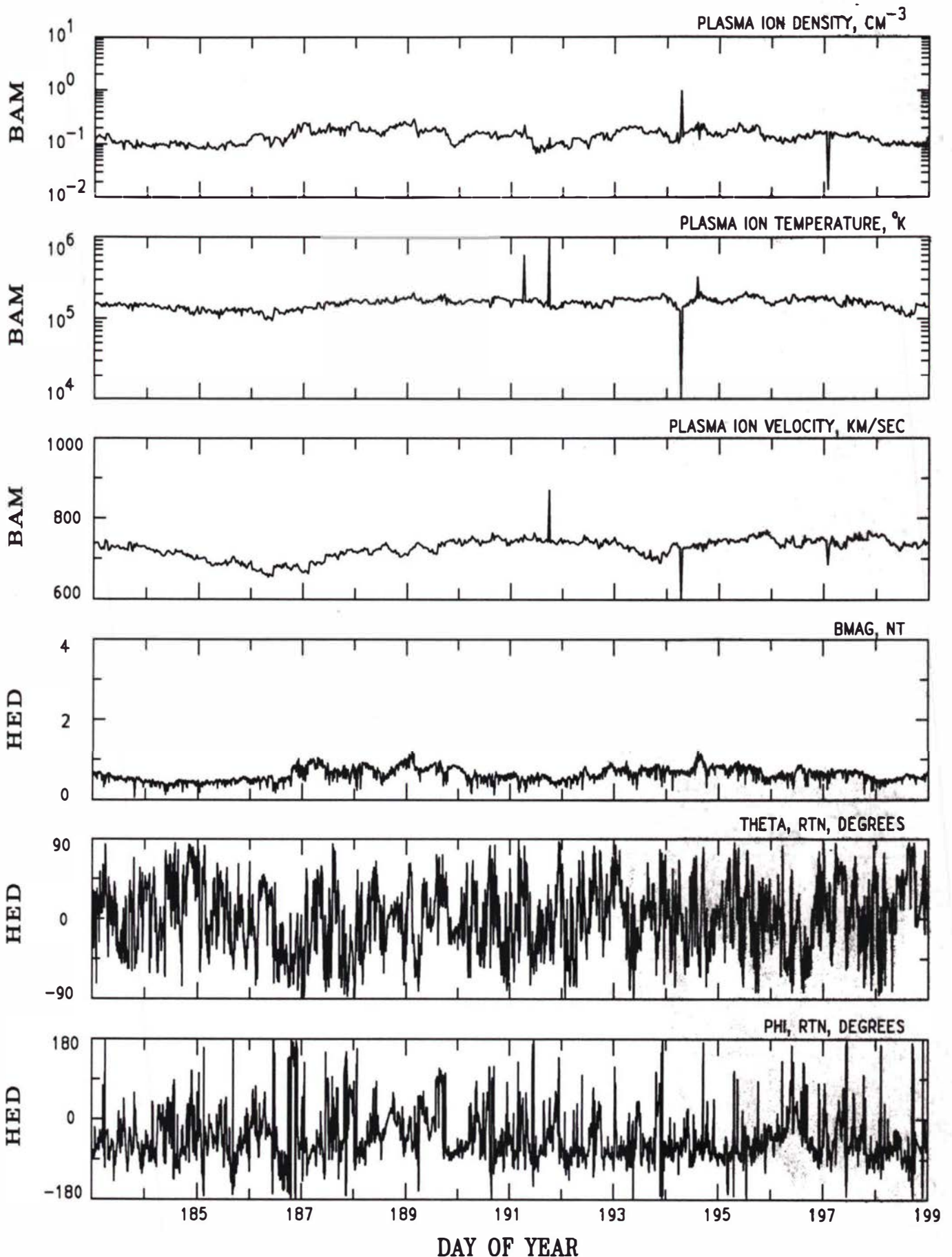


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 183 JUL 1 00:00:00.000 - 96 199 JUL 17 00:00:00.000



UNIT 1

UNIT 1

UNIT 1

UNIT 1

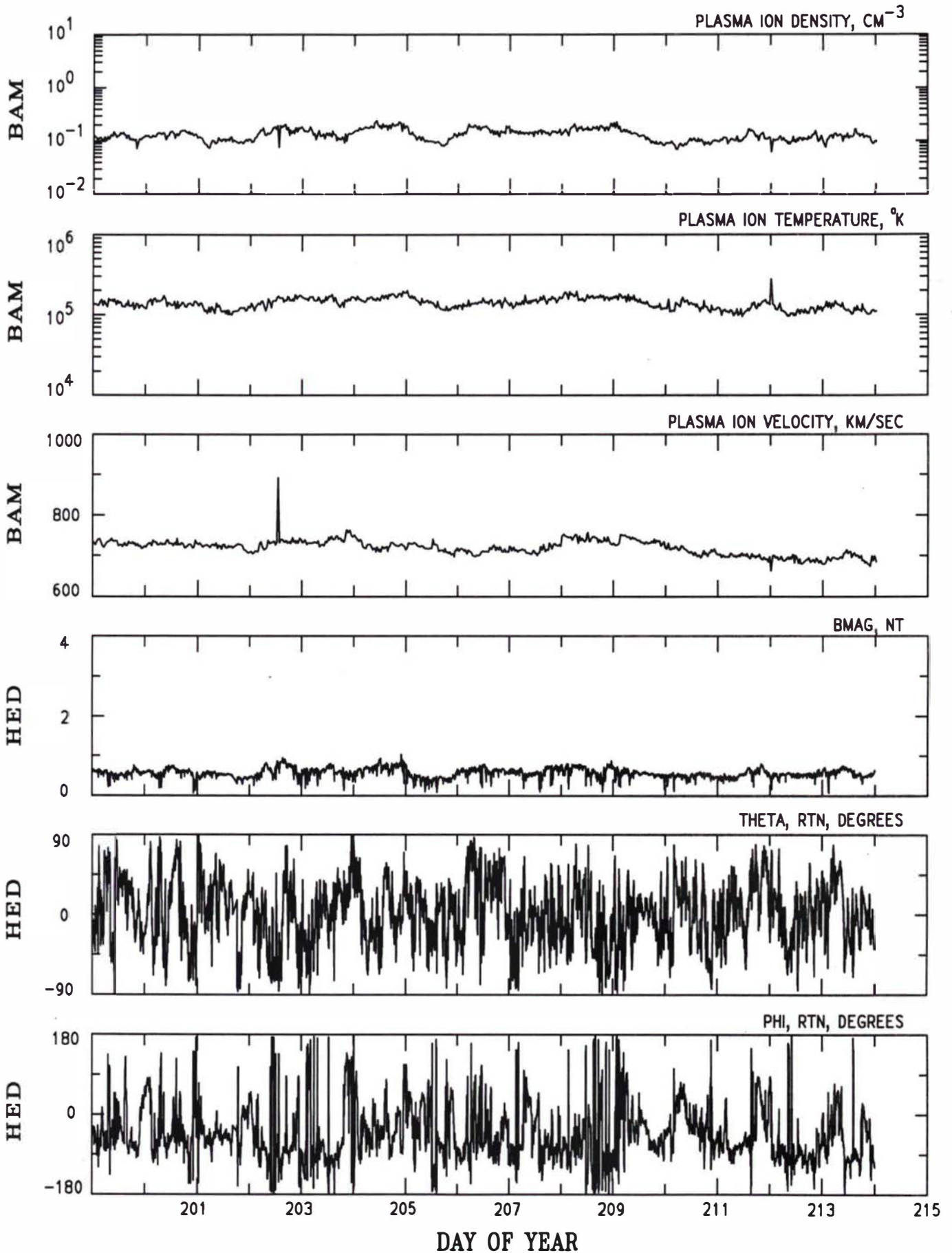
UNIT 1

UNIT 1

UNIT 1

ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

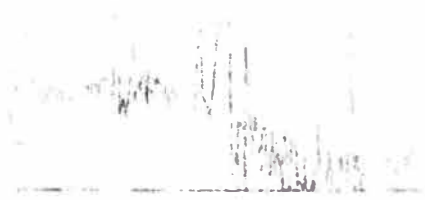
96 199 JUL 17 00:00:00.000 - 96 215 AUG 2 00:00:00.000



UNITED STATES

DEPARTMENT OF AGRICULTURE

WATER RESOURCES DIVISION



WATER RESOURCES DIVISION

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WATER RESOURCES DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE

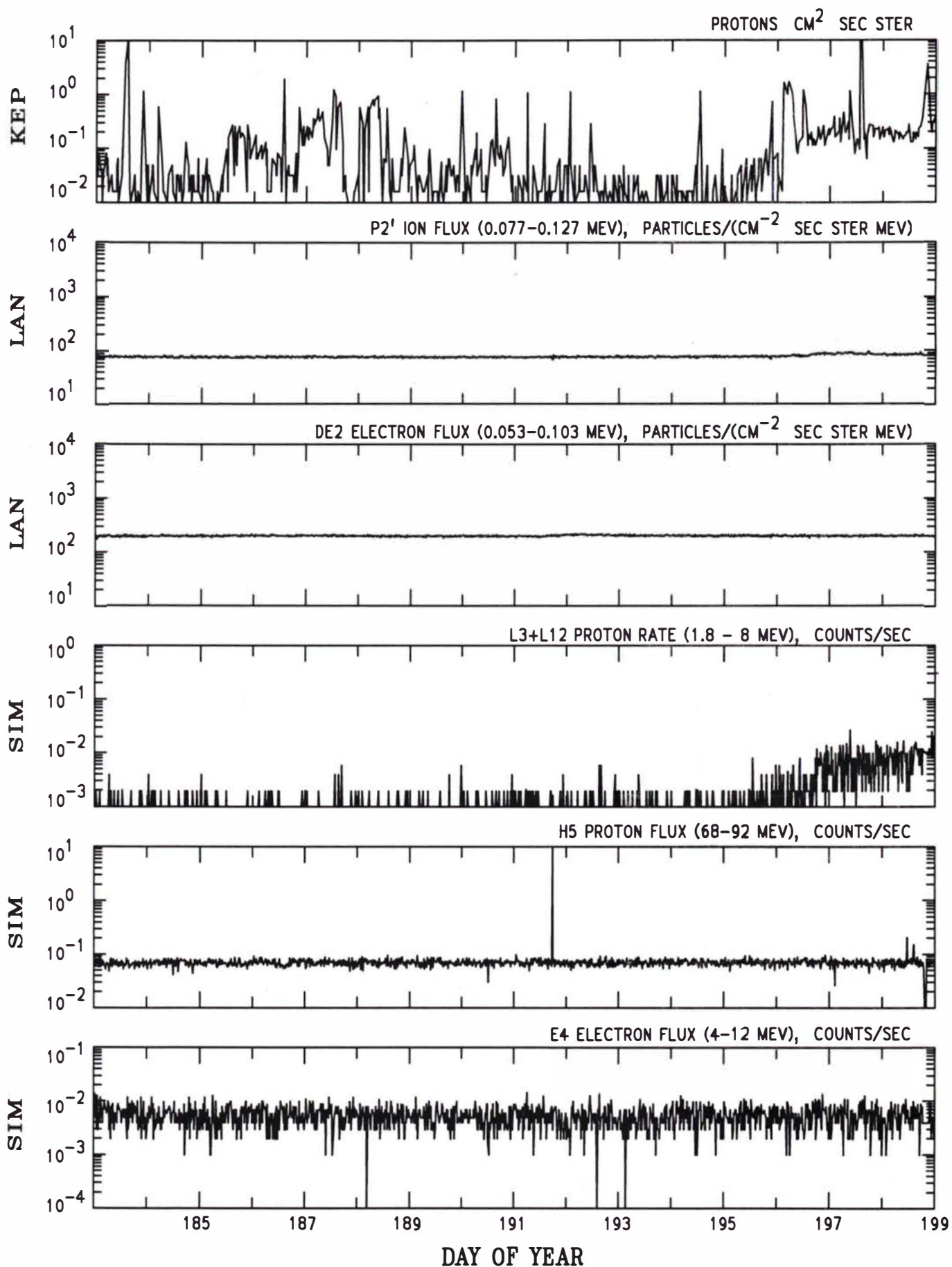
WATER RESOURCES DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE

WATER RESOURCES DIVISION

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

96 183 JUL 1 00:00:00.000 - 96 199 JUL 17 00:00:00.000



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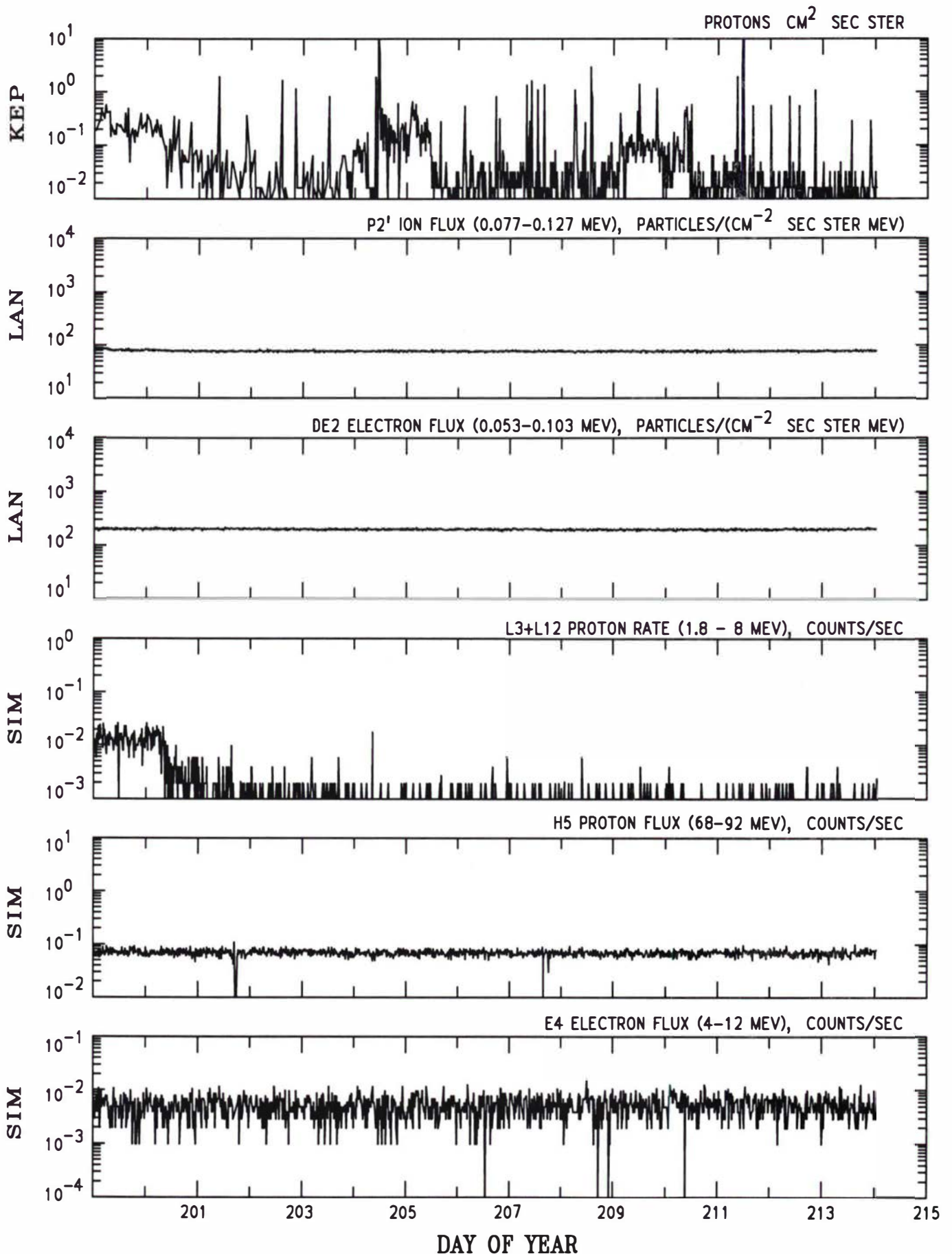
100 100 100

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

96 199 JUL 17 00:00:00.000 - 96 215 AUG 2 00:00:00.000



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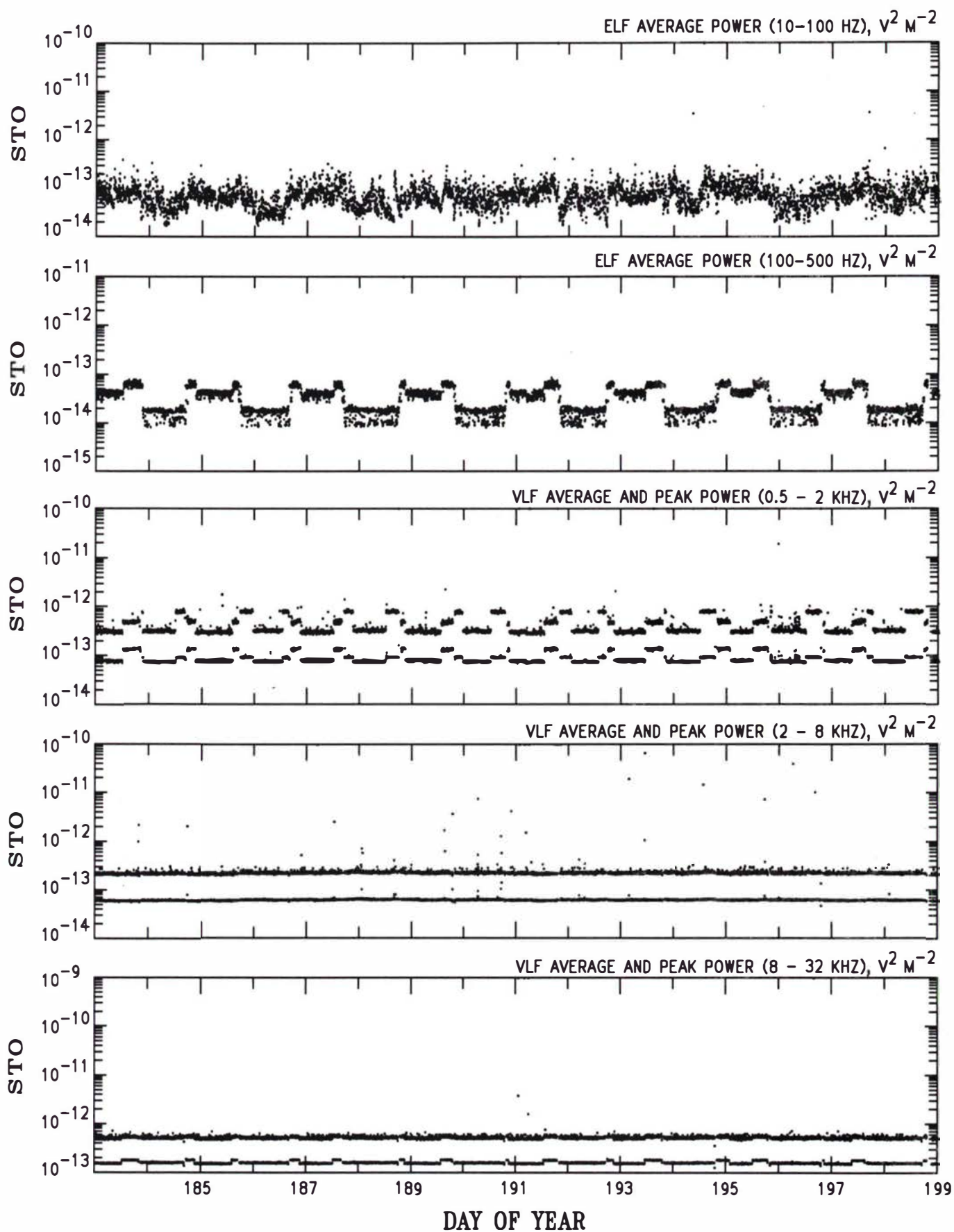
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100-000000

ULYSSES CDR - PLASMA WAVE

96 183 JUL 1 00:00:00.000 - 96 199 JUL 17 00:00:00.000



100-011-235

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ULYSSES CDR - PLASMA WAVE

96 199 JUL 17 00:00:00.000 - 96 215 AUG 2 00:00:00.000

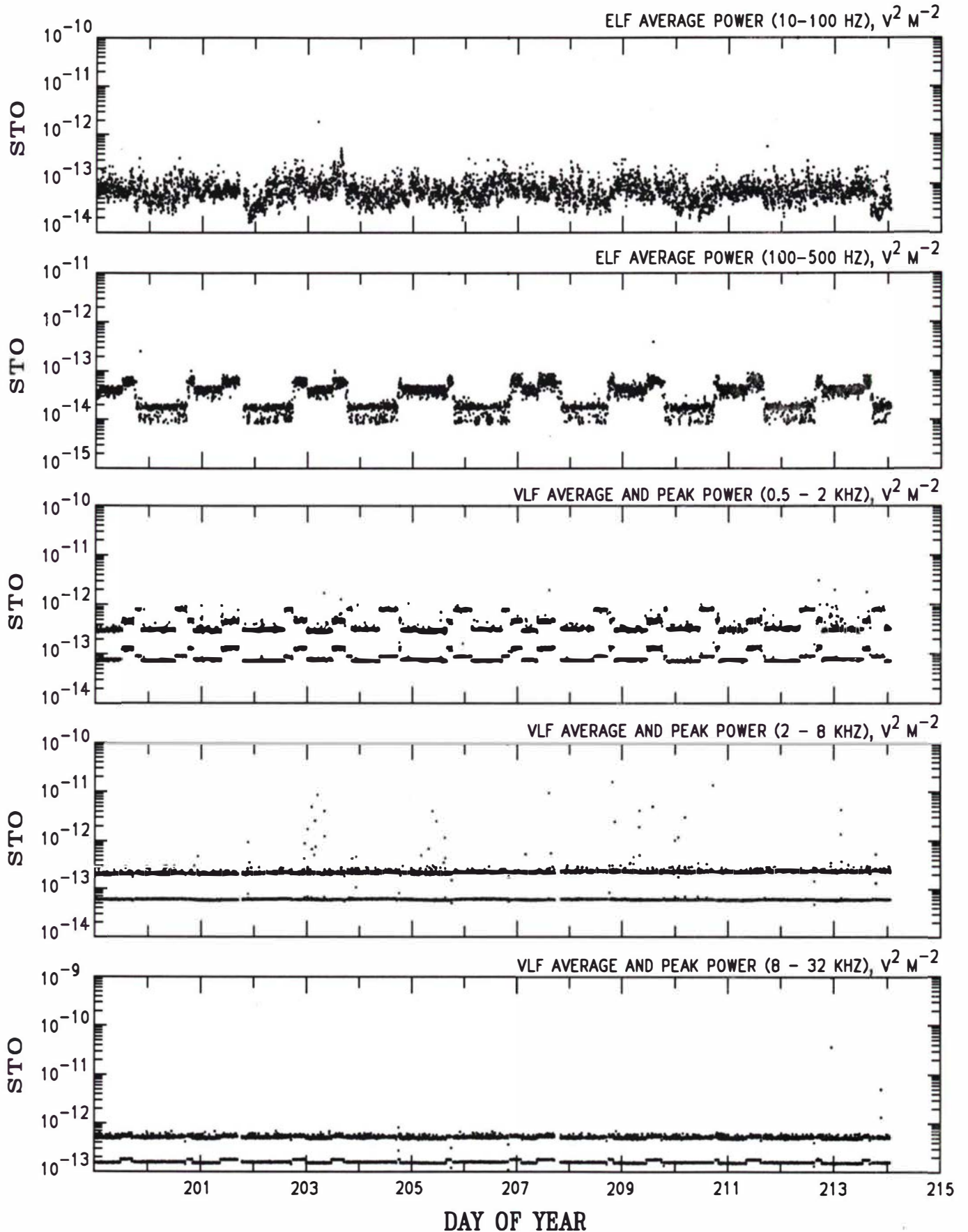
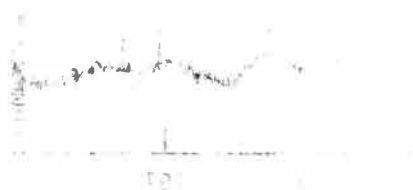
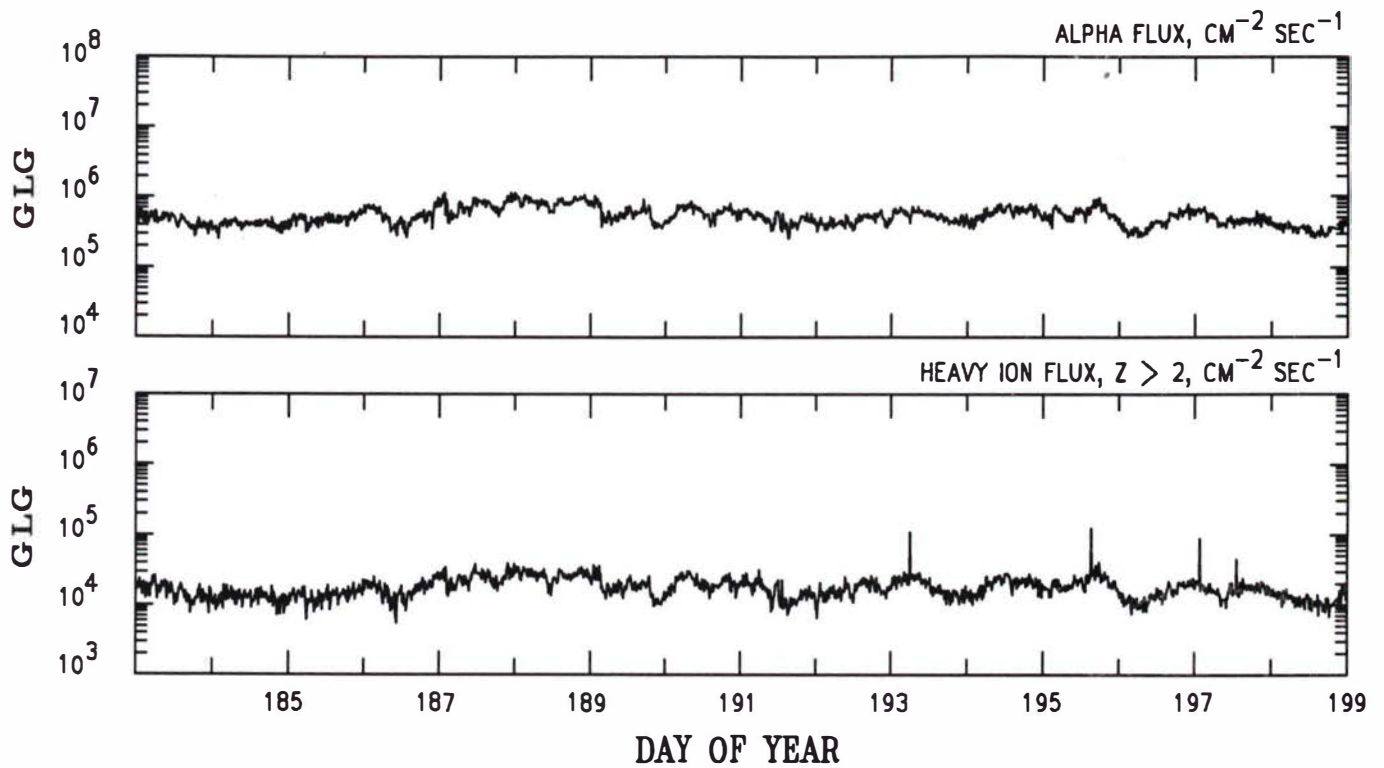


Figure 1



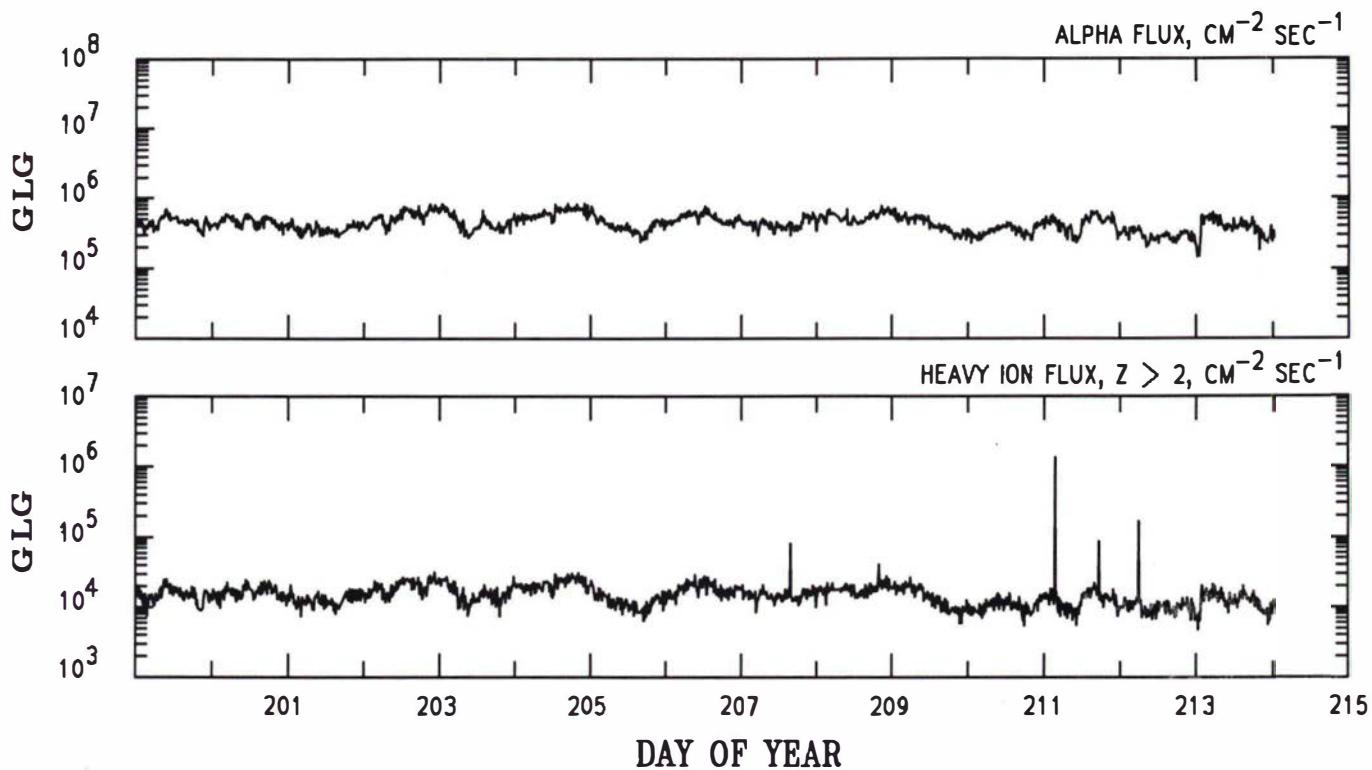
ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 183 JUL 1 00:00:00.000 - 96 199 JUL 17 00:00:00.000

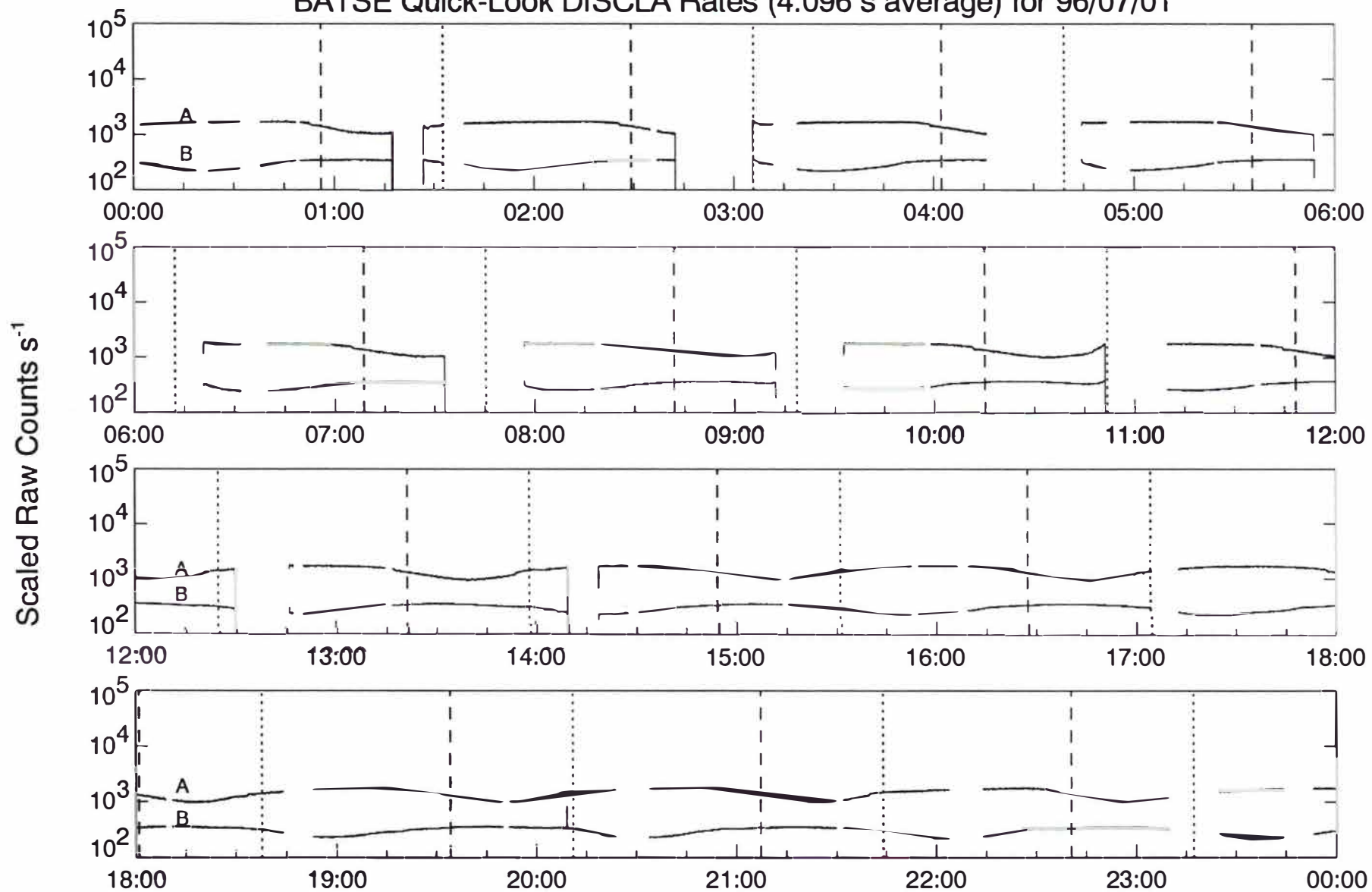


ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 199 JUL 17 00:00:00.000 - 96 215 AUG 2 00:00:00.000



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/01



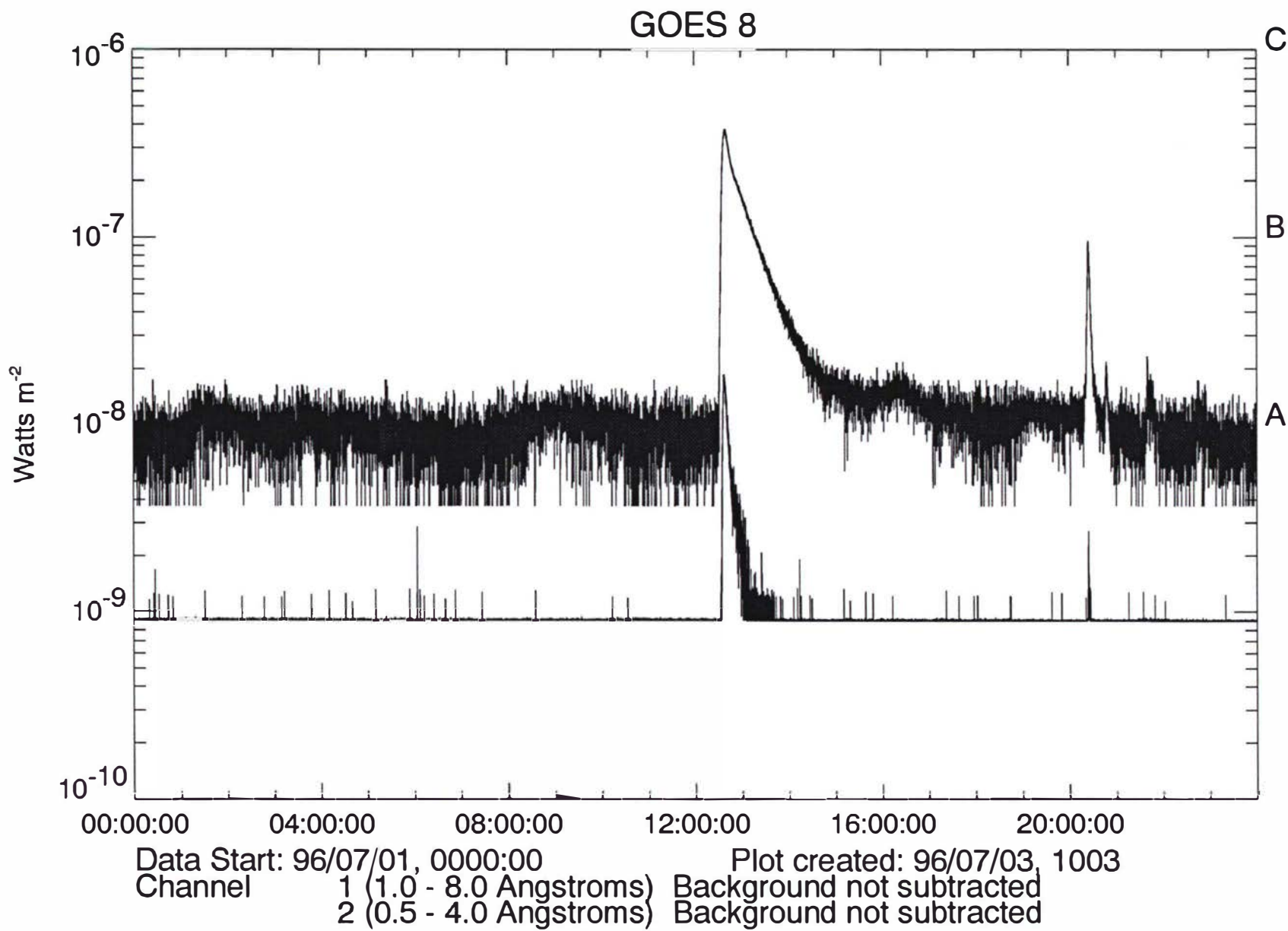
Current Time: 96/07/03, 1004 EDT

A: Channel 0 Most Sunward LAD

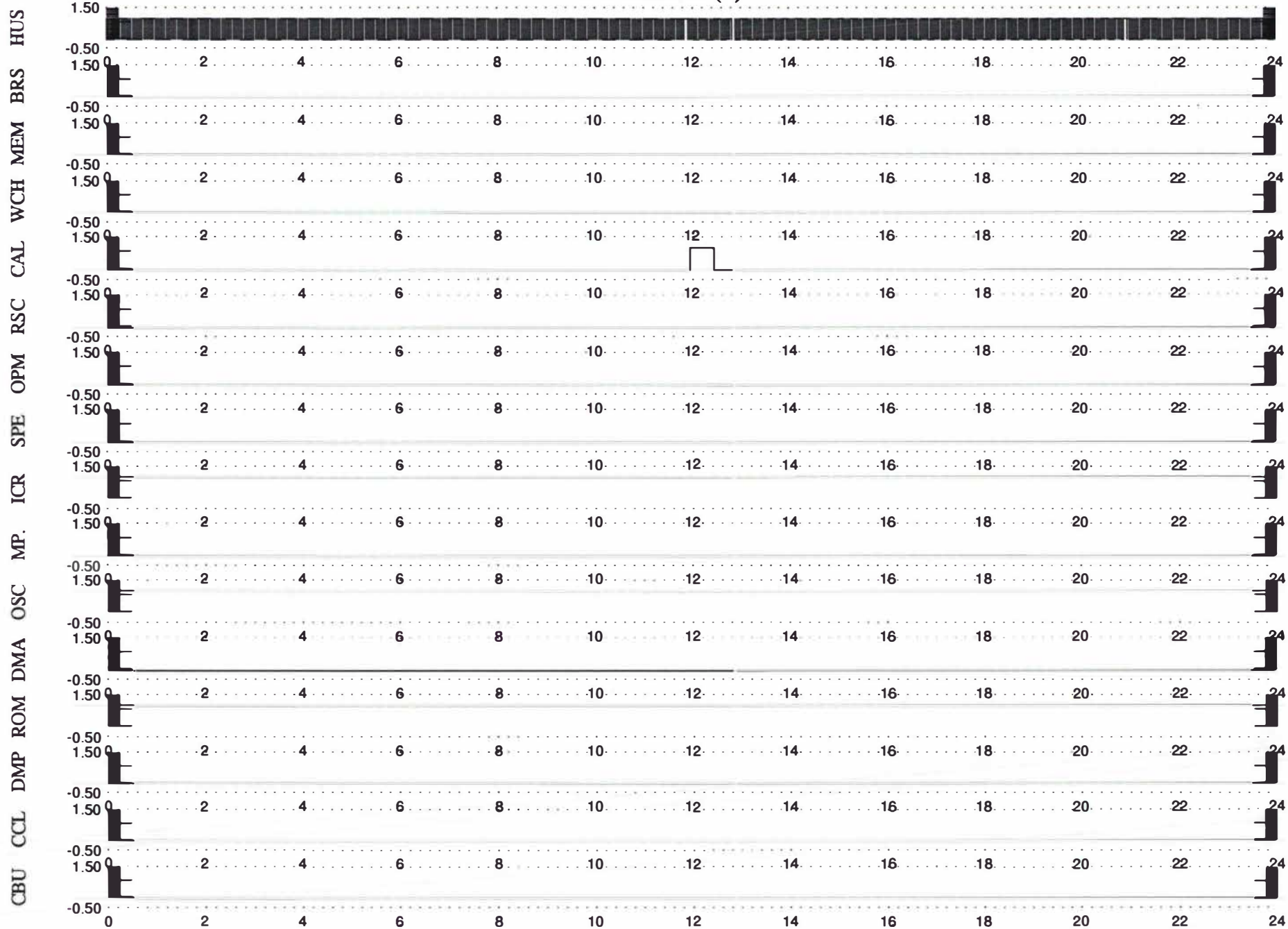
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

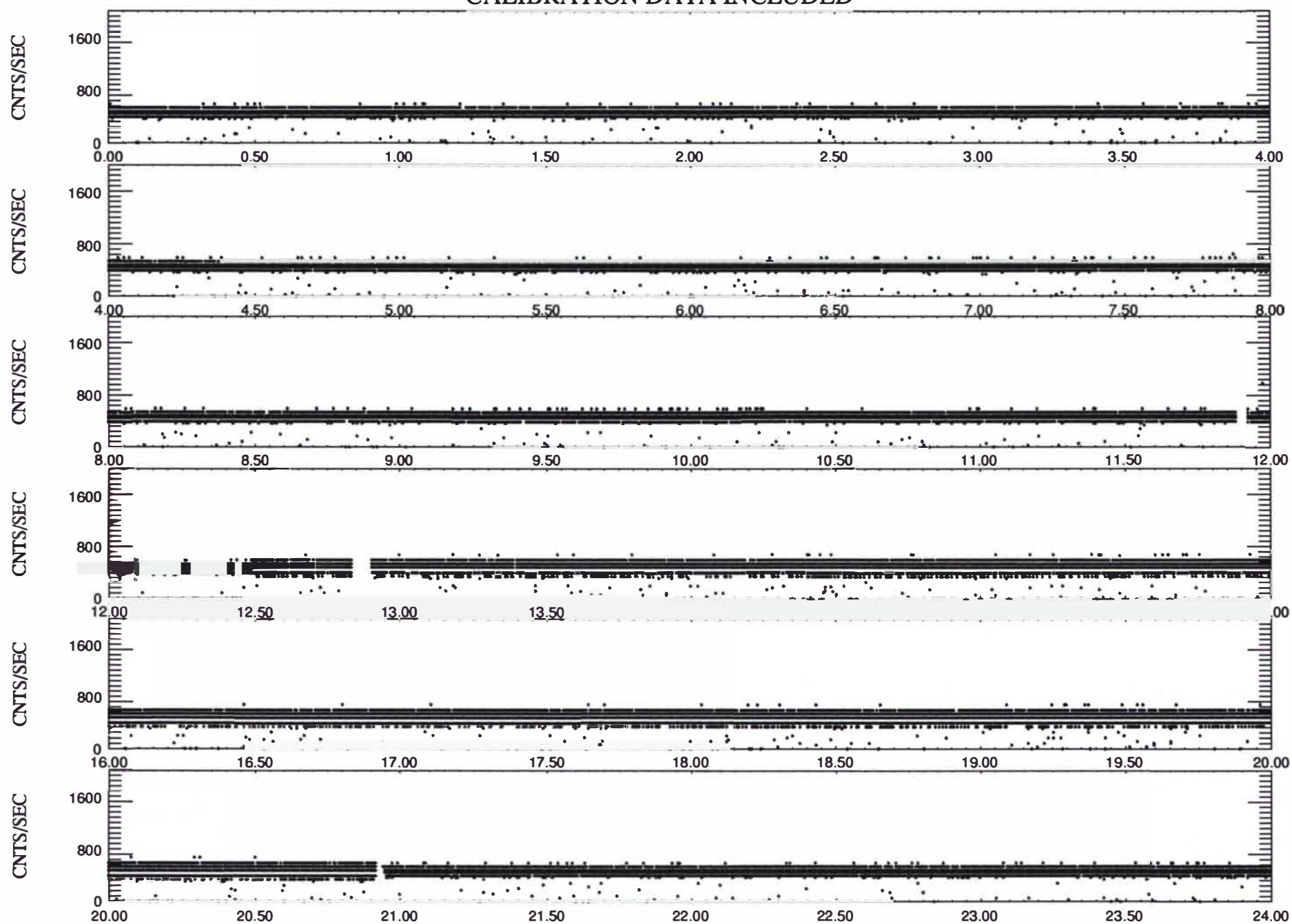


NO BURST (7)

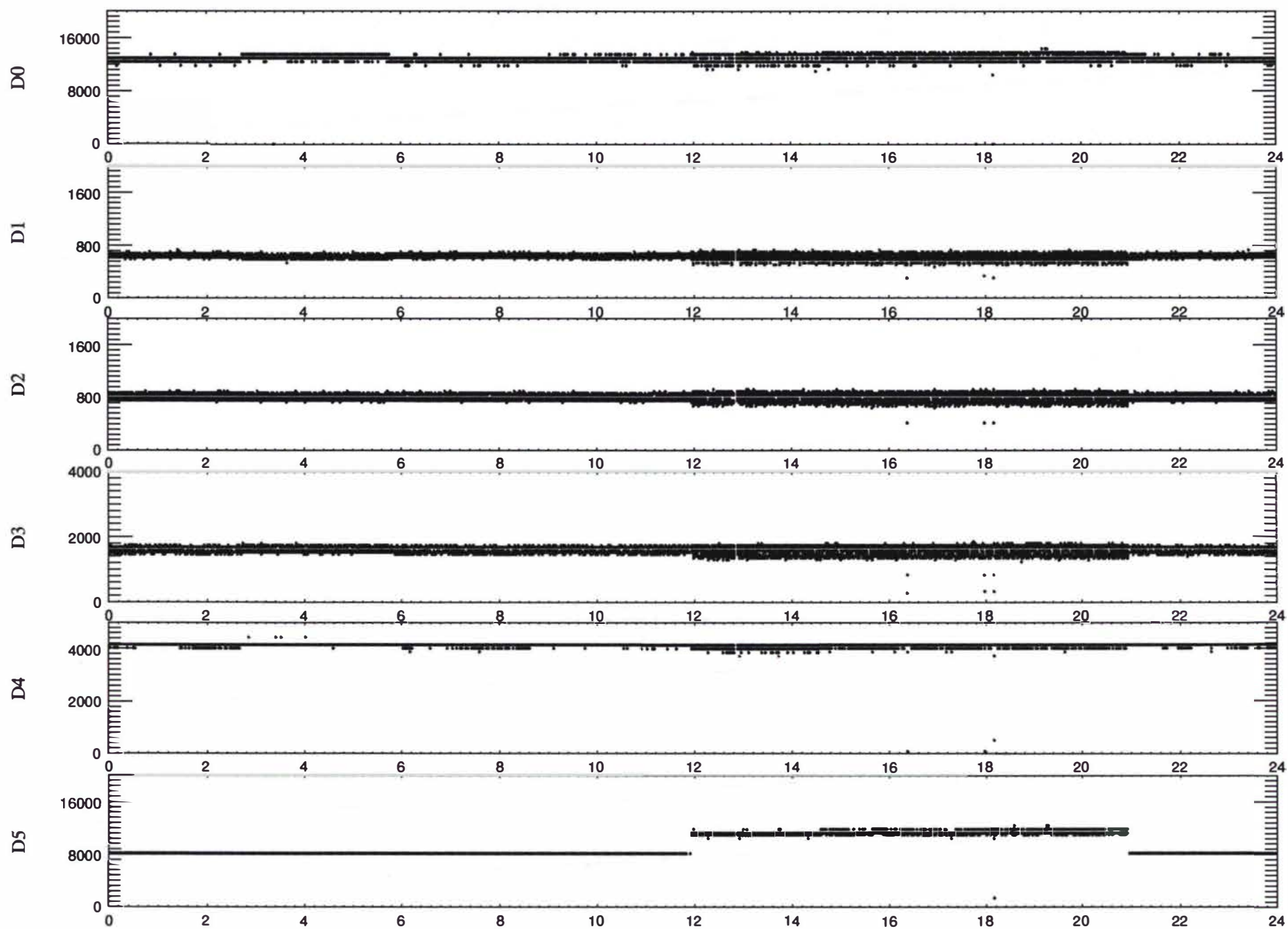


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From HENZE@ssl.msfc.nasa.gov Fri Jul 5 12:47 PDT 1996
Date: Fri, 5 Jul 1996 14:47:26 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5524

BATSEARCH PROGRAM

BATSE BURST # 5524
EVENT OF 1996 JUL 2 DAY OF YEAR=184
EVENT CROSSING TIME AT BATSE : 3549. S. OR 00:59:09.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 109.000 19.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 7/ 96 IS:
RA= 153.847 DEC= 47.014 DIST= 4.641 AU
BATSE-ULYSSES DISTANCE = 694248058. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=134.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1609.98 SECS.
CROSSING TIME AT ULYSSES IS 1939. S. OR 00:32:19 +/- 314.54 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 7/ 96 IS:
RA= 72.305 DEC= 22.573 DIST= 2.322 AU
MARS-BATSE DISTANCE = 347412608. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=145.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -956.08 SECS.
CROSSING TIME AT MARS IS 2593. S. OR 00:43:12 +/- 99.17 SECONDS

BATSE BURST TRIGGER

NO.: 5524

TIME: TJD=0266 SECONDS=03549

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=035.9 AZIMUTH=003.4 ERROR=005.8 DEGREES

COMMENTS:

TOTAL DUR. ~45 S, INCLUDING PRECURSSOR EMISSION BEGINNING AT ~T-30 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5524	960702	10266	03549	2500	109	+19	45

B A T S E #

5 5 2 4

5 / 7 / 9 6

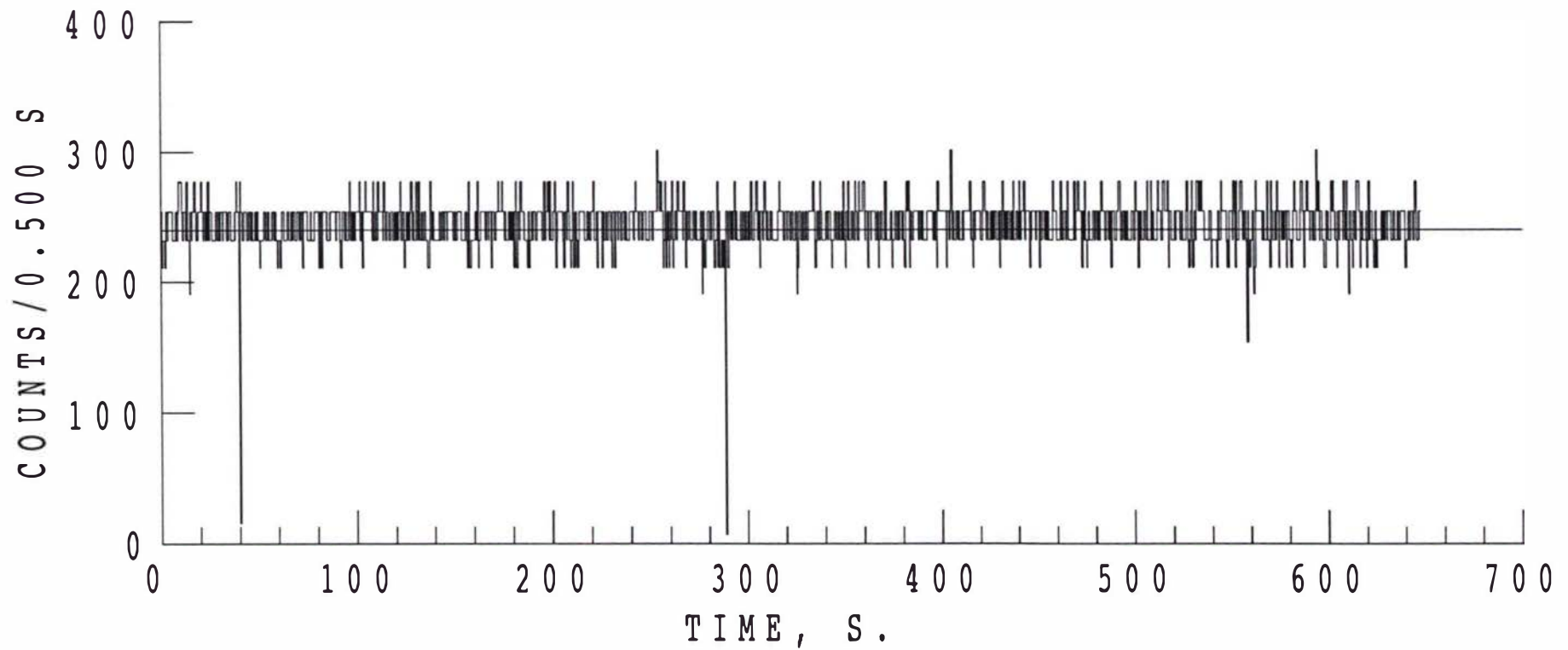
U L Y S S E S R T

2 / 7 / 9 6 1 6 2 0 . 4 8 9 s

0 - 0 k e V

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



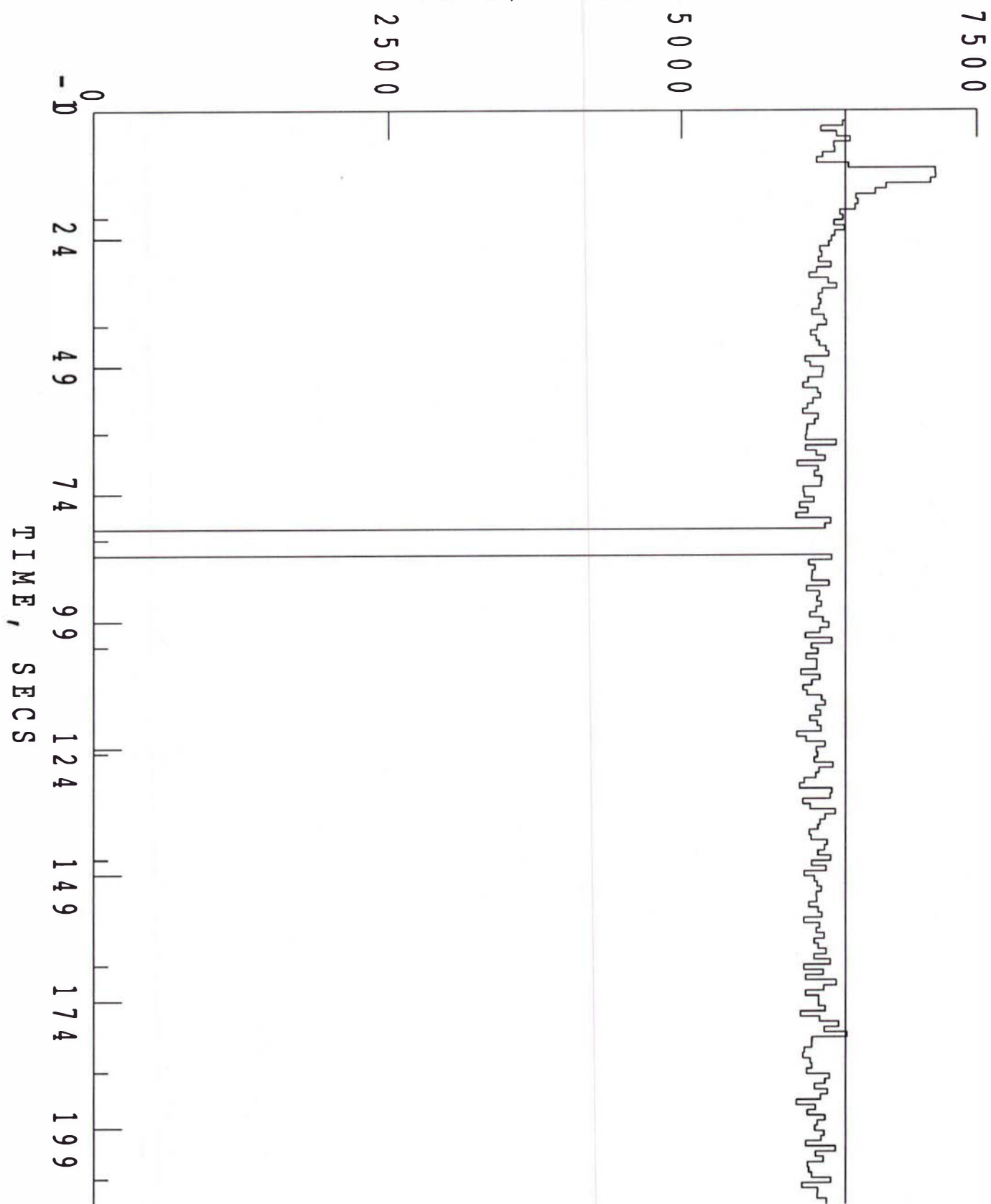
BACODINE

02/07/96

3538.633

25 - 100 keV

COUNTS/1.024 S



From HENZE@ssl.msfc.nasa.gov Fri Jul 5 12:50 PDT 1996
Date: Fri, 5 Jul 1996 14:50:32 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5525

BATSEARCH PROGRAM

RI

BATSE BURST # 5525
EVENT OF 1996 JUL 2 DAY OF YEAR=184
EVENT CROSSING TIME AT BATSE : 54686. S. OR 15:11:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 37.000 -16.000
BATSE PEAK COUNTING RATE: 9200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 7/ 96 IS:
RA= 153.957 DEC= 46.891 DIST= 4.648 AU
BATSE-ULYSSES DISTANCE = 695400900. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1157.53 SECS.
CROSSING TIME AT ULYSSES IS 55844. S. OR 15:30:43 +/- 416.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 7/ 96 IS:
RA= 72.305 DEC= 22.573 DIST= 2.322 AU
MARS-BATSE DISTANCE = 347412608. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.21 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -716.82 SECS.
CROSSING TIME AT MARS IS 53969. S. OR 14:59:29 +/- 147.20 SECONDS

BATSE BURST TRIGGER

NO.: 5525

TIME: TJD=0266 SECONDS=54686

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=045.3 AZIMUTH=158.1 ERROR=000.5 DEGREES

COMMENTS:

DUR. ~90 S. IN DATA GAP. WEAK ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5525	960702	10266	54686	9200	037	-16	90

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
96	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
96	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5369
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search RI	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	SEARCH	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	SEARCH	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	SEARCH	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

BATSE

Helio corr removed

Date: Mar 12 '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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

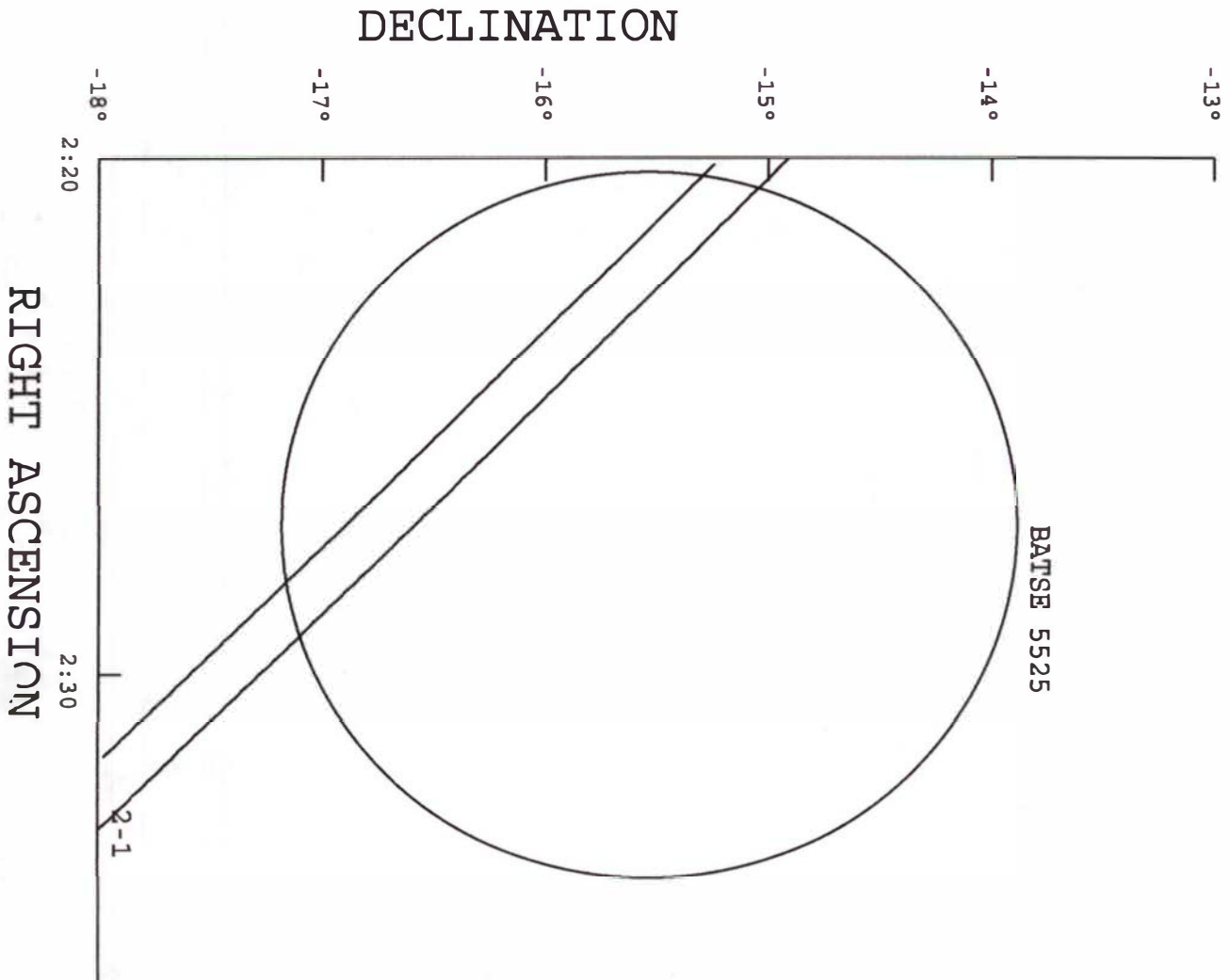
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 2, 1996 15:30

12/ 3/98



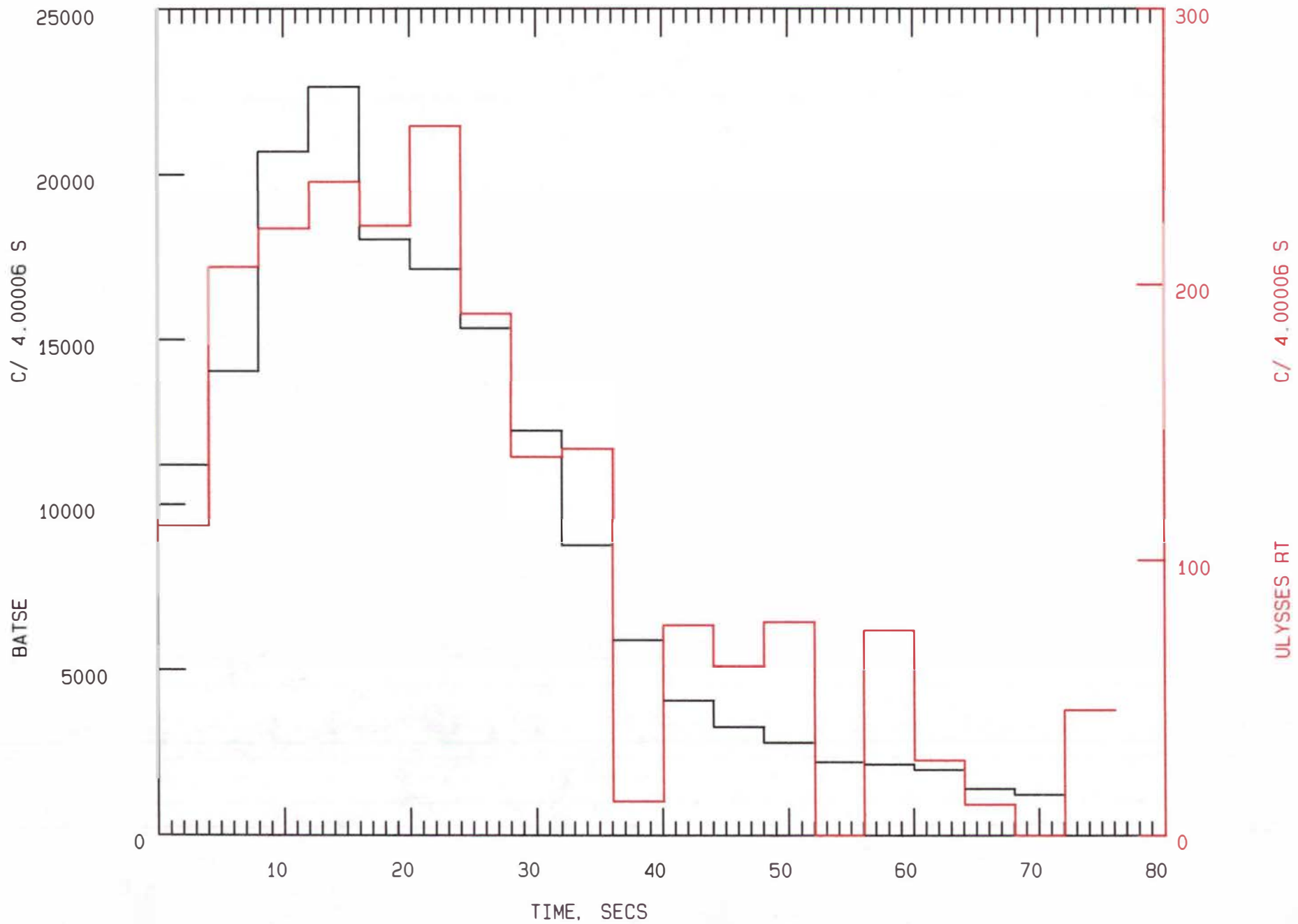
BATSE

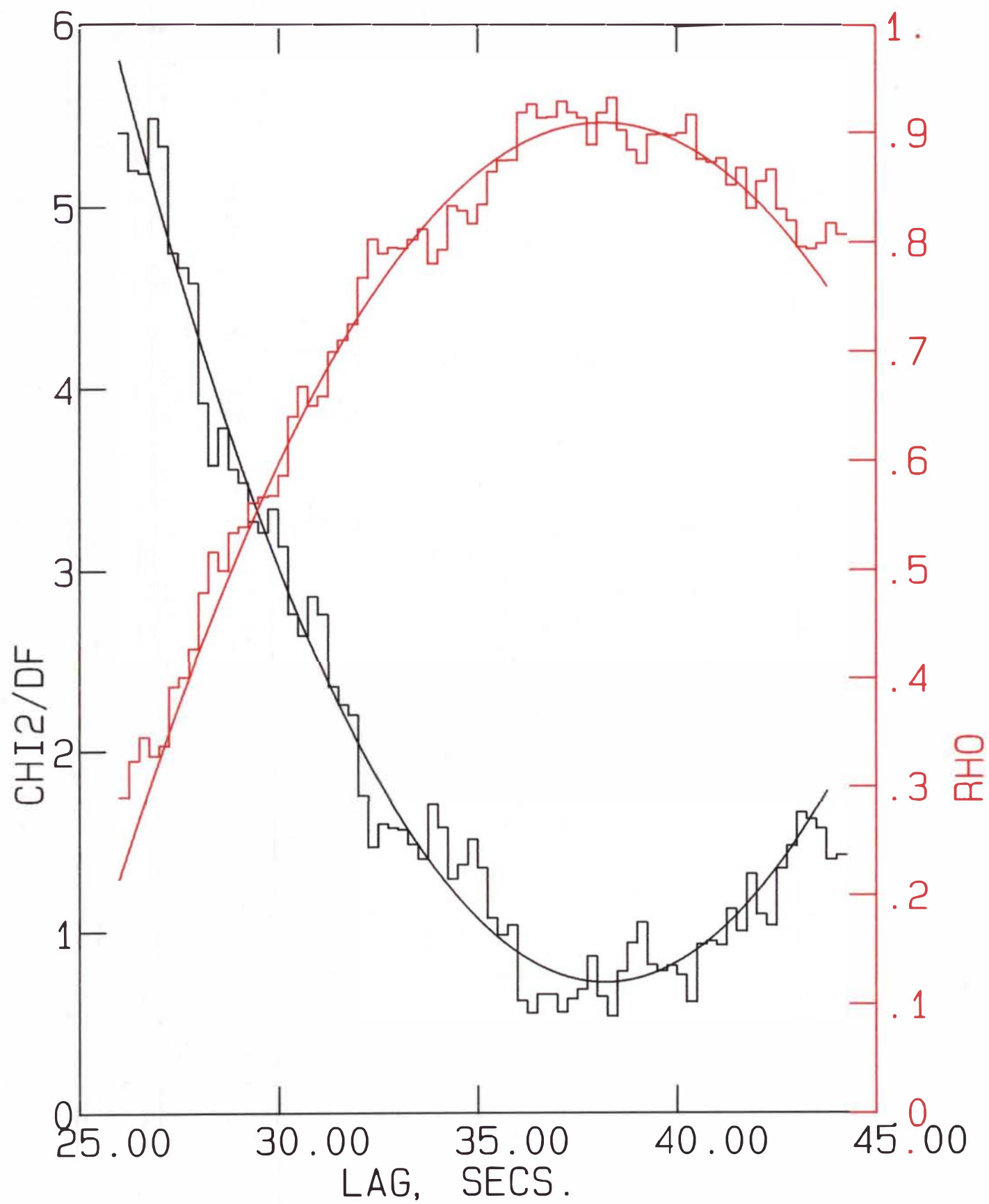
-ULYSSES RT CORRELATION

2/ 7/96

54686.410

12/ 3/98





ULYSSES RT

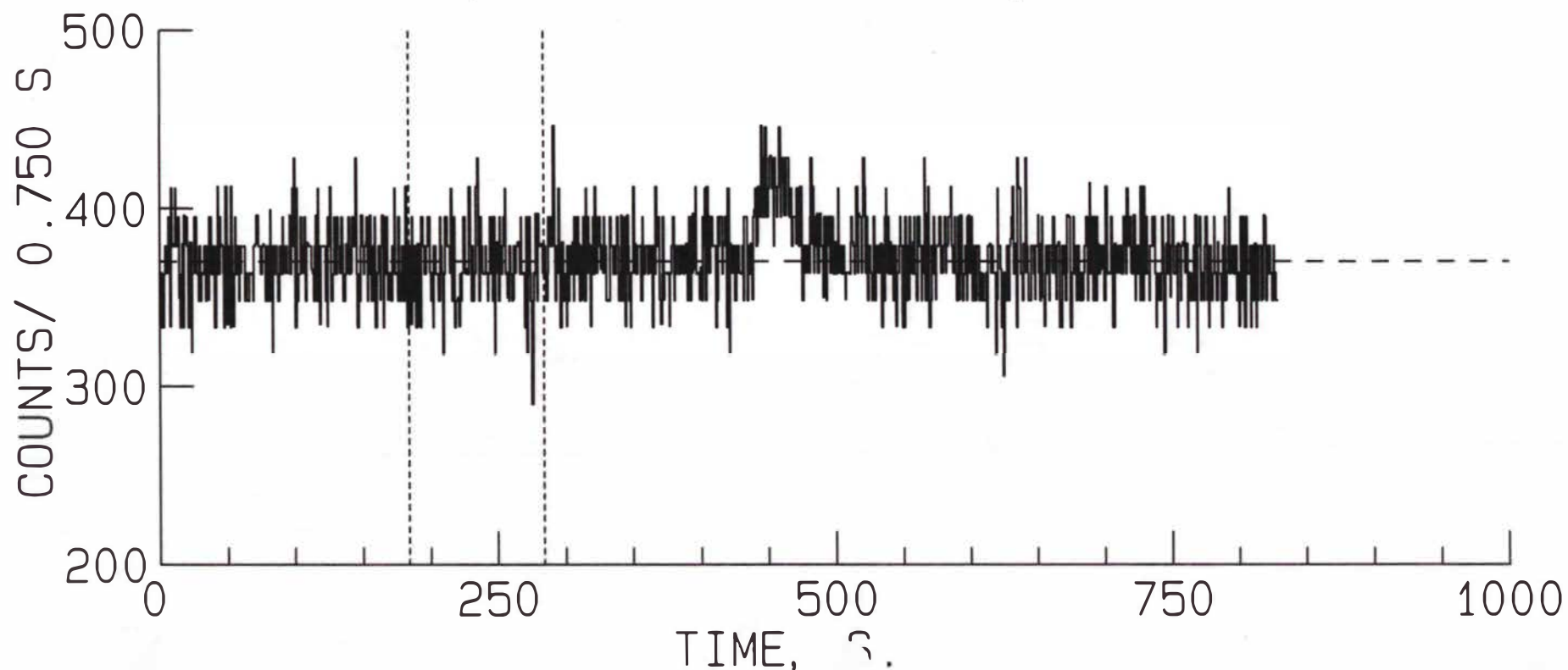
12 / 3 / 98

2 / 7 / 96 55440.044 s

0.250 S INTERVALS REGROUPED BY 3

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



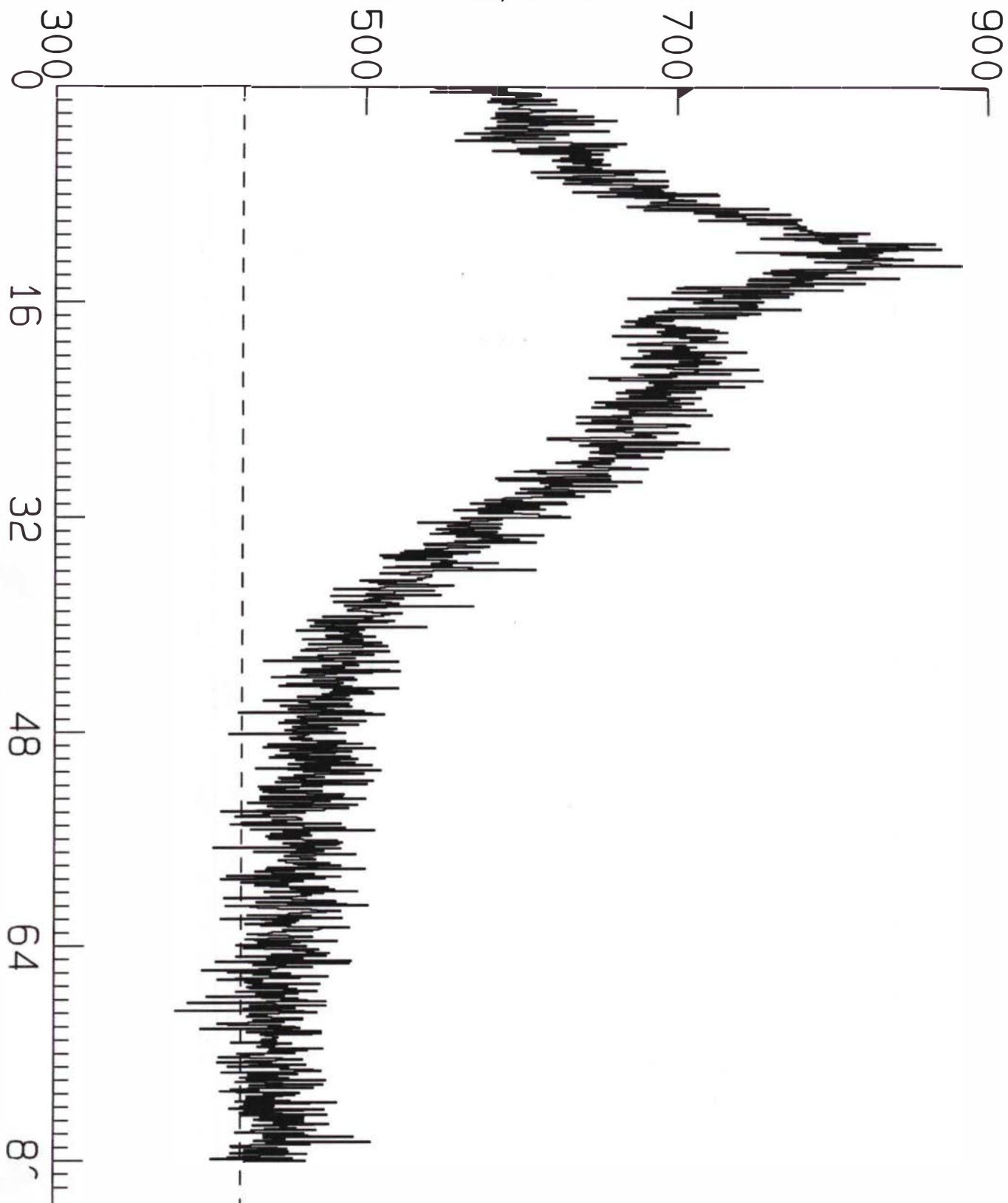
BATSE

02/07/96

54686.410

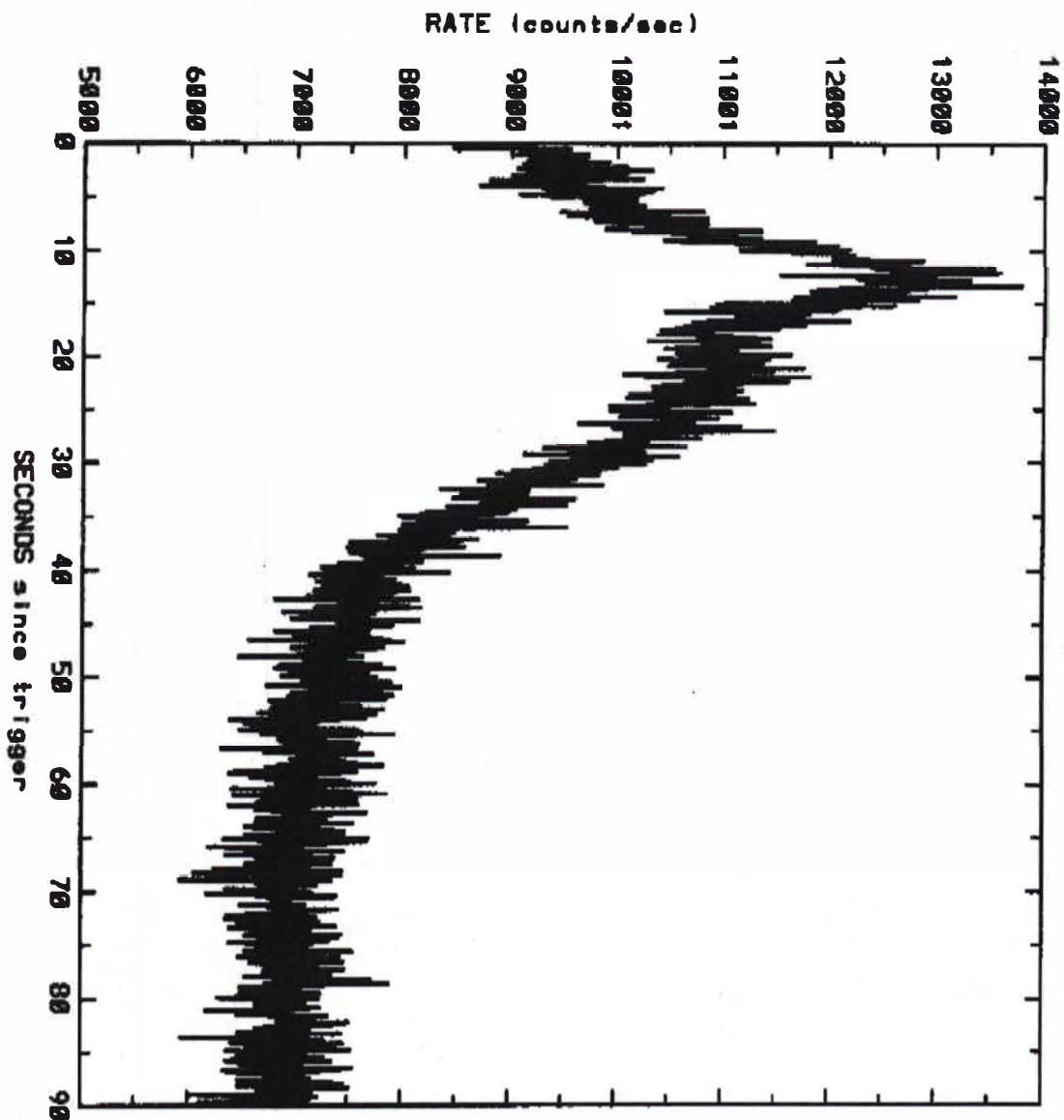
25- 100 keV

COUNTS/0.064 S



12 / 7 / 96

MER Data for K. Hurley, No. 5525



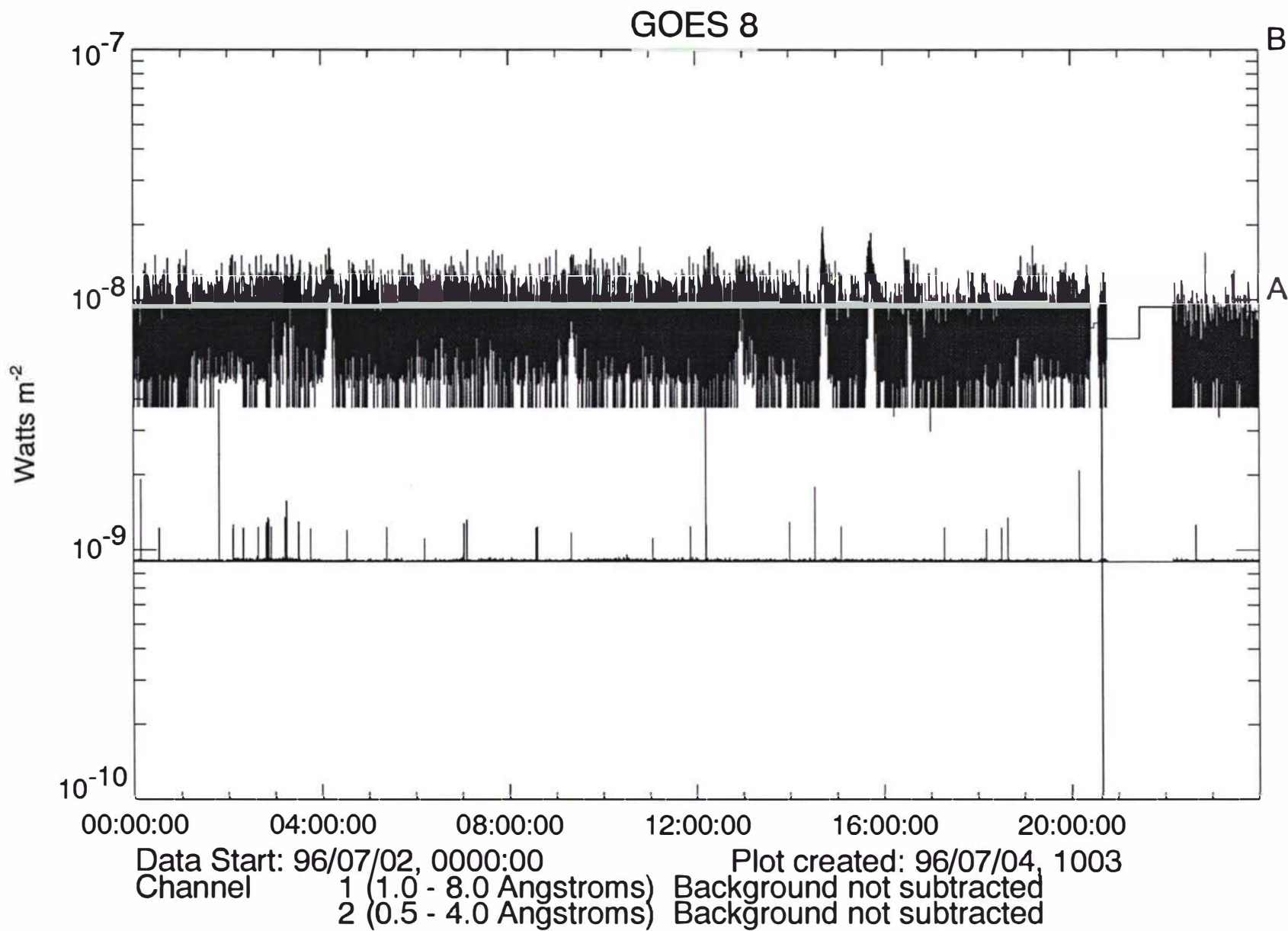
12-JUL-1996 08:46:43

Created by MOPS BD
(Burnt Display)
Version 12.25

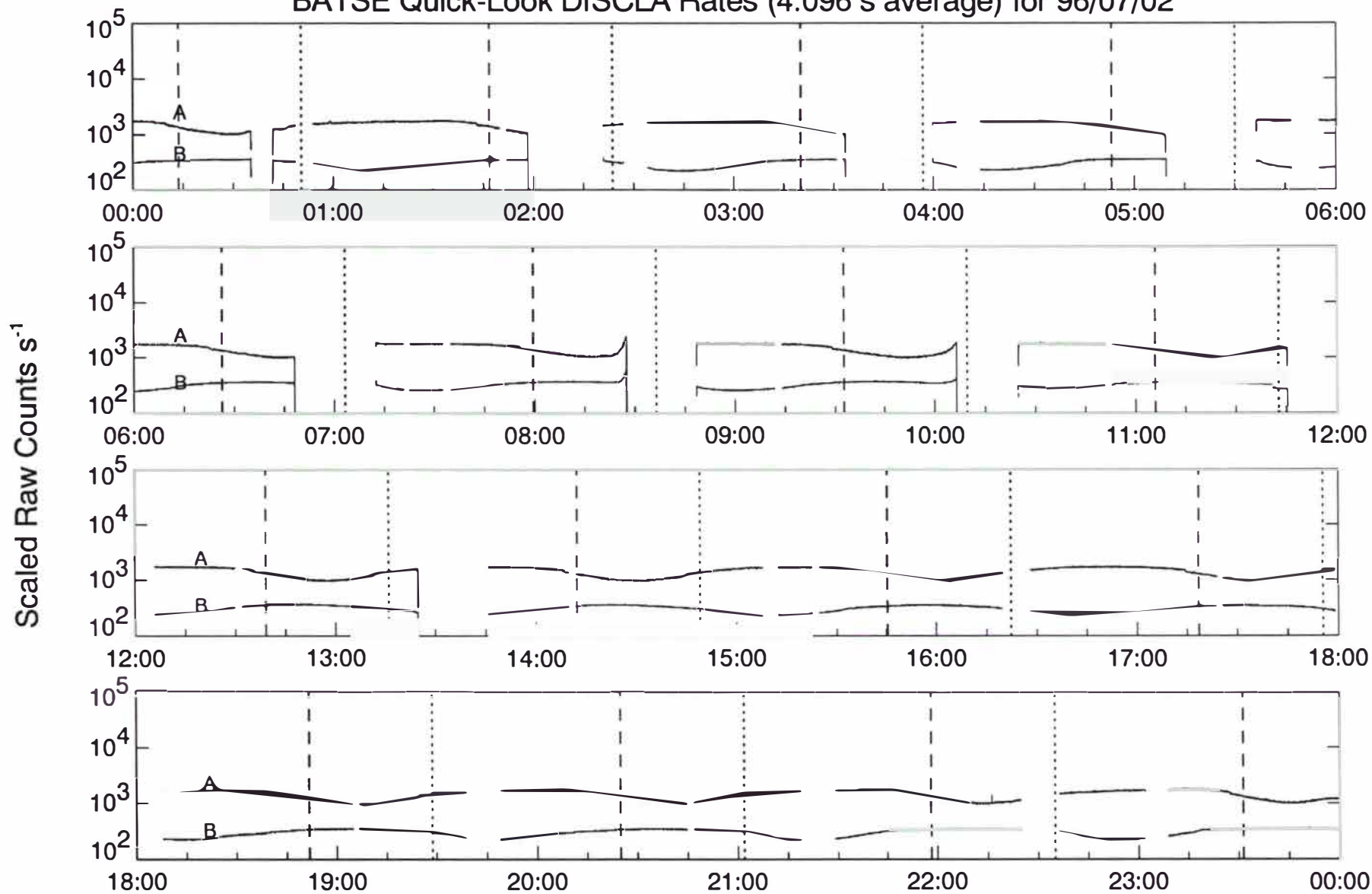
Trigger # : 5525

Trigger Time:
10206 / 54606.418Burnt Data Type:
MER

Deadtime
Corrected: N
Background Data
Type: COUNT
Minimum Integ. Time:
0.004 second(s)
Detectors [7.0]:
-6-4-
Channels:
10 - 61
Quality Mask:
BDISP1



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/02



Current Time: 96/07/04, 1004 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

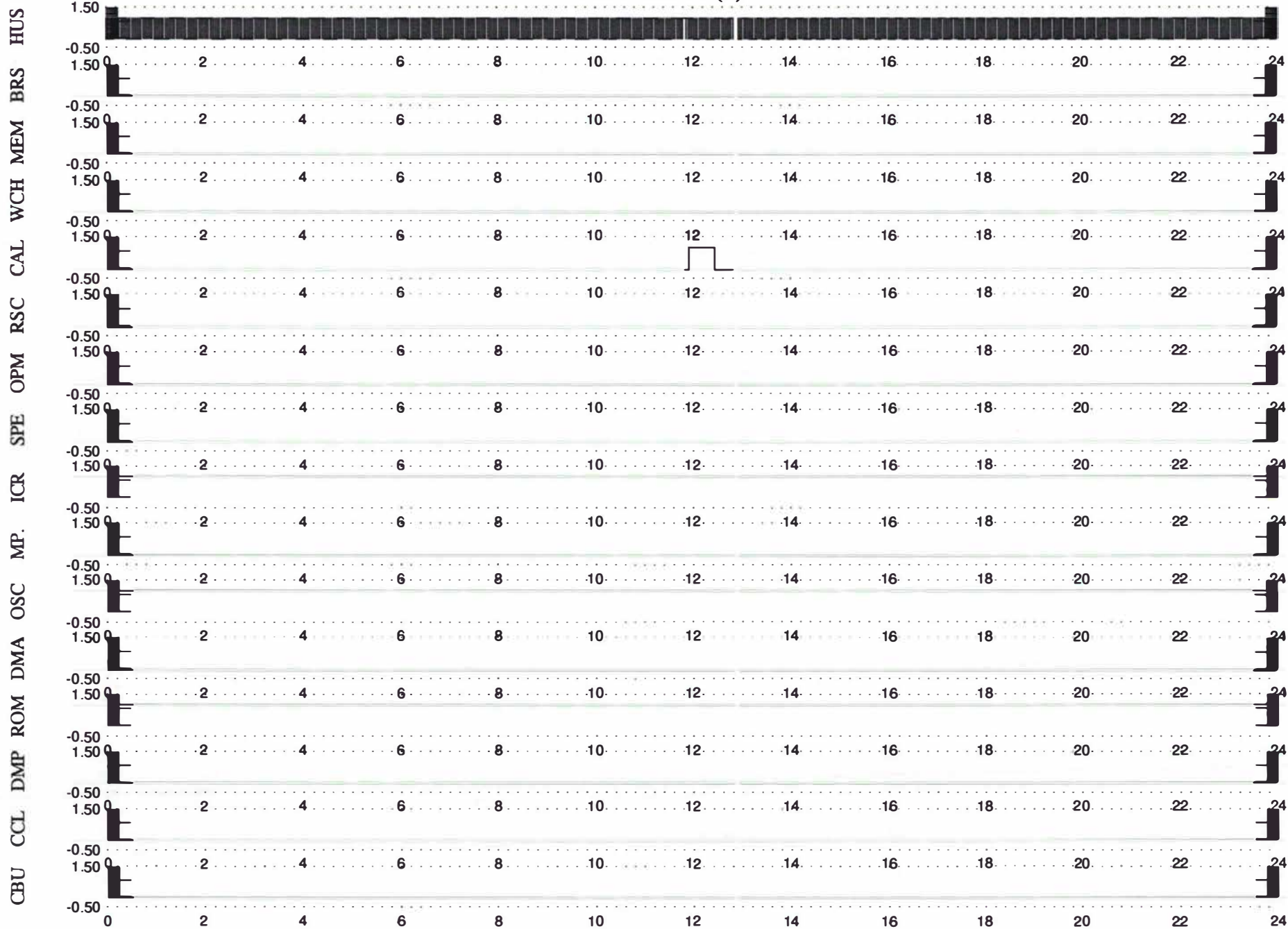
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

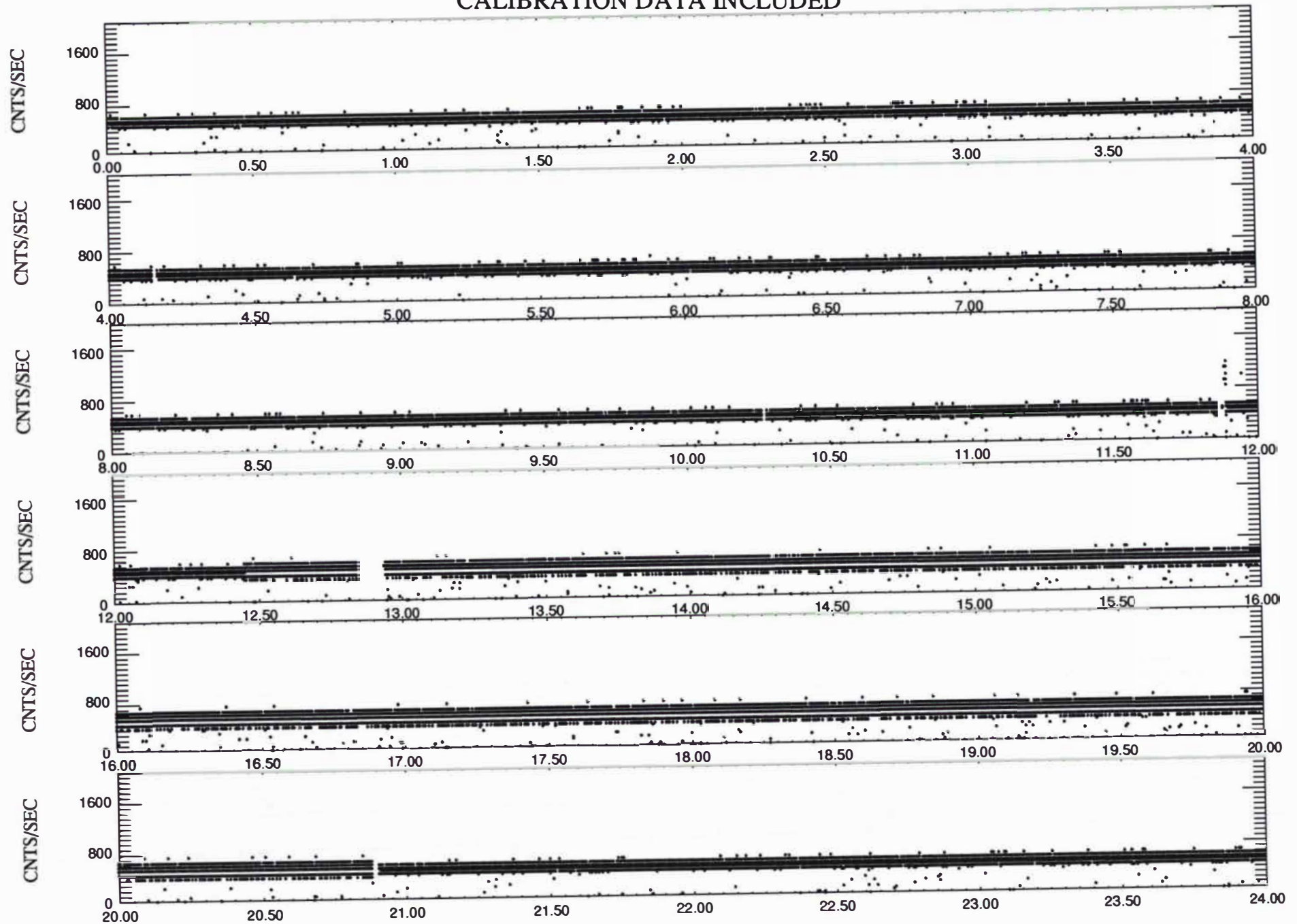
+ Solar Flare

NO BURST (7)

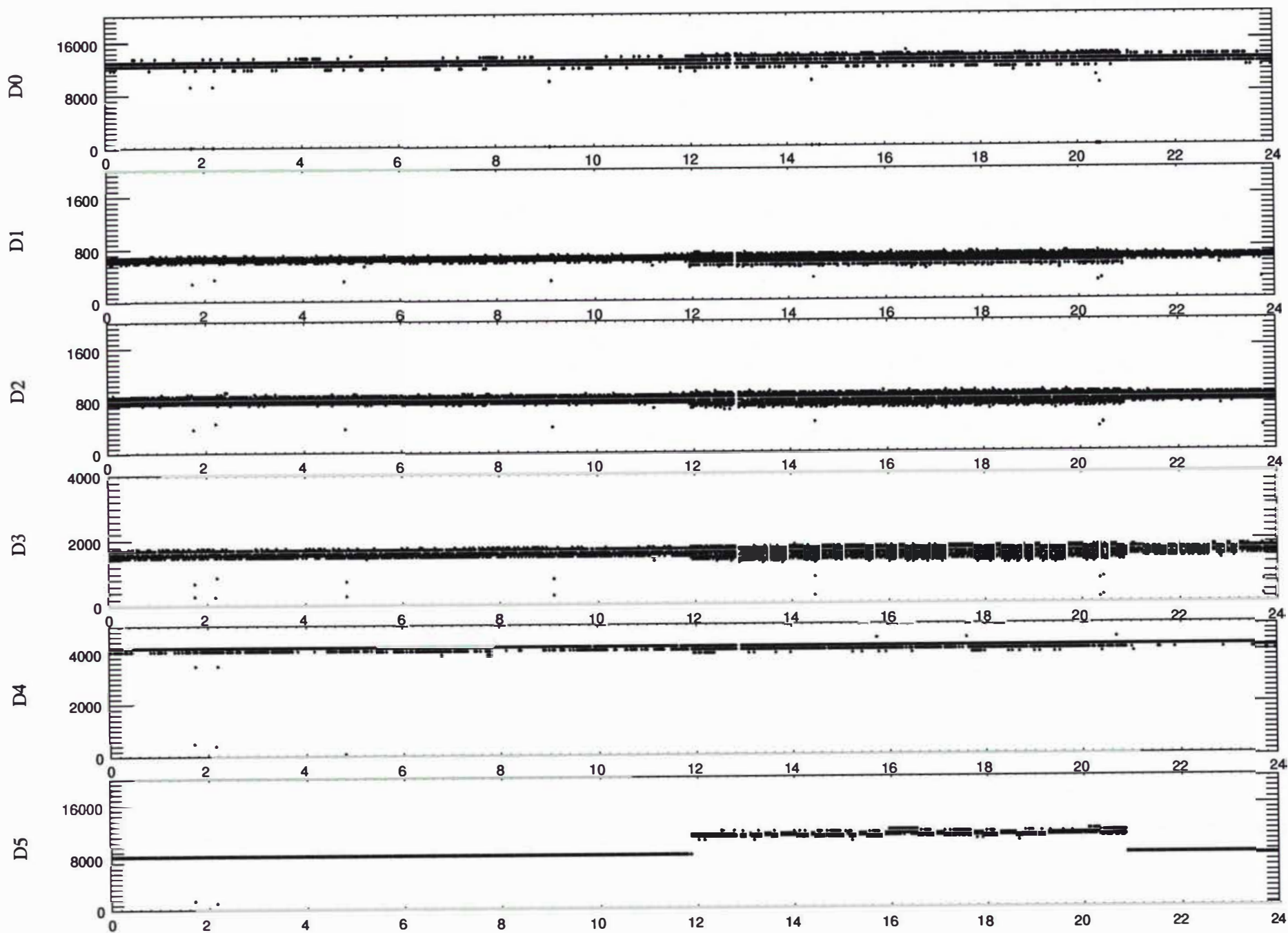


UNIVERSAL TIME

CALIBRATION DATA INCLUDED

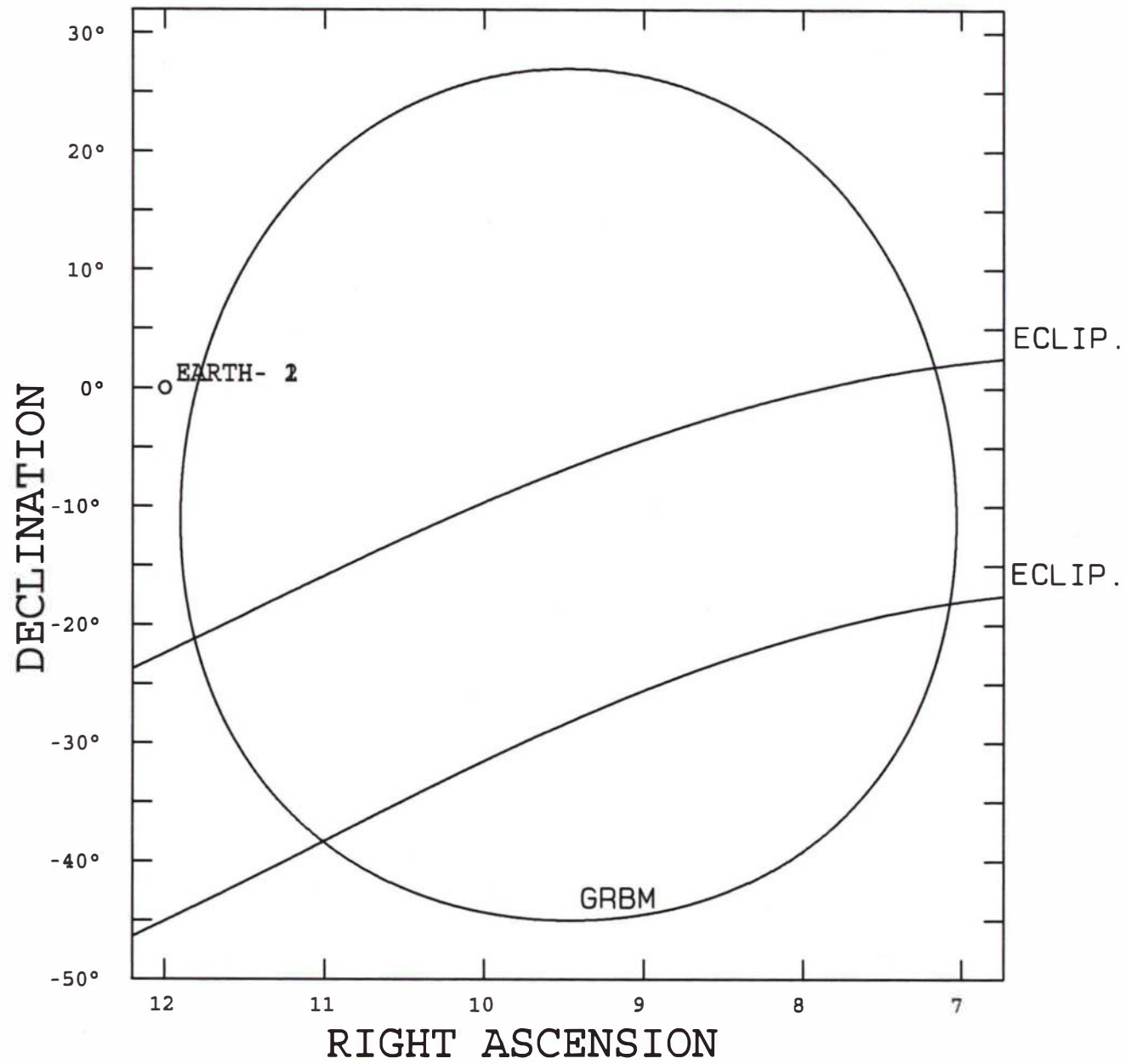


UNIVERSAL TIME



UNIVERSAL TIME

S/K burst 960703 27588,



KONUS

ULYSSES RT

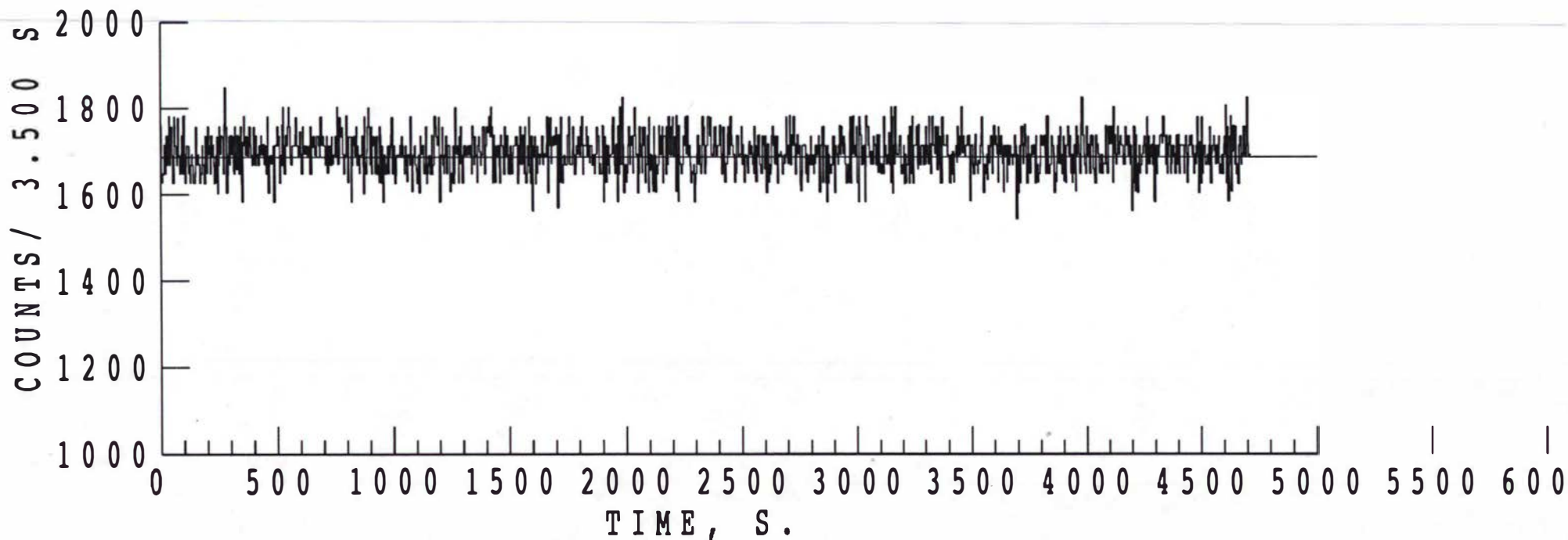
29 / 01 / 00

03 / 07 / 96 25236.031 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@ssl.msfc.nasa.gov Fri Jul 5 12:52 PDT 1996
Date: Fri, 5 Jul 1996 14:52:00 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5526

BATSEARCH PROGRAM

RI

BATSE BURST # 5526
EVENT OF 1996 JUL 3 DAY OF YEAR=185
EVENT CROSSING TIME AT BATSE : 49373. S. OR 13:42:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 5.000 -8.000
BATSE PEAK COUNTING RATE: 12000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 7/ 96 IS:
RA= 154.132 DEC= 46.697 DIST= 4.661 AU
BATSE-ULYSSES DISTANCE = 697222435. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 46.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1591.38 SECS.
CROSSING TIME AT ULYSSES IS 50964. S. OR 14:09:24 +/- 368.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 7/ 96 IS:
RA= 73.053 DEC= 22.667 DIST= 2.320 AU
MARS-BATSE DISTANCE = 347111968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -333.33 SECS.
CROSSING TIME AT MARS IS 49040. S. OR 13:37:19 +/- 187.45 SECONDS

BATSE BURST TRIGGER

NO.: 5526

TIME: TJD=0267 SECONDS=49373

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=076.4 AZIMUTH=147.6 ERROR=001.0 DEGREES

COMMENTS:

DUR. ~95 S. VISIBLE ABOVE 300 KEV. COMPLEX.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5526	960703	10267	49373	12000	005	-08	95

Helio corr removed

Date: Mar 12 '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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

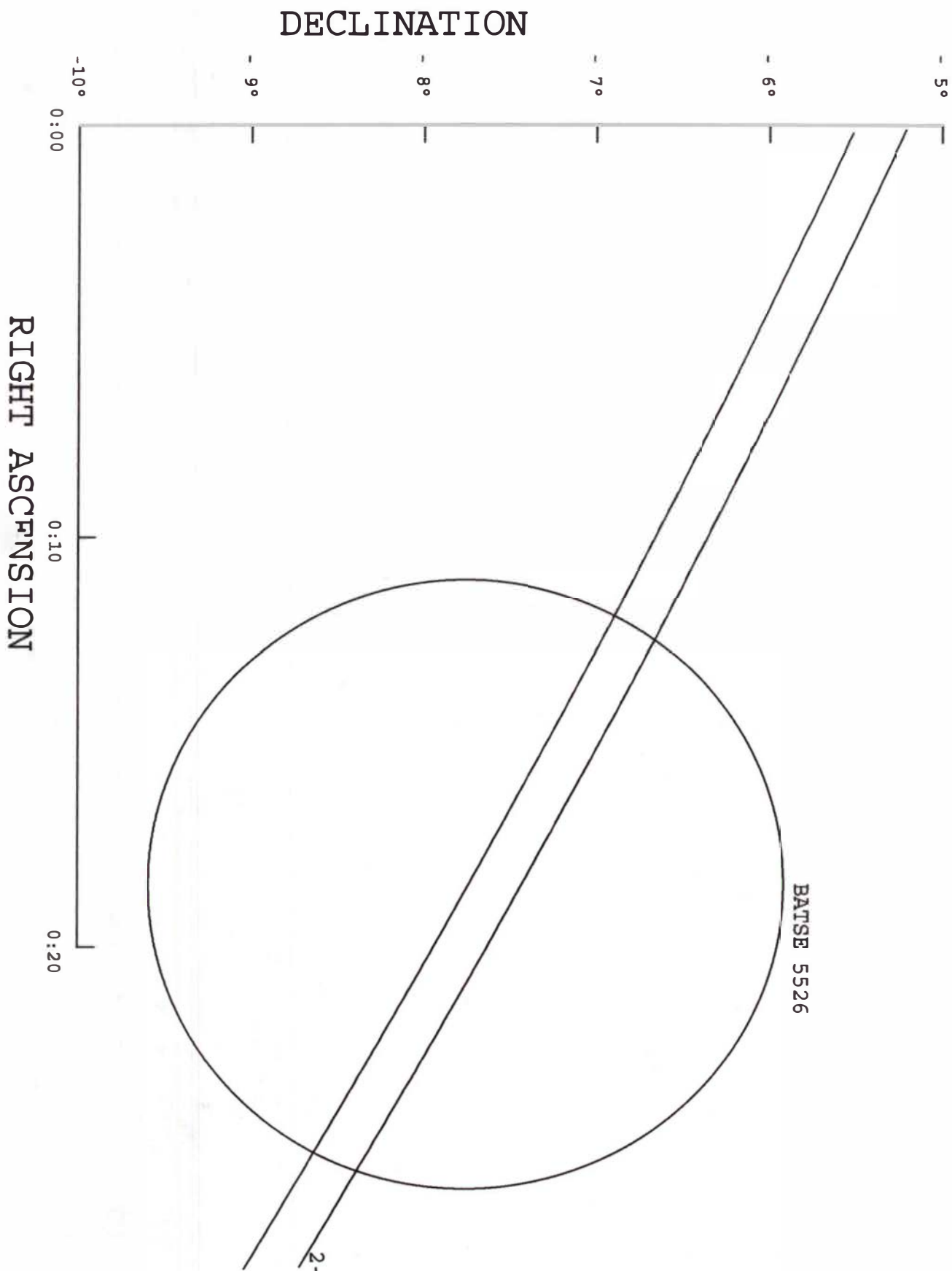
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 3, 1996 14:08

12/ 3/98



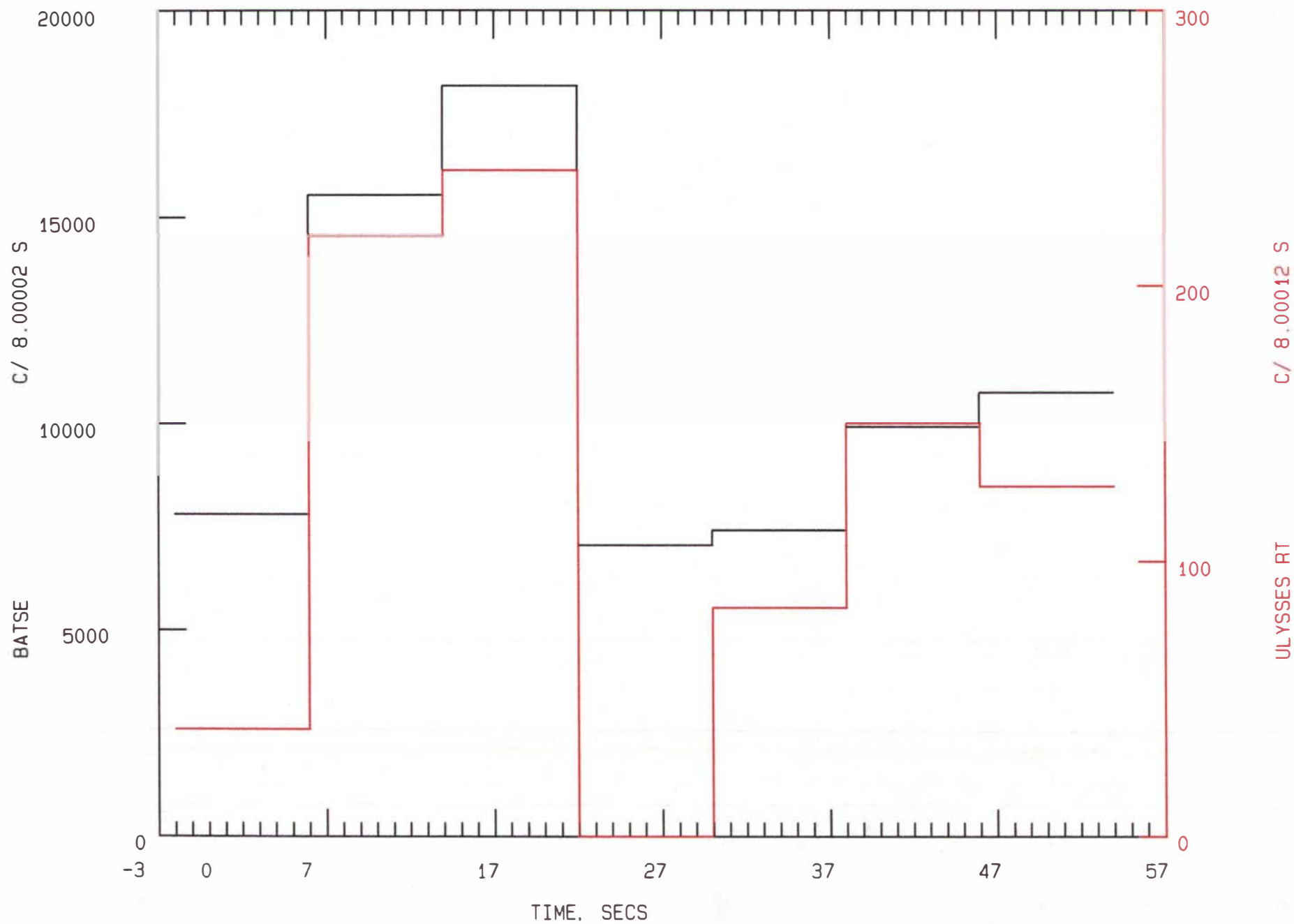
BATSE

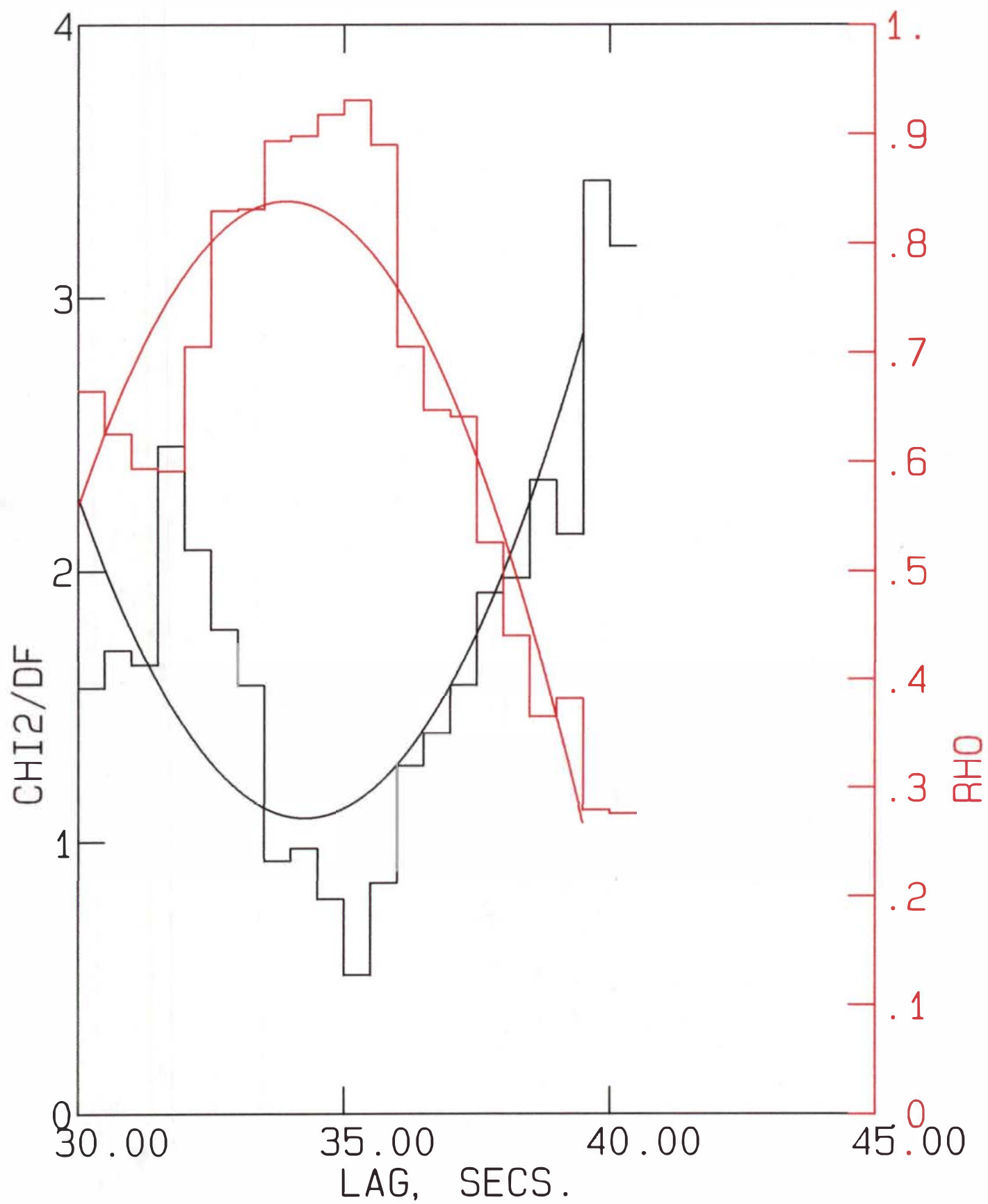
-ULYSSES RT CORRELATION

3/ 7/96

49373.898

12/ 3/98





ULYSSES RT

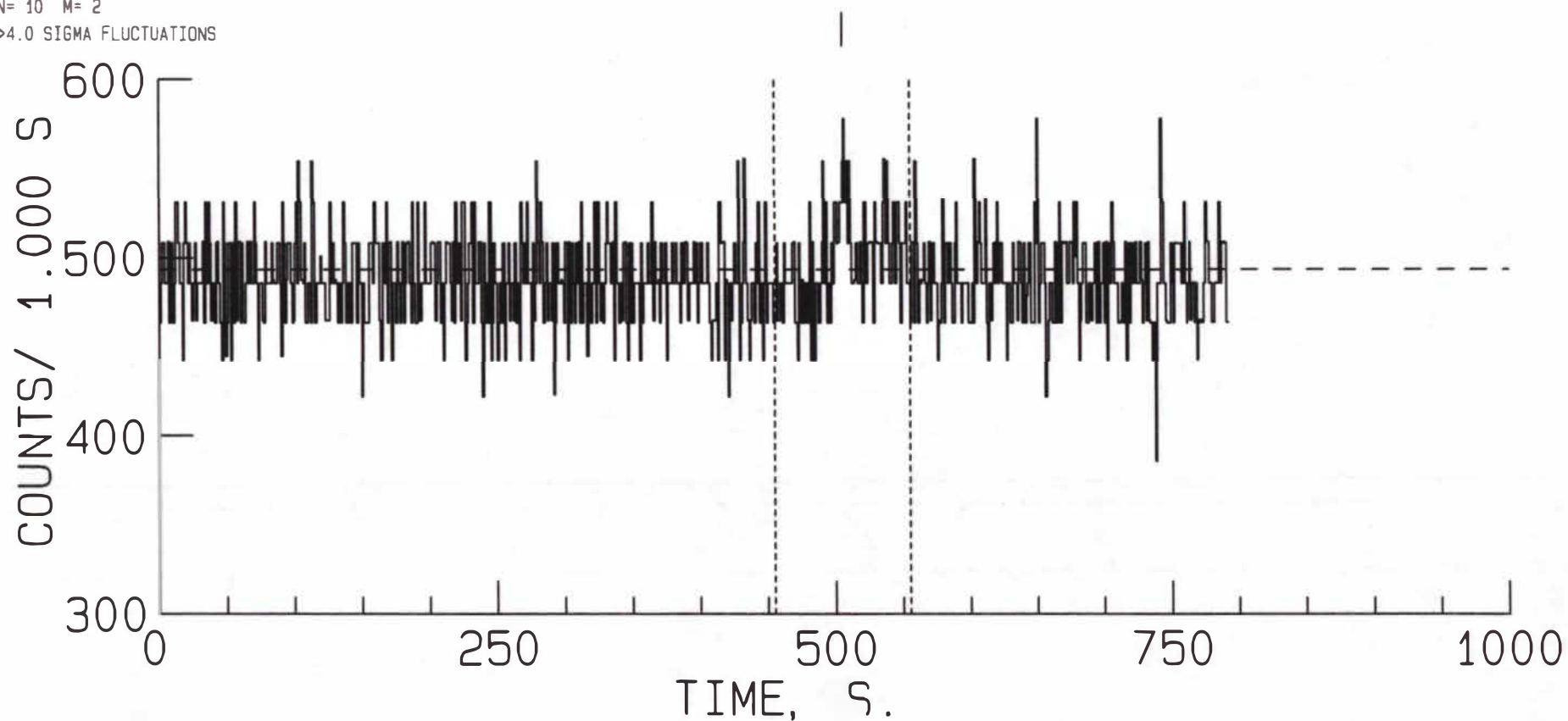
12 / 3 / 98

3 / 7 / 96 50472.361 s

0.500 S INTERVALS REGROUPED BY 2

21- 144 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



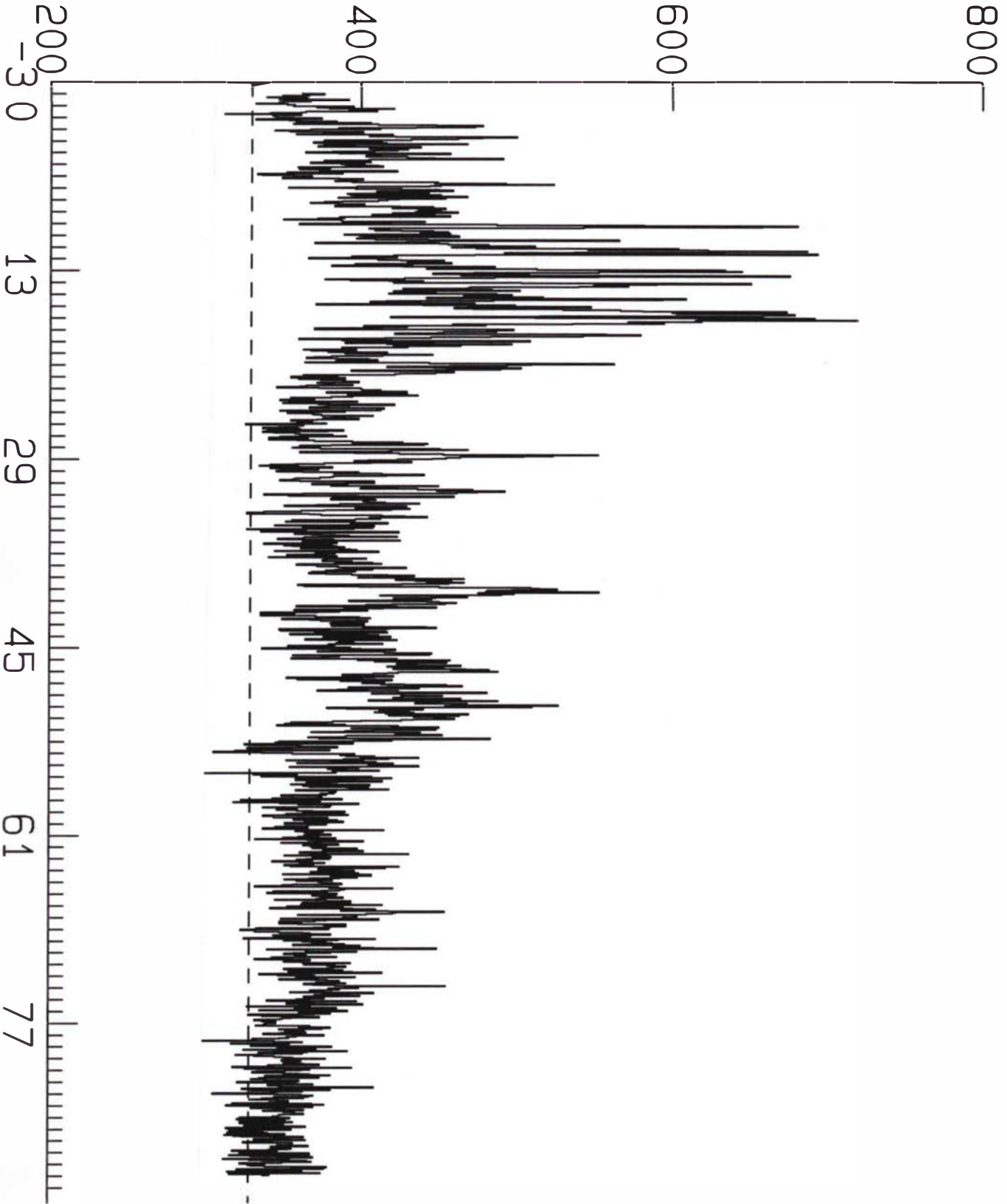
BATSE

03/07/96

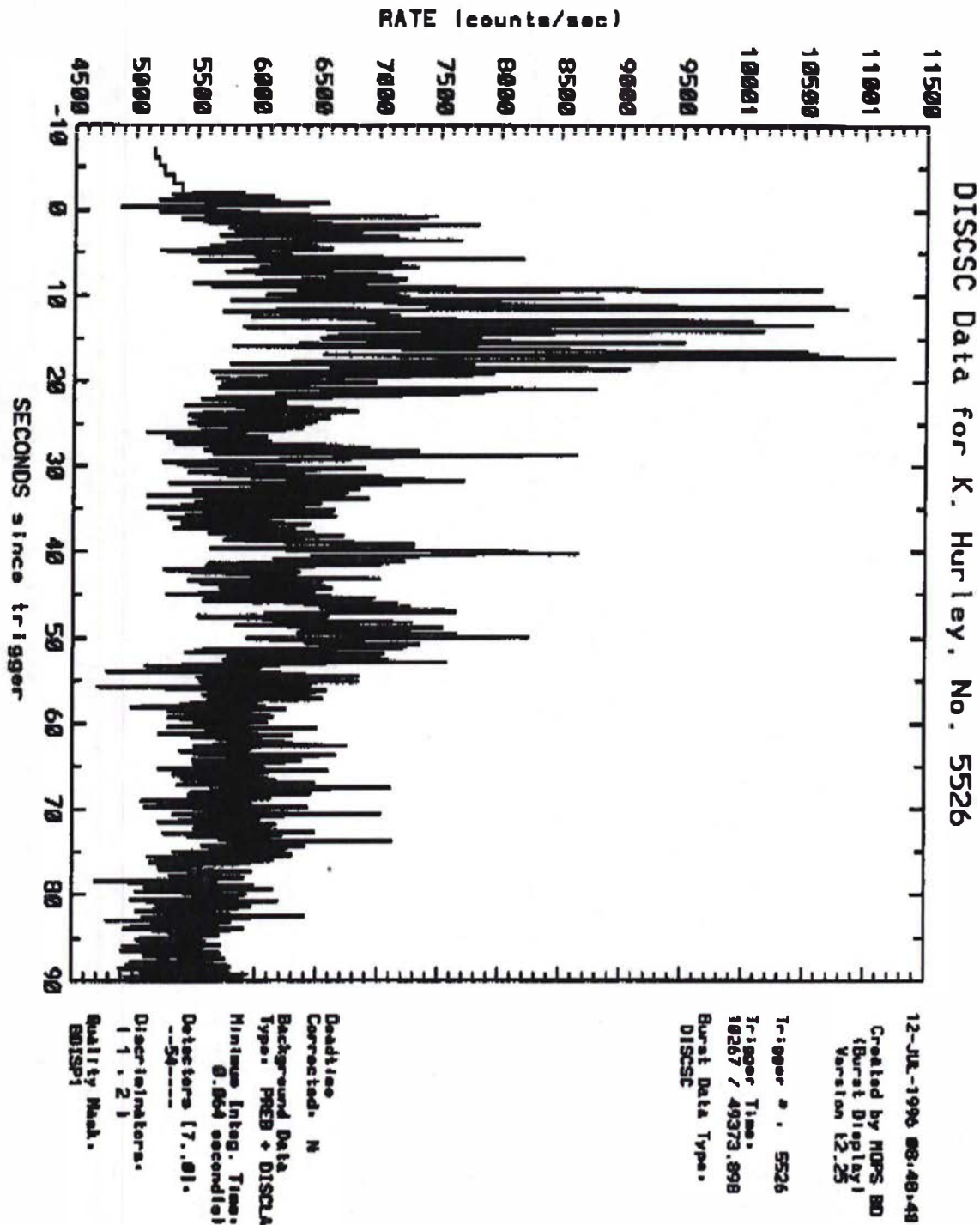
49373.898

25- 100 keV

COUNTS/0.064 S



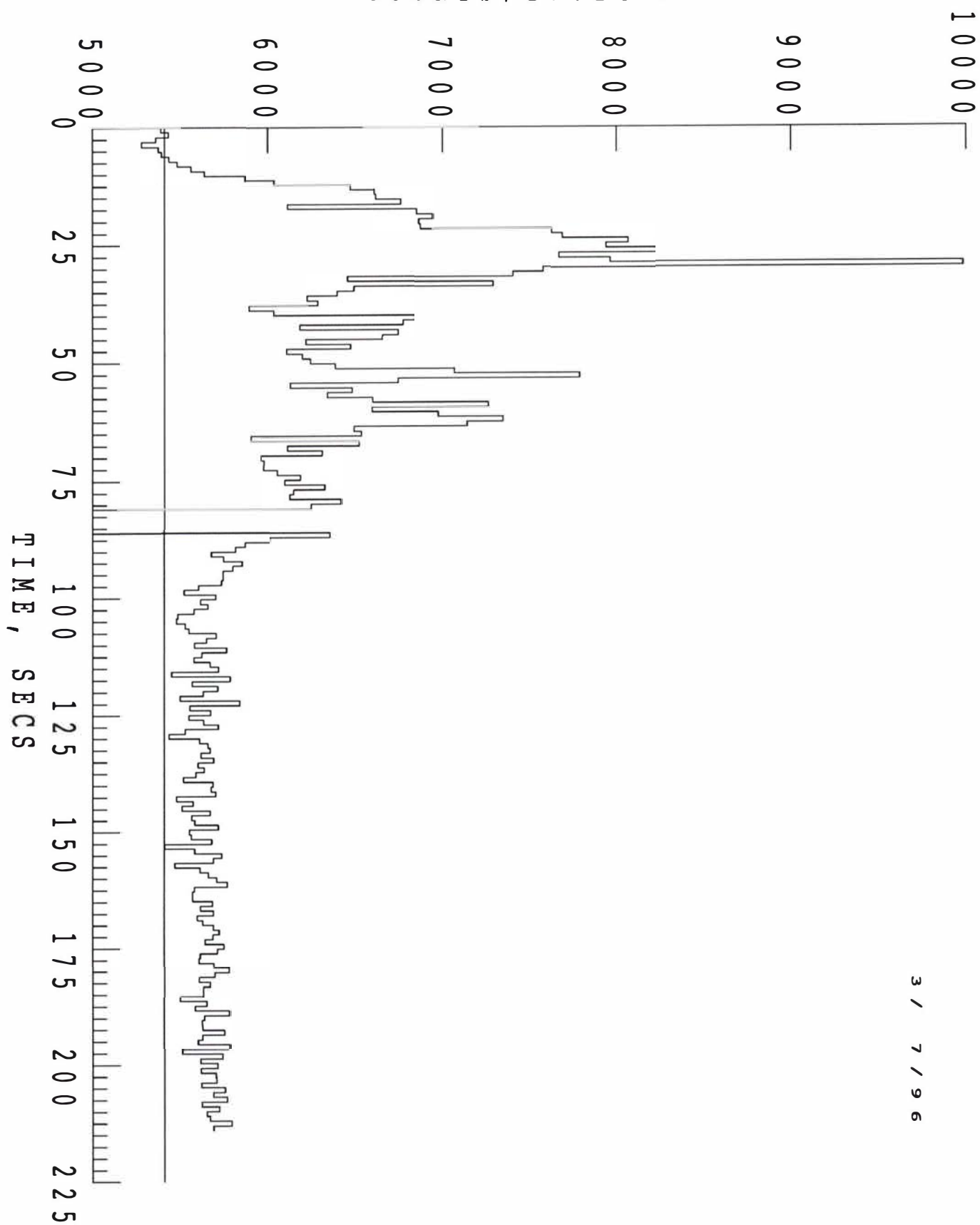
12 / 7 / 96



BACODINE 5526 03/07/96 49361.609

25 - 100 keV

COUNTS/1.024 S



From HAGEDON@fender.msfc.nasa.gov Fri Jul 5 13:36 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 5 Jul 1996 15:36:31 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5527

BATSEARCH PROGRAM

No

BATSE BURST # 5527
EVENT OF 1996 JUL 3 DAY OF YEAR=185
EVENT CROSSING TIME AT BATSE : 65440. S. OR 18:10:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 330.000 -55.000
BATSE PEAK COUNTING RATE: 27000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 7/ 96 IS:
RA= 154.167 DEC= 46.658 DIST= 4.663 AU
BATSE-ULYSSES DISTANCE = 697583175. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 8.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2299.85 SECS.
CROSSING TIME AT ULYSSES IS 67740. S. OR 18:48:59 +/- 146.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 7/ 96 IS:
RA= 73.053 DEC= 22.667 DIST= 2.320 AU
MARS-BATSE DISTANCE = 347111968. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 64.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 503.92 SECS.
CROSSING TIME AT MARS IS 65944. S. OR 18:19:03 +/- 188.64 SECONDS

BATSE BURST TRIGGER

NO.: 5527

TIME: TJD=0267 SECONDS=65440

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=98.2 AZIMUTH=197.8 ERROR=1.2 DEGREES

COMMENTS:

BURST. SINGLE PULSE. FAST RISE AND FAST DECAY. DUR.~1 SEC.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5527	960703	10267	65440	27000	330	-55	1.0

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Scat RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Scat NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Scat NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Scat RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Scat RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Scat RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Scat KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Scat RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Scat KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Scat RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Scat RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Scat RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Scat NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Scat RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Scat N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Scat RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Scat NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Scat NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Scat NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Scat NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Scat RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Scat RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Scat NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Scat RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Scat RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
Date: Wed, 20 Nov 1996 14:32:12 -0800
Mime-Version: 1.0
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor	Max counts	N(S1)/N(S2)	Duration	Trigger #
	(UT)	G1 G2 G3	in G2	T<T0 T>T0	KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

(BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	SEARCH	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	SEARCH	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RT KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RT	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RT	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	SEARCH	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RT	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Trig	NO

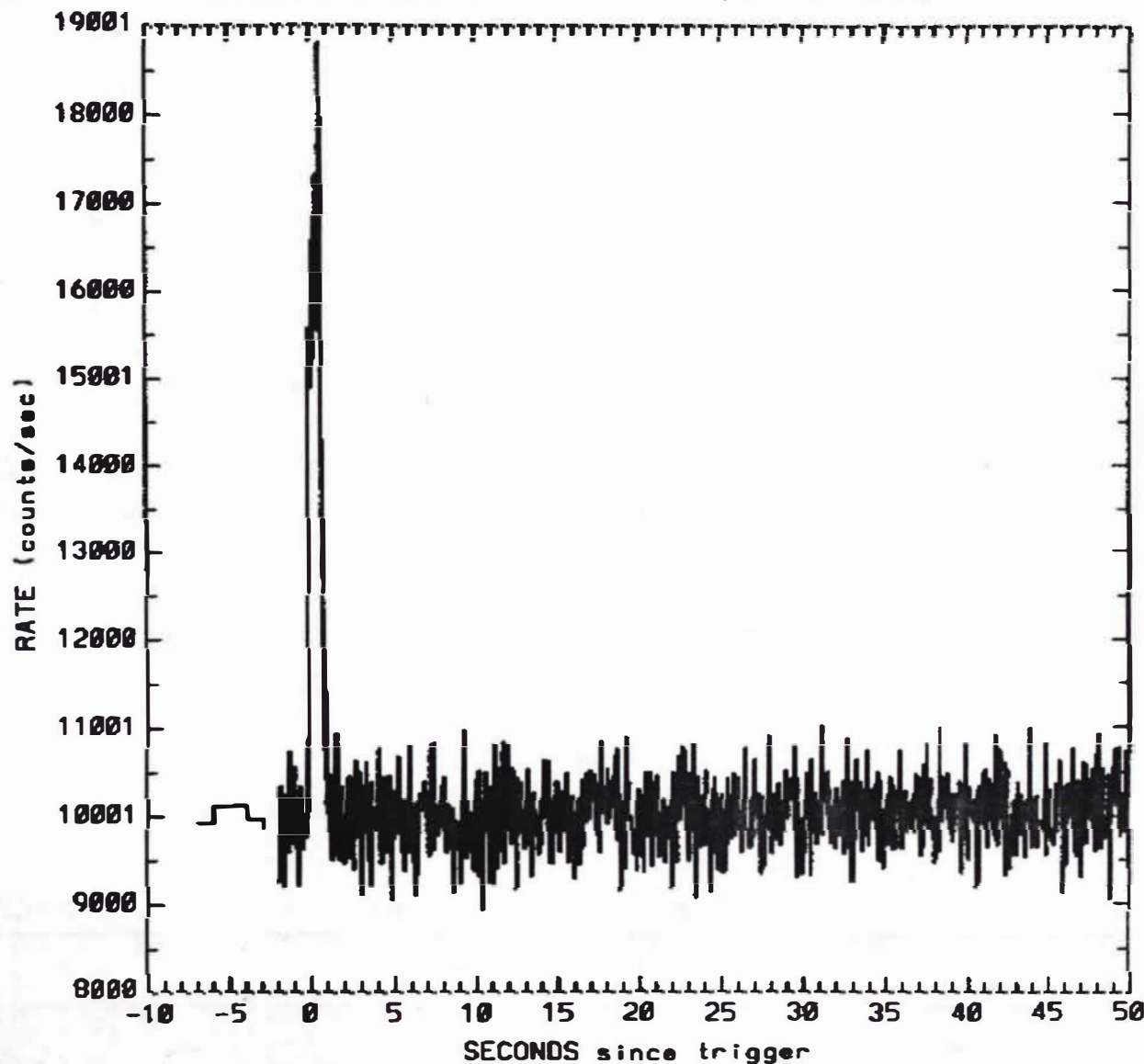
From isac.ernet.in!kmarar@vigyan.iisc.ernet.in Tue Jul 9 04:32 PDT 1996
Date: Tue, 9 Jul 1996 16:28:31 +0000 (CUT)
From: kmarar@isac.ernet.in
✓ Sender: kmarar@se07
Hurley K <khurley@sunspot.ssl.berkeley.edu>
Subject: July 3 event
Mime-Version: 1.0

We have a gross-c2 event on July 3 at 18:10:40 UT lasting about 0.7 sec.
Kindly confirm this event.
Krishnan

Also pl confirm our earlier events of June 5 and June 7 lasting about 25
sec and 4 sec respectively. I had sent a mail about them earlier.
Thanks.

$\sim 5000 \text{ c/s} \times 1/5 = 5000 \text{ c} \Rightarrow 50-100 \text{ c in Ulysses}$
Earth - Ulysses - GRB L $\approx 172^\circ$, so no S/C shadowing

DISCSC Data for K. Hurley, No. 5527



BATSE #

5527

8 / 7 / 96

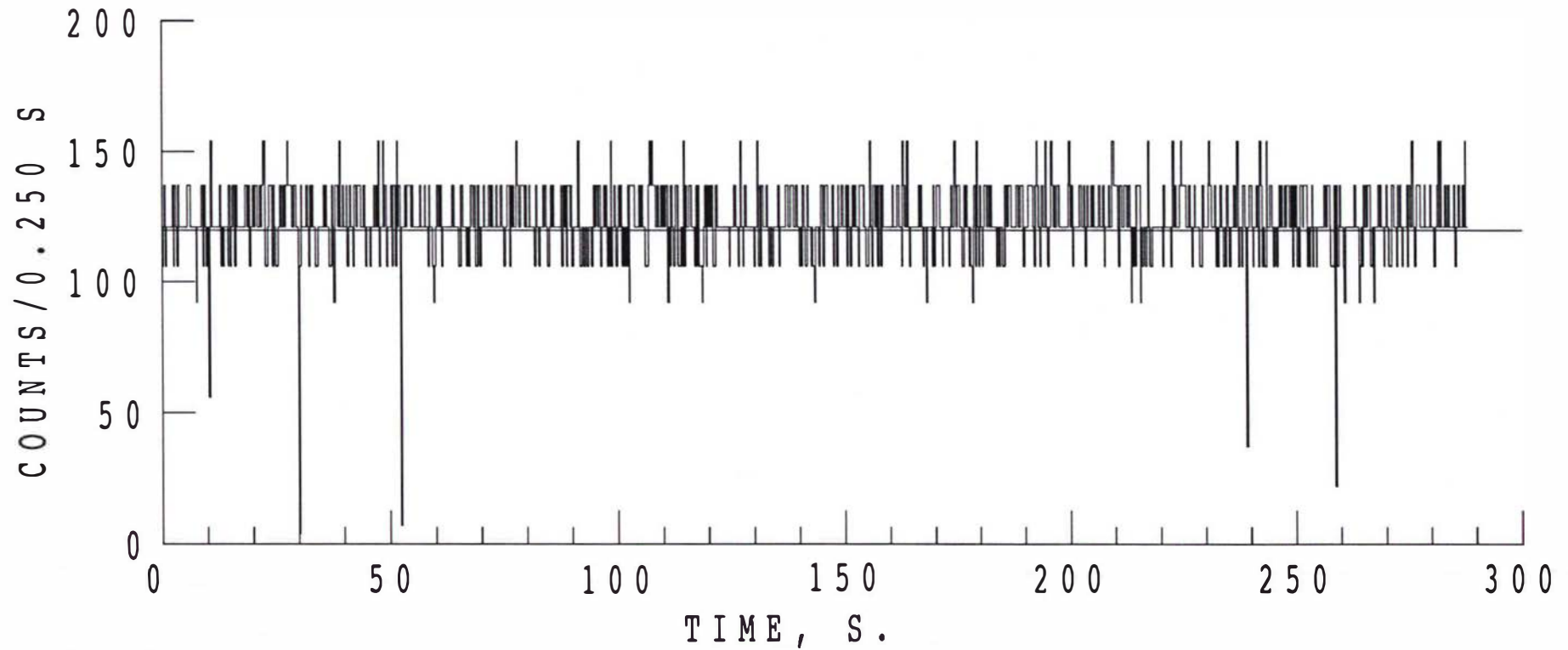
ULYSSES RT

3 / 7 / 96 67608.078 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Expanded search window

ULYSSES RT

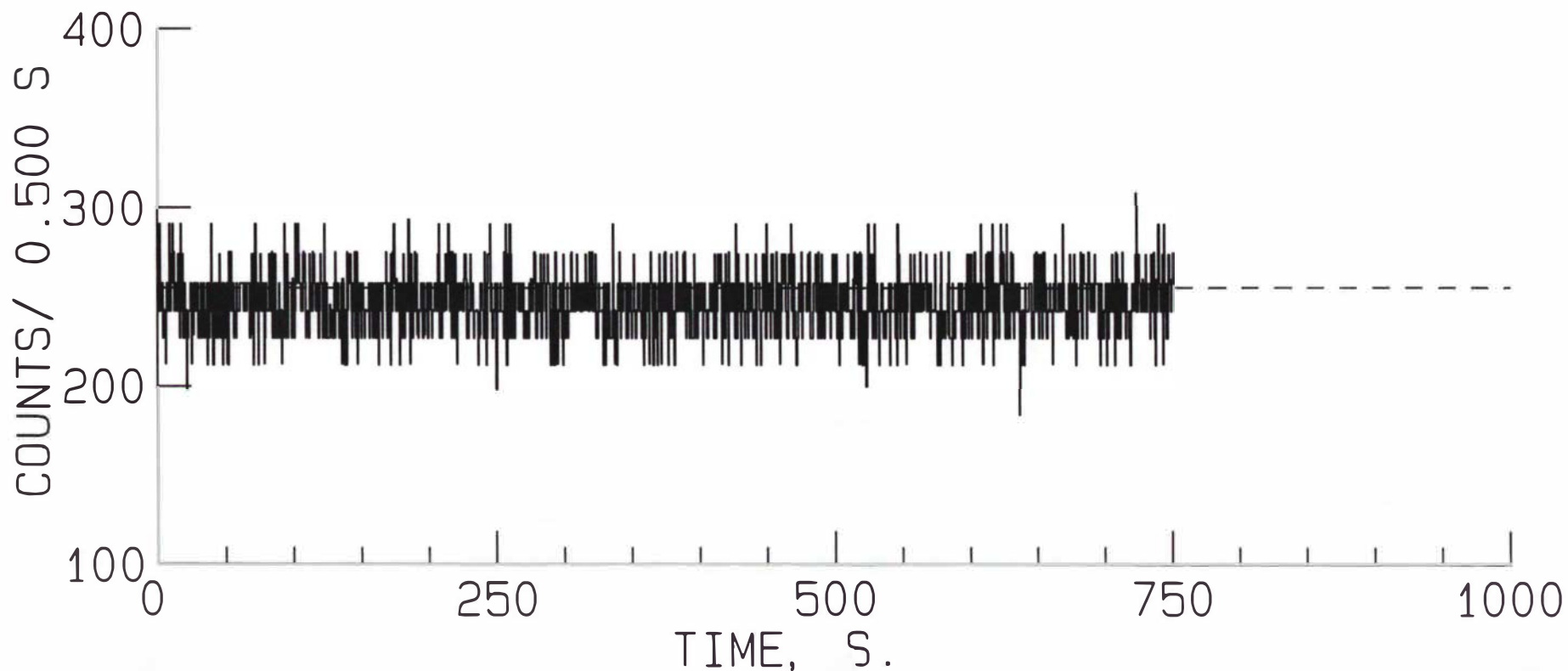
22 / 8 / 96

3 / 7 / 96 66672.074 s

0.250 S INTERVALS REGROUPED BY 2

21- 145 keV

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS



ULYSSES RT

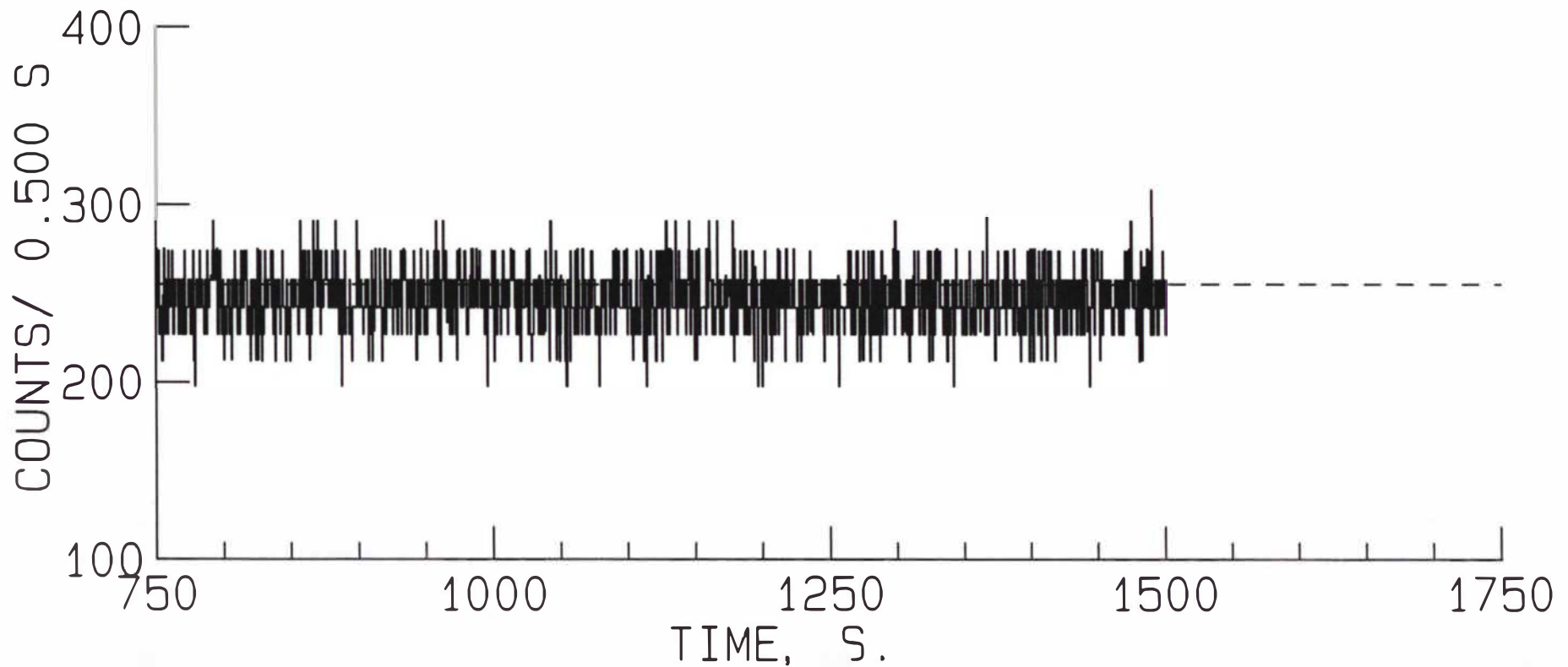
22 / 8 / 96

3 / 7 / 96 66672.074 s

0.250 S INTERVALS REGROUPED BY 2

21- 145 keV

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS



ULYSSES RT

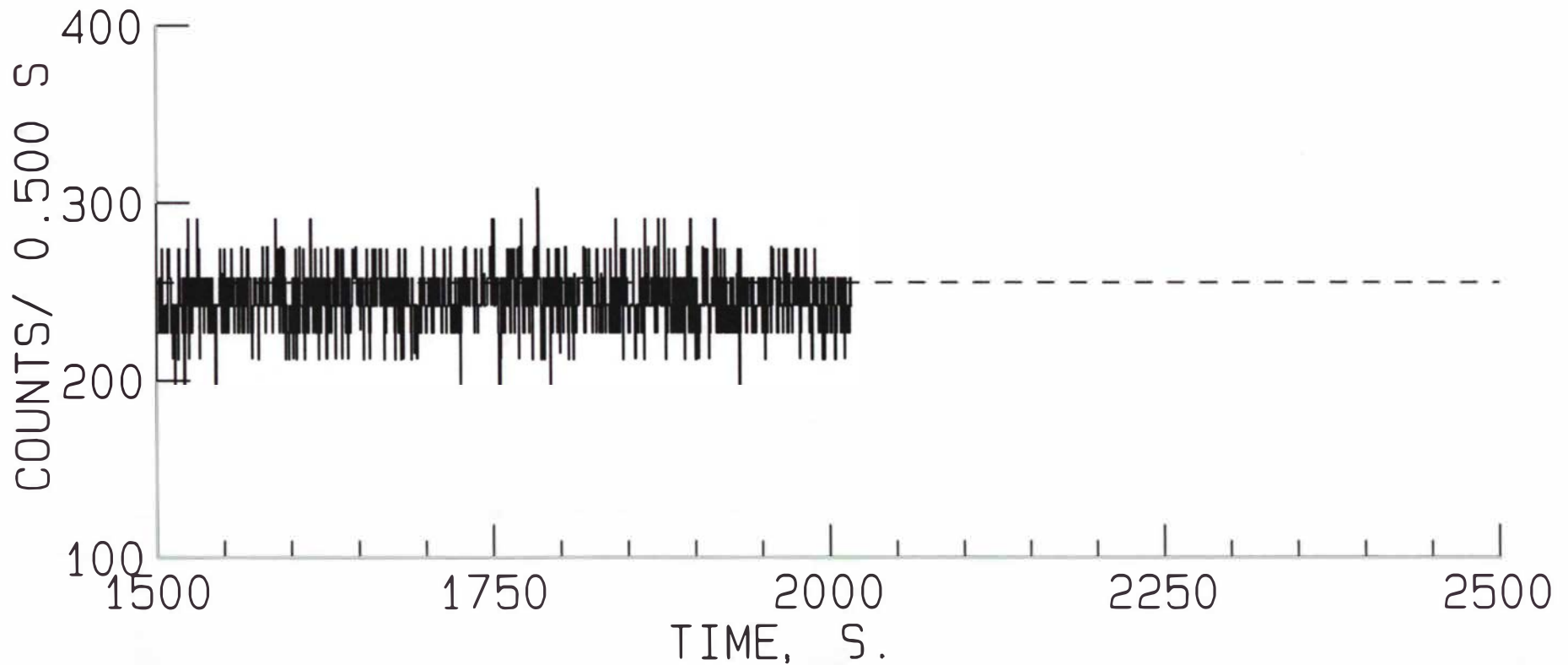
22 / 8 / 96

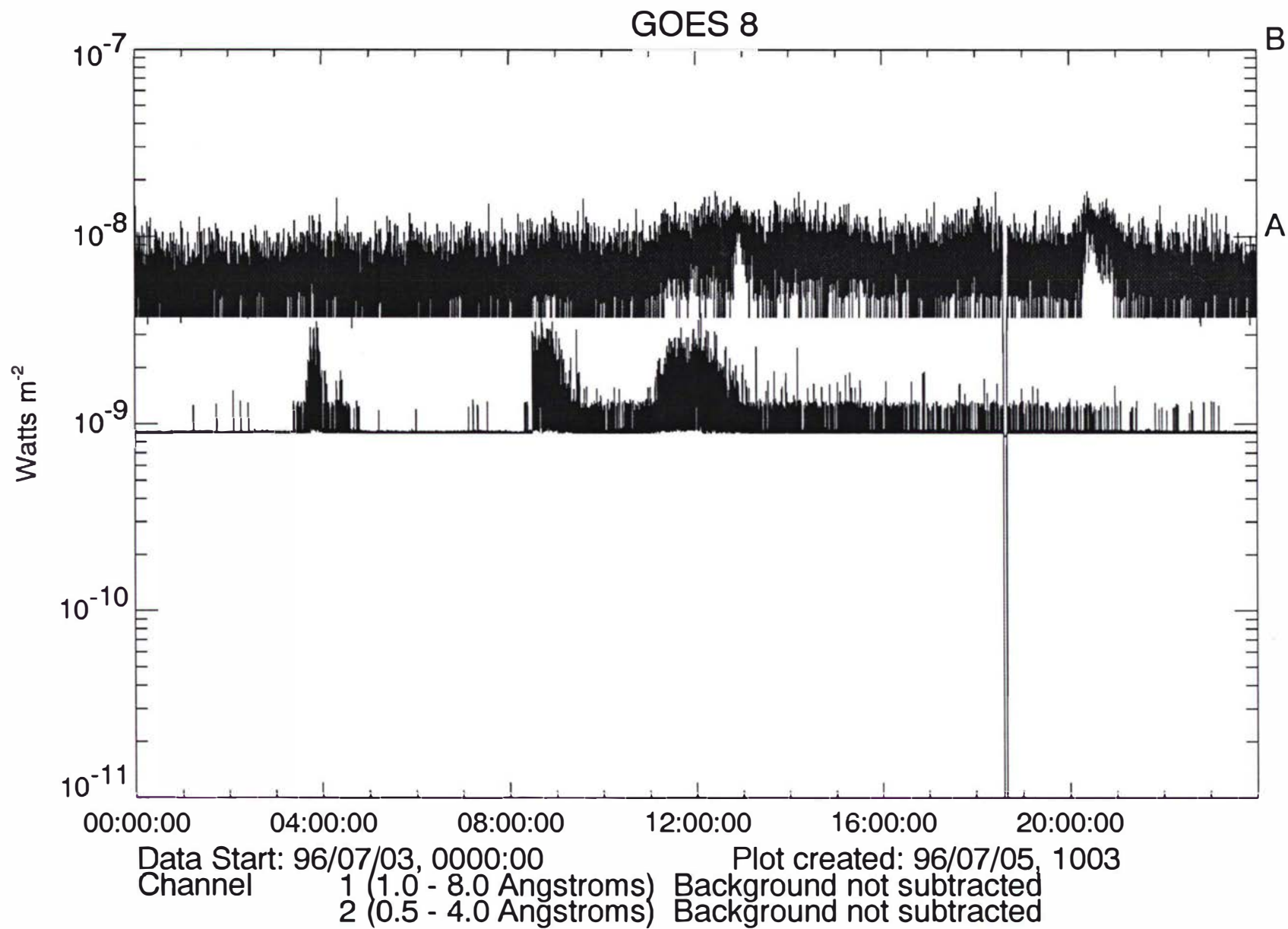
3 / 7 / 96 66672.074 s

0.250 S INTERVALS REGROUPED BY 2

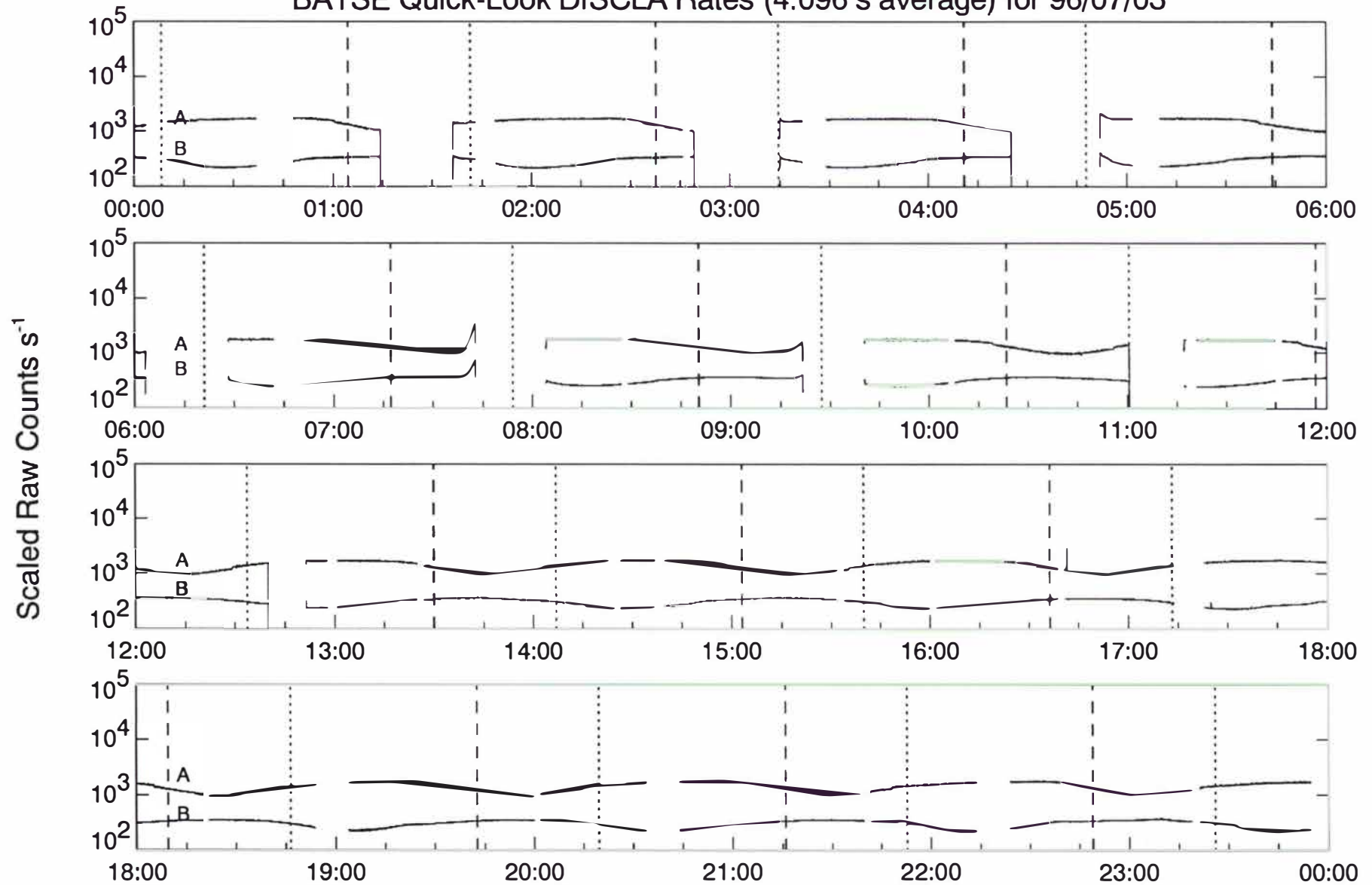
21- 145 keV

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS





BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/03



Current Time: 96/07/05, 1004 EDT

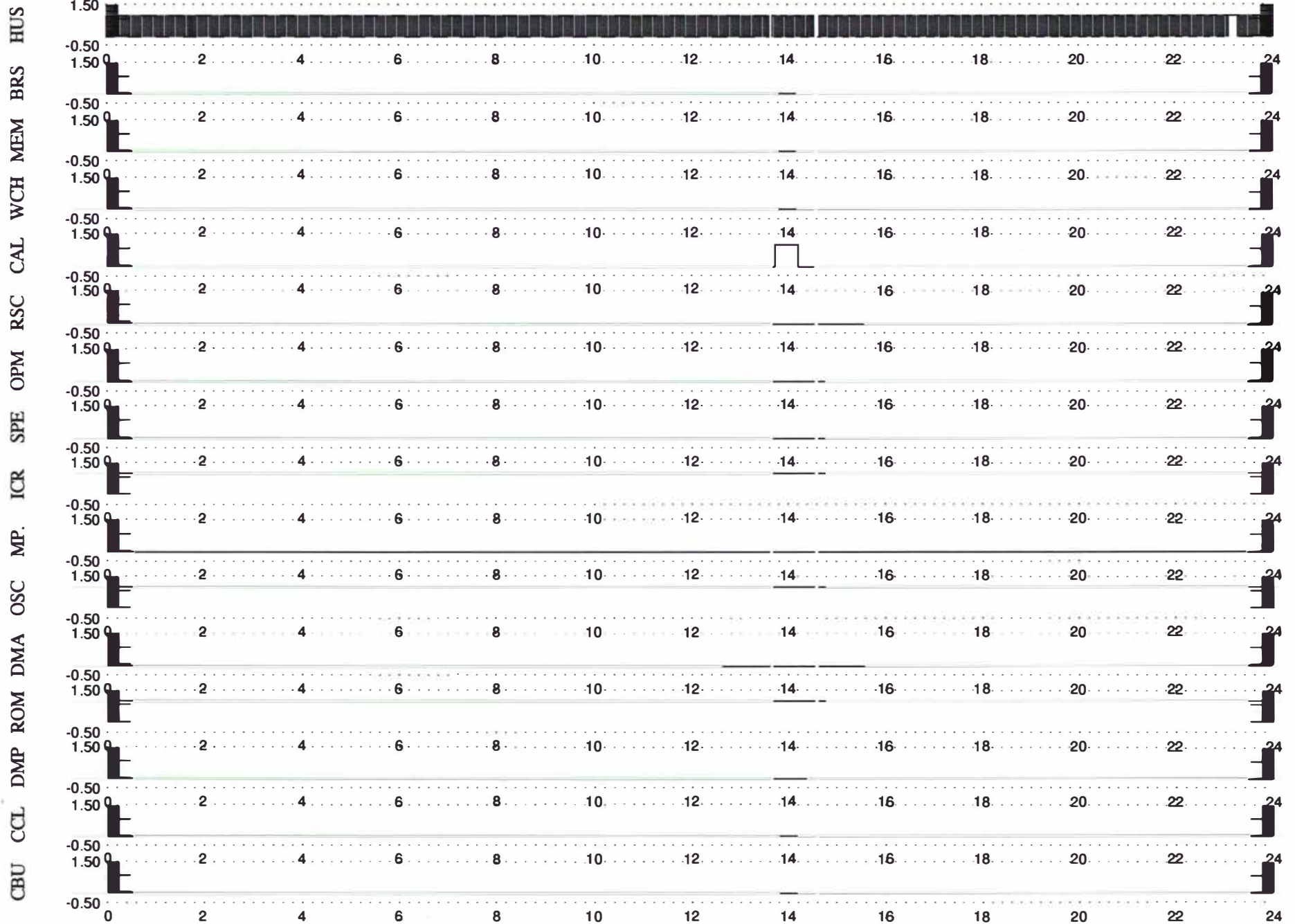
A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

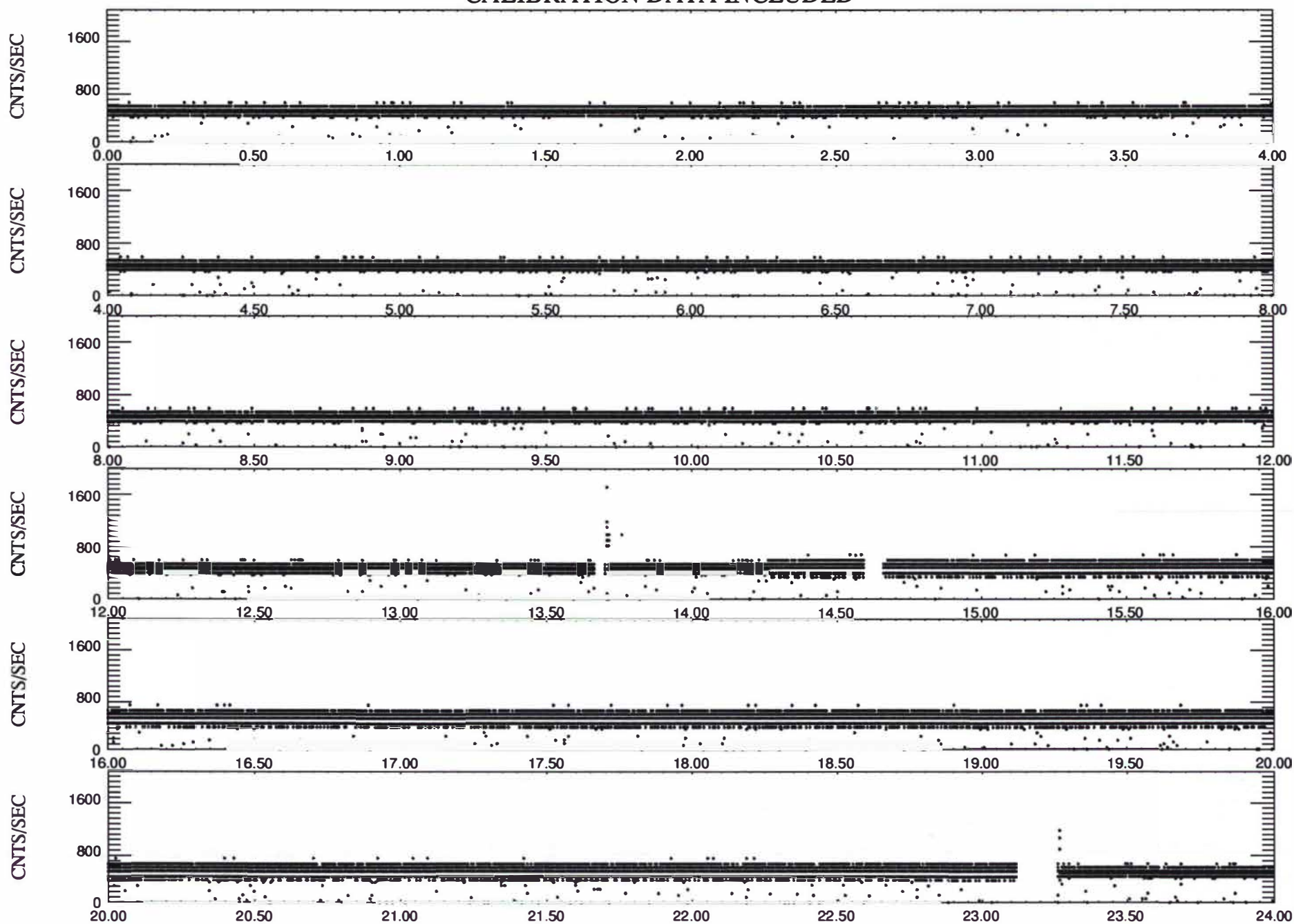
* Solar Burst Trigger
+ Solar Flare

NO BURST (7)

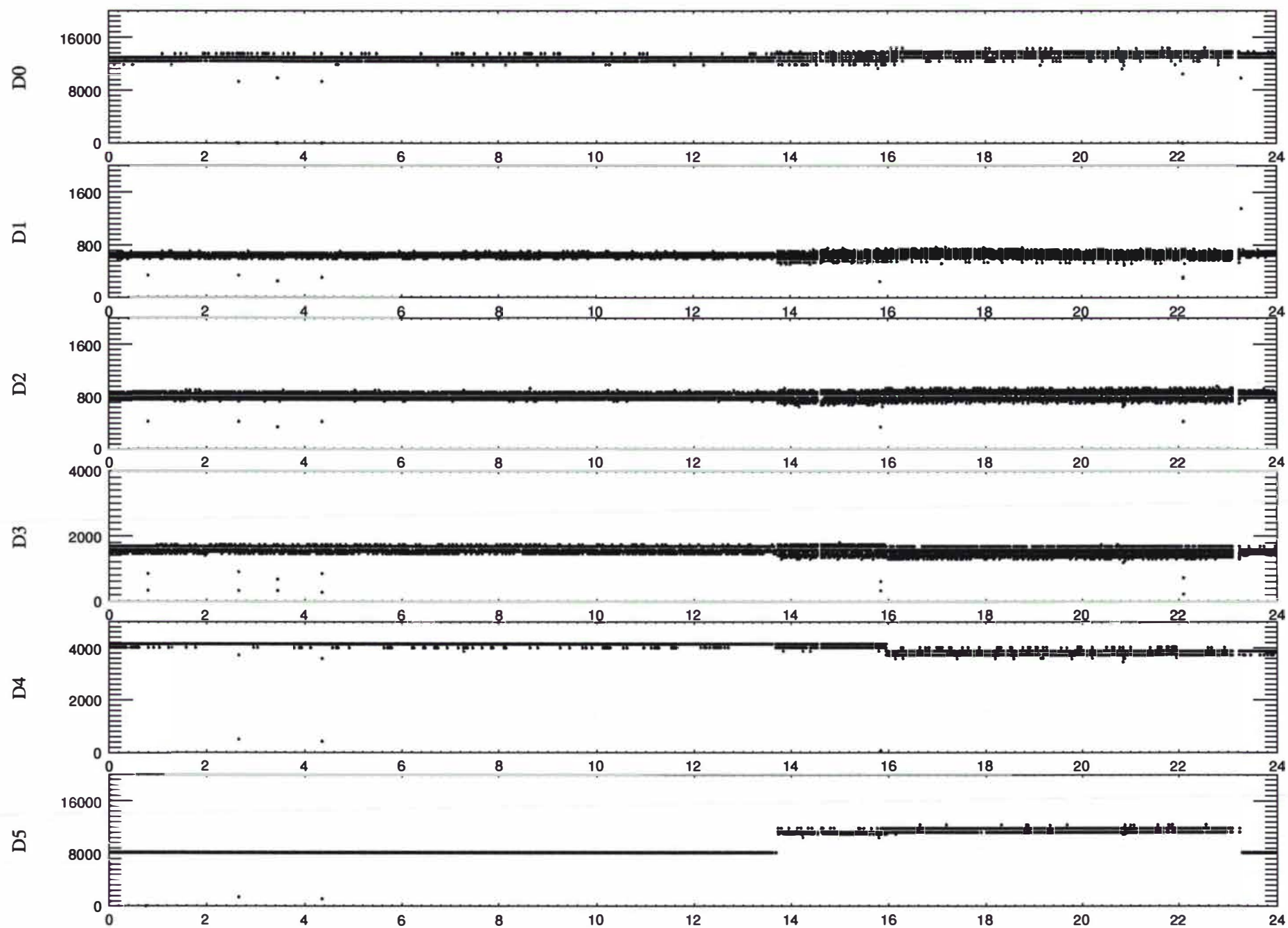


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

Date: Oct 9 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?

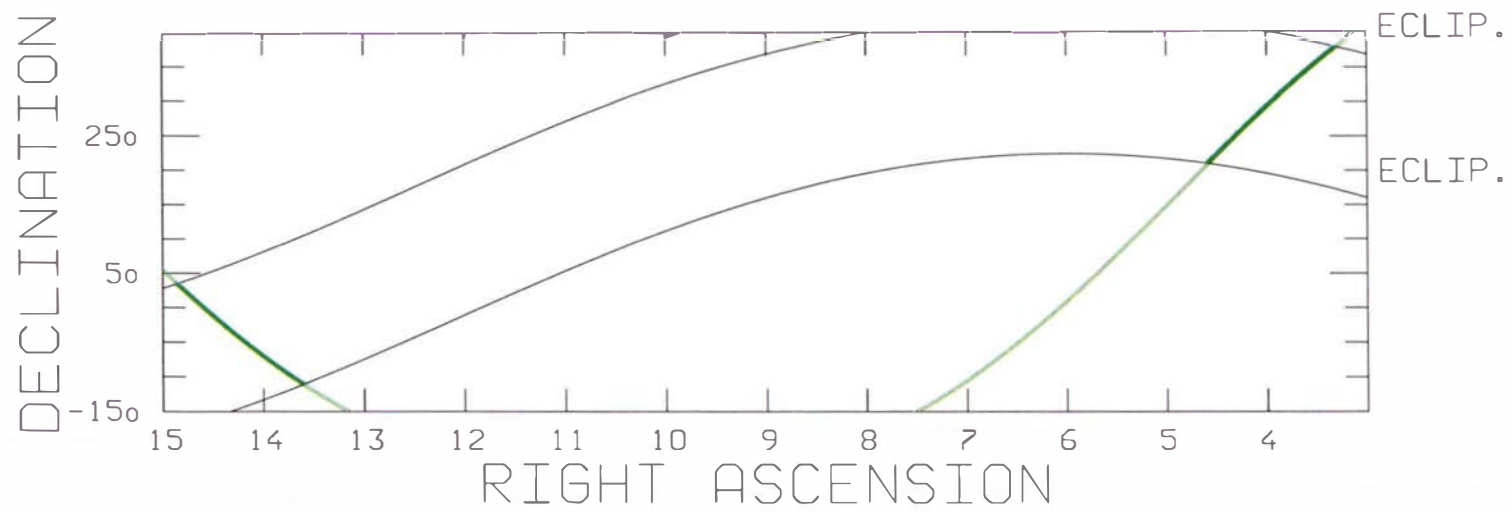
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

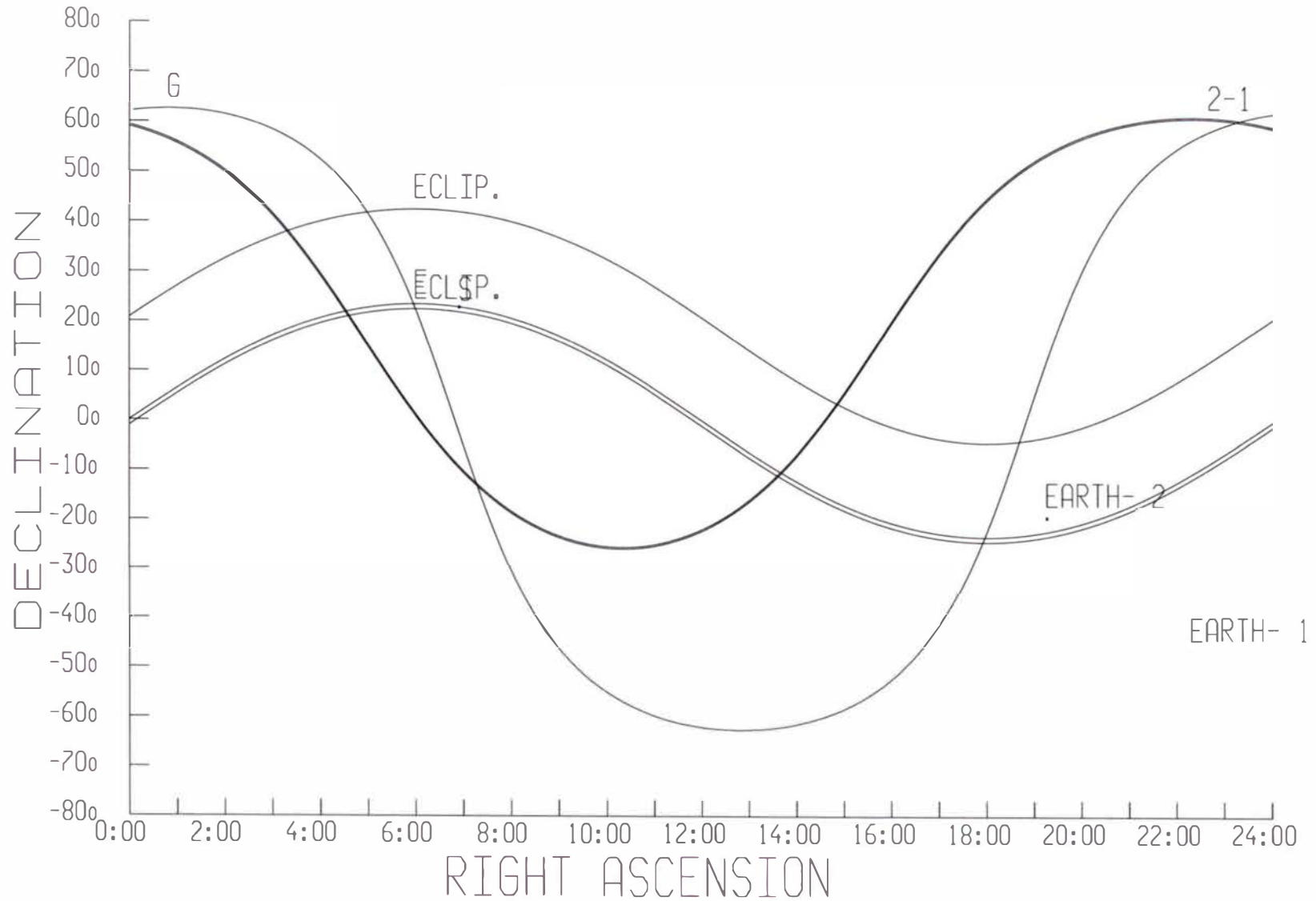
-
- ☒ ACCESS and MBL4 databases updated with identical times?



EVENT OF JUL 4, 1996 5:33

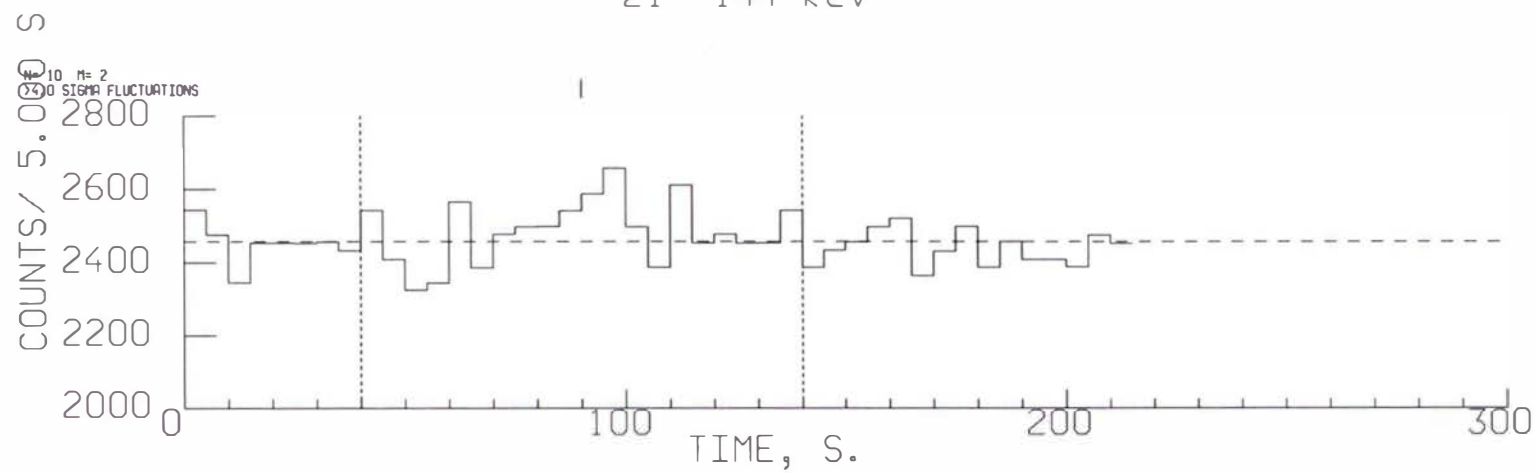
04/10/2011

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 KONUS



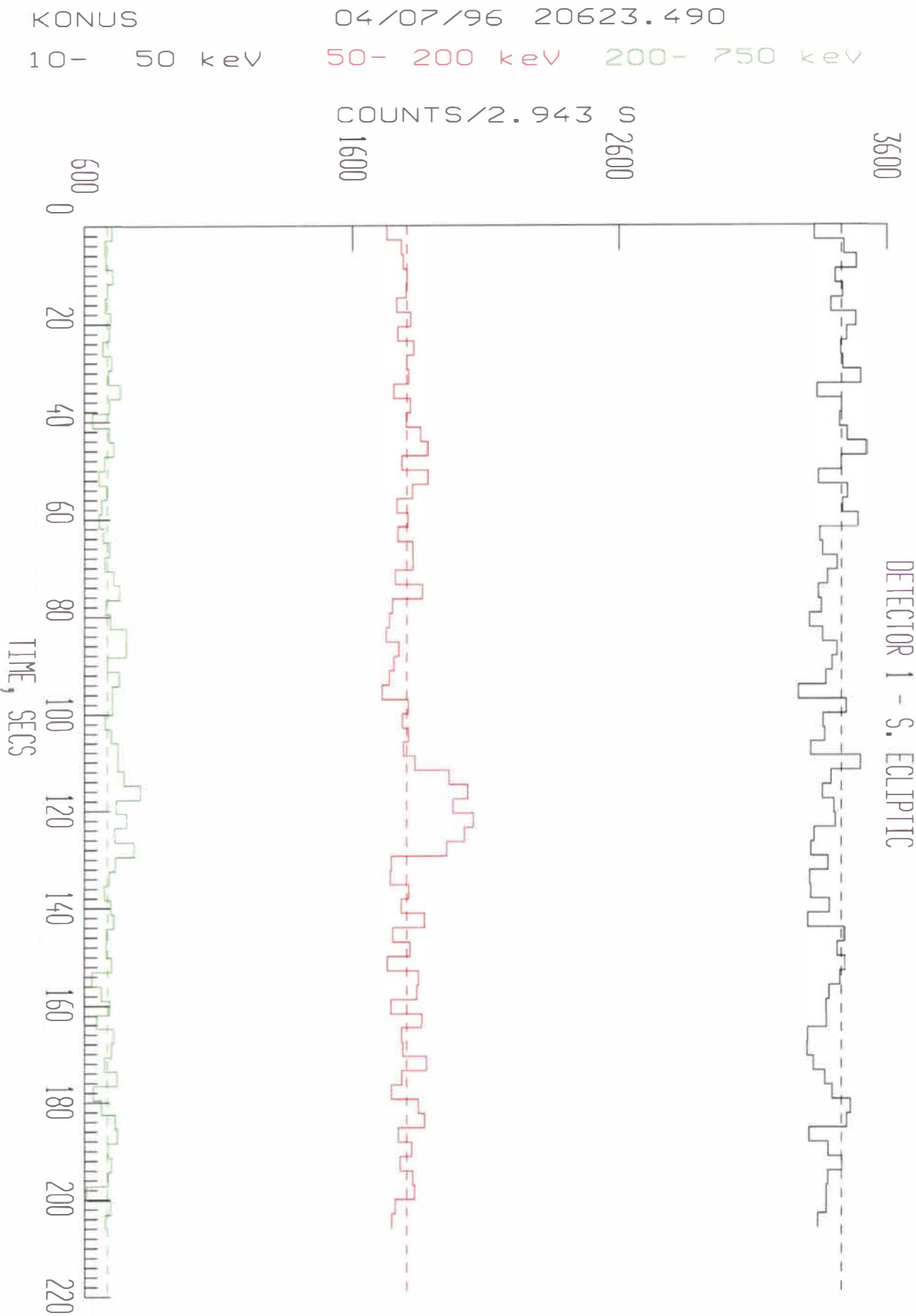
ULYSSES RT
4/ 7/96 19944.094 s
0.500 S INTERVALS REGROUPED BY 10
21- 144 keV

4/10/11



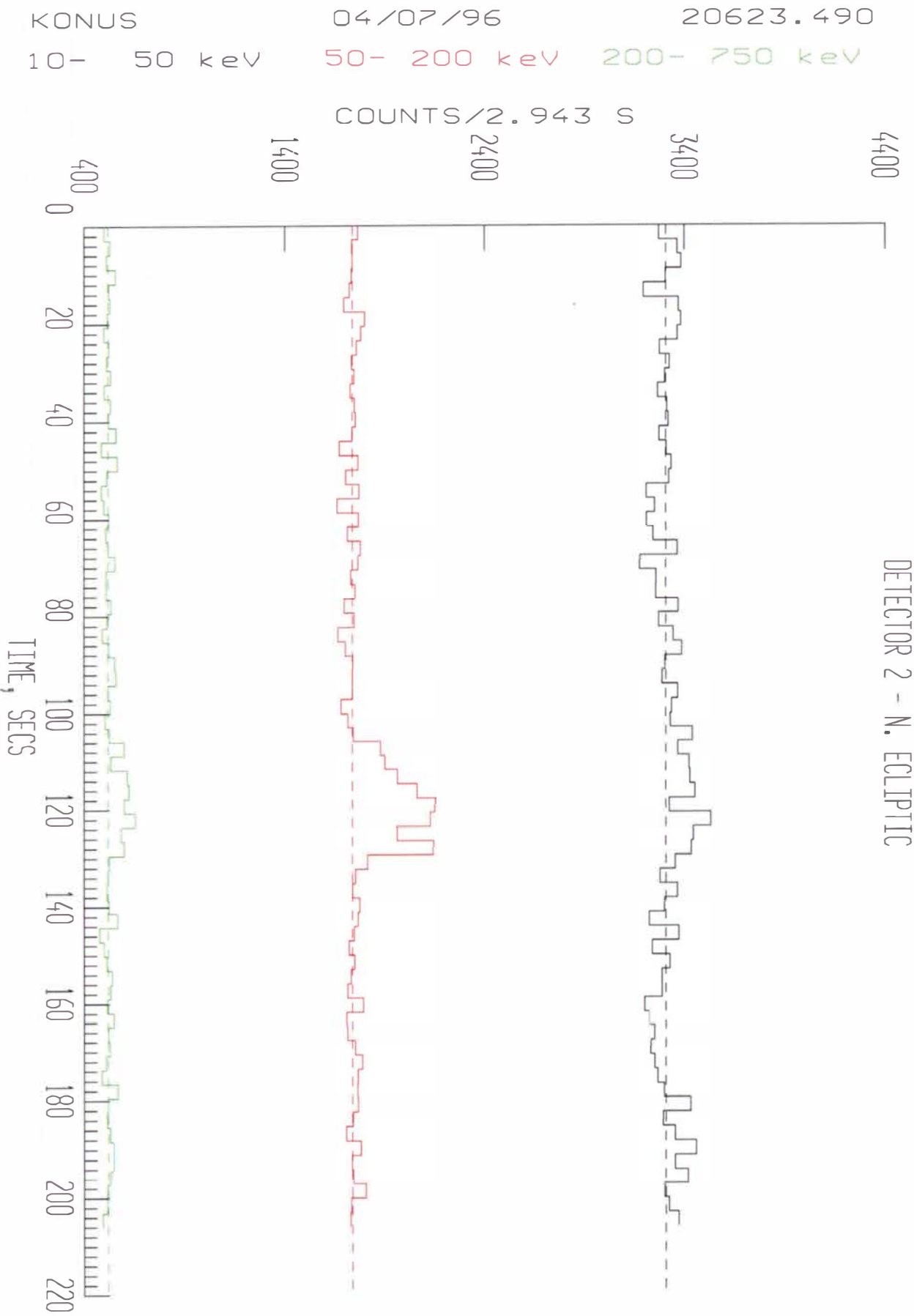
04/10/2011

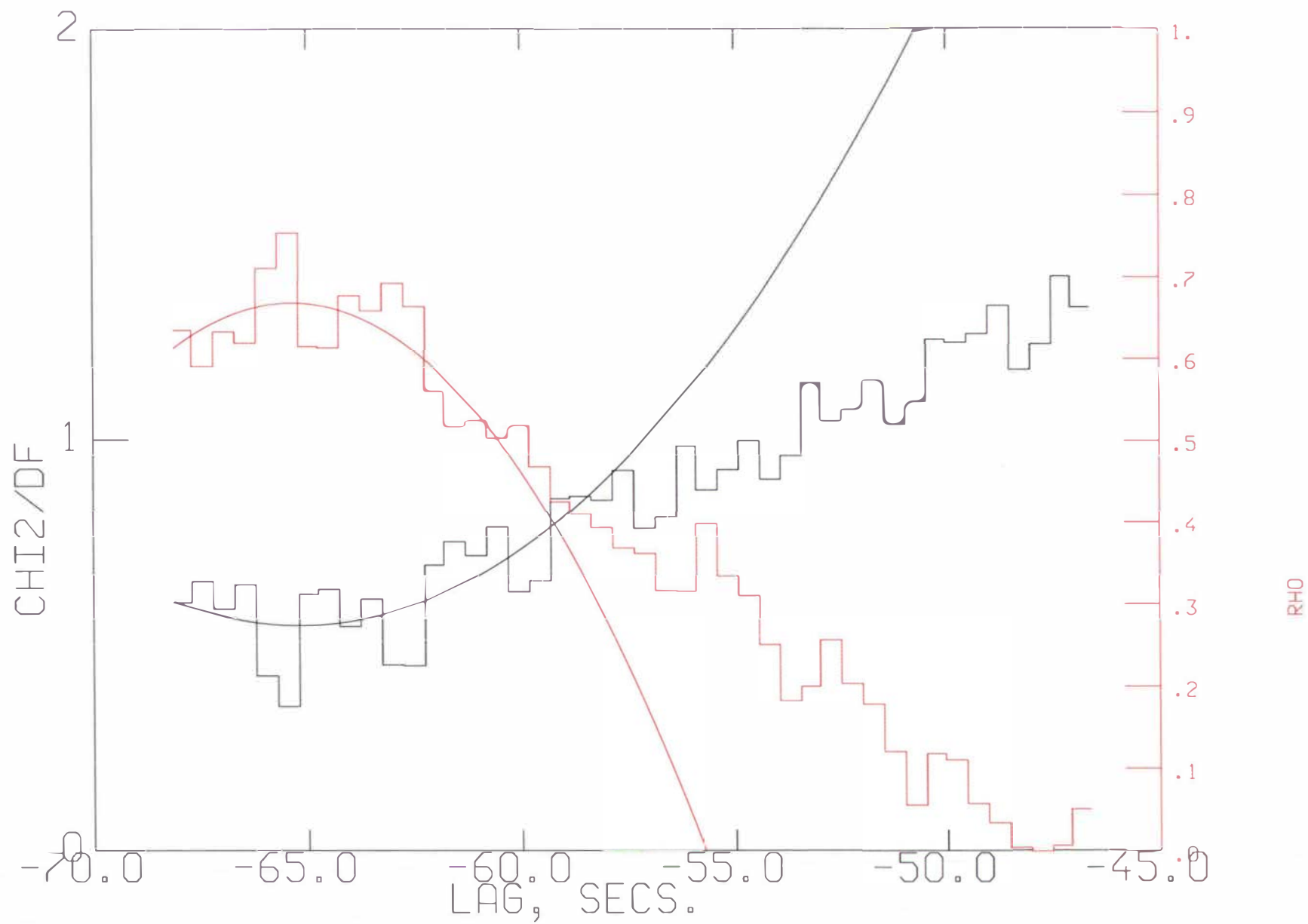
DETECTOR 1 - S. ECLIPSE



04/10/2011

DETECTOR 2 - N. ECLIPSE





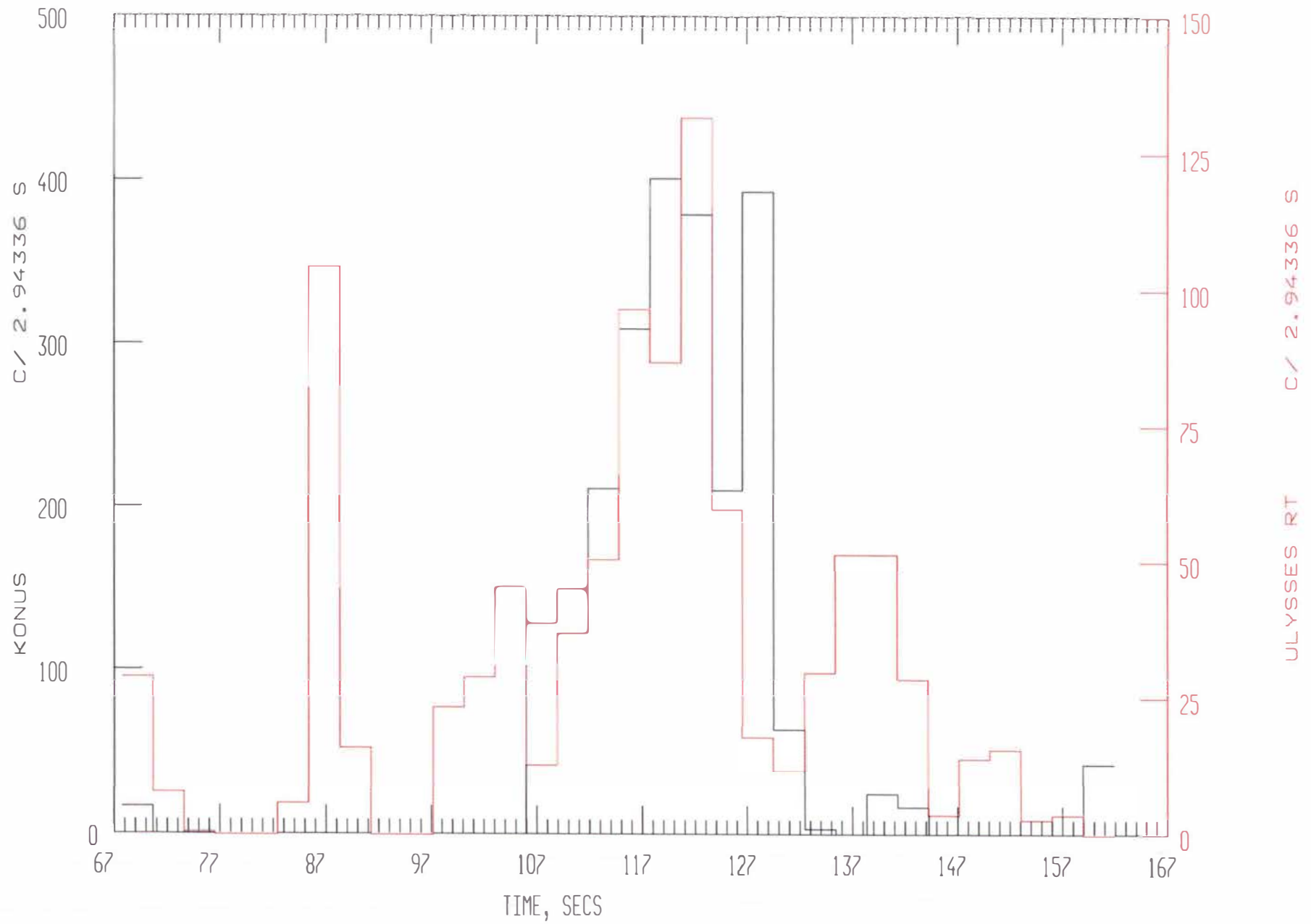
KONUS

-ULYSSES RT CORRELATION

04/07/96

20623.490

4/10/11



KONUS 19960704 20060

ULYSSES RT

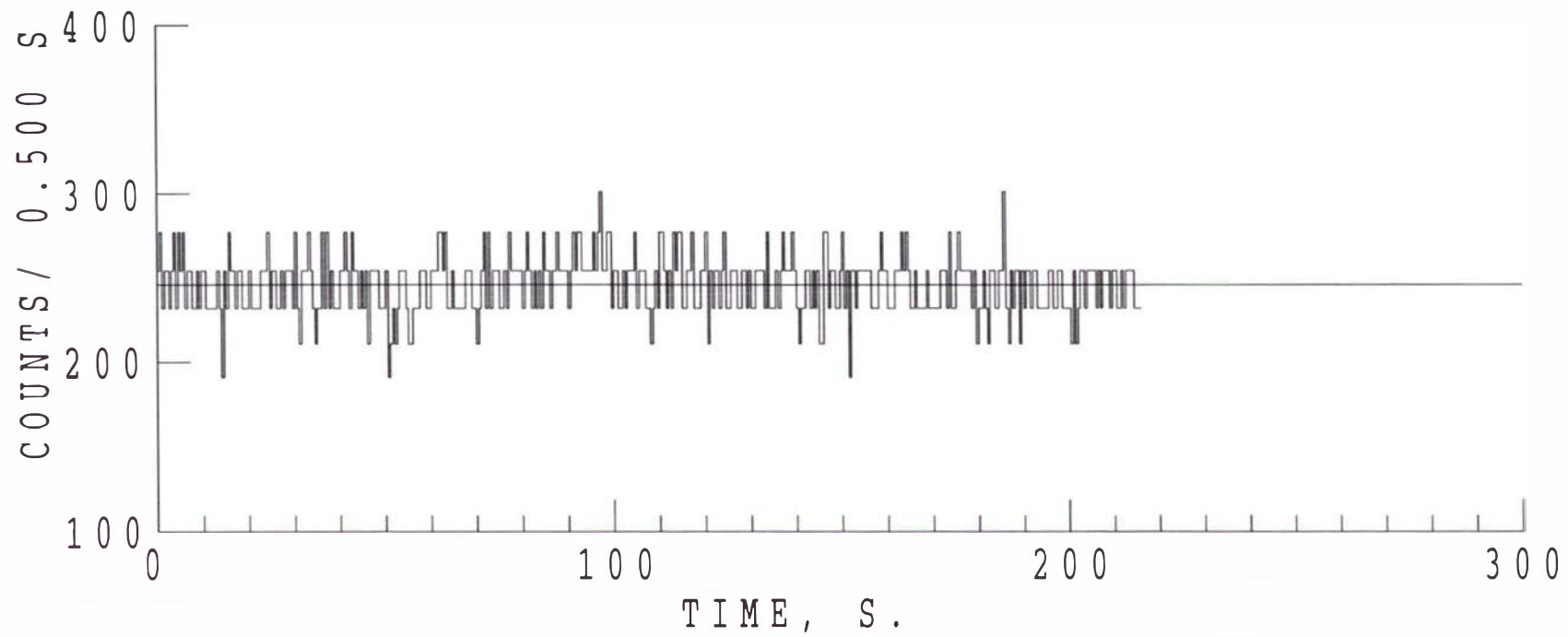
03/10/11

04/07/96 19944.094 s

0 - 0 keV

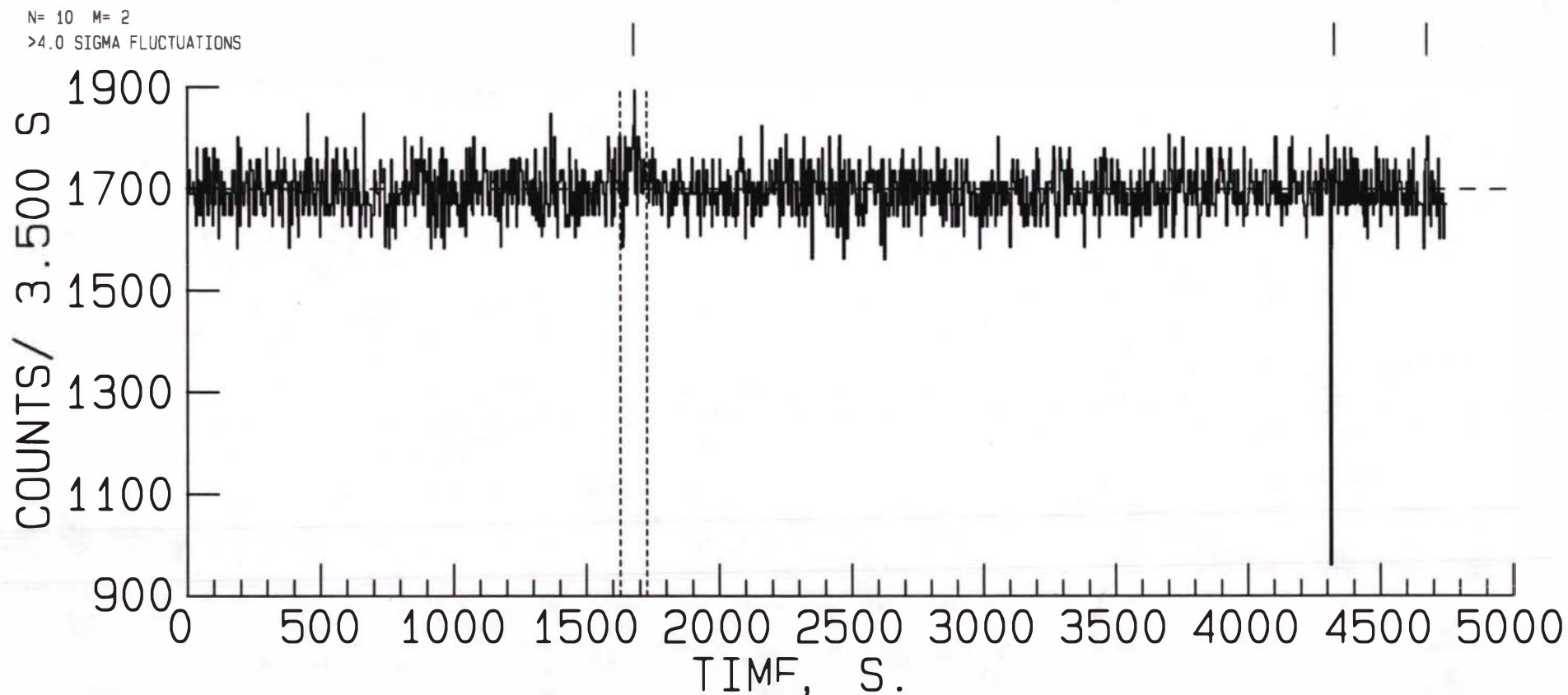
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
4/ 7/96 18360.074 s
0.500 S INTERVALS REGROUPED BY 7
21- 144 keV

31 / 1 / 0



From HAGEDON@fender.msfc.nasa.gov Fri Jul 5 13:38 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 5 Jul 1996 15:38:34 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5528

BATSEARCH PROGRAM

NO

BATSE BURST # 5528
EVENT OF 1996 JUL 4 DAY OF YEAR=186
EVENT CROSSING TIME AT BATSE : 58116. S. OR 16:08:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 358.000 -7.000
BATSE PEAK COUNTING RATE: 9500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 7/ 96 IS:
RA= 154.340 DEC= 46.470 DIST= 4.675 AU
BATSE-ULYSSES DISTANCE = 699341365. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1666.75 SECS.
CROSSING TIME AT ULYSSES IS 59783. S. OR 16:36:22 +/- 358.67 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 7/ 96 IS:
RA= 73.801 DEC= 22.758 DIST= 2.318 AU
MARS-BATSE DISTANCE = 346805536. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -205.18 SECS.
CROSSING TIME AT MARS IS 57911. S. OR 16:05:10 +/- 194.54 SECONDS

BATSE BURST TRIGGER

NO.: 5528

TIME: TJD=0268 SECONDS=58116

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=82.7 AZIMUTH=147.5 ERROR=6.0 DEGREES

COMMENTS:

BURST. SINGLE PULSE WITH SUBSTRUCTURE. DUR.~1.5 SEC. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5528	960704	10268	58116	9500	358	-07	1.5

BATSE #

5528

8 / 7 / 96

ULYSSES RT

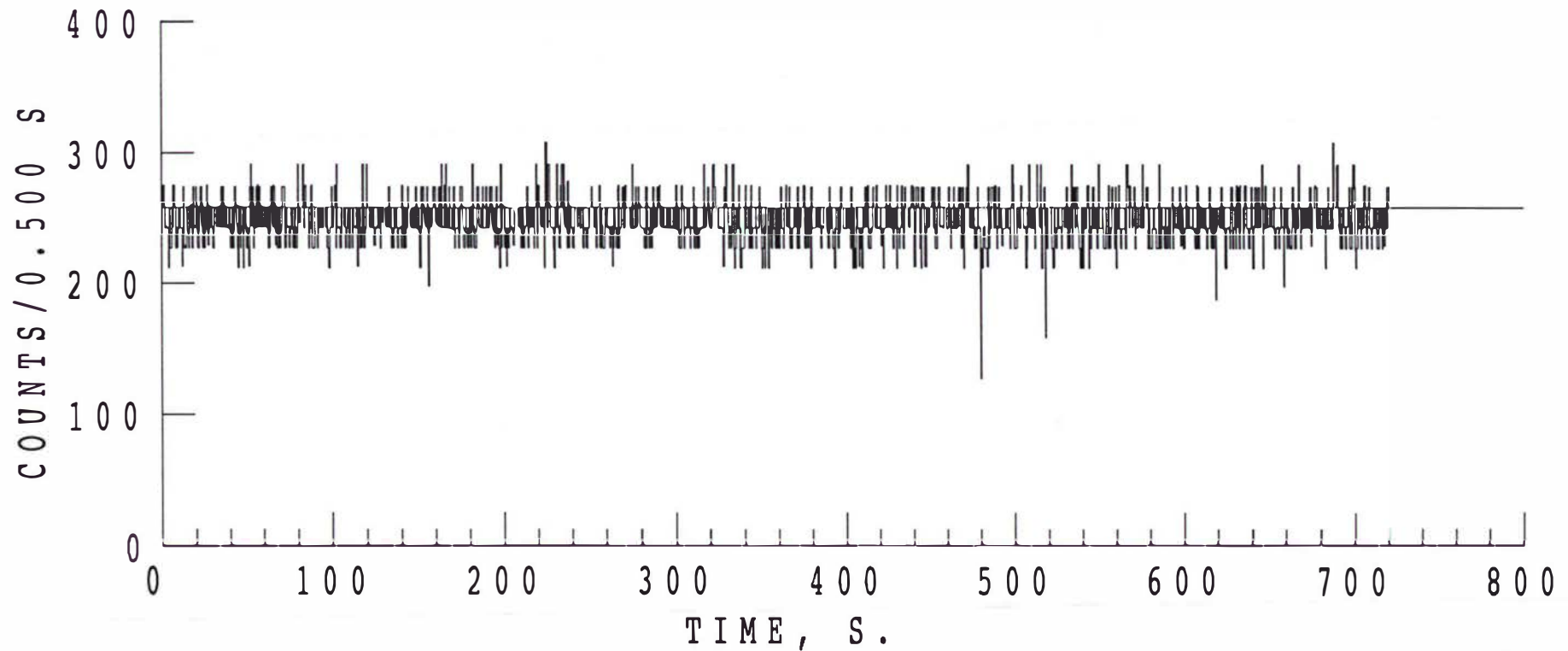
4 / 7 / 96 59436.113 s

0.250 S INTERVALS REGROUPED BY 2

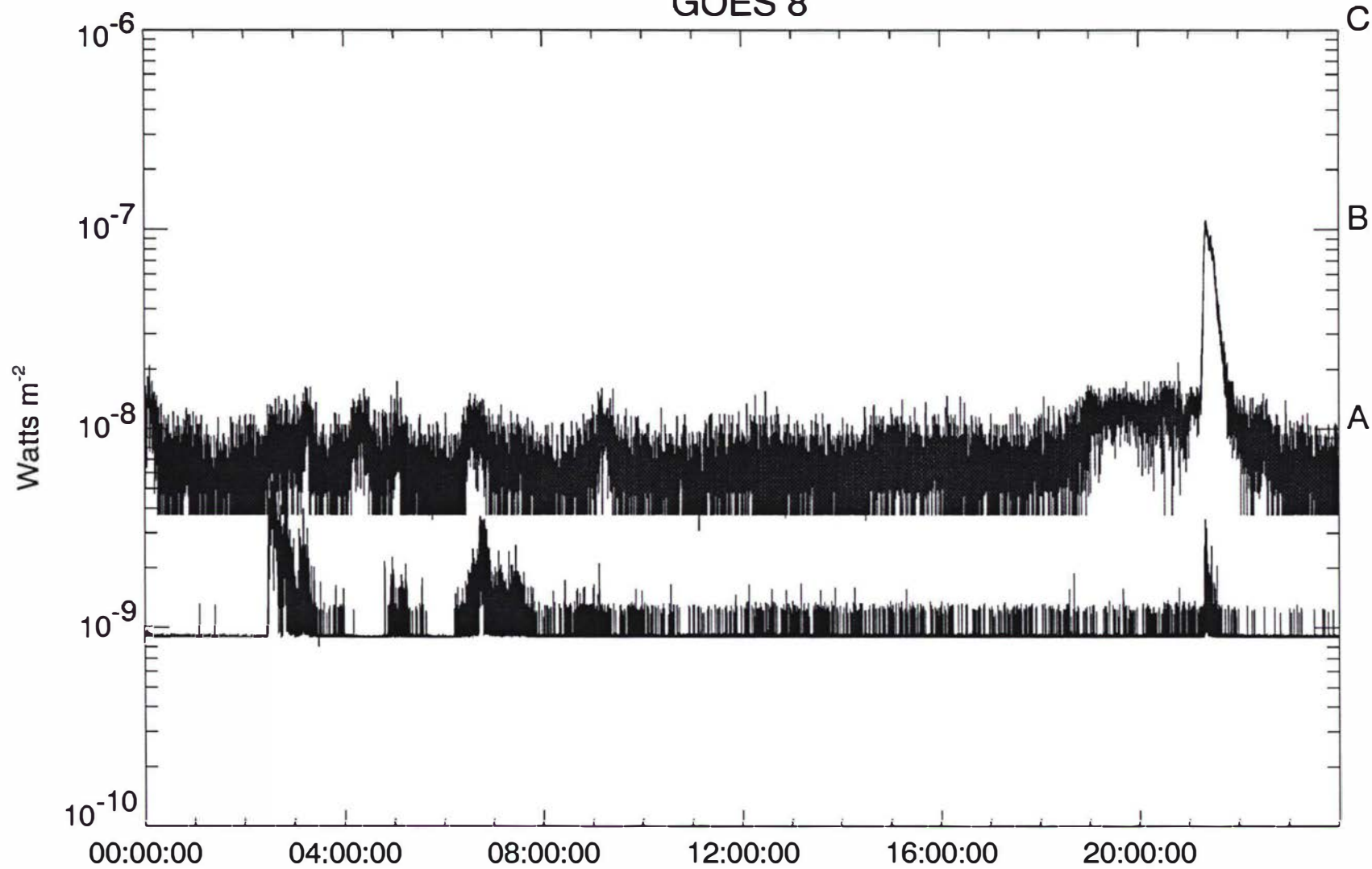
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



GOES 8

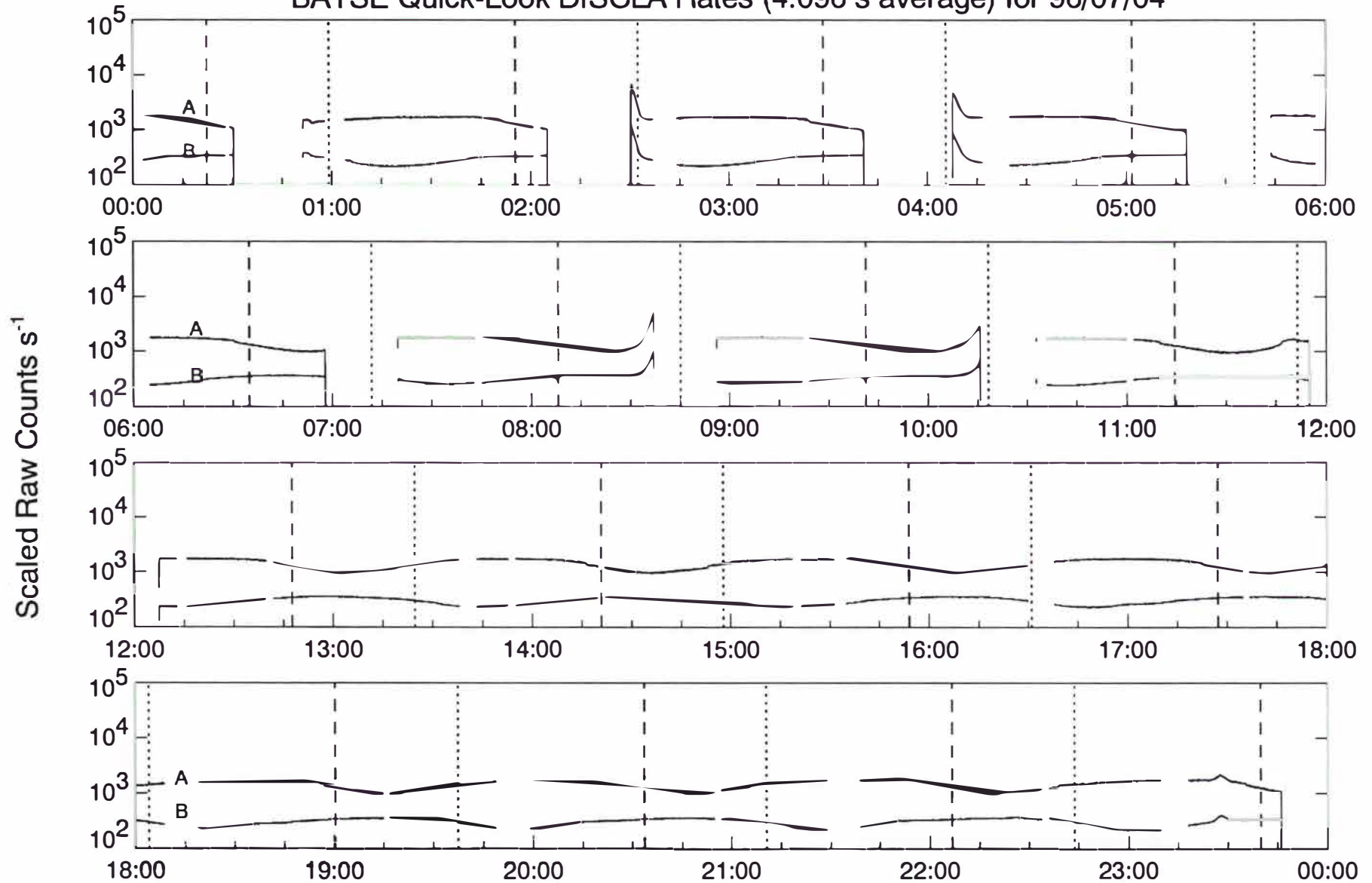


Data Start: 96/07/04, 0000:00

Plot created: 96/07/06, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/04

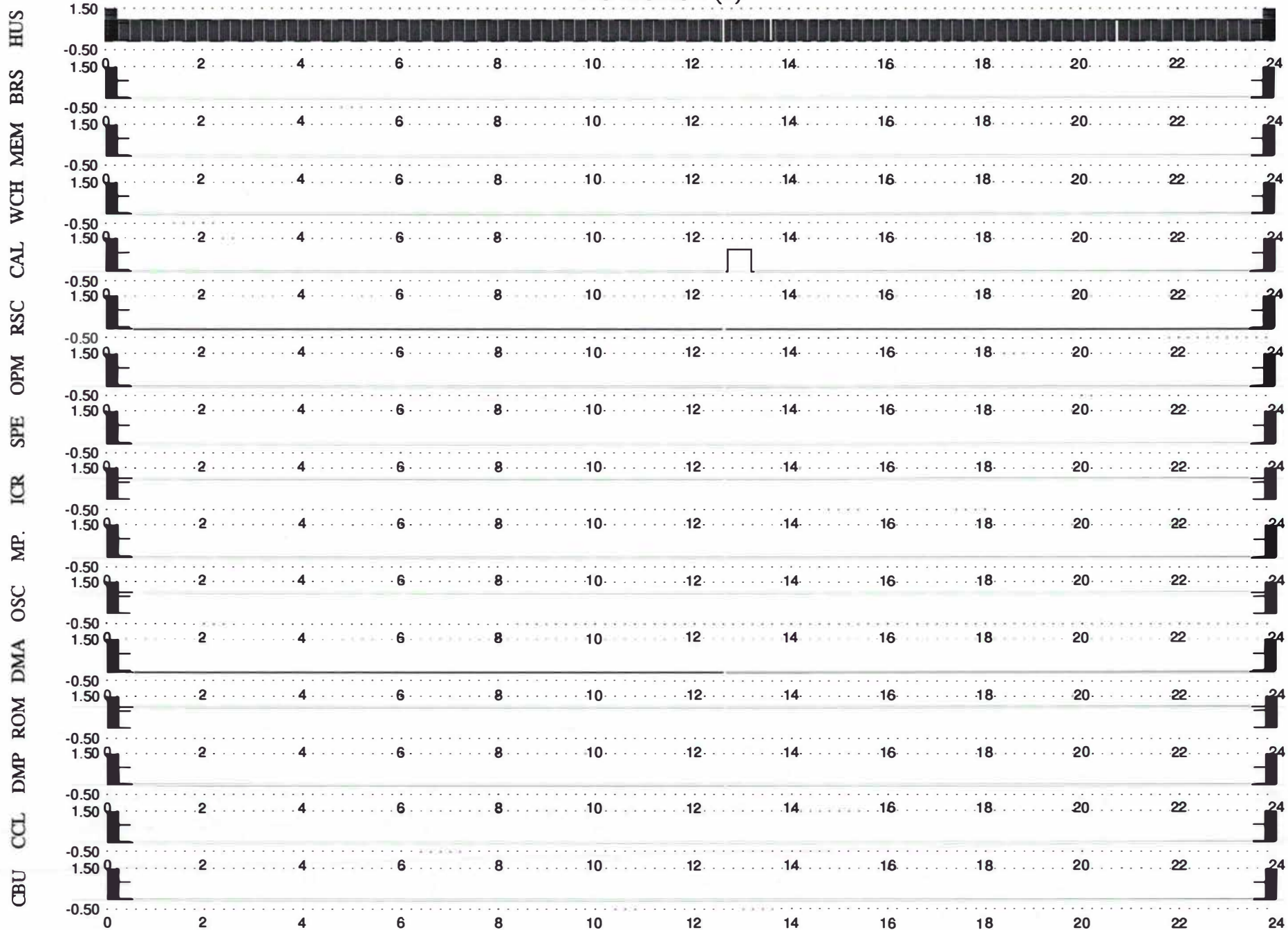


Current Time: 96/07/06, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

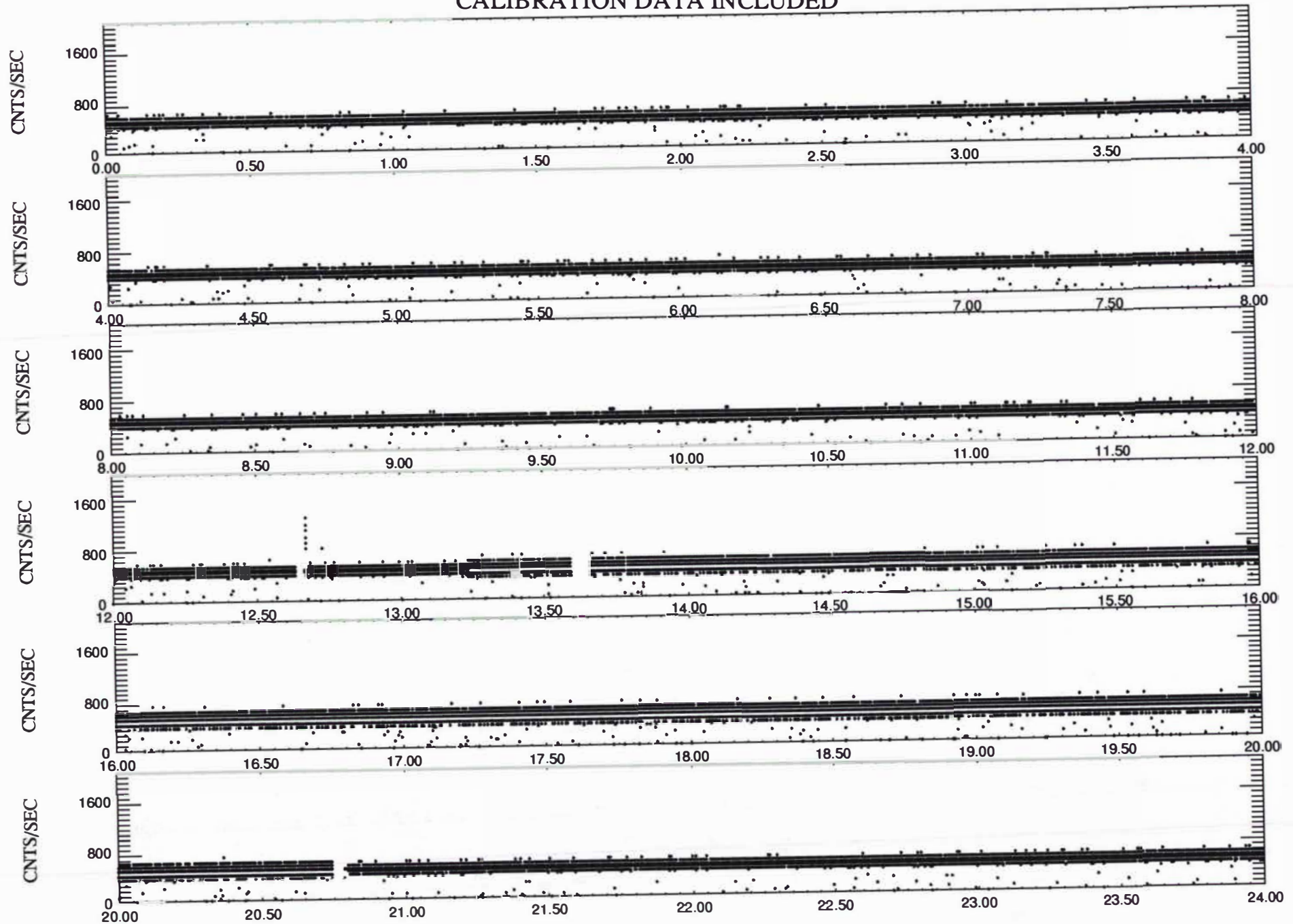
* Solar Burst Trigger
 + Solar Flare

NO BURST (7)

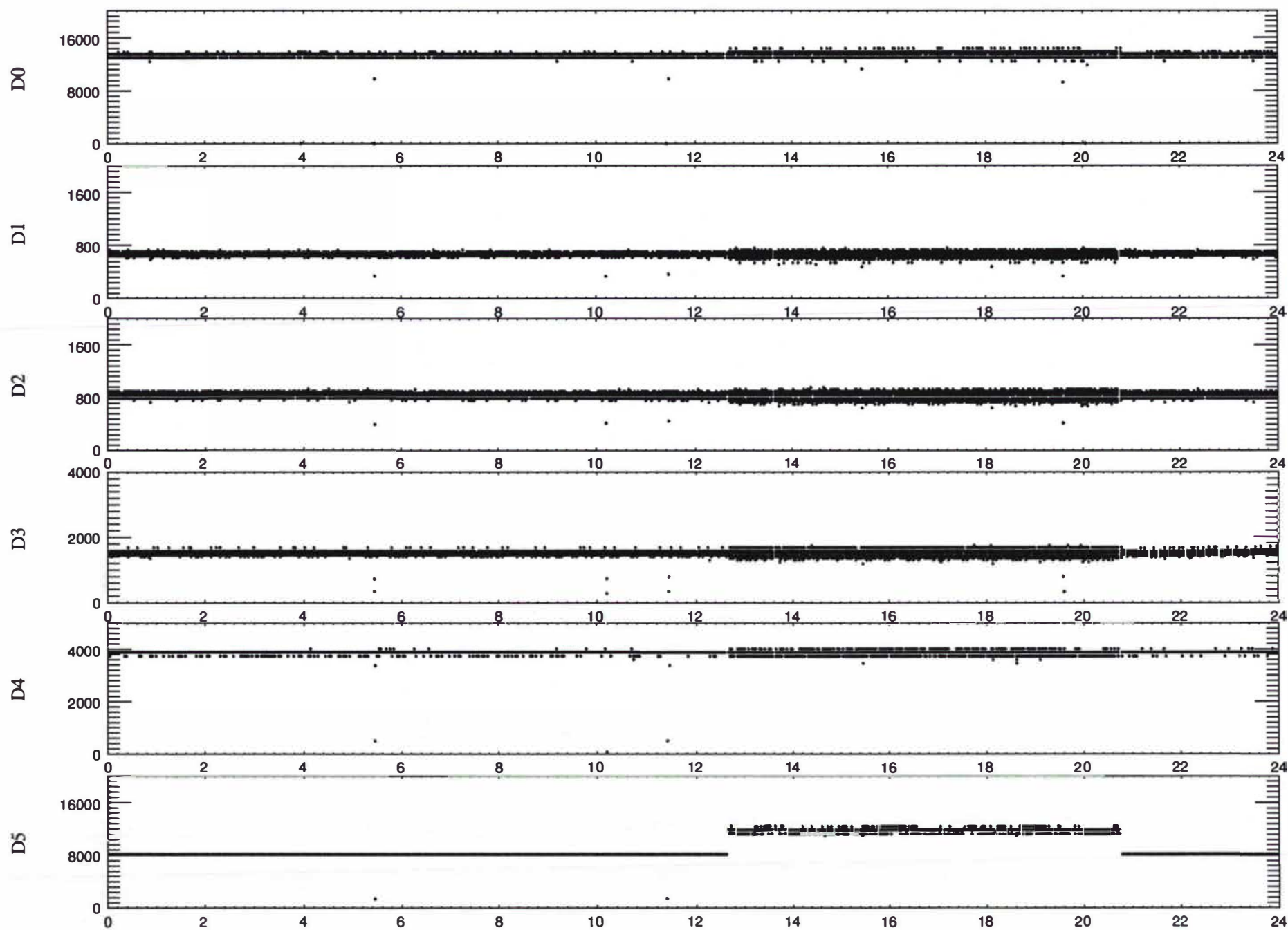


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From HENZE@fender.msfc.nasa.gov Mon Jul 8 09:40 PDT 1996
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 8 Jul 1996 11:40:18 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5529

BATSEARCH PROGRAM

NO

BATSE BURST # 5529
EVENT OF 1996 JUL 5 DAY OF YEAR=187
EVENT CROSSING TIME AT BATSE : 2983. S. OR 00:49:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 29.000 0.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 7/ 96 IS:
RA= 154.408 DEC= 46.396 DIST= 4.679 AU
BATSE-ULYSSES DISTANCE = 700033527. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 933.08 SECS.
CROSSING TIME AT ULYSSES IS 3916. S. OR 01:05:16 +/- 435.80 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 7/ 96 IS:
RA= 74.548 DEC= 22.844 DIST= 2.316 AU
MARS-BATSE DISTANCE = 346493184. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -745.91 SECS.
CROSSING TIME AT MARS IS 2237. S. OR 00:37:17 +/- 141.95 SECONDS

BATSE BURST TRIGGER

NO.: 5529

TIME: TJD=0269 SECONDS=02983

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=052.2 AZIMUTH=137.5 ERROR=002.8 DEGREES

COMMENTS:

DOUBLE SPIKE (OR TRIPLE), FIRST STRONGER. TOTAL DUR. ~1 S.
WEAK ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5529	960705	10269	02983	10000	029	0	1

BATSE #

5529

8 / 7 / 96

ULYSSES RT

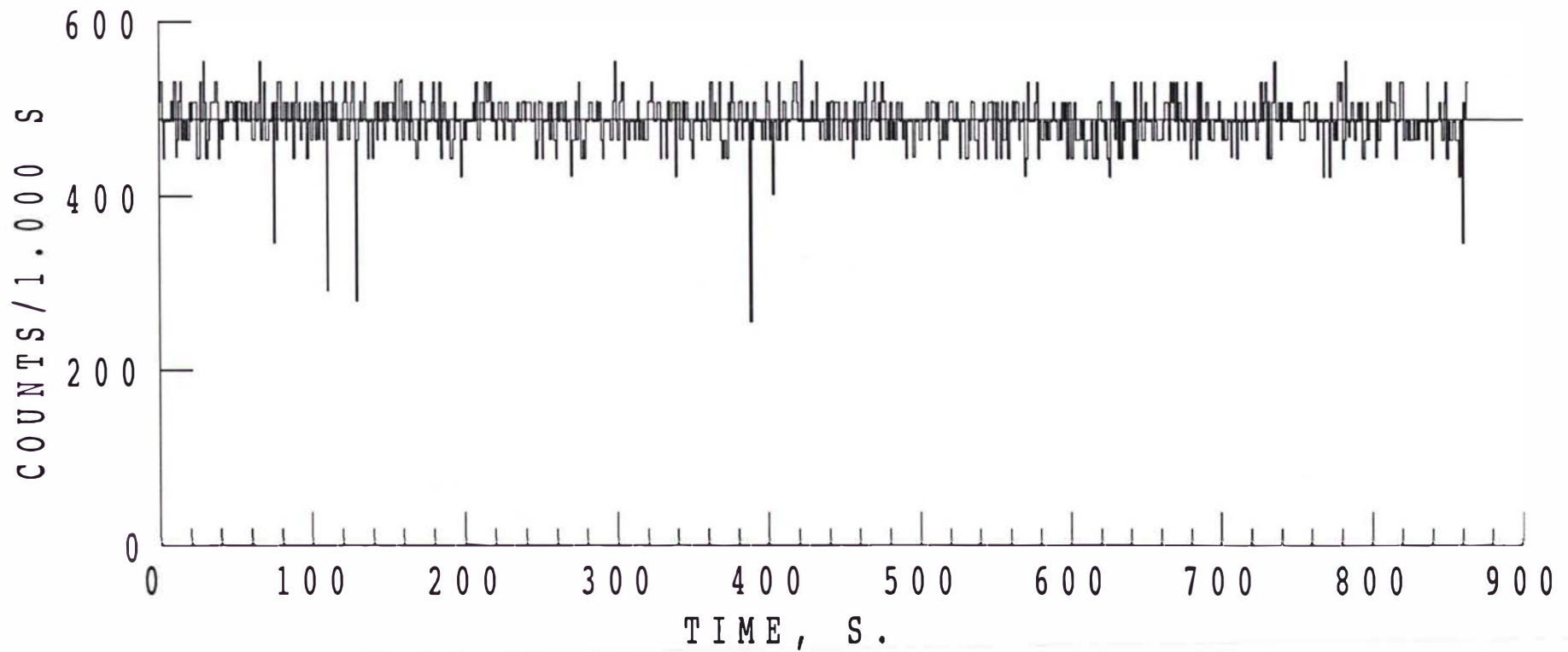
5 / 7 / 96 3492.008 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



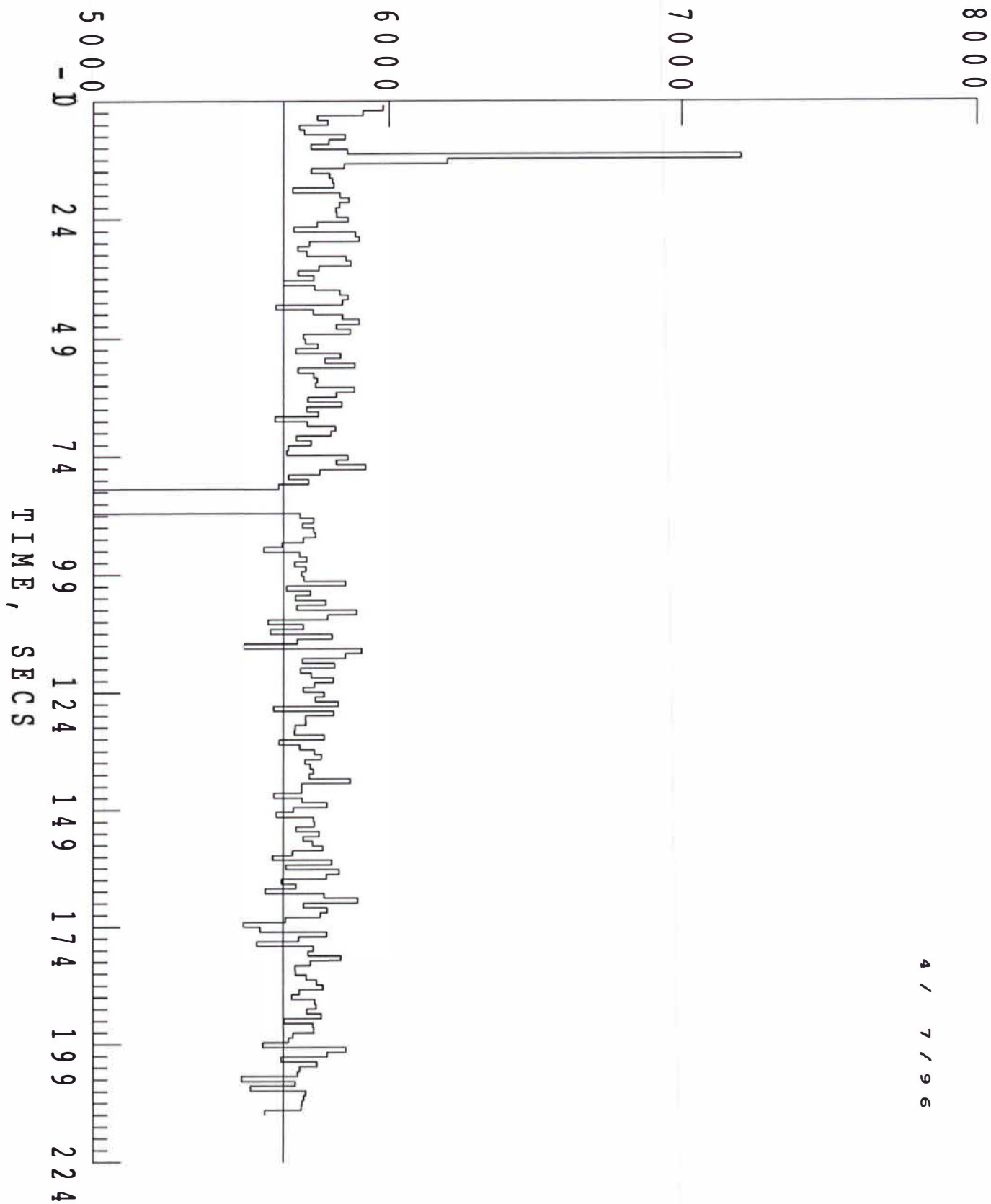
BACODINE 5529

05/07/96

2972.361

25 - 100 keV

COUNTS/1.024 S



From BUTTERWORTH@lheavx.gsfc.nasa.gov Wed Jul 10 10:35 PDT 1996

From: BUTTERWORTH@lheavx.gsfc.nasa.gov

Date: Wed, 10 Jul 1996 13:36:49 -0400 (EDT)

khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, CLINE@lheavx.gsfc.nasa.gov,
scott@rosserv.gsfc.nasa.gov, TEEGARDEN@lheavx.gsfc.nasa.gov

CC: BUTTERWORTH@lheavx.gsfc.nasa.gov

Subject: Konus did not see the Ulysses event near 18:18 UT on July 5

Hi Everyone,

Konus did not trigger on July 5. No events are visible in the 3-second averaged waiting-mode data at a compatible time.

Paul.

Date: Wed, 10 Jul 1996 09:08:40 -0700

From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)

Message-Id: <199607101608.JAA21378@scylla.berkeley.edu>

To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp

Subject: GRB960705

X-Sun-Charset: US-ASCII

YSSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

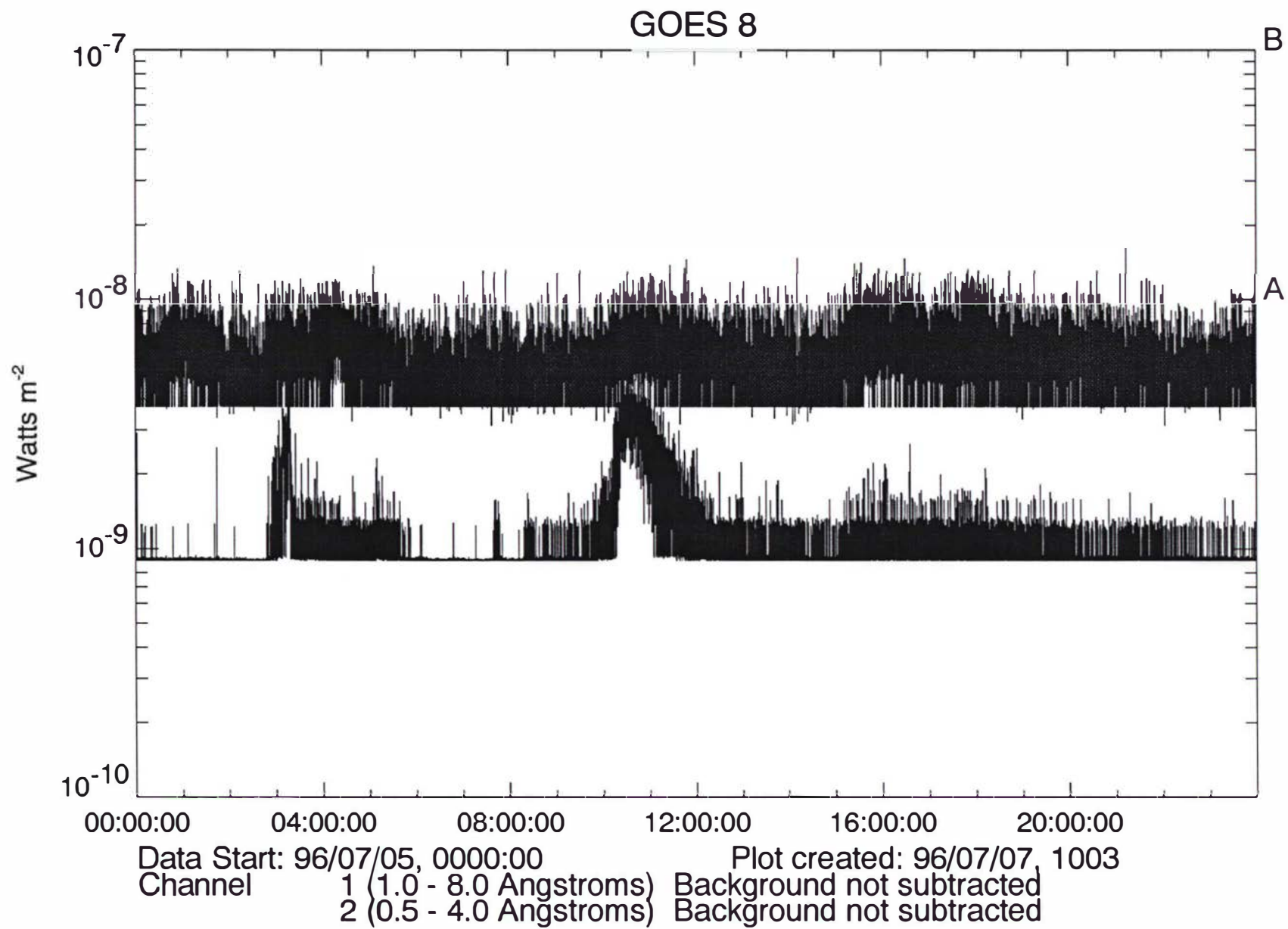
Ulysses triggered on a very weak, 32 ms long event July 5 1996 around 18:18 UT at Ulysses.

The spacecraft was about 2350 light-seconds from Earth.

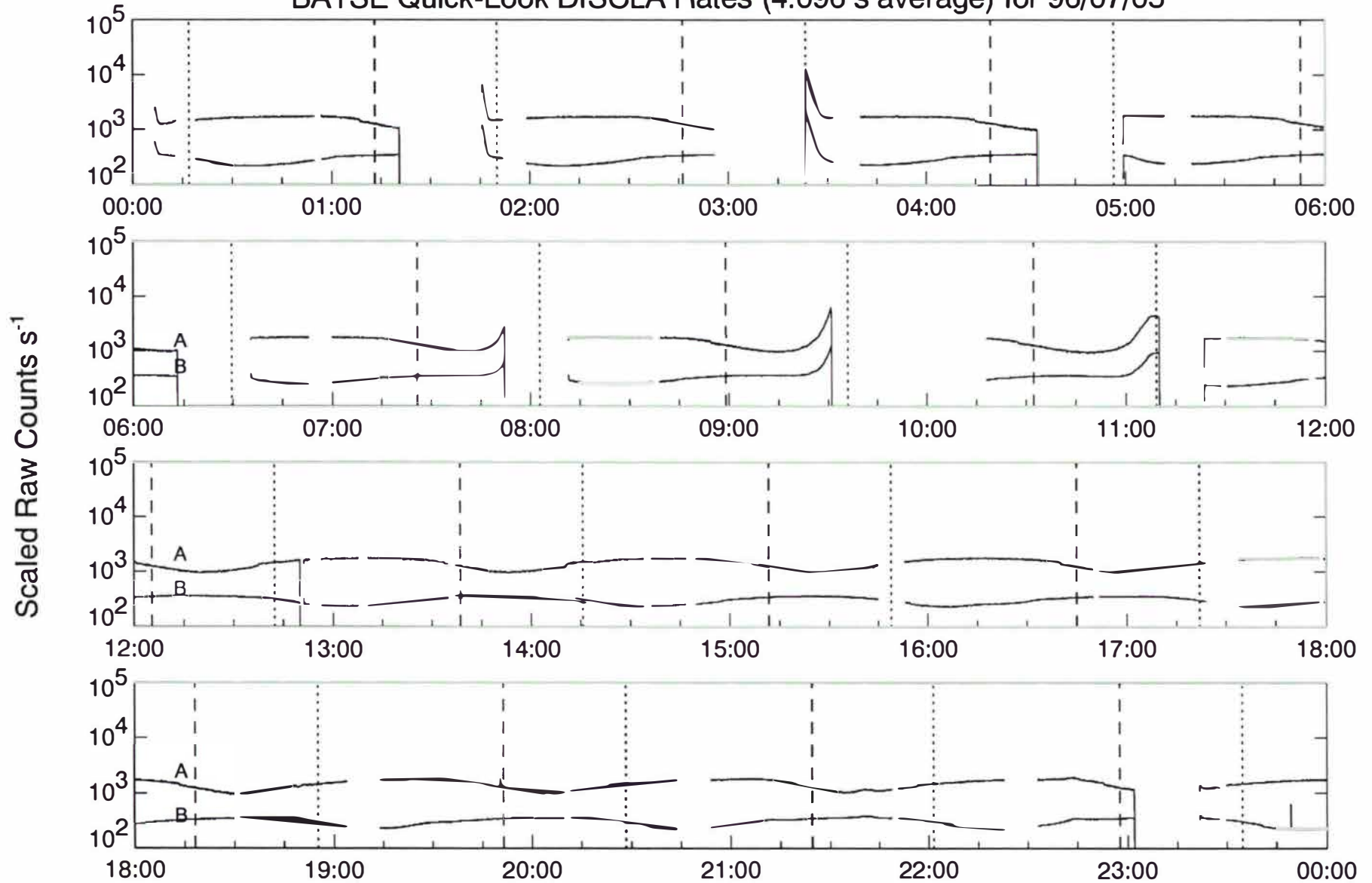
Was this event detected by anyone else?

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, marar, teegarden, terrell, yoshimori)



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/05



Current Time: 96/07/07, 1004 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

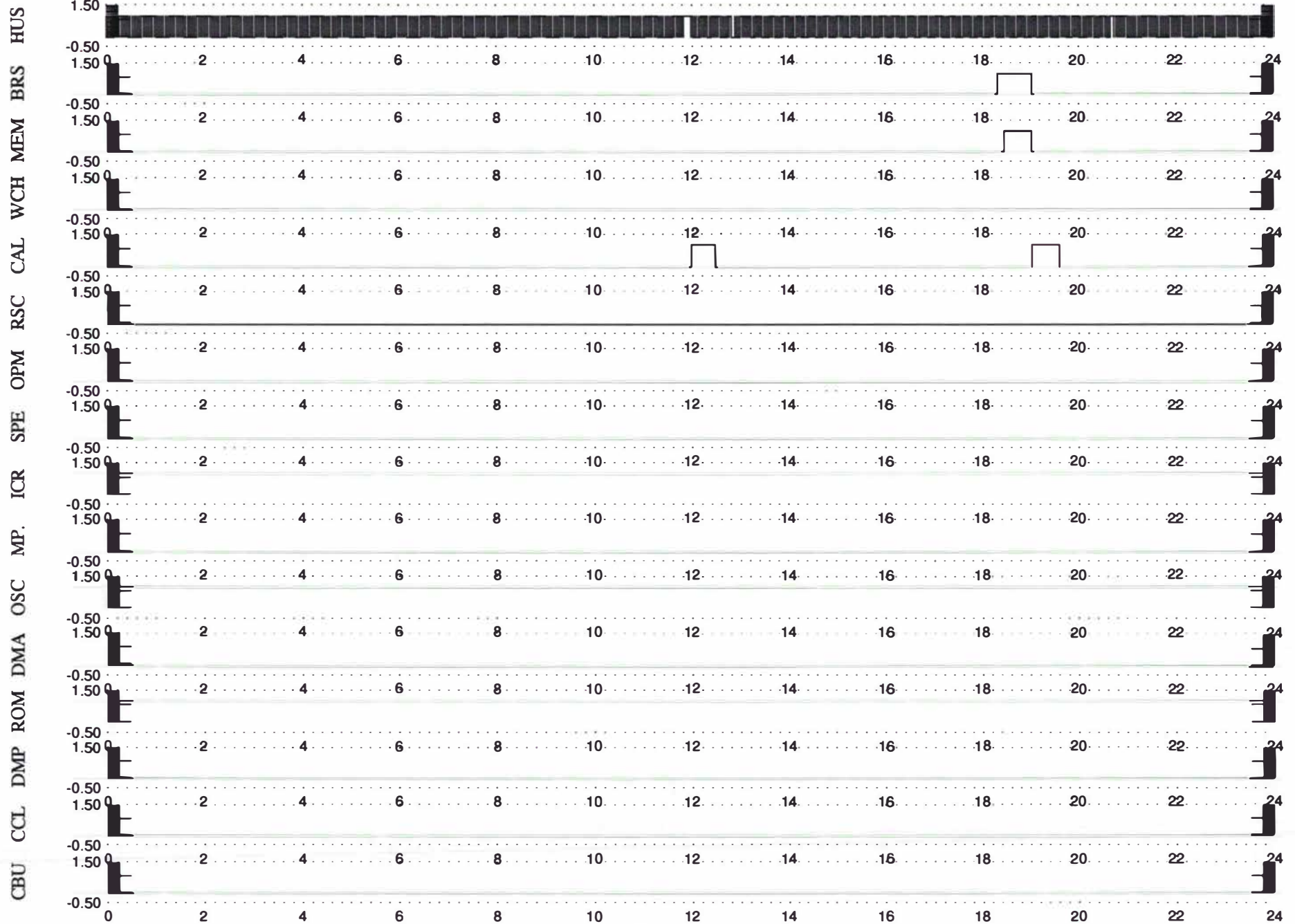
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

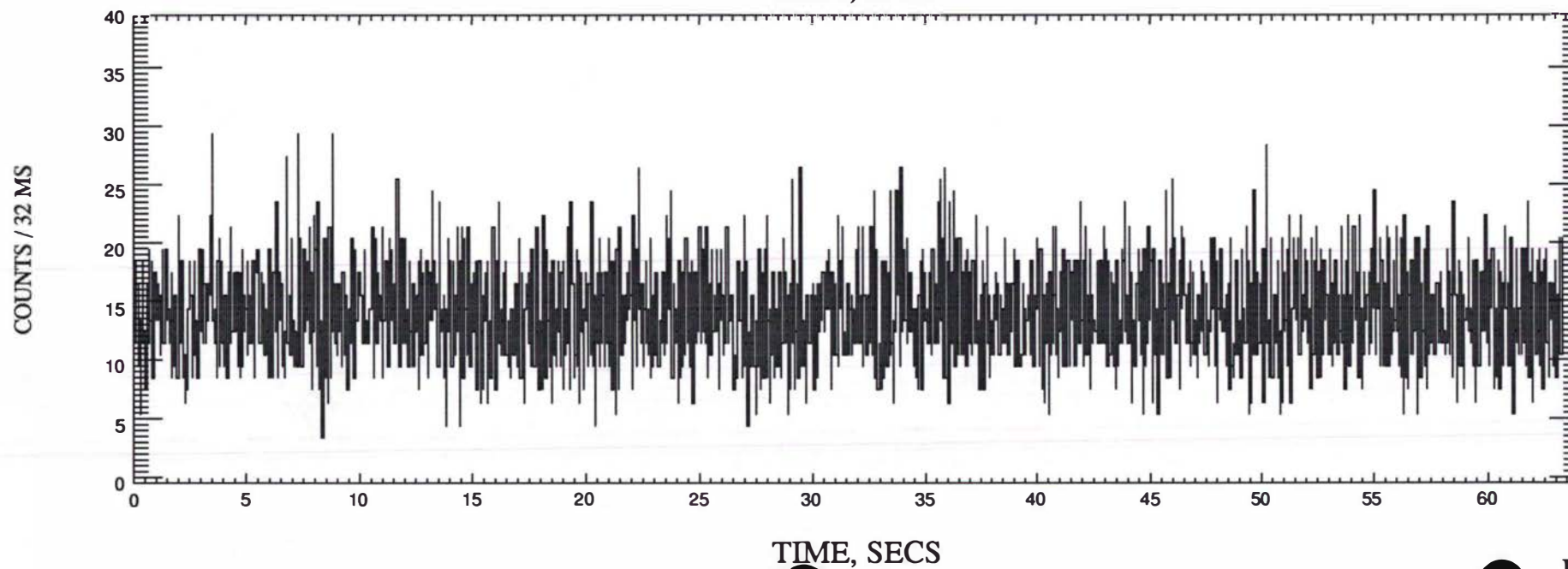
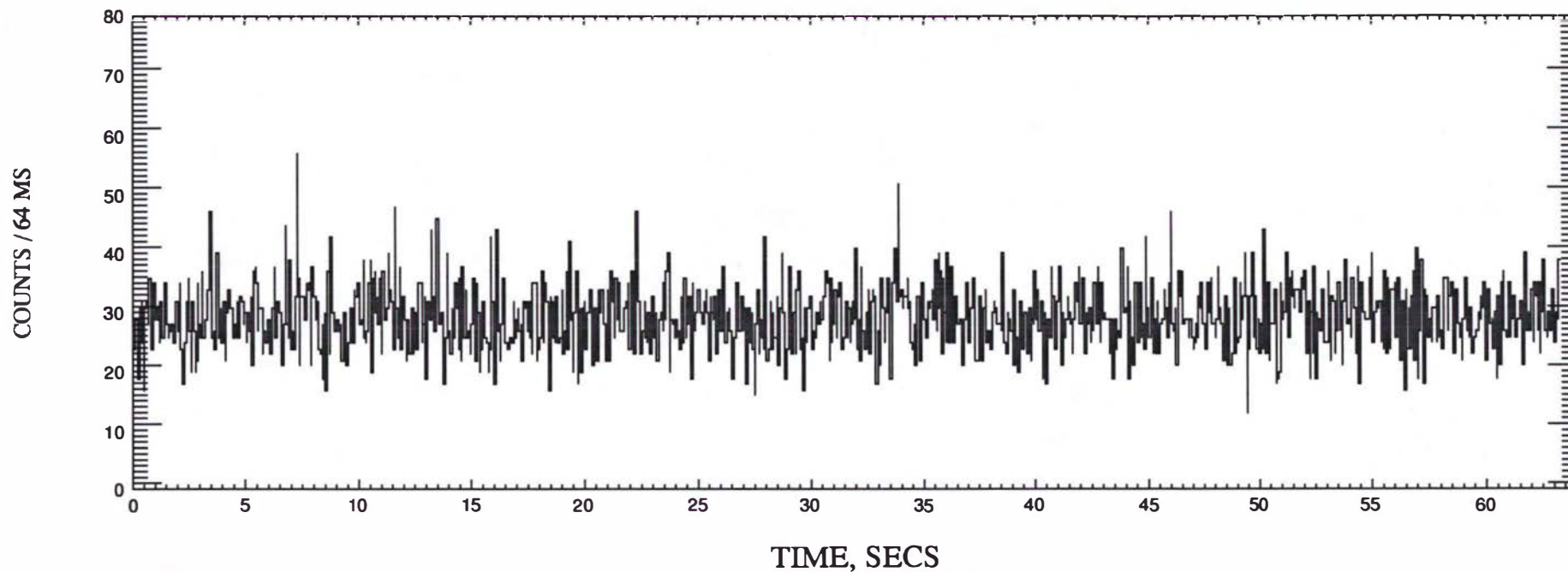
+ Solar Flare

BURST NUMBER 8

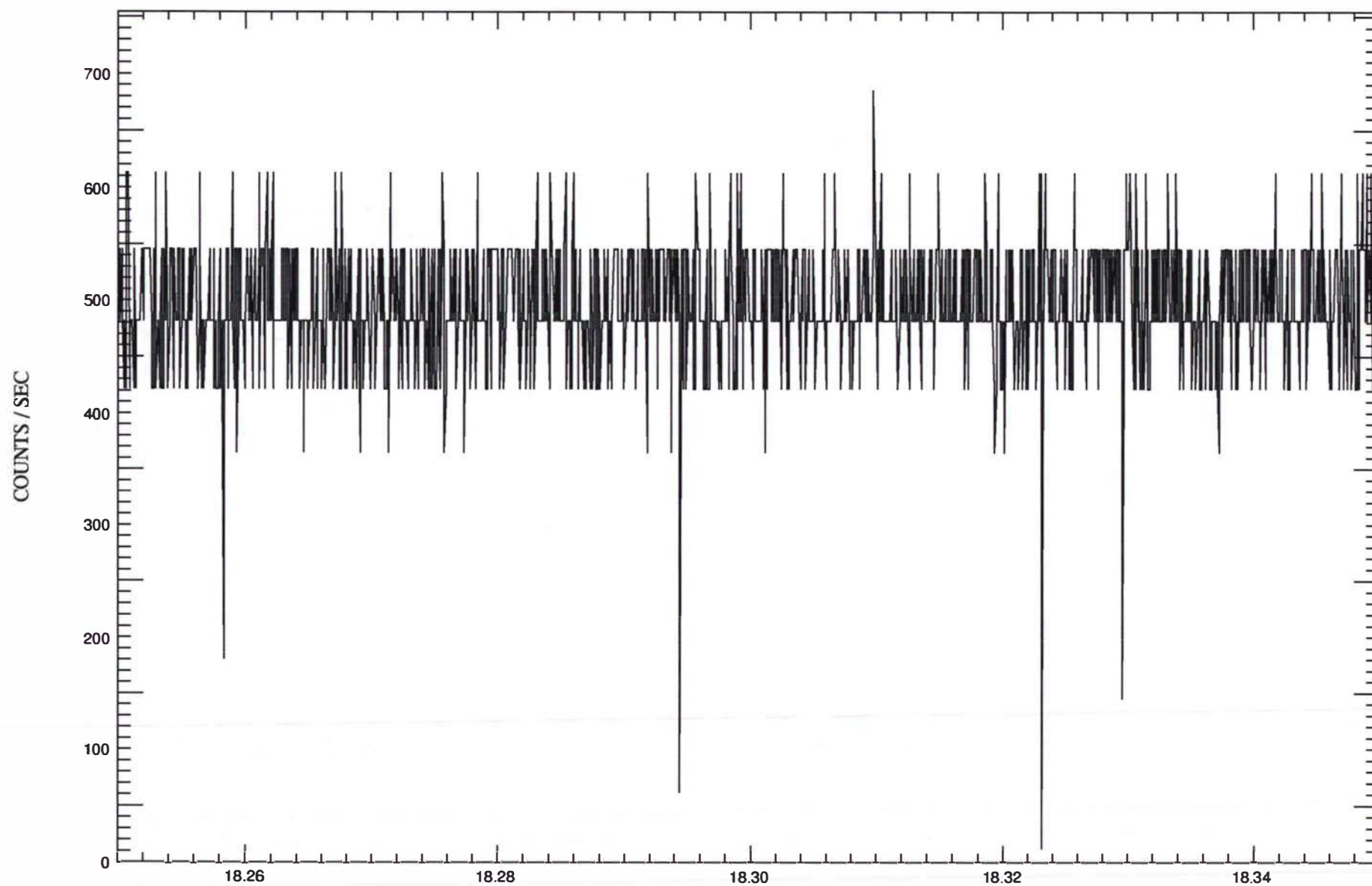


UNIVERSAL TIME

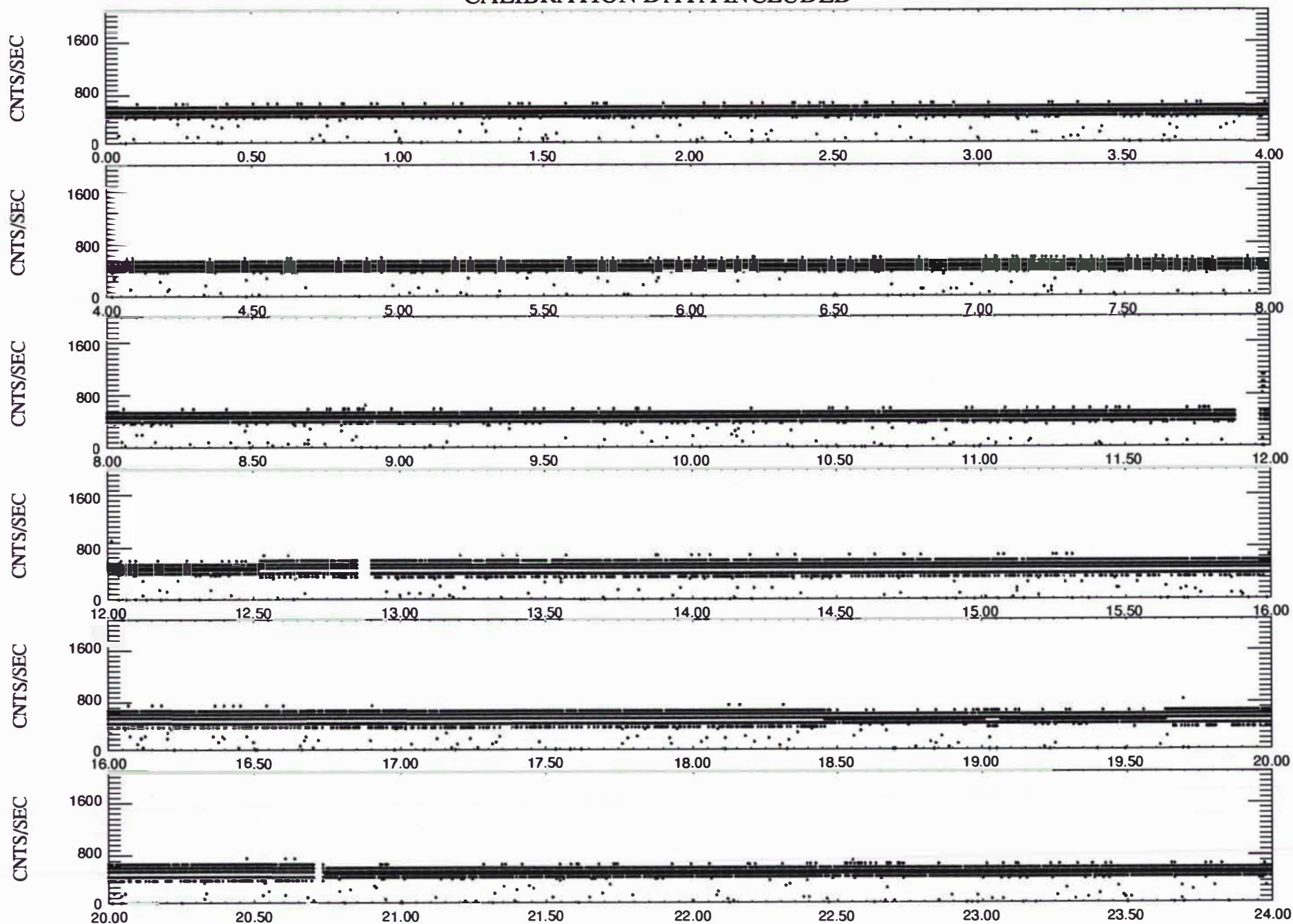
Burst Counter 8 at UT=18.302692519294 h=65889.693 s 18:18:09.693



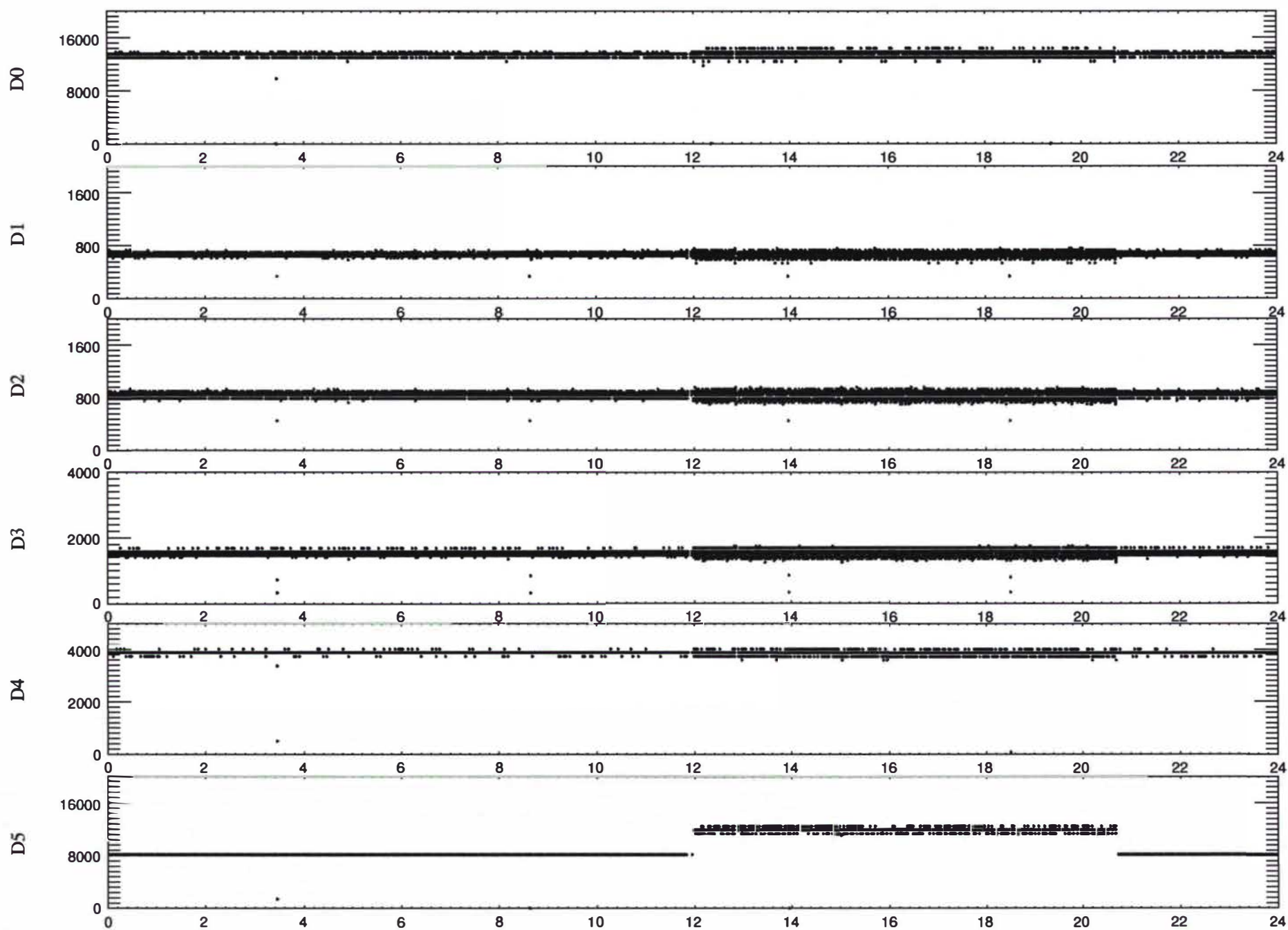
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED

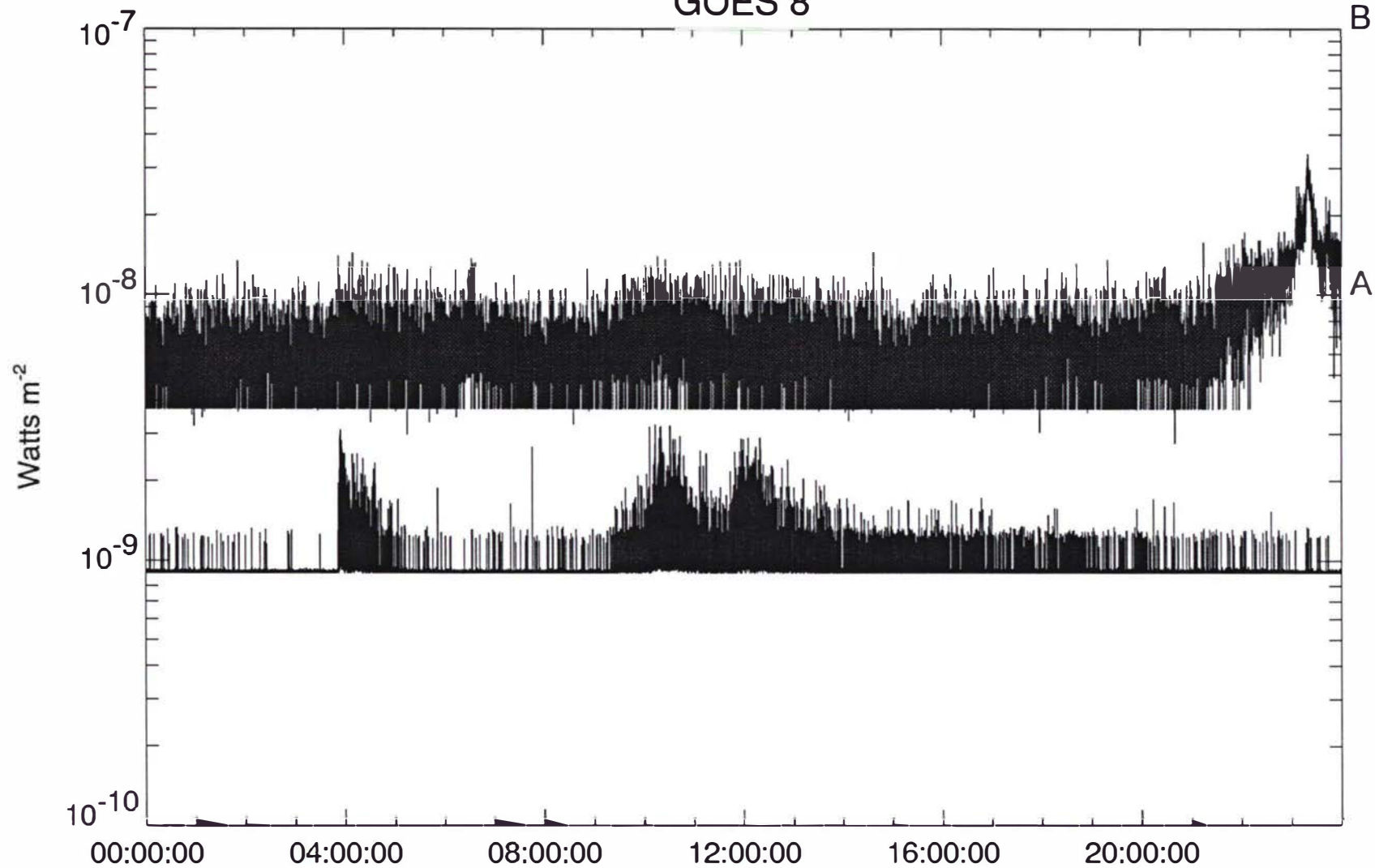


UNIVERSAL TIME



UNIVERSAL TIME

GOES 8

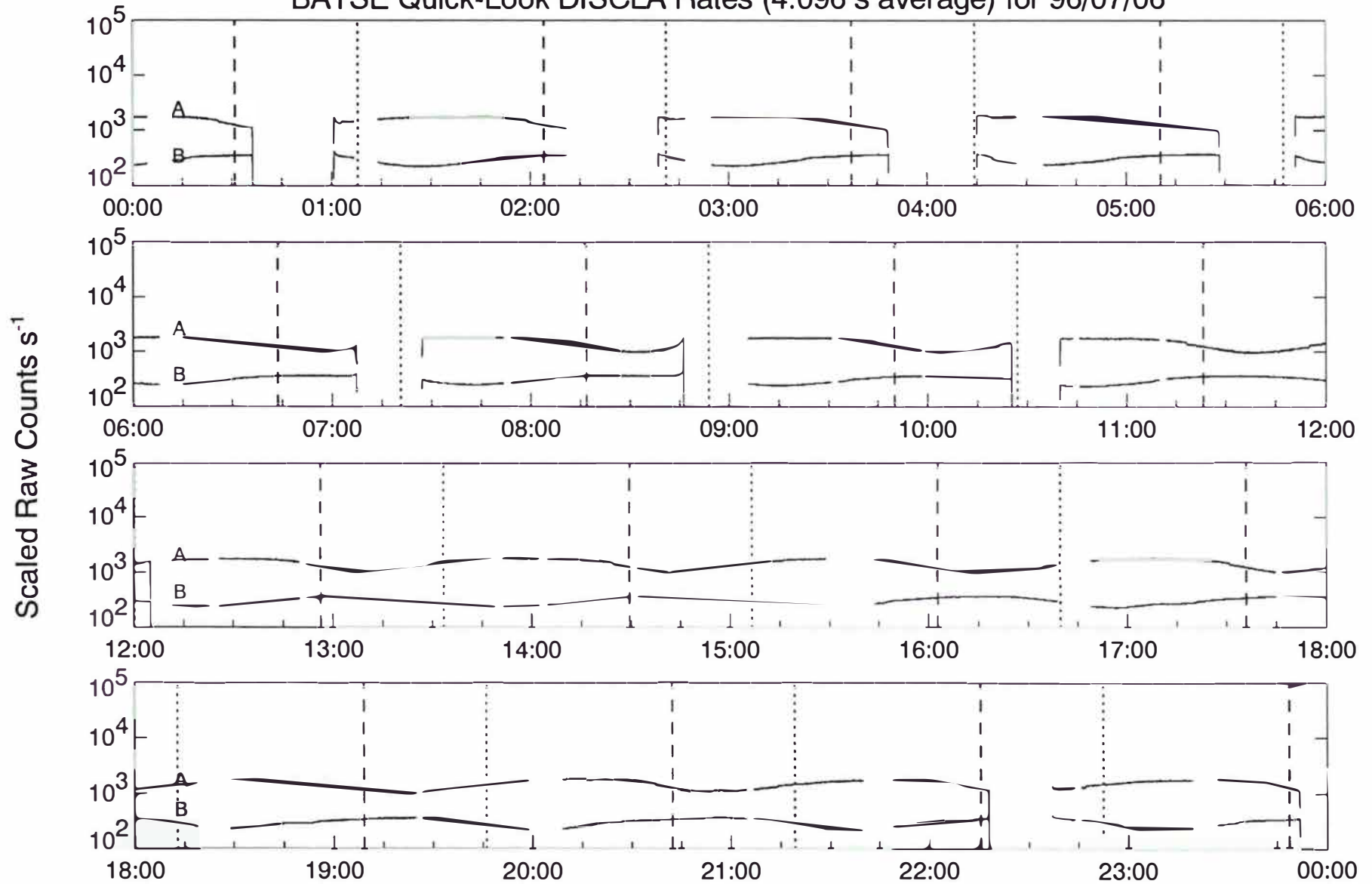


Data Start: 96/07/06, 0000:00

Plot created: 96/07/08, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/06

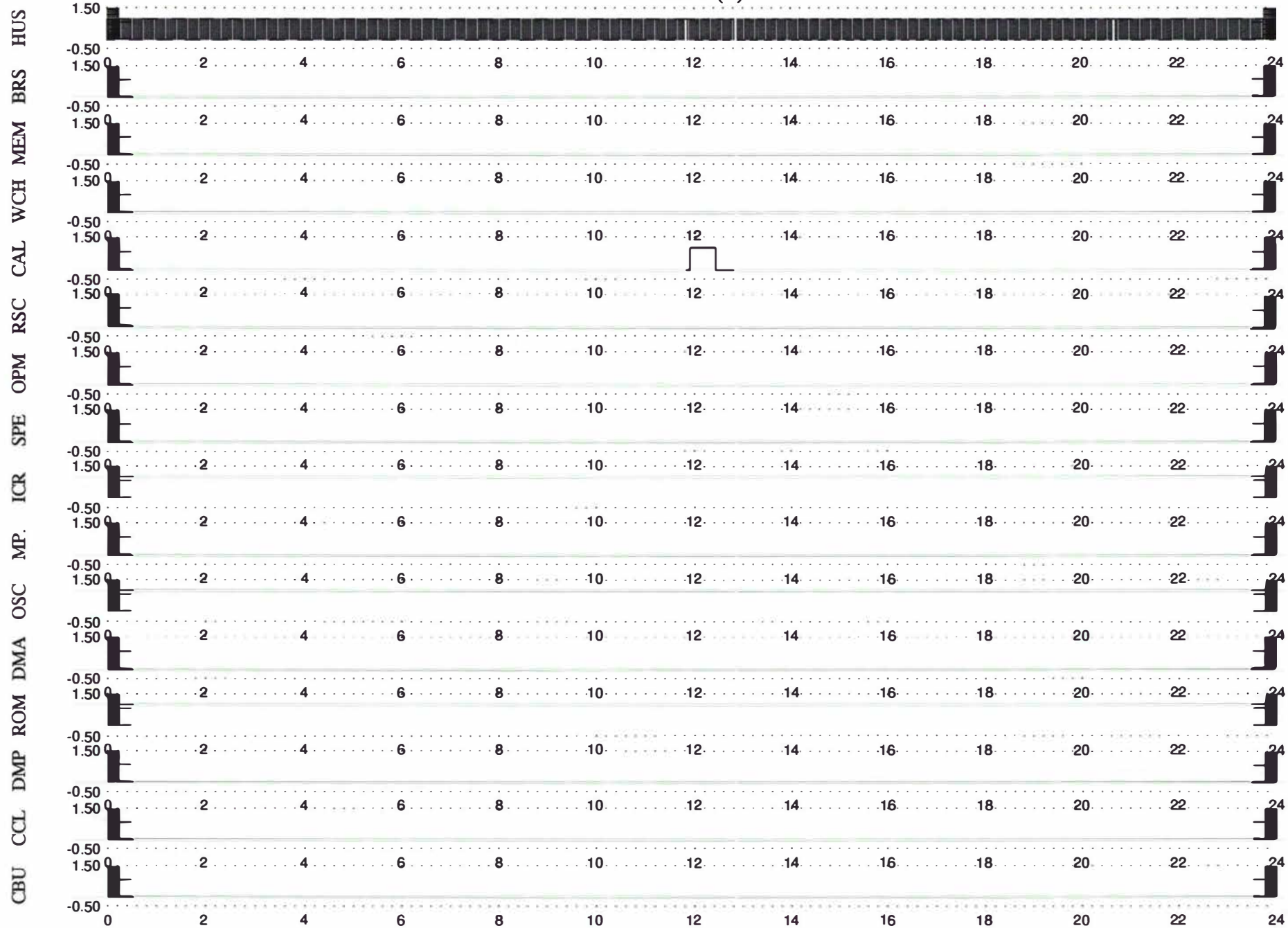


Current Time: 96/07/08, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

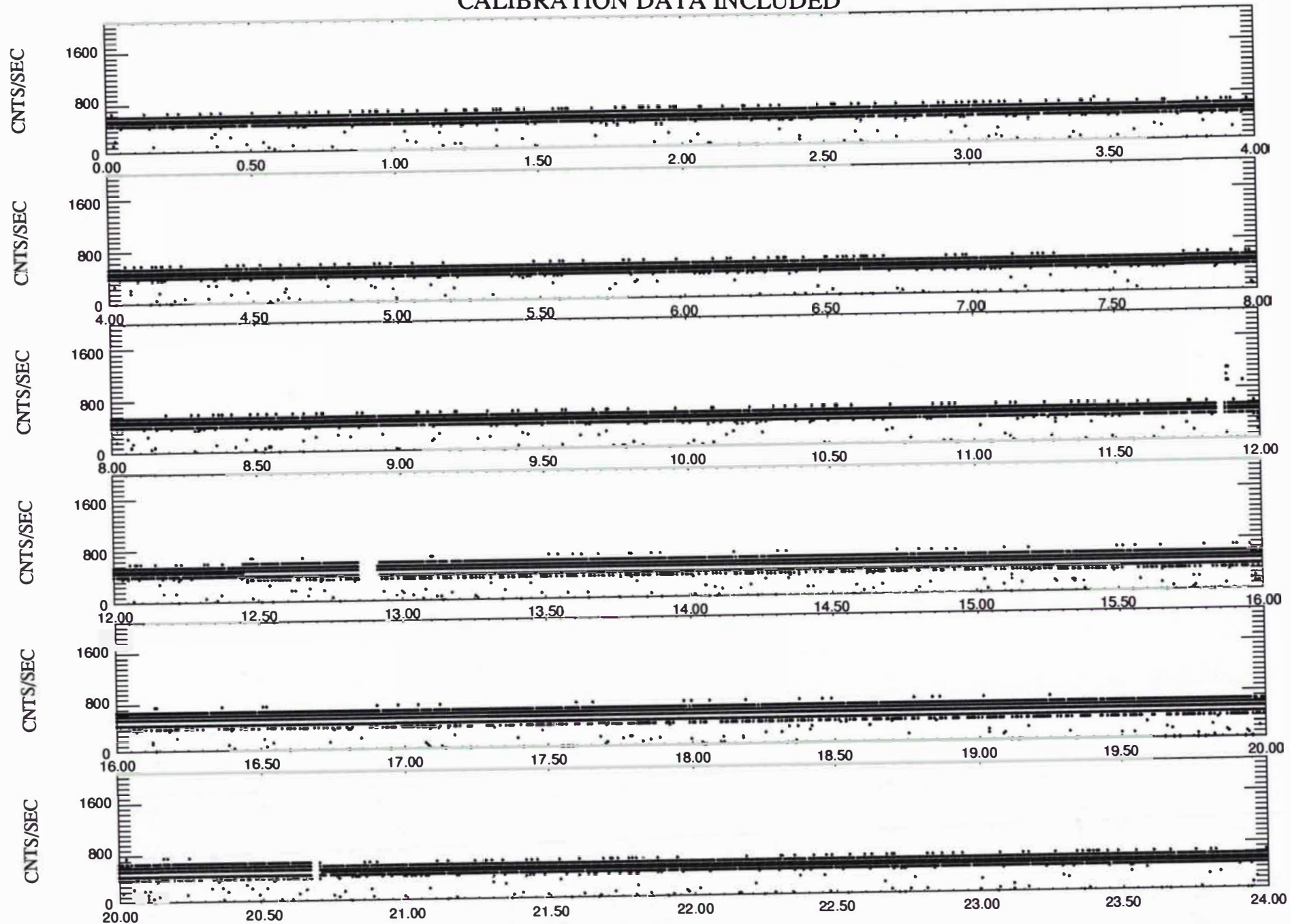
* Solar Burst Trigger
 + Solar Flare

NO BURST (8)

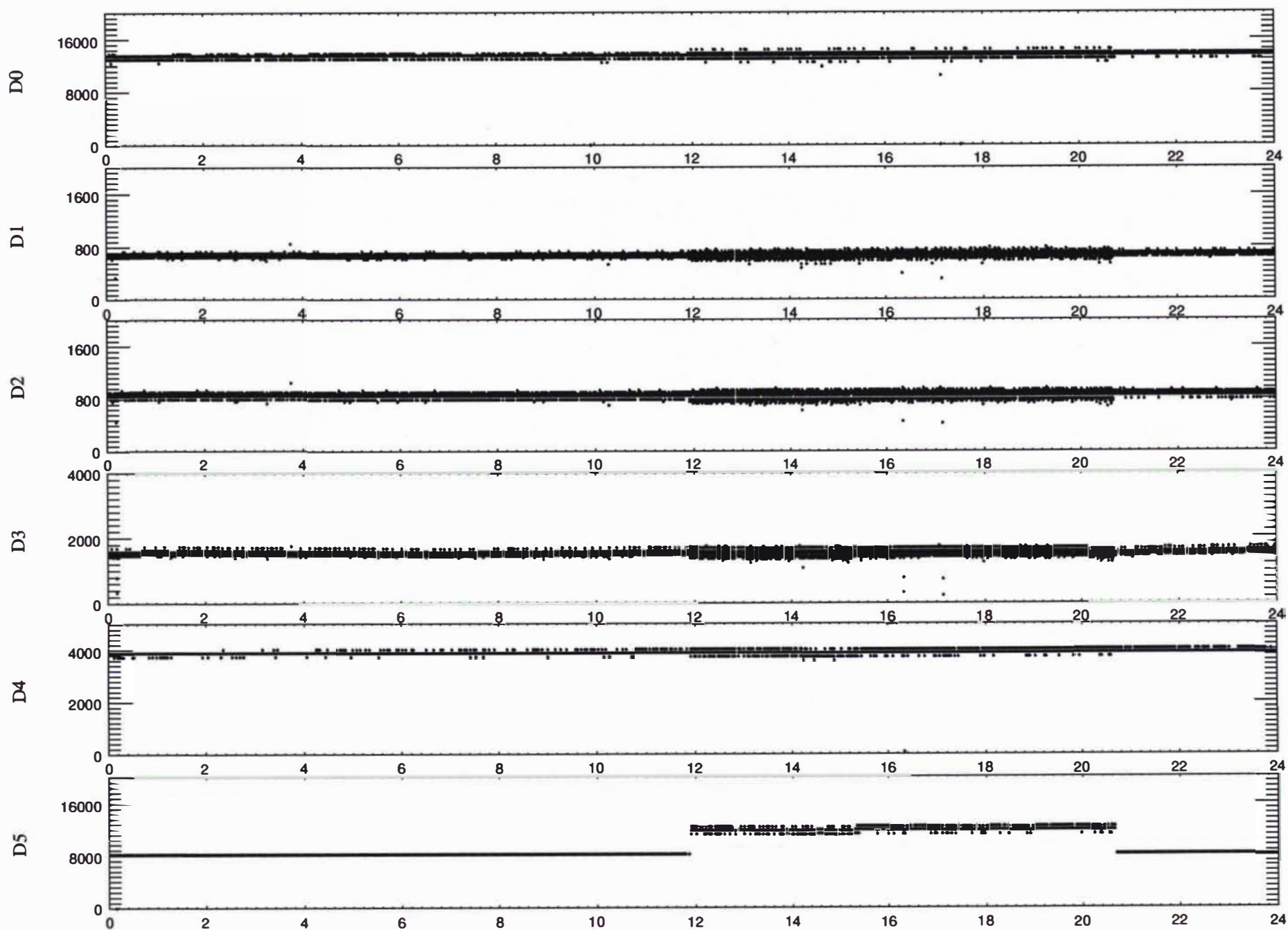


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From PANJEVG@SSLLES.MSFC.NASA.GOV Wed Jul 10 08:04 PDT 1996
Date: Wed, 10 Jul 1996 10:03:48 -0500 (CDT)
From: PANJEVG@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5530

BATSEARCH PROGRAM

RL

BATSE BURST # 5530
EVENT OF 1996 JUL 7 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 37000. S. OR 10:16:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 321.000 83.000
BATSE PEAK COUNTING RATE: 14600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 96 IS:
RA= 154.864 DEC= 45.911 DIST= 4.709 AU
BATSE-ULYSSES DISTANCE = 704529120. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1481.89 SECS.
CROSSING TIME AT ULYSSES IS 35518. S. OR 09:51:58 +/- 344.16 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 96 IS:
RA= 76.044 DEC= 23.007 DIST= 2.312 AU
MARS-BATSE DISTANCE = 345850464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -392.75 SECS.
CROSSING TIME AT MARS IS 36607. S. OR 10:10:07 +/- 182.36 SECONDS

BATSE BURST TRIGGER

NO.: 5530

TIME: TJD=0271 SECONDS=37000

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=98.3 AZIMUTH=57.2 ERROR=1.07 DEGREES

COMMENTS:

GRB LASTING ~6.5SEC. COMPLEX STRUCTURE. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5530	960707	10271	37000	14600	321	+83	6.5

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
Date: Wed, 20 Nov 1996 14:32:12 -0800
Mime-Version: 1.0
To: KHURLEY@sunspot.ssl.berkeley.edu
From: cline@apache.gsfc.nasa.gov (T L Cline)
Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

(BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	scribble	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	scribble	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	scribble RI	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

Hello car removed

Date: Mar 12 '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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

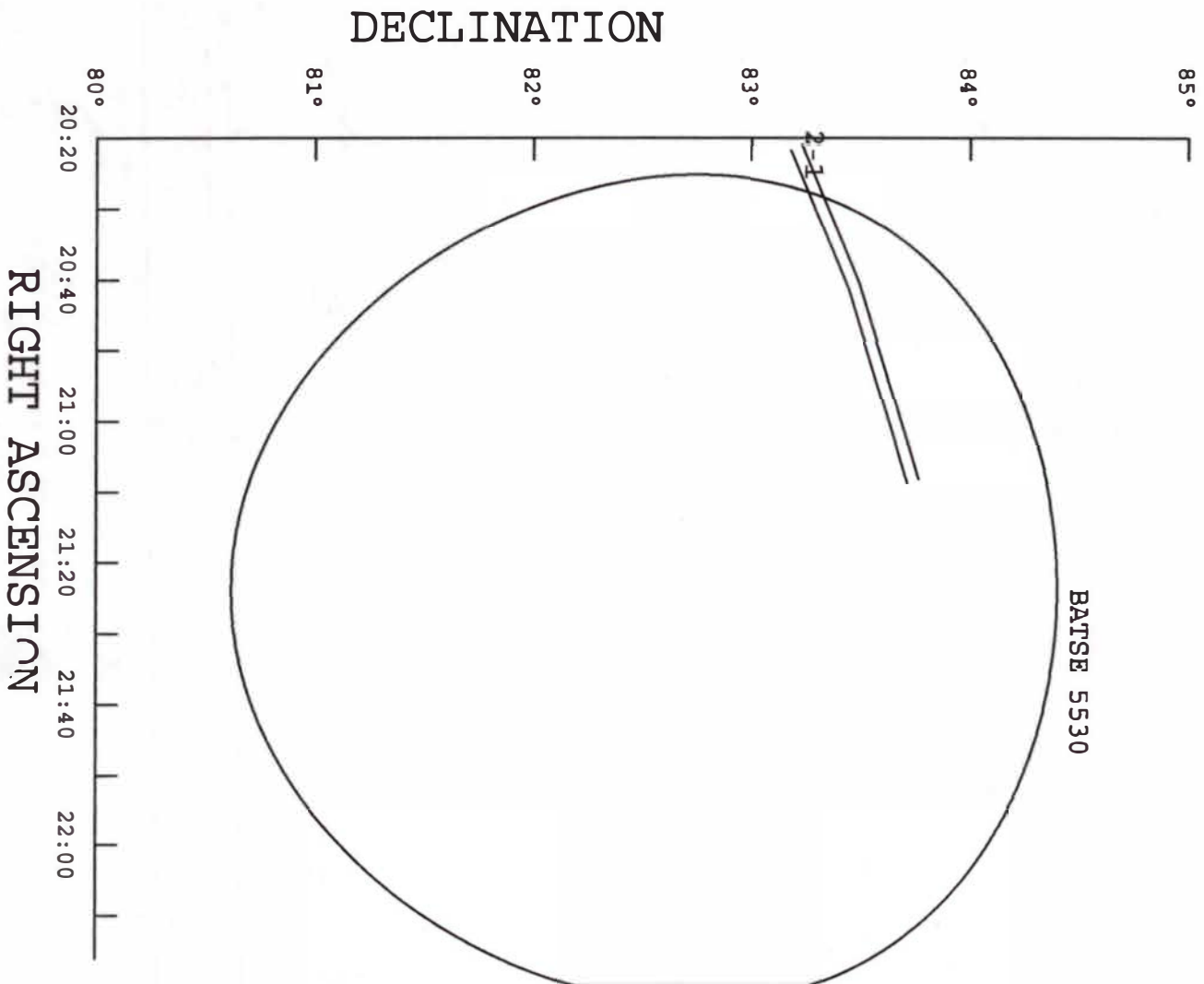
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 7, 1996 9:50

12/ 3/98



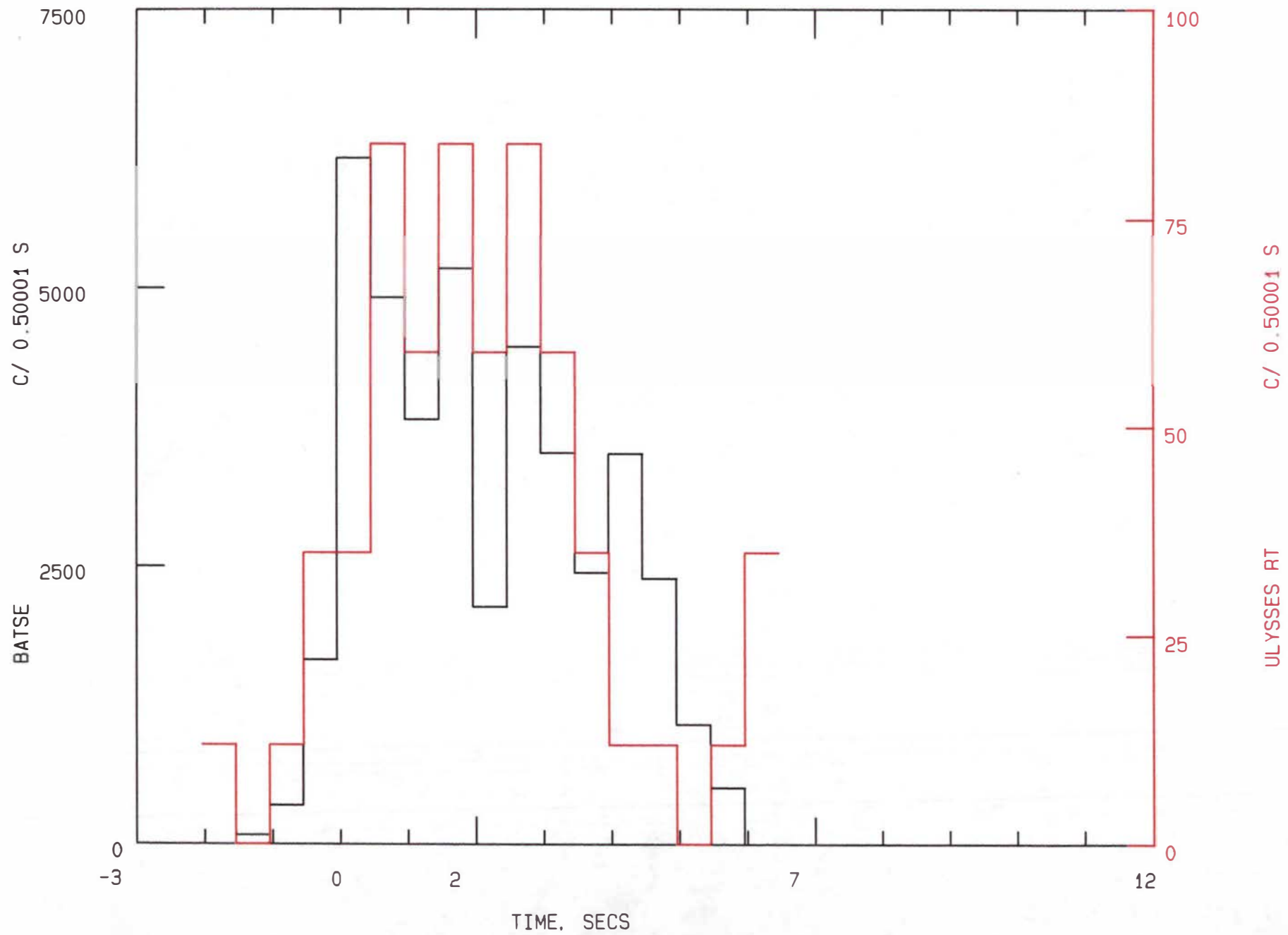
BATSE

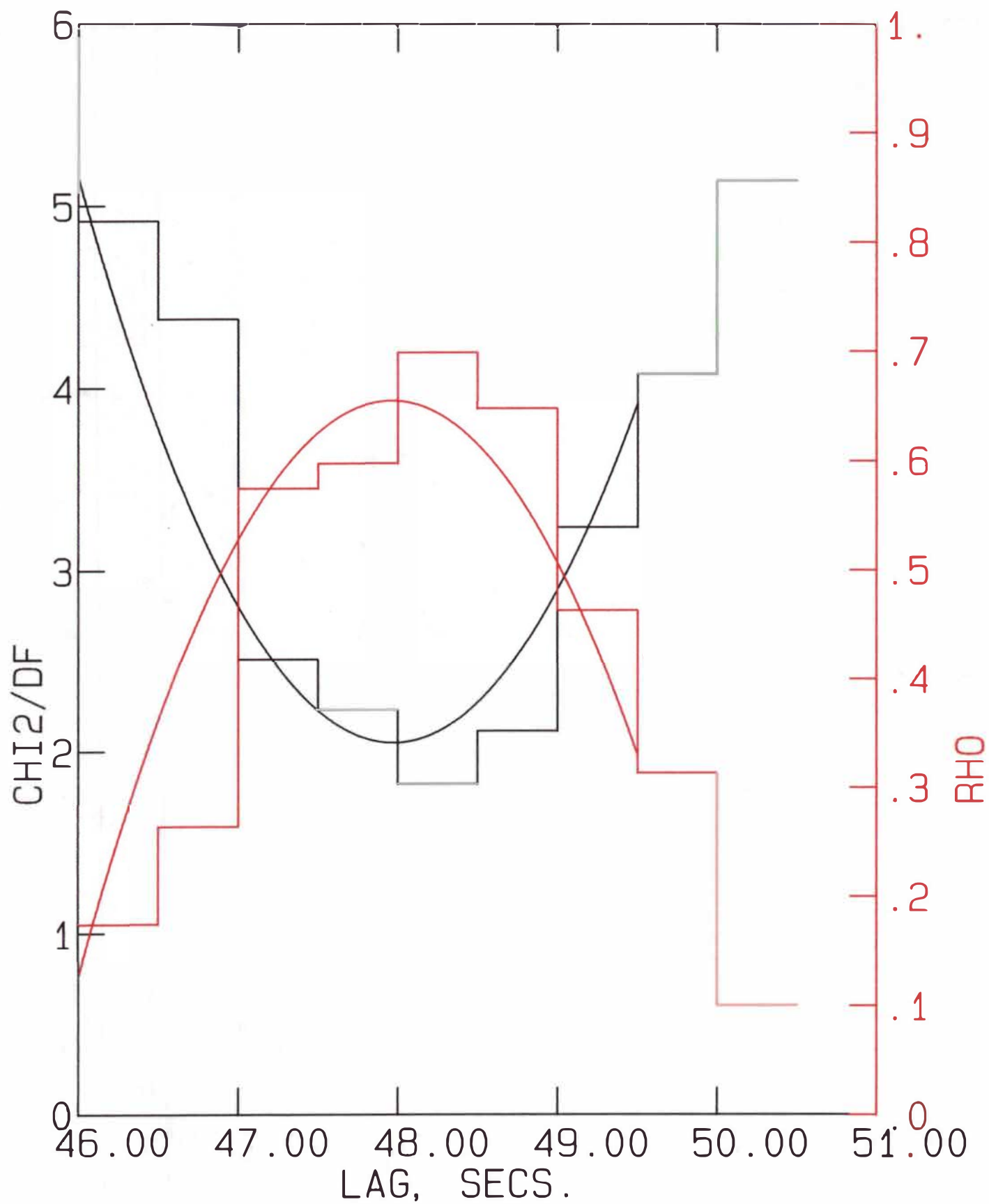
-ULYSSES RT CORRELATION

7/ 7/96

37000.266

12/ 3/98





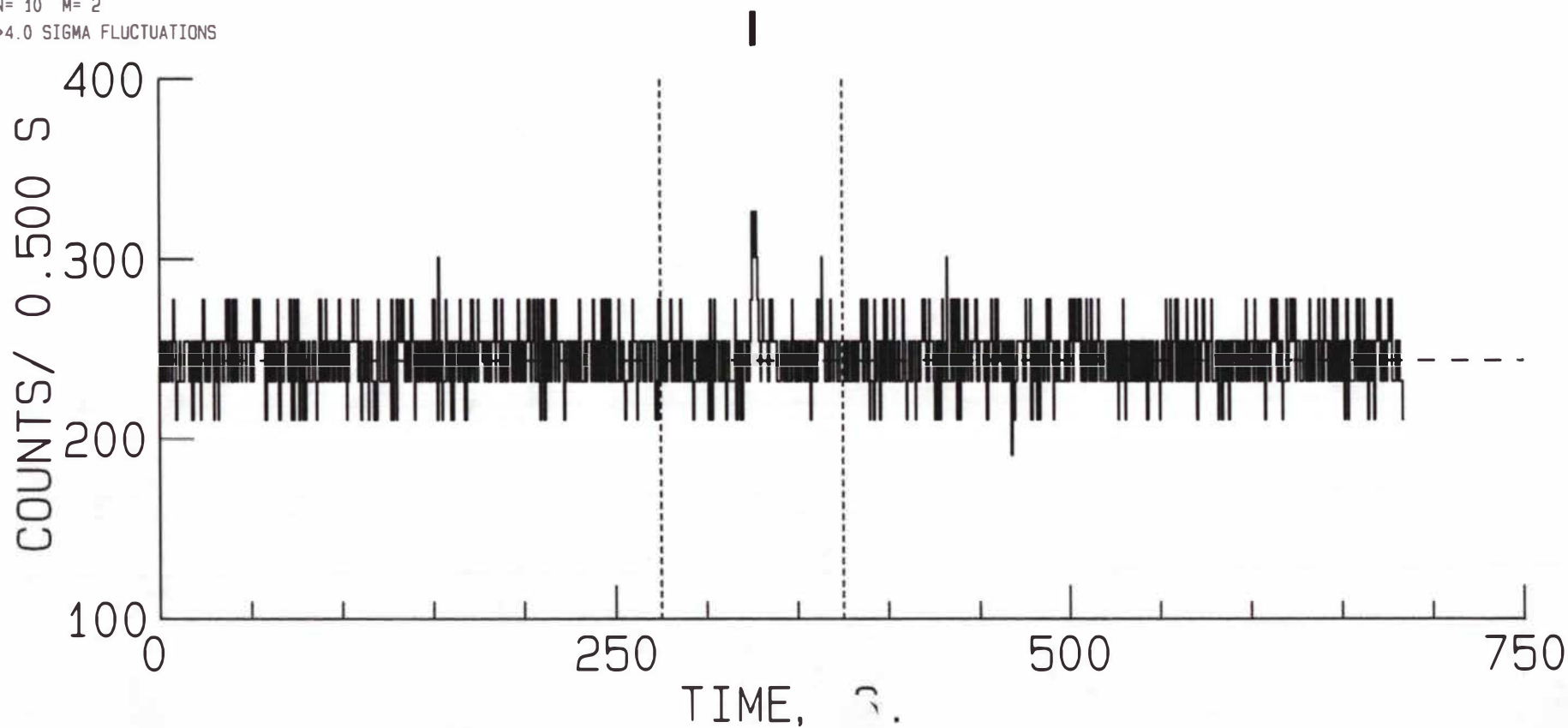
ULYSSES RT

12 / 3 / 98

7 / 7 / 96 35172.189 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



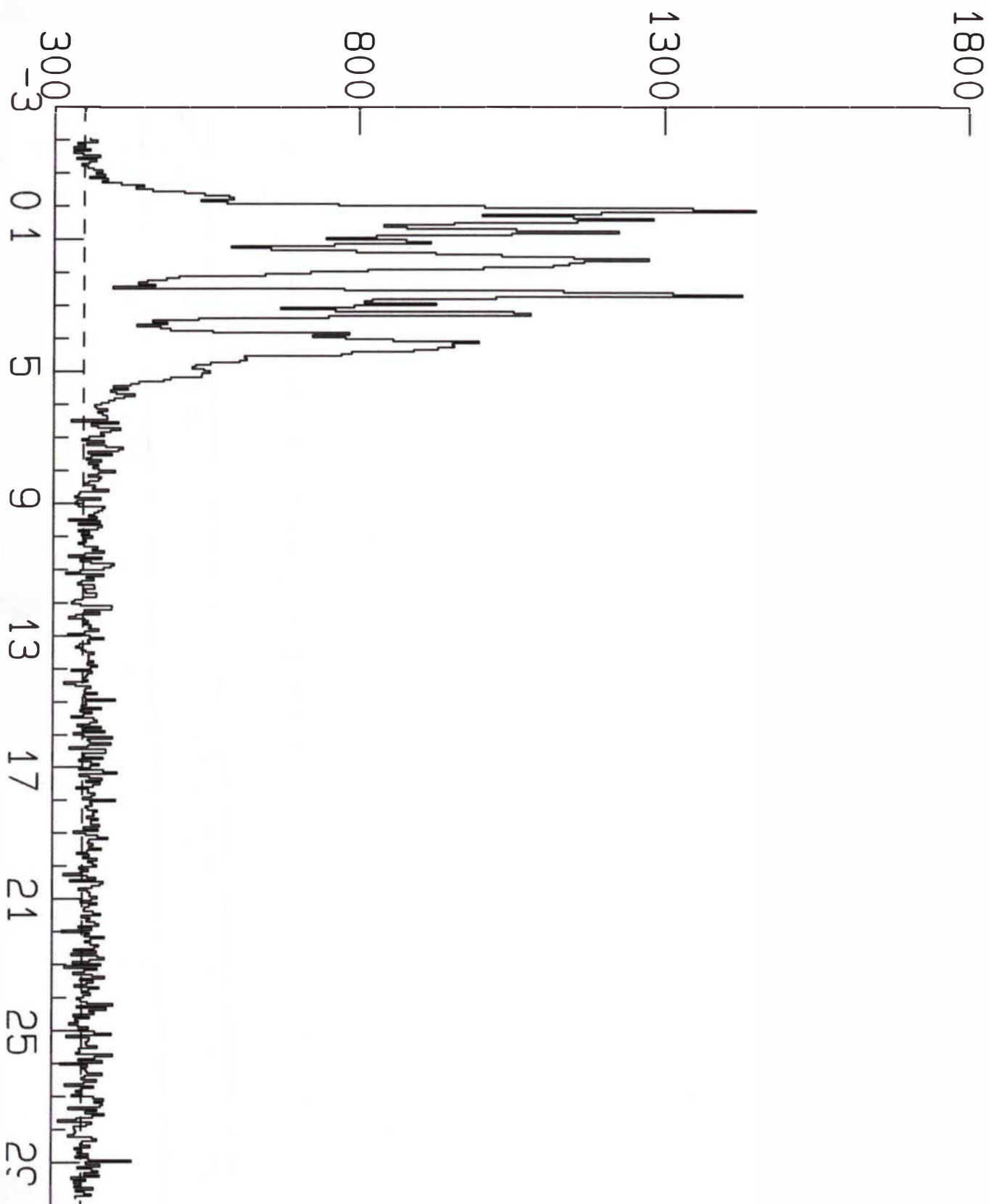
BATSE

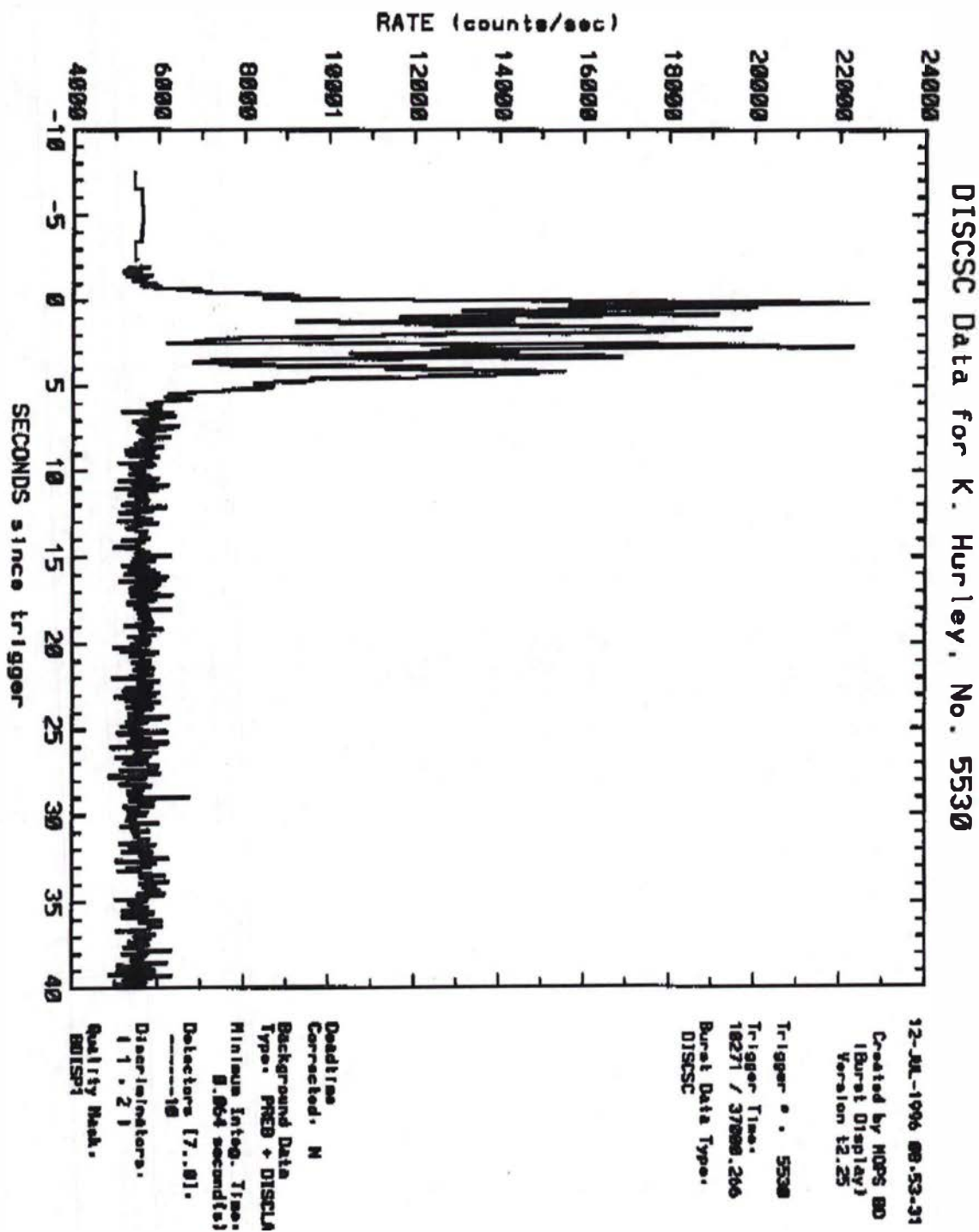
07/07/96

37000.266

25- 100 keV

COUNTS/0.064 S





From PANJEVG@ssl.msfc.nasa.gov Wed Jul 10 07:53 PDT 1996
From: PANJEVG@ssl.msfc.nasa.gov
Date: Wed, 10 Jul 1996 9:53:14 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5531

BATSEARCH PROGRAM

RI

BATSE BURST # 5531
EVENT OF 1996 JUL 7 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 44693. S. OR 12:24:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 189.000 -2.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 96 IS:
RA= 154.881 DEC= 45.893 DIST= 4.711 AU
BATSE-ULYSSES DISTANCE = 704694474. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=123.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1294.70 SECS.
CROSSING TIME AT ULYSSES IS 43398. S. OR 12:03:18 +/- 370.96 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 96 IS:
RA= 76.044 DEC= 23.007 DIST= 2.312 AU
MARS-BATSE DISTANCE = 345850464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 68.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 429.64 SECS.
CROSSING TIME AT MARS IS 45123. S. OR 12:32:02 +/- 192.41 SECONDS

BATSE BURST TRIGGER

NO.: 5531

TIME: TJD=0271 SECONDS=44693

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=107.6 AZIMUTH=317.4 ERROR=1.23 DEGREES

COMMENTS:

GRB LASTING ~22SEC. SMOOTH RISE AND FALL. NOT VISIBLE ABOVE 300KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5531	960707	10271	44693	6000	189	-02	22

Helio corr removed

Date: Mar 12 '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 starts*

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?

Ulysses blgd not correctly estimated by program - adjusted by hand

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

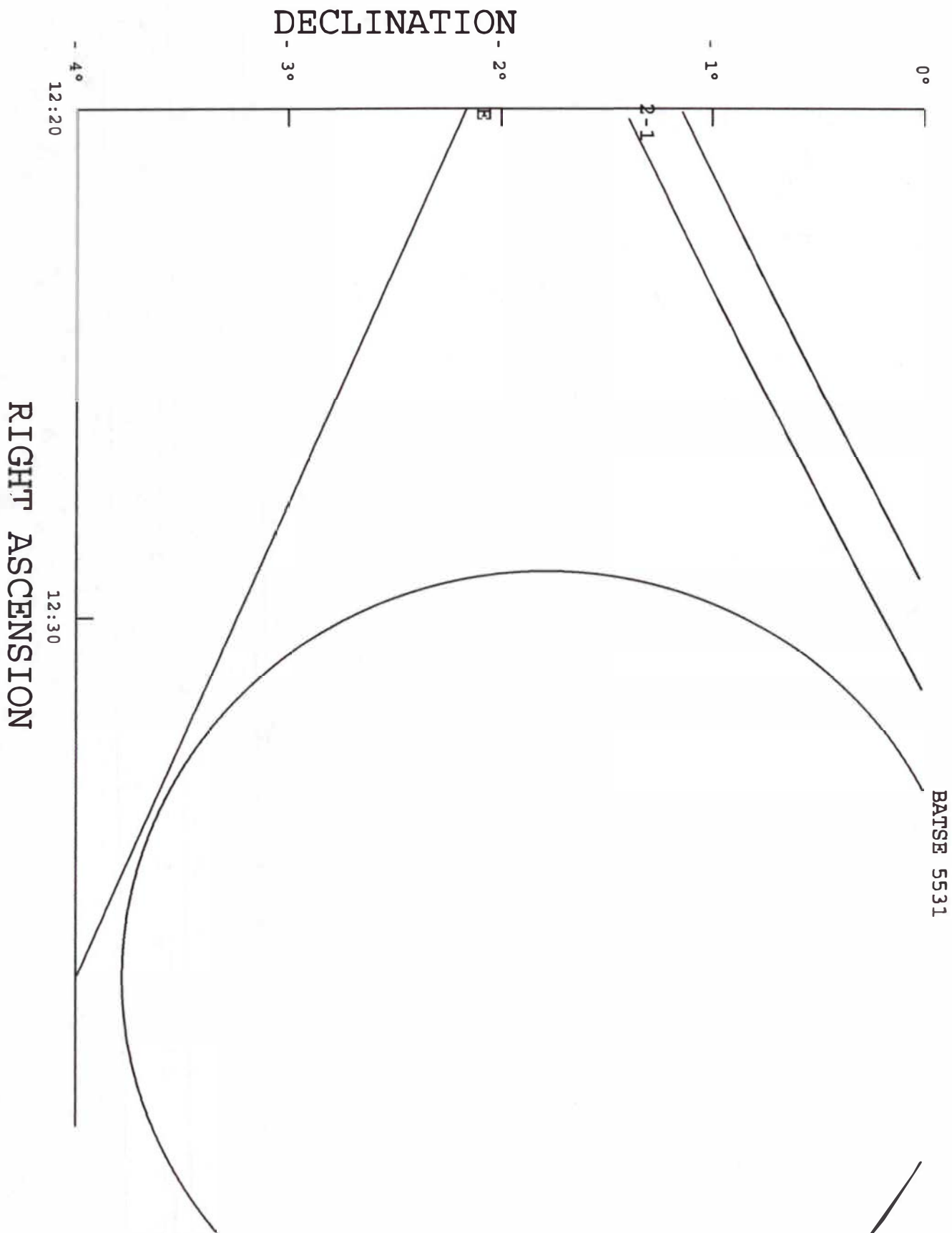
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 7, 1996 12:01

12/ 3/98



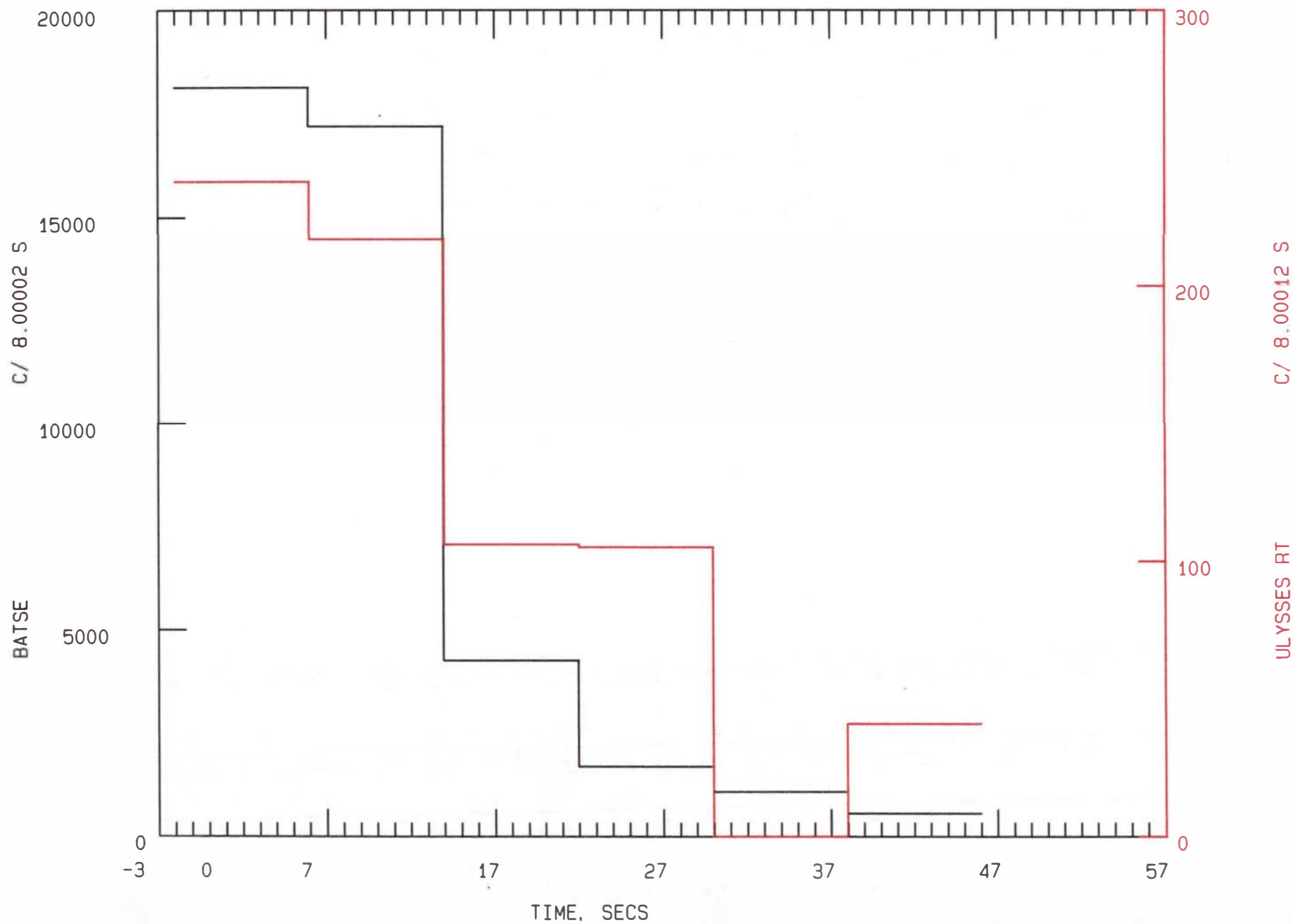
BATSE

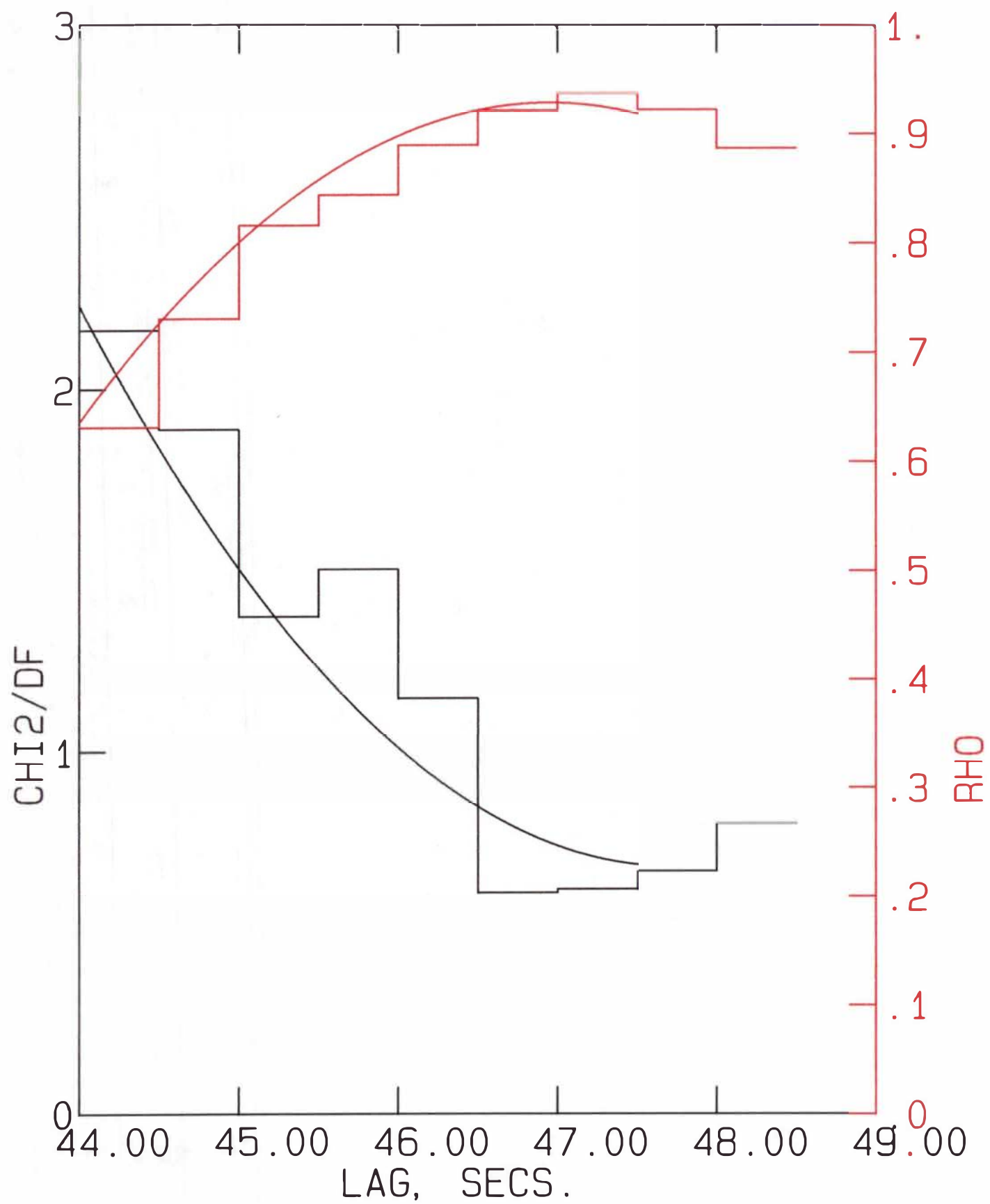
-ULYSSES RT CORRELATION

7/ 7/96

44693.450

12/ 3/98





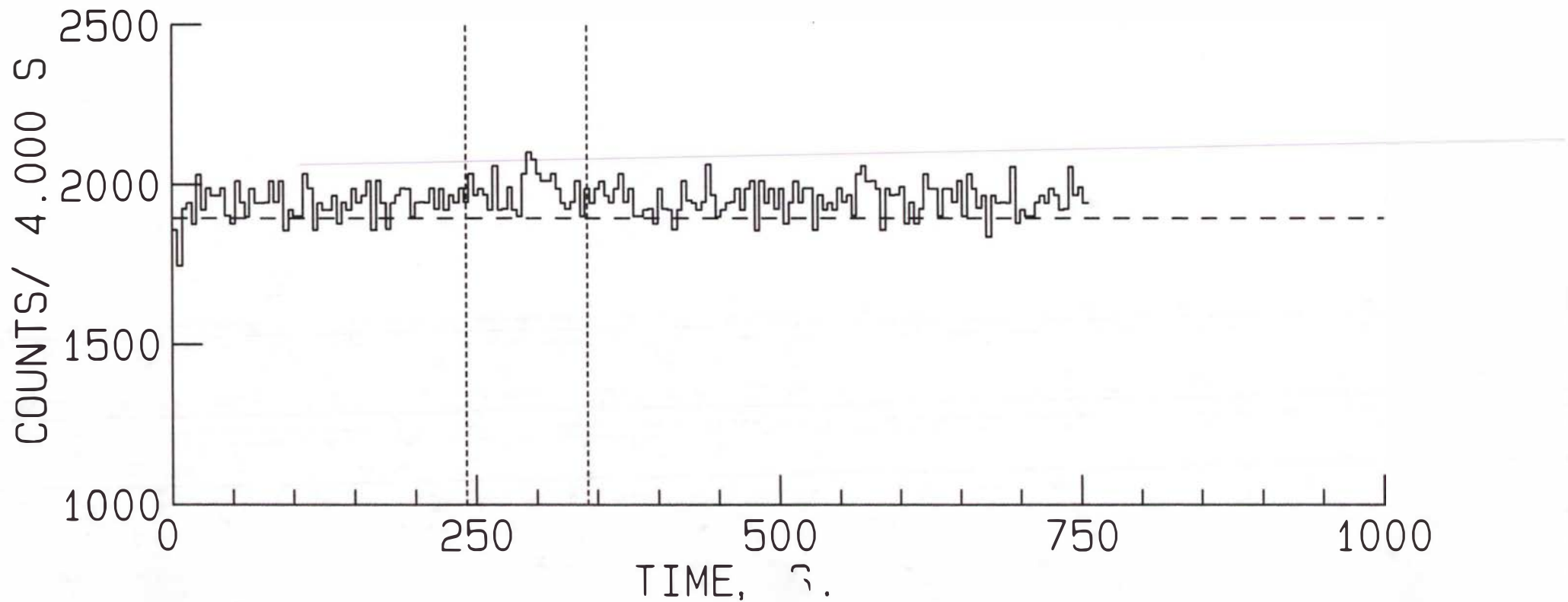
ULYSSES RT

12 / 3 / 98

7 / 7 / 96 43020.290 s

0.500 S INTERVALS REGROUPED BY 8

21- 145 keV



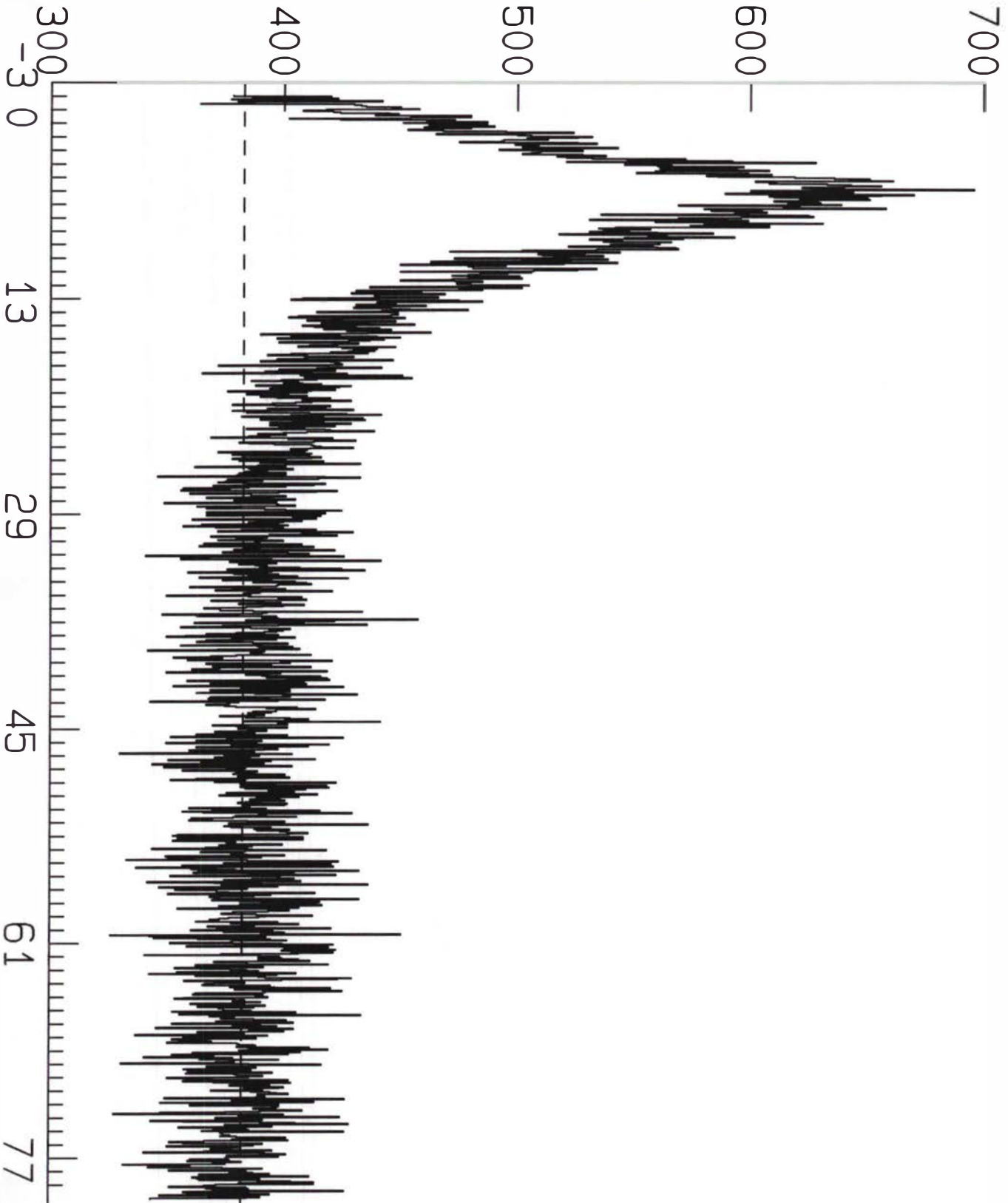
BATSE

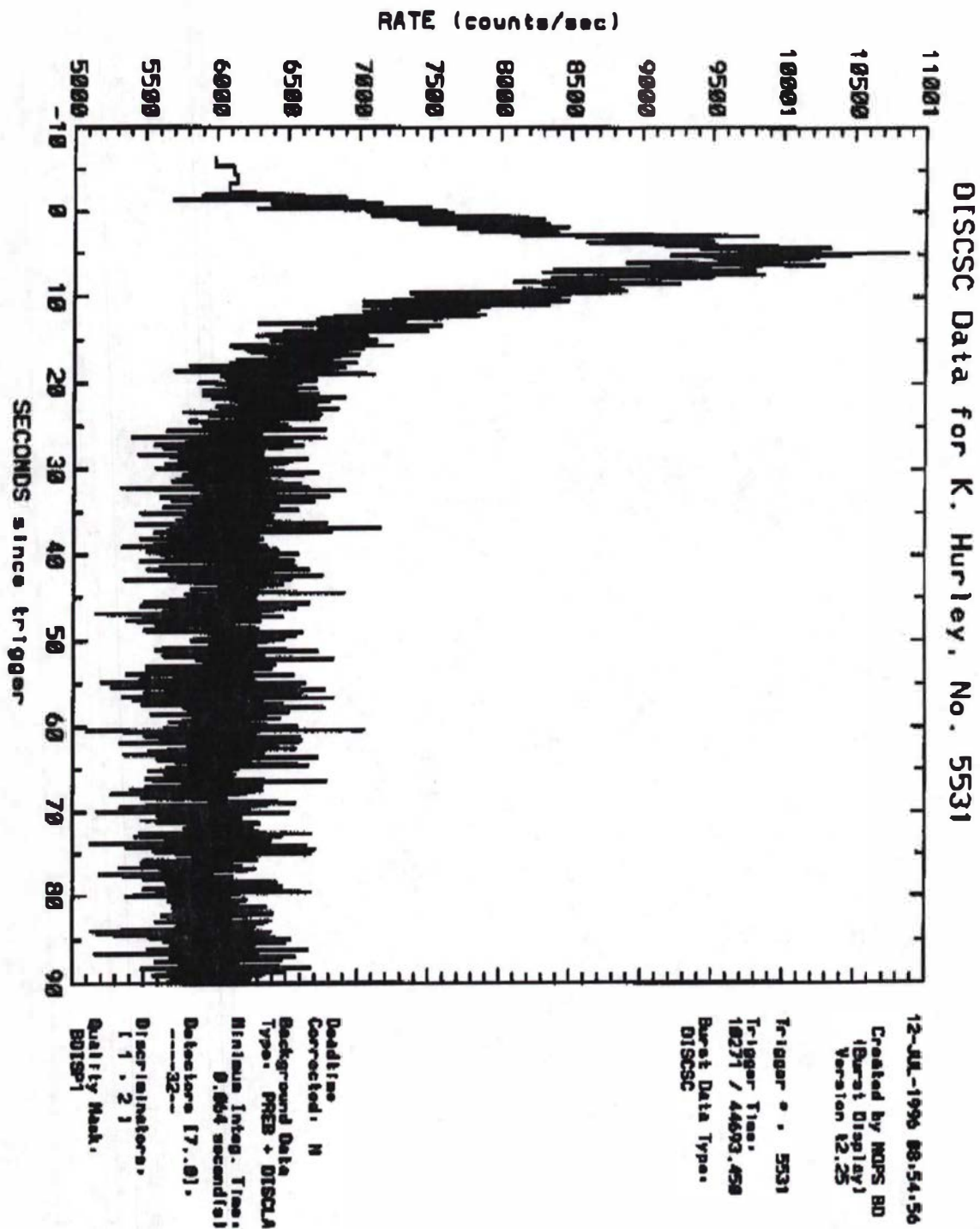
07/07/96

44693.450

25- 100 keV

COUNTS/0.064 S





From PANJEVG@ssl.msfc.nasa.gov Wed Jul 10 07:50 PDT 1996
From: PANJEVG@ssl.msfc.nasa.gov
Date: Wed, 10 Jul 1996 9:50:04 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5532

BATSEARCH PROGRAM

BATSE BURST # 5532 NO
EVENT OF 1996 JUL 7 DAY OF YEAR=189
EVENT CROSSING TIME AT BATSE : 59164. S. OR 16:26:04.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 161.000 -15.000
BATSE PEAK COUNTING RATE: 1200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 7/ 96 IS:
RA= 154.914 DEC= 45.859 DIST= 4.713 AU
BATSE-ULYSSES DISTANCE = 705004495. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=118.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1136.23 SECS.
CROSSING TIME AT ULYSSES IS 58028. S. OR 16:07:07 +/- 390.21 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 7/ 96 IS:
RA= 76.044 DEC= 23.007 DIST= 2.312 AU
MARS-BATSE DISTANCE = 345850464. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 26.53 SECS.
CROSSING TIME AT MARS IS 59191. S. OR 16:26:30 +/- 200.64 SECONDS

BATSE BURST TRIGGER

NO.: 5532

TIME: TJD=0271 SECONDS=59164

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=78.7 AZIMUTH=306.5 ERROR=9.63 DEGREES

COMMENTS:

GRB LASTING ~60SEC. WEAK BURST WITH COMPLEX STRUCTURE.

MARGINAL ABOVE 300KEV

ex

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5532	960707	10271	59164	1200	161	-15	60

BATSE #

5532

10 / 7 / 96

ULYSSES RT

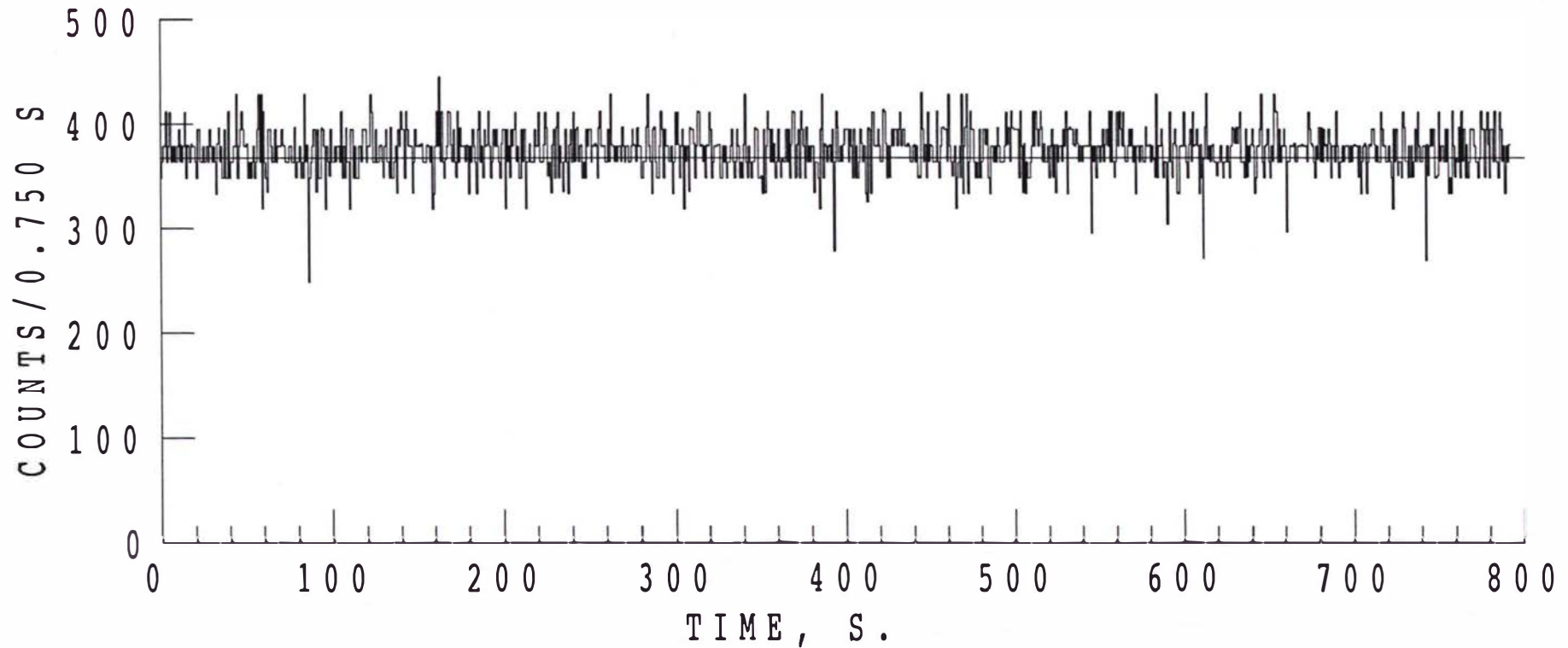
7 / 7 / 96 57636.230 s

0.250 S INTERVALS REGROUPED BY 3

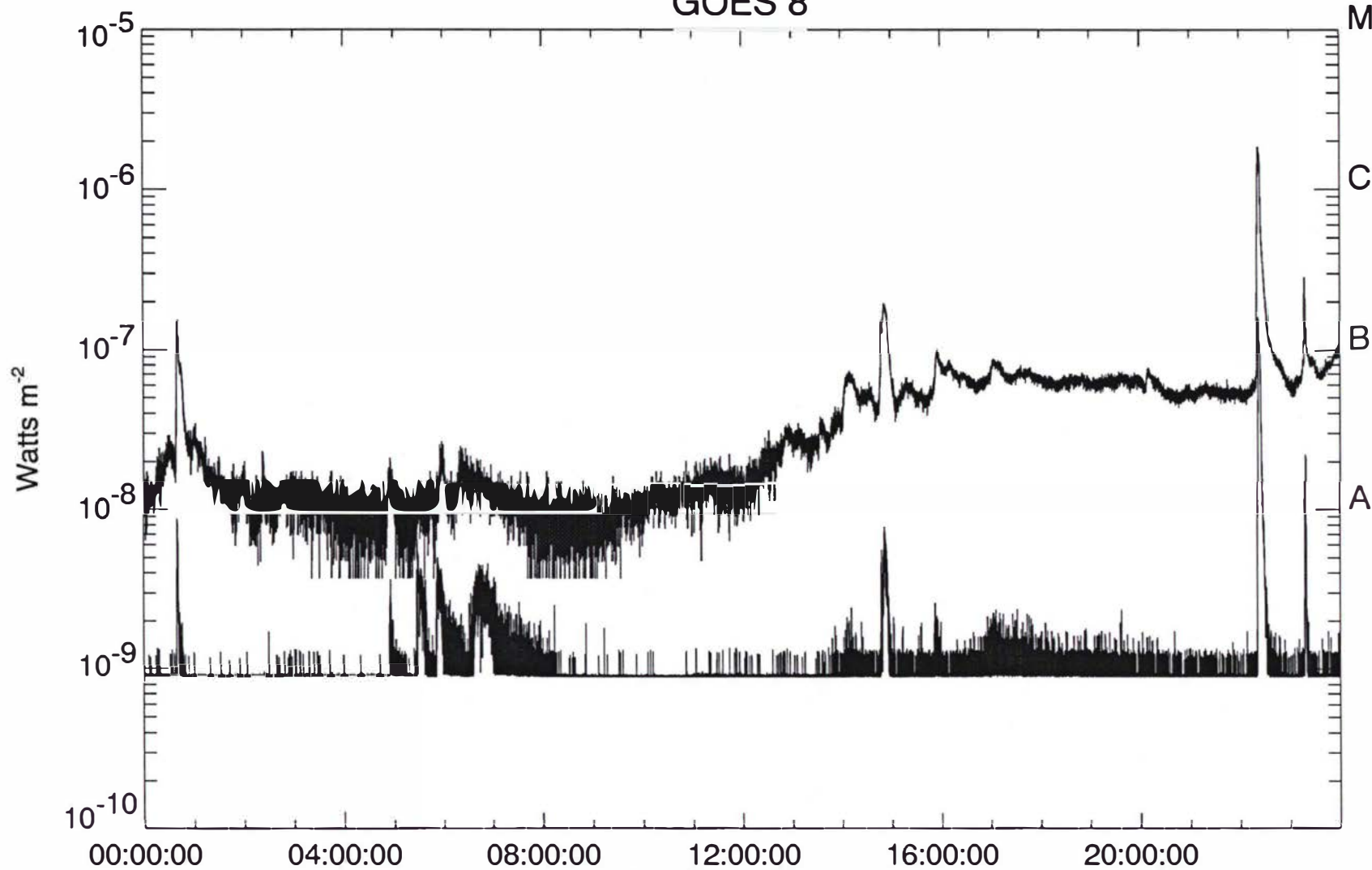
0 - 0 keV

M = 10 M = 2

>4.0 SIGMA FLUCTUATIONS



GOES 8



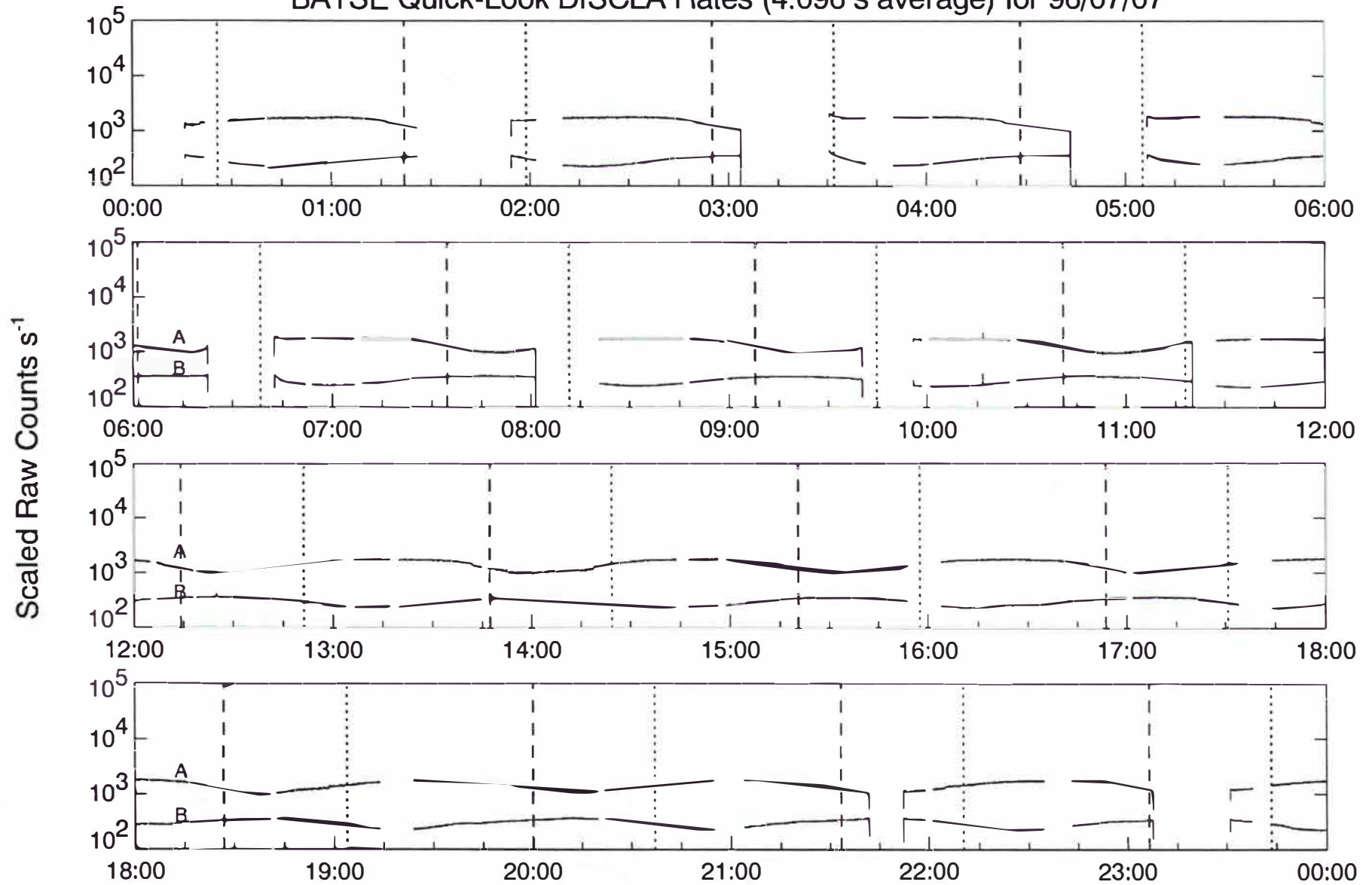
Data Start: 96/07/07, 0000:00

Plot created: 96/07/09, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/07



Current Time: 96/07/09, 1003 EDT

A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

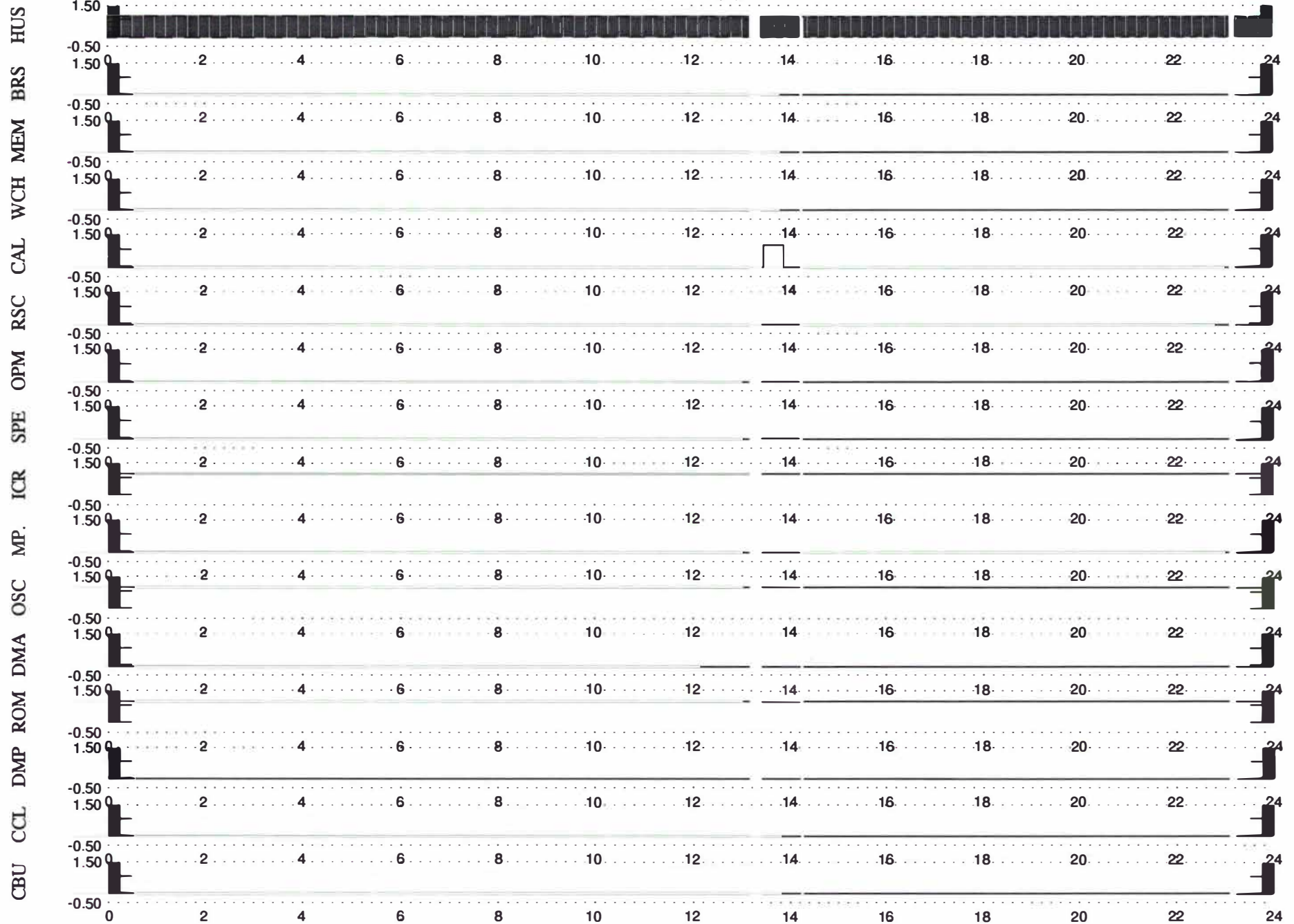
Dotted line: Day entry

Dashed line: Night entry

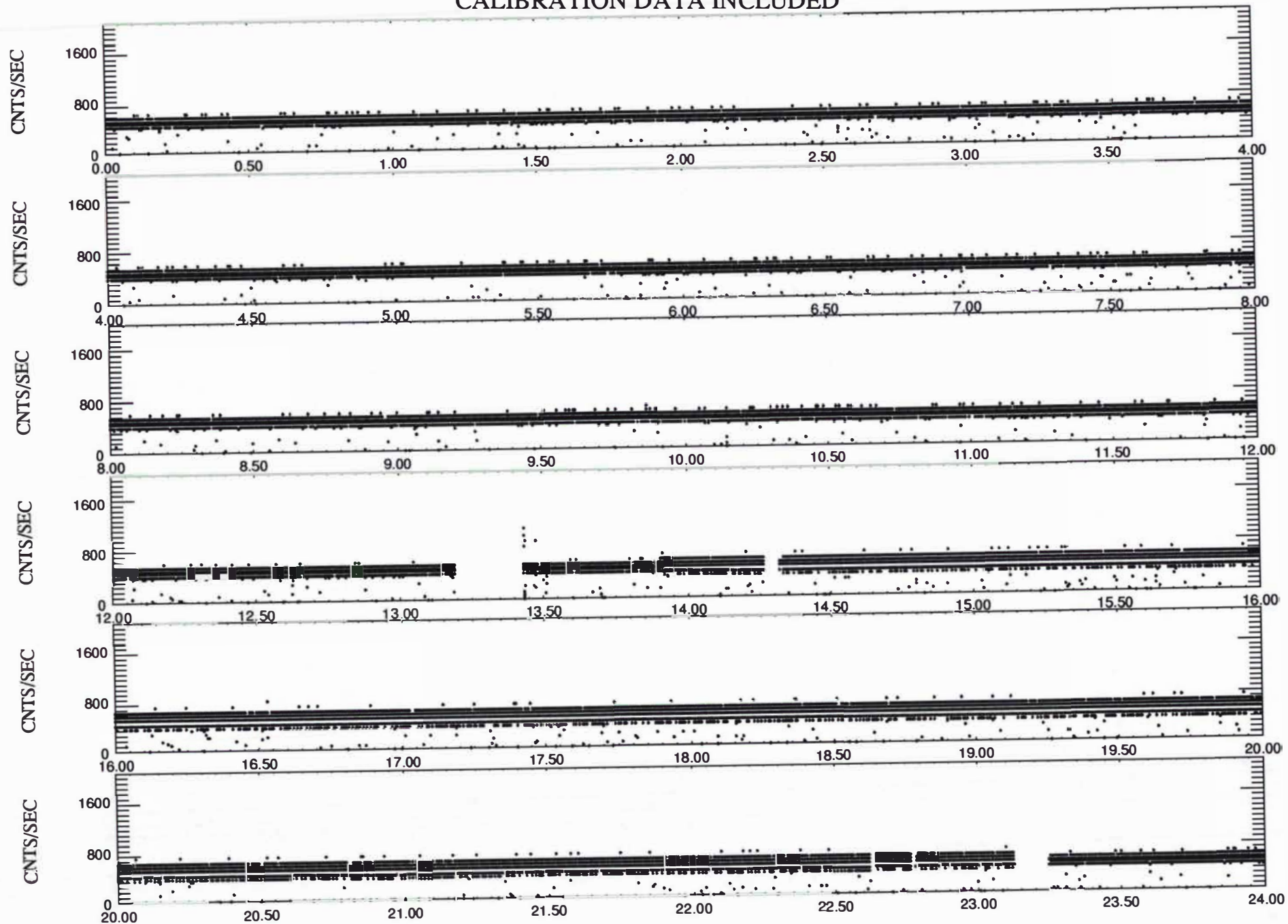
* Solar Burst Trigger

+ Solar Flare

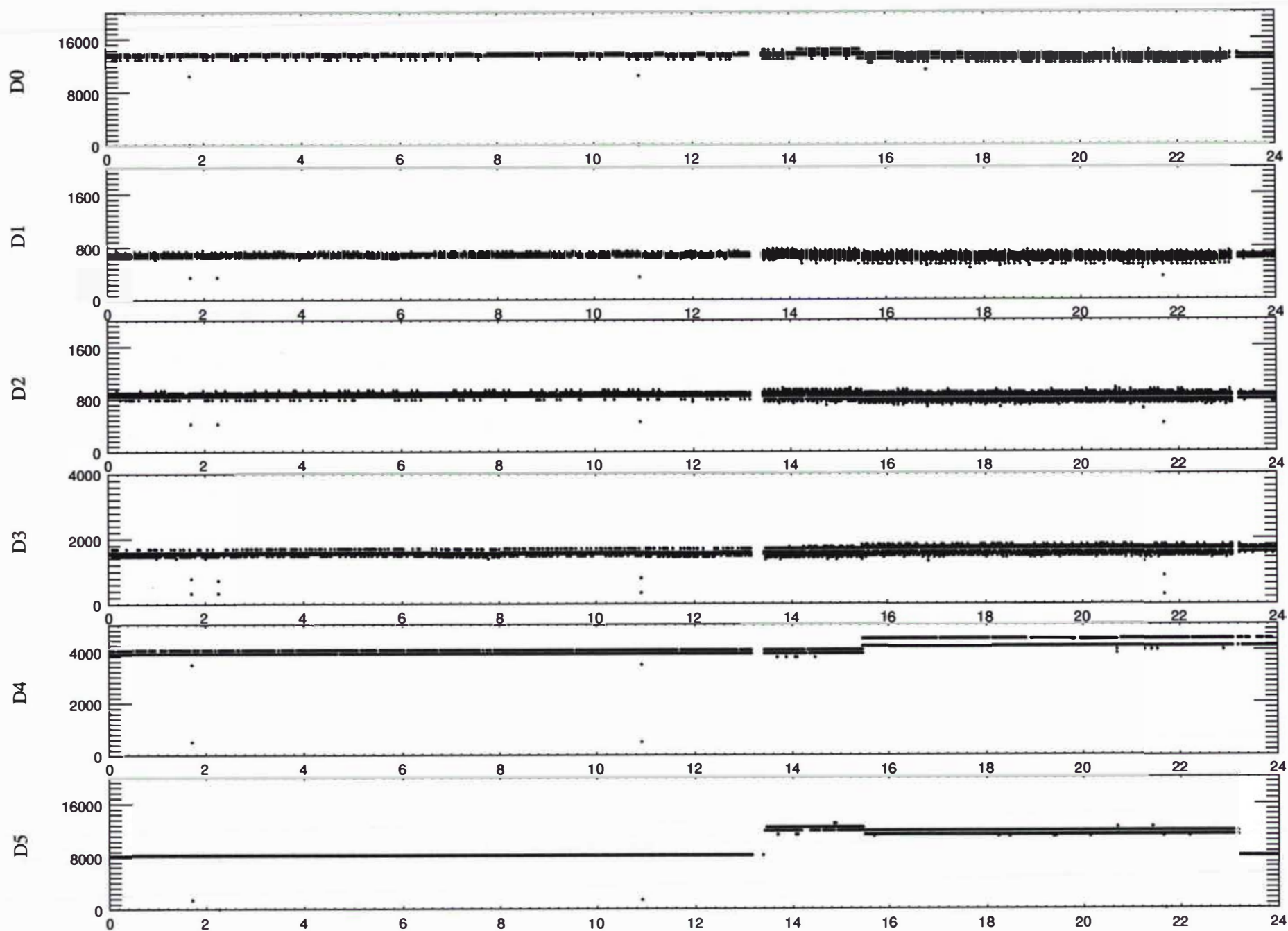
NO BURST (8)



CALIBRATION DATA INCLUDED



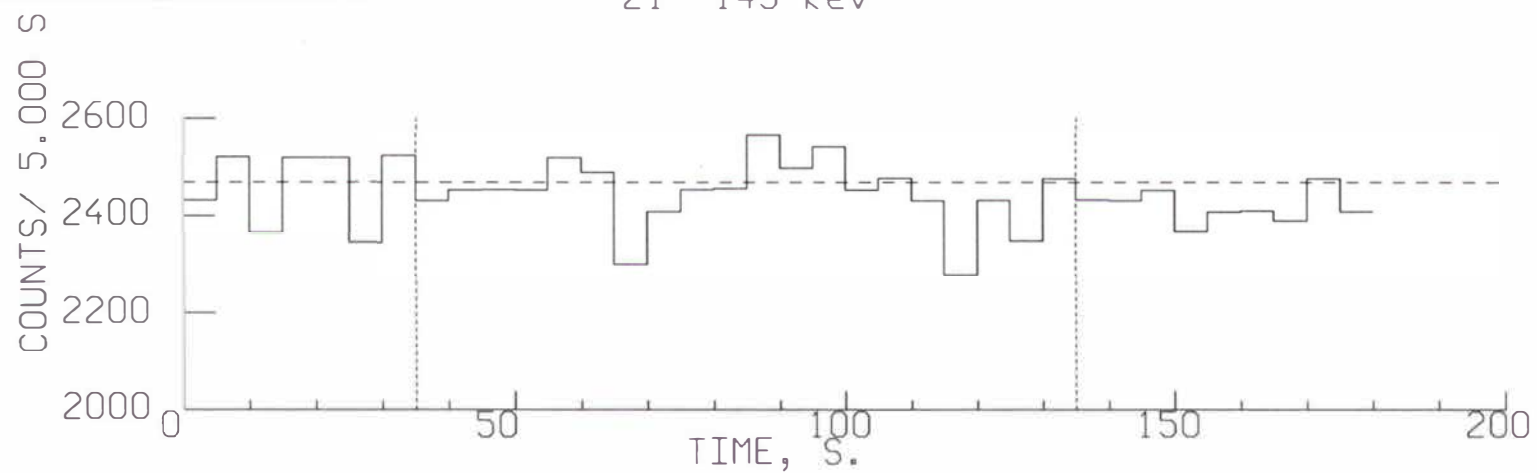
UNIVERSAL TIME



UNIVERSAL TIME

ULYSSES RT
8/ 7/96 1620.378 s
0.500 S INTERVALS REGROUPED BY 10
21-145 keV

4/10/11



KONUS 19960708 01708

ULYSSES RT

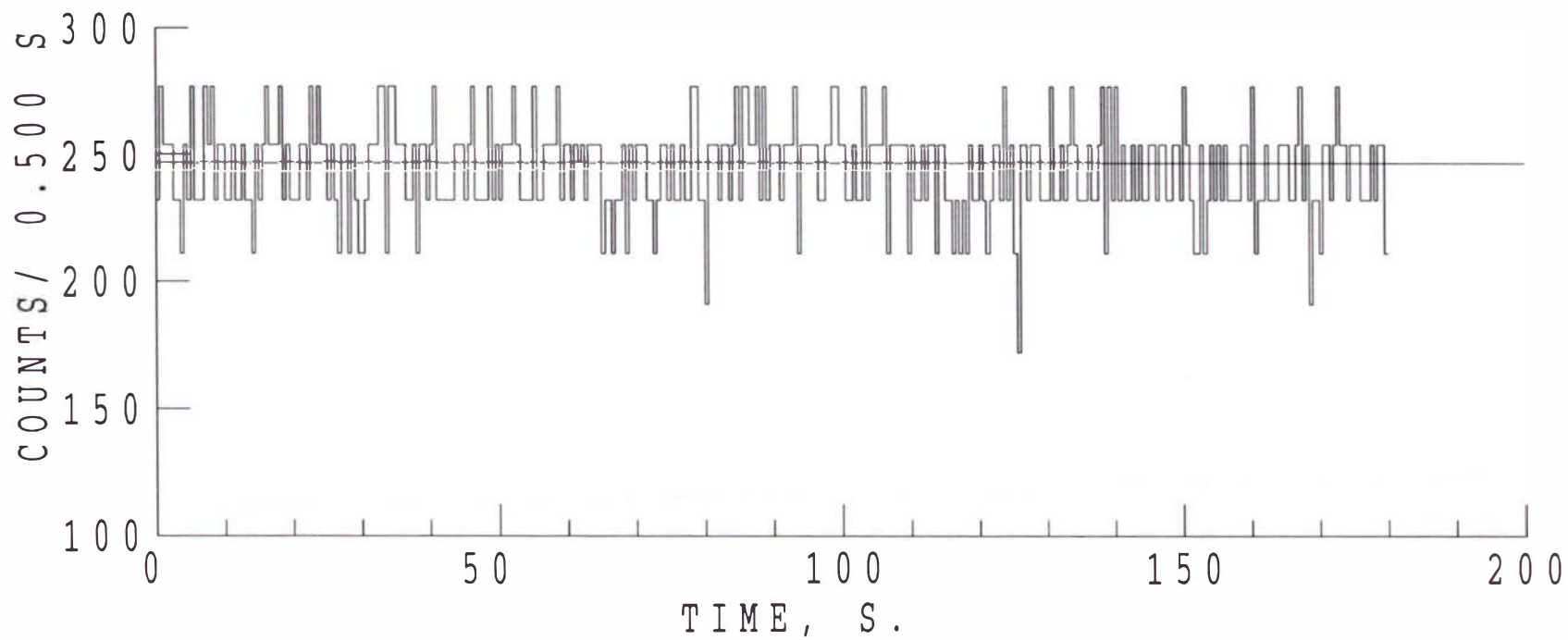
03 / 10 / 11

08 / 07 / 96 1620.378 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

29 / 01 / 00

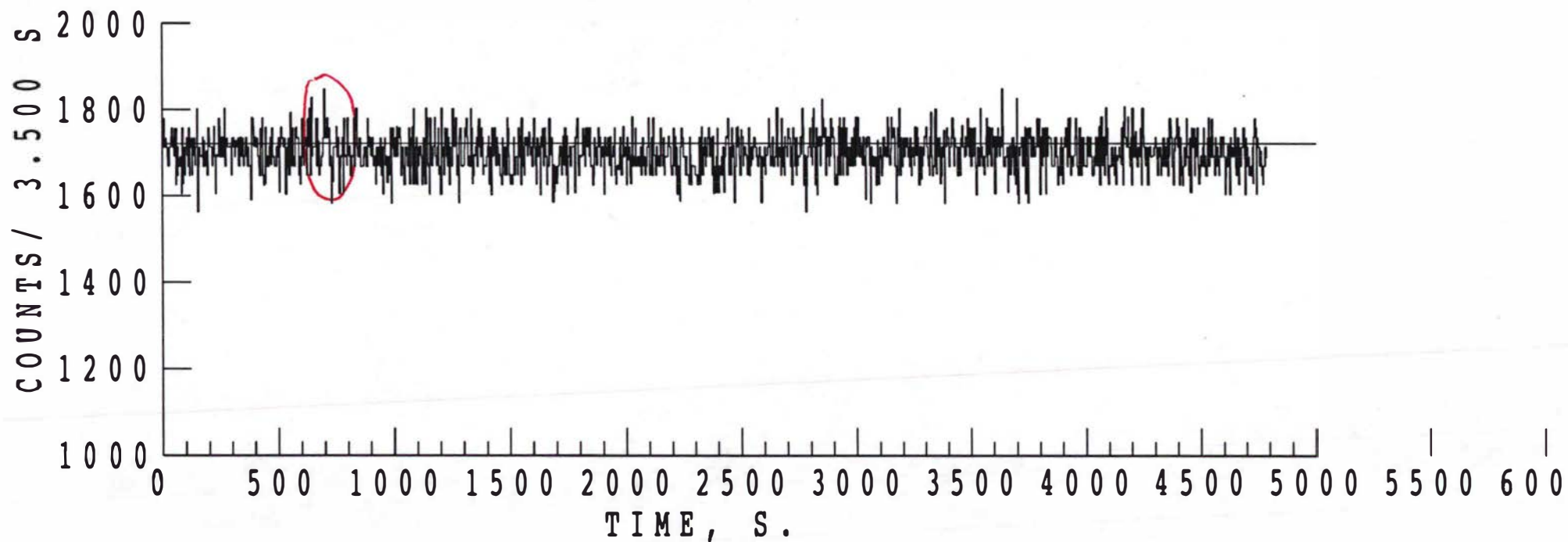
08/07/96 1008.372 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLLES.MSFC.NASA.GOV Tue Jul 9 11:34 PDT 1996
Date: Tue, 9 Jul 1996 13:33:55 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5533

BATSEARCH PROGRAM

BATSE BURST # 5533
EVENT OF 1996 JUL 8 DAY OF YEAR=190
EVENT CROSSING TIME AT BATSE : 54306. S. OR 15:05:06.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 222.000 -8.000
BATSE PEAK COUNTING RATE: 21500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 7/ 96 IS:
RA= 155.095 DEC= 45.670 DIST= 4.724 AU
BATSE-ULYSSES DISTANCE = 706739787. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -405.20 SECS.
CROSSING TIME AT ULYSSES IS 53901. S. OR 14:58:20 +/- 447.04 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 7/ 96 IS:
RA= 76.791 DEC= 23.083 DIST= 2.310 AU
MARS-BATSE DISTANCE = 345519904. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 36.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 925.13 SECS.
CROSSING TIME AT MARS IS 55231. S. OR 15:20:31 +/- 133.38 SECONDS

BATSE BURST TRIGGER

NO.: 5533

TIME: TJD=0272 SECONDS=54306

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

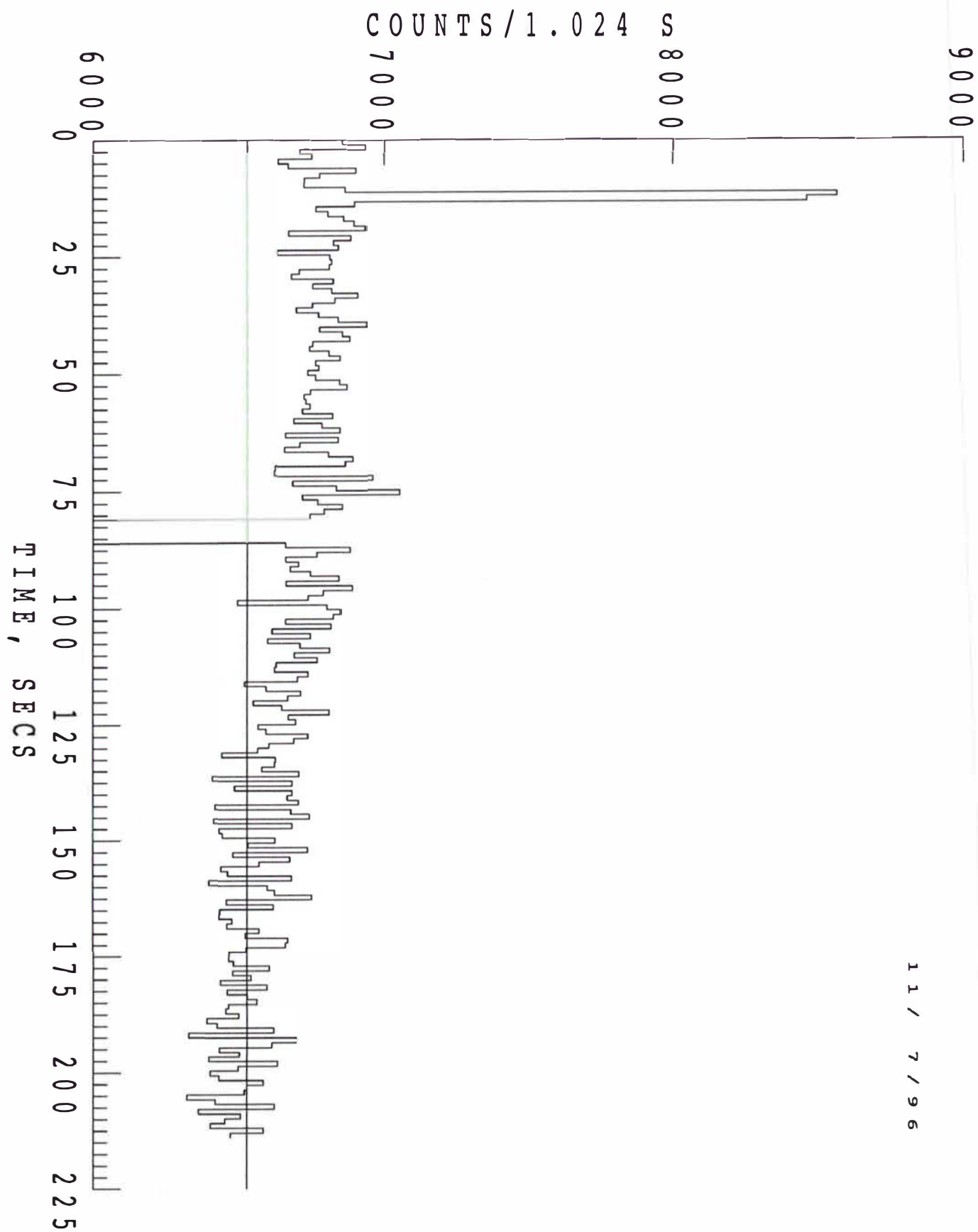
LOCATION: ZENITH=138.5 AZIMUTH=303.2 ERROR=2.1 DEGREES

COMMENTS:

GRB LASTING 1 SEC. HARD SPECTRUM. ONE PEAK WITH SHARP RISE AND DECAY TIME.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5533	960708	10272	54306	21500	222	-08	1

BACODINE 5533 08/07/96 54294.217
25 - 100 keV



BATSE #

5533

10 / 7 / 96

ULYSSES RT

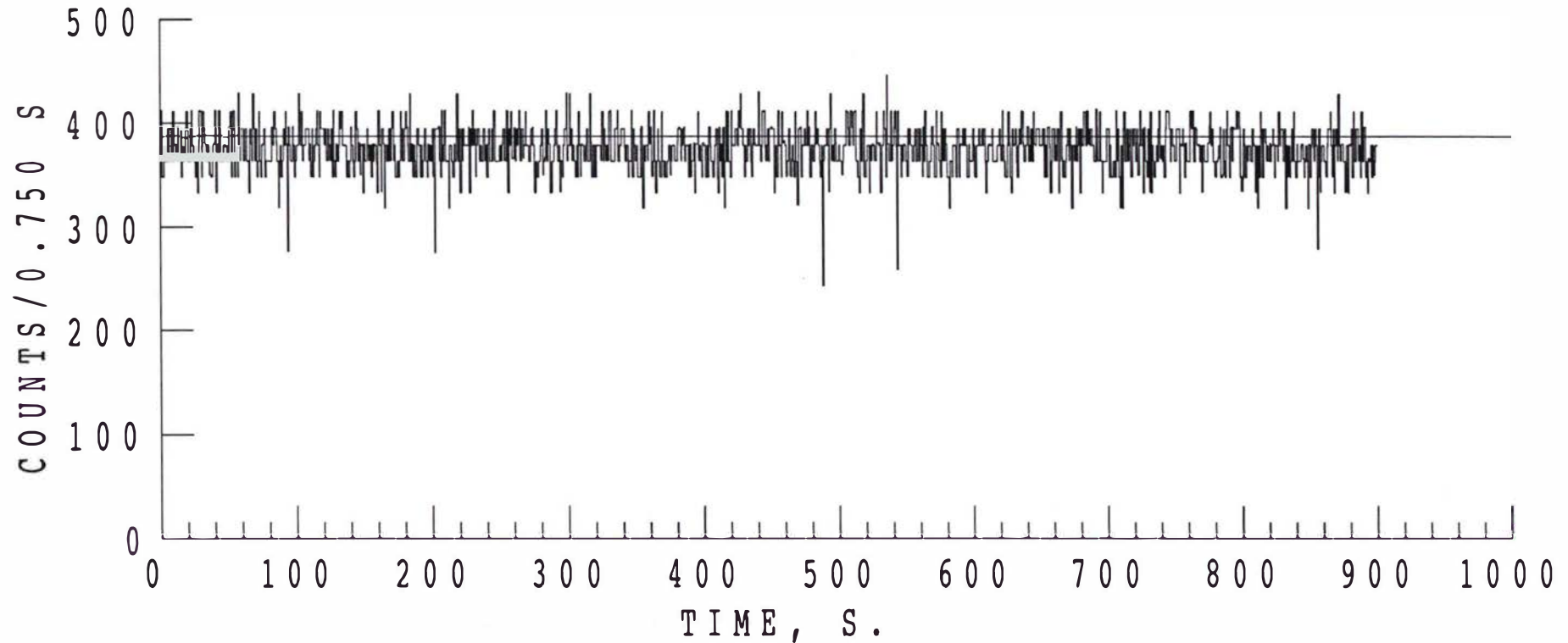
8 / 7 / 96 53460.059 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From WOODSP@ssl.msfc.nasa.gov Tue Jul 9 11:36 PDT 1996
Return-Path: <WOODSP@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA12325; Tue, 9 Jul 1996 11:36:18 -0700
n: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 9 Jul 1996 13:36:12 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <960709133612.20402ef4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5534
Content-Type: text
Content-Length: 1135
Status: R

BATSEARCH PROGRAM

BATSE BURST # 5534
EVENT OF 1996 JUL 8 DAY OF YEAR=190
EVENT CROSSING TIME AT BATSE : 72572. S. OR 20:09:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 307.000 10.000
BATSE PEAK COUNTING RATE: 16000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 7/ 96 IS:
RA= 155.136 DEC= 45.628 DIST= 4.727 AU
BATSE-ULYSSES DISTANCE = 707126992. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1139.69 SECS.
CROSSING TIME AT ULYSSES IS 73712. S. OR 20:28:31 +/- 425.84 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 7/ 96 IS:
RA= 76.791 DEC= 23.083 DIST= 2.310 AU
MARS-BATSE DISTANCE = 345519904. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 589.78 SECS.
CROSSING TIME AT MARS IS 73162. S. OR 20:19:21 +/- 180.87 SECONDS

BATSE BURST TRIGGER

NO.: 5534

TIME: TJD=0272 SECONDS=72572

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=134.6 AZIMUTH=131.5 ERROR=0.5 DEGREES

COMMENTS:

^B LASTING 12 SEC. SINGLE PULSE WITH FRED STRUCTURE. VISIBLE ABOVE
J KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5534	960708	10272	72572	16000	307	+10	12

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RT	5277
96	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
96	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RT	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search ± 1750	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RT KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search ± 1750	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RT KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA ± 1750	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search ± 1750	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RT	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA ± 1750	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RT	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RT KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search ± 2050	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search ± 2050	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search ± 2050	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search ± 2050	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search ± 2050	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RT	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search ± 2050	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search ± 2050	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search ± 2100	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RT	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RT	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search ± 2100	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search ± 2100	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search ± 2100	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RT KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search ± 2100	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RT	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RT	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RT	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RT	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search ± 2100 RT	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search ± 2350	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RT	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search ± 2350	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search ± 2350	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RT	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RT	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 search	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 search	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 Search	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

Helio corr removed

Date: Oct 17 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

- ☐ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)? *N/A*
- ☒ Does T_0 in data file agree with T_0 in plot?
- ☒ 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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

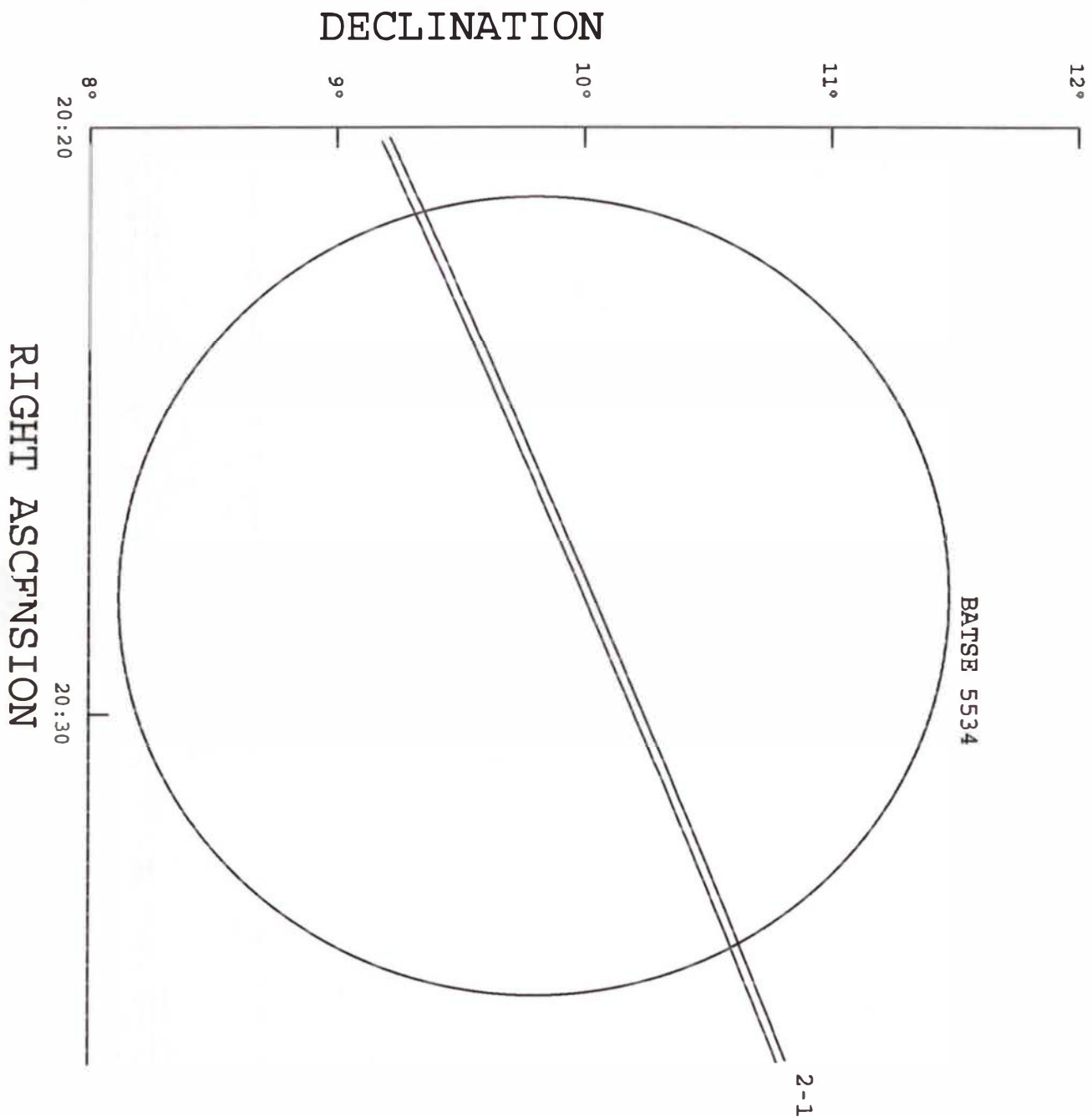
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 8, 1996 20:27

17/10/97



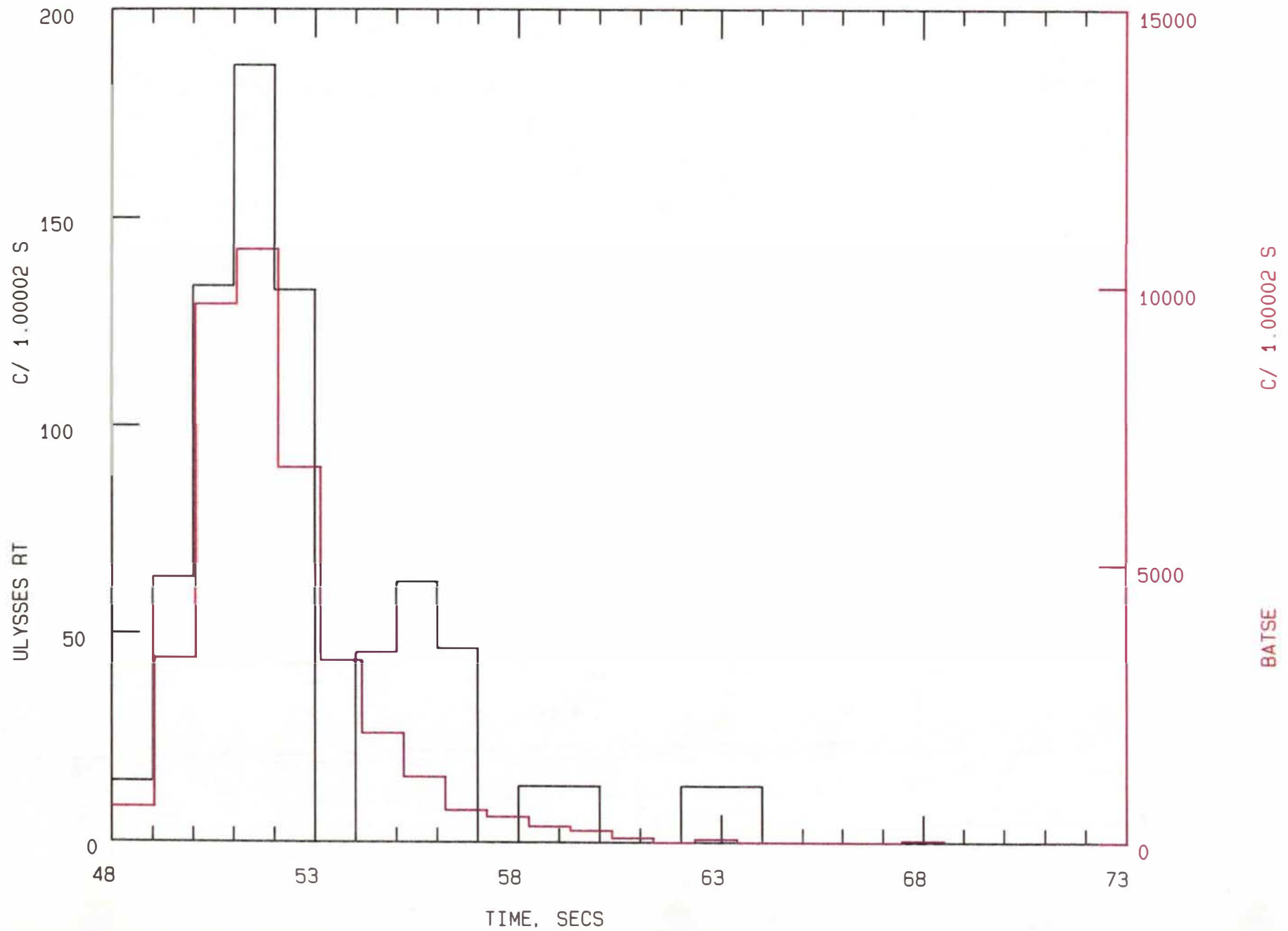
ULYSSES RT-BATSE

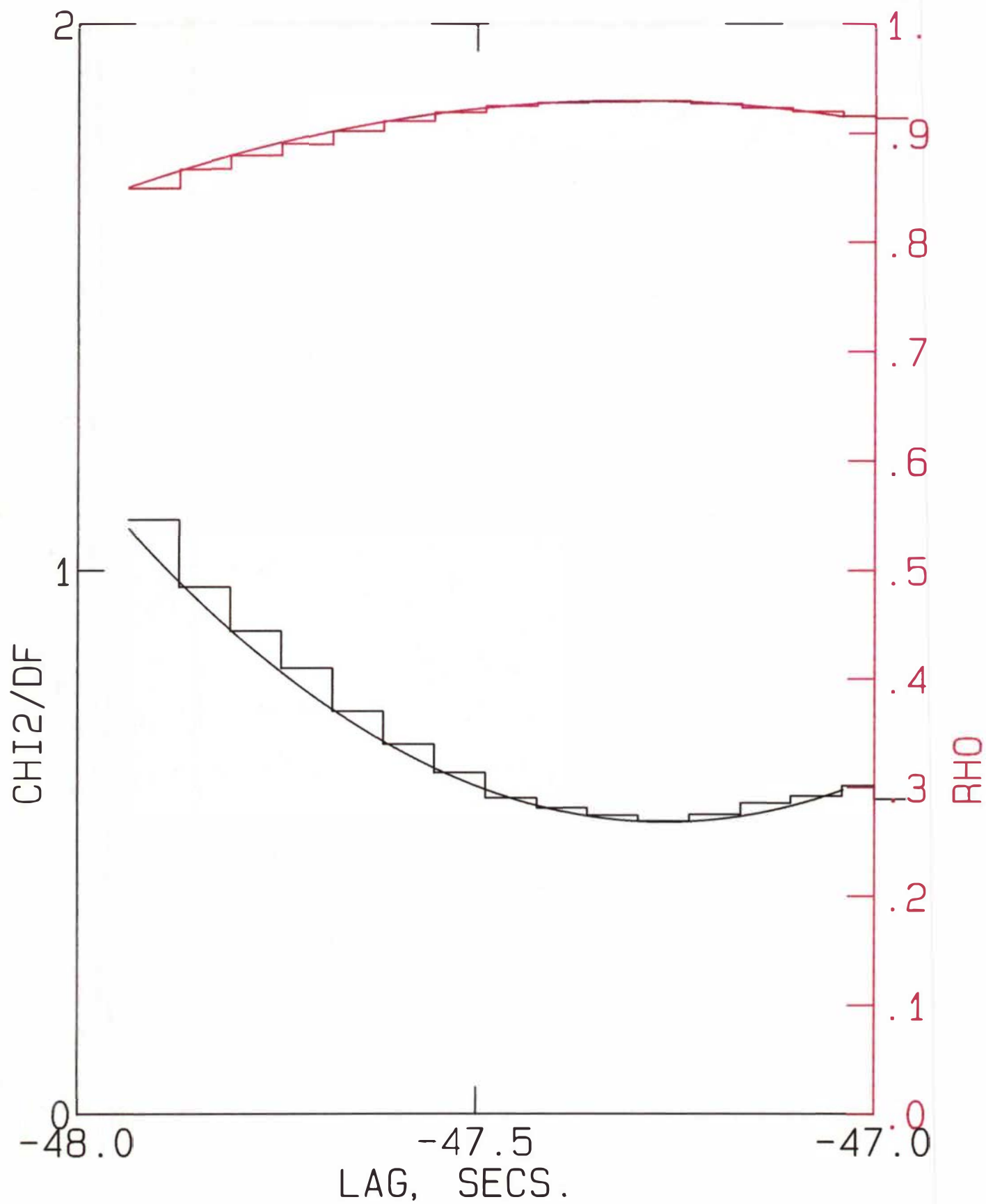
CORRELATION

8/ 7/96

73652.986

17/10/97





ULYSSES RT

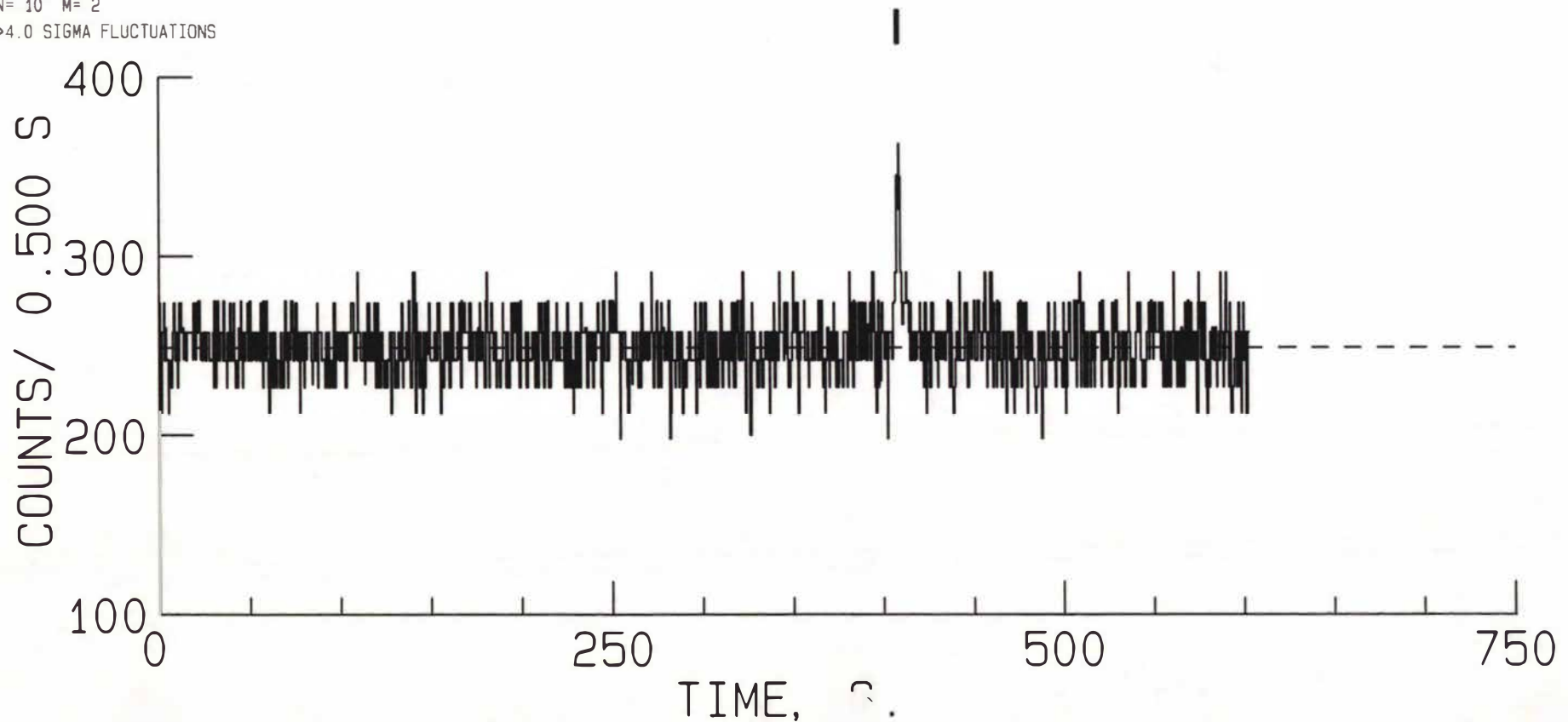
17/10/97

8/ 7/96 73296.071 s

0.250 S INTERVALS REGROUPED BY 2

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



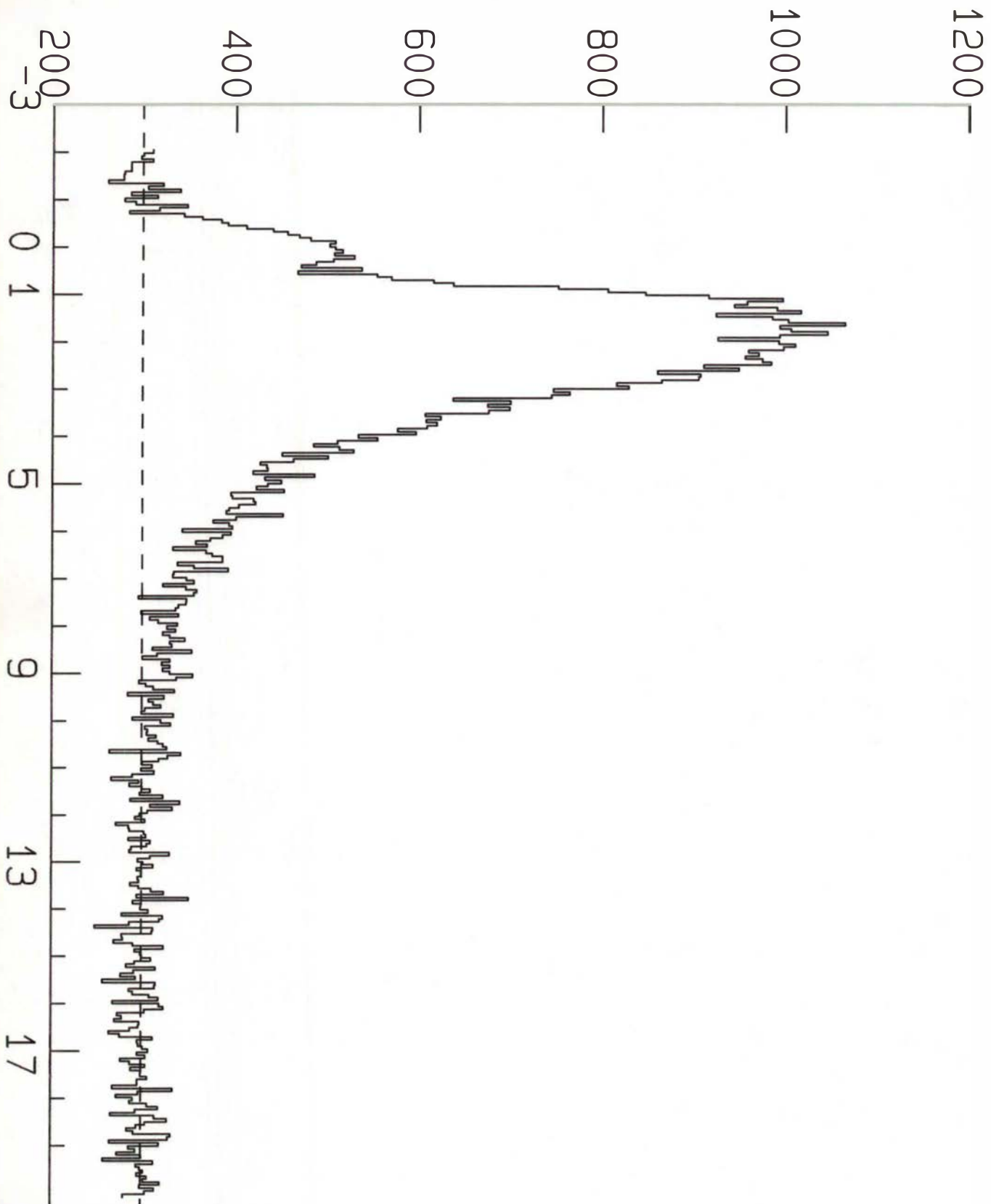
BATSE

08/07/96

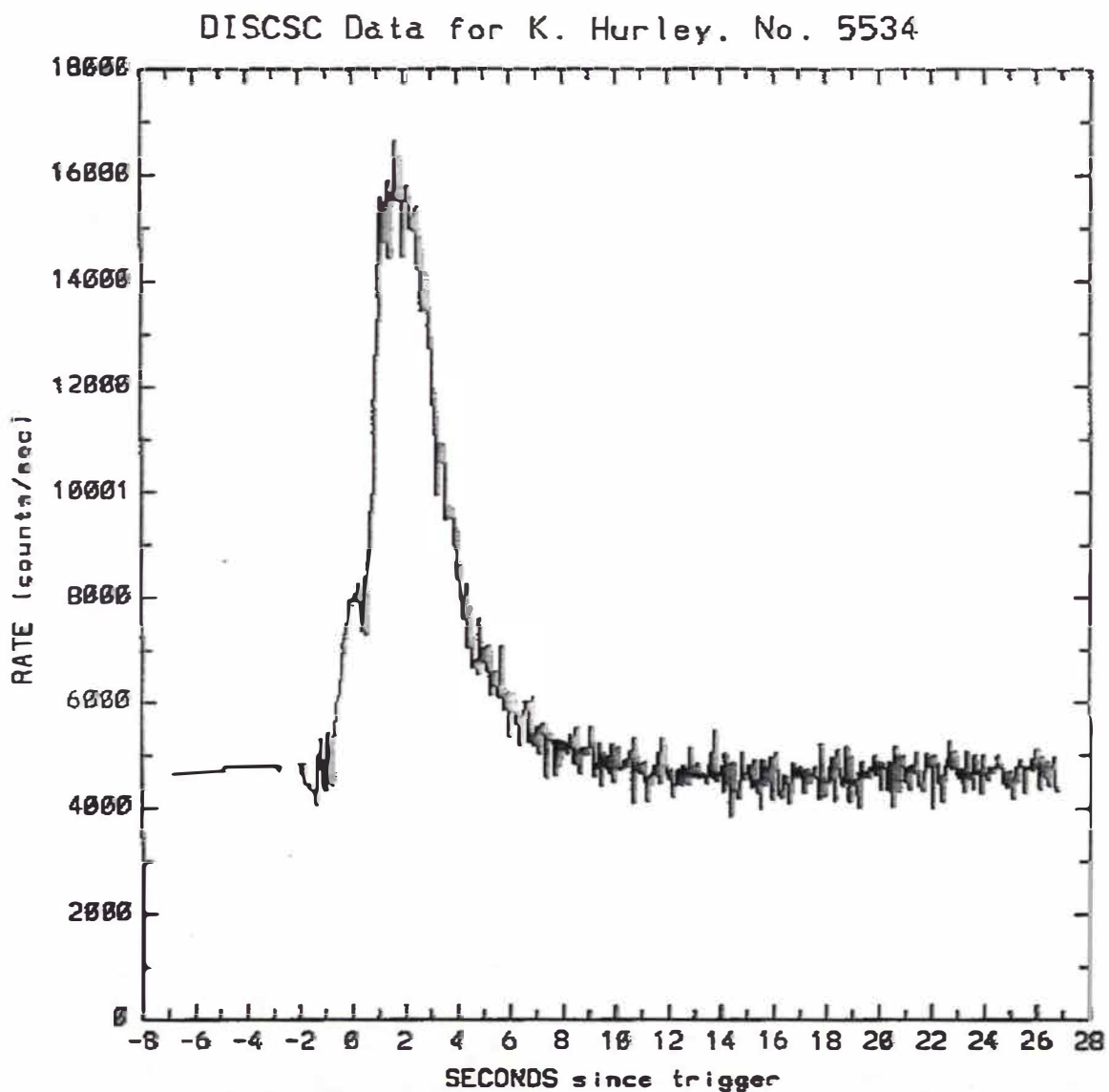
72572.362

25- 100 keV

COUNTS/0.064 S



17/10/97



15-OCT-1997 07:51:10

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 5534

Trigger Time:
16272 / 72572.362

Burst Data Type:
DISCSC

Deadtime
Corrected: K

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
8.864 seconds

Detectors [7..8]:
--5--1-

Discriminators:
11.21

Quality Mask:
BDSP1

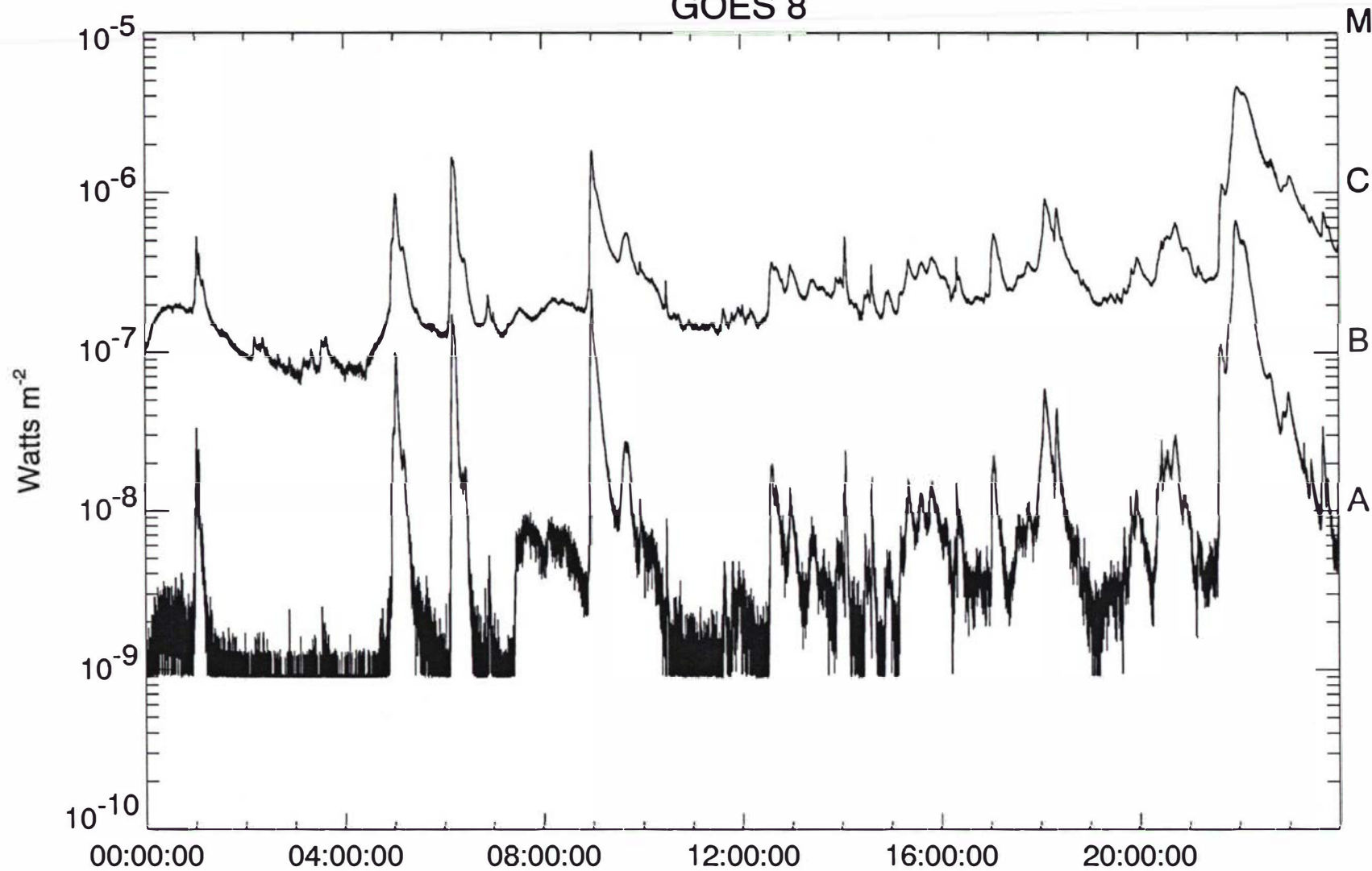
10-15-1997 07:18

205 544 5800

BATSE

P.02

GOES 8



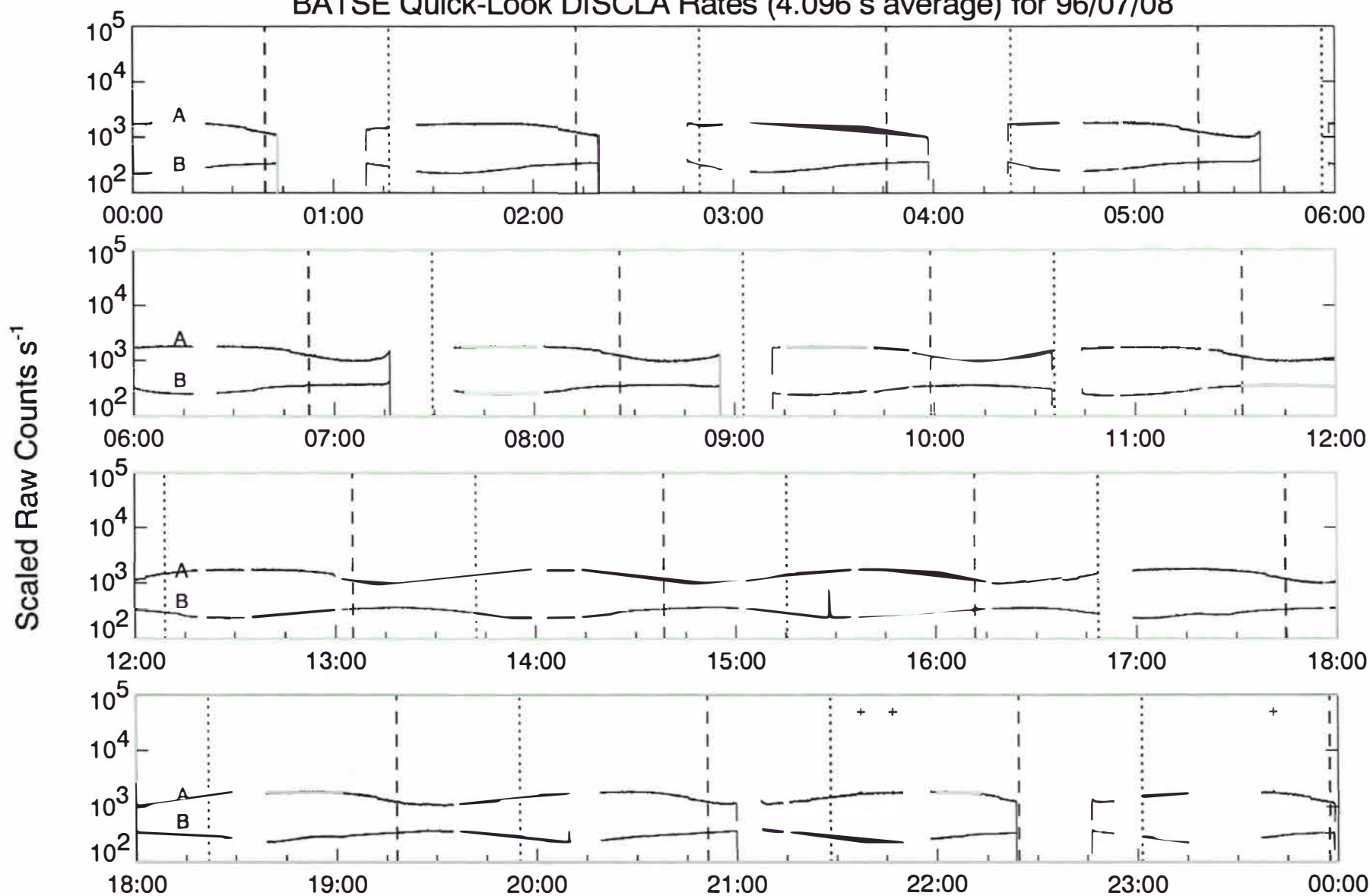
Data Start: 96/07/08, 0000:00

Plot created: 96/07/10, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/08

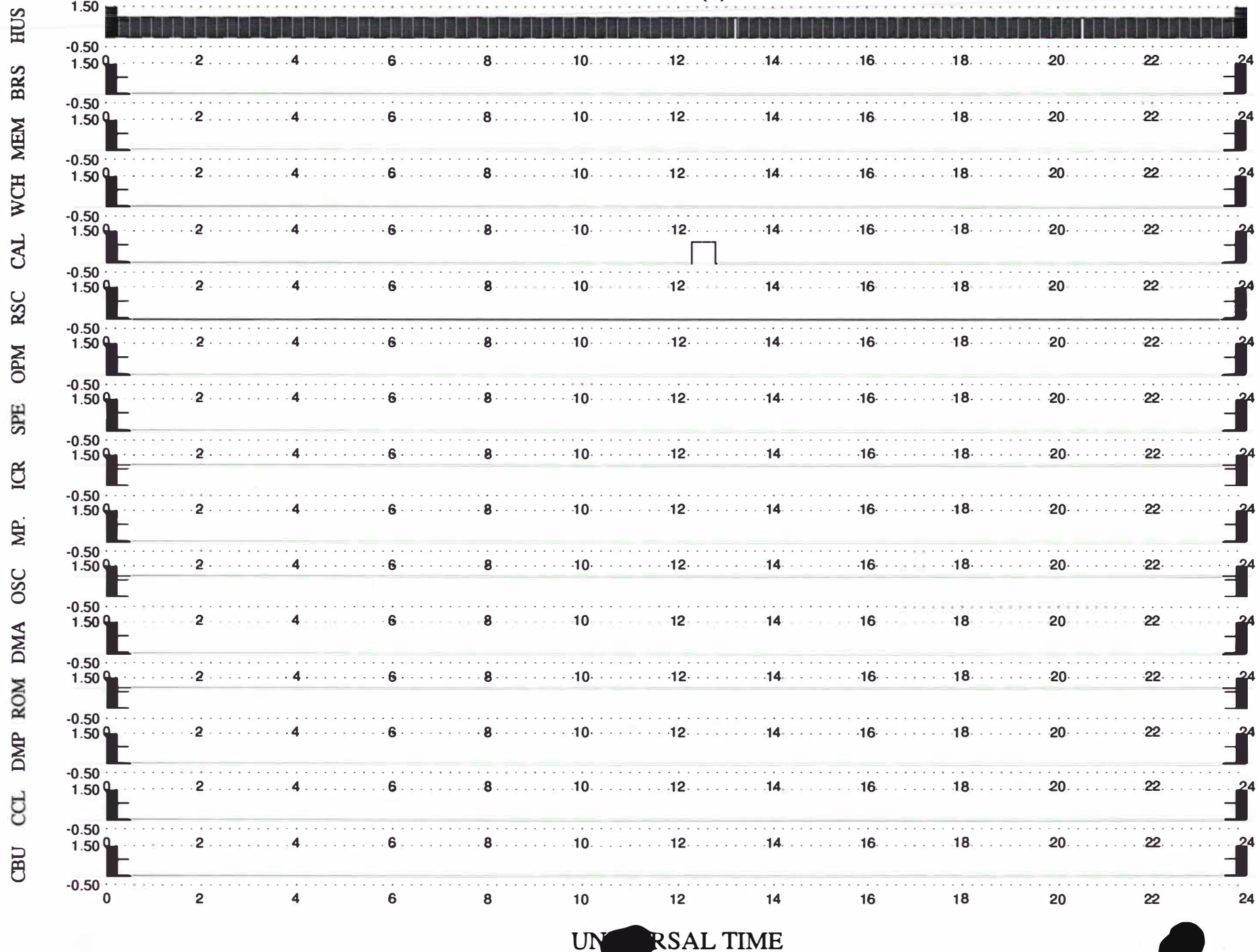


Current Time: 96/07/10, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

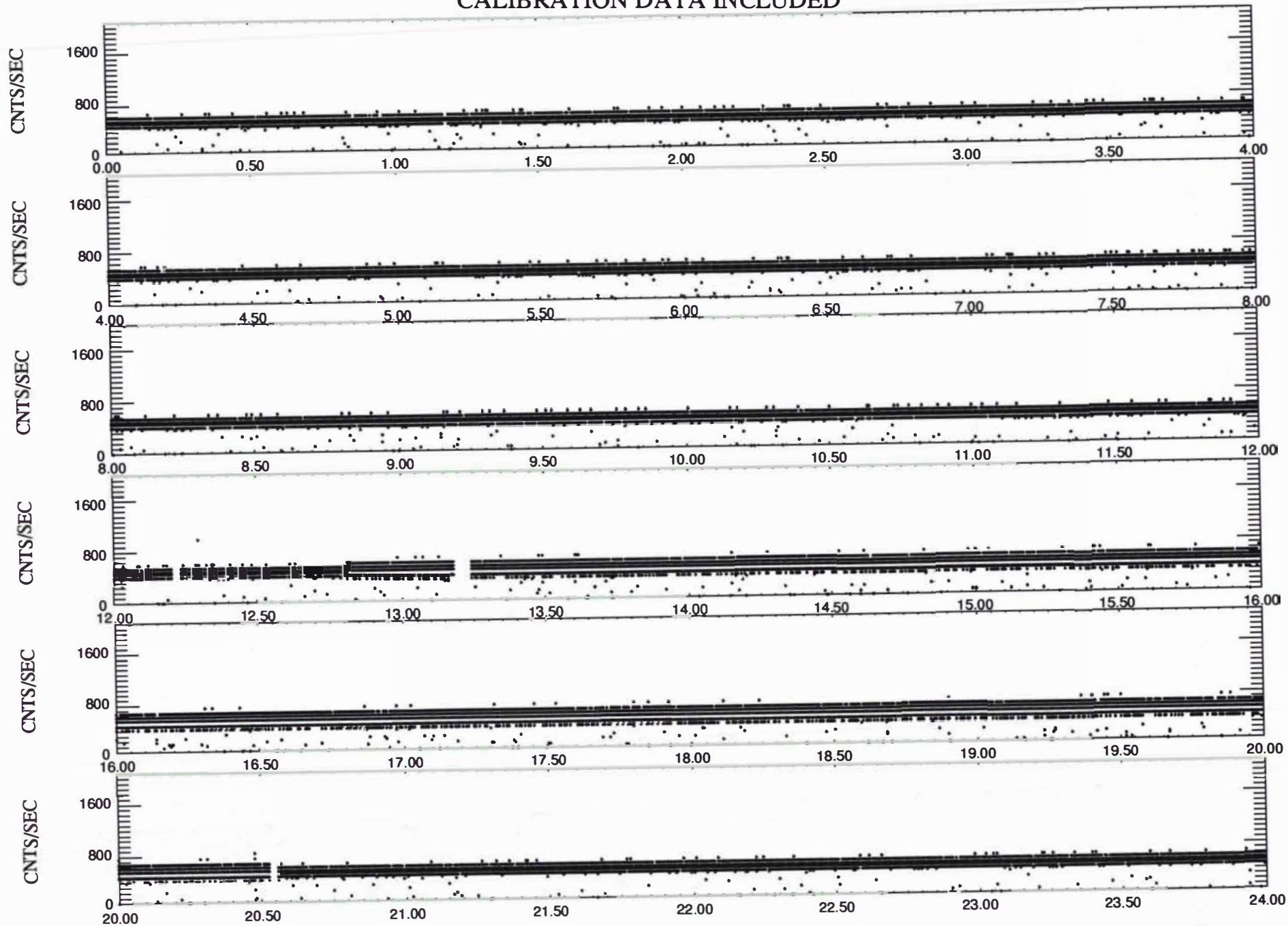
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

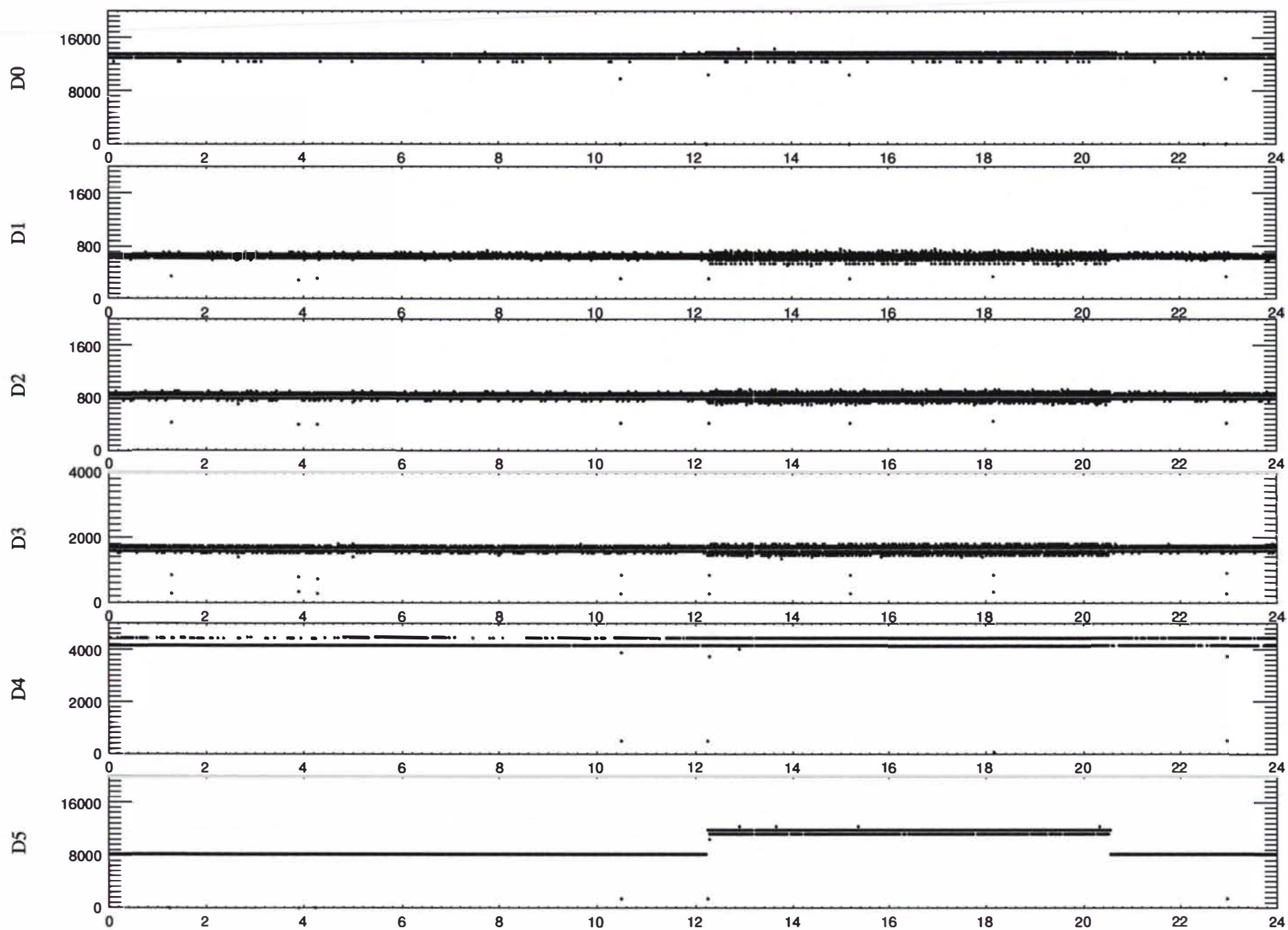
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

Date: 4 Oct 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

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

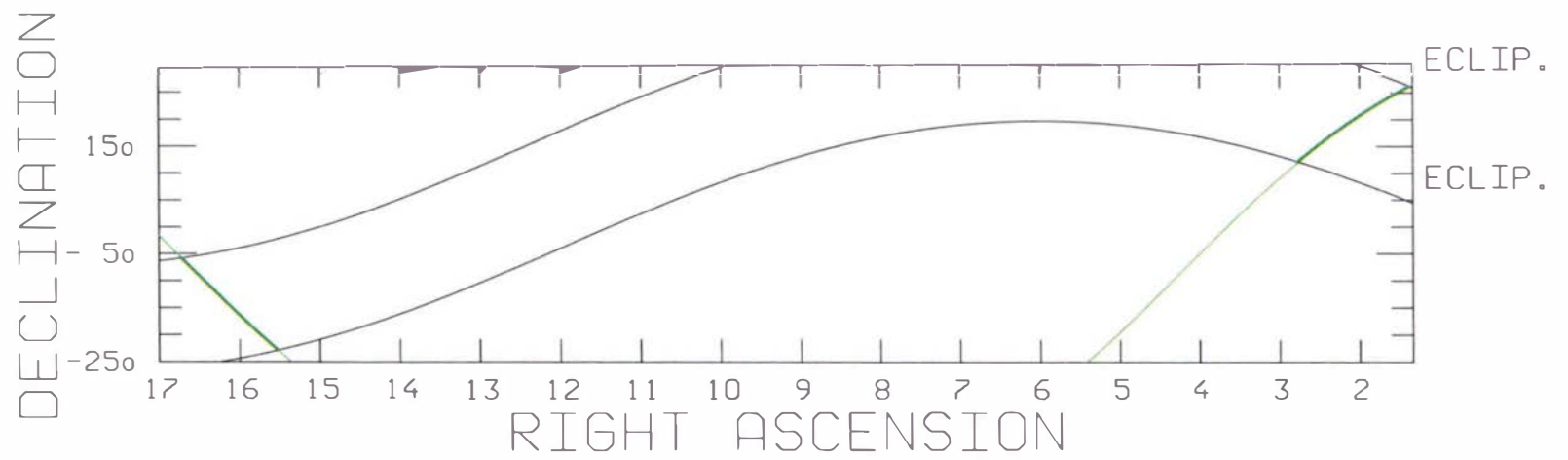
3. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

-
- ☒ ACCESS and MBL4 databases updated with identical times?

GRB960709 ~00195 S

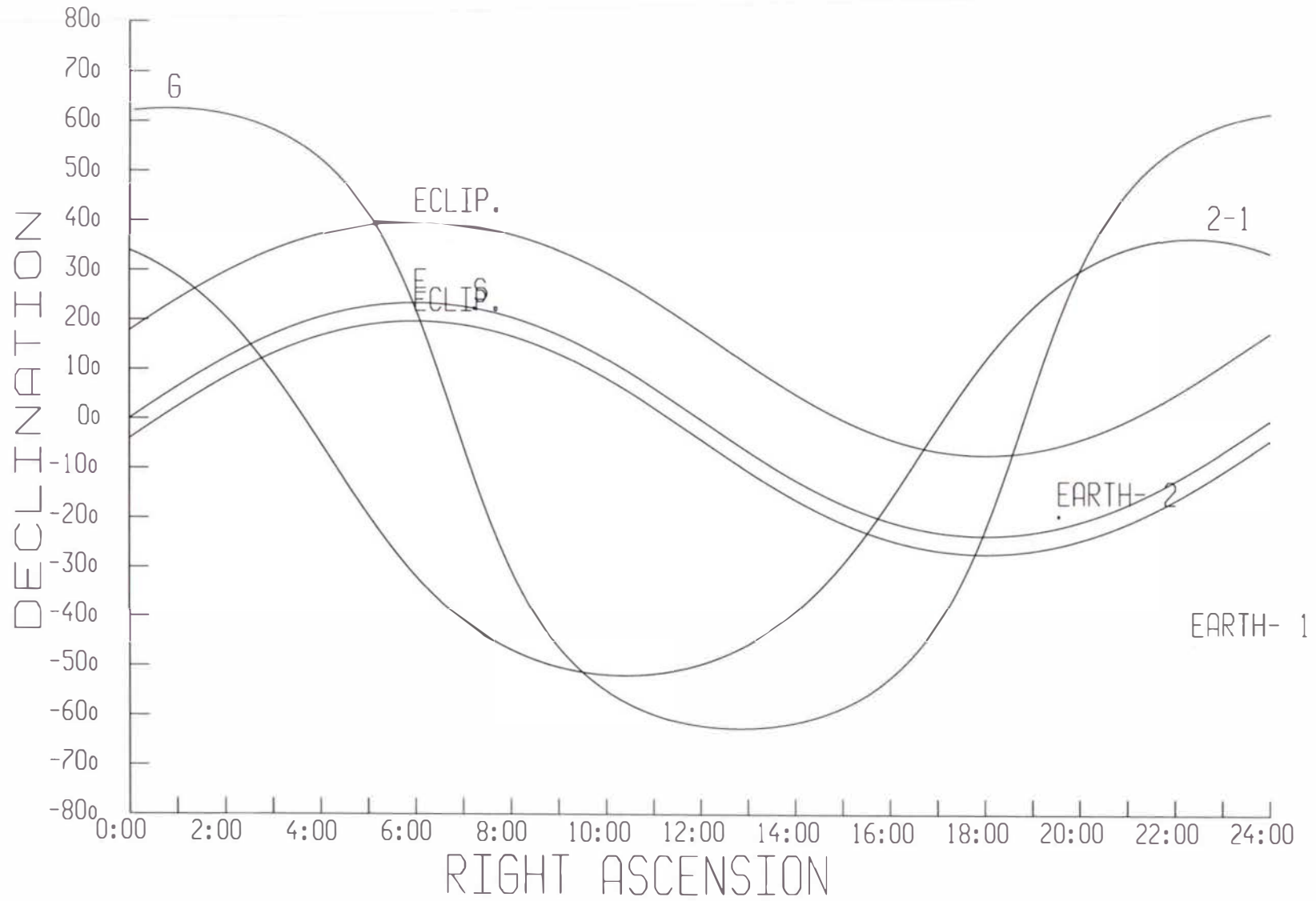
05/10/2011

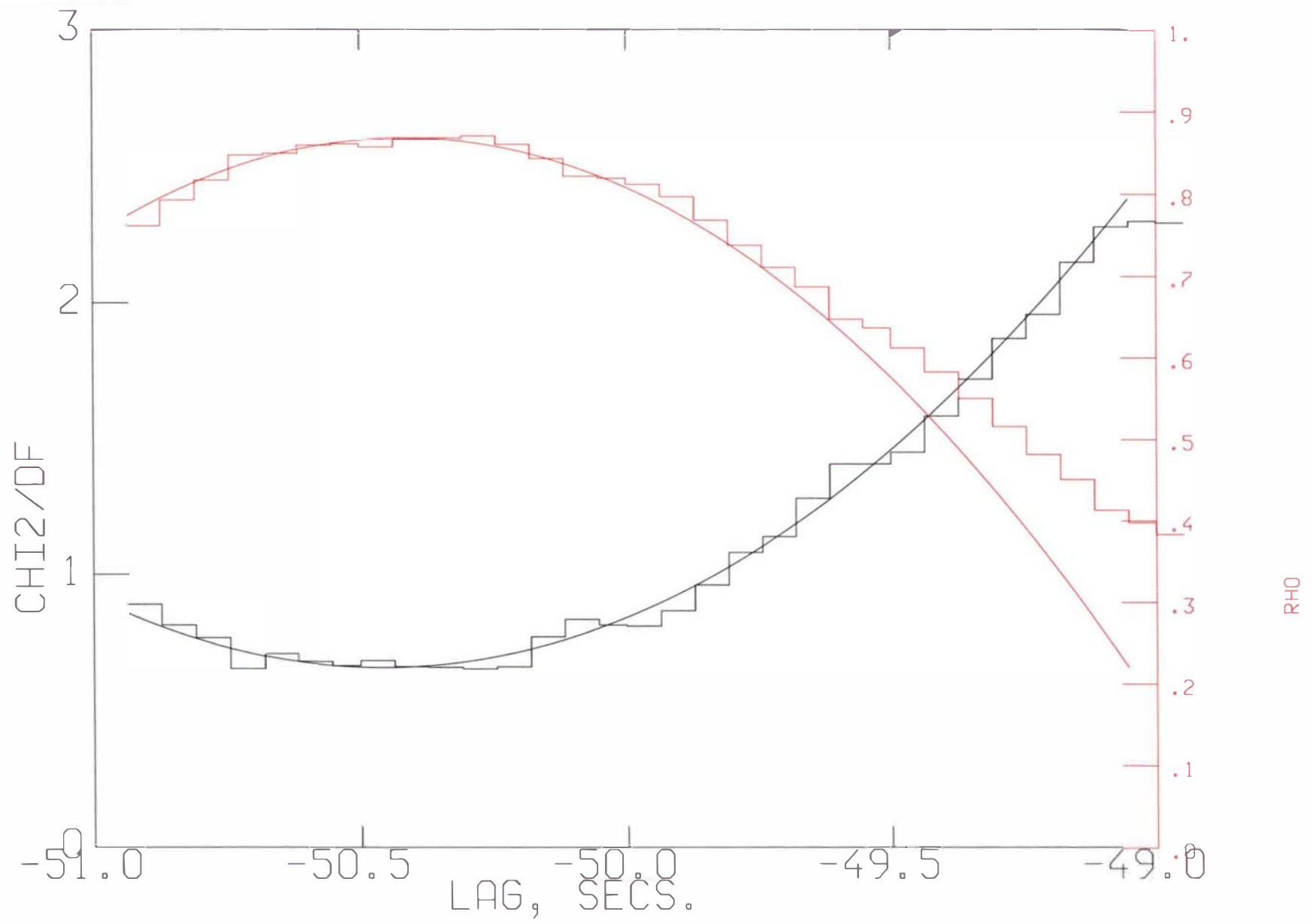


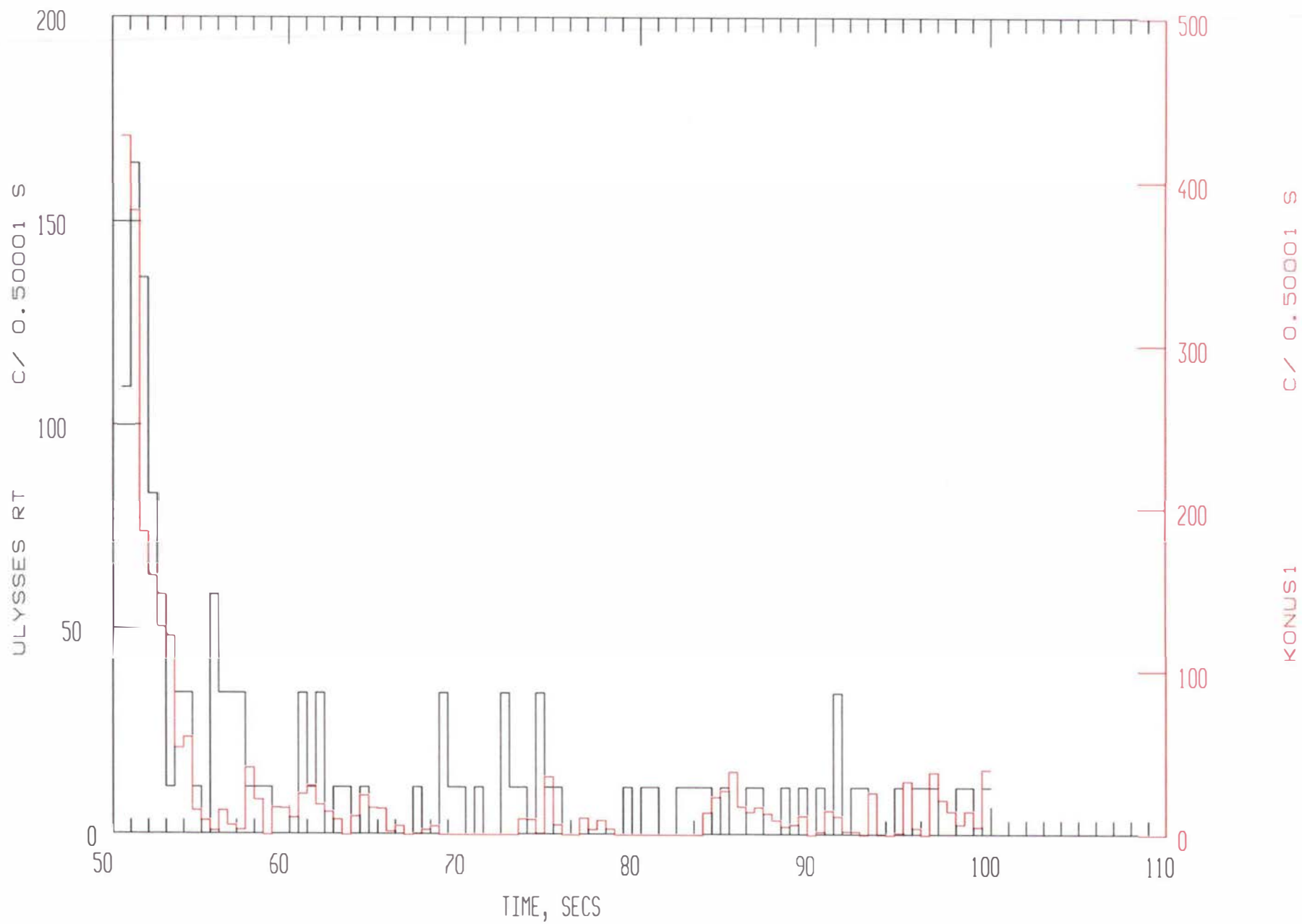
EVENT OF JUL 9, 1996 0:08

04/10/2011

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







KONUS 19960709 00555

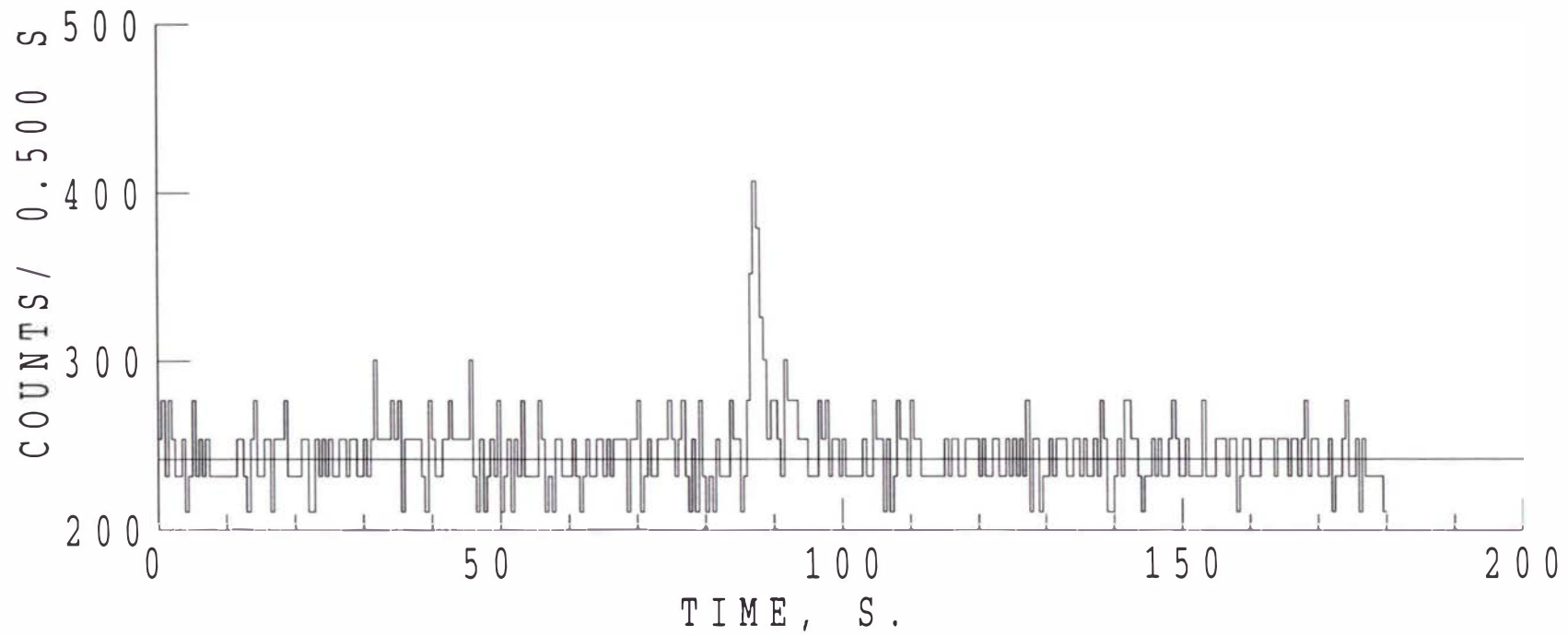
ULYSSES RT

03 / 10 / 11

09 / 07 / 96 468.497 s

0 - 0 keV

N= 10 K= 2
>4.0 SIGMA FLUCTUATIONS



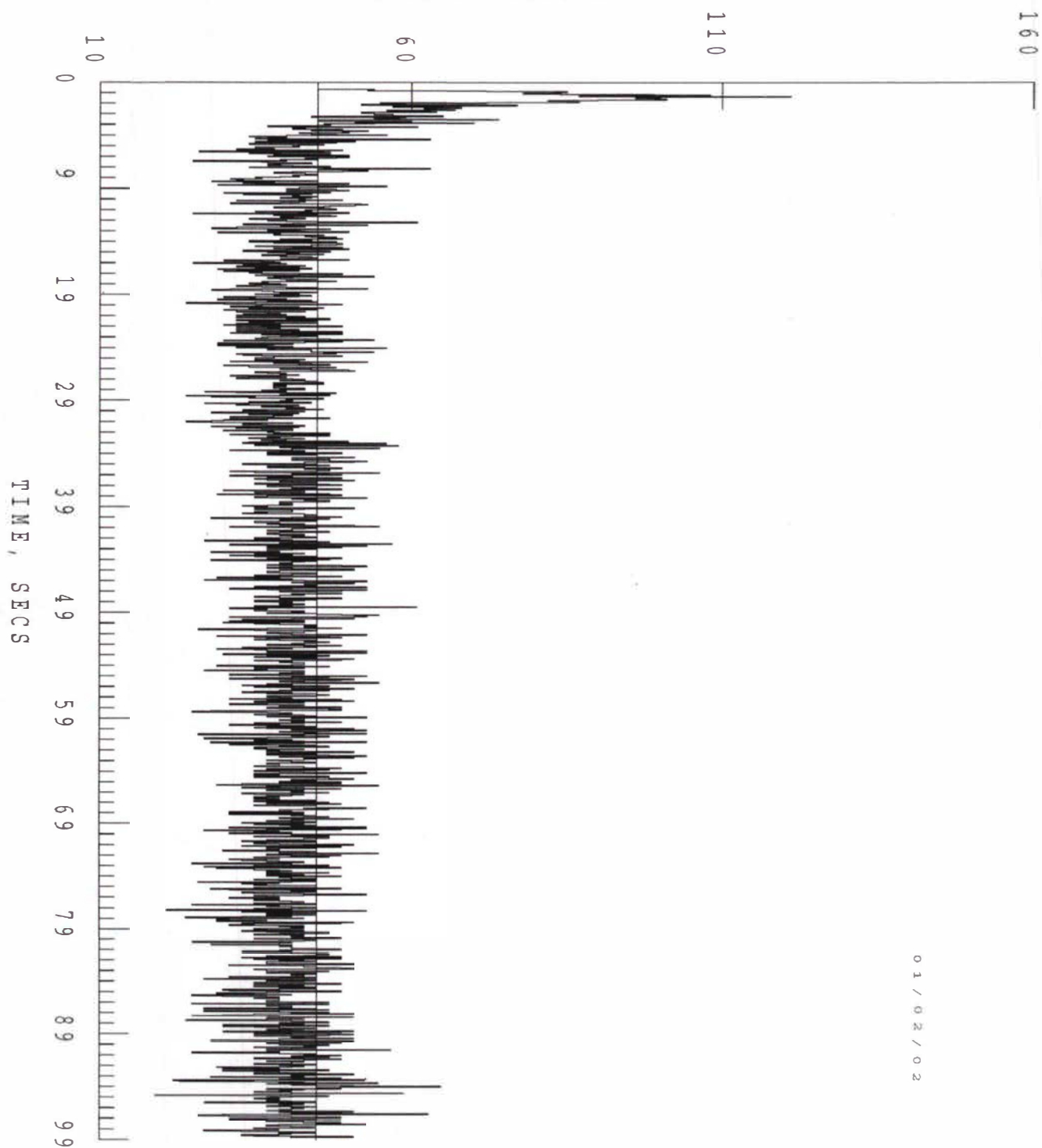
KONUS1

09/07/96

246.641

50 - 200 keV

COUNTS/0.064 S

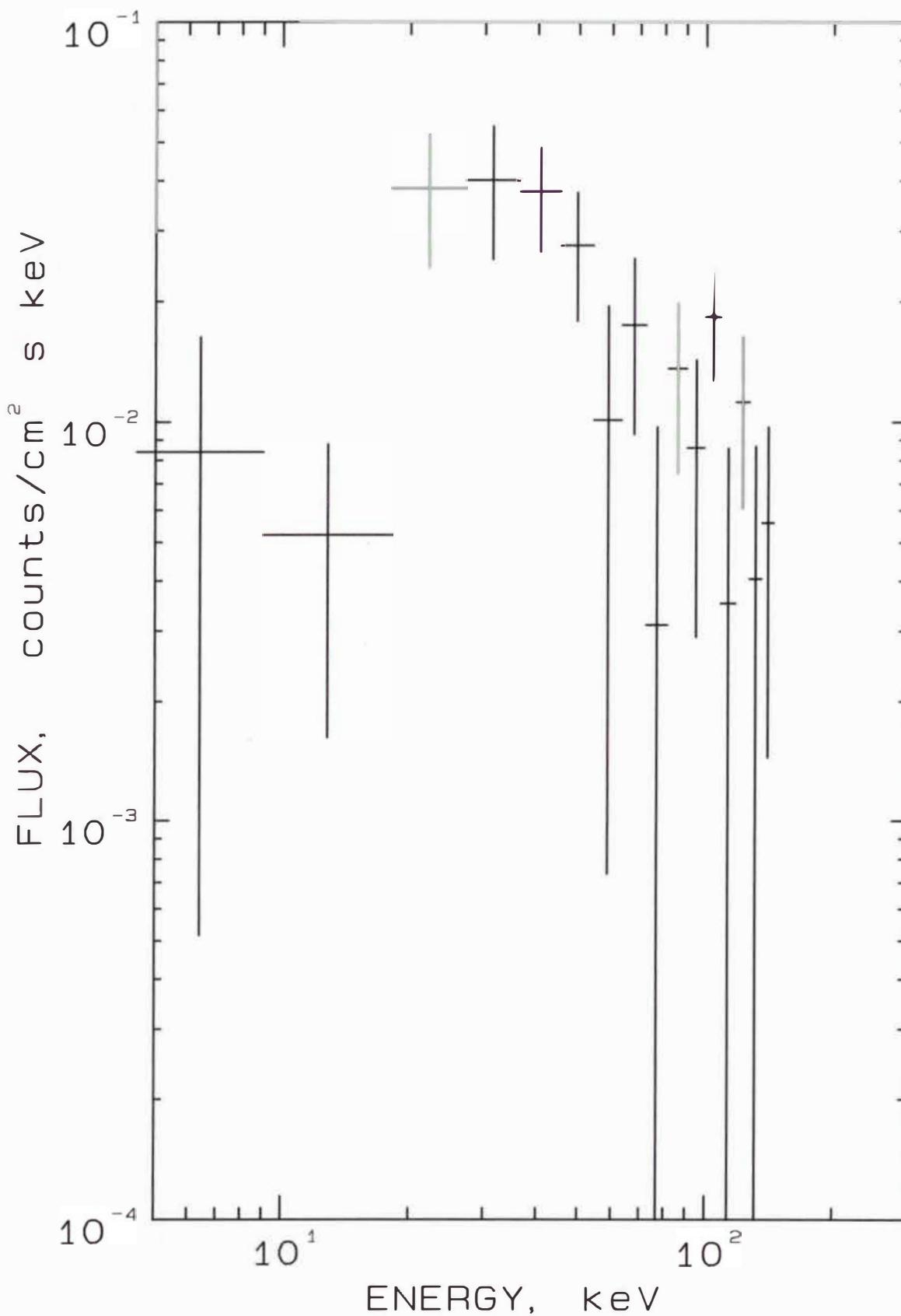


ULYSSES 09/07/96

555.716

24/11/97

SPECTRUM INTEGRATED OVER 20.3 SECONDS, INTERVALS 2 TO 20



ULYSSES 09/07/96

BURST SPECTRAL COUNT RATES

555.716

4- 18 keV

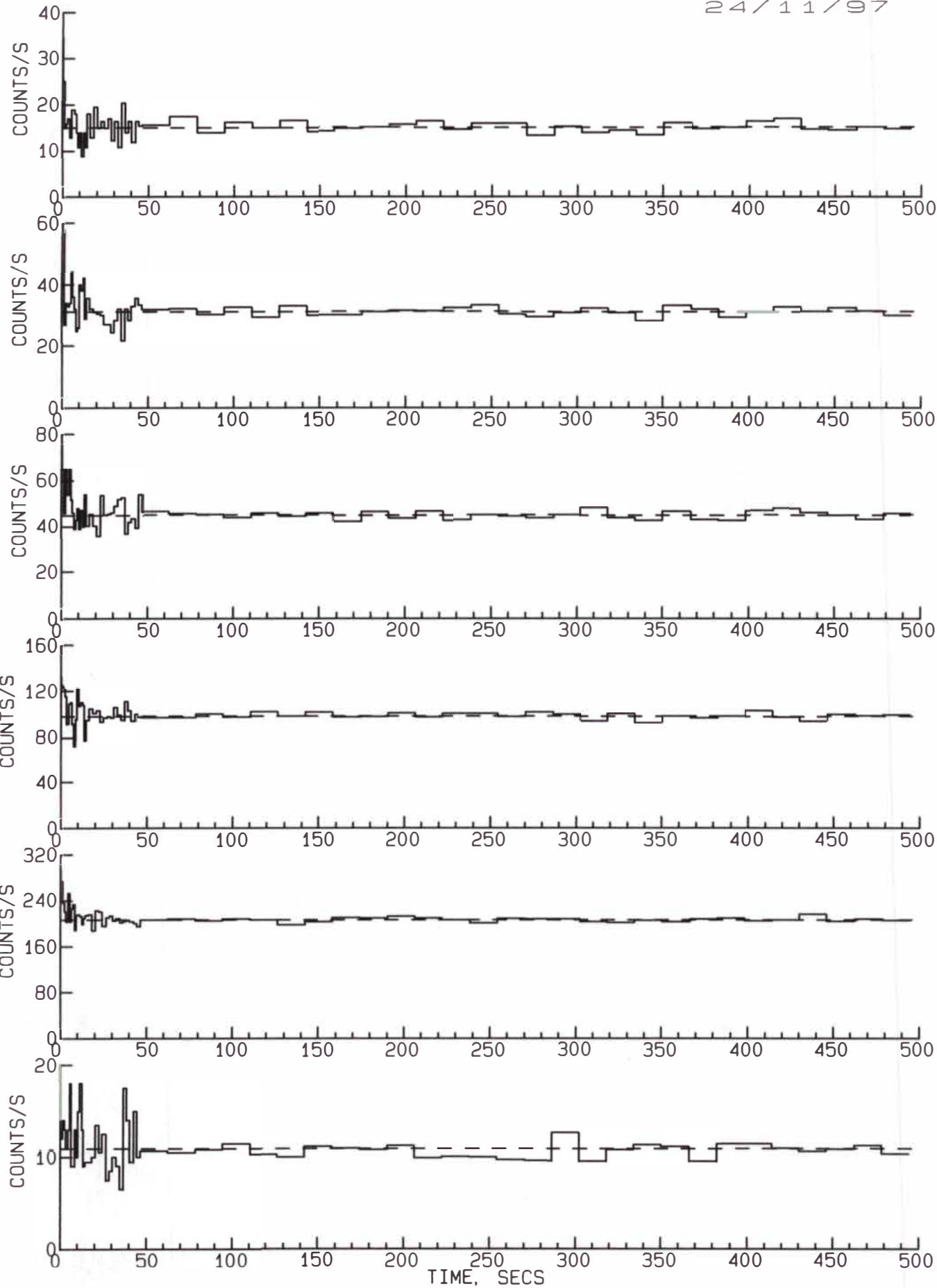
18- 45 keV

45- 72 keV

72- 99 keV

99-126 keV

126-144 keV



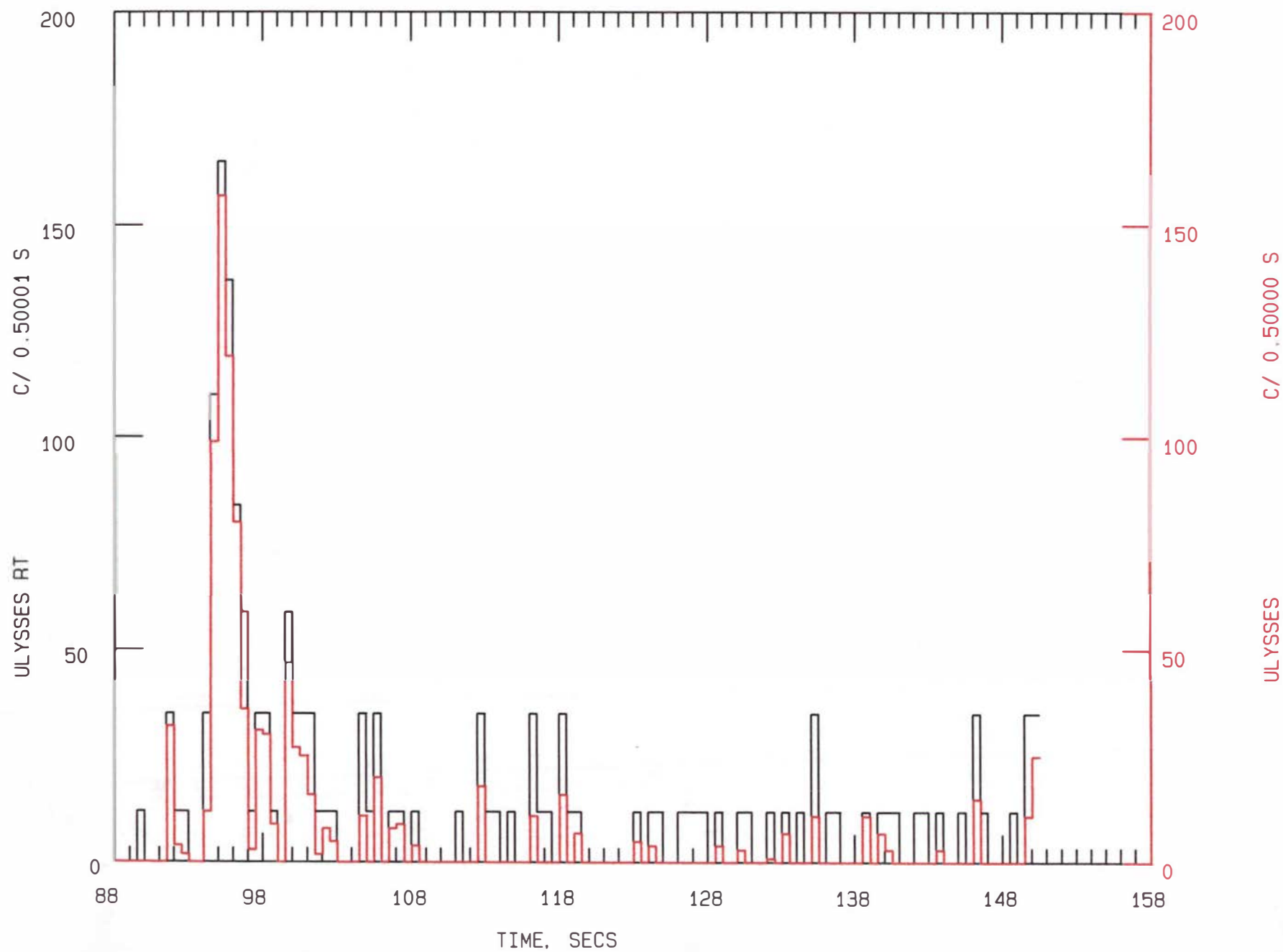
ULYSSES RT-ULYSSES

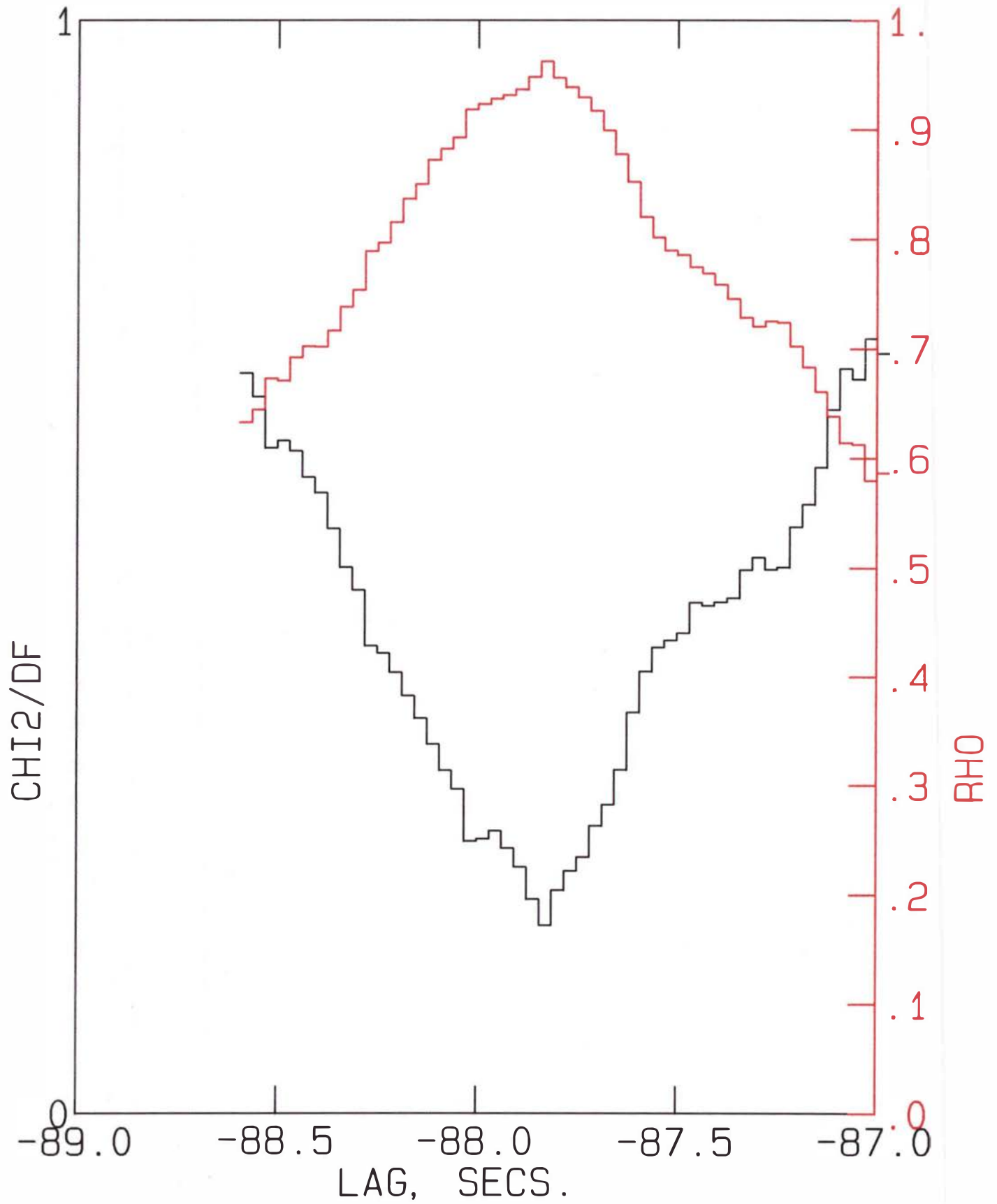
CORRELATION

9/ 7/96

460.409

24/11/97





ULYSSES

09/07/96

Ttrig= 555.635

0- 0 keV

COUNTS/0.031 S

COUNTS/0.125 S

150

100

50

50

40

30

20

10

0

4

8

12

16

20

24

28

32

36

40

44

48

52

56

60

64

4

8

12

16

20

24

28

32

36

40

44

48

52

56

60

64

24/11/11

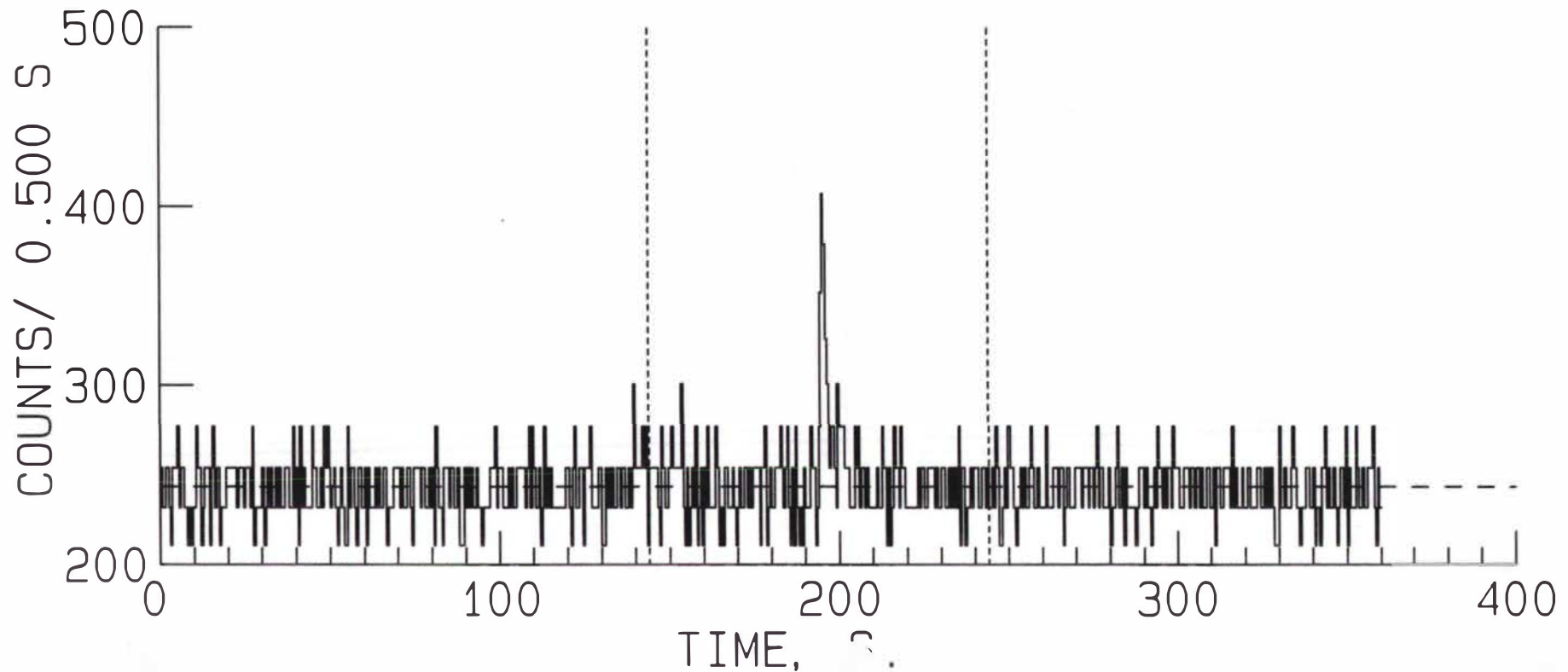
ULYSSES RT

24/11/97

9/ 7/96 360.497 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
96	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5299
96	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5413
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

(BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 <i>see RI</i>	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 <i>see RI</i>	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 <i>see RI</i>	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:17 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:16:31 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesl.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960709 was seen by Konus

Konus triggered at 00:04:06.641 in the detector facing to the ecliptic south. The event was a moderately intense and quite hard single-peak FRED, with a rise time of 0.5s and a decline time of 5s.

Date: Mon, 5 Aug 1996 15:54:51 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608052254.PAA02501@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botesl.tesre.bo.cnr.it
Subject: GRB960709
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses triggered on an intense, 10 s long event July 9 1996 around 00:09 UT at Ulysses.

The spacecraft was about 2400 light-seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

From HAGEDON@fender.msfc.nasa.gov Wed Jul 10 13:17 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Wed, 10 Jul 1996 15:16:36 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.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
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5535

TIME: TJD=0273 SECONDS=32955

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

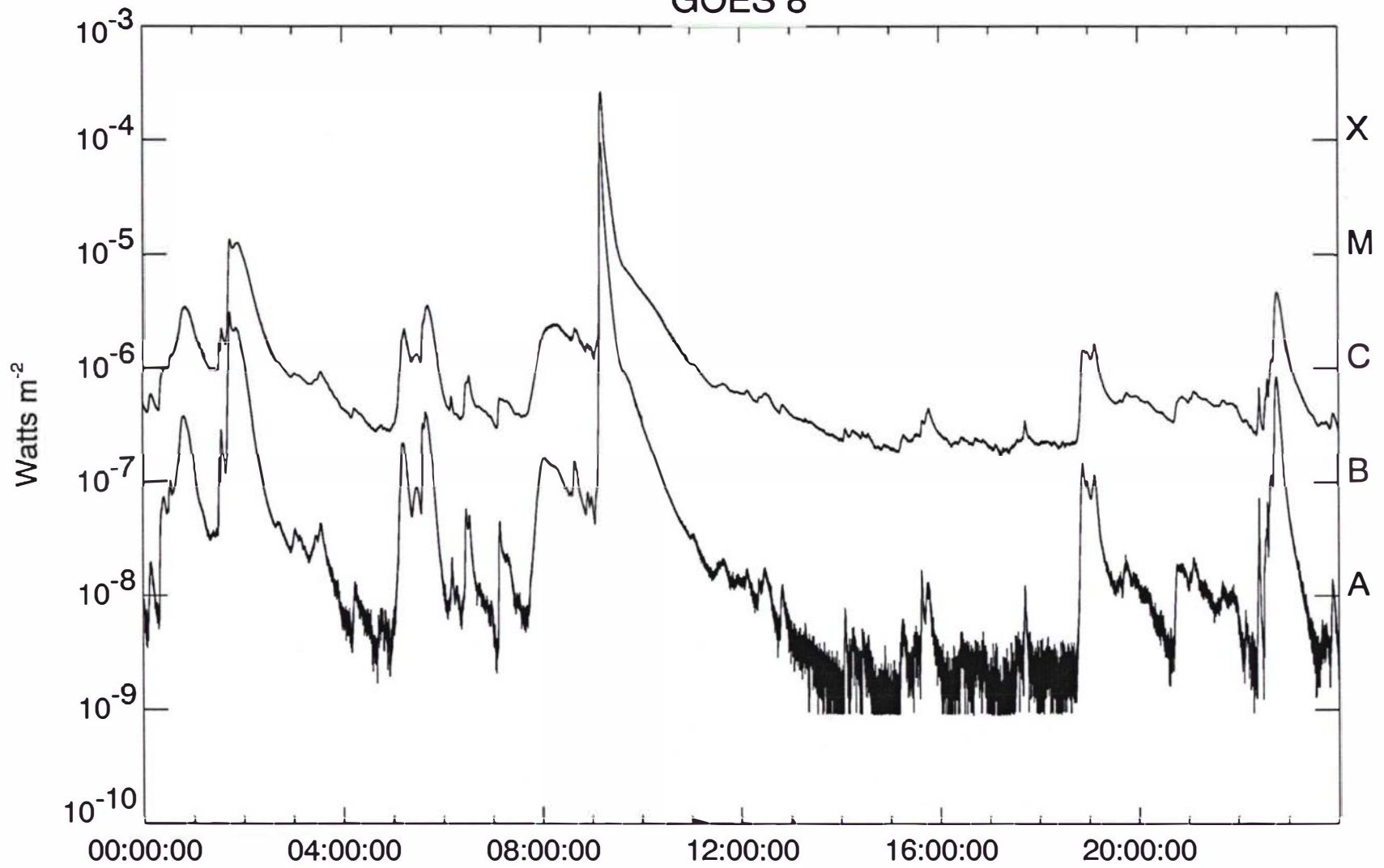
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

GOES X2.6 SOLAR FLARE. DUR.~500 SEC. VISIBLE ABOVE 300 KEV.

GOES 8



Data Start: 96/07/09, 0000:00

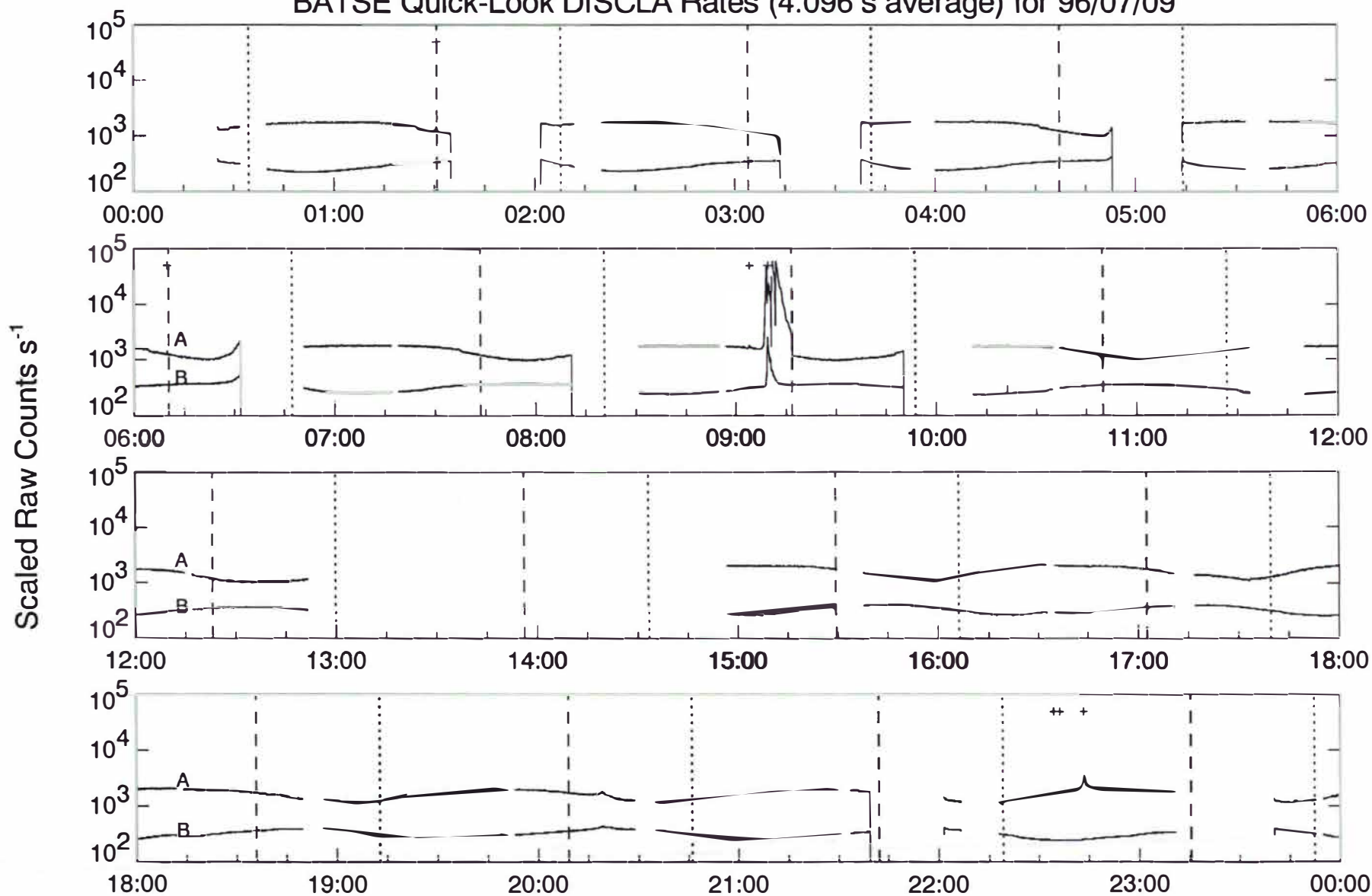
Plot created: 96/07/11, 1004

Channel

1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/09



Current Time: 96/07/11, 1004 EDT

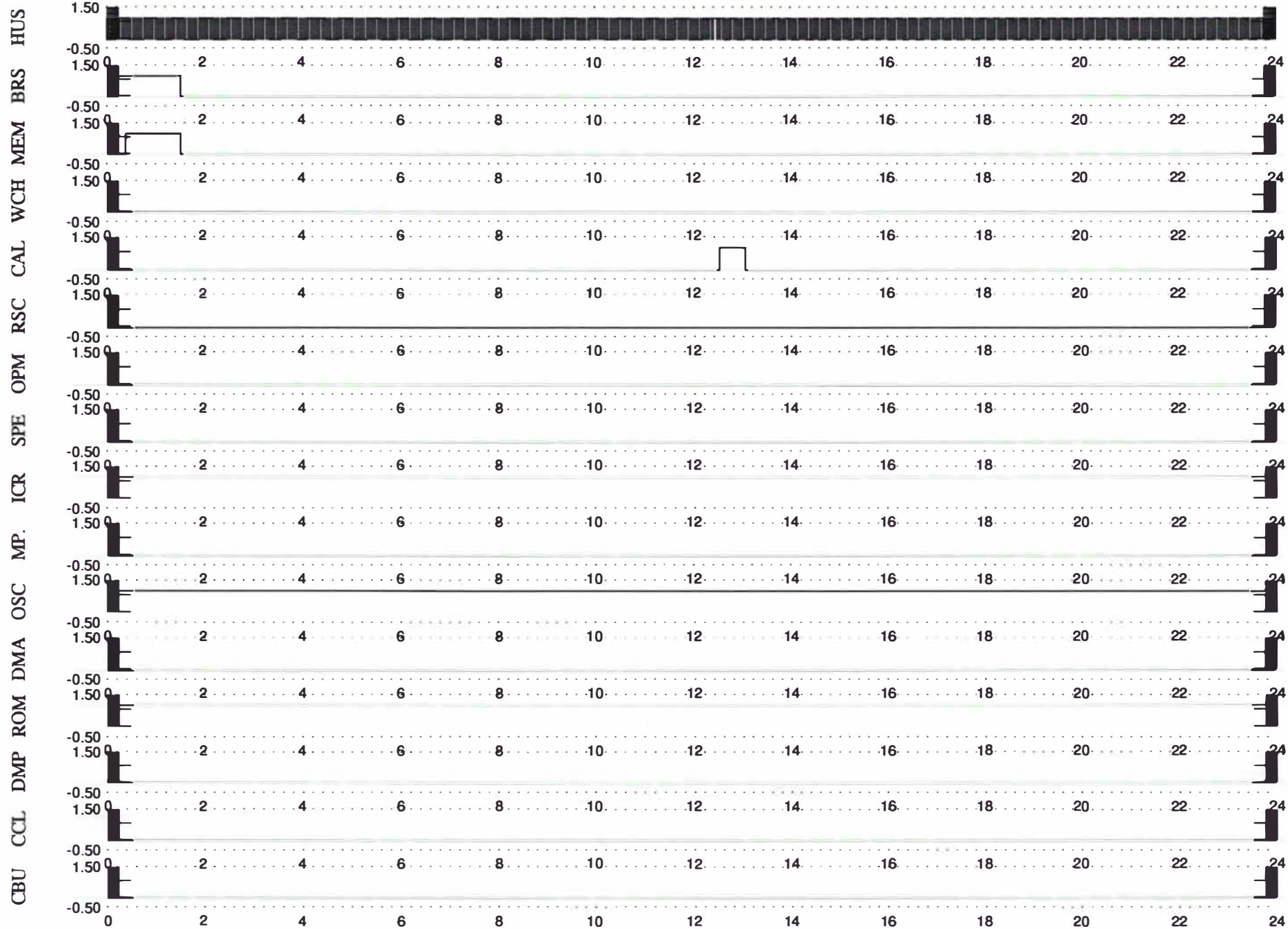
A: Channel 0 Most Sunward LAD

B: Sum Channel 0 Anti-Sunward LADs X .05

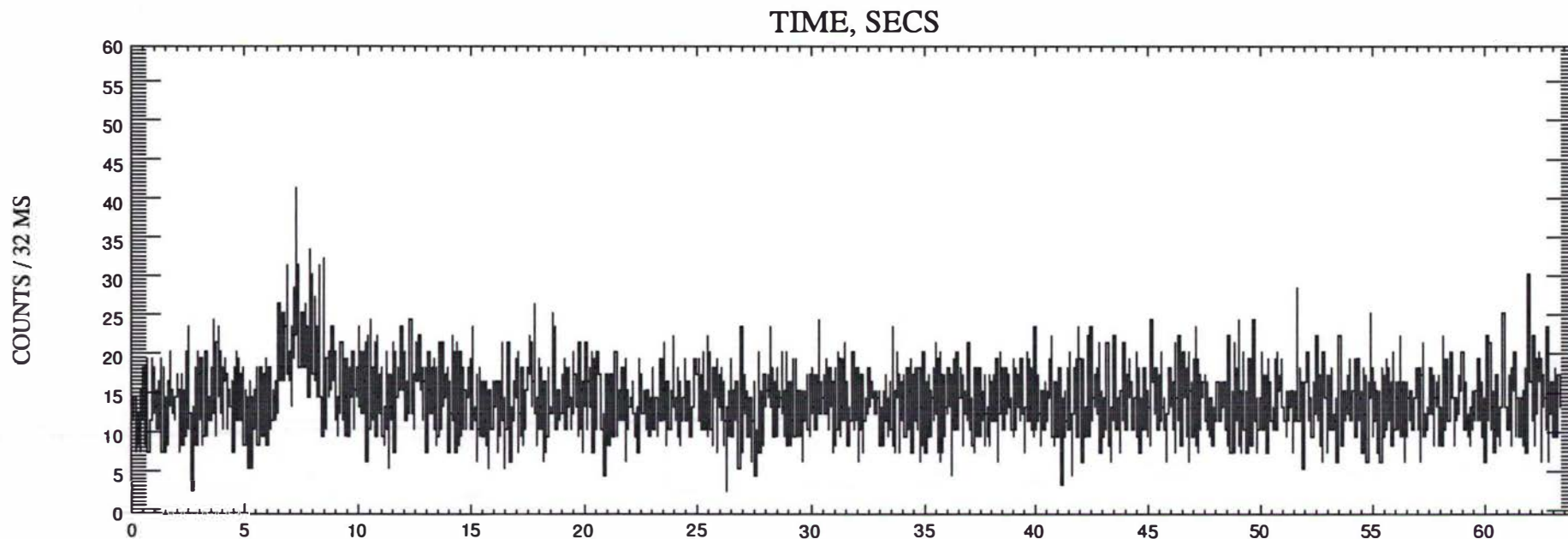
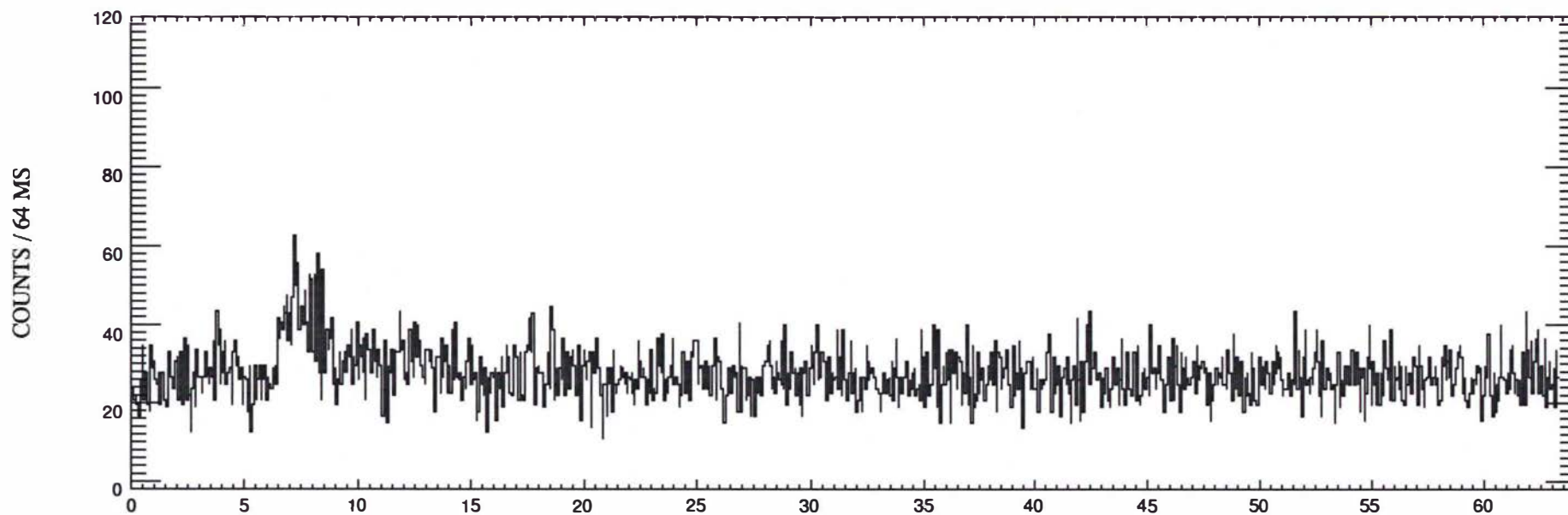
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

BURST NUMBER 9

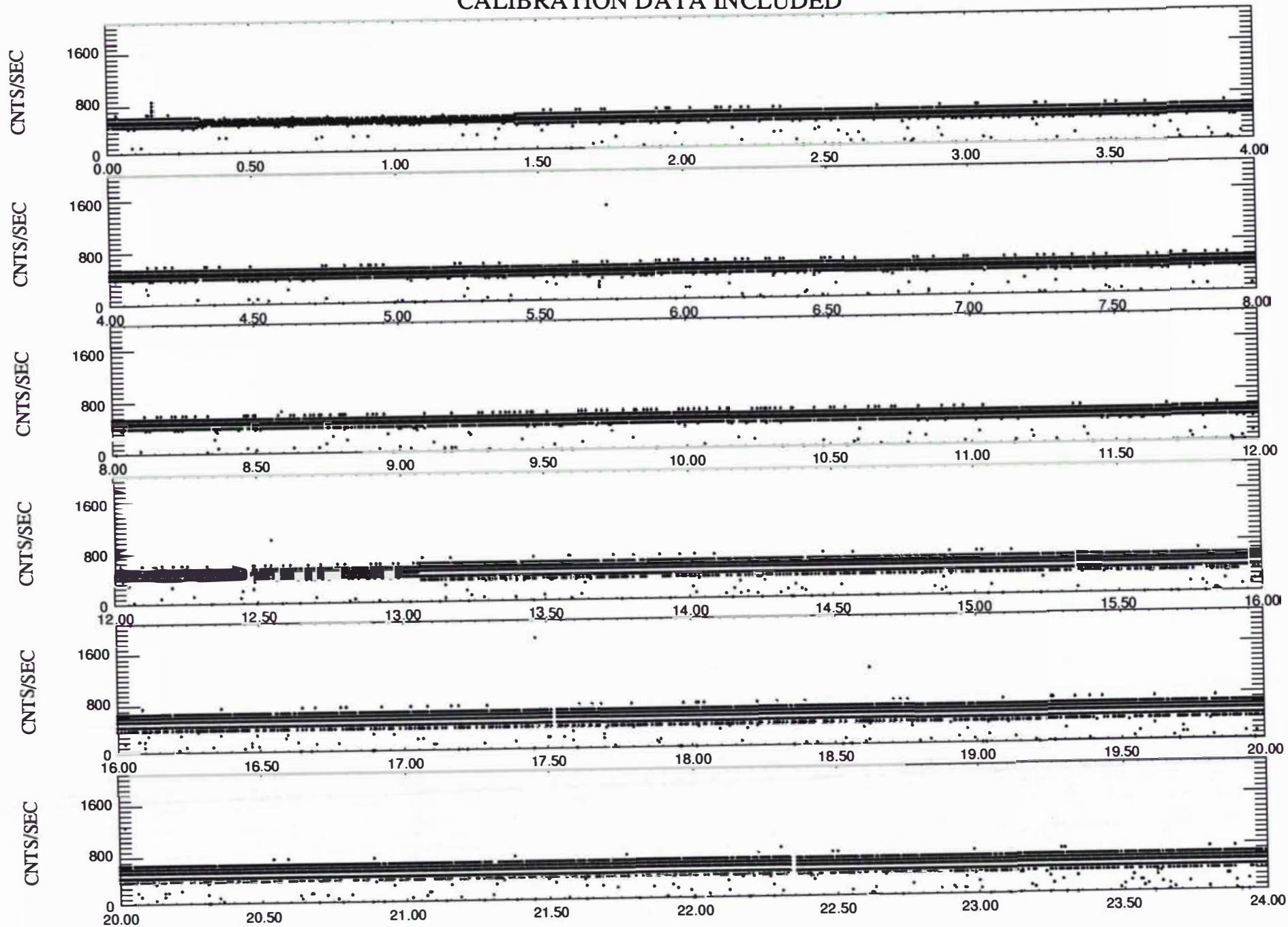


Burst Counter 9 at UT= 0.154365552266 h= 555.716 s 00:09:15.716

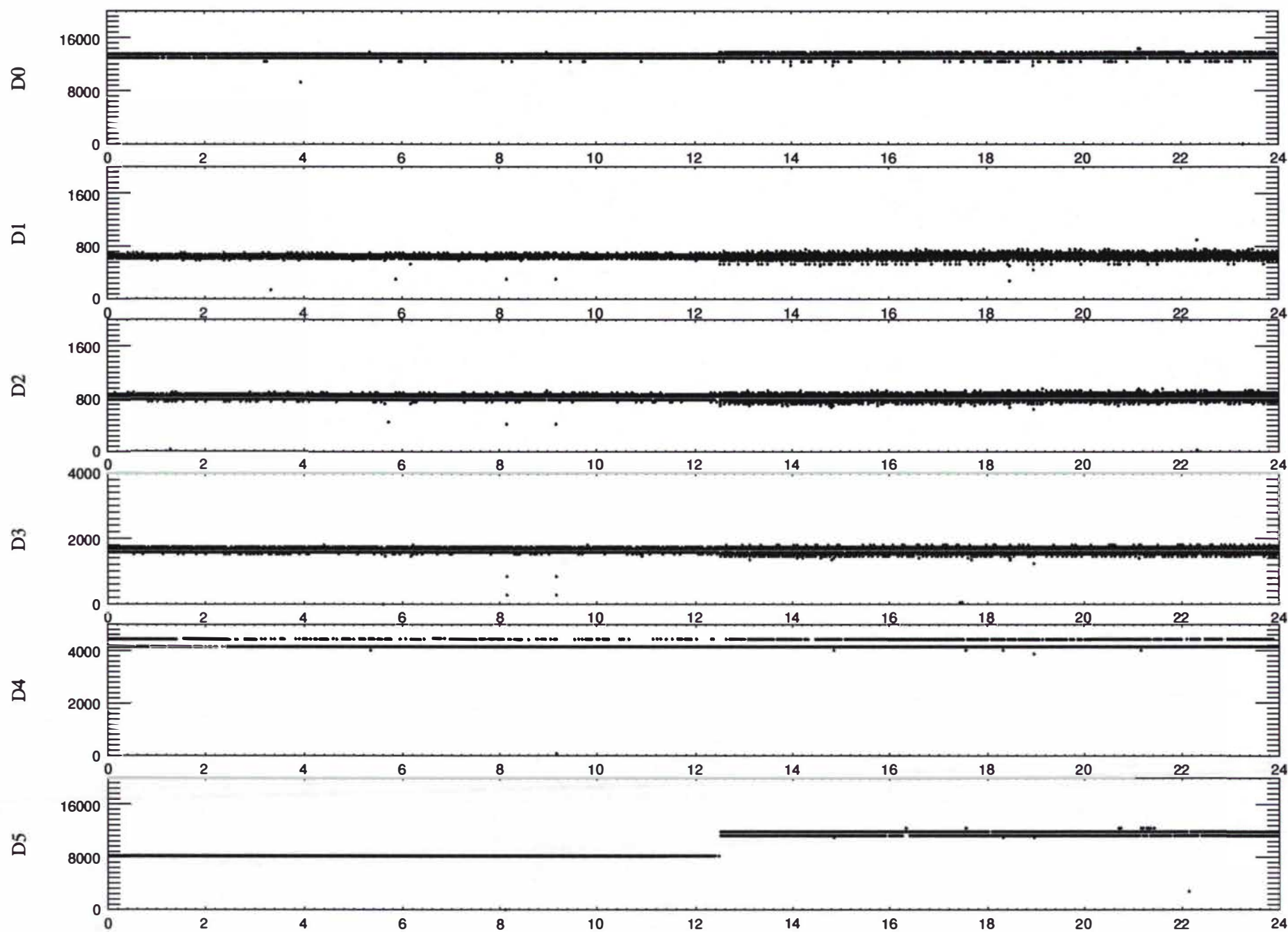


TIME, SECS

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

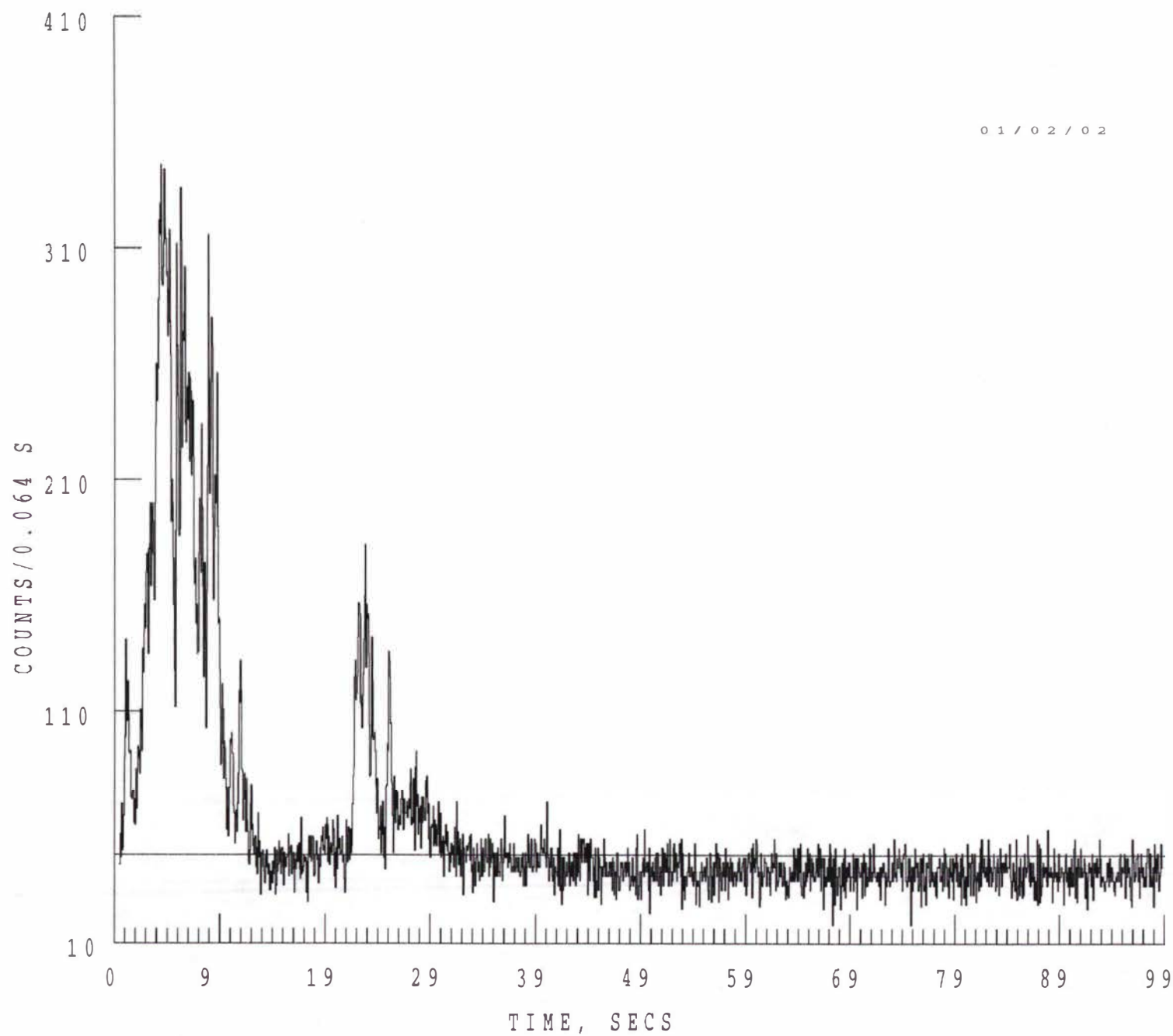


UNIVERSAL TIME

10/07/96 662.014

50- 200 keV

KONUS2



Date: Oct 4 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?

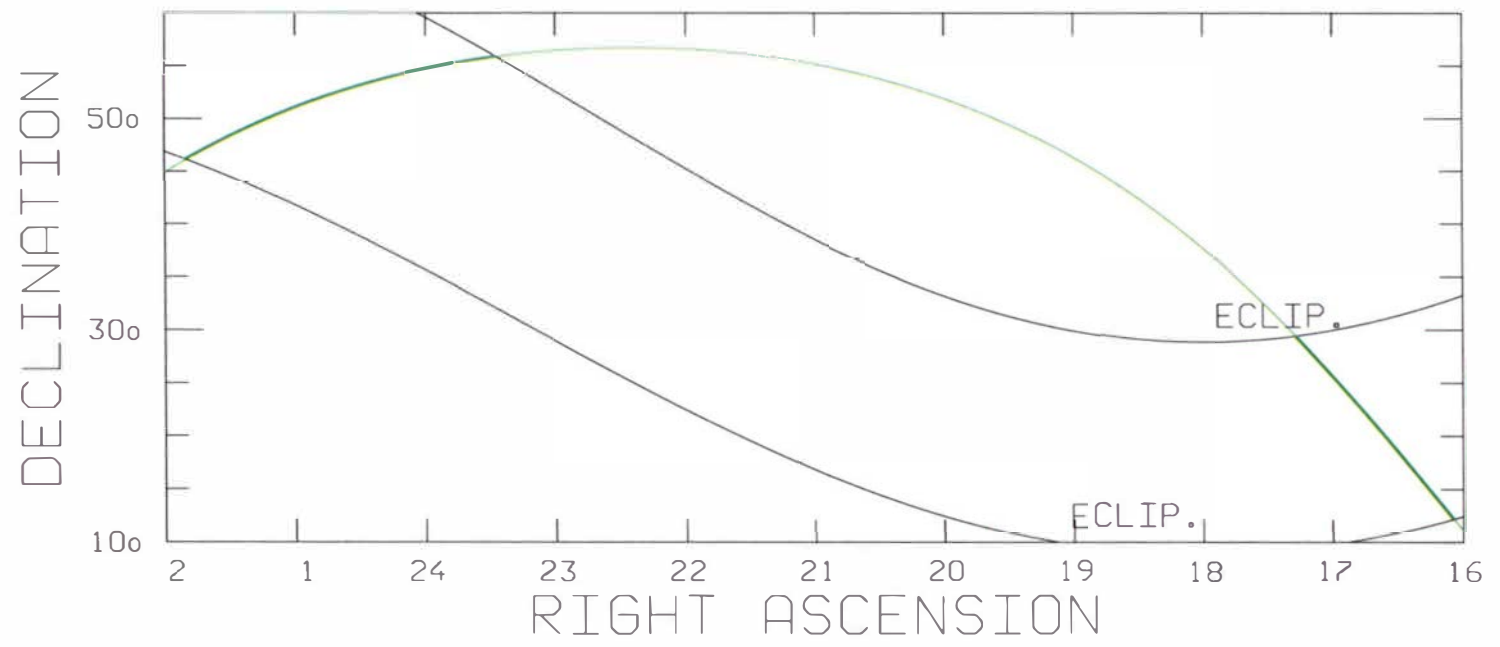
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

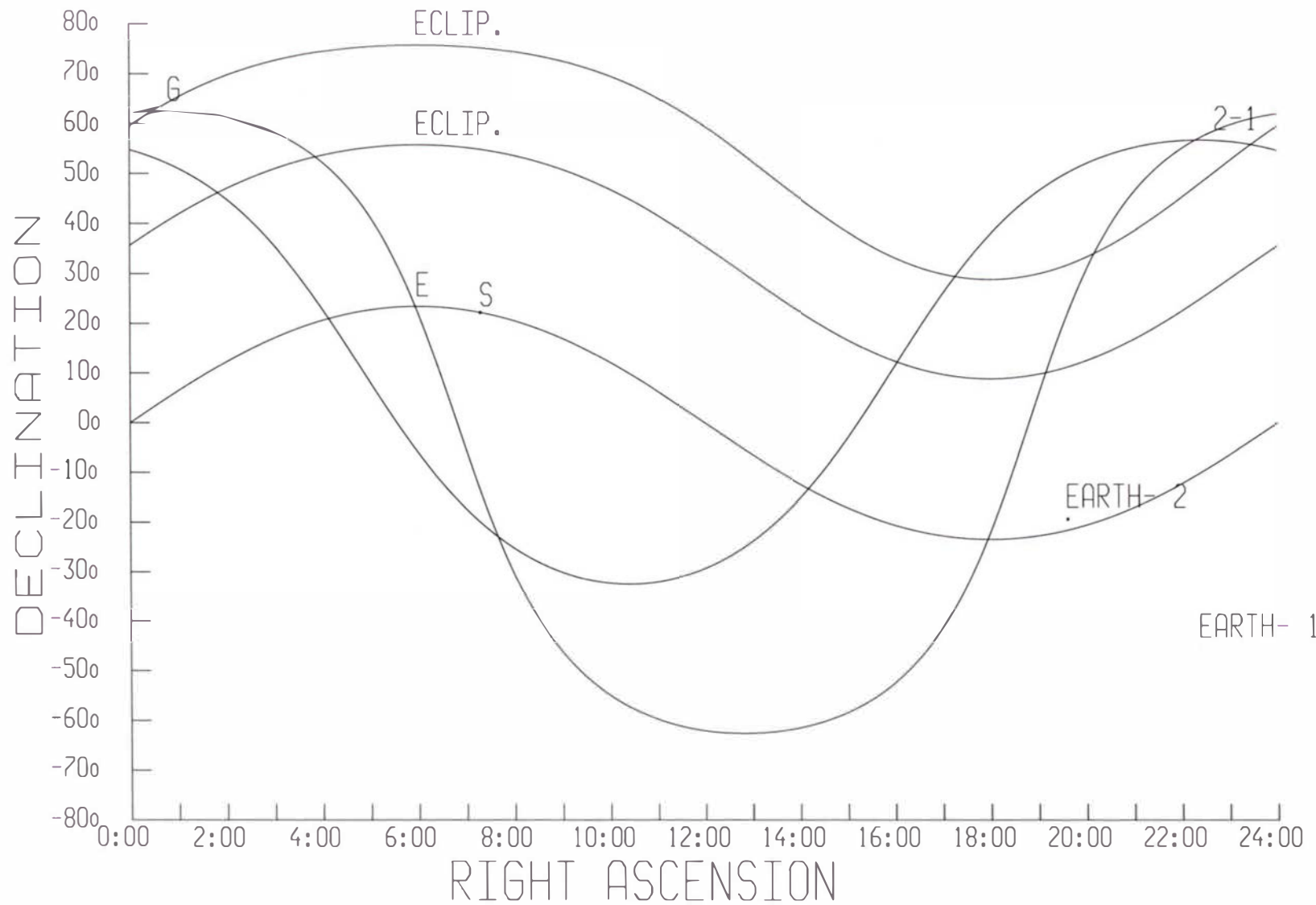
-
- ☒ ACCESS and MBL4 databases updated with identical times?

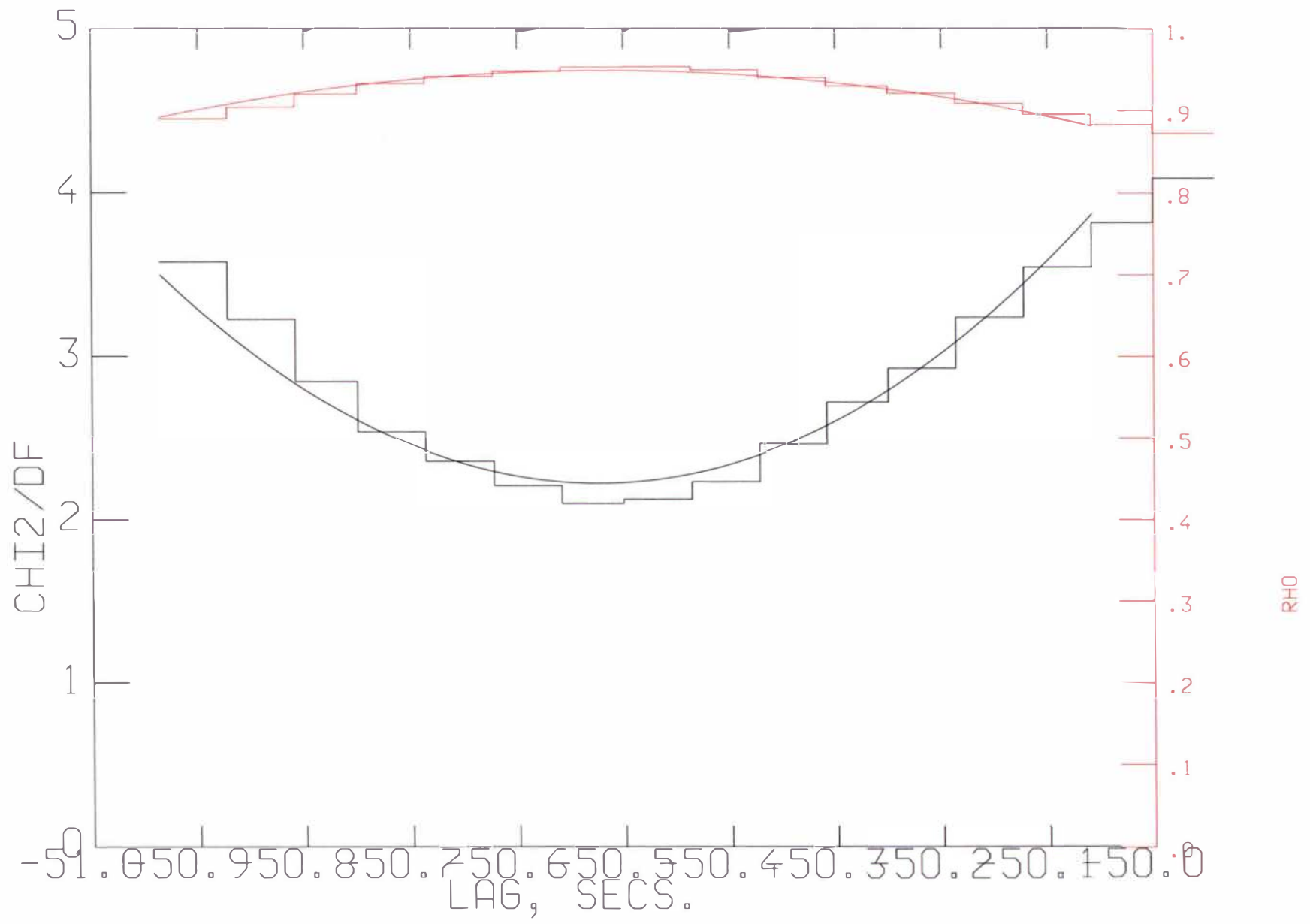


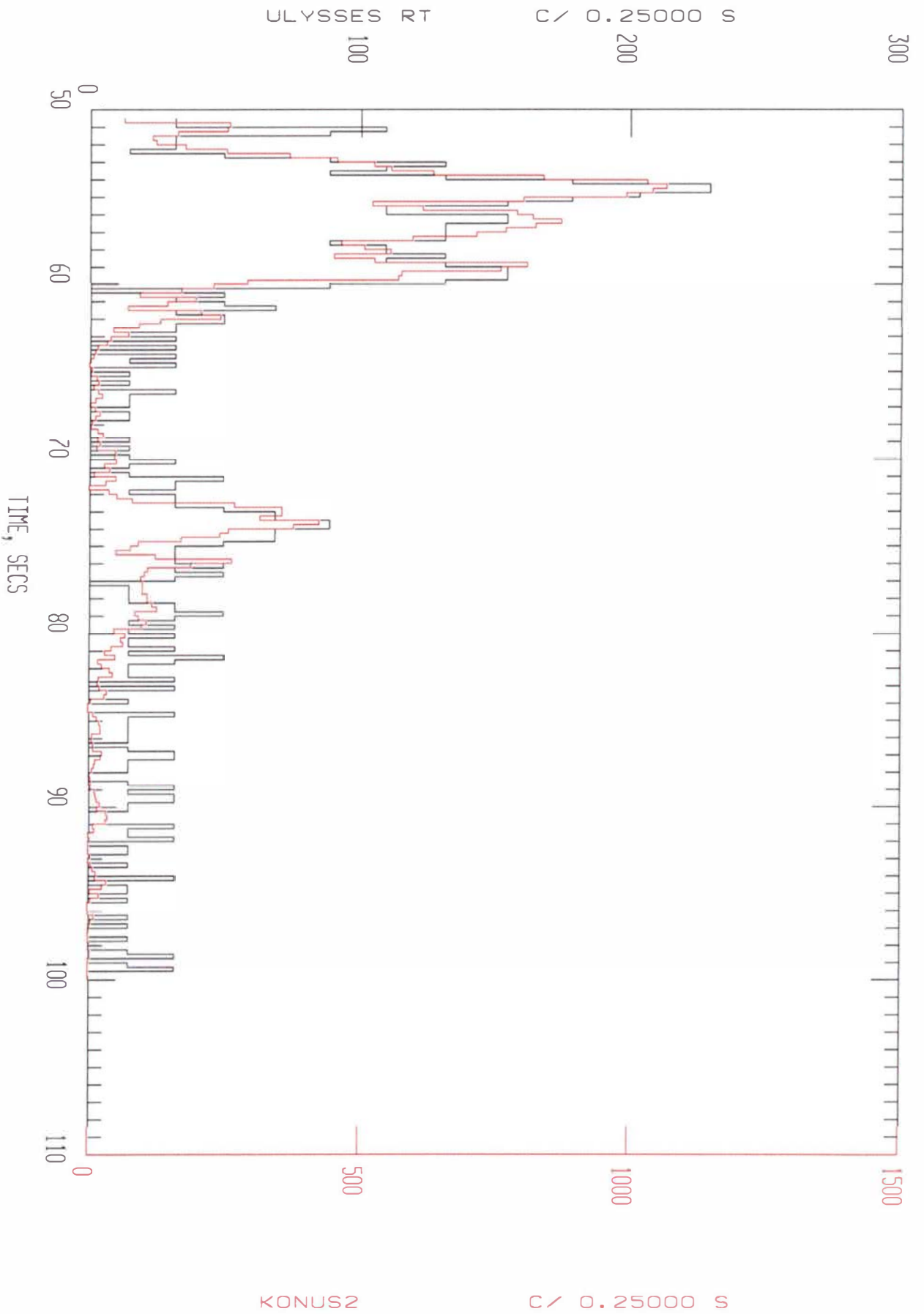
EVENT OF JUL 10, 1996 0:01

04/10/2011

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 KONUS2







KONUS 19960710 00166

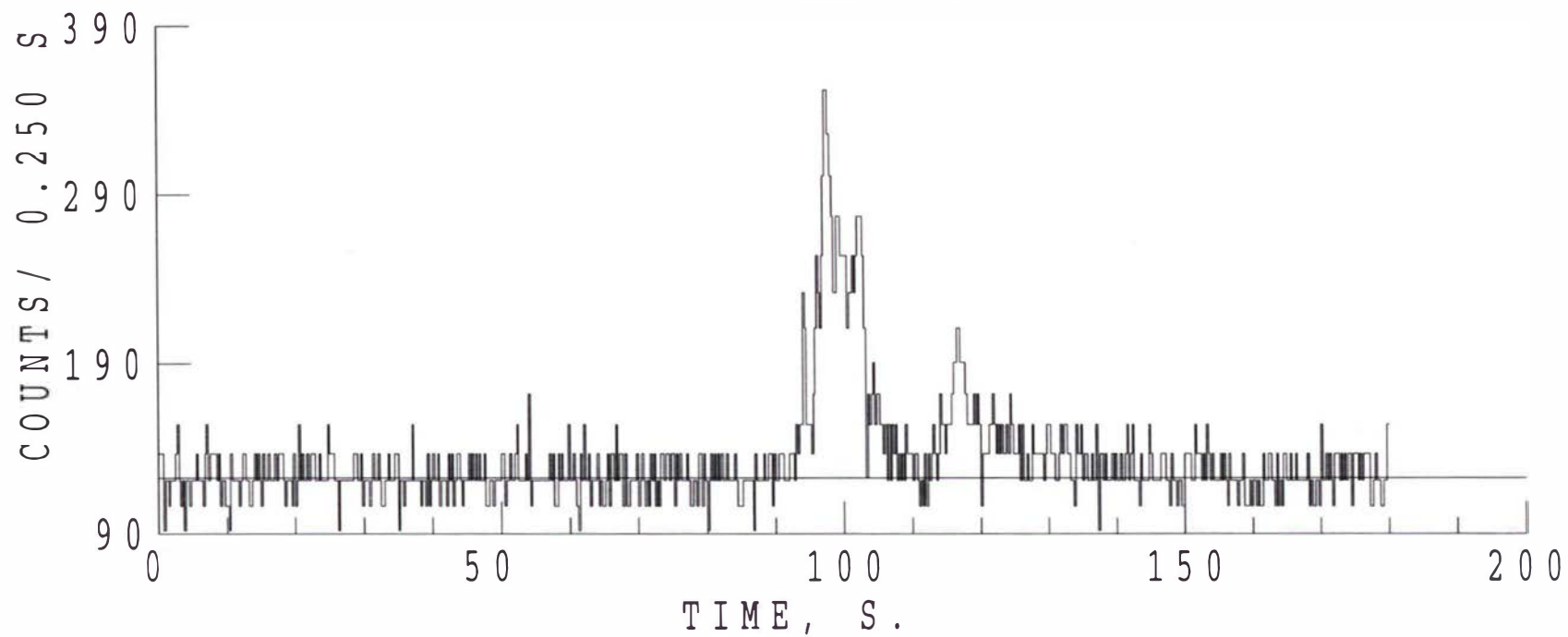
ULYSSES RT

03 / 10 / 11

10 / 07 / 96 72.124 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From TERRELL@nisd00.lanl.gov Fri Dec 6 14:43 PST 1996

From: TERRELL@nisd00.lanl.gov

Date: Fri, 6 Dec 1996 15:43:13 -0700

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, filippo@botesl.tesre.bo.cnr.it,
kmarar@isac.ernet.in

X-Vmsmail-To: @EMAIL.DIS

Subject: dmsp grb detections

From: jterrell@lanl.gov (James Terrell) 961206

To: khurley@sunspot.ssl.berkeley.edu, butterworth@lheavx.gsfc.nasa.gov,
filippo@botesl.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

Subj: DMSP GRB detections

DMSP 12 detected the event of 12 June 1996 as three peaks at 71201.8, 71205.8, and 71209.8 sec UT, very hard (>550 keV).

DMSP 13 detected the event of 10 July 1996 as 2 hard peaks at 664.7 (intense) and 684.7 sec UT.

DMSP 13 detected the event of 11 July 1996 as a single peak at 63774.2 sec UT, <4sec long.

DMSP 13 detected the event of 5 August 1996 as a soft peak at 78969.4, <6sec long.

; next report will be more timely, I hope. However, DMSP 13 is less sensitive than DMSP 12, inoperative since 960630. --Jim

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
96	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5293
96	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5554
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 SEARCH	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 SEARCH	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 SEARCH RI	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:13 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:12:49 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesl.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960710 was seen by Konus

Konus triggered at 00:11:02.014 in the detector facing to the ecliptic north. The event was intense, with three broad peaks (strong, moderate and weak) at 4s, 23s and 40s after the trigger. The strongest peak had 4 evenly-spaced maxima.

Date: Mon, 5 Aug 1996 15:52:59 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608052252.PAA02497@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botesl.tesre.bo.cnr.it
Subject: GRB960710
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses triggered on an intense, 30 s long event July 10 1996 around 00:02 UT at Ulysses.

The spacecraft was about 2400 light-seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

From WOODSP@ssl.msfc.nasa.gov Thu Jul 11 11:54 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 11 Jul 1996 13:53:59 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5536

BATSEARCH PROGRAM

NO

BATSE BURST # 5536
EVENT OF 1996 JUL 10 DAY OF YEAR=192
EVENT CROSSING TIME AT BATSE : 38686. S. OR 10:44:46.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 347.000 -31.000
BATSE PEAK COUNTING RATE: 6700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 7/ 96 IS:
RA= 155.447 DEC= 45.309 DIST= 4.746 AU
BATSE-ULYSSES DISTANCE = 710032888. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 16.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2266.01 SECS.
CROSSING TIME AT ULYSSES IS 40952. S. OR 11:22:32 +/- 204.02 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 7/ 96 IS:
RA= 78.286 DEC= 23.225 DIST= 2.305 AU
MARS-BATSE DISTANCE = 344839840. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 253.96 SECS.
CROSSING TIME AT MARS IS 38940. S. OR 10:48:59 +/- 198.63 SECONDS

BATSE BURST TRIGGER

NO.: 5536

TIME: TJD=0274 SECONDS=38686

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=67.6 AZIMUTH=101.8 ERROR=5.4 DEGREES

COMMENTS:

SHORT GRB LASTING 0.03 SEC. SINGLE SPIKE WITH A FAIRLY SOFT SPECTRUM.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5536	960710	10274	38686	6700	347	-31	.03

BATSE #

5536

ULYSSES RT

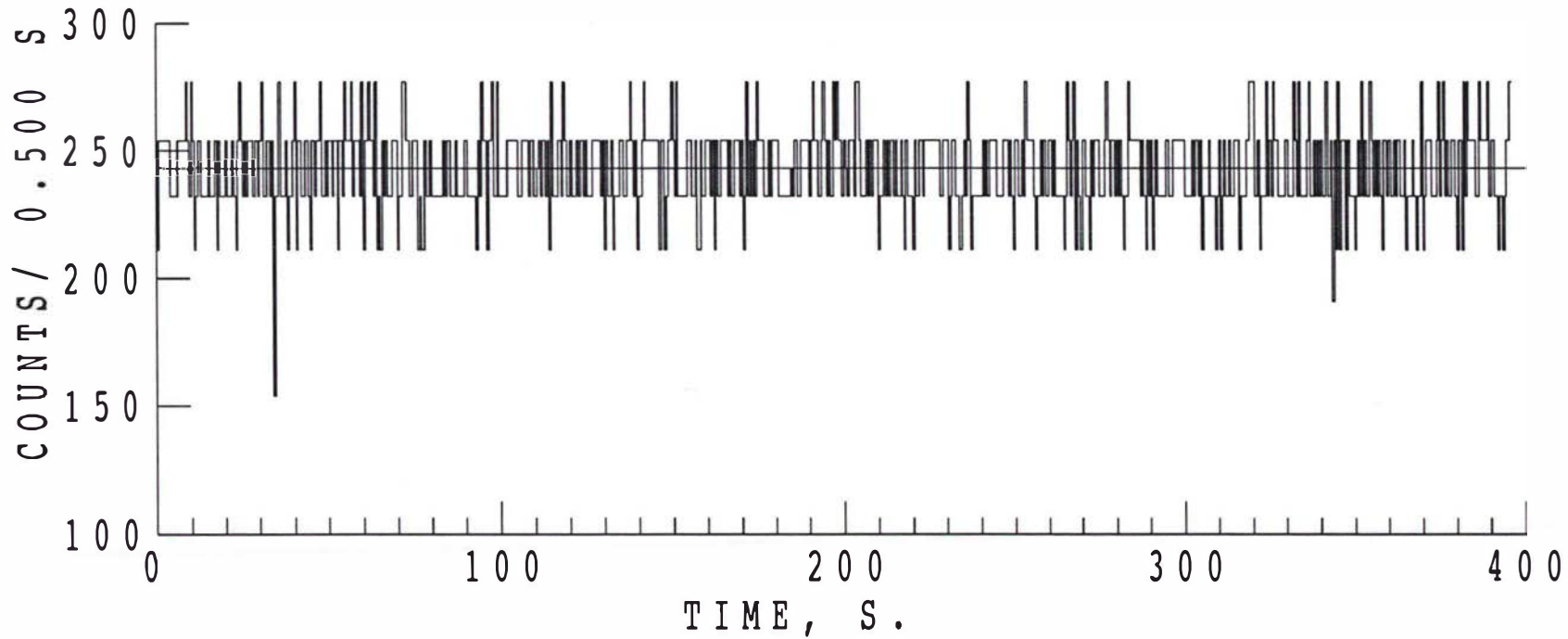
5 / 12 / 96

10 / 7 / 96 40752.156 s

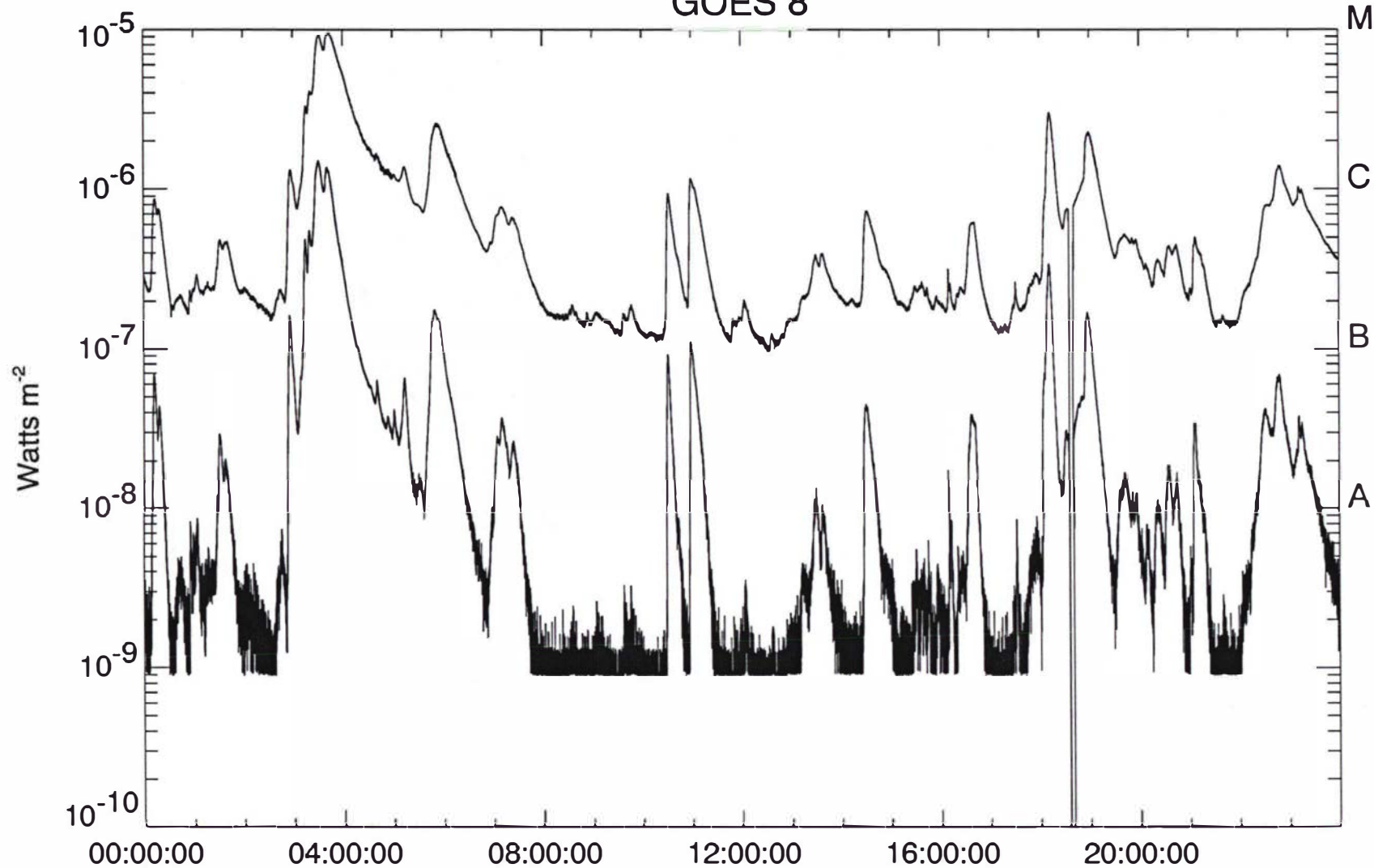
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GOES 8



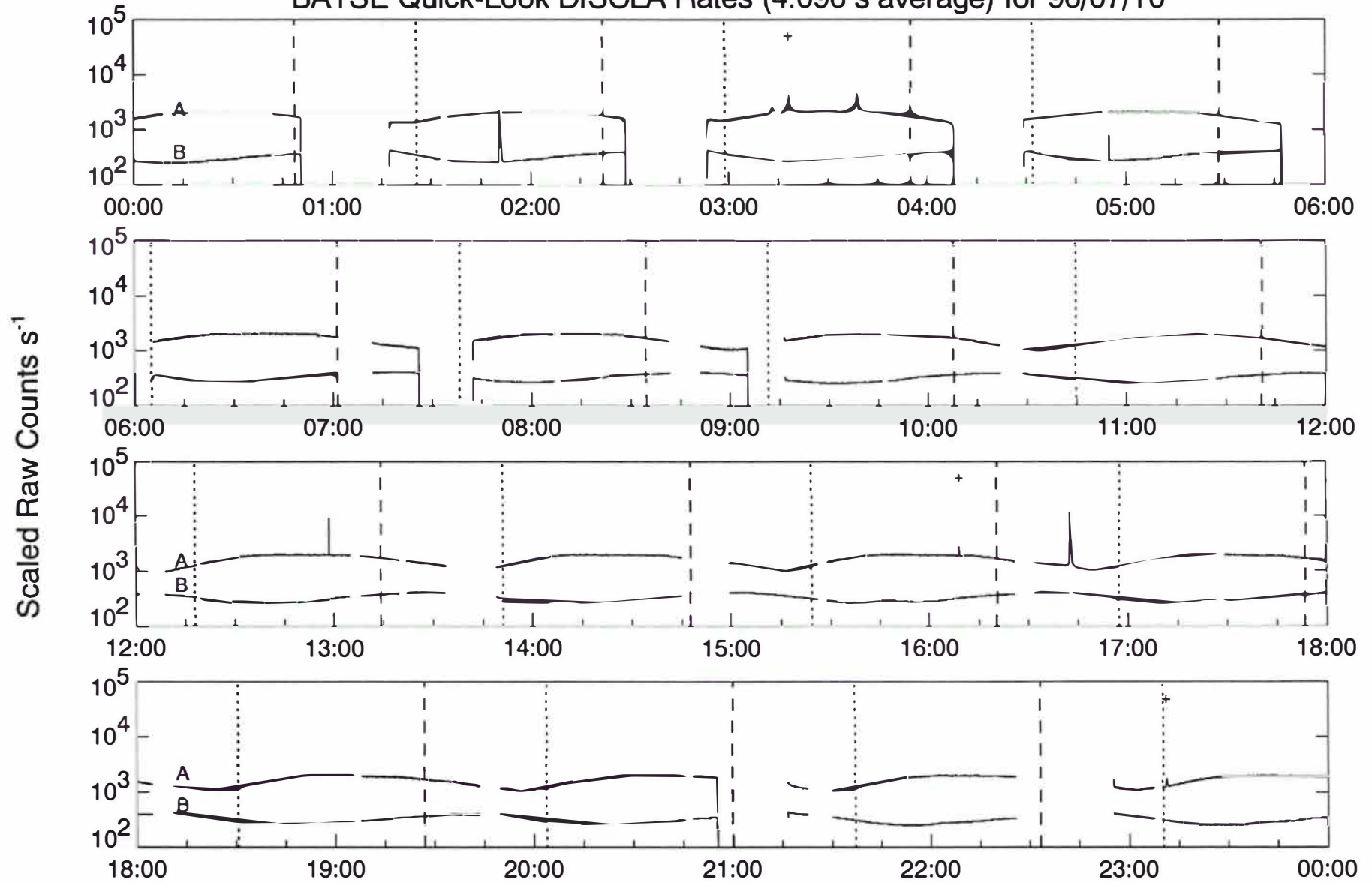
Data Start: 96/07/10, 0000:00

Plot created: 96/07/12, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/10

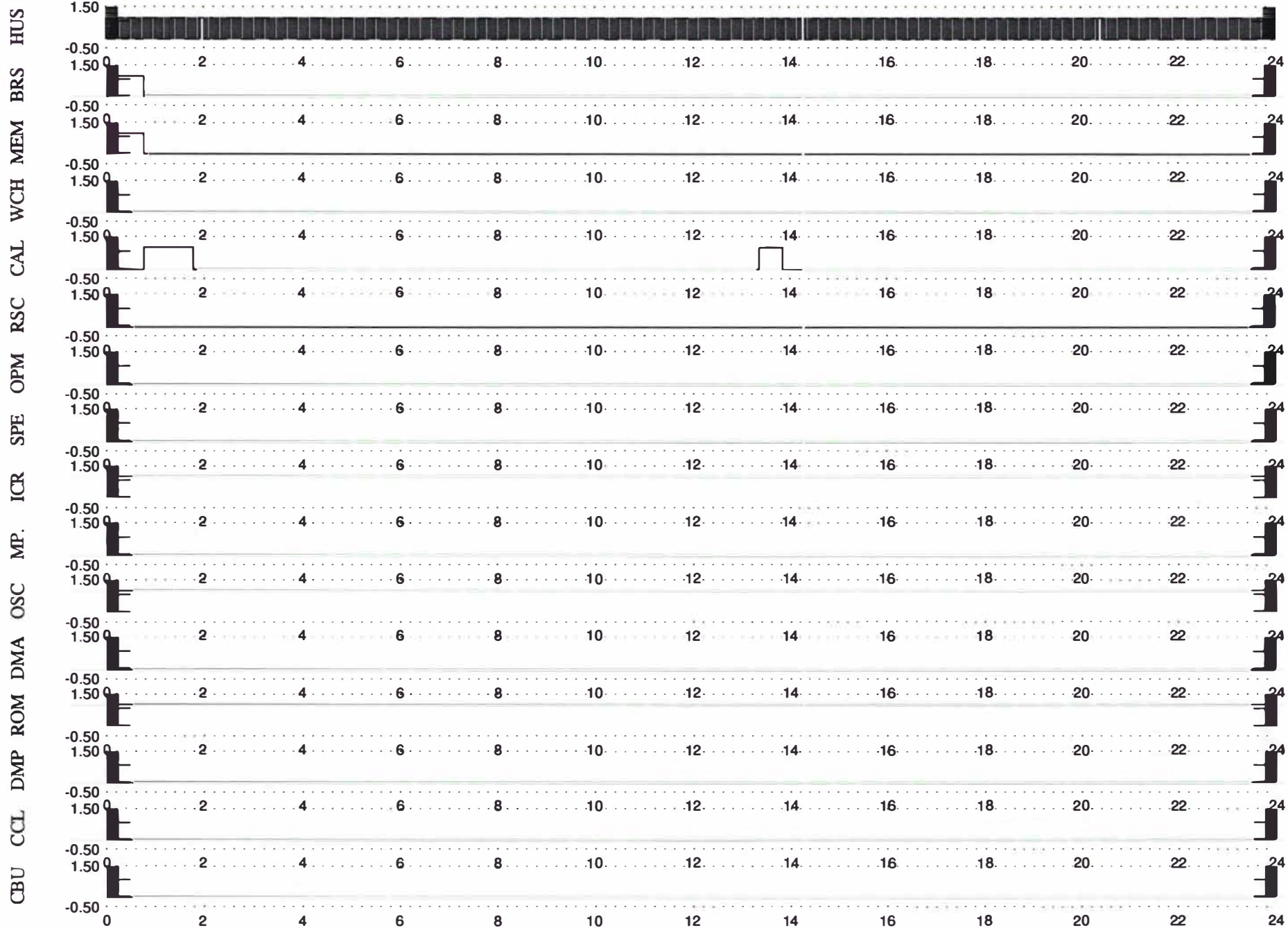


Current Time: 96/07/12, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

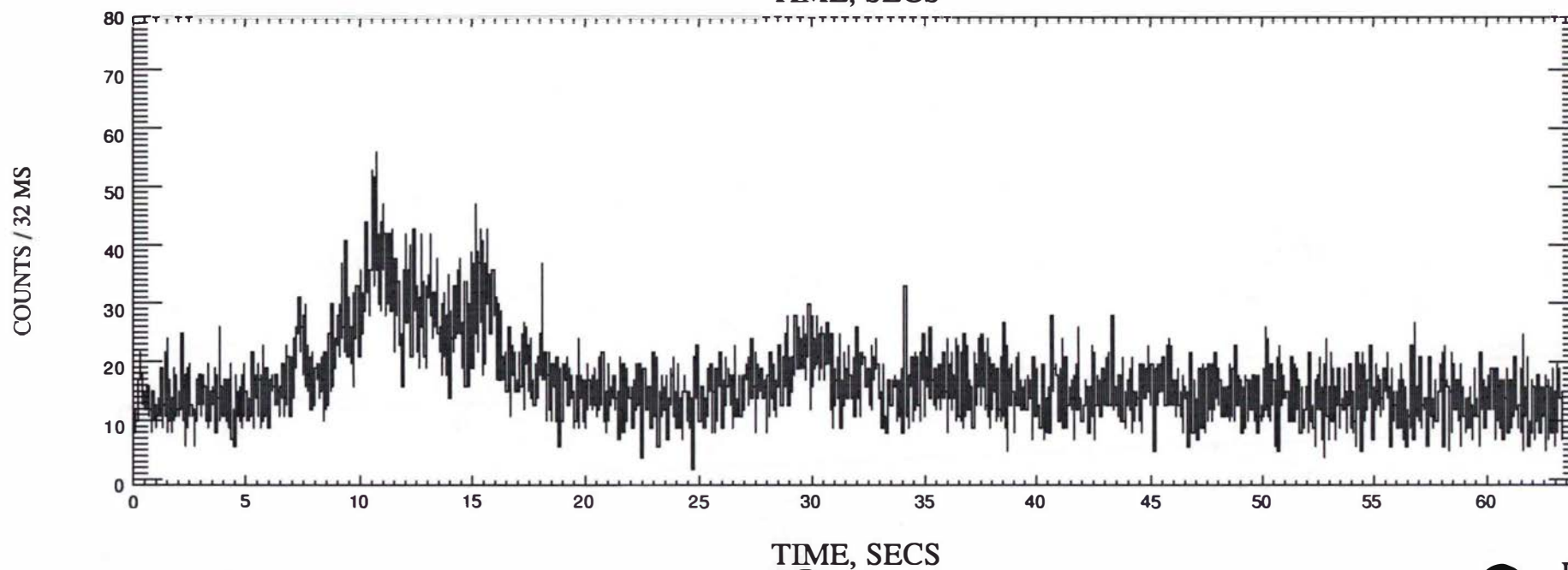
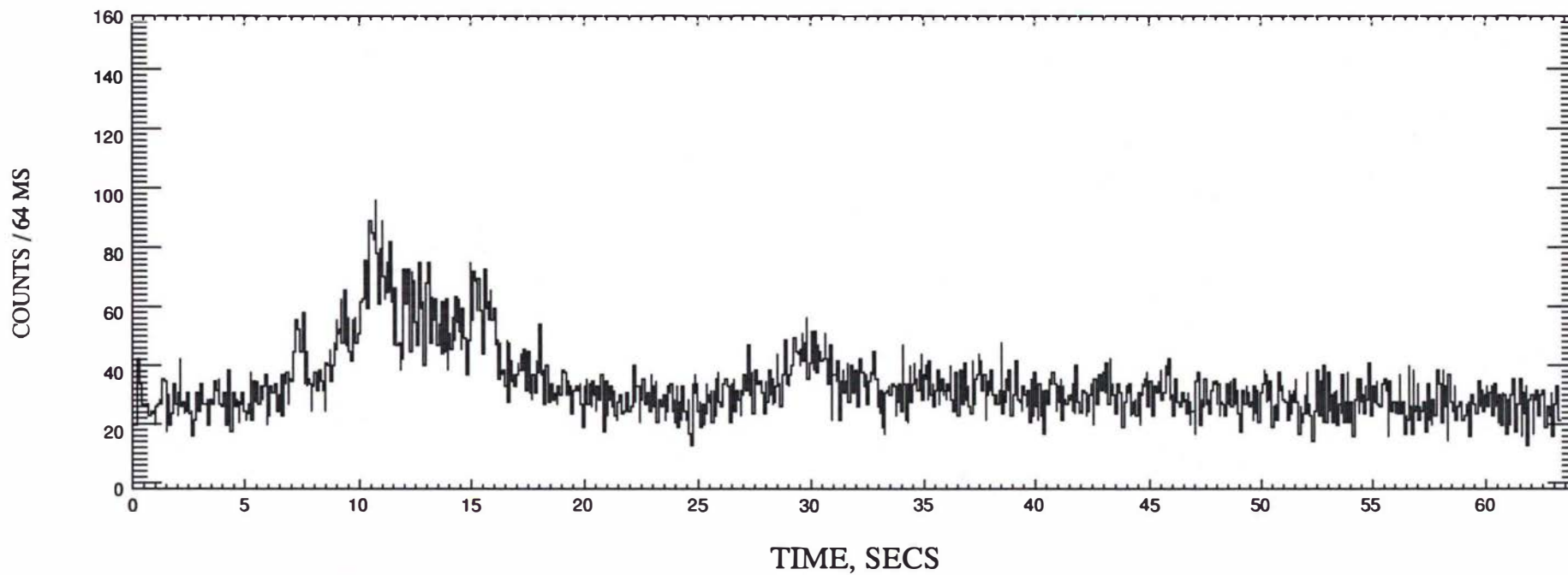
* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 10

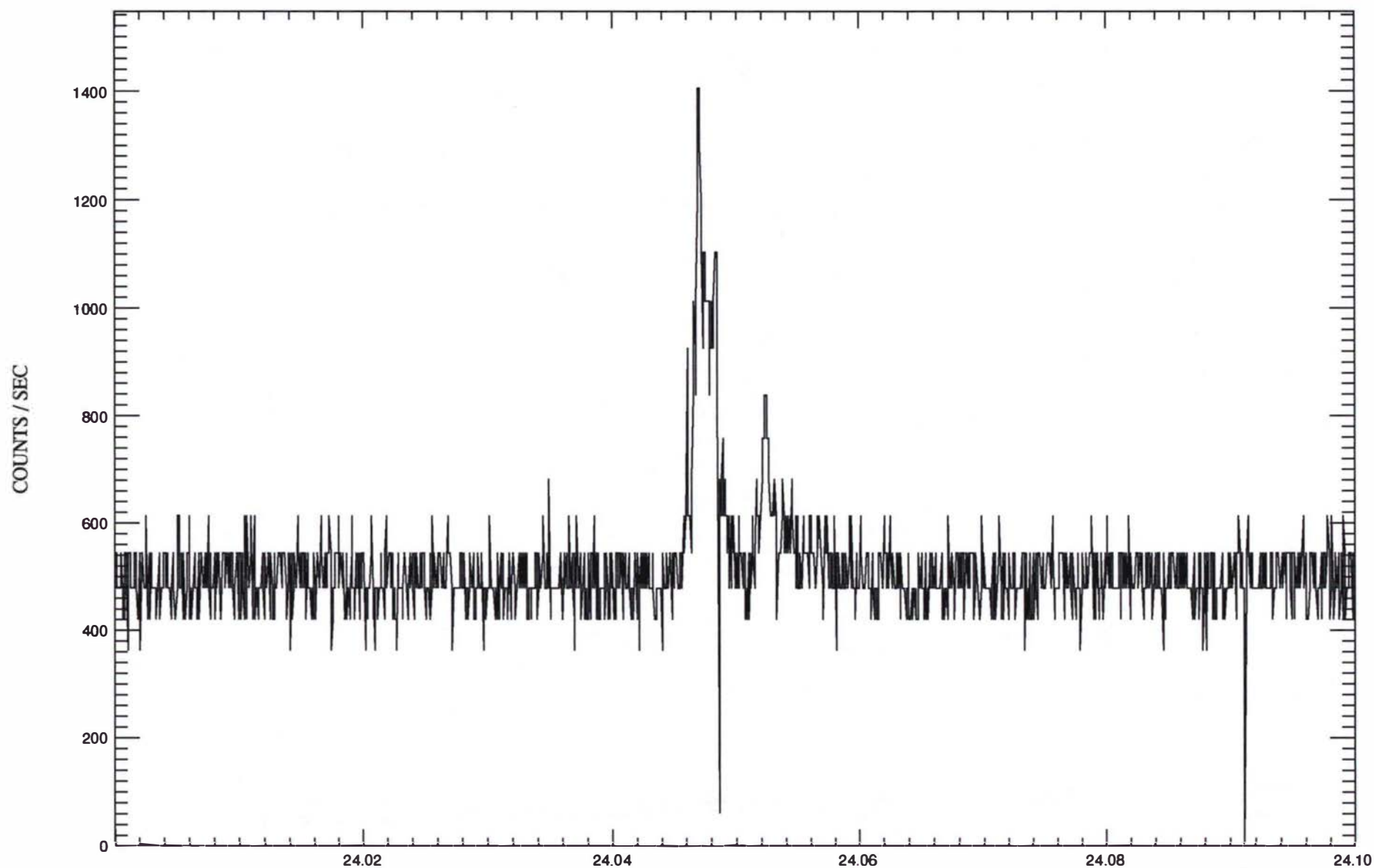


UNIVERSAL TIME

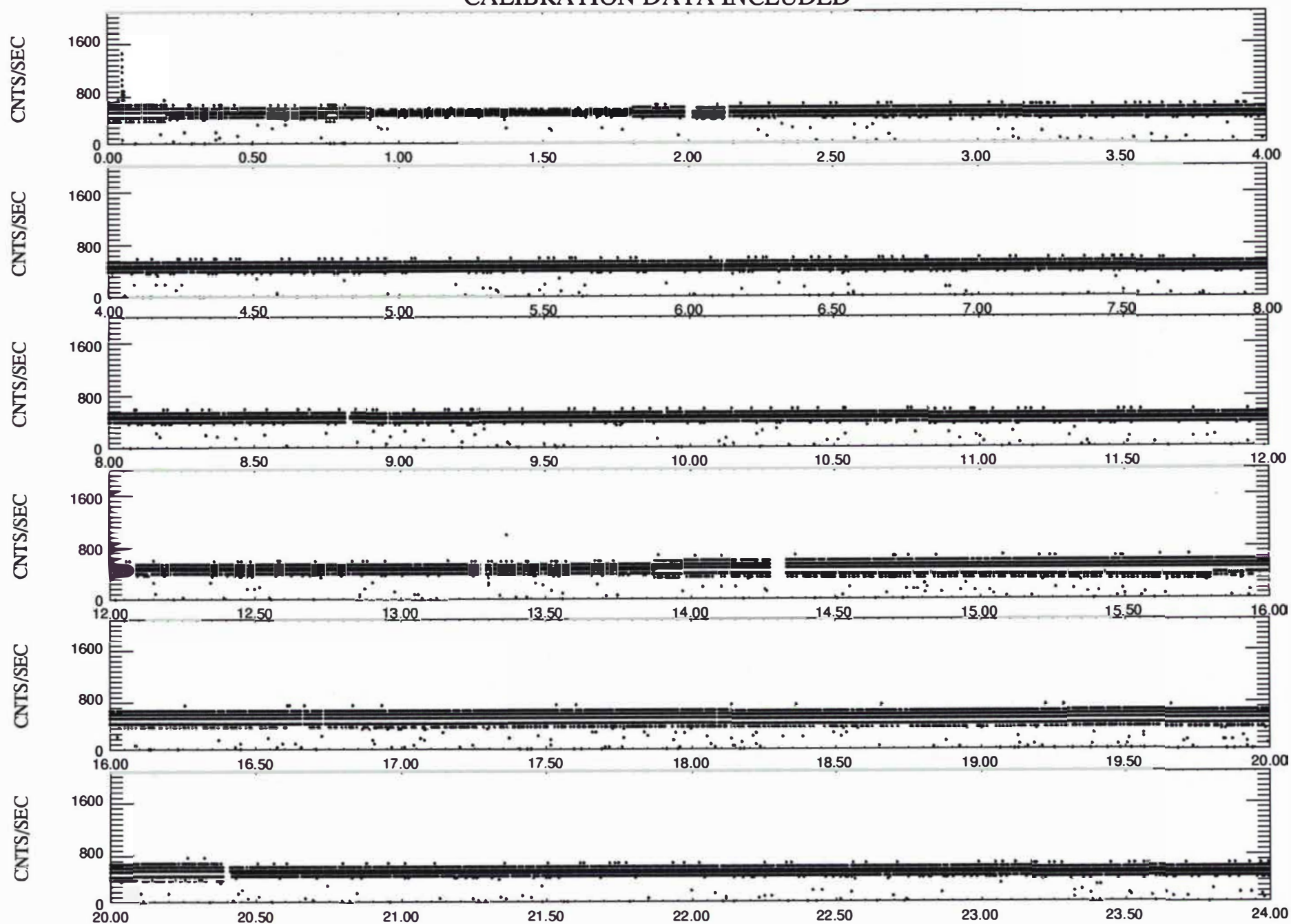
Burst Counter 10 at UT= 0.046206563314 h= 166.344 s 00:02:46.344



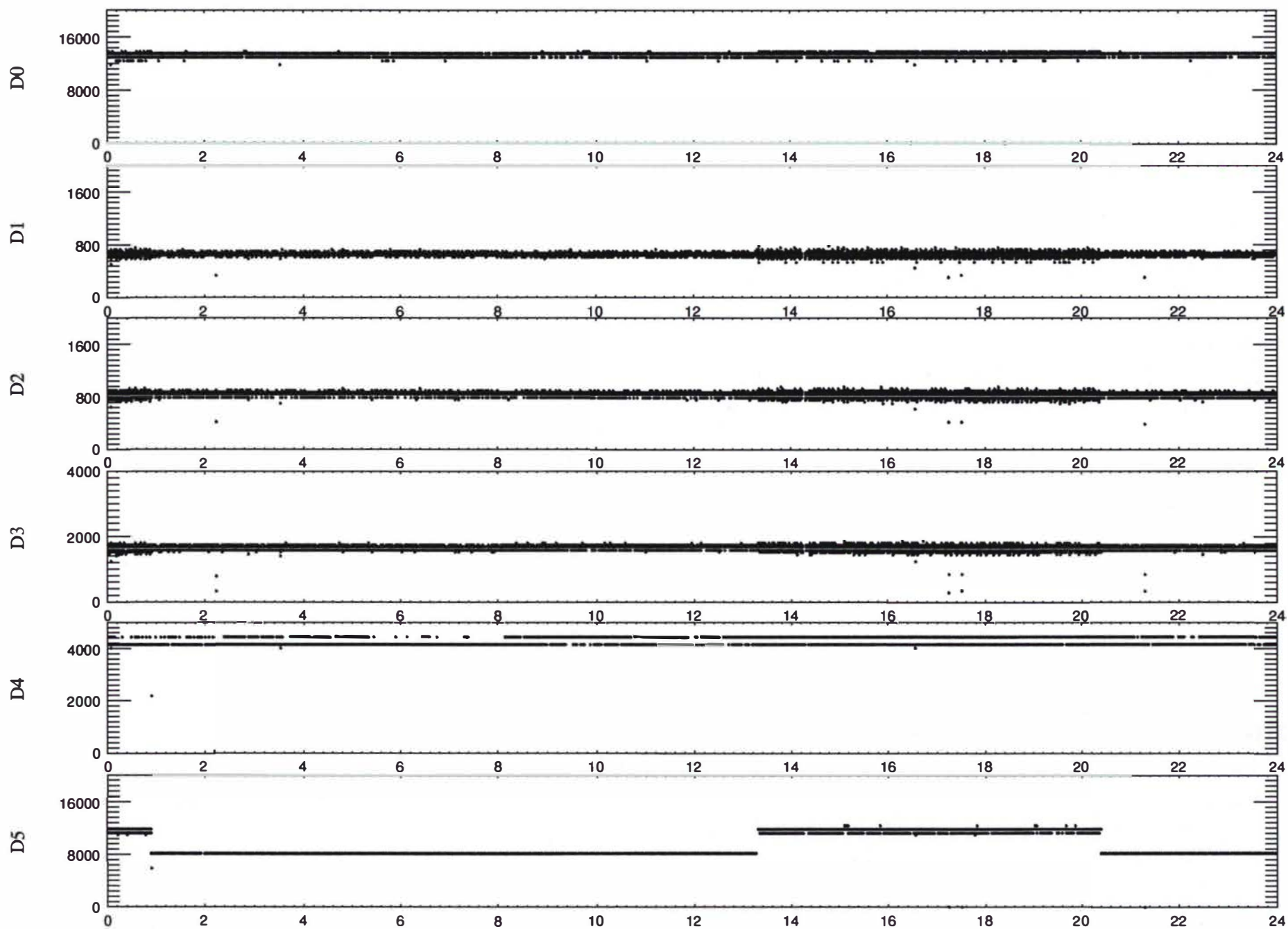
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

Date: Oct 4 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?

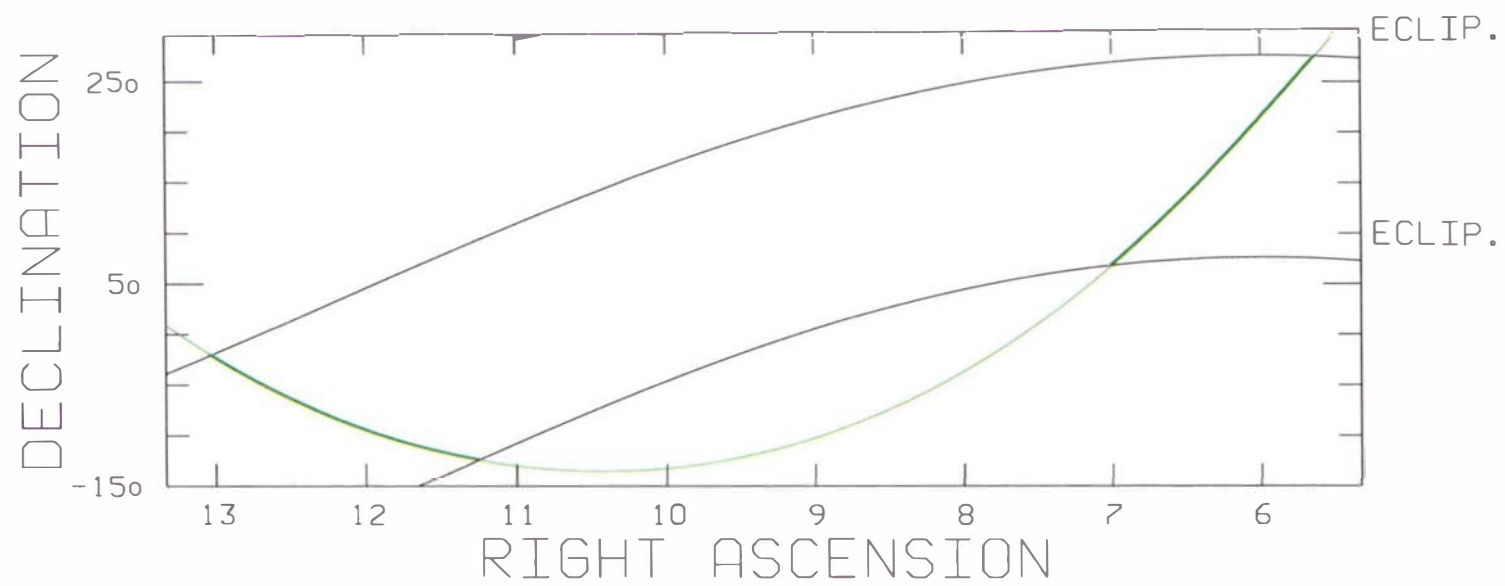
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

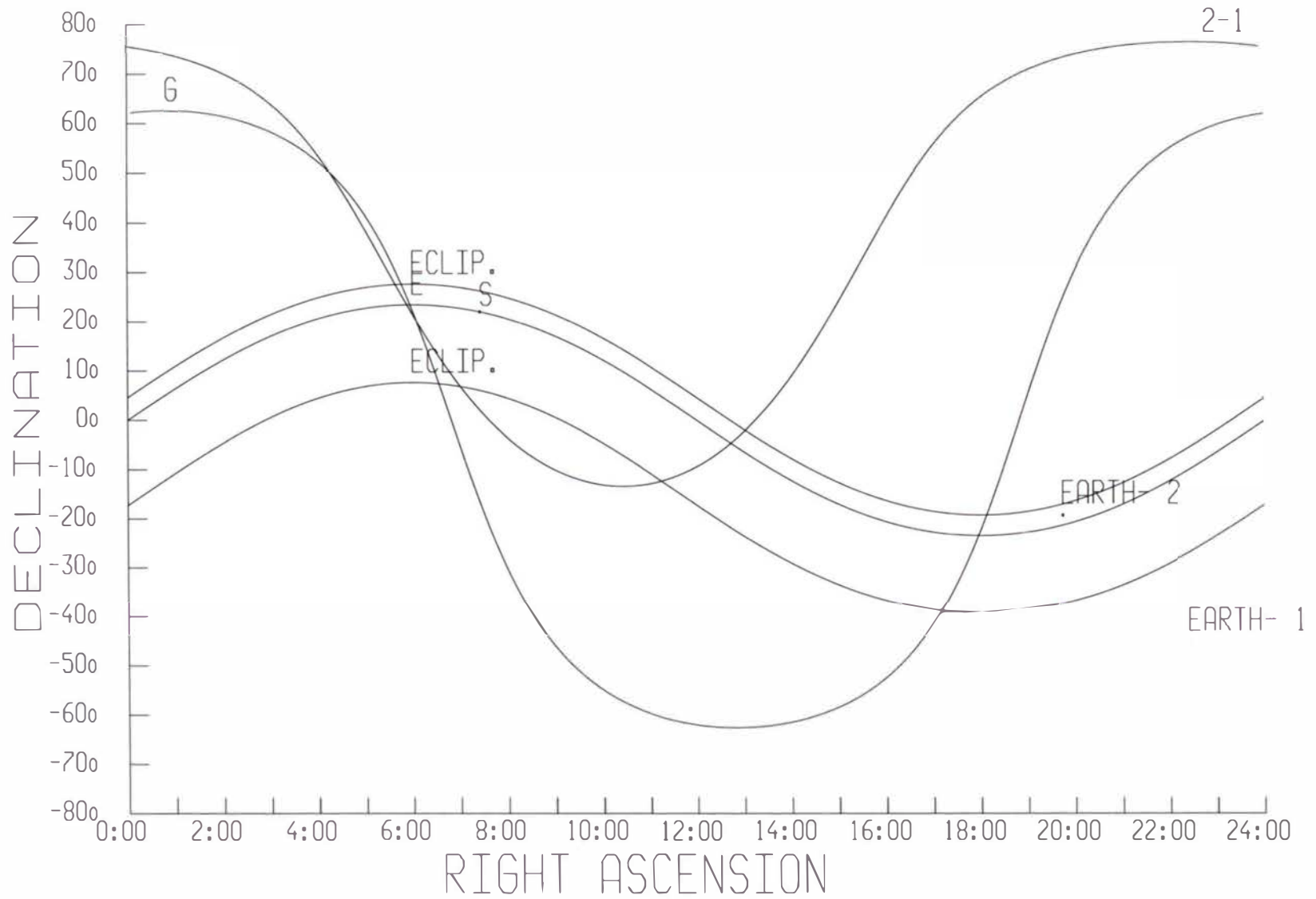
-
- ☒ ACCESS and MBL4 databases updated with identical times?

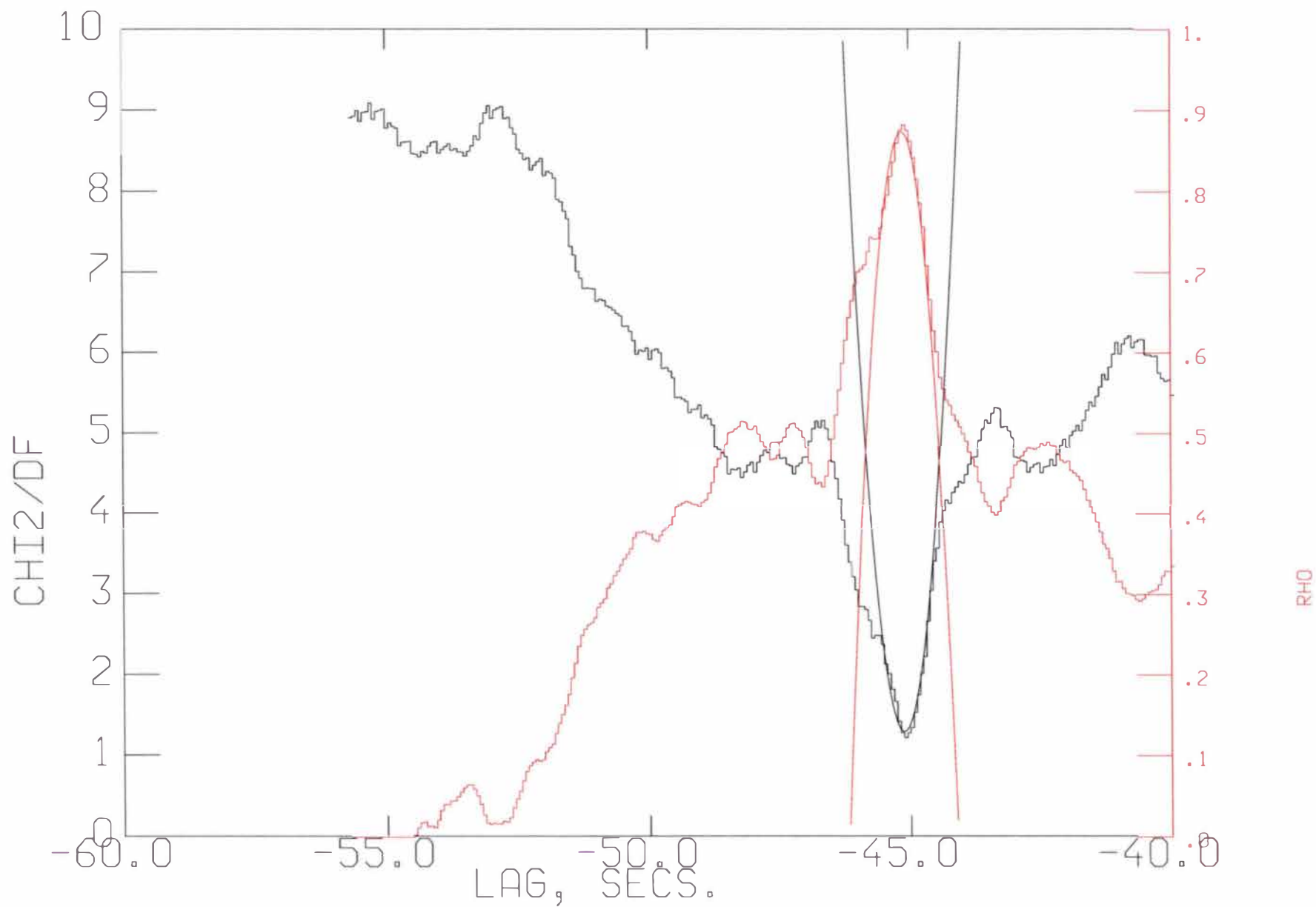


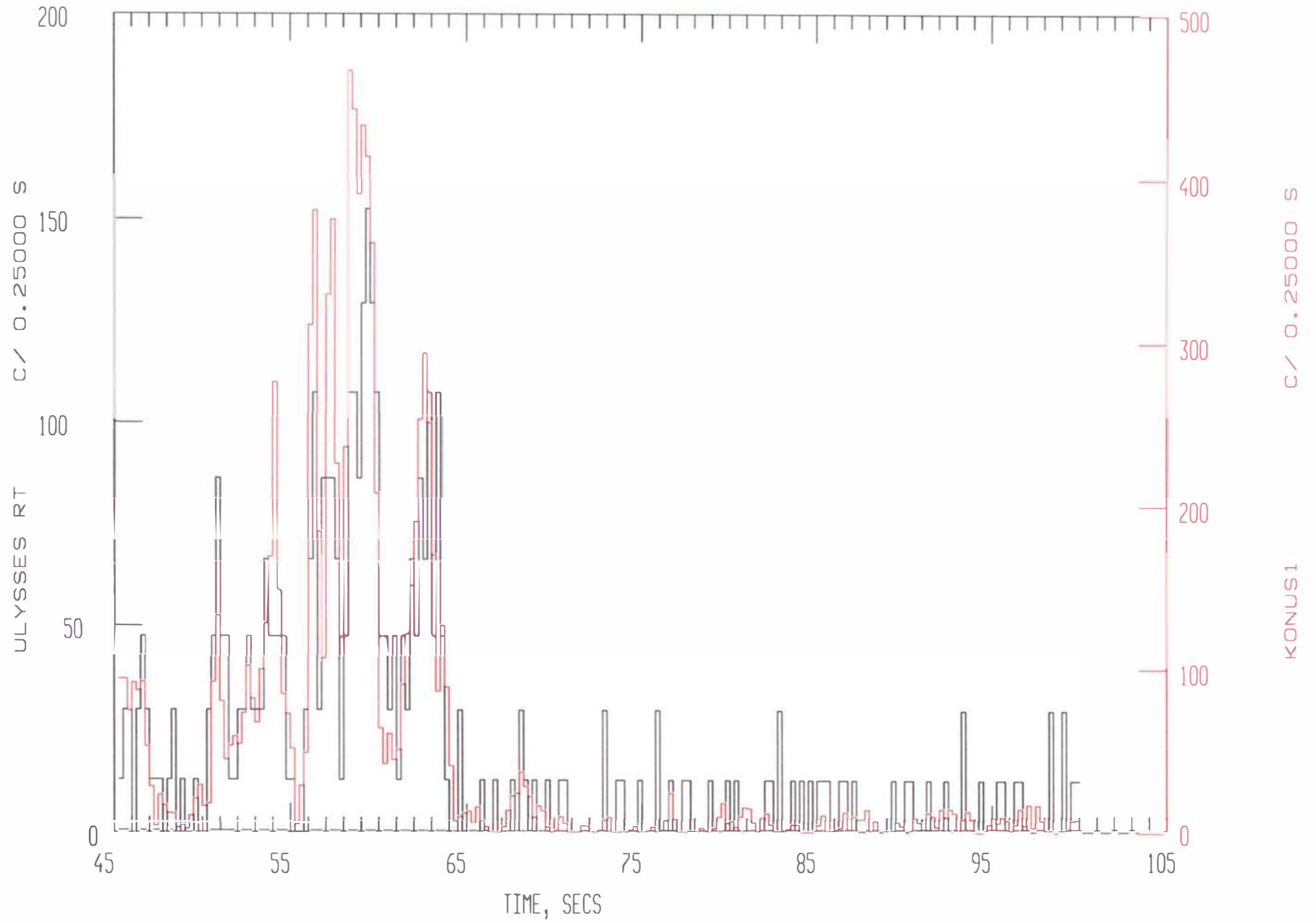
EVENT OF JUL 11, 1996 17:21

04/10/2011

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







KONUS 19960711 62524

ULYSSES RT

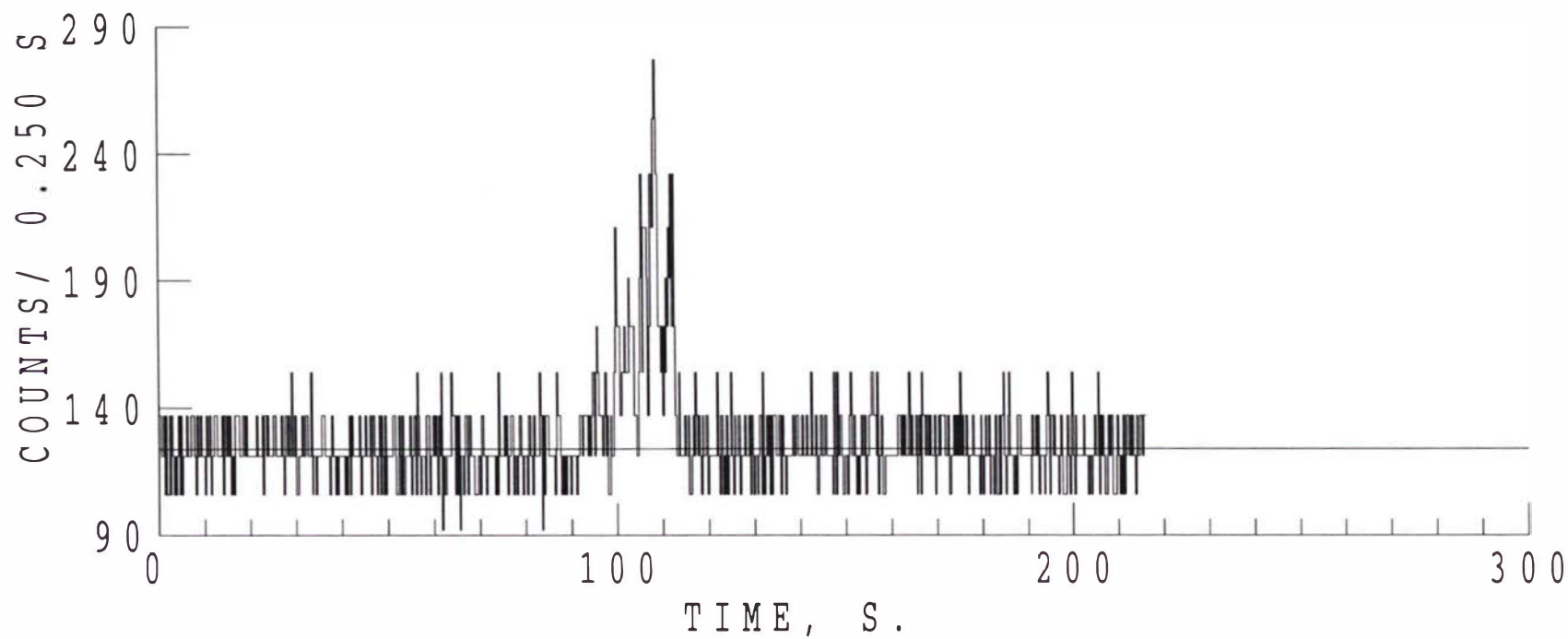
03/10/11

11/07/96 62424.070 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

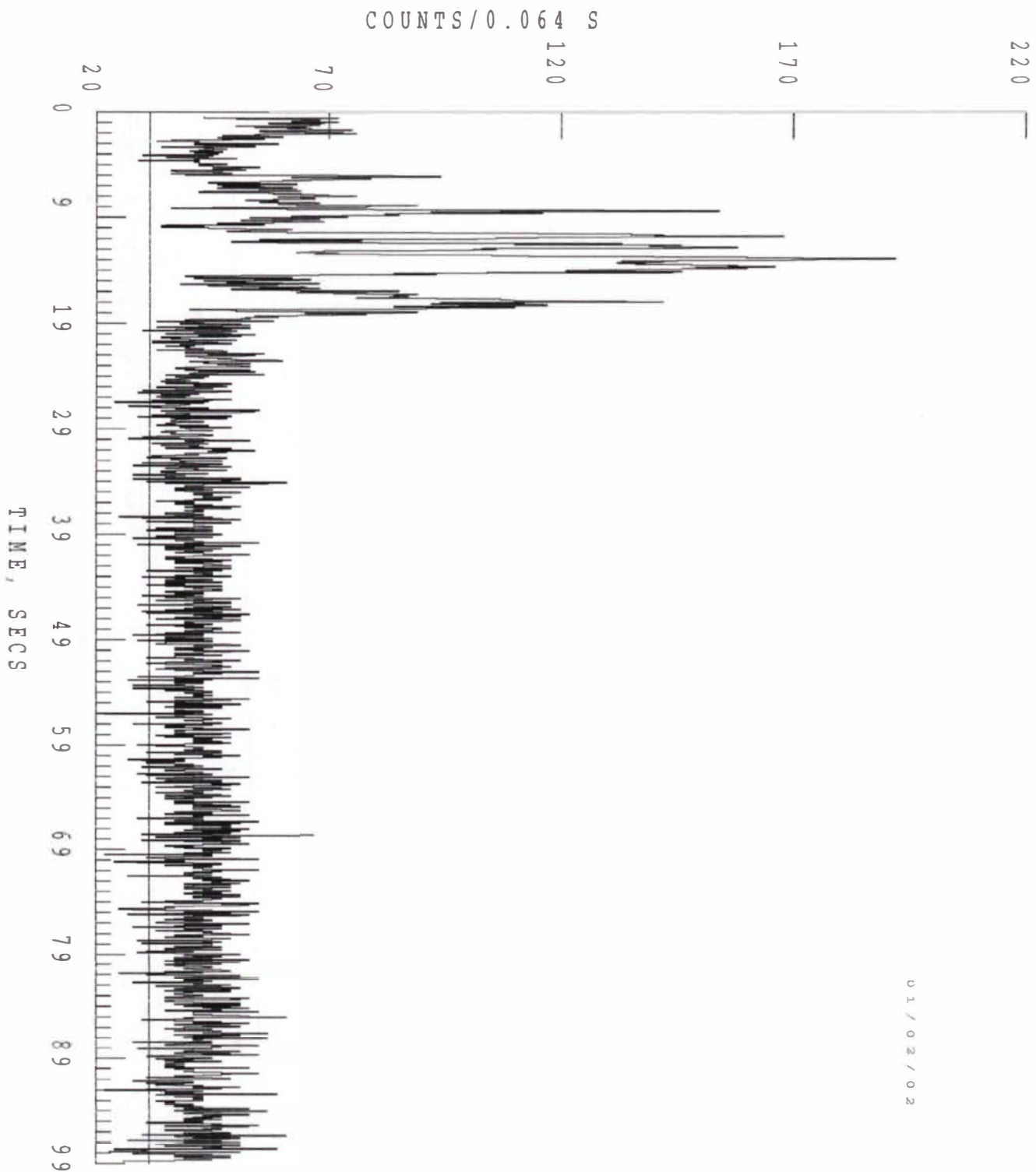


KONUS1

11/07/96

63757.543

50 - 200 keV

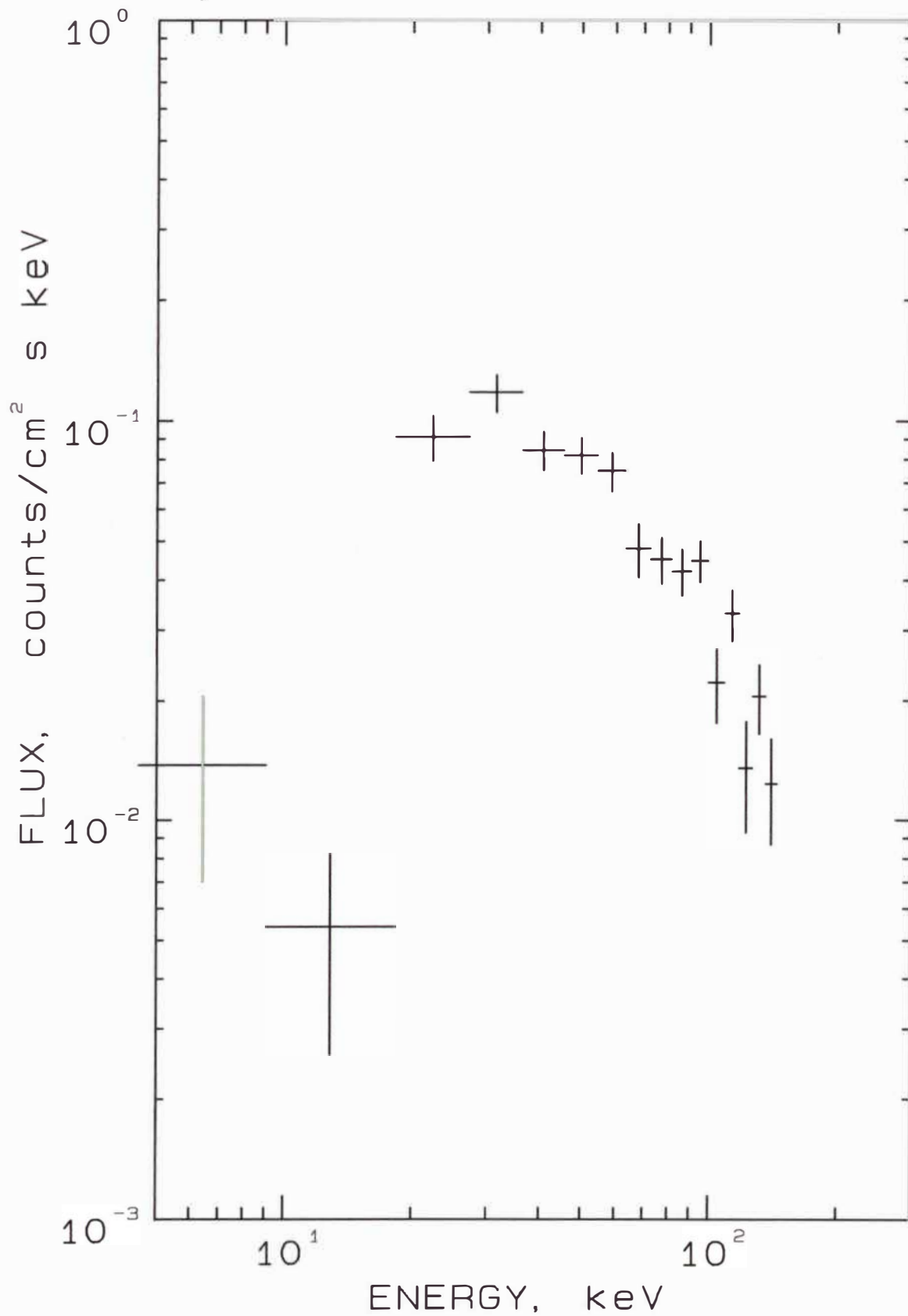


01/02/02

ULYSSES 11/07/96 62524.057

24/11/97

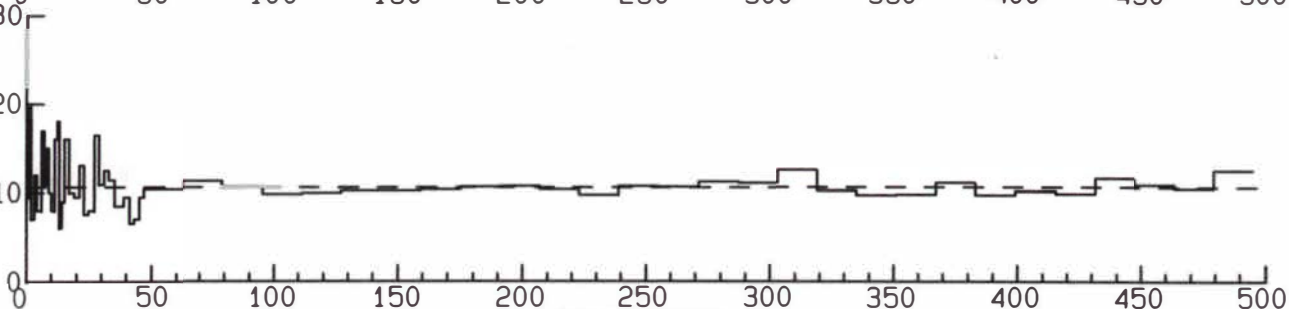
SPECTRUM INTEGRATED OVER 31.0 SECONDS, INTERVALS 2 TO 25



ULYSSES 11/07/96 62524.057 BURST SPECTRAL COUNT RATES

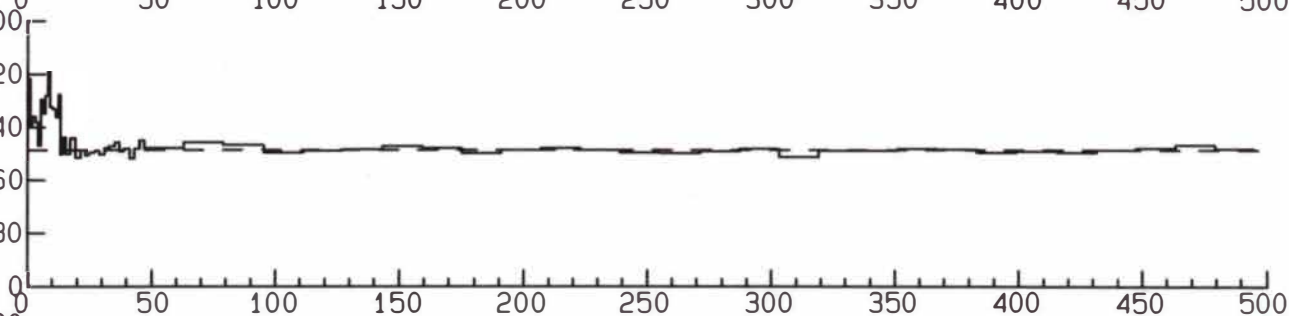
4- 18 keV

COUNTS/S



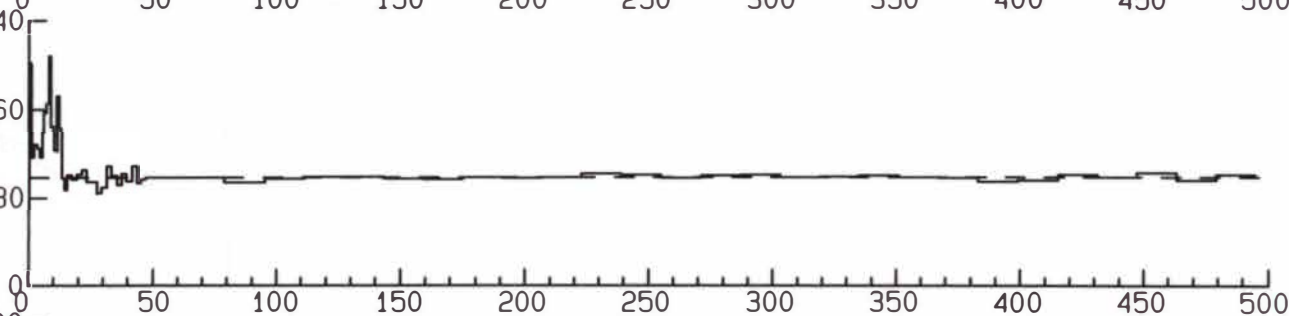
18- 45 keV

COUNTS/S



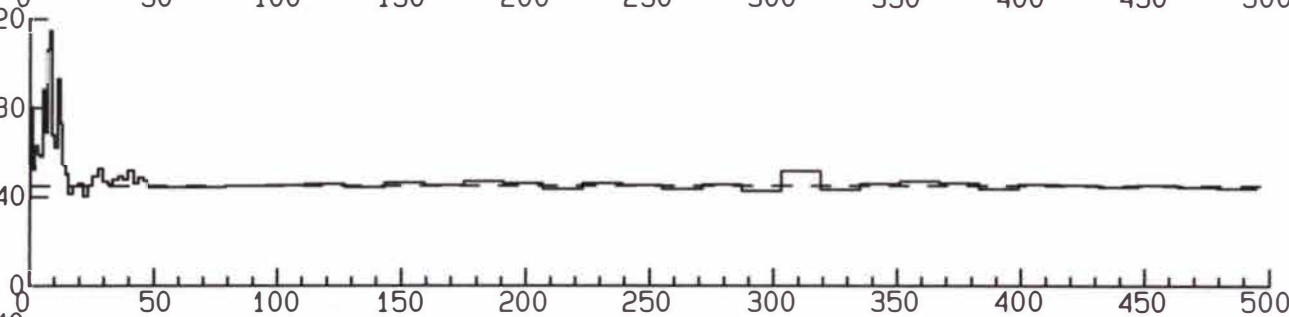
45- 72 keV

COUNTS/S



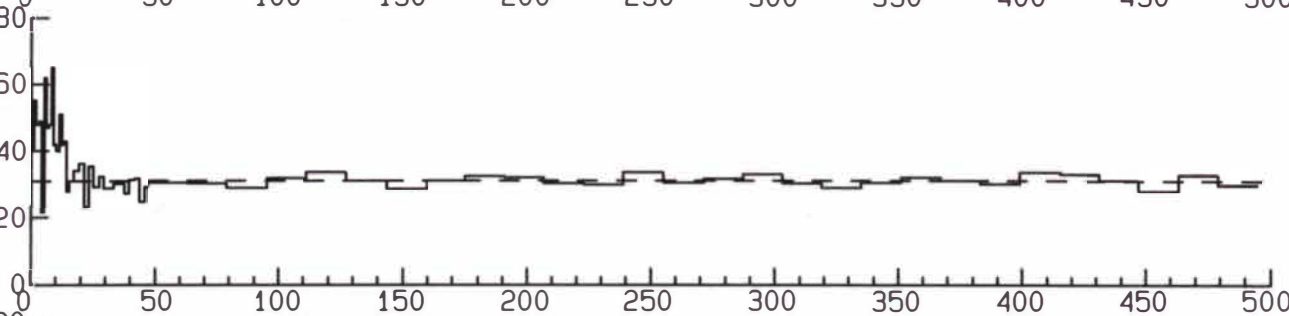
72-100 keV

COUNTS/S



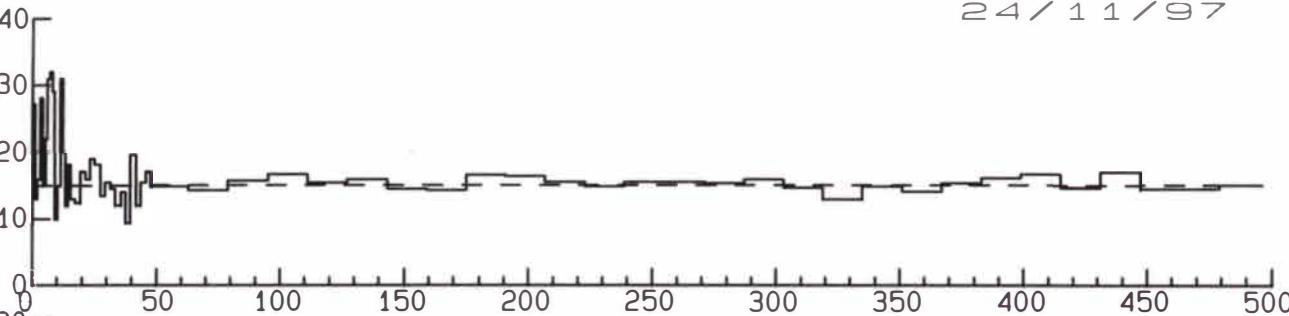
100-127 keV

COUNTS/S



127-145 keV

COUNTS/S



24 / 11 / 97

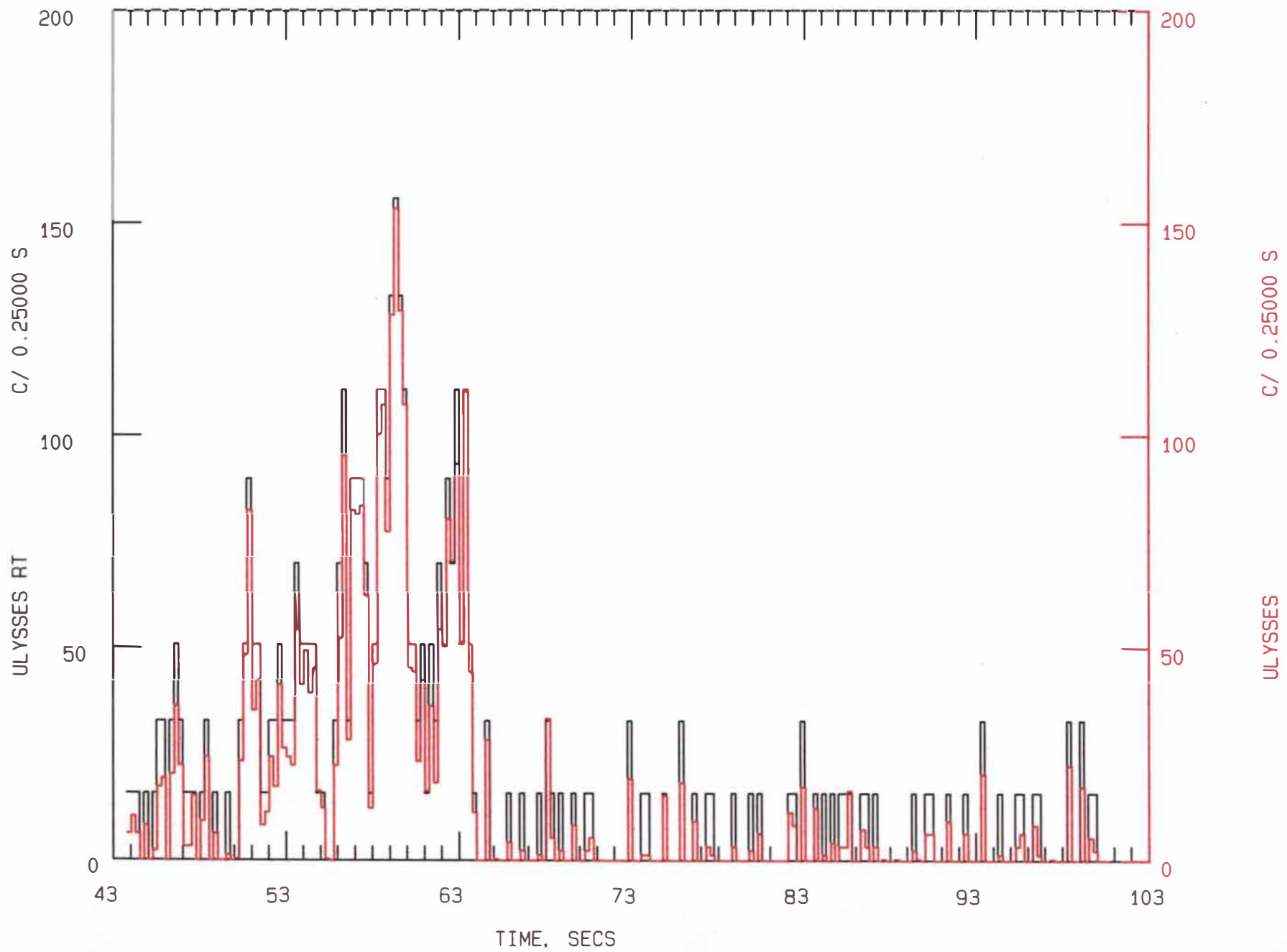
ULYSSES RT-ULYSSES

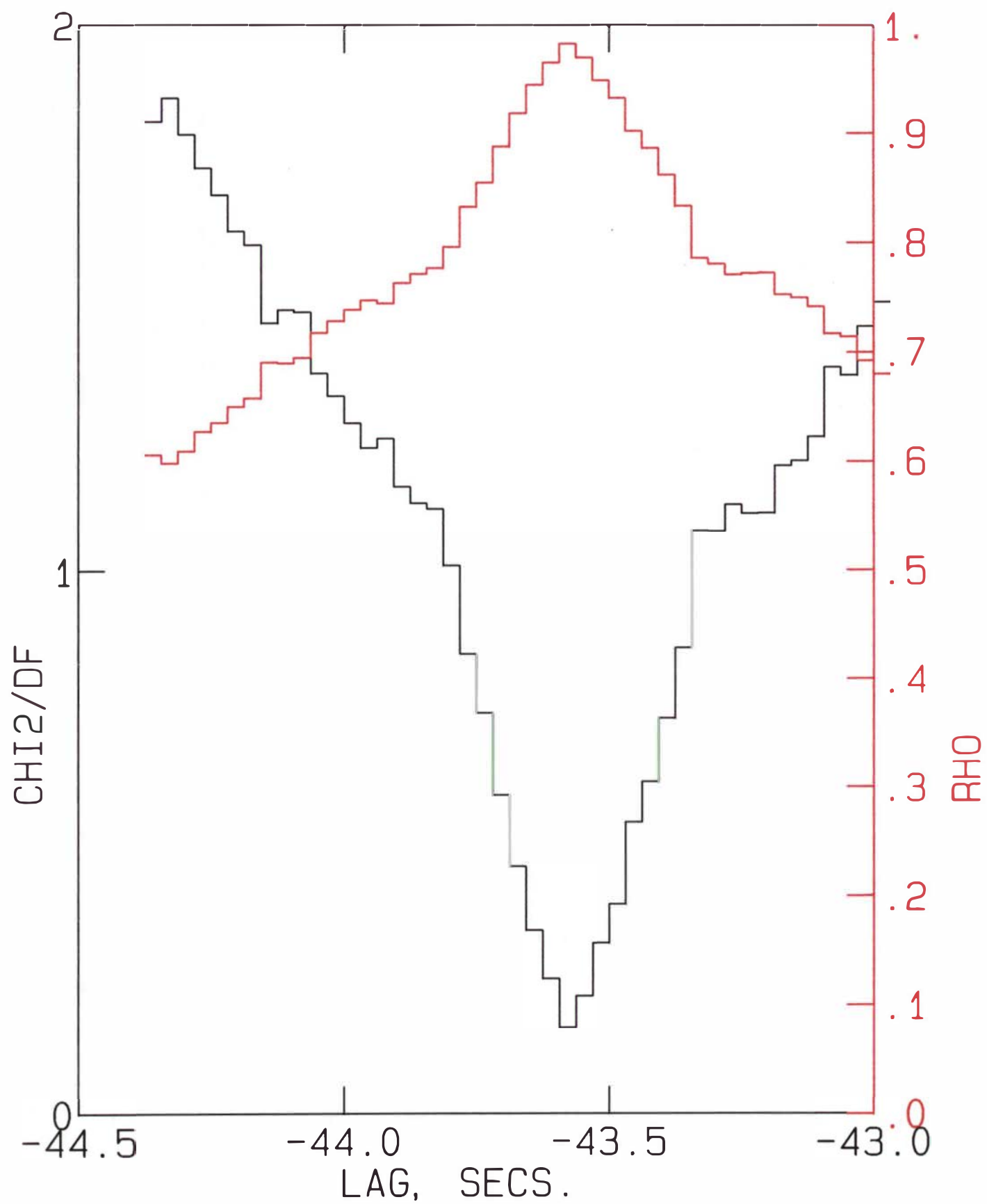
CORRELATION

11/ 7/96

62472.997

24/11/97



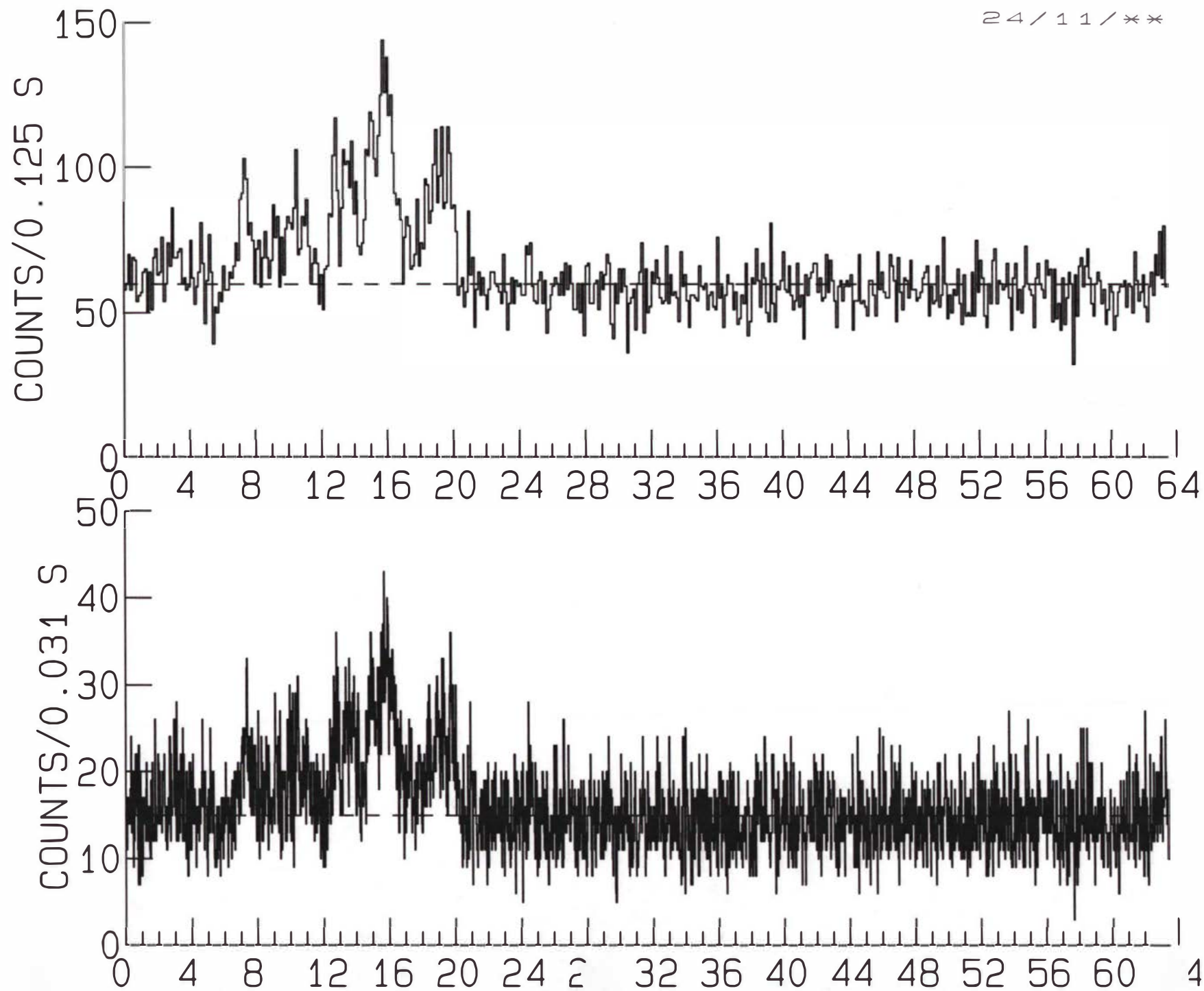


ULYSSES

11/07/96

Ttrig=62523.986

0- 0 keV



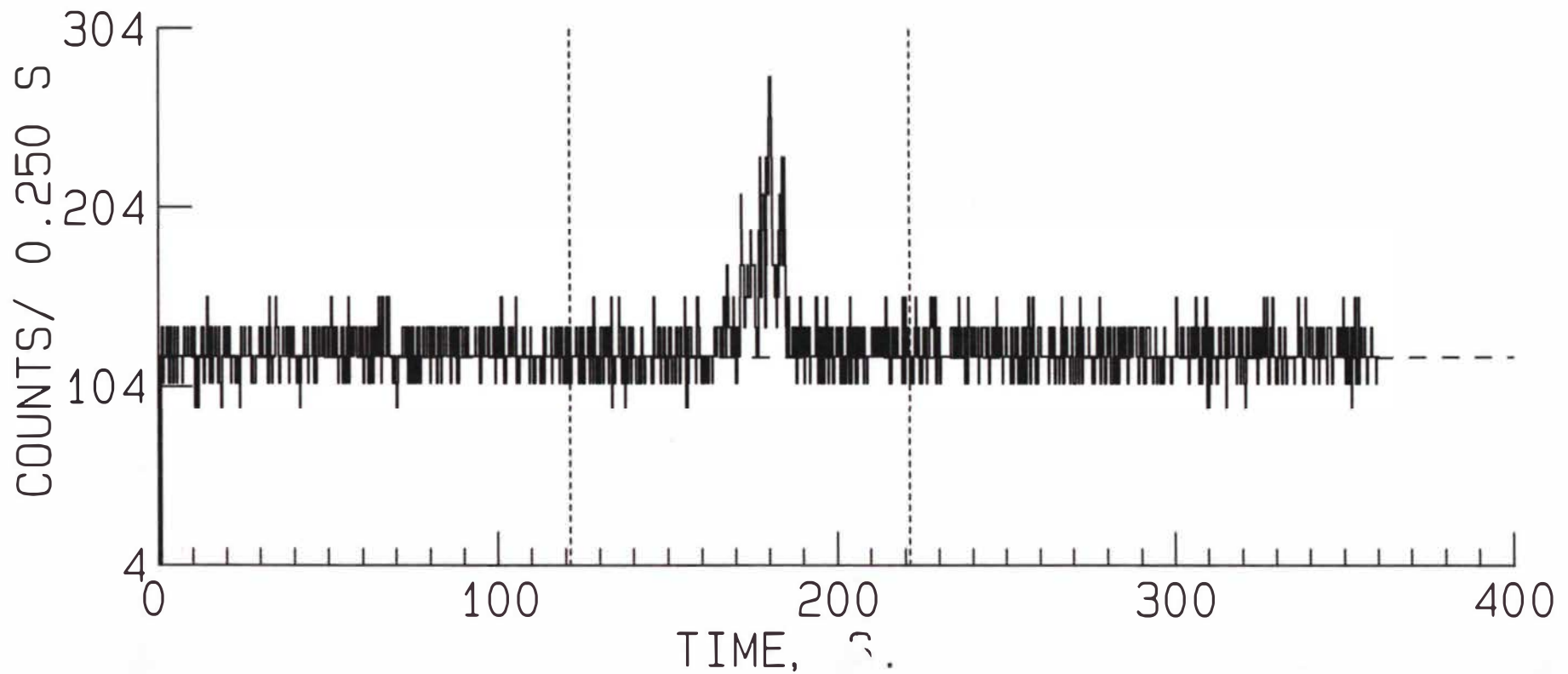
ULYSSES RT

24 / 11 / 97

11/ 7/96 62352.072 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
96	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
96	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5369
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5419
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

(BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 <i>scribble</i>	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 <i>scribble</i>	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 <i>scribble</i>	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

From TERRELL@nisdpo.lanl.gov Fri Dec 6 14:43 PST 1996

From: TERRELL@nisdpo.lanl.gov

Date: Fri, 6 Dec 1996 15:43:13 -0700

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, filippo@botesl.tesre.bo.cnr.it,
kmarar@isac.ernet.in

X-Vmsmail-To: @EMAIL.DIS

Subject: dmsp grb detections

From: jterrell@lanl.gov (James Terrell) 961206

To: khurley@sunspot.ssl.berkeley.edu, butterworth@lheavx.gsfc.nasa.gov,
filippo@botesl.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

Subj: DMSP GRB detections

DMSP 12 detected the event of 12 June 1996 as three peaks at 71201.8, 71205.8, and 71209.8 sec UT, very hard (>550 keV).

DMSP 13 detected the event of 10 July 1996 as 2 hard peaks at 664.7 (intense) and 684.7 sec UT.

DMSP 13 detected the event of 11 July 1996 as a single peak at 63774.2 sec UT, <4sec long.

DMSP 13 detected the event of 5 August 1996 as a soft peak at 78969.4, <6sec long.

; next report will be more timely, I hope. However, DMSP 13 is less sensitive than DMSP 12, inoperative since 960630. --Jim

From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:23 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:22:28 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesl.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: one Ulysses GRB960711 was seen by Konus, one wasn't

The earlier of the two Ulysses events was not seen by Konus. Konus triggered at 17:42:37.543 in the detector facing to the ecliptic south. The event consisted of six distinct spikes over a period of 20s, with the strongest signal 13s after the trigger.

Date: Mon, 5 Aug 1996 15:58:16 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608052258.PAA02509@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botesl.tesre.bo.cnr.it
Subject: GRBs 960711
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses triggered on a weak, 32 ms long event July 11 1996 around 00:22 UT at Ulysses. Also, it triggered on an intense, 20 s long event around 17:22 on the same day.

The spacecraft was about 2400 light-seconds from Earth.

Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
96	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5290
96	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5369
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search ± 1750	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search ± 1750	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA ± 1750	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search ± 1750	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA ± 1750	
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96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search ± 2050	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search ± 2050	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search ± 2050	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search ± 2050	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search ± 2050	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
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96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
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96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search ± 2100	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search ± 2100	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search ± 2100	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search ± 2300	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search ± 2300 NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search ± 2300	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search ± 2300	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
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94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219 search	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220 NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237 search	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240 NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241 RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242 RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243 RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244 Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245 search	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247 RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249 Trig	NO

KONUS 19960711 67044

ULYSSES RT

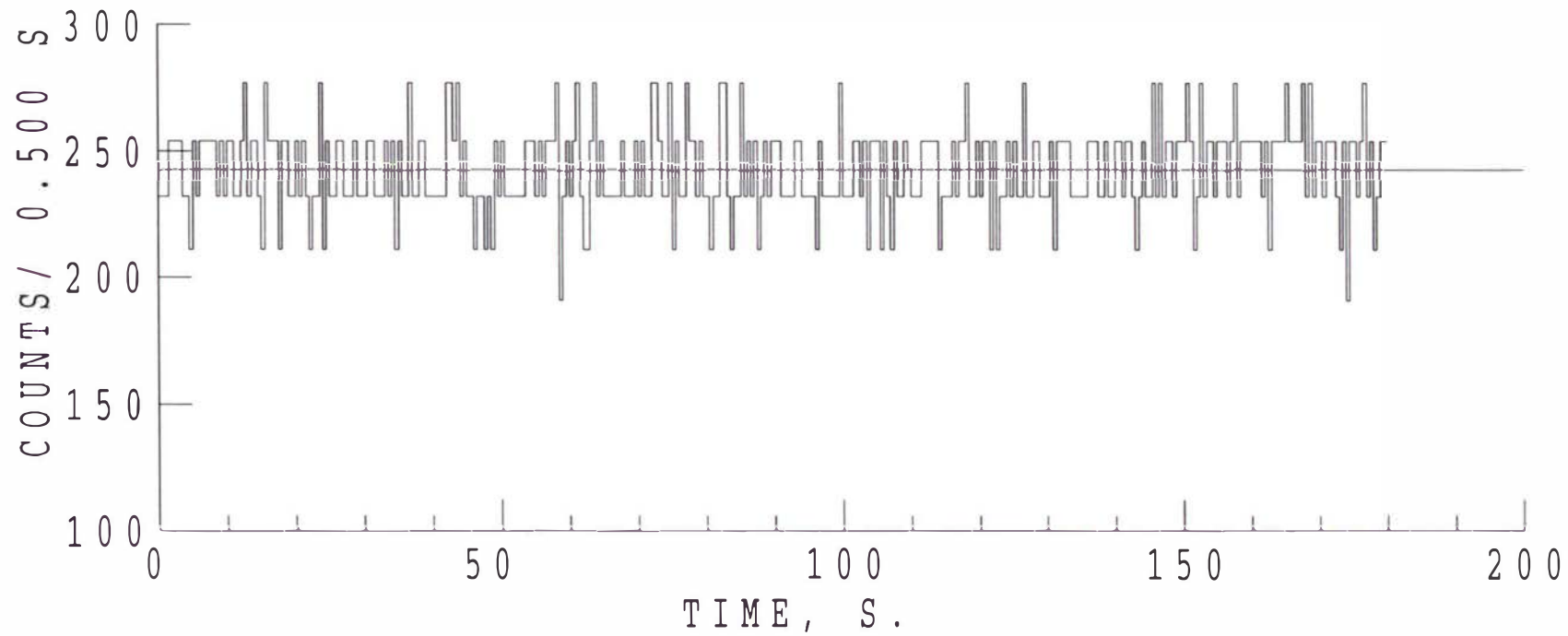
03 / 10 / 11

11 / 07 / 96 66960.133 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS 26

25 / 11 / 96

ULYSSES RT

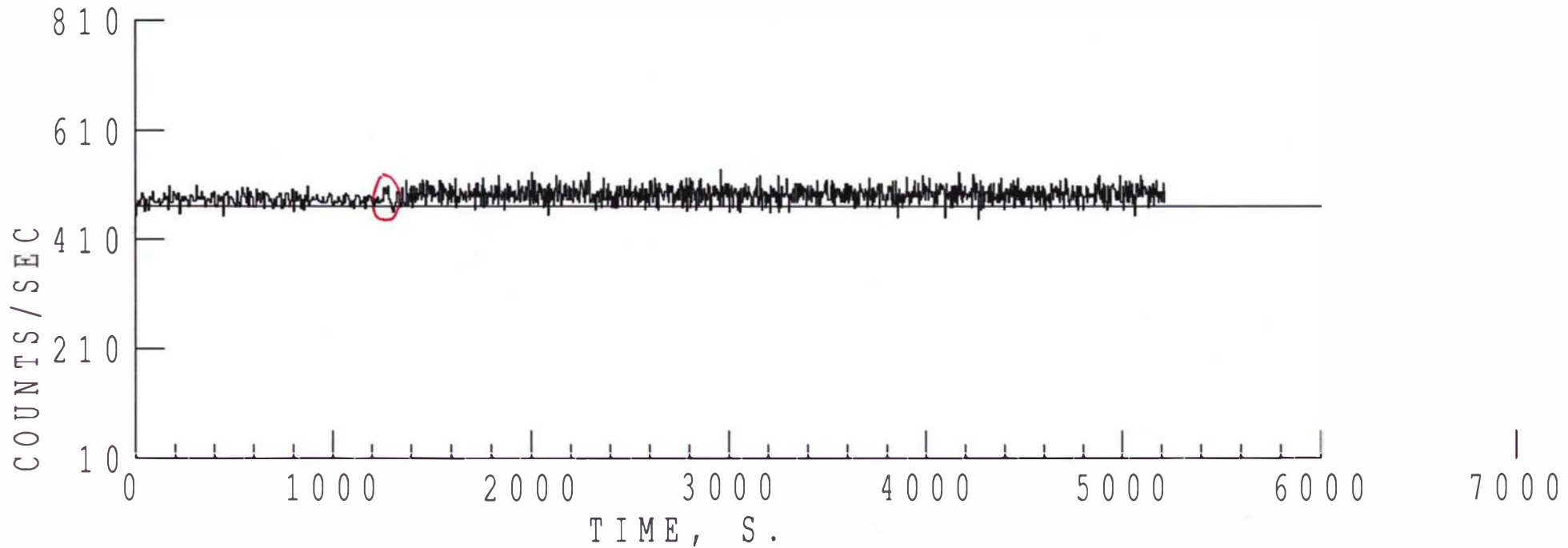
11 / 7 / 96 65844.117 s

INTERVALS REGROUPED BY 13

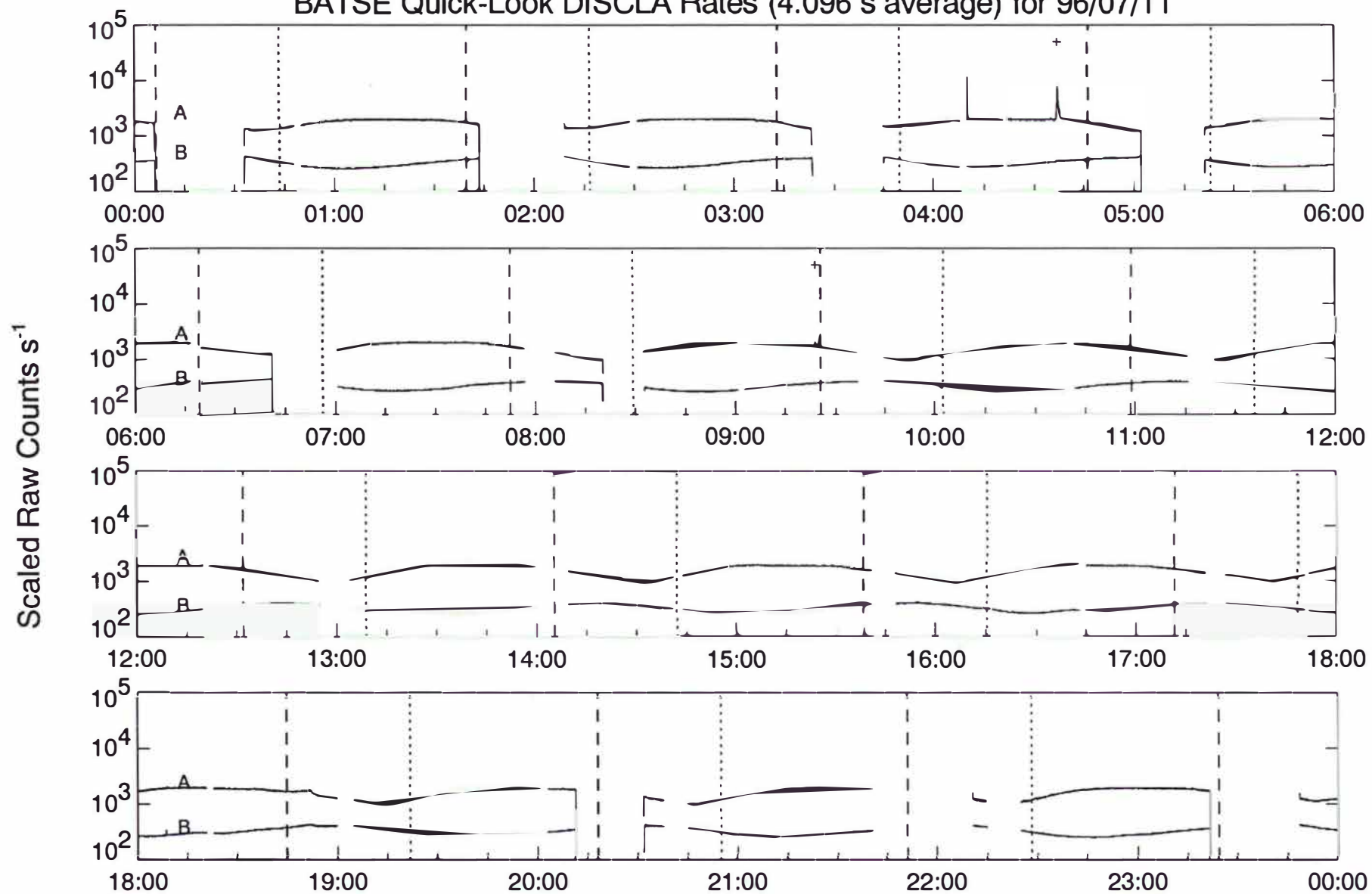
0 - 0 keV

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 96/07/11

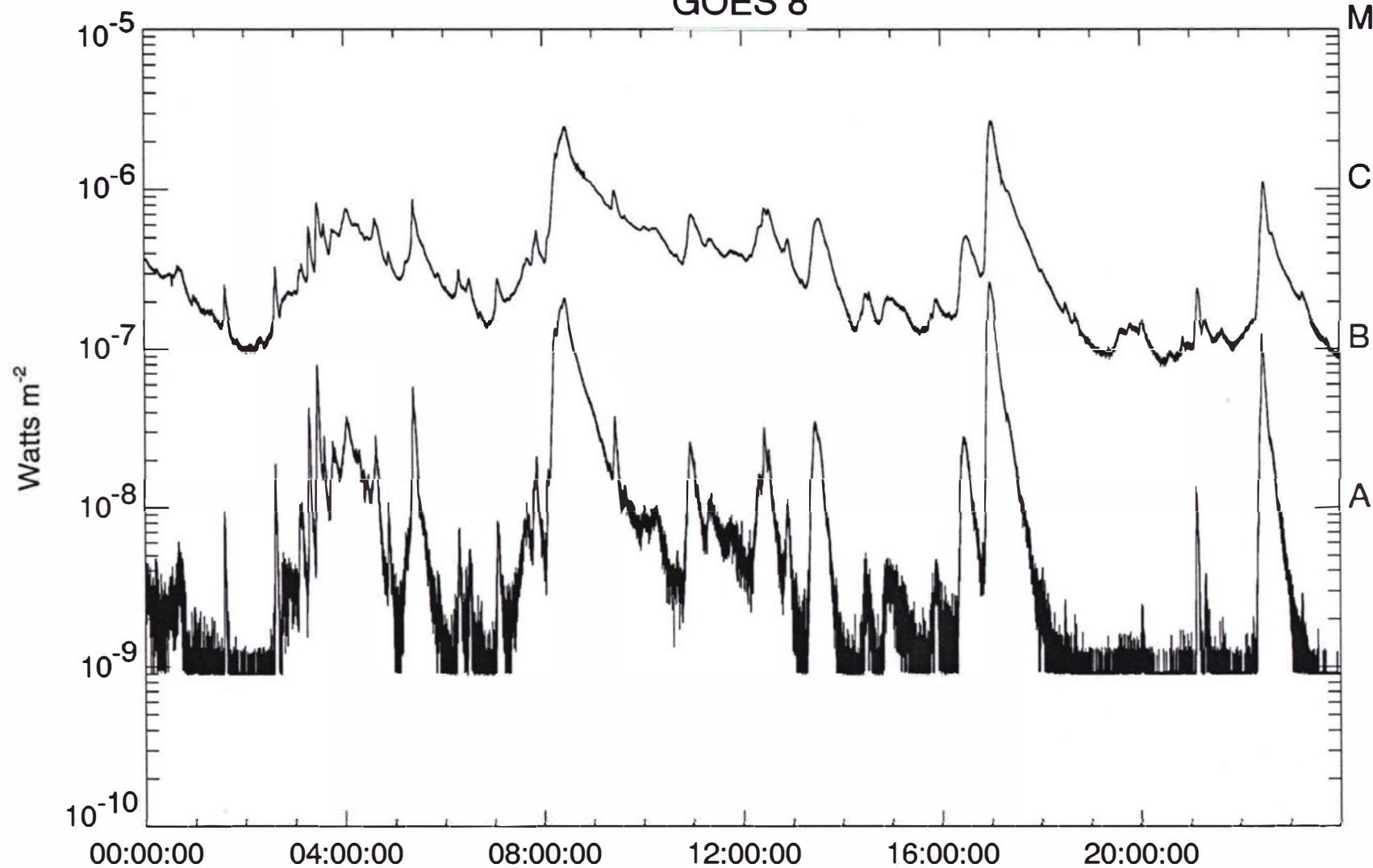


Current Time: 96/07/13, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 96/07/11, 0000:00

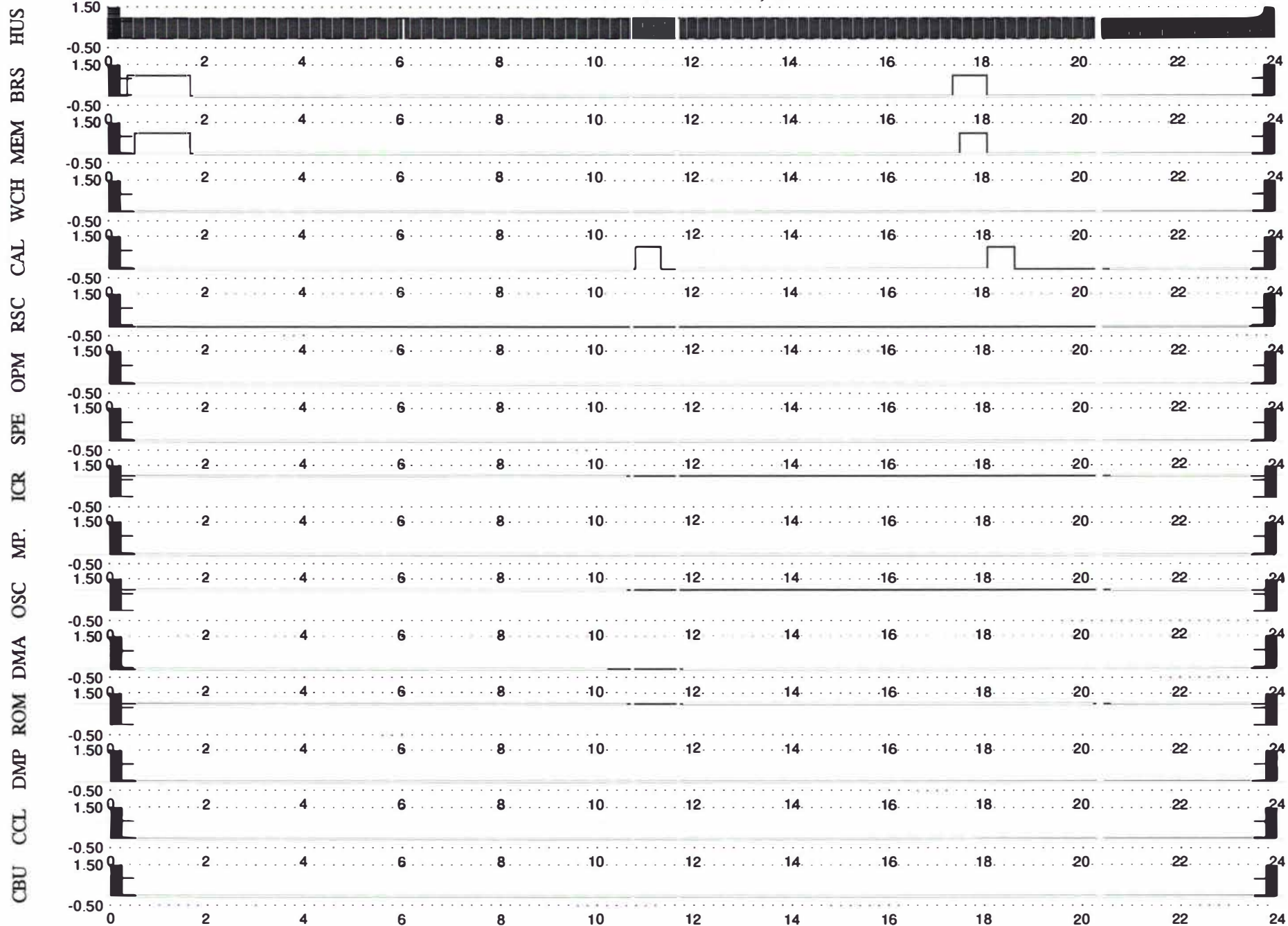
Plot created: 96/07/13, 1003

Channel

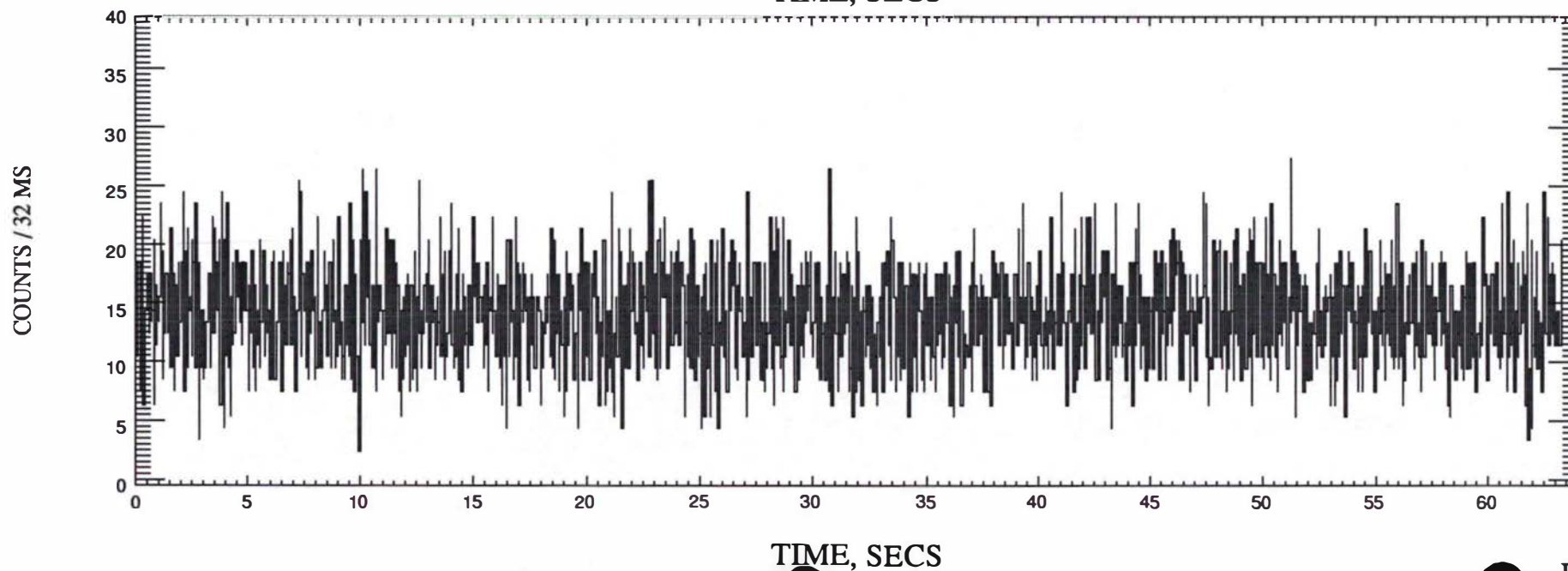
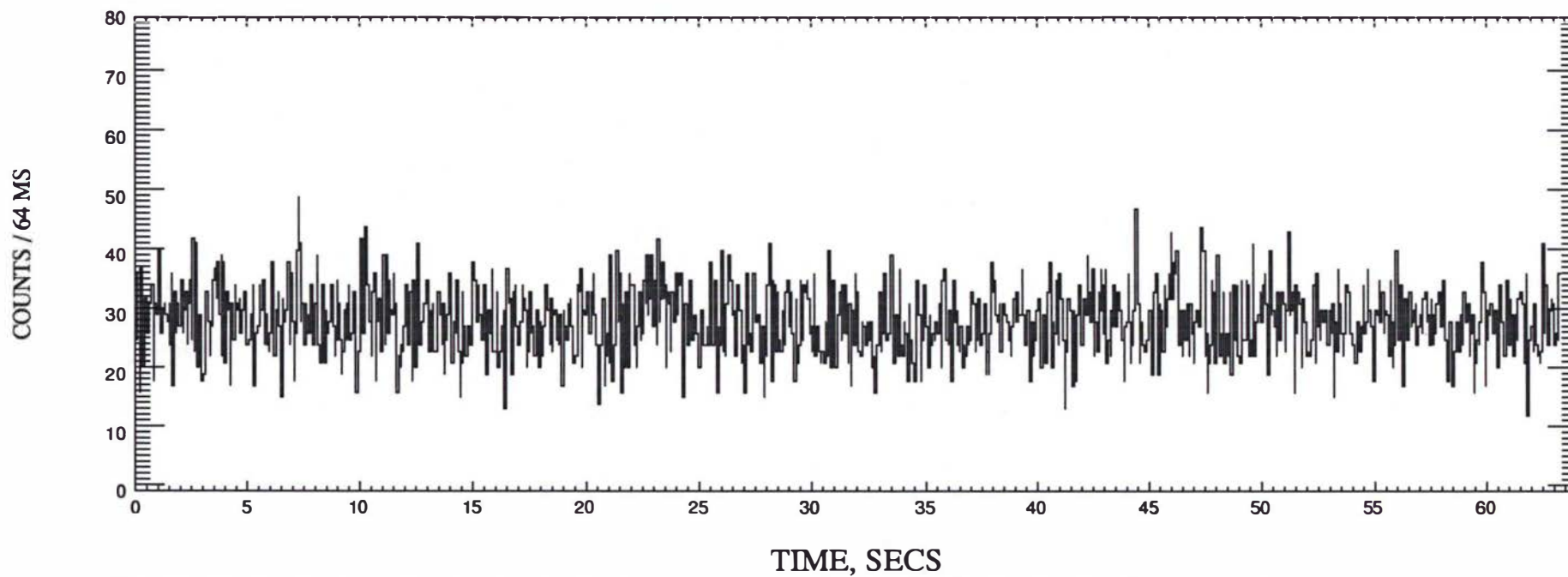
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted

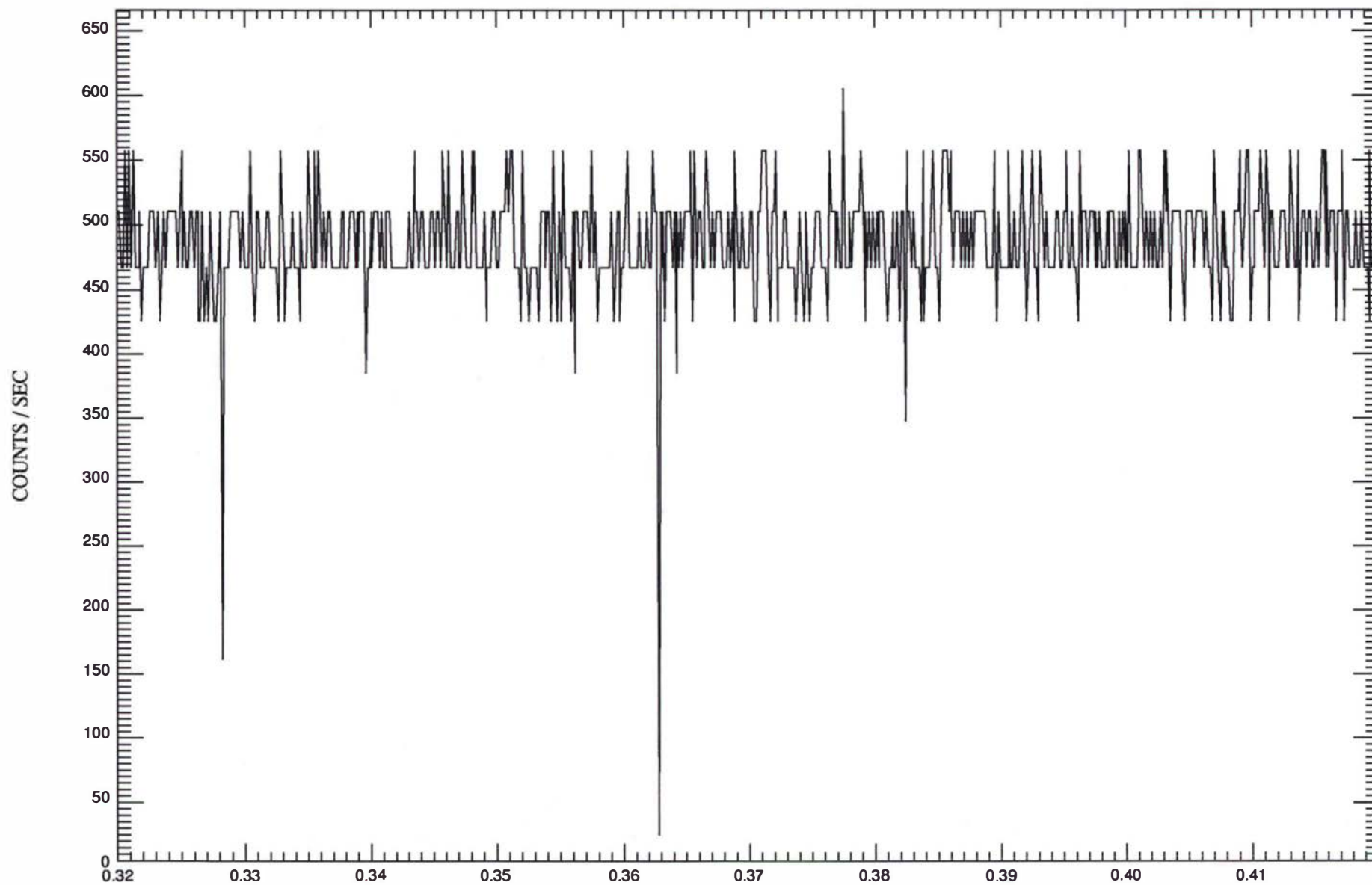
BURST NUMBER 11, 12



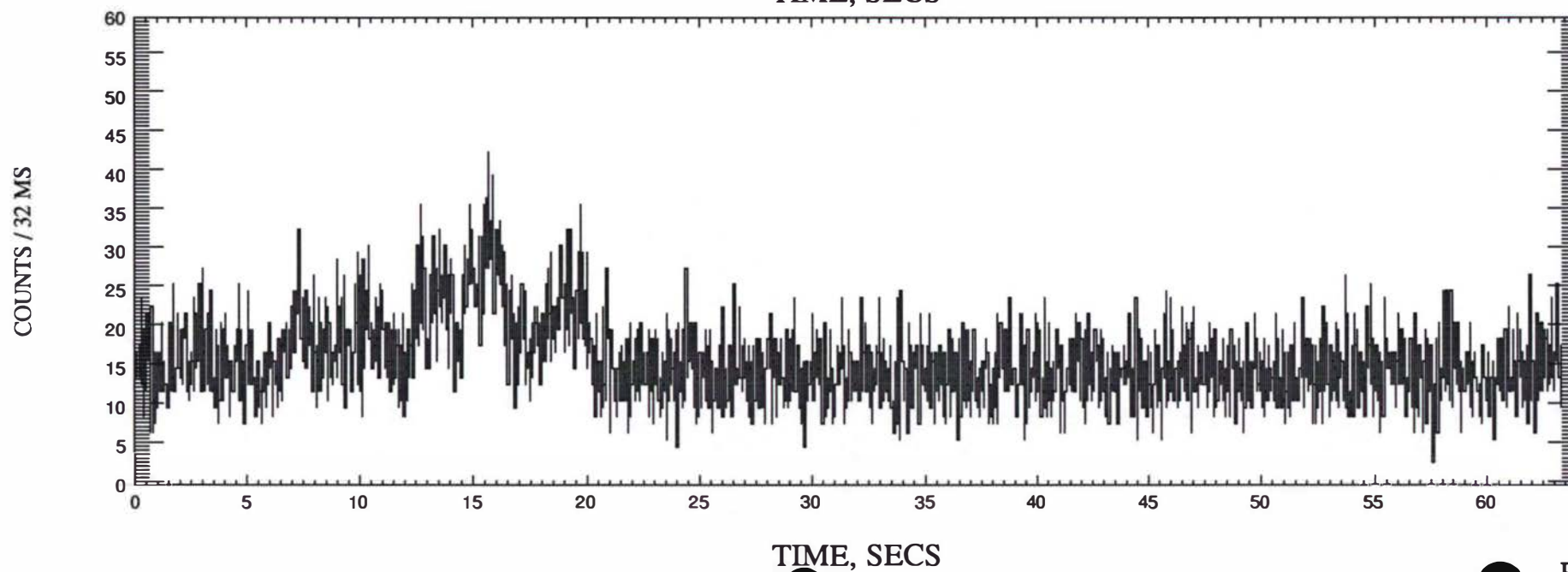
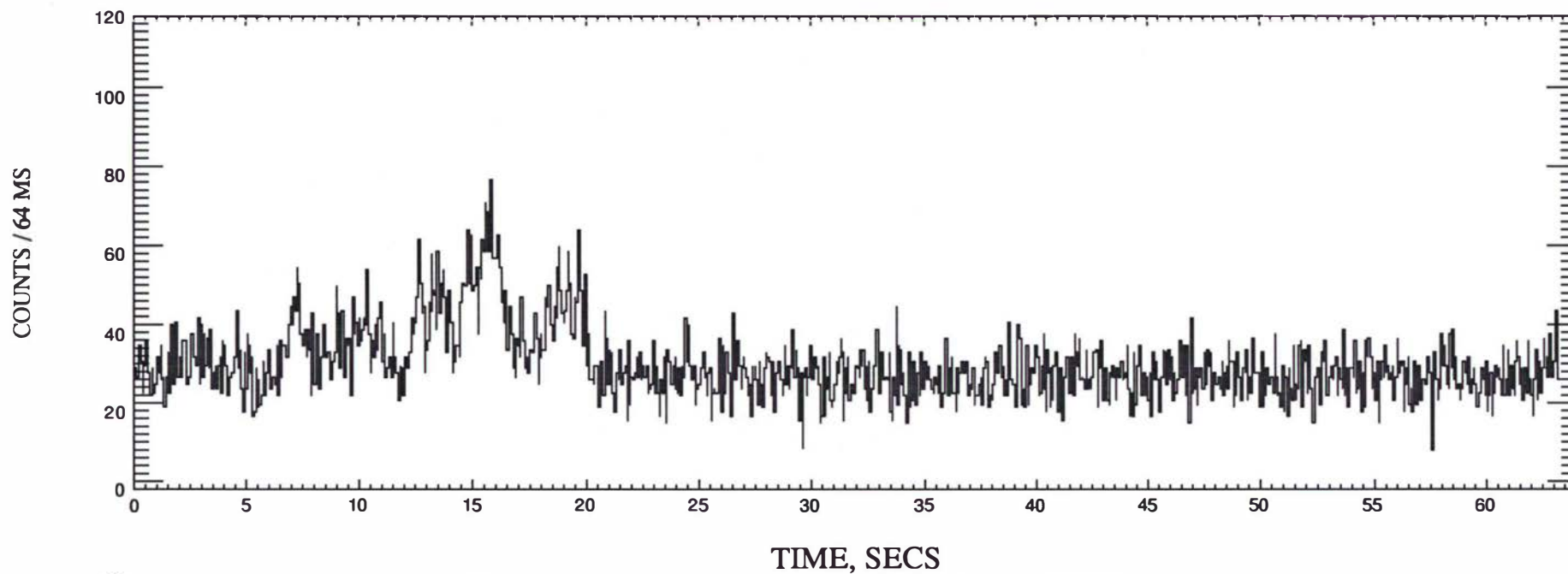
Burst Counter 11 at UT= 0.366877725389 h= 1320.760 s 00:22:00.760



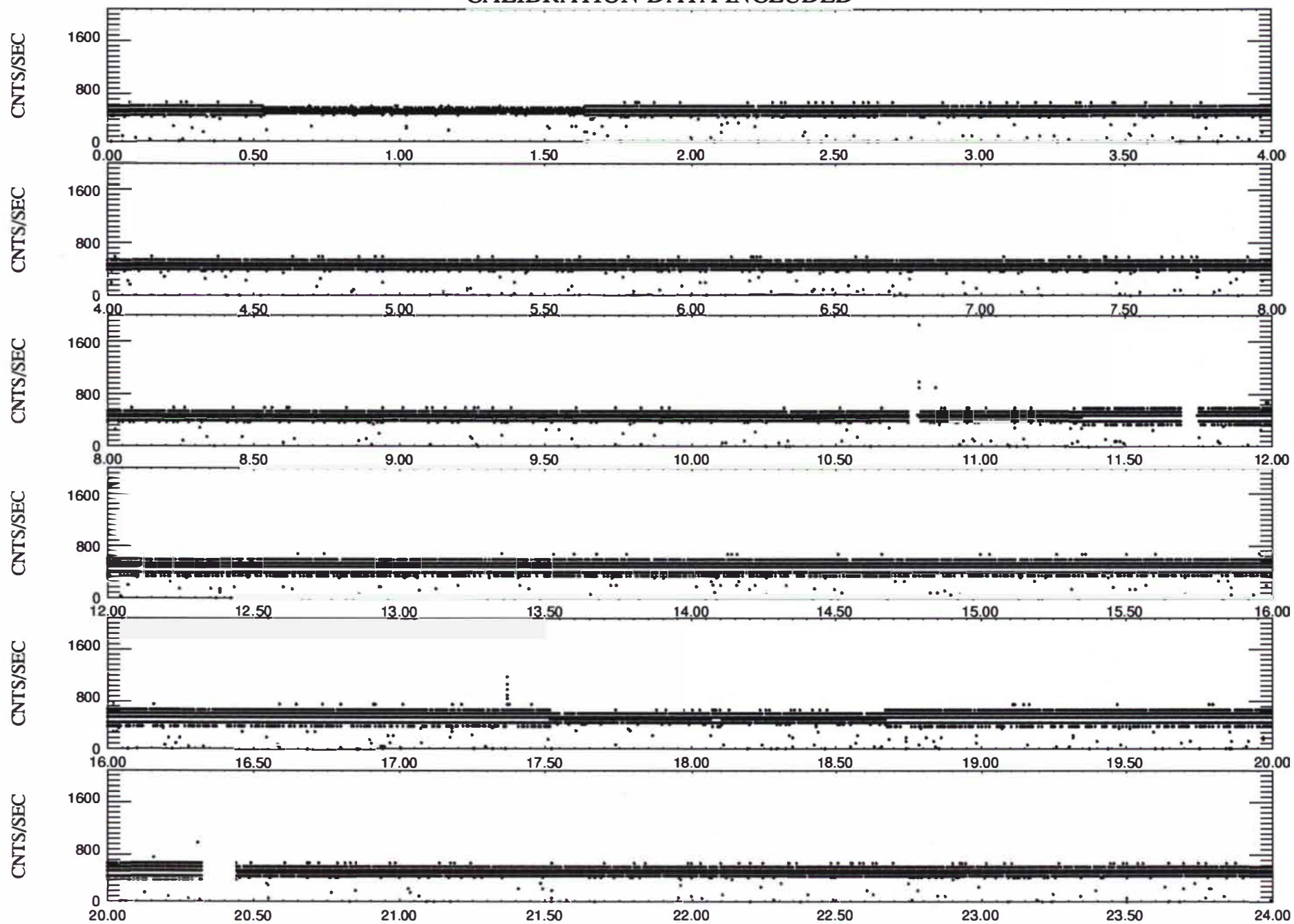
CALIBRATION DATA INCLUDED



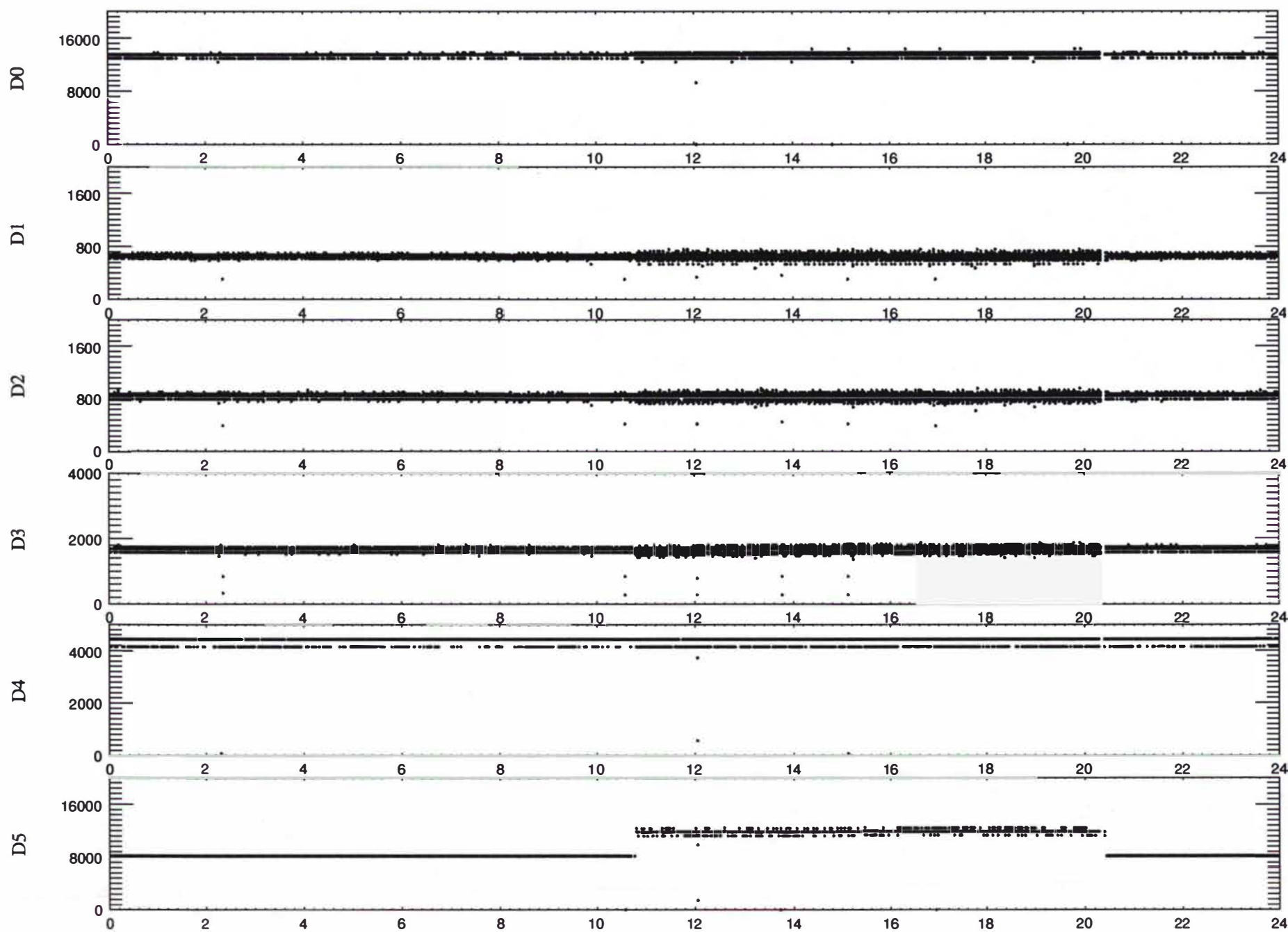
Burst Counter 12 at UT=17.367793570624 h=62524.057 s 17:22:04.057



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From williams@sunspot Thu Sep 10 17:43 PDT 1998
Date: Thu, 10 Sep 1998 17:47:38 -0700
From: williams@sunspot (Roger Williams)
To: khurley@sunspot
Subject: Event investigations...
Cc: williams@sunspot

Hi Kevin,

The list of triggered events has been processed to find differences between 2AB ascii files made with the old and new flavor of the software. Nearly all files agreed.

From yyddd IN YOUR LIST, considering ALL TRIGGERS for that day, these were the only files that differed.

```
-rw-r--r--    1 williams    46372 Sep  9 19:39 e96194_2AB_1.ascii.diff.Z
-rw-r--r--    1 williams    47587 Sep  9 19:42 e96268_2AB_1.ascii.diff.Z
```

Looking at TRIGGER TIMES IN YOUR LIST, only the first file seemed to correspond to an entry precisely.

The file.	Our approx. trigger.	The entry in your list.
e96194_2AB_1.ascii.Z	20:10	192.12 JUL 96 194 20:10:26 726
e96268_2AB_1.ascii.Z	12:06	207.24 SEP 96 268 11:41:50 421

IN BOTH CASES, the new decom version puts the trigger time at exactly +3 seconds relative to the old decom. You can see this in the ascii files which I have placed in directories: /general/kevin/yyddd/OldNew, yyddd = 96194 and 96268.

Looking directly at the raw edr data, one sees that there are exactly 3 DPI flags in the relevant data record, this means that major frames after the flagged region will have their time tags shifted forward by three seconds in the new decom (which is theoretically the CORRECT timing). Thus the 3 second shift is making some sense. The problem is that it was our understanding that the decom was using an independent method of timing the 2AB files using trigger time stored in housekeeping parameters, and hence the timing of these files would be independent of the edr time tags for records and frames. We are investigating this further.

Roger and J

From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:25 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:24:25 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesl.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960712 was not detected by Konus

No feature corresponding to this event was seen by Konus.

Date: Mon, 5 Aug 1996 16:00:28 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608052300.QAA02521@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botesl.tesre.bo.cnr.it
Subject: GRB960712
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

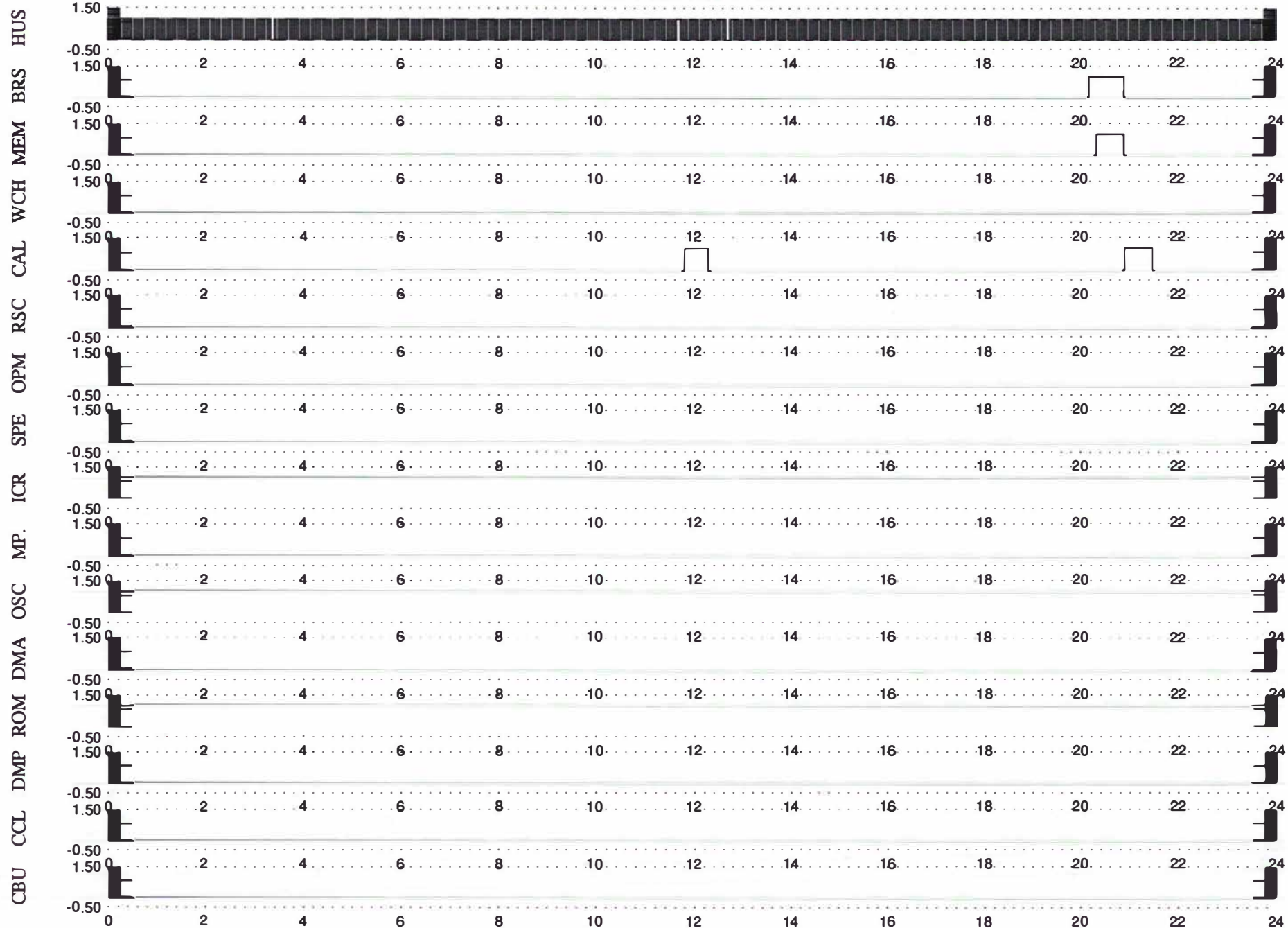
Ulysses triggered on a weak, 32 ms long event July 12
1996 around 20:10 UT at Ulysses.

The spacecraft was about 2400 light-seconds from Earth.

Was this event detected by anyone else?

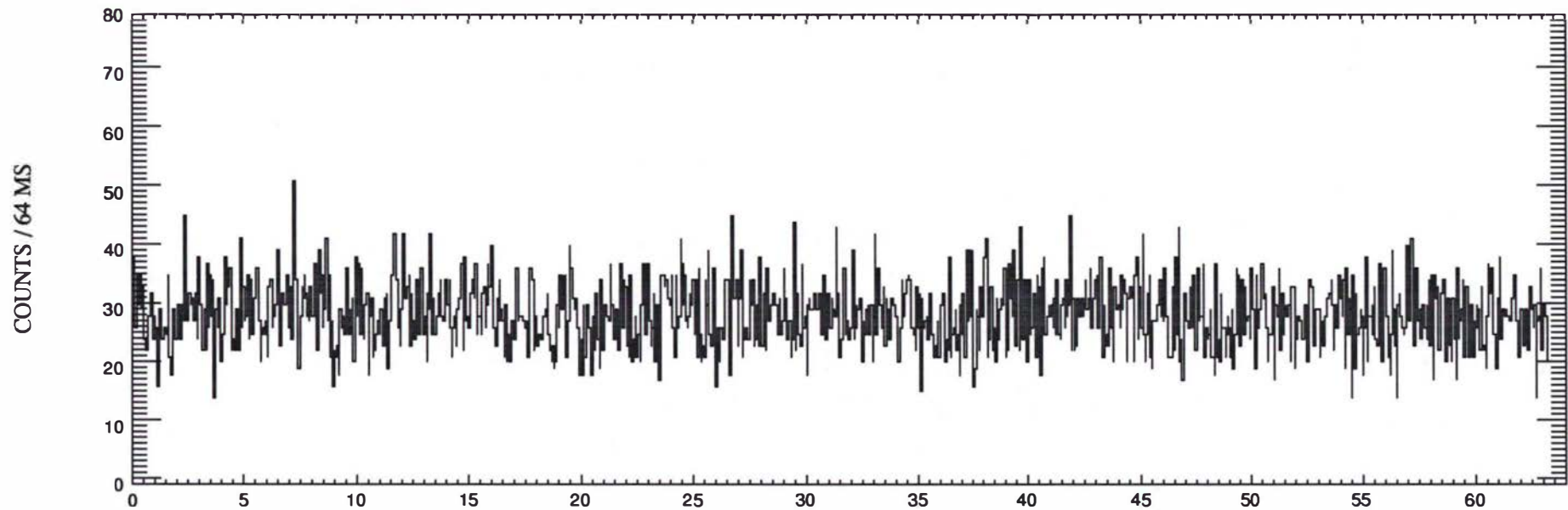
CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

BURST NUMBER 13

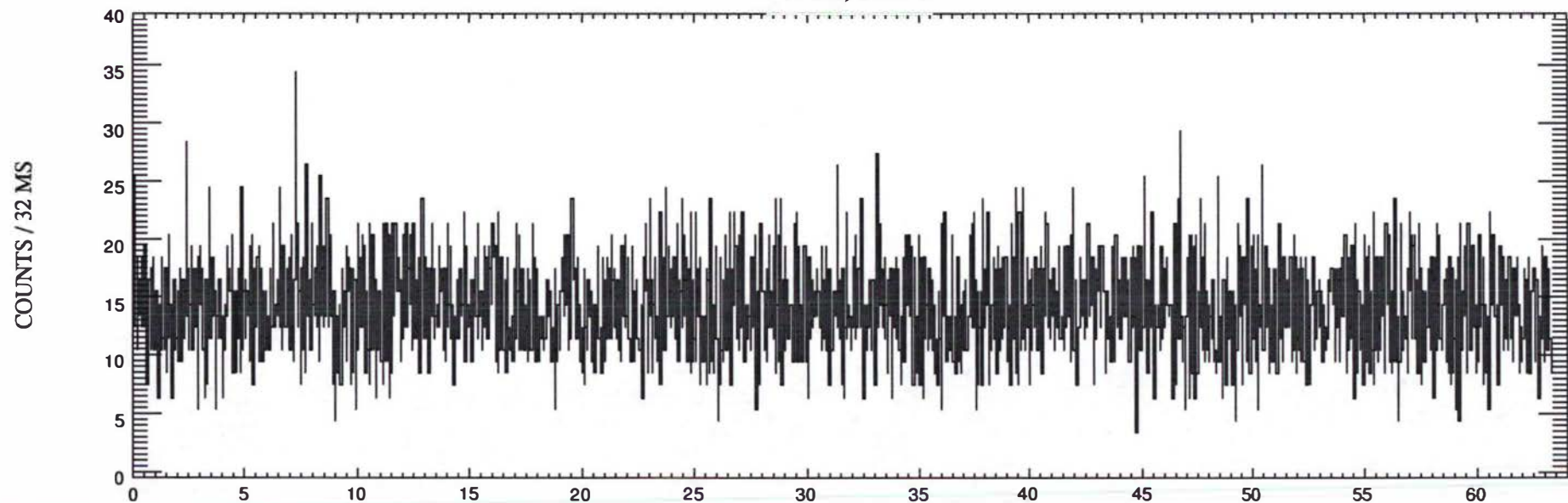


UNIVERSAL TIME

Burst Counter 13 at UT=20.173806194729 h=72625.702 s 20:10:25.702

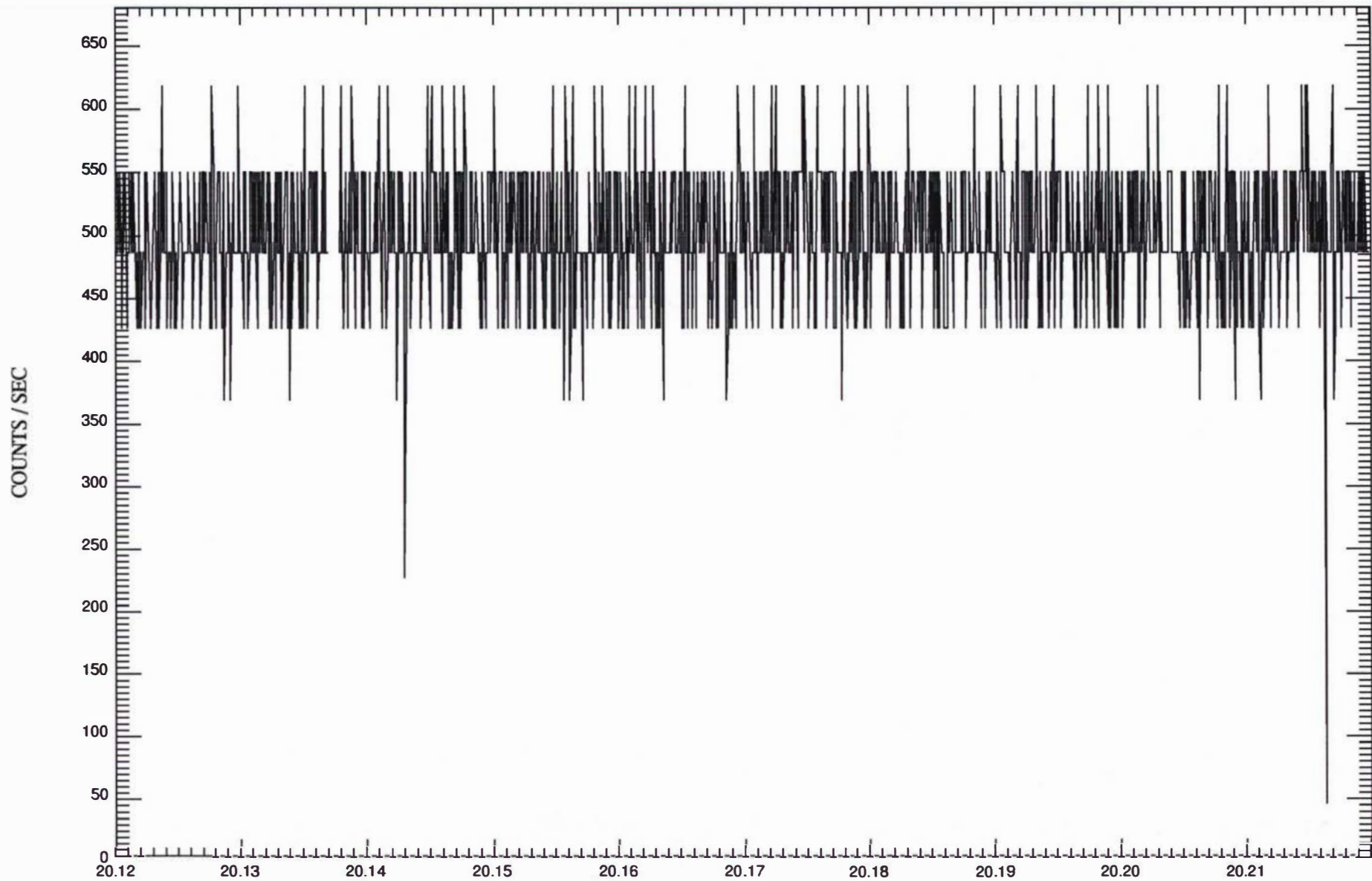


TIME, SECS

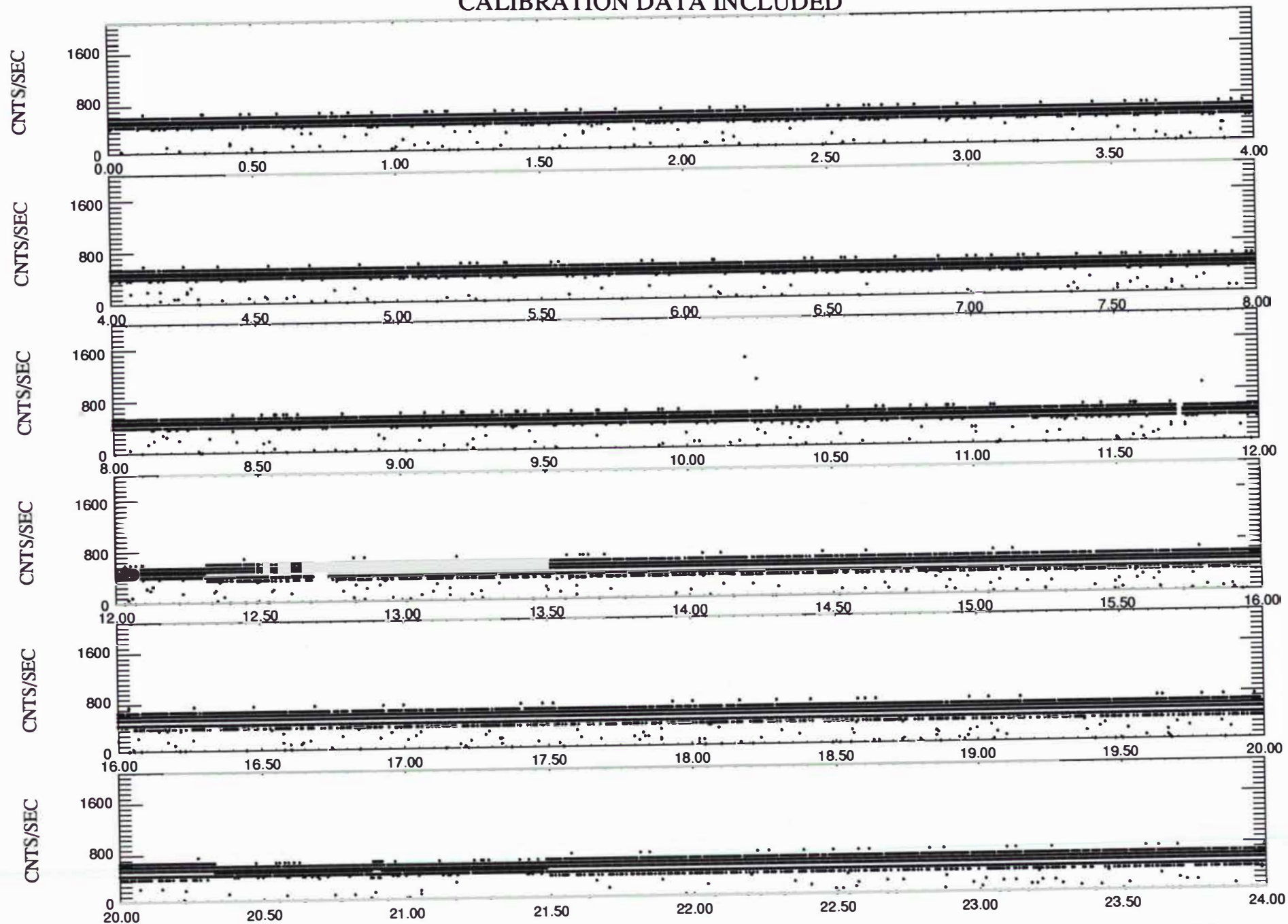


TIME, SECS

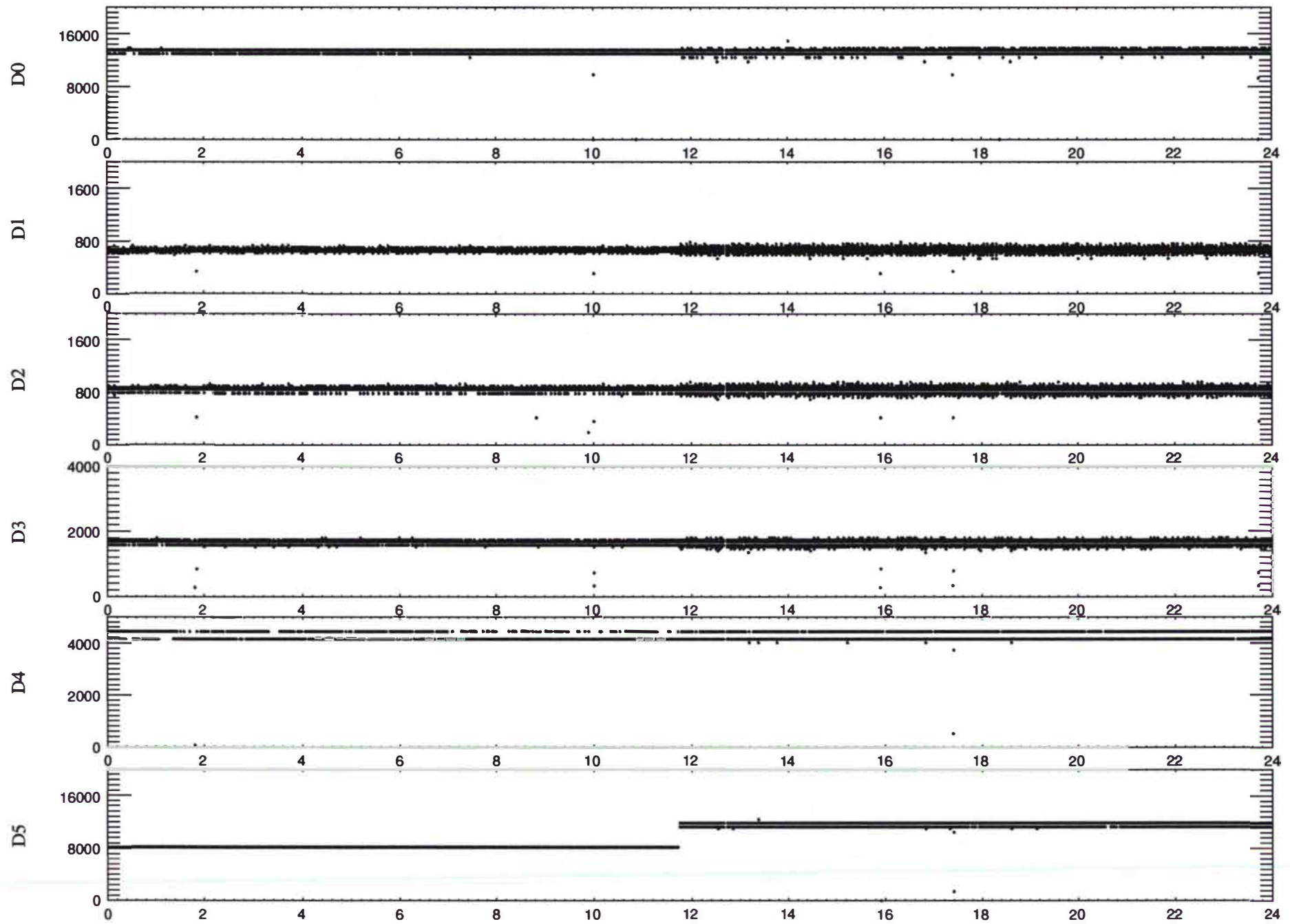
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Mon Jul 15 09:25 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 15 Jul 1996 11:25:14 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5537

BATSEARCH PROGRAM

BATSE BURST # 5537 NO
EVENT OF 1996 JUL 13 DAY OF YEAR=195
EVENT CROSSING TIME AT BATSE : 62123. S. OR 17:15:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 130.000 13.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 96 IS:
RA= 156.088 DEC= 44.671 DIST= 4.785 AU
BATSE-ULYSSES DISTANCE = 715784117. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.30 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1863.47 SECS.
CROSSING TIME AT ULYSSES IS 60260. S. OR 16:44:19 +/- 280.85 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 96 IS:
RA= 80.525 DEC= 23.411 DIST= 2.298 AU
MARS-BATSE DISTANCE = 343771264. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -768.73 SECS.
CROSSING TIME AT MARS IS 61354. S. OR 17:02:34 +/- 136.05 SECONDS

BATSE BURST TRIGGER

NO.: 5537

TIME: TJD=1027 SECONDS=62123

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

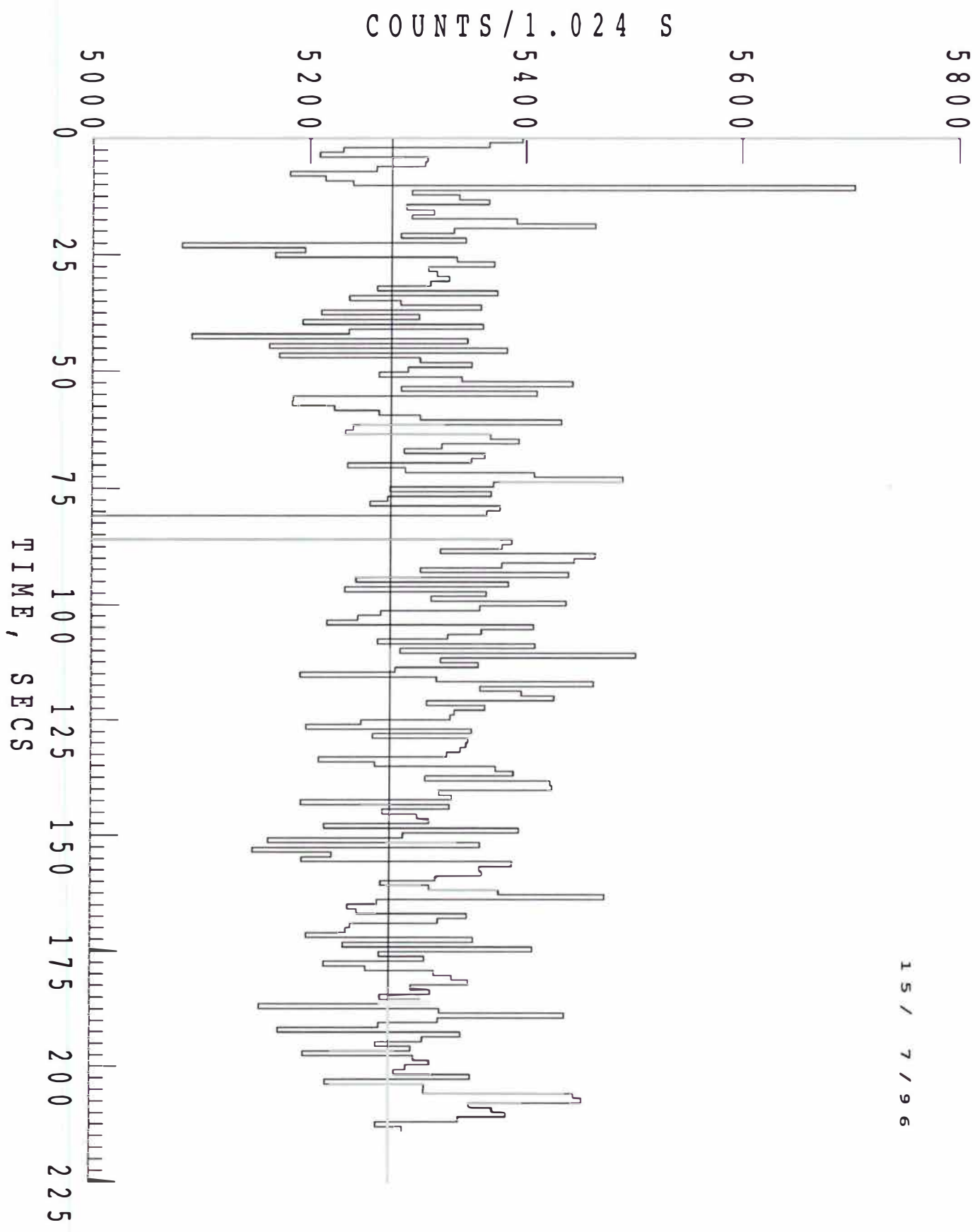
LOCATION: ZENITH=125.5 AZIMUTH=323.2 ERROR=10.1 DEGREES

COMMENTS:

GRB LASTING ~ 1 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5537	960713	10277	62123	3000	130	+13	1.0

BACODINE 5537 13/07/96 62112.457
25 - 100 keV



BATSE #

5537

15 / 7 / 96

ULYSSES RT

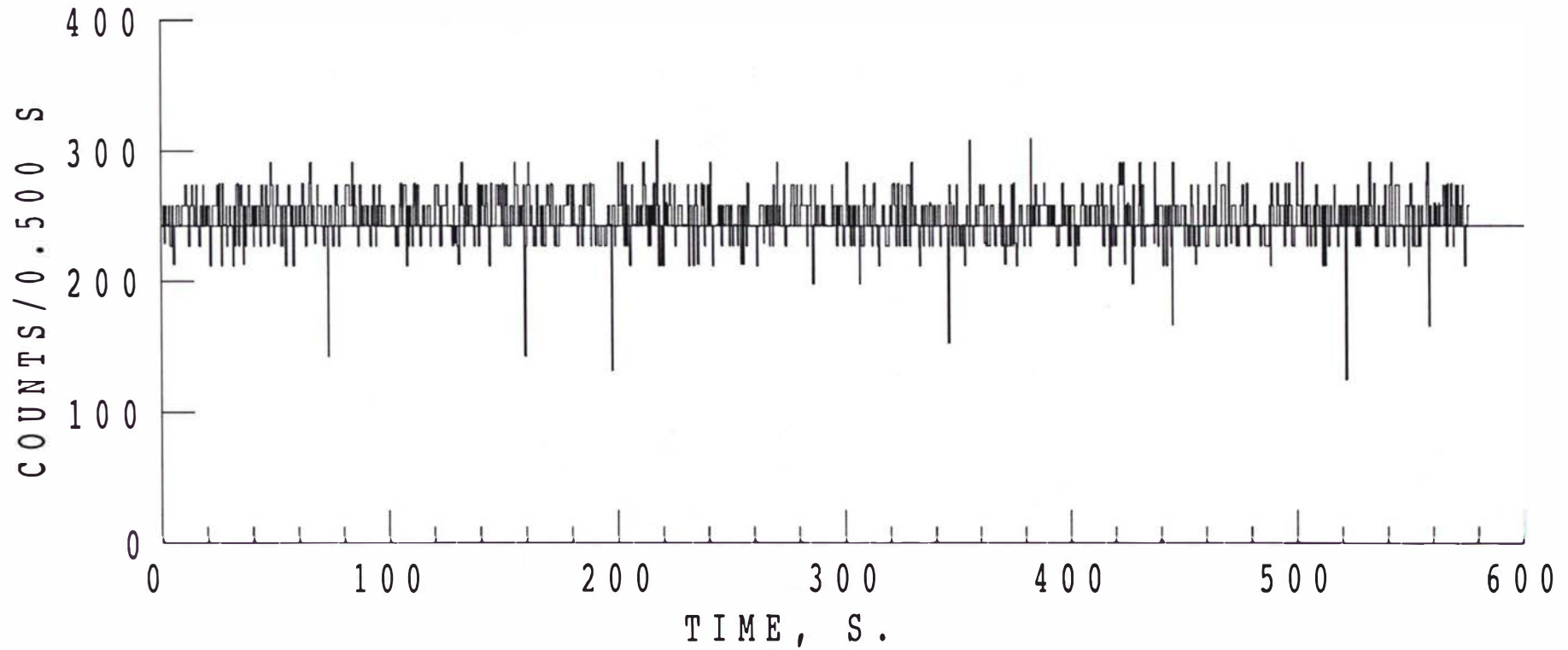
13 / 7 / 96 59976.055 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Mon Jul 15 09:28 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 15 Jul 1996 11:27:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5538

BATSEARCH PROGRAM

NO

BATSE BURST # 5538
EVENT OF 1996 JUL 13 DAY OF YEAR=195
EVENT CROSSING TIME AT BATSE : 71132. S. OR 19:45:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 170.000 86.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 7/ 96 IS:
RA= 156.108 DEC= 44.651 DIST= 4.786 AU
BATSE-ULYSSES DISTANCE = 715966877. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1789.35 SECS.
CROSSING TIME AT ULYSSES IS 69343. S. OR 19:15:42 +/- 297.43 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 7/ 96 IS:
RA= 80.525 DEC= 23.411 DIST= 2.298 AU
MARS-BATSE DISTANCE = 343771264. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.39 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -455.16 SECS.
CROSSING TIME AT MARS IS 70677. S. OR 19:37:56 +/- 175.82 SECONDS

BATSE BURST TRIGGER

NO.: 5538

TIME: TJD=0277 SECONDS=71132

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

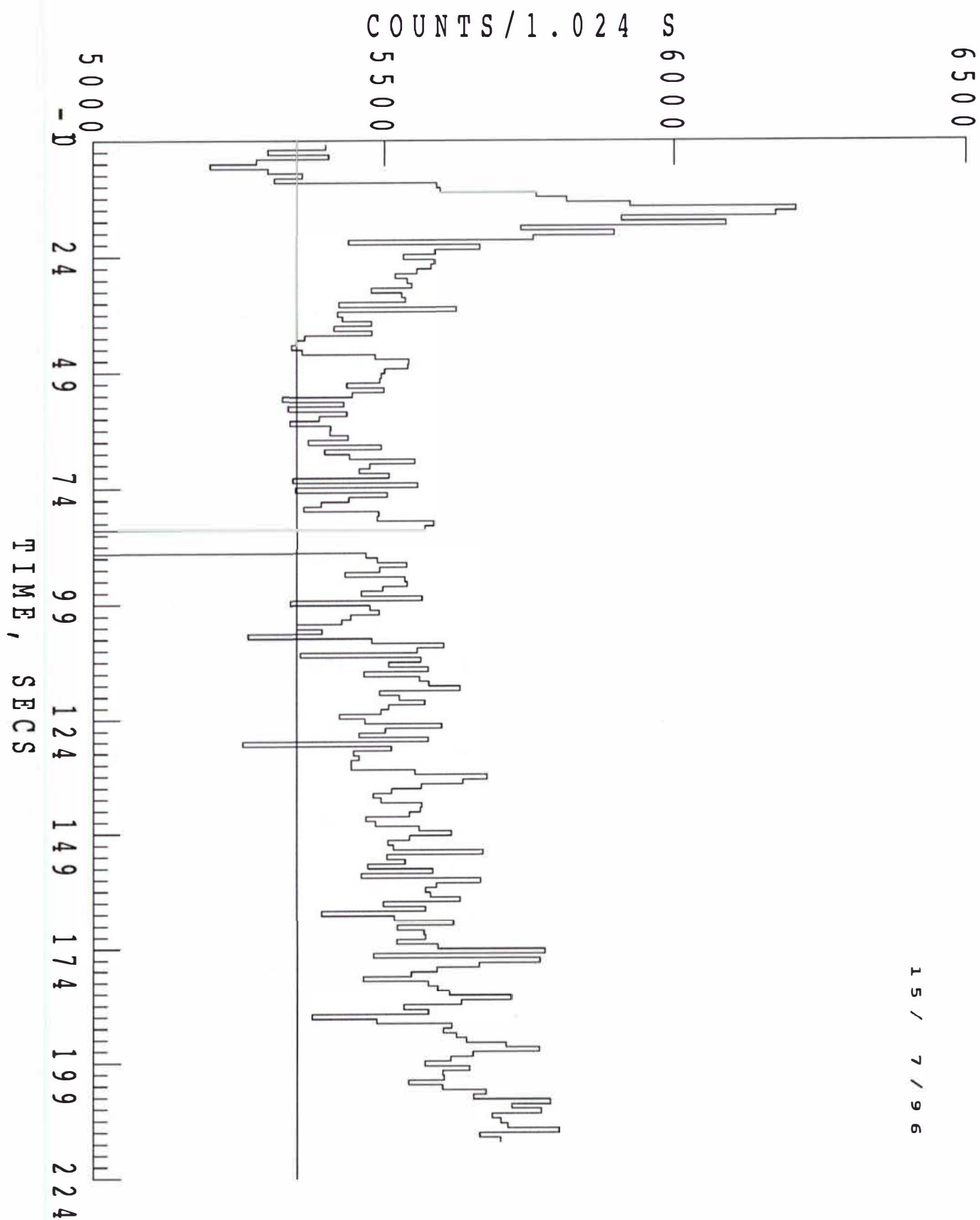
LOCATION: ZENITH=134.9 AZIMUTH=219.9 ERROR=2.6 DEGREES

COMMENTS:

GRB LASTING ~ 30 S. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5538	960713	10277	71132	3500	170	+86	30

BACODINE 5538 13/07/96 71121.609
25- 100 keV



BATSE #

5538

15 / 7 / 96

ULYSSES RT

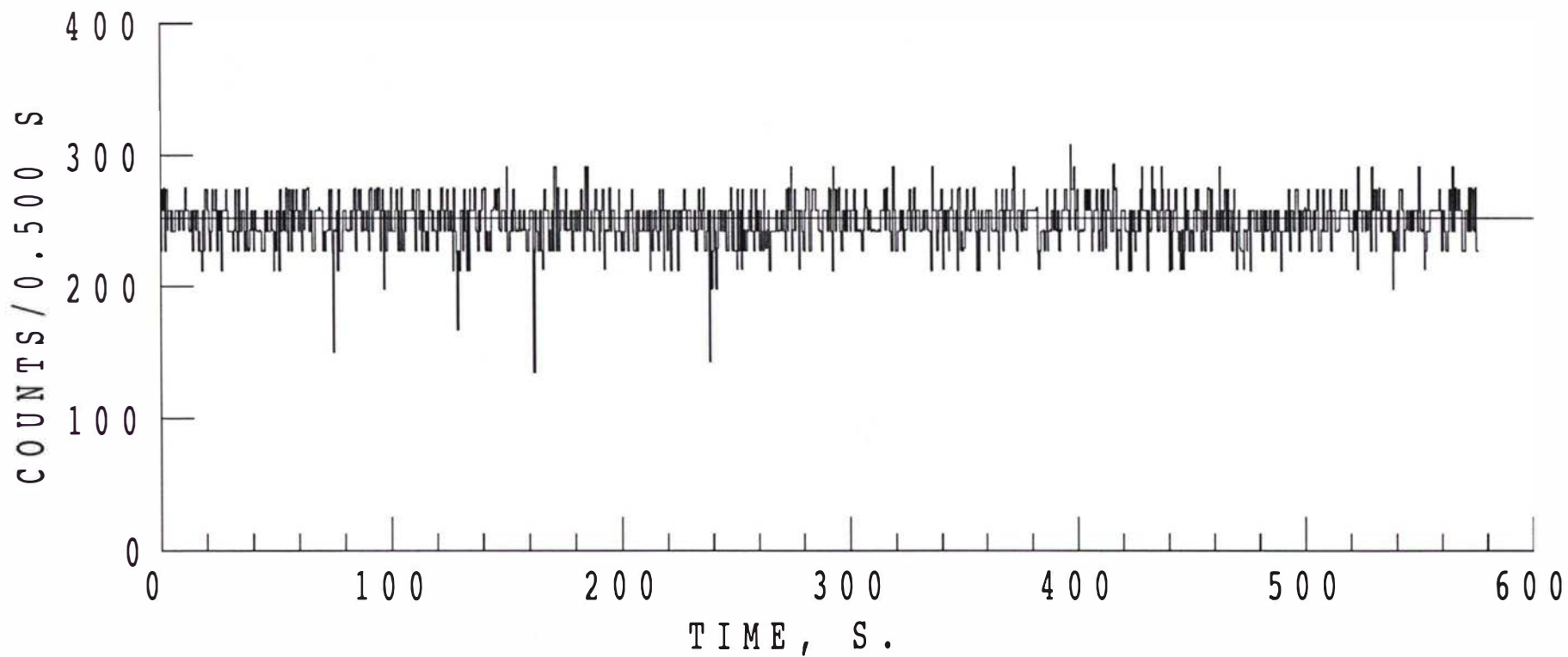
13 / 7 / 96 69048.180 s

0.250 S INTERVALS REGROUPED BY 2

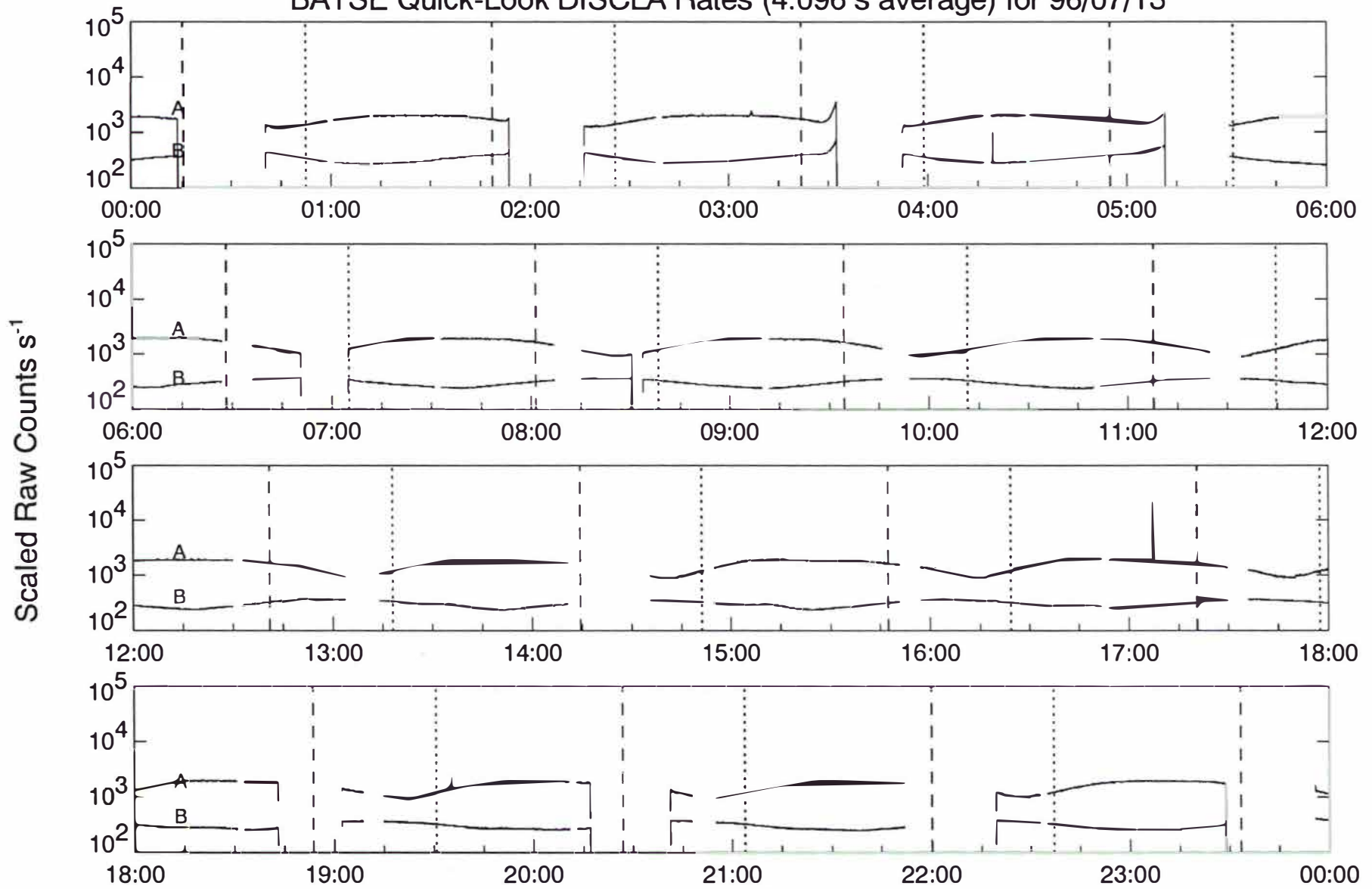
0 - 0 keV

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/13

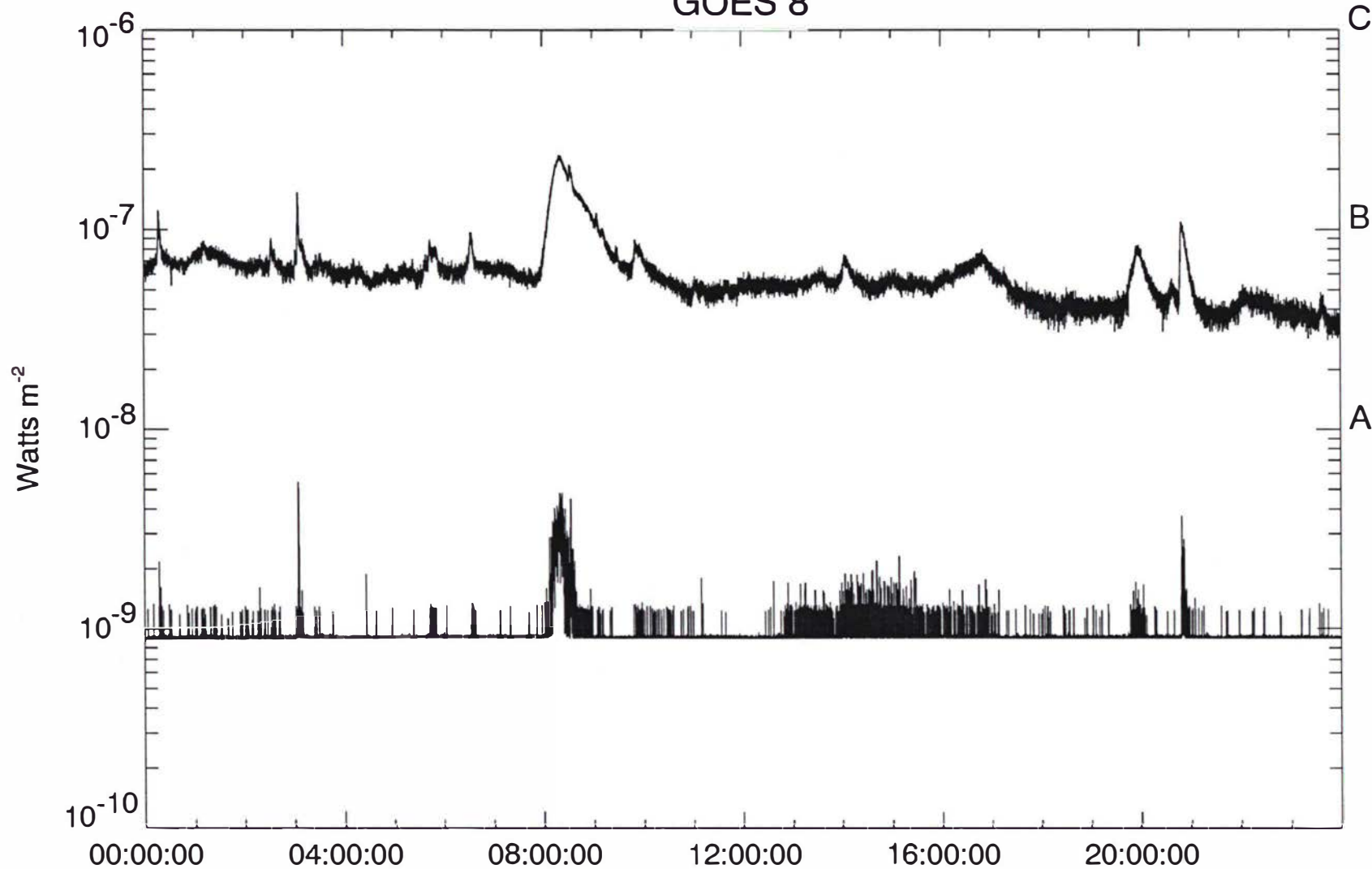


Current Time: 96/07/15, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

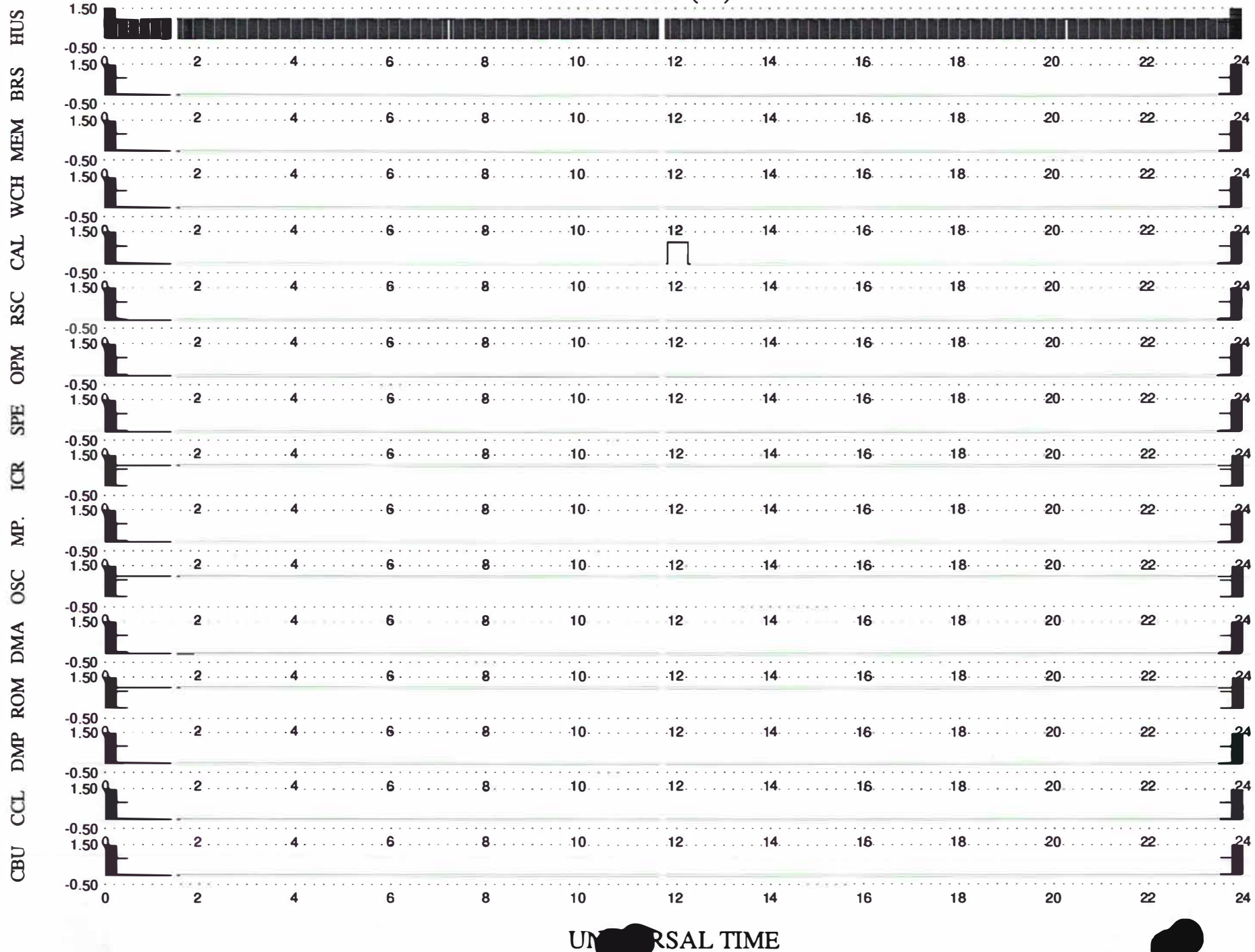


Data Start: 96/07/13, 0000:00

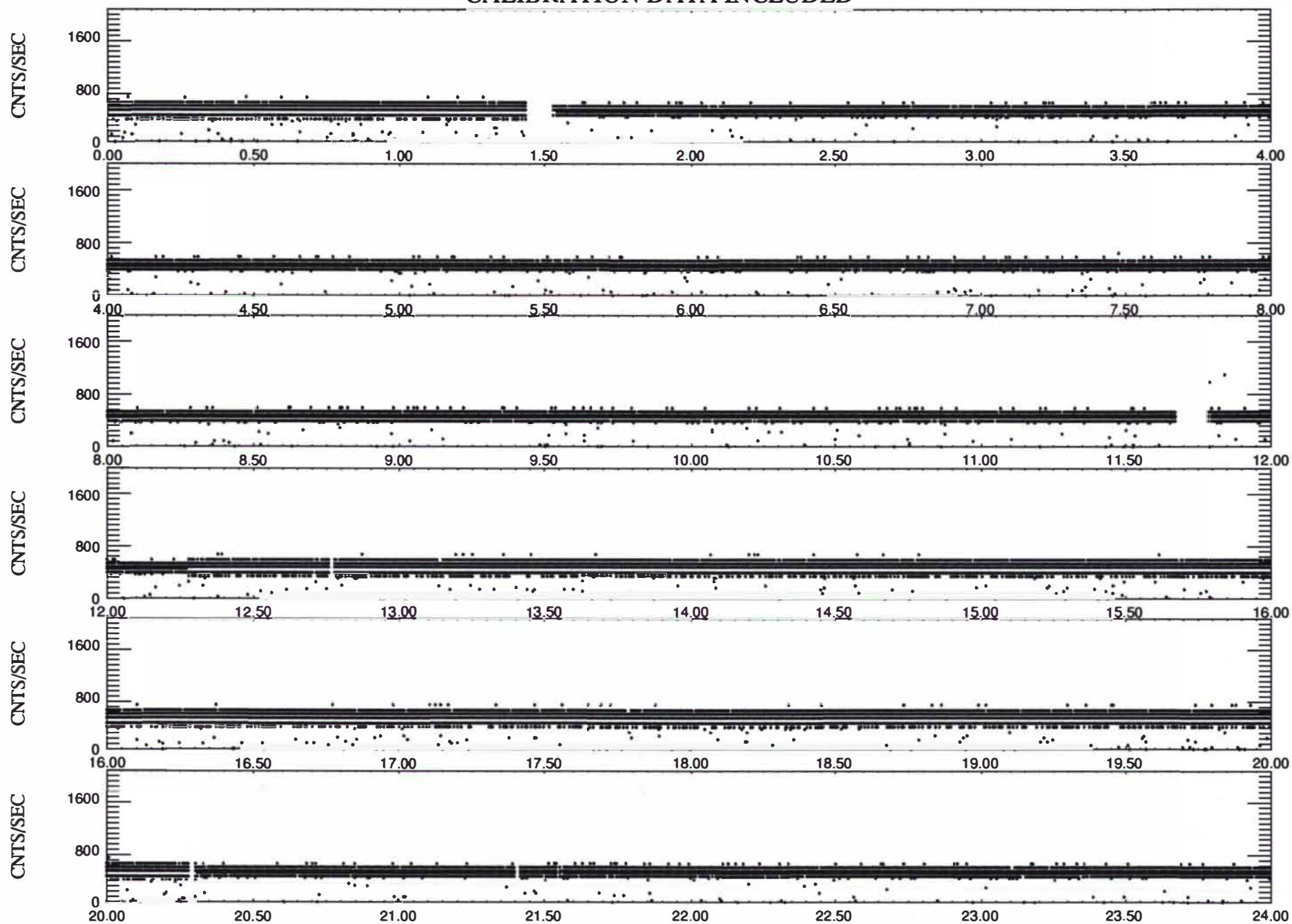
Plot created: 96/07/15, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

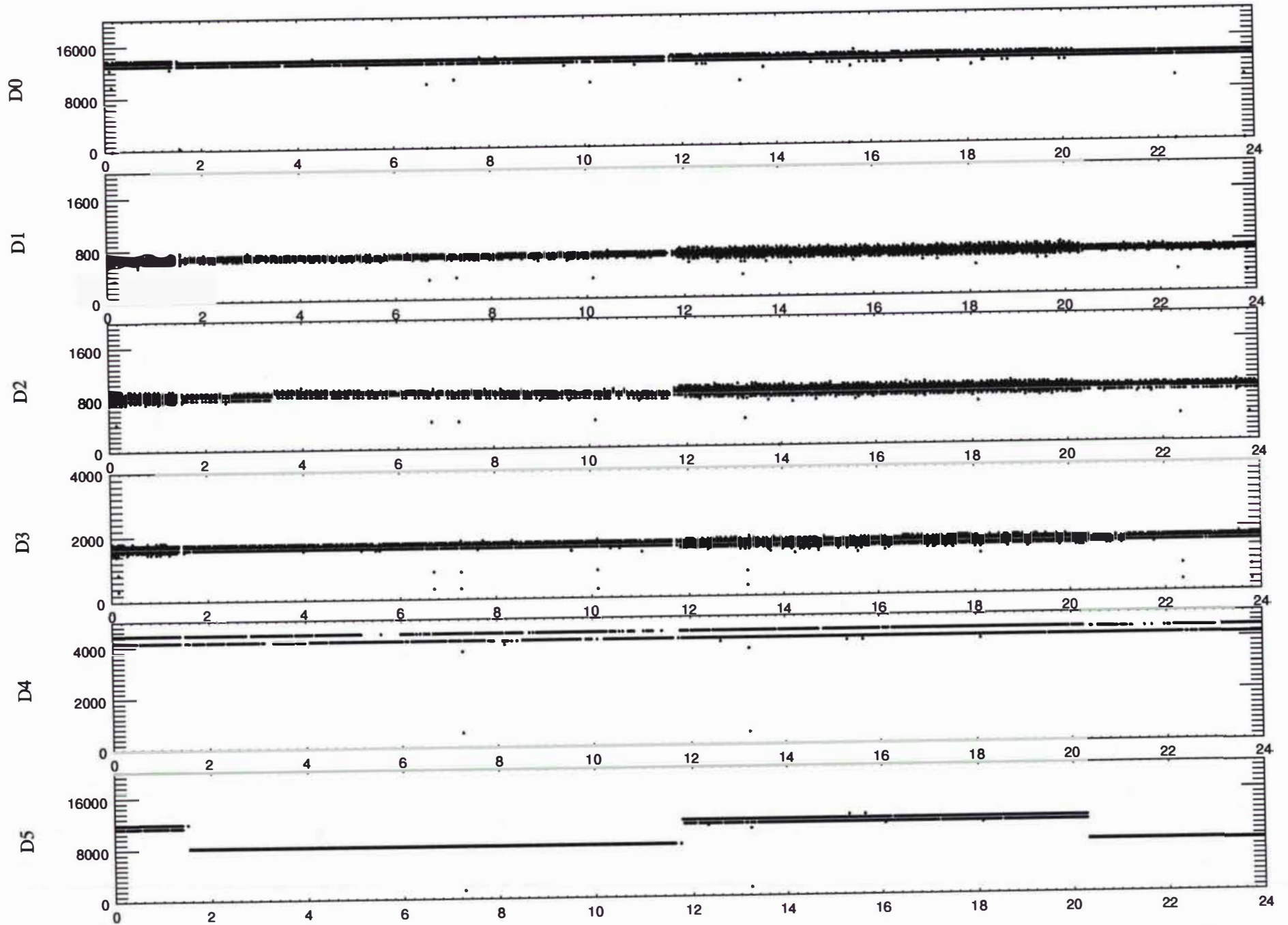
NO BURST (13)



CALIBRATION DATA INCLUDED

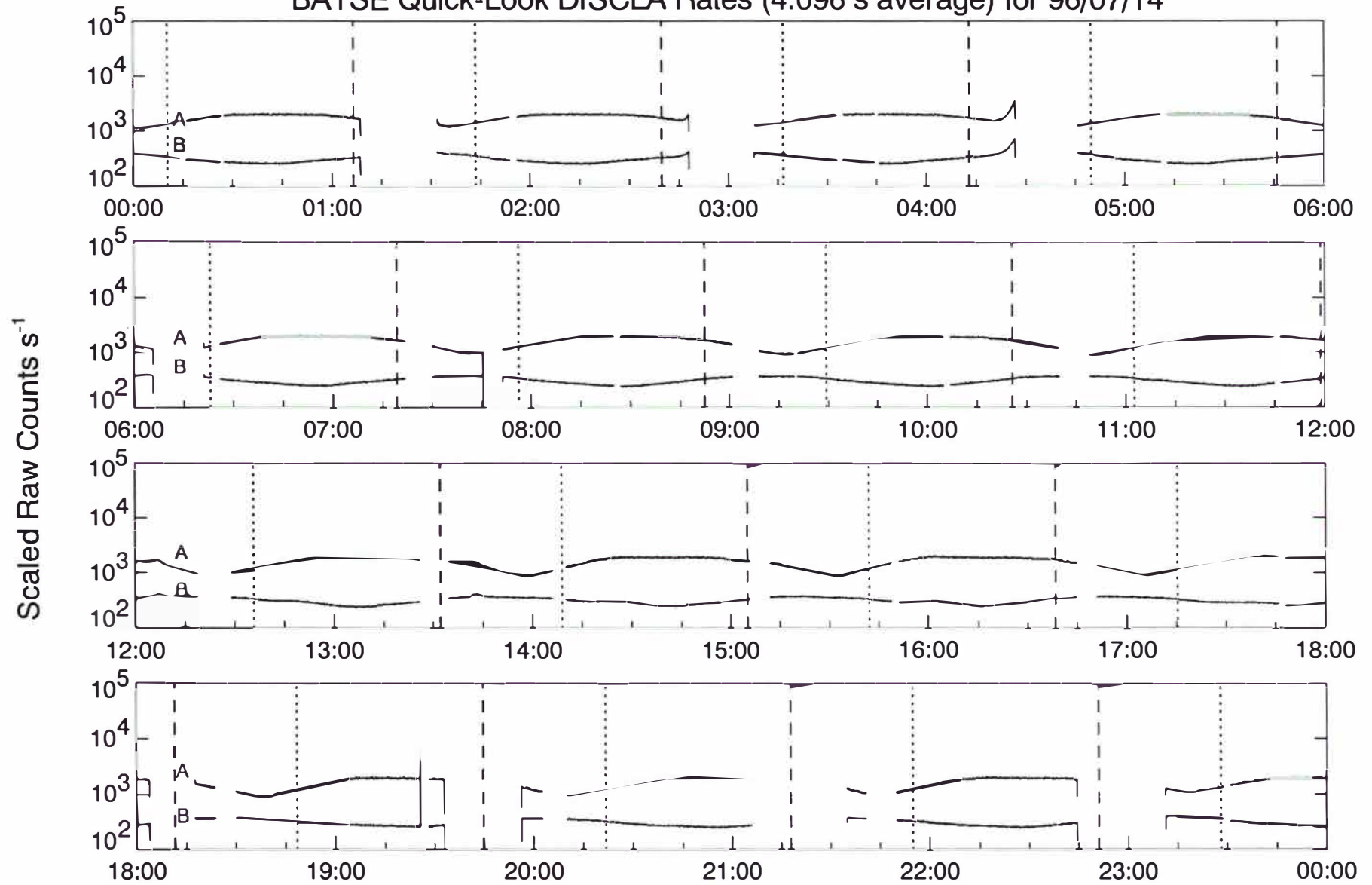


UNIVERSAL TIME



UNIVERSAL TIME

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/14

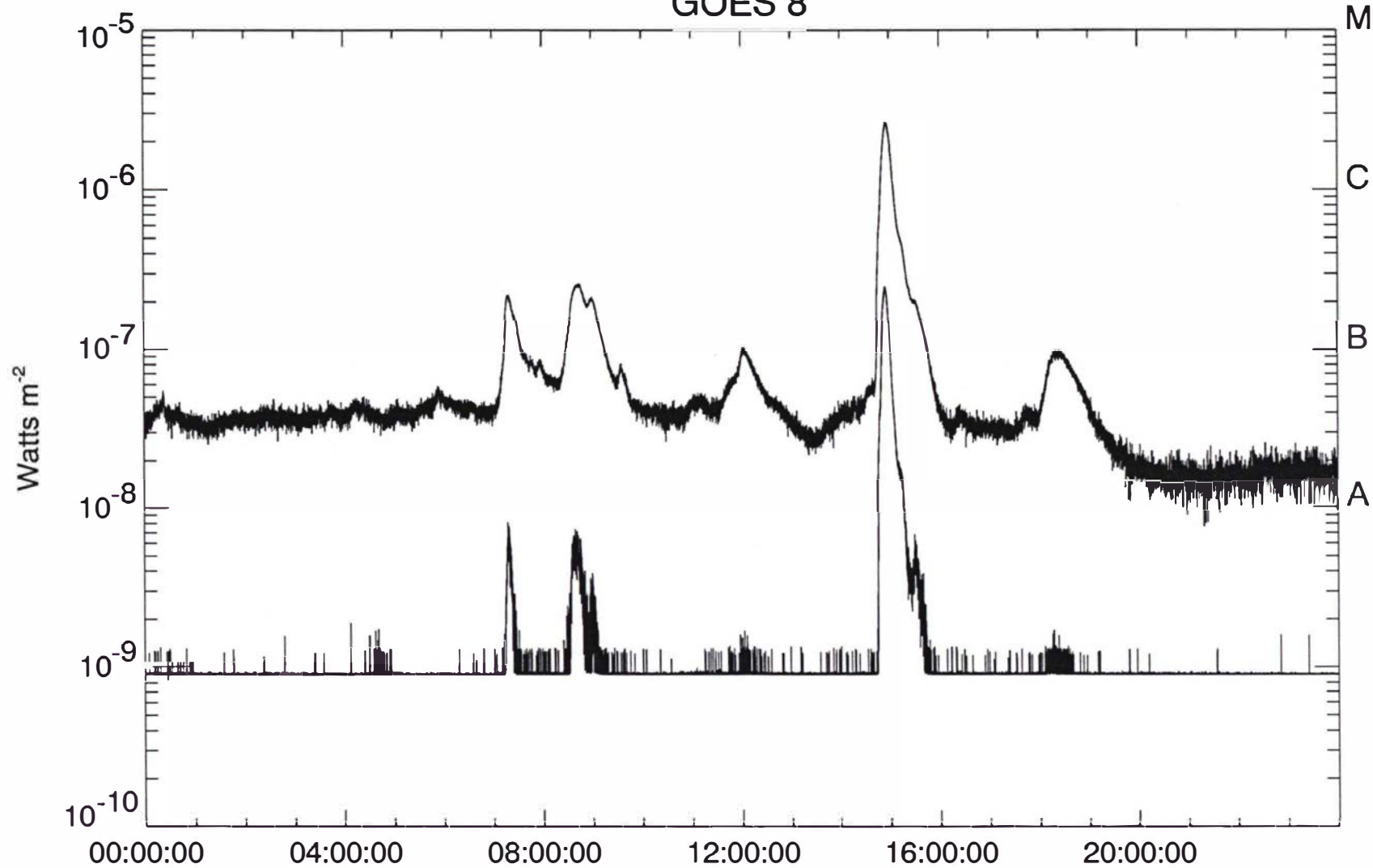


Current Time: 96/07/16, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

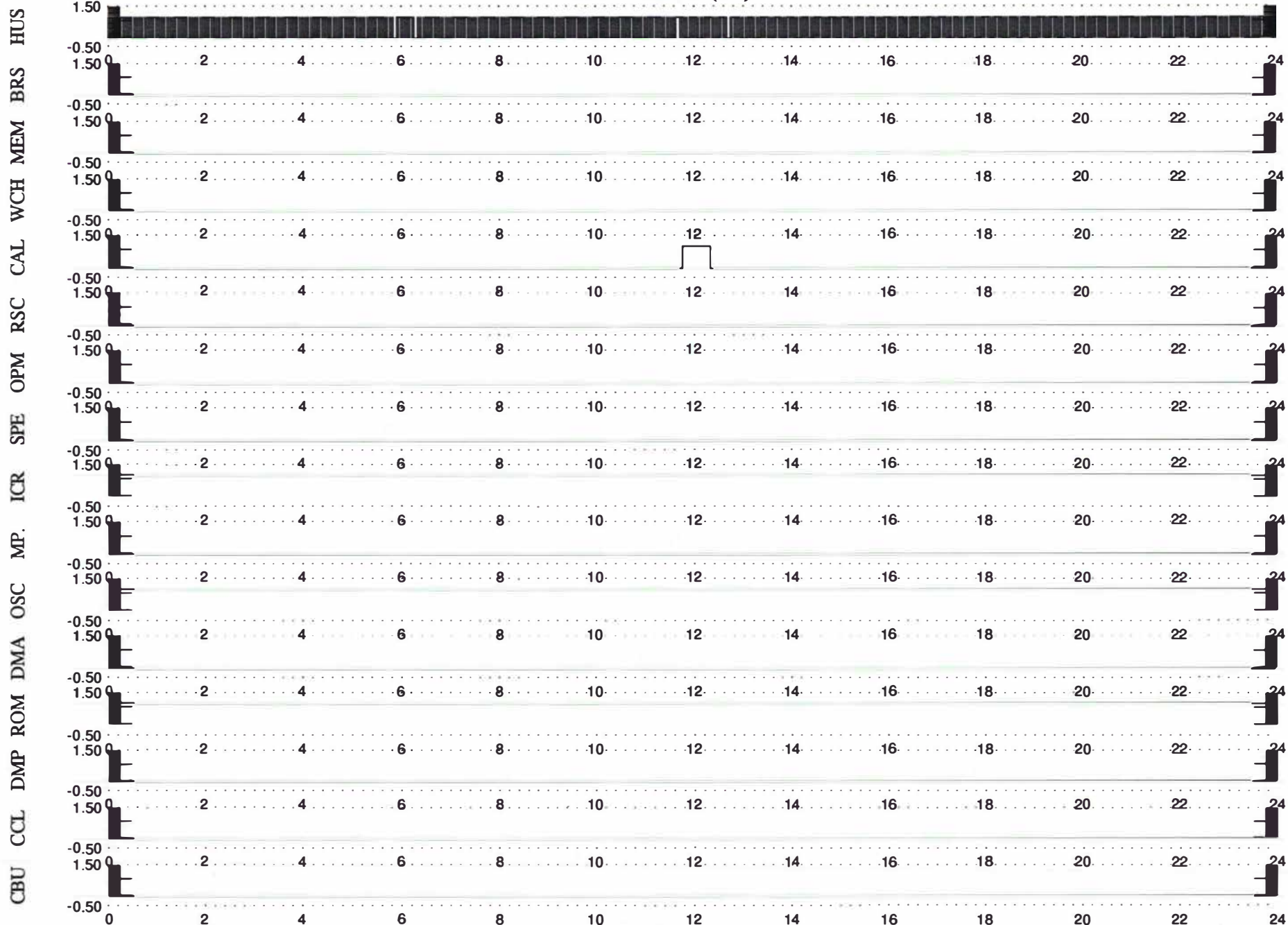


Data Start: 96/07/14, 0000:00

Plot created: 96/07/16, 1003

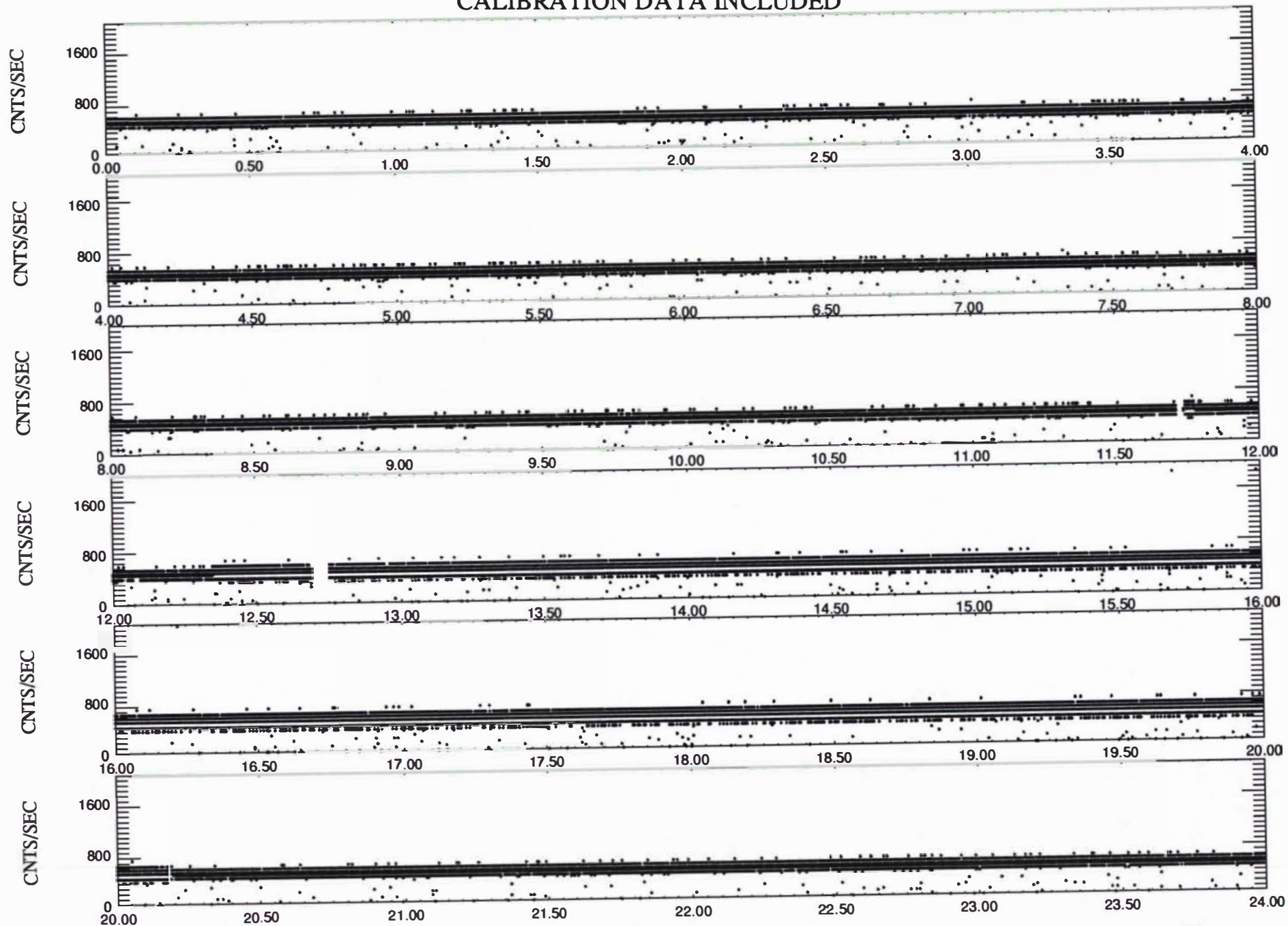
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

NO BURST (13)

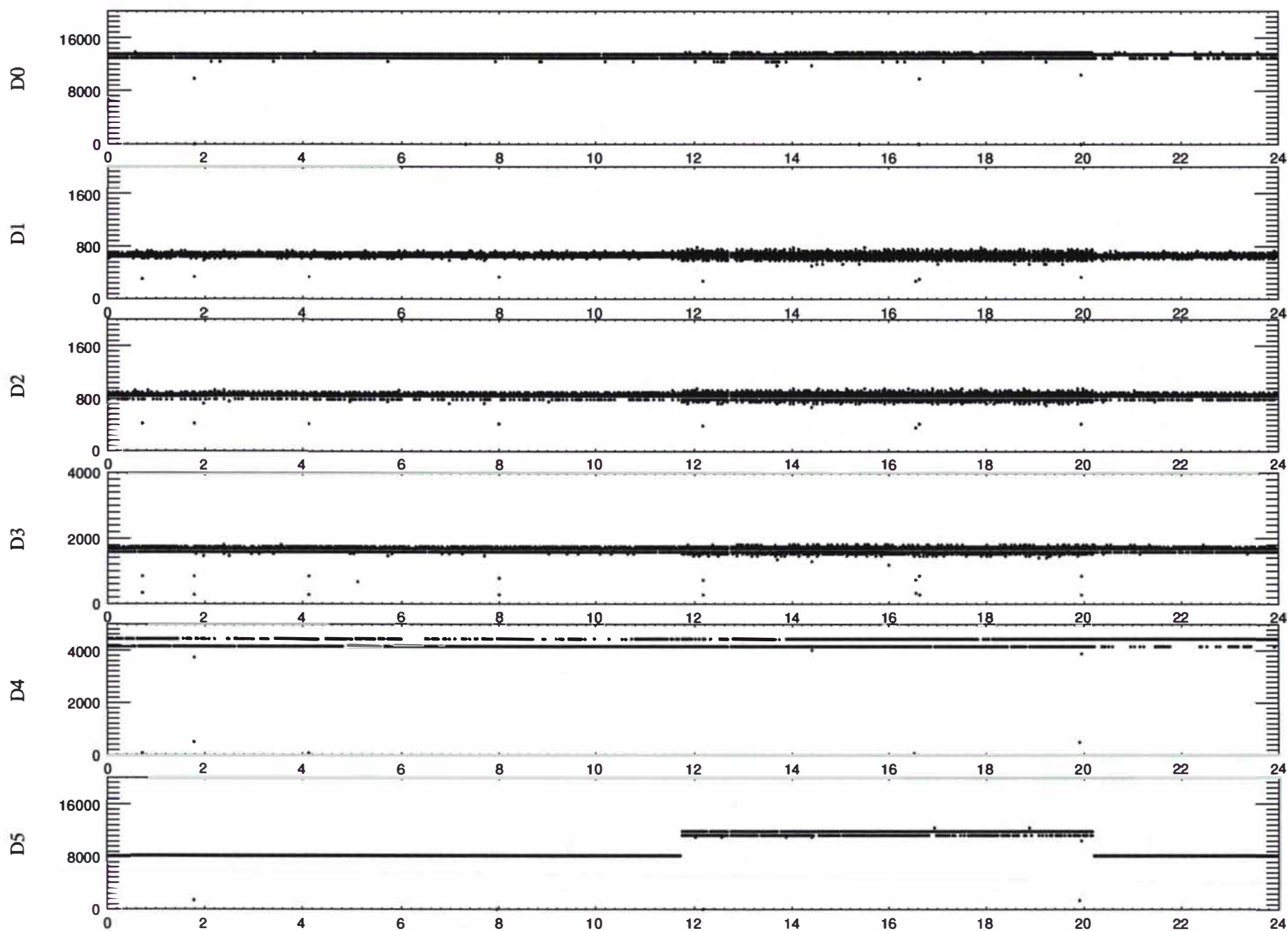


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From RICHARDSON@ssl.msfc.nasa.gov Thu Jul 18 06:51 PDT 1996
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Thu, 18 Jul 1996 8:50:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5539

BATSEARCH PROGRAM

BATSE BURST # 5539
EVENT OF 1996 JUL 15 DAY OF YEAR=197
EVENT CROSSING TIME AT BATSE : 2906. S. OR 00:48:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 3.000 36.000
BATSE PEAK COUNTING RATE: 18000 C/S

RT

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 7/ 96 IS:
RA= 156.348 DEC= 44.419 DIST= 4.800 AU
BATSE-ULYSSES DISTANCE = 718029951. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 251.61 SECS.
CROSSING TIME AT ULYSSES IS 3158. S. OR 00:52:37 +/- 467.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 96 IS:
RA= 82.016 DEC= 23.517 DIST= 2.293 AU
MARS-BATSE DISTANCE = 343025792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -430.08 SECS.
CROSSING TIME AT MARS IS 2476. S. OR 00:41:15 +/- 177.55 SECONDS

BATSE BURST TRIGGER

NO.: 5539

TIME: TJD=0279 SECONDS=2906

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.0 AZIMUTH=141.8 ERROR=1.7 DEGREES

COMMENTS:

GRB. MULTI PULSED EVENT. FIRST AND MAIN PULSE AT ~T-4SEC. WITH DUR.~15SEC.
SECOND PULSE AT ~T+35SEC. WITH DUR.~10SEC. POSSIBLE EMISSION EXTENDING UNTIL
T+100SEC. TOTAL DUR.~105SEC. SLIGHTLY VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5539	960715	10279	02906	18000	003	+36	105

Date:

Helio corr removed
Mar 12 '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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

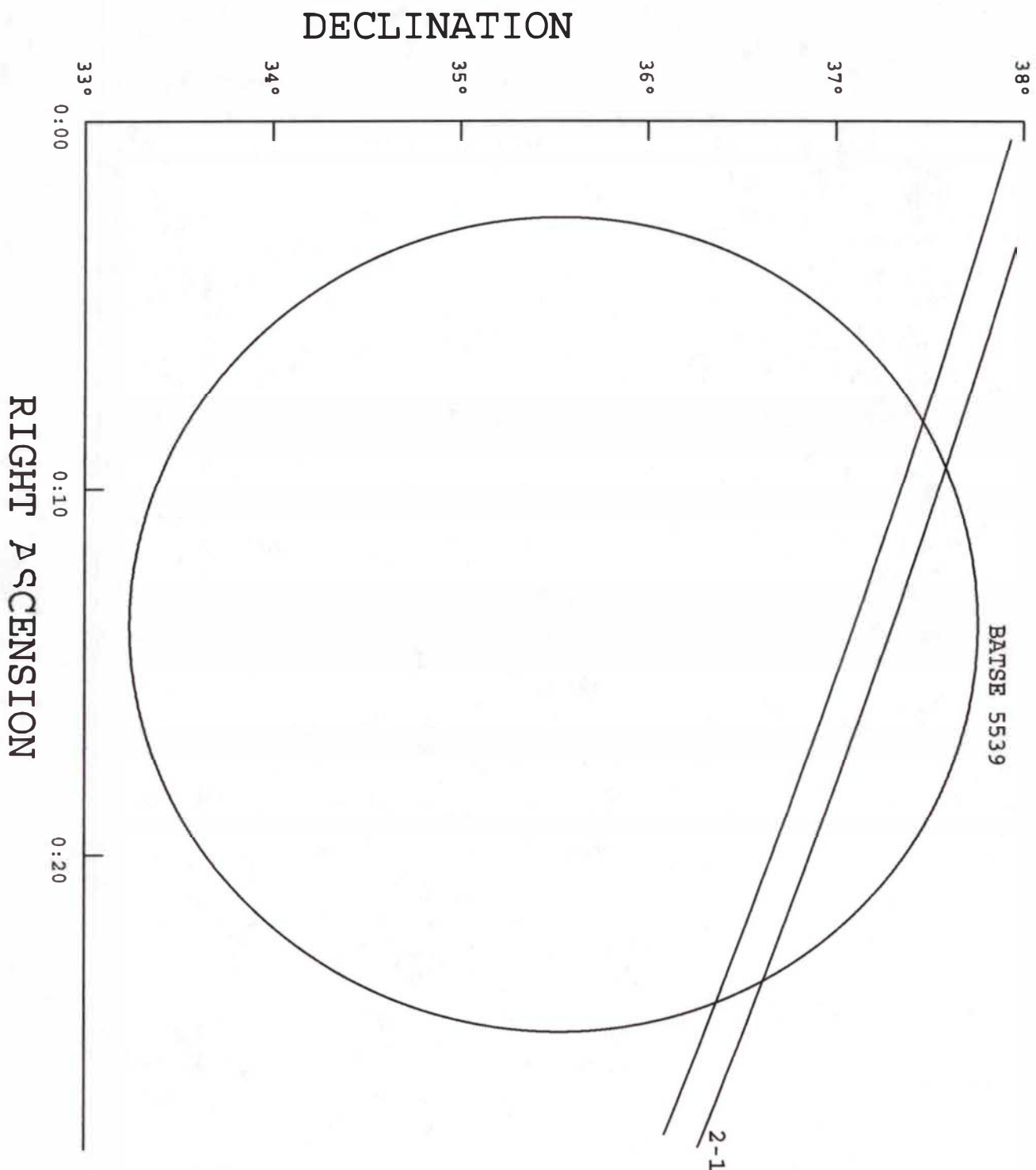
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 15, 1996 0:49

12/ 3/98



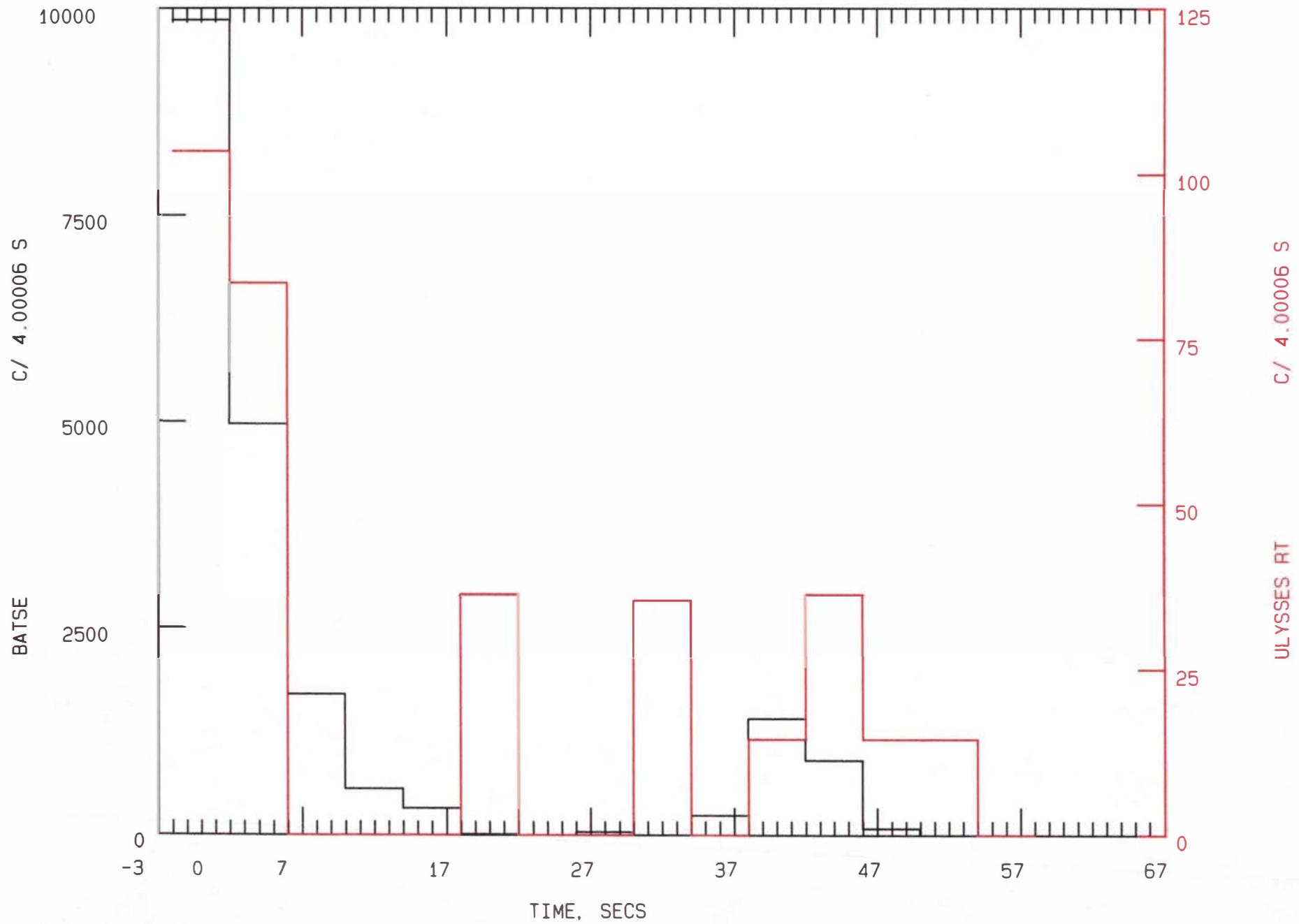
BATSE

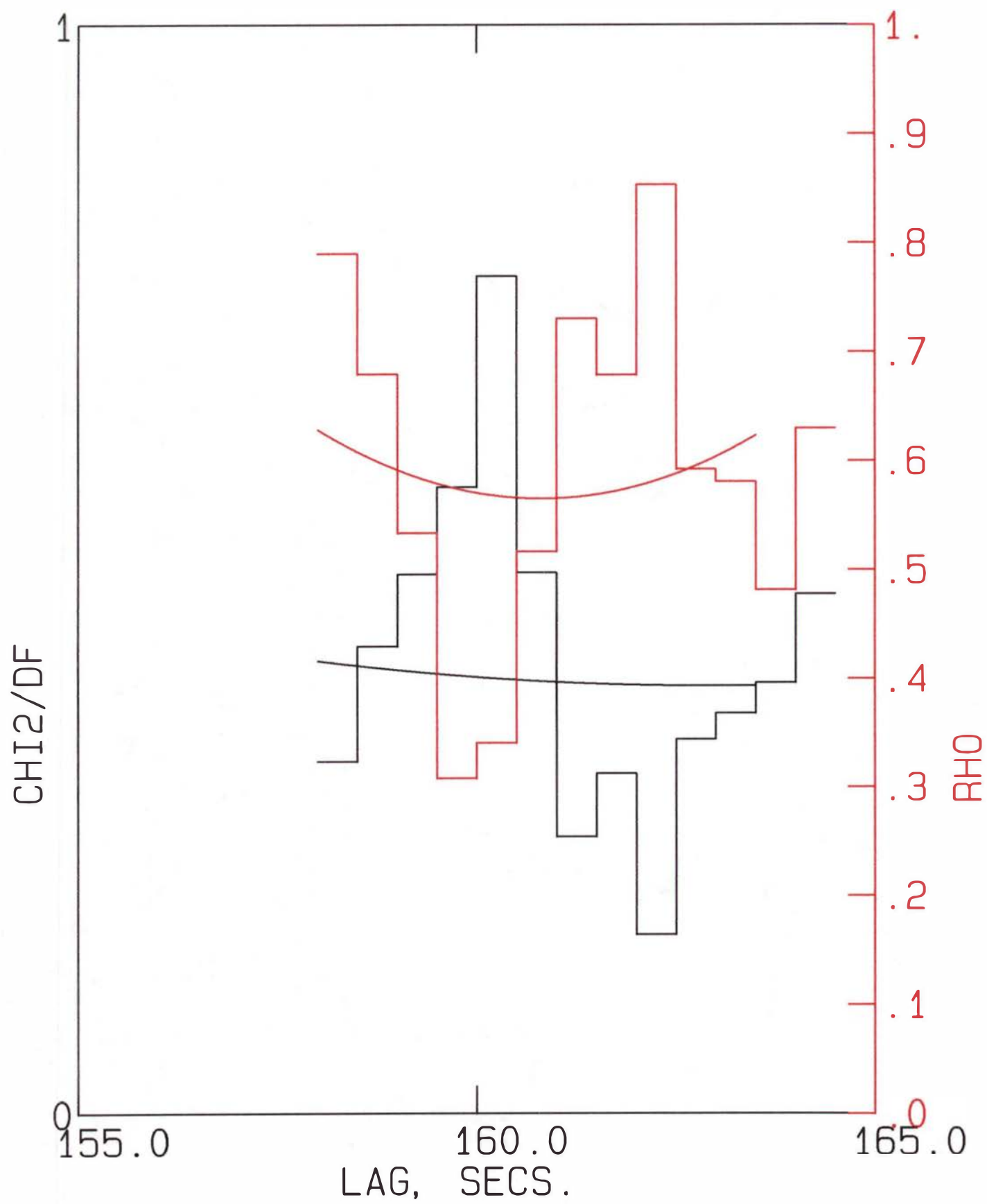
-ULYSSES RT CORRELATION

15/ 7/96

2906.826

12/ 3/98





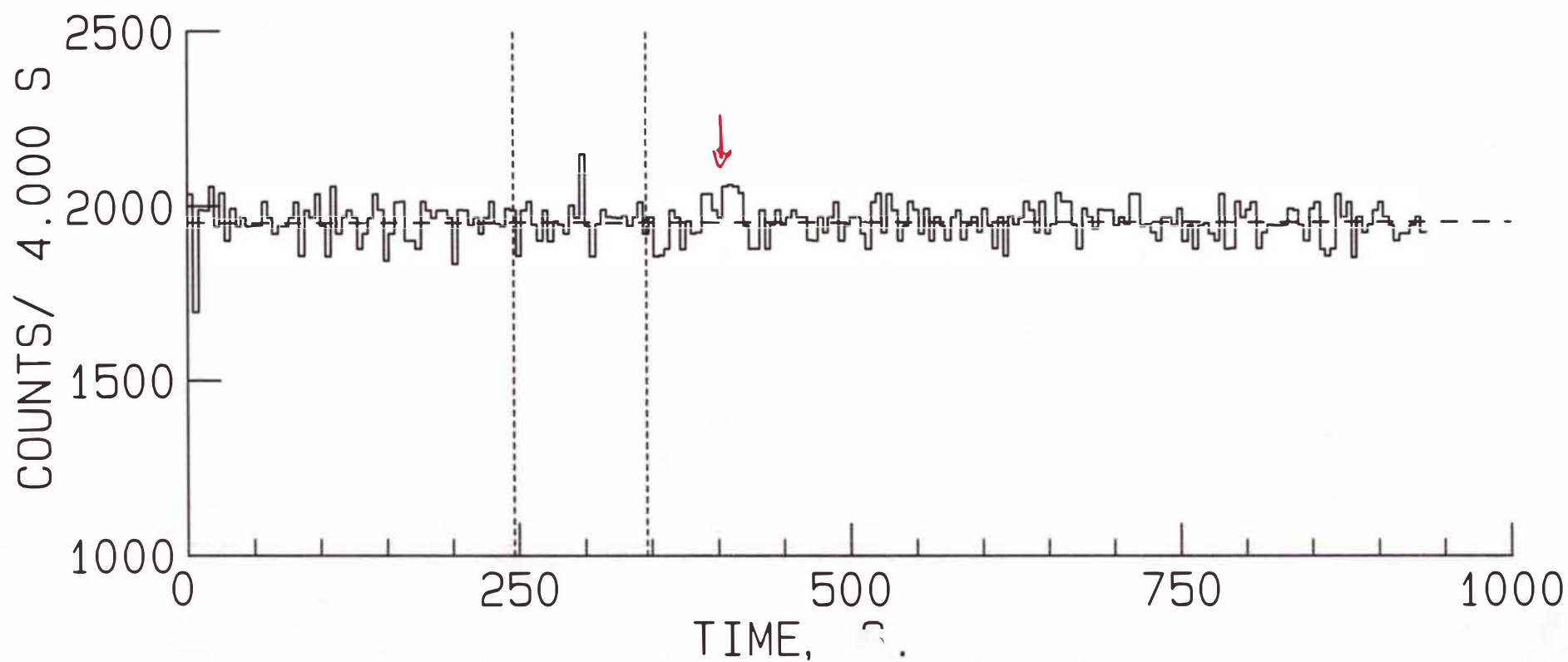
ULYSSES RT

12 / 3 / 98

15 / 7 / 96 2700.318 s

0.500 S INTERVALS REGROUPED BY 8

21- 145 keV



BATSE

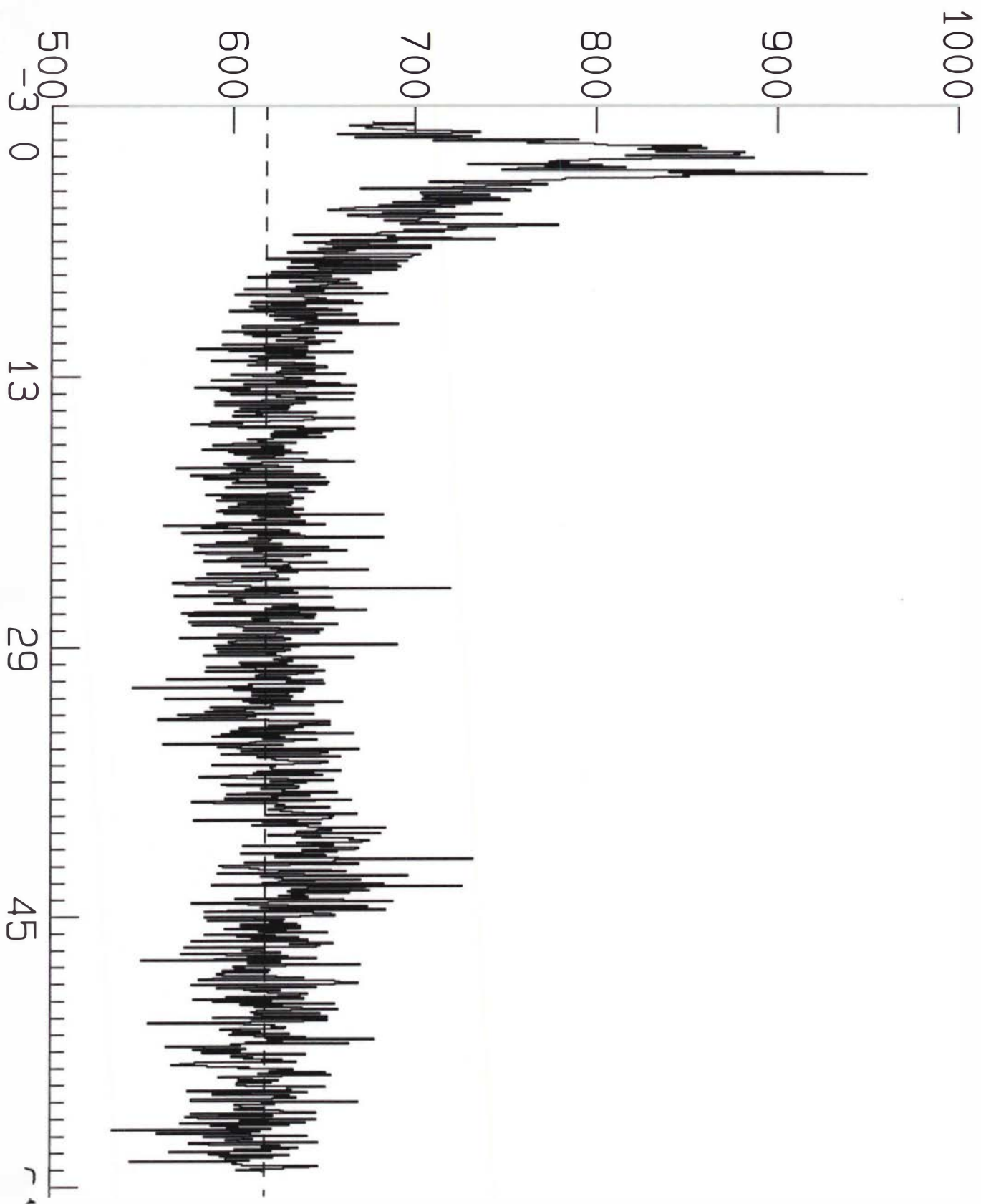
15/07/96

2906.826

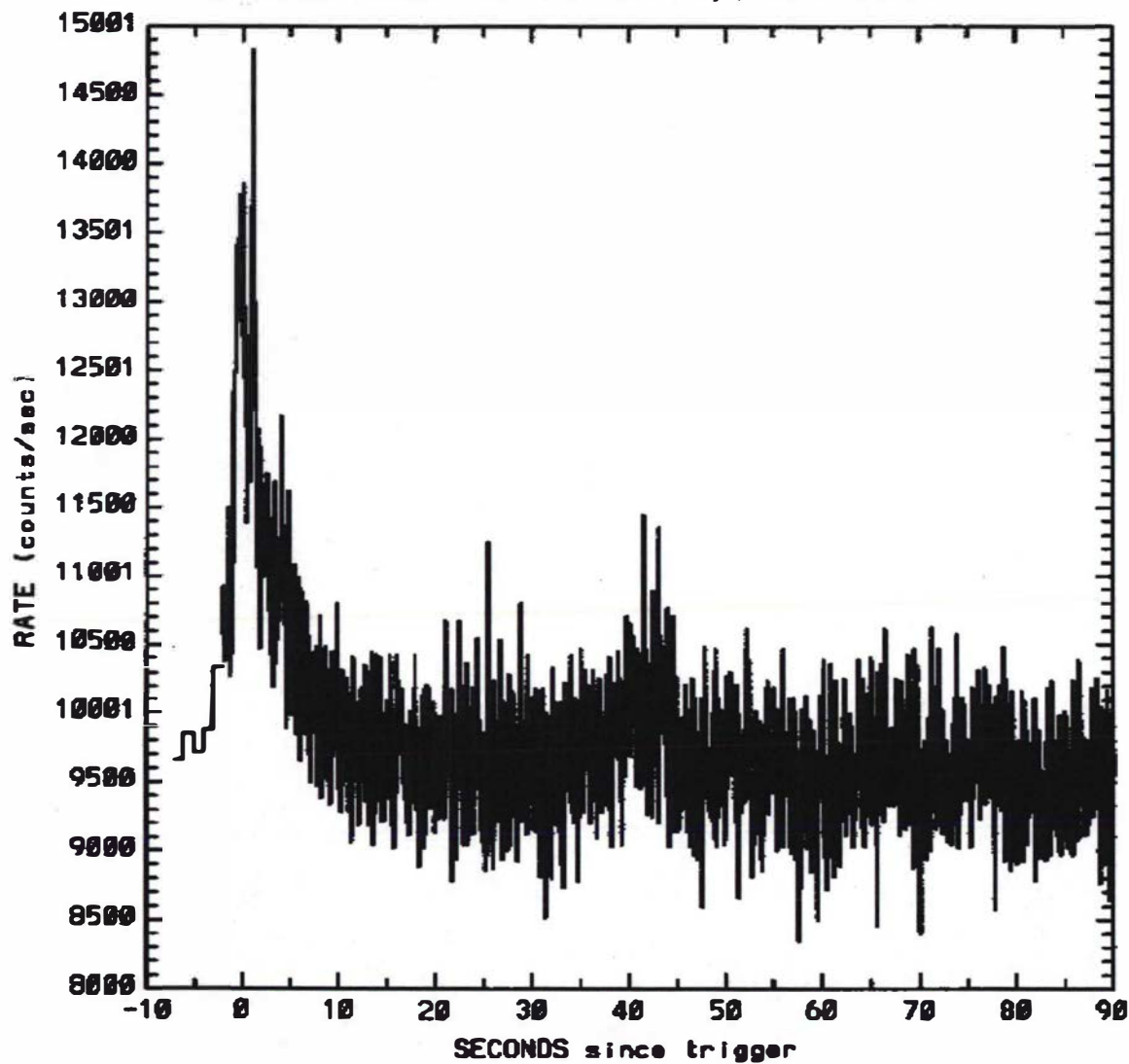
25- 100 keV

COUNTS/0.064 S

23 / 8 / 96



DISCSC Data for K. Hurley, No. 5539



13-AUG-1996 09:02.23

Created by HOPS 80
(Burst Display)
Version t2.25

Trigger #: 5539

Trigger Time:
18279 / 2986.826

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PRED + DISCLA

Minimum Integ. Time:
0.044 second(s)

Detectors (7..8):
7-54----

Discriminators:
(1, 2)

Quality Mask:
BDISP

From RICHARDSON@SSLLES.MSFC.NASA.GOV Thu Jul 18 06:52 PDT 1996
Date: Thu, 18 Jul 1996 8:52:20 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5540

BATSEARCH PROGRAM

NO

BATSE BURST # 5540
EVENT OF 1996 JUL 15 DAY OF YEAR=197
EVENT CROSSING TIME AT BATSE : 27193. S. OR 07:33:13.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 82.000 49.000
BATSE PEAK COUNTING RATE: 4750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 7/ 96 IS:
RA= 156.404 DEC= 44.365 DIST= 4.803 AU
BATSE-ULYSSES DISTANCE = 718502616. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.83 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1566.96 SECS.
CROSSING TIME AT ULYSSES IS 25626. S. OR 07:07:06 +/- 341.05 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 96 IS:
RA= 82.016 DEC= 23.517 DIST= 2.293 AU
MARS-BATSE DISTANCE = 343025792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=154.52 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1032.89 SECS.
CROSSING TIME AT MARS IS 26160. S. OR 07:16:00 +/- 69.78 SECONDS

BATSE BURST TRIGGER

NO.: 5540

TIME: TJD=0279 SECONDS=27193

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=175.5 AZIMUTH=242.9 ERROR=2.6 DEGREES

COMMENTS:

GRB. TWO MAIN PULSES, EACH WITH LOTS OF STRUCTURE. TOTAL DUR.~60SEC.
NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5540	960715	10279	27193	4750	082	+49	60

BATSE #

5540

18 / 7 / 96

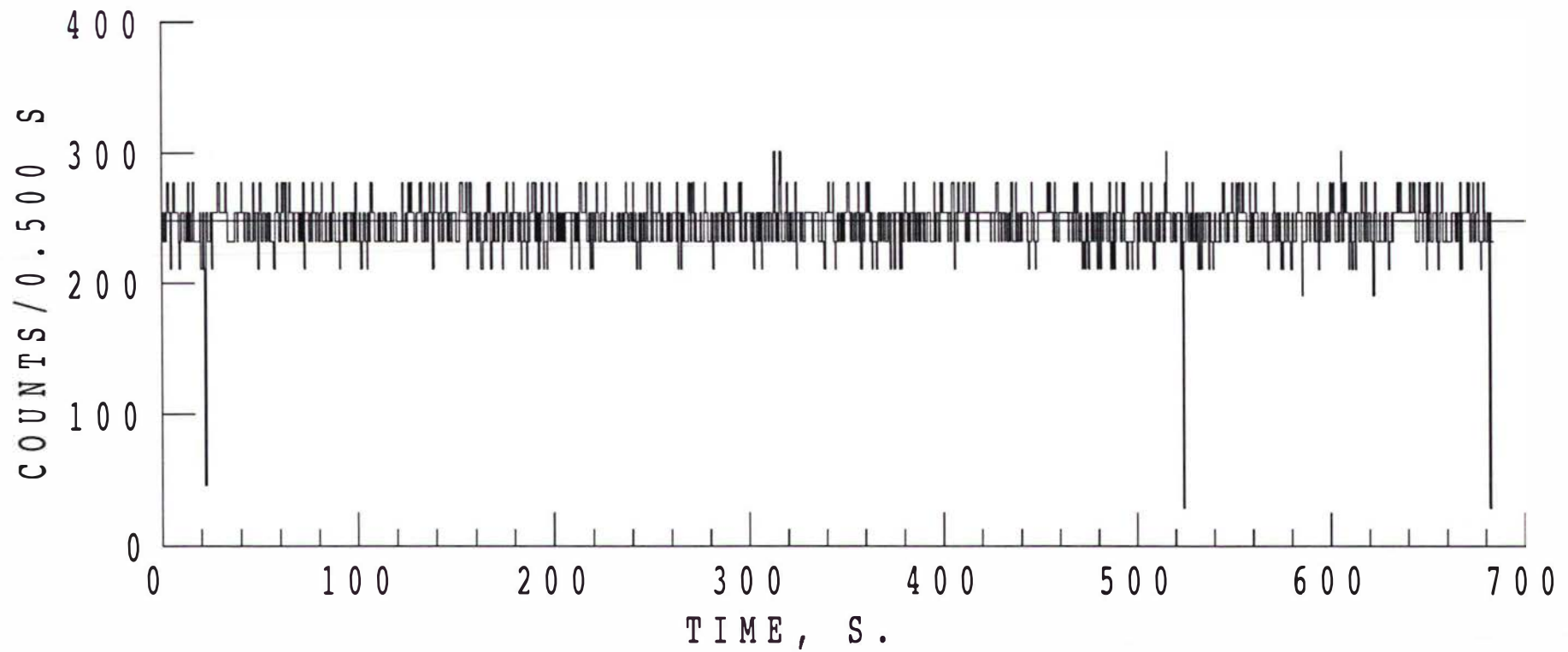
ULYSSES RT

15 / 7 / 96 25272.111 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@ssl.msfc.nasa.gov Thu Jul 18 06:53 PDT 1996
From: RICHARDSON@ssl.msfc.nasa.gov
Date: Thu, 18 Jul 1996 8:53:42 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5541

BATSEARCH PROGRAM

BATSE BURST # 5541
EVENT OF 1996 JUL 15 DAY OF YEAR=197
EVENT CROSSING TIME AT BATSE : 40754. S. OR 11:19:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 313.000 52.000
BATSE PEAK COUNTING RATE: 5500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 7/ 96 IS:
RA= 156.435 DEC= 44.335 DIST= 4.805 AU
BATSE-ULYSSES DISTANCE = 718769337. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.43 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -351.62 SECS.
CROSSING TIME AT ULYSSES IS 40402. S. OR 11:13:22 +/- 456.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 7/ 96 IS:
RA= 82.016 DEC= 23.517 DIST= 2.293 AU
MARS-BATSE DISTANCE = 343025792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 46.88 SECS.
CROSSING TIME AT MARS IS 40801. S. OR 11:20:00 +/- 199.20 SECONDS

BATSE BURST TRIGGER

NO.: 5541

TIME: TJD=0279 SECONDS=40754

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=107.6 AZIMUTH=181.5 ERROR=1.3 DEGREES

COMMENTS:

GRB. FAST RISE WITH AN EXPONENTIAL DECAY. TOTAL DUR.~25SEC.
NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5541	960715	10279	40754	5500	313	+52	25

BATSE #

5541

18 / 7 / 96

ULYSSES RT

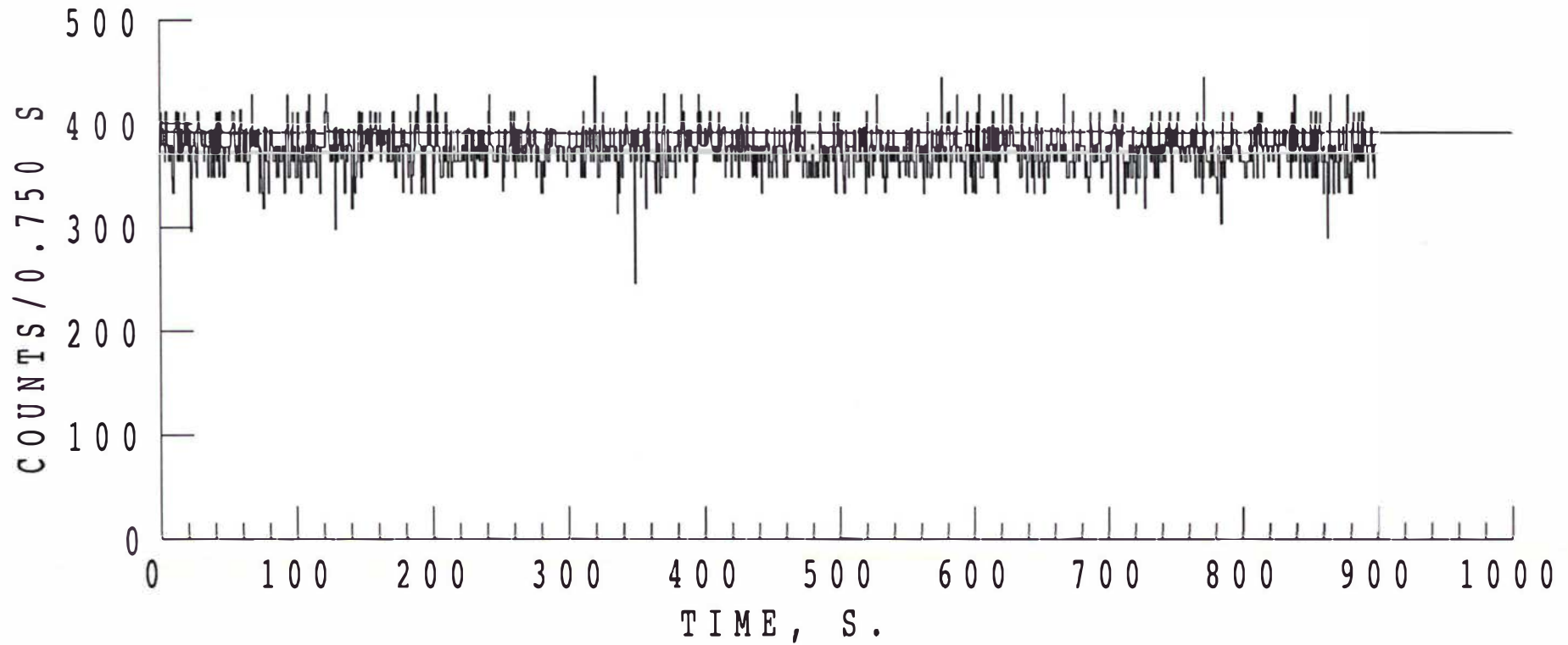
15 / 7 / 96 39960.055 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



KONUS

Stem, Kammers unter
29 / 01 / 00

ULYSSES RT

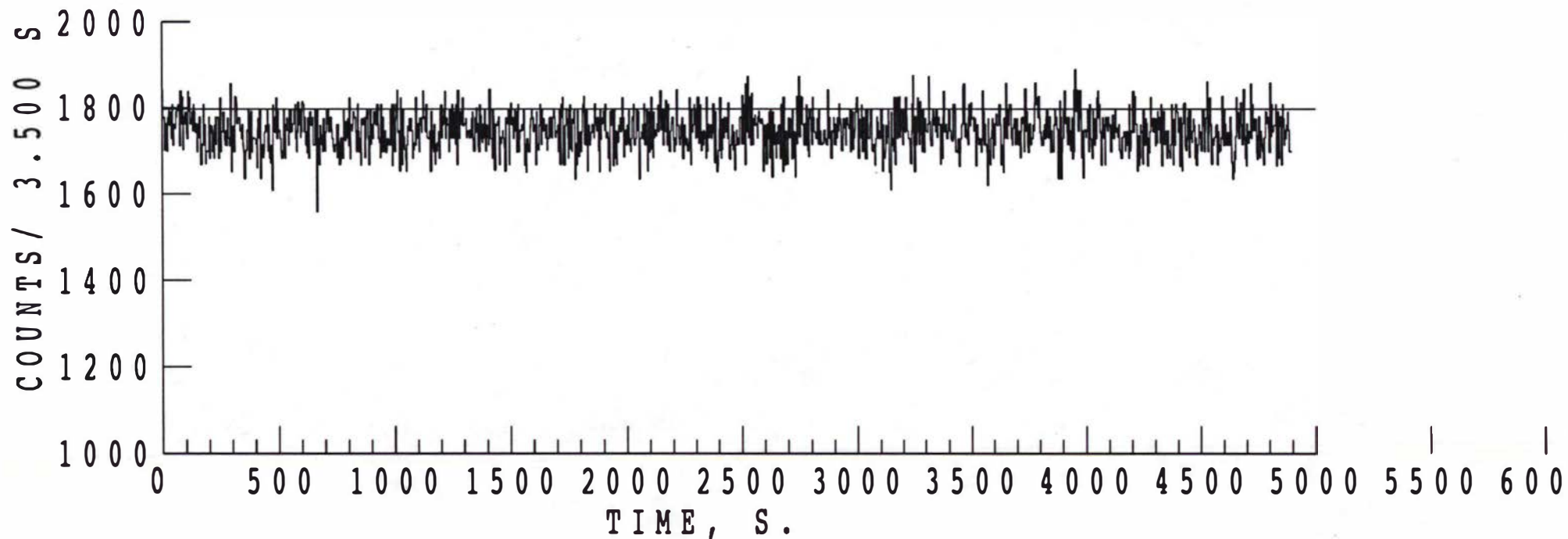
15/07/96 55872.016 s

0.250 S INTERVALS REGROUPED BY 14

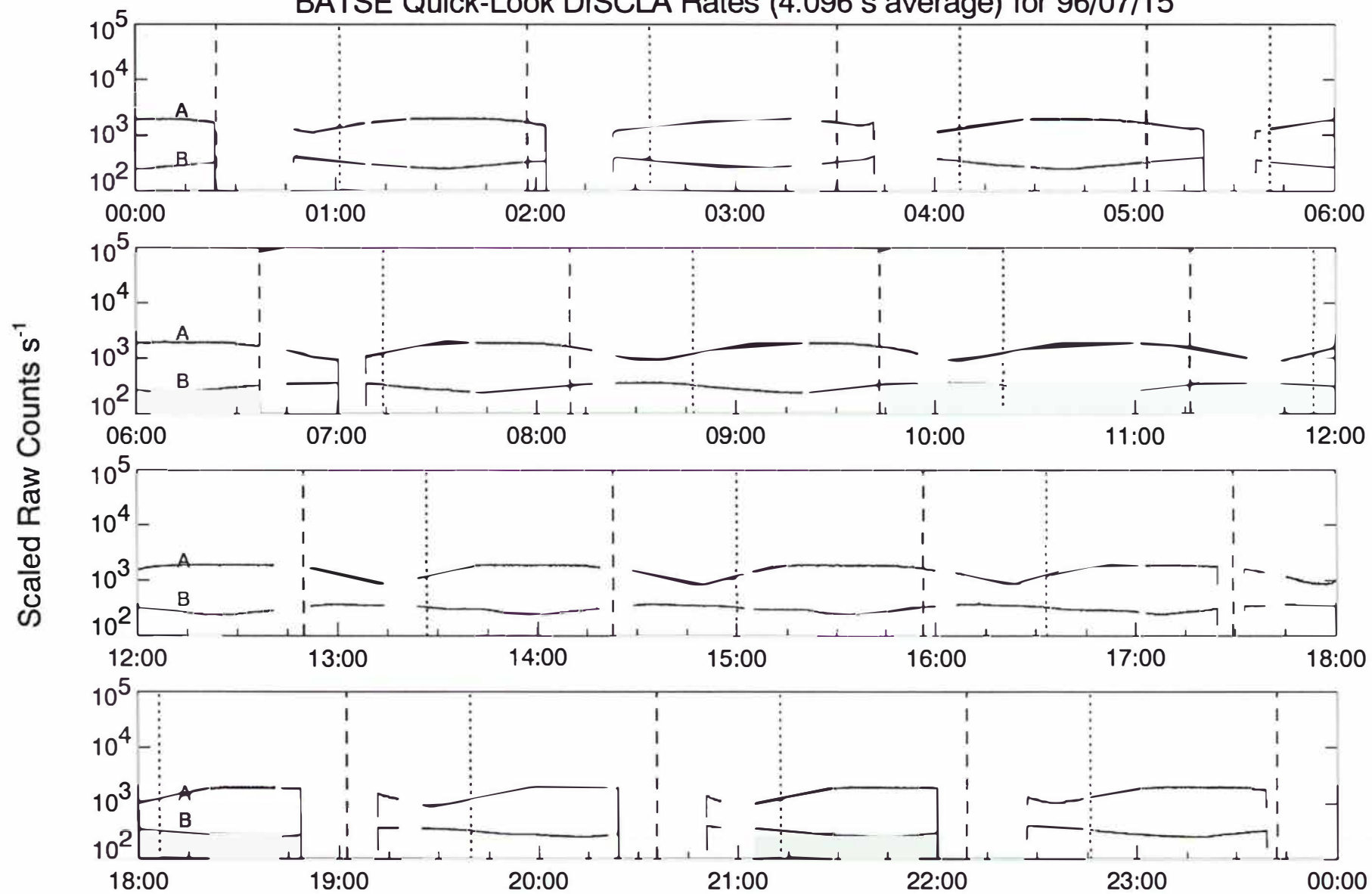
0 - 0 keV

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 96/07/15

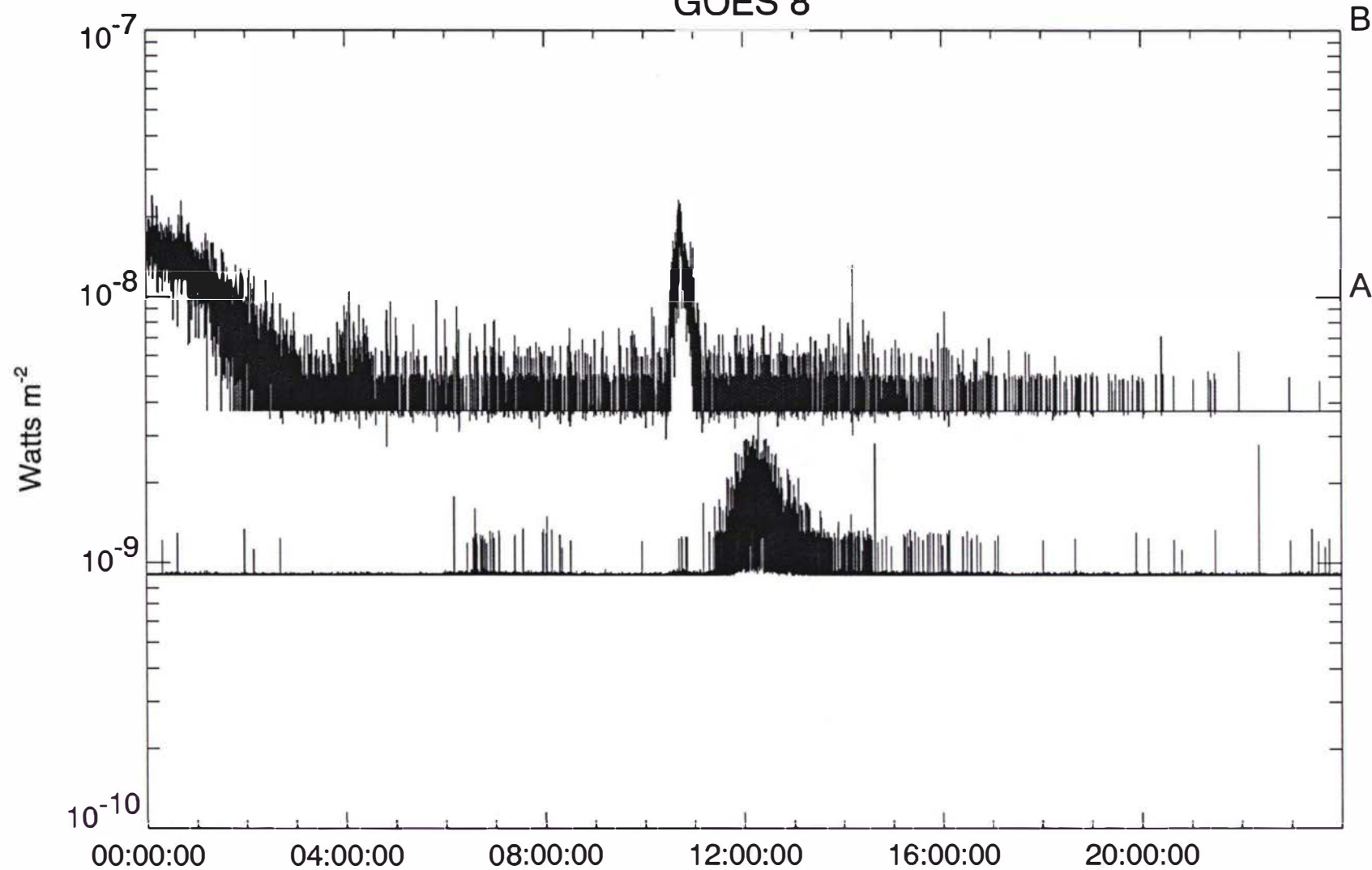


Current Time: 96/07/17, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 96/07/15, 0000:00

Plot created: 96/07/17, 1004

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

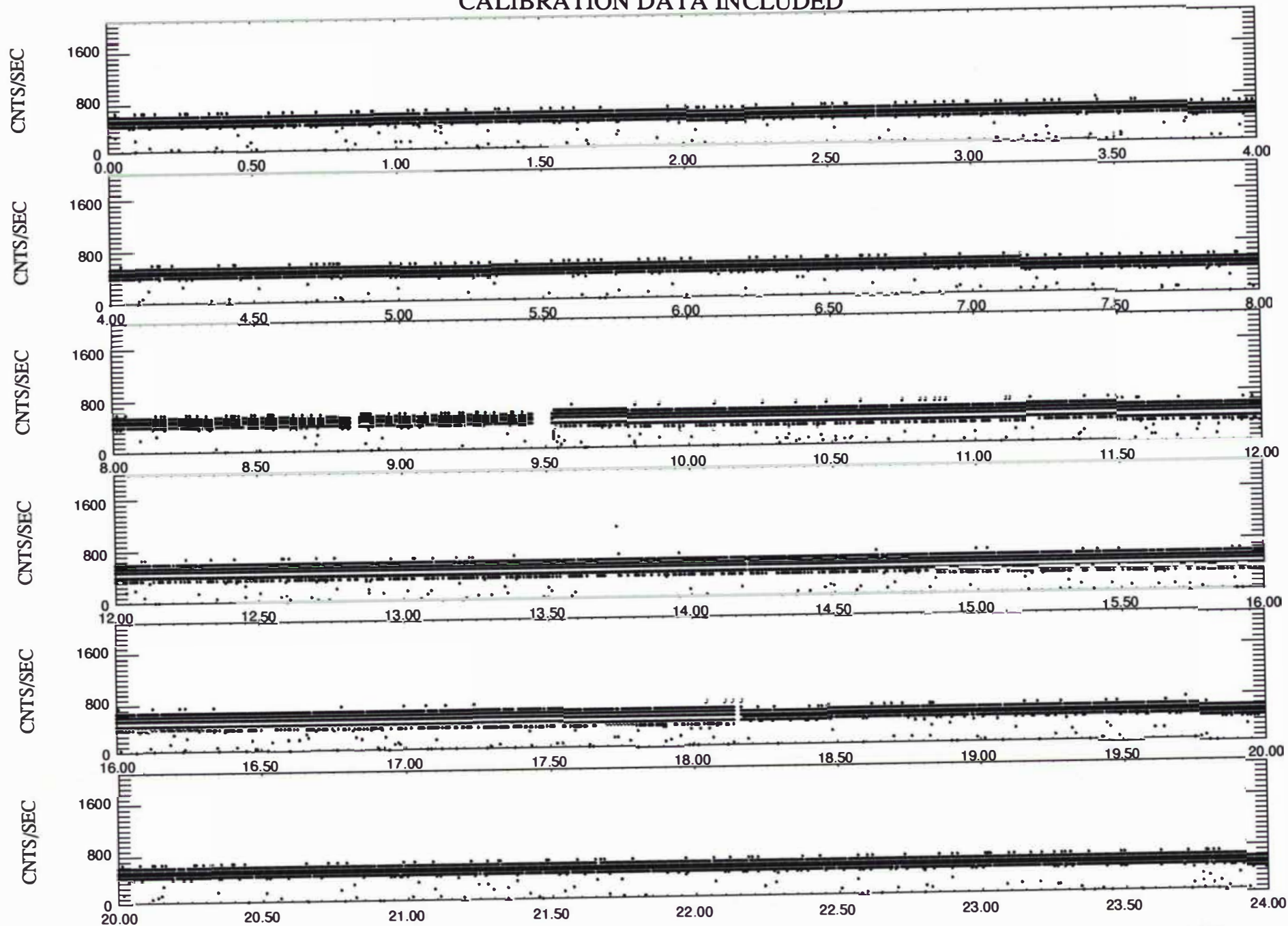
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

NO BURST (13)

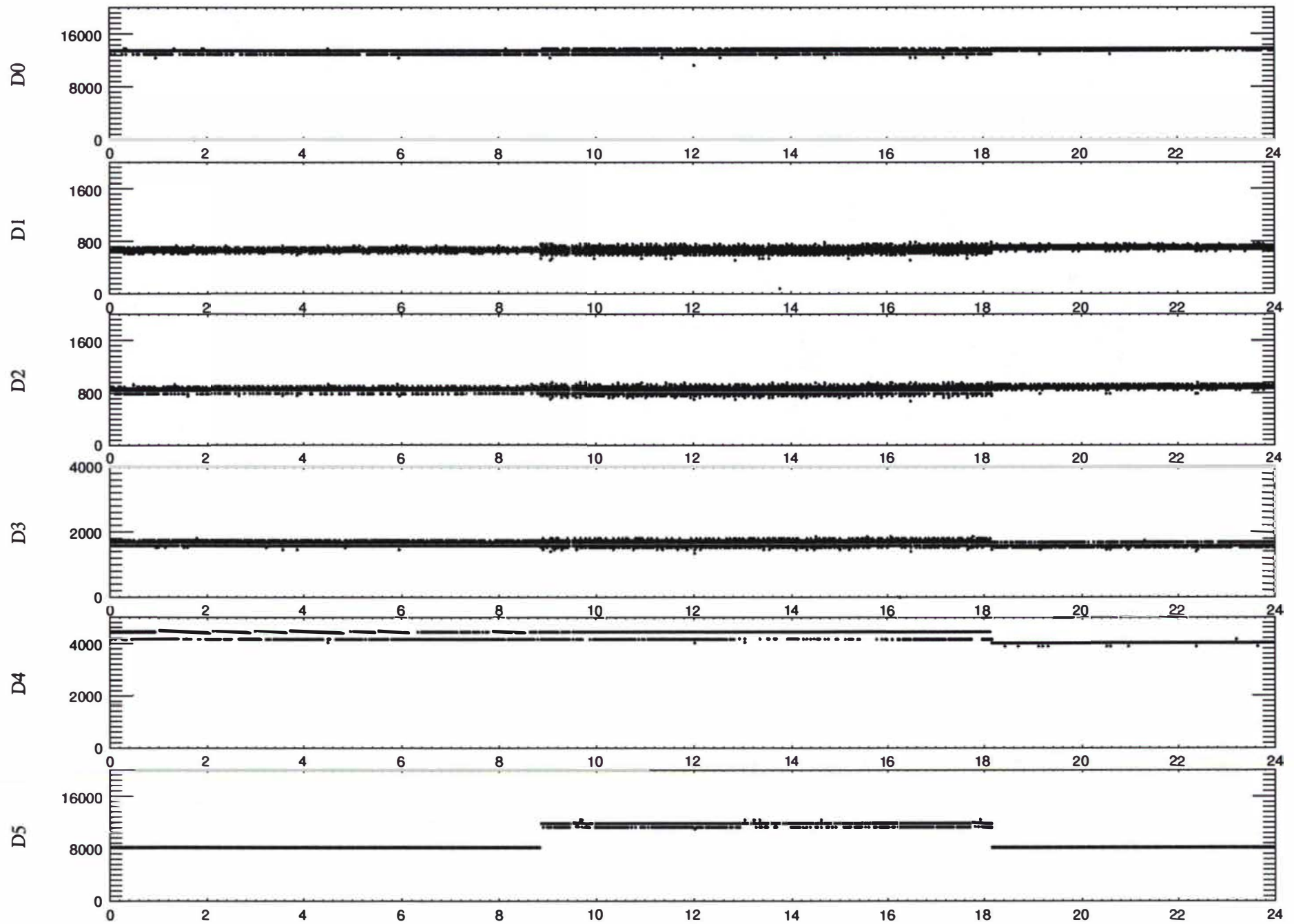


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Thu Jul 18 13:34 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Thu, 18 Jul 1996 15:33:46 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5542

BATSEARCH PROGRAM

BATSE BURST # 5542
EVENT OF 1996 JUL 16 DAY OF YEAR=198
EVENT CROSSING TIME AT BATSE : 8049. S. OR 02:14:09.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 55.000 -11.000
BATSE PEAK COUNTING RATE: 6000 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 7/ 96 IS:
RA= 156.559 DEC= 44.216 DIST= 4.812 AU
BATSE-ULYSSES DISTANCE = 719810968. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 657.97 SECS.
CROSSING TIME AT ULYSSES IS 8707. S. OR 02:25:06 +/- 460.89 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 7/ 96 IS:
RA= 82.761 DEC= 23.564 DIST= 2.290 AU
MARS-BATSE DISTANCE = 342643008. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=136.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -822.83 SECS.
CROSSING TIME AT MARS IS 7226. S. OR 02:00:26 +/- 125.23 SECONDS

BATSE BURST TRIGGER

NO.: 5542

TIME: TJD=0280 SECONDS=8049

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

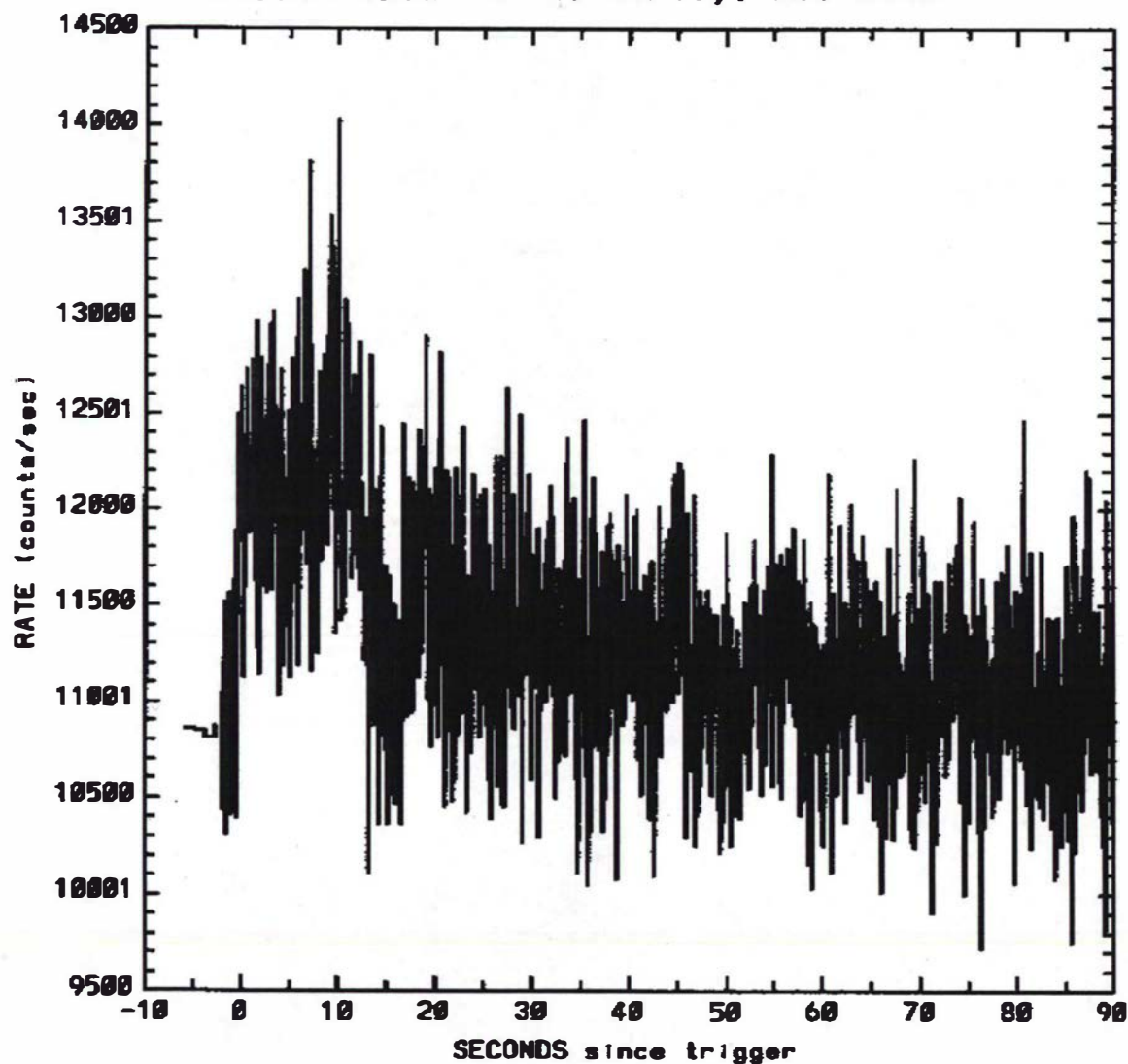
LOCATION: ZENITH=120.7 AZIMUTH=60.0 ERROR=1.3 DEGREES

COMMENTS:

GRB LASTING ~ 70 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5542	960716	10280	08049	6000	055	-11	70

DISCSC Data for K. Hurley. No. 5542



13-AUG-1996 09:04.56

Created by HOPS 80
(Burst Display)
Version t2.25

Trigger # : 5542

Trigger Time:
10200 / 8849.098Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8].
--5--210Discriminators:
(1..2)Quality Mask:
00ISP1

ULYSSES RT

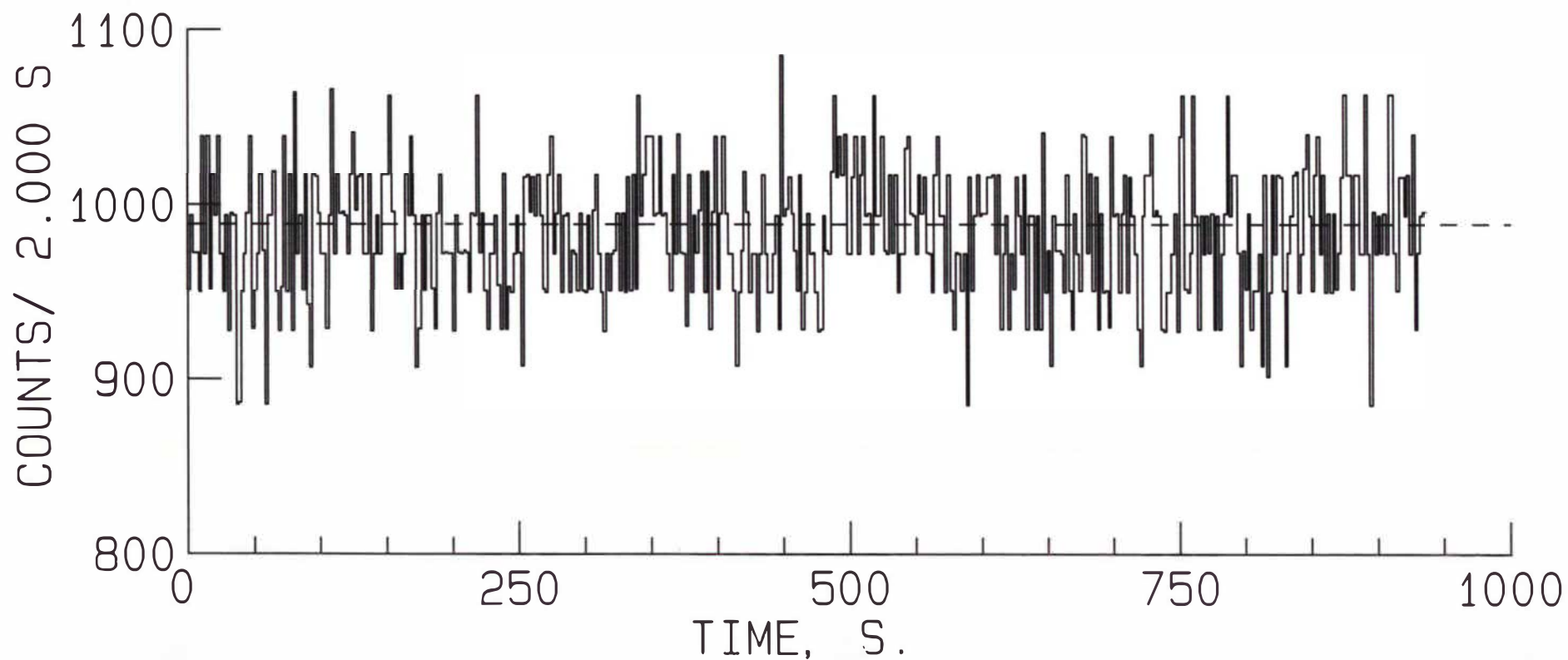
26 / 8 / 96

16 / 7 / 96 8244.022 s

0.500 S INTERVALS REGROUPED BY 4

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



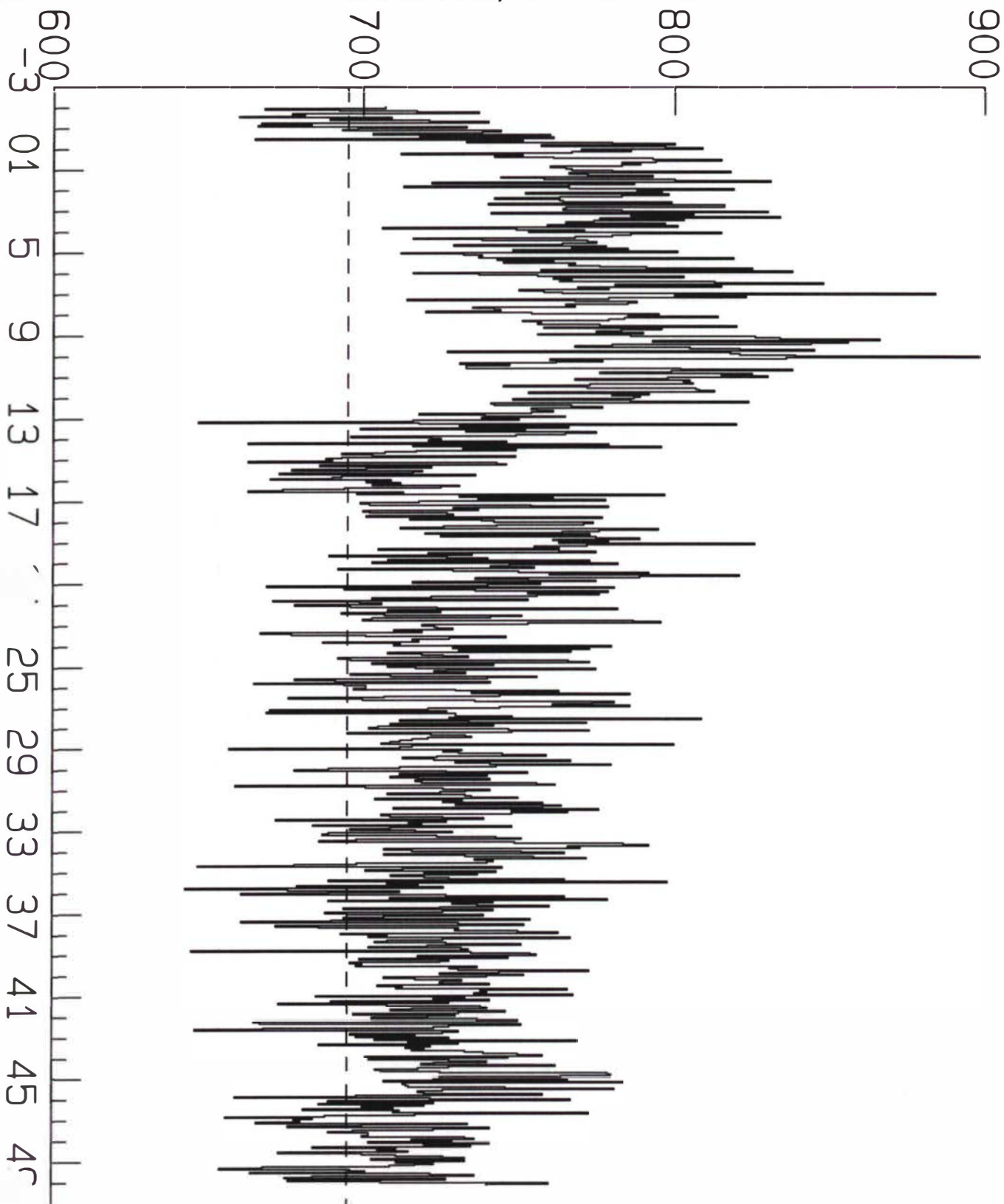
BATSE

16/07/96

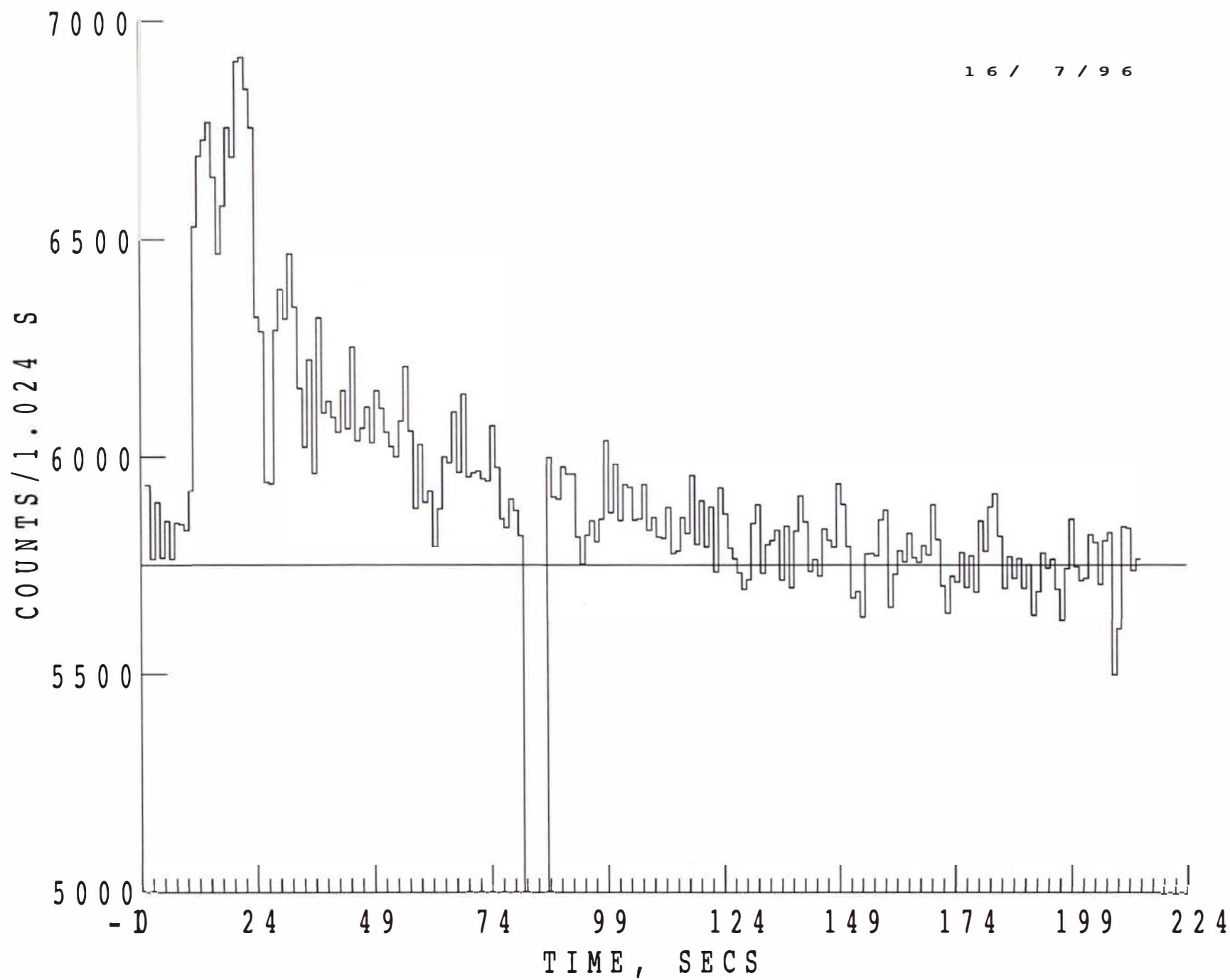
8049.098

25- 100 keV

COUNTS/0.064 S



BACODINE 5542 16/07/96 8038.089
25- 100 keV



KONUS

ULYSSES RT

29 / 01 / 00

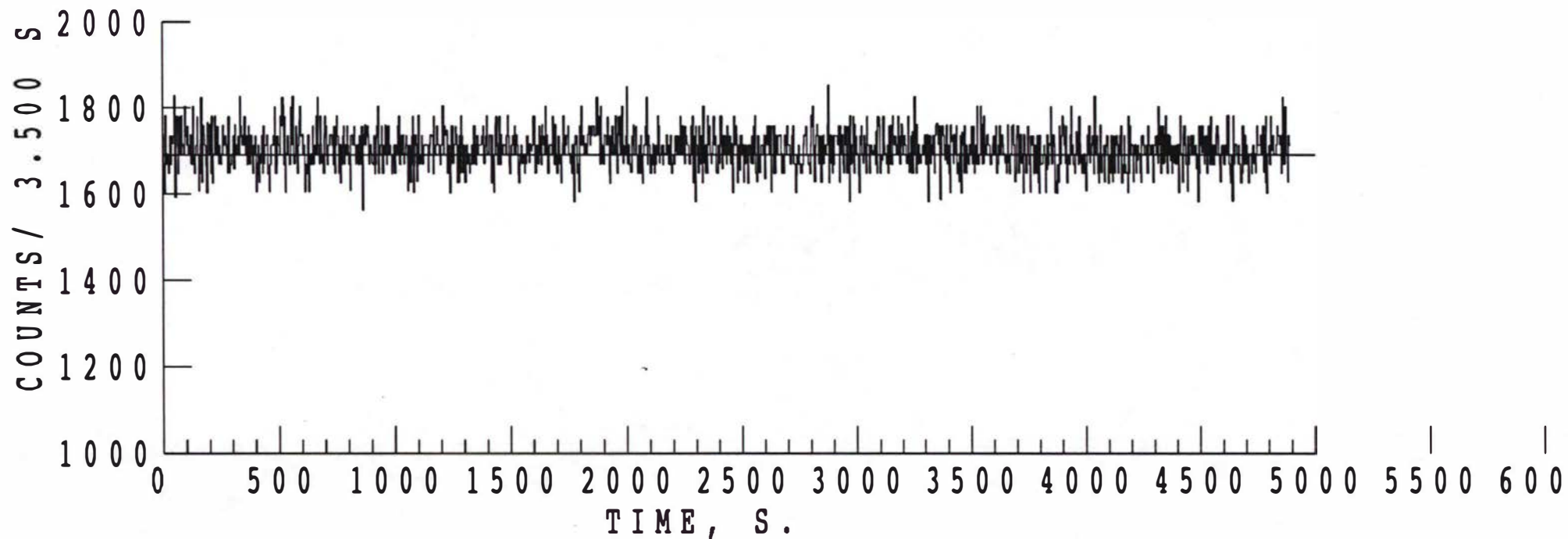
16 / 07 / 96 79668.453 s

0.500 S INTERVALS REGROUPED BY 7

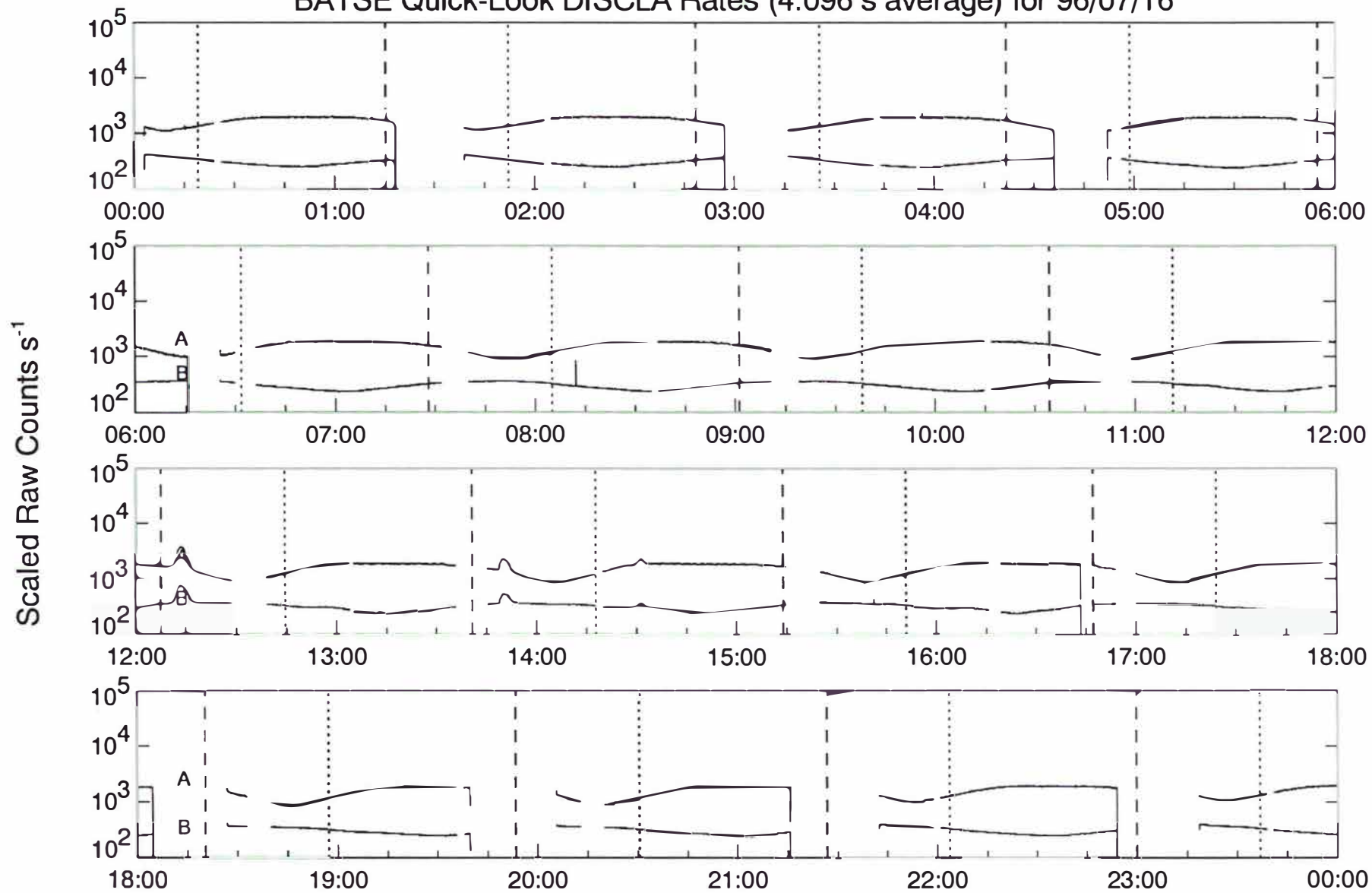
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



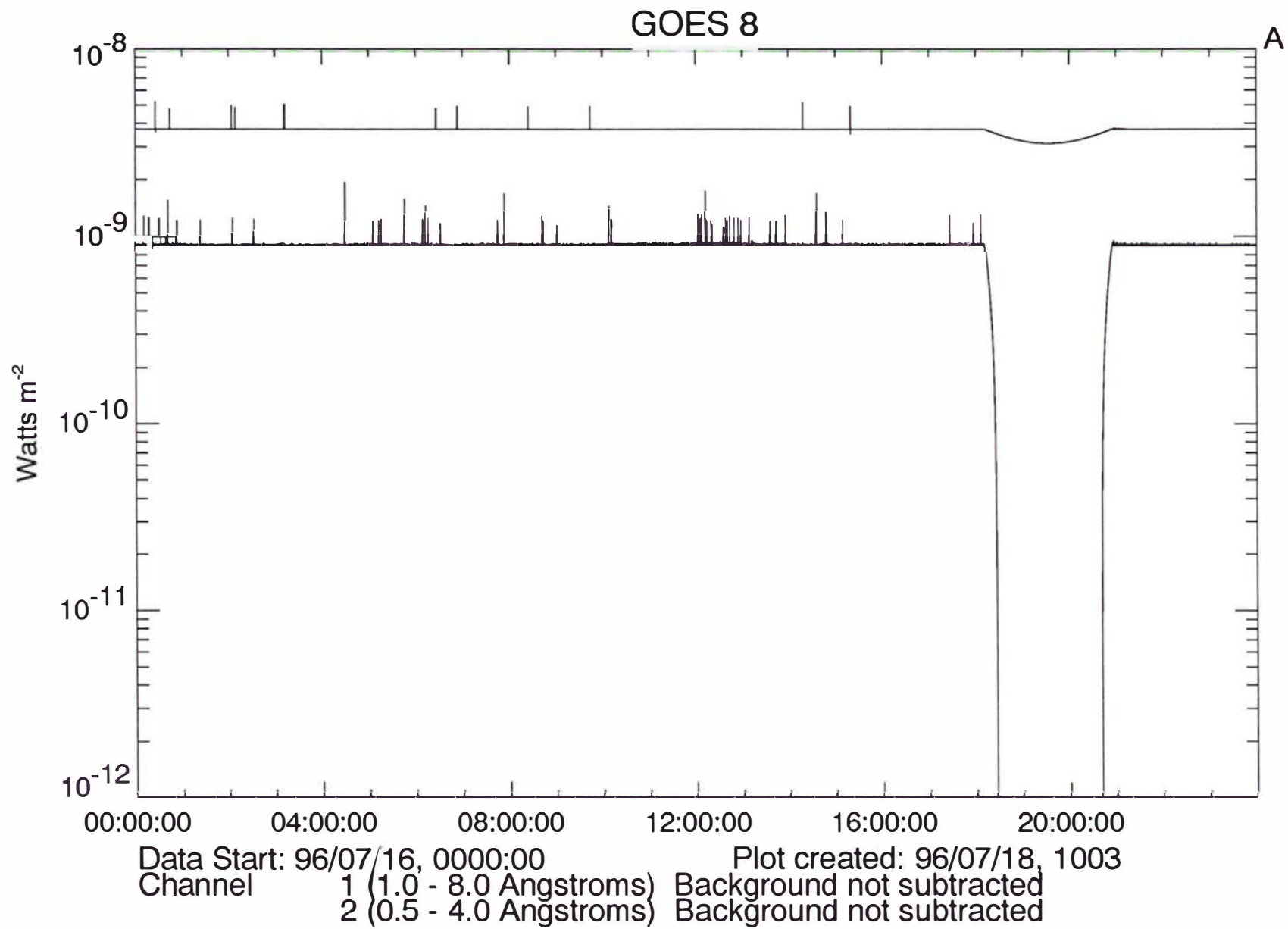
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/16



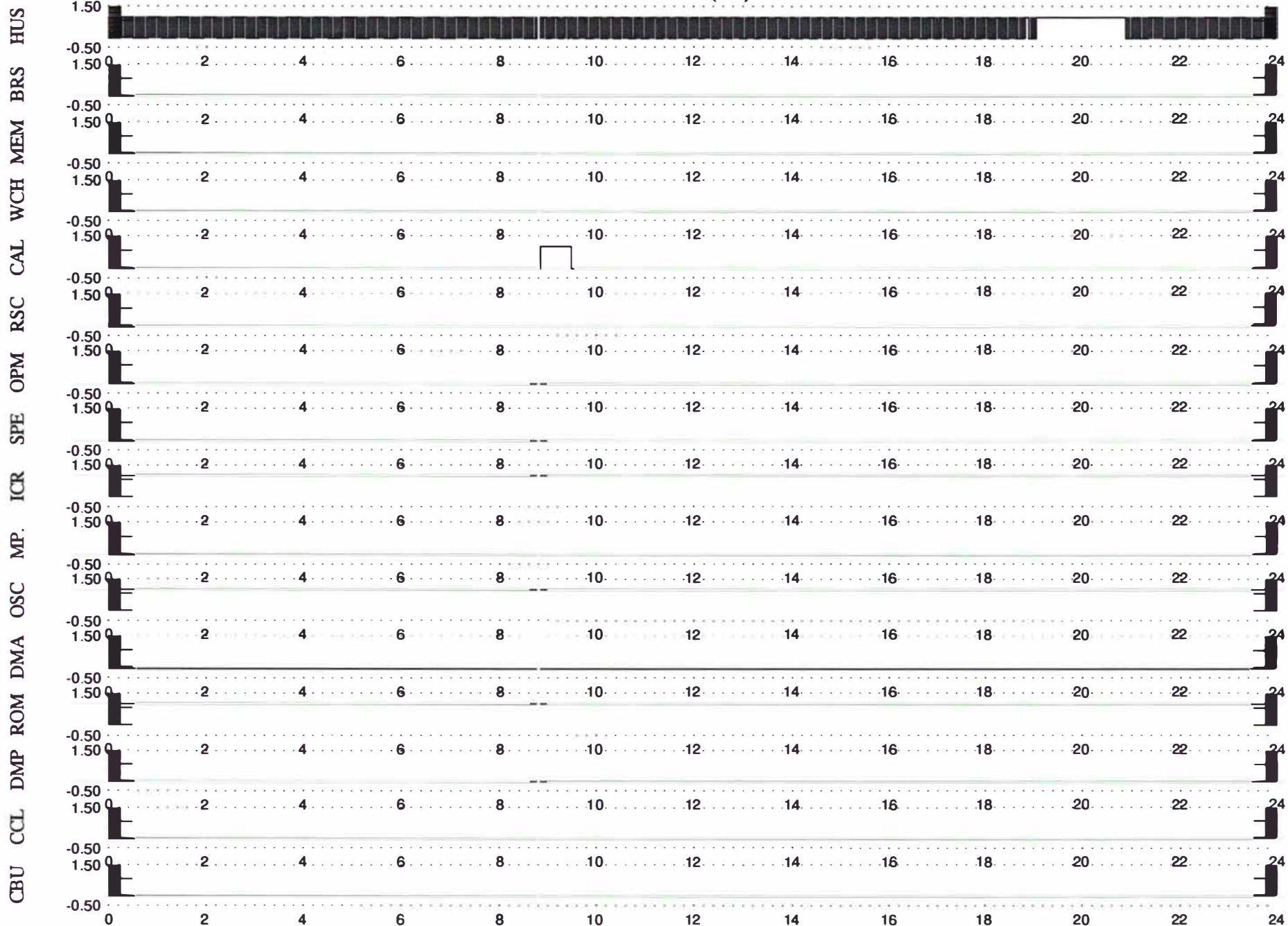
Current Time: 96/07/18, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

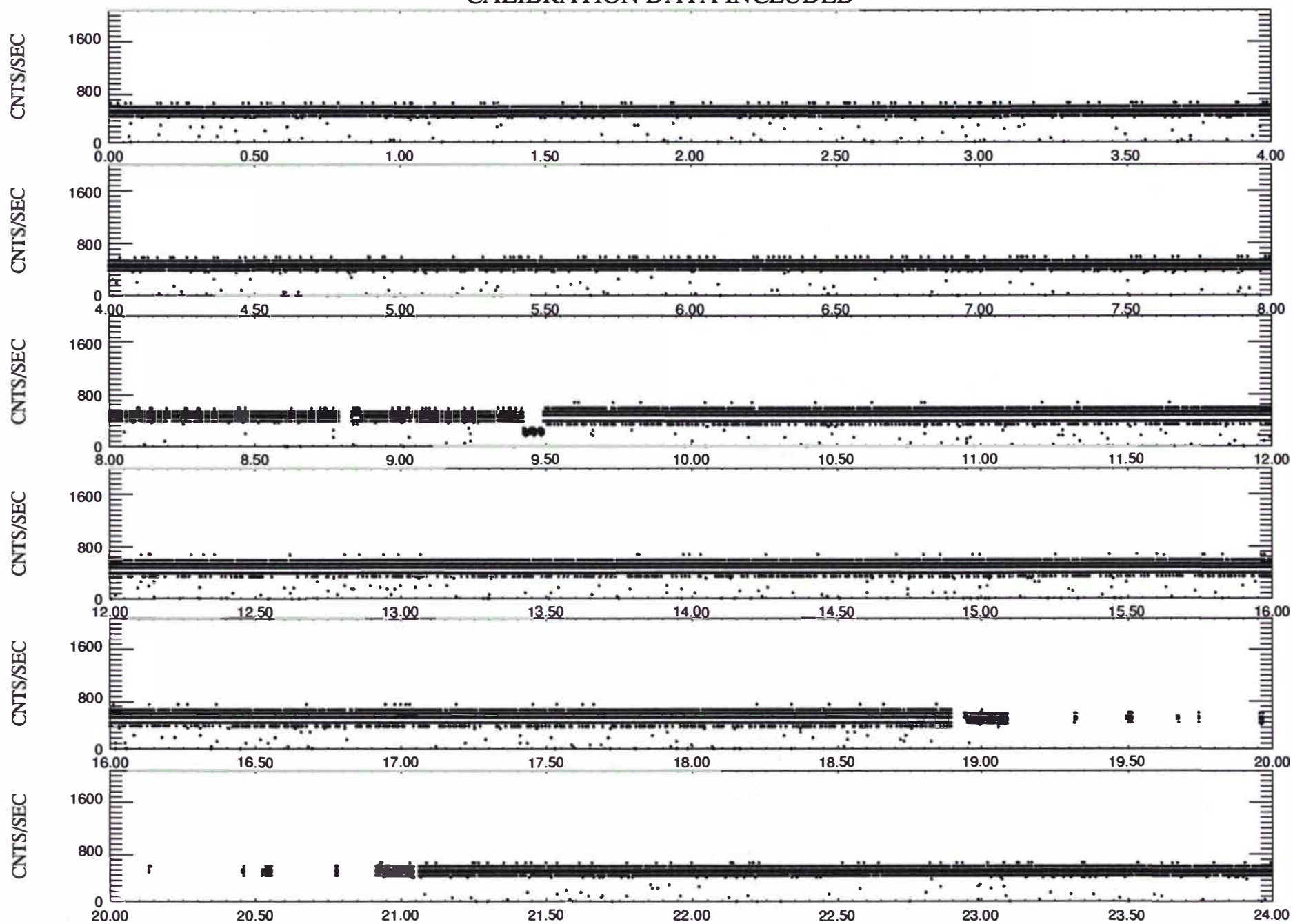


NO BURST (13)

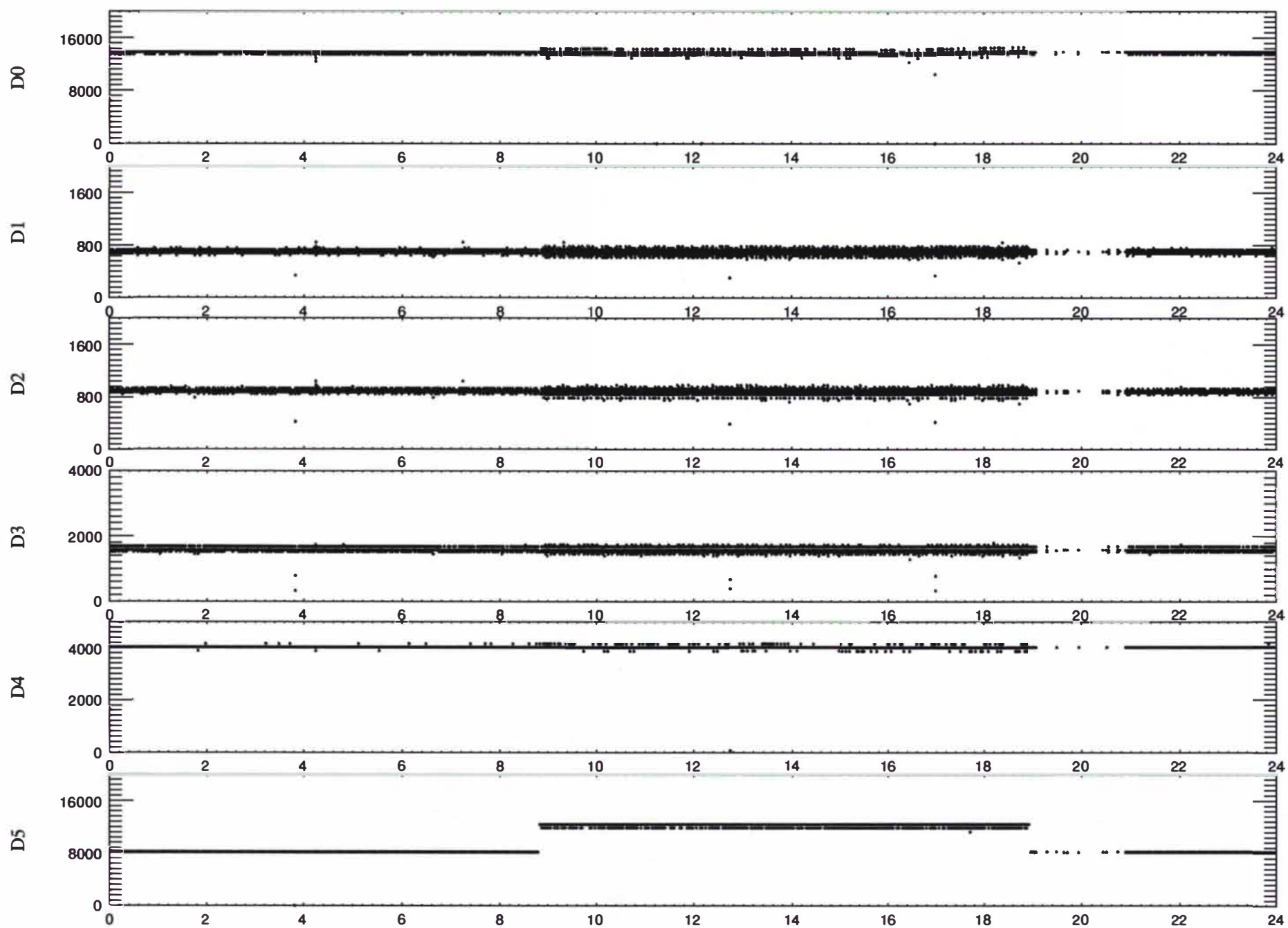


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From HAGEDON@fender.msfc.nasa.gov Fri Jul 19 10:17 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Fri, 19 Jul 1996 12:17:02 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5543

BATSEARCH PROGRAM

NO

BATSE BURST # 5543
EVENT OF 1996 JUL 17 DAY OF YEAR=199
EVENT CROSSING TIME AT BATSE : 16560. S. OR 04:36:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 9.000 13.000
BATSE PEAK COUNTING RATE: 3200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 7/ 96 IS:
RA= 156.777 DEC= 44.009 DIST= 4.824 AU
BATSE-ULYSSES DISTANCE = 721626868. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 64.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1050.88 SECS.
CROSSING TIME AT ULYSSES IS 17611. S. OR 04:53:30 +/- 441.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 7/ 96 IS:
RA= 83.505 DEC= 23.608 DIST= 2.288 AU
MARS-BATSE DISTANCE = 342253504. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.18 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -375.15 SECS.
CROSSING TIME AT MARS IS 16185. S. OR 04:29:44 +/- 181.50 SECONDS

BATSE BURST TRIGGER

NO.: 5543

TIME: TJD=0281 SECONDS=16560

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.3 AZIMUTH=118.4 ERROR=3.5 DEGREES

COMMENTS:

BURST. SINGLE PULSE IN DATA GAP. DUR.~20 SEC. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5543	960717	10281	16560	3200	009	+13	20

BATSE #

5543

19 / 7 / 96

ULYSSES RT

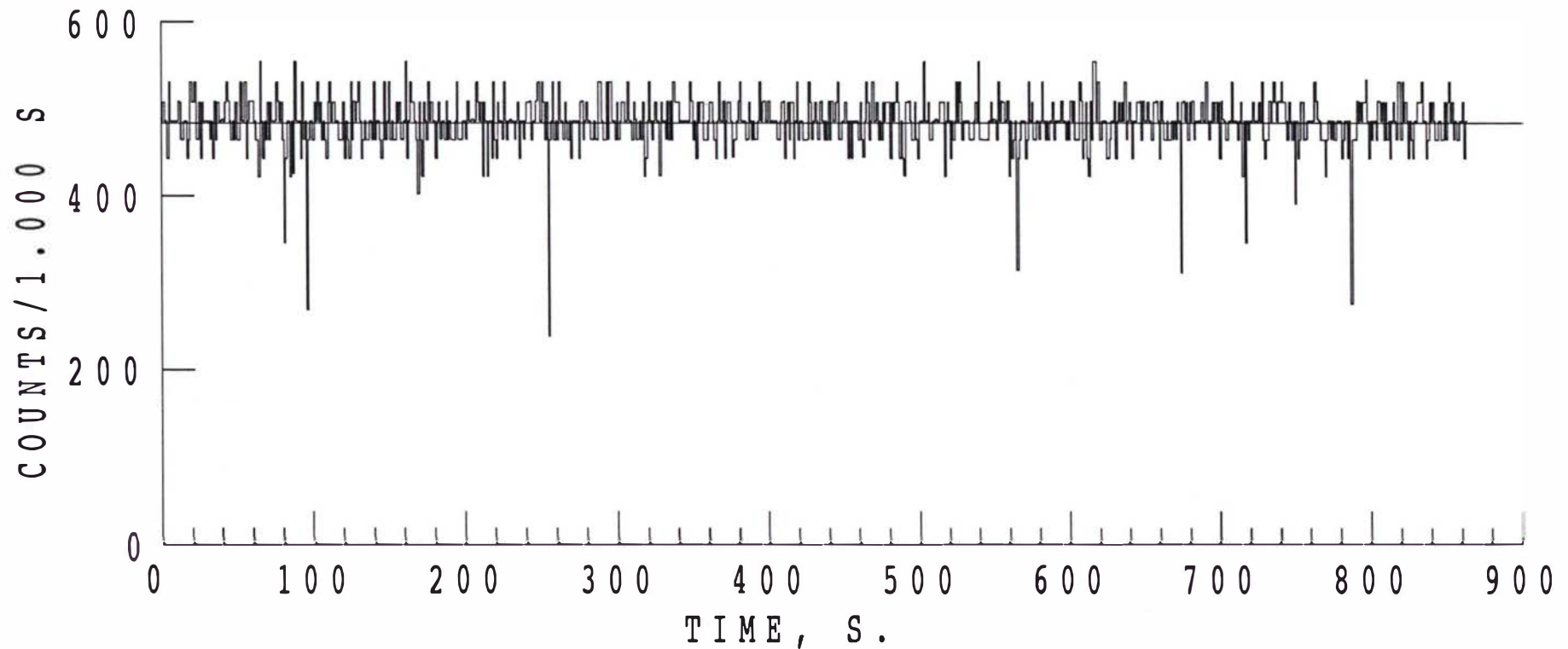
17 / 7 / 96 17172.271 s

0.500 S INTERVALS REGROUPED BY 2

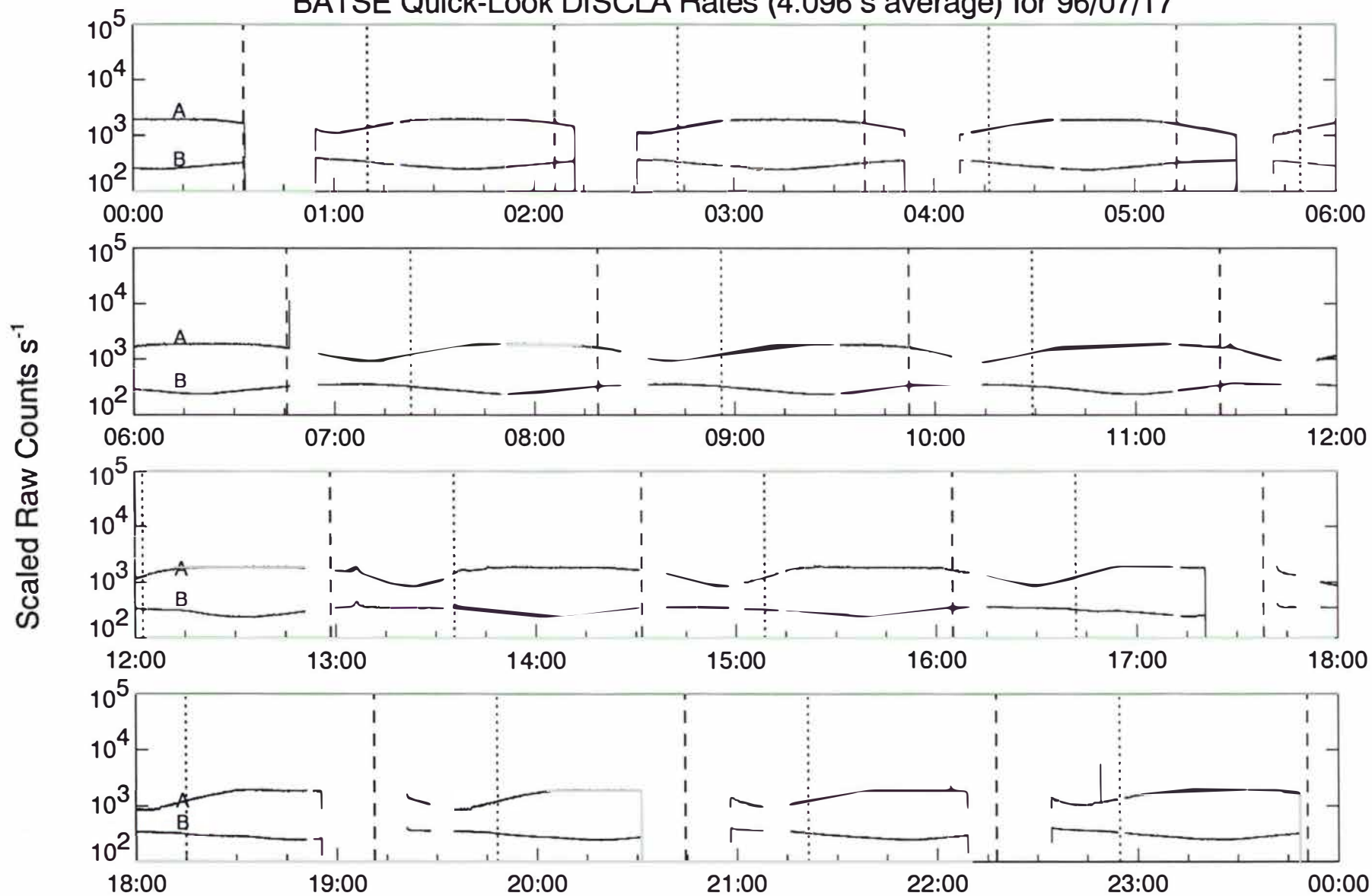
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/17



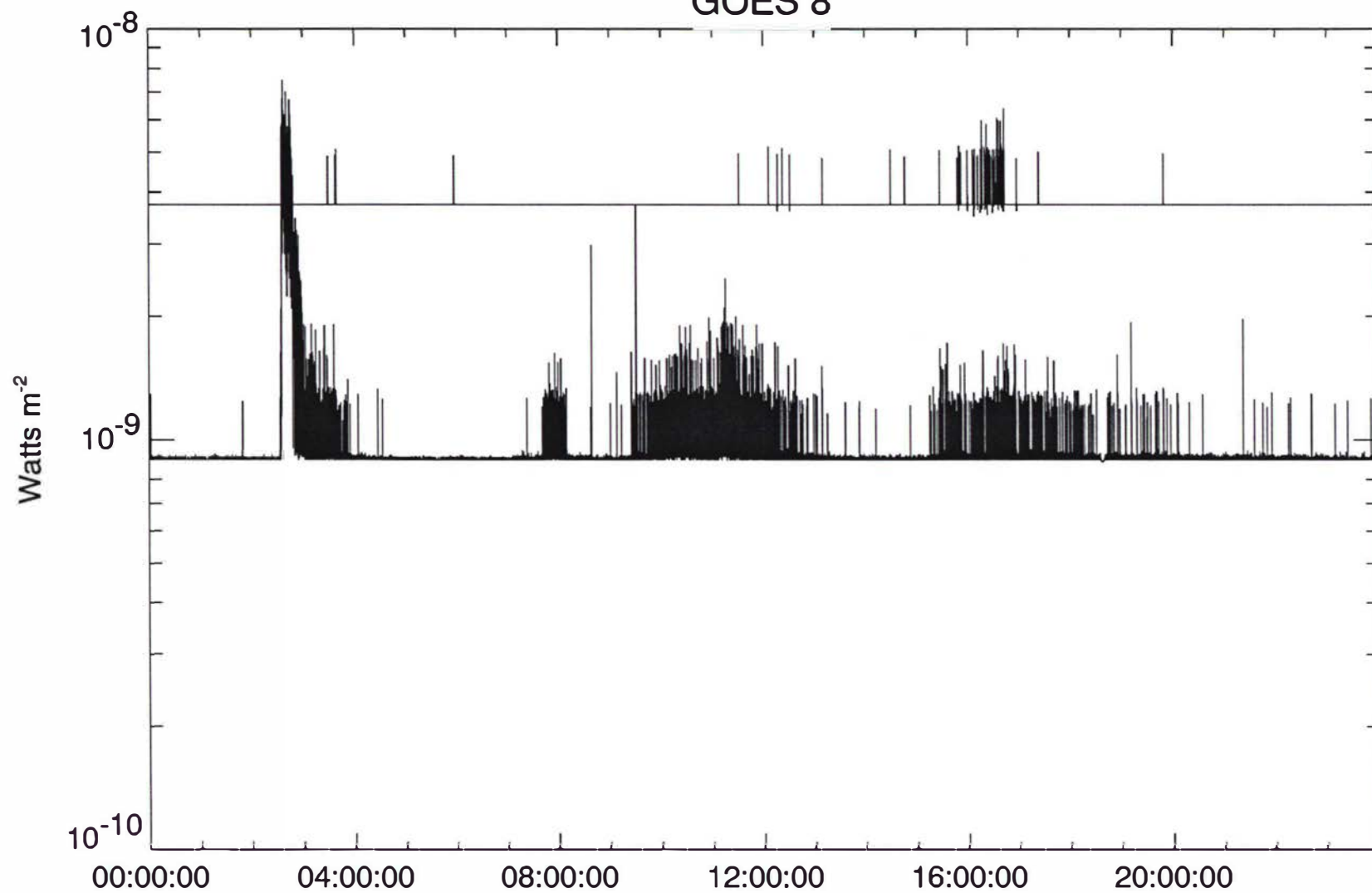
Current Time: 96/07/19, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8

A



Data Start: 96/07/17, 0000:00

Plot created: 96/07/19, 1003

Channel

1

(1.0 - 8.0 Angstroms)

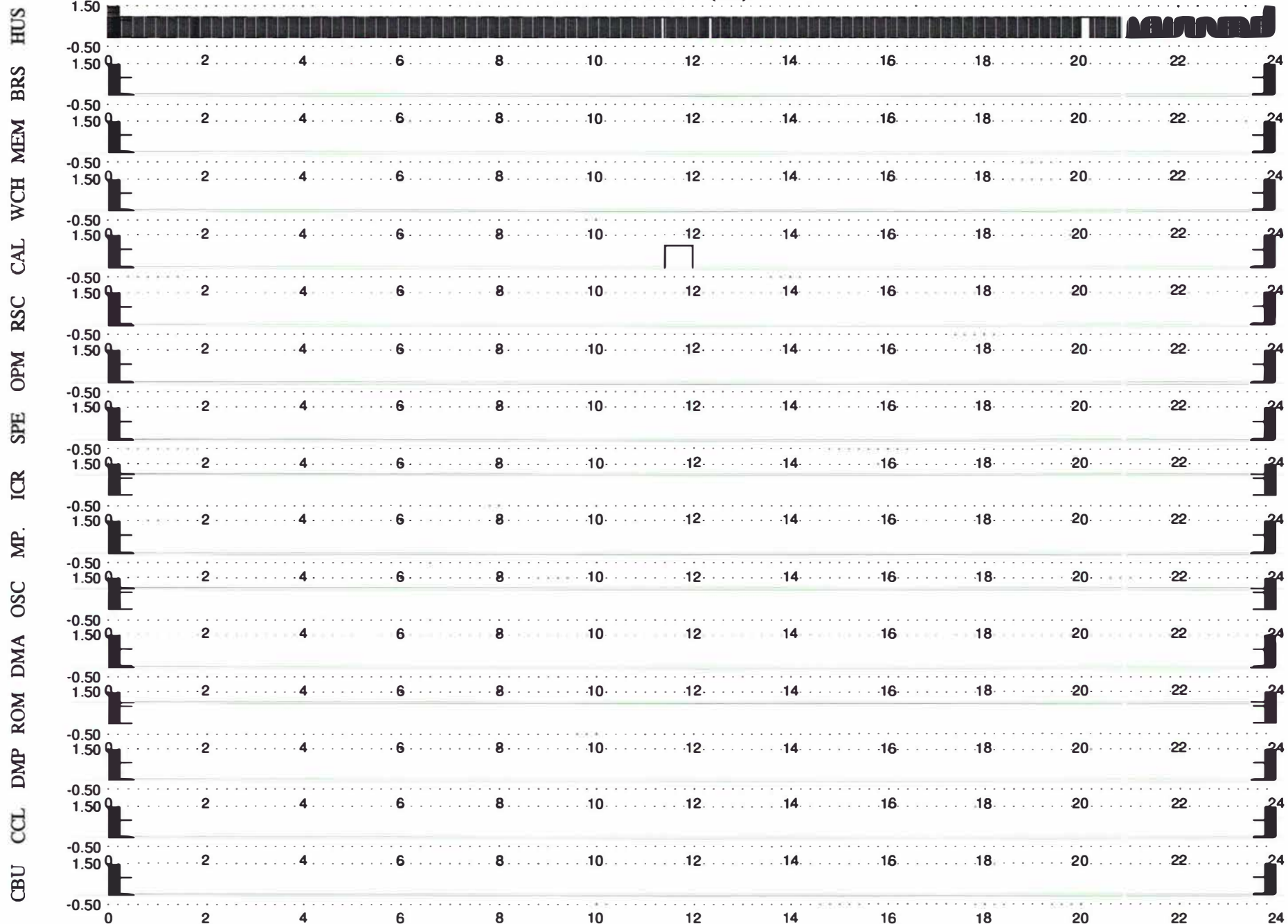
Background not subtracted

2

(0.5 - 4.0 Angstroms)

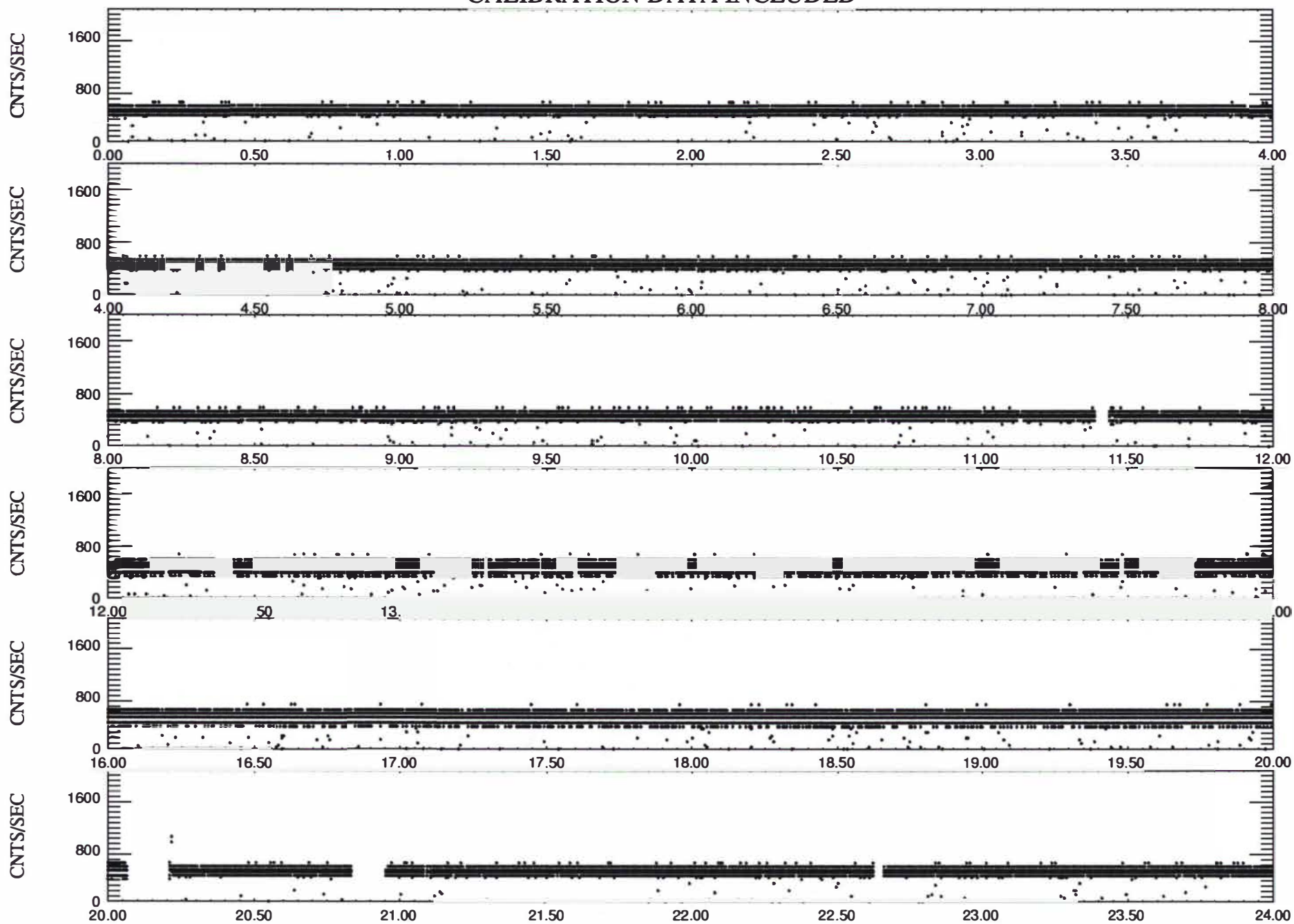
Background not subtracted

NO BURST (13)

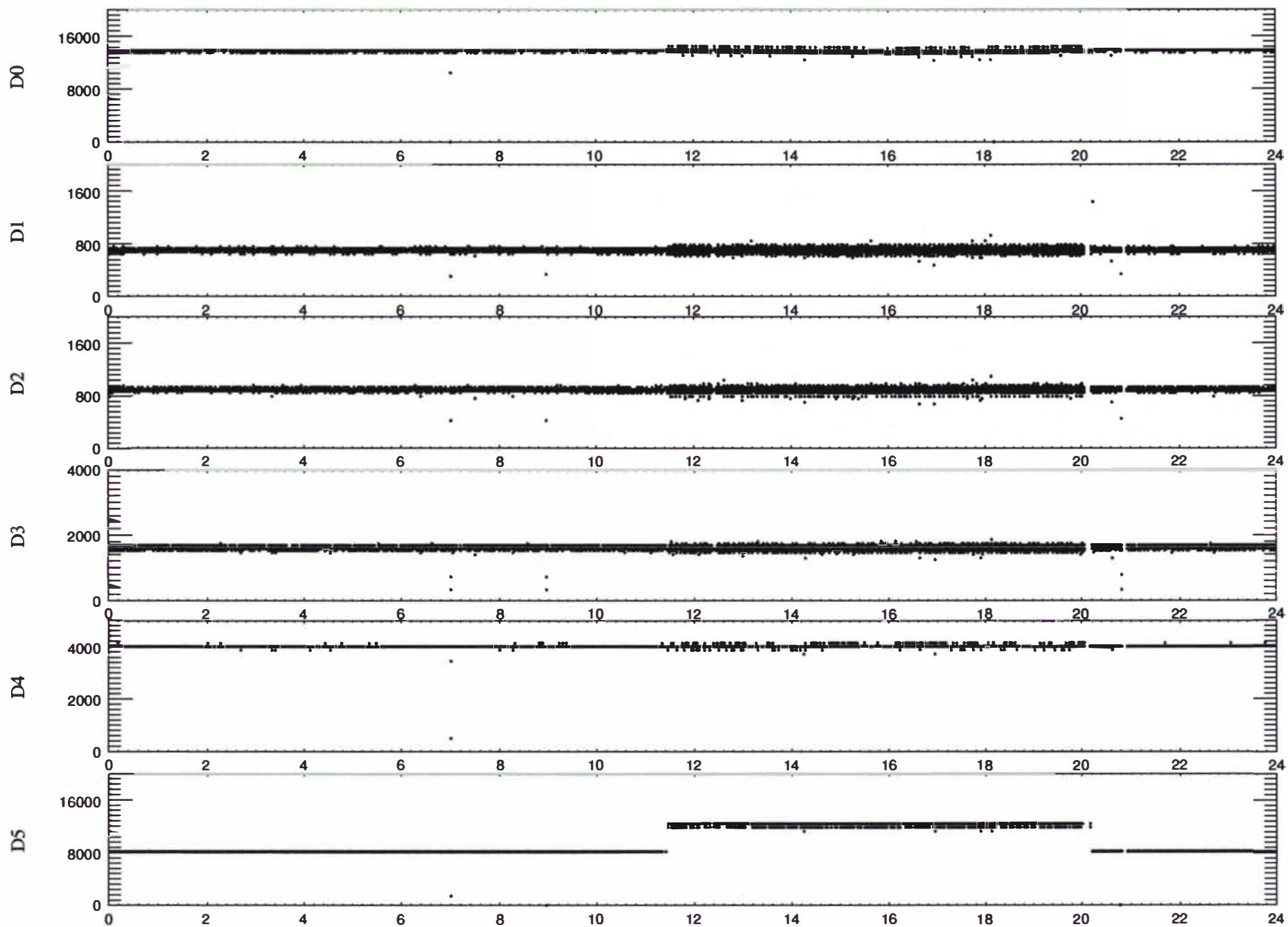


UNIVERSAL TIME

CALIBRATION DATA INCLUDED

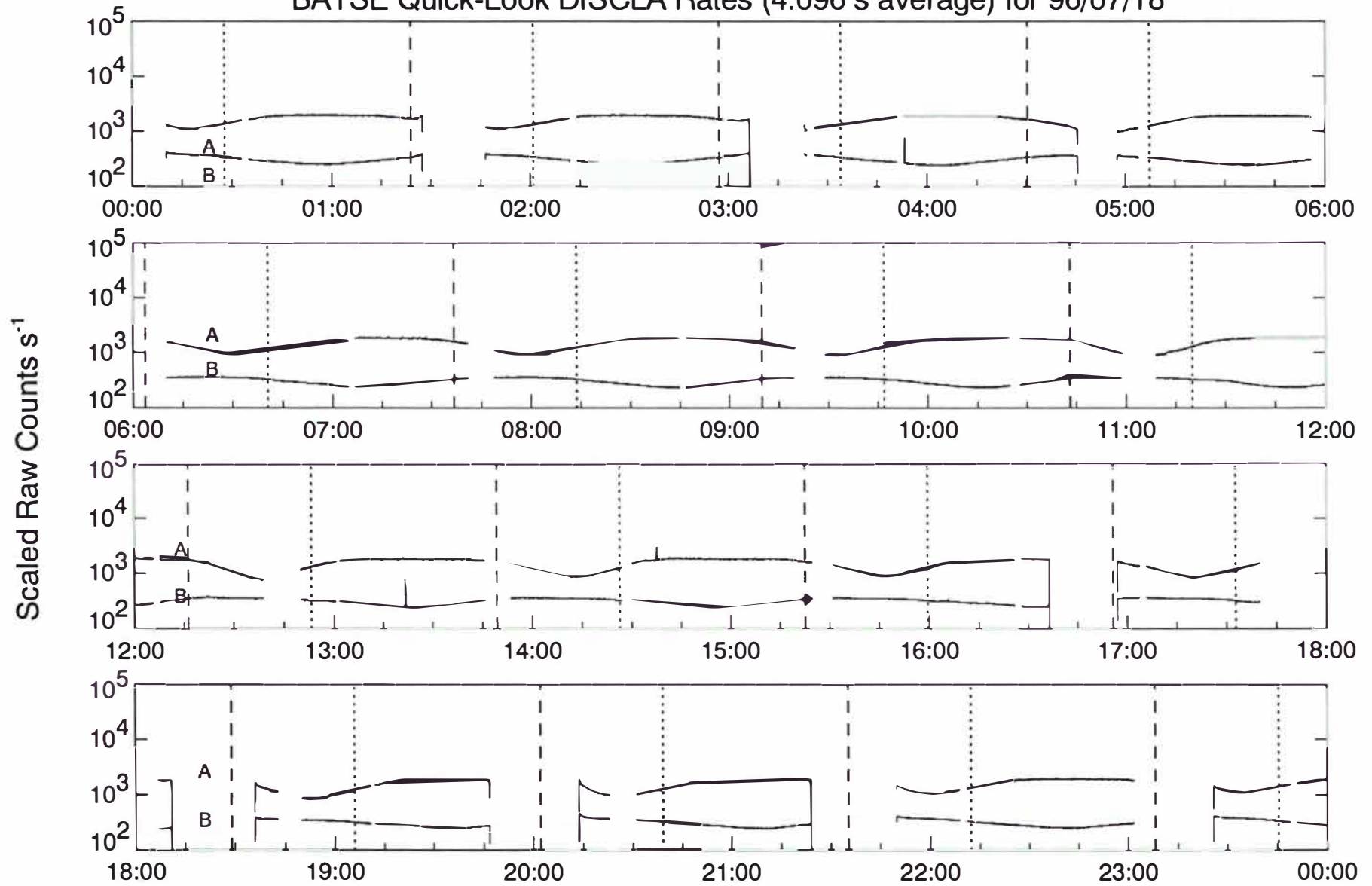


UNIVERSAL TIME



UNIVERSAL TIME

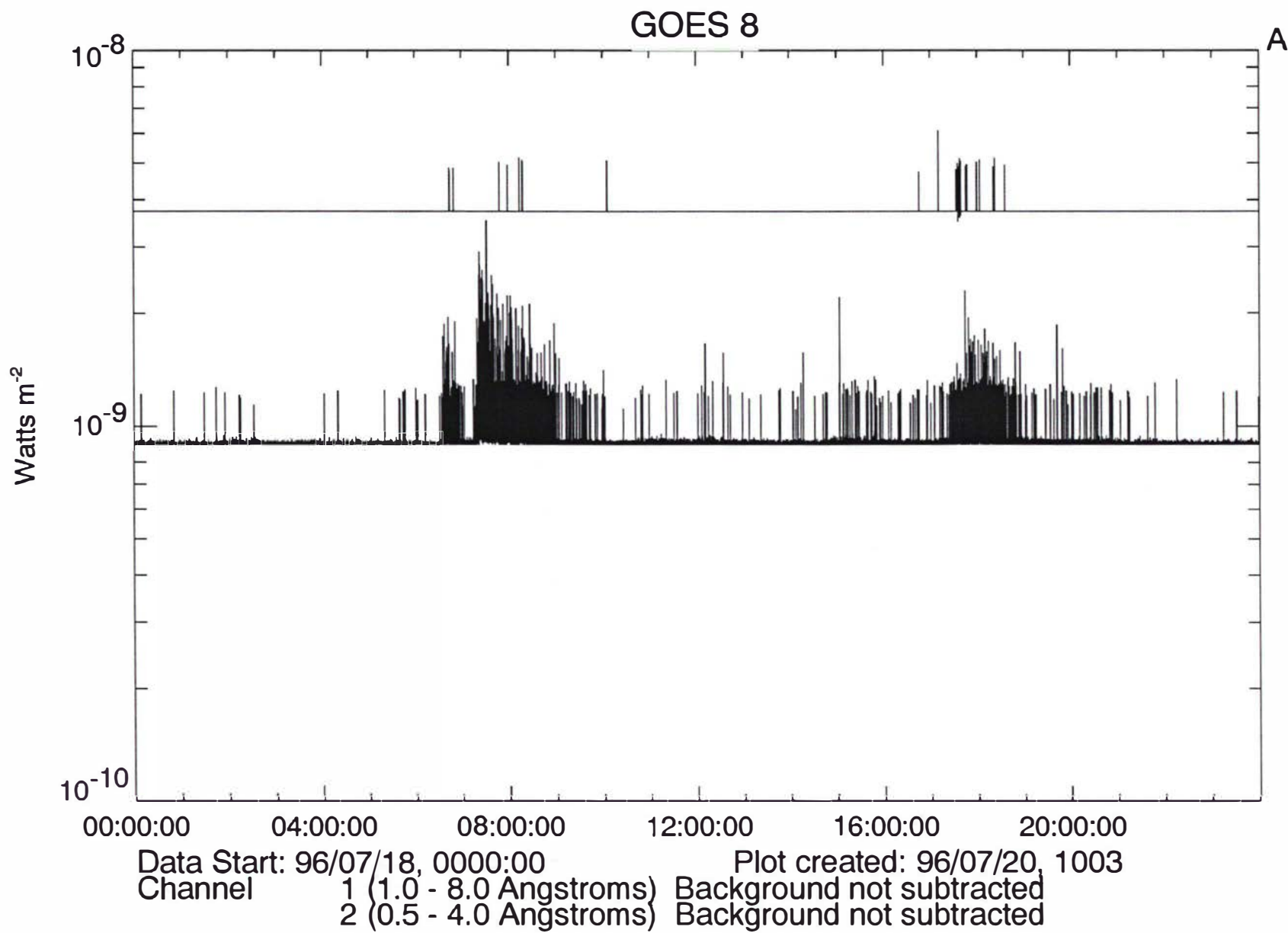
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/18



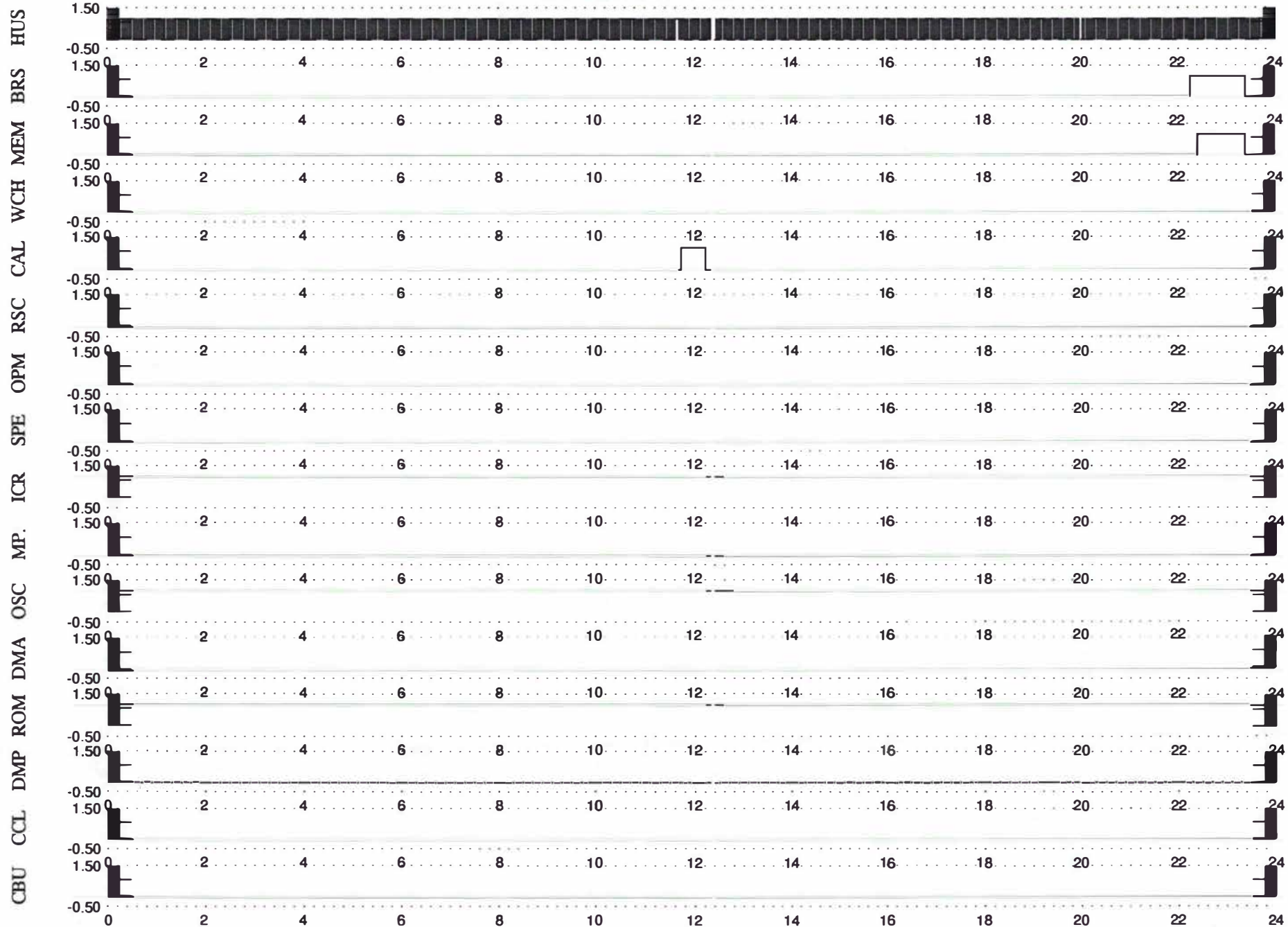
Current Time: 96/07/20, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

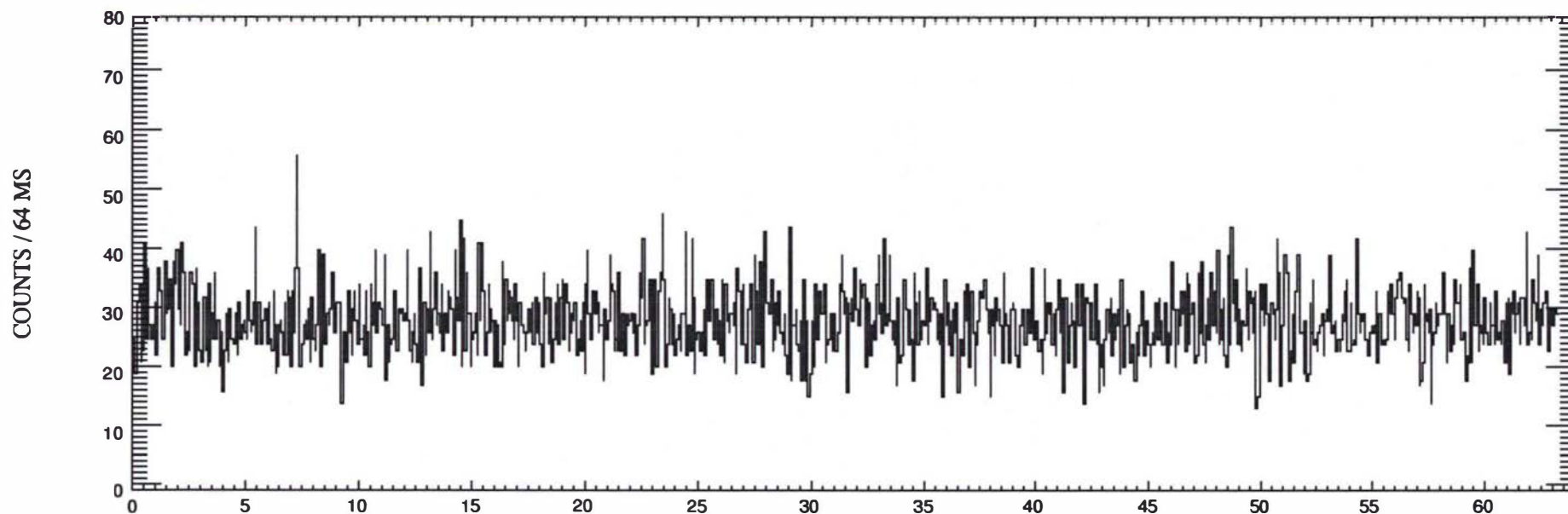


BURST NUMBER 14

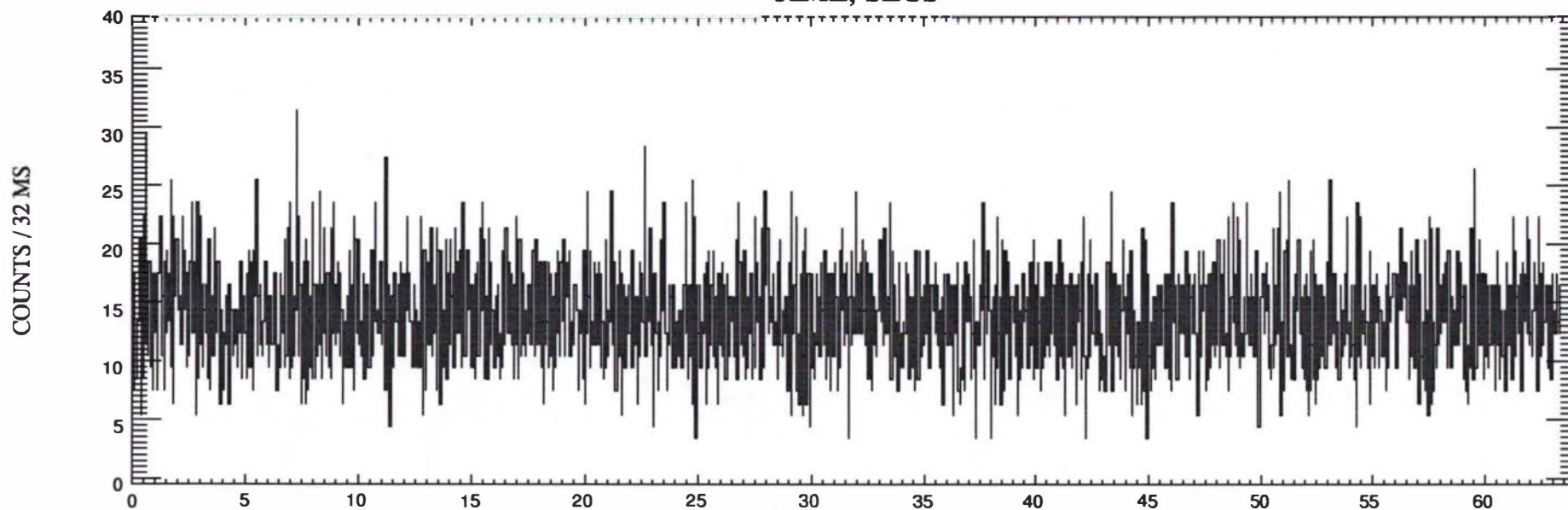


UNIVERSAL TIME

Burst Counter 14 at UT=22.146969608731 h=79729.091 s 22:08:49.091

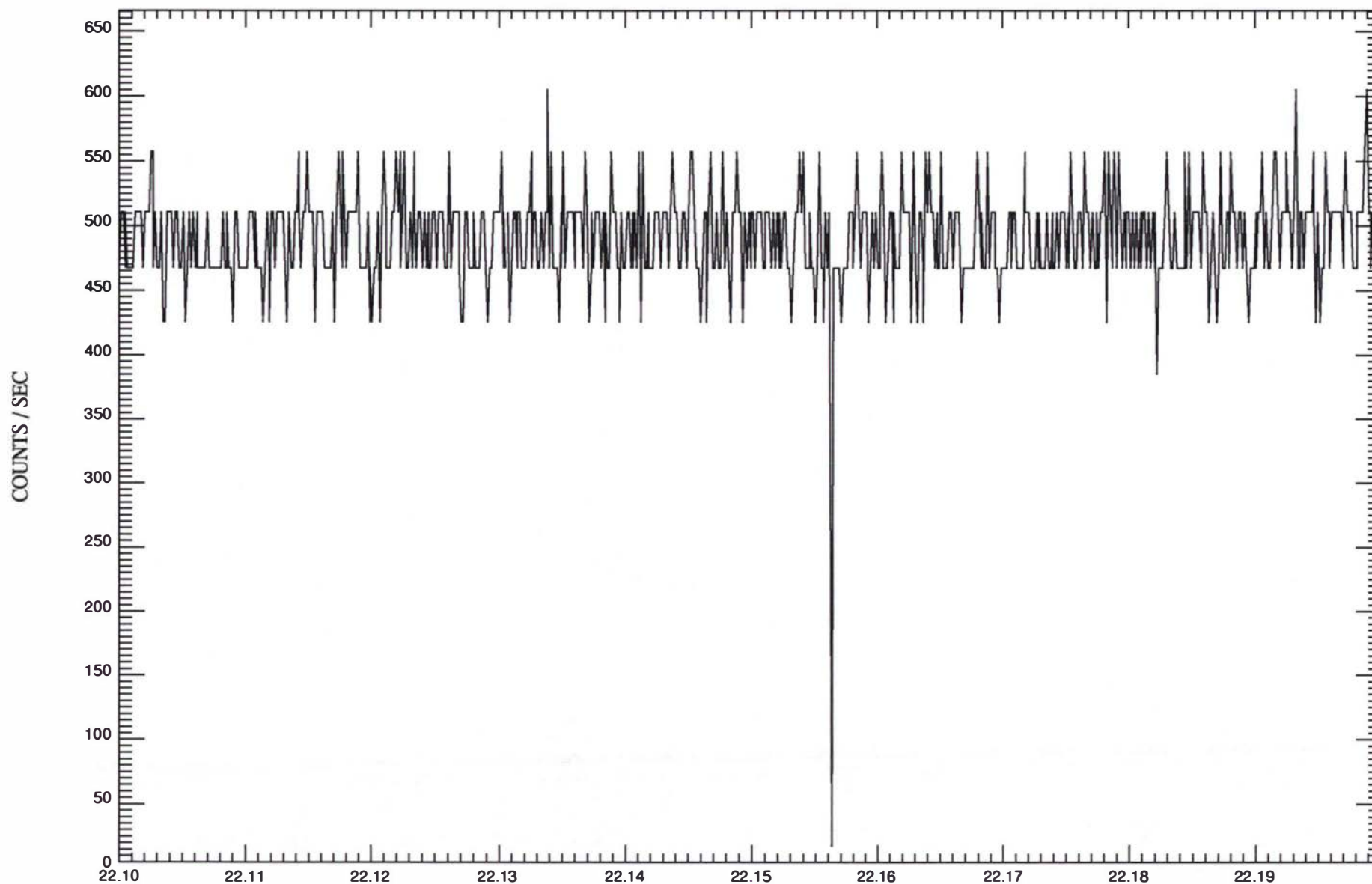


TIME, SECS

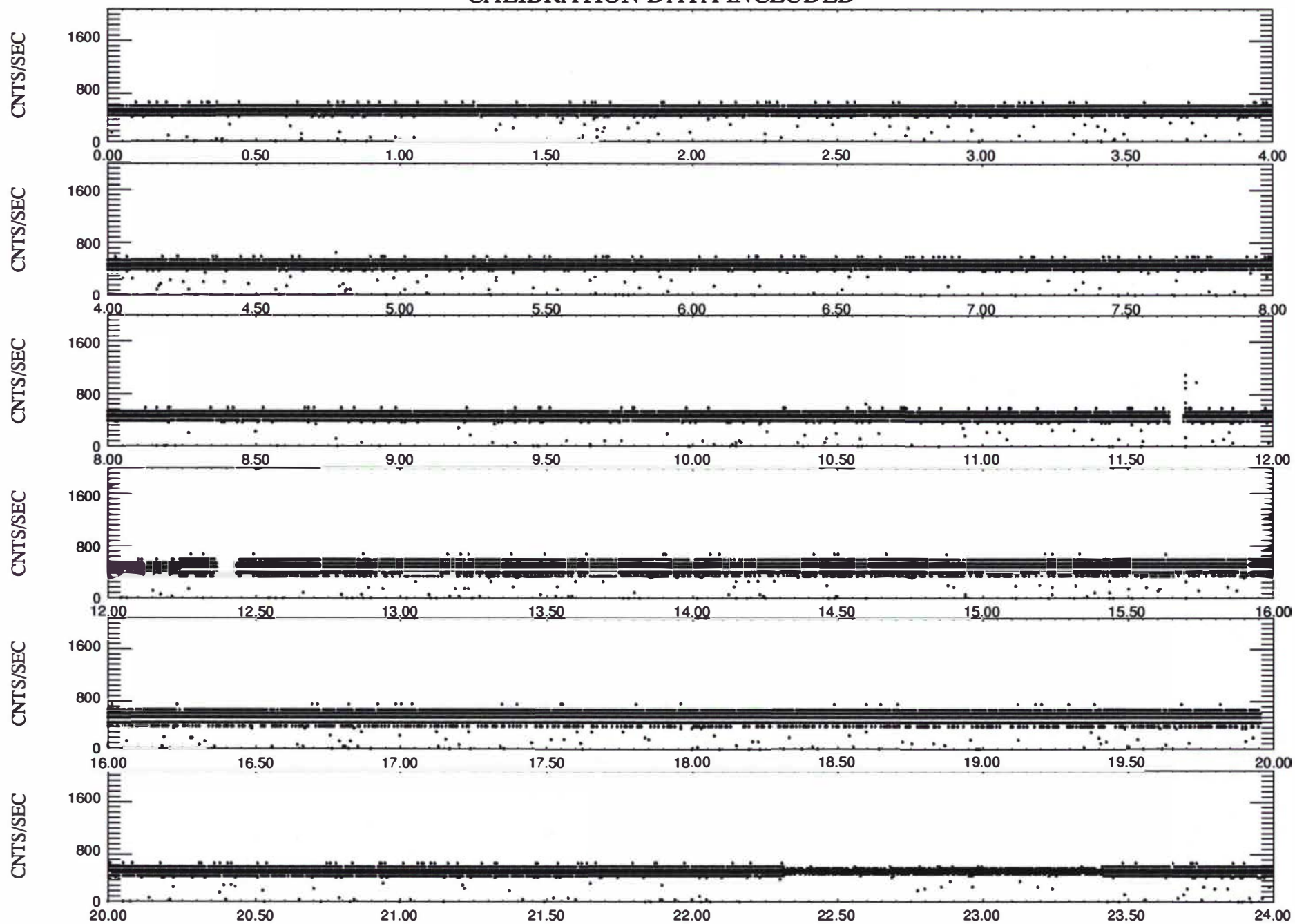


TIME, SECS

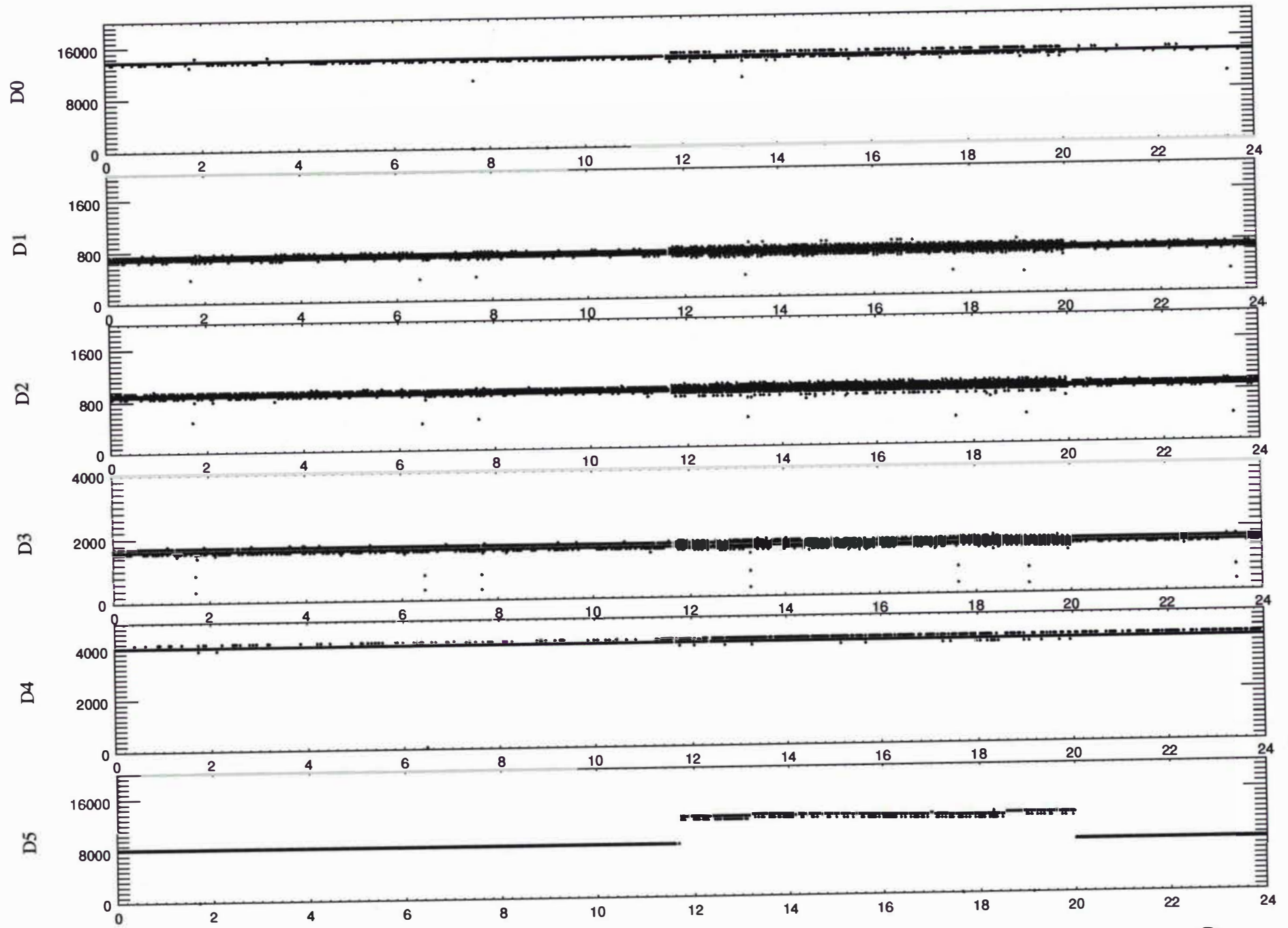
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED

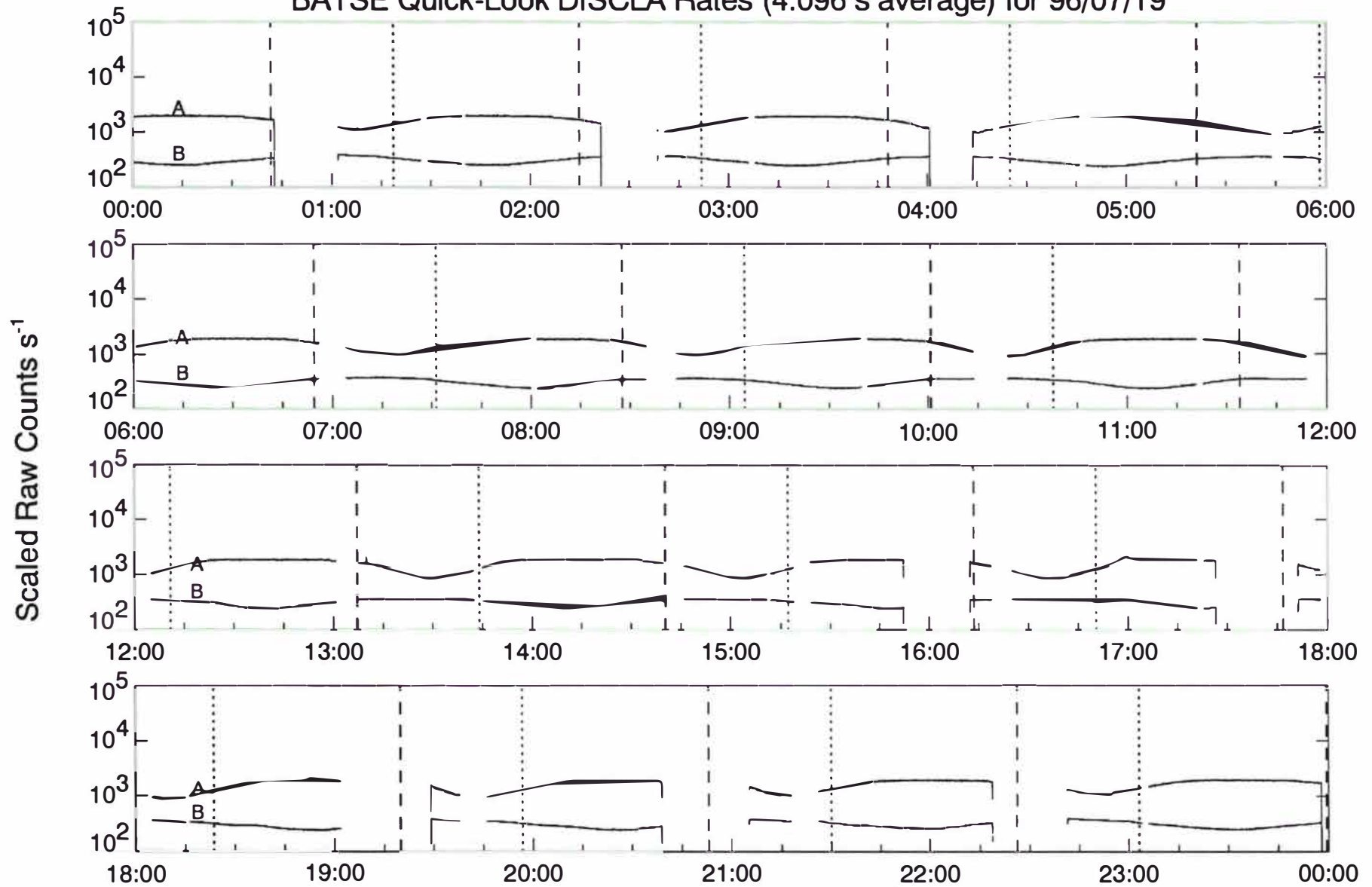


UNIVERSAL TIME



UNIVERSAL TIME

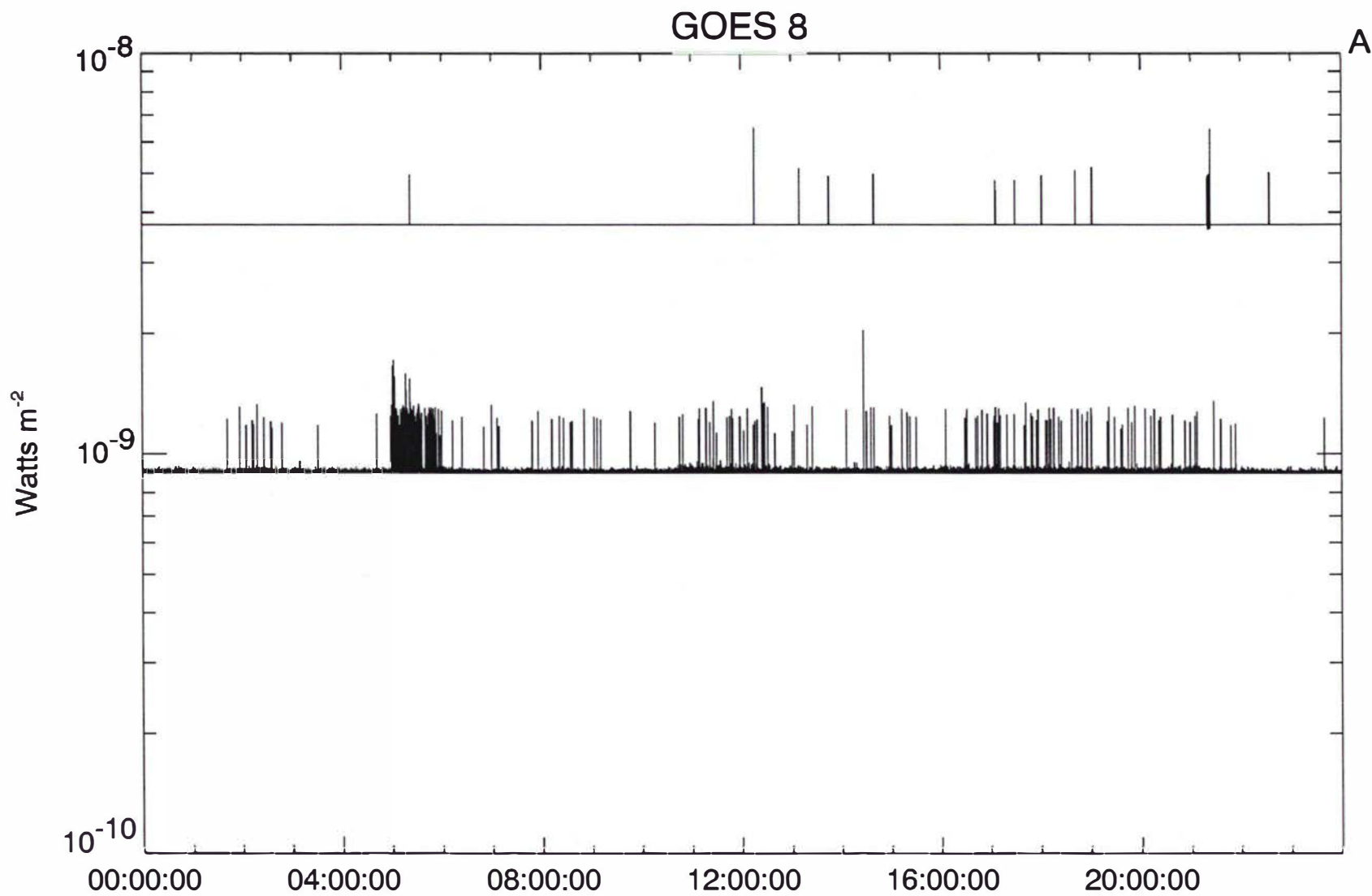
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/19



Current Time: 96/07/21, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

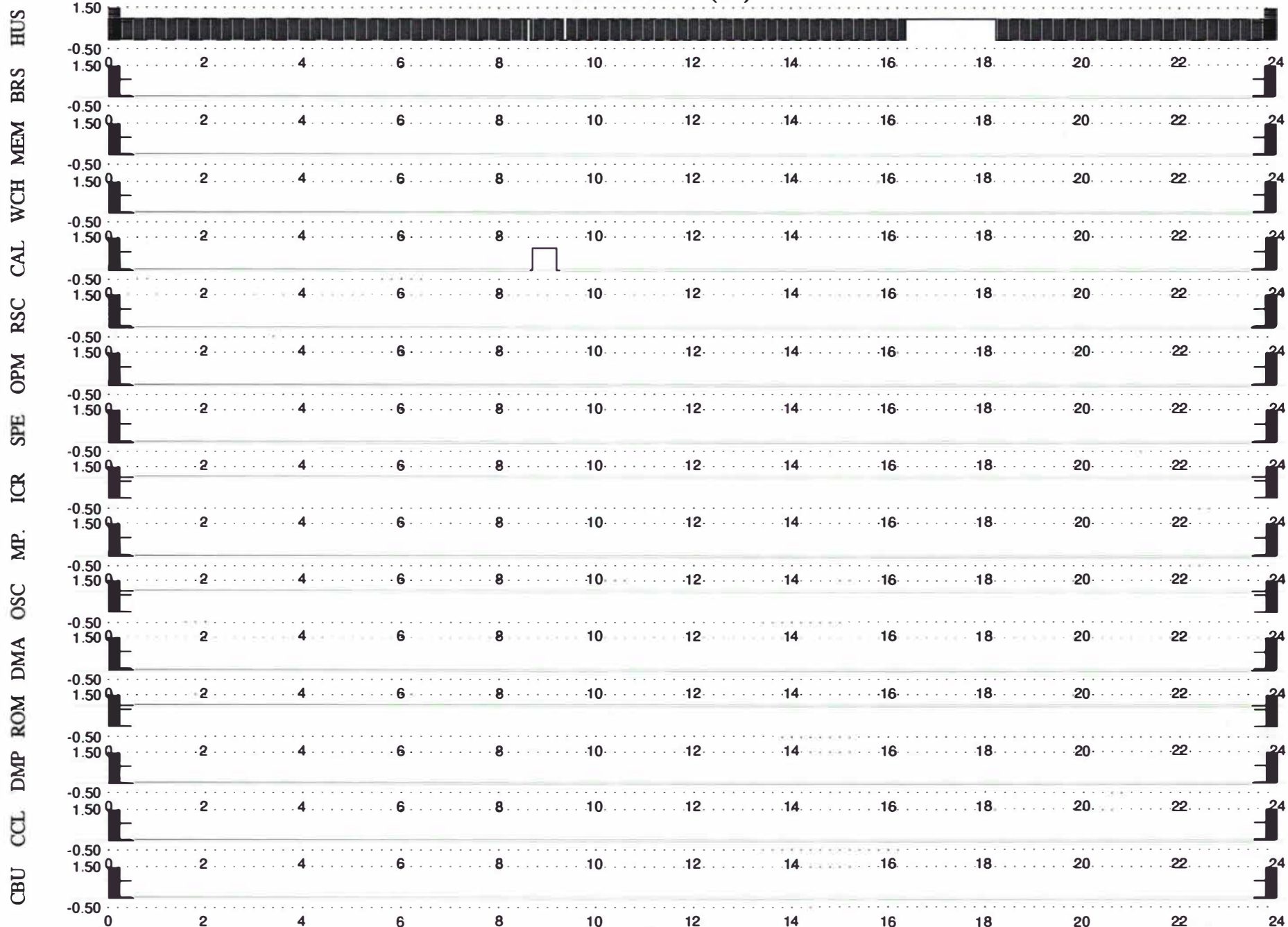
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



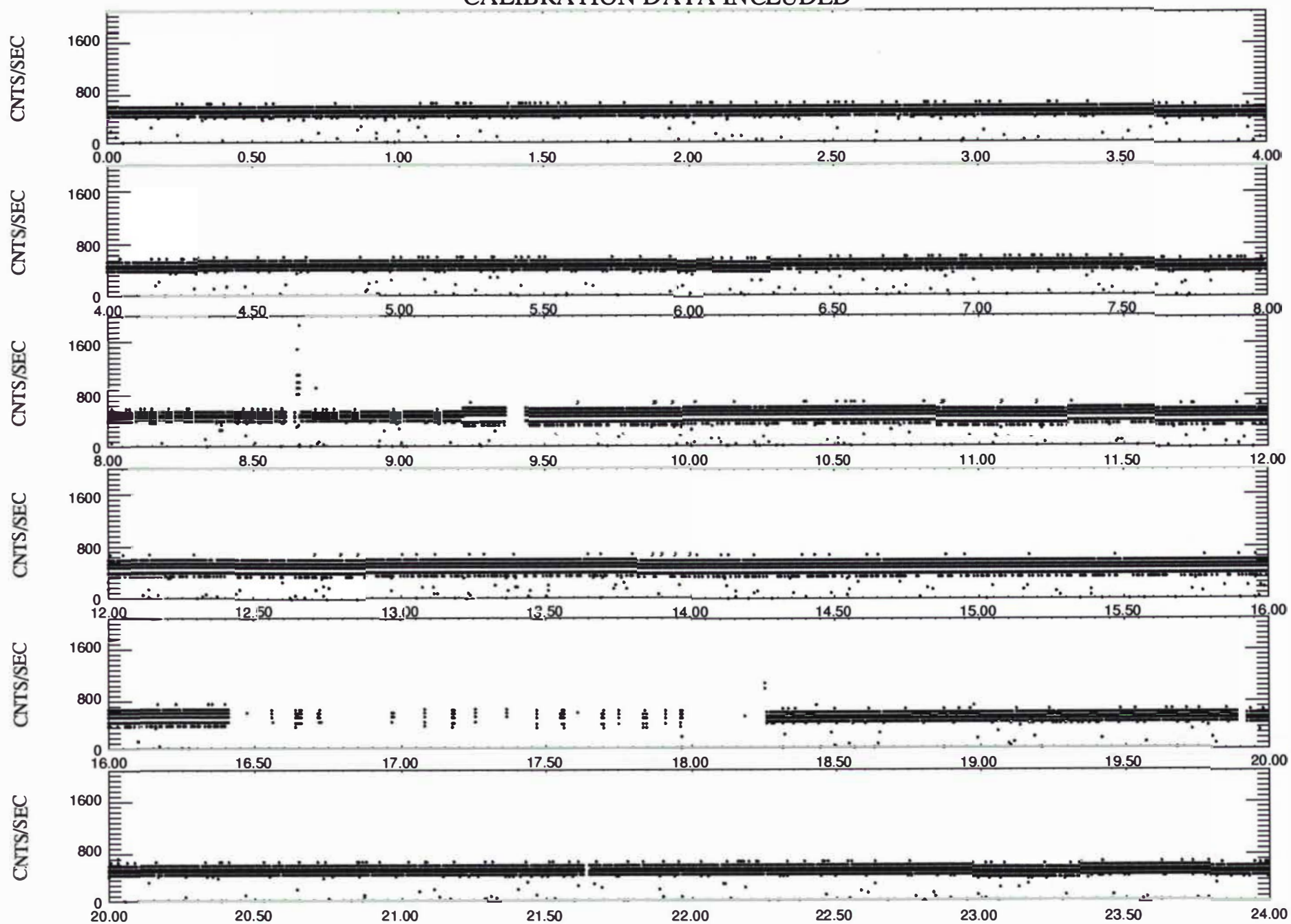
Data Start: 96/07/19, 0000:00 Plot created: 96/07/21, 1003
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 2 (0.5 - 4.0 Angstroms) Background not subtracted

NO BURST (14)

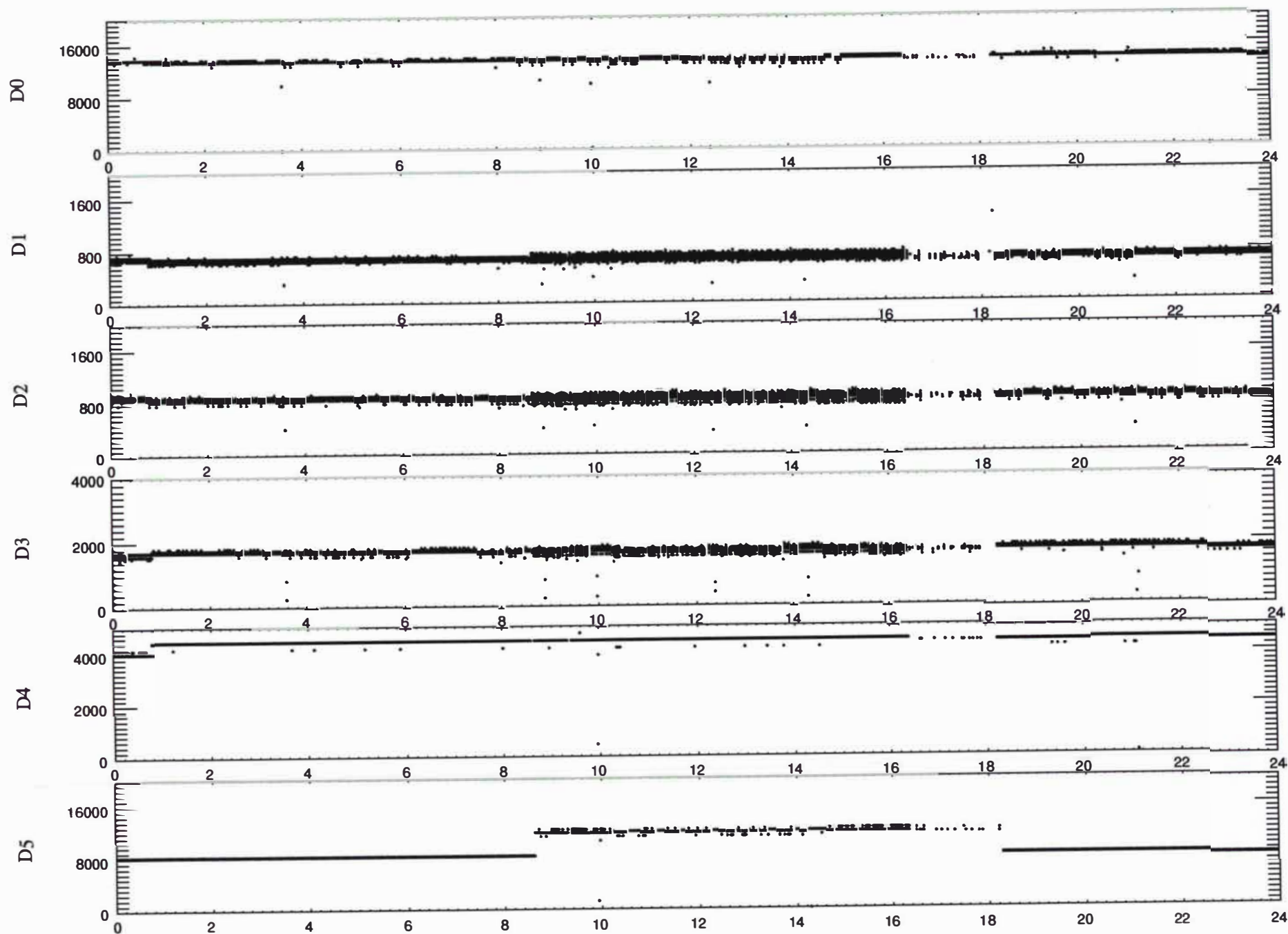


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Mon Jul 22 09:19 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 22 Jul 1996 11:19:02 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@lhev.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
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5544

TIME: TJD=0283 SECONDS=57128

TYPE: SAA ENT SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY

From RICHARDSON@ssl.msfc.nasa.gov Mon Jul 22 09:19 PDT 1996
Date: Mon, 22 Jul 1996 11:19:01 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5545

BATSEARCH PROGRAM

BATSE BURST # 5545
EVENT OF 1996 JUL 20 DAY OF YEAR=202
EVENT CROSSING TIME AT BATSE : 41812. S. OR 11:36:52.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 262.000 49.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 7/ 96 IS:
RA= 157.436 DEC= 43.397 DIST= 4.859 AU
BATSE-ULYSSES DISTANCE = 26898299. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.49 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -966.61 SECS.
CROSSING TIME AT ULYSSES IS 40845. S. OR 11:20:45 +/- 421.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 7/ 96 IS:
RA= 85.734 DEC= 23.719 DIST= 2.280 AU
MARS-BATSE DISTANCE = 341044416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 72.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 336.48 SECS.
CROSSING TIME AT MARS IS 42148. S. OR 11:42:28 +/- 193.78 SECONDS

BATSE BURST TRIGGER

NO.: 5545

TIME: TJD=0284 SECONDS=41812

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=94.4 AZIMUTH=210.8 ERROR=1.6 DEGREES

COMMENTS:

GRB. FAST RISE AND EXPONENTIAL DECAY. DUR.~8SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5545	960720	10284	41812	7500	262	+49	8

From dgreen@cfa0.harvard.edu Sat Dec 21 13:57 PST 1996
Date: Sat, 21 Dec 1996 16:47:08 -0500
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
Subject: IAUC 6526: GRB 960720; 22P

Circular No. 6526

Central Bureau for Astronomical Telegrams
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Phone 617-495-7244/7440/7444 (for emergency use only)

GRB 960720

C. Luginbuhl and F. Vrba, U.S. Naval Observatory, Flagstaff Station; R. Hudec, P. Pravec, and L. Sarounova, Astronomical Institute, Ondrejov; J. Greiner, Max-Planck-Institut fur Extraterrestrische Physik, Garching; and G. Tovmassian, Instituto de Astronomia, Universidad Nacional Autonoma de Mexico (UNAM), report: "Broadband BVR CCD frames taken at the Ondrejov 0.65-m telescope have revealed a single very blue object within the 10'-radius Beppo-SAX error circle for GRB 960720 (cf. IAUC 6467) at R.A. = 17h29m24s.73, Decl. = +49o06'22".0 (equinox 2000.0); these images do not reach deep enough to detect the fainter objects seen on the POSS images. Broadband UBVI photometric observations of this object obtained at the Flagstaff Station 1.0-m telescope on Dec. 9 and 10 UT show this object to have colors typical of quasistellar objects (QSOs), with $V = 18.25 \pm 0.01$, $U-B = -0.31 \pm 0.08$, $B-V = +1.21 \pm 0.05$, $V-I = +1.36 \pm 0.02$. An optical spectrum (range 400--670 nm) obtained on Oct. 19 with the UNAM 2.15-m telescope at Cananea confirms the QSO (which was outside the 1'-radius error circle of the quiescent x-ray source discussed on IAUC 6481), showing a strong, broad emission line at 418 nm and two fainter broad lines at 442 and 515 nm, which we interpret as the redshifted lines of C IV] at 155 nm, He II at 164 nm, and C III] at 191 nm, resulting in a redshift of $z = 1.7$ (see <http://www.rosat.mpe-garching.mpg.de/~jcg/grb.html>). This QSO is the likely counterpart of RX J1729.4+4906, mentioned (but not specifically designated) on IAUC 6487. From the Boyle et al. (1988, MNRAS 235, 935) QSO statistics, the likelihood of finding a QSO of this brightness or brighter within the Beppo-SAX localization by chance alone is 0.08. The Flagstaff Station observations also covered the other seven ROSAT sources within the Beppo-SAX localization described on IAUC 6487. For the Seyfert galaxy reported within the RX J1729.5+4904 error circle, our measures indicate a possible variation at U of 0.50 ± 0.16 mag between the two successive nights with mean photometric values of $V = 20.39 \pm 0.05$, $U-B = -0.59 \pm 0.25$, $B-V = +0.28 \pm 0.05$, $V-I = +0.40 \pm 0.17$. Follow-up observations of this Seyfert object are encouraged to confirm and characterize any variation."

.ET 22P/KOPFF

G. Cremonese, Astronomical Observatory, Padua, informs us that the account of this comet's splitting is in error and that the part of the report on IAUC 6521 discussing the splitting should be ignored.

From dgreen@cfa0.harvard.edu Tue Sep 3 15:31 PDT 1996
Date: Tue, 3 Sep 96 18:19:47 EDT
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
Subject: IAUC 6467: gamma-ray burst; CAL 83

Circular No. 6467

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Phone 617-495-7244/7440/7444 (for emergency use only)

GAMMA-RAY BURST

L. Piro, E. Costa, M. Feroci, and M. Cinti, Istituto
Astrofisica Spaziale, CNR, Frascati; F. Frontera, D. Dal Fiume, M.
Orlandini, and G. Pizzichini, Istituto Tecnologie e Studio delle
Radiazioni Extraterrestri, CNR, Bologna; J. Heise and R. Jager,
Space Research Organization of the Netherlands (SRON), Utrecht; and
H. Muller, Beppo-SAX Scientific Data Center, Rome, communicate: "On
July 20.48395 UT, a gamma-ray burst was simultaneously detected in
the gamma-ray-burst monitor (GRBM, 60-600 keV) and one of the wide-
field-camera x-ray detectors (WFC, 2-30 keV) aboard Beppo-SAX. The
burst had a peak flux of about 1200 counts/s (2 photons cm⁻² s⁻¹)
in the GRBM, and 90 counts/s (about 10E-8 erg cm⁻² s⁻¹) in the
WFC, with a fluence ratio F(2-30 keV)/F(60-600 keV) of about 0.02.

The WFC provided an image of the field with a resolution of 5'
(FWHM). We conservatively estimate a maximum error-box radius of
10', corresponding to the maximum systematic deviation currently
found in position reconstruction. The burst position is R.A. =
17h29m36s, Decl. = +49°02'.2 (equinox 2000.0). It will be possible
to refine the position to a 2'.5 error-box radius after the
systematic residuals are calibrated. This position lies within
0.25 deg of the center of the 2-deg error box of a simultaneous
BATSE event (trigger #5545, BATSE team, private comm.). A search
from all catalogues available via several on-line services for
objects within the Beppo-SAX error box yielded no results. The
Palomar digitized plates show several sources in the error box, but
no one of these is characterized by peculiar colors."

CAL 83

P. Kahabka, University of Amsterdam; F. Haberl, Max-Planck-
Institut fur Extraterrestrische Physik, Garching; and A. N. Parmar,
Astrophysics Division, ESTEC, European Space Agency, report: "The
supersoft x-ray source CAL 83 has been detected again at a
count rate of 0.21 +/- 0.04 count/s during a ROSAT/HRI target-of-
opportunity observation on Aug. 6.17 UT. The duration of the x-ray
off-state on Apr. 28 (IAUC 6432) is limited to < 100 days. This
constrains the mass of the white dwarf to >= 1.1 solar masses if
the off/on behavior is due to an expanding/contracting white-dwarf
envelope without mass ejection (cf. Kahabka 1996, in Supersoft X-
ray Sources, ed. J. Greiner, LNP 472, Springer, p. 215)."

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1996 September 3

(6467)

Daniel W. E. Green

From ascanews@ascasrv.gsfc.nasa.gov Wed Sep 4 06:10 PDT 1996
 Date: Wed, 4 Sep 1996 09:10:24 -0400
 Originator: ascanews@athena.gsfc.nasa.gov
 From: Fumiaki NAGASE <nagase@astro.isas.ac.jp>
 khurley@sunspot.ssl.berkeley.edu
 Subject: ASCA weekly
 X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas

Dear ASCA users,

I am sending an ASCA observation schedule for the period of September 18-27.
 In this span we allocate three TOO observations each for 20 ksec; a follow-up
 of the SAX-BASTE burst (see IAUC 6467) and two comets (Hale-Bopp & Tabur).

F. Nagase

 A S C A WEEKLY OBSERVATION PLAN

September 18 - 27 ver-1 (96/09/04)
 (ISAS contact scientist: M. ISHIDA ishida@astro.isas.ac.jp)

Date	MNV start	Target name	Tag. Cat.	Exp. (ks)	Observation Cat. Pri./TC	PI or (PPI/Co-PI)
9/18	14:10	H 1705-250	Bin.	20	JPN 2/n	K. Asai
9/19	2:30	SAX-BASTE burst	Star	20	JPN TOO	Nagase /ASCA team
19	15:20	Gal Ridge-2 #1	SNR	10	JPN 1/n	S. Yamauchi
9/19	22:10	Gal Ridge-2 #2	SNR	10	JPN 1/n	S. Yamauchi
9/20	4:00	Gal Ridge-2 #3	SNR	10	JPN 1/n	S. Yamauchi
9/20	9:00	Gal Ridge-2 #4	SNR	10	JPN 1/n	S. Yamauchi
9/20	13:40	Gal Ridge-2 #5	SNR	10	JPN 1/n	S. Yamauchi
9/20	18:50	Gal Ridge-2 #6	SNR	10	JPN 1/n	S. Yamauchi
9/20	23:40	Rapid Burster	Bin.	80	JPN 2/n	T. Dotani
9/22	14:00	Gal Ridge-2 #7	SNR	10	JPN 1/n	S. Yamauchi
9/22	20:20	Gal Ridge-2 #8	SNR	10	JPN 1/n	S. Yamauchi
9/23	2:50	Gal Ridge-2 #9	SNR	10	JPN 1/n	S. Yamauchi
9/23	9:00	Gal Ridge-2 #10	SNR	10	JPN 1/n	S. Yamauchi
9/23	13:50	G359.1-0.9	Star	20	JPN 2/n	K. Koyama
9/24	2:40	G7.4-1.4	Star	40	JPN 2/n	K. Koyama
25	1:00	Comet Hale-Bopp	Star	20	JPN TOO	Nagase /ASCA team
9/25	13:20	Comet Tabur	Star	20	JPN TOO	Nagase /ASCA team
9/26	5:30	4U 1822-37	Bin.	40	US 1/Y	N. White

From dgreen@cfa0.harvard.edu Wed Sep 11 16:54 PDT 1996
Date: Wed, 11 Sep 96 19:42:02 EDT
From: dgreen@cfa0.harvard.edu (Daniel W. E. Green)
To: quai@mars.harvard.edu
Subject: IAUC 6472; U**x error caused line deletion earlier

Circular No. 6472

Central Bureau for Astronomical Telegrams
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BMARSDEN@CFA.HARVARD.EDU or DGREEN@CFA.HARVARD.EDU (science)
Phone 617-495-7244/7440/7444 (for emergency use only)

COMET C/1991 A2 (ARAI)

K. Dennerl, J. Englhauser, and J. Trumper, Max-Planck-Institut fur Extraterrestrische Physik, Garching, communicate: "X-ray emission from comet C/1991 A2 (= 1991b = 1990 XXVI) was detected in data obtained with the ROSAT Position Sensitive Proportional Counter during the all-sky survey. The comet was observed from 1990 Nov. 18.09 to 21.43 UT ($\Delta = 1.2$ AU, $r = 1.5$ AU), six weeks before it was discovered (IAUC 5157), when it would have had projected visual m_V about 12 (or fainter) and would be optically the faintest comet ever detected in x-rays."

GAMMA-RAY BURST 960720

D. A. Frail, National Radio Astronomy Observatory; S. R. Blakerni, California Institute of Technology; L. Piro, E. Costa, M. Feroci, and M. Cinti, Istituto Astrofisica Spaziale, CNR, Frascati; F. Frontera, D. Dal Fiume, L. Nicastro, M. Orlandini, and G. Pizzichini, Istituto Tecnologie e Studio delle Radiazioni Extraterrestri, CNR, Bologna; J. Heise and R. Jager, Space Research Organization of the Netherlands, Utrecht; and H. Muller, Beppo-SAX Scientific Data Center, Rome, report: "We made radio observations at the position of the gamma-ray burst detected by Beppo-SAX on July 20 (IAUC 6467) using the Very Large Array (VLA) in Socorro at a wavelength of 20 cm. Images taken on Sept. 7.98 and 9.06 UT were compared with an image taken more than one year earlier as part of the VLA All-Sky Survey by Condon et al. (<http://www.cv.nrao.edu/~jcondon/nvss.html>). There are no radio sources in the 10' error circle above a 4-sigma level of 2 mJy in either the preburst or postburst images. This includes the position of the ROSAT x-ray source reported by Boller and Voges (IAUC 6469). There are five radio sources just outside the error circle but none shows any signs of unusual variability."

1996 PW

S. Mottola and U. Carsenty, DLR German Aerospace Establishment, Berlin, write: "CCD photometry of 1996 PW, obtained during Sept. 7-10 with the Bochum 0.60-m telescope at the European Southern Observatory, reveals a rotational lightcurve with two maxima and two minima. We determined an unambiguous rotation period of 35.5 hr, an amplitude of 0.40 mag, and a reduced magnitude $V(\alpha = 8.5^\circ) = 14.69$."

ULYSSES RT

23 / 8 / 96

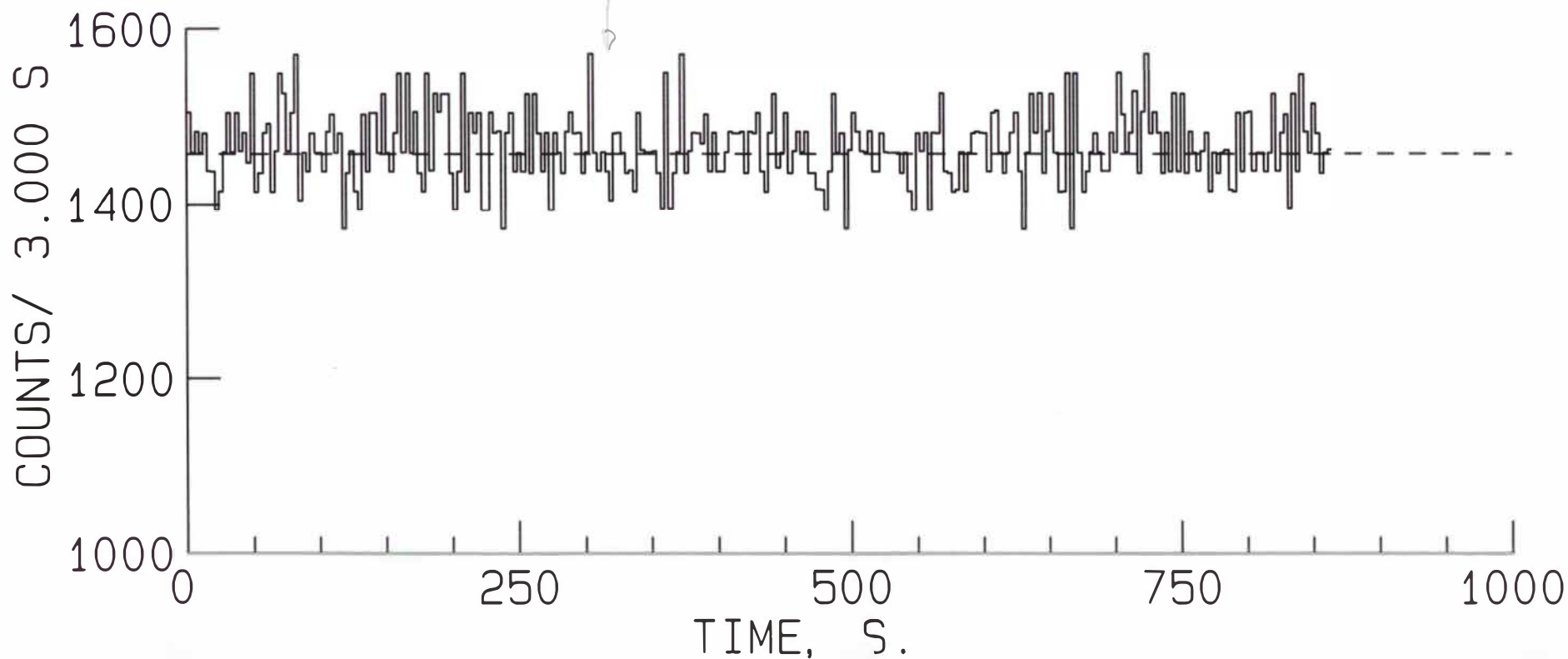
20 / 7 / 96 40536.468 s

0.500 S INTERVALS REGROUPED BY 6

21- 145 keV

UCT = 40858

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE #

5545

22 / 7 / 96

ULYSSES RT

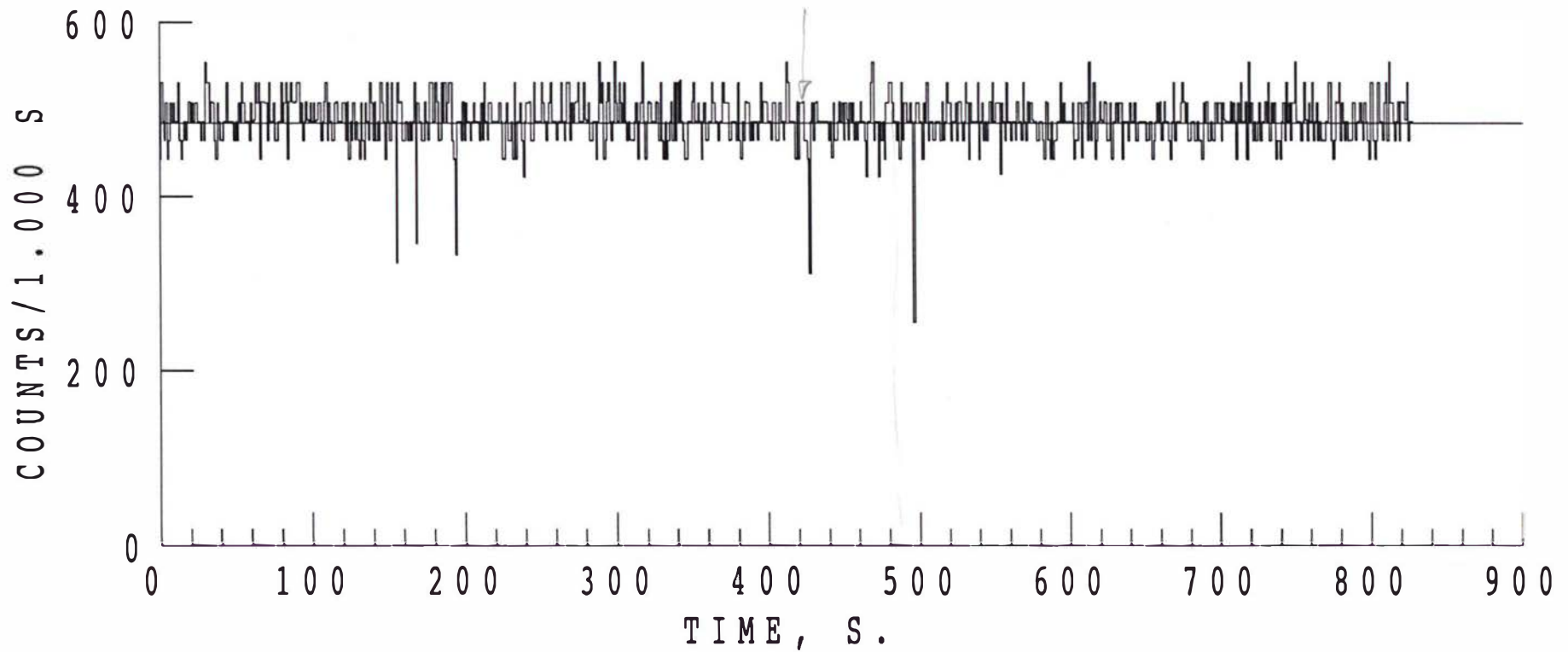
20 / 7 / 96 40428.469 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

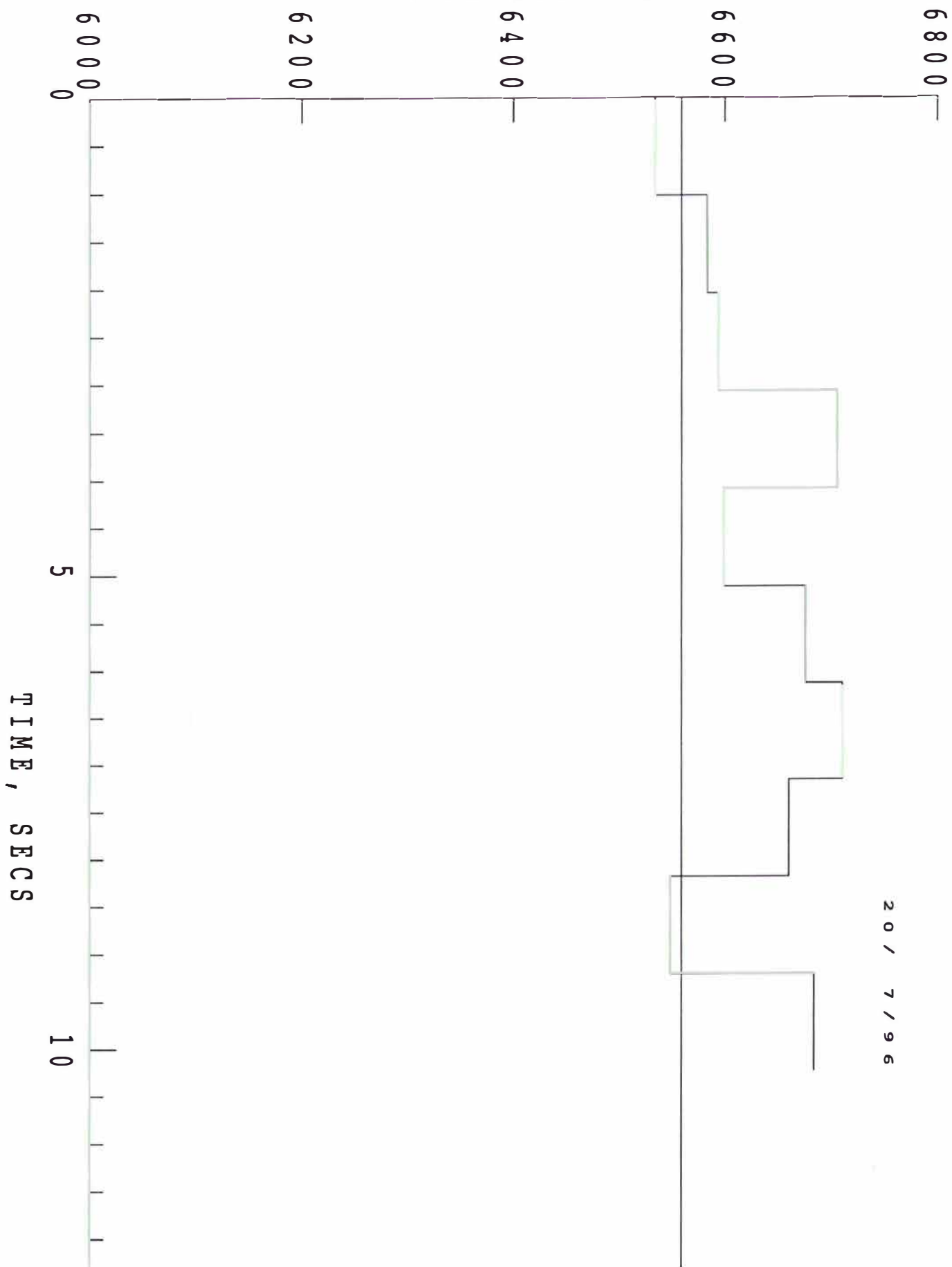
N=10 M=2

>4.0 SIGMA FLUCTUATIONS



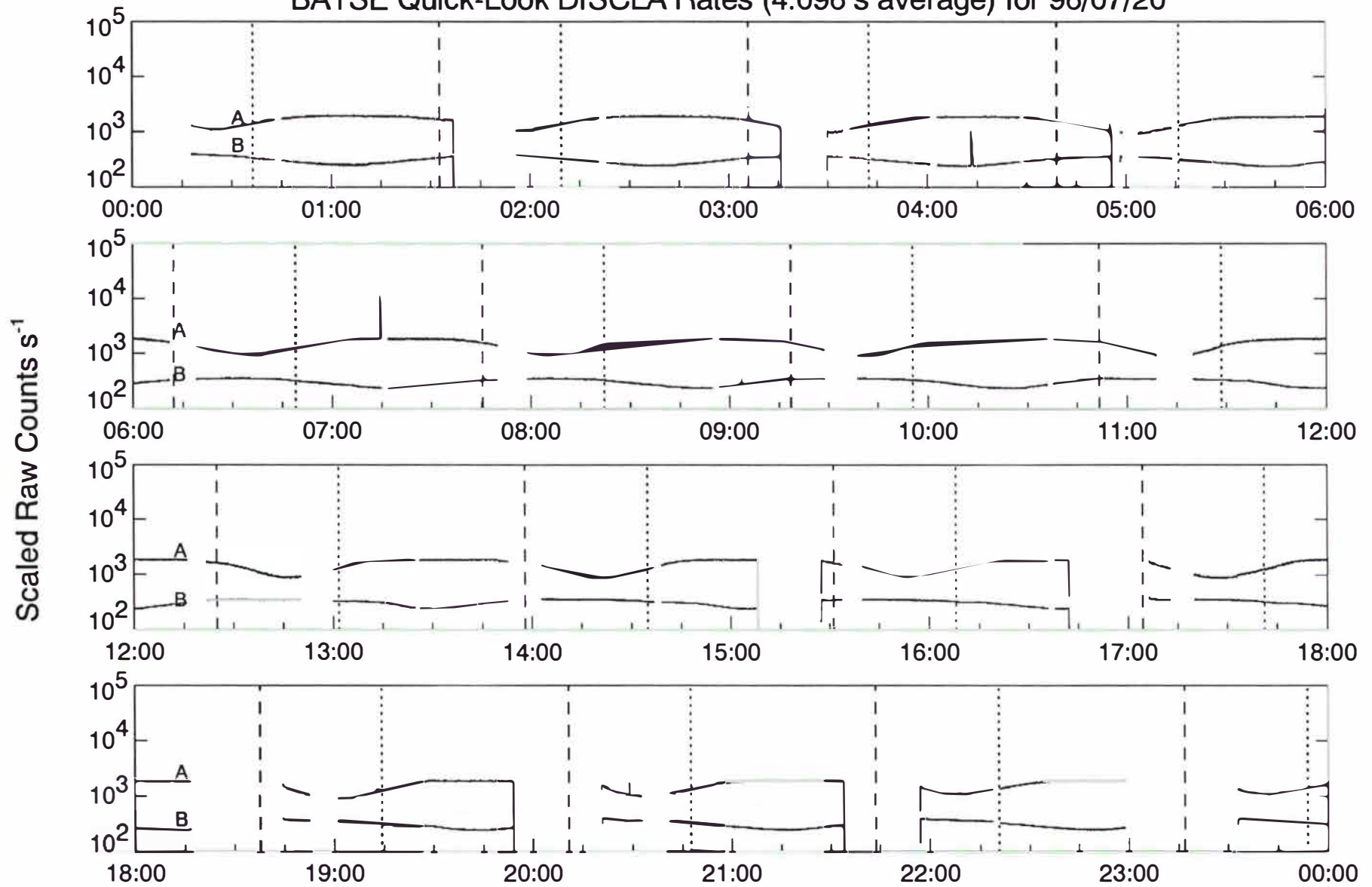
BACODINE 5545 20/07/96 41801.417
25 - 100 keV

COUNTS/1.024 S



20 / 7 / 96

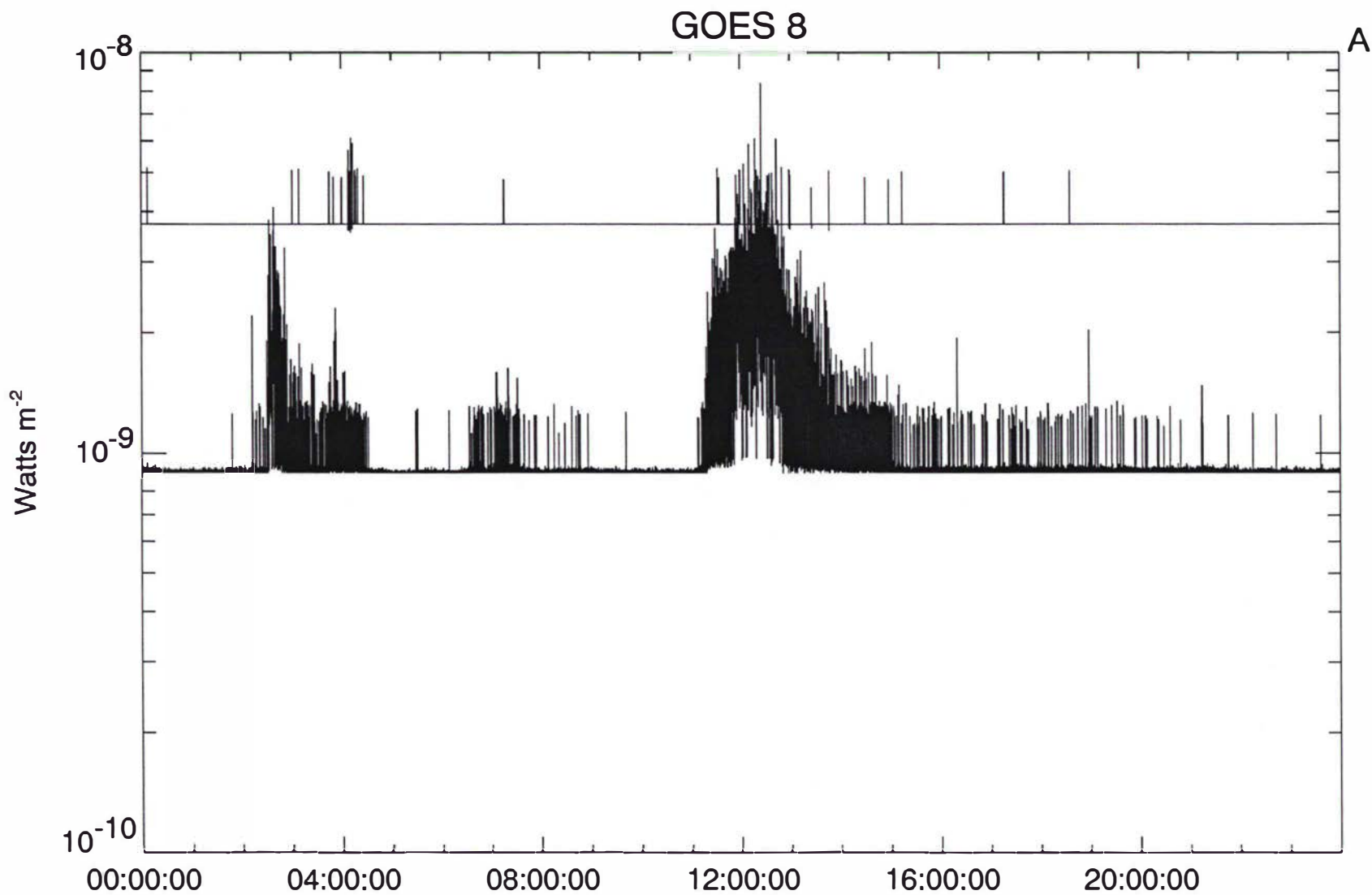
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/20



Current Time: 96/07/22, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

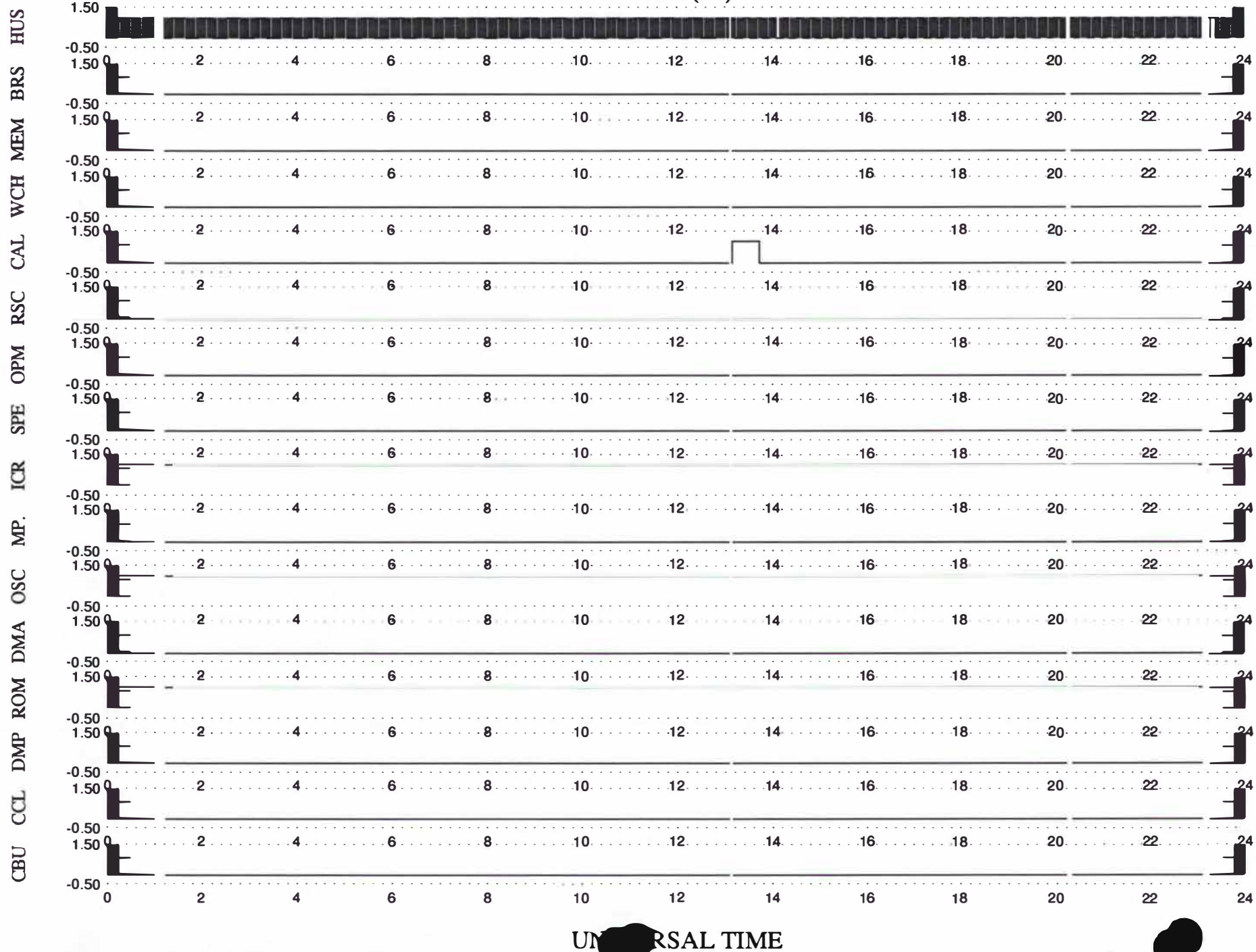
* Solar Burst Trigger
 + Solar Flare



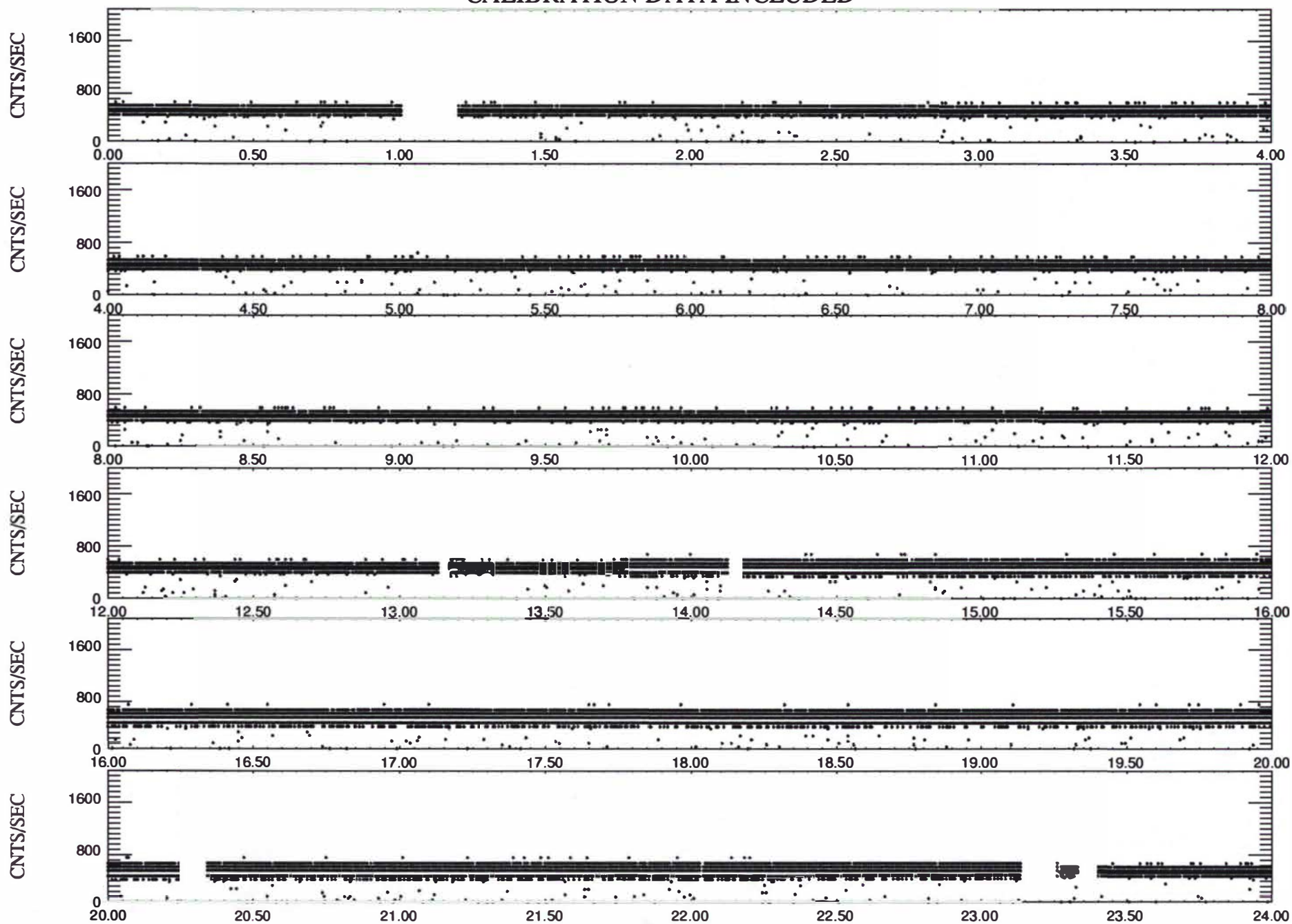
Data Start: 96/07/20, 0000:00 Plot created: 96/07/22, 1003

Channel	1	(1.0 - 8.0 Angstroms)	Background not subtracted
	2	(0.5 - 4.0 Angstroms)	Background not subtracted

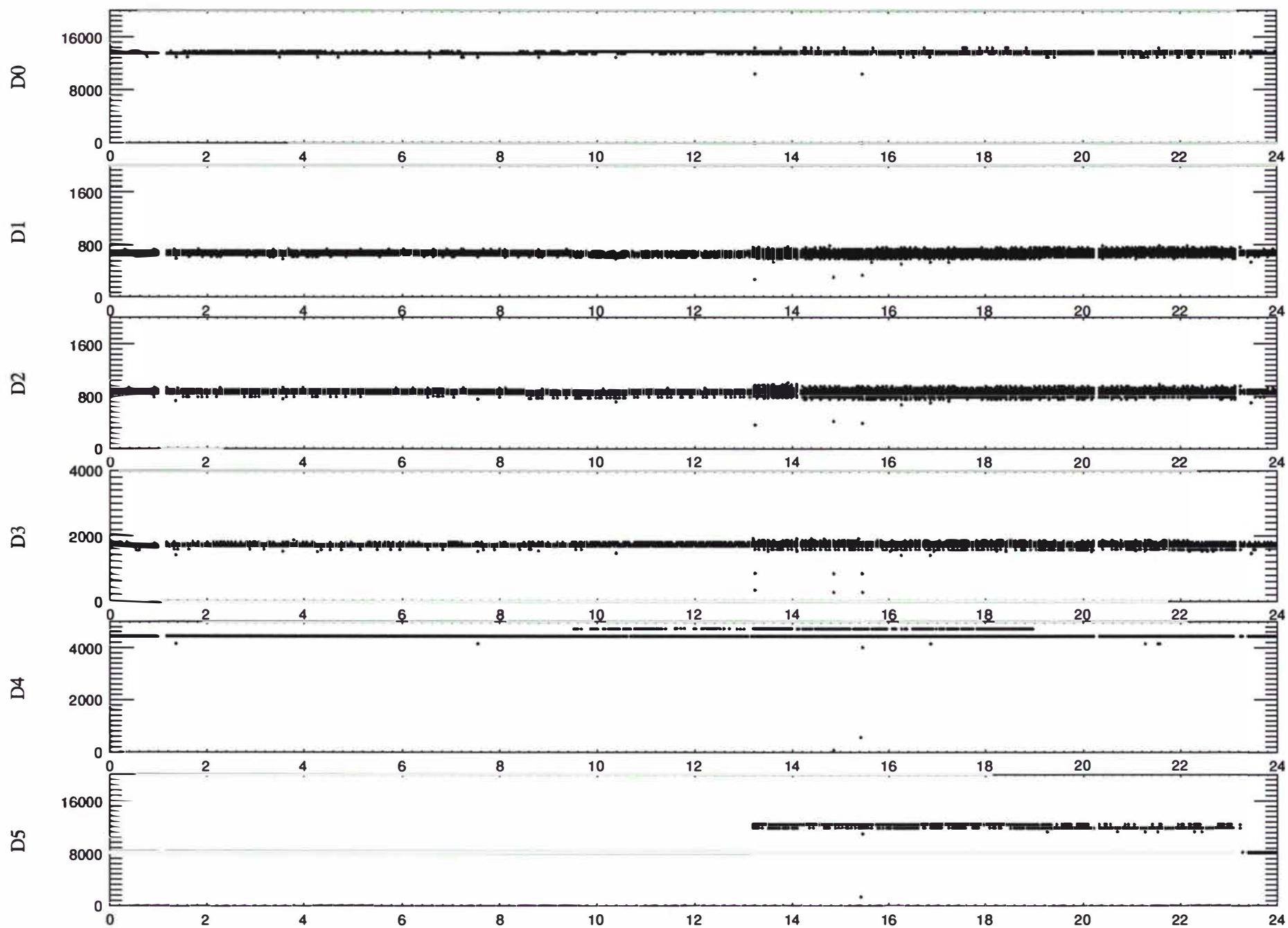
NO BURST (14)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:26 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:25:50 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesl.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960721 was not detected by Konus

No feature corresponding to this event was seen by Konus.

Date: Mon, 5 Aug 1996 16:05:59 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608052305.QAA02529@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botesl.tesre.bo.cnr.it
Subject: GRB960721
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

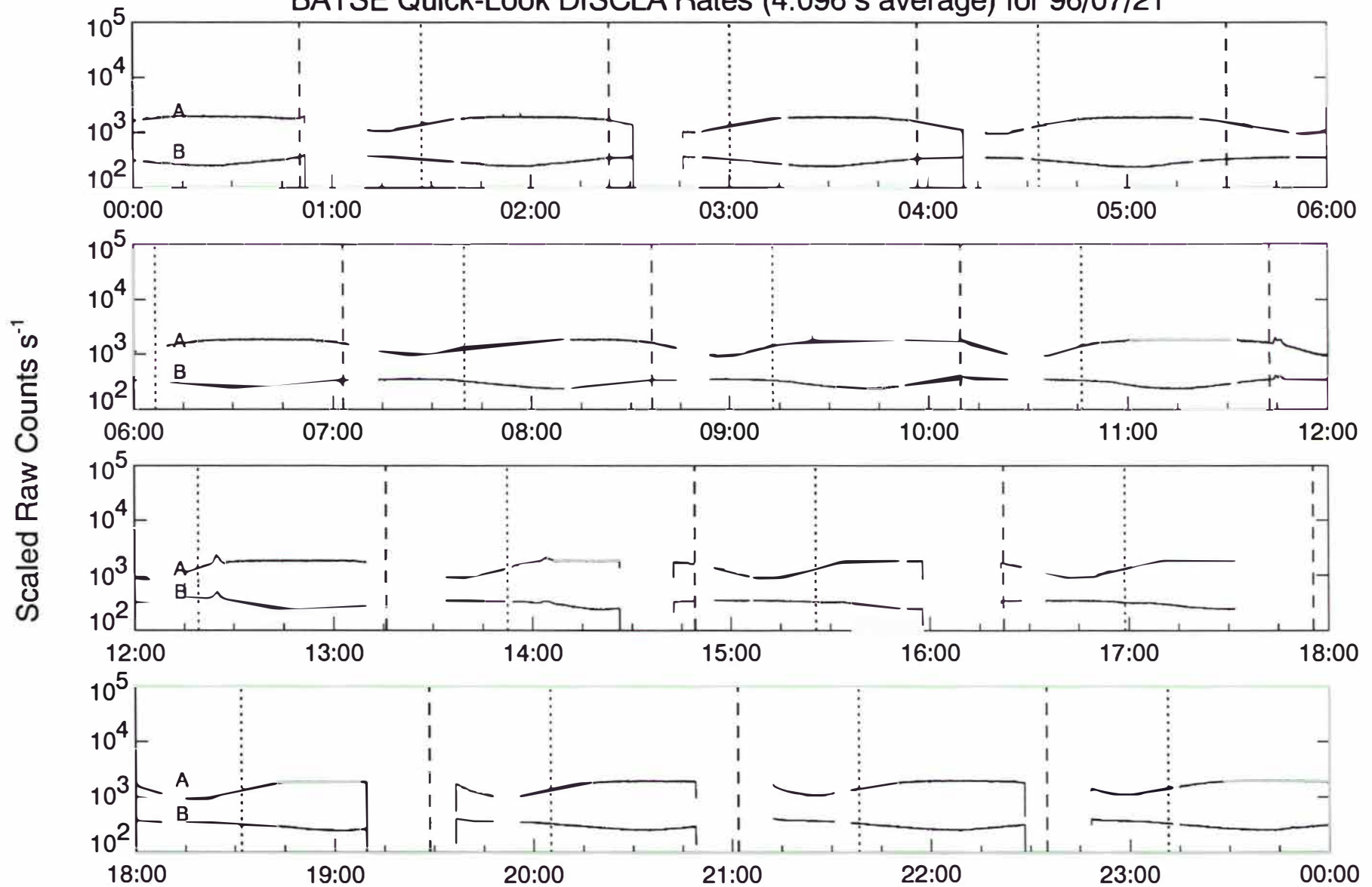
Ulysses triggered on a weak, 32 ms long event July 21
1996 around 14:16 UT at Ulysses.

The spacecraft was about 2400 light-seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

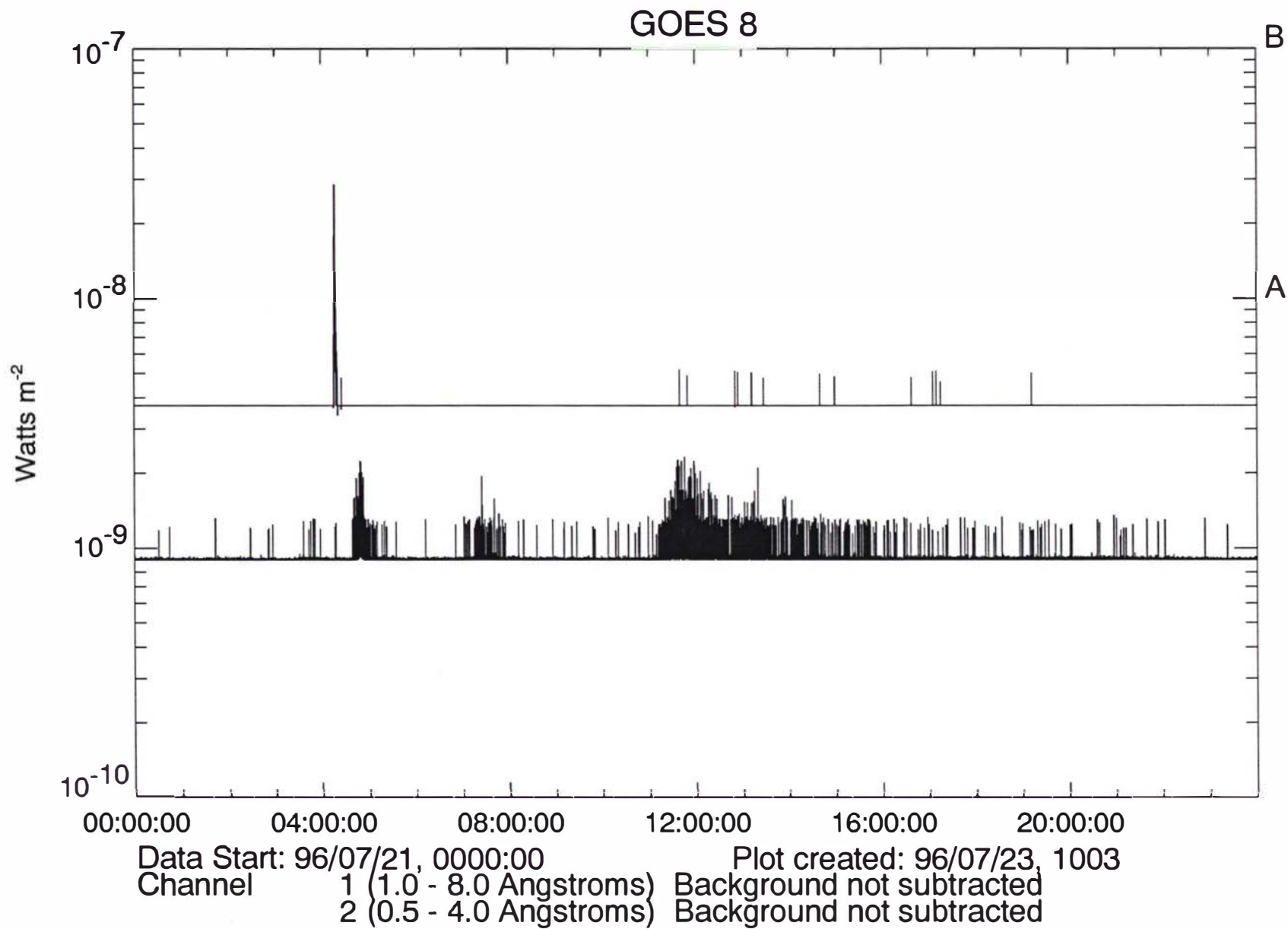
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/21



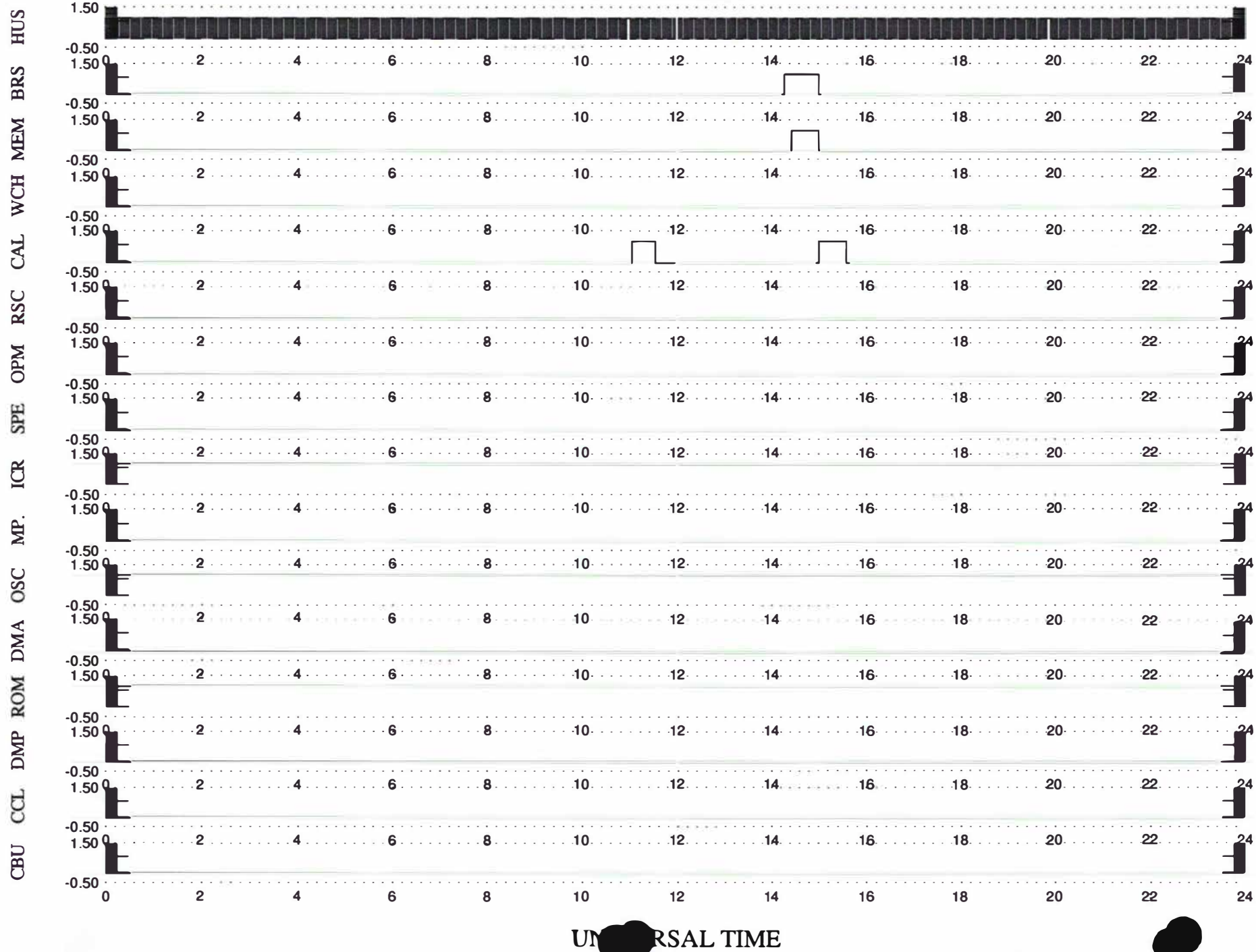
Current Time: 96/07/23, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

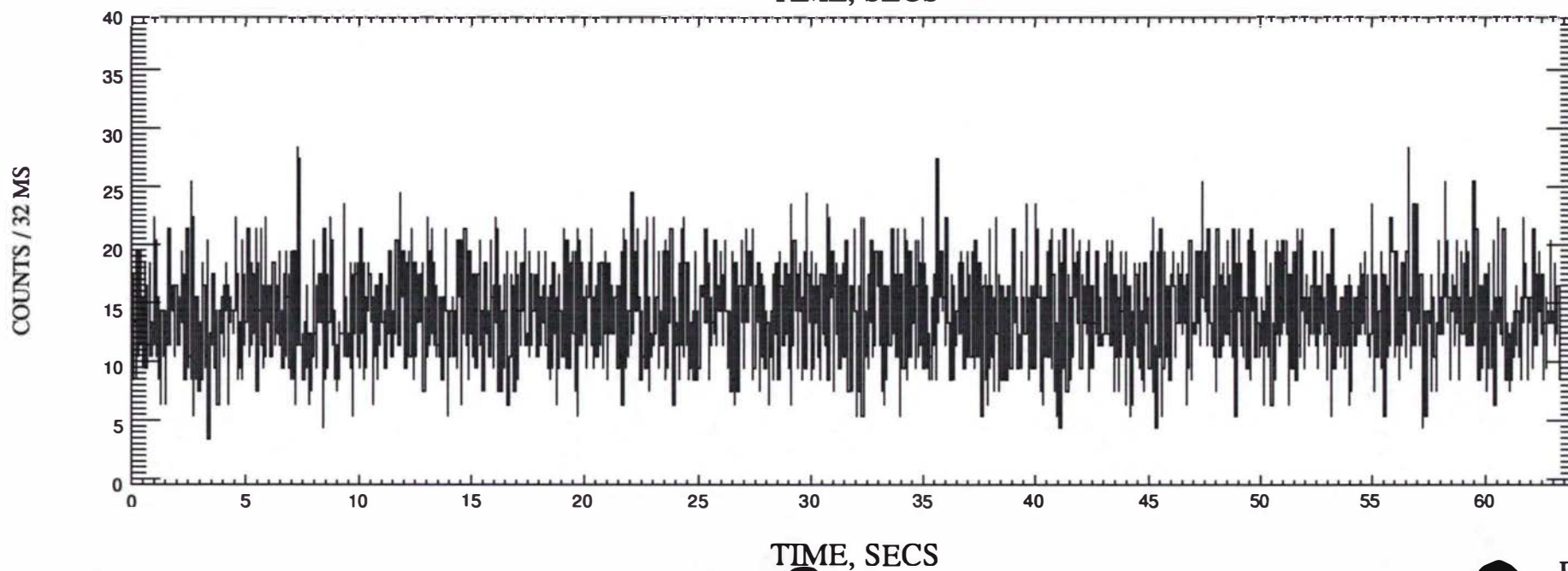
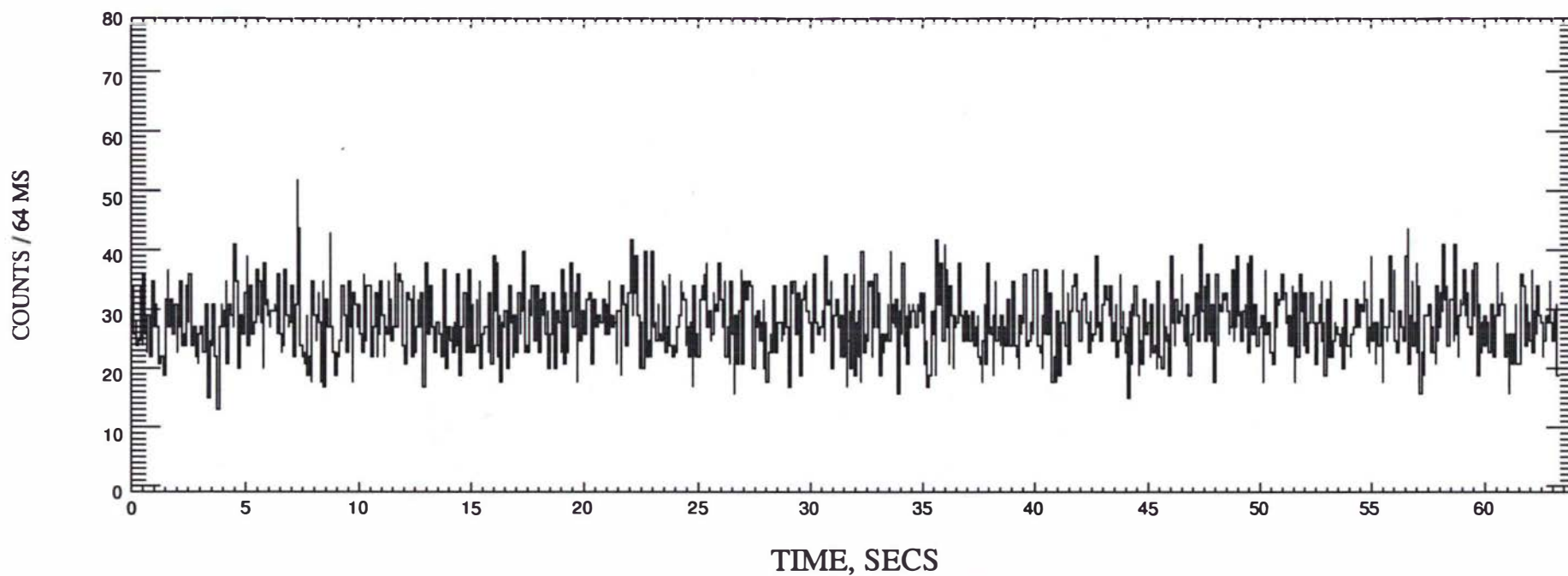
* Solar Burst Trigger
+ Solar Flare



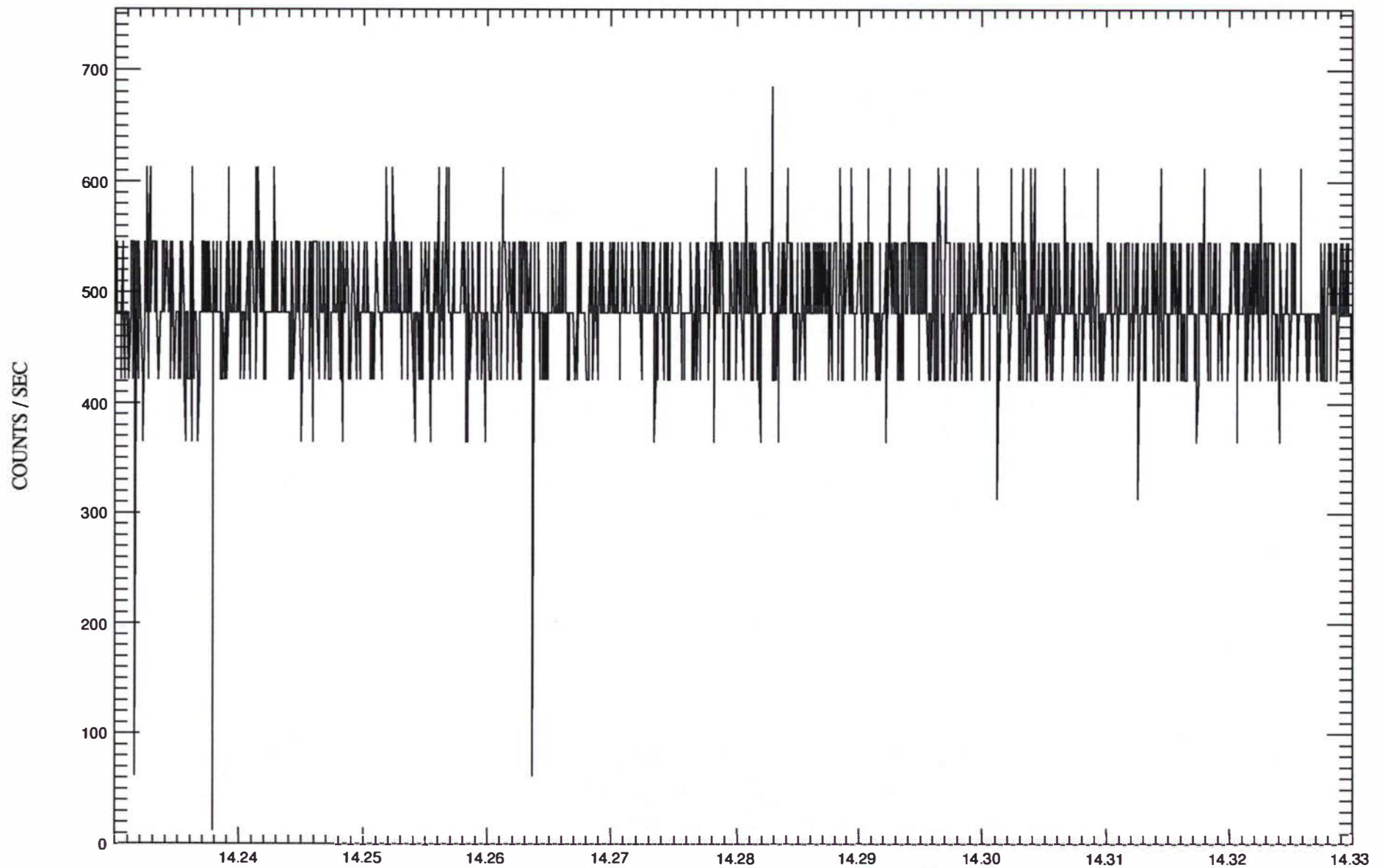
BURST NUMBER 15



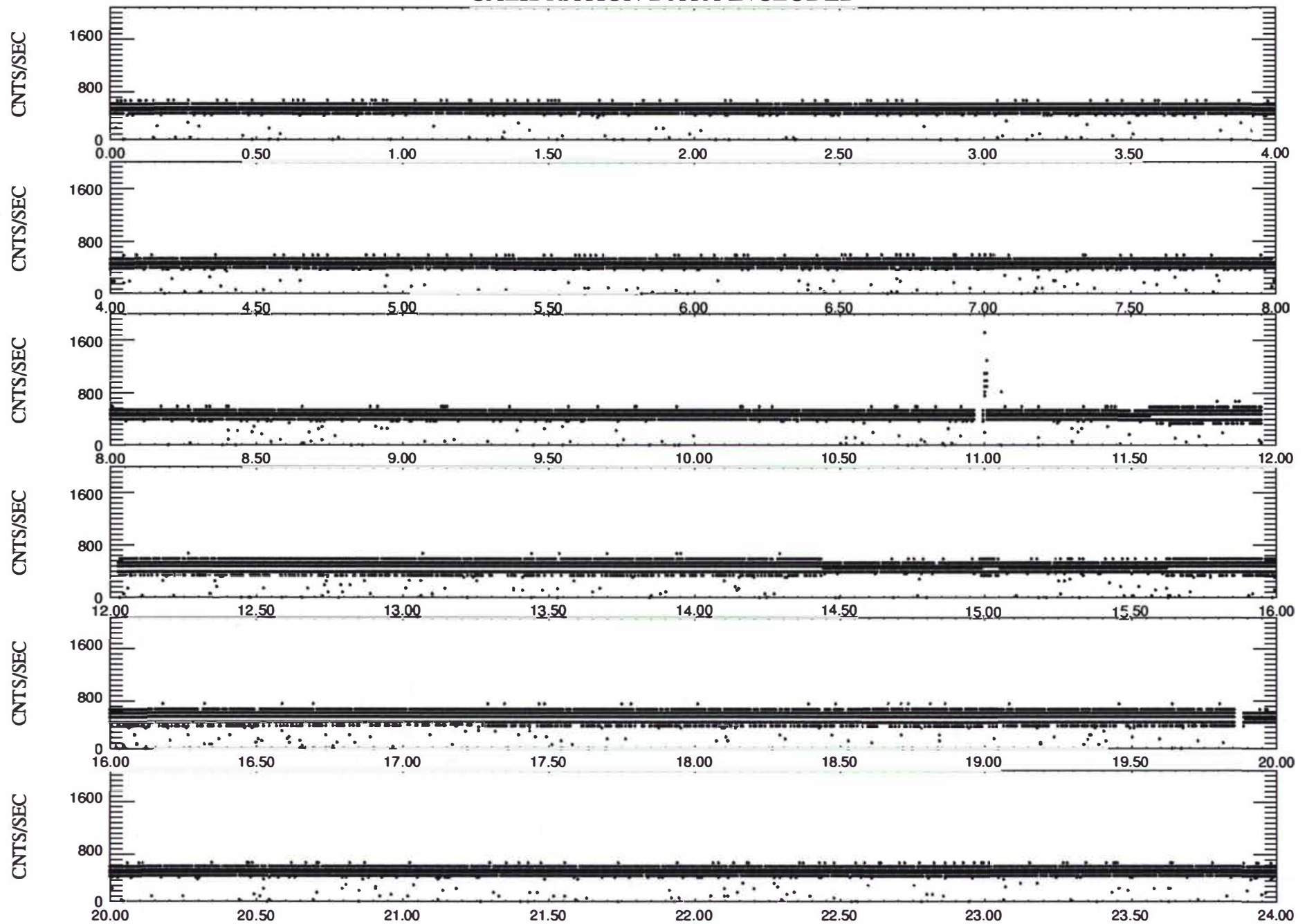
Burst Counter 15 at UT=14.283052232530 h=51418.988 s 14:16:58.988



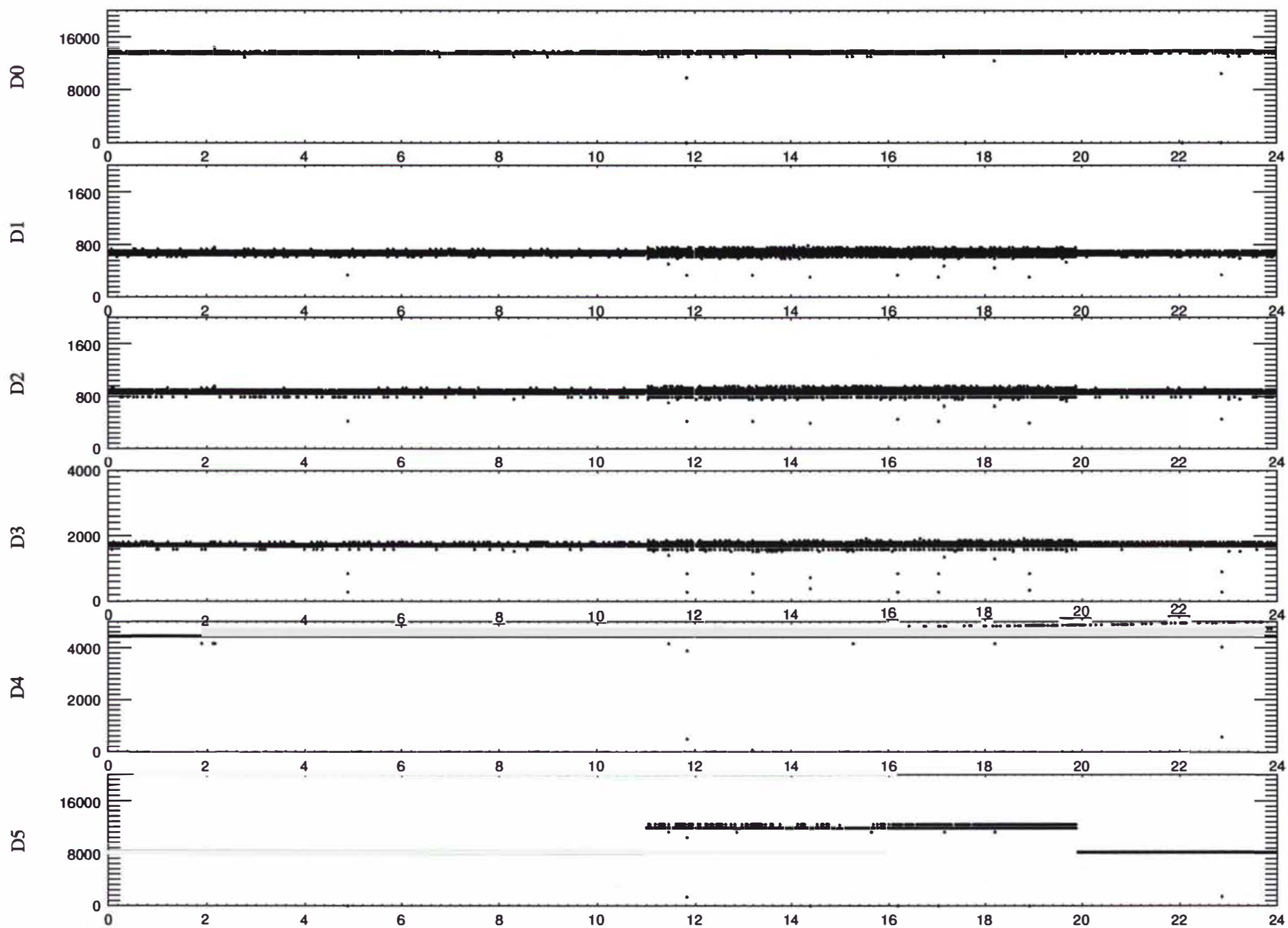
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From WOODSP@ssl.msfc.nasa.gov Wed Jul 24 11:32 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 24 Jul 1996 13:32:22 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5546

BATSEARCH PROGRAM

BATSE BURST # 5546
EVENT OF 1996 JUL 22 DAY OF YEAR=204
EVENT CROSSING TIME AT BATSE : 1621. S. OR 00:27:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 229.000 11.000
BATSE PEAK COUNTING RATE: 2600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 7/ 96 IS:
RA= 157.746 DEC= 43.115 DIST= 4.875 AU
BATSE-ULYSSES DISTANCE = 729277173. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -877.43 SECS.
CROSSING TIME AT ULYSSES IS 744. S. OR 00:12:23 +/- 430.58 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 7/ 96 IS:
RA= 87.216 DEC= 23.776 DIST= 2.274 AU
MARS-BATSE DISTANCE = 340204544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 713.64 SECS.
CROSSING TIME AT MARS IS 2335. S. OR 00:38:54 +/- 164.02 SECONDS

BATSE BURST TRIGGER

NO.: 5546

TIME: TJD=0286 SECONDS=1621

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=61.6 AZIMUTH=247.0 ERROR=5.9 DEGREES

COMMENTS:

GRB LASTING ~ 4.5 SEC. SINGLE WEAK PULSE WITH SUBSTRUCTURE. MARGINALLY
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5546	960722	10286	01621	2600	229	+11	4.5

BATSE #

5546

24 / 7 / 96

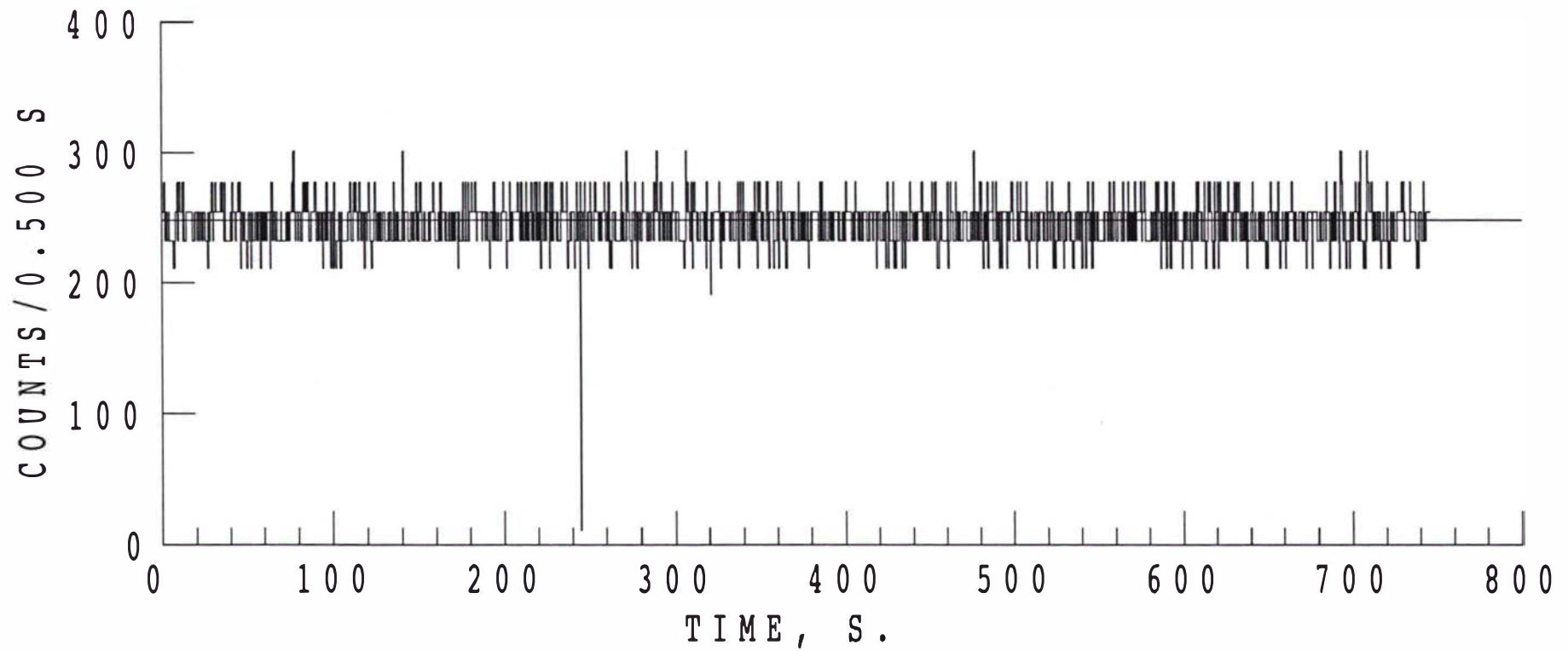
ULYSSES RT

22 / 7 / 96 442.212 s

0 - 0 keV

N=10 M=2

>4.0 SIGMA FLUCTUATIONS



From WOODSP@ssl.msfc.nasa.gov Wed Jul 24 11:35 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 24 Jul 1996 13:35:13 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5547

BATSEARCH PROGRAM

BATSE BURST # 5547
EVENT OF 1996 JUL 22 DAY OF YEAR=204
EVENT CROSSING TIME AT BATSE : 14911. S. OR 04:08:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 52.000 -77.000
BATSE PEAK COUNTING RATE: 7800 C/S

No

too weak

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 7/ 96 IS:
RA= 157.777 DEC= 43.088 DIST= 4.876 AU
BATSE-ULYSSES DISTANCE = 729509082. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.74 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1728.38 SECS.
CROSSING TIME AT ULYSSES IS 16639. S. OR 04:37:19 +/- 373.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 7/ 96 IS:
RA= 87.216 DEC= 23.776 DIST= 2.274 AU
MARS-BATSE DISTANCE = 340204544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 254.93 SECS.
CROSSING TIME AT MARS IS 15166. S. OR 04:12:45 +/- 195.85 SECONDS

BATSE BURST TRIGGER

NO.: 5547

TIME: TJD=0286 SECONDS=14911

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=56.7 AZIMUTH=40.2 ERROR=2.5 DEGREES

COMMENTS:

GRB LASTING ~ 1 SEC. SHARP RISE AND DECAY TIMES. HARD SPECTRUM. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5547	960722	10286	14911	7800	052	-77	1

No

ULYSSES RT

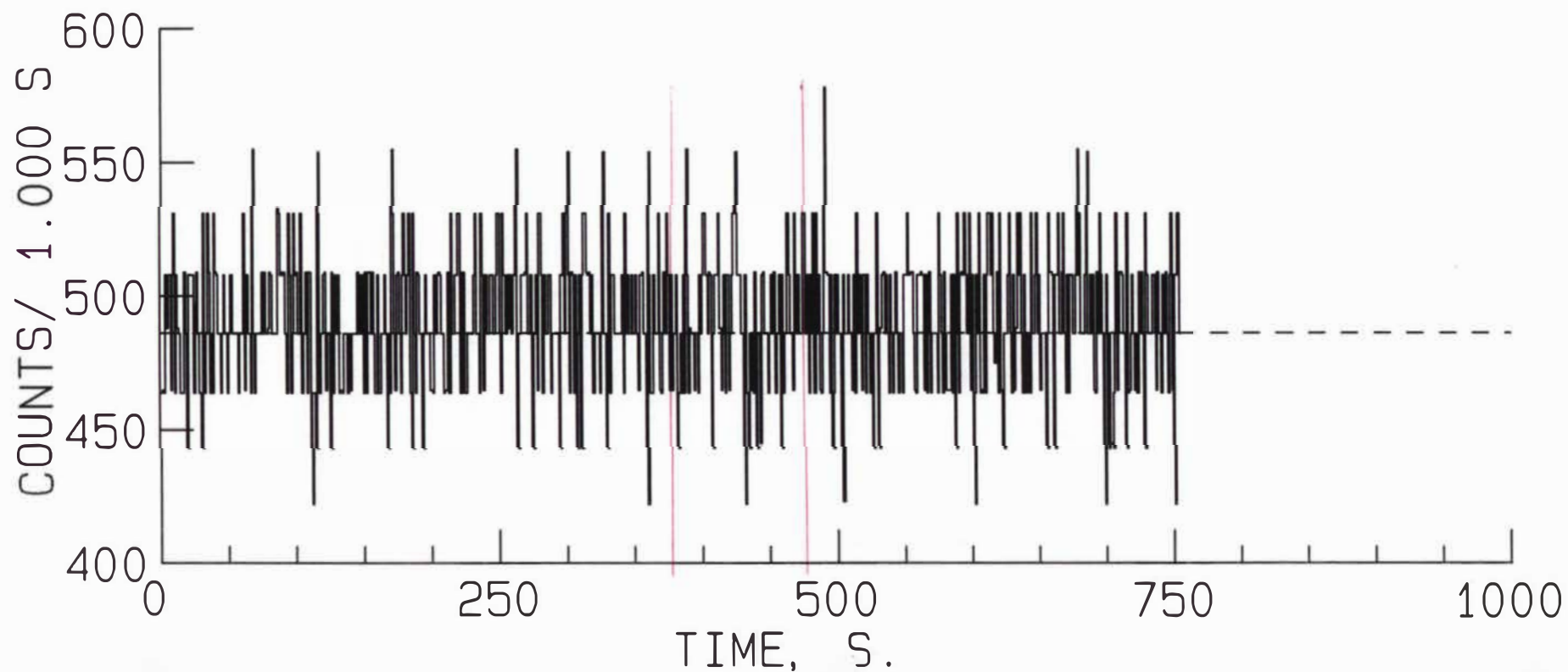
23 / 8 / 96

22 / 7 / 96 16272.414 s

0.500 S INTERVALS REGROUPED BY 2

21- 145 keV

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS



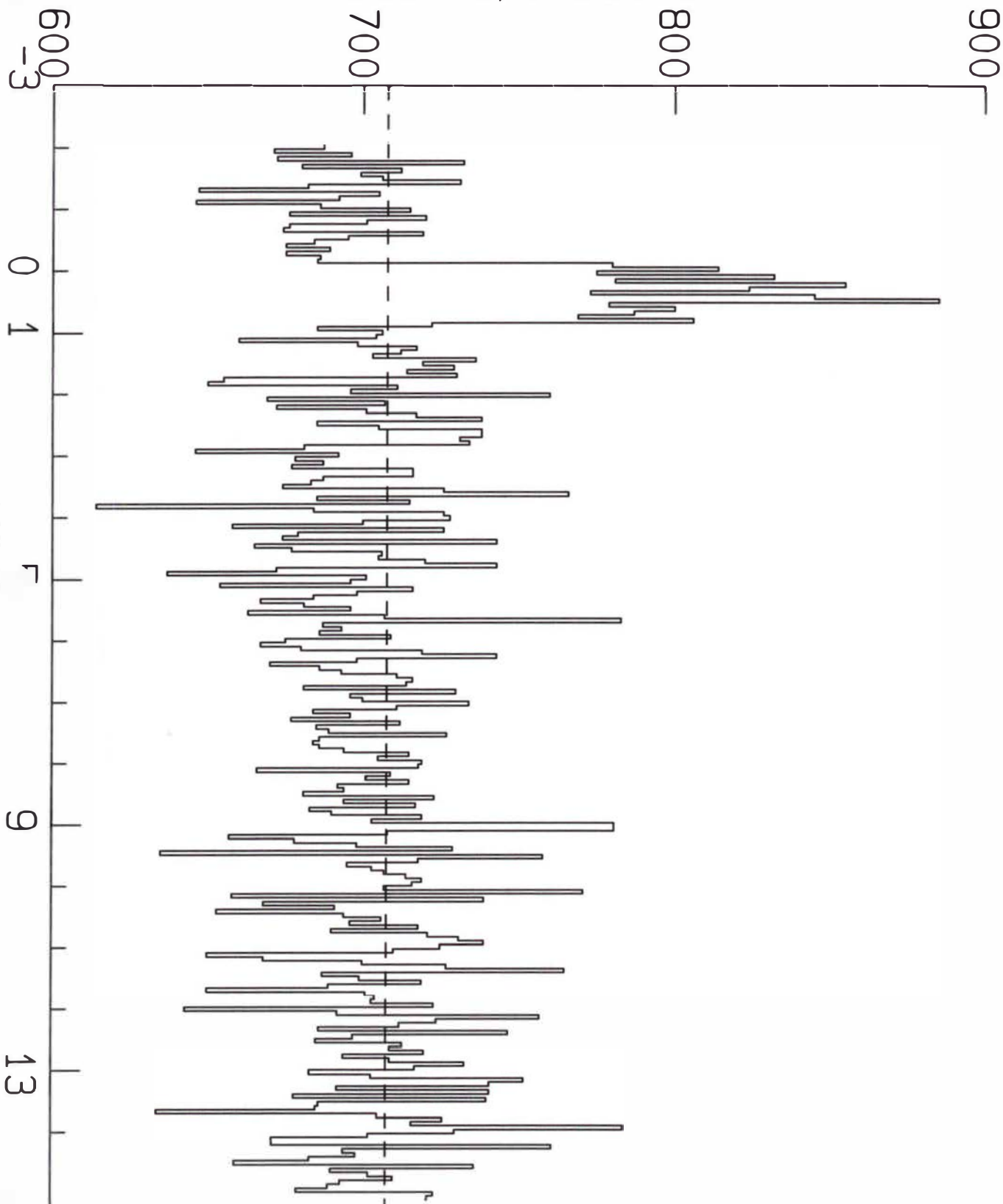
BATSE

22/07/96

14911.562

25- 100 keV

COUNTS/0.064 S



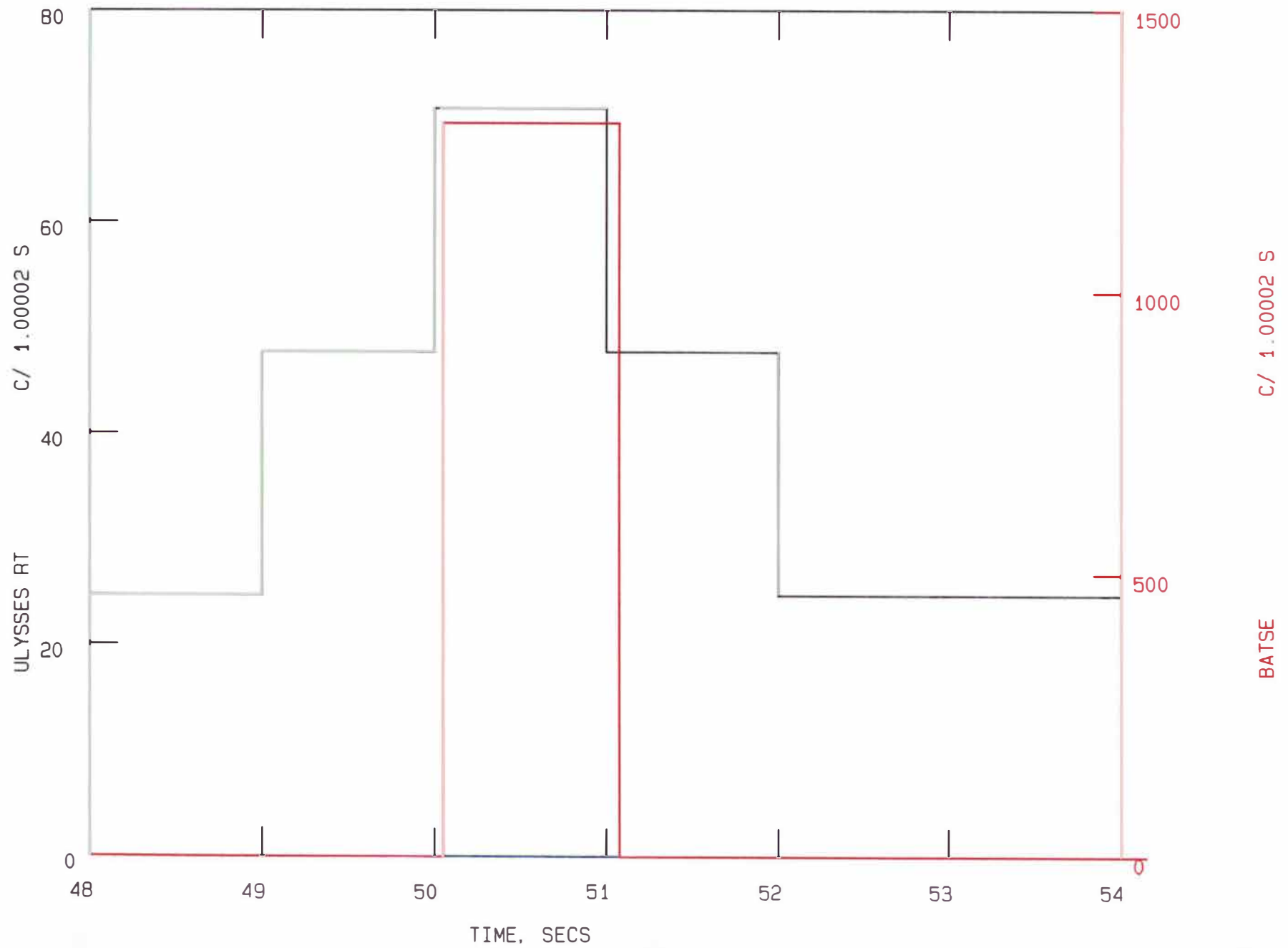
ULYSSES RT-BATSE

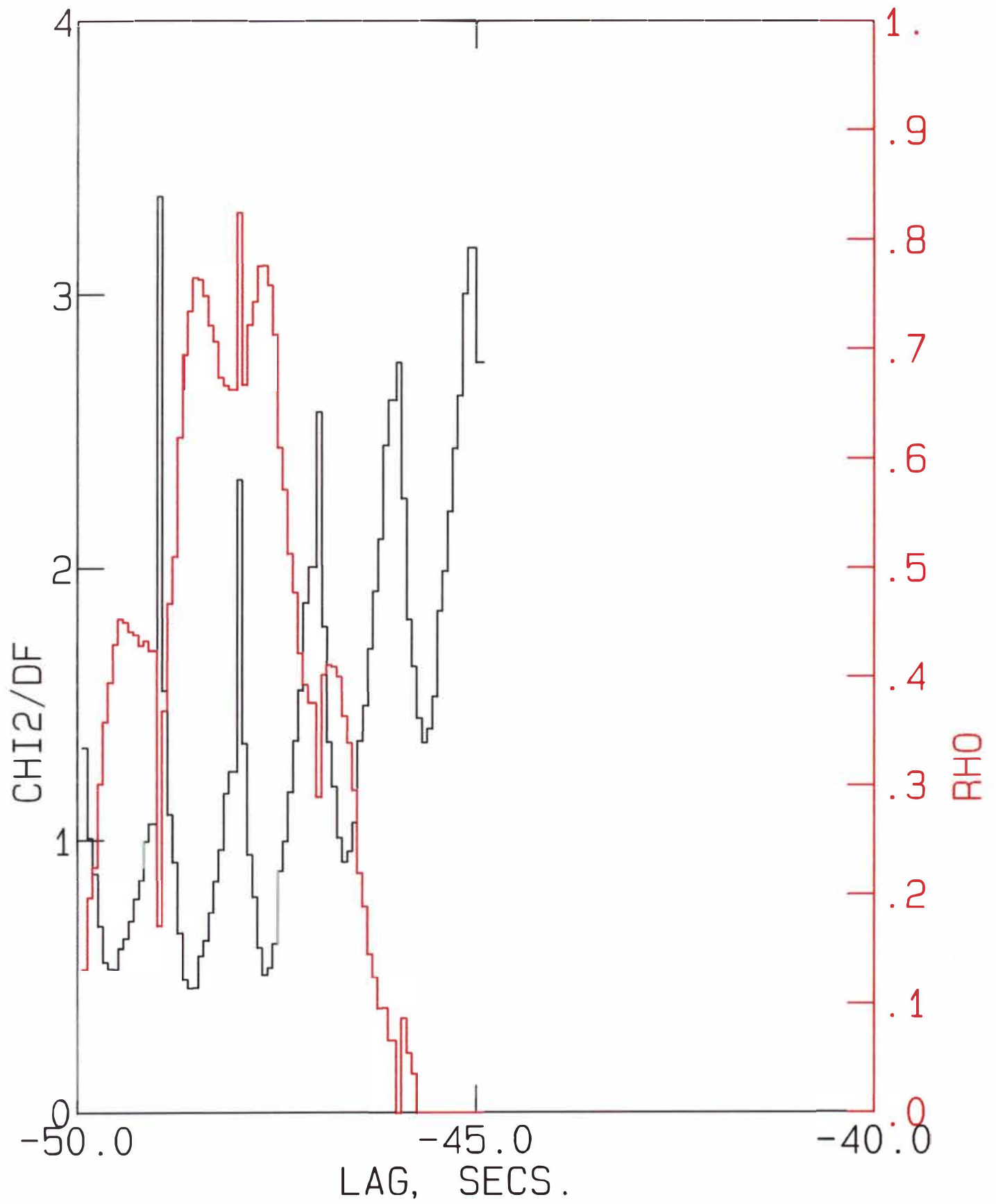
CORRELATION

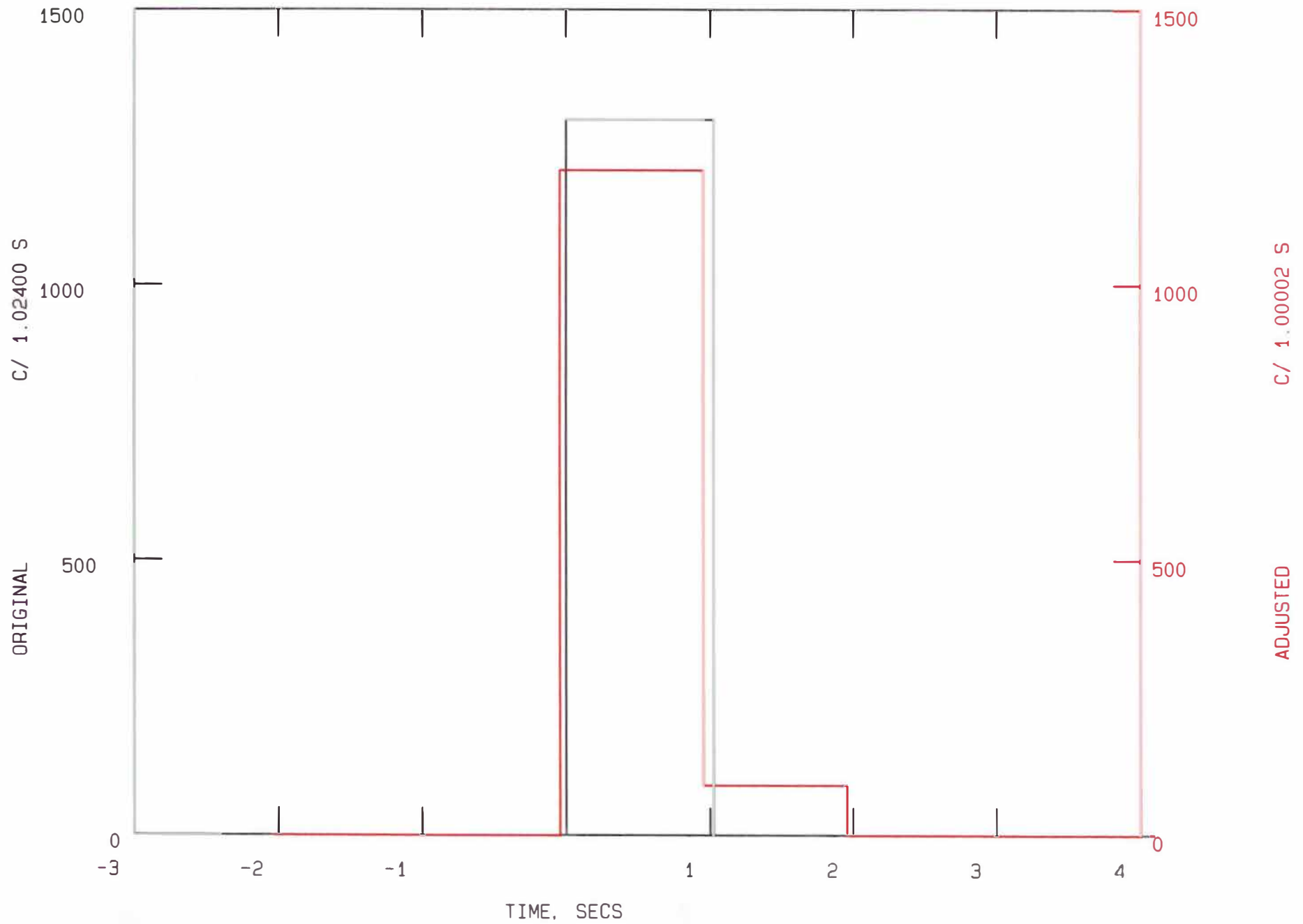
22/ 7/96

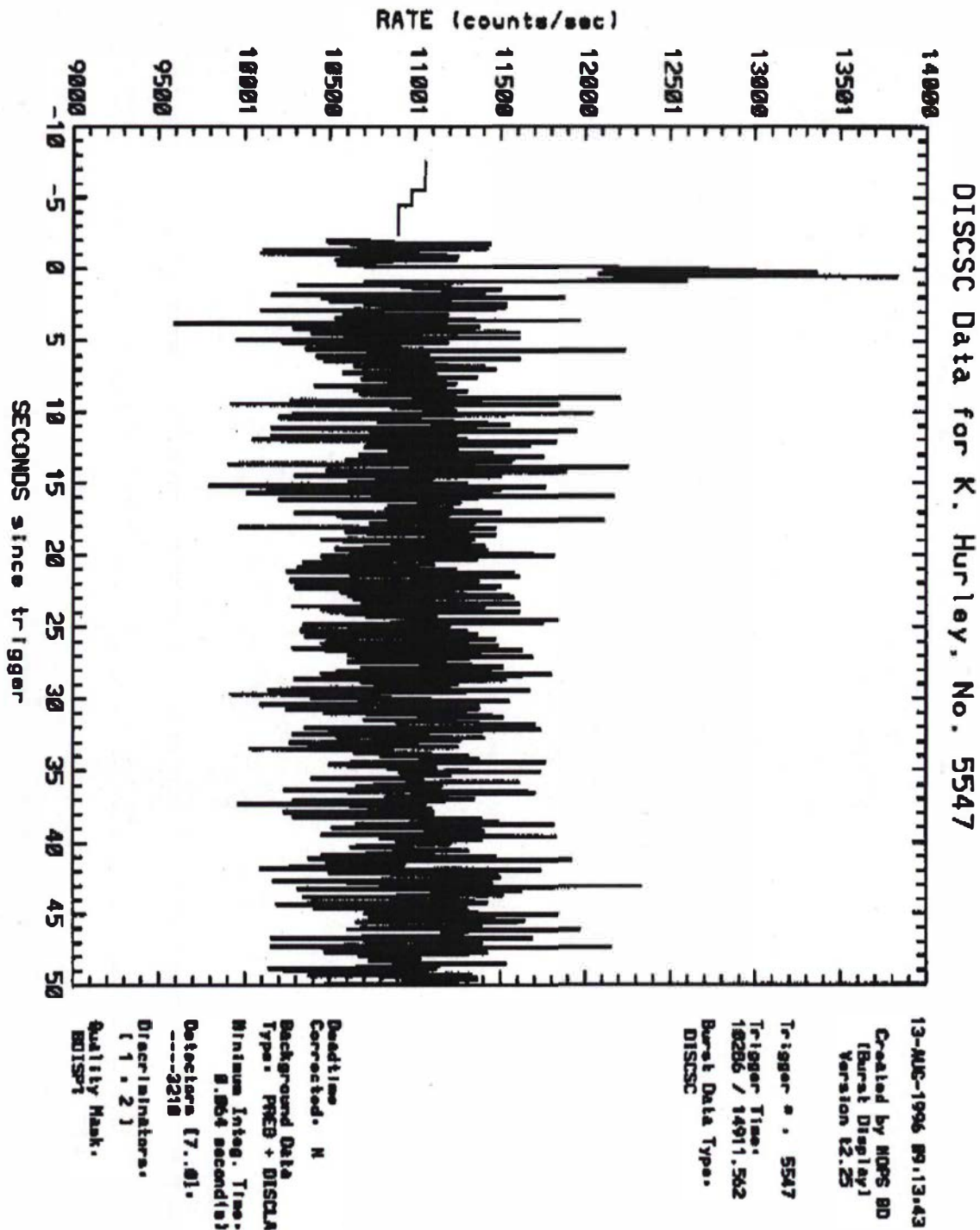
16647.421

23/ 8/96









From WOODSP@ssl.msfc.nasa.gov Wed Jul 24 07:32 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 24 Jul 1996 9:31:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5548

BATSEARCH PROGRAM

BATSE BURST # 5548
EVENT OF 1996 JUL 22 DAY OF YEAR=204
EVENT CROSSING TIME AT BATSE : 25506. S. OR 07:05:06.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 30.000 32.000
BATSE PEAK COUNTING RATE: 19500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 7/ 96 IS:
RA= 157.802 DEC= 43.066 DIST= 4.878 AU
BATSE-ULYSSES DISTANCE = 729694624. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 43.58 SECS.
CROSSING TIME AT ULYSSES IS 25550. S. OR 07:05:49 +/- 473.17 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 7/ 96 IS:
RA= 87.216 DEC= 23.776 DIST= 2.274 AU
MARS-BATSE DISTANCE = 340204544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=129.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -719.31 SECS.
CROSSING TIME AT MARS IS 24787. S. OR 06:53:06 +/- 141.46 SECONDS

BATSE BURST TRIGGER

NO.: 5548

TIME: TJD=0286 SECONDS=25506

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=140.1 AZIMUTH=121.1 ERROR=0.9 DEGREES

COMMENTS:

MULTIEPISODIC, BRIGHT GRB LASTING ~ 250 SEC. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5548	960722	10286	25506	19500	030	+32	250

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
6	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5293
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5389
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5417
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA RI NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5433
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5470
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	se RI	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	se RI	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	se RI	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

Helio corr removed

Date: Mar 12 '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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

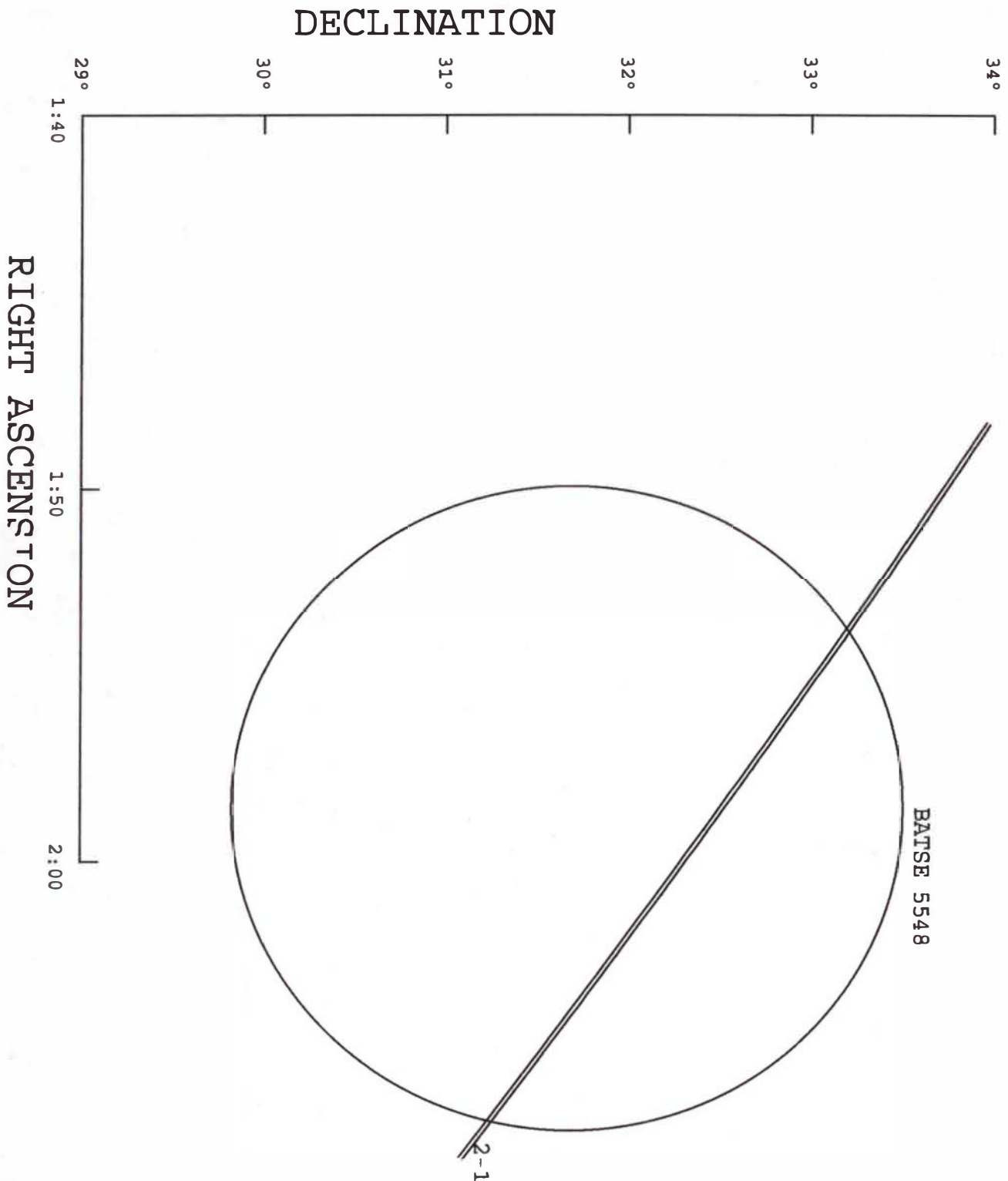
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 22, 1996 7:05

12/ 3/98



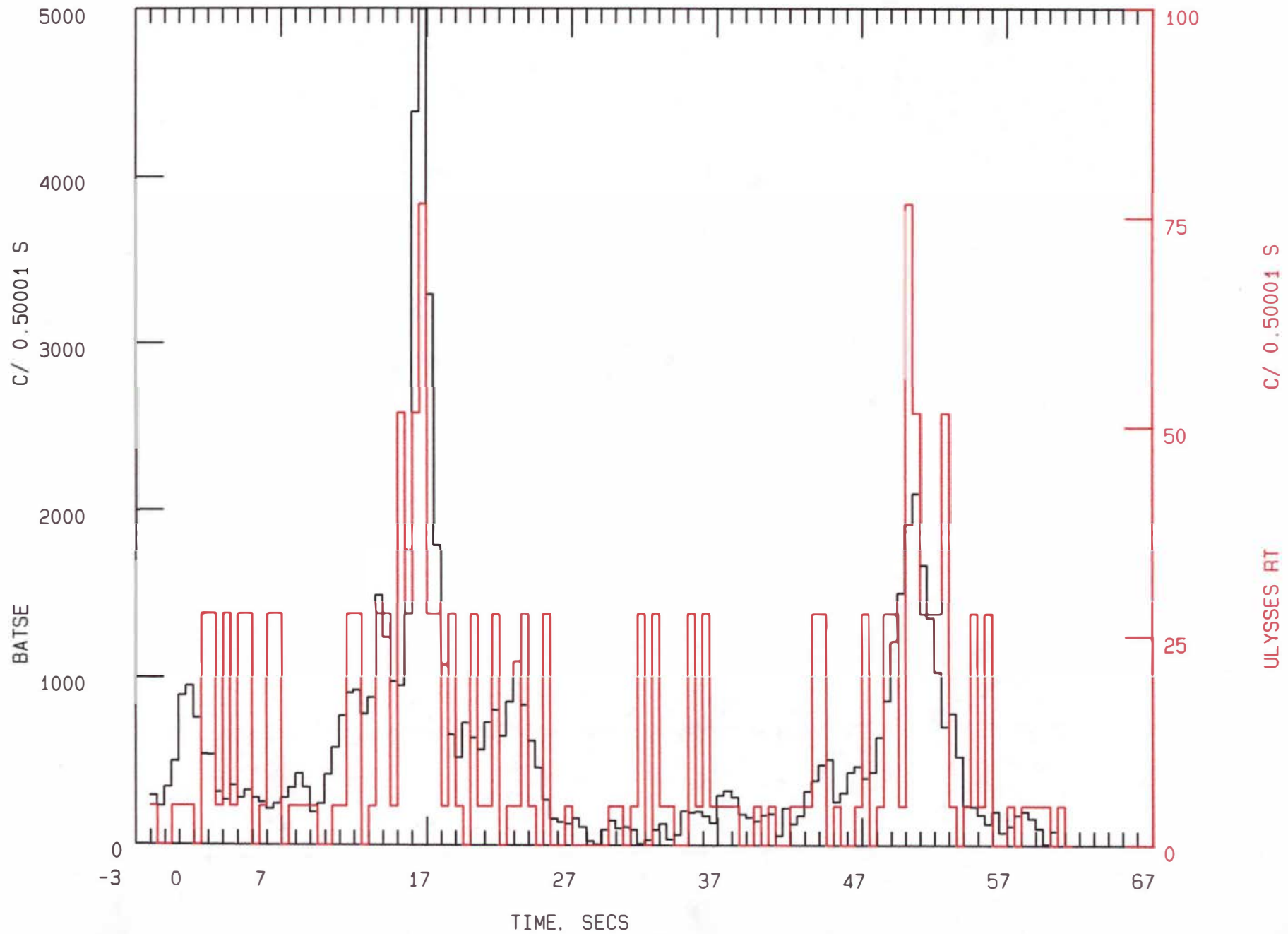
BATSE

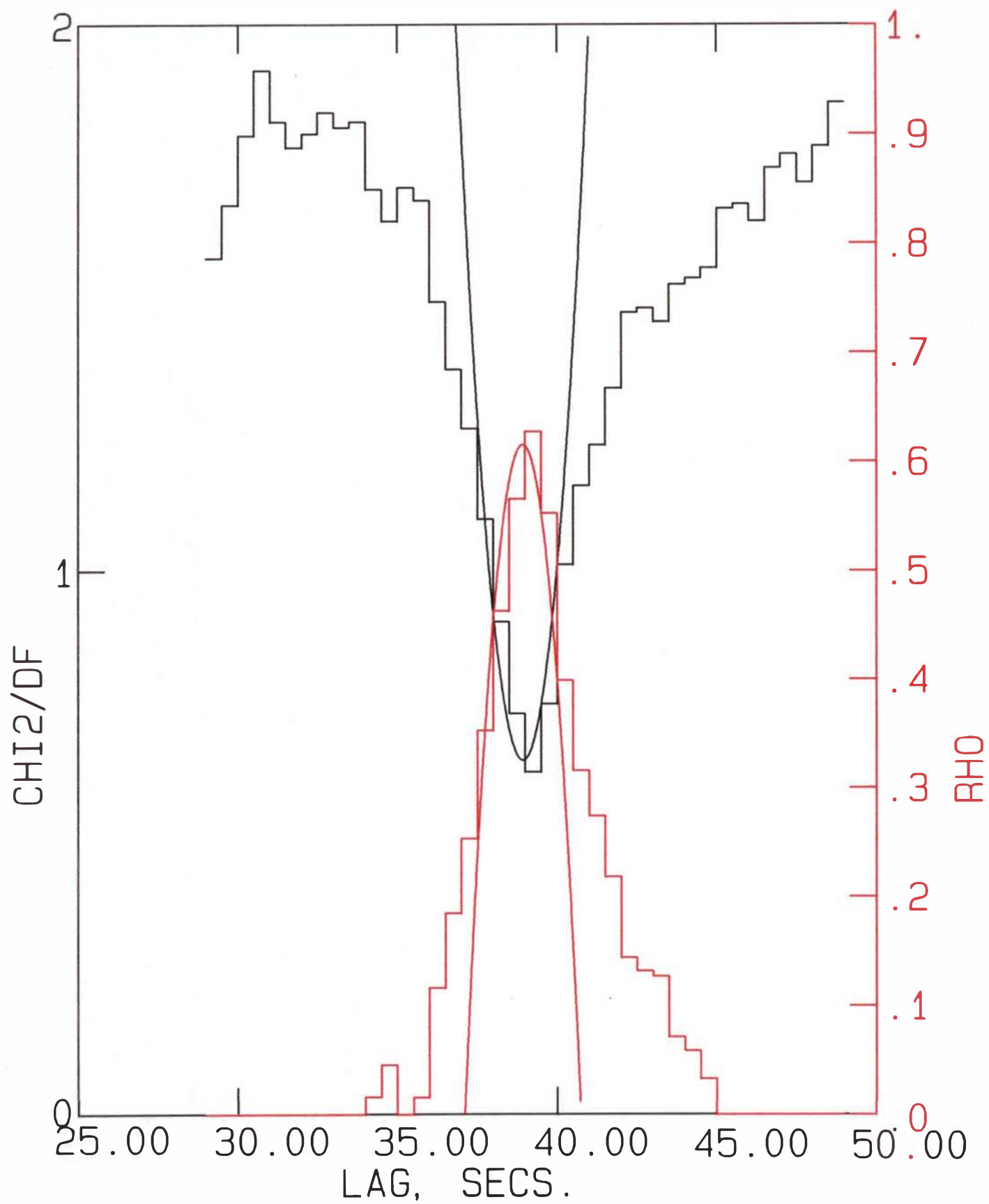
-ULYSSES RT CORRELATION

22/ 7/96

25506.506

12/ 3/98





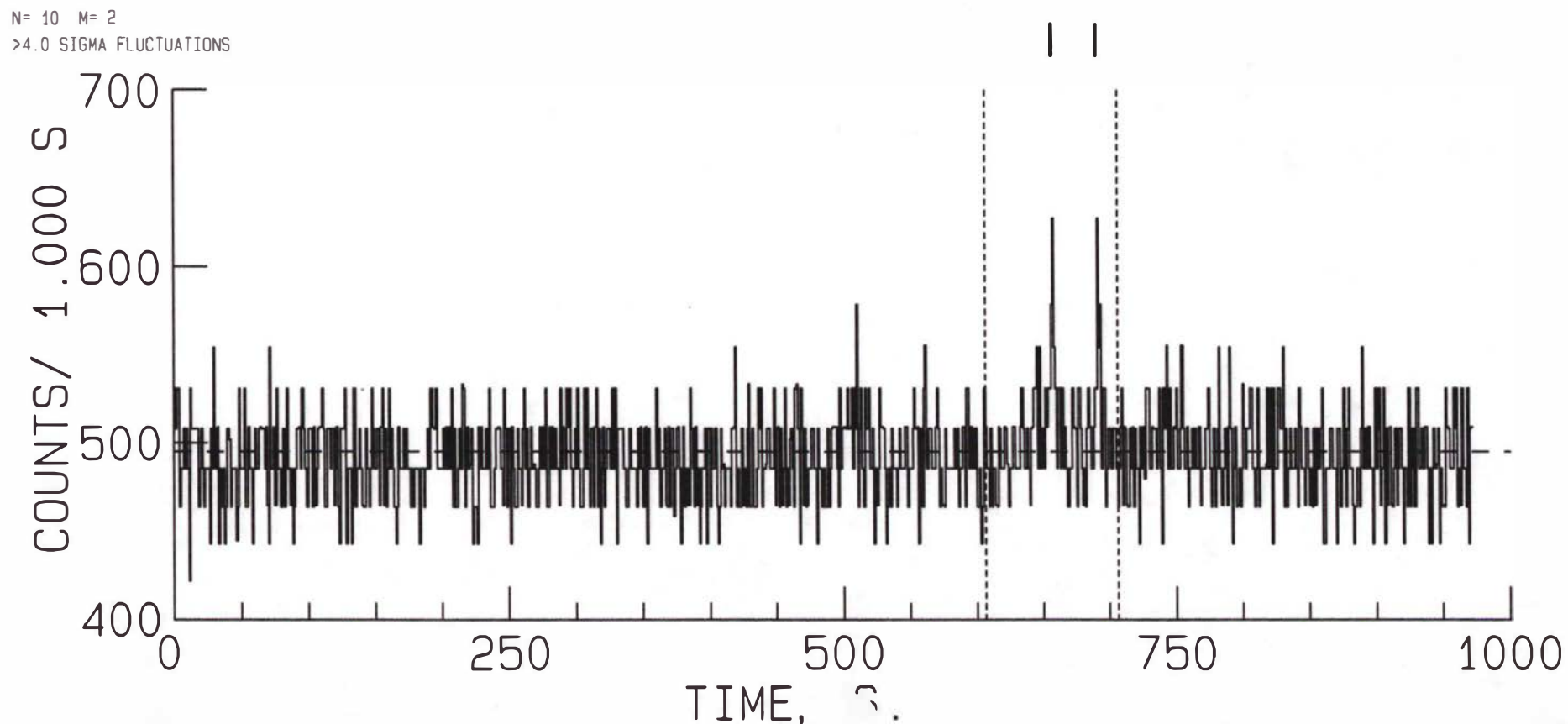
ULYSSES RT

12 / 3 / 98

22 / 7 / 96 24912.028 s

0.500 S INTERVALS REGROUPED BY 2

21- 145 keV



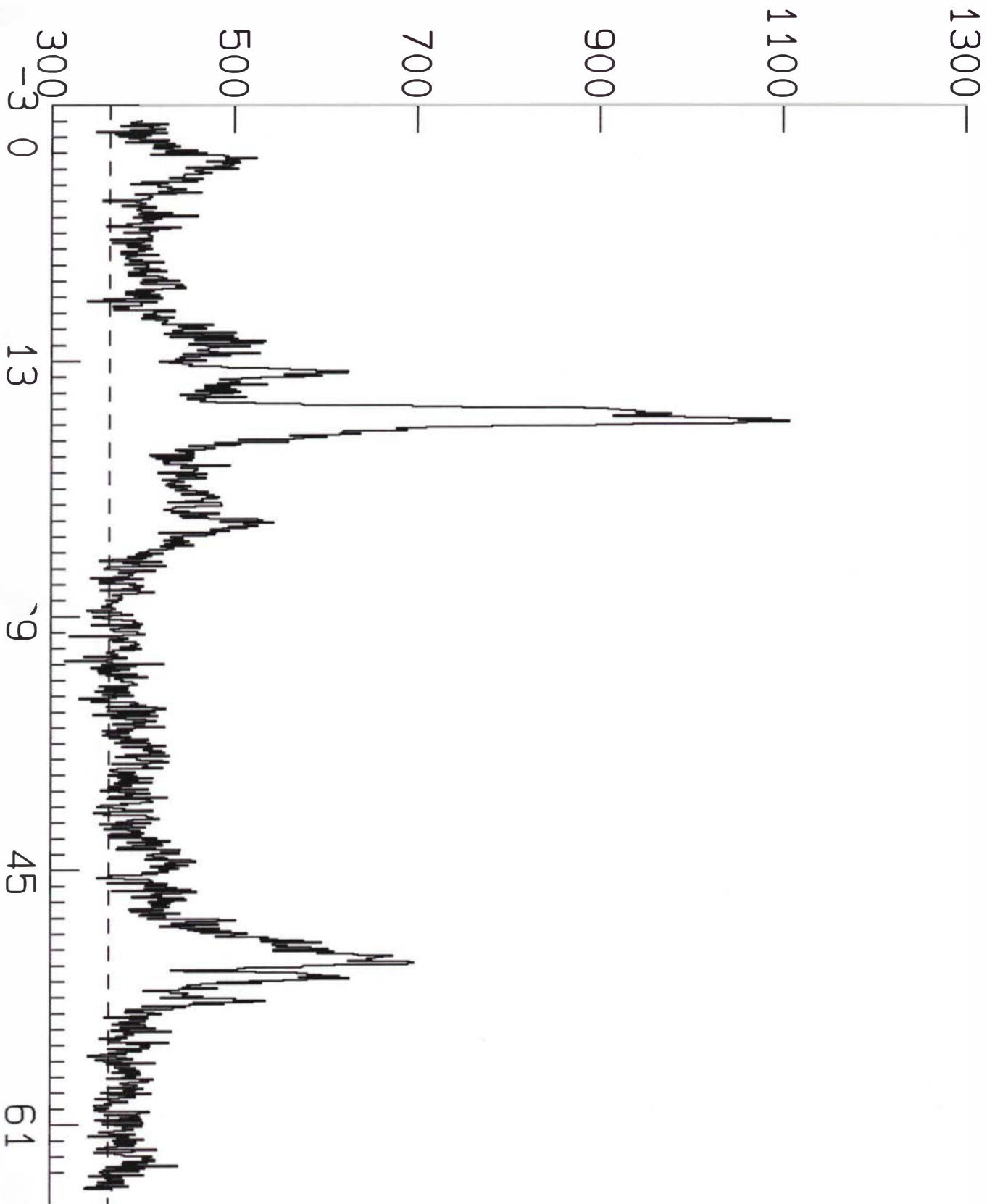
BATSE

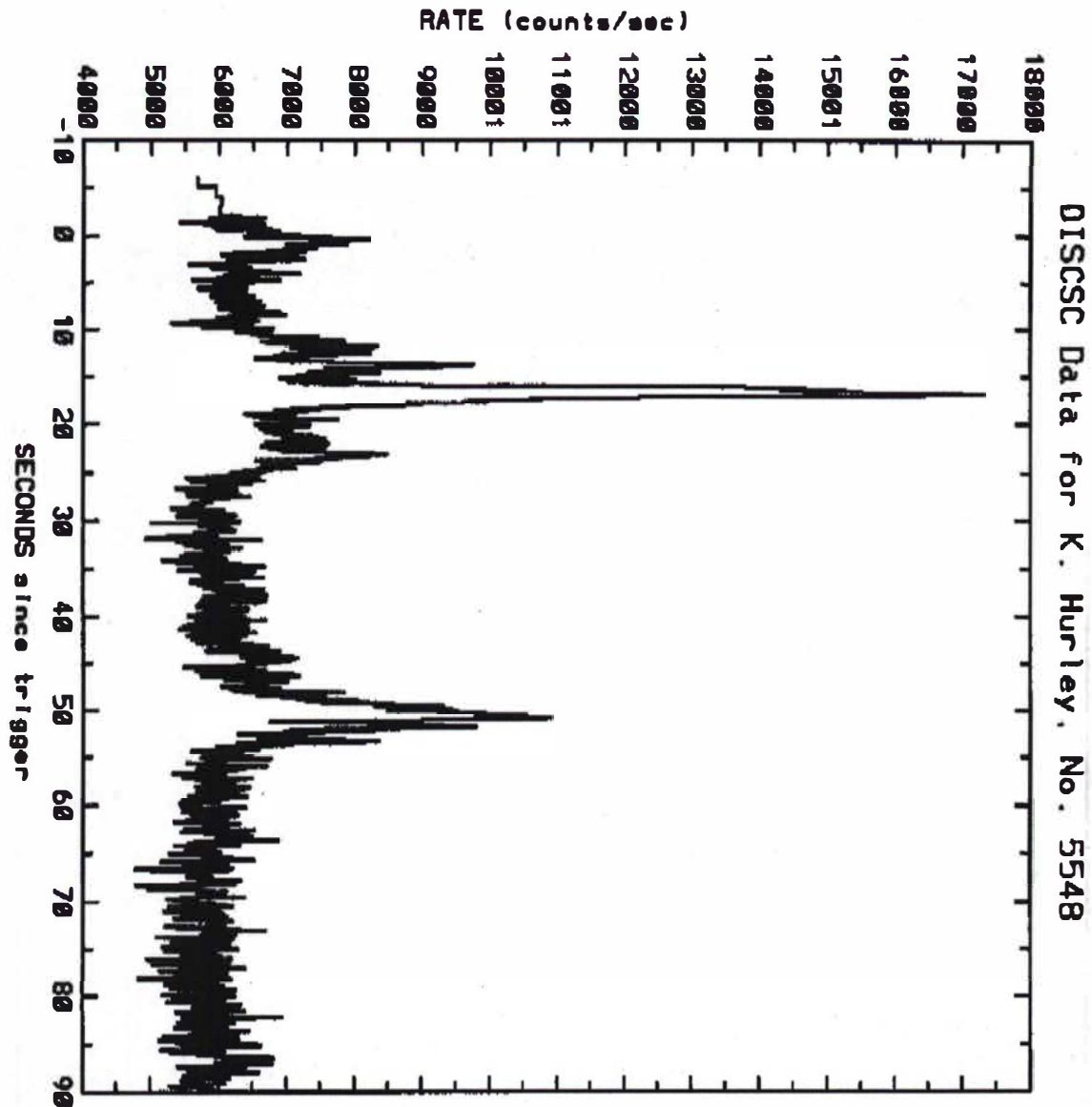
22/07/96

25506.506

25- 100 keV

COUNTS/0.064 S





13-AUG-1996 09:16:29

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 5548

Trigger Time:
10286 / 25596.506Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PNEB + DISCSCMinimum Integ. Time:
0.004 secondsDetectors (7.0):
--5--1-Discriminator:
(1, 2)Quality Mask:
801SP1

From Jerry.Fishman@msfc.nasa.gov Wed Jul 24 07:41 PDT 1996

From: "Fishman, Jerry" <Jerry.Fishman@msfc.nasa.gov>

To: "'Barthelmy'" <scott@xtelab.gsfc.nasa.gov>,
 "'Hurley'"

 <khurley@sunspot.ssl.berkeley.edu>

Cc: "'Fishman-SSL'" <fishman@ssl.msfc.nasa.gov>,

 "'Kouveliotou'"

 <kouveliotou@ssl.msfc.nasa.gov>,

 "'Meegan'"

 <meegan@ssl.msfc.nasa.gov>,

 "'Woods-Pete'"

 <woods@ssl.msfc.nasa.gov>

Subject: Trig. # 5548

Date: Wed, 24 Jul 1996 09:39:12 -0500

MIME-Version: 1.0

Content-Transfer-Encoding: 7bit

Note- This is a long, strong burst.

But it had a slow rise, so the BACODINE Loc. is WAY OFF.

The correct (Huntsville) loc. is being sent now (RA=29.6; Dec=31.7);
also consistent with the IPN, but ~10 deg. away.

Please send a revised IPN/BAC Notice ASAP, perhaps with a note.

This may be the first time the IPN loc. came before the Hsvl loc.?

Maybe we should work faster in Hsv'l on processing these strong ones? -
I'll blame it on Chip; he's not here.

Jerry

From WOODSP@SSLLES.MSFC.NASA.GOV Wed Jul 24 11:47 PDT 1996
Date: Wed, 24 Jul 1996 13:46:06 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
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.: 5549

TIME: TJD=0286 SECONDS=41969

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From WOODSP@SSLLES.MSFC.NASA.GOV Wed Jul 24 11:48 PDT 1996
Date: Wed, 24 Jul 1996 13:47:05 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@ests2.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.: 5550

TIME: TJD=0286 SECONDS=47814

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

Date: Oct 4 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?

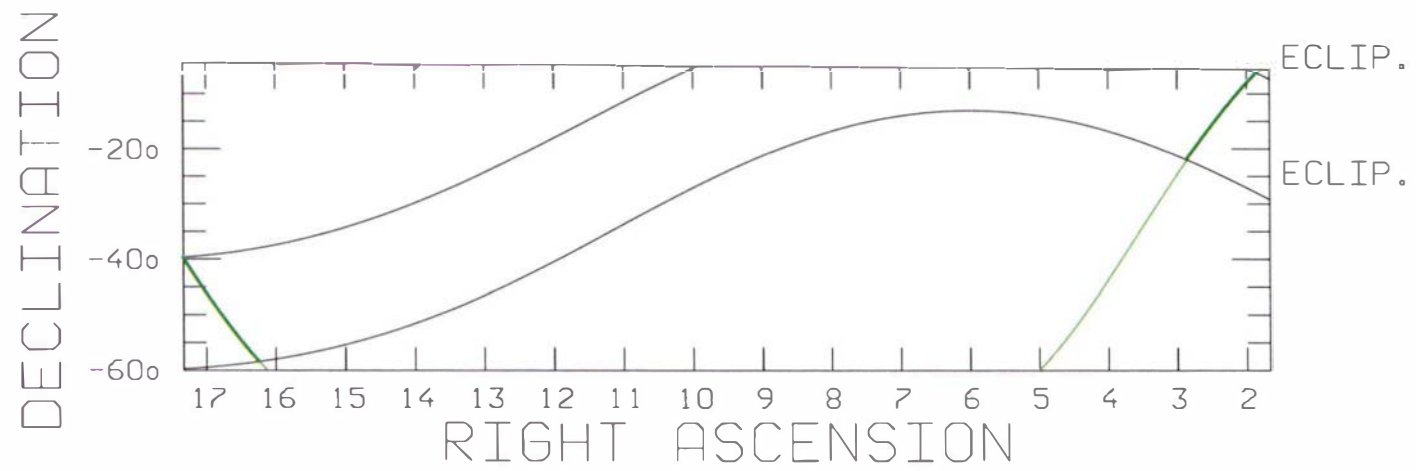
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

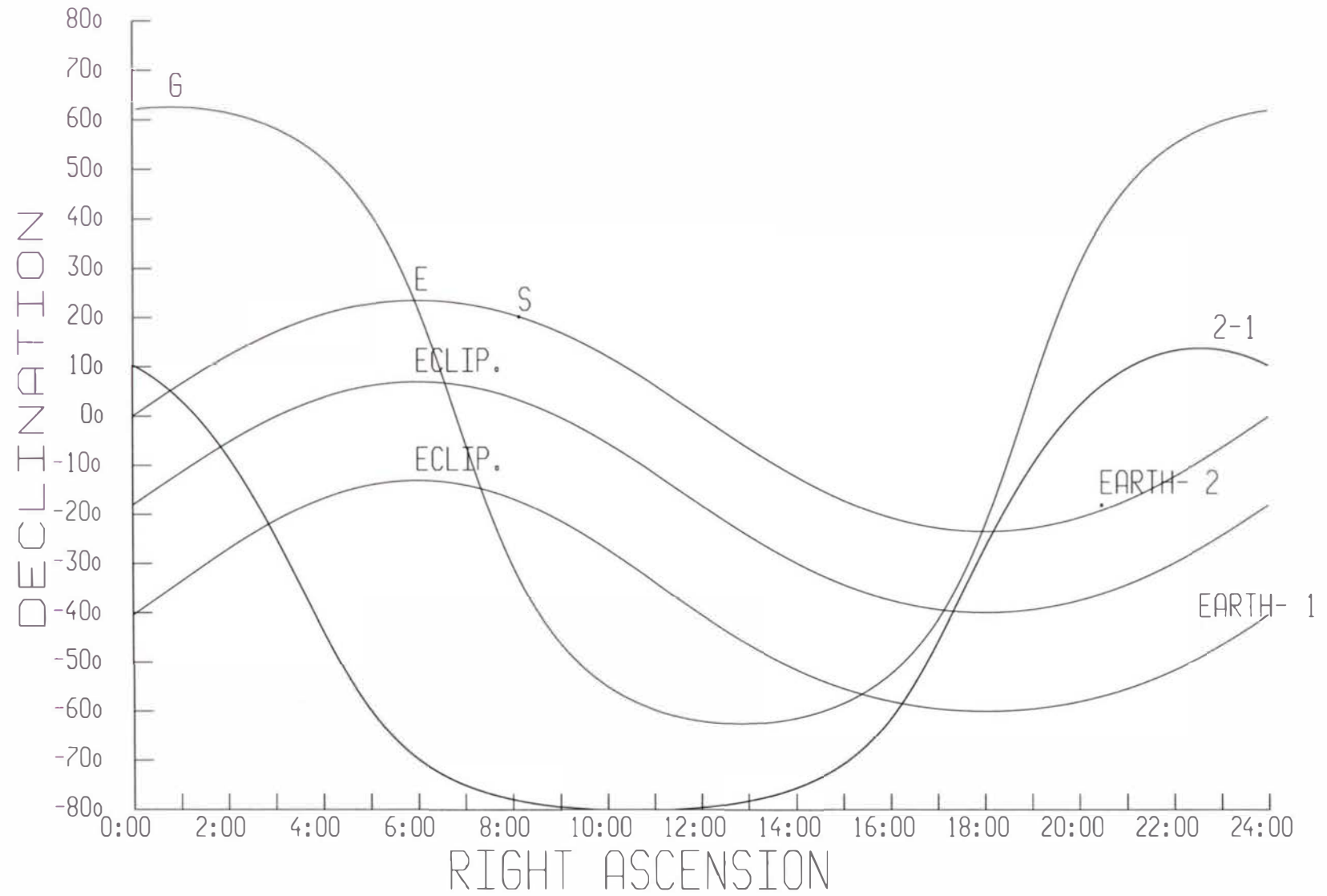
-
- ☒ ACCESS and MBL4 databases updated with identical times?

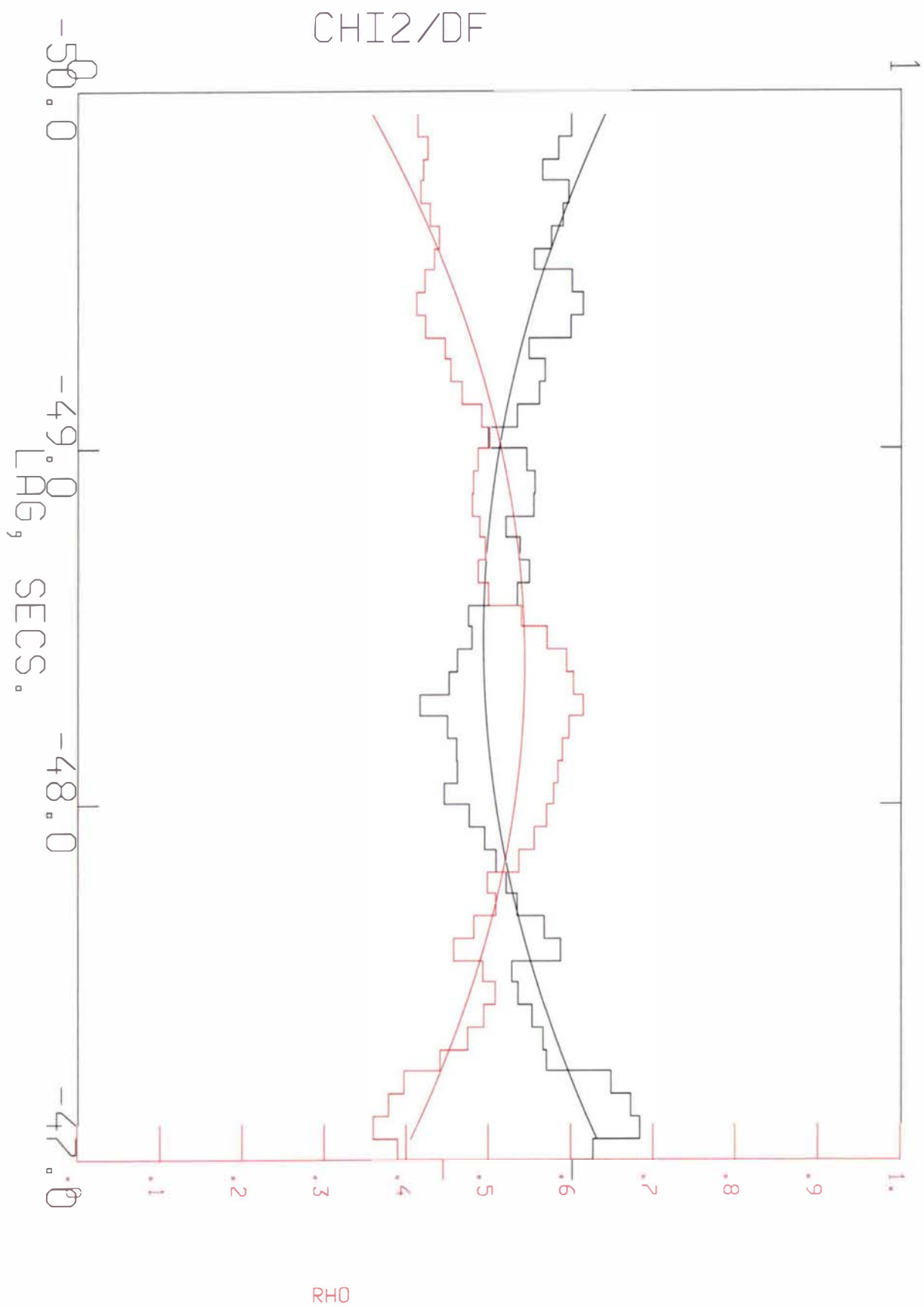


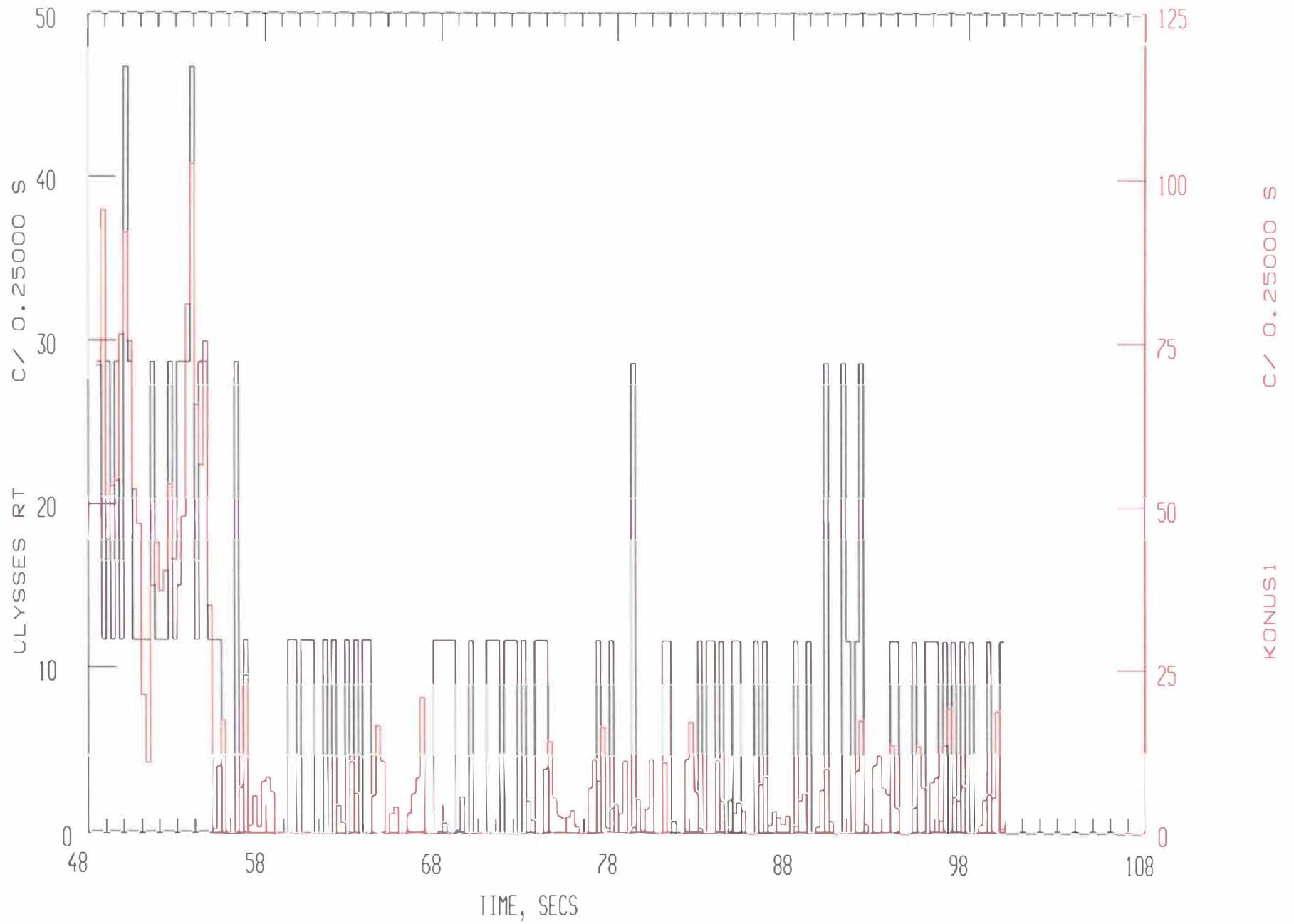
EVENT OF JUL 22, 1996 16:00

04/10/2011

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







KONUS 19960722 57706

ULYSSES RT

03 / 10 / 11

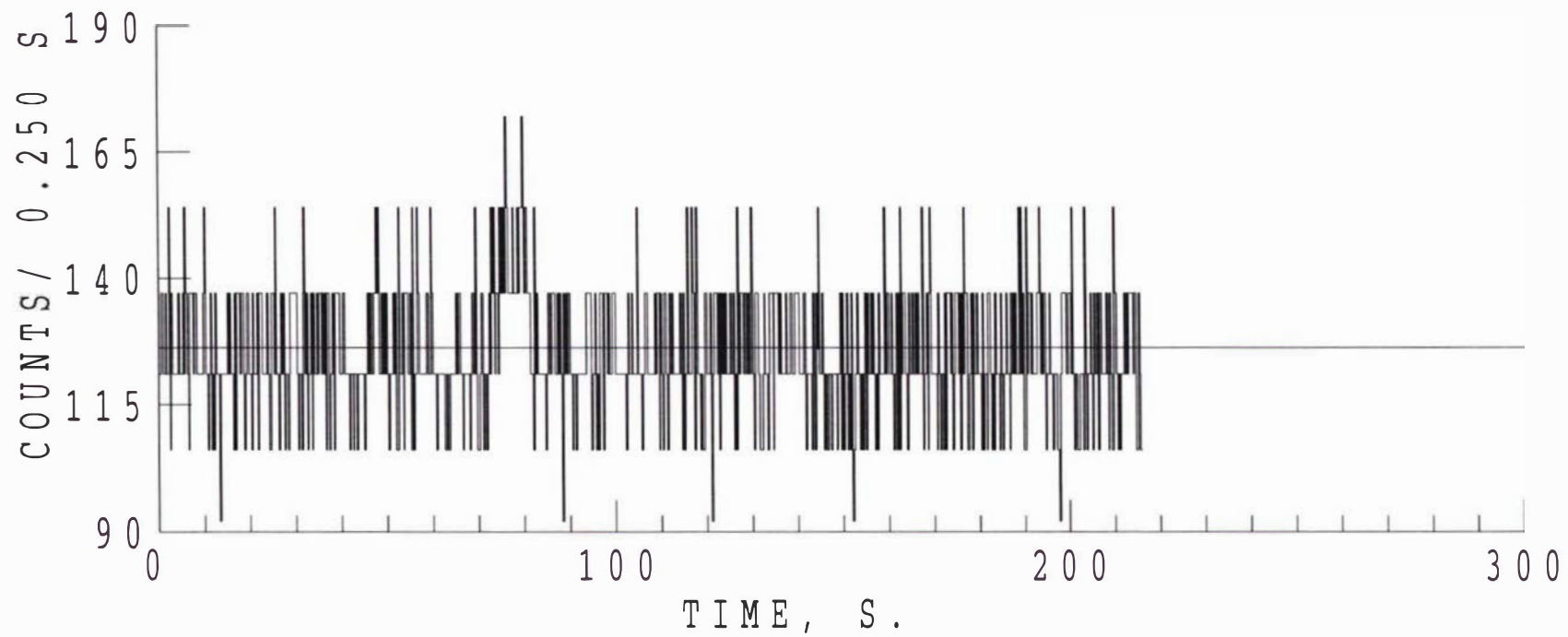
22 / 07 / 96 57600.207 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

||

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



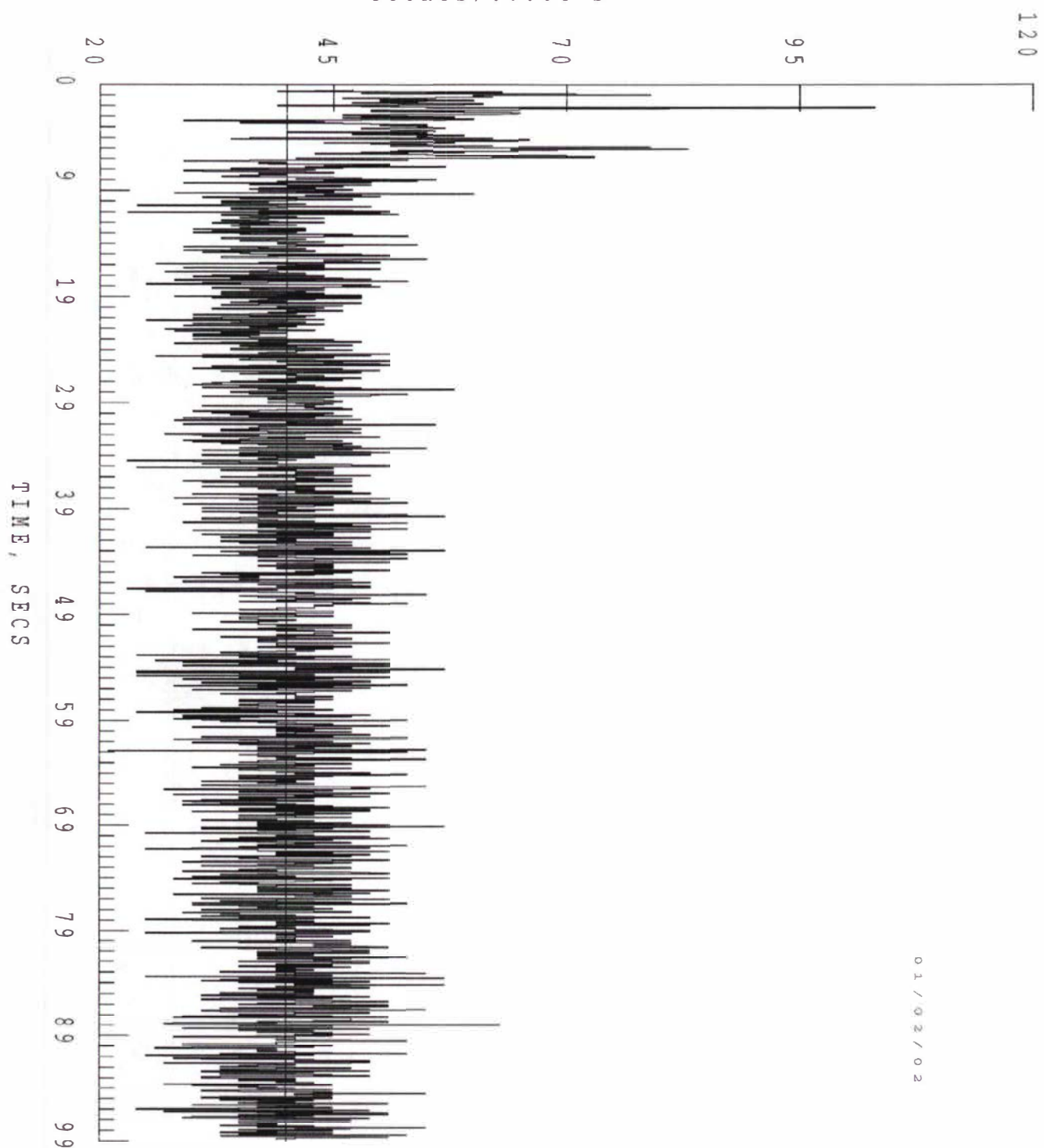
KONUS1

22/07/96

56346.728

50 - 200 keV

COUNTS/0.064 S



KONUS1 19960722 56346

ULYSSES RT

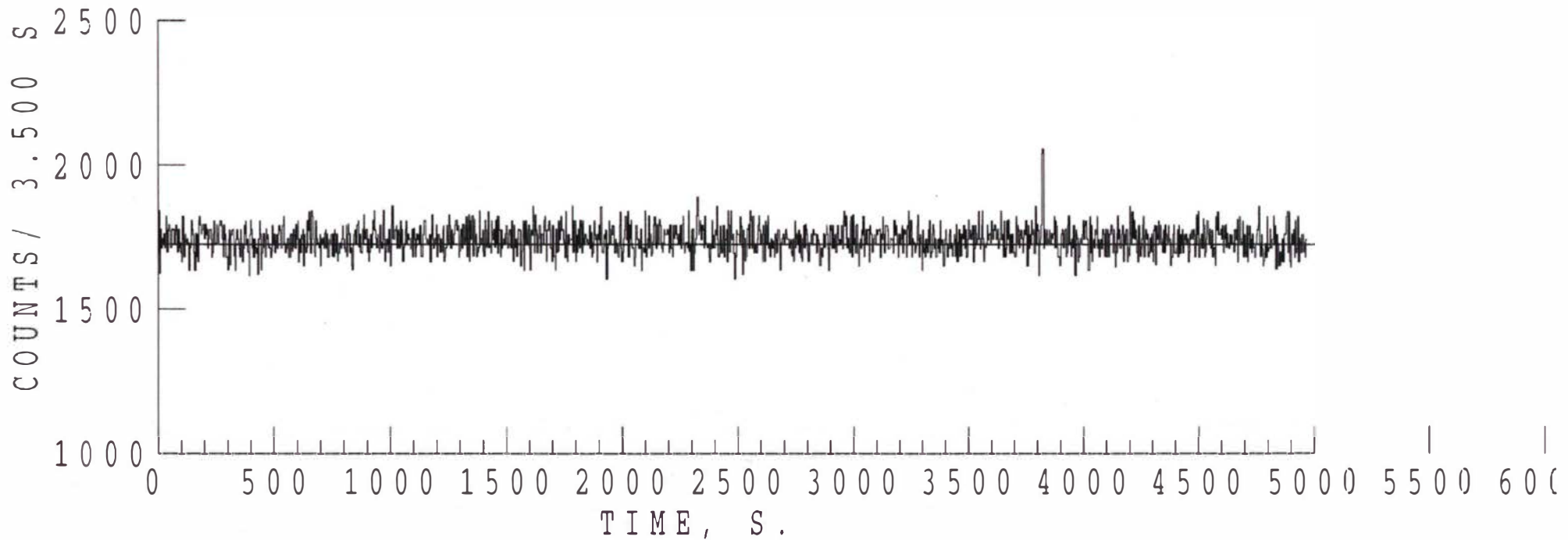
01/02/02

22/07/96 53856.160 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:28 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:27:40 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesl.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960722 was not detected by Konus

No feature corresponding to this event was seen by Konus.

Date: Mon, 5 Aug 1996 16:08:00 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608052308.QAA02533@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, teegarden@lheavx.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botesl.tesre.bo.cnr.it
Subject: GRB960722
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

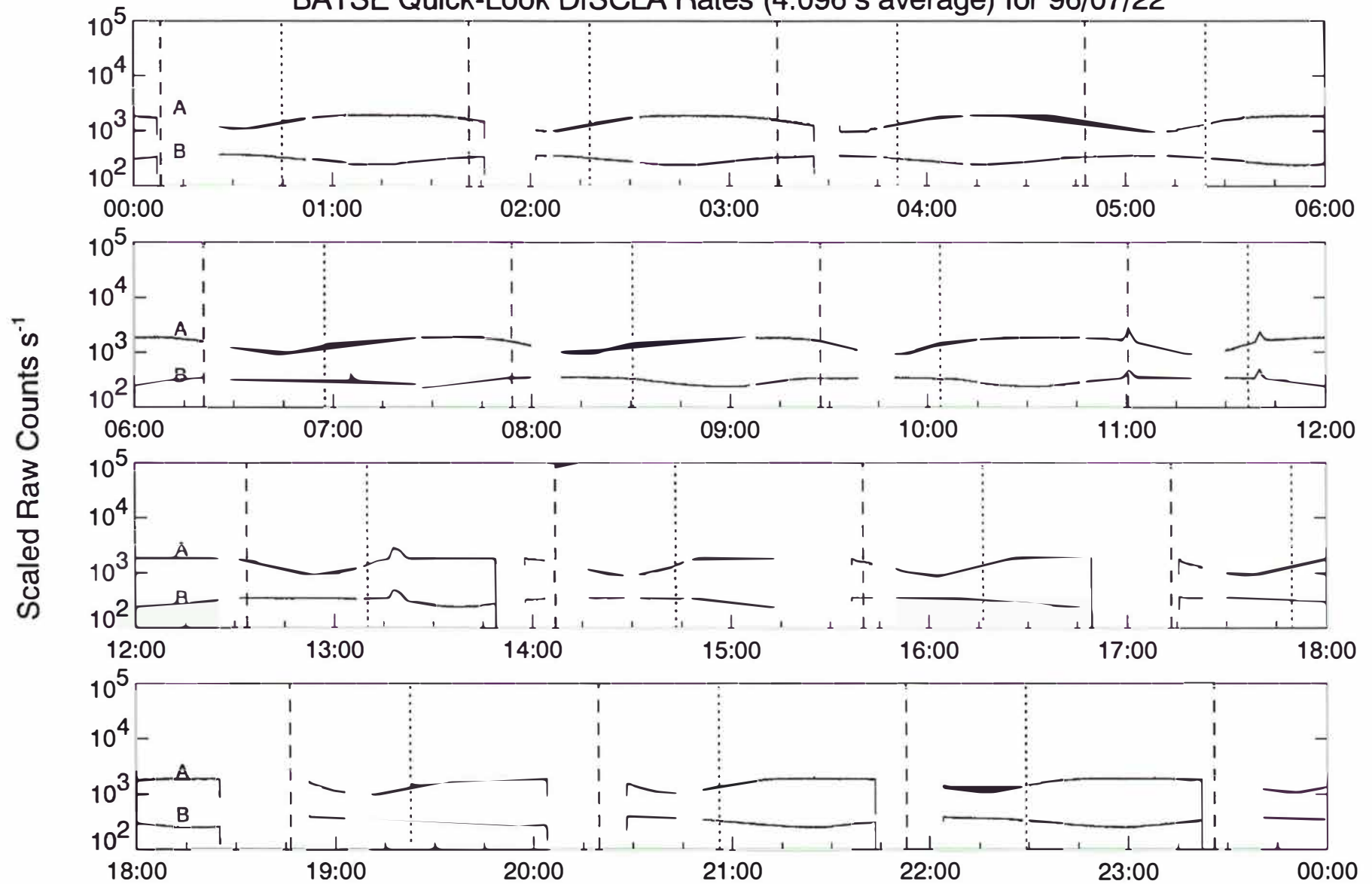
Ulysses triggered on a weak, 32 ms long event July 22
1996 around 22:17 UT at Ulysses.

The spacecraft was about 2400 light-seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

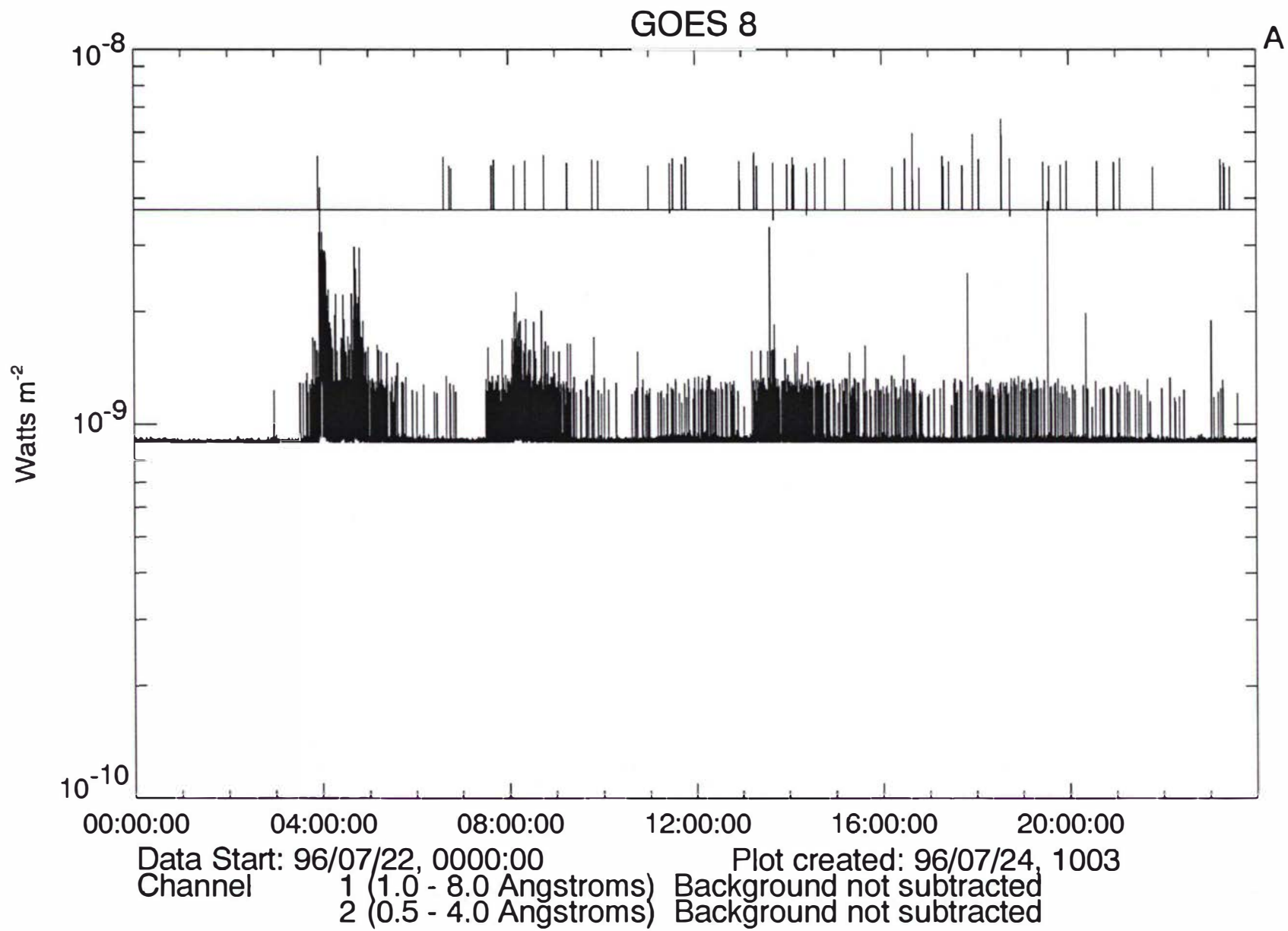
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/22



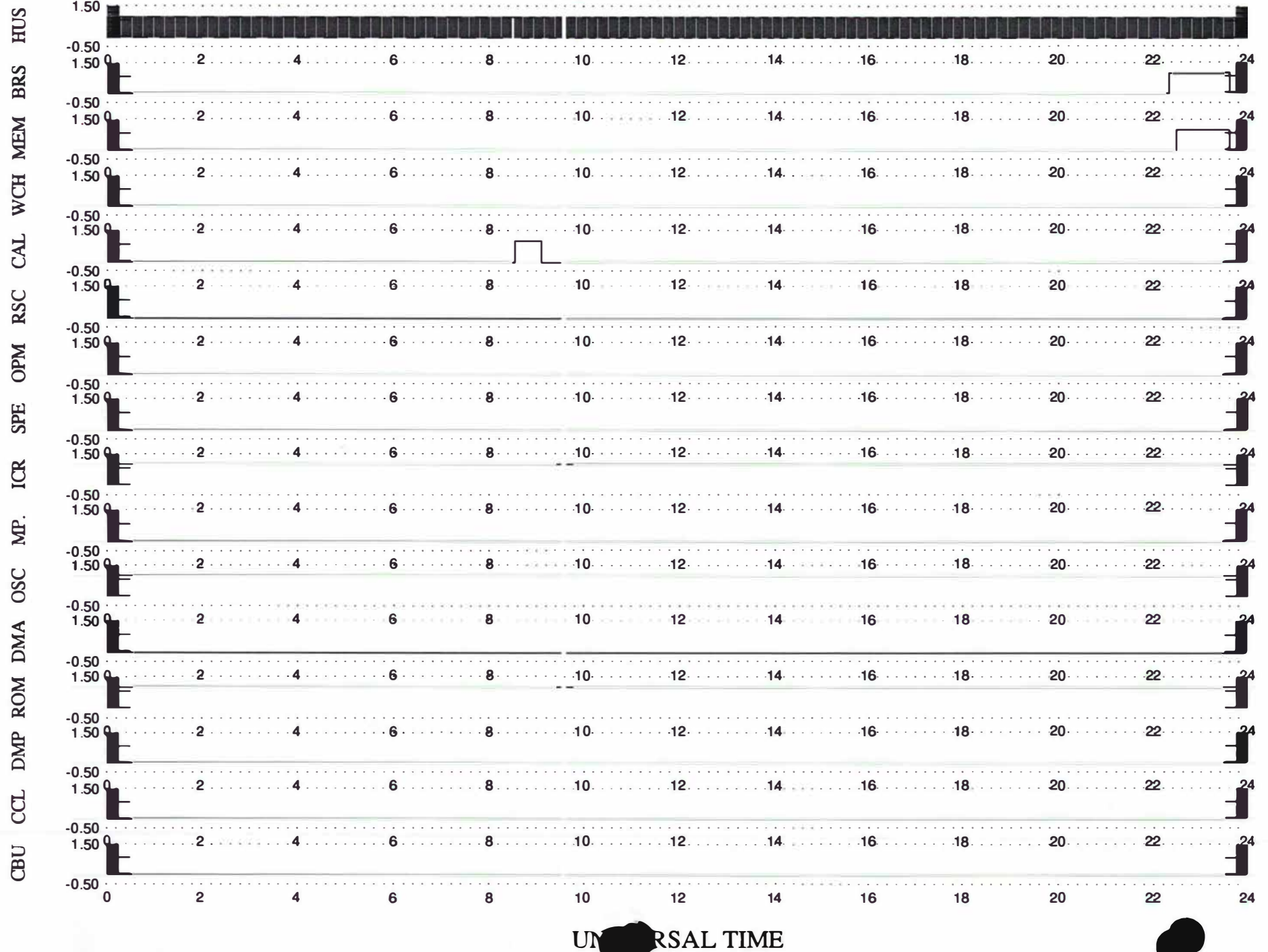
Current Time: 96/07/24, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

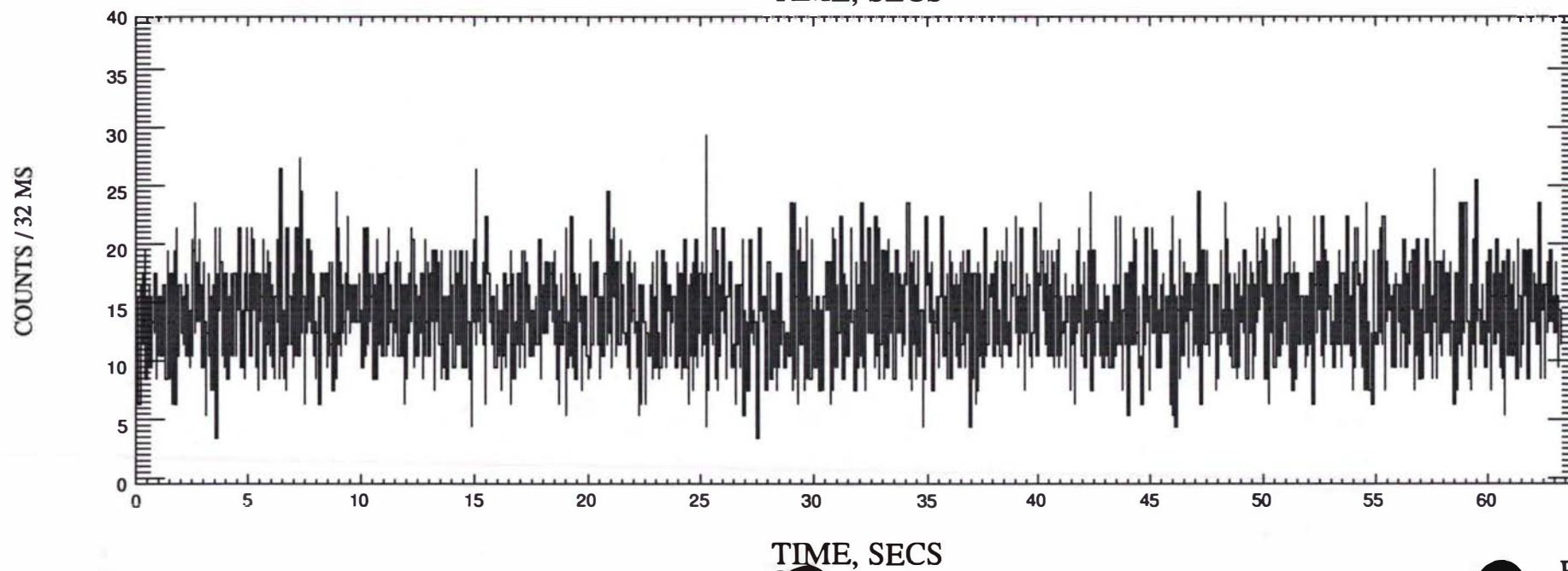
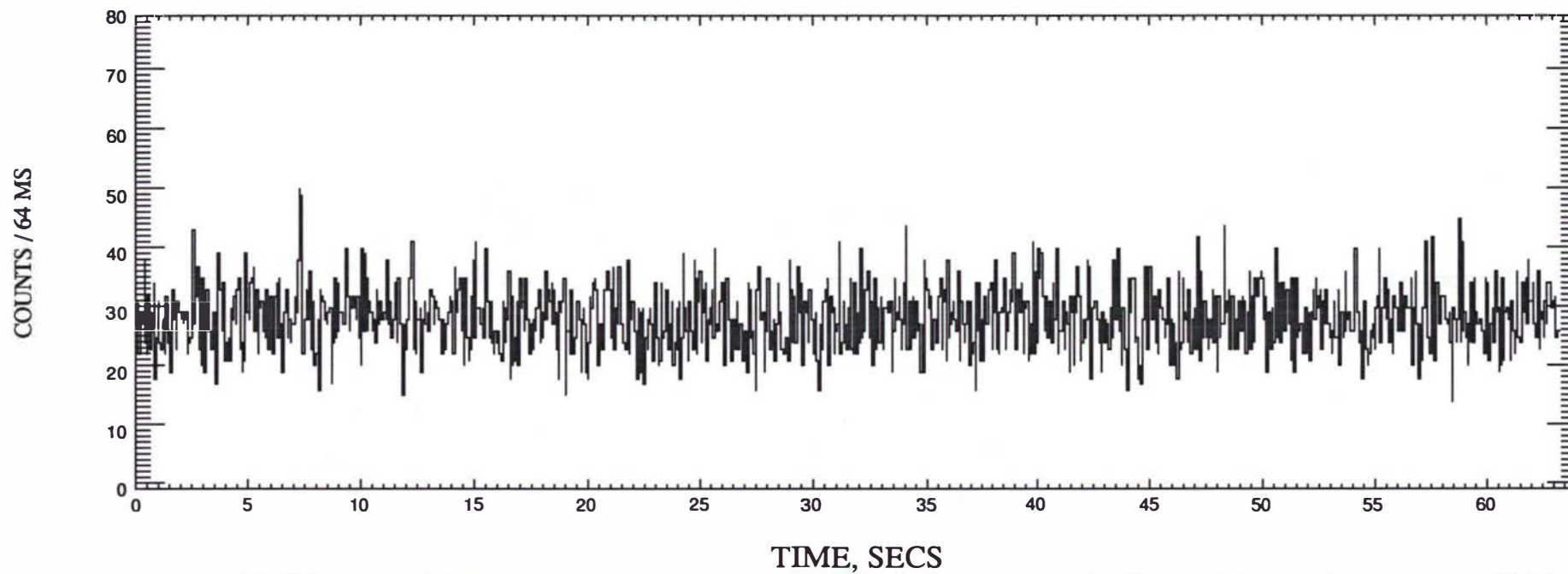
* Solar Burst Trigger
+ Solar Flare



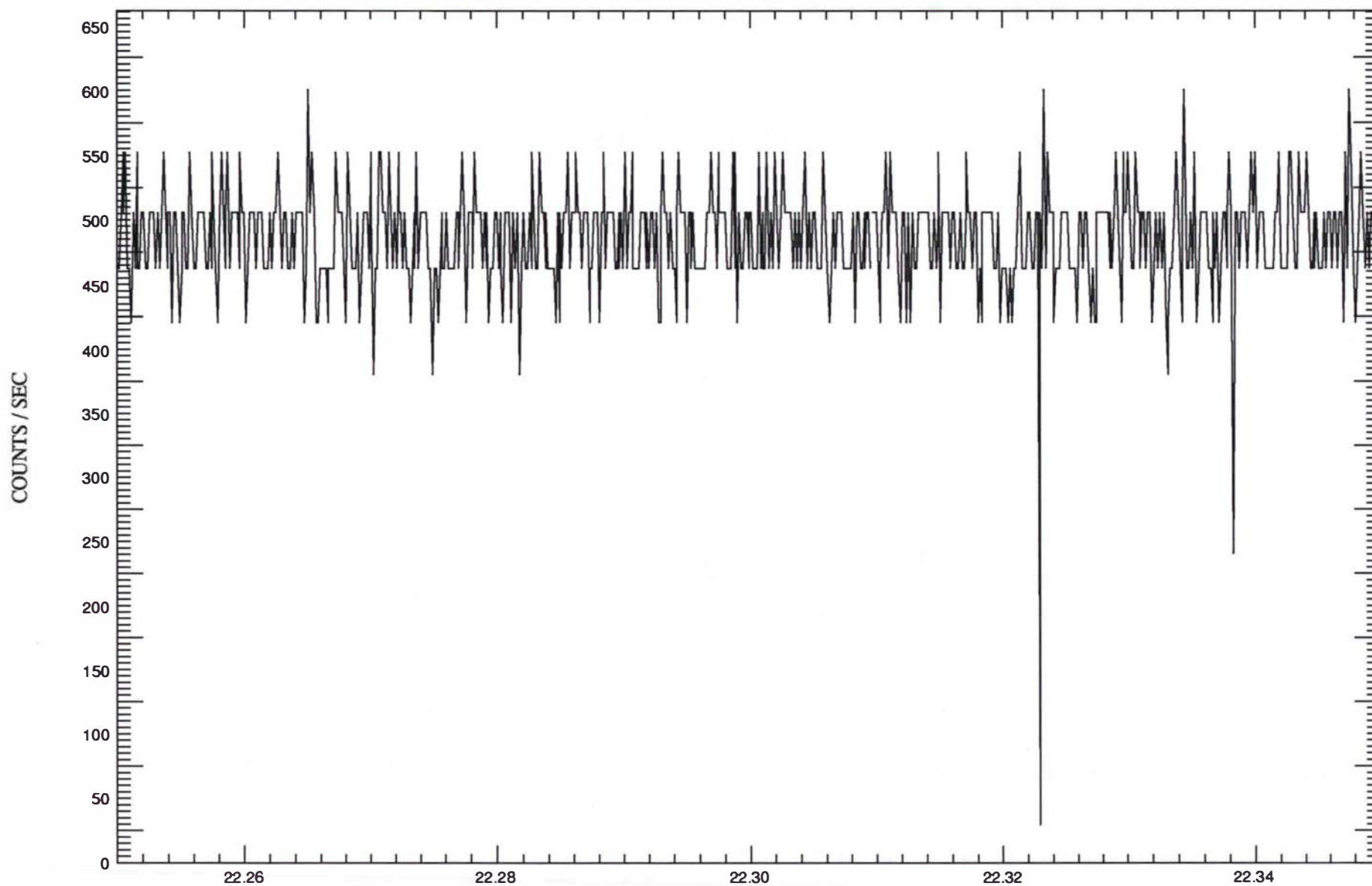
BURST NUMBER 0



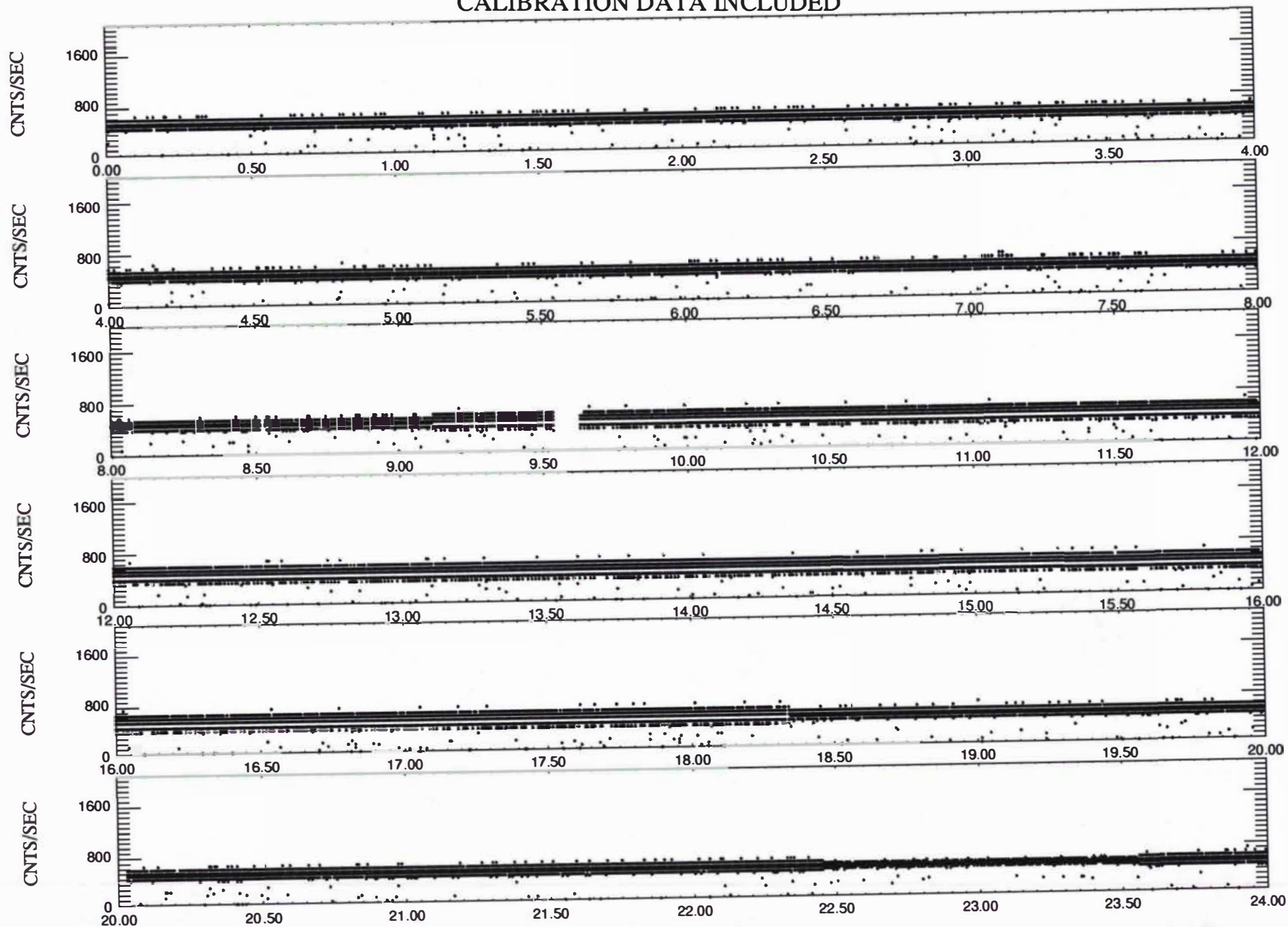
Burst Counter 0 at UT=22.302149115668 h=80287.737 s 22:18:07.737



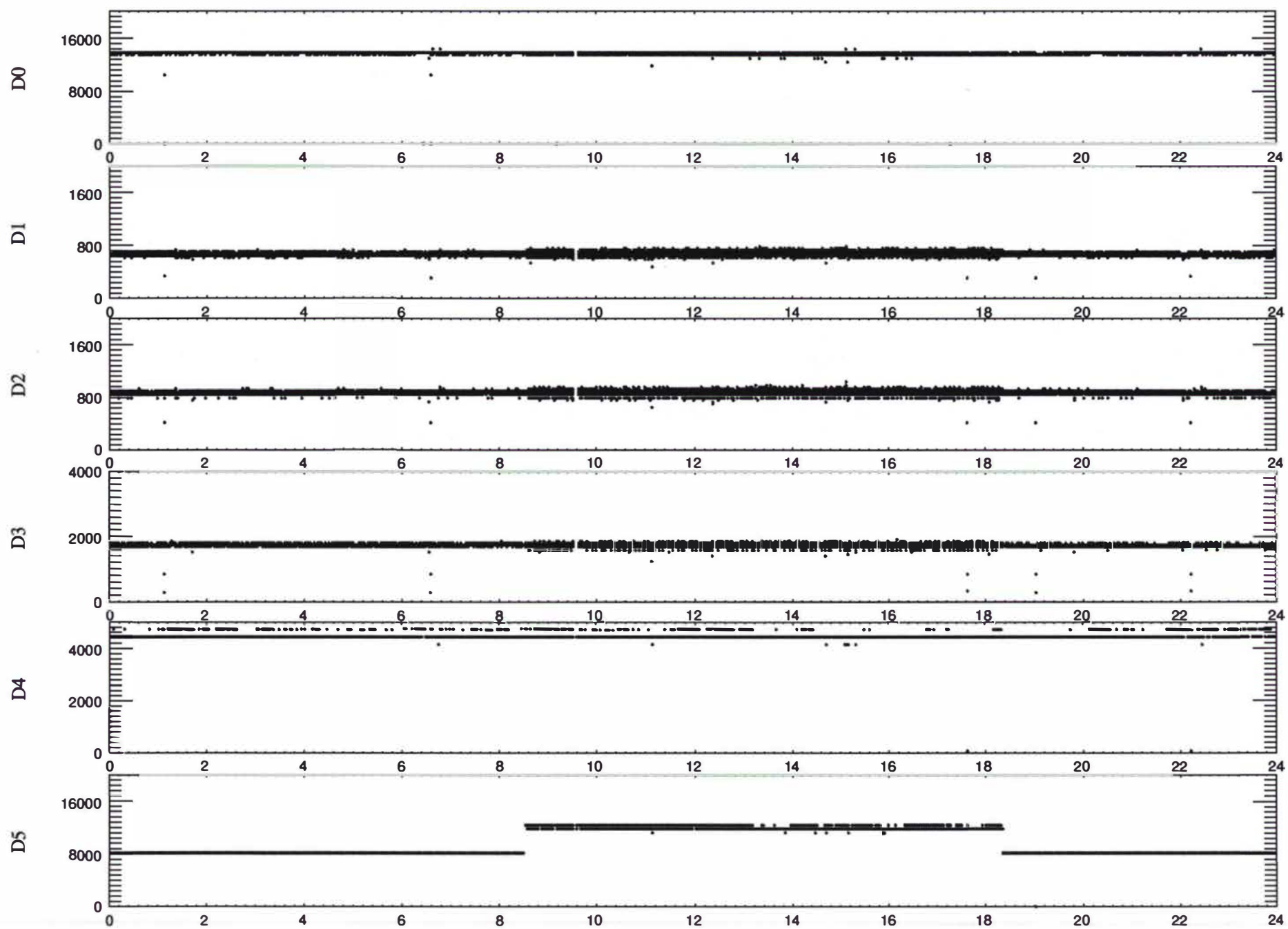
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Wed Jul 24 12:50 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 24 Jul 1996 14:49:36 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5551

BATSEARCH PROGRAM

100

BATSE BURST # 5551
EVENT OF 1996 JUL 23 DAY OF YEAR=205
EVENT CROSSING TIME AT BATSE : 17161. S. OR 04:46:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 95.000 43.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 7/ 96 IS:
RA= 157.984 DEC= 42.902 DIST= 4.887 AU
BATSE-ULYSSES DISTANCE = 731056264. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=135.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1725.55 SECS.
CROSSING TIME AT ULYSSES IS 15435. S. OR 04:17:15 +/- 322.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 7/ 96 IS:
RA= 87.956 DEC= 23.799 DIST= 2.271 AU
MARS-BATSE DISTANCE = 339774496. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=159.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1064.59 SECS.
CROSSING TIME AT MARS IS 16096. S. OR 04:28:16 +/- 51.33 SECONDS

BATSE BURST TRIGGER

NO.: 5551

TIME: TJD=0287 SECONDS=17161

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=168.0 AZIMUTH=305.8 ERROR=1.5 DEGREES

COMMENTS:

DOUBLE PEAK GRB LASTING ~ 90 S. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #

5551

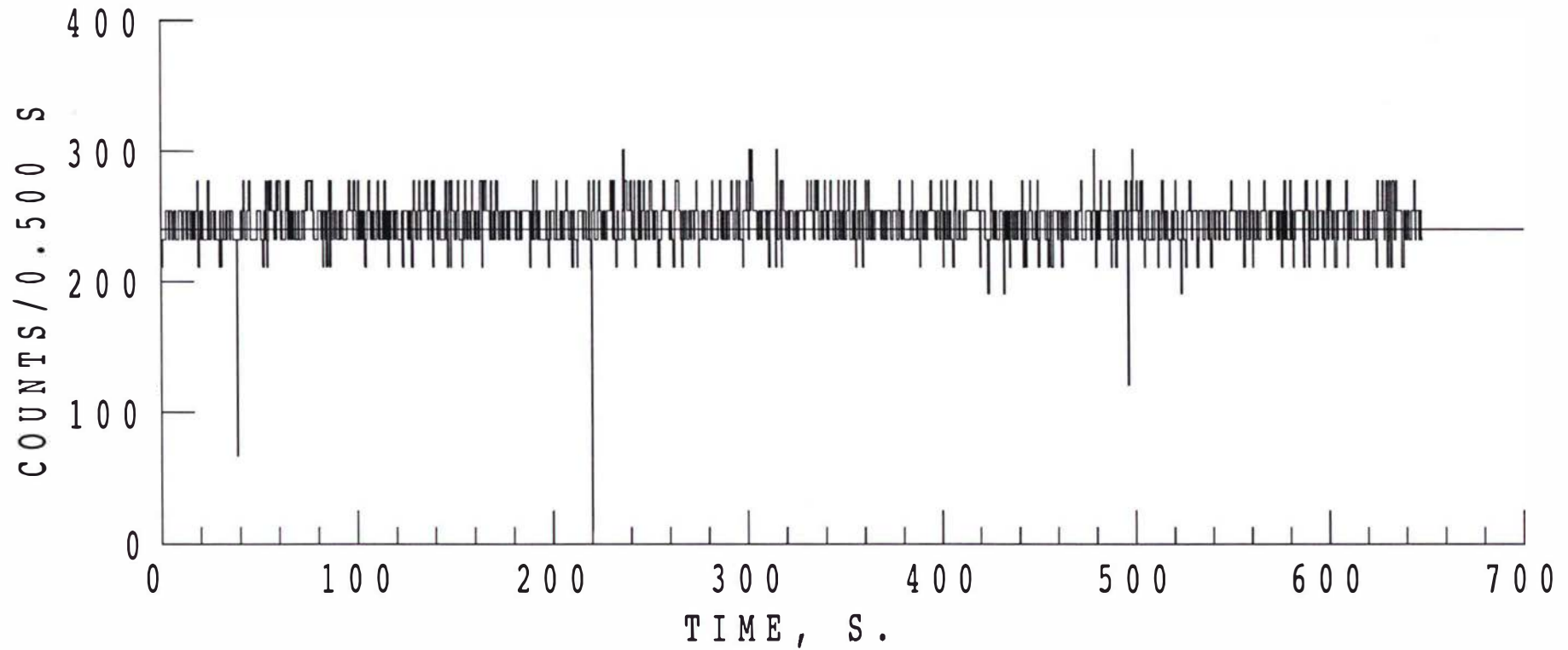
25 / 7 / 96

ULYSSES RT

23 / 7 / 96 15120.034 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

29 / 01 / 00

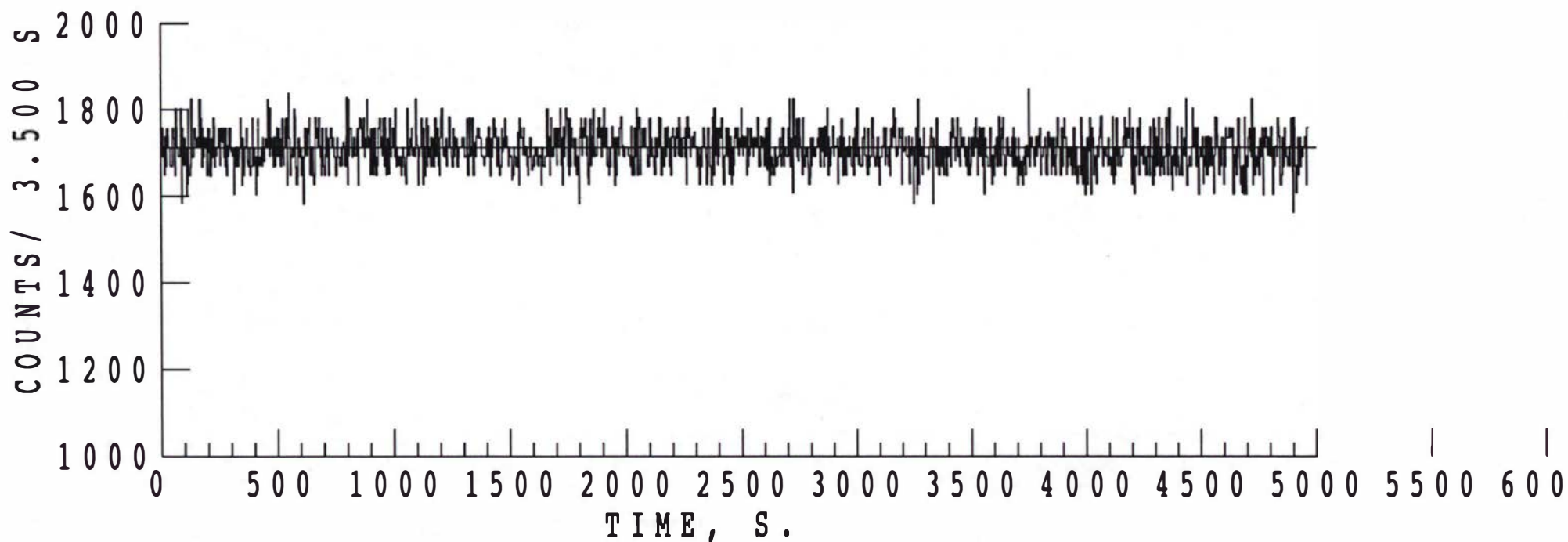
23 / 07 / 96 23184.141 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX

HUS DATA

19 / 07 / 05

ULYSSES RT

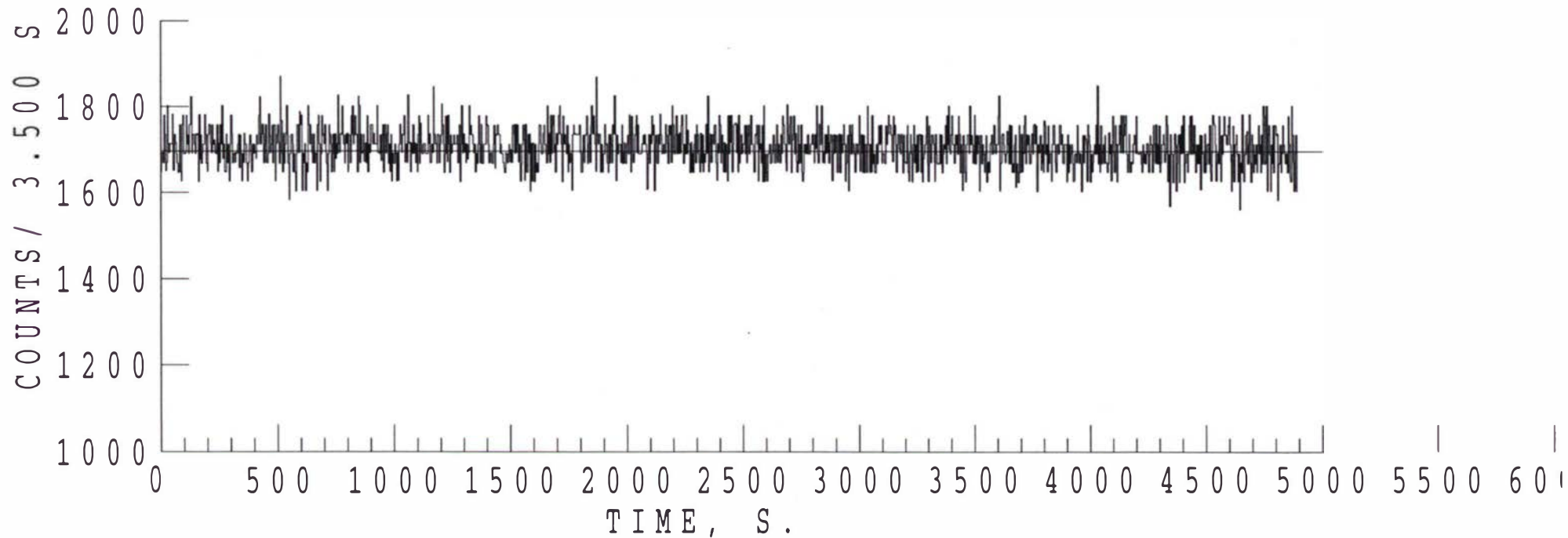
23 / 07 / 96 23220.141 s

0.500 S INTERVALS REGROUPED BY 7

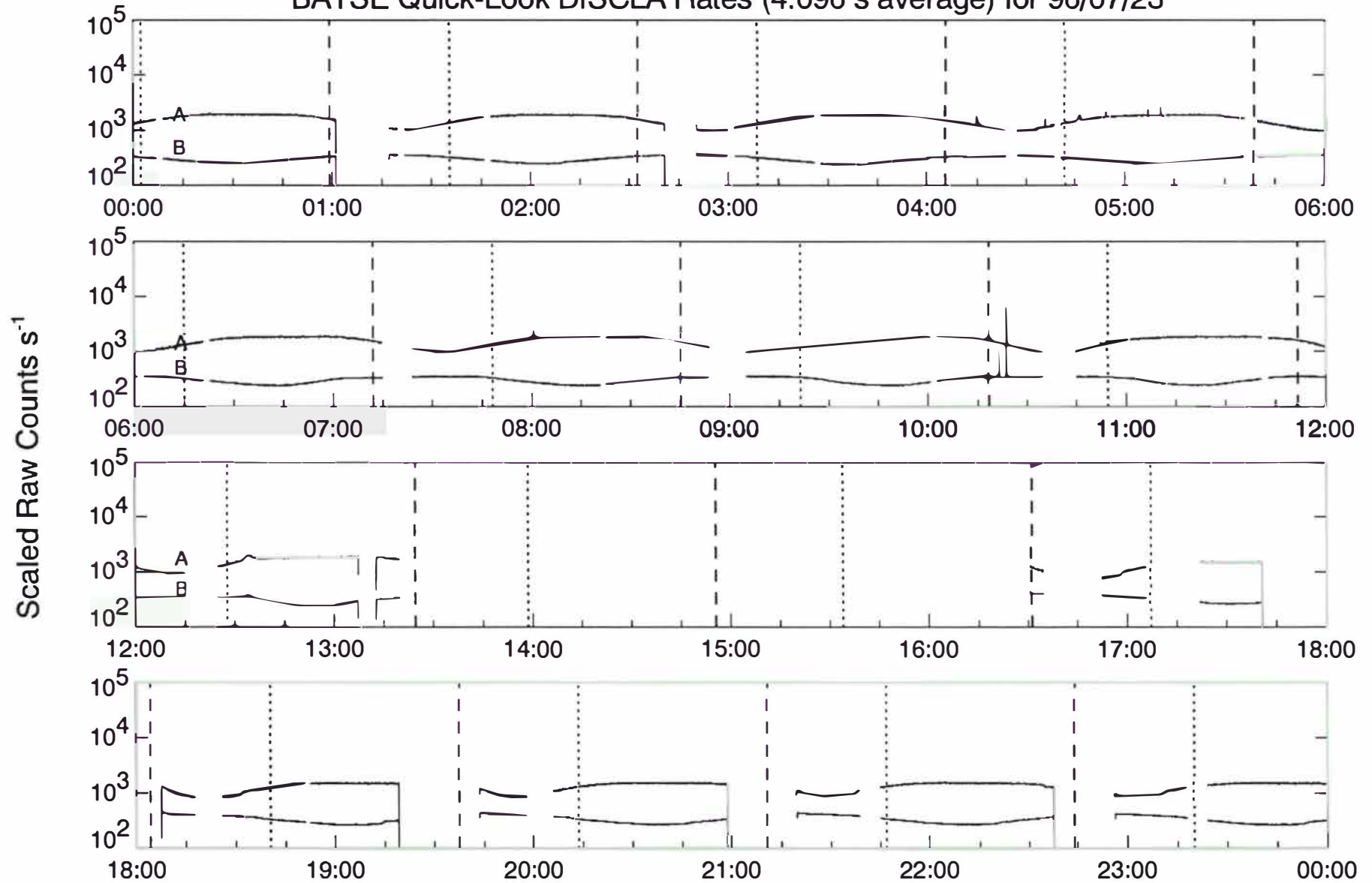
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



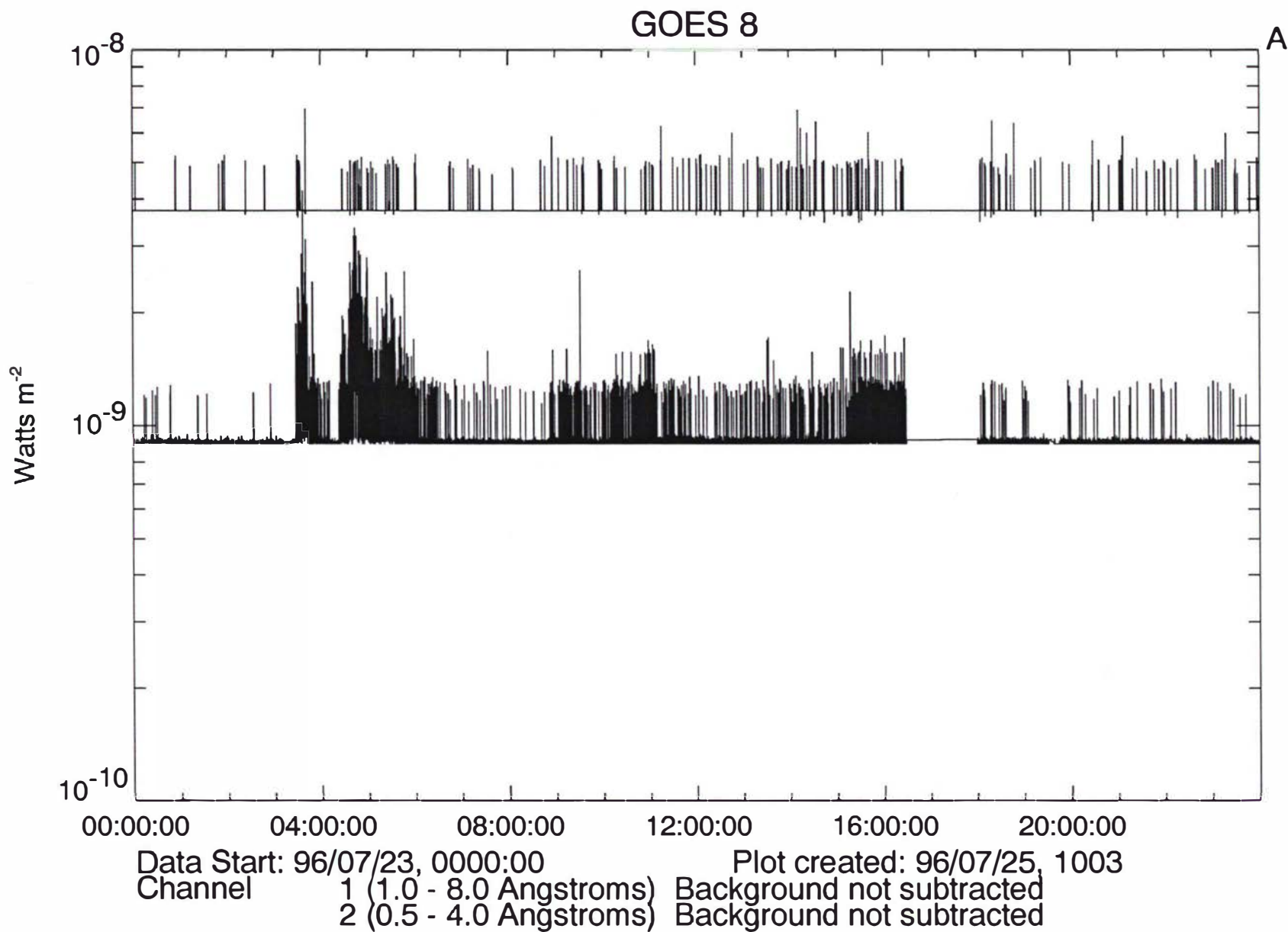
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/23



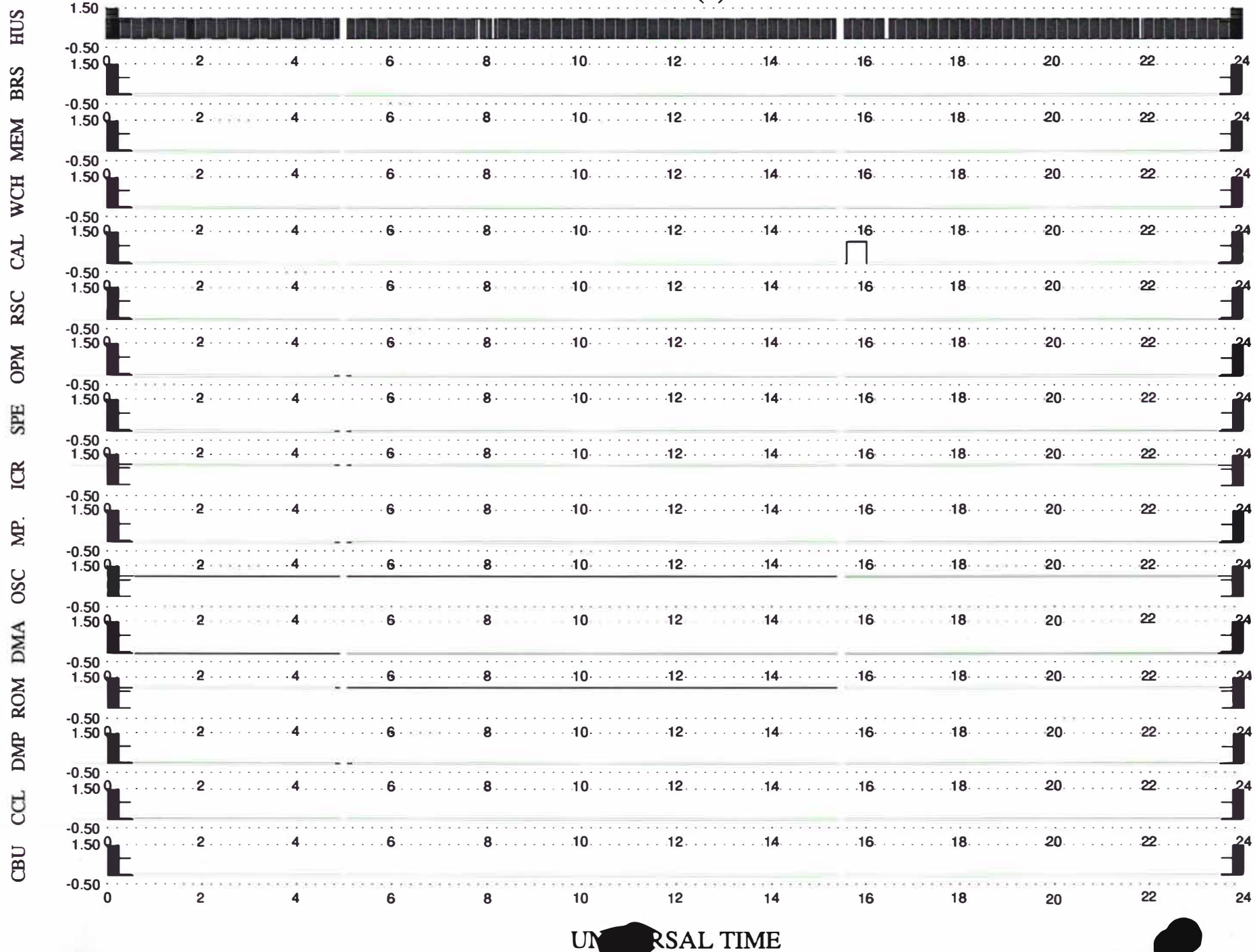
Current Time: 96/07/25, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

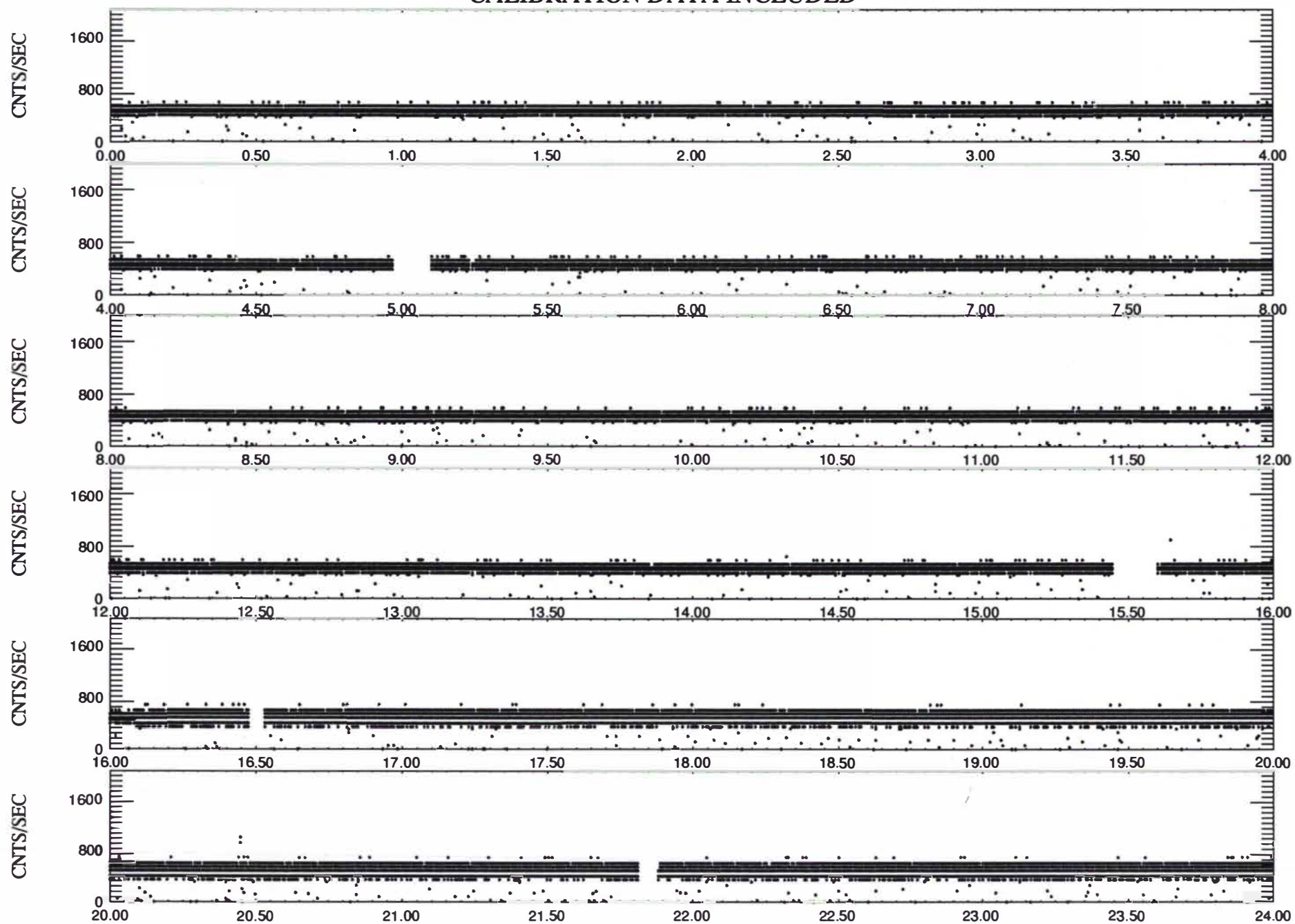
* Solar Burst Trigger
 + Solar Flare



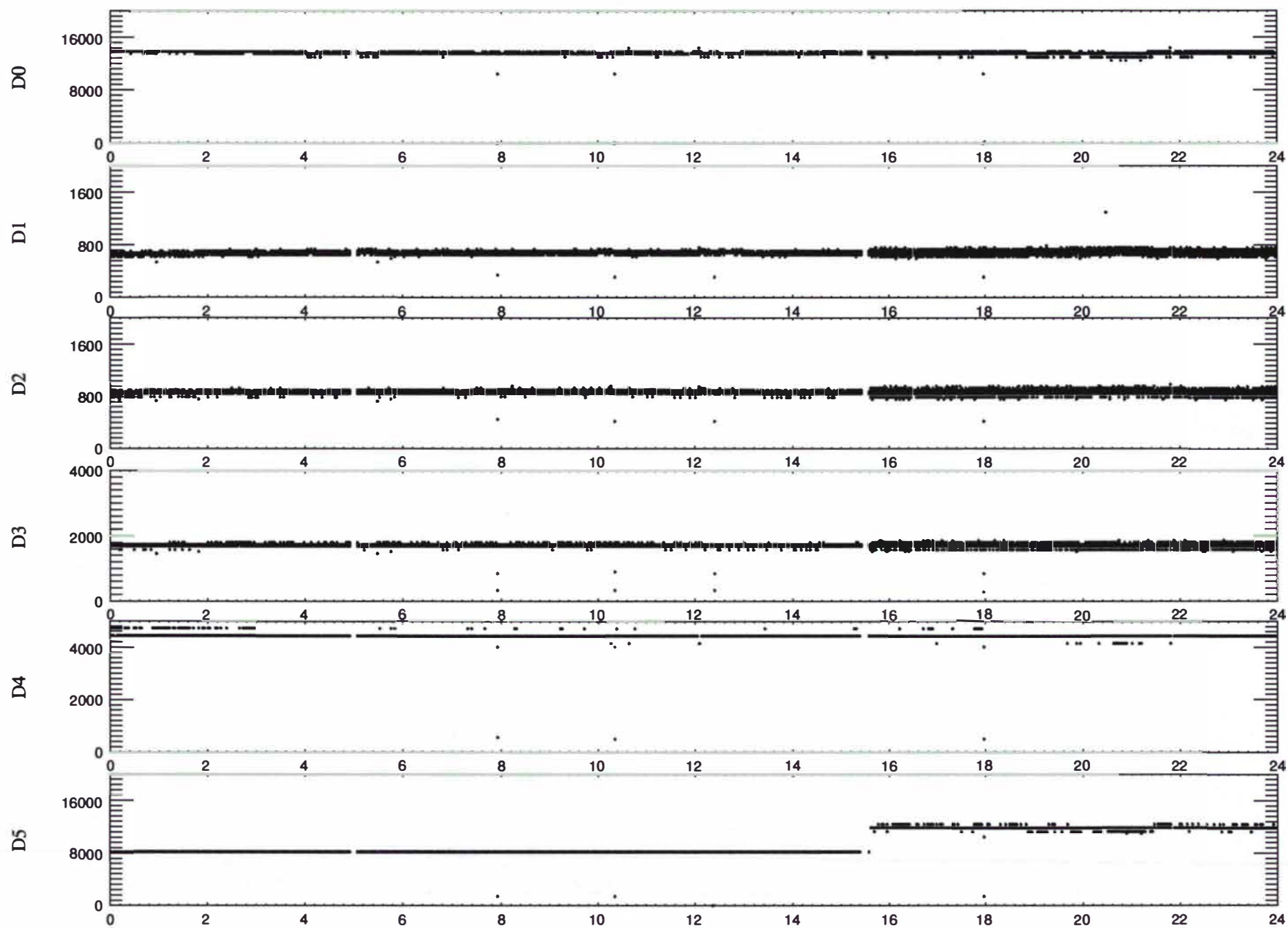
NO BURST (0)



CALIBRATION DATA INCLUDED

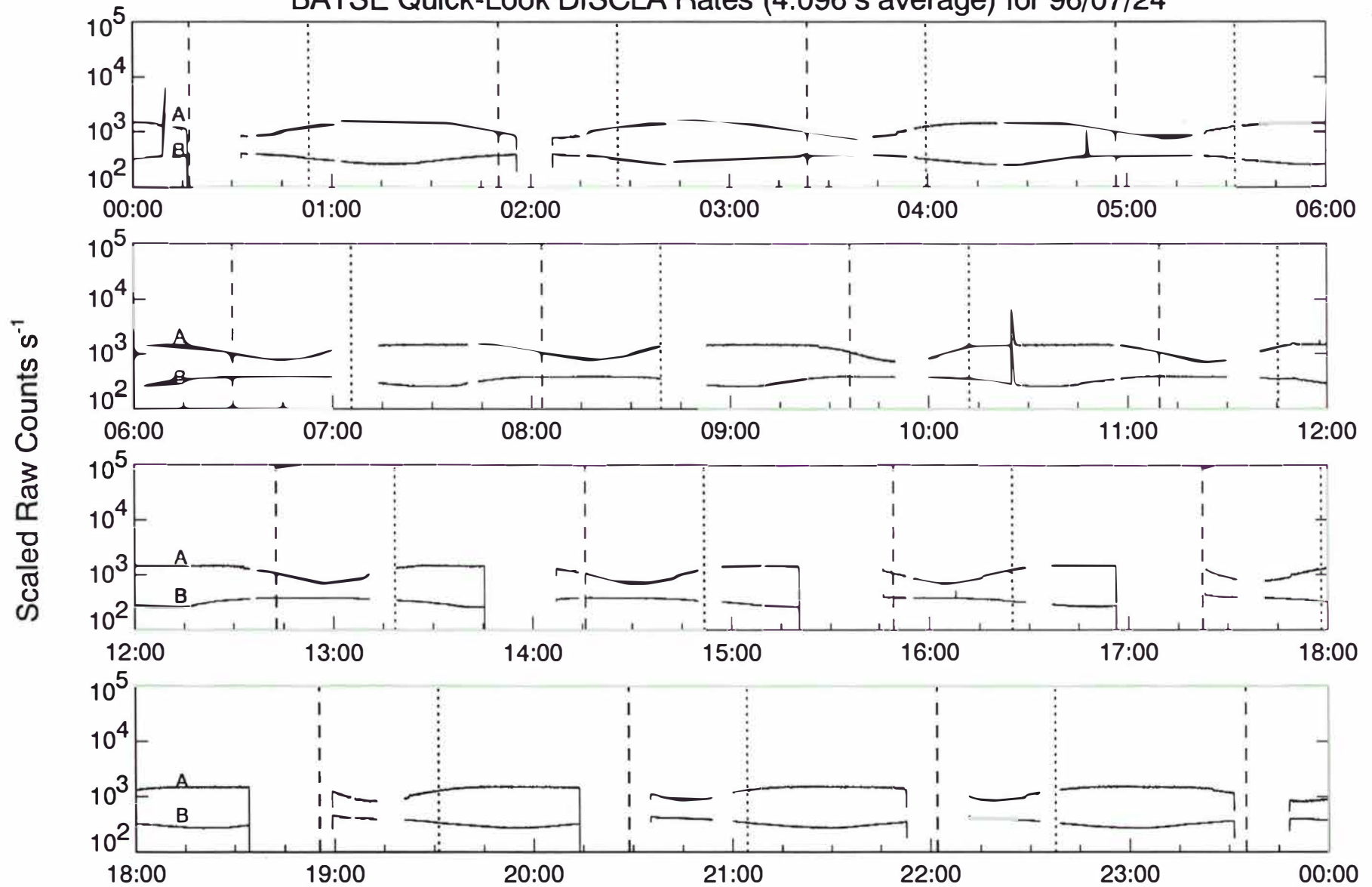


UNIVERSAL TIME



UNIVERSAL TIME

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/24



Current Time: 96/07/26, 1004 EDT

A: Channel 0 Most Sunward LAD

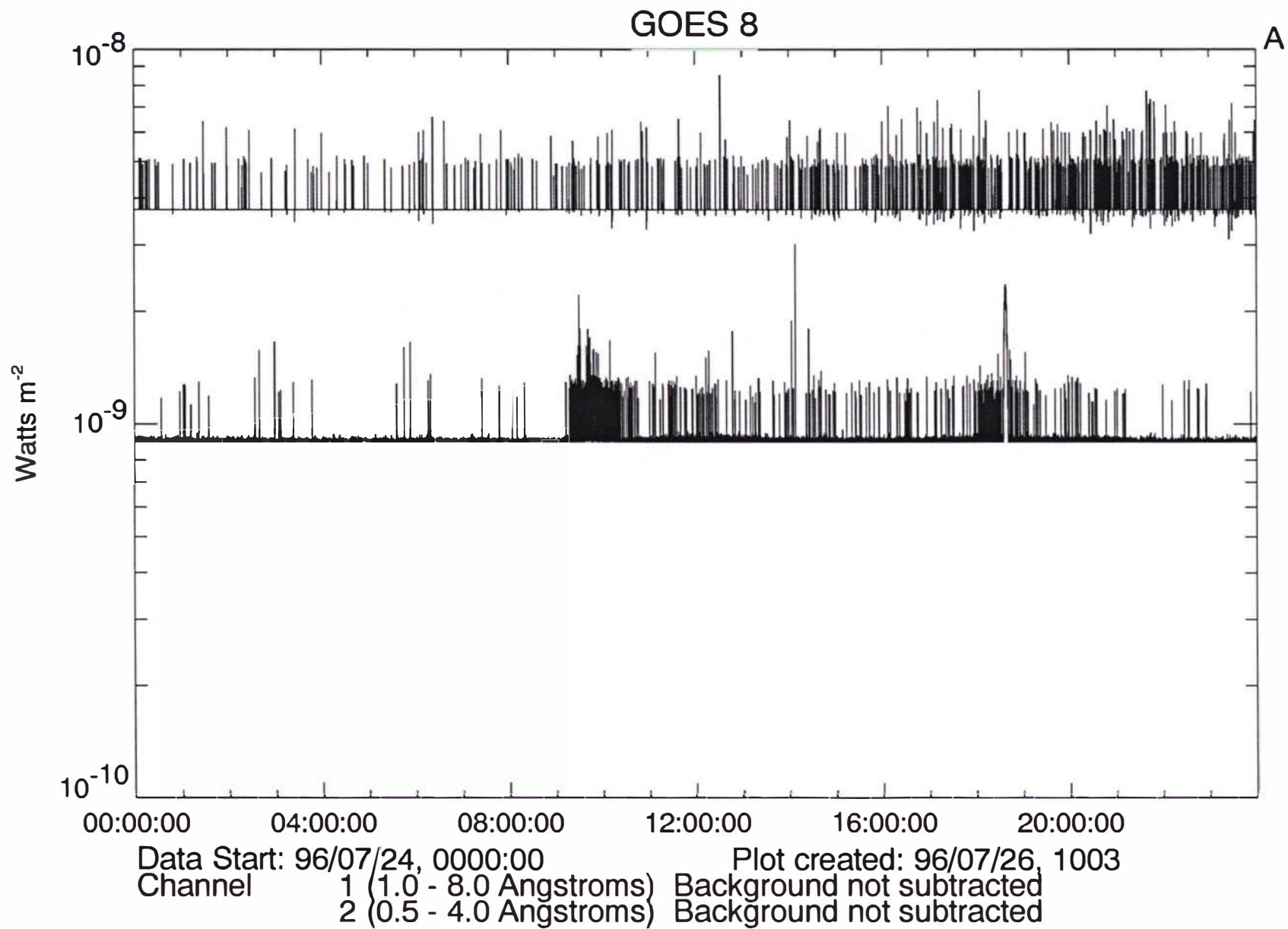
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry

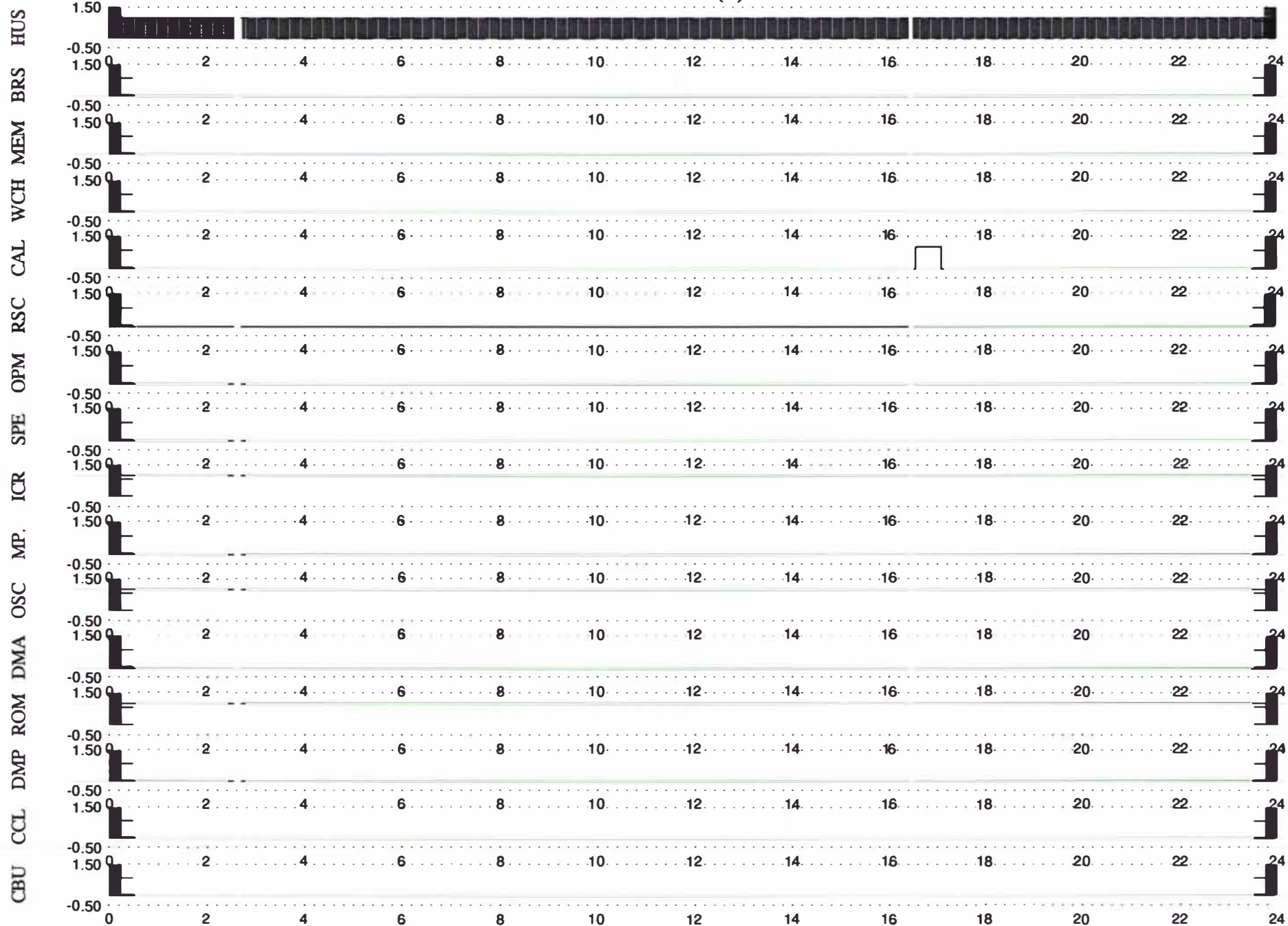
Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

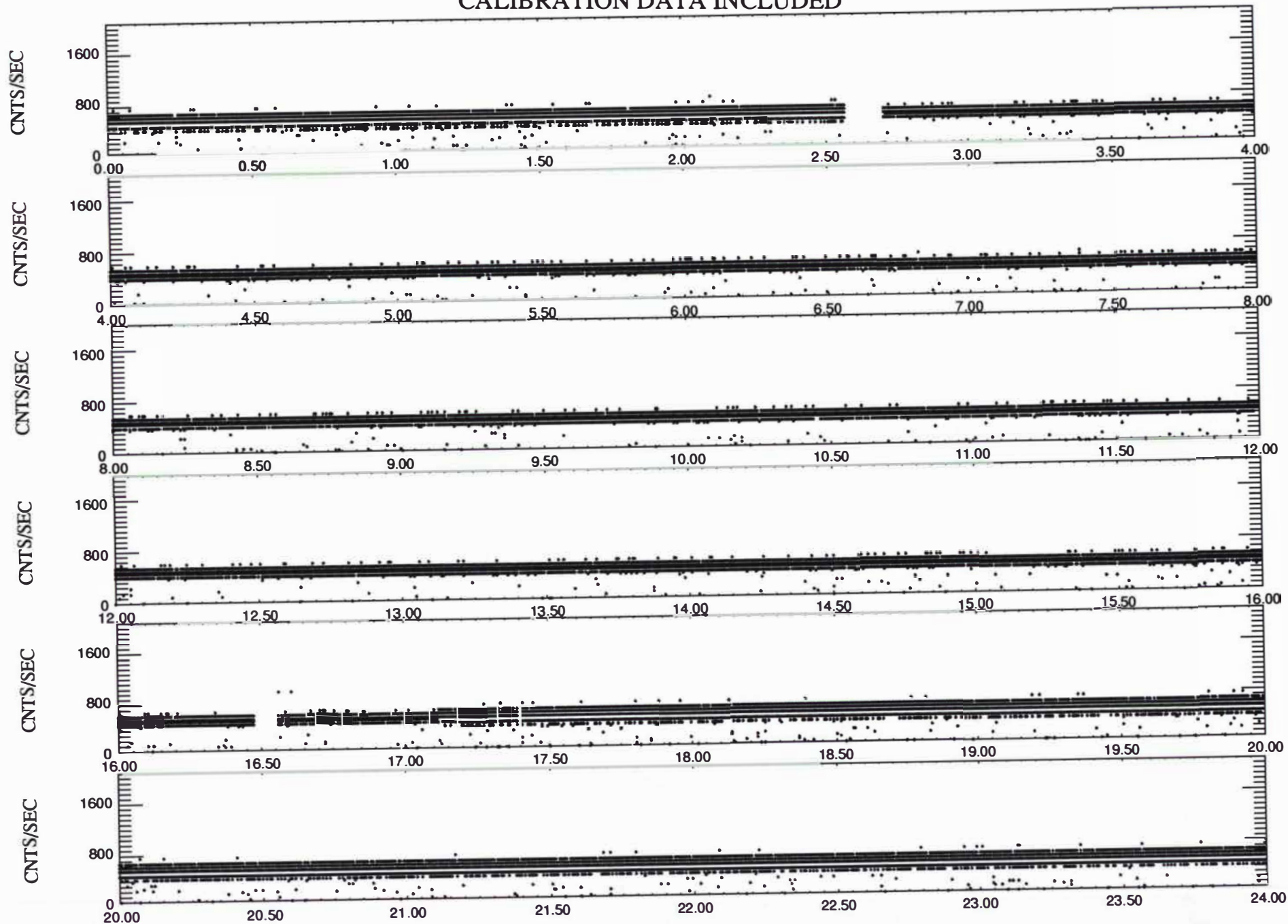


NO BURST (0)

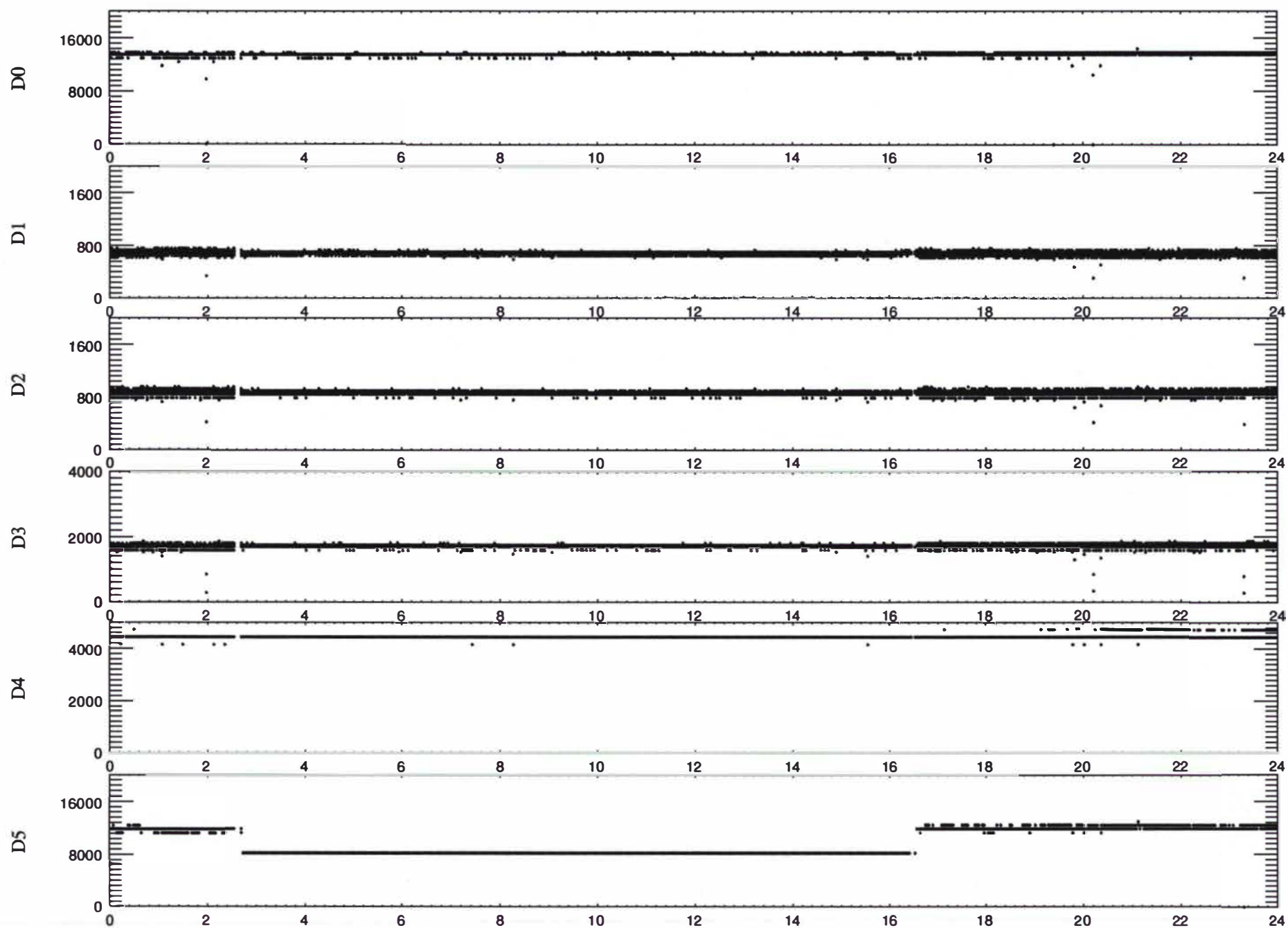


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From RICHARDSON@SSLLES.MSFC.NASA.GOV Fri Jul 26 10:18 PDT 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Fri, 26 Jul 1996 12:17:48 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5552

BATSEARCH PROGRAM

BATSE BURST # 5552
EVENT OF 1996 JUL 25 DAY OF YEAR=207
EVENT CROSSING TIME AT BATSE : 5415. S. OR 01:30:15.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 276.000 37.000
BATSE PEAK COUNTING RATE: 1000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 7/ 96 IS:
RA= 158.363 DEC= 42.568 DIST= 4.905 AU
BATSE-ULYSSES DISTANCE = 733808433. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -328.64 SECS.
CROSSING TIME AT ULYSSES IS 5086. S. OR 01:24:46 +/- 466.12 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 7/ 96 IS:
RA= 89.433 DEC= 23.834 DIST= 2.265 AU
MARS-BATSE DISTANCE = 338894176. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 545.48 SECS.
CROSSING TIME AT MARS IS 5960. S. OR 01:39:20 +/- 180.18 SECONDS

BATSE BURST TRIGGER

NO.: 5552

TIME: TJD=0289 SECONDS=5415

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.9 AZIMUTH=206.3 ERROR=3.1 DEGREES

COMMENTS:

GRB. FAST RISE WITH AN EXPONENTIAL DECAY. DUR.~20SEC. SLIGHTLY VISIBLE
ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5552	960725	10289	05415	1000	276	+37	20

BATSE BURST# 5552

ULYSSES RT

19 / 12 / 96

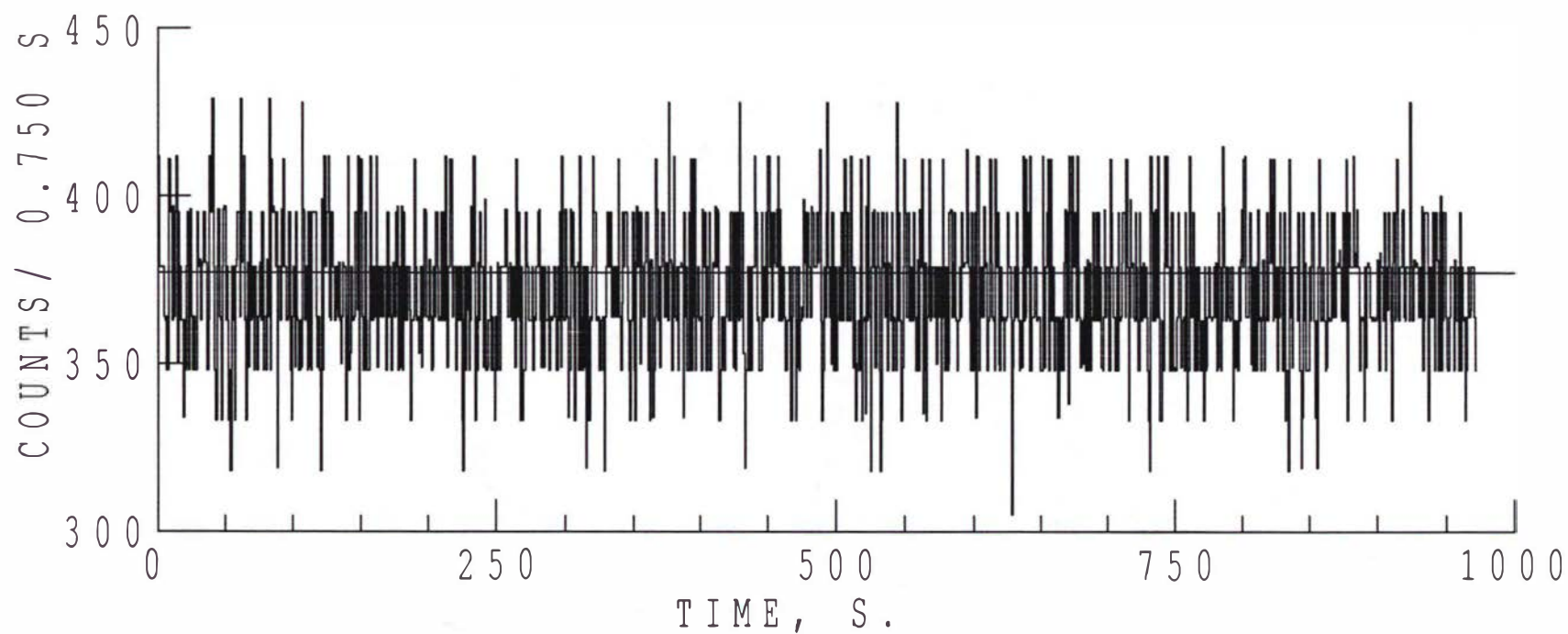
25 / 7 / 96 4608.129 s

0.250 S INTERVALS REGROUPED BY 3

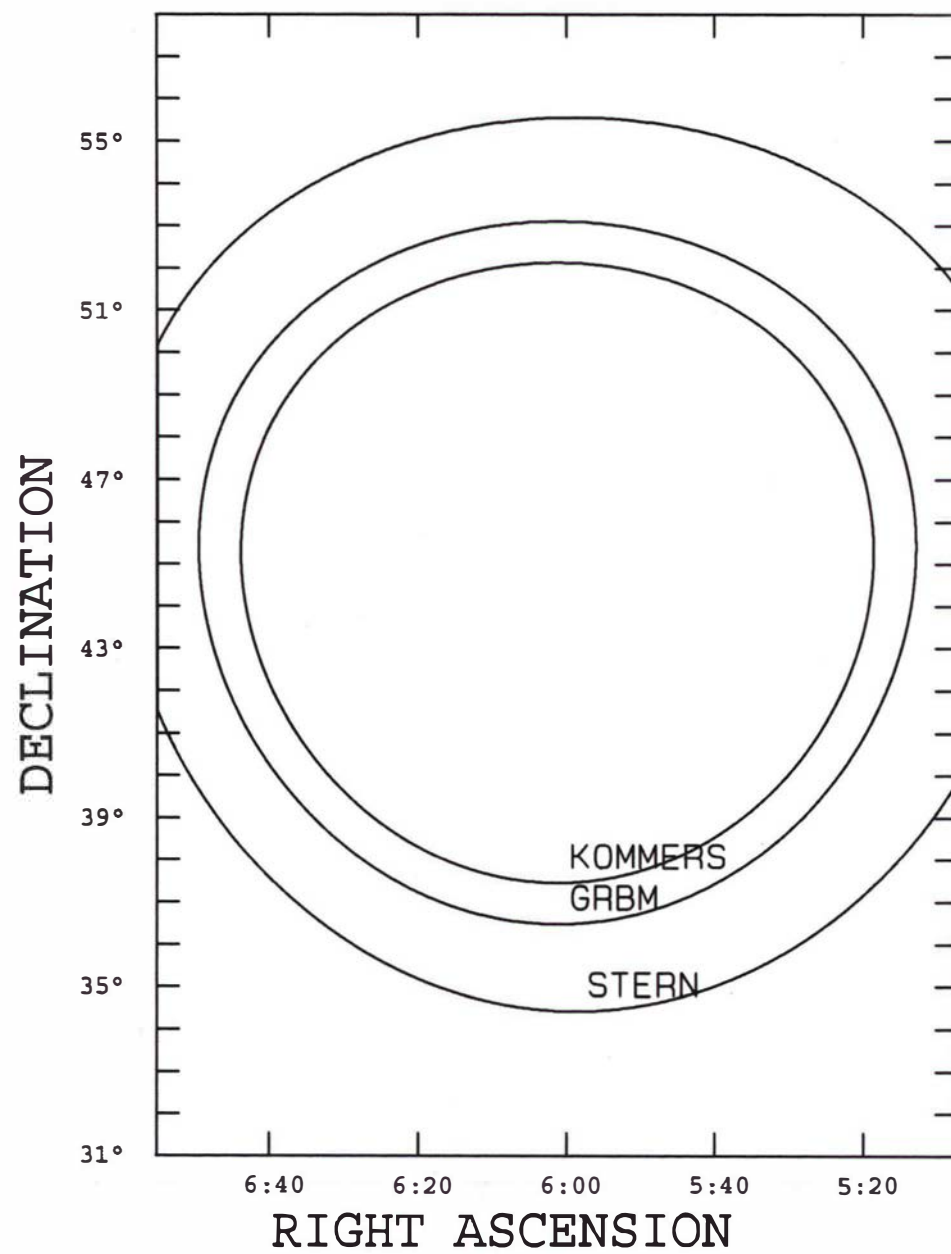
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

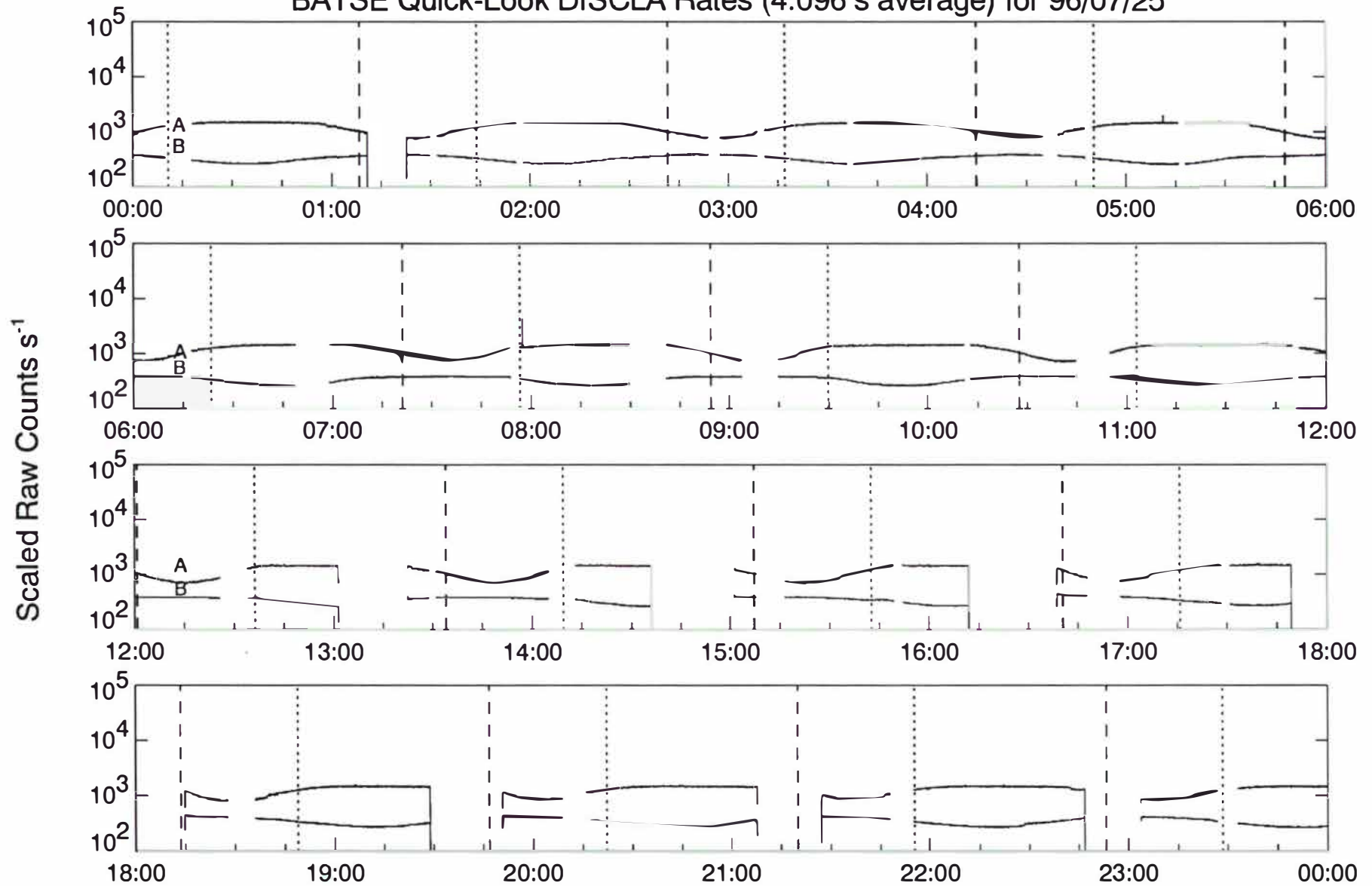
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

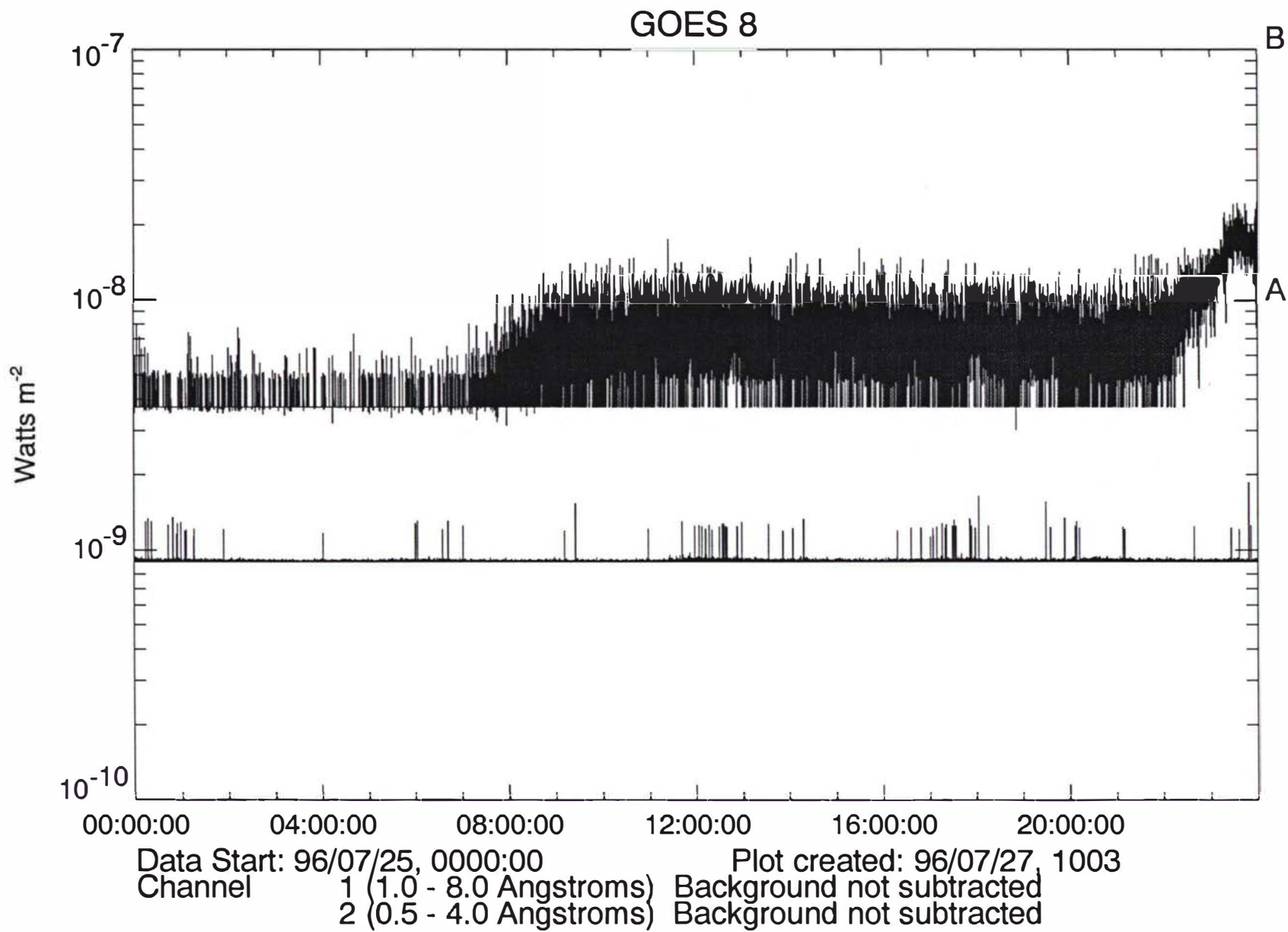


960725 17:39

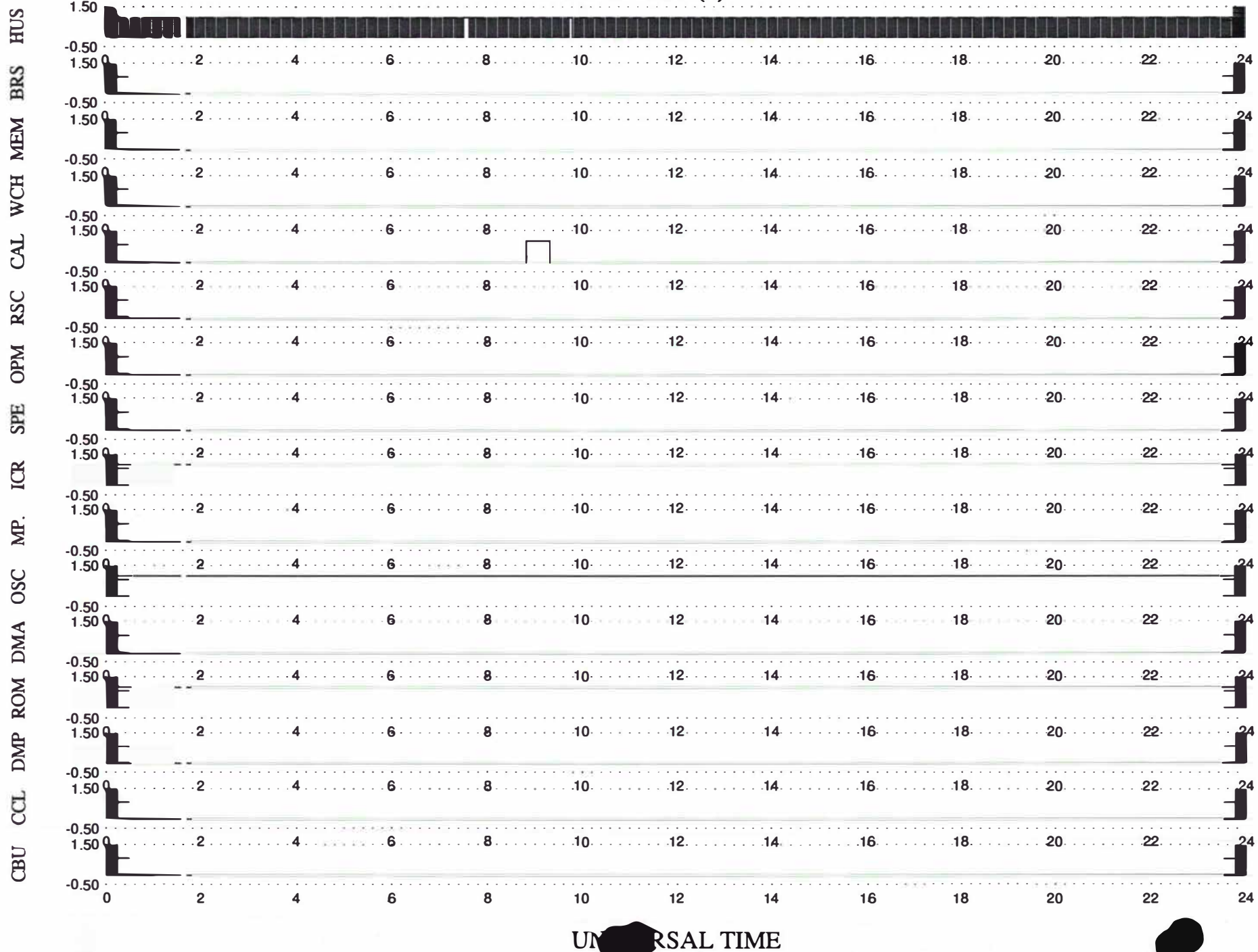


BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/25

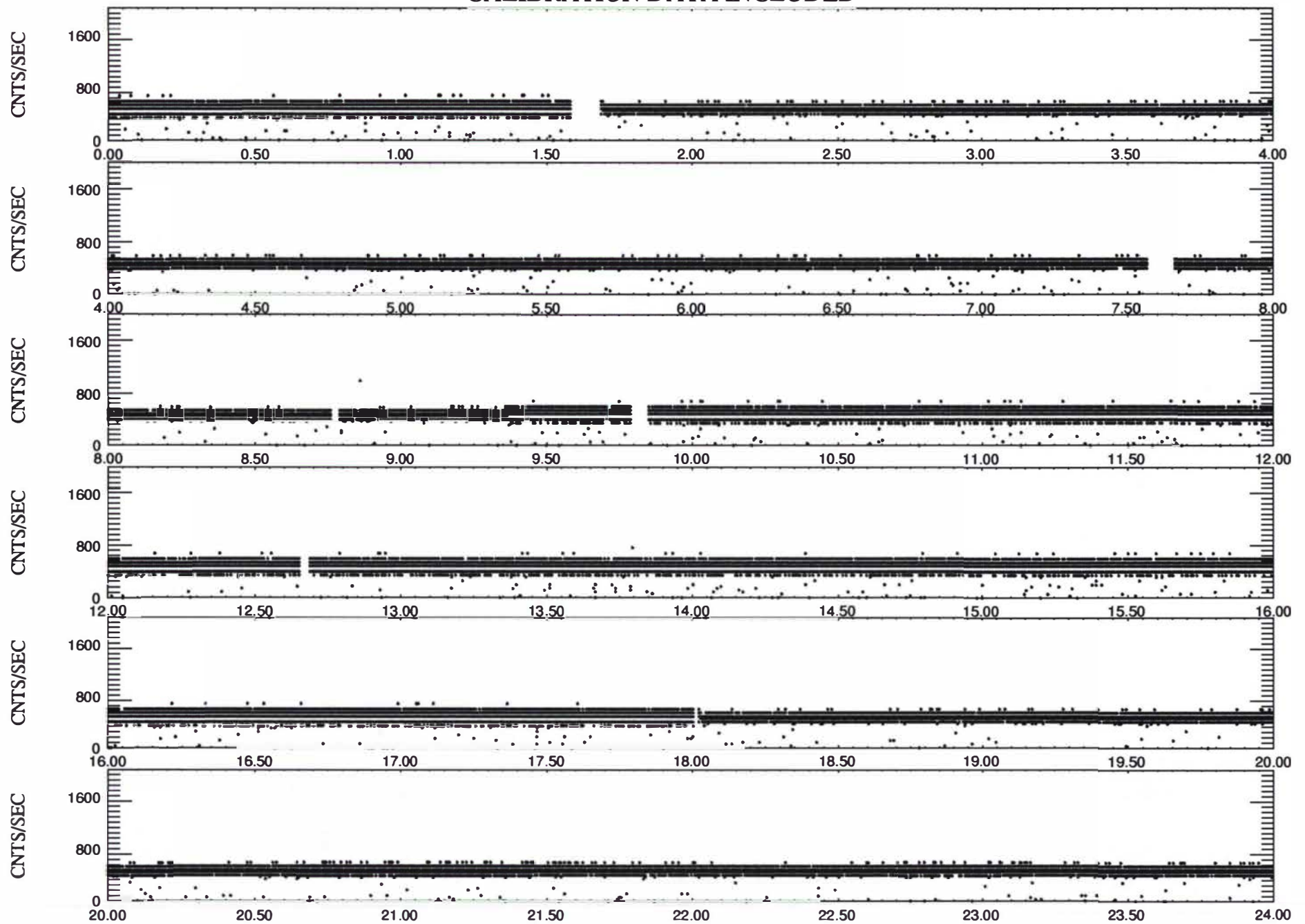




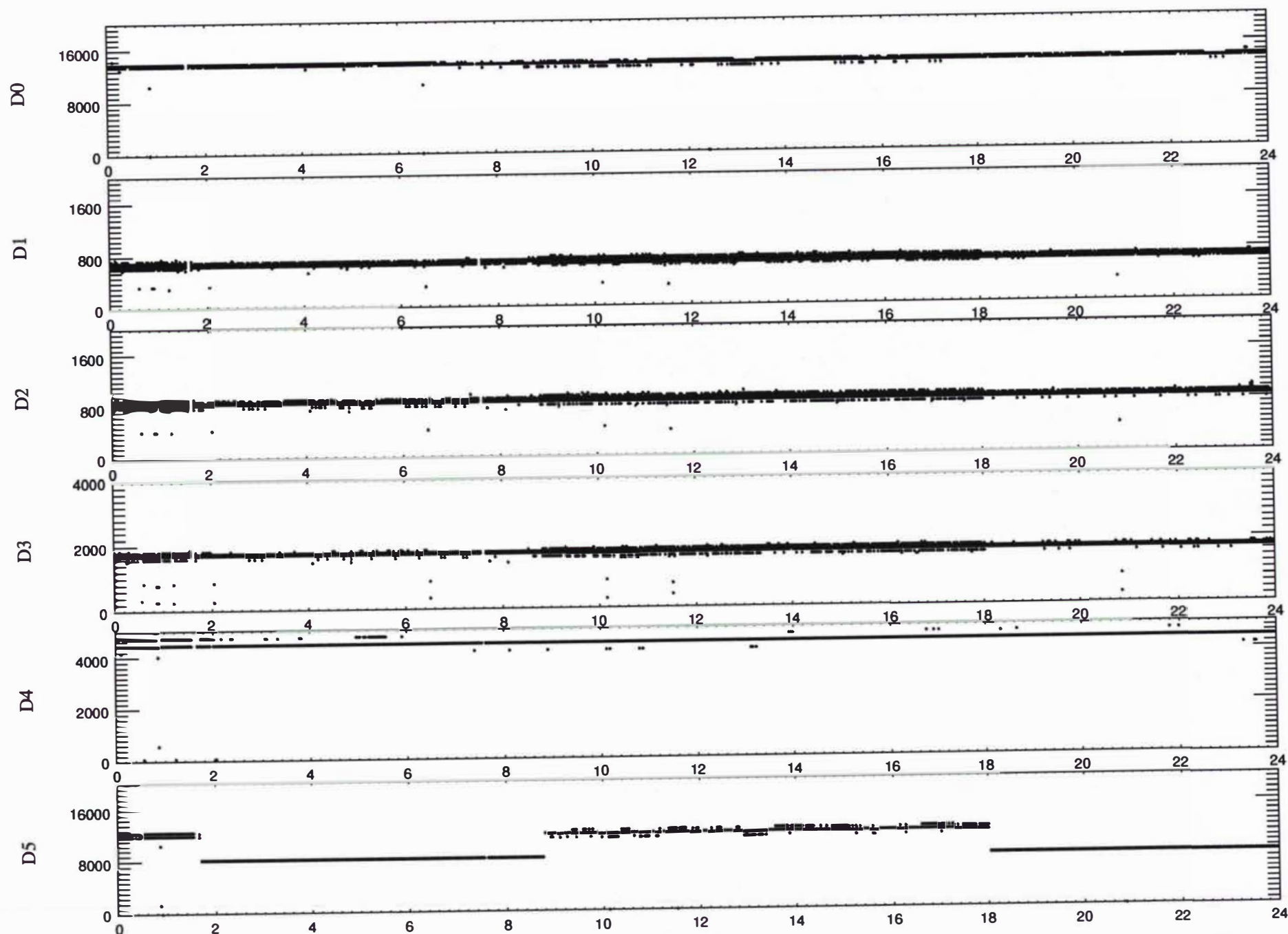
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

KONUS

ULYSSES RT

29 / 01 / 00

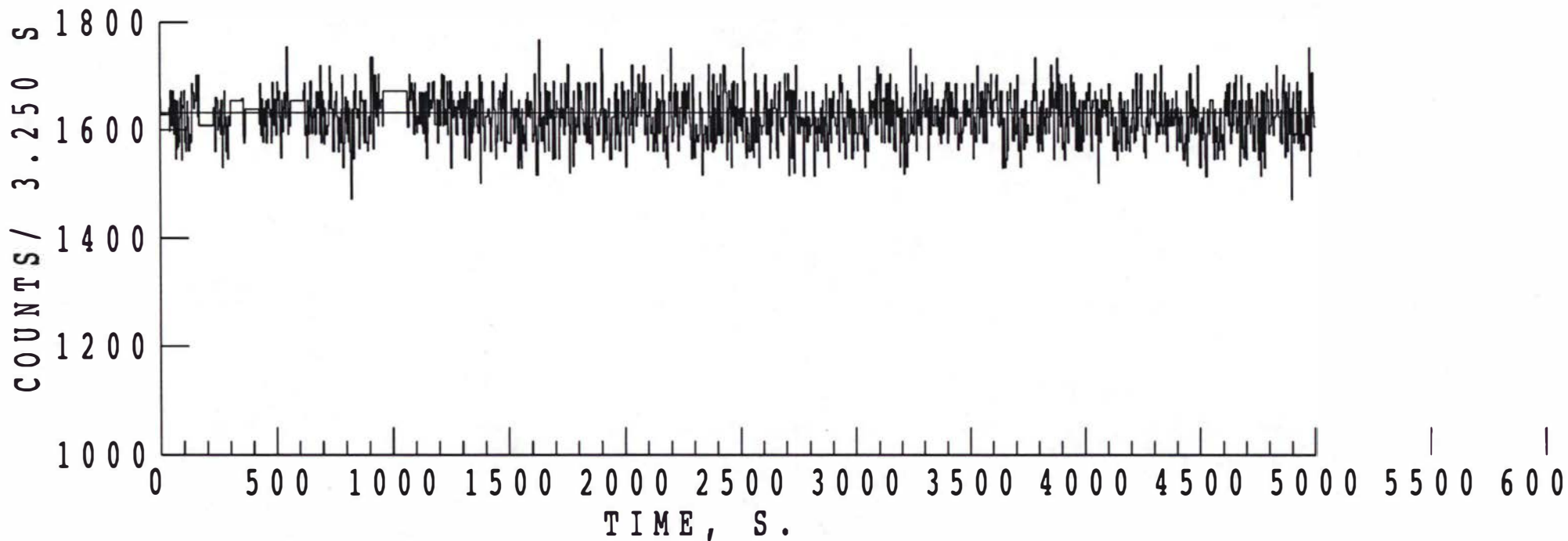
26 / 07 / 96 48276.070 s

0.250 S INTERVALS REGROUPED BY 13

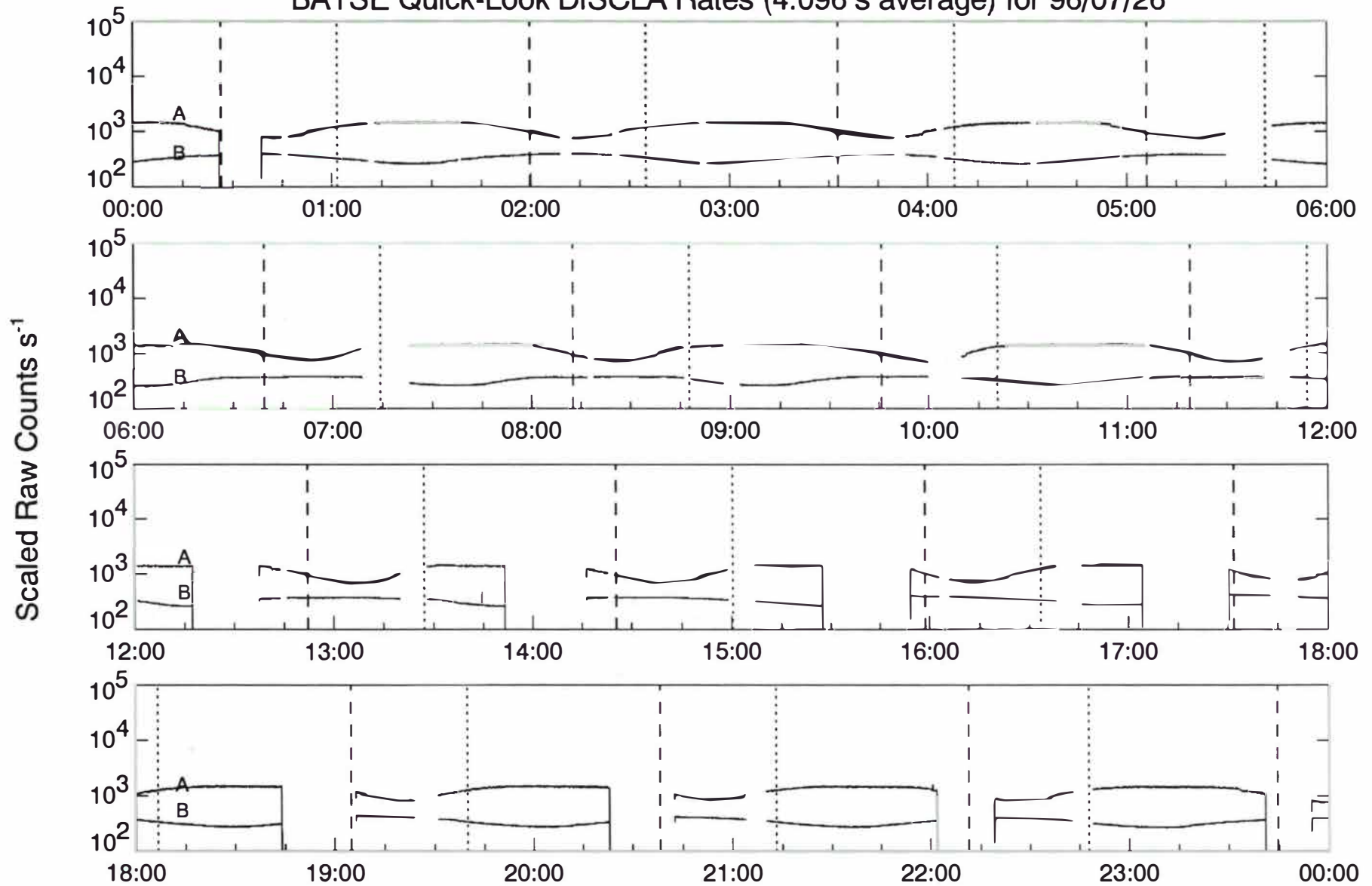
0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



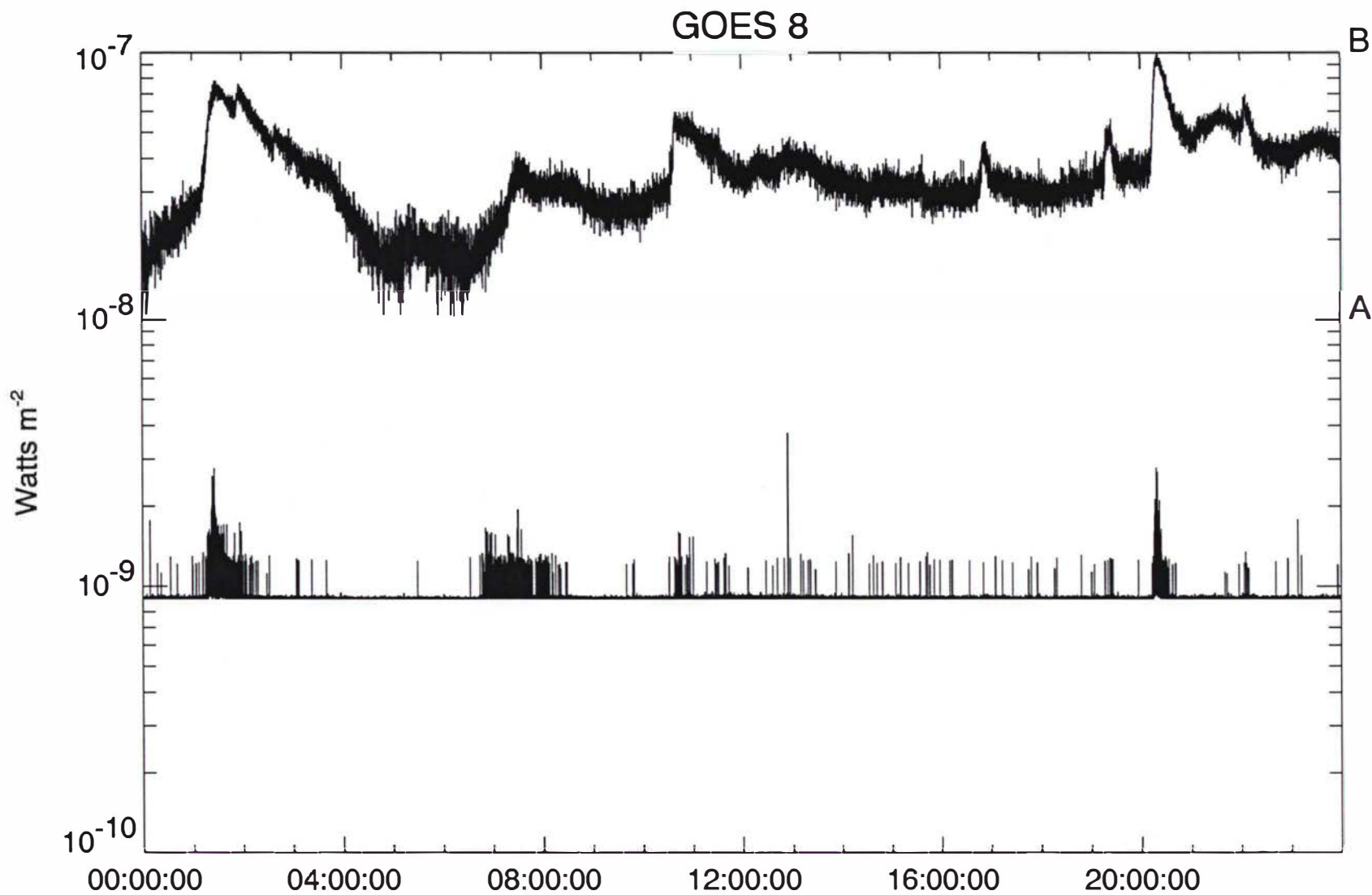
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/26



Current Time: 96/07/28, 1004 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



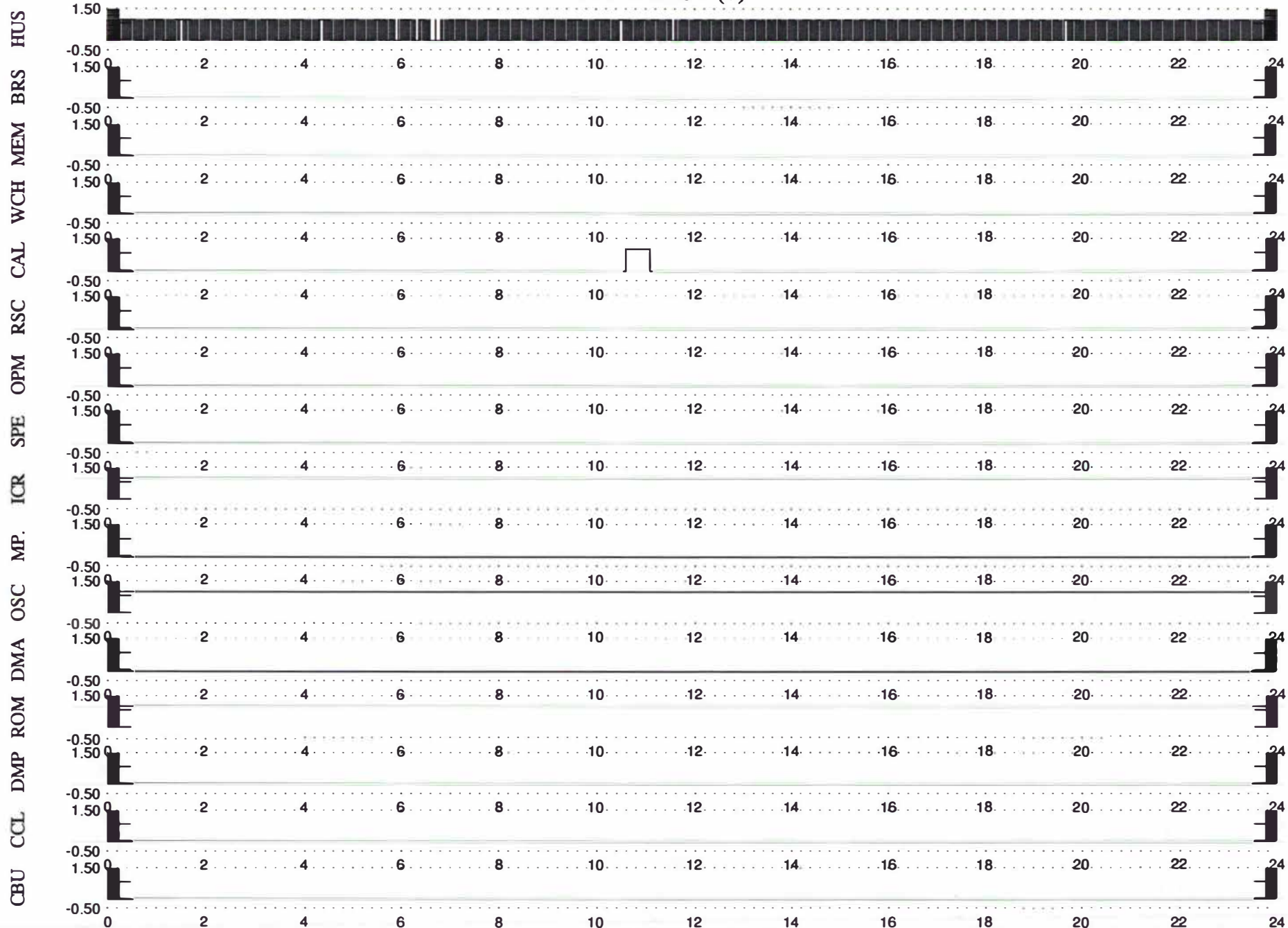
Data Start: 96/07/26, 0000:00

Plot created: 96/07/28, 1003

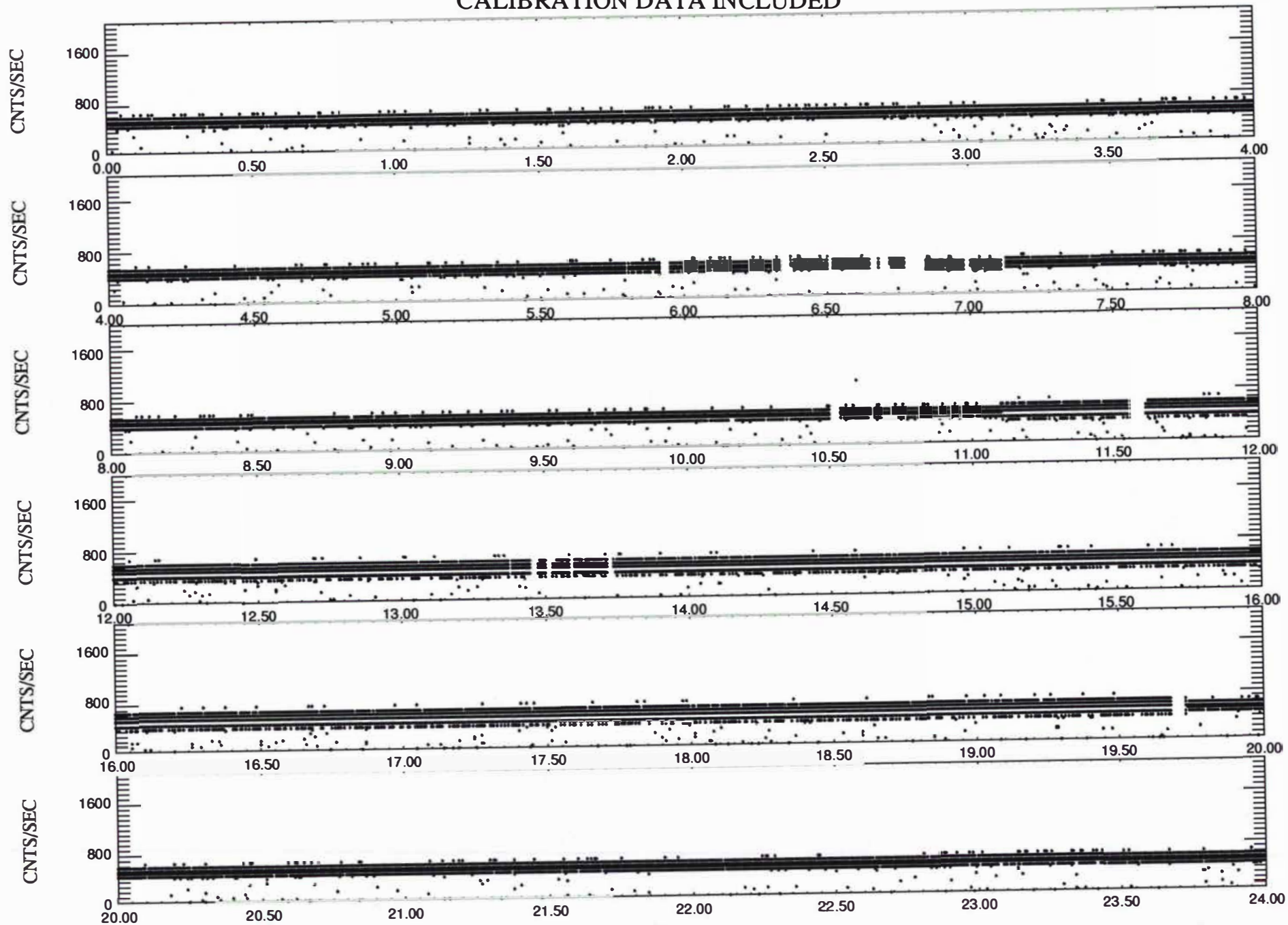
Channel 1 {1.0 - 8.0 Angstroms} Background not subtracted

Channel 2 {0.5 - 4.0 Angstroms} Background not subtracted

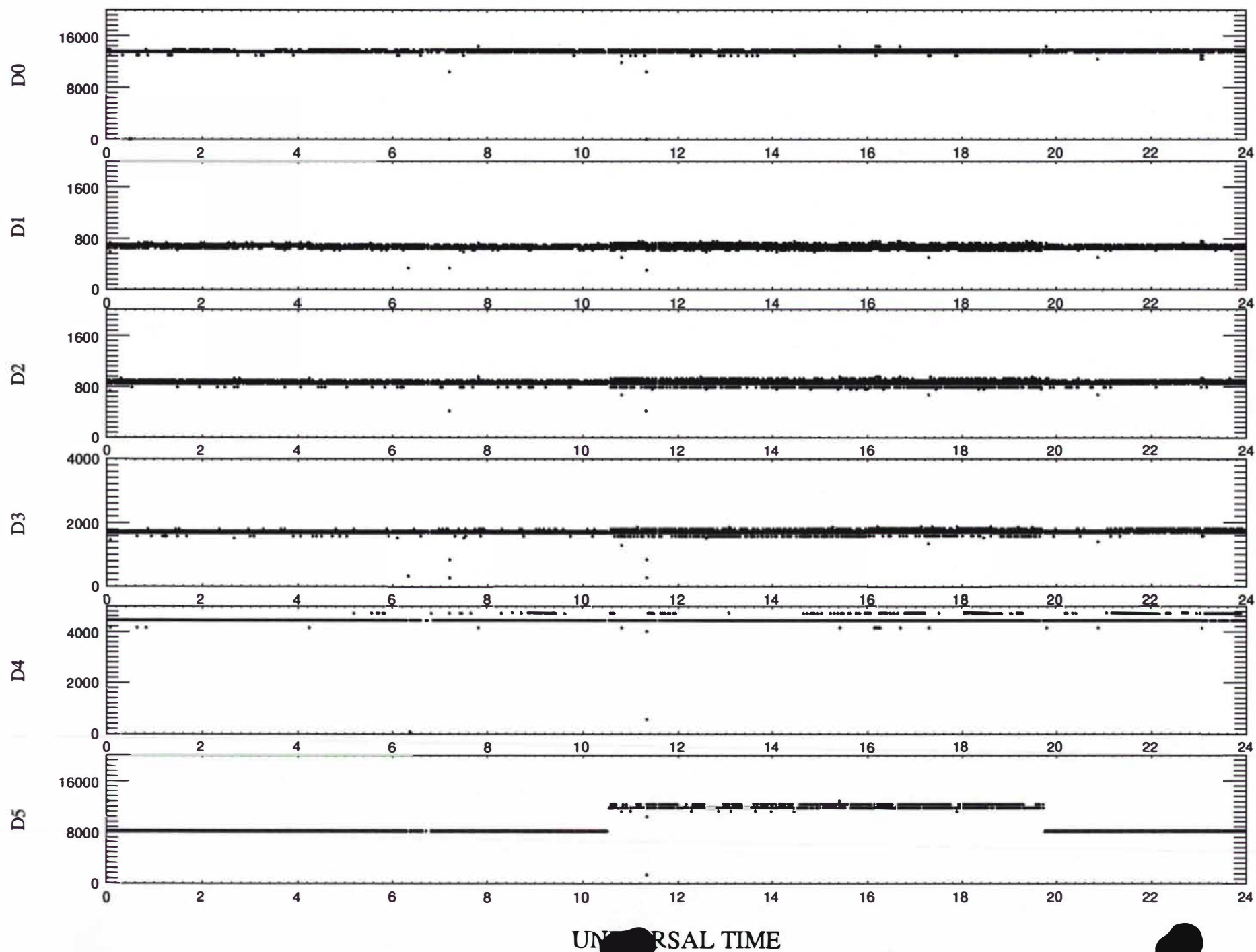
UNIVERSAL TIME



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Helio. com removed

Date: *Feb 3 '99*

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

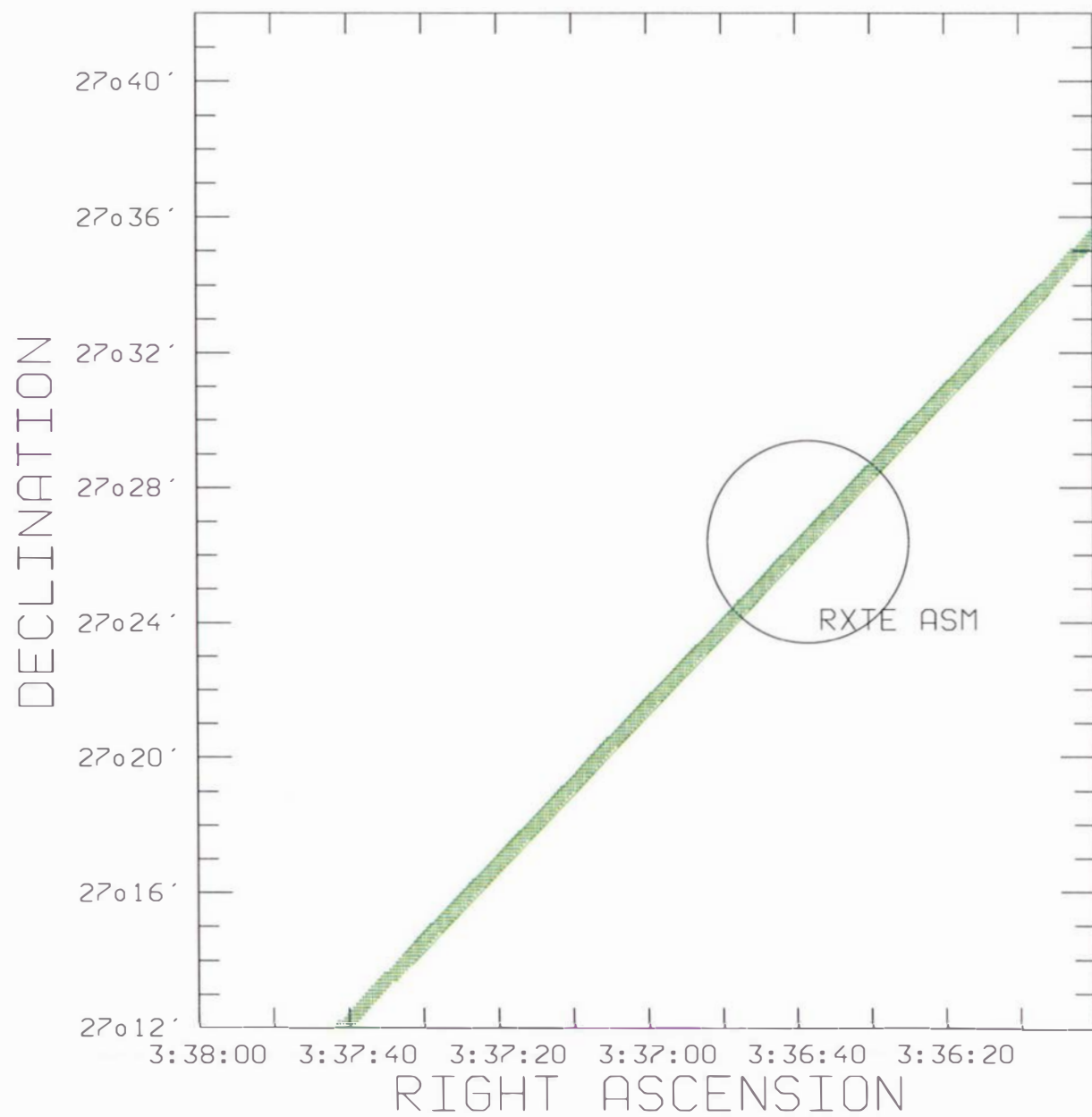
2. BATSE Data

- ☐ 2.042 s subtracted for bursts prior to June 25 1992 and DISCSC programs prior to Version 2.16 (August 28 1992)?
- ☐ BATSE ephemeris for T_0 ?
- ☐ Error circle position and radius from public catalog used?
- ☐ If MER data were used, is a 30 ms systematic error included?

3. PVO Data

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

- ☒ ACCESS database updated?



KONUS 19960727 42727

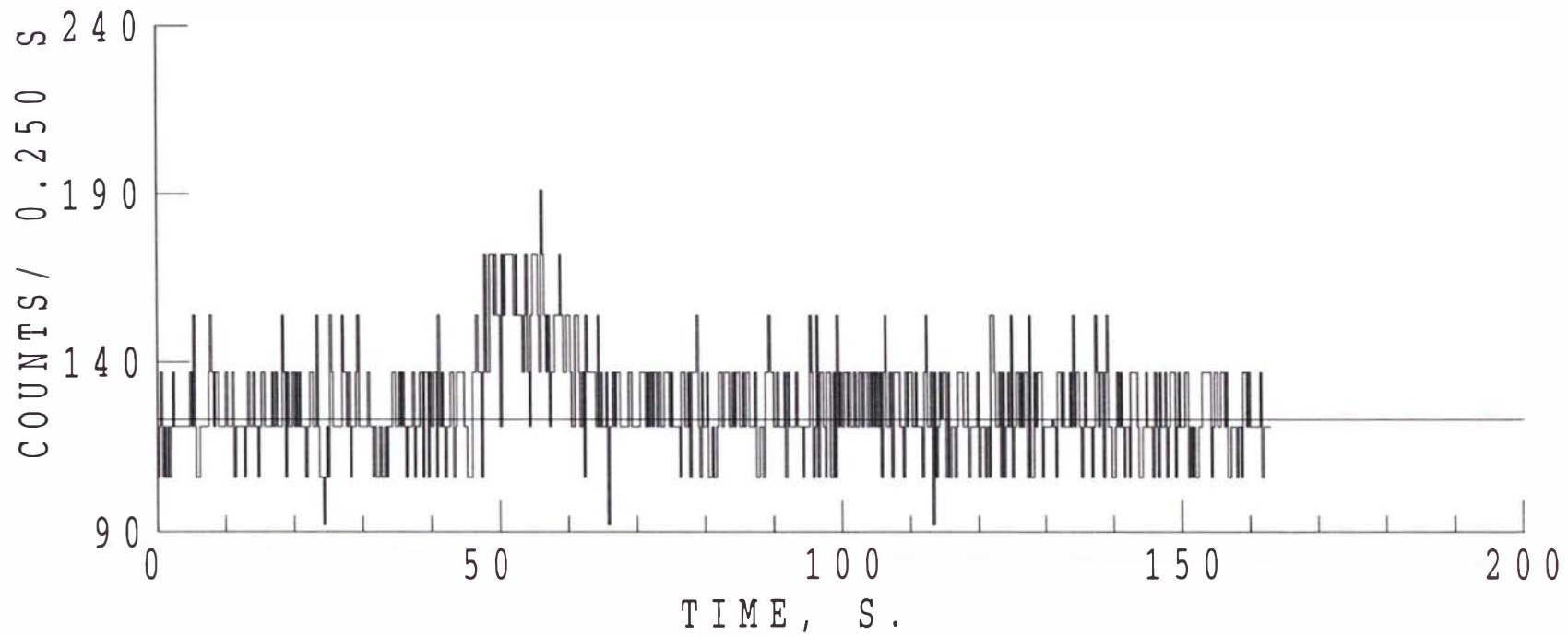
ULYSSES RT

03 / 10 / 11

27/07/96 42677.125 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



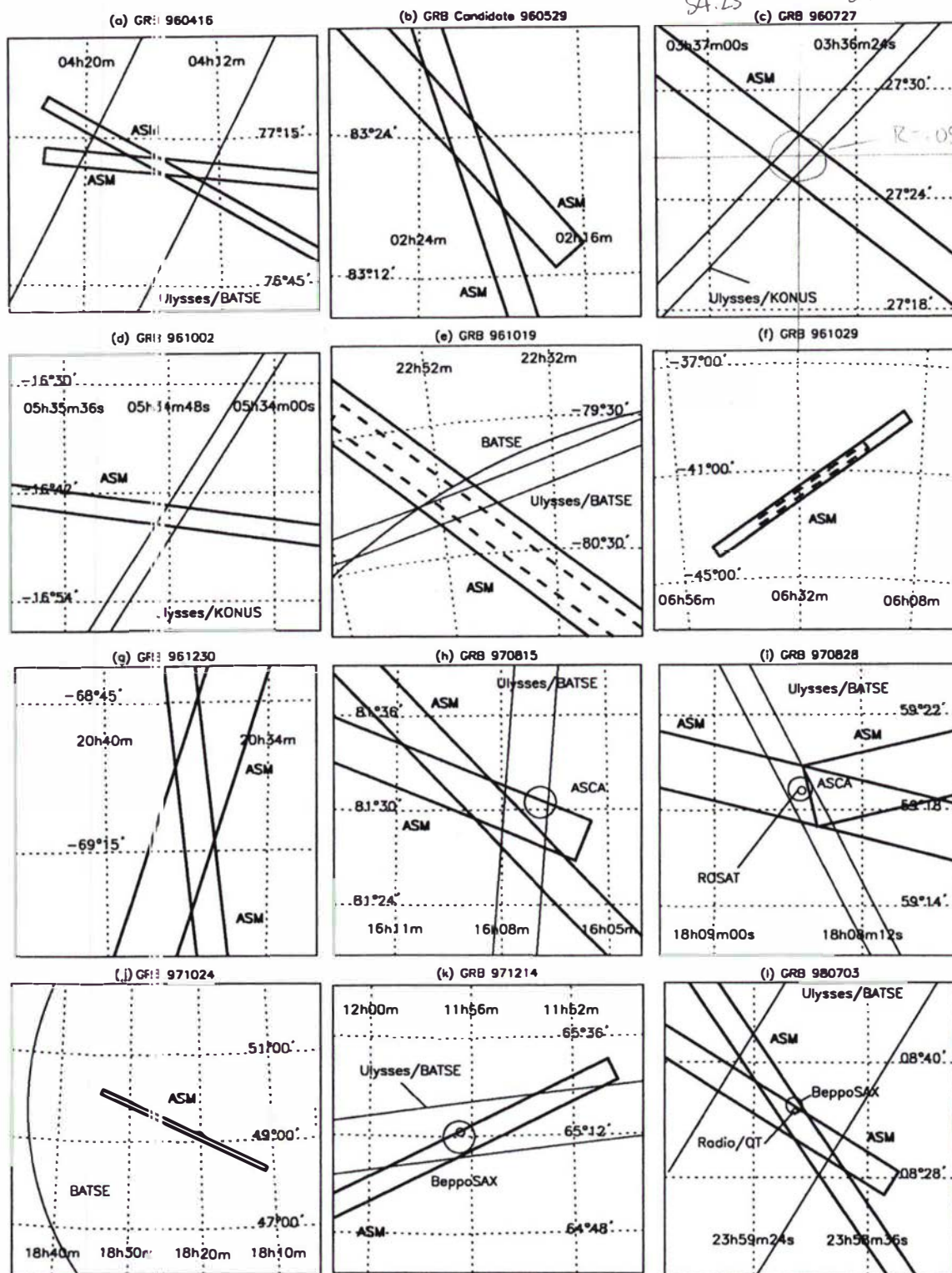


FIG. 6.—ASM localizations of 12 gamma-ray bursts, shown with position information from other satellites when available. Each frame is mapped at a different scale. ASM (heavy line) and BATSE locations are given at 90% confidence, while IPN annuli are 3σ . In cases of dim GRBs, boxes at 68% confidence are also plotted as dashed outlines. Positions and sizes of the 90% regions are given in Tables 2–4, while references to the other instruments are given in the text and in Tables 5–6.

one IPN instrument, so triangulation annuli were impossible to calculate in these cases.

Third, as of 1997 May, we began searching for GRB events in the real-time ASM data. We first developed software to respond directly to the GRB alerts released by the

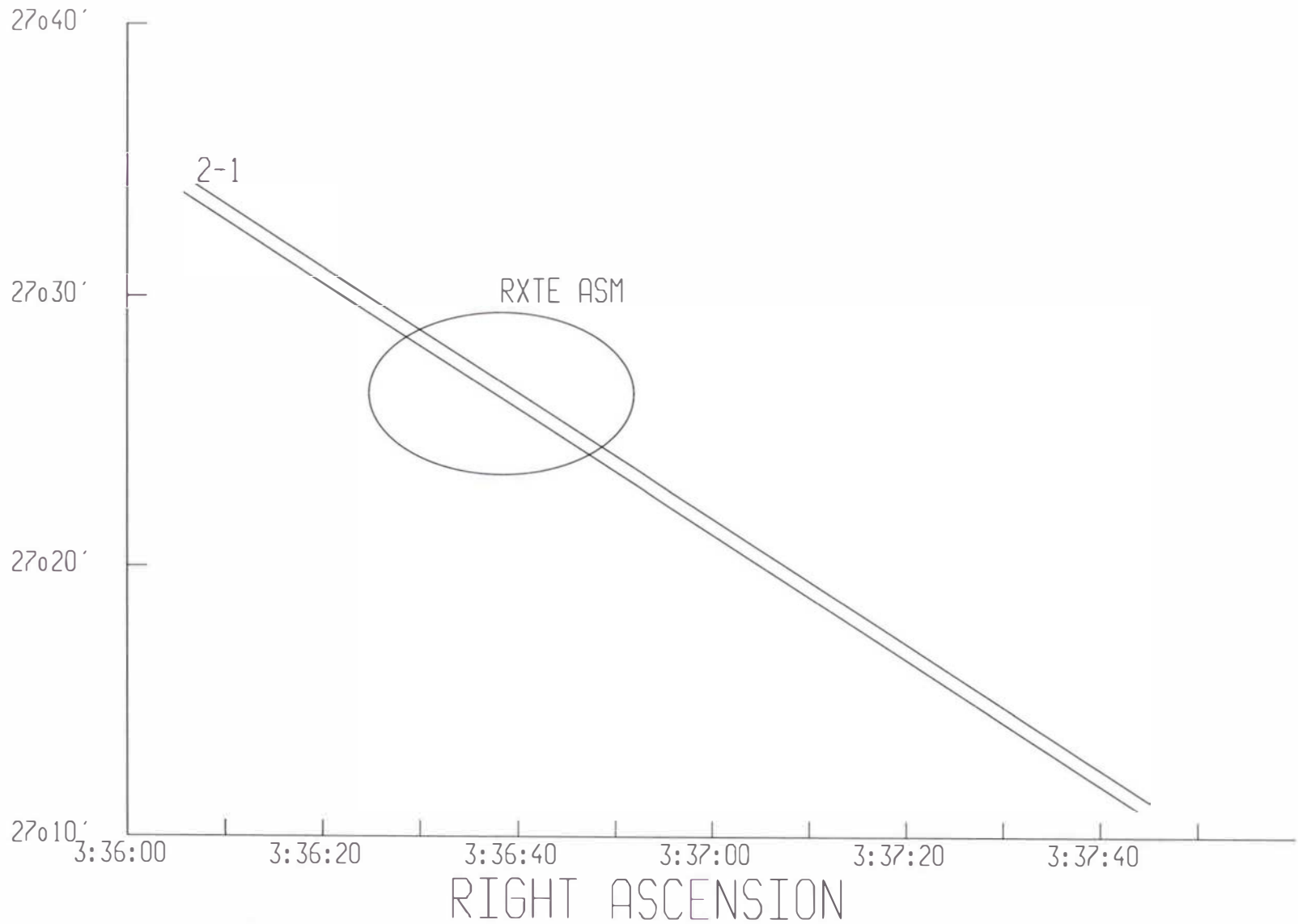
BATSE team over the Gamma-ray burst Coordinate Network (GCN). The ASM observing plan cannot be changed in response to alerts, but on occasion the ASM FOV will overlap with a BATSE GRB error circle at or shortly after the trigger time. GRBs have been observed by

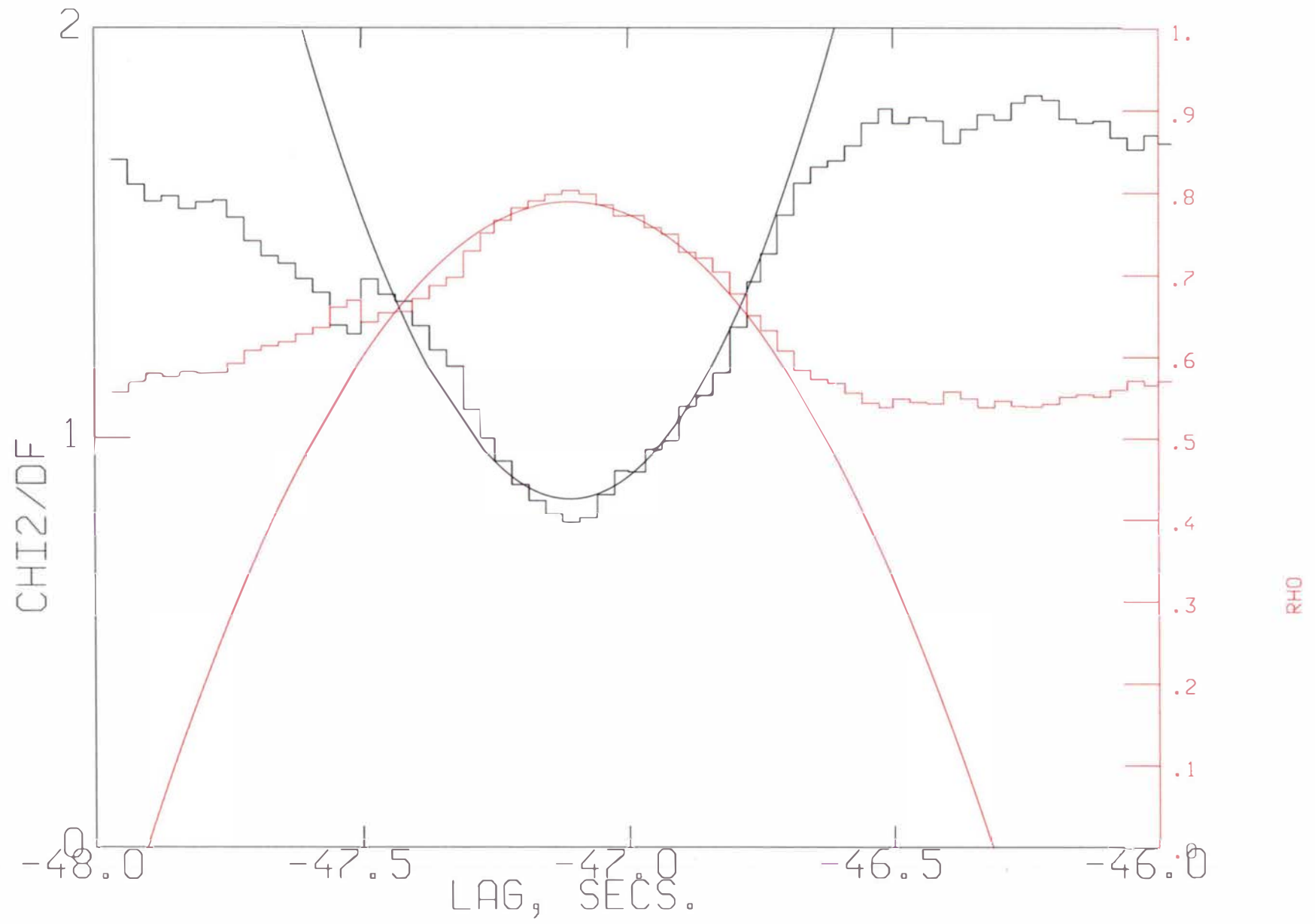
EVENT OF JUL 27, 1996 11:51

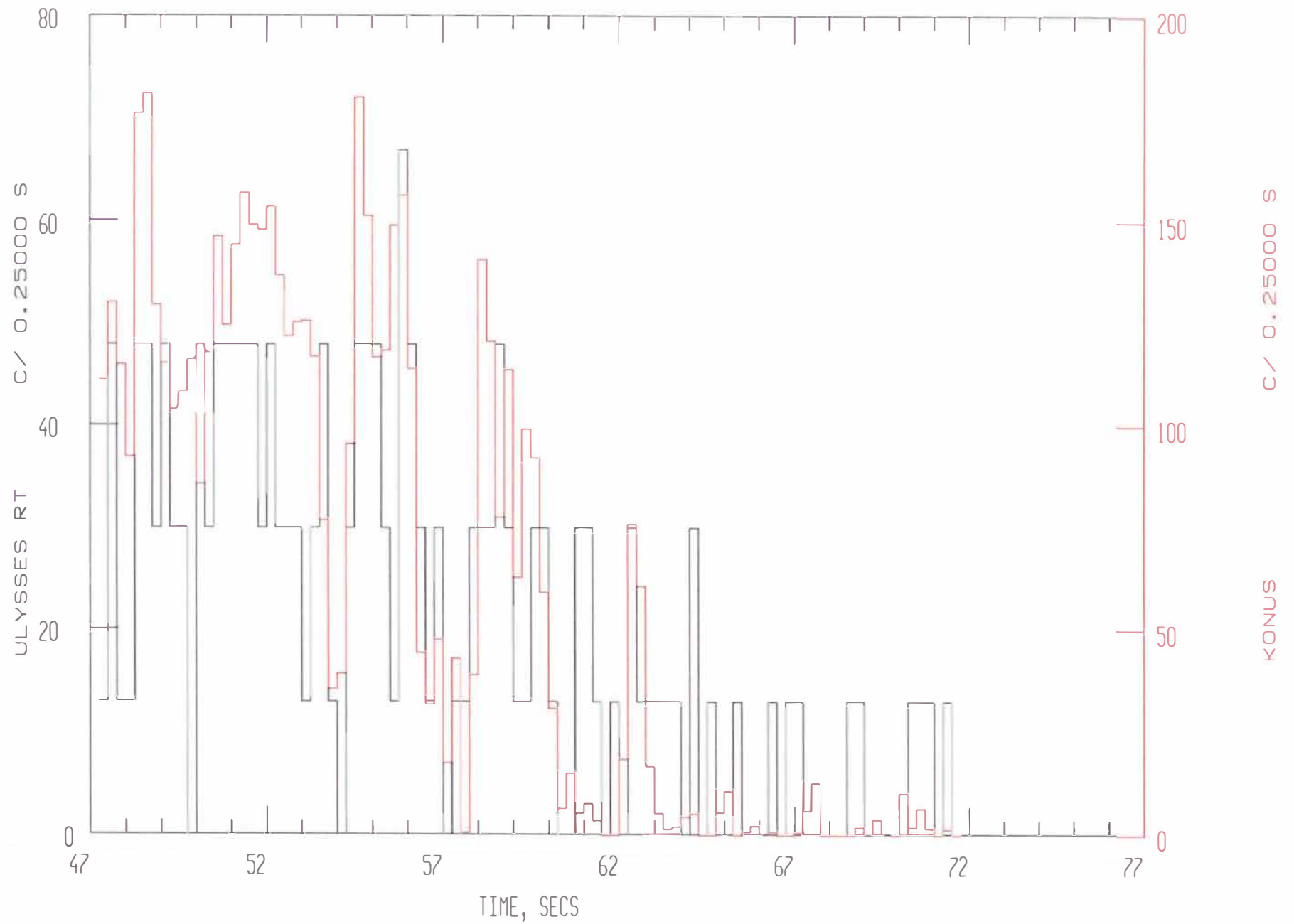
04/10/2011

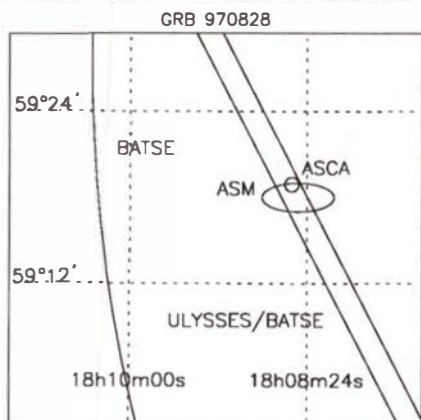
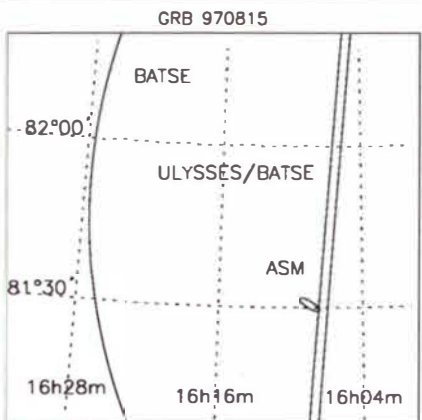
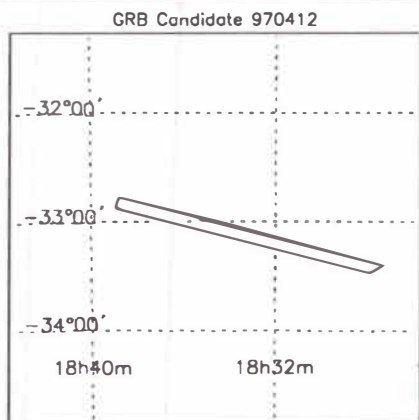
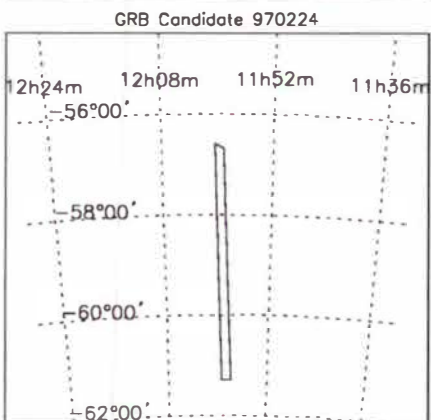
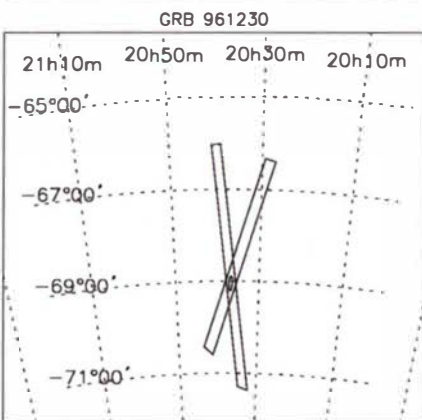
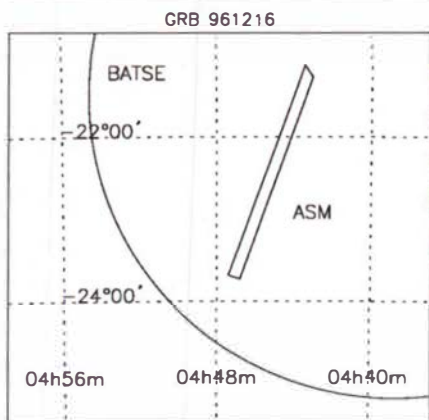
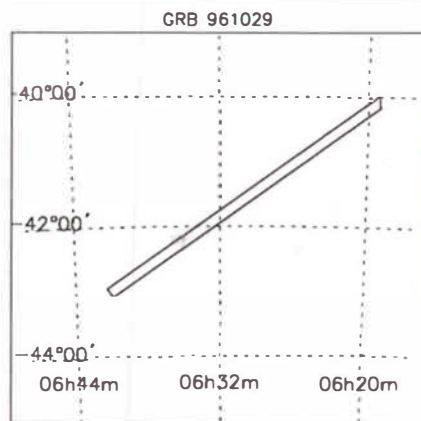
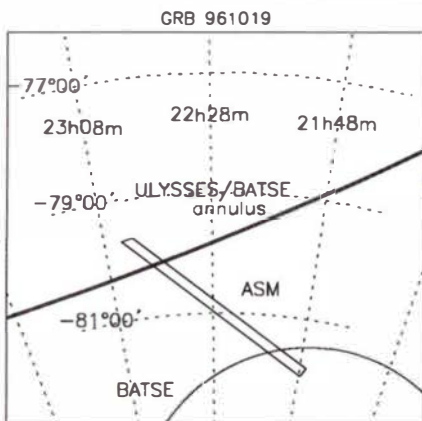
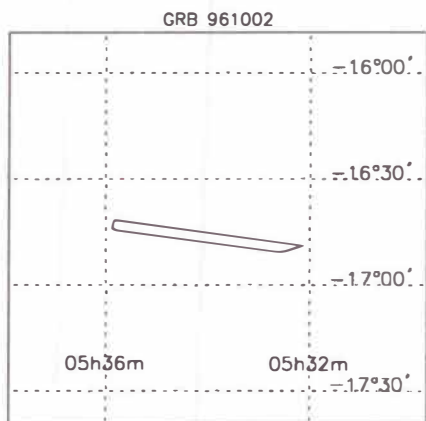
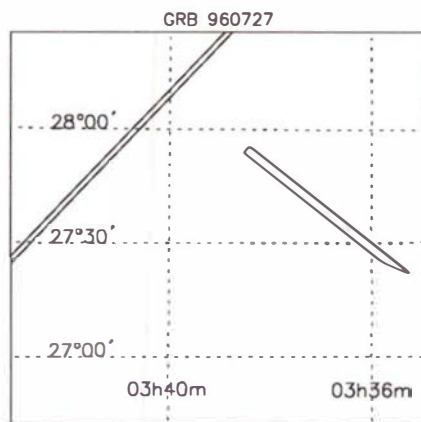
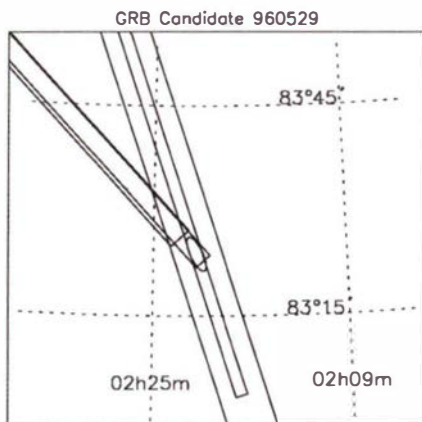
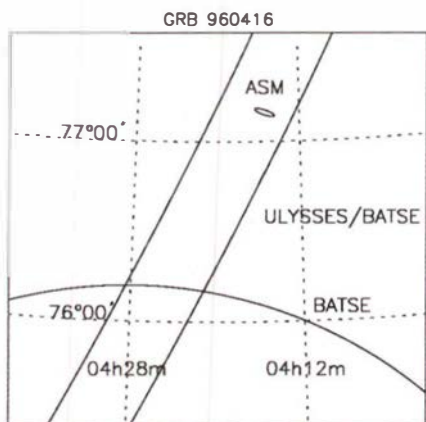
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS

DECLINATION









N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

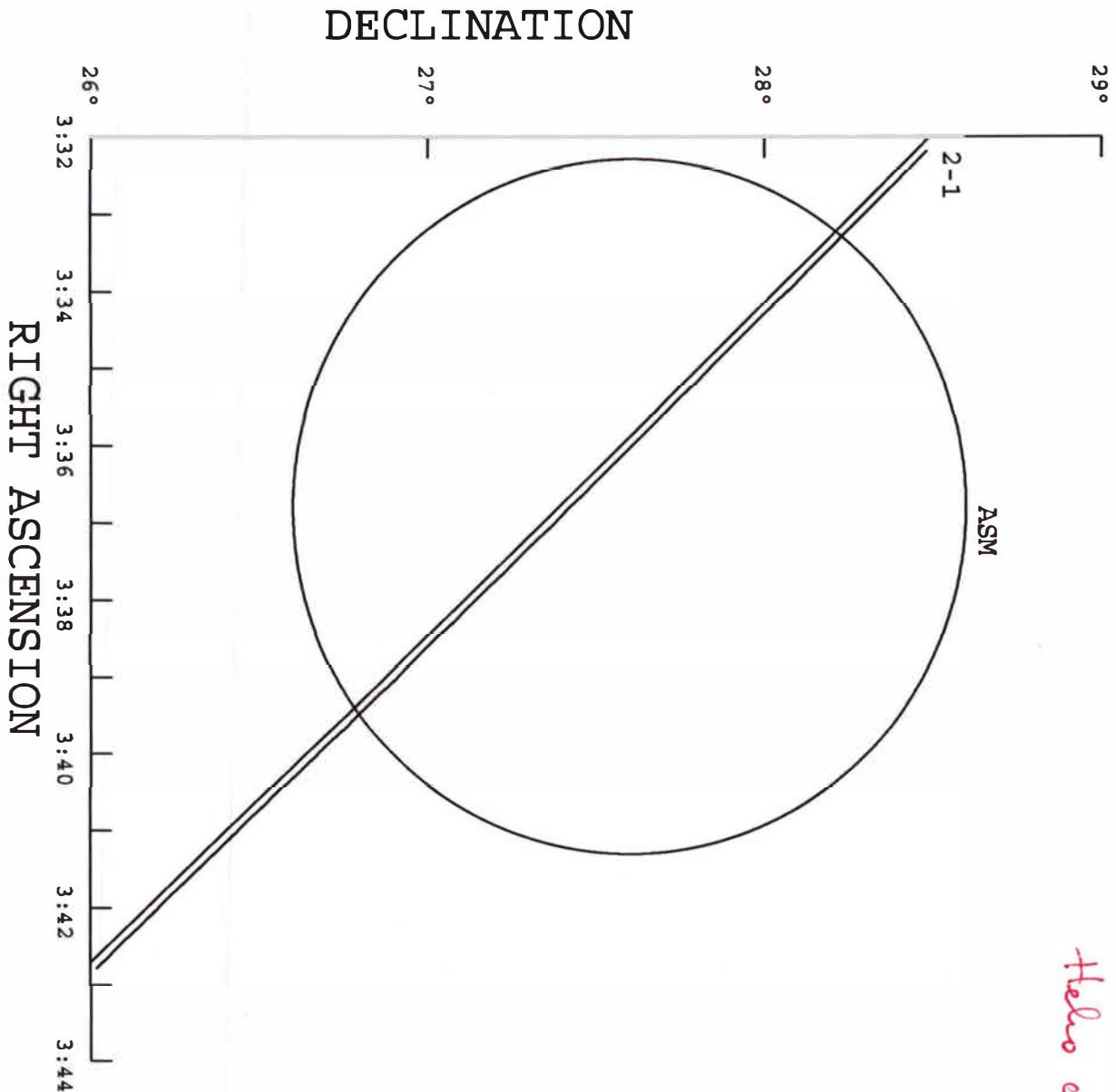
1 ULYSSES

2 KONUS

EVENT OF JUL 27, 1996 11:51

3 / 2/99

Helio con removed



From dasmith@space.mit.edu Tue Sep 23 12:16 PDT 1997
From: "Don A. Smith" <dasmith@space.mit.edu>
Subject: Re: ASM/IPN GRB positions
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
e: Tue, 23 Sep 1997 15:16:11 -0400 (EDT)
...e-Version: 1.0
Content-Transfer-Encoding: 7bit

Dear Kevin,

Thanks for the annotation. I have added the ASM times below (I hope MJD (UTC) is sufficient?).

> 960529 02h22m +83.5 4 a Need ASM time

50232.23211

Note: this is a multi-peaked event, and it is possible that we scanned onto it in progress. We saw three ~55s peaks, and we scanned off right after the third one.

> 970815 16h09m +81.5 bu 2 a OK
> 960416 04h15m +77.2 bu 2 a OK
> 970828 18h08m +59.3 bu 2 a OK
> * 960727 03h37m +27.6 u? 1 a? KONUS, Ulysses - I'm getting the KONUS data
> 960408 07h22m -03.8 1 Need ASM time. The position is close to,
> but inconsistent with, a BATSE/Ulysses
> burst (RA, Dec=85, +2)

54.25, 27.6

50181.78931

Note: may be double-peaked, with the second peak following at t=+18 s. The second peak is *much* brighter than the first.

Note: depending on the size and orientation of the error regions, this may yet be close enough to bear fruit.

> 960730 06h43m -19.5 1 I need the ASM time to search Ulysses + Konus

50294.02946

Note: *very* soft event, symmetric in time, total duration ~80 s

> * 961002 05h33m -16.8 u? 1 a?d I need the ASM time to search Ulysses + Konus

50358.87062

Note: very hard, bright spike. ~16 s rise, ~5 s fall

> 961216 04h45m -22.5 b 1 Not observed by Ulysses
> 970412 18h55m -31.8 1 I need the ASM time to search

50550.27930

Note: single pulse, hard, dim

> * 961029 06h30m -41.7 u? 1 a? I need the ASM time to search

50385.79509

Note: just caught ~20 s rise at end of dwell.

> 970224 11h59m -58.7 1 I need the ASM time to search

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

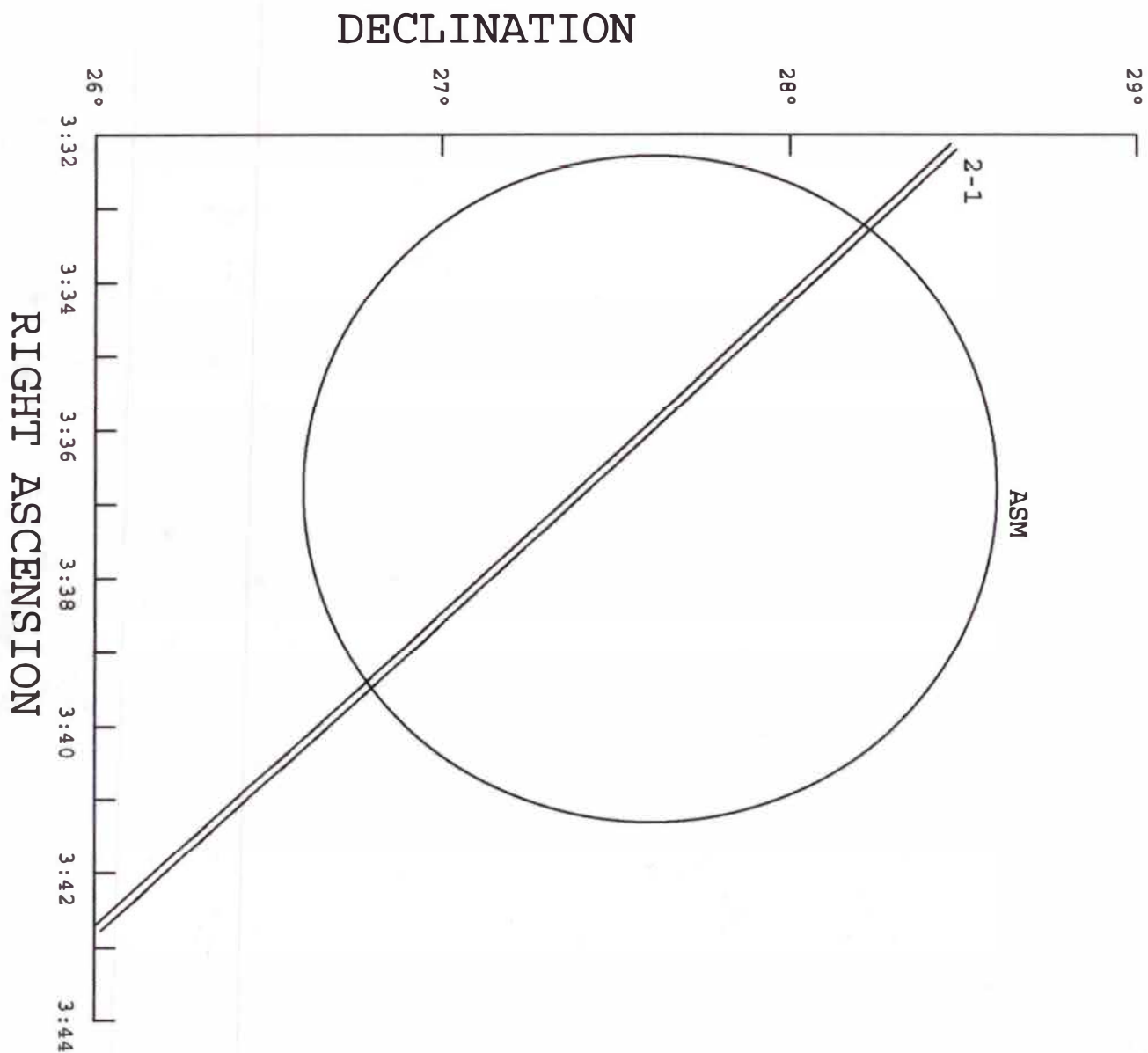
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS

EVENT OF JUL 27, 1996 11:51

13 / 5/98



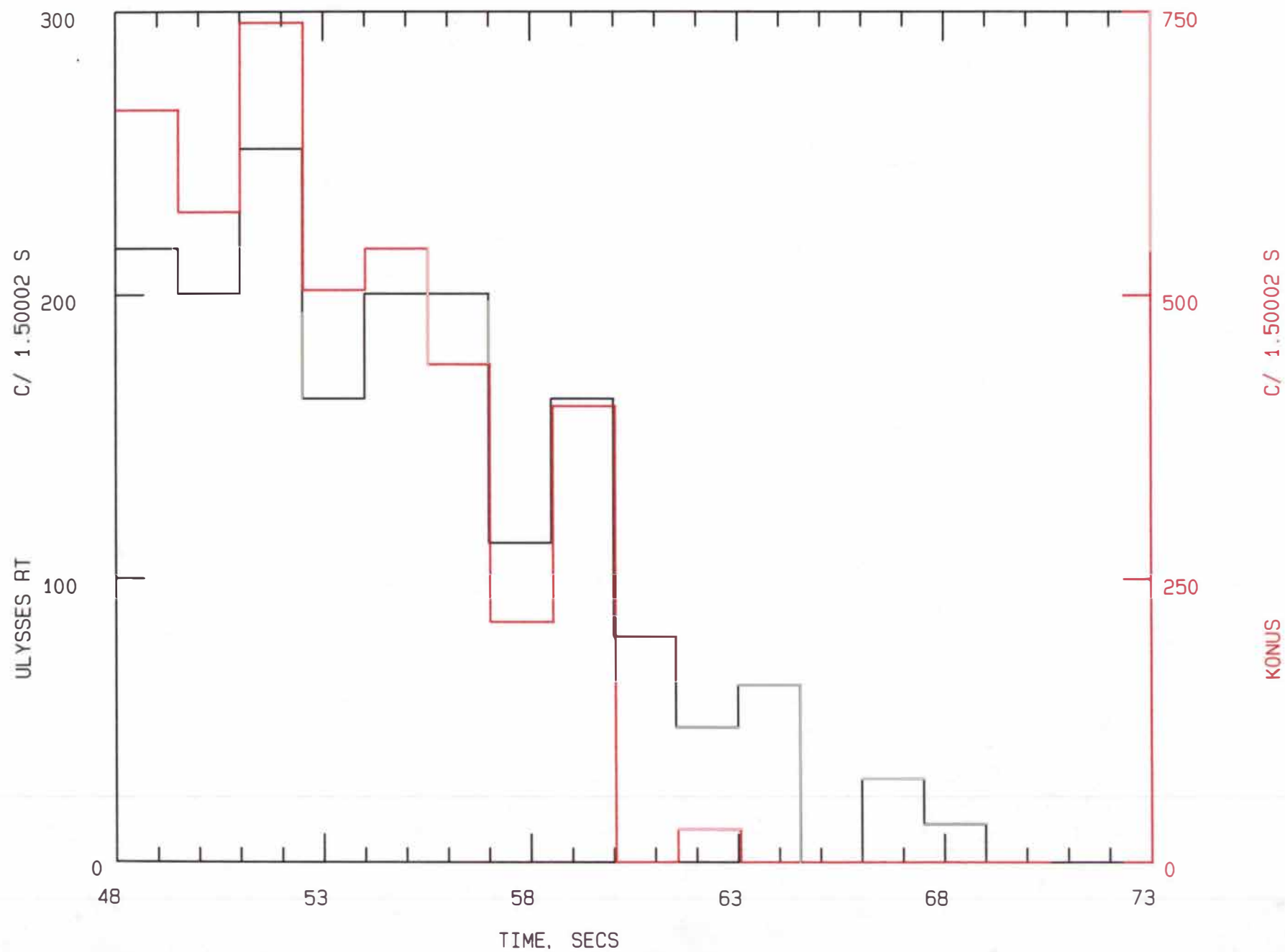
ULYSSES RT-KONUS

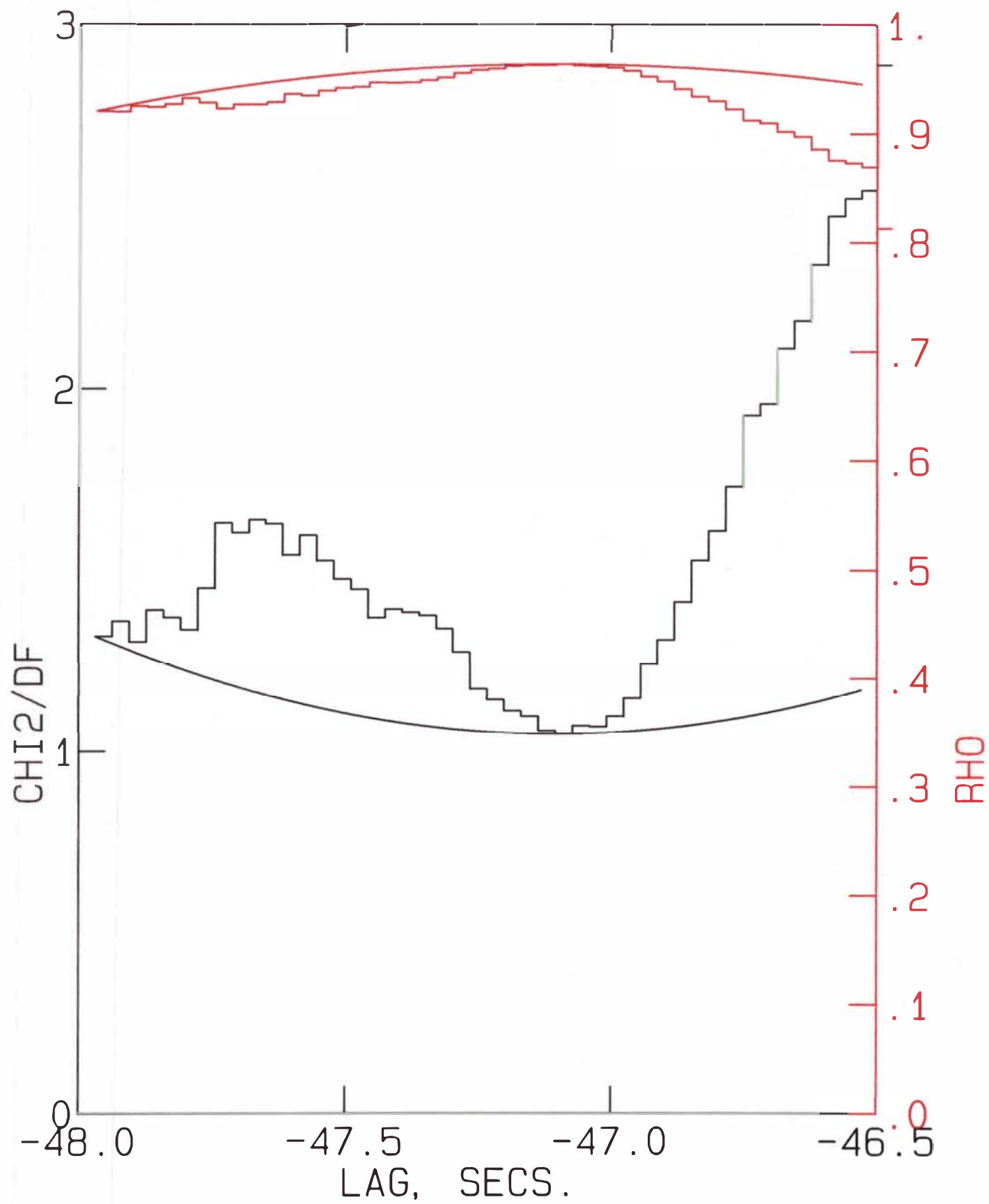
CORRELATION

27/ 7/96

42677.302

13/ 5/98





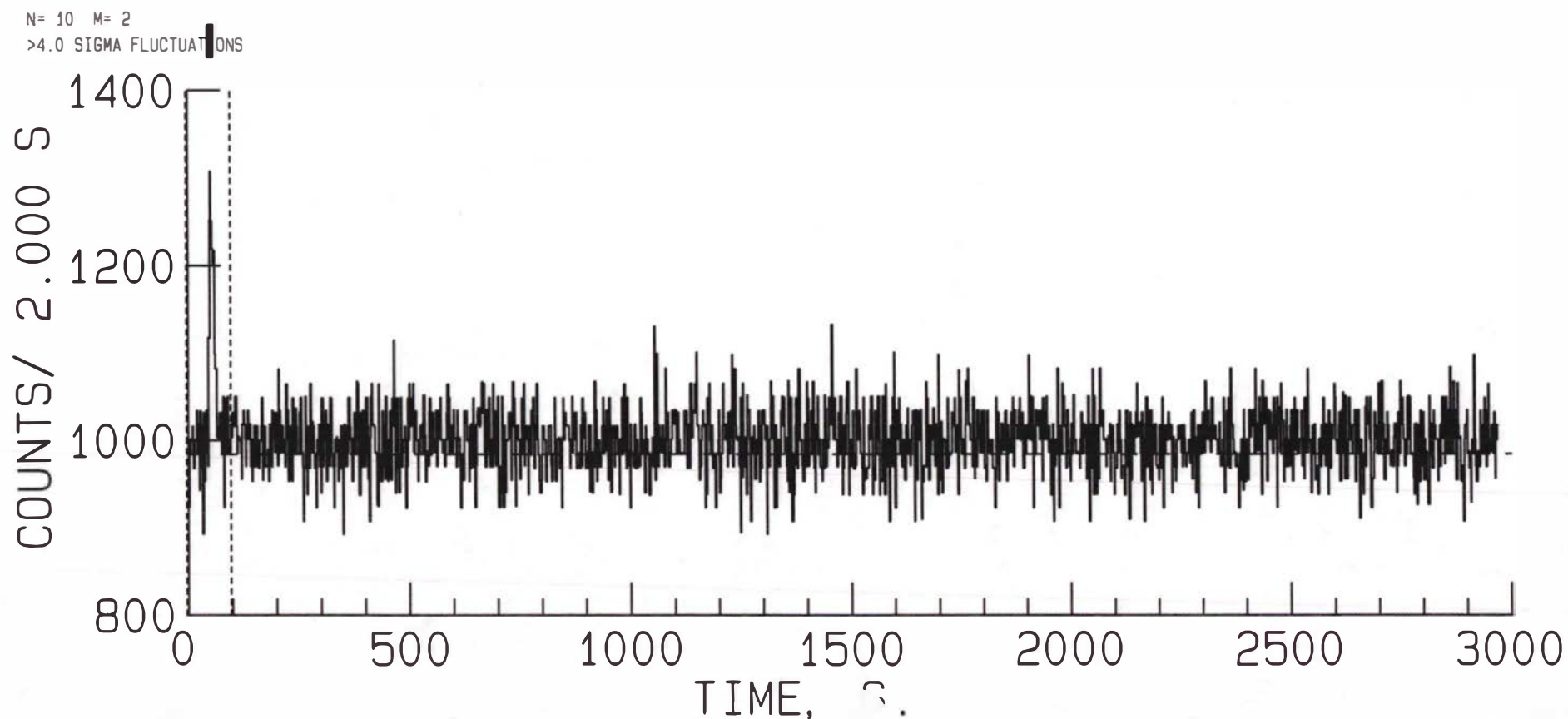
ULYSSES RT

13 / 5 / 98

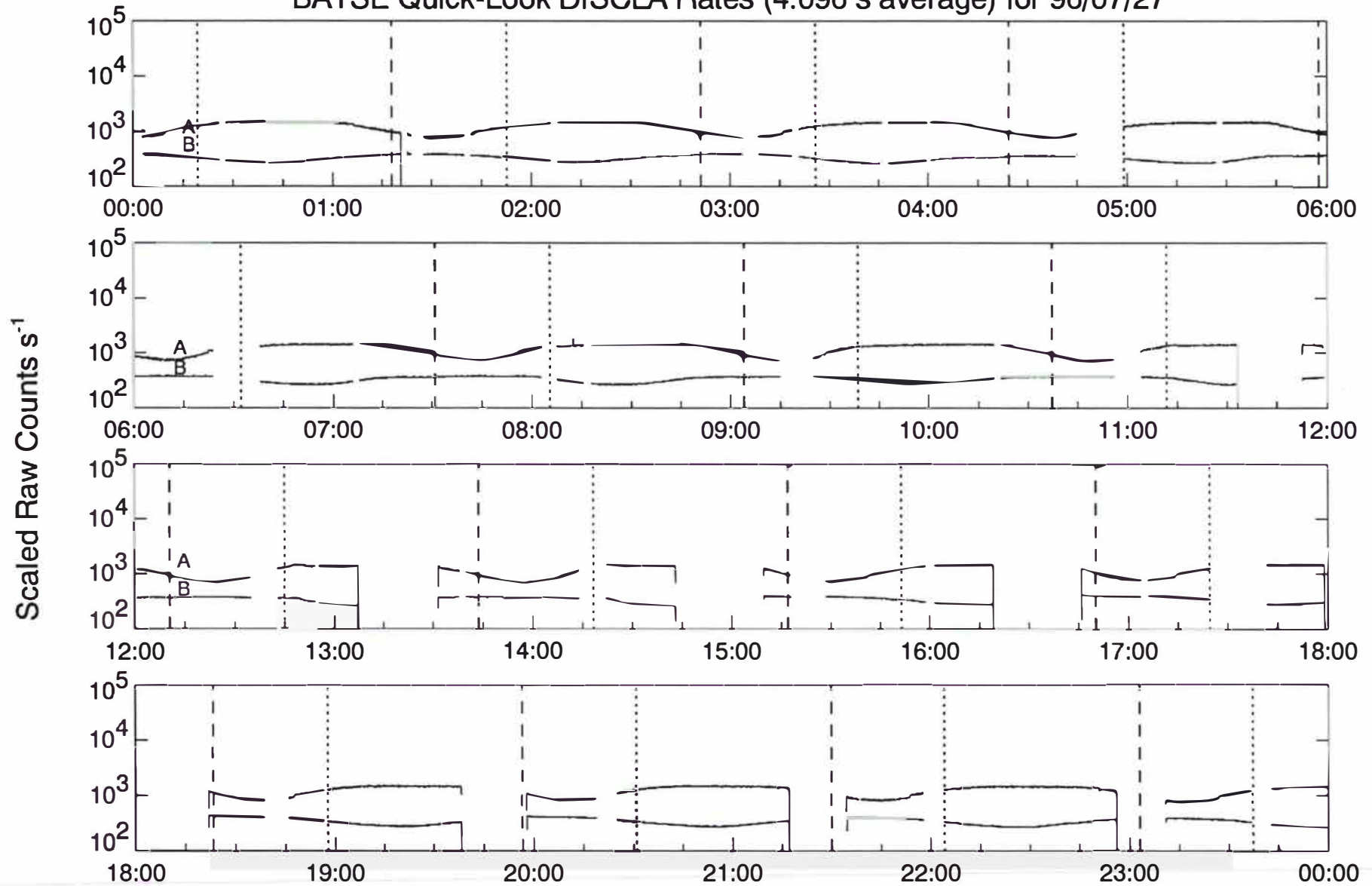
27 / 7 / 96 42677.123 s

0.250 S INTERVALS REGROUPED BY 8

21- 145 keV



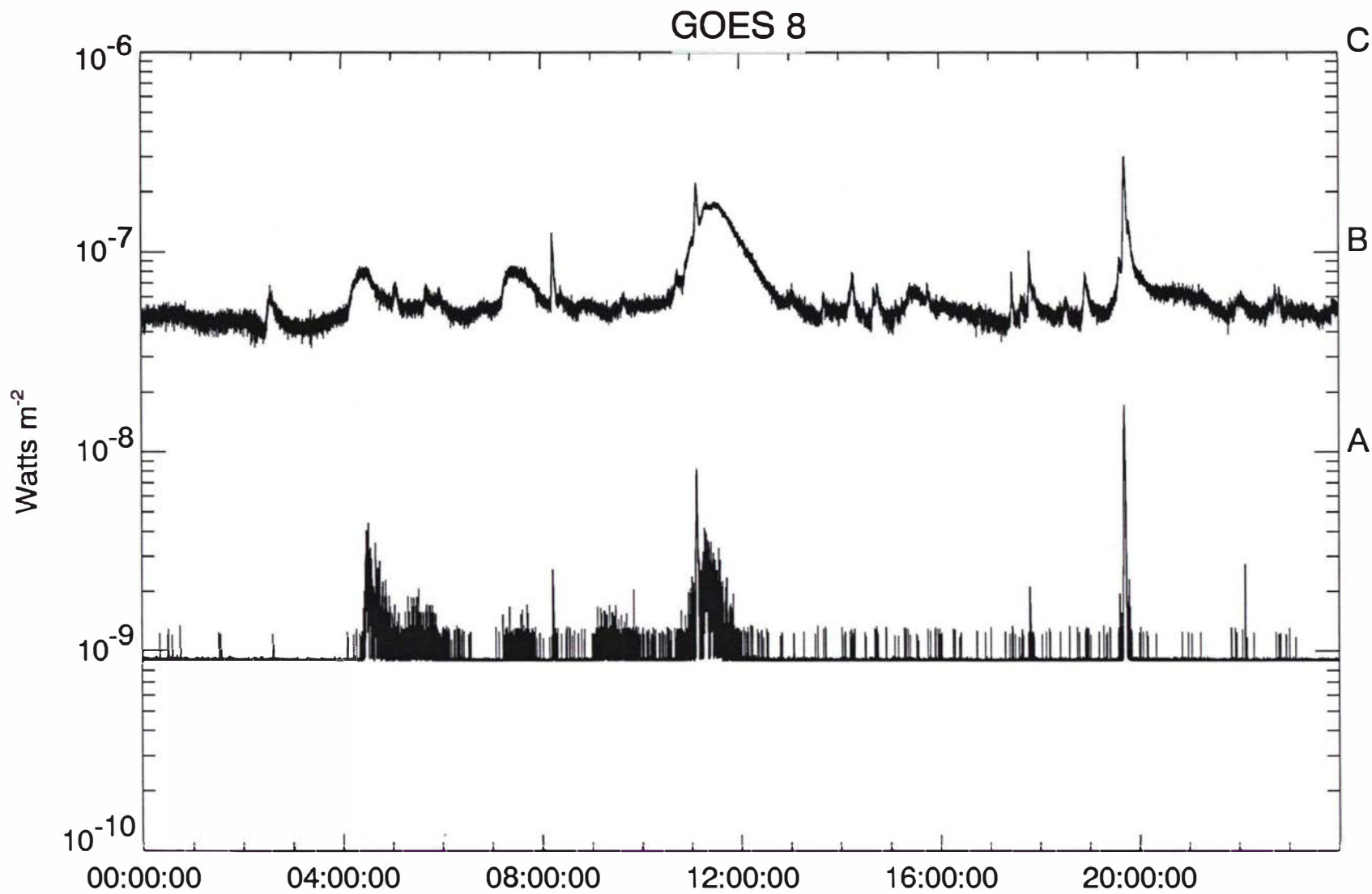
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/27



Current Time: 96/07/29, 1004 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



Data Start: 96/07/27, 0000:00

Plot created: 96/07/29, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

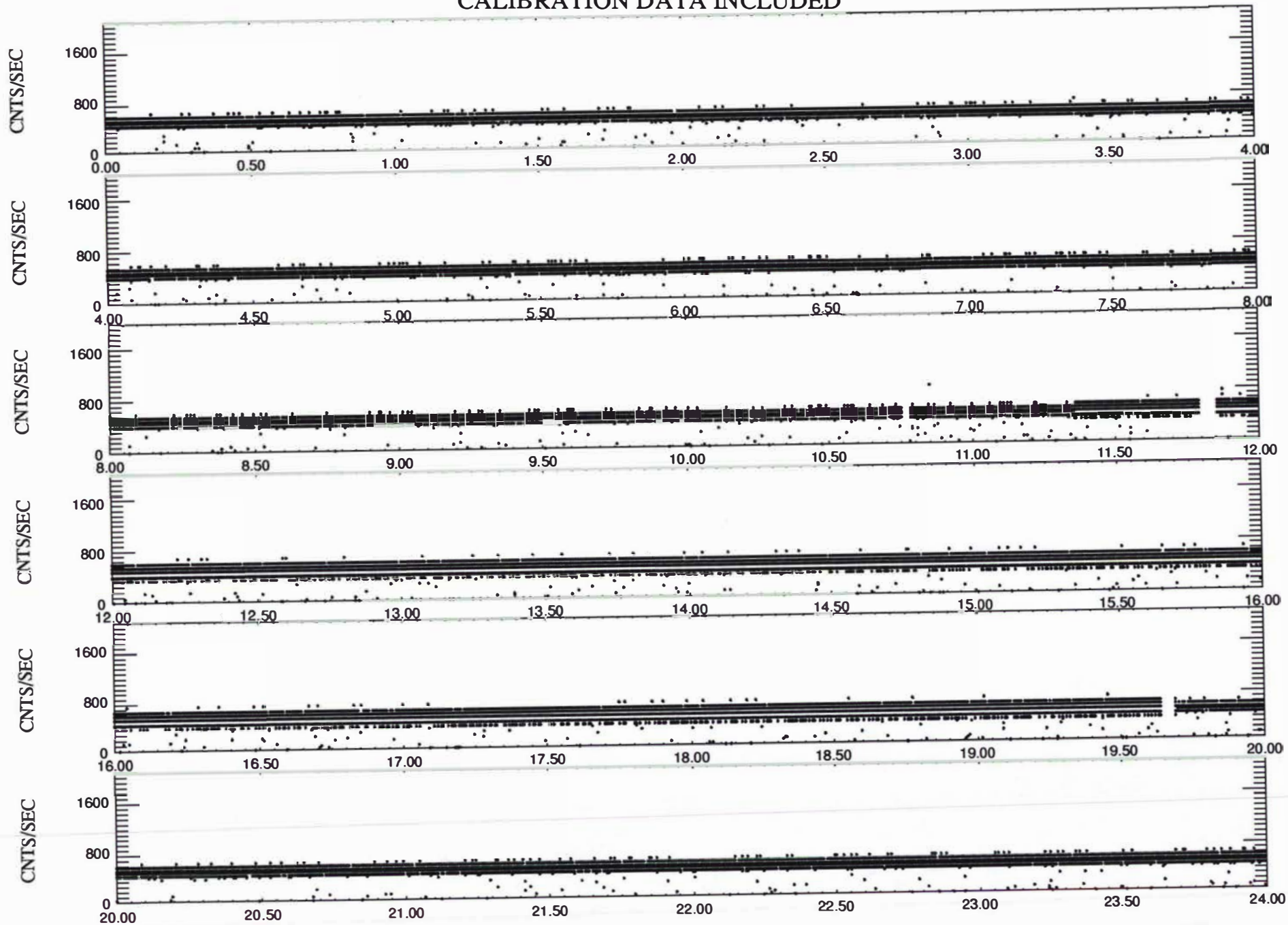
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

NO BURST (0)

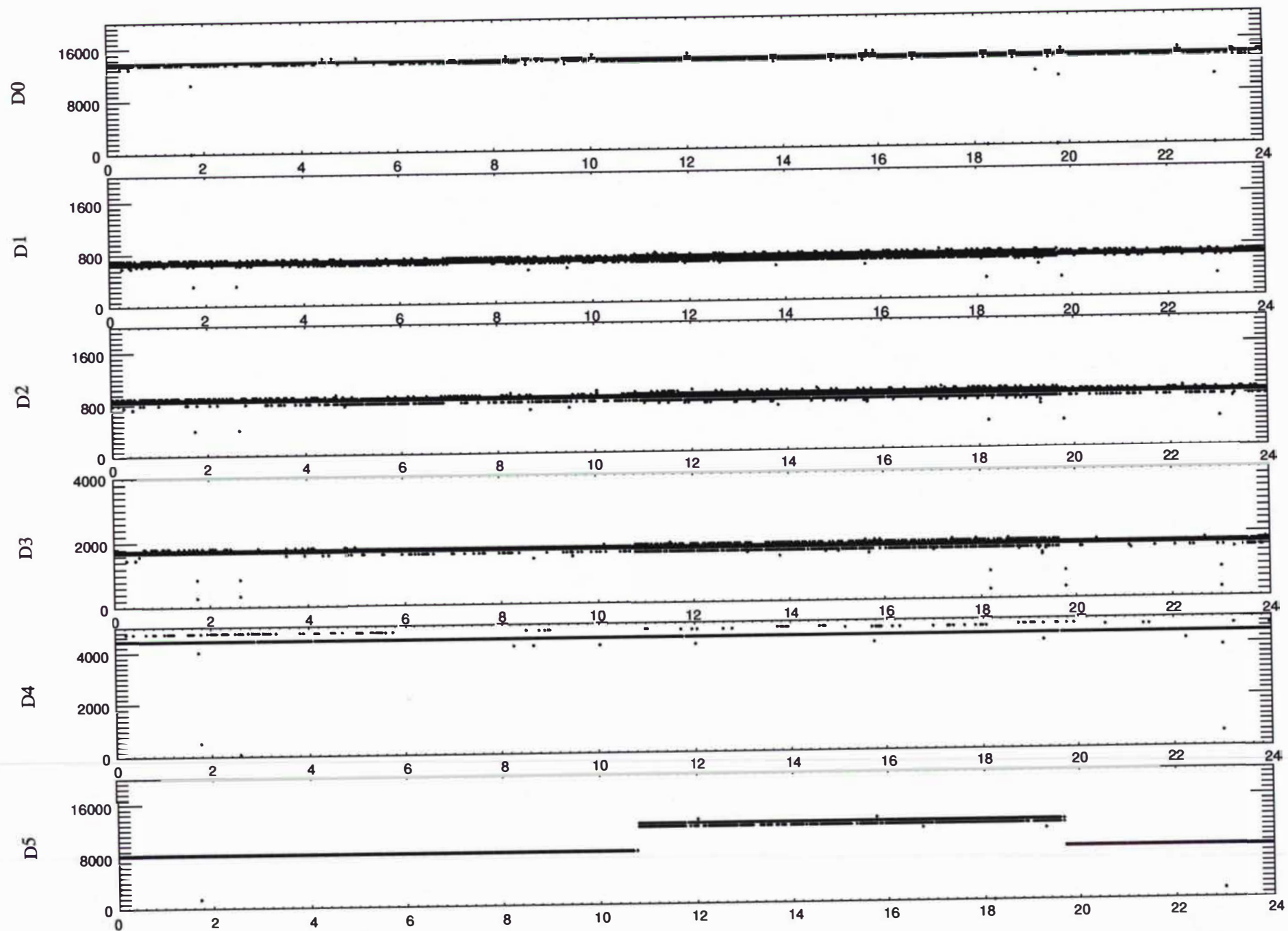


UNIVERSAL TIME

CALIBRATION DATA INCLUDED

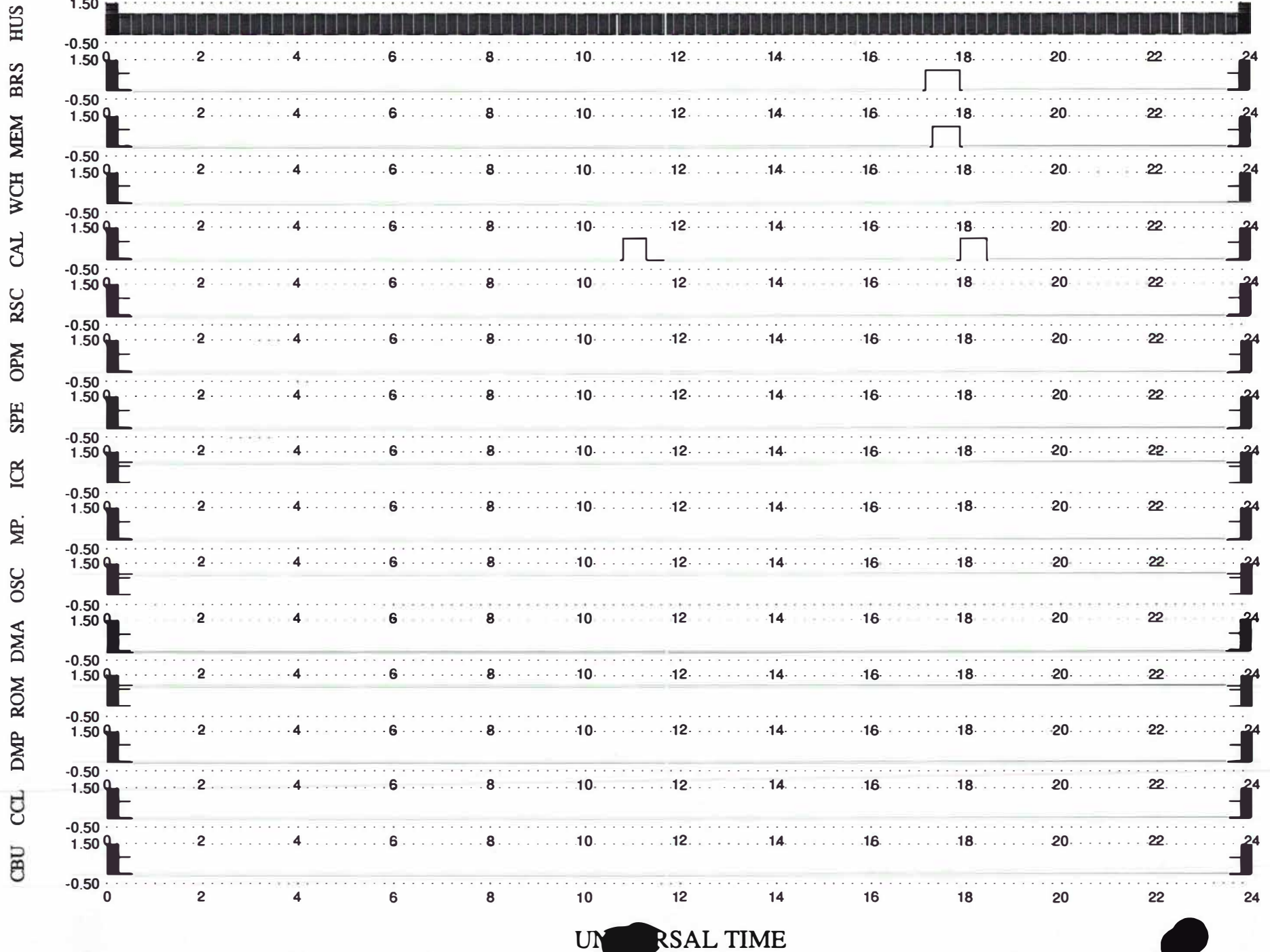


UNIVERSAL TIME

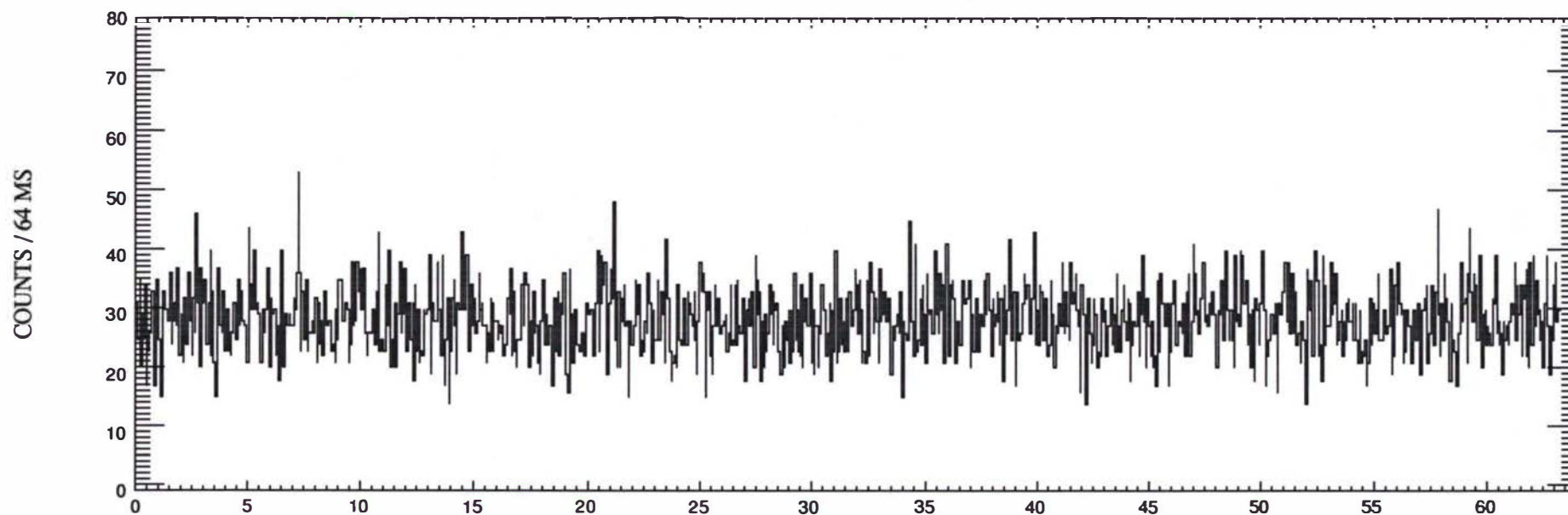


UNIVERSAL TIME

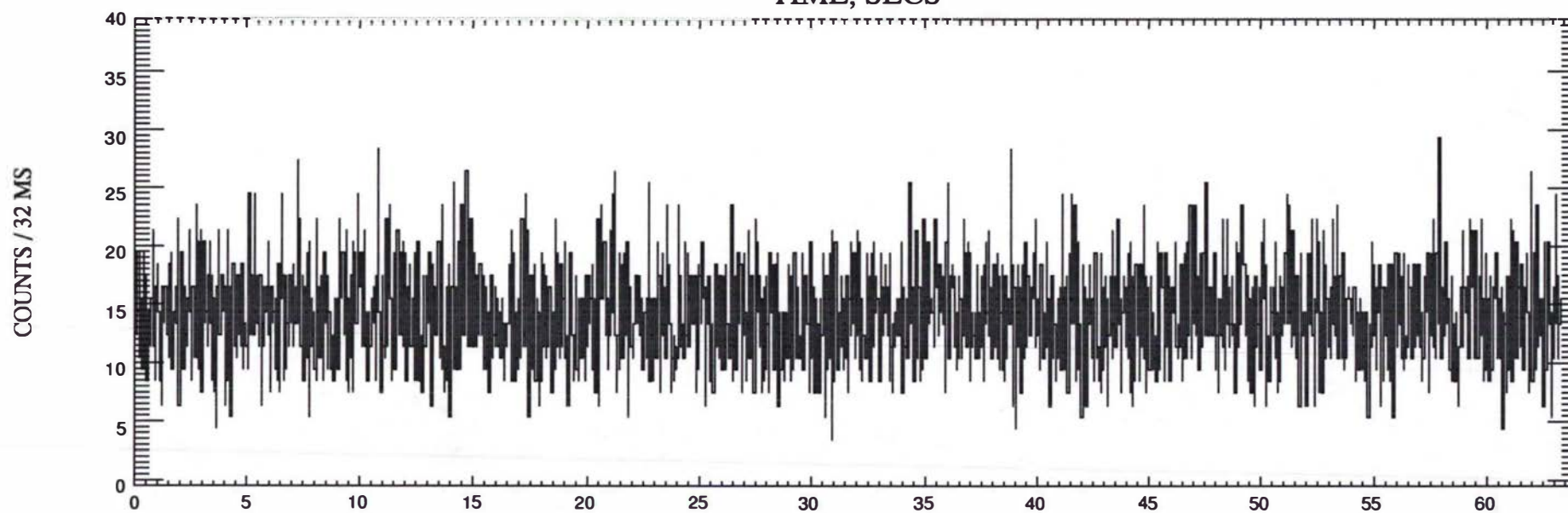
BURST NUMBER 1



Burst Counter 1 at UT=17.171143646240 h=61816.117 s 17:10:16.117

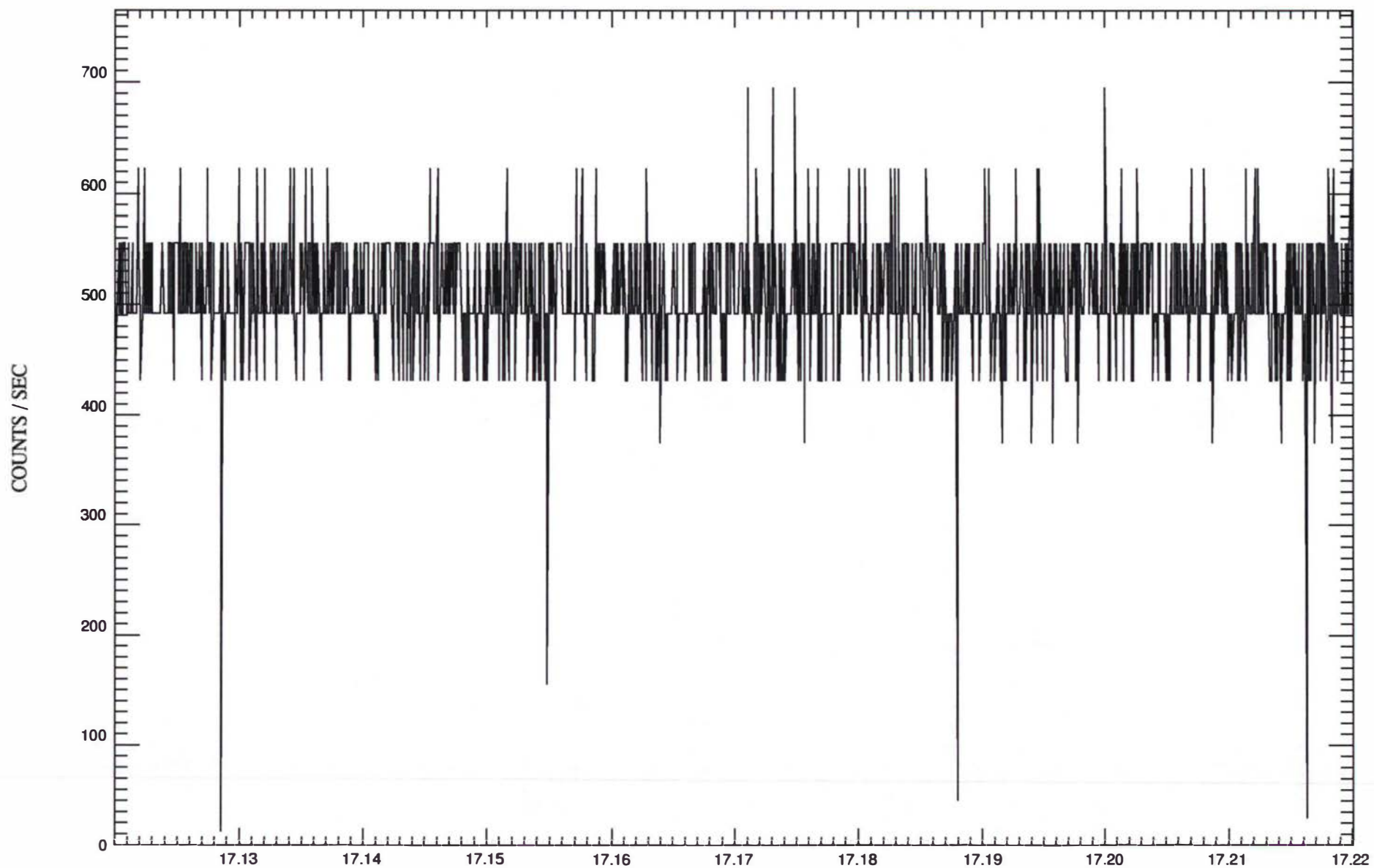


TIME, SECS

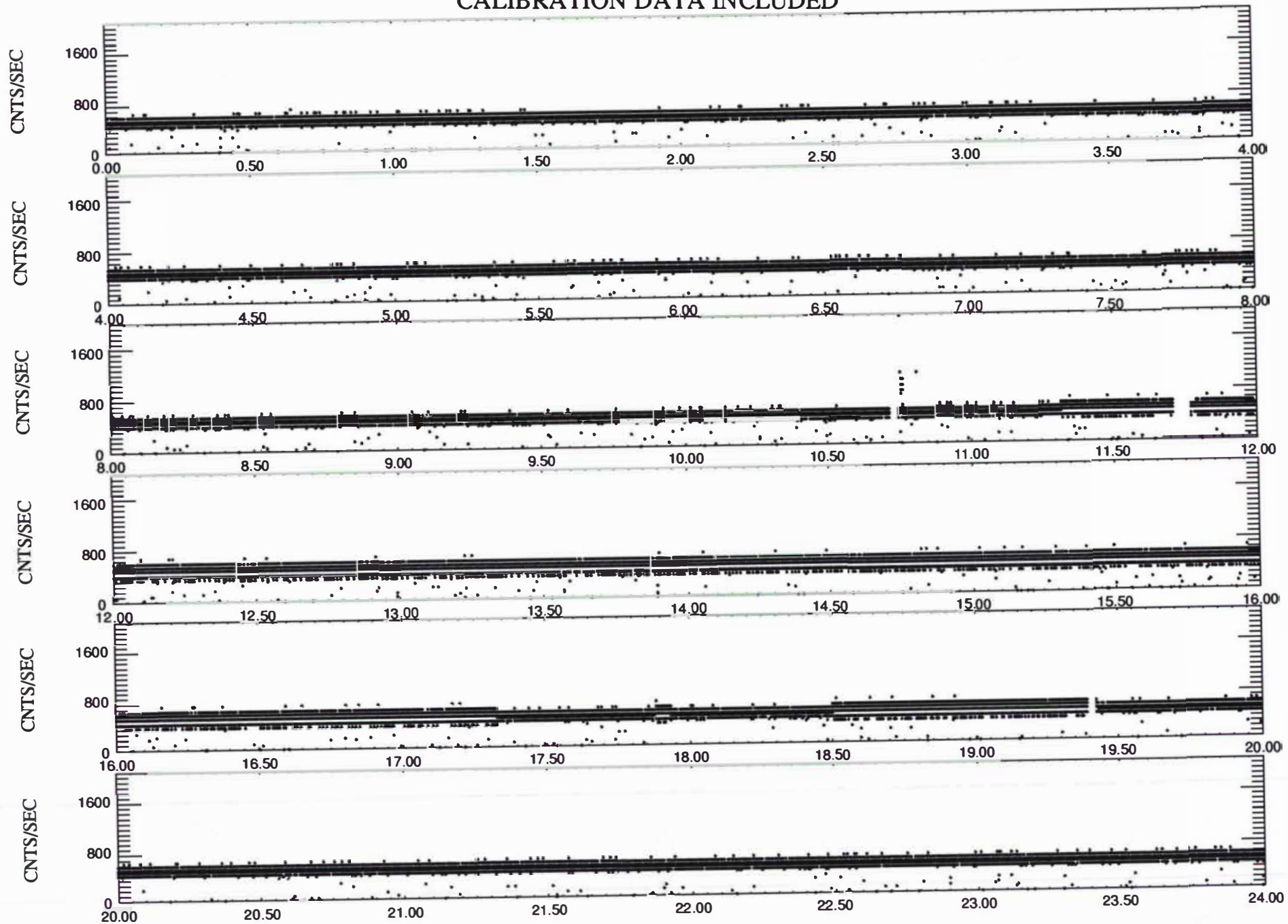


TIME, SECS

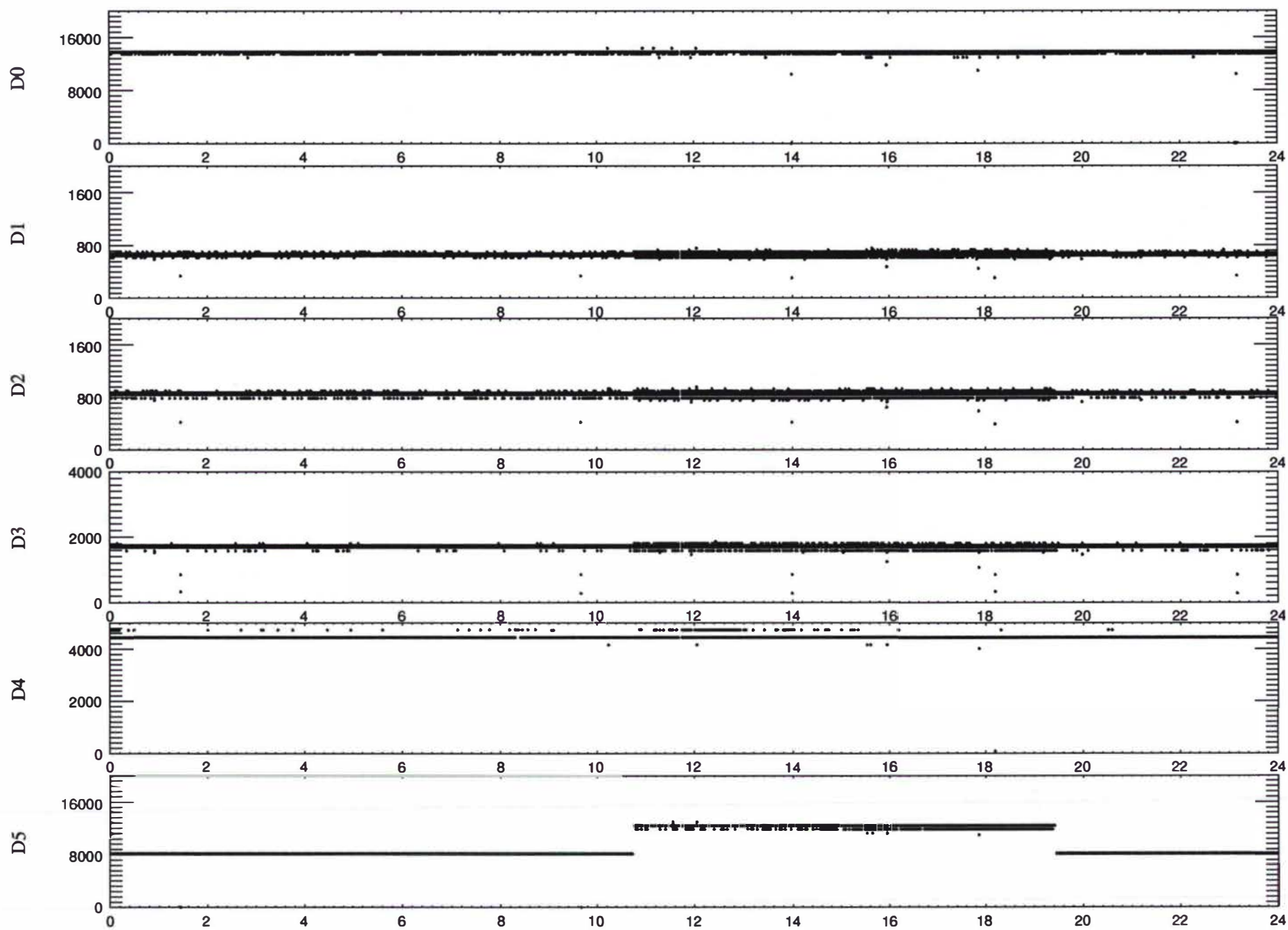
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Tue Jul 30 12:26 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 30 Jul 1996 14:26:46 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5553

BATSEARCH PROGRAM

BATSE BURST # 5553 NO
EVENT OF 1996 JUL 29 DAY OF YEAR=211
EVENT CROSSING TIME AT BATSE : 6413. S. OR 01:46:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 254.000 -7.000
BATSE PEAK COUNTING RATE: 2600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 7/ 96 IS:
RA= 159.180 DEC= 41.866 DIST= 4.943 AU
BATSE-ULYSSES DISTANCE = 739420131. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 353.80 SECS.
CROSSING TIME AT ULYSSES IS 6767. S. OR 01:52:46 +/- 479.16 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 7/ 96 IS:
RA= 92.377 DEC= 23.864 DIST= 2.253 AU
MARS-BATSE DISTANCE = 337052096. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 24.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1023.90 SECS.
CROSSING TIME AT MARS IS 7437. S. OR 02:03:56 +/- 96.17 SECONDS

BATSE BURST TRIGGER

NO.: 5553

TIME: TJD=0293 SECONDS=6413

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.9 AZIMUTH=249.4 ERROR=8.9 DEGREES

COMMENTS:

SINGLE PEAKED GRB LASTING ~ 10 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5553	960729	10293	06413	2600	254	-07	10

BATSE #

5553

31 / 7 / 96

ULYSSES RT

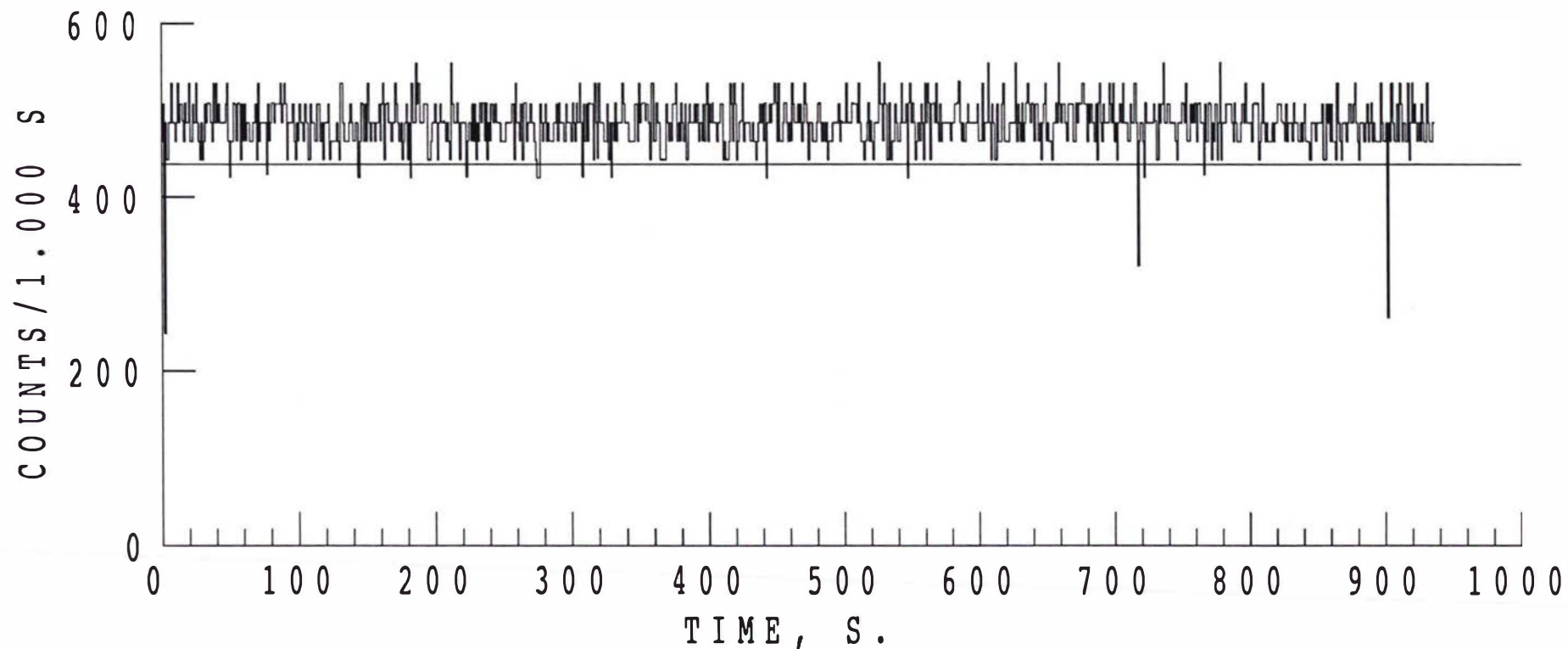
29 / 7 / 96 6300.145 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



KONUS 19960729 33188

ULYSSES RT

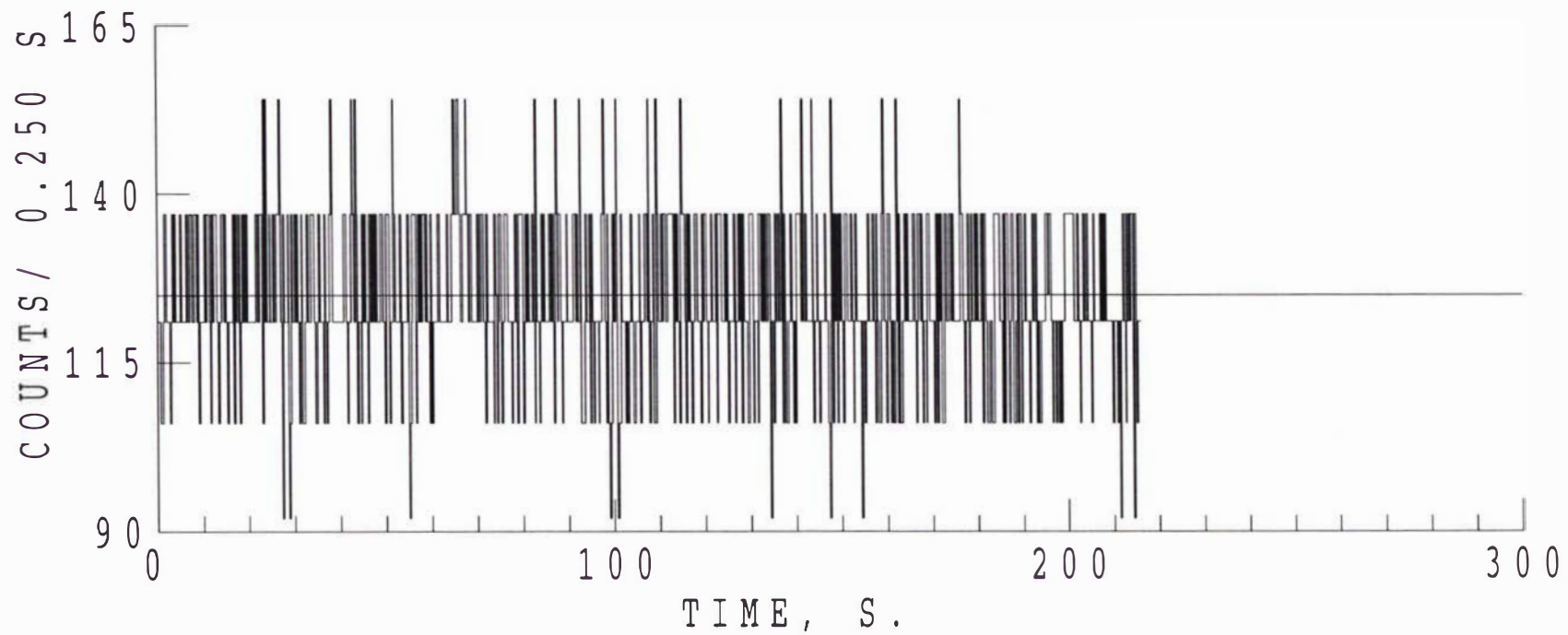
03 / 10 / 11

29 / 07 / 96 33084.242 s

0 - 0 keV

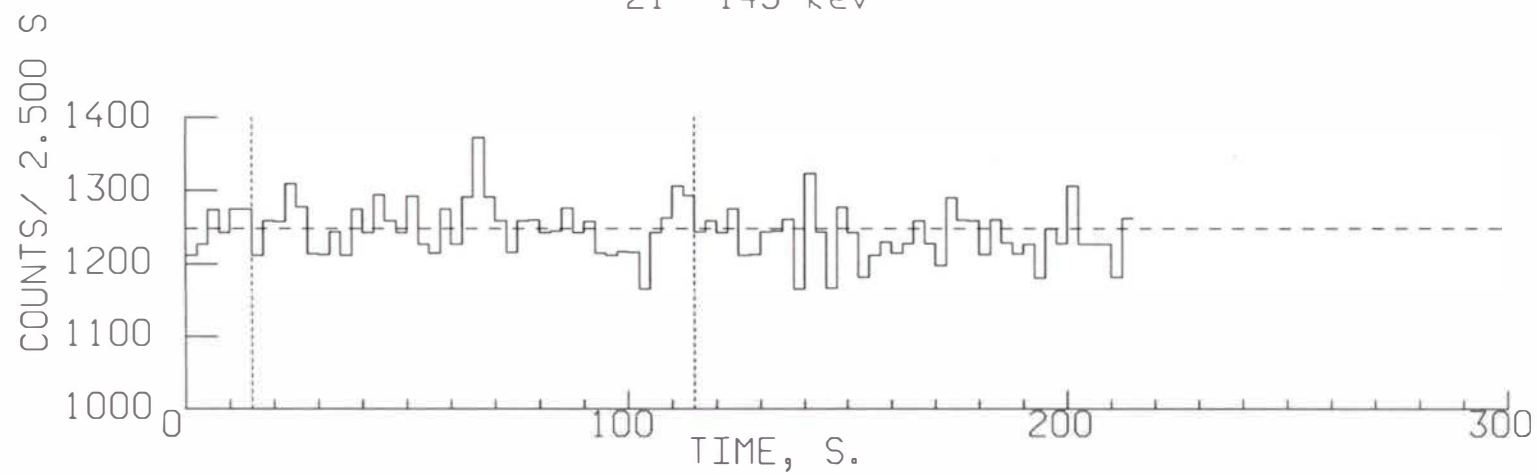
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
29/ 7/96 33084.242 s
0.250 S INTERVALS REGROUPED BY 10
21- 145 keV

4/10/11



KONUS

29 / 01 / 00

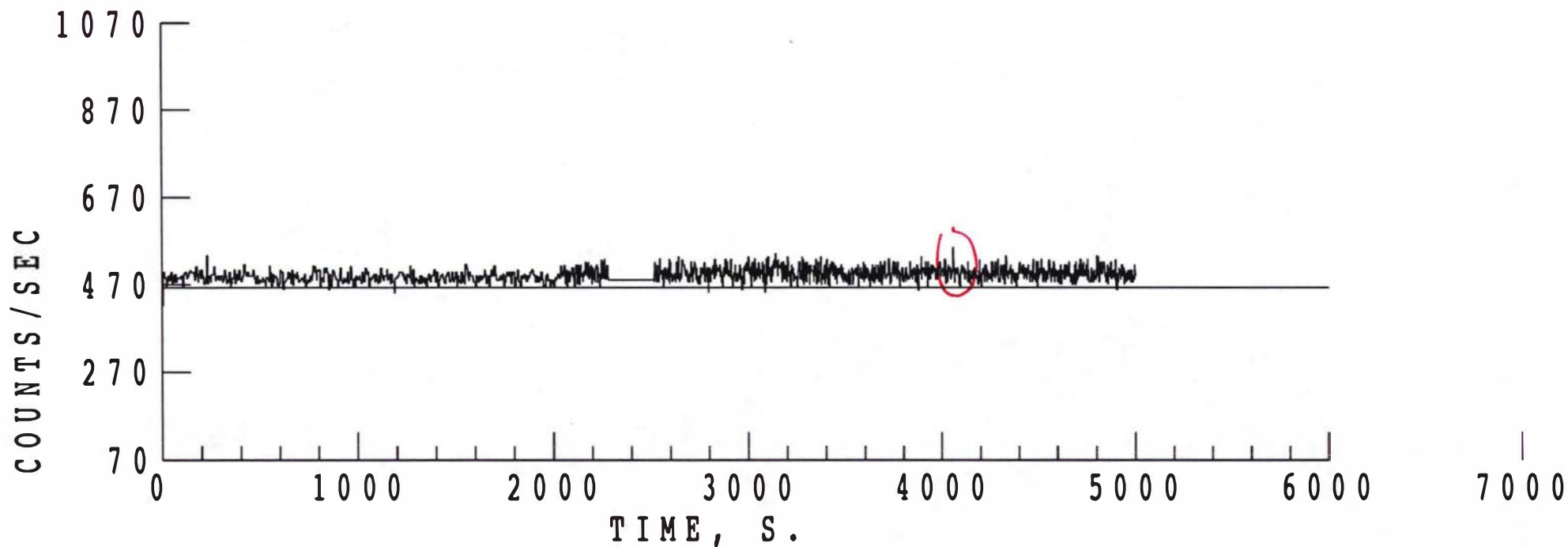
ULYSSES RT

29 / 07 / 96 29088.191 s

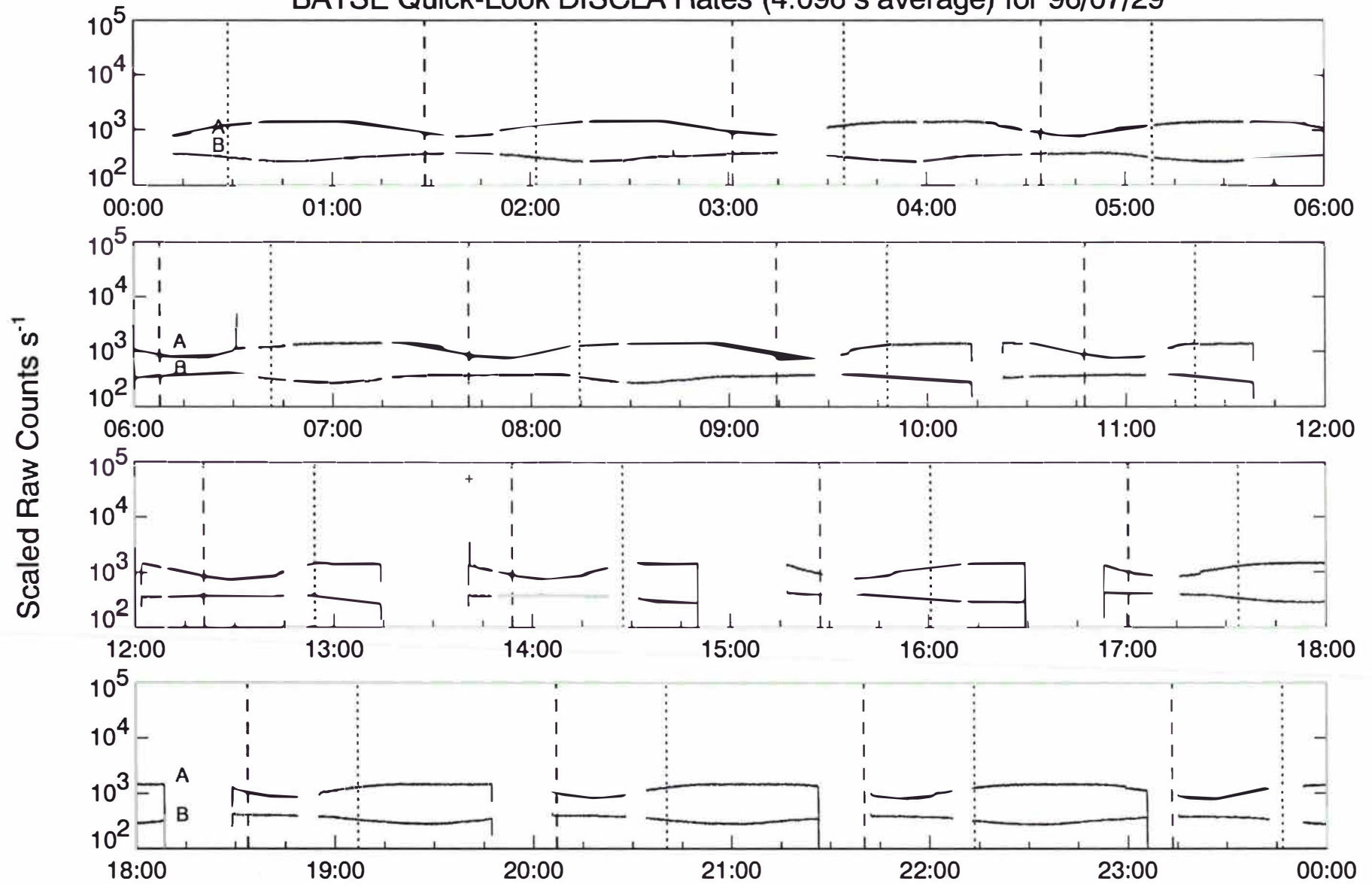
INTERVALS REGROUPED BY 10

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/29

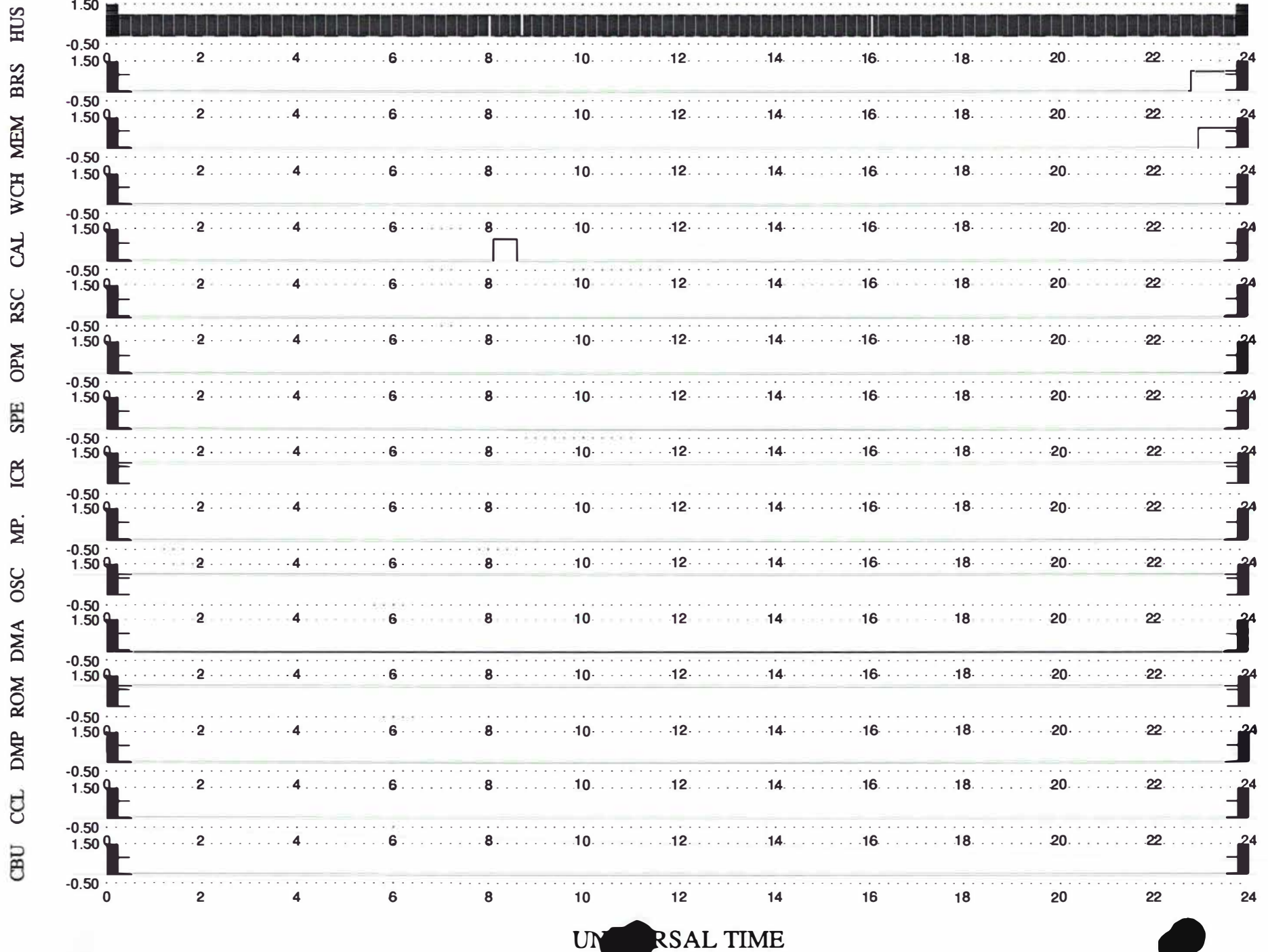


Current Time: 96/07/31, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

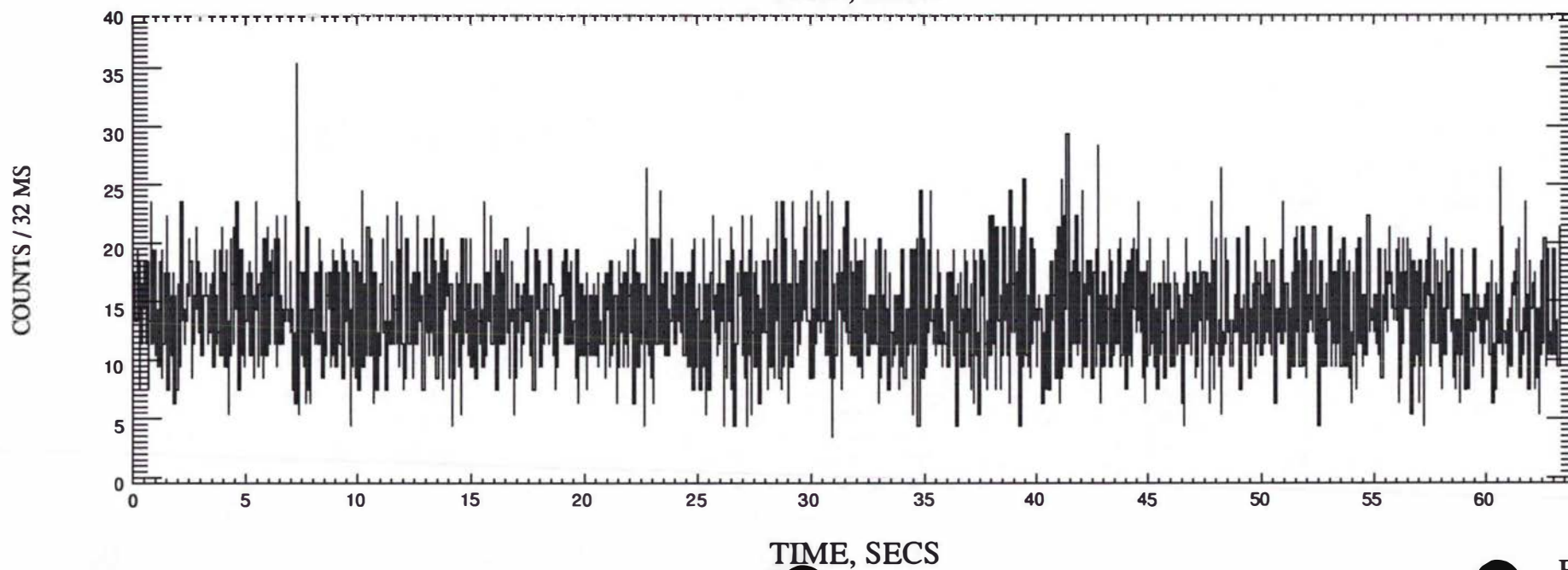
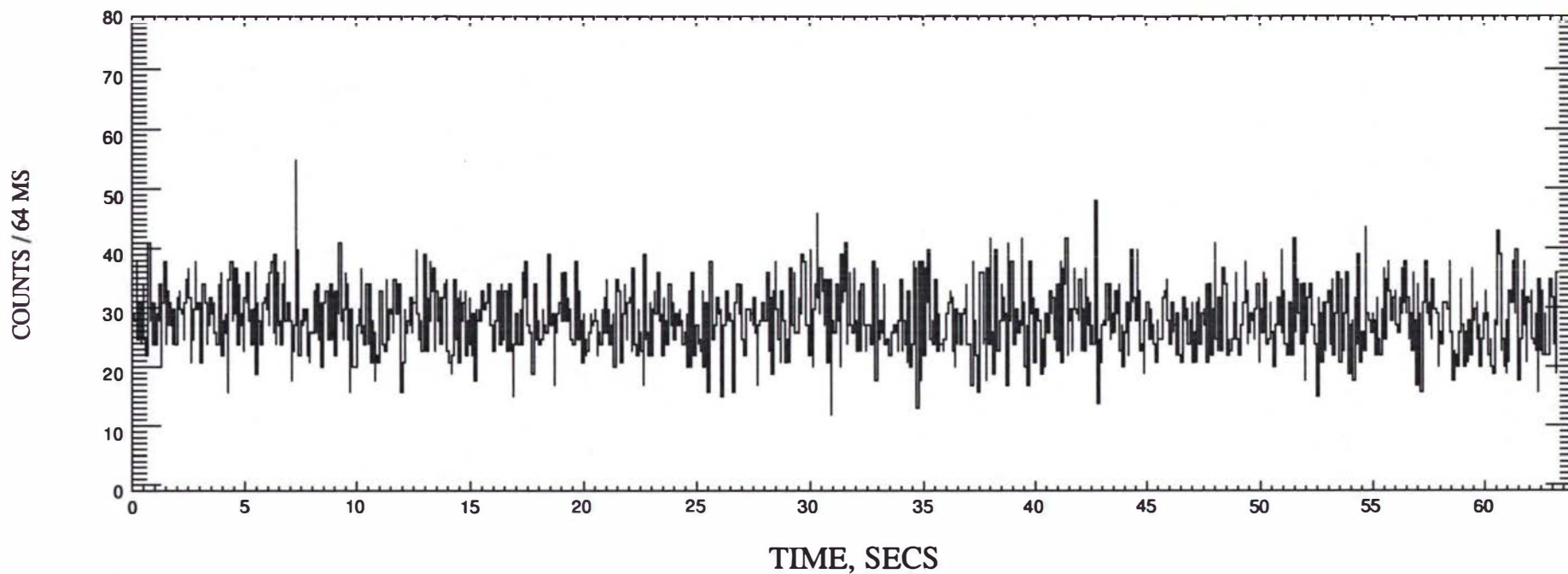
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

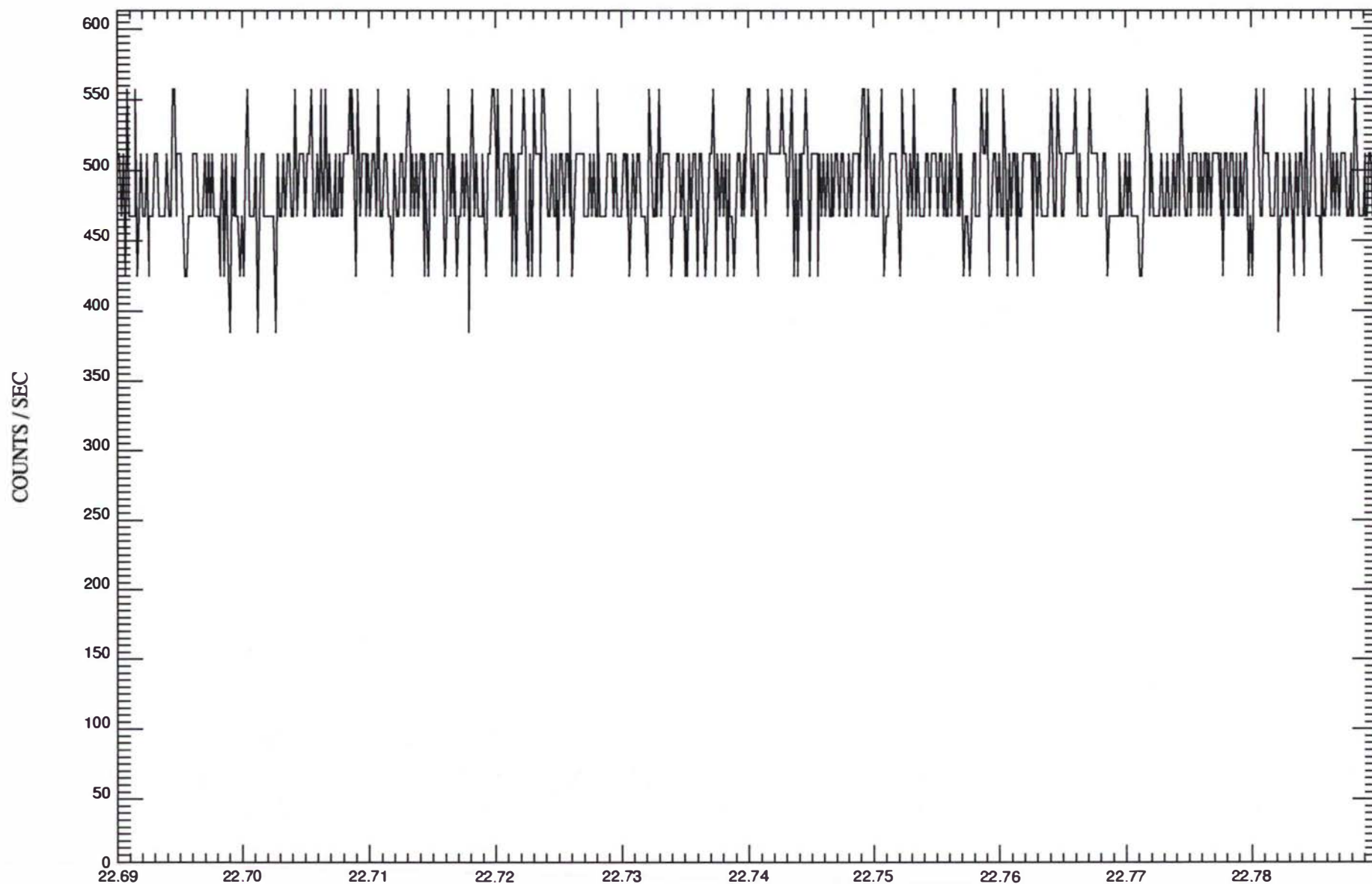
BURST NUMBER 2



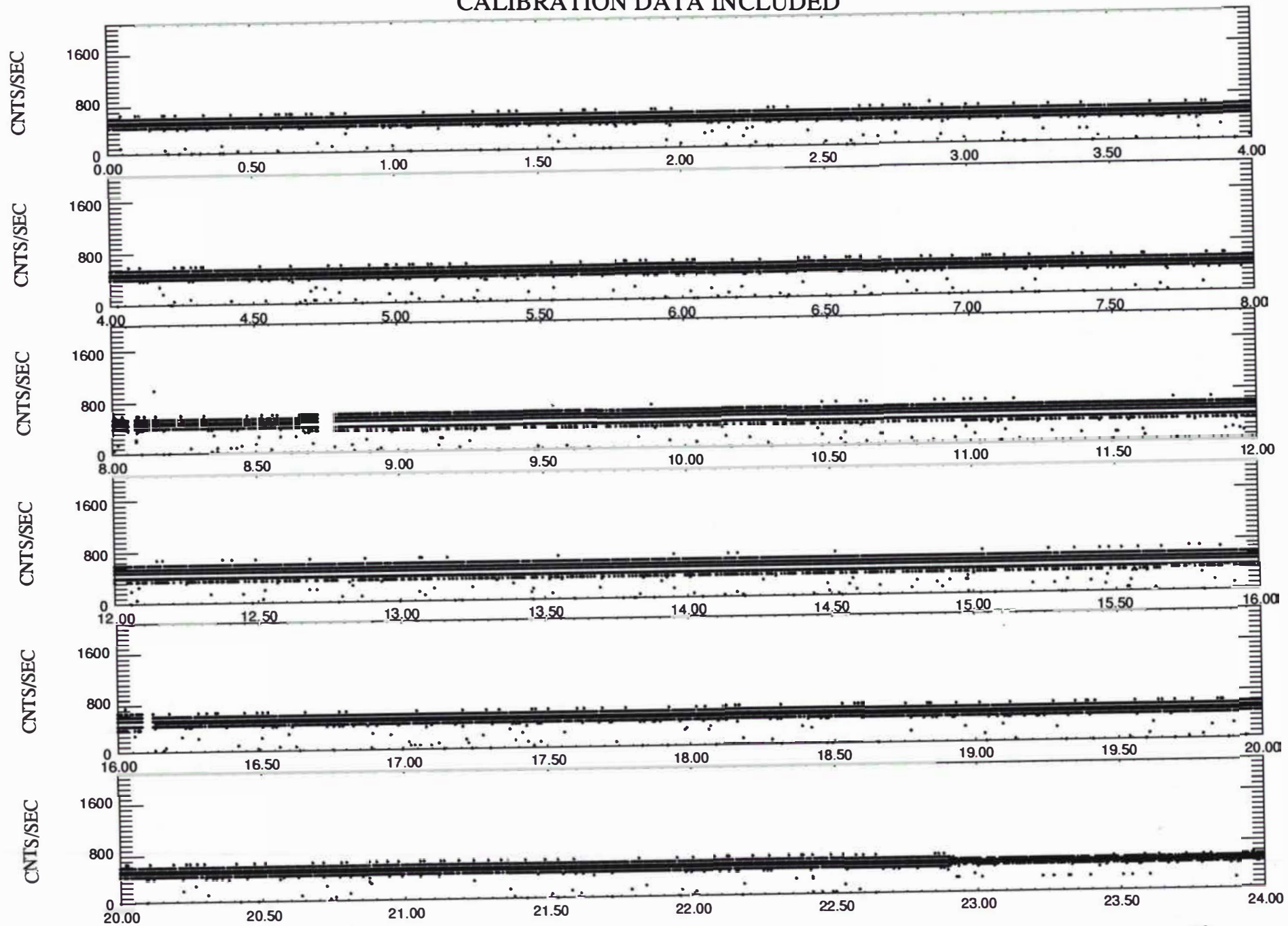
Burst Counter 2 at UT=22.743018404643 h=81874.866 s 22:44:34.866



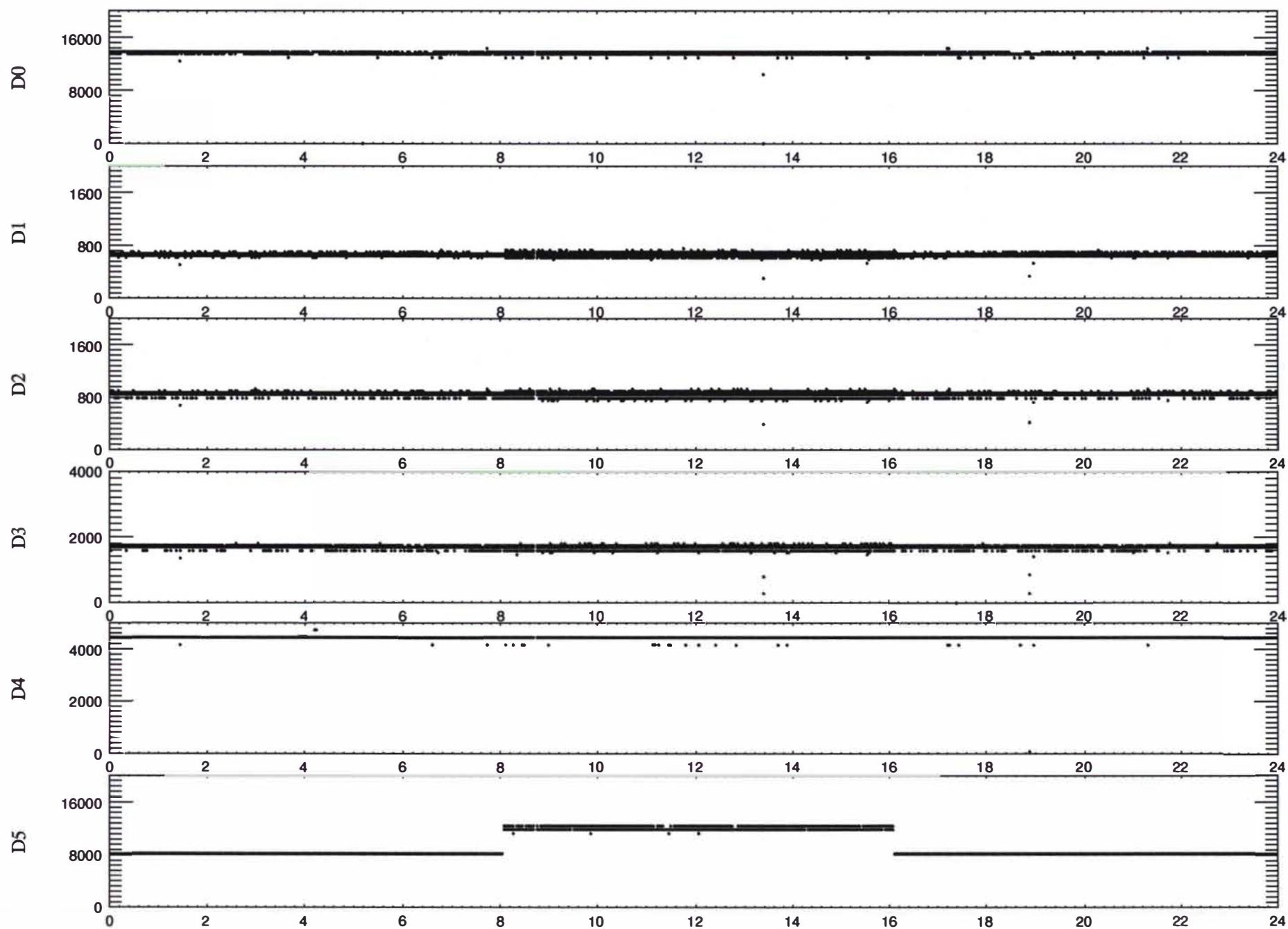
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From khurley@sunspot Fri Sep 26 08:05 PDT 1997
Date: Fri, 26 Sep 1997 08:06:31 -0700
From: khurley@sunspot (Kevin Hurley)
To: dasmith@space.mit.edu
Subject: Ulysses responses to XTE events
Cc: khurley@sunspot

Dear Don,

Well, that changes things a bit! Here are the replies.

Kevin

> From dasmith@space.mit.edu Thu Sep 25 08:43 PDT 1997
> From: "Don A. Smith" <dasmith@space.mit.edu>
> Subject: Re: PS
> To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
> Date: Thu, 25 Sep 1997 11:43:26 -0400 (EDT)
> Mime-Version: 1.0
>
> > I forgot to ask: why are all the times in the 50000 second range?
> > Is there something to be suspicious about here?
>
> I think we have a misunderstanding here. I gave the times in MJD,
> not in seconds. Am I to understand that you took the decimal
> number (e.g. 50232.23211) as the seconds of the day in question?
> Here are the numbers in the format you want:
>
Ulysses response
> 96 05 29 20054 35.5 83.5 'XTE' NO
> 96 04 08 68196 110.5 -03.8 'XTE' NO
> 96 07 30 02545 100.8 -19.5 'XTE' NO
> 96 10 02 75222 83.3 -16.8 'XTE' RATE INCREASE
> 97 04 12 24132 283.8 -31.8 'XTE' NO
> 96 10 29 68696 97.5 -41.7 'XTE' NO
> 97 02 24 26044 179.8 -58.7 'XTE' NO
> 96 12 30 07472 309.0 -69.0 'XTE' RATE INCREASE
>
> That ought to be better,
> --
> Don Smith The Rossi X-Ray Timing Explorer
> dasmith@space.mit.edu <http://www.mit.edu/~dasmith/>
>
> "There are love dogs no one knows the names of
> Give your life to be one of them."
> - Rumi (13th Century Persian Sufi Mystic Poet)
>

X T E

ULYSSES RT

25 / 9 / 97

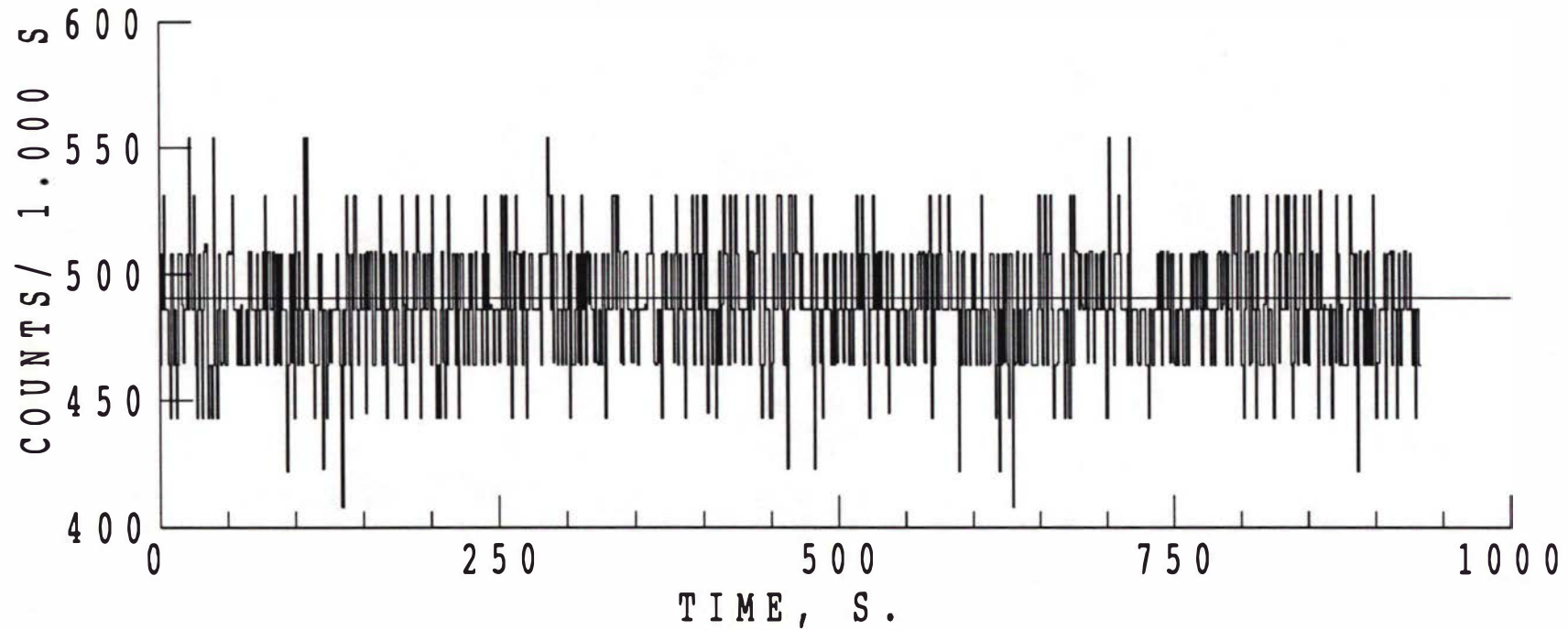
30 / 7 / 96 1731.210 s

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 PANJEVG@SSLLES.MSFC.NASA.GOV Thu Aug 1 13:36 PDT 1996
Date: Thu, 1 Aug 1996 15:36:35 -0500 (CDT)
From: PANJEVG@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5554

BATSEARCH PROGRAM

No

BATSE BURST # 5554
EVENT OF 1996 JUL 30 DAY OF YEAR=212
EVENT CROSSING TIME AT BATSE : 70508. S. OR 19:35:08.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 278.000 -56.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 7/ 96 IS:
RA= 159.536 DEC= 41.566 DIST= 4.958 AU
BATSE-ULYSSES DISTANCE = 741732949. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1854.28 SECS.
CROSSING TIME AT ULYSSES IS 72362. S. OR 20:06:02 +/- 362.55 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 7/ 96 IS:
RA= 93.110 DEC= 23.863 DIST= 2.250 AU
MARS-BATSE DISTANCE = 336574432. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 32.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 948.58 SECS.
CROSSING TIME AT MARS IS 71457. S. OR 19:50:56 +/- 118.67 SECONDS

BATSE BURST TRIGGER

NO.: 5554

TIME: TJD=0294 SECONDS=70508

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=143.1 AZIMUTH=283.5 ERROR=2.80 DEGREES

COMMENTS:

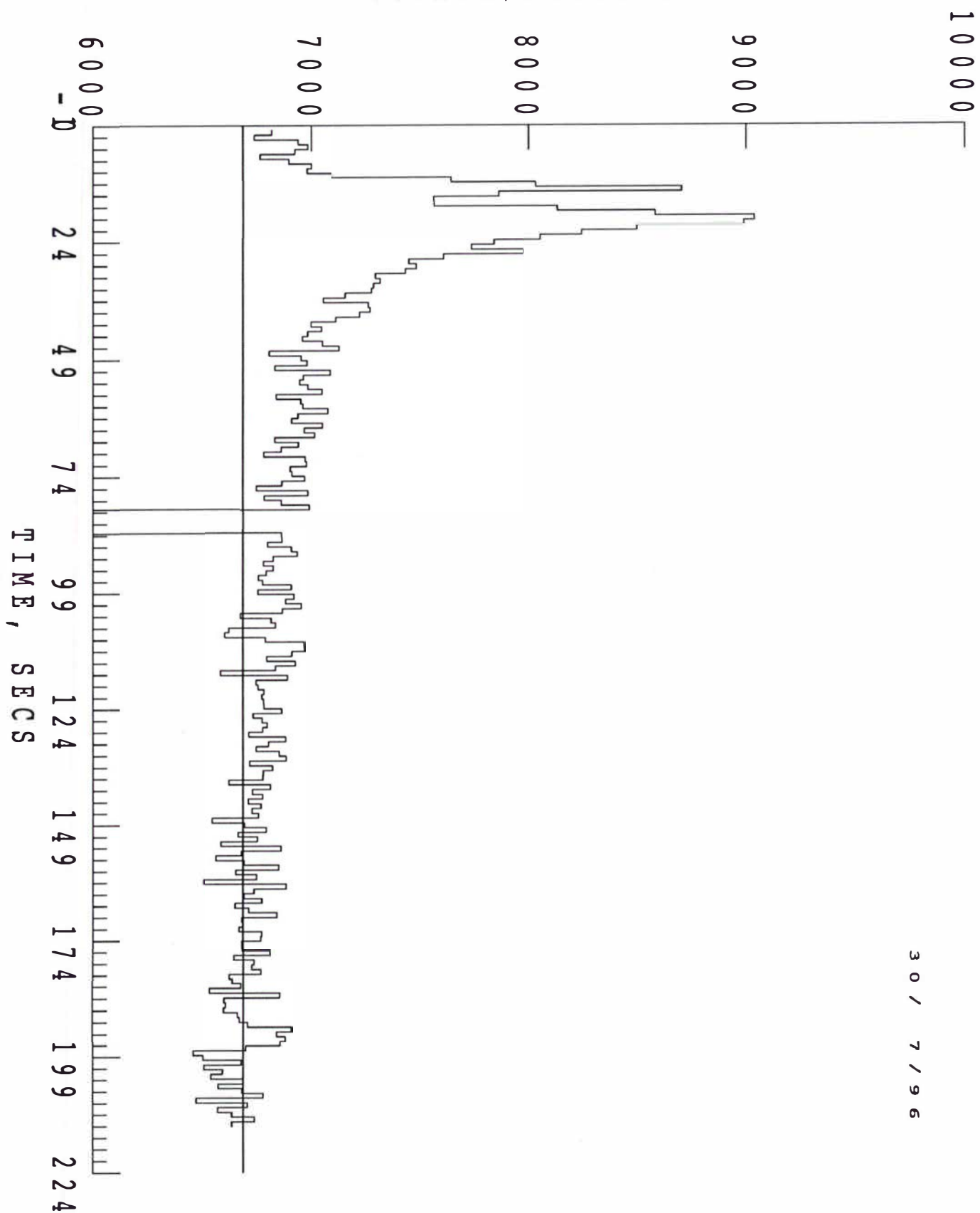
GRB LASTING ~25s. 2 MAIN EPISODES. VISIBLE ABOVE 300KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5554	960730	10294	70508	3000	278	-56	25

BACODINE 5554 30/07/96 70495.945

25 - 100 keV

COUNTS/1.024 S



30 / 7 / 96

BATSE #

5554

2 / 8 / 96

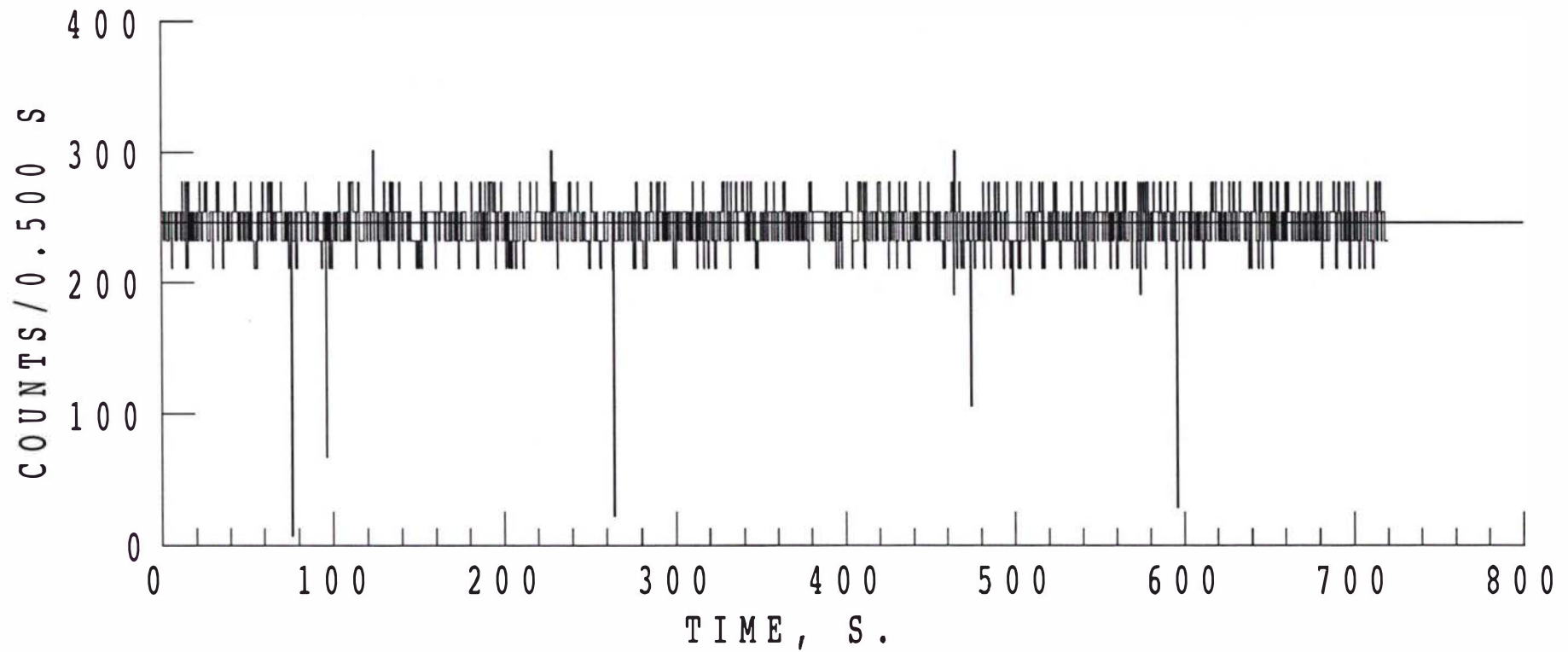
ULYSSES RT

30 / 7 / 96 72000.117 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From PANJEVG@ssl.msfc.nasa.gov Thu Aug 1 13:38 PDT 1996
From: PANJEVG@ssl.msfc.nasa.gov
Date: Thu, 1 Aug 1996 15:38:46 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5555

BATSEARCH PROGRAM

BATSE BURST # 5555
EVENT OF 1996 JUL 30 DAY OF YEAR=212
EVENT CROSSING TIME AT BATSE : 73998. S. OR 20:33:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 150.000 25.000
BATSE PEAK COUNTING RATE: 1300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 7/ 96 IS:
RA= 159.544 DEC= 41.560 DIST= 4.958 AU
BATSE-ULYSSES DISTANCE = 741784096. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=161.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2348.47 SECS.
CROSSING TIME AT ULYSSES IS 71650. S. OR 19:54:09 +/- 149.60 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 7/ 96 IS:
RA= 93.110 DEC= 23.863 DIST= 2.250 AU
MARS-BATSE DISTANCE = 336574432. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -700.24 SECS.
CROSSING TIME AT MARS IS 73298. S. OR 20:21:37 +/- 141.72 SECONDS

BATSE BURST TRIGGER

NO.: 5555

TIME: TJD=0294 SECONDS=73998

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=57.3 AZIMUTH=41.0 ERROR=2.12 DEGREES

COMMENTS:

GRB LASTING ~30S. SINGLE PULSE. NOT VISIBLE ABOVE 300KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5555	960730	10294	73998	1300	150	+25	30

BATSE #

5555

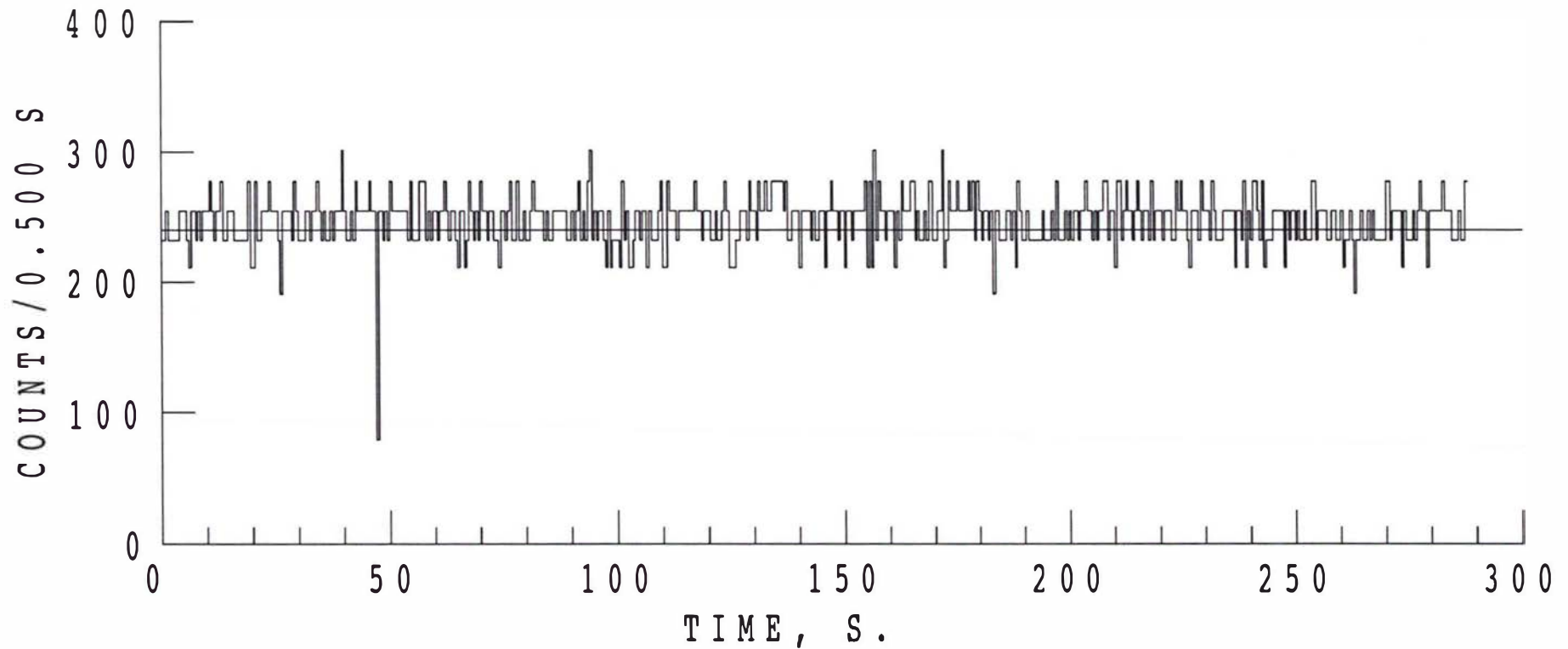
2 / 8 / 96

ULYSSES RT

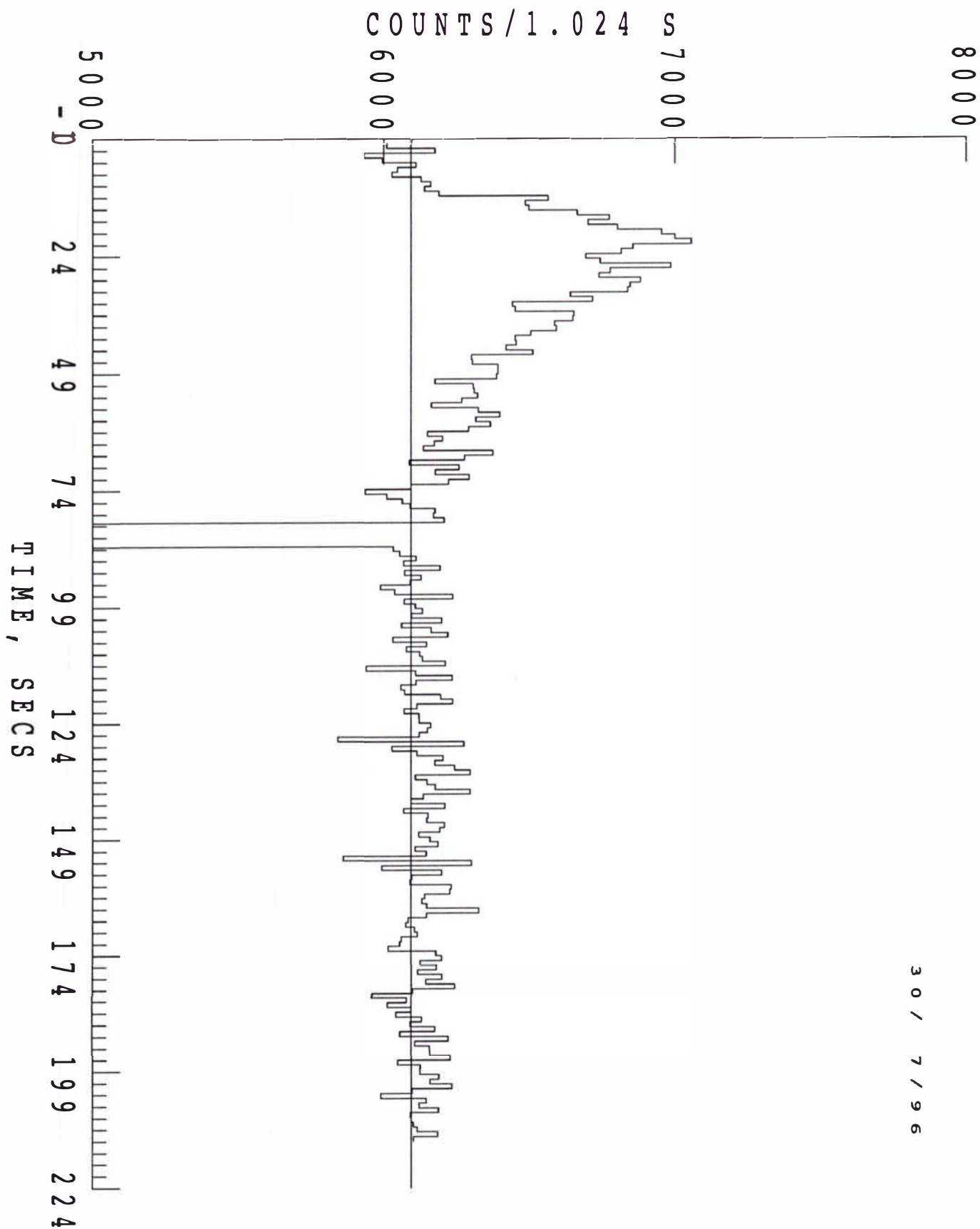
30 / 7 / 96 71496.109 s

0 - 0 keV

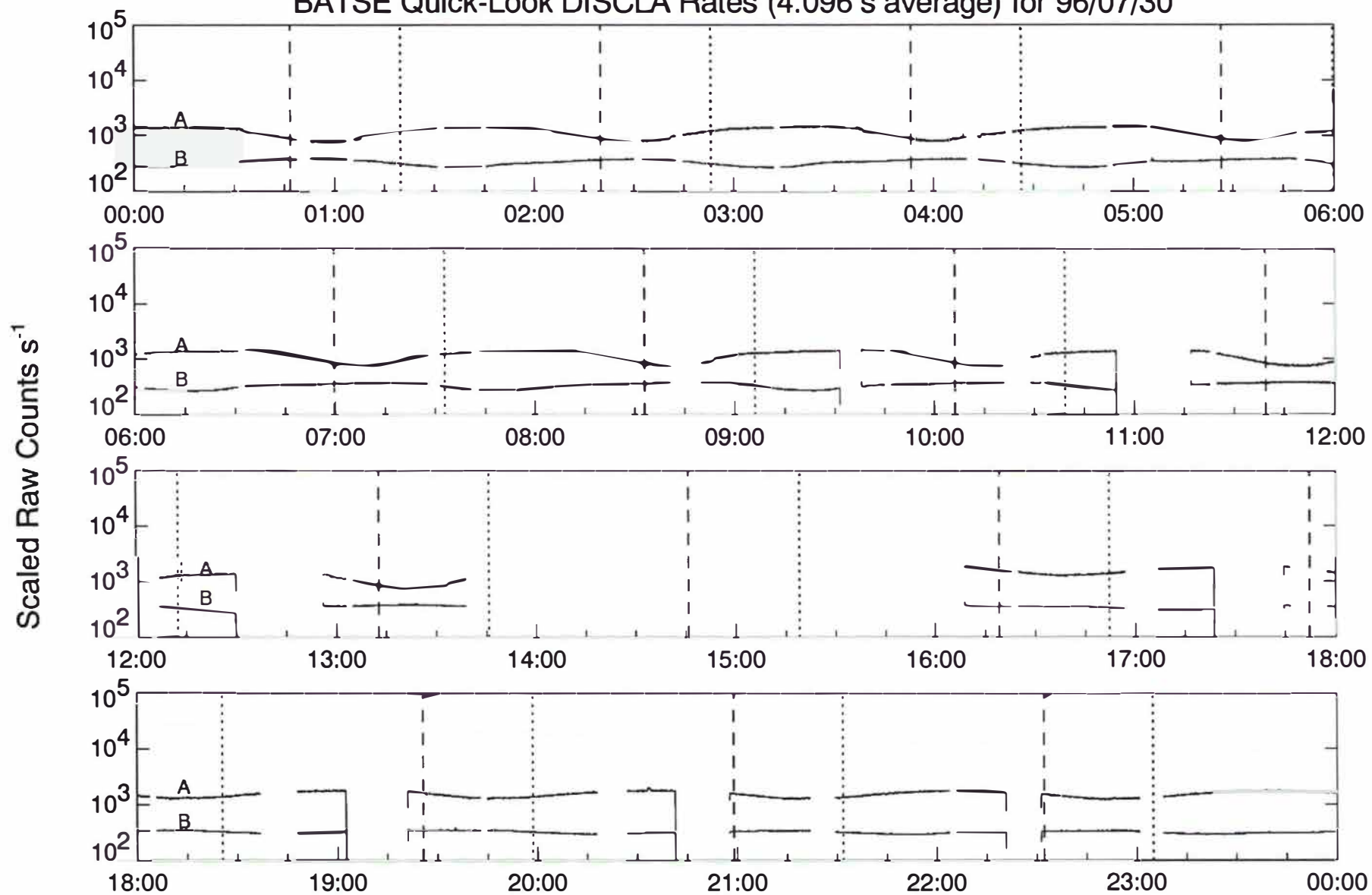
N=10 M=2
>4.0 SIGMA FLUCTUATIONS



BACODINE 5555 30/07/96 73985.737
25 - 100 keV



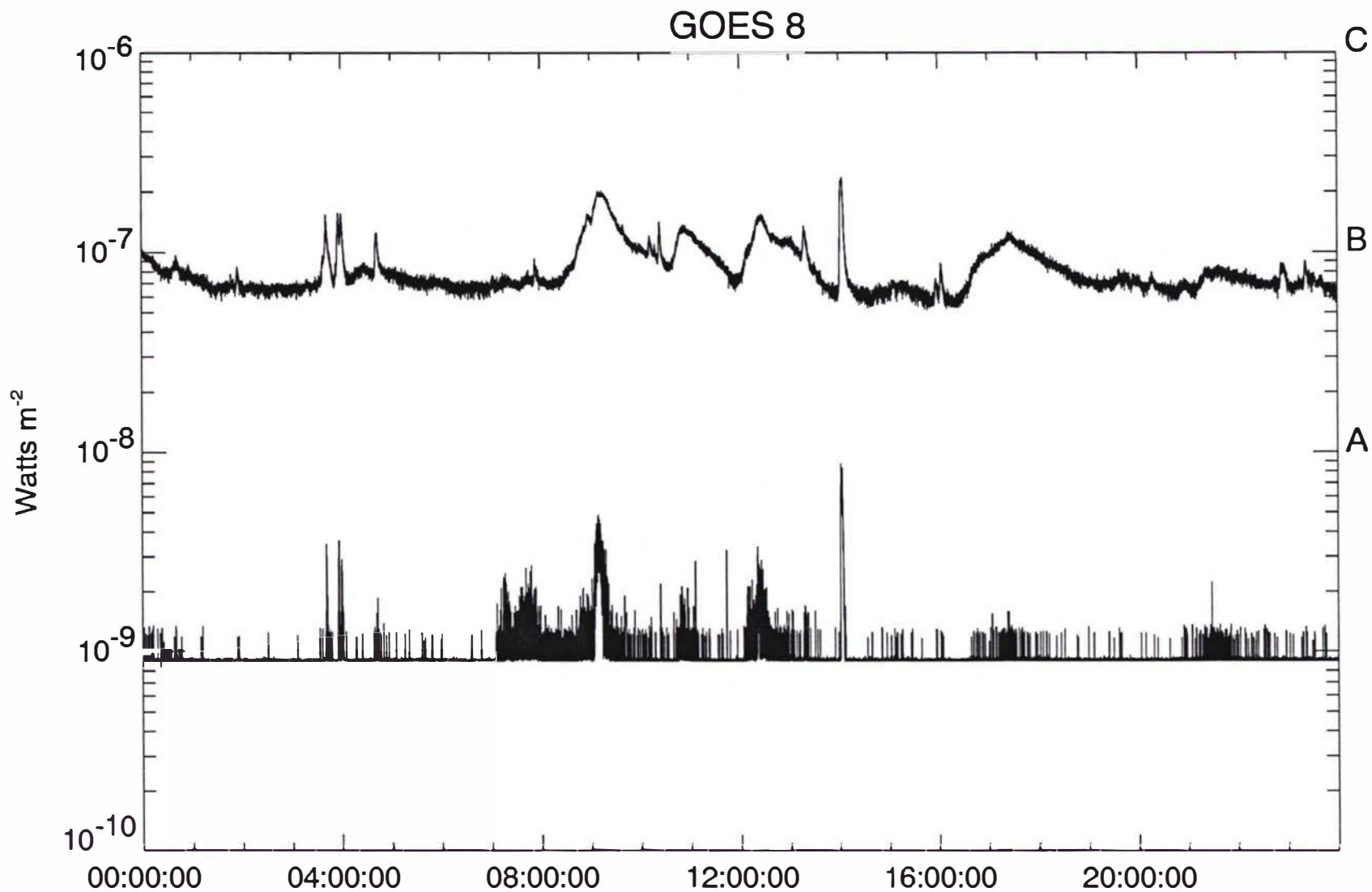
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/30



Current Time: 96/08/01, 1004 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

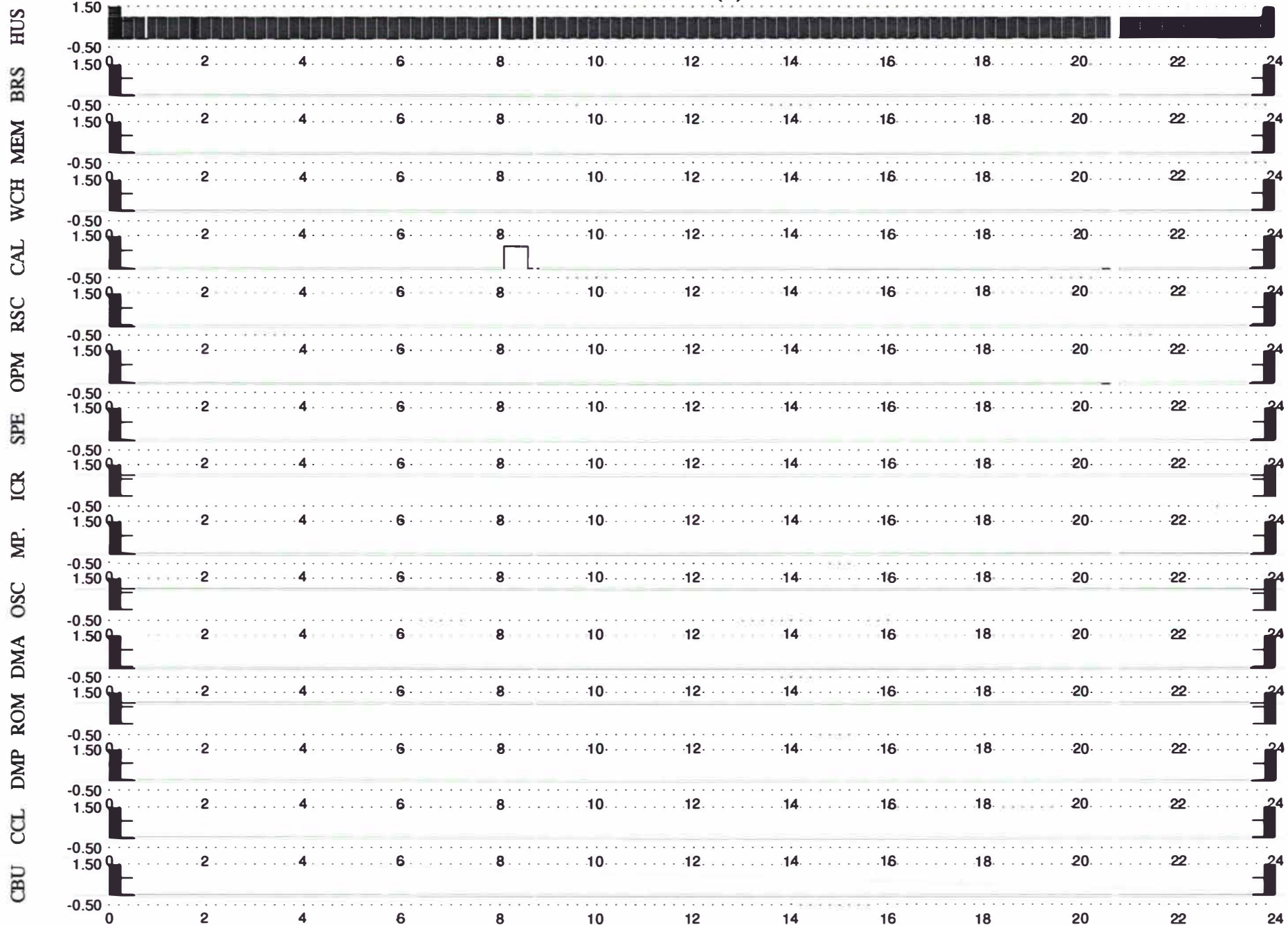


Data Start: 96/07/30, 0000:00

Plot created: 96/08/01, 1003

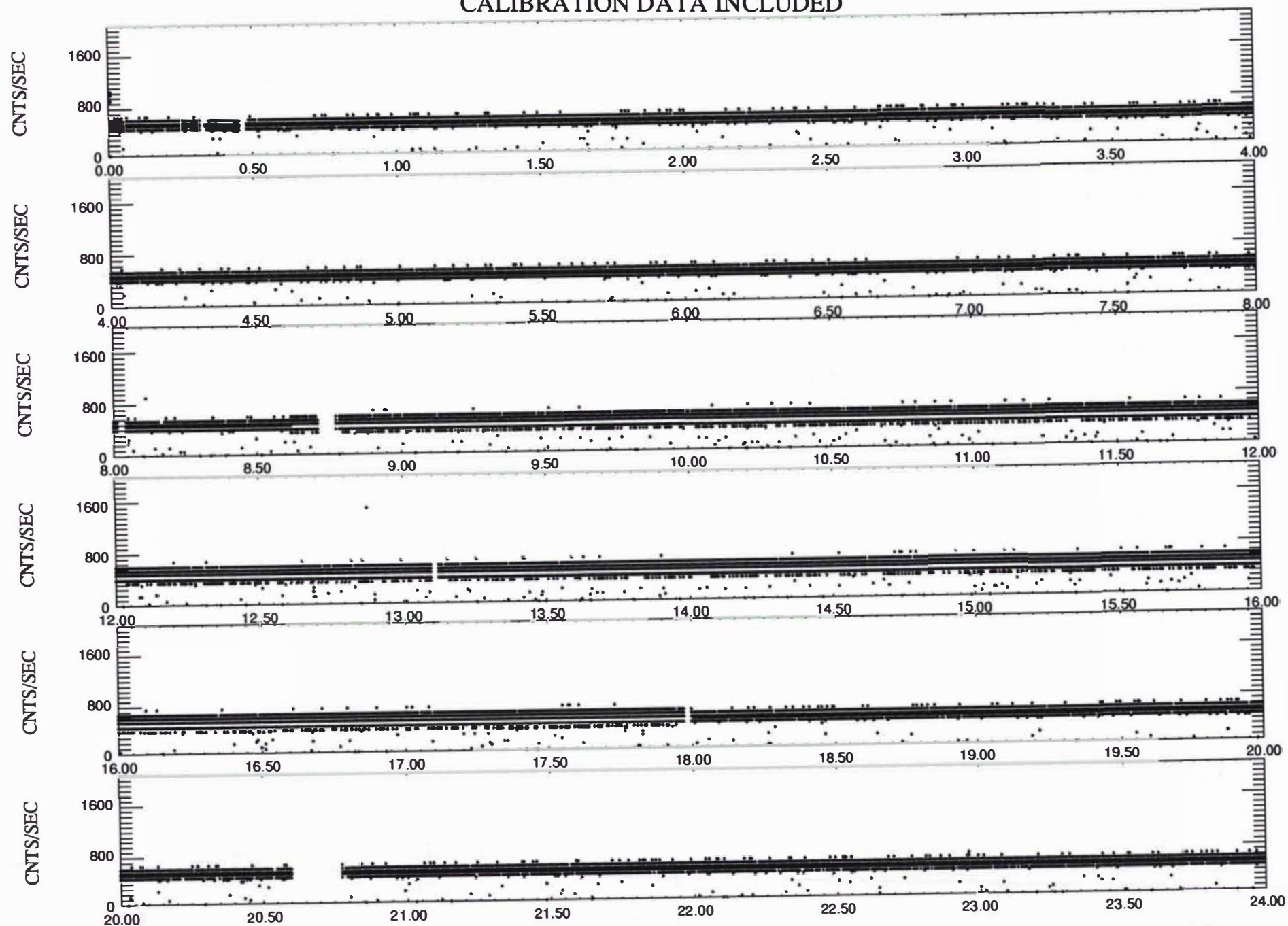
Channel 1 {1.0 - 8.0 Angstroms} Background not subtracted
2 {0.5 - 4.0 Angstroms} Background not subtracted

NO BURST (2)

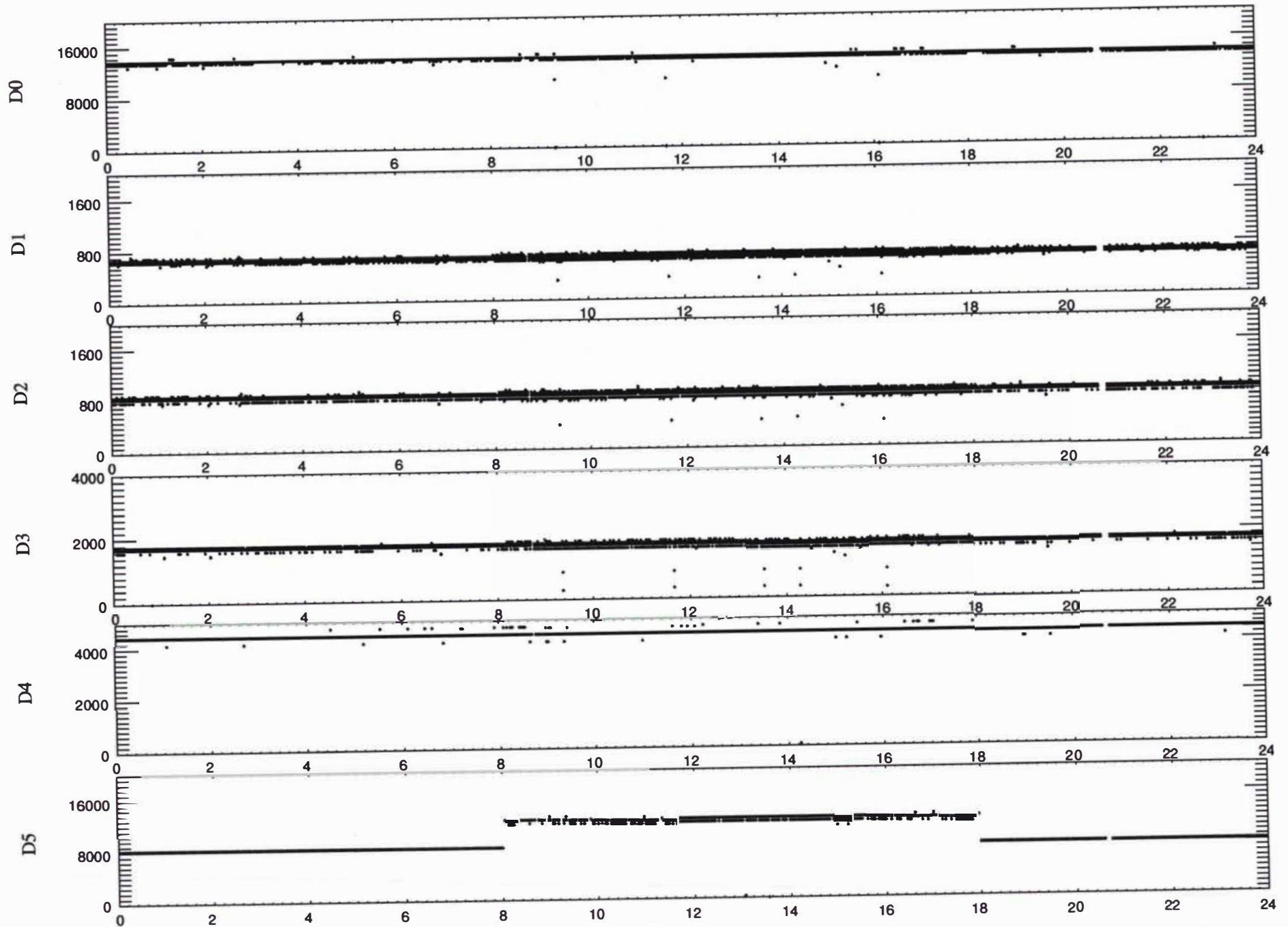


UNIVERSAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

From WOODSP@ssl.msfc.nasa.gov Fri Aug 2 11:25 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 2 Aug 1996 13:25:03 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5556

BATSEARCH PROGRAM

RI? NO

BATSE BURST # 5556
EVENT OF 1996 JUL 31 DAY OF YEAR=213
EVENT CROSSING TIME AT BATSE : 12173. S. OR 03:22:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 200.000 -18.000
BATSE PEAK COUNTING RATE: 4900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 7/ 96 IS:
RA= 159.643 DEC= 41.478 DIST= 4.963 AU
BATSE-ULYSSES DISTANCE = 742405351. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -837.76 SECS.
CROSSING TIME AT ULYSSES IS 11335. S. OR 03:08:55 +/- 441.87 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 7/ 96 IS:
RA= 93.842 DEC= 23.859 DIST= 2.247 AU
MARS-BATSE DISTANCE = 336089824. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 68.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 411.48 SECS.
CROSSING TIME AT MARS IS 12584. S. OR 03:29:44 +/- 187.30 SECONDS

BATSE BURST TRIGGER

NO.: 5556

TIME: TJD=0295 SECONDS=12173

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.5 AZIMUTH=12.4 ERROR=5.5 DEGREES

COMMENTS:

GRB LASTING 1.5 SEC. SINGLE PULSE WITH SYMMETRIC RISE AND FALL TIMES.
MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5556	960731	10295	12173	4900	200	-18	1.5

ULYSSES RT

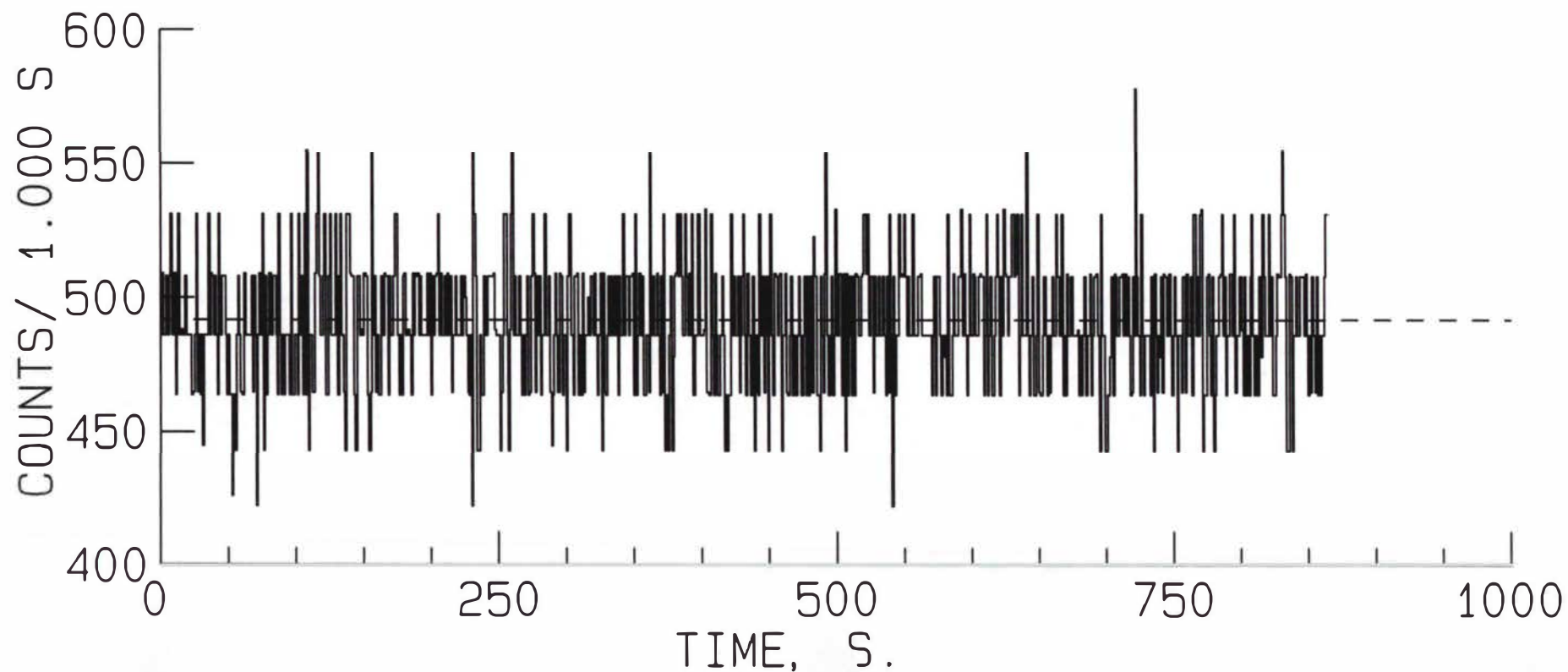
23 / 8 / 96

31 / 7 / 96 10908.446 s

0.500 S INTERVALS REGROUPED BY 2

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



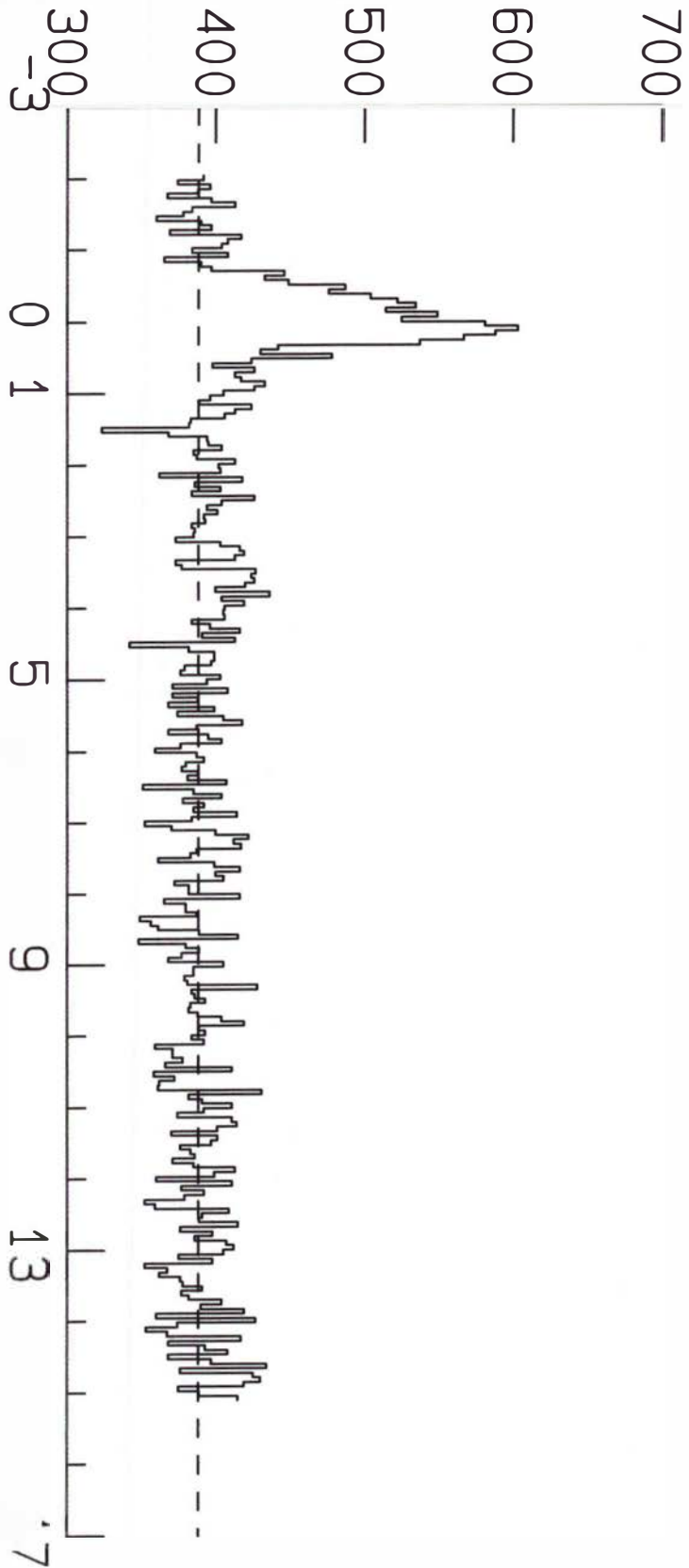
BATSE

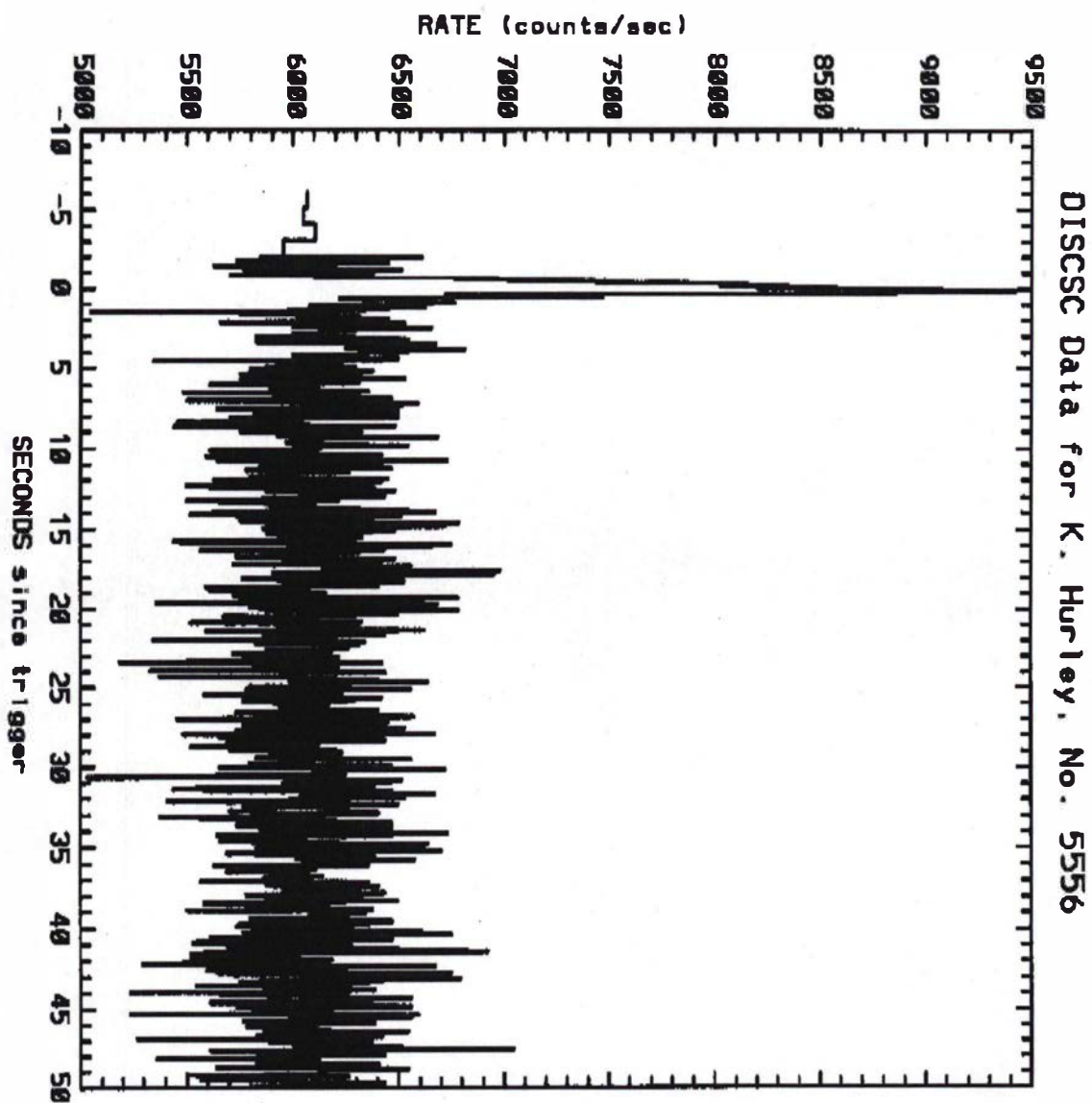
31/07/96

12173.002

25- 100 keV

COUNTS/0.064 S





13-MAR-1996 09:22.49

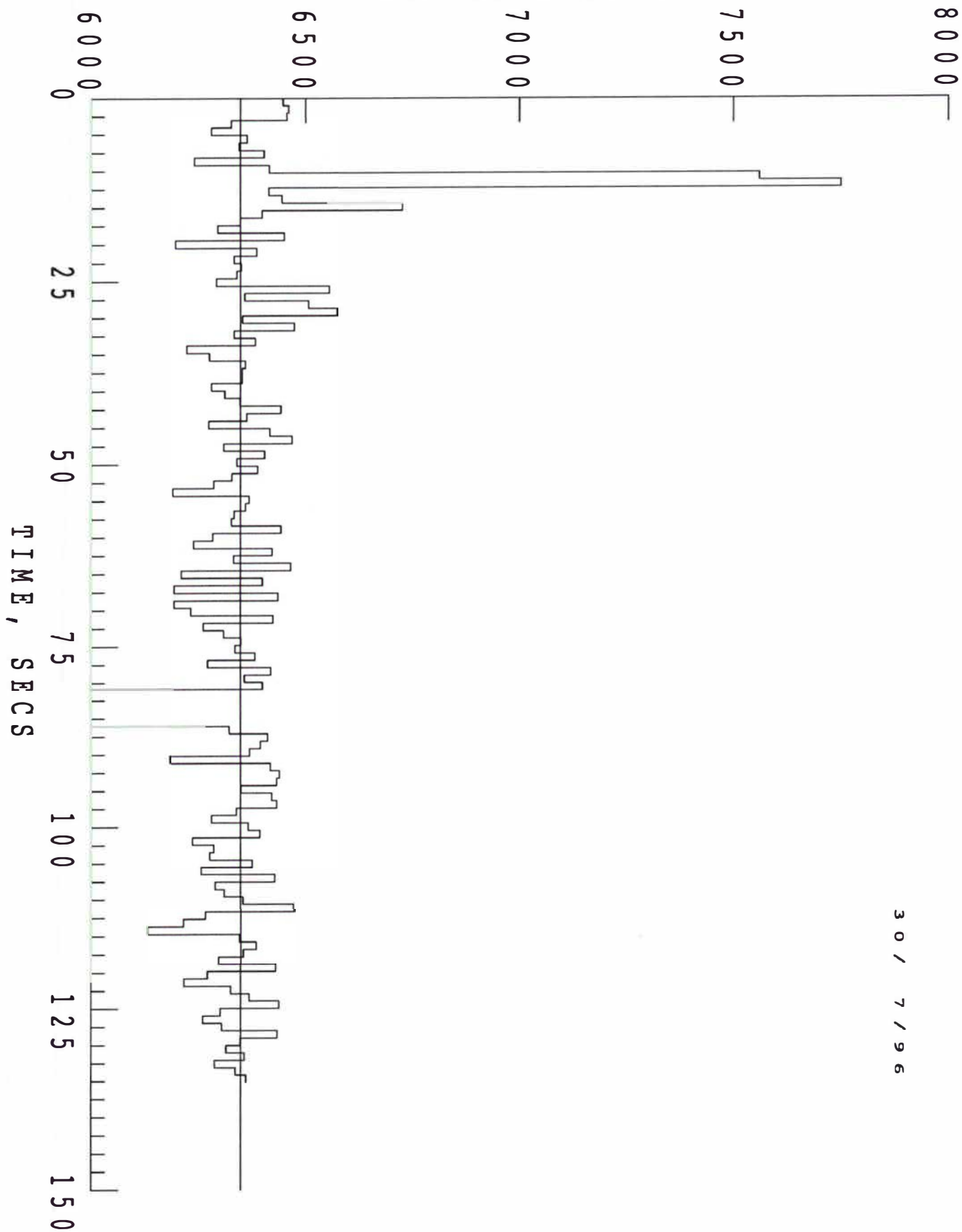
Created by MOPS 80
(Burst Display)
Version 12.23

Trigger # - 5556

Trigger Time:
10295 / 12173.002Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: MEB + DISCSCMinimum Integ. Time:
0.004 second(s)Detectors (7.01):
---3-1-Discriminators:
(1, 2)Quality Mask:
BDISP1

BACODINE 5556 31/07/96 12161.737
25- 100 keV

COUNTS/1.024 S



30 / 7 / 96

From WOODSP@ssl.msfc.nasa.gov Fri Aug 2 11:27 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 2 Aug 1996 13:27:14 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5557

BATSEARCH PROGRAM

RI

BATSE BURST # 5557
EVENT OF 1996 JUL 31 DAY OF YEAR=213
EVENT CROSSING TIME AT BATSE : 20761. S. OR 05:46:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 44.000 13.000
BATSE PEAK COUNTING RATE: 7700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 7/ 96 IS:
RA= 159.692 DEC= 41.437 DIST= 4.965 AU
BATSE-ULYSSES DISTANCE = 742715800. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 415.76 SECS.
CROSSING TIME AT ULYSSES IS 21177. S. OR 05:52:56 +/- 480.34 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 7/ 96 IS:
RA= 93.842 DEC= 23.859 DIST= 2.247 AU
MARS-BATSE DISTANCE = 336089824. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=131.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -746.25 SECS.
CROSSING TIME AT MARS IS 20015. S. OR 05:33:34 +/- 133.92 SECONDS

BATSE BURST TRIGGER

NO.: 5557

TIME: TJD=0295 SECONDS=20761

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=42.3 AZIMUTH=207.1 ERROR=0.9 DEGREES

COMMENTS:

BRIGHT GRB LASTING 17 SEC. THREE MAIN EPISODES. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5557	960731	10295	20761	7700	044	+13	17

Hello corr removed

Date: Oct 16 '97

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Were data checked by Joe Springer for 0.5 s errors? *N/A*
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No - BATSE data is ITS*

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*
- ☒ Does T_0 in data file agree with T_0 in plot?
- ☒ 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?

96	2	29	22445.141	S2	740	1520	550	0.3	0.5	8	250	Search RI	
96	3	5	33645.352	S1	440	390	70	>10	0.8	1.8	251	Search NO	
96	3	12	35074.697	S2	160	730	330	<0.25	0.2	0.1	252	Search NO	
96	3	19	51992.828	S1		800	970	>7	0.16	0.4	253	RI	5277
5	3	21	76321.803	S2	4600	4550	1020	0.03	42	46	254	Trig	5293
6	3	22	19642.728	S1	1060	1760	1120	40	2	28	255	Trig	5304
96	3	24	80064.124	S2	320	520	150	0.07	1	14	257	Search RI	
96	3	25	69892.978	S1	250	620	460	6	0.5	0.5	258	NO	5339
96	3	31	21208.784	S1	220	520	120	4.4	2	24	271	RI	5369
96	4	4	25289.264	S2	420	750	240	0.07	4	9	272	Search RI	
96	4	9	77143.618	S2	650	1170	420	0.17	0.5	5	273	RI KA	5419
96	4	10	80648.201	S2	190	330	140	<0.05	1	35	274	Search RI	
96	4	18	06106.854	S1	200	330	70	1	2	2	277	RI KA	5433
96	4	18	08271.303	S2	350	770	50	<0.1	3	30	278	Search KA 225 NO	
96	4	18	66796.140	S1	1160	1000	50	10	1	3	290	Trig	5436
96	4	20	17324.809	S2	300	1190	1080	1	0.3	0.04	303	Search RI	
96	4	22	59981.190	S2	160	410	140	0.5	4	12	305	RI	5443
96	4	25	86395.862	S2	1300	730		<0.04	44	16	306	Search KA 1120 RI	
96	4	28	47556.501	S2	270	420	230	<0.04	1	170	307	RI	5450
96	4	30	49895.524	S1	250	640	180	8	8	18	309	RI KA	5451
96	5	1	31344.546	S1	380	870	350	3.7	20	56	310	Search RI	
96	5	6	47384.998	S1	160	490	190	1.1	3	6	312	Search RI	
96	5	7	44869.909	S2	460	760	290	0.03	20	98	313	Search RI	
96	5	10	38723.598	S2	560	1300	330	0.1	1	7	317	Trig	
96	5	19	14766.283	S2	1700	7700	8000	0.4	0.1	0.56	319	Search NO	
96	5	21	62489.430	S1	330	500	90	5.8	1	8	320	Search RI	
96	5	23	59522.013	S1	270	550	580	10	1	3	321	RI	5473
96	5	29	43663.061	S2	1700	4000	5000	0.15	0.5	3.5	322	Trig	5477
96	5	29	80722.705	S2	420	620	140	0.1	1	14	323	Trig KA	
96	5	30	62300.750	S1	180	400	110	>20	2	14	324	Search N/O	
96	5	31	06926.043	S1	300	440	120	4.7	50	7	325	Search RI	
96	5	31	73498.259	S2	1600	4250	2800	0.5	27	19	326	Trig	
96	6	2	42664.032	S1	1000	1450	1400	>2	0.3	0.03	327	Search NO	
96	6	5	29392.672	S1	400	950	410	1.3	2	87	328	RI	5486
96	6	7	78106.176	S2	890	1280	550	0.04	32	120	329	RI	5489
96	6	10	84502.254	S2	200	1000	1500	0.9	0.16	0.11	330	Search NO	
96	6	12	71198.677	S1	650	2800	2700	1.4	0.5	18	331	Trig	
96	6	14	67654.516	S1	80	1800	1600	1	0.18	0.1	332	Search NO	
96	6	17	76195.941	S1	350	560		>8	1	0.6	333	NO	5504
96	6	22	74906.054	S2	100	360	280	0.2	4	8	334	Search NO	
96	6	23	04734.229	S2	130	320	150	0.5	7	25	335	RI KA	5512
96	6	23	77186.871	S2	250	350	130	0.05	6	15	336	Search RI	
96	6	25	16949.252	S1	180	280	70	4.6	6	9	337	RI	5518
96	6	28	19224.223	S2	500	410	120	0.06	12	6	338	RI	5523
96	7	2	54698.284	S1	280	350	70	2.8	23	85	339	RI	5525
96	7	3	65443.861	S1	200	560	600	3	1	0.4	340	NO	5527
96	7	7	36999.311	S2	1600	1200		0.06	2	5	341	RI	5530
96	7	8	72577.095	S2	900	820	160	0.2	1	6	342	Search RI	
96	7	9	00246.641	S1	260	1000	400	0.95	15	4	343	Trig KA	
96	7	10	00662.014	S2	1800	4700	3600	0.13	0.5	48	345	Trig	
96	7	11	63757.543	S1	560	2400	900	1.25	0.5	19	346	Trig	
96	7	11	68451.869	S2	200	360	170	<0.07	2	41	347	Search NO	
96	7	22	25522.448	S2	360	650	170	0.27	17	151	348	RI	5548
96	7	22	56346.728	S1	700	1000	200	2.6	3	6	349	Search RI	
96	7	27	43056.737	S2	500	1000	500	0.7	0.5	15	350	Search RI	
96	7	31	20761.638	S2	800	1160	170	0.9	0.5	4	353?	RI	5557
96	8	3	67525.033	S1	4000	8000	3000	3	0.02	0.18	354	Trig KA	5561
96	8	4	84535.906	S2	2000	2600	600	<0.03	0.5	2	355	Trig KA	5563
96	8	5	78957.888	S2	1270	2360	380	0.05	1	20	356	Trig	
96	8	6	80989.772	S2	420	850	250	1	86	10	357	RI	5566

From cline@apache.gsfc.nasa.gov Wed Nov 20 14:32 PST 1996
 Date: Wed, 20 Nov 1996 14:32:12 -0800
 Mime-Version: 1.0
 To: KHURLEY@sunspot.ssl.berkeley.edu
 From: cline@apache.gsfc.nasa.gov (T L Cline)
 Subject: Search for (Konus mini-network) 3-sc triggers

Dear Kevin,

I'm sorry to report that the May 1996 mail from you was a list only to January 1996. If you have another later list, don't go to the trouble of plowing thru all this; I'll do it if you can e-mail/fax something. Thanks.

 SEARCH FOR 3-SC TRIGGERS ONLY -- Konus-W / Ulysses / BATSE or Konus-A

DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 0.16	47 3410
95 2 11	08697.749 S2	2750 11630 6560	<0.06	0.03 0.14	48 3412
95 2 11	72469.074 S1	1170 1570 460	60	12 60	50 3415
95 3 25	25841.574 S2	345 1460 1570	0.2	1 230	63 3480
95 3 25	63392.815 S1	1320 2710 900	3.2	1 43	64 3481
95 4 3	47985.179 S1	1030 2840 800	1.0	1 15	71 3491
95 4 3	84828.194 S2	4650 10000 4700	0.06	0.5 60	72 3492
95 4 25	00923.718 S1	1200 2780 1820	4.2	0.5 65	86 3523
95 5 3	66971.838 S1	1140 4200 3140	1.9	0.2 115	88 3537
95 5 13	81706.917 S1	720 1360 520	10	1 30	93 3571
95 7 1	12762.114 S1	340 1400 580	1.3	1 30	116 3657
95 7 1	23737.604 S2	570 1600 700	0.05	1 11	117 3658
95 8 4	07135.704 S2	3000 6650 3340	<0.03	0.2 3.5	131 3734
95 8 18	05065.640 S2	1960 4100 1350	0.05	60 50	137 3765
95 8 22	13751.048 S1	6070 12000 3770	9	0.4 60	140 3767
95 10 16	02484.285 S1	1960 1950 560	5	0.2 7	162 3870
95 12 3	03988.180 S2	260 720 420	0.85	1 16	196 3930
95 12 27	23005.042 S1	420 1200 320	1	1 1.5	218 ??? NO
96 1 11	46524.530 S2	1130 1280 190	0.2	0.5 6	222 4312
96 1 13	56024.261 S2	500 450 50	0.3	2 36	228 ??? NO
96 1 14	44104.737 S1	4900 7200 1400	1.8	1 60	233 4368, KA

(ABOVE, ALL ARE ULYSSES TRIGGERS - ALL BUT 2 ARE CONFIRMED BATSE TRIGGERS)

 (BELOW, ULYSSES TRIGGERS INCOMPLETE, BUT KNOWN ULYSSES RI'S ARE DELETED:)

BATSE

95 12 31	20231.668 S2	180 320 150	0.07	9 65	219	NO	
96 1 2	11650.996 S1	140 300 80	1	1 0.2	220	NO	
96 1 19	45226.016 S2	210 460 190	0.2	6 85	237	NO	
96 1 30	08756.848 S1	100 470 340	3	0.5 0.2	240	NO	4660
96 2 1	78530.582 S2	400 770 230	0.34	12 70	241	RI KA	4701
96 2 2	50750.813 S1	390 430 180	5	0.5 8	242	RI	4710
96 2 5	34499.021 S1	100 240 80	>15	7 250	243	RI	4745
96 2 6	17898.732 S1	120 520 260	1.05	1 36	244	Triq	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12	245	Seand	NO
96 2 10	35198.959 S2	220 550 360	<0.1	0.5 2	247	RI	4814
96 2 28	85760.241 S1	2360 7360 3350	4.3	0.1 2.5	249	Triq	NO

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

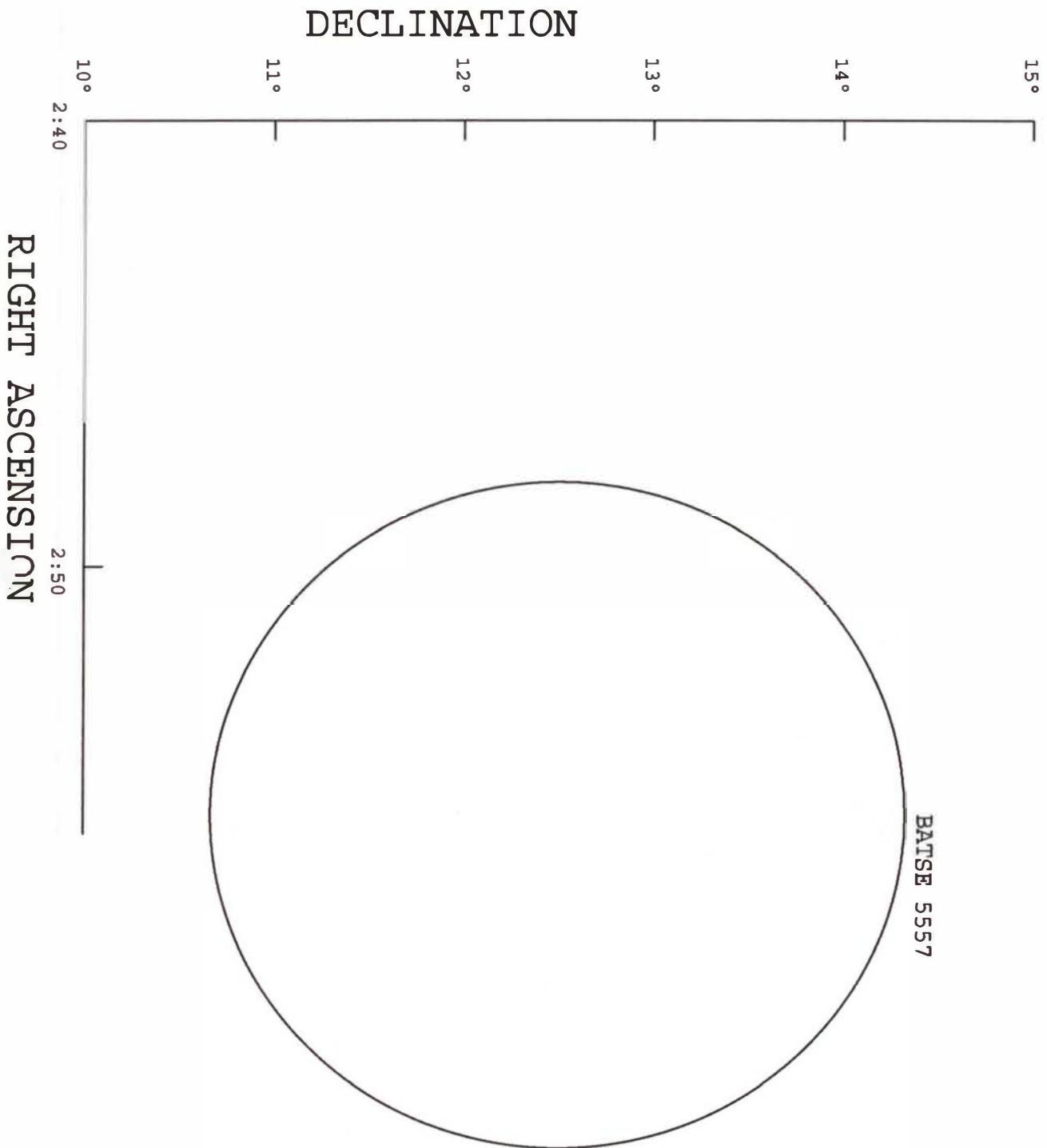
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF JUL 31, 1996 5:49

16/10/97



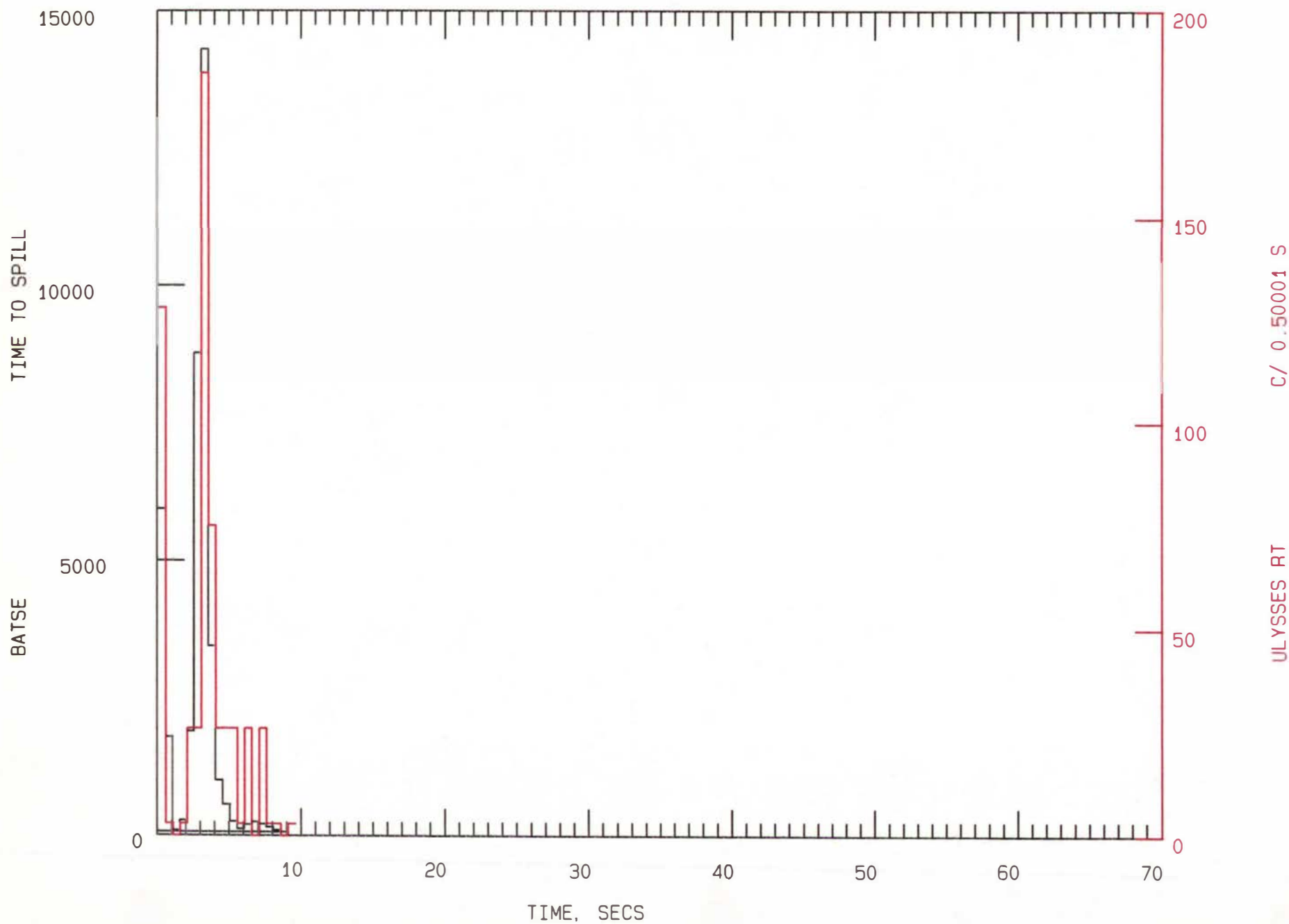
BATSE

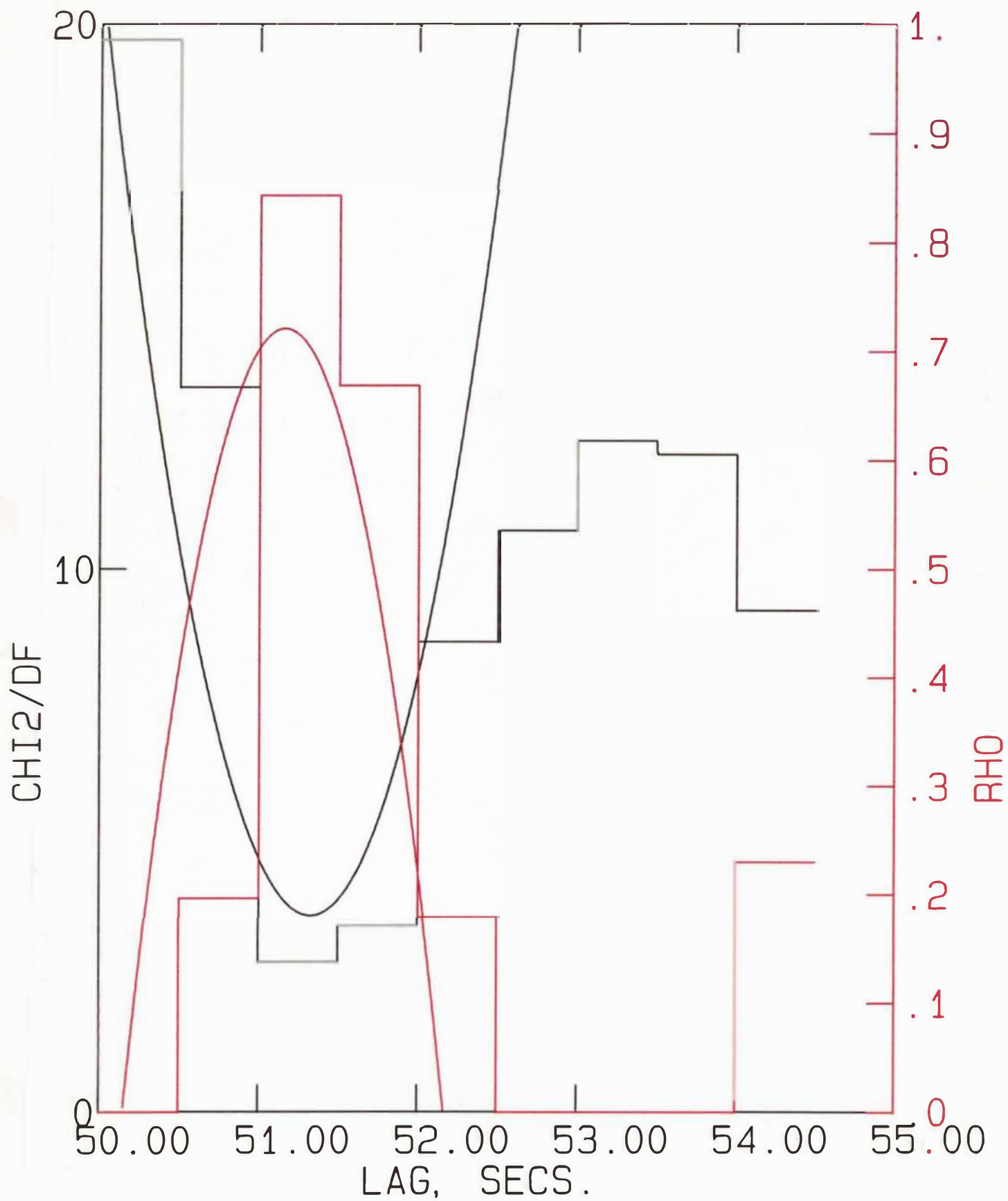
-ULYSSES RT CORRELATION

31/ 7/96

20761.737

16/10/97





ULYSSES RT

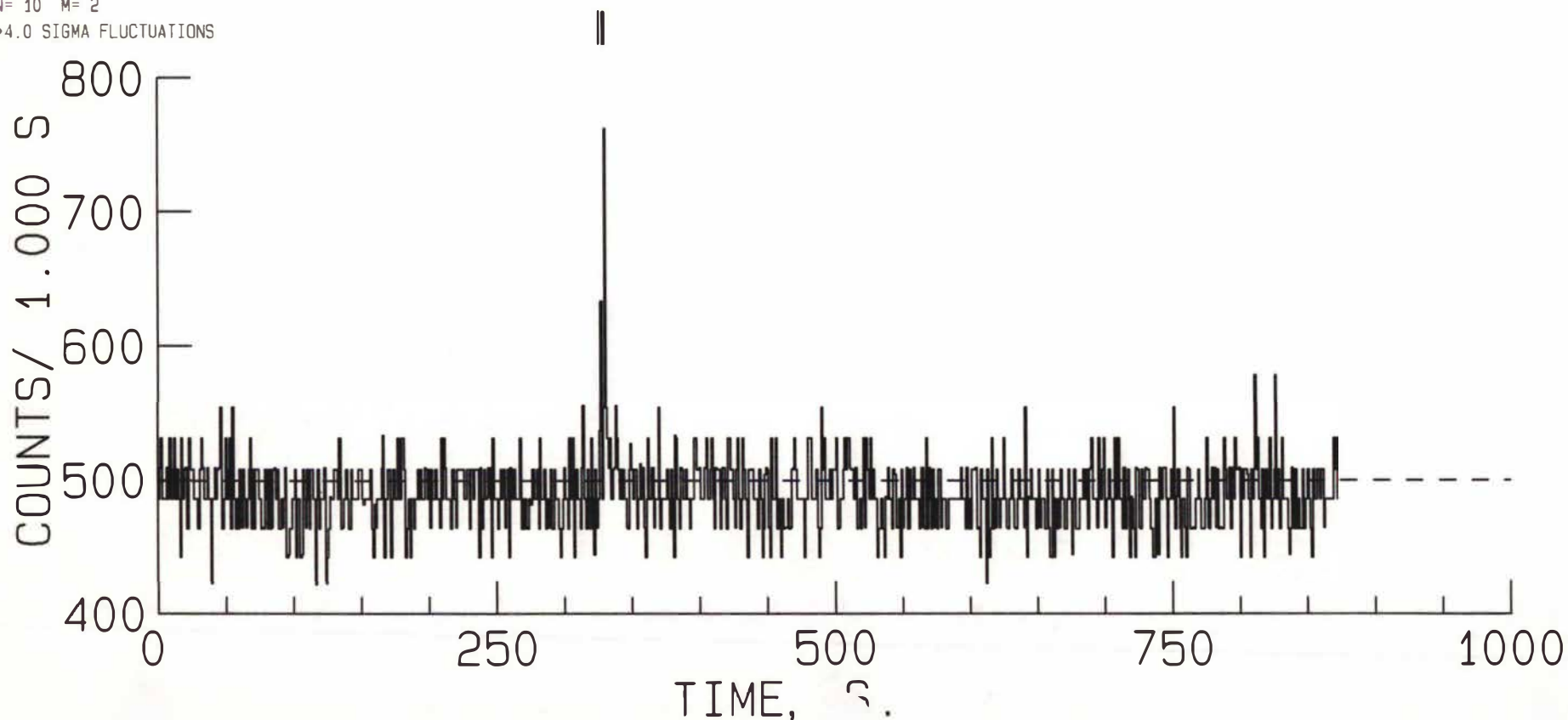
16/10/97

31/ 7/96 20700.080 s

0.500 S INTERVALS REGROUPED BY 2

21- 146 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

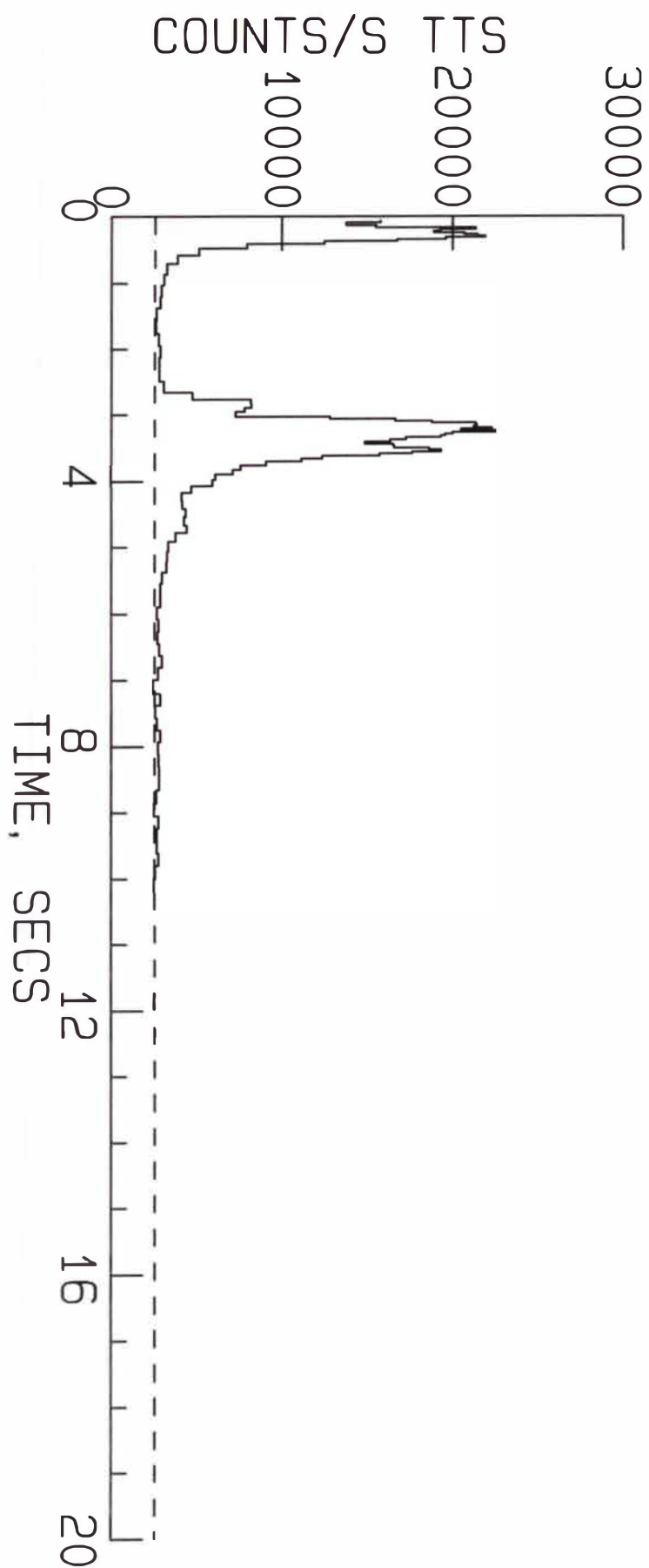


BATSE

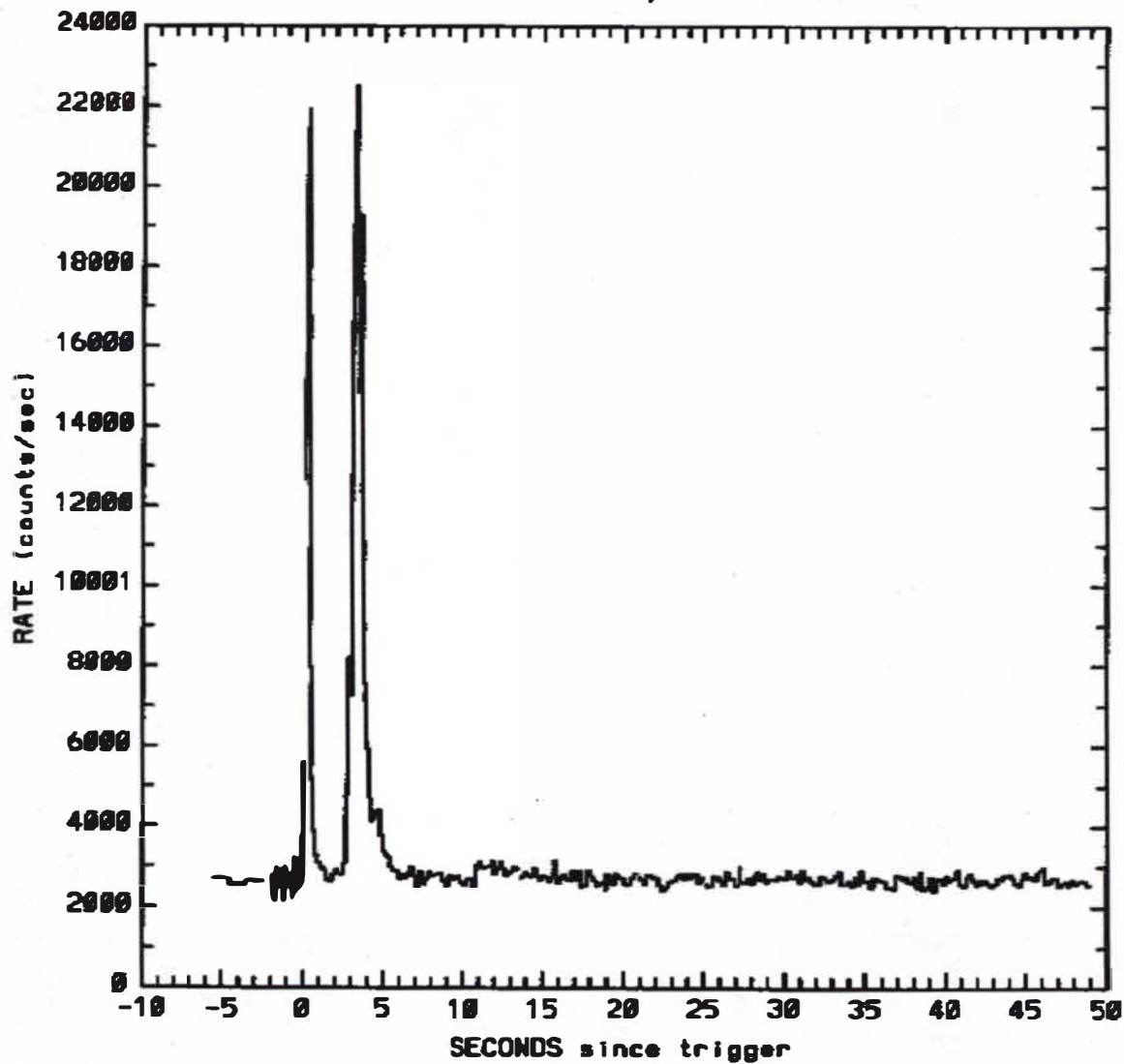
31/07/96

20761.737

25- 100 keV



TTS Data for K. Hurley, No. 5557



13-AUG-1996 09:31:56

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger # : 5557

Trigger Time:
18295 / 28761.738Burst Data Type:
TTS

Time Corrected: Y

Maximum Time Error:
0.84966 second(s)Deadtime
Corrected: NBackground Data
Type: PREB + DISCLA

Bin Count: 8

Detectors [7..8].
-6-4----Discriminators:
(2 , 2)Quality Mask:
80ISPI

KONUS

ULYSSES RT

29 / 01 / 00

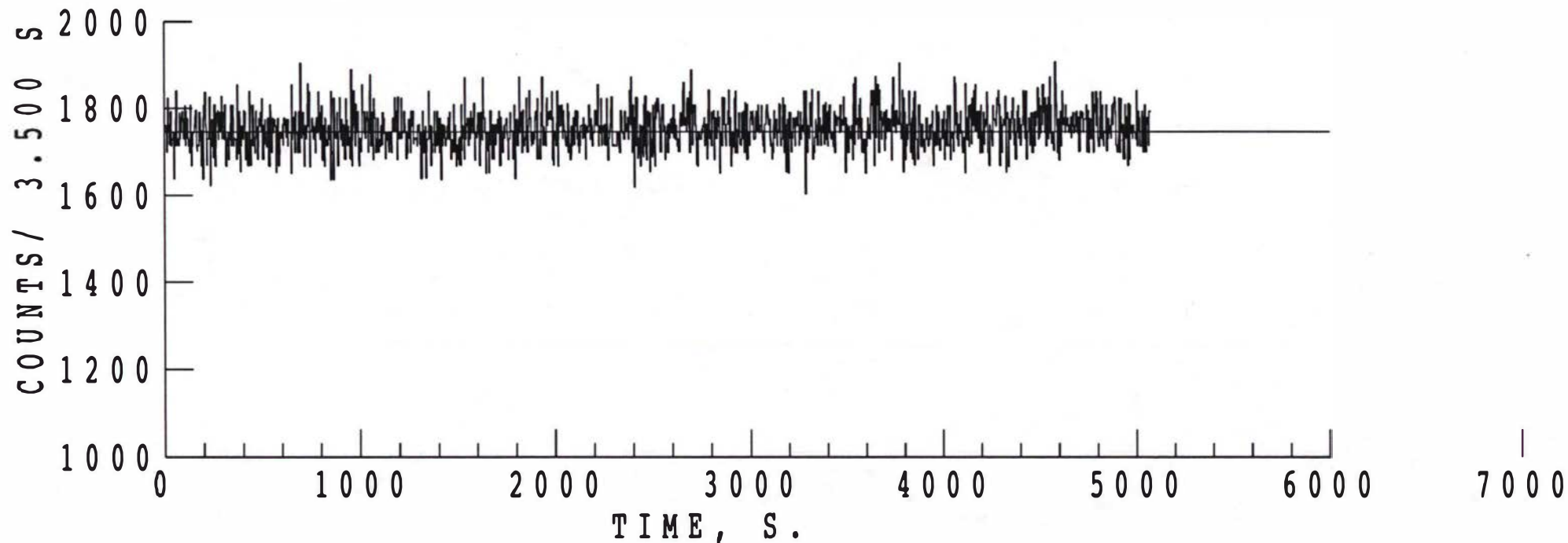
31 / 07 / 96 66744.180 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@ssl.msfc.nasa.gov Fri Aug 2 11:29 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Fri, 2 Aug 1996 13:29:16 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5558

BATSEARCH PROGRAM

No - too weak

BATSE BURST # 5558
EVENT OF 1996 JUL 31 DAY OF YEAR=213
EVENT CROSSING TIME AT BATSE : 74689. S. OR 20:44:49.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 126.000 37.000
BATSE PEAK COUNTING RATE: 15400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 7/ 96 IS:
RA= 159.871 DEC= 41.289 DIST= 4.972 AU
BATSE-ULYSSES DISTANCE = 743822489. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=153.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2221.51 SECS.
CROSSING TIME AT ULYSSES IS 72467. S. OR 20:07:47 +/- 208.10 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 7/ 96 IS:
RA= 93.842 DEC= 23.859 DIST= 2.247 AU
MARS-BATSE DISTANCE = 336089824. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=149.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -966.09 SECS.
CROSSING TIME AT MARS IS 73723. S. OR 20:28:42 +/- 84.07 SECONDS

BATSE BURST TRIGGER

NO.: 5558

TIME: TJD=0295 SECONDS=74689

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.1 AZIMUTH=58.7 ERROR=3.7 DEGREES

COMMENTS:

GRB LASTING 0.38 SEC. MULTIPLE PEAKS. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5558	960731	10295	74689	15400	126	+37	.038

616 c

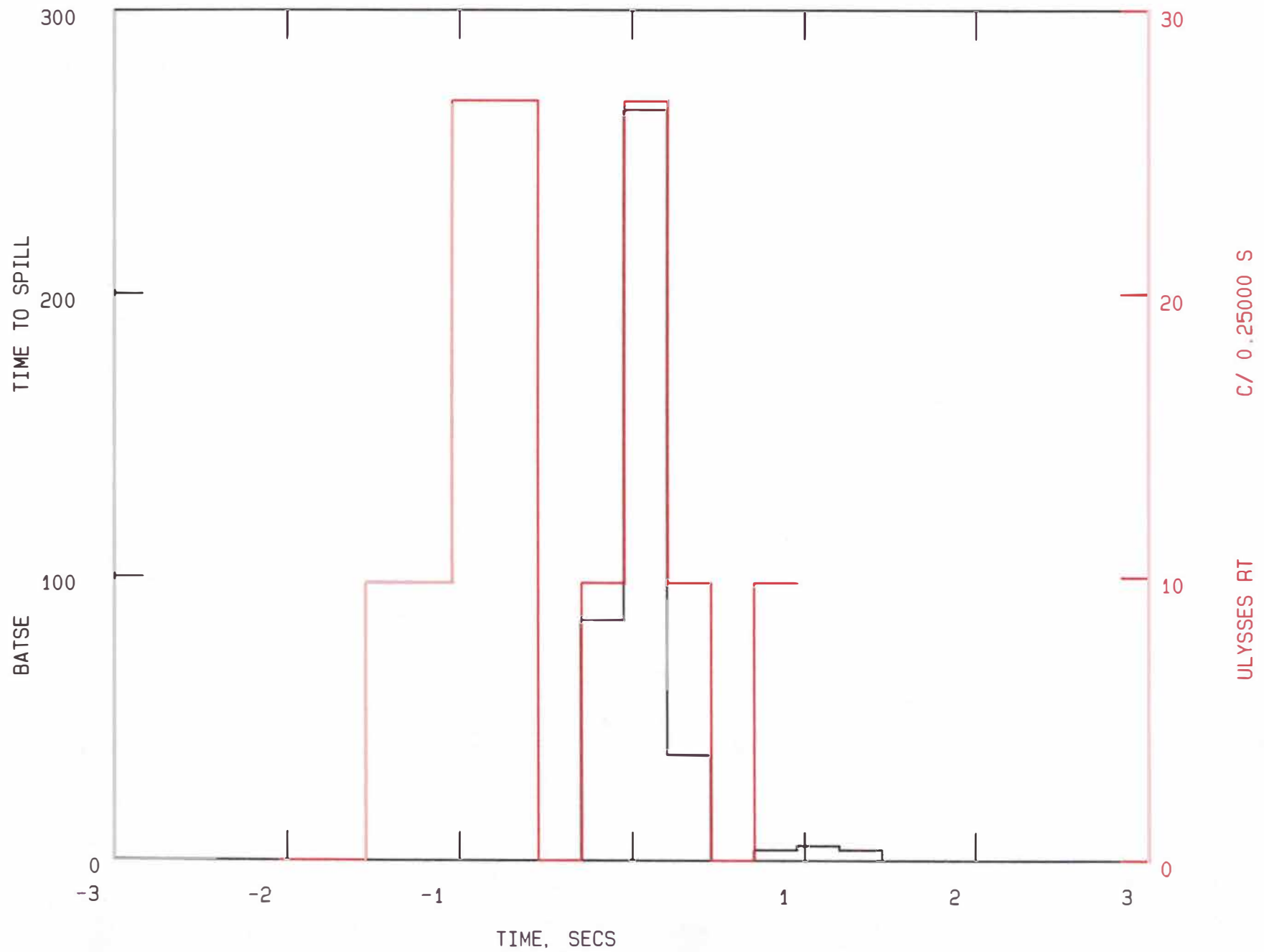
BATSE

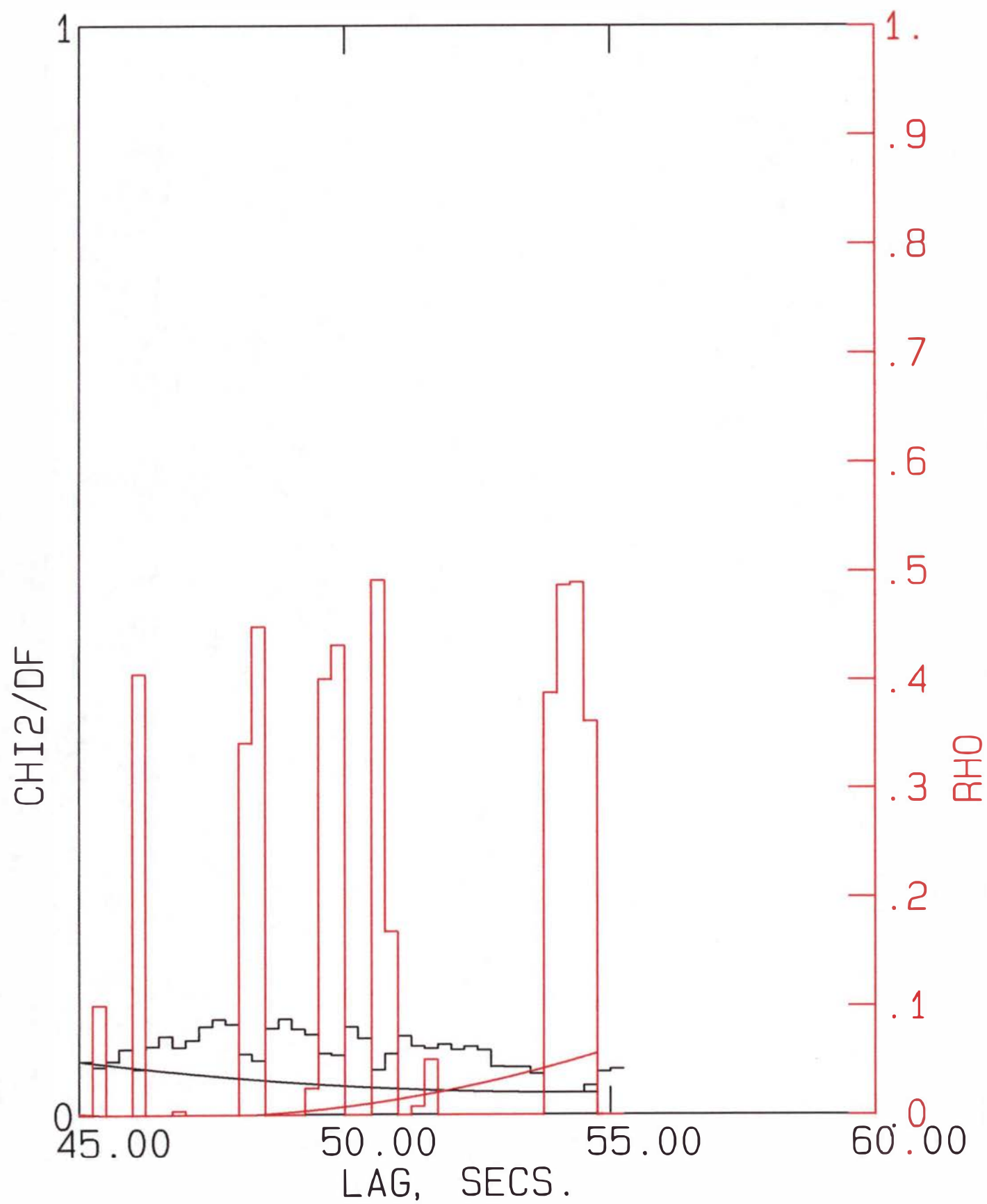
-ULYSSES RT CORRELATION

31/ 7/96

74689.225

12/ 3/98





ULYSSES RT

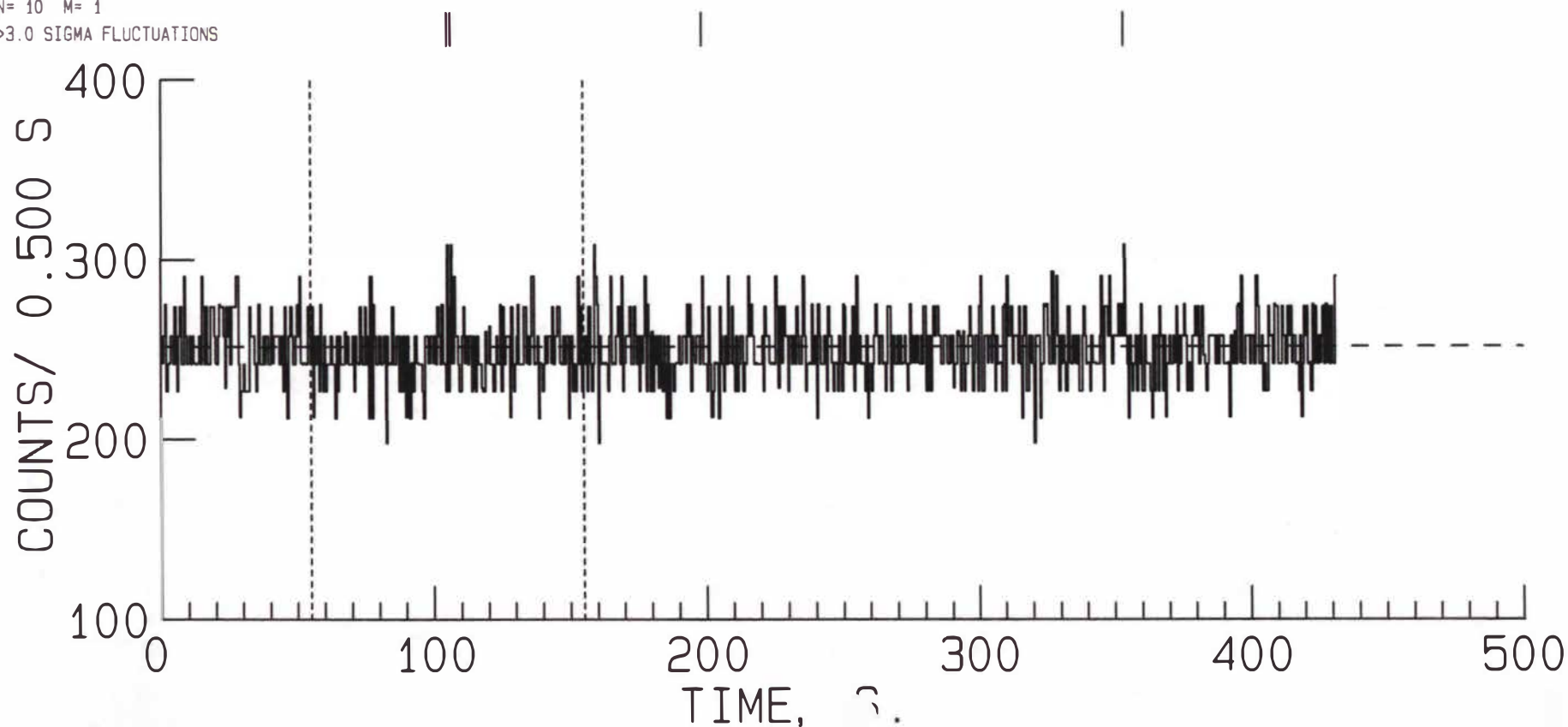
12 / 3 / 98

31 / 7 / 96 72252.248 s

0.250 S INTERVALS REGROUPED BY 2

21- 146 keV

N= 10 M= 1
>3.0 SIGMA FLUCTUATIONS

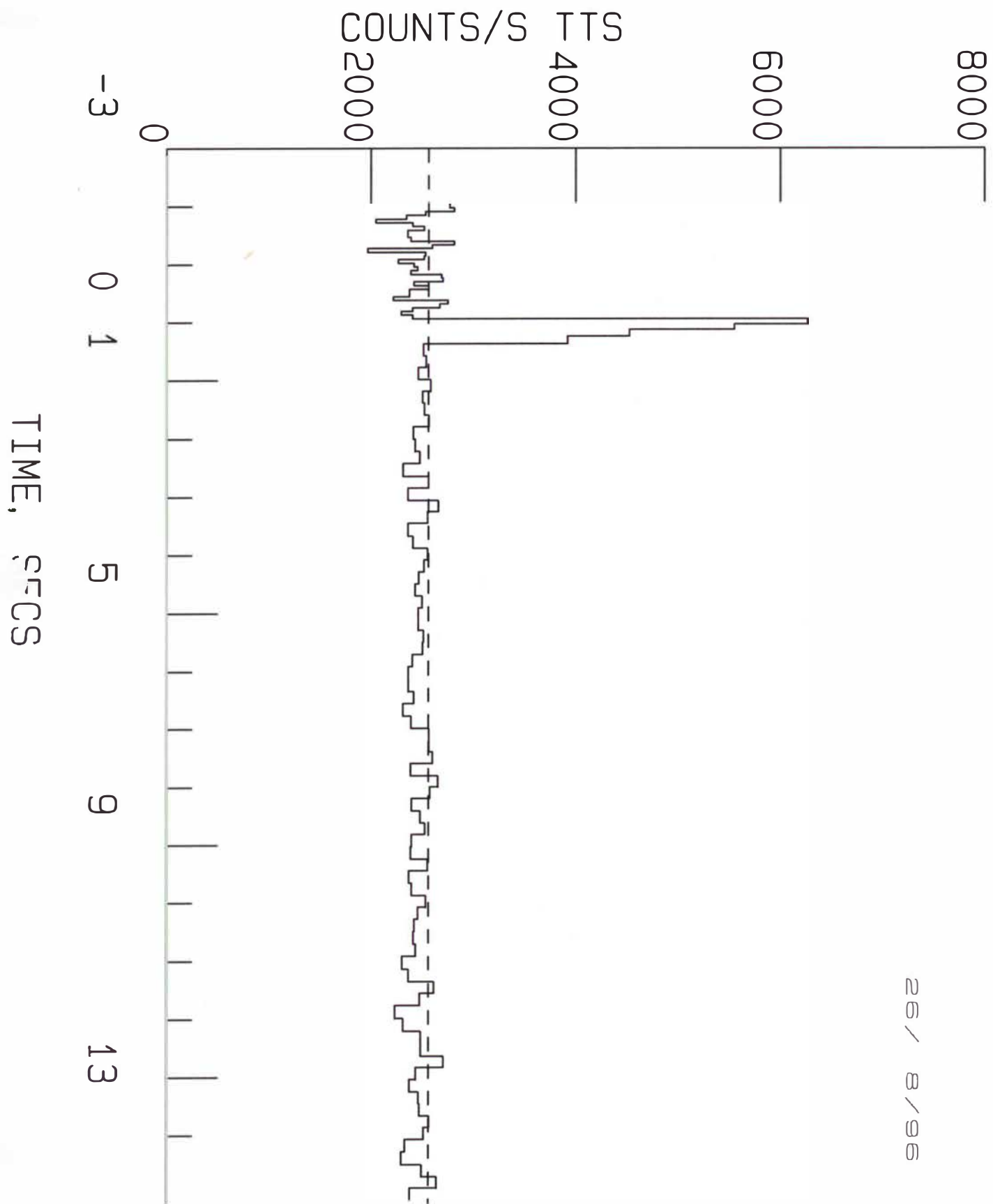


BATSE

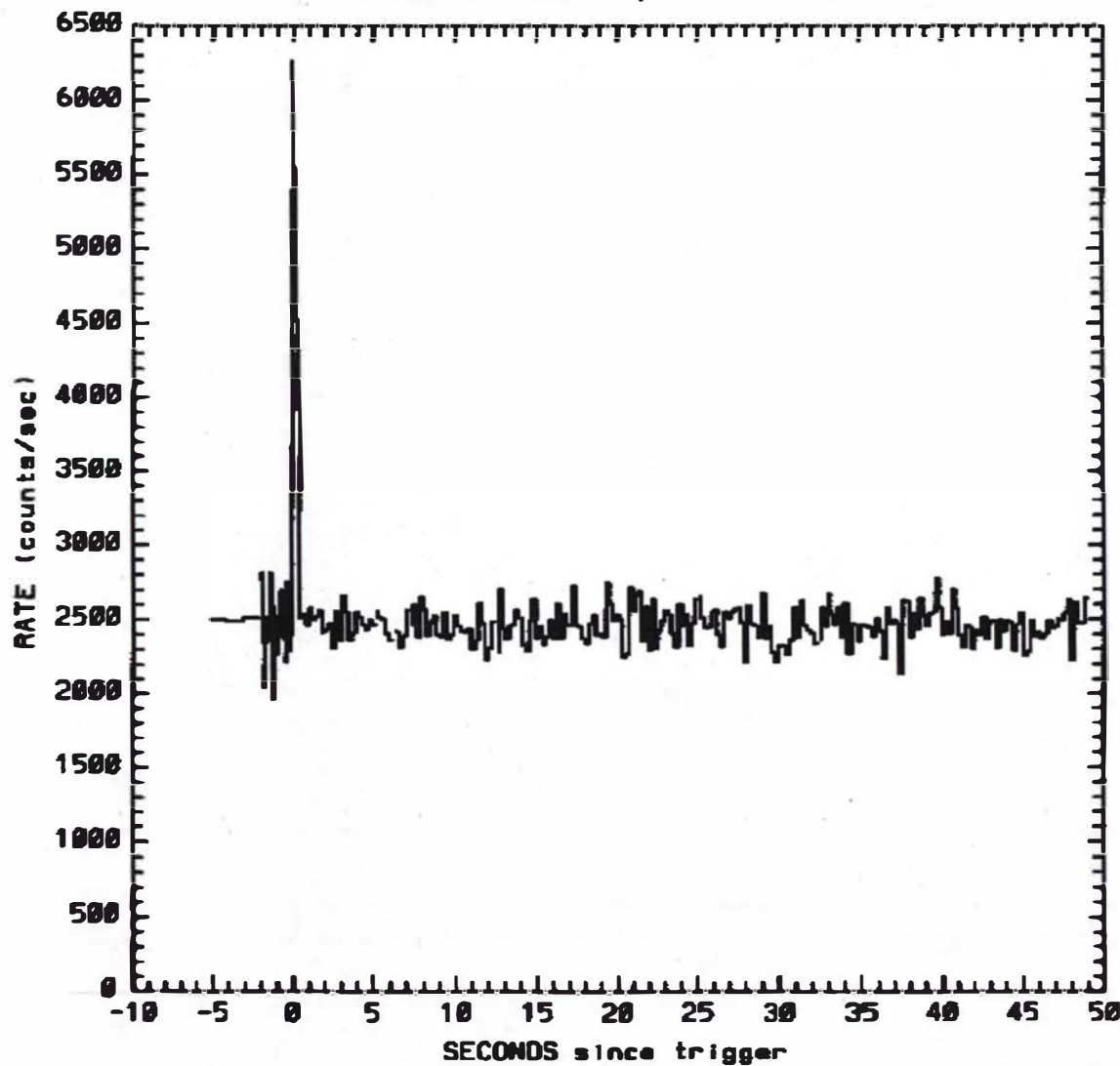
31/07/96

74689.225

25- 100 keV



TTS Data for K. Hurley. No. 5558



13-AUG-1996 09:48.46

Created by MDPS BD
(Burst Display)
Version t2.25

Trigger = . 5558

Trigger Time:
18295 / 74689.226Burst Data Type:
TTS

Time Corrected: Y

Maximum Time Error:
0.04557 second(s)Deadtime
Corrected: NBackground Data
Type: PREB + DISCLA

Bin Count: 8

Detectors [7..8].
---4---8Discriminators:
(2 . 2)Quality Mask:
BDISP1

5

1

3

4

2

1

1

1

1

1

1

1

1

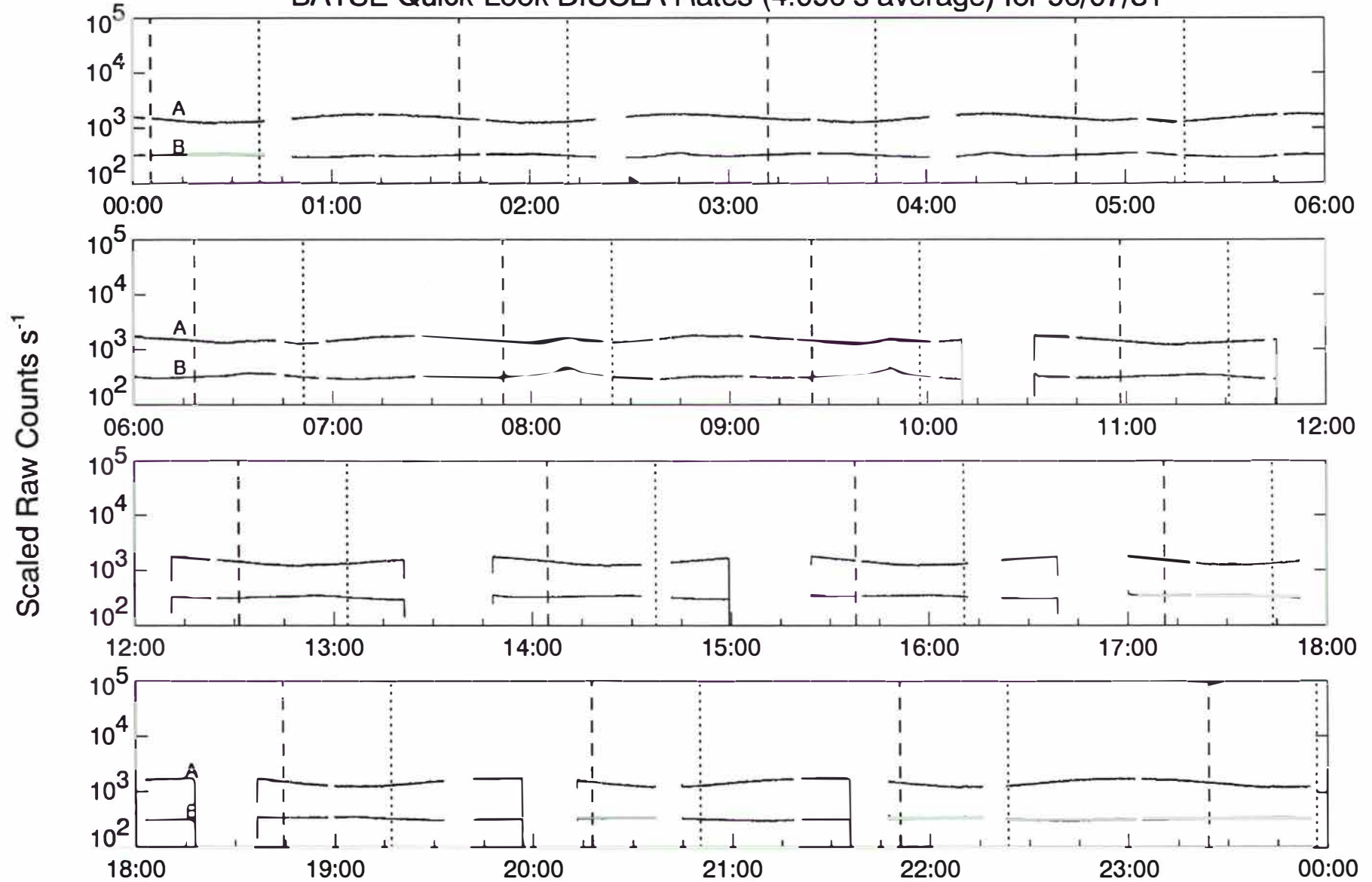
1

1

1

1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/07/31



Current Time: 96/08/02, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

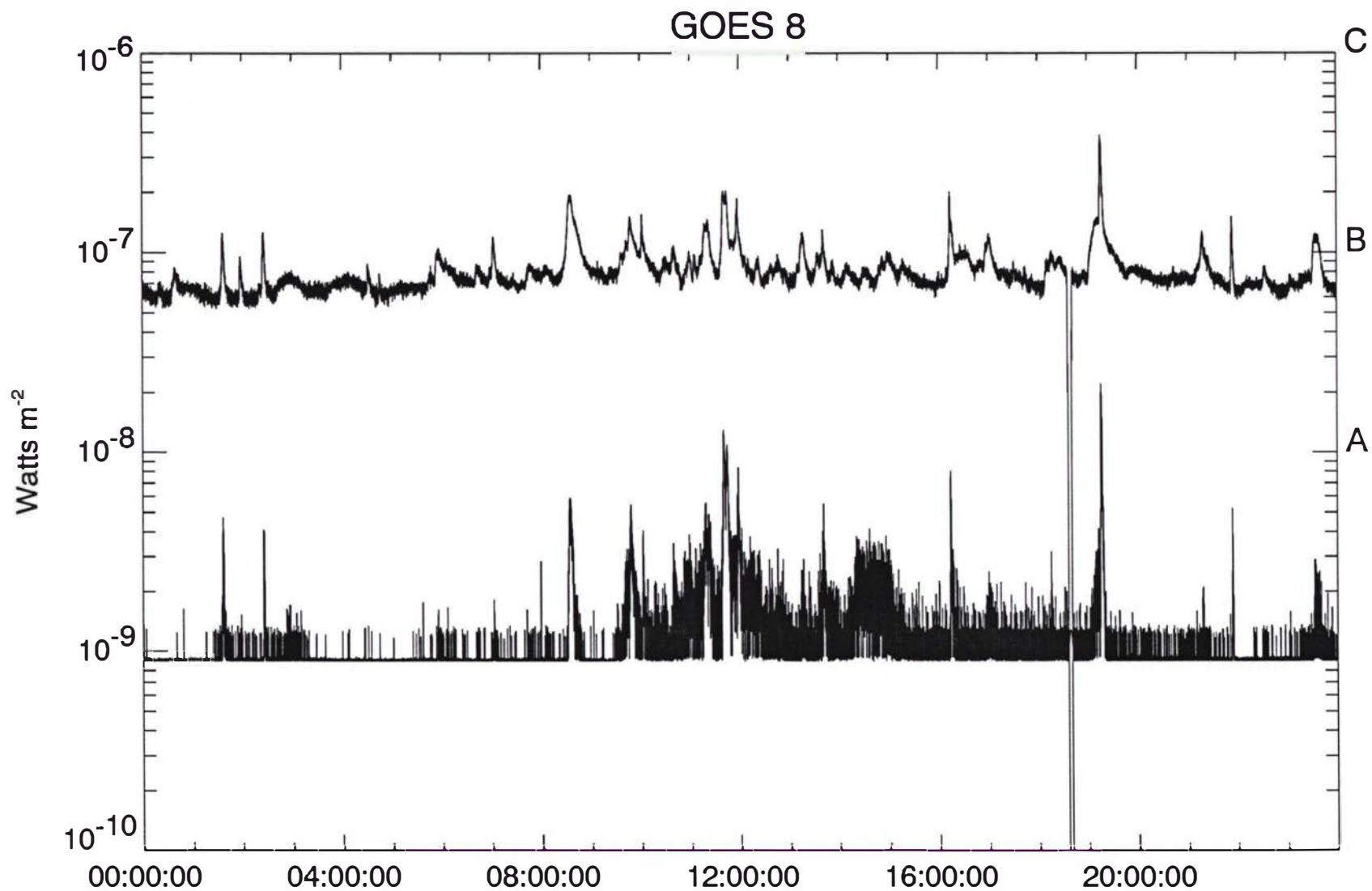
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

100

100

100



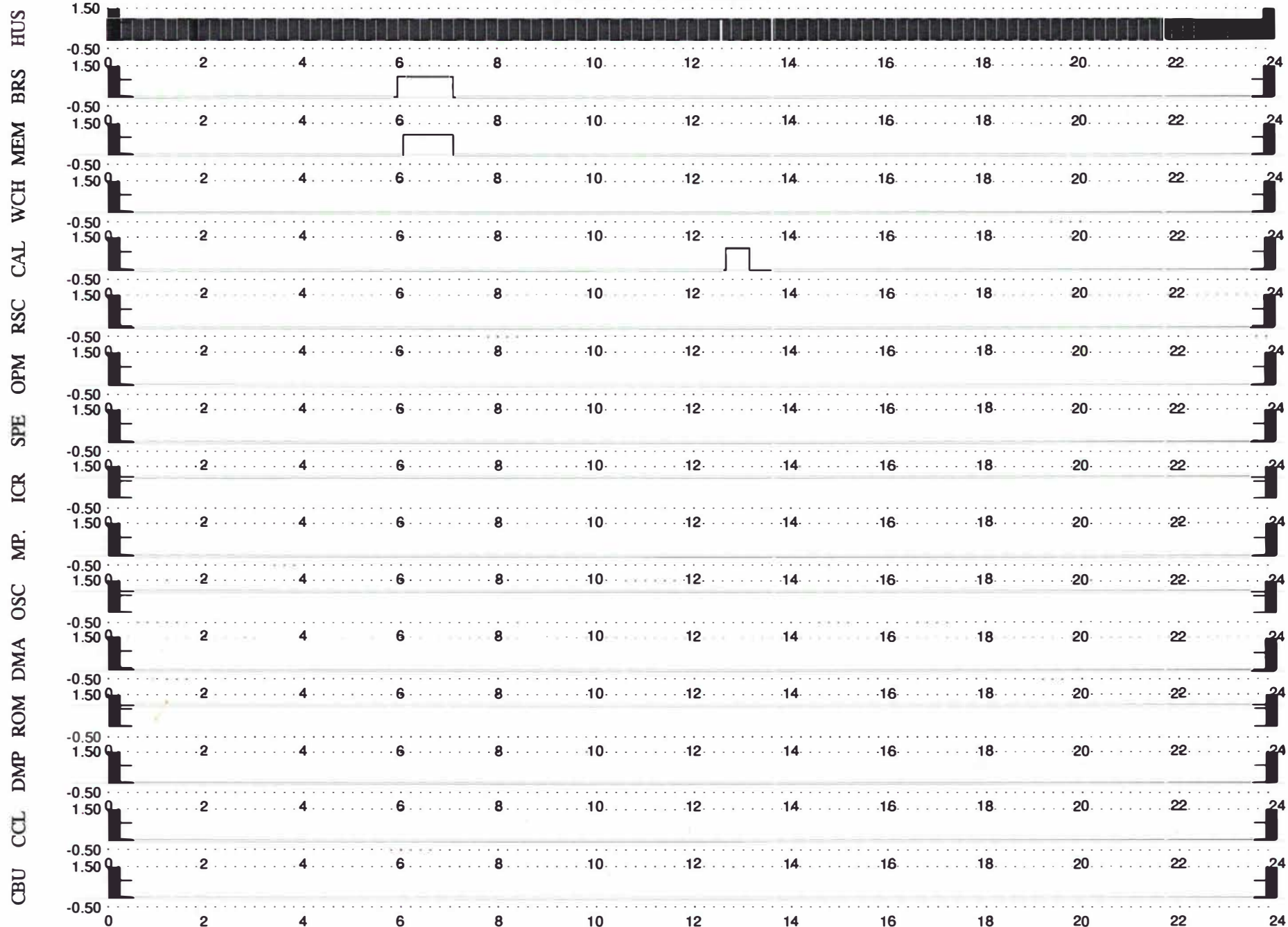
Data Start: 96/07/31, 0000:00

Plot created: 96/08/02, 1003

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BURST NUMBER 3



UNIVERSAL TIME

11/11/11

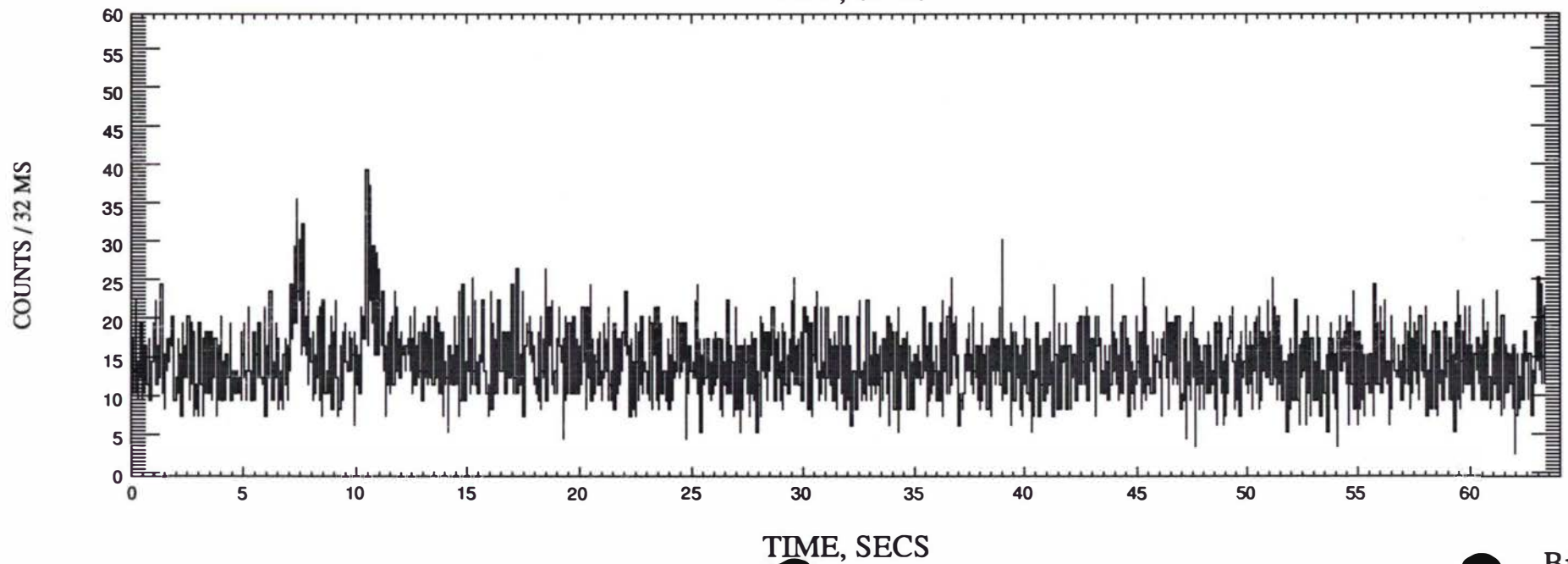
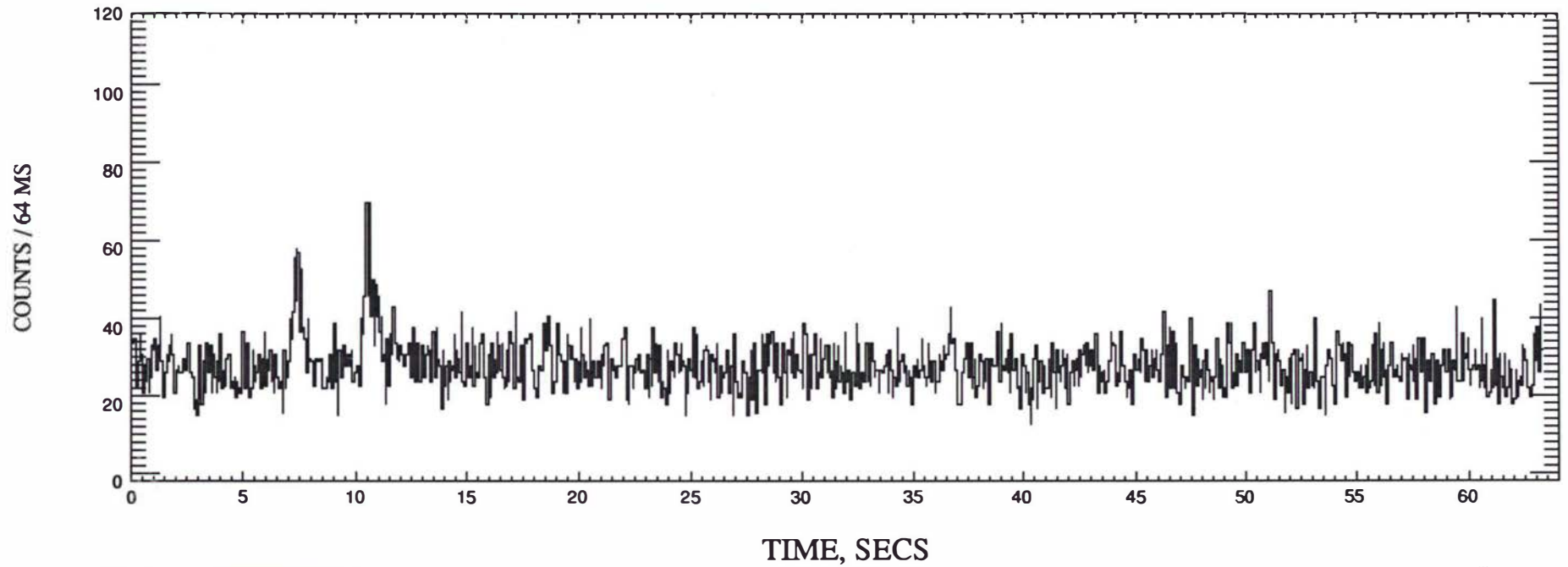
11/11/11

11/11/11

11/11/11

11/11/11

Burst Counter 3 at UT= 5.840851236979 h=21027.064 s 05:50:27.064



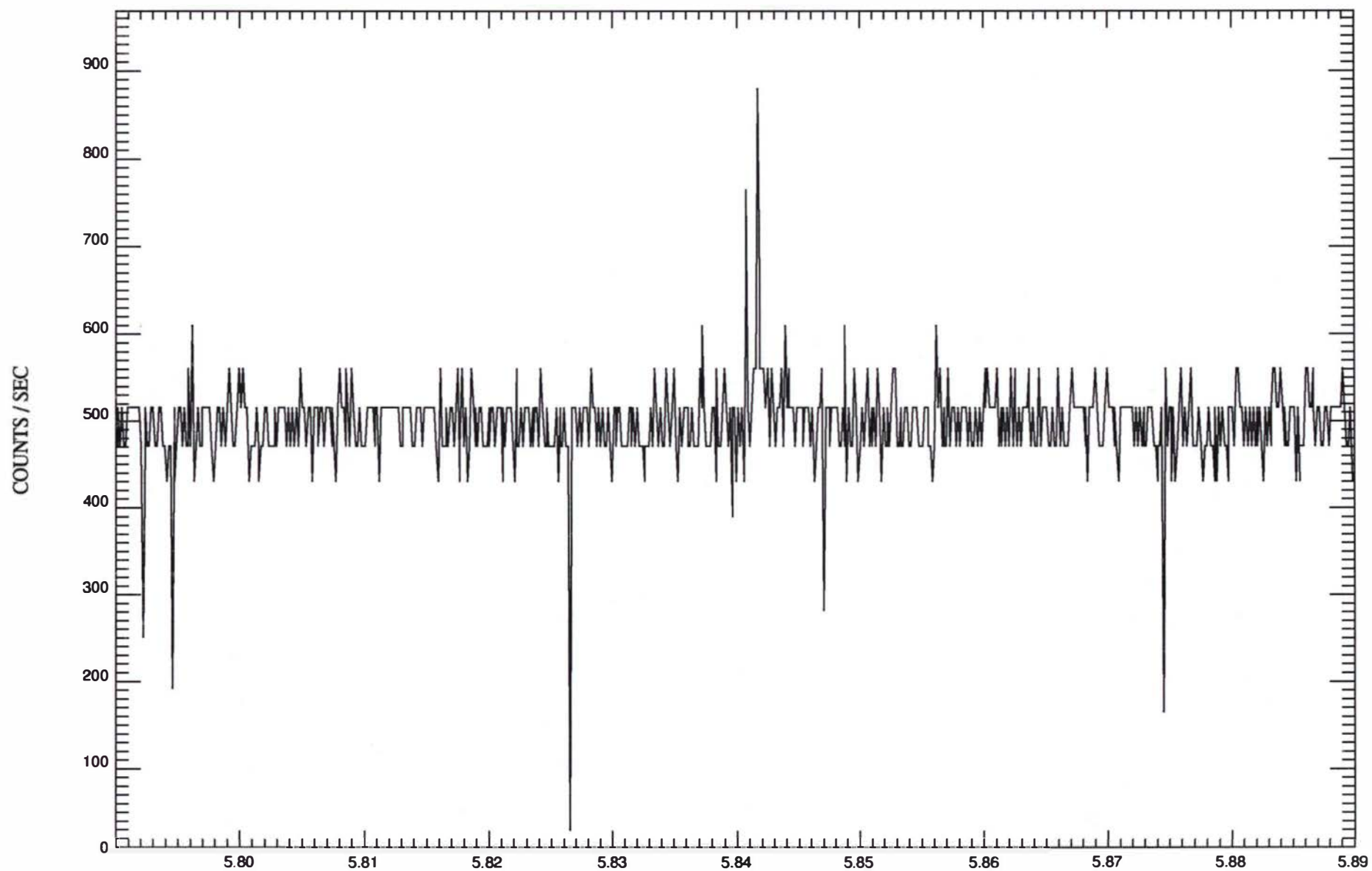
1910

THE UNIVERSITY OF CHICAGO
LIBRARY

1910

1910

CALIBRATION DATA INCLUDED

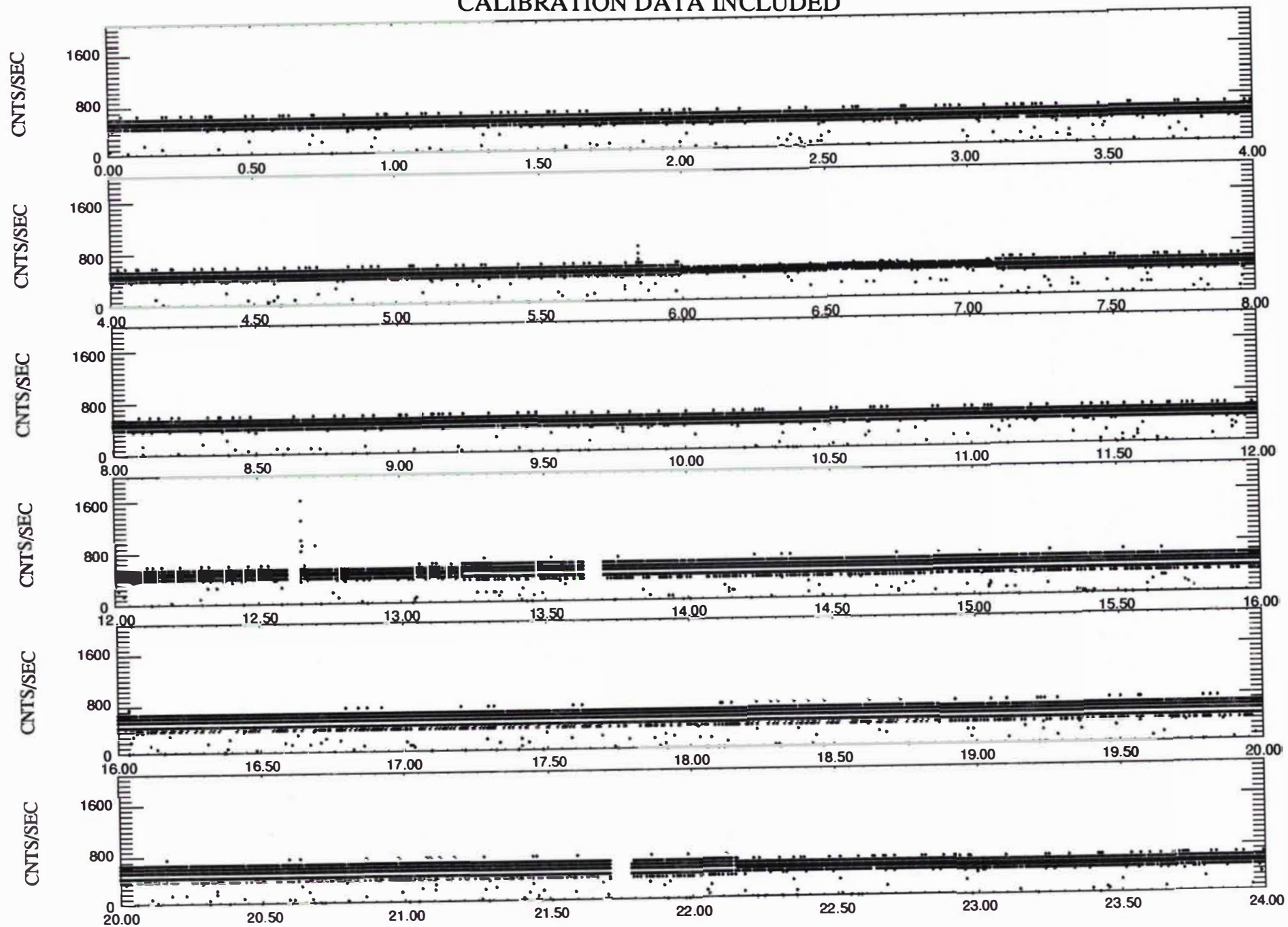


1880

10

۱۵

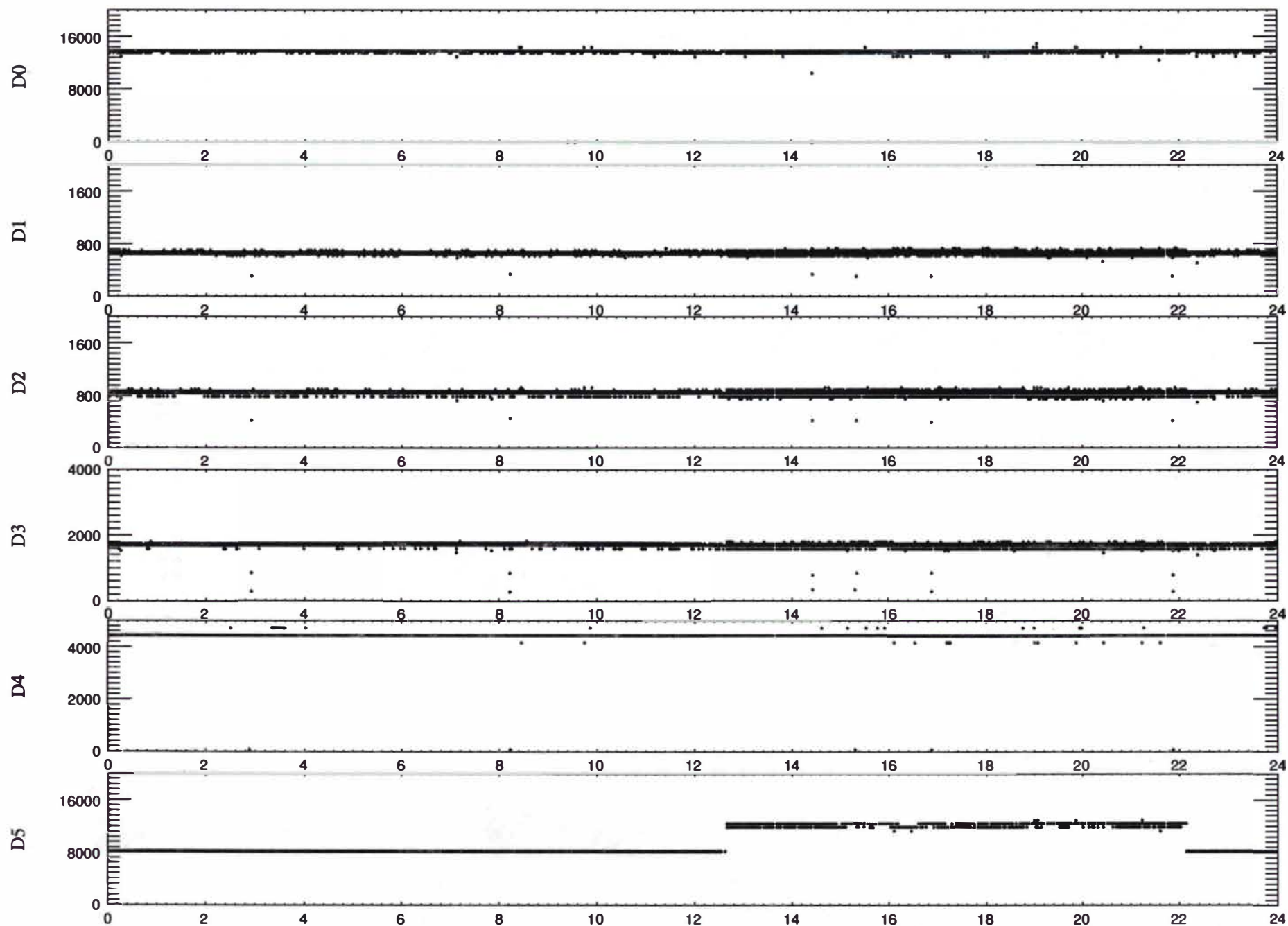
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

5

[illegible]



UNIVERSAL TIME