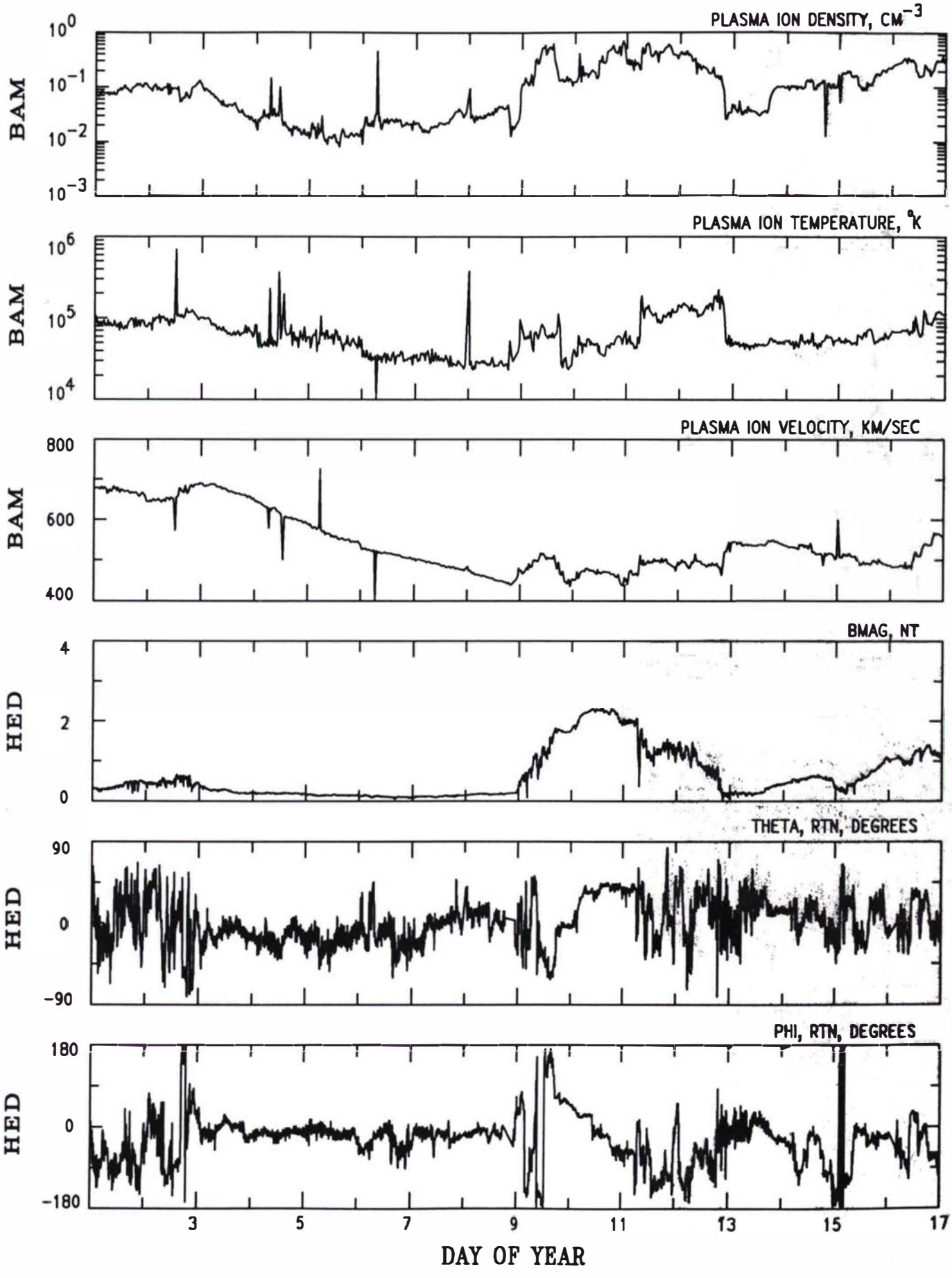
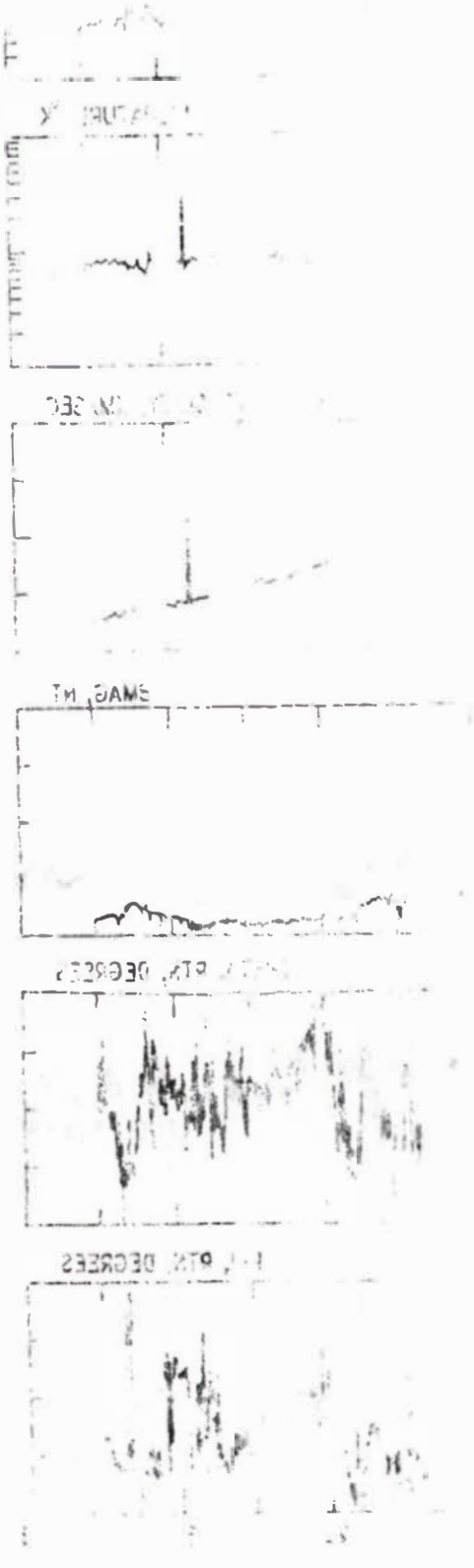
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

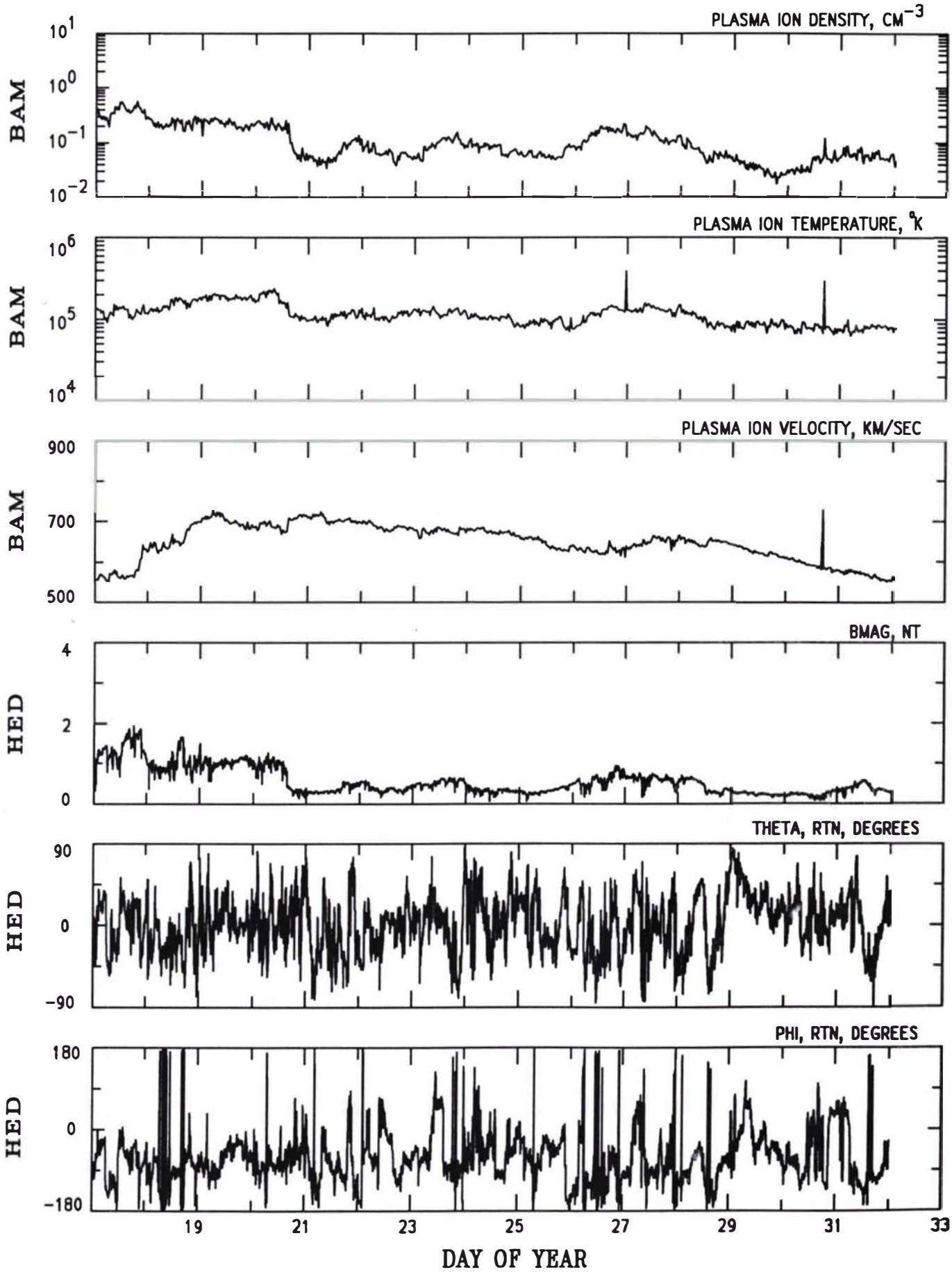
97 001 JAN 1 00:00:00.000 – 97 017 JAN 17 00:00:00.000





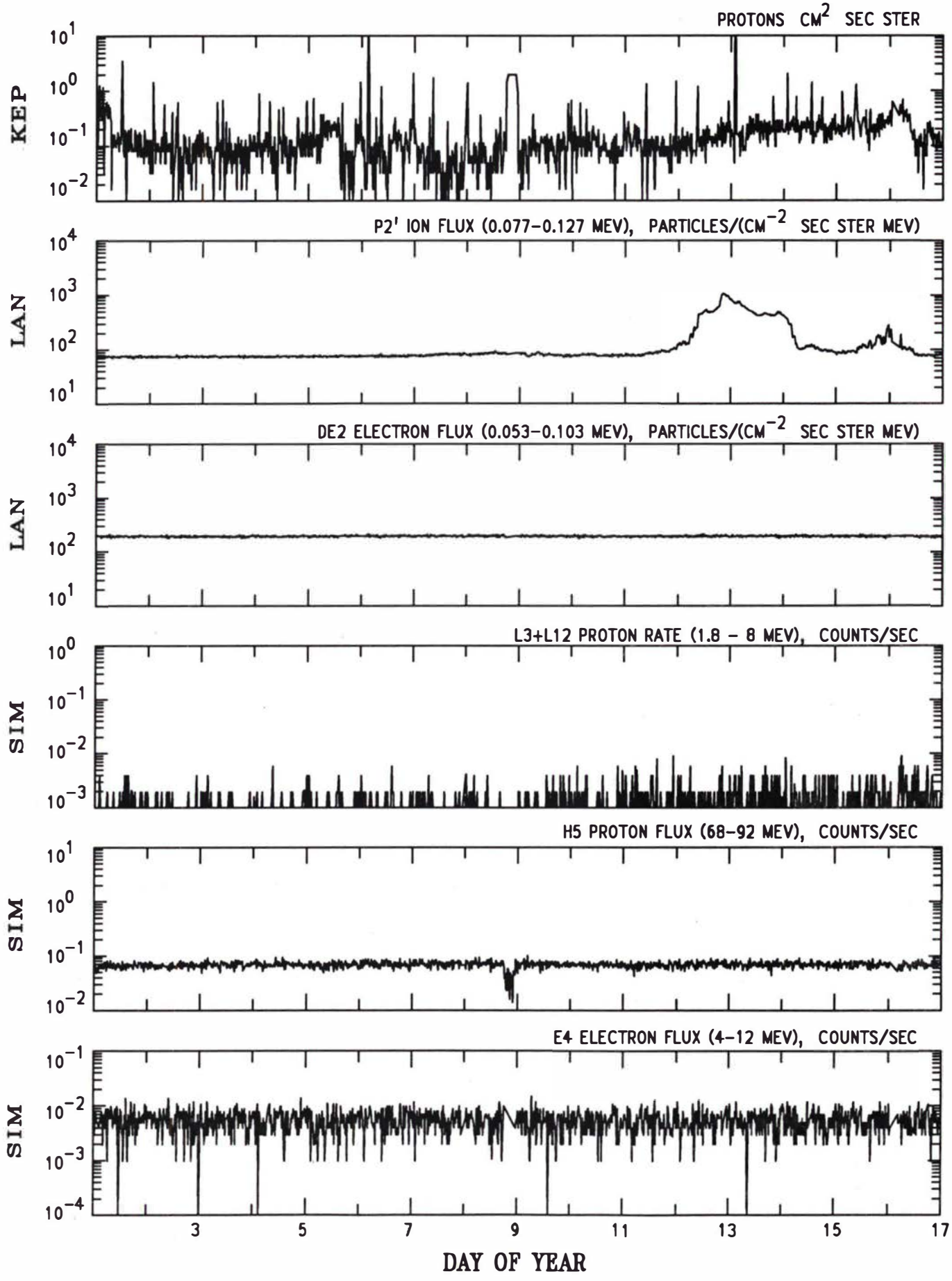
ULYSSES CDR – SOLAR WIND PLASMA AND MAGNETIC FIELD

97 017 JAN 17 00:00:00.000 – 97 033 FEB 2 00:00:00.000



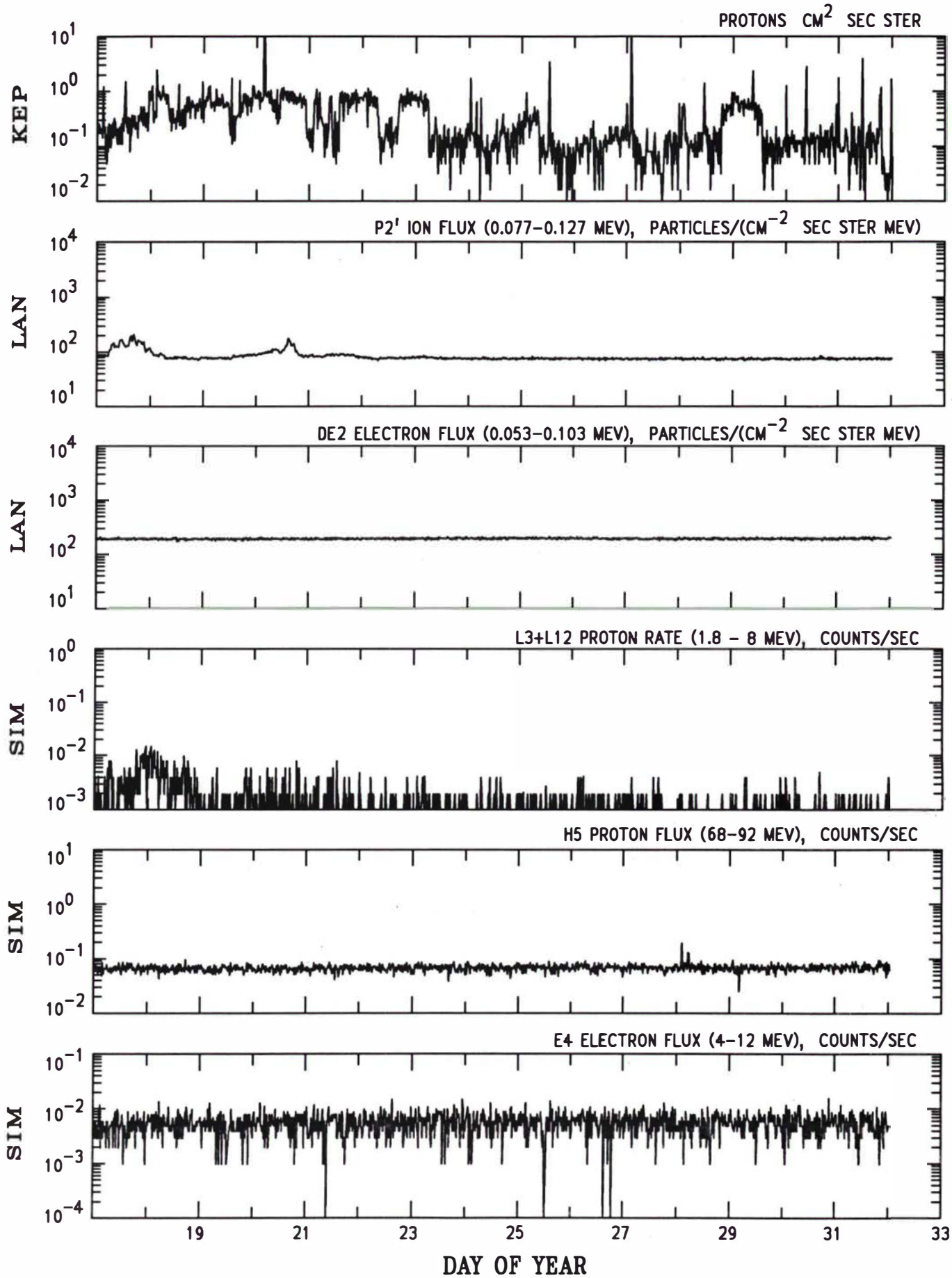
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 001 JAN 1 00:00:00.000 – 97 017 JAN 17 00:00:00.000



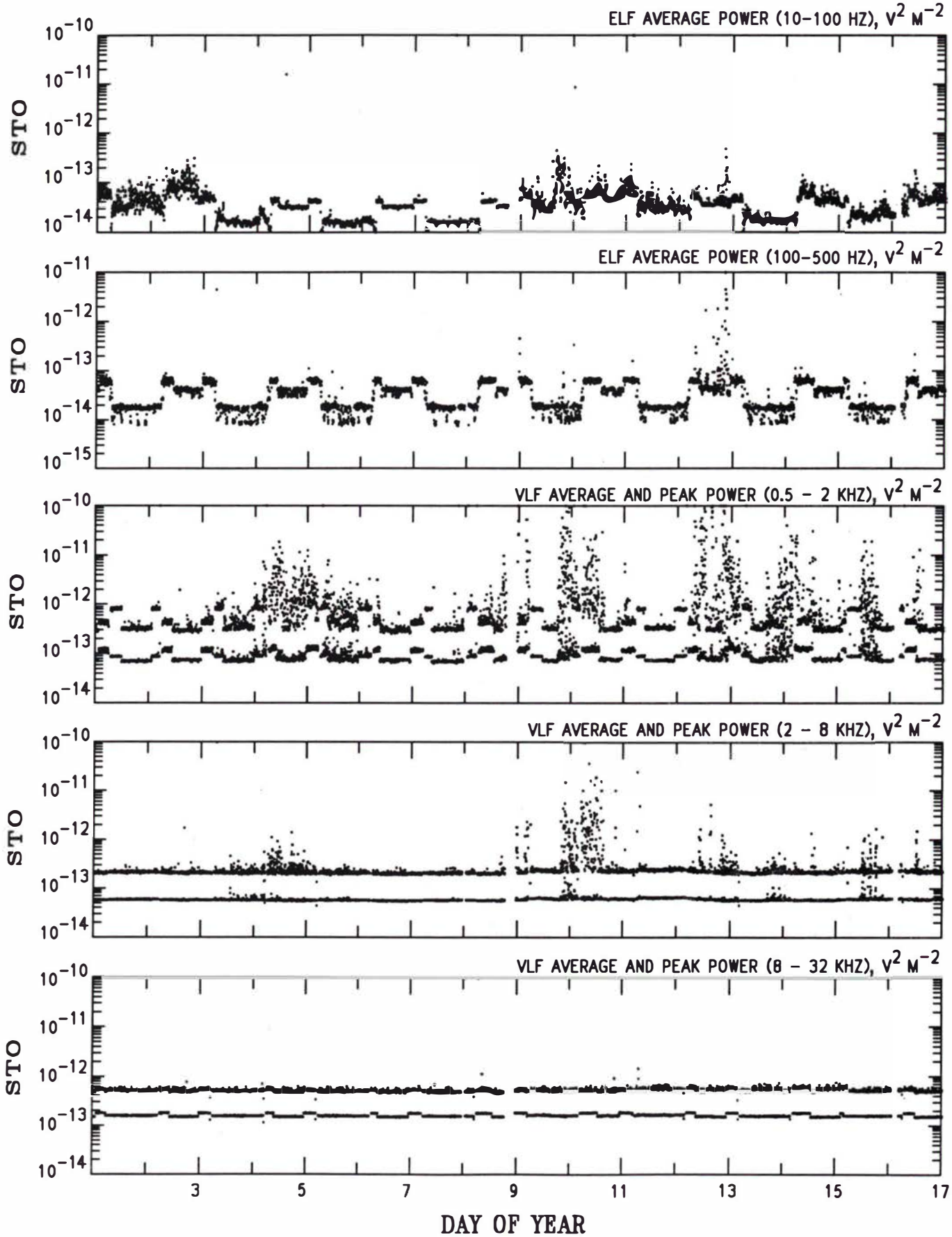
ULYSSES CDR – ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

97 017 JAN 17 00:00:00.000 – 97 033 FEB 2 00:00:00.000



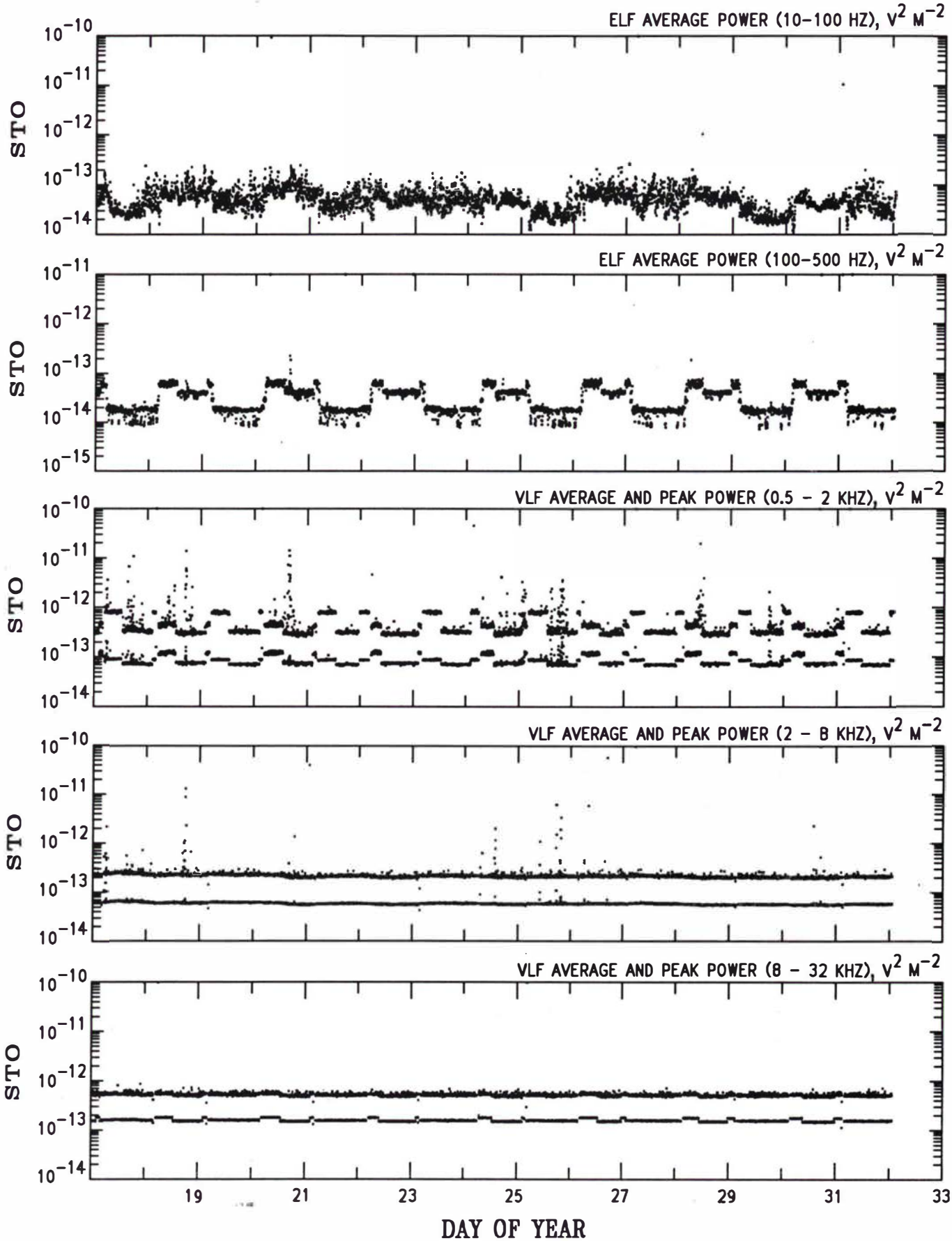
ULYSSES CDR – PLASMA WAVE

97 001 JAN 1 00:00:00.000 – 97 017 JAN 17 00:00:00.000



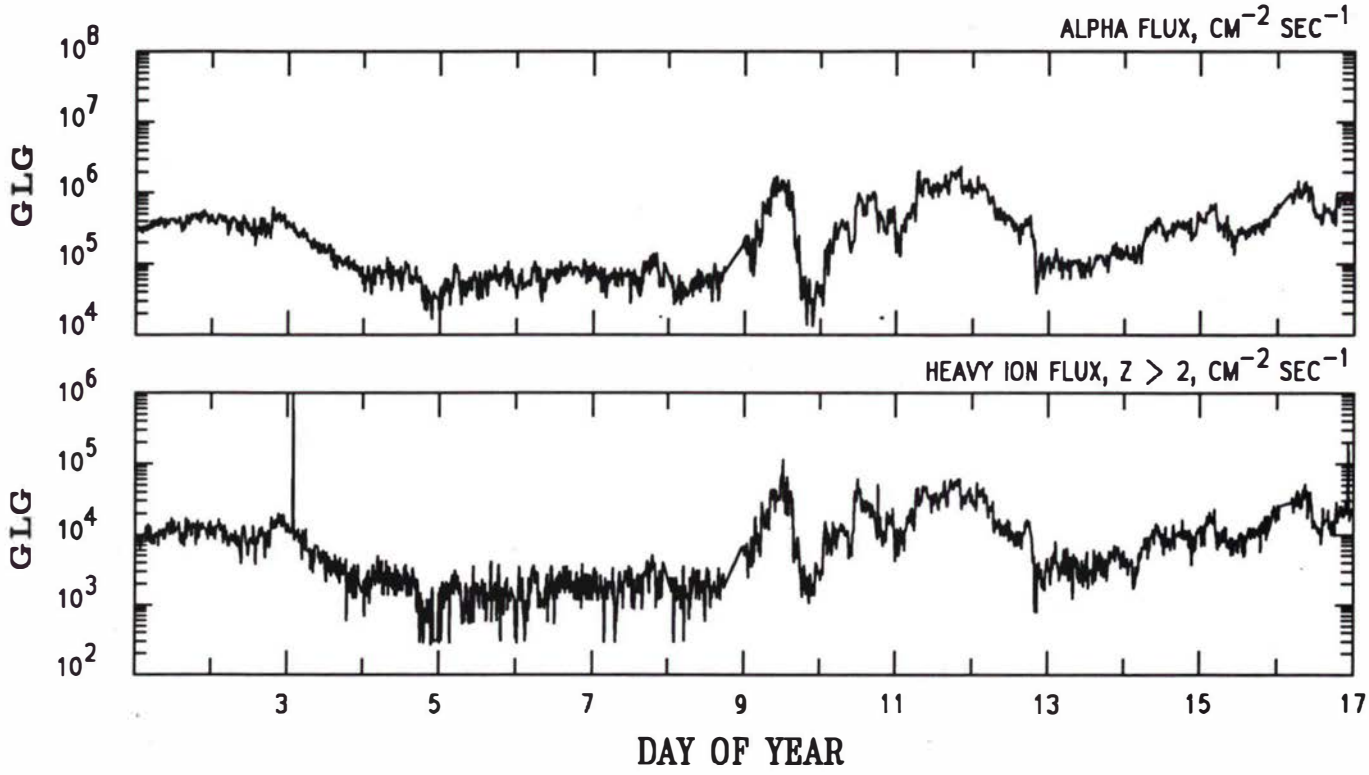
ULYSSES CDR – PLASMA WAVE

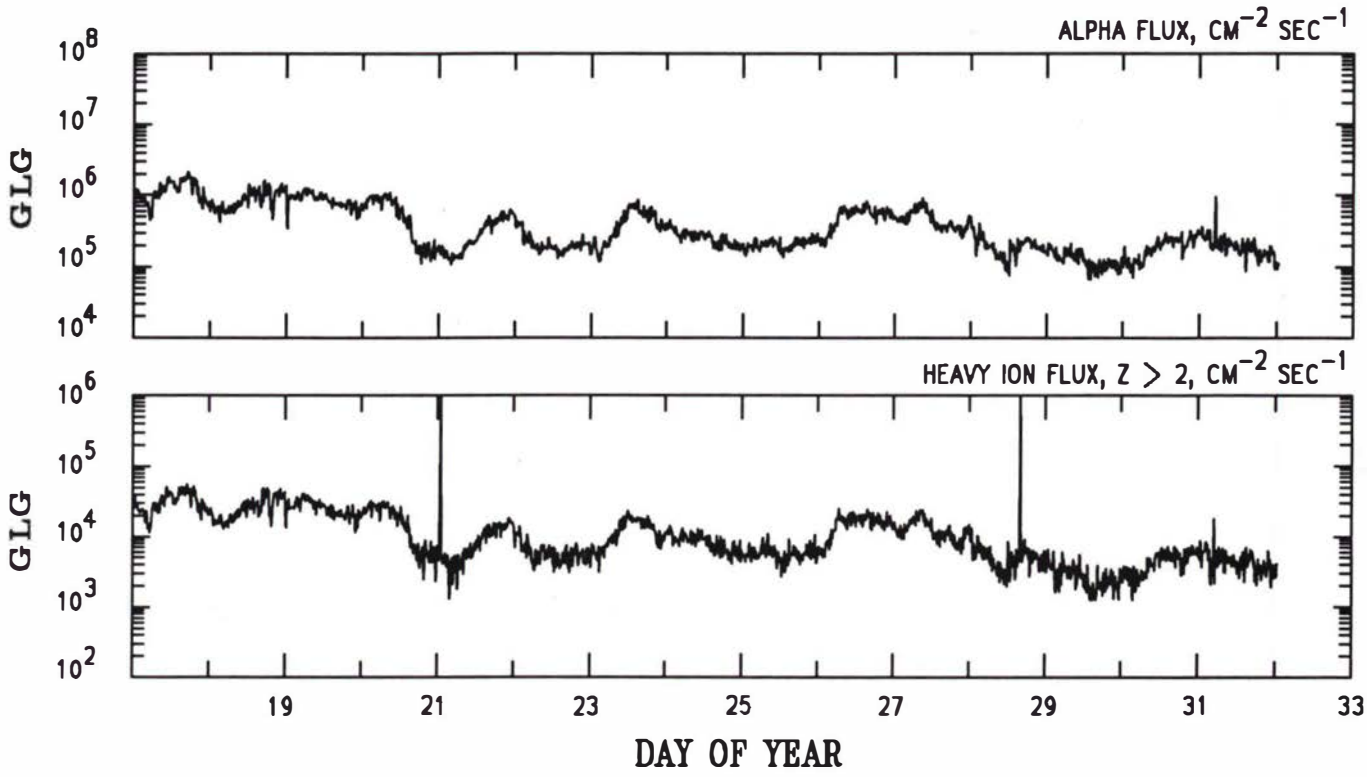
97 017 JAN 17 00:00:00.000 – 97 033 FEB 2 00:00:00.000



ULYSSES CDR – SOLAR WIND ION COMPOSITION

97 001 JAN 1 00:00:00.000 – 97 017 JAN 17 00:00:00.000




ULYSSES CDR – SOLAR WIND ION COMPOSITION
97 017 JAN 17 00:00:00.000 – 97 033 FEB 2 00:00:00.000
ALPHA FLUX, CM^{-2} SEC^{-1}
GLG
10^8
10^7
10^6
10^5
10^4
HEAVY ION FLUX, Z > 2, CM^{-2} SEC^{-1}
GLG
10^6
10^5
10^4
10^3
10^2
19
21
23
25
27
29
31
33
DAY OF YEAR

From DEAL@fender.msfc.nasa.gov Thu Jan 2 09:34 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA22132; Thu, 2 Jan 1997 09:34:56 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Thu, 2 Jan 1997 11:34:49 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970102113449.2ba00bf6@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5736
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST #   5736
EVENT OF 1997 JAN 1 DAY OF YEAR= 1
EVENT CROSSING TIME AT BATSE   : 22971. S. OR 06:22:51.0
COORDINATES ARE   0.000   0.000   6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 351.000 -19.000
BATSE PEAK COUNTING RATE: 2000   C/S

EVENT CROSSING TIME AT ULYSSES   WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 1/ 97 IS:
RA= 178.194 DEC=   32.919 DIST=   4.235 AU
BATSE-ULYSSES DISTANCE = 633510936. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 15.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2037.92 SECS.
CROSSING TIME AT ULYSSES   IS 25009. S. OR   06:56:48 +/- 177.98 SECONDS

EVENT CROSSING TIME AT MARS   WILL BE FOUND
POSITION OF MARS ON 1/ 1/ 97 IS:
RA= 180.350 DEC=   2.729 DIST=   1.160 AU
MARS-BATSE DISTANCE = 173568656. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 18.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 548.51 SECS.
CROSSING TIME AT MARS   IS 23520. S. OR   06:31:59 +/-   40.50 SECONDS

BATSE BURST TRIGGER

NO.: 5736

TIME: TJD=0449 SECONDS=22971

TYPE: BURST   SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=146.0 AZIMUTH=326.7 ERROR=8.7   DEGREES

COMMENTS:
GRB DOUBLE PEAK LASTING ~ 85 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5736	970101	10449	22971	2000	351	-19	85

BATSE BURST# 5736

ULYSSES RT 4/ 5/98

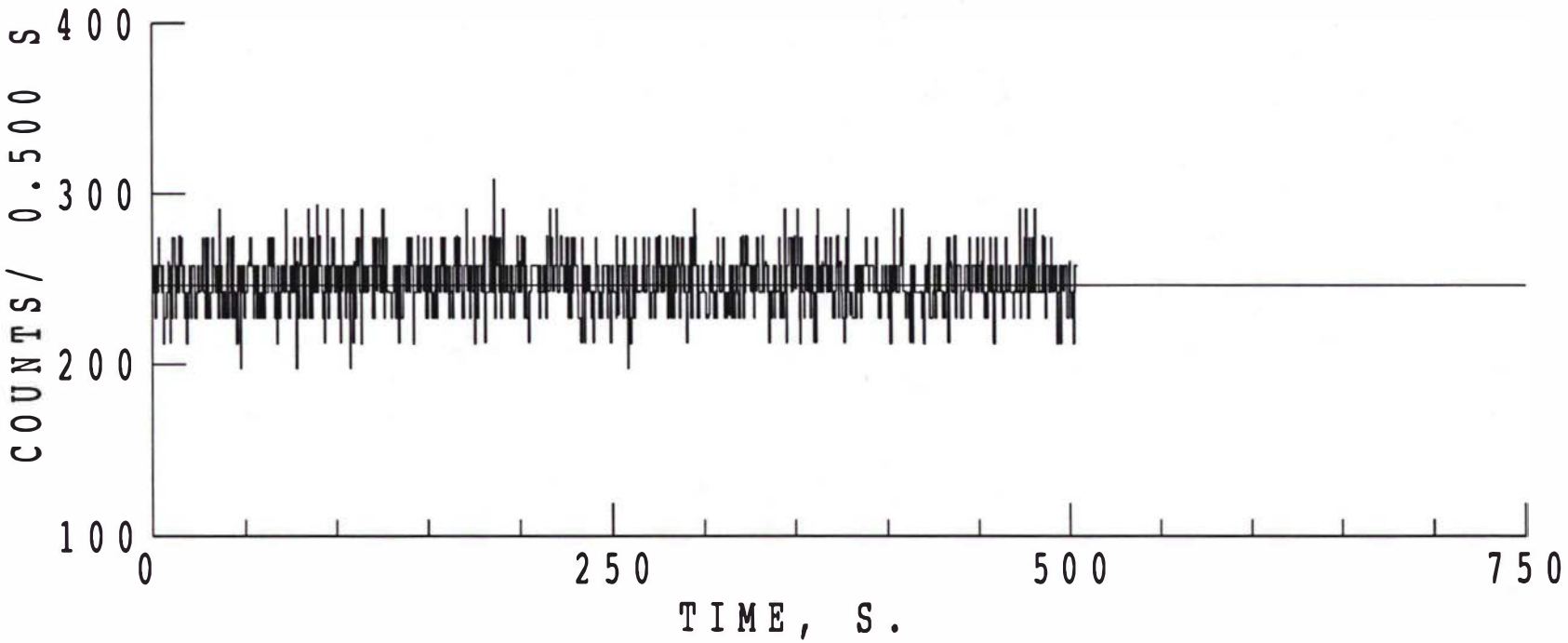
1/ 1/97 24588.164 s

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 DEAL@fender.msfc.nasa.gov Mon Jan 6 11:57 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 6 Jan 1997 13:56:49 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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.: 5737

TIME: TJD=0449 SECONDS=65106

TYPE: UNKNOWN SOLAR FLARE TRIGGER SIGNAL:N

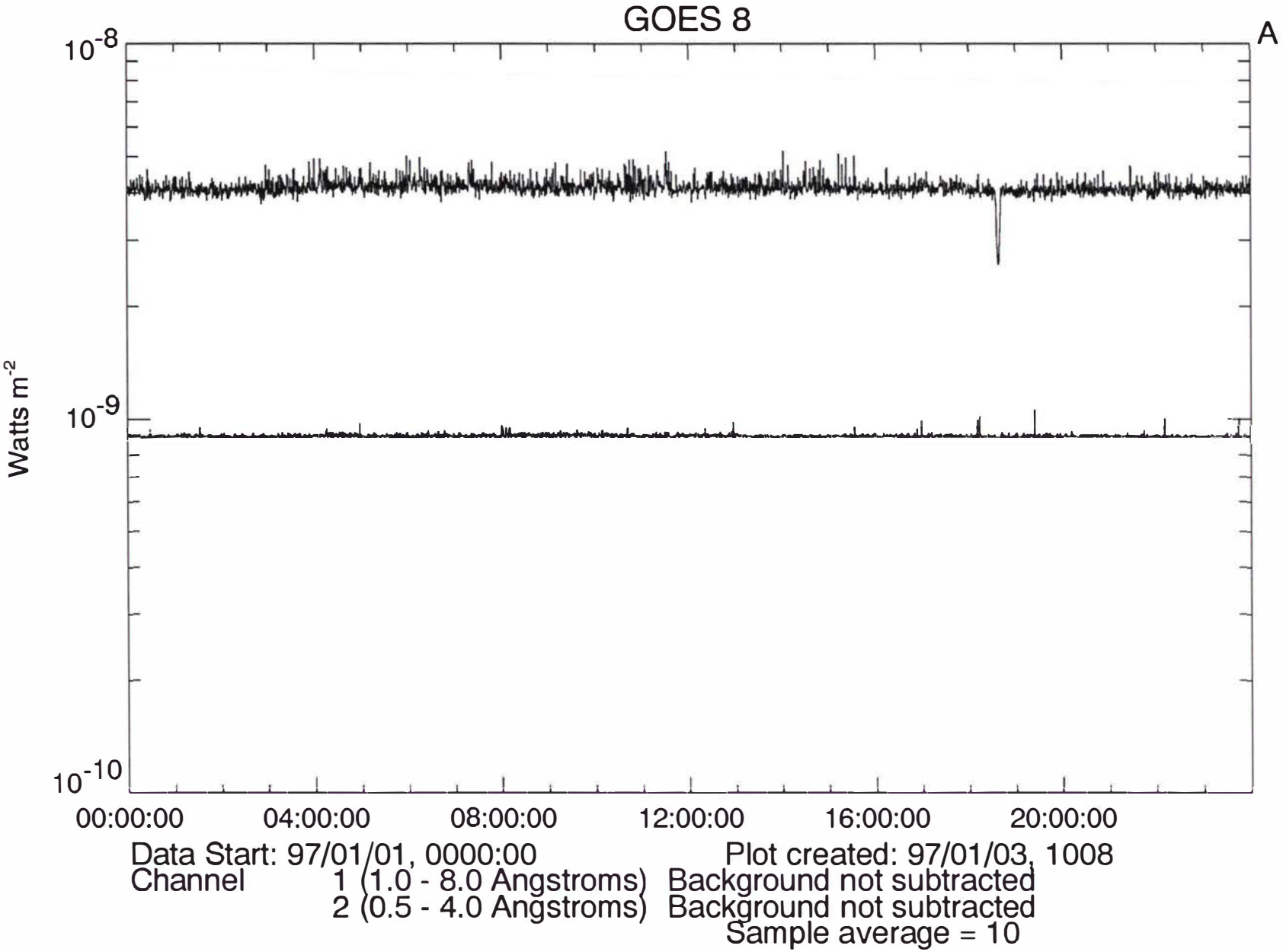
SIGNIFICANCE: SIGMA

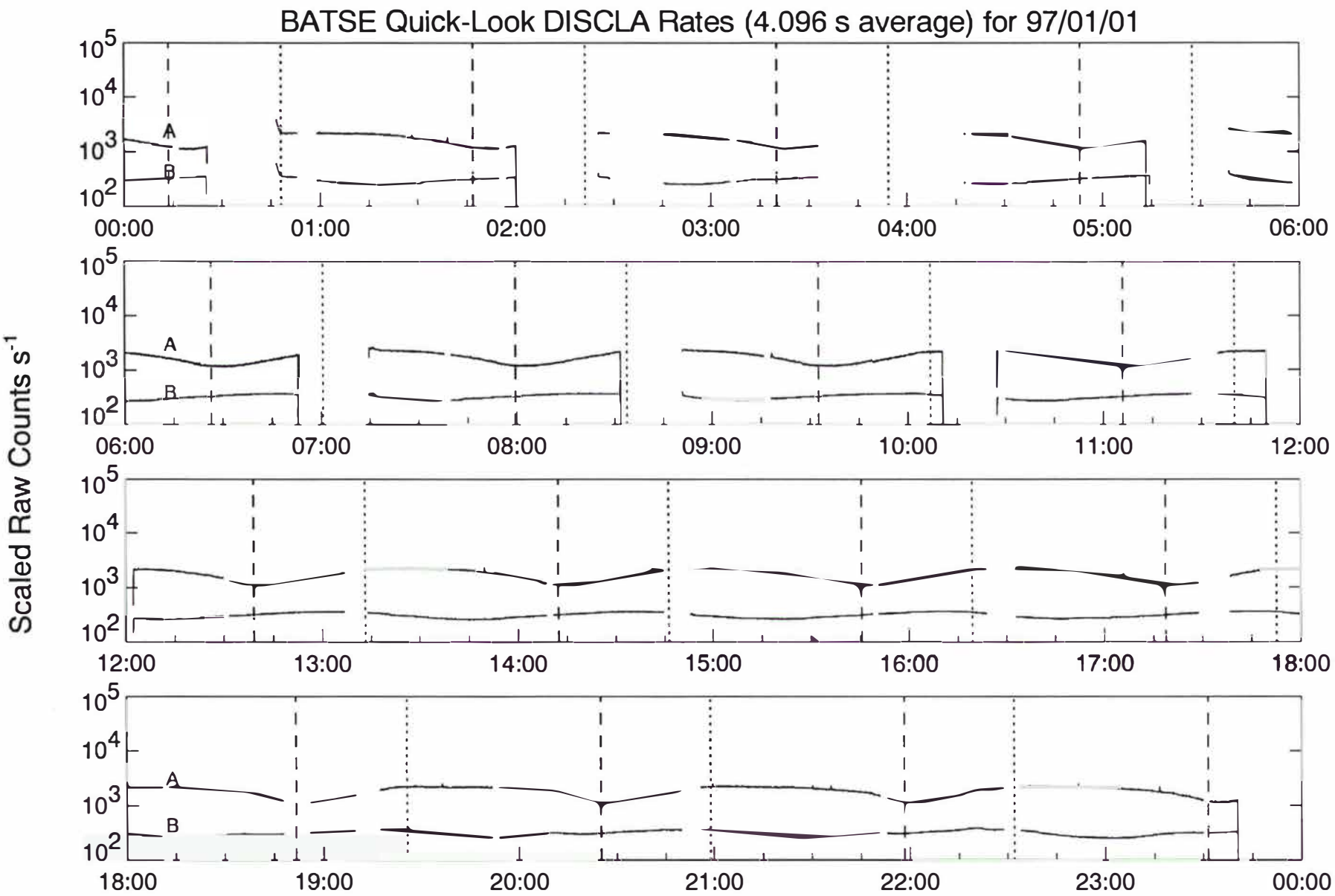
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.1 AZIMUTH=78.7 ERROR=7.9 DEGREES

COMMENTS:
UNKNOWN WITH DOUBLE PEAKS ~ 90 S. APART. TOTAL DURATION 120 S. SECOND PEAK NOT V
ISIBLE ABOVE 300 KEV. FIRST NOT VISIBLE ABOVE 100 KEV. POSSIBLE CYGX-1 FLUCTUATI
ON.

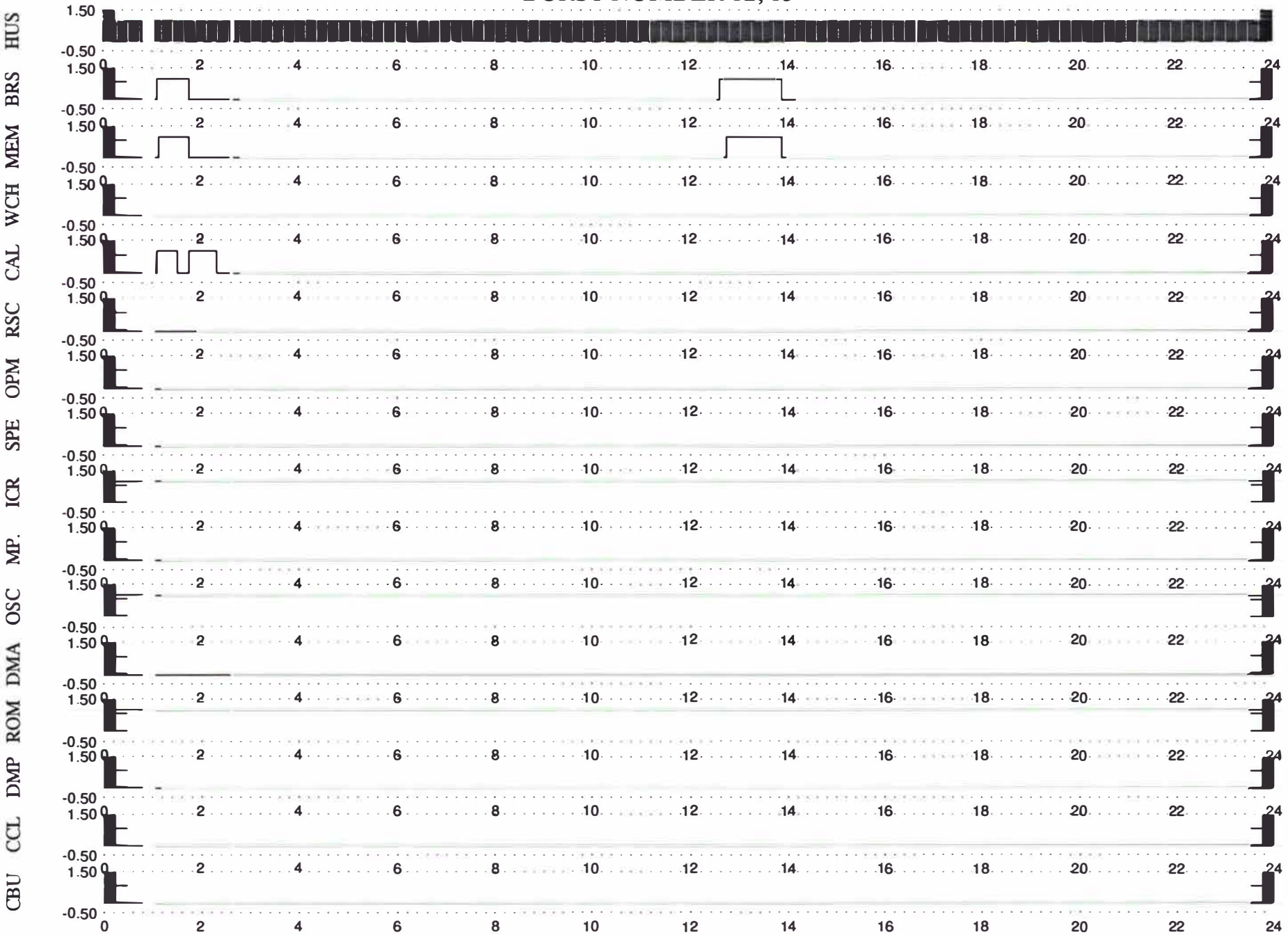
Reclassified as Cyg X-1 by
Briggs 2001


GOES 8
A
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/01, 0000:00
Plot created: 97/01/03, 1008
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 97/01/01
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/01/03, 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

HUS MODES EDR day 1, year 1997 to day 1, year 1997 5/5/97

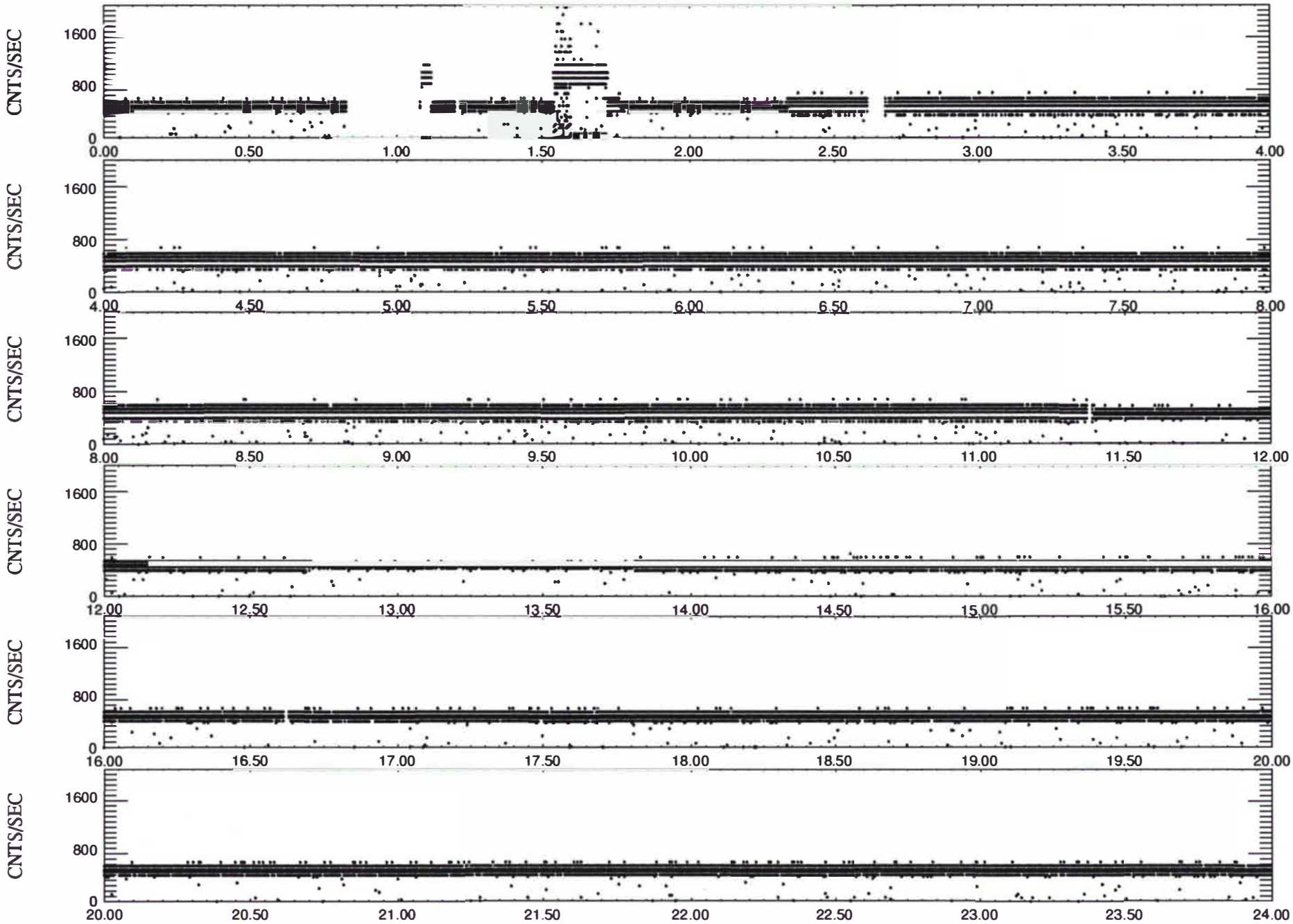
BURST NUMBER 12, 13



UNIVI AL TIME

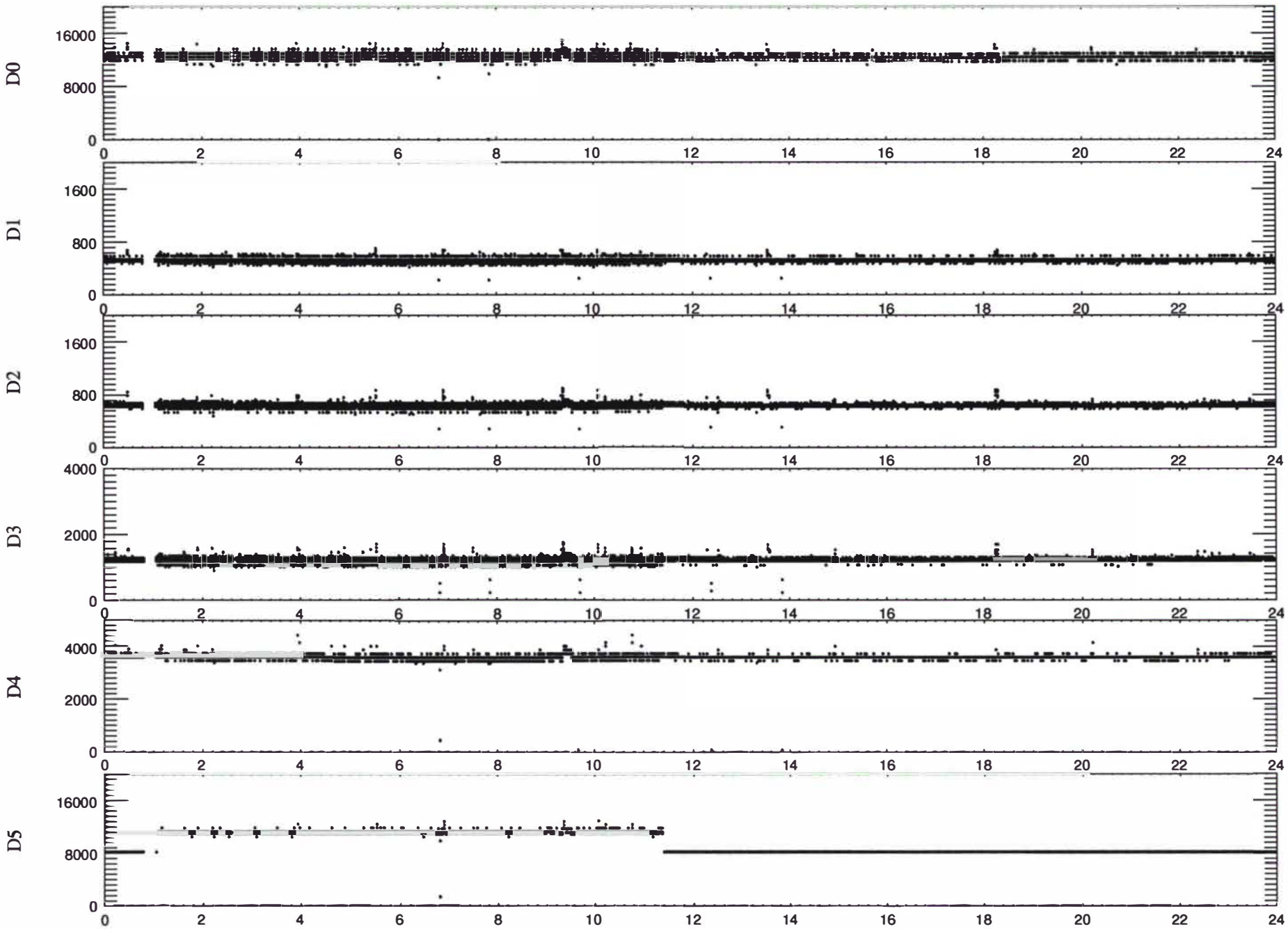
HUS 2A, MODE 1, NOT AVERAGED EDR day 1, year 1997 to day 1, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 1, year 1997 to day 1, year 1997 5/5/97



From DEAL@ssl.msfc.nasa.gov Fri Jan 3 07:35 PST 1997
From: DEAL@ssl.msfc.nasa.gov
Date: Fri, 3 Jan 1997 9:35:21 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5738

TIME: TJD=0450 SECONDS=85

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

From DEAL@ssl.msfc.nasa.gov Fri Jan 3 07:35 PST 1997
From: DEAL@ssl.msfc.nasa.gov
Date: Fri, 3 Jan 1997 9:34:06 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5739

TIME: TJD=0450 SECONDS=23401

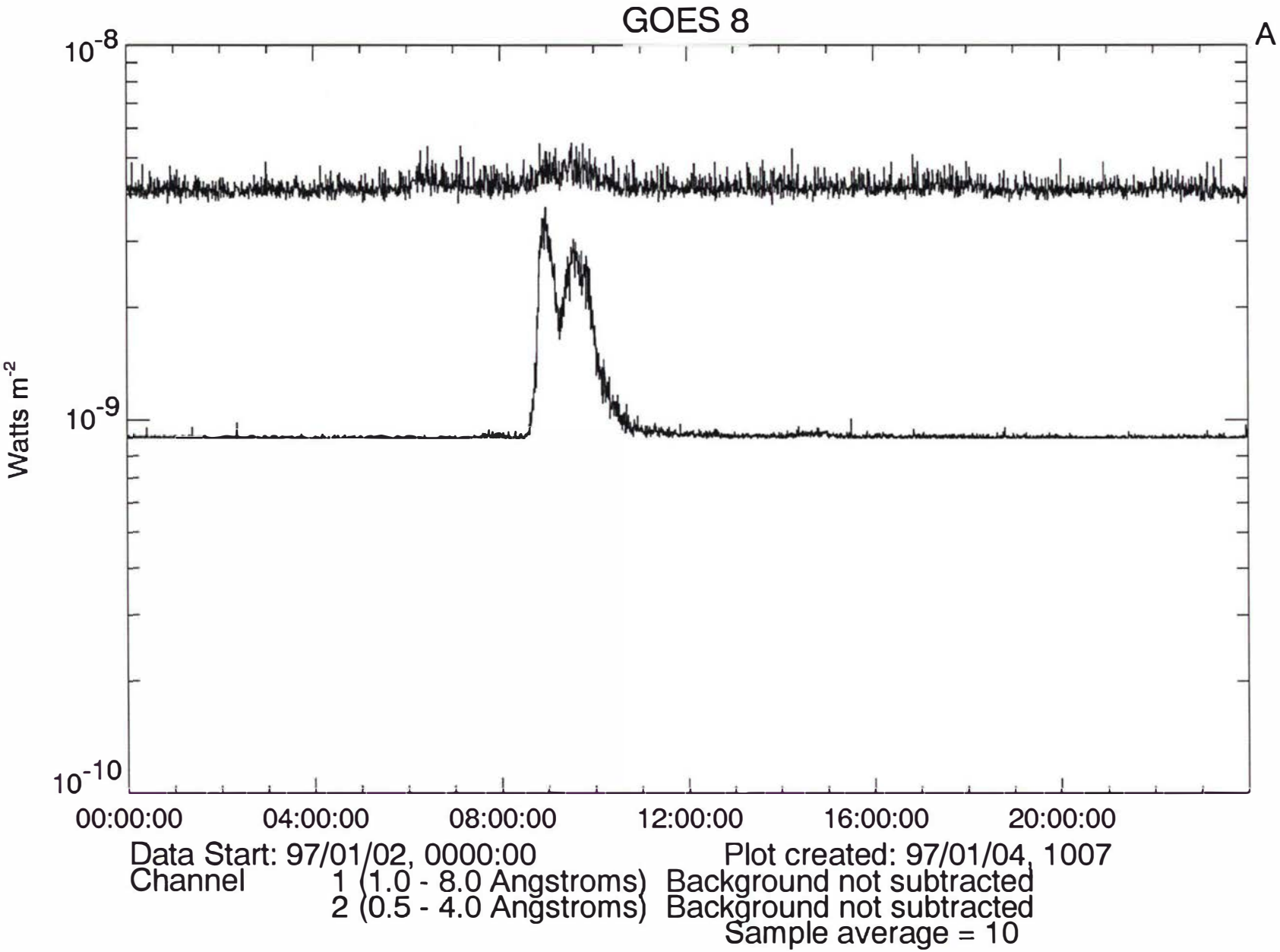
TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:Y

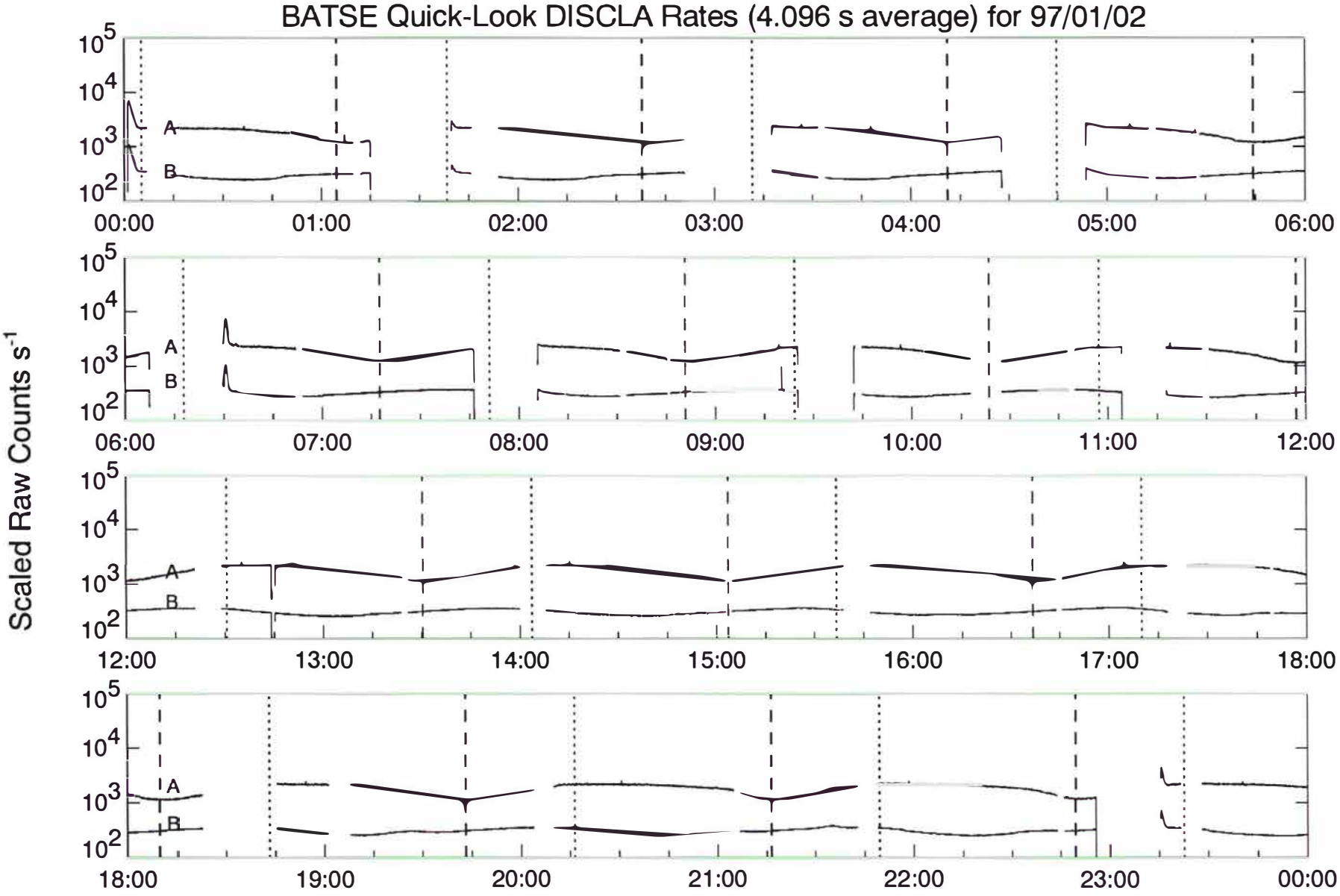
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

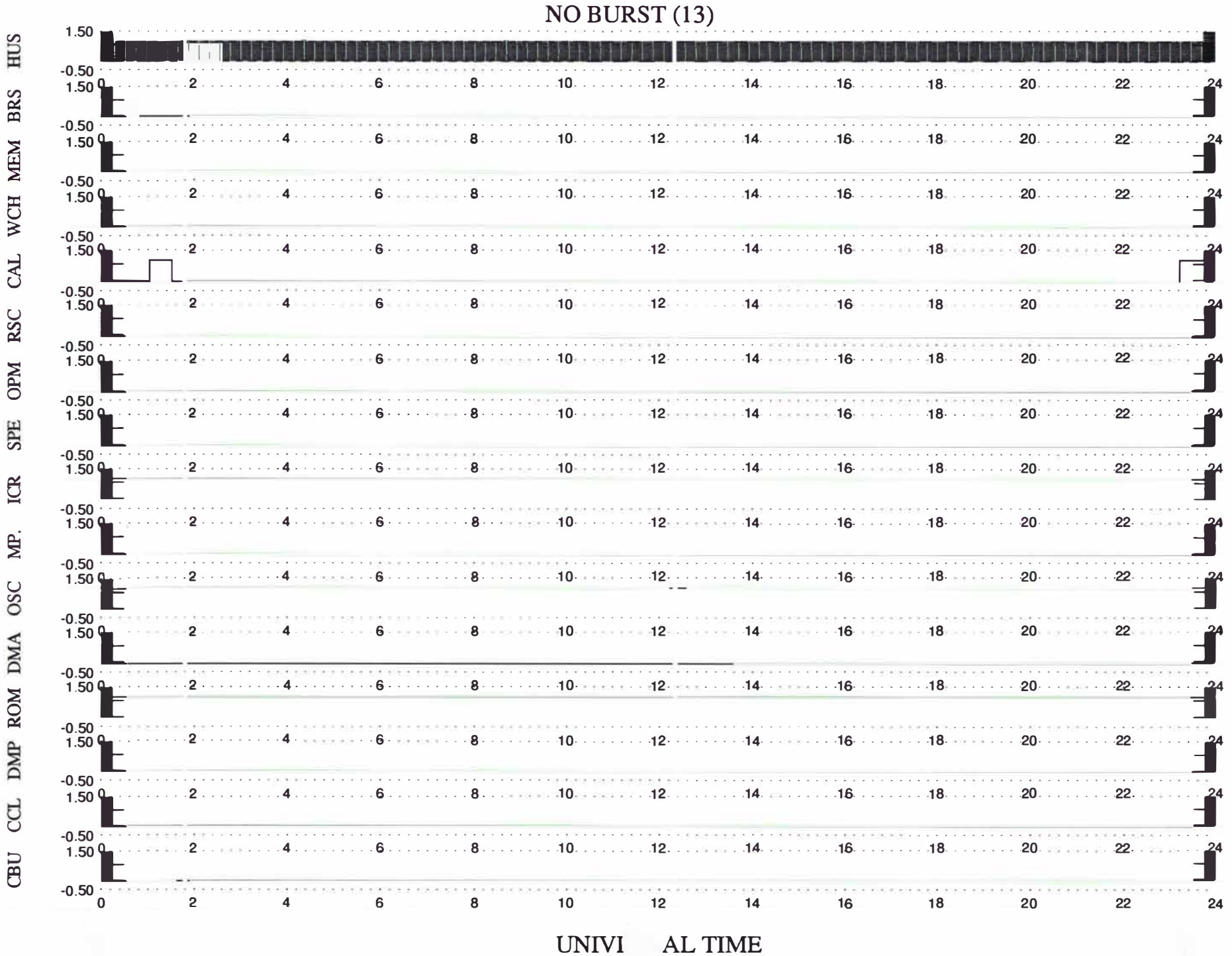
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY

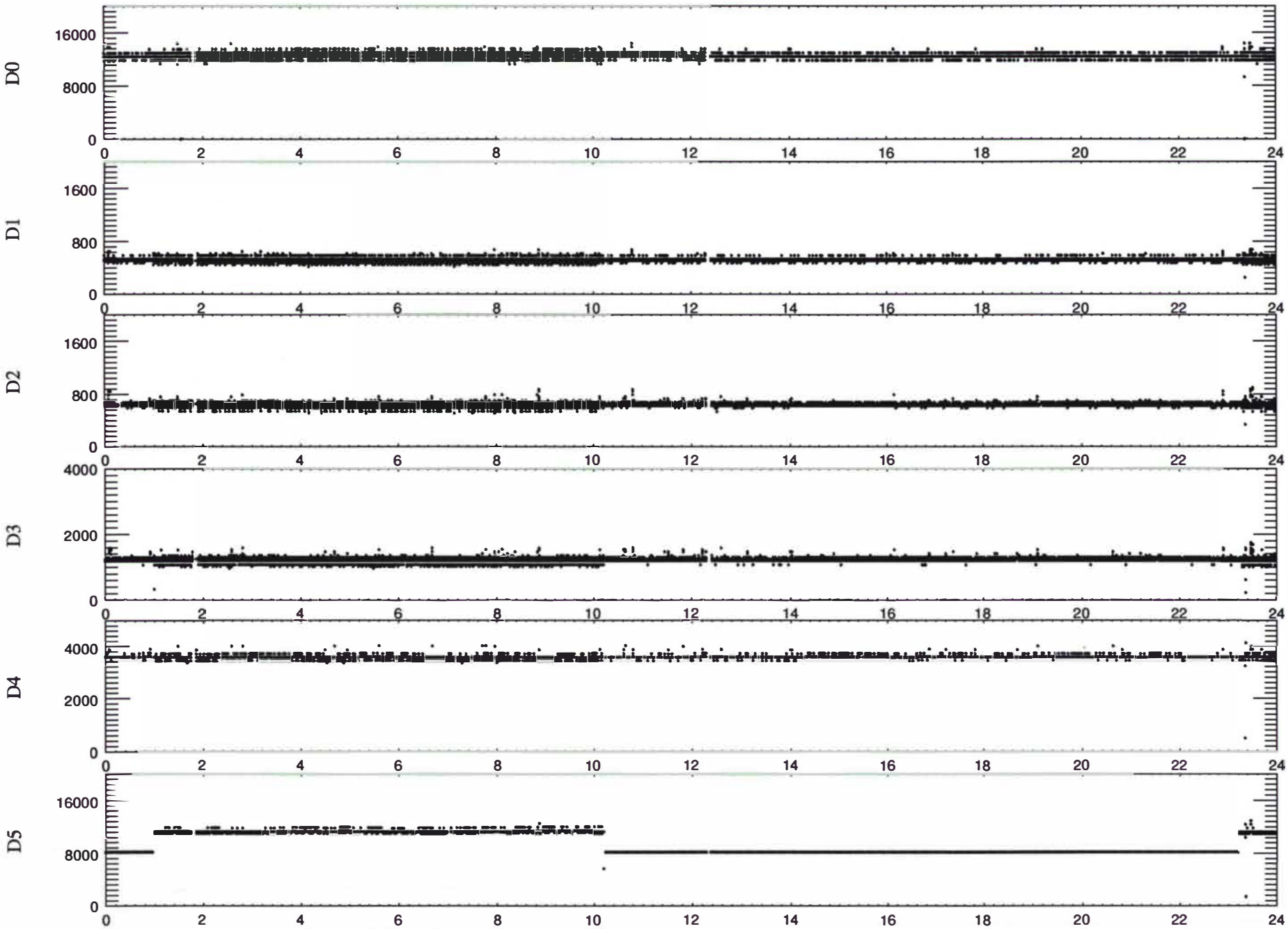

GOES 8
A
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/02, 0000:00
Plot created: 97/01/04, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/02
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
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: 97/01/04, 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 2, year 1997 to day 2, year 1997 5/5/97

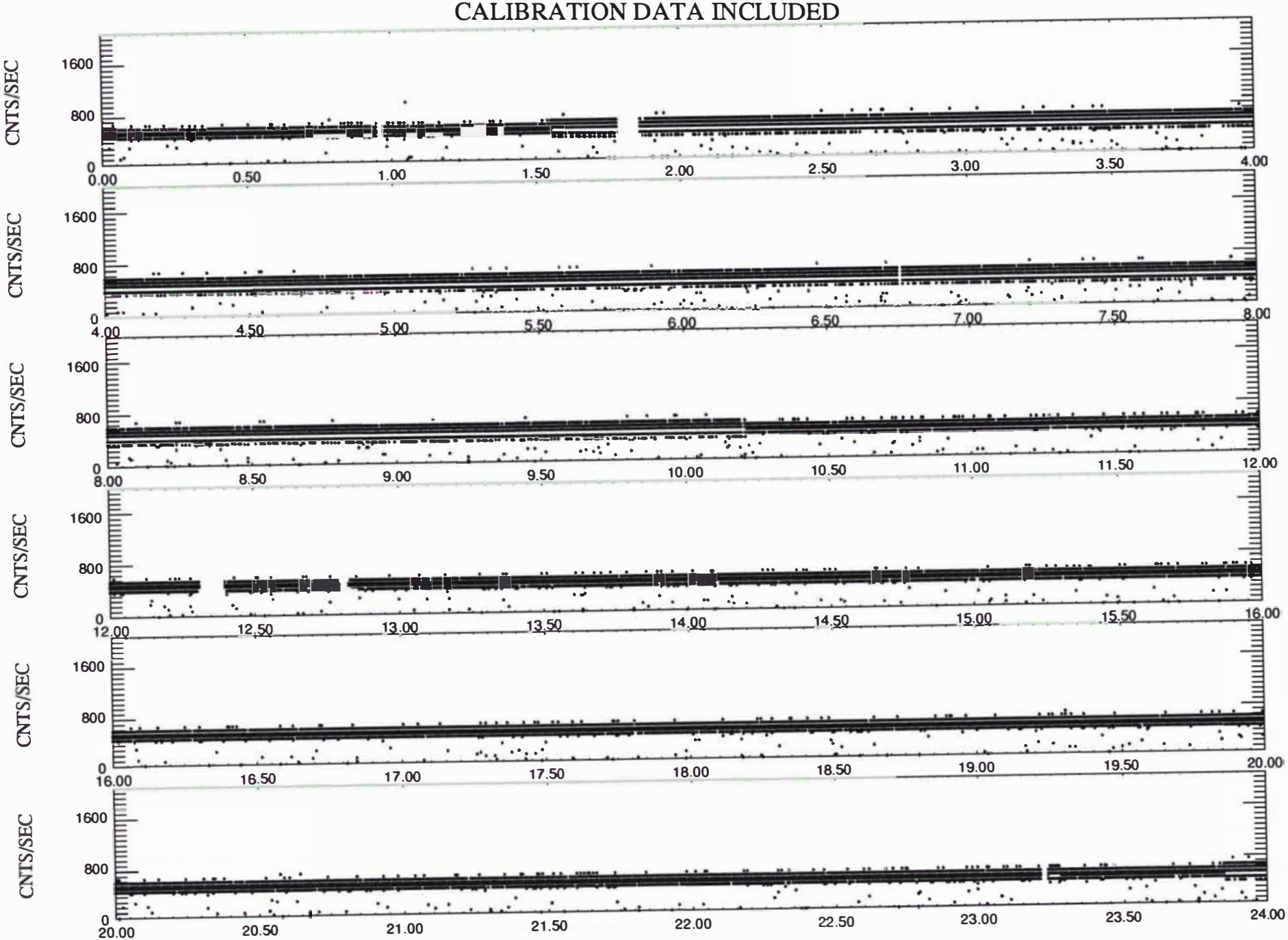


HUS 2B COUNTS / SEC EDR day 2, year 1997 to day 2, year 1997 5/5/97



HUS 2A, MODE 1, NOT AVERAGED EDR day 2, year 1997 to day 2, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

From RICHARDSON@ssl.msfc.nasa.gov Tue Jan 7 11:52 PST 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 LAA21837; Tue, 7 Jan 1997 11:52:12 -0800
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Tue, 7 Jan 1997 13:52:08 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970107135208.2b607117@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5740
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5740
EVENT OF 1997 JAN 3 DAY OF YEAR= 3
EVENT CROSSING TIME AT BATSE : 18993. S. OR 05:16:33.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 179.000 -7.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 1/ 97 IS:
RA= 177.992 DEC= 33.067 DIST= 4.214 AU
BATSE-ULYSSES DISTANCE = 630409155. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1609.00 SECS.
CROSSING TIME AT ULYSSES IS 17384. S. OR 04:49:44 +/- 260.62 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 1/ 97 IS:
RA= 180.967 DEC= 2.507 DIST= 1.141 AU
MARS-BATSE DISTANCE = 170721296. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=170.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -561.31 SECS.
CROSSING TIME AT MARS IS 18432. S. OR 05:07:11 +/- 8.15 SECONDS

BATSE BURST TRIGGER

NO.: 5740

TIME: TJD=0451 SECONDS=18993

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

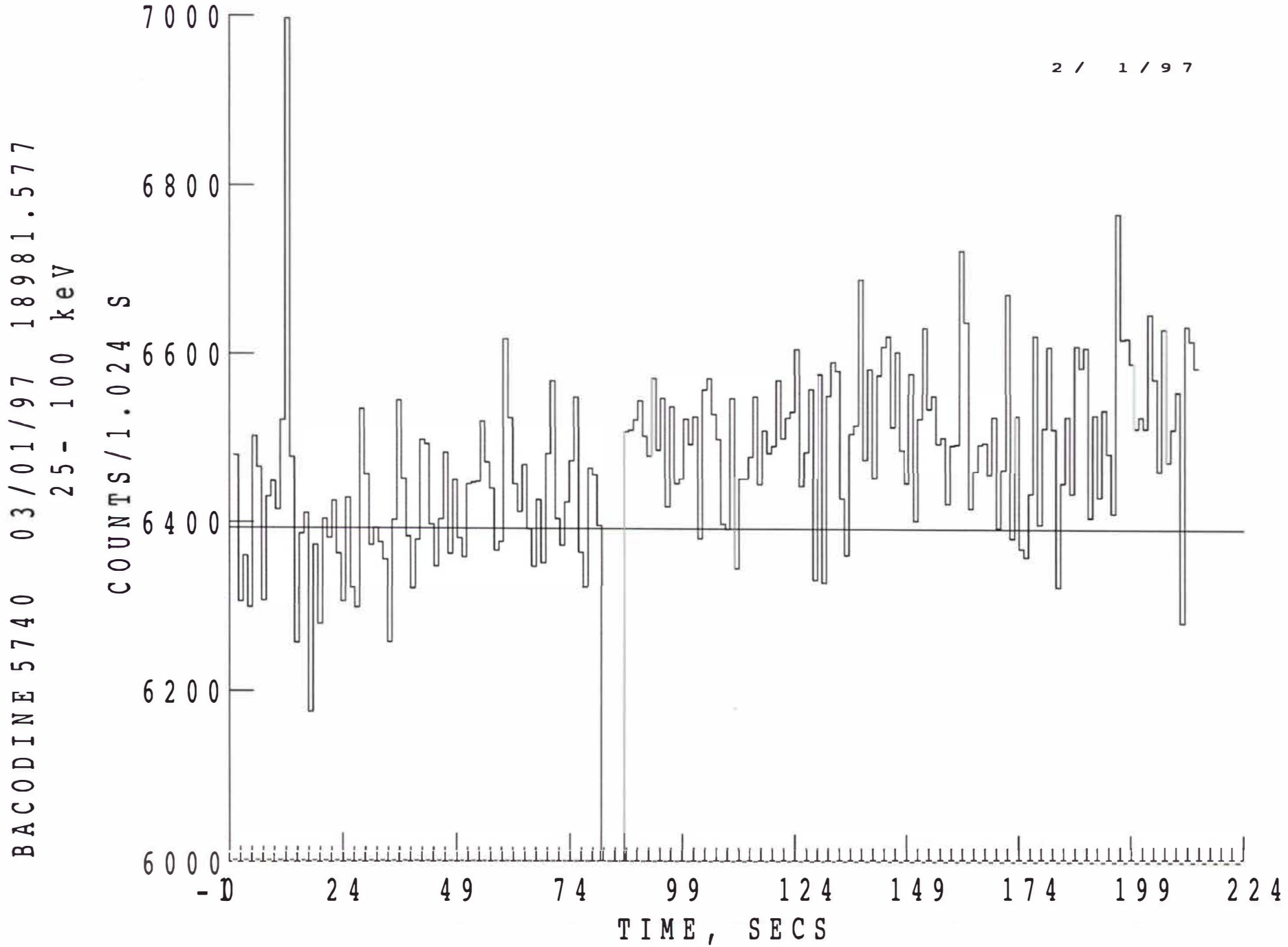
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=15.8 AZIMUTH=197.3 ERROR=3.9 DEGREES

COMMENTS:
GRB SHORT SPIKE, DUR.~0.5 SEC. SLIGHTLY VISIBLE ABOVE 300KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5740	970103	10451	18993	4000	179	-07	.5


BACODINE 5740 03/01/97 18981.577
25- 100 keV
COUNTS/1.024 S
7000
6800
6600
6400
6200
6000
2 / 1 / 97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

BATSE# 5740

ULYSSES RT 7/ 1/97

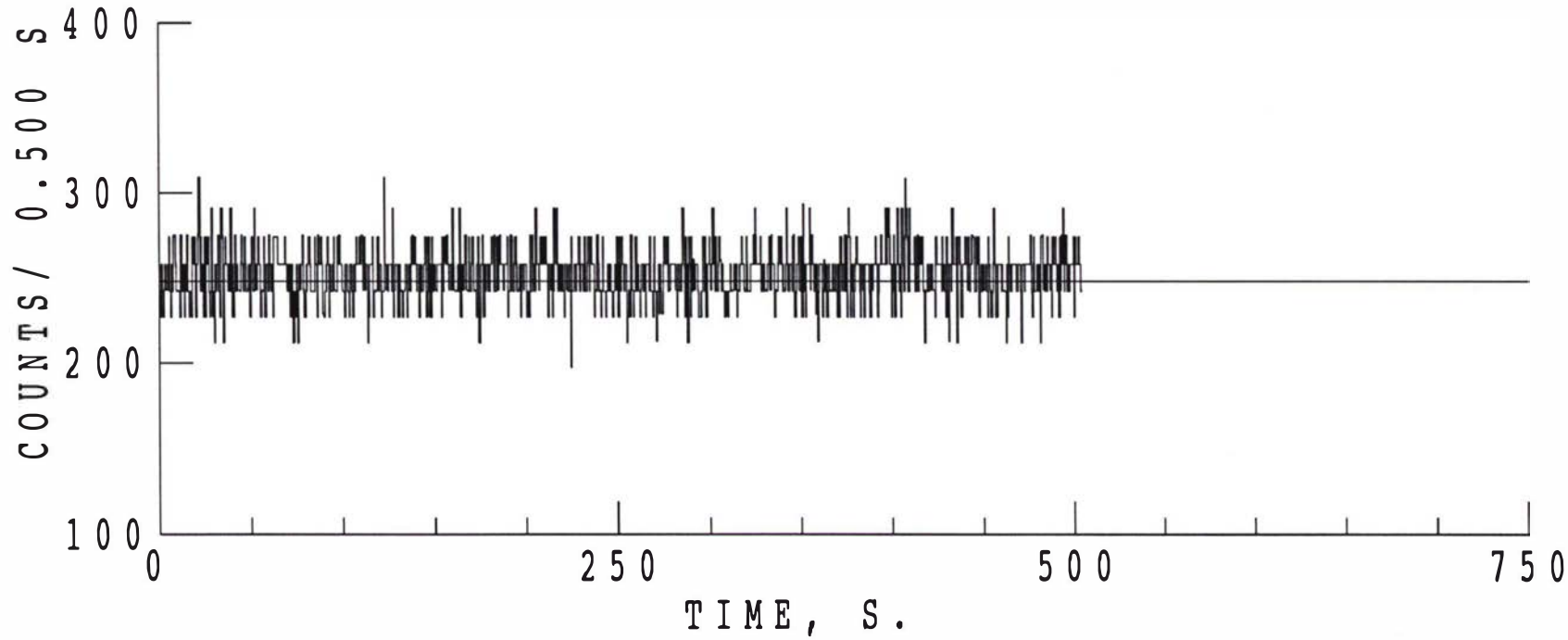
3/ 1/97 17136.188 s

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 RICHARDSON@ssl.msfc.nasa.gov Tue Jan 7 11:50 PST 1997
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Tue, 7 Jan 1997 13:50:25 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5741

TIME: TJD=0451 SECONDS=60285

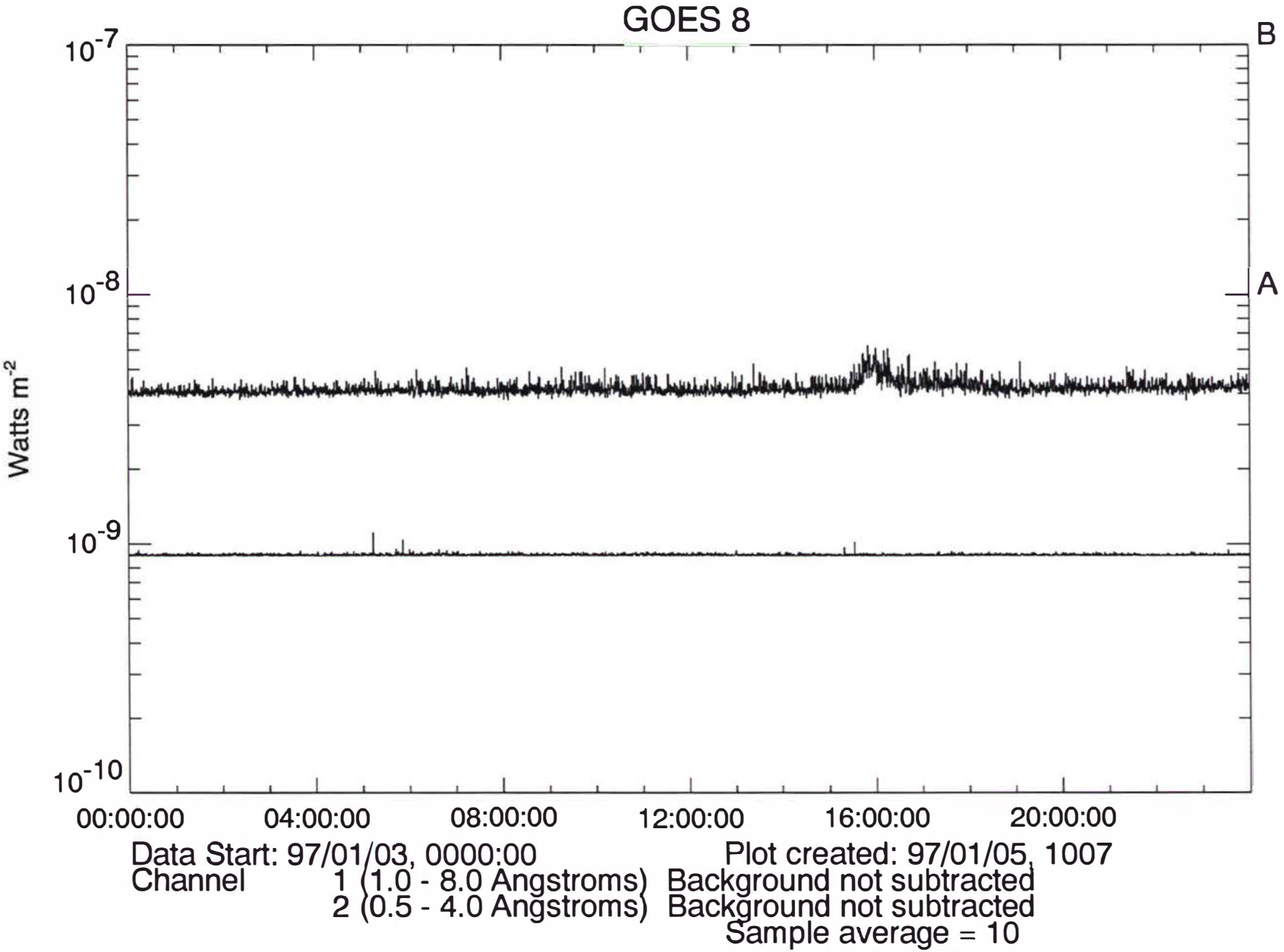
TYPE: CYG X-1 SOLAR FLARE TRIGGER SIGNAL:N

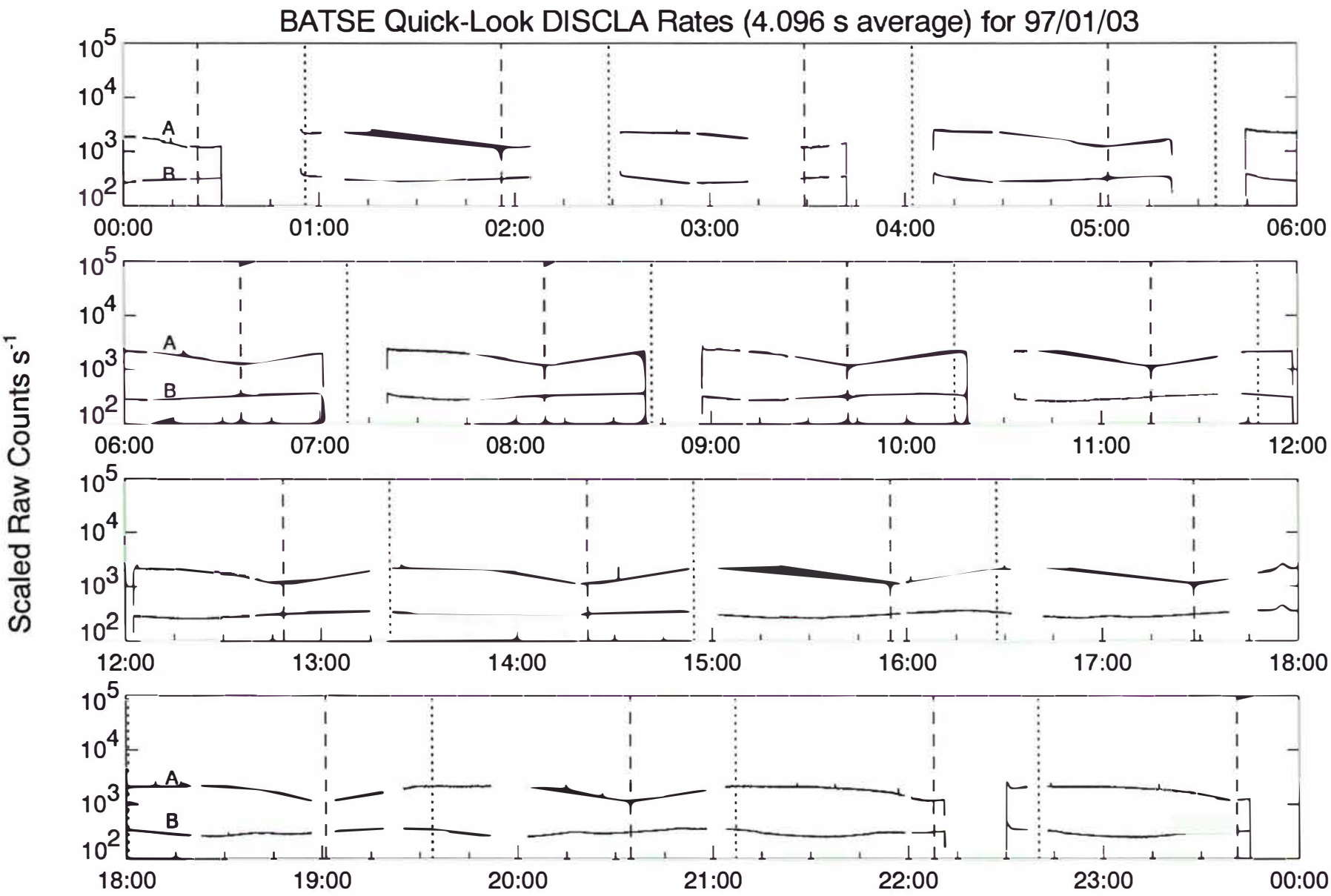
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

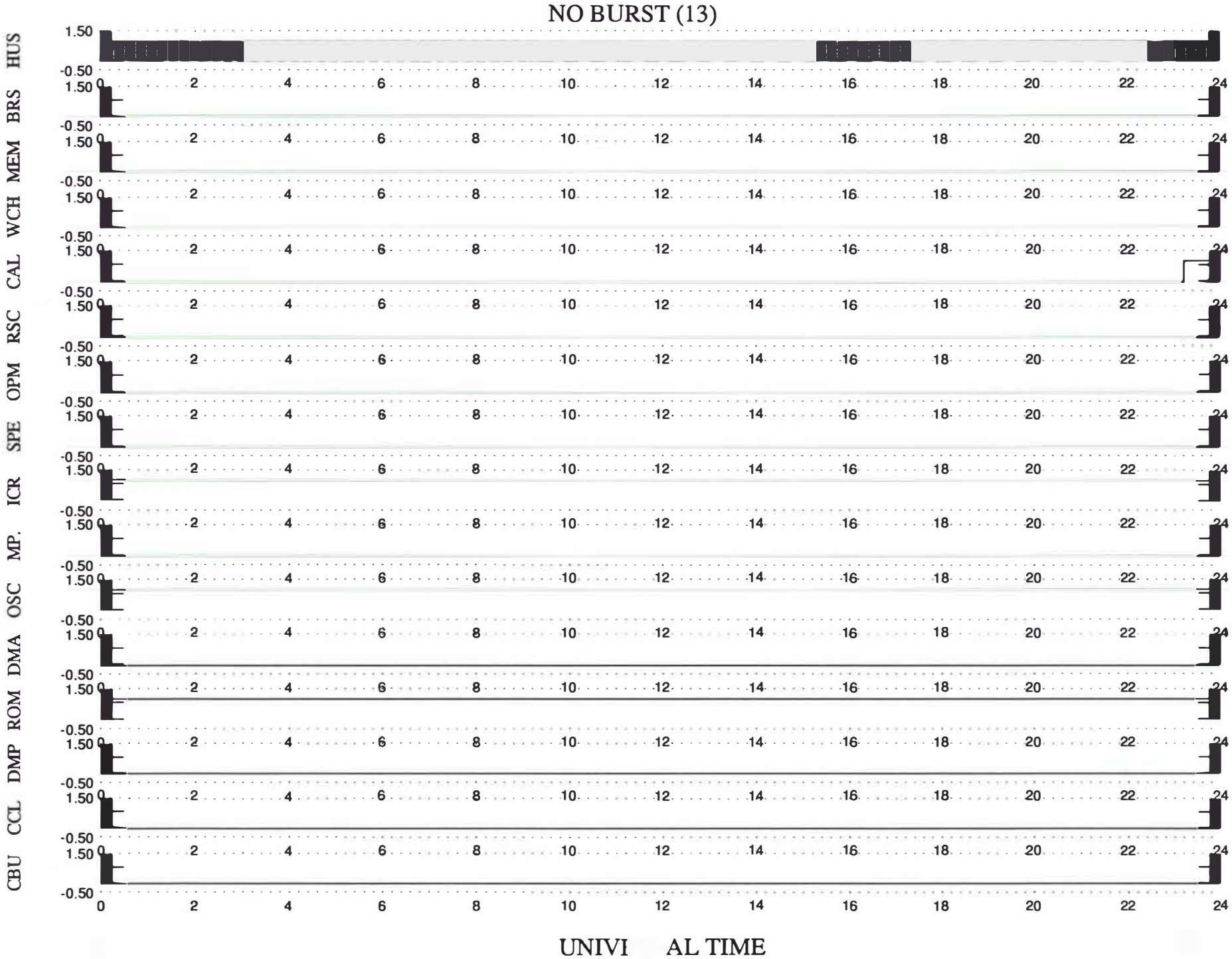
LOCATION: ZENITH=109.1 AZIMUTH=54.8 ERROR=13.0 DEGREES

COMMENTS:
CYG X-1 FLUCTUATION


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: 97/01/03, 0000:00
Plot created: 97/01/05, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

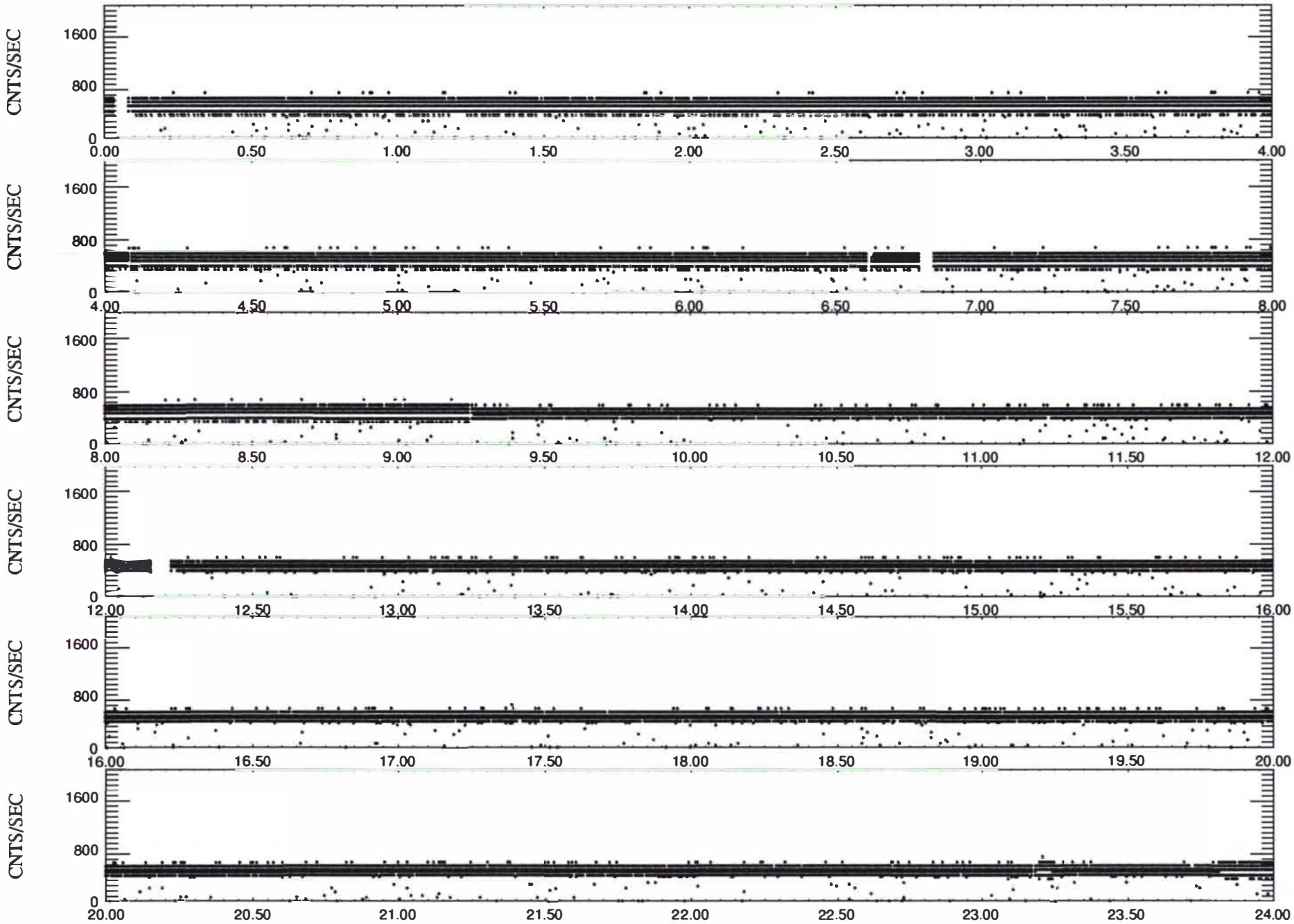

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/03
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/05, 1008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

HUS MODES EDR day 3, year 1997 to day 3, year 1997 5/5/97



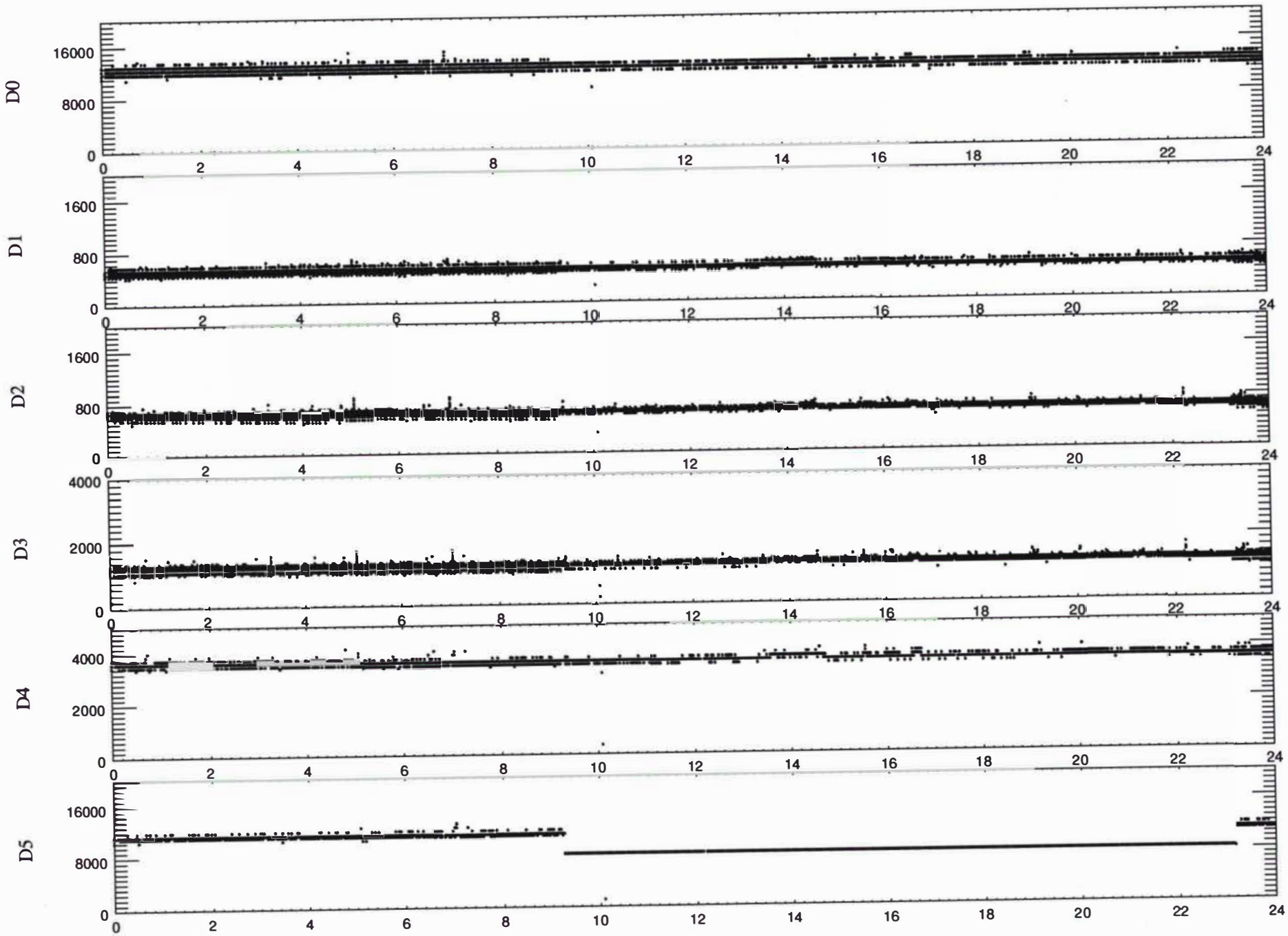
HUS 2A, MODE 1, NOT AVERAGED EDR day 3, year 1997 to day 3, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 3, year 1997 to day 3, year 1997 5/5/97



SAX

HUS DATA

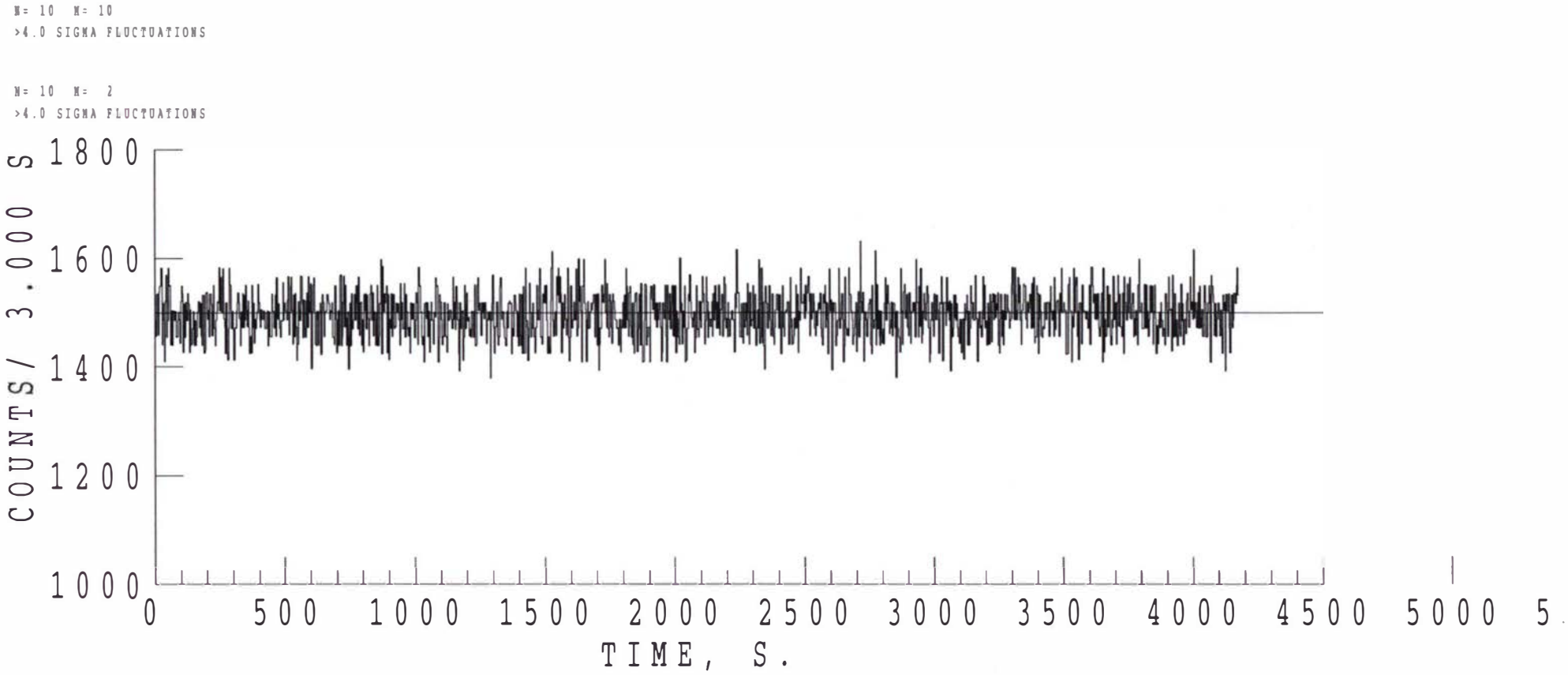
ULYSSES RT

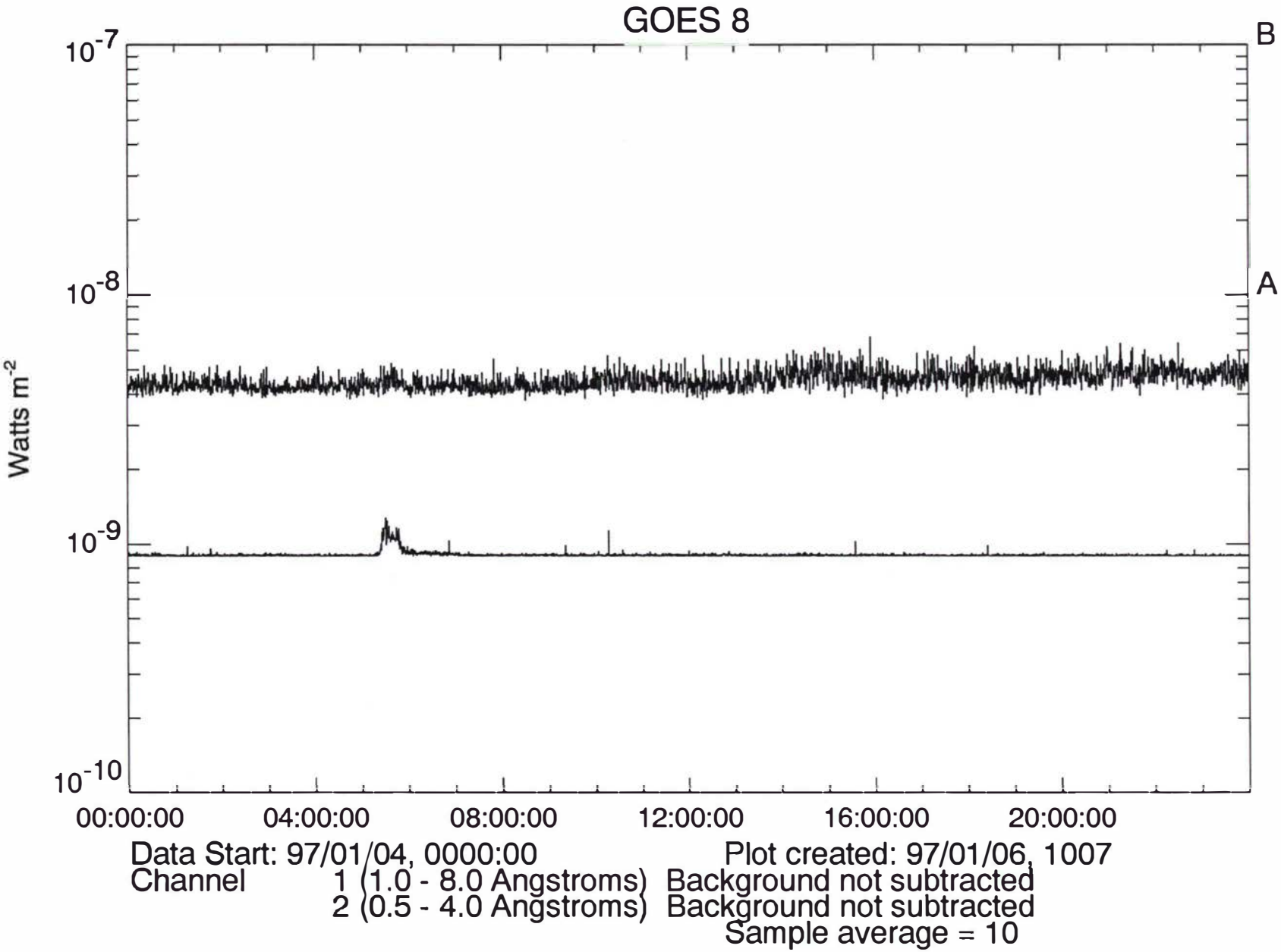
19/07/05

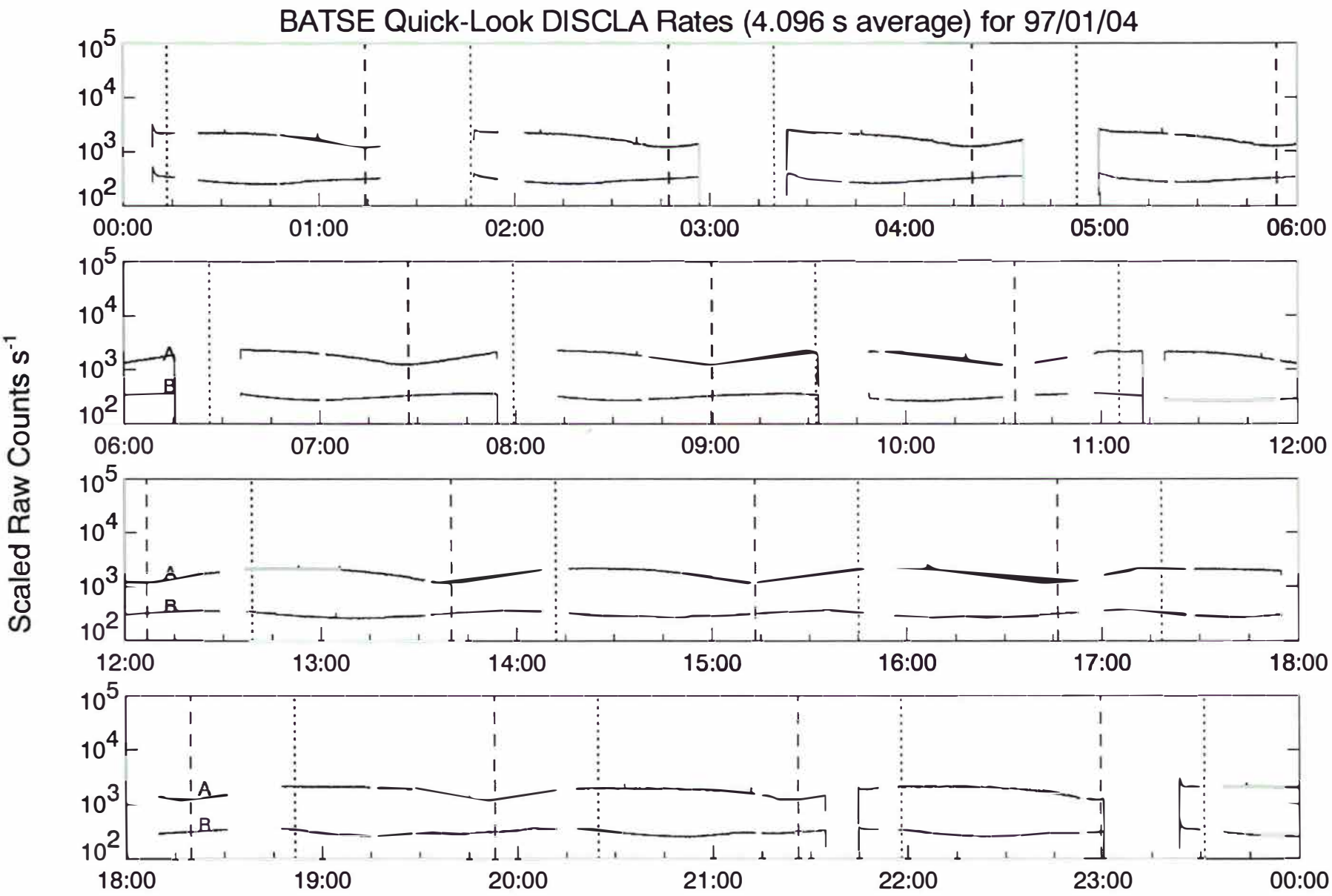
04/01/97 10296.166 s

0.250 S INTERVALS REGROUPED BY 12

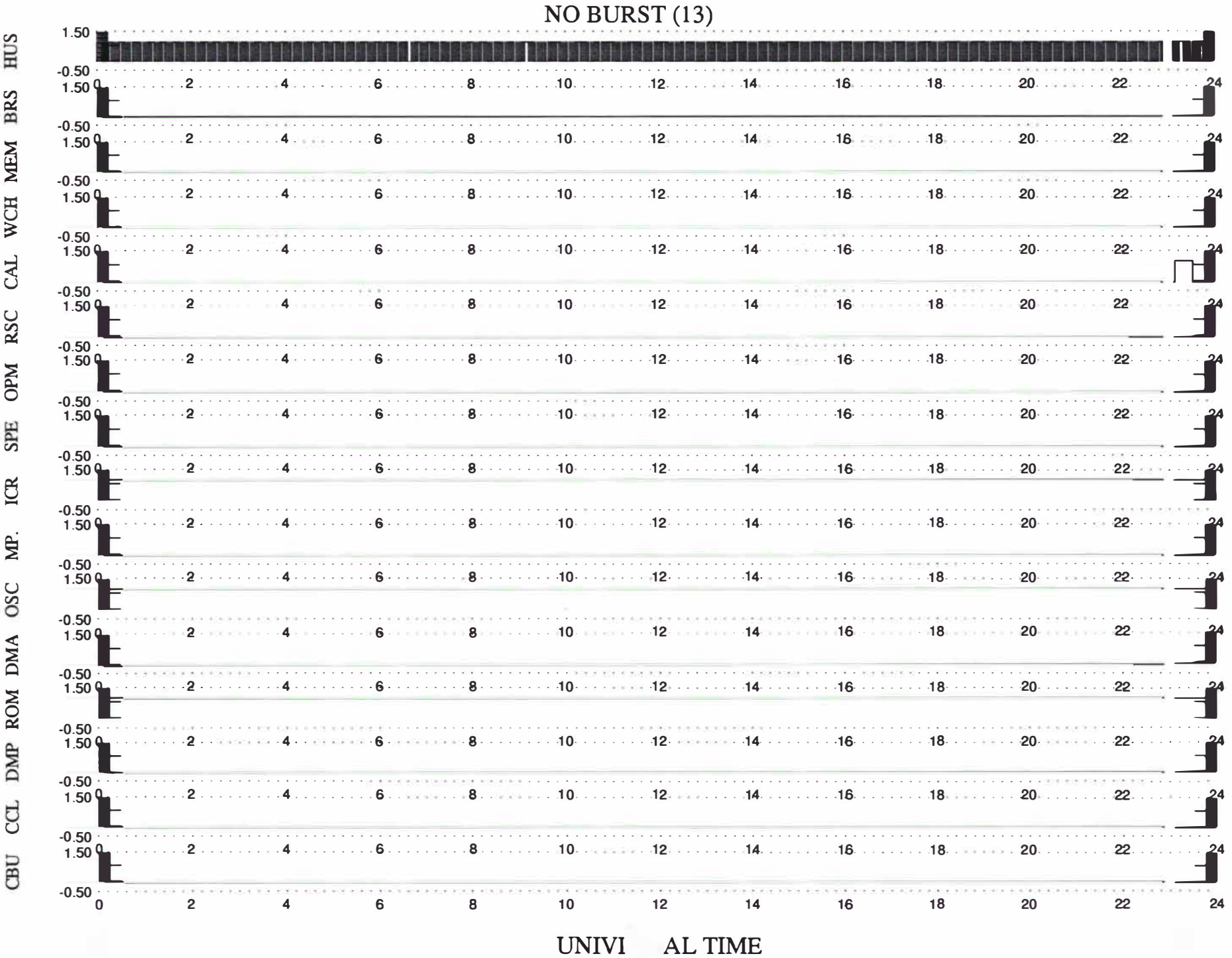
0- 0 keV




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: 97/01/04, 0000:00
Plot created: 97/01/06, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

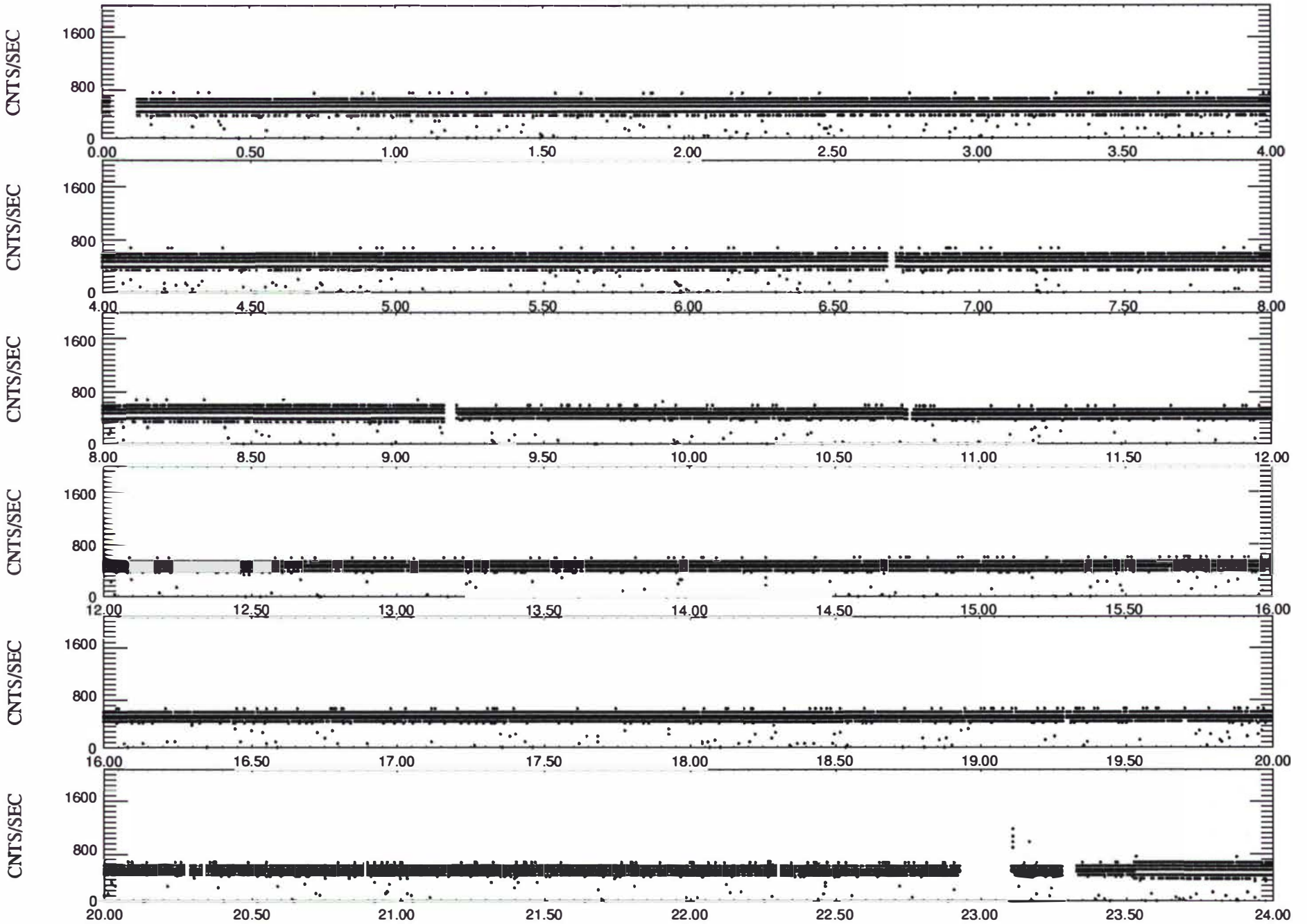

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/04
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Current Time: 97/01/06, 1008 EDT
A: Channel 0 Most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



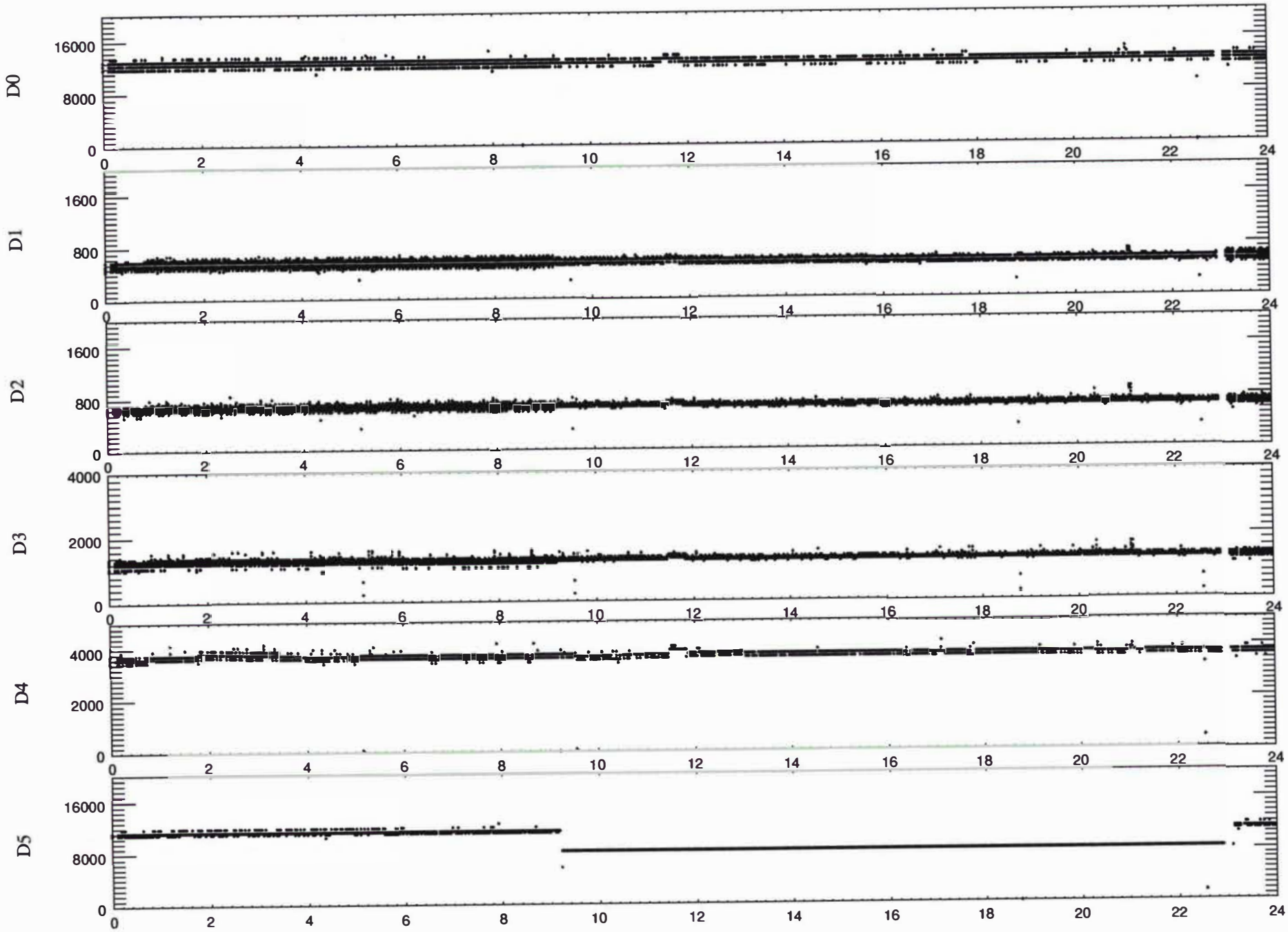
HUS 2A, MODE 1, NOT AVERAGED EDR day 4, year 1997 to day 4, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIV' AL TIME

HUS 2B COUNTS / SEC EDR day 4, year 1997 to day 4, year 1997 5/5/97



From PANJEVG@ssl.msfc.nasa.gov Tue Jan 7 13:50 PST 1997
Return-Path: <PANJEVG@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA22756; Tue, 7 Jan 1997 13:50:56 -0800
From: PANJEVG@ssl.msfc.nasa.gov
Date: Tue, 7 Jan 1997 15:50:53 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970107155053.2b607023@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5744
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5744
EVENT OF 1997 JAN 5 DAY OF YEAR= 5
EVENT CROSSING TIME AT BATSE : 10676. S. OR 02:57:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 316.000 56.000
BATSE PEAK COUNTING RATE: 13000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 1/ 97 IS:
RA= 177.777 DEC= 33.215 DIST= 4.194 AU
BATSE-ULYSSES DISTANCE = 627460957. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -220.28 SECS.
CROSSING TIME AT ULYSSES IS 10456. S. OR 02:54:15 +/- 408.01 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 1/ 97 IS:
RA= 181.560 DEC= 2.296 DIST= 1.122 AU
MARS-BATSE DISTANCE = 167882592. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 200.48 SECS.
CROSSING TIME AT MARS IS 10876. S. OR 03:01:16 +/- 93.82 SECONDS

BATSE BURST TRIGGER

NO.: 5744

TIME: TJD=0453 SECONDS=10676

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=111.2 AZIMUTH= 73.9 ERROR= 4.4 DEGREES

COMMENTS:
GRB. SINGLE SPIKE LASTING ~.15S. NOT VISIBLE ABOVE 300KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5744	970105	10453	10676	13000	316	+56	.15

BATSE# 5744

ULYSSES RT 7/ 1/97

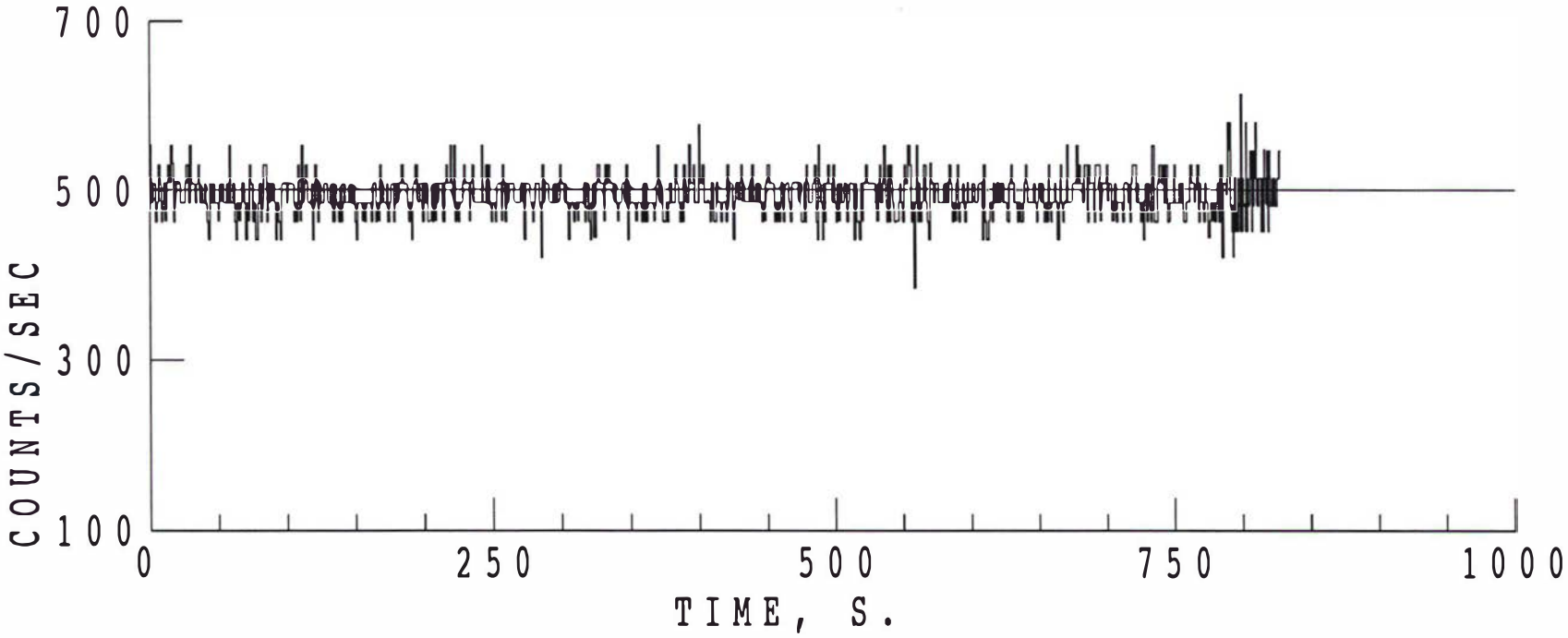
5/ 1/97 10044.219 s

INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



1

From HENZE@fender.msfc.nasa.gov Thu Jan 9 13:50 PST 1997
Date: Thu, 9 Jan 1997 15:49:46 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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: BATSE triggers from GRO J1744-28 (this takes place of AD messages)

This listing contains BATSE triggers for GRO J1744-28
beginning with number 5728.
TJD = Truncated Julian Day, SoD = Seconds of Day.

Trig. No.	TJD / SoD of start time (or trigger time)	
5728	10443 / 75688.6495	Dec 26
5742	10453 / 558.7935	00:09:18
5743	10453 / 5778.1215	Jan 5 01:36:18
5745	10453 / 43069.1295	11:57:49
5747	10453 / 84931.2735	23:35:31
5748	10454 / 32152.2655	
5749	10454 / 68191.9455	Jan 6
5750	10454 / 80035.0175	
5751	10456 / 32742.8575	
5752	10456 / 48378.5695	Jan 7
5754	10456 / 75239.3695	

266.2 -28.7

BATSE# 5742

ULYSSES RT 11/ 1/97

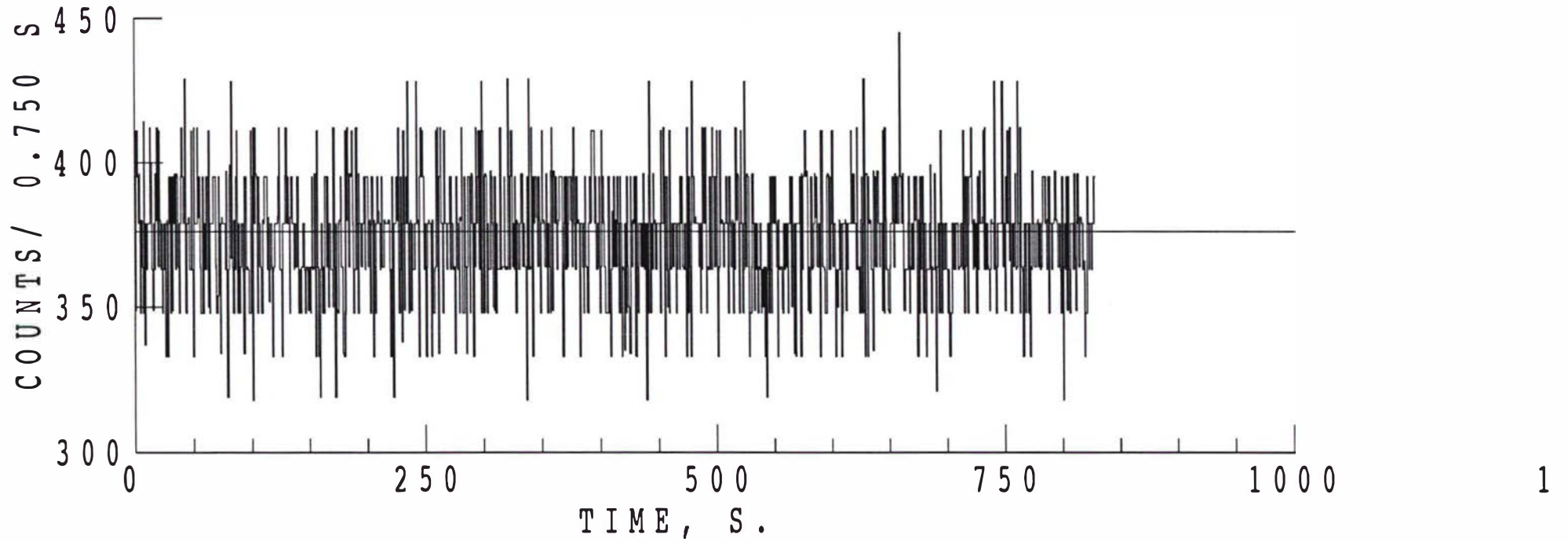
5/ 1/97 648.106 s

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



BATSE# 5743

ULYSSES RT 11/ 1/97

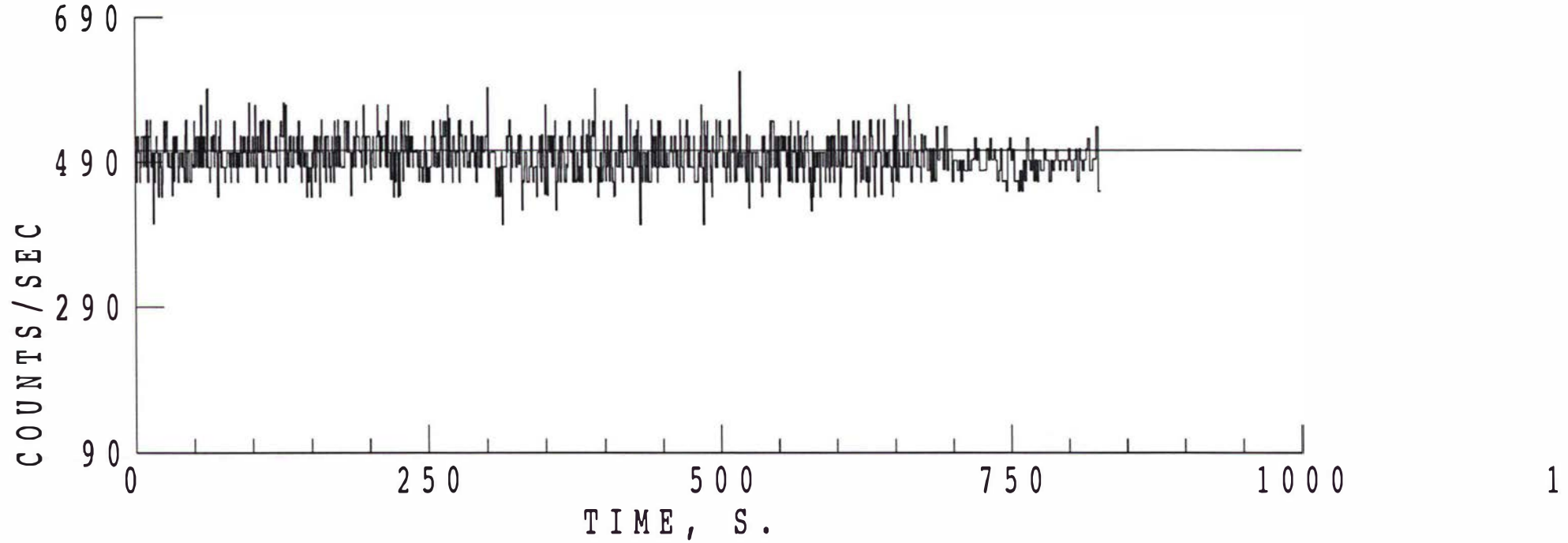
5/ 1/97 5868.168 s

INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE# 5745

ULYSSES RT 11/ 1/97

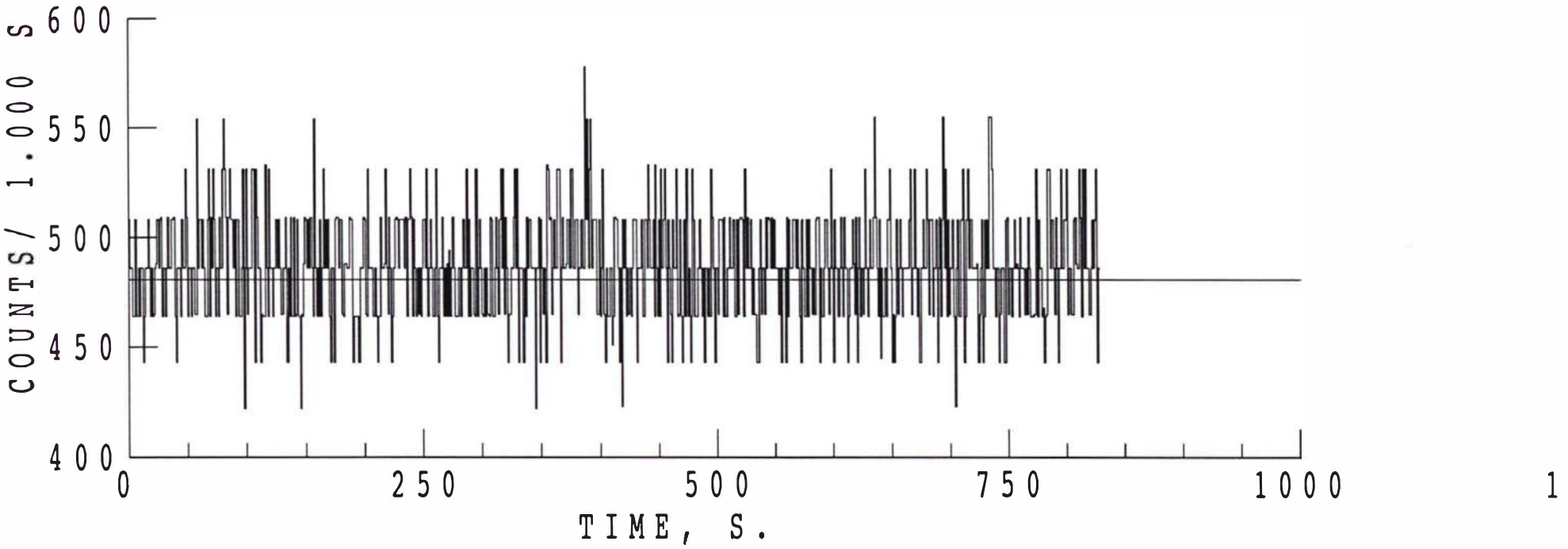
5/ 1/97 43164.125 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE# 5747

ULYSSES RT 11/ 1/97

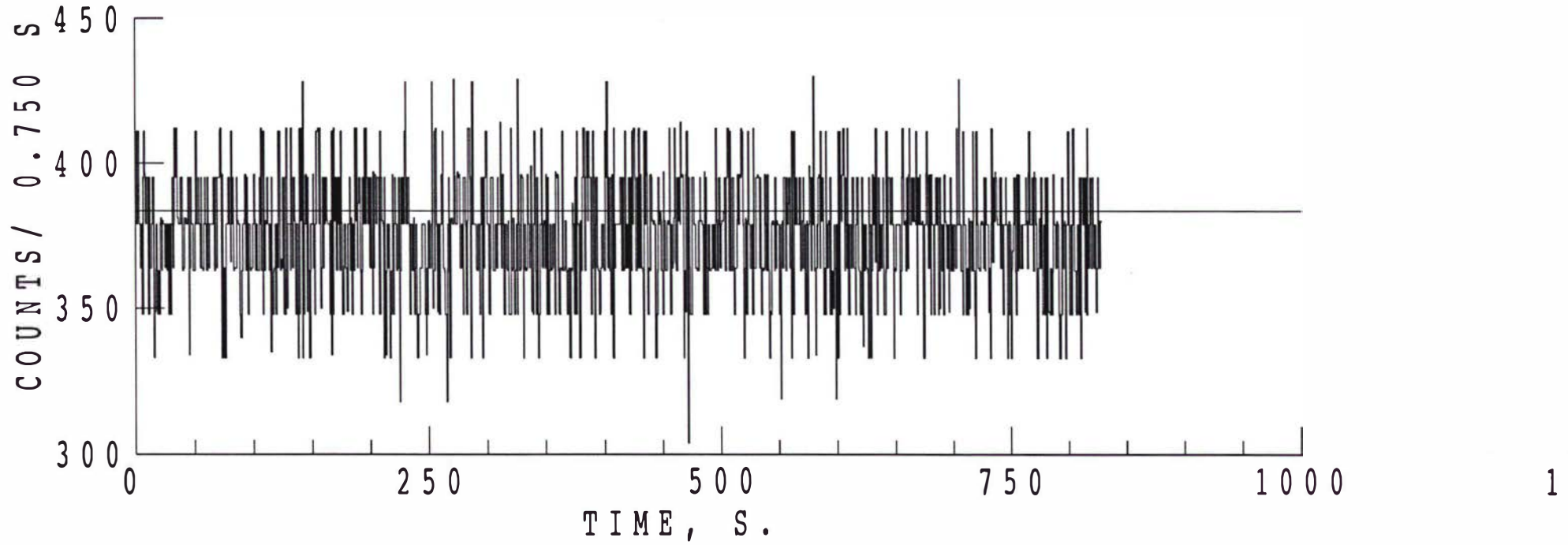
5/ 1/97 85032.133 s

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 BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
`ject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec 09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan 05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan 05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan 07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan 07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan 09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan 10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan 10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan 11	23:35	10459/84900	Nothing evident.
1997	Jan 13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan 14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan 15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
,97	Jan 17	15:07	10465/54420	HV off during SAA.
1997	Jan 17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan 24	12:51	10472/46260	HV off during SAA.
1997	Jan 26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan 30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

From David.M.Palmer.1@gsfc.nasa.gov Tue Jan 21 11:09 PST 1997
X-Sender: palmer@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 21 Jan 1997 14:09:05 -0400
    bonnard@rosserv.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
        helmut.seifert.1@gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov,
        palmer@rosserv.gsfc.nasa.gov
From: David Palmer <David.M.Palmer.1@gsfc.nasa.gov>
Subject: Posible burst detections

Nothing apparent at 970105_06000, 970105_65820, 950107_28620, 970109_05100, 970110_31980, 970110_52260, 970113_52260, all +/- 2100 seconds

Possible brief event at 970107_51292.6 - 51292.9 (one sample time for the fast rate) with a significance of 6 sigma 100-300 keV, 4.5 sigma 35-100 keV (different sampling times).

There is a strong, real trigger at 970111_85744, which lasts about 300 seconds. Do you see it? It doesn't show up on the GOES x-ray plots or particle plots
gopher://proton.sec.noaa.gov:70/I9/plots/xray/gif/970113
so it doesn't seem to be a solar flare.

Data fro 970114 19020 and 970115 48960 is not yet available.

David Palmer
palmer@lheamail.gsfc.nasa.gov
USA (301) 286-2739 Voice
USA (301) 286-1682 Fax

From PANJEVG@ssl.msfc.nasa.gov Tue Jan 7 14:01 PST 1997
From: PANJEVG@ssl.msfc.nasa.gov
Date: Tue, 7 Jan 1997 16:01:19 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5746

TIME: TJD=0453 SECONDS=50324 13:58:44

TYPE: SGR SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.9 AZIMUTH= 2.5 ERROR= 5.9 DEGREES

COMMENTS:
SGR. MULTIPLE SPIKES WITH SOME SUBSTRUCTURE, LASTING .13S.
NOT VISIBLE ABOVE 300KEV.

BATSE# 5746

ULYSSES RT 7/ 1/97

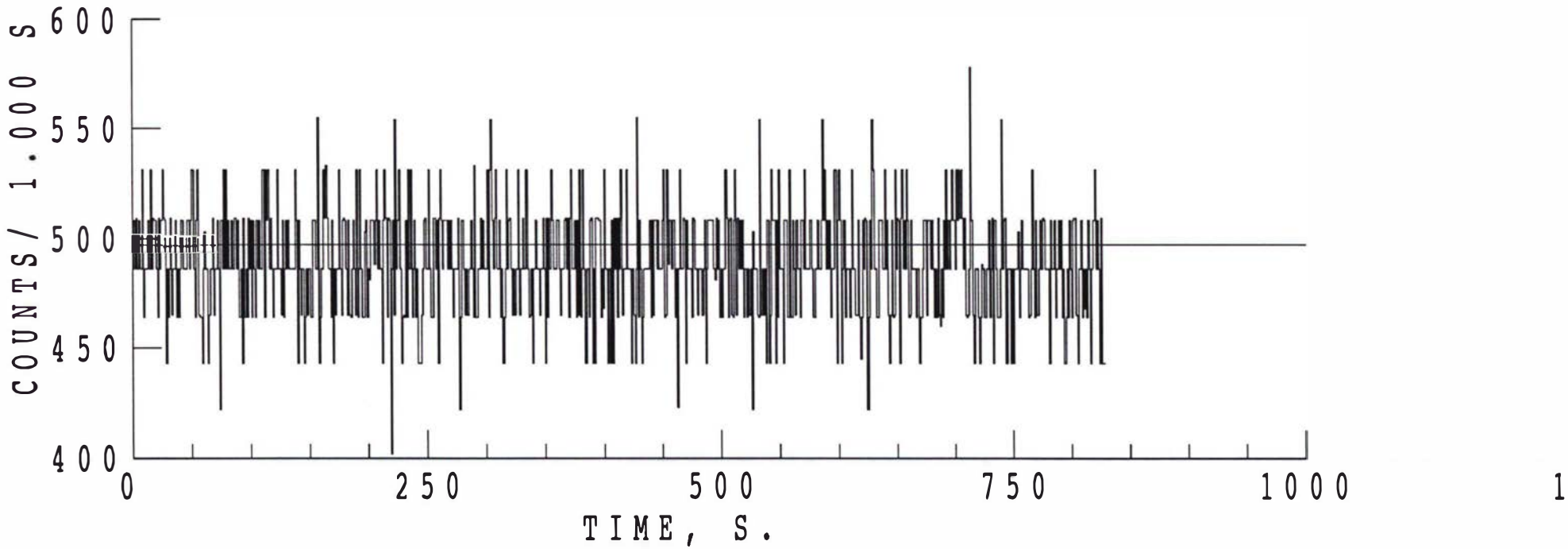
5/ 1/97 50436.211 s

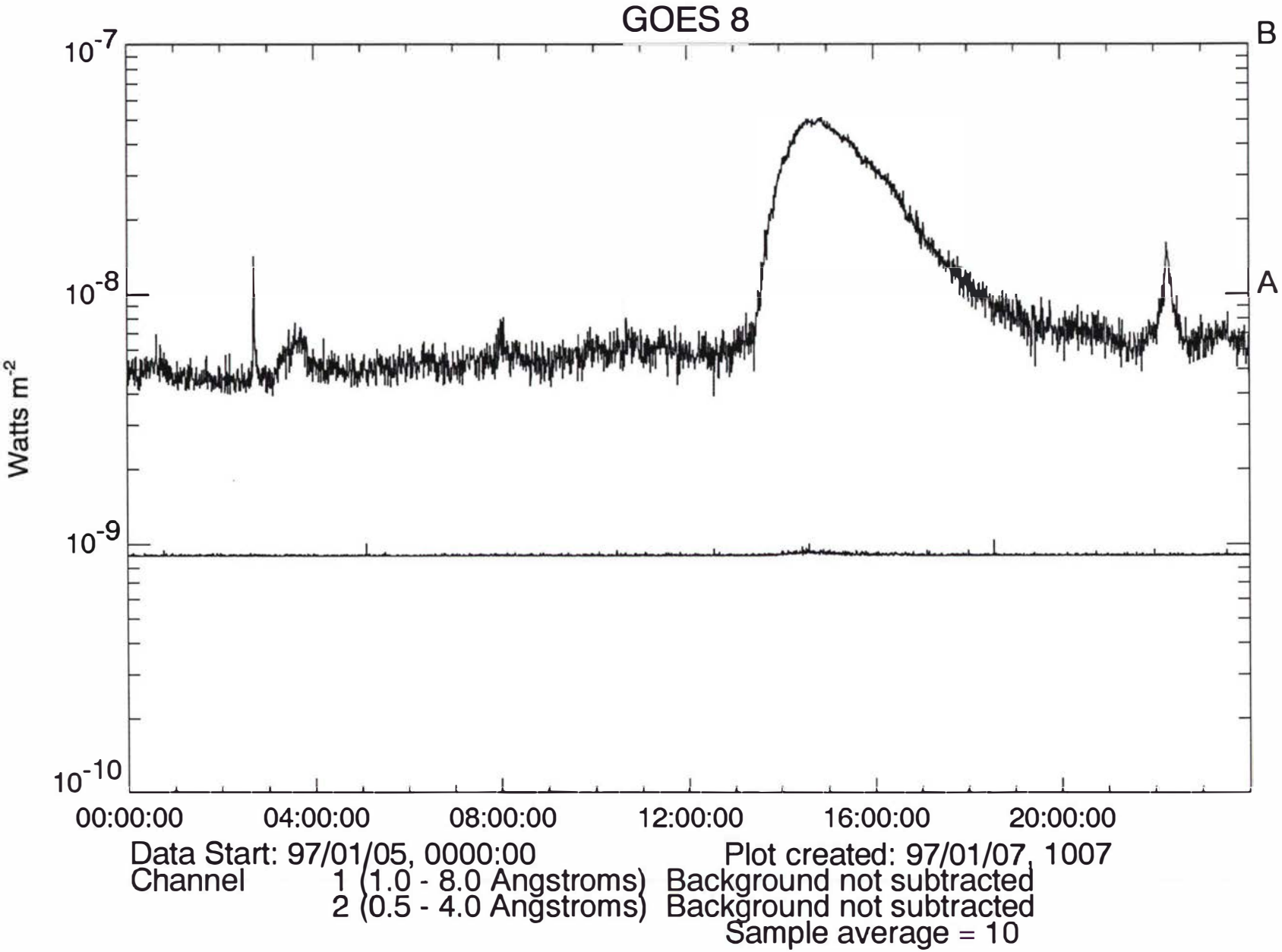
0.500 S INTERVALS REGROUPED BY 2

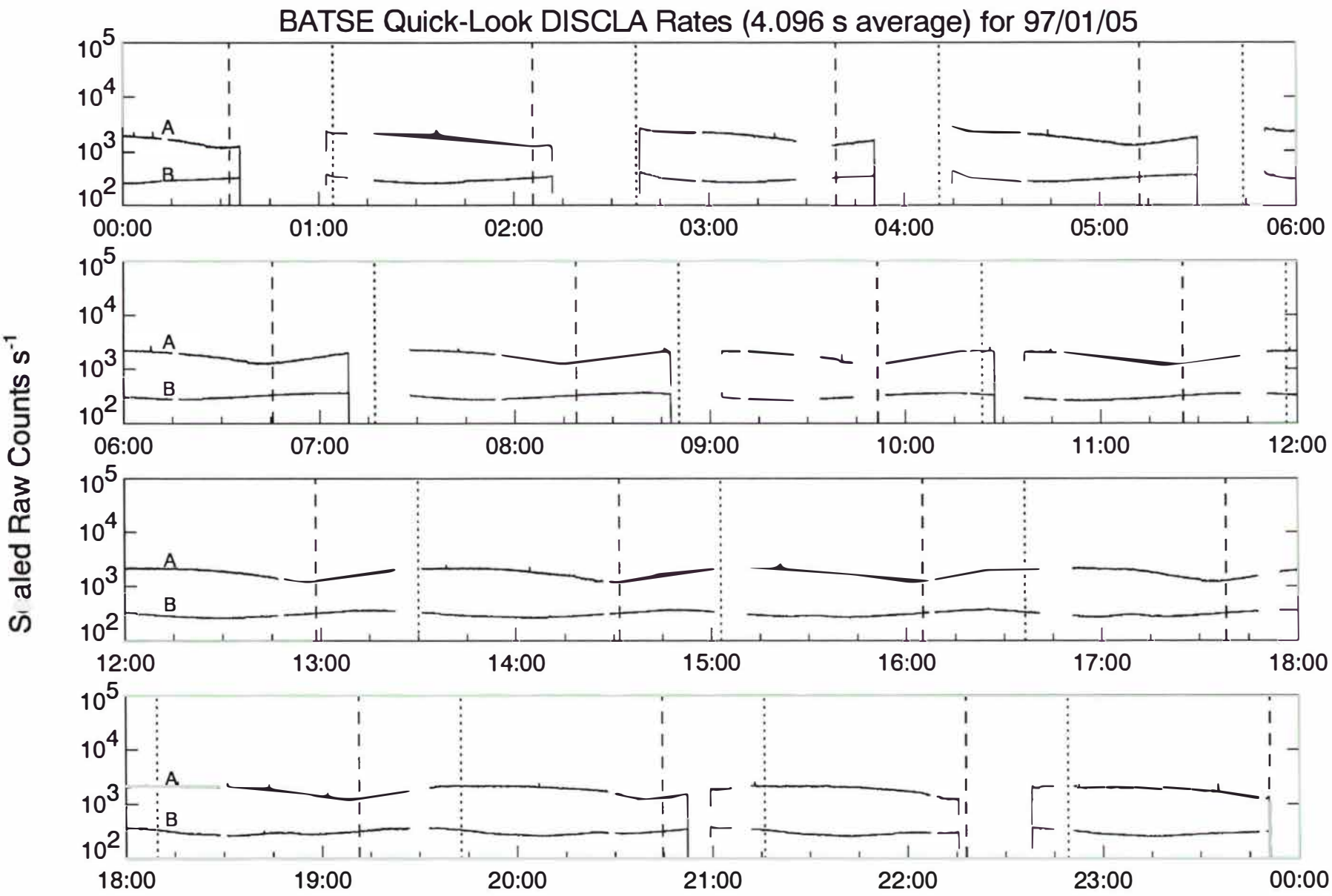
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

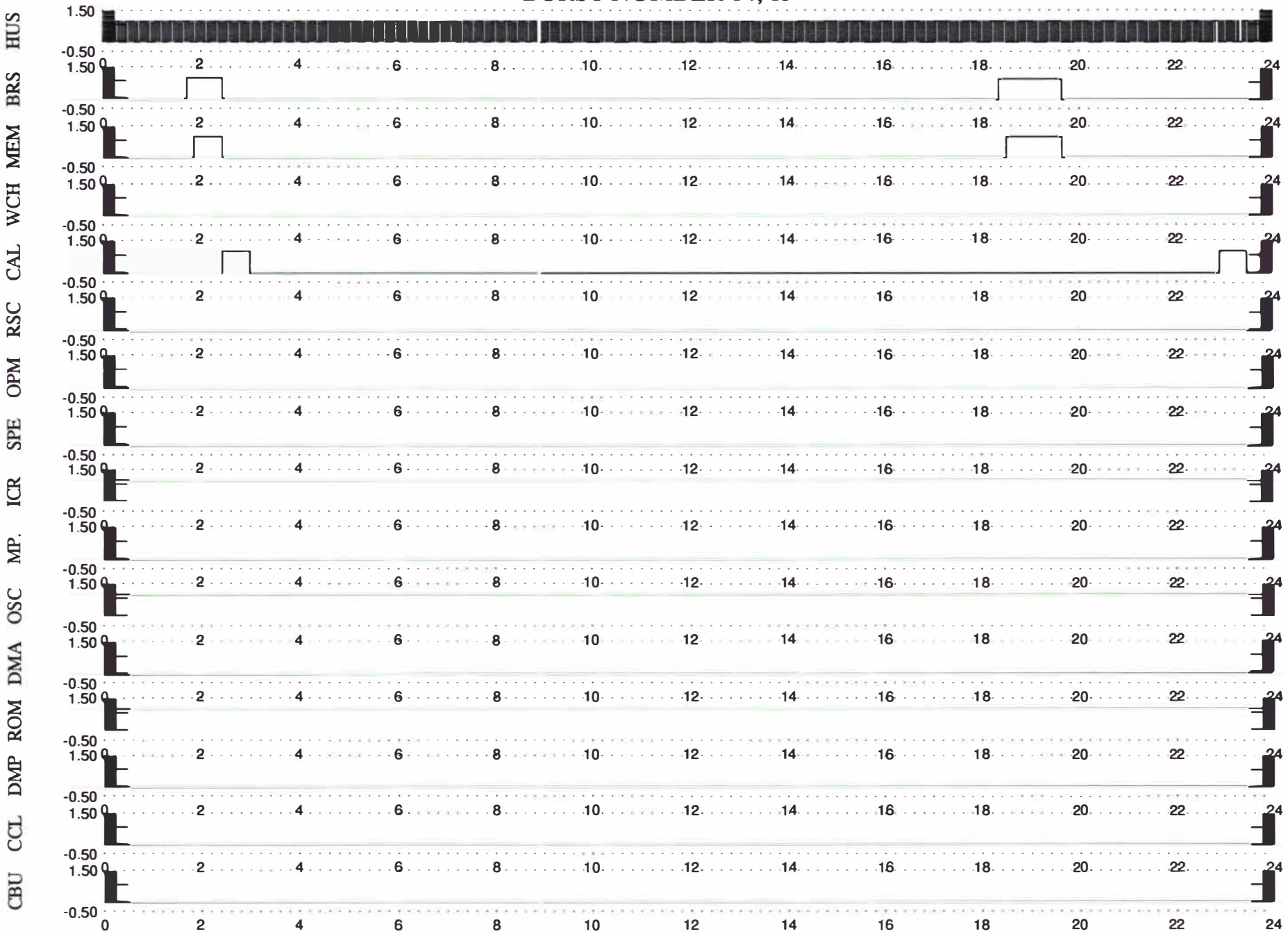



GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/05, 0000:00
Plot created: 97/01/07, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/05
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
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: 97/01/07, 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

HUS MODES EDR day 5, year 1997 to day 5, year 1997 5/5/97

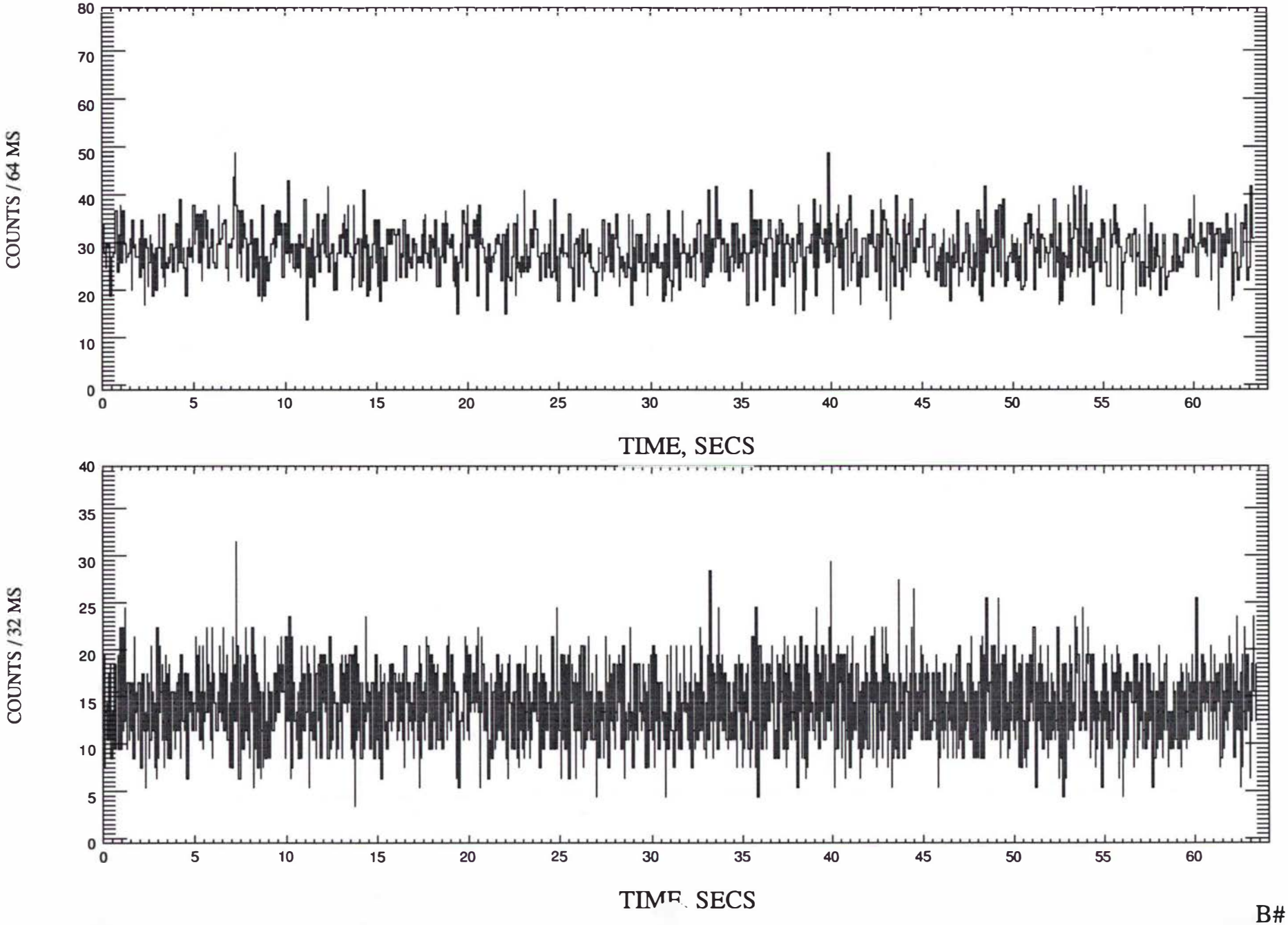
BURST NUMBER 14, 15



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 5, year 1997 5/2/97

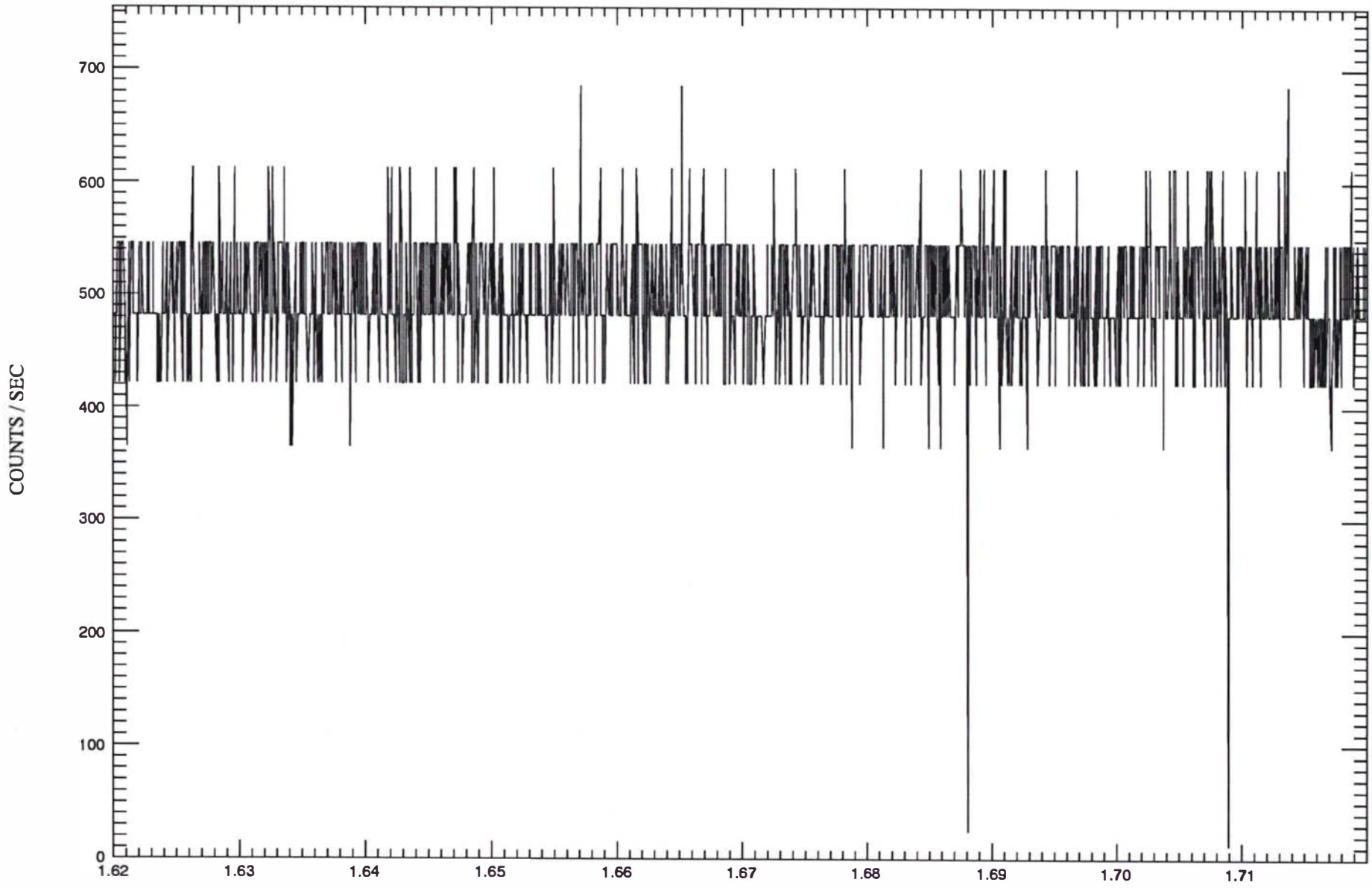
Burst Counter 14 at UT= 1.665287785000 h= 5995.036 s 01:39:55.036



B# 1

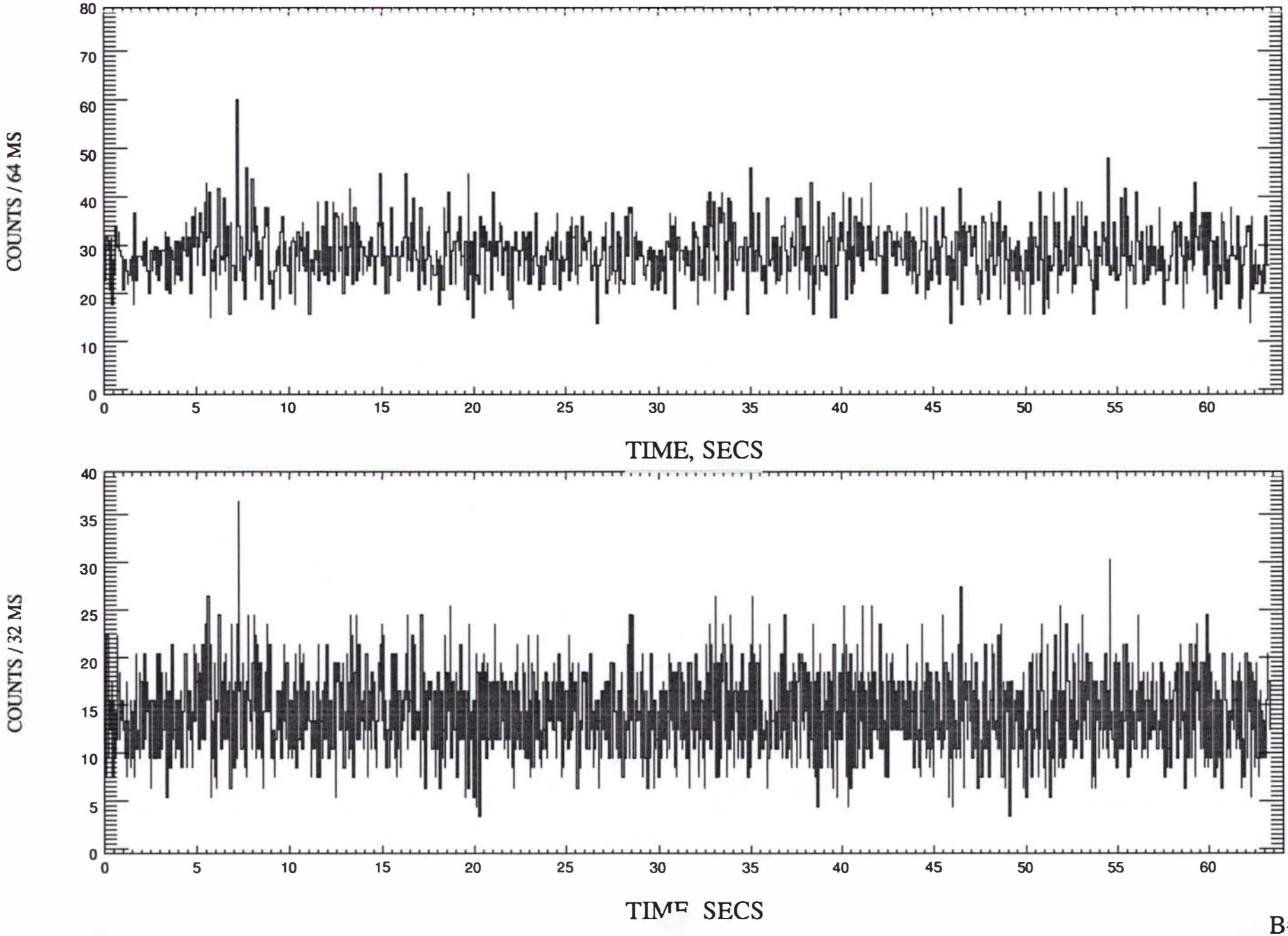
HUS 2A, MODE 1, NOT AVERAGED QEDR day 5, year 1997 to day 5, year 1997 1/9/97

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 5, year 1997 5/2/97

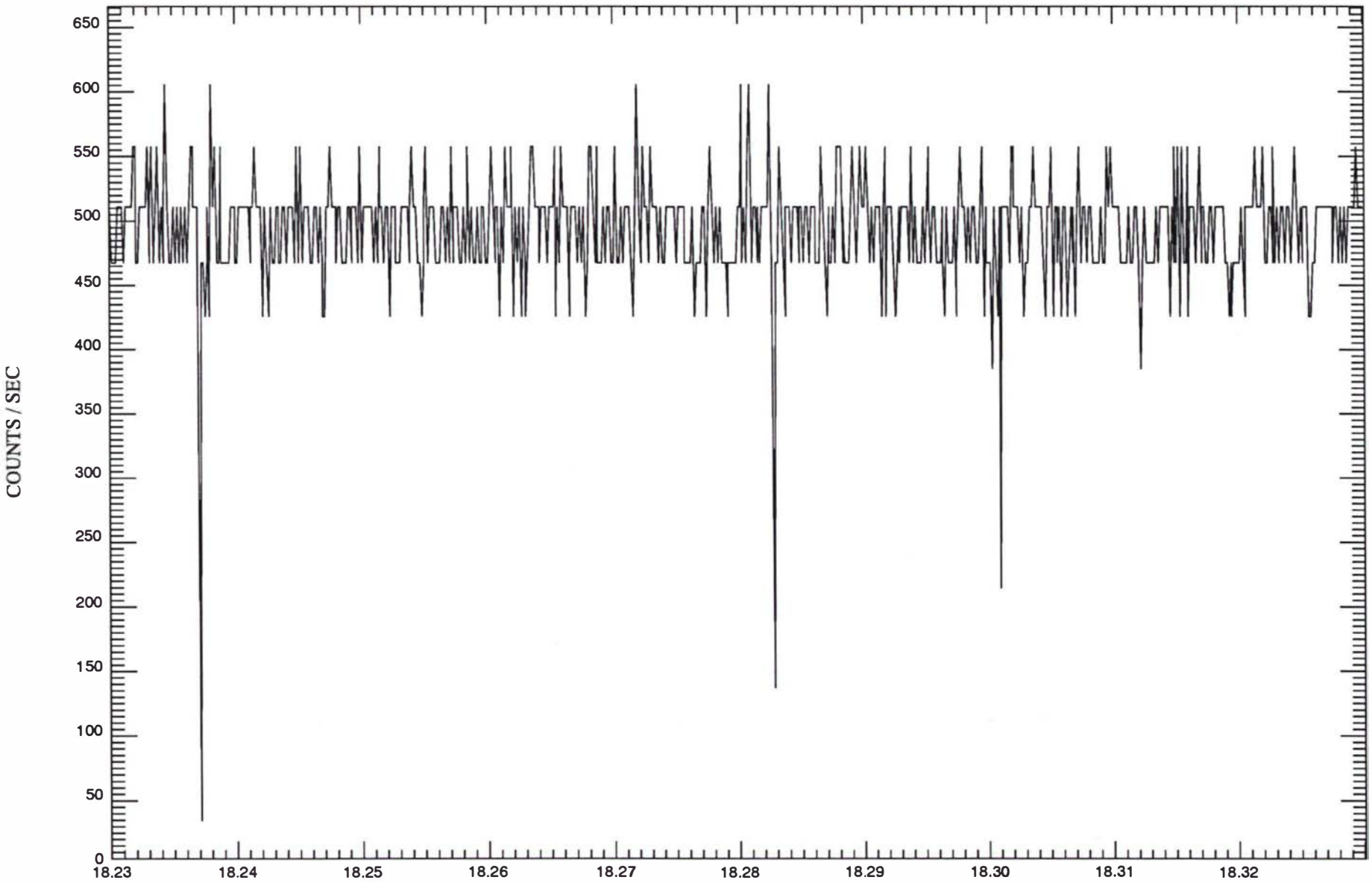
Burst Counter 15 at UT=18.280838411119 h=65811.018 s 18:16:51.018



B# 2

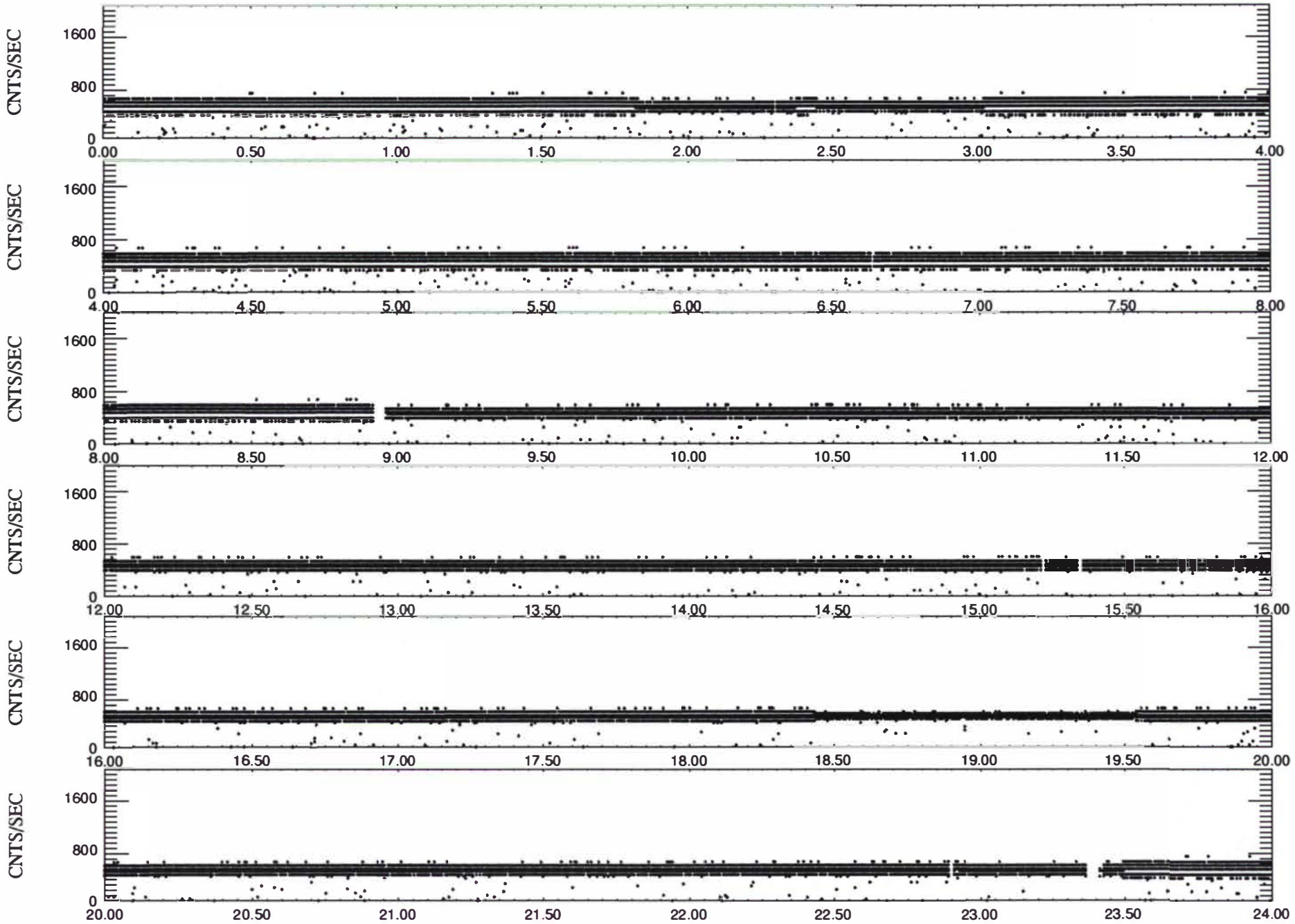
HUS 2A, MODE 1, NOT AVERAGED QEDR day 5, year 1997 to day 5, year 1997 1/9/97

CALIBRATION DATA INCLUDED



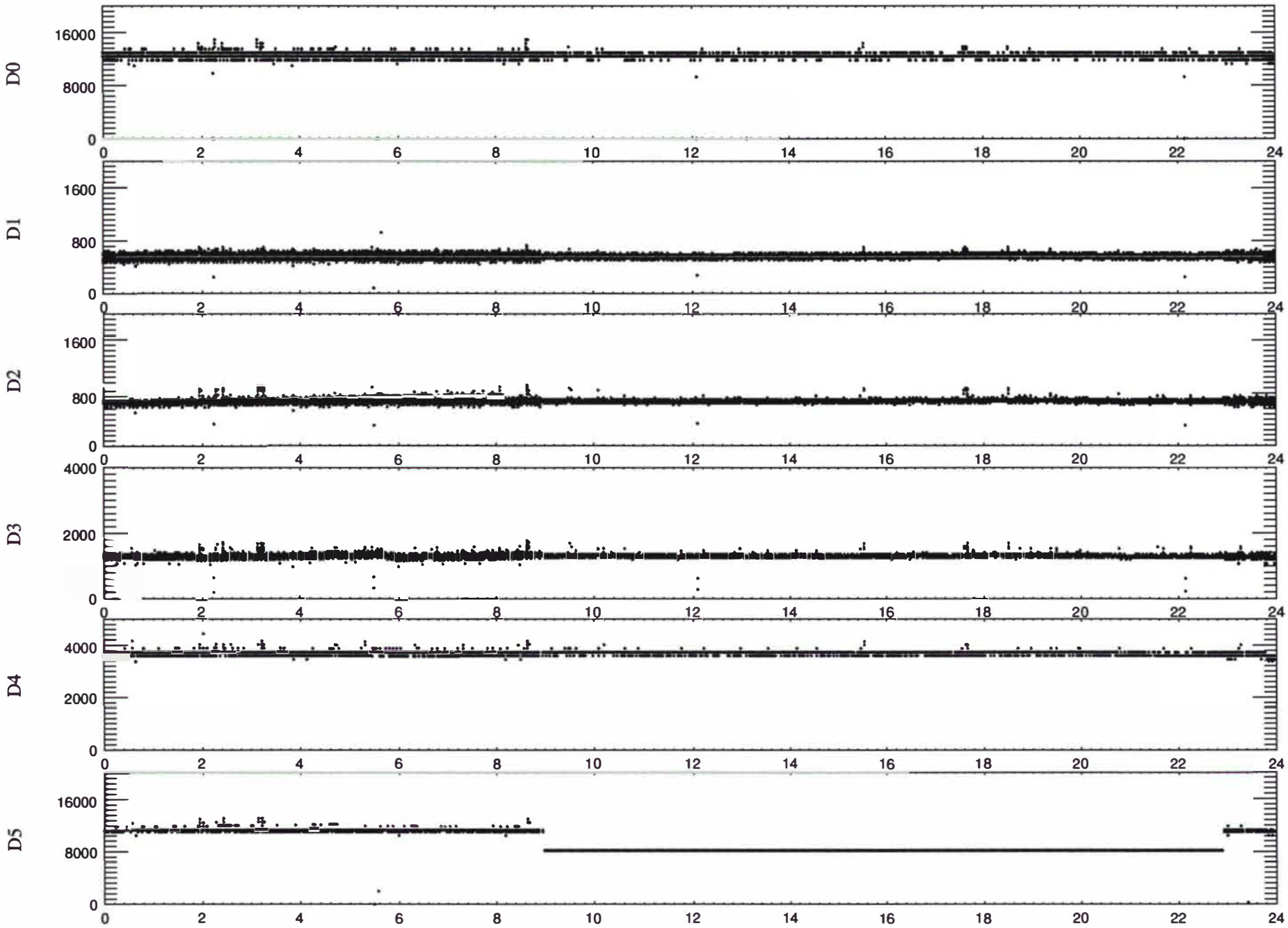
HUS 2A, MODE 1, NOT AVERAGED EDR day 5, year 1997 to day 5, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 5, year 1997 to day 5, year 1997 5/5/97



From HENZE@fender.msfc.nasa.gov Thu Jan 9 13:50 PST 1997
Date: Thu, 9 Jan 1997 15:49:46 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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: BATSE triggers from GRO J1744-28 (this takes place of AD messages)

This listing contains BATSE triggers for GRO J1744-28
beginning with number 5728.
TJD = Truncated Julian Day, SoD = Seconds of Day.

Trig. No.	TJD / SoD of start time (or trigger time)	
5728	10443 / 75688.6495	
5742	10453 / 558.7935	
5743	10453 / 5778.1215	
5745	10453 / 43069.1295	
5747	10453 / 84931.2735	
5748	10454 / 32152.2655	08:55:52
5749	10454 / 68191.9455	18:56:32
5750	10454 / 80035.0175	22:13:55
5751	10456 / 32742.8575	
5752	10456 / 48378.5695	
5754	10456 / 75239.3695	

BATSE# 5748

ULYSSES RT 11/ 1/97

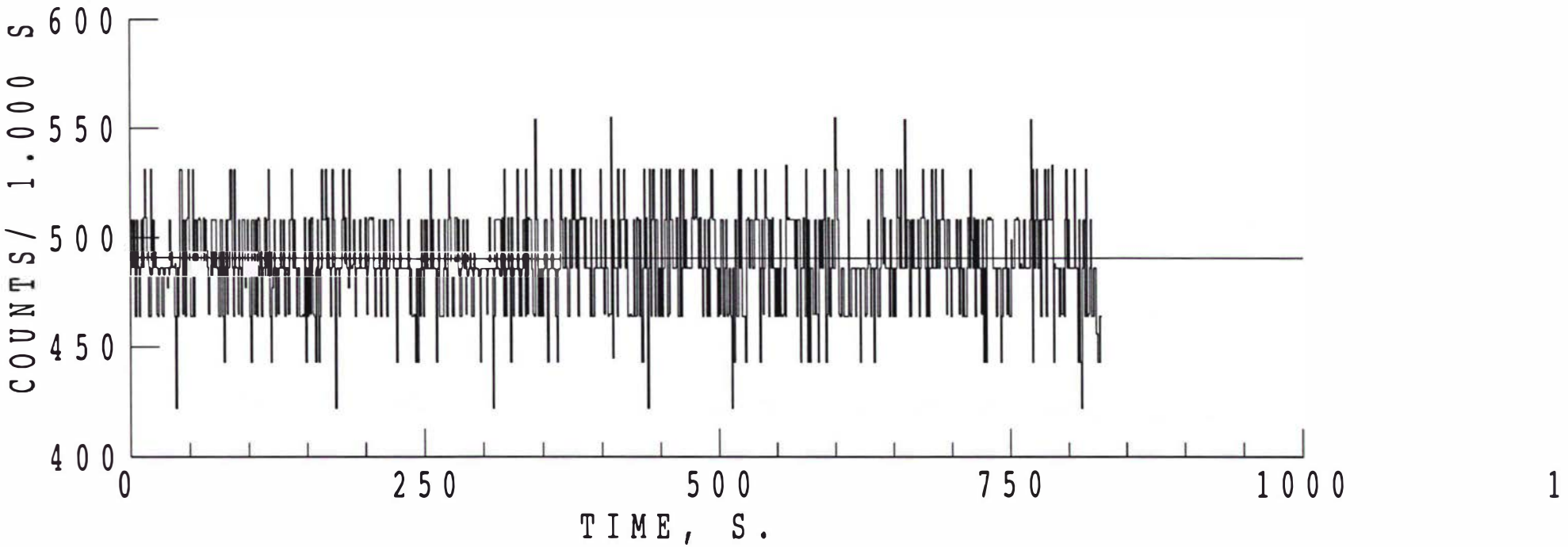
6/ 1/97 32256.049 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE# 5749

ULYSSES RT 11/ 1/97

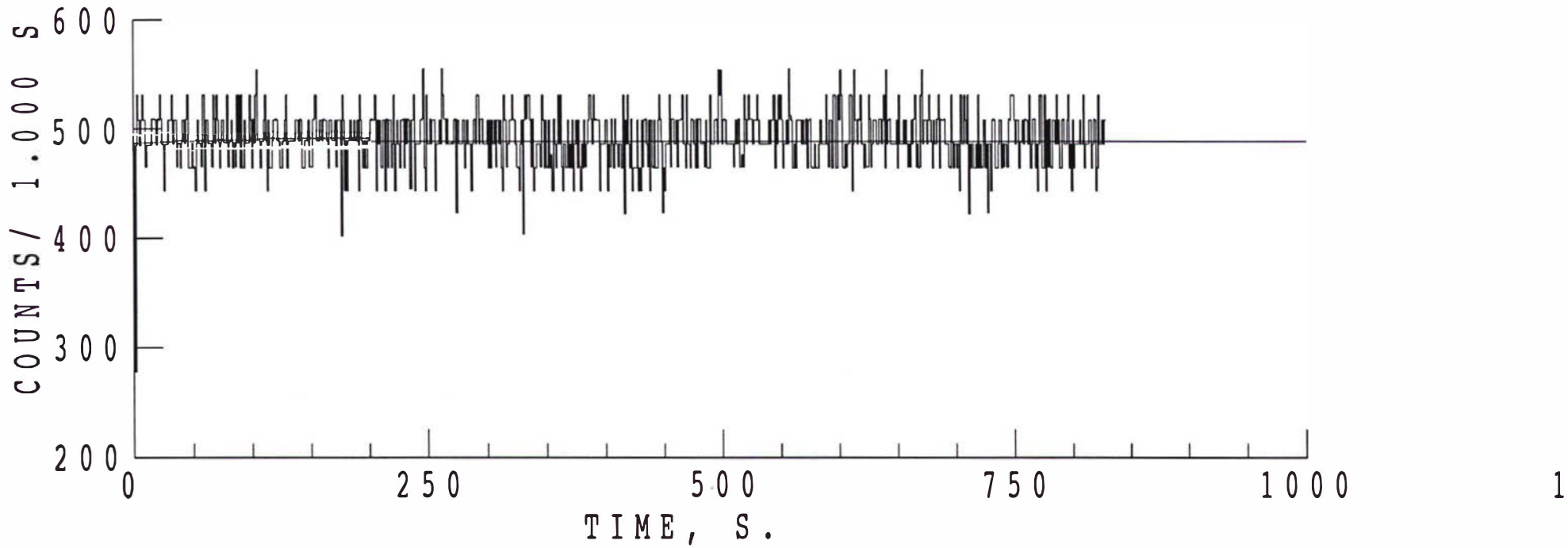
6/ 1/97 68292.492 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE# 5750

ULYSSES RT 11/ 1/97

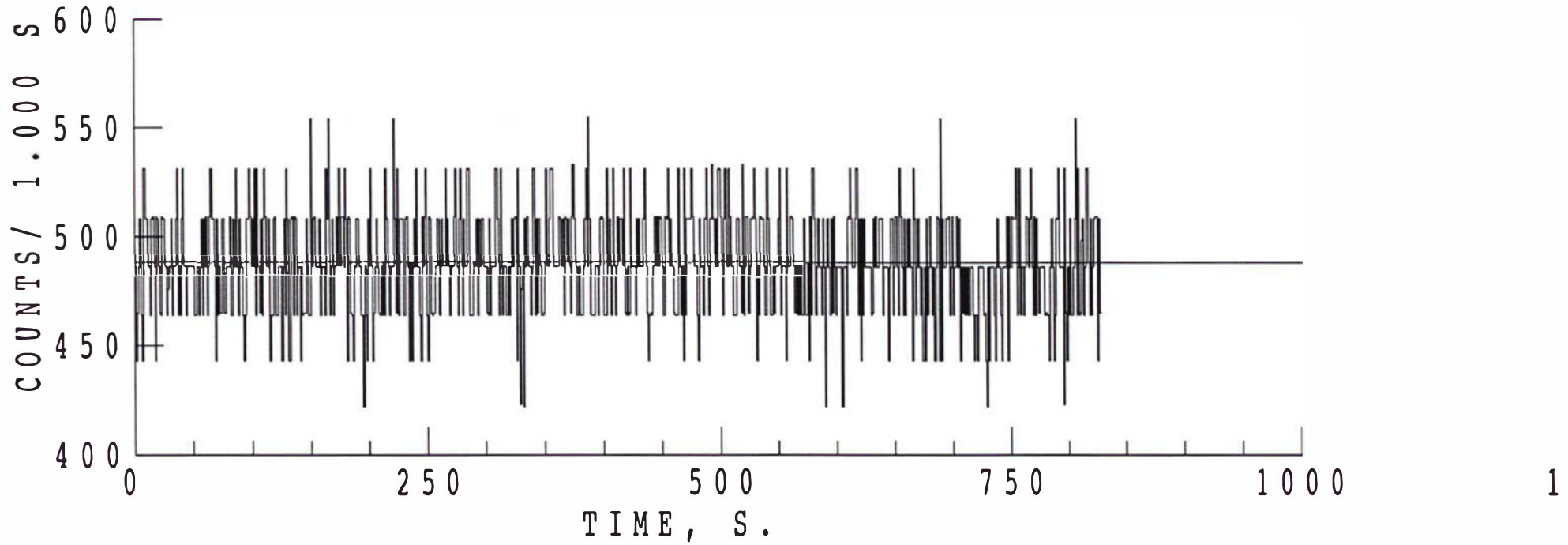
6/ 1/97 80136.133 s

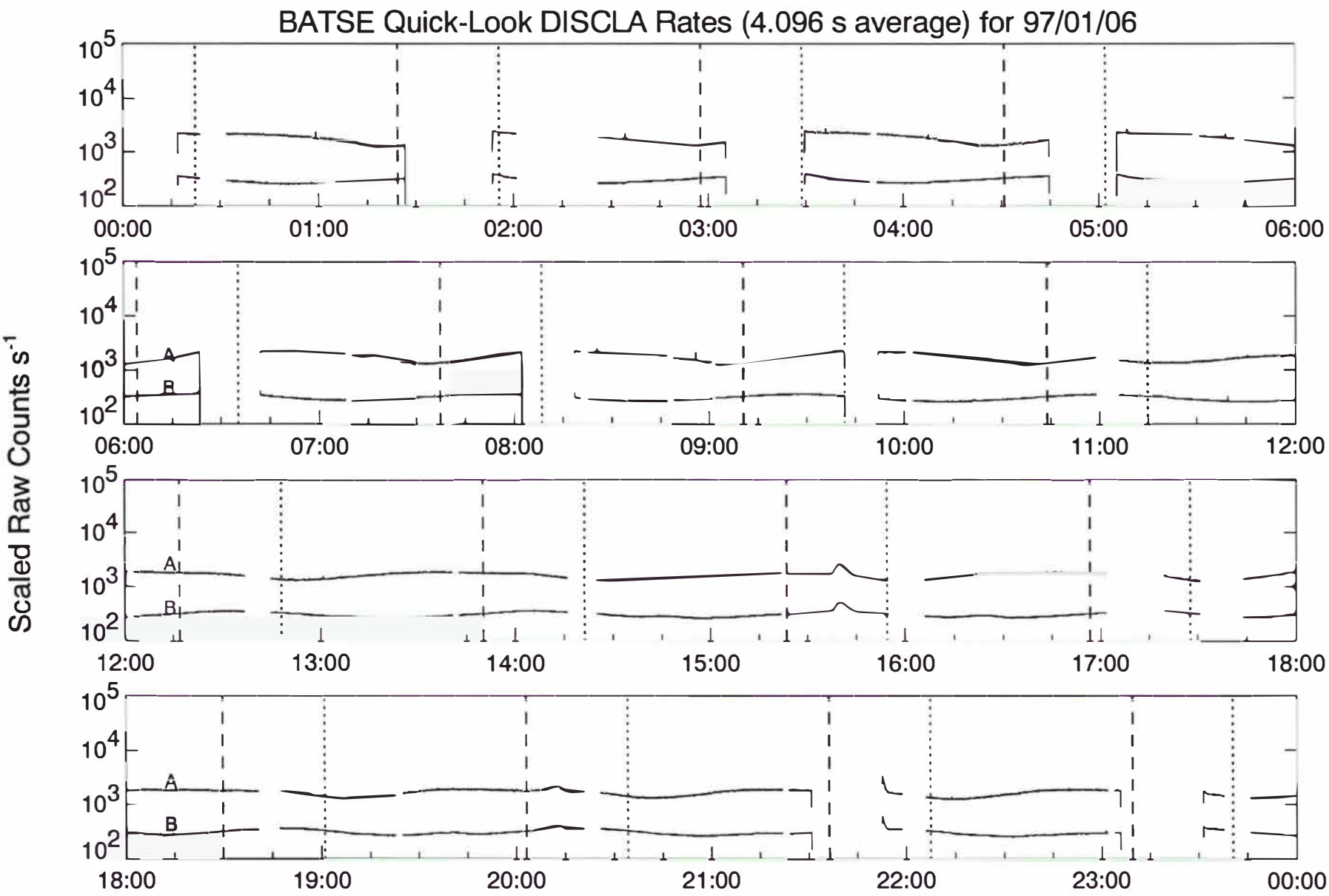
0.500 S INTERVALS REGROUPED BY 2

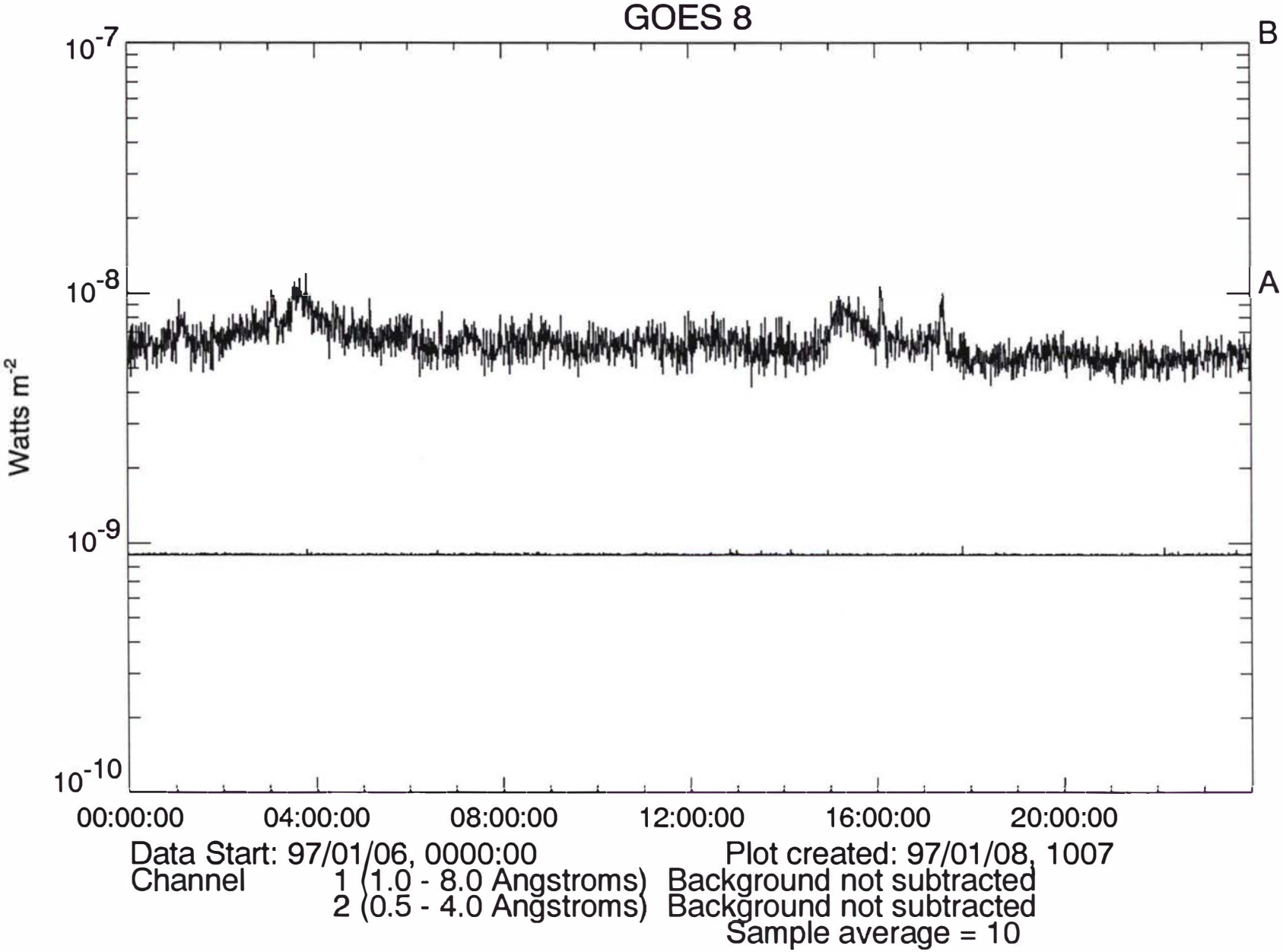
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

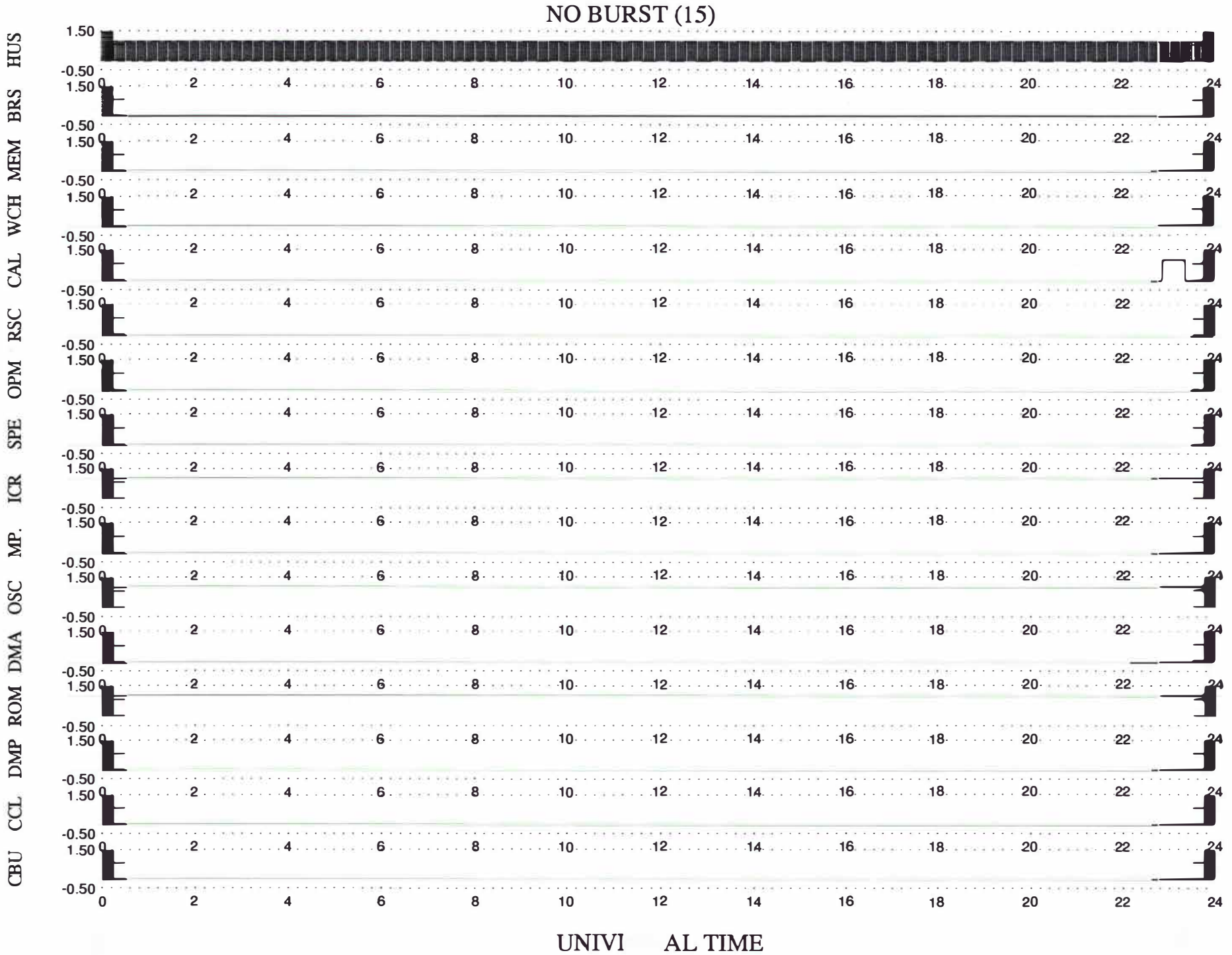
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




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

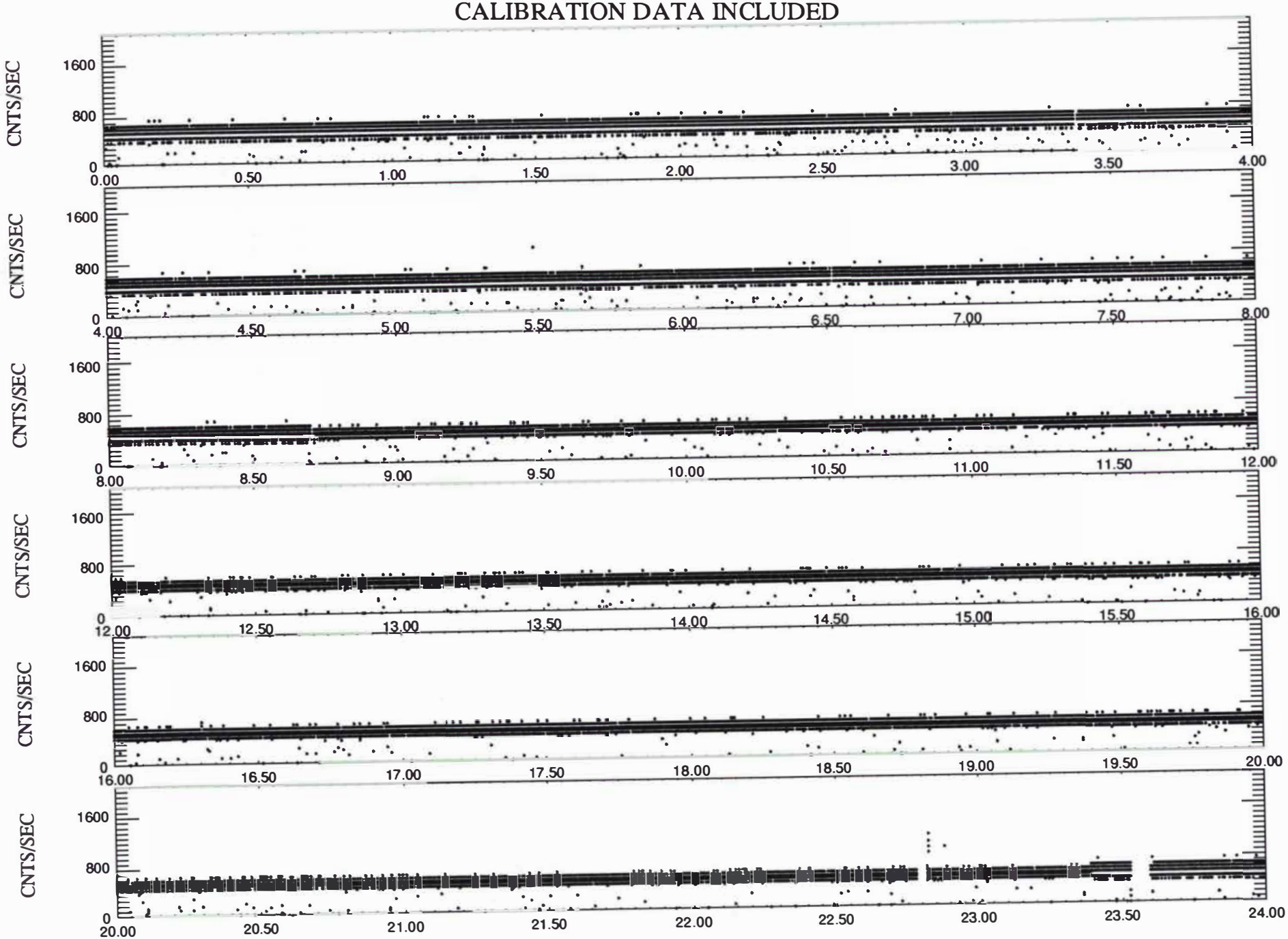

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/06, 0000:00
Plot created: 97/01/08, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 6, year 1997 to day 6, year 1997 5/5/97



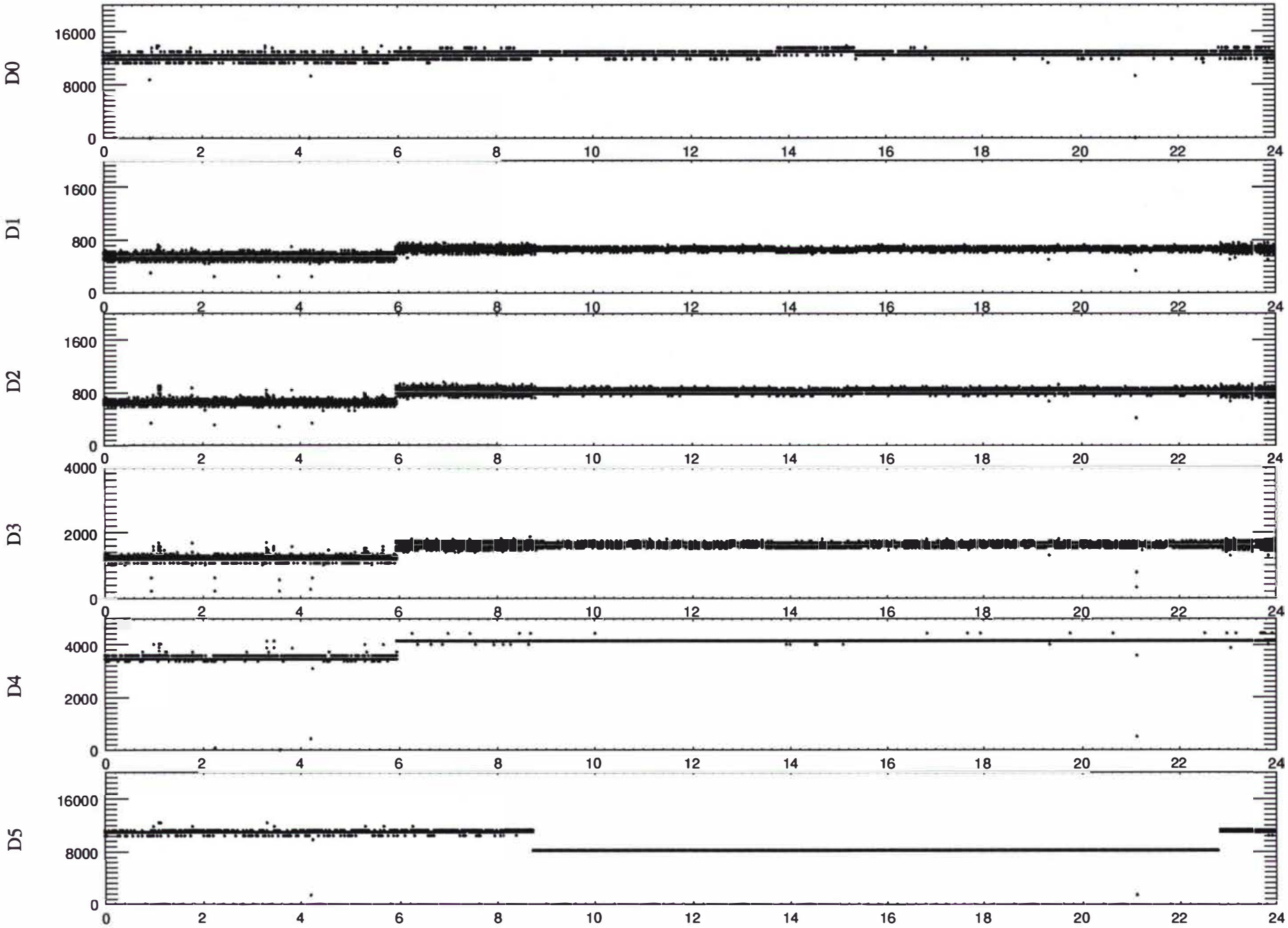
HUS 2A, MODE 1, NOT AVERAGED EDR day 6, year 1997 to day 6, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 6, year 1997 to day 6, year 1997 5/5/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
T khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
ject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec 09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan 05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan 05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan 07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan 07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan 09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan 10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan 10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan 11	23:35	10459/84900	Nothing evident.
1997	Jan 13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan 14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan 15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
,97	Jan 17	15:07	10465/54420	HV off during SAA.
1997	Jan 17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan 24	12:51	10472/46260	HV off during SAA.
1997	Jan 26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan 30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

From David.M.Palmer.1@gsfc.nasa.gov Tue Jan 21 11:09 PST 1997
X-Sender: palmer@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 21 Jan 1997 14:09:05 -0400
    bonnard@rosserv.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
        helmut.seifert.1@gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov,
        palmer@rosserv.gsfc.nasa.gov
From: David Palmer <David.M.Palmer.1@gsfc.nasa.gov>
Subject: Posible burst detections

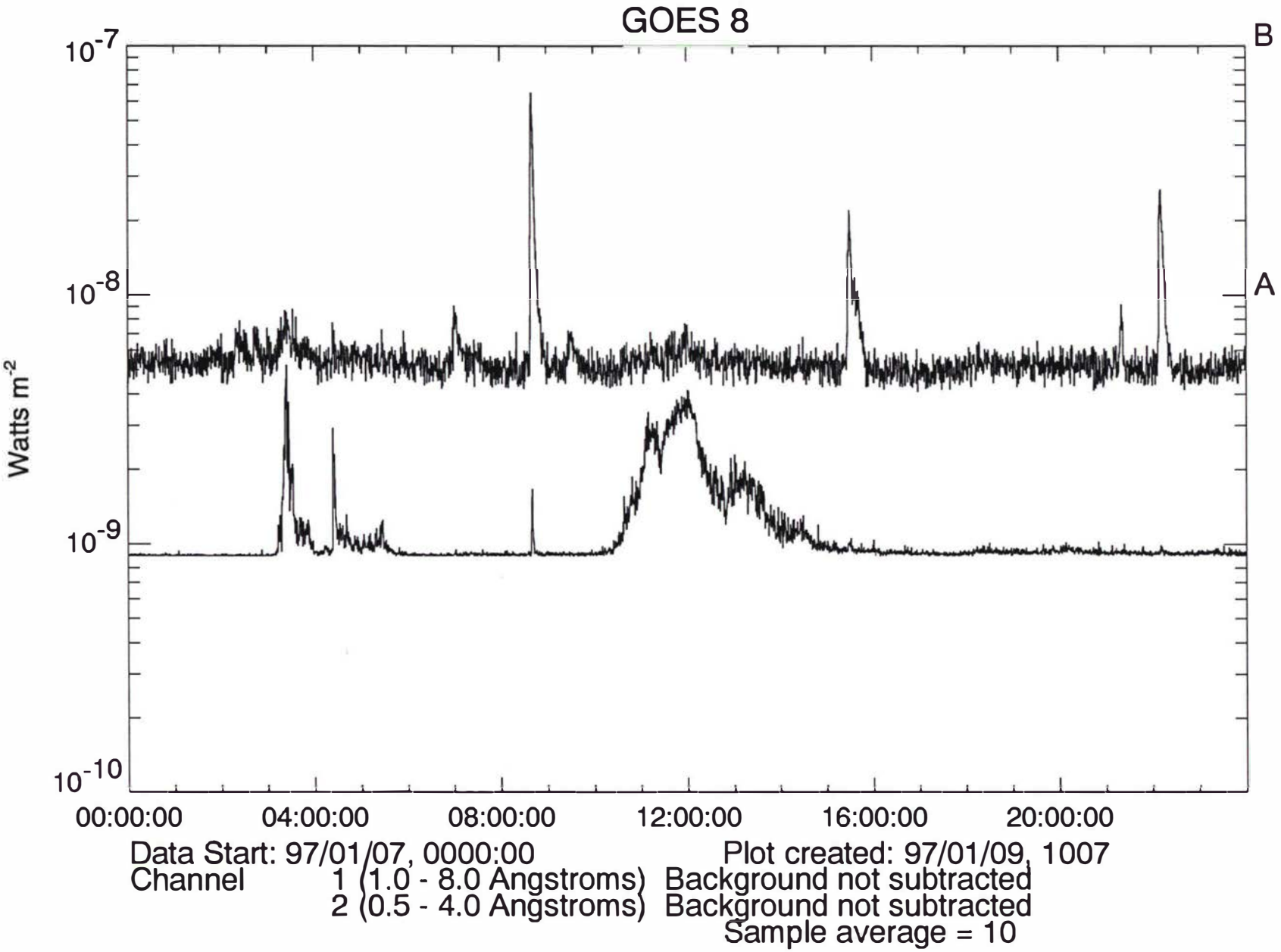
Nothing apparent at 970105 06000, 970105 65820, 950107 28620, 970109 05100, 970110_31980, 970110_52260, 970113_52260, all +/- 2100 seconds

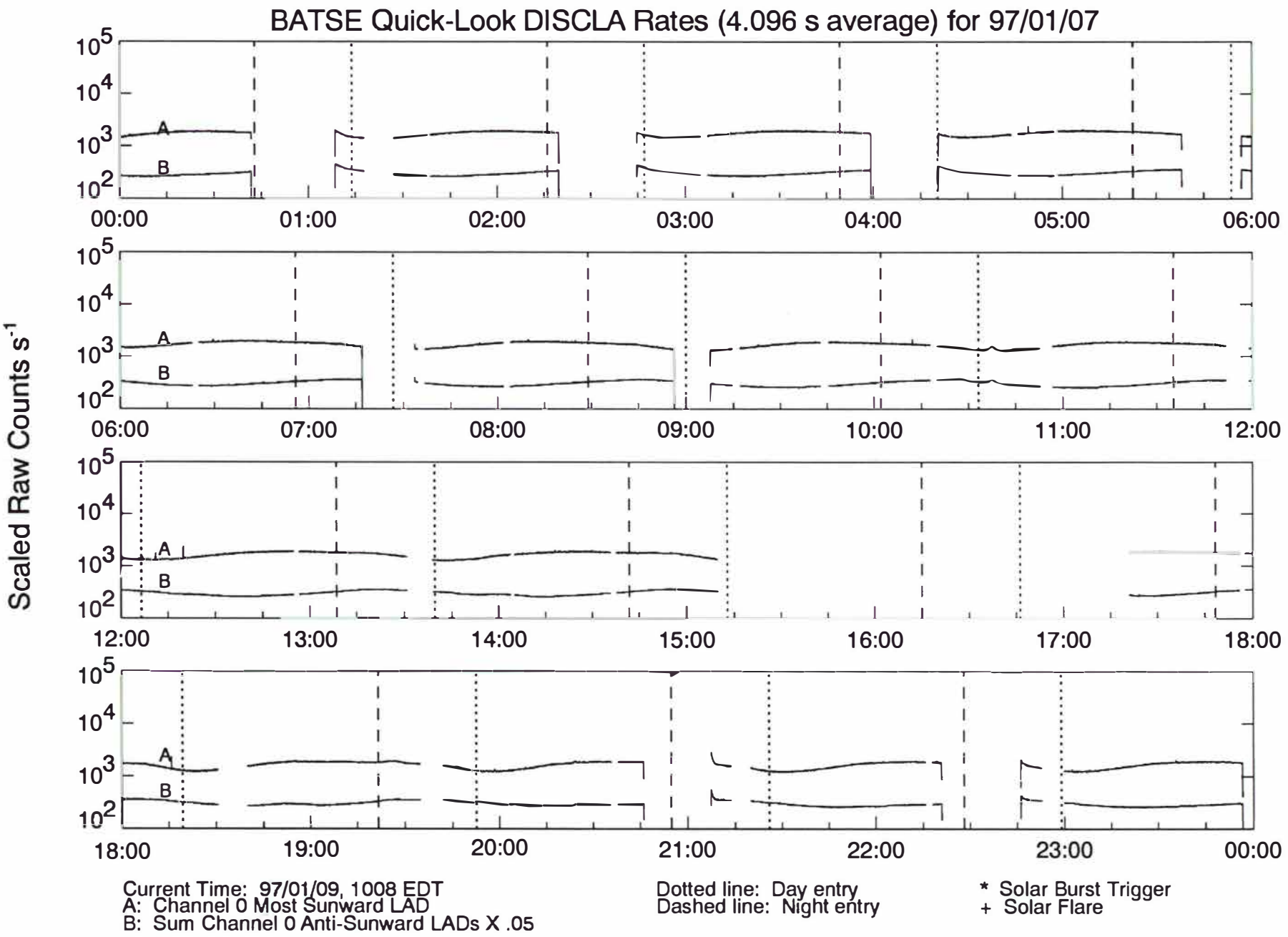
Possible brief event at 970107_51292.6 - 51292.9 (one sample time for the fast rate) with a significance of 6 sigma 100-300 keV, 4.5 sigma 35-100 keV (different sampling times).

There is a strong, real trigger at 970111_85744, which lasts about 300 seconds. Do you see it? It doesn't show up on the GOES x-ray plots or particle plots
gopher://proton.sec.noaa.gov:70/I9/plots/xray/gif/970113
so it doesn't seem to be a solar flare.

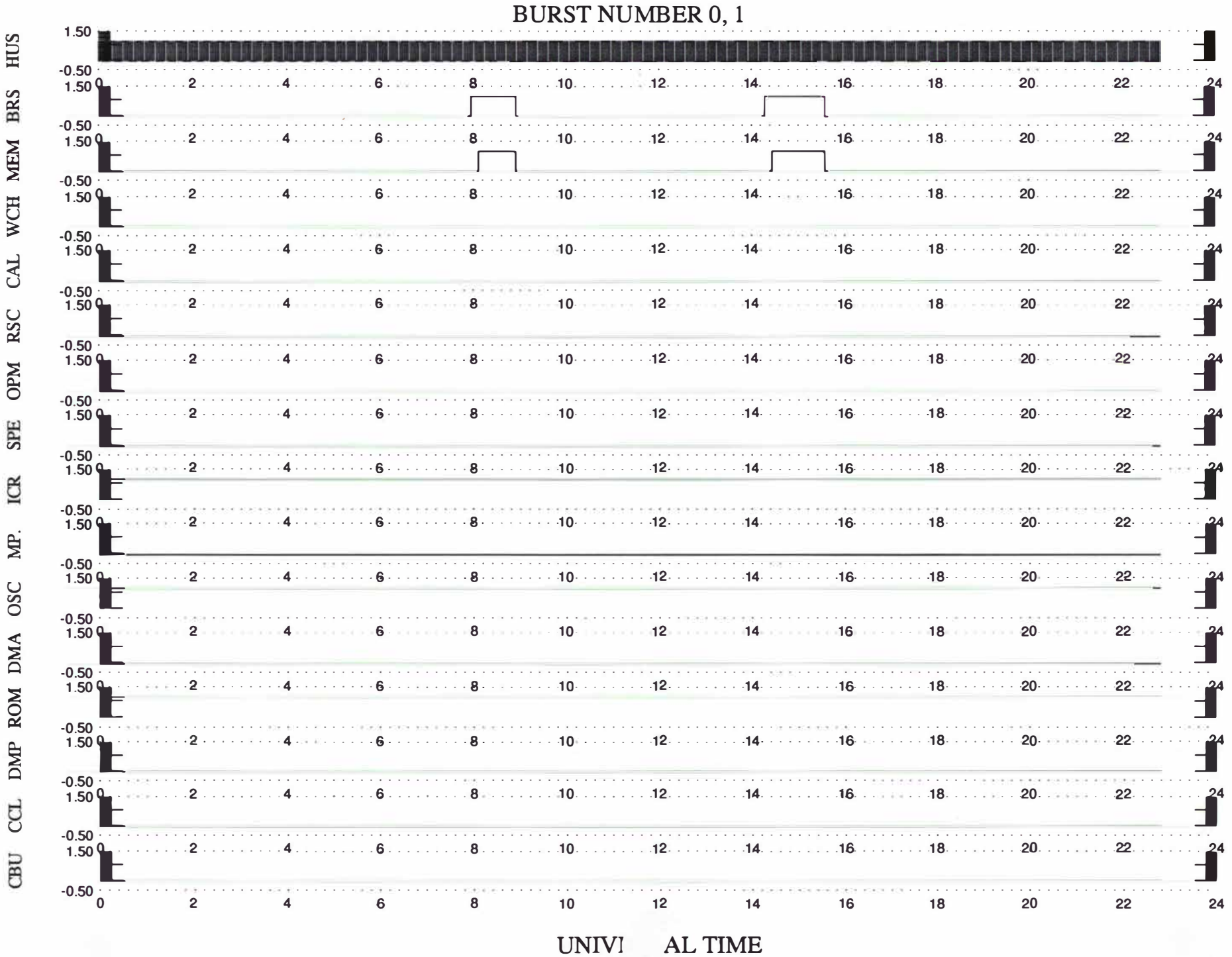
Data fro 970114 19020 and 970115 48960 is not yet available.

David Palmer
palmer@lheamail.gsfc.nasa.gov
USA (301) 286-2739 Voice
USA (301) 286-1682 Fax


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: 97/01/07, 0000:00
Plot created: 97/01/09, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

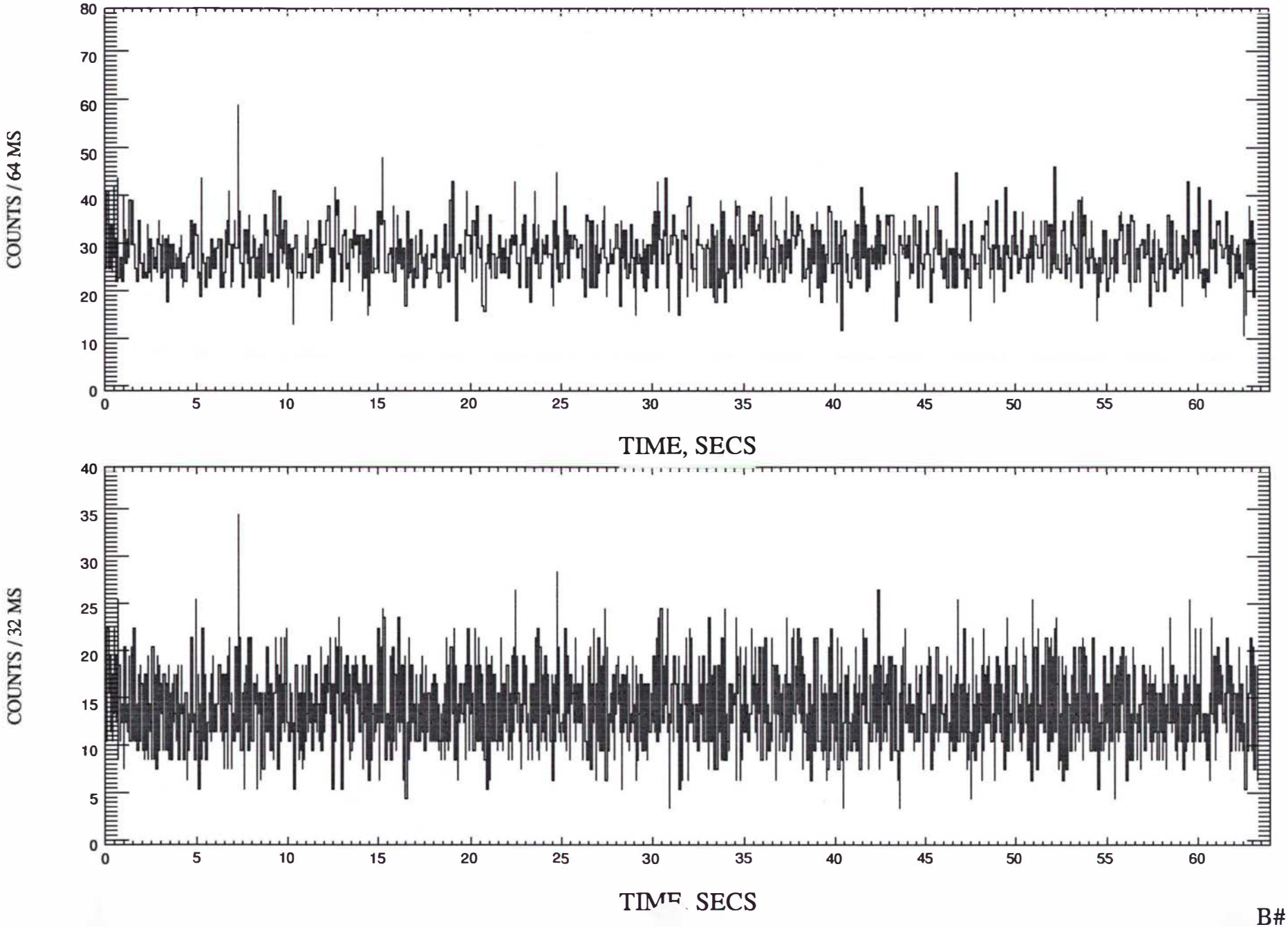

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/07
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/09, 1008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

HUS MODES EDR day 7, year 1997 to day 7, year 1997 5/5/97



HUS 2A TRIGGERED DATA EDR day 7, year 1997 5/2/97

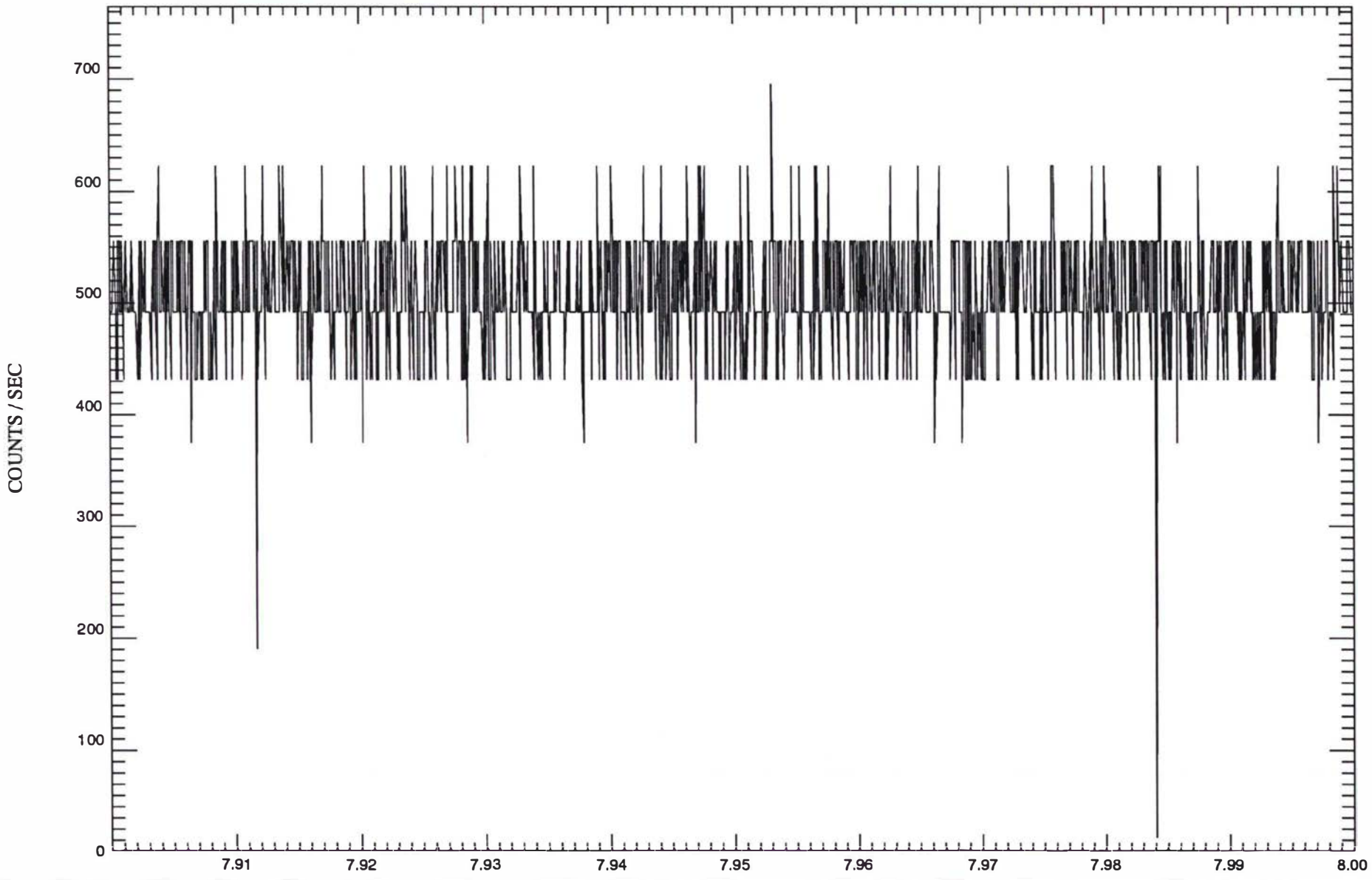
Burst Counter 0 at UT= 7.953246934679 h=28631.689 s 07:57:11.689



B# 1

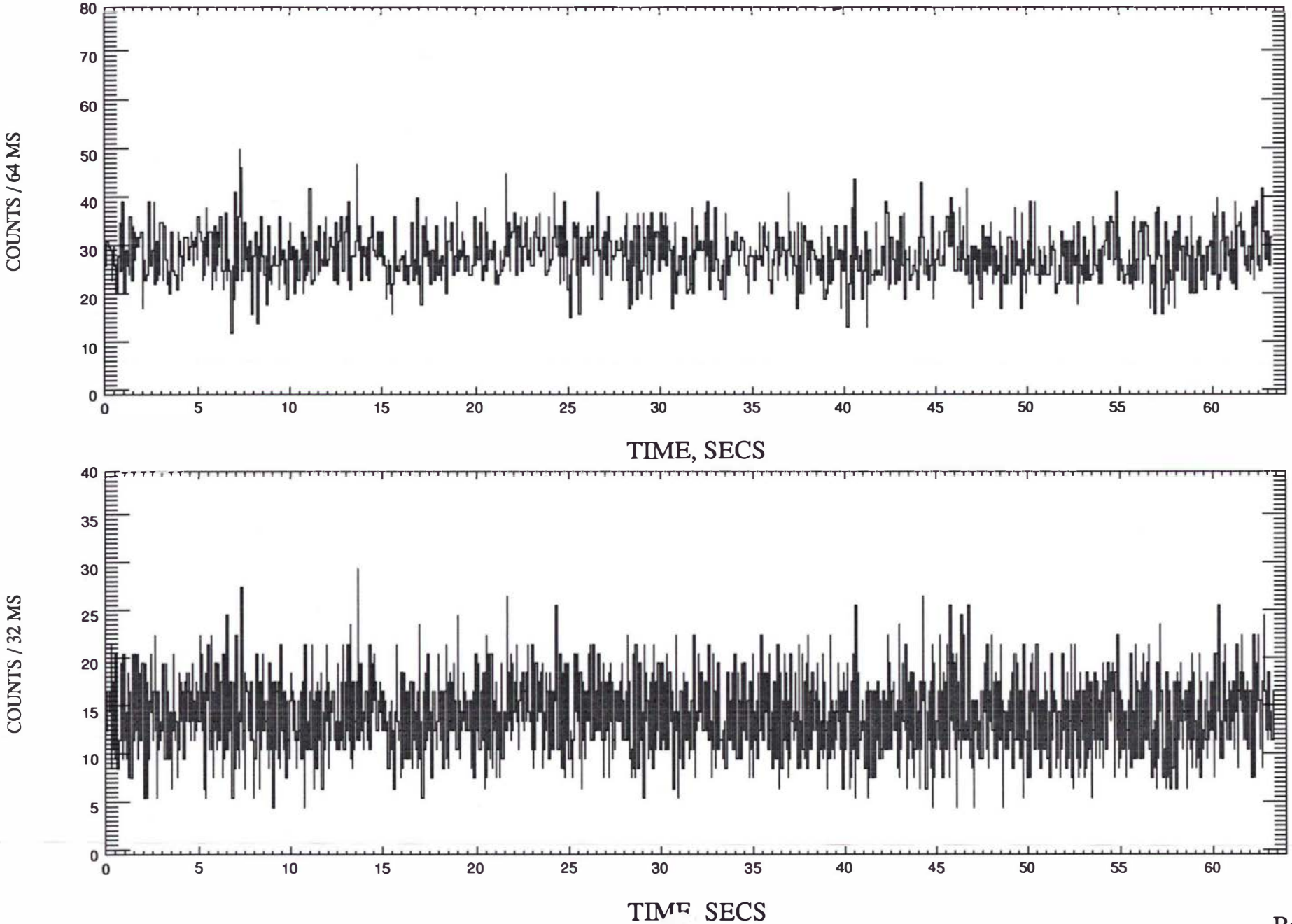
HUS 2A, MODE 1, NOT AVERAGED QEDR day 7, year 1997 to day 7, year 1997 1/9/97

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 7, year 1997 5/2/97

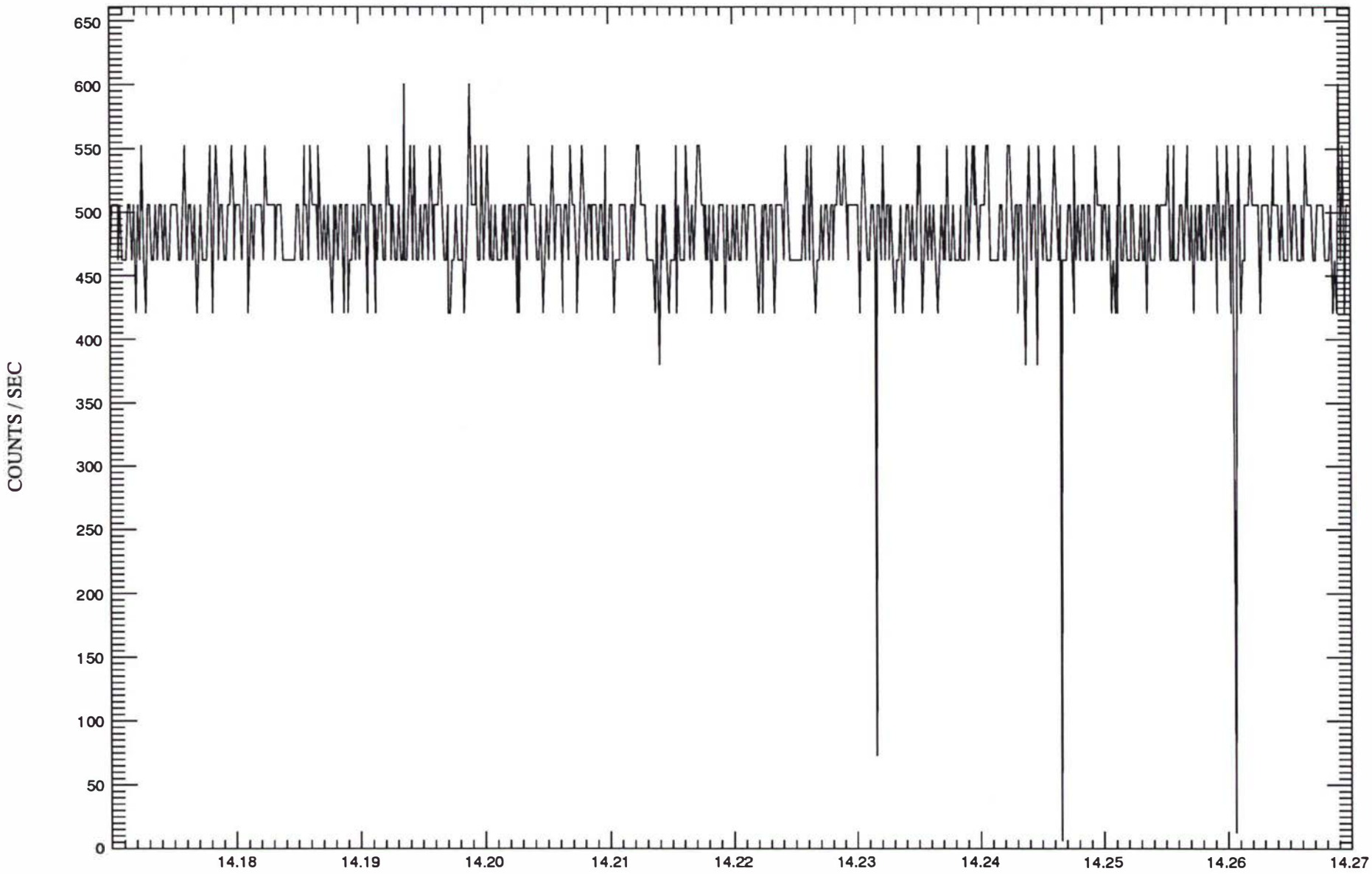
Burst Counter 1 at UT=14.224536480374 h=51208.331 s 14:13:28.331



B# 2

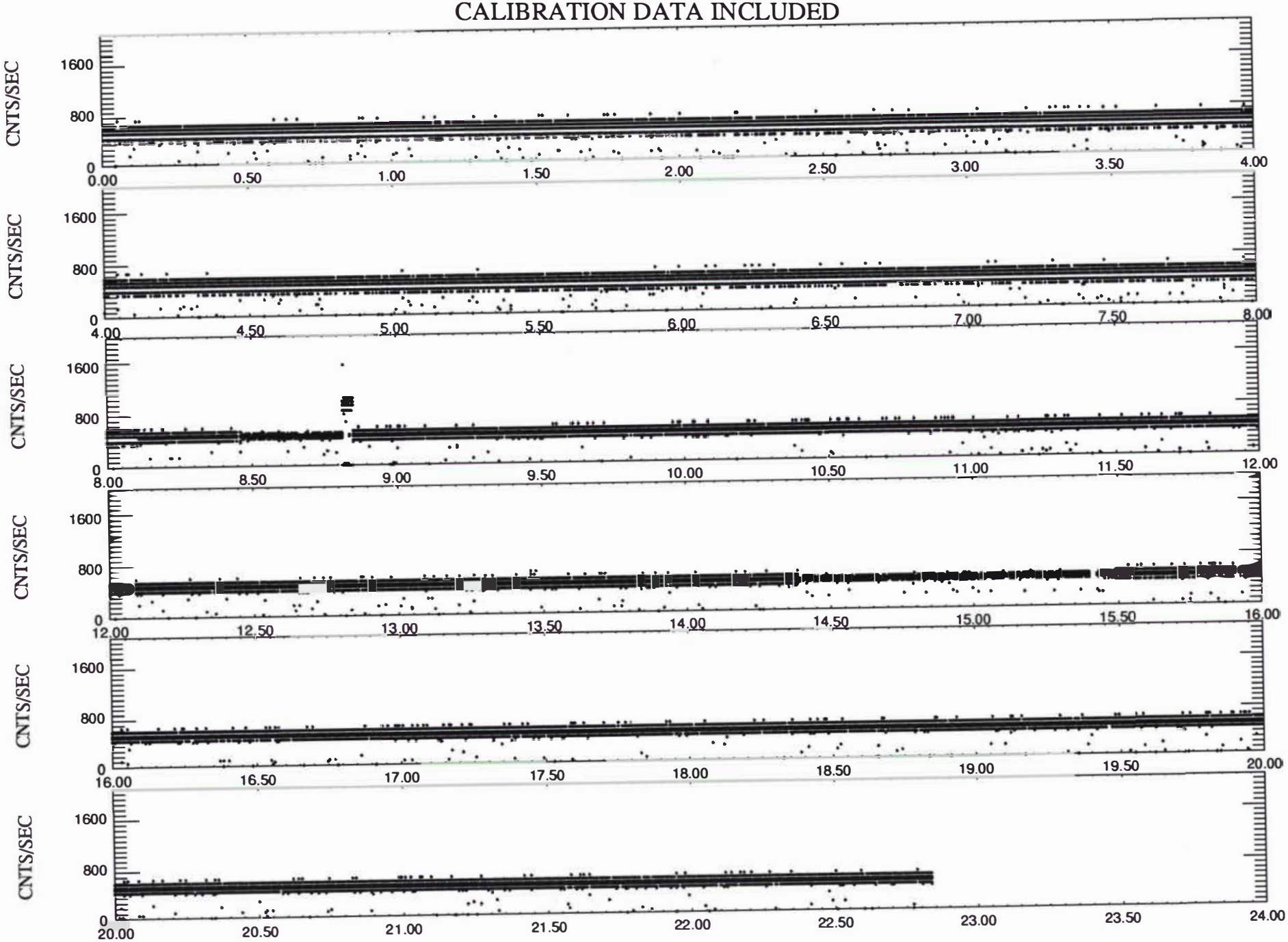
HUS 2A, MODE 1, NOT AVERAGED QEDR day 7, year 1997 to day 7, year 1997 1/9/97

CALIBRATION DATA INCLUDED



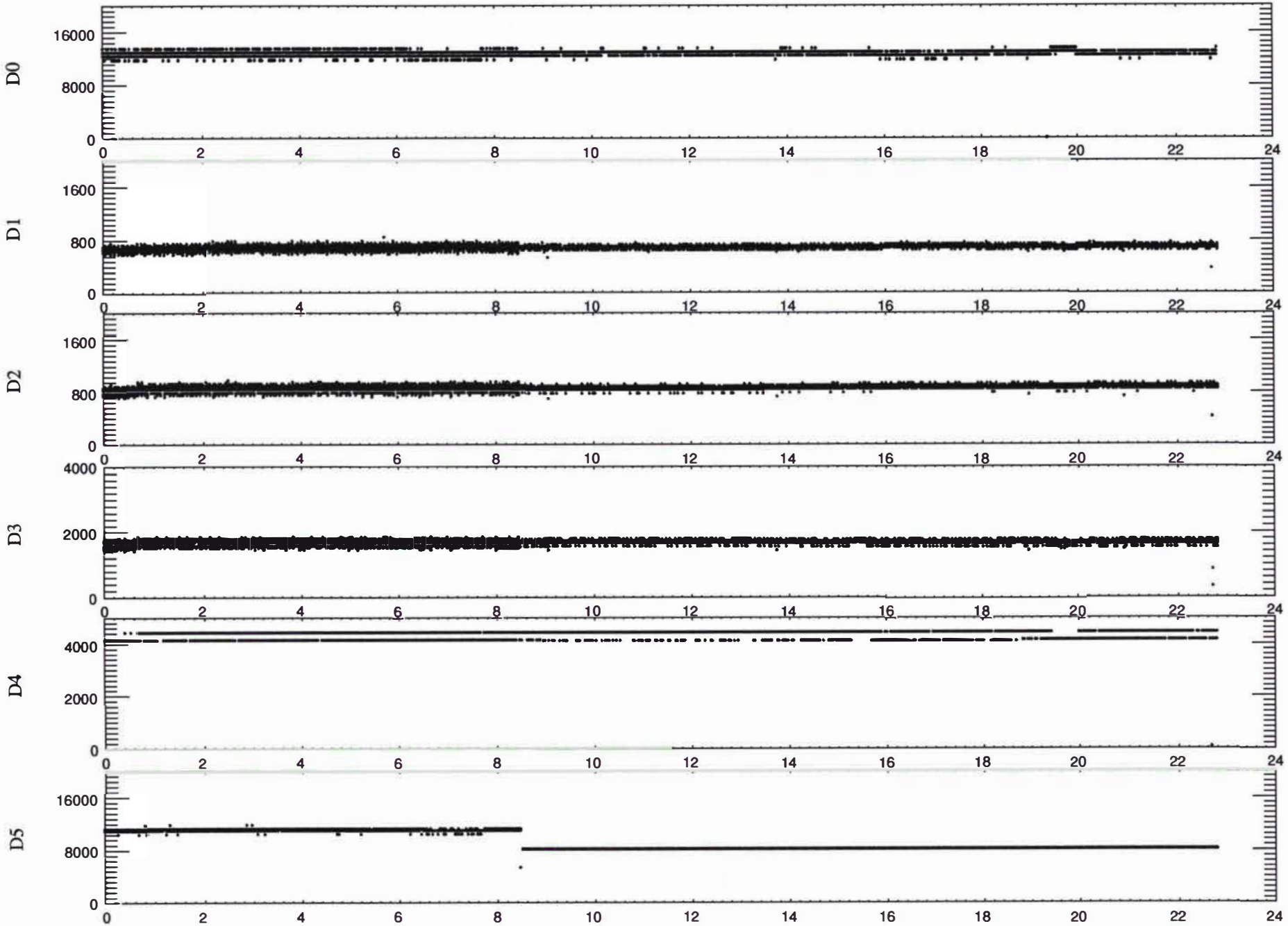
HUS 2A, MODE 1, NOT AVERAGED EDR day 7, year 1997 to day 7, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 7, year 1997 to day 7, year 1997 5/5/97



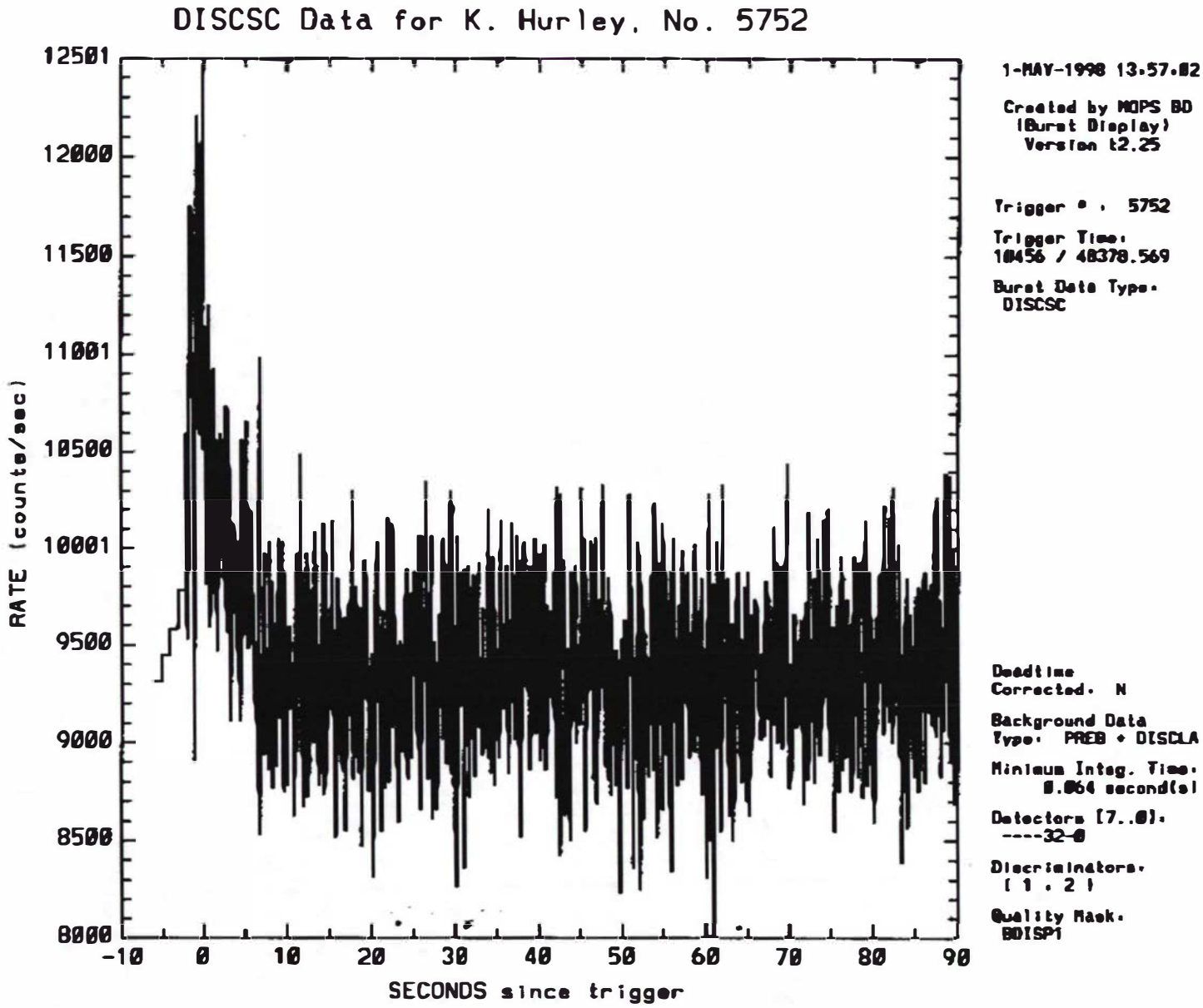
From HENZE@fender.msfc.nasa.gov Thu Jan 9 13:50 PST 1997
Date: Thu, 9 Jan 1997 15:49:46 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.nasa.gov,
scott@circe.gsfc.nasa.gov, 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: BATSE triggers from GRO J1744-28 (this takes place of AD messages)

This listing contains BATSE triggers for GRO J1744-28
beginning with number 5728.
TJD = Truncated Julian Day, SoD = Seconds of Day.

Trig. No.	TJD / SoD of start time (or trigger time)	
5728	10443 / 75688.6495	
5742	10453 / 558.7935	
5743	10453 / 5778.1215	
5745	10453 / 43069.1295	
5747	10453 / 84931.2735	
5748	10454 / 32152.2655	
5749	10454 / 68191.9455	
5750	10454 / 80035.0175	
5751	10456 / 32742.8575	09:05:43
5752	10456 / 48378.5695	13:26:18
5754	10456 / 75239.3695	20:53:59

Jan 8

Redo following plots


DISCSC Data for K. Hurley, No. 5752
RATE (counts/sec)
12501
12000
11500
11001
10500
10001
9500
9000
8500
8000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
1-MAY-1998 13:57:02
Created by MOPS BD
(Burst Display)
Version 2.25
Trigger # : 5752
Trigger Time:
10456 / 48378.569
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 second(s)
Detectors [7..0]:
----32-0
Discriminators:
[1 , 2]
Quality Mask:
BDISP1

BATSE# 5751

ULYSSES RT 11/ 1/97

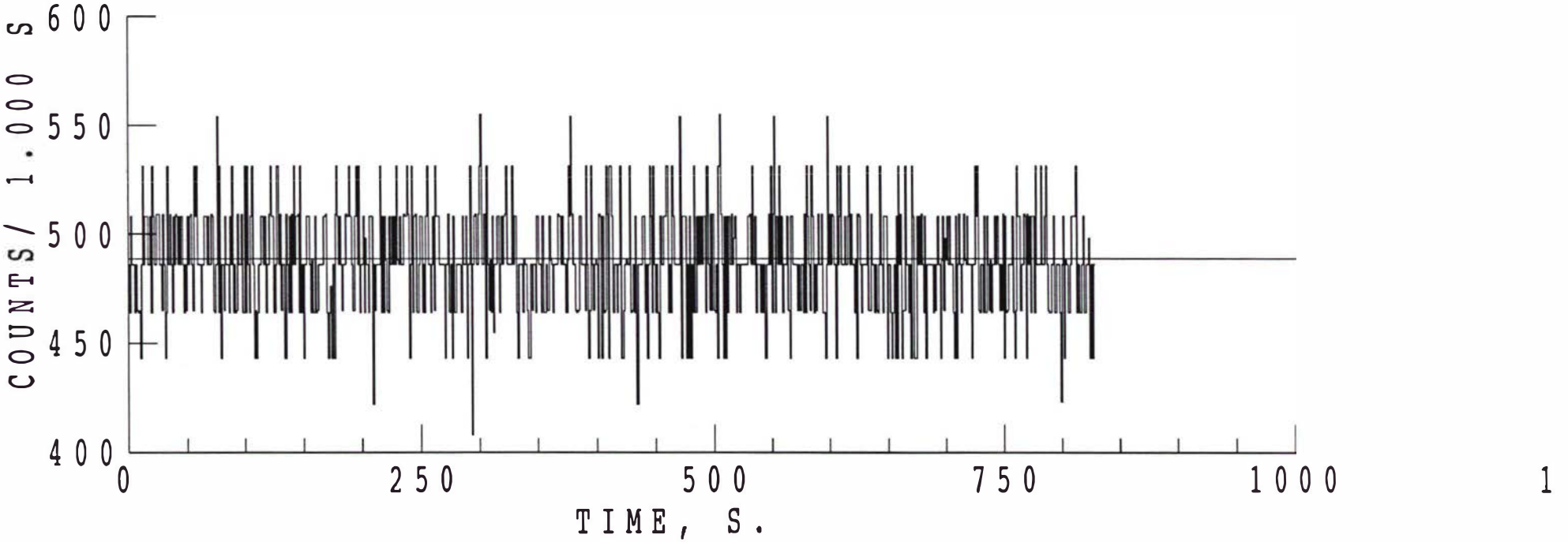
7/ 1/97 32832.113 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE# 5752

ULYSSES RT 11/ 1/97

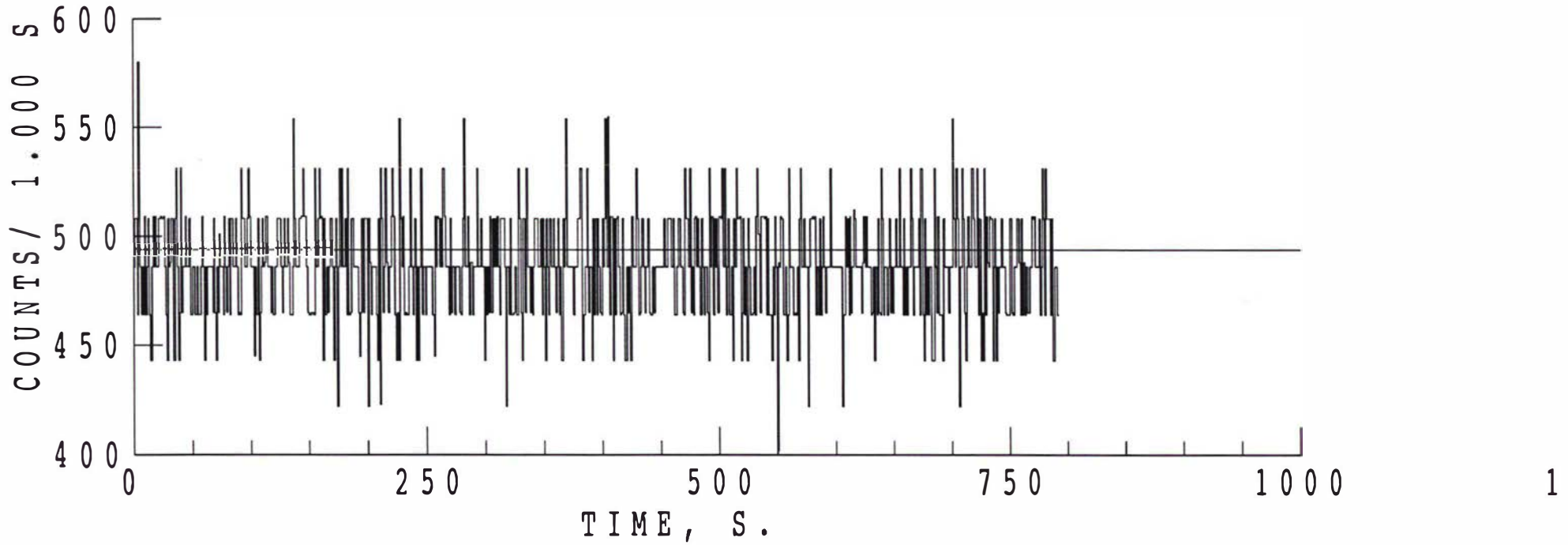
7/ 1/97 48492.309 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE# 5754

ULYSSES RT 11/ 1/97

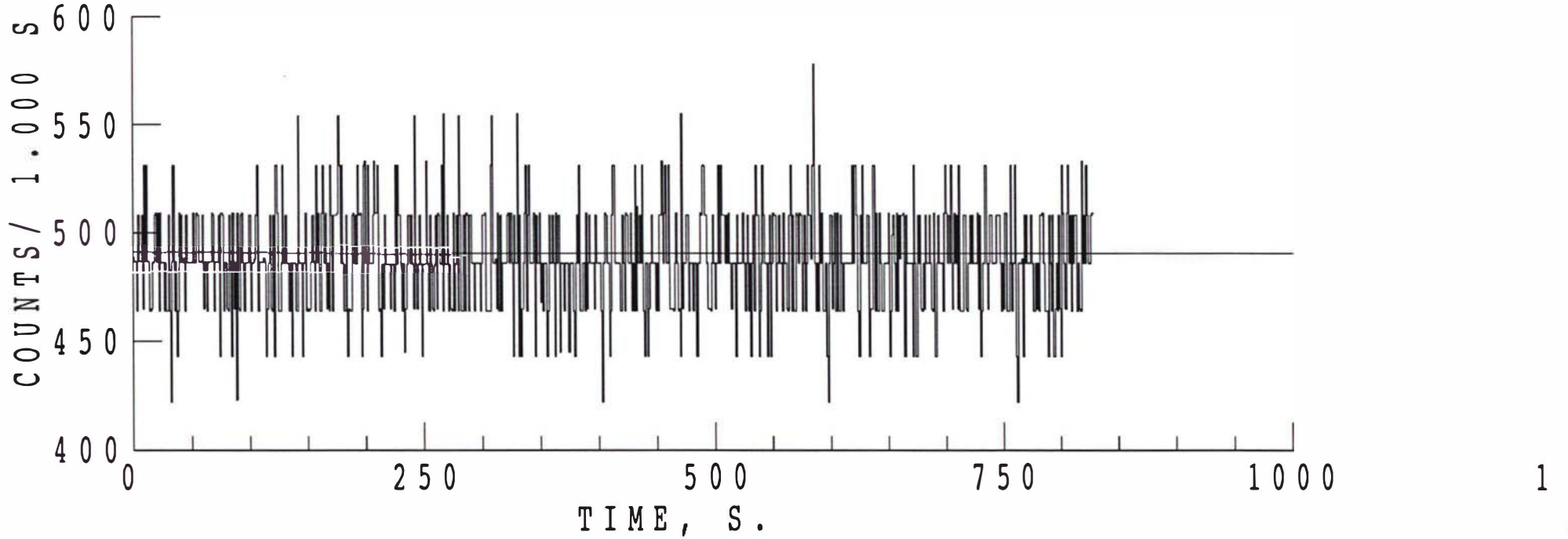
7/ 1/97 75348.133 s

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 DEAL@fender.msfc.nasa.gov Mon Jan 13 08:38 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id IAA16011; Mon, 13 Jan 1997 08:38:20 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 13 Jan 1997 10:36:41 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970113103641.2ba01926@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5753
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5753
EVENT OF 1997 JAN 8 DAY OF YEAR= 8
EVENT CROSSING TIME AT BATSE : 62041. S. OR 17:14:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 1.000 -54.000
BATSE PEAK COUNTING RATE: 2100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 1/ 97 IS:
RA= 177.320 DEC= 33.504 DIST= 4.159 AU
BATSE-ULYSSES DISTANCE = 622128464. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 20.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1941.73 SECS.
CROSSING TIME AT ULYSSES IS 63983. S. OR 17:46:22 +/- 206.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 1/ 97 IS:
RA= 182.401 DEC= 2.002 DIST= 1.094 AU
MARS-BATSE DISTANCE = 163646240. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 335.99 SECS.
CROSSING TIME AT MARS IS 62377. S. OR 17:19:36 +/- 79.79 SECONDS

BATSE BURST TRIGGER
NO.: 57553

TIME: TJD=0456 SECONDS=62041

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=119.2 AZIMUTH=292.5 ERROR=4.99 DEGREES

COMMENTS:
GRB LASTING ~ 25 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5753	970108	10456	62041	2100	001	-54	25

BATSE# 5753

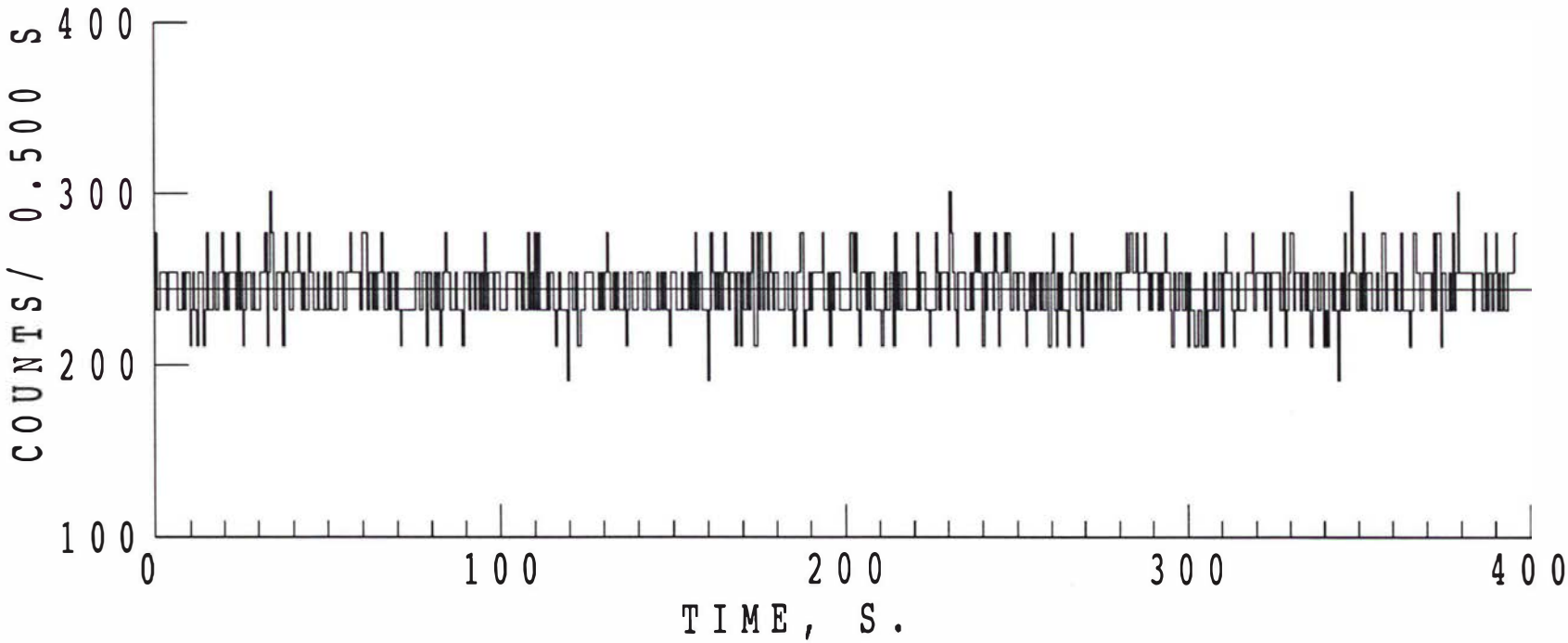
ULYSSES RT 13/ 1/97

8/ 1/97 63792.051 s

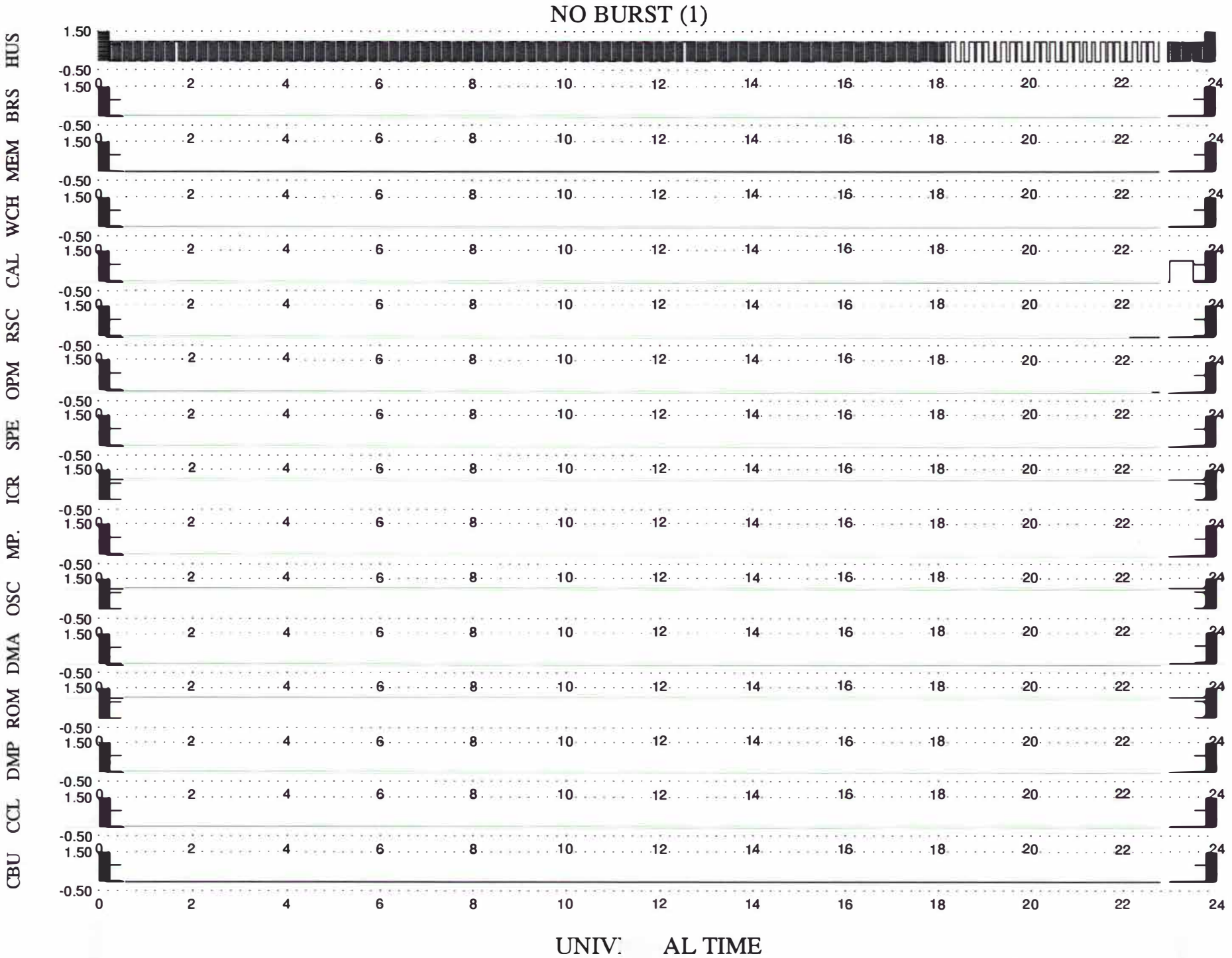
0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



HUS MODES EDR day 8, year 1997 to day 8, year 1997 5/5/97



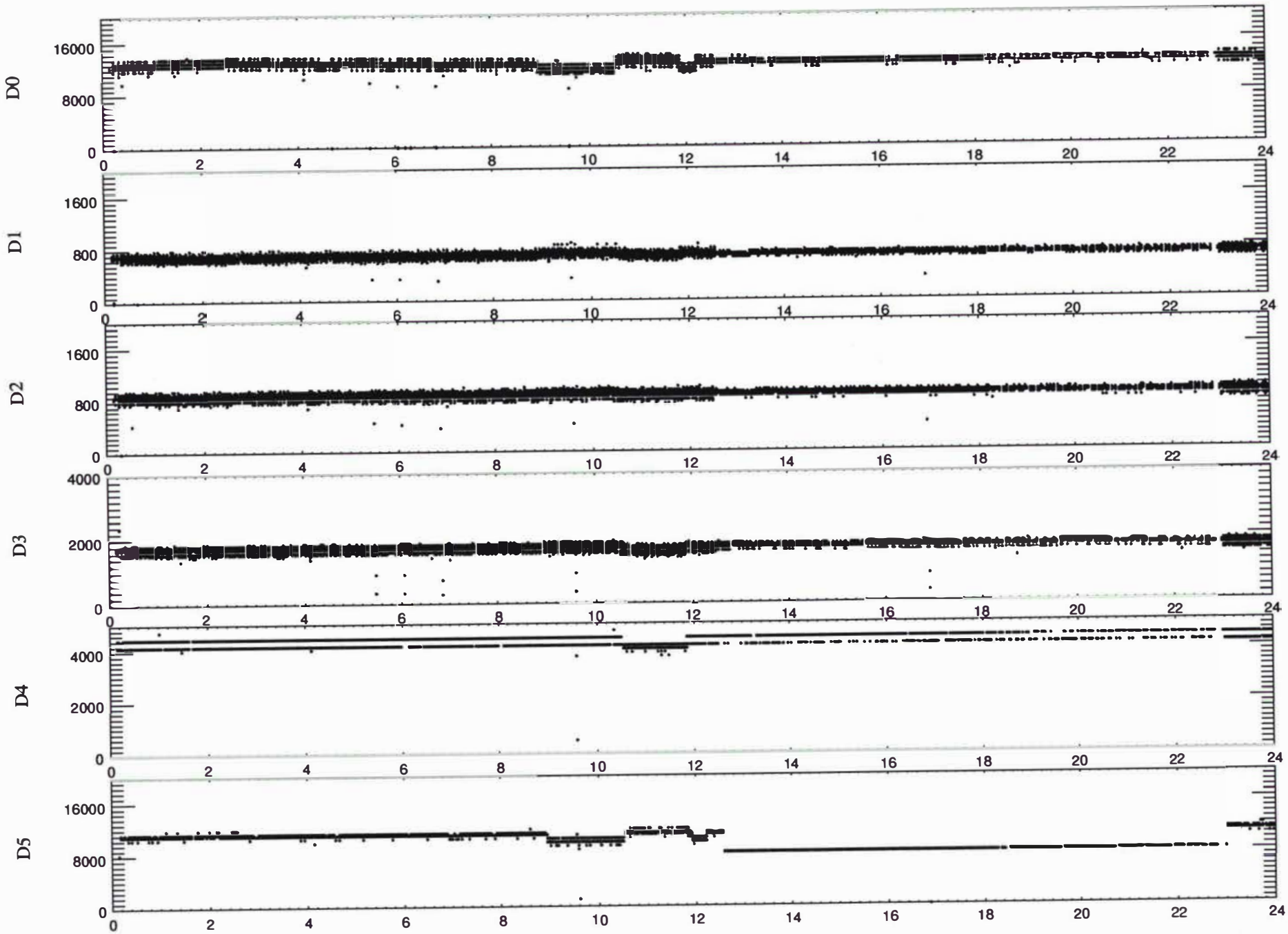
HUS 2A, MODE 1, NOT AVERAGED EDR day 8, year 1997 to day 8, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 8, year 1997 to day 8, year 1997 5/5/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
1997	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

From David.M.Palmer.1@gsfc.nasa.gov Tue Jan 21 11:09 PST 1997
X-Sender: palmer@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 21 Jan 1997 14:09:05 -0400
    bonnard@rosserv.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
        helmut.seifert.1@gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov,
        palmer@rosserv.gsfc.nasa.gov
From: David Palmer <David.M.Palmer.1@gsfc.nasa.gov>
Subject: Posible burst detections

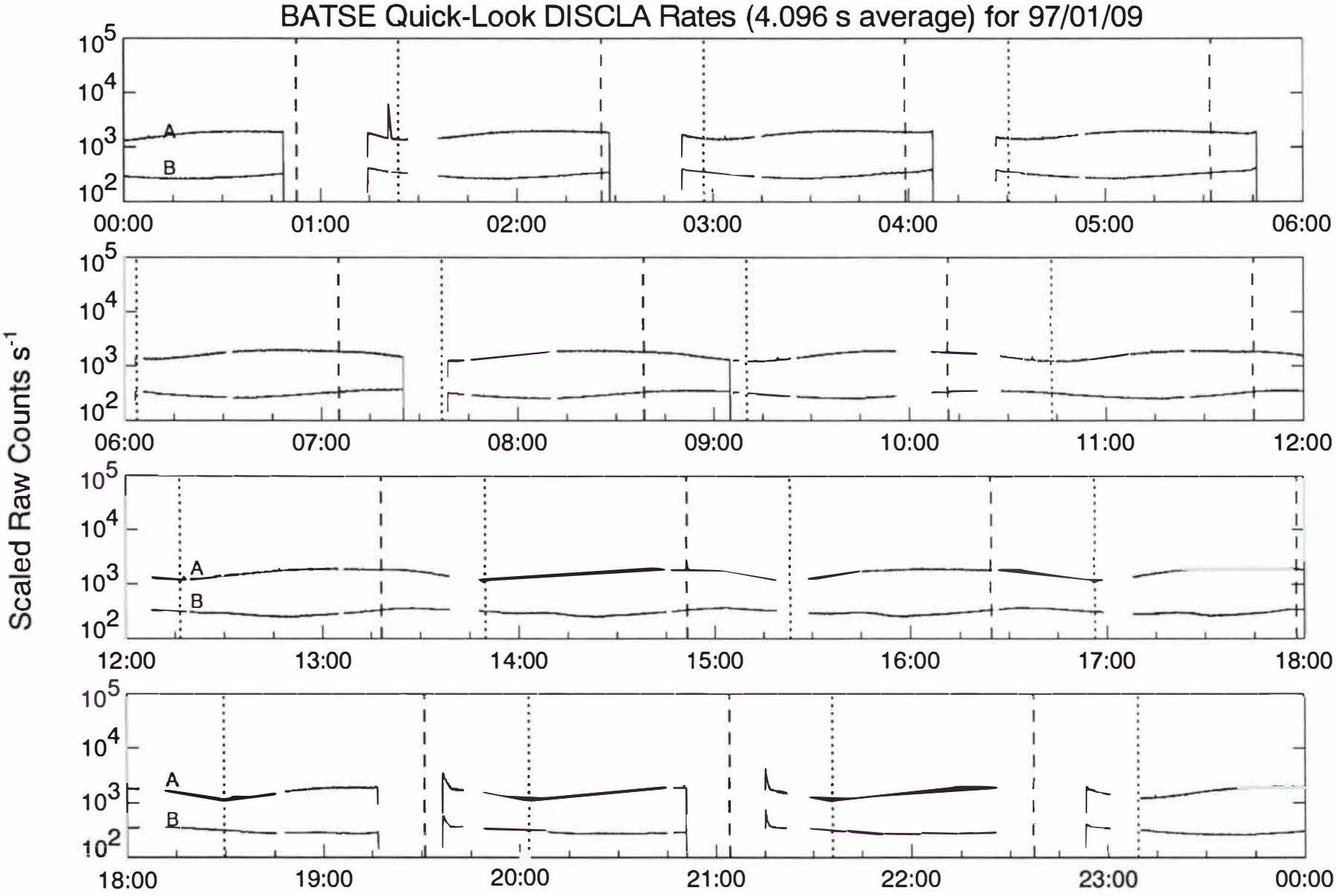
Nothing apparent at 970105 06000, 970105 65820, 950107 28620, 970109 05100, 970110_31980, 970110_52260, 970113_52260, all +/- 2100 seconds

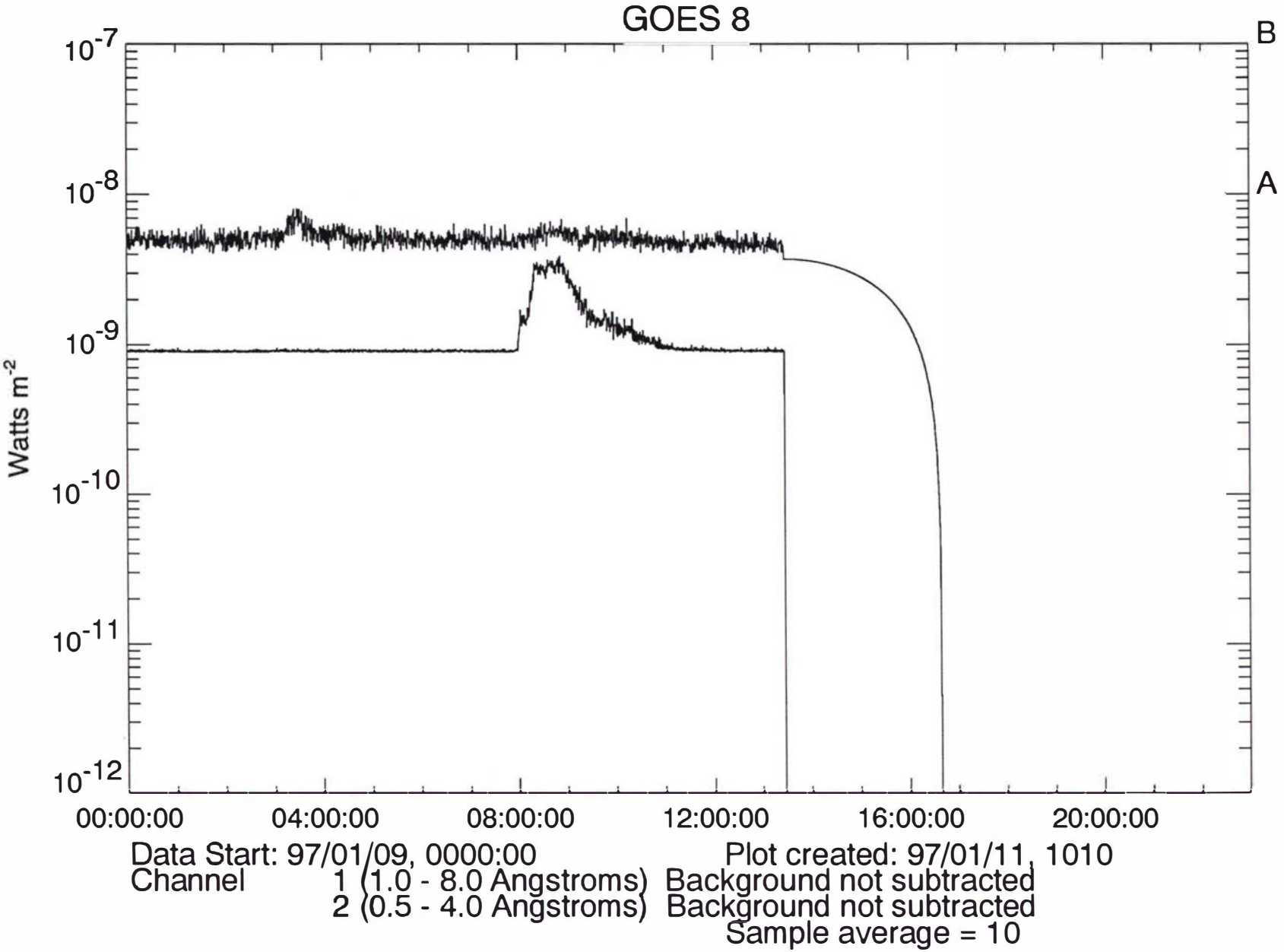
Possible brief event at 970107_51292.6 - 51292.9 (one sample time for the fast rate) with a significance of 6 sigma 100-300 keV, 4.5 sigma 35-100 keV (different sampling times).

There is a strong, real trigger at 970111_85744, which lasts about 300 seconds. Do you see it? It doesn't show up on the GOES x-ray plots or particle plots
gopher://proton.sec.noaa.gov:70/I9/plots/xray/gif/970113
so it doesn't seem to be a solar flare.

Data fro 970114 19020 and 970115 48960 is not yet available.

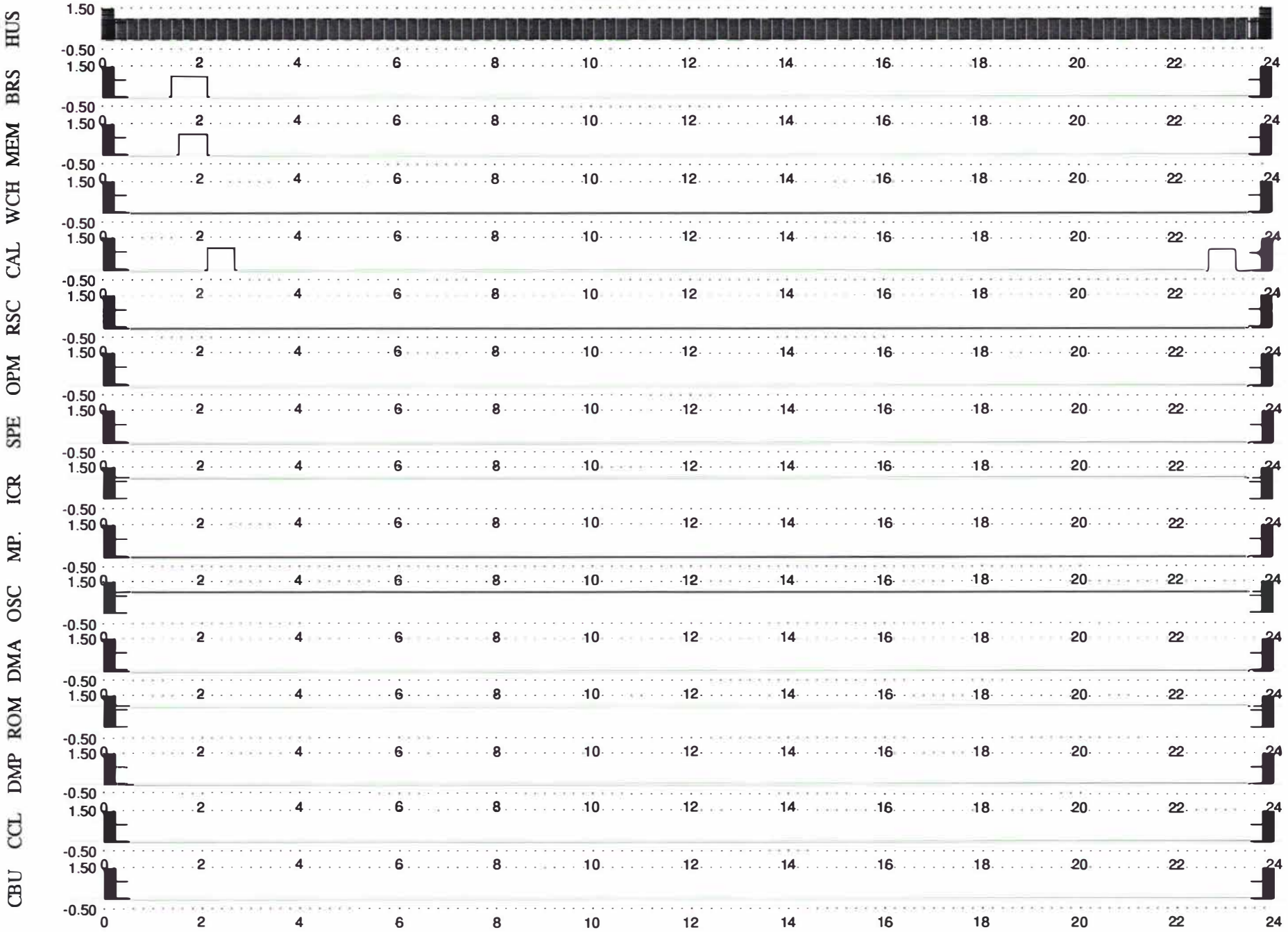
David Palmer
palmer@lheamail.gsfc.nasa.gov
USA (301) 286-2739 Voice
USA (301) 286-1682 Fax


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/09
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: 97/01/11, 1010 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}
10^{-11}
10^{-12}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/09, 0000:00
Plot created: 97/01/11, 1010
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

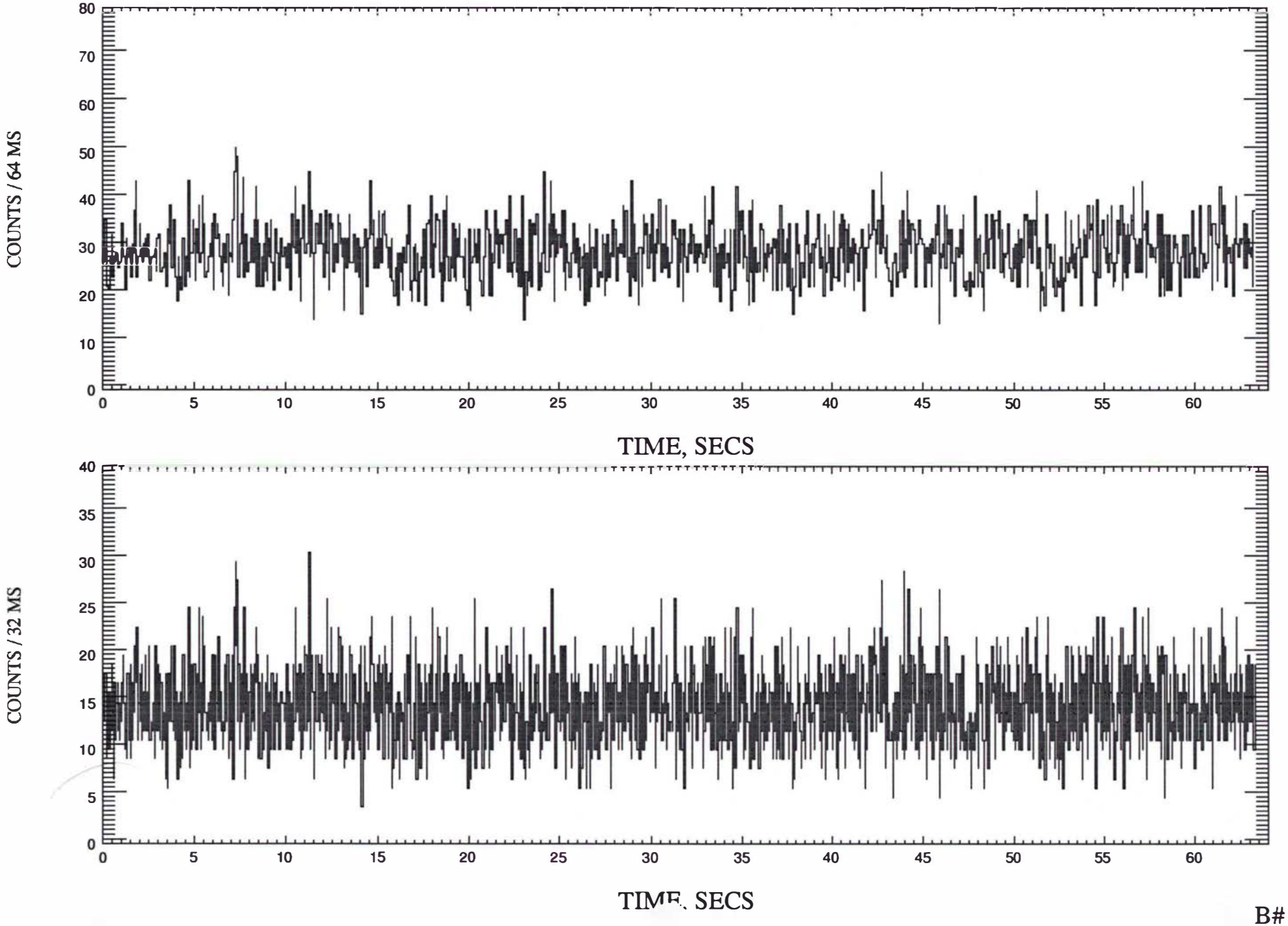
HUS MODES EDR day 9, year 1997 to day 9, year 1997 5/5/97

BURST NUMBER 2



HUS 2A TRIGGERED DATA EDR day 9, year 1997 5/2/97

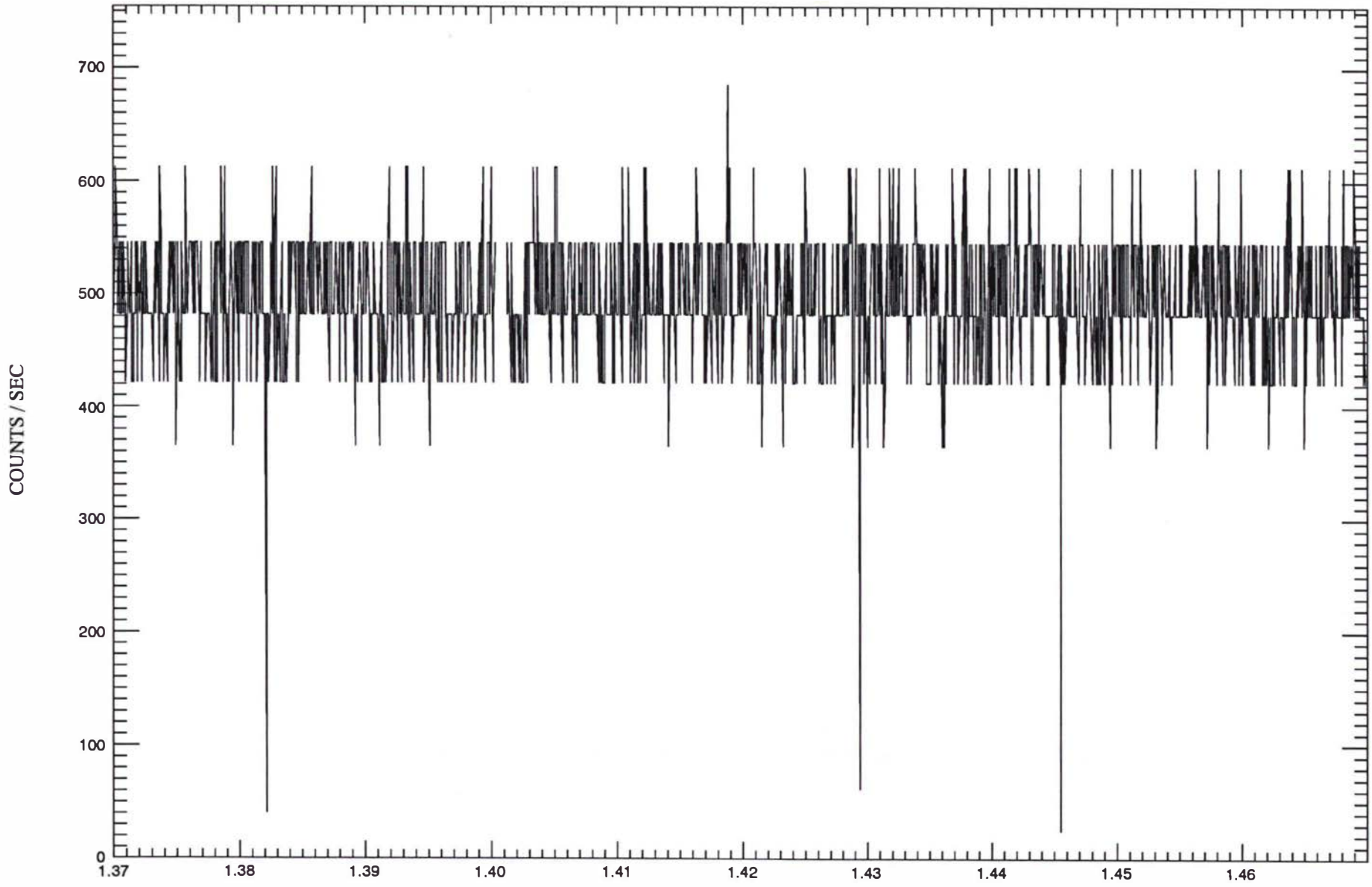
Burst Counter 2 at UT= 1.418092464871 h= 5105.133 s 01:25:05.133



B# 1

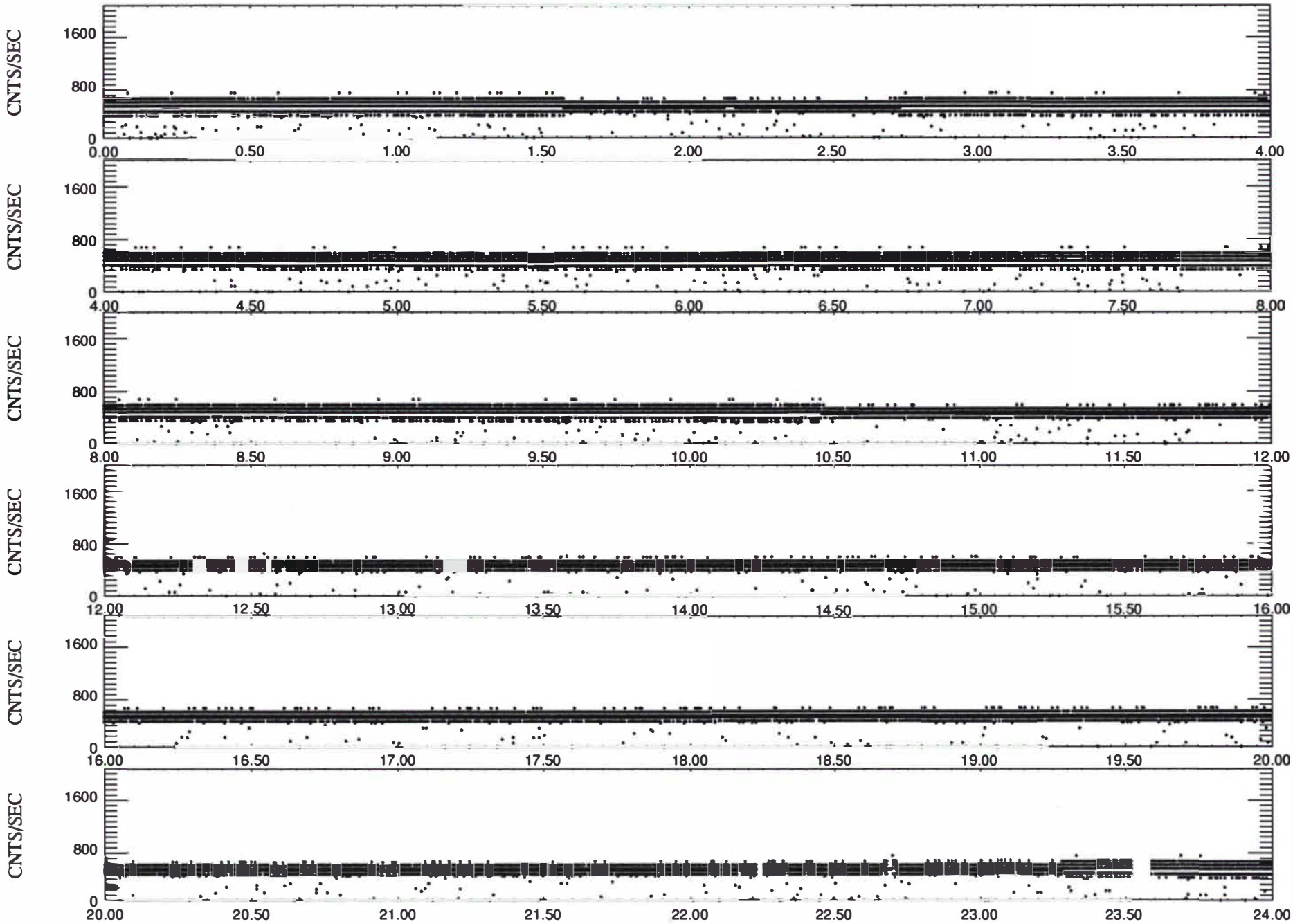
HUS 2A, MODE 1, NOT AVERAGED QEDR day 9, year 1997 to day 9, year 1997 1/13/97

CALIBRATION DATA INCLUDED



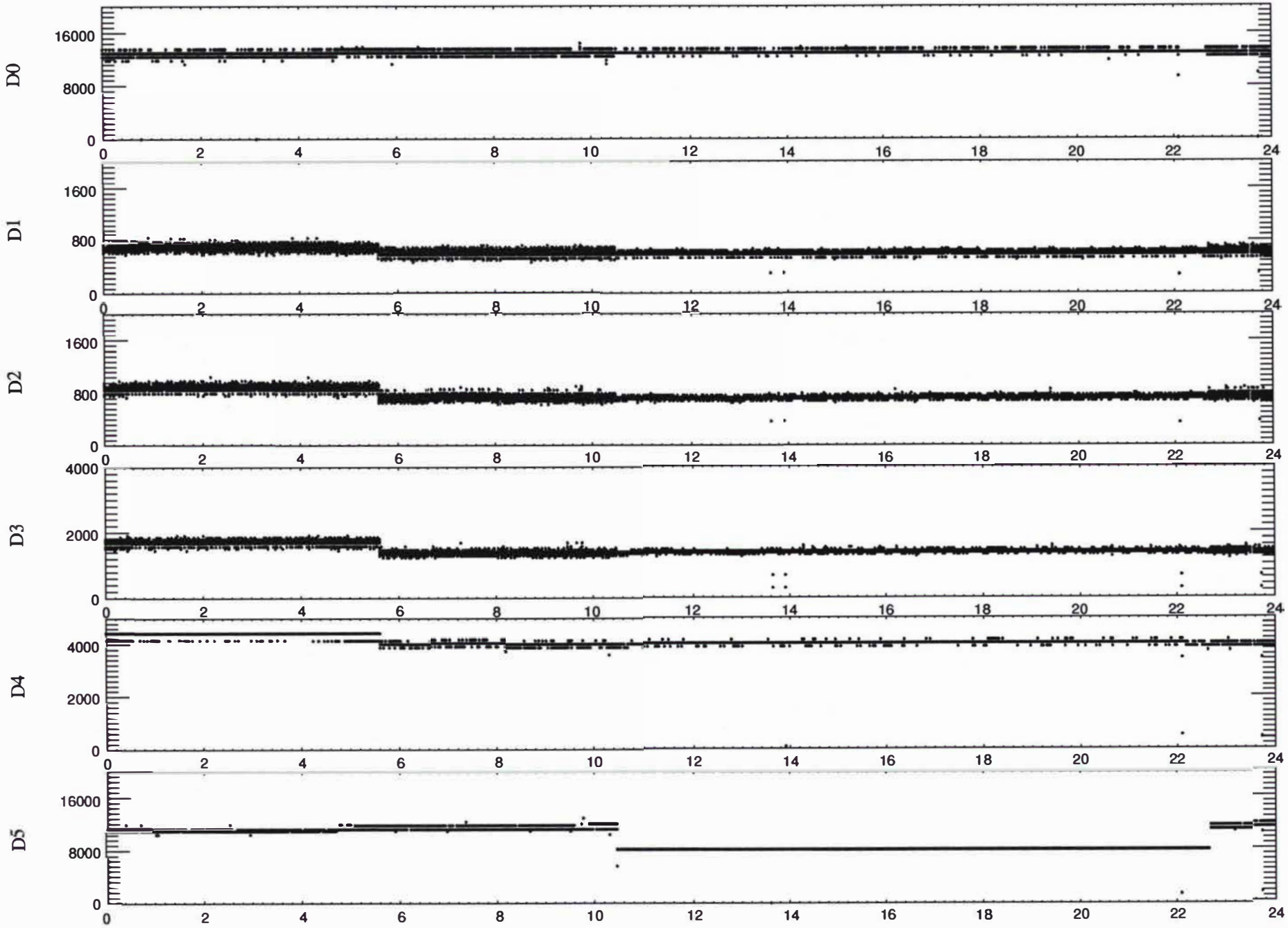
HUS 2A, MODE 1, NOT AVERAGED EDR day 9, year 1997 to day 9, year 1997 5/5/97

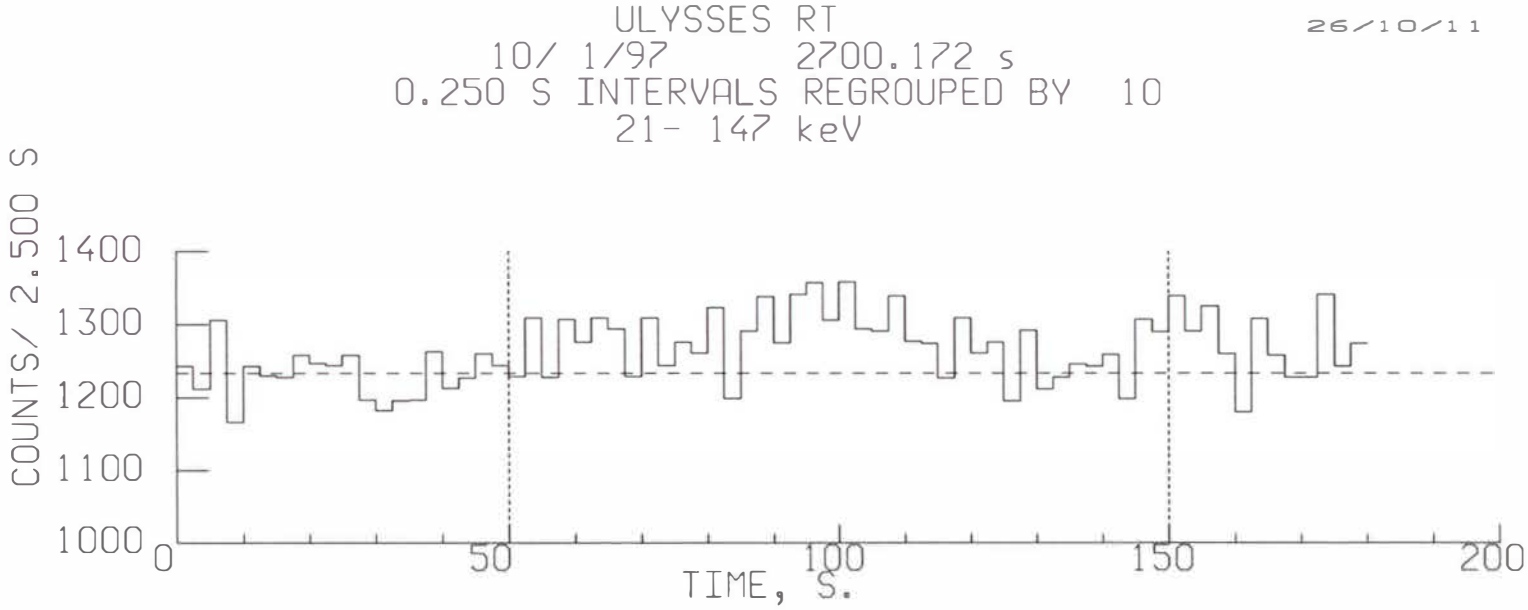
CALIBRATION DATA INCLUDED



UNIV' AL TIME

HUS 2B COUNTS / SEC EDR day 9, year 1997 to day 9, year 1997 5/5/97



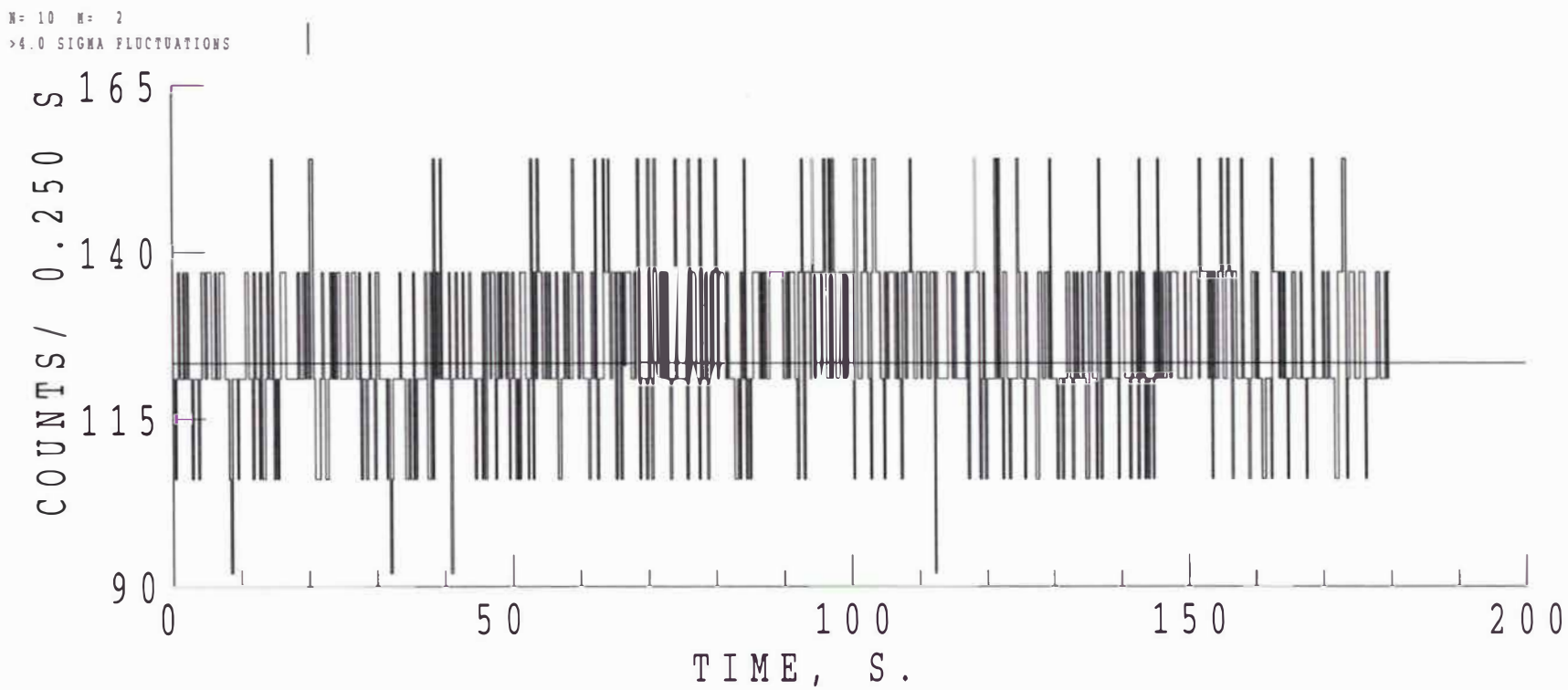

ULYSSES RT
26/10/11
10/ 1/97 2700.172 s
0.250 S INTERVALS REGROUPED BY 10
21- 147 keV
COUNTS/ 2.500 S
1400
1300
1200
1100
1000
0
50
100
150
200
TIME, S.

KONUS 19970110 02792

ULYSSES RT 25/10/11

10/01/97 2700.172 s

0- 0 keV



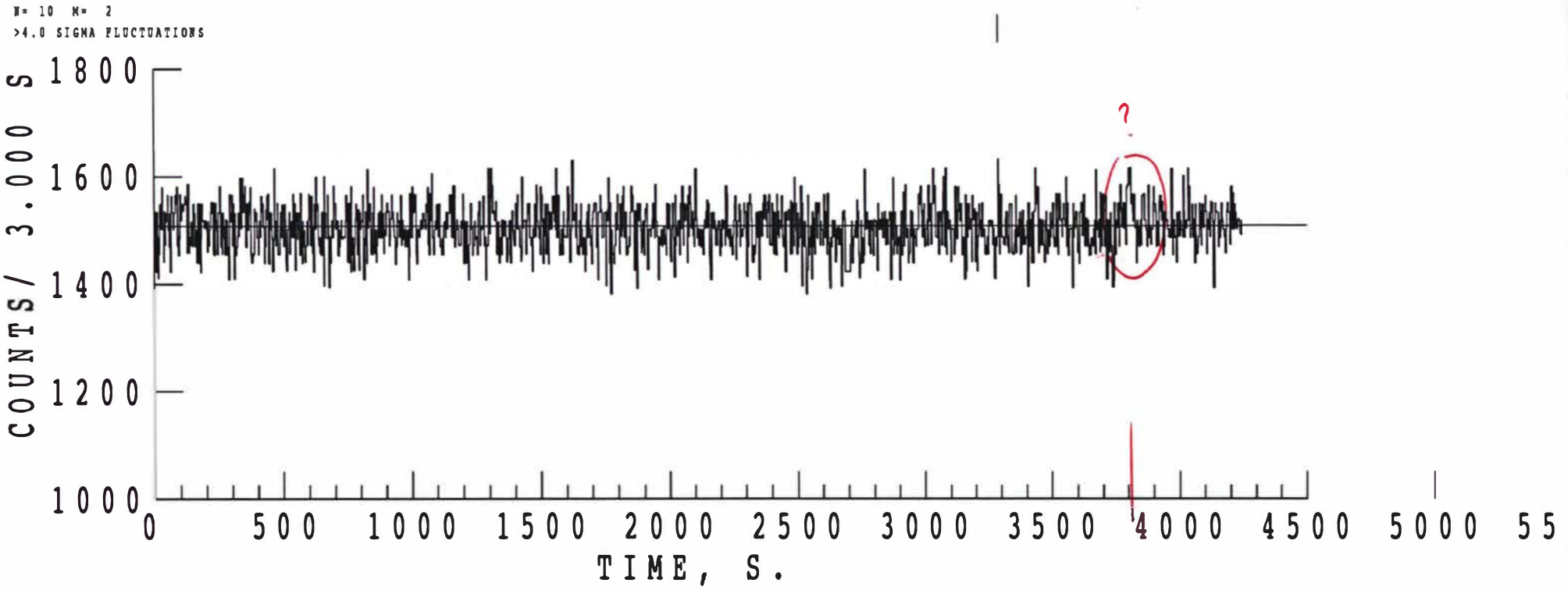
KONUS (ion)

ULYSSES RT 01/02/00

09/01/97 85392.125 s

0.250 S INTERVALS REGROUPED BY 12

0- 0 keV



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
ject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
,97	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

From DEAL@fender.msfc.nasa.gov Mon Jan 13 09:30 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 13 Jan 1997 11:29:56 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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.: 5767

TIME: TJD=0458 SECONDS=54081

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

From DEAL@fender.msfc.nasa.gov Mon Jan 13 09:36 PST 1997
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
        id JAA16387; Mon, 13 Jan 1997 09:36:53 -0800
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 13 Jan 1997 11:36:40 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970113113640.2ba01926@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5770
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5770
EVENT OF 1997 JAN 10 DAY OF YEAR= 10
EVENT CROSSING TIME AT BATSE : 83571. S. OR 23:12:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 310.000 31.000
BATSE PEAK COUNTING RATE: 4100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 1/ 97 IS:
RA= 177.000 DEC= 33.689 DIST= 4.137 AU
BATSE-ULYSSES DISTANCE = 618949284. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 414.42 SECS.
CROSSING TIME AT ULYSSES IS 83985. S. OR 23:19:45 +/- 407.44 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 1/ 97 IS:
RA= 182.929 DEC= 1.820 DIST= 1.075 AU
MARS-BATSE DISTANCE = 160840384. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 268.30 SECS.
CROSSING TIME AT MARS IS 83839. S. OR 23:17:19 +/- 84.74 SECONDS

BATSE BURST TRIGGER
NO.: 5770

TIME: TJD=0458 SECONDS=83571

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

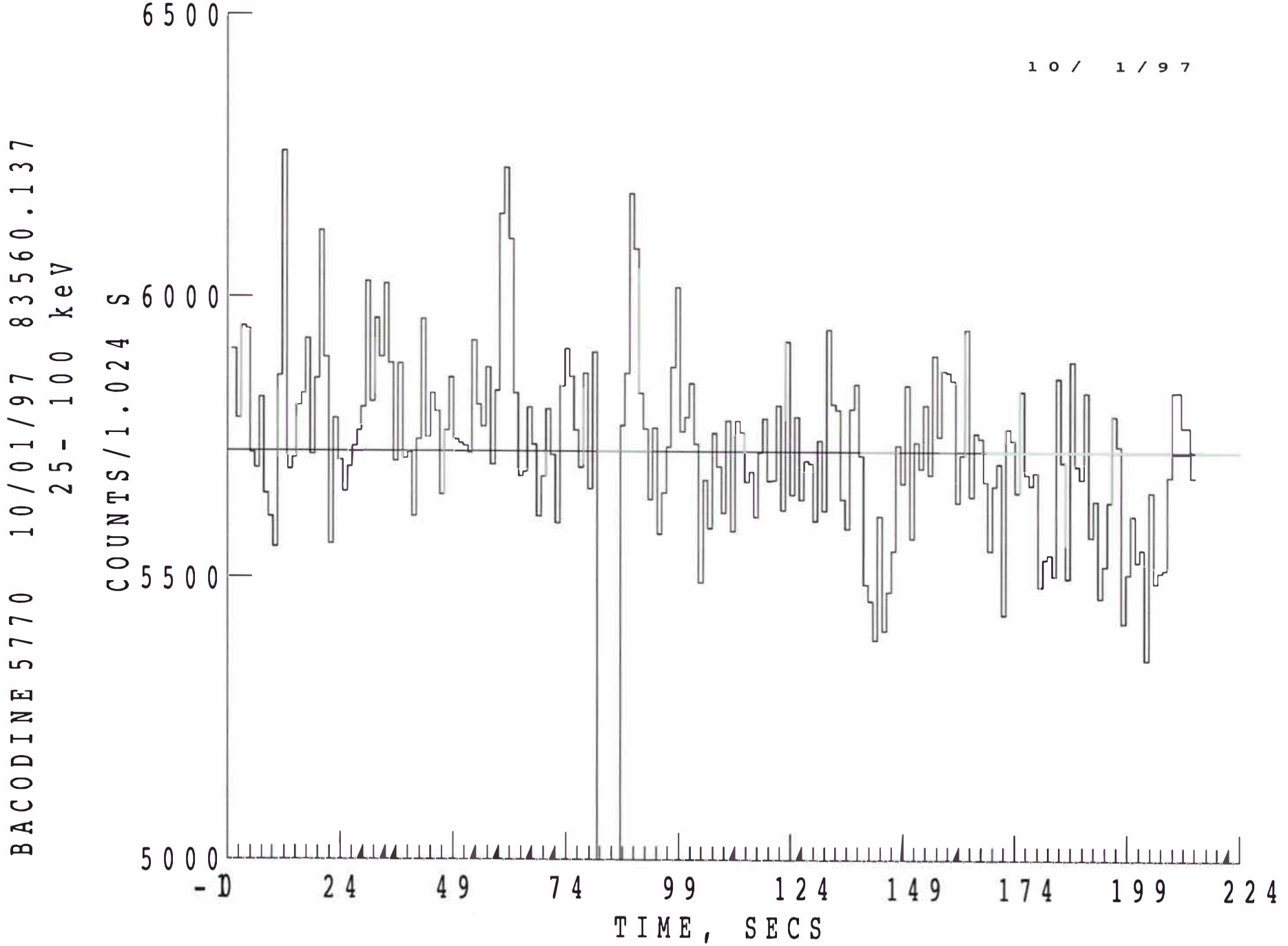
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.8 AZIMUTH=44.9 ERROR=9.5 DEGREES

COMMENTS:
GRB LASTING ~ 0.8 S. NOT VISIBLE ABOVE 300 keV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5770	970110	10458	83571	4100	310	+31	.8


BACODINE 5770 10/01/97 83560.137
25- 100 keV
COUNTS/1.024 S
6500
6000
5500
5000
10/ 1/97
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

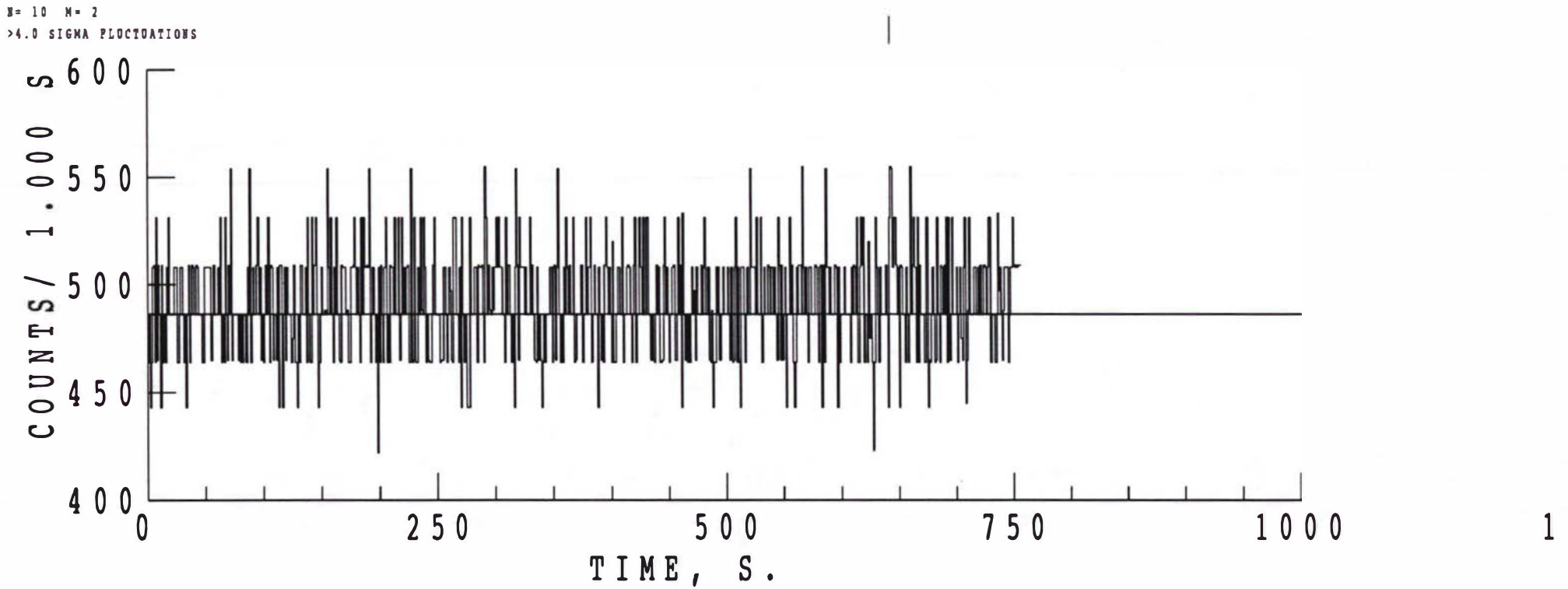
BATSE BURST# 5770

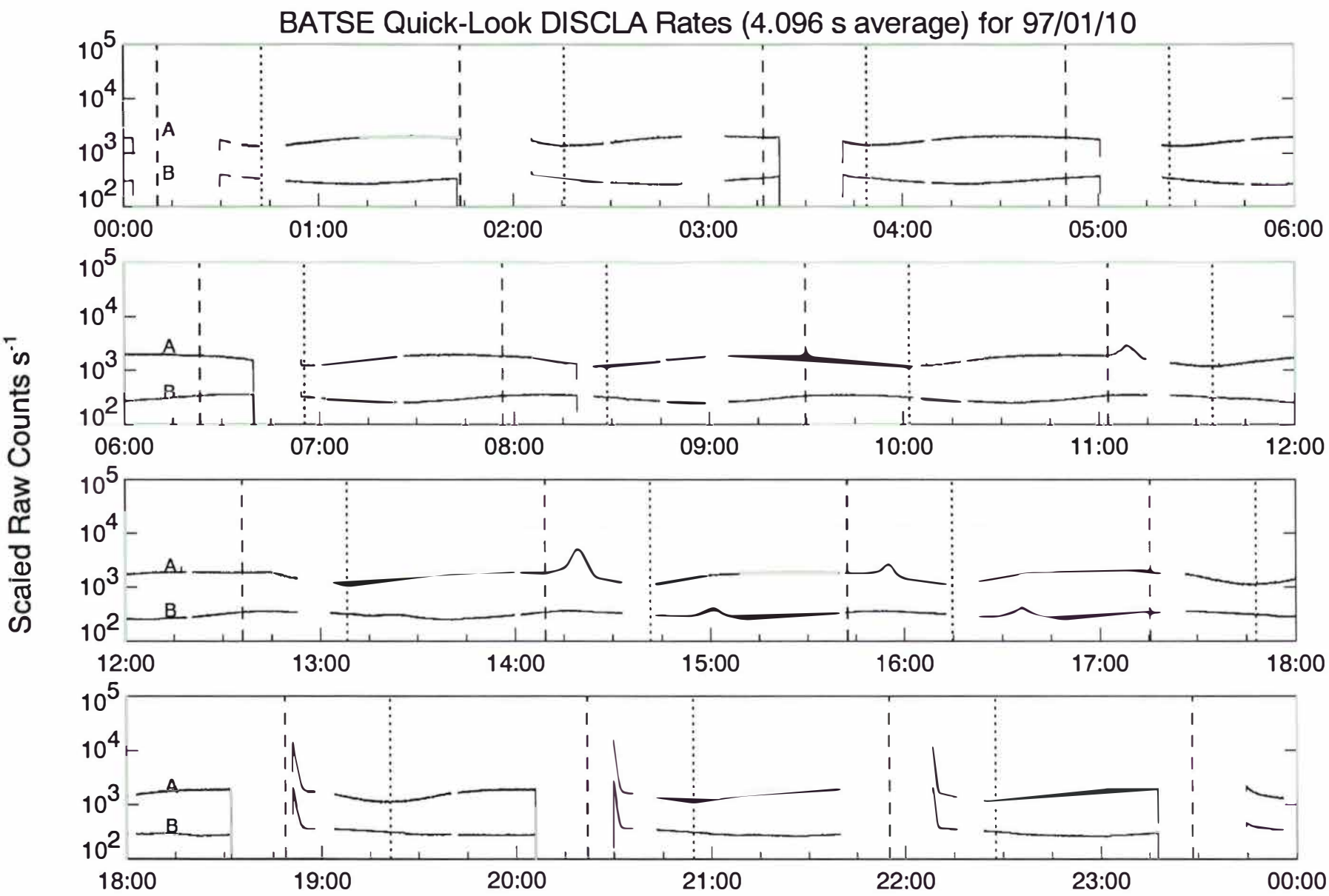
ULYSSES RT 4/ 5/98

10/ 1/97 82512.398 s

0.500 S INTERVALS REGROUPED BY 2

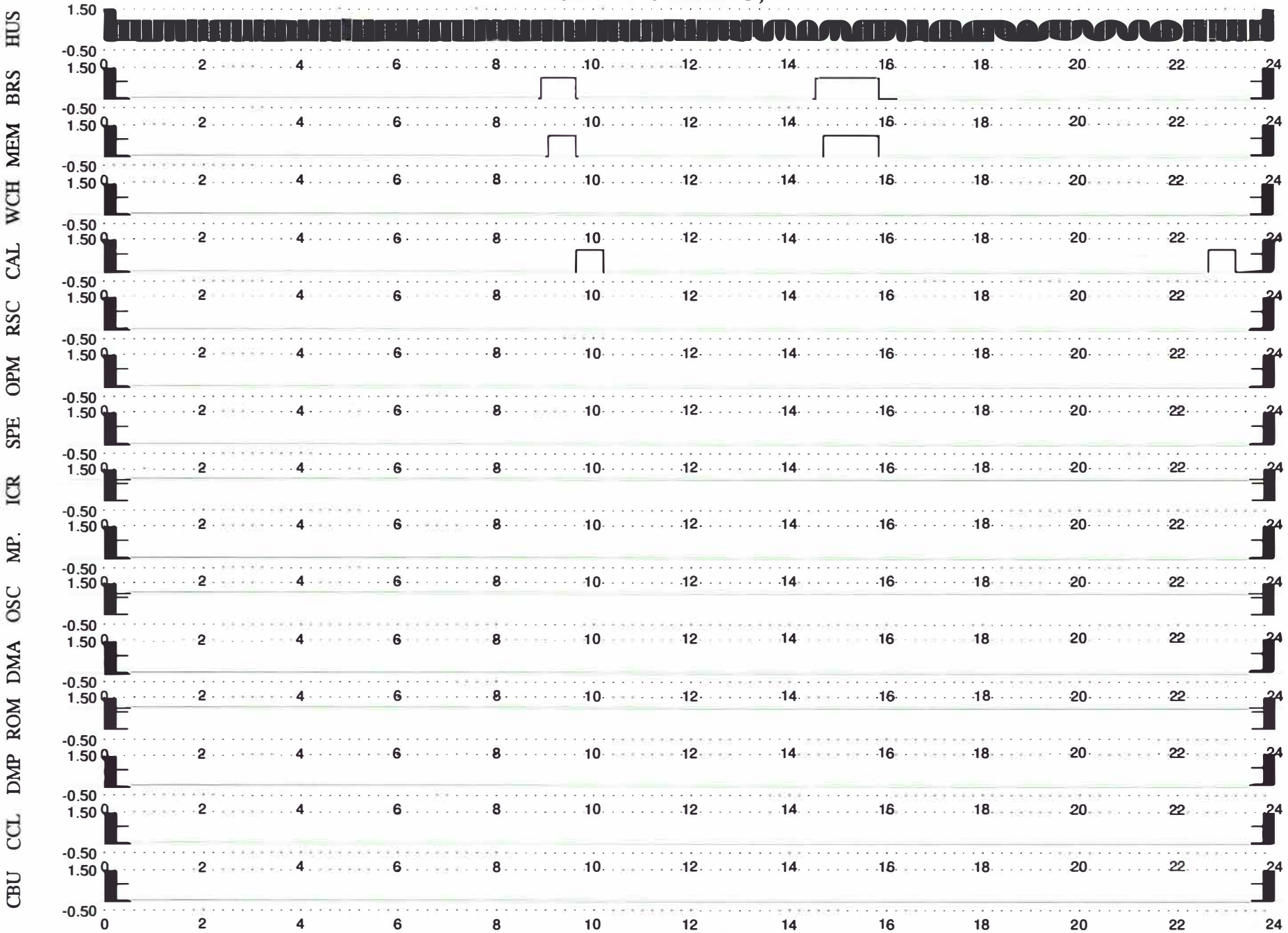
0- 0 keV




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

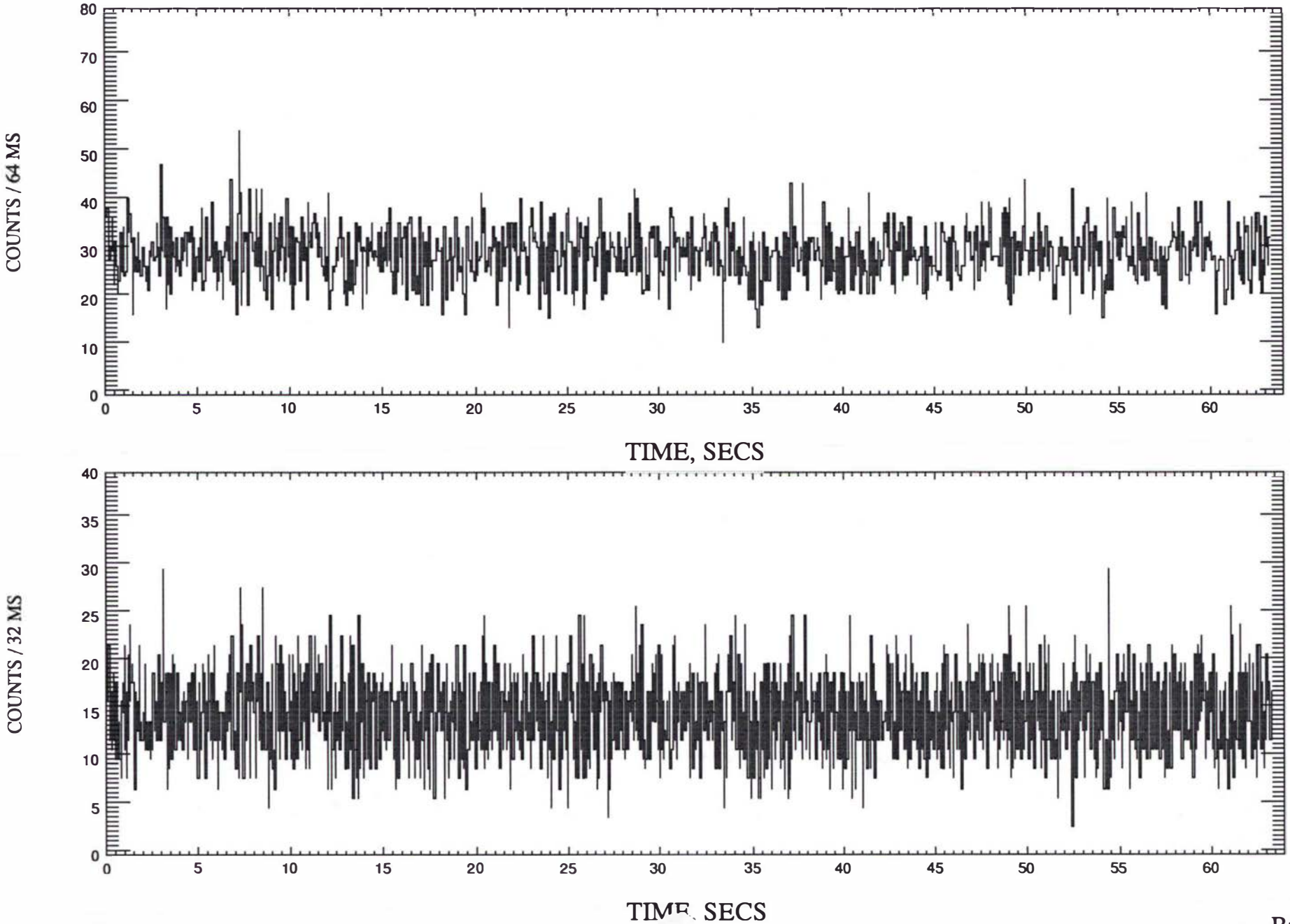
BURST NUMBER 3, 4



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 10, year 1997 5/2/97

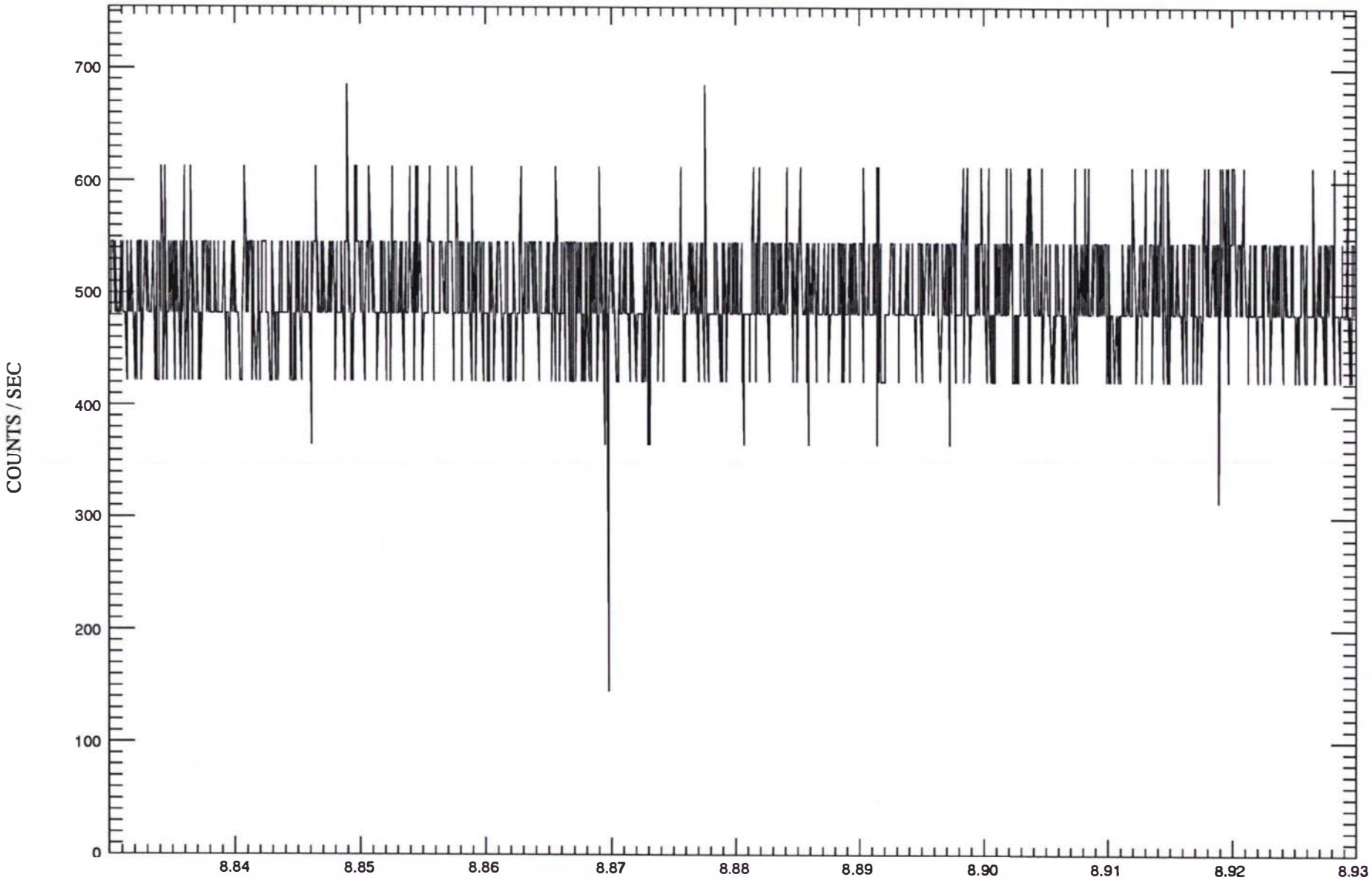
Burst Counter 3 at UT= 8.884311697218 h=31983.522 s 08:53:03.522



B# 1

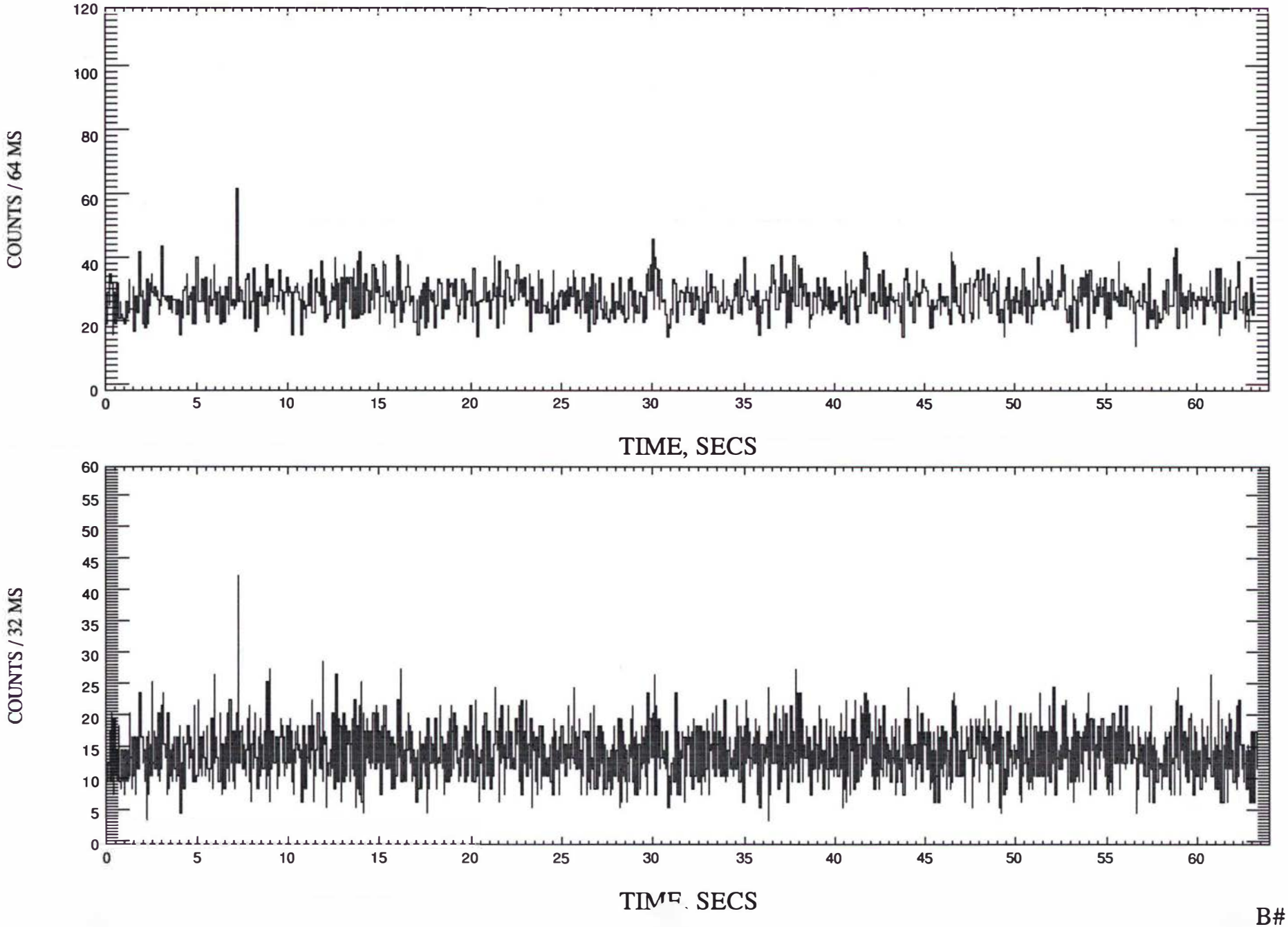
HUS 2A, MODE 1, NOT AVERAGED QEDR day 10, year 1997 to day 10, year 1997 1/14/97

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 10, year 1997 5/2/97

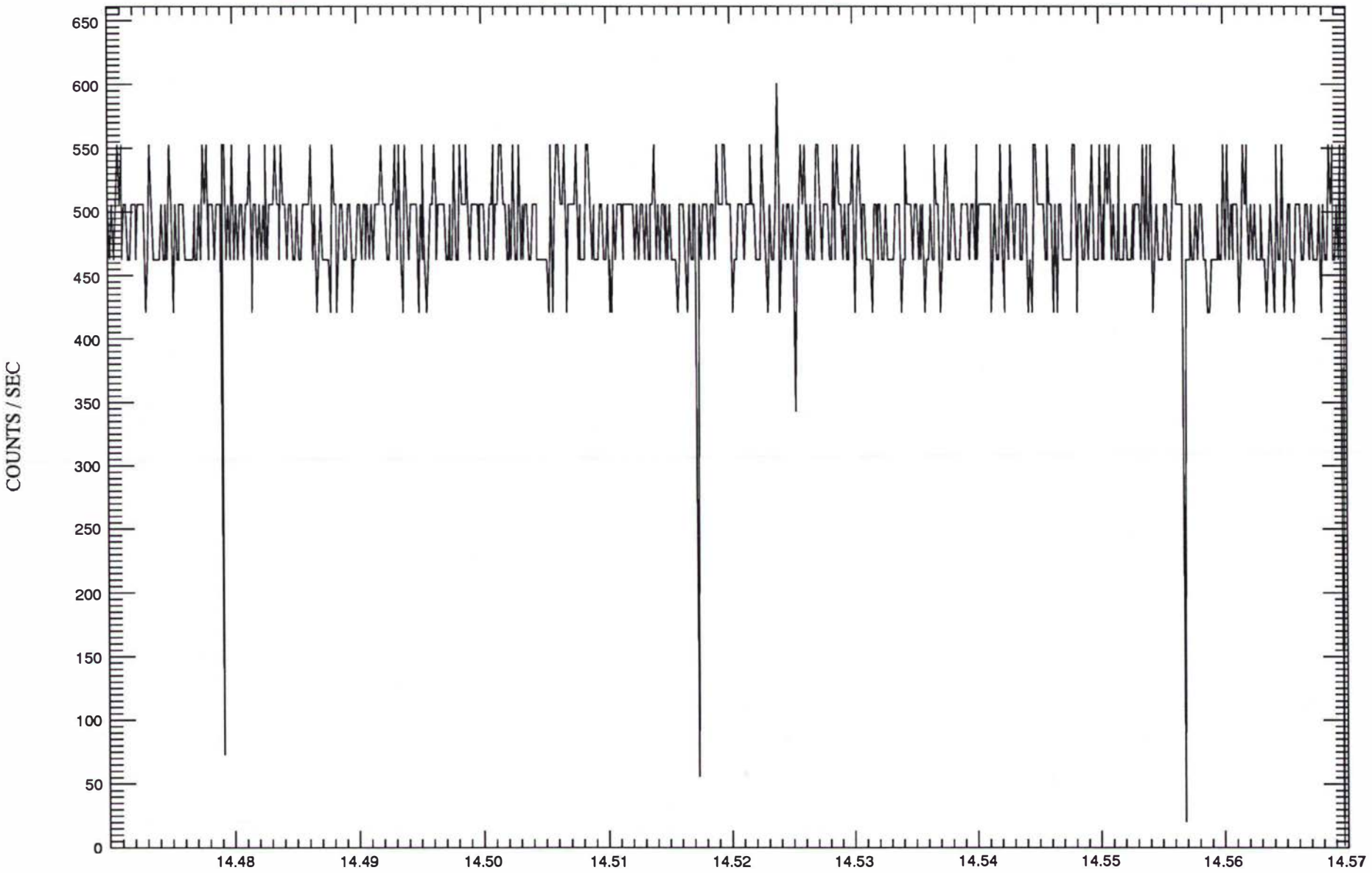
Burst Counter 4 at UT=14.517643750509 h=52263.518 s 14:31:03.518



B# 2

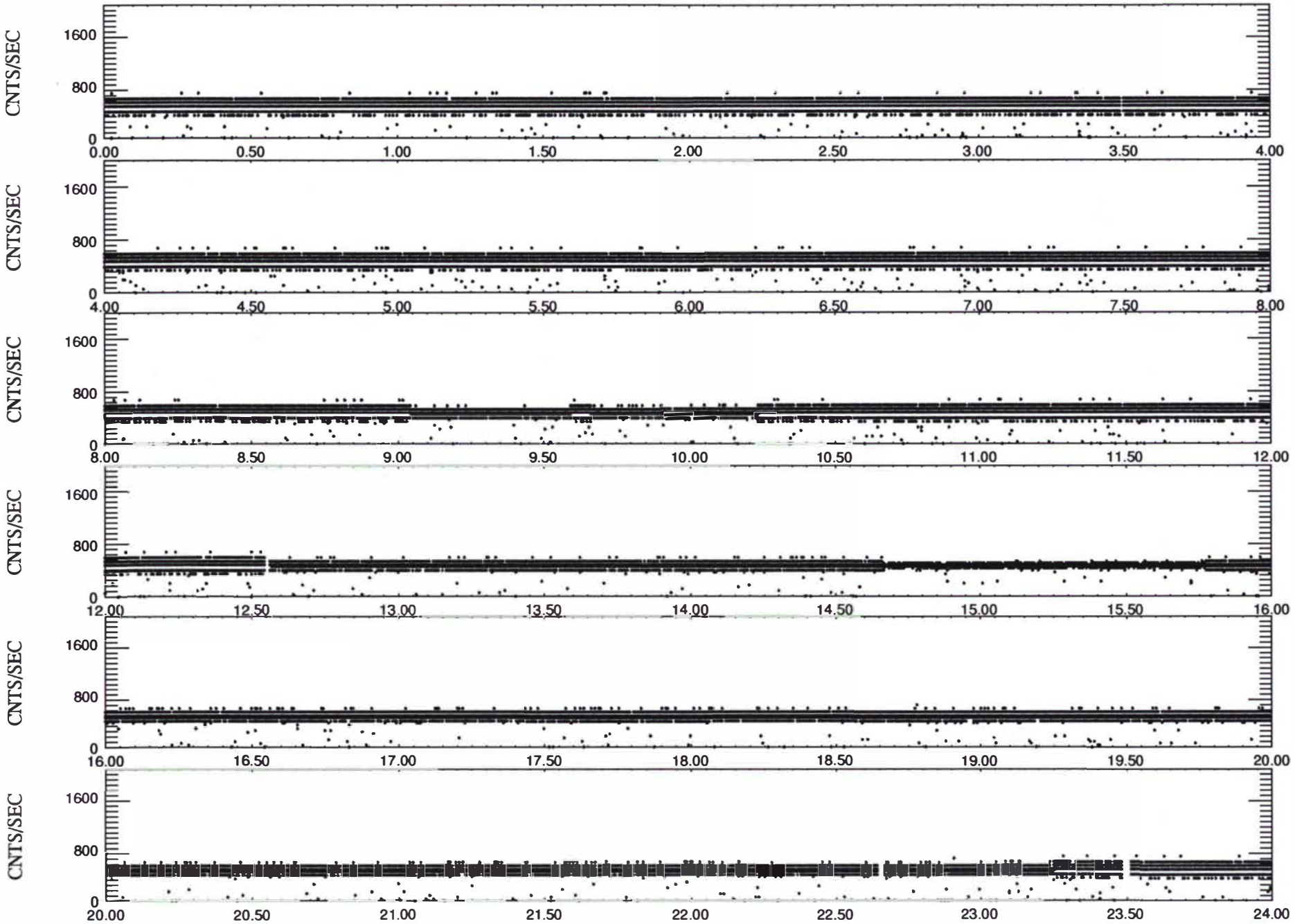
HUS 2A, MODE 1, NOT AVERAGED QEDR day 10, year 1997 to day 10, year 1997 1/14/97

CALIBRATION DATA INCLUDED



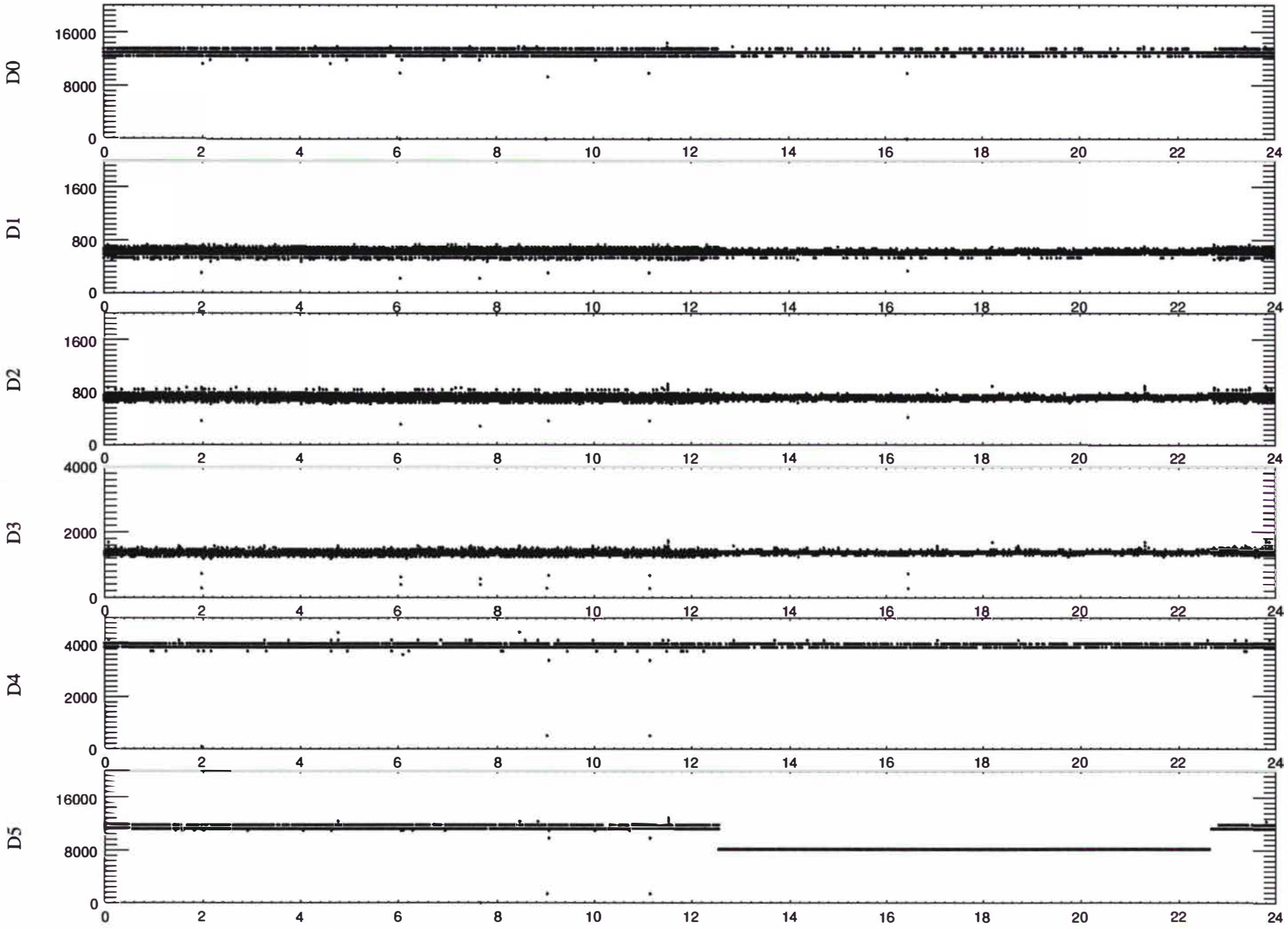
HUS 2A, MODE 1, NOT AVERAGED EDR day 10, year 1997 to day 10, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 10, year 1997 to day 10, year 1997 5/5/97



From RICHARDSON@SSLLES.MSFC.NASA.GOV Mon Jan 13 09:23 PST 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 JAA16267; Mon, 13 Jan 1997 09:22:52 -0800
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Mon, 13 Jan 1997 11:22:23 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970113112223.2cc002a8@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 5773
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5773
EVENT OF 1997 JAN 11 DAY OF YEAR= 11
EVENT CROSSING TIME AT BATSE : 35040. S. OR 09:44:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 231.000 19.000
BATSE PEAK COUNTING RATE: 46000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 1/ 97 IS:
RA= 176.934 DEC= 33.726 DIST= 4.133 AU
BATSE-ULYSSES DISTANCE = 618350428. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1324.71 SECS.
CROSSING TIME AT ULYSSES IS 33715. S. OR 09:21:55 +/- 304.36 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 1/ 97 IS:
RA= 183.182 DEC= 1.735 DIST= 1.066 AU
MARS-BATSE DISTANCE = 159444032. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -342.76 SECS.
CROSSING TIME AT MARS IS 34697. S. OR 09:38:17 +/- 65.40 SECONDS

BATSE BURST TRIGGER
NO.: 5773

TIME: TJD=0459 SECONDS=35040

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=43.4 AZIMUTH=48.7 ERROR=0.2 DEGREES

COMMENTS:
GRB. STRONG EVENT WITH STRUCTURE. DUR.~ 50 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5773	970111	10459	35040	46000	231	+19	50

Helio corr removed 17/2/00

Date: Mar 20 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

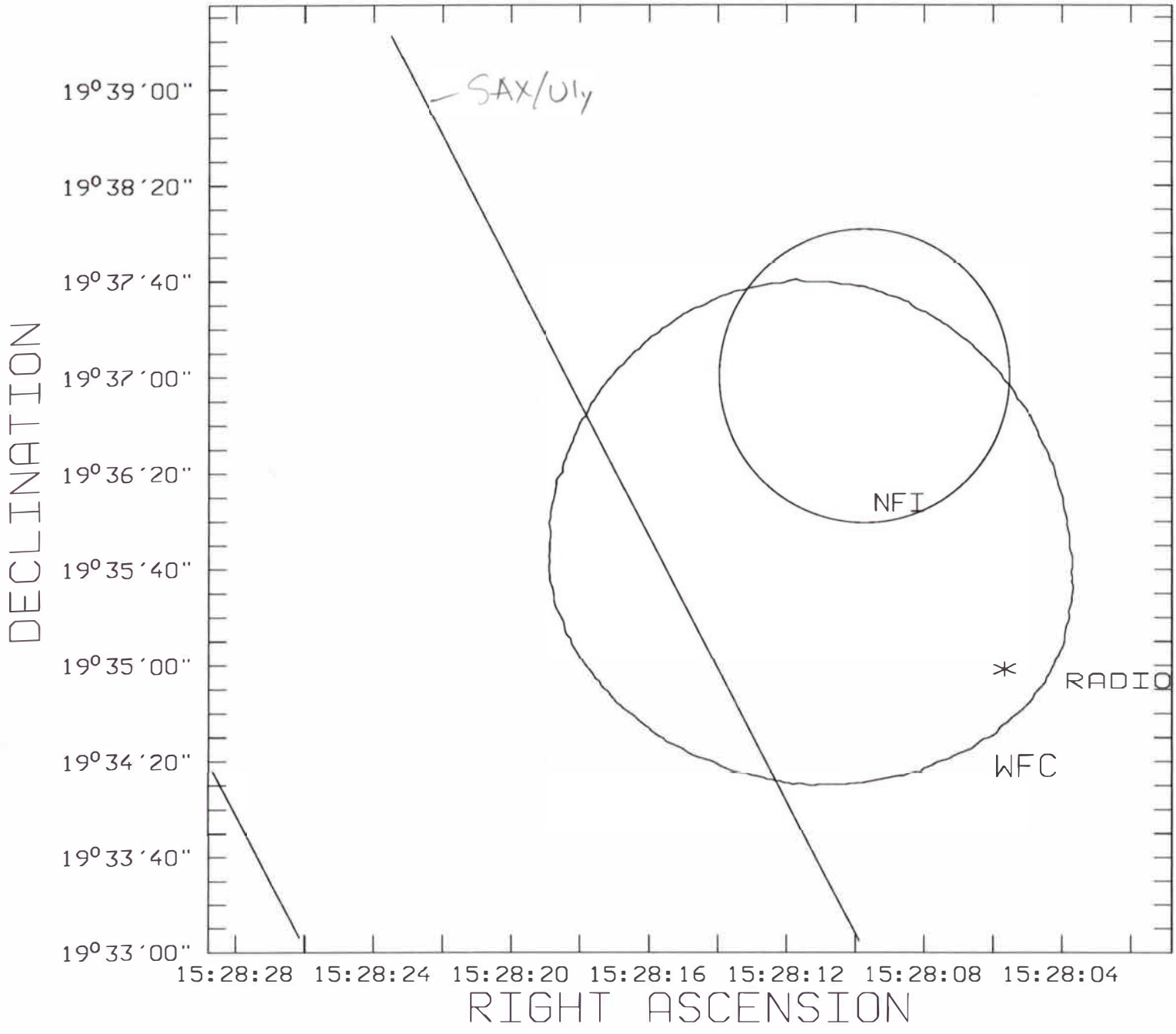
3. PVO Data

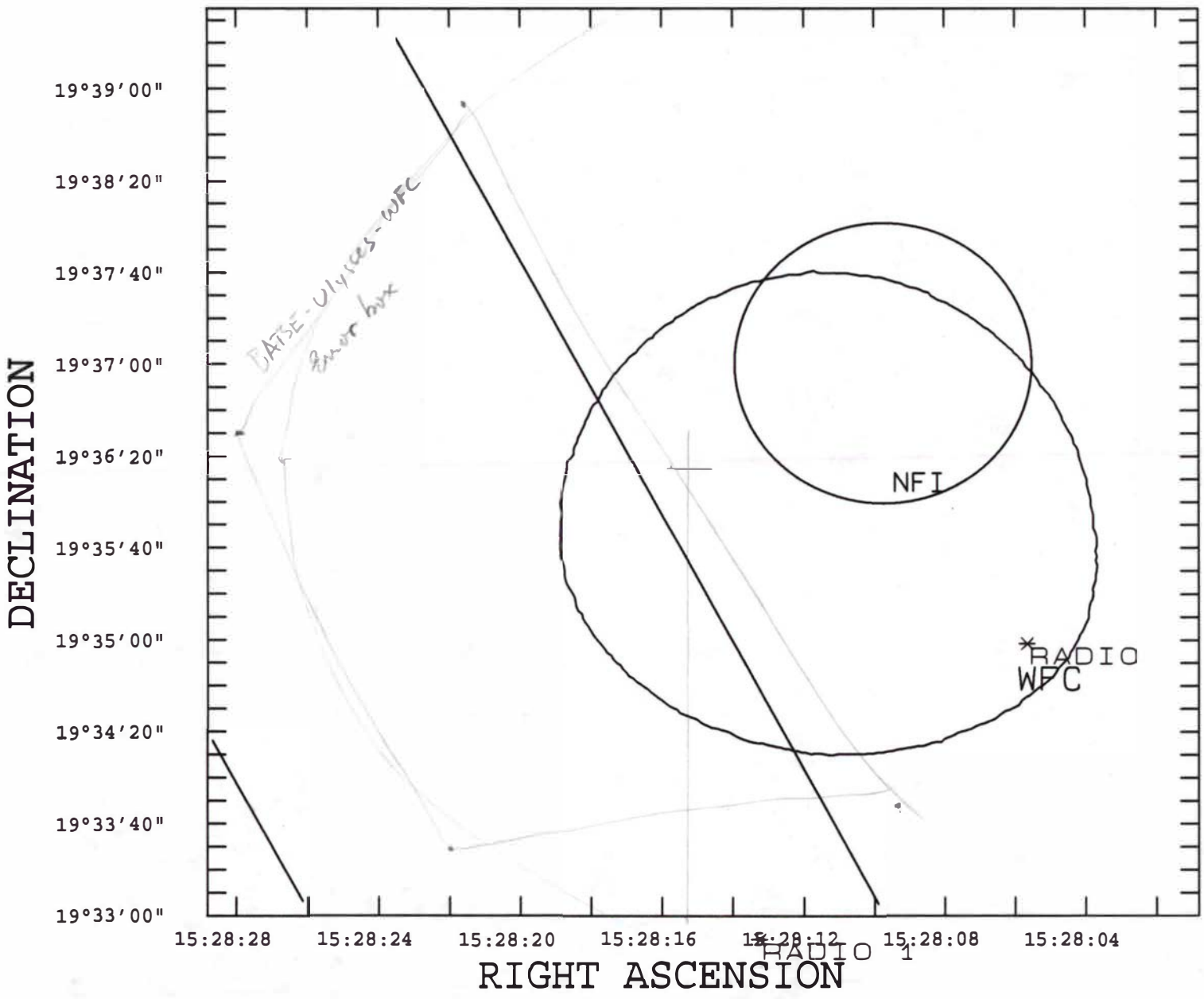
☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

☐ Geocentric time used?

☑ ACCESS database updated?

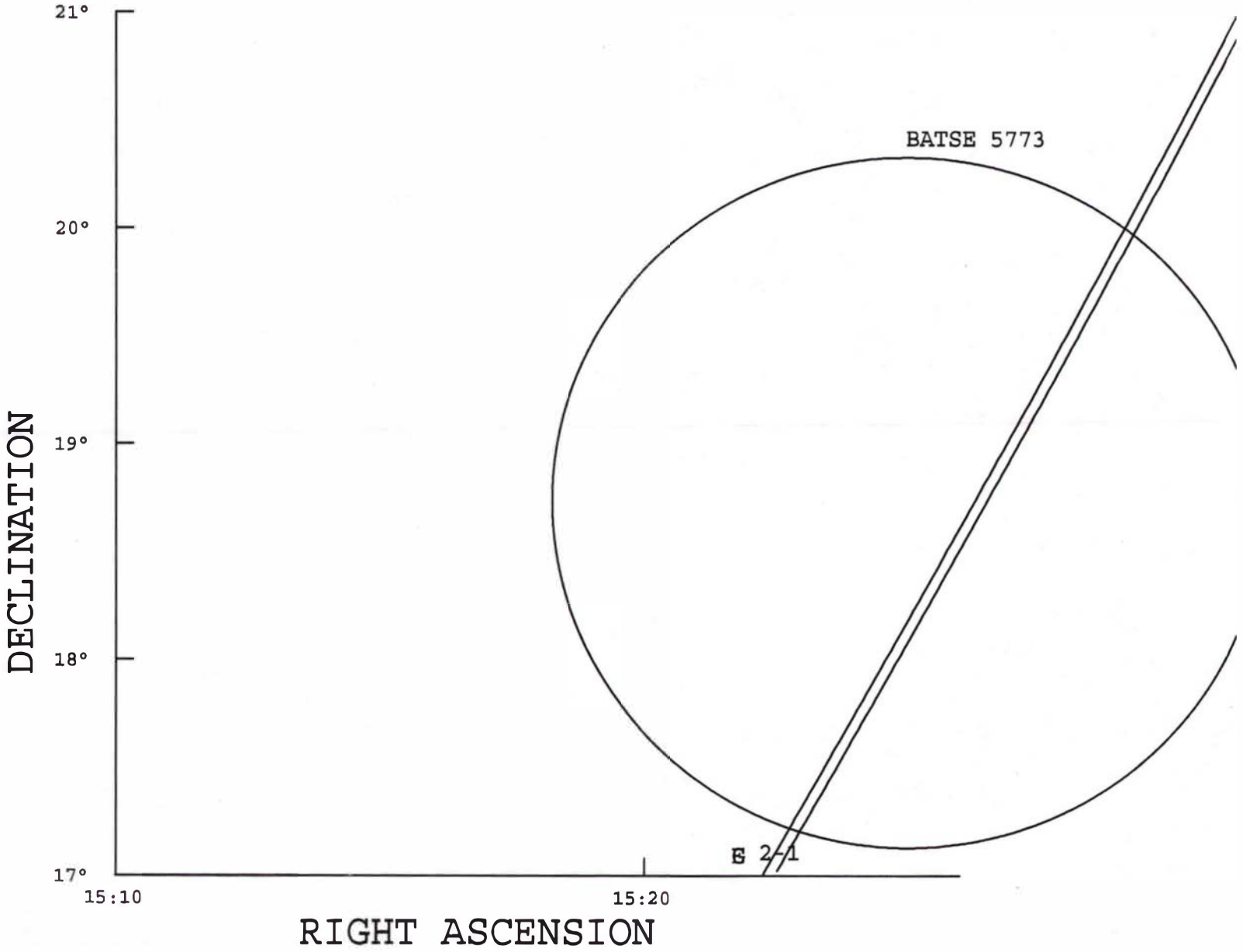

SAX/Uly
NFI
RADIO
WFC
19°39'00"
19°38'20"
19°37'40"
19°37'00"
19°36'20"
19°35'40"
19°35'00"
19°34'20"
19°33'40"
19°33'00"
DECLINATION
15:28:28
15:28:24
15:28:20
15:28:16
15:28:12
15:28:08
15:28:04
RIGHT ASCENSION

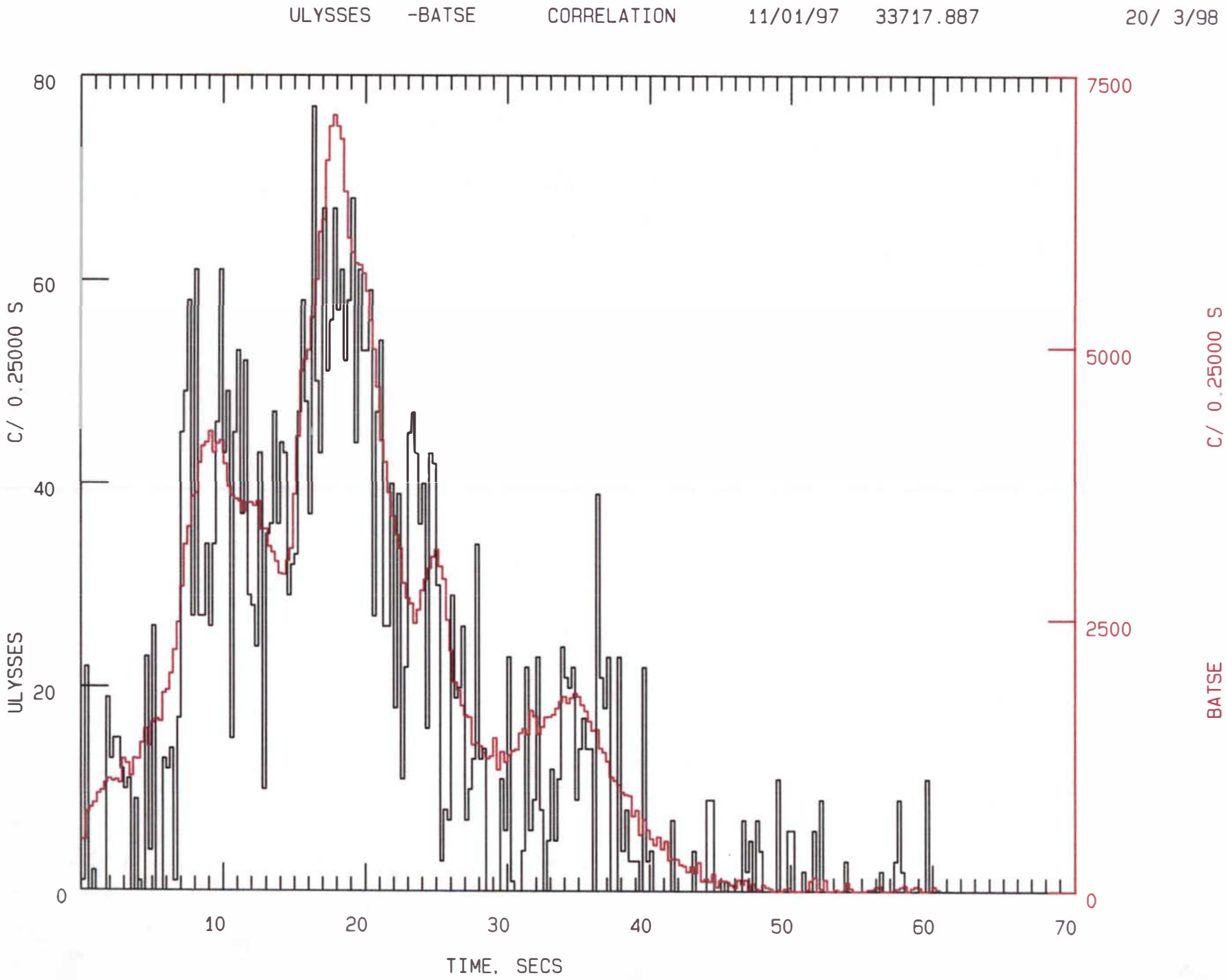

Hubble corr removed from SAX - Ulysses triangulation
BATSE - Ulysses - WFC
Error box
NFI
RADIO
WFC
RADIO 1
DECLINATION
19°39'00"
19°38'20"
19°37'40"
19°37'00"
19°36'20"
19°35'40"
19°35'00"
19°34'20"
19°33'40"
19°33'00"
15:28:28
15:28:24
15:28:20
15:28:16
15:28:12
15:28:08
15:28:04
RIGHT ASCENSION

EVENT OF JAN 11, 1997 9:21

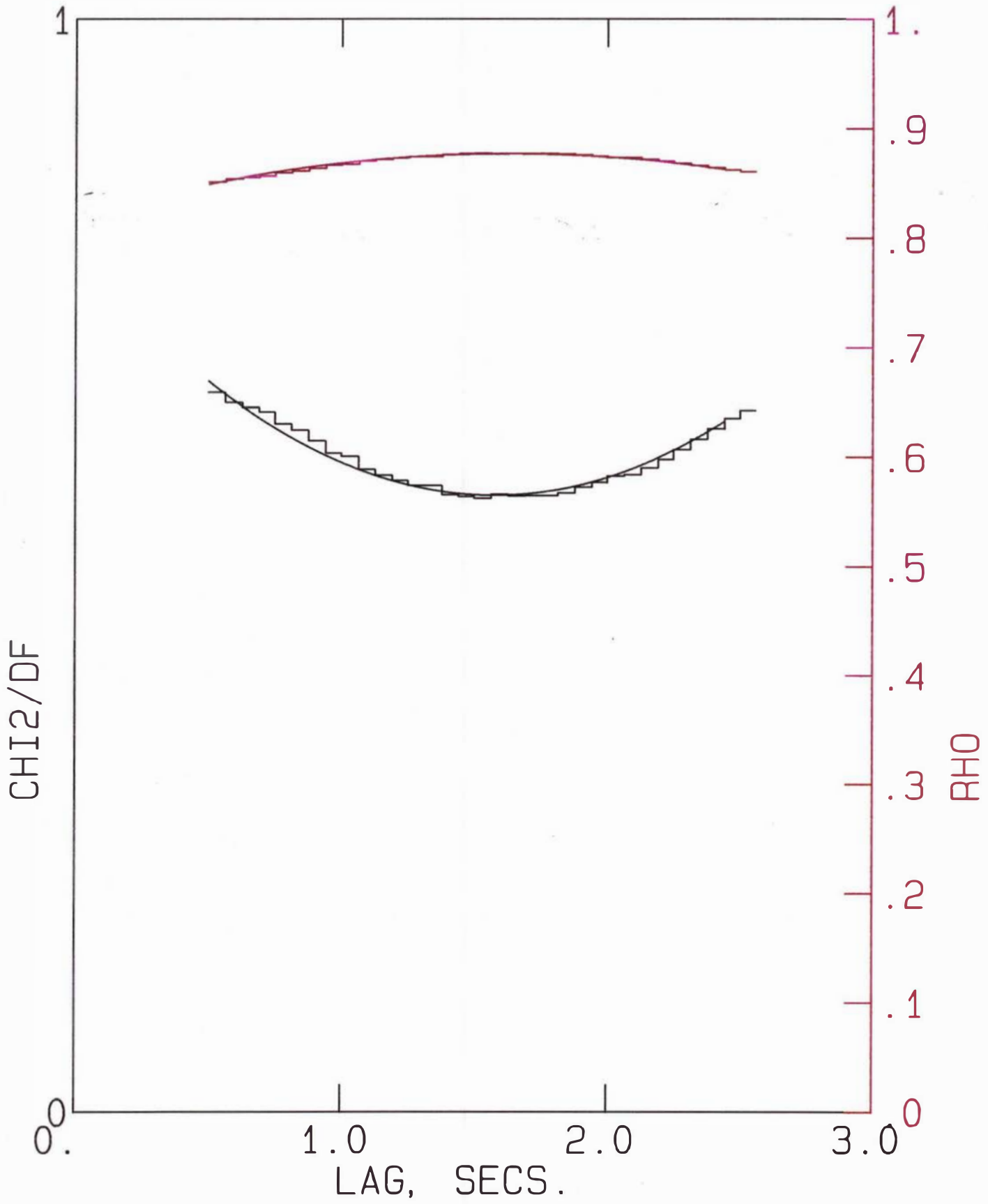
17/ 2/ 0

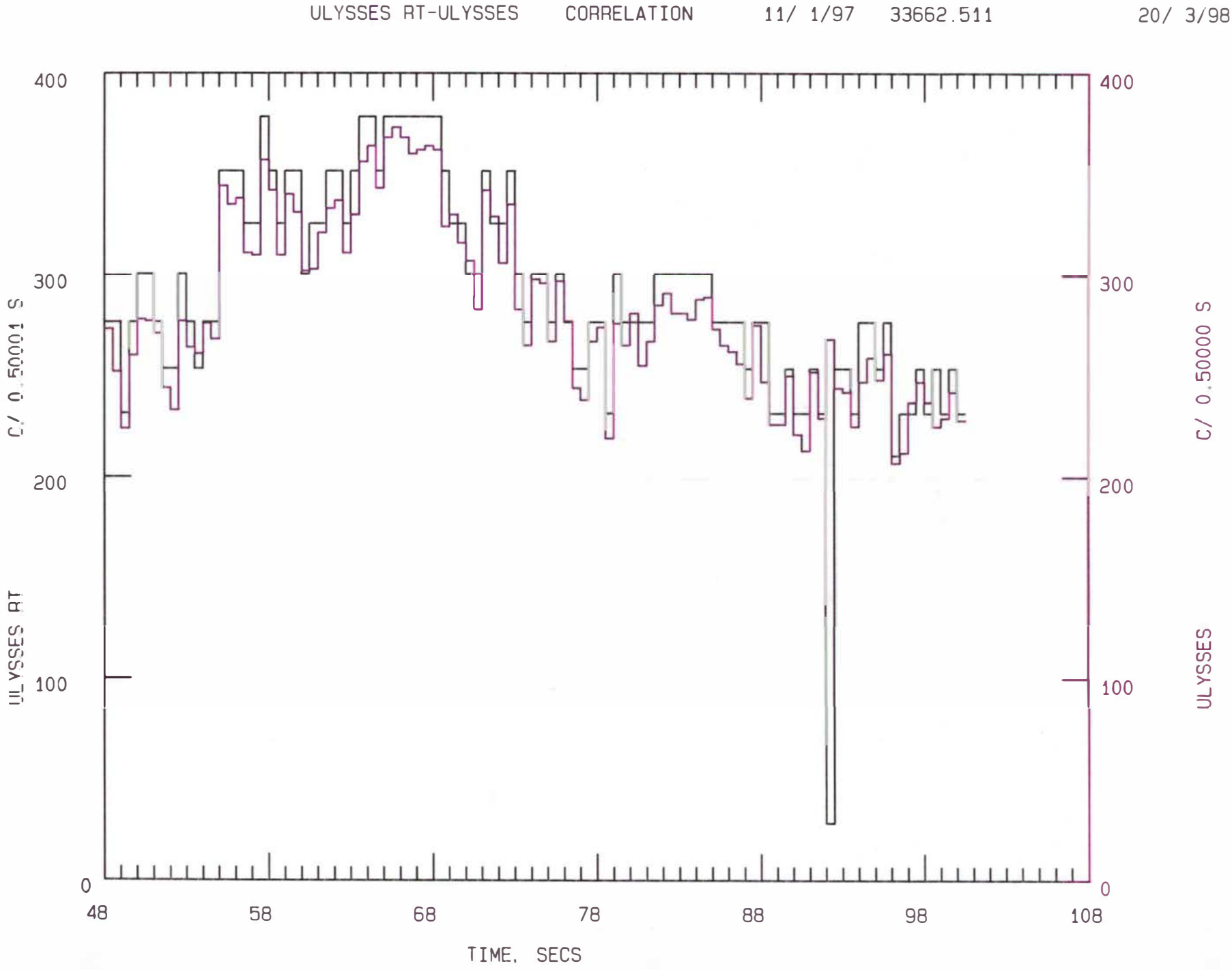
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




ULYSSES -BATSE CORRELATION 11/01/97 33717.887 20/ 3/98
80
60
40
20
0
C/ 0.25000 S
ULYSSES
7500
5000
2500
0
C/ 0.25000 S
BATSE
10
20
30
40
50
60
70
TIME, SECS

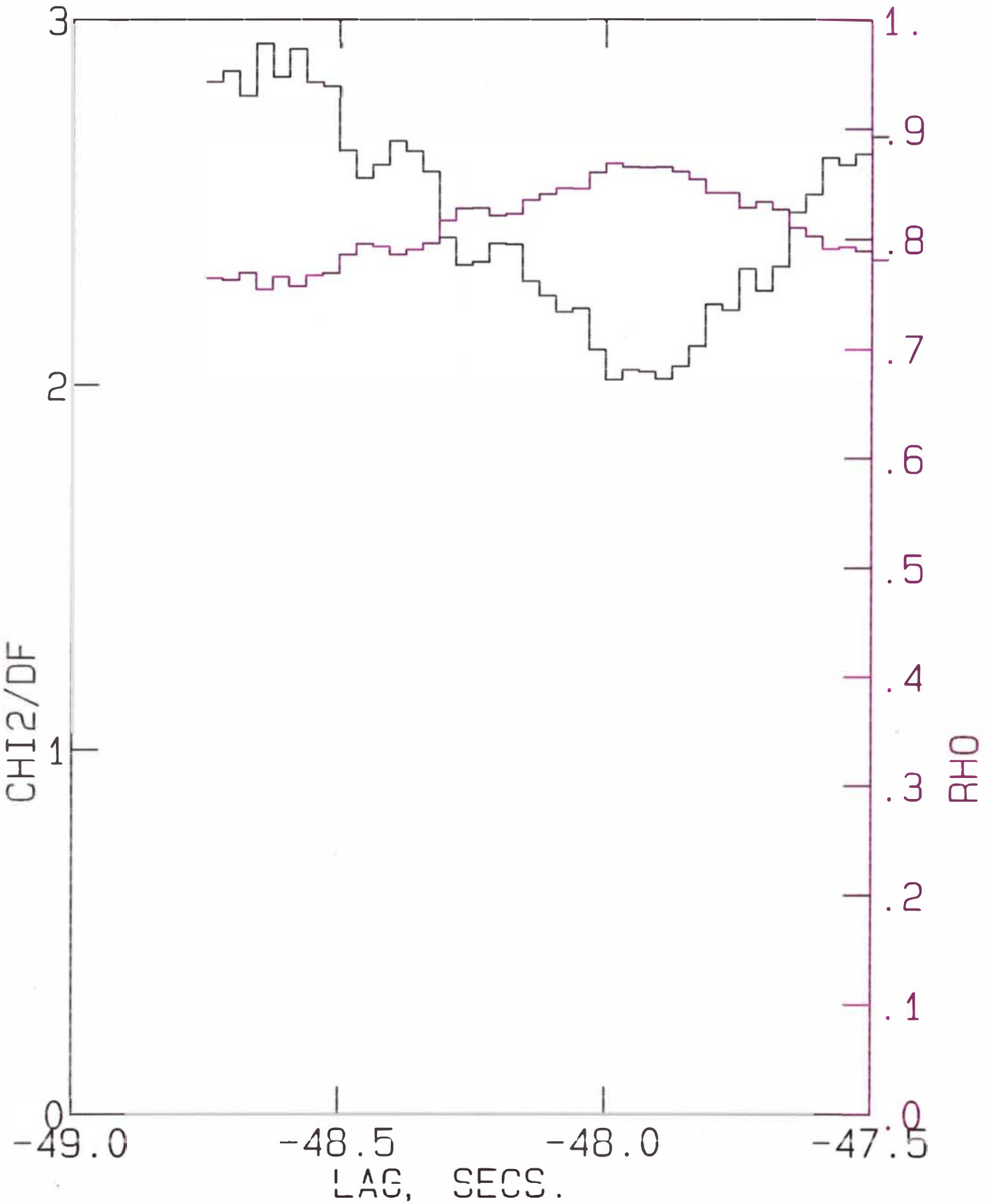
ULYSSES -BATSE CORRELATION 11/01/97 33717.887




ULYSSES RT-ULYSSES CORRELATION 11/ 1/97 33662.511 20/ 3/98
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
400
300
200
100
0
C/ 0.50000 S
ULYSSES
48
58
68
78
88
98
108
TIME, SECS

20/ 3/98

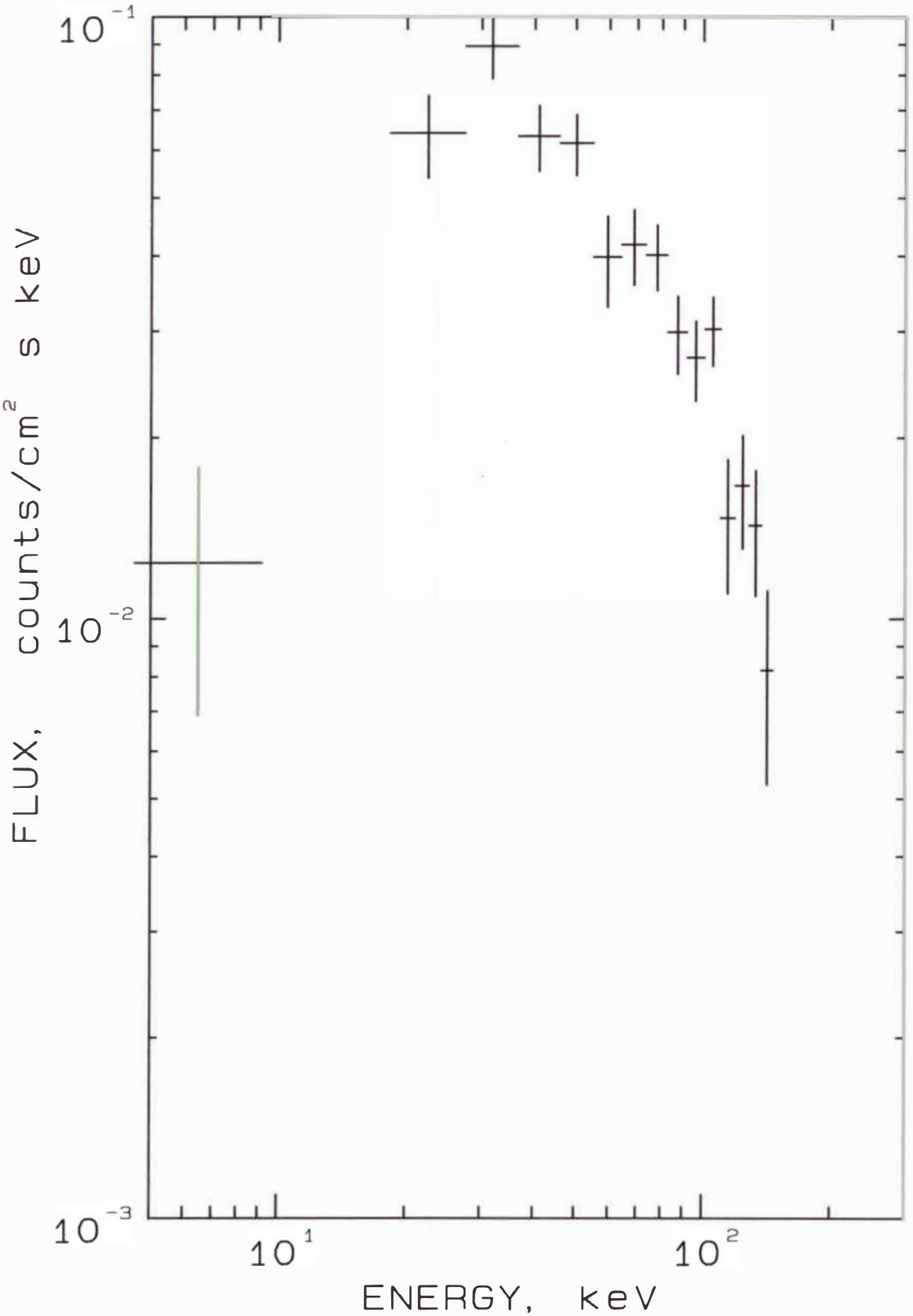
ULYSSES RT-ULYSSES CORRELATION 11/ 1/97 33662.511

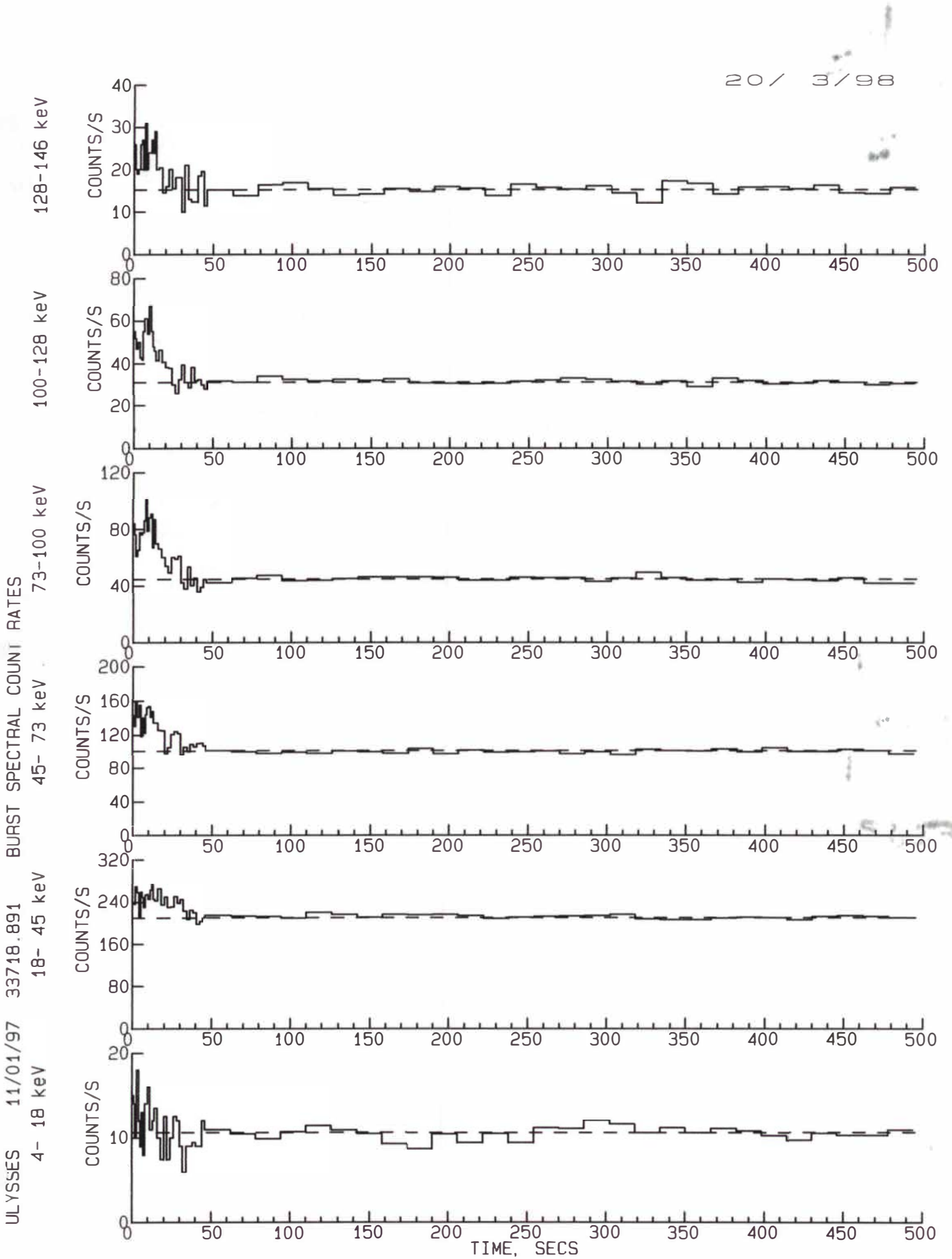


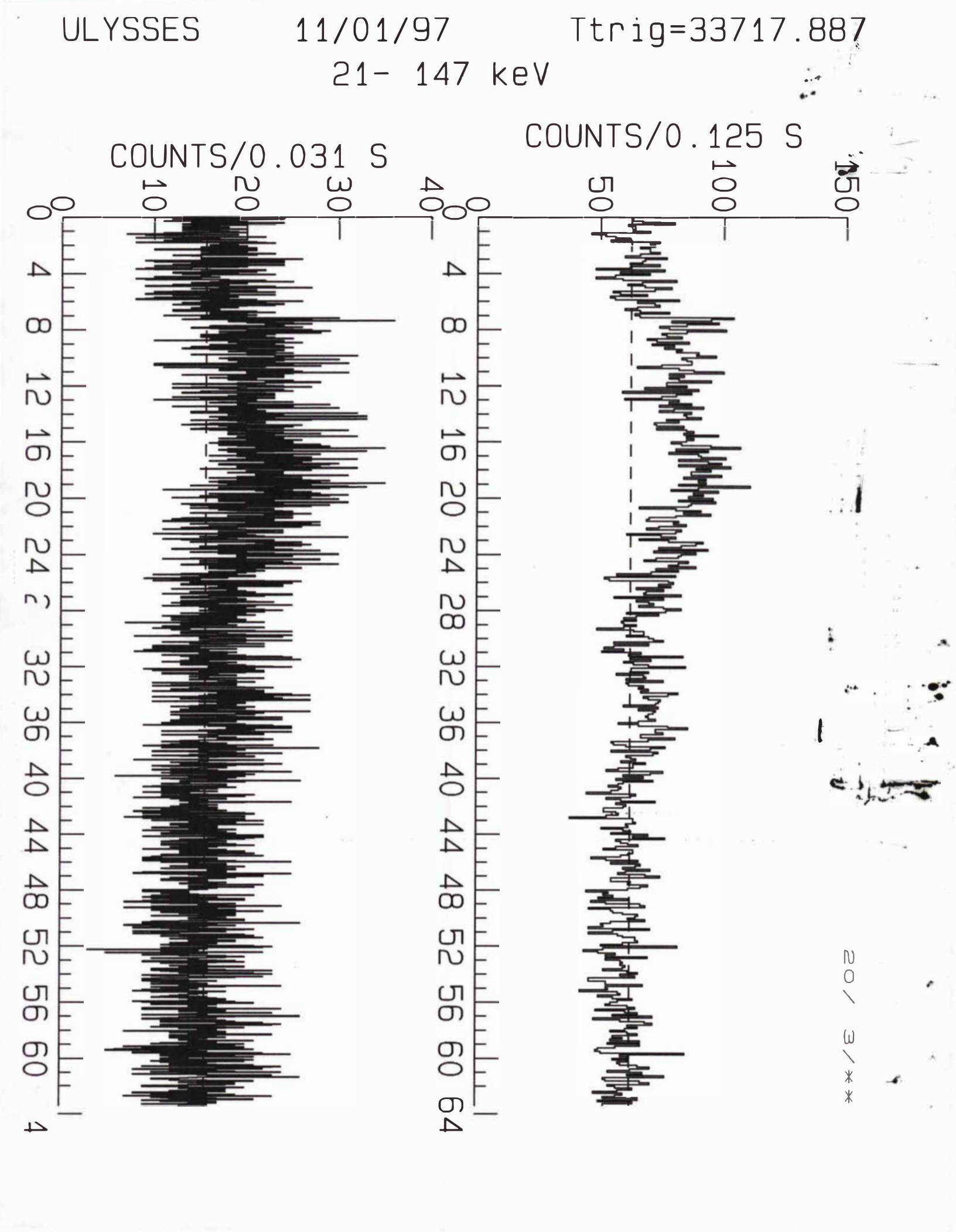
ULYSSES 11/01/97 33718.891

20/ 3/98

SPECTRUM INTEGRATED OVER 62.0 SECONDS, INTERVALS 2 TO 33




20/ 3/98
ULYSSES 11/01/97 33718.891 BURST SPECTRAL COUNT RATES
128-146 keV
100-128 keV
73-100 keV
45- 73 keV
18- 45 keV
4- 18 keV
COUNTS/S
TIME, SECS

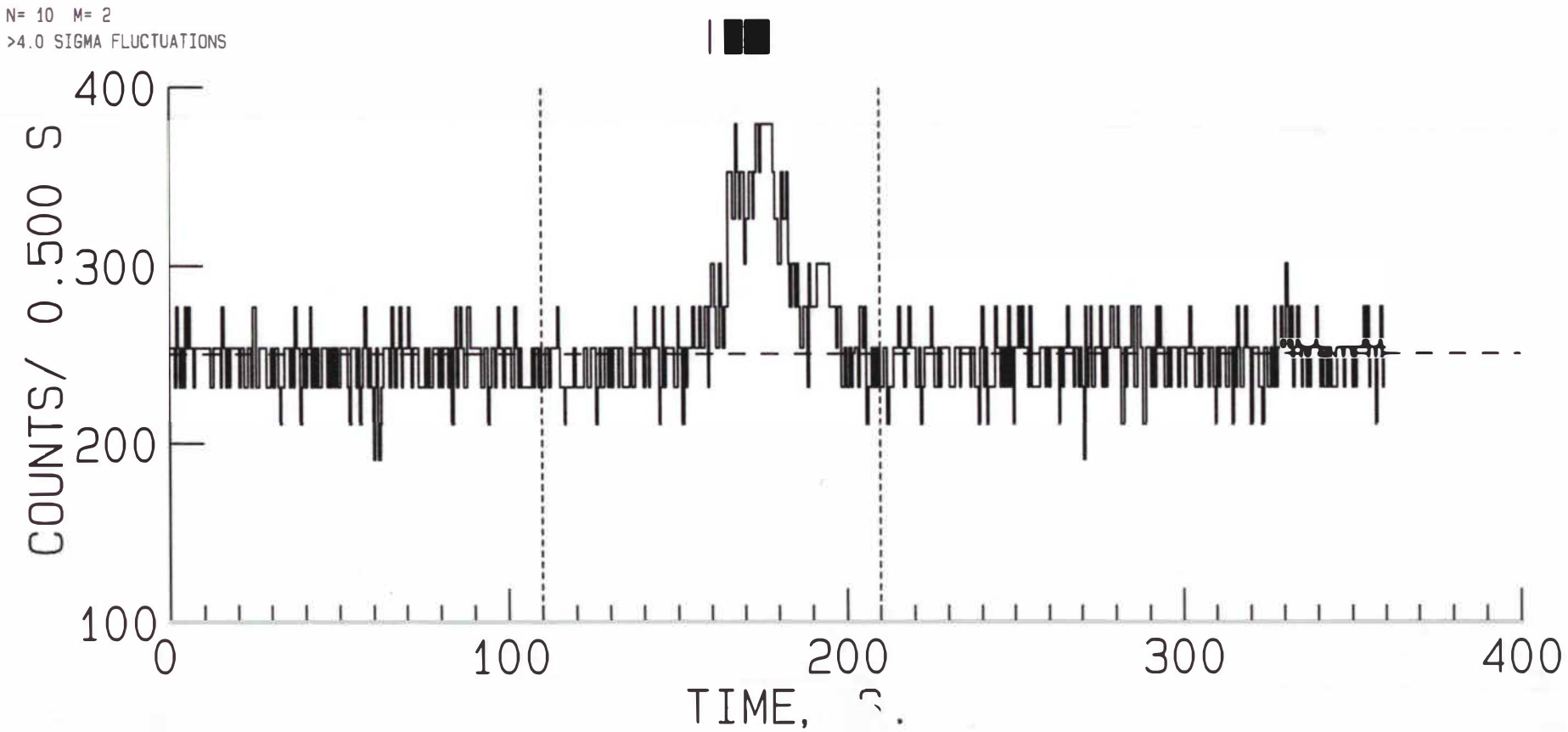

ULYSSES 11/01/97 Ttrig=33717.887
21- 147 keV
COUNTS/0.031 S
COUNTS/0.125 S
0 10 20 30 40
0 50 100 150
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
20/ 3/**

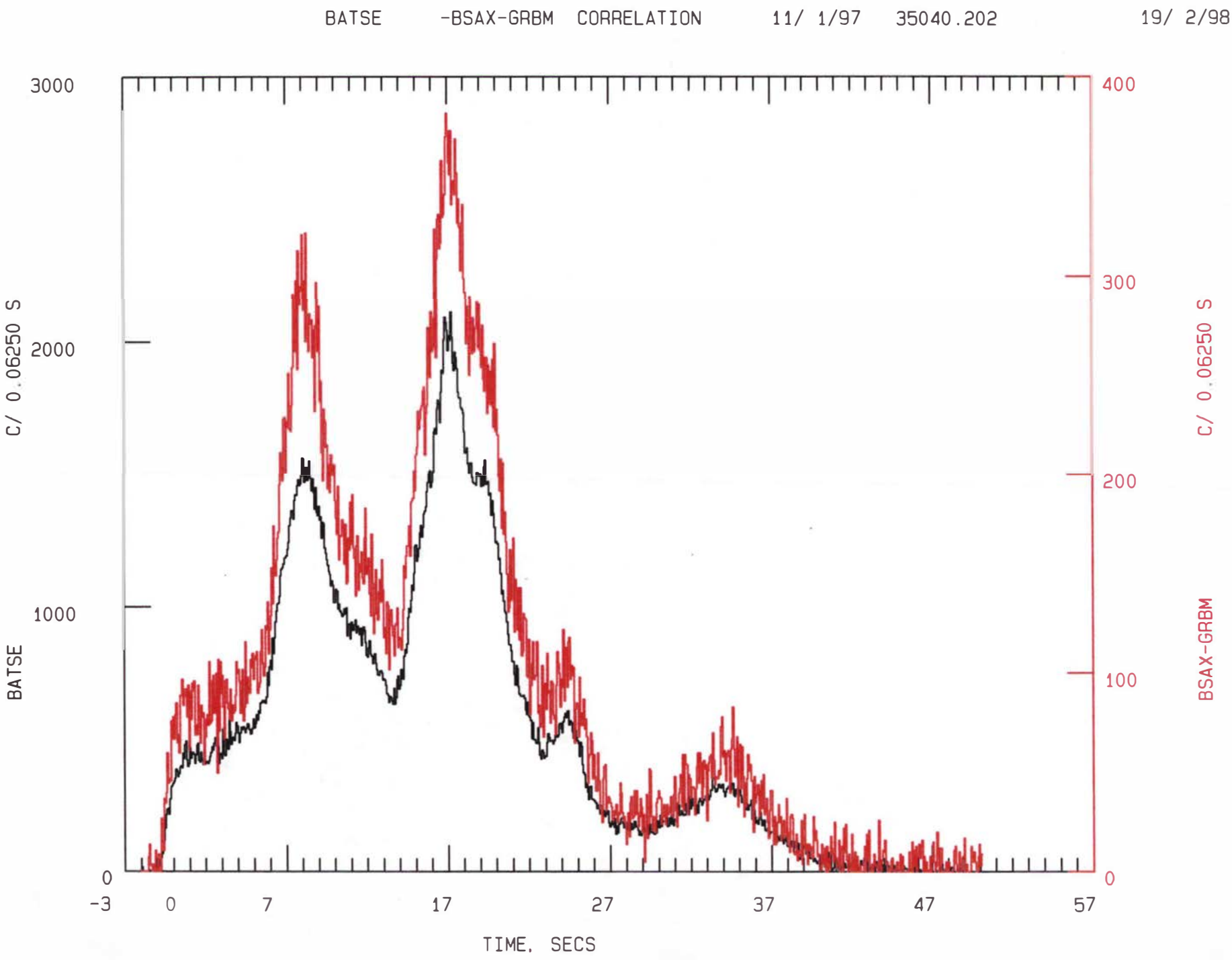
ULYSSES RT

20/ 3/98

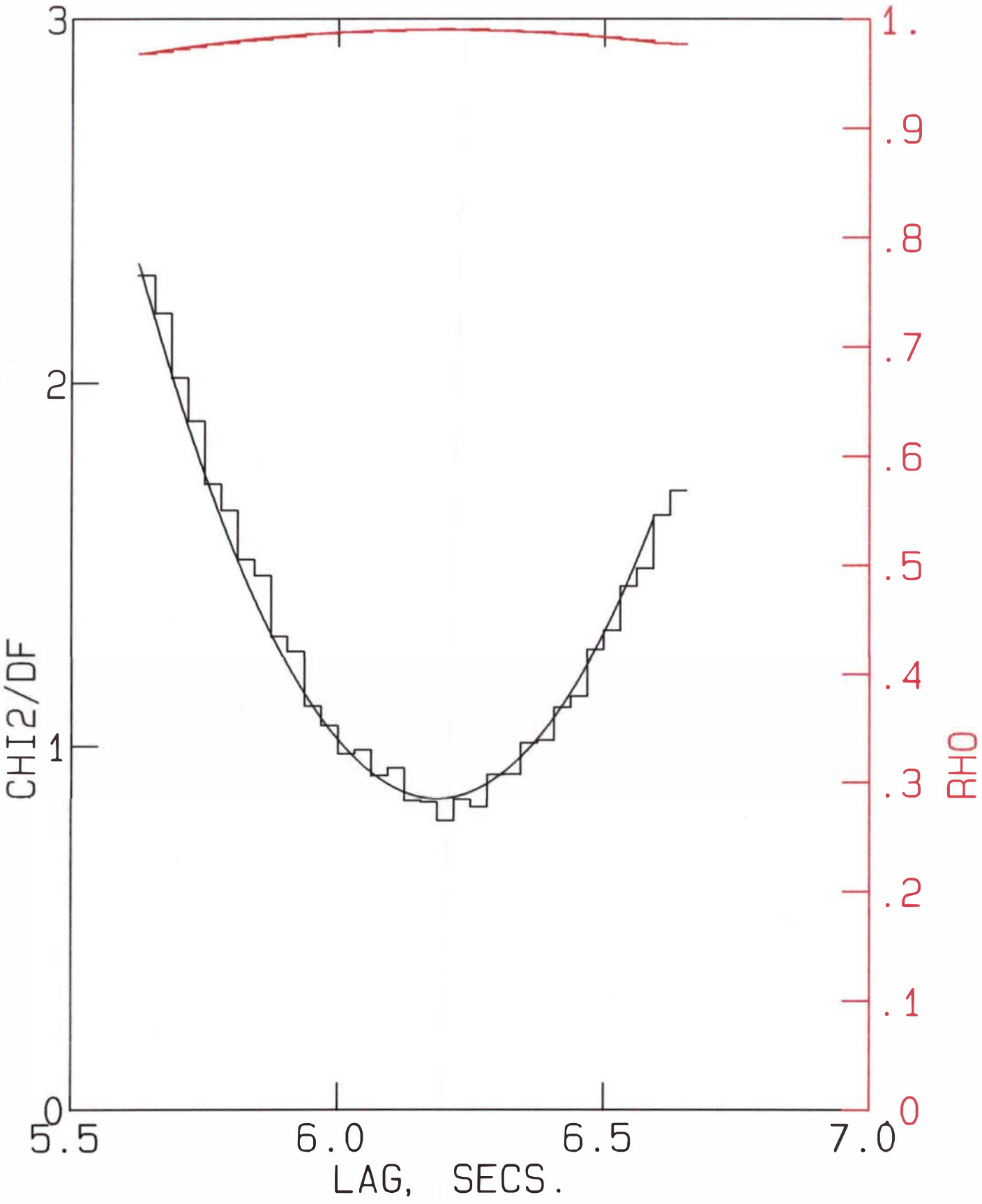
11/ 1/97 33552.359 s

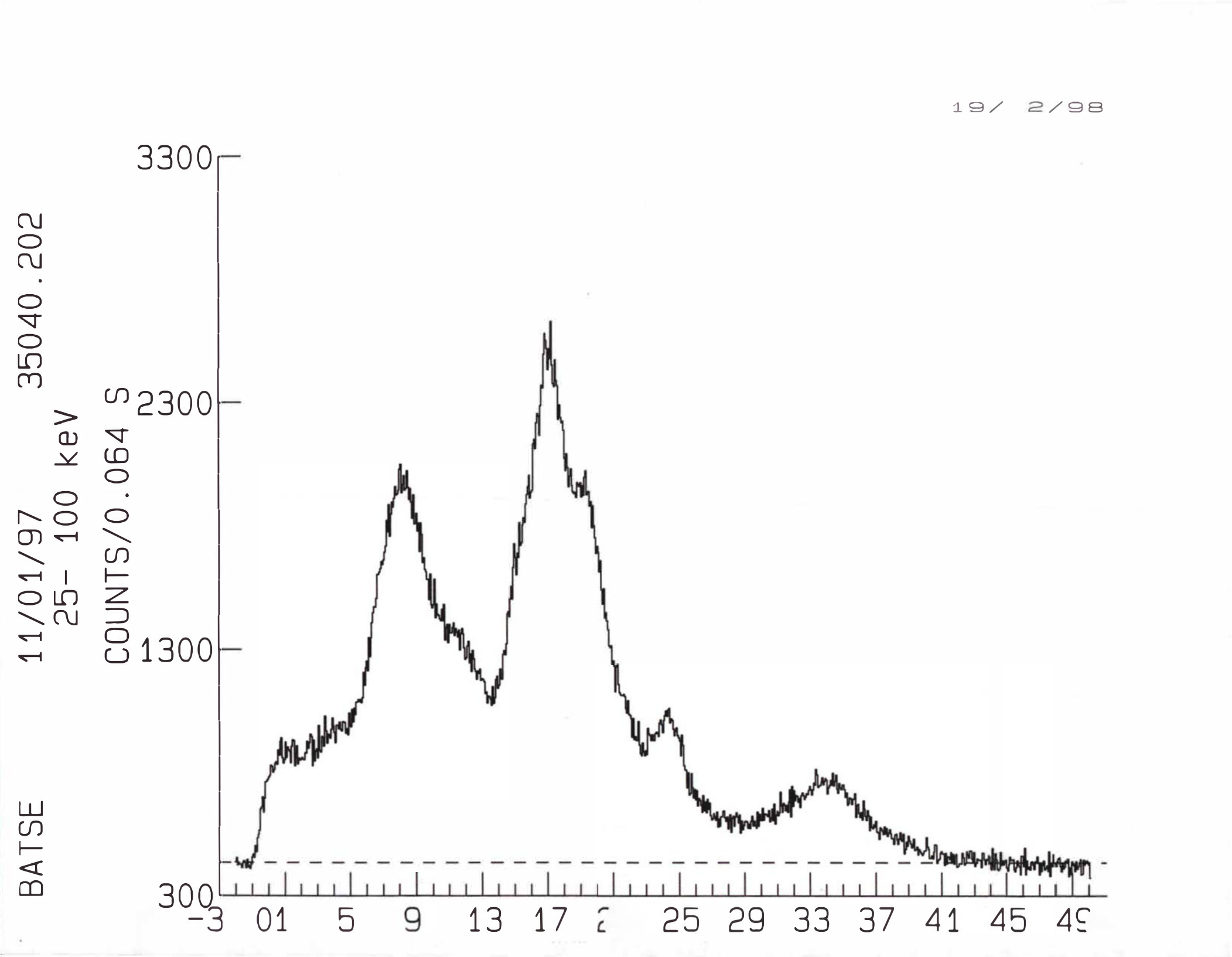
21- 147 keV

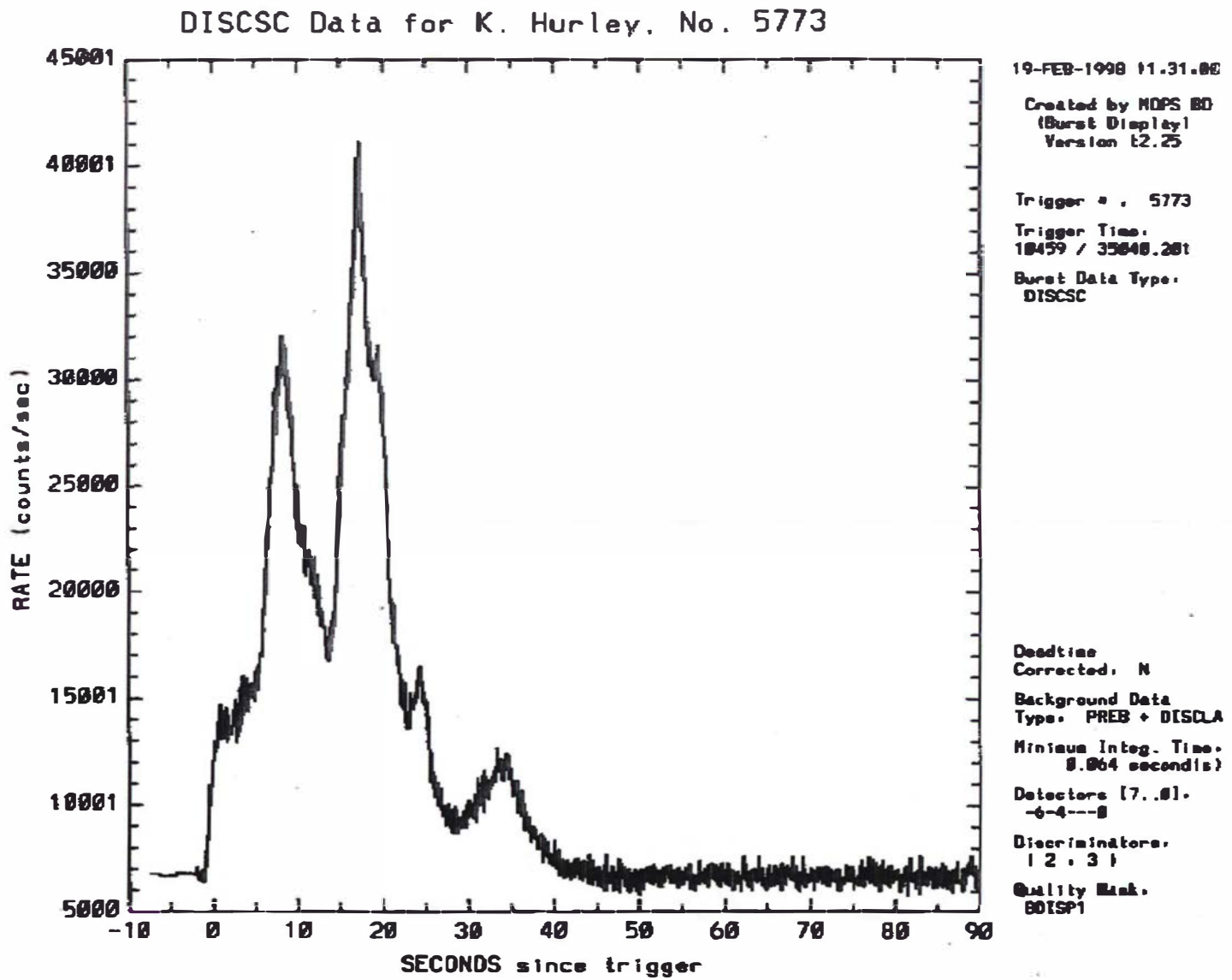



BATSE -BSAX-GRBM CORRELATION 11/ 1/97 35040.202 19/ 2/98
3000
2000
1000
0
C/ 0.06250 S
BATSE
400
300
200
100
0
C/ 0.06250 S
BSAX-GRBM
-3
0
7
17
27
37
47
57
TIME, SECS

BATSE -BSAX-GRBM CORRELATION 11/ 1/97 35040.202




19/ 2/98
BATSE 11/01/97 35040.202
25- 100 keV
COUNTS/0.064 S
3300
2300
1300
300
-3
01
5
9
13
17
25
29
33
37
41
45


DISCSC Data for K. Hurley, No. 5773
RATE (counts/sec)
45001
40001
35000
30000
25000
20000
15001
10001
5000
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
19-FEB-1998 11.31.00
Created by MDPS BD
(Burst Display)
Version 2.25
Trigger # . 5773
Trigger Time:
10459 / 35040.201
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds)
Detectors [7..0]:
-6-4---0
Discriminators:
| 2 . 3 |
Quality Mask:
BDISP1

From TERRELL@nisdp0.lanl.gov Thu Mar 13 13:41 PST 1997
From: TERRELL@nisdp0.lanl.gov
Date: Thu, 13 Mar 1997 14:41:37 -0700
To: khurley@sunspot.ssl.berkeley.edu, bonnard@rosserv.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, chryssa.kouveliotou@msfc.nasa.gov,
cline@lheavx.gsfc.nasa.gov, henze@fender.msfc.nasa.gov
X-Vmsmail-To: @MAILOUTUL.DIS
Subject: grb detections by DMSP 13

From: jterrell@lanl.gov (James Terrell) 970313
To: khurley@sunspot.ssl.berkeley.edu,butterworth@lheavx.gsfc.nasa.gov,
filippo@botes1.tesre.bo.cnr.it,cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in,scott@rosserv.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov,yosimori@rikkyo.ac.jp,
bonnard@rosserv.gsfc.nasa.gov,chryssa.kouveliotou@msfc.nasa.gov,
henze@fender.msfc.nasa.gov
Subj: DMSP GRB detections

DMSP 13 detected the event of 11 January 1997 (IAUC 6533,...) as 3 soft peaks at 35041.8, 35049.8, and 35059.8 sec UT.

DMSP 13 detected the event of 26 February 1997 as a moderately strong peak at 31596.8 sec UT, lasting about 10 sec. The first rise in counting rate occurred in the 2-sec interval preceding the peak count. --Jim

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 dgreen@cfa0.harvard.edu Sat Mar 1 13:57 PST 1997
Date: Sat, 1 Mar 1997 16:40:32 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
ject: IAUC 6569: GRBs 960720, 970111; 29P

Circular No. 6569

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URL http://cfa-www.harvard.edu/cfa/ps/cbat.html
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GRB 960720 AND GRB 970111

J. in 't Zand, J. Heise, P. Hoyng, and R. Jager, Space Research Organization of the Netherlands (SRON), Utrecht; L. Piro, E. Costa, and M. Feroci, Istituto Astrofisica Spaziale, CNR, Frascati; F. Frontera, D. Dal Fiume, M. Orlandini, G. Pizzichini, and L. Nicastro, Istituto Tecnologie e Studio delle Radiazioni Extraterrestri, CNR, Bologna; and J. Muller, BeppoSAX, Rome, and SRON, Utrecht, write: "The positions of the x-ray counterparts to GRB 960720 and GRB 970111 as determined with the BeppoSAX Wide Field Cameras (cf. IAUC 6467 and 6533, respectively) have been refined through an improvement of the spatial calibration of the instruments. The calibration concerns small misalignments between both cameras and between the cameras and the satellite coordinate system, the image scales of both WFCs, and the modeling of the nt spread function. The calibration was tested with 123 ections of catalogued x-ray sources with accurately known positions, as found in 15 SAX WFC observations with a variety of orientation angles. These sources have a representative range of intensities and off-axis angles. None of the detections has a difference between catalogue and measured source positions > 3'.9, and 97 percent have a difference of < 3'. In a subset of fourteen sources having significance levels that are within a factor of 2 of the levels of GRB 960720 and GRB 970111, one source shows a difference of > 3' from the catalogue position. For GRB 960720, we find a 3'-radius error circle centered on R.A. = 17h30m37s, Decl. = +49o05'.8 (equinox 2000.0). This position is 10'.5 from the previously reported position, for which a 10' error circle radius was reported. Neither the previously reported SAX NFI source (IAUC 6480) nor the optical source (IAUC 6526) lies within the error circle. The new error circle does include the radio-loud quasar 4C 49.29 (z = 1.038). The error circle for GRB 970111 is centered on R.A. = 15h28m15s, Decl. = +19o36'.3. This center is 4'.2 from the previously reported position, and the circle overlaps the IPN annulus reported by Hurley et al. (IAUC 6545). None of the previously reported SAX NFI sources (Butler et al., IAUC 6539), RASS sources (Voges et al., IAUC 6539), radio source (Frail et al., IAUC 6545), and ROSAT HRI source (IAUC 6567) lies within the 3'-radius error circle."

232.0625°, 19.6050°

ET 29P/SCHWASSMANN-WACHMANN 1

Visual m1 estimates: Feb. 2.19 UT, 11.6 (K. Hornoch, Lelekovice, Czech Republic, 0.35-m refl.); 8.15, 14.1: (J. D. Shanklin, Cambridge, England, 0.3-m refractor); 16.18, 14.1 (J.

From dgreen@cfa0.harvard.edu Sat Mar 1 13:51 PST 1997
Date: Sat, 1 Mar 1997 16:41:10 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
ject: IAUC 6571: GRB 970111; 81P

Circular No. 6571

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IAUSUBS@CFA.HARVARD.EDU or FAX 617-495-7231 (subscriptions)
BMARSDEN@CFA.HARVARD.EDU or DGREEN@CFA.HARVARD.EDU (science)
URL http://cfa-www.harvard.edu/cfa/ps/cbat.html
Phone 617-495-7244/7440/7444 (for emergency use only)

GRB 970111

K. Hurley, Space Sciences Laboratory, Berkeley, on behalf of the Ulysses Gamma-Ray Burst Team; C. Kouveliotou, G. Fishman, and C. Meegan, on behalf of the Gamma Ray Observatory BATSE Team; and J. van Paradijs, University of Amsterdam and University of Alabama in Huntsville, report: "A refined triangulation of GRB 970111 has been done using almost final Ulysses and BATSE data. The resulting position is an annulus whose half-width is 0.027 deg, centered at R.A. = 11h50m56s, Decl. = +33o21'.8 (equinox 2000.0), with central radius 49.981 deg. Combining this with the refined BeppoSAX error circle by in 't Zand et al. (IAUC 6569) gives an approximately trapezoidal error box with corners at R.A., Decl. = 15h28m24s, +19o34'.2; 15h28m28s, +19o36'.04; 15h28m08s, +19o33'.97; 15h28m20s, +19o39'.25. This error box is consistent with the one reported on IAUC 6545 but has an area approximately seven times smaller. Only minor improvements to this error box are expected."

T. Galama, University of Amsterdam (UoA); R. Strom, Netherlands Foundation for Research in Astronomy, Dwingeloo, and UoA; J. van Paradijs; L. Hanlon and K. Bennett, European Space Agency/ESTEC; C. Kouveliotou, Universities Space Research Association; G. Fishman and C. Meegan, Marshall Space Flight Center, NASA; J. Heise, SRON, Utrecht; and K. Hurley report: "We have made radio observations at 840 MHz (21" x 62" beamwidth) with the Westerbork array of the revised BeppoSAX/WFC-IPN error box of GRB 970111 (cf. IAUC 6569 and Hurley et al., above) on Jan. 12 (for 1.5 hr), Jan. 13, 14, 16, 20, and 29 (12 hr each day). We also observed at 5 GHz for 6 hr on each of Feb. 26 and 27. The error box contains one weak unresolved radio source (A) at R.A. = 15h28m17s.7, Decl. = +19o35'39" (equinox 2000.0); two sources lie just outside the error box: B, R.A. = 15h28m12s.8, +19o32'50"; C, R.A. = 15h28m04s.9, Decl. = +19o35'00". The 840-MHz and 5-GHz fluxes in mJy are as follows: source A, 0.6, < 0.5; B, 1.0, < 0.5; C, < 0.5, 0.8 (upper limits are 3 sigma)."

COMET 81P/WILD 2

Total visual magnitude estimates: Feb. 2.15 UT, 10.0 (R. Keen, Mt. Thorodin, CO, 0.32-m reflector); 7.05, 9.8 (J. Bortle, Stormville, NY, 0.41-m reflector); 14.06, 9.7 (A. Diepvens, Balen, gium, 0.15-m refractor); 27.94, 9.9 (A. Pereira, Cabo da Roca, tugal, 0.25-m reflector); Mar. 1.07, 9.9 (B. H. Granslo, Fjellhamar, Norway, 0.20-m reflector).

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From dgreen@cfa0.harvard.edu Tue Mar 4 09:55 PST 1997
Date: Tue, 4 Mar 1997 12:37:49 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
Subject: IAUC 6574: GRB 970111; GRB 970228

Circular No. 6574

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Mailstop 18, Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
IAUSUBS@CFA.HARVARD.EDU or FAX 617-495-7231 (subscriptions)
BMARSDEN@CFA.HARVARD.EDU or DGREEN@CFA.HARVARD.EDU (science)
URL http://cfa-www.harvard.edu/cfa/ps/cbat.html
Phone 617-495-7244/7440/7444 (for emergency use only)

GRB 970111

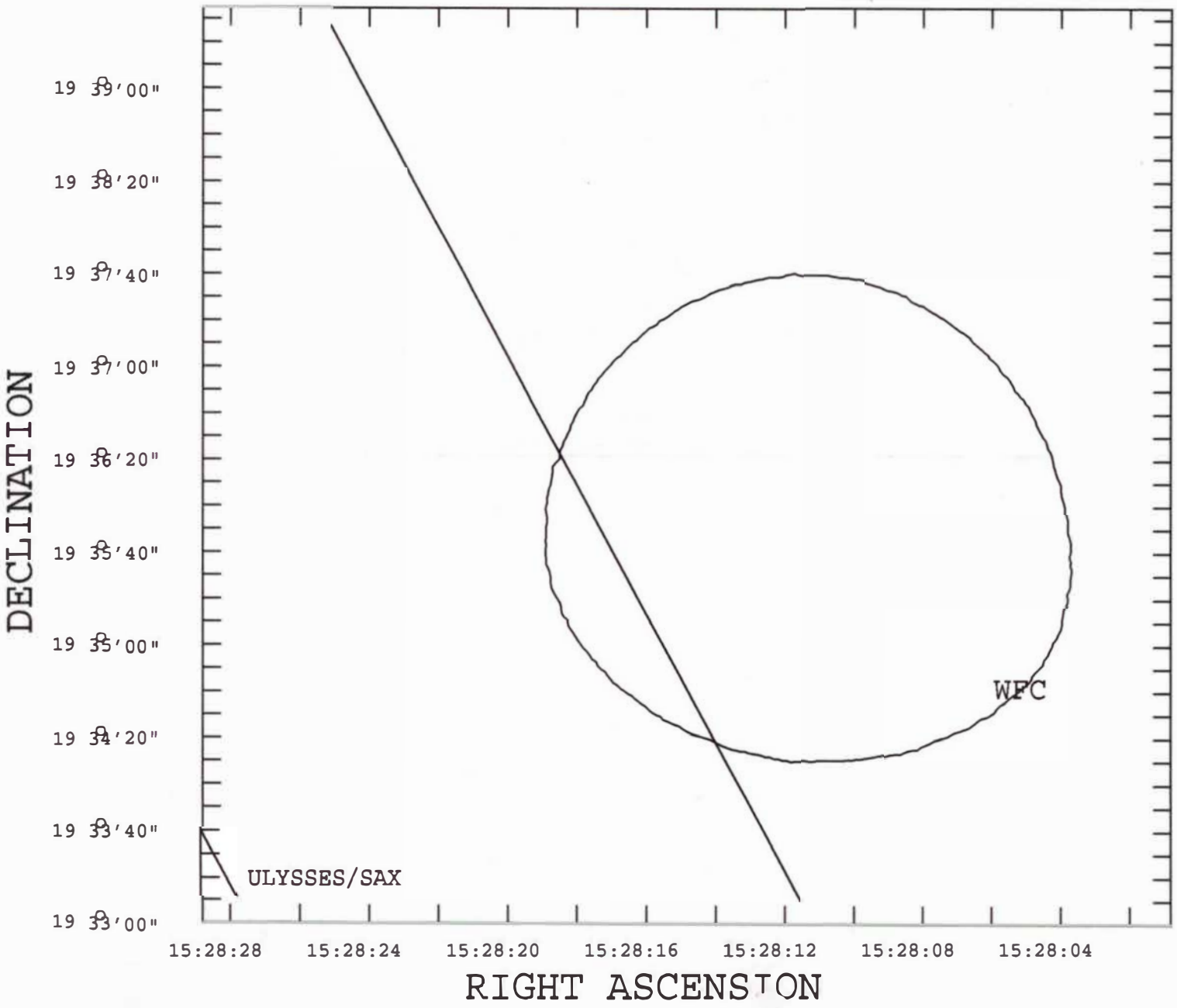
P. J. Groot and T. Galama, University of Amsterdam (UoA); J. Telting and R. G. M. Rutten, ING Telescopes, La Palma; and J. van Paradijs, UoA and University of Alabama in Huntsville, report: "We have obtained BVI images of the refined error-box of GRB 970111 (IAUC 6569) on Feb. 28.2 UT with integration times of 930, 405, and 695 s, respectively, and R images (405 s) on Mar. 1.1, using the 4.2-m William Herschel Telescope (prime focus) at La Palma. Comparison with the Digital Sky Survey shows no brightening of sources to V = 19. The three radio sources reported by Galama et al. (IAUC 6571) show no optical counterpart down to V = 24.0. The GRB error box contains two galaxies, at R.A. = 15h28m15s.2, Decl. = +19o35'55" (equinox 2000.0), with V = 20.2, B-V = +1.3, V-R = +0.7, V-I = +1.4; and at R.A. = 15h28m10s.8, Decl. = +19o35'35", with V = 5, B-V = +0.5, V-R = +0.4, V-I = +0.9. These galaxies are not ected in the radio observations reported by Galama et al."

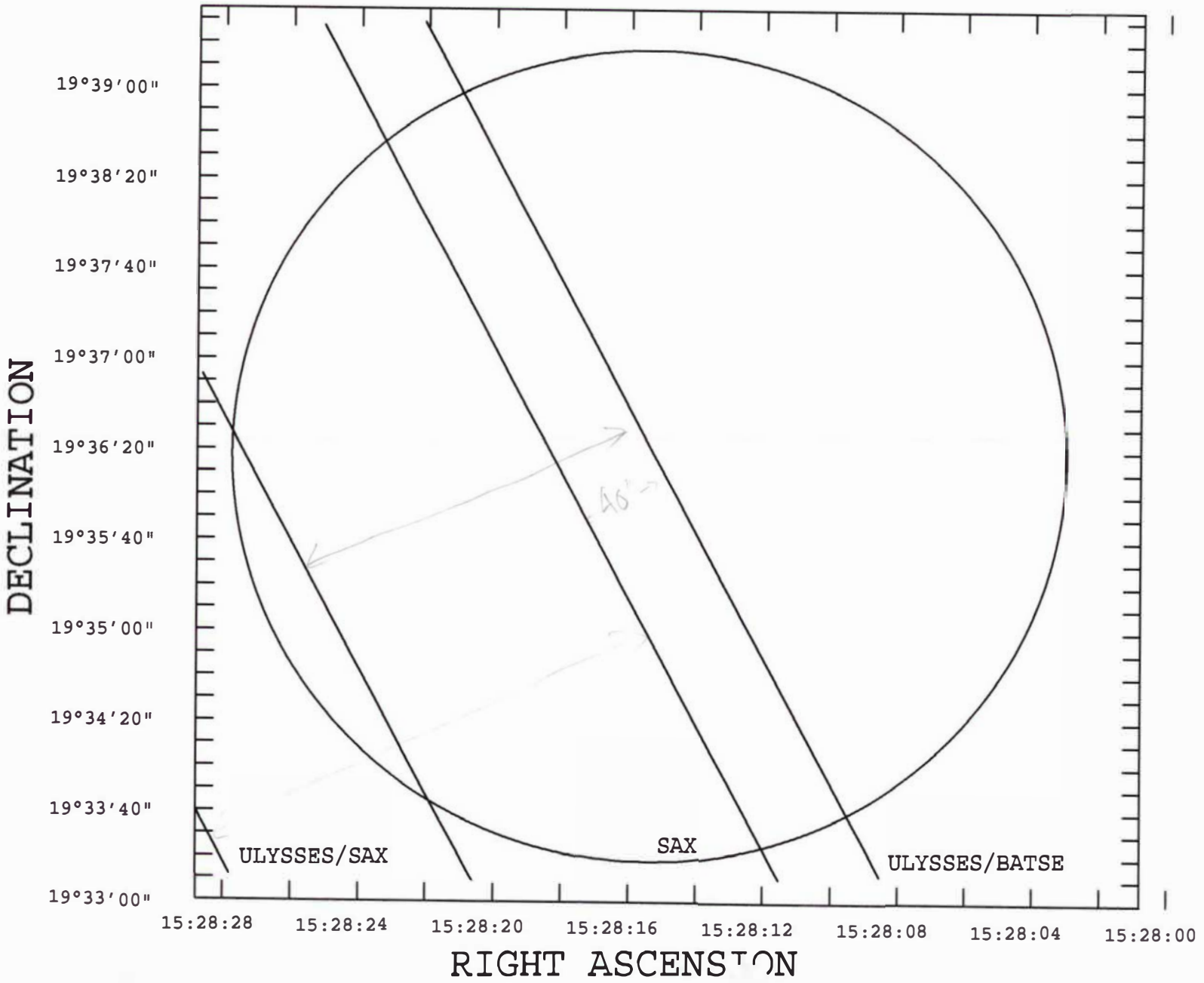
GRB 970228

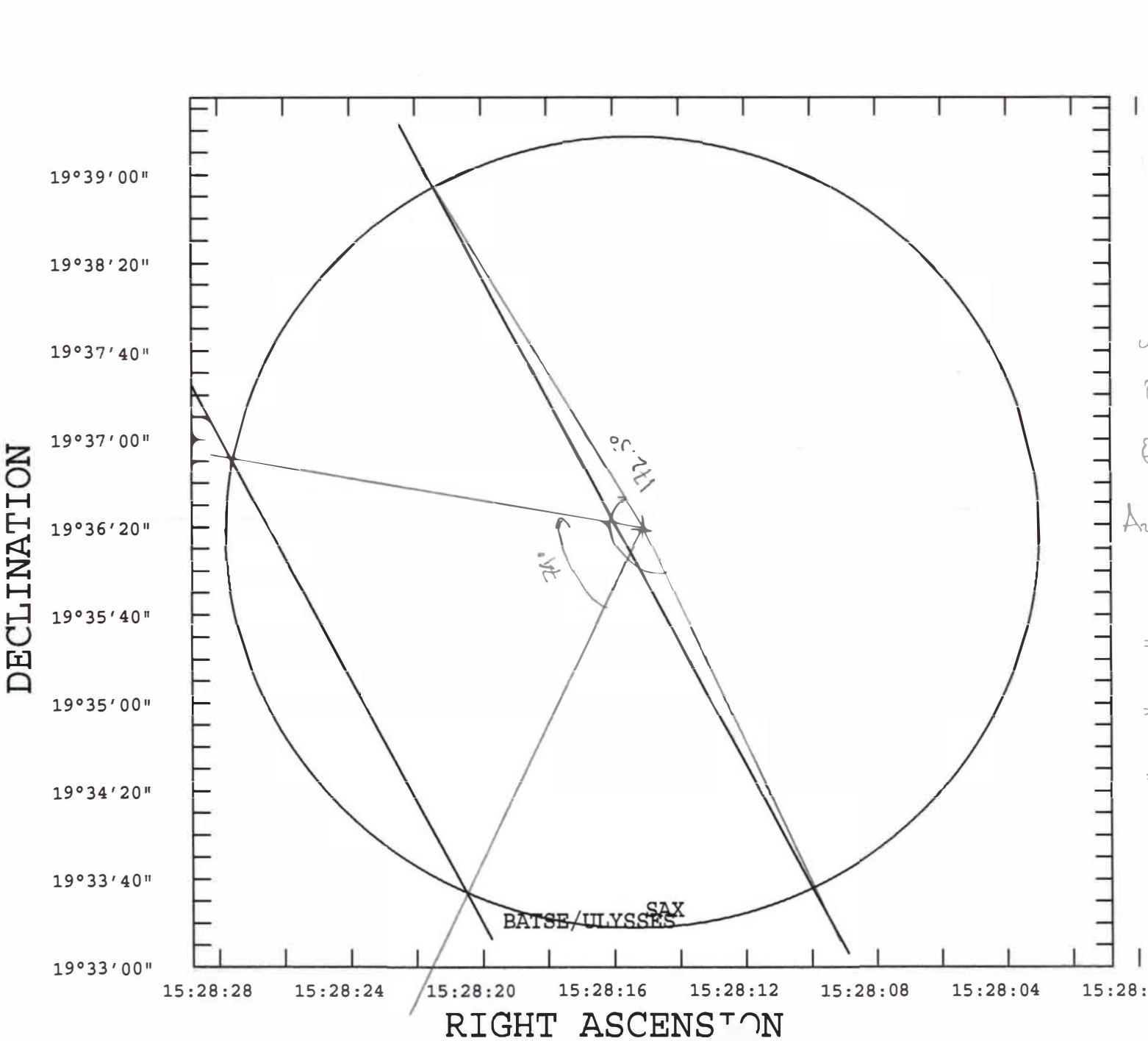
Galama; R. Strom, Netherlands Foundation for Research in Astronomy, Dwingeloo, and UoA; van Paradijs; L. Hanlon and K. Bennett, European Space Agency/ESTEC; C. Kouveliotou, Universities Space Research Association; G. Fishman and C. Meegan, NASA Marshall Space Flight Center; J. Heise and J. in 't Zand, SRON, Utrecht; E. Costa, M. Feroci, and L. Piro, Istituto di Astrofisica Spaziale, CNR, Frascati; F. Frontera and G. Zavattini, Universita di Ferrara; L. Nicastro and E. Palazzi, Istituto Tecnologia e Studio Radiazioni Extraterrestri, CNR, Bologna; and K. Hurley, Space Sciences Laboratory, Berkeley, report: "We made radio observations (5 GHz, 3".8 x 17" beamwidth) with the Westerbork array of the SAX/WFC error box of GRB 970228 (IAUC 6572) on Feb. 28 (19.9 hr after the onset of GRB 970228) for 1.2 hr, and on Mar. 1 and 2 for 12 hr each. The error box contains no radio sources above 0.7 mJy (4 sigma)."

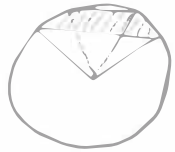
Groot et al. (above), in 't Zand, Heise, Costa, Feroci, Frontera, and Palazzi further report: "We have obtained V and I images of the error box of GRB 970228 (IAUC 6572) on Mar. 1.0 UT (21 hr after the BeppoSAX trigger) with integration times of 300 s each using the same telescope. Comparison with the Digital Sky Survey shows no brightening of sources to V = 19. A spiral galaxy with V = 20.5 and V-I = +1.3 is located just outside the error box R.A. = 5h01m46s.0, Decl. = +11o48'19" (equinox 2000.0)."

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DECLINATION
19 39'00"
19 38'20"
19 37'40"
19 37'00"
19 36'20"
19 35'40"
19 35'00"
19 34'20"
19 33'40"
19 33'00"
15:28:28
15:28:24
15:28:20
15:28:16
15:28:12
15:28:08
15:28:04
RIGHT ASCENSION
WFC
ULYSSES/SAX


19°39'00"
19°38'20"
19°37'40"
19°37'00"
19°36'20"
19°35'40"
19°35'00"
19°34'20"
19°33'40"
19°33'00"
DECLINATION
15:28:28
15:28:24
15:28:20
15:28:16
15:28:12
15:28:08
15:28:04
15:28:00
RIGHT ASCENSION
ULYSSES/SAX
SAX
ULYSSES/BATSE





Area = Segment 1 - Segment 2

$= \frac{1}{2}R^2(\theta_1 - \sin\theta_1) - \frac{1}{2}R^2(\theta_2 - \sin\theta_2)$

where $\theta_1 > \theta_2$

$\theta_1 = 172.5° = 3.0092$ rad

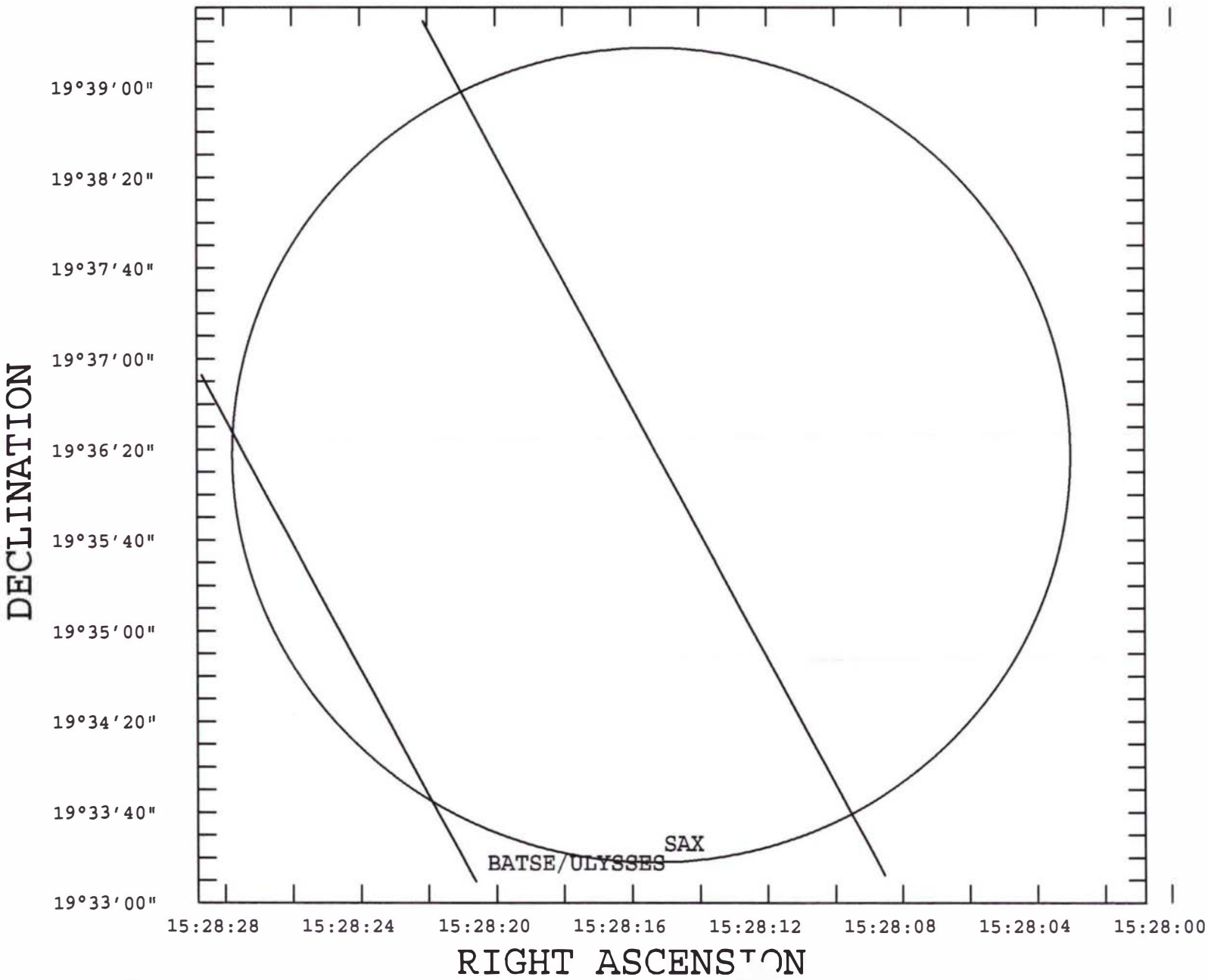
$\theta_2 = 74° = 1.2909$ rad

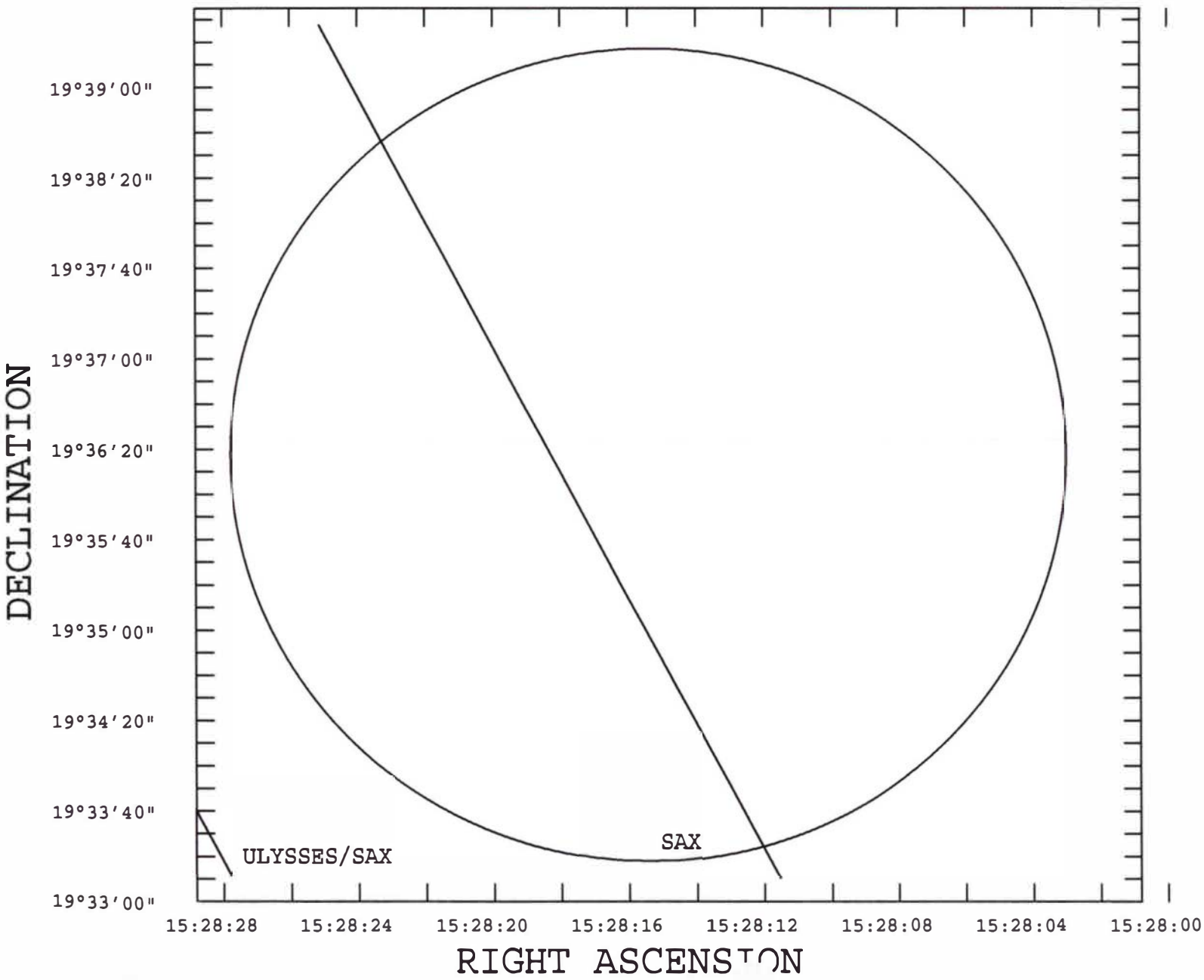
Area $= \frac{1}{2}R^2(3.0092 - 1.2909 - \sin 172.5 + \sin 74°)$

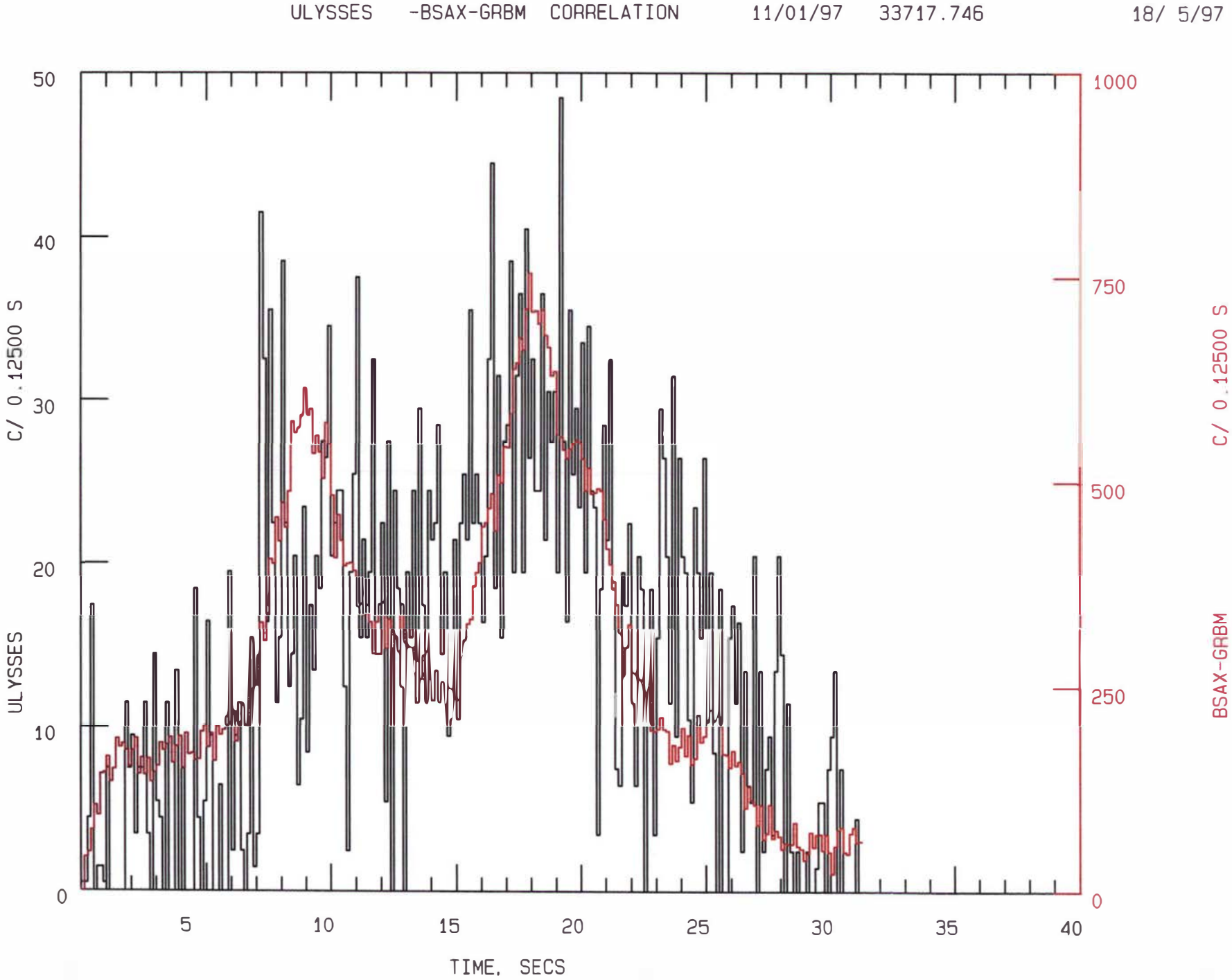
$= \frac{1}{2}R^2(1.7183 - .1305 + .9613)$

$= \frac{1}{2}R^2(2.549)$

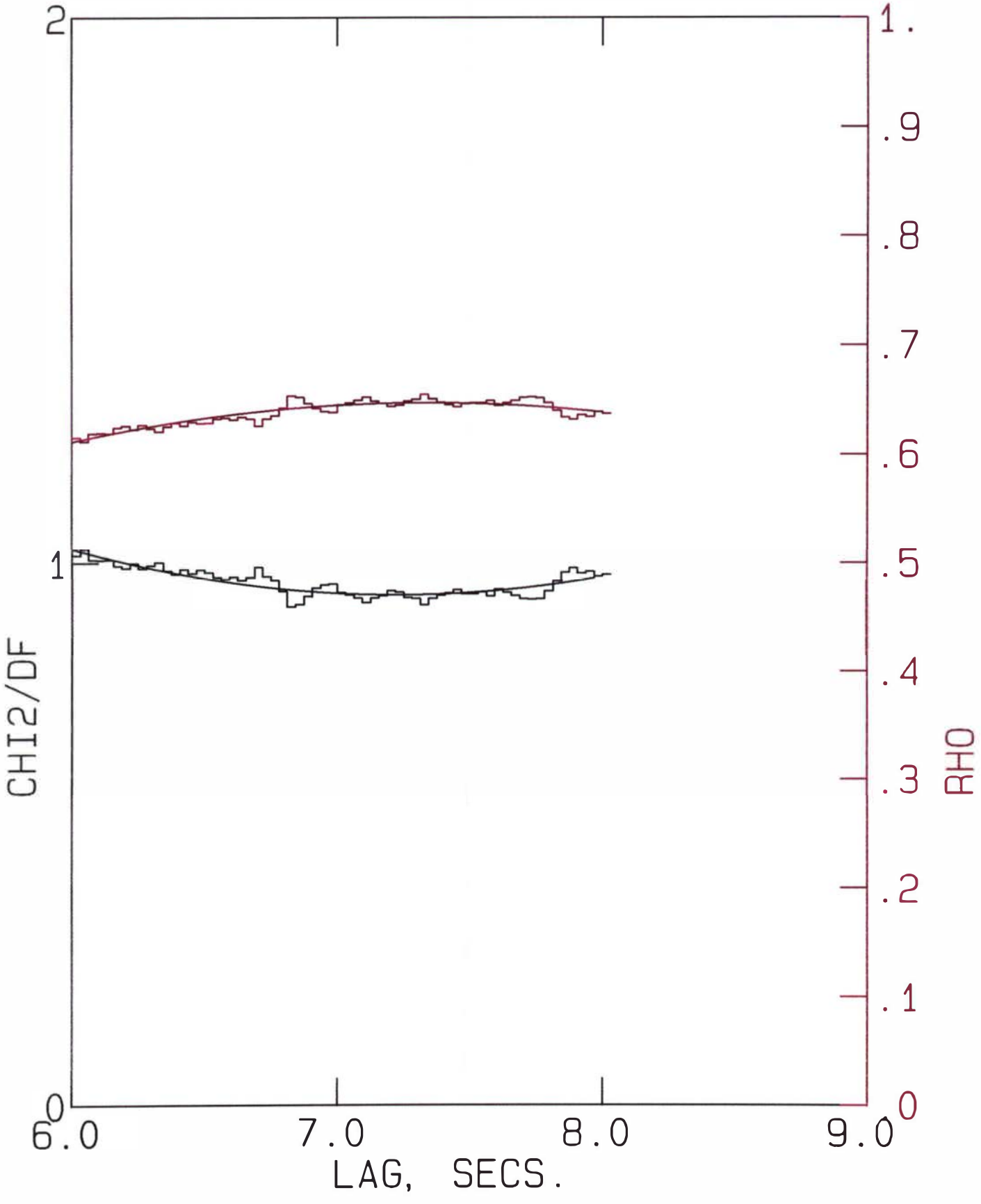
$= \frac{1}{2}3'^2(2.549) = 11.47$ sq arcmin


19°39'00"
19°38'20"
19°37'40"
19°37'00"
19°36'20"
19°35'40"
19°35'00"
19°34'20"
19°33'40"
19°33'00"
DECLINATION
15:28:28
15:28:24
15:28:20
15:28:16
15:28:12
15:28:08
15:28:04
15:28:00
RIGHT ASCENSION
SAX
BATSE/ULYSSES


19°39'00"
19°38'20"
19°37'40"
19°37'00"
19°36'20"
19°35'40"
19°35'00"
19°34'20"
19°33'40"
19°33'00"
DECLINATION
15:28:28
15:28:24
15:28:20
15:28:16
15:28:12
15:28:08
15:28:04
15:28:00
RIGHT ASCENSION
ULYSSES/SAX
SAX


ULYSSES -BSAX-GRBM CORRELATION 11/01/97 33717.746 18/ 5/97
ULYSSES
C/ 0.12500 S
BSAX-GRBM
C/ 0.12500 S
TIME, SECS
0
10
20
30
40
50
250
500
750
1000
5
10
15
20
25
30
35
40

ULYSSES -BSAX-GRBM CORRELATION 11/01/97 33717.746



National Radio Astronomy Observatory
P.O. Box O, Socorro, New Mexico 87801-0387 USA
Telephone:(505)835-7000 **Fax:**(505)835-7027

Fax Message

TO: Kevin Hurley DATE:

COMPANY: Fax #: 510 643 8302

Number of Pages (including cover page): 2

THIS FAX MESSAGE FROM:

NAME: Dale A. Frail Phone:(505)835- 7338
National Radio Astronomy Observatory
P.O. Box O
Socorro, New Mexico 87801

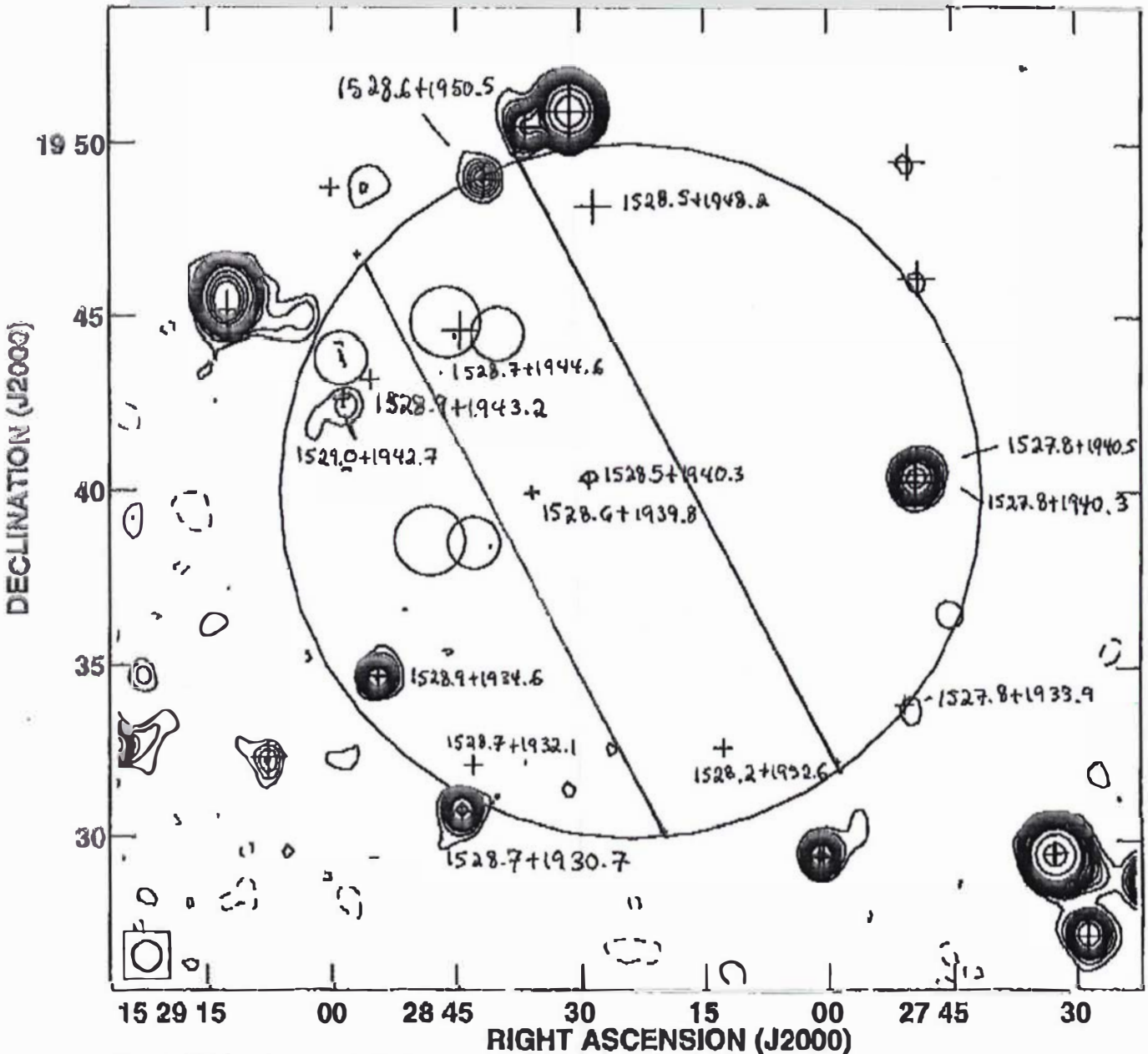
COMMENTS: Kevin, I thought you might like to see this. I am not distributing it widely. It is a radio image taken on March 5, 1995 (i.e. "before") image. Also plotted are the radio sources that I detect now. The size of the cross of flux density. The "new" radio source inside the X-ray (SAX) source is visible.

If you have any problems receiving, please contact receptionist at (505)835-7000.

The National Radio Astronomy Observatory is a facility of the National Science Foundation operated under cooperative agreement by Associated Universities, Inc.

LTESS - 4 fields

PLot file version 2 created 26-JAN-1997 09:53:37
CONT: 15270+19 IPOL 1400.000 MHZ NVSS_MAR95.LTESS.4

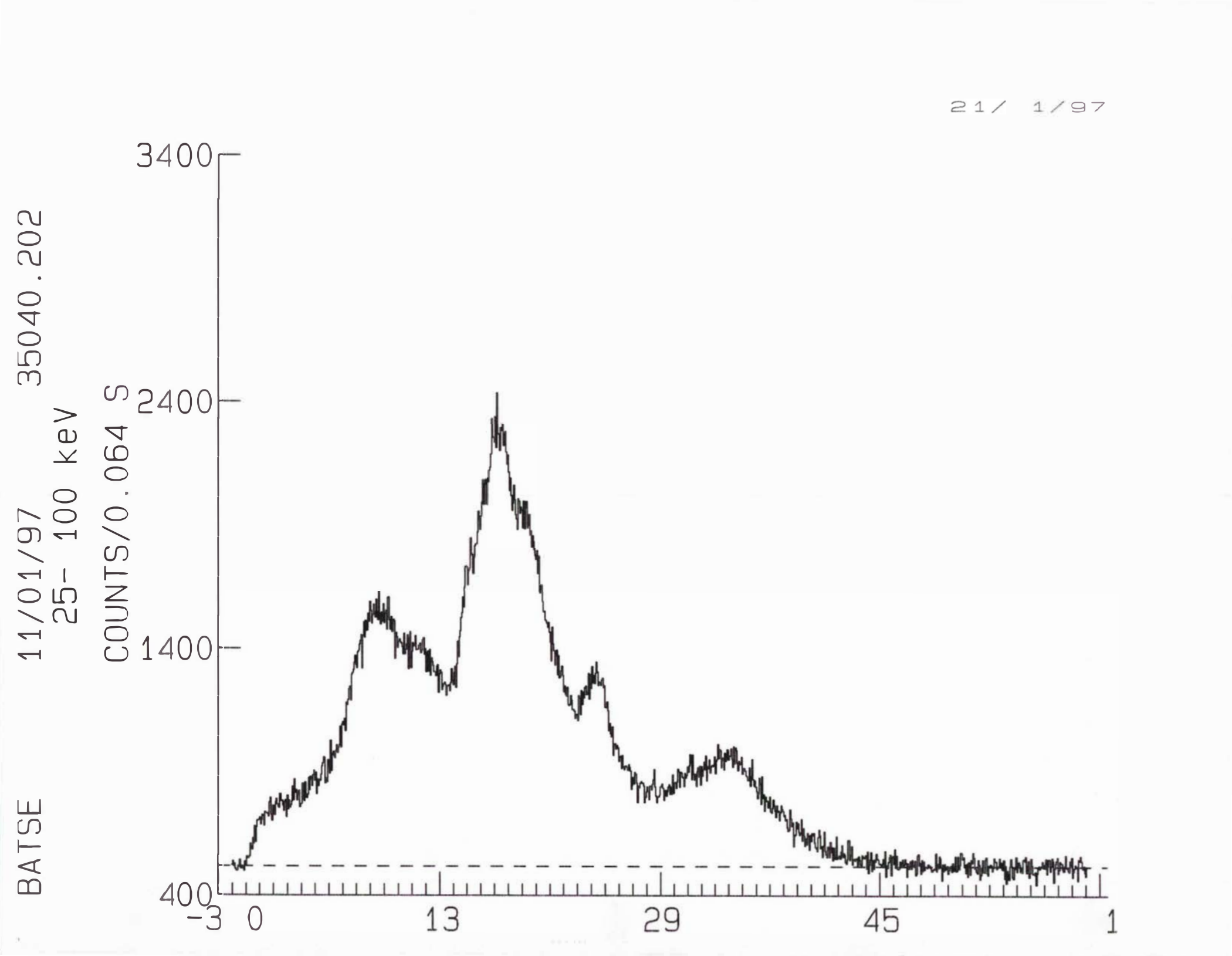


Cont peak flux = 1.2547E-01 JY/BEAM
Levs = 3.4000E-04 * (-3.00, 3.000, 5.000, 7.000, 9.000, 11.00, 13.00, 15.00, 20.00, 30.00, 40.00, 50.00, 100.0, 200.0, 500.0, 1000., 2000., 3000.)

12"
53" x 47"

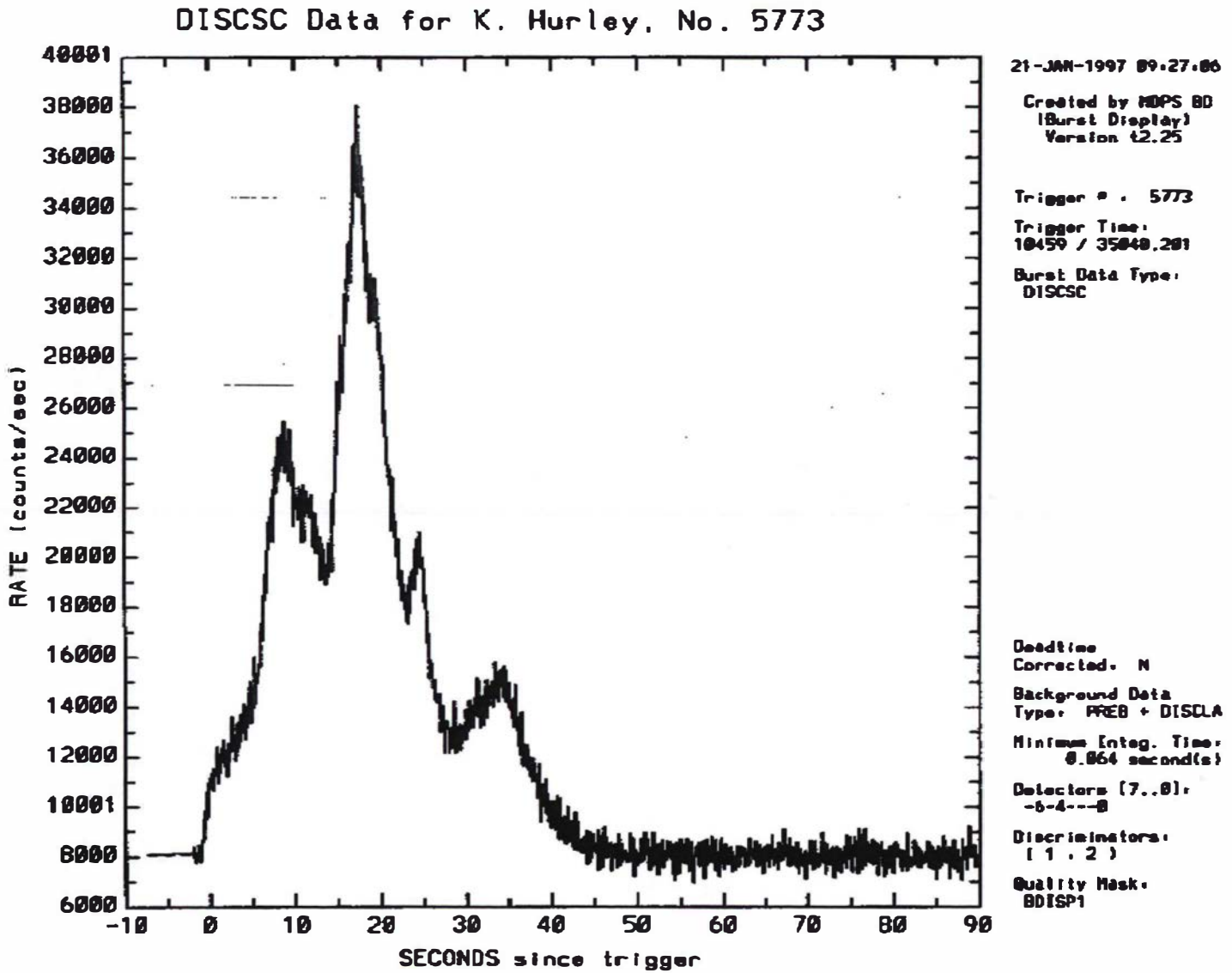
190, 230

335, 370


21/ 1/97
BATSE 11/01/97 35040.202
25- 100 keV
COUNTS/0.064 S
3400
2400
1400
400
-3
0
13
29
45
1

R=95%

01-21-1997 09:52 205 544 5800 BATSE P.03



205 544 5800 01-21-97 07:41AM P003 #43

From dgreen@cfa0.harvard.edu Sat Jan 11 15:38 PST 1997
Date: Sat, 11 Jan 1997 18:29:09 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
T[illegible] quai@mars.harvard.edu
[illegible]ect: IAUC 6533: GRB 970111; PSR 0656+14

Circular No. 6533

Central Bureau for Astronomical Telegrams
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BMARSDEN@CFA.HARVARD.EDU or DGREEN@CFA.HARVARD.EDU (science)
URL http://cfa-www.harvard.edu/cfa/ps/cbat.html
Phone 617-495-7244/7440/7444 (for emergency use only)

GRB 970111

E. Costa, M. Feroci, and L. Piro, Istituto Astrofisica Spaziale, C.N.R., Frascati; F. Frontera and G. Zavattini, Universita di Ferrara; L. Nicastro and E. Palazzi, Istituto Tecnologie e Studio Radiazioni Extraterrestri, C.N.R., Bologna; G. Gandolfi, M. Smith, A. Coletta, G. D'Andreta, and G. Spoliti, BeppoSAX Science Operation Center, Roma; and R. Jager and J. Heise, Space Research Organization of the Netherlands, Utrecht, communicate: "The BeppoSAX Gamma Ray Burst Monitor (GRBM) was triggered on Jan. 11.405556 UT. Quick-look analysis carried out at the BeppoSAX Science Operation Center shows the following. From the GRBM lightcurve, we see an intense gamma-ray burst lasting about 50 s, with two major peaks of similar intensity spaced 9 s [illegible]rt, and a third peak after 17 s. The fluxes of the three peaks about 4500, 5500, and 700 counts/s. The burst is in the field of Wide Field Camera (WFC) number 2 with a peak countrate of about 300 counts/s. Taking into account the off-axis position, the peak flux corresponds to about 4 Crab. From the WFC image, we have derived a first estimation of the position at R.A. = 15h28m24s, Decl. = +19o40'.0 (equinox 2000.0); we conservatively estimate a 10' error radius. The procedure for a TOO pointing of BeppoSAX Narrow Field Instruments has been started. Observations in all bands are solicited."

232.100, 19.666, 0.167

PSR 0656+14

V. G. Kurt and B. V. Komberg, Astro Space Center, Russian Academy of Sciences; V. V. Sokolov and S. V. Zharikov, Special Astrophysical Observatory; and G. G. Pavlov, Pennsylvania State University, report: "The radio pulsar PSR 0656+14 was observed with the 6-m telescope on Nov. 11-12. Broadband BVRI CCD images (field-of-view 2'.4 x 2'.6; pixel size 0".274; seeing about 1".5) show the following magnitudes of the pulsar: B = 24.85 (+0.19, -0.16), V = 24.90 (+0.16, -0.14), R = 24.52 (+0.12, -0.11), I = 23.81 (+0.27, -0.21). The optical-ultraviolet spectrum, including the flux measured in the HST/FOC F130LP filter (cf. Pavlov, Stringfellow, and Cordova 1996, Ap.J. 467, 370) can be interpreted as a sum of the nonthermal power-law spectrum and thermal spectrum [illegible]itted by the surface of the neutron-star."

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From dgreen@cfa0.harvard.edu Thu Jan 16 21:13 PST 1997
Date: Fri, 17 Jan 1997 00:04:31 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
Subject: IAUC 6539: GRB 970111

Circular No. 6539

Central Bureau for Astronomical Telegrams
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URL http://cfa-www.harvard.edu/cfa/ps/cbat.html
Phone 617-495-7244/7440/7444 (for emergency use only)

GRB 970111

R. C. Butler, Agenzia Spaziale Italiana, Rome; L. Piro, E. Costa, and M. Feroci (cf. IAUC 6533); F. Frontera and D. Dal Fiume, TESRE, CNR, Bologna; J. Heise and R. Jager; B. Sacco, IFCAI, CNR, Palermo; L. Chiappetti, IFCTR, CNR, Milan; A. Parmar, Space Science Department, ESTEC; L. A. Antonelli and D. Ricci, BeppoSAX, Rome; J. M. Muller, BeppoSAX, Rome, and SRON, Utrecht; and A. Coletta, C. De Libero, and L. Salotti, BeppoSAX, Rome, write: "BeppoSAX pointed its Narrow Field Instruments on the estimated position of GRB 970111 (IAUC 6533) during Jan. 12.09-13.38 UT. A quick analysis of the data shows two sources within the BeppoSAX WFC error box: (a) R.A. = 15h28m46s.3, Decl. = +19o44'50" (equinox 2000.0), with a MECS 2-10-keV flux of 0.0025 counts/s (corresponding to 3.8 x 10E-13 erg cmE-2 sE-1) and a LECS flux 0.1-10-keV of 0.0037 counts/s (about 4.4 x 10E-13 erg cmE-2 sE-1); (b) R.A. = 15h28m48s.3, Decl. = +19o38'34", with a MECS flux (2-10 keV) of 0.0013 counts/s (about 1.9 x 10E-13 erg cmE-2 sE-1). The spectrum of source 'a' is considerably softer than that of source 'b'. As some systematic effects can still be present, an error radius of 1' must still be assumed. Though the detection is highly significant, the countrates can have an uncertainty of 30 percent, due to systematic effects and to the application of a spectrum-independent correction for rough flux estimation."

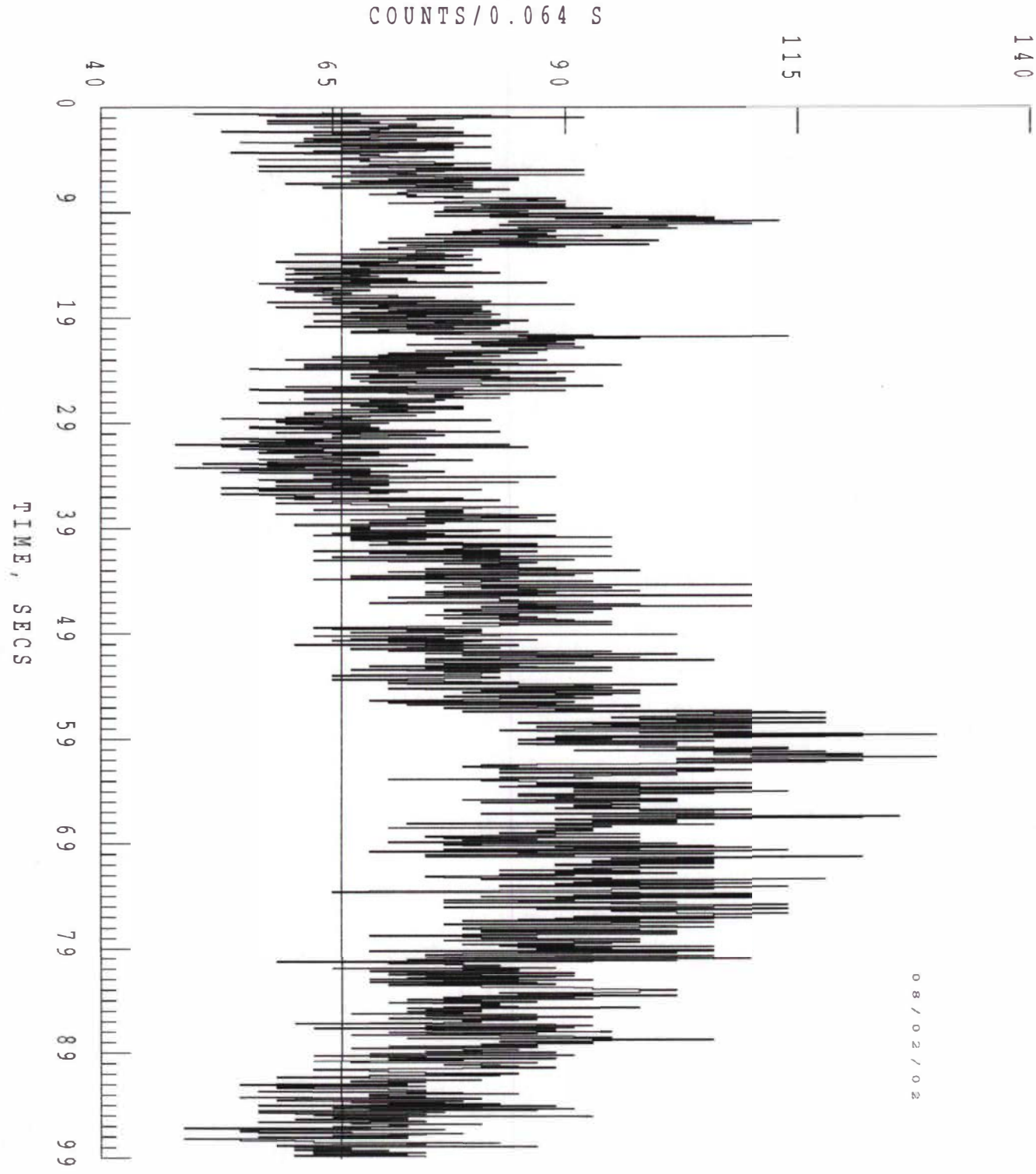
W. Voges and T. Boller, Max-Planck-Institut fur Extraterrestrische Physik, Garching; and J. Greiner, Astrophysikalisches Institut, Potsdam, report: "Within the 10' error box centered on the BeppoSAX position of the gamma-ray burst 970111 (IAUC 6533), we have found three faint x-ray sources in the ROSAT all-sky survey data from 1991 Aug. 5-7, with the following positions (equinox 2000.0; estimated 1-sigma error 45"), PSPC countrates and fluxes (assuming a power-law model with photon index of 2.0 but not corrected for any galactic absorption): source 1, R.A. = 15h28m40s, Decl. = +19o44'.5, 0.045 +/- 0.015 counts/s (0.1-2.0 keV) or 2.5 x 10E-13 erg cmE-2 sE-1; source 2, R.A. = 15h28m59s, Decl. = +19o43'.8, 0.012 +/- 0.06 counts/s (0.5-2.0 keV) or 3.1 x 10E-14 erg cmE-2 sE-1; source 3, R.A. = 15h28m43s, Decl. = +19o38'.5, 0.026 +/- 0.011 counts/s (0.5-2.0 keV) or 6.6 x 10E-14 erg cmE-2 sE-1. The BeppoSAX source 'a' appears to be resolved into ROSAT sources 1 and 2; the BeppoSAX source 'b' coincides well with ROSAT source 3. ROSAT sources 1 and 2 are softer than source 3. Within the error circle of each ROSAT source, there is more than one optical object."

232.167, 19.742
232.246 19.730
232.179 19.642

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KONUS1 11/01/97 85744.563

50- 200 keV



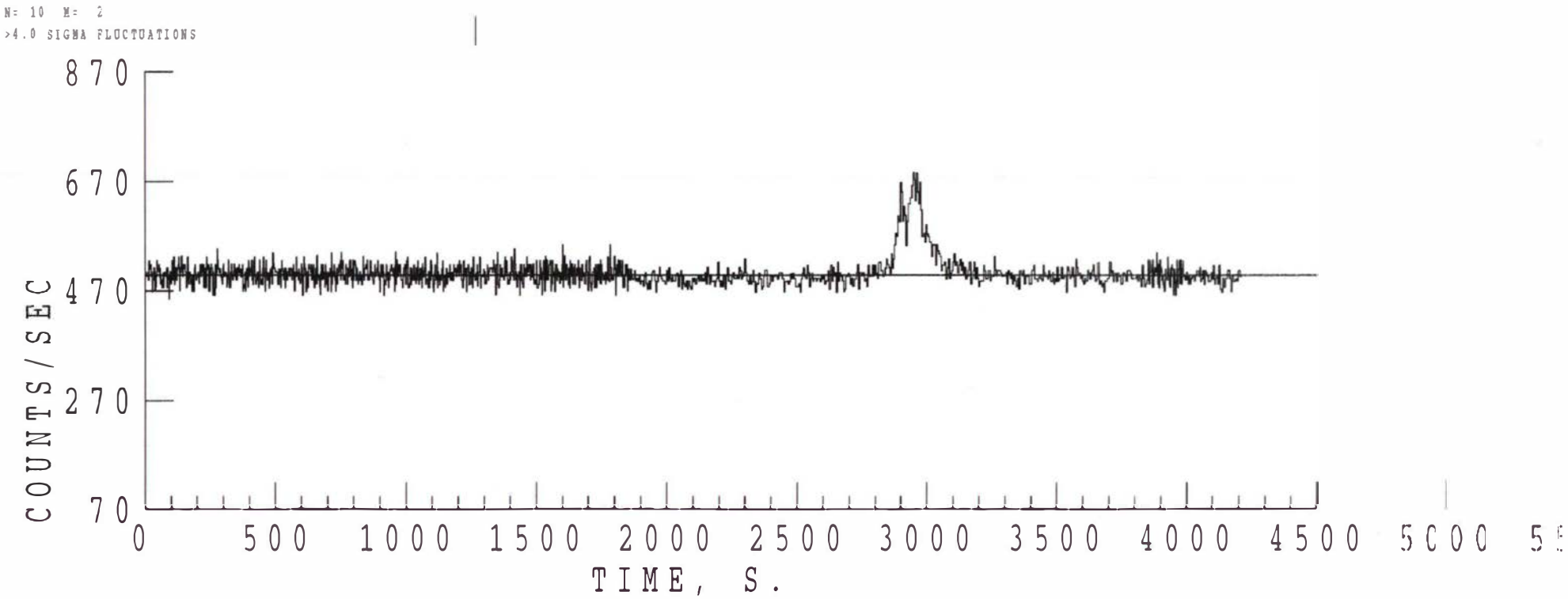
KONUS1 19970111 85744

ULYSSES RT 08/02/02

11/01/97 83628.227 s

INTERVALS REGROUPED BY 9

0- 0 keV



From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
1997	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

Date: Oct 26 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

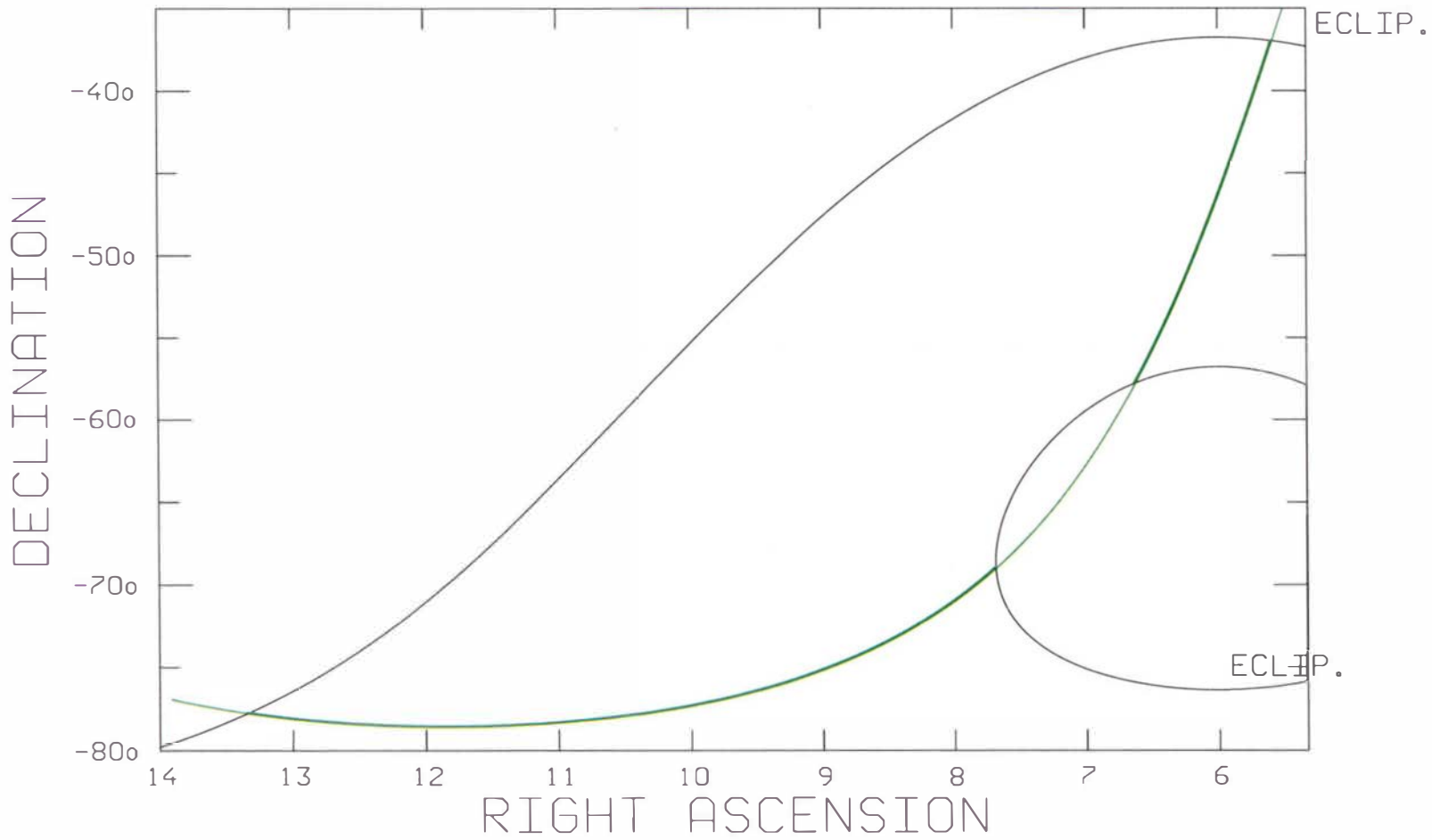
3. For INTEGRAL events

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

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

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

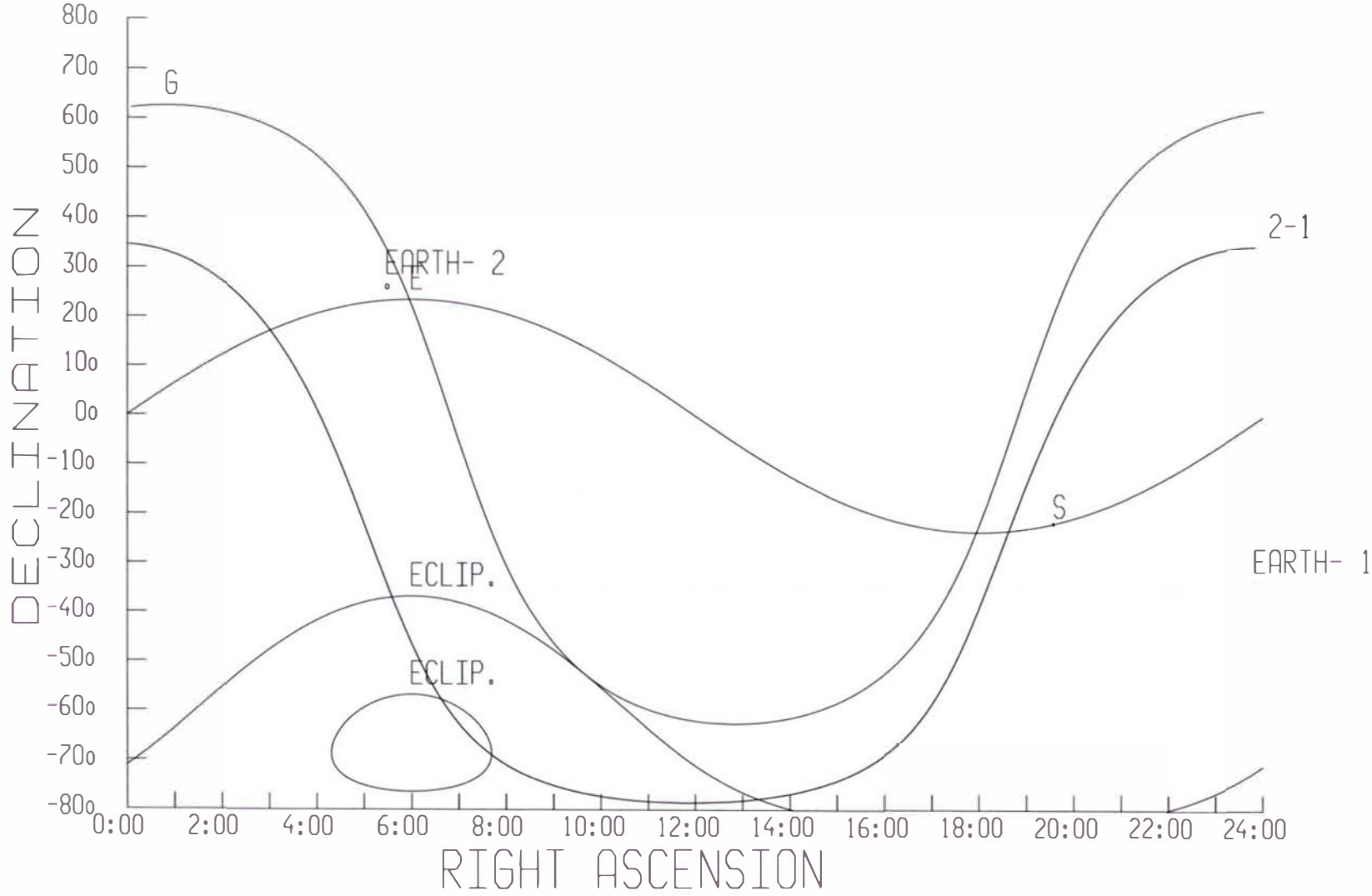
☑ ACCESS and MBL4 databases updated with identical times?


ECLIP.
-40o
-50o
-60o
-70o
-80o
DECLINATION
14
13
12
11
10
9
8
7
6
RIGHT ASCENSION
ECLIP.

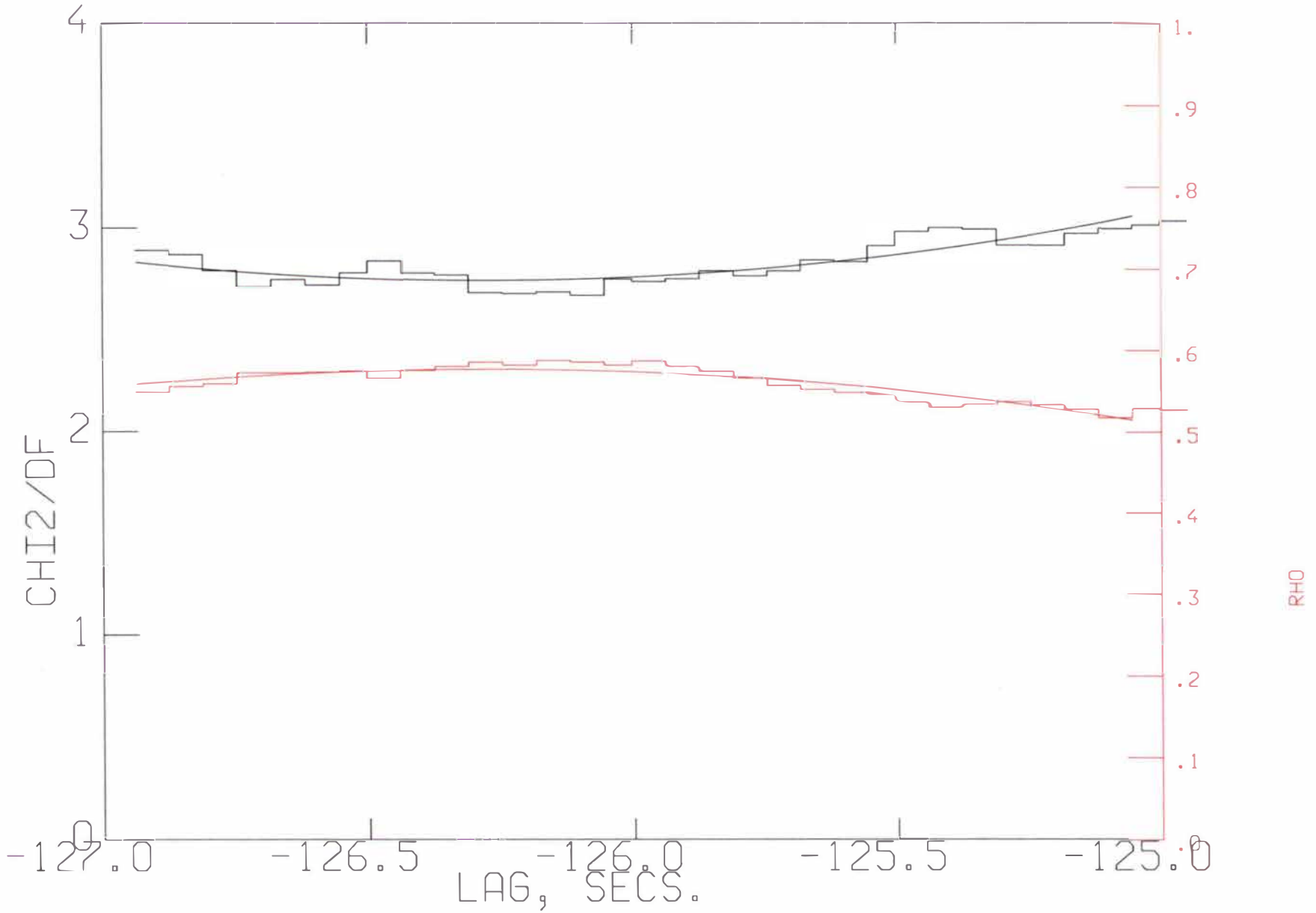
EVENT OF JAN 11, 1997 23:59

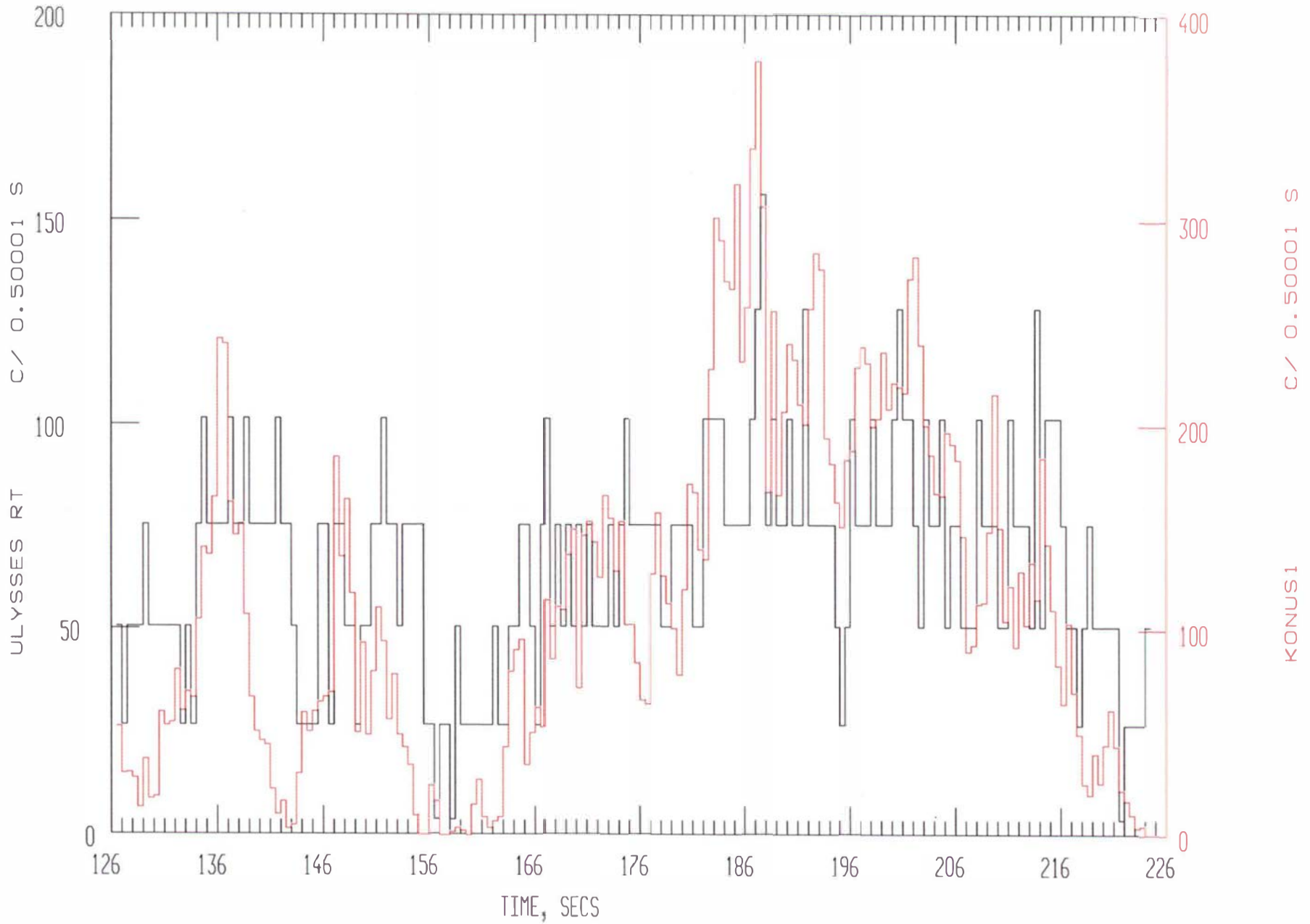
26/10/2011

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



ULYSSES RT-KONUS1 CORRELATION 11/ 1/97 86392.016




ULYSSES RT-KONUS1 CORRELATION 11/ 1/97 86392.016
26/10/11
ULYSSES RT C/ 0.50001 S
KONUS1 C/ 0.50001 S
TIME, SECS
0
50
100
150
200
300
400
126
136
146
156
166
176
186
196
206
216
226

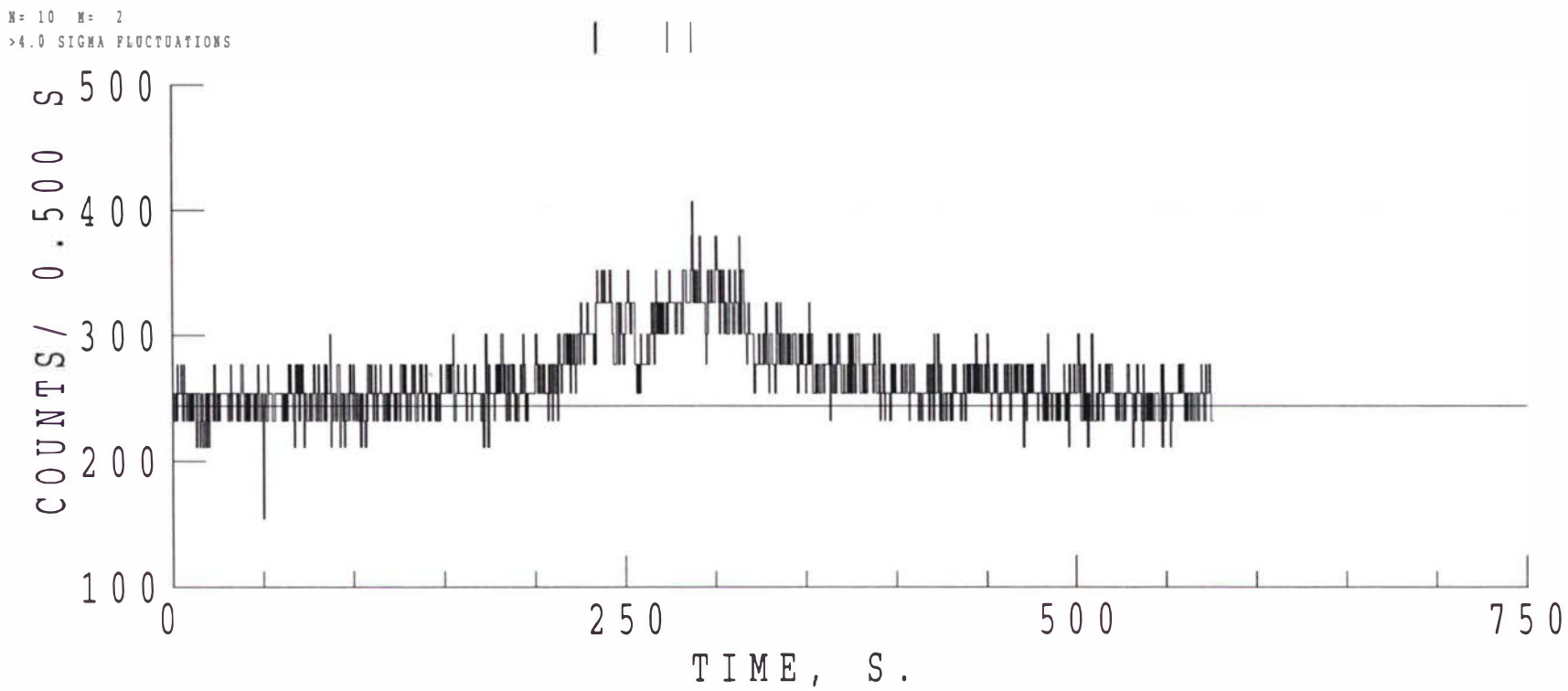
KONUS 19970112 00178

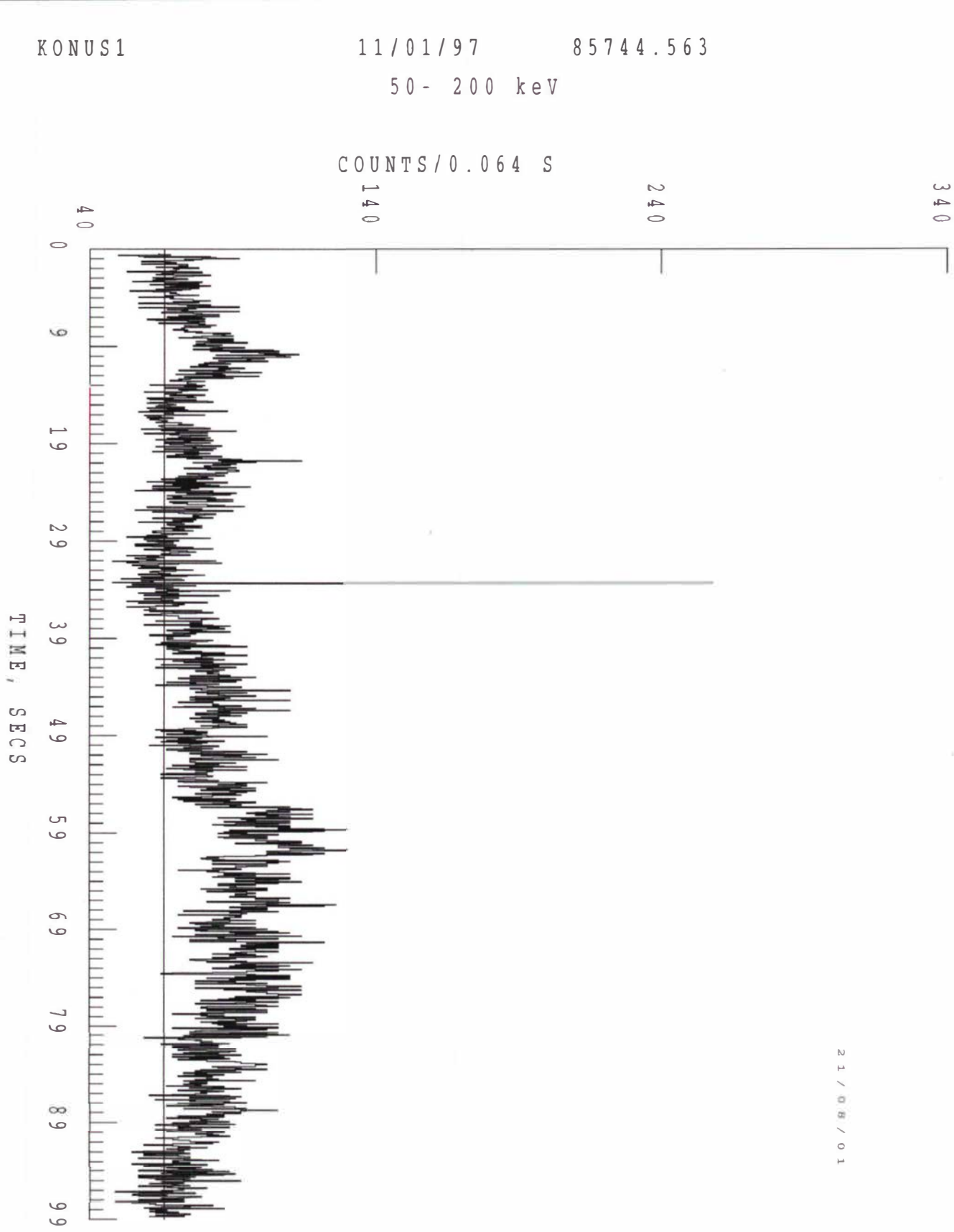
ULYSSES RT

25/10/11

11/01/97 86292.000 s

0- 0 keV




KONUS1
11/01/97
85744.563
50- 200 keV
COUNTS/0.064 S
40
140
240
340
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
21/08/01

From David.M.Palmer.1@gsfc.nasa.gov Tue Jan 21 11:09 PST 1997
X-Sender: palmer@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 21 Jan 1997 14:09:05 -0400
To: bonnard@rosserv.gsfc.nasa.gov, khurlev@sunspot.ssl.berkelev.edu,
helmut.seifert.1@gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov,
palmer@rosserv.gsfc.nasa.gov
From: David Palmer <David.M.Palmer.1@gsfc.nasa.gov>
Subject: Posible burst detections

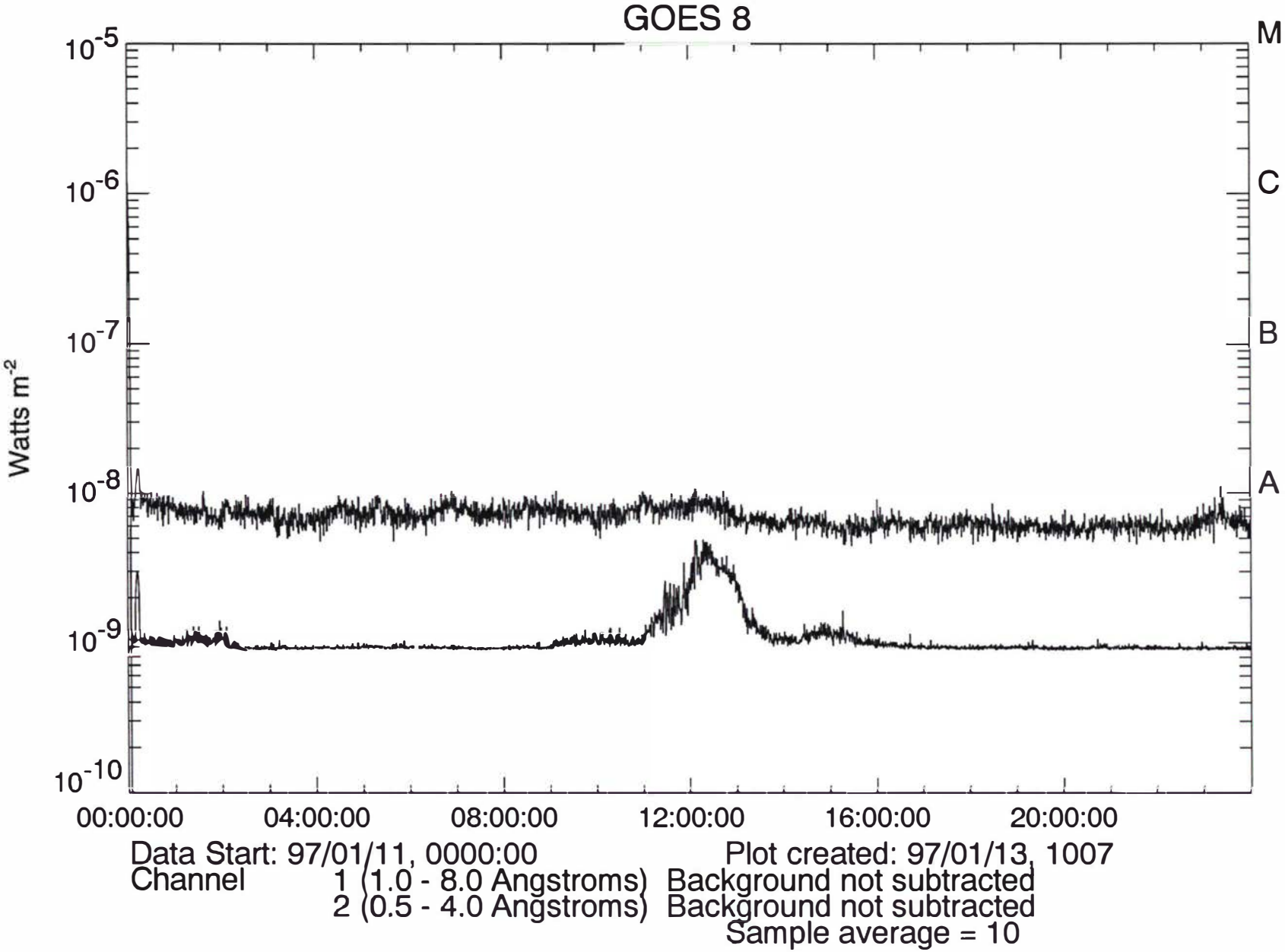
Nothing apparent at 970105 06000, 970105 65820, 950107 28620, 970109 05100, 970110_31980, 970110_52260, 970113_52260, all +/- 2100 seconds

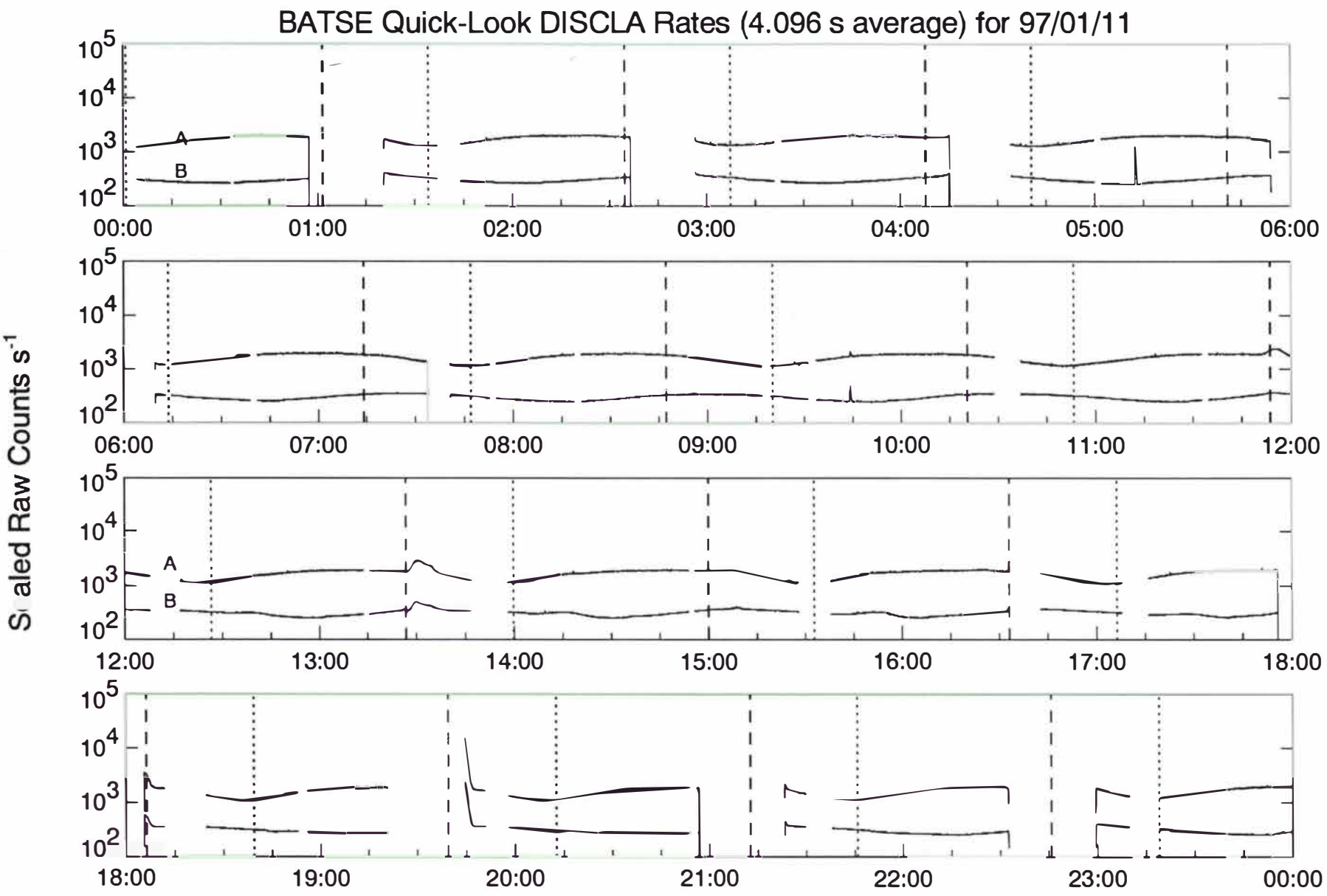
Possible brief event at 970107_51292.6 - 51292.9 (one sample time for the fast rate) with a significance of 6 sigma 100-300 keV, 4.5 sigma 35-100 keV (different sampling times).

There is a strong, real trigger at 970111 85744, which lasts about 300 seconds. 23:49:04 Do you see it? It doesn't show up on the GOES x-ray plots or particle plots
gopher://proton.sec.noaa.gov:70/I9/plots/xray/gif/970113
so it doesn't seem to be a solar flare.

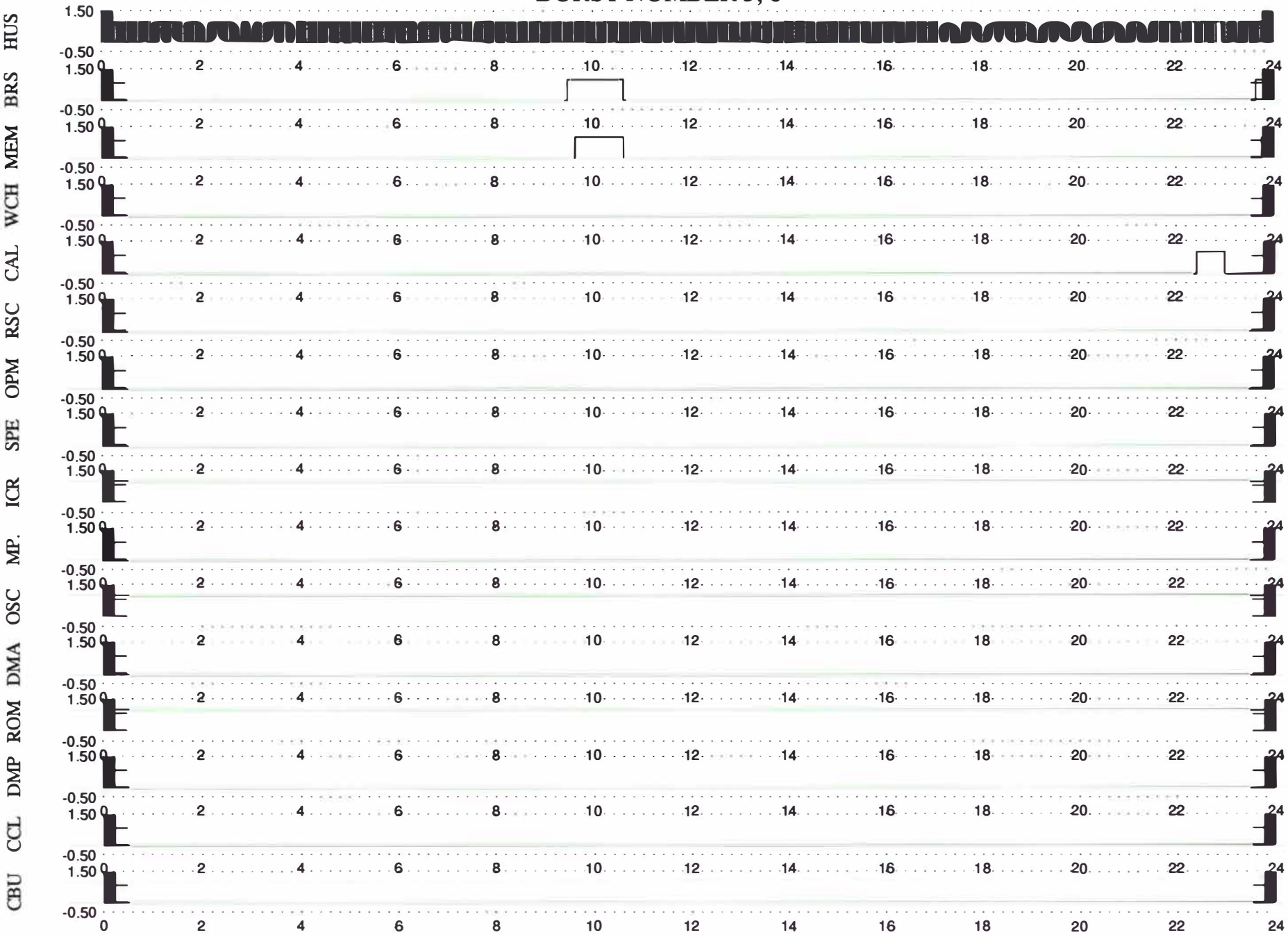
Data fro 970114 19020 and 970115 48960 is not yet available.

David Palmer
palmer@lheamail.gsfc.nasa.gov
USA (301) 286-2739 Voice
USA (301) 286-1682 Fax


GOES 8
M
C
B
A
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/11, 0000:00
Plot created: 97/01/13, 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 97/01/11
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/13, 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

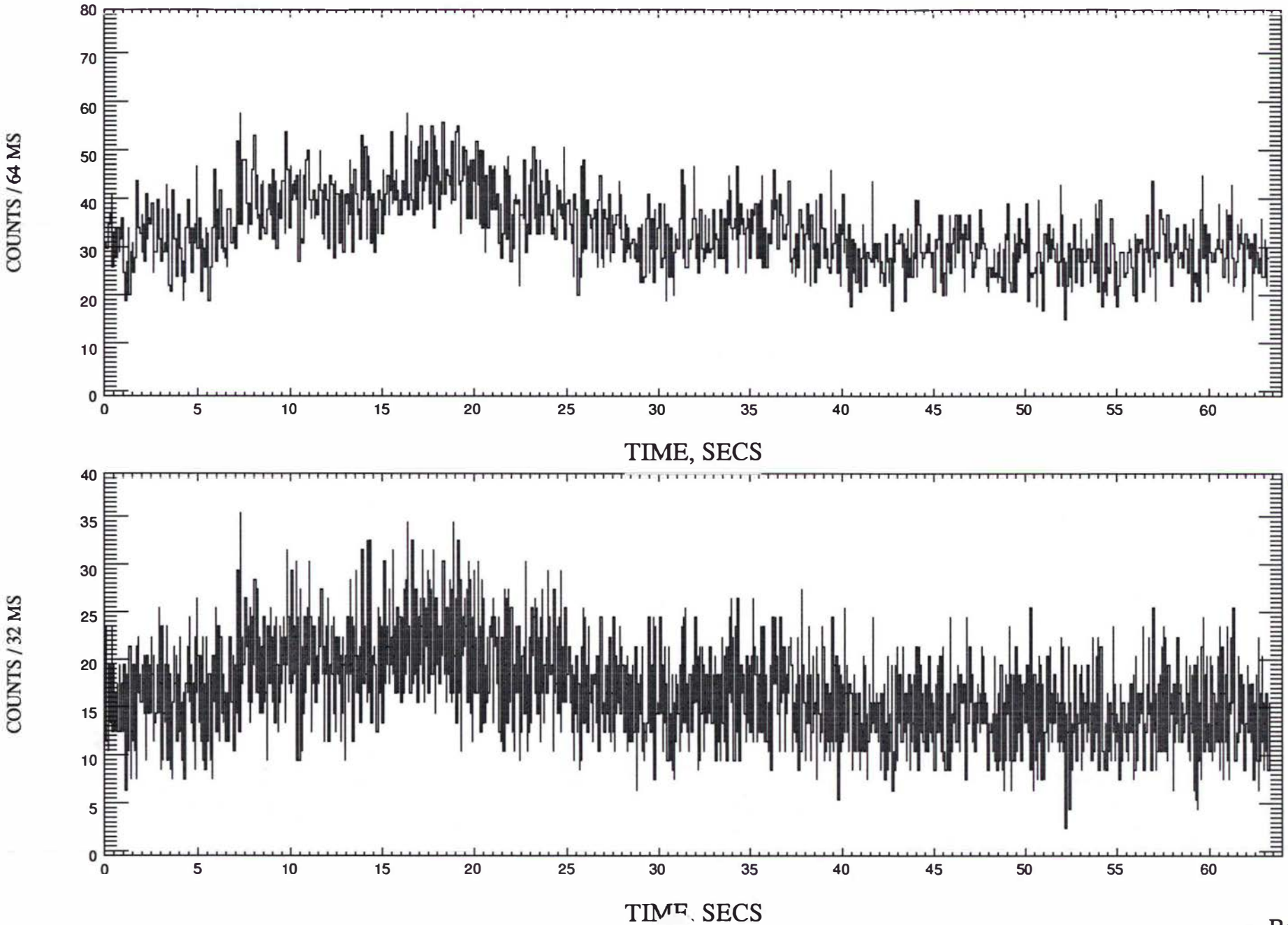
BURST NUMBER 5, 6



UNIVERSAL TIME

HUS 2A TRIGGERED DATA EDR day 11, year 1997 5/6/97

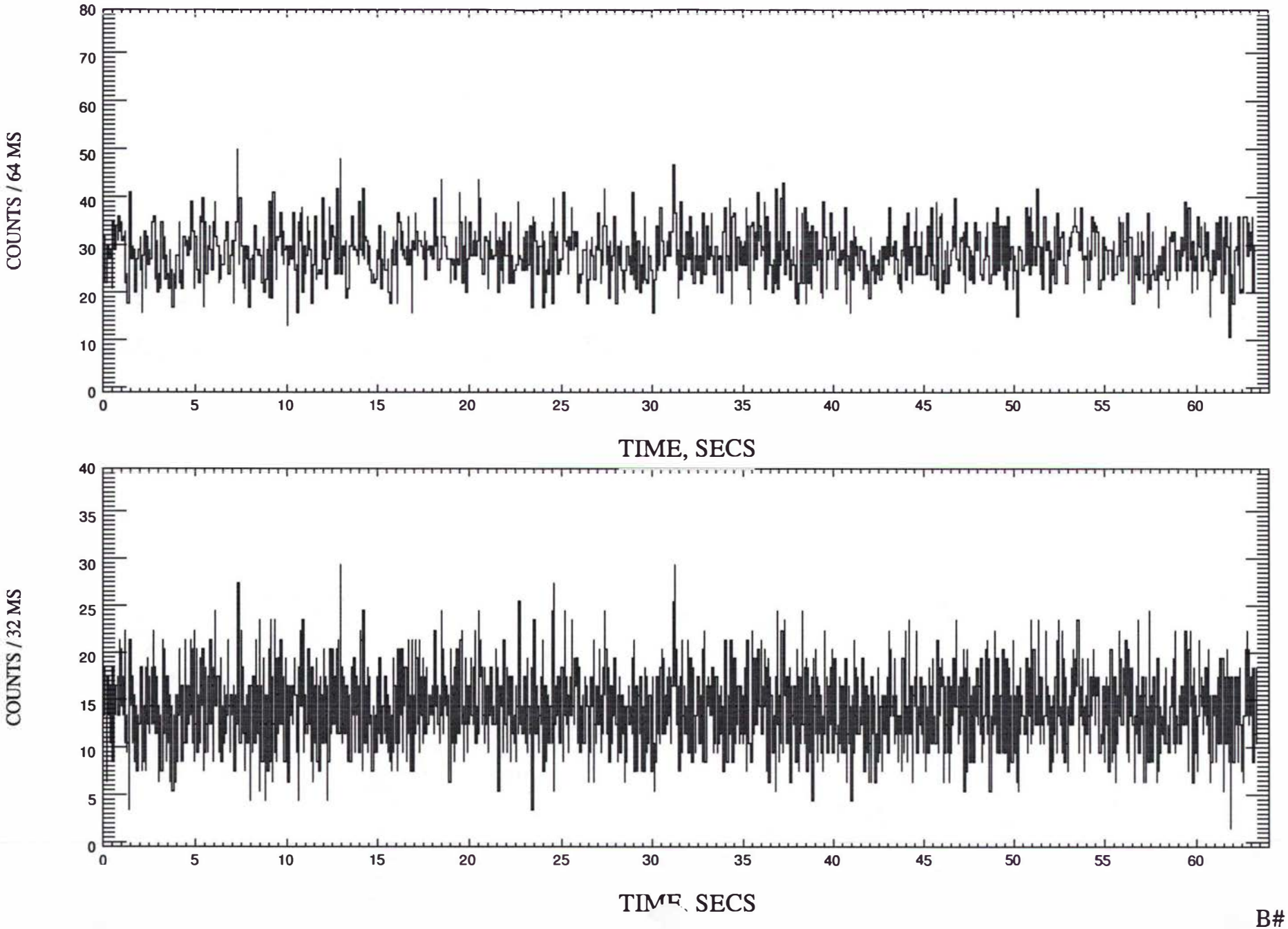
Burst Counter 5 at UT= 9.366035190158 h=33717.727 s 09:21:57.727



B# 1

HUS 2A TRIGGERED DATA EDR day 11, year 1997 5/6/97

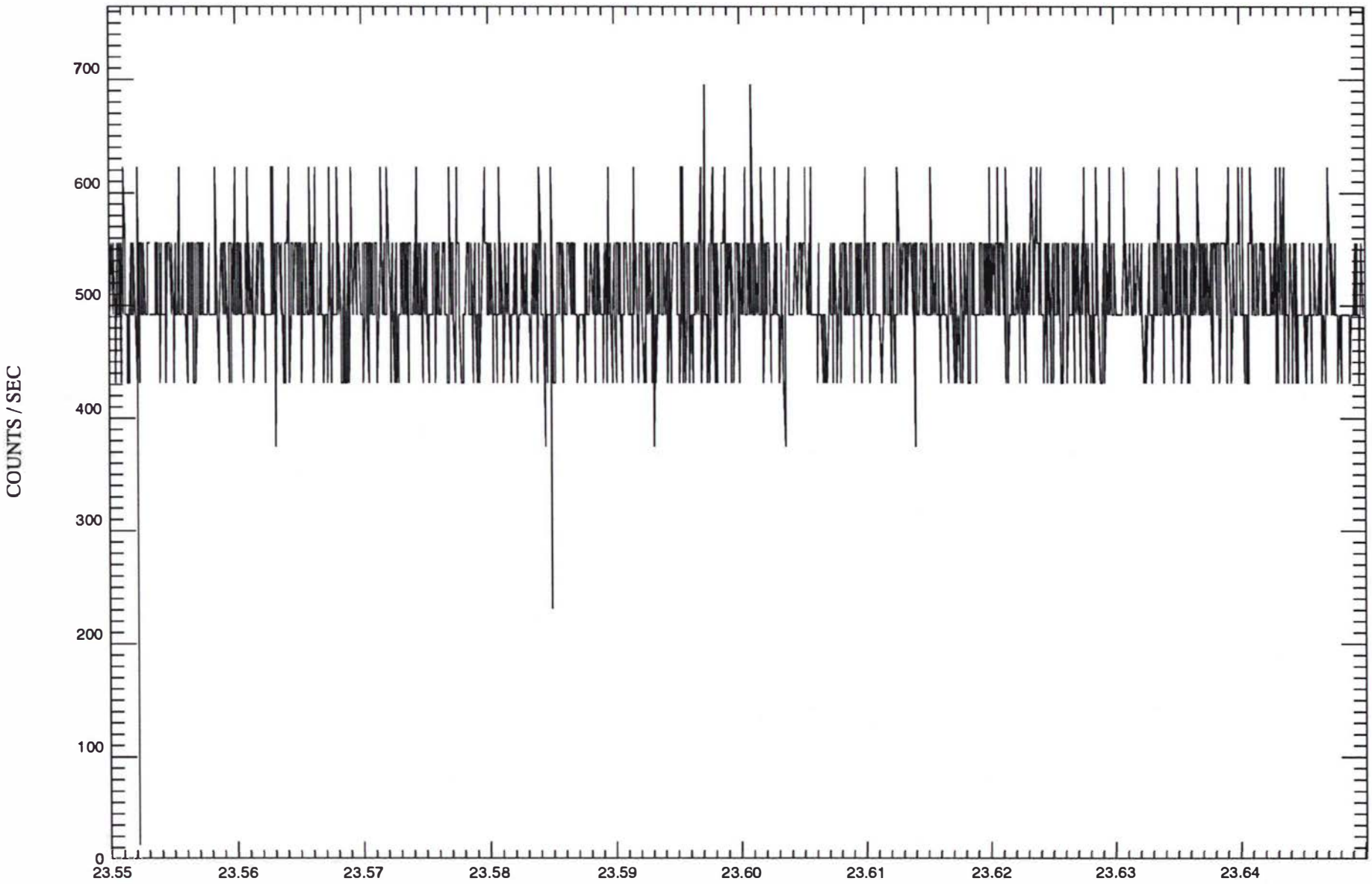
Burst Counter 6 at UT=23.597320738898 h=84950.355 s 23:35:50.355



B# 2

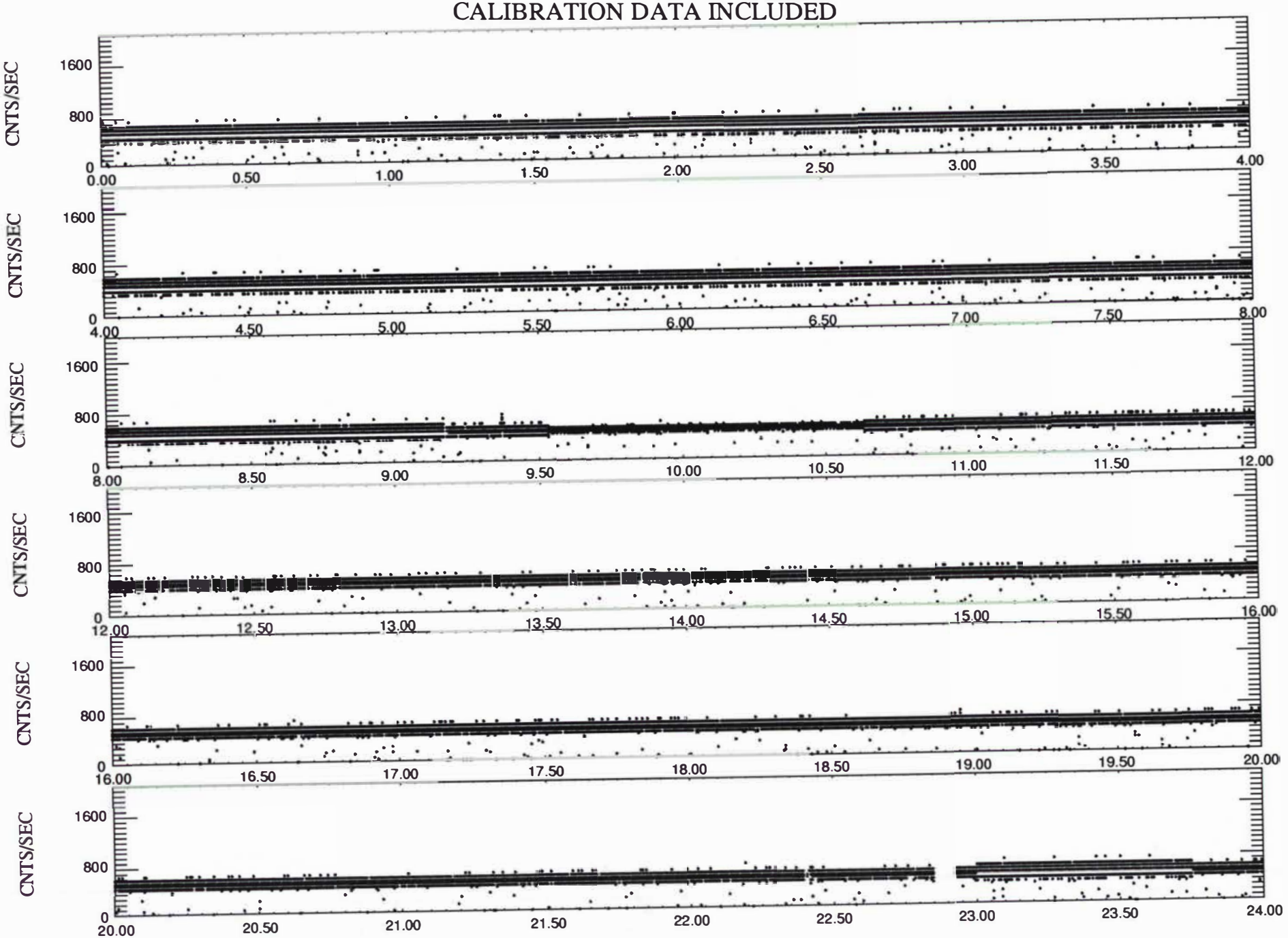
HUS 2A, MODE 1, NOT AVERAGED QEDR day 11, year 1997 to day 11, year 1997 1/15/97

CALIBRATION DATA INCLUDED



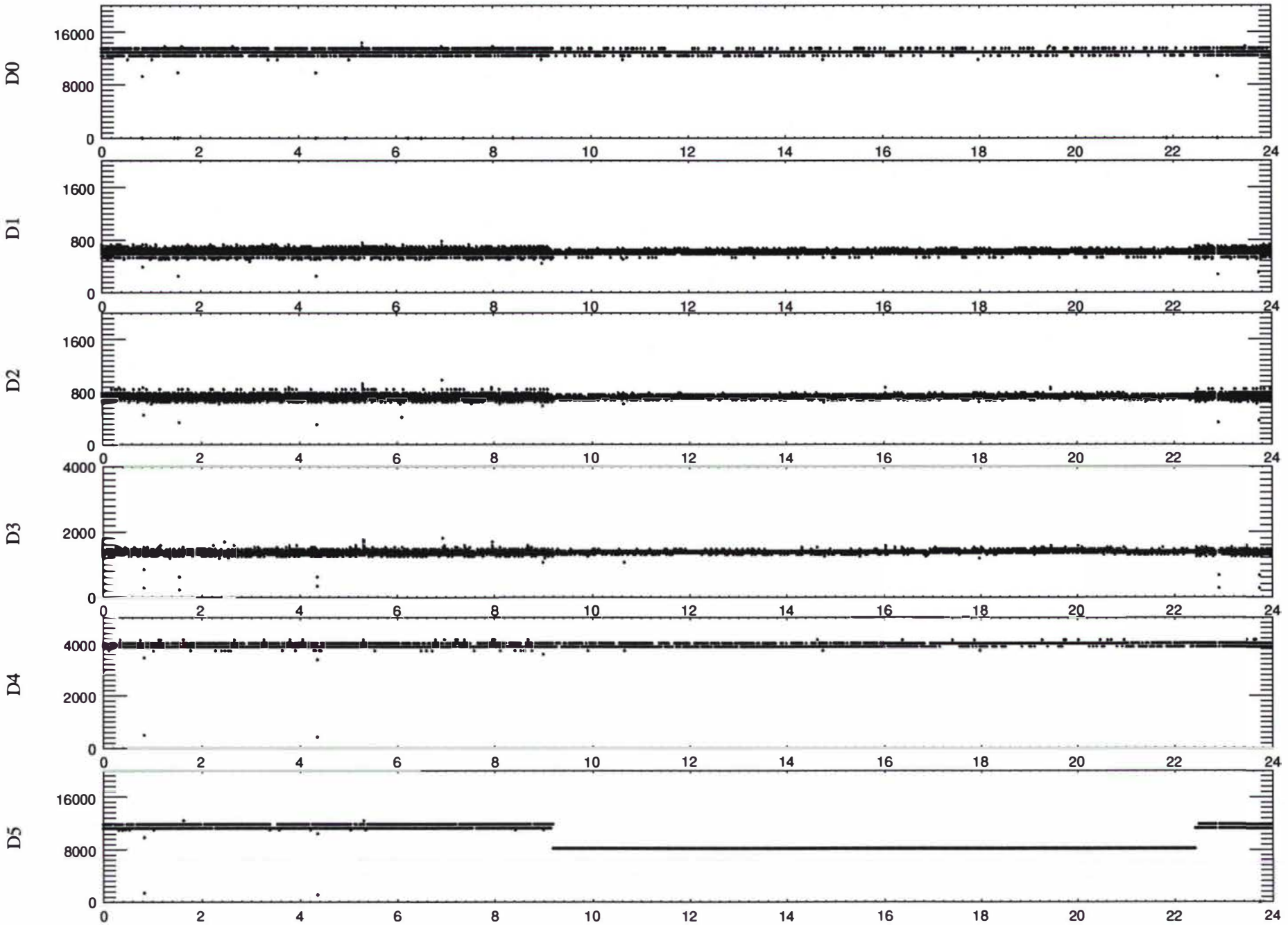
HUS 2A, MODE 1, NOT AVERAGED EDR day 11, year 1997 to day 11, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIV AL TIME

HUS 2B COUNTS / SEC EDR day 11, year 1997 to day 11, year 1997 5/5/97

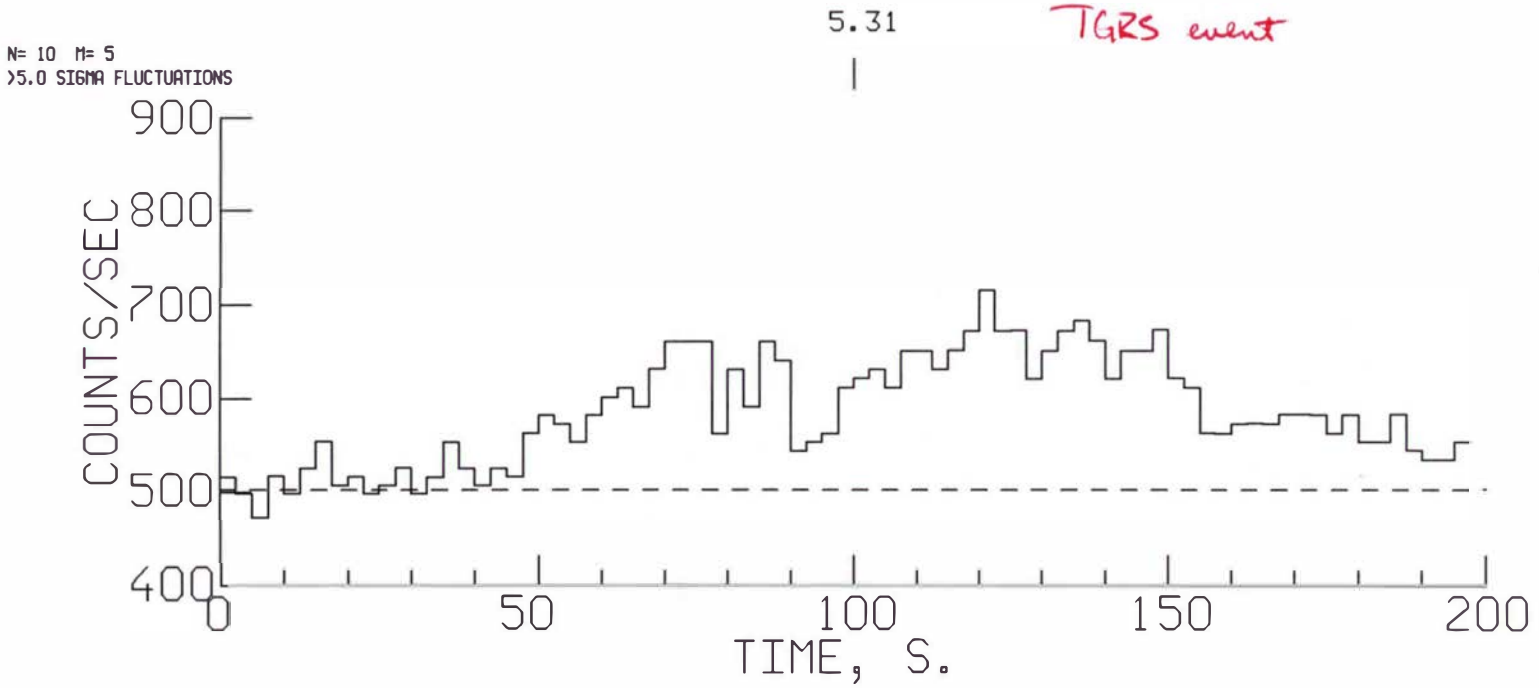


ULYSSES RT 4/ 2/98

12/ 1/97 257.509 s

0.500 S INTERVALS REGROUPED BY 5

21- 146 keV



From RICHARDSON@SSLLES.MSFC.NASA.GOV Mon Jan 13 10:00 PST 1997
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Mon, 13 Jan 1997 11:59:53 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@SSLLES.MSFC.NASA.GOV,
"LHEAVX::BARTHELMY"@SSLLES.MSFC.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.: 5783

TIME: TJD=0460 SECONDS=62546

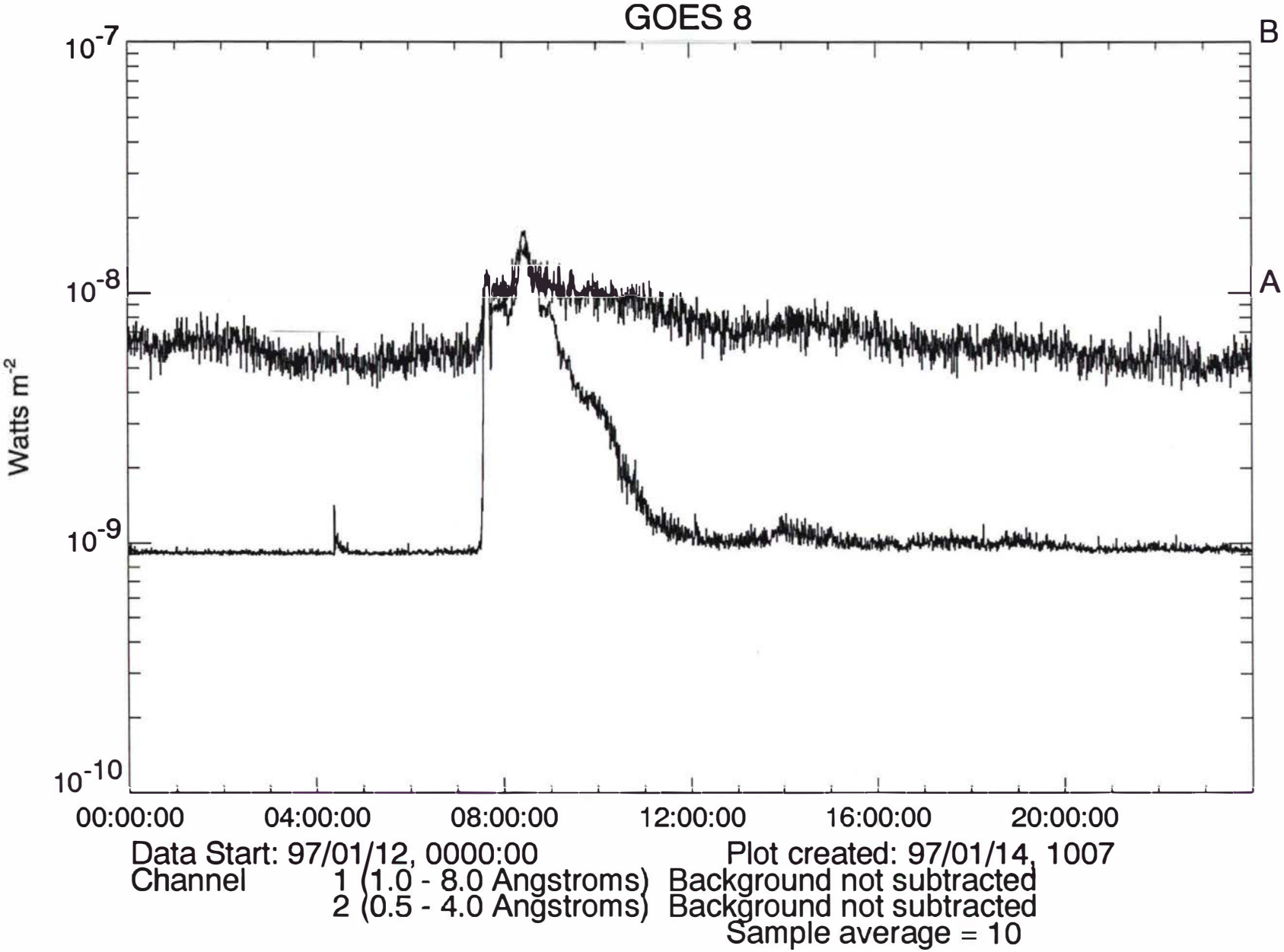
TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

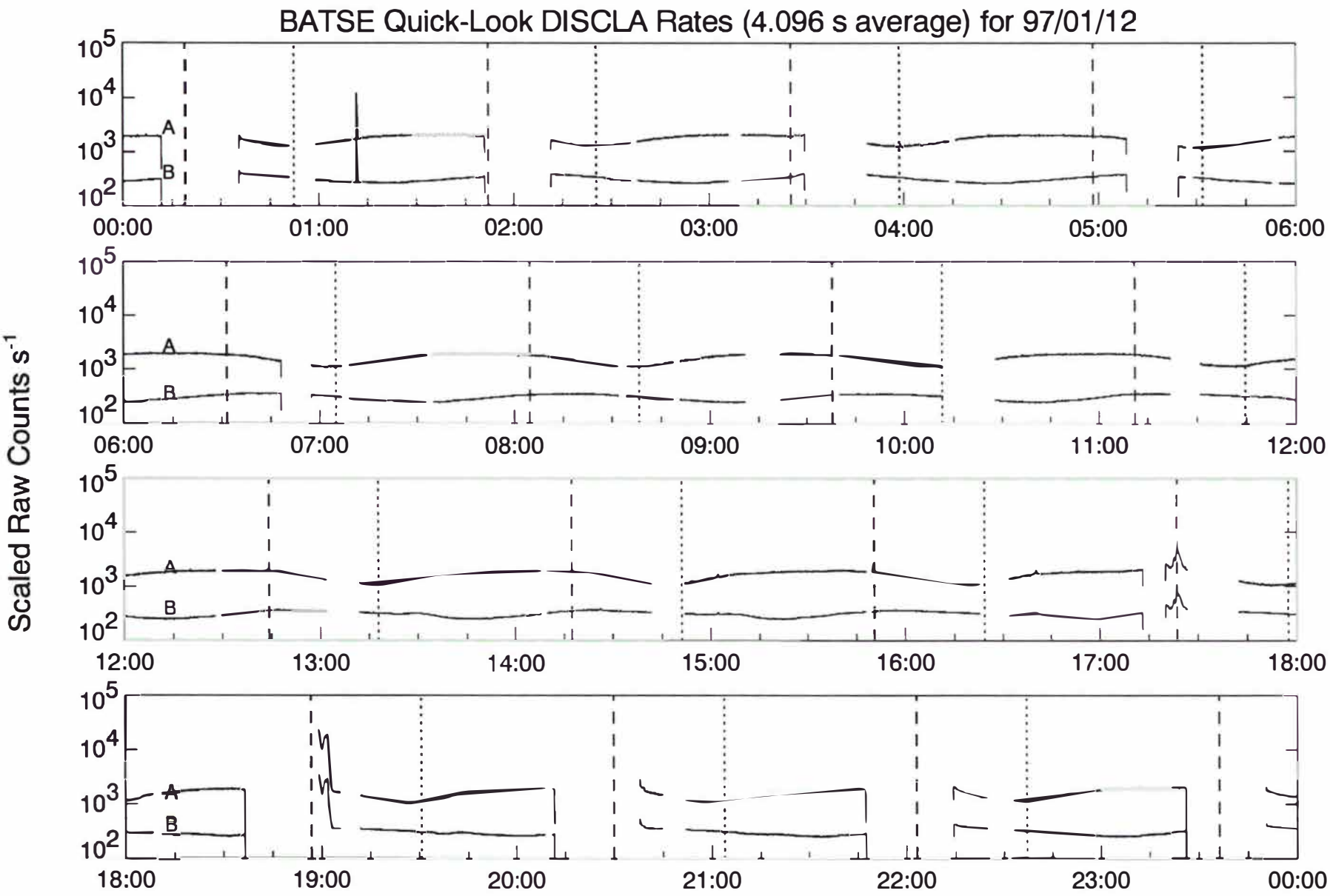
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

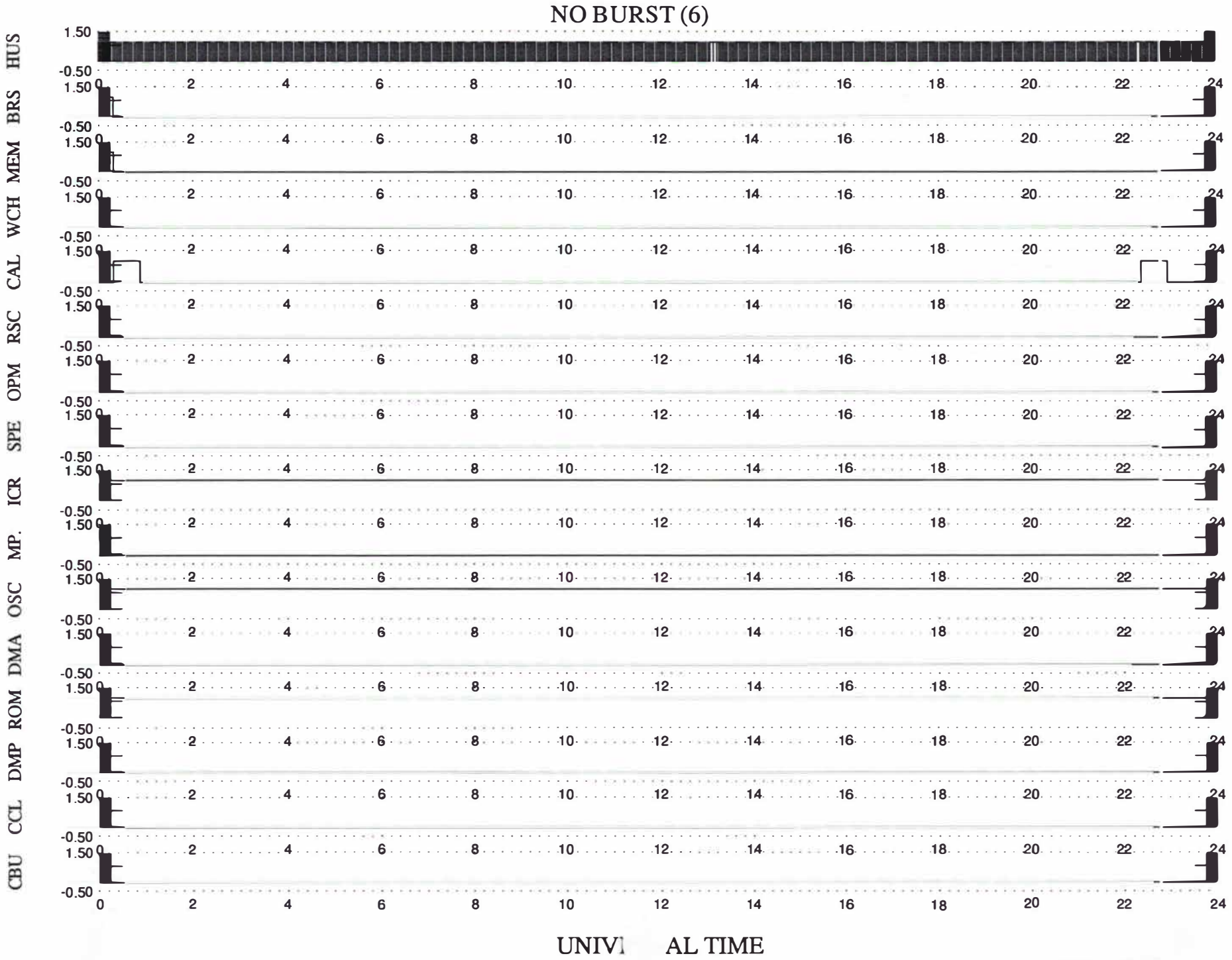
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT


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: 97/01/12, 0000:00
Plot created: 97/01/14, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

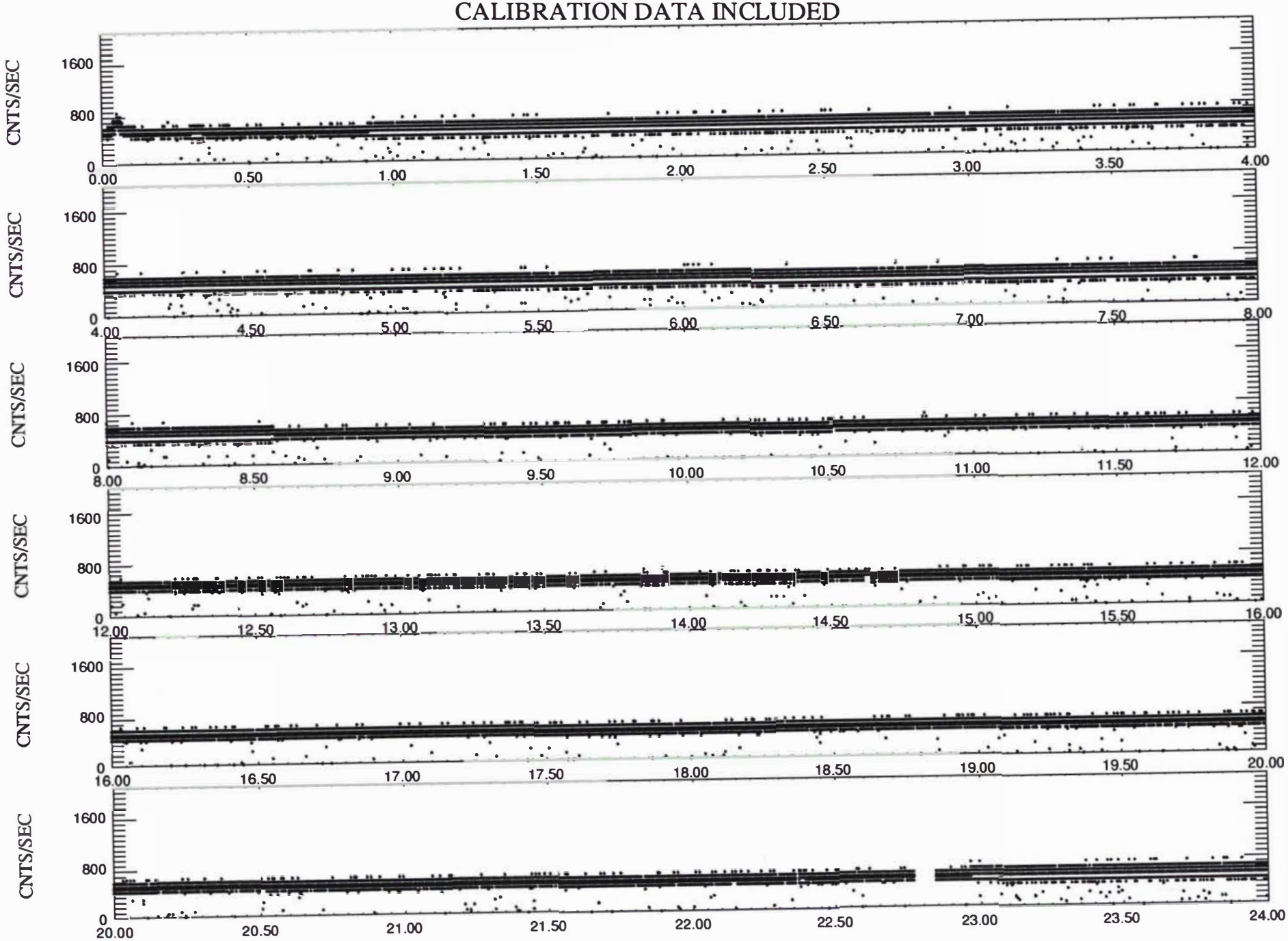

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/12
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/14, 1008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



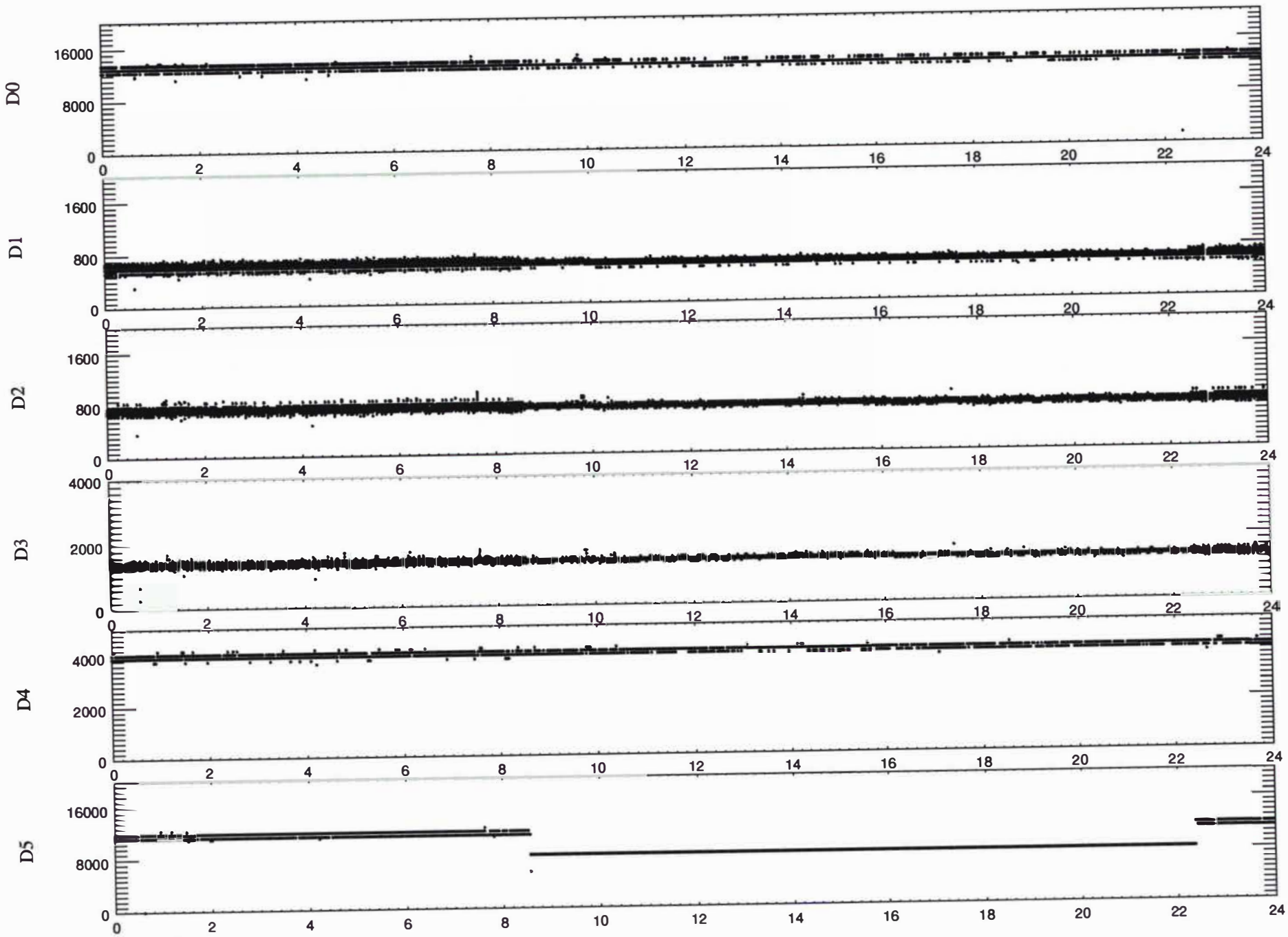
HUS 2A, MODE 1, NOT AVERAGED EDR day 12, year 1997 to day 12, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 12, year 1997 to day 12, year 1997 5/5/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
1997	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

From David.M.Palmer.1@gsfc.nasa.gov Tue Jan 21 11:09 PST 1997
X-Sender: palmer@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Tue, 21 Jan 1997 14:09:05 -0400
    bonnard@rosserv.gsfc.nasa.gov, khurlev@sunspot.ssl.berkelev.edu,
        helmut.seifert.1@gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov,
        palmer@rosserv.gsfc.nasa.gov
From: David Palmer <David.M.Palmer.1@gsfc.nasa.gov>
Subject: Posible burst detections

Nothing apparent at 970105 06000, 970105 65820, 950107 28620, 970109 05100, 970110_31980, 970110_52260, 970113_52260, all +/- 2100 seconds

Possible brief event at 970107_51292.6 - 51292.9 (one sample time for the fast rate) with a significance of 6 sigma 100-300 keV, 4.5 sigma 35-100 keV (different sampling times).

There is a strong, real trigger at 970111_85744, which lasts about 300 seconds. Do you see it? It doesn't show up on the GOES x-ray plots or particle plots
gopher://proton.sec.noaa.gov:70/I9/plots/xray/gif/970113
so it doesn't seem to be a solar flare.

Data fro 970114 19020 and 970115 48960 is not yet available.

David Palmer
palmer@lheamail.gsfc.nasa.gov
USA (301) 286-2739 Voice
USA (301) 286-1682 Fax

From dgreen@cfa0.harvard.edu Thu Jan 16 21:13 PST 1997
Date: Fri, 17 Jan 1997 00:04:13 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
Subject: IAUC 6538: SN 1997E; x-ray burst

Circular No. 6538

Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION
Mailstop 18, Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.
IAUSUBS@CFA.HARVARD.EDU or FAX 617-495-7231 (subscriptions)
BMARSDEN@CFA.HARVARD.EDU or DGREEN@CFA.HARVARD.EDU (science)
URL http://cfa-www.harvard.edu/cfa/ps/cbat.html
Phone 617-495-7244/7440/7444 (for emergency use only)

SUPERNOVA 1997E IN NGC 2258

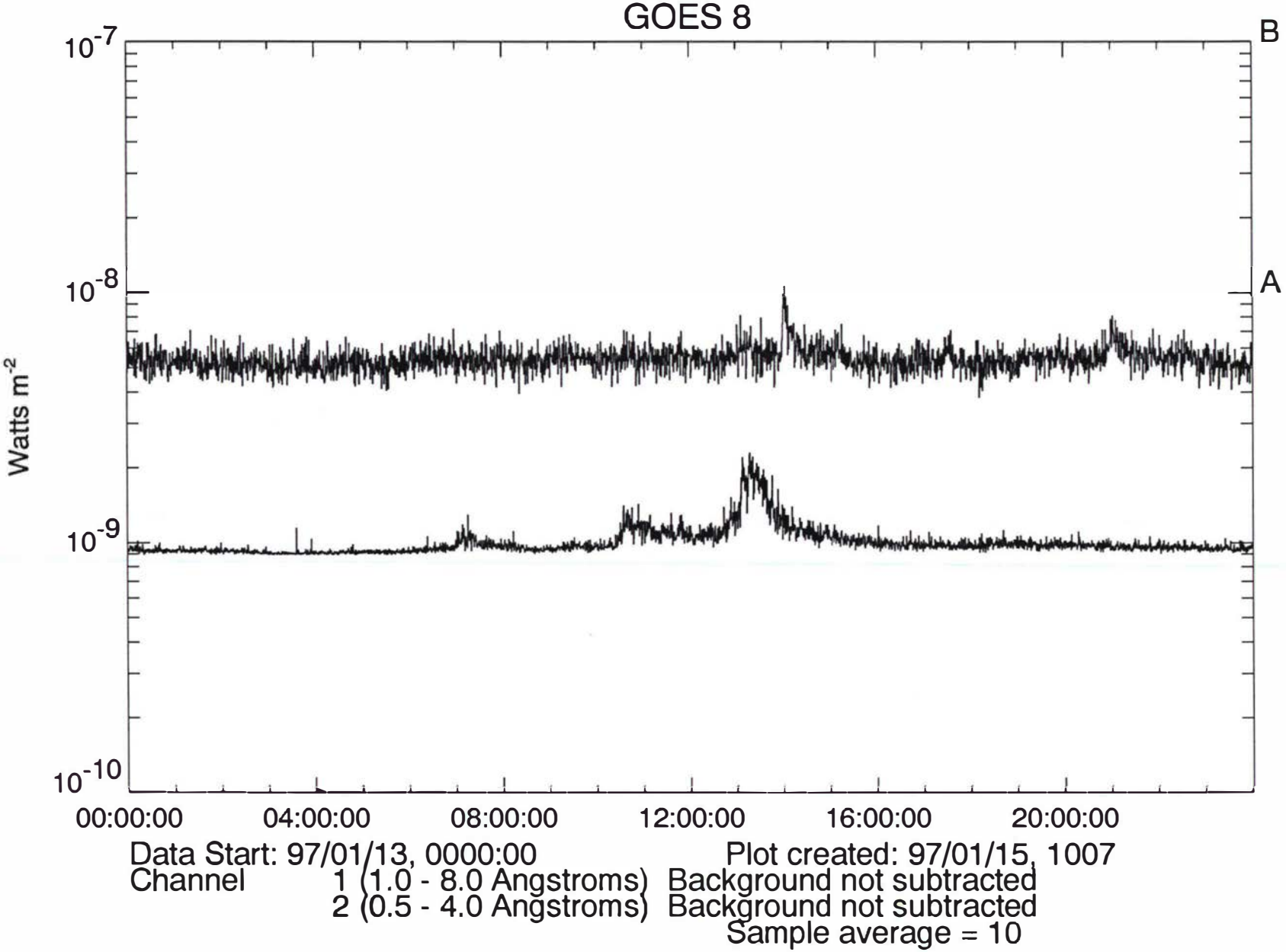
S. Nakano, Sumoto, Japan, reports the discovery by Reiki Kushida, Yatsugatake South Base Observatory, of an apparent supernova (mag 15.7) on seven unfiltered CCD frames taken around Jan. 14.530 UT with a 0.40-m f/5 reflector. Y. Kushida provides the following measurement of the position of SN 1997E from the discovery frames: R.A. = 6h47m38s.10, Decl. = +74o29'51".0 (equinox 2000.0), which is 32" west and 57" north of the center of NGC 2258. There is no star at the position of the new star on Kushida's frames taken on 1996 Dec. 15, 29, and 1997 Jan. 4, nor is anything present on the Digital Sky Survey.

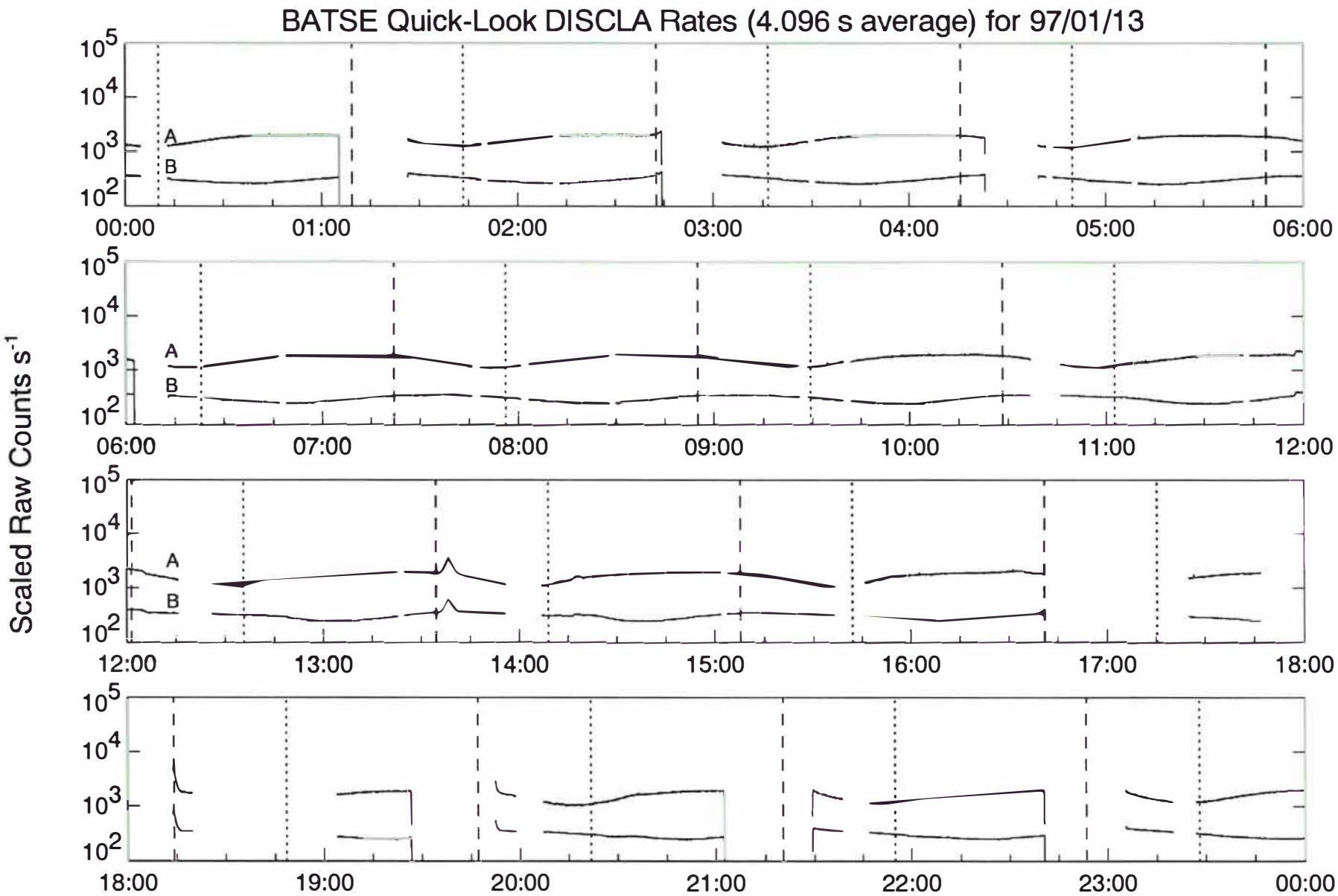
P. Garnavich and R. Kirshner, Harvard-Smithsonian Center for Astrophysics, communicate: "Spectrograms of SN 1997E were obtained by J. Peters on Jan. 16.2 UT at the F.L. Whipple Observatory (FLWO) 1.5-m Tillinghast telescope, showing this to be a type-Ia supernova at maximum. The relative strengths of the Si II features at 617.9 and 582.2 nm, and the narrow Si II feature at 491.3 nm, imply that this supernova may have a fast-declining light curve similar to that of SN 1992A. CCD images obtained on Jan. 16.4 by J. Raymond with the FLWO 1.2-m telescope yield visual mag 15.6 for SN 1997E.

NEW X-RAY BURSTER

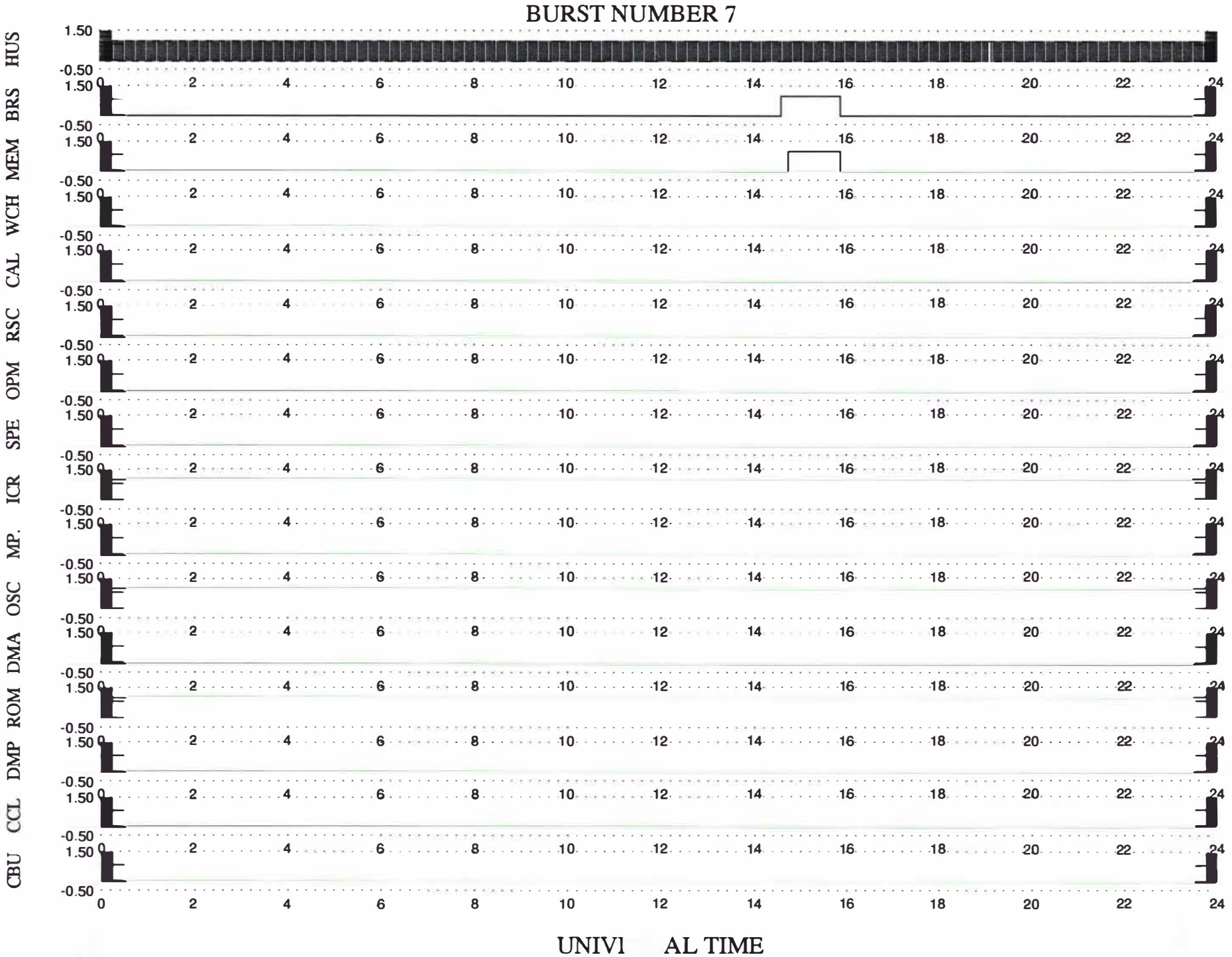
L. Piro, Istituto Astrofisica Spaziale (IAS), CNR, Frascati; J. Heise and R. Jager, Space Research Organization of the Netherlands (SRON), Utrecht; M. Feroci, IAS; G. D'Andreta, G. Spoliti, and A. Coletta, BeppoSAX, Rome; H. Muller, BeppoSAX, Rome, and SRON; and D. Ricci, BeppoSAX, Rome, write: "On Jan. 13.295011 UT, the BeppoSAX Wide Field Camera No. 1 (WFC1) detected an x-ray burst in the range 2-20 keV, seen in the ratemeter as a single peak and showing a fast rise (on the order of 10 s) with an exponential decay lasting about 150 s. This event is likely to be an x-ray burster and not a gamma-ray burst, as it was not seen by the BeppoSAX Gamma Ray Burst Monitor. The derived position (R.A. = 12h49m50s, Decl. = -59o10'.8, equinox 2000.0; estimated 10' error radius) does not correspond to any catalogued source. The peak flux corresponds to about 1.9 Crab. The WFC1 observed the same field for about 40 000 s before and 2500 s after the event, with no positive detection, leading to an upper limit to the steady flux from the burst source of about 10 mCrab."

(C) Copyright 1997 CBAT


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: 97/01/13, 0000:00
Plot created: 97/01/15, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

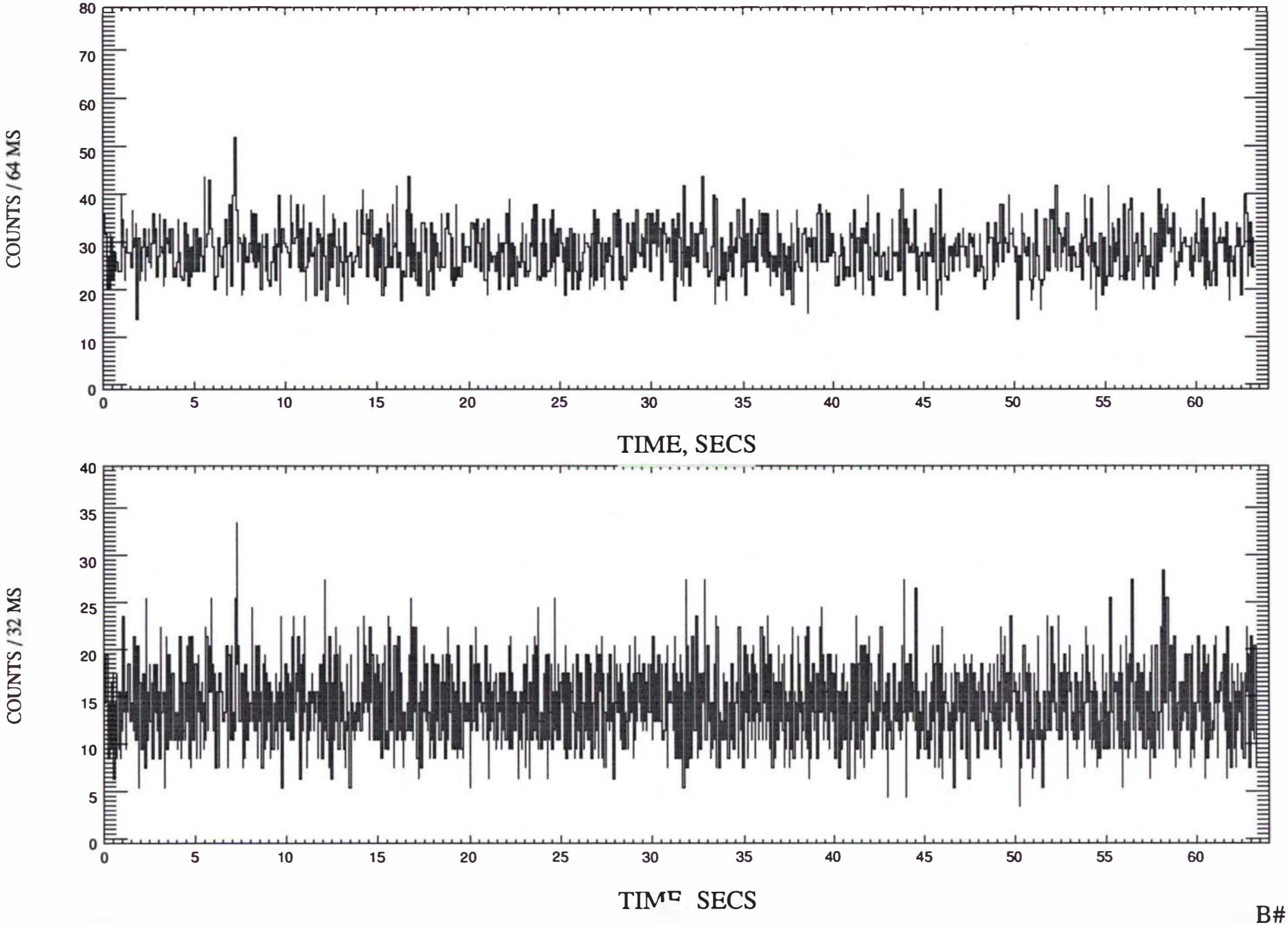

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/13
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/15, 1008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

HUS MODES EDR day 13, year 1997 to day 13, year 1997 5/5/97



HUS 2A TRIGGERED DATA EDR day 13, year 1997 5/6/97

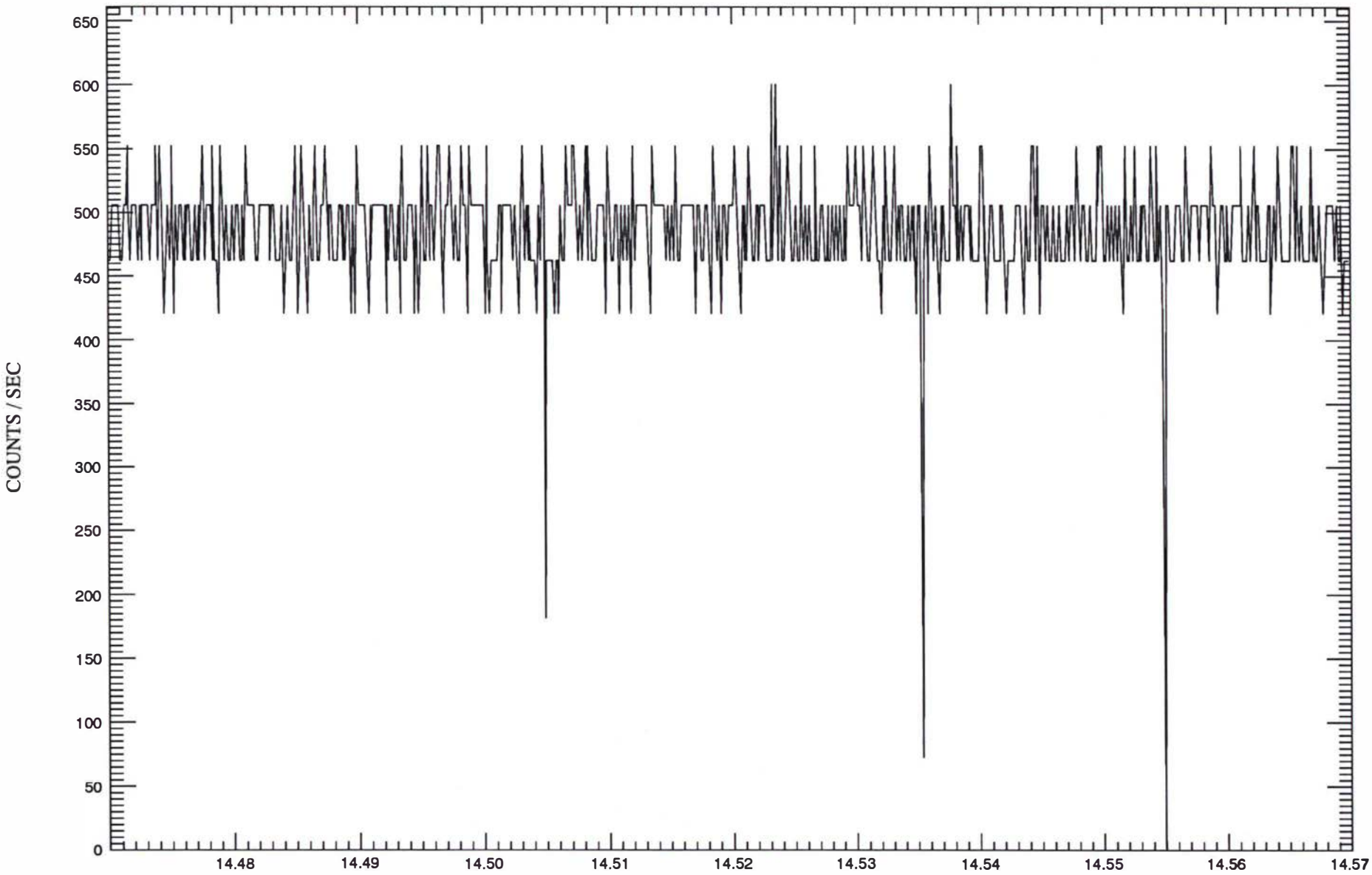
Burst Counter 7 at UT=14.523769243028 h=52285.569 s 14:31:25.569



B# 1

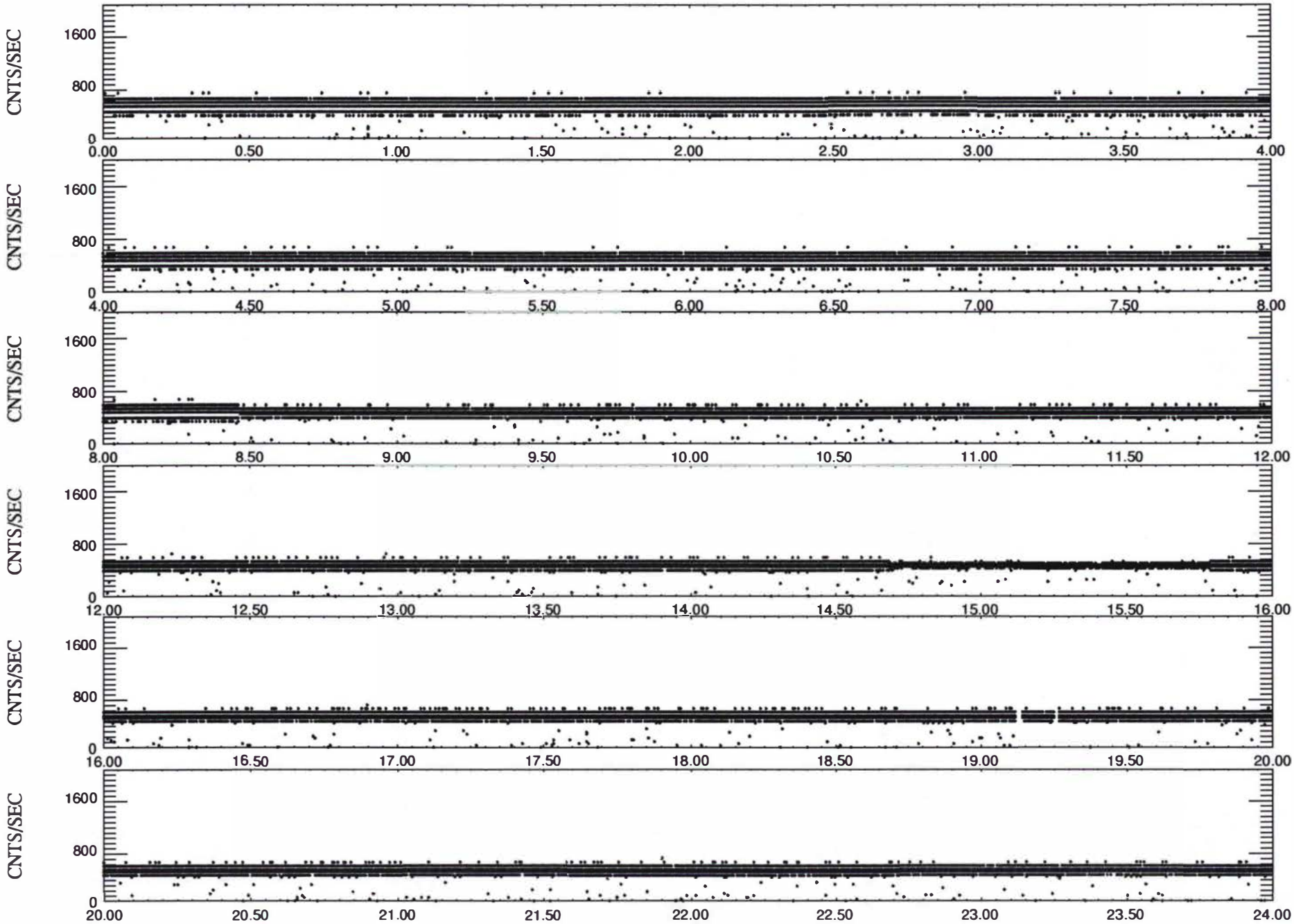
HUS 2A, MODE 1, NOT AVERAGED QEDR day 13, year 1997 to day 13, year 1997 1/15/97

CALIBRATION DATA INCLUDED



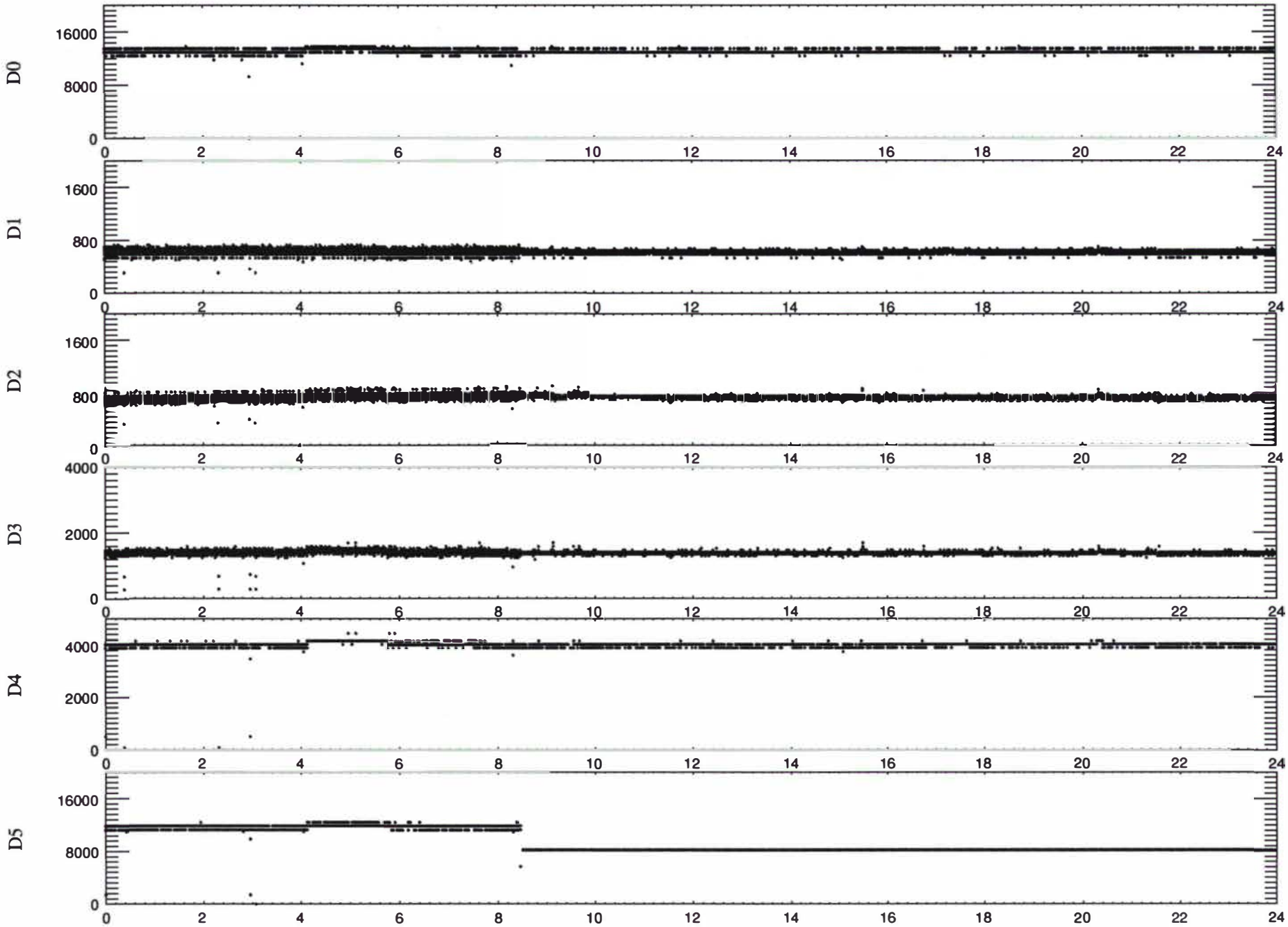
HUS 2A, MODE 1, NOT AVERAGED EDR day 13, year 1997 to day 13, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 13, year 1997 to day 13, year 1997 5/5/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
T khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
'13 14:31	not detected
.14 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
ject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and before the Ulysses events in your messages to Chryssa.

Bill Henze

Ulysses events and times				BATSE
Year	Mon Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec 09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan 05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan 05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan 07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan 07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan 09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan 10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan 10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan 11	23:35	10459/84900	Nothing evident.
1997	Jan 13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan 14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan 15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
,97	Jan 17	15:07	10465/54420	HV off during SAA.
1997	Jan 17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan 24	12:51	10472/46260	HV off during SAA.
1997	Jan 26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan 30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

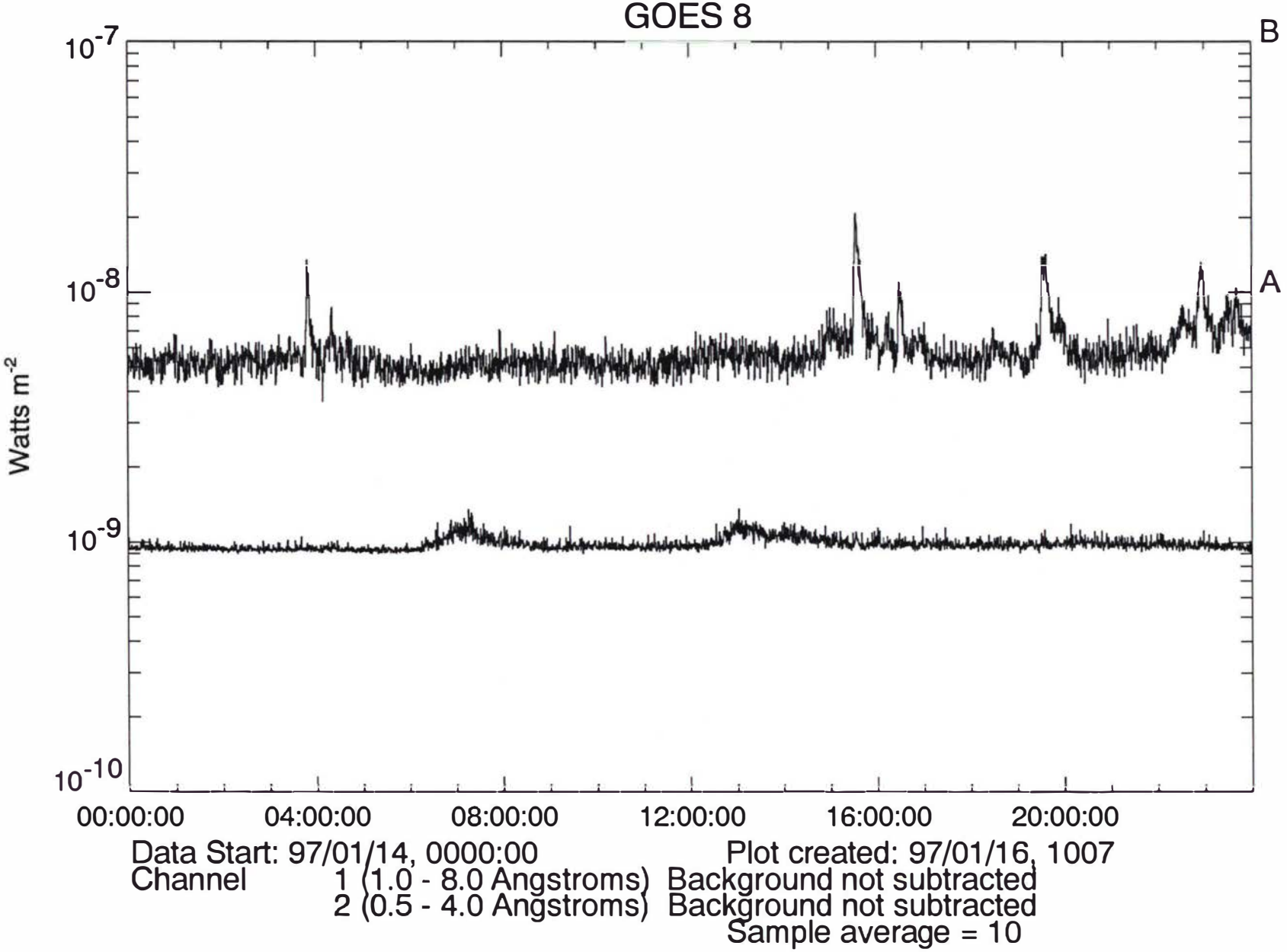
From kraken@rosserv.gsfc.nasa.gov Thu Mar 20 07:01 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Thu, 20 Mar 1997 10:01:51 -0500
    khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: GRB970313, GRB970316, GRB970114
Cc: bonnard@iolanthe.gsfc.nasa.gov (Bonnard Teegarden),
        kraken@rosserv.gsfc.nasa.gov,
        David Palmer <David.M.Palmer.1@gsfc.nasa.gov>

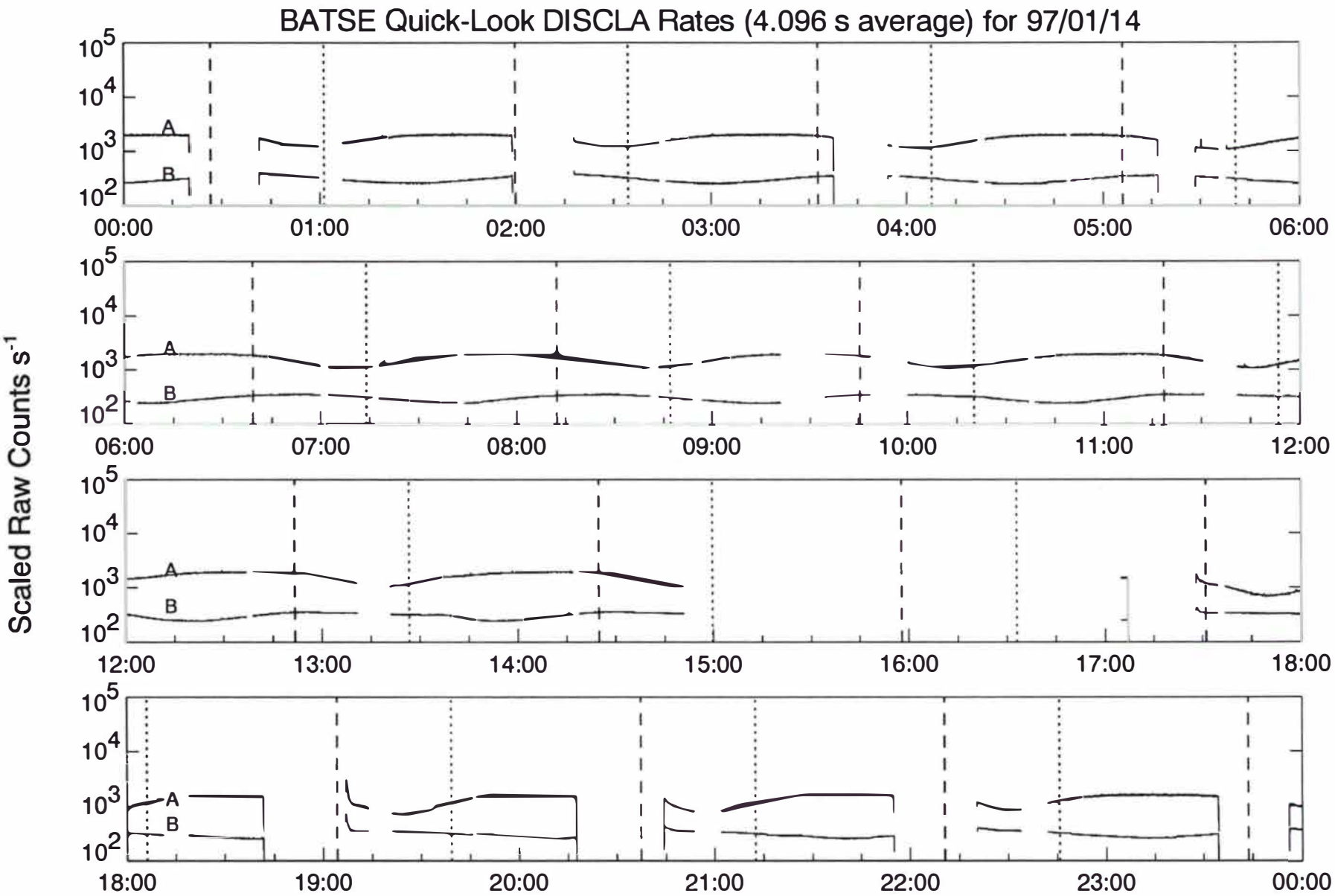
Hi Kevin,

Bonnard has forwarded your email about the above bursts which occurred recently, and David Palmer has given me the one from January. TGRS has seen events on March 3 and March 16 (as triggered events), but in neither case did the events come within 2000 seconds of the Ulysses reported time. The January event was not a triggered event, nor could I find it in waiting mode data. I wonder if the March 3 and 16 events correspond to some solar charged particle activity?

Pete

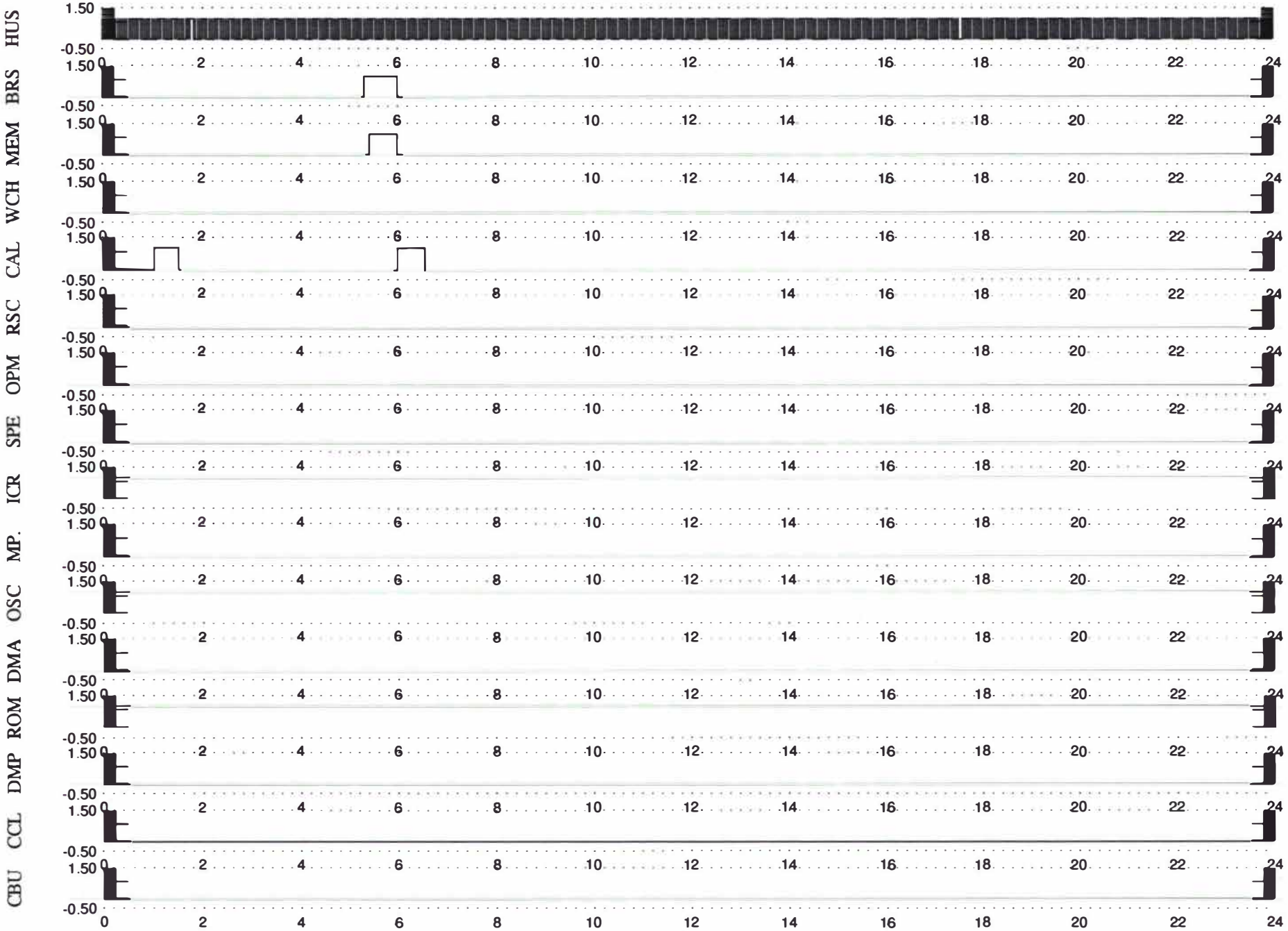
Ulysses Observation	TGRS detection
313 7:53 10 sec long	NO BUT: TGRS #542 at 970313 35181 sec. ~10 sec long 100 counts/sec peak intens. NOTE: this is about 7000 sec after the Ulysses observation, so I attribute it to a different event.
970316 13:16 64 msec long	NO BUT: TGRS #546 at 970316 62785 secs. ~4 sec long. 150 counts/sec peak intens. NOTE: this is about 15200 sec after the Ulysses observation.
970114 5:17 100 msec long	NO triggered or untriggered events; although there is a data drop out between 970114 18400-18500 sec. which is close to -500 sec from Ulysses observation


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: 97/01/14, 0000:00
Plot created: 97/01/16, 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 97/01/14
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: 97/01/16, 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 14, year 1997 to day 14, year 1997 5/5/97

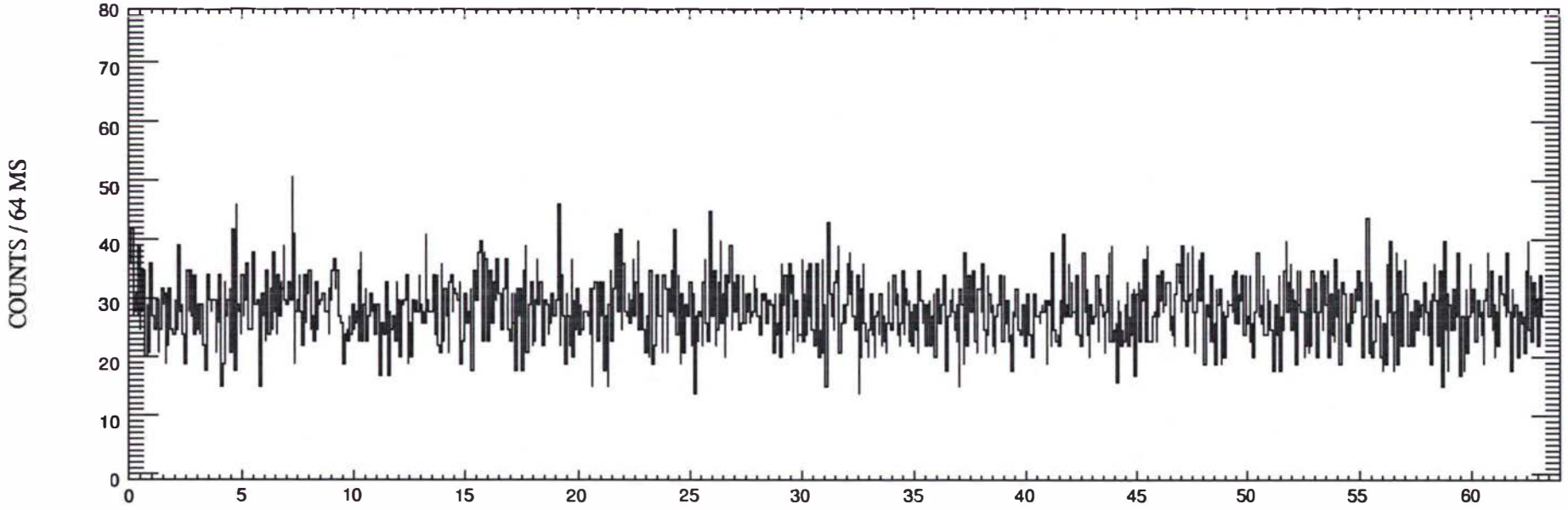
BURST NUMBER 8



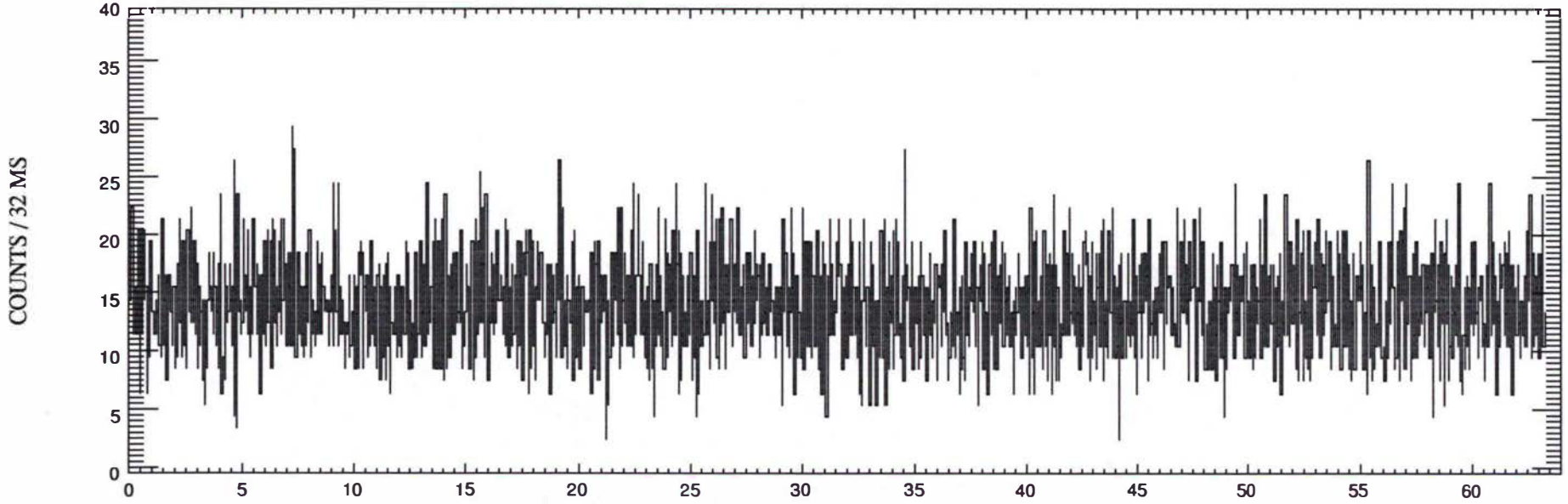
UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 14, year 1997 5/6/97

Burst Counter 8 at UT= 5.292804819743 h=19054.097 s 05:17:34.097



TIME, SECS

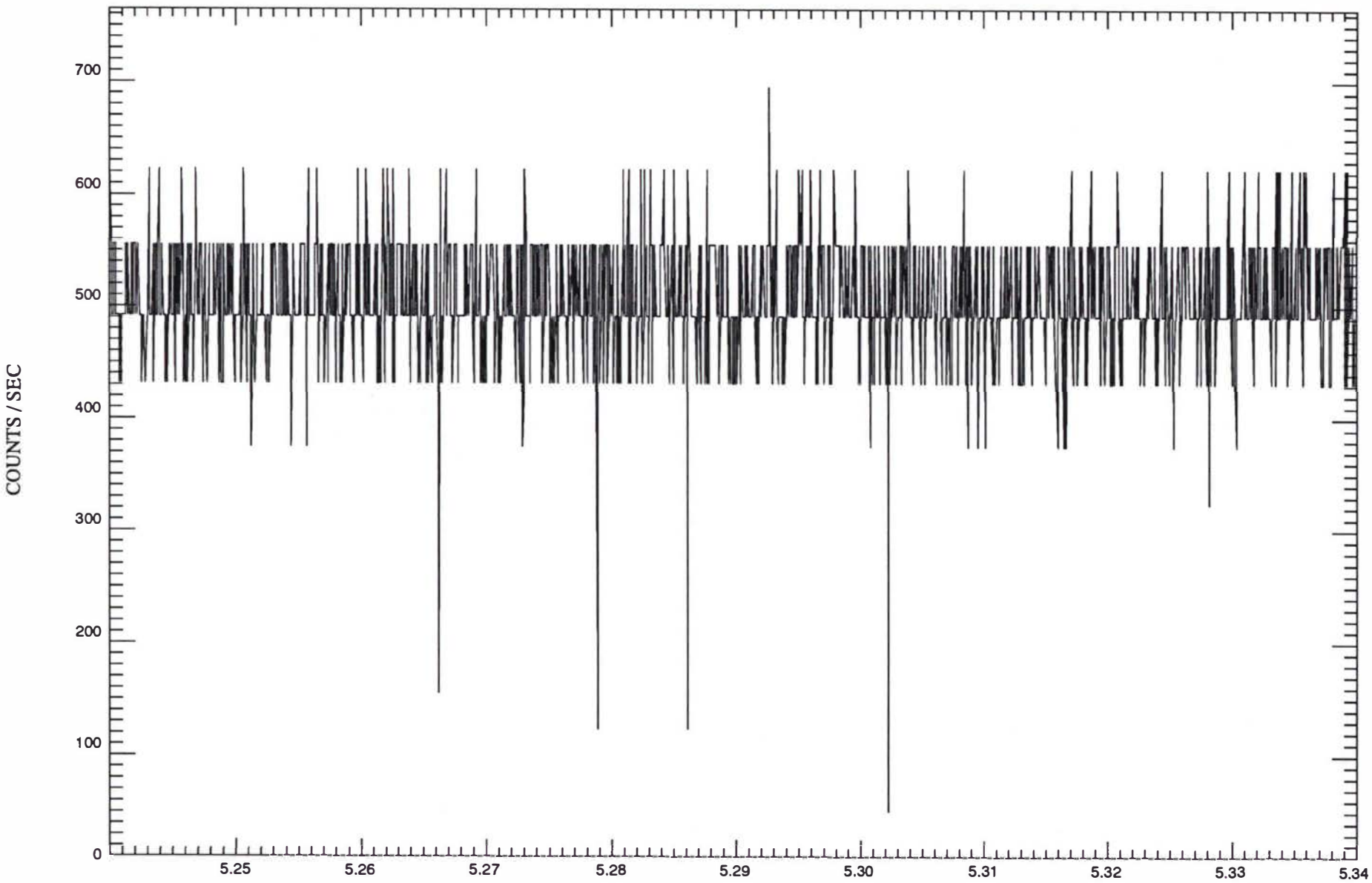


TIME SECS

B# 1

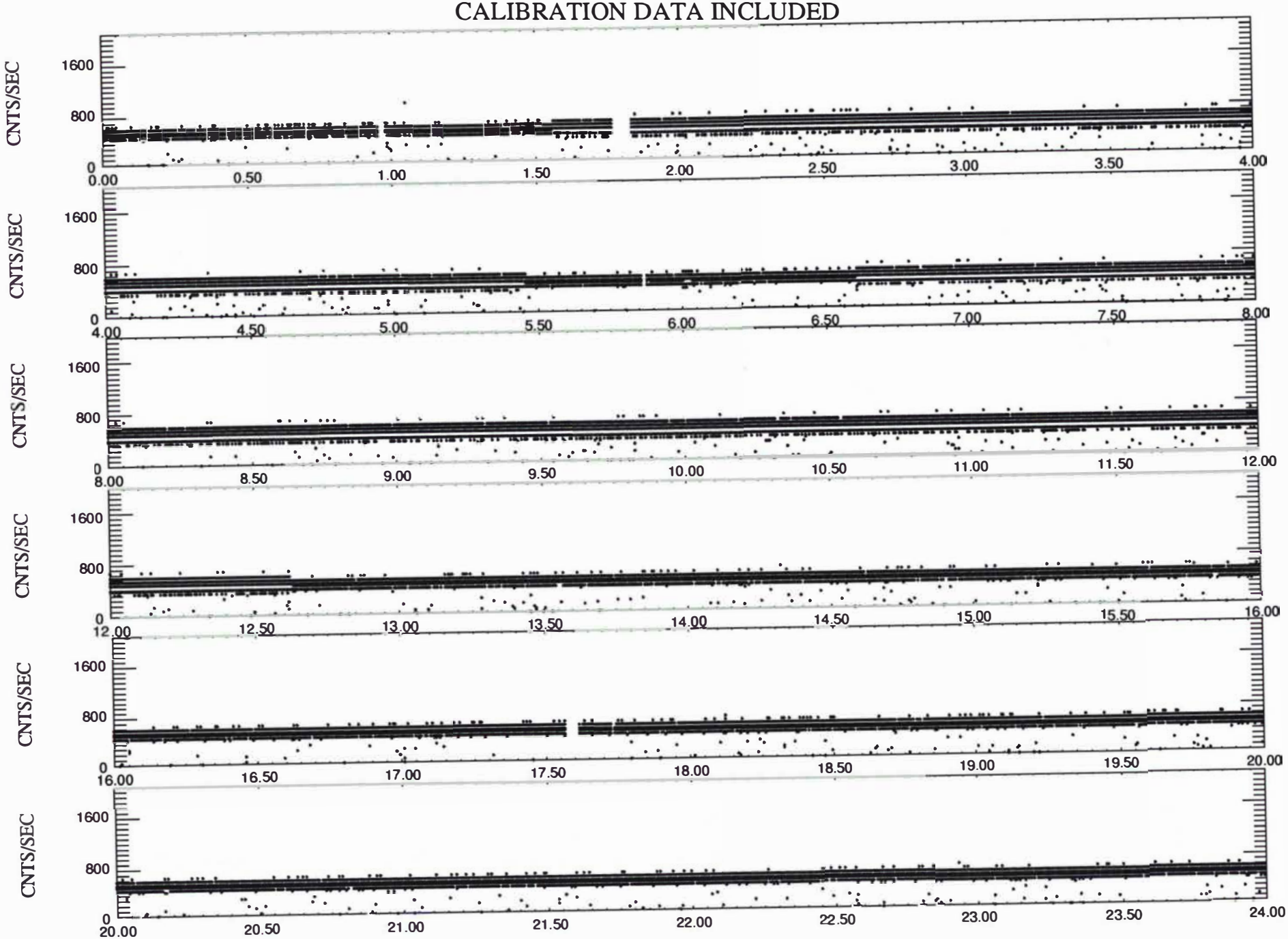
HUS 2A, MODE 1, NOT AVERAGED QEDR day 14, year 1997 to day 14, year 1997 1/16/97

CALIBRATION DATA INCLUDED



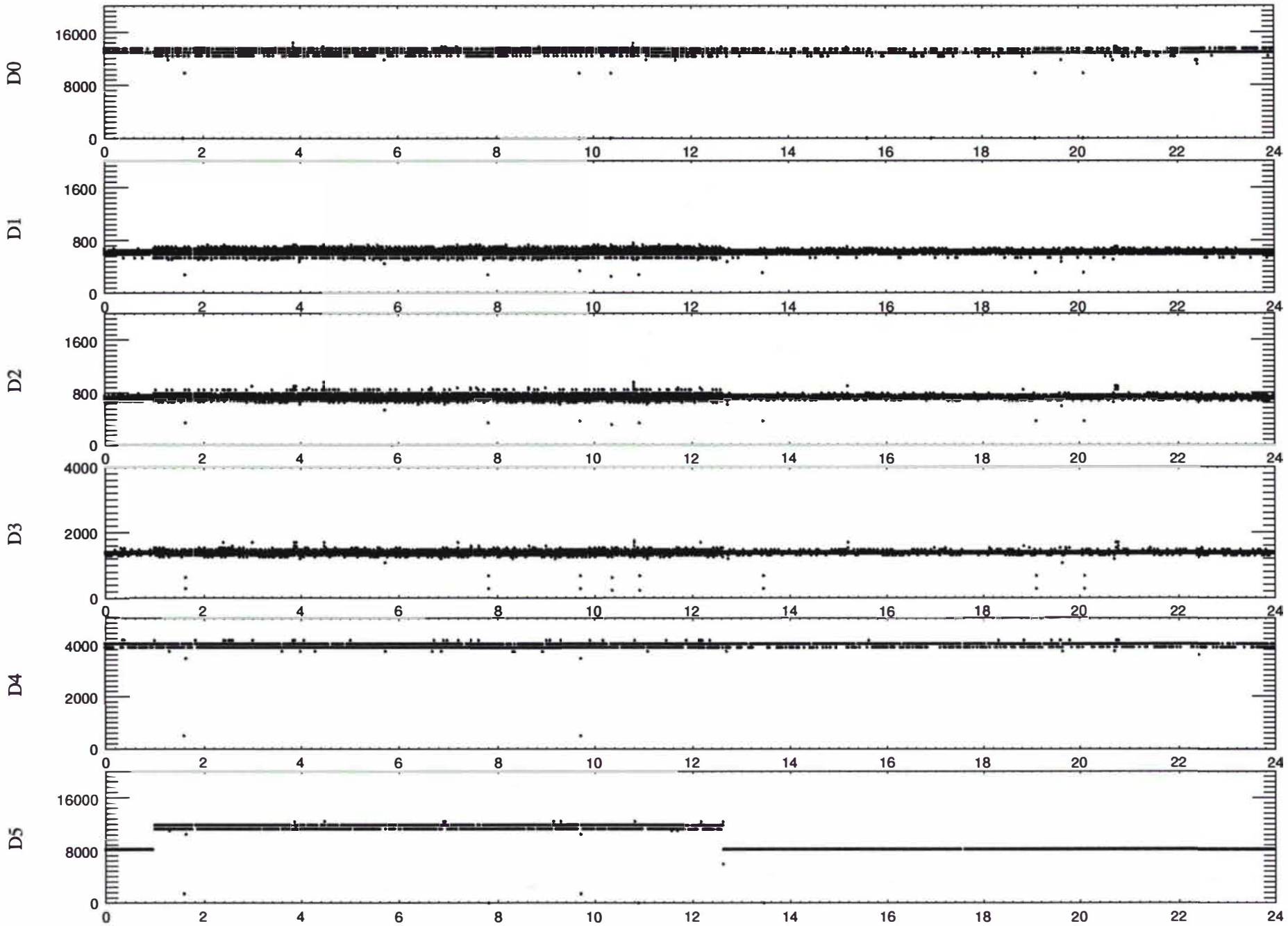
HUS 2A, MODE 1, NOT AVERAGED EDR day 14, year 1997 to day 14, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 14, year 1997 to day 14, year 1997 5/5/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
T khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From kraken@rosserv.gsfc.nasa.gov Wed Mar 12 15:00 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 12 Mar 1997 18:00:58 -0500
To: khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: TGRS/Ulysses GRB's
Cc: bonnard@rosserv.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hello Dr. Hurley,

I'm Peter Kurczynski, a graduate student in the LEGR group here at Goddard. I am working on TGRS data analysis. I am messaging you in response to several emails you've sent to Bonnard Teegarden and others about Ulysses gamma ray bursts and whether they could be corroborated by other instruments.

What follows is a list of the dates and times of Ulysses observations that were forwarded to me recently, and the results of a search through TGRS data for bursts. We've found two matches among the Ulysses bursts listed below. Please
let me know if you would like me to forward time history data or other information about them.

Take care,

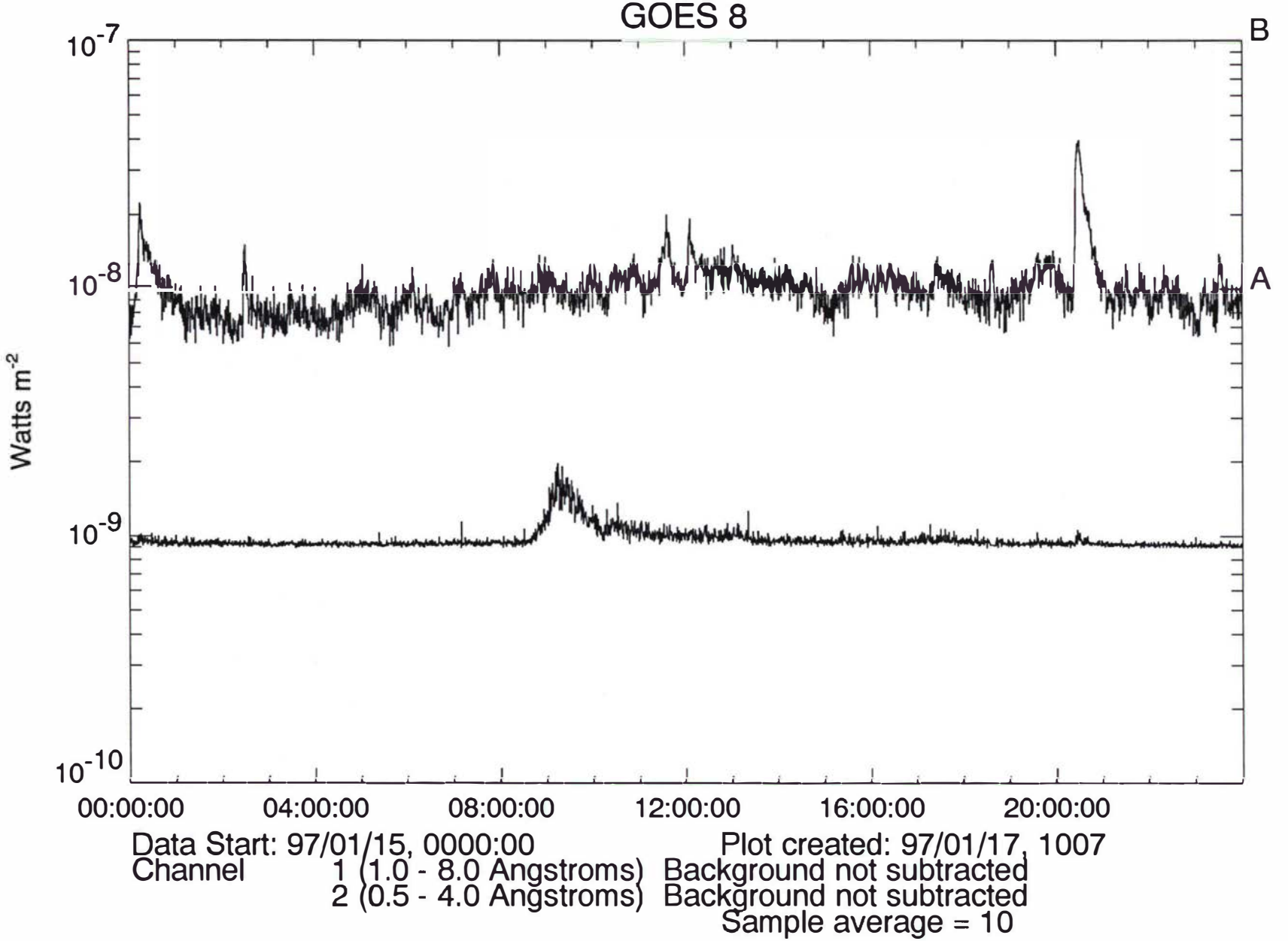
Pete

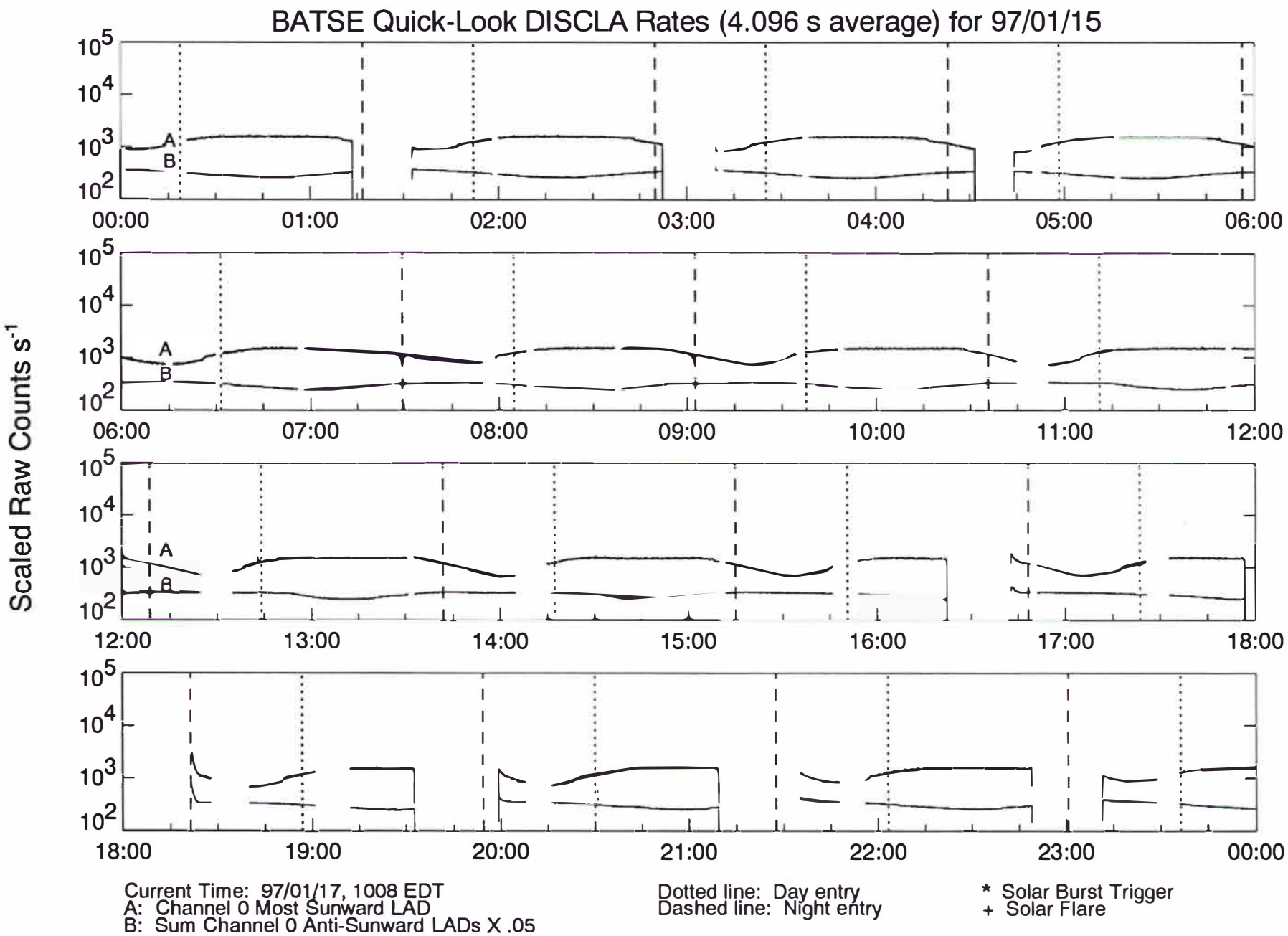
Ulysses date/time	TGRS detection
[illegible]. 15 1997 13:36	NO
Jan. 17 1997 15:07	YES! 20s duration FRED; peak at 970117:53211s
Jan. 17 1997 18:45	NO
Jan. 24 1997 12:51	YES! <10s duration; very narrow; peak at 970124:44347s
Jan. 26 1997 15:30	NO
Jan. 30 1997 19:33	NO
Feb. 4 1997 11:18	NO
Feb. 8 1997 18:04	NO

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
ject: examination of BATSE data in response to queries about Ulysses events

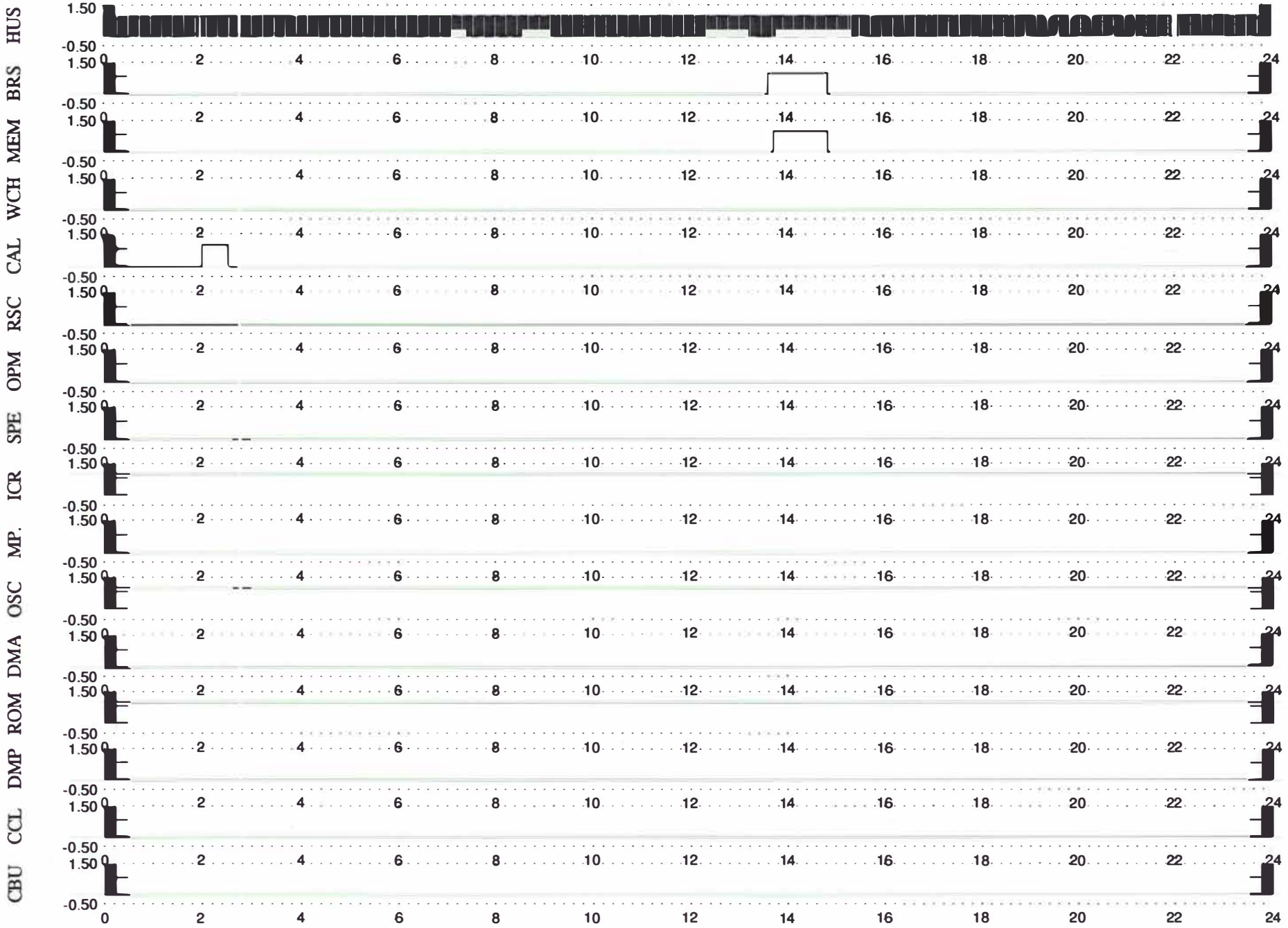
Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec 09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan 05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan 05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan 07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan 07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan 09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan 10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan 10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan 11	23:35	10459/84900	Nothing evident.
1997	Jan 13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan 14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan 15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
97	Jan 17	15:07	10465/54420	HV off during SAA.
1997	Jan 17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan 24	12:51	10472/46260	HV off during SAA.
1997	Jan 26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan 30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.


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: 97/01/15, 0000:00
Plot created: 97/01/17, 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 97/01/15
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/17, 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

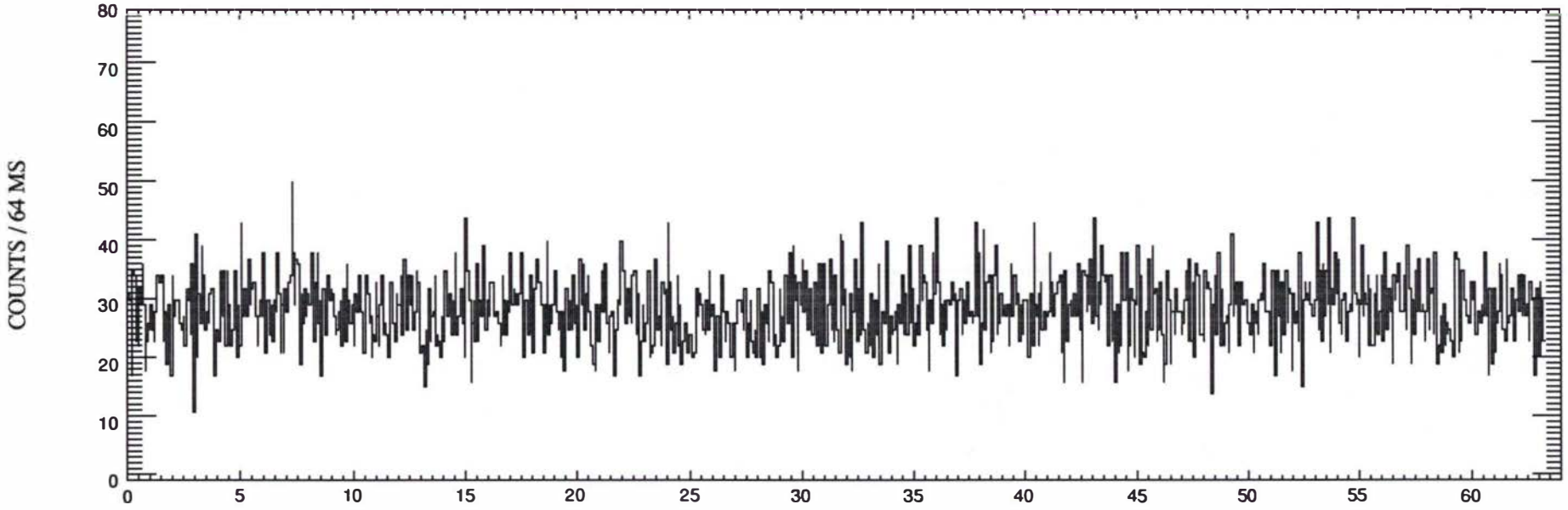
BURST NUMBER 9



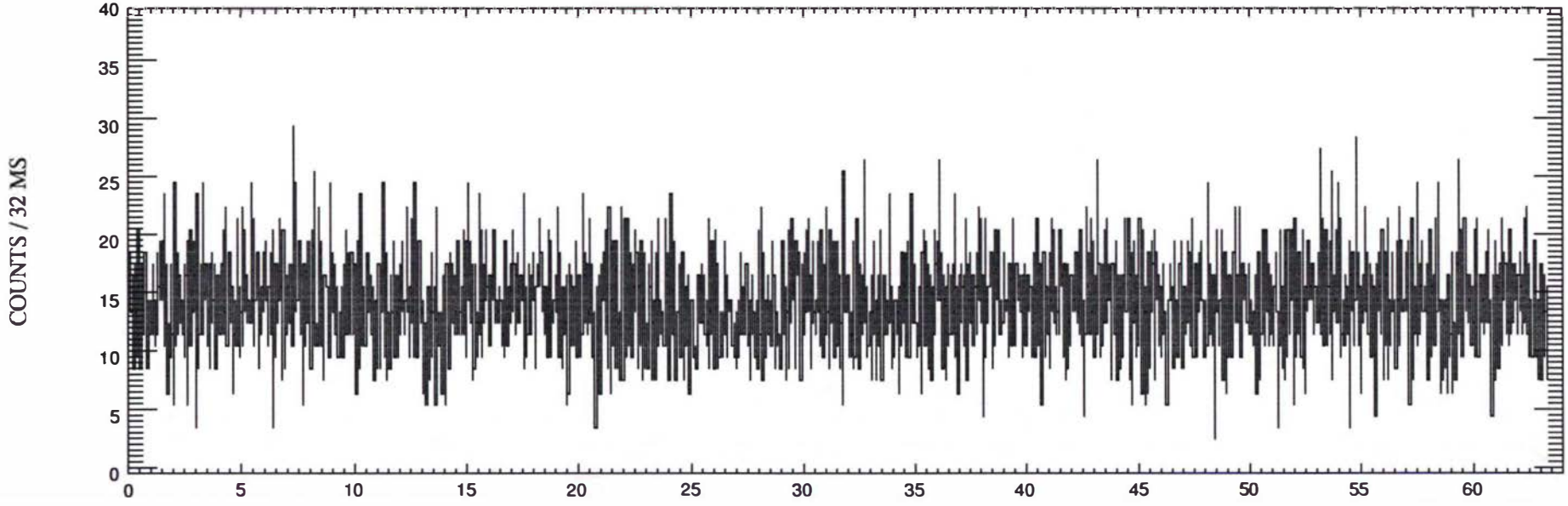
UNIVl AL TIME

HUS 2A TRIGGERED DATA EDR day 15, year 1997 5/6/97

Burst Counter 9 at UT=13.600944438510 h=48963.400 s 13:36:03.400



TIME, SECS

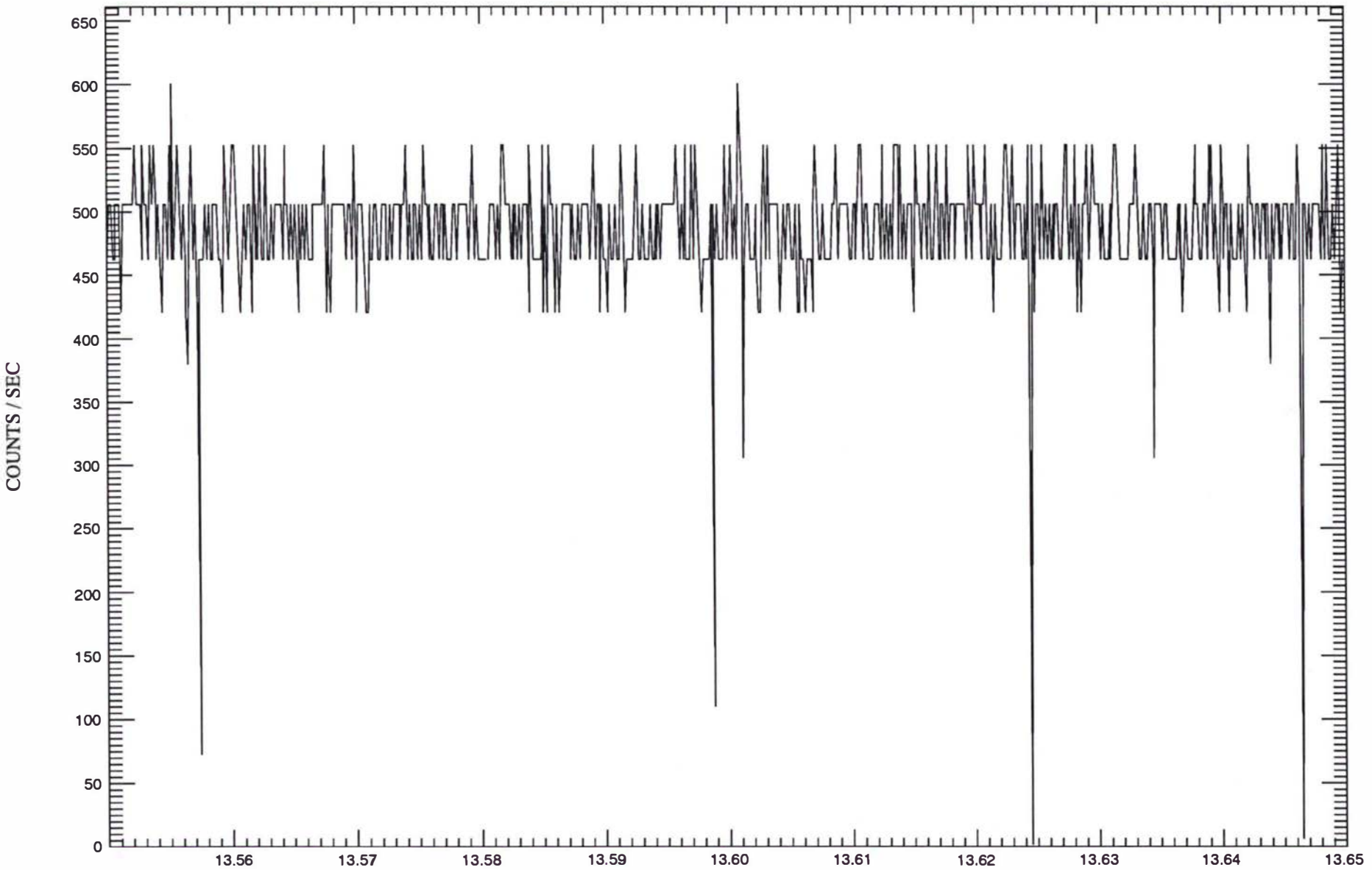


TIME SECS

B# 1

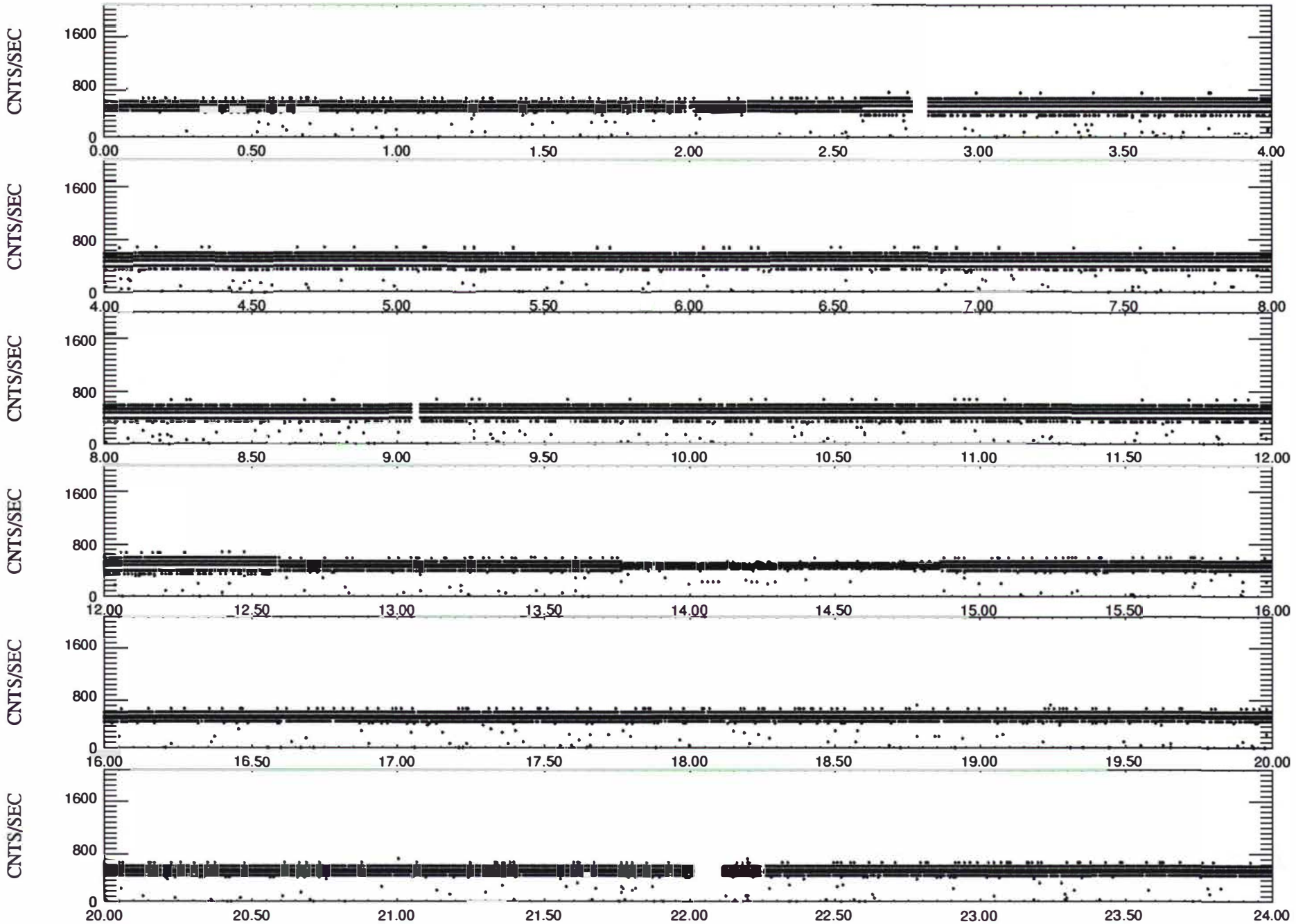
HUS 2A, MODE 1, NOT AVERAGED QEDR day 15, year 1997 to day 15, year 1997 1/20/97

CALIBRATION DATA INCLUDED



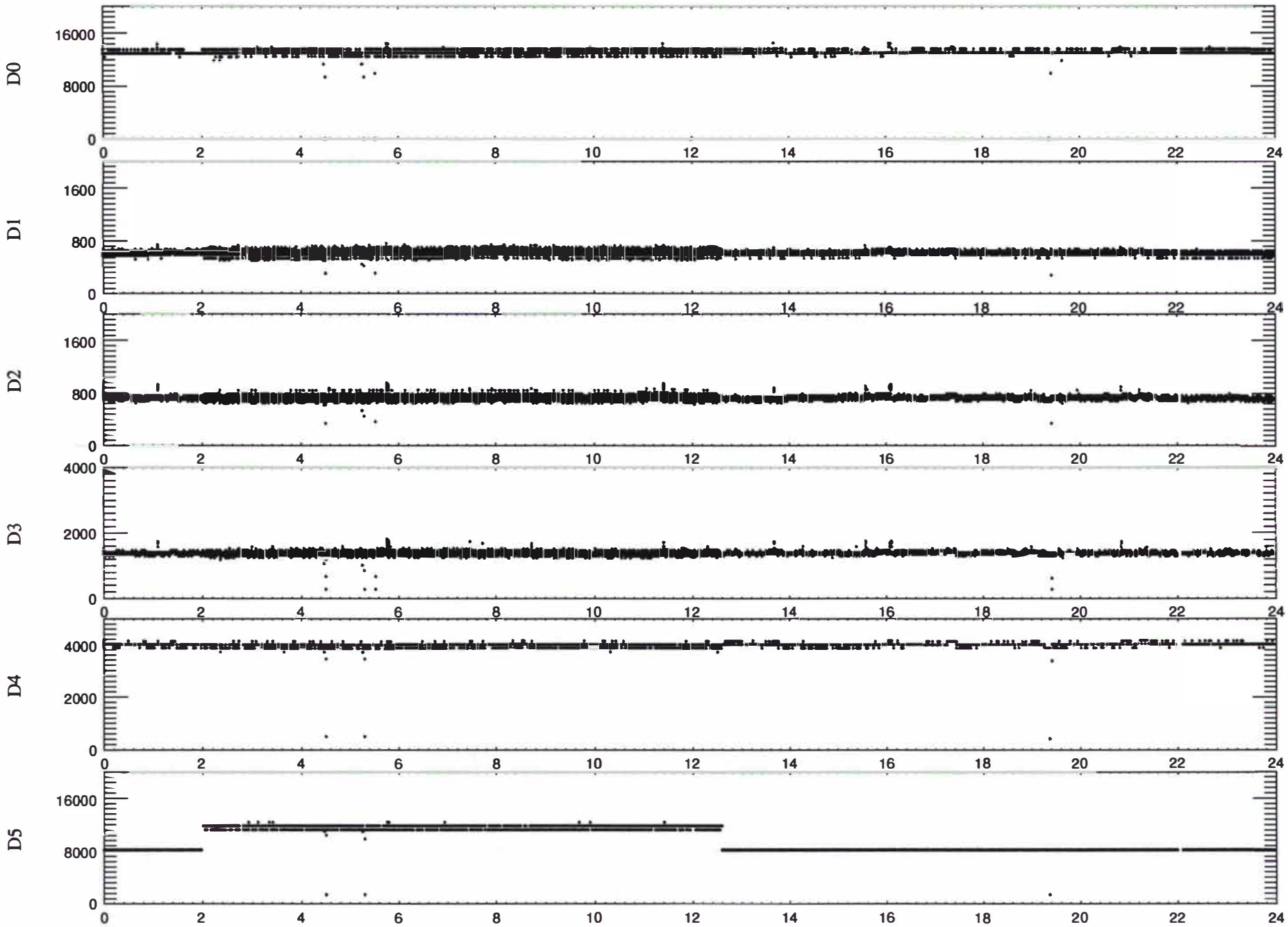
HUS 2A, MODE 1, NOT AVERAGED EDR day 15, year 1997 to day 15, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 15, year 1997 to day 15, year 1997 5/5/97



From DEAL@fender.msfc.nasa.gov Wed Jan 22 06:41 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 22 Jan 1997 8:39:33 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5827

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

 BATSE BURST #    5827
 EVENT OF 1997 JAN 16 DAY OF YEAR= 16
 EVENT CROSSING TIME AT BATSE     : 42084. S. OR 11:41:24.0
 COORDINATES ARE   0.000   0.000       6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 123.000  -11.000
 BATSE PEAK COUNTING RATE:   4300    C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 16/ 1/  97 IS:
 RA=  176.103 DEC=   34.155 DIST=    4.089 AU
 BATSE-ULYSSES DISTANCE =  611759589. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.37 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -776.59 SECS.
 CROSSING TIME AT ULYSSES    IS 41307. S. OR   11:28:27 +/-  365.83 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 16/ 1/  97 IS:
 RA=  184.338 DEC=    1.355 DIST=    1.020 AU
 MARS-BATSE DISTANCE =  152542224. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.79 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -237.21 SECS.
 CROSSING TIME AT MARS       IS 41847. S. OR   11:37:26 +/-   74.55 SECONDS



                BATSE BURST TRIGGER
NO.: 5827

TIME: TJD=0464 SECONDS=42084

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=70.9   AZIMUTH=219.5  ERROR=3.5   DEGREES

COMMENTS:
GRB LASTING ~ 50 S. VISIBLE ABOVE 300 KEV.



 BATSE #   Date     TJD     SoD   Max ct/s   RA   Dec  Dur (s)
   5827   970116   10464   42084     4300   123   -11     50
```

BATSE# 5827

ULYSSES RT 22/ 1/97

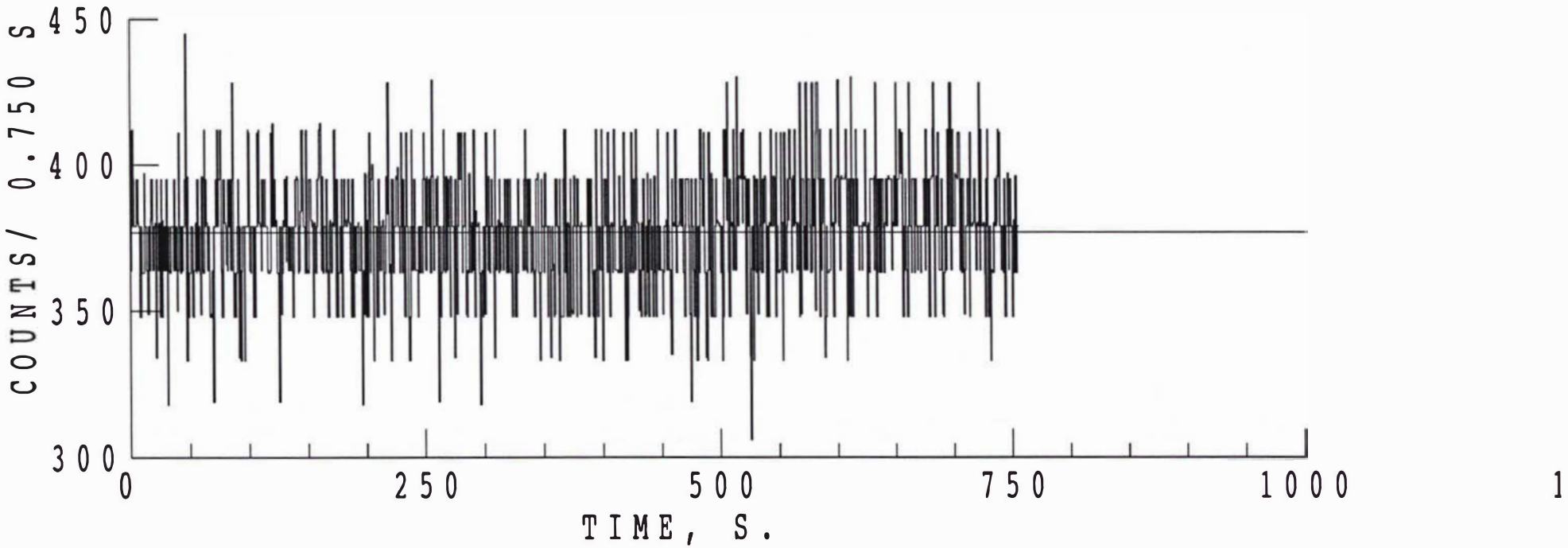
16/ 1/97 40932.238 s

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



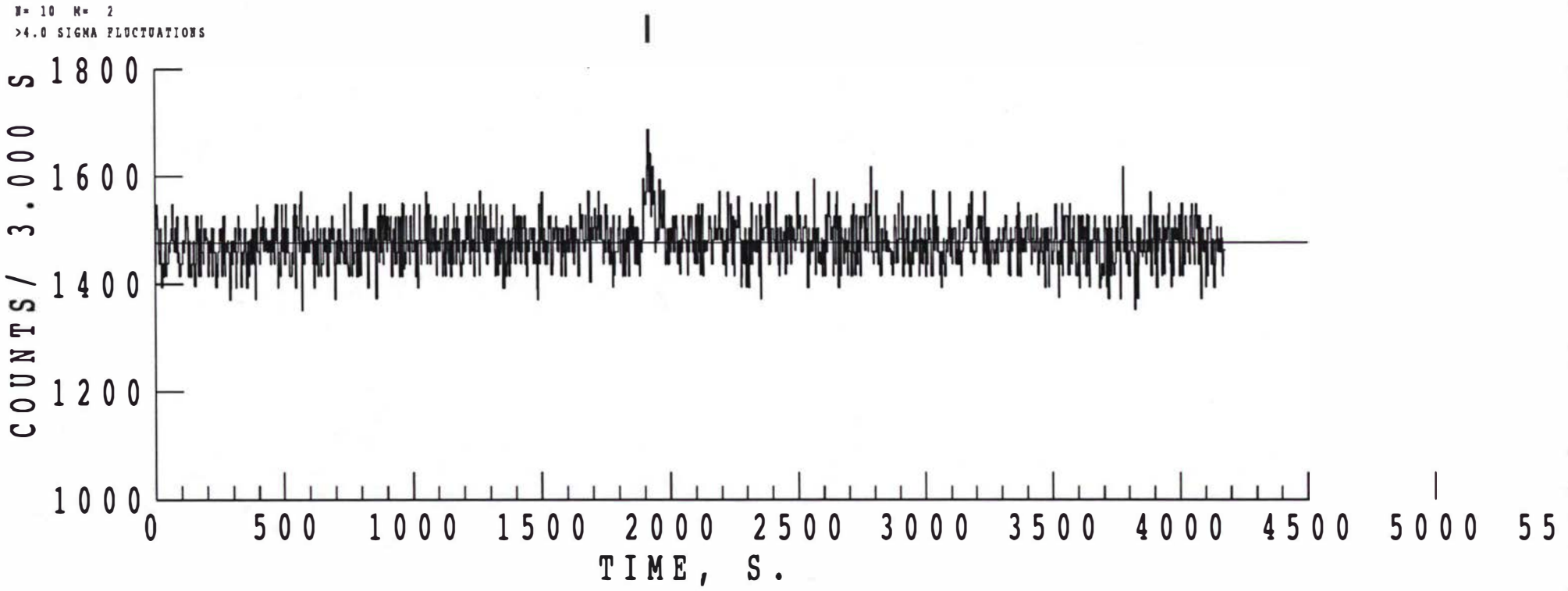
KONUS

ULYSSES RT 01/02/00

16/01/97 56160.426 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



Date: July 3 2003

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. BATSE Data

☐ BATSE ephemeris for T_0? N/A

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

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

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)

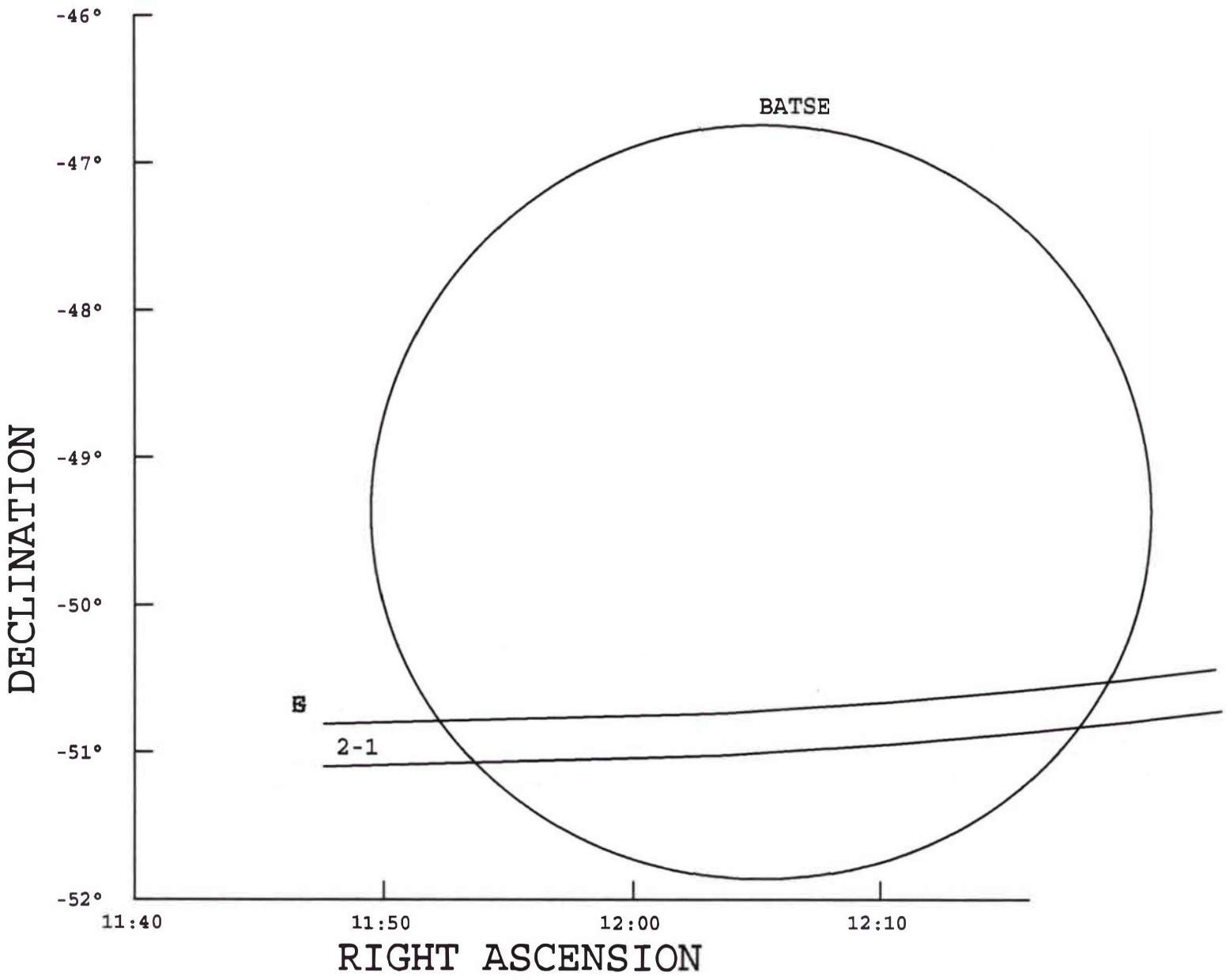
☐ BATSE >100 keV data used for NEAR correlation?

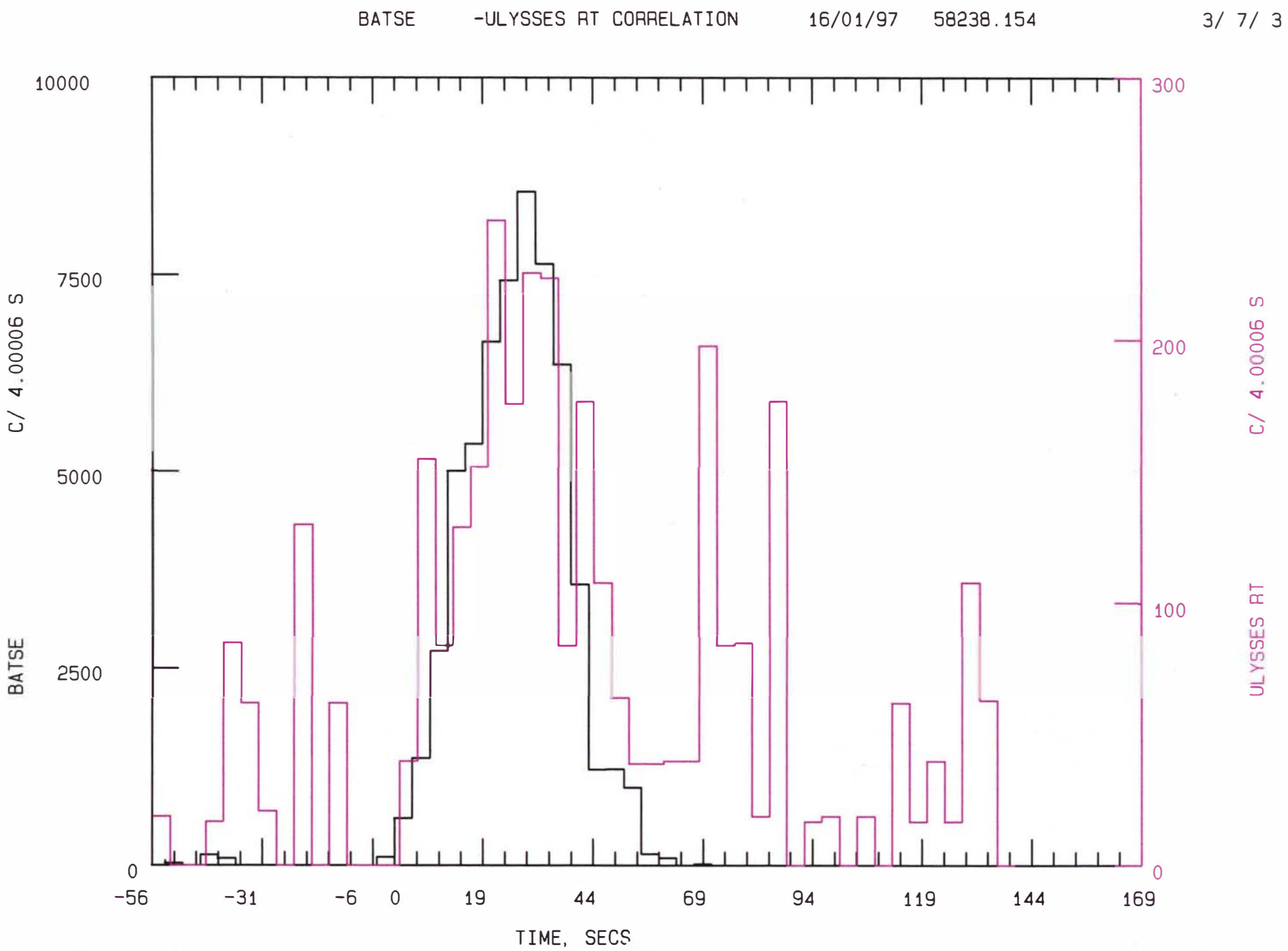
☑ ACCESS database updated?

EVENT OF JAN 16, 1997 16:10

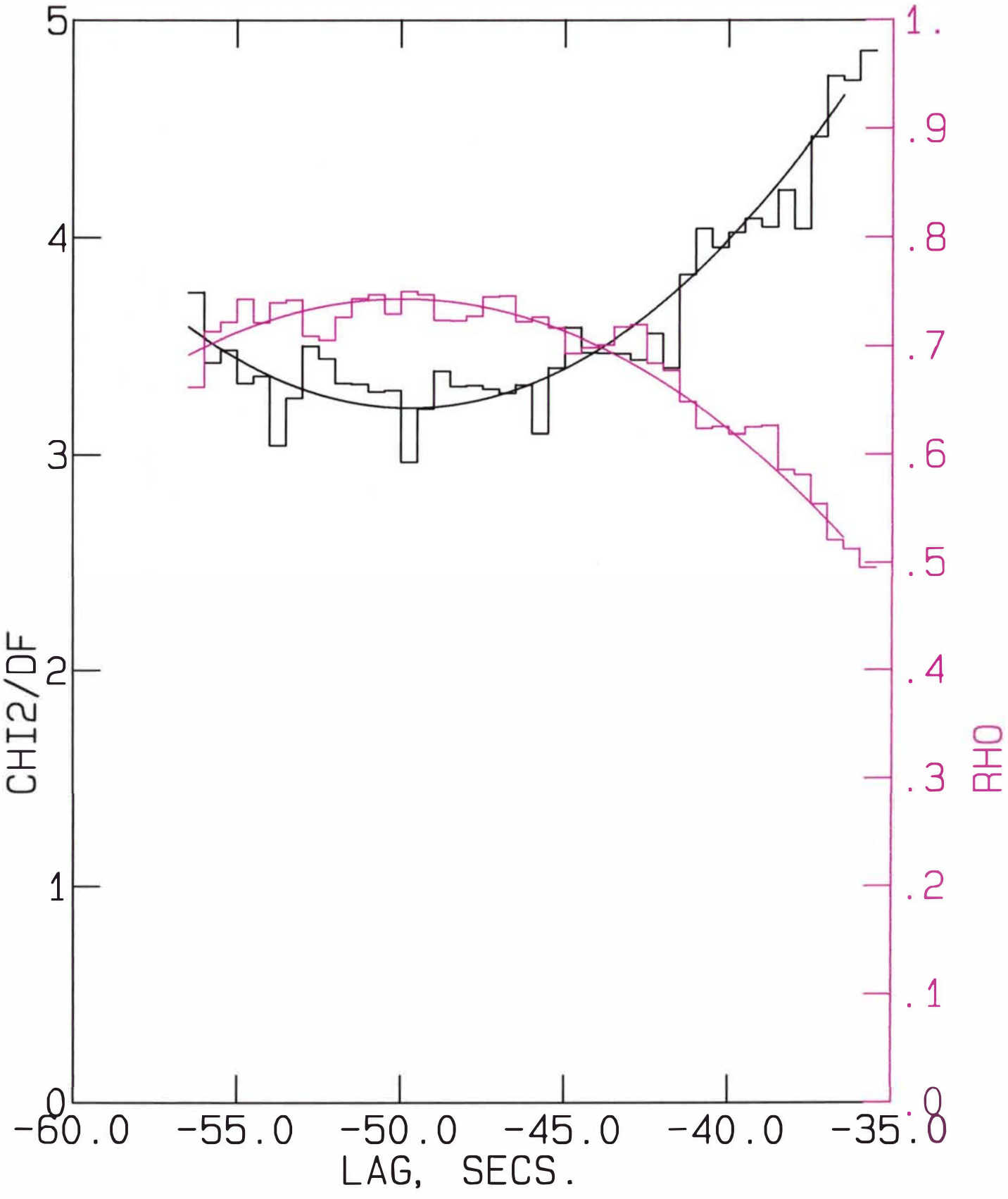
3/ 7/ 3

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 16/01/97 58238.154 3/ 7/ 3
10000
7500
5000
2500
0
C/ 4.00006 S
BATSE
300
200
100
0
C/ 4.00006 S
ULYSSES RT
-56
-31
-6
0
19
44
69
94
119
144
169
TIME, SECS

BATSE -ULYSSES RT CORRELATION 16/01/97 58238.154

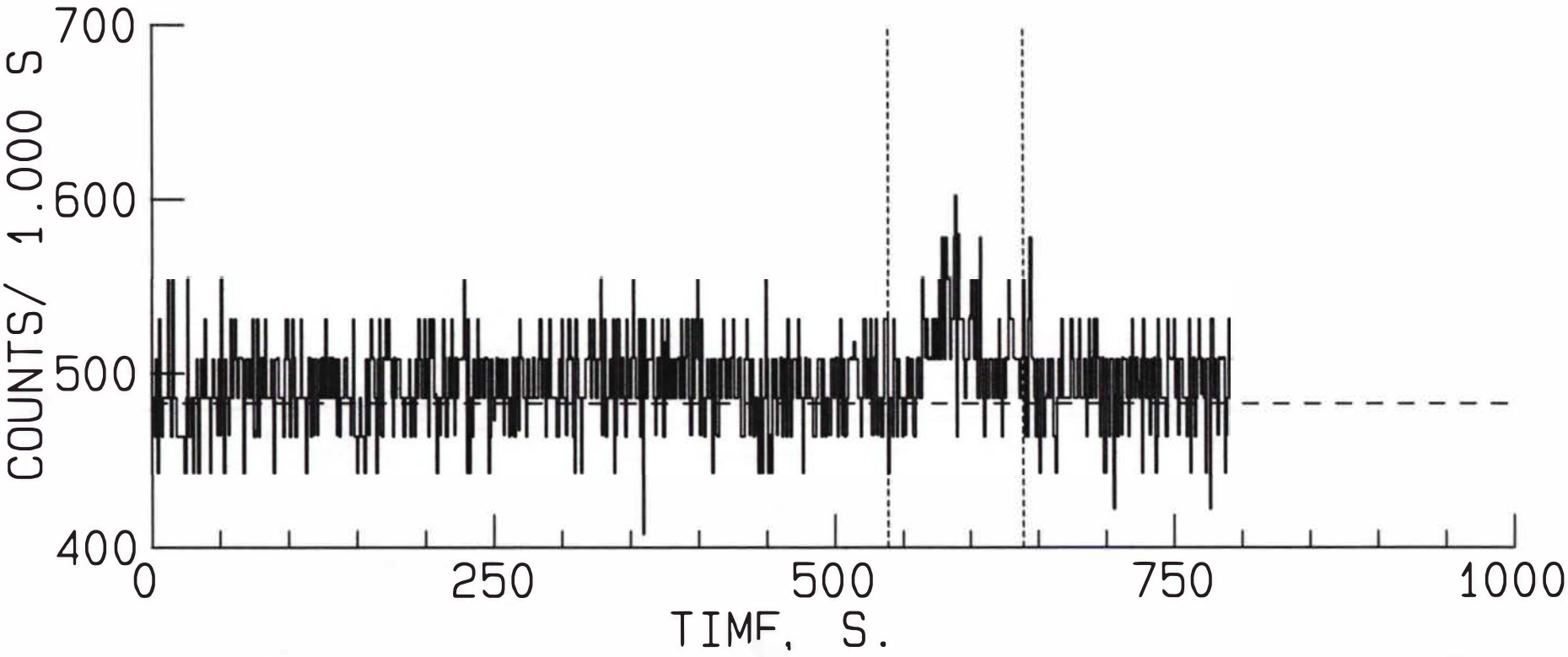


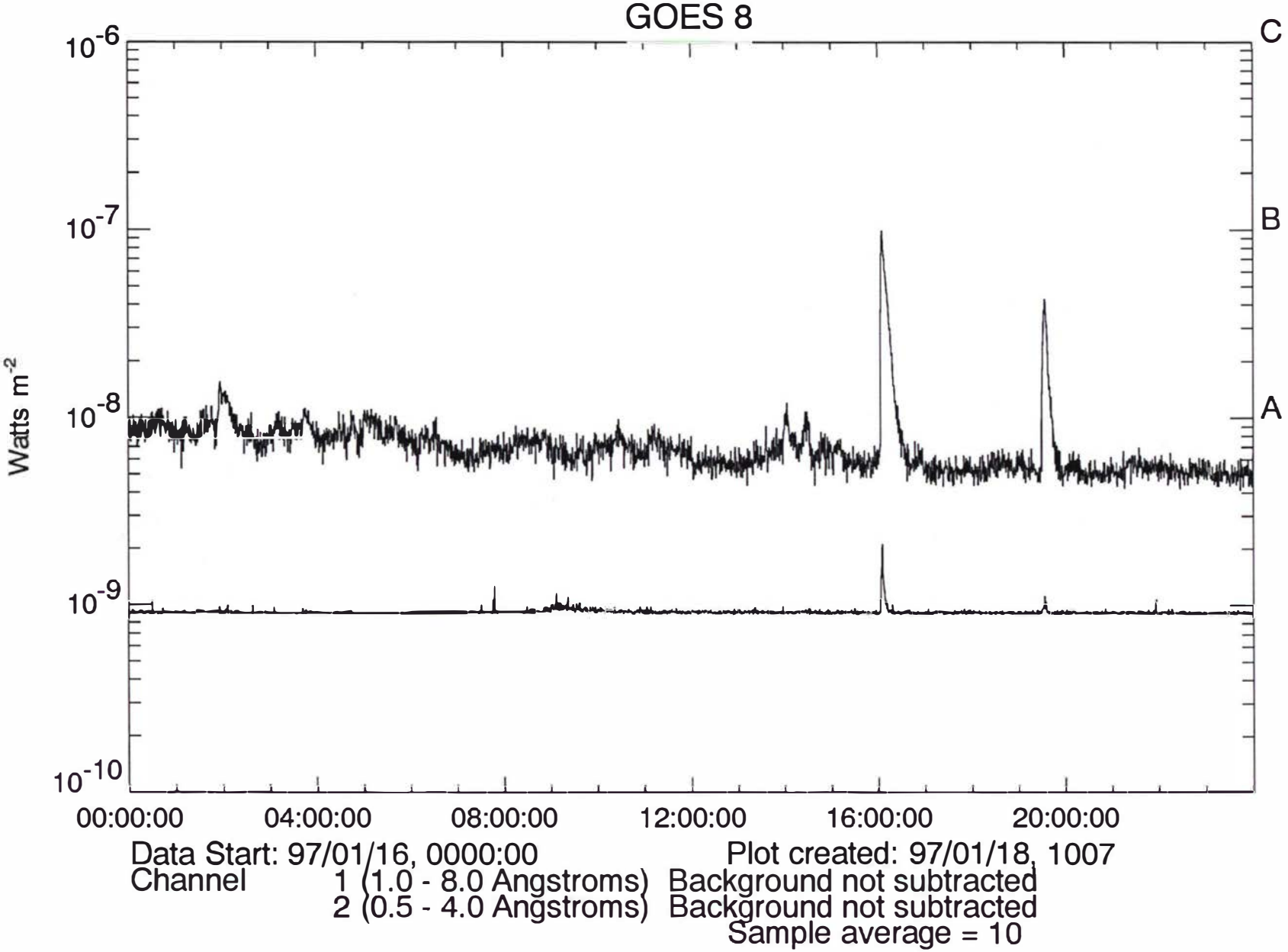
ULYSSES RT 3/ 7/ 3

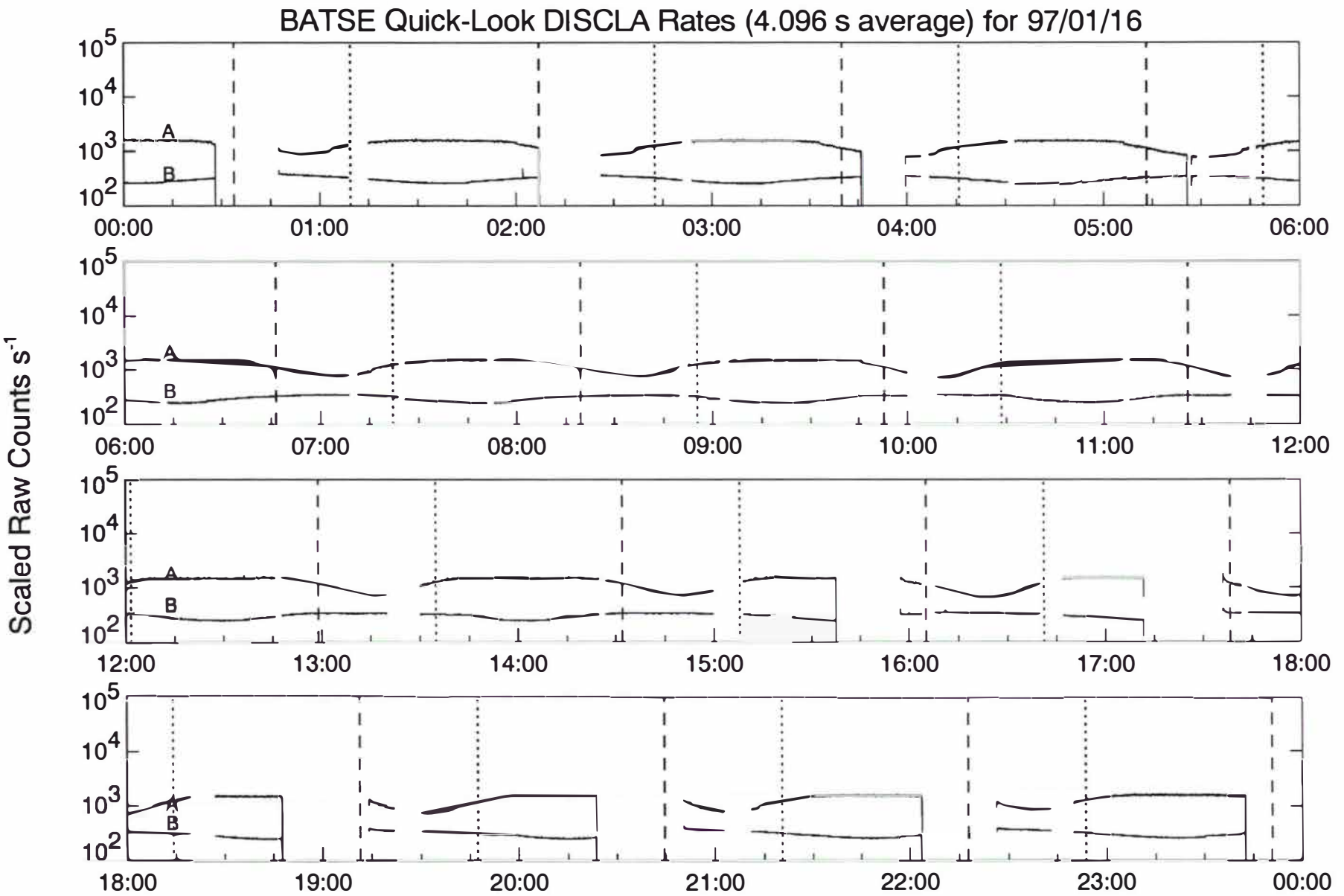
16/ 1/97 57492.445 s

0.500 S INTERVALS REGROUPED BY 2

21- 147 keV




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: 97/01/16, 0000:00
Plot created: 97/01/18, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

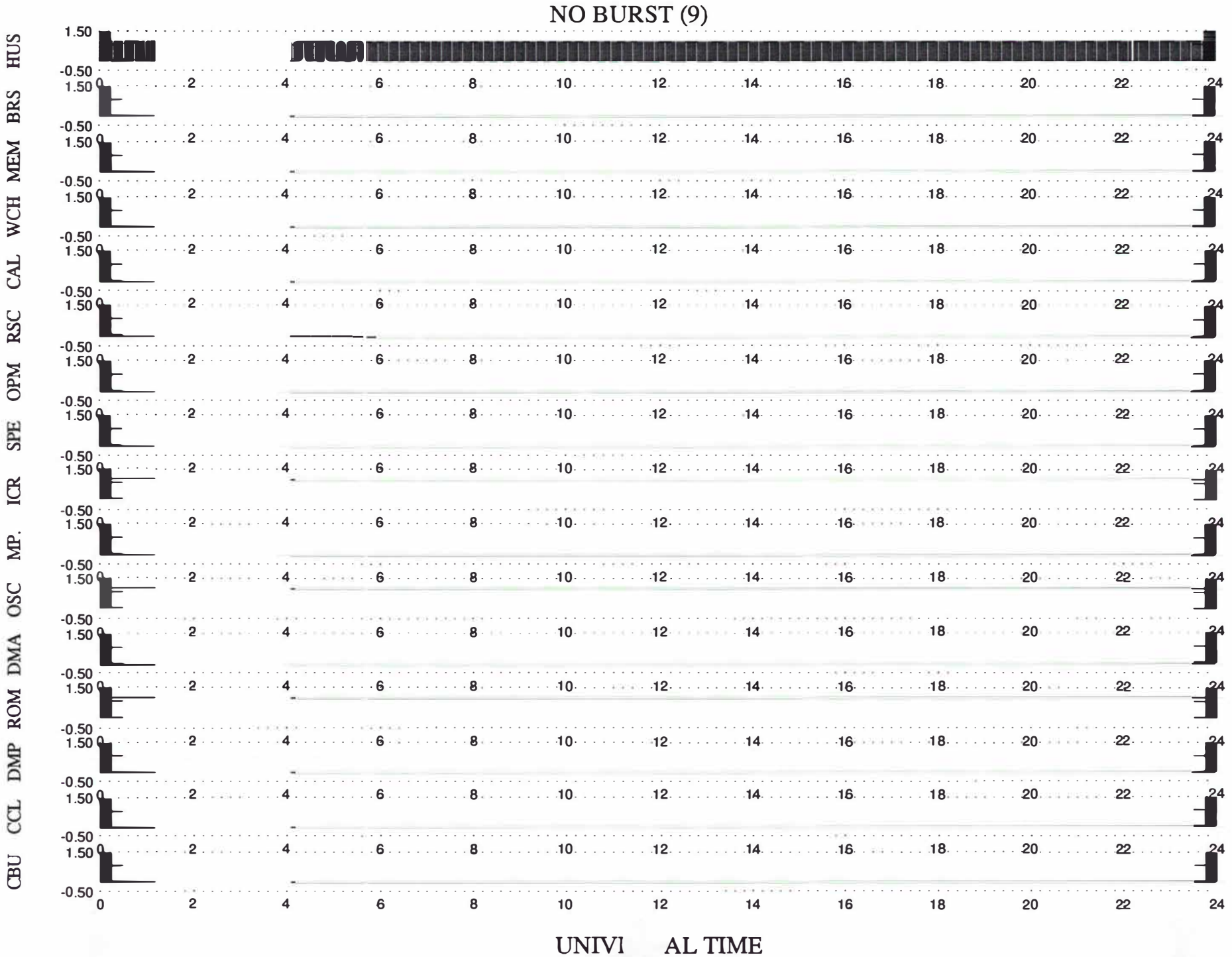


Current Time: 97/01/18, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

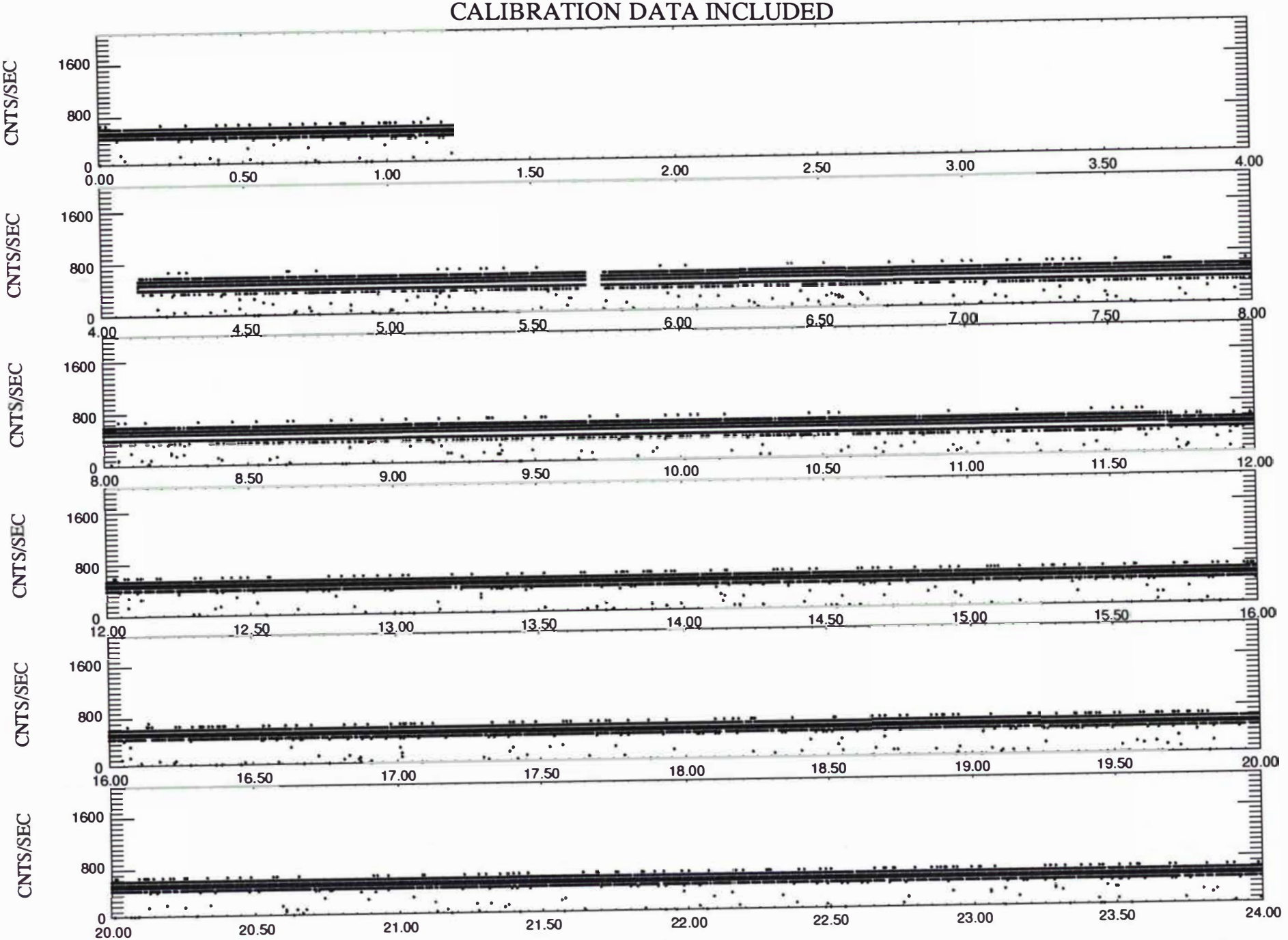
* Solar Burst Trigger
\+ Solar Flare

HUS MODES EDR day 16, year 1997 to day 16, year 1997 5/5/97



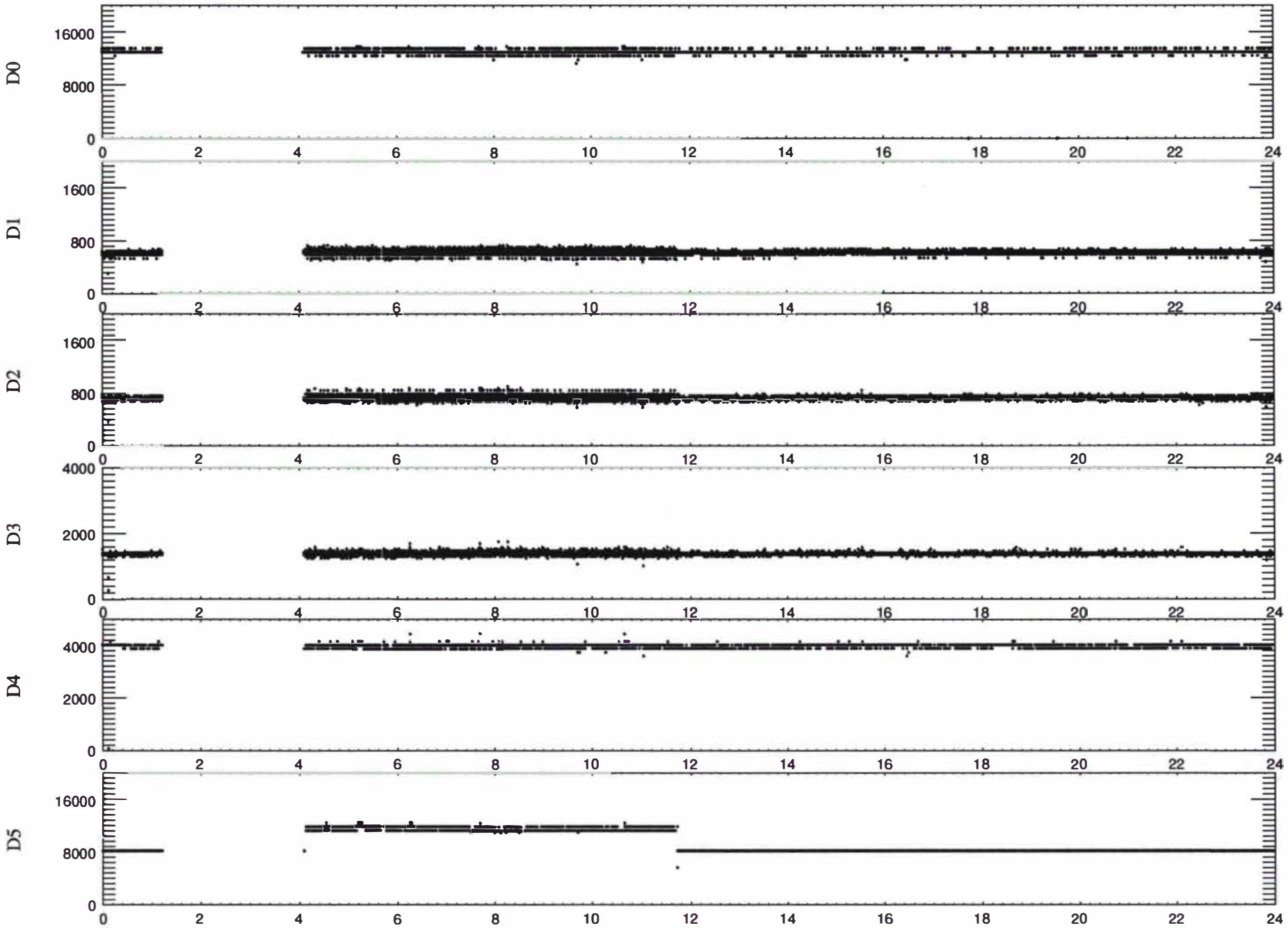
HUS 2A, MODE 1, NOT AVERAGED EDR day 16, year 1997 to day 16, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 16, year 1997 to day 16, year 1997 5/5/97



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

Date: Oct 1 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data N/A

☑ Jim Schmidling's stat file correction applied?

☐ Final ephemeris used?

☐ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

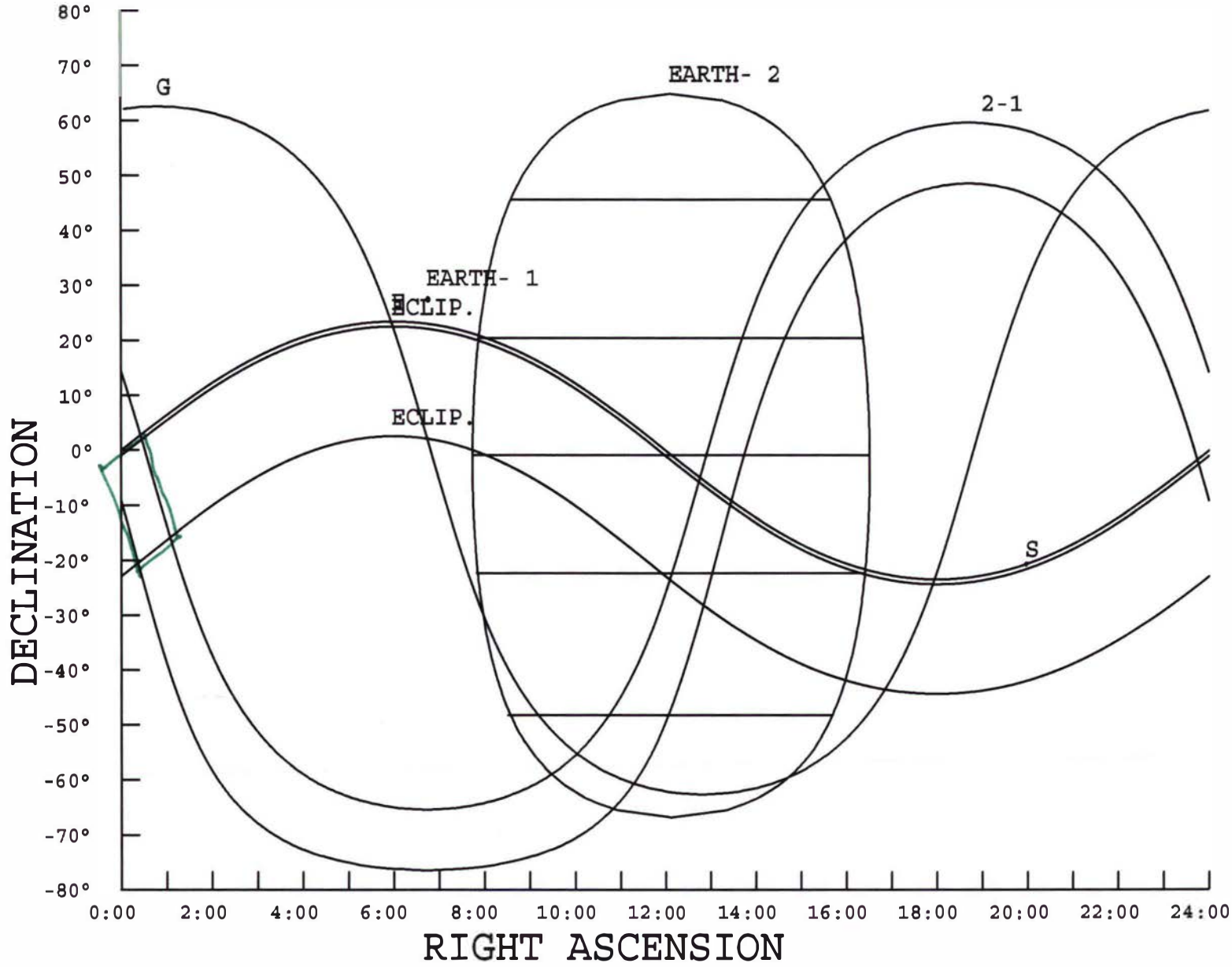
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

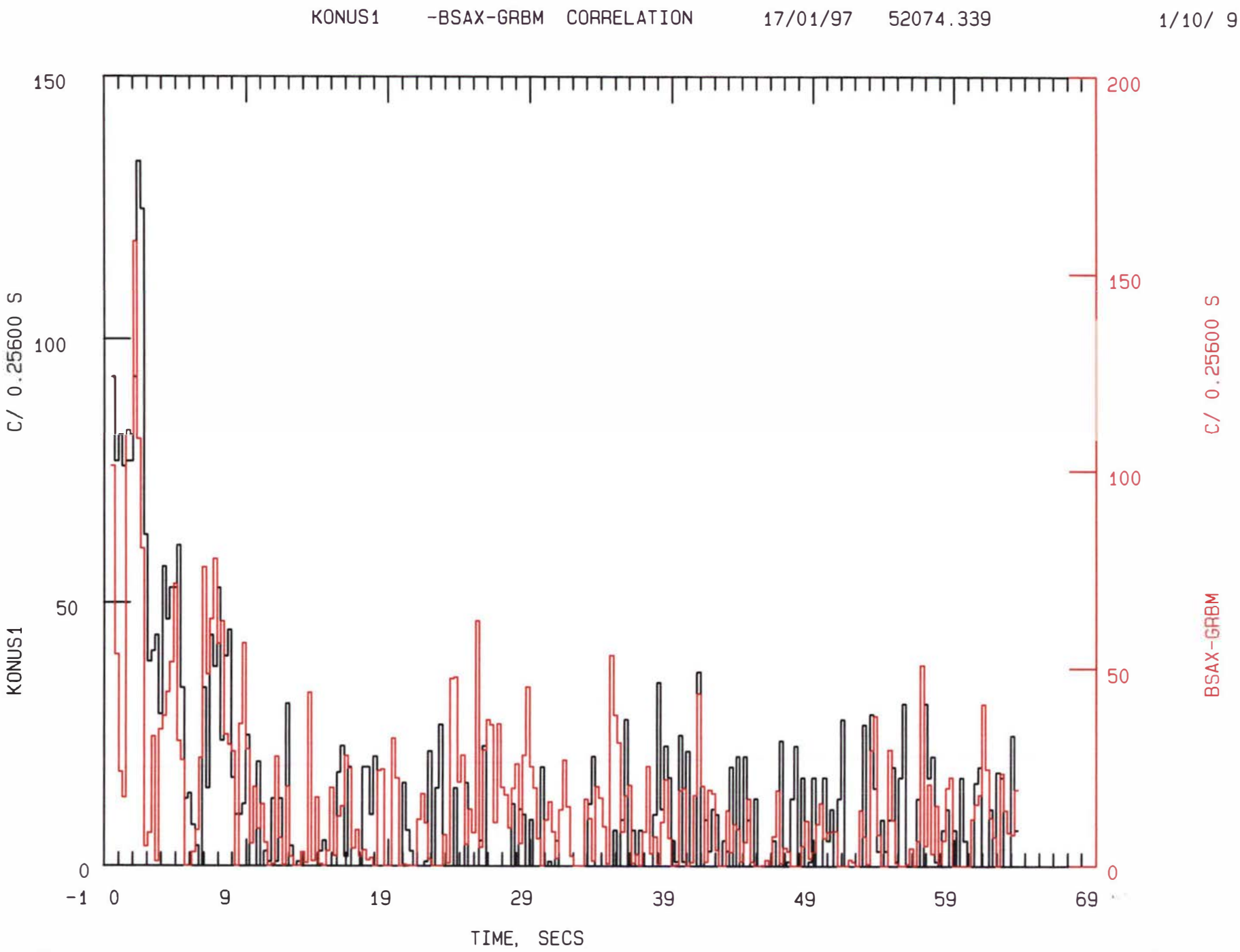
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

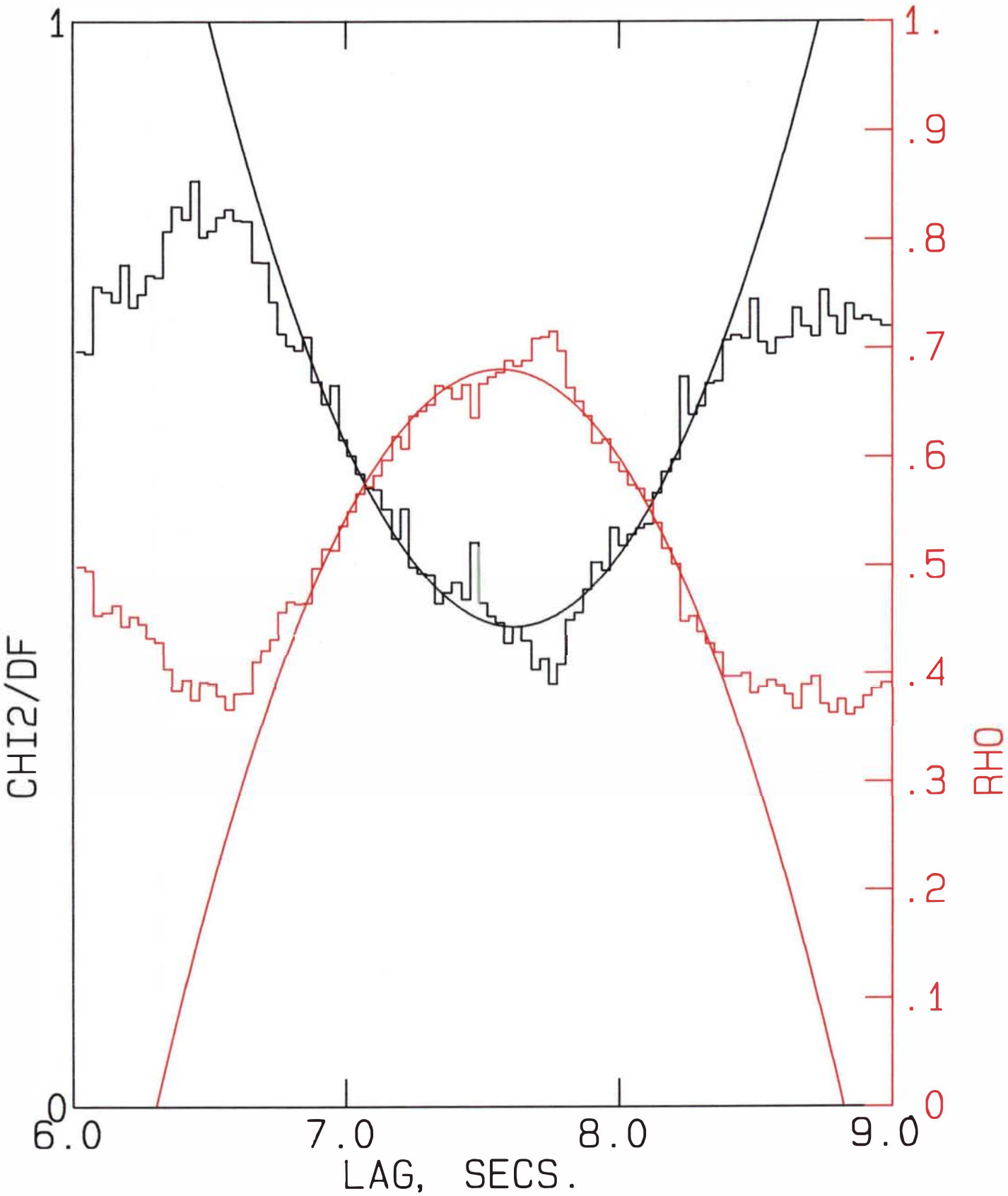
EVENT OF JAN 17, 1997 14:27

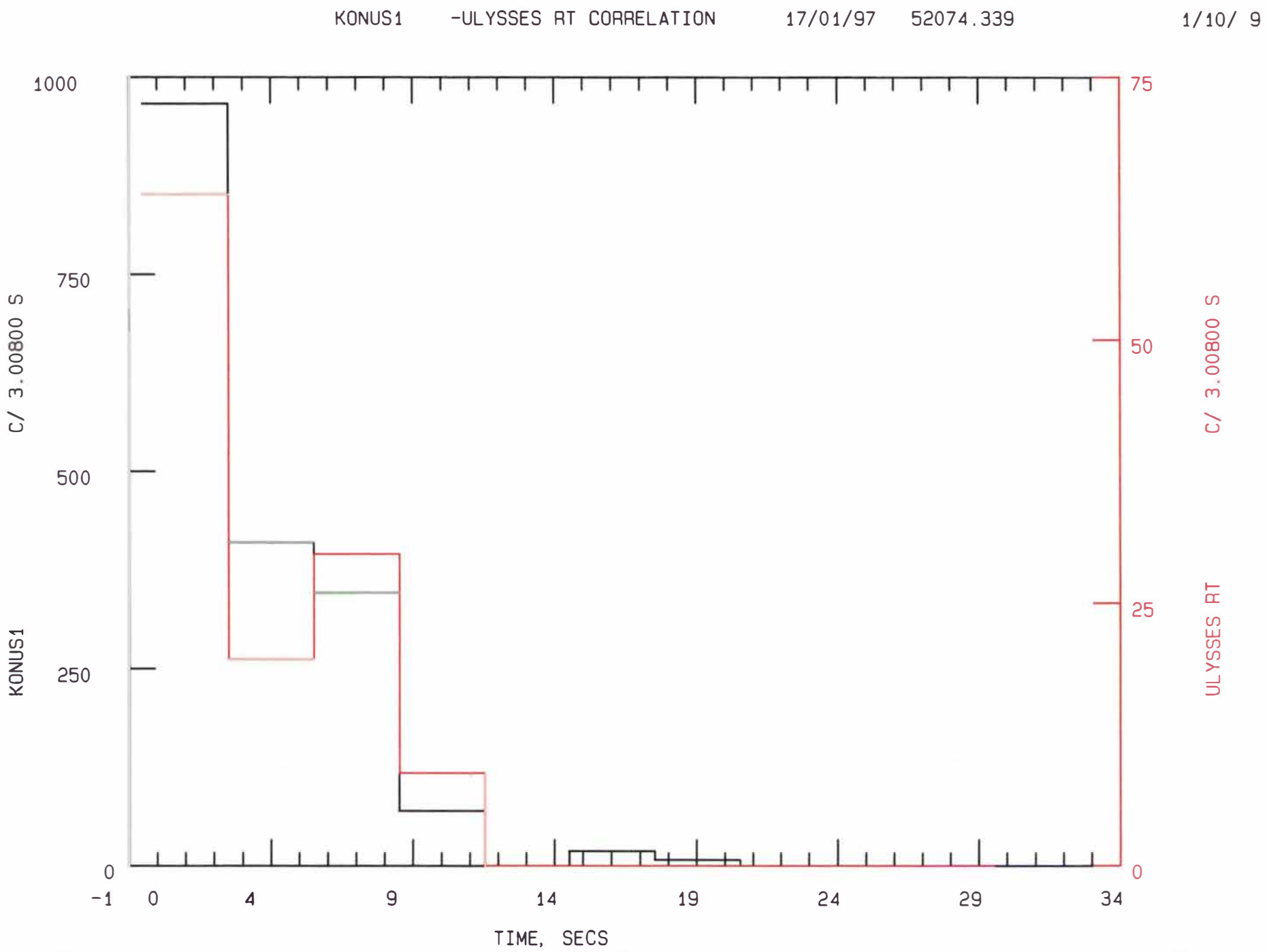
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS1 2 SAX



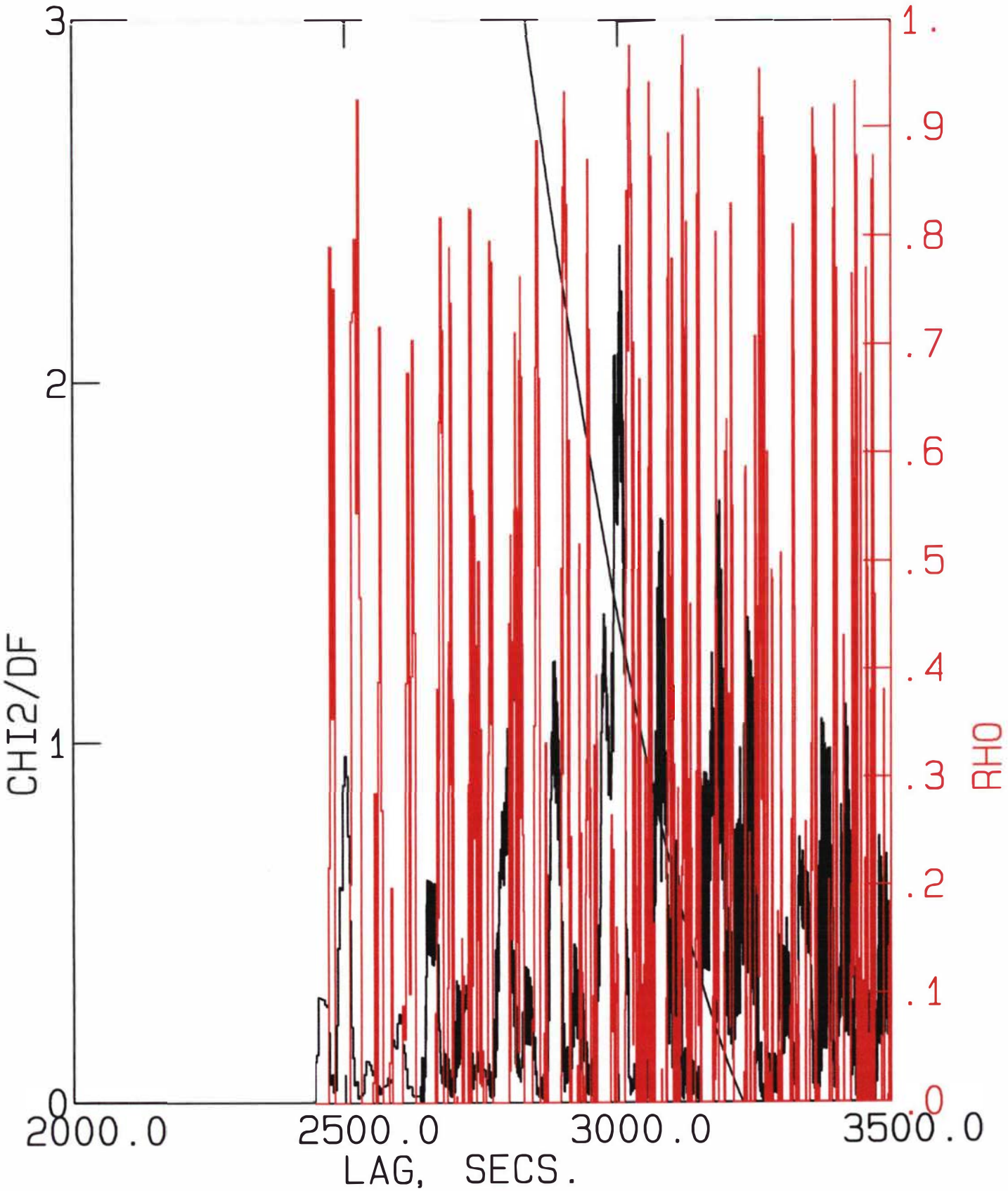

KONUS1 -BSAX-GRBM CORRELATION 17/01/97 52074.339 1/10/ 9
150
100
50
0
200
150
100
50
0
C/ 0.25600 S
KONUS1
C/ 0.25600 S
BSAX-GRBM
-1
0
9
19
29
39
49
59
69
TIME, SECS

KONUS1 -BSAX-GRBM CORRELATION 17/01/97 52074.339




KONUS1 -ULYSSES RT CORRELATION 17/01/97 52074.339 1/10/ 9
1000
750
500
250
0
C/ 3.00800 S
KONUS1
75
50
25
0
C/ 3.00800 S
ULYSSES RT
-1
0
4
9
14
19
24
29
34
TIME, SECS

KONUS1 -ULYSSES RT CORRELATION 17/01/97 52074.339



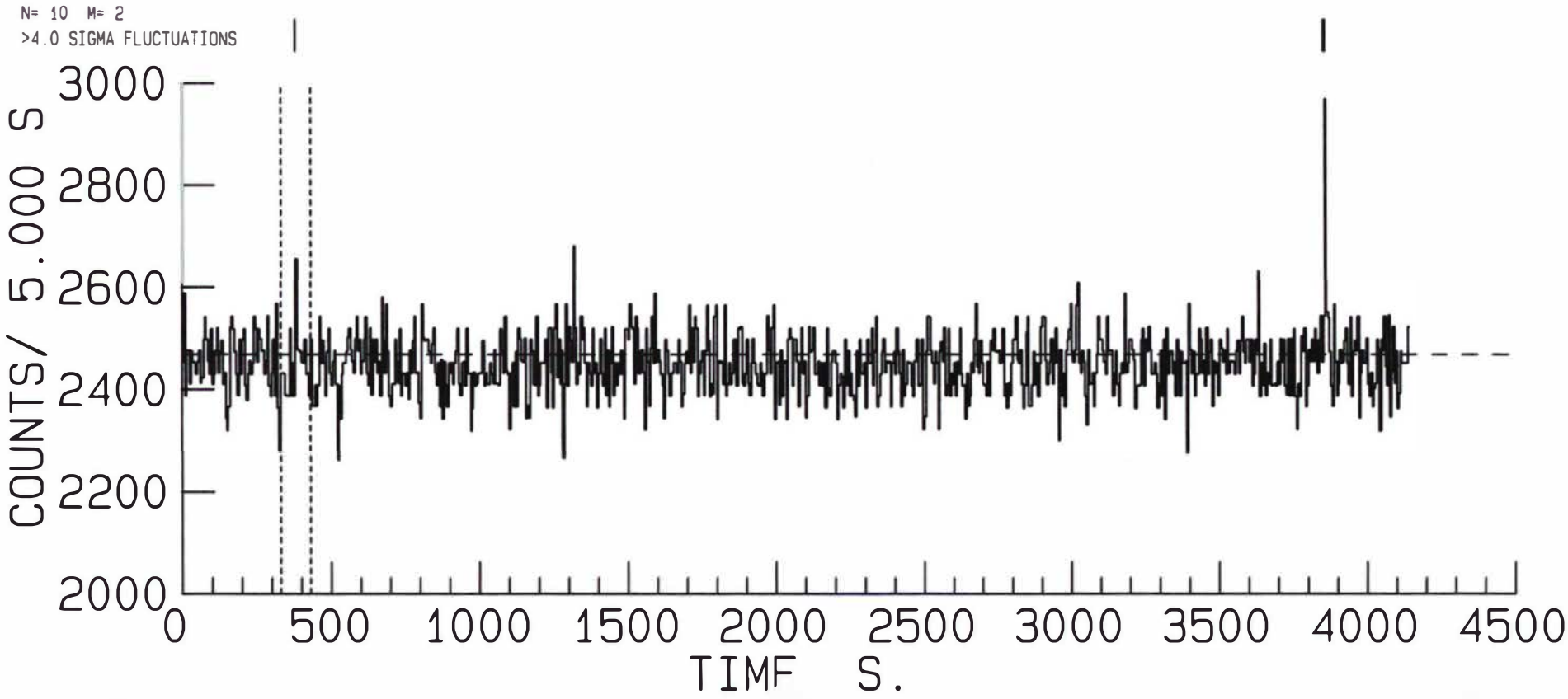
ULYSSES RT

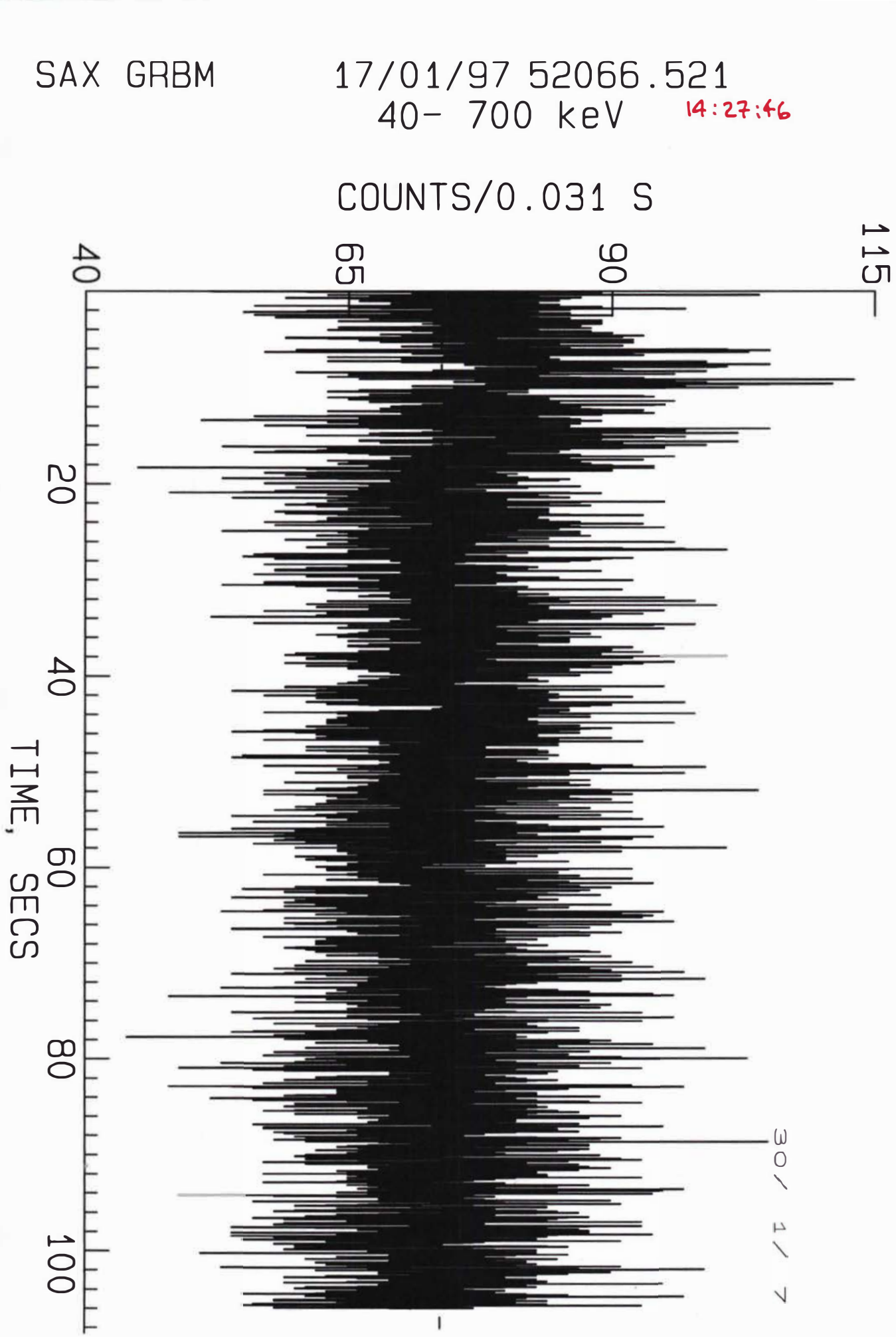
1/10/ 9

17/ 1/97 50004.375 s

0.500 S INTERVALS REGROUPED BY 10

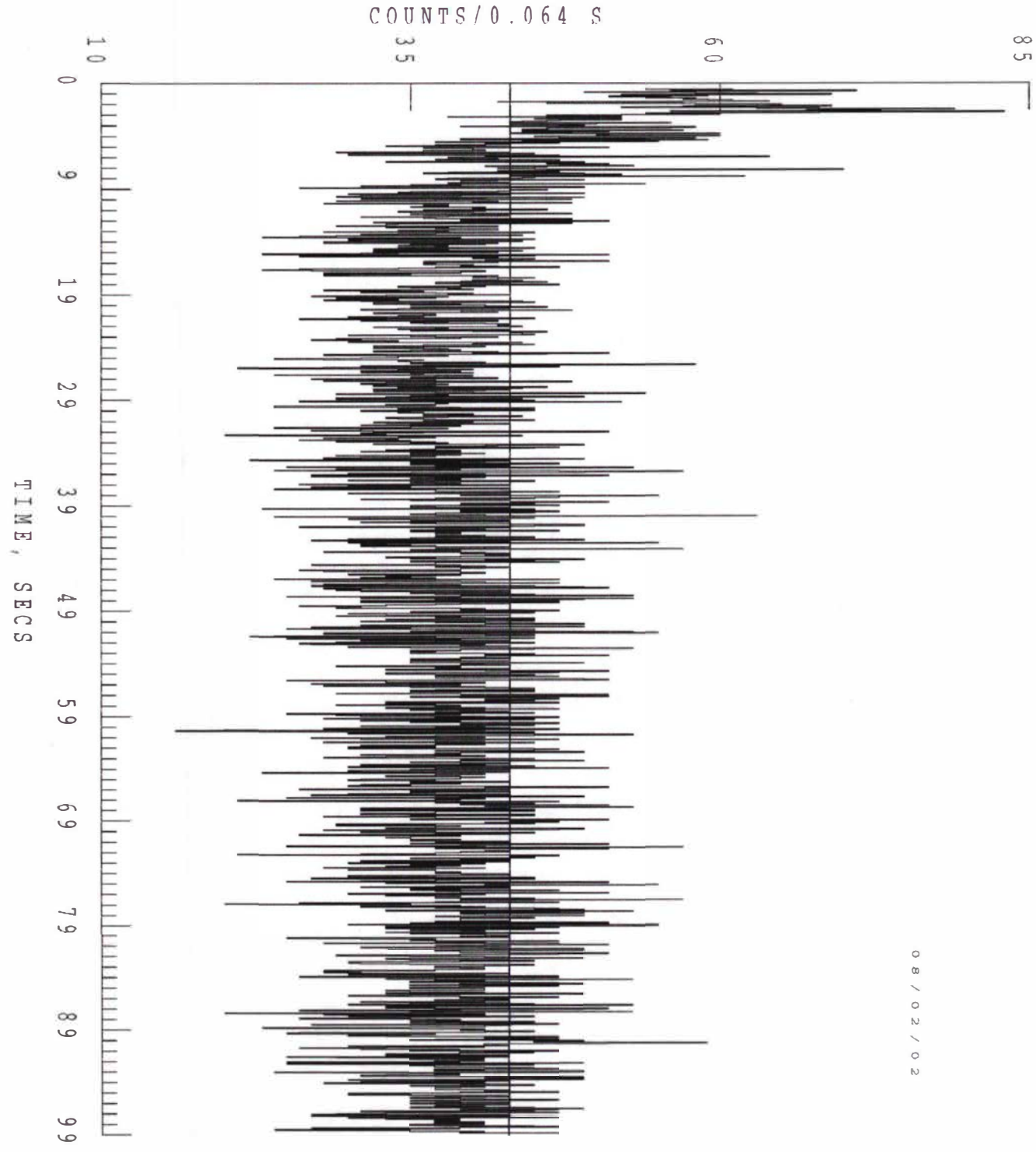
21- 146 keV




SAX GRBM
17/01/97 52066.521
40- 700 keV
14:27:46
COUNTS/0.031 S
40
65
90
115
20
40
60
80
100
TIME, SECS
30/ 1/ 7

KONUS1 17/01/97 52074.339

50- 200 keV



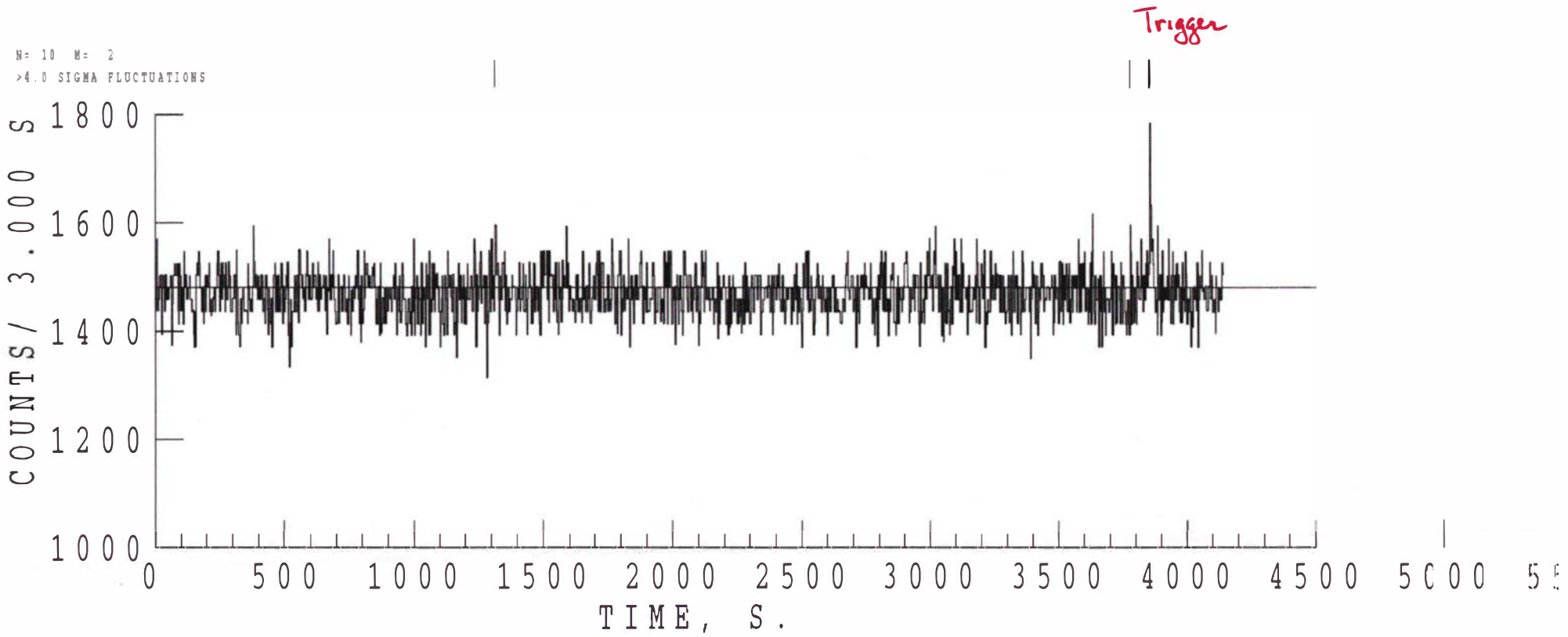
KONUS1 19970117 52074

ULYSSES RT 08/02/02

17/01/97 50004.375 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



Date: Jan 31 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 N/A

☐ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

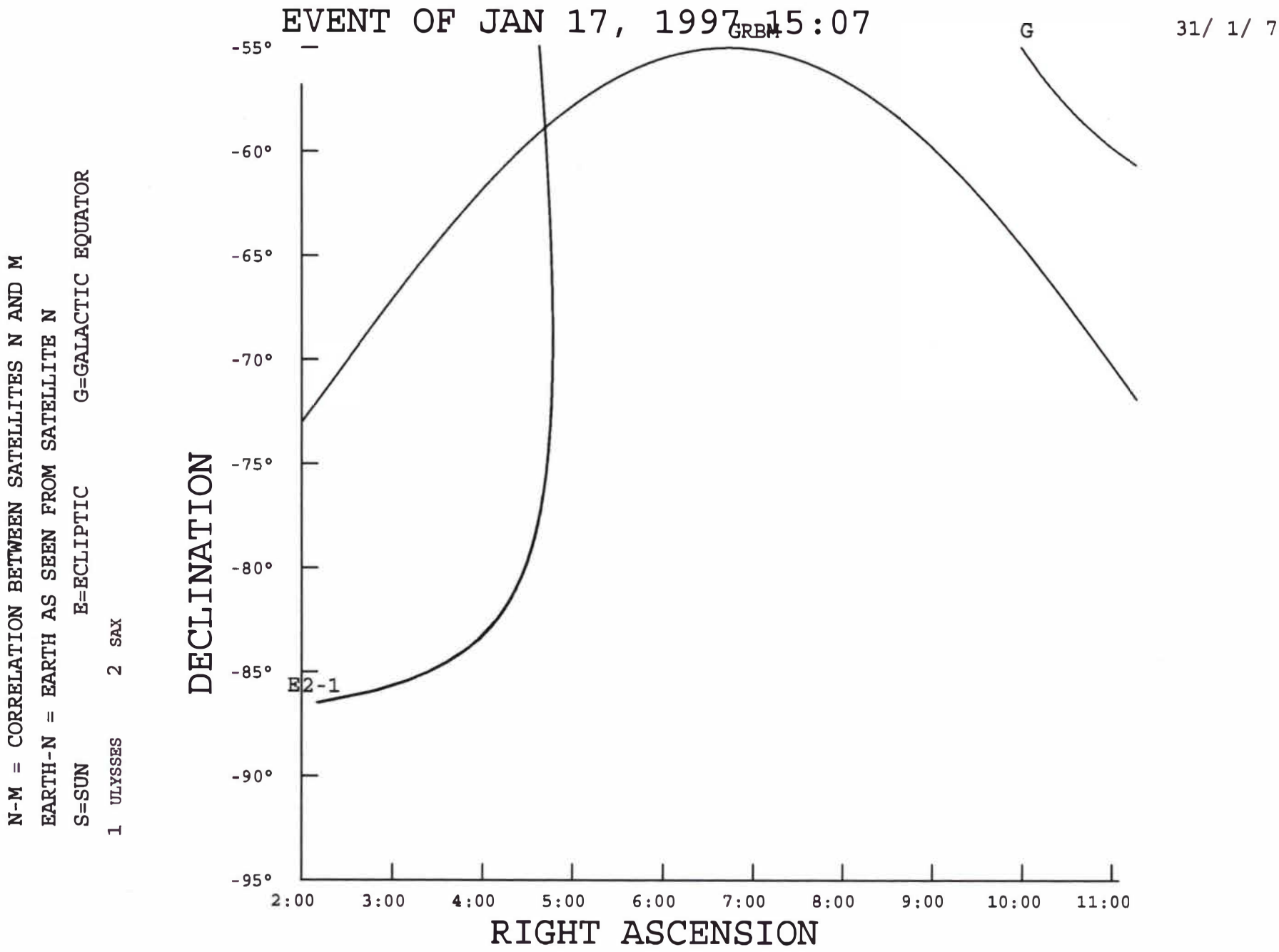
3. For INTEGRAL events

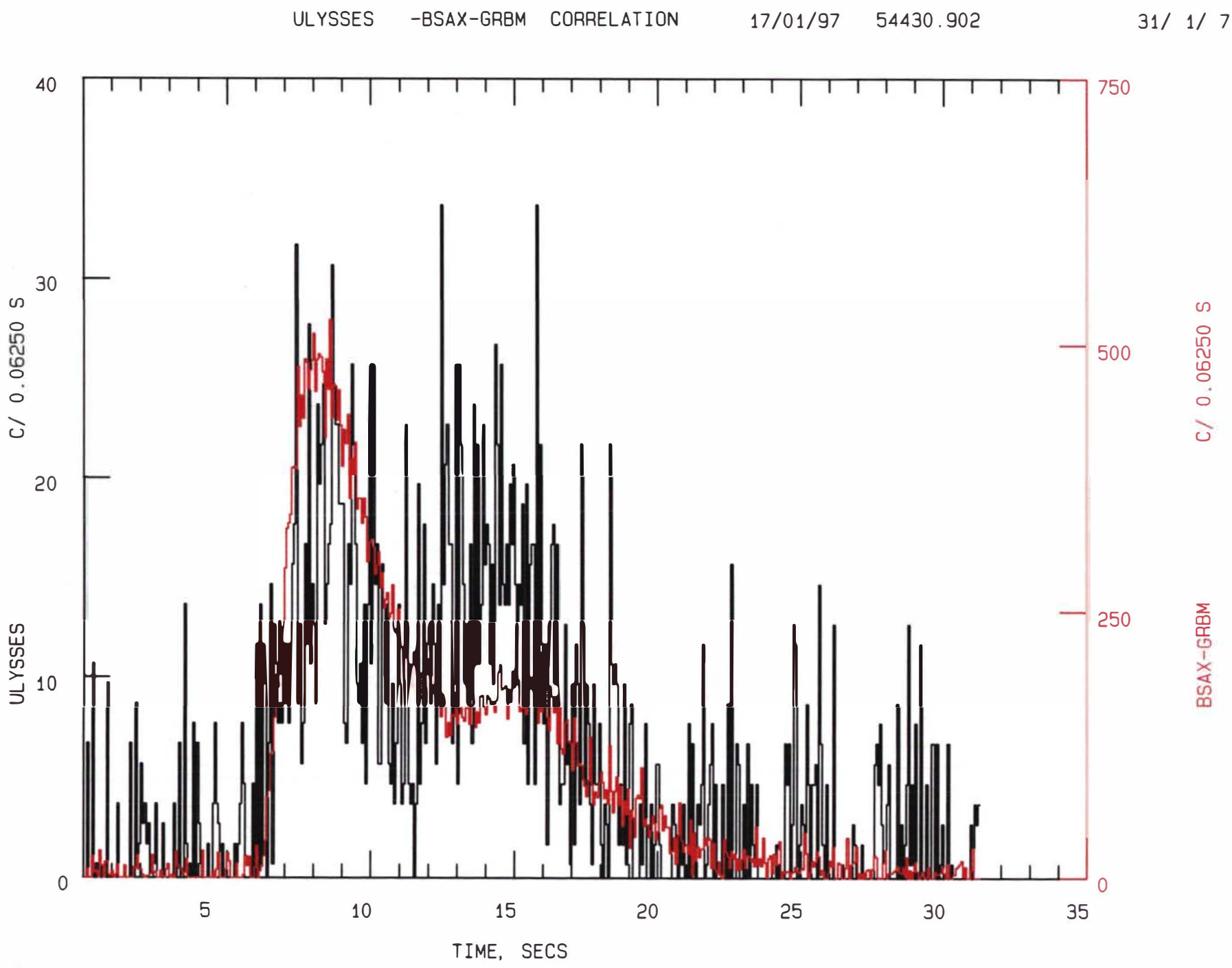
☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?

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

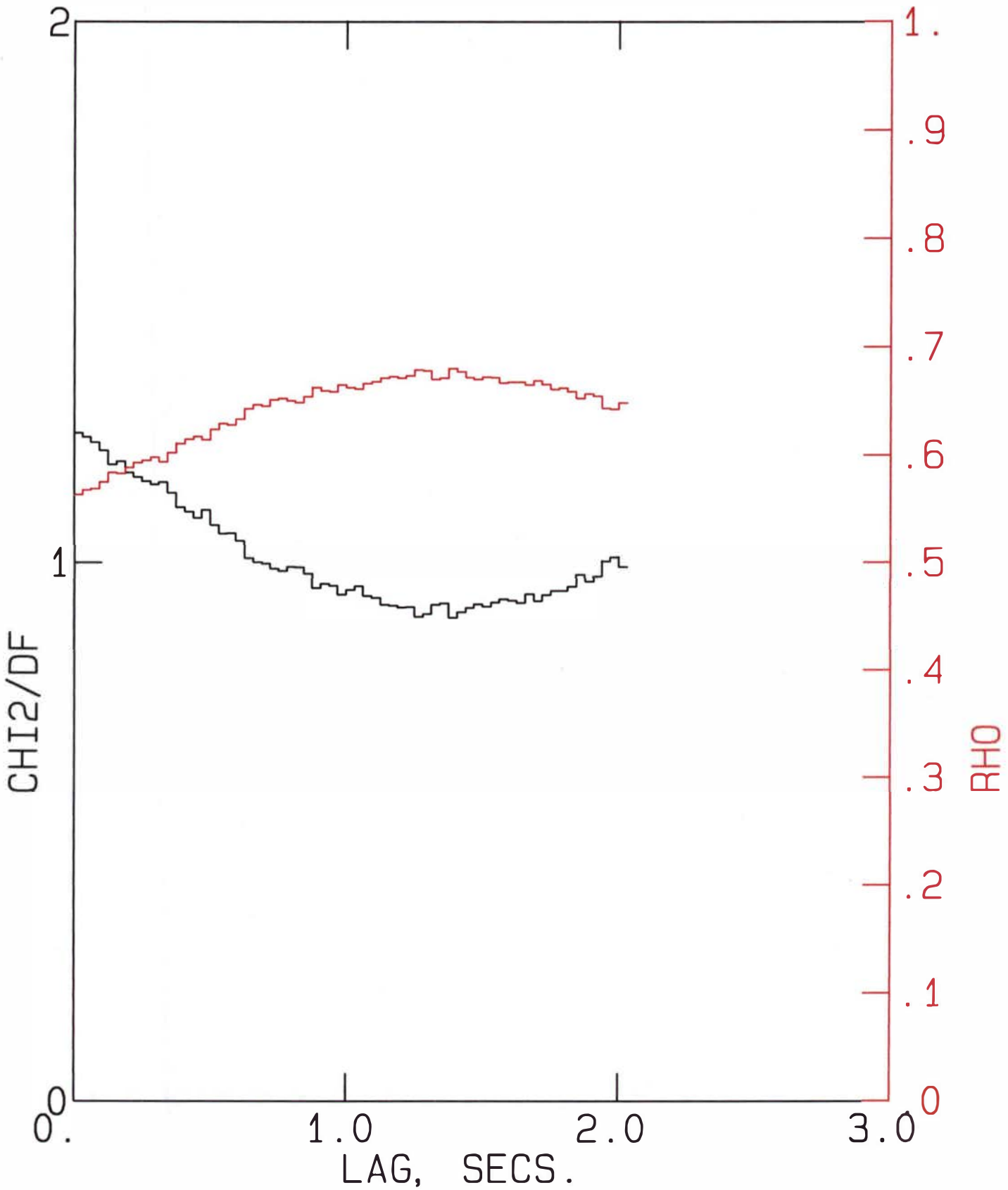
☐ Updated ephemeris used for bursts prior to September 30, 2003?

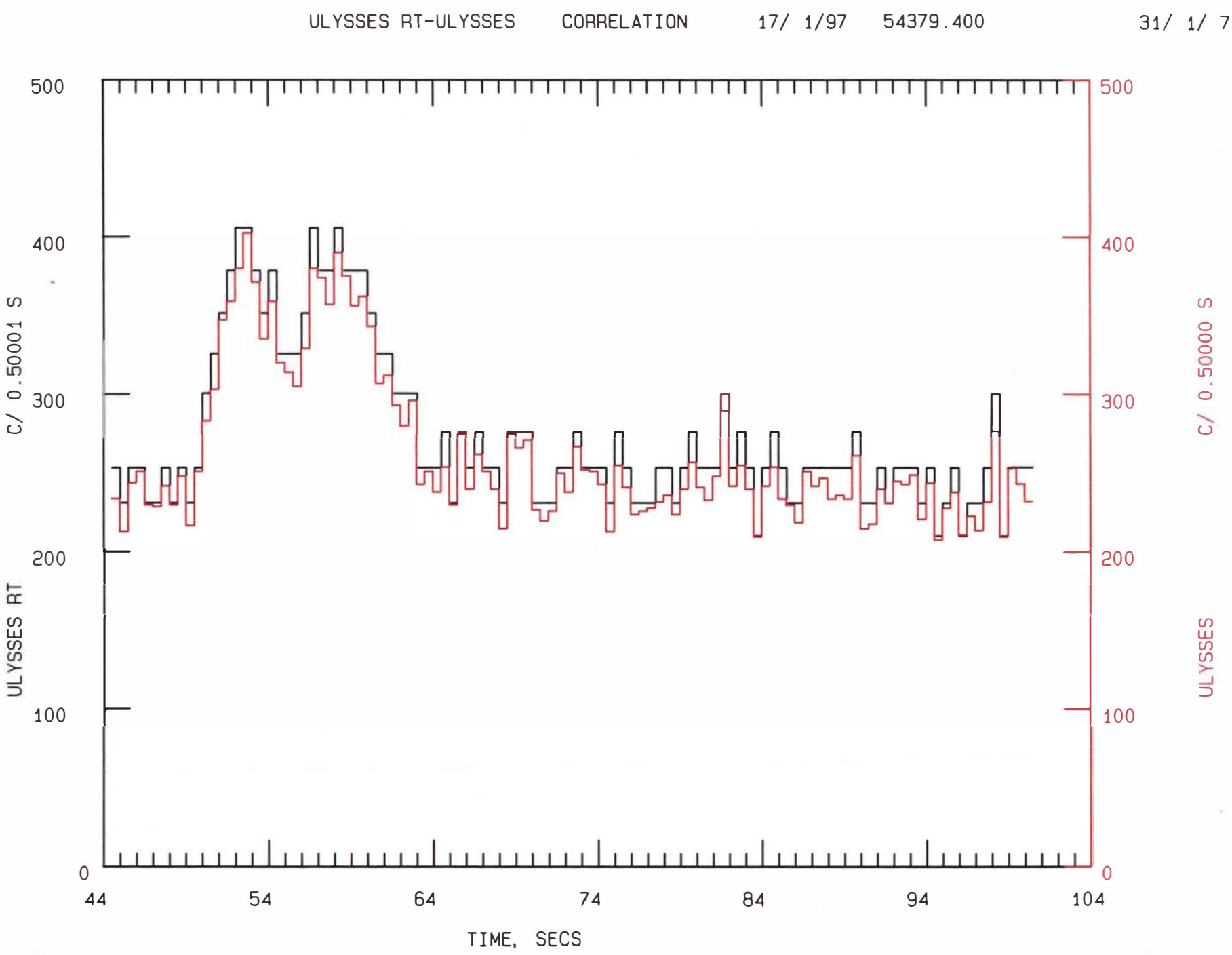
☑ ACCESS and MBL4 databases updated?


EVENT OF JAN 17, 1997 15:07
31/ 1/ 7
GRBM
G
-55°
-60°
-65°
-70°
-75°
-80°
-85°
-90°
-95°
DECLINATION
E2-1
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
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 SAX

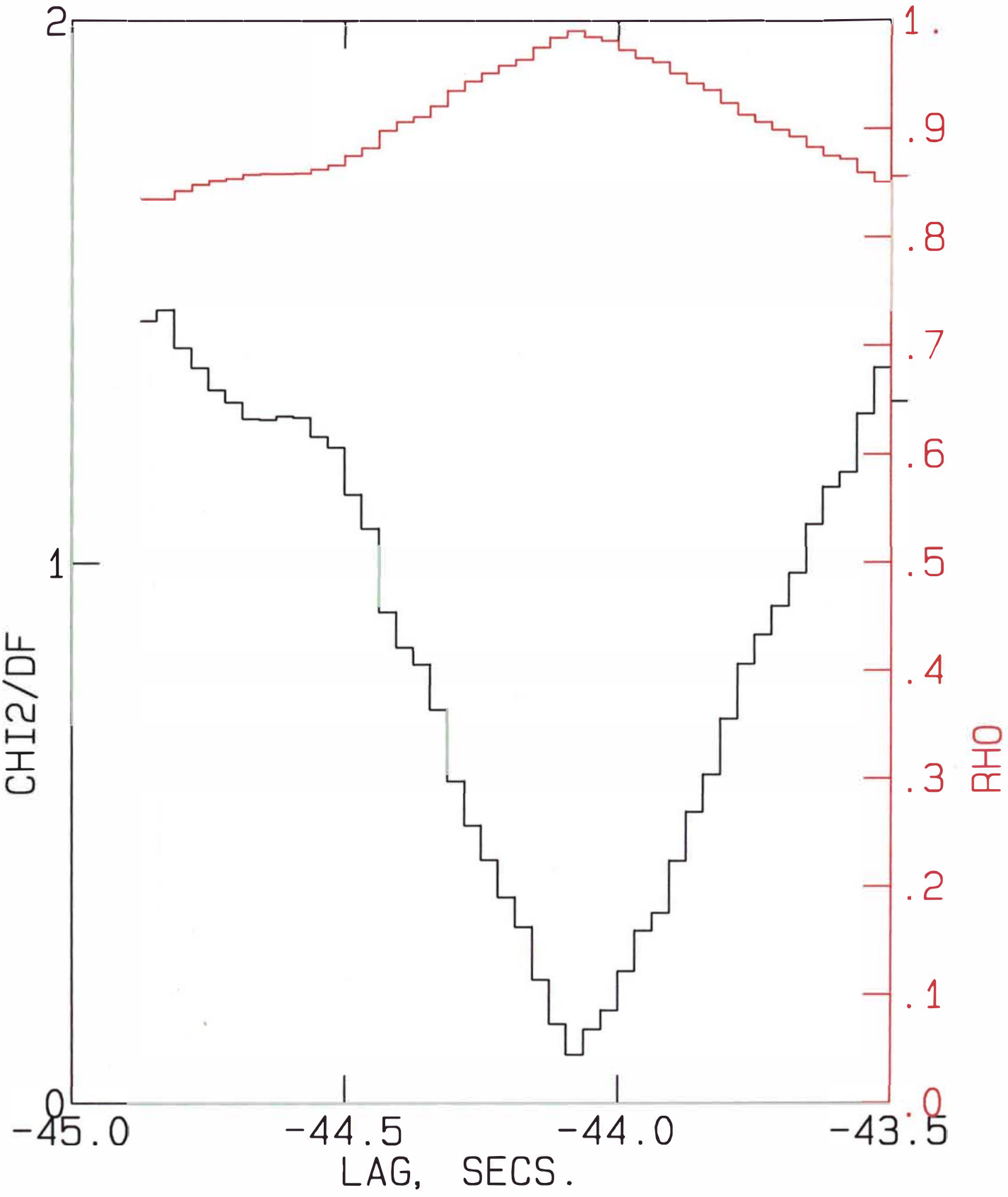

ULYSSES -BSAX-GRBM CORRELATION 17/01/97 54430.902 31/ 1/ 7
40
30
20
10
0
C/ 0.06250 S
ULYSSES
750
500
250
0
C/ 0.06250 S
BSAX-GRBM
5
10
15
20
25
30
35
TIME, SECS

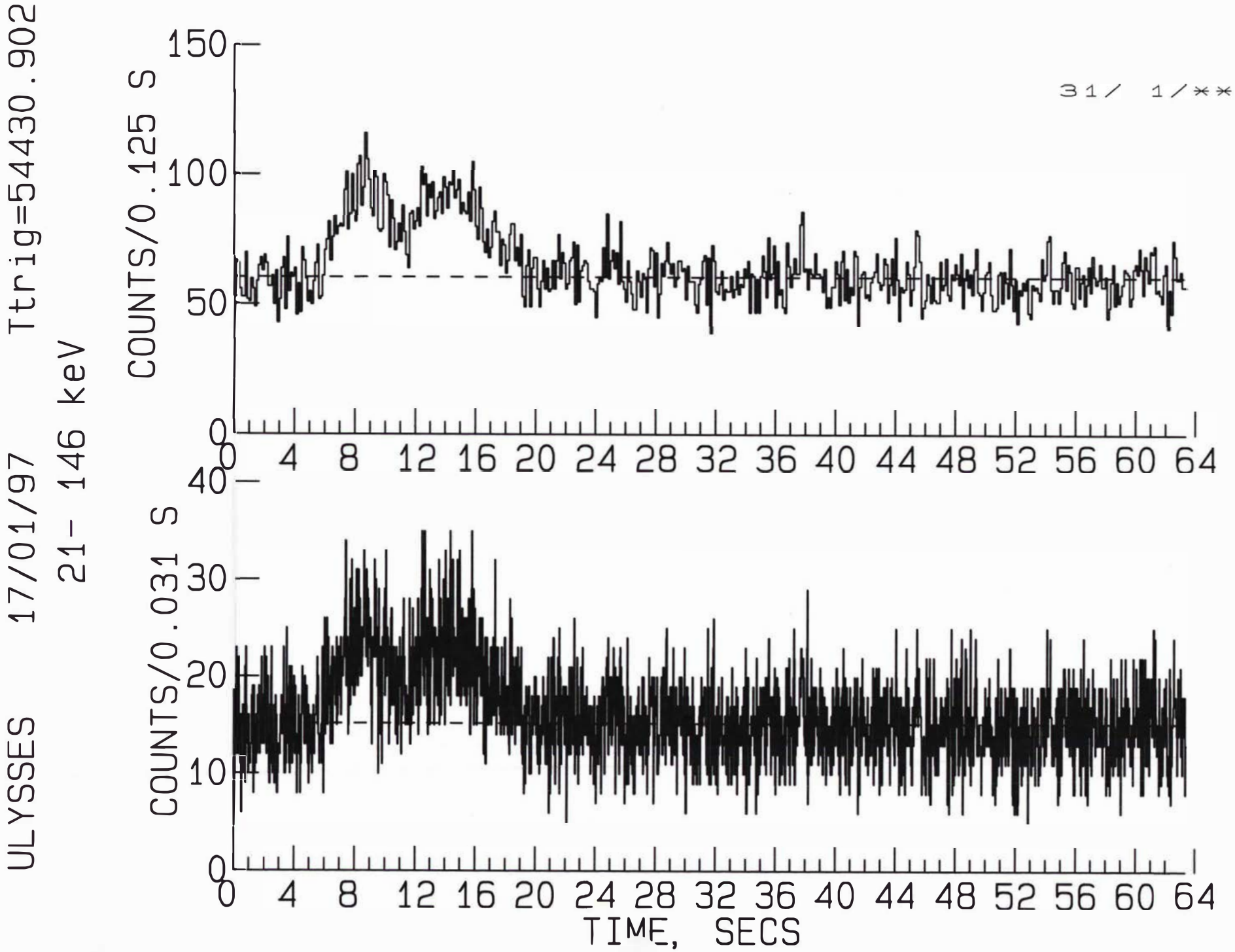
ULYSSES -BSAX-GRBM CORRELATION 17/01/97 54430.902




ULYSSES RT-ULYSSES CORRELATION 17/ 1/97 54379.400 31/ 1/ 7
500
400
300
200
100
0
C/ 0.50001 S
ULYSSES RT
500
400
300
200
100
0
C/ 0.50000 S
ULYSSES
44
54
64
74
84
94
104
TIME, SECS

ULYSSES RT-ULYSSES CORRELATION 17/ 1/97 54379.400



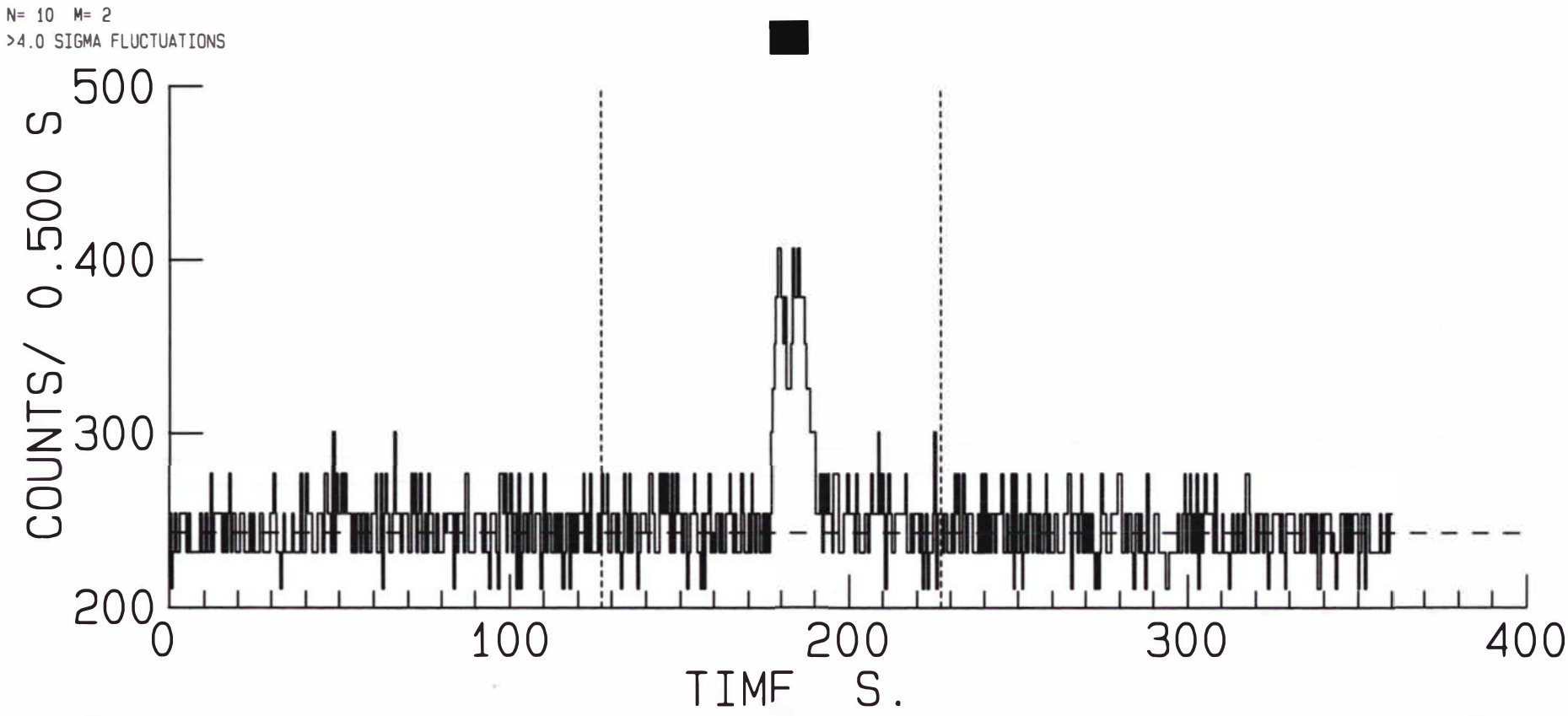

ULYSSES 17/01/97 Ttrig=54430.902
21- 146 keV
31/ 1/**
COUNTS/0.125 S
150
100
50
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
COUNTS/0.031 S
40
30
20
10
0
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64
TIME, SECS

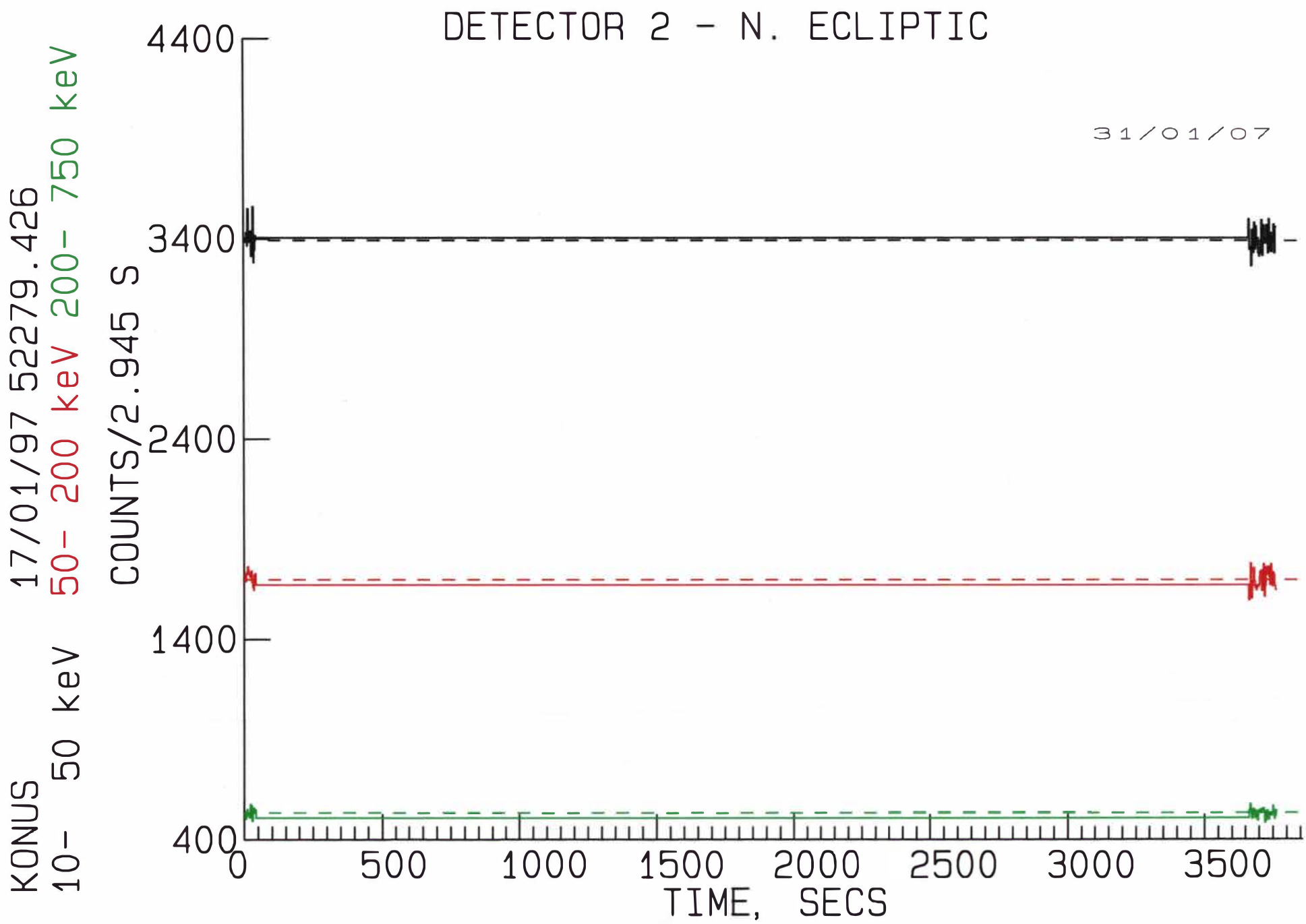
ULYSSES RT

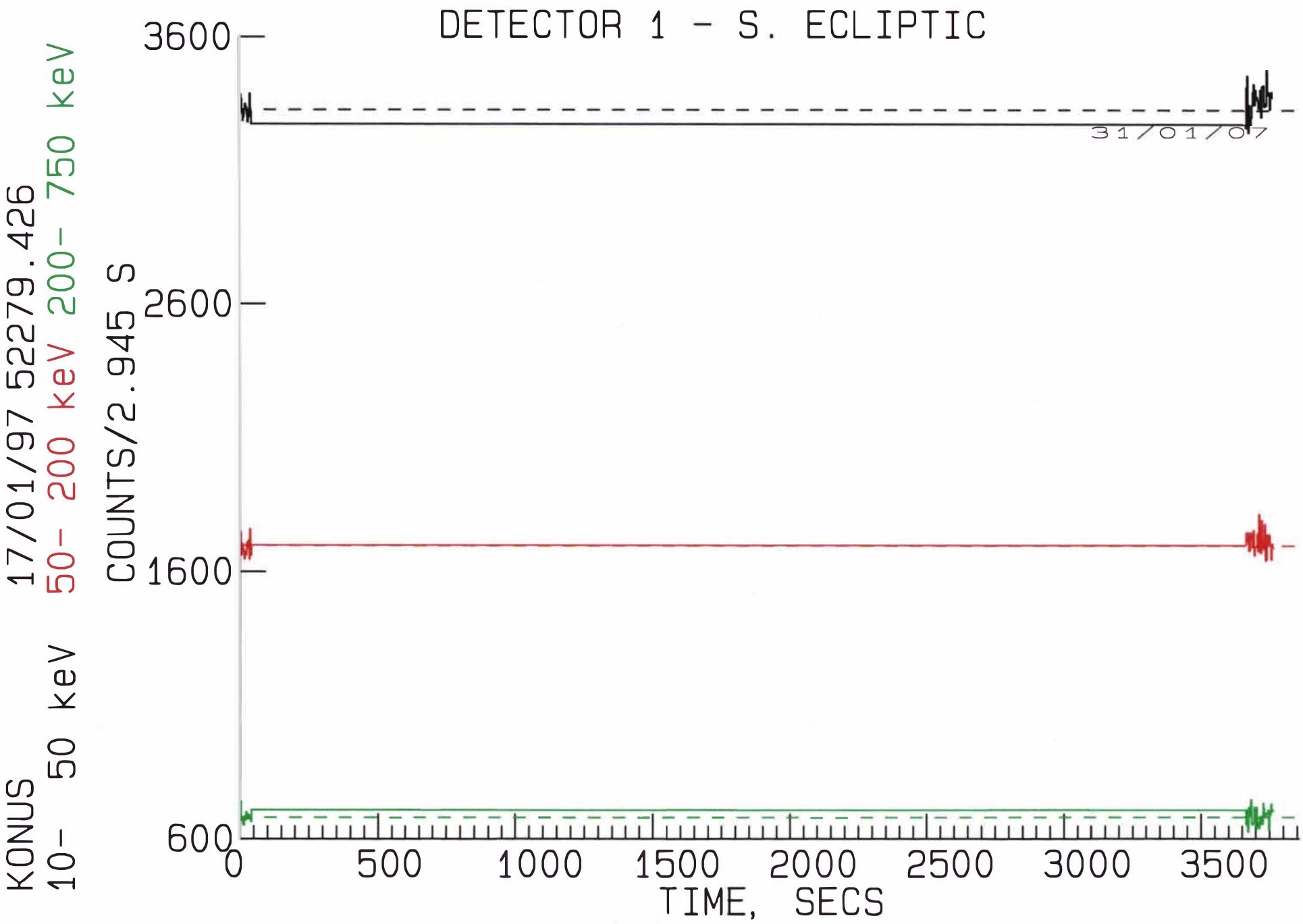
17/ 1/97 54252.426 s

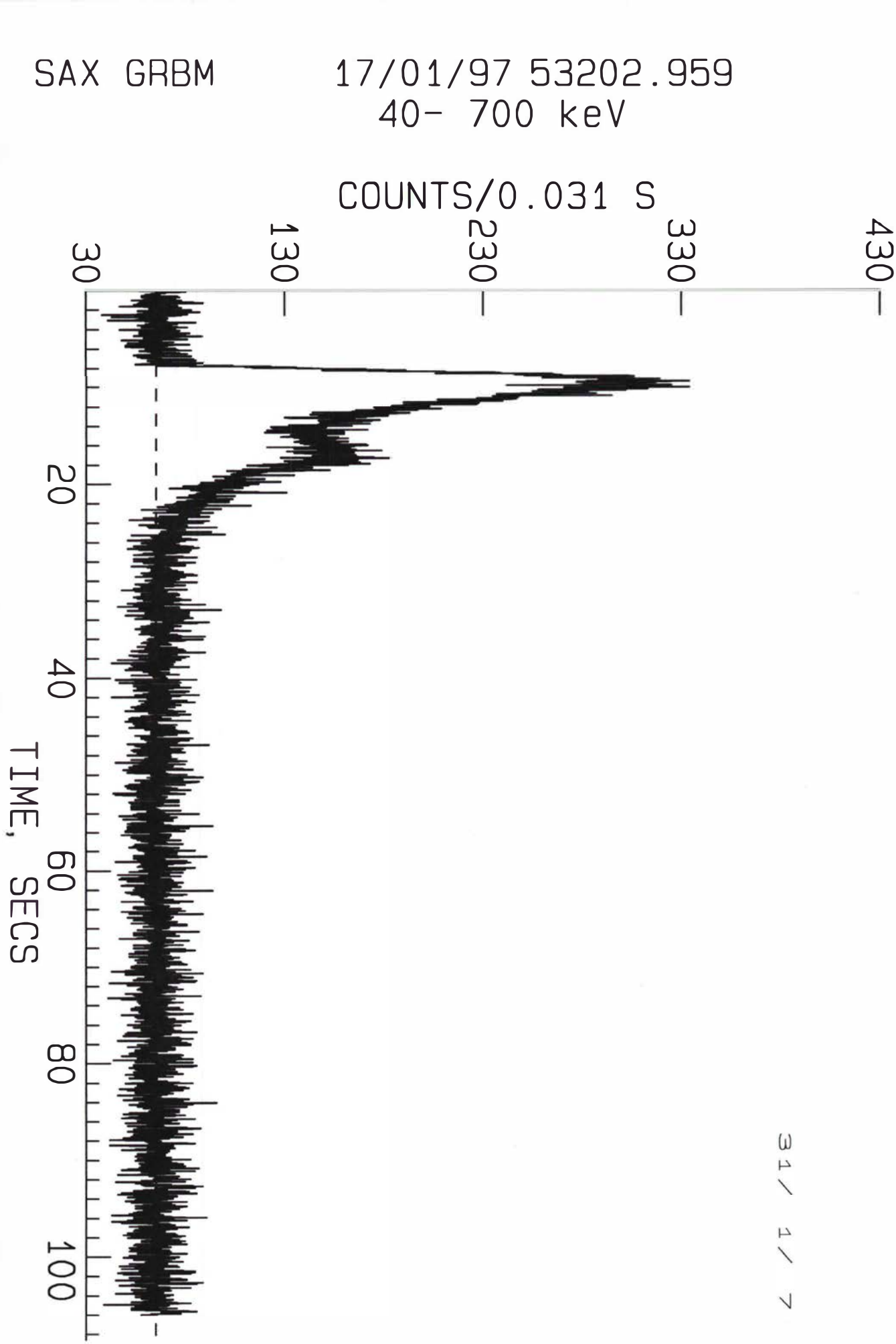
21- 146 keV

31/ 1/ 7




DETECTOR 2 - N. ECLIPTIC
31/01/07
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
17/01/97 52279.426
COUNTS/2.945 S
4400
3400
2400
1400
400
0
500
1000
1500
2000
2500
3000
3500
TIME, SECS


DETECTOR 1 - S. ECLIPTIC
KONUS
10- 50 keV 50- 200 keV 200- 750 keV
17/01/97 52279.426
COUNTS/2.945 S
3600
2600
1600
600
0
500
1000
1500
2000
2500
3000
3500
TIME, SECS
31/01/07


SAX GRBM
17/01/97 53202.959
40- 700 keV
COUNTS/0.031 S
30
130
230
330
430
20
40
60
80
100
TIME, SECS
31/ 1/ 7

From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
T khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From kraken@rosserv.gsfc.nasa.gov Wed Mar 12 15:00 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 12 Mar 1997 18:00:58 -0500
To: khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: TGRS/Ulysses GRB's
Cc: bonnard@rosserv.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hello Dr. Hurley,

I'm Peter Kurczynski, a graduate student in the LEGR group here at Goddard. I am working on TGRS data analysis. I am messaging you in response to several emails you've sent to Bonnard Teegarden and others about Ulysses gamma ray bursts and whether they could be corroborated by other instruments.

What follows is a list of the dates and times of Ulysses observations that were forwarded to me recently, and the results of a search through TGRS data for bursts. We've found two matches among the Ulysses bursts listed below. Please
let me know if you would like me to forward time history data or other information about them.

Take care,

Pete

Ulysses date/time	TGRS detection
[illegible]. 15 1997 13:36	NO
Jan. 17 1997 15:07	YES! 20s duration FRED; peak at 970117:53211s 14:46:51
Jan. 17 1997 18:45	NO
Jan. 24 1997 12:51	YES! <10s duration; very narrow; peak at 970124:44347s
Jan. 26 1997 15:30	NO
Jan. 30 1997 19:33	NO
Feb. 4 1997 11:18	NO
Feb. 8 1997 18:04	NO

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and before the Ulysses events in your messages to Chryssa.

Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
1997	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

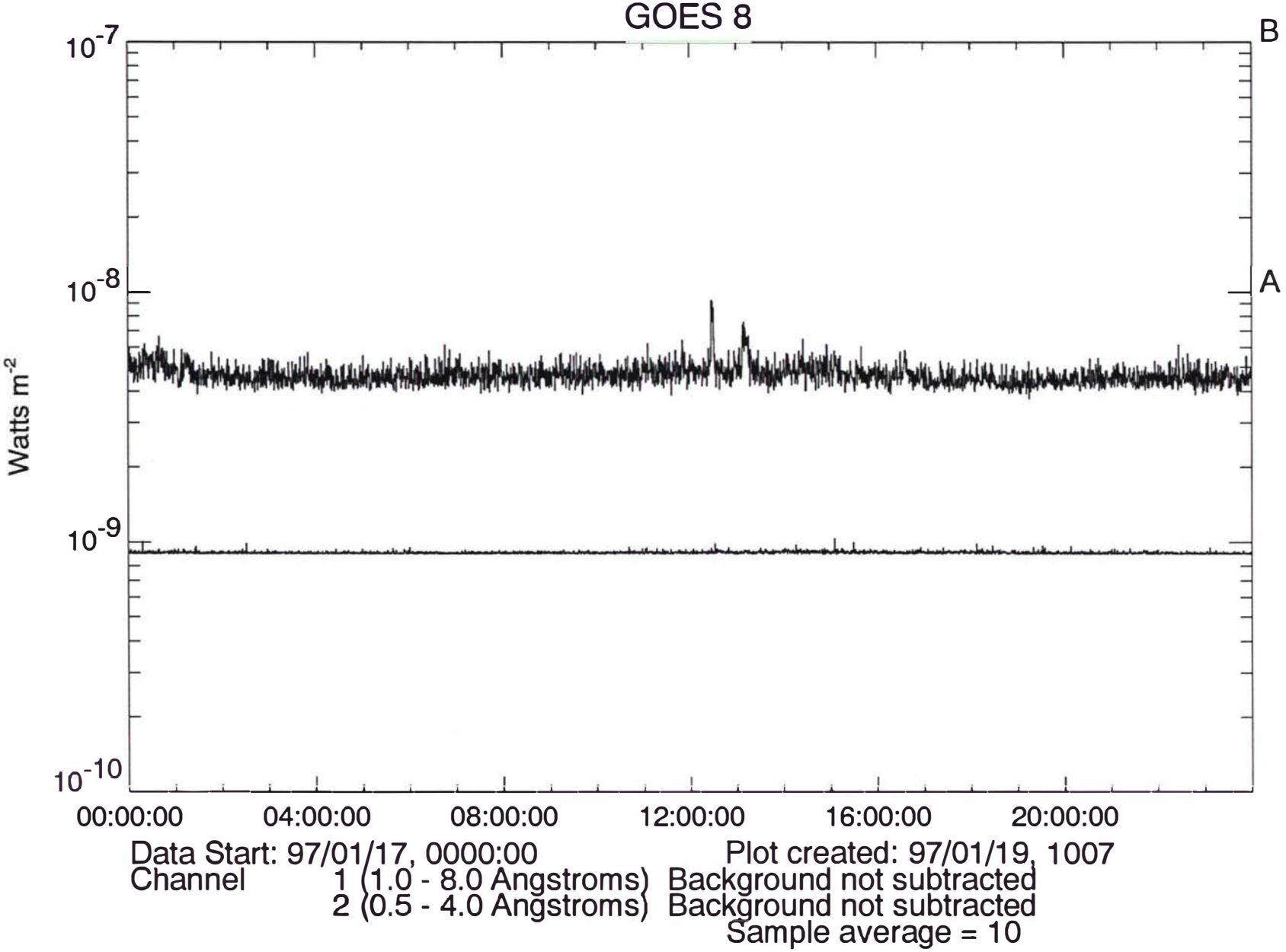
From feroci@saturn.ias.fra.cnr.it Thu Jan 23 07:32 PST 1997
Date: Thu, 23 Jan 1997 16:27:55 +0100 (NFT)
From: Marco Feroci <feroci@saturn.ias.fra.cnr.it>
To: Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
    Filippo Frontera <filippo@tesre.bo.cnr.it>,
        Enrico Costa <costa@saturn.ias.fra.cnr.it>
Subject: Re: GRBs 970117
Mime-Version: 1.0

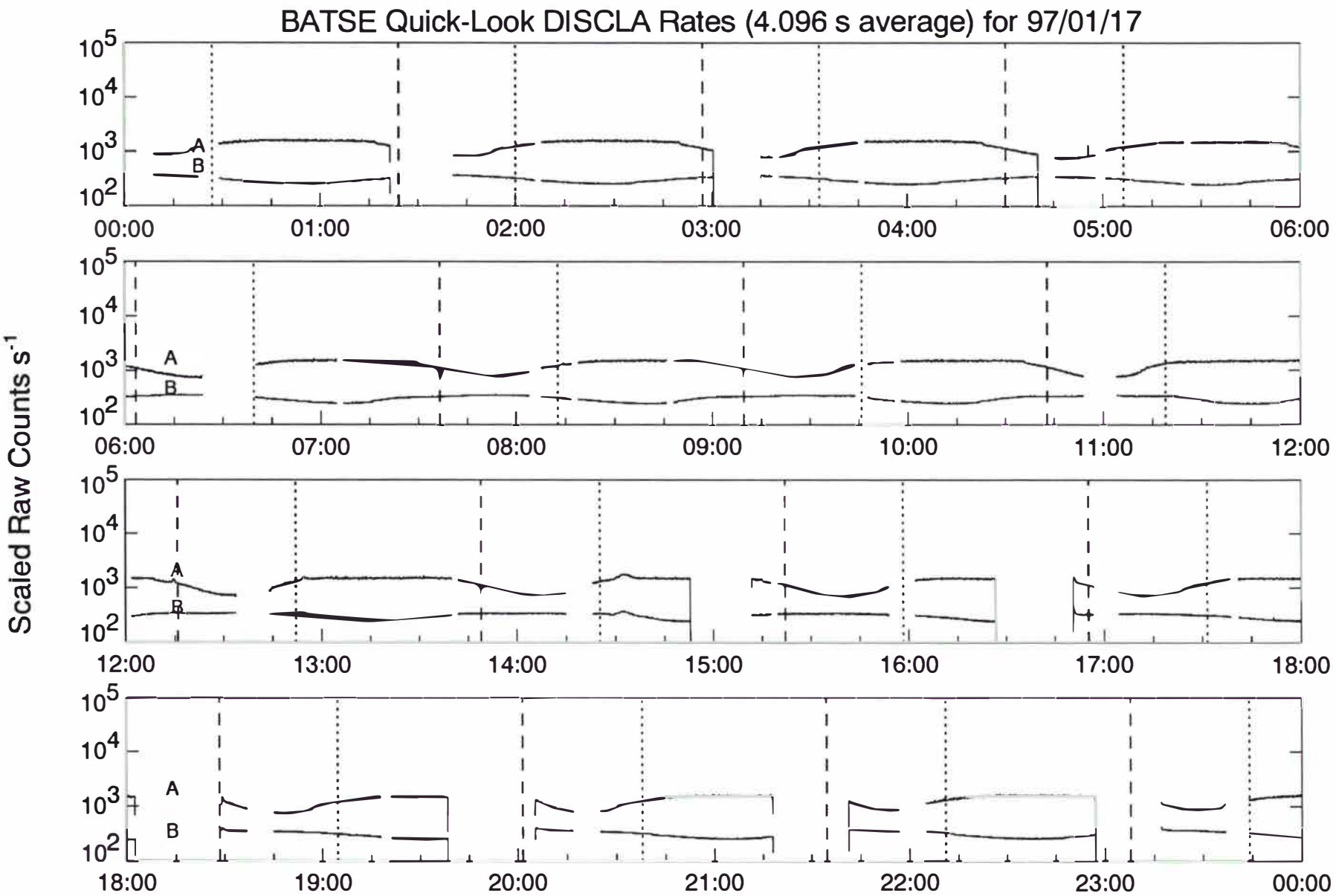
> ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:
>
> Ulysses observed the following bursts:
>
>
> January 17 1997 15:07 Ulysses time; strong burst, 20 s long
>
> January 17 1997 18:45   "   " ; weak, 100 ms long event
>
>
> The spacecraft was about 2100 light-seconds from Earth, but it is
> possible that the second burst is from GRO J1744-28, in which case it
> would have crossed the Earth about 500 s earlier than the times
> given above.
>
> Were these events detected by anyone else?
>
Dear Kevin

BeppoSAX detected a strong, long burst on Jan 17, 14:46:51 UT.
I think it could be related to the Ulysses 15:07 event.

Regards,
Marco

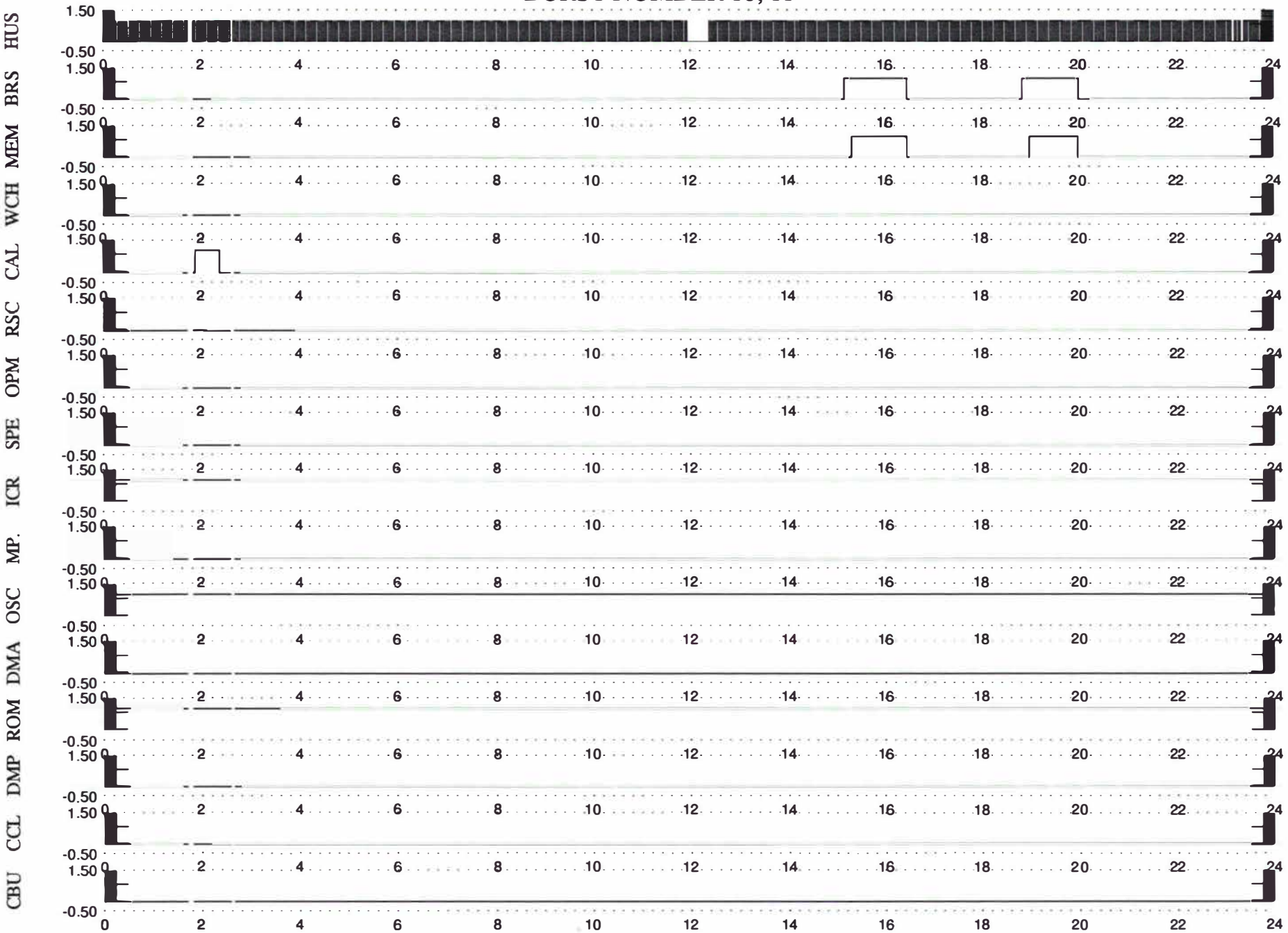
Marco Feroci
Istituto di Astrofisica Spaziale - C.N.R.
Via E. Fermi 21, I-00044 Frascati, ITALY
Phone: +39-6-9424589
E-mail: feroci@saturn.ias.fra.cnr.it
Fax : +39-6-9416847
feroci@alpha1.ias.fra.cnr.it


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: 97/01/17, 0000:00
Plot created: 97/01/19, 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 97/01/17
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/19, 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

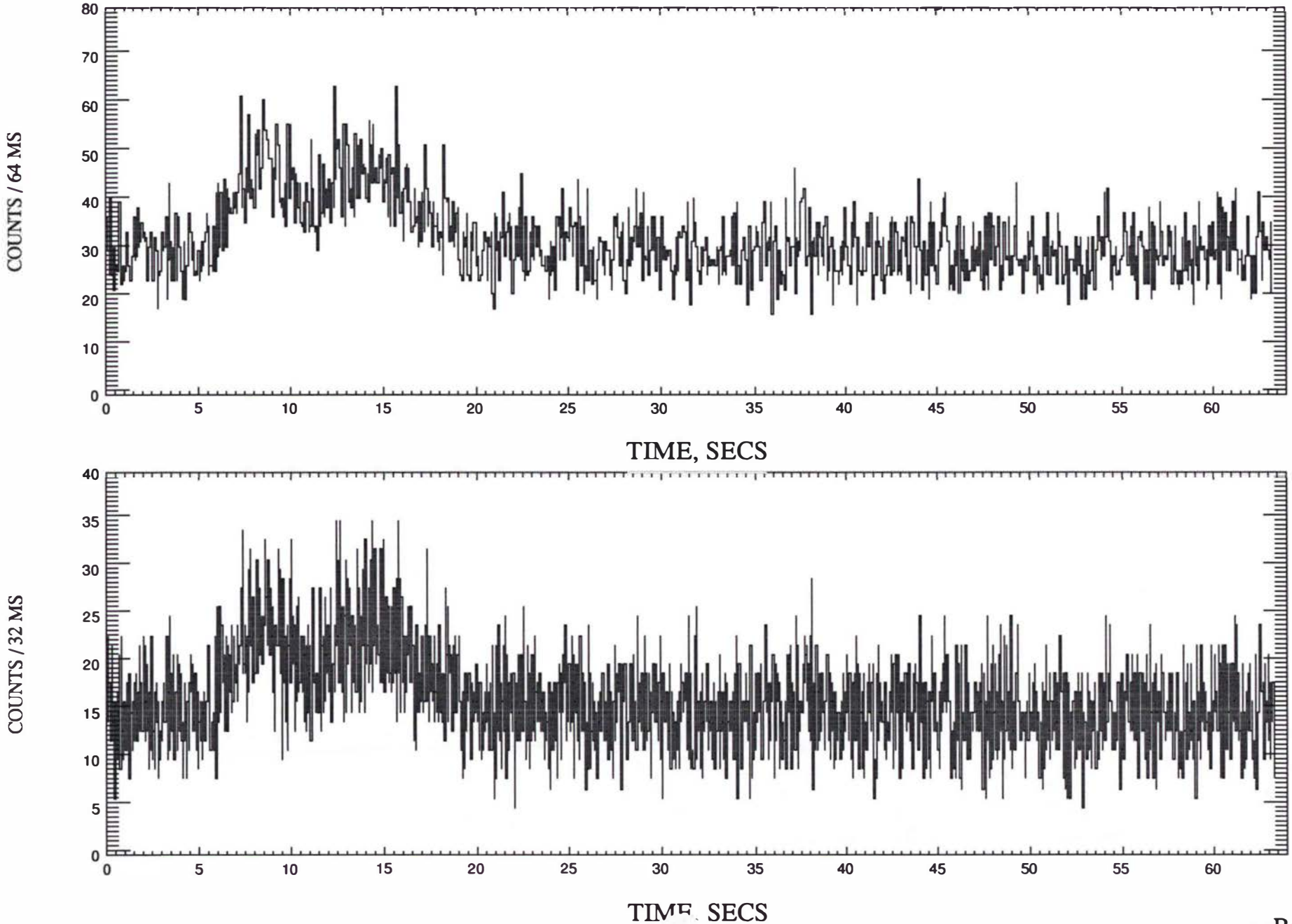
HUS MODES EDR day 17, year 1997 to day 17, year 1997 5/5/97

BURST NUMBER 10, 11



UNIVI AL TIME

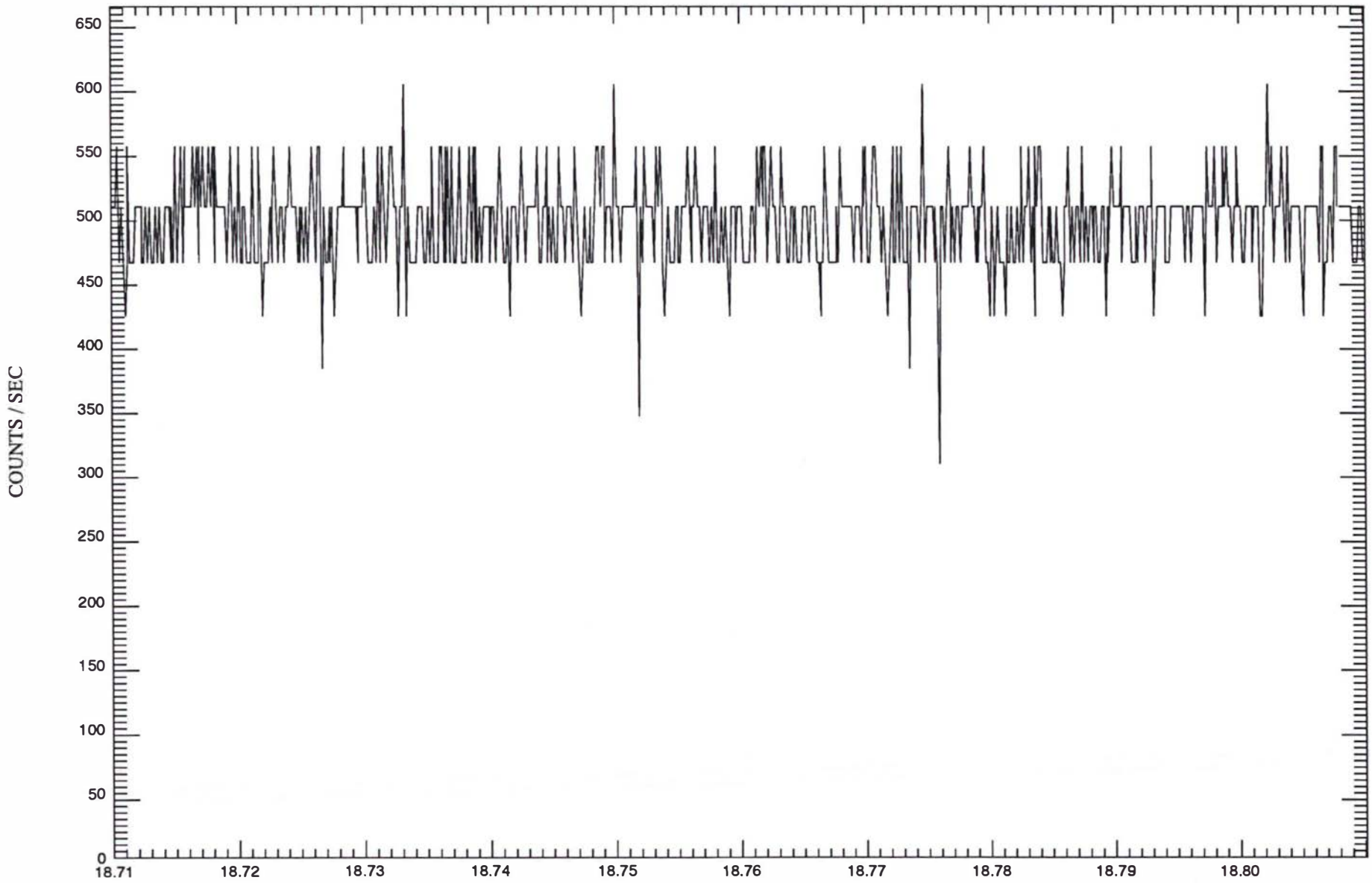
Burst Counter 10 at UT=15.1196991009 18 h=54430.917 s 15:07:10.917



B# 1

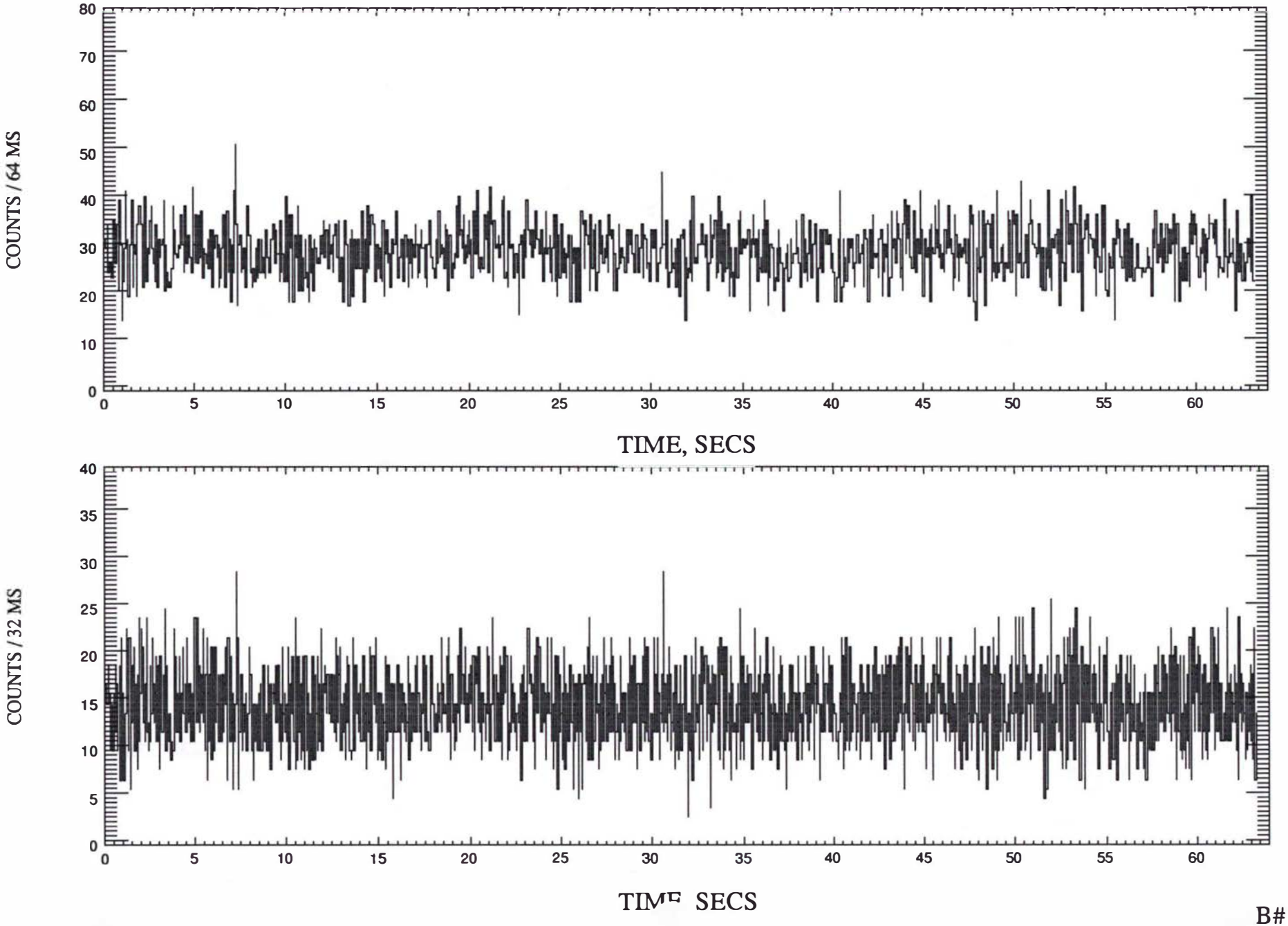
HUS 2A, MODE 1, NOT AVERAGED QEDR day 17, year 1997 to day 17, year 1997 1/21/97

CALIBRATION DATA INCLUDED



HUS 2A TRIGGERED DATA EDR day 17, year 1997 5/6/97

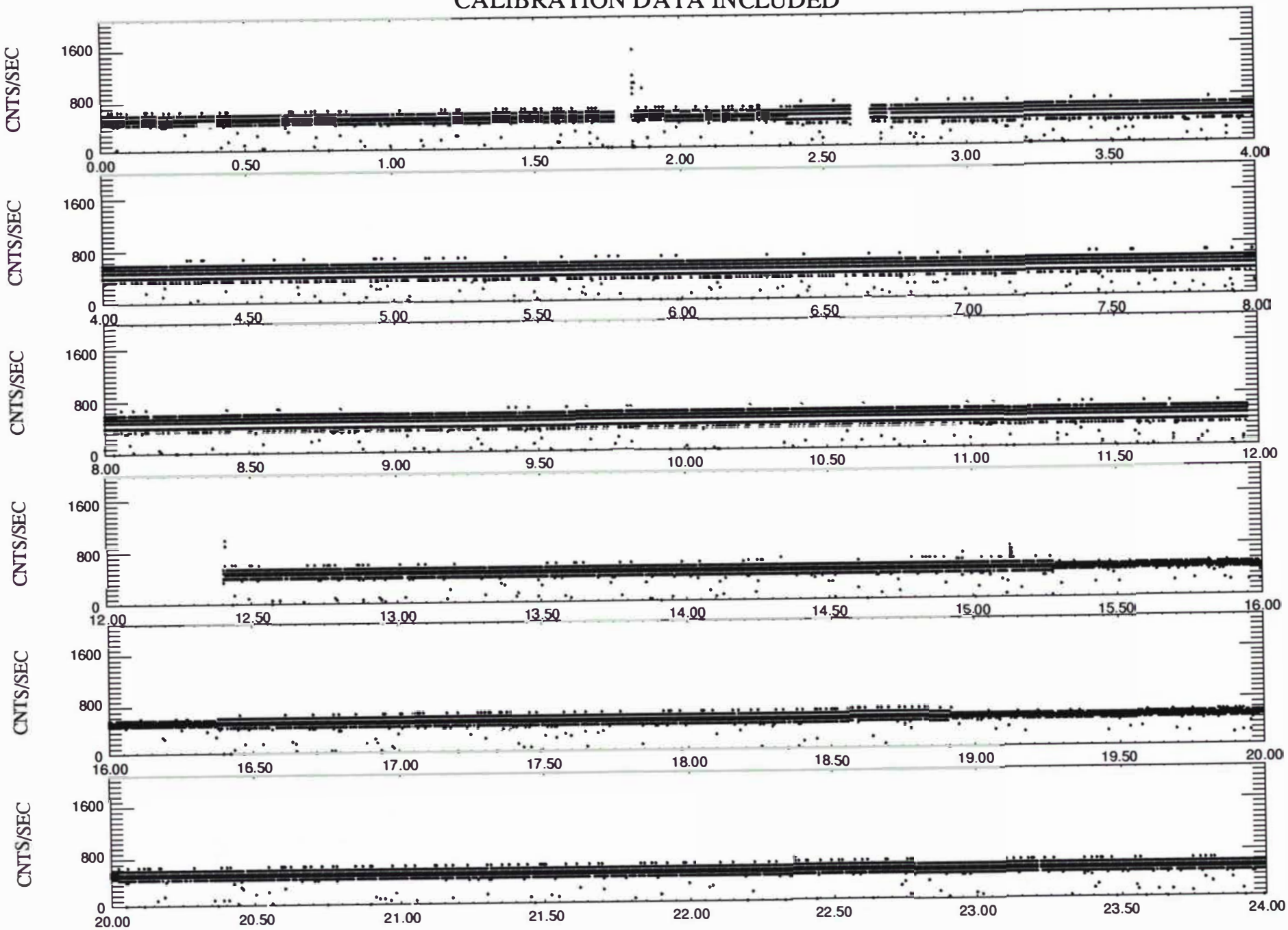
Burst Counter 11 at UT=18.758111898634 h=67529.203 s 18:45:29.203



B# 2

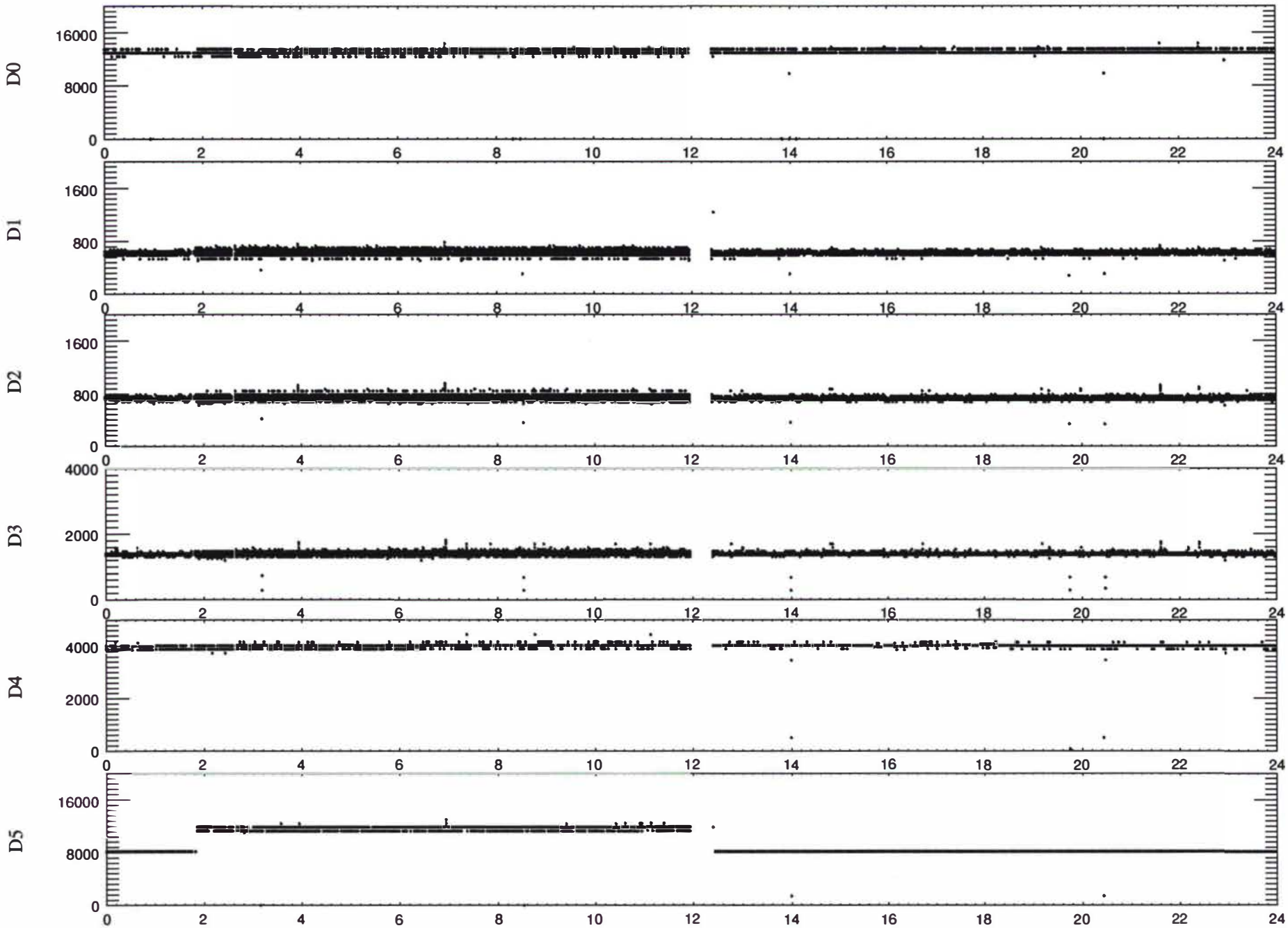
HUS 2A, MODE 1, NOT AVERAGED EDR day 17, year 1997 to day 17, year 1997 5/5/97

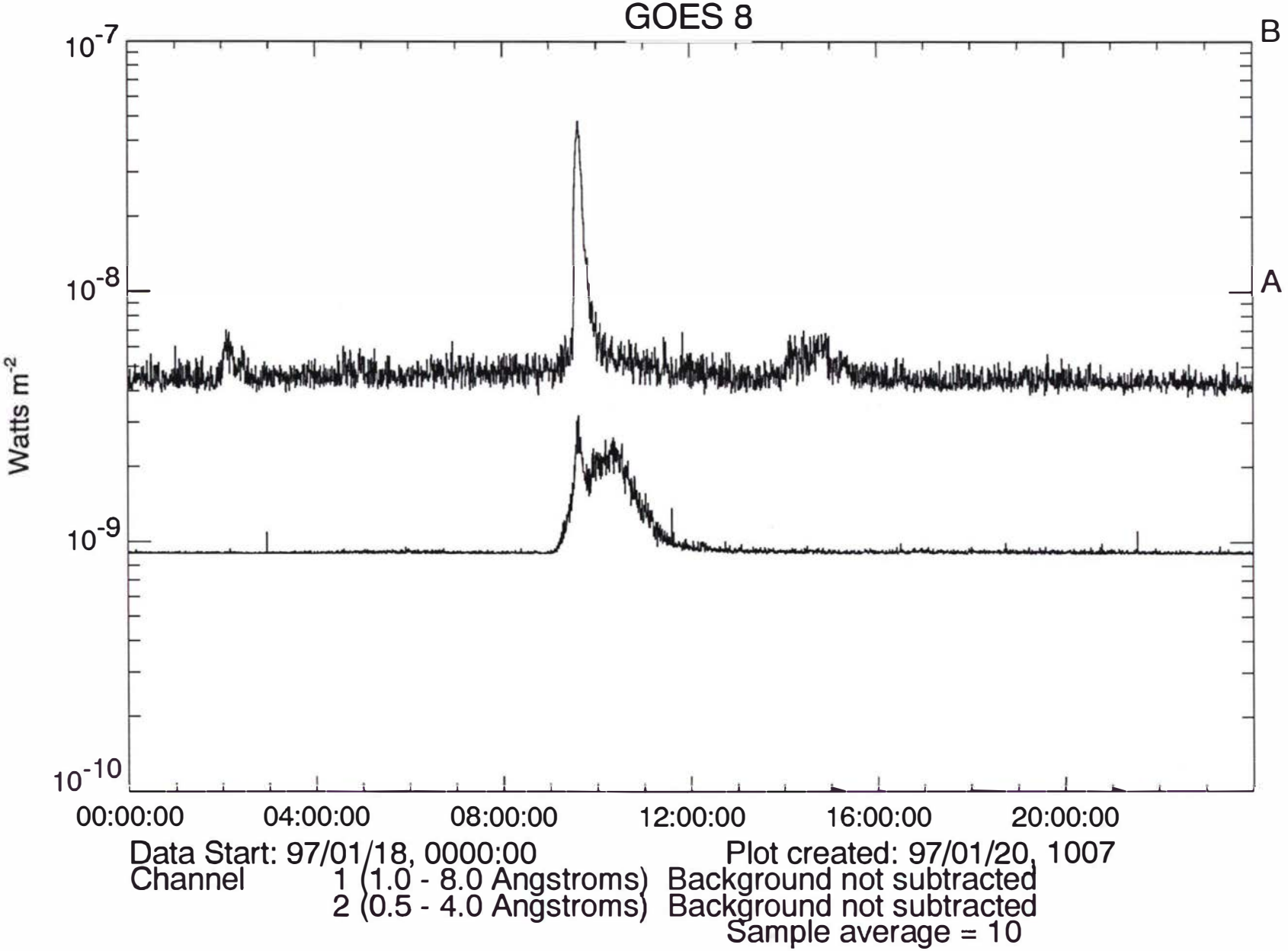
CALIBRATION DATA INCLUDED

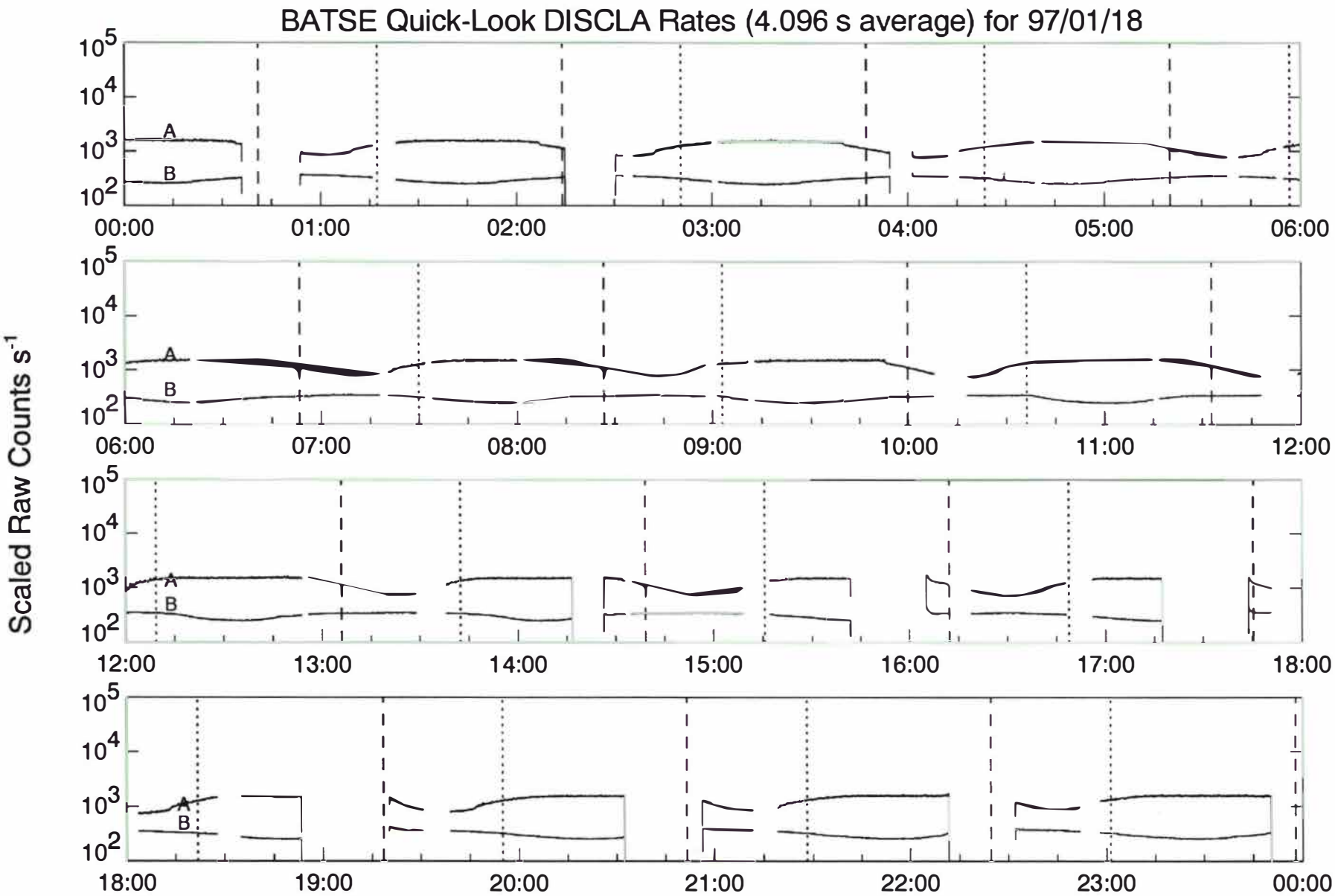


UNIV AL TIME

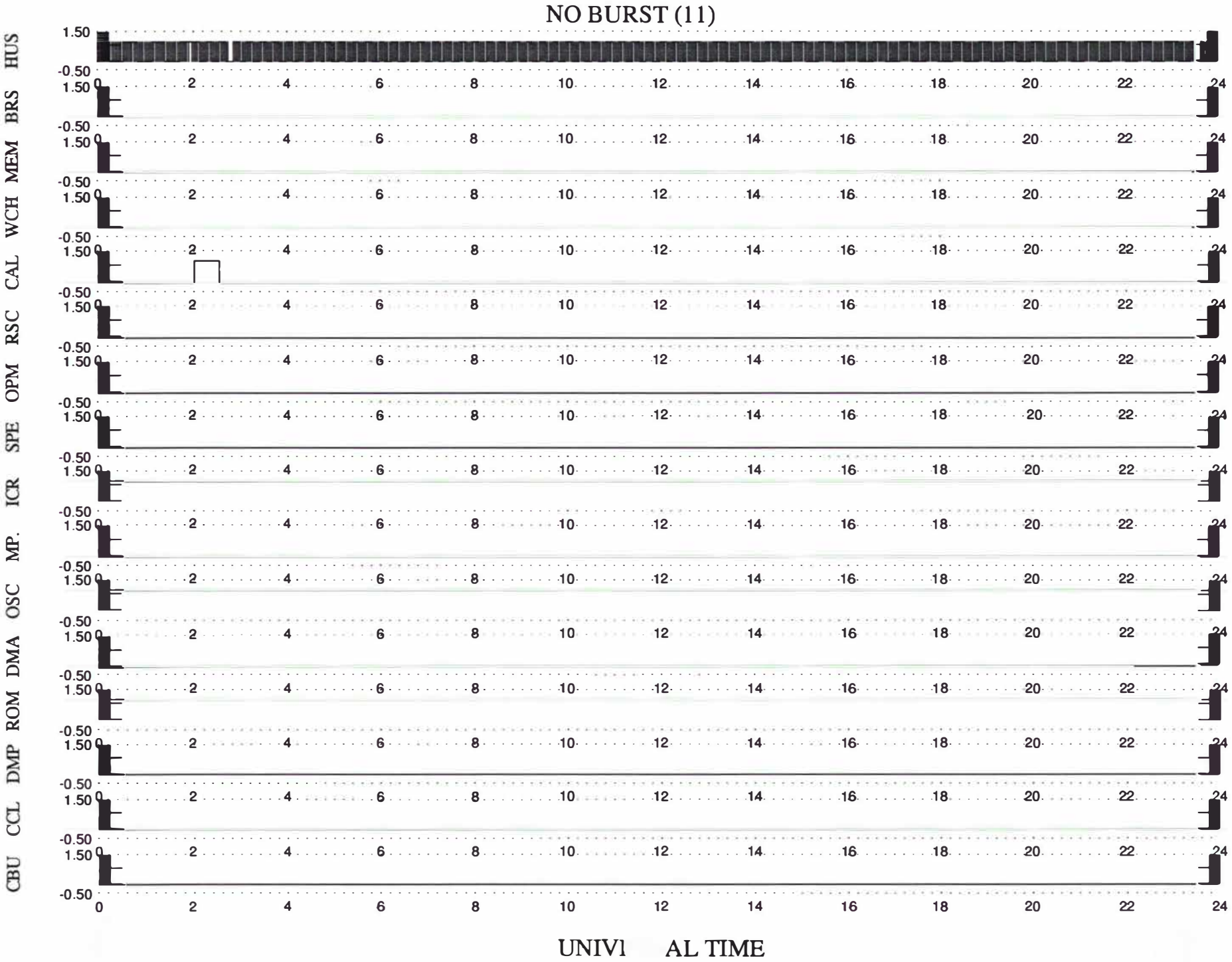
HUS 2B COUNTS / SEC EDR day 17, year 1997 to day 17, year 1997 5/5/97




GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/18, 0000:00
Plot created: 97/01/20, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

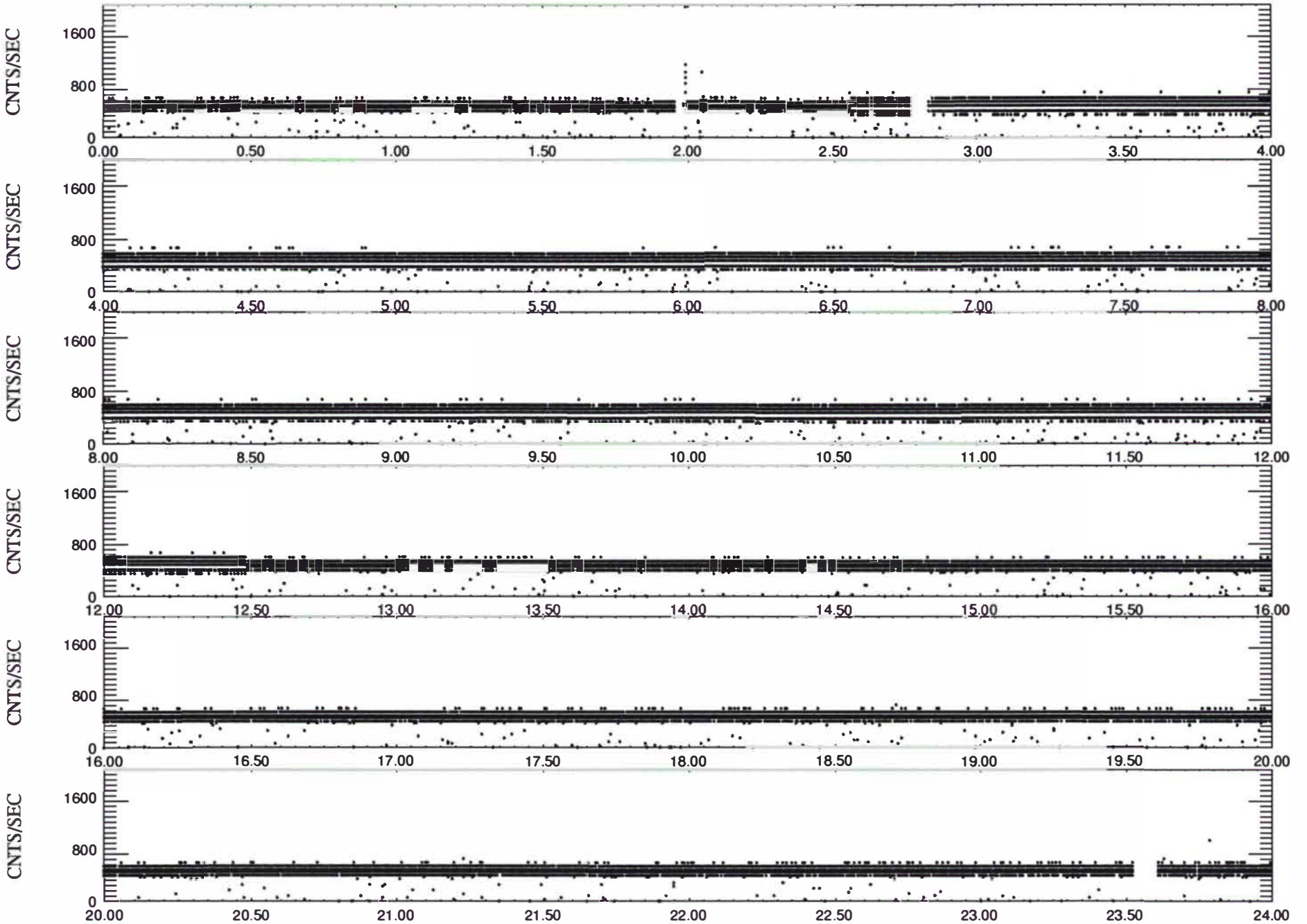

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/18
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/20, 1008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



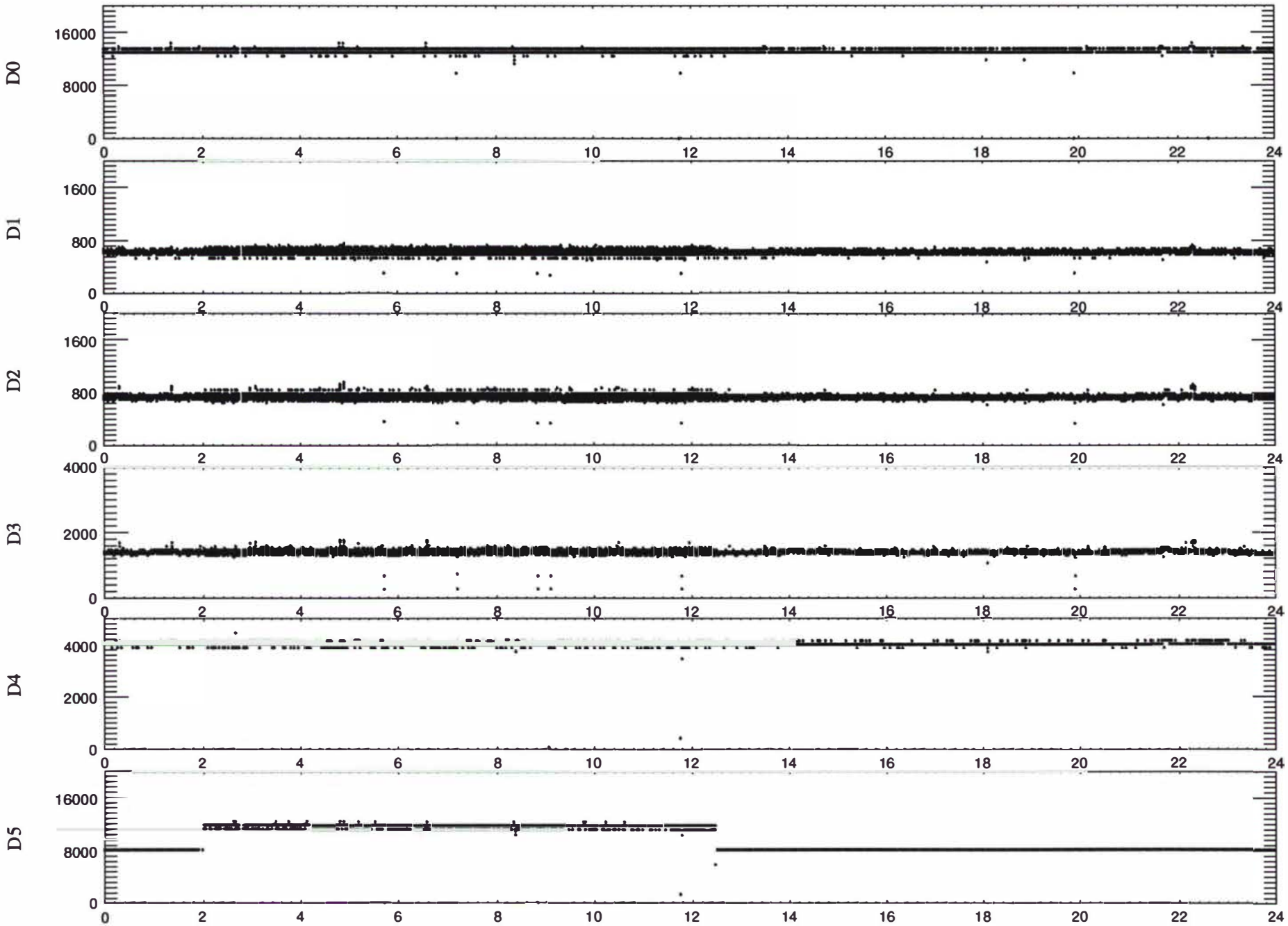
HUS 2A, MODE 1, NOT AVERAGED EDR day 18, year 1997 to day 18, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 18, year 1997 to day 18, year 1997 5/5/97



From WOODSP@ssl.msfc.nasa.gov Tue Jan 21 12:19 PST 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 MAA07276; Tue, 21 Jan 1997 12:28:28 -0800
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 21 Jan 1997 14:28:24 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970121142824.2b610d23@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5867
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5867
EVENT OF 1997 JAN 19 DAY OF YEAR= 19
EVENT CROSSING TIME AT BATSE : 26729. S. OR 07:25:29.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 323.000 32.000
BATSE PEAK COUNTING RATE: 17500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 1/ 97 IS:
RA= 175.585 DEC= 34.395 DIST= 4.067 AU
BATSE-ULYSSES DISTANCE = 608447726. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 589.14 SECS.
CROSSING TIME AT ULYSSES IS 27318. S. OR 07:35:18 +/- 396.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 1/ 97 IS:
RA= 184.938 DEC= 1.170 DIST= 0.992 AU
MARS-BATSE DISTANCE = 148477504. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.69 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 307.01 SECS.
CROSSING TIME AT MARS IS 27036. S. OR 07:30:36 +/- 72.14 SECONDS

BATSE BURST TRIGGER
NO.: 5867

TIME: TJD=0467 SECONDS=26729

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

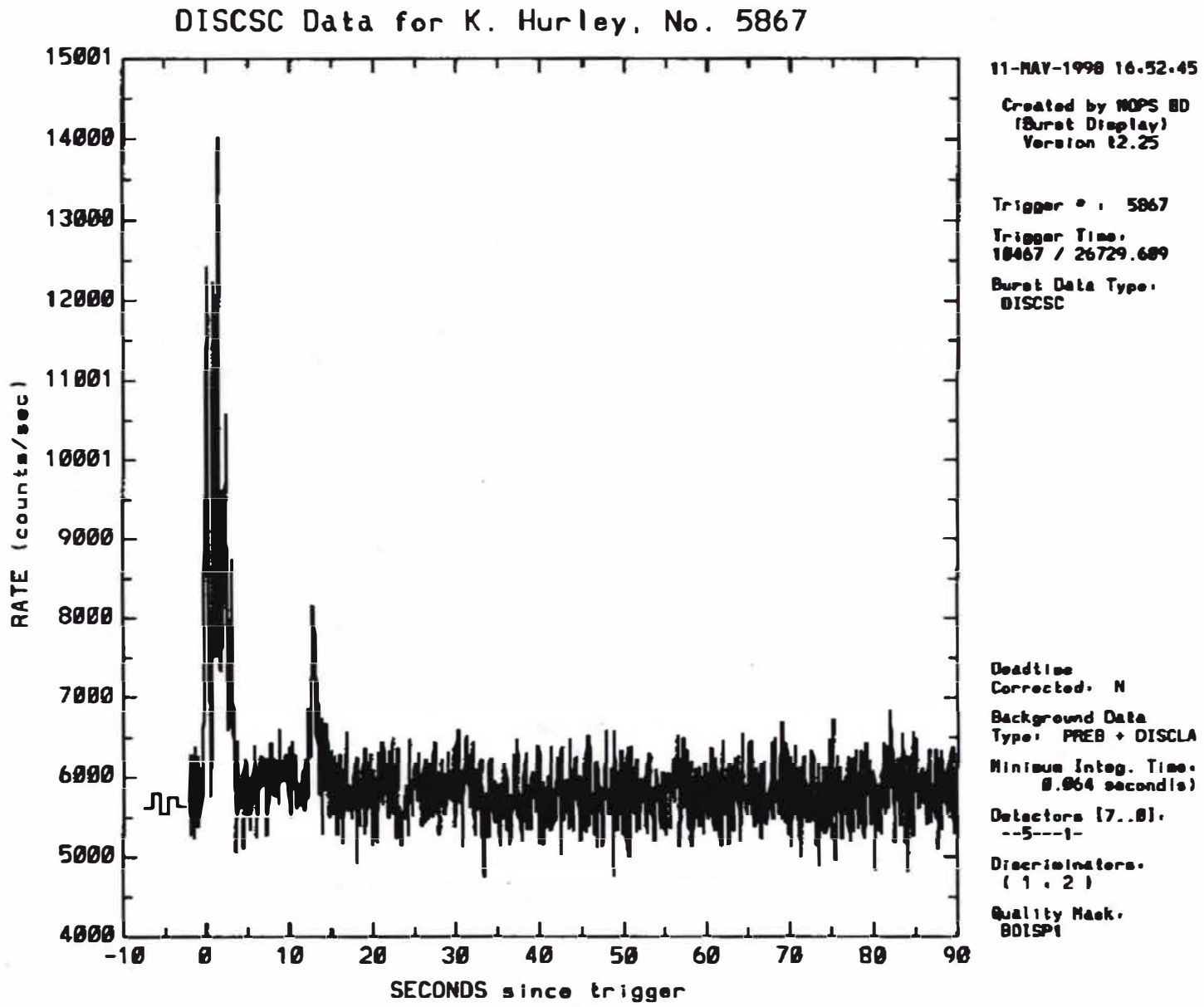
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=123.8 AZIMUTH=65.6 ERROR=2.4 DEGREES

COMMENTS:
GRB LASTING ~ 15 SEC. TWO PULSES. FIRST SHOWS MULTIPLE PEAKS.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5867	970119	10467	26729	17500	323	+32	15



05-12-1998 12:54 205 544 5800 BATSE P.06

BATSE# 5867

ULYSSES RT 21/ 1/97

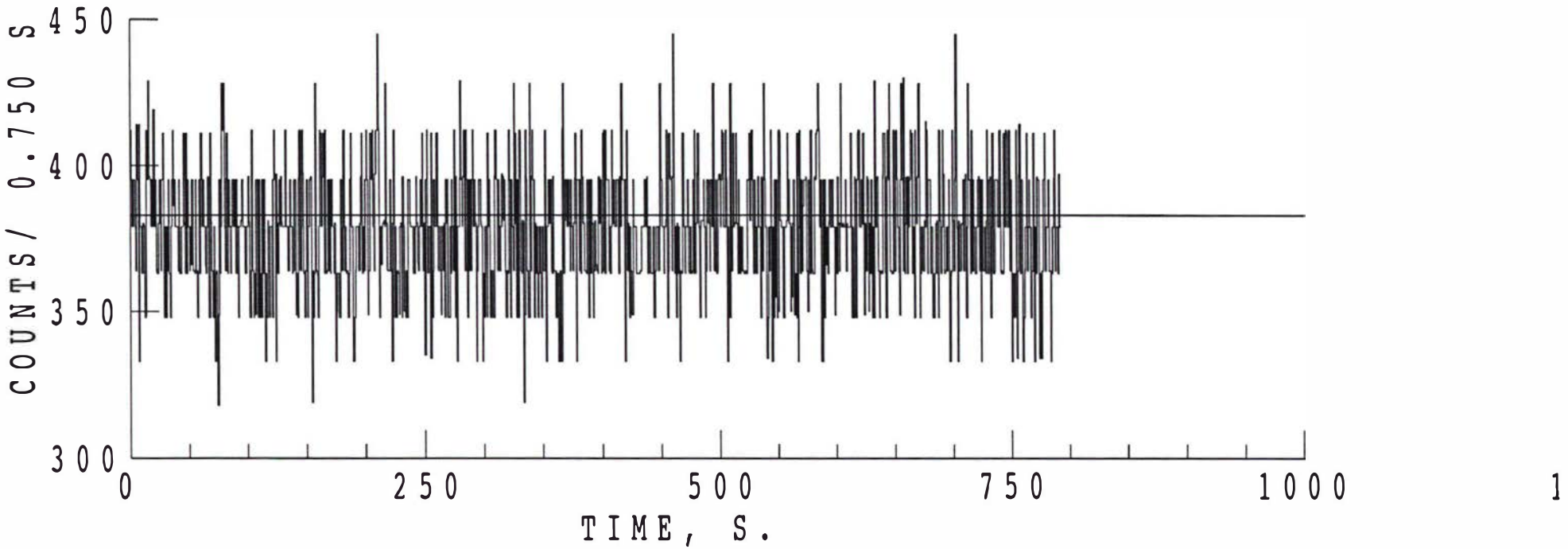
19/ 1/97 26928.186 s

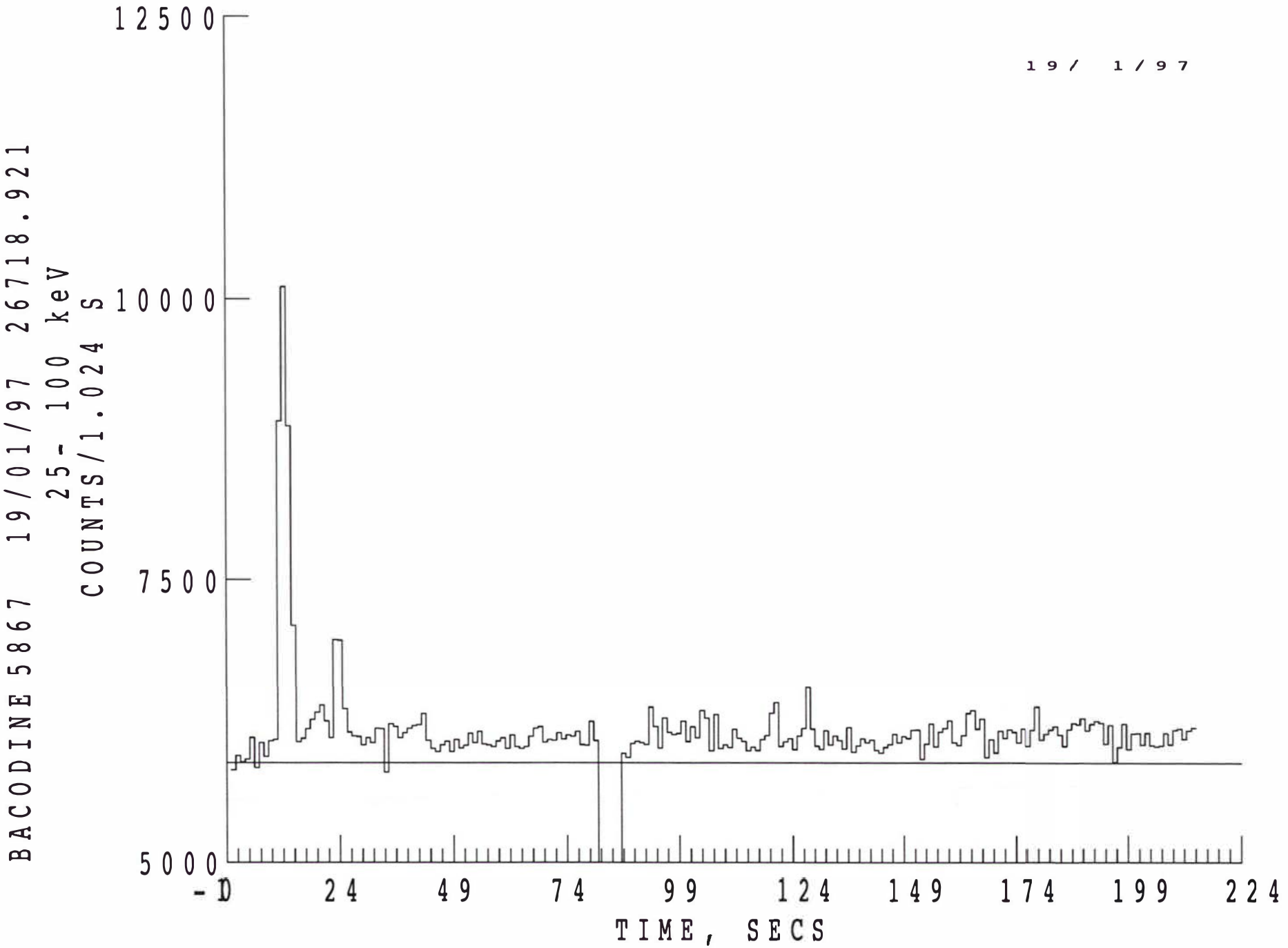
0.250 S INTERVALS REGROUPED BY 3

0- 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS




19/ 1/97
BACODINE 5867 19/01/97 267118.921
25- 100 keV
COUNTS/1.024 S
12500
10000
7500
5000
-D
24
49
74
99
124
149
174
199
224
TIME, SECS

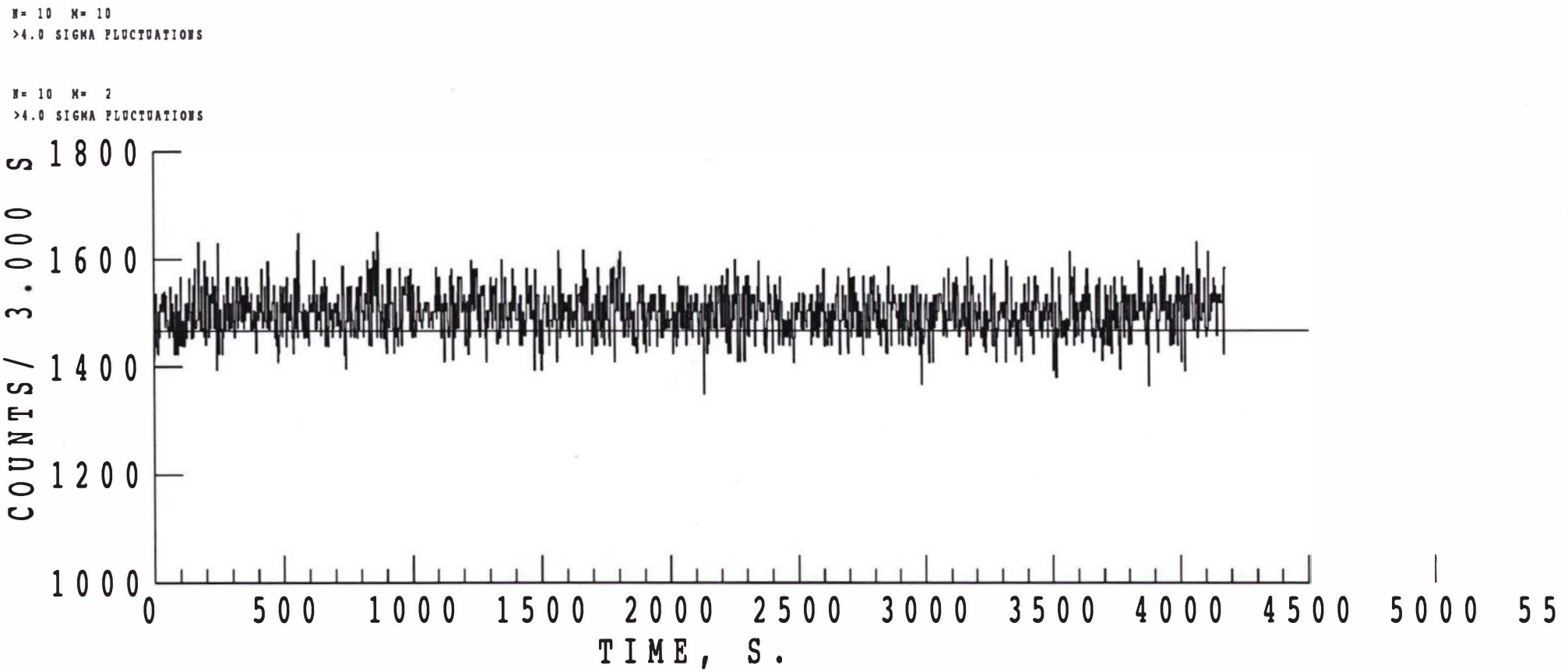
KONUS

ULYSSES RT 01/02/00

19/01/97 40536.105 s

0.250 S INTERVALS REGROUPED BY 12

0- 0 keV



From WOODSP@ssl.msfc.nasa.gov Thu Jan 23 07:07 PST 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 23 Jan 1997 9:06:30 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5870

TIME: TJD=0467 SECONDS=45832

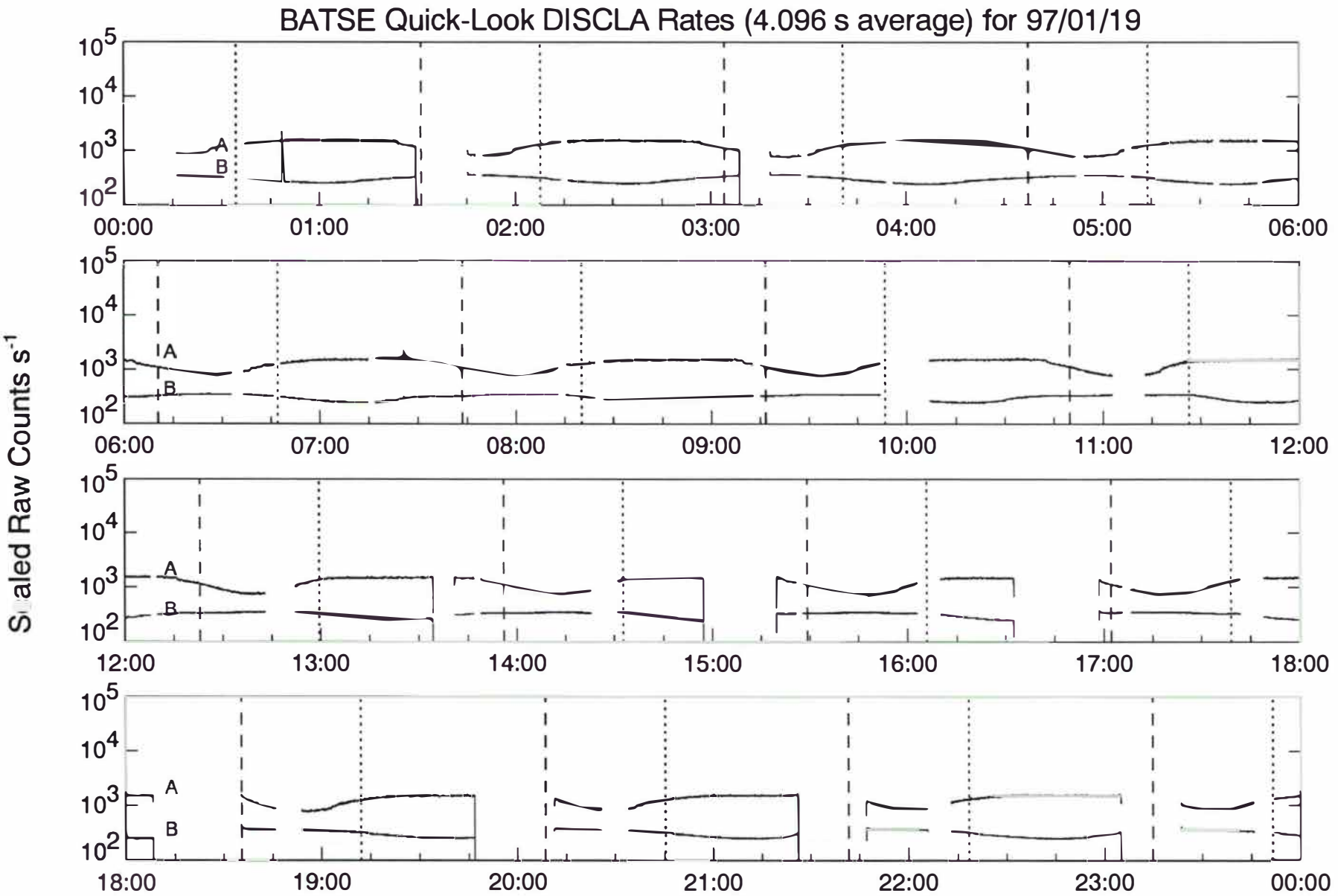
TYPE: PHOSPHO SOLAR FLARE TRIGGER SIGNAL:N

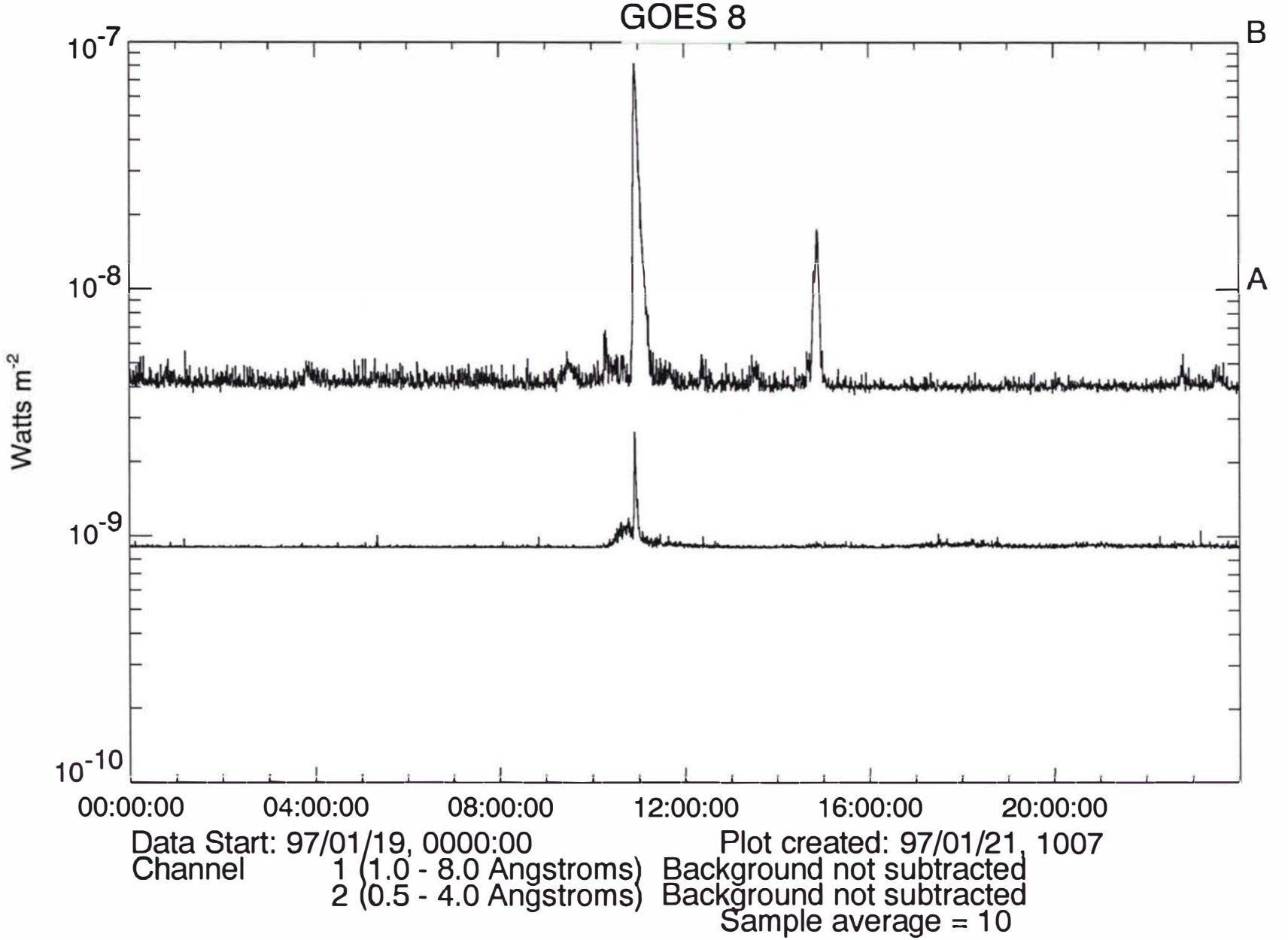
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

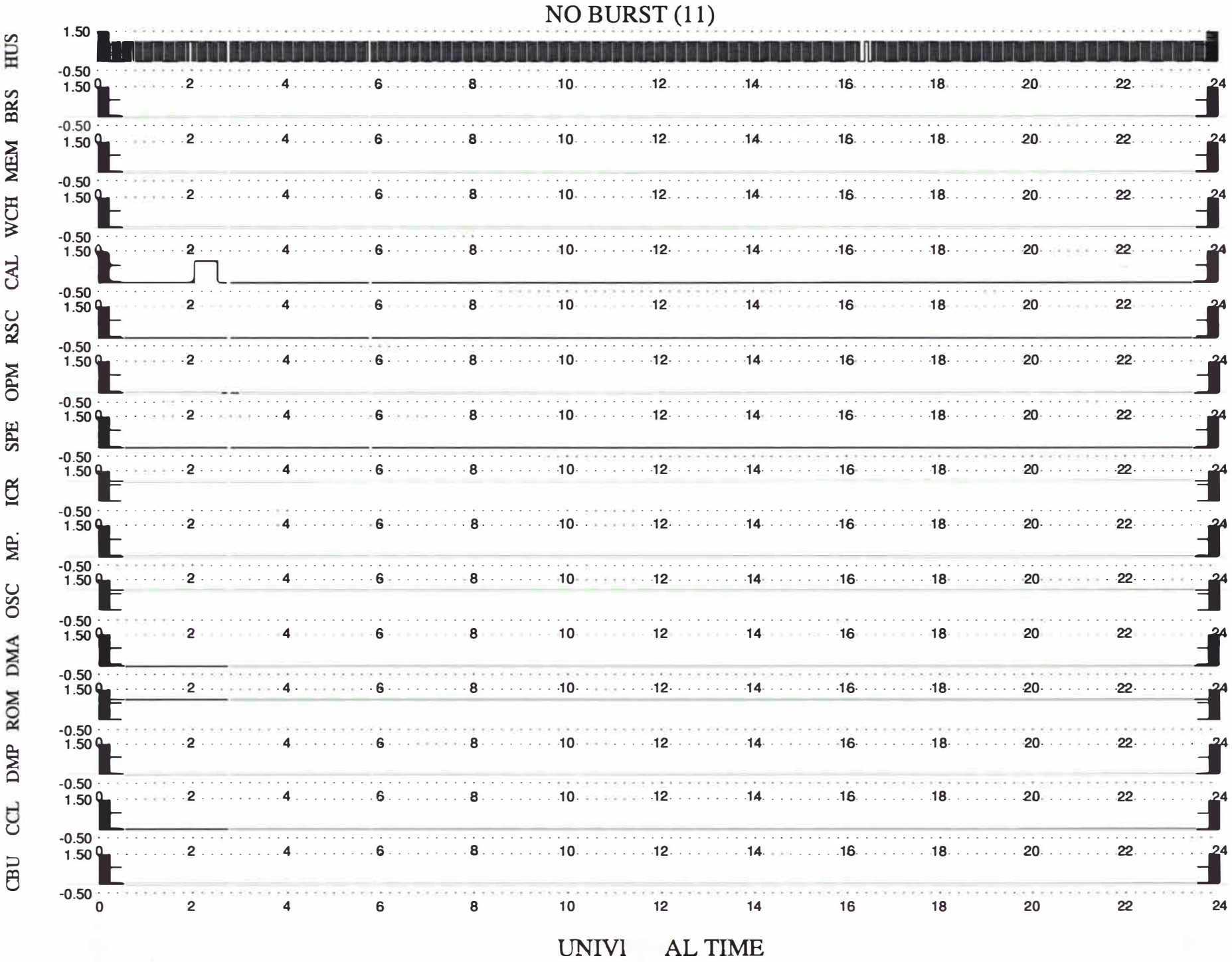
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TWO NEARLY COINCIDENT PHOSPHORESCENT SPIKES IN DIFFERENT MODULES
WITHIN THE SAME 64 MSEC BIN.


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

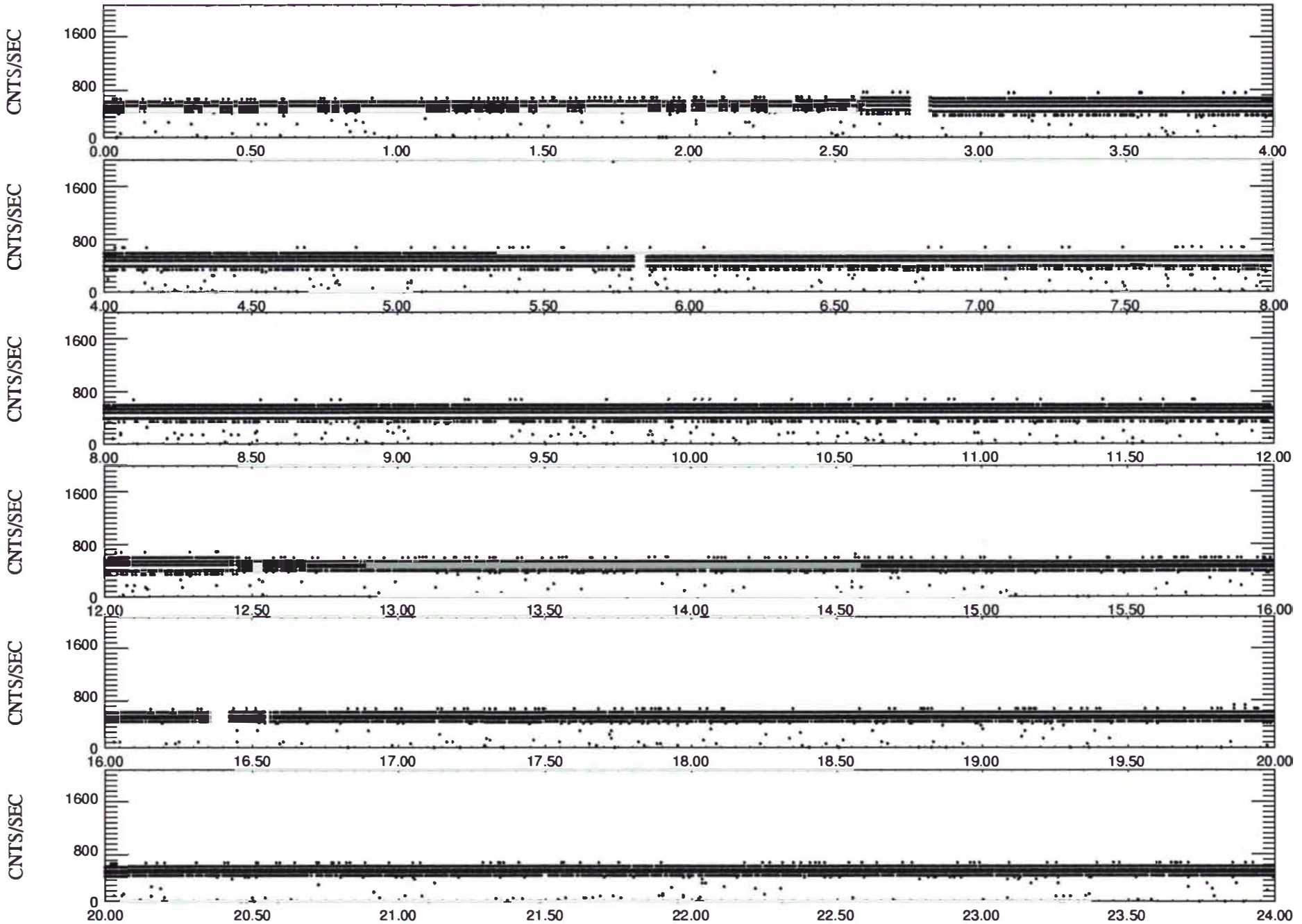

GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/19, 0000:00
Plot created: 97/01/21, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

HUS MODES EDR day 19, year 1997 to day 19, year 1997 5/5/97



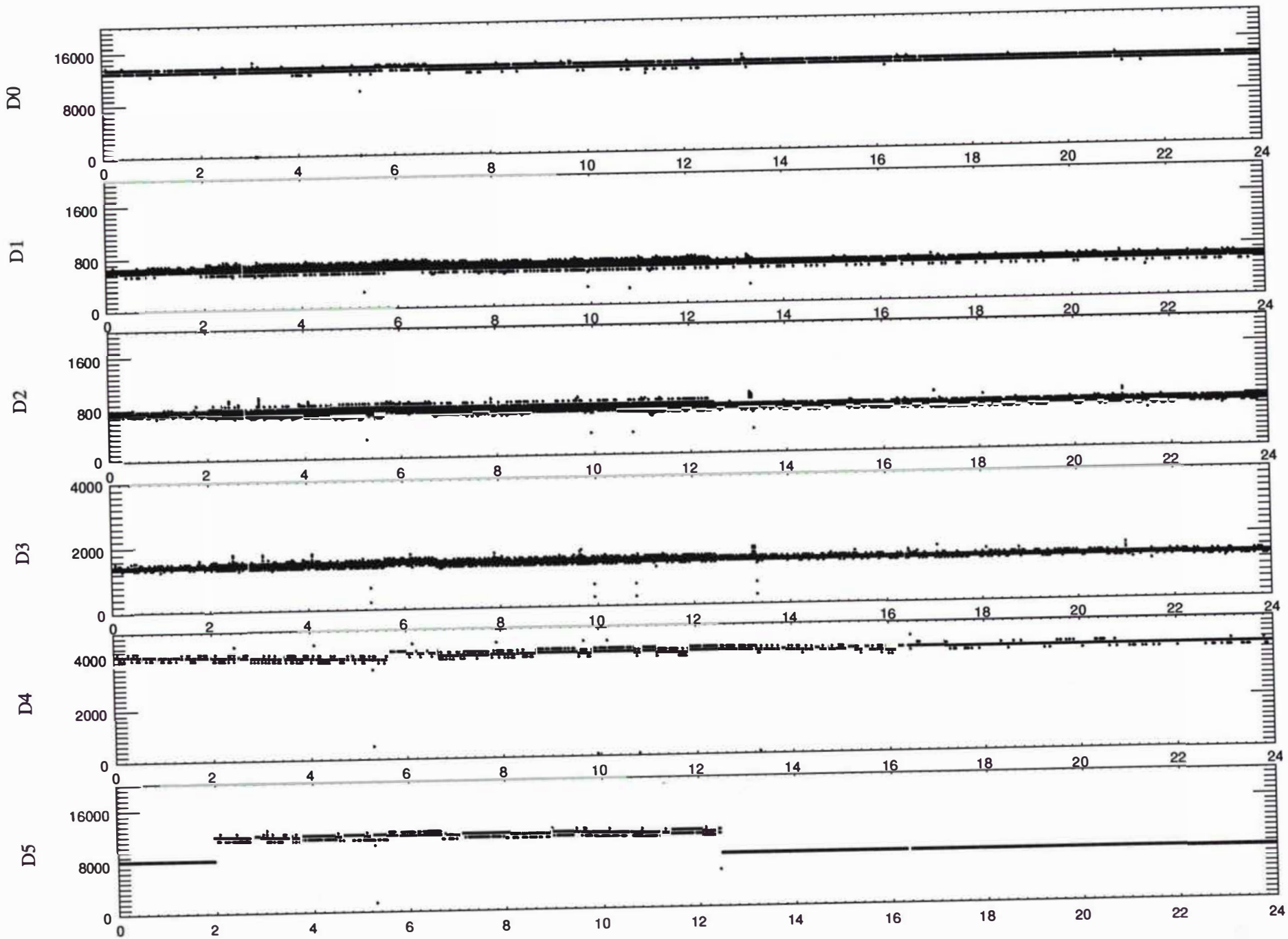
HUS 2A, MODE 1, NOT AVERAGED EDR day 19, year 1997 to day 19, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 19, year 1997 to day 19, year 1997 5/5/97



From DEAL@fender.msfc.nasa.gov Wed Jan 22 07:29 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 22 Jan 1997 9:29:31 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5890

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

 BATSE BURST #     5890
 EVENT OF 1997 JAN 20 DAY OF YEAR= 20
 EVENT CROSSING TIME AT BATSE      : 83366. S. OR 23:09:26.0
 COORDINATES ARE    0.000    0.000        6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 196.000    61.000
 BATSE PEAK COUNTING RATE:    3000     C/S

 EVENT CROSSING TIME AT ULYSSES    WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 20/ 1/  97 IS:
 RA=  175.263 DEC=    34.536 DIST=     4.055 AU
 BATSE-ULYSSES DISTANCE =  606626904. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=150.38 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1759.10 SECS.
 CROSSING TIME AT ULYSSES    IS 81607. S. OR   22:40:06 +/-  196.91 SECONDS

 EVENT CROSSING TIME AT MARS       WILL BE FOUND
 POSITION OF MARS ON 20/ 1/  97 IS:
 RA=  185.122 DEC=     1.115 DIST=     0.984 AU
 MARS-BATSE DISTANCE =  147137360. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.54 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -241.98 SECS.
 CROSSING TIME AT MARS       IS 83124. S. OR   23:05:24 +/-   70.46 SECONDS


                BATSE BURST TRIGGER
NO.: 5890

TIME: TJD=0468 SECONDS=83366

TYPE: BURST                    SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE:       SIGMA

INTENSITY:          COUNTS/CM2

LOCATION: ZENITH=64.8   AZIMUTH=118.3  ERROR=3.3   DEGREES

COMMENTS:
GRB SINGLE PULSE LASTING ~ 10 S. NOT VISIBLE ABOVE 300 KEV.
```

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5890	970120	10468	83366	3000	196	+61	10

Helio corr removed 17/2/00

Date: Mar 20 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

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

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

2. BATSE Data

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

☑ BATSE ephemeris for T_0?

☑ Error circle position and radius from public catalog used?

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

3. PVO Data

☐ Ephemeris of PVO used (not Venus)?

☐ 2000 coordinates used?

☐ Geocentric time used?

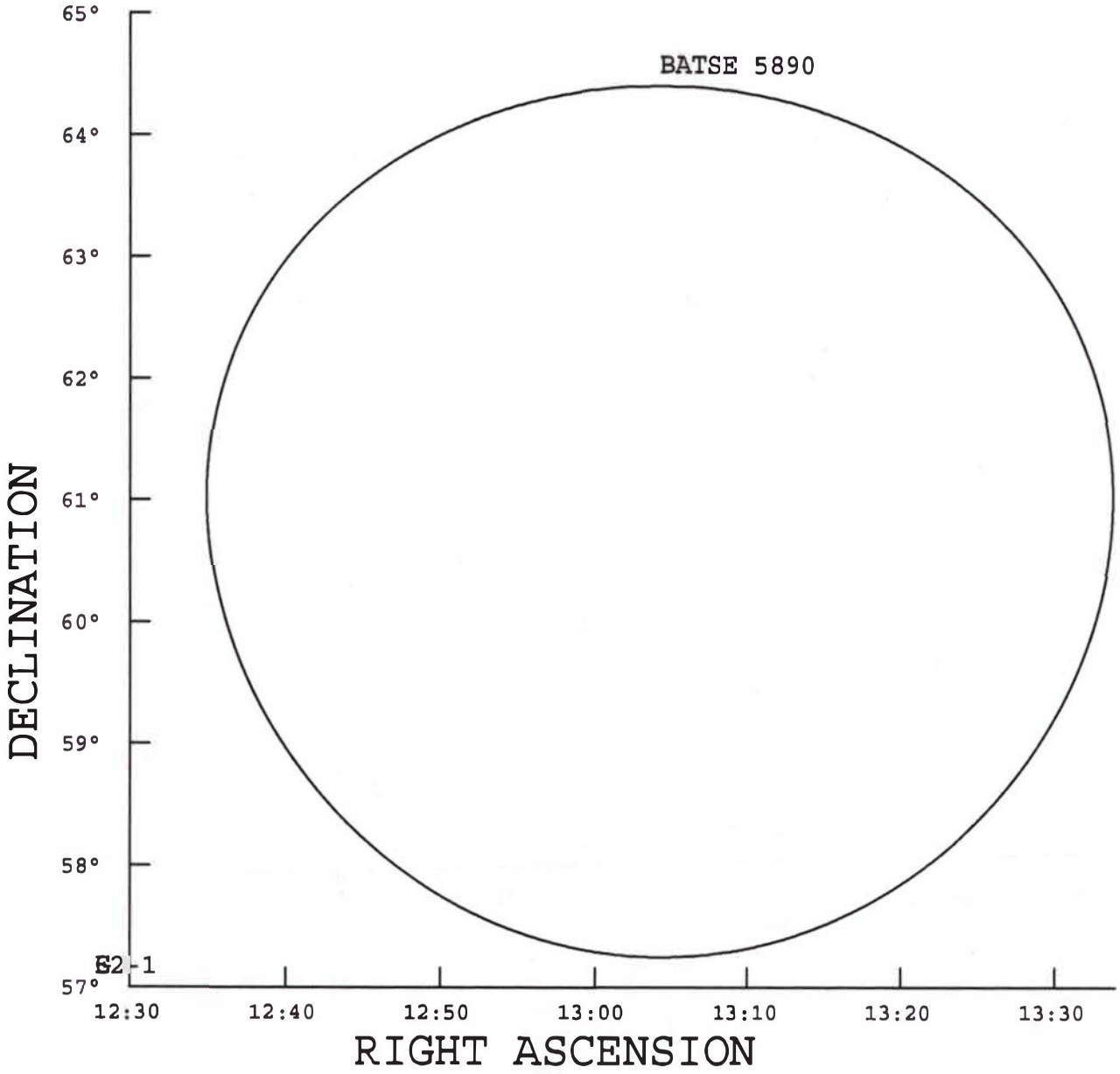
☑ ACCESS database updated?

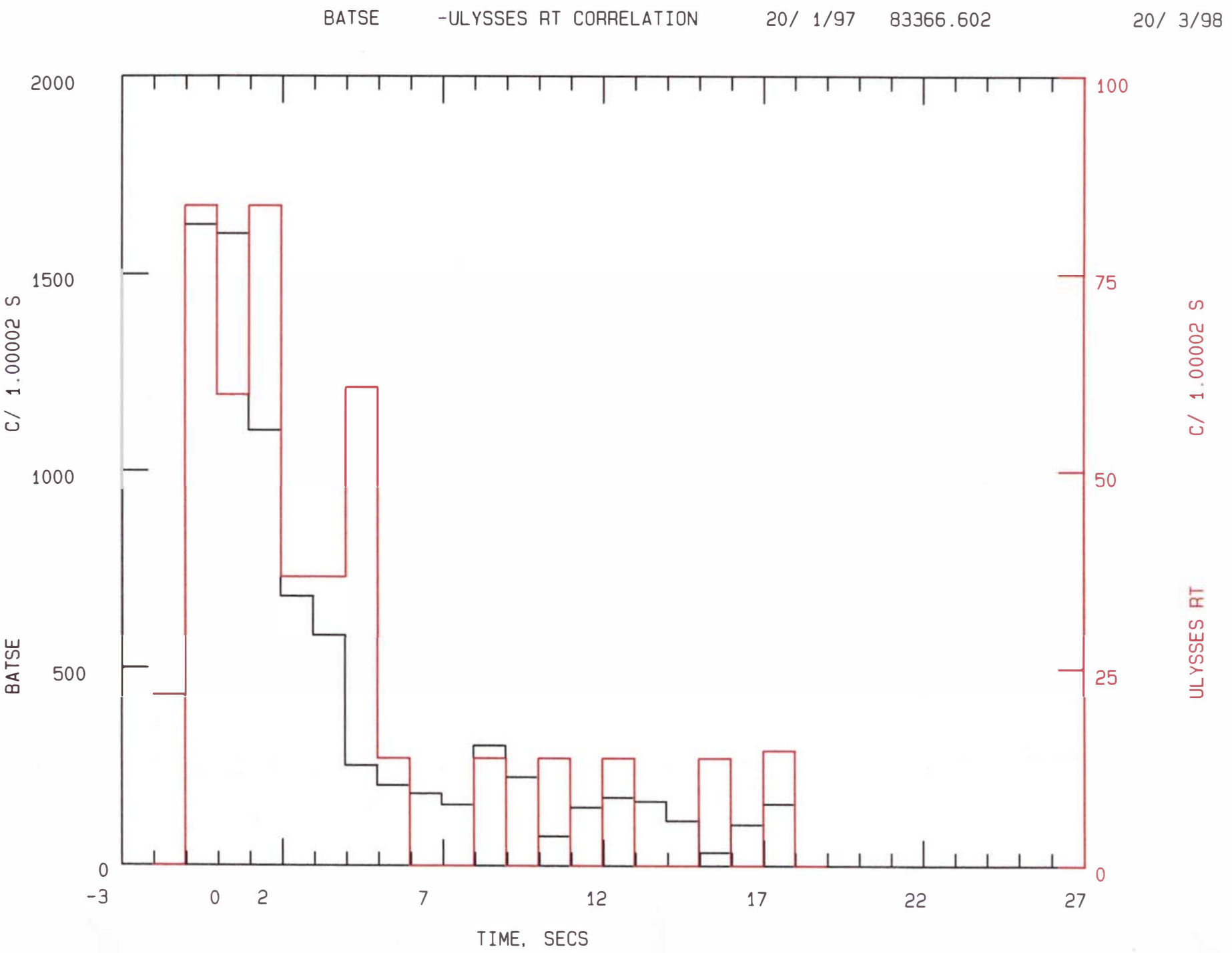


EVENT OF JAN 20, 1997 22:41

17/ 2/ 0

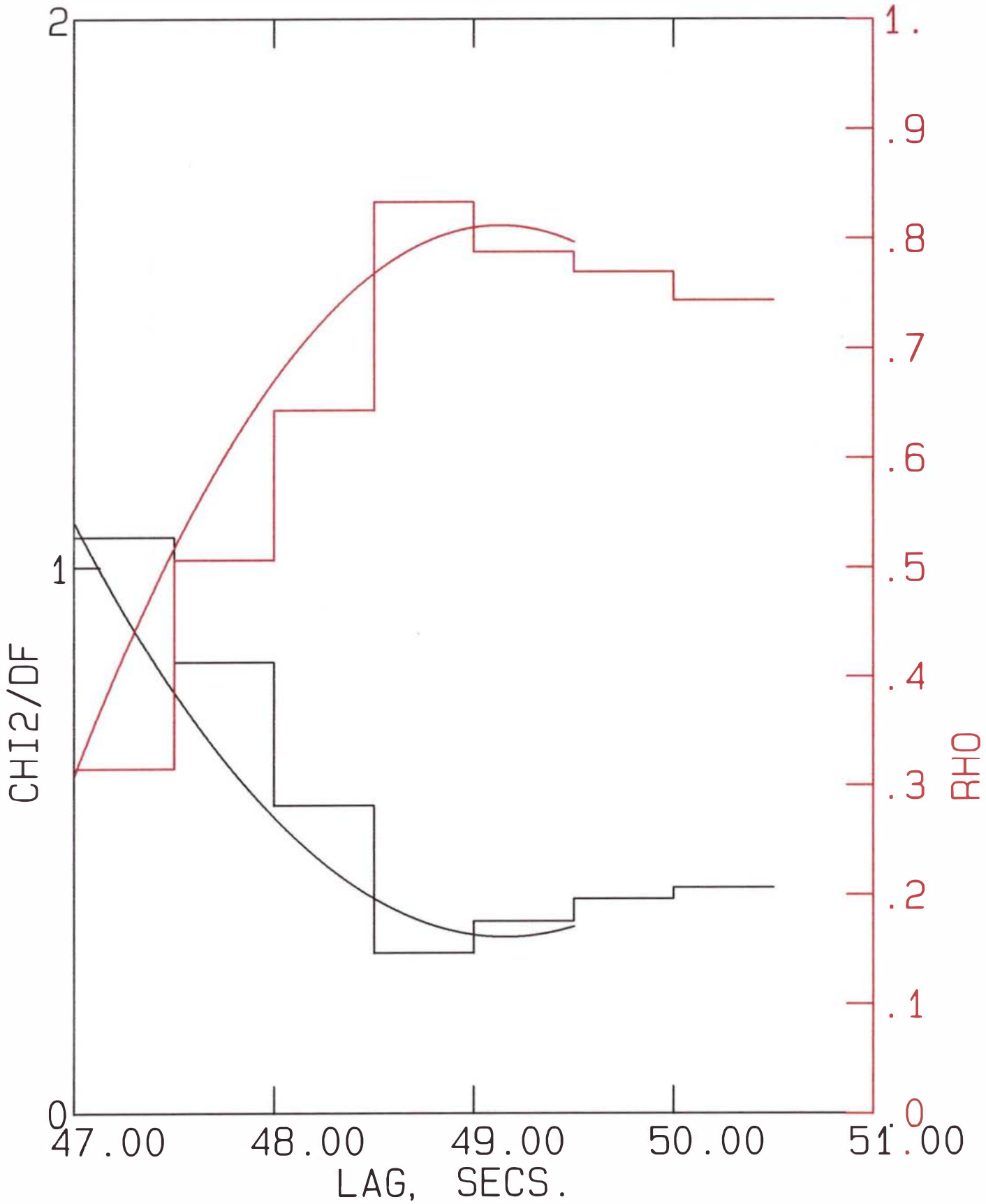
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 BATSE




BATSE -ULYSSES RT CORRELATION 20/ 1/97 83366.602 20/ 3/98
2000
1500
1000
500
0
C/ 1.00002 S
BATSE
100
75
50
25
0
C/ 1.00002 S
ULYSSES RT
-3
0
2
7
12
17
22
27
TIME, SECS

20/ 3/98

BATSE -ULYSSES RT CORRELATION 20/ 1/97 83366.602

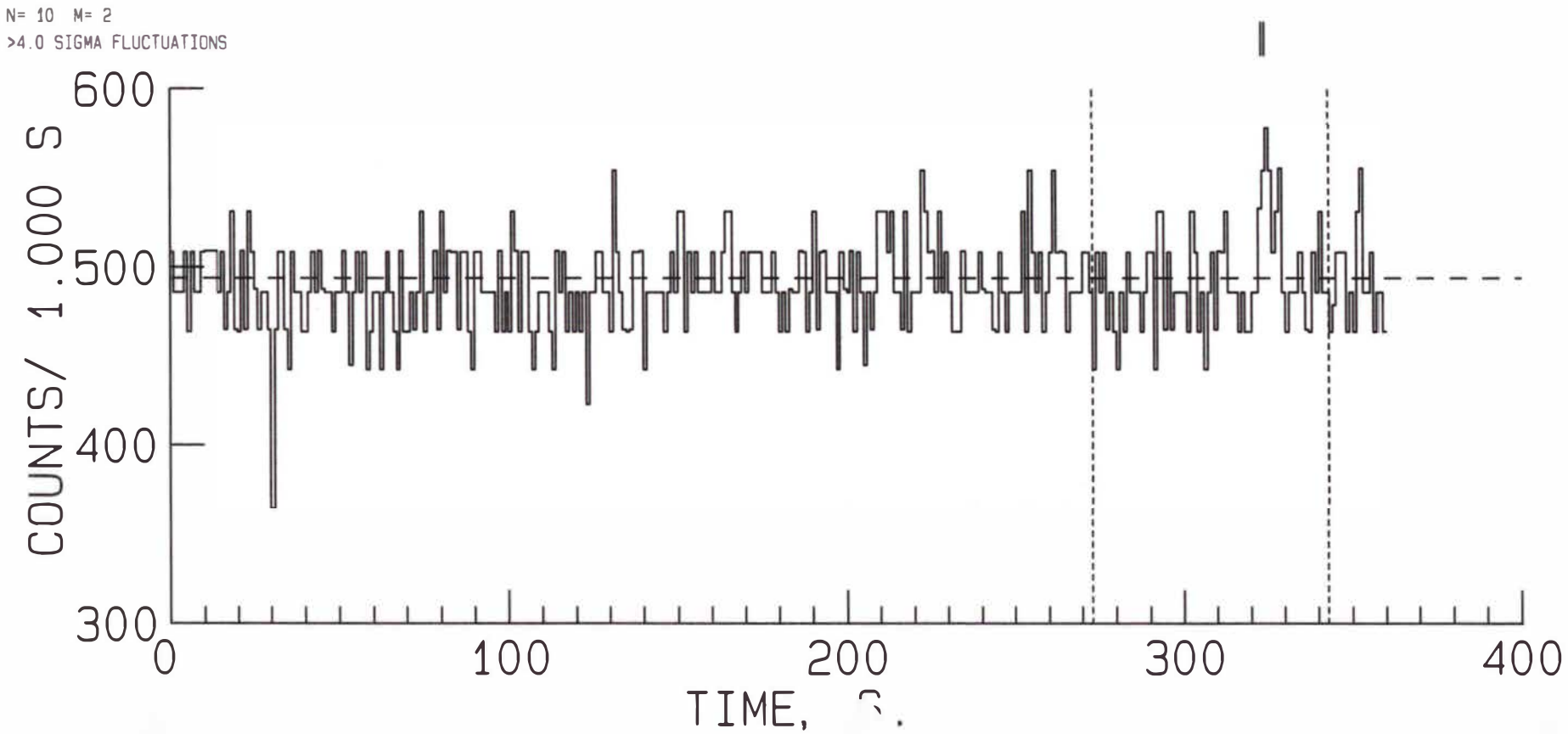


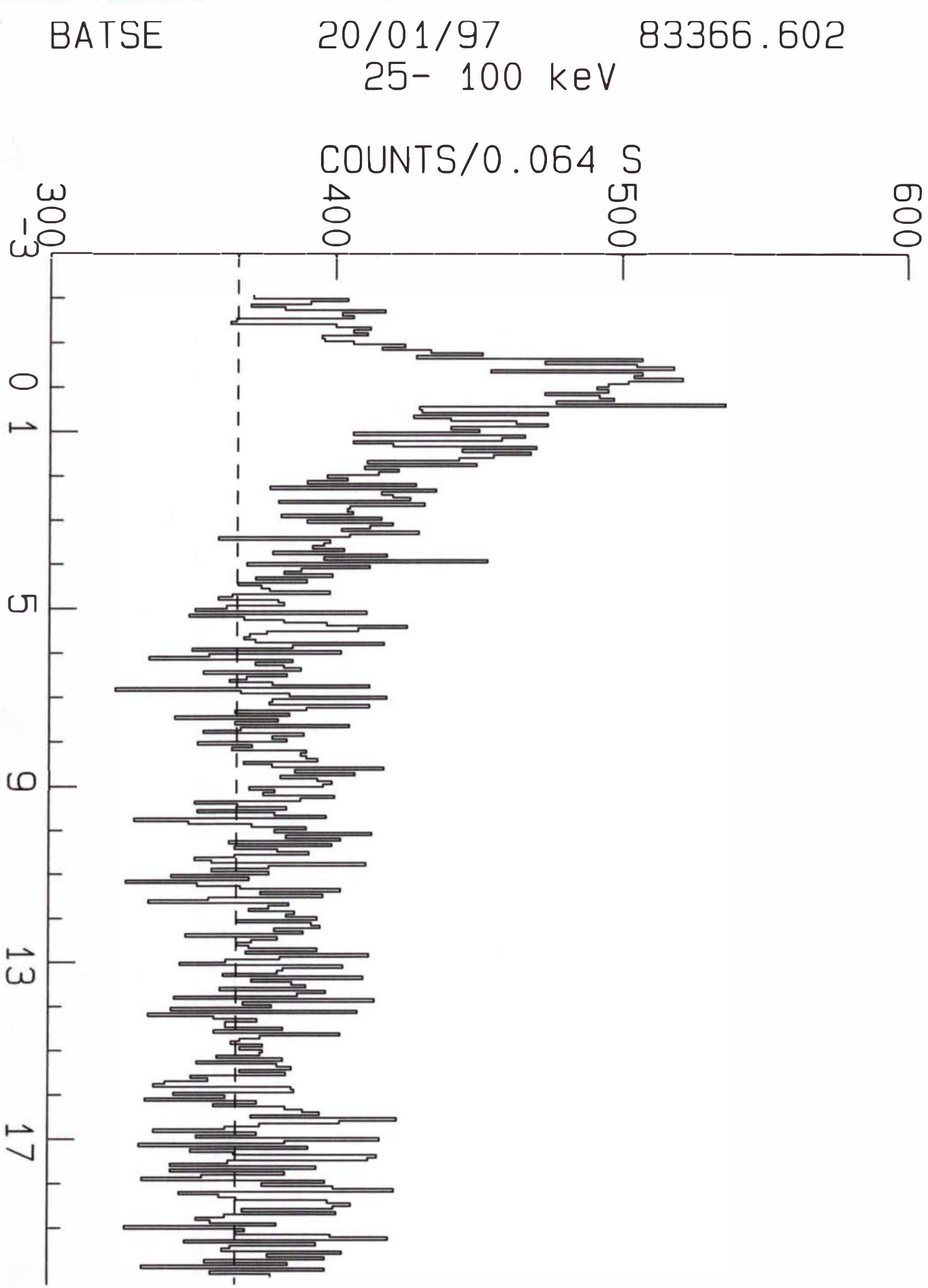
ULYSSES RT 20/ 3/98

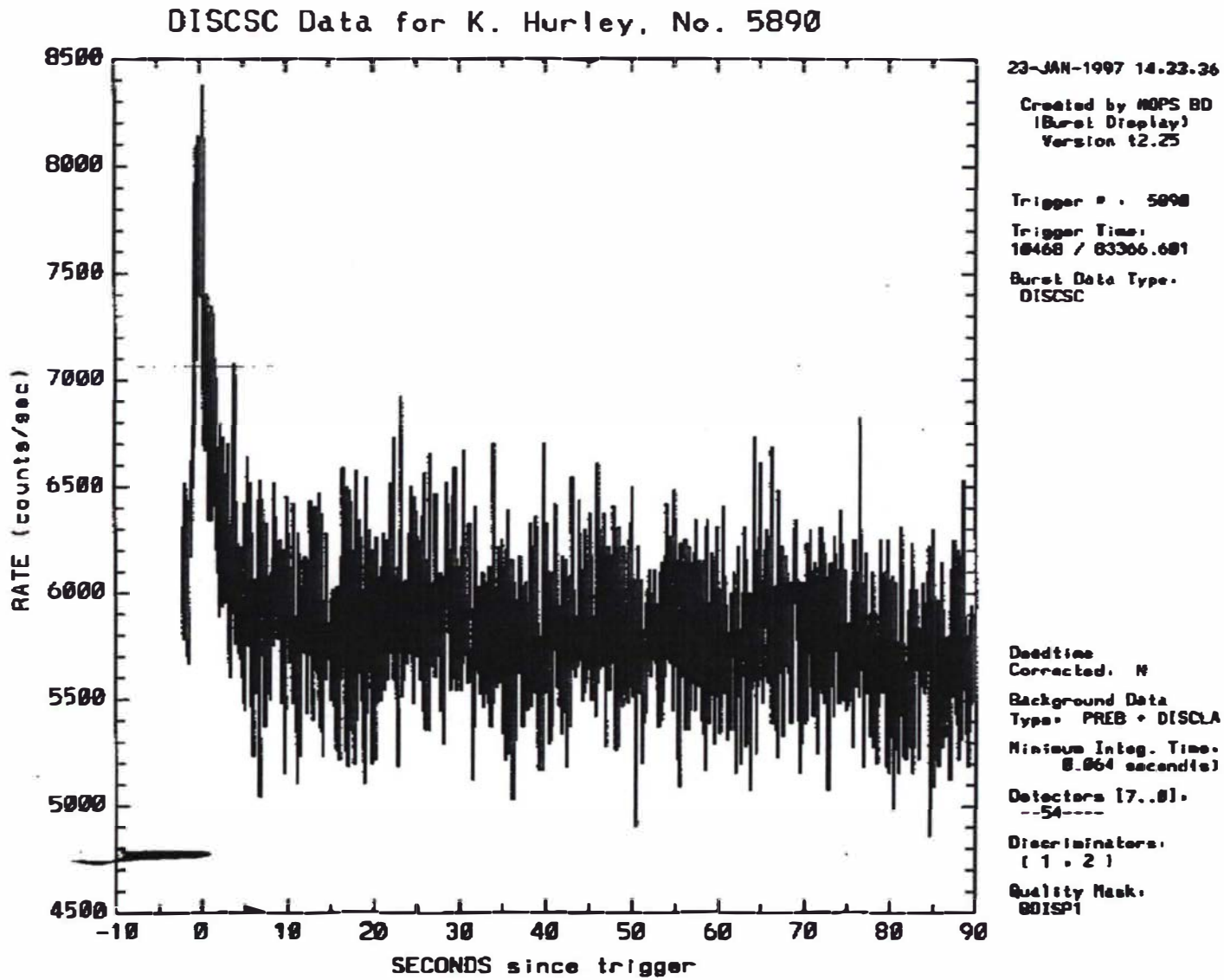
20/ 1/97 81396.392 s

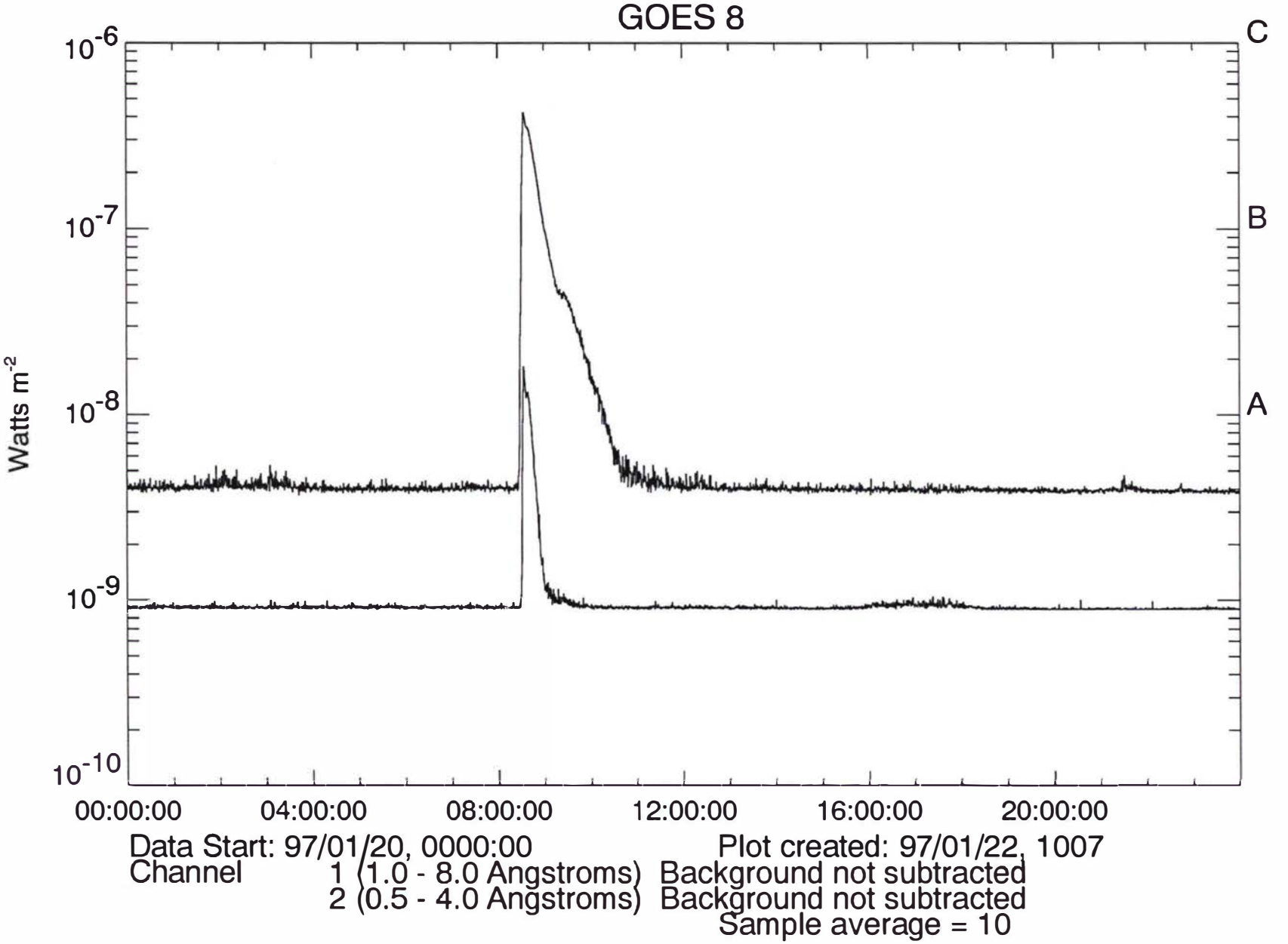
0.500 S INTERVALS REGROUPED BY 2

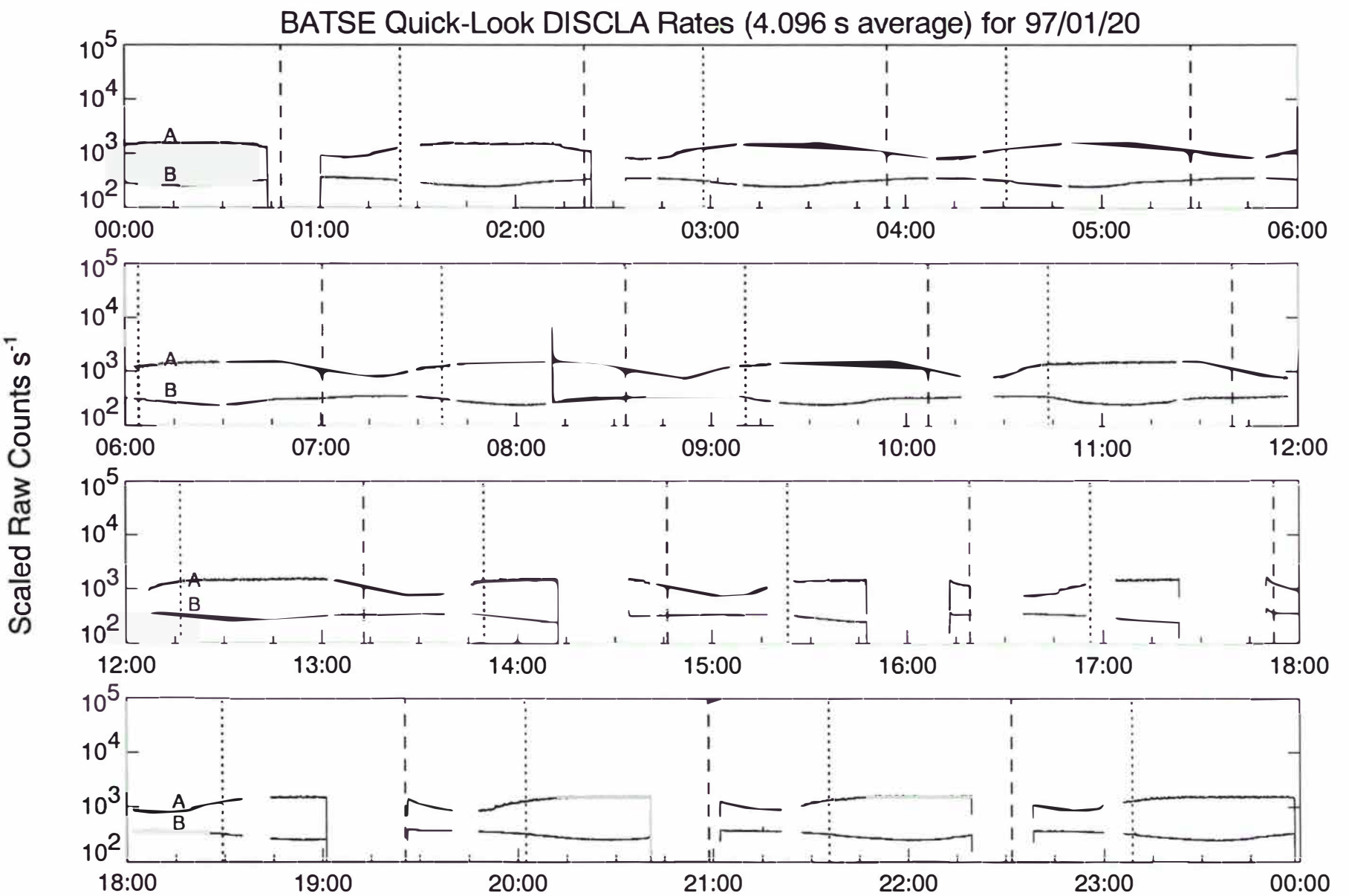
22- 148 keV




BATSE 20/01/97 83366.602
25- 100 keV
COUNTS/0.064 S
300
400
500
600
-3
0
1
5
9
13
17

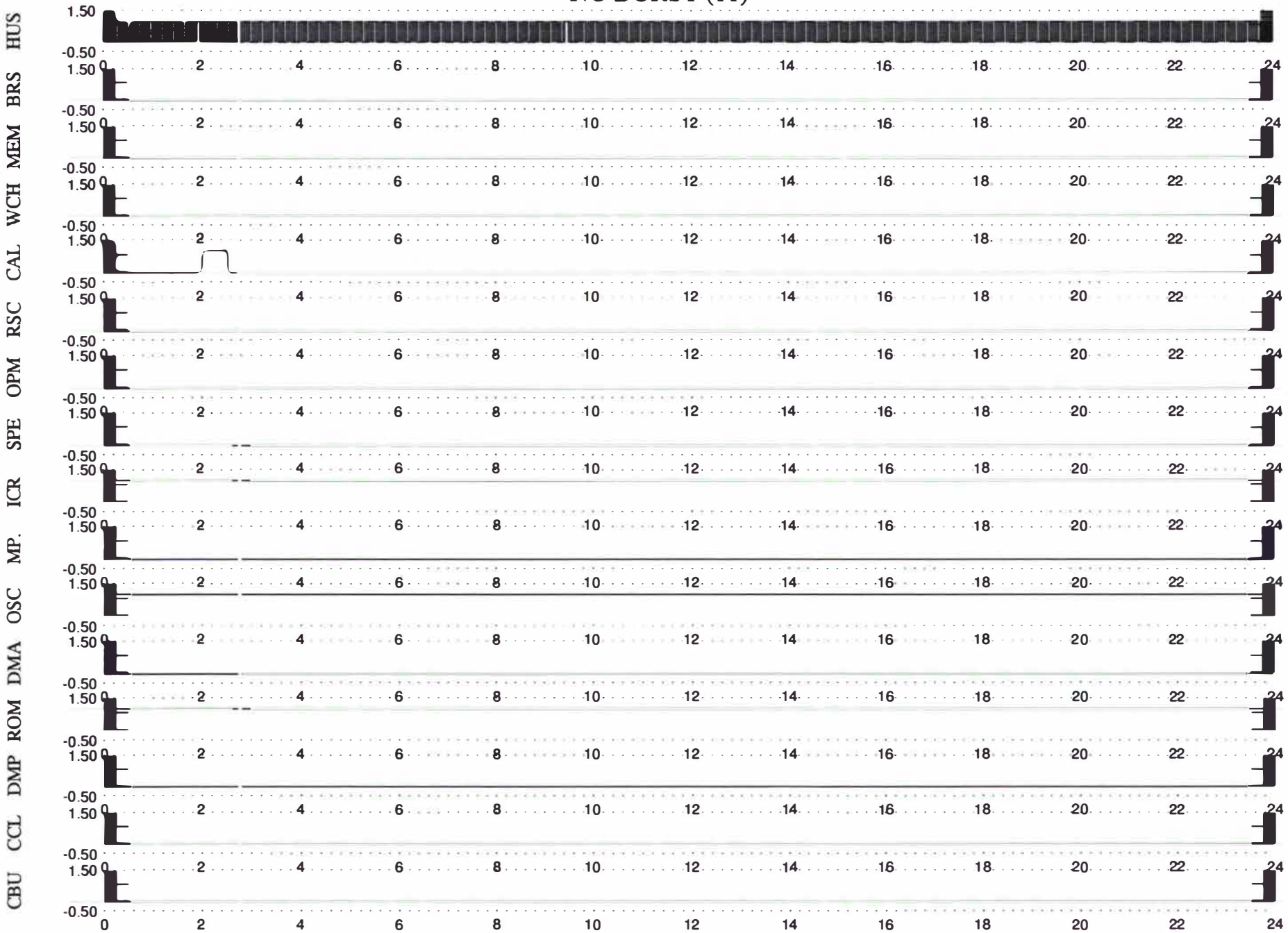

DISCSC Data for K. Hurley, No. 5890
RATE (counts/sec)
8500
8000
7500
7000
6500
6000
5500
5000
4500
-10
0
10
20
30
40
50
60
70
80
90
SECONDS since trigger
23-JAN-1997 14.23.36
Created by MOPS BD
(Burst Display)
Version t2.25
Trigger # : 5890
Trigger Time:
10468 / 83306.681
Burst Data Type:
DISCSC
Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 seconds
Detectors [7..0]:
--54----
Discriminators:
[1 , 2]
Quality Mask:
@DISP1


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: 97/01/20, 0000:00
Plot created: 97/01/22, 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 97/01/20
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/22, 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 20, year 1997 to day 20, year 1997 5/5/97

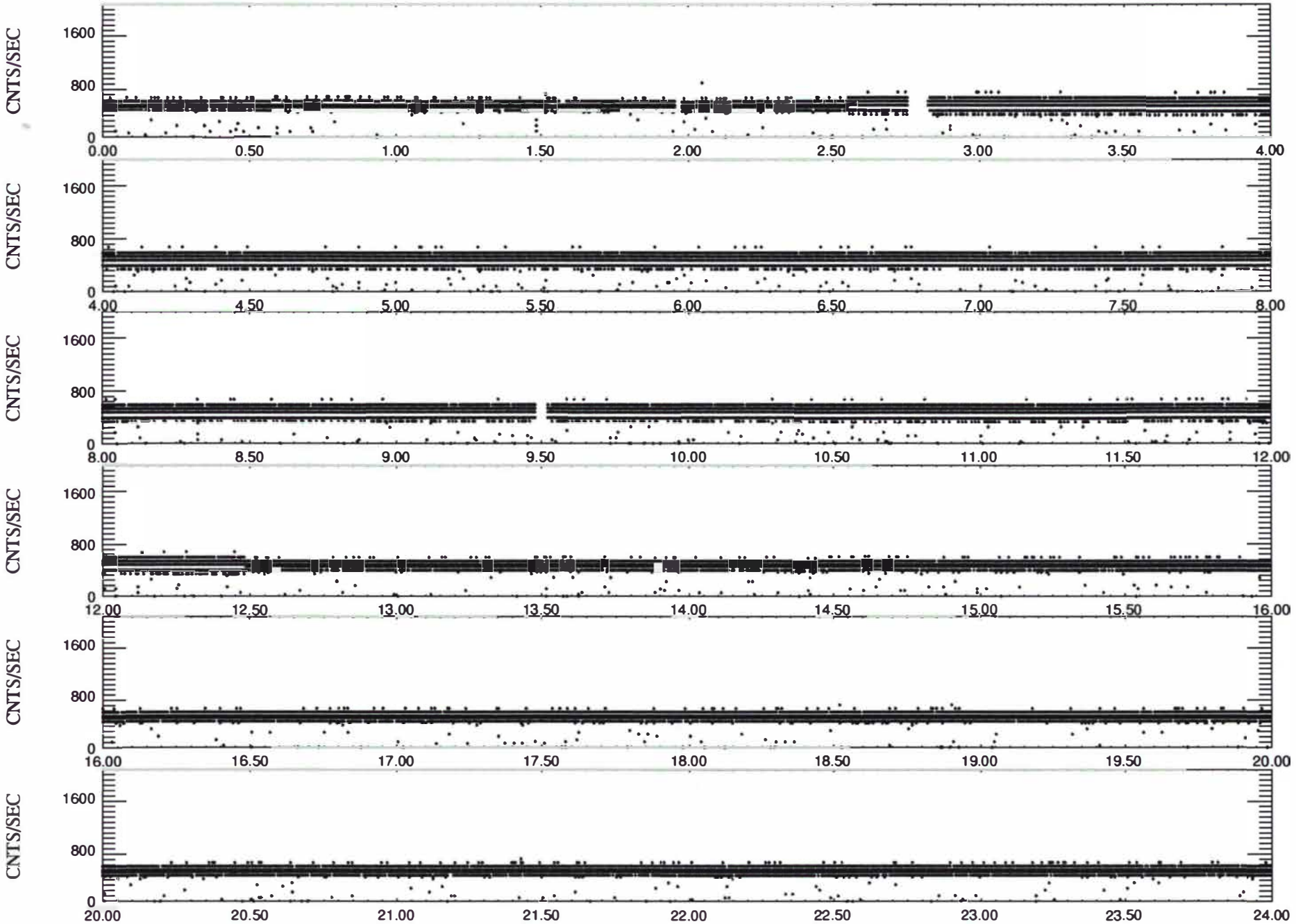
NO BURST (11)



UNIVI AL TIME

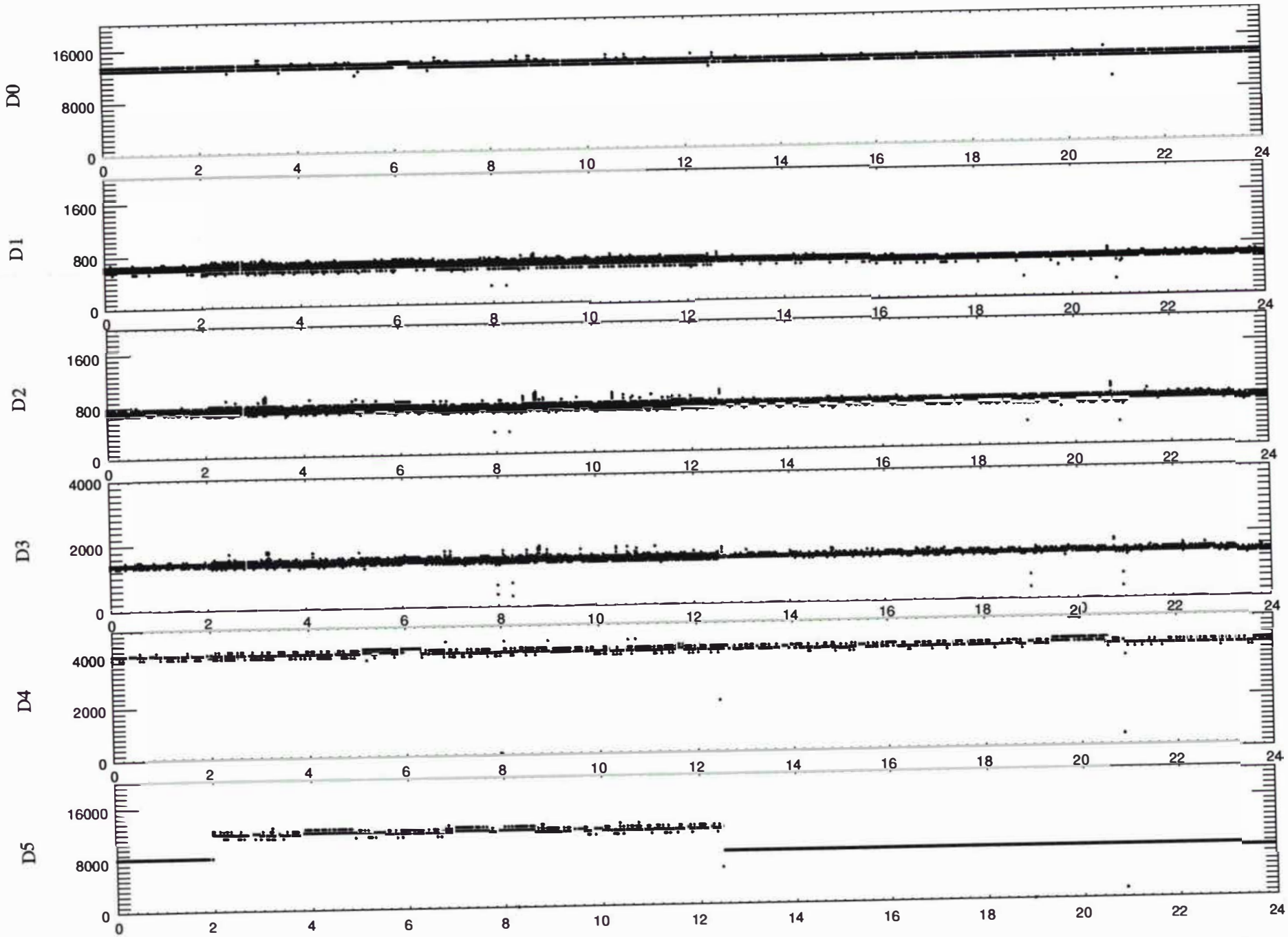
HUS 2A, MODE 1, NOT AVERAGED EDR day 20, year 1997 to day 20, year 1997 5/5/97

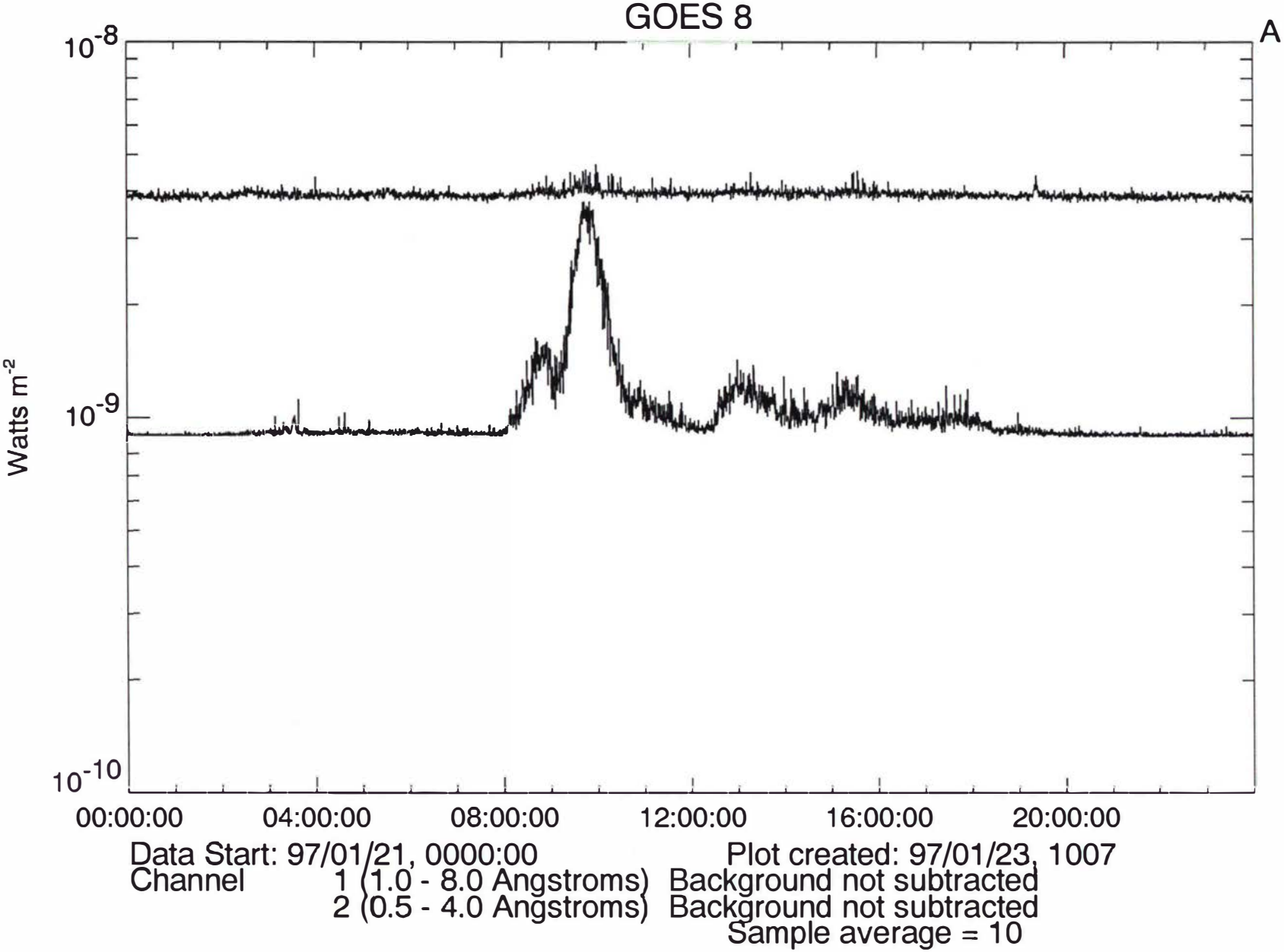
CALIBRATION DATA INCLUDED

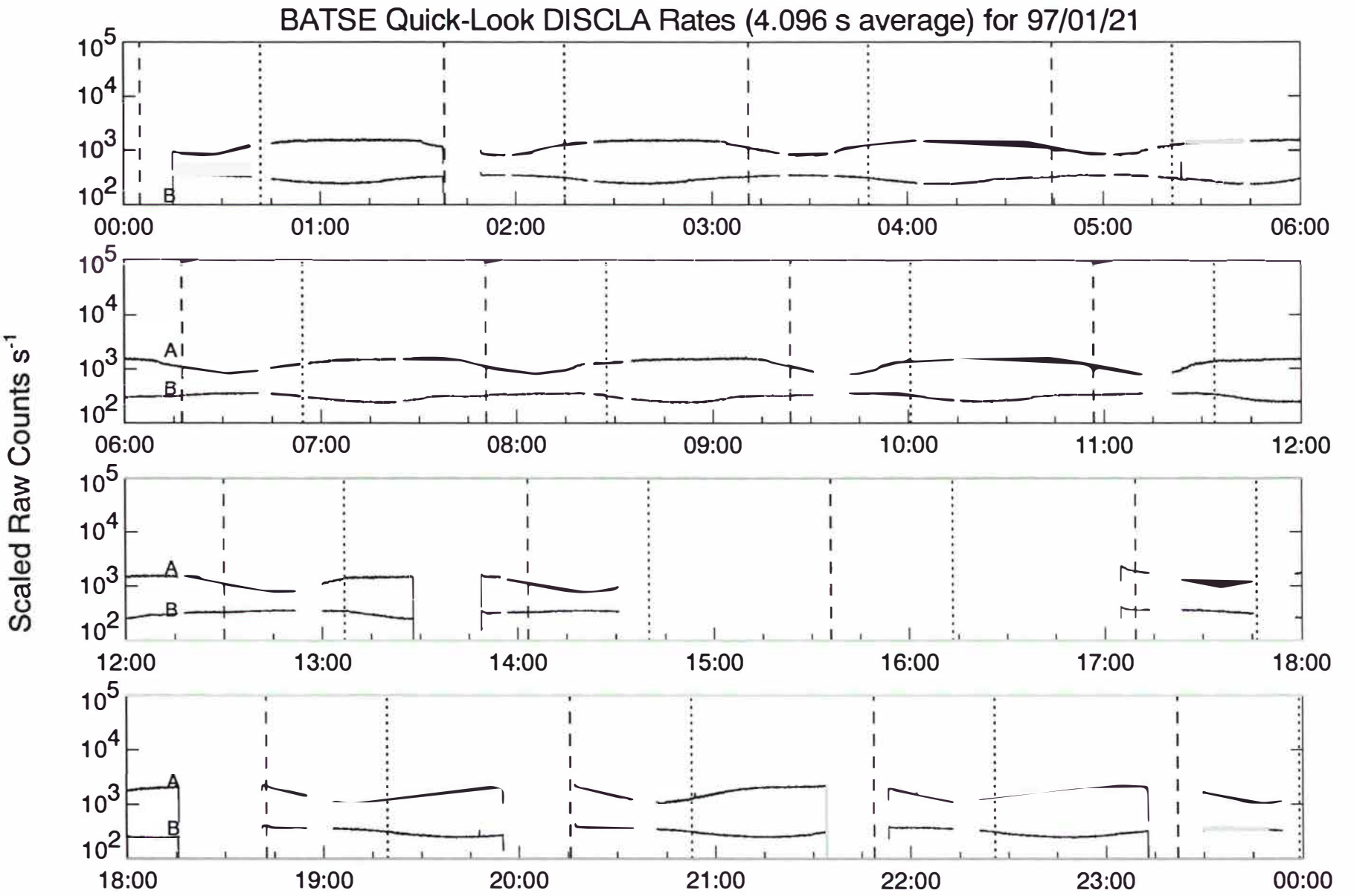


UNIVI AL TIME

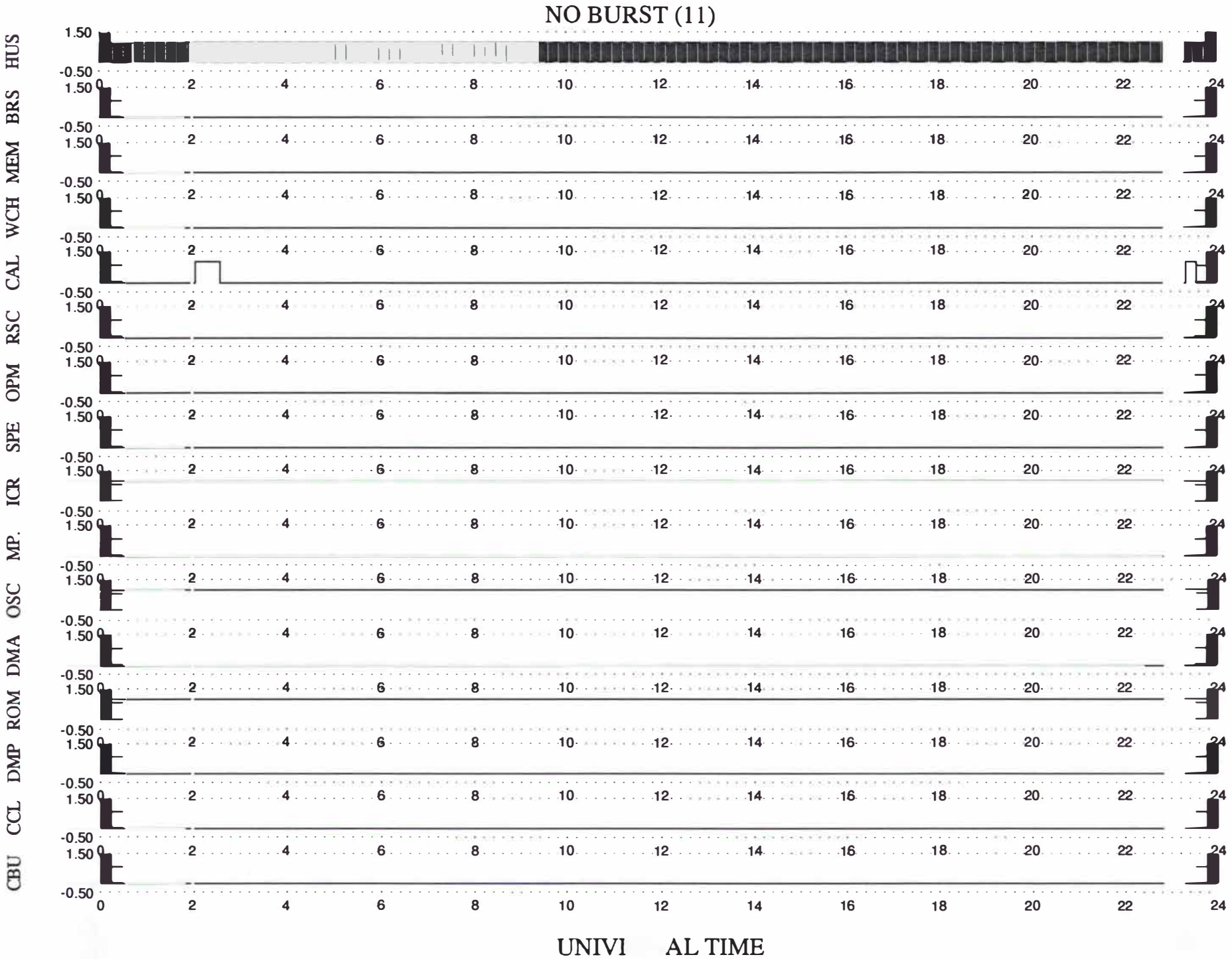
HUS 2B COUNTS / SEC EDR day 20, year 1997 to day 20, year 1997 5/5/97




GOES 8
A
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/21, 0000:00
Plot created: 97/01/23, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

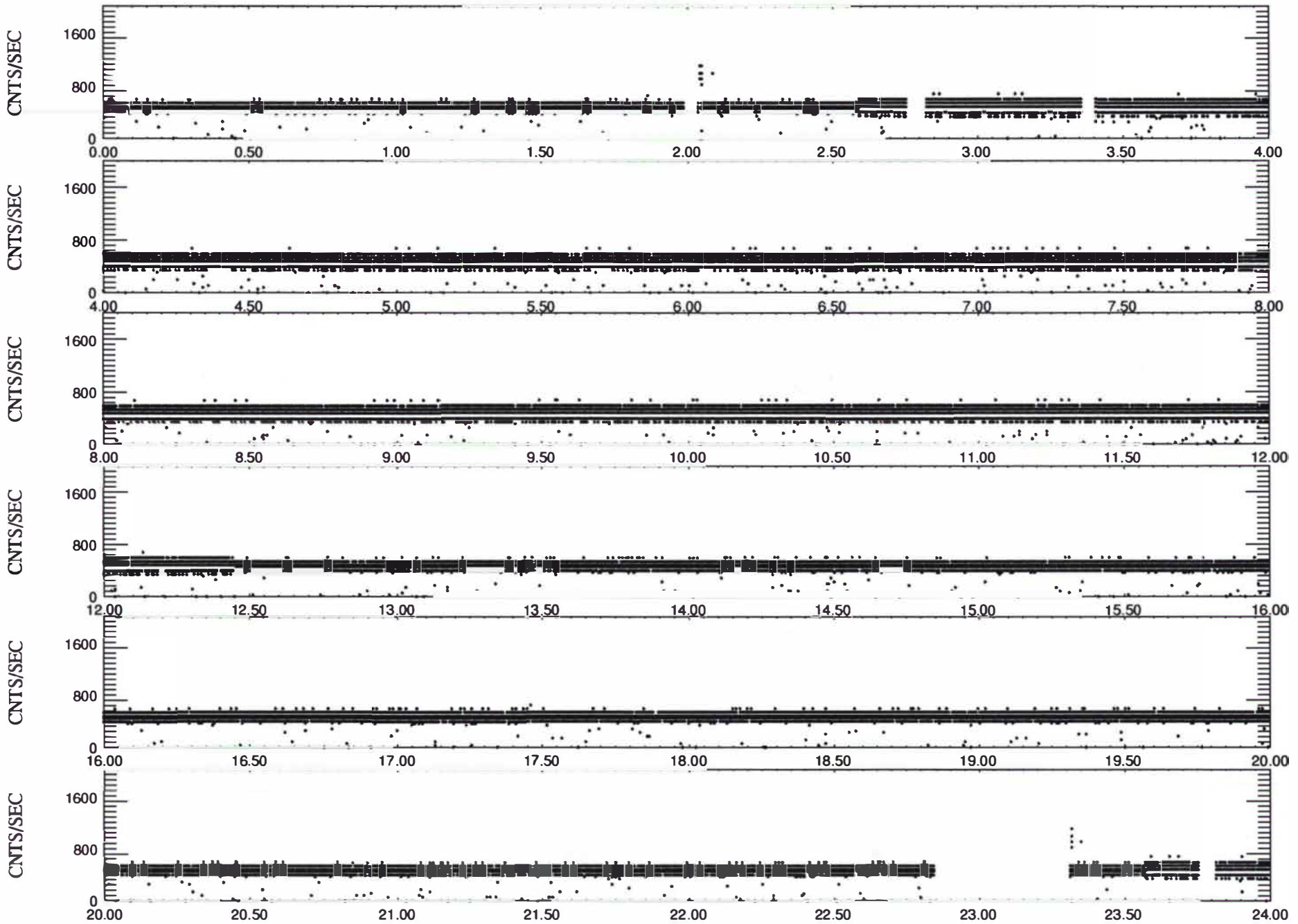

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/21
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/23, 1008 EDT
A: Channel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



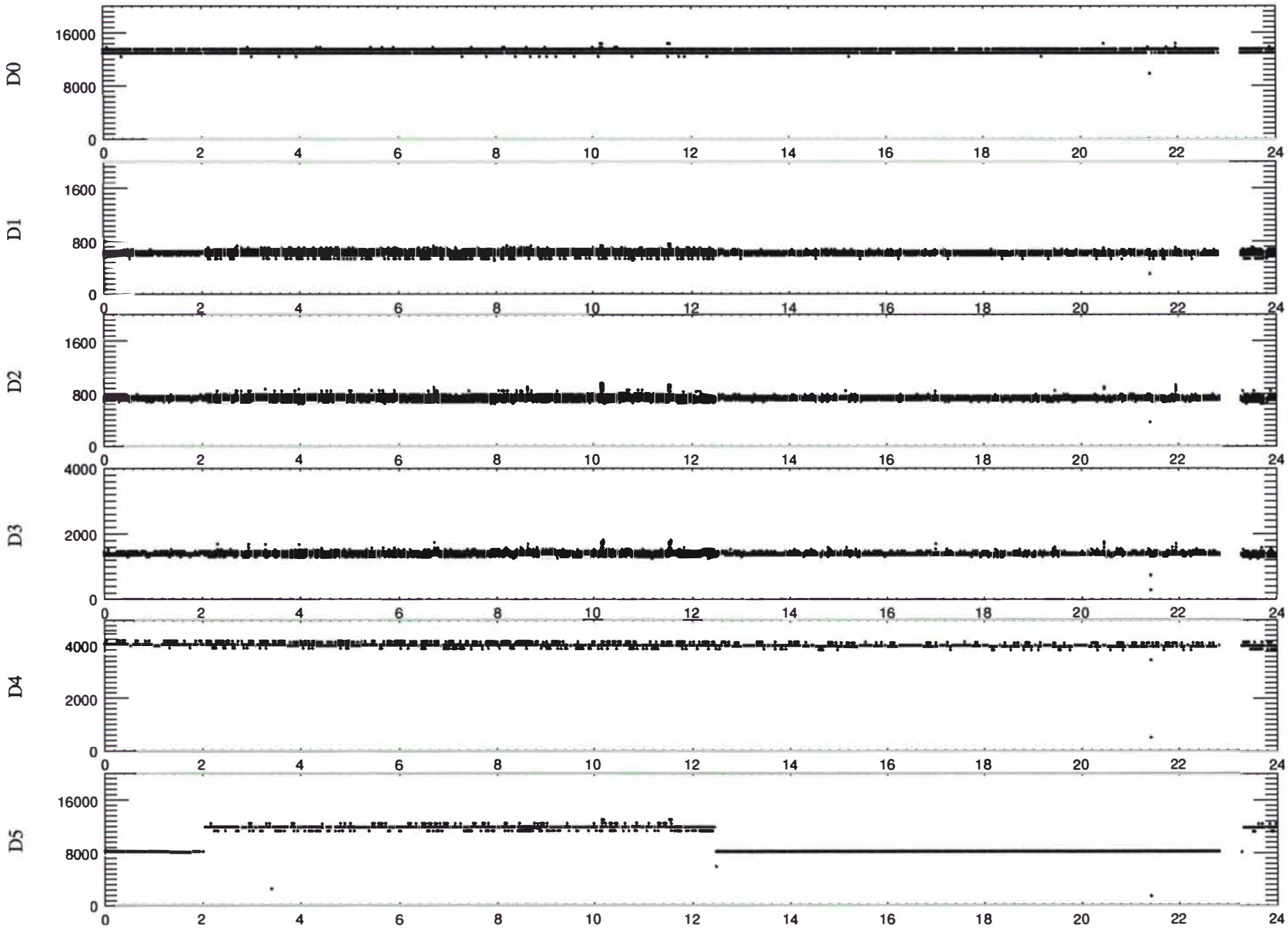
HUS 2A, MODE 1, NOT AVERAGED EDR day 21, year 1997 to day 21, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 21, year 1997 to day 21, year 1997 5/5/97



From WOODSP@ssl.msfc.nasa.gov Fri Jan 24 11:16 PST 1997
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 24 Jan 1997 13:15:33 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.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.: 5903

TIME: TJD=0470 SECONDS=6117 01:41:57

TYPE: SGR SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=74.2 AZIMUTH=348.4 ERROR=1.2 DEGREES

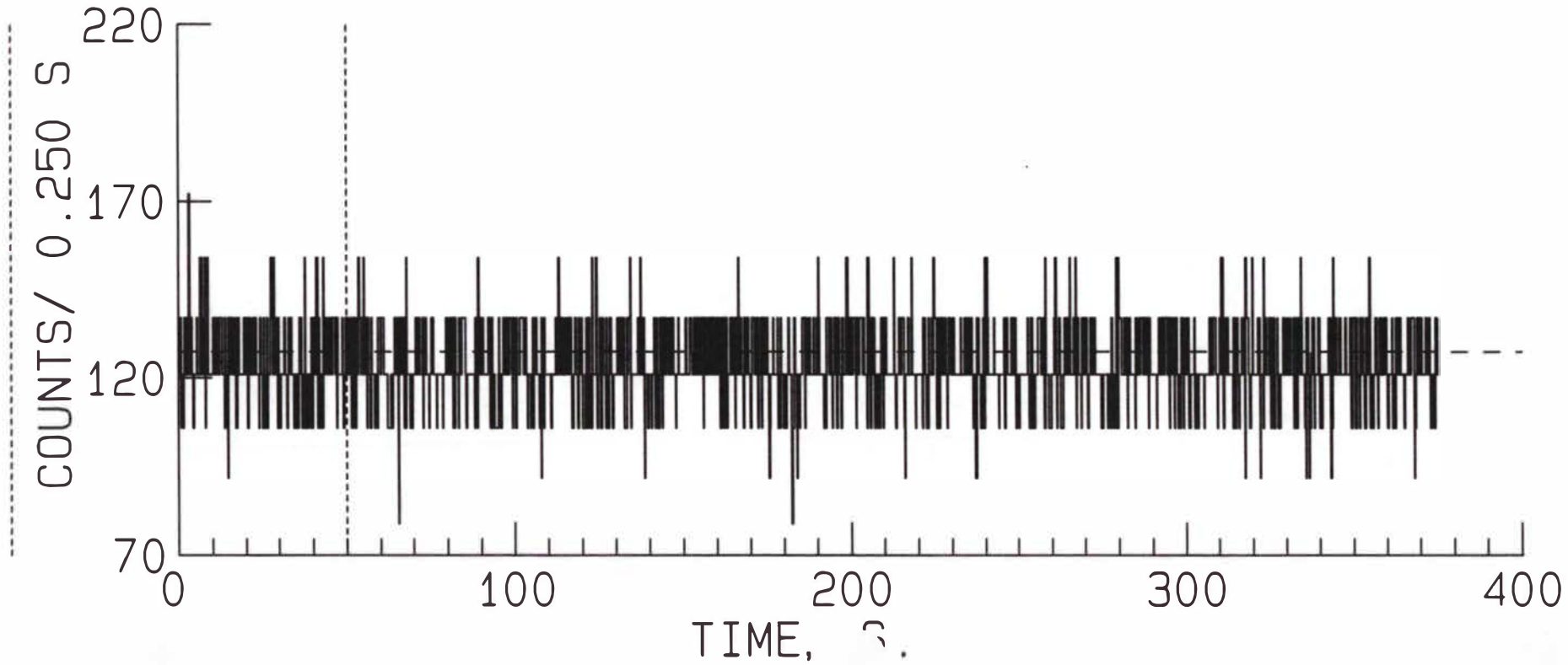
COMMENTS:
SGR 1806-20. BURST LASTING ~ 0.12 SEC.

ULYSSES RT

20/ 3/98

22/ 1/97 6300.074 s

21- 146 keV

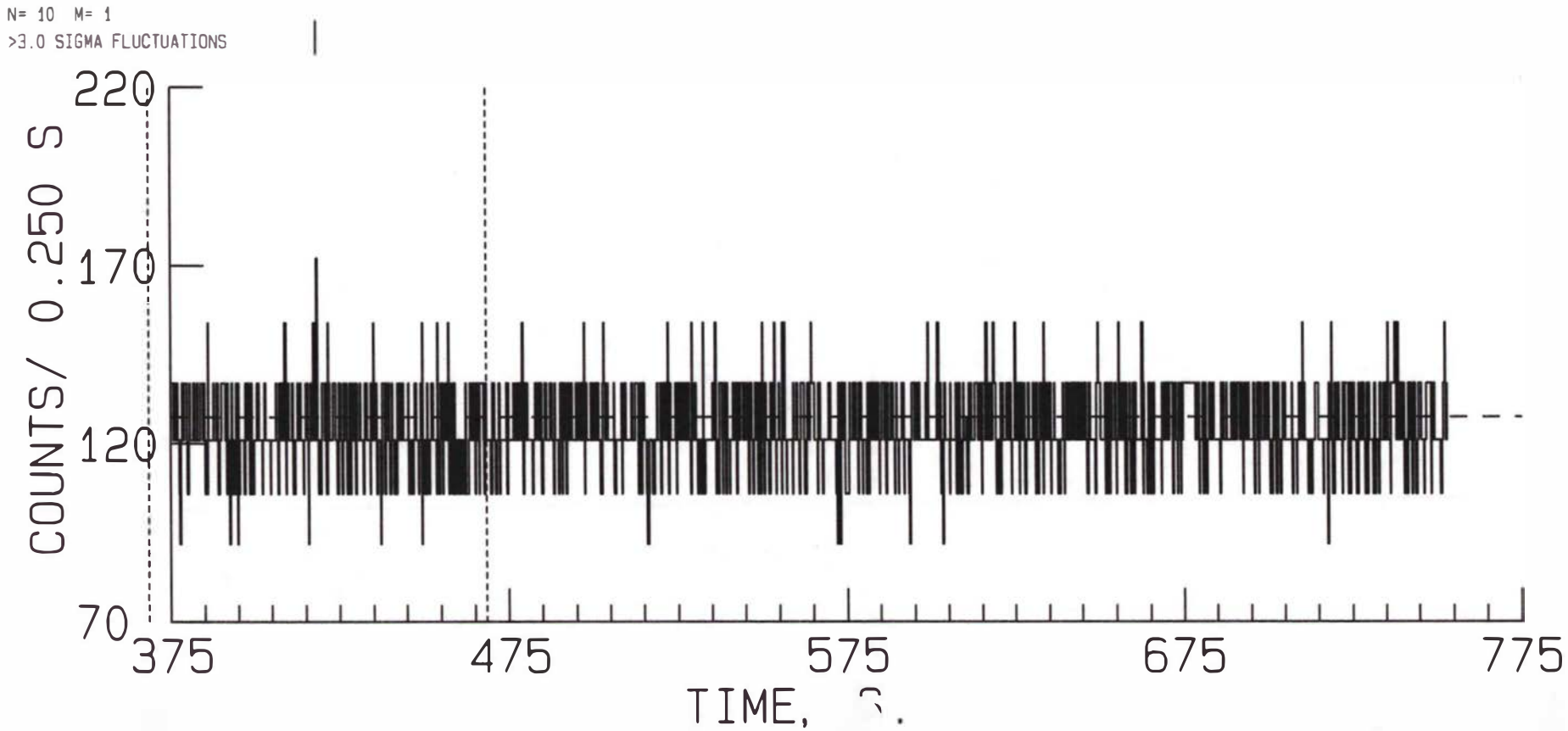


ULYSSES RT

20/ 3/98

22/ 1/97 6300.074 s

21- 146 keV

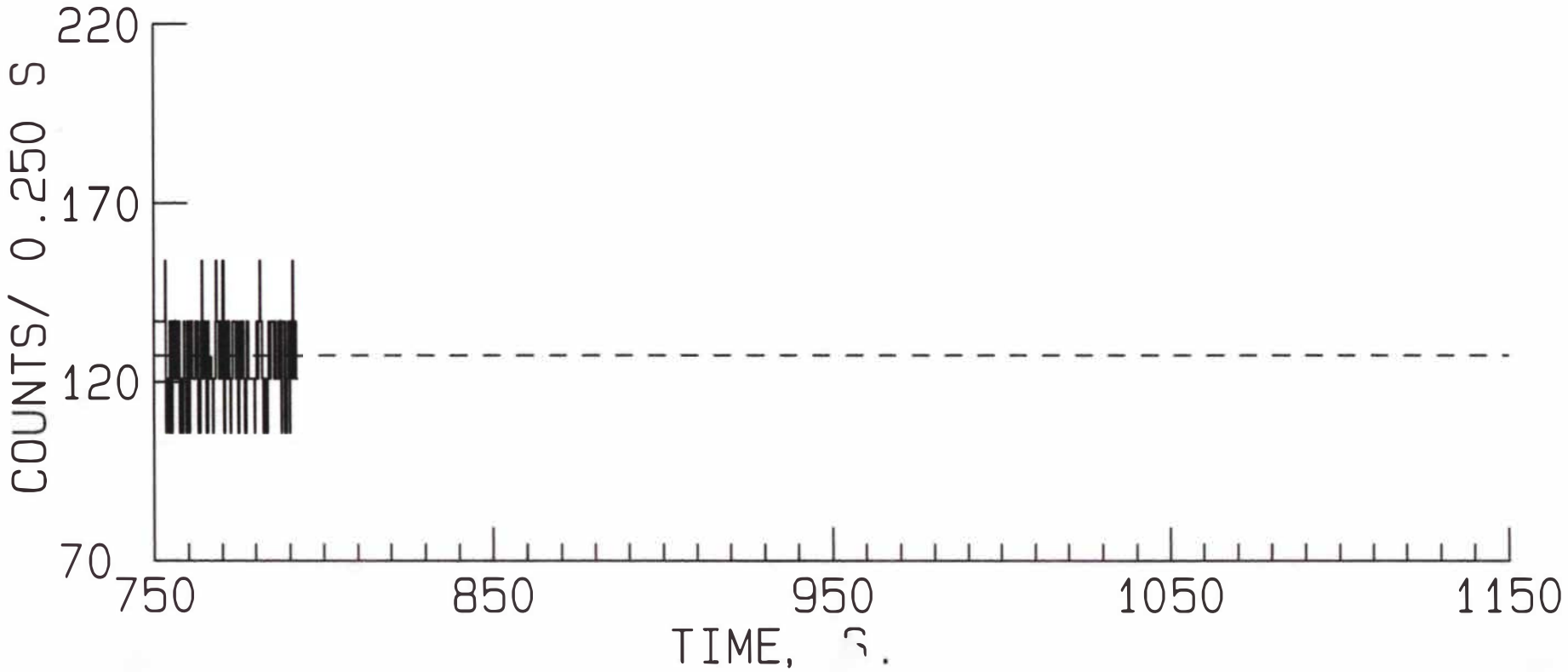


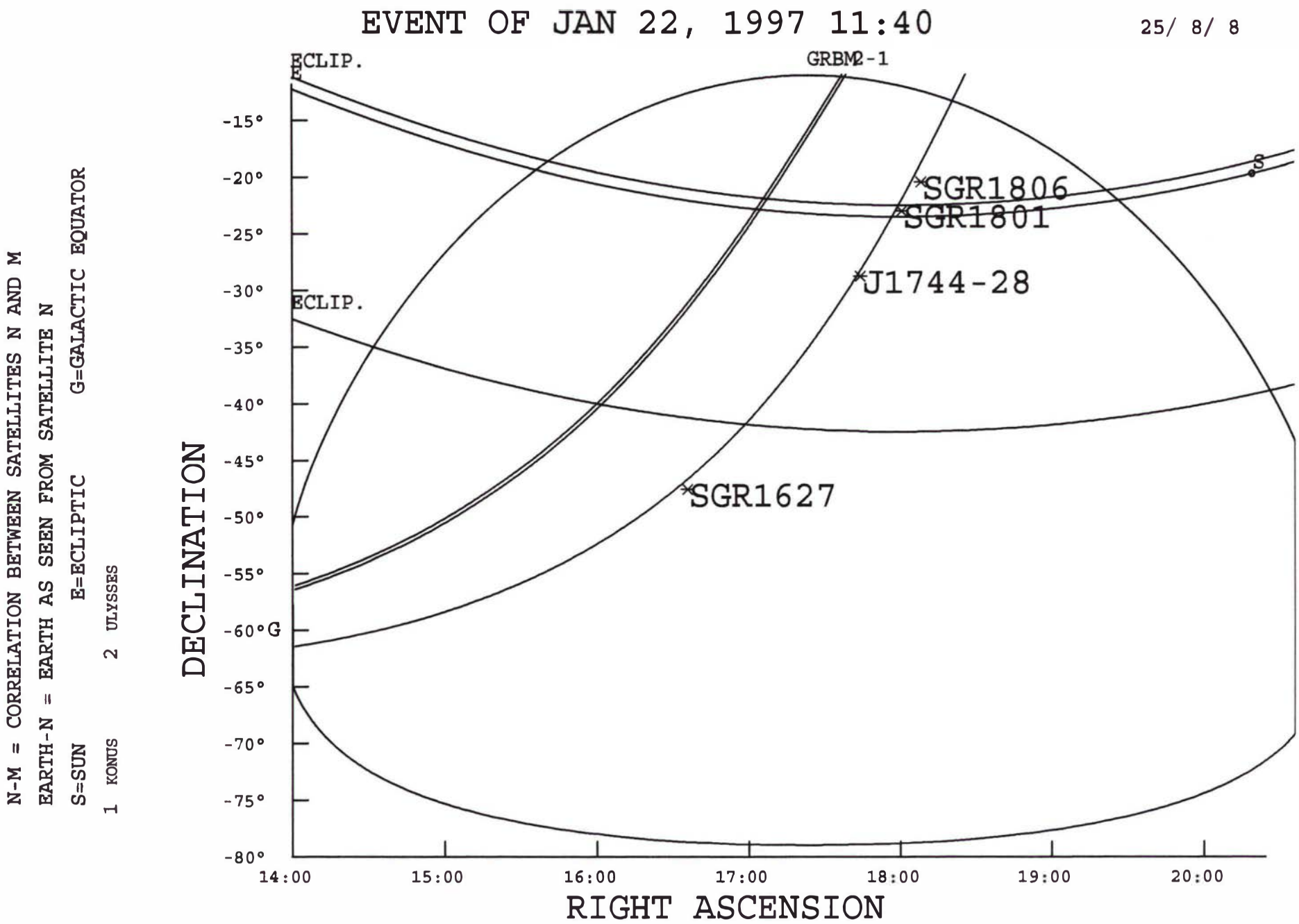
ULYSSES RT

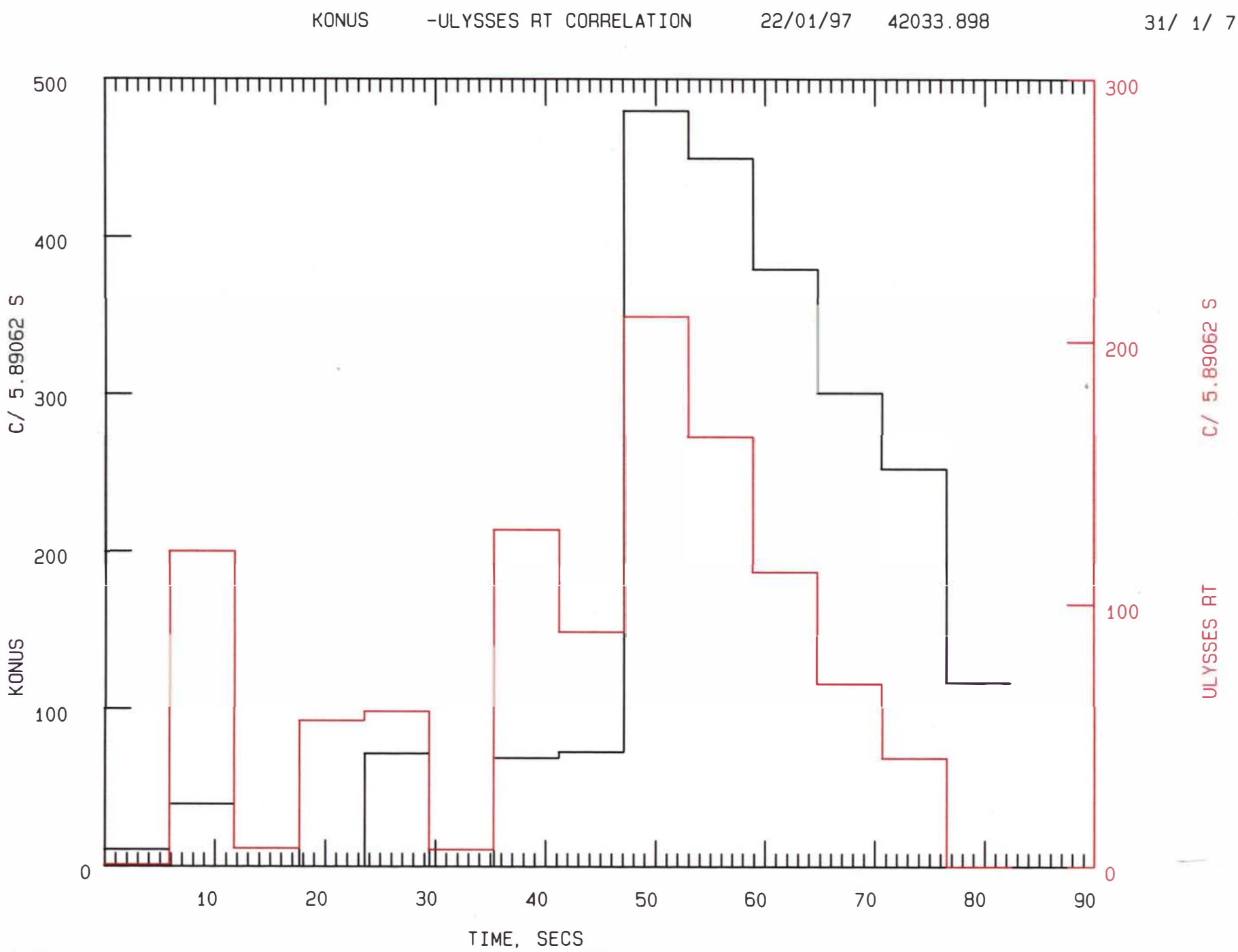
20/ 3/98

22/ 1/97 6300.074 s

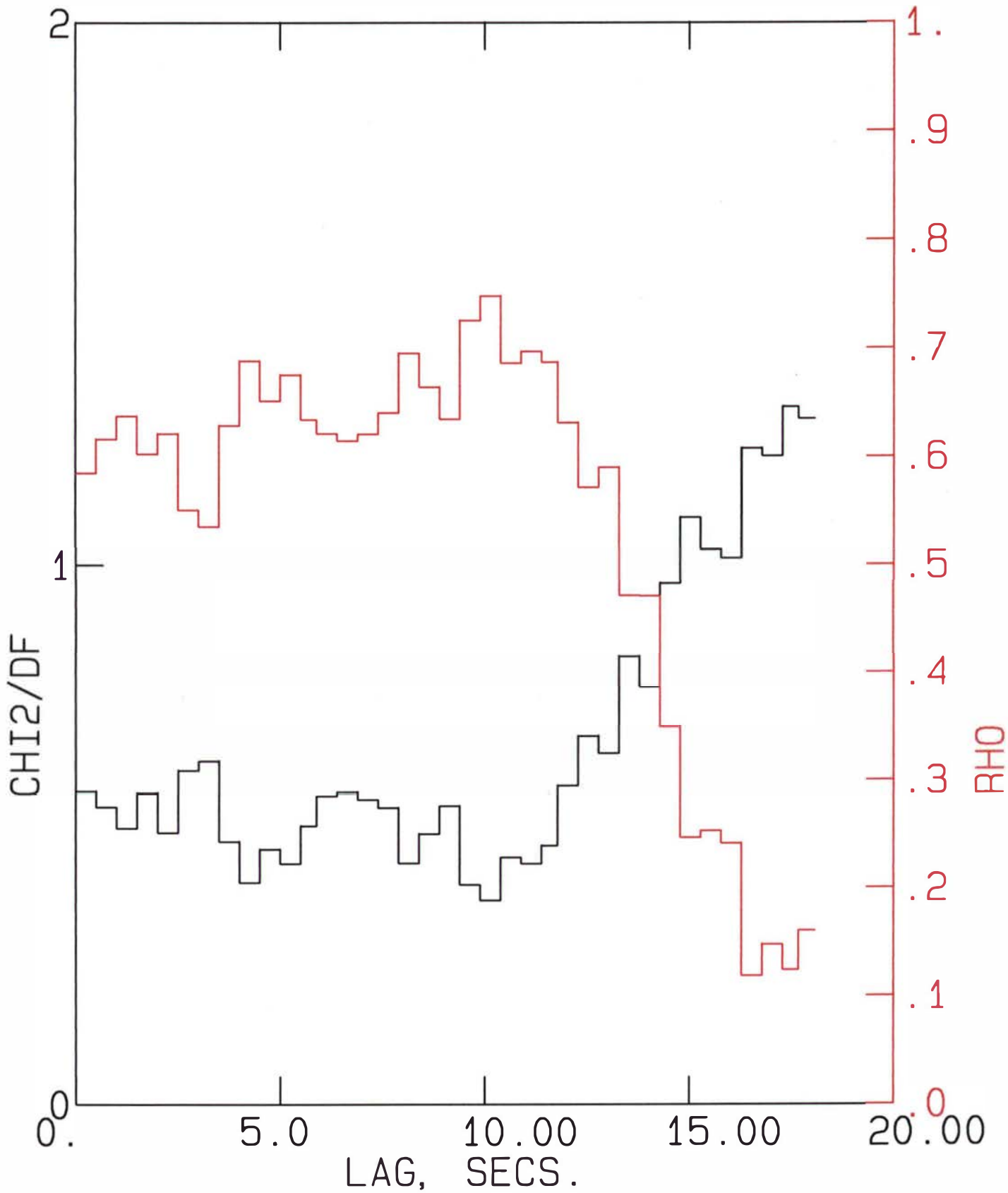
21- 146 keV

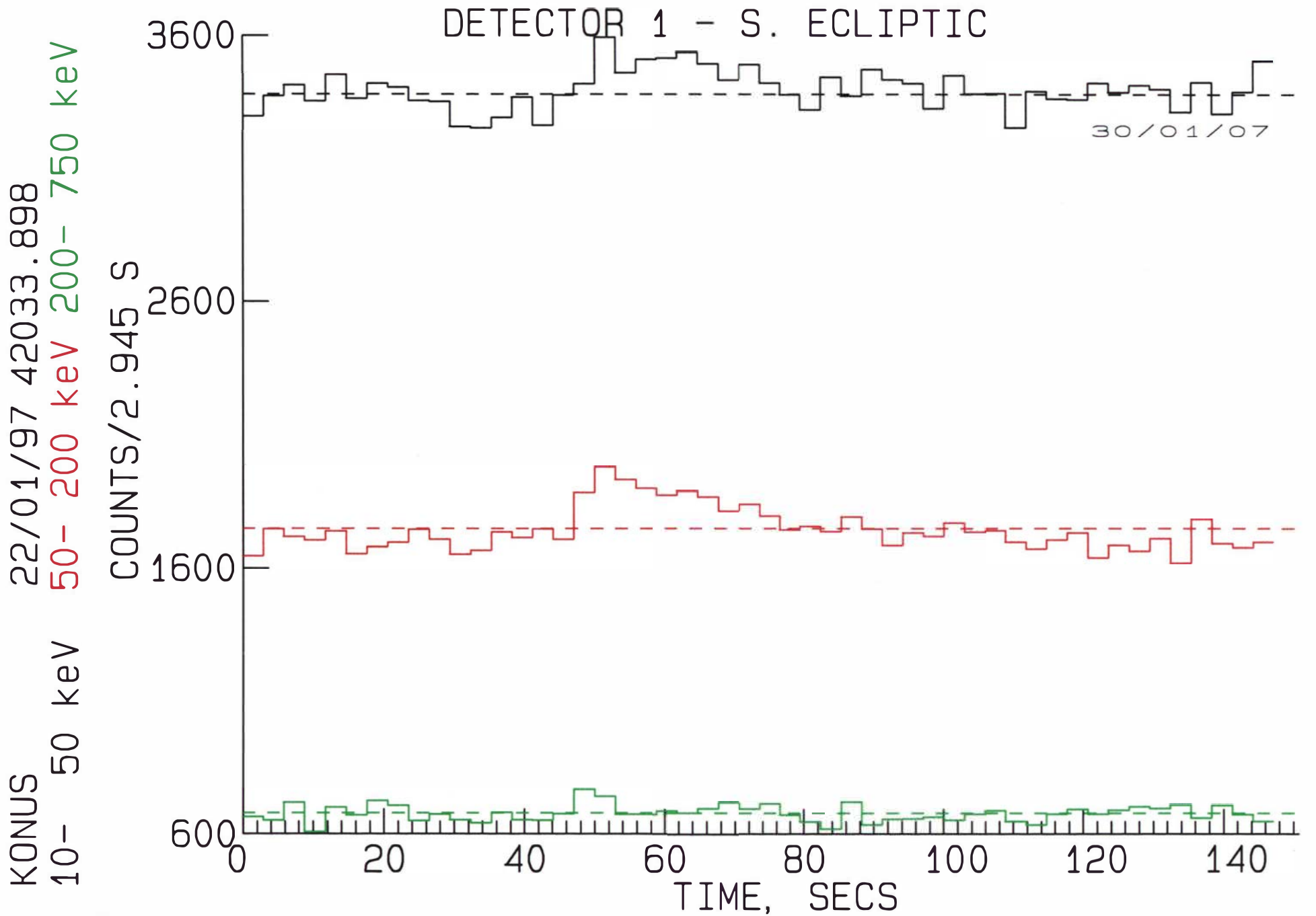


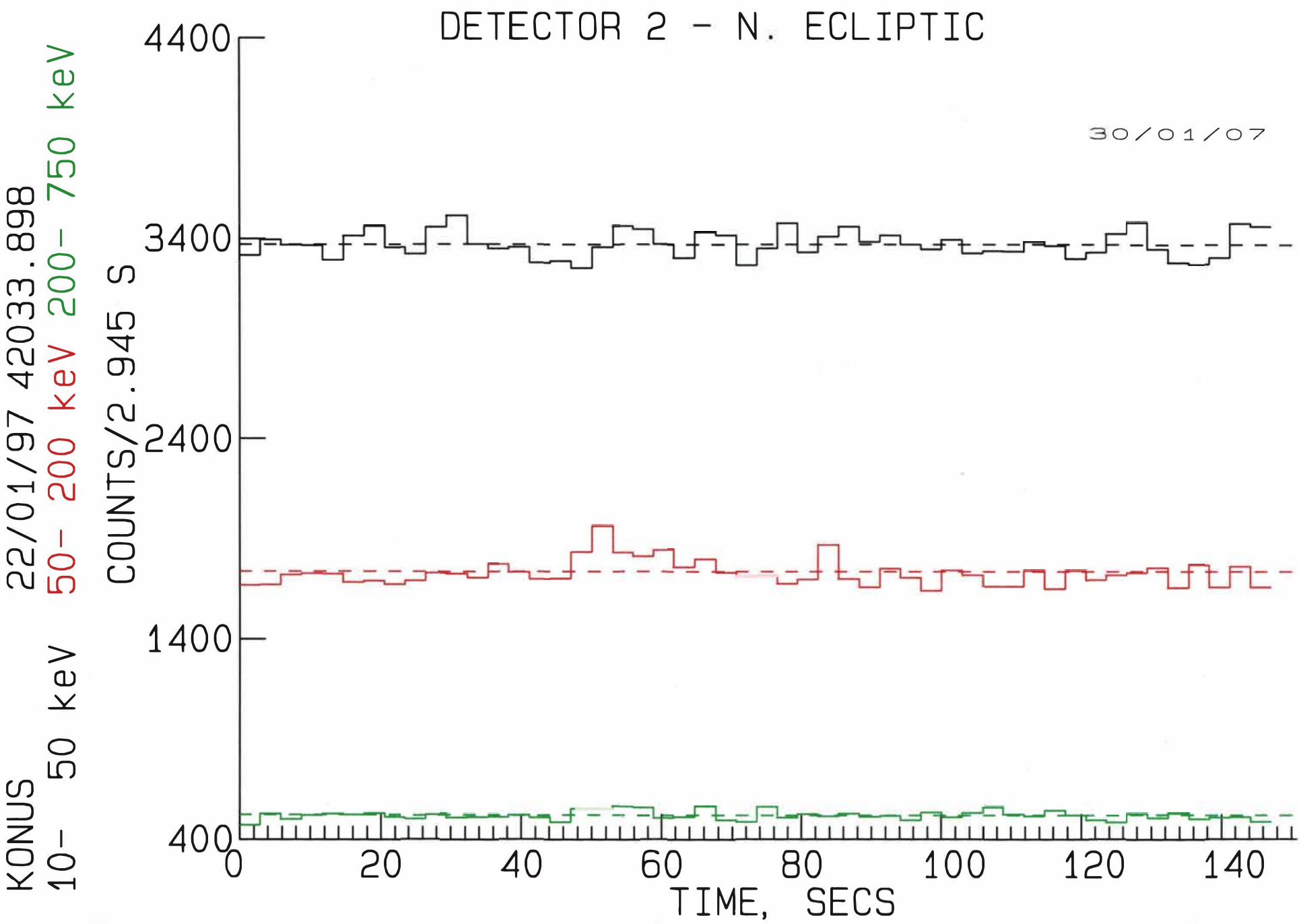

EVENT OF JAN 22, 1997 11:40
25/ 8/ 8
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS 2 ULYSSES
ECLIP.
GRBM2-1
SGR1806
SGR1801
J1744-28
ECLIP.
SGR1627
DECLINATION
-15°
-20°
-25°
-30°
-35°
-40°
-45°
-50°
-55°
-60°
-65°
-70°
-75°
-80°
14:00
15:00
16:00
17:00
18:00
19:00
20:00
RIGHT ASCENSION


KONUS -ULYSSES RT CORRELATION 22/01/97 42033.898 31/ 1/ 7
500
400
300
200
100
0
C/ 5.89062 S
KONUS
300
200
100
0
C/ 5.89062 S
ULYSSES RT
10
20
30
40
50
60
70
80
90
TIME, SECS

KONUS -ULYSSES RT CORRELATION 22/01/97 42033.898




DETECTOR 1 - S. ECLIPTIC
30/01/07
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
22/01/97 42033.898
COUNTS/2.945 S
3600
2600
1600
600
0
20
40
60
80
100
120
140
TIME, SECS


DETECTOR 2 - N. ECLIPTIC
30/01/07
KONUS
22/01/97 42033.898
10- 50 keV
50- 200 keV
200- 750 keV
COUNTS/2.945 S
4400
3400
2400
1400
400
0
20
40
60
80
100
120
140
TIME, SECS

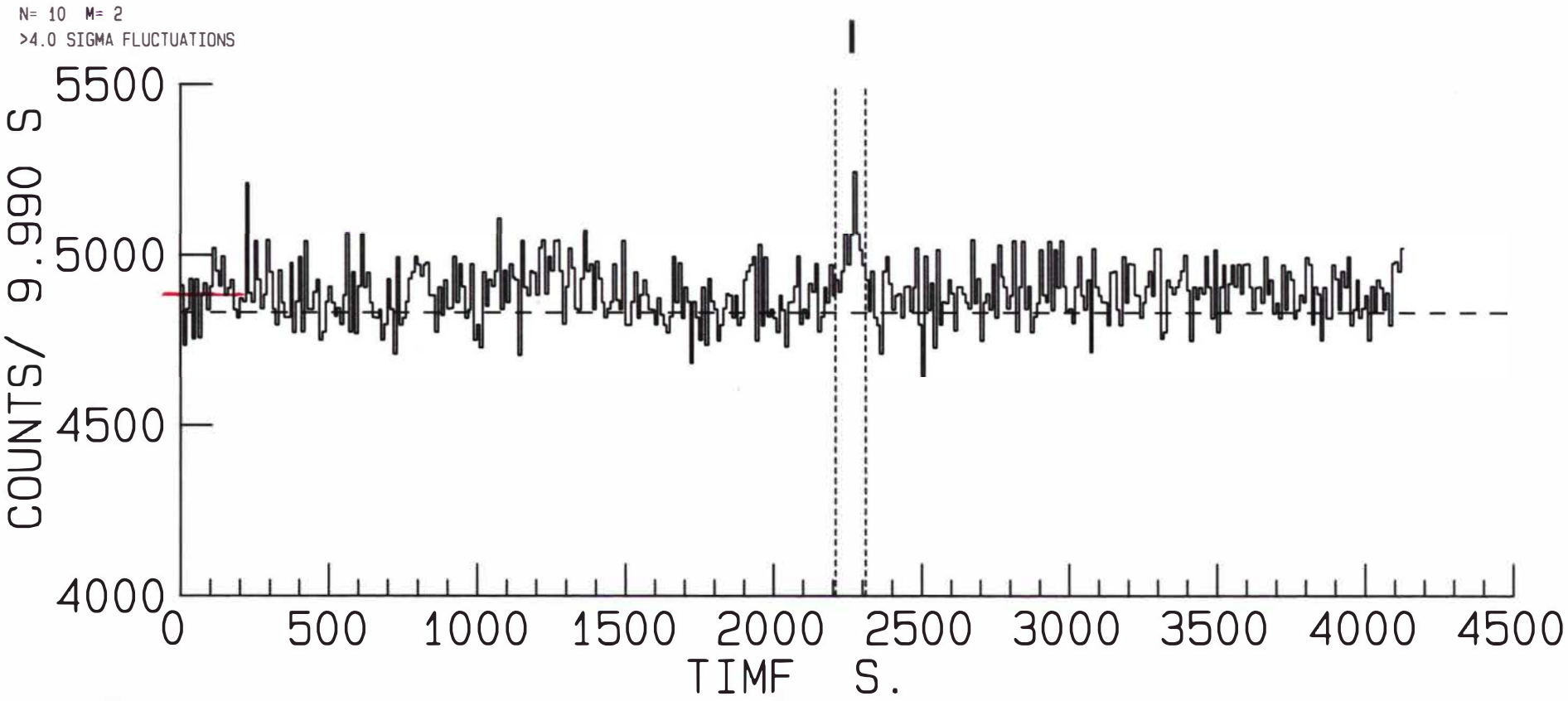
ULYSSES RT

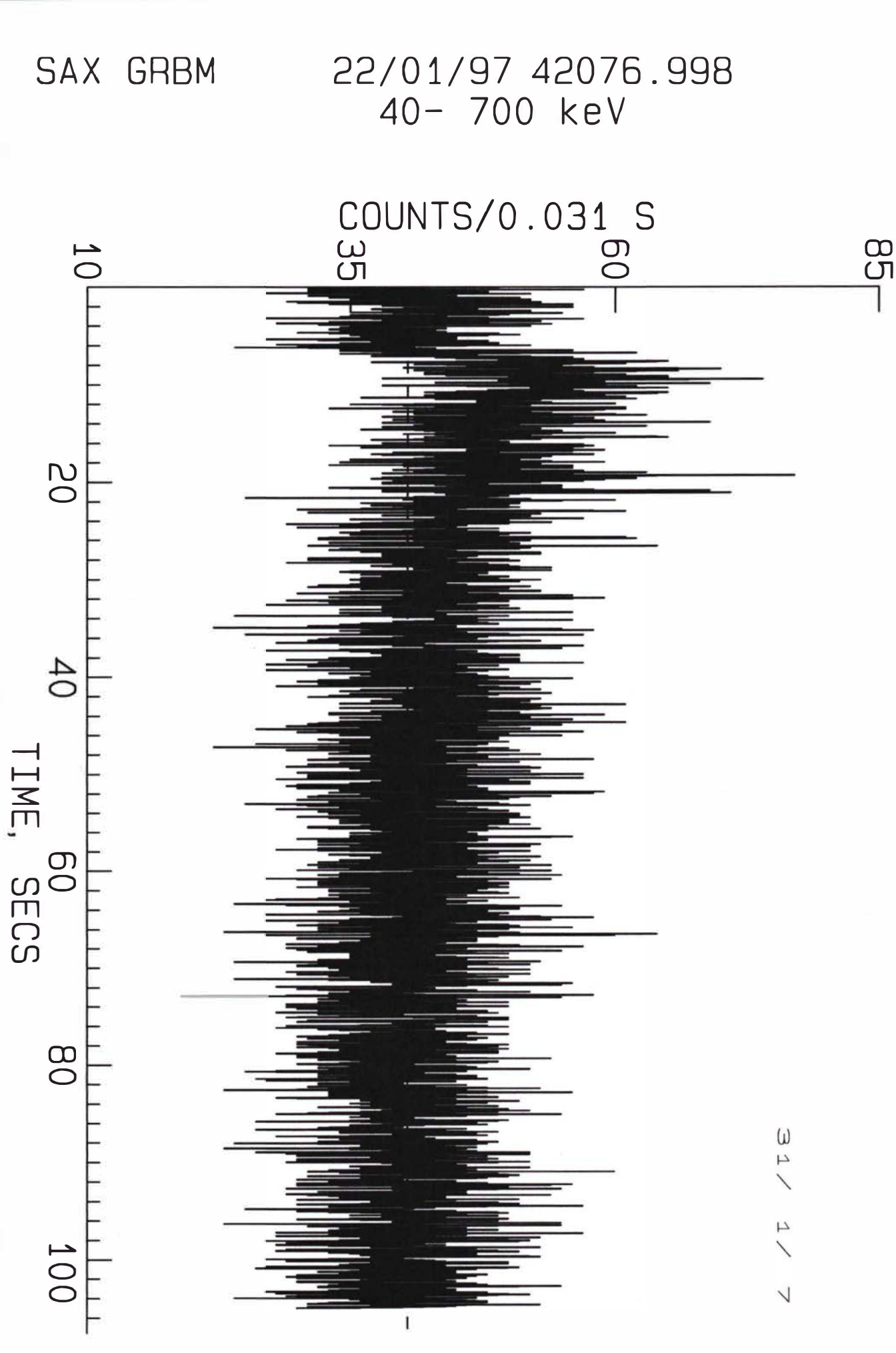
30/ 1/ 7

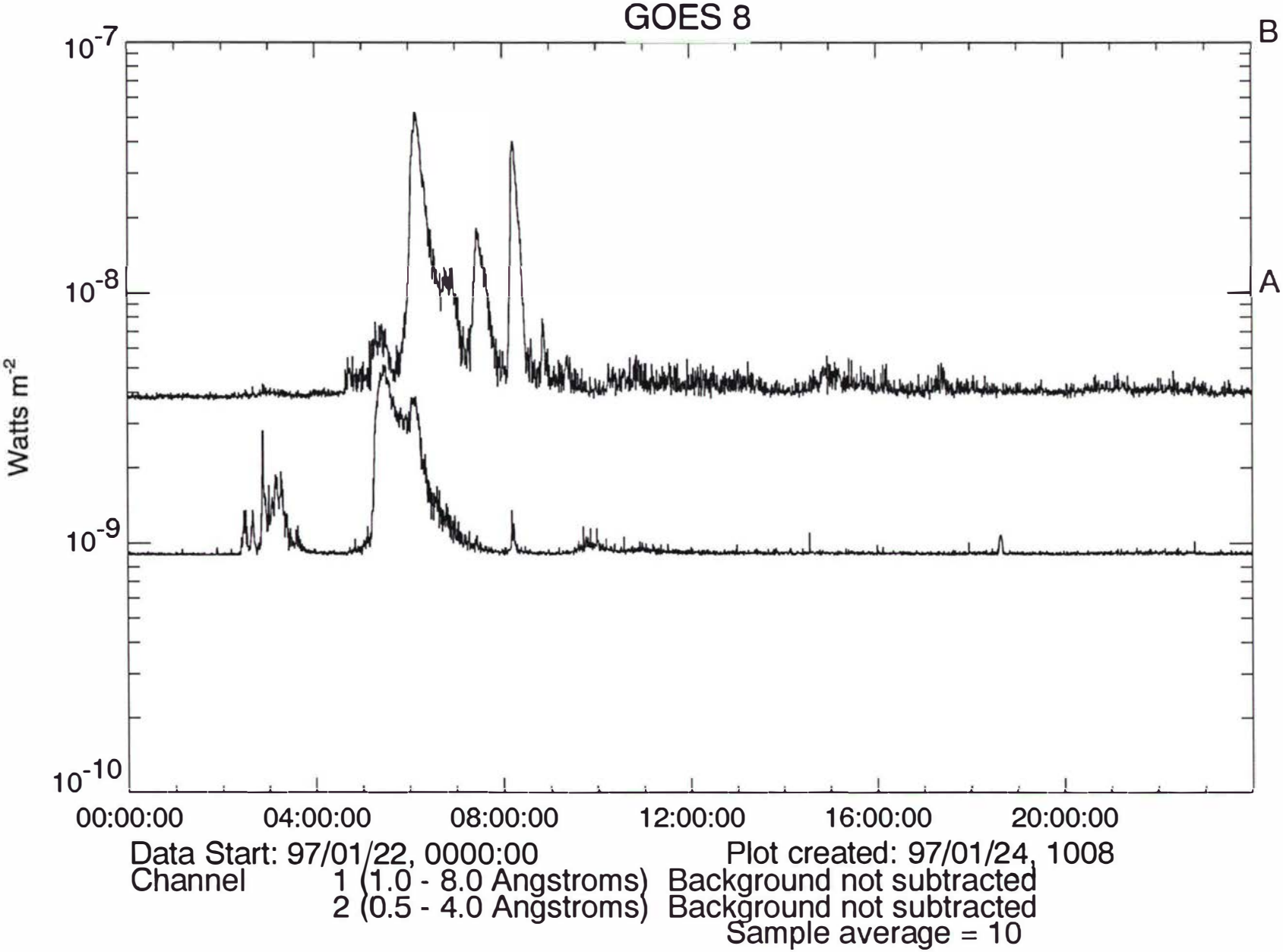
22/ 1/97 39996.480 s

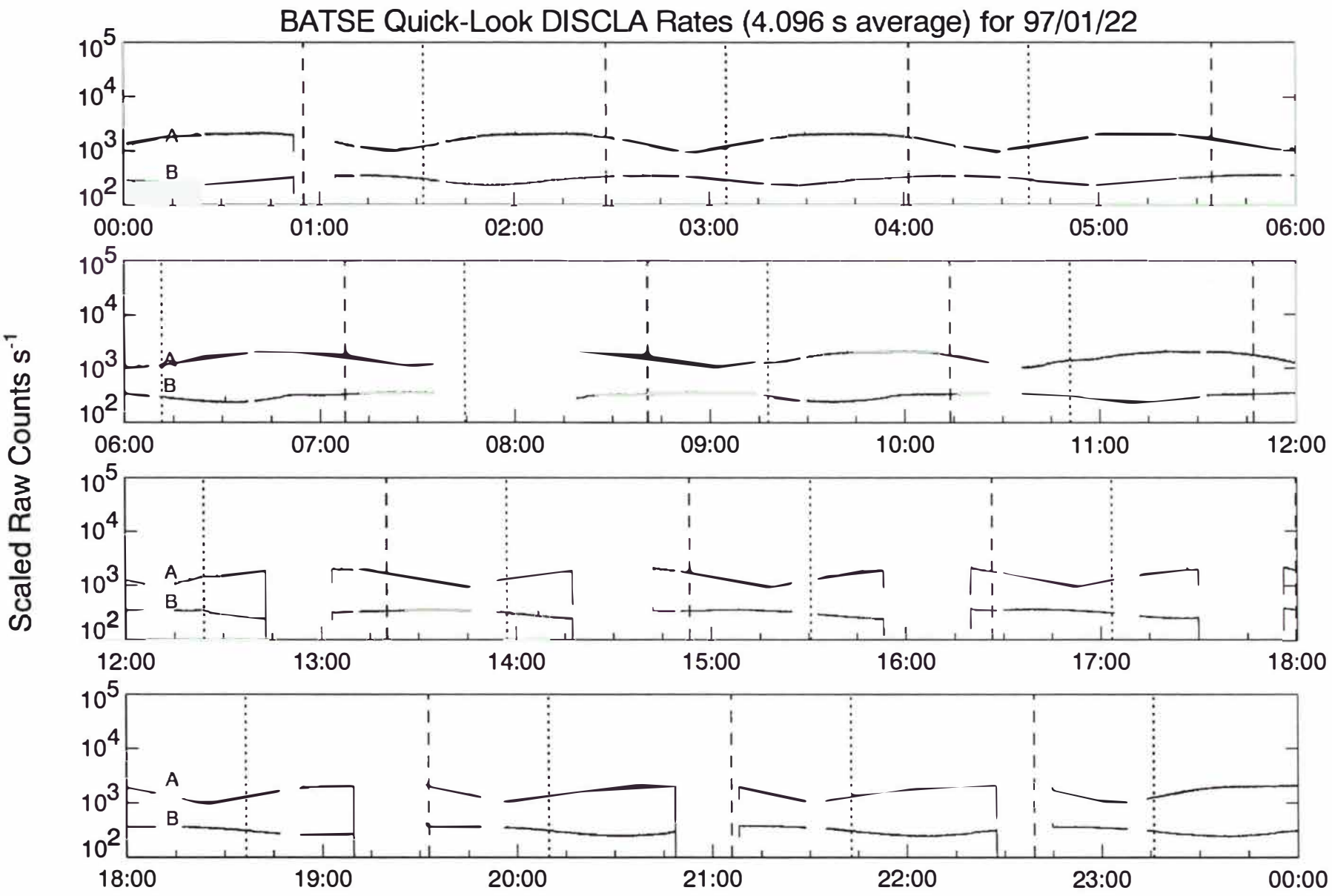
0.500 S INTERVALS REGROUPED BY 20

21- 146 keV




SAX GRBM
22/01/97 42076.998
40- 700 keV
COUNTS/0.031 S
10
35
60
85
20
40
60
80
100
TIME, SECS
31/ 1/ 7


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: 97/01/22, 0000:00
Plot created: 97/01/24, 1008
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

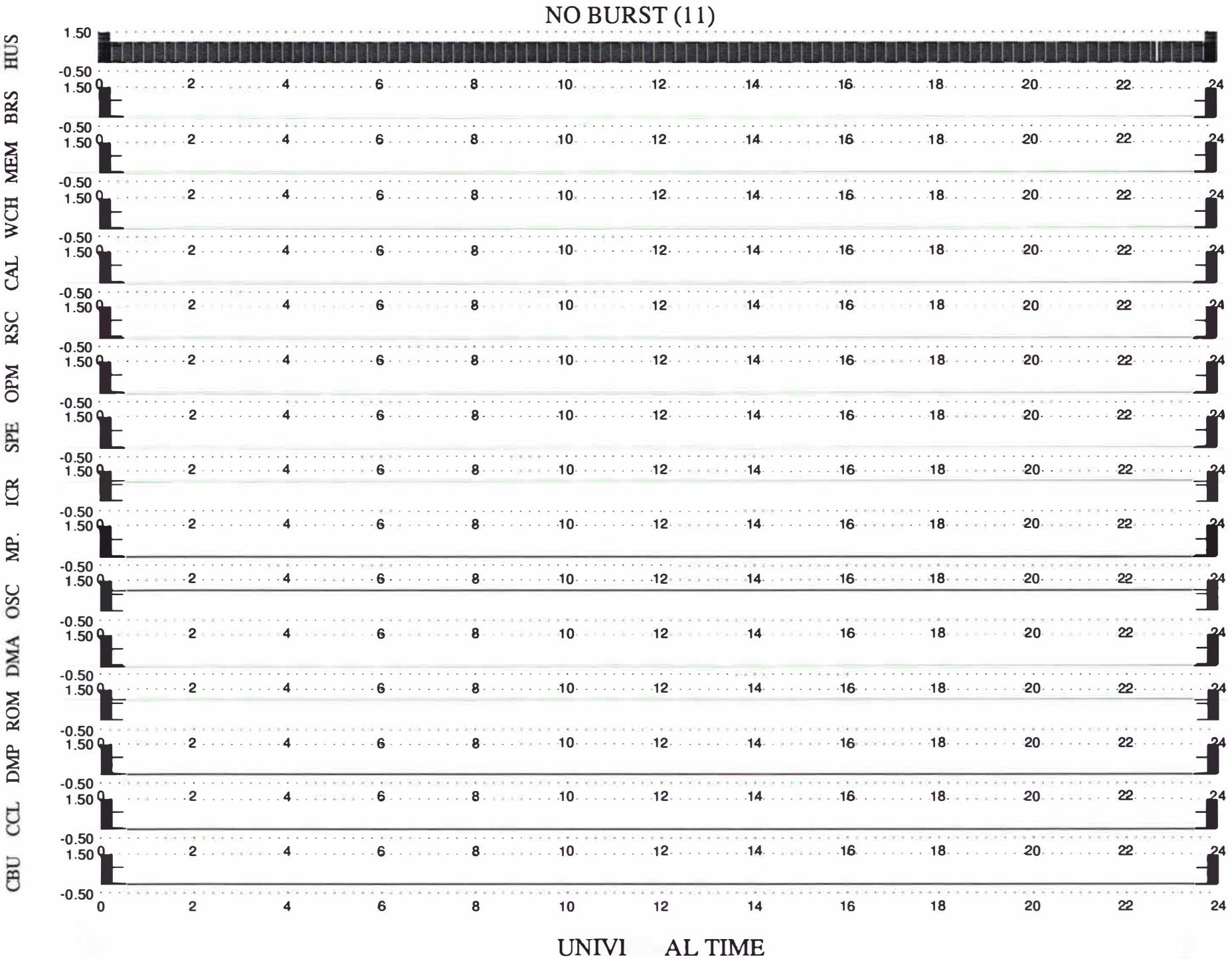


Current Time: 97/01/24, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

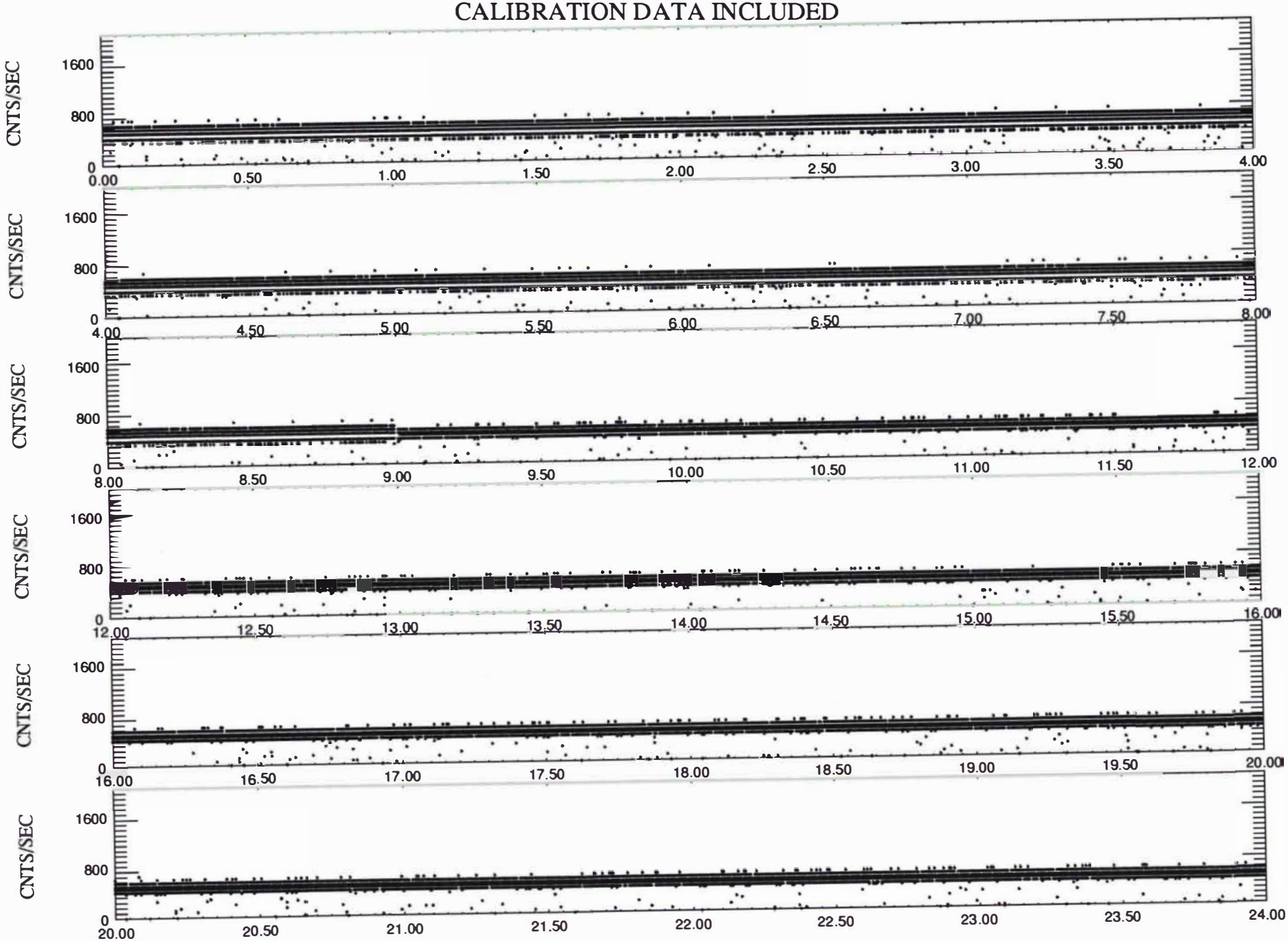
* Solar Burst Trigger
\+ Solar Flare

HUS MODES EDR day 22, year 1997 to day 22, year 1997 5/5/97



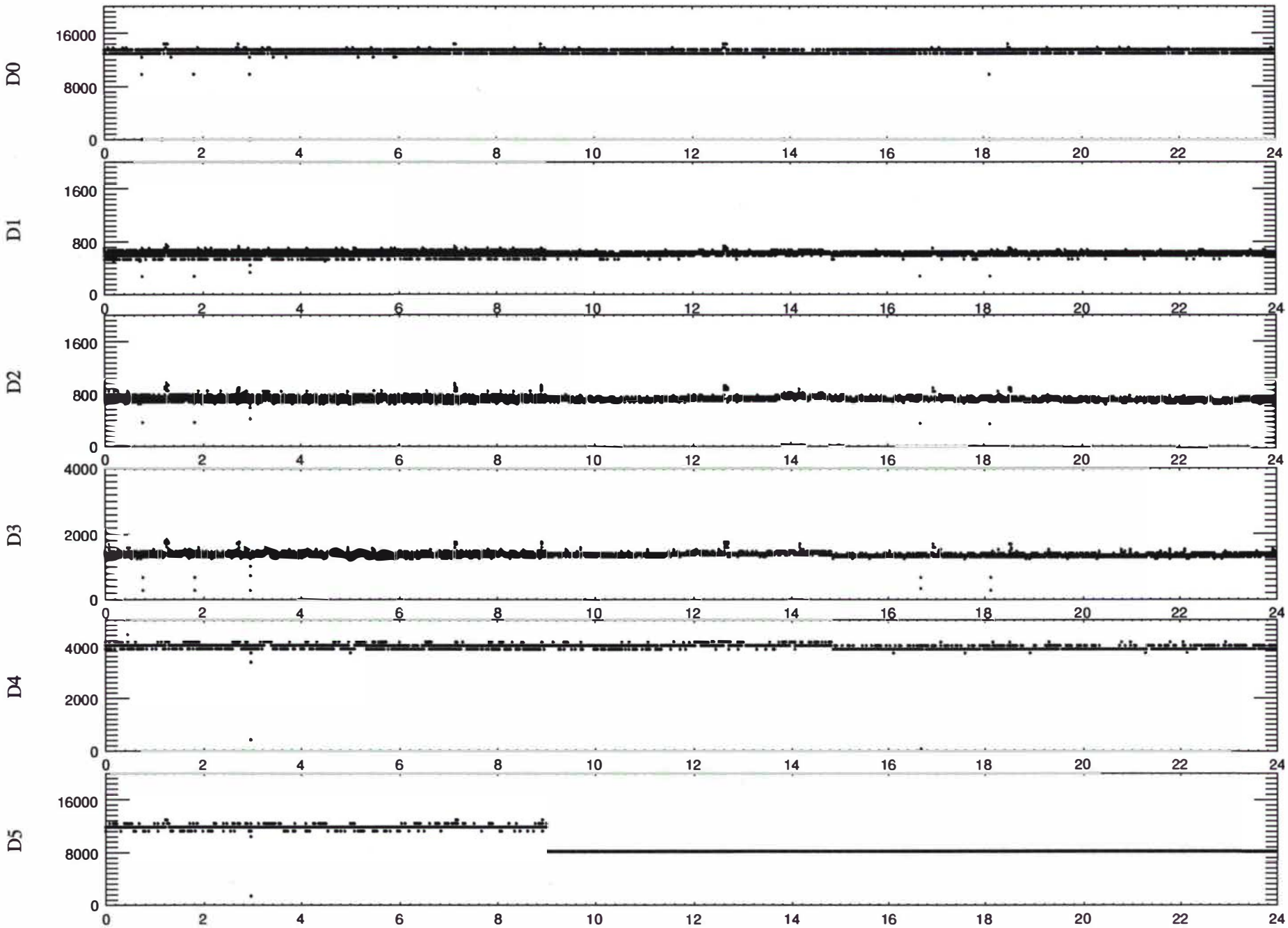
HUS 2A, MODE 1, NOT AVERAGED EDR day 22, year 1997 to day 22, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 22, year 1997 to day 22, year 1997 5/5/97



RXTE ASM

13/10/00

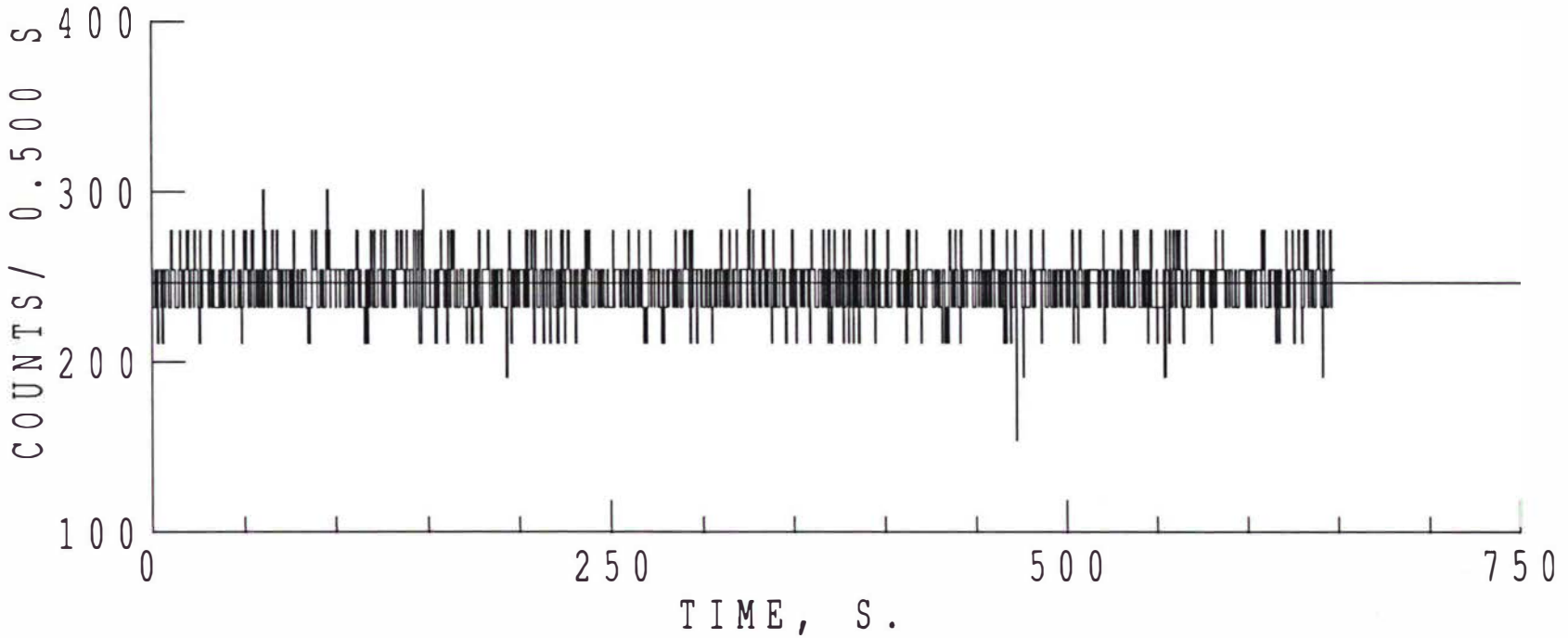
ULYSSES RT

23/01/97 4680.097 s

0- 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Mon Jan 27 12:03 PST 1997
Date: Mon, 27 Jan 1997 14:03:25 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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.: 5913

TIME: TJD=0471 SECONDS=13574

TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYGNUS X-1 FLUCTUATION

Date: Jan 31 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

☐ 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?

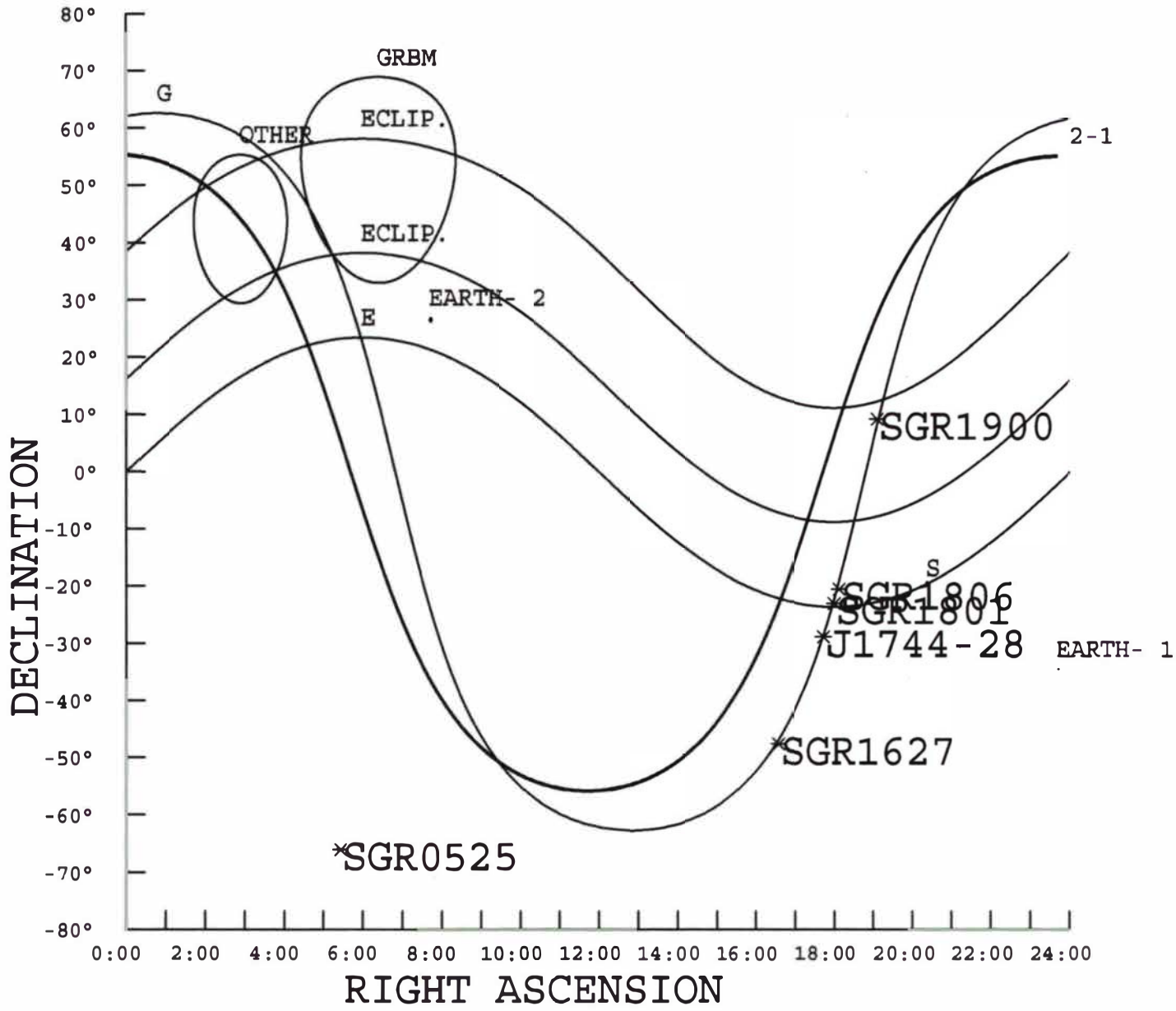
☑ ACCESS and MBL4 databases updated?

IPN/Konus EL position in concs. w. GRBM circle, but concs. w. GRBM contour "Other" circle added

EVENT OF JAN 23, 1997 8:35

23/ 7/ 9

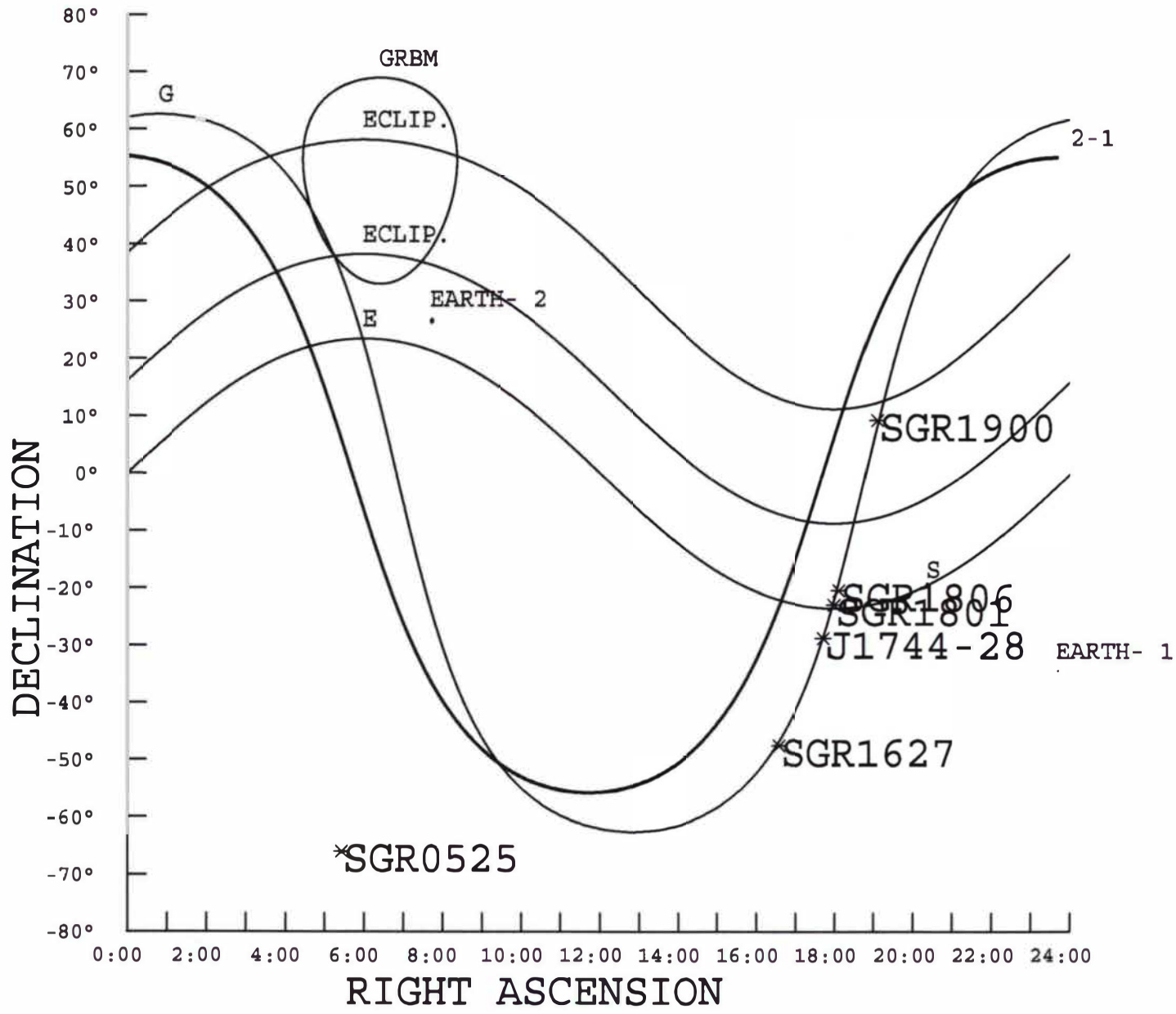
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS



EVENT OF JAN 23, 1997 8:35

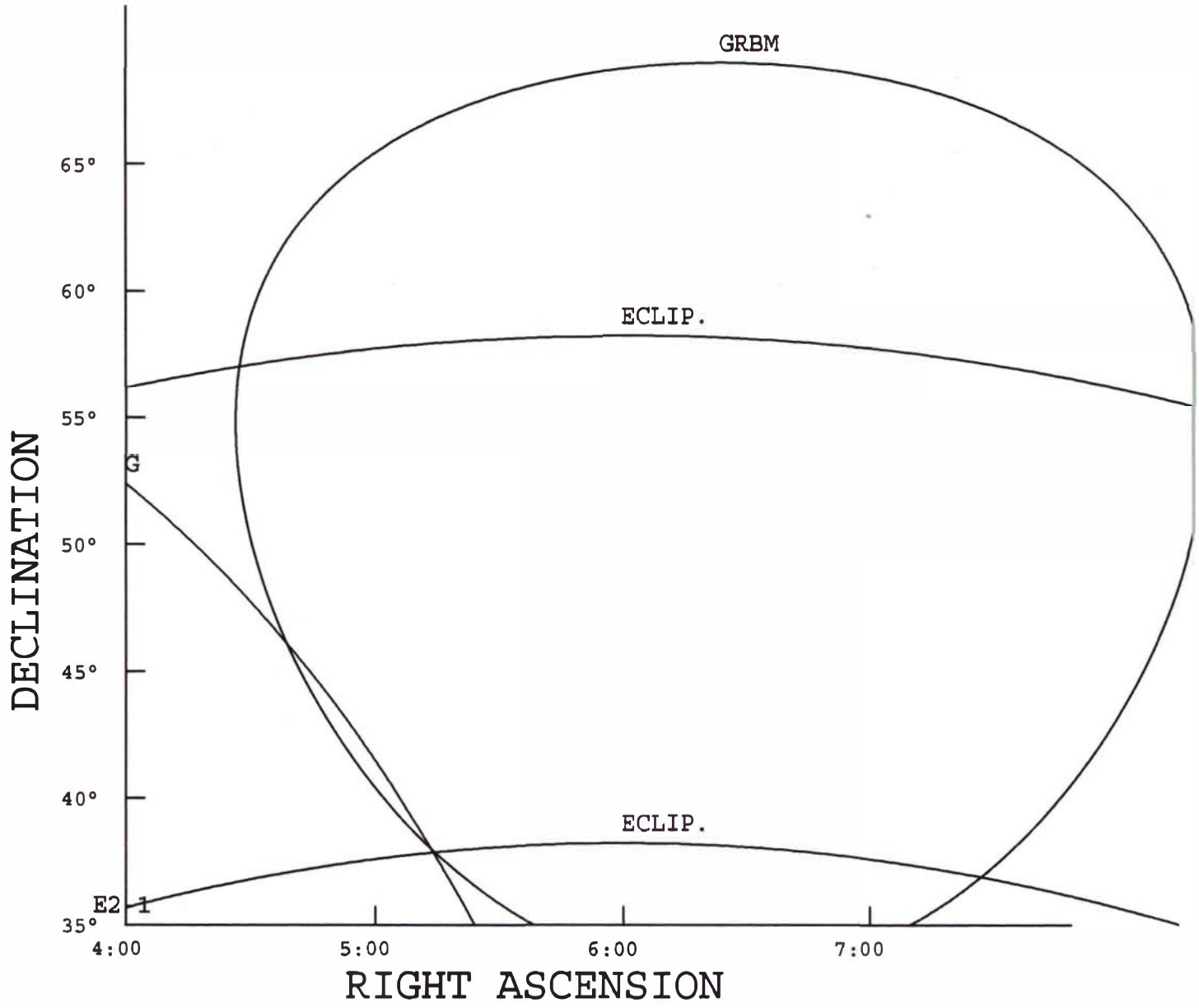
14/ 5/ 9

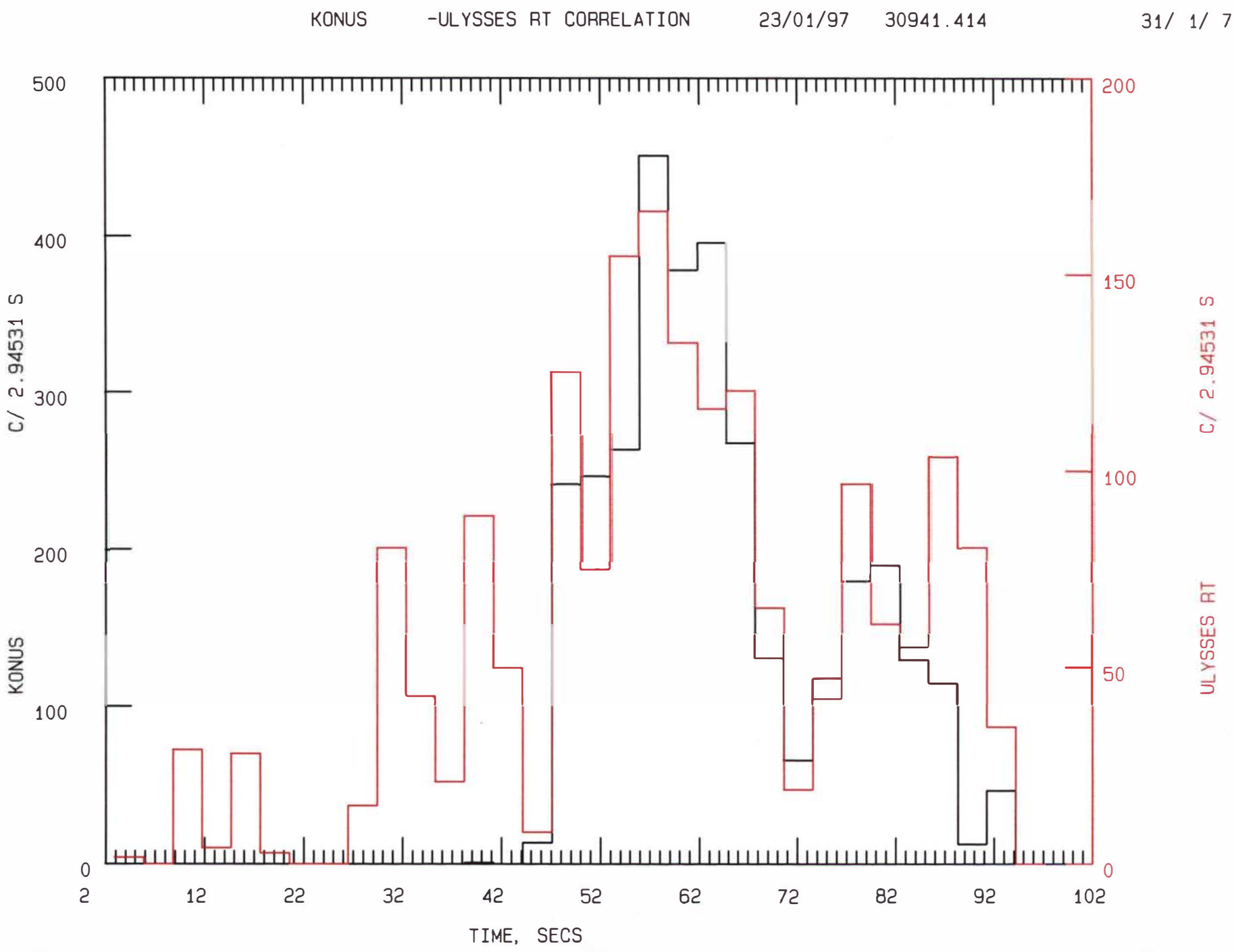
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS



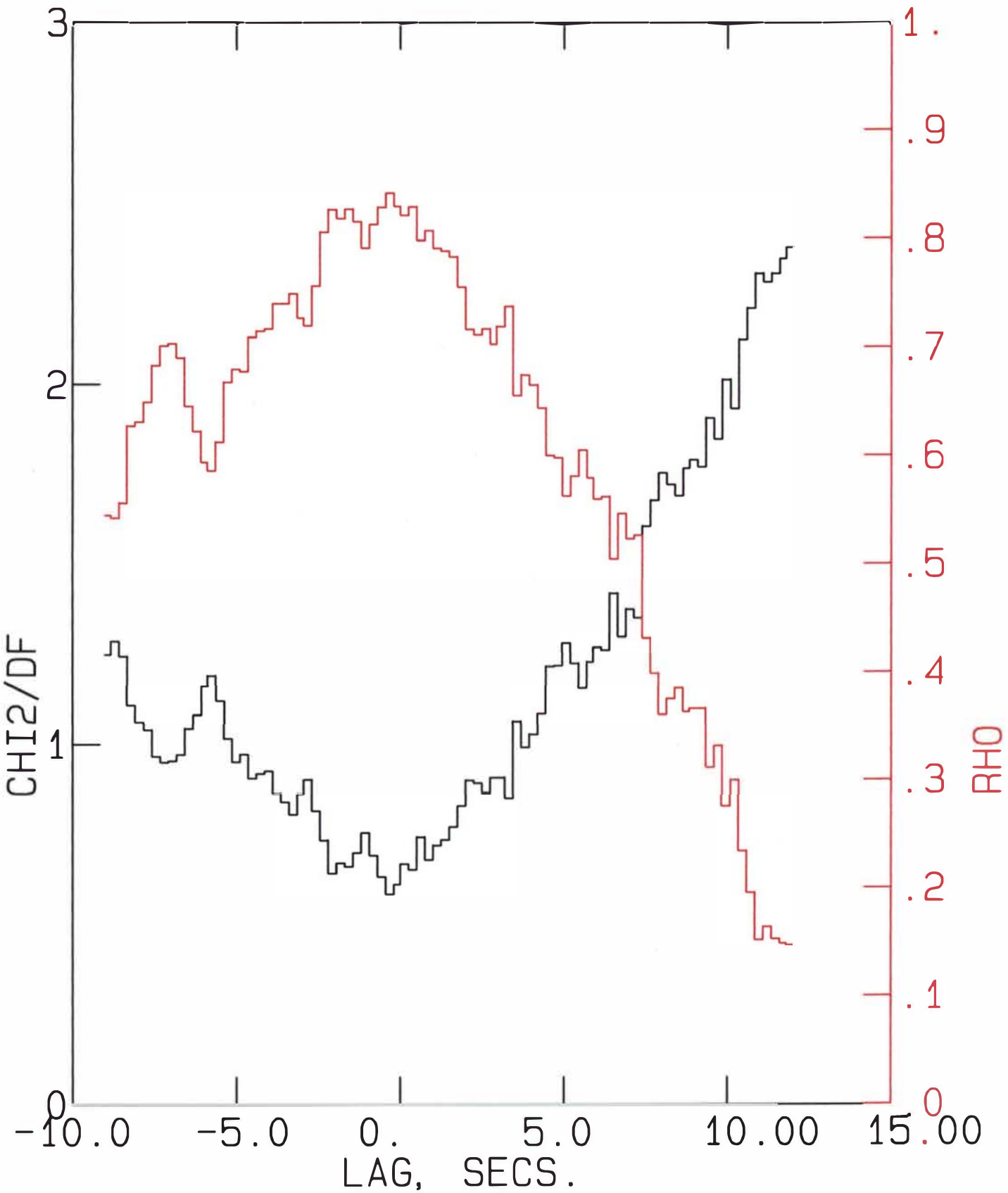
EVENT OF JAN 23, 1997 8:35

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




KONUS -ULYSSES RT CORRELATION 23/01/97 30941.414 31/ 1/ 7
500
400
300
200
100
0
C/ 2.94531 S
KONUS
200
150
100
50
0
C/ 2.94531 S
ULYSSES RT
2
12
22
32
42
52
62
72
82
92
102
TIME, SECS

KONUS -ULYSSES RT CORRELATION 23/01/97 30941.414



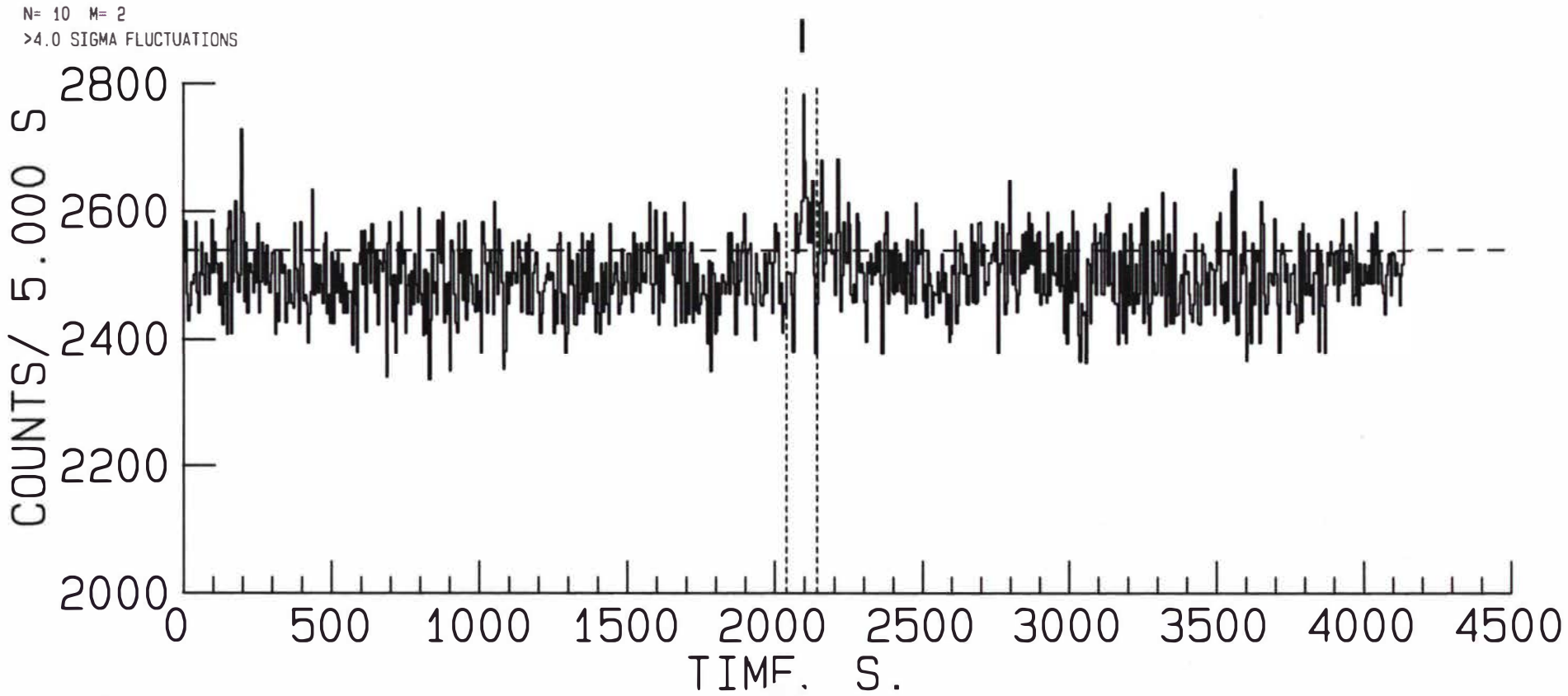
ULYSSES RT

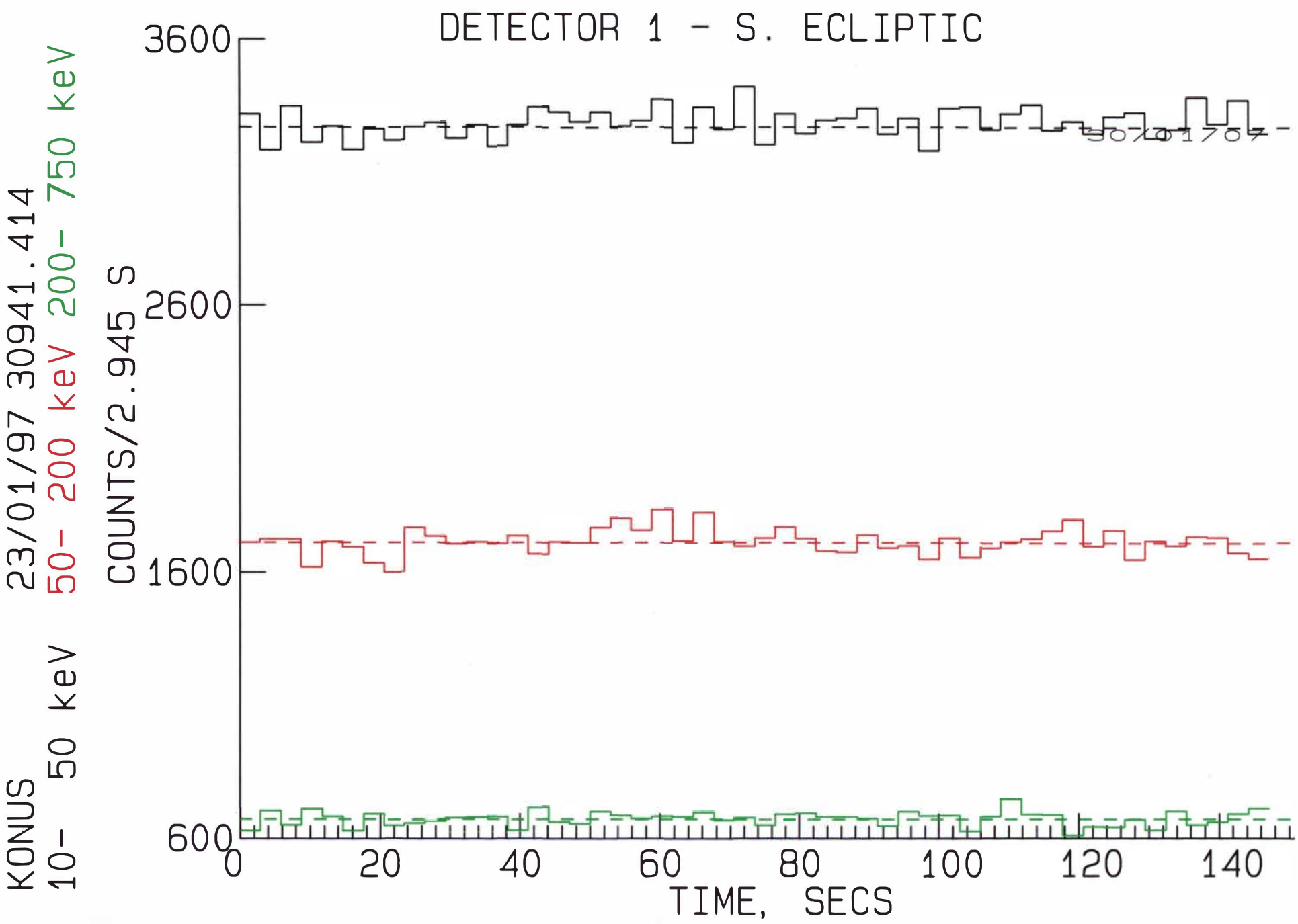
30/ 1/ 7

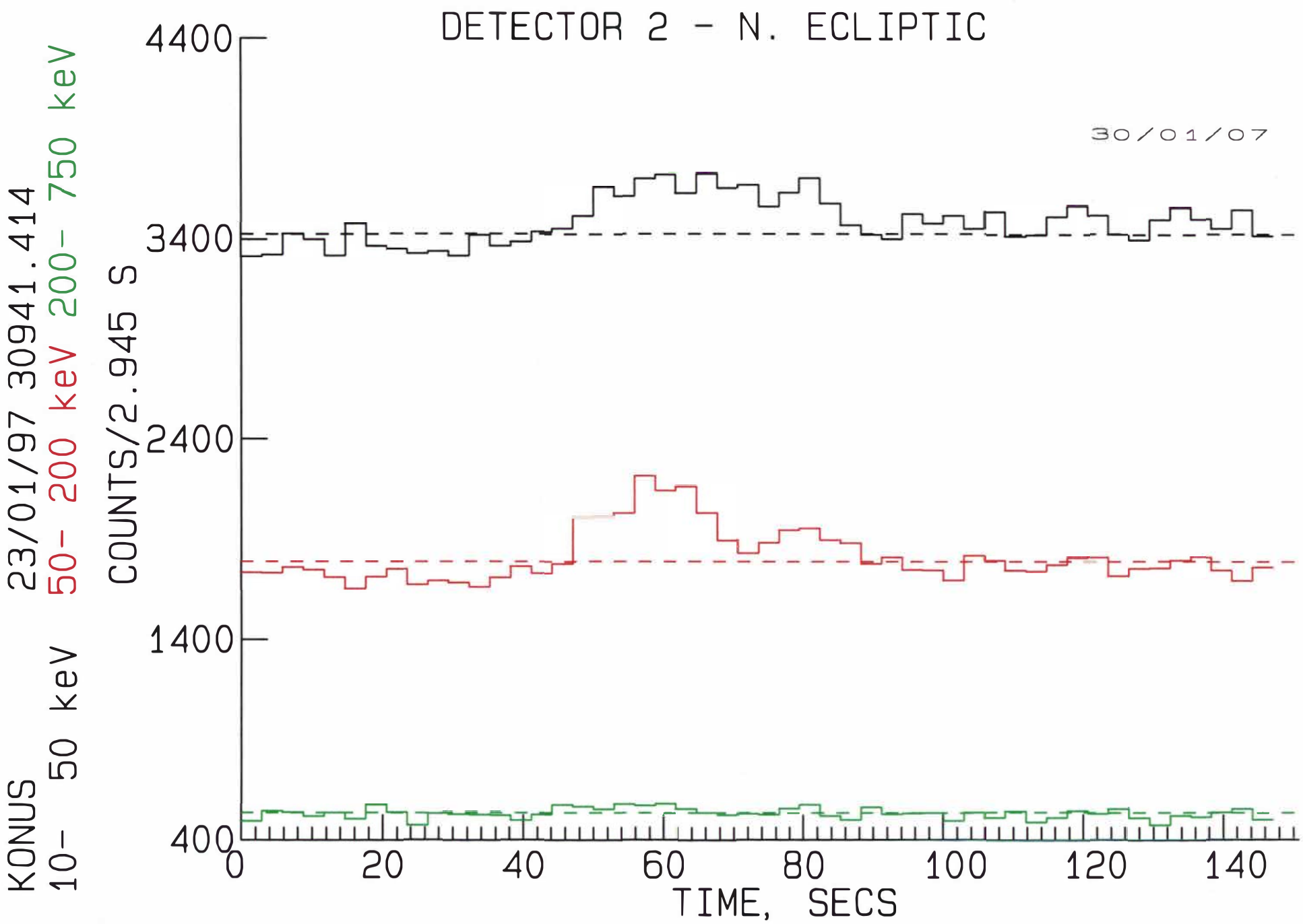
23/ 1/97 28908.145 s

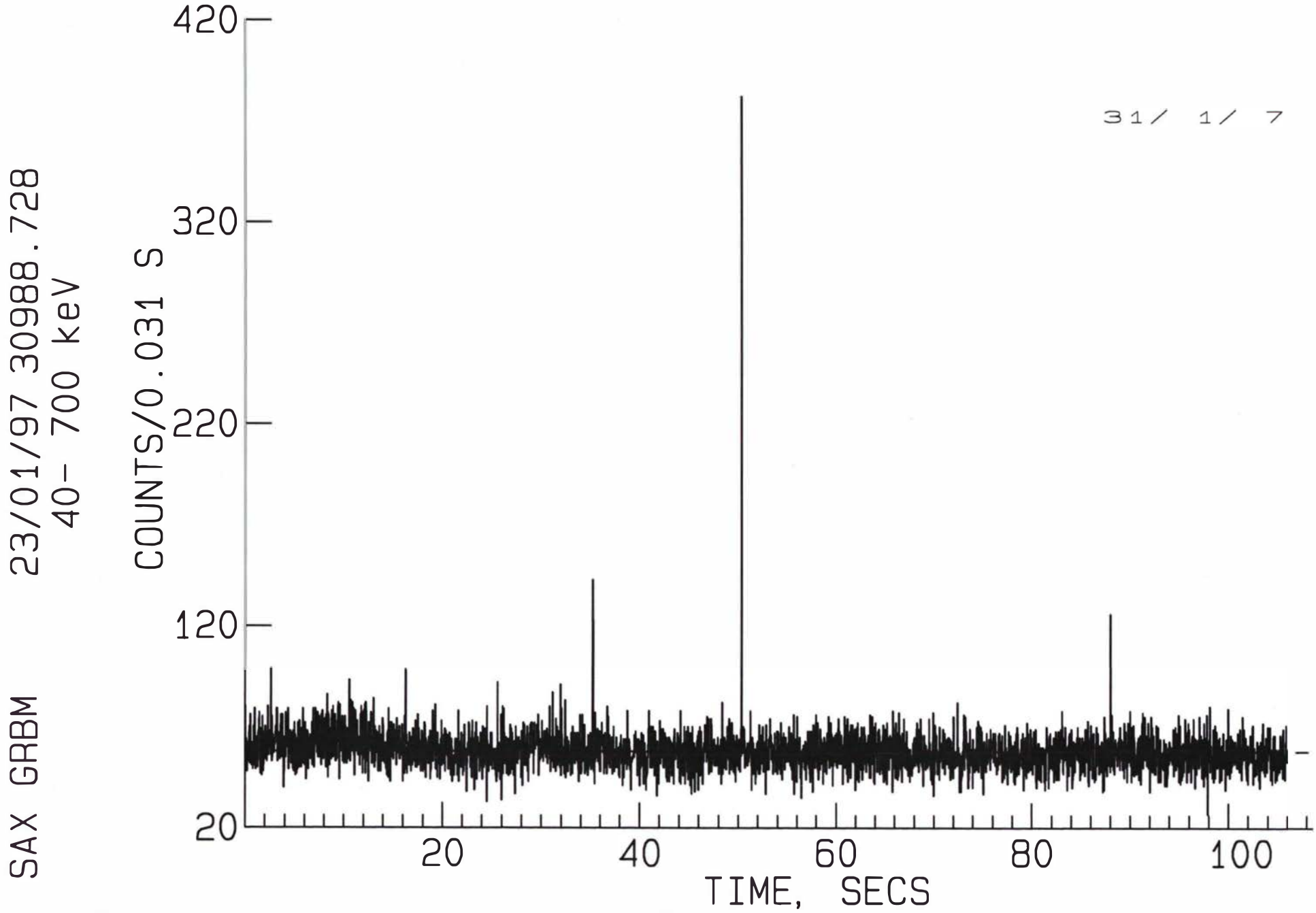
0.250 S INTERVALS REGROUPED BY 20

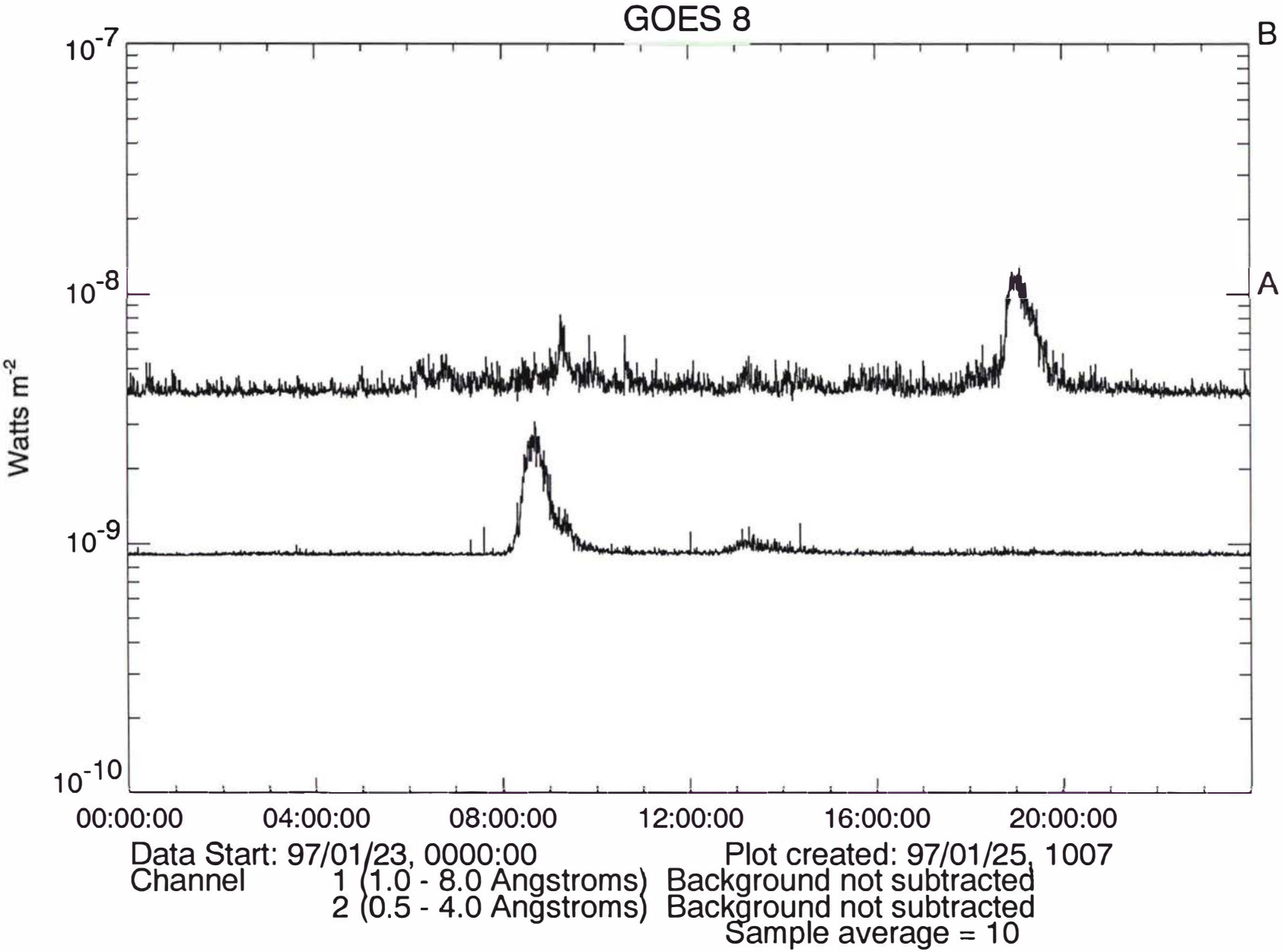
21- 146 keV

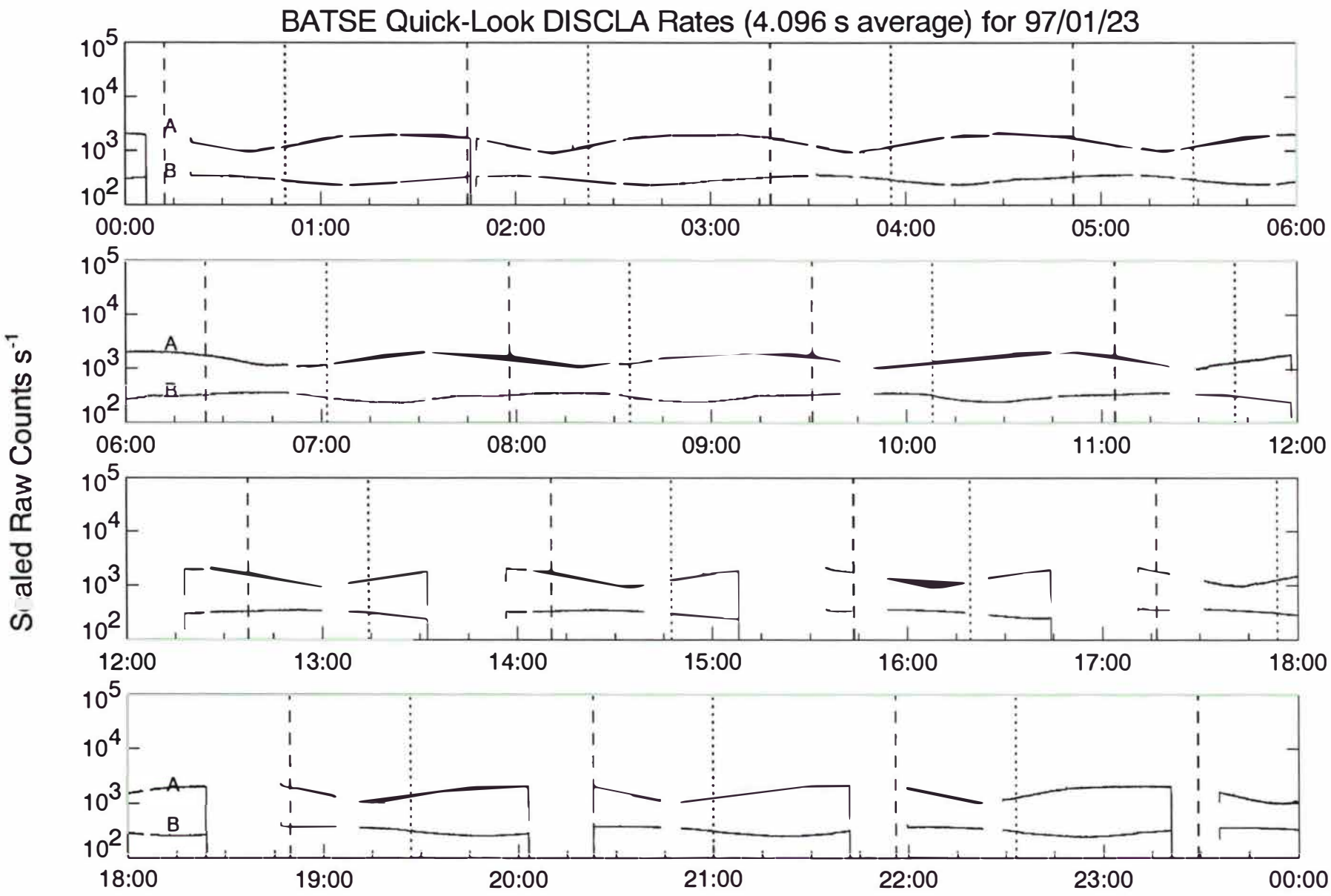



DETECTOR 1 - S. ECLIPTIC
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
23/01/97 30941.414
COUNTS/2.945 S
3600
2600
1600
600
0
20
40
60
80
100
120
140
TIME, SECS

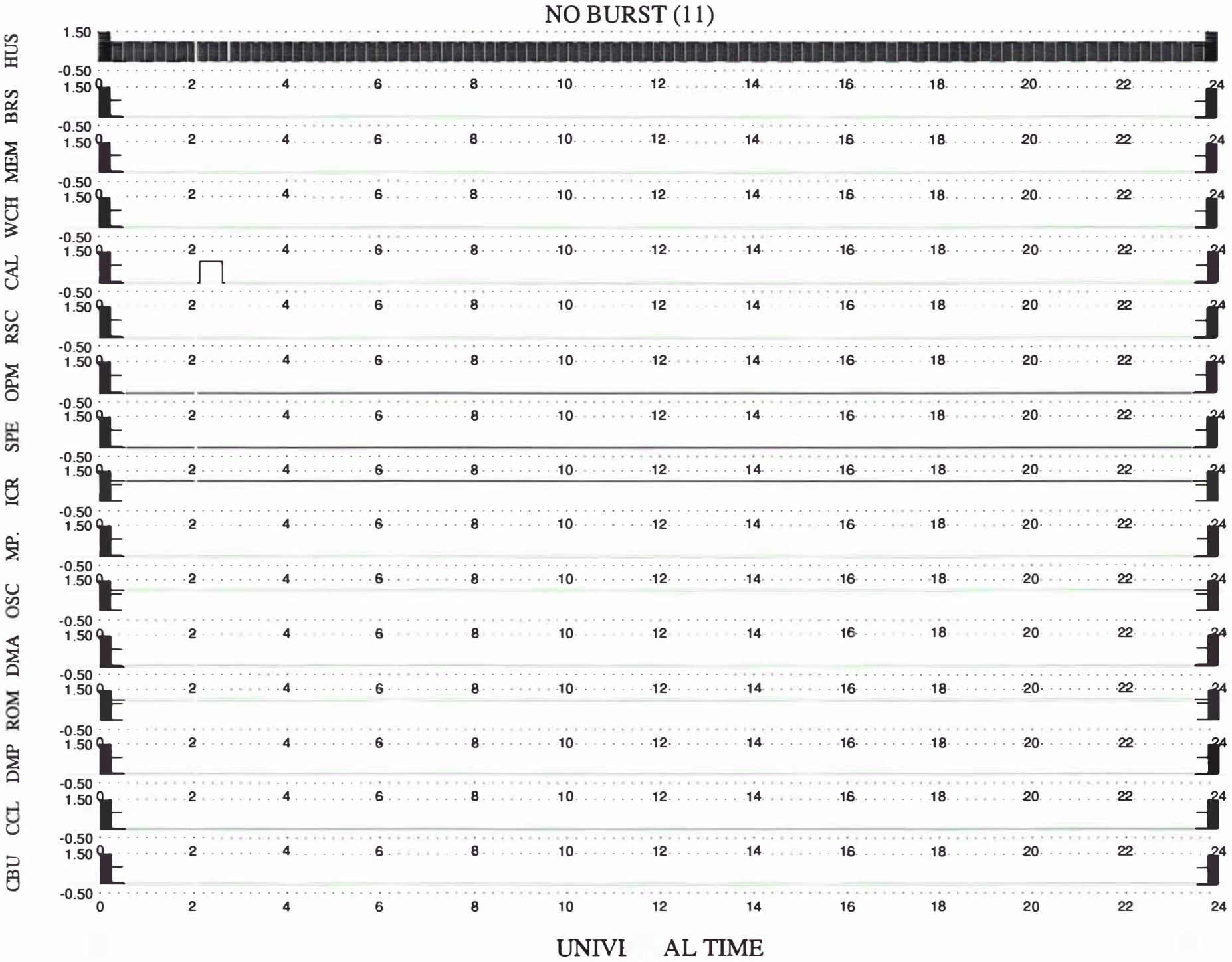

DETECTOR 2 - N. ECLIPTIC
30/01/07
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
23/01/97 30941.414
COUNTS/2.945 S
4400
3400
2400
1400
400
0
20
40
60
80
100
120
140
TIME, SECS


SAX GRBM
23/01/97 30988.728
40- 700 keV
COUNTS/0.031 S
420
320
220
120
20
20
40
60
80
100
TIME, SECS
31/ 1/ 7


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: 97/01/23, 0000:00
Plot created: 97/01/25, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

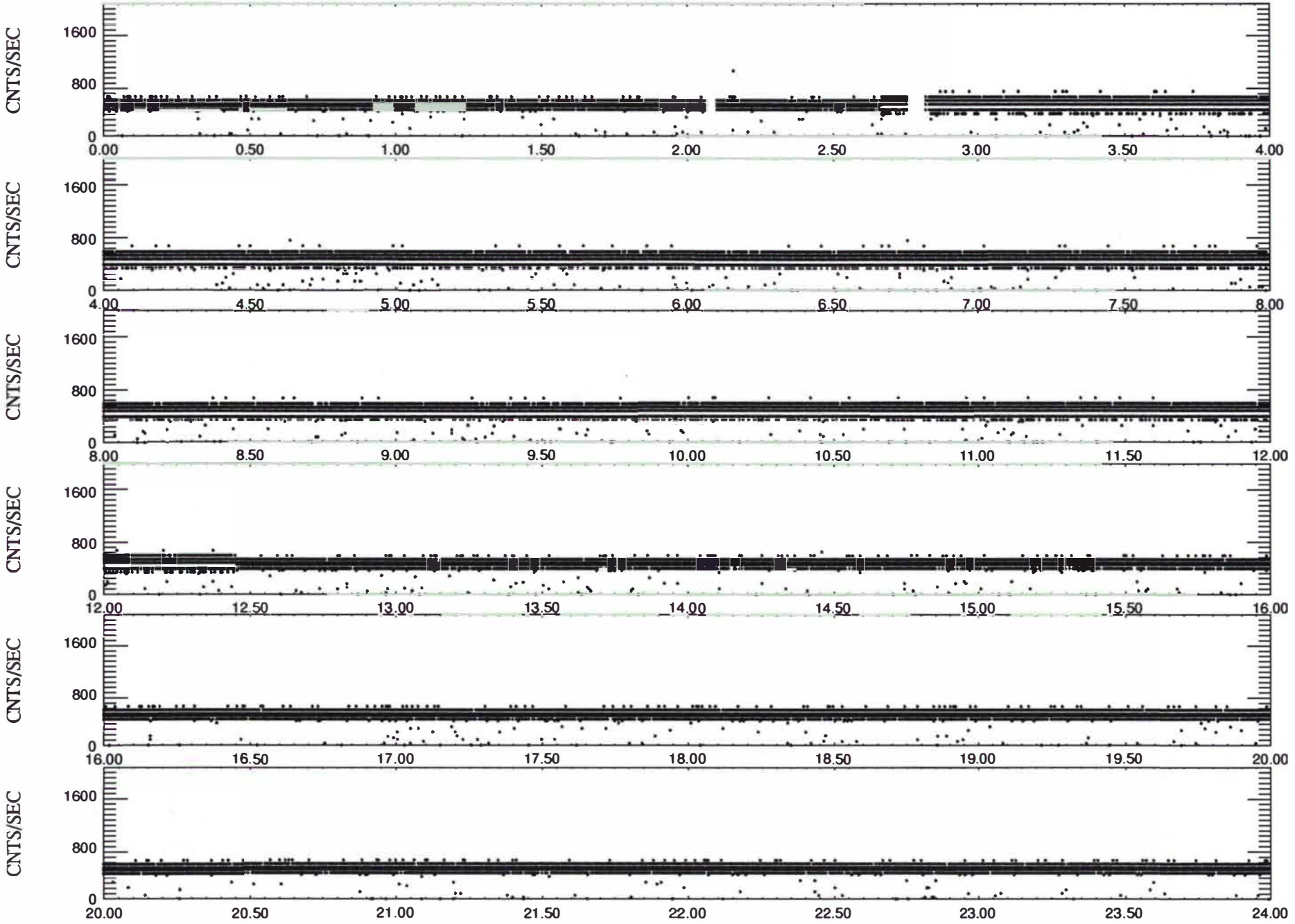

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/23
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/25, 1008 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 23, year 1997 to day 23, year 1997 5/5/97



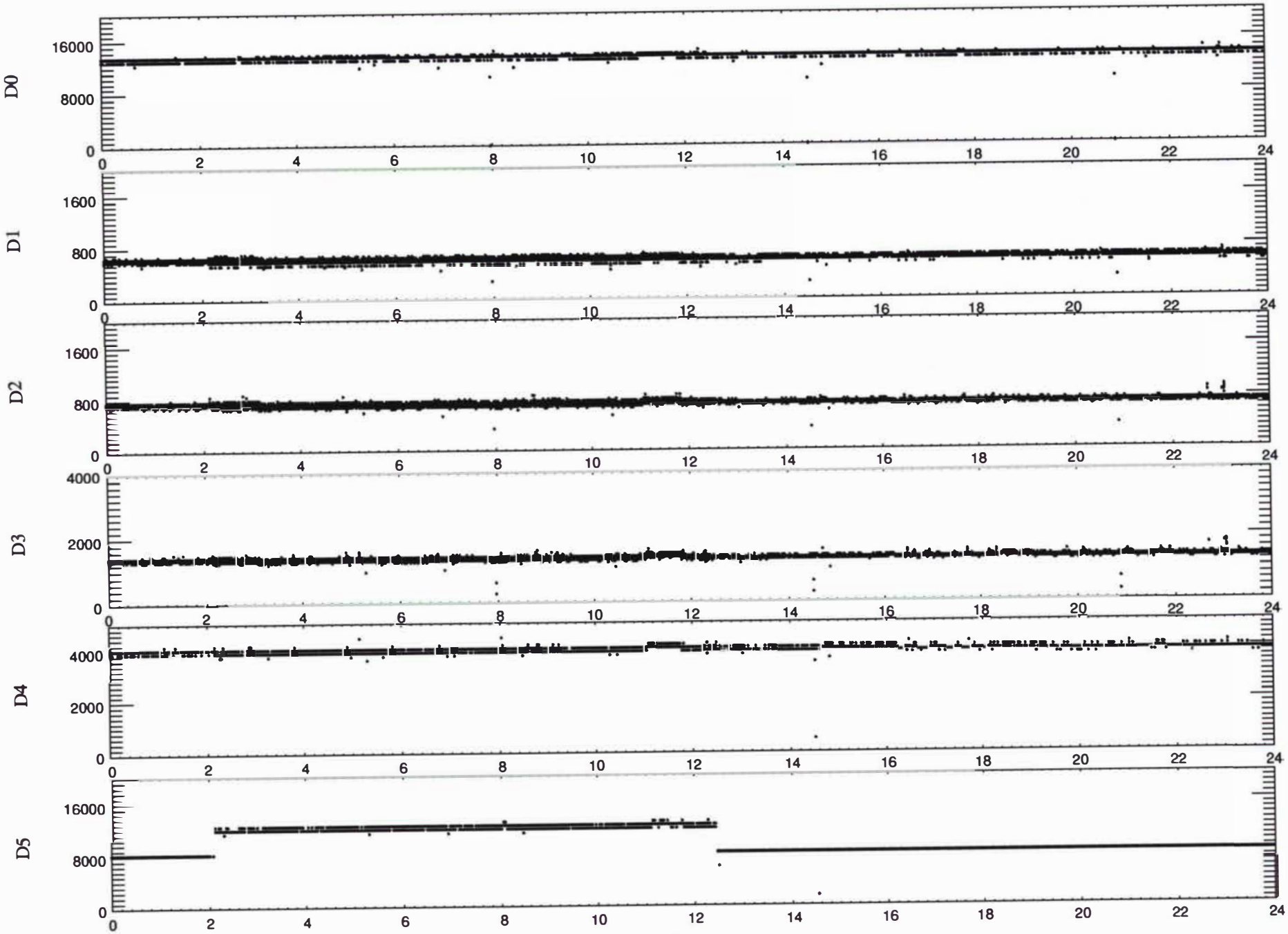
HUS 2A, MODE 1, NOT AVERAGED EDR day 23, year 1997 to day 23, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 23, year 1997 to day 23, year 1997 5/5/97



Date: Oct 1 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☐ Jim Schmidling's stat file correction applied? Problem with trigger time

☐ Final ephemeris used?

☐ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

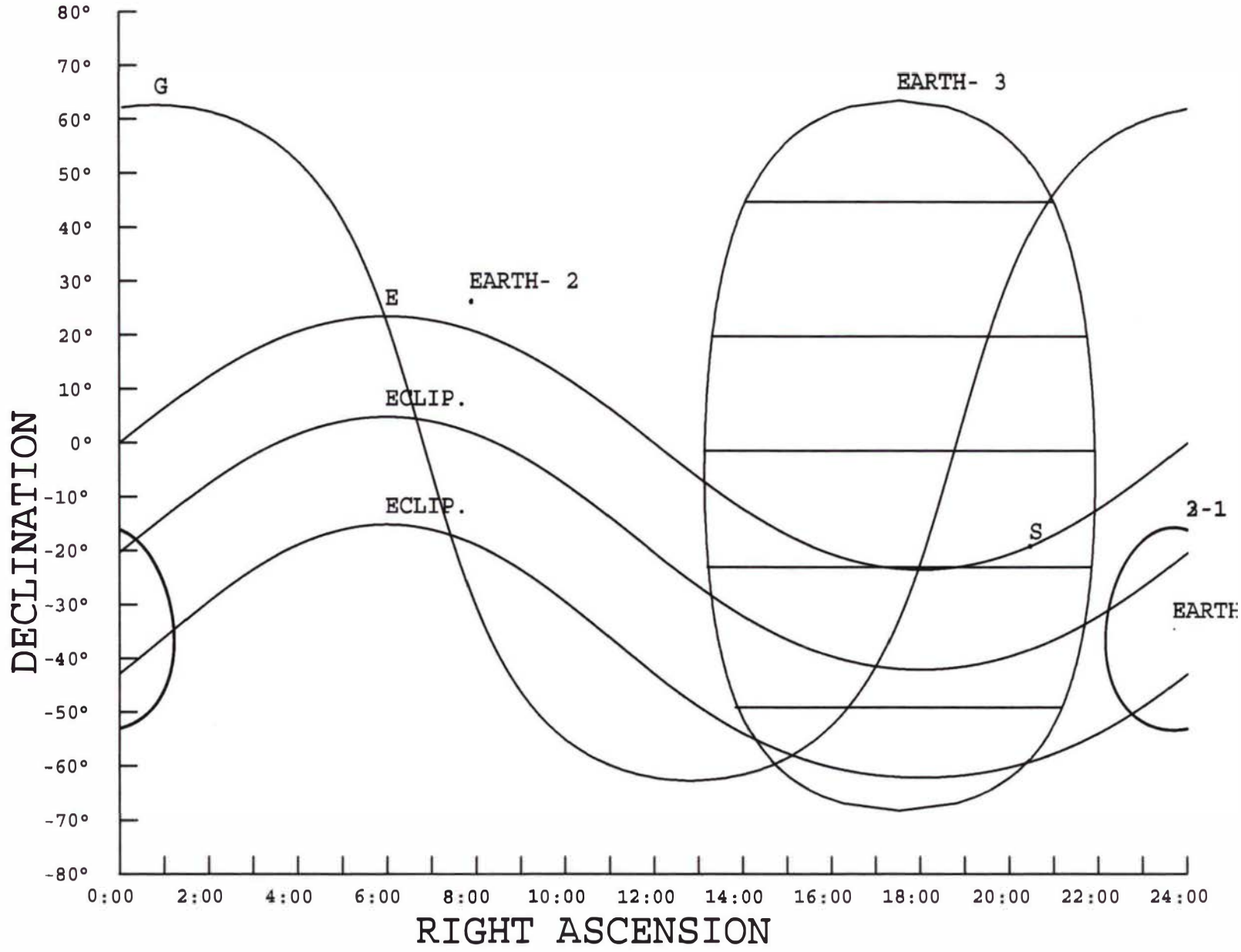
☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?

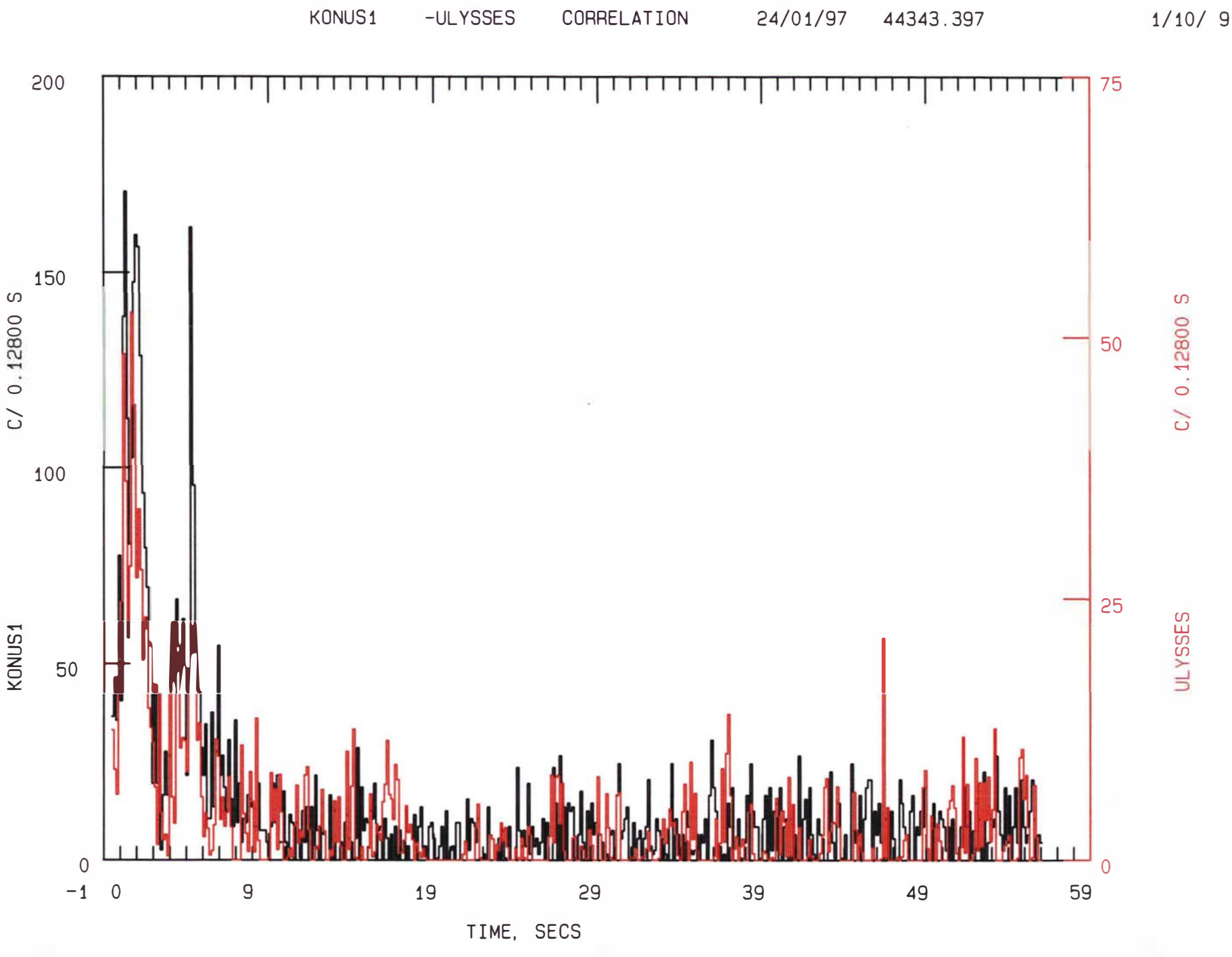
☐ Updated ephemeris used for bursts prior to September 30, 2003?

☑ ACCESS and MBL4 databases updated?

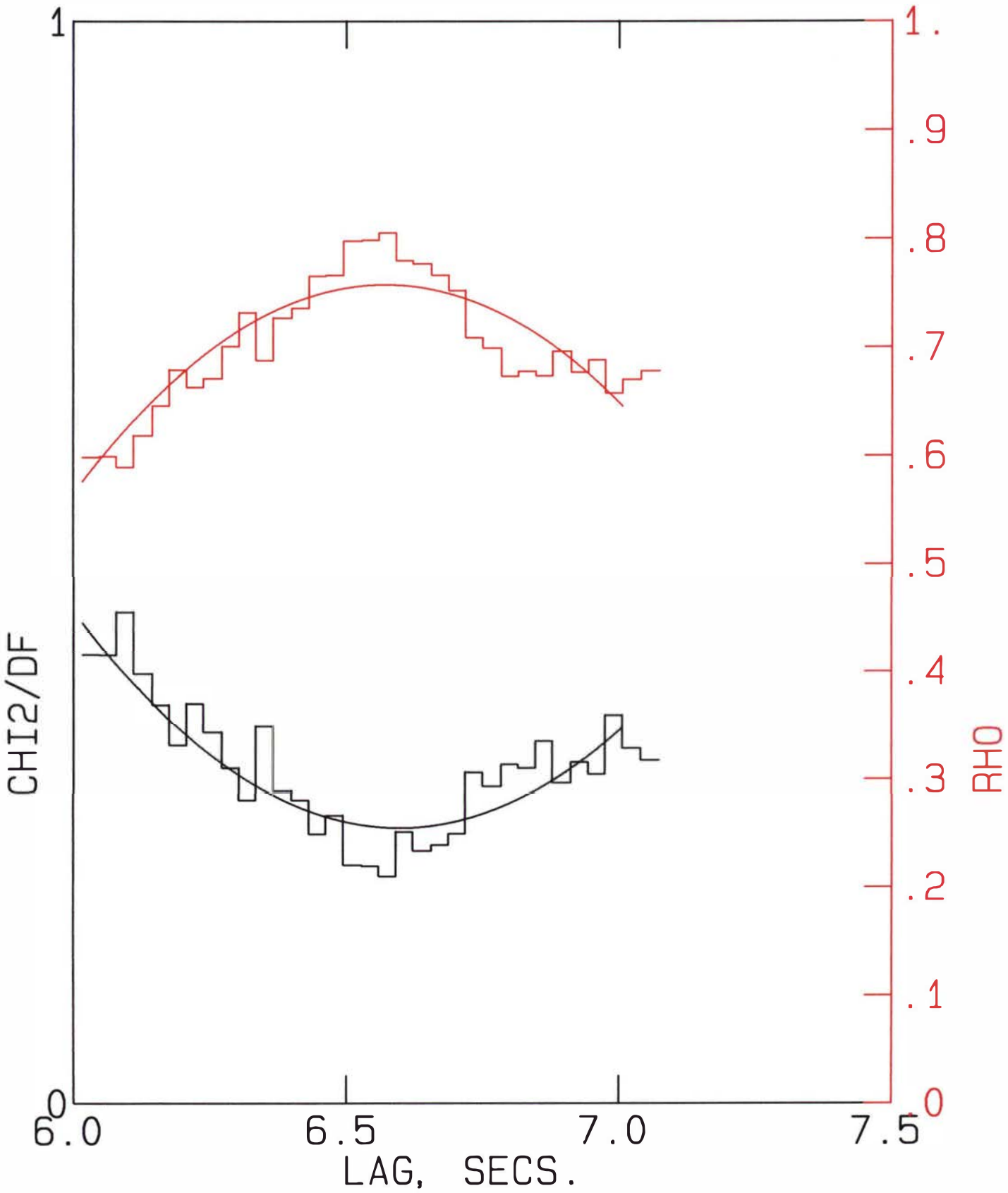
EVENT OF JAN 24, 1997 12:50

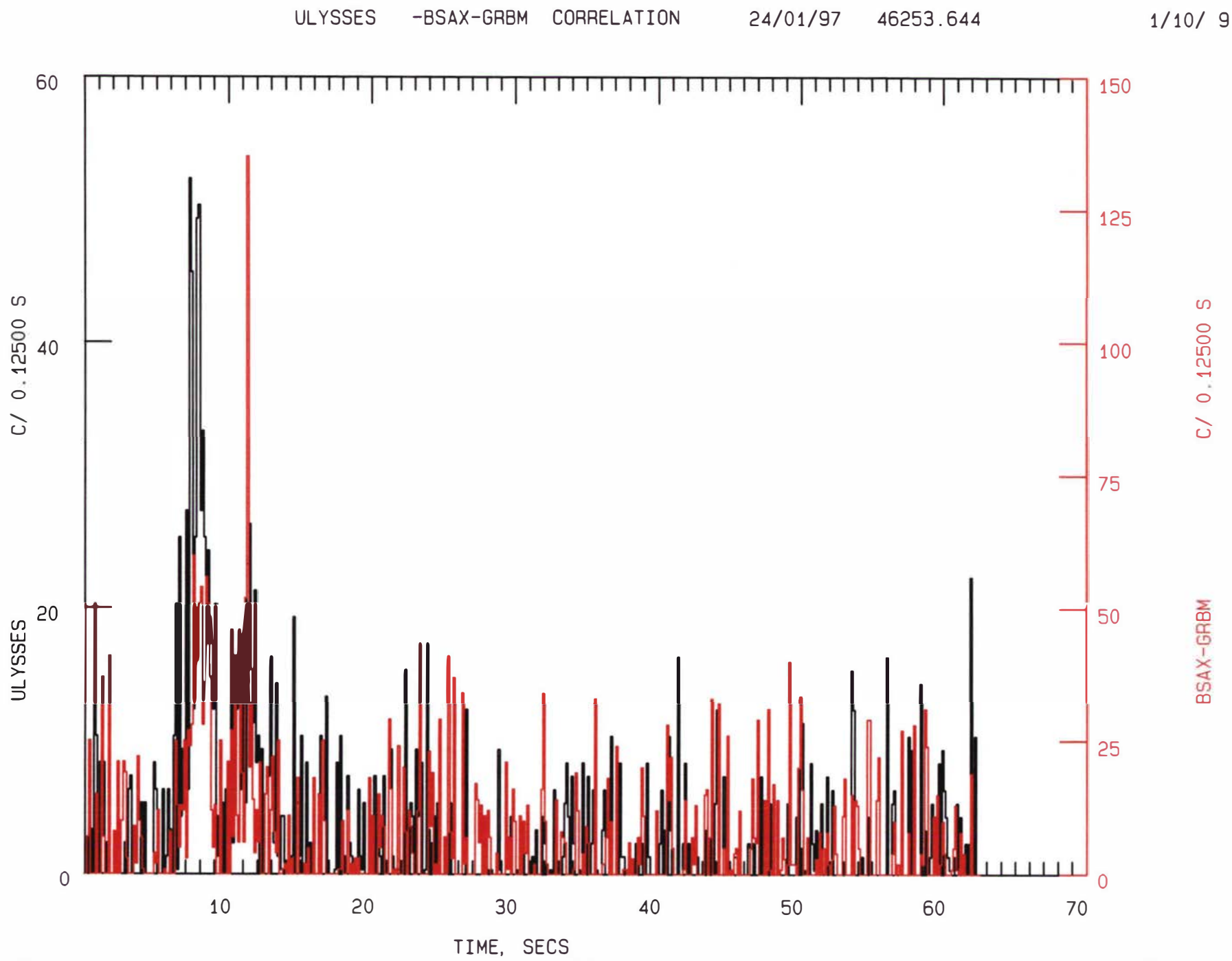
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS1 3 SAX



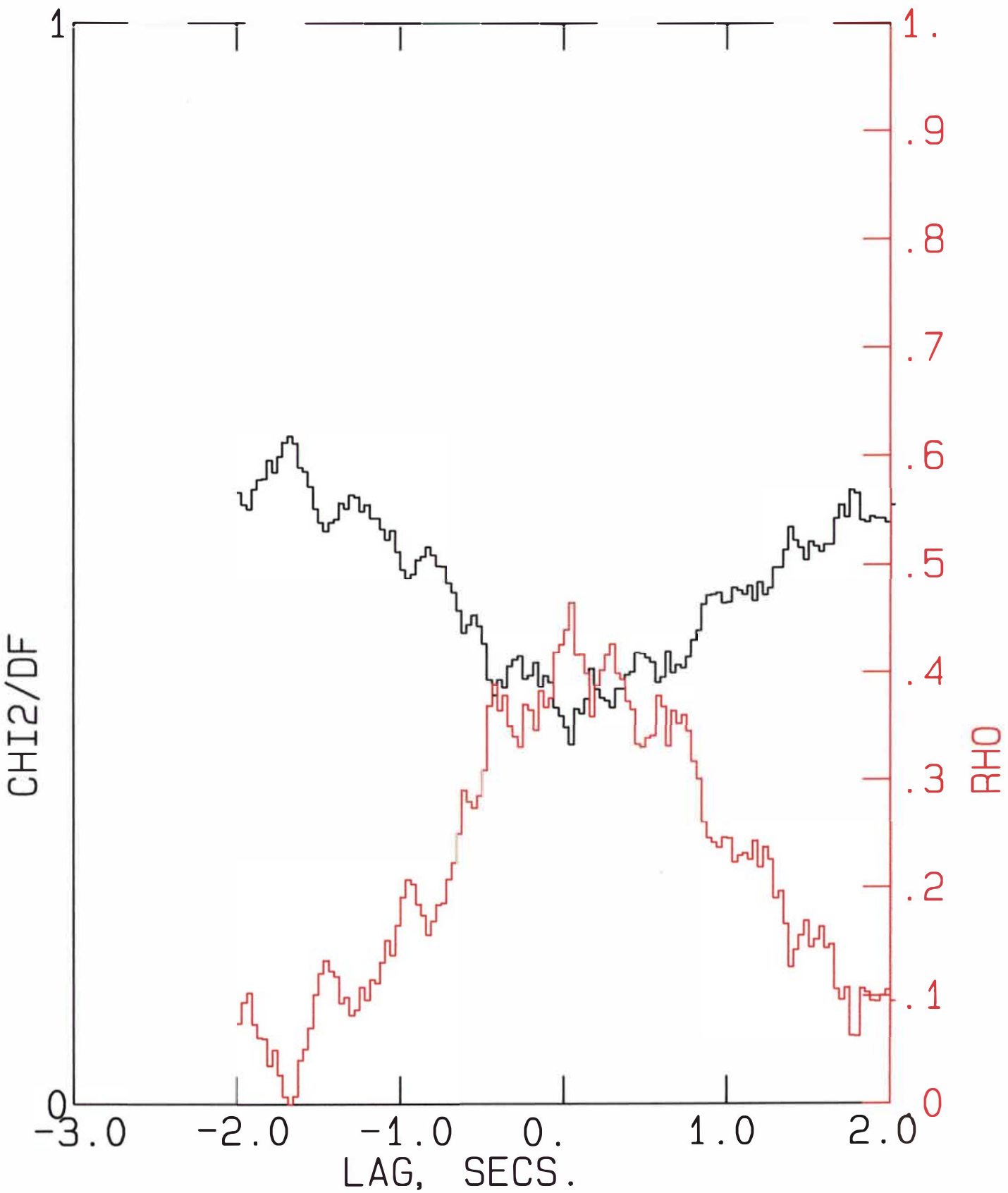

KONUS1 -ULYSSES CORRELATION 24/01/97 44343.397 1/10/ 9
200
150
100
50
0
C/ 0.12800 S
KONUS1
75
50
25
0
C/ 0.12800 S
ULYSSES
-1
0
9
19
29
39
49
59
TIME, SECS

KONUS1 -ULYSSES CORRELATION 24/01/97 44343.397




ULYSSES -BSAX-GRBM CORRELATION 24/01/97 46253.644 1/10/ 9
60
40
20
0
150
125
100
75
50
25
0
C/ 0.12500 S
ULYSSES
C/ 0.12500 S
BSAX-GRBM
10
20
30
40
50
60
70
TIME, SECS

ULYSSES -BSAX-GRBM CORRELATION 24/01/97 46253.644



ULYSSES 24/01/97 Ttrig=44591.607

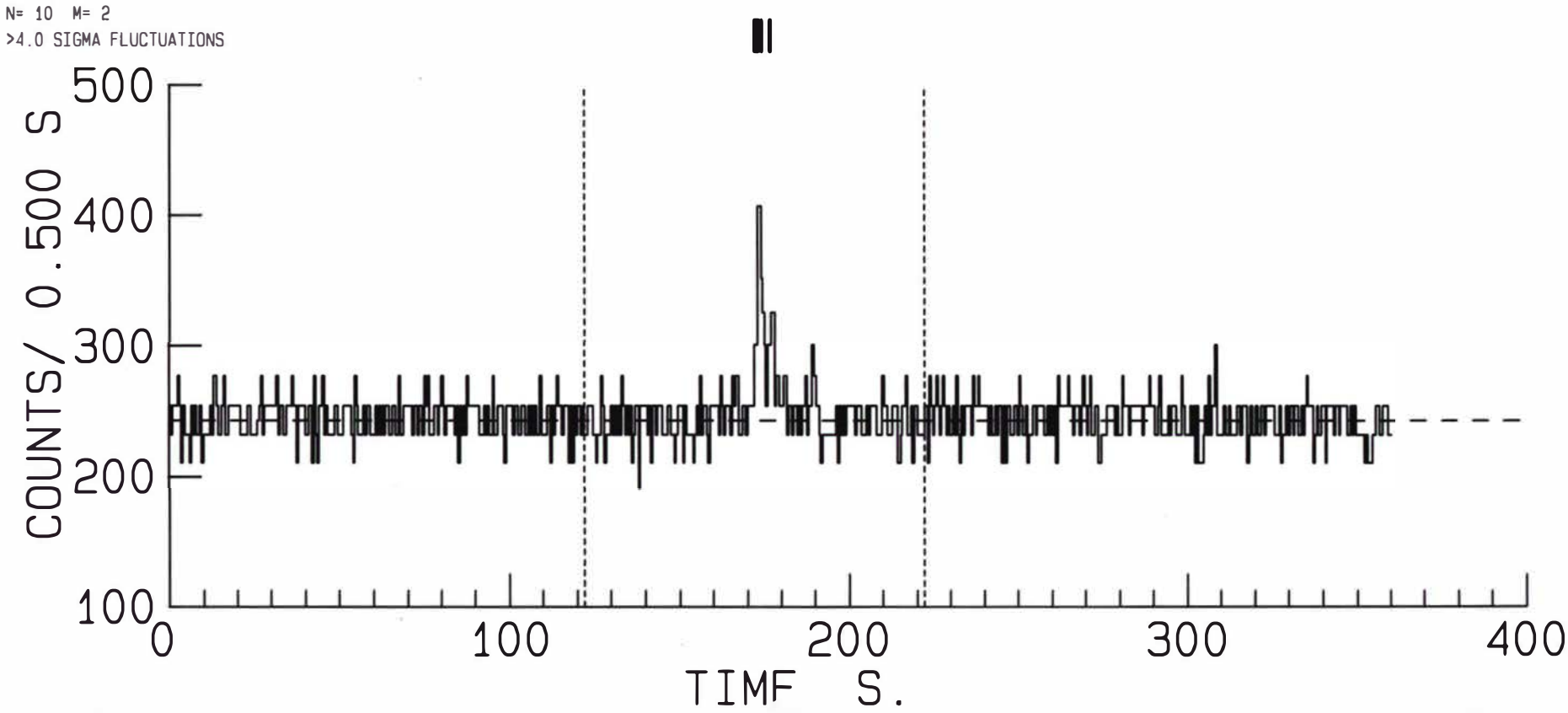
21- 146 keV

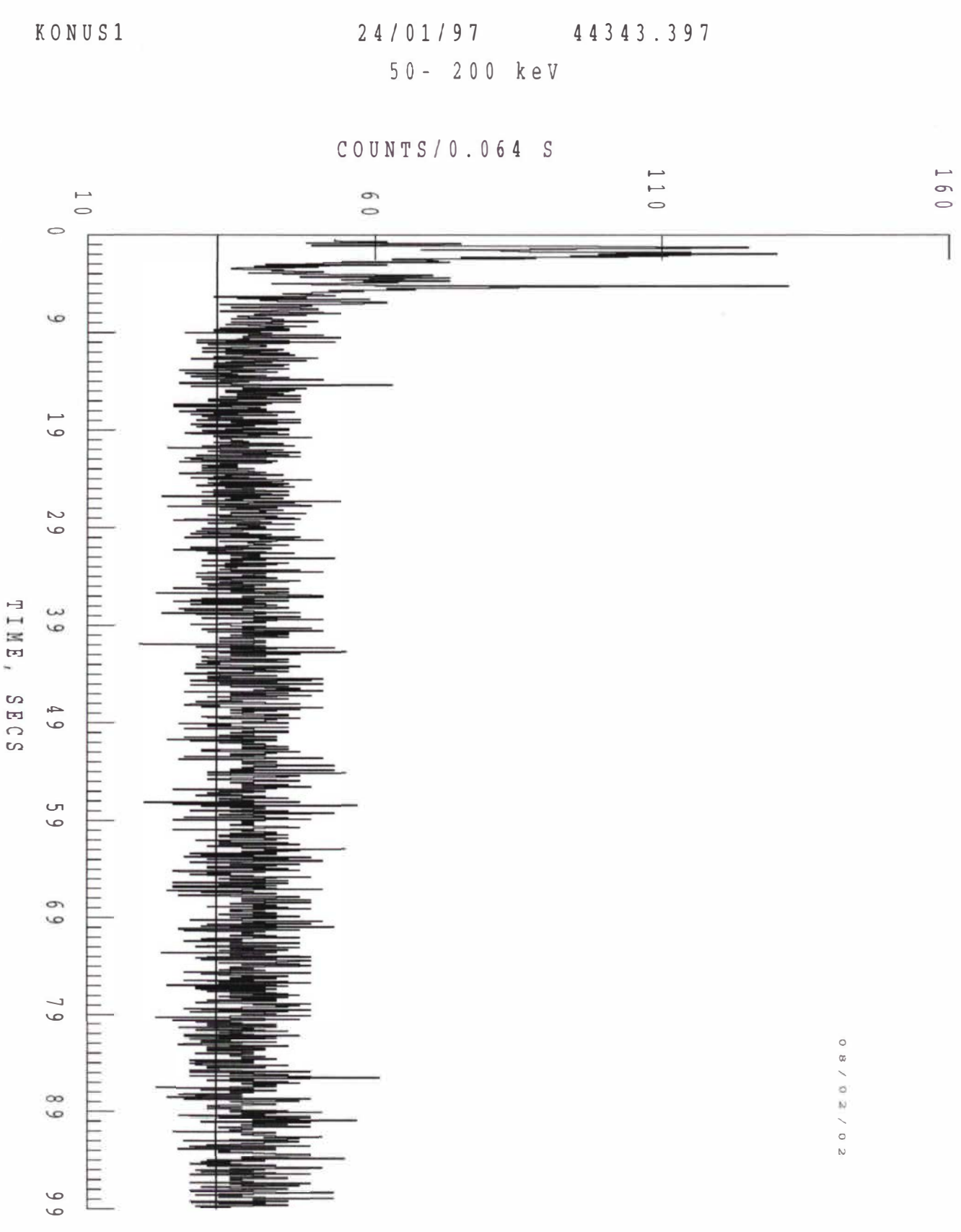
ULYSSES RT

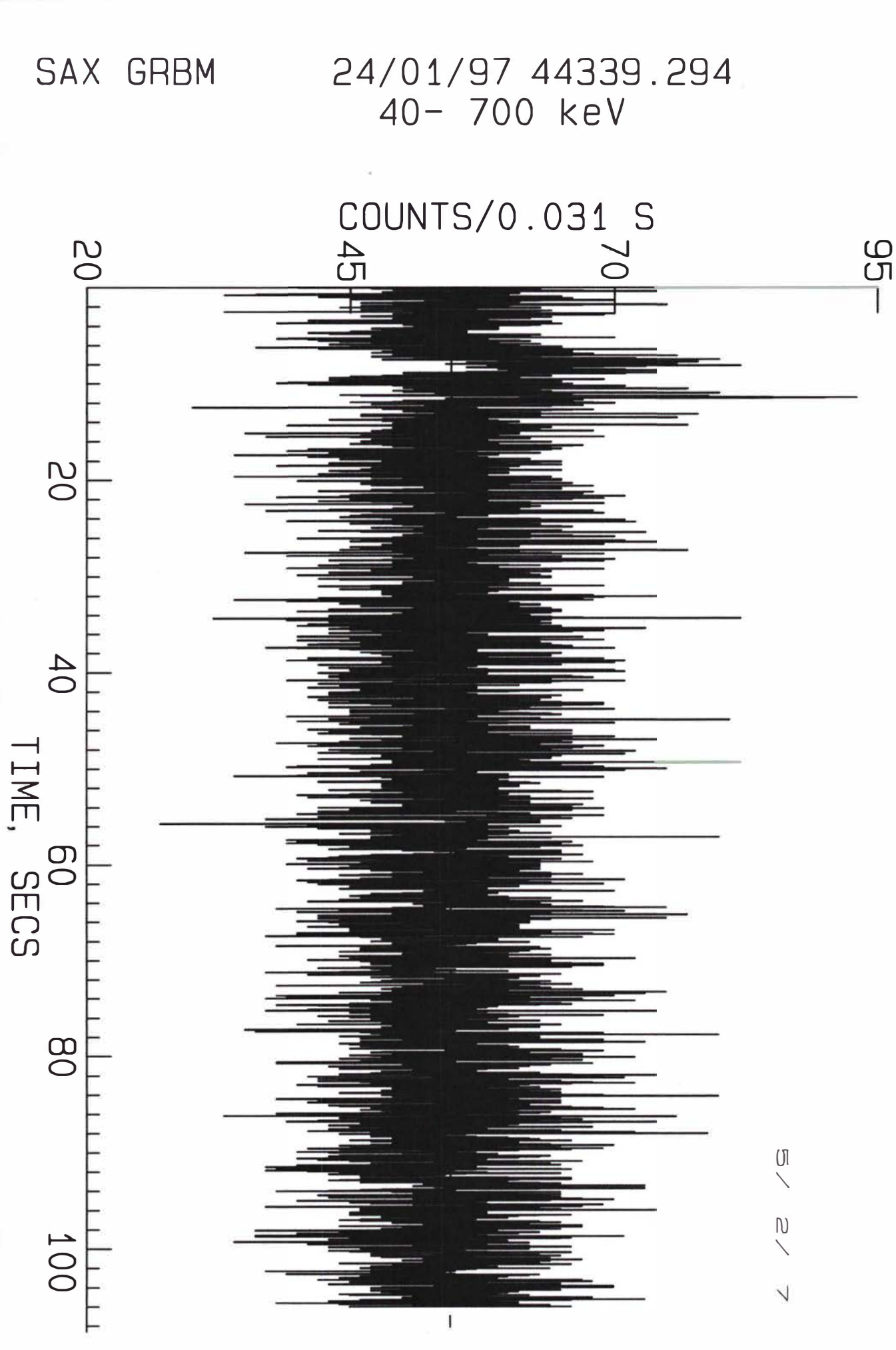
1/10/ 9

24/ 1/97 46080.145 s

21- 146 keV




KONUS1
24/01/97
44343.397
50- 200 keV
COUNTS/0.064 S
10
60
110
160
0
9
19
29
39
49
59
69
79
89
99
TIME, SECS
08/02/02


SAX GRBM
24/01/97 44339.294
40- 700 keV
COUNTS/0.031 S
20
45
70
95
20
40
60
80
100
TIME, SECS
5 / 2 / 7

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

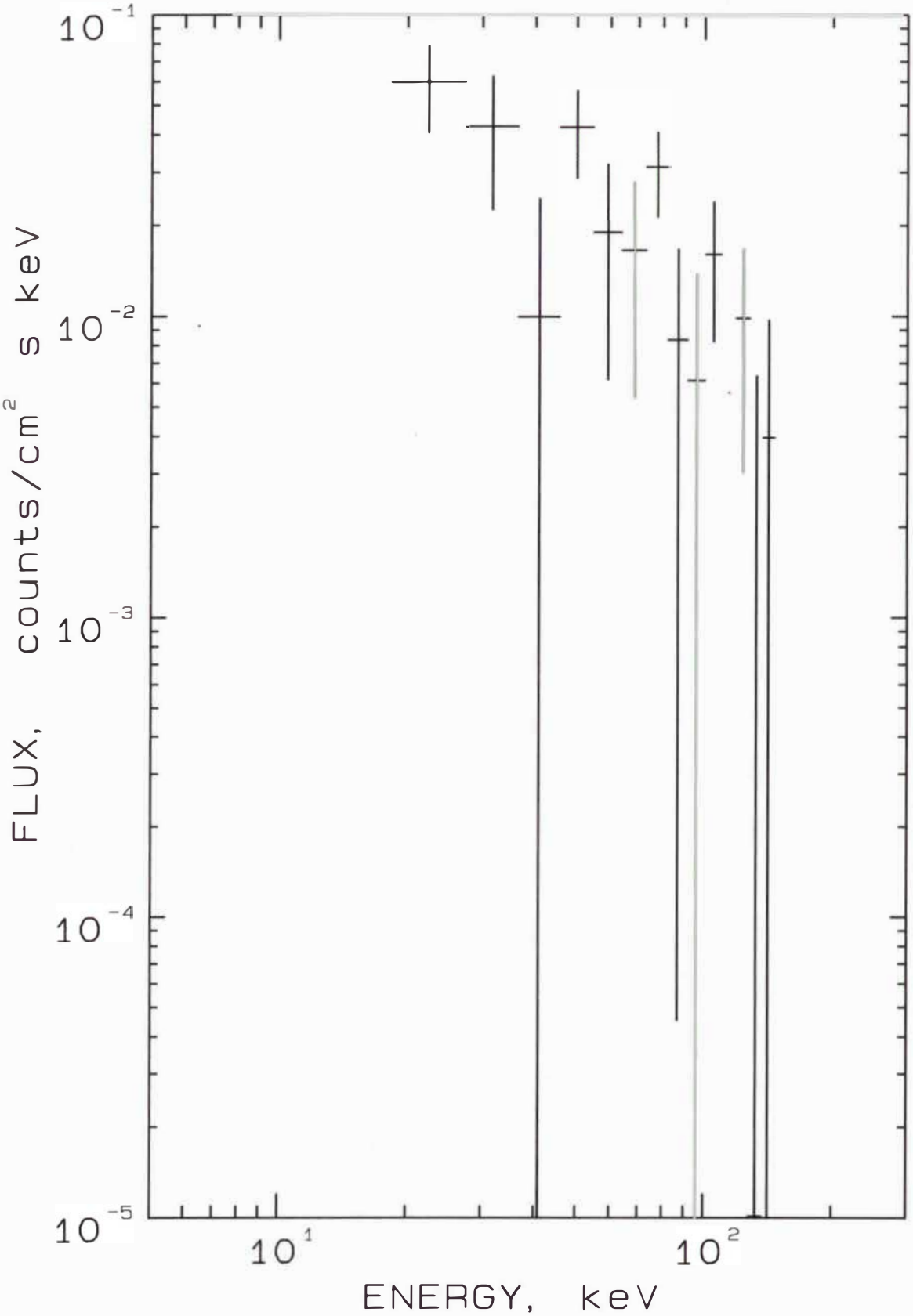
The following GRB were detected by DMSP13 or DMSP14 (or NOT detected, if indicated).
No detection can occur for bursts more than 118 degrees from spacecraft zenith,
or if in the presence of very high counting rates (SAA,SR,NR).
Data are normally in 2-sec counts, except when the DMSP14 trigger circuit 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.

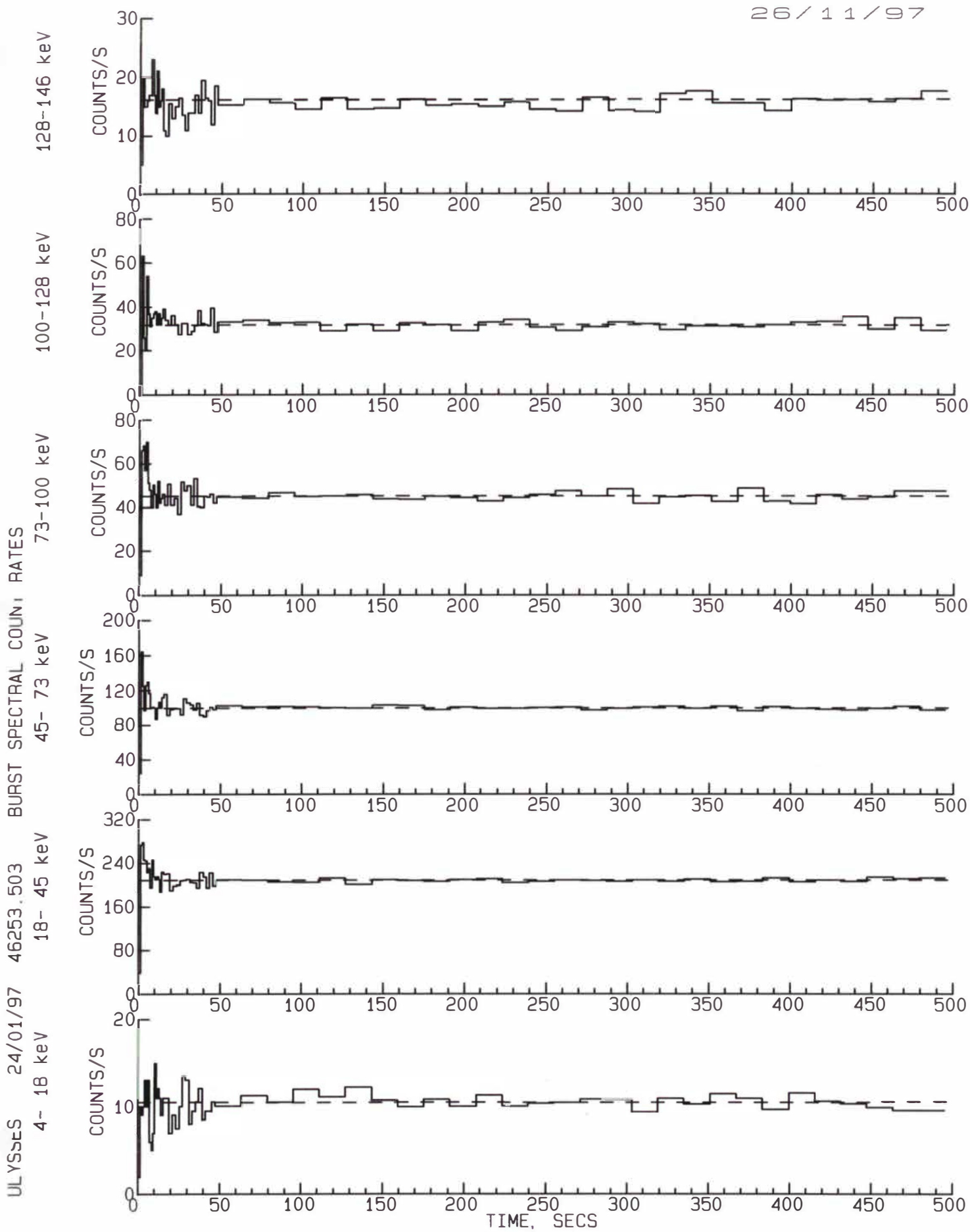
DATE	FL	DAY	TIME	NOTES---(ND=NO DATA,NA=NOT APPARENT & NOT ANALYZED)------REPORTED (NO=DATA CHECKED--SHOWS NO DETECTION)(SR=S. RADIATION BELT) (NR=NORTH RADIATION BELT)(SAA=SOUTH ATLANTIC ANOMALY)	
970111		011	35040.2	BATSE GRB#5773 (8727CTS/2S) (SEE IAU6569,6571,6574,6598)	
		011	35040.2	BEPPO SAX TRIG,INTENSE,50S,3 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)	
..0313		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

ULYSSES 24/01/97 46253.503

26/11/97

SPECTRUM INTEGRATED OVER 10.2 SECONDS, INTERVALS 2 TO 12




26/11/97
ULYSSES 24/01/97 46253.503 BURST SPECTRAL COUNT RATES
128-146 keV
100-128 keV
73-100 keV
45- 73 keV
18- 45 keV
4- 18 keV
COUNTS/S
TIME, SECS

From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
0114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
0226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From kraken@rosserv.gsfc.nasa.gov Wed Mar 12 15:00 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 12 Mar 1997 18:00:58 -0500
    khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: TGRS/Ulysses GRB's
Cc: bonnard@rosserv.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hello Dr. Hurley,

I'm Peter Kurczynski, a graduate student in the LEGR group here at Goddard. I am working on TGRS data analysis. I am messaging you in response to several emails you've sent to Bonnard Teegarden and others about Ulysses gamma ray bursts and whether they could be corroborated by other instruments.

What follows is a list of the dates and times of Ulysses observations that were forwarded to me recently, and the results of a search through TGRS data for bursts. We've found two matches among the Ulysses bursts listed below. Please
let me know if you would like me to forward time history data or other information about them.

Take care,

Pete

Ulysses date/time	TGRS detection
[illegible]. 15 1997 13:36	NO
Jan. 17 1997 15:07	YES! 20s duration FRED; peak at 970117:53211s
Jan. 17 1997 18:45	NO
Jan. 24 1997 12:51	YES! <10s duration; very narrow; peak at 970124:44347s 12:19:07
Jan. 26 1997 15:30	NO
Jan. 30 1997 19:33	NO
Feb. 4 1997 11:18	NO
Feb. 8 1997 18:04	NO

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
1997	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

From DEAL@fender.msfc.nasa.gov Mon Jan 27 11:20 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 27 Jan 1997 13:19:36 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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.: 5919

TIME: TJD=0472 SECONDS=23817

TYPE: CYGX-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
CYGX-1 FLUCTUATION

From DEAL@fender.msfc.nasa.gov Mon Jan 27 11:24 PST 1997
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 27 Jan 1997 13:23:55 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.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.: 5920

TIME: TJD=0472 SECONDS=28043 07:47:23

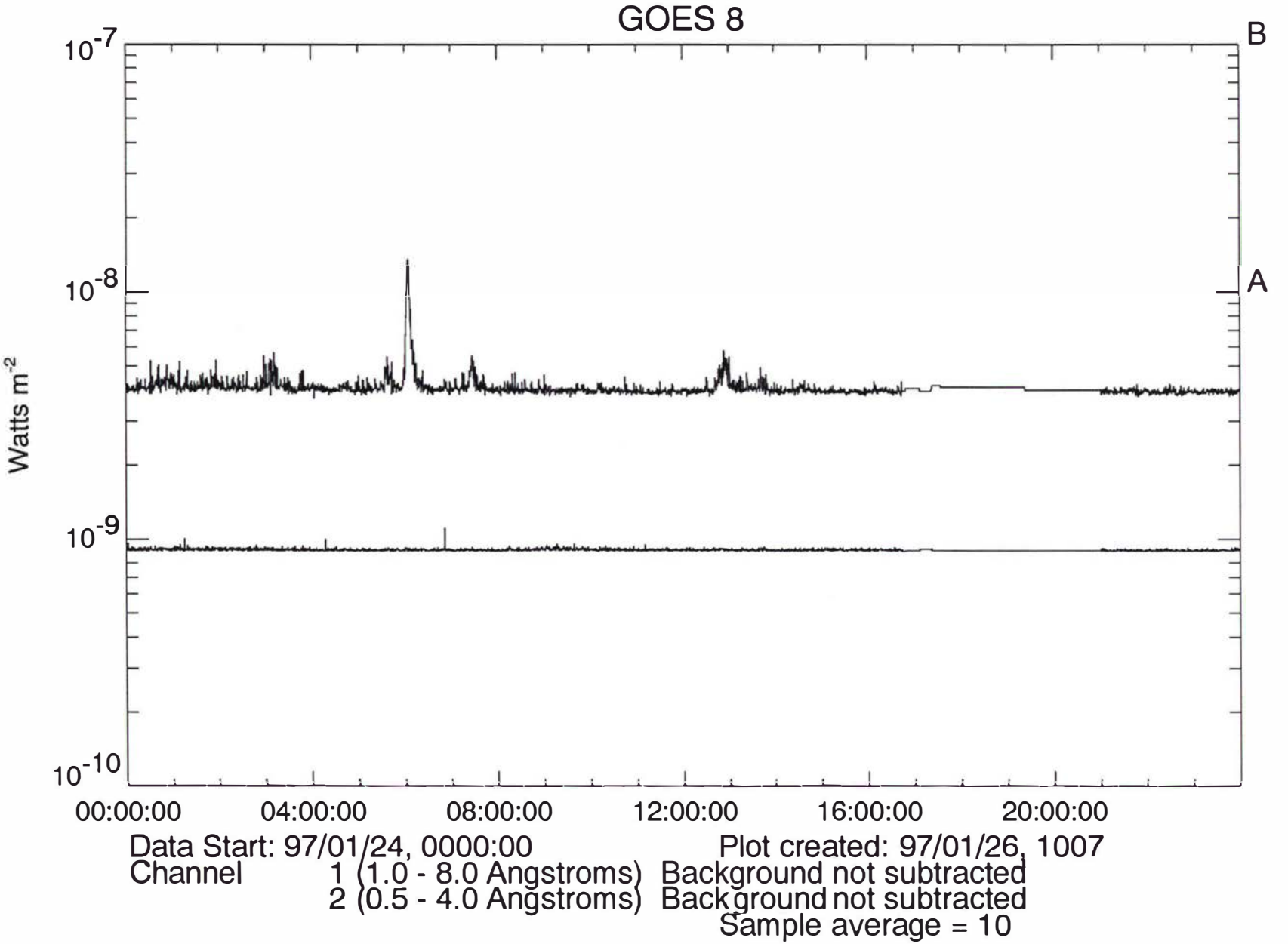
TYPE: SGR SOLAR FLARE TRIGGER SIGNAL:Y

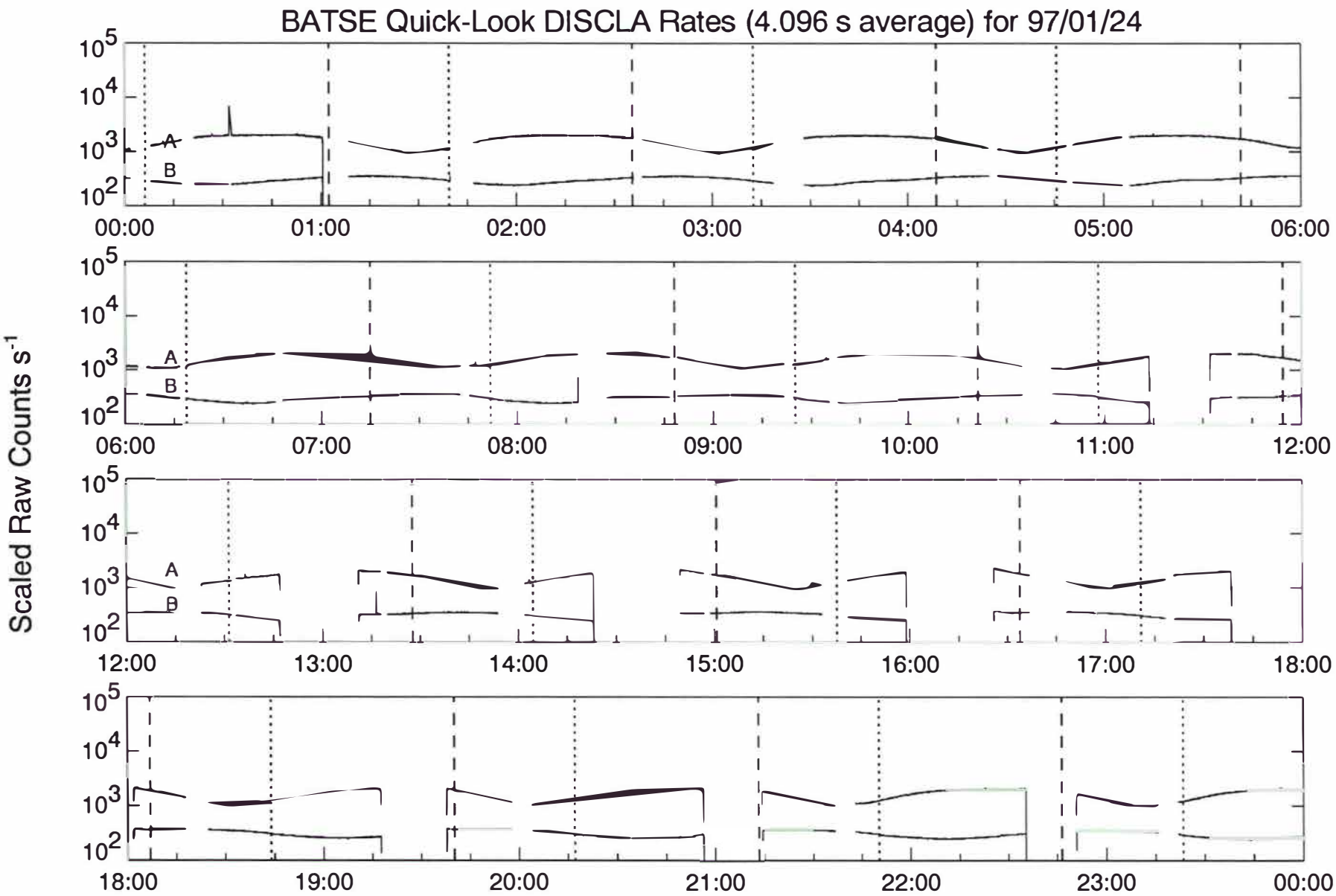
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=74.7 AZIMUTH=349.3 ERROR=0.7 DEGREES

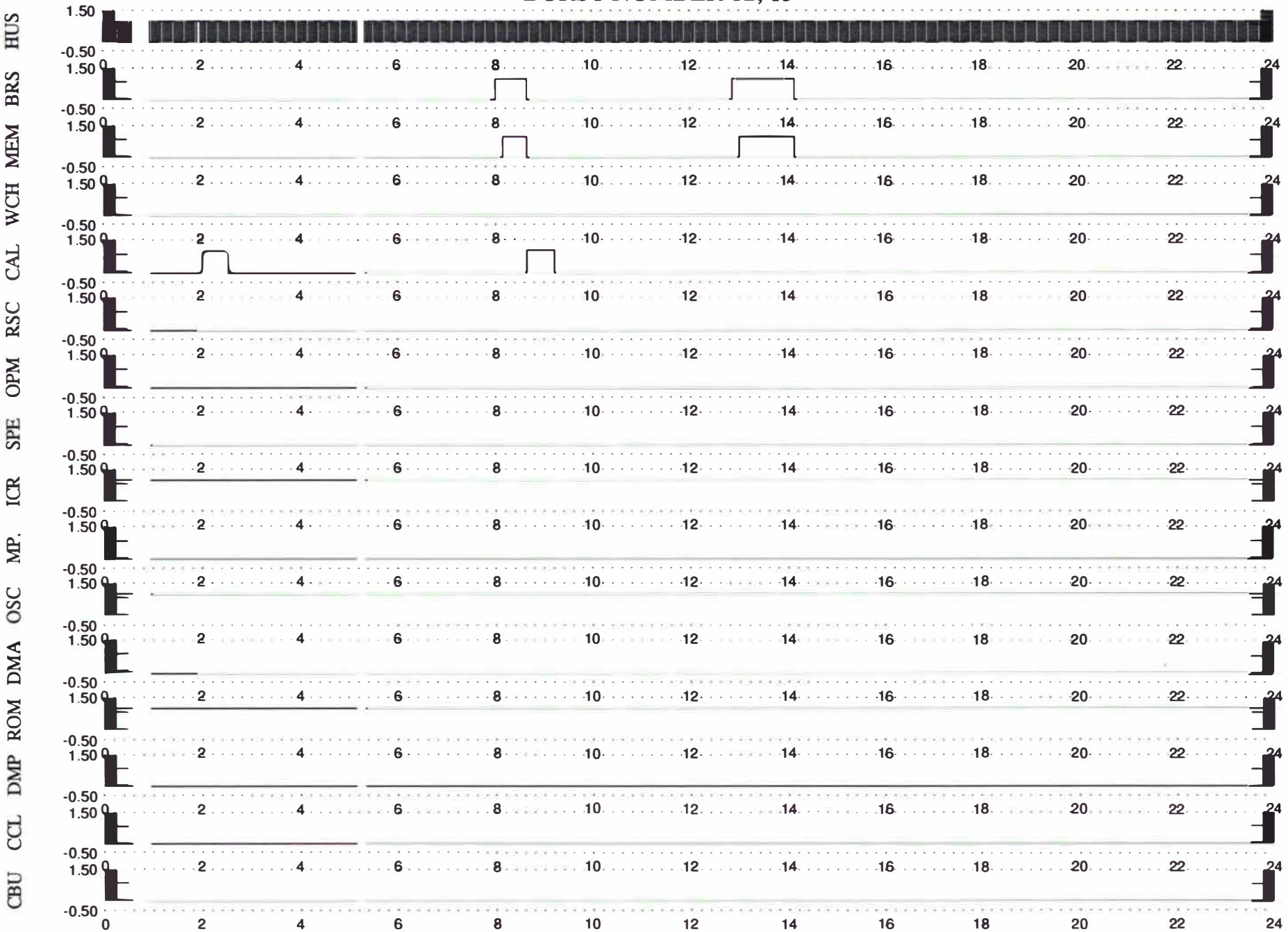
COMMENTS:
SGR LASTING ~ 0.15 S. 1806 - 20


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: 97/01/24, 0000:00
Plot created: 97/01/26, 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 97/01/24
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/26, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 24, year 1997 to day 24, year 1997 5/5/97

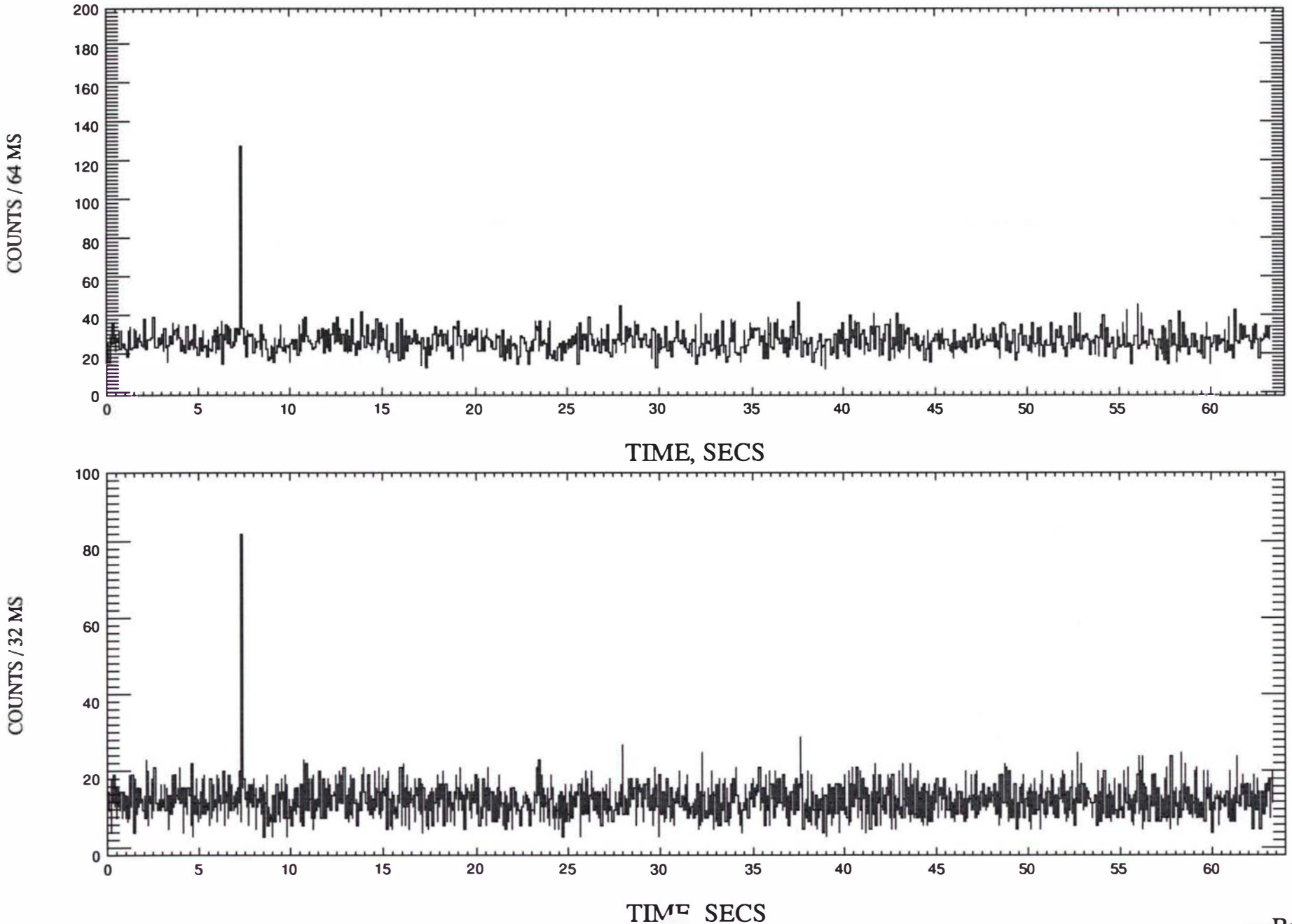
BURST NUMBER 12, 13



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 24, year 1997 5/6/97

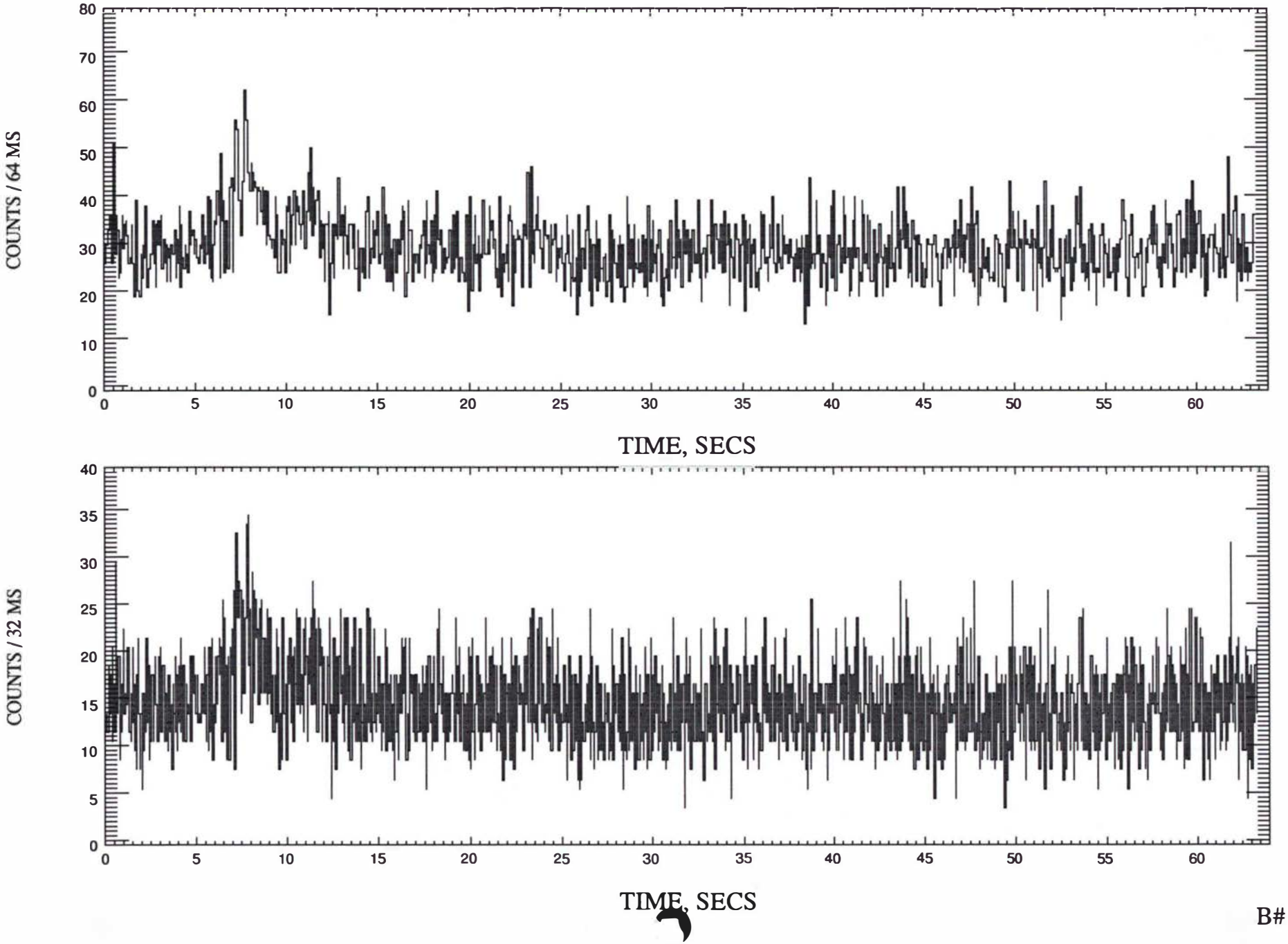
Burst Counter 12 at UT= 7.950939034356 h=28623.381 s 07:57:03.381



B# 1

HUS 2A TRIGGERED DATA EDR day 24, year 1997 5/6/97

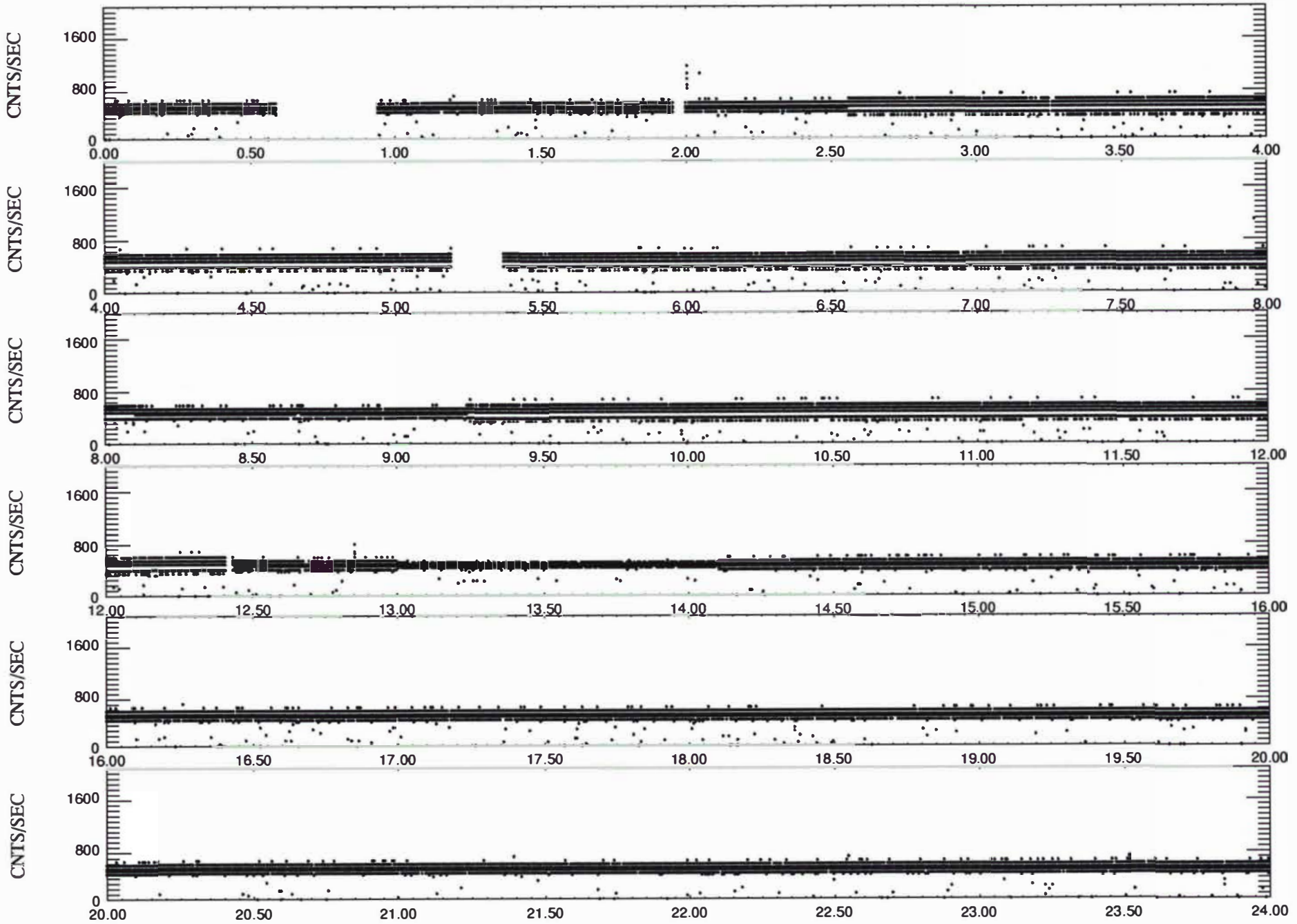
Burst Counter 13 at UT=12.848195249769 h=46253.503 s 12:50:53.503



B# 2

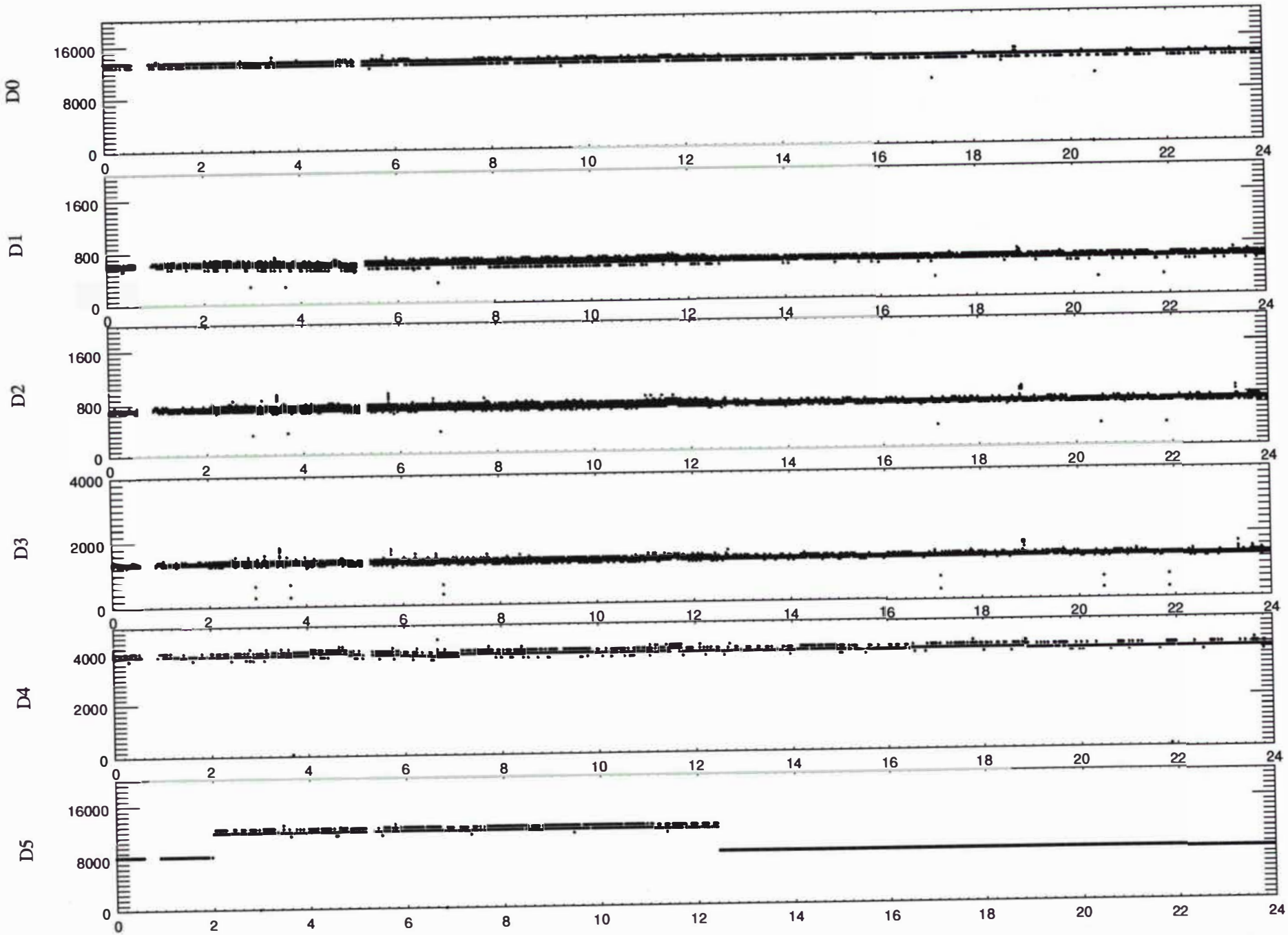
HUS 2A, MODE 1, NOT AVERAGED EDR day 24, year 1997 to day 24, year 1997 5/5/97

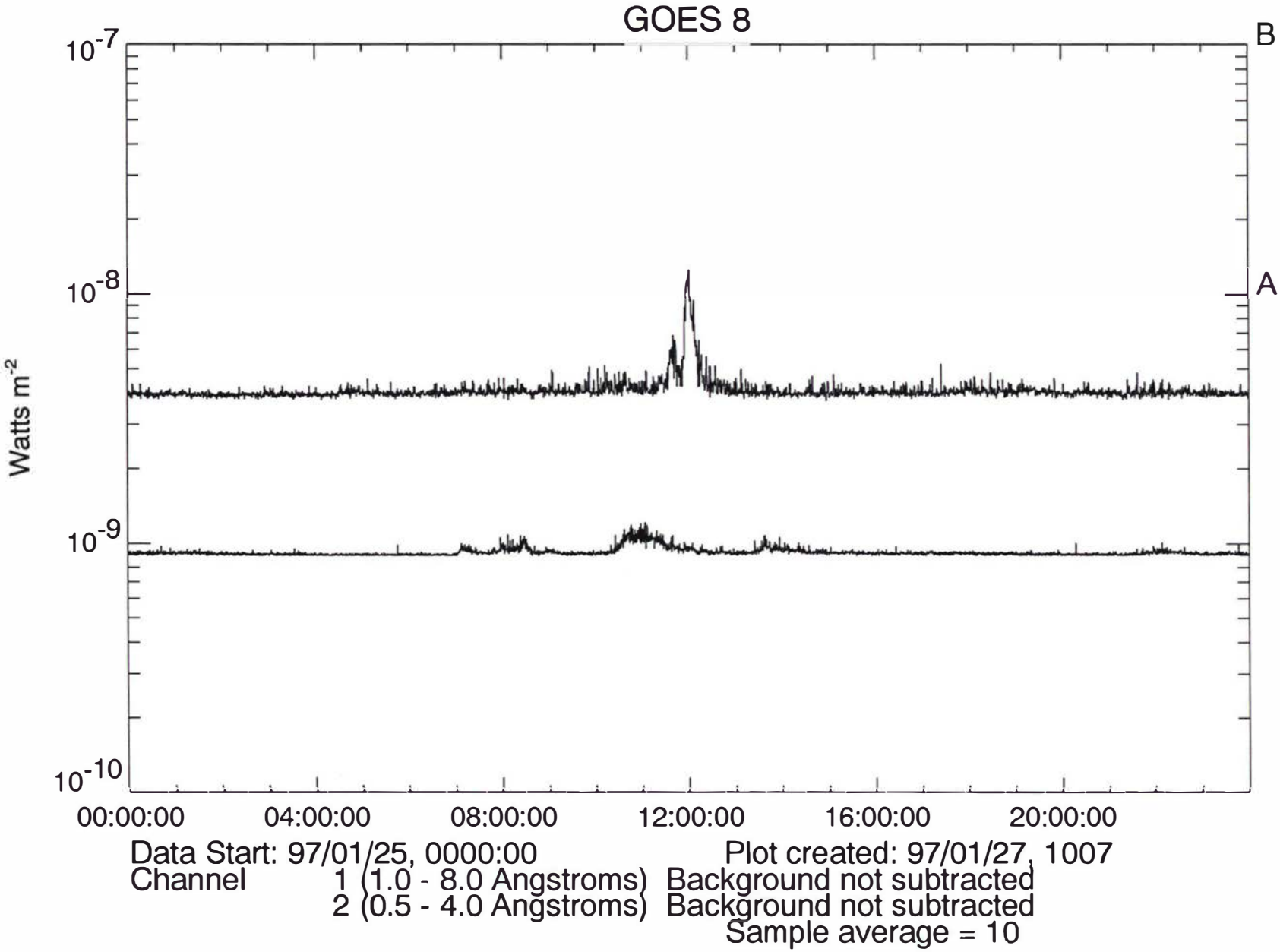
CALIBRATION DATA INCLUDED

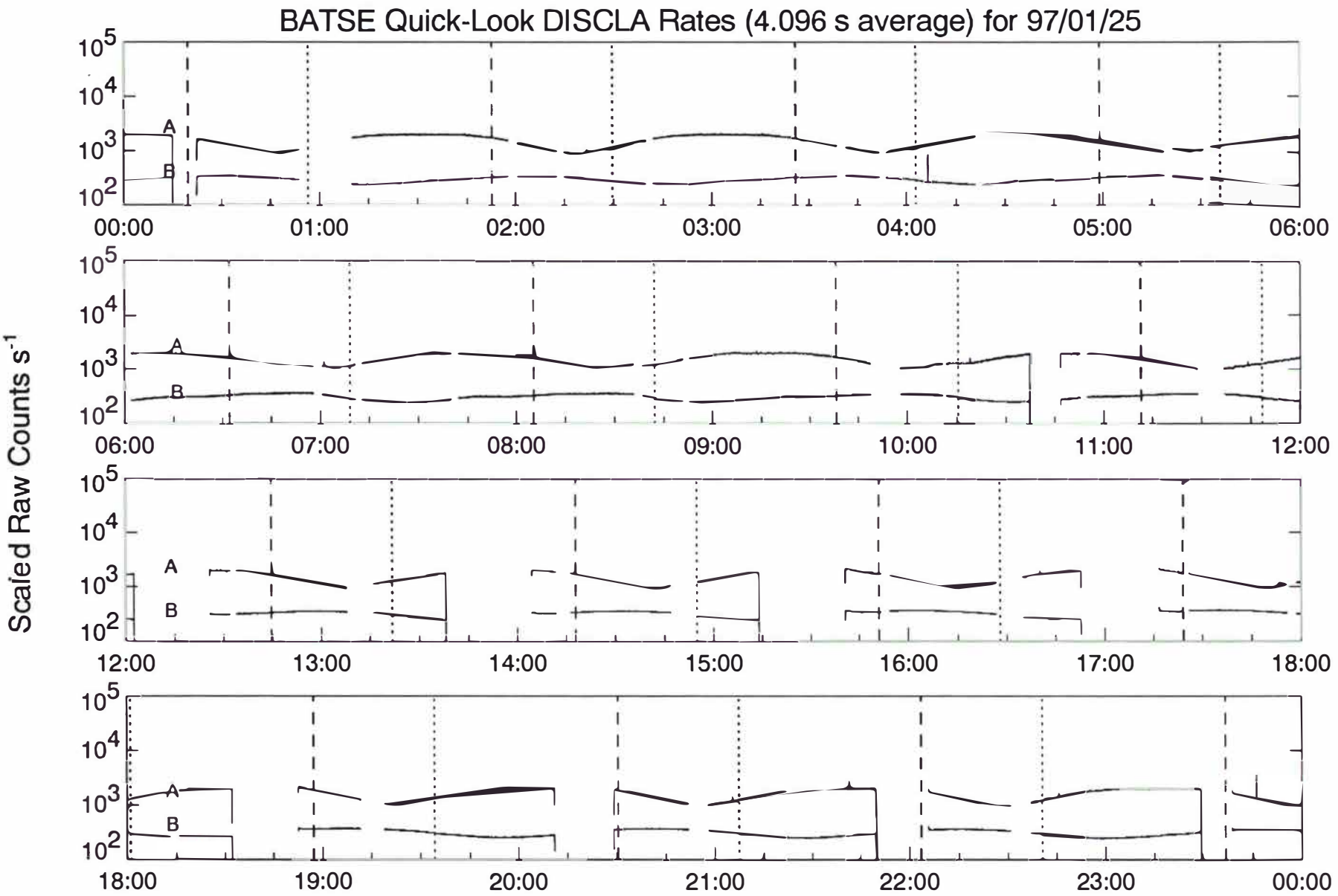


UNIVI AL TIME

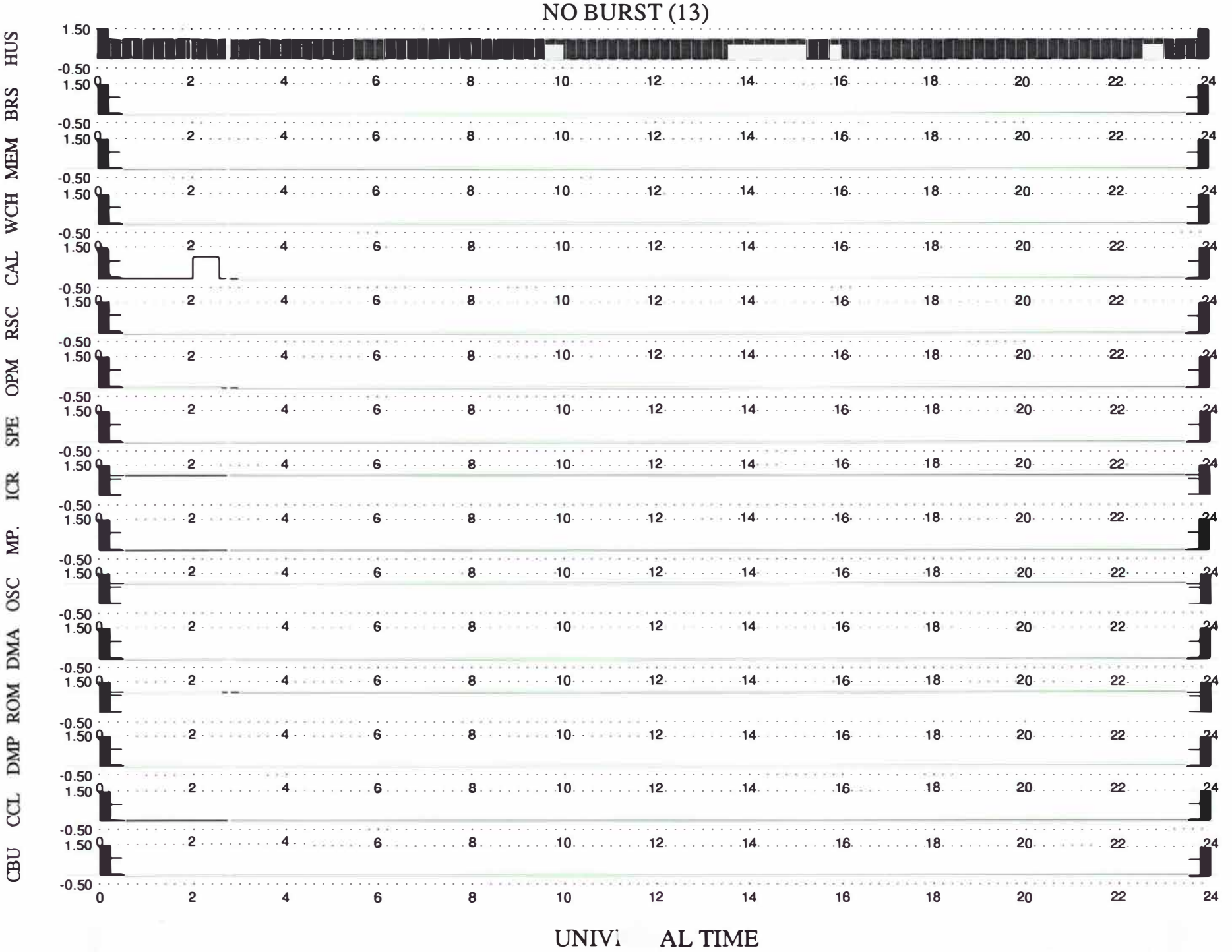
HUS 2B COUNTS / SEC EDR day 24, year 1997 to day 24, year 1997 5/5/97




GOES 8
B
A
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Watts m^{-2}
00:00:00
04:00:00
08:00:00
12:00:00
16:00:00
20:00:00
Data Start: 97/01/25, 0000:00
Plot created: 97/01/27, 1007
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

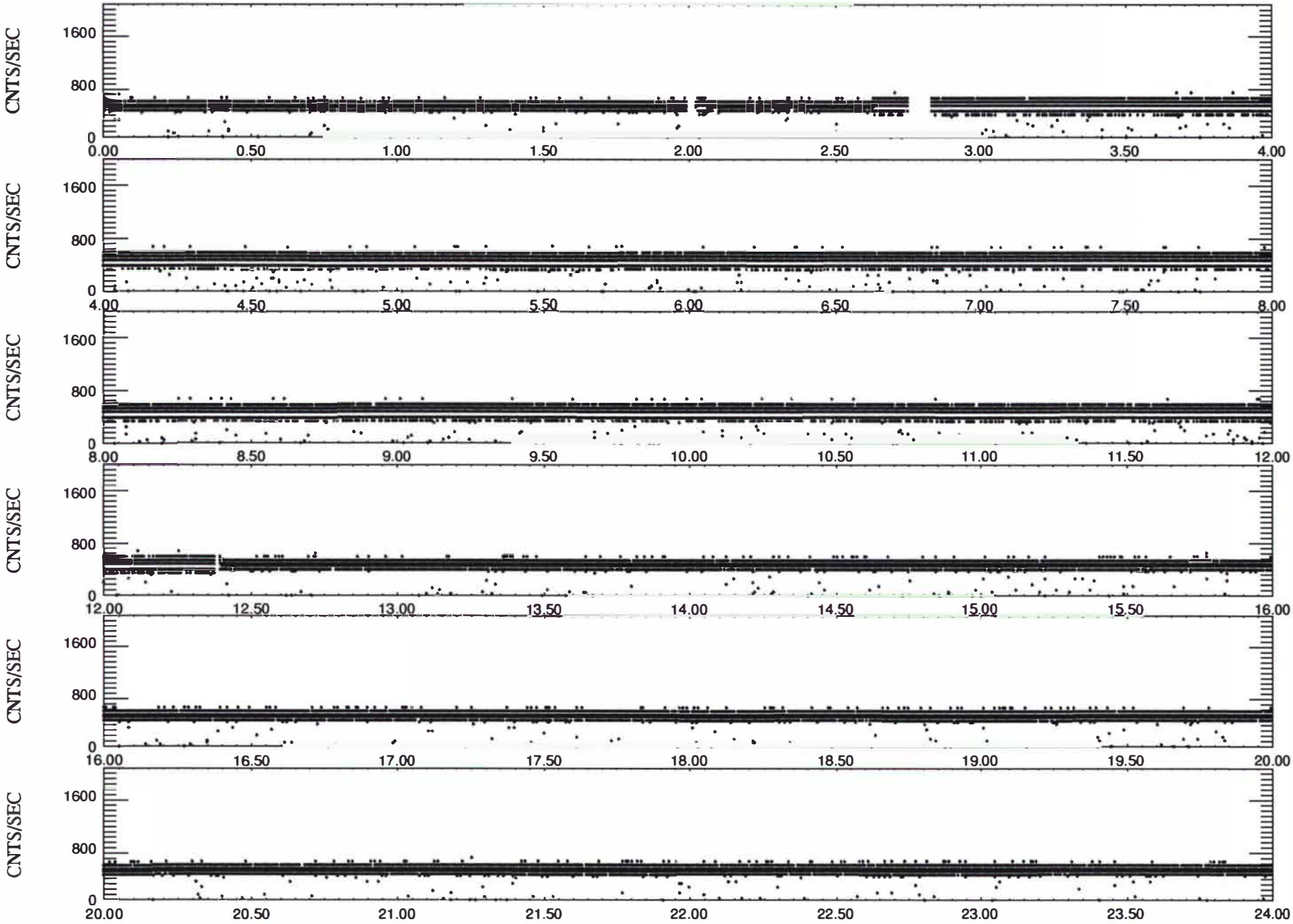

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/25
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/27, 1008 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 25, year 1997 to day 25, year 1997 5/5/97



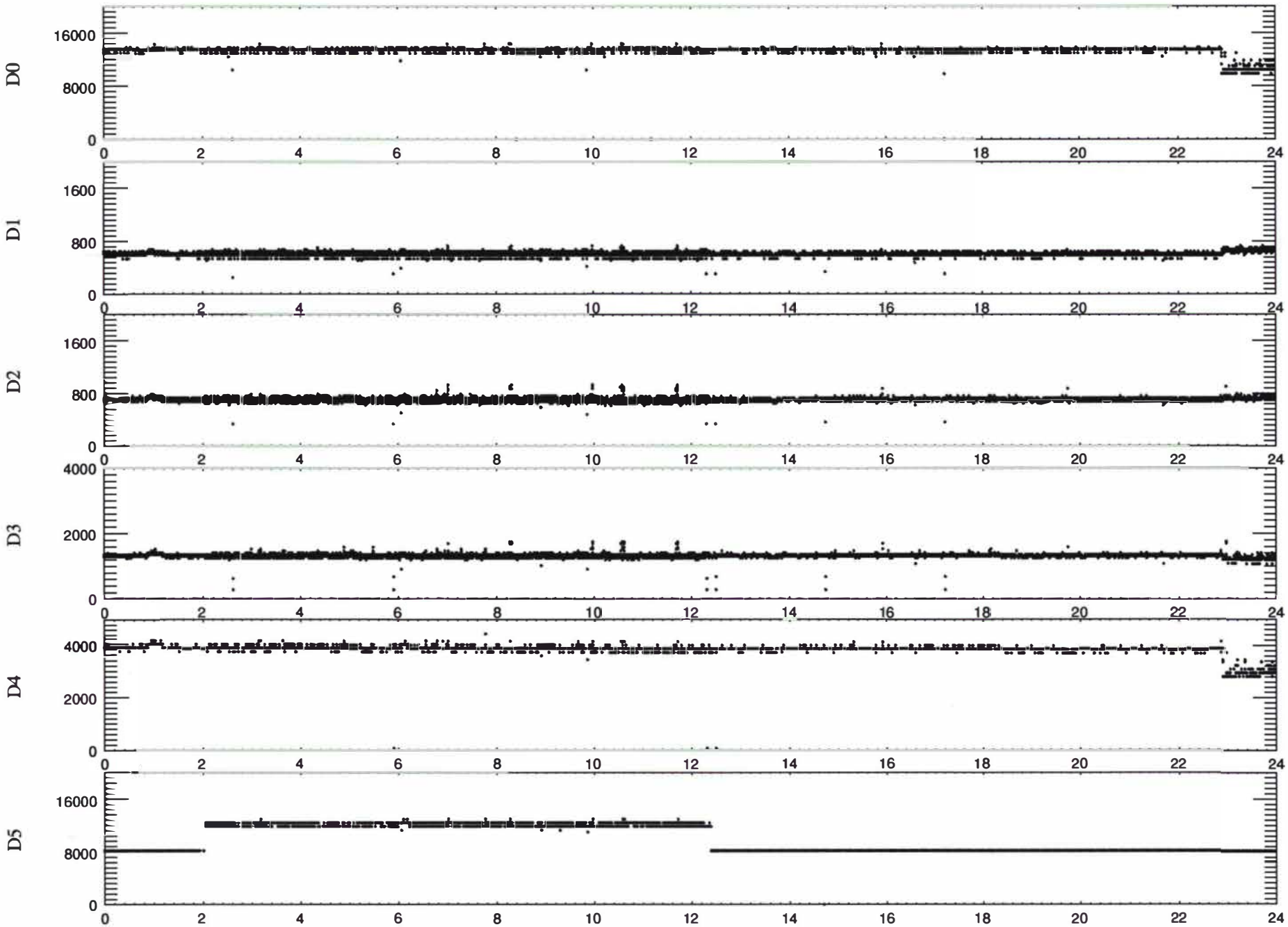
HUS 2A, MODE 1, NOT AVERAGED EDR day 25, year 1997 to day 25, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 25, year 1997 to day 25, year 1997 5/5/97



Date: Oct 27 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

☑ Jim Schmidling's stat file correction applied?

☑ Final ephemeris used?

☑ Final, CDROM data used?

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

2. For Konus events

☑ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

☐ Was CHECKMO run to eliminate data gaps?

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

☐ Was Mars-blocking used?

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

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

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

2. For 3 or More Spacecraft events

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

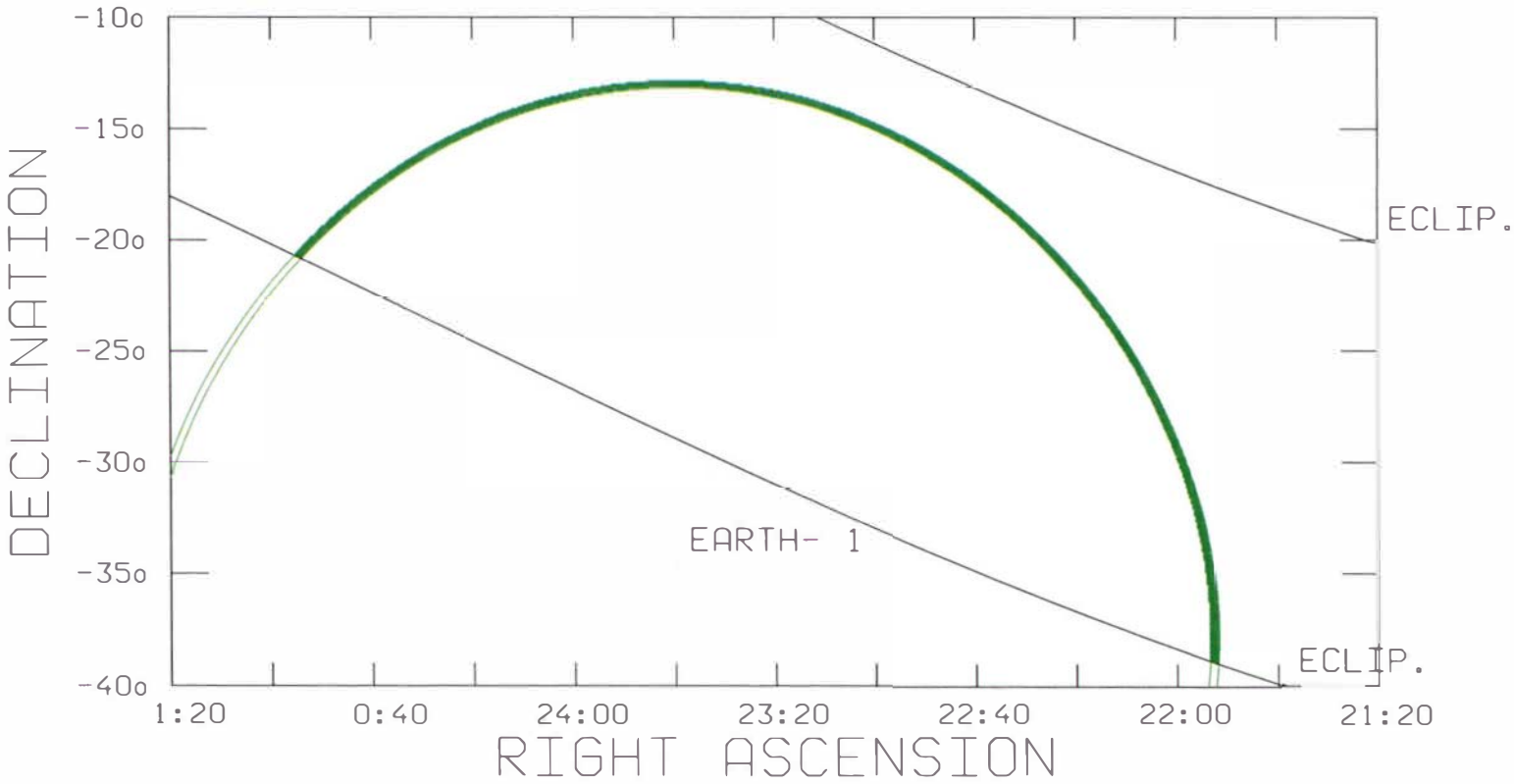
3. For INTEGRAL events

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

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

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

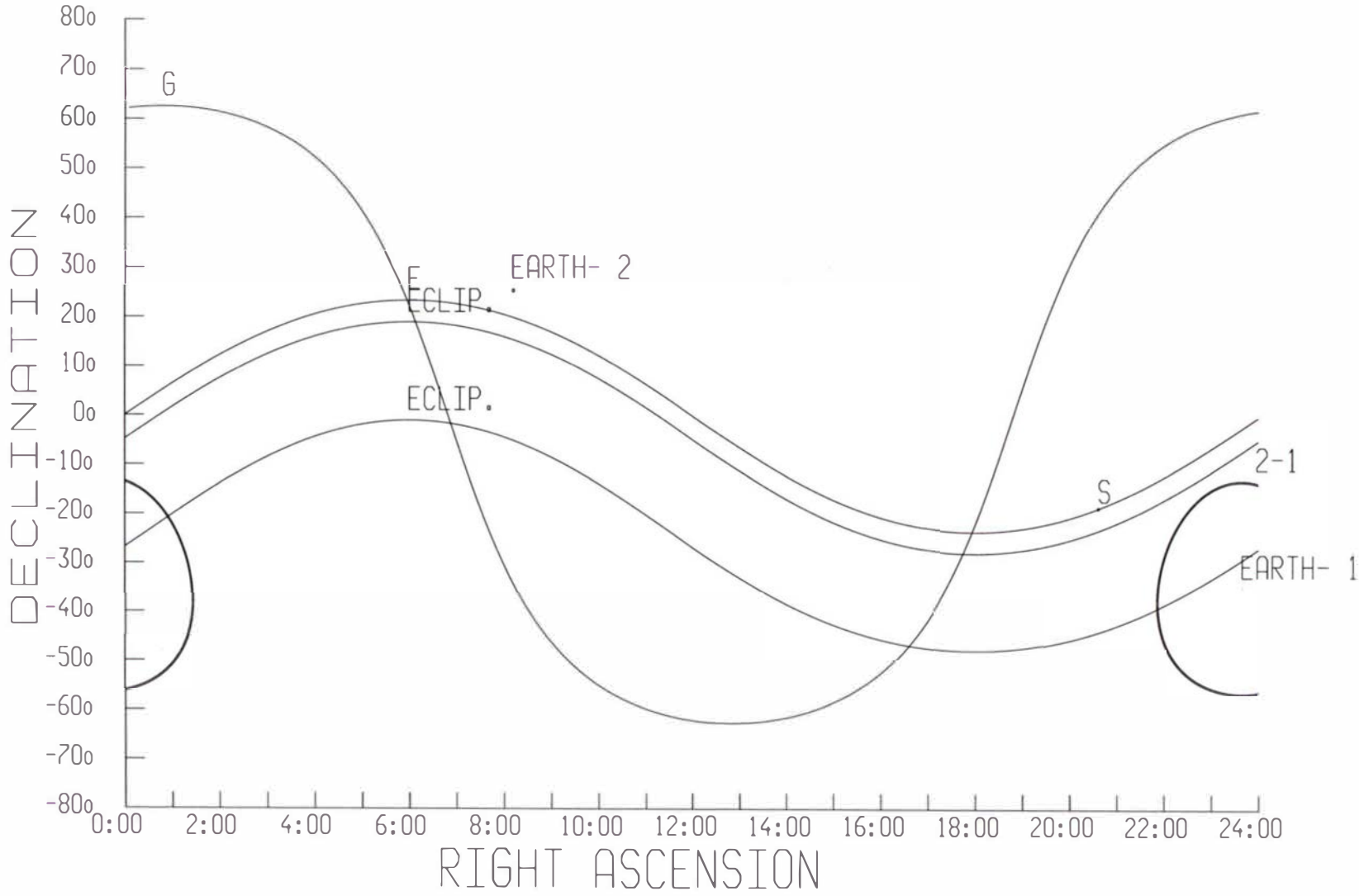
☑ ACCESS and MBL4 databases updated with identical times?


-10o
-15o
-20o
-25o
-30o
-35o
-40o
DECLINATION
ECLIP.
EARTH- 1
ECLIP.
1:20
0:40
24:00
23:20
22:40
22:00
21:20
RIGHT ASCENSION

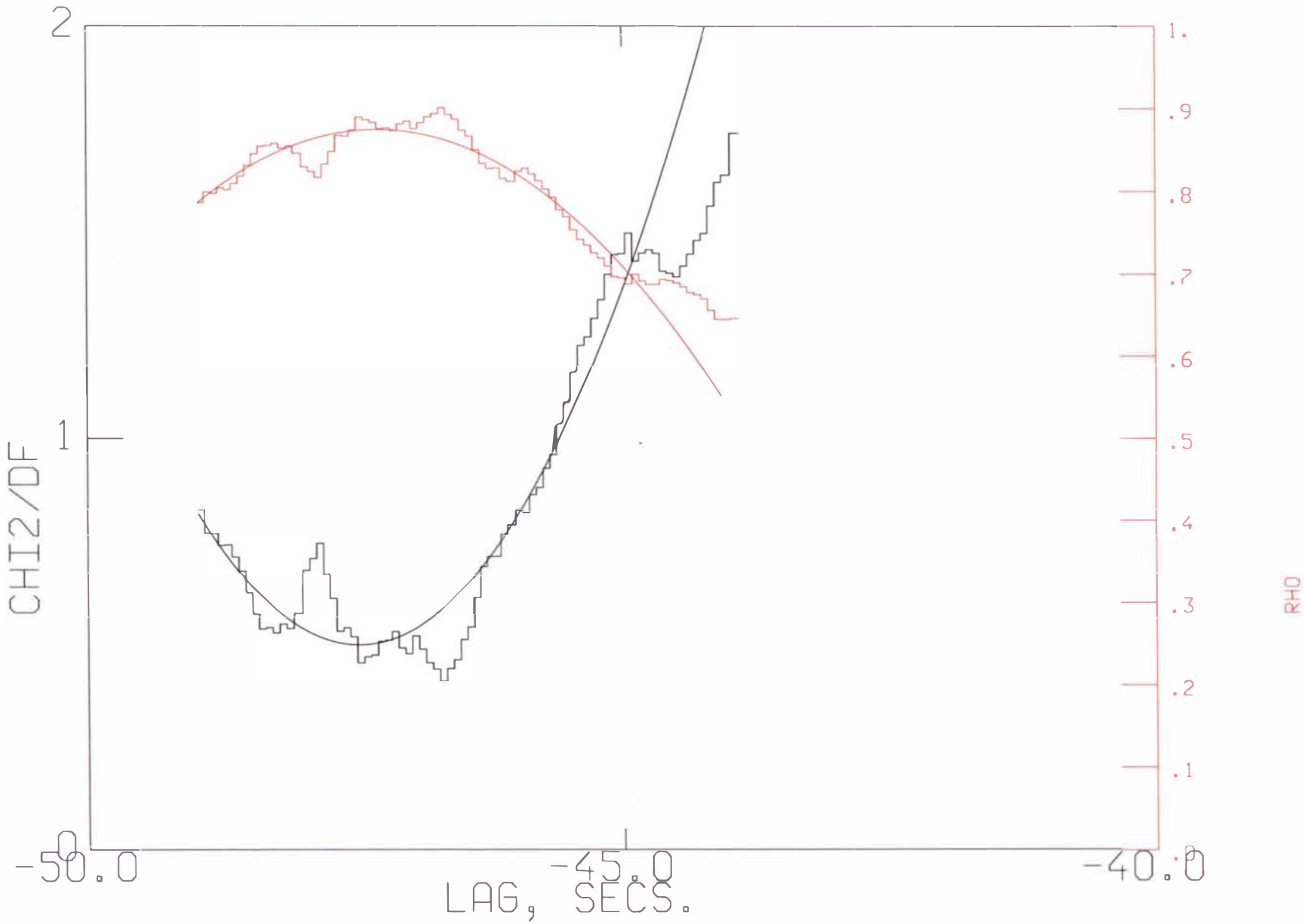
EVENT OF JAN 26, 1997 20:30

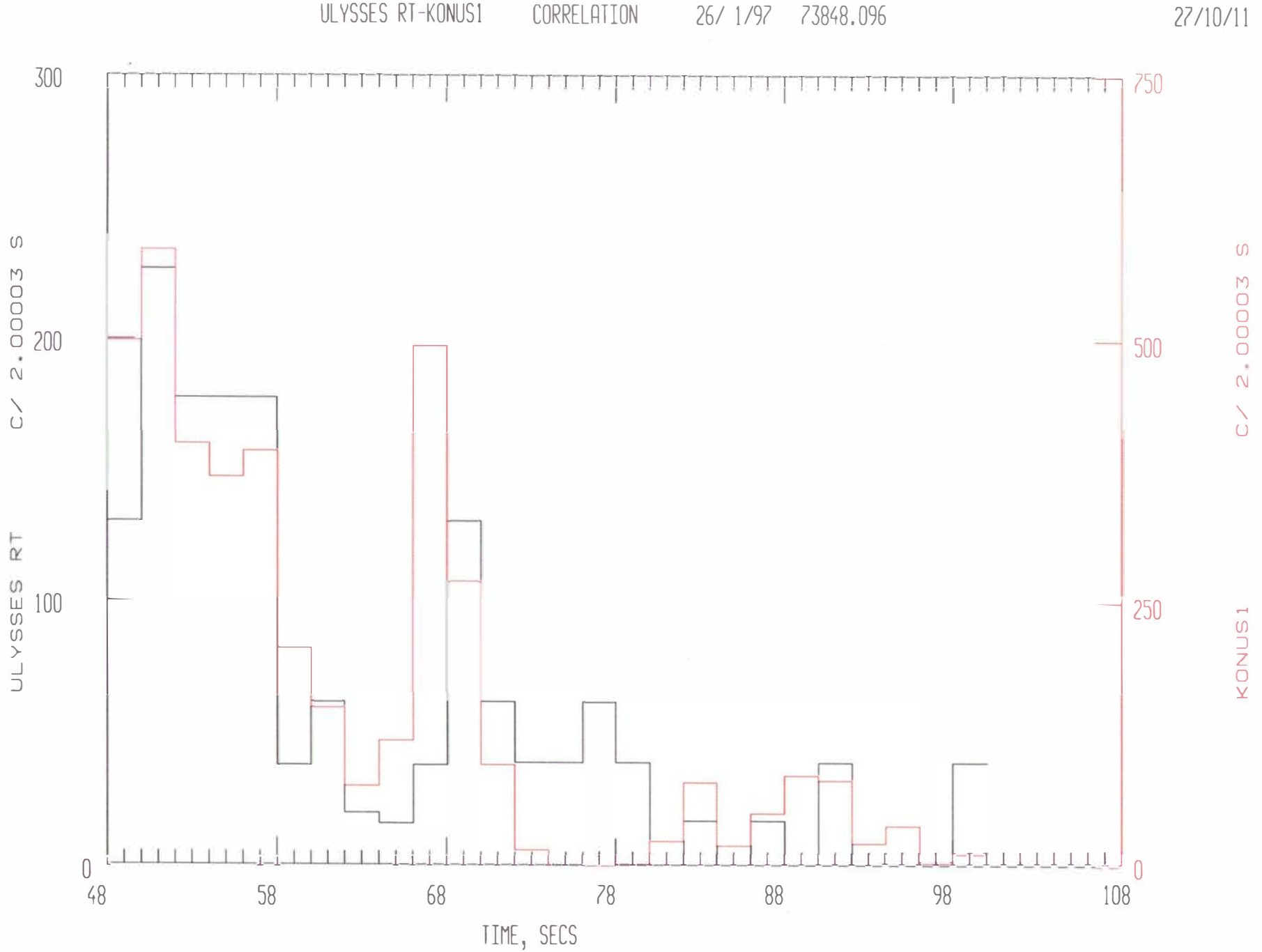
27/10/2011

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



ULYSSES RT-KONUS1 CORRELATION 26/ 1/97 73848.096



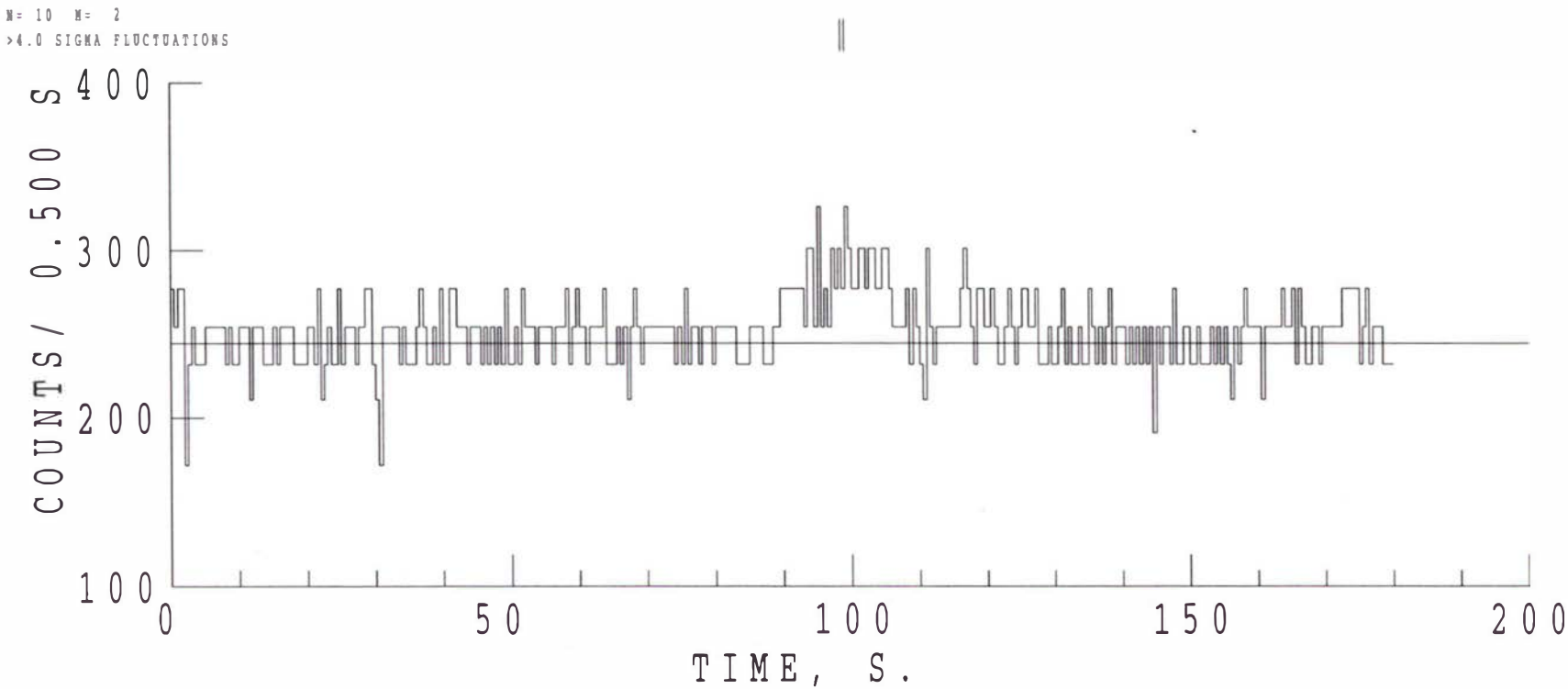

ULYSSES RT-KONUS1 CORRELATION 26/ 1/97 73848.096
27/10/11
300
200
100
0
750
500
250
0
48
58
68
78
88
98
108
TIME, SECS
C/ 2.00003 S
ULYSSES RT
C/ 2.00003 S
KONUS1

KONUS 19970126 73884

ULYSSES RT 25/10/11

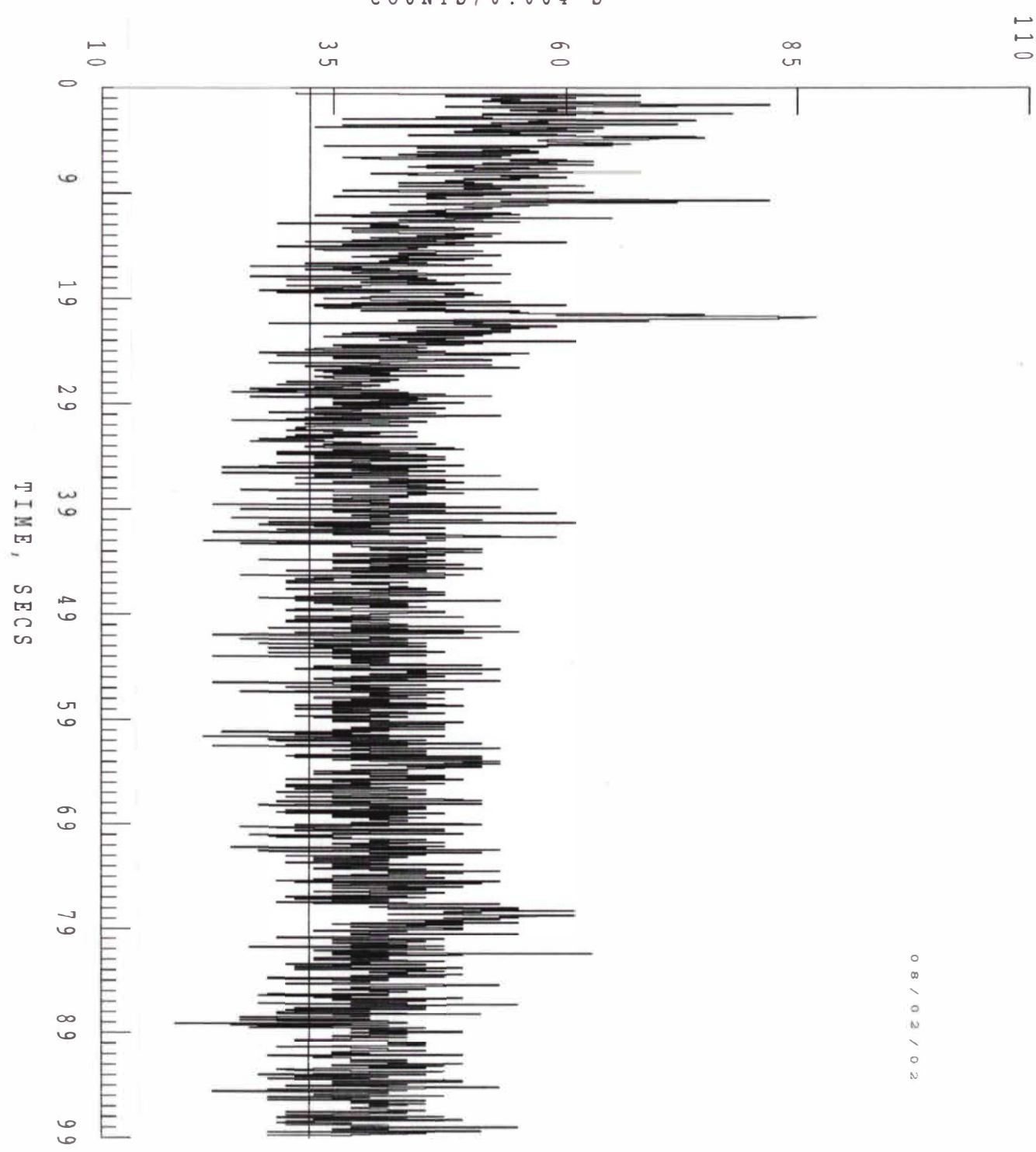
26/01/97 73800.062 s

0- 0 keV



KONUS1 26/01/97 72027.355

50- 200 keV



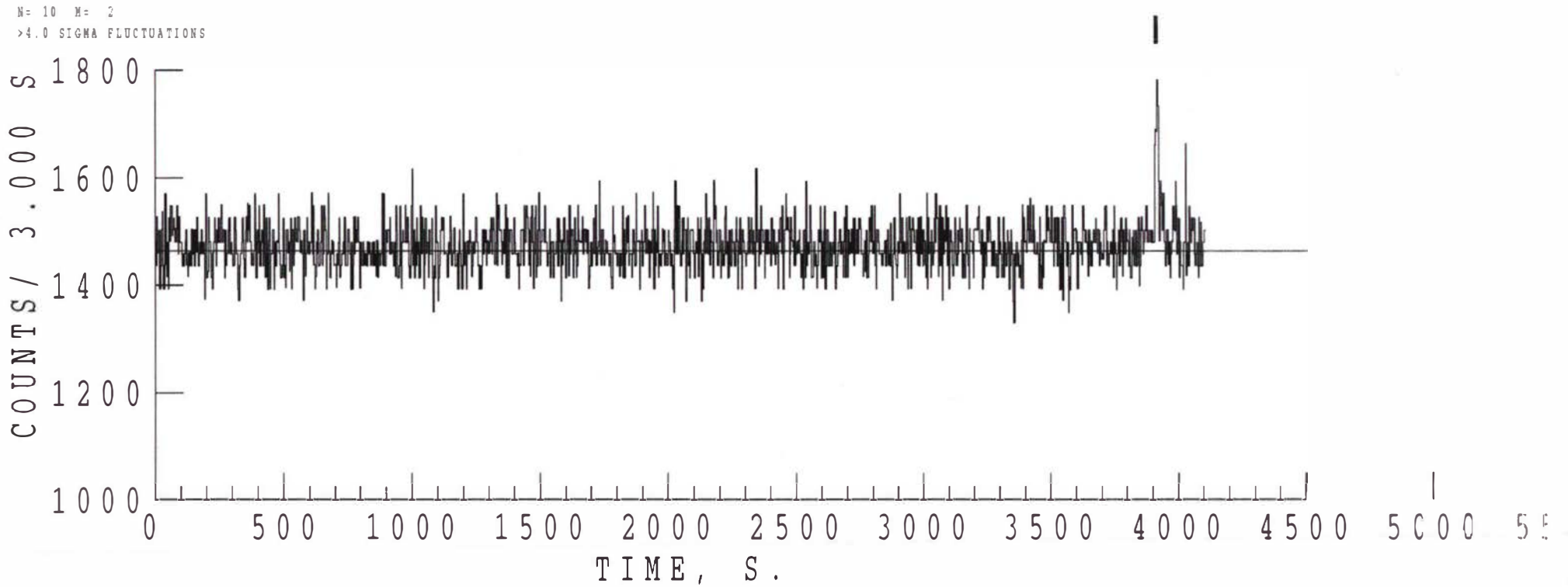
KONUS1 19970126 72027

ULYSSES RT 08/02/02

26/01/97 69984.023 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From kraken@rosserv.gsfc.nasa.gov Wed Mar 12 15:00 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 12 Mar 1997 18:00:58 -0500
    khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: TGRS/Ulysses GRB's
Cc: bonnard@rosserv.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hello Dr. Hurley,

I'm Peter Kurczynski, a graduate student in the LEGR group here at Goddard. I am working on TGRS data analysis. I am messaging you in response to several emails you've sent to Bonnard Teegarden and others about Ulysses gamma ray bursts and whether they could be corroborated by other instruments.

What follows is a list of the dates and times of Ulysses observations that were forwarded to me recently, and the results of a search through TGRS data for bursts. We've found two matches among the Ulysses bursts listed below. Please
let me know if you would like me to forward time history data or other information about them.

Take care,

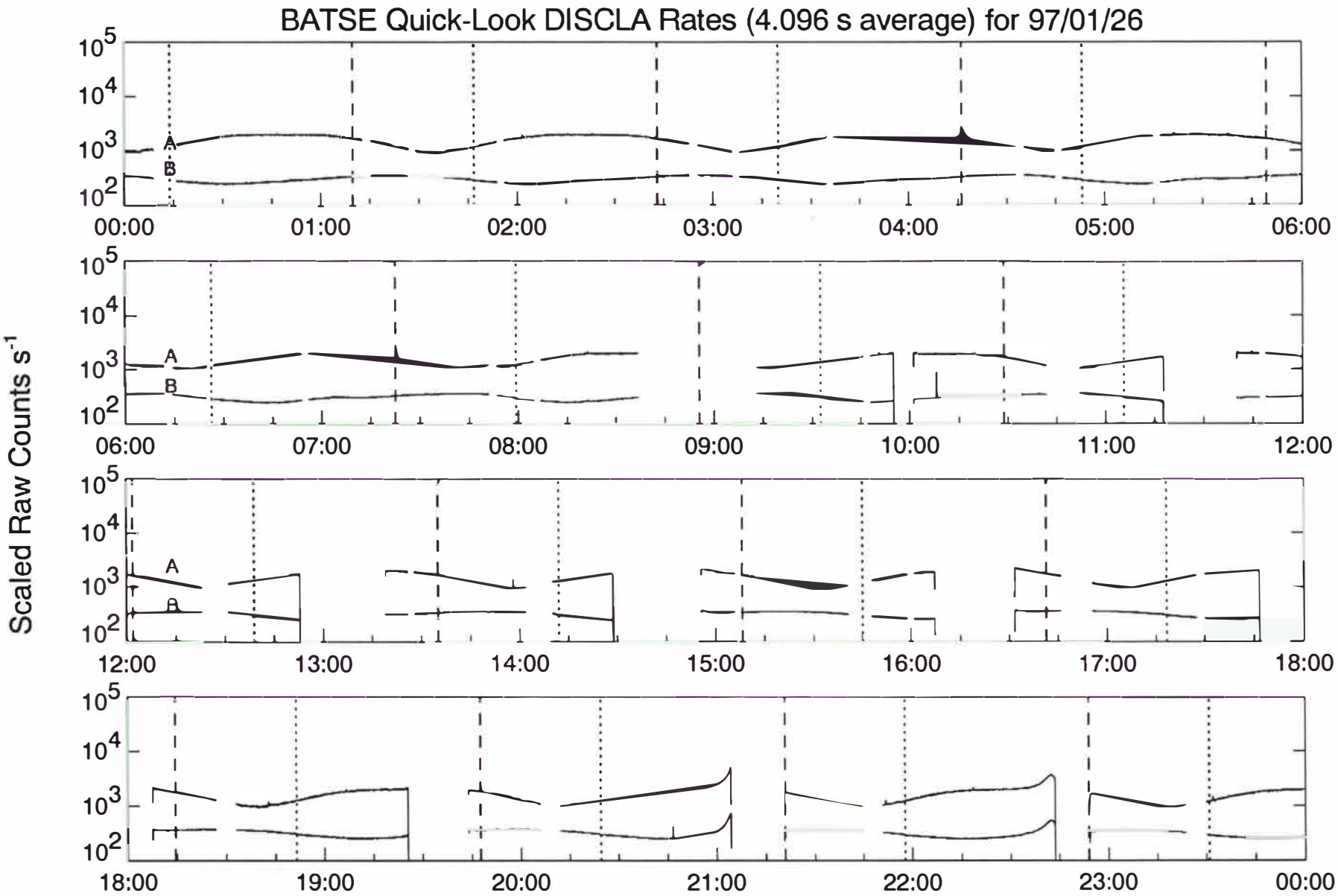
Pete

Ulysses date/time	TGRS detection
[illegible]. 15 1997 13:36	NO
Jan. 17 1997 15:07	YES! 20s duration FRED; peak at 970117:53211s
Jan. 17 1997 18:45	NO
Jan. 24 1997 12:51	YES! <10s duration; very narrow; peak at 970124:44347s
Jan. 26 1997 15:30	NO
Jan. 30 1997 19:33	NO
Feb. 4 1997 11:18	NO
Feb. 8 1997 18:04	NO

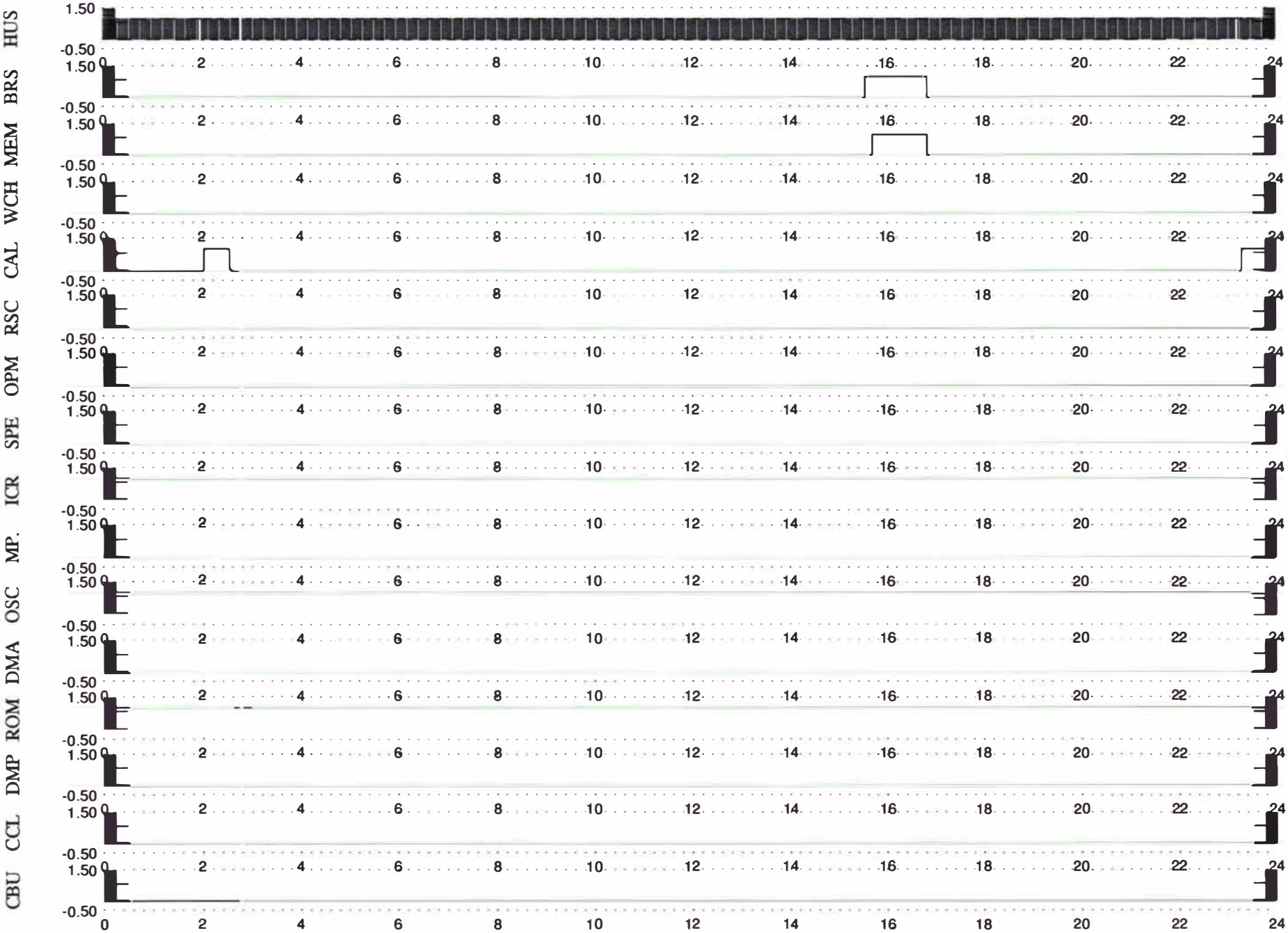
From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
Subject: examination of BATSE data in response to queries about Ulysses events

Here are the results of my examination of BATSE data for times of and
before the Ulysses events in your messages to Chryssa.
Bill Henze

Ulysses events and times				BATSE
Year	Mon	Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec	09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan	05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan	05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan	07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan	07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan	09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan	10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan	10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan	11	23:35	10459/84900	Nothing evident.
1997	Jan	13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan	14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan	15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
97	Jan	17	15:07	10465/54420	HV off during SAA.
1997	Jan	17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan	24	12:51	10472/46260	HV off during SAA.
1997	Jan	26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan	30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.


BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/26
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: 97/01/28, 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

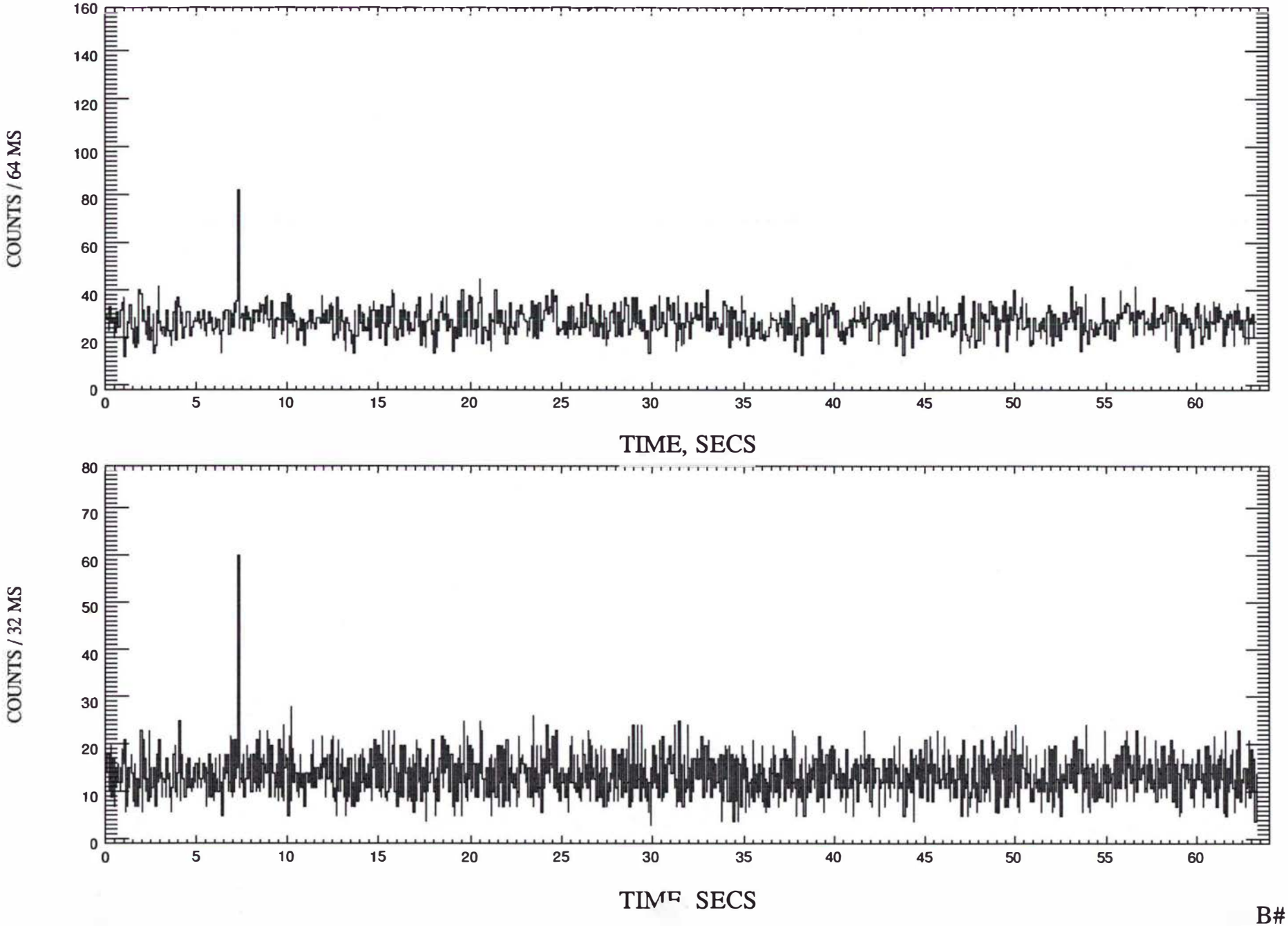
BURST NUMBER 14



UNIVI AL TIME

HUS 2A TRIGGERED DATA EDR day 26, year 1997 5/6/97

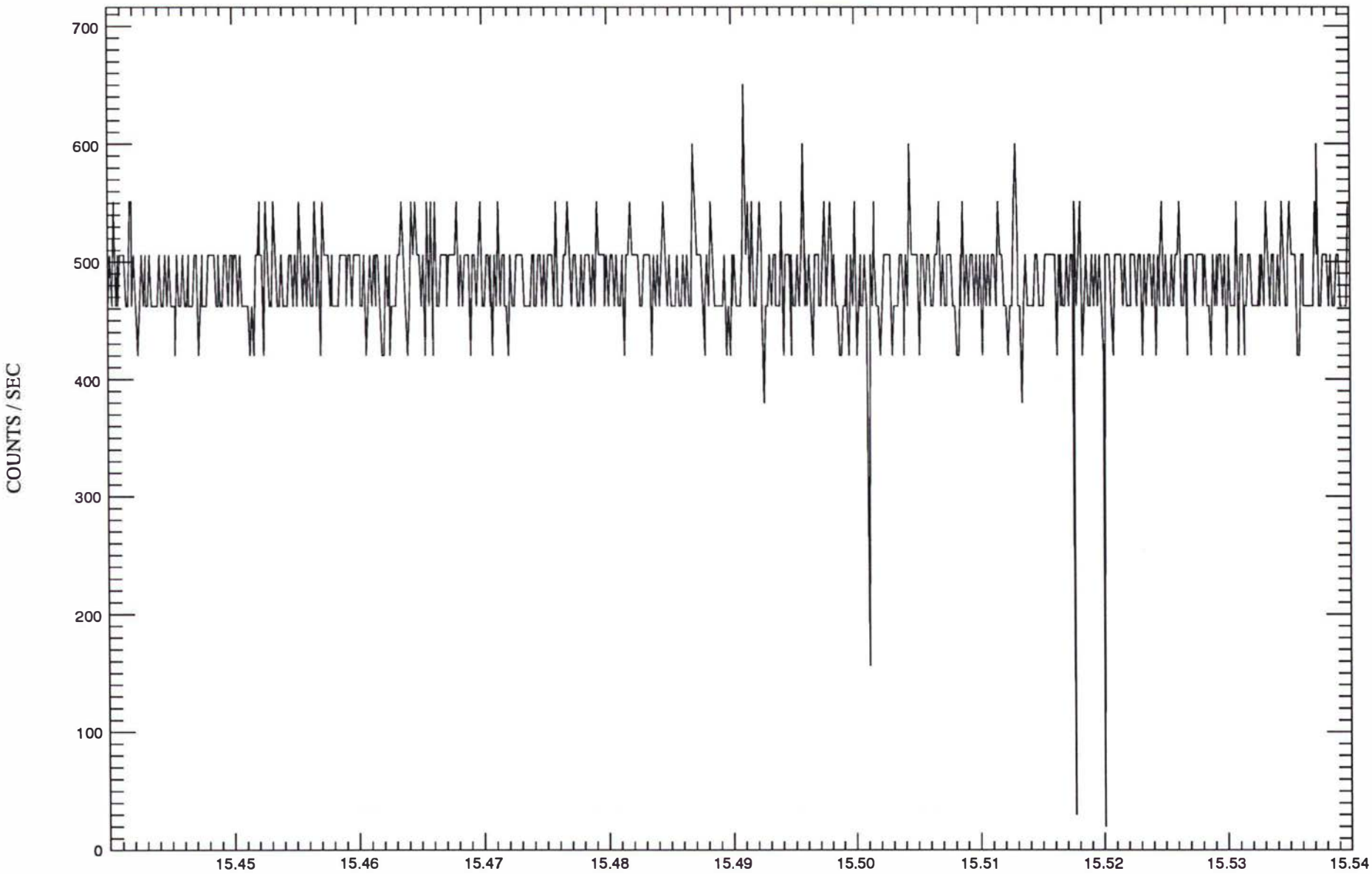
Burst Counter 14 at UT=15.491091732449 h=55767.930 s 15:29:27.930



B# 1

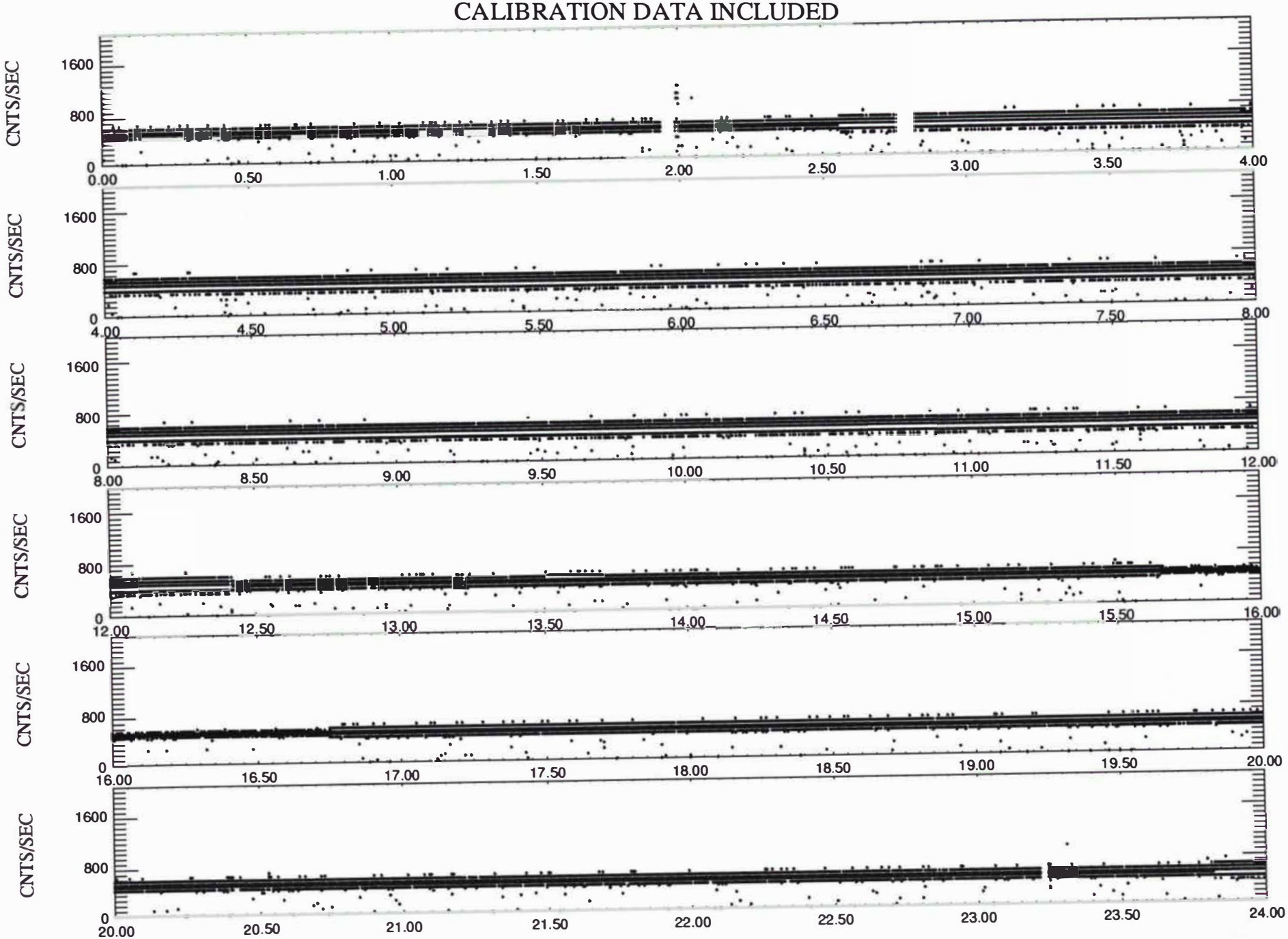
HUS 2A, MODE 1, NOT AVERAGED QEDR day 26, year 1997 to day 26, year 1997 1/27/97

CALIBRATION DATA INCLUDED



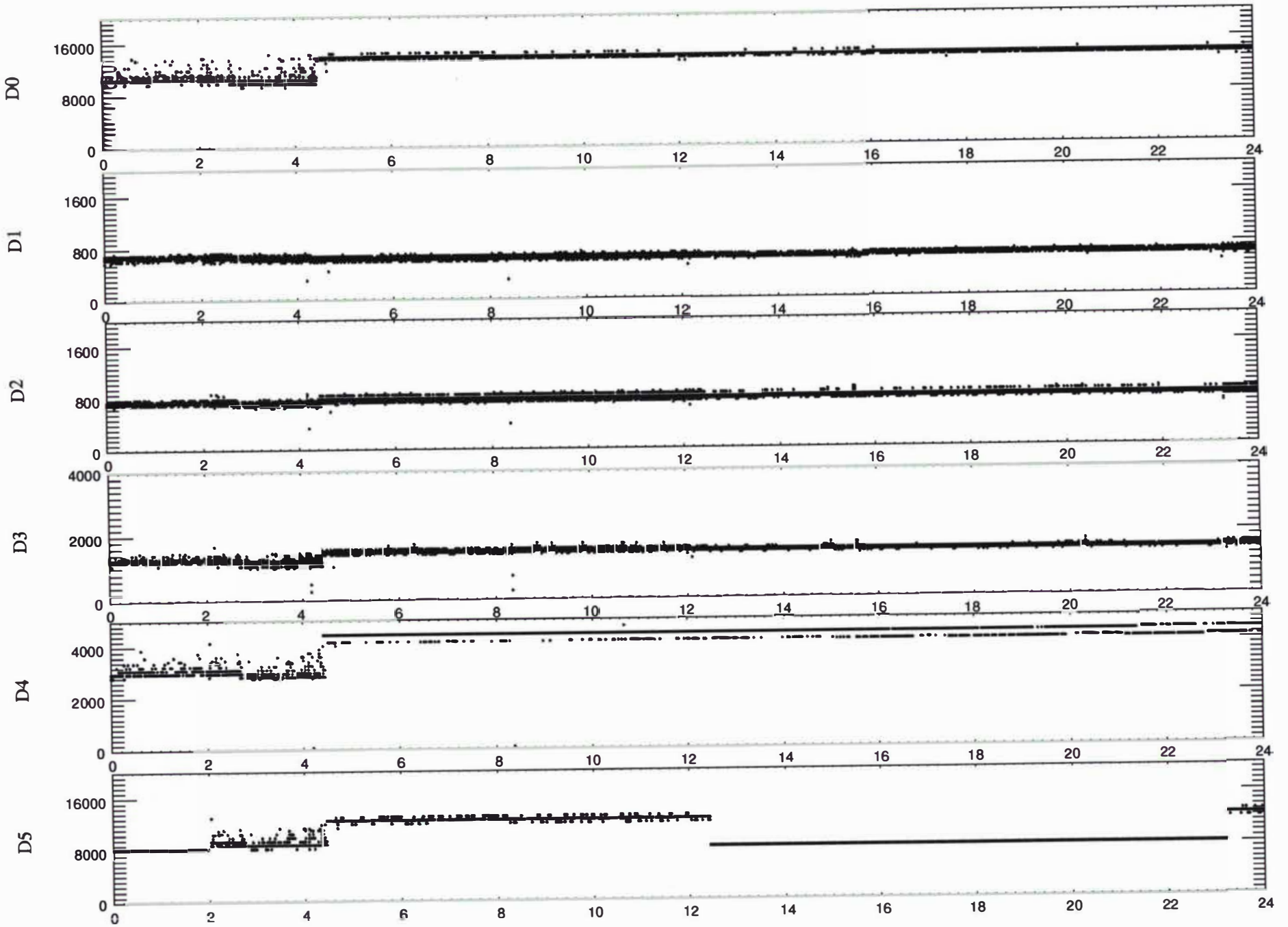
HUS 2A, MODE 1, NOT AVERAGED EDR day 26, year 1997 to day 26, year 1997 5/5/97

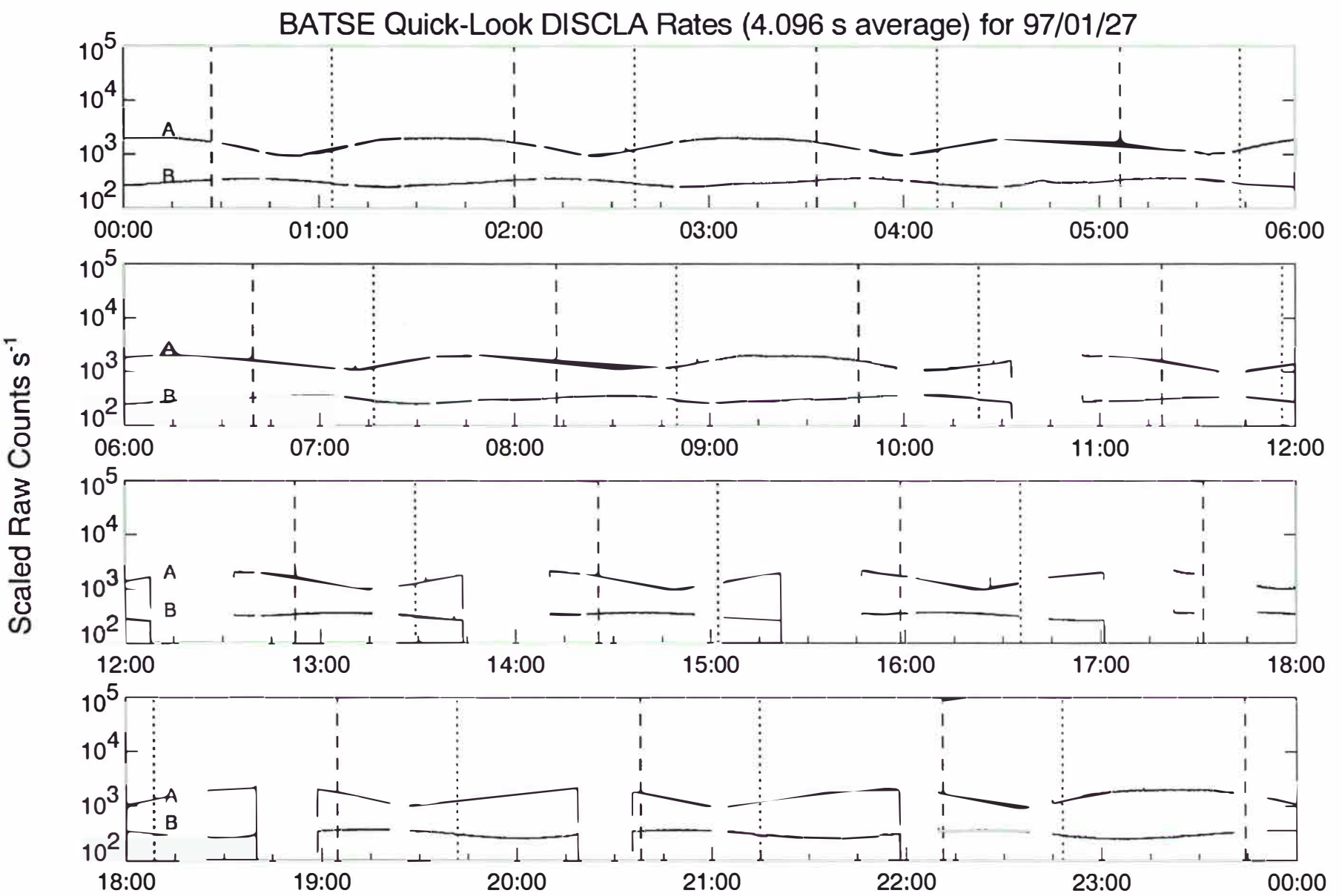
CALIBRATION DATA INCLUDED



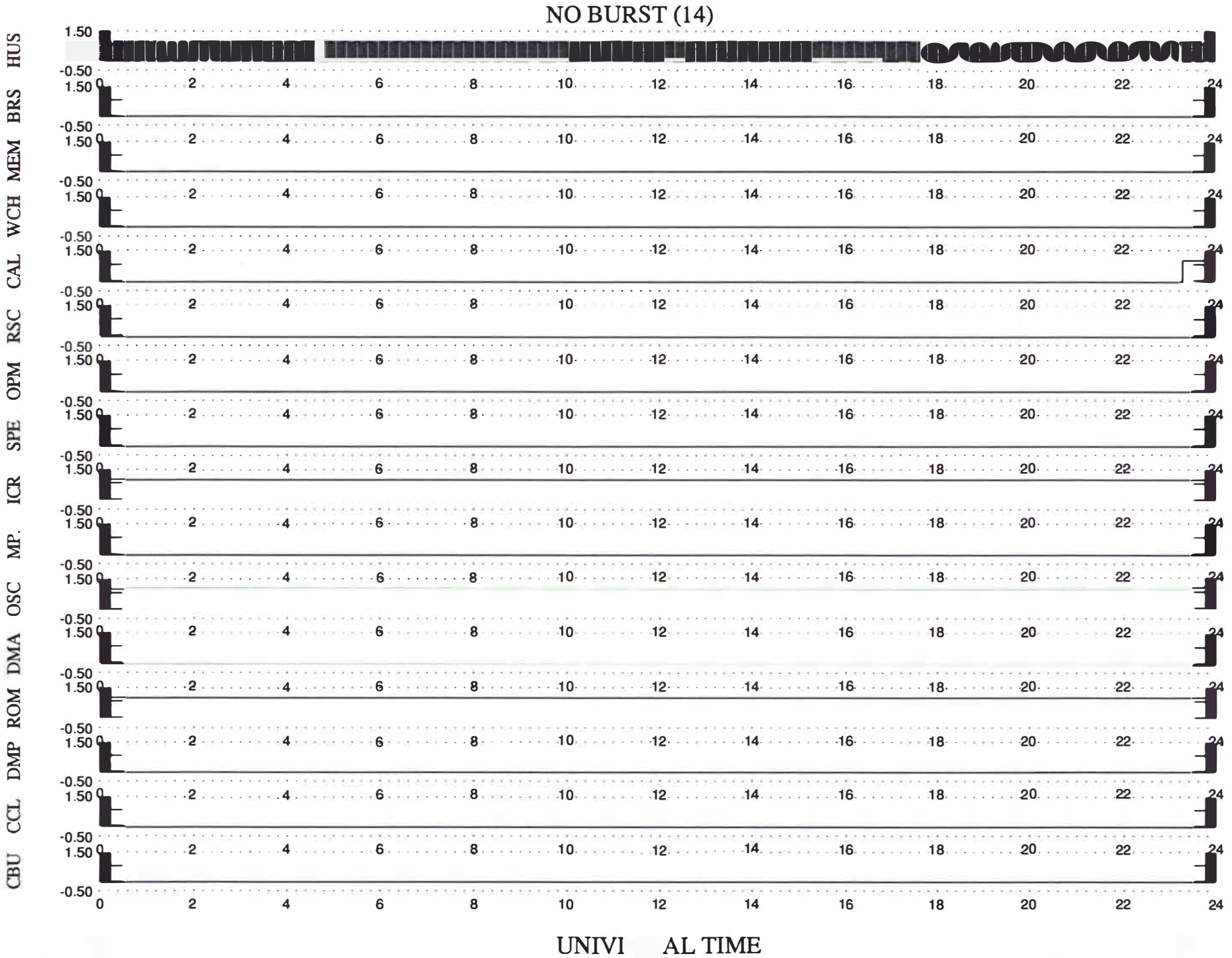
UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 26, year 1997 to day 26, year 1997 5/5/97



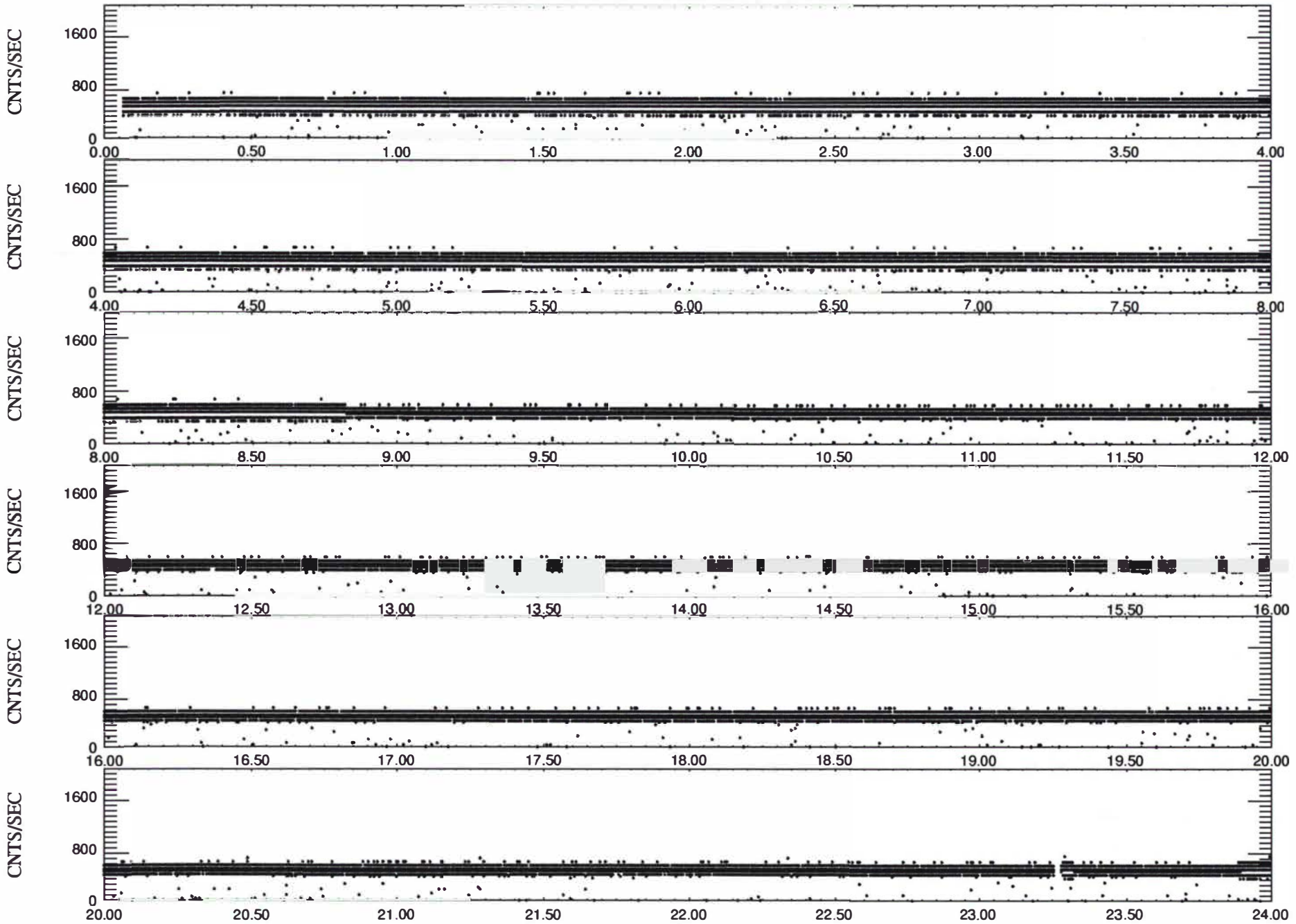

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/27
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/29, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 27, year 1997 to day 27, year 1997 5/5/97



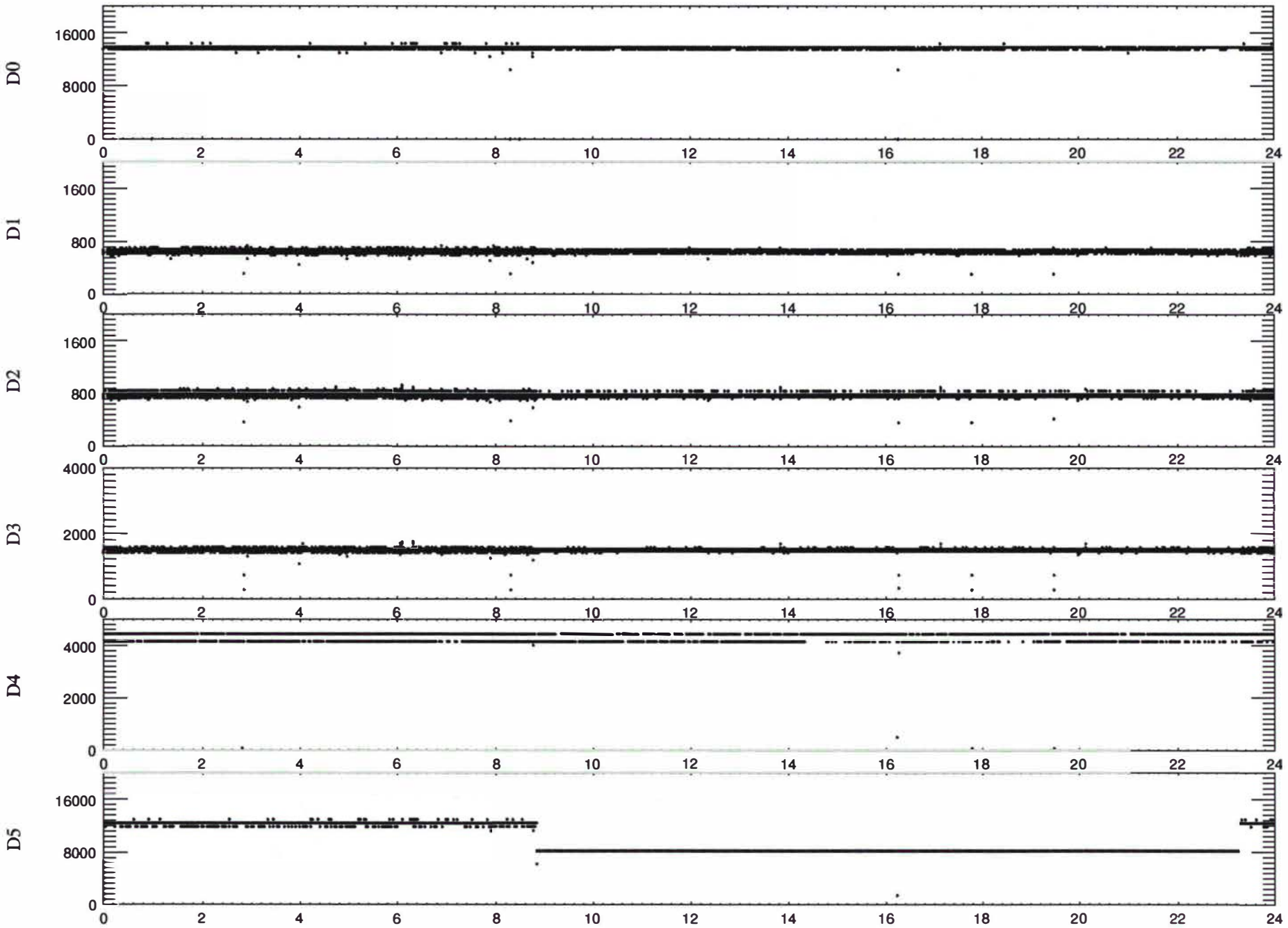
HUS 2A, MODE 1, NOT AVERAGED EDR day 27, year 1997 to day 27, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 27, year 1997 to day 27, year 1997 5/5/97



From RICHARDSON@ssl.msfc.nasa.gov Thu Jan 30 11:34 PST 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 LAA25456; Thu, 30 Jan 1997 11:34:38 -0800
Date: Thu, 30 Jan 1997 13:34:12 -0600 (CST)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970130133412.2dc004d2@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 5955
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5955
EVENT OF 1997 JAN 28 DAY OF YEAR= 28
EVENT CROSSING TIME AT BATSE : 29942. S. OR 08:19:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 275.000 25.000
BATSE PEAK COUNTING RATE: 11750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 28/ 1/ 97 IS:
RA= 173.663 DEC= 35.149 DIST= 4.009 AU
BATSE-ULYSSES DISTANCE = 599736387. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -195.31 SECS.
CROSSING TIME AT ULYSSES IS 29747. S. OR 08:15:46 +/- 392.69 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 28/ 1/ 97 IS:
RA= 186.271 DEC= 0.818 DIST= 0.914 AU
MARS-BATSE DISTANCE = 136732112. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 91.50 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -11.92 SECS.
CROSSING TIME AT MARS IS 29930. S. OR 08:18:50 +/- 78.98 SECONDS

BATSE BURST TRIGGER

NO.: 5955

TIME: TJD=0476 SECONDS=29942

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.7 AZIMUTH=36.5 ERROR=2.1 DEGREES

COMMENTS:
GRB. DOUBLE SPIKE WITH EXTENDED EMISSION. DUR.~14 SEC. SLIGHTLY VISIBLE
ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5955	970128	10476	29942	11750	275	+25	14

BATSE# 5955

ULYSSES RT 31/ 1/97

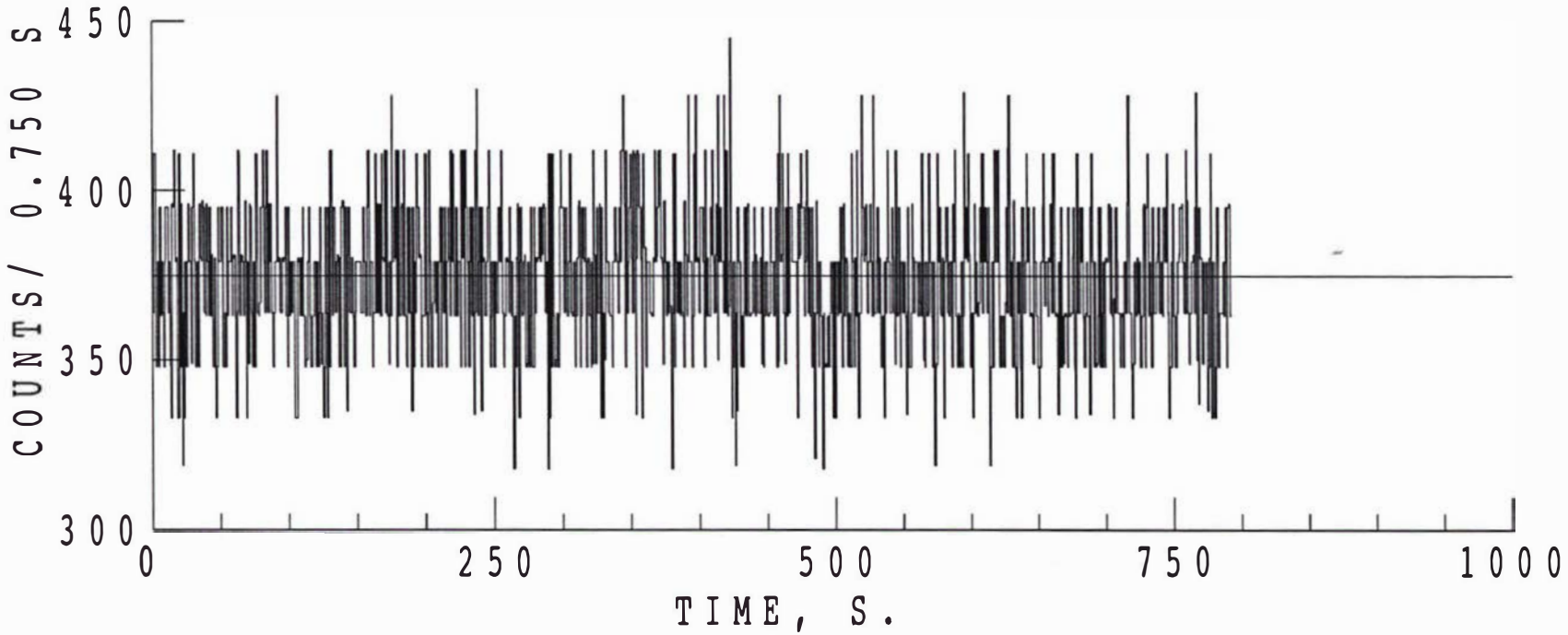
28/ 1/97 29340.123 s

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



Date: Feb 6 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

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

3. For INTEGRAL events N/A

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

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

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

☑ ACCESS and MBL4 databases updated?

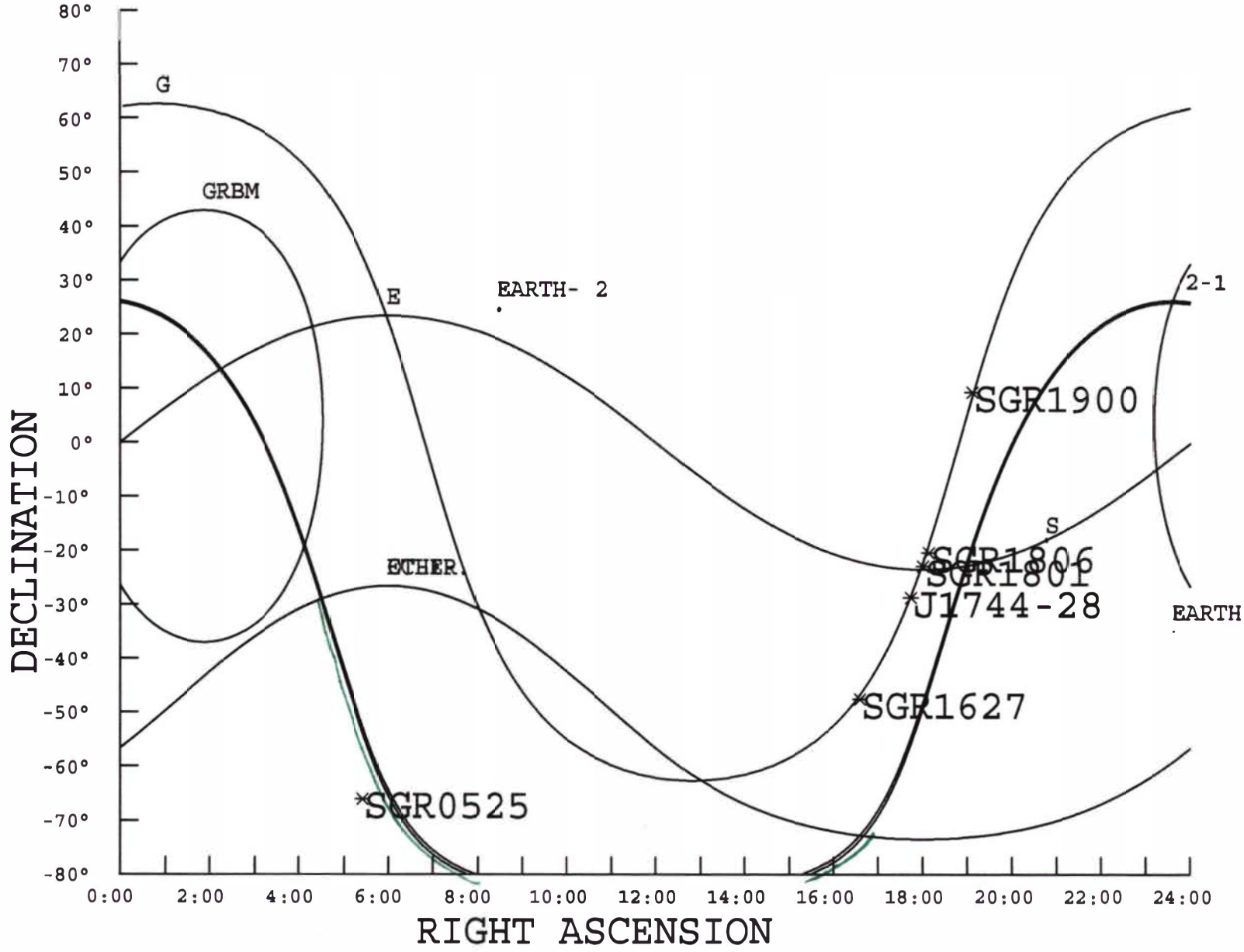
IPN/Konus GL incons is. w. GRBM error circle, but consis. w. contours

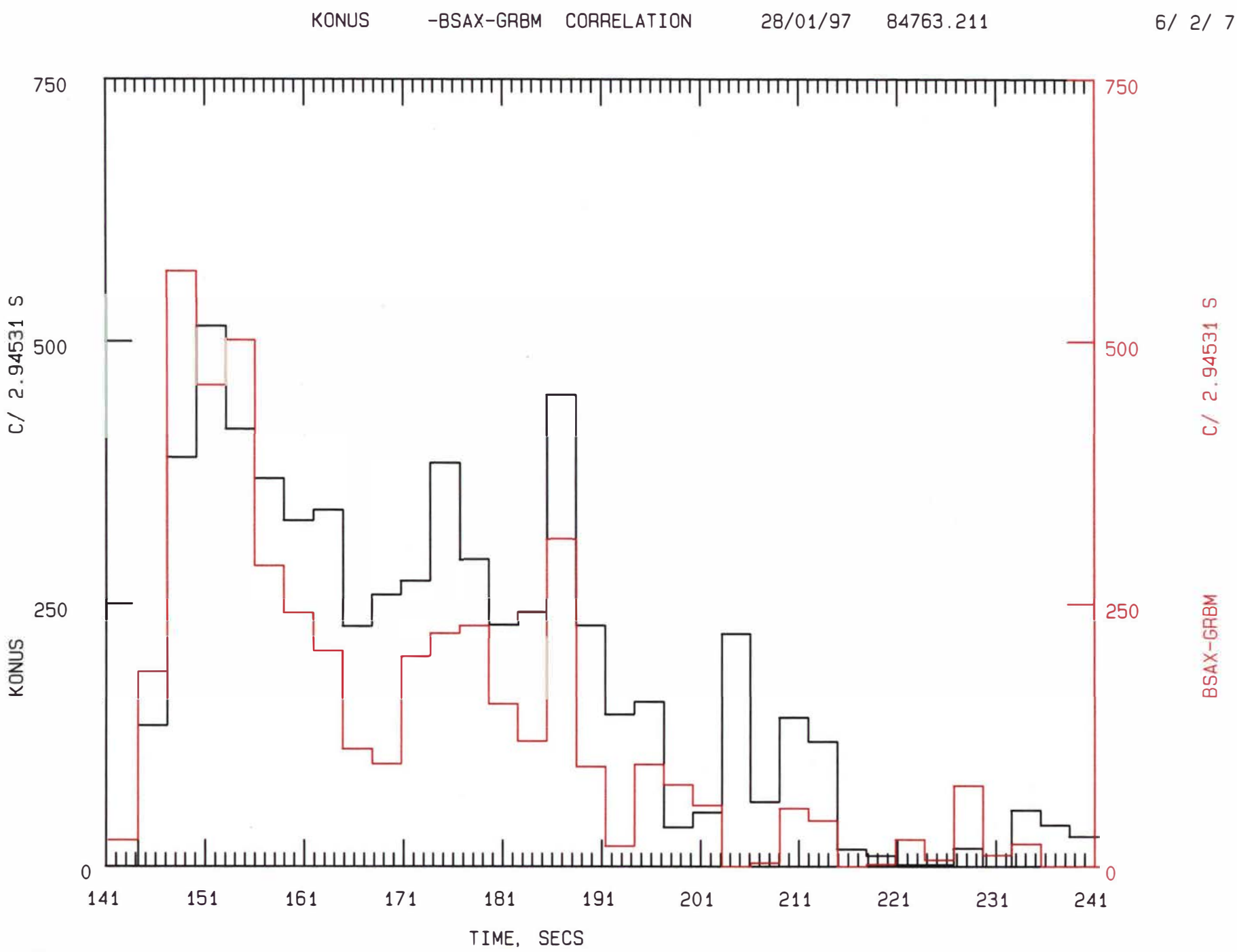
"Other" circle added

EVENT OF JAN 28, 1997 23:50

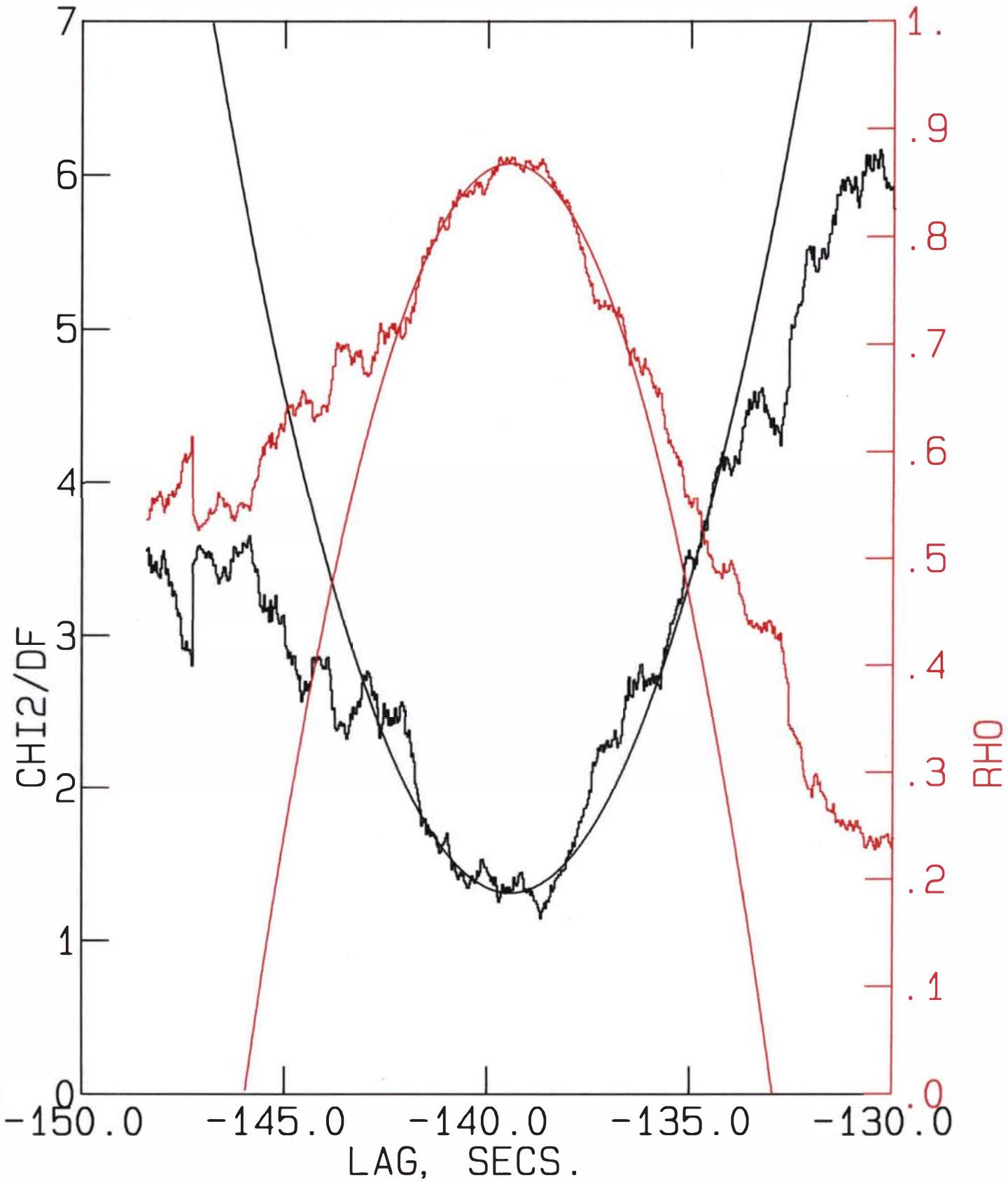
23/ 7/ 9

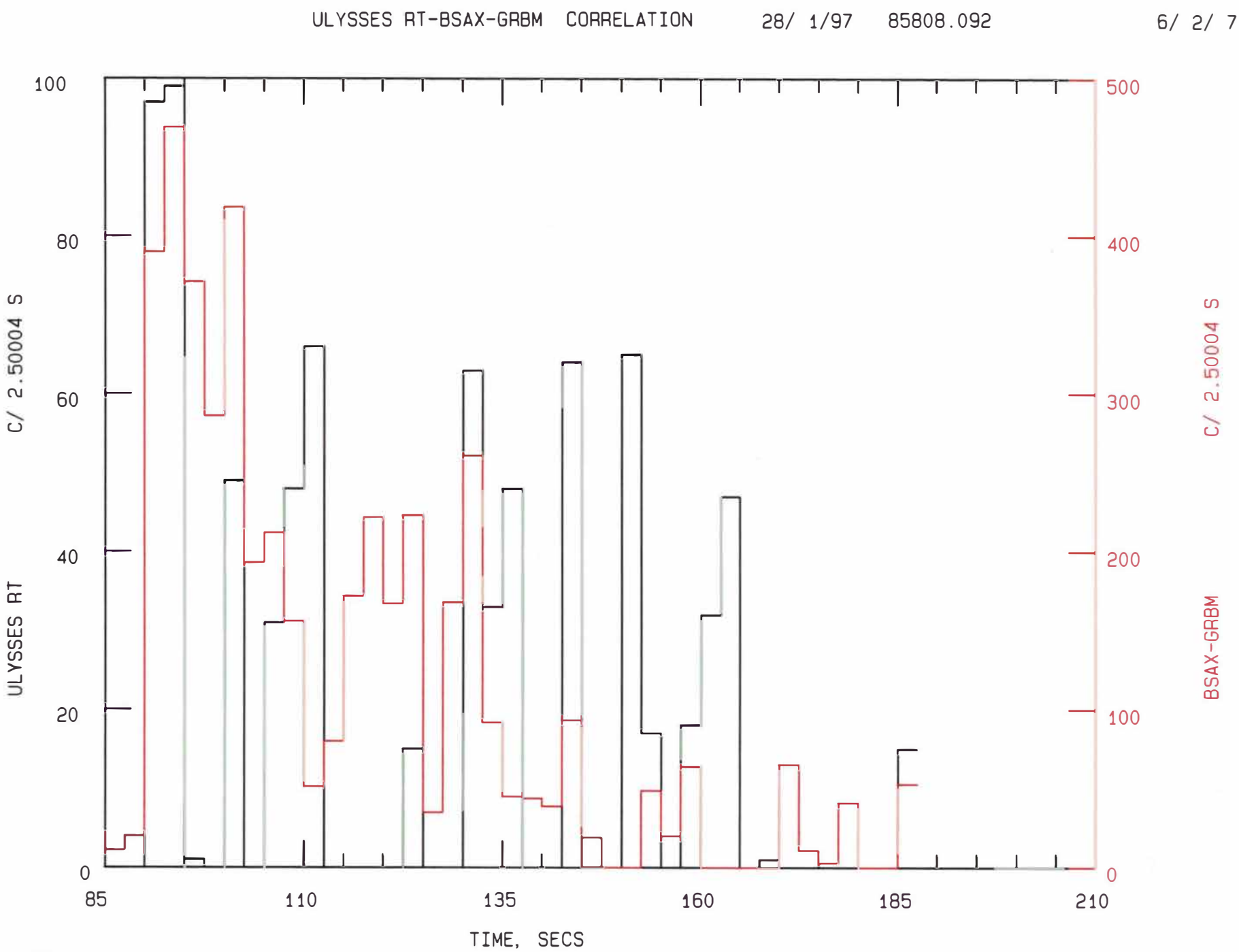
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS



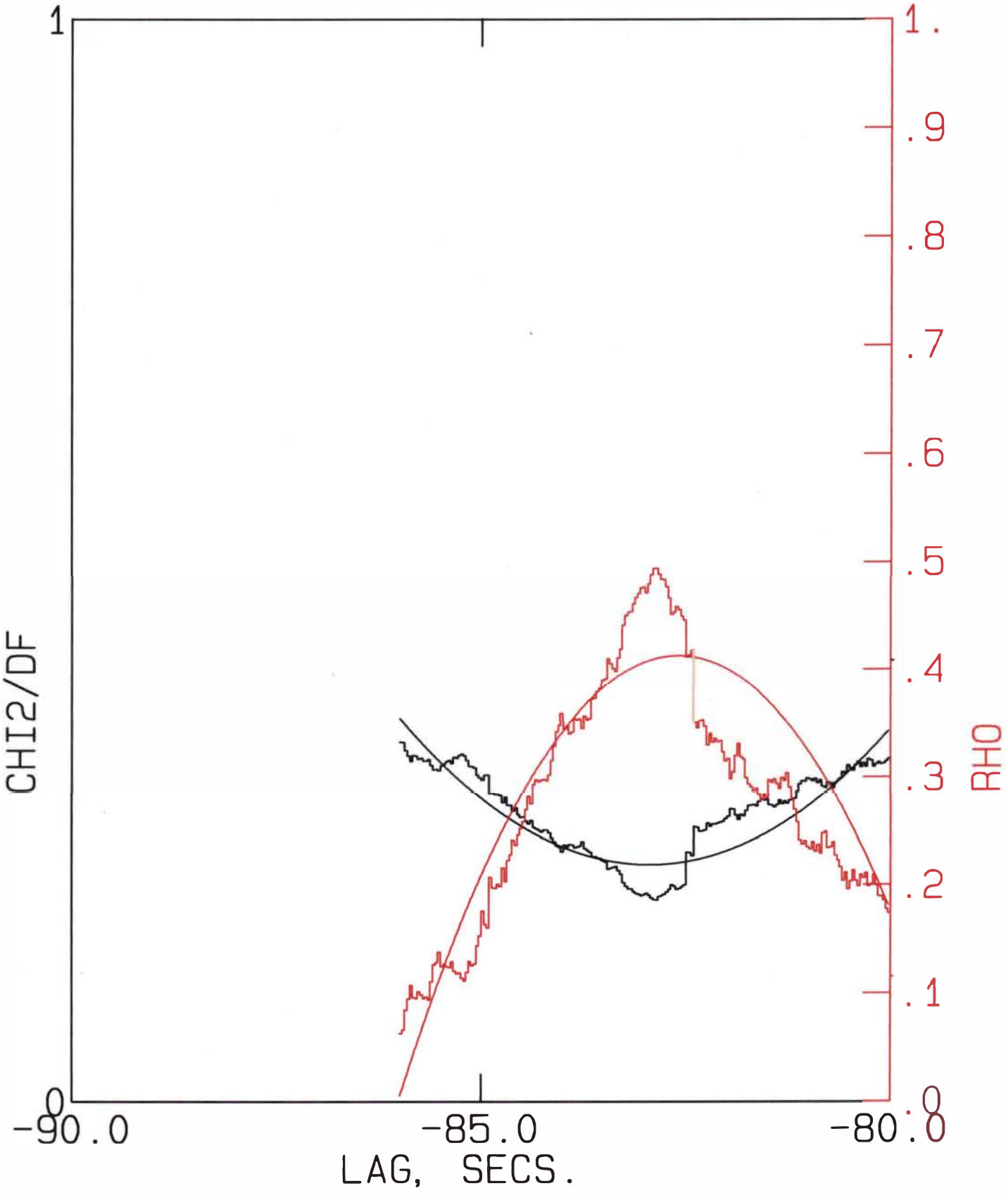

KONUS -BSAX-GRBM CORRELATION 28/01/97 84763.211 6/ 2/ 7
750
500
250
0
C/ 2.94531 S
KONUS
750
500
250
0
C/ 2.94531 S
BSAX-GRBM
141
151
161
171
181
191
201
211
221
231
241
TIME, SECS

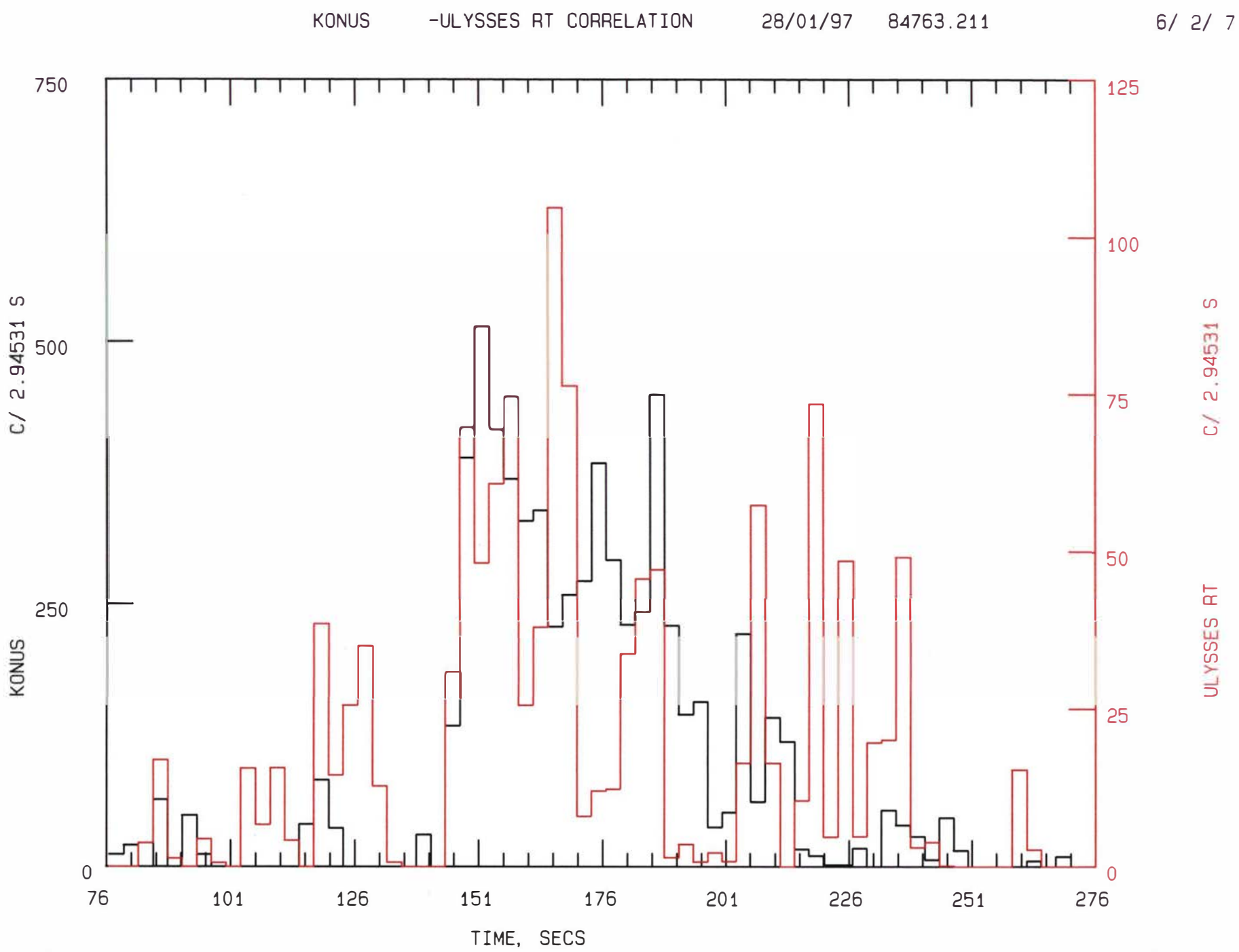
KONUS -BSAX-GRBM CORRELATION 28/01/97 84763.211



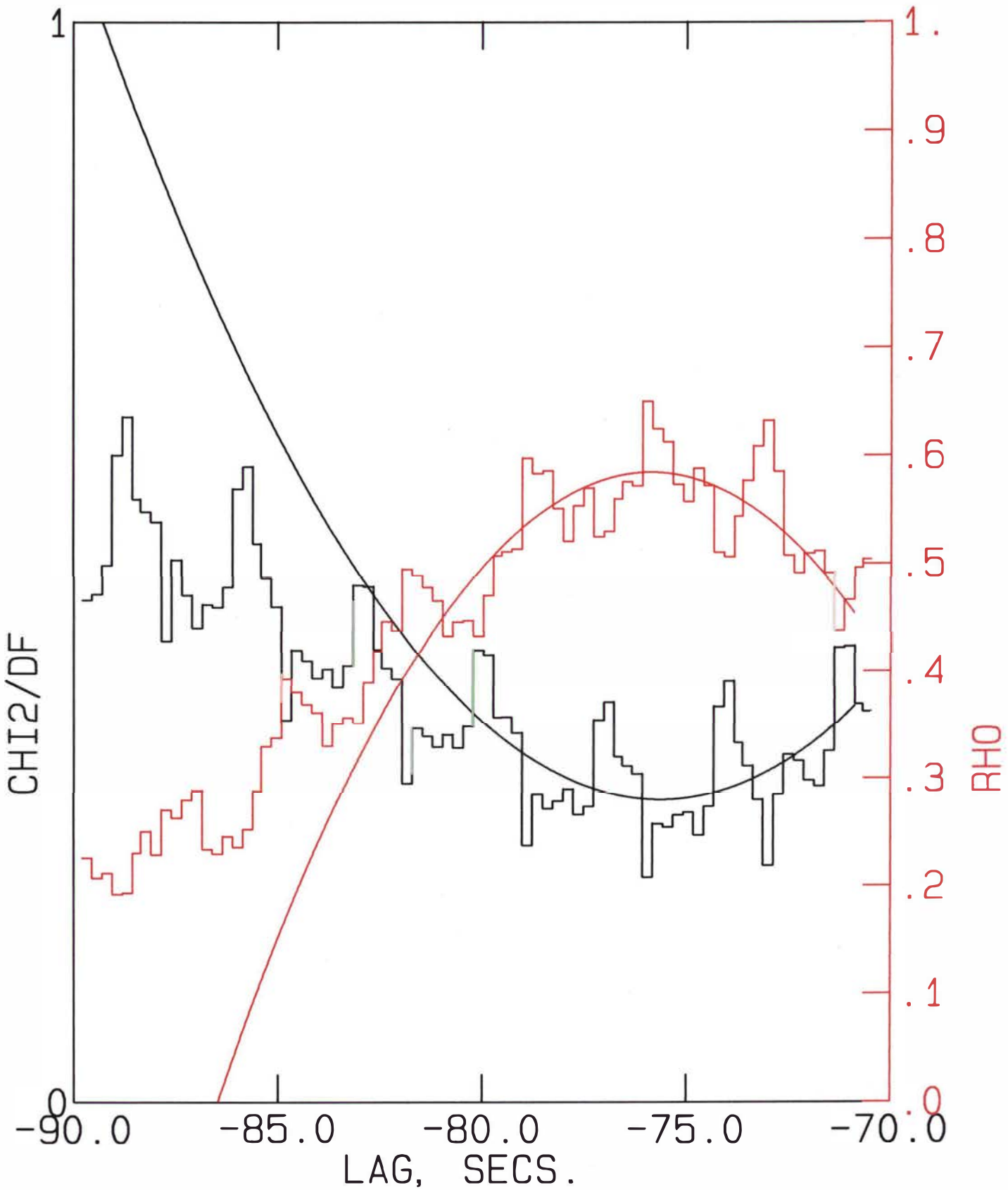

ULYSSES RT-BSAX-GRBM CORRELATION 28/ 1/97 85808.092 6/ 2/ 7
ULYSSES RT
C/ 2.50004 S
BSAX-GRBM
C/ 2.50004 S
TIME, SECS
0
20
40
60
80
100
0
100
200
300
400
500
85
110
135
160
185
210

ULYSSES RT-BSAX-GRBM CORRELATION 28/ 1/97 85808.092




KONUS -ULYSSES RT CORRELATION 28/01/97 84763.211 6/ 2/ 7
750
500
250
0
C/ 2.94531 S
KONUS
125
100
75
50
25
0
C/ 2.94531 S
ULYSSES RT
76
101
126
151
176
201
226
251
276
TIME, SECS

KONUS -ULYSSES RT CORRELATION 28/01/97 84763.211



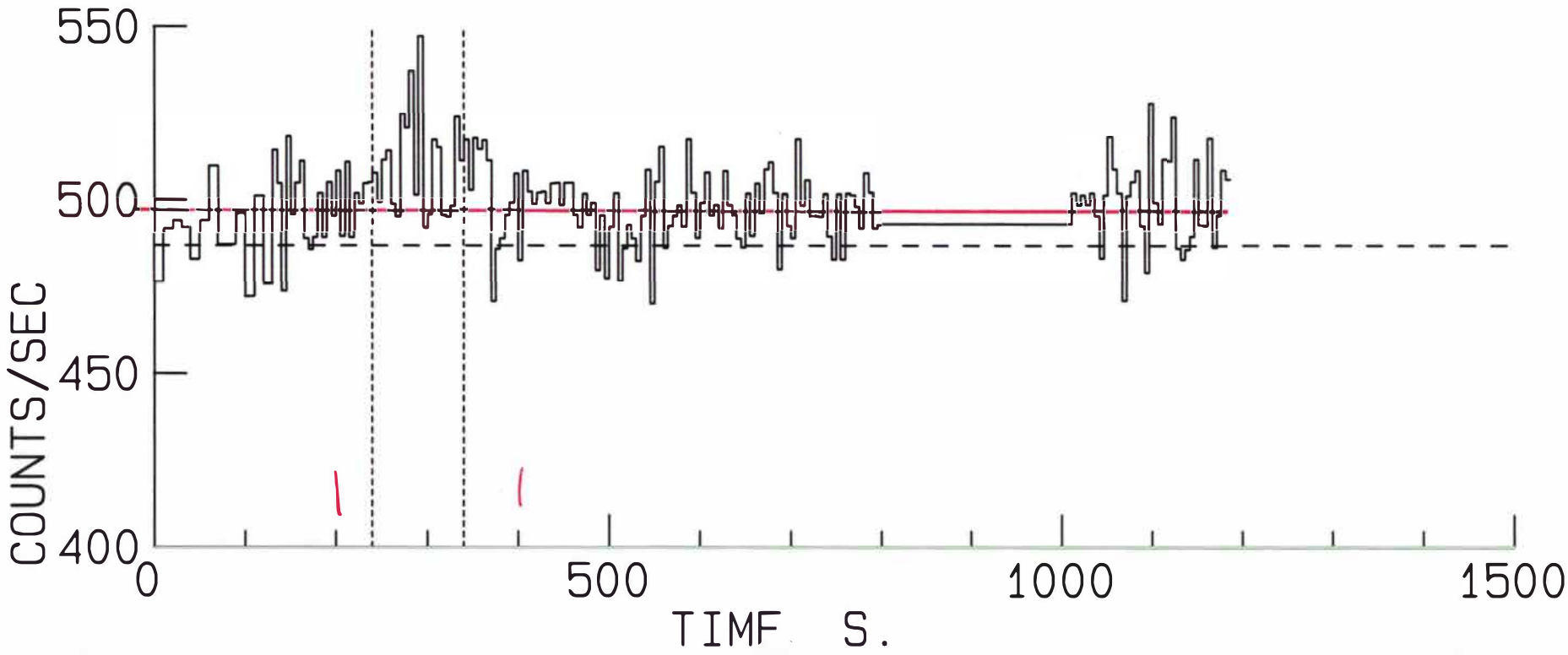
ULYSSES RT

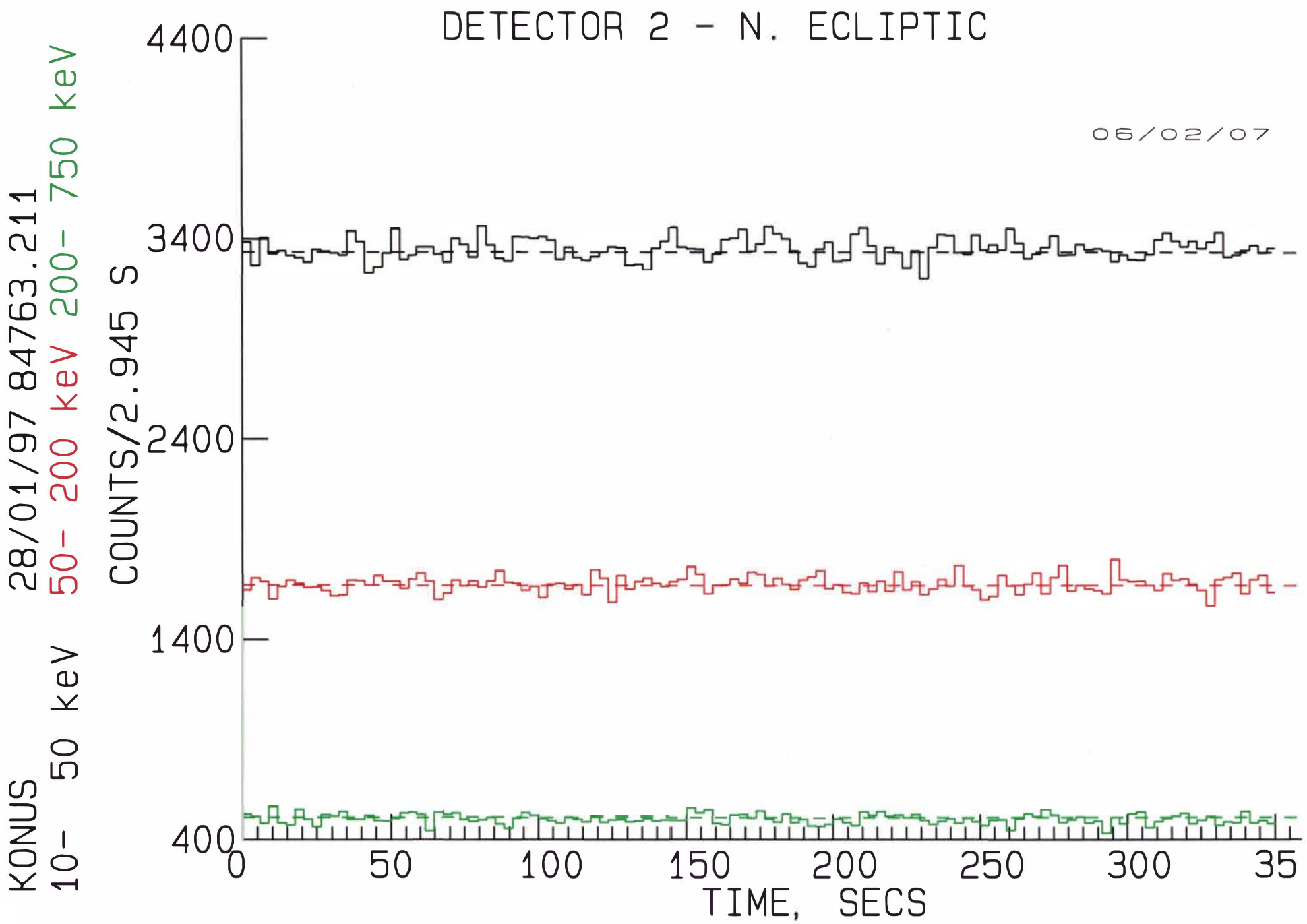
6/ 2/ 7

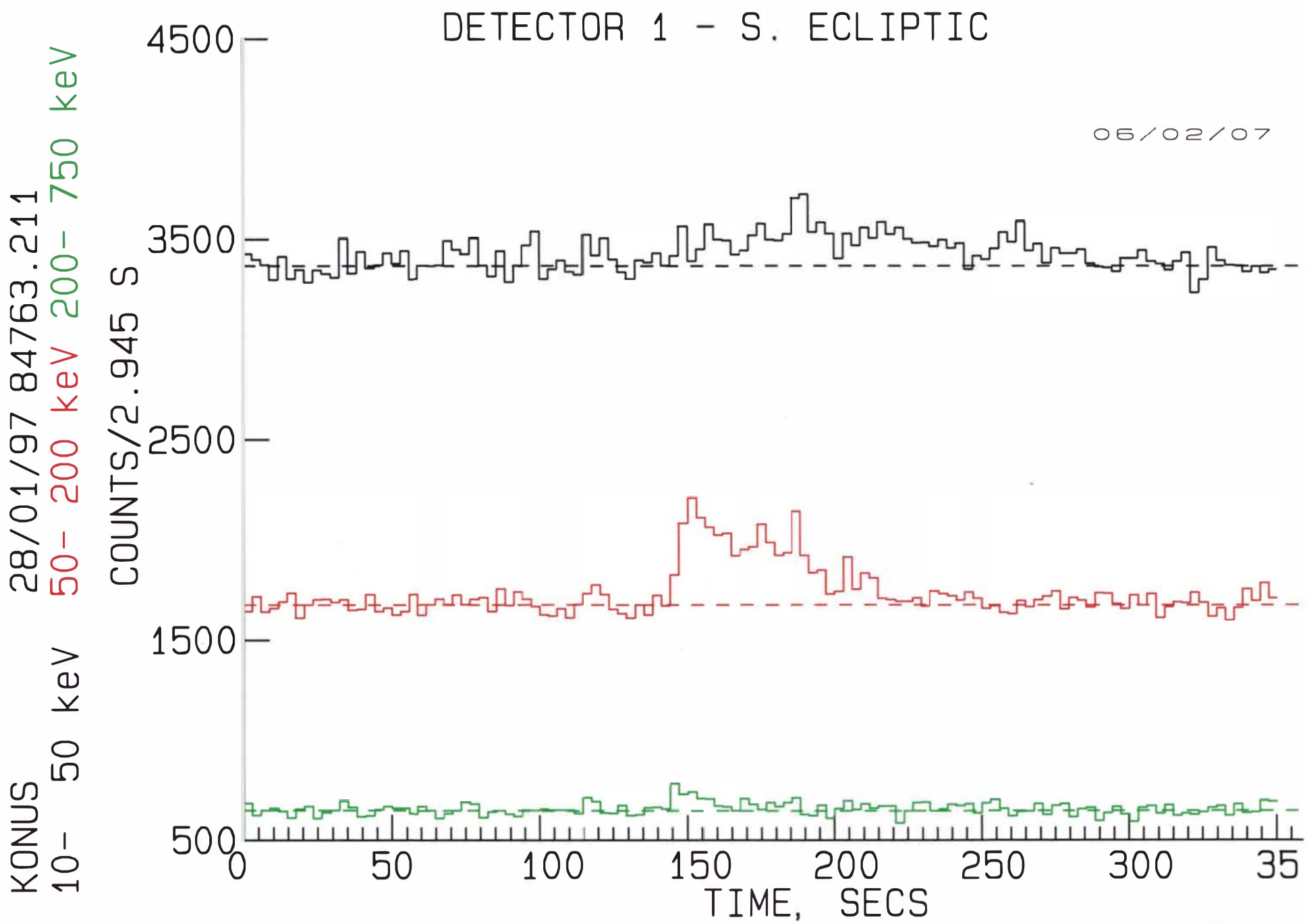
28/ 1/97 85608.305 s

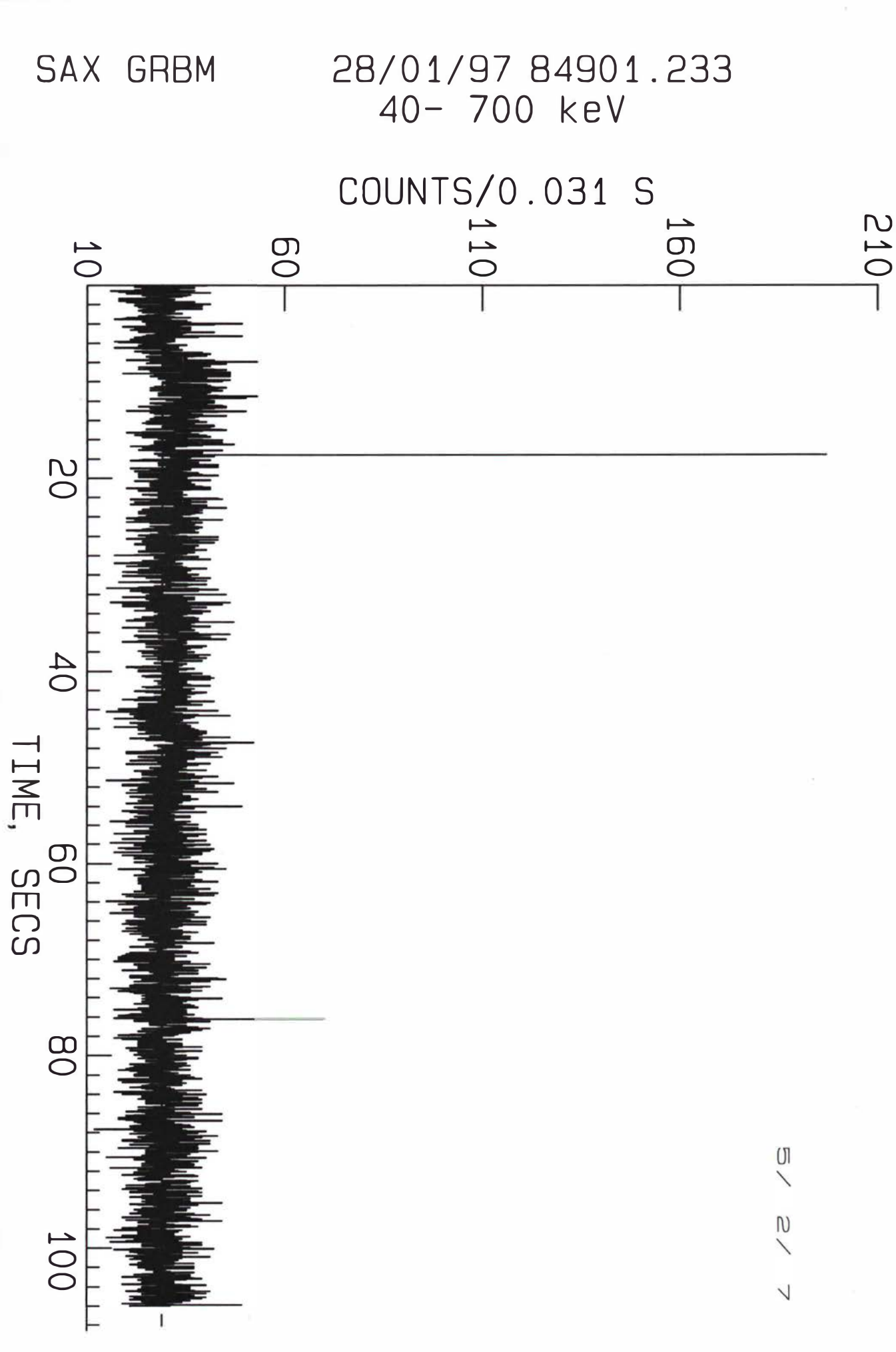
INTERVALS REGROUPED BY 20

21- 146 keV



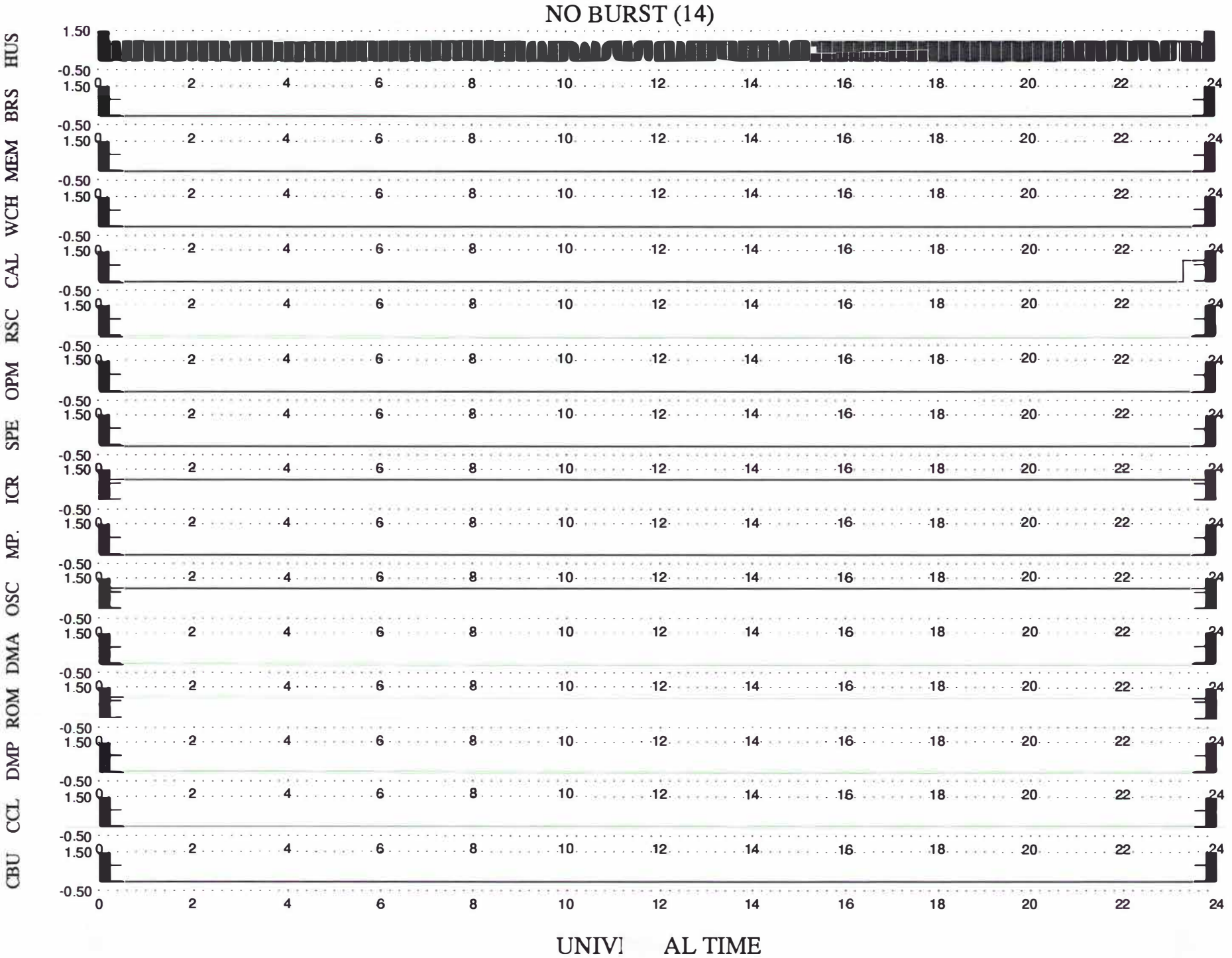

DETECTOR 2 - N. ECLIPTIC
06/02/07
KONUS
10- 50 keV
50- 200 keV
200- 750 keV
28/01/97 84763.211
COUNTS/2.945 S
4400
3400
2400
1400
400
0
50
100
150
200
250
300
35
TIME, SECS


DETECTOR 1 - S. ECLIPTIC
06/02/07
KONUS
10- 50 keV 50- 200 keV 200- 750 keV
28/01/97 84763.211
COUNTS/2.945 S
4500
3500
2500
1500
500
0
50
100
150
200
250
300
35
TIME, SECS


SAX GRBM
28/01/97 84901.233
40- 700 keV
COUNTS/0.031 S
10
60
110
160
210
20
40
60
80
100
TIME, SECS

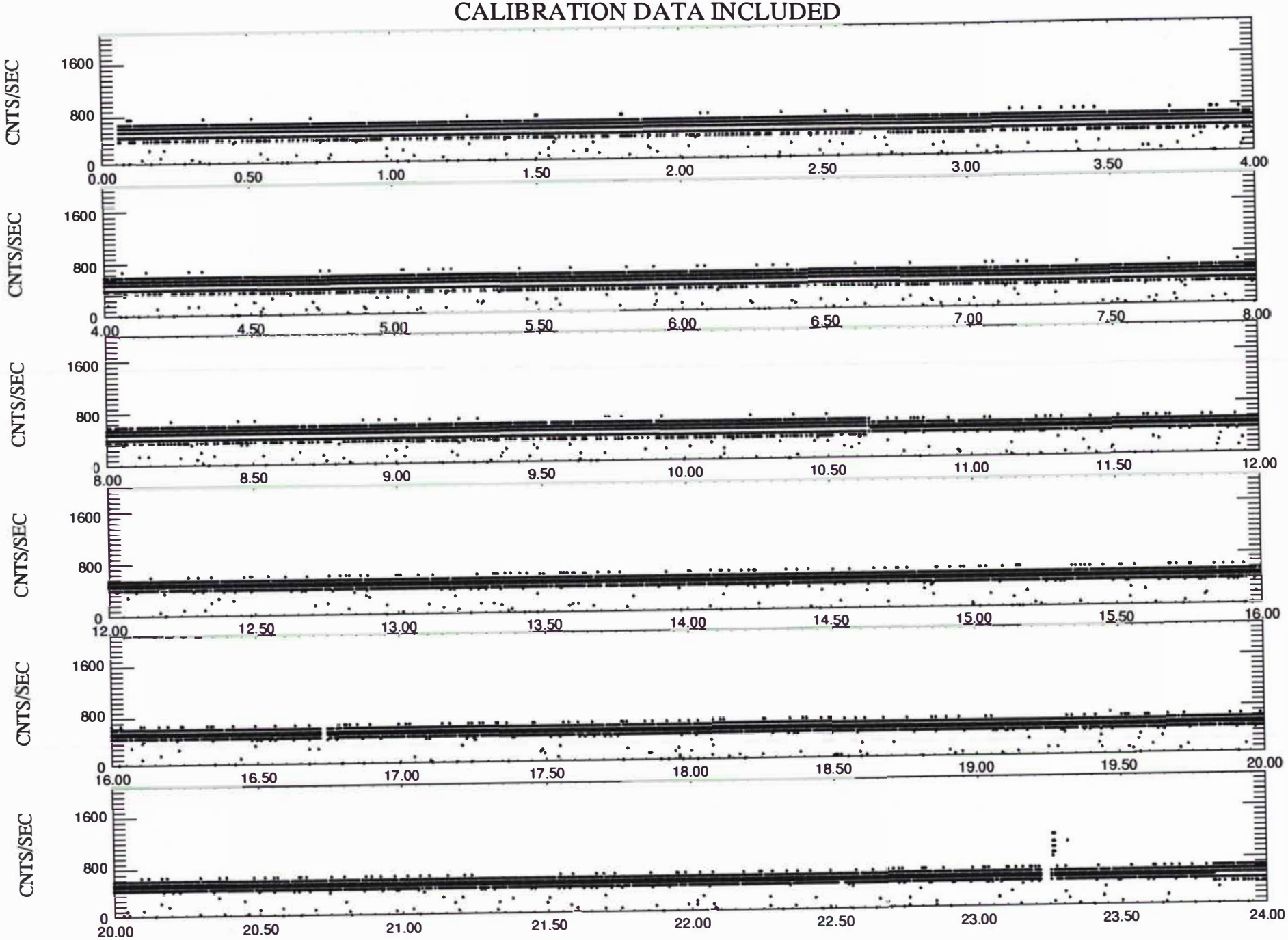
5/2/7

HUS MODES EDR day 28, year 1997 to day 28, year 1997 5/5/97



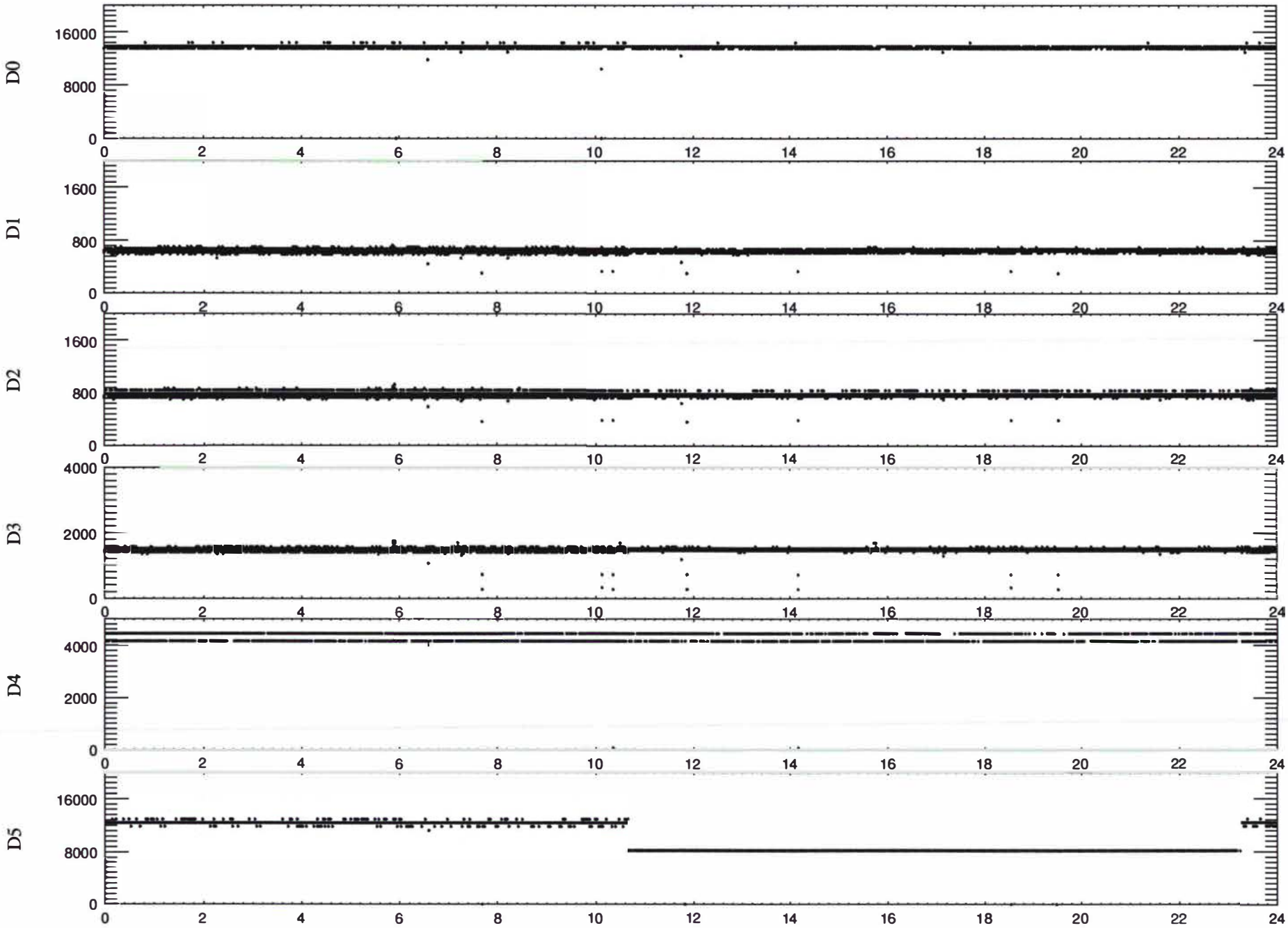
HUS 2A, MODE 1, NOT AVERAGED EDR day 28, year 1997 to day 28, year 1997 5/5/97

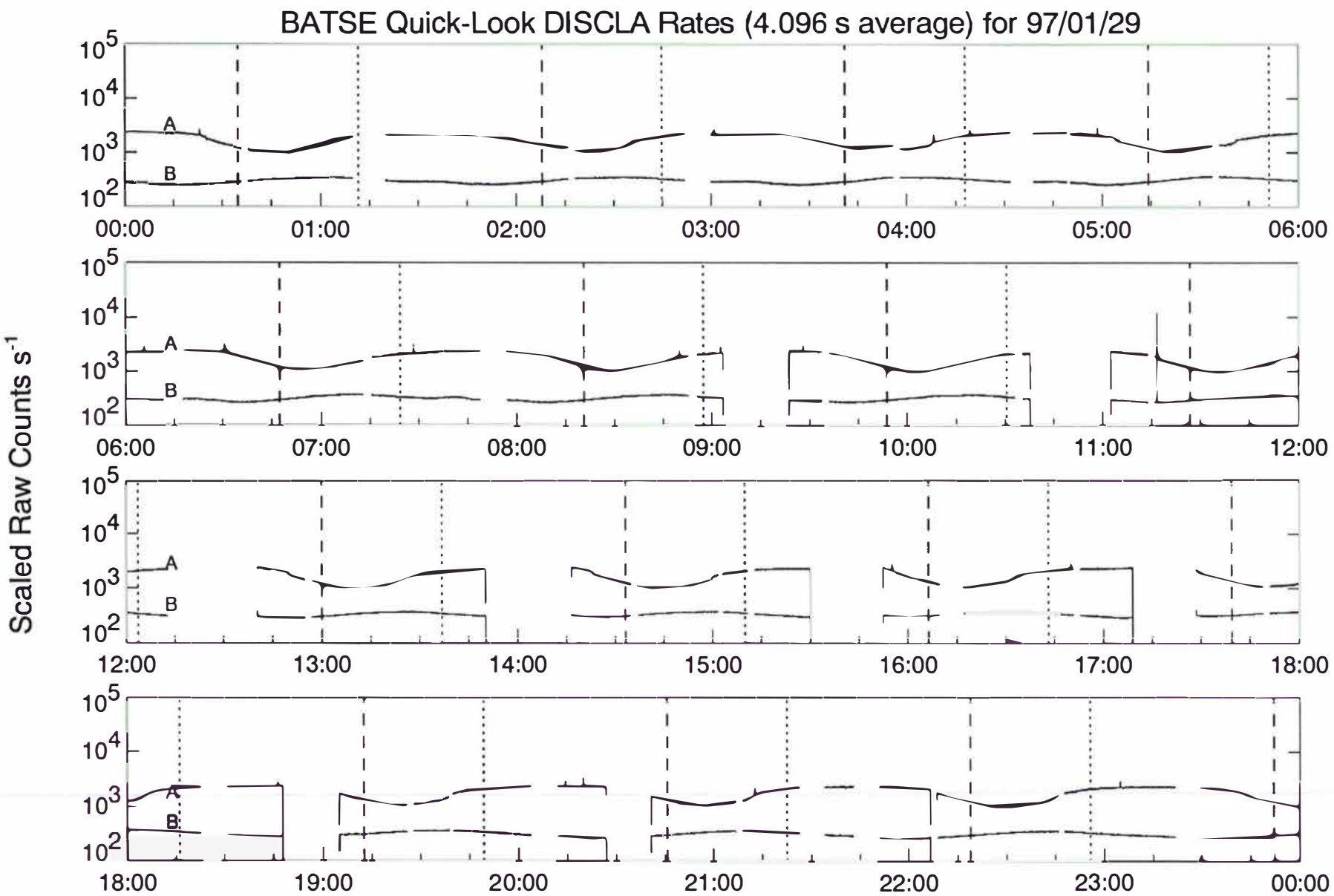
CALIBRATION DATA INCLUDED



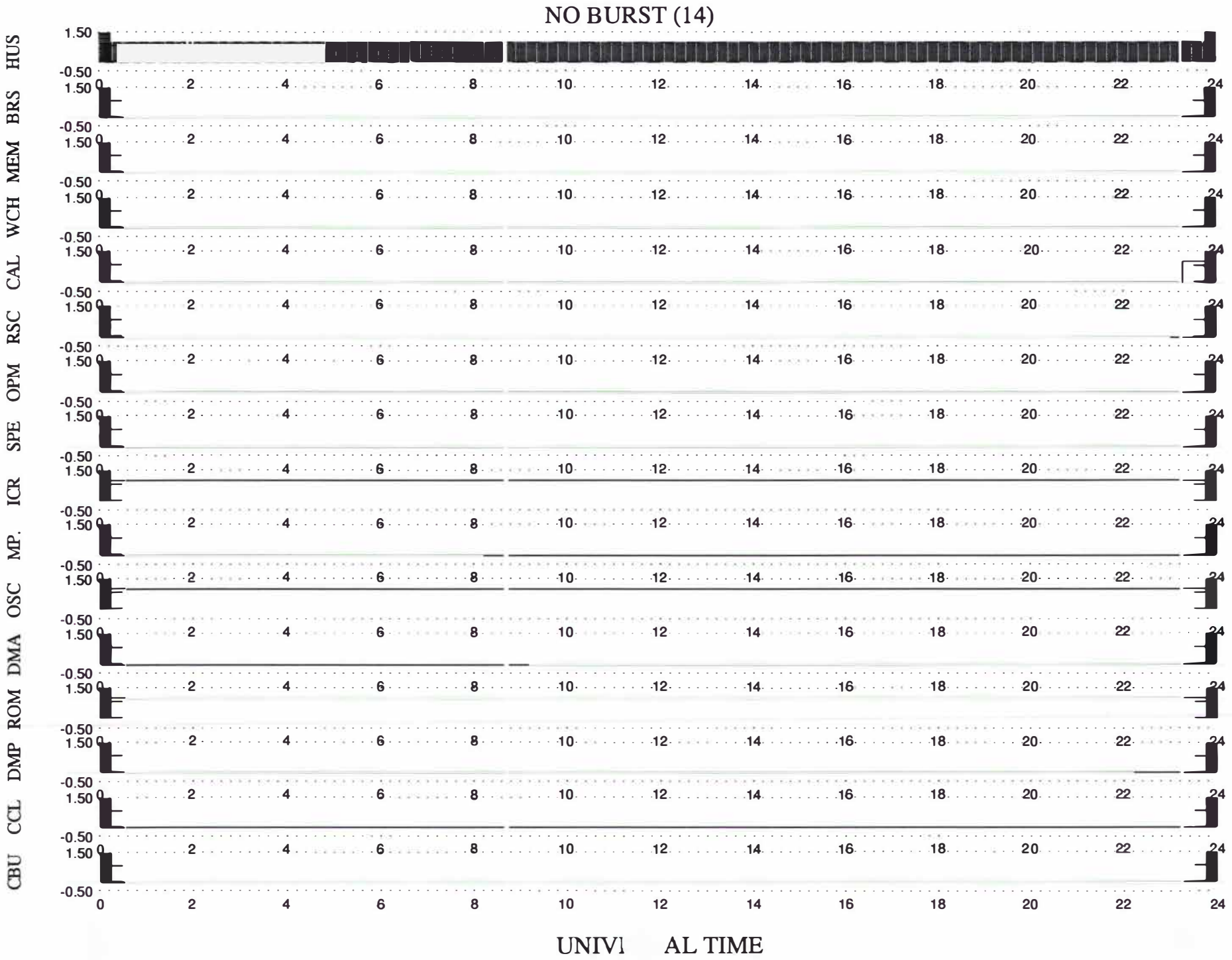
UNIVERSAL TIME

HUS 2B COUNTS / SEC EDR day 28, year 1997 to day 28, year 1997 5/5/97



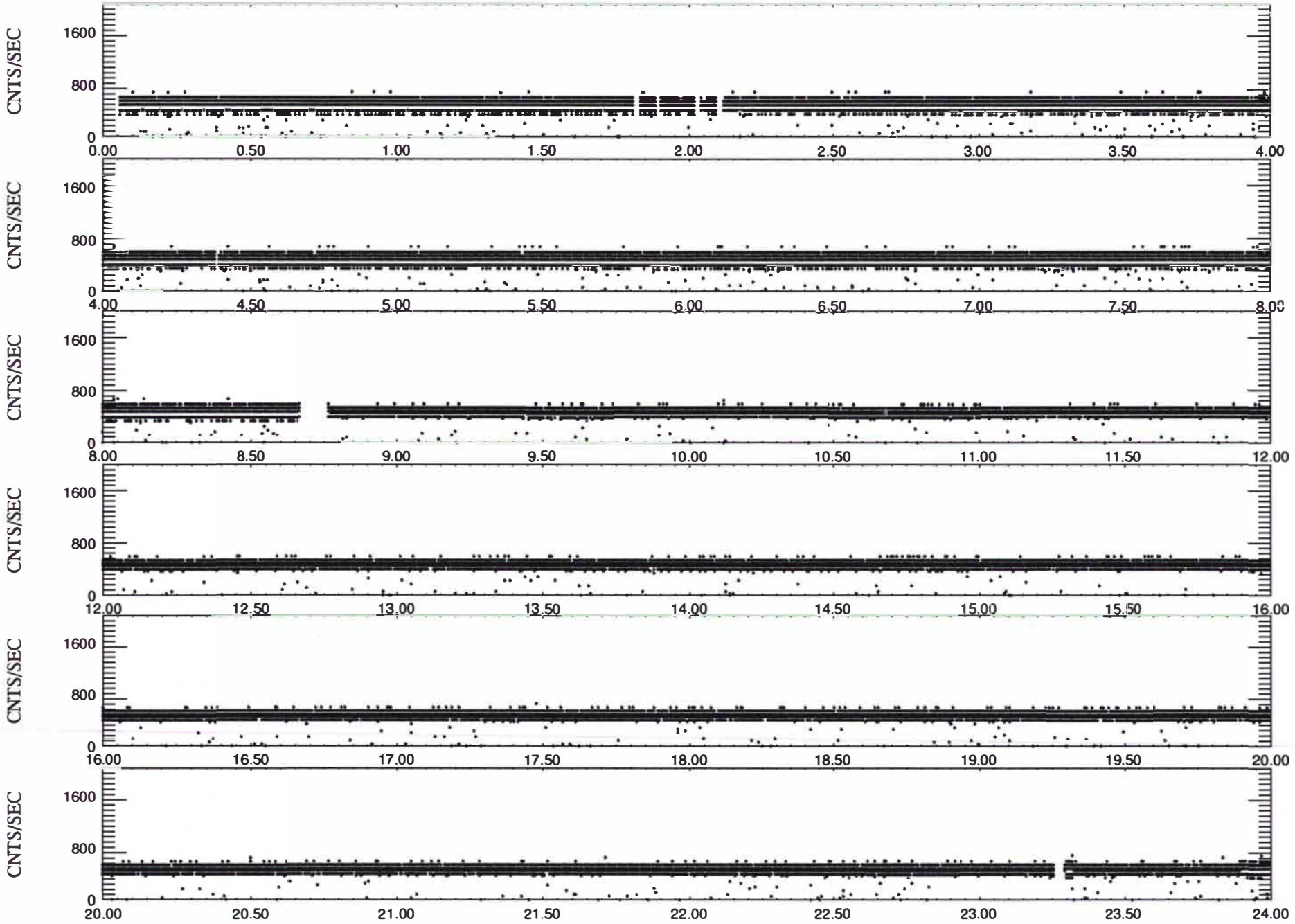

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/29
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/01/31, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05
Dotted line: Day entry
Dashed line: Night entry
* Solar Burst Trigger
+ Solar Flare

HUS MODES EDR day 29, year 1997 to day 29, year 1997 5/5/97



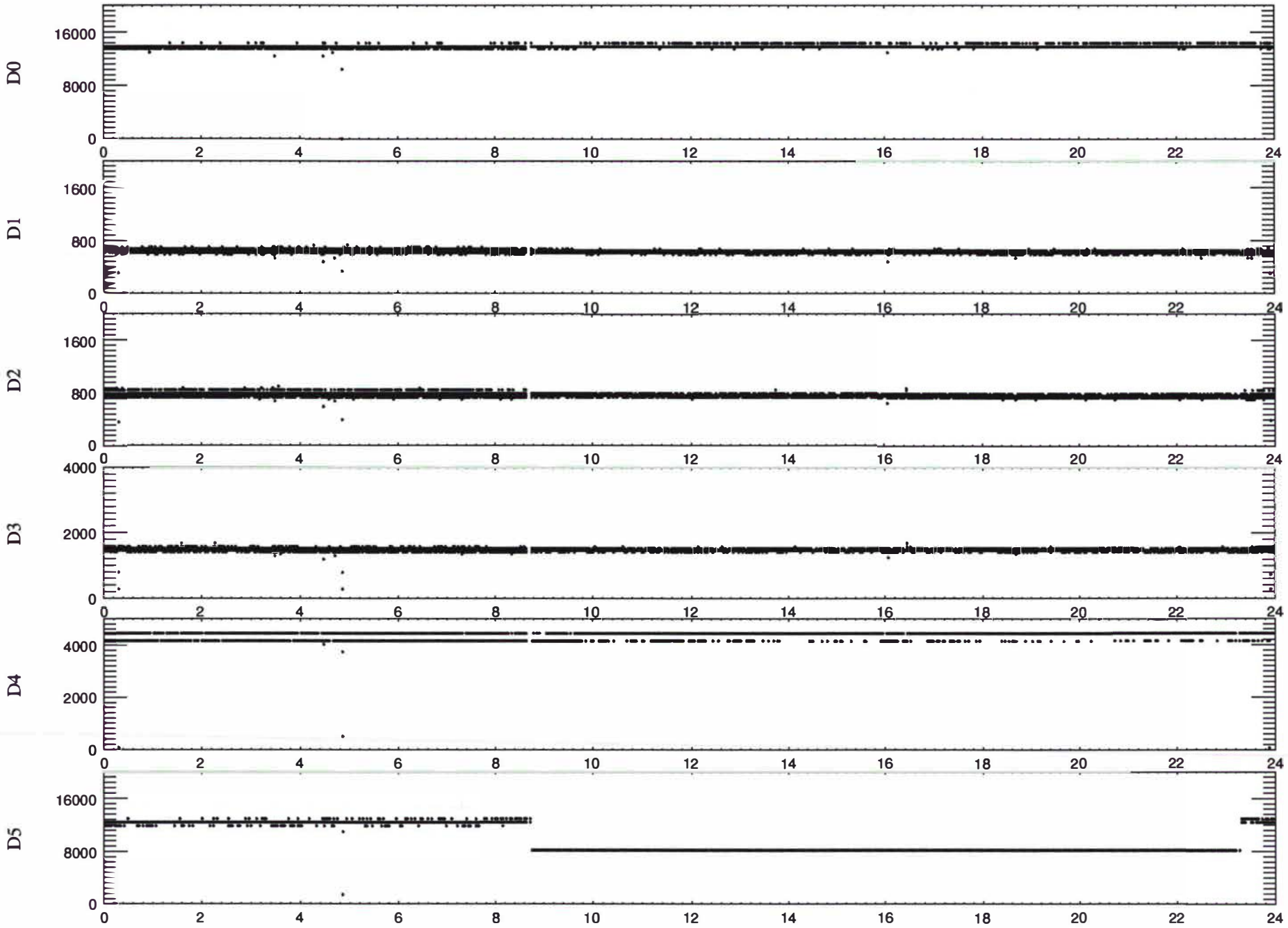
HUS 2A, MODE 1, NOT AVERAGED EDR day 29, year 1997 to day 29, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIV! AL TIME

HUS 2B COUNTS / SEC EDR day 29, year 1997 to day 29, year 1997 5/5/97



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue May 6 09:56 PDT 1997
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 6 May 1997 12:54:56 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: summary of Konus observations of 1997 events seen by Ulysses but not BATSE

Hi Everyone,

Here is a summary for this year to date of Konus observations corresponding to events seen by Ulysses but not reported by BATSE:

Ulysses event	Konus observation
970105 01:40	not detected
970105 18:17	not detected
970107 07:57	not detected
970107 14:13	not detected
970109 01:25	not detected
970110 08:53	not detected
970110 14:31	not detected
970111 23:35	trigger at 23:49:04.563 - peak ~60 seconds later S of ecliptic, hard event lasting 4 minutes with slow rise and decay
113 14:31	not detected
114 05:17	not detected
970115 13:36	not detected
970117 15:07	not observed (unrelated trigger at 14:27 will have prevented any further trigger until after 15:32)
970117 18:45	not detected
970124 12:51	trigger at 12:19:03.397 - peak 4.2 seconds later S of ecliptic, several peaks with the strongest the hardest
970126 15:30	not detected
970130 19:33	not detected
970204 11:18	not detected
970208 18:04	not detected
970212 22:50	not detected
970203 19:03	not detected
970216 14:35	not detected
970218 14:15	trigger at 14:09:56.145 - peak ~3 seconds later N of ecliptic, strong event lasting 5 seconds
970222 23:51	trigger at 23:53:26.565 - peak 0.7 seconds later N of ecliptic, moderately strong event lasting several seconds
970223 15:53	not detected
970224 21:08	not detected
970226 08:29	trigger at 08:46:25.868 - peak 39 seconds later N of ecliptic, strong, double broad FRED, with the second peak (39 seconds after the trigger) much softer than the first (12 seconds after the trigger)
970310 00:22	not detected

970313 07:53	trigger at 08:21:36.505 - peak 11 seconds later N of ecliptic, moderately strong event lasting 40 seconds
970316 13:16	not detected
970321 21:42	not detected
970322 00:16	not detected
970405 11:35	not detected
970405 23:44	trigger at 00:17:40.876 on 970406 N of ecliptic, moderately strong, multi-peaked event lasting over 15 seconds
970411 09:44	trigger at 09:52:45.166 - peak 4 seconds later N of ecliptic, broad event lasting 25 seconds with a FRED component lasting 0.5 seconds 4 seconds after the trigger
970421 06:47	instrument off

From kraken@rosserv.gsfc.nasa.gov Wed Mar 12 15:00 PST 1997
X-Sender: kraken@lheapop.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 12 Mar 1997 18:00:58 -0500
    khurley@sunspot.ssl.berkeley.edu
From: kraken@rosserv.gsfc.nasa.gov (Peter Kurczynski)
Subject: TGRS/Ulysses GRB's
Cc: bonnard@rosserv.gsfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Hello Dr. Hurley,

I'm Peter Kurczynski, a graduate student in the LEGR group here at Goddard. I am working on TGRS data analysis. I am messaging you in response to several emails you've sent to Bonnard Teegarden and others about Ulysses gamma ray bursts and whether they could be corroborated by other instruments.

What follows is a list of the dates and times of Ulysses observations that were forwarded to me recently, and the results of a search through TGRS data for bursts. We've found two matches among the Ulysses bursts listed below. Please
let me know if you would like me to forward time history data or other information about them.

Take care,

Pete

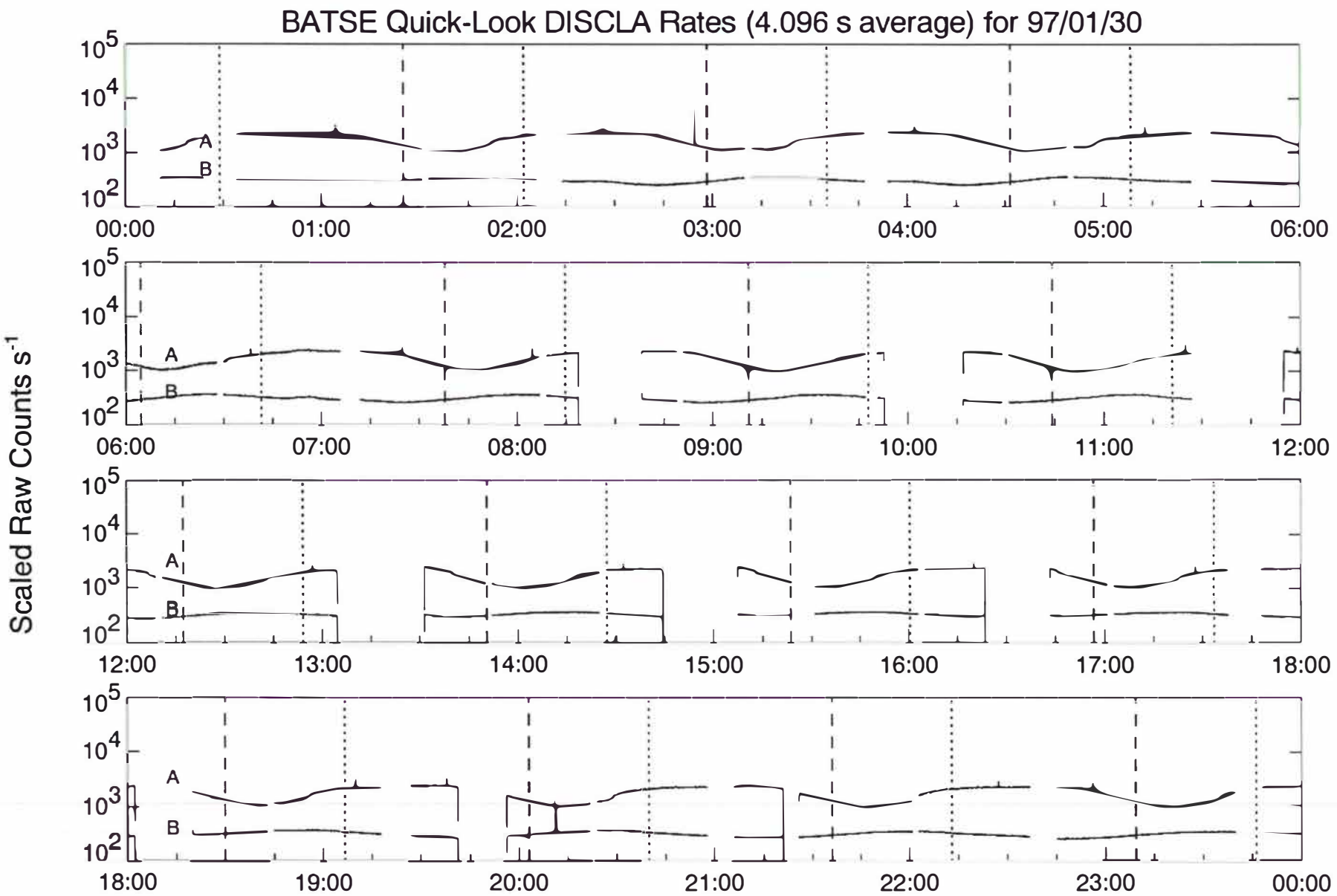
Ulysses date/time	TGRS detection
[illegible]. 15 1997 13:36	NO
Jan. 17 1997 15:07	YES! 20s duration FRED; peak at 970117:53211s
Jan. 17 1997 18:45	NO
Jan. 24 1997 12:51	YES! <10s duration; very narrow; peak at 970124:44347s
Jan. 26 1997 15:30	NO
Jan. 30 1997 19:33	NO
Feb. 4 1997 11:18	NO
Feb. 8 1997 18:04	NO

From HENZE@ssl.msfc.nasa.gov Fri Feb 7 15:02 PST 1997
Date: Fri, 7 Feb 1997 17:02:04 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@ssl.msfc.nasa.gov>
To: khurley@sunspot.ssl.berkeley.edu
ject: examination of BATSE data in response to queries about Ulysses events

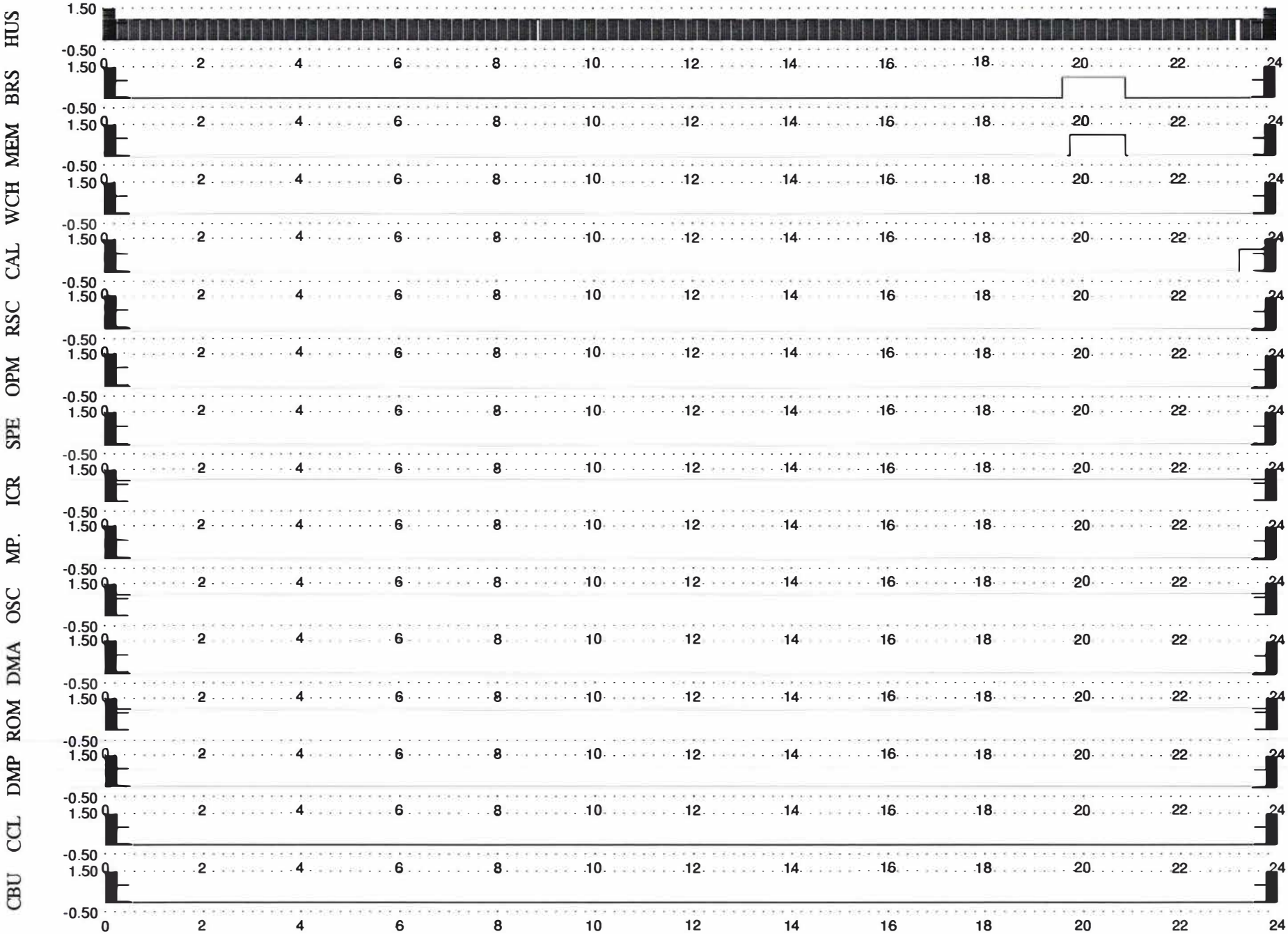
Here are the results of my examination of BATSE data for times of and before the Ulysses events in your messages to Chryssa.

Bill Henze

Ulysses events and times				BATSE
Year	Mon Day	hh:mm	TJD / SoD	Status and/or Comments
1996	Dec 09	22:45	10426/81900	Prob. GRO J1744-28 event (untrig.) at SoD~81200. HV off at SoD 81438.
1997	Jan 05	01:40	10453/06000	GRO J1744-28 event (untrig.) at SoD~05505. Trig. 5743 occurred at SoD 05778.
1997	Jan 05	18:17	10453/65820	GRO J1744-28 event (untrig.) at SoD~65760.
1997	Jan 07	07:57	10455/28620	GRO J1744-28 event (untrig.) at SoD~28455.
1997	Jan 07	14:13	10455/51180	Nothing evident. Data gap SoD 50639-50711.
1997	Jan 09	01:25	10457/05100	Nothing evident. Data gap SoD 04860-04917. HV off before SoD 04481.
1997	Jan 10	08:53	10458/31980	GRO J1744-28 event (untrig.) at SoD~31610.
1997	Jan 10	14:31	10458/52260	Particle event obscuring any weak cosmic event. GRO J1744-28 prob. occulted by Earth.
1997	Jan 11	23:35	10459/84900	Nothing evident.
1997	Jan 13	14:31	10461/52260	Possible very, very weak events at SoD~51700 and 51800. Particle event at SoD 51400-51600.
1997	Jan 14	05:17	10462/19020	Nothing evident. During readout of Trig. 5794. GRO J1744-28 occulted by Earth. HV off beg. SoD 19025.
1997	Jan 15	13:36	10463/48960	Nothing evident. Data gap SoD 48657-48773. During readout of Trig. 5810.
,97	Jan 17	15:07	10465/54420	HV off during SAA.
1997	Jan 17	18:45	10465/67500	Data gap SoD 67017-67500.
1997	Jan 24	12:51	10472/46260	HV off during SAA.
1997	Jan 26	15:30	10474/55800	Nothing evident. GRO J1744-28 occulted by Earth.
1997	Jan 30	19:33	10478/70380	Data gap SoD 69478-70020. During readout of Trig. 5977.

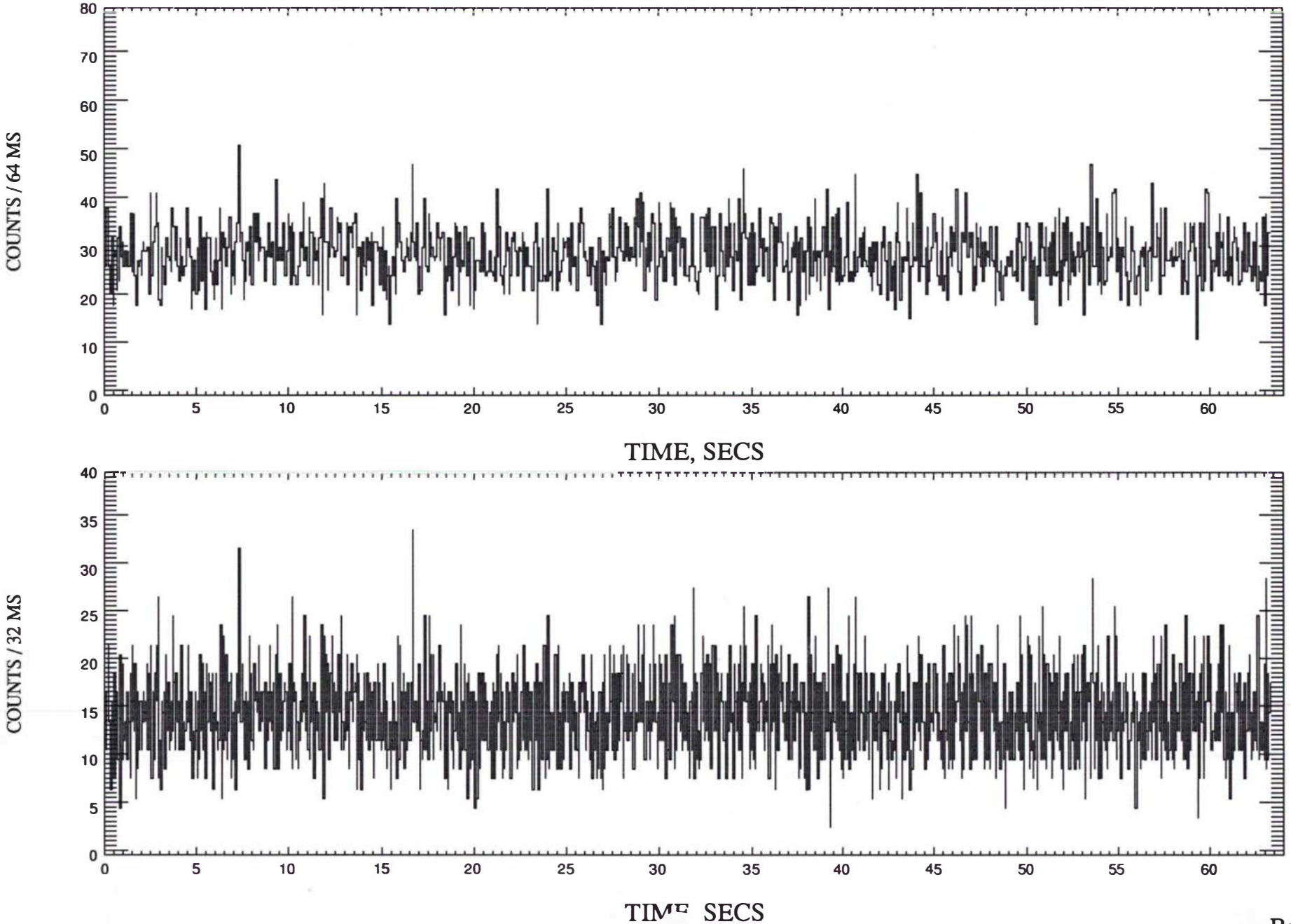

BATSE Quick-Look DISCLA Rates (4.096 s average) for 97/01/30
Scaled Raw Counts s-1
10^5
10^4
10^3
10^2
A
B
00:00
01:00
02:00
03:00
04:00
05:00
06:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
18:00
19:00
20:00
21:00
22:00
23:00
00:00
Current Time: 97/02/01, 1008 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

BURST NUMBER 15



HUS 2A TRIGGERED DATA EDR day 30, year 1997 5/6/97

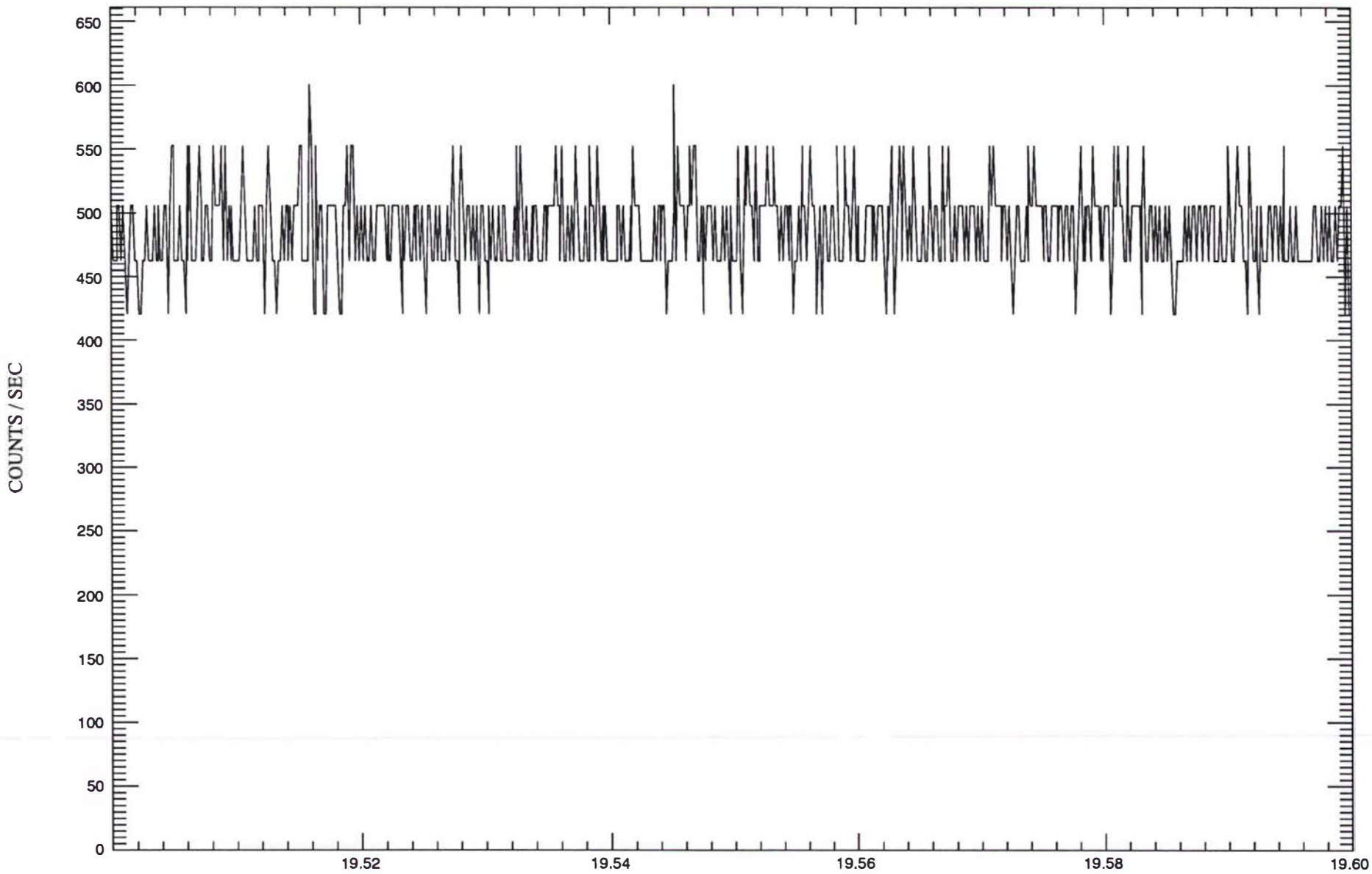
Burst Counter 15 at UT=19.545405248006 h=70363.459 s 19:32:43.459



B# 1

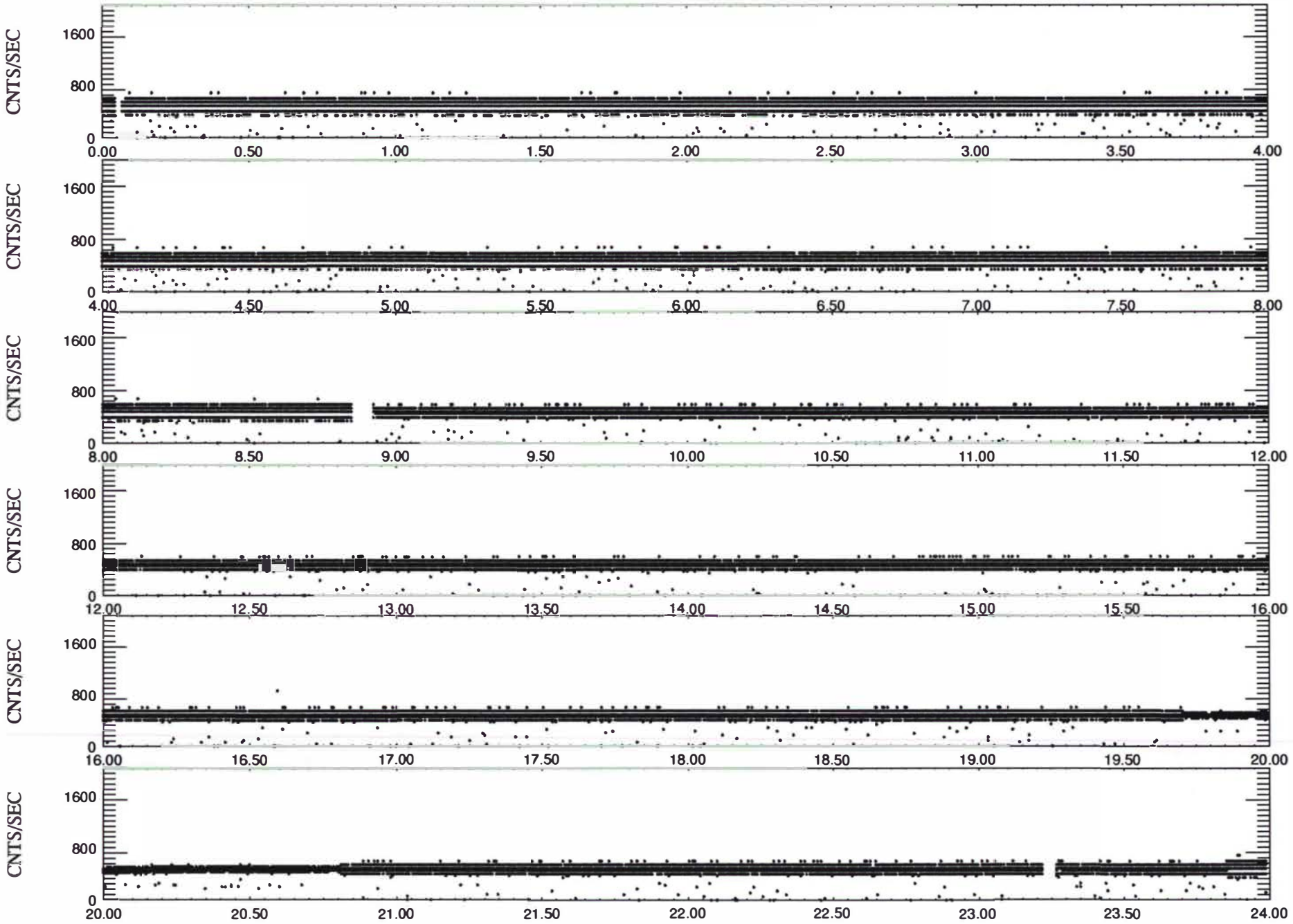
HUS 2A, MODE 1, NOT AVERAGED QEDR day 30, year 1997 to day 30, year 1997 2/4/97

CALIBRATION DATA INCLUDED



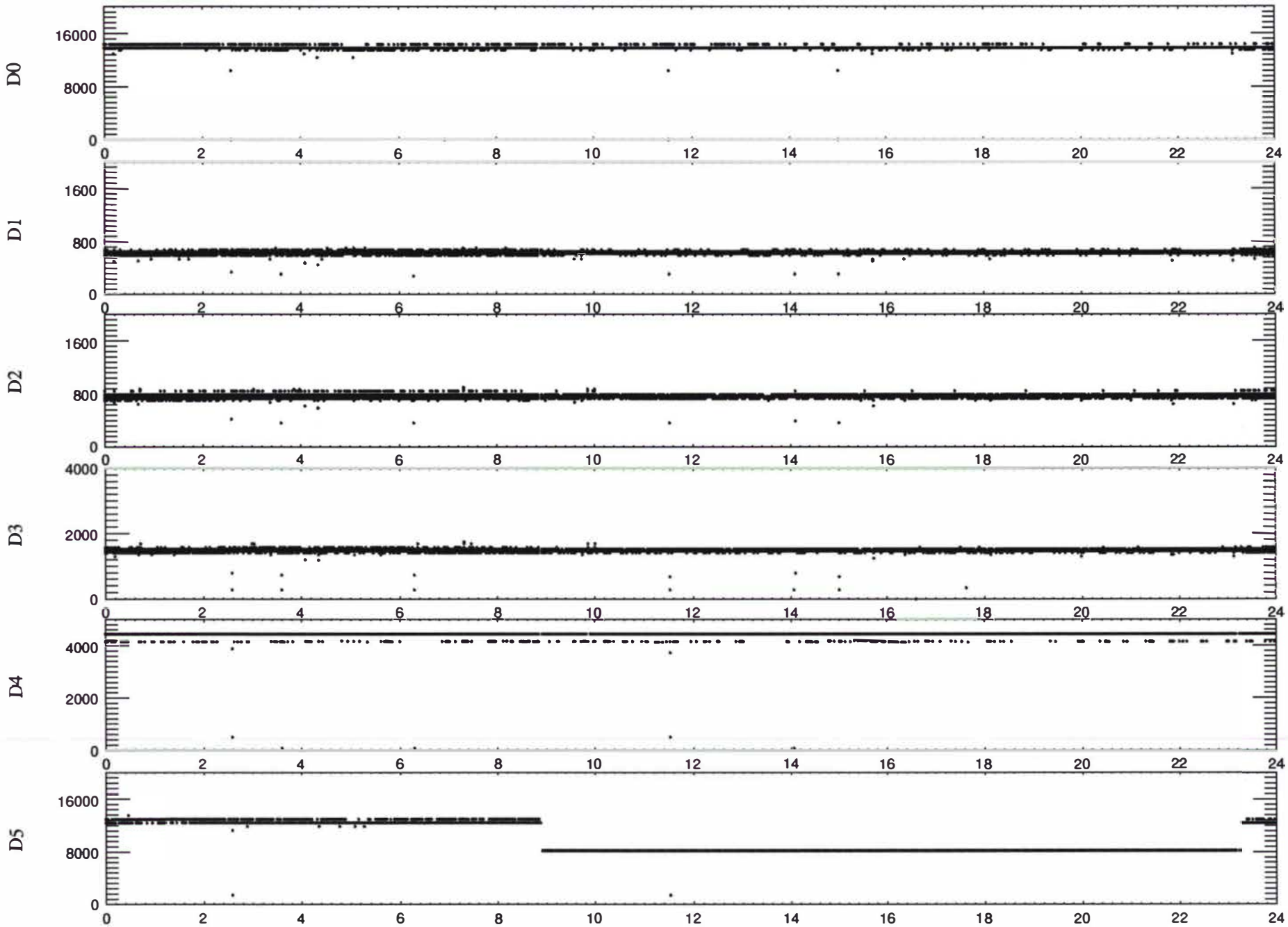
HUS 2A, MODE 1, NOT AVERAGED EDR day 30, year 1997 to day 30, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 30, year 1997 to day 30, year 1997 5/5/97



SAX

HUS DATA

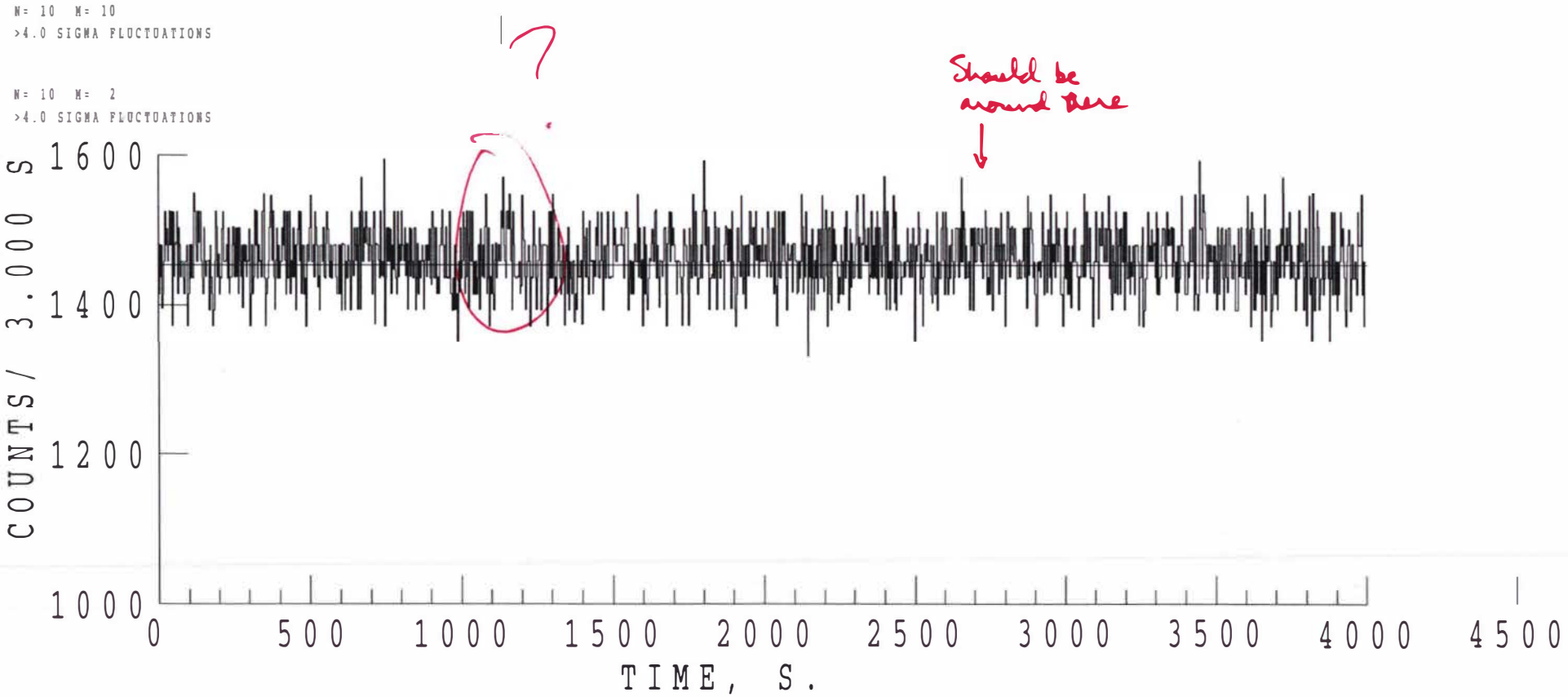
19/07/05

ULYSSES RT

31/01/97 76032.328 s

0.500 S INTERVALS REGROUPED BY 6

0- 0 keV



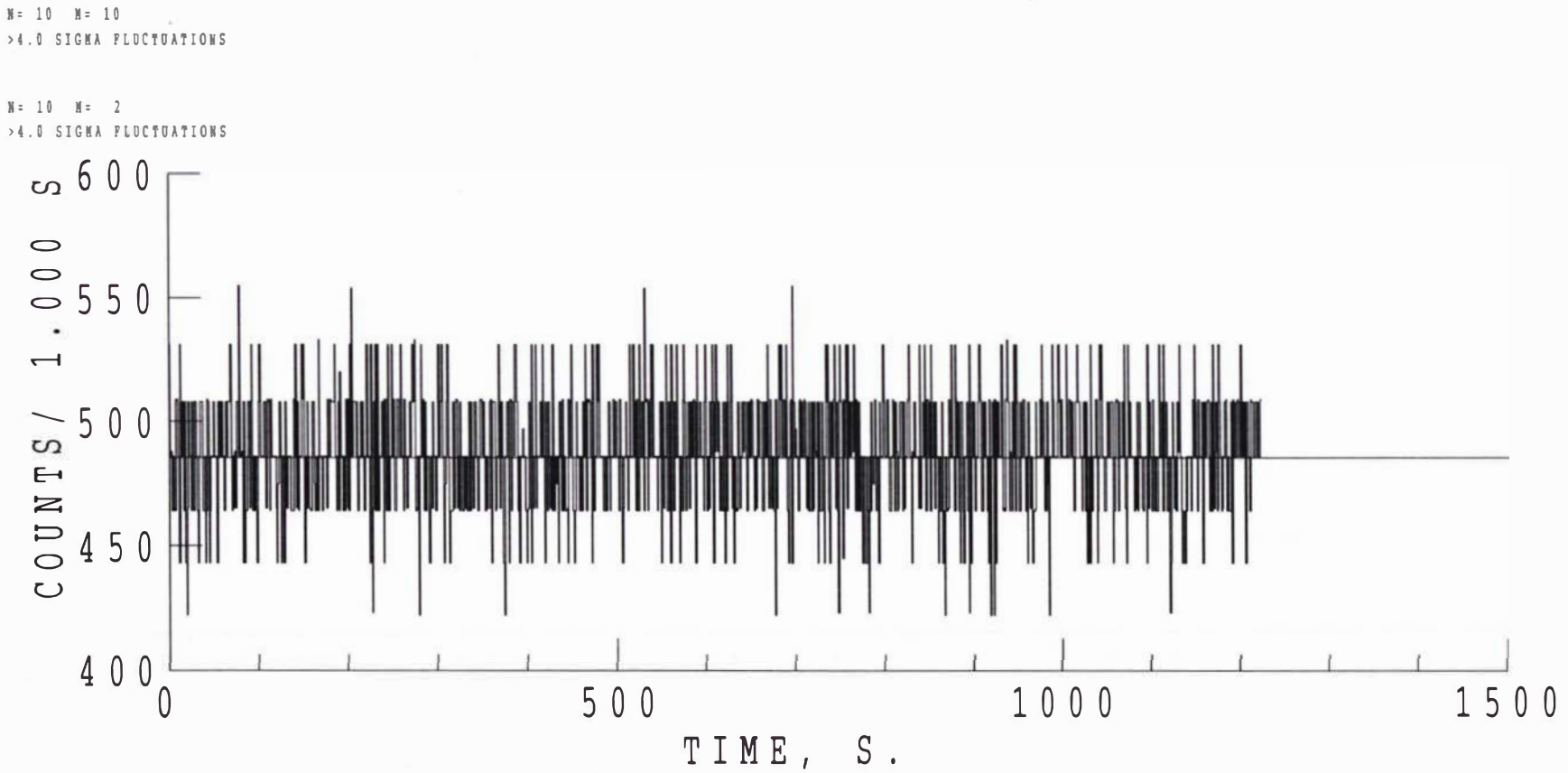
GRBM 19970131 78770

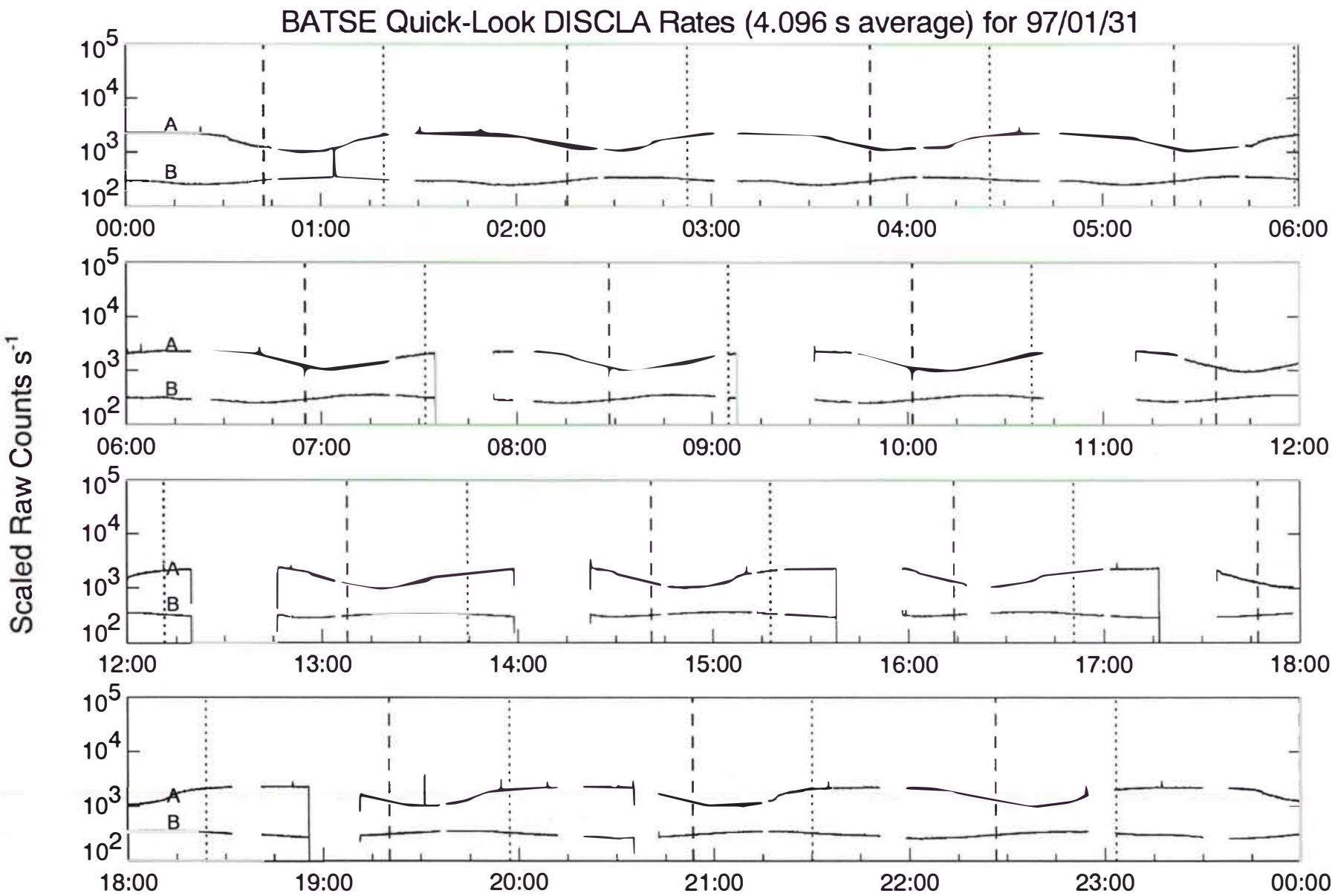
ULYSSES RT 31/01/07

31/01/97 78156.352 s

0.500 S INTERVALS REGROUPED BY 2

0- 0 keV





Current Time: 97/02/02, 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

From HENZE@fender.msfc.nasa.gov Mon Feb 3 11:43 PST 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 LAA29369; Mon, 3 Feb 1997 11:43:41 -0800
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 3 Feb 1997 13:42:23 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <970203134223.2e2002ad@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5983
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

****
BATSEARCH PROGRAM
****

BATSE BURST # 5983
EVENT OF 1997 JAN 31 DAY OF YEAR= 31
EVENT CROSSING TIME AT BATSE : 78371. S. OR 21:46:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 254.000 37.000
BATSE PEAK COUNTING RATE: 3600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 1/ 97 IS:
RA= 172.657 DEC= 35.475 DIST= 3.989 AU
BATSE-ULYSSES DISTANCE = 596804454. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -890.15 SECS.
CROSSING TIME AT ULYSSES IS 77481. S. OR 21:31:20 +/- 345.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 1/ 97 IS:
RA= 186.544 DEC= 0.775 DIST= 0.889 AU
MARS-BATSE DISTANCE = 133000600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -139.44 SECS.
CROSSING TIME AT MARS IS 78232. S. OR 21:43:51 +/- 71.00 SECONDS

BATSE BURST TRIGGER
NO.: 5983

TIME: TJD=0479 SECONDS=78371

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=036.7 AZIMUTH=226.8 ERROR=002.7 DEGREES

COMMENTS:
SINGLE PULSE, DUR. ~12 S. MARGINALLY VISIBLE ABOVE 300 KEV.

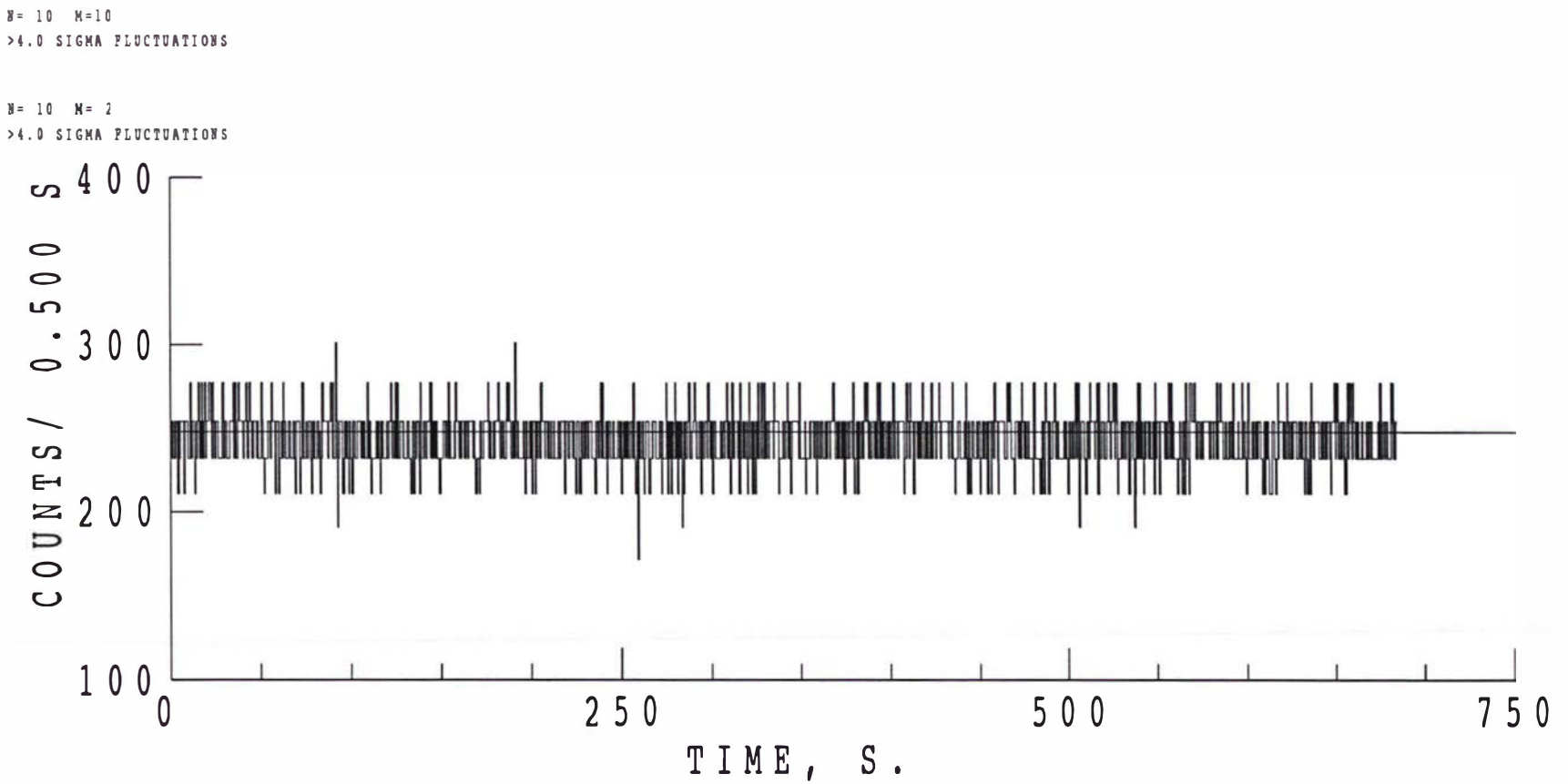
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5983	970131	10479	78371	3600	254	+37	12

BATSE# 5983

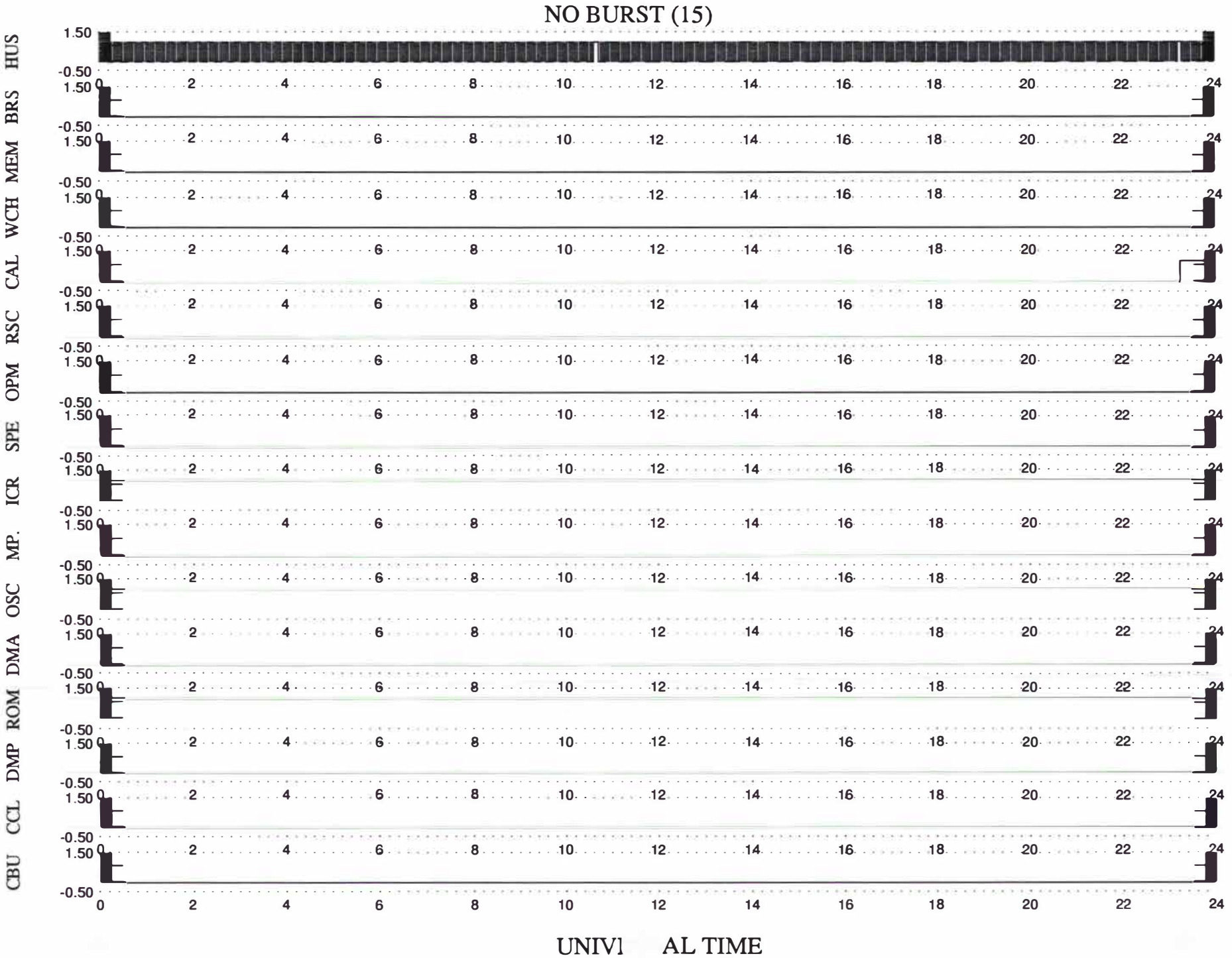
ULYSSES RT 4/ 2/97

31/ 1/97 77148.336 s

0- 0 keV



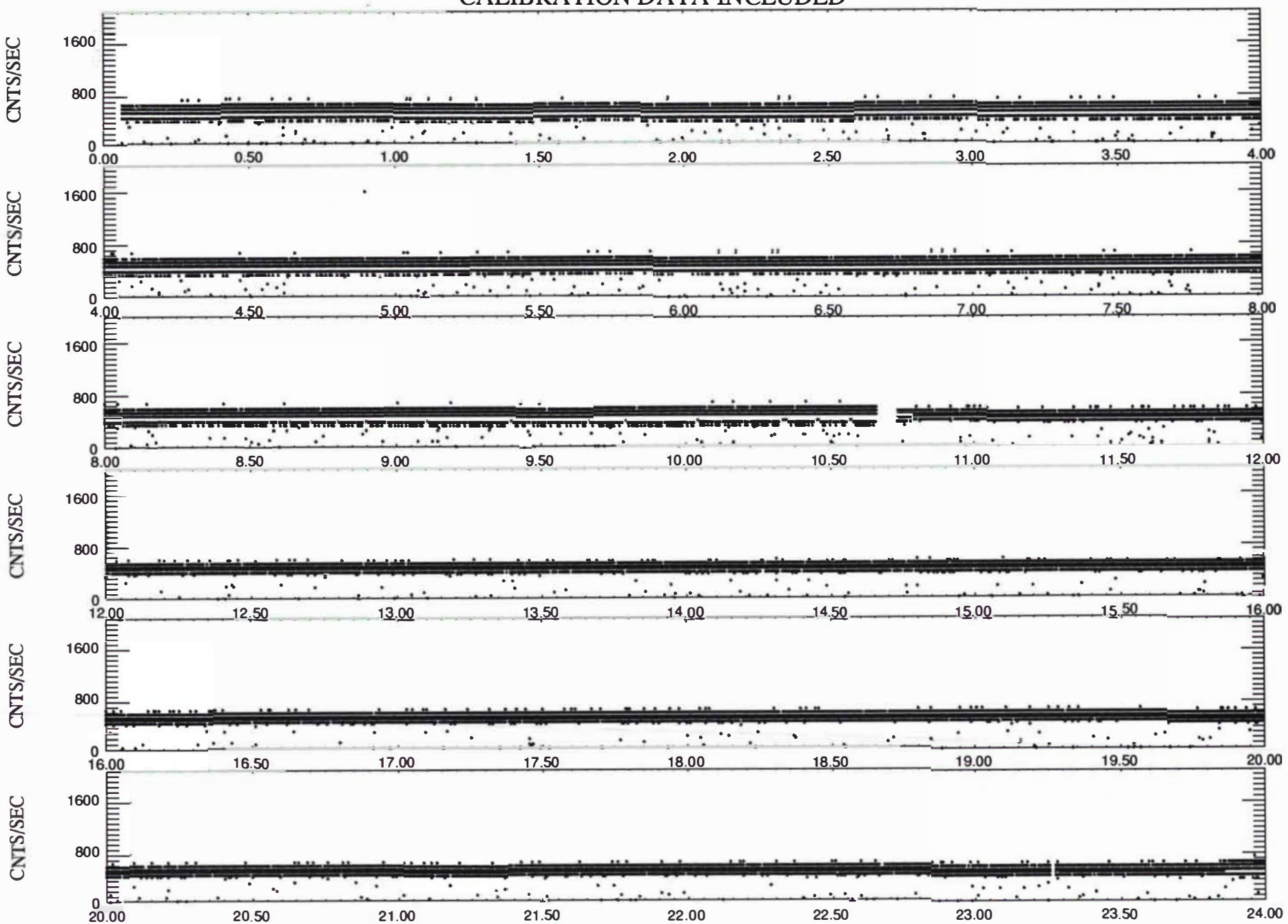
HUS MODES EDR day 31, year 1997 to day 31, year 1997 5/5/97





HUS 2A, MODE 1, NOT AVERAGED EDR day 31, year 1997 to day 31, year 1997 5/5/97

CALIBRATION DATA INCLUDED



UNIVI AL TIME

HUS 2B COUNTS / SEC EDR day 31, year 1997 to day 31, year 1997 5/5/97

