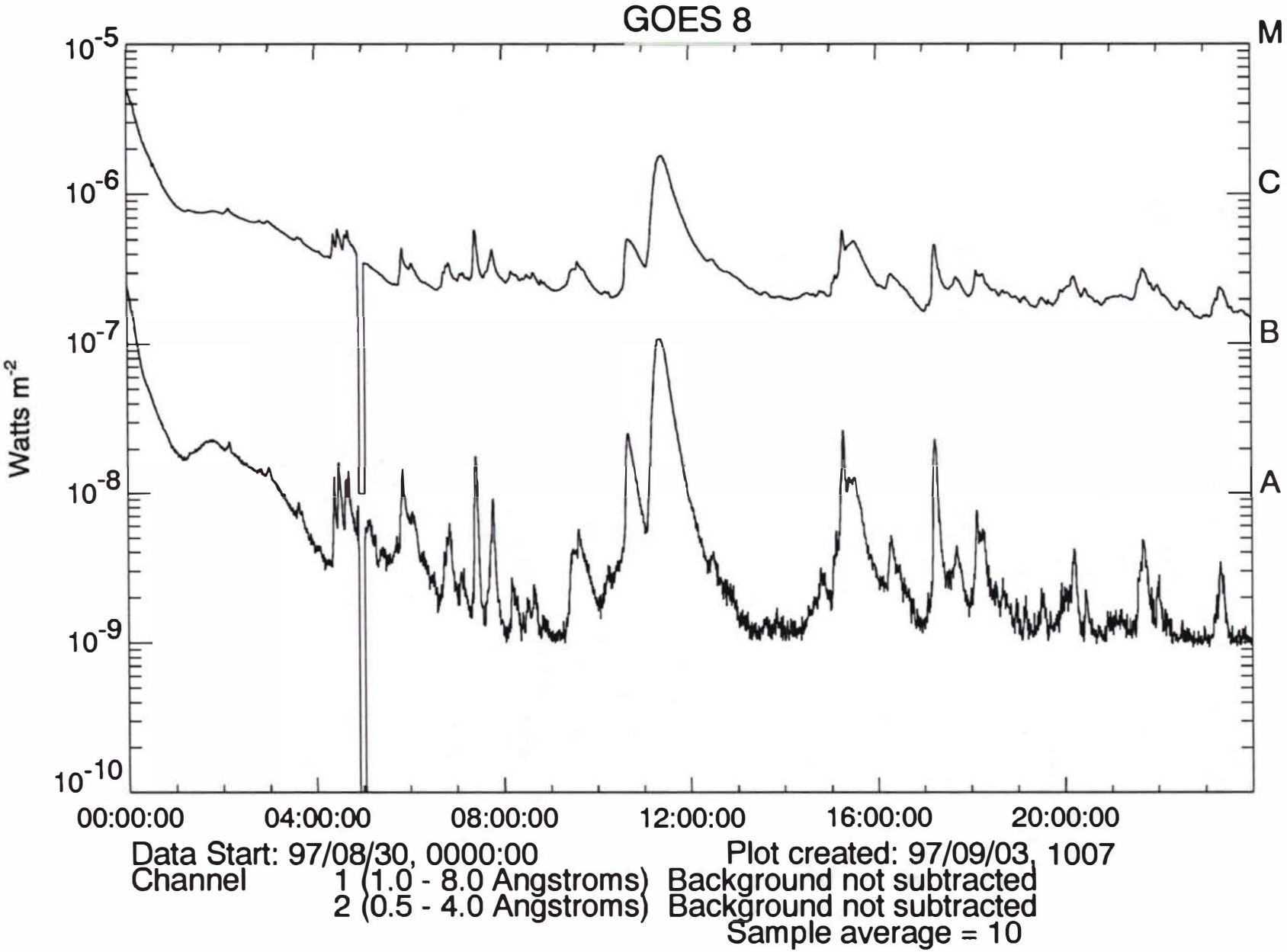




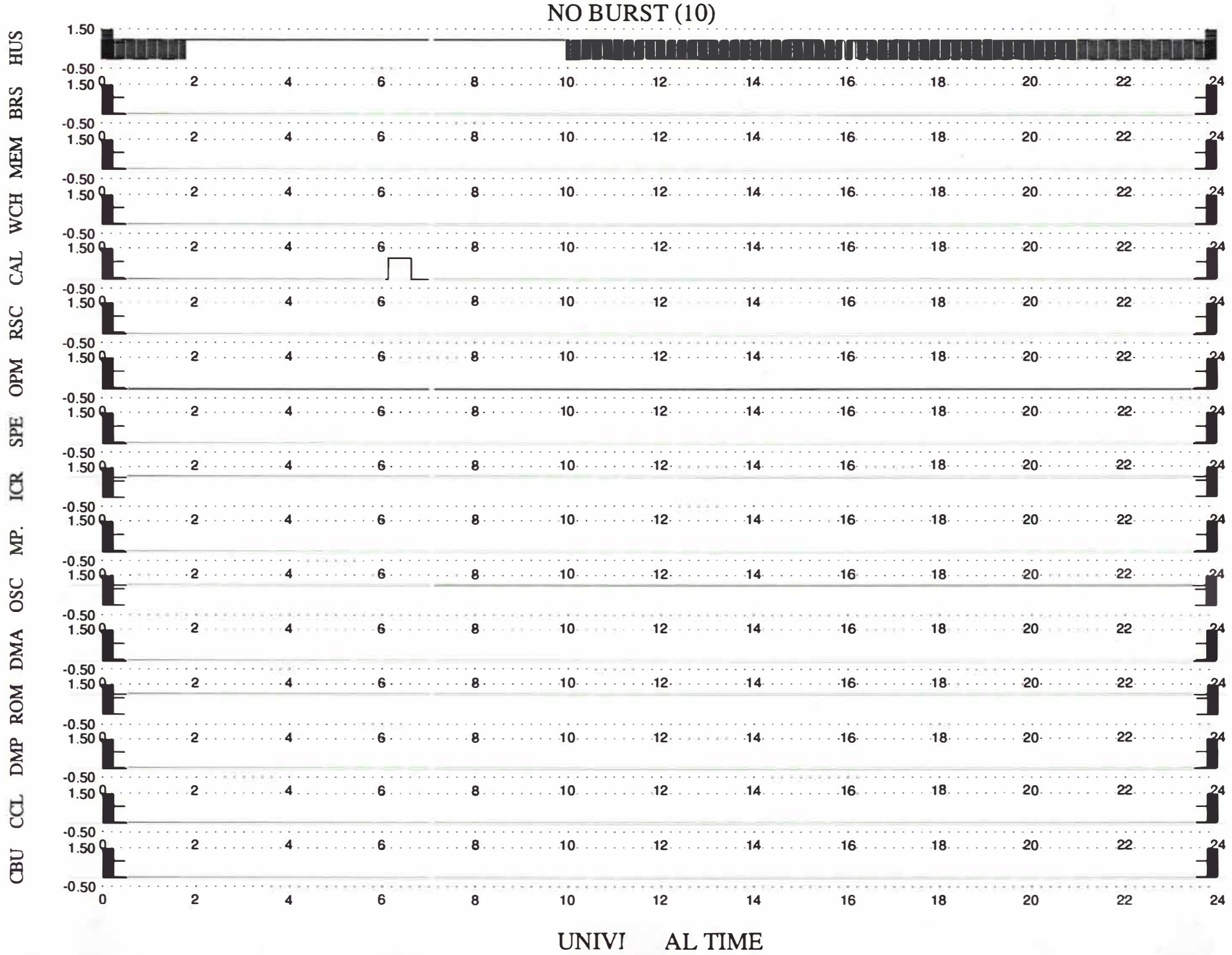
Current Time: 97/09/03, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
\+ Solar Flare

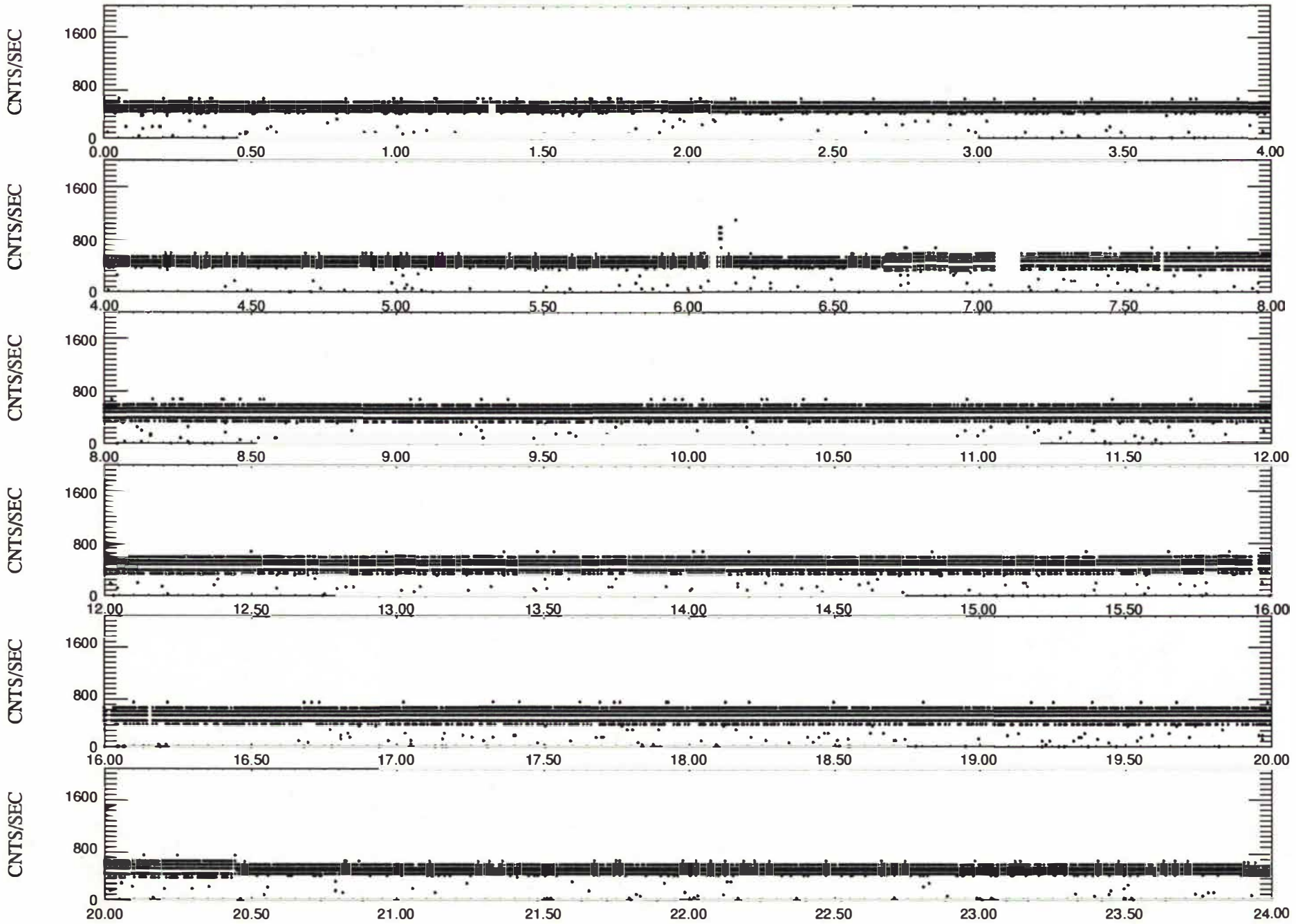

GOES 8
M
C
B
A
Watts m-2
10-5
10-6
10-7
10-8
10-9
10-10
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/08/30, 0000:00
Plot created: 97/09/03, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 242, year 1997 to day 242, year 1997 1/6/98



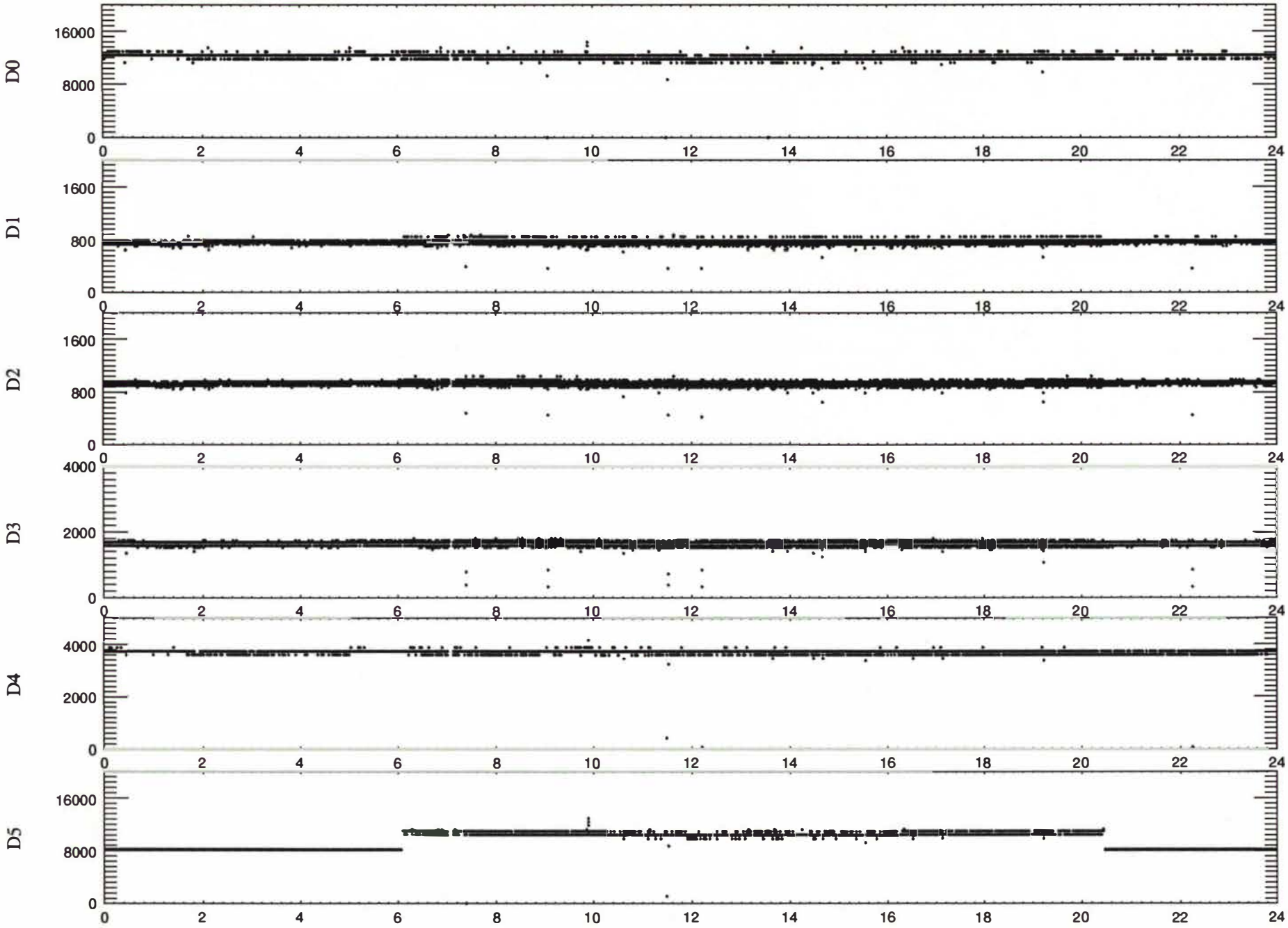
HUS 2A, MODE 1, NOT AVERAGED EDR day 242, year 1997 to day 242, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV' 'AL TIME

HUS 2B COUNTS / SEC EDR day 242, year 1997 to day 242, year 1997 1/6/98



From SURASAK@ssl.msfc.nasa.gov Wed Sep 3 07:16 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 HAA10637; Wed, 3 Sep 1997 07:16:54 -0700
Date: Wed, 3 Sep 1997 9:16:42 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970903091642.2020806b@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 6353
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 6353
EVENT OF 1997 AUG 31 DAY OF YEAR=243
EVENT CROSSING TIME AT BATSE : 63570. S. OR 17:39:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 86.000 -47.000
BATSE PEAK COUNTING RATE: 10900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 8/ 97 IS:
RA= 161.541 DEC= 18.970 DIST= 6.237 AU
BATSE-ULYSSES DISTANCE = 933049135. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 238.73 SECS.
CROSSING TIME AT ULYSSES IS 63809. S. OR 17:43:28 +/- 592.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 8/ 97 IS:
RA= 217.830 DEC= -15.726 DIST= 1.639 AU
MARS-BATSE DISTANCE = 245184816. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 76.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 195.95 SECS.
CROSSING TIME AT MARS IS 63766. S. OR 17:42:45 +/- 140.83 SECONDS

BATSE BURST TRIGGER

NO.: 6353

TIME: TJD=0691 SECONDS=63570

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=44.9 AZIMUTH=16.3 ERROR=0.68 DEGREES

COMMENTS:
GRB. DUR~160S. SINGLE PULSE WITH COMPLEX STRUCTURE. VISISBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6353	970831	10691	63570	10900	086	-47	160

Helio corr removed 14/2/00

Date: Apr 7 '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? N/A

☑ 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)?

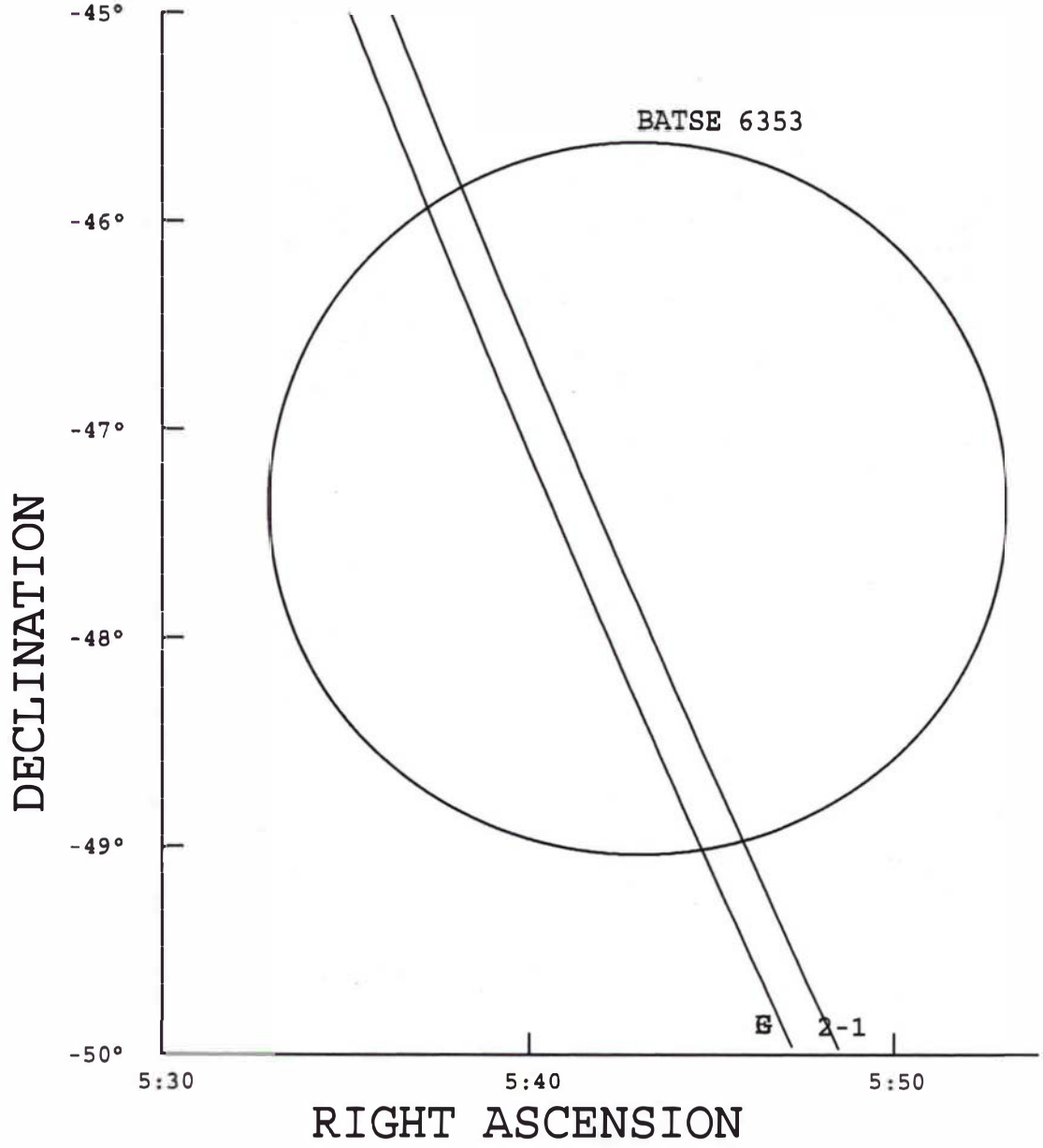
☐ 2000 coordinates used?

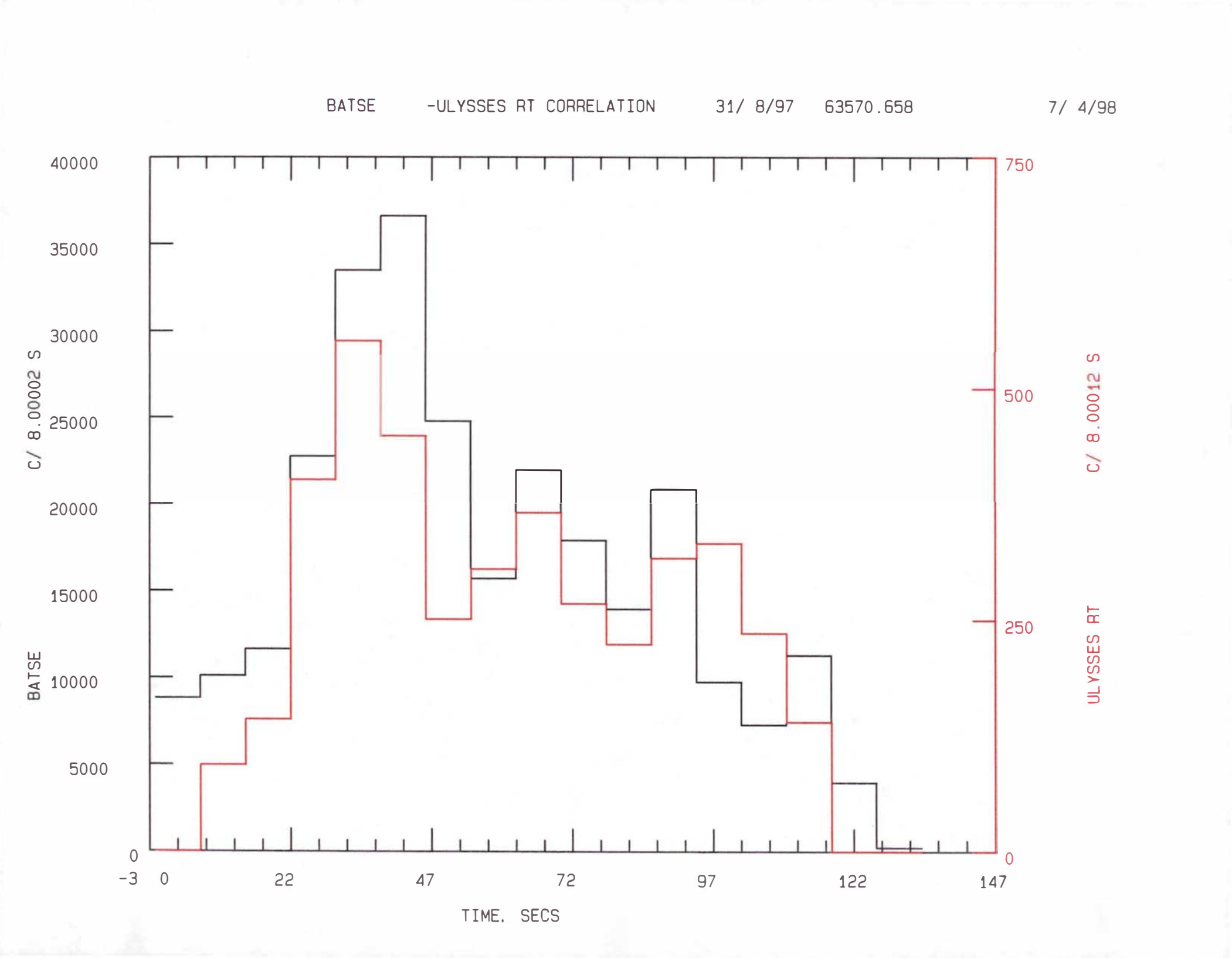
☐ Geocentric time used?

☑ ACCESS database updated?

EVENT OF AUG 31, 1997 17:43

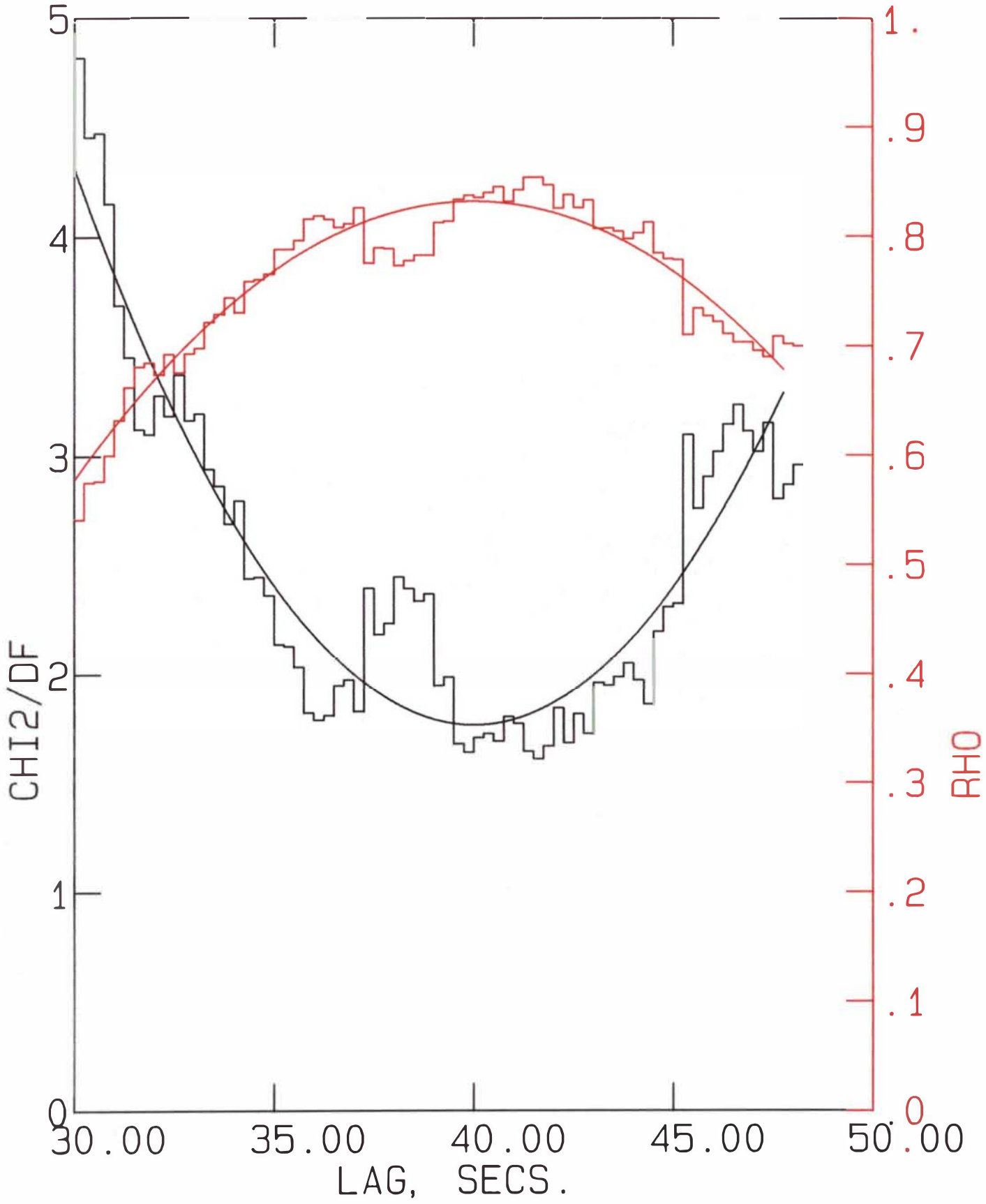
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




BATSE -ULYSSES RT CORRELATION 31/ 8/97 63570.658 7/ 4/98
40000
35000
30000
25000
20000
15000
10000
5000
0
C/ 8.00002 S
BATSE
750
500
250
0
C/ 8.00012 S
ULYSSES RT
-3
0
22
47
72
97
122
147
TIME, SECS

7/ 4/98

BATSE -ULYSSES RT CORRELATION 31/ 8/97 63570.658

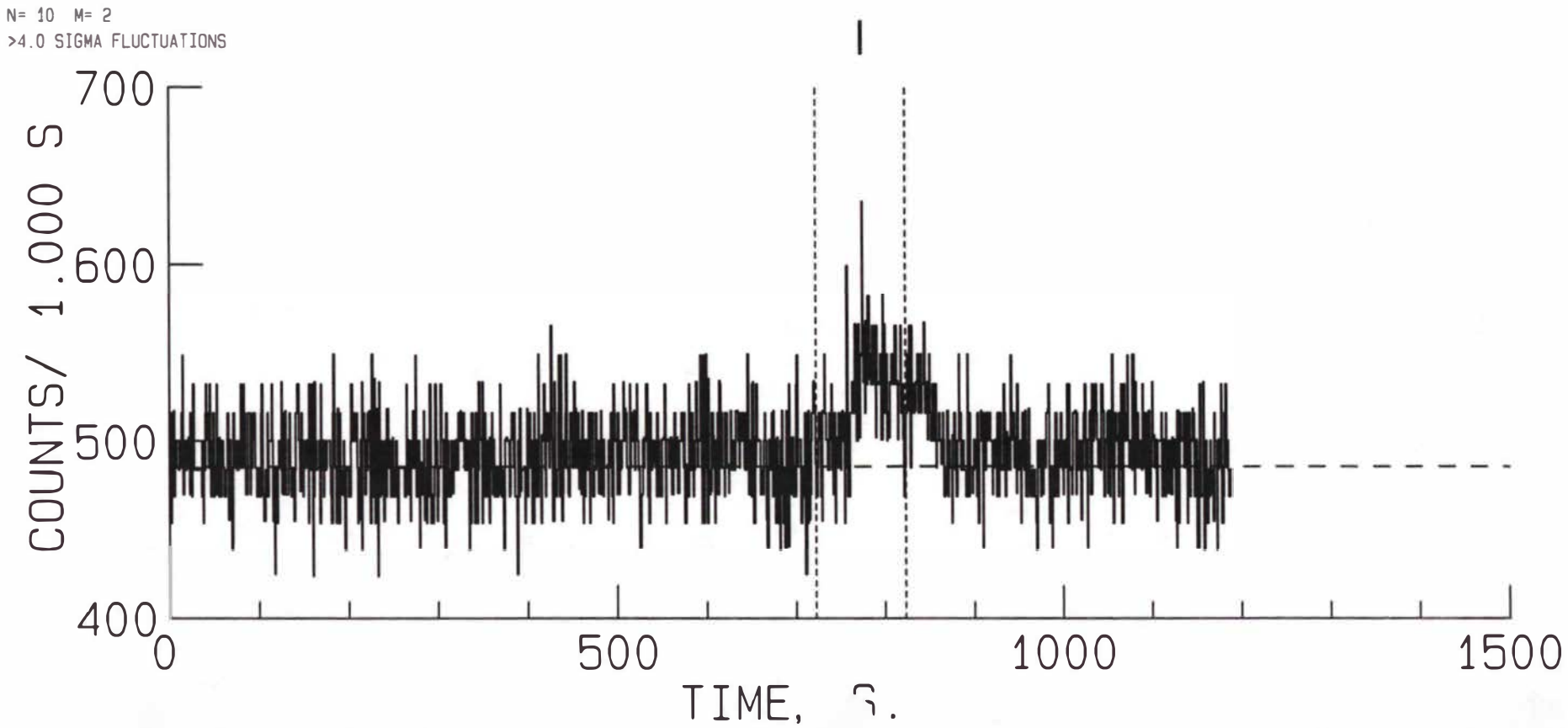


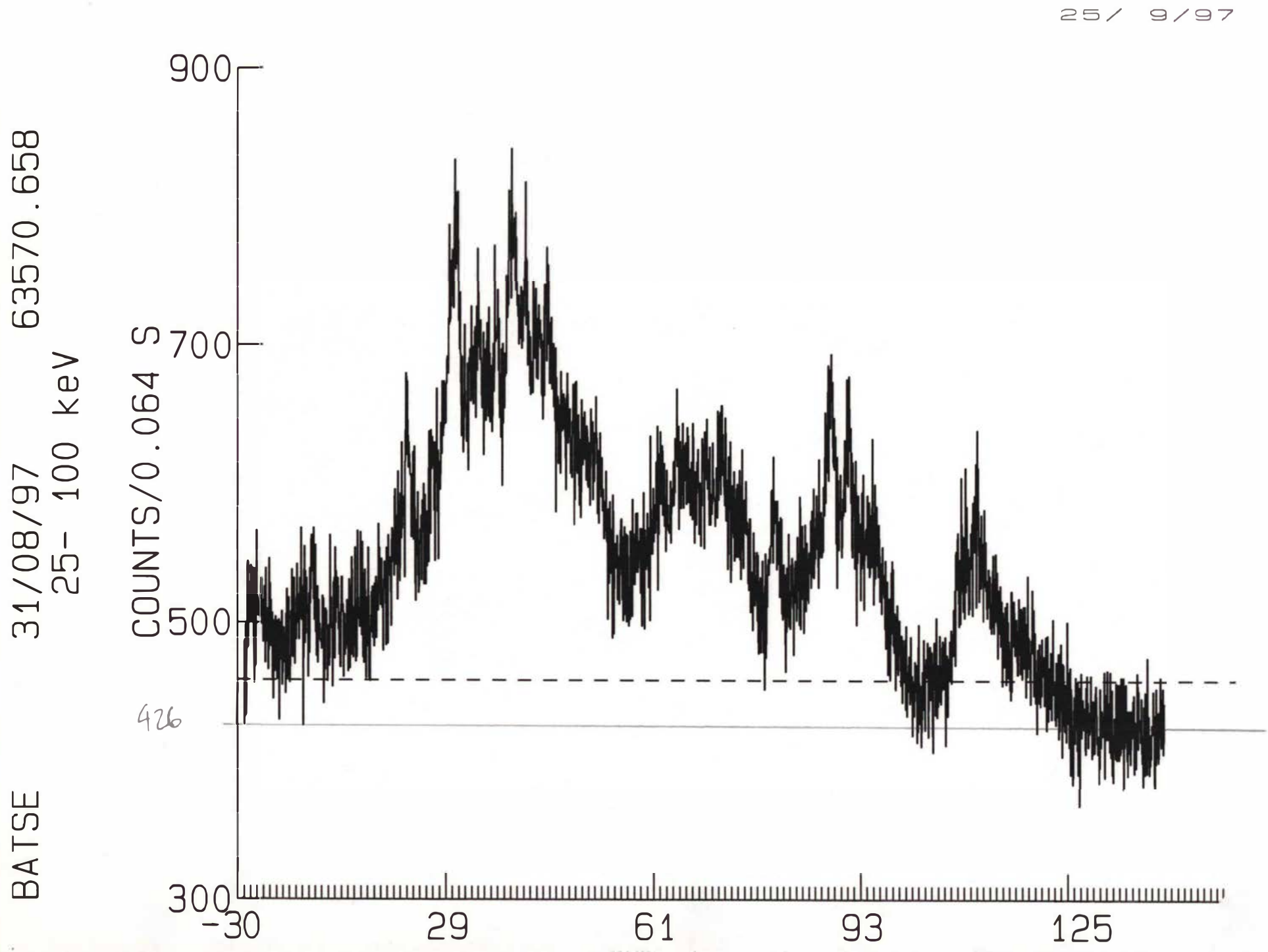
ULYSSES RT 7/ 4/98

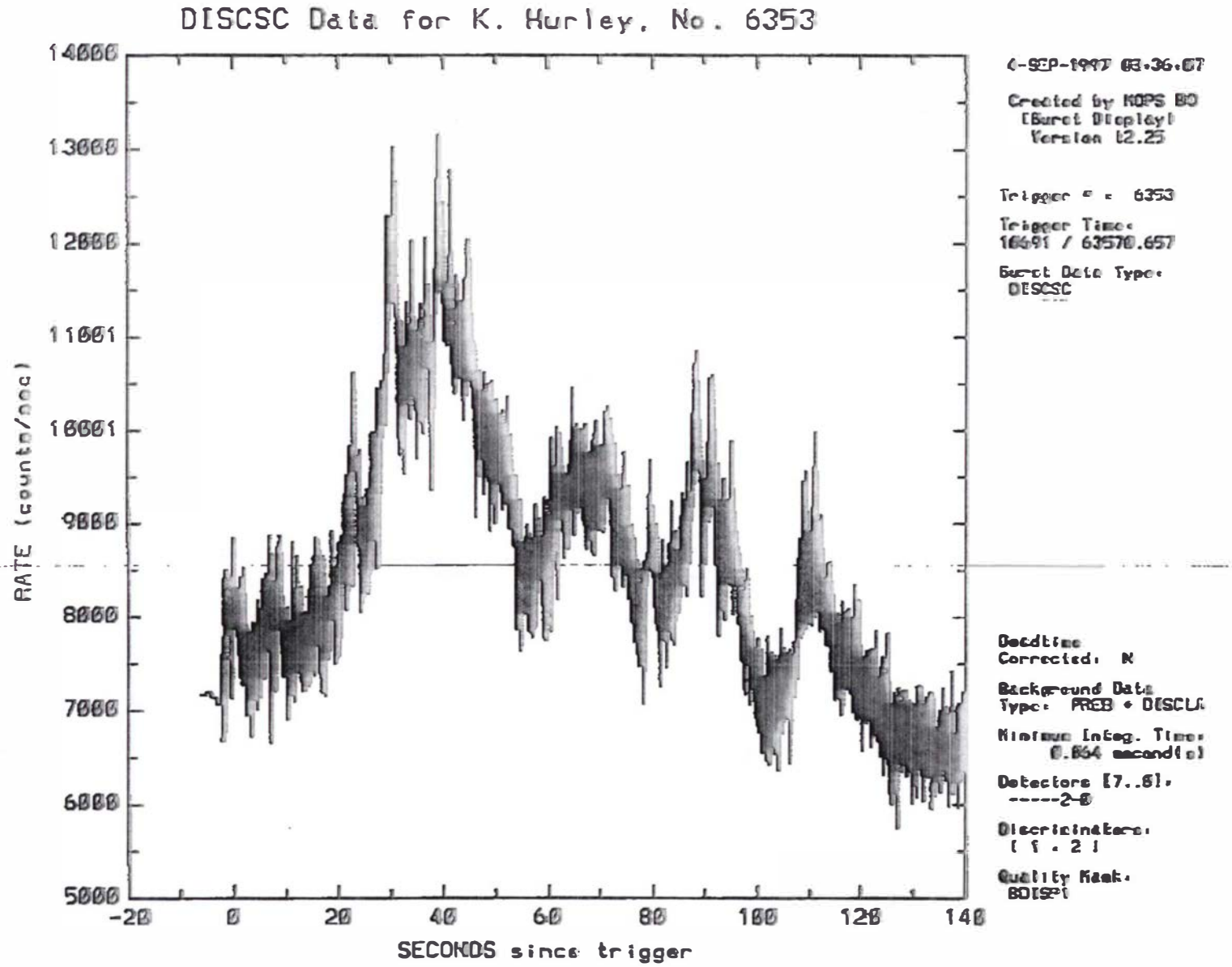
31/ 8/97 63108.066 s

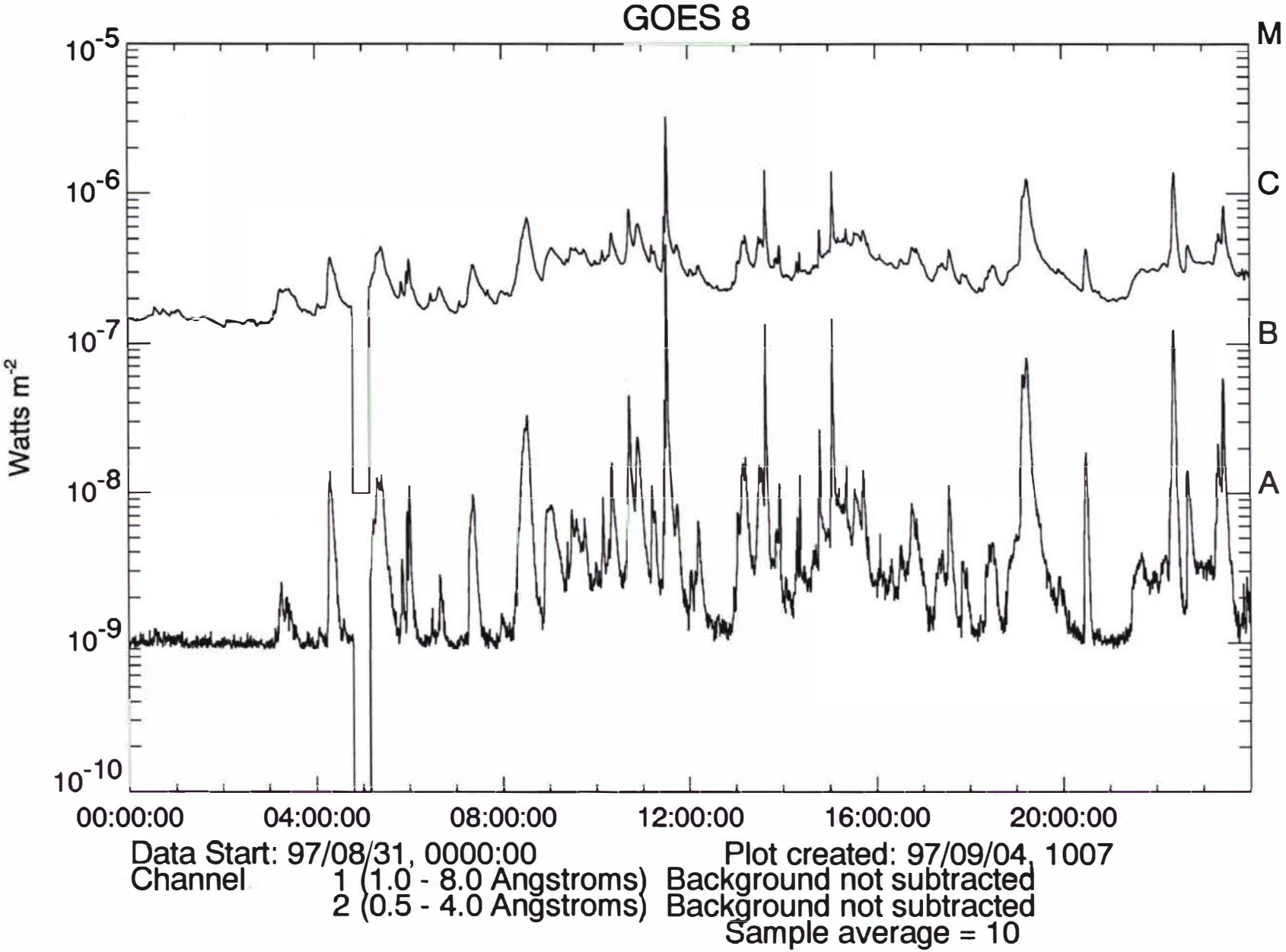
0.250 S INTERVALS REGROUPED BY 4

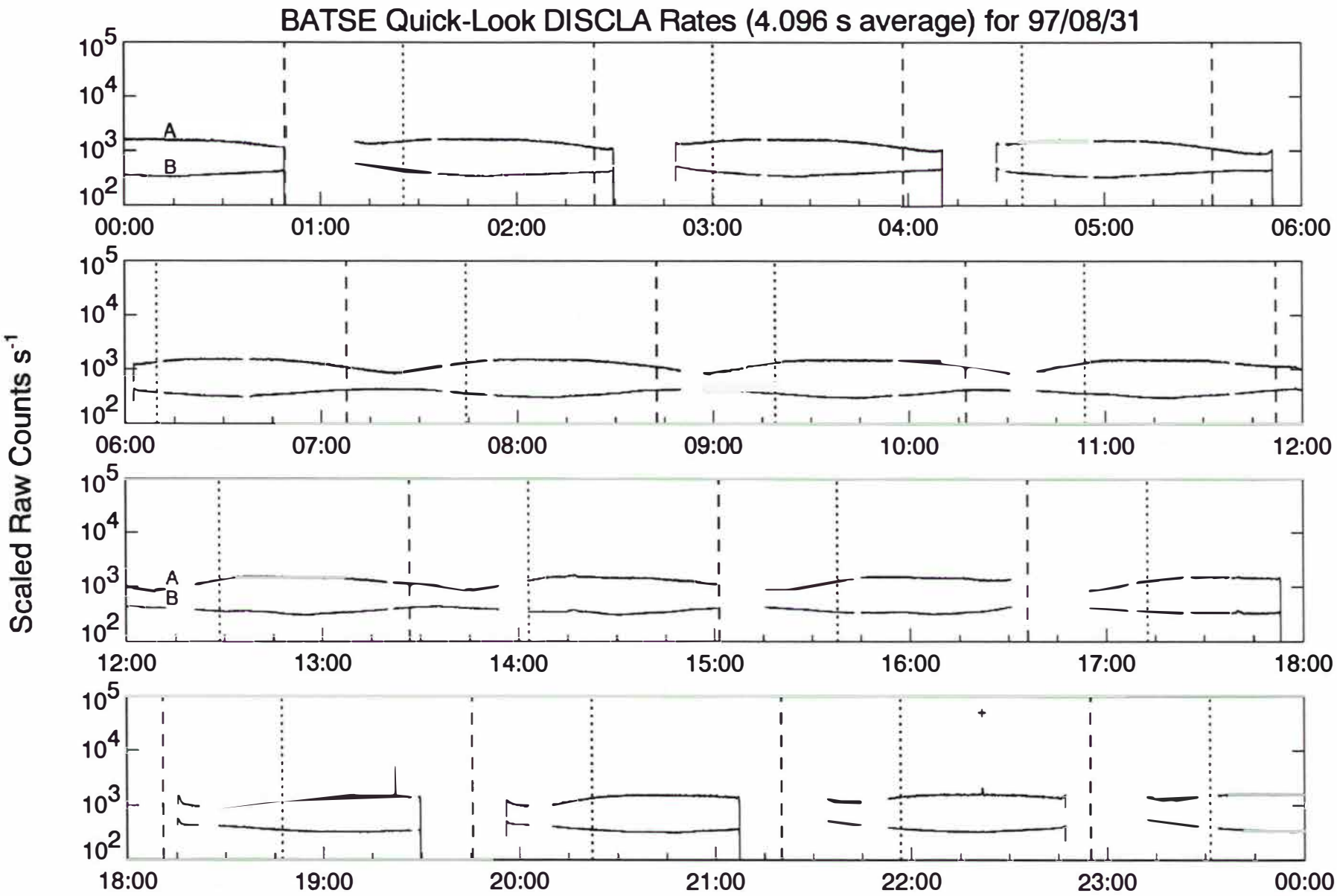
22- 147 keV



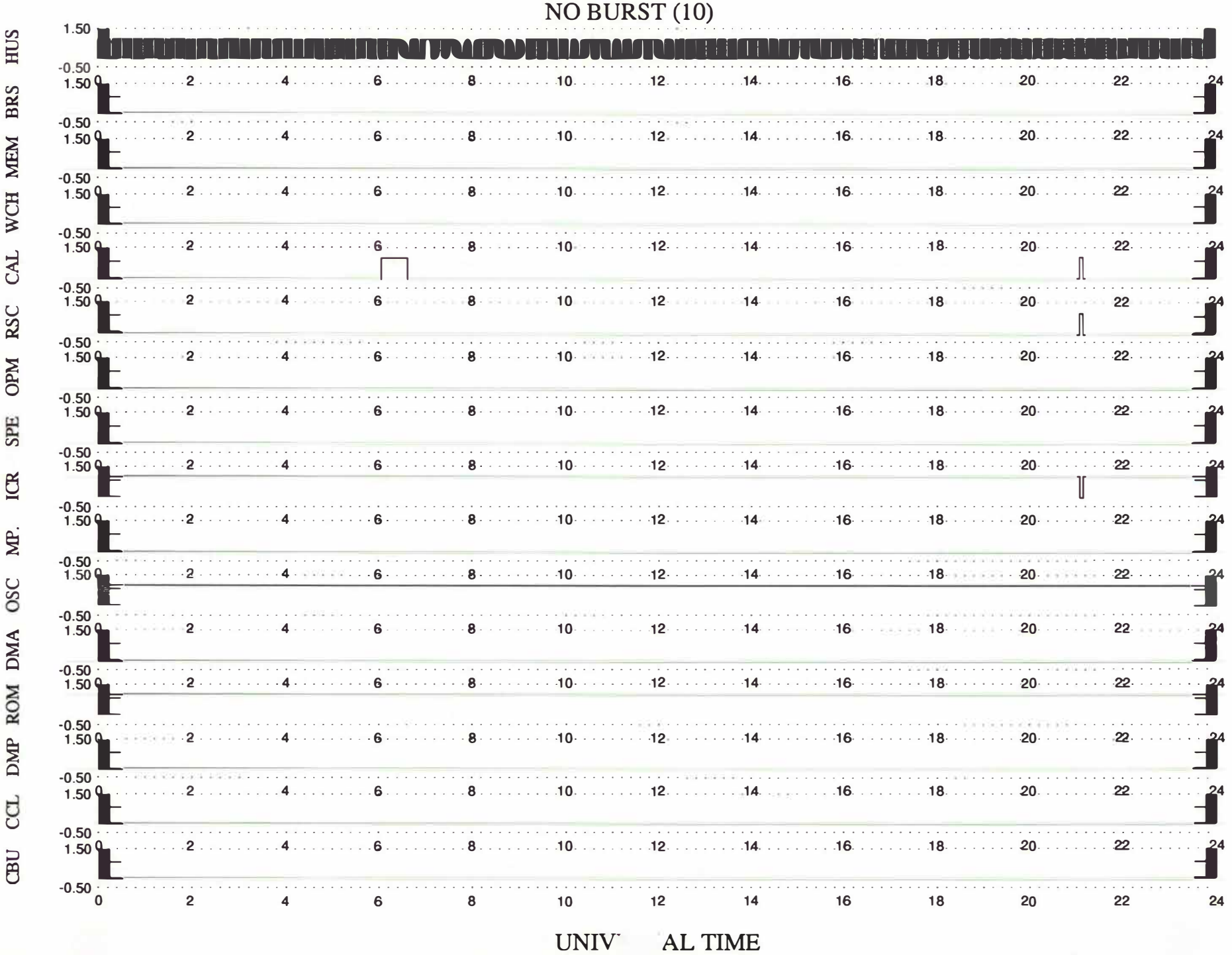

25/ 9/97
BATSE
31/08/97 63570.658
25- 100 keV
COUNTS/0.064 S
900
700
500
300
426
-30
29
61
93
125


DISCSC Data for K. Hurley, No. 6353
RATE (counts/sec)
14000
13000
12000
11001
10001
9000
8000
7000
6000
5000
-20
0
20
40
60
80
100
120
140
SECONDS since trigger
6-SEP-1997 03:36:07
Created by KOPS BD
[Burst Display]
Version 12.25
Trigger # = 6353
Trigger Time:
10691 / 63570.657
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
-----2-0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1


GOES 8
M
C
B
A
Watts m-2
10-5
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: 97/08/31, 0000:00
Plot created: 97/09/04, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

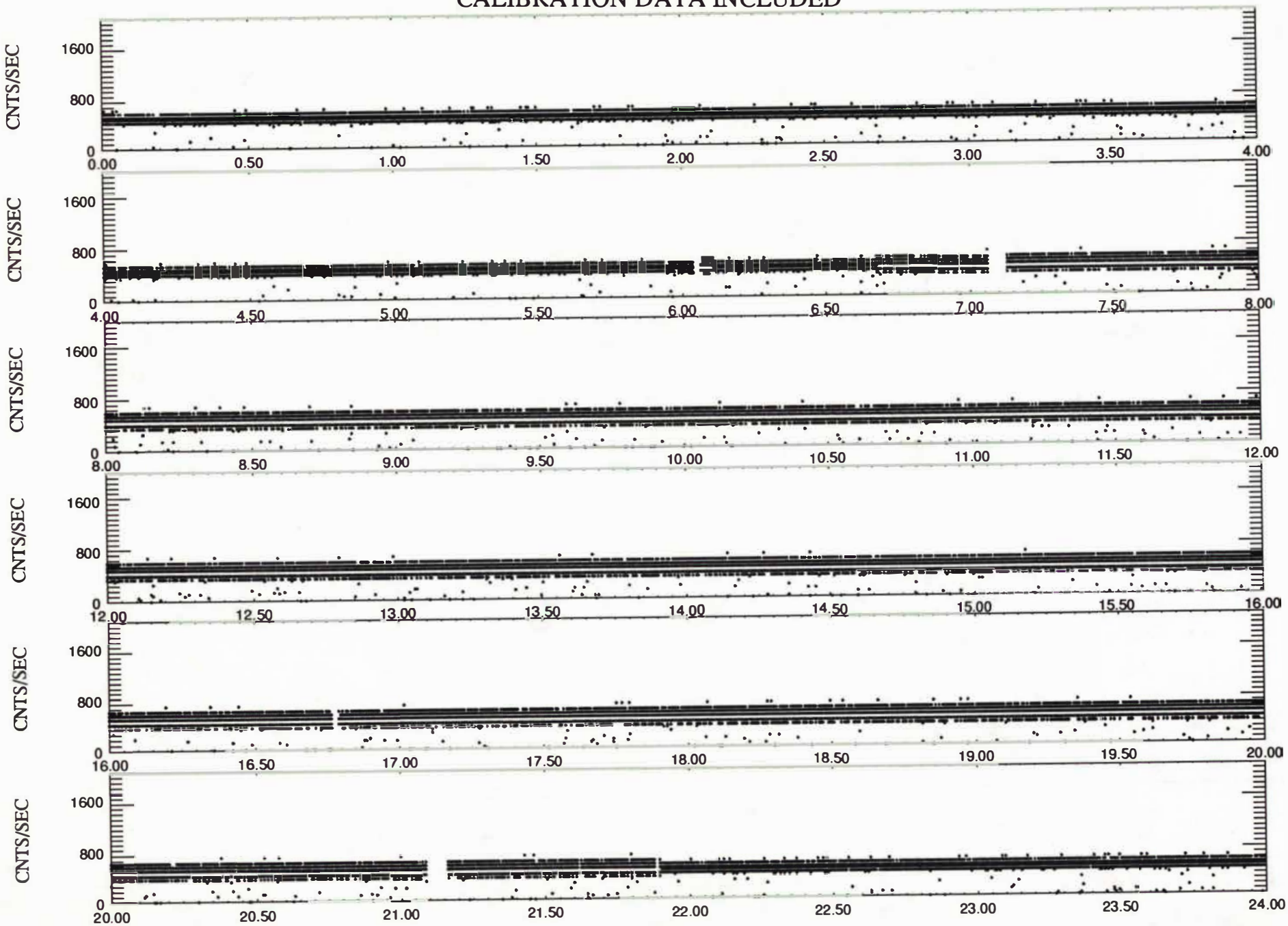

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/08/31
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/09/04, 1008 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 243, year 1997 to day 243, year 1997 1/6/98



HUS 2A, MODE 1, NOT AVERAGED EDR day 243, year 1997 to day 243, year 1997 1/6/98

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 243, year 1997 to day 243, year 1997 1/6/98

