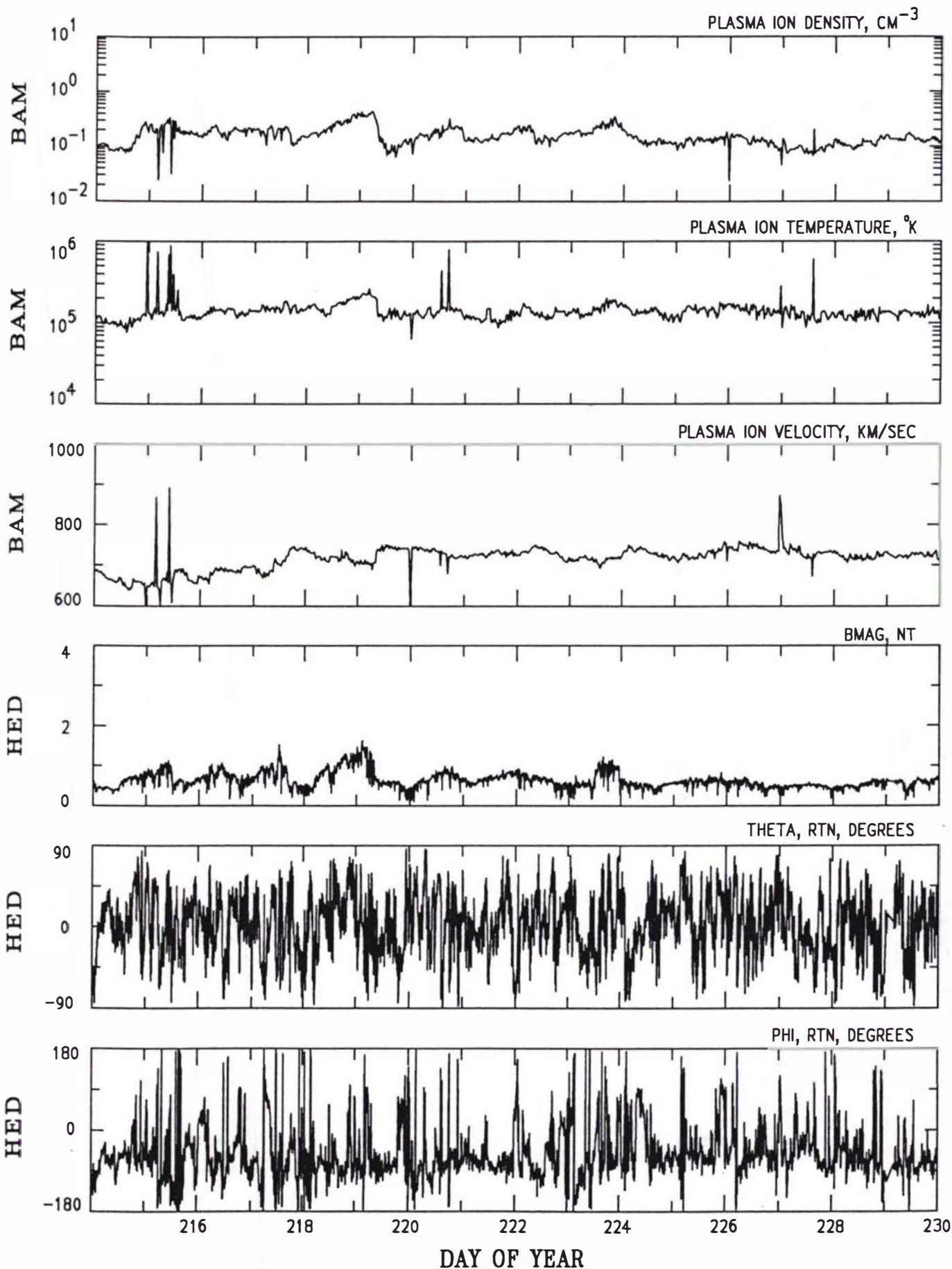


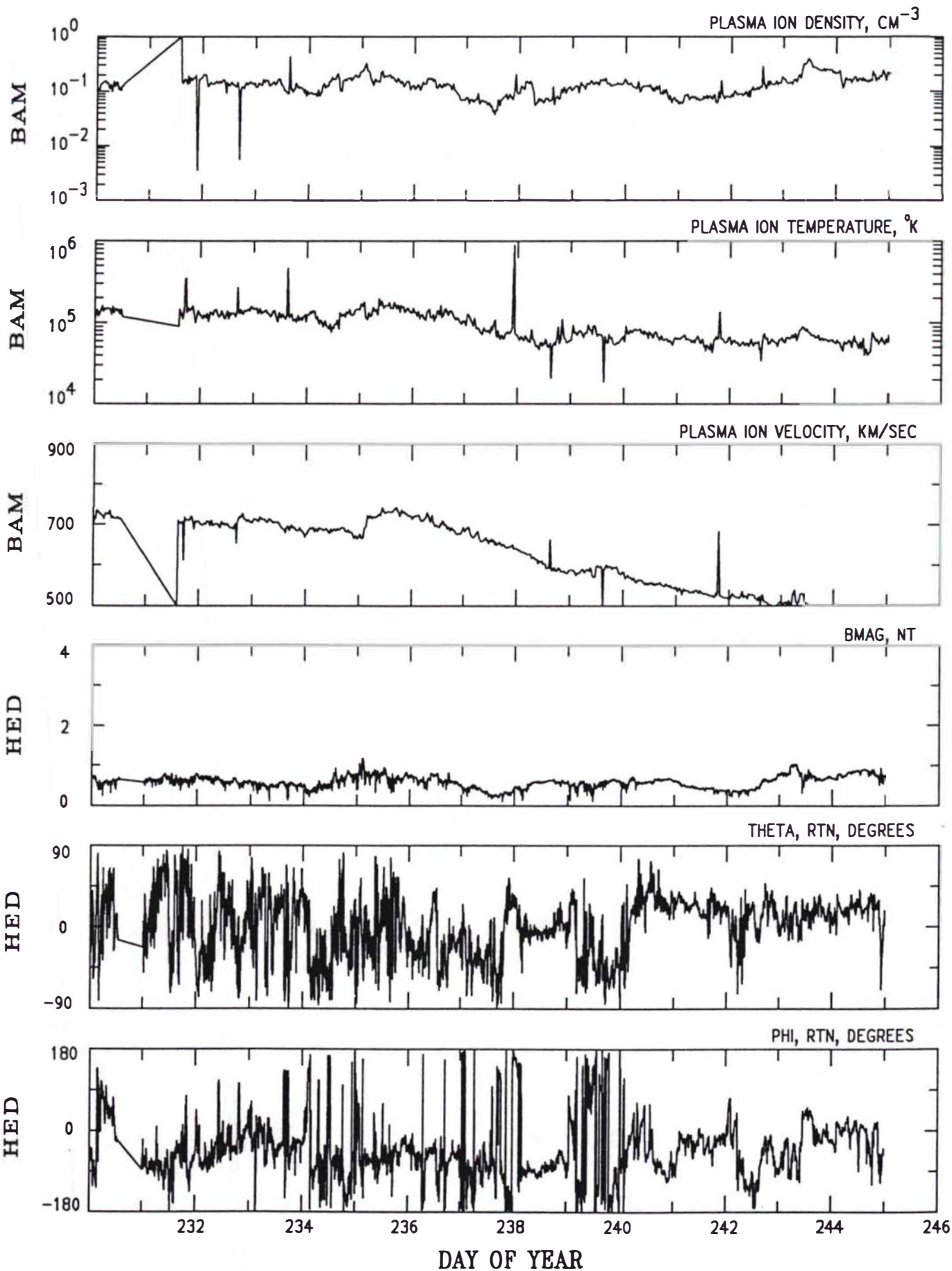
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 214 AUG 1 00:00:00.000 - 96 230 AUG 17 00:00:00.000



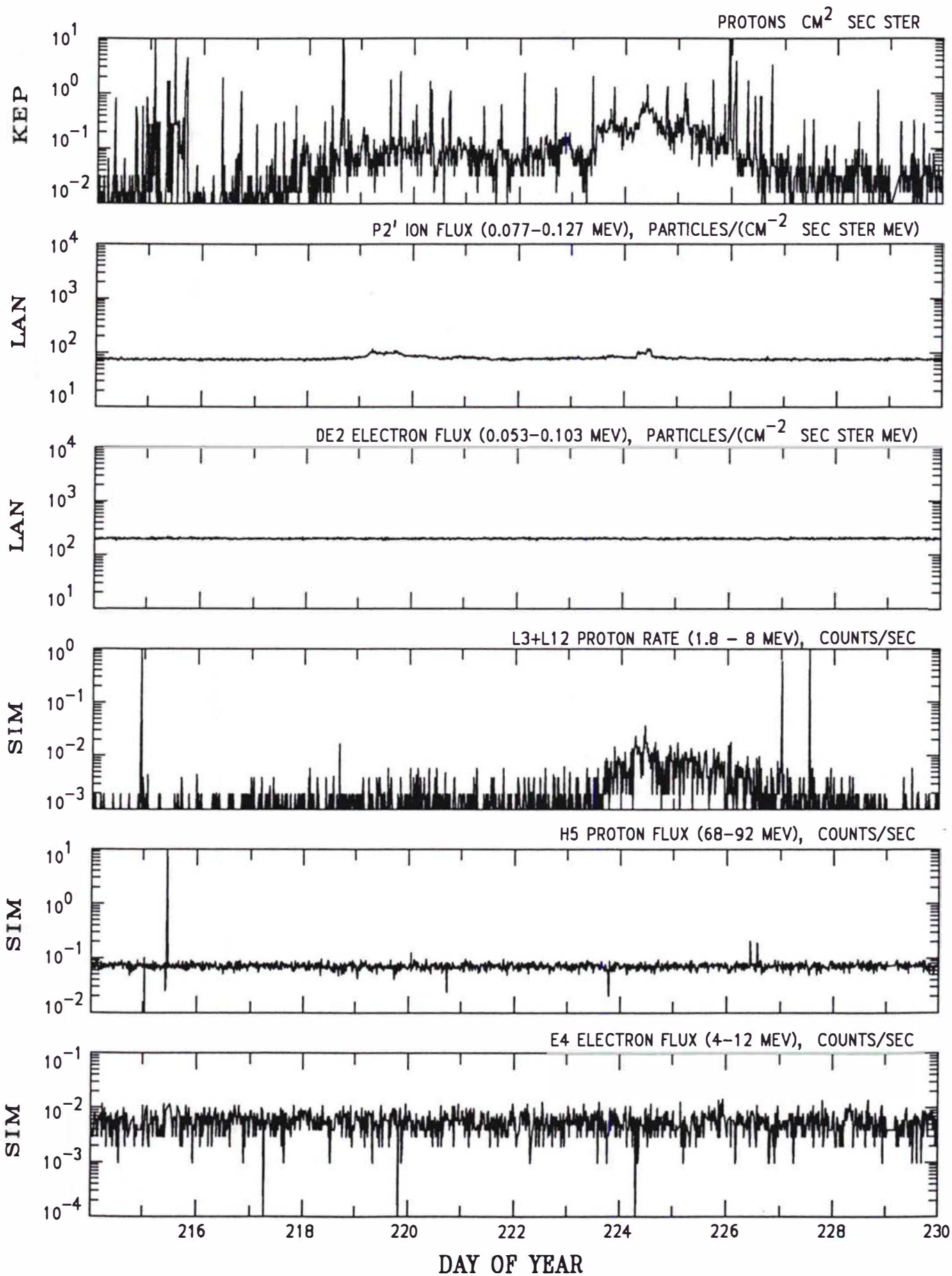
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 230 AUG 17 00:00:00.000 - 96 246 SEP 2 00:00:00.000



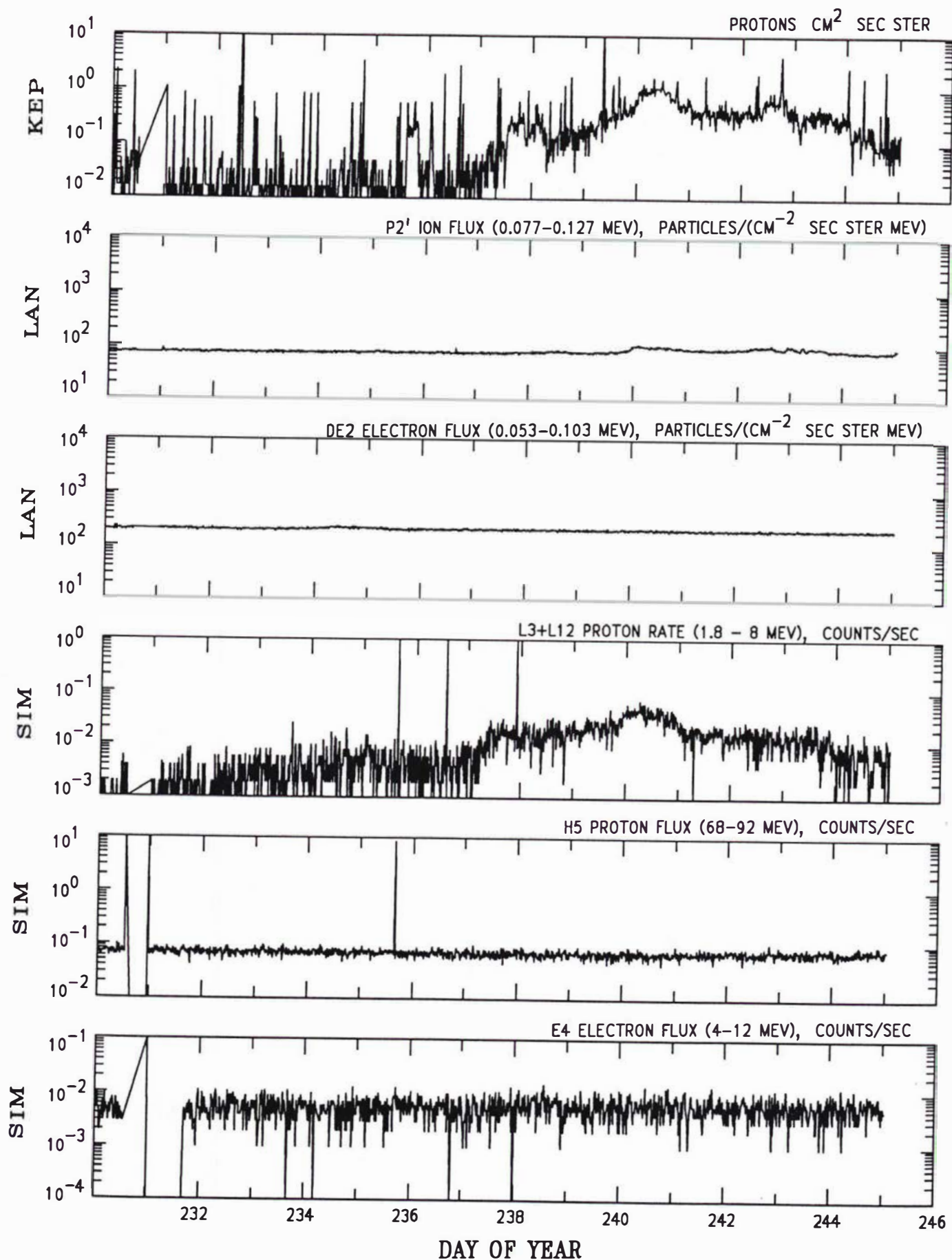
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

96 214 AUG 1 00:00:00.000 - 96 230 AUG 17 00:00:00.000



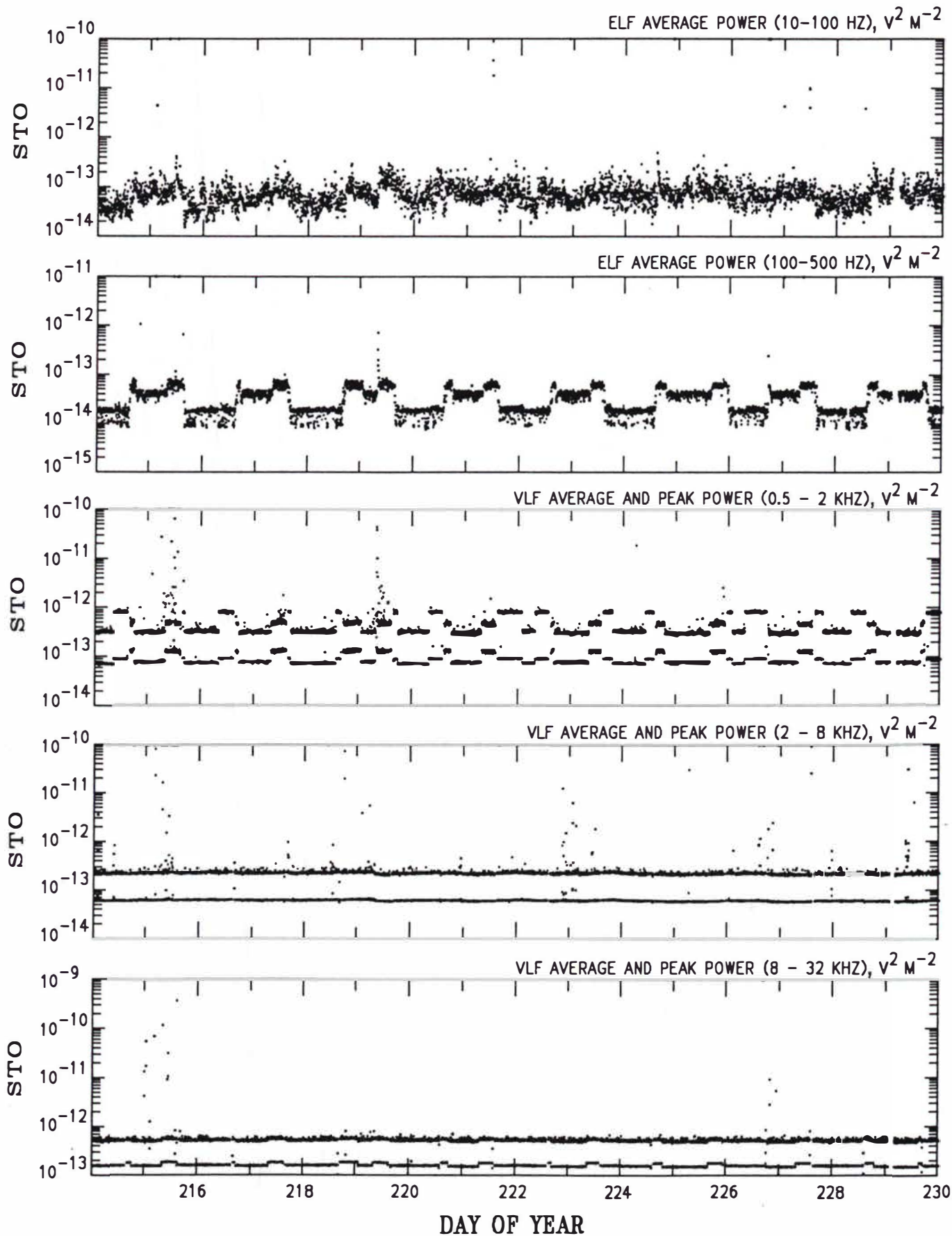
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

96 230 AUG 17 00:00:00.000 - 96 246 SEP 2 00:00:00.000



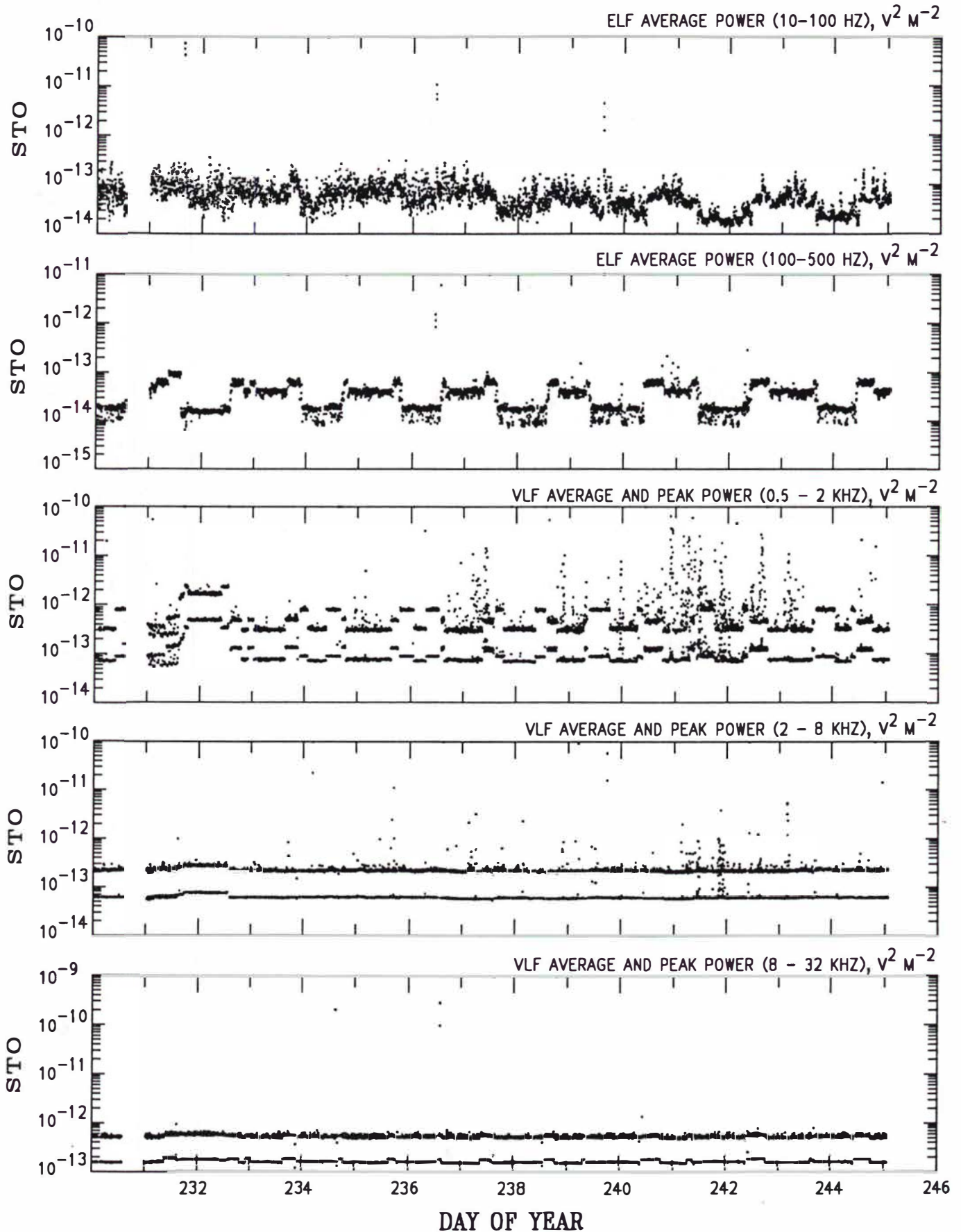
ULYSSES CDR - PLASMA WAVE

96 214 AUG 1 00:00:00.000 - 96 230 AUG 17 00:00:00.000



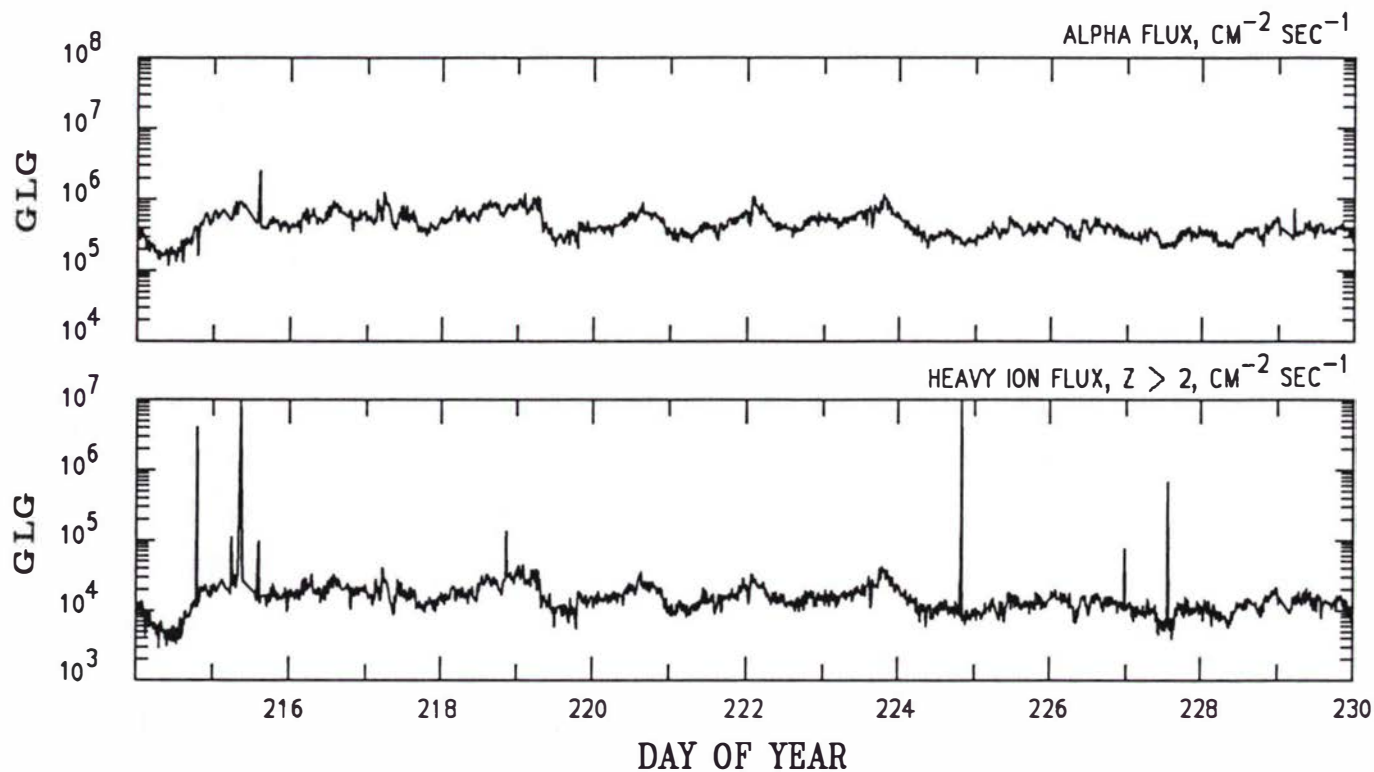
ULYSSES CDR - PLASMA WAVE

96 230 AUG 17 00:00:00.000 - 96 246 SEP 2 00:00:00.000



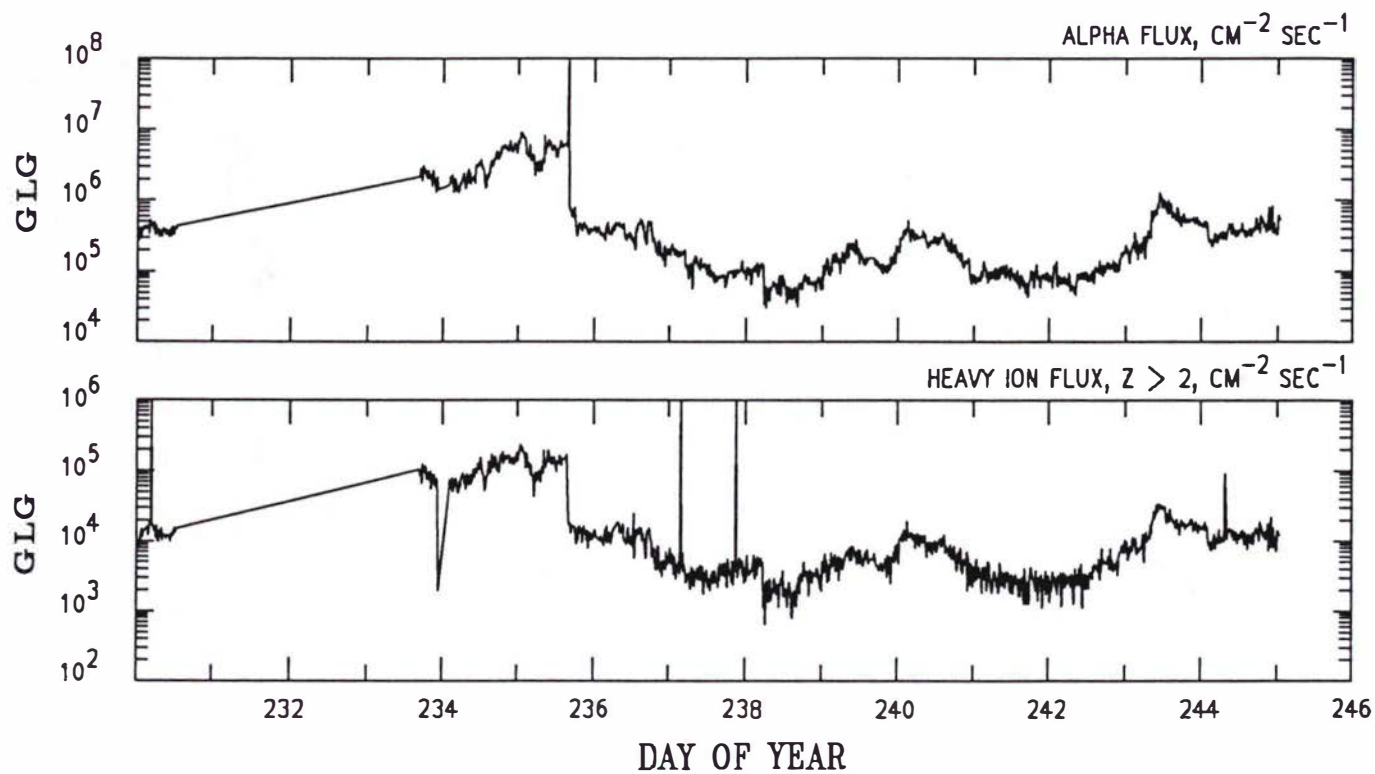
ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 214 AUG 1 00:00:00.000 - 96 230 AUG 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 230 AUG 17 00:00:00.000 - 96 246 SEP 2 00:00:00.000



Date: Sep 30 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☐ Final, CDROM data used?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

- ☐ Was CHECKMO run to eliminate data gaps?
- ☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data...")
- ☐ Was Mars-blocking used?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)
- ☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).
- ☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

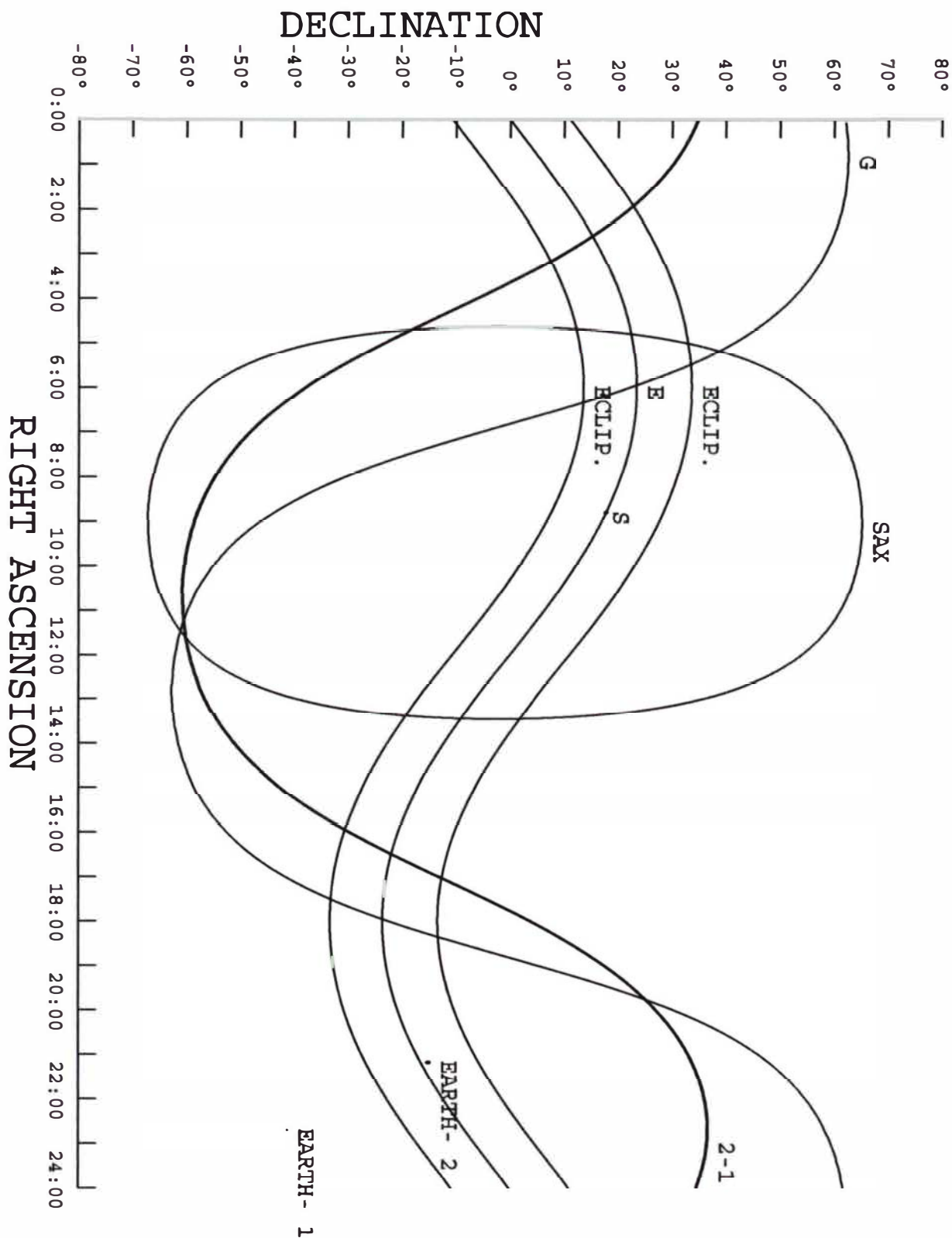
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS

EVENT OF AUG 1, 1996 11:36

5 / 1/10



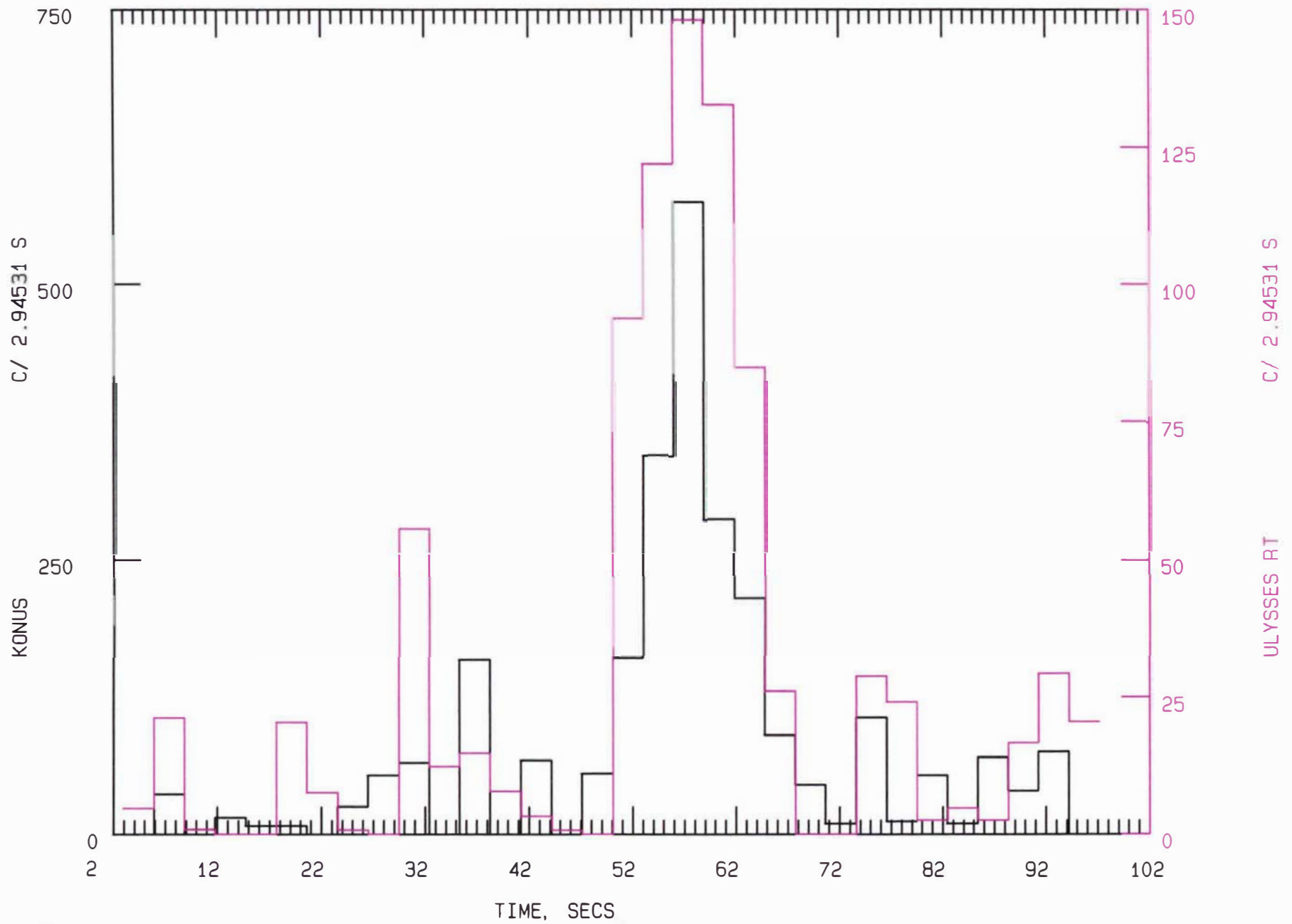
KONUS

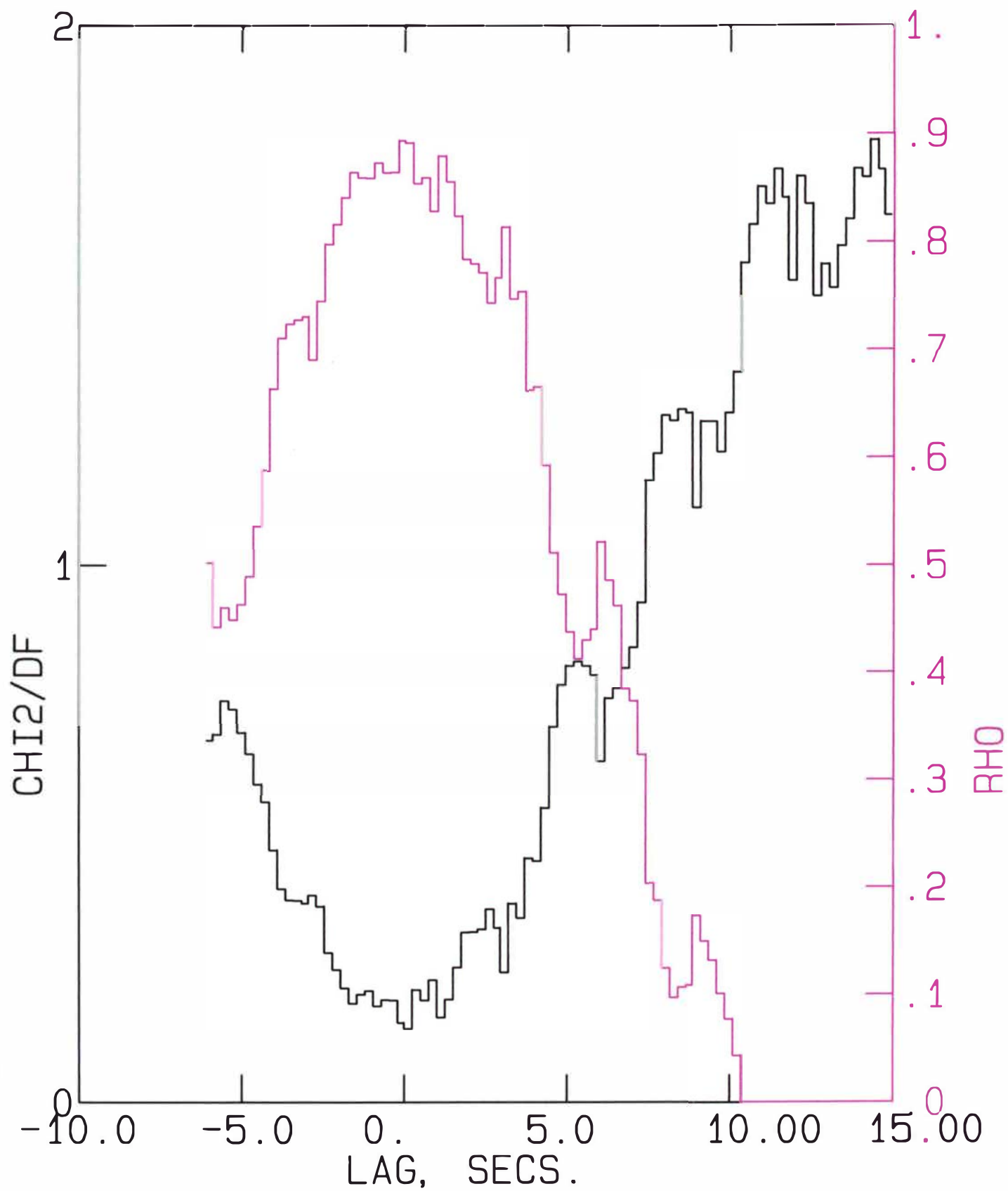
-ULYSSES RT CORRELATION

01/08/96

41295.016

30/ 9/ 9





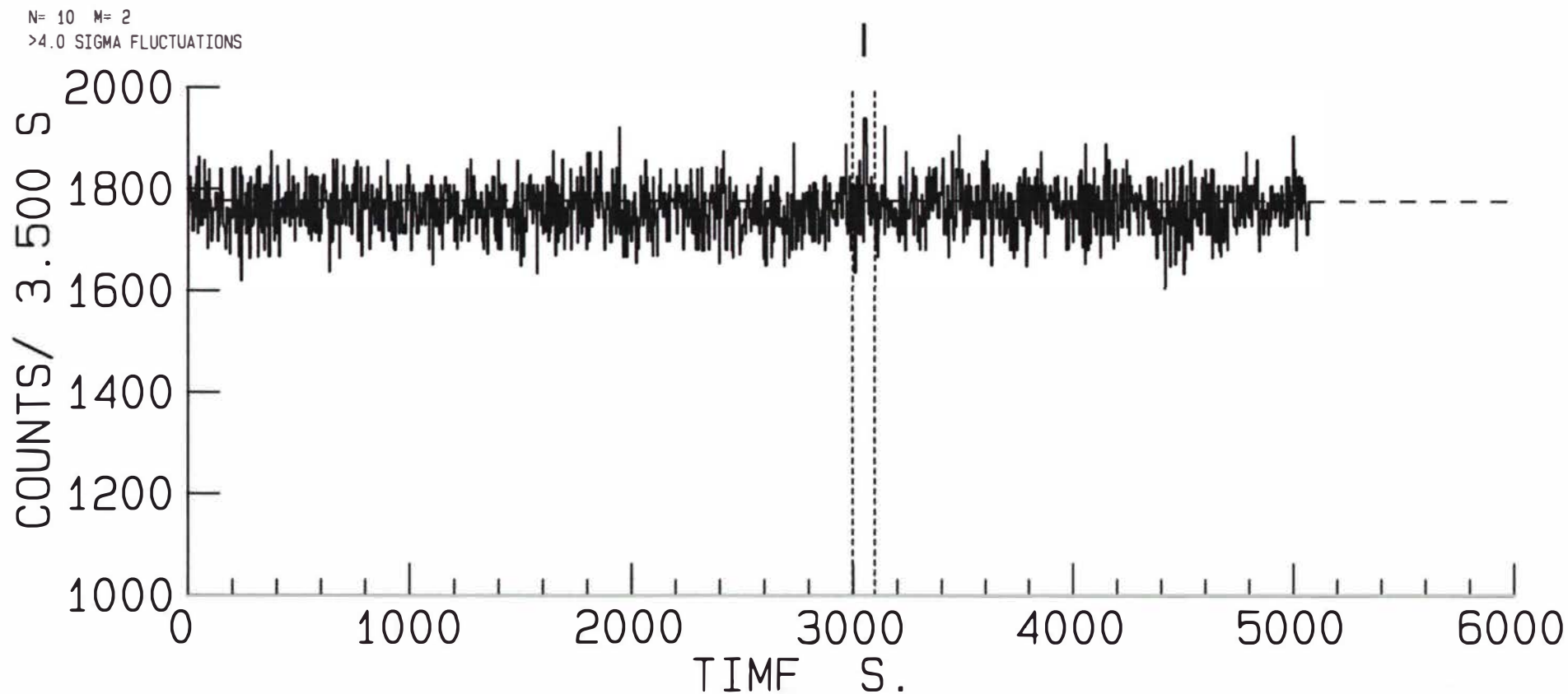
ULYSSES RT

30 / 9 / 9

1 / 8 / 96 38808.188 s

0.250 S INTERVALS REGROUPED BY 14

21- 145 keV



KONUS 01/08/96 41295.016

10- 50 keV 50- 200 keV

COUNTS/2.945 S

4600

DETECTOR 1 - S. ECLIPHTIC

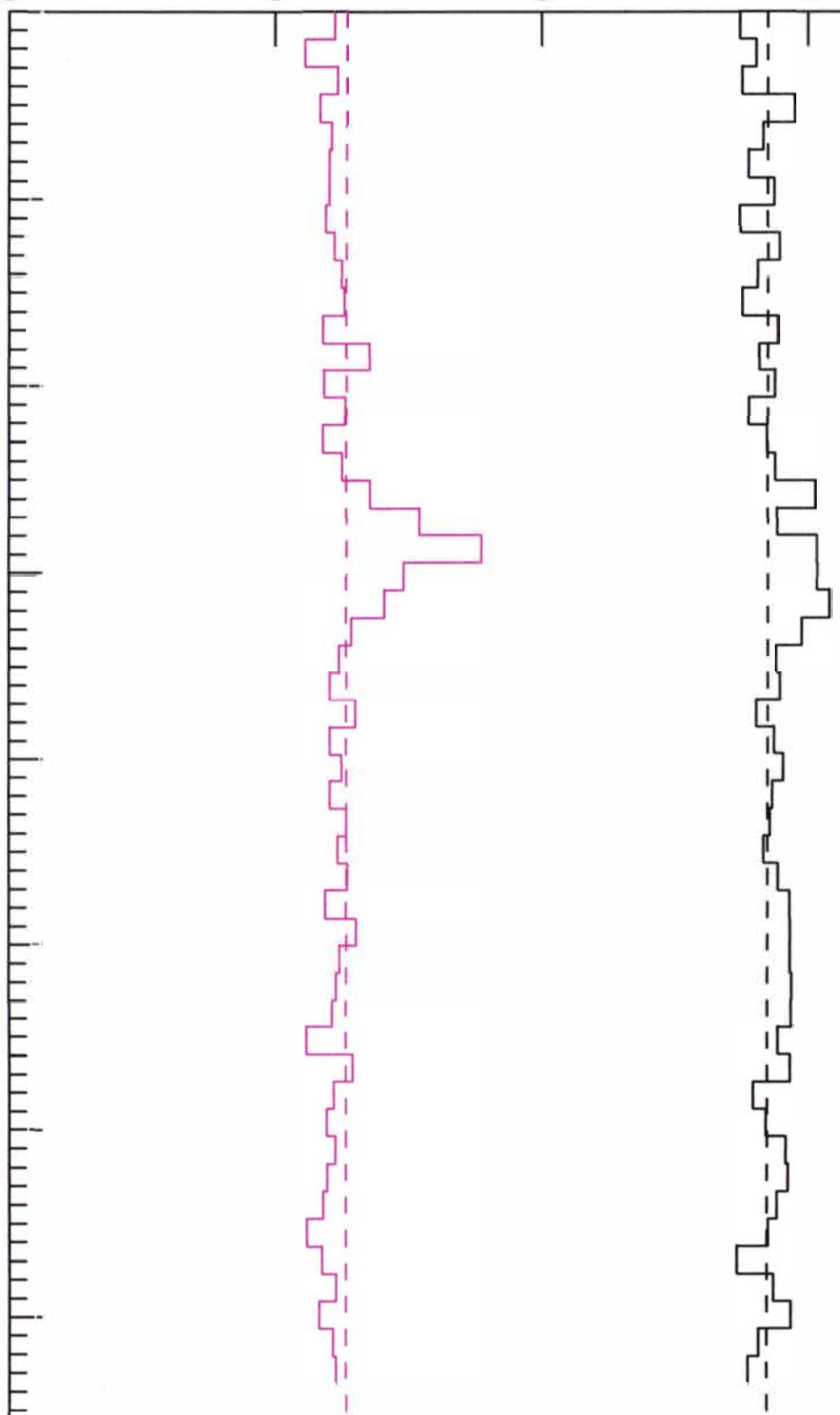
3600

2600

1600

30/09/09

600
0
20
40
60
80
100
120
140
TIME, SECS



KONUS

01/08/96 41295.016

10- 50 keV

50- 200 keV

COUNTS/2.945 S

4400

DETECTOR 2 - N. ECLIPHTIC

30/09/09

3400

2400

1400

400

20

40

60

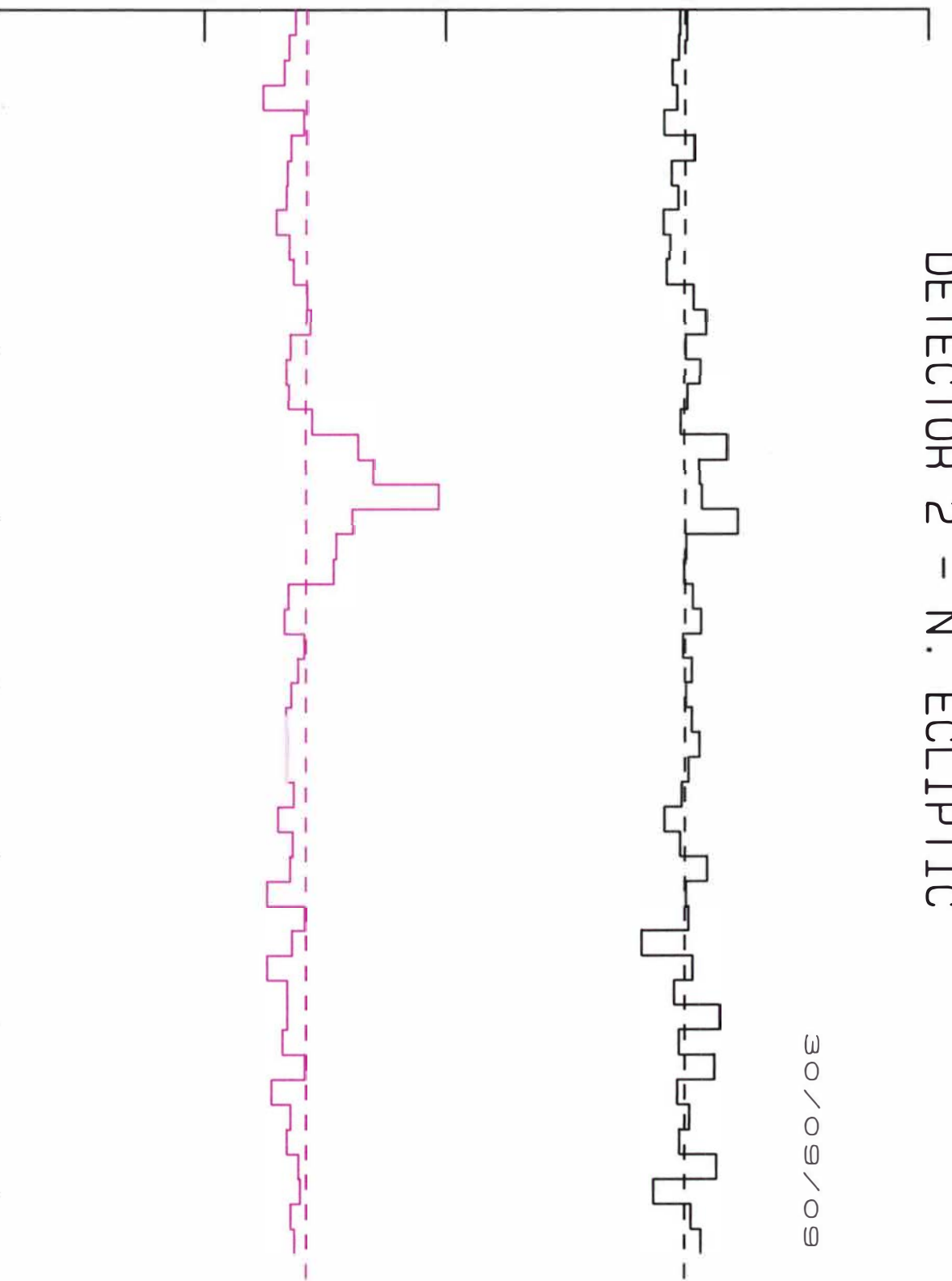
80

100

120

140

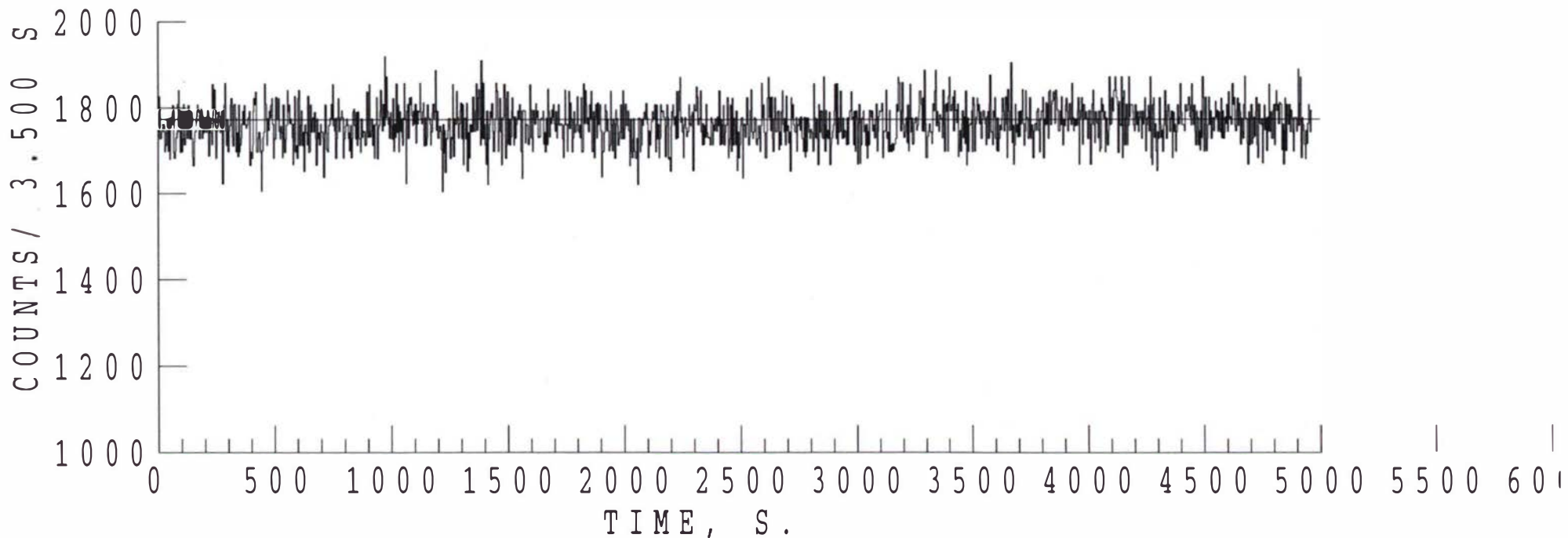
TIME, SECS



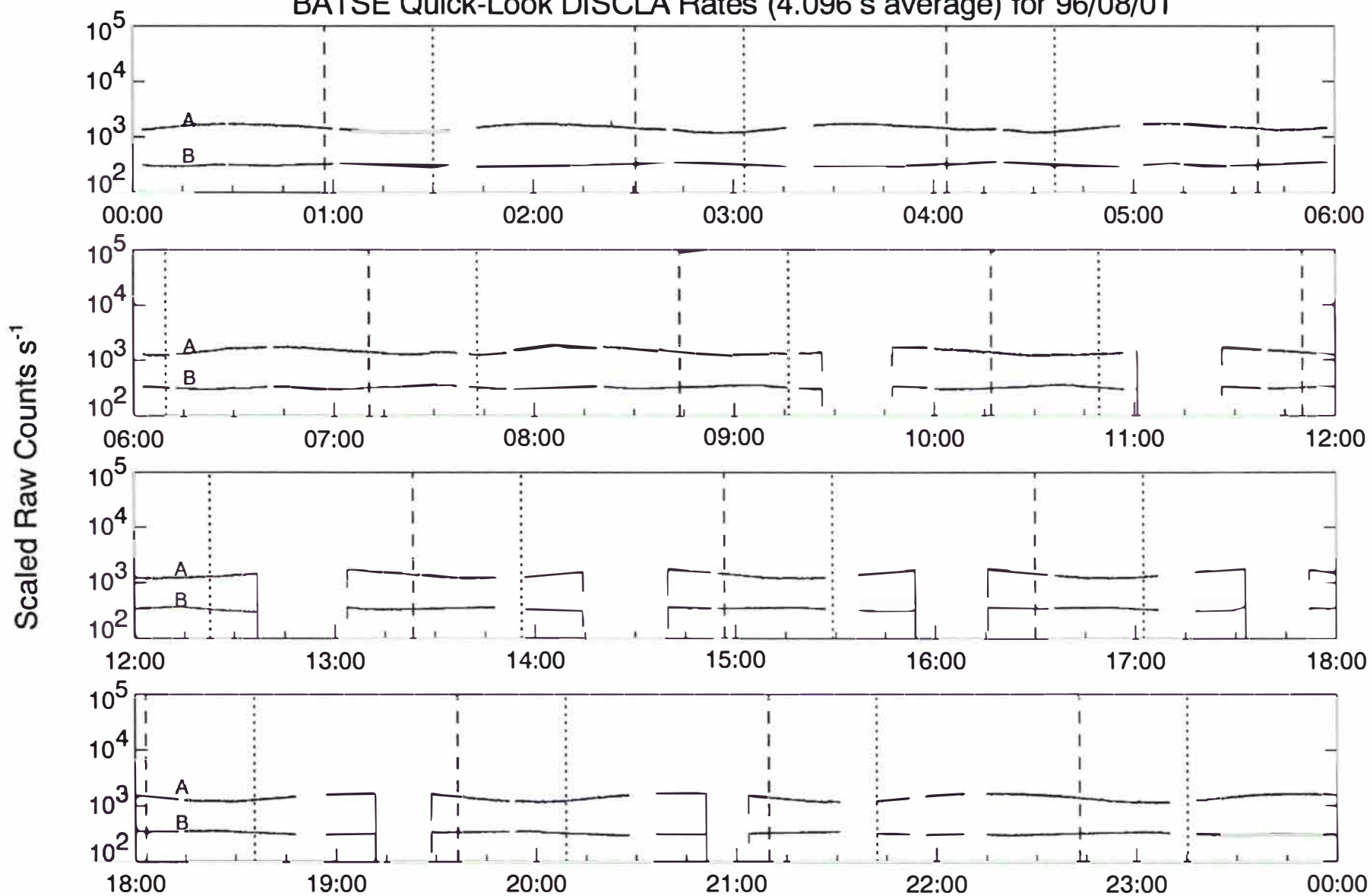
~~SAX~~
HUS DATA
19 / 07 / 05

ULYSSES RT
01 / 08 / 96 54468.141 s
0.250 S INTERVALS REGROUPED BY 14
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/01

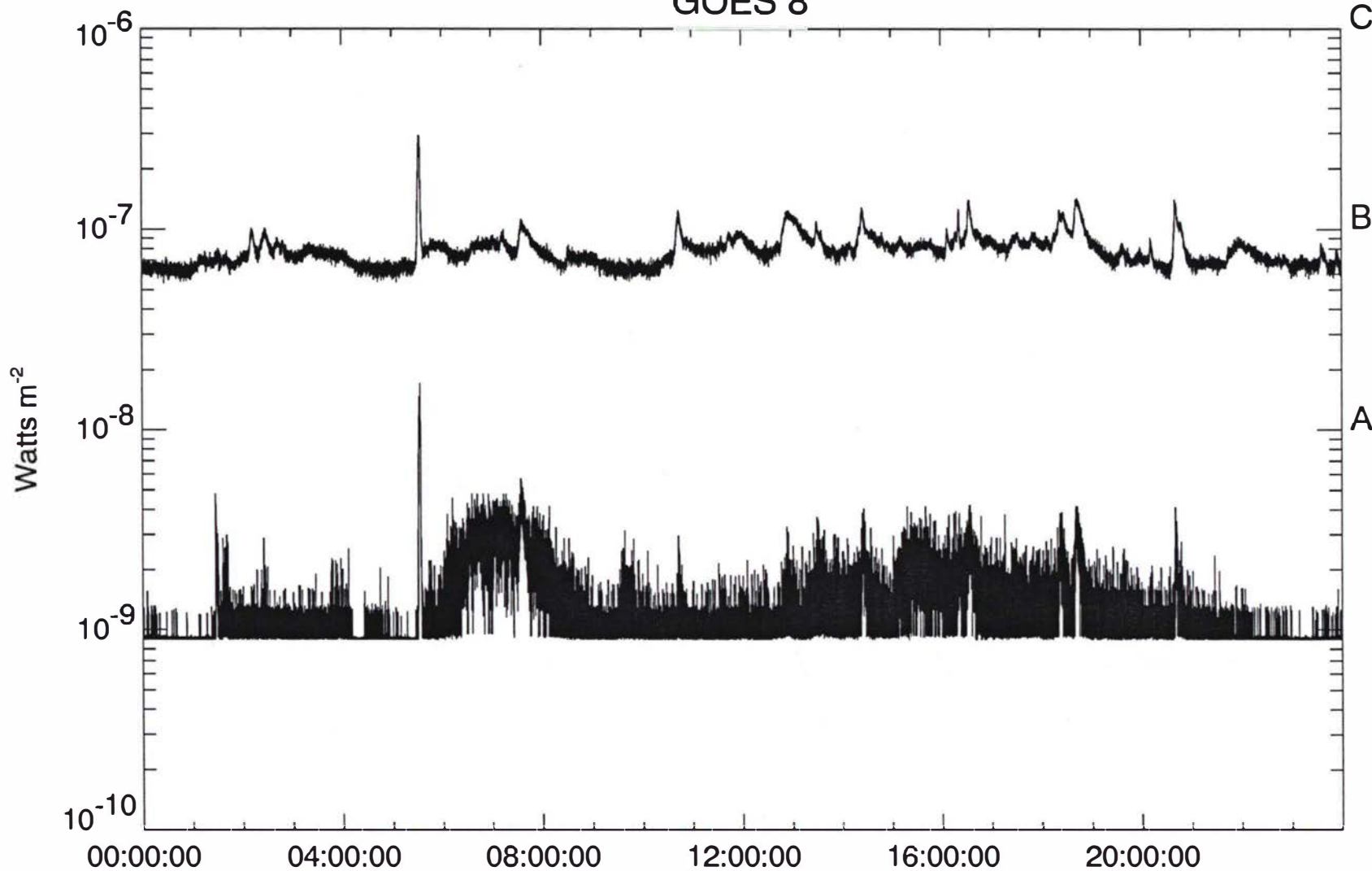


Current Time: 96/08/03, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



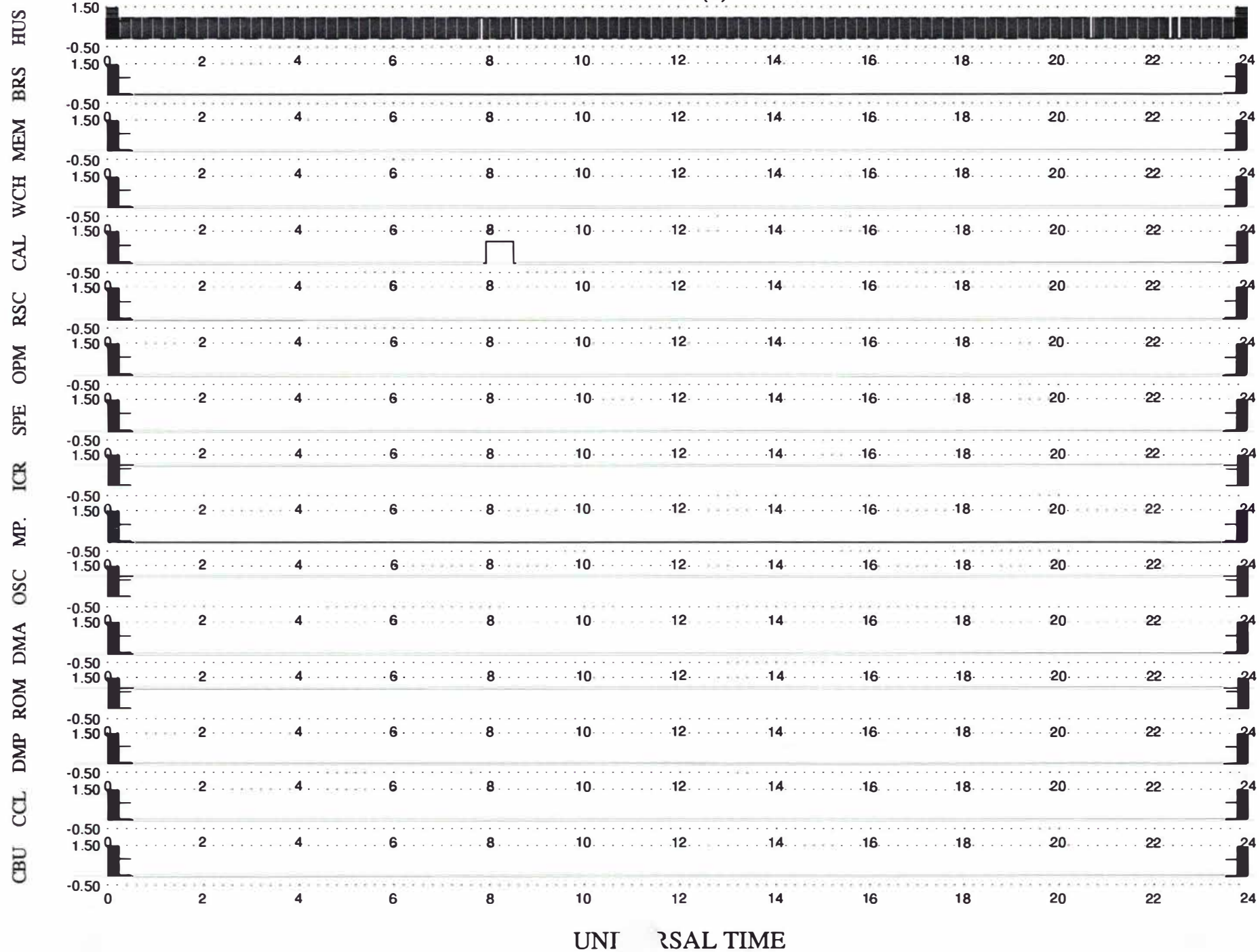
Data Start: 96/08/01, 0000:00

Plot created: 96/08/03, 1003

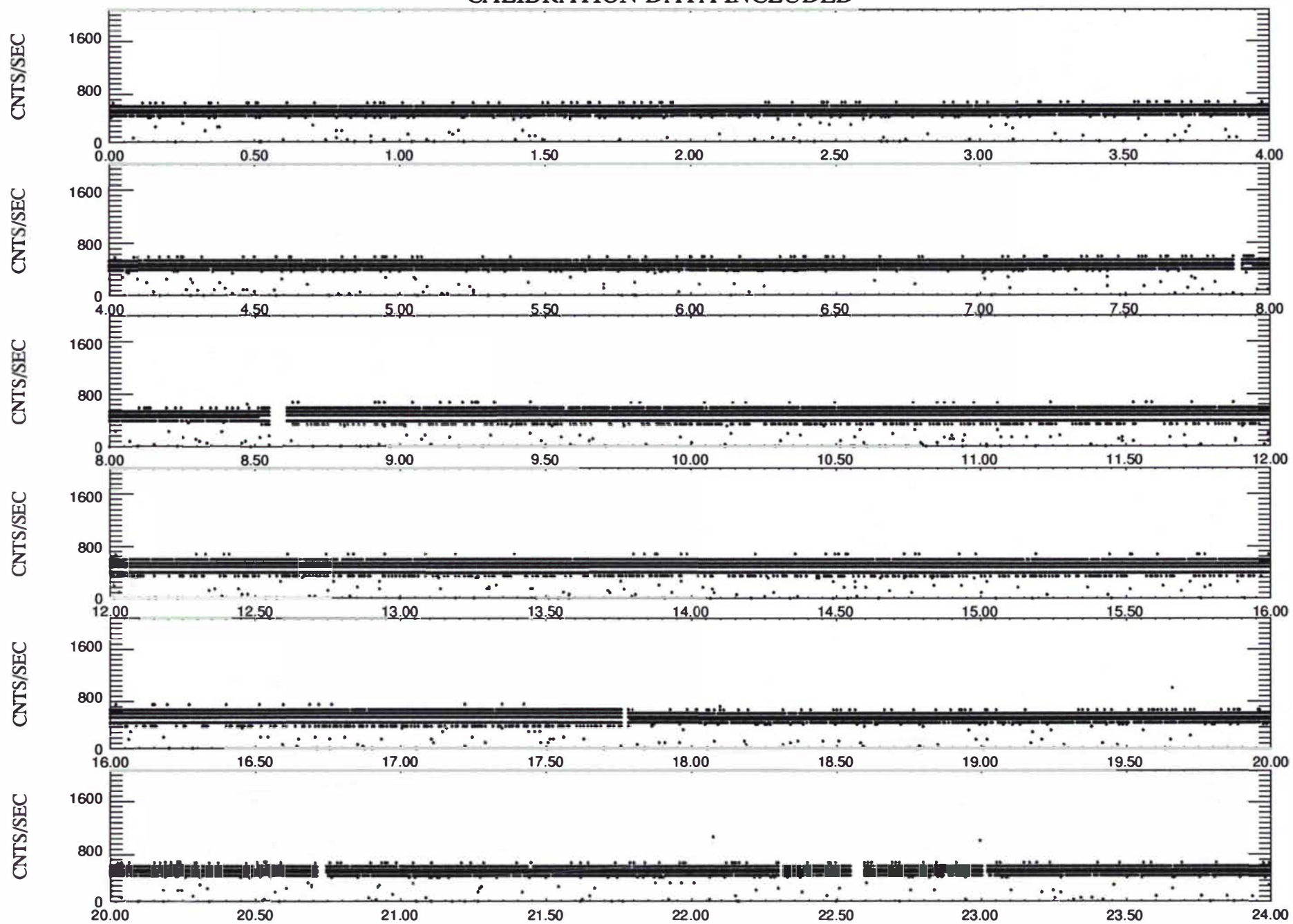
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

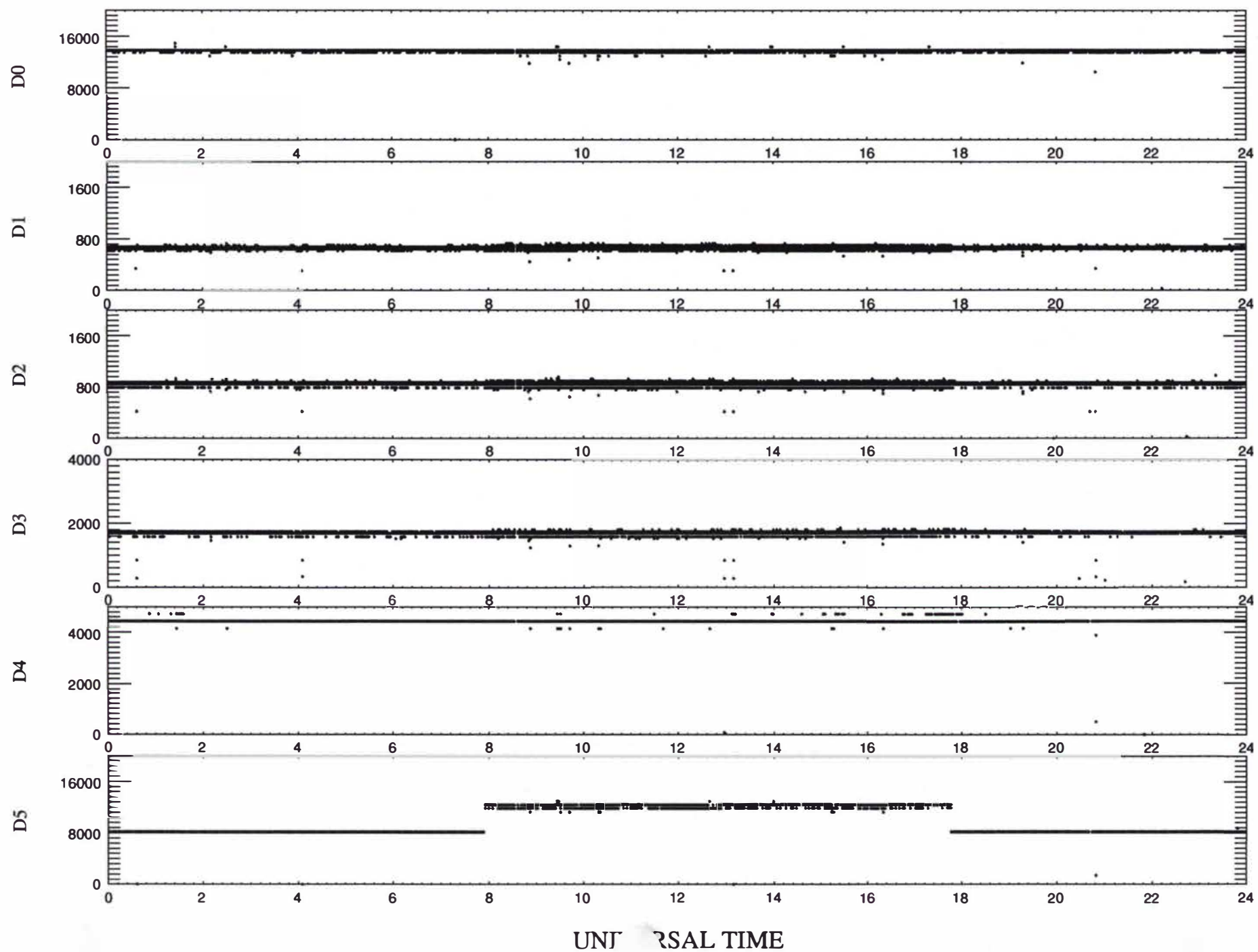
NO BURST (3)



CALIBRATION DATA INCLUDED



UNT RSAL TIME



From HAGEDON@fender.msfc.nasa.gov Mon Aug 5 12:29 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Mon, 5 Aug 1996 14:28:54 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5559

BATSEARCH PROGRAM

NO

BATSE BURST # 5559
EVENT OF 1996 AUG 2 DAY OF YEAR=215
EVENT CROSSING TIME AT BATSE : 79619. S. OR 22:06:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 250.000 31.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 2/ 8/ 96 IS:
RA= 160.172 DEC= 41.042 DIST= 4.984 AU
BATSE-ULYSSES DISTANCE = 745651942. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -845.97 SECS.
CROSSING TIME AT ULYSSES IS 78773. S. OR 21:52:53 +/- 443.23 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 2/ 8/ 96 IS:
RA= 95.303 DEC= 23.840 DIST= 2.240 AU
MARS-BATSE DISTANCE = 335099520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 559.61 SECS.
CROSSING TIME AT MARS IS 80179. S. OR 22:16:18 +/- 176.49 SECONDS

BATSE BURST TRIGGER

NO.: 5559

TIME: TJD=0297 SECONDS=79619

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=126.2 AZIMUTH=94.2 ERROR=6.7 DEGREES

COMMENTS:

WEAK SINGLE PULSE WITH SUBSTRUCTURE. DUR.~7 SEC. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5559	960802	10297	79619	2200	250	+31	7

BATSE #

5559

6 / 8 / 96

ULYSSES RT

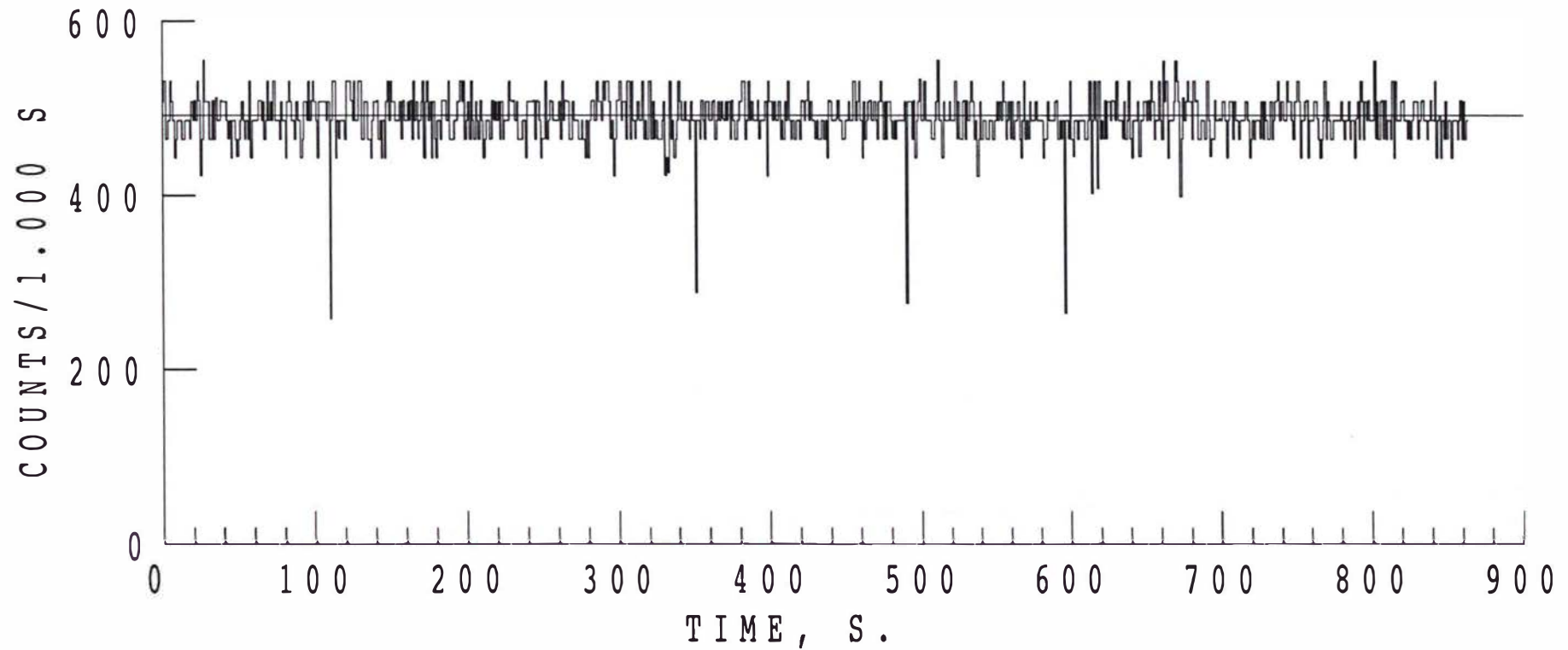
2 / 8 / 96 78336.070 s

0.500 S INTERVALS REGROUPED BY 2

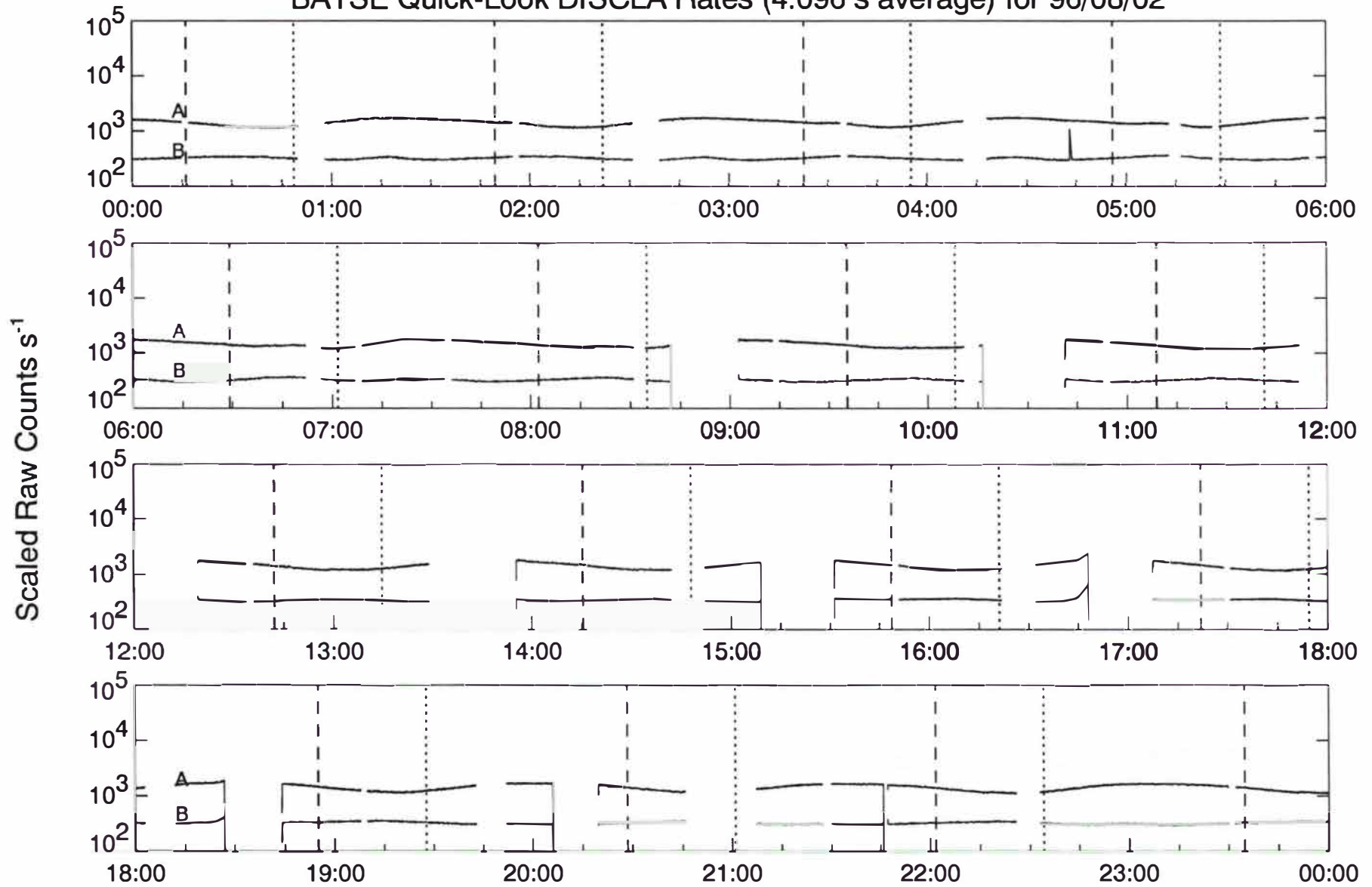
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/02

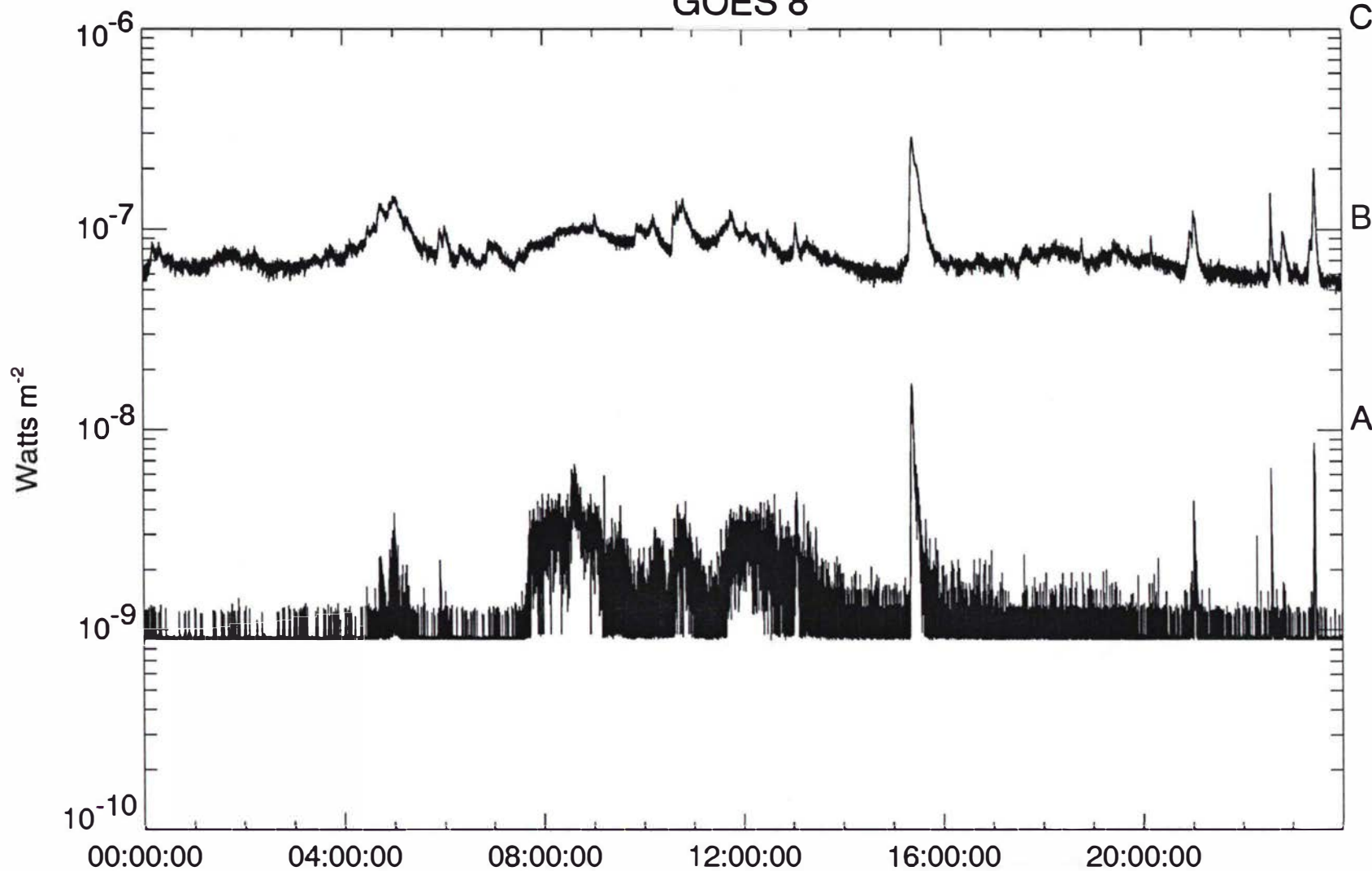


Current Time: 96/08/04, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



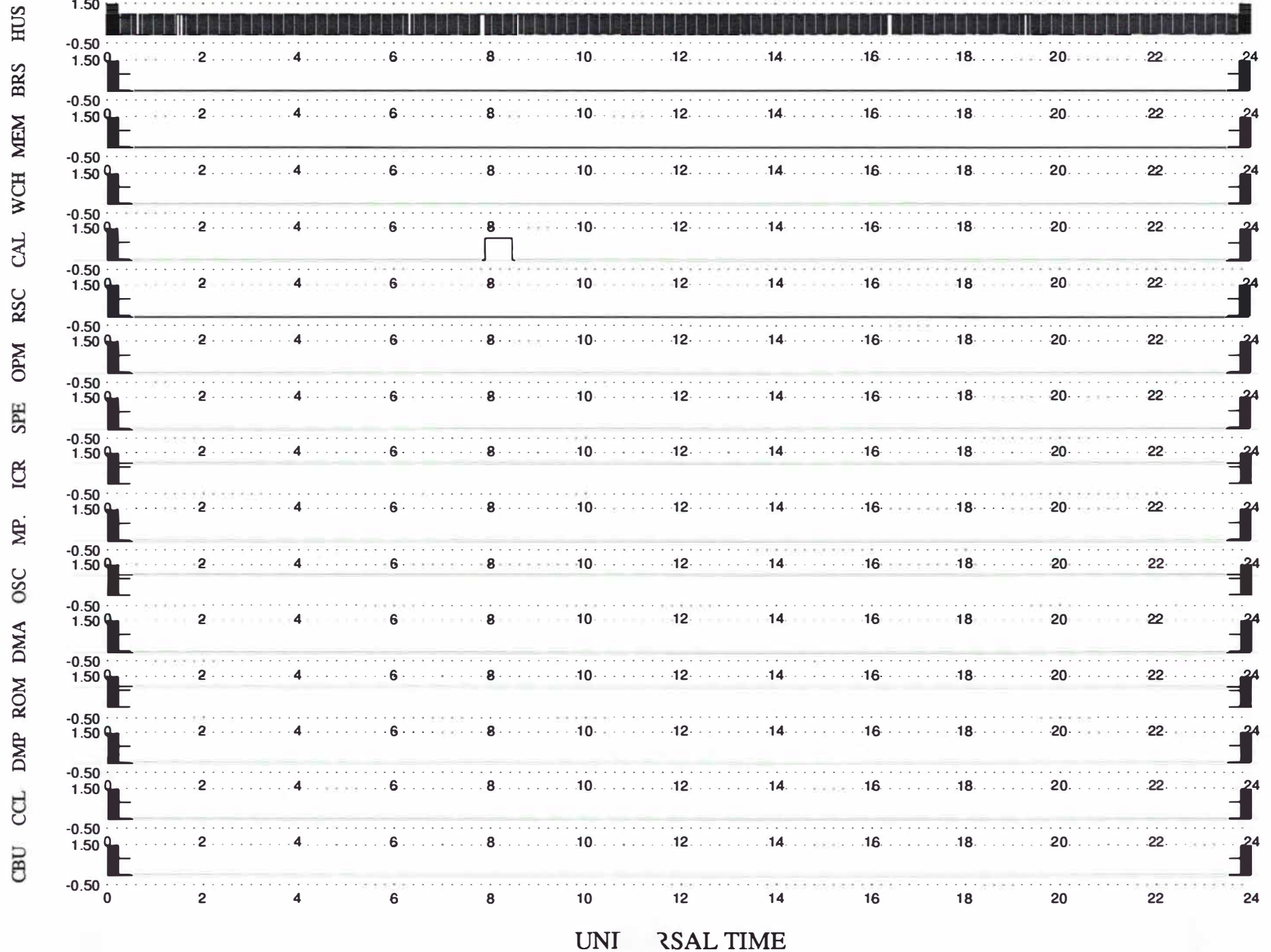
Data Start: 96/08/02, 0000:00

Plot created: 96/08/04, 1003

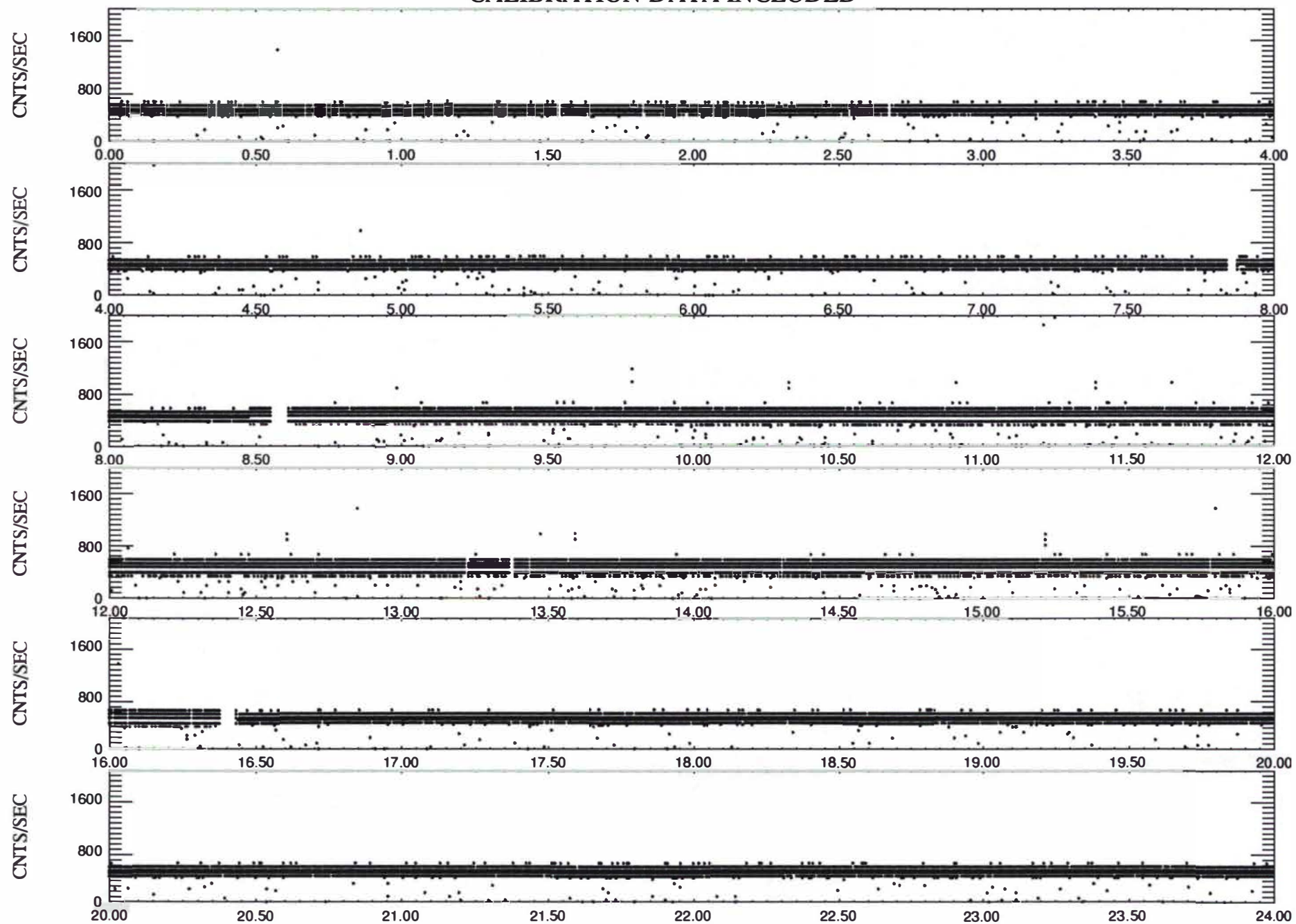
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

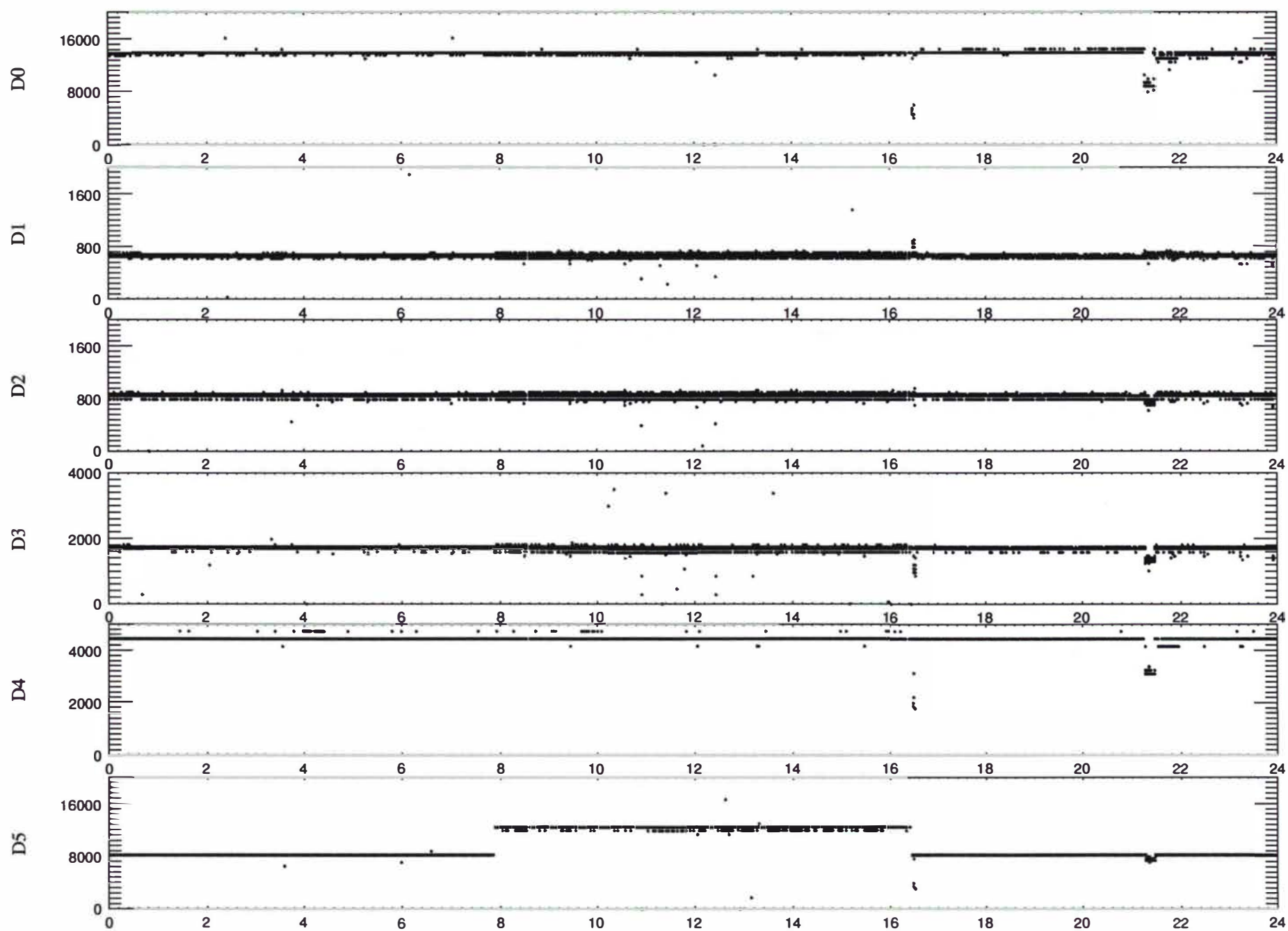
NO BURST (3)



CALIBRATION DATA INCLUDED



UNT RSAL TIME



UNIVERSAL TIME

From HAGEDON@fender.msfc.nasa.gov Mon Aug 5 12:31 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Mon, 5 Aug 1996 14:30:43 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5560

NO

BATSEARCH PROGRAM

BATSE BURST # 5560
EVENT OF 1996 AUG 3 DAY OF YEAR=216
EVENT CROSSING TIME AT BATSE : 31212. S. OR 08:40:12.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 166.000 40.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 8/ 96 IS:
RA= 160.263 DEC= 40.969 DIST= 4.988 AU
BATSE-ULYSSES DISTANCE = 746185313. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=175.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2481.44 SECS.
CROSSING TIME AT ULYSSES IS 28731. S. OR 07:58:50 +/- 54.01 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 8/ 96 IS:
RA= 96.032 DEC= 23.825 DIST= 2.237 AU
MARS-BATSE DISTANCE = 334593632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -557.69 SECS.
CROSSING TIME AT MARS IS 30654. S. OR 08:30:54 +/- 159.38 SECONDS

BATSE BURST TRIGGER

NO.: 5560

TIME: TJD=0298 SECONDS=31212

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

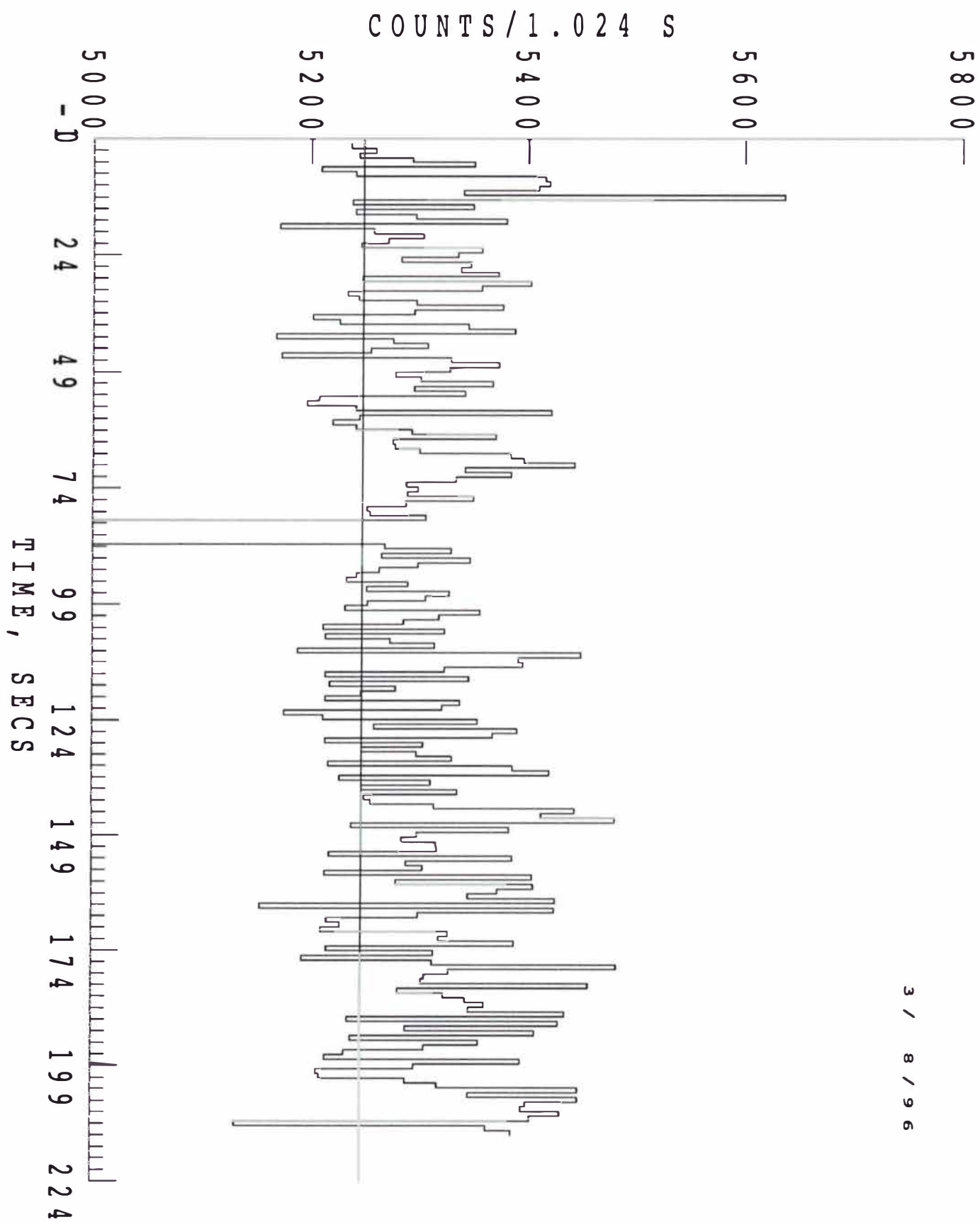
LOCATION: ZENITH=68.6 AZIMUTH=59.9 ERROR=10.2 DEGREES

COMMENTS:

WEAK SINGLE PULSE. DUR.~0.8 SEC. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5560	960803	10298	31212	3000	166	+40	.8

BACODINE 5560 03/08/96 31200.969
25 - 100 keV



BATSE #

5560

6 / 8 / 96

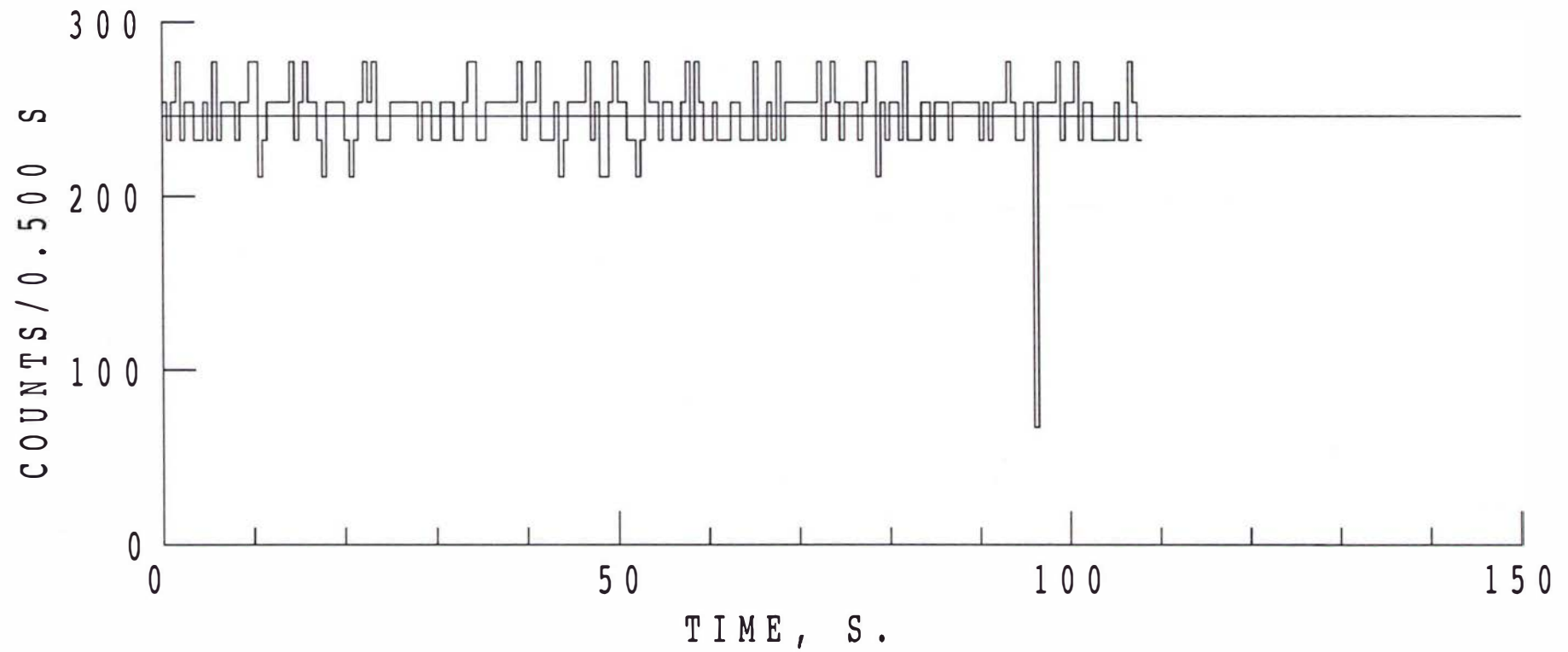
ULYSSES RT

3 / 8 / 96 28692.053 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Oct 14 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?

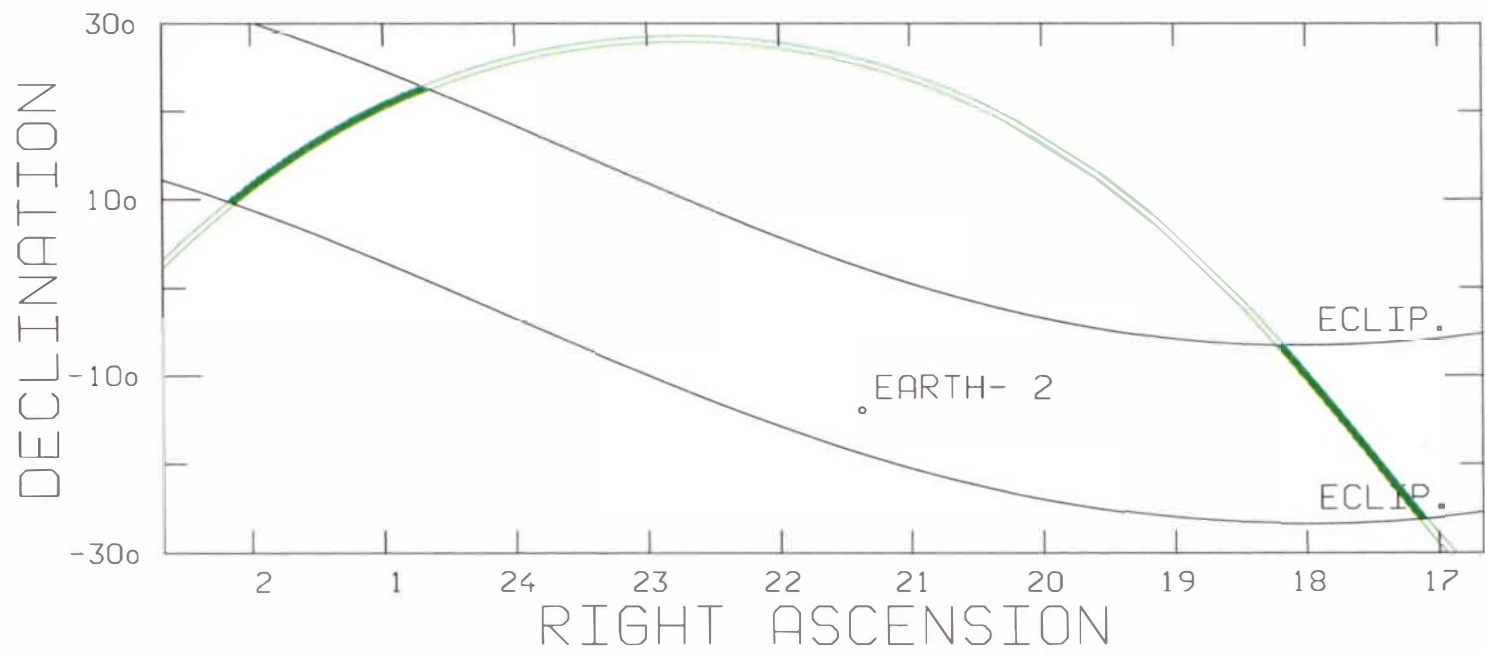
2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

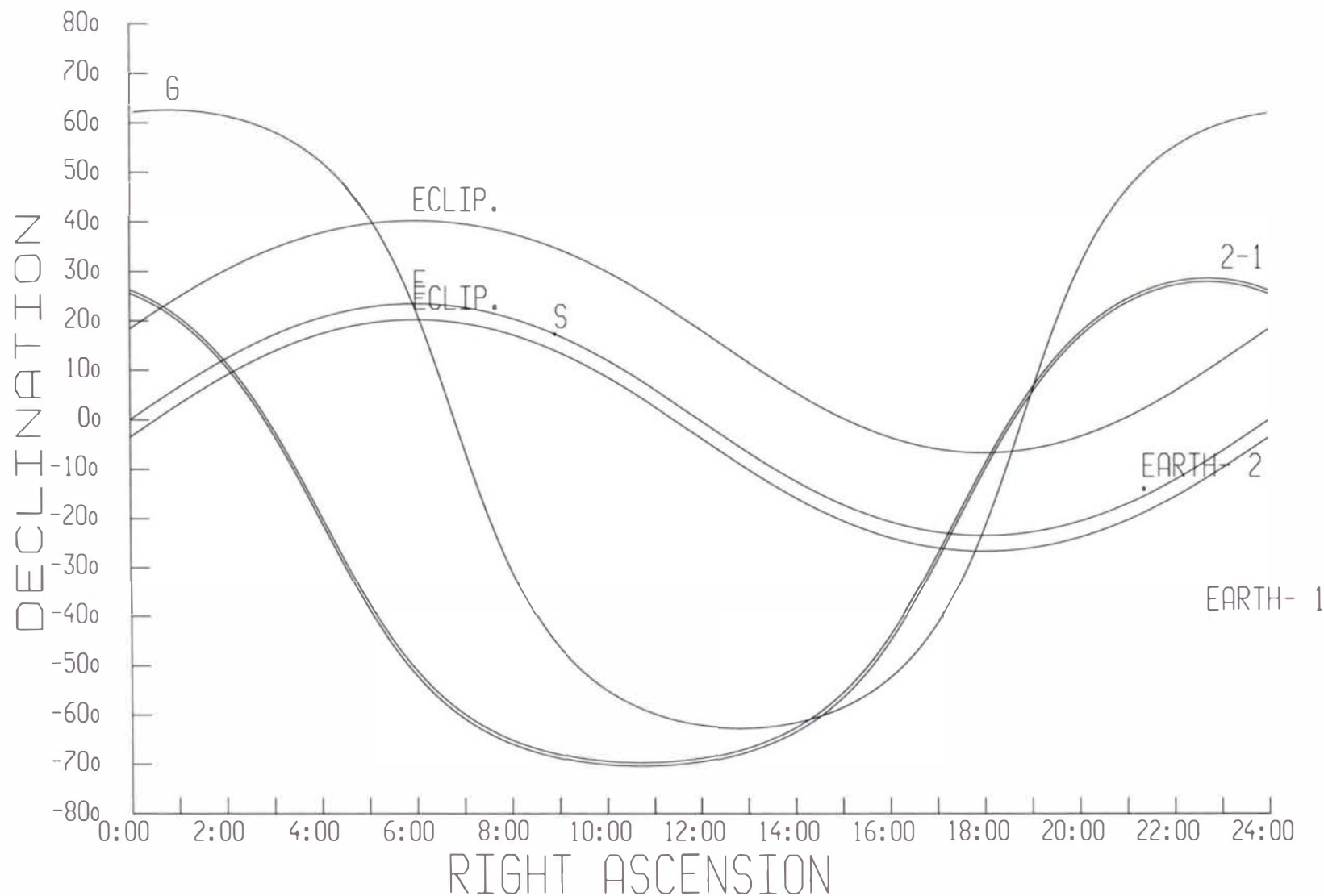
-
- ☒ ACCESS and MBL4 databases updated with identical times?

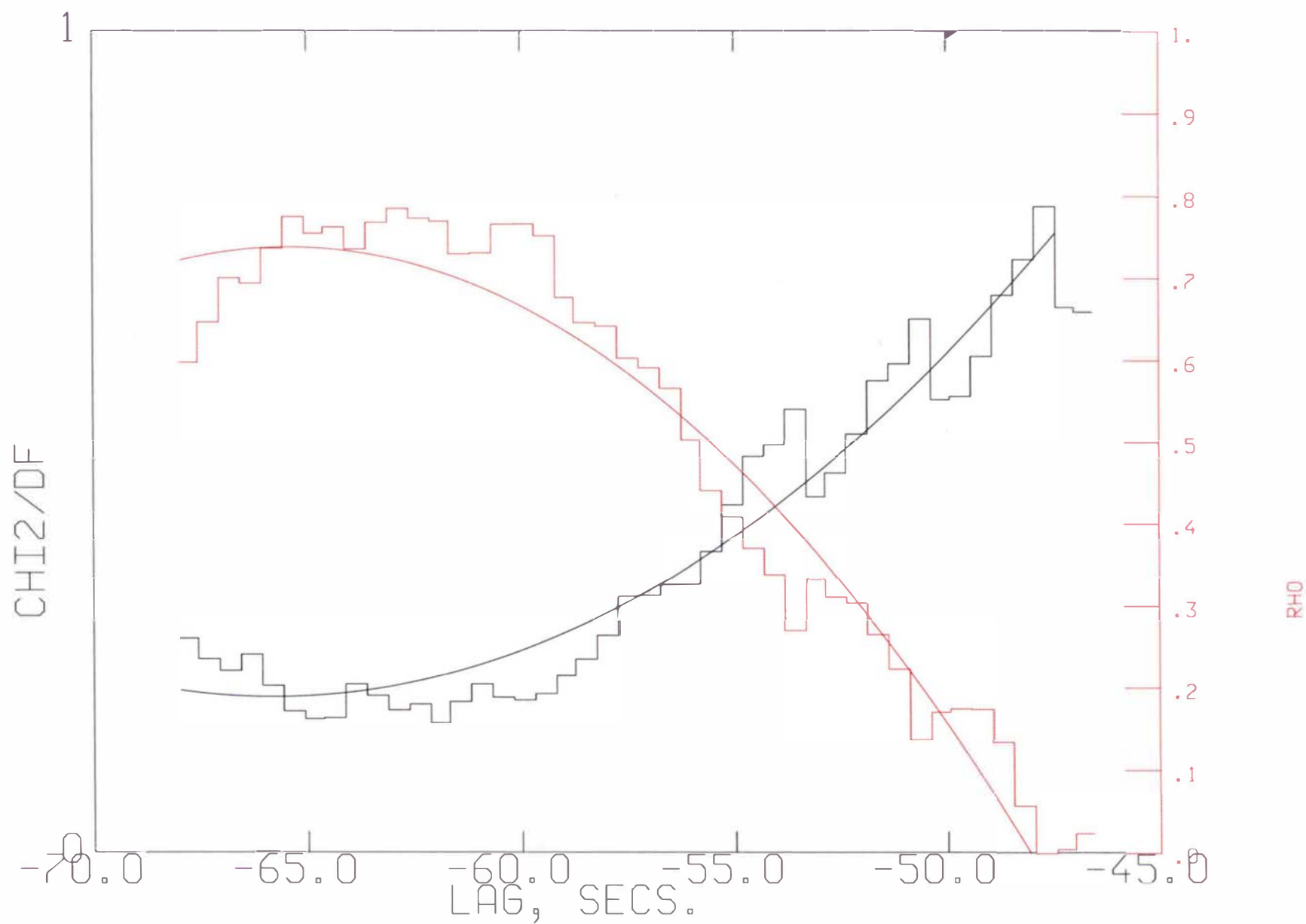


EVENT OF AUG 3, 1996 18:35

14/10/2011

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





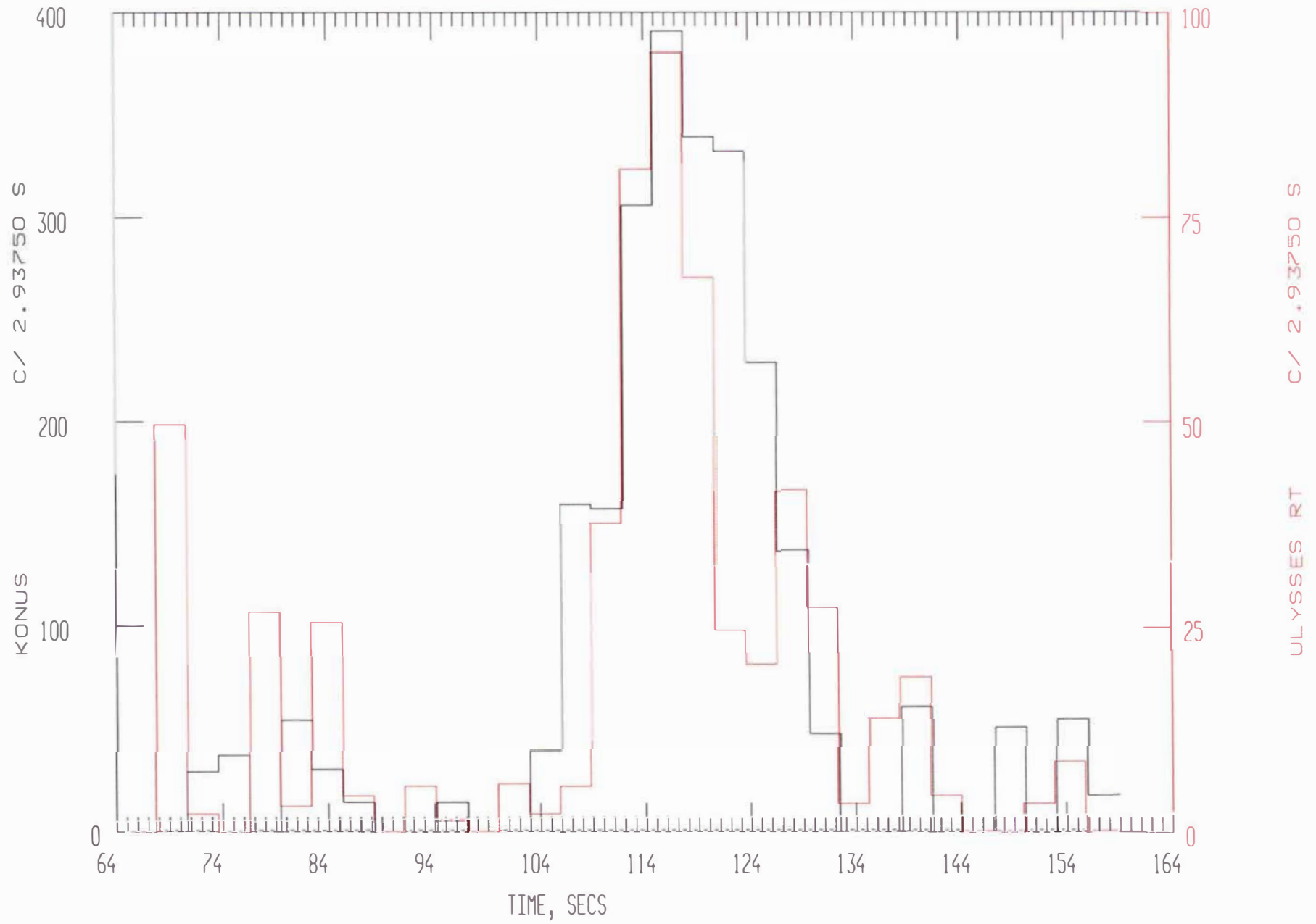
KONUS

-ULYSSES RT CORRELATION

03/08/96

65990.312

14/10/11



KONUS

03/08/96

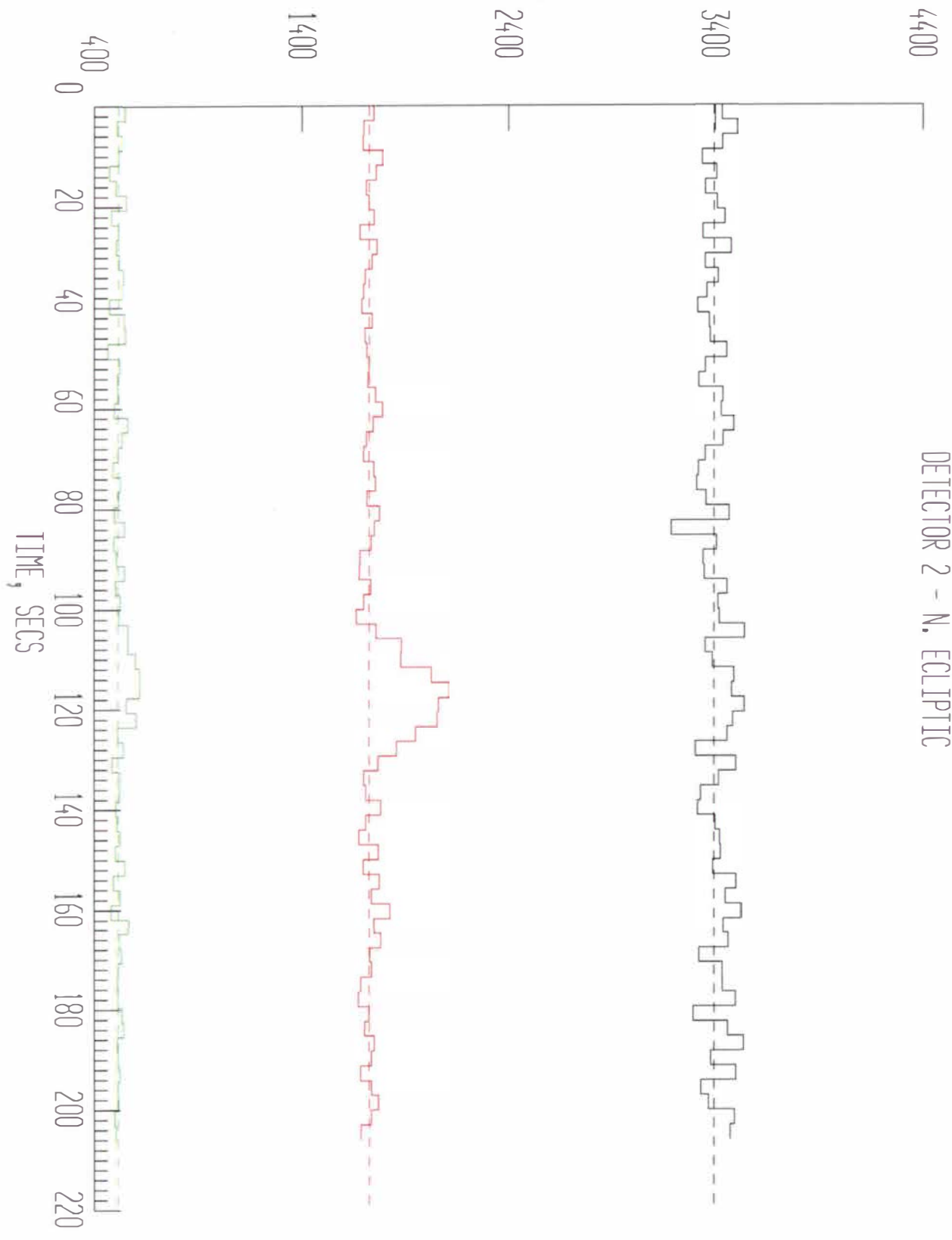
65990.312

10- 50 keV

50- 200 keV

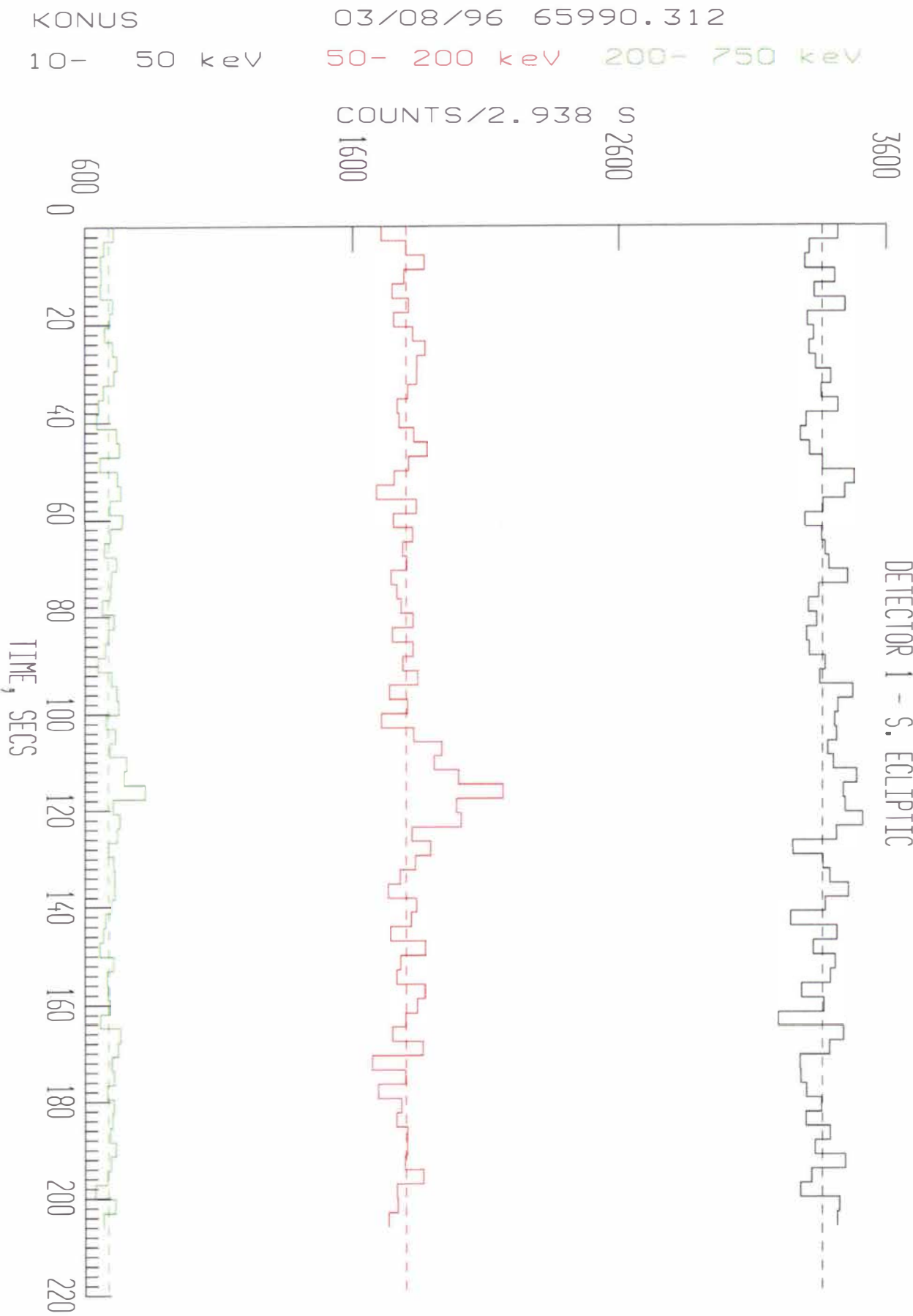
200- 750 keV

COUNTS/2.938 S



14/10/2011

DETECTOR 1 - S. ECLIPSE



KONUS 19960803 66976

ULYSSES RT

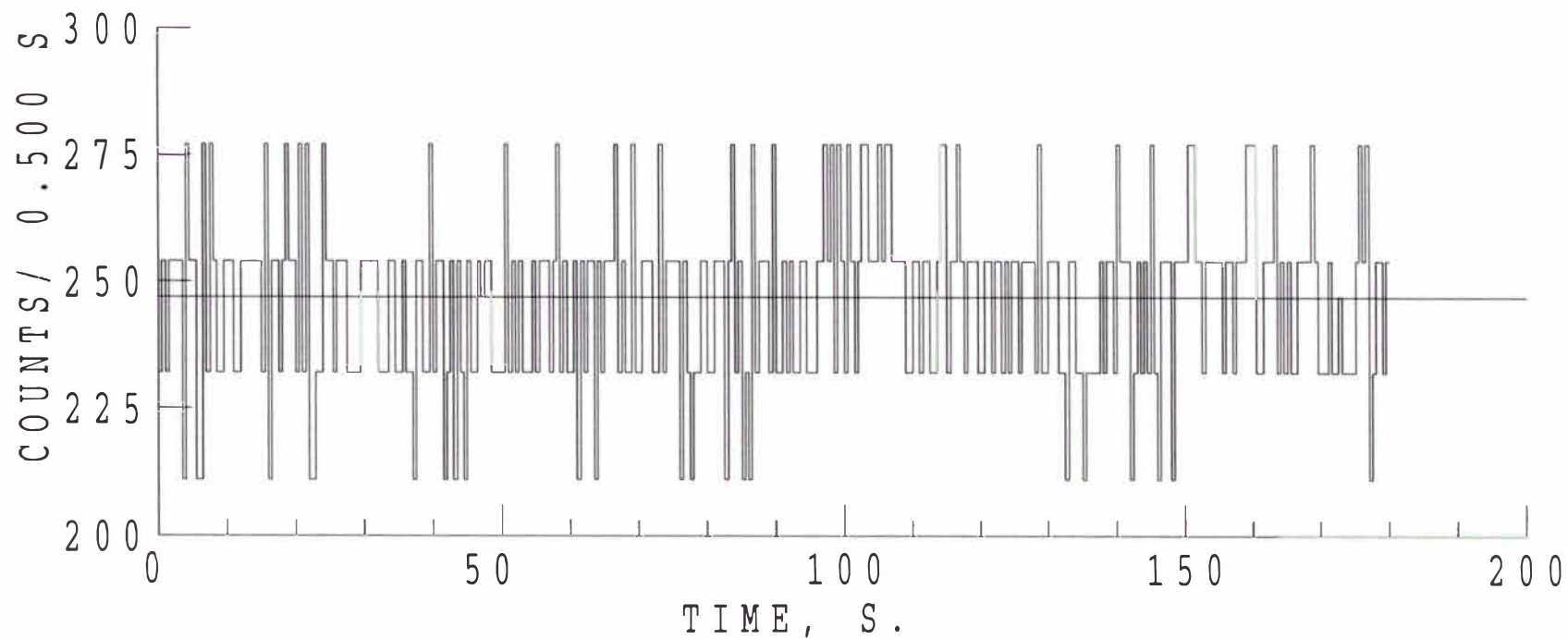
05/10/11

03/08/96 66888.047 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

31 / 01 / 00

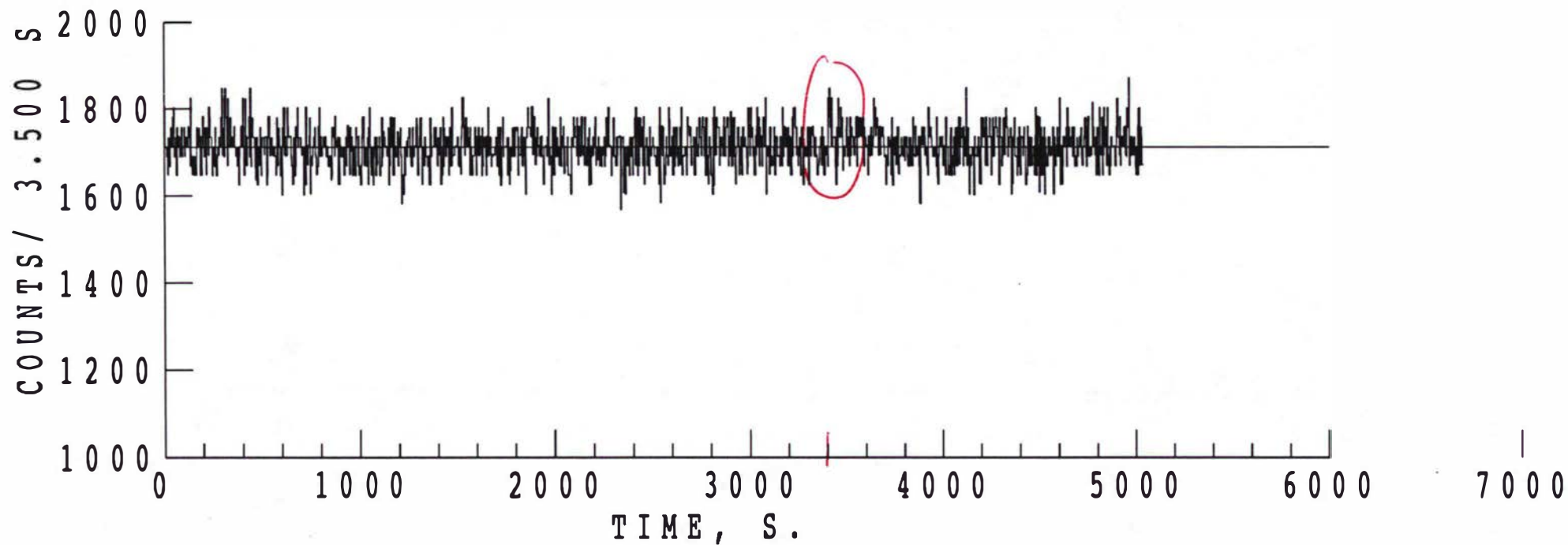
03 / 08 / 96 63576.004 s

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 DEAL@fender.msfc.nasa.gov Mon Aug 5 12:03 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 5 Aug 1996 14:03:18 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5561

BATSEARCH PROGRAM

RI?
Trigger

BATSE BURST # 5561
EVENT OF 1996 AUG 3 DAY OF YEAR=216
EVENT CROSSING TIME AT BATSE : 67522. S. OR 18:45:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 342.000 -55.000
BATSE PEAK COUNTING RATE: 75000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 8/ 96 IS:
RA= 160.349 DEC= 40.900 DIST= 4.991 AU
BATSE-ULYSSES DISTANCE = 746693146. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 14.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2415.21 SECS.
CROSSING TIME AT ULYSSES IS 69937. S. OR 19:25:37 +/- 192.34 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 8/ 96 IS:
RA= 96.032 DEC= 23.825 DIST= 2.237 AU
MARS-BATSE DISTANCE = 334593632. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.00 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 607.79 SECS.
CROSSING TIME AT MARS IS 68130. S. OR 18:55:29 +/- 171.75 SECONDS

BATSE BURST TRIGGER

NO.: 5561

TIME: TJD=0298 SECONDS=67522

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=115.3 AZIMUTH=255.3 ERROR=2.1 DEGREES

COMMENTS:

GRB LASTING ~ 0.3 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5561	960803	10298	67522	75000	342	-55	.3

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
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	5413
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 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 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:)

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 12:33 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:32:14 -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 GRB960803 was detected by Konus

Konus triggered at 18:45:25.033 in the detector facing to the ecliptic south. The event was weak and very short. The most intense phase lasted 70ms, with some signal out to 200ms after the trigger at energies below 50keV only.

Date: Wed, 7 Aug 1996 13:15:21 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608072015.NAA04380@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: GRB960803
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses triggered on a weak, 32 ms long event August 3 1996 around 19:26 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)

Helio corr removed

Date: Mar 13 '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? **1**

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

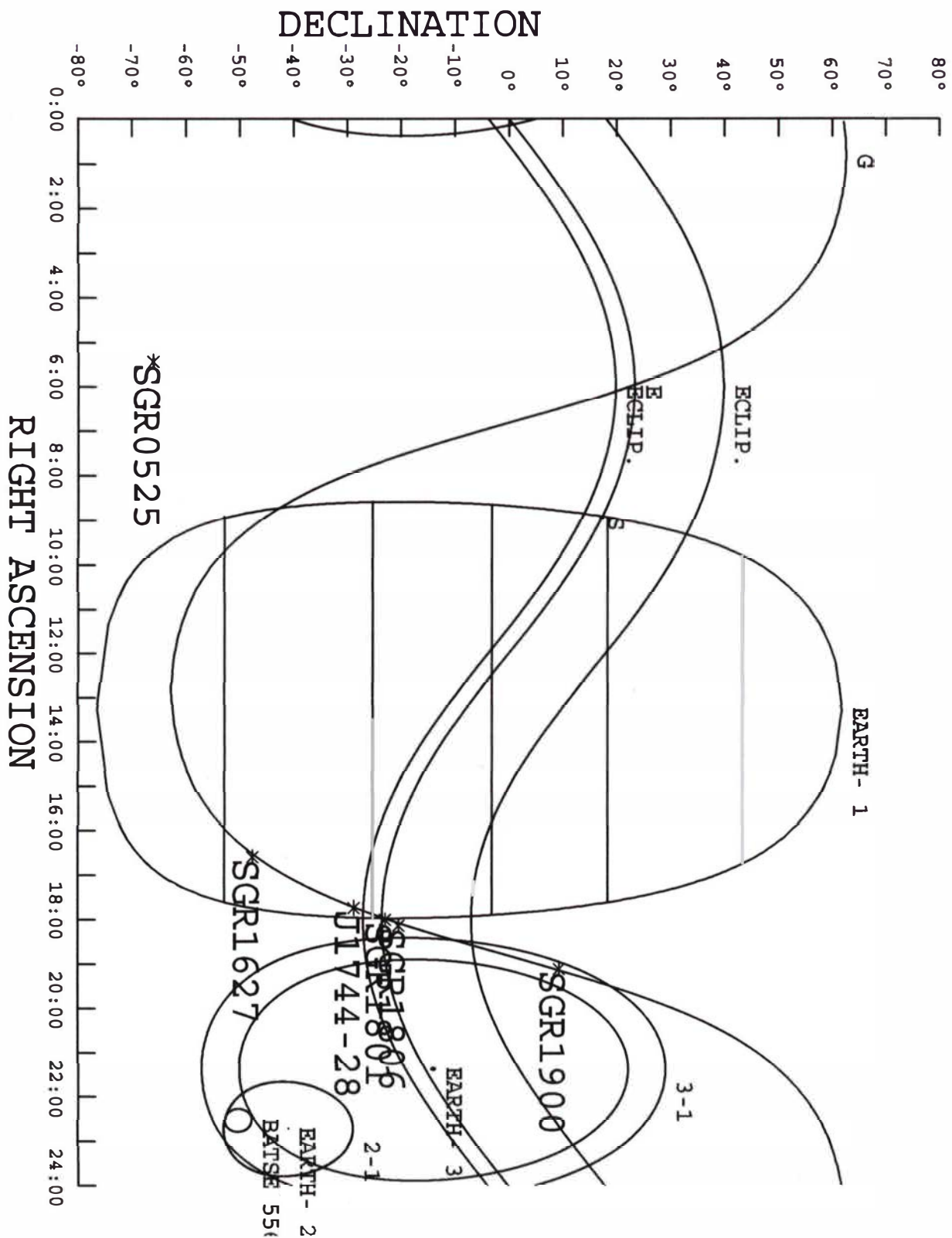
1 BATSE

2 ULYSSES

3 KONUS1

EVENT OF AUG 3, 1996 18:45

24/10/ 8



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

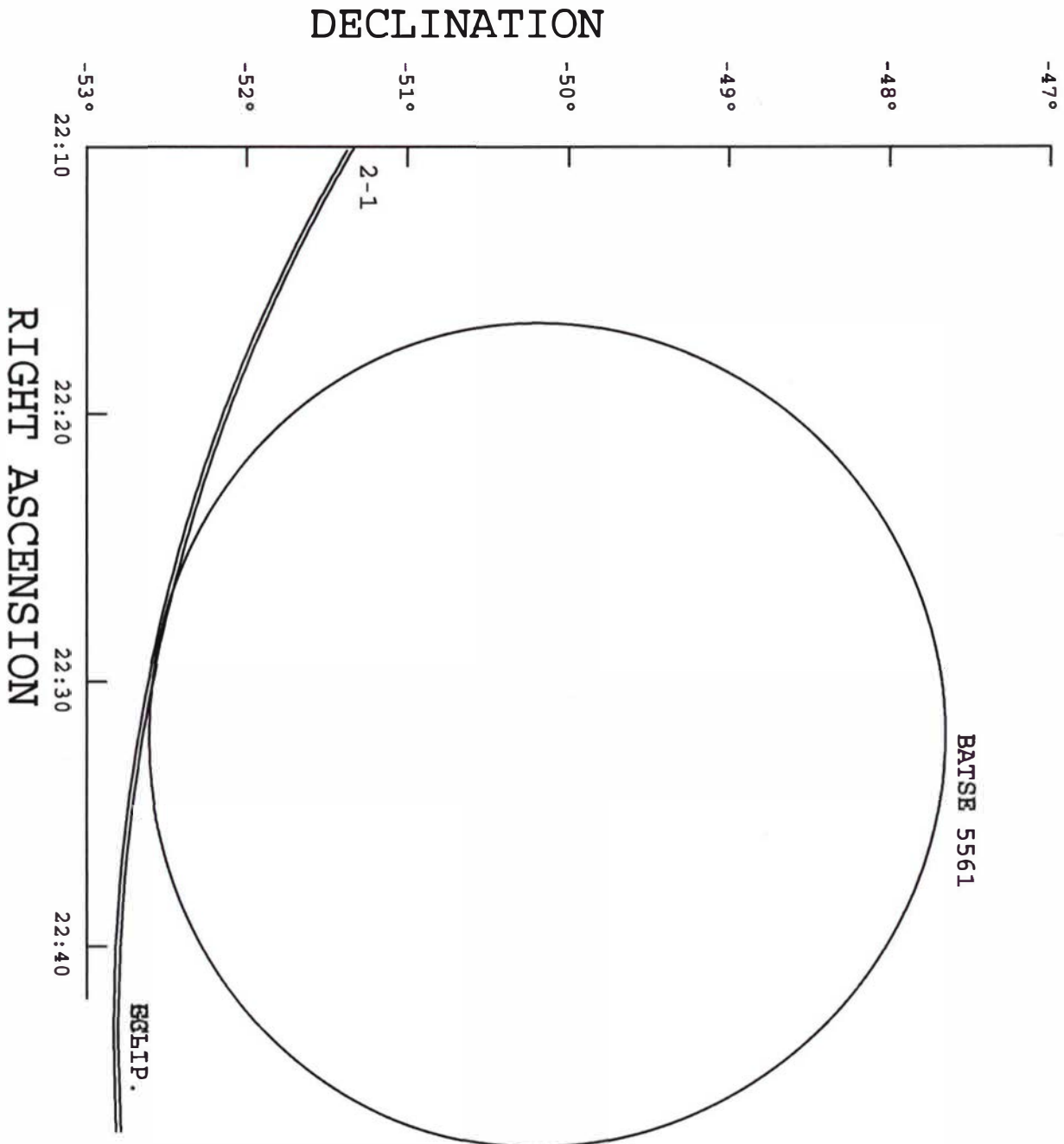
1 BATSE

2 ULYSSES

3 KONUS1

EVENT OF AUG 3, 1996 18:45

24/10/ 8



KONUS1

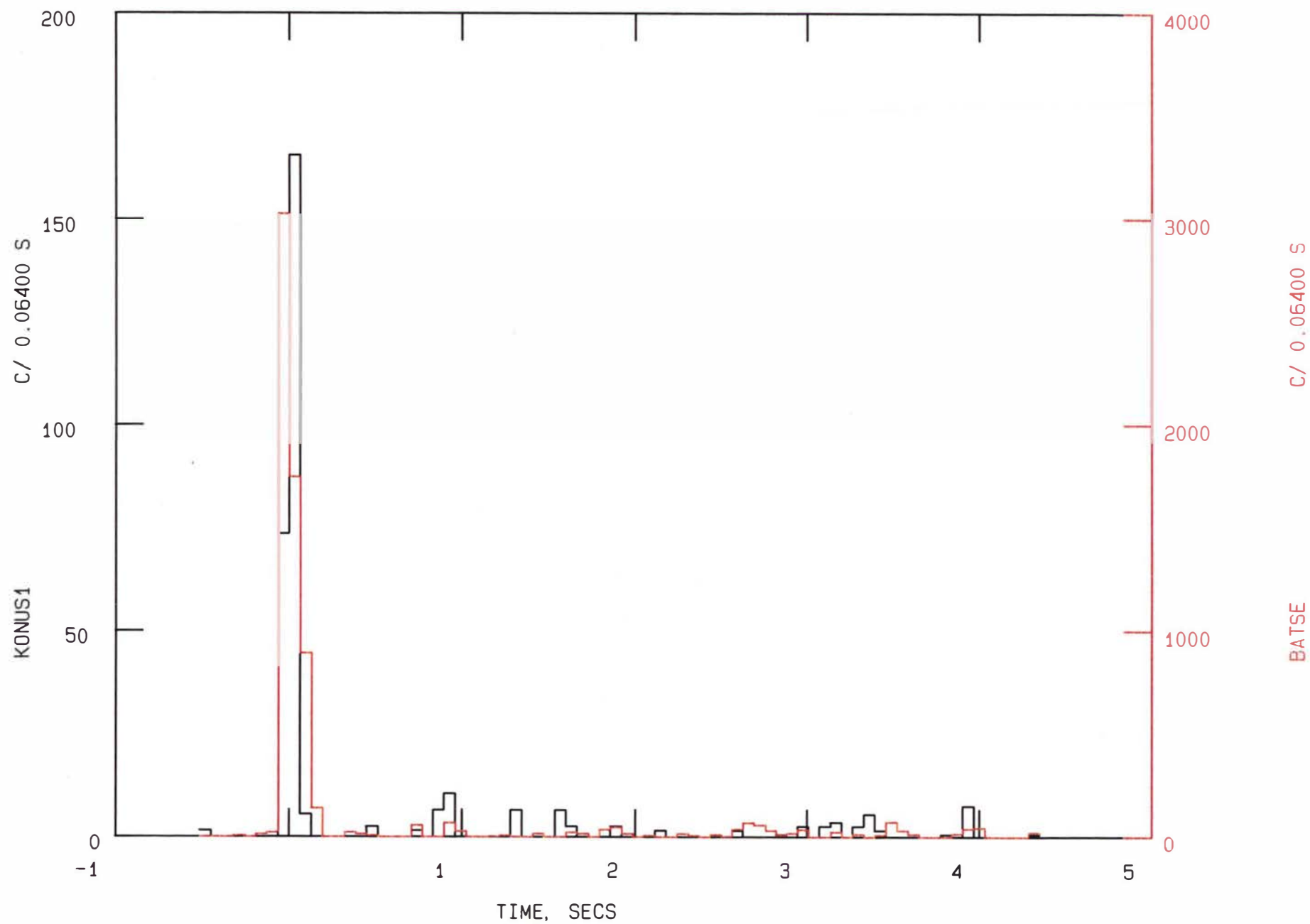
-BATSE

CORRELATION

03/08/96

67525.033

24/10/ 8



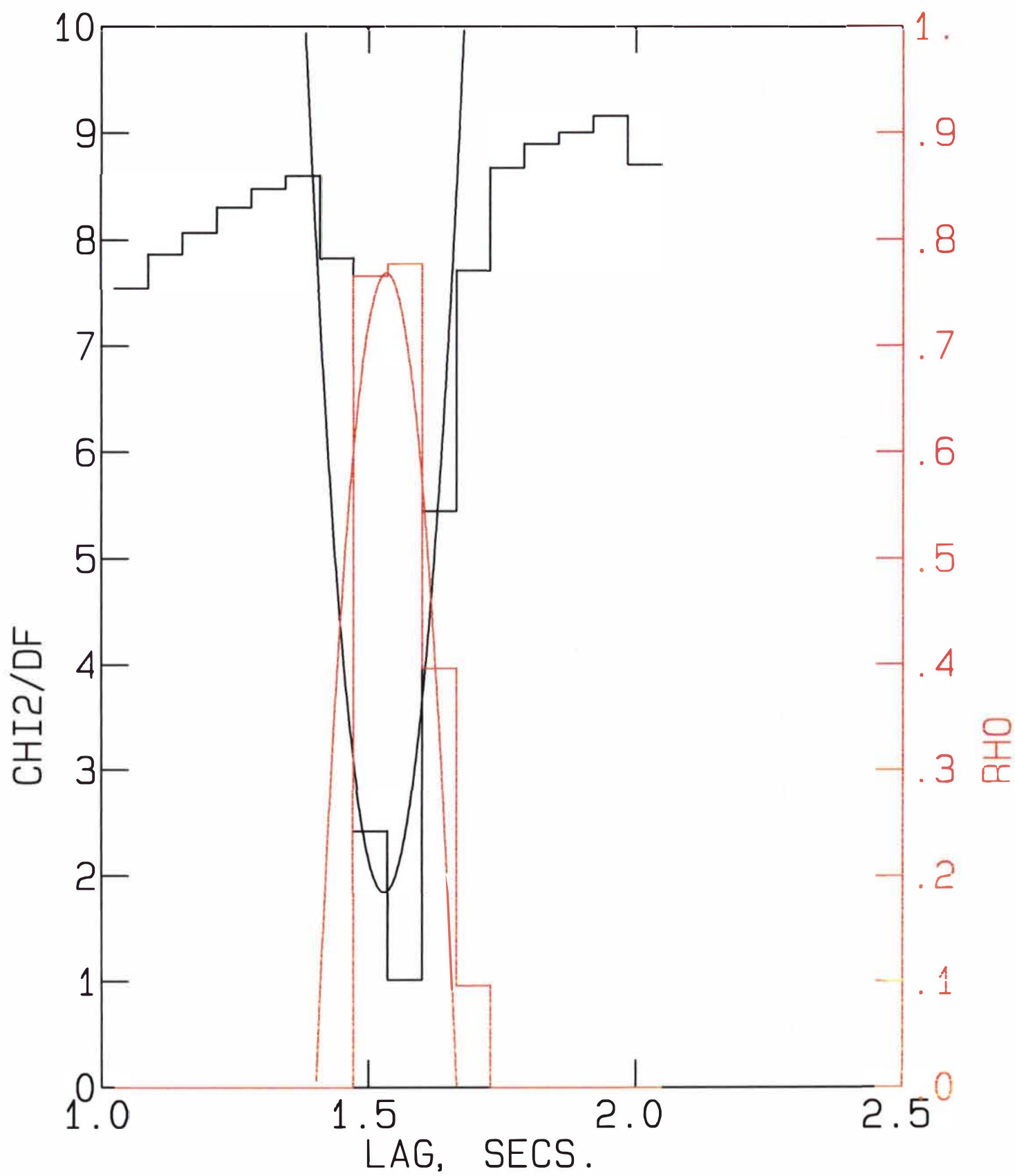
KONUS1

-BATSE

CORRELATION

03/08/96

67525.033



BATSE

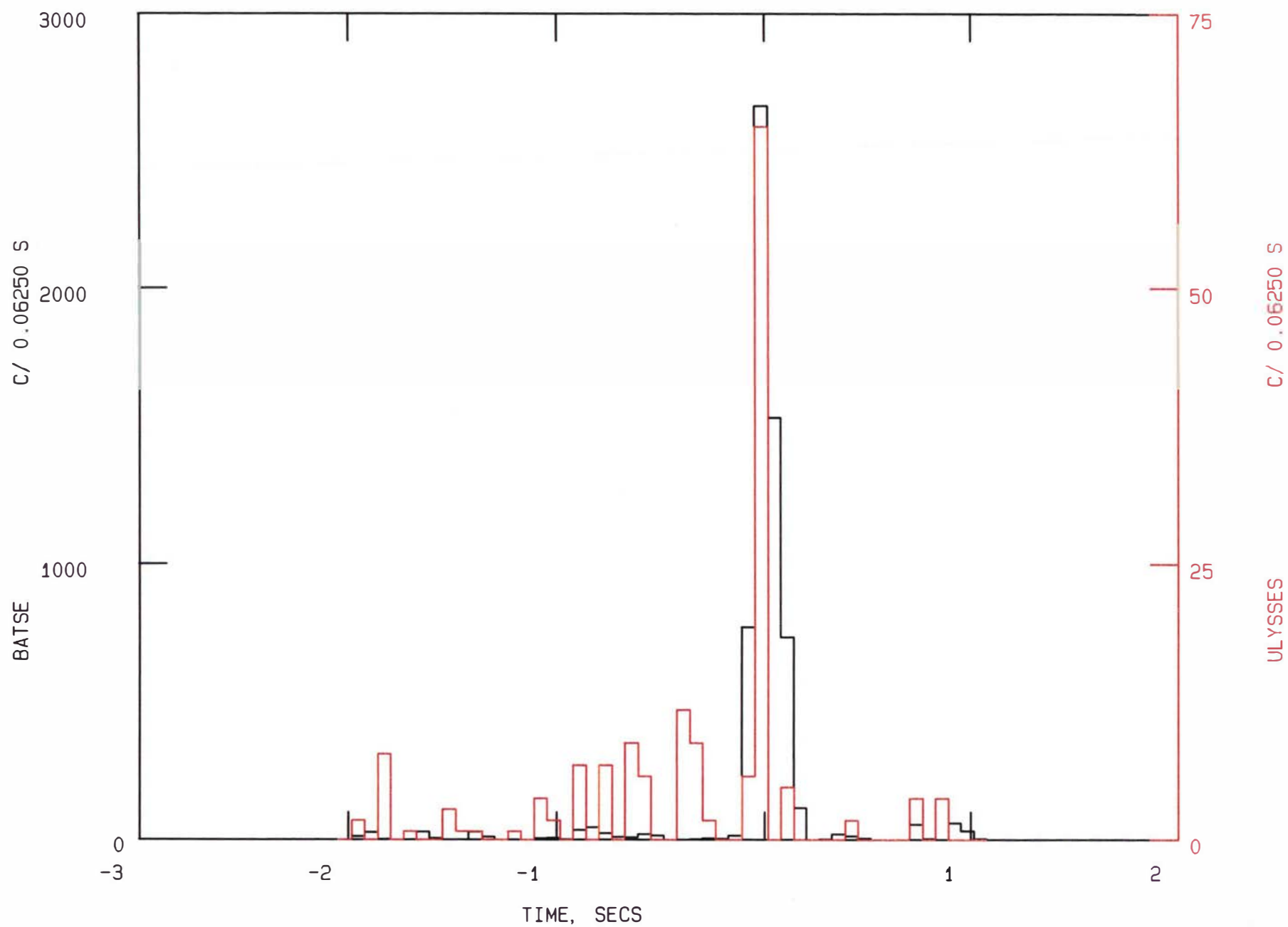
-ULYSSES

CORRELATION

3/ 8/96

67522.442

24/10/ 8



BATSE

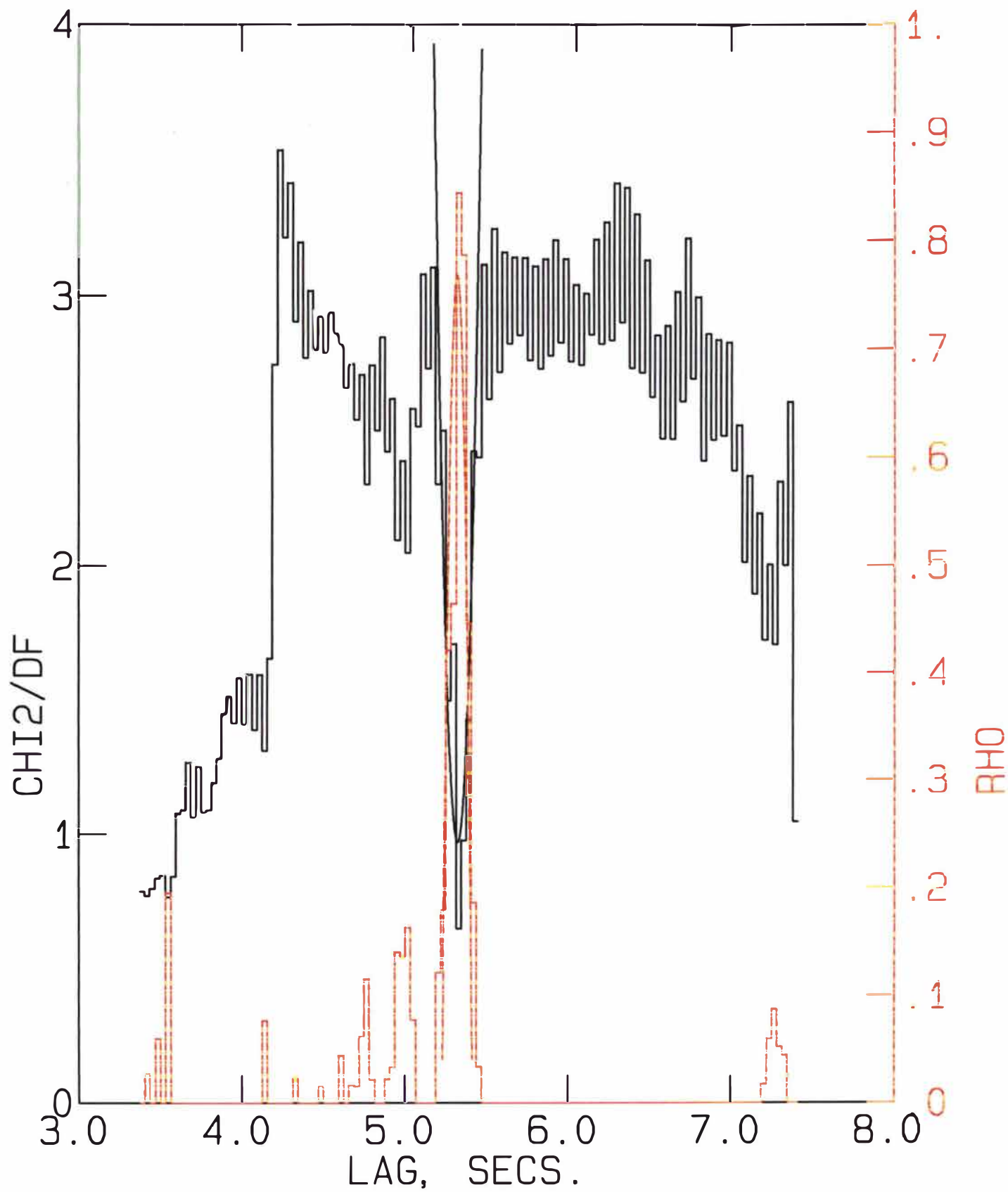
-ULYSSES

CORRELATION

3/ 8/96

67522.442

24/10/ 8



BATSE

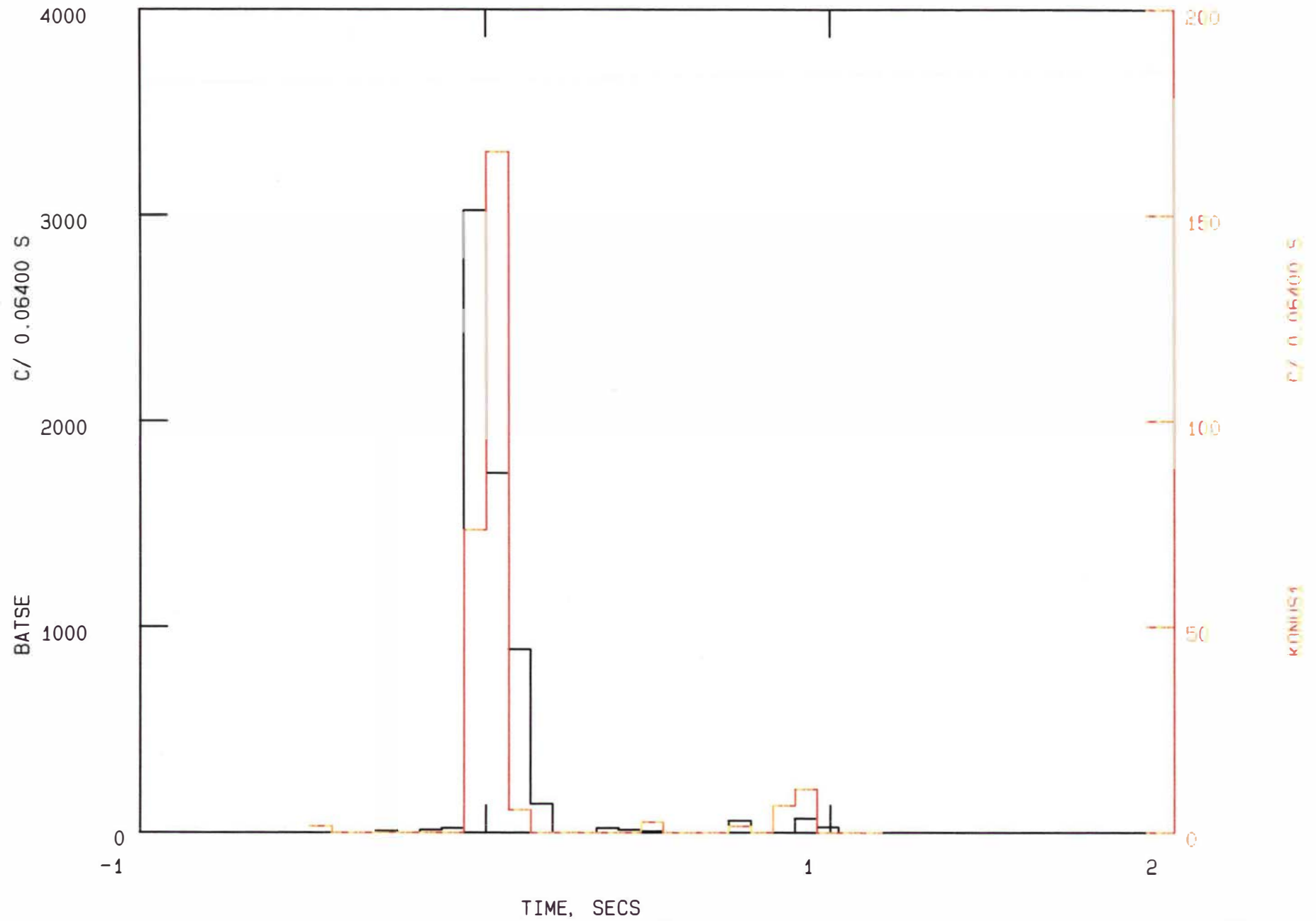
-KONUS1

CORRELATION

3/ 8/96

67522.442

24/10/ 8



BATSE

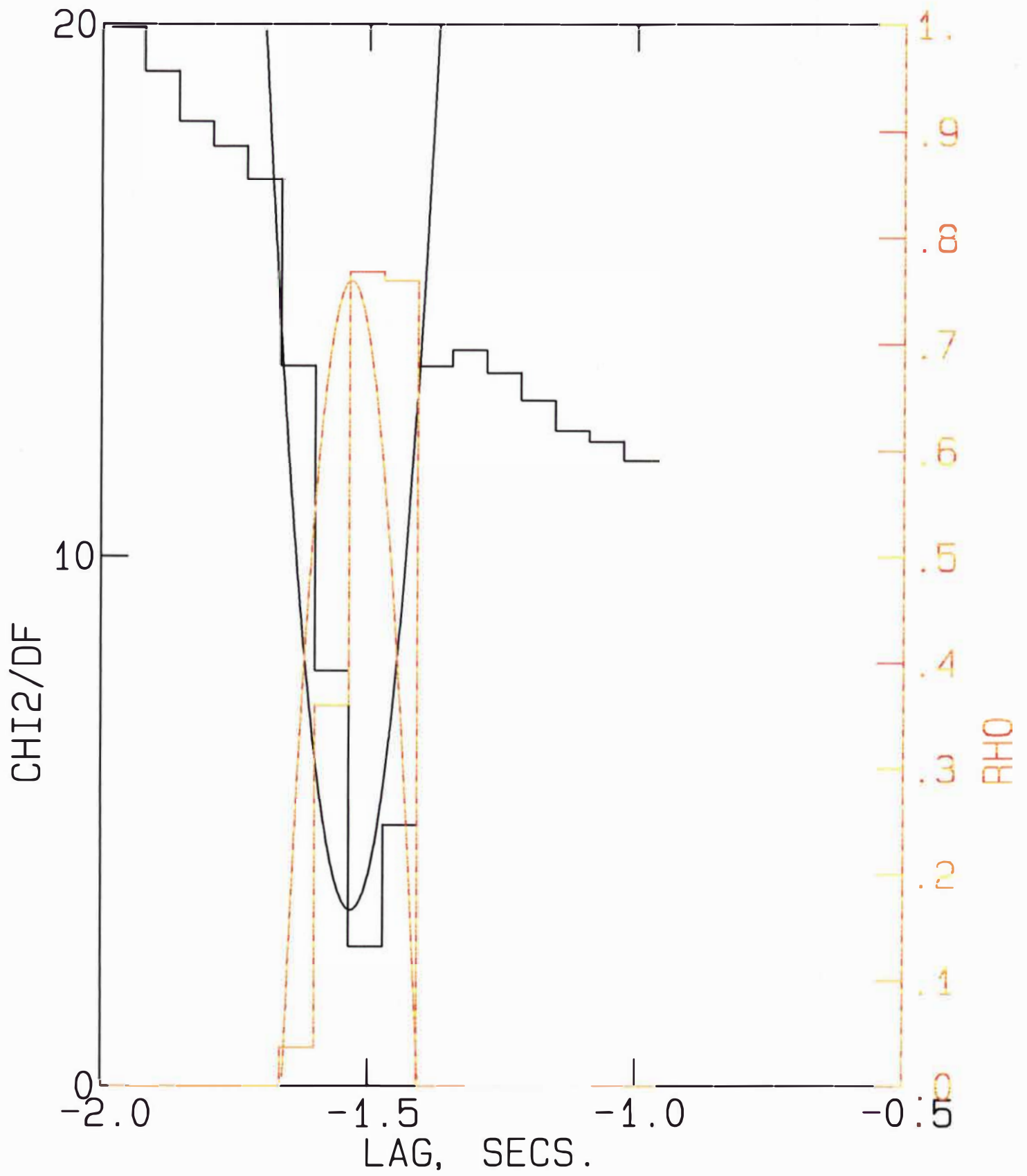
-KONUS1

CORRELATION

3/ 8/96

67522.442

24/10/ 8



KONUS1

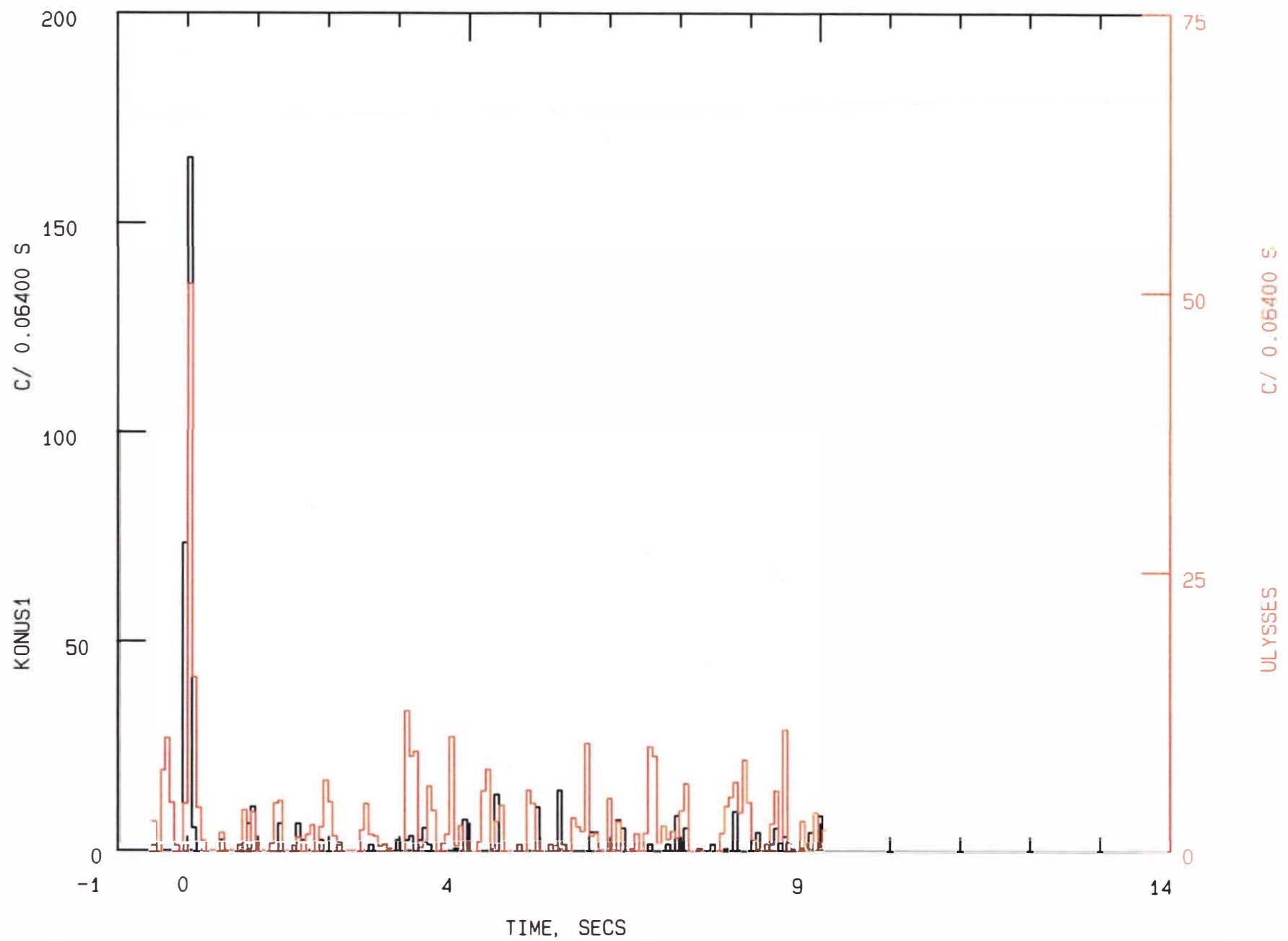
-ULYSSES

CORRELATION

03/08/96

67525.033

24/10/ 8



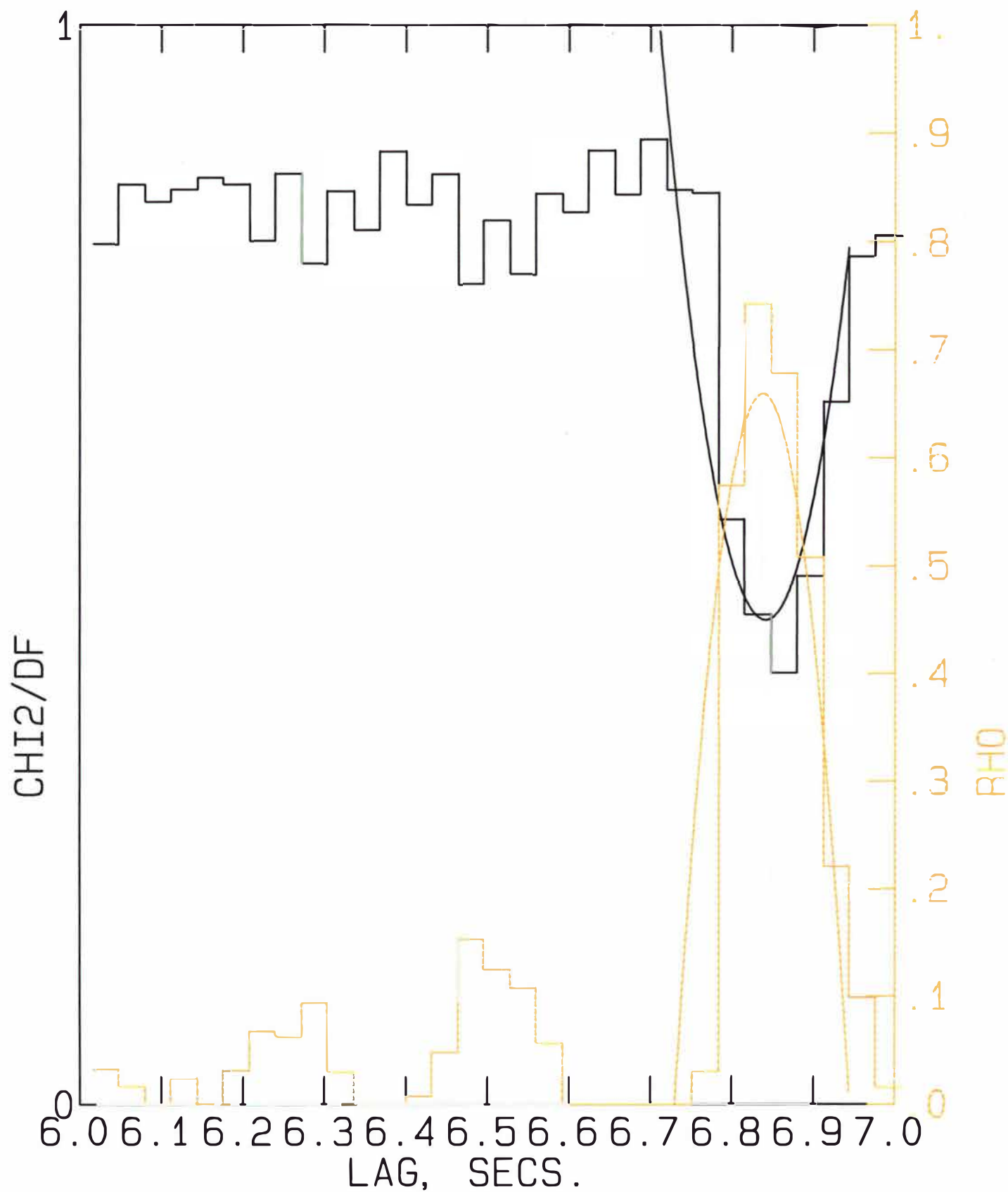
KONUS1

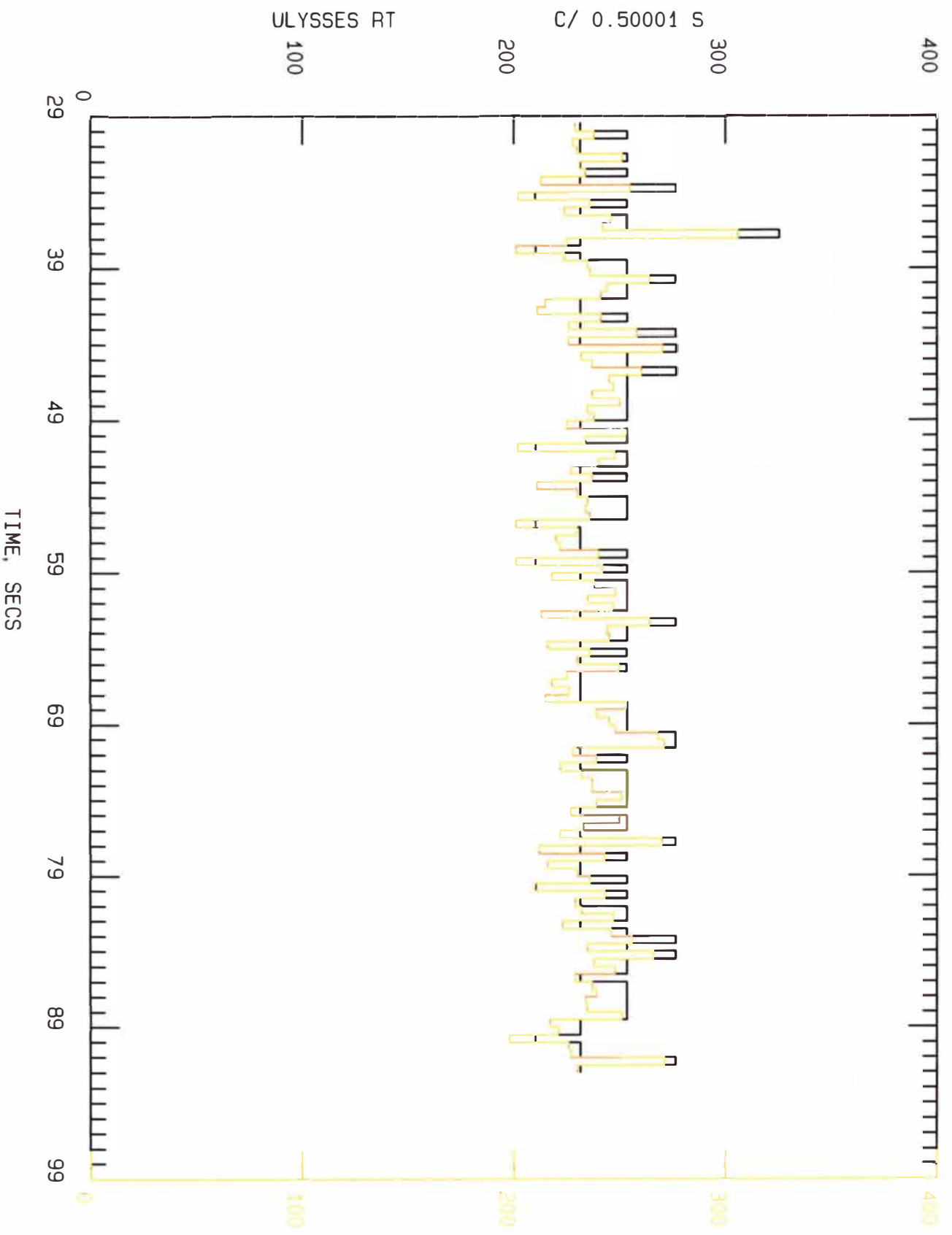
-ULYSSES

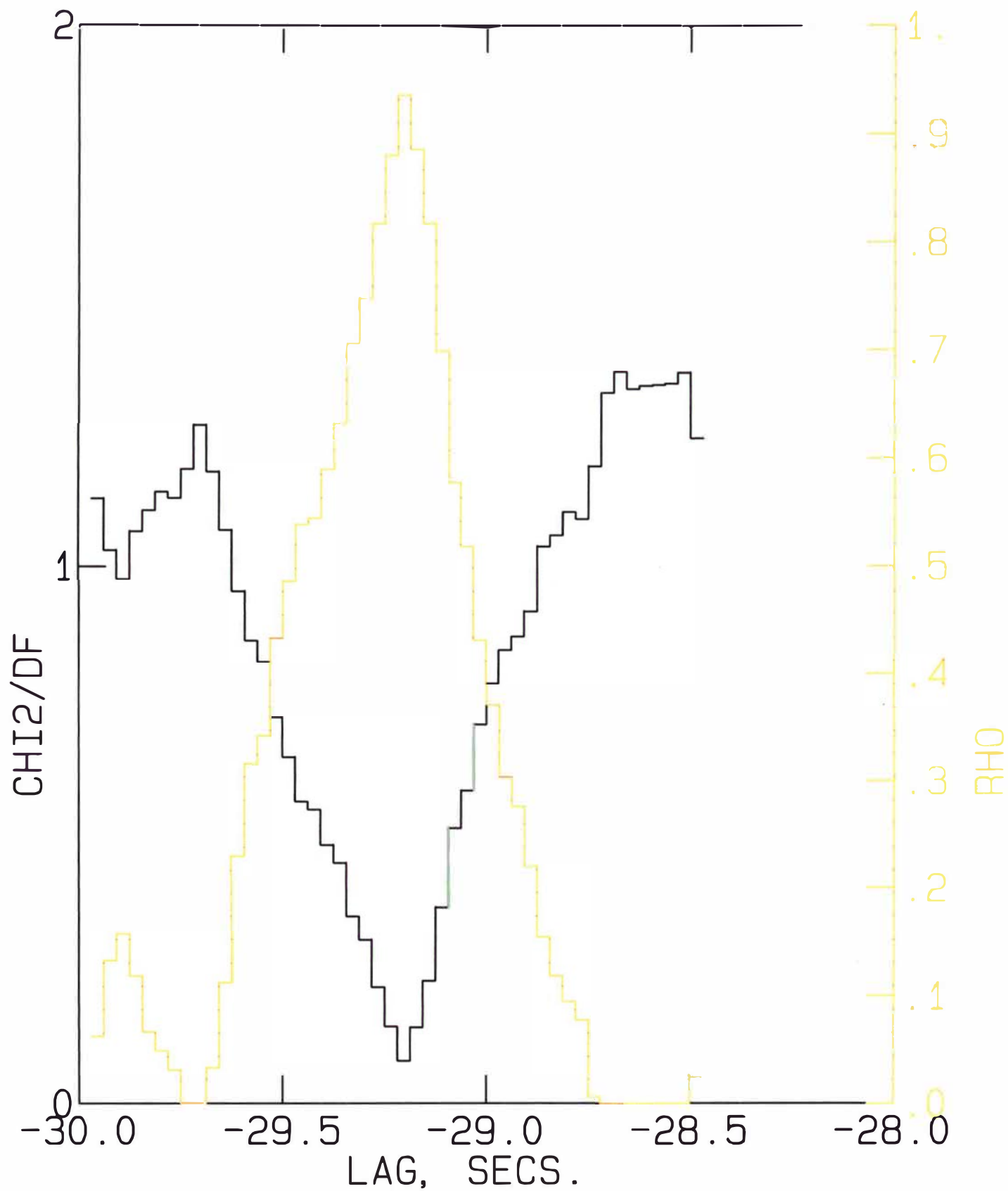
CORRELATION

03/08/96

67525.033





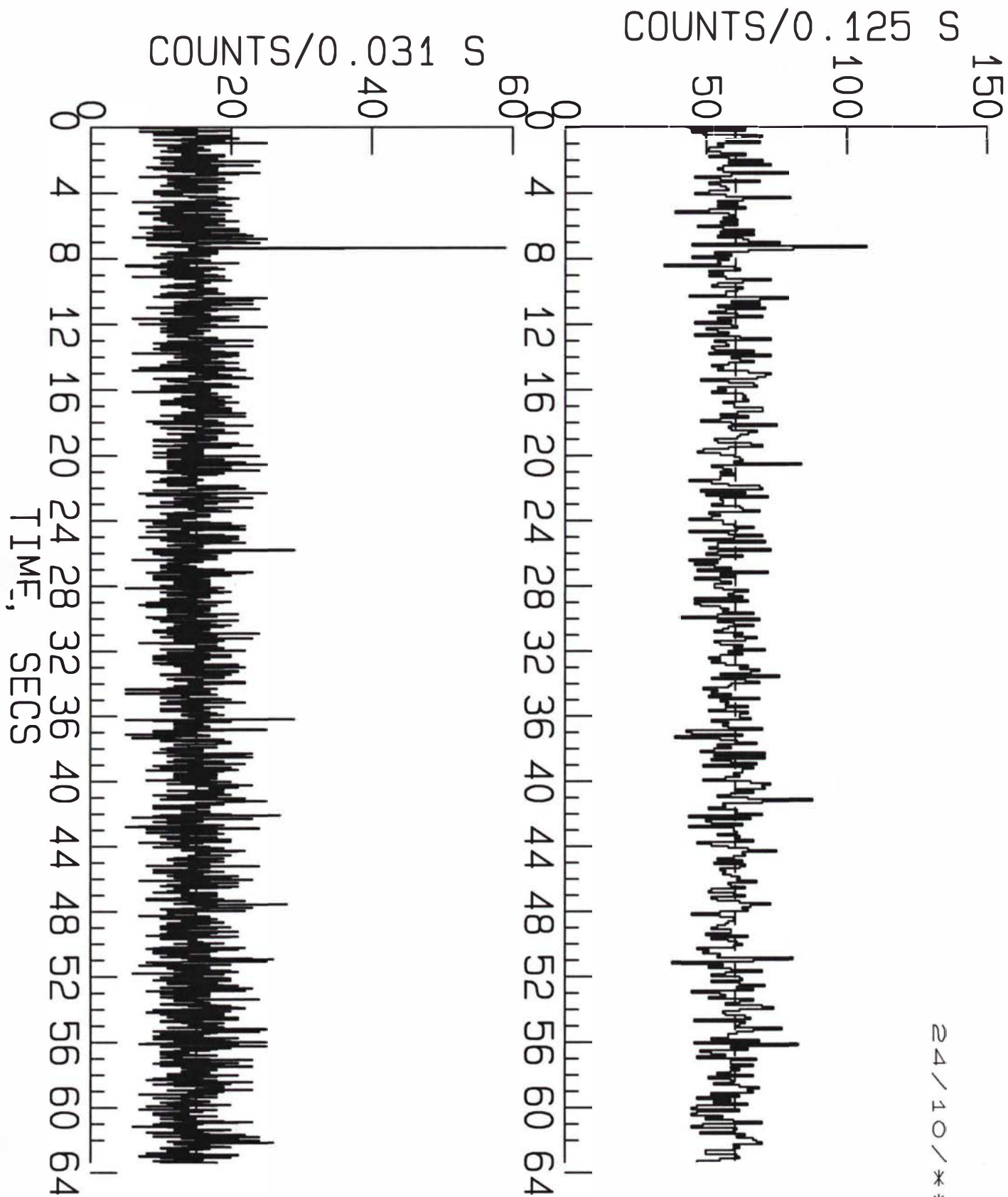


ULYSSES

03/08/96

Ttrig=69954.664

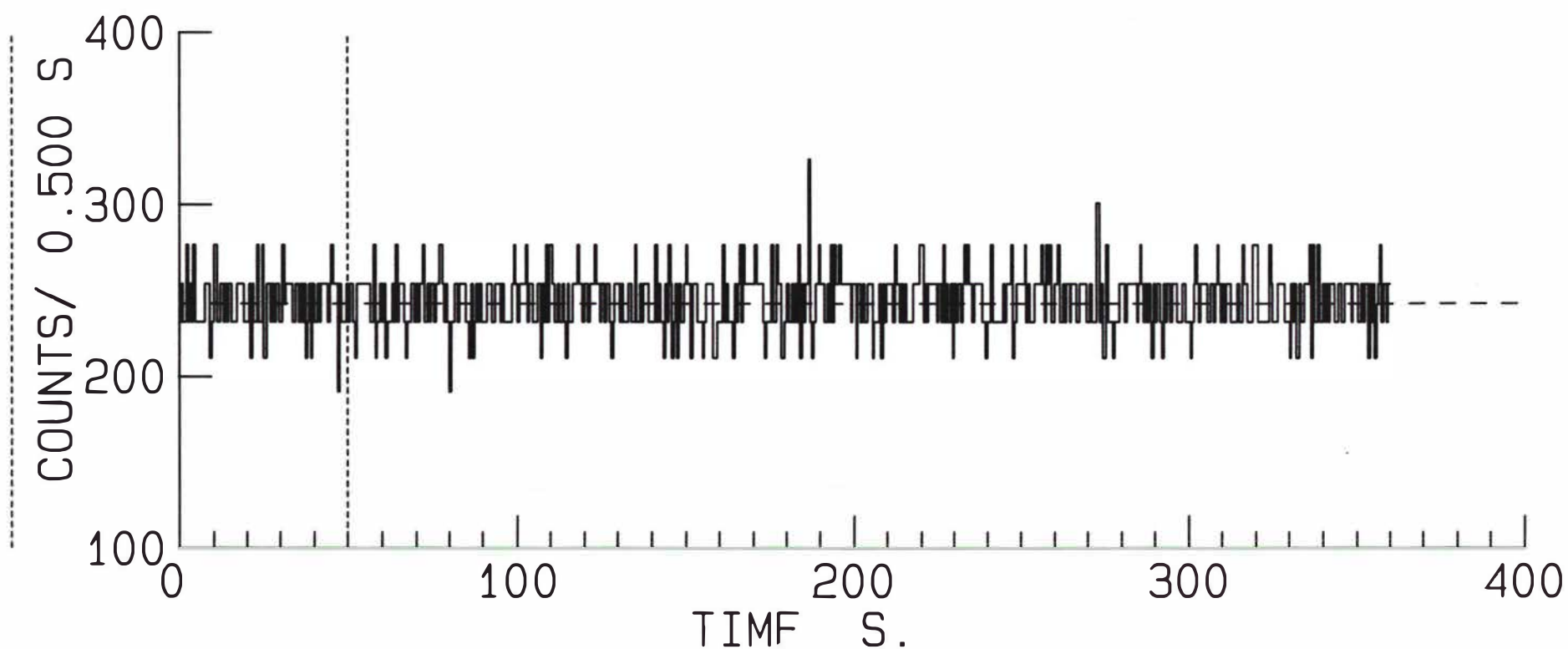
21- 145 keV



24/10/11

ULYSSES RT
3/ 8/96 69768.086 s
21- 145 keV

24/10/ 8



KONUS

03/08/96 67525.030

50- 200 keV

COUNTS/0.064 S

100

200

300

25 / 8 / 8

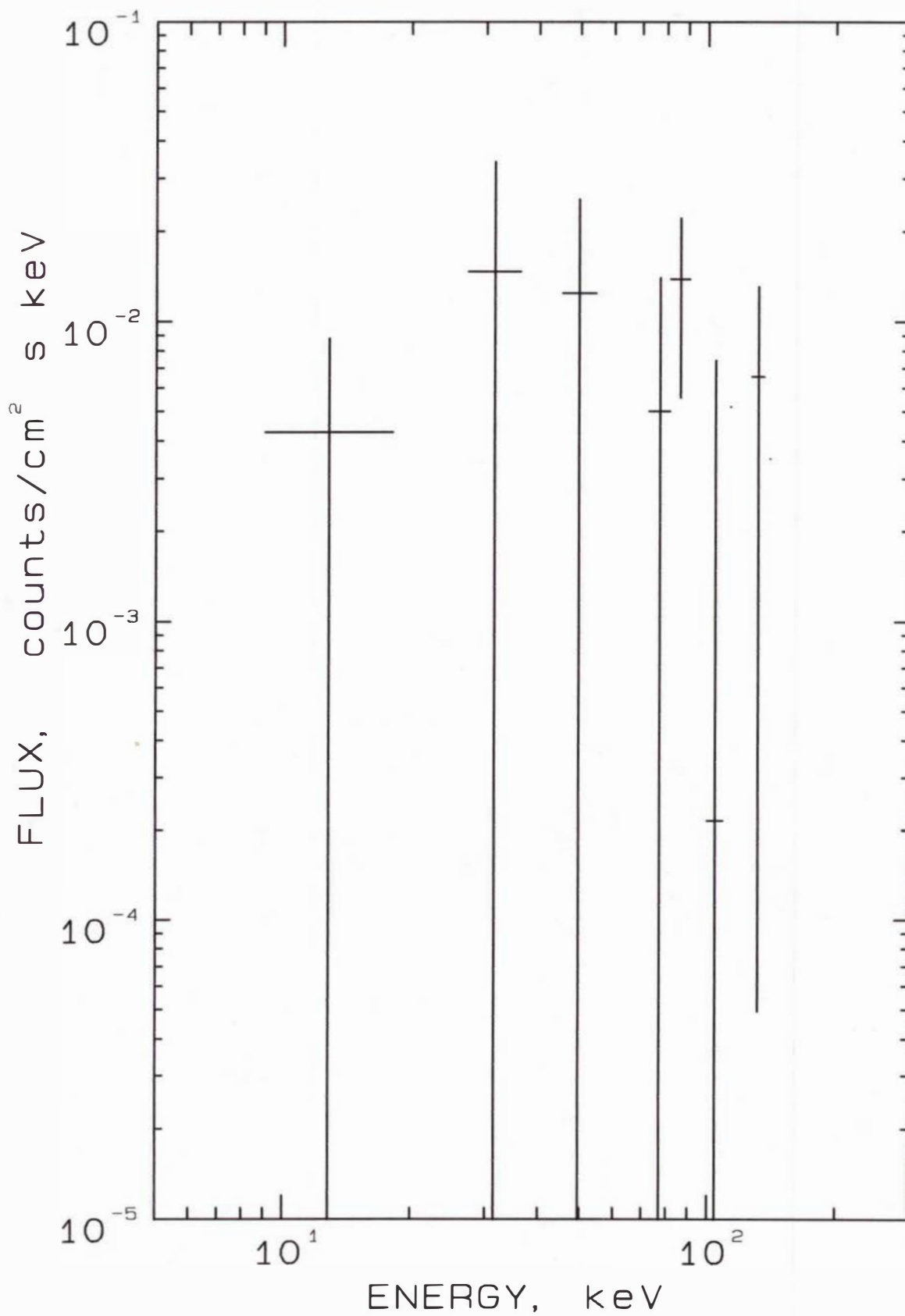
0 9 19 29 39 49 59 69 79 89 99
TIME, SECS



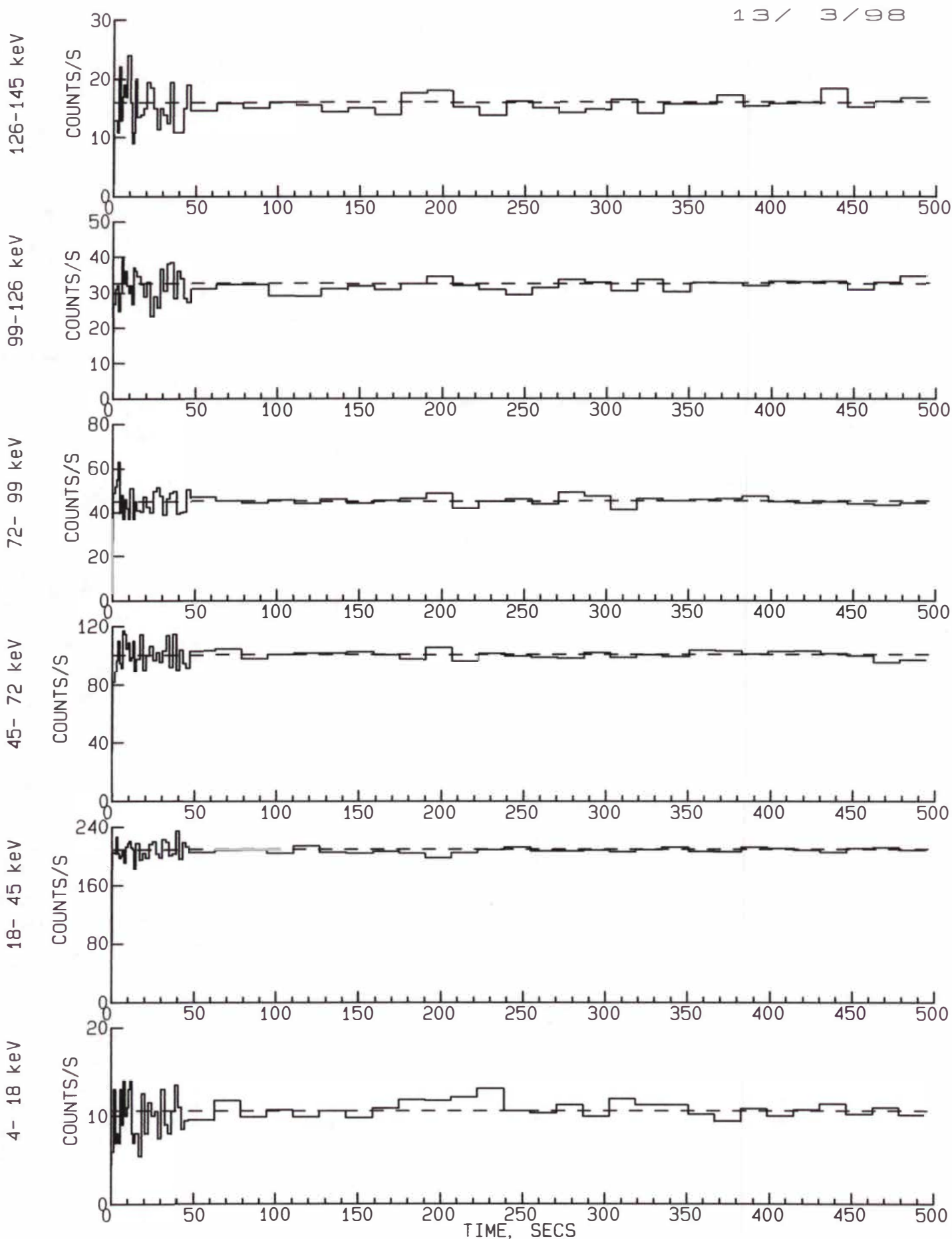
ULYSSES 03/08/96 69954.672

13/ 3/98

SPECTRUM INTEGRATED OVER 10.5 SECONDS, INTERVALS 2 TO 13



ULYSSES 03/08/96 69954.672 BURST SPECTRAL COUNT RATES



ULYSSES

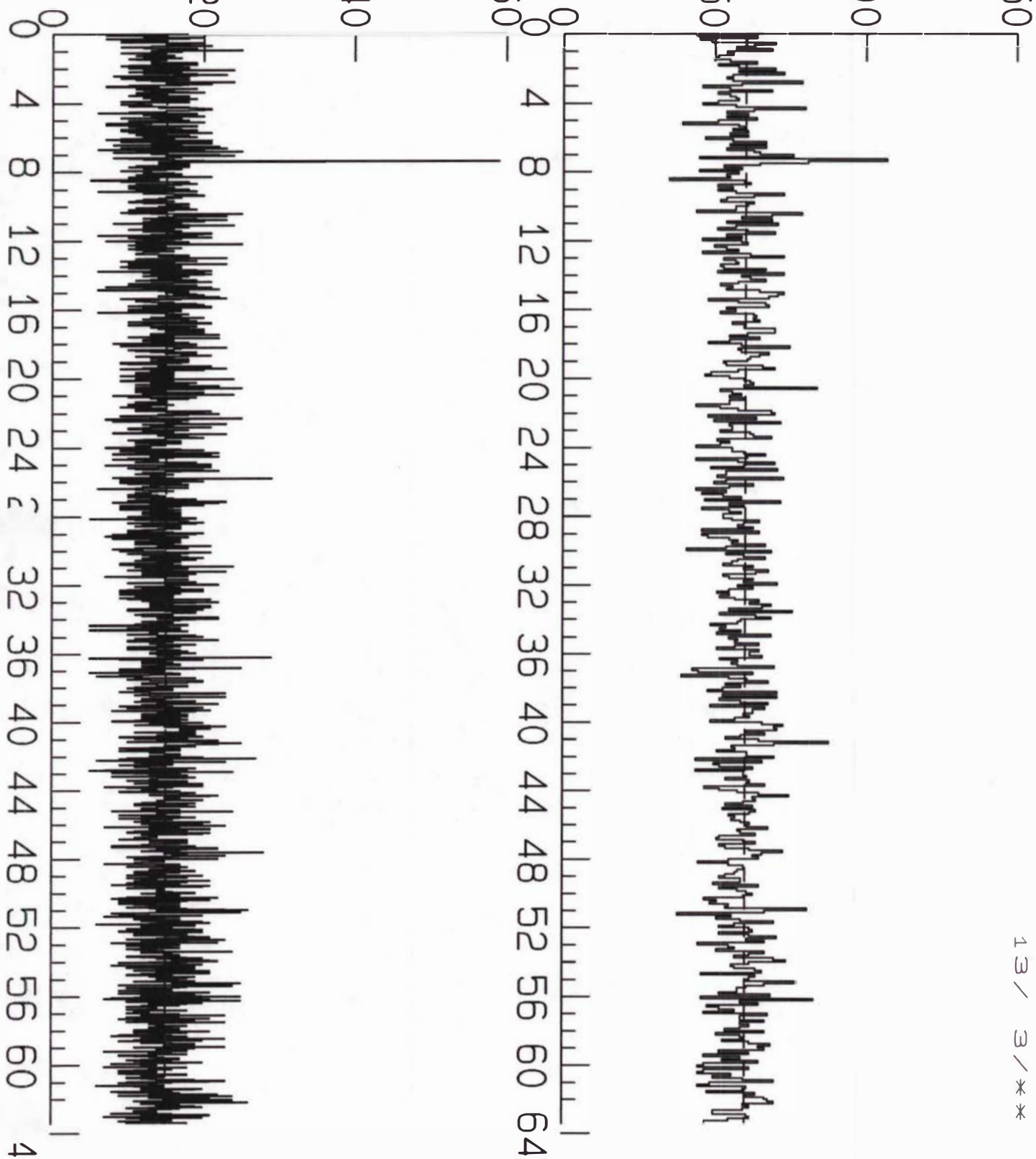
03/08/96

Ttrig=69954.612

0- 0 keV

COUNTS/0.031 S

COUNTS/0.125 S



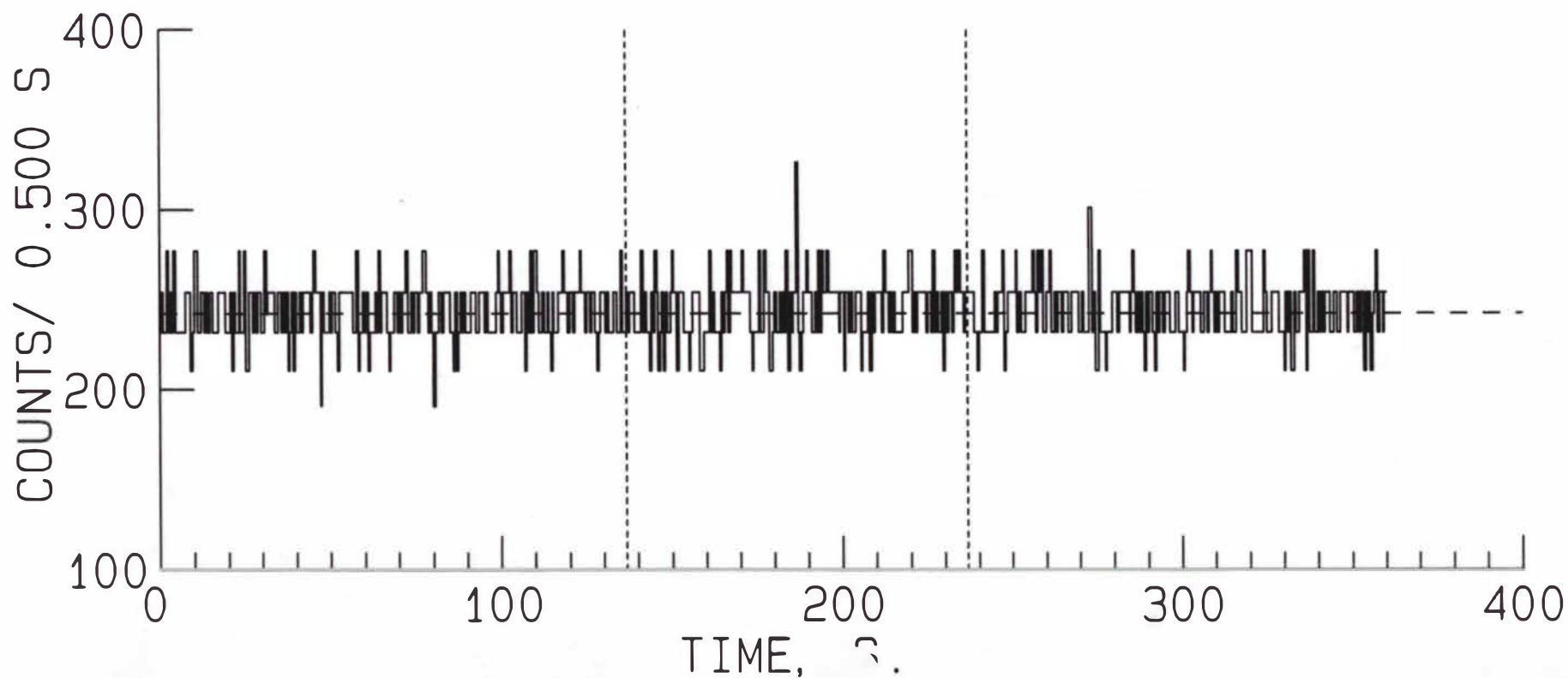
ULYSSES RT

13 / 3 / 98

3 / 8 / 96 69768.085 s

21- 145 keV

N= 10 M= 1
>4.0 SIGMA FLUCTUATIONS



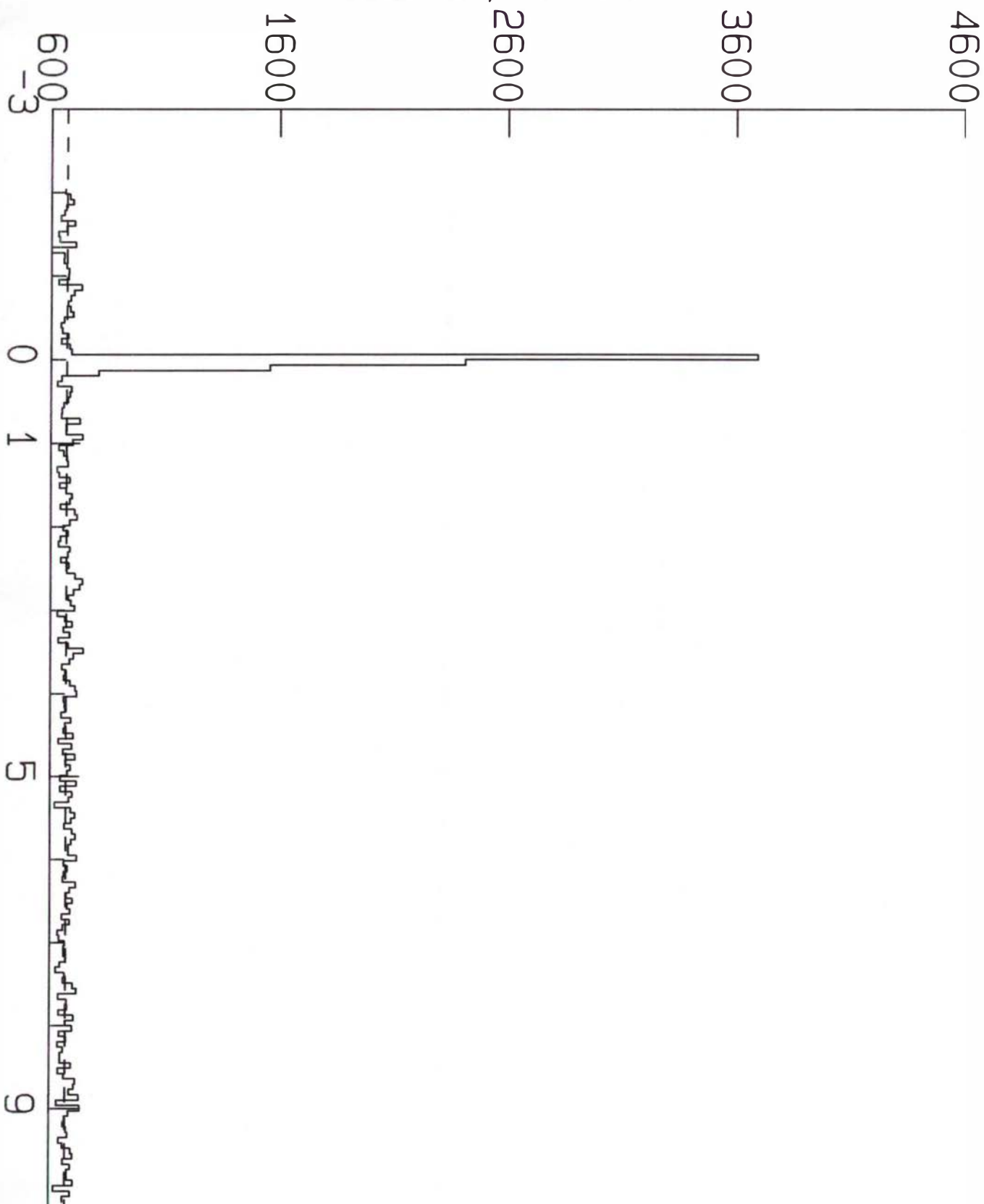
BATSE

03/08/96

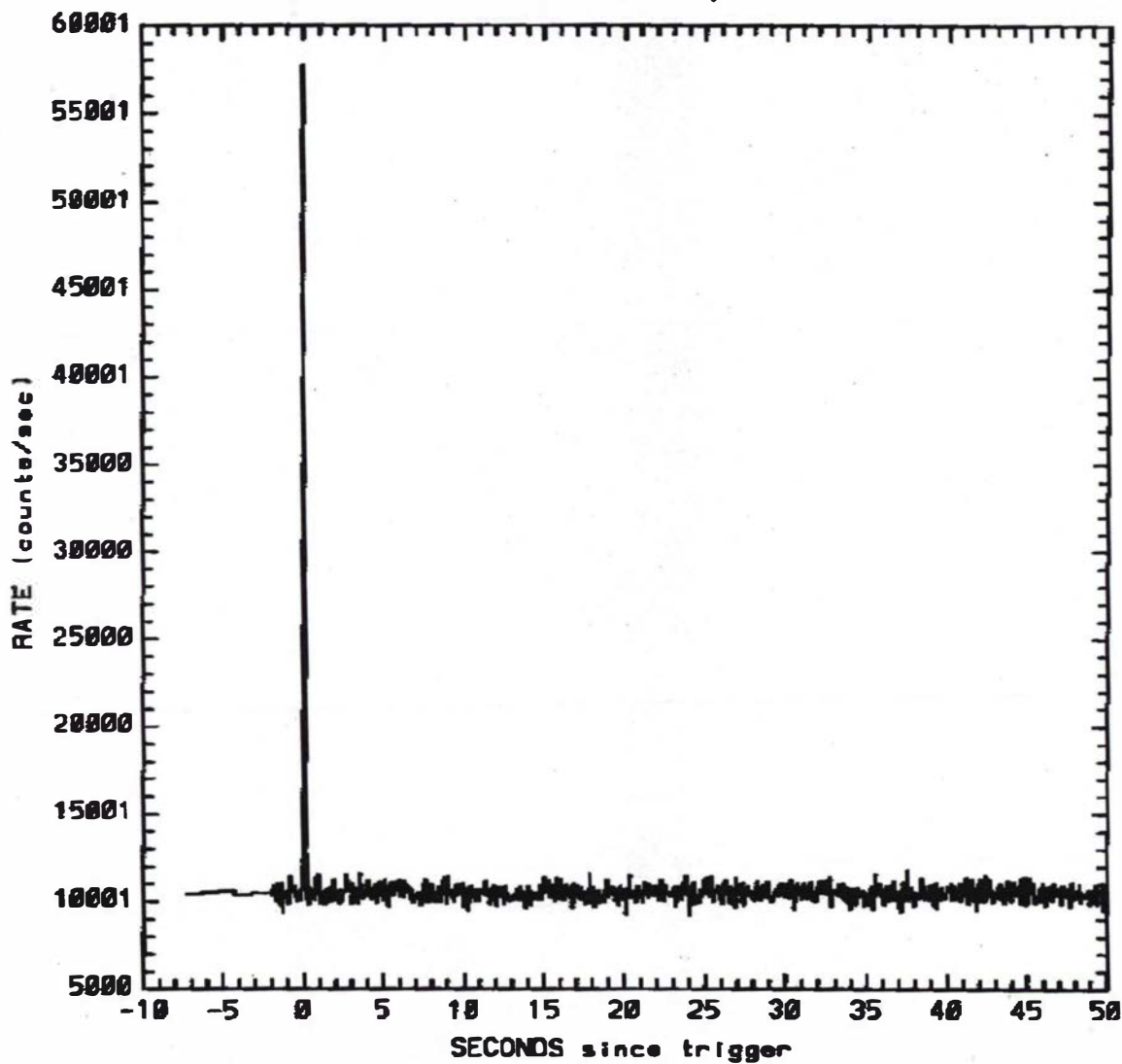
67522.442

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5561



13-AUG-1996 09:47:18

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger # : 5561

Trigger Time:
16298 / 67522.442Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors [7..8],
76-3-1-Discriminators:
(1 , 2)Quality Mask:
801SP1

KONUS

08/03/96 67477.023

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4600

3600

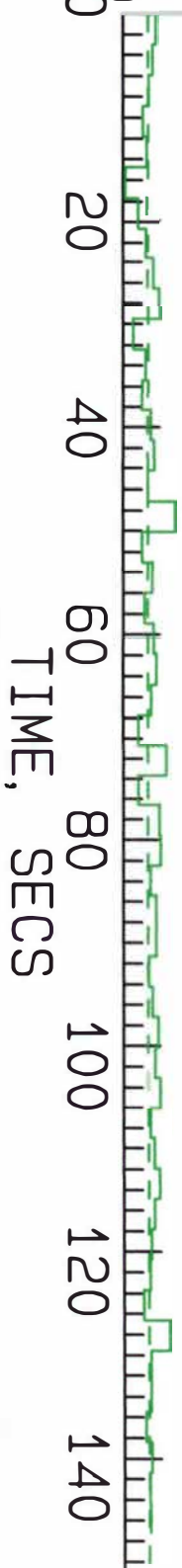
2600

1600

600

DETECTOR 1 - S. ECLIPATIC

21/08/08



KONUS

08/03/96 67477.023

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.945 S

4400

DETECTOR 2 - N. ECLIPIC

21/08/08

3400

2400

1400

400

20

40

60

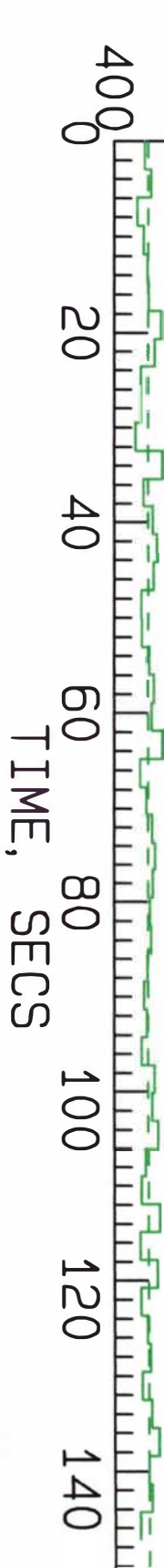
80

100

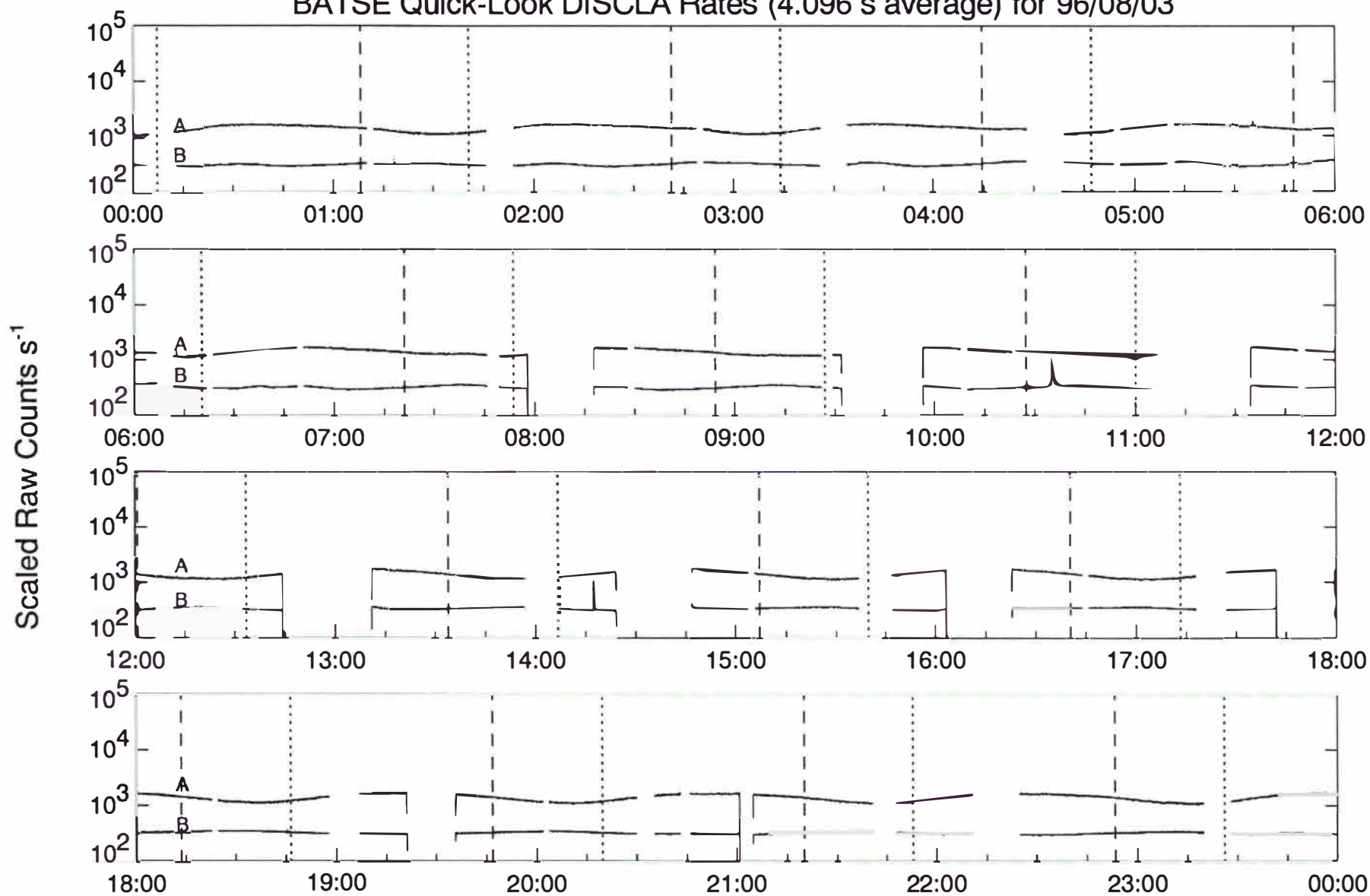
120

140

TIME, SECS



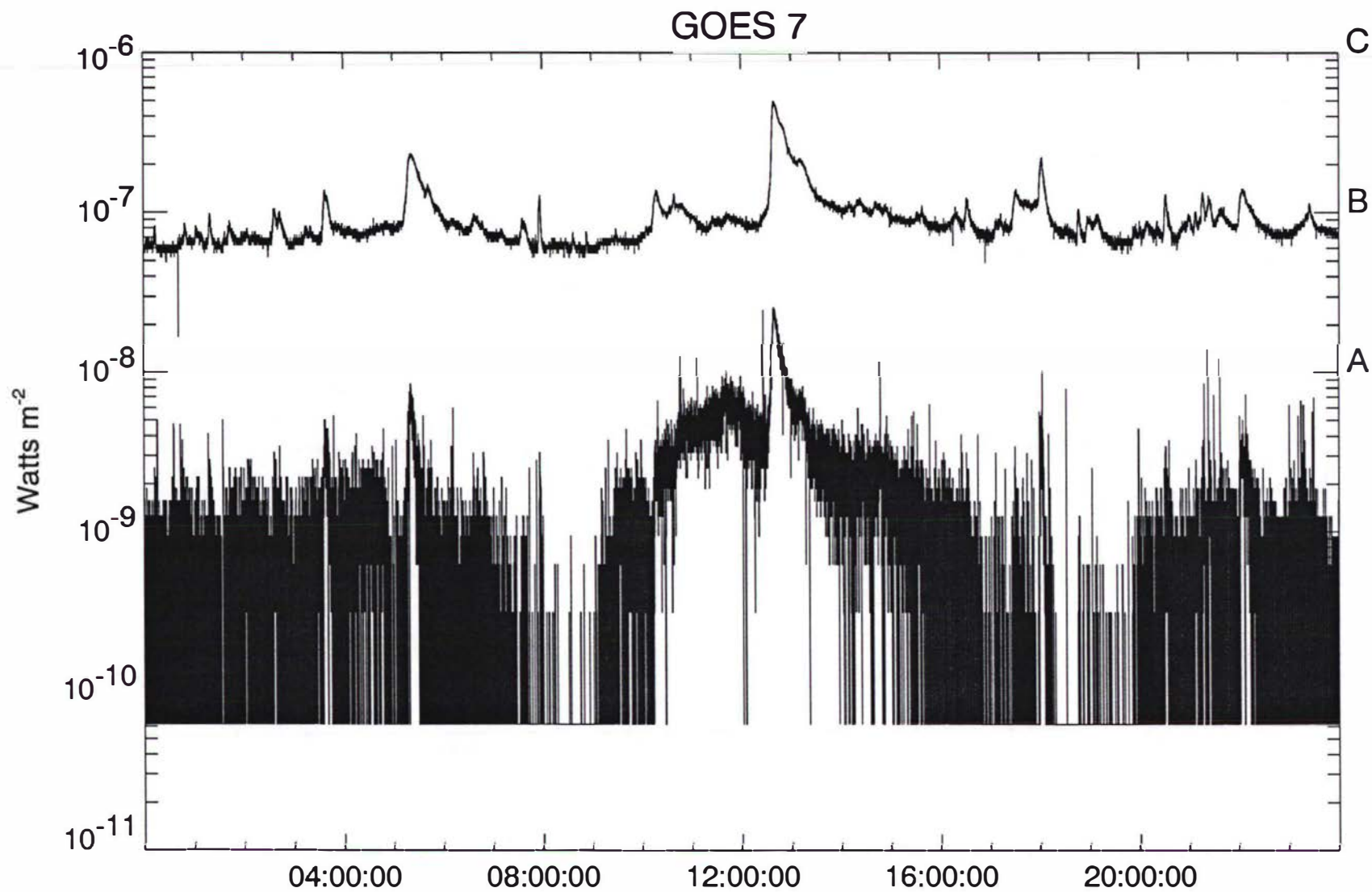
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/03



Current Time: 96/08/05, 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



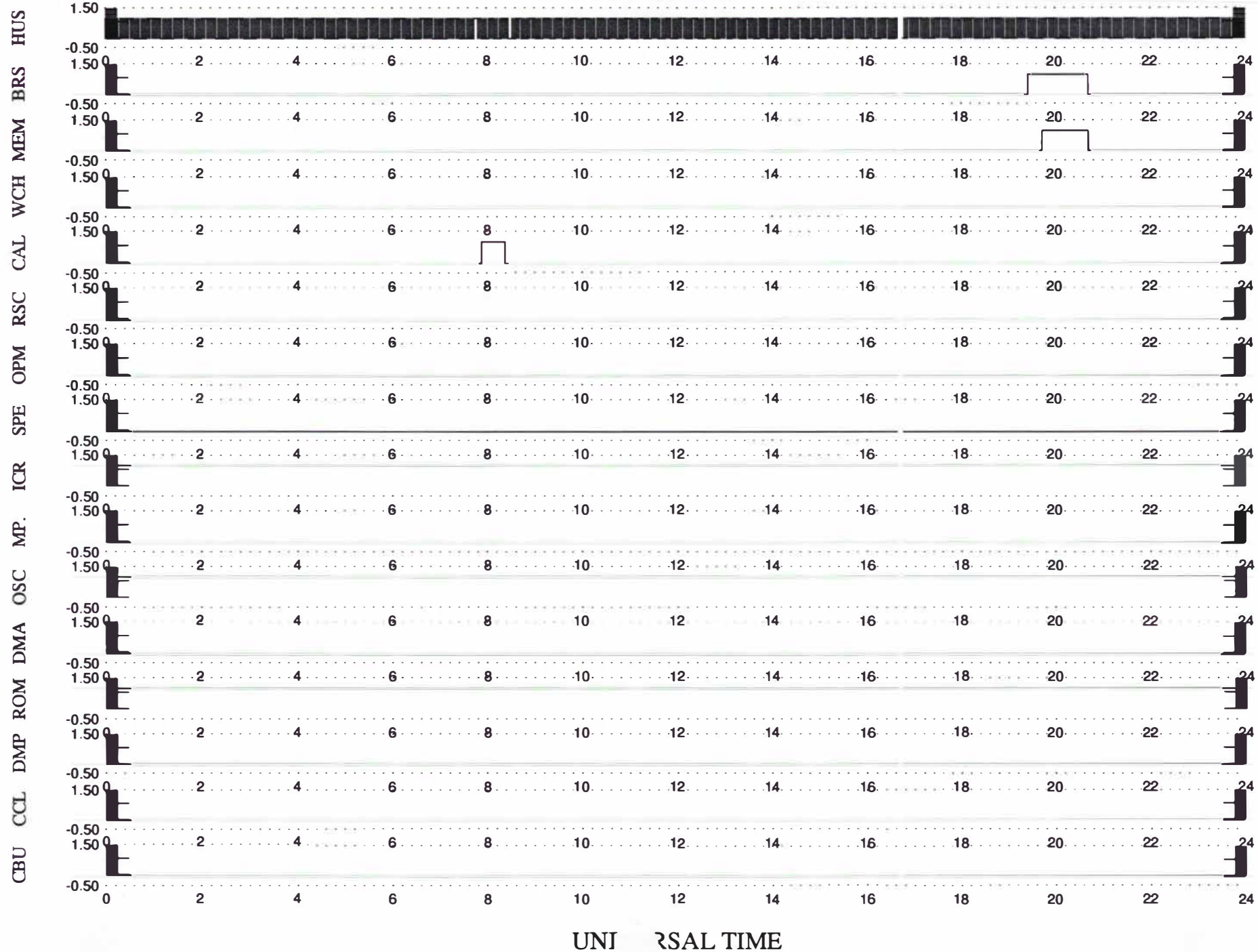
Data Start: 96/08/03, 0000:02

Plot created: 96/08/05, 1003

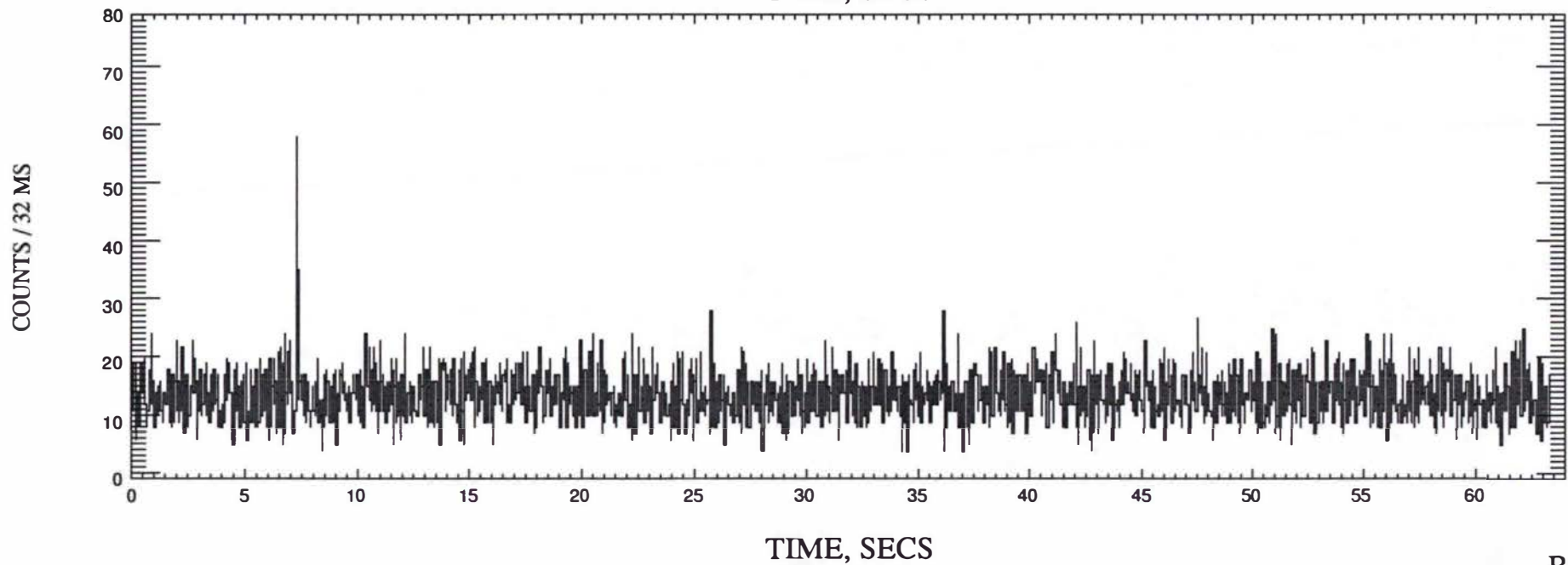
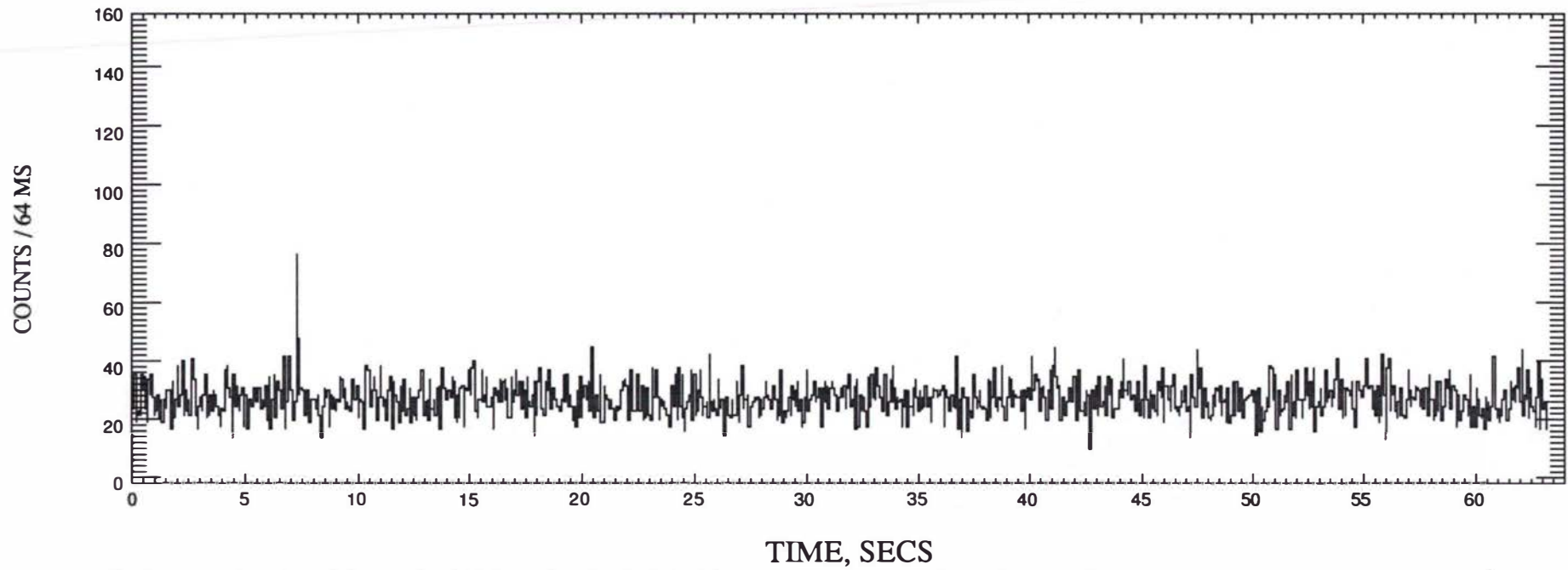
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

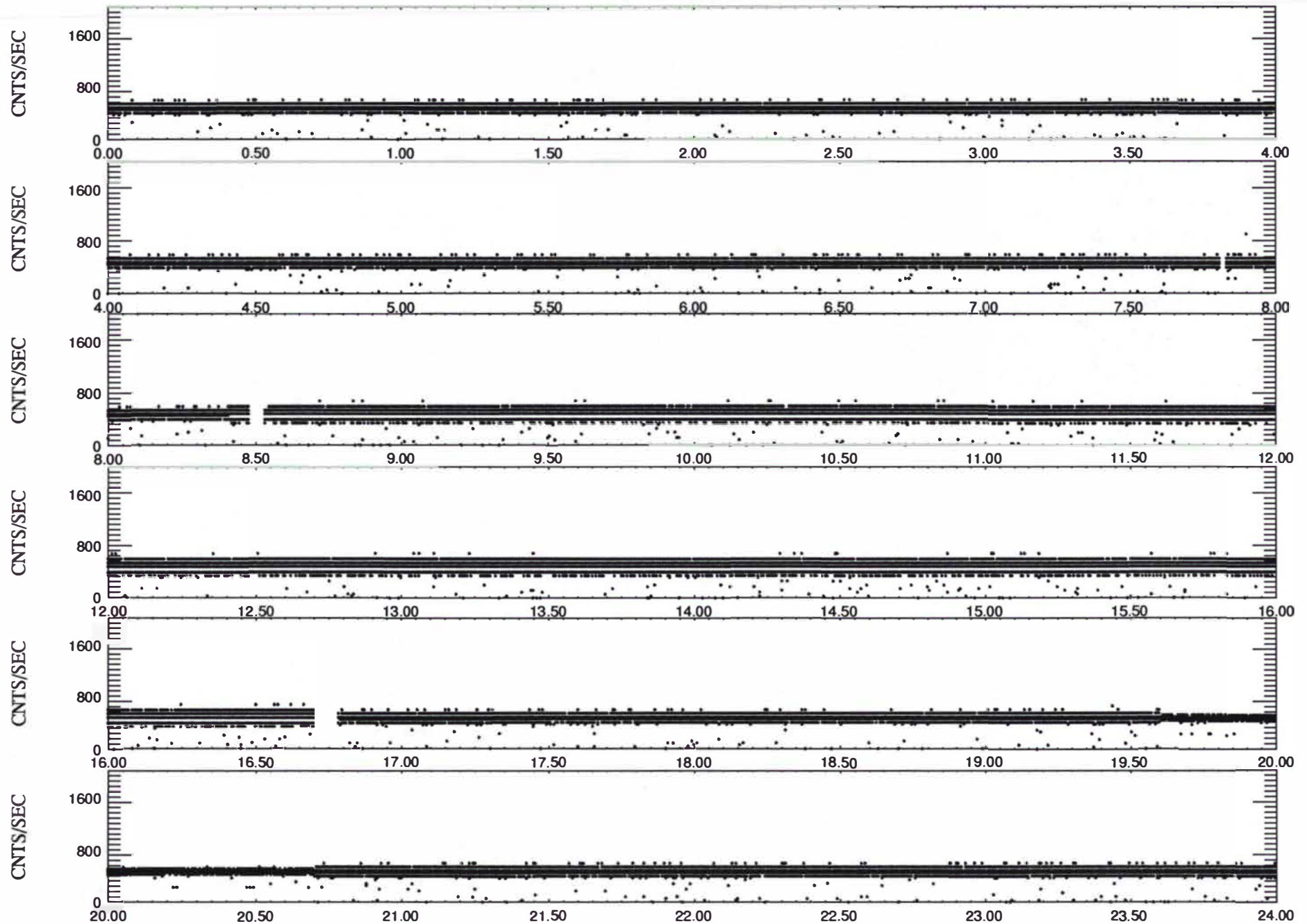
BURST NUMBER 4



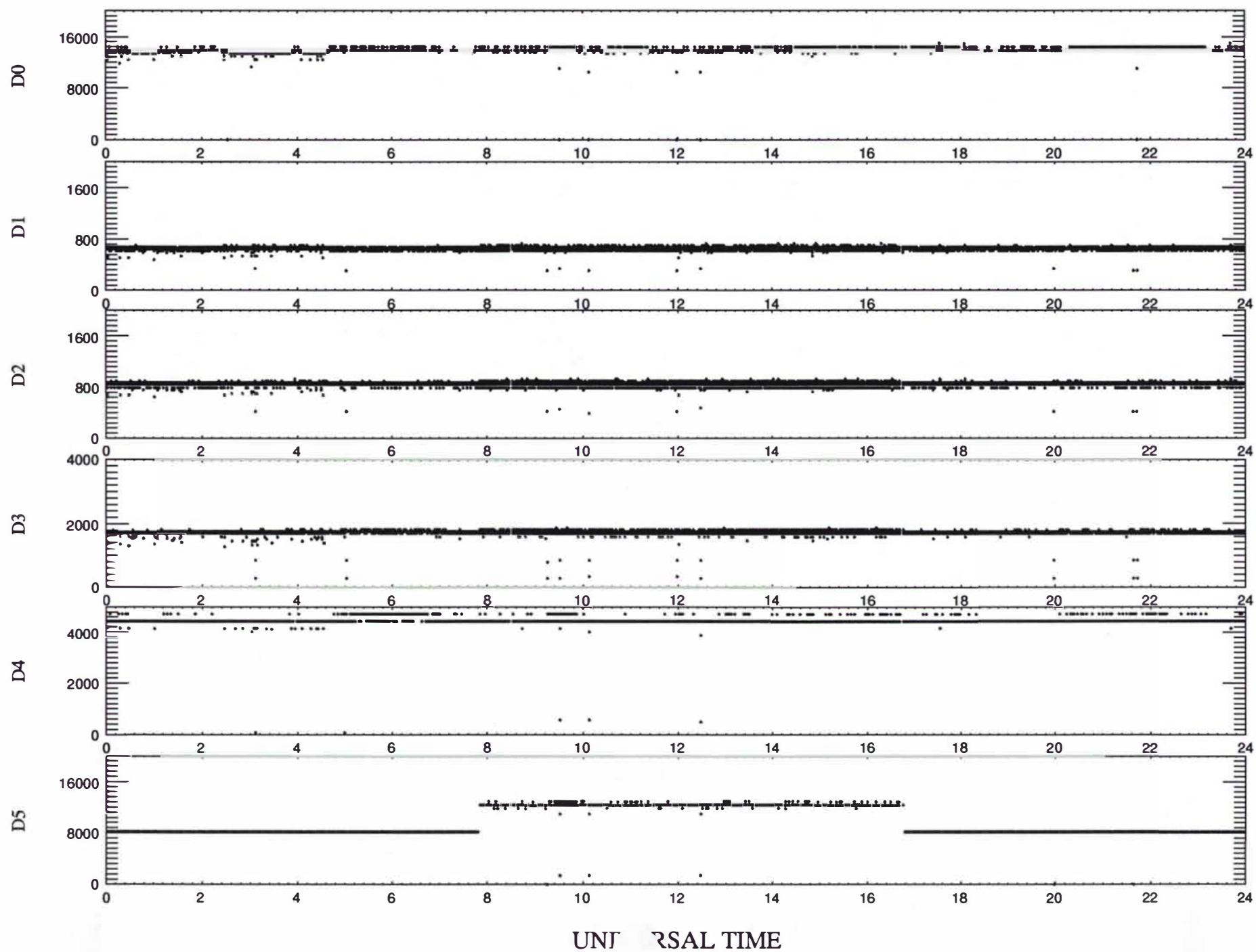
Burst Counter 4 at UT=19.431853446960 h=69954.672 s 19:25:54.672



CALIBRATION DATA INCLUDED



UNRSAL TIME



From WOODSP@ssl.msfc.nasa.gov Mon Aug 5 13:41 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 5 Aug 1996 15:40:45 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5562

BATSEARCH PROGRAM

BATSE BURST # 5562
EVENT OF 1996 AUG 4 DAY OF YEAR=217
EVENT CROSSING TIME AT BATSE : 70360. S. OR 19:32:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 281.000 -52.000
BATSE PEAK COUNTING RATE: 8200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 8/ 96 IS:
RA= 160.561 DEC= 40.730 DIST= 4.999 AU
BATSE-ULYSSES DISTANCE = 747917608. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1872.42 SECS.
CROSSING TIME AT ULYSSES IS 72232. S. OR 20:03:52 +/- 364.66 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 8/ 96 IS:
RA= 96.759 DEC= 23.807 DIST= 2.233 AU
MARS-BATSE DISTANCE = 334080480. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 28.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 980.45 SECS.
CROSSING TIME AT MARS IS 71340. S. OR 19:49:00 +/- 106.85 SECONDS

BATSE BURST TRIGGER

NO.: 5562

TIME: TJD=0299 SECONDS=70360

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=146.5 AZIMUTH=277.8 ERROR=8.4 DEGREES

COMMENTS:

GRB LASTING ABOUT 0.25 SEC. HARD SPECTRUM AND A SHARP DECAY.
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5562	960804	10299	70360	8200	281	-52	.25

BATSE #

5562

6 / 8 / 96

ULYSSES RT

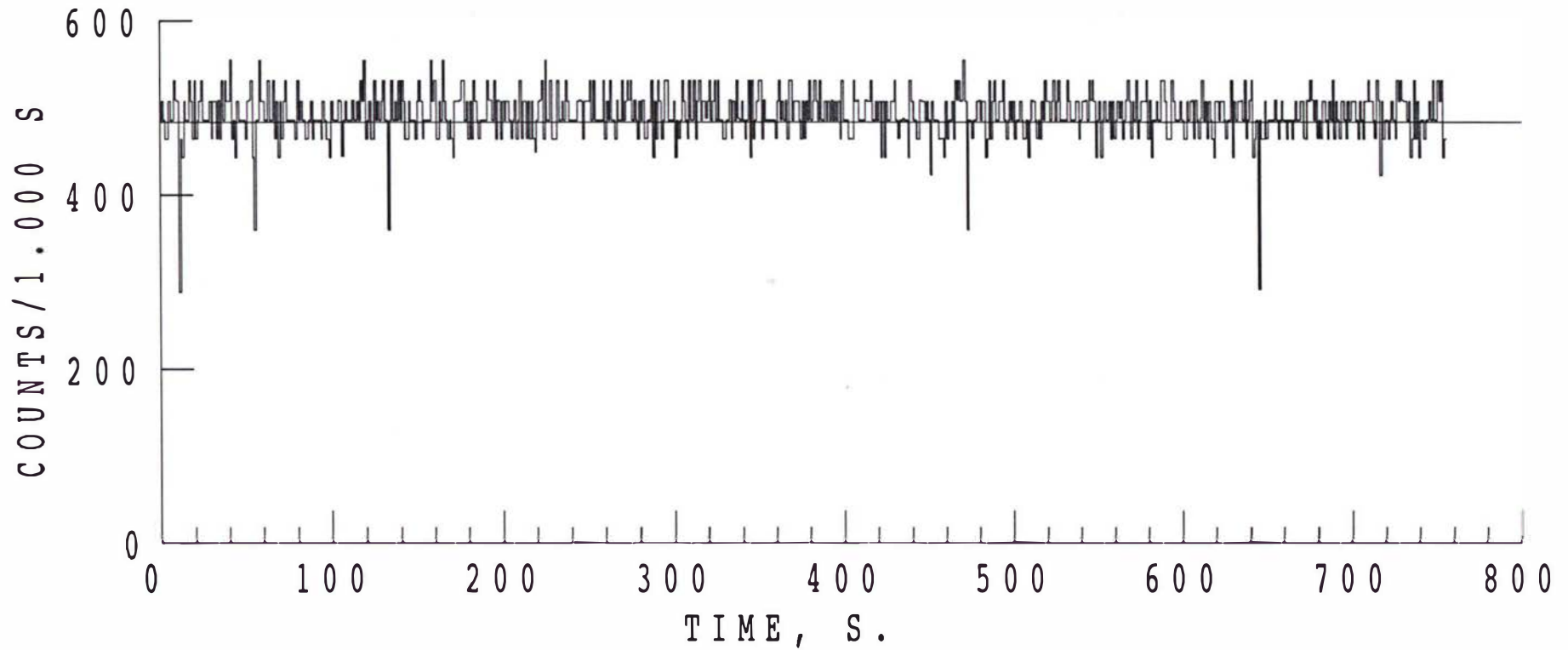
4 / 8 / 96 71856.242 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From WOODSP@ssl.msfc.nasa.gov Mon Aug 5 13:42 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Mon, 5 Aug 1996 15:42:53 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5563

BATSEARCH PROGRAM

Trigger

BATSE BURST # 5563
EVENT OF 1996 AUG 4 DAY OF YEAR=217
EVENT CROSSING TIME AT BATSE : 84535. S. OR 23:28:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 219.000 68.000
BATSE PEAK COUNTING RATE: 57000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 8/ 96 IS:
RA= 160.594 DEC= 40.703 DIST= 5.001 AU
BATSE-ULYSSES DISTANCE = 748111354. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1880.13 SECS.
CROSSING TIME AT ULYSSES IS 82655. S. OR 22:57:34 +/- 306.32 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 8/ 96 IS:
RA= 96.759 DEC= 23.807 DIST= 2.233 AU
MARS-BATSE DISTANCE = 334080480. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=101.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -213.32 SECS.
CROSSING TIME AT MARS IS 84322. S. OR 23:25:21 +/- 186.66 SECONDS

BATSE BURST TRIGGER

NO.: 5563

TIME: TJD=0299 SECONDS=84535

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=84.5 AZIMUTH=97.0 ERROR=0.4 DEGREES

COMMENTS:

GRB LASTING ABOUT 7 SEC. VERY BRIGHT WITH SMOOTH, SYMMETRIC TIME
HISTORY. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5563	960804	10299	84535	57000	219	+68	7

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	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	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	5403
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	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: Mar 13 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

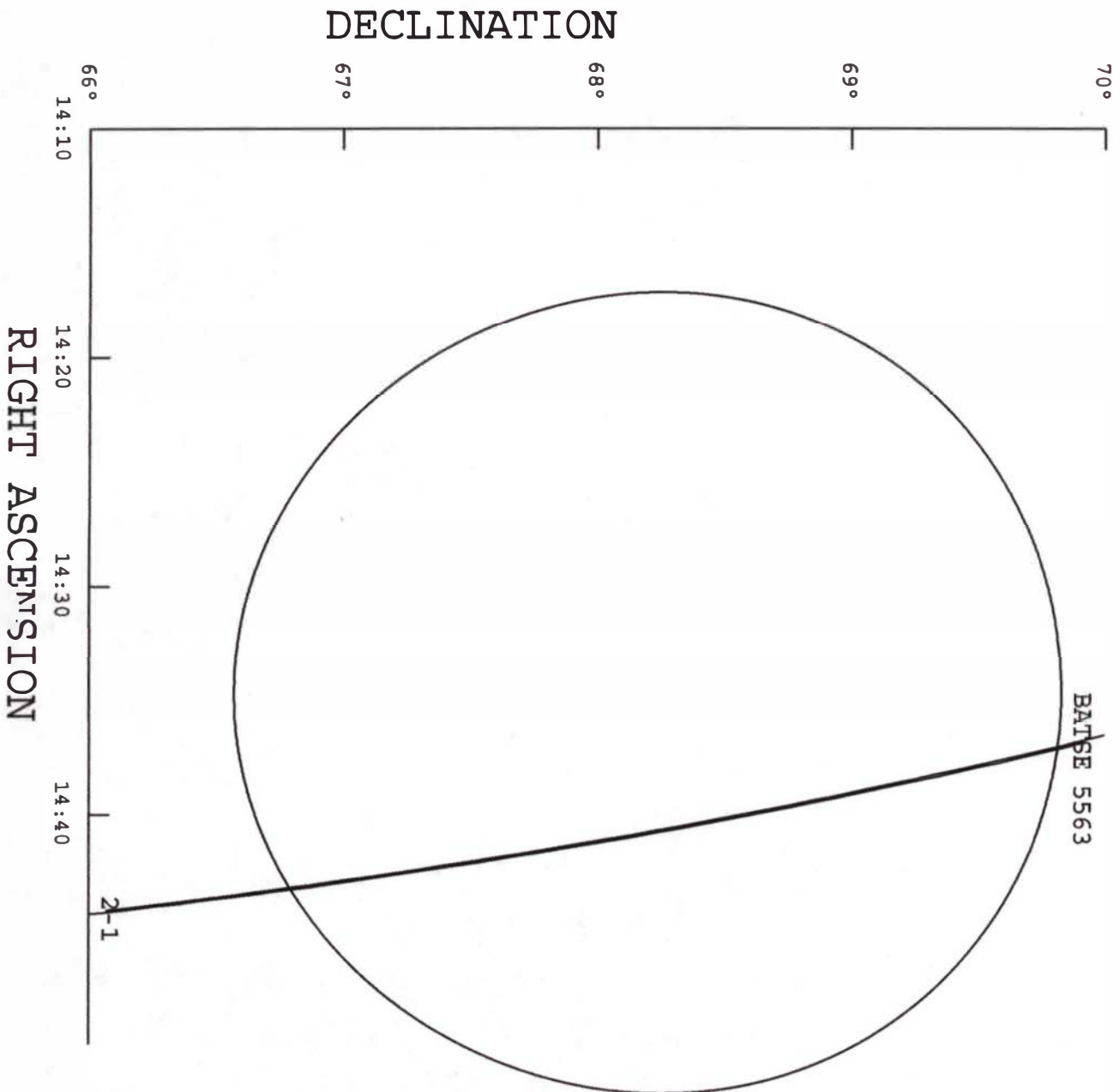
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF AUG 4, 1996 22:57

13/ 3/98



BATSE

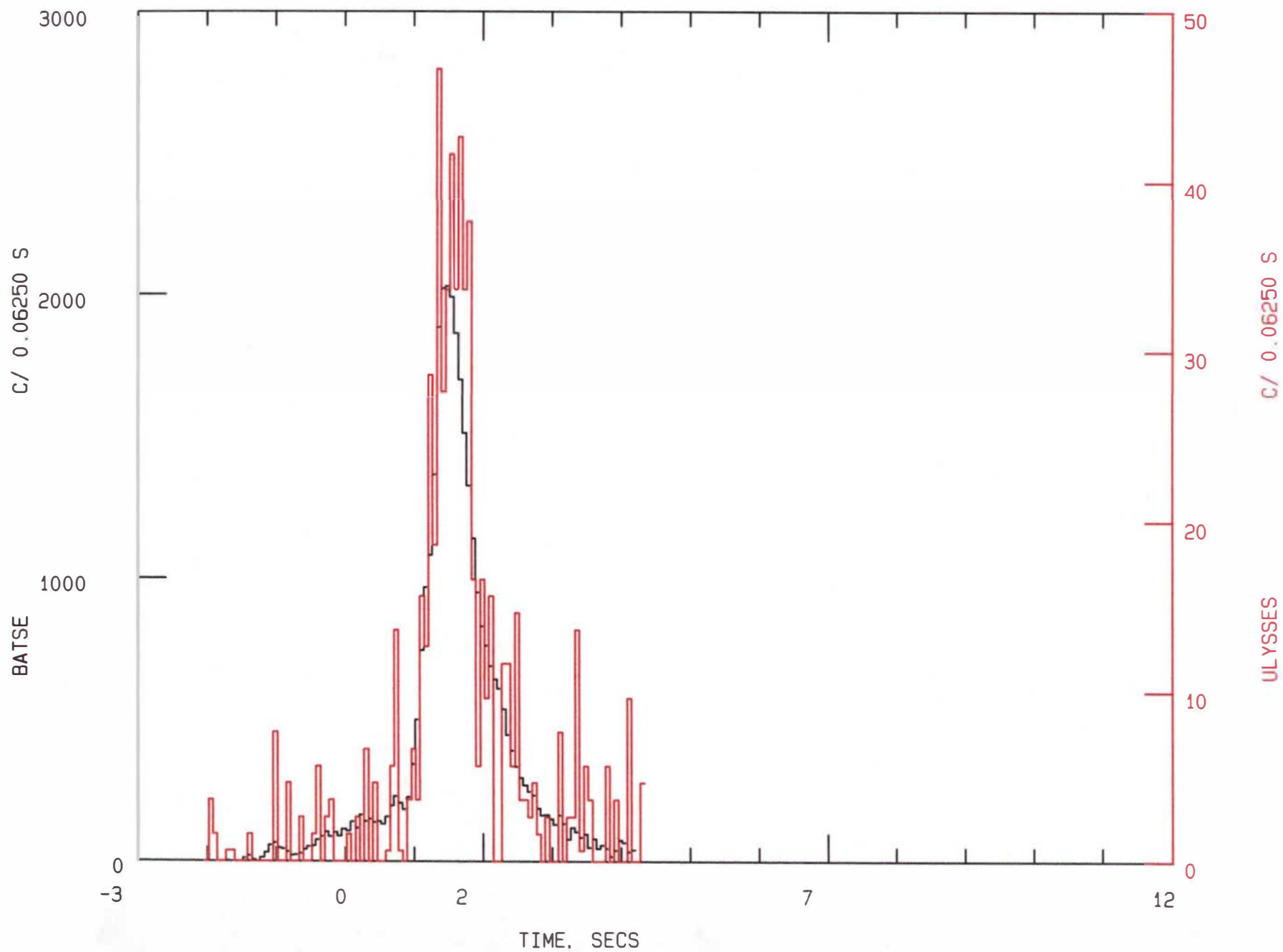
-ULYSSES

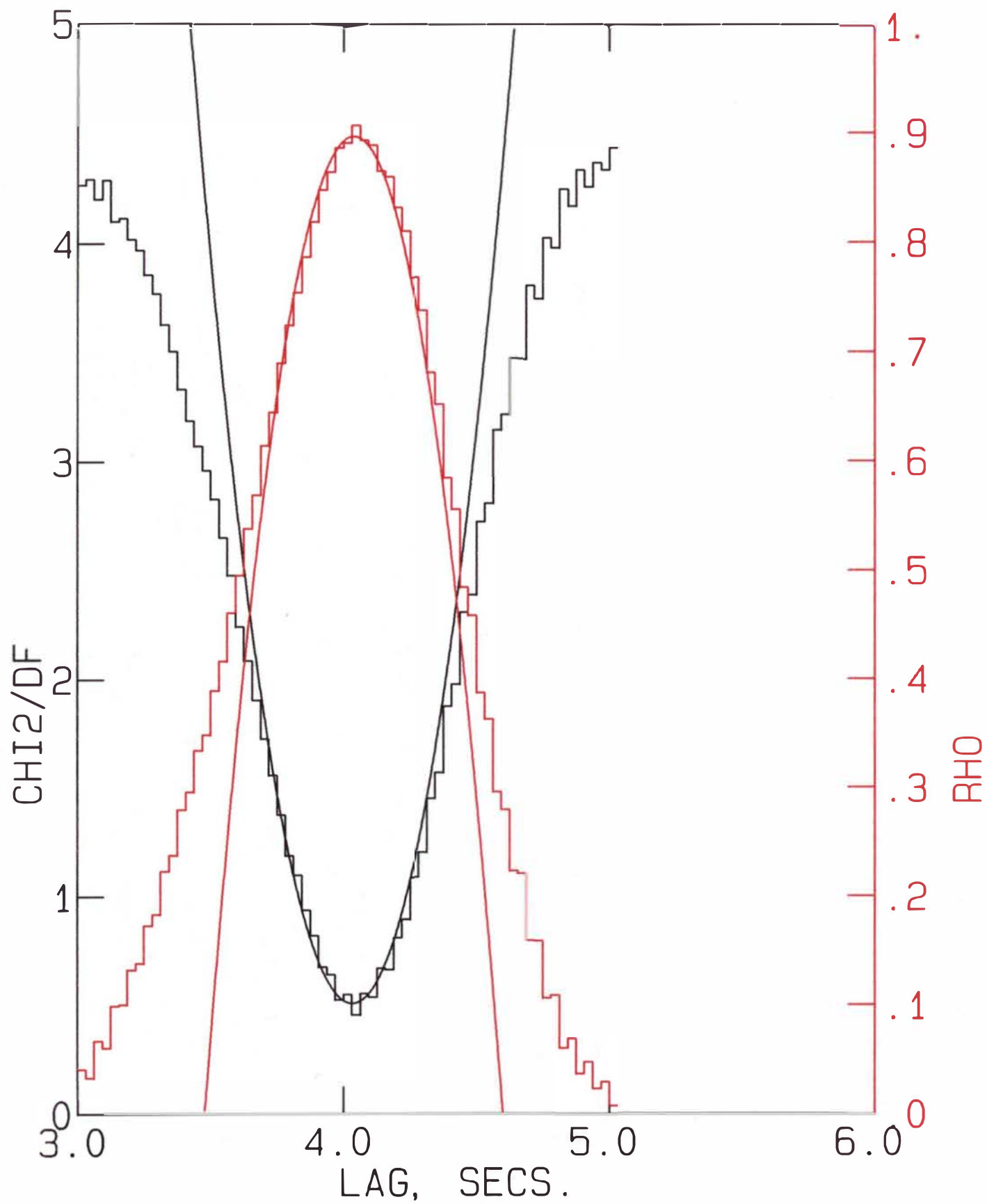
CORRELATION

4/ 8/96

84535.754

13/ 3/98





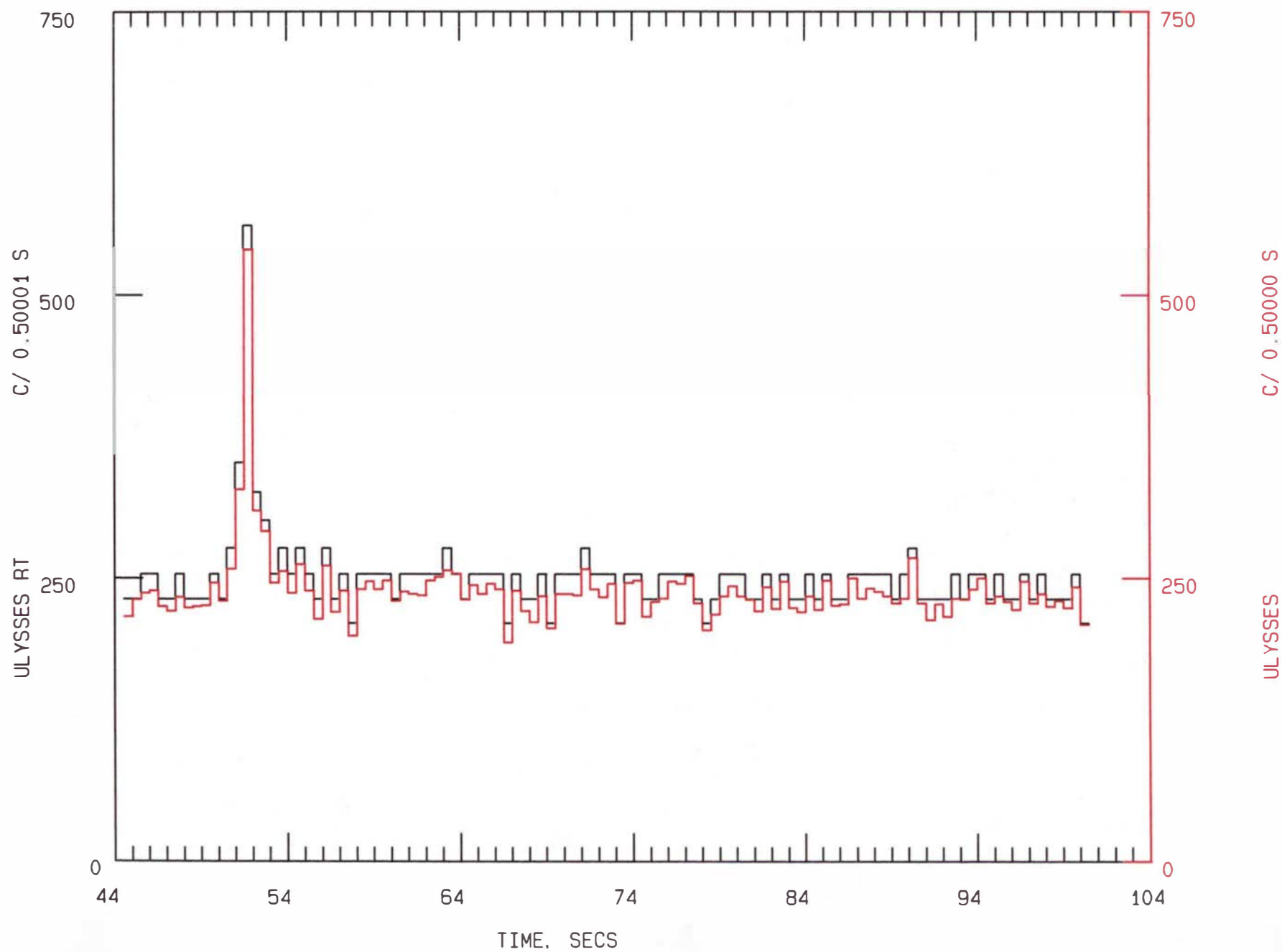
ULYSSES RT-ULYSSES

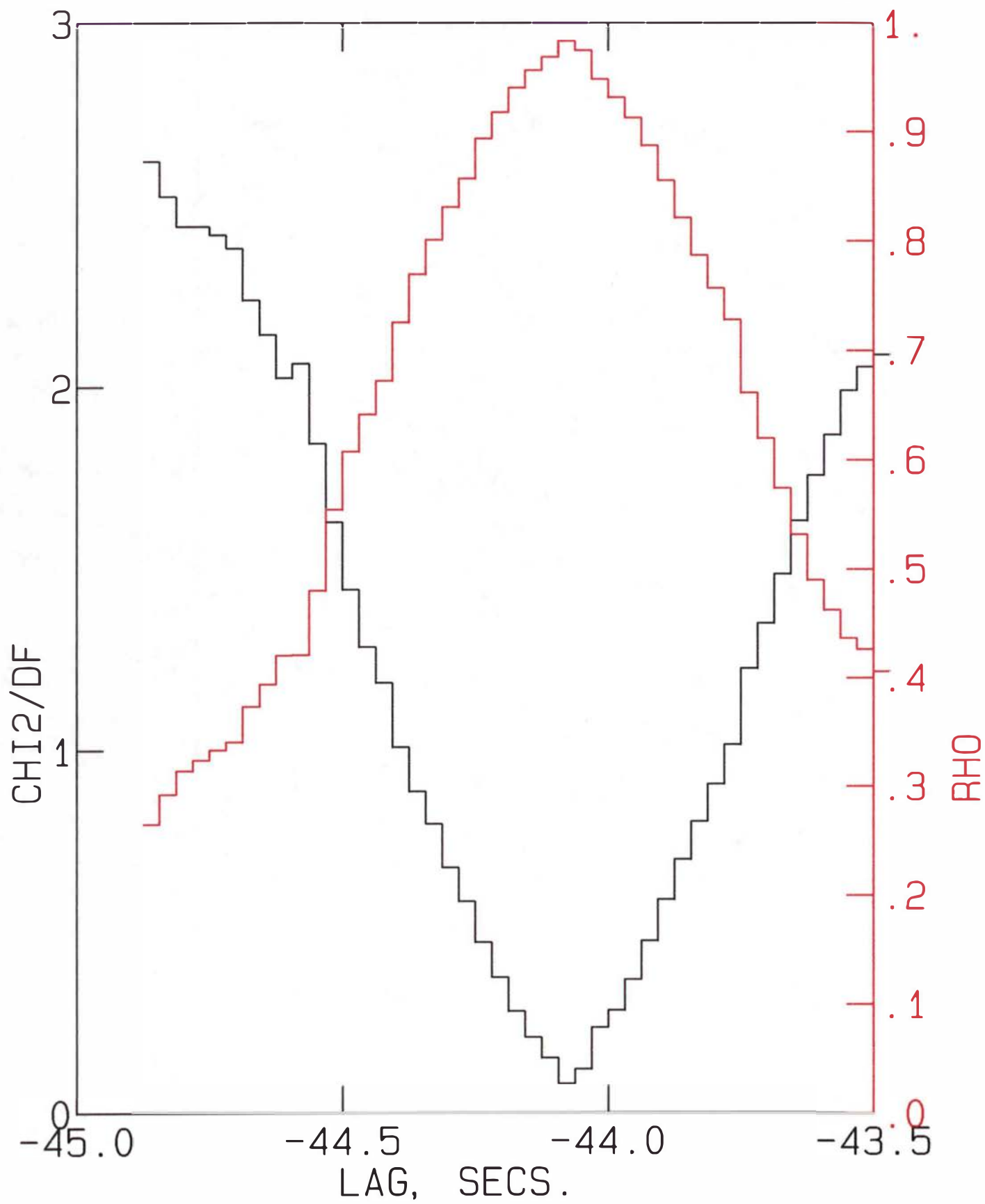
CORRELATION

4/ 8/96

82619.296

13/ 3/98

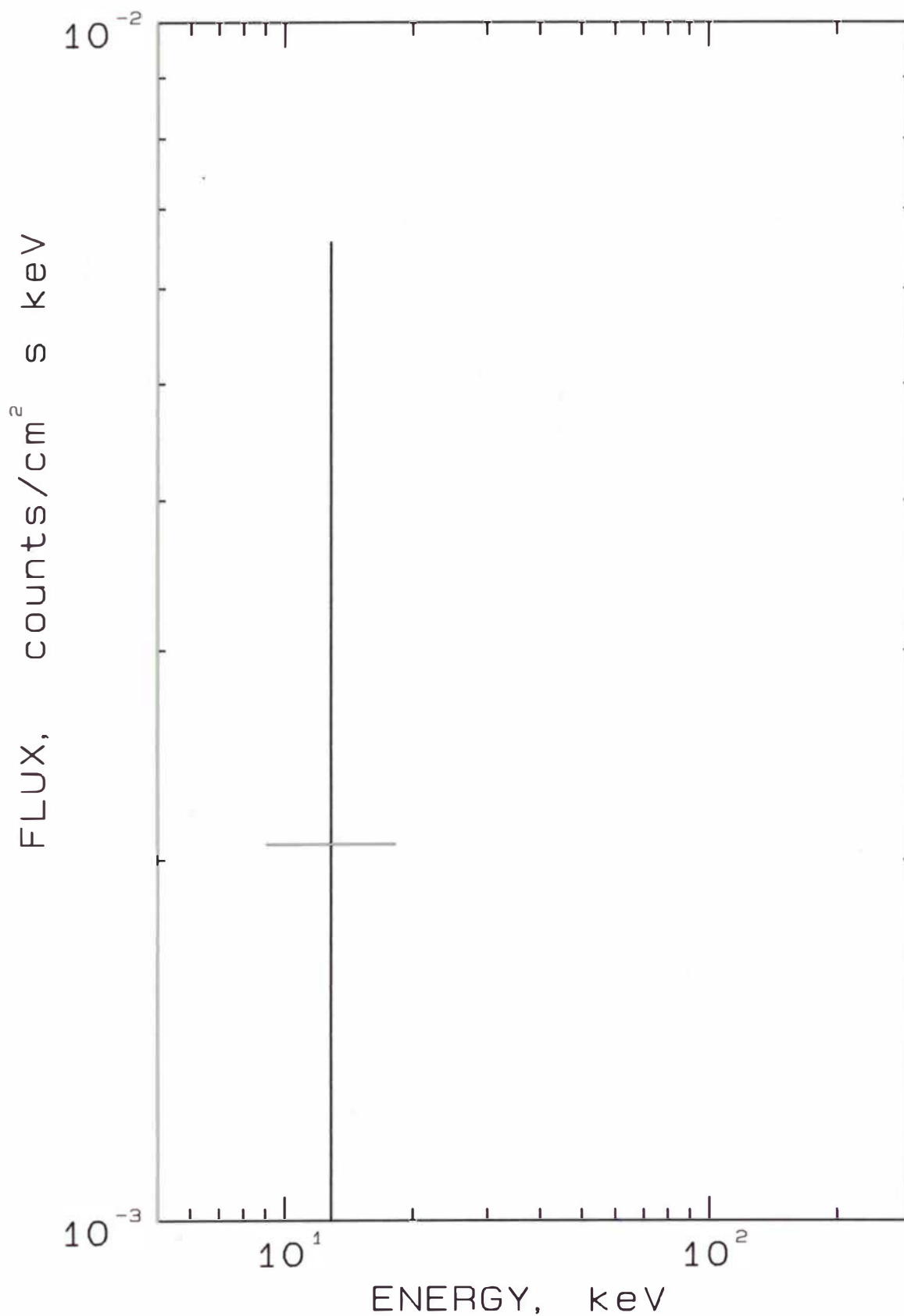




ULYSSES 04/08/96 82670.861

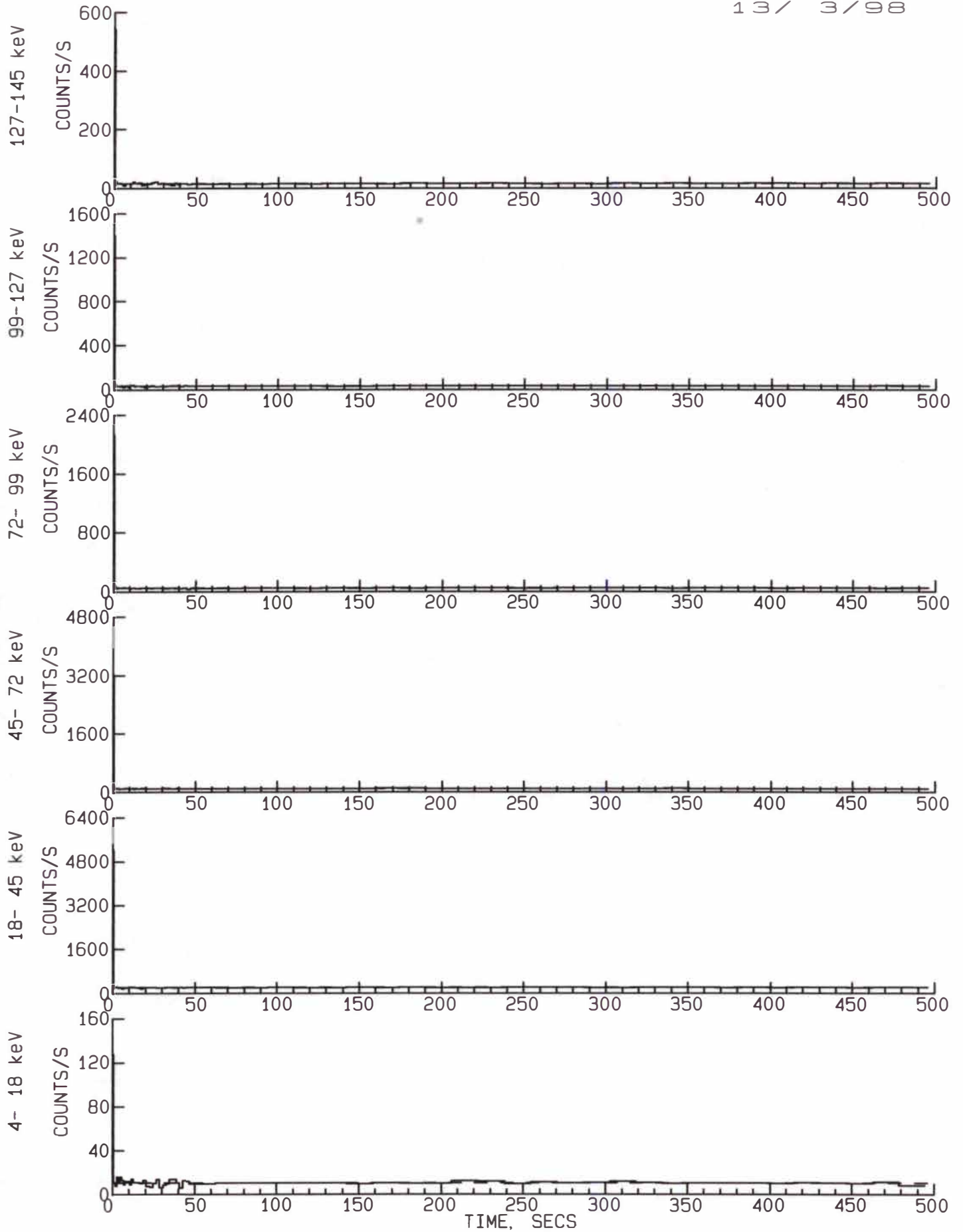
13/ 3/98

SPECTRUM INTEGRATED OVER 10.6 SECONDS, INTERVALS 2 TO 13



13 / 3 / 98

ULYSSES 04/08/96 82670.861 BURST SPECTRAL COUNT RATES



ULYSSES

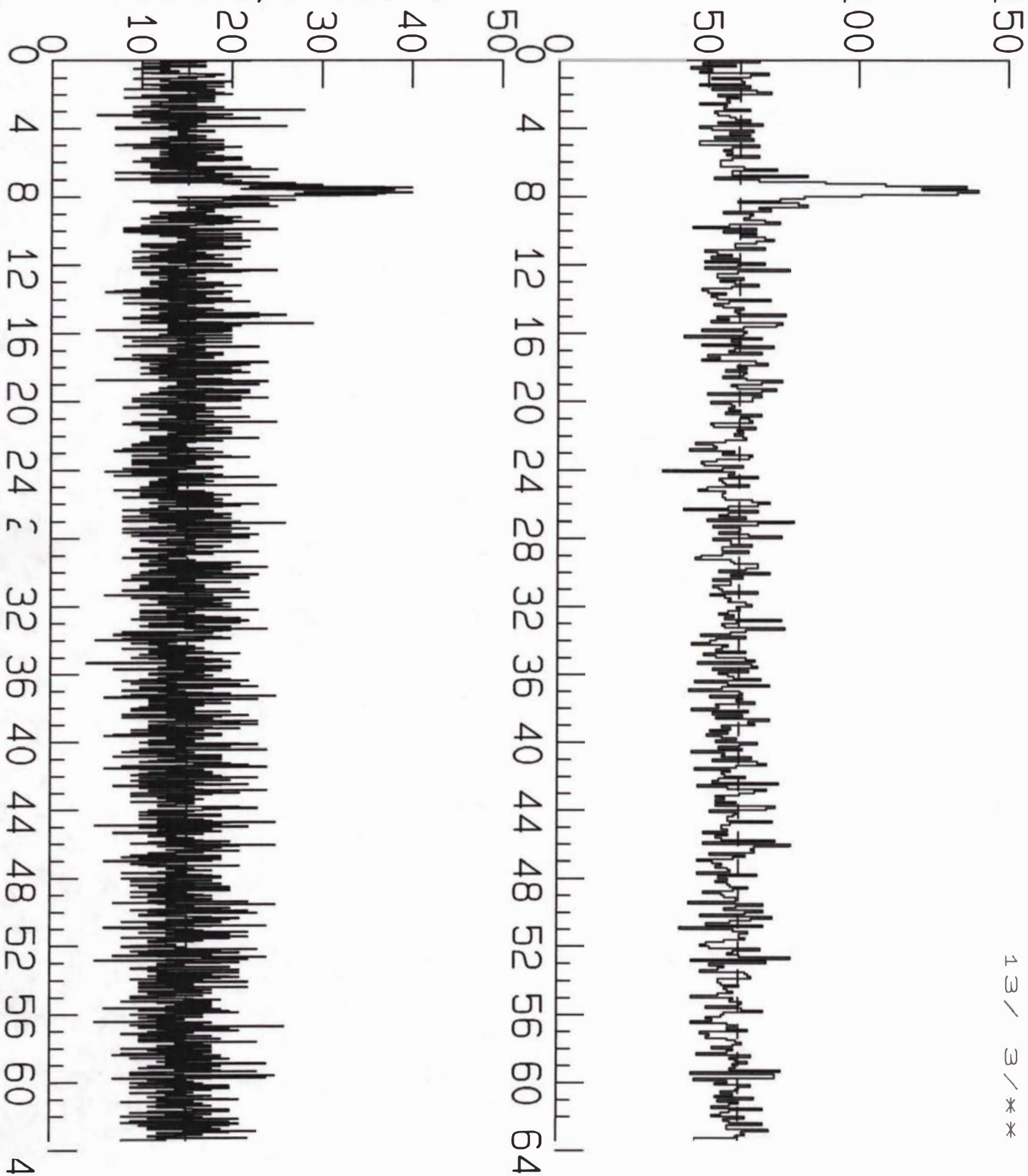
04/08/96

Ttrig=82670.785

21- 145 keV

COUNTS/0.031 S

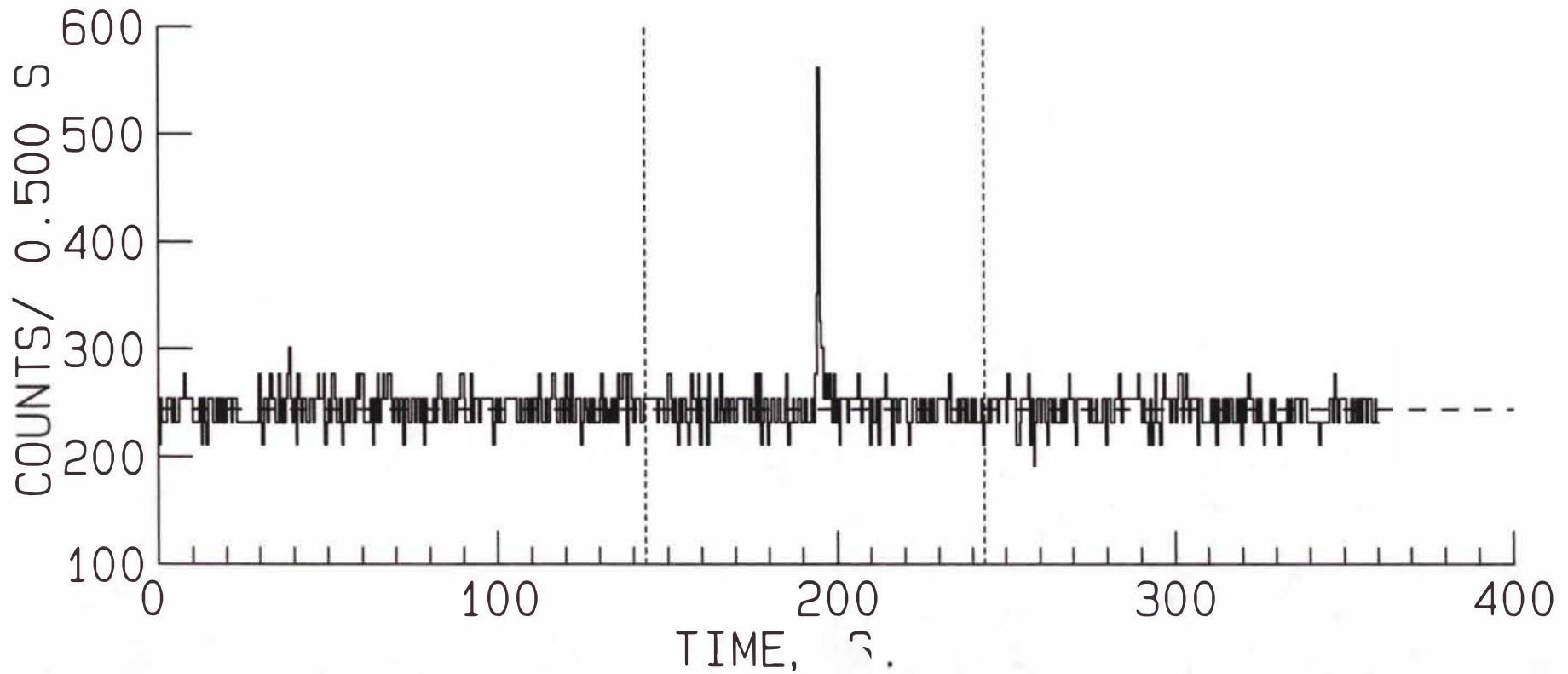
COUNTS/0.125 S



ULYSSES RT
4/ 8/96 82476.369 s
21- 145 keV

13/ 3/98

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



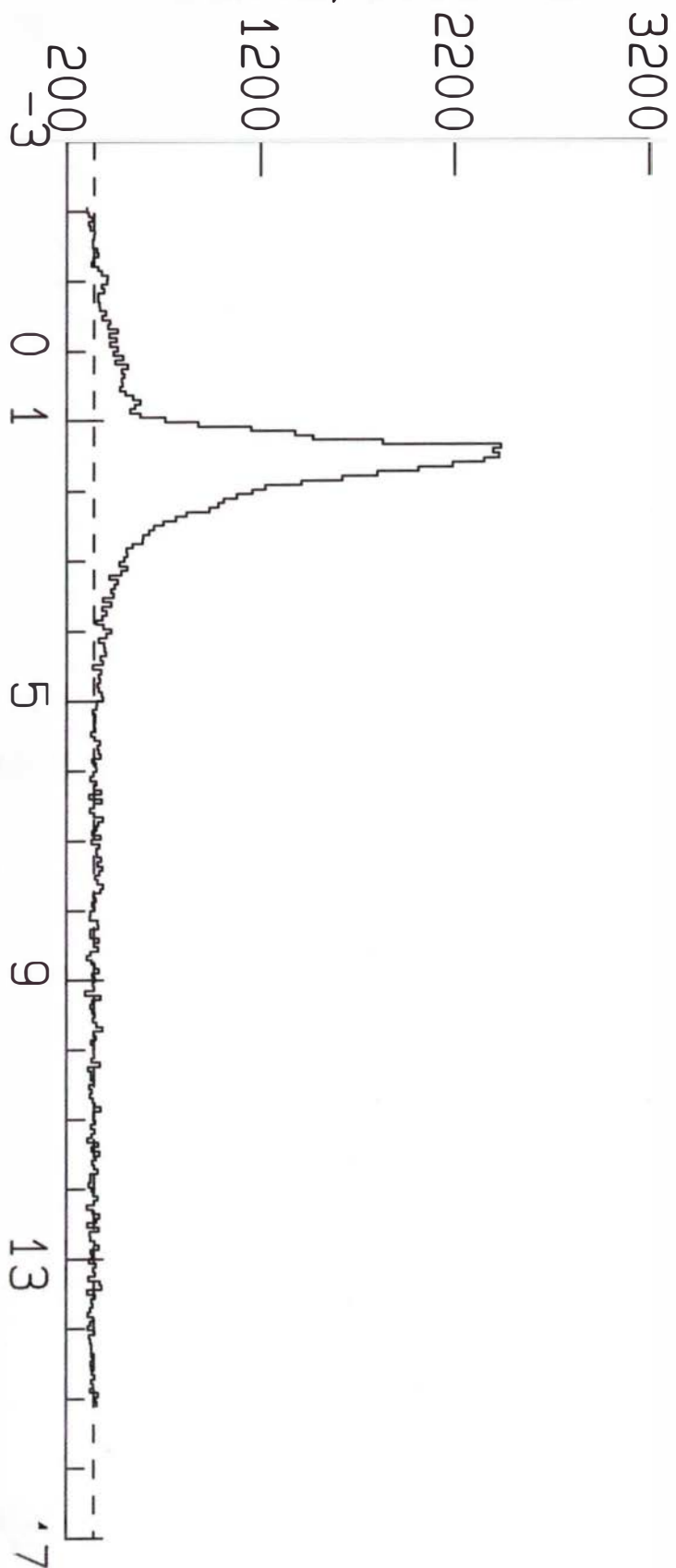
BATSE

04/08/96

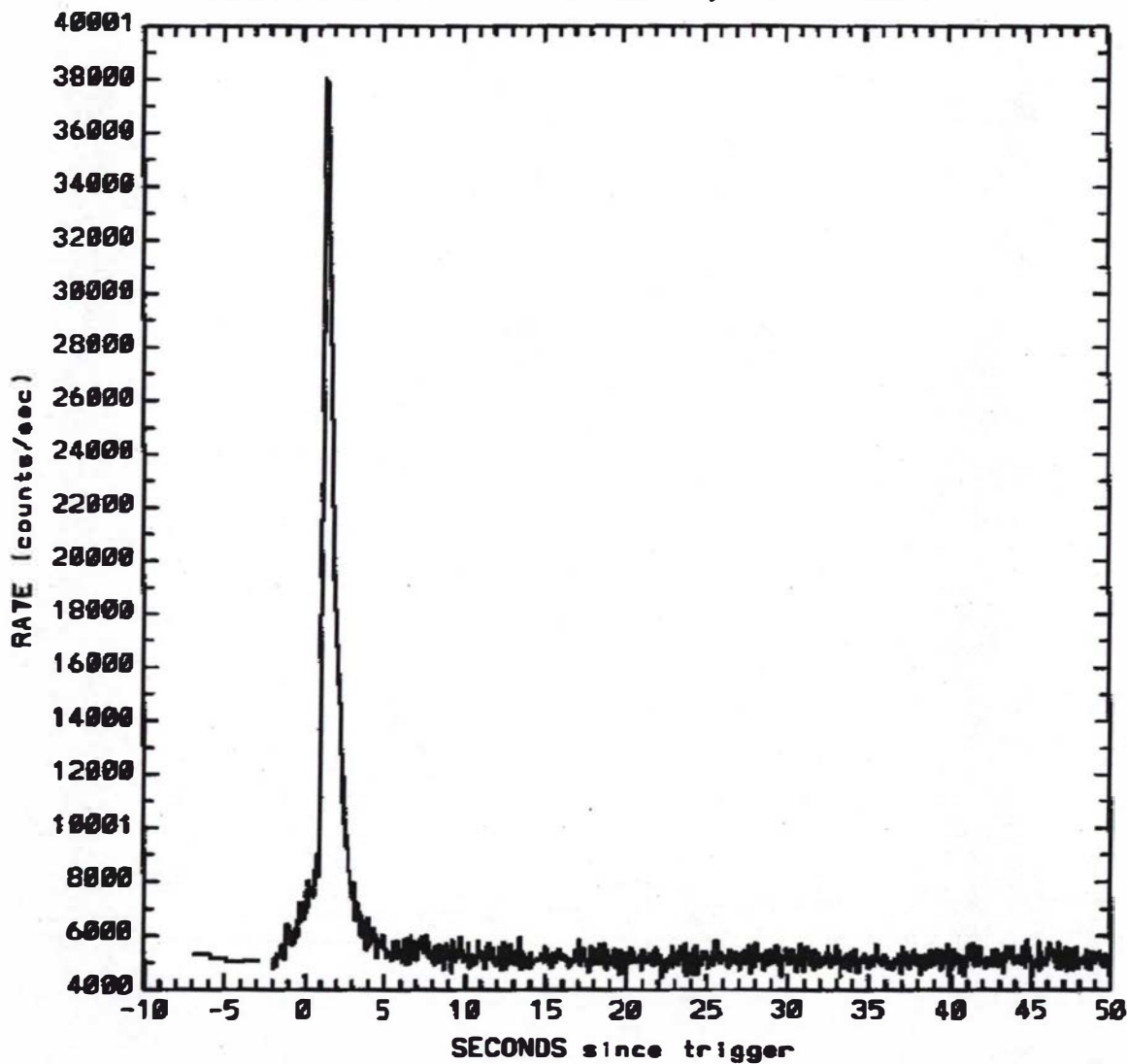
84535.754

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5563



13-AUG-1996 09:51:17

Created by MDPS 80
(Burst Display)
Version 12.25

Trigger # : 5563

Trigger Time:
18299 / 84535.754

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

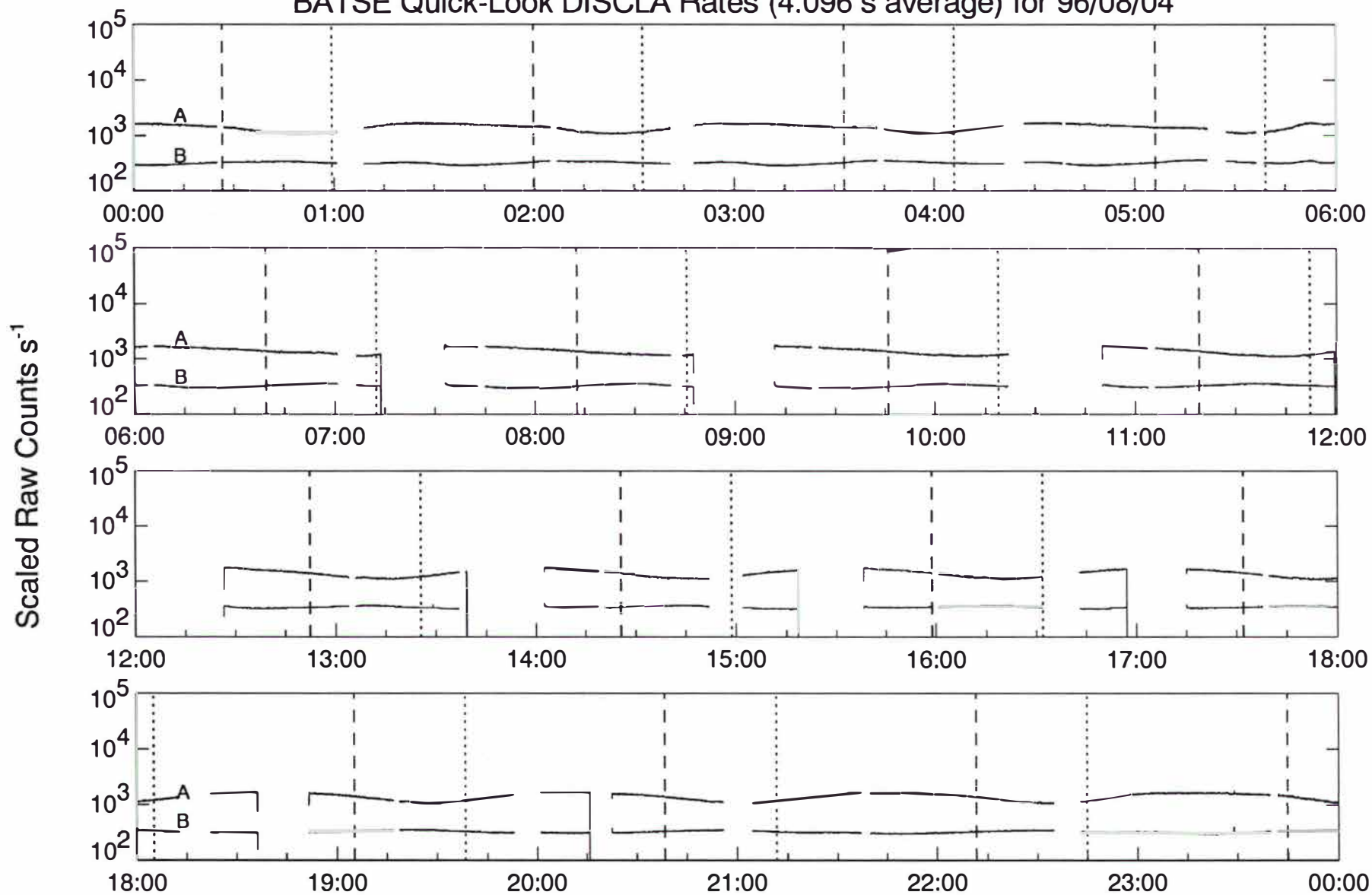
Minimum Integ. Time:
0.064 seconds

Detectors [7..8].
--54----

Discriminators:
(1 , 2)

Quality Mask:
BDISP:

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/04

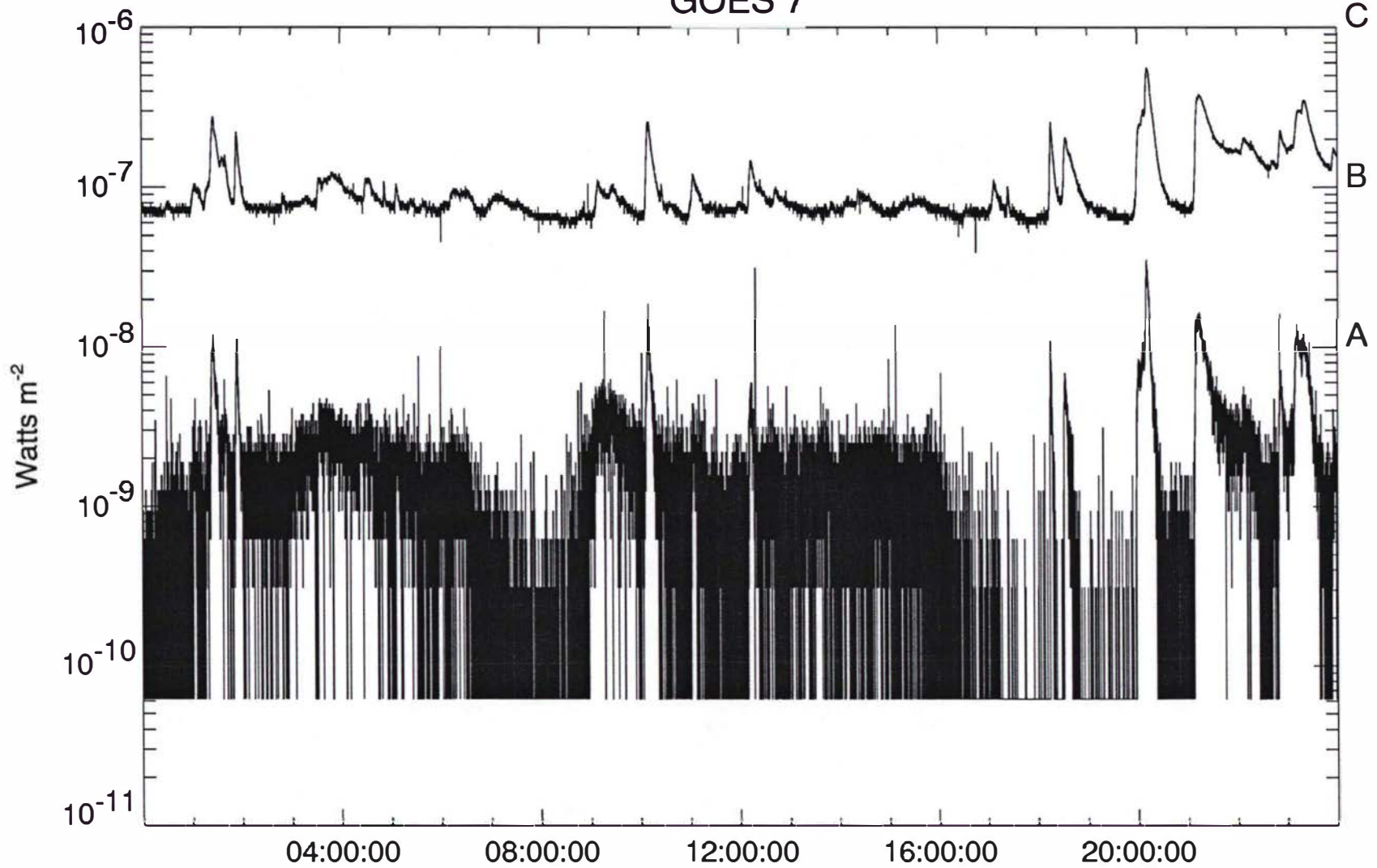


Current Time: 96/08/06, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 7



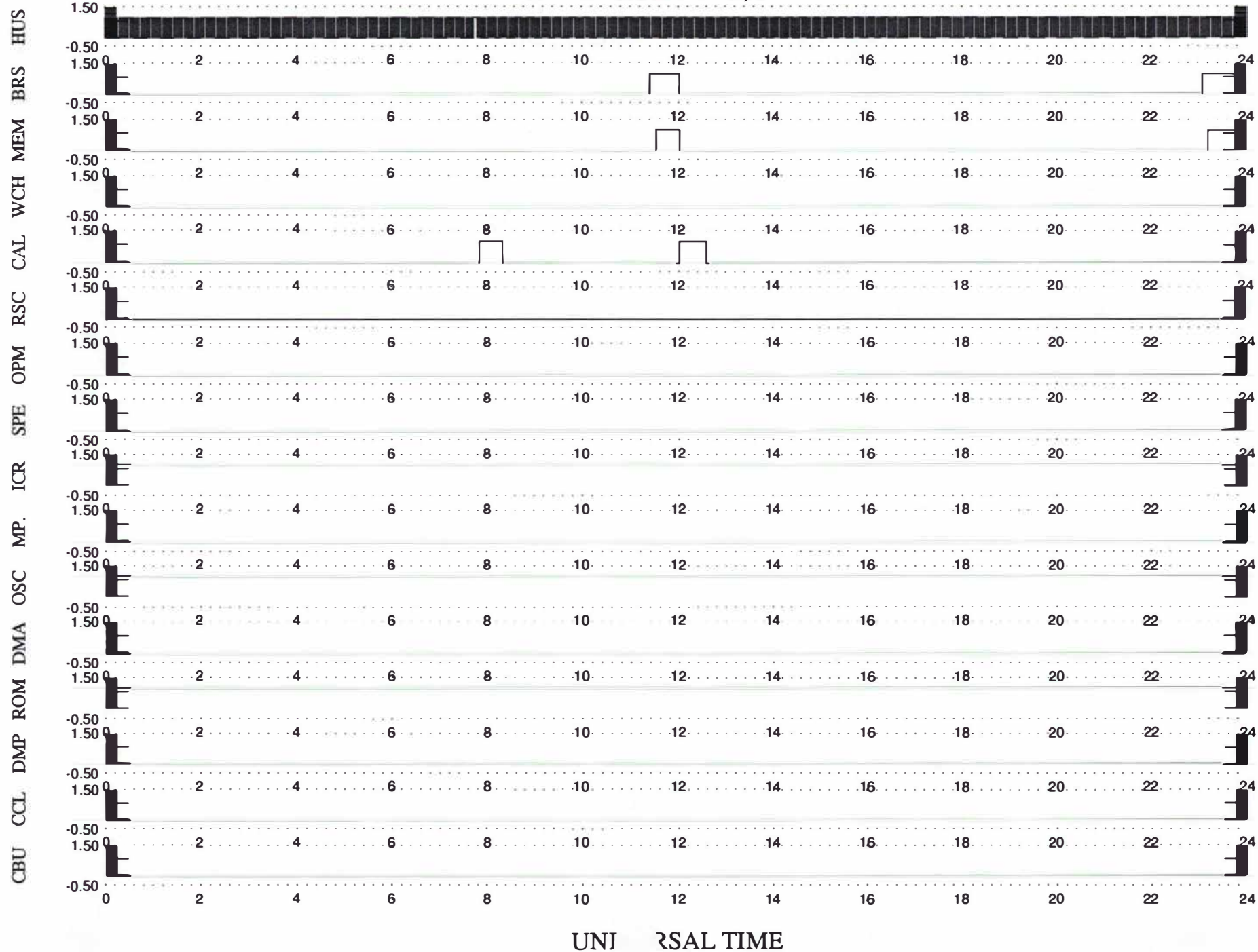
Data Start: 96/08/04, 0000:00

Plot created: 96/08/06, 1003

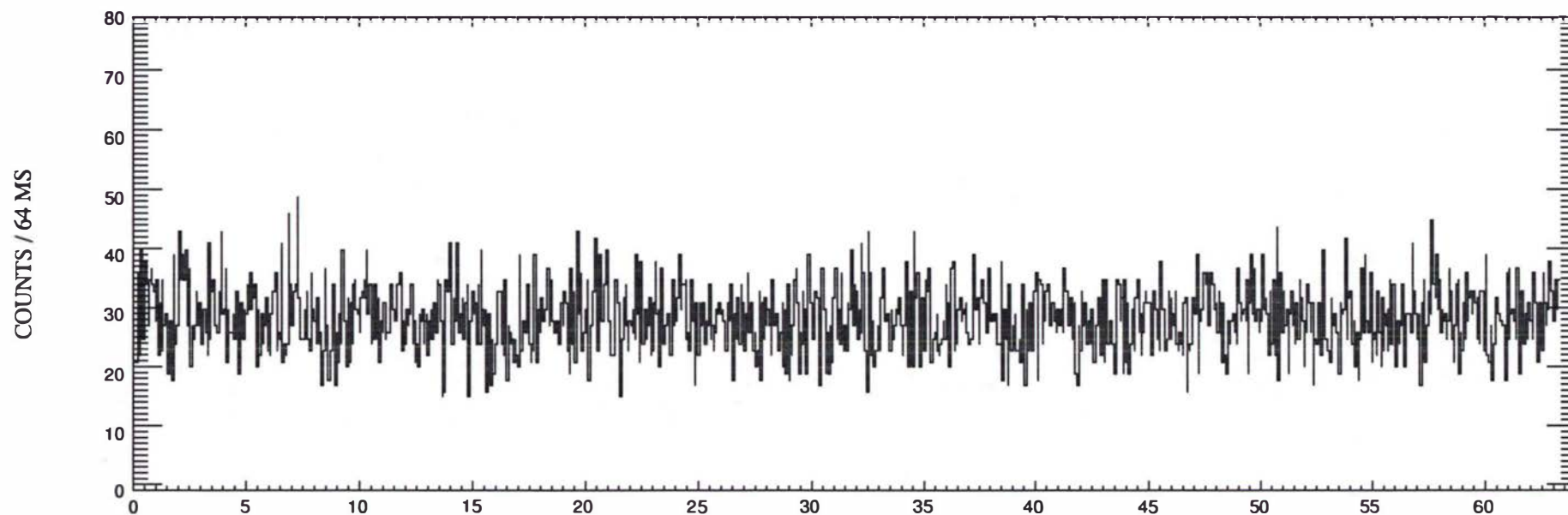
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

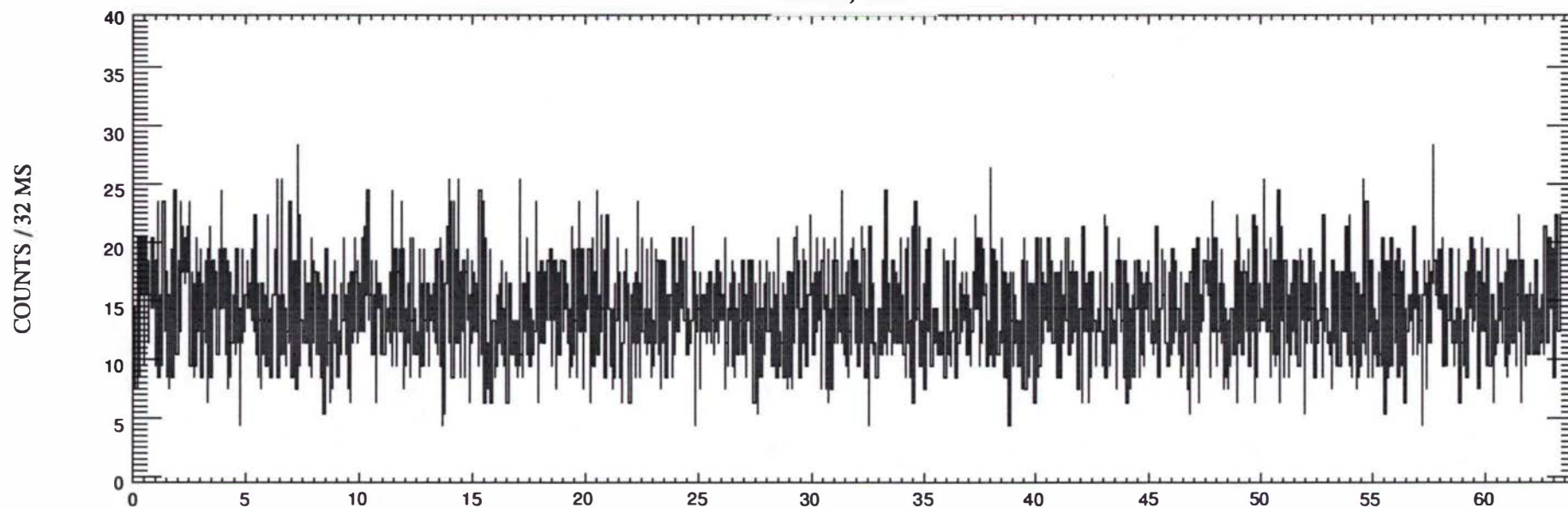
BURST NUMBER 5, 6



Burst Counter 5 at UT=11.346791568332 h=40848.450 s 11:20:48.450

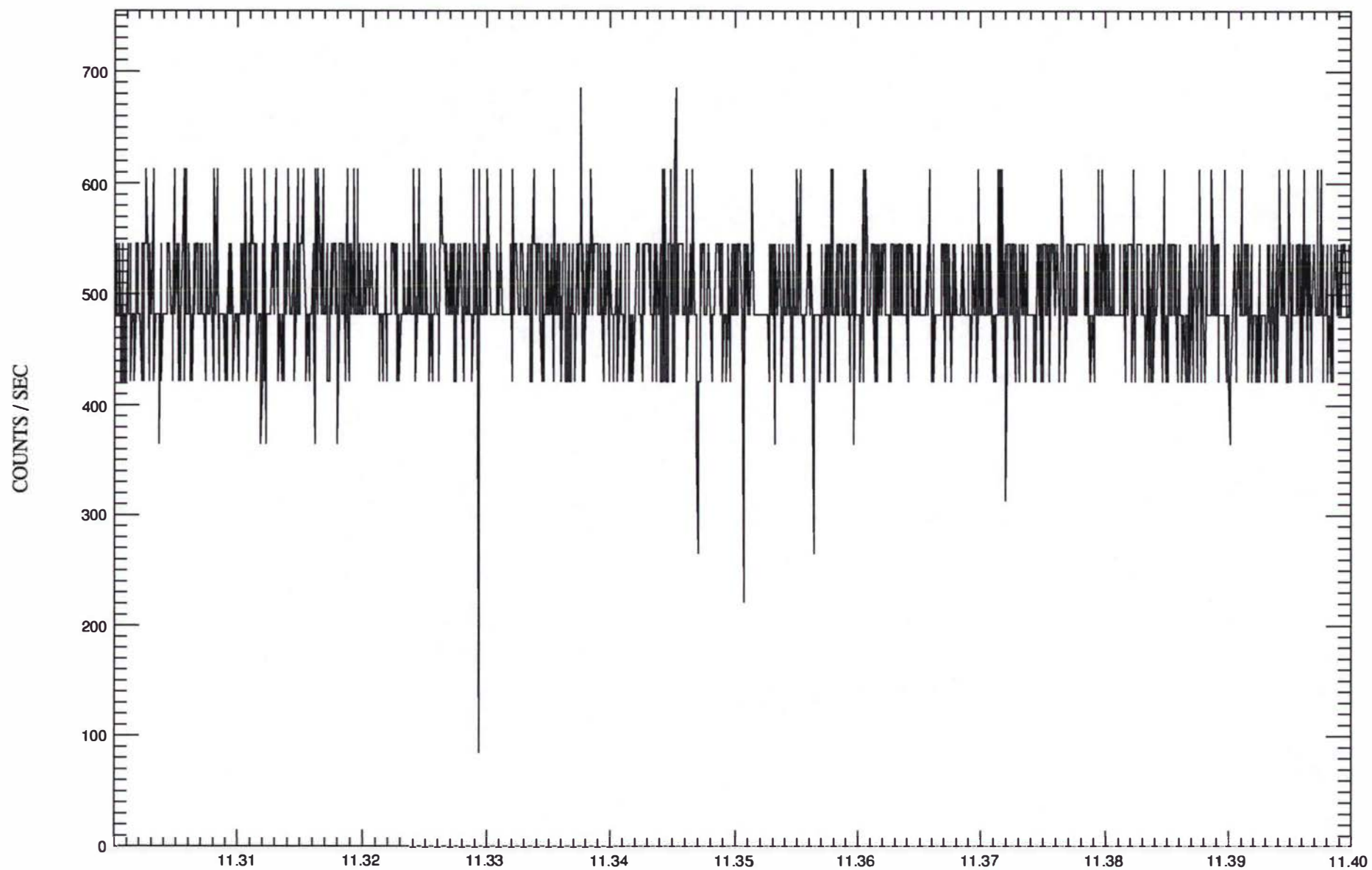


TIME, SECS

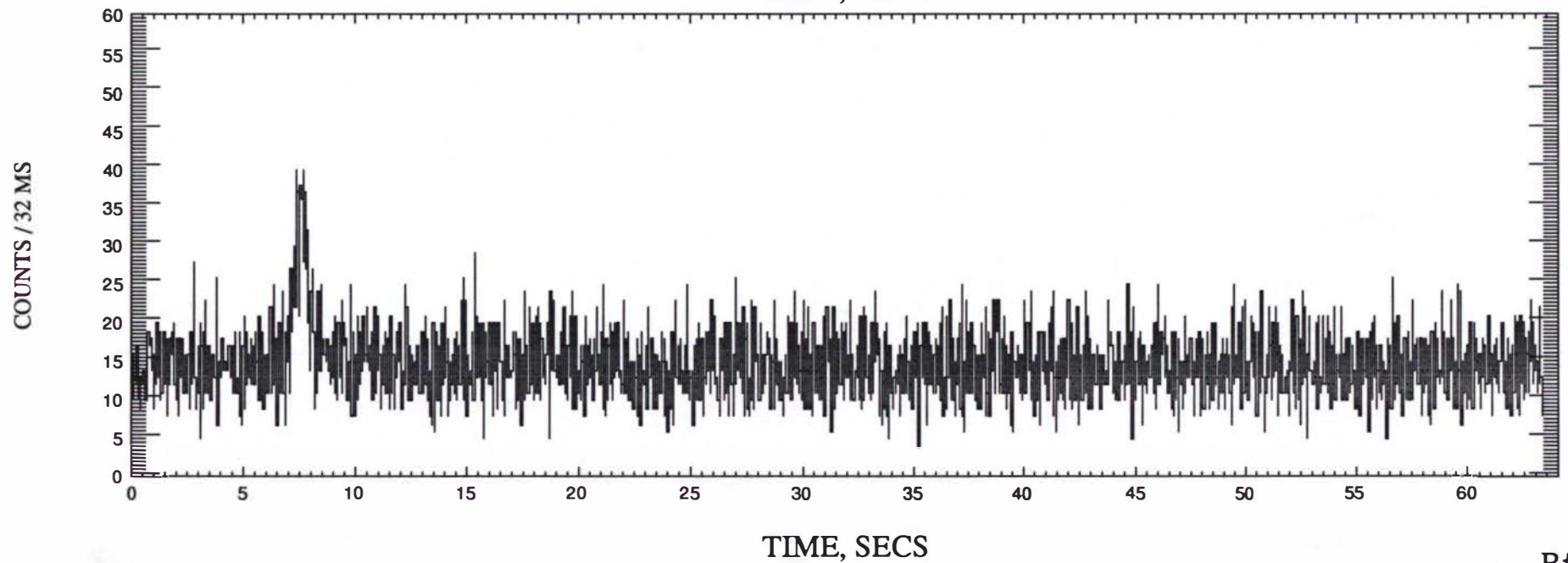
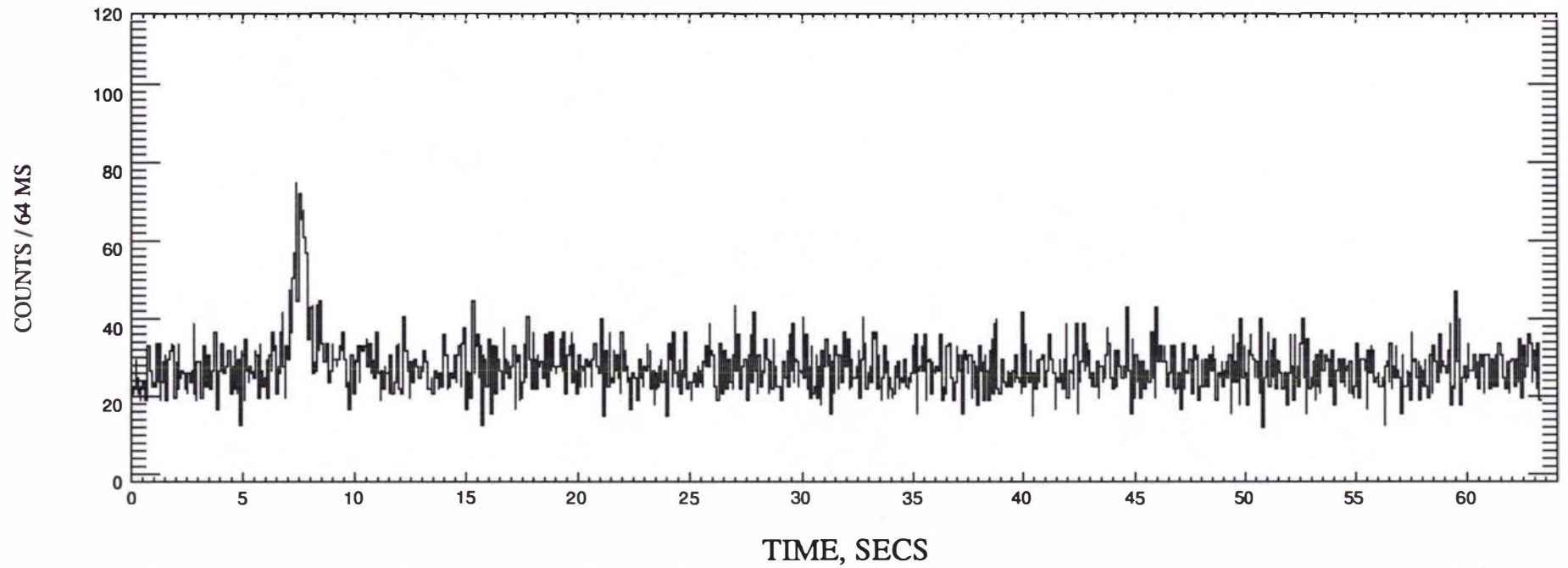


TIME, SECS

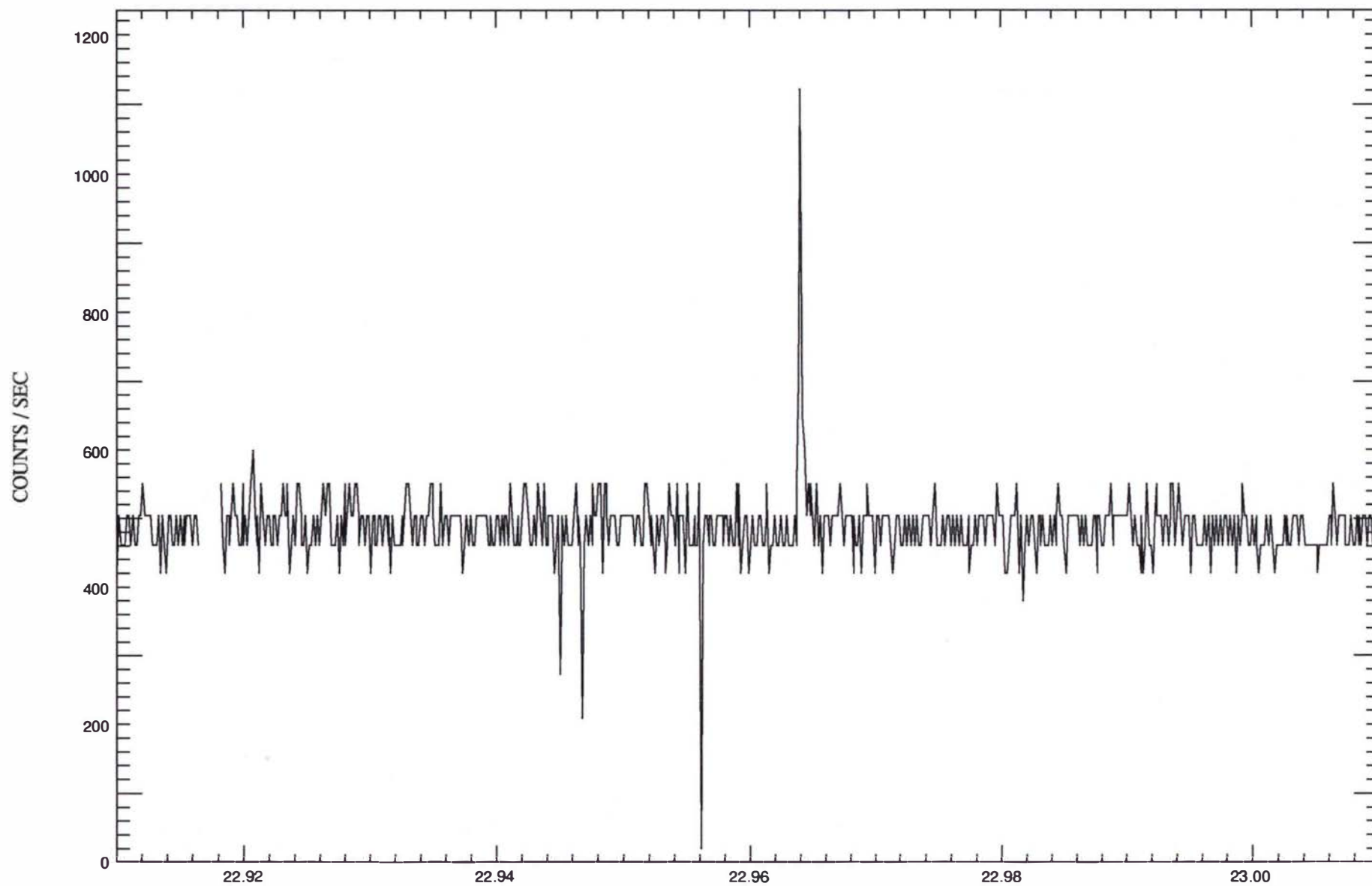
CALIBRATION DATA INCLUDED



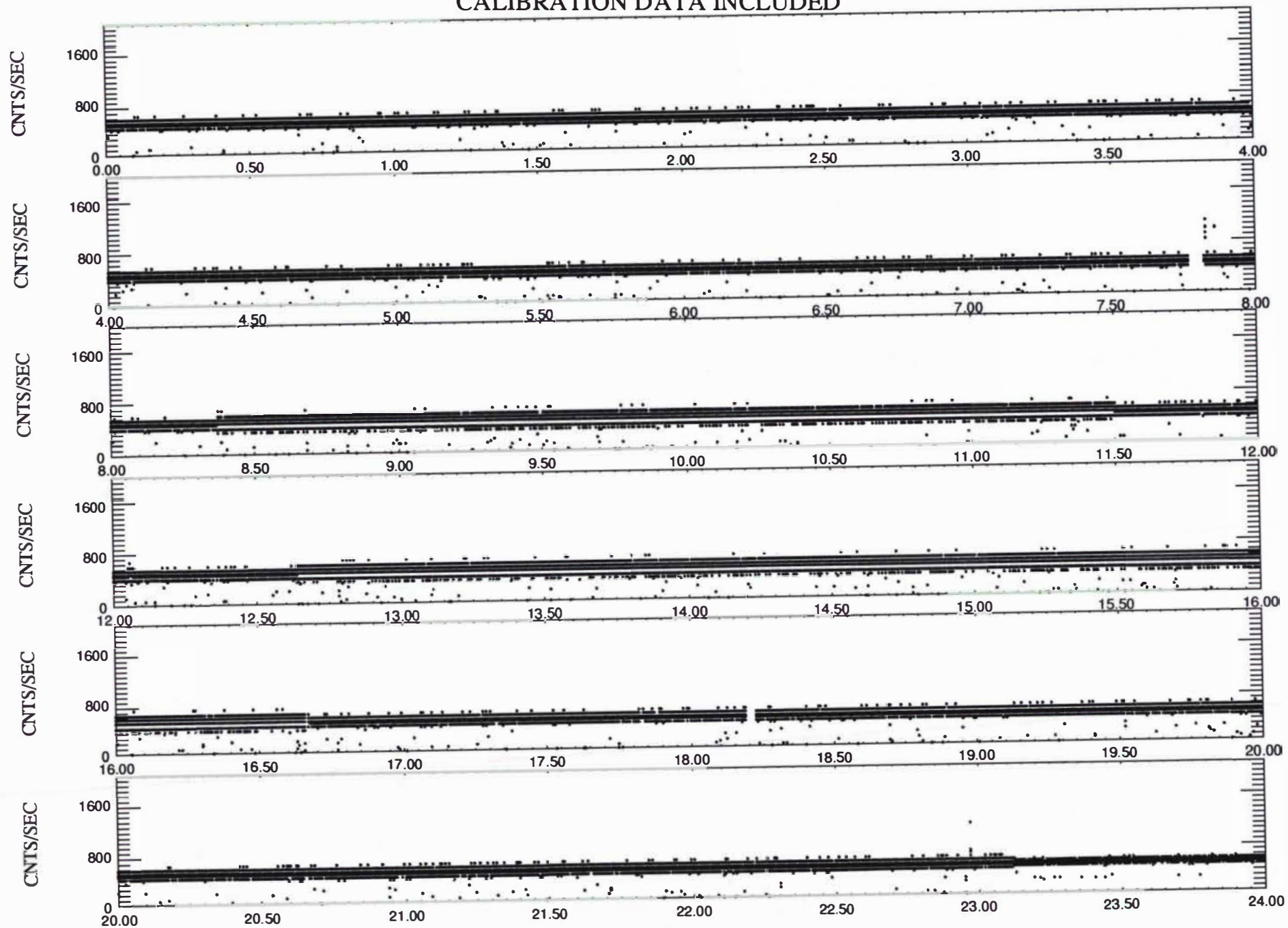
Burst Counter 6 at UT=22.964128044976 h=82670.861 s 22:57:50.861



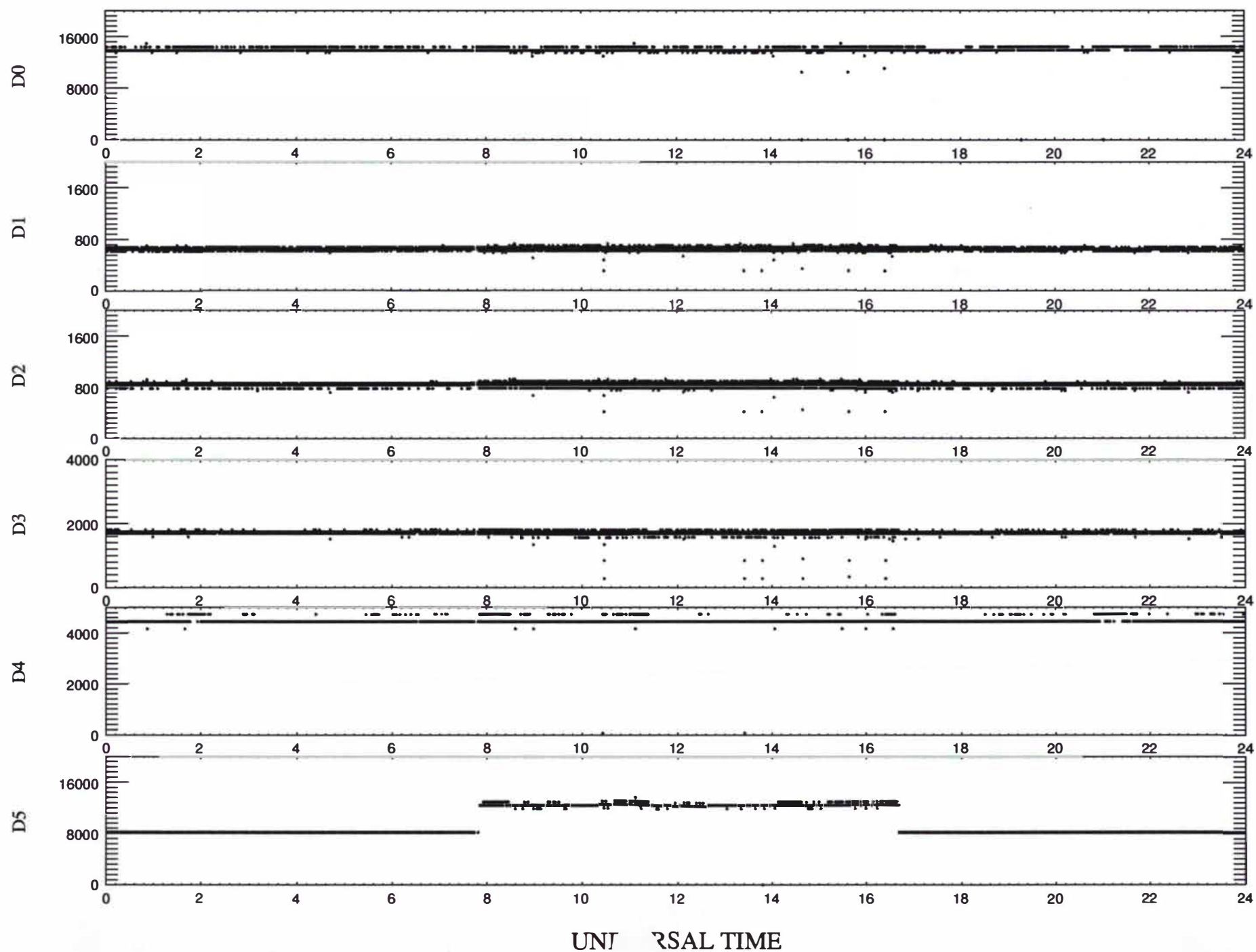
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNJ RSAL TIME



From DEAL@fender.msfc.nasa.gov Tue Aug 6 11:11 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 6 Aug 1996 13:11:41 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5564

BATSEARCH PROGRAM

20

BATSE BURST # 5564
EVENT OF 1996 AUG 5 DAY OF YEAR=218
EVENT CROSSING TIME AT BATSE : 77347. S. OR 21:29:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 186.000 76.000
BATSE PEAK COUNTING RATE: 22500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 8/ 96 IS:
RA= 160.783 DEC= 40.552 DIST= 5.008 AU
BATSE-ULYSSES DISTANCE = 749167609. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.86 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1991.98 SECS.
CROSSING TIME AT ULYSSES IS 75355. S. OR 20:55:55 +/- 281.72 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 8/ 96 IS:
RA= 97.485 DEC= 23.786 DIST= 2.230 AU
MARS-BATSE DISTANCE = 333560032. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -441.80 SECS.
CROSSING TIME AT MARS IS 76905. S. OR 21:21:45 +/- 170.58 SECONDS

BATSE BURST TRIGGER

NO.: 5564

TIME: TJD=0300 SECONDS=77347

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=72.1 AZIMUTH=99.1 ERROR=4.1 DEGREES

COMMENTS:

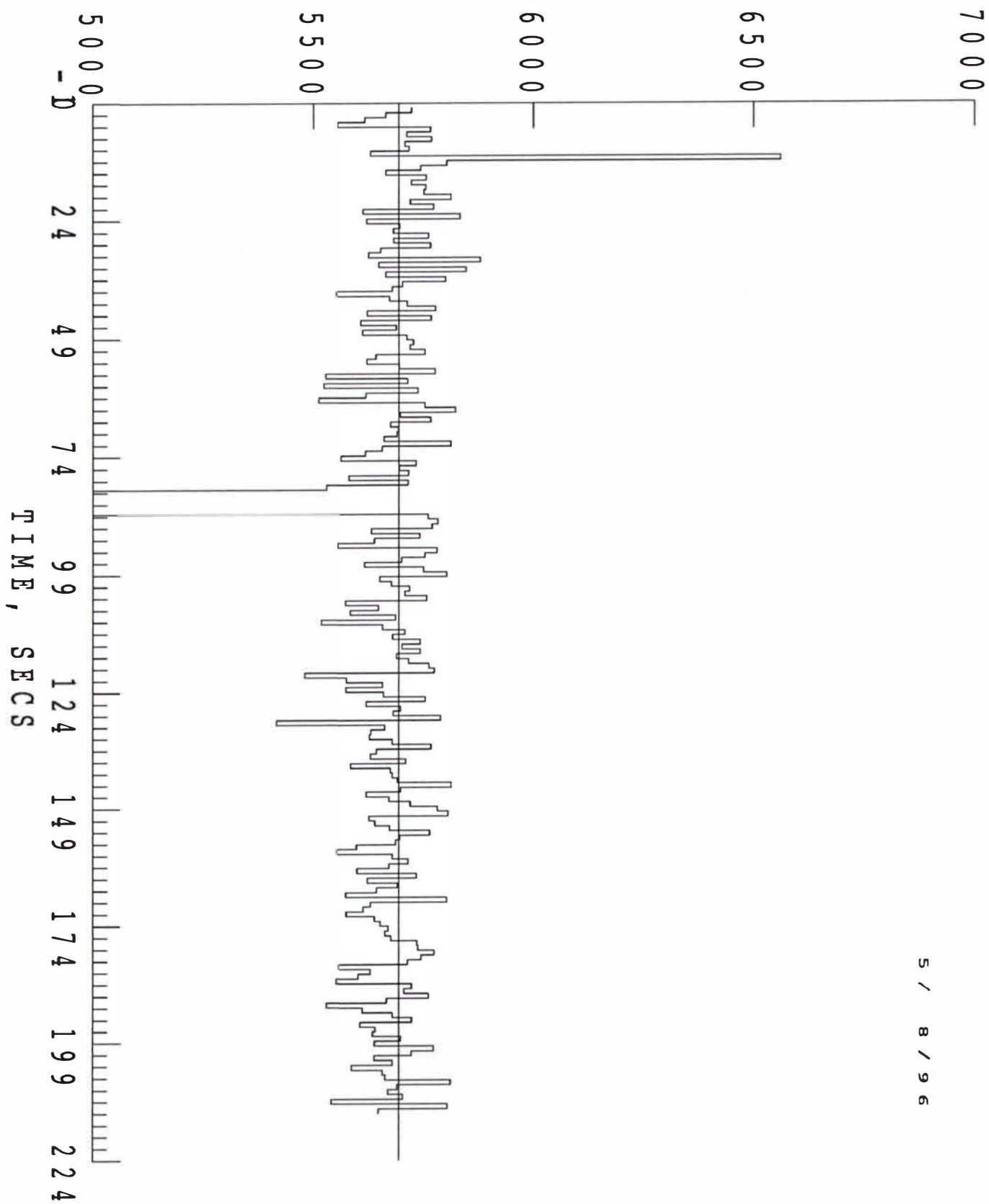
SHORT GRB LASTING ~ 0.3 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5564	960805	10300	77347	22500	186	+76	.3

BACODINE 5564 05/08/96 77336.265

25 - 100 keV

COUNTS/1.024 S



BATSE #

5564

7 / 8 / 96

ULYSSES RT

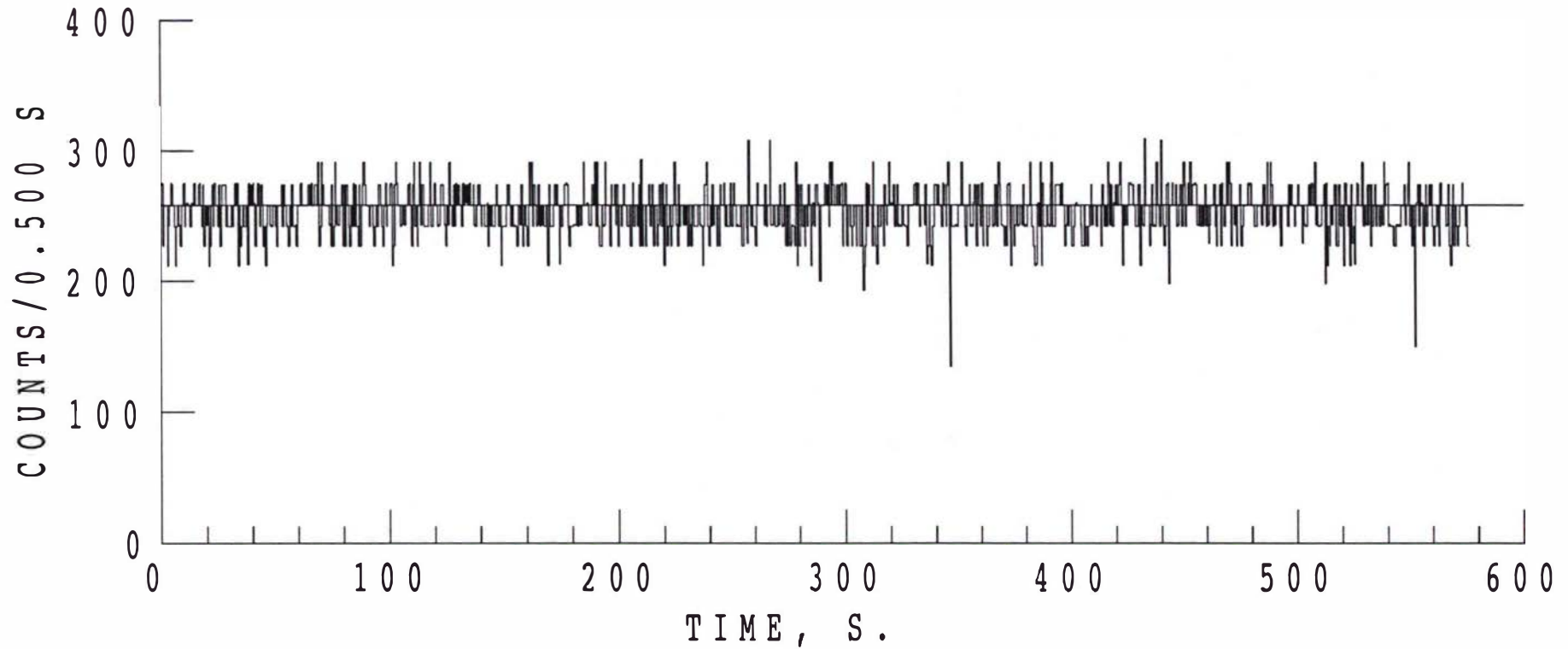
5 / 8 / 96 75060.148 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Sep 30 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

- ☐ Was CHECKMO run to eliminate data gaps?
- ☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data...")
- ☐ Was Mars-blocking used?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)
- ☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).
- ☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

Added SAX Jan 5 '10

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

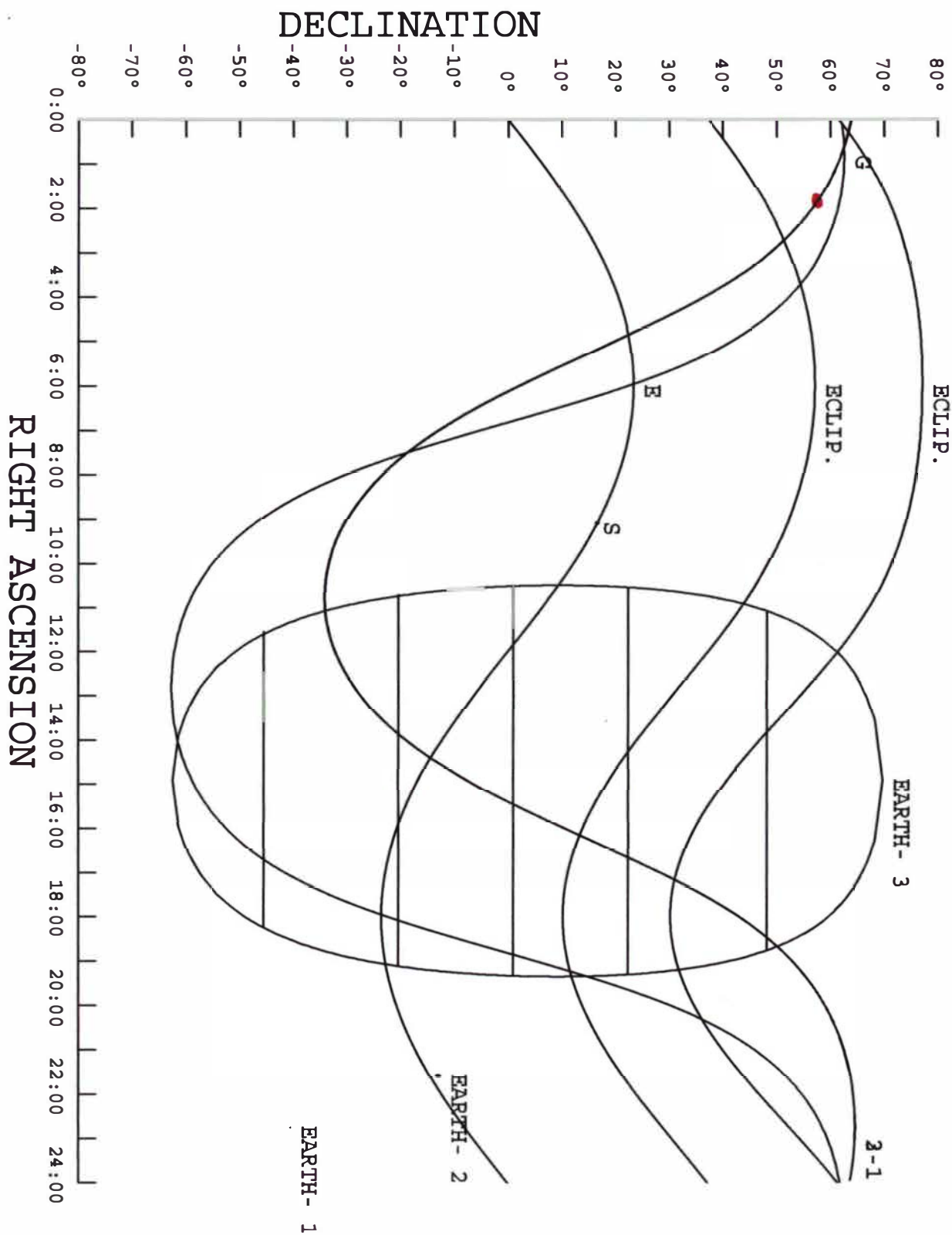
1 ULYSSES

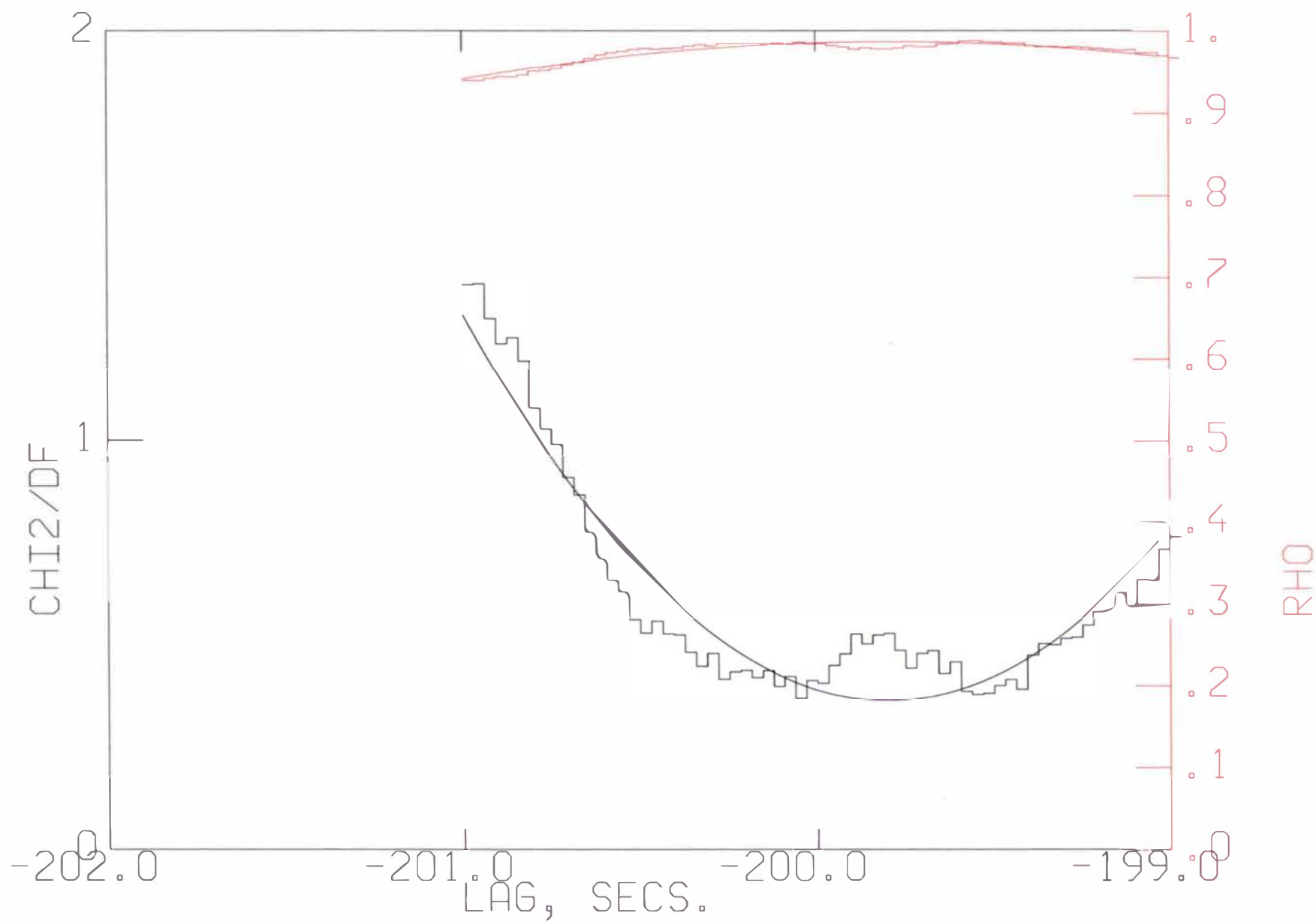
2 KONUS2

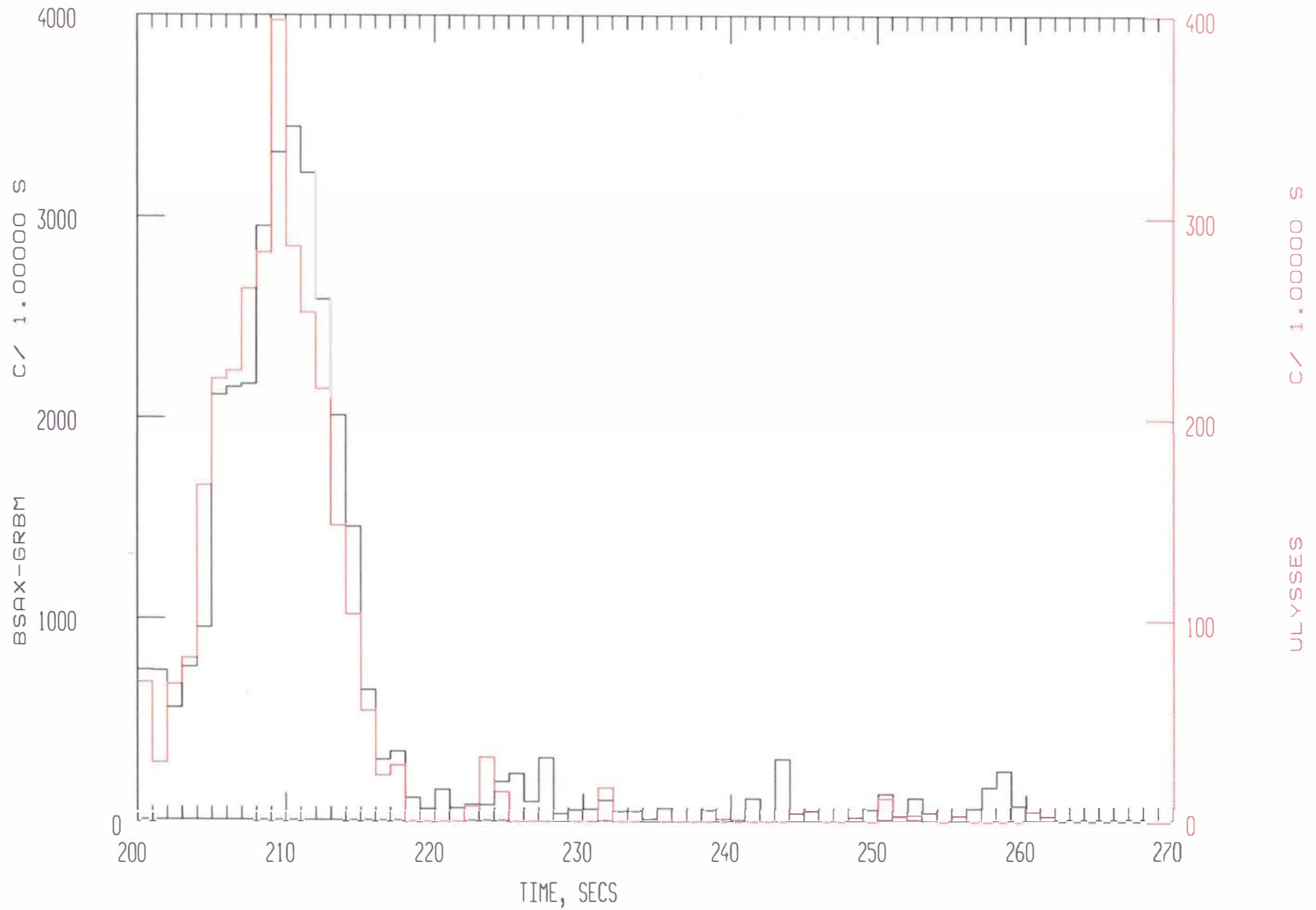
3 SAX

EVENT OF AUG 5, 1996 21:45

5 / 1/10





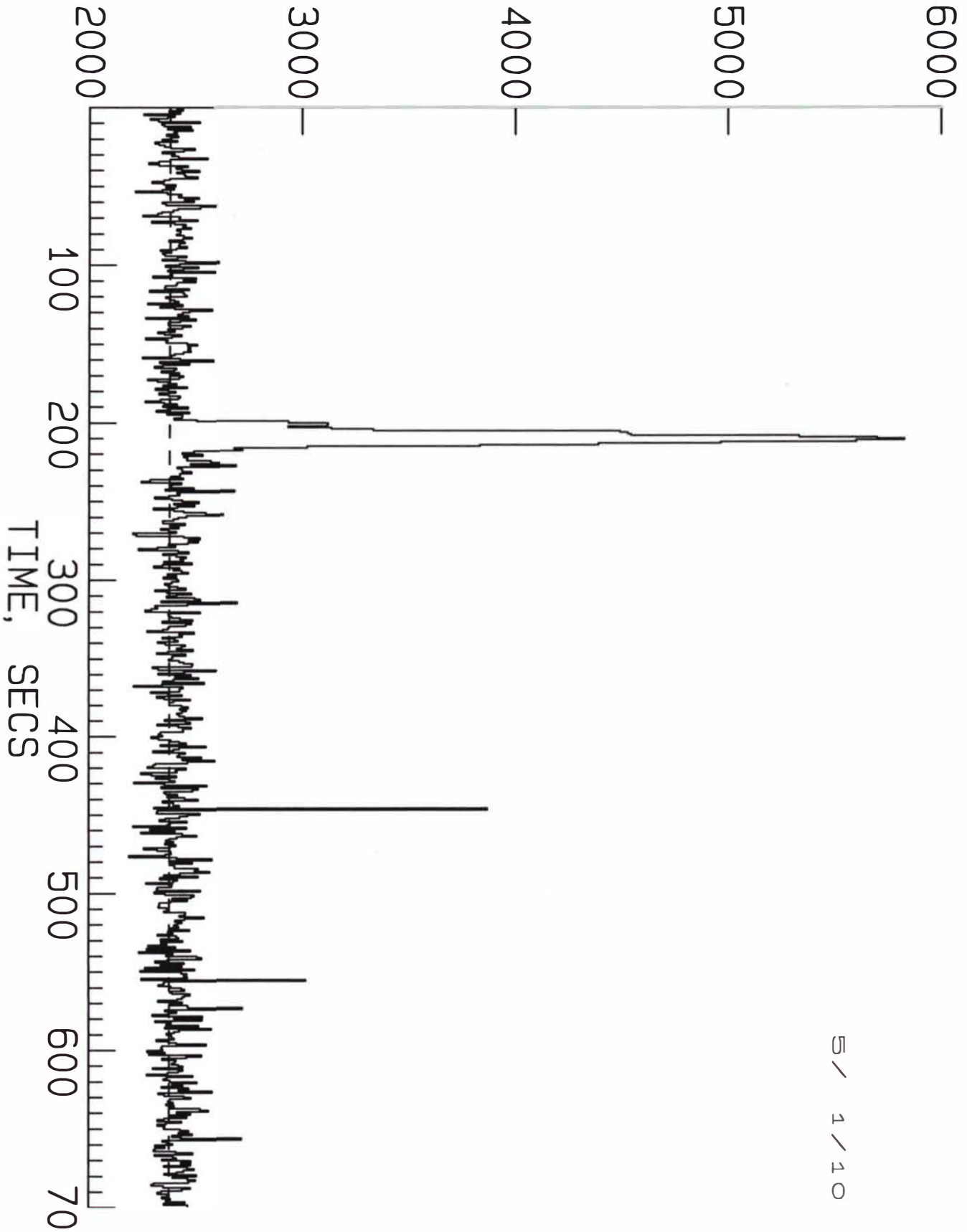


SAX GRBM

05/08/96 78757.557

40- 700 keV

COUNTS/1.000 S



KONUS2

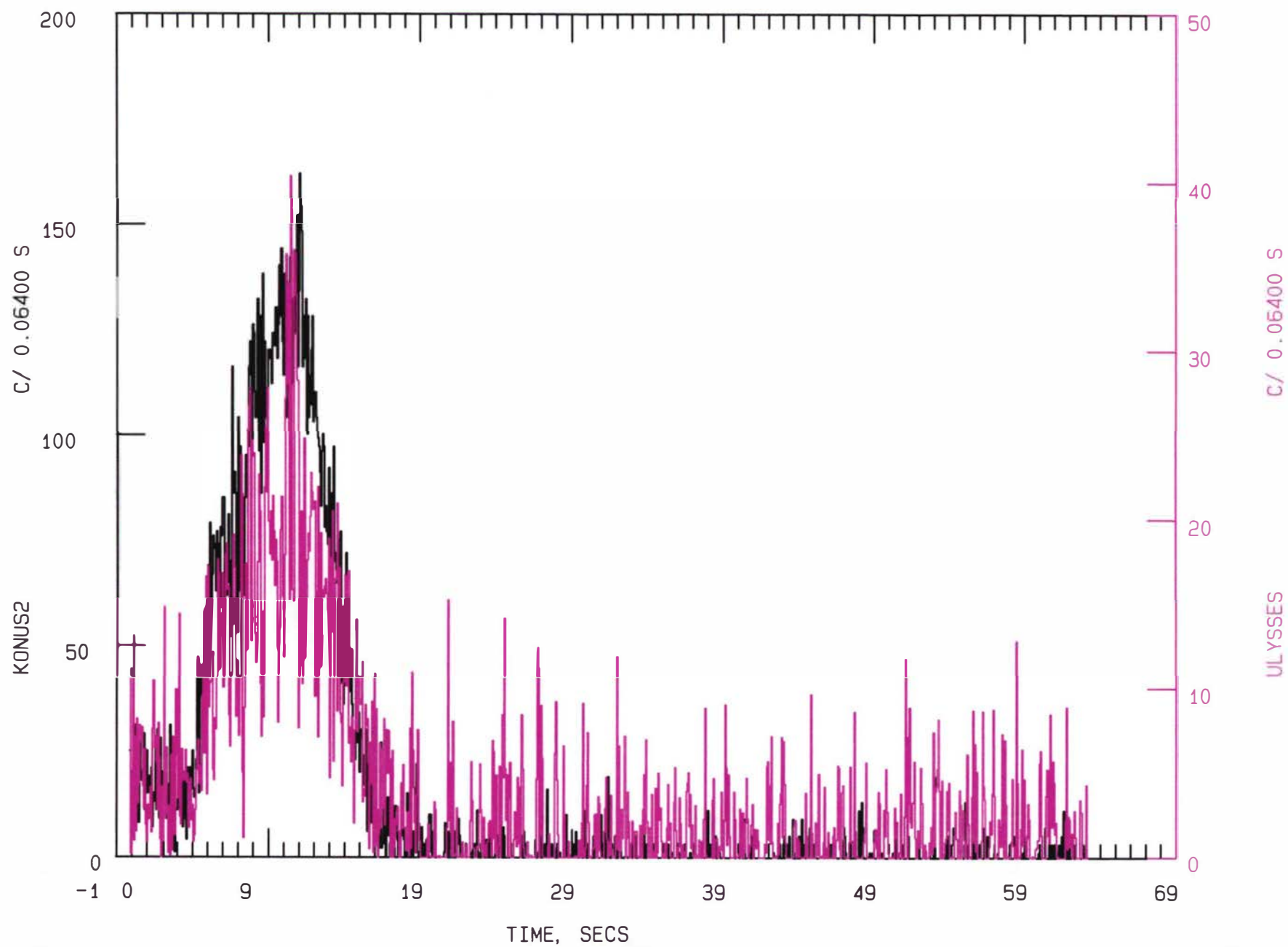
-ULYSSES

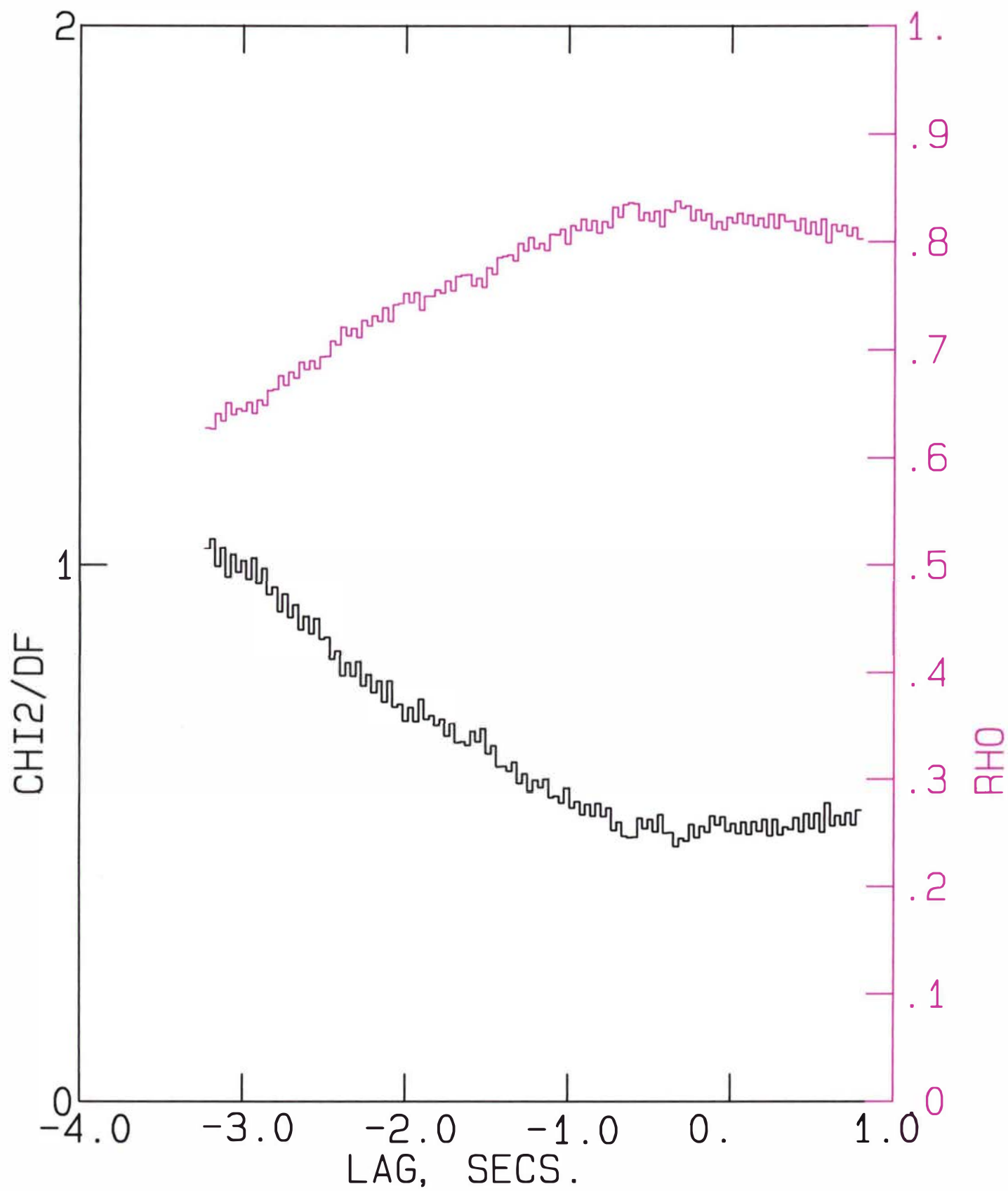
CORRELATION

05/08/96

78957.888

30/ 9/ 9





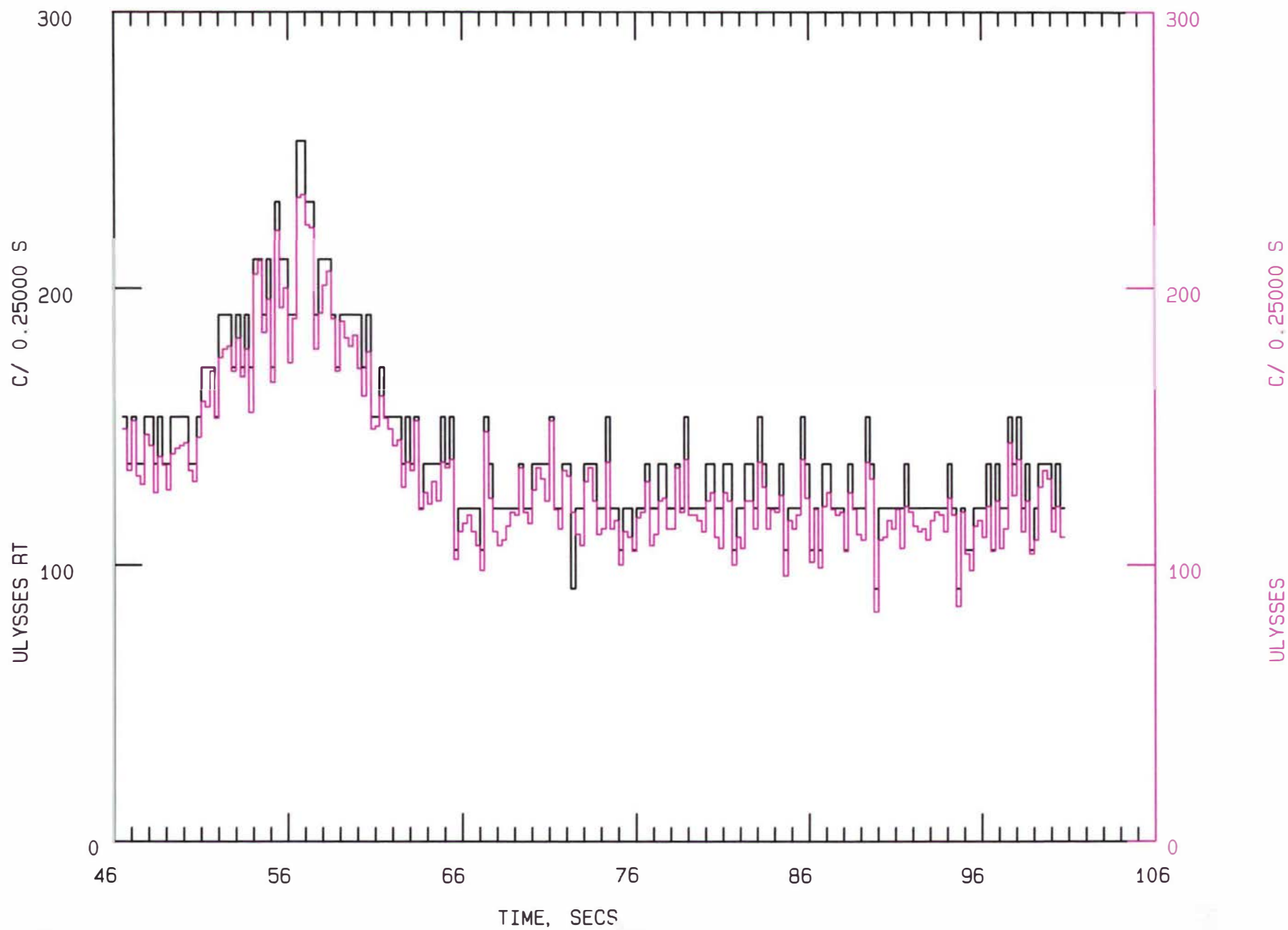
ULYSSES RT-ULYSSES

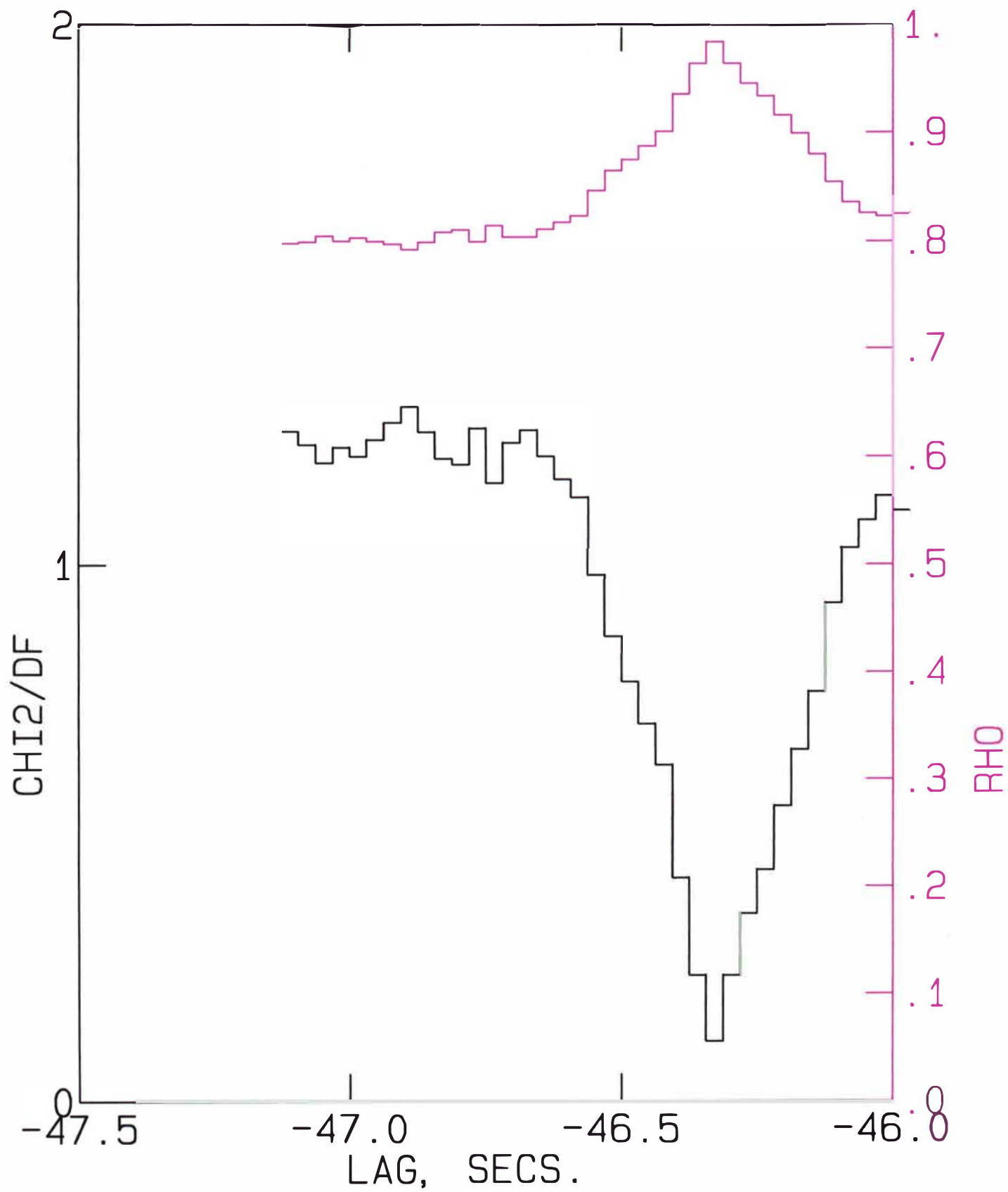
CORRELATION

5/ 8/96

78248.155

30/ 9/ 9



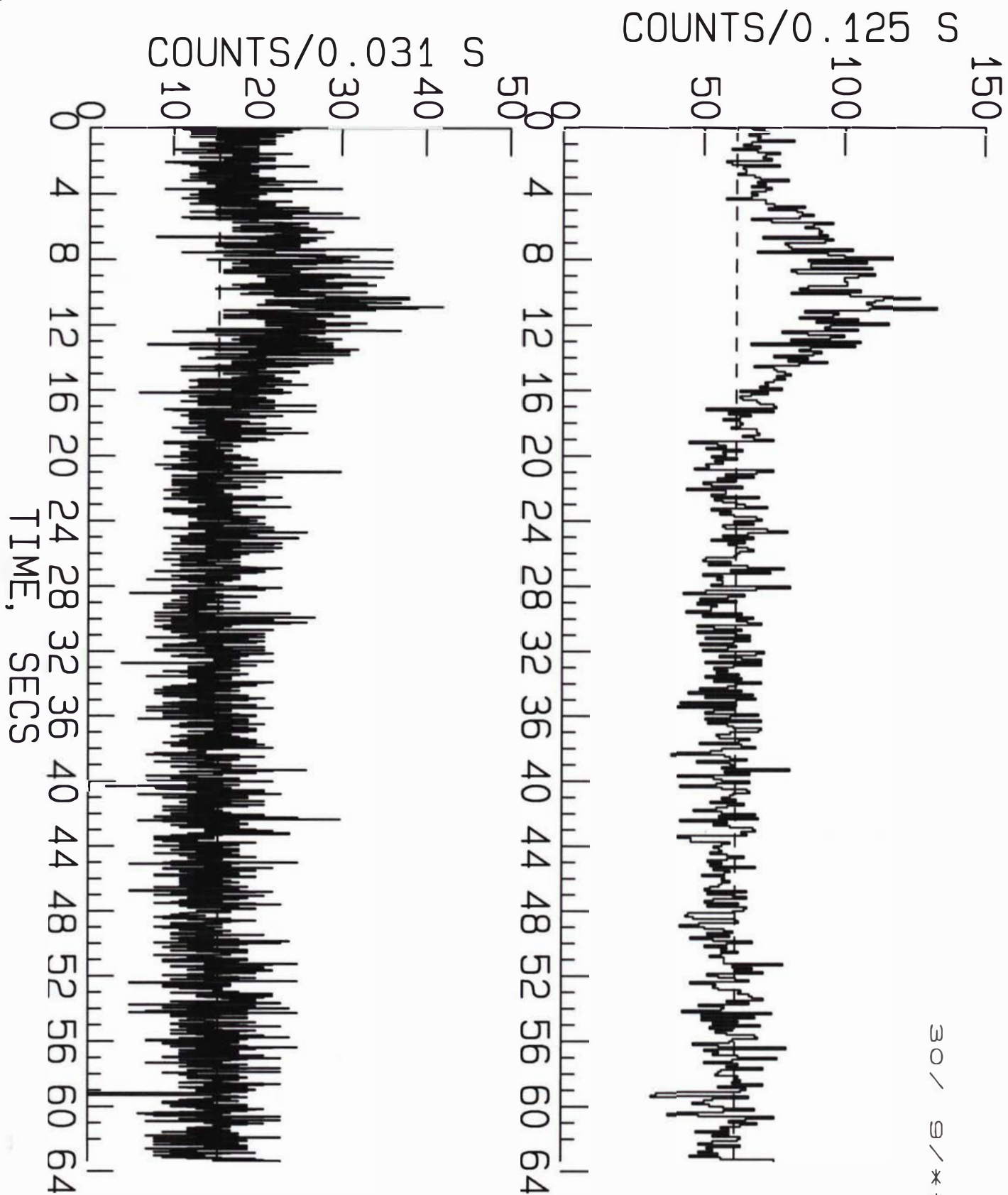


ULYSSES

05/08/96

Ttrig=78301.905

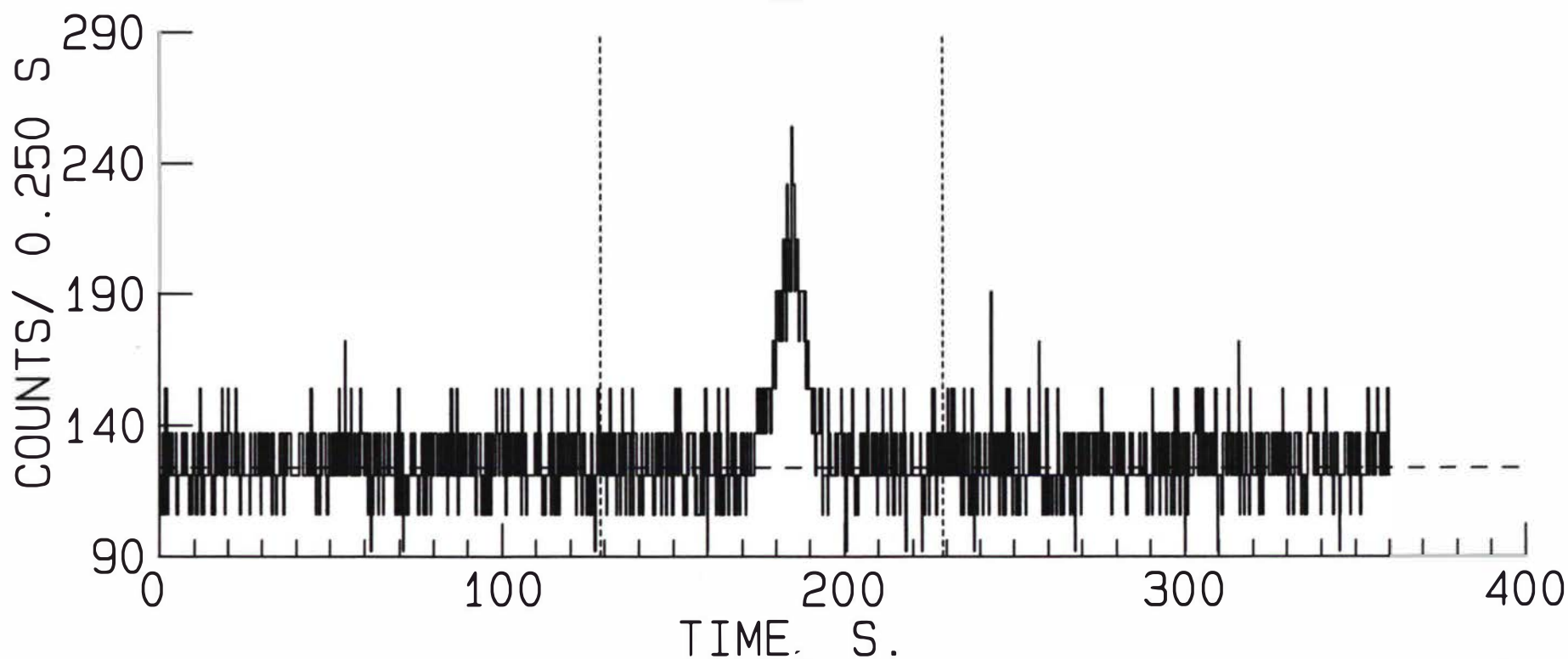
21- 146 keV



ULYSSES RT
5/ 8/96 78120.195 s
21- 146 keV

30 / 9 / 9

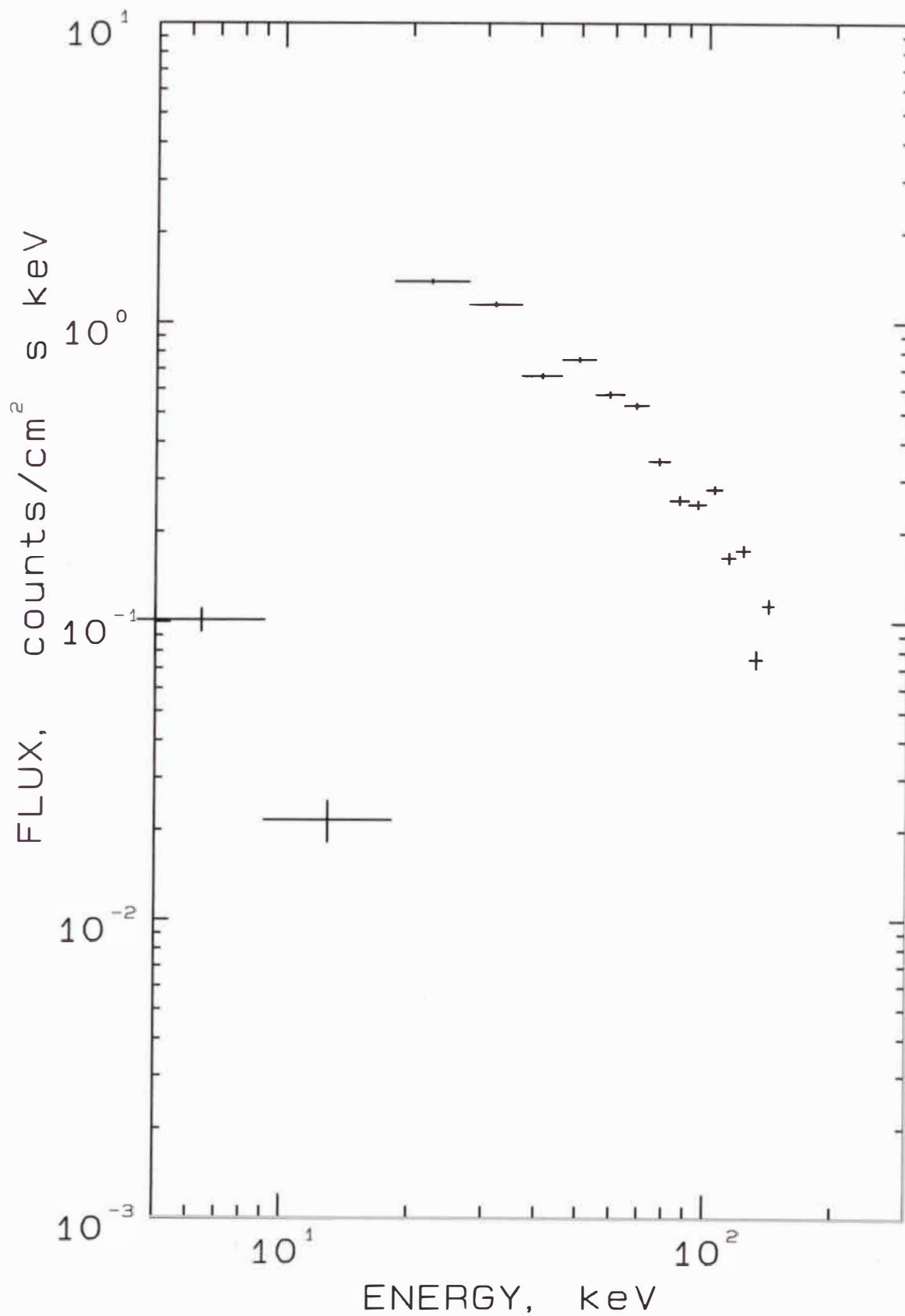
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES 05/08/96 78301.933

25/11/97

SPECTRUM INTEGRATED OVER 30.5 SECONDS, INTERVALS 2 TO 25



ULYSSES 05/08/96 78301.933 BURST SPECTRAL COUNT RATES

4- 18 keV

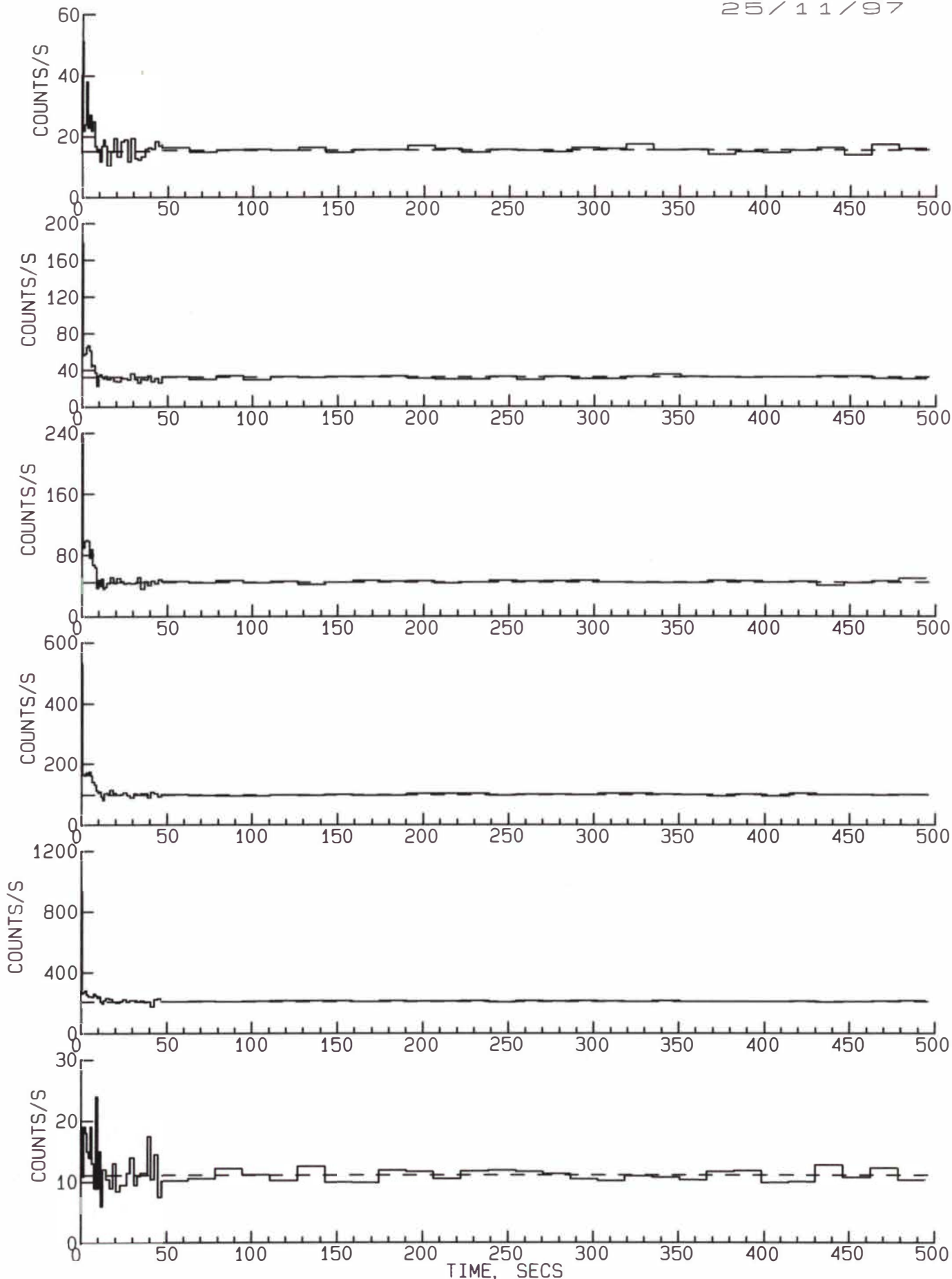
18- 45 keV

45- 72 keV

72-100 keV

100-127 keV

127-145 keV



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: dmosp 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

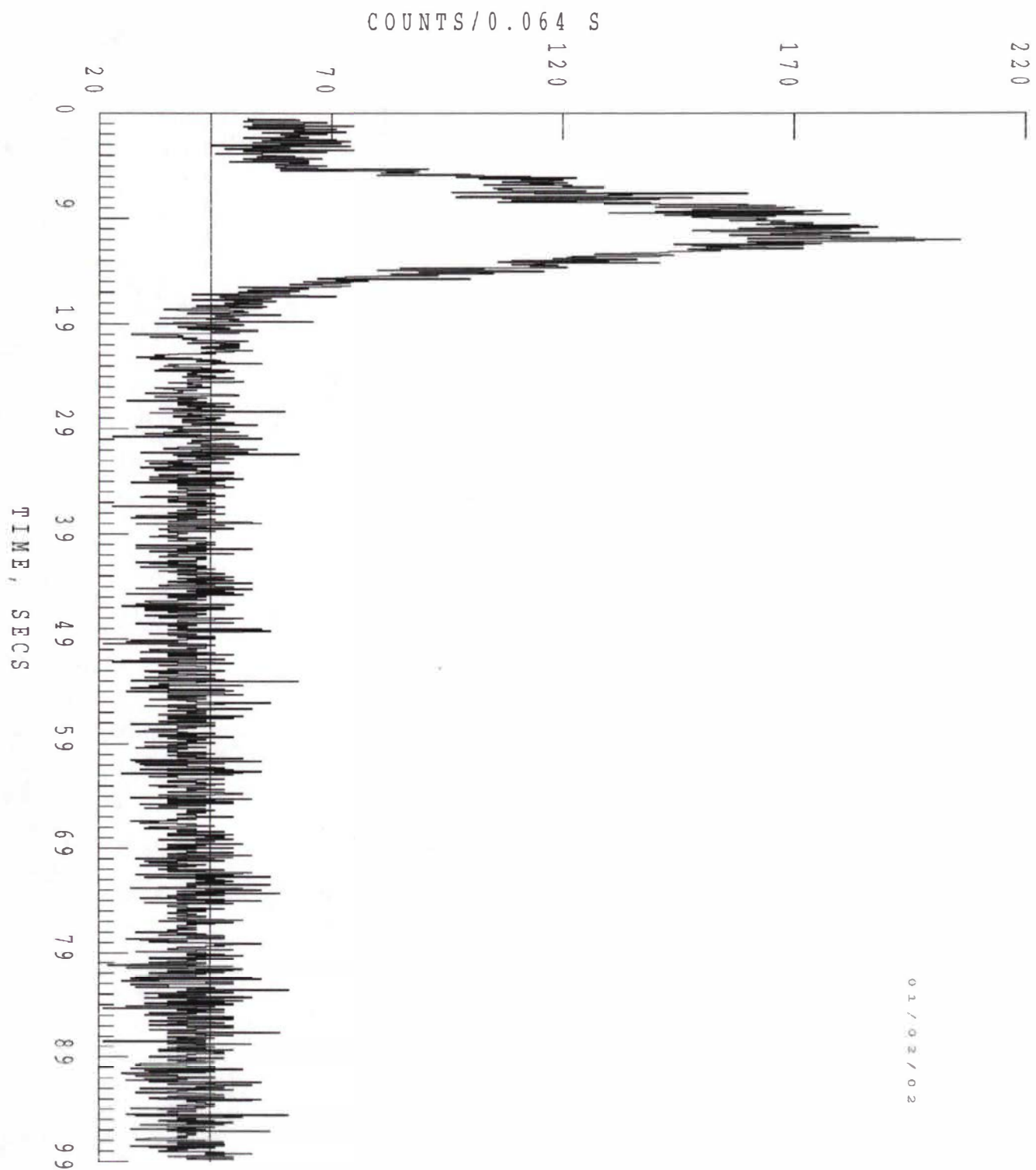
KONUS2

05/08/96

78957.888

50 - 200 keV

21:55:57



01/02/02

From BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Aug 12 12:37 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 12 Aug 1996 15:36:27 -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 GRB960805 was detected by Konus

Konus triggered at 21:55:57.888 in the detector facing to the ecliptic north. The event was moderately intense, consisting of a single broad peak lasting 18s from the trigger, with a maximum 11s after the trigger.

Date: Thu, 8 Aug 1996 09:49:22 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608081649.JAA05526@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: GRB960805
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

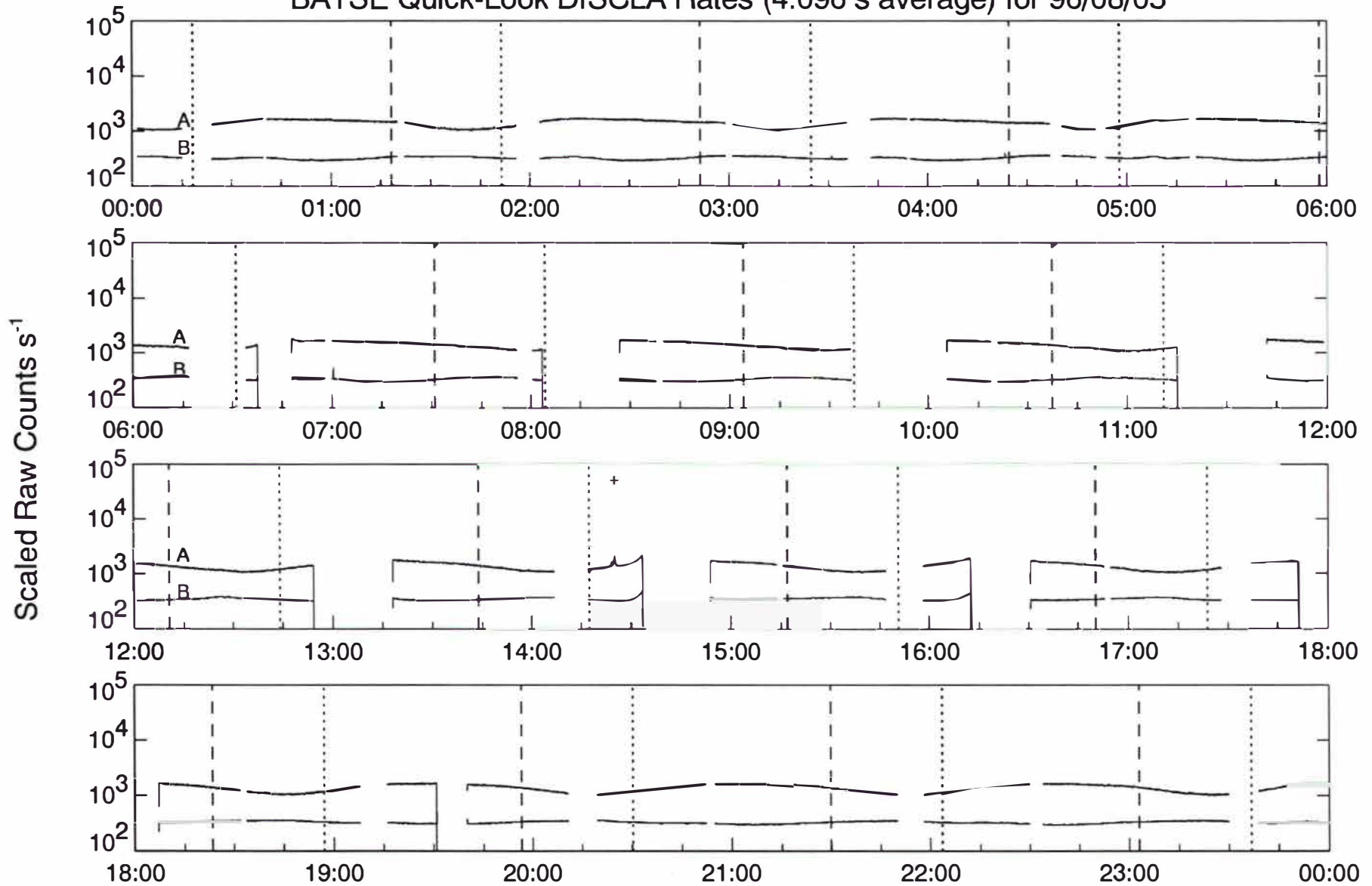
Ulysses triggered on a moderately intense, 10 s long event August 5 1996 around 21:45 UT at Ulysses.

The spacecraft was about 2500 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 96/08/05



Current Time: 96/08/07, 1004 EDT

A: Channel 0 Most Sunward LAD

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

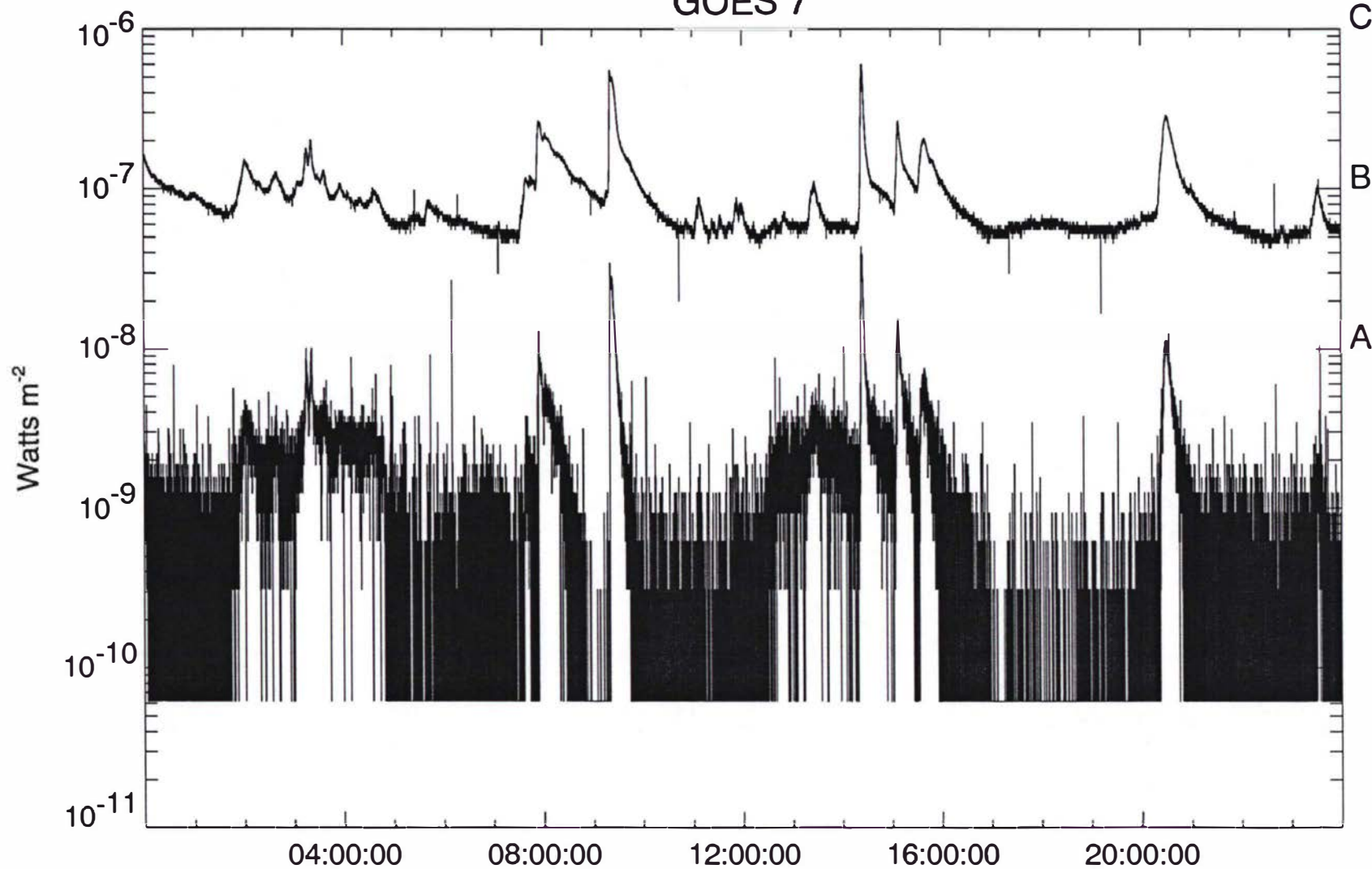
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 7

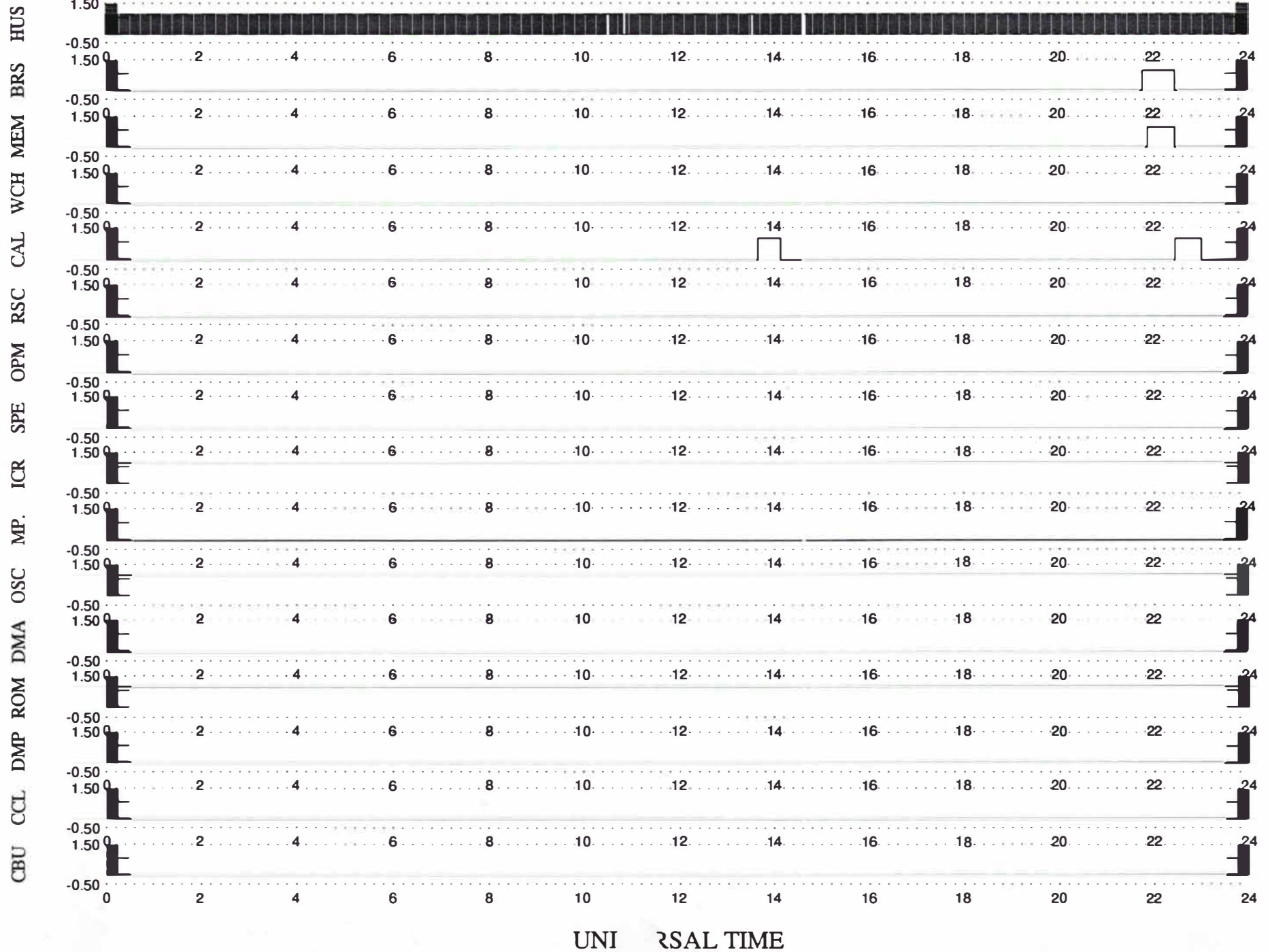


Data Start: 96/08/05, 0000:00

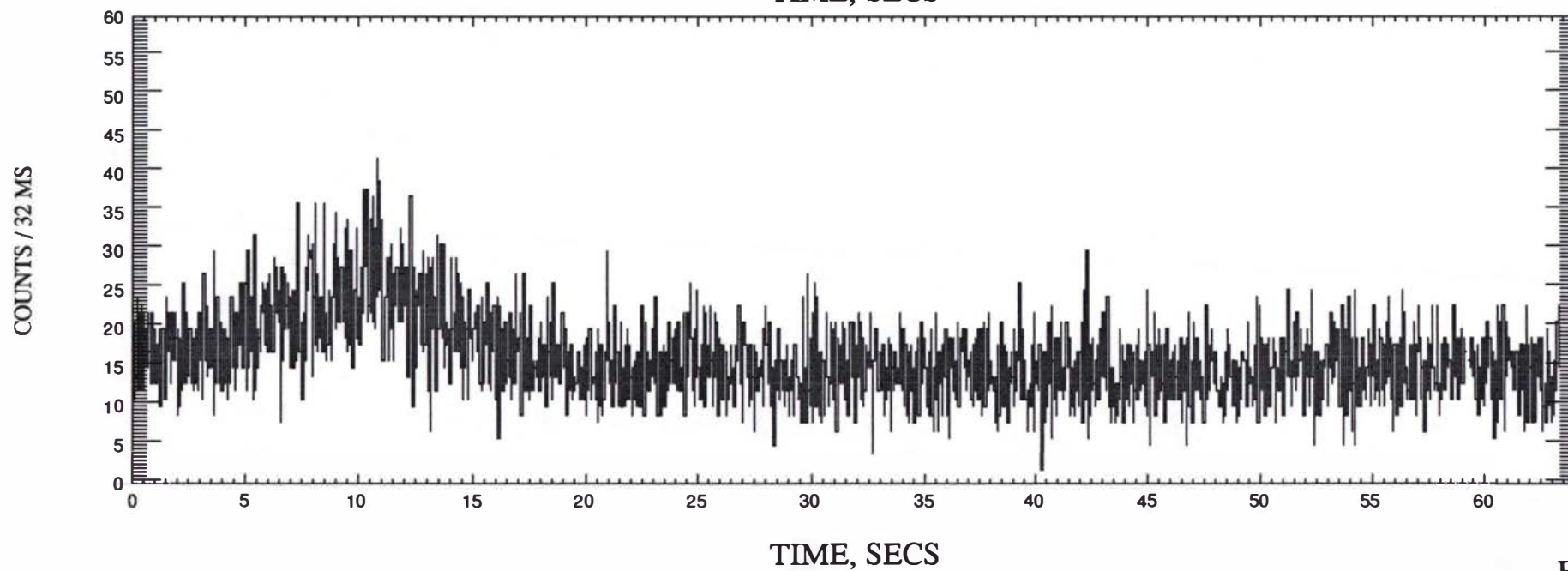
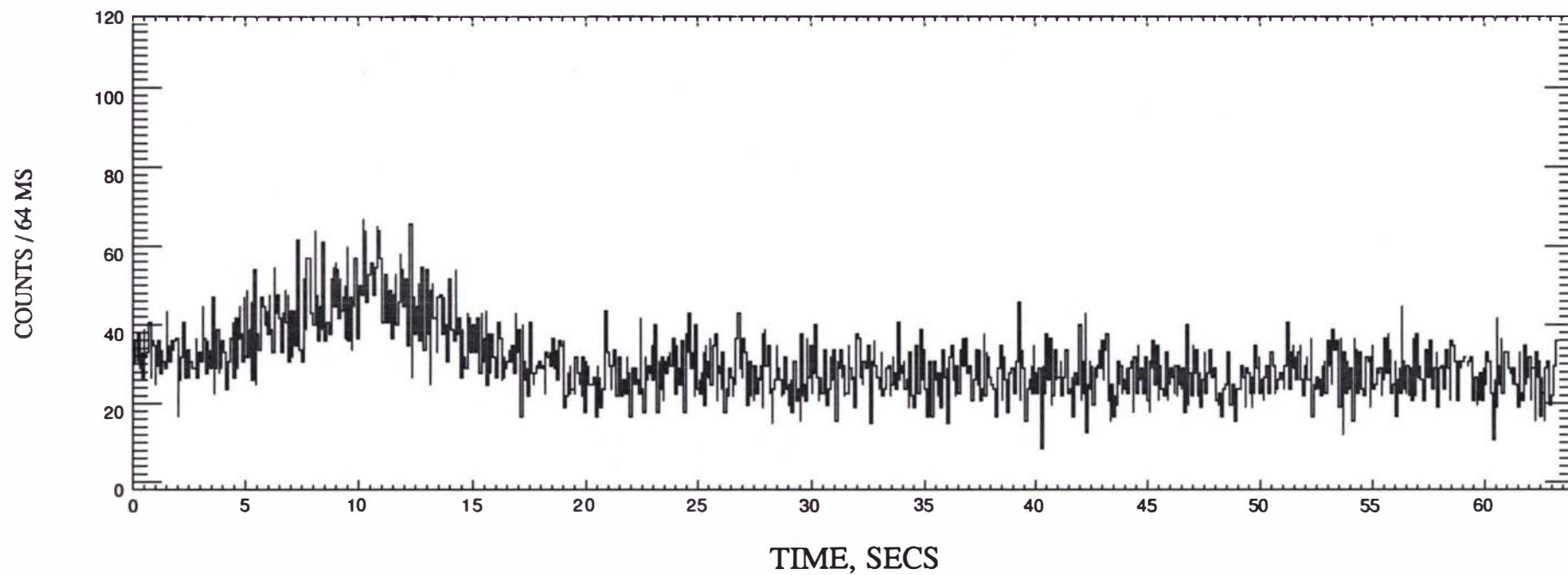
Plot created: 96/08/07, 1003

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

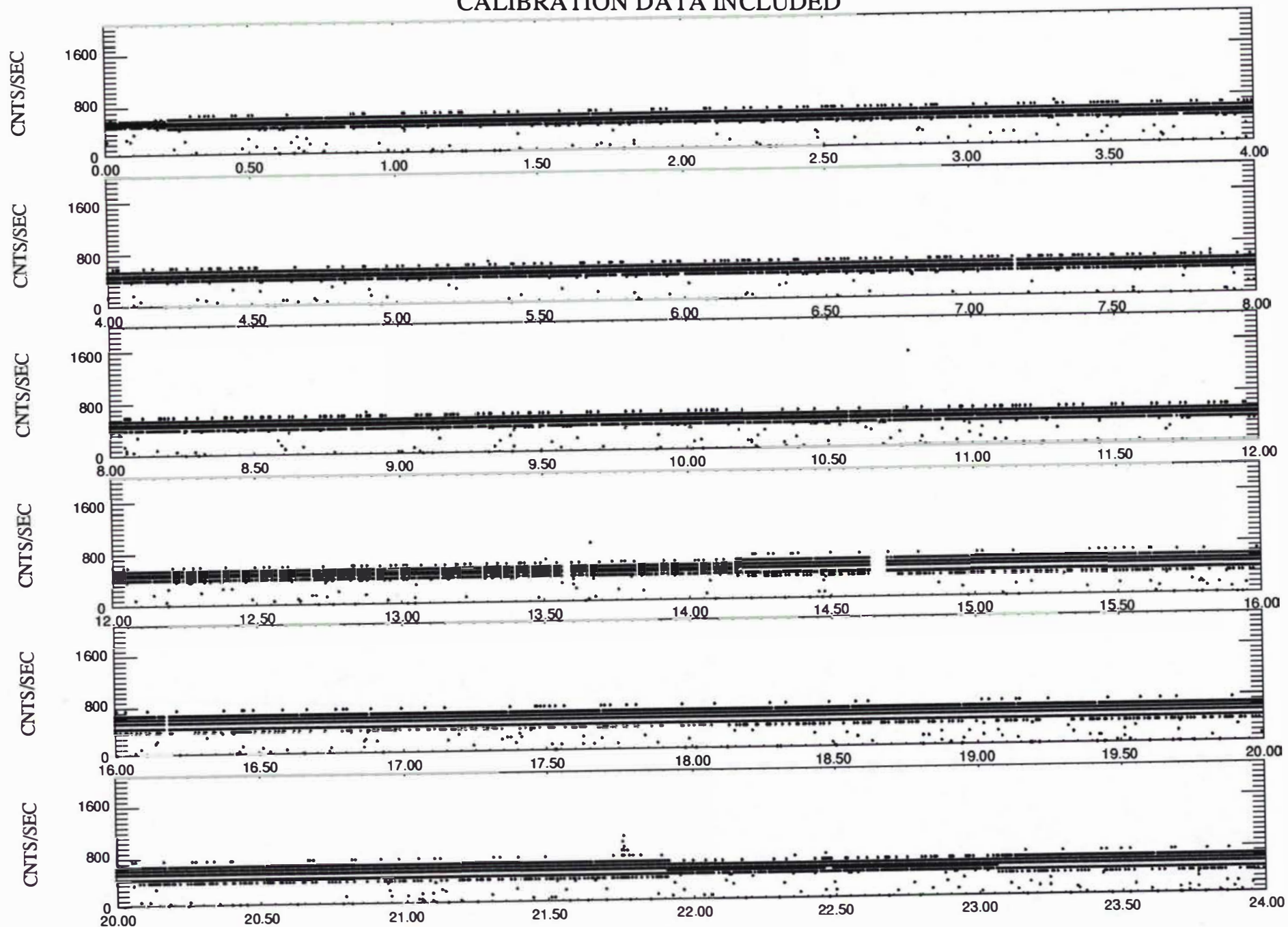
BURST NUMBER 7



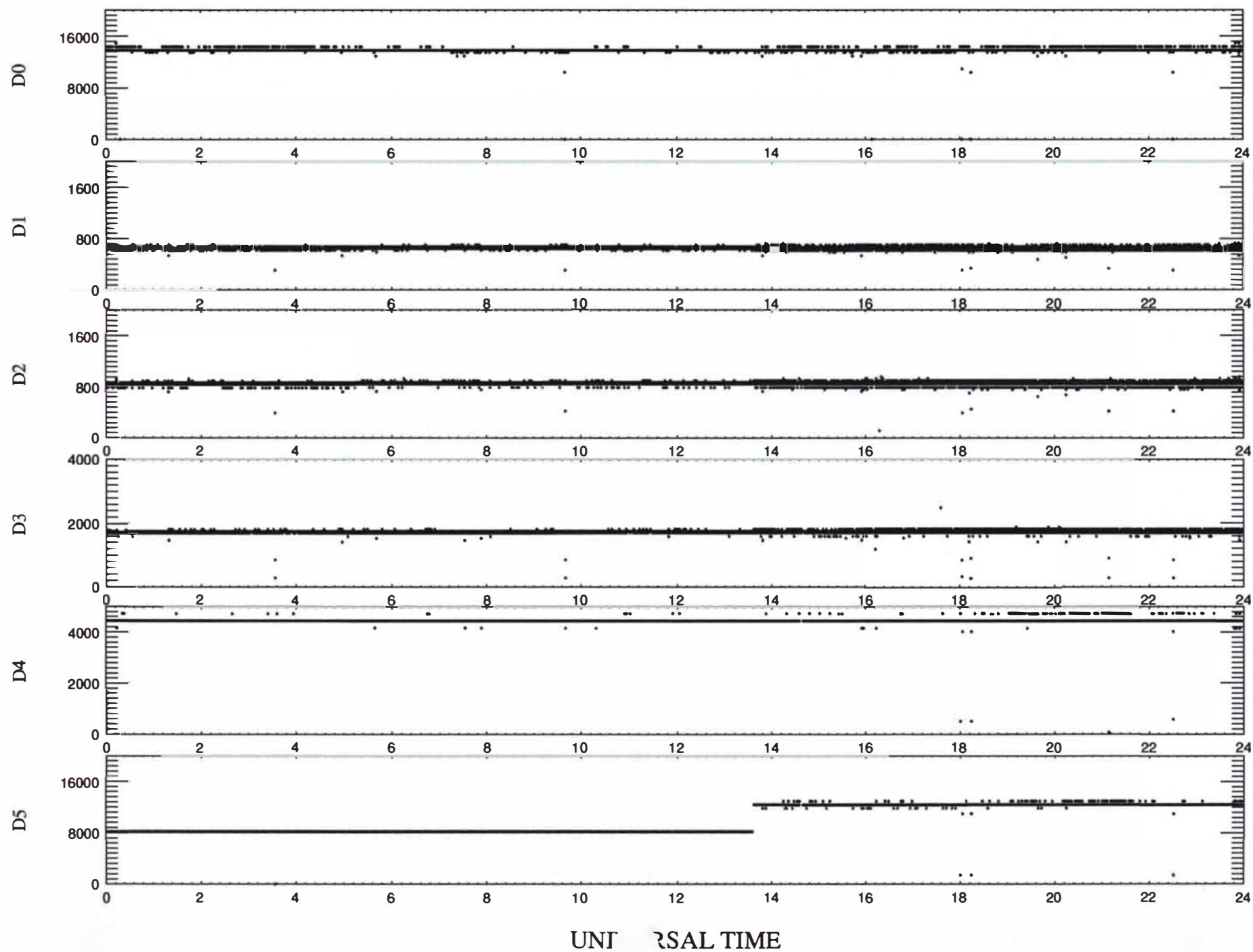
Burst Counter 7 at UT=21.750536918640 h=78301.933 s 21:45:01.933



CALIBRATION DATA INCLUDED



UNJ RSAL TIME



From HAGEDON@fender.msfc.nasa.gov Wed Aug 7 09:33 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Wed, 7 Aug 1996 11:33:33 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5565

BATSEARCH PROGRAM

NO

BATSE BURST # 5565
EVENT OF 1996 AUG 6 DAY OF YEAR=219
EVENT CROSSING TIME AT BATSE : 58713. S. OR 16:18:33.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 320.000 1.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 8/ 96 IS:
RA= 160.944 DEC= 40.425 DIST= 5.014 AU
BATSE-ULYSSES DISTANCE = 750054158. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 45.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1750.18 SECS.
CROSSING TIME AT ULYSSES IS 60463. S. OR 16:47:43 +/- 386.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 8/ 96 IS:
RA= 98.210 DEC= 23.762 DIST= 2.226 AU
MARS-BATSE DISTANCE = 333032128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 750.13 SECS.
CROSSING TIME AT MARS IS 59463. S. OR 16:31:03 +/- 153.65 SECONDS

BATSE BURST TRIGGER

NO.: 5565

TIME: TJD=0301 SECONDS=58713

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.2 AZIMUTH=187.1 ERROR=5.8 DEGREES

COMMENTS:

BURST. WEAK SINGLE PULSE WITH SUBSTRUCTURE. DUR.~4 SEC.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5565	960806	10301	58713	5000	320	+01	4

BATSE #

5565

7 / 8 / 96

ULYSSES RT

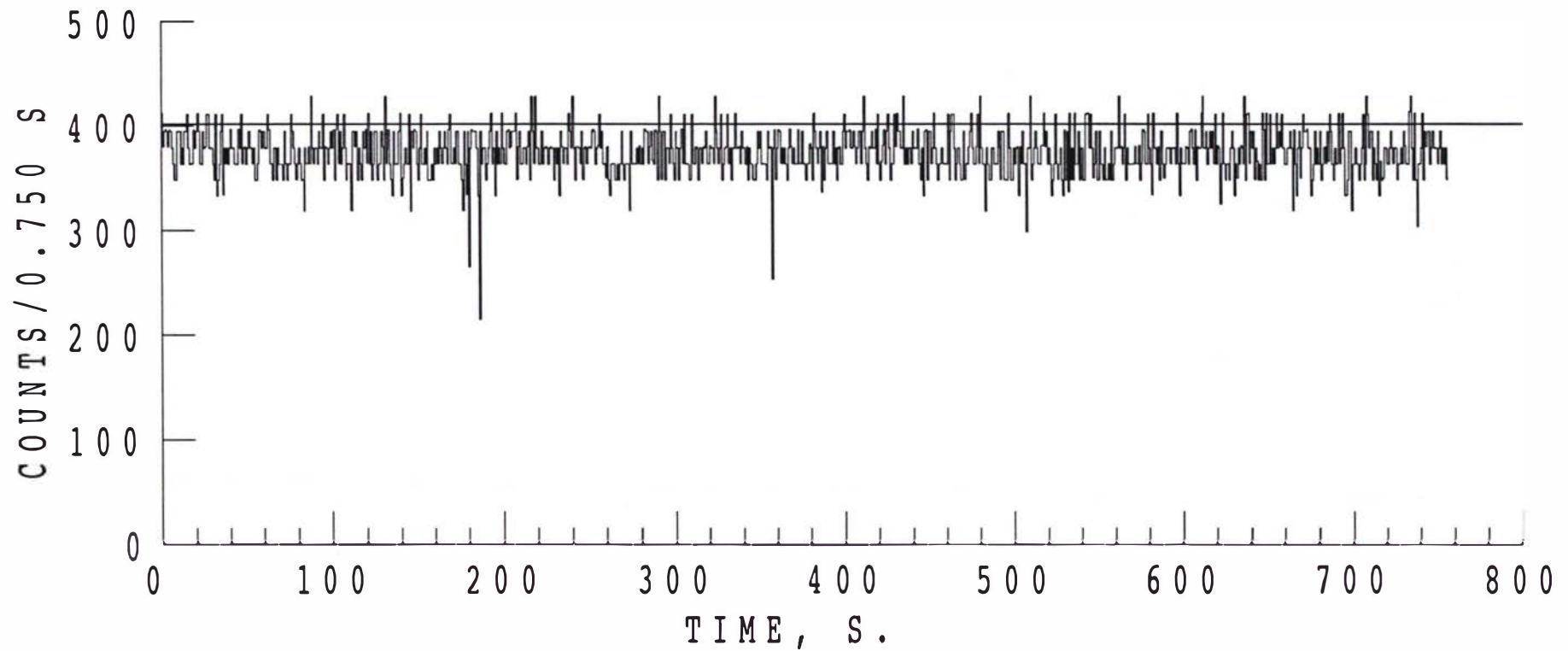
6 / 8 / 96 60084.031 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N=10 M=2

>4.0 SIGMA FLUCTUATIONS



From HAGEDON@fender.msfc.nasa.gov Wed Aug 7 09:35 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Wed, 7 Aug 1996 11:34:52 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5566

BATSEARCH PROGRAM

BATSE BURST # 5566
EVENT OF 1996 AUG 6 DAY OF YEAR=219
EVENT CROSSING TIME AT BATSE : 80909. S. OR 22:28:29.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 183.000 -2.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 8/ 96 IS:
RA= 160.997 DEC= 40.383 DIST= 5.016 AU
BATSE-ULYSSES DISTANCE = 750342493. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1709.97 SECS.
CROSSING TIME AT ULYSSES IS 79199. S. OR 21:59:59 +/- 341.34 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 8/ 96 IS:
RA= 98.210 DEC= 23.762 DIST= 2.226 AU
MARS-BATSE DISTANCE = 333032128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -76.65 SECS.
CROSSING TIME AT MARS IS 80832. S. OR 22:27:12 +/- 191.24 SECONDS

BATSE BURST TRIGGER

NO.: 5566

TIME: TJD=0301 SECONDS=80909

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=96.0 AZIMUTH=23.2 ERROR=1.6 DEGREES

COMMENTS:

BURST. WEAK DOUBLE-PEAKED EVENT. DUR.~55 SEC. FIRST PEAK VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5566	960806	10301	80909	3500	183	-02	55

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	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	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

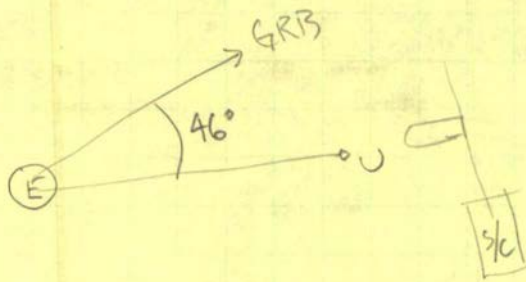
DATE	Konus-W Sensor (UT)	Max counts G1 G2 G3	N(S1)/N(S2) in G2	Duration T<T0 T>T0	Trigger # KW# BATSE/KA
94 11 21	62700.945 S1	1652 1656 300	21	3 50	6 3290
94 11 26	44557.952 S1	860 1430 330	4.2	40 45	8 3298
95 2 8	07824.432 S2	1144 1824 670	0.02	1 60	45 3408
95 2 10	08424.148 S1	1350 3900 700	3.2	0.04 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	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 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



Burst could not have been shadowed by S/C, yet Ulysses
time history has only one peak, while BATSE has 2

Date: Mar 13

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

These must be 2 different bursts. In addition to their different time histories, the U/B ratio is ~ 0.13 for the single Ulysses peak compared to the single BATSE peak

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

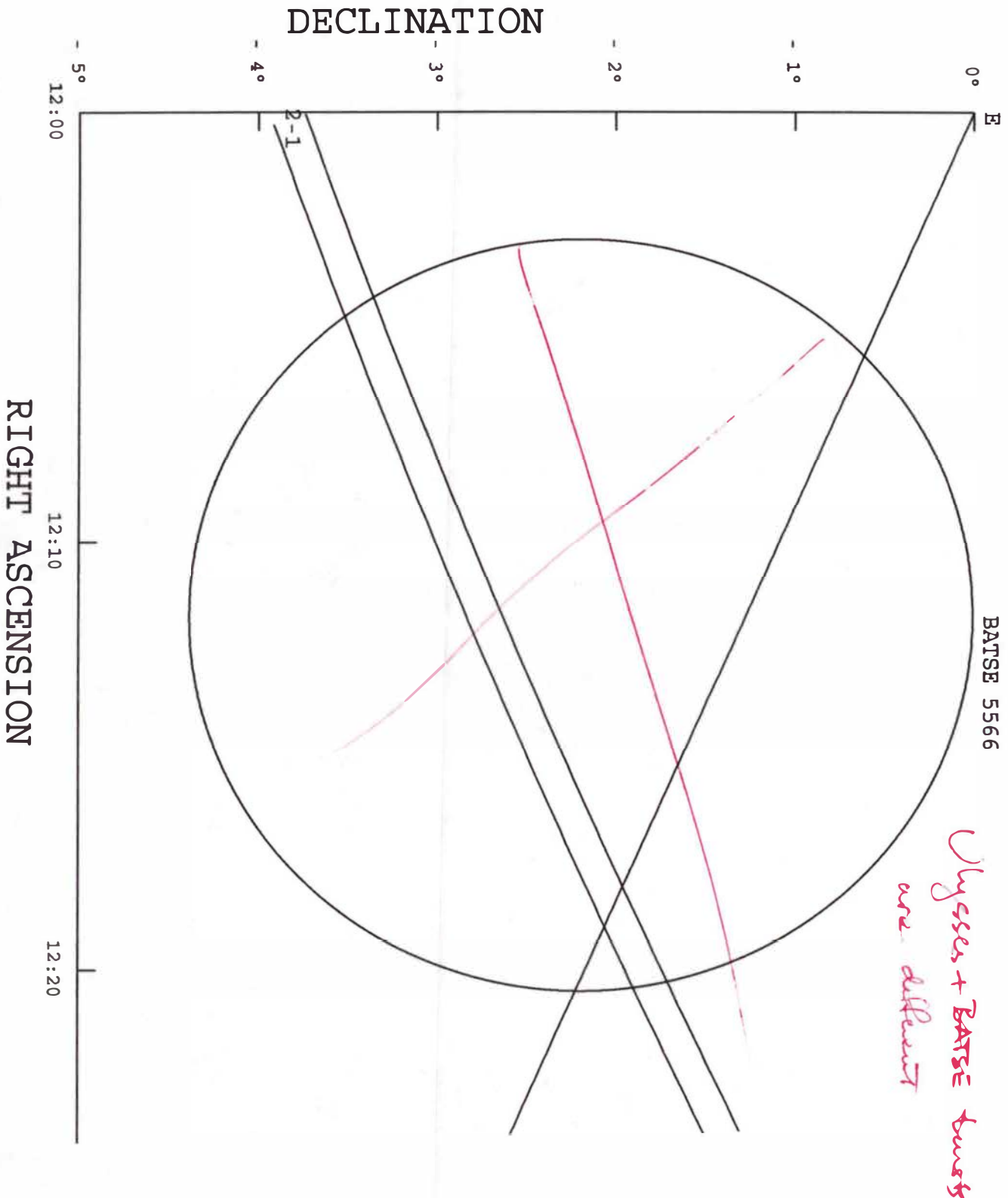
G=GALACTIC EQUATOR

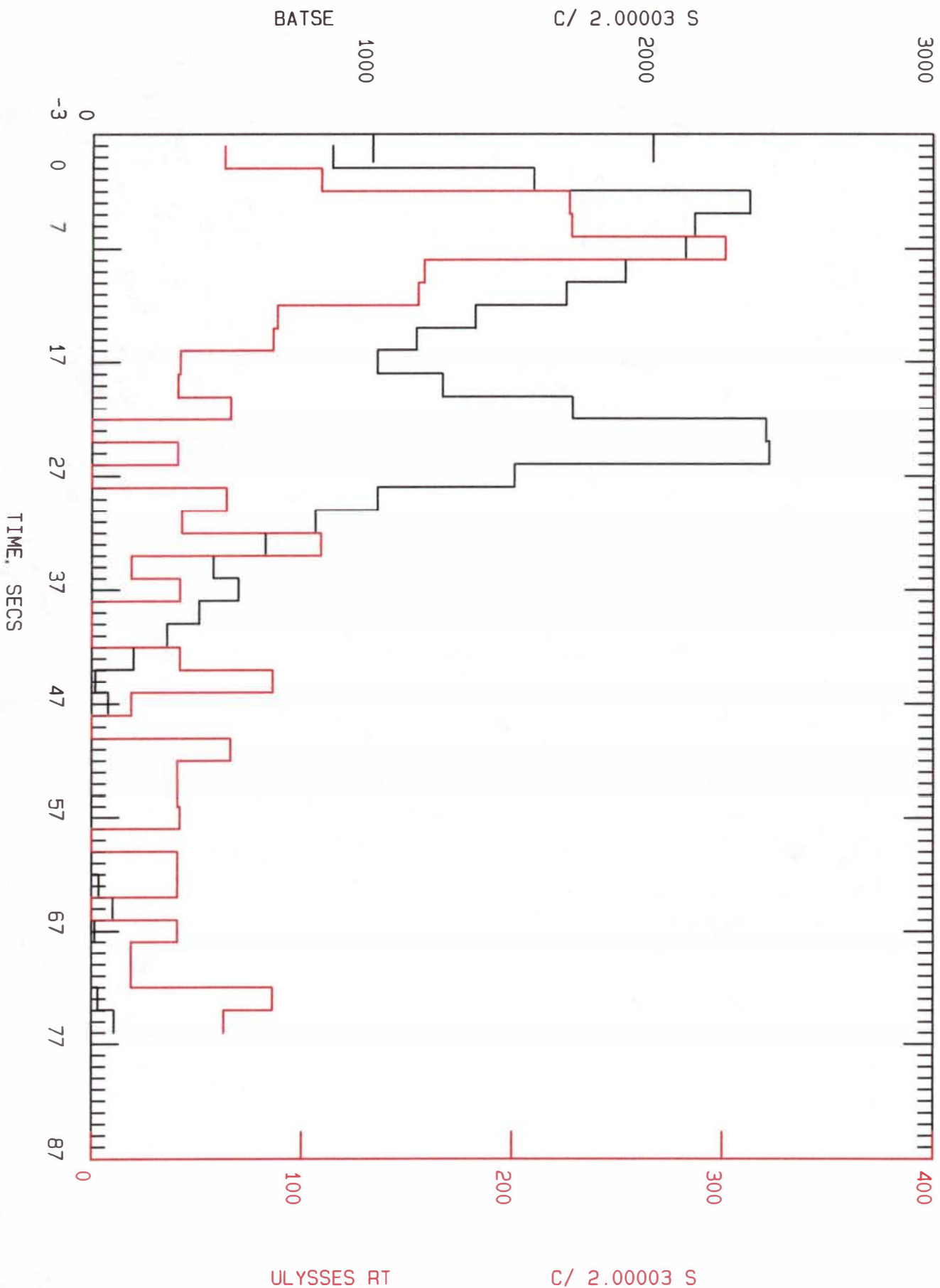
1 ULYSSES

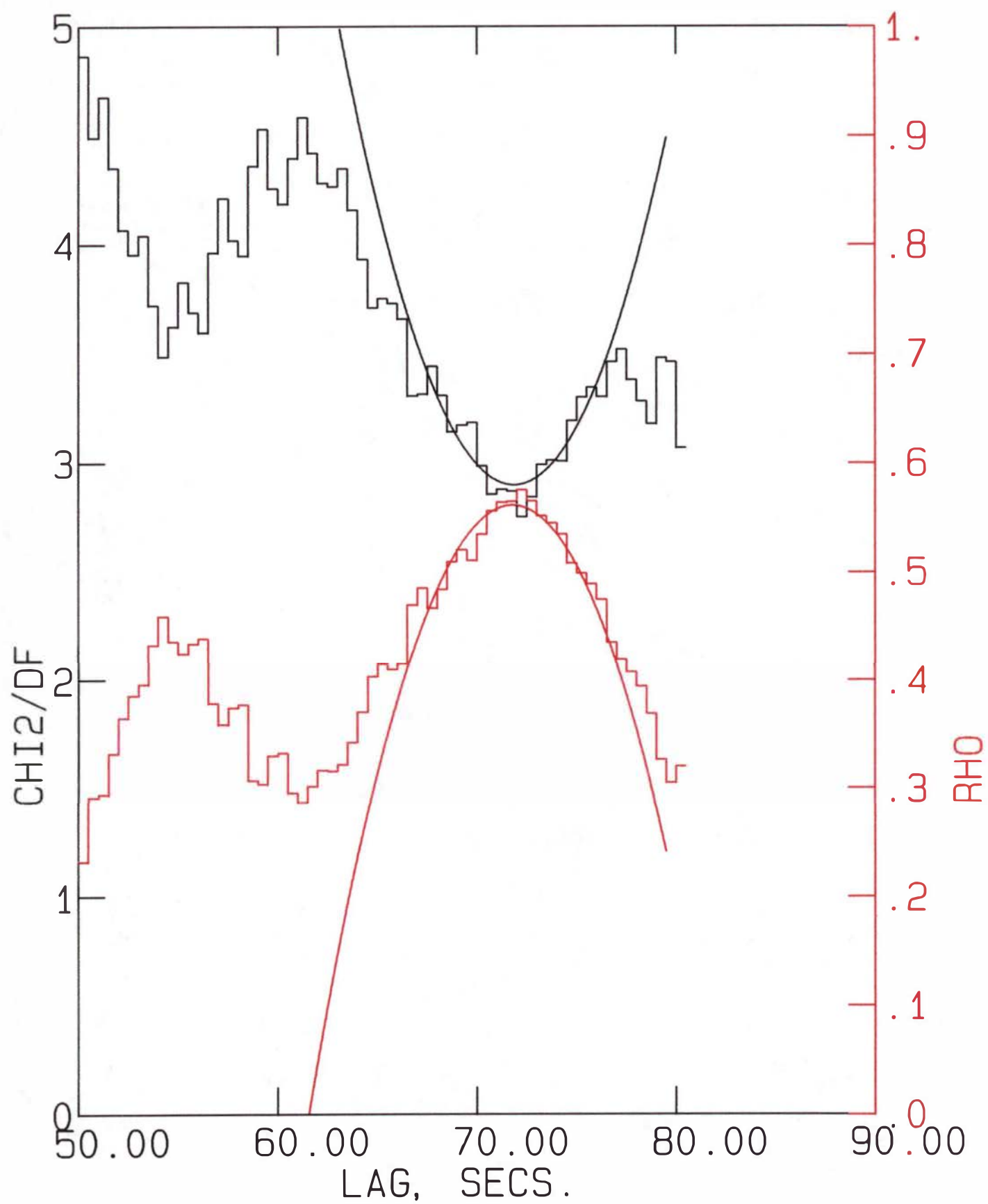
2 BATSE

EVENT OF AUG 6, 1996 21:58

13/ 3/98







ULYSSES RT

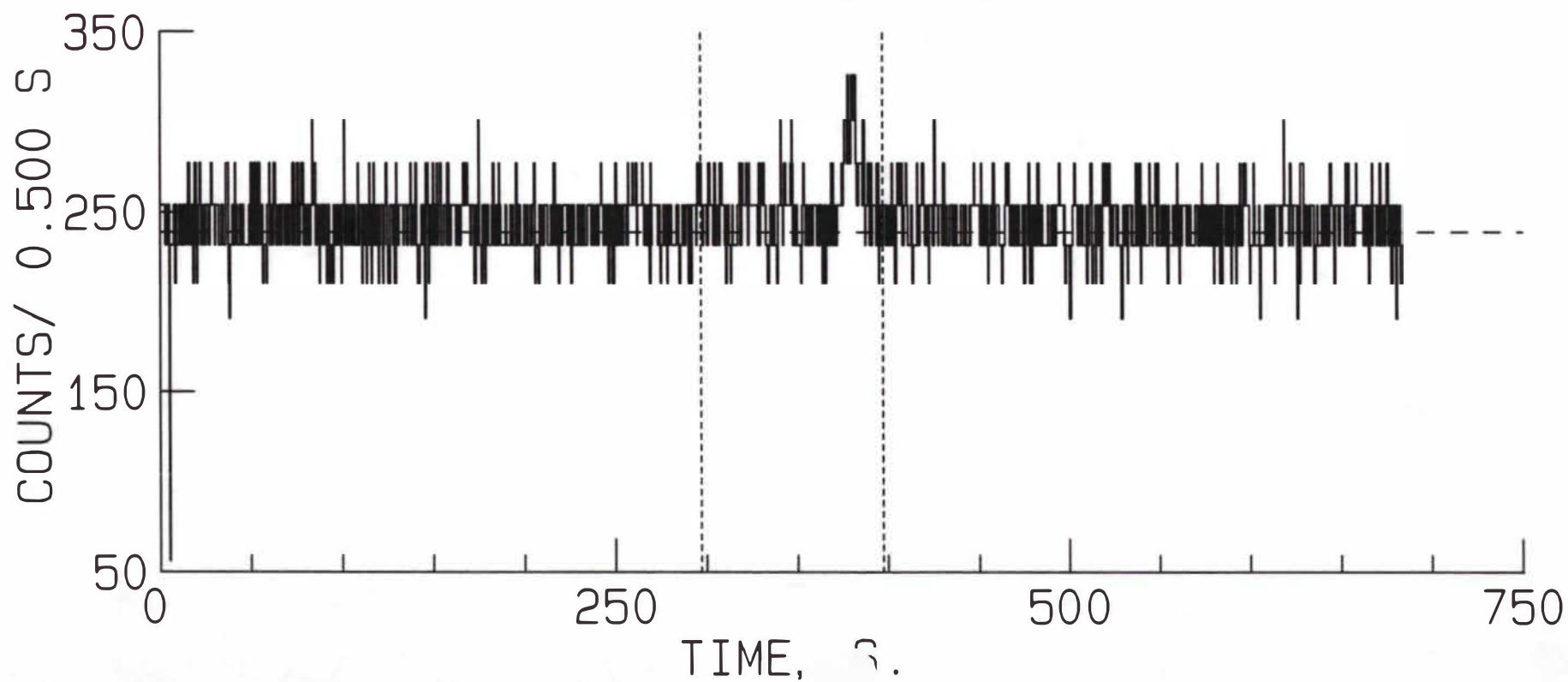
13 / 3 / 98

6 / 8 / 96 78840.024 s

21- 145 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE

06/08/96

80909.770

25- 100 keV

COUNTS/0.064 S

315

500

400

300

200

-30

13

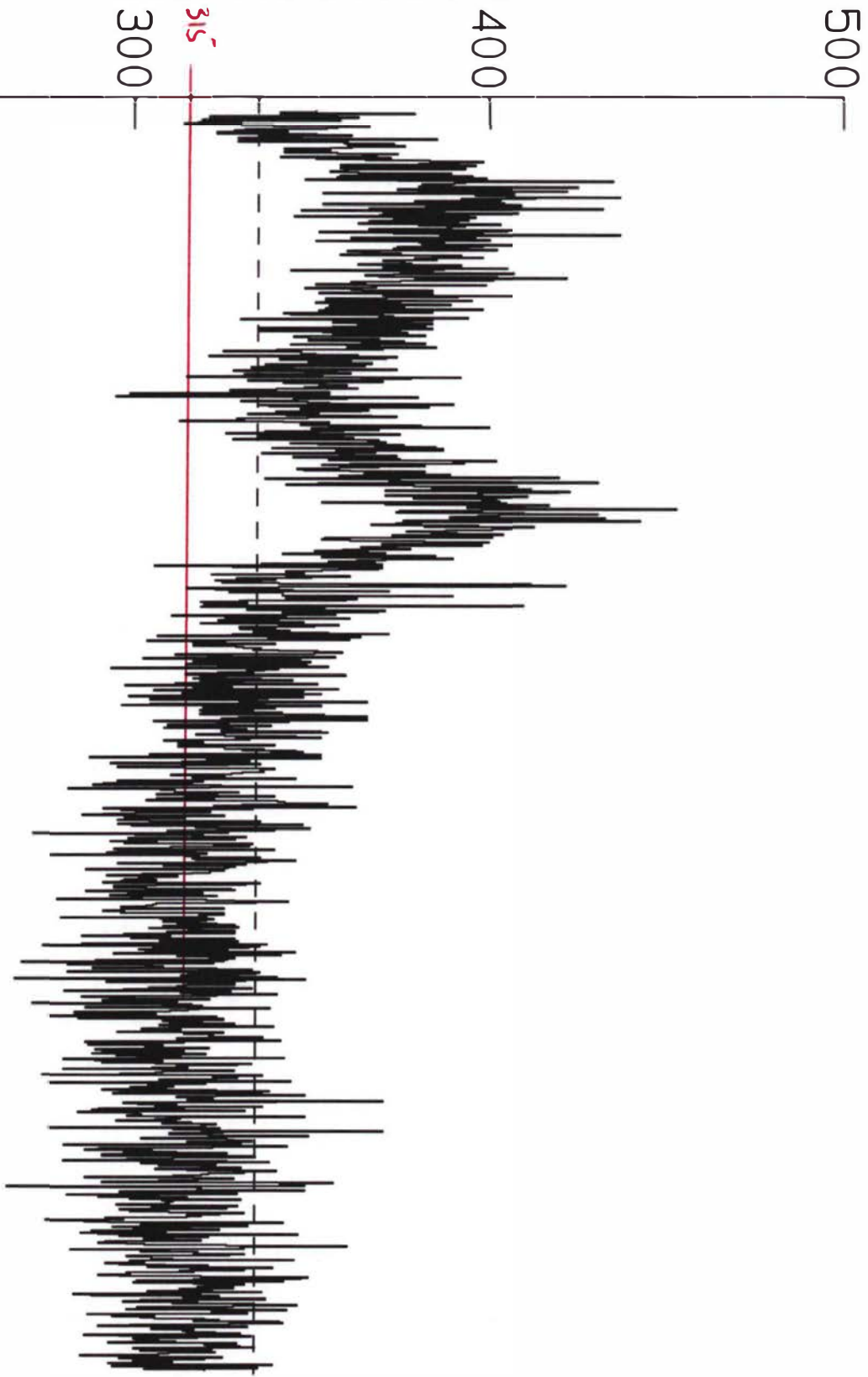
29

45

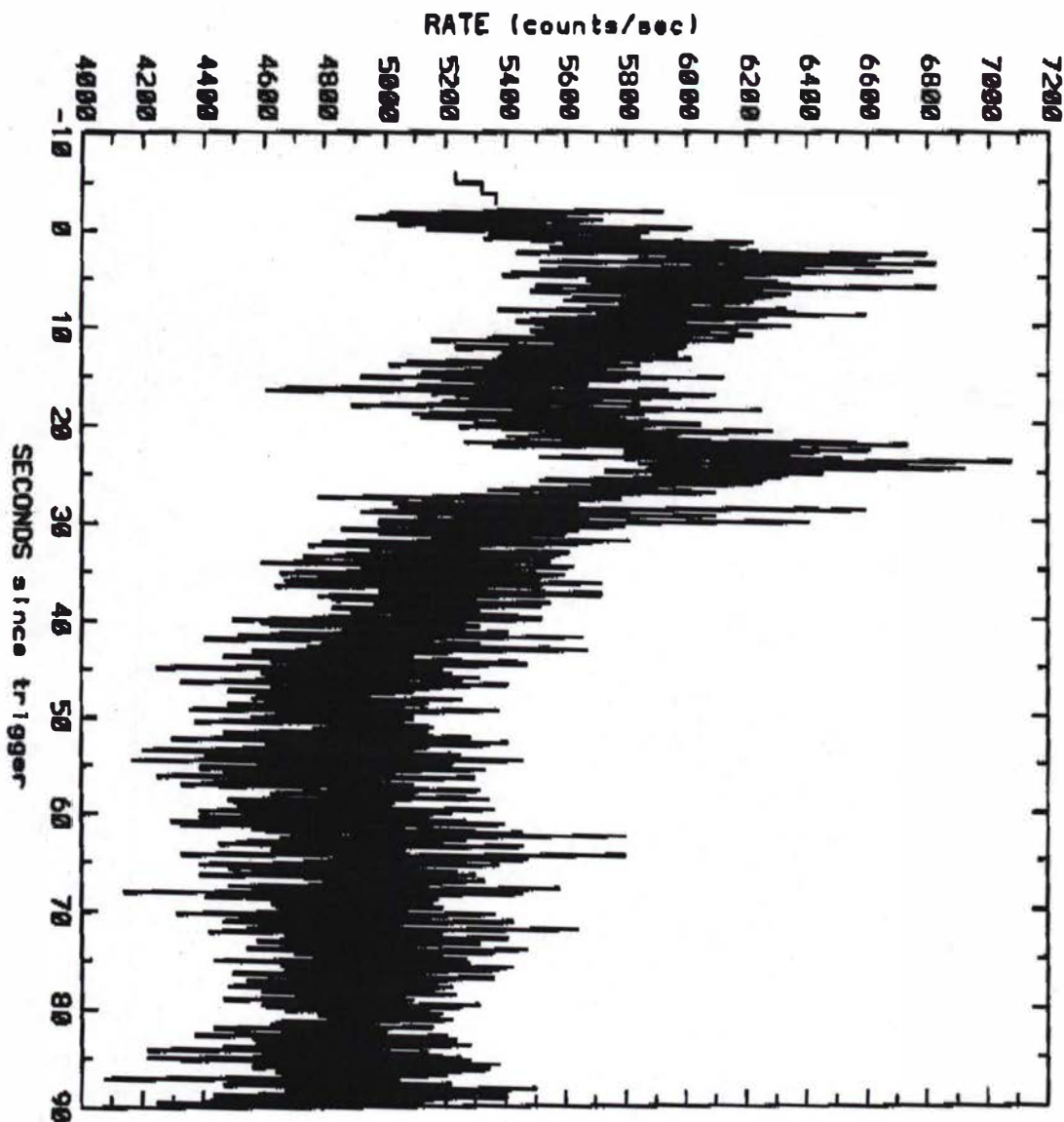
61

77

26 / 8 / 96



DISCSC Data for K. Hurley, No. 5566



13-AUG-1996 09:54:00

Created by MDPS BD
(Burst Display)
Version 12.25

Trigger # . 5566

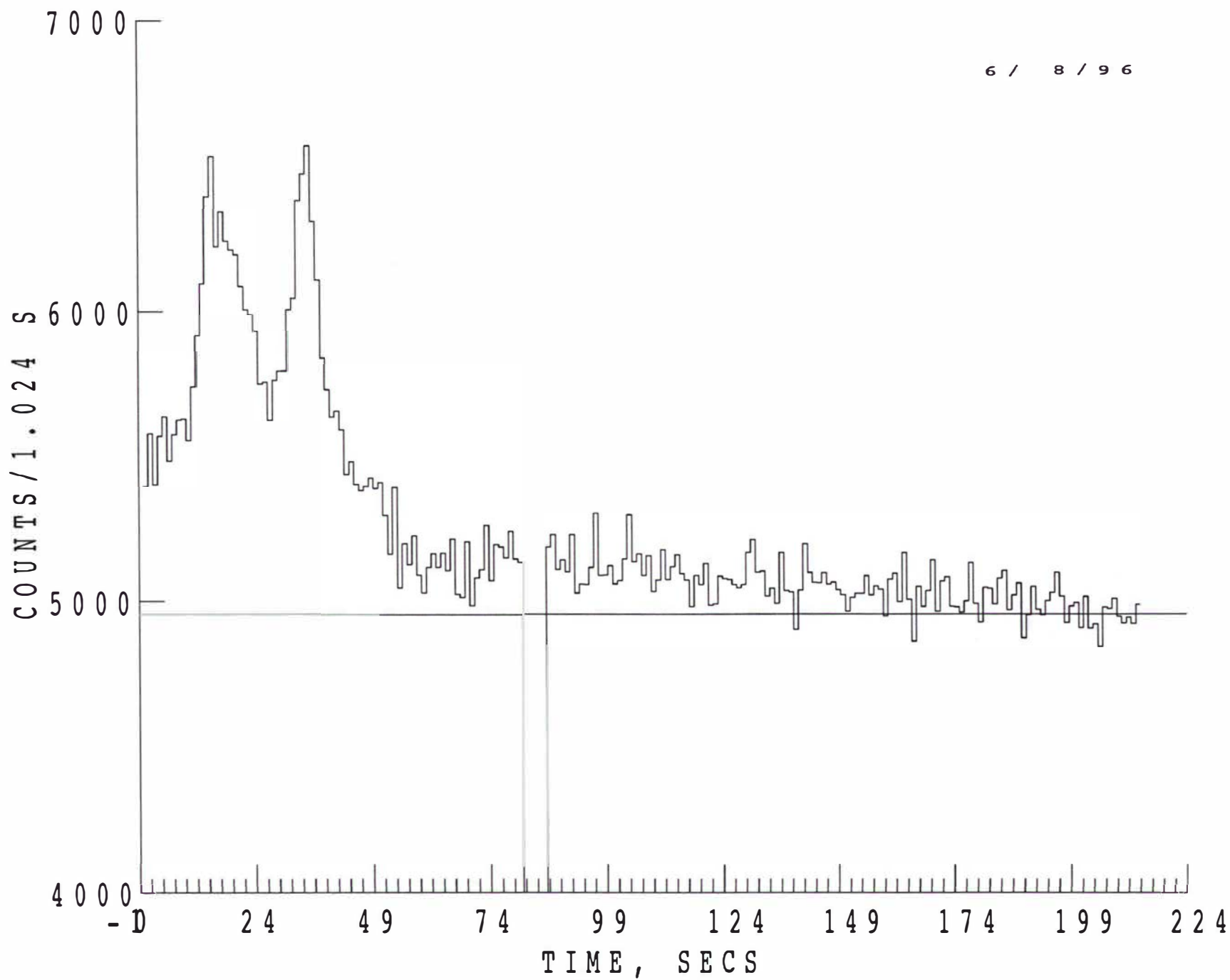
Trigger Time:

18381 / 8899.770

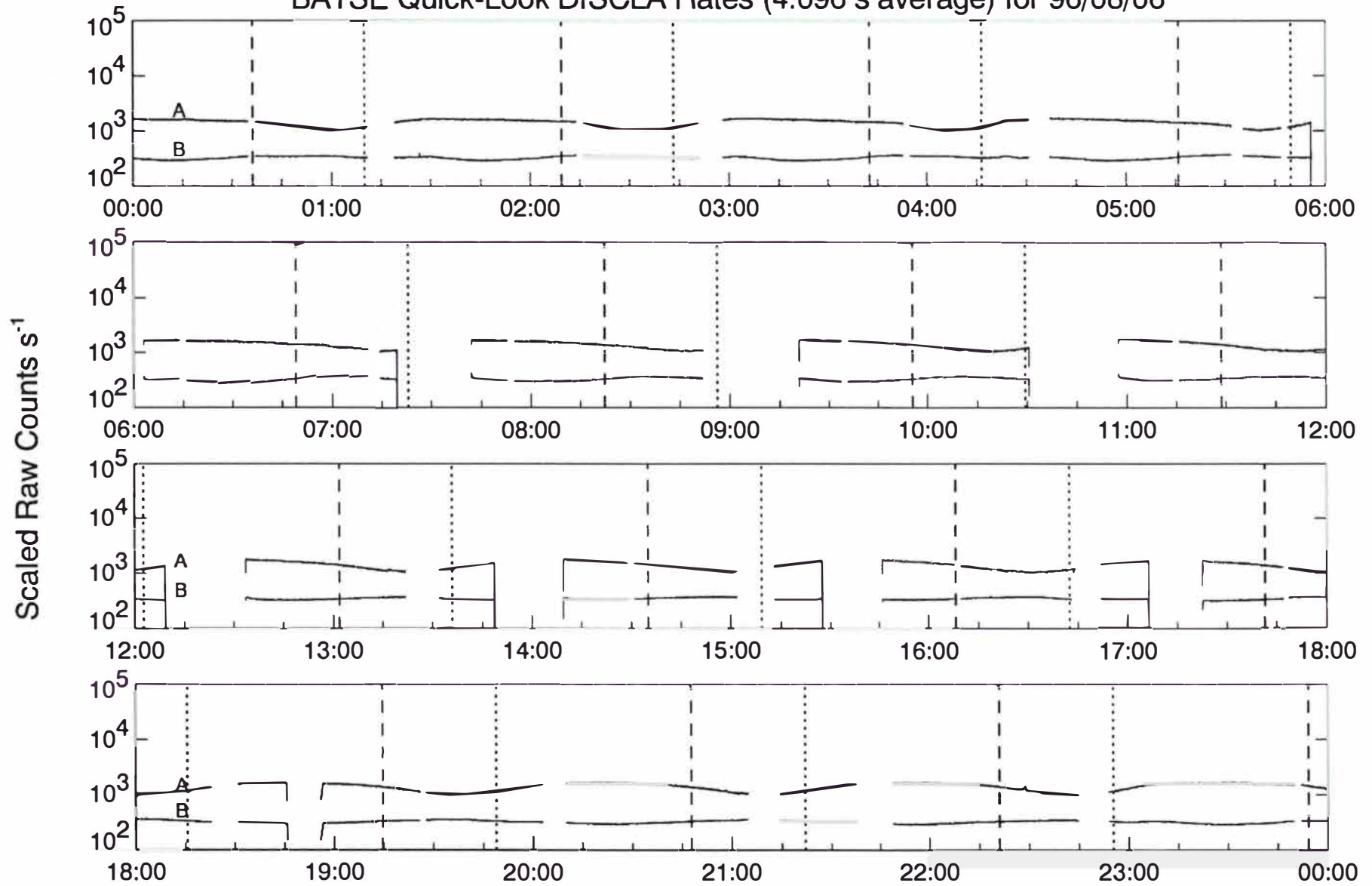
Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.001 seconds)Detectors [7..8]:
-----10Discriminator:
(1..2)Quality Mask:
BDISP1

BACODINE 5566 06/08/96 80898.761
25- 100 keV

6 / 8 / 96



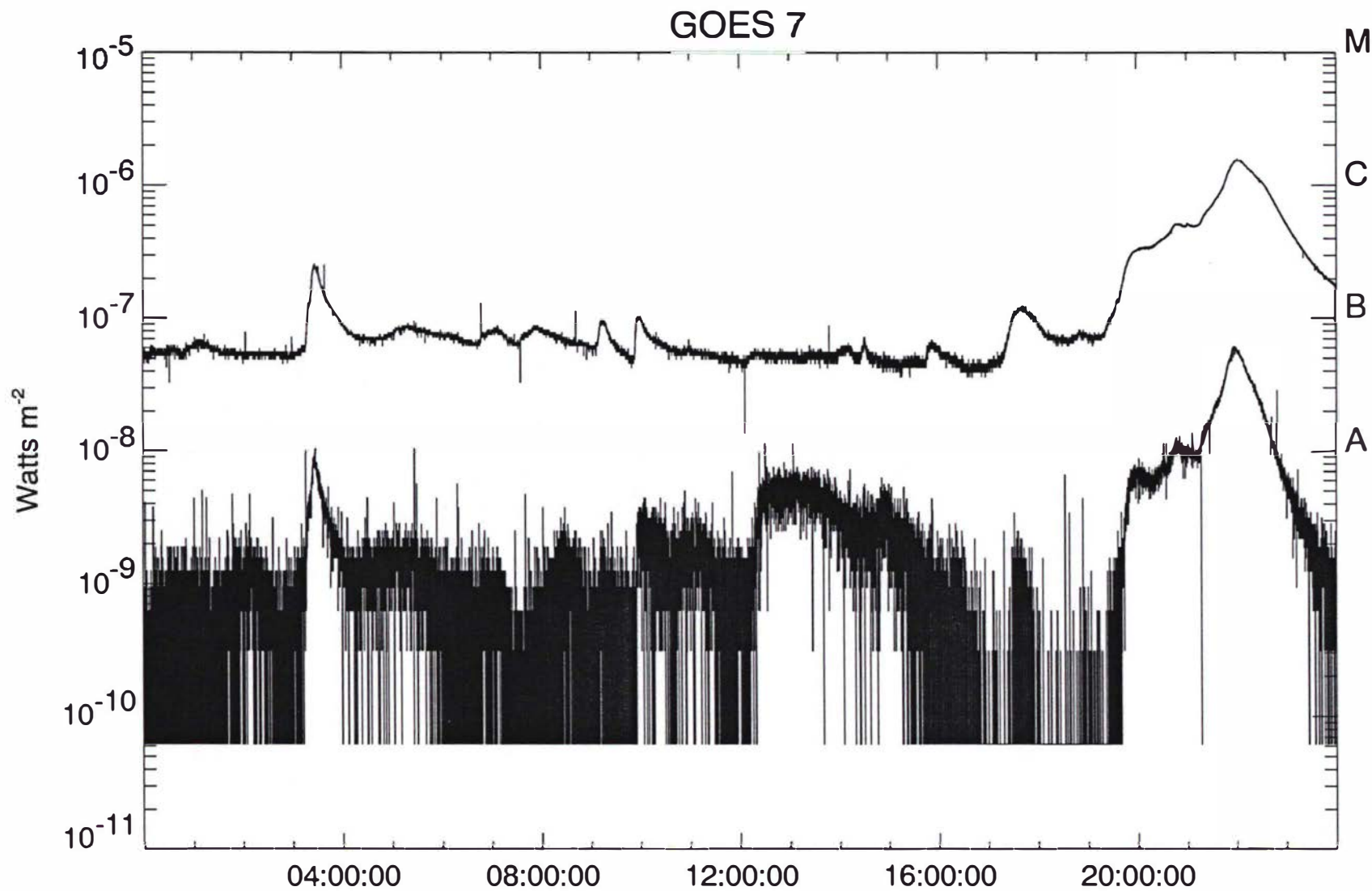
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/06



Current Time: 96/08/08, 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



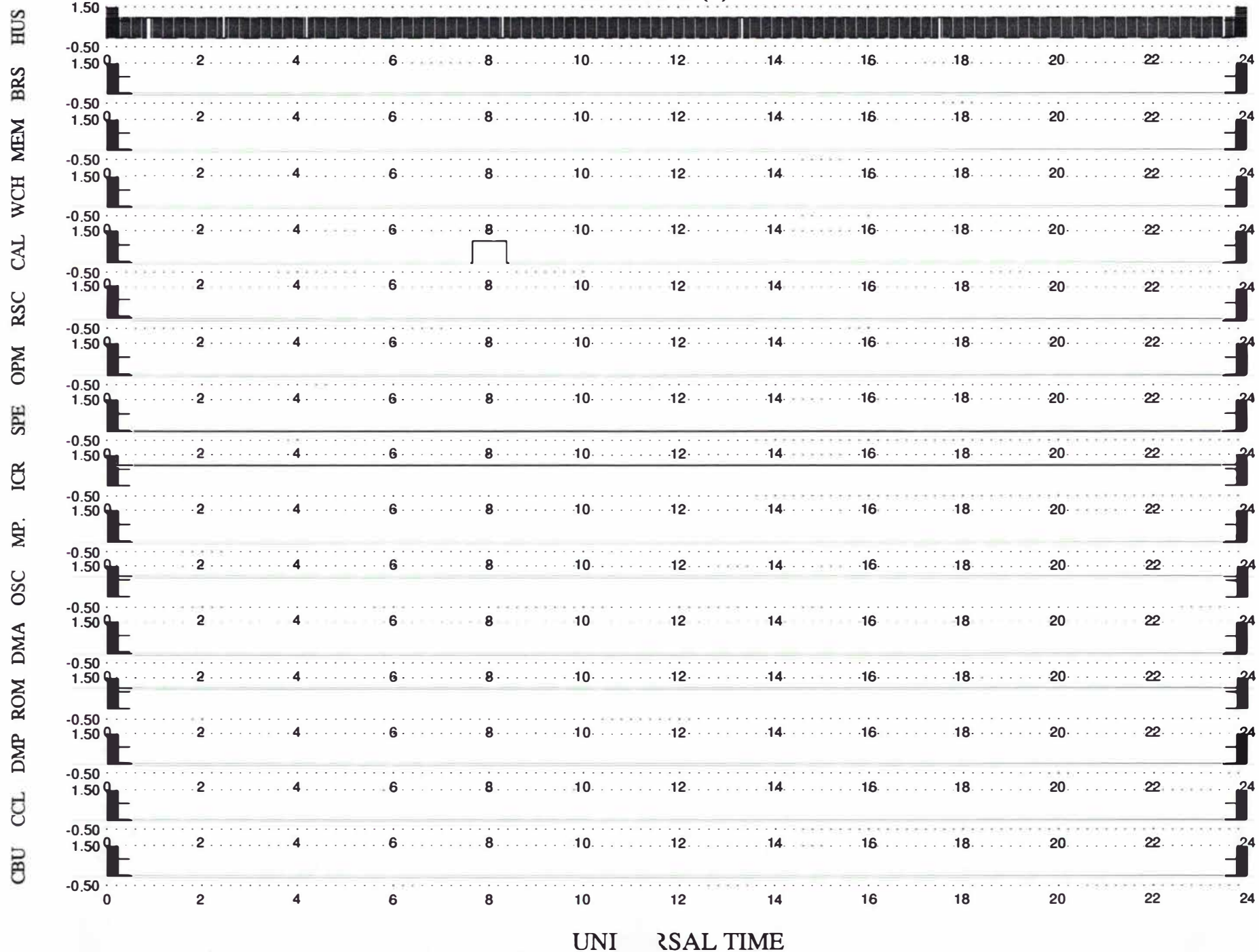
Data Start: 96/08/06, 0000:01

Plot created: 96/08/08, 1003

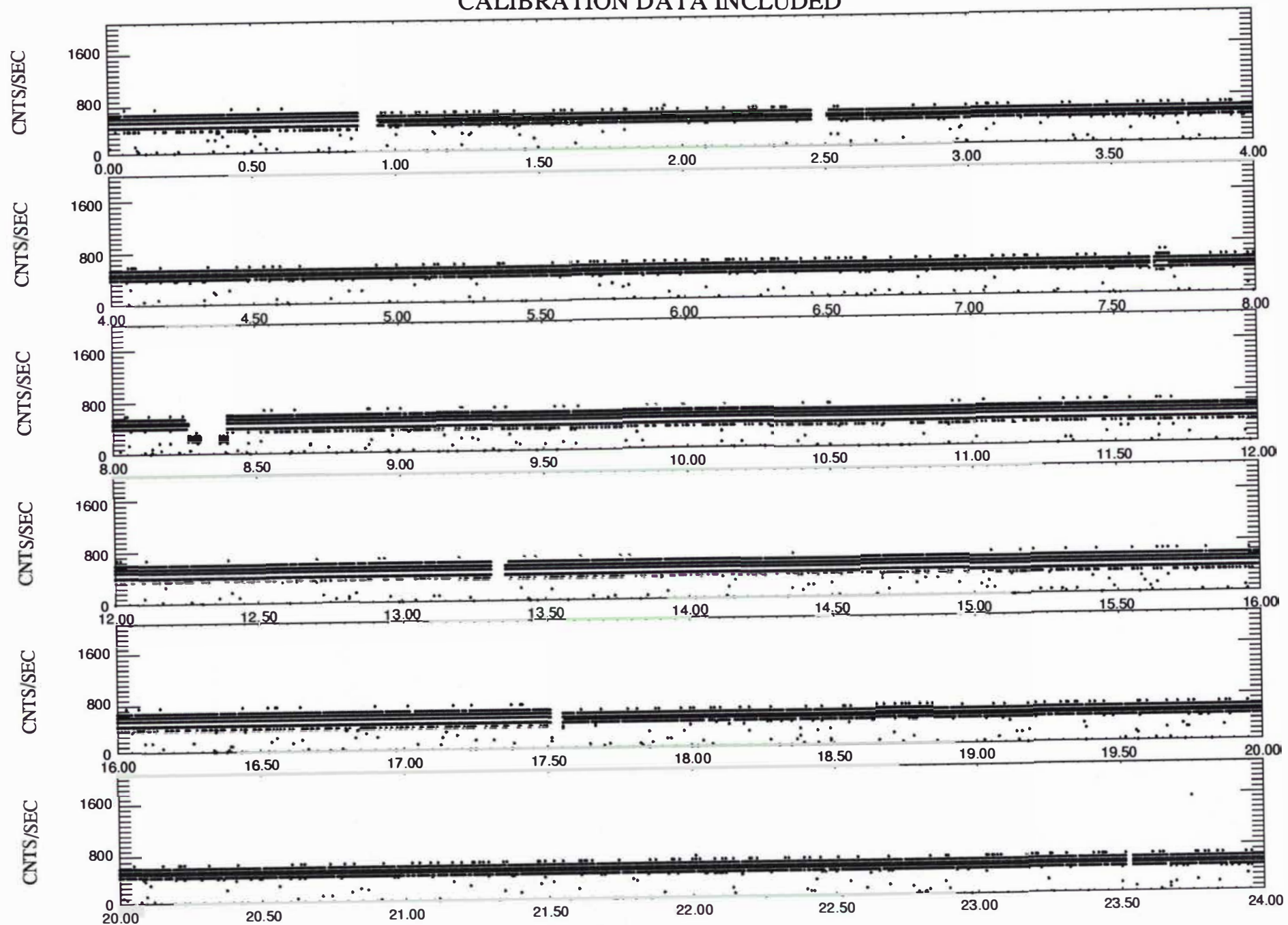
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

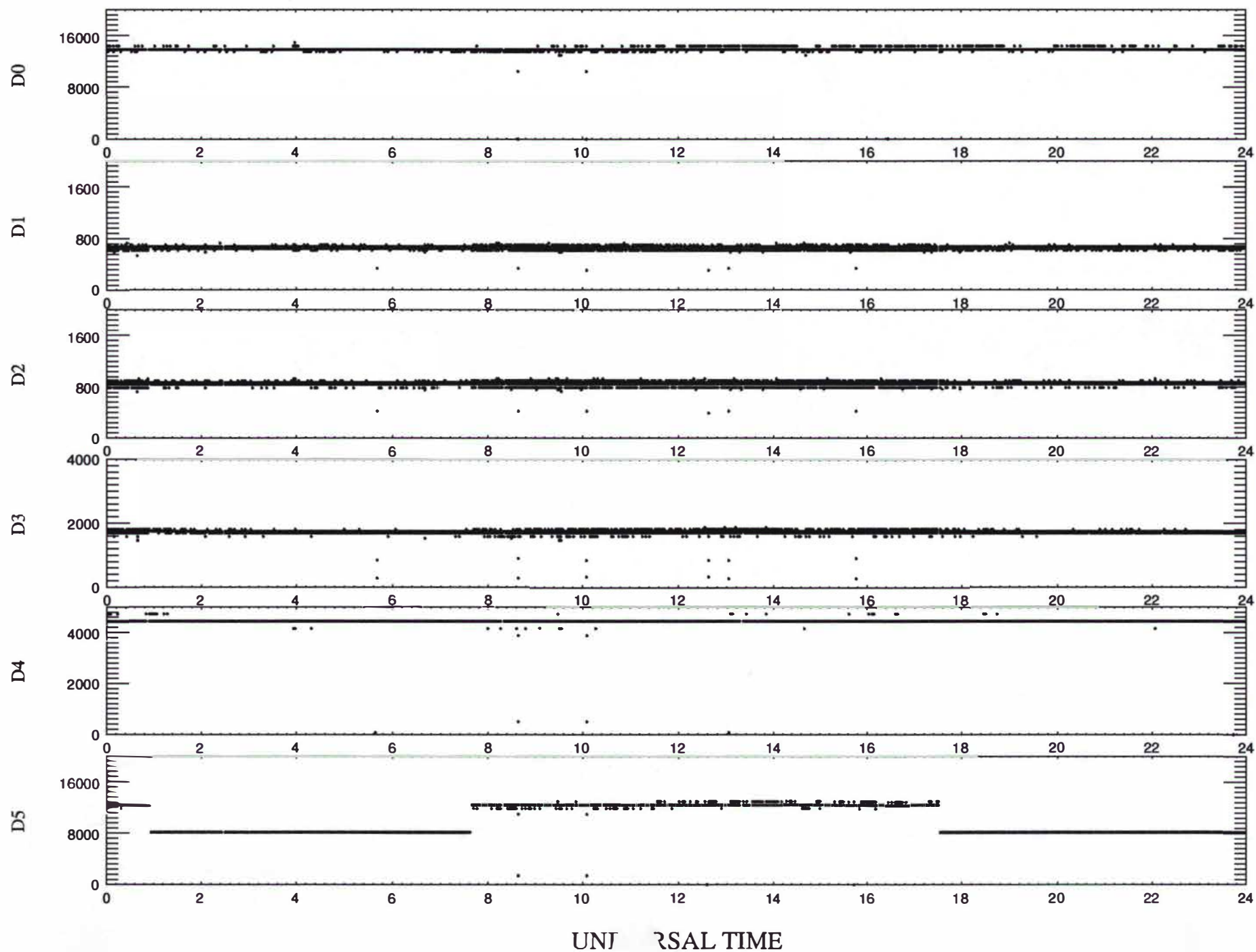
NO BURST (7)



CALIBRATION DATA INCLUDED



UNJ RSAL TIME



From WOODSP@ssl.msfc.nasa.gov Thu Aug 8 08:14 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 8 Aug 1996 10:14:24 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5567

BATSEARCH PROGRAM

BATSE BURST # 5567
EVENT OF 1996 AUG 7 DAY OF YEAR=220
EVENT CROSSING TIME AT BATSE : 71366. S. OR 19:49:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 158.000 32.000
BATSE PEAK COUNTING RATE: 68000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 8/ 96 IS:
RA= 161.180 DEC= 40.240 DIST= 5.022 AU
BATSE-ULYSSES DISTANCE = 751321707. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=171.37 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2477.77 SECS.
CROSSING TIME AT ULYSSES IS 68888. S. OR 19:08:08 +/- 77.66 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 8/ 96 IS:
RA= 98.934 DEC= 23.734 DIST= 2.223 AU
MARS-BATSE DISTANCE = 332496736. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=127.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -679.16 SECS.
CROSSING TIME AT MARS IS 70687. S. OR 19:38:06 +/- 141.92 SECONDS

BATSE BURST TRIGGER

NO.: 5567

TIME: TJD=0302 SECONDS=71366

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=62.8 AZIMUTH=49.8 ERROR=0.2 DEGREES

COMMENTS:

VERY BRIGHT GRB LASTING ABOUT 27 SEC. SINGLE PULSE WITH MULTIPLE
PEAKS THAT GROW IN INTENSITY AS TIME INCREASES. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5567	960807	10302	71366	68000	158	+32	27

96	8	7	71369.324	S2	1200	2740	1000	0.25	6	10	358	Trig	5567
96	8	9	52229.443	S2	6500	10000	9500	0.06	5	40	359	Trig	
96	8	10	24974.750	S1	740	860	250	4	0.5	0.6	360	Search + 2500	RI
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI	KA
96	8	15	36027.501	S1	470	1250	370	3.2	0.5	12	362	Trig	5575
96	8	21	13940.971	S1	520	720	360	6	2	11	368	Search + 2500	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 2500	RI
96	8	31	37775.300	S2	420	500	210	0.1	64	98	370	RI	5591
96	9	2	58097.128	S1	1750	3200	1060	3	0.05	1.5	371	Trig	KA
96	9	6	81590.312	S1	240	470	170	13	2	16	372	RI	5593
96	9	8	25028.442	S2	10000	7000	2500	<0.04	0.04	0.3	373	Trig	
96	9	12	50250.066	S2	420	600	320	<0.03	3	15	378	RI	5601
96	9	12	67621.610	S1	2000	380		3.4	270	0.5	379	Search + 2500	NO
96	9	13	83120.562	S1		320	70	1.7	2	14	380	RI	5604
96	9	16	14182.498	S1	250	420	60	3.4	300	12	381	Search + 2500	RI
96	9	21	54231.399	S1	1160	2900	830	2.5	0.5	40	382	Trig	5609
96	9	22	18368.358	S1	800	1100	280	14	2	70	383	Search + 2500	RI
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5614
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5617
96	10	1	75186.385	S2	1600	3800	1800	0.08	1	12	386	Trig	5621
96	10	2	75235.745	S1	1100	1600	250	8	11	6	387	Search + 2500	RI
96	10	9	33560.099	S2	1020	1360	300	0.03	6	13	393	NO	5628
96	10	9	49065.989	S1	600	900	320	23	3	24	394	RI	5629
96	10	15	42782.014	S2	160	290	100	0.7	3	80	395	Search + 2500	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 2500	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 2500	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 2500	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 2500	RI
96	10	26	05631.940	S1	6000	3000		1	0.04	0.04	401	Trig	
96	10	26	22311.118	S2	400	560	300	0.3	2	3	402	RI	5644
96	10	29	24354.087	S1	4000	3700	1250	25	7	300	404	Trig	
96	10	29	68710.804	S1	570	620	120	>20	2	11	405	Search + 2500	NO
96	11	1	58062.904	S2	1020	1450	600	<0.04	1	18	406	Trig	
96	11	2	41907.802	S2	350	610	230	0.08	5	90	407	Search + 2500	RI

TLC

-- T. L. Cline ----- LHEAVX::CLINE

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	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	Trig	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	Trig	NO

From isac.ernet.in!kmarar@vigyan.iisc.ernet.in Wed Aug 21 07:48 PDT 1996
From: kmarar@isac.ernet.in
Date: Wed, 21 Aug 1996 09:17:51 +0000 (CUT)
X-Sender: kmarar@se07
To: Hurley K <khurley@sunspot.ssl.berkeley.edu>
Subject: solar events
Mime-Version: 1.0

Dear Kevin

Hope u had a pleasant trip back home.

-
1. We had an event on the 7th of Aug which we showed u when u were here.
It is at 19:49:38 UT with about 3.5 sec duration and two pulses.
Pl confirm the same.
 2. We requested u to send us some 10-12 profiles of solar events less than
about 204 sec duration. (in Ulysses energy range).
 3. Our 3 rd July event was not confirmed by Ulysses. U were going to look
why? It was at 18:10:40.55 UT. It was very weak also and had a duration of
0.76 s.

Krishnan

Helio cor'n removed

Date: Mar 13 '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

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E=ECLIPTIC

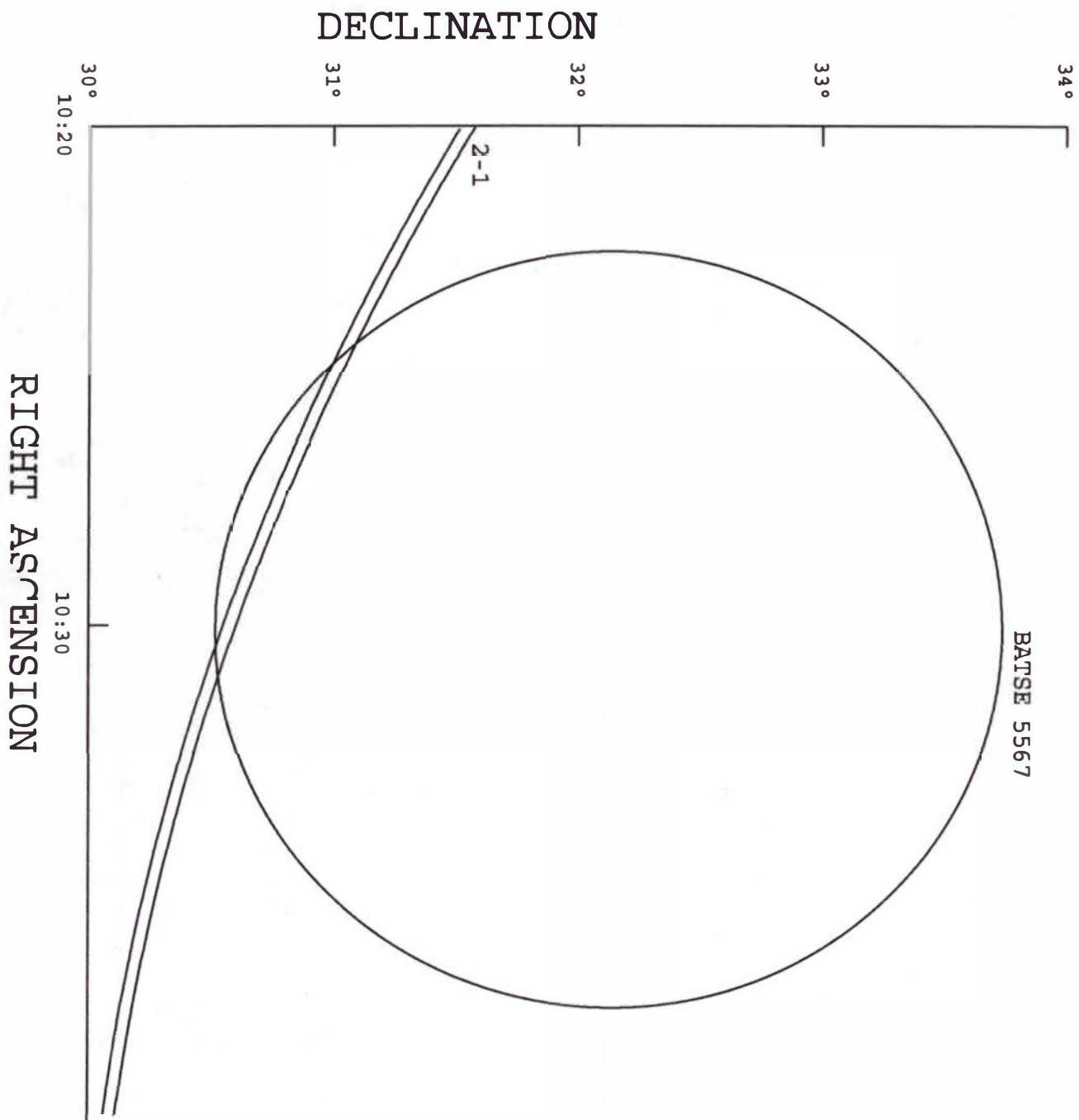
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF AUG 7, 1996 19:08

13/ 3/98



ULYSSES

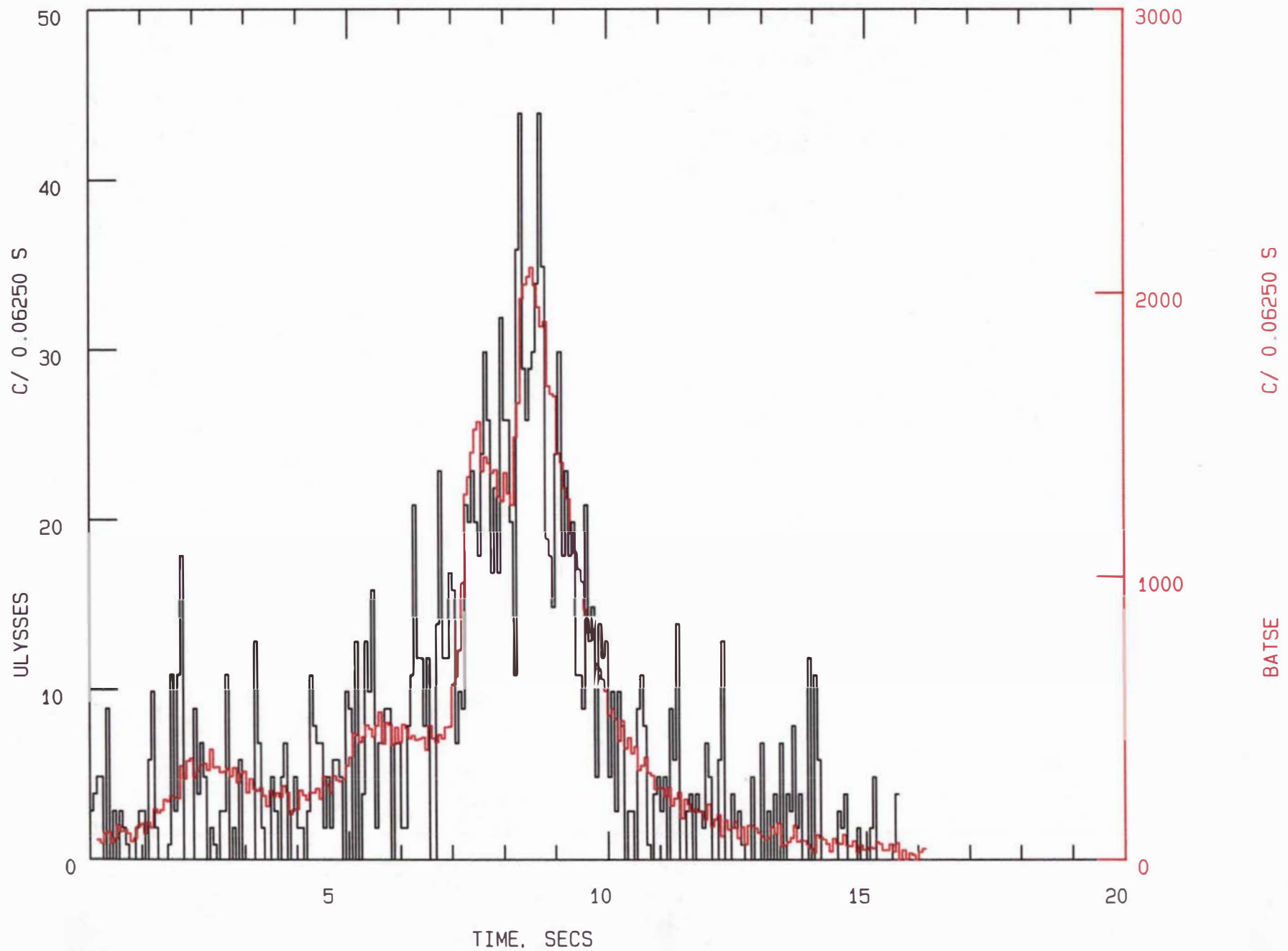
-BATSE

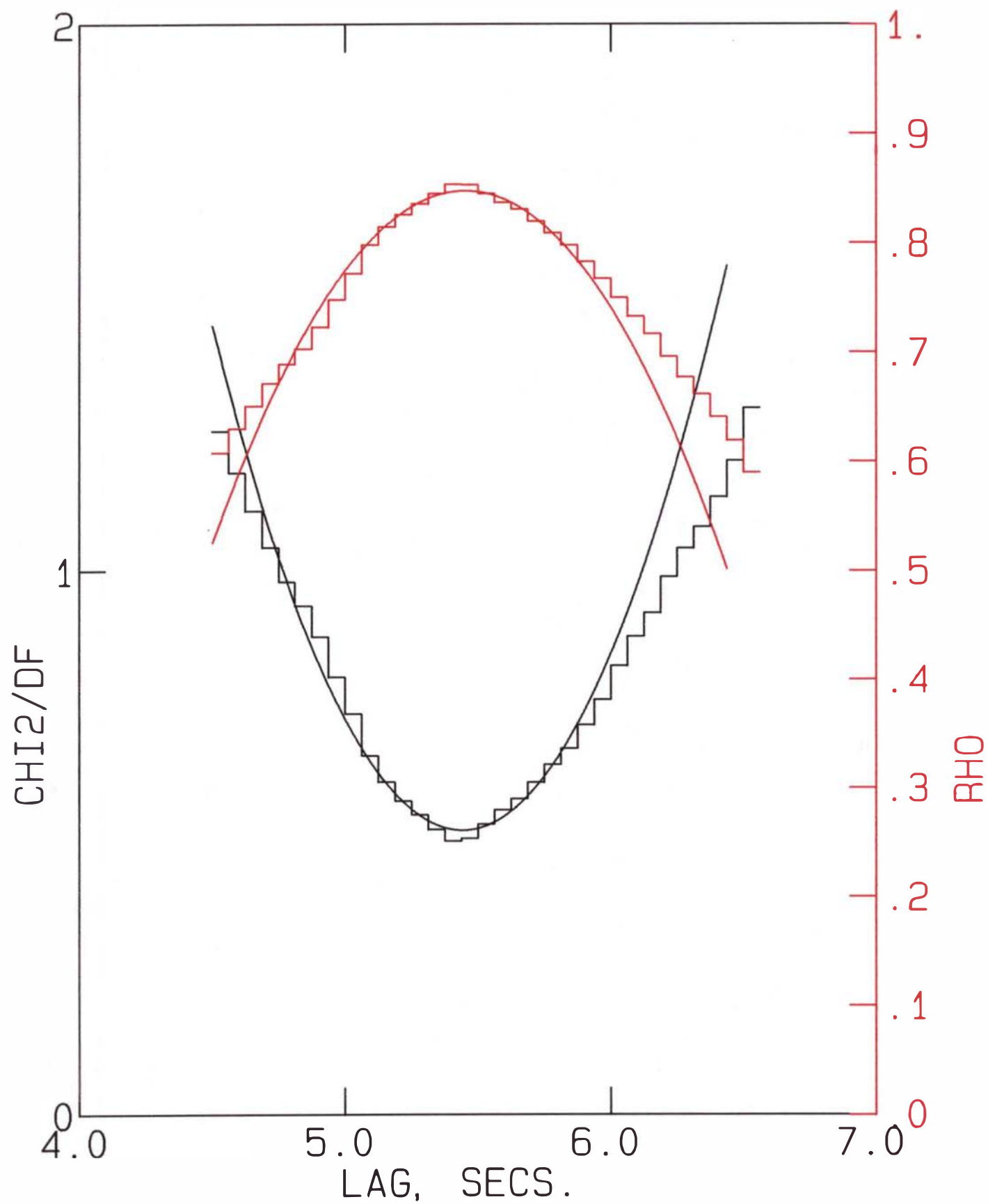
CORRELATION

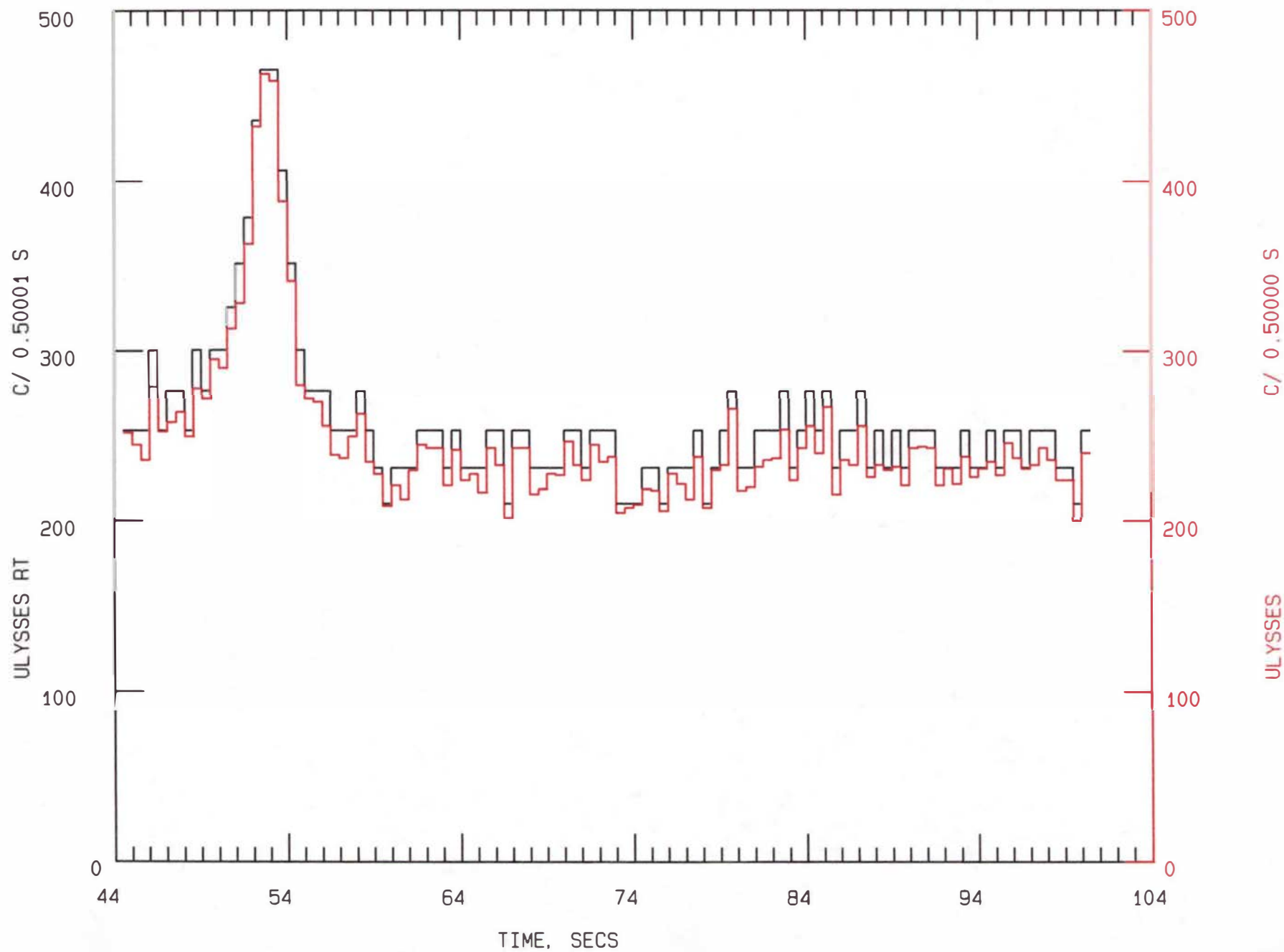
07/08/96

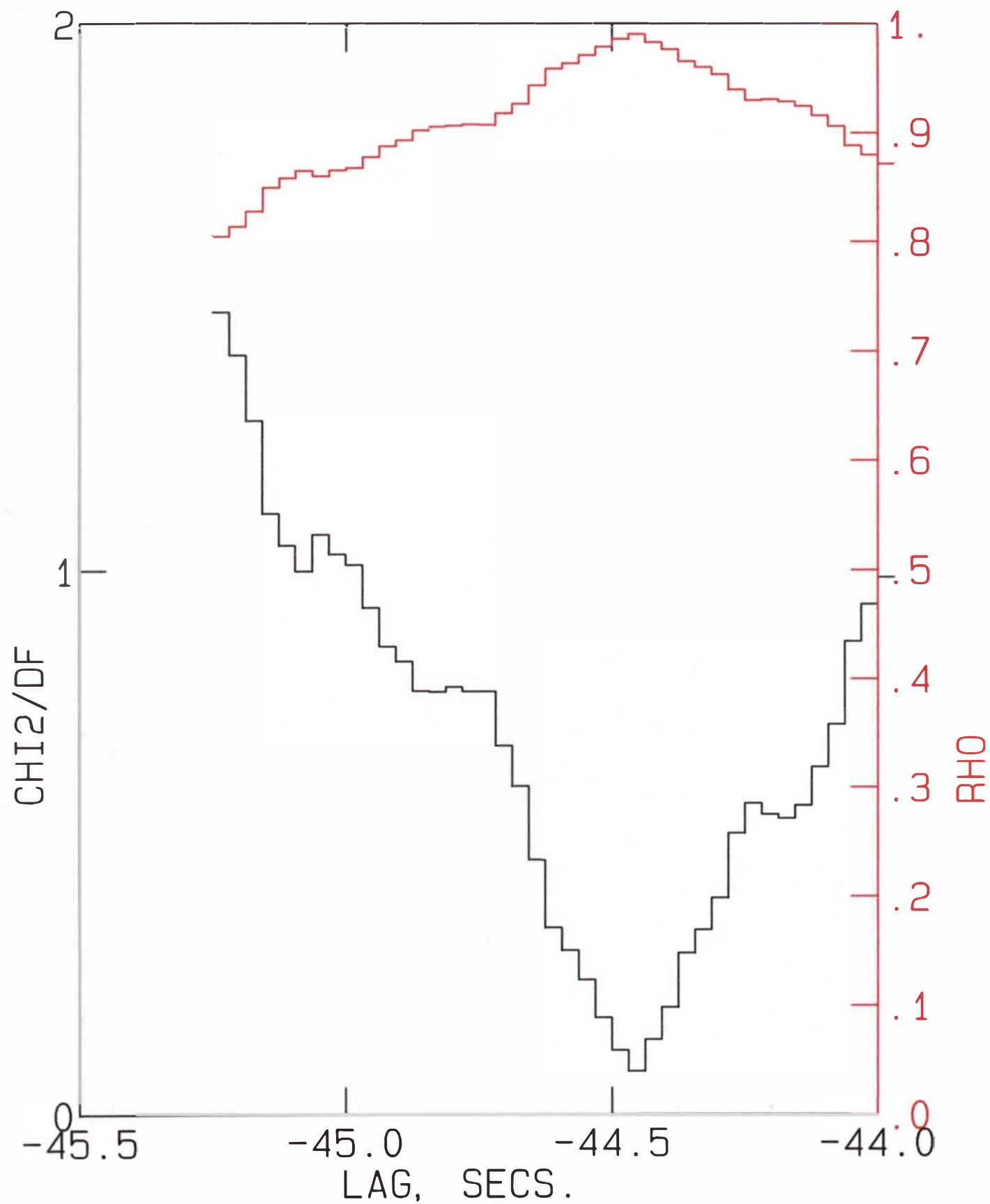
68913.854

13/ 3/98





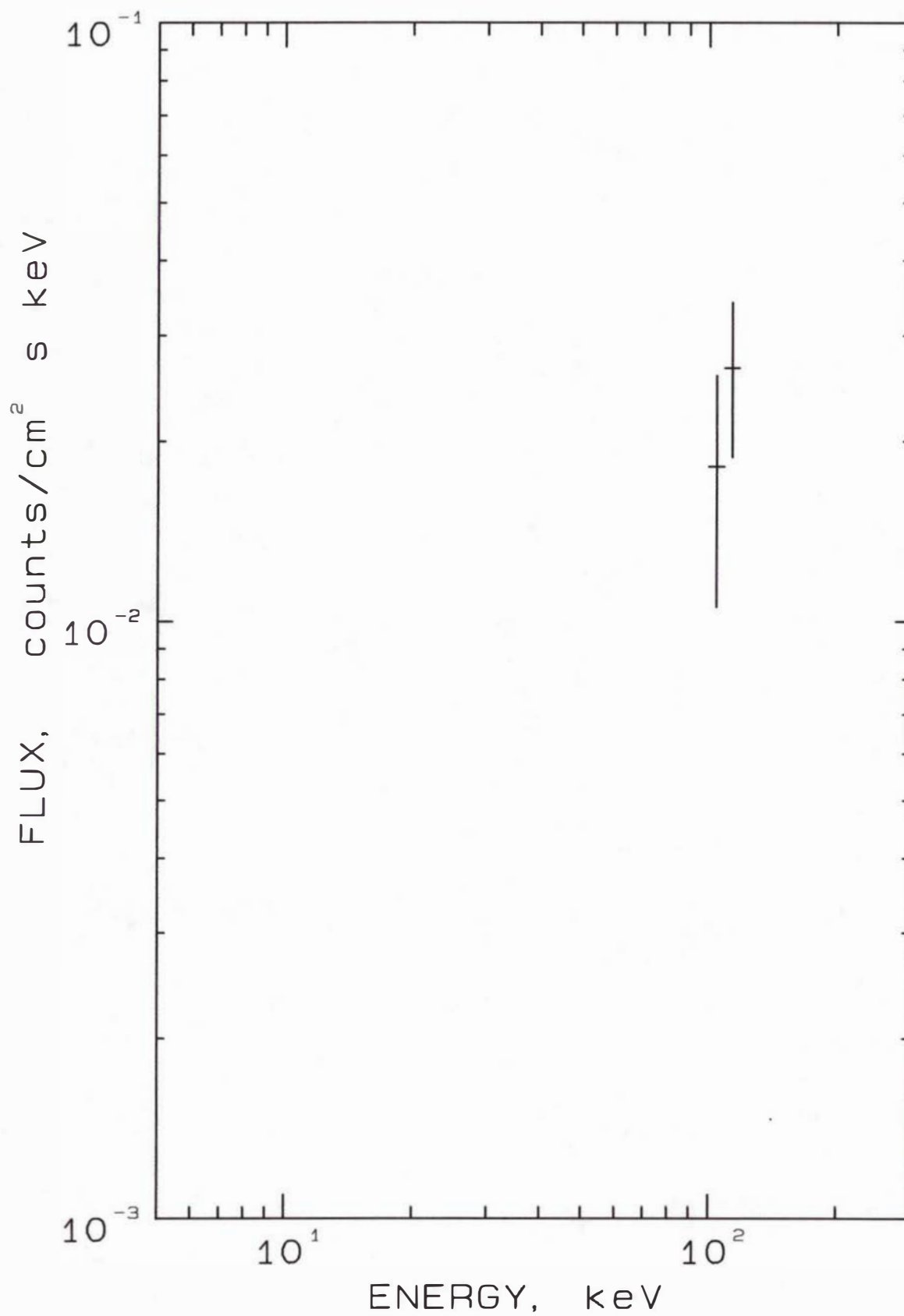




ULYSSES 07/08/96 68913.870

13/ 3/98

SPECTRUM INTEGRATED OVER 10.7 SECONDS, INTERVALS 2 TO 13



ULYSSES

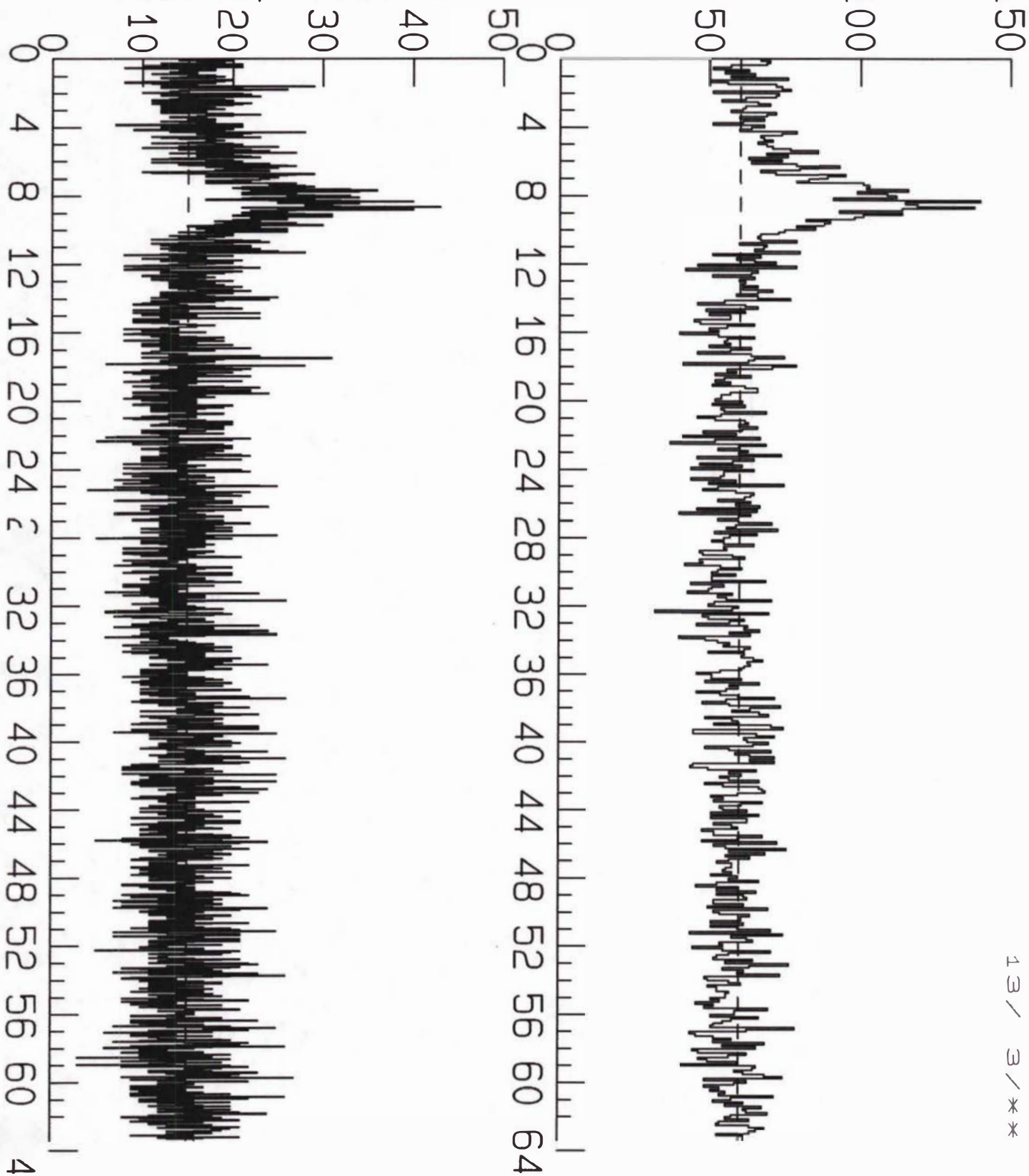
07/08/96

Ttrig=68913.854

21- 146 keV

COUNTS/0.031 S

COUNTS/0.125 S



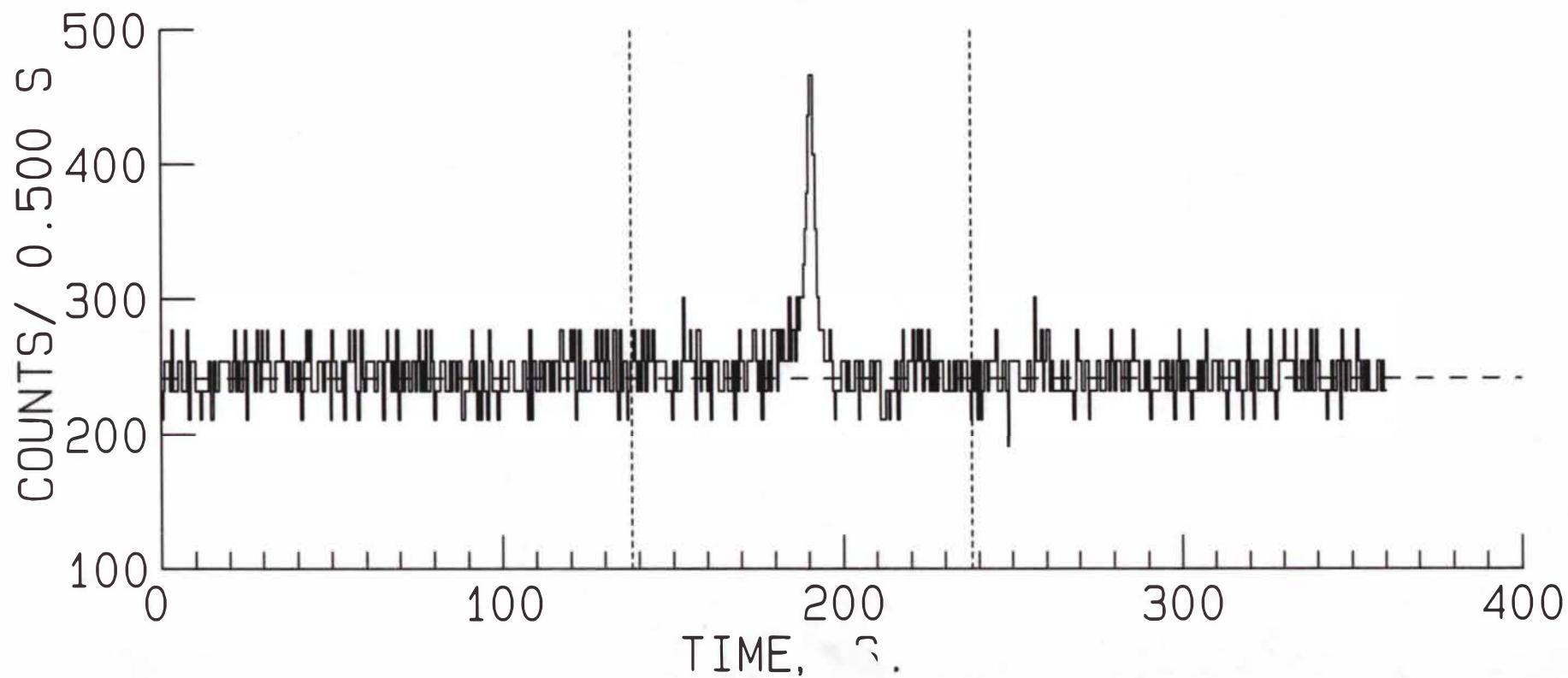
ULYSSES RT

13 / 3 / 98

7 / 8 / 96 68724.009 s

21- 146 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



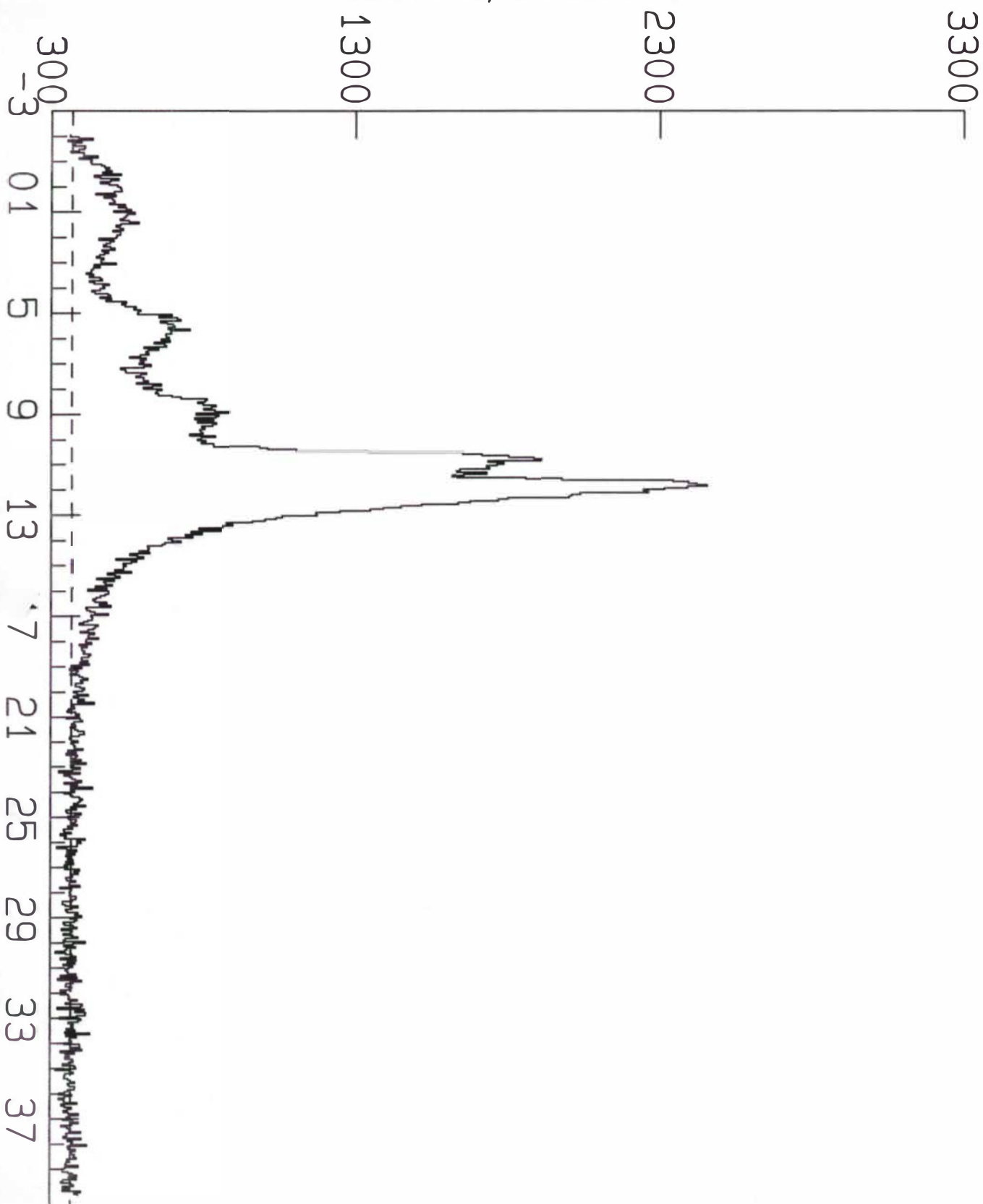
BATSE

07/08/96

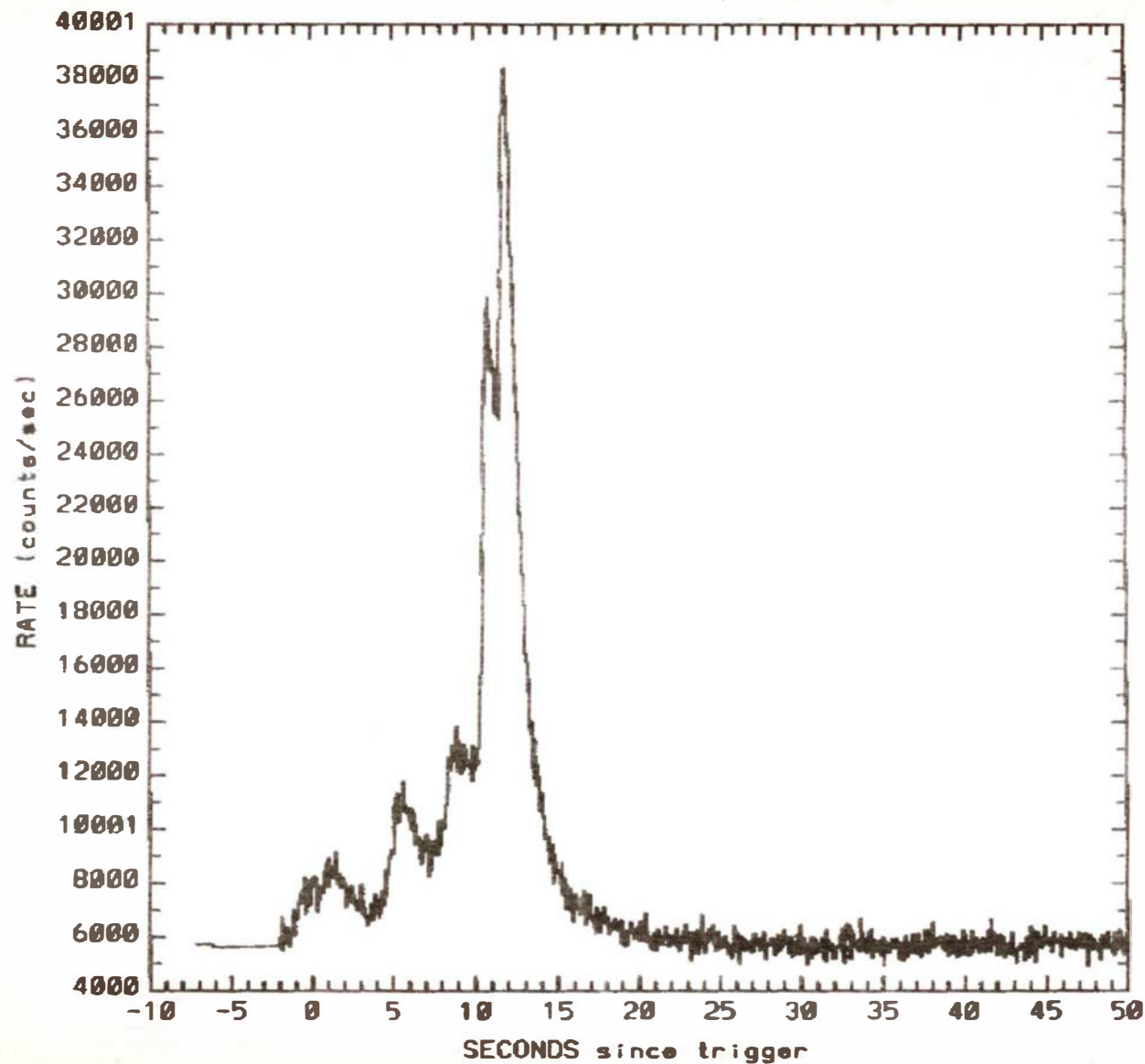
71366.346

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5567



28-AUG-1996 18:06:59

Created by WOPS 80
(Burst Display)
Version 12.25

Trigger # : 5567

Trigger Time:
10382 / 71366.346

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

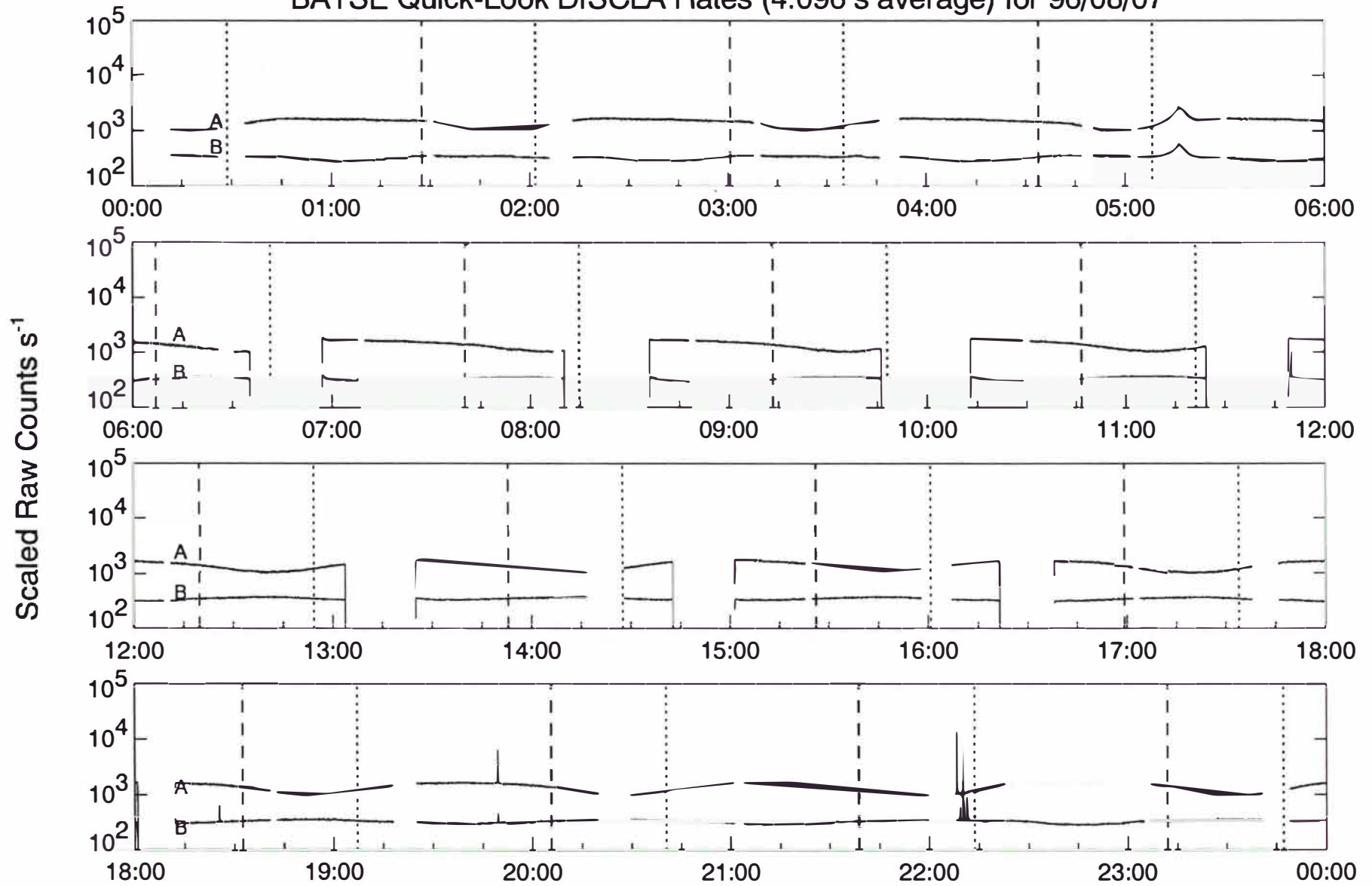
Minimum Integ. Time:
0.064 seconds

Detectors [7..8]:
-----10

Discriminators:
11 - 21

Quality Mask:
BDISP1

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

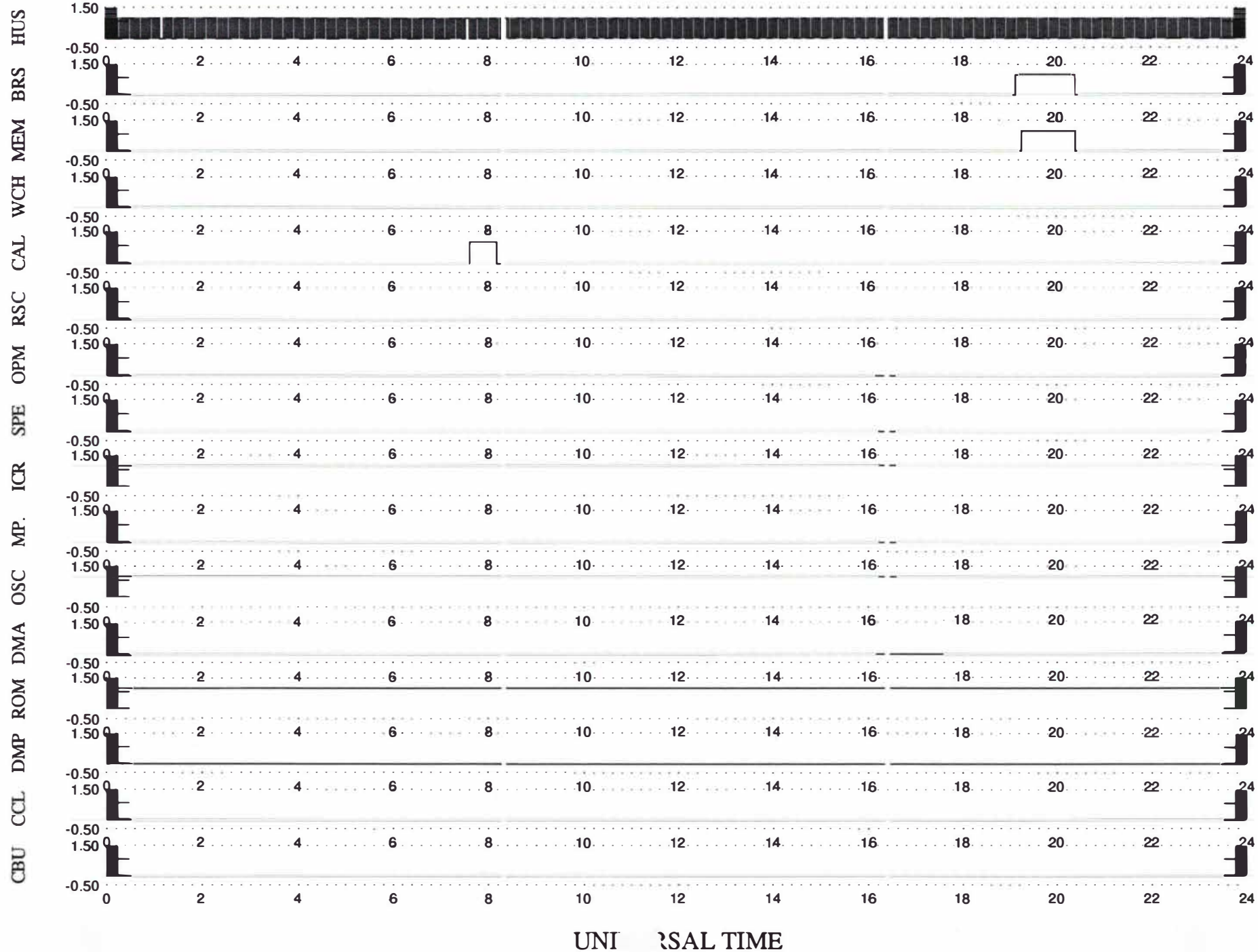


Current Time: 96/08/09, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

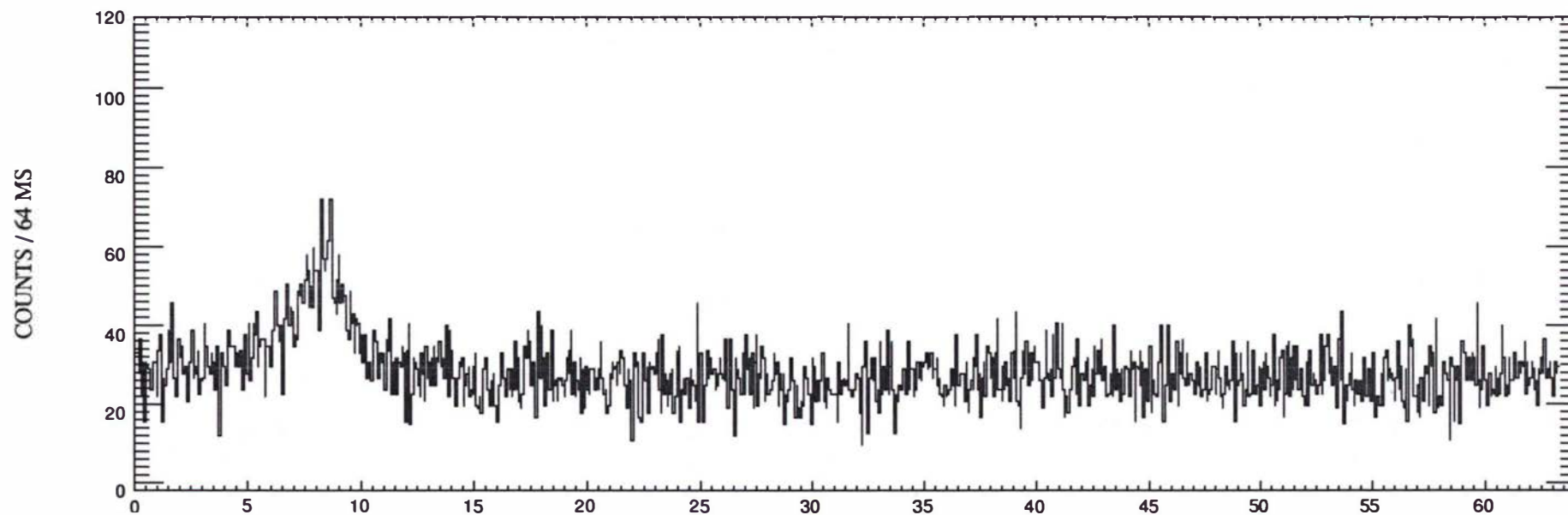
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

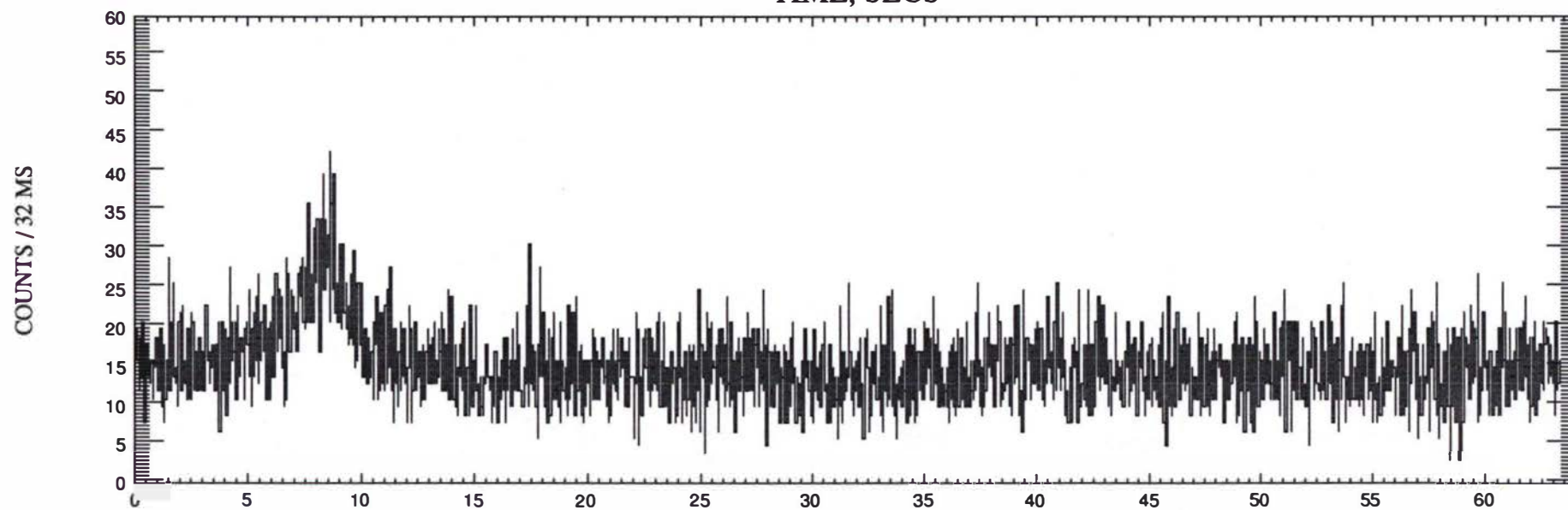
BURST NUMBER 8



Burst Counter 8 at UT=19.142741796705 h=68913.870 s 19:08:33.870

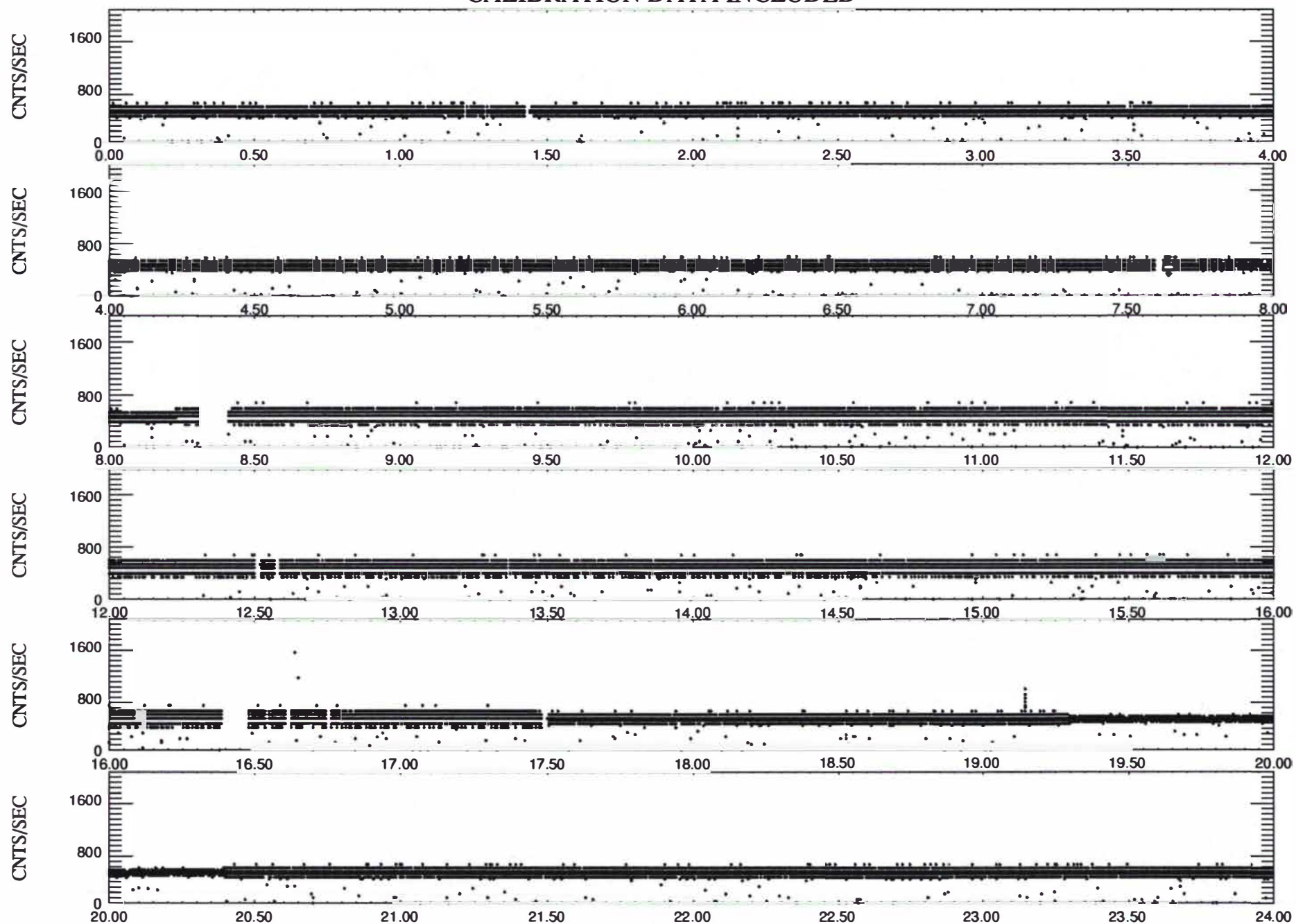


TIME, SECS

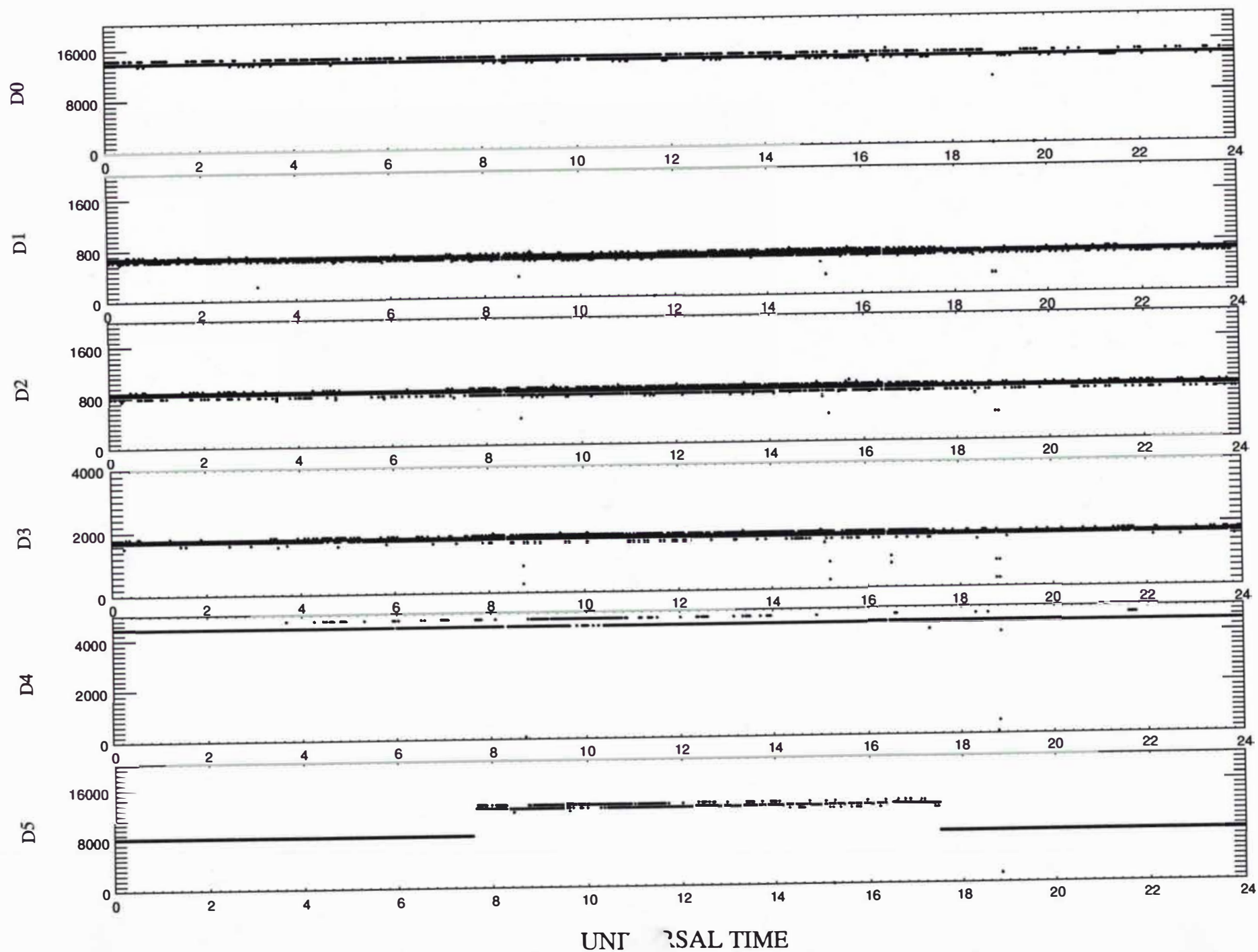


TIME, SECS

CALIBRATION DATA INCLUDED



UNJ RSAL TIME



From HENZE@fender.msfc.nasa.gov Mon Aug 12 13:13 PDT 1996
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 12 Aug 1996 15:13:13 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5568

BATSEARCH PROGRAM

BATSE BURST # 5568
EVENT OF 1996 AUG 8 DAY OF YEAR=221
EVENT CROSSING TIME AT BATSE : 60123. S. OR 16:42:03.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 85.000 37.000
BATSE PEAK COUNTING RATE: 59000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 8/ 96 IS:
RA= 161.359 DEC= 40.101 DIST= 5.028 AU
BATSE-ULYSSES DISTANCE = 752254980. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1334.21 SECS.
CROSSING TIME AT ULYSSES IS 58789. S. OR 16:19:48 +/- 398.70 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 8/ 96 IS:
RA= 99.656 DEC= 23.703 DIST= 2.219 AU
MARS-BATSE DISTANCE = 331953760. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=161.69 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1051.25 SECS.
CROSSING TIME AT MARS IS 59072. S. OR 16:24:31 +/- 44.41 SECONDS

BATSE BURST TRIGGER

NO.: 5568

TIME: TJD=0303 SECONDS=60123

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=016.6 AZIMUTH=119.3 ERROR=000.4 DEGREES

COMMENTS:

SINGLE PULSE, DUR. ~8 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5568	960808	10303	60123	59000	085	+37	8

Helio corr removed

Date: Mar 13 '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

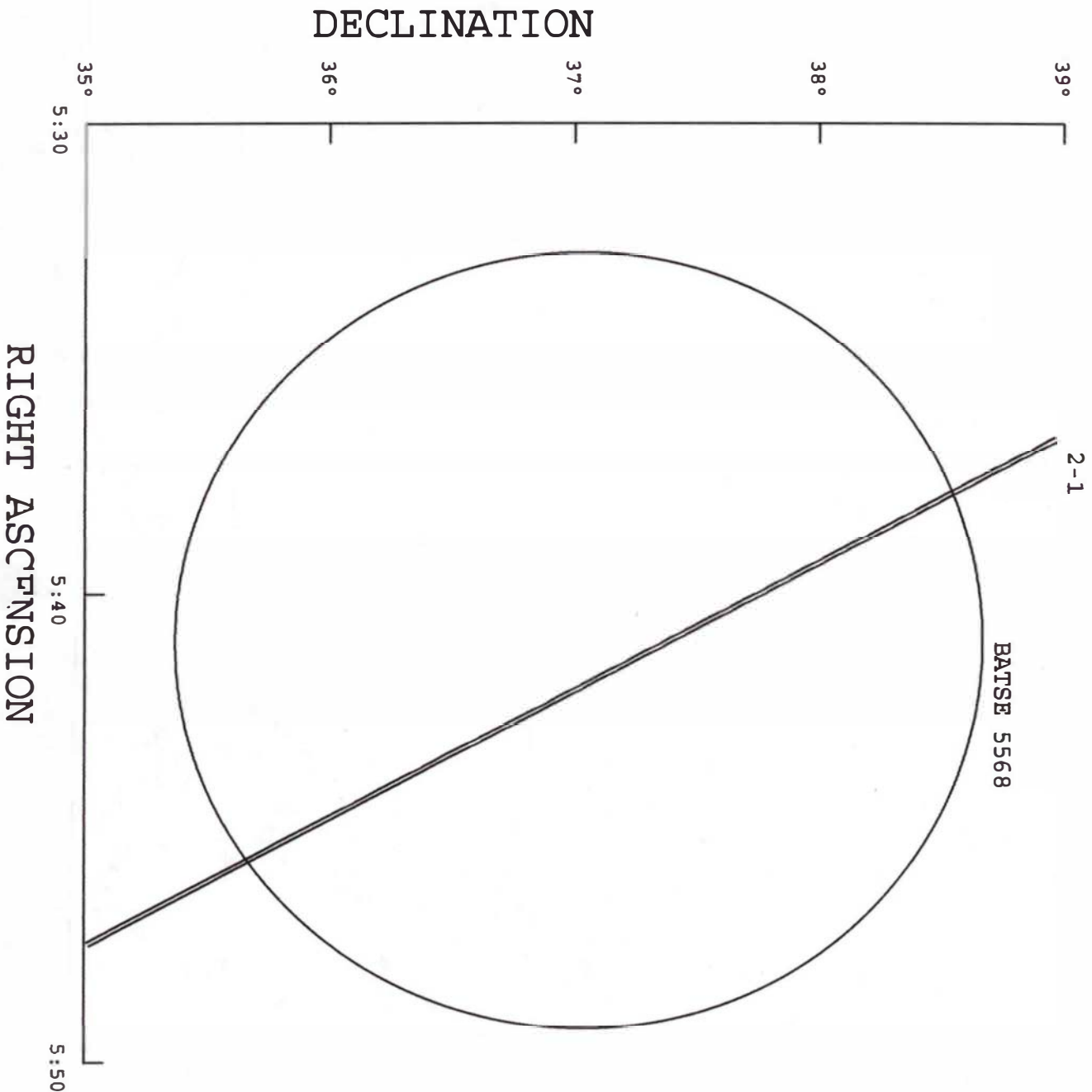
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?

- ☒ 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 AUG 8, 1996 16:19

13 / 3/98



ULYSSES

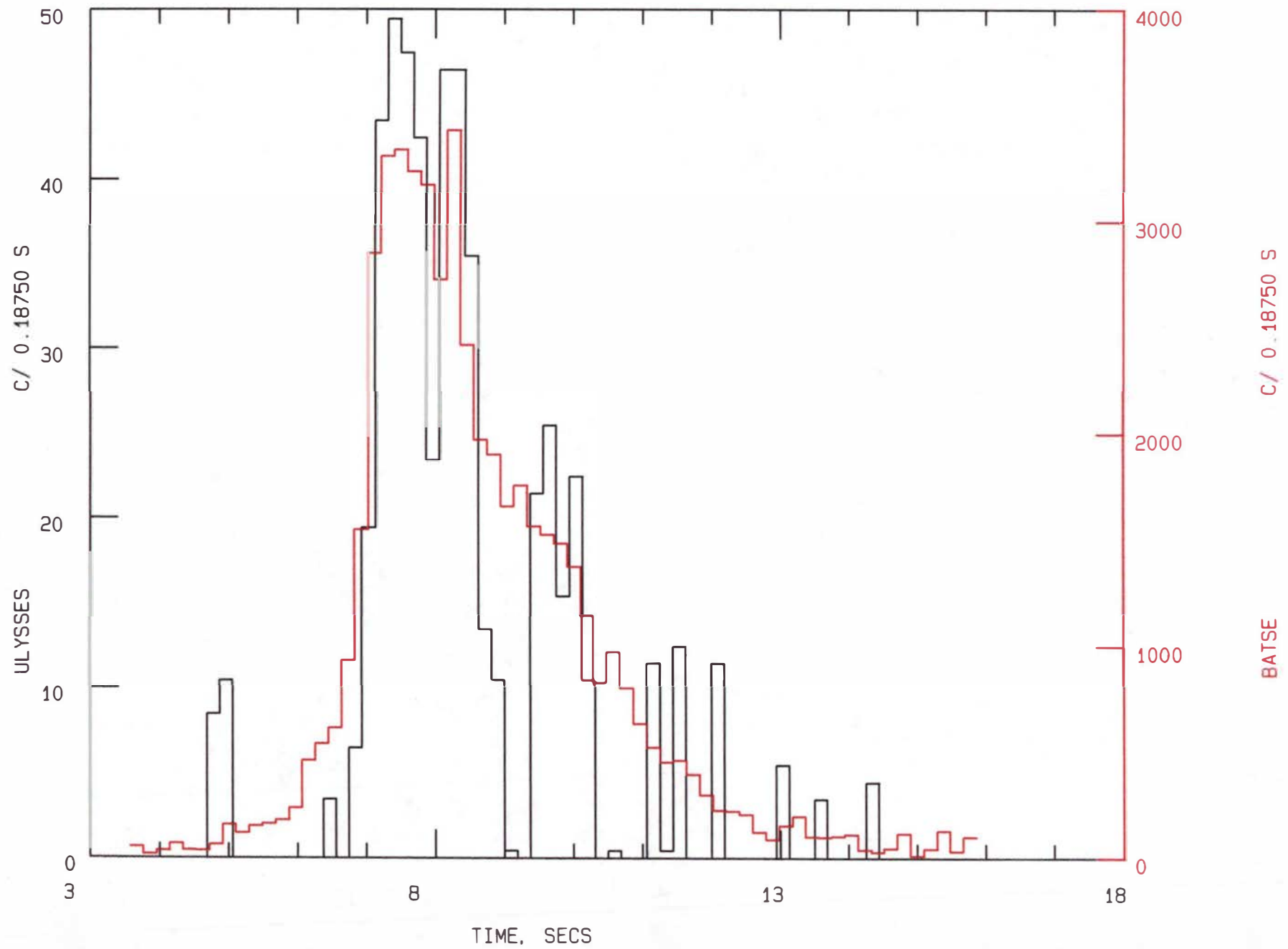
-BATSE

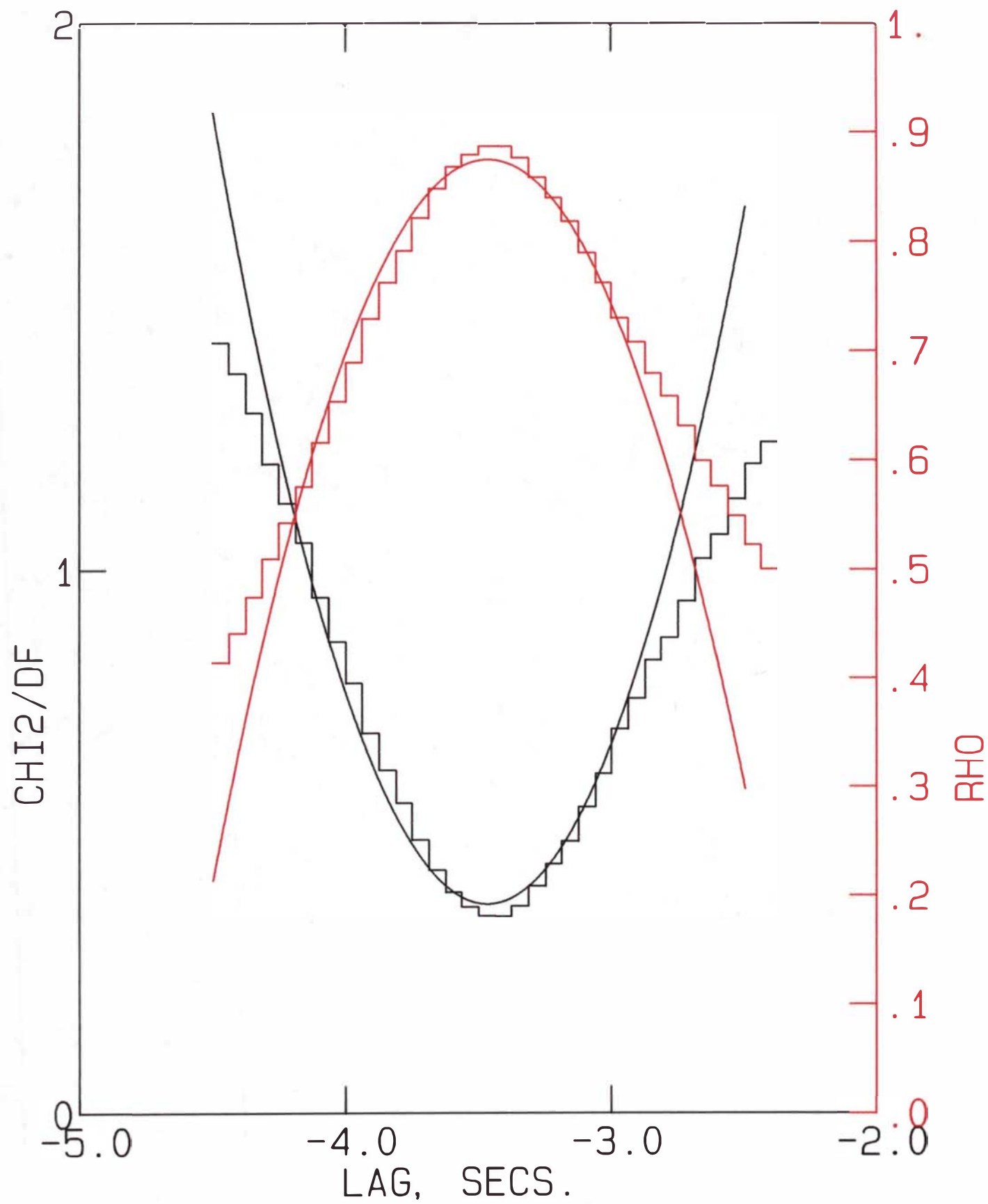
CORRELATION

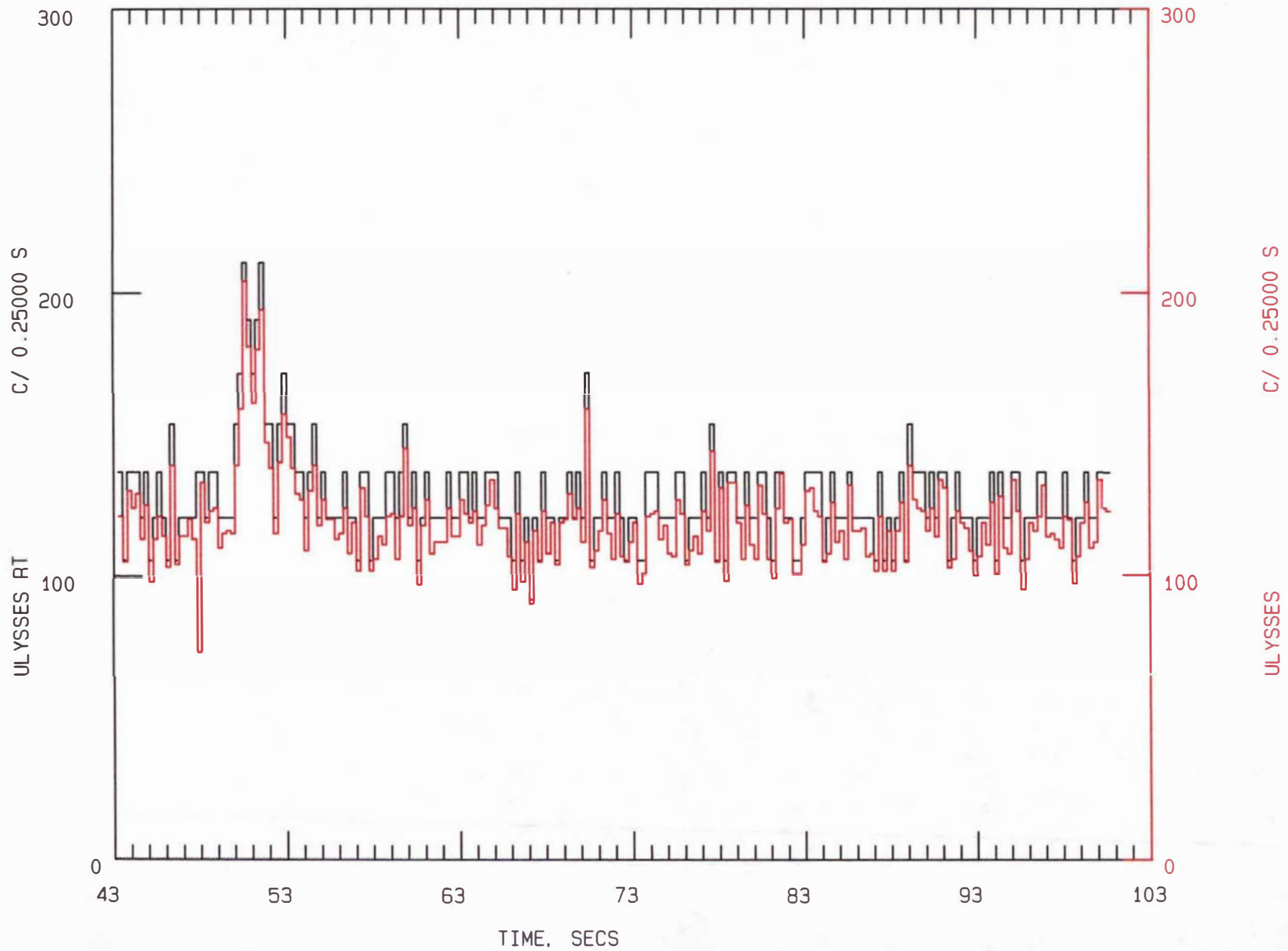
08/08/96

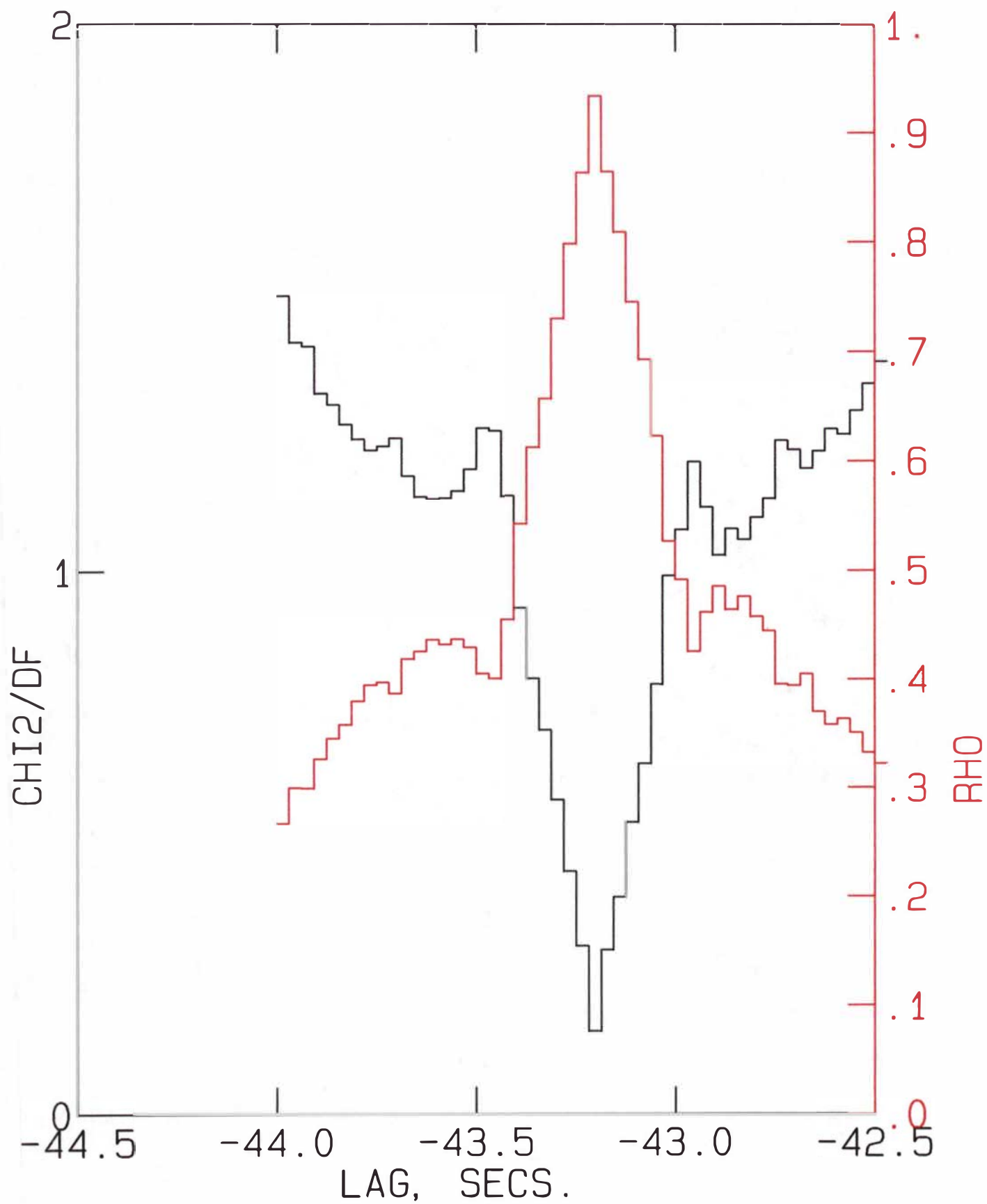
58794.840

13/ 3/98





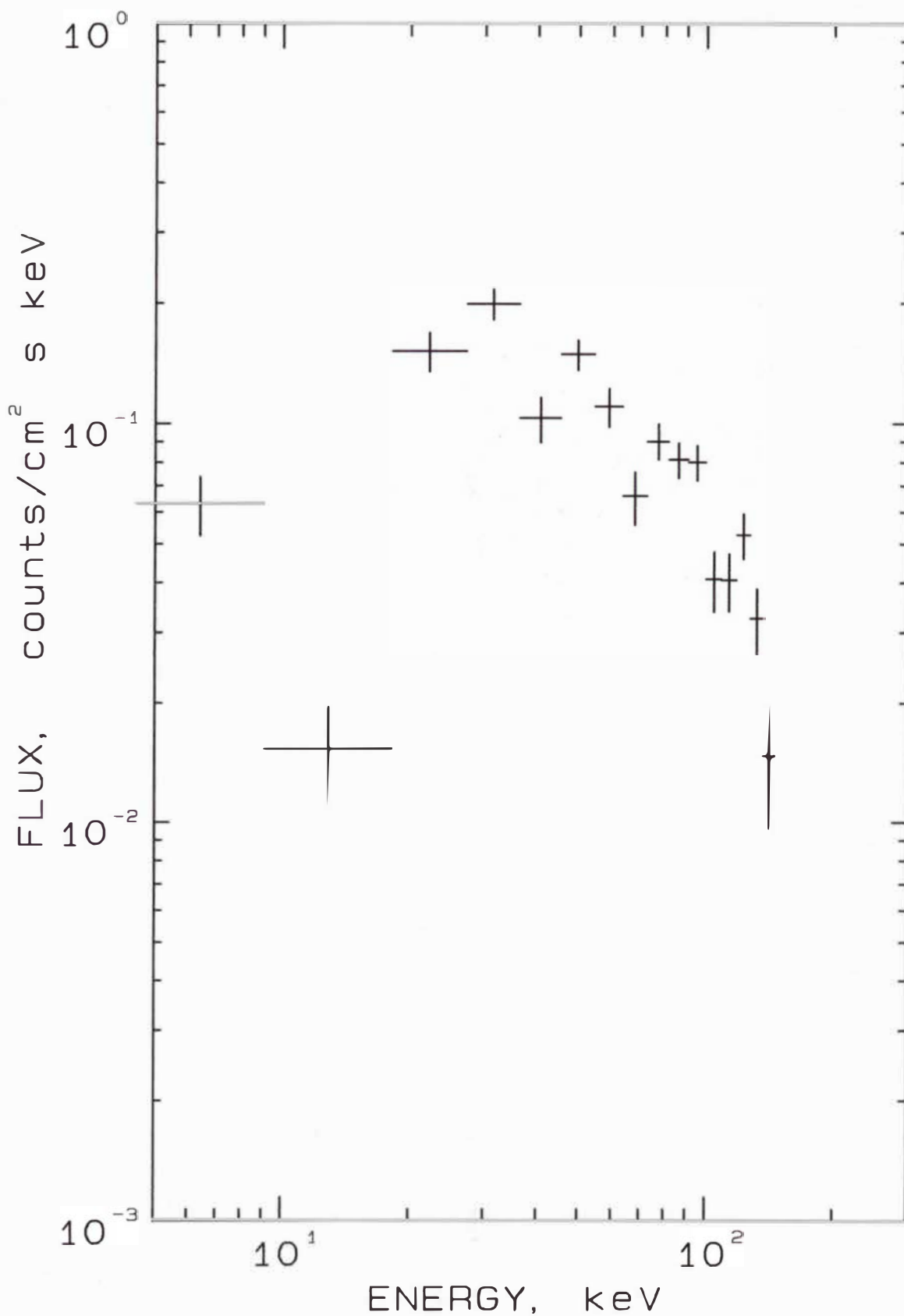




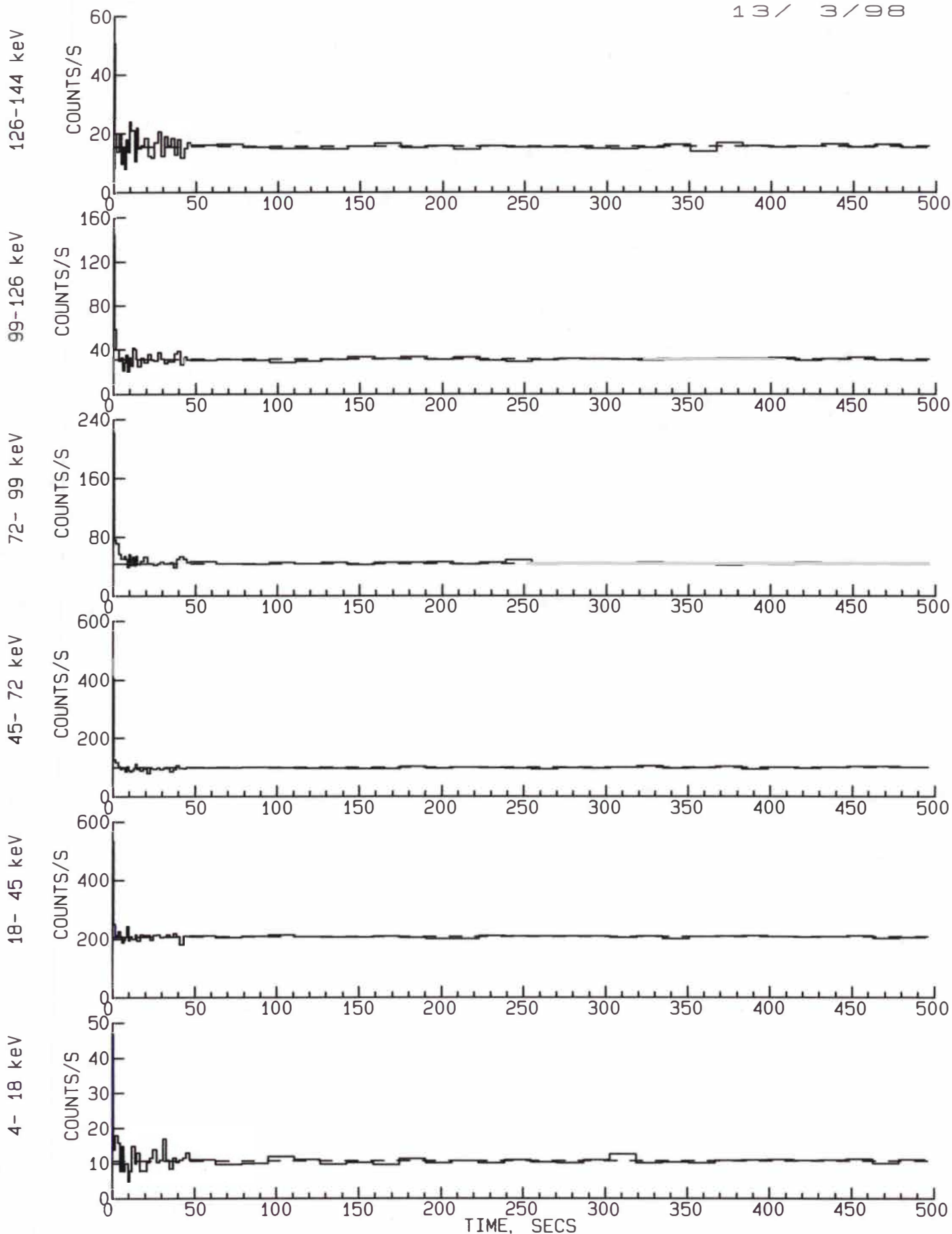
ULYSSES 08/08/96 58794.863

13/ 3/98

SPECTRUM INTEGRATED OVER 16.7 SECONDS, INTERVALS 2 TO 17



ULYSSES 08/08/96 58794.863 BURST SPECTRAL COUNT RATES



ULYSSES

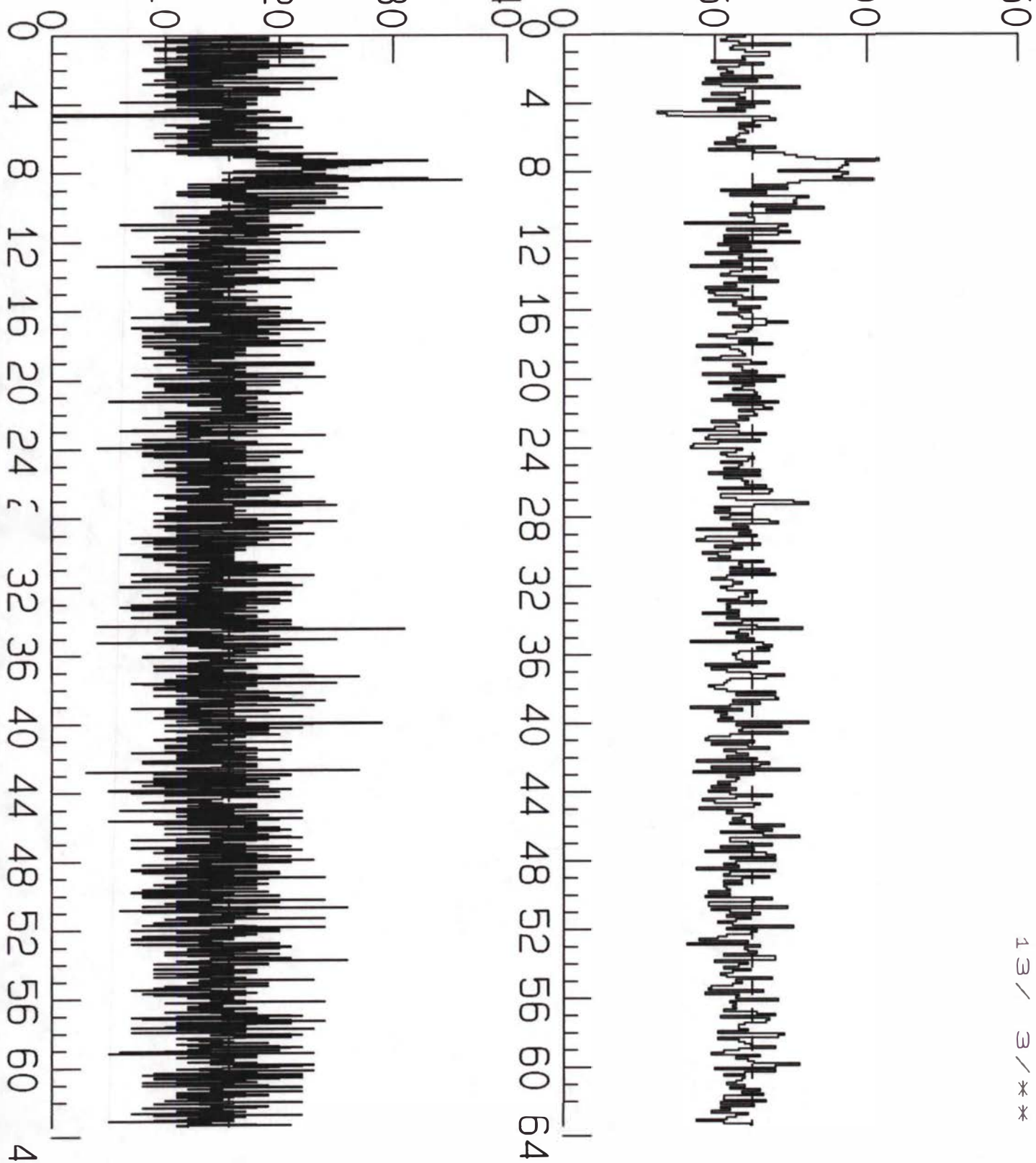
08/08/96

Ttrig=58794.840

21- 145 keV

COUNTS/0.031 S

COUNTS/0.125 S



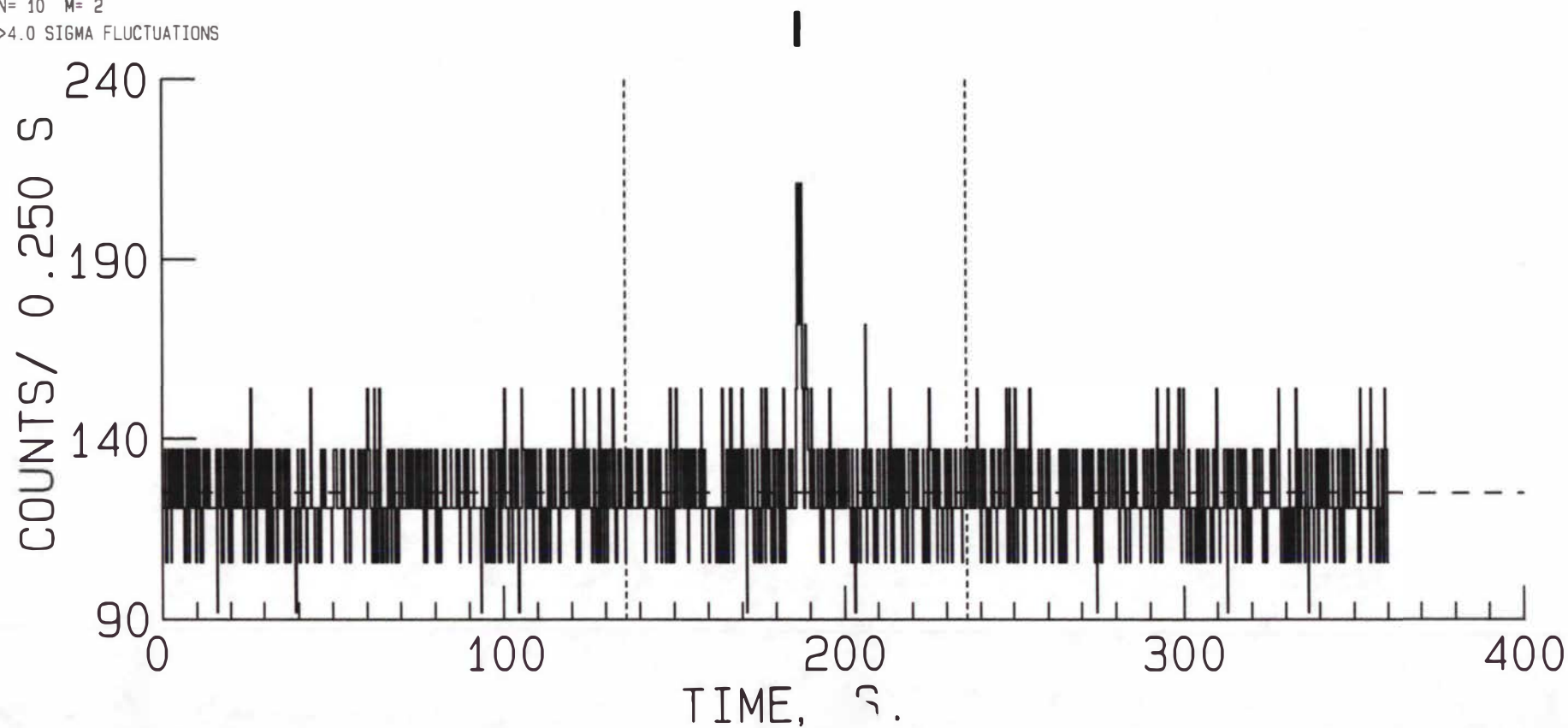
ULYSSES RT

13 / 3 / 98

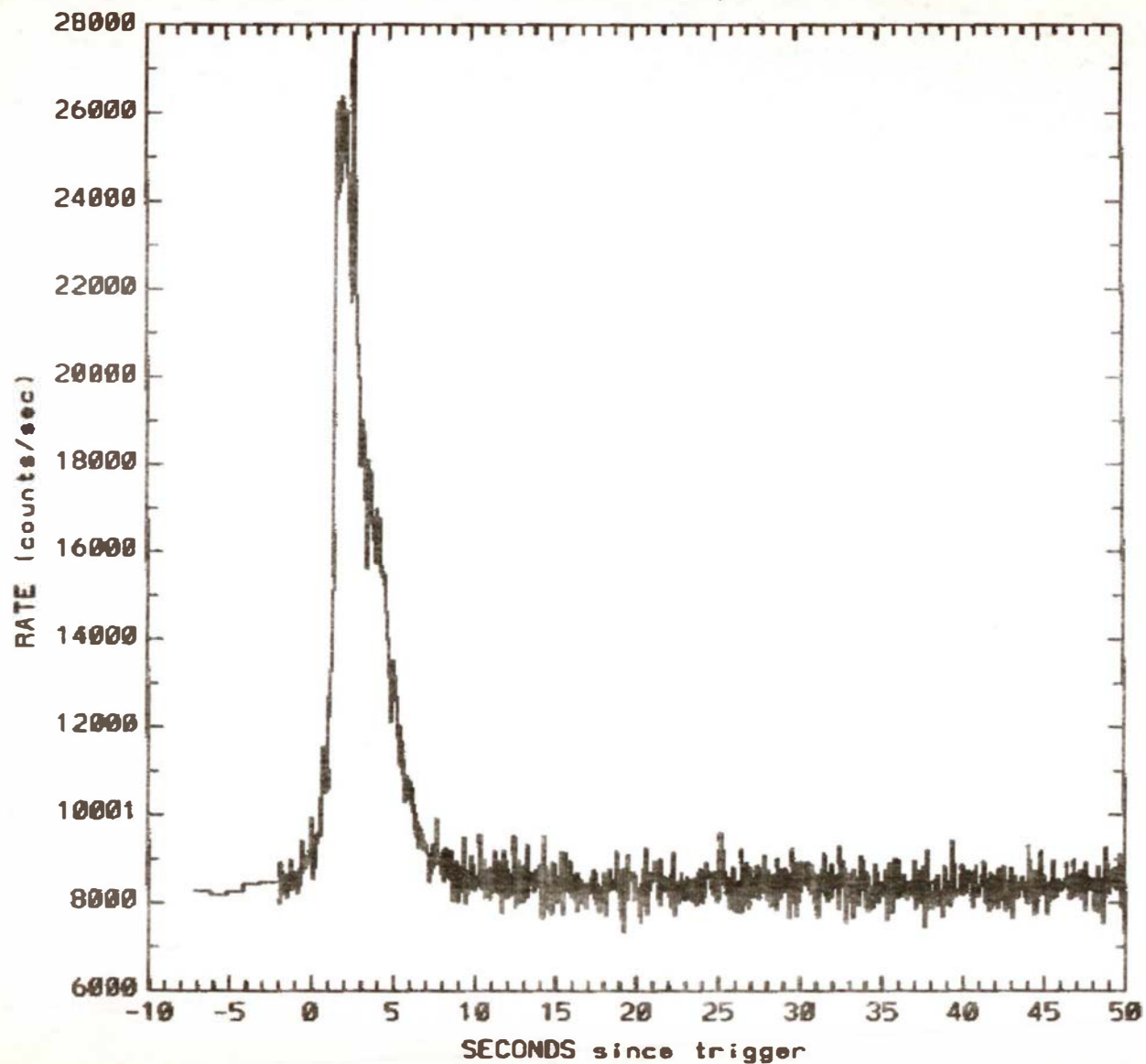
8 / 8 / 96 58608.245 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



DISCSC Data for K. Hurley, No. 5568



28-AUG-1996 18.11.17

Created by MDPS 80
(Burst Display)
Version 12.25

Trigger # : 5568

Trigger Time:
18383 / 68123.850

Burst Data Type:
DISCSC

Deadtime
Corrected: M

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors (7..8):
-5-4--8

Discriminators:
(1..2)

Quality Mask:
BDISP1

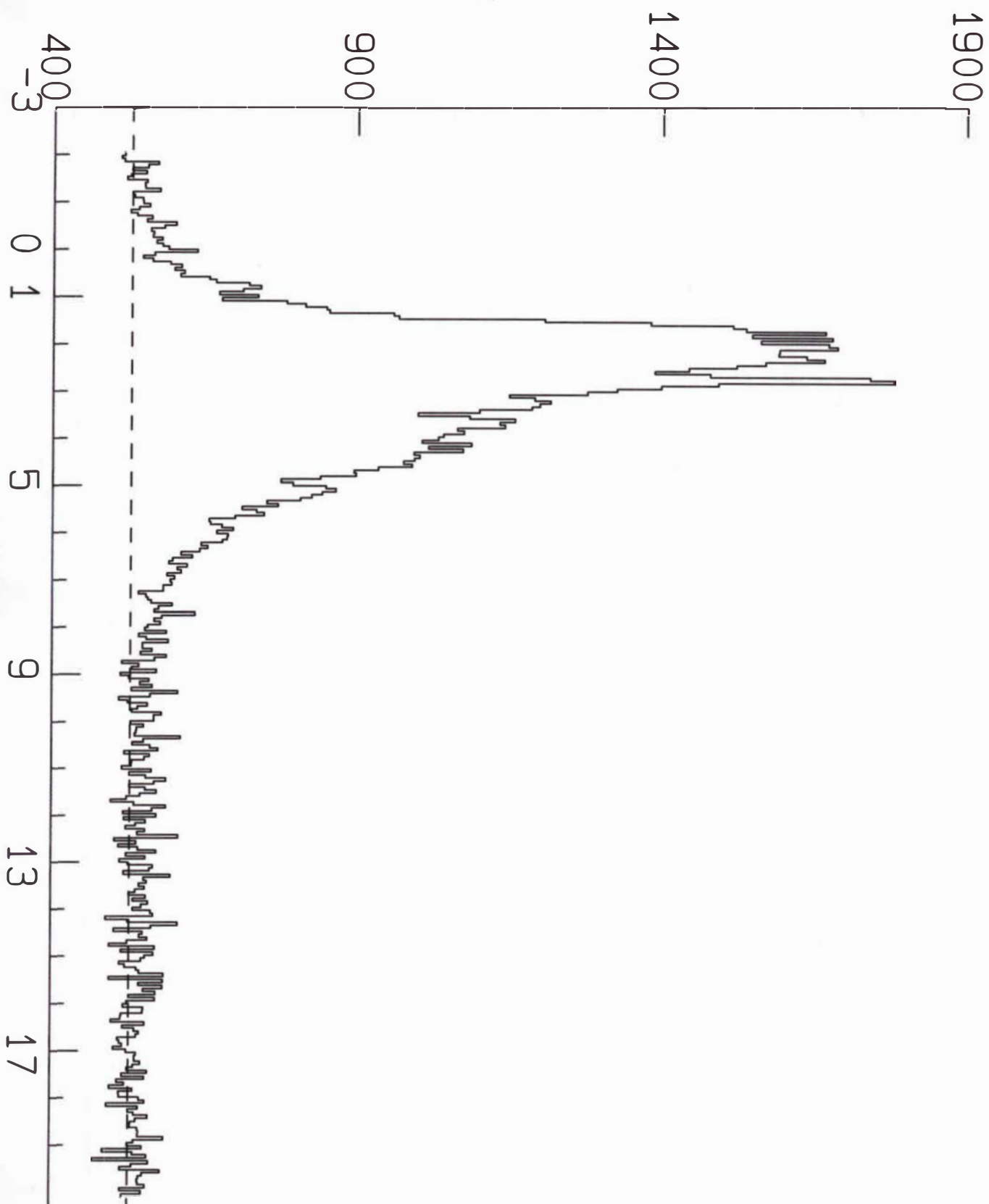
BATSE

08/08/96

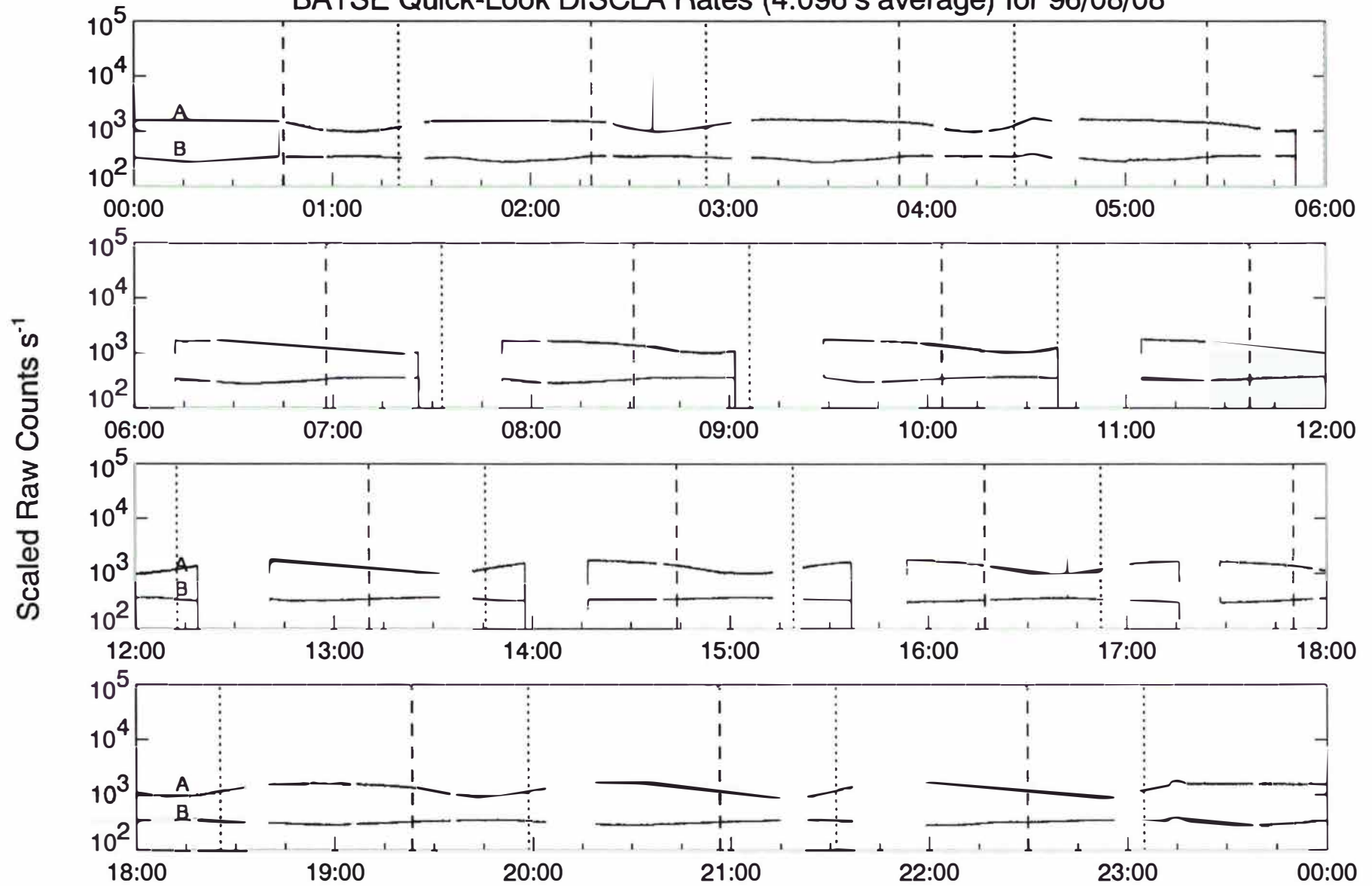
60123.850

25- 100 keV

COUNTS/0.064 S



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

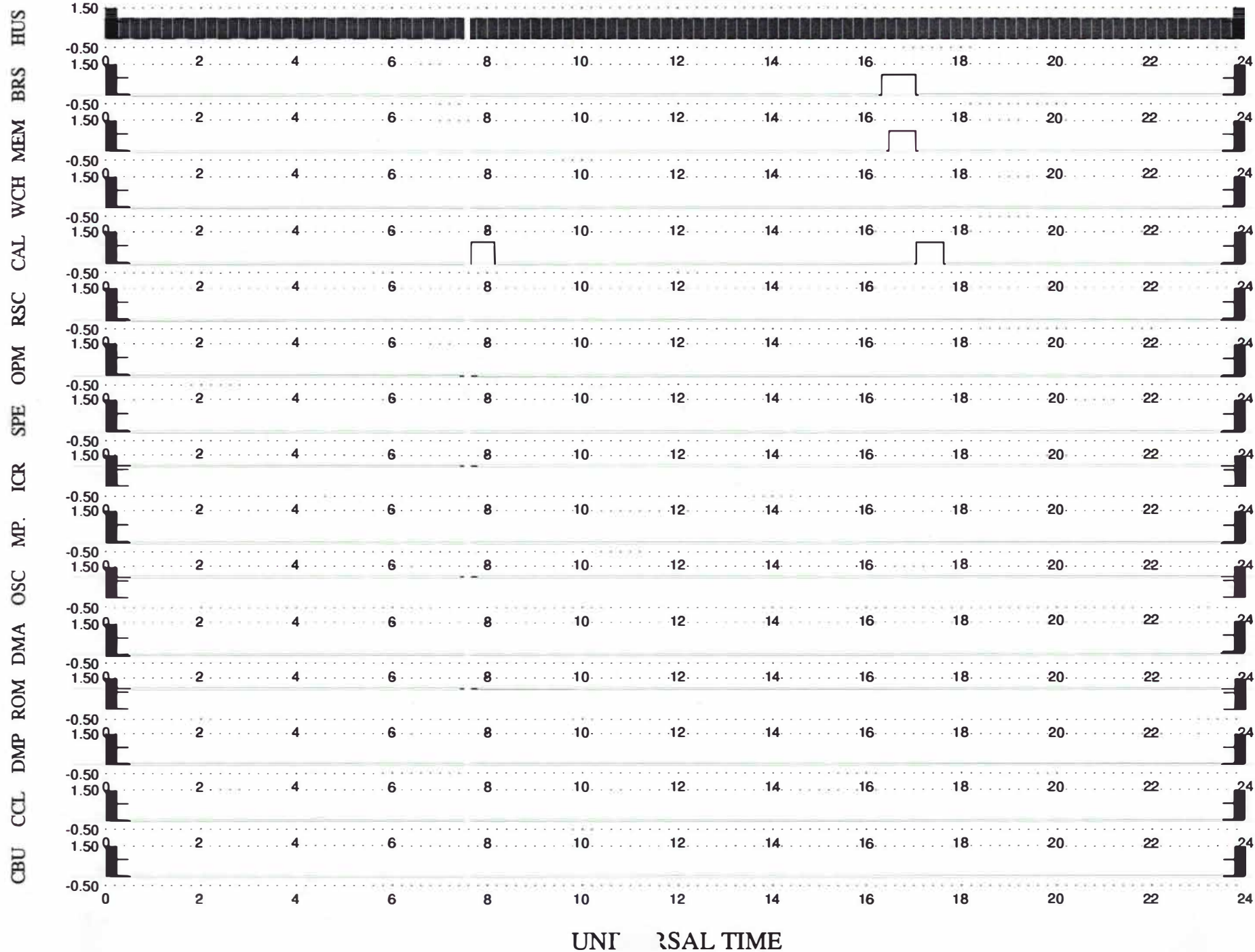


Current Time: 96/08/10, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

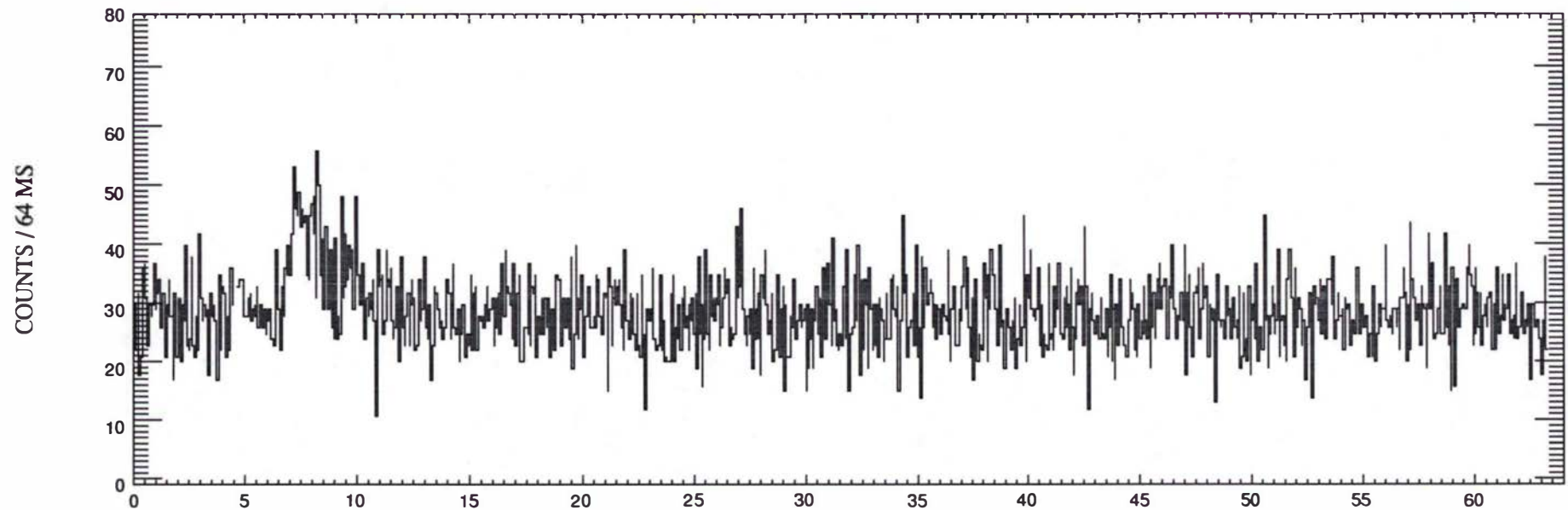
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

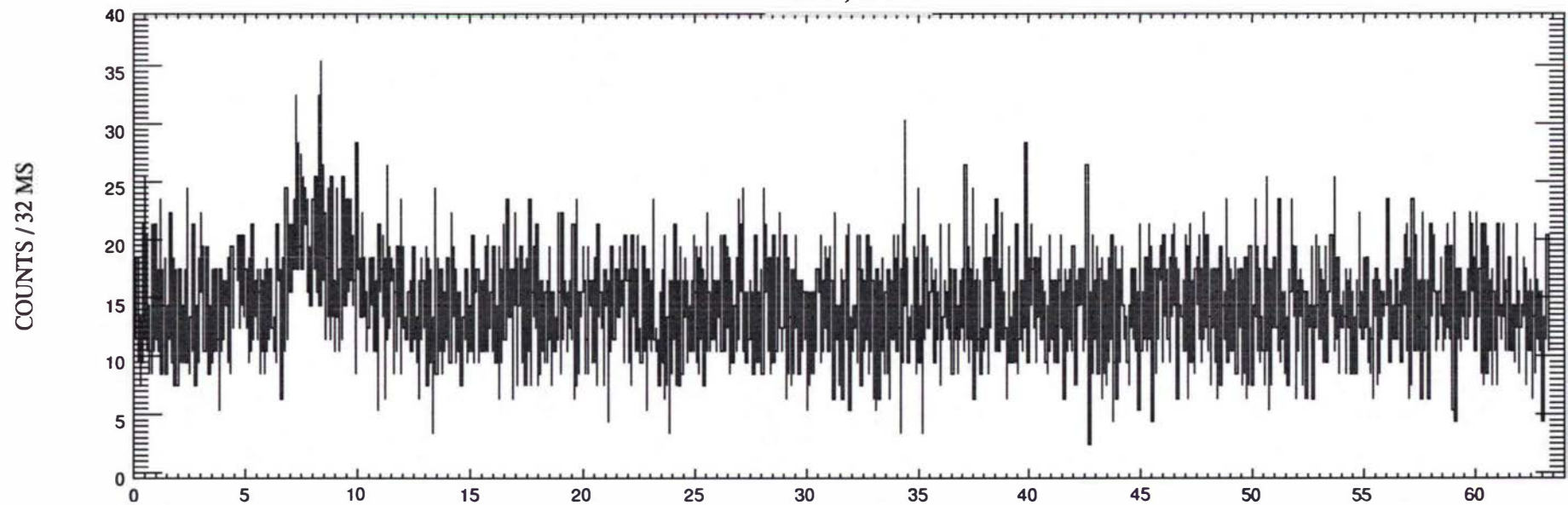
BURST NUMBER 9



Burst Counter 9 at UT=16.331906344096 h=58794.863 s 16:19:54.863

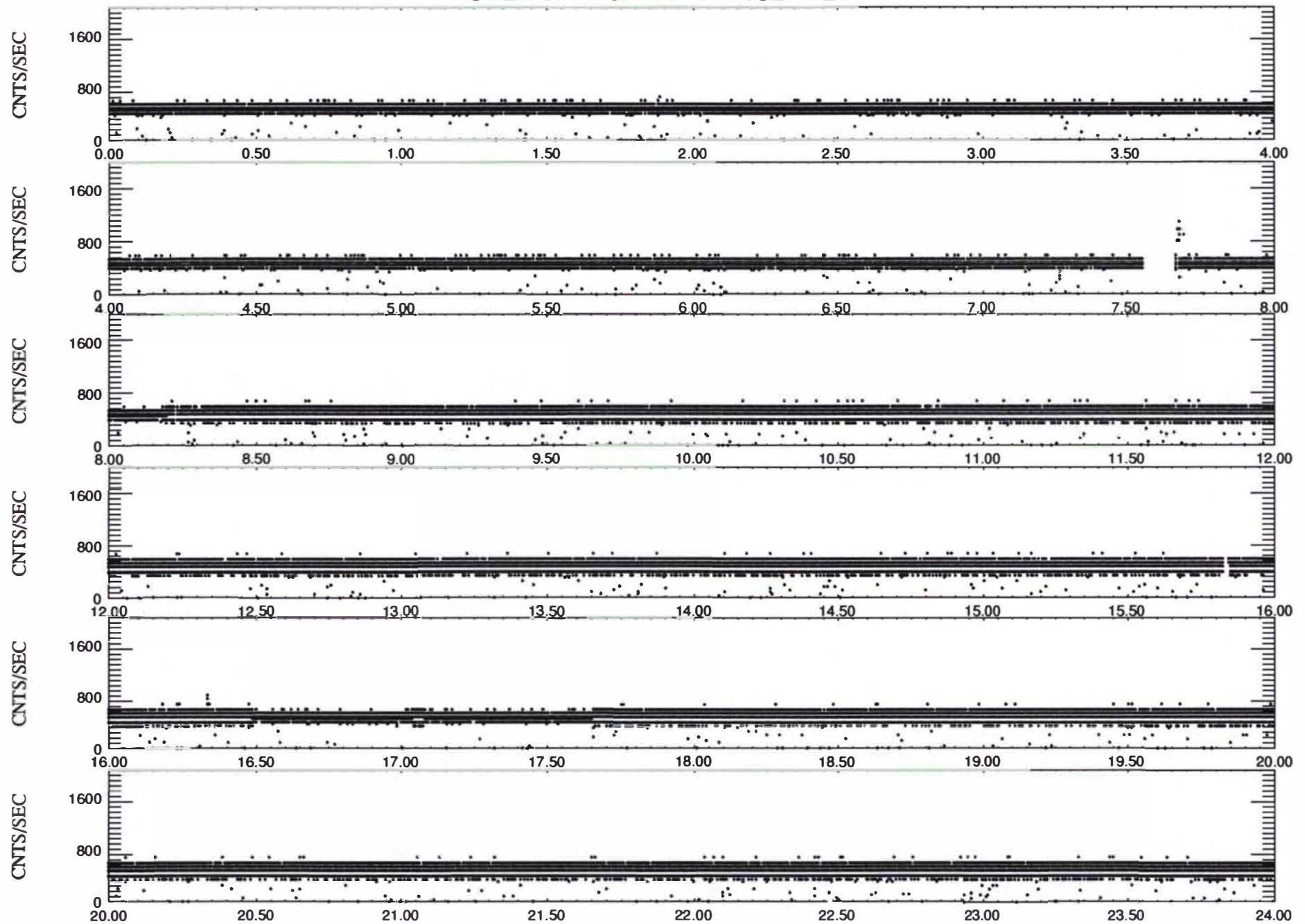


TIME, SECS

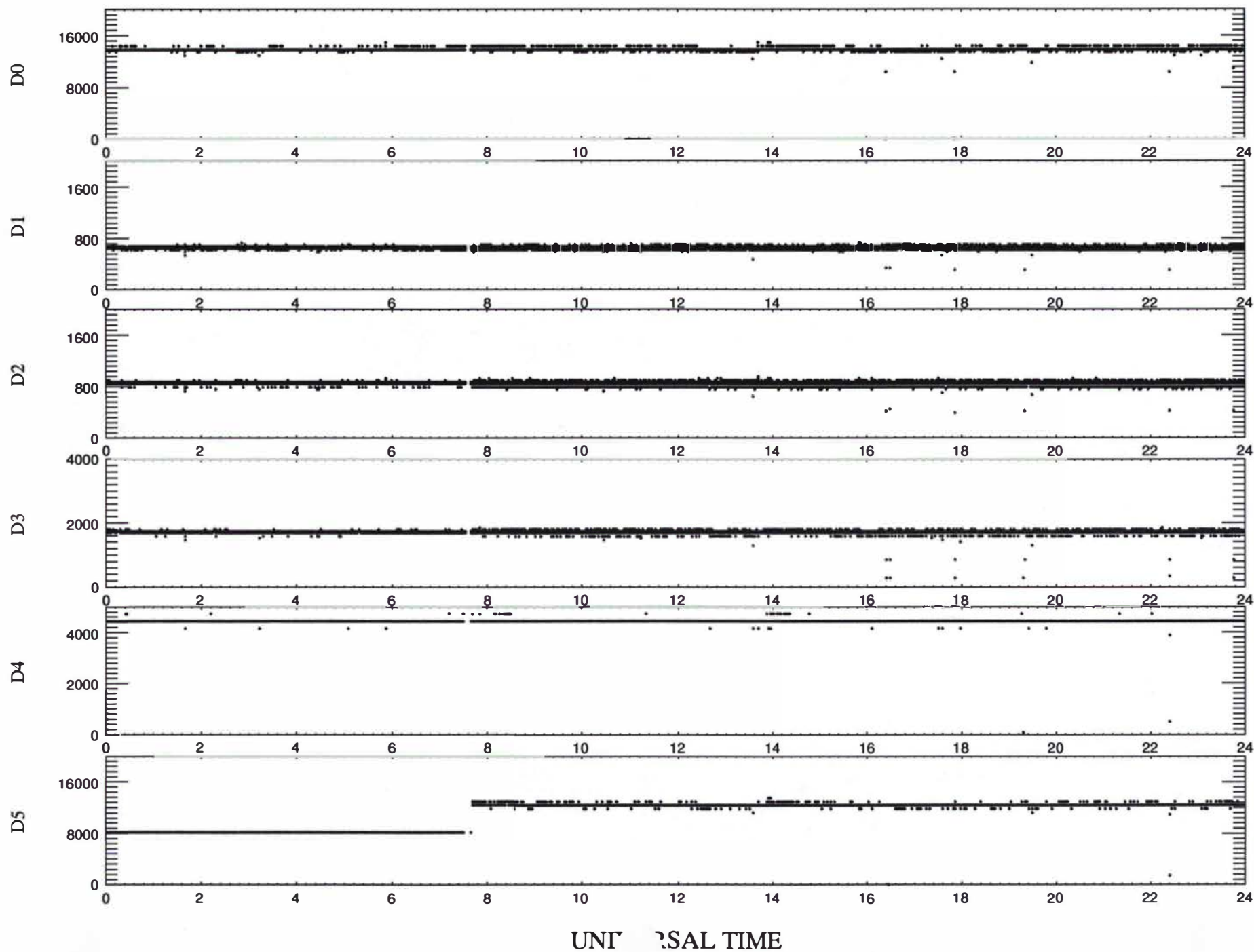


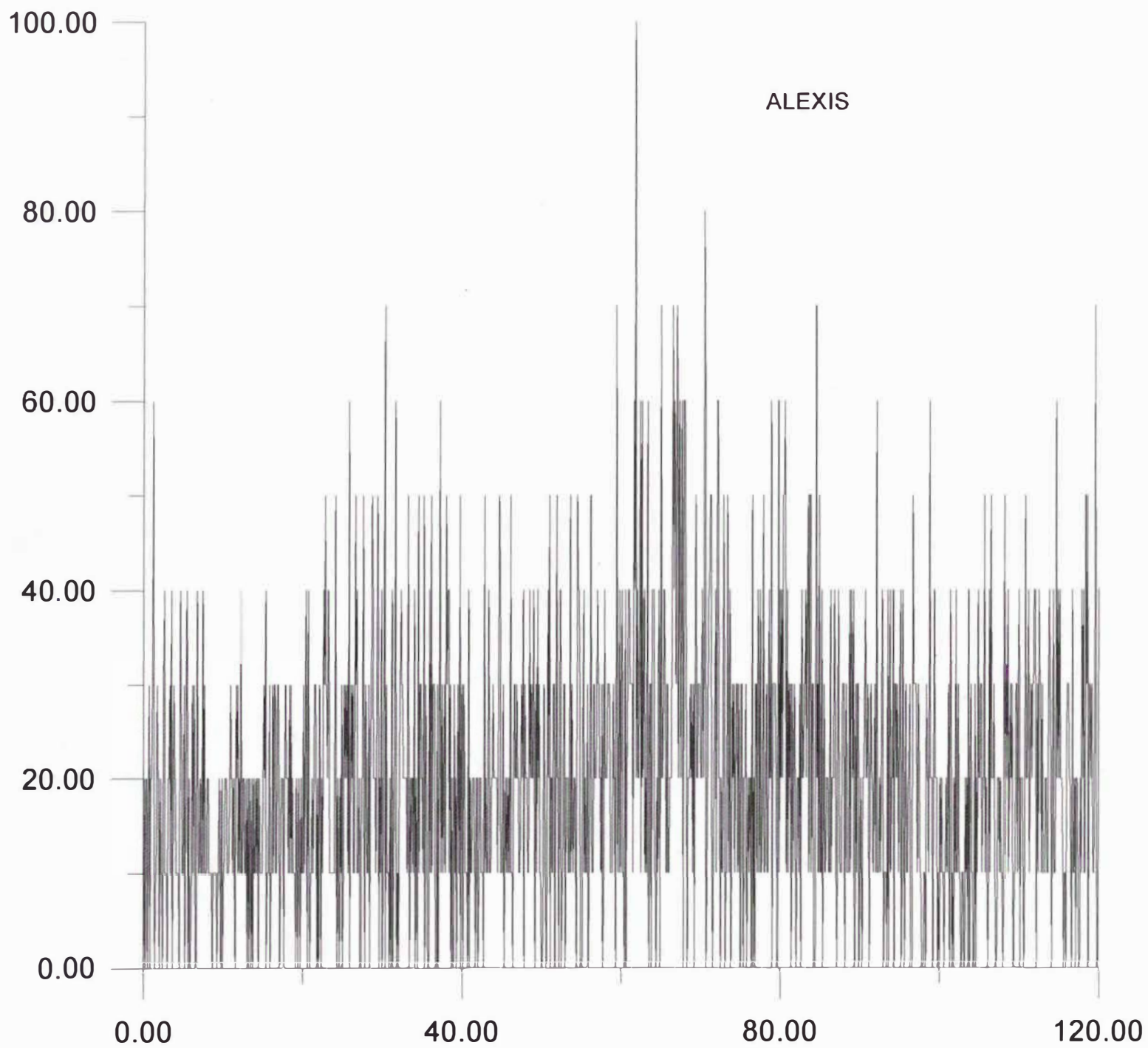
TIME, SECS

CALIBRATION DATA INCLUDED



UNT RSAL TIME





Date: Oct 5 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?

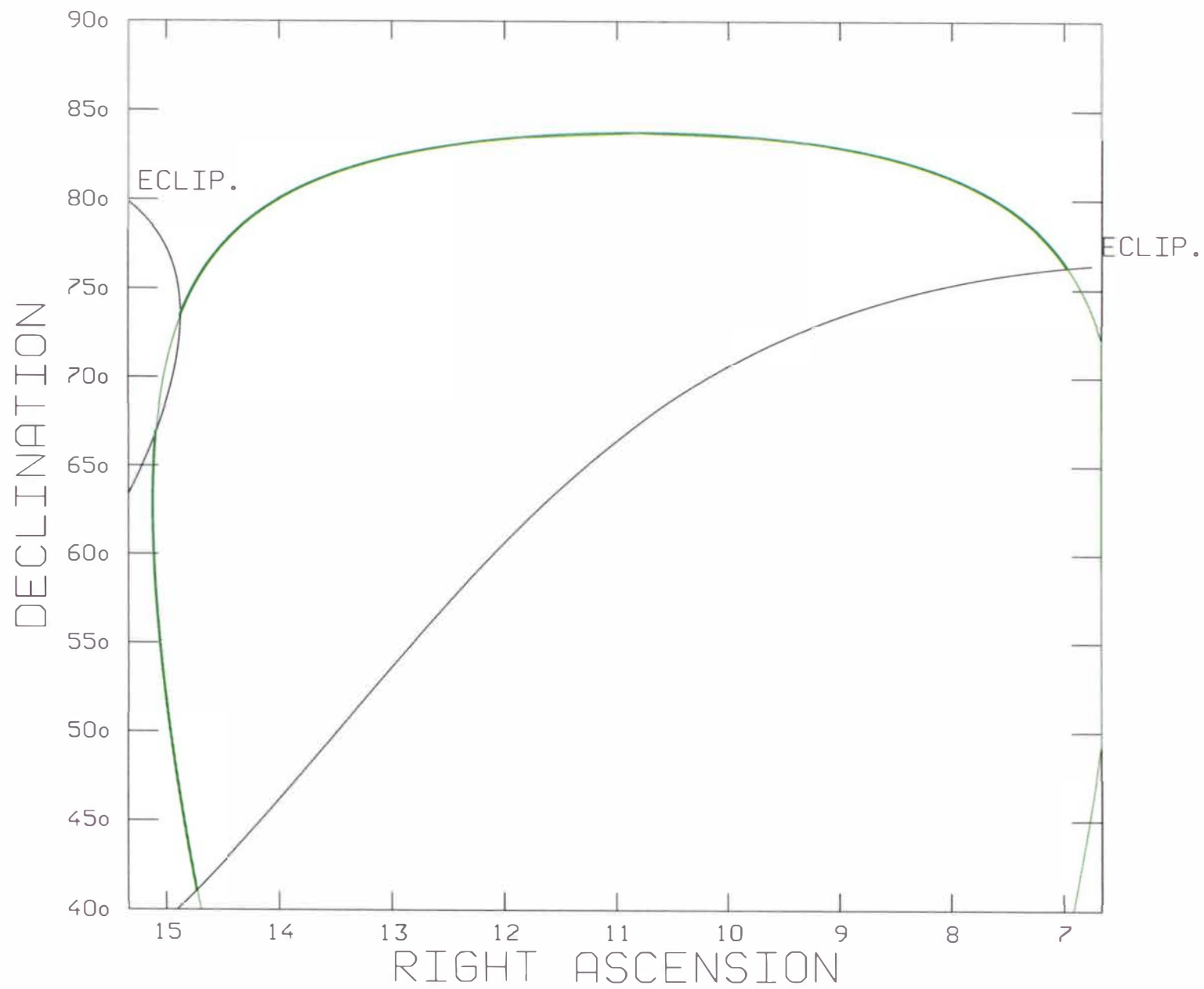
2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

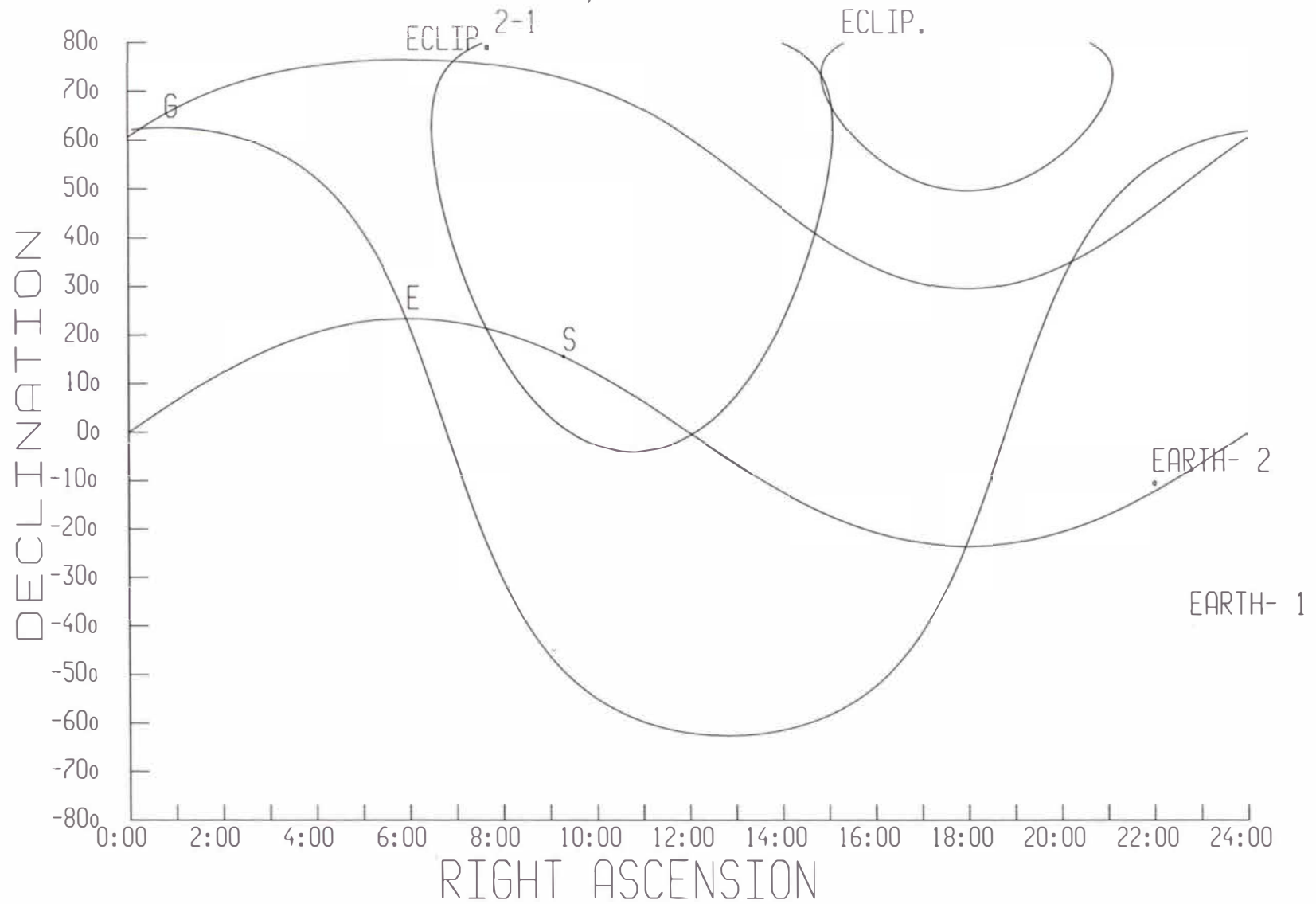
-
- ☒ ACCESS and MBL4 databases updated with identical times?



EVENT OF AUG 9, 1996 13:59

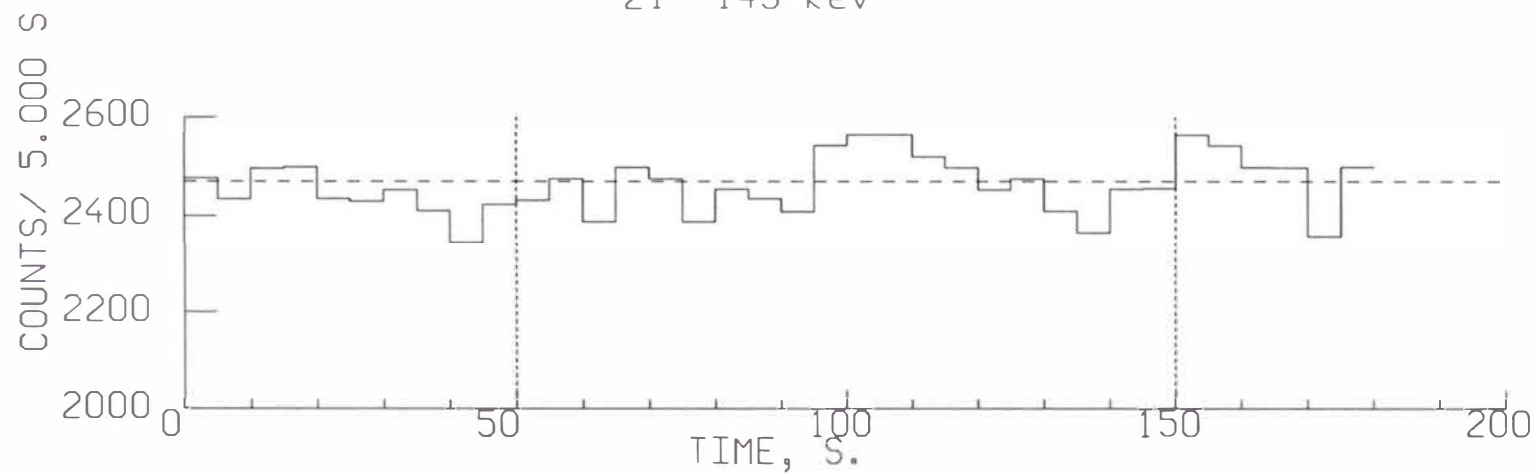
05/10/2011

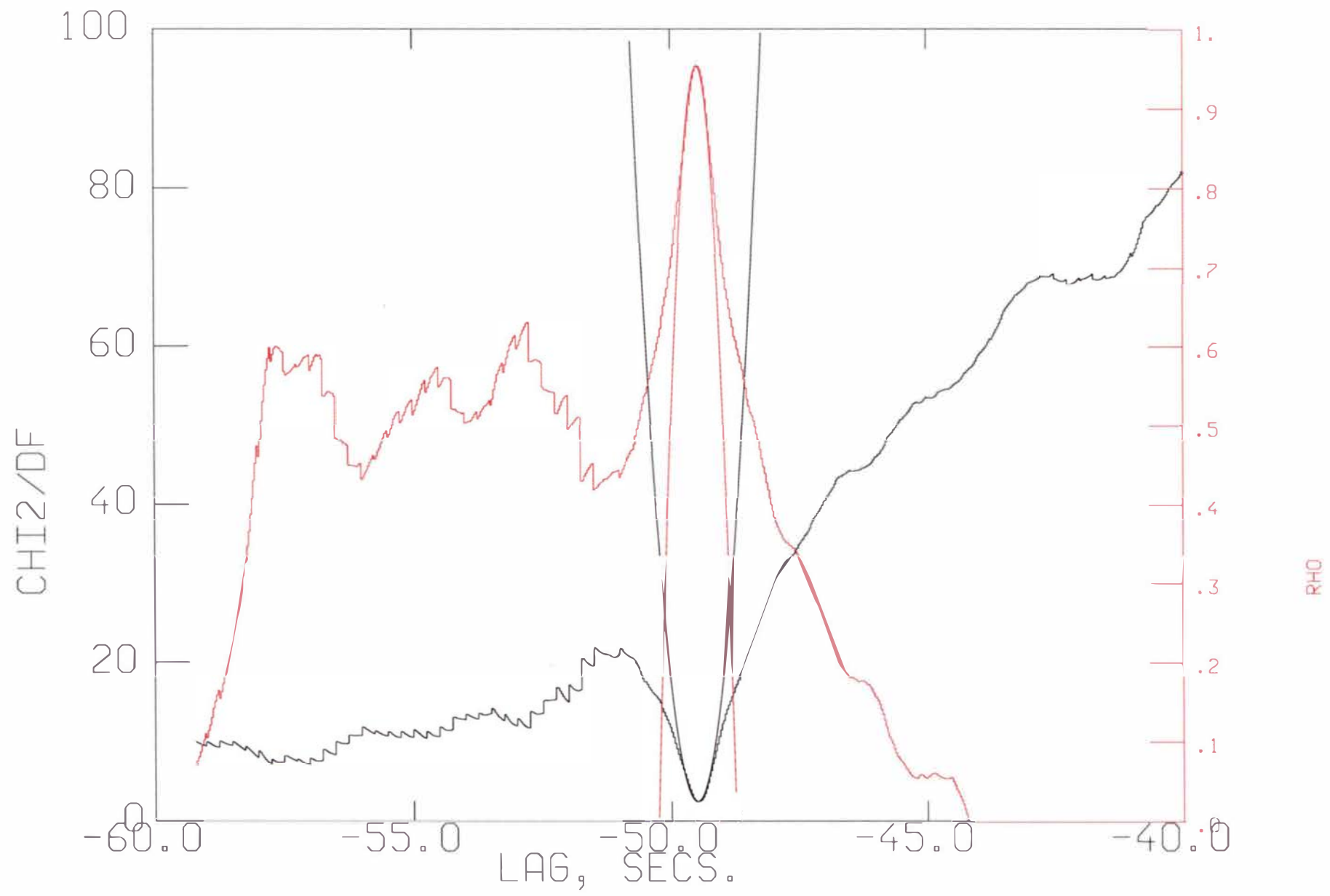
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 KONUS

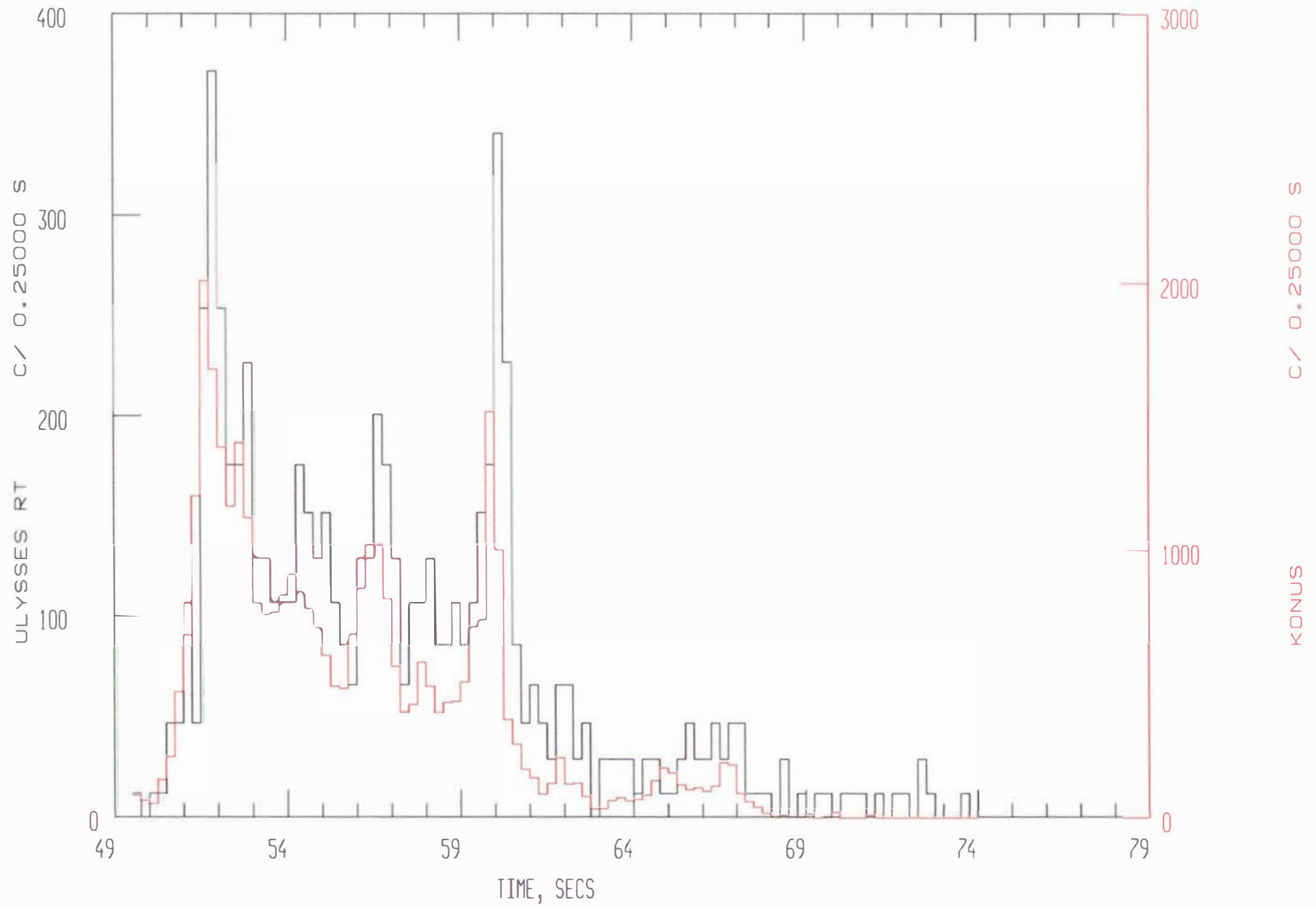


ULYSSES RT
3/ 8/96 66888.047 s
0.500 S INTERVALS REGROUPED BY 10
21- 145 keV

5/10/11







KONUS 19960809 50424

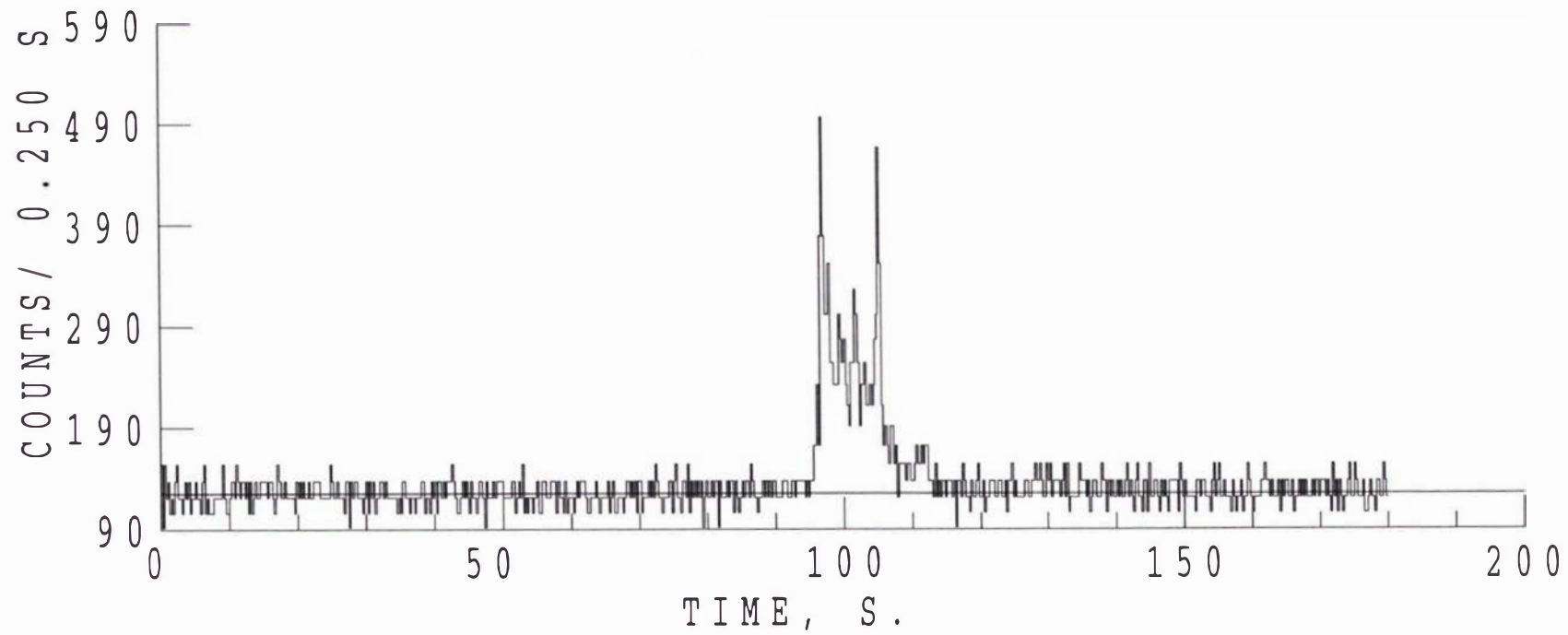
ULYSSES RT

05/10/11

09/08/96 50328.000 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



TO: JEFF BLOCH

SOS 665 4414

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

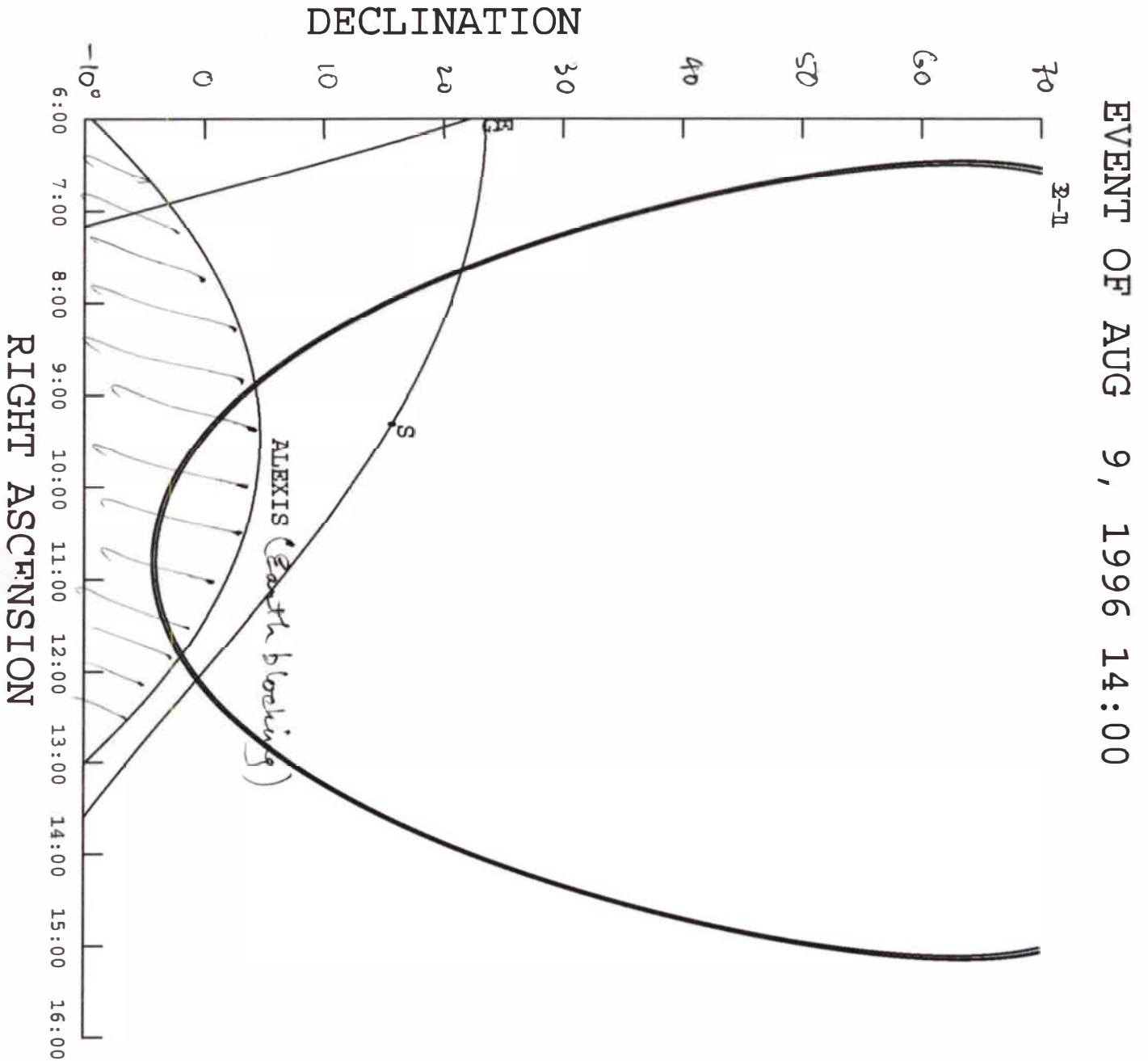
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS

3 1990-095



7 / 2/98

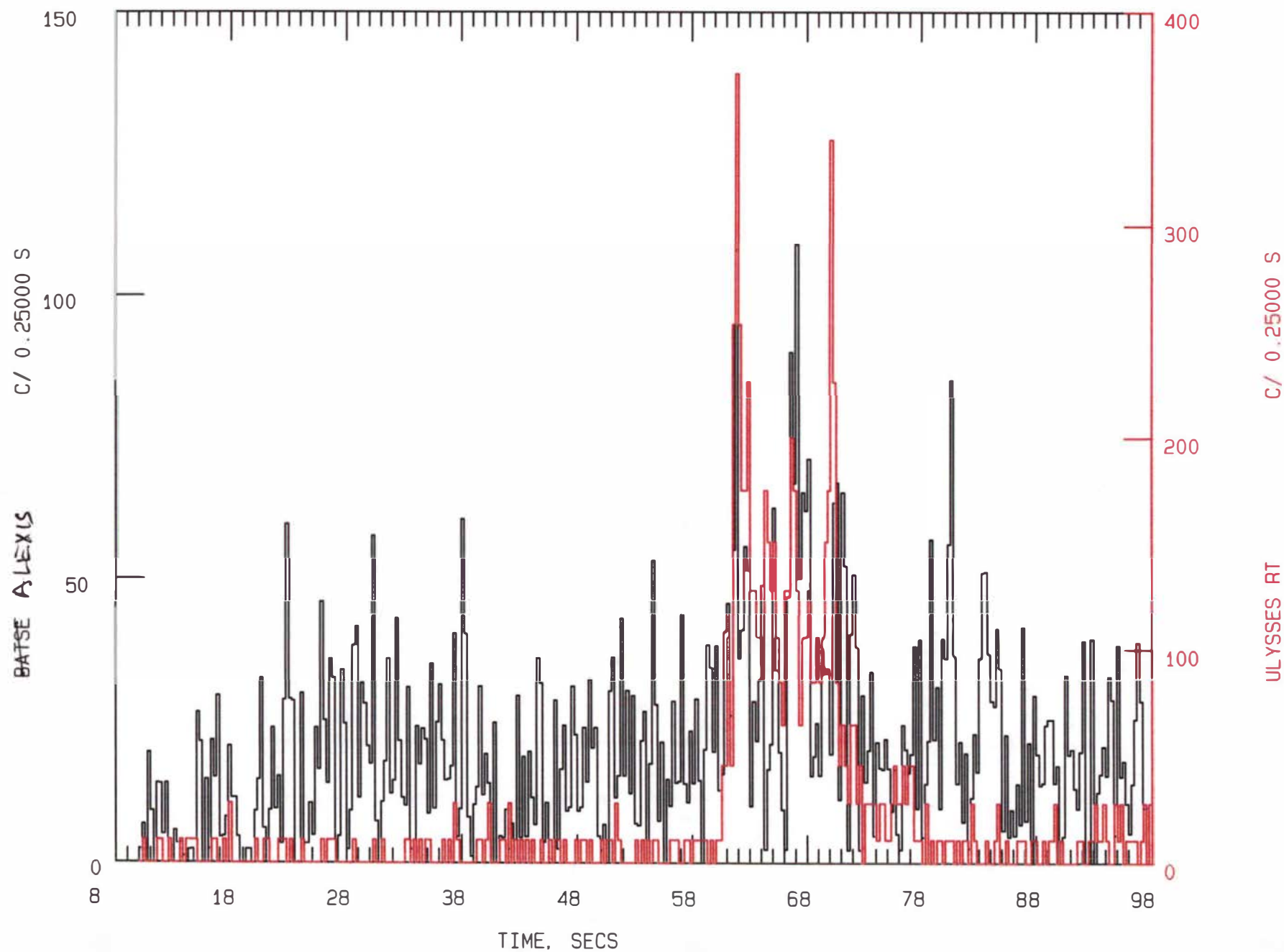
ALEXIS
BATSE

-ULYSSES RT CORRELATION

09/08/96

52170.000

7/ 2/98

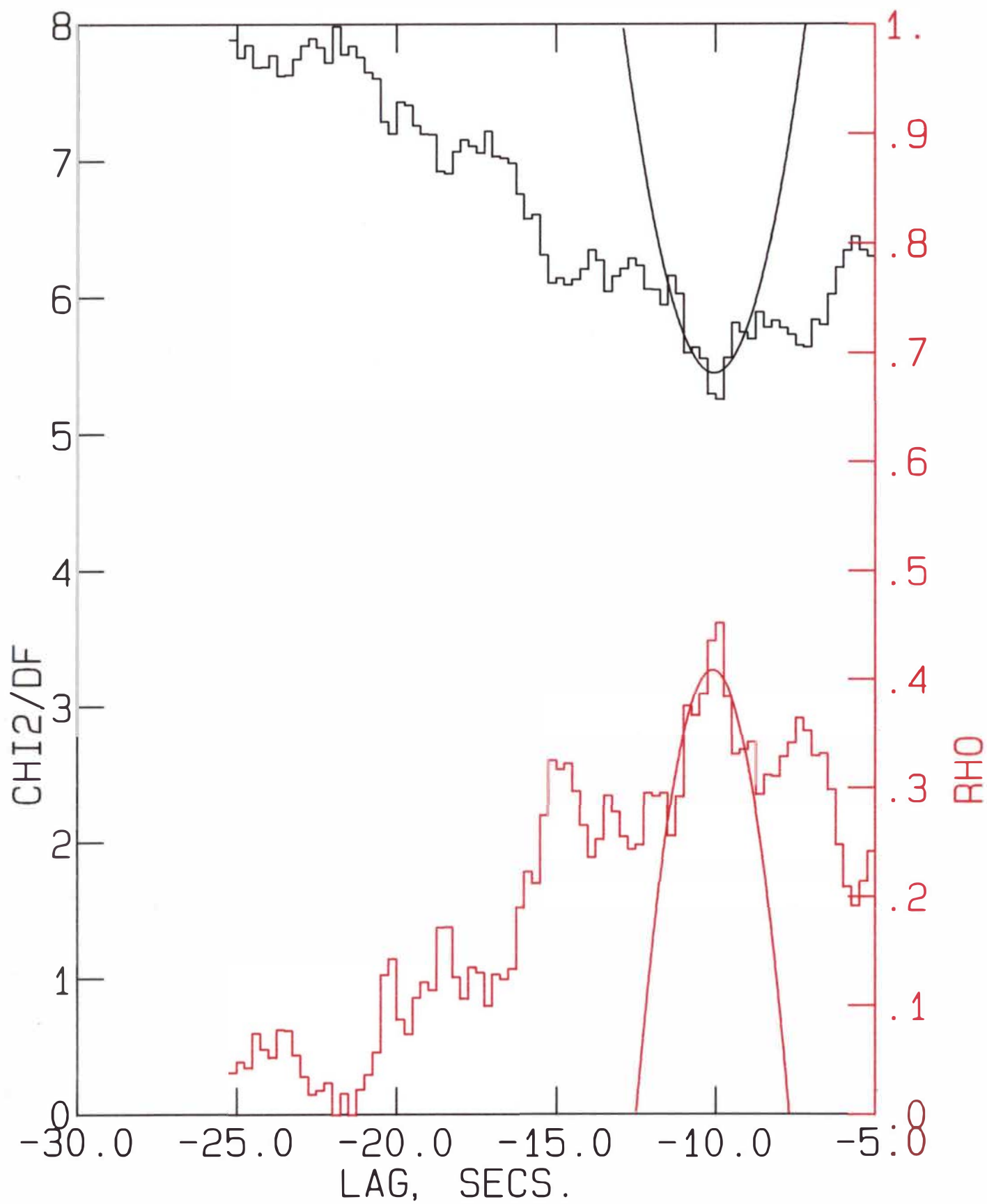


~~BATSE~~
ALEXIS

-ULYSSES RT CORRELATION

09/08/96

52170.000



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

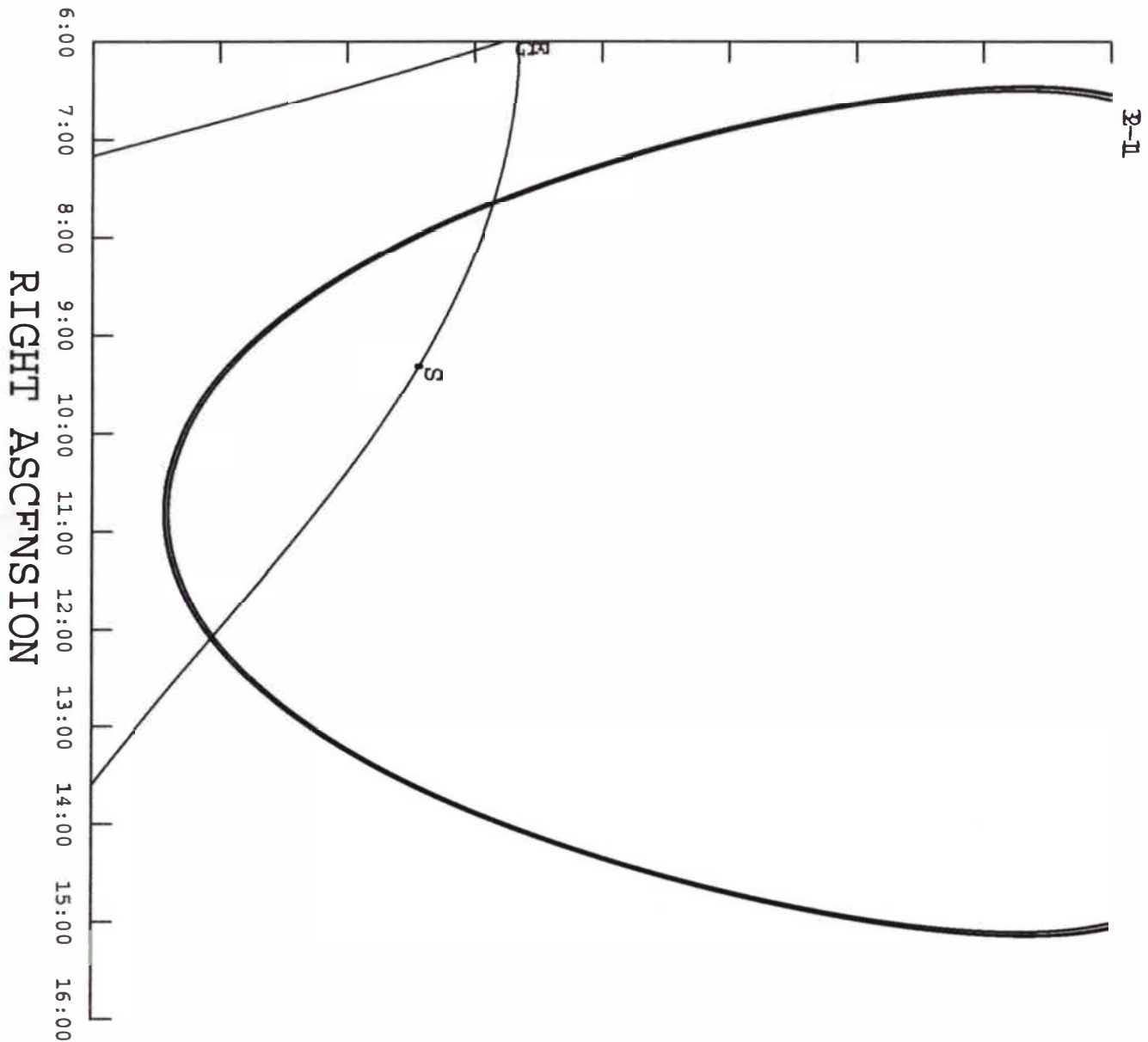
G=GALACTIC EQUATOR

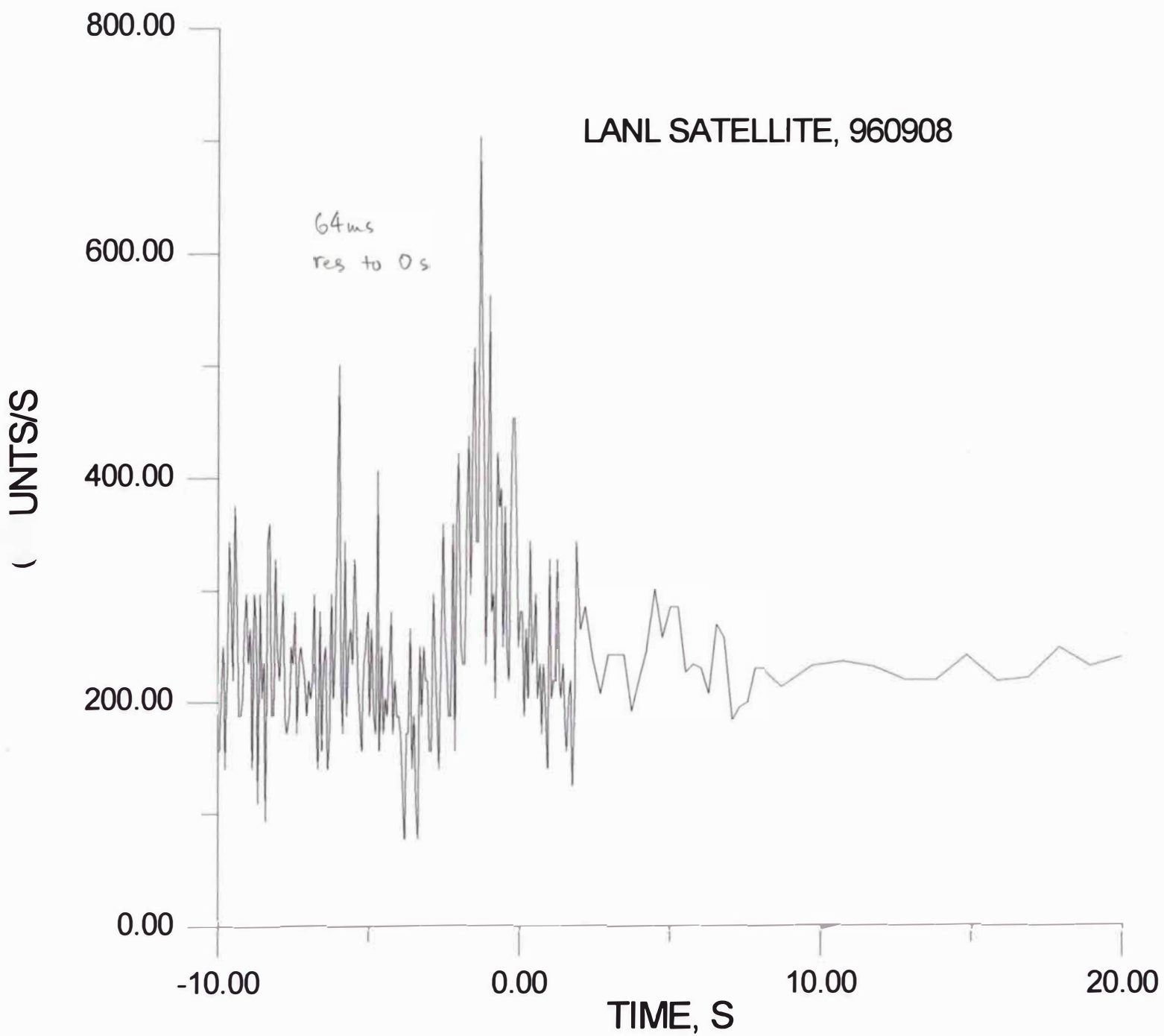
1 ULYSSES

2 KONUS

3 1990-095

DECLINATION





BATSE

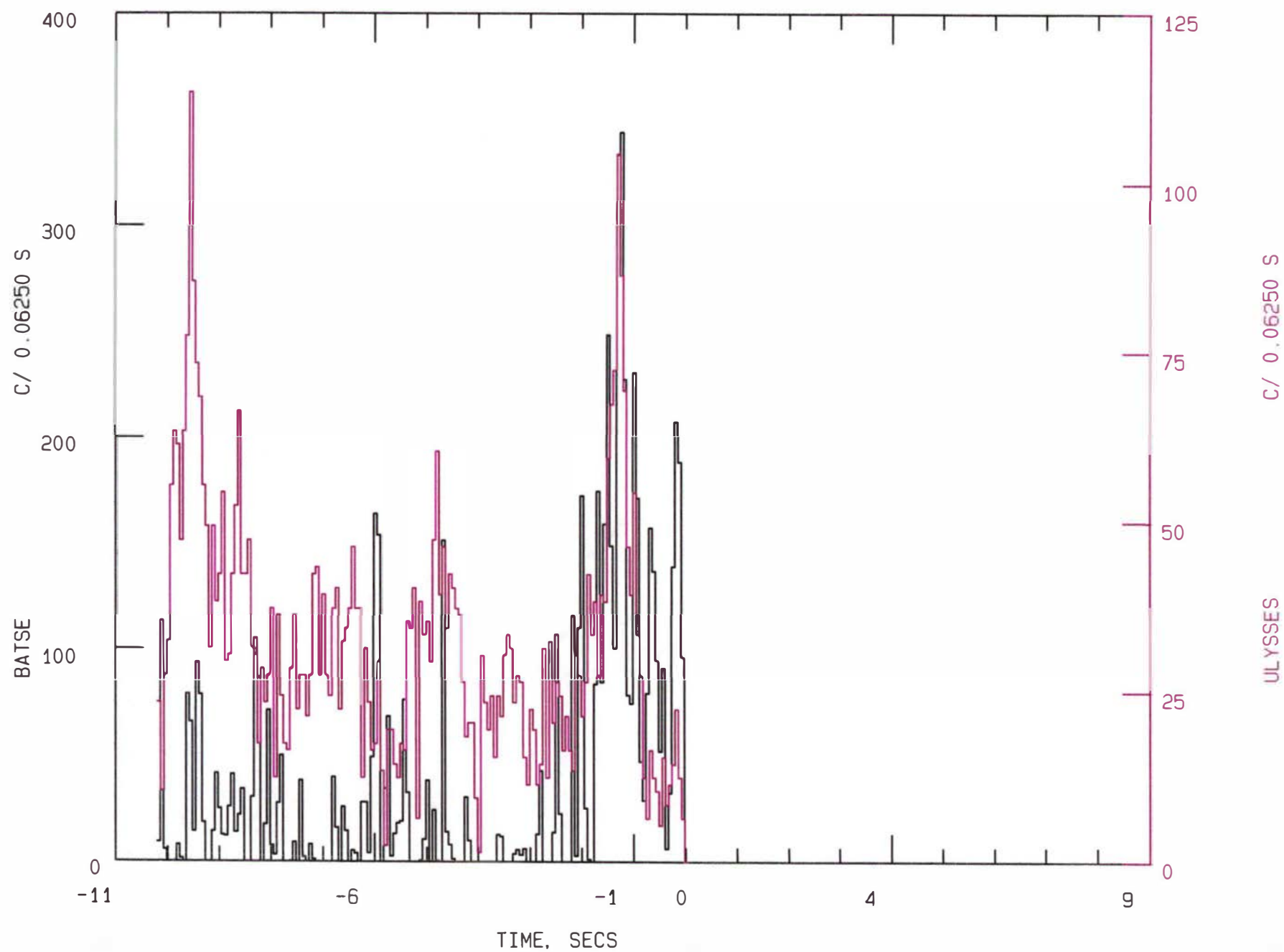
-ULYSSES

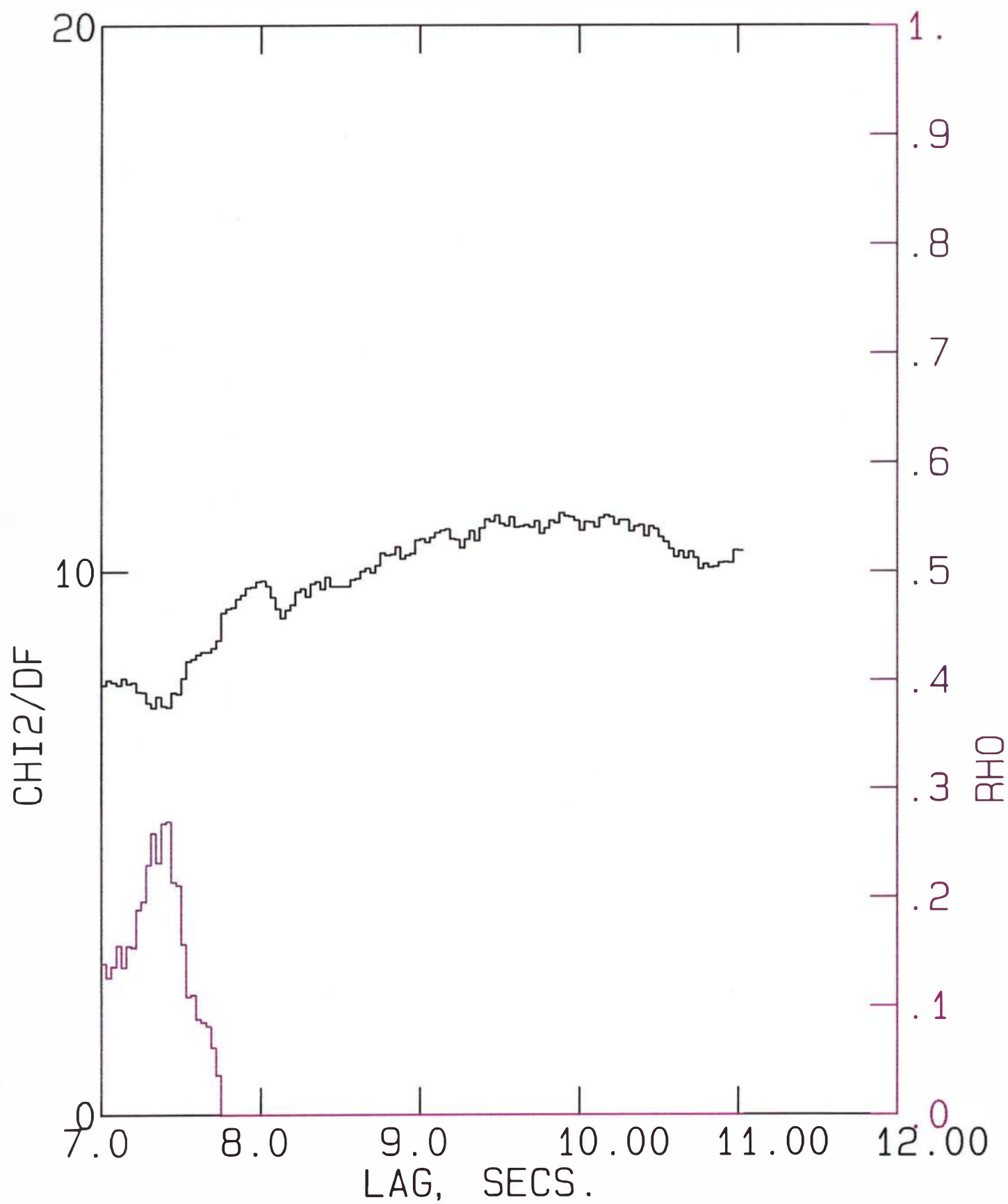
CORRELATION

08/09/96

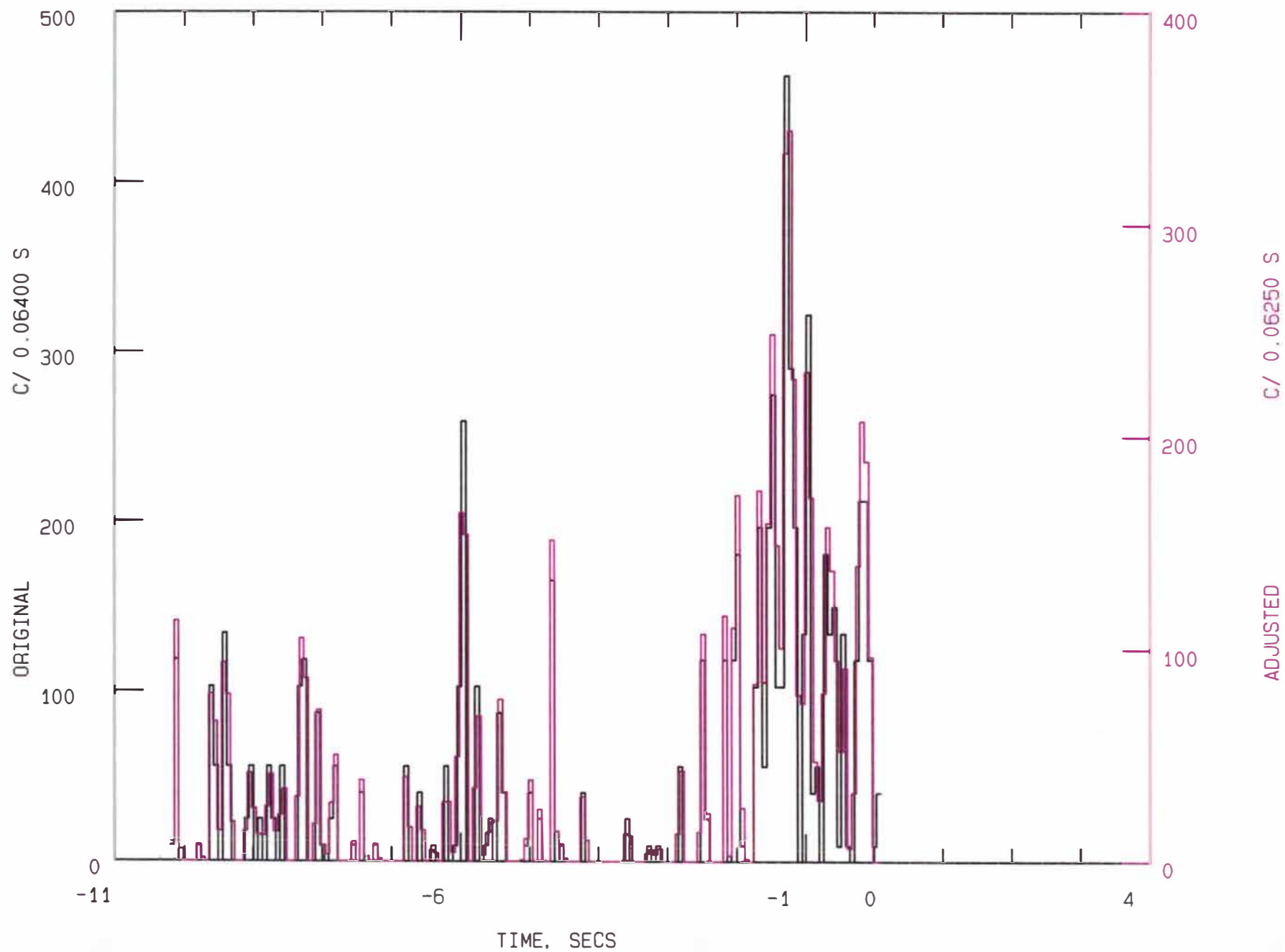
52233.460

13/ 3/97





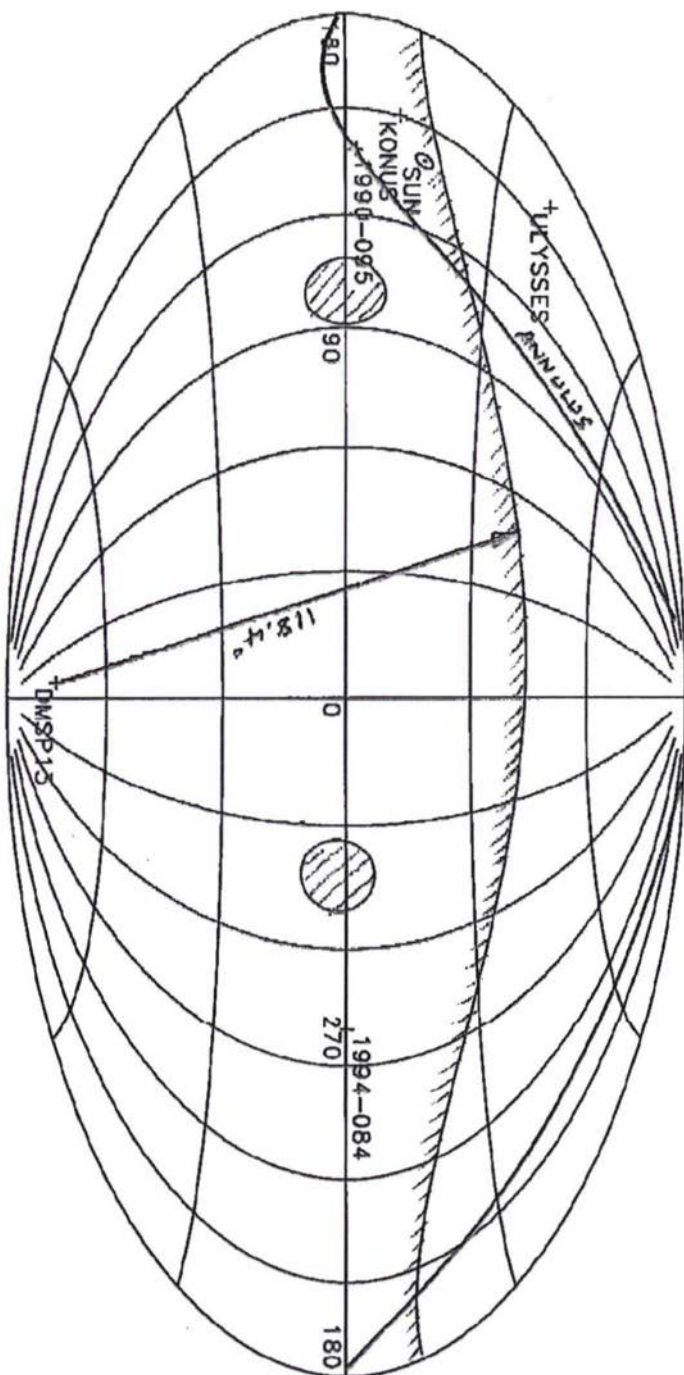
13/ 3/97



3-7-97

TO: KEVIN HORNEY, U.C.B., SSL

(FAX: 510-643-8302)

FROM: JAMES TERRELL, LBNL
(FAX: 505-665-4414)

970306

DMSP POSITIONS+VIEW, 96/08/09 52232 UT
EQUATORIAL COORDINATES

From jbloch@nis.lanl.gov Tue Feb 18 18:02 PST 1997
Date: Tue, 18 Feb 1997 19:02:45 -0700 (MST)
From: Jeff Bloch <jbloch@nis.lanl.gov>
To: Mike Meier <mmeier@lanl.gov>
Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>, efenimore@lanl.gov,
jterrell@lanl.gov, jlaros@LPL.Arizona.EDU
Subject: ALEXIS and GRB960809
MIME-Version: 1.0

To All:

As I mentioned to you Kevin at the AAS, ALEXIS saw this burst as a "background" event in that the burst was hard and strong enough to cause background events in the ALEXIS microchannel plates (Again, there is no evidence for imaged EUV radiation).

As luck would have it, even though ALEXIS was approaching the northern auroral zone, event rates were still low enough to have digitized events in addition to the event rate scalers. The fact that ALEXIS saw this effect was first noted in the 0.5 second event scalers (rates over the whole FOV of a telescope).

Penetrating particle or compton induced background events in microchannel plates have an exponential distribution in pulse height, so the majority of events tend to have low pulse height values. I made a data cut during this time frame for low pulse height events, and binned the events into 0.5 second bins, with the results in the attached postscript files, which really seems to enhance the signal over the total rate scalers. Since the events have millisecond timing, it is possible that I can determine the rise of the first bright peak to 10s of milliseconds.

If anyone has other suggestions, please advise. I will provide text readable data when I am convinced I have the conventions of bin time labeling correct, etc. I will also provide ALEXIS' position at the time.

Cheers,
Jeff

Jeffrey Bloch	Office:	(505) 665-2568
Astrophysics and Radiation Measurements Group	ALEXIS SOC:	(505) 665-5975
Los Alamos National Laboratory	FAX:	(505) 665-4414
Group NIS-2, Mail Stop D436	e-mail:	jbloch@lanl.gov
Los Alamos, NM 87545	Digital Pager:	(505)665-9800 #104-8074

<This message contains 1 attachments (not printed)>

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

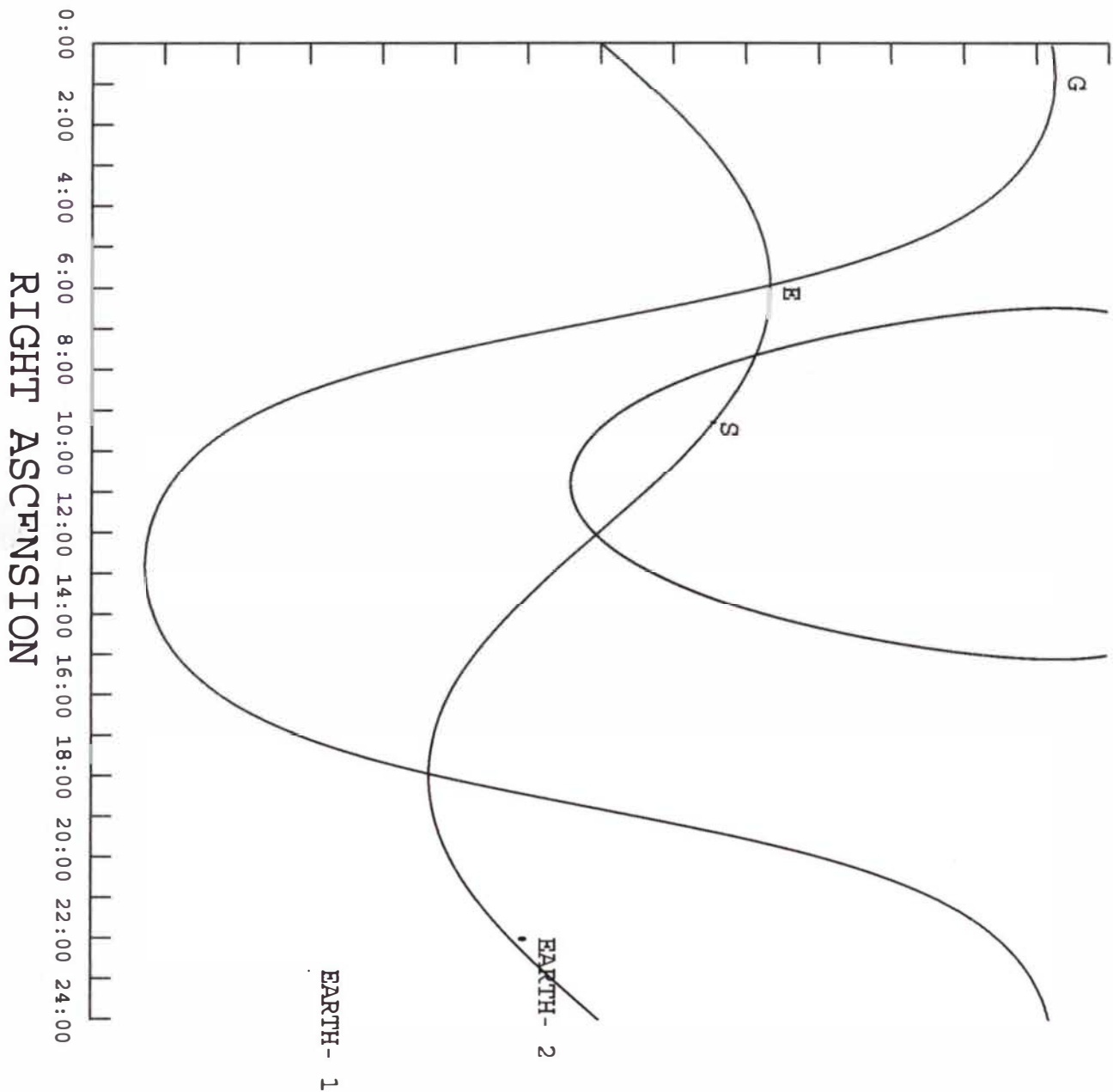
1 ULYSSES

2 KONUS

DECLINATION

EVENT OF AUG 9, 1996 14:00

2-1



19/ 1/97

ULYSSES

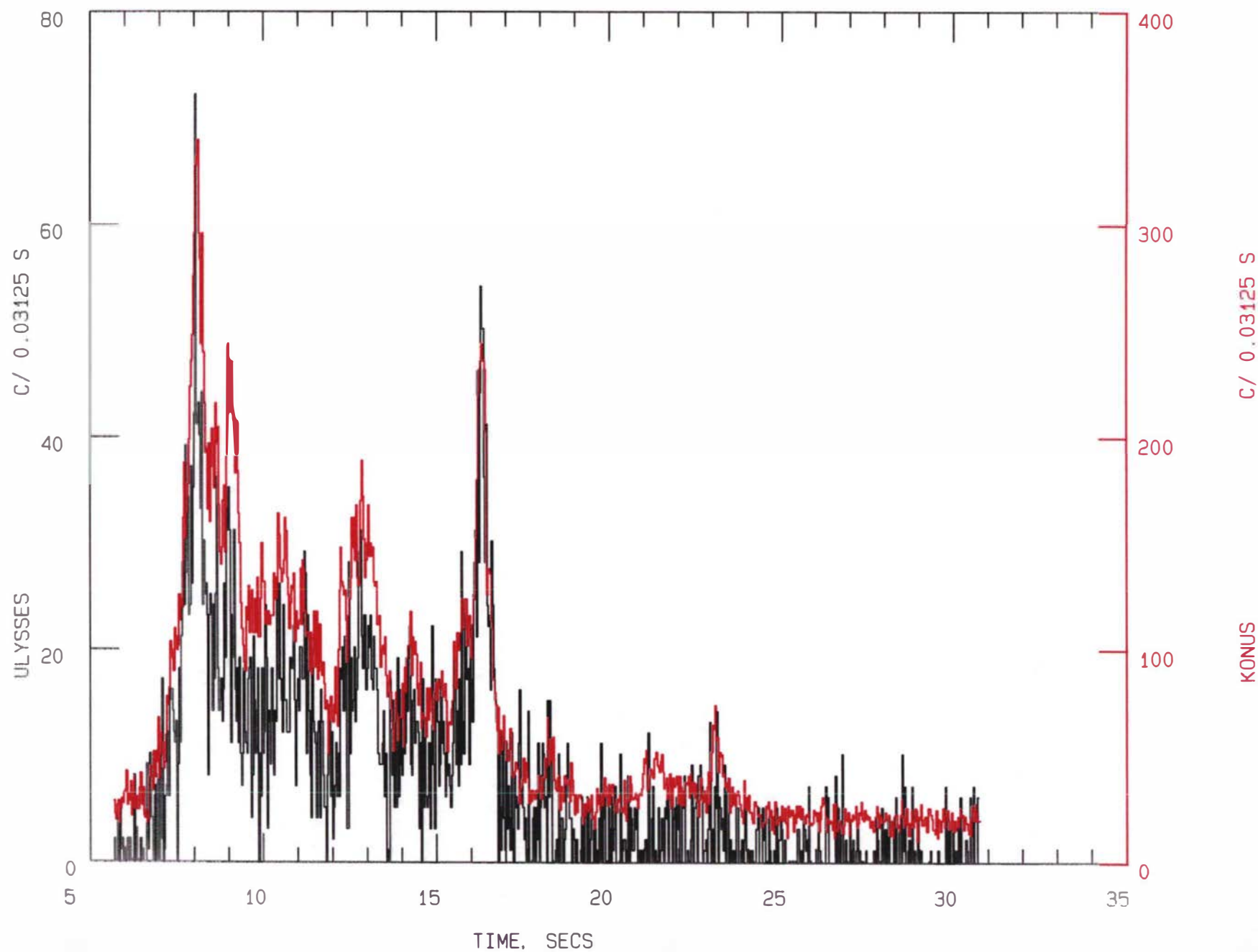
-KONUS

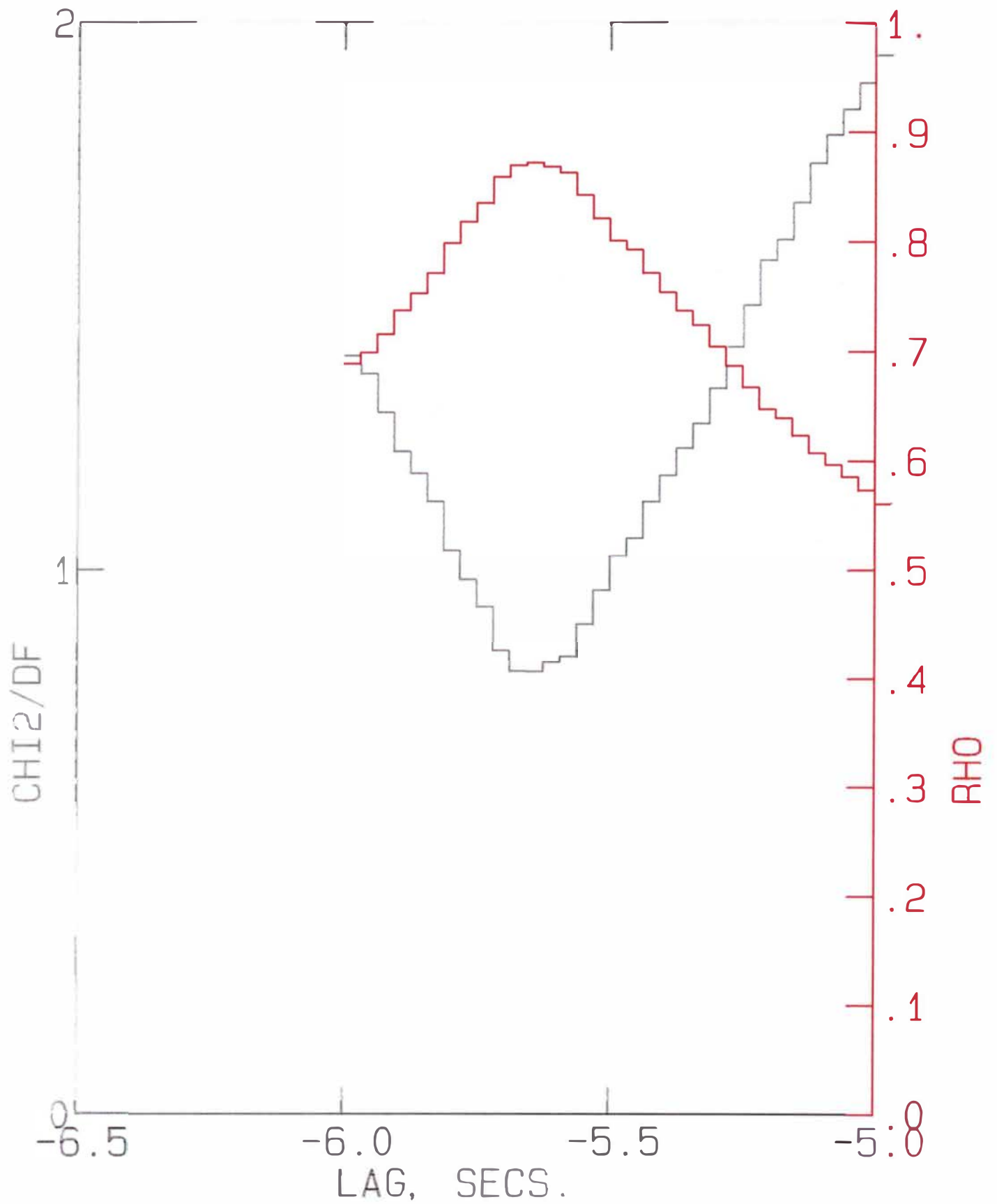
CORRELATION

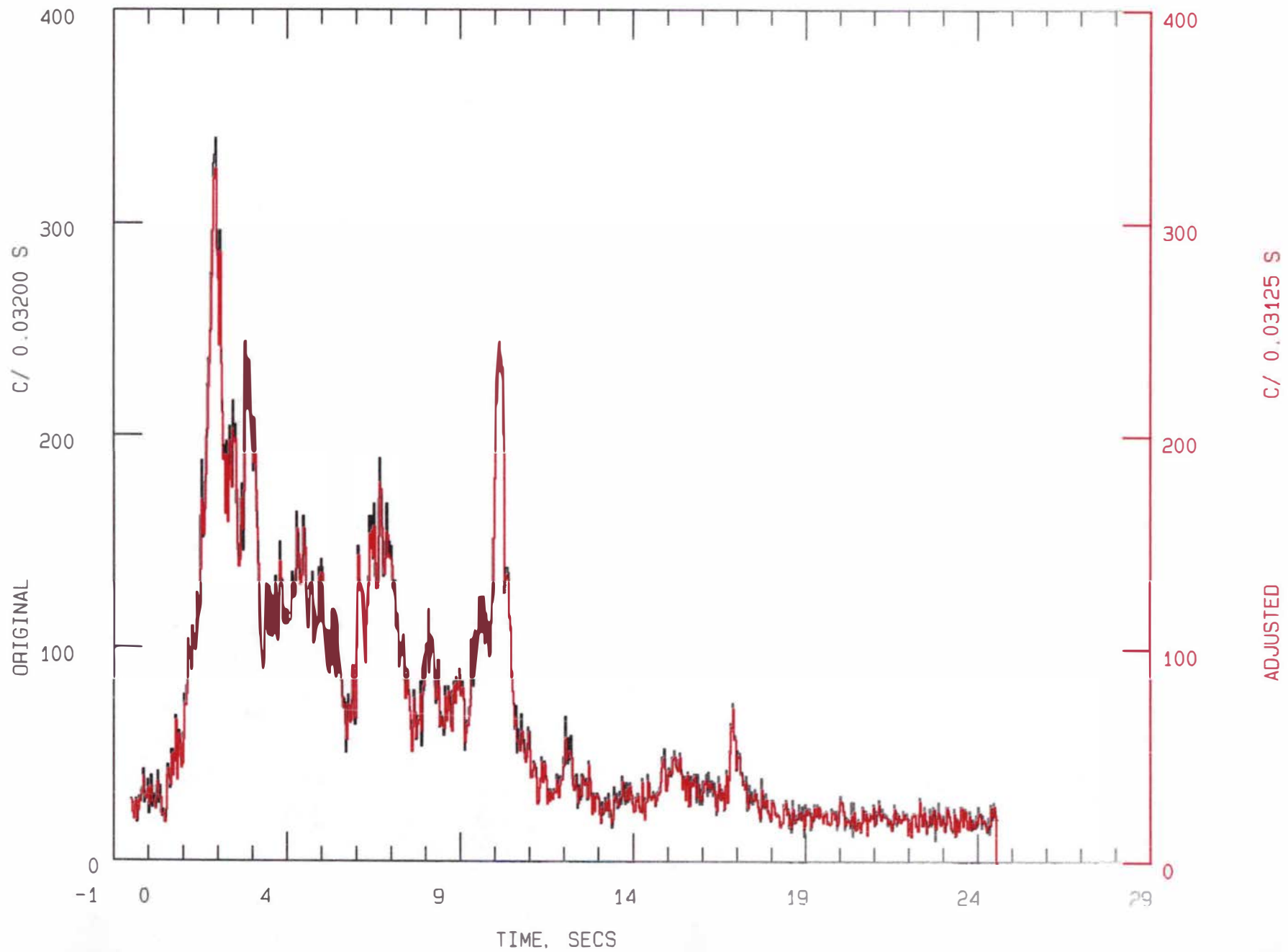
09/08/96

50424.231

19/ 1/97



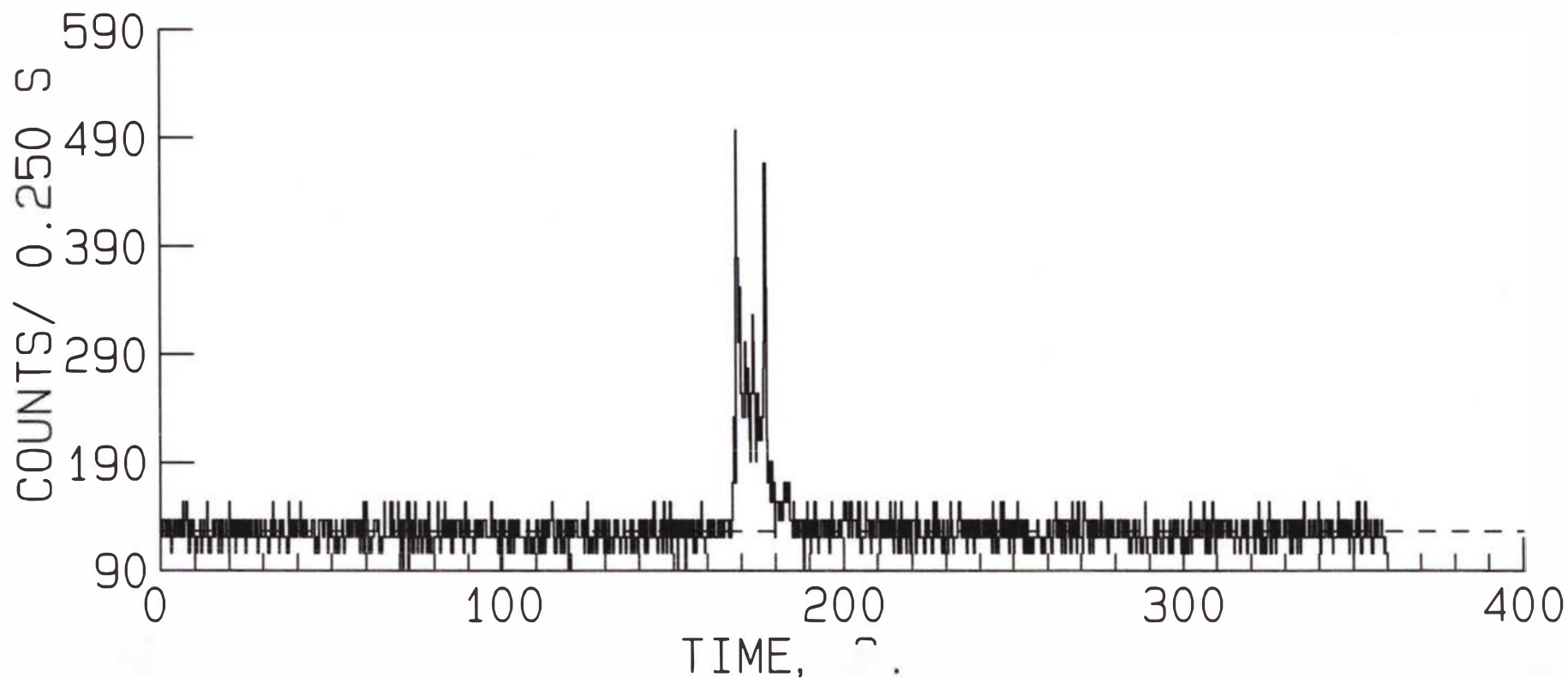




ULYSSES RT
9/ 8/96 50256.002 s
21- 145 keV

17 / 1 / 97

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

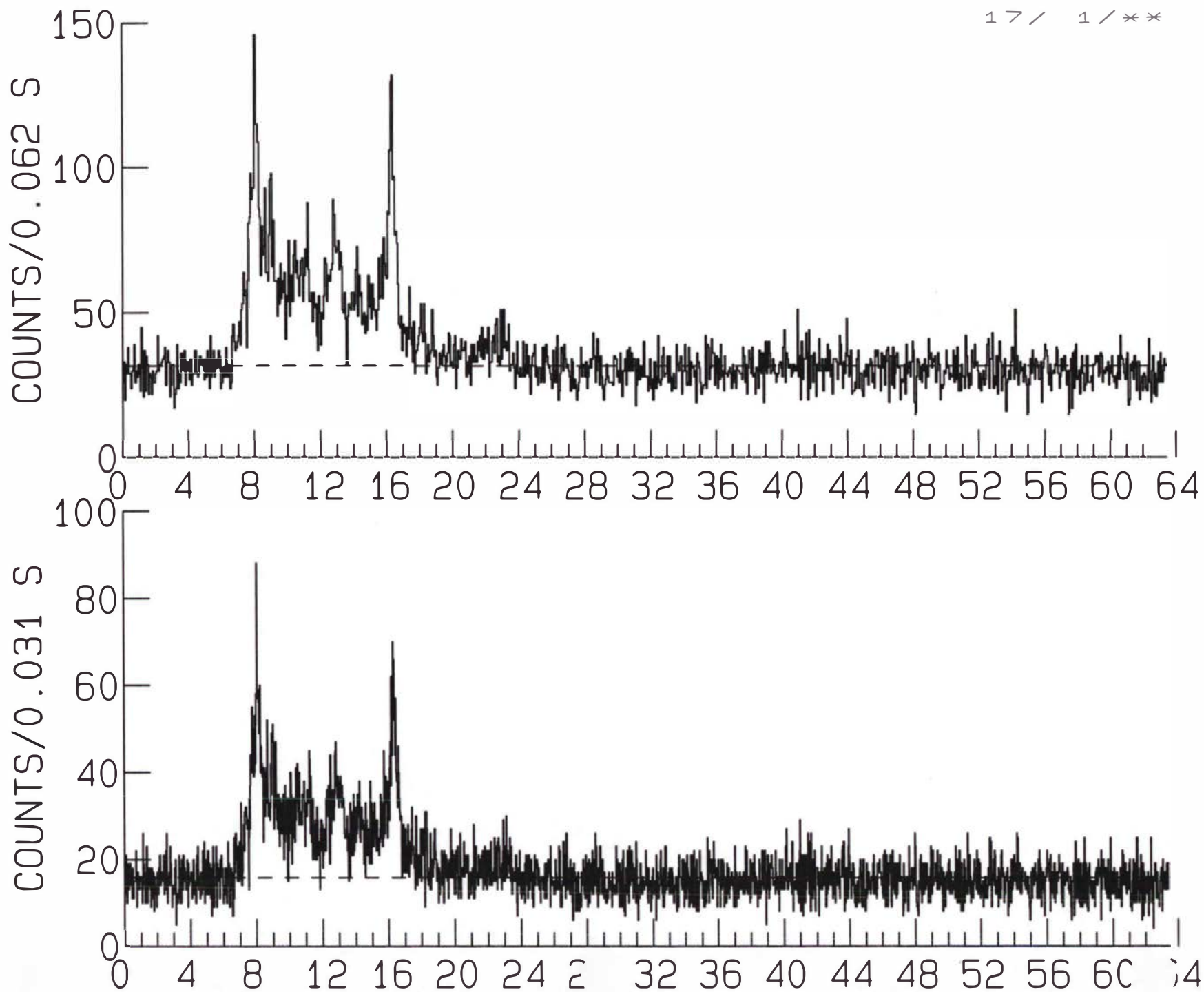


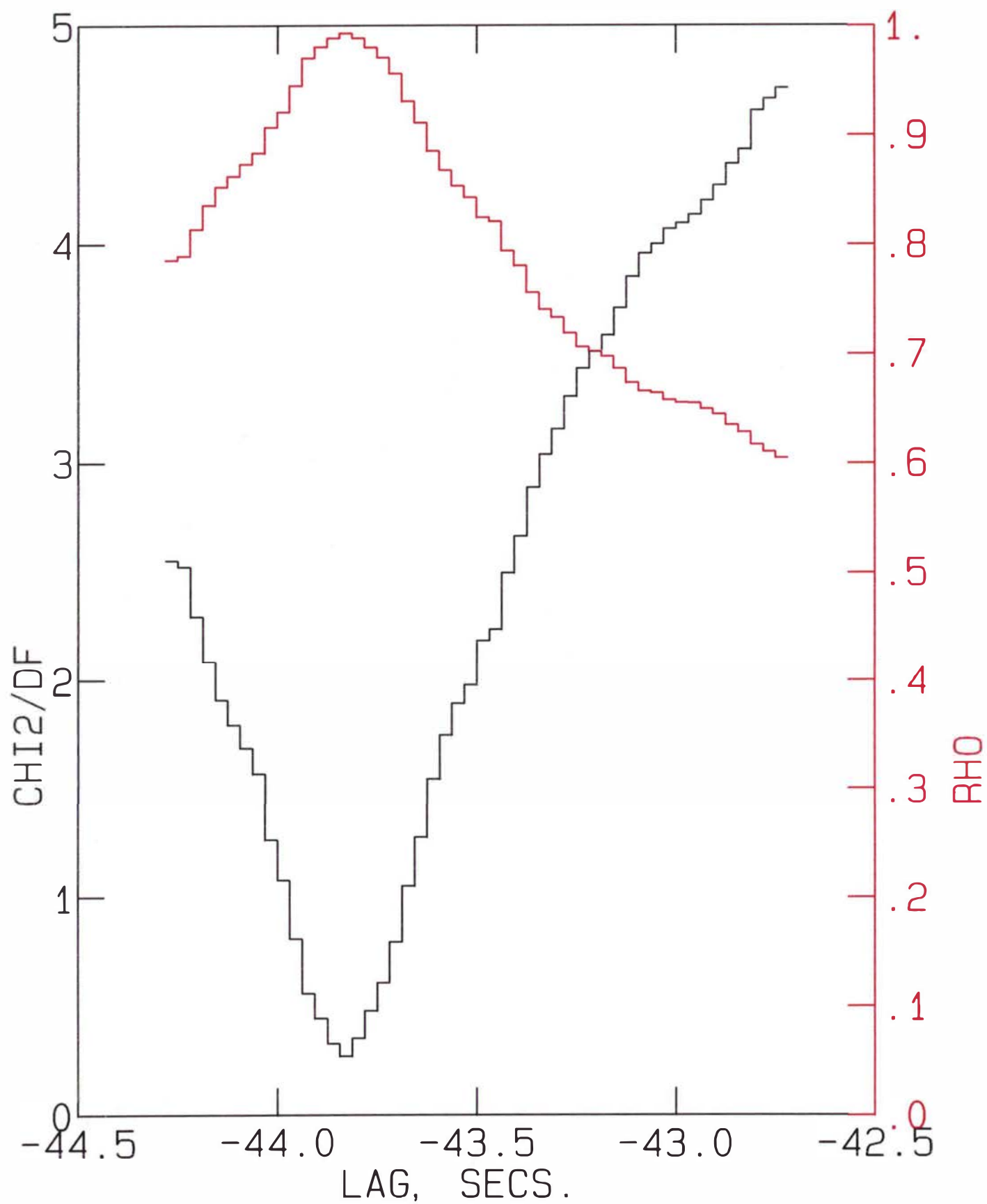
ULYSSES

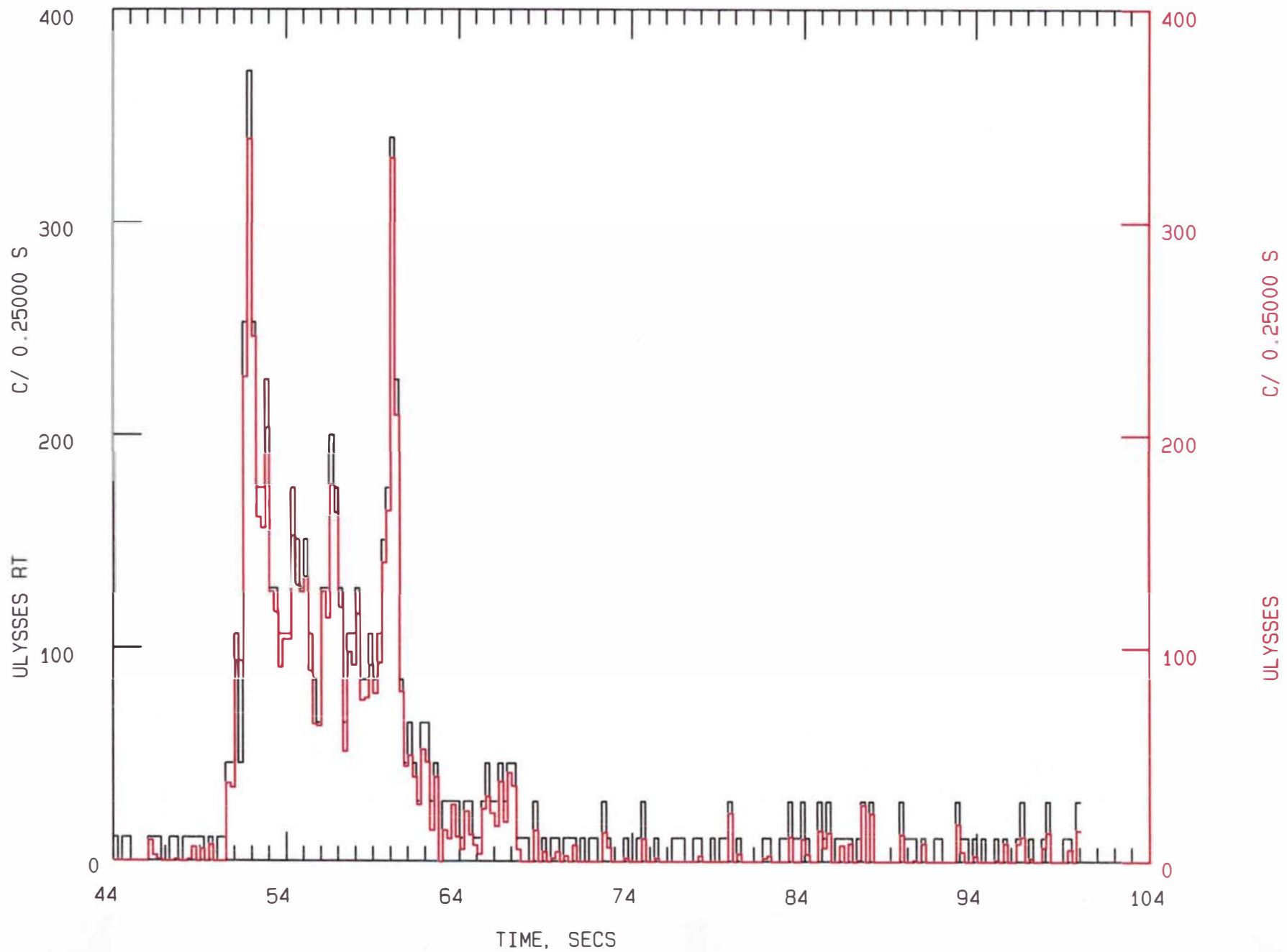
09/08/96

Ttrig=50424.231

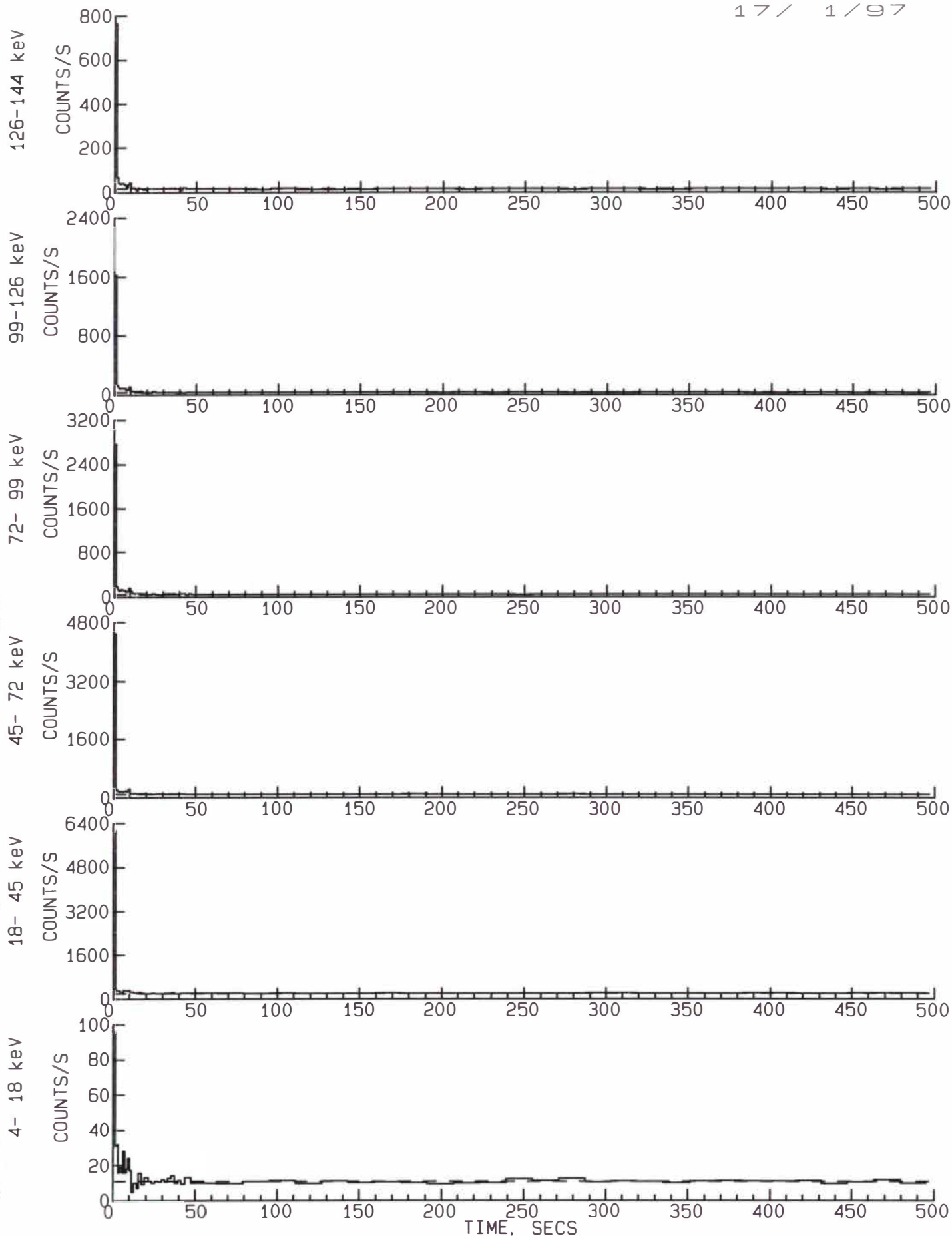
0- 0 keV







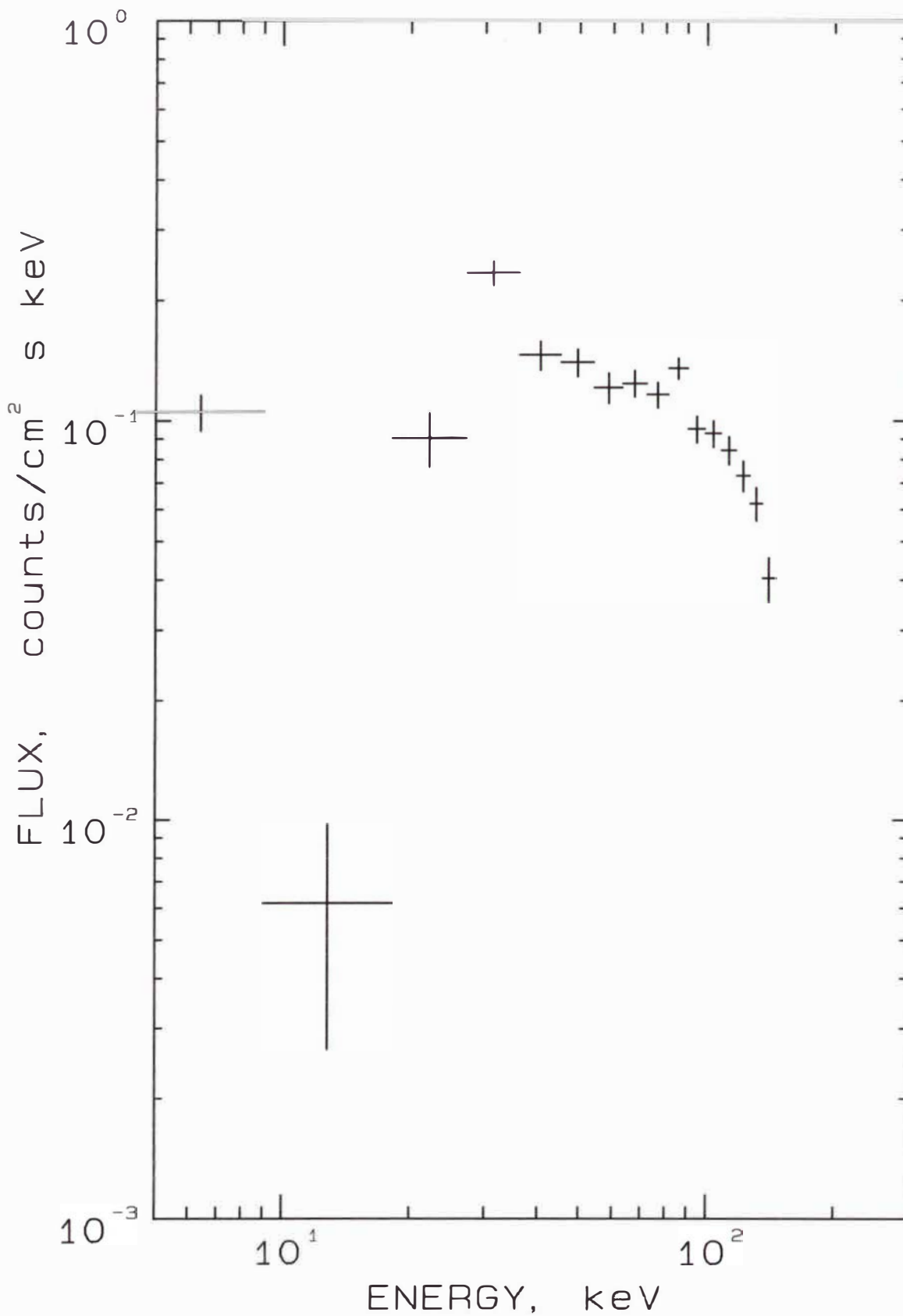
ULYSSES 09/08/96 50424.221 BURST SPECTRAL COUNT RATES



ULYSSES 09/08/96 50424.221

17/ 1/97

SPECTRUM INTEGRATED OVER 21.3 SECONDS, INTERVALS 2 TO 20



96	8	7	71369.324	S2	1200	2740	1000	0.25	6	10	358	Trig	5567
96	8	9	52229.443	S2	6500	10000	9500	0.06	5	40	359	Trig	
96	8	10	24974.750	S1	740	860	250	4	0.5	0.6	360	Search + 2500	RI
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI	KA
6	8	15	36027.501	S1	470	1250	370	3.2	0.5	12	362	Trig	5575
96	8	21	13940.971	S1	520	720	360	6	2	11	368	Search + 2500	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 2500	RI
96	8	31	37775.300	S2	420	500	210	0.1	64	98	370	RI	5591
96	9	2	58097.128	S1	1750	3200	1060	3	0.05	1.5	371	Trig	KA
96	9	6	81590.312	S1	240	470	170	13	2	16	372	RI	5593
96	9	8	25028.442	S2	10000	7000	2500	<0.04	0.04	0.3	373	Trig	
96	9	12	50250.066	S2	420	600	320	<0.03	3	15	378	RI	5601
96	9	12	67621.610	S1	2000	380		3.4	270	0.5	379	Search + 2500	NO
96	9	13	83120.562	S1		320	70	1.7	2	14	380	RI	5604
96	9	16	14182.498	S1	250	420	60	3.4	300	12	381	Search + 2500	RI
96	9	21	54231.399	S1	1160	2900	830	2.5	0.5	40	382	Trig	5609
96	9	22	18368.358	S1	800	1100	280	14	2	70	383	Search + 2500	RI
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5614
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5617
96	10	1	75186.385	S2	1600	3800	1800	0.08	1	12	386	Trig	5621
96	10	2	75235.745	S1	1100	1600	250	8	11	6	387	Search + 2500	RI
96	10	9	33560.099	S2	1020	1360	300	0.03	6	13	393	NO	5628
96	10	9	49065.989	S1	600	900	320	23	3	24	394	RI	5629
96	10	15	42782.014	S2	160	290	100	0.7	3	80	395	Search + 2500	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 2500	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 2500	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 2500	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 2500	RI
96	10	26	05631.940	S1	6000	3000		1	0.04	0.04	401	Trig	
96	10	26	22311.118	S2	400	560	300	0.3	2	3	402	RI	5644
96	10	29	24354.087	S1	4000	3700	1250	25	7	300	404	Trig	
96	10	29	68710.804	S1	570	620	120	>20	2	11	405	Search + 2500	NO
96	11	1	58062.904	S2	1020	1450	600	<0.04	1	18	406	Trig	
96	11	2	41907.802	S2	350	610	230	0.08	5	90	407	Search + 2500	RI

TLC

-- T. L. Cline ----- LHEAVX::CLINE

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:)

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	Trig	4757
96 2 7	65075.063 S2	210 780 200	0.13	32 12 245	scribble	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 Fri Aug 23 09:04 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Fri, 23 Aug 1996 12:02:50 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960809 was seen by Konus

Hi Everyone,

Konus triggered at 14:30:29.443 in the detector facing towards ecliptic north. The event lasted 20 seconds and was quite hard. The strongest peak occurred 2 seconds after the trigger, but it was followed by several other significant peaks.

Paul.

Date: Thu, 22 Aug 1996 14:02:53 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608222102.OAA00946@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@botes1.tesre.bo.cnr.it
Subject: GRB 960809
Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses triggered on an intense, 20 s long event August 9 1996 around 14:00 UT at Ulysses.

The spacecraft was about 2500 light-seconds from Earth.

Was this event detected by anyone else?

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

From jlaros@LPL.Arizona.EDU Thu Aug 22 14:19 PDT 1996
Date: Thu, 22 Aug 1996 14:19:00 -0700
From: jlaros@LPL.Arizona.EDU (John Laros)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Re: grb 960809
Cc: mmeier@lanl.gov

> How did Ed find out about it? It's not a BATSE burst.

Kevin,

I used to know the answer to that, but I don't any more, now that my security clearance is gone.

But, seriously, I would suggest contacting Mike Meier for more information.

Welcome back,

John

From jlaros@LPL.Arizona.EDU Tue Aug 13 12:11 PDT 1996
Date: Tue, 13 Aug 1996 12:11:16 -0700
From: jlaros@LPL.Arizona.EDU (John Laros)
To: khurley@sunspot.ssl.berkeley.edu
Cc: fenimore@nisdp0.lanl.gov

Kevin,

Ed heard that there might have been a huge GRB (or solar flare?) on August 9 around 14:30. Can you quickly find out if Ulysses saw anything? BATSE apparently did not see a GRB at that time.

John

From williams@sunspot Wed Aug 14 17:56 PDT 1996
Date: Wed, 14 Aug 1996 18:00:46 -0700
From: williams@sunspot (Roger Williams)
To: jlaros@LPL.Arizona.EDU
Subject: Re: burst on aug 9
Cc: williams@sunspot, khurley@sunspot
Mime-Version: 1.0
Content-Transfer-Encoding: 7bit
Content-MD5: oGld+GBmzMYf5iilux7QrQ==

Hi John -

We have a burst trigger at 14.0067 hours UT (14:00:24 hr:mn:sc) on day 222 (Aug 9, 1996) -- is this close enough for you -- a 1/2 hour early?

The event is characteristic of a GRB, not a solar flare. We do not have any real-time signal at 14.5 (14:30).

Do you need anything more for this time? If so, let us know.

Roger

Date: Oct 14 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?

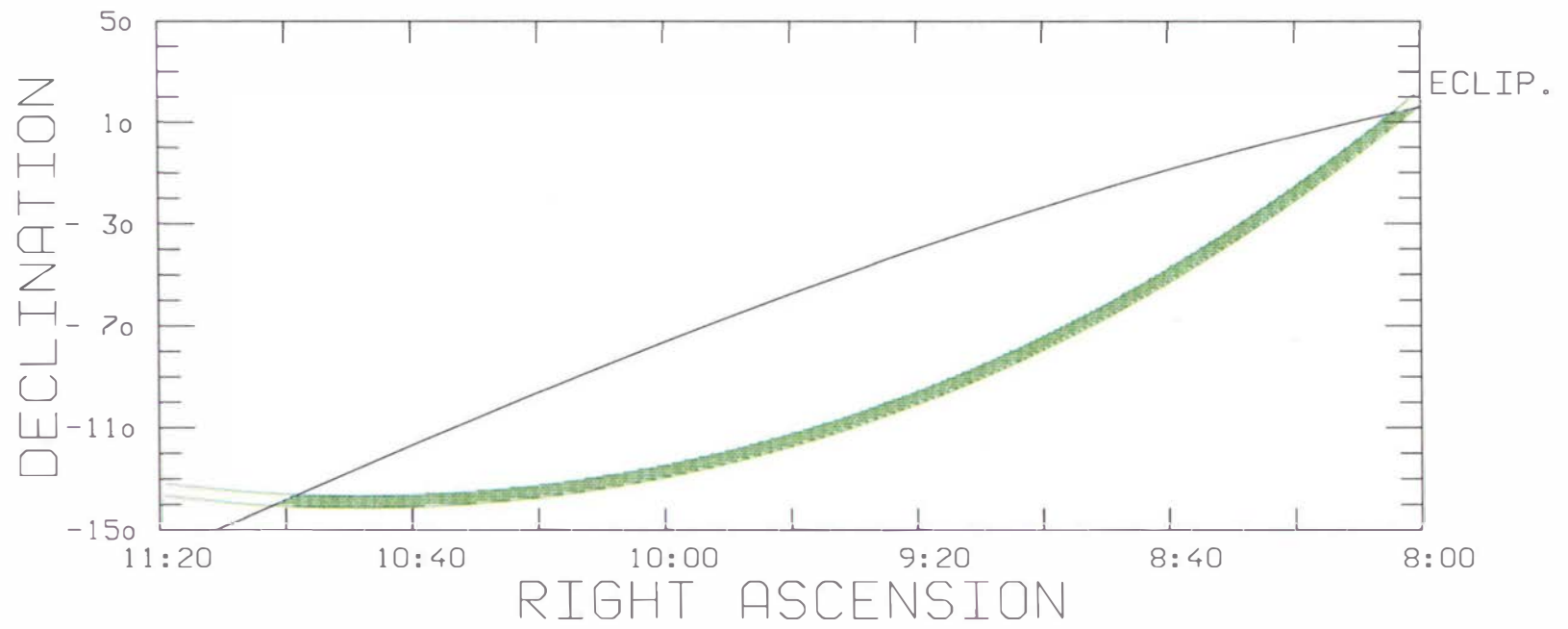
2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

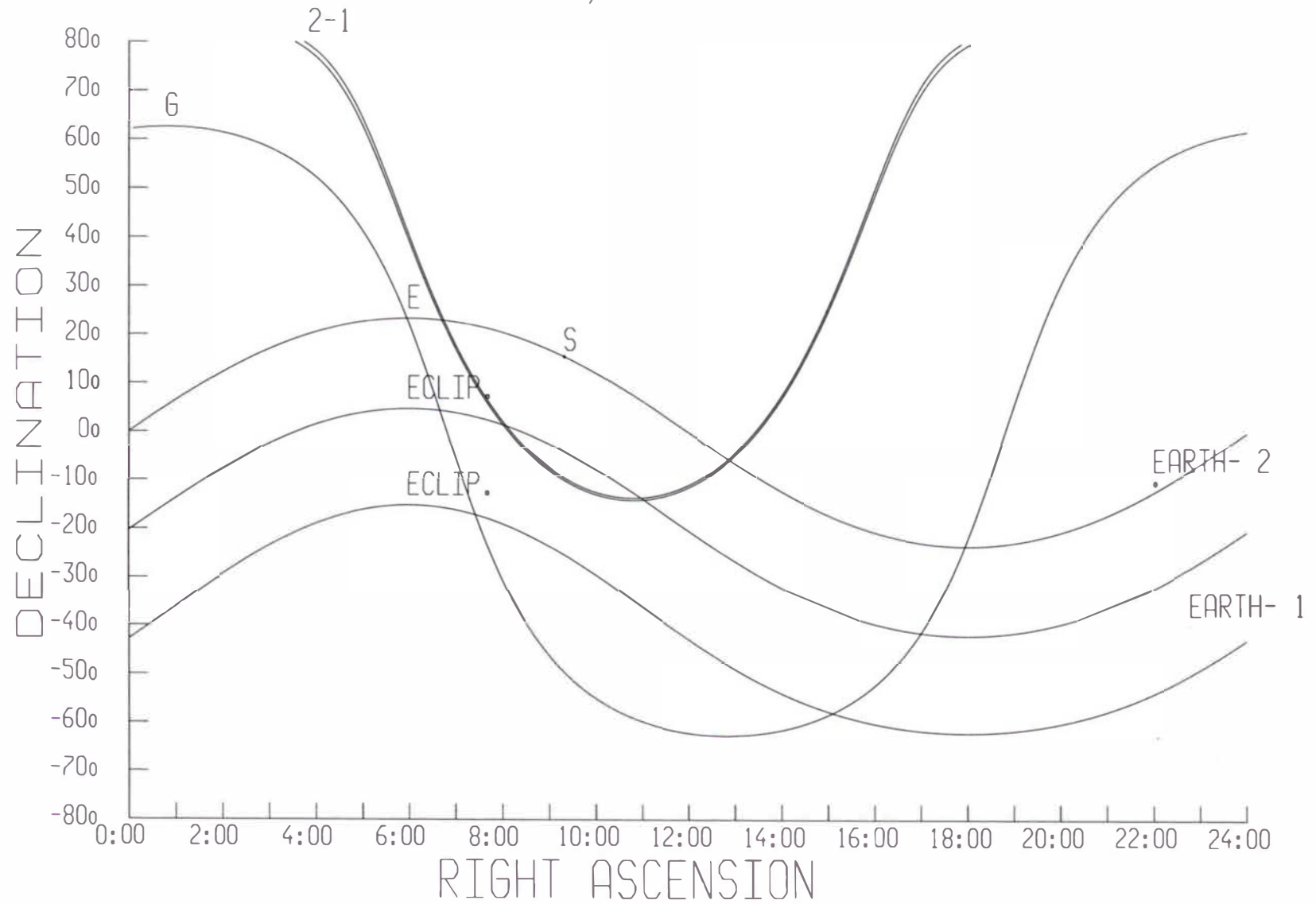
-
- ☒ ACCESS and MBL4 databases updated with identical times?



EVENT OF AUG 9, 1996 17:00

14/10/2011

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



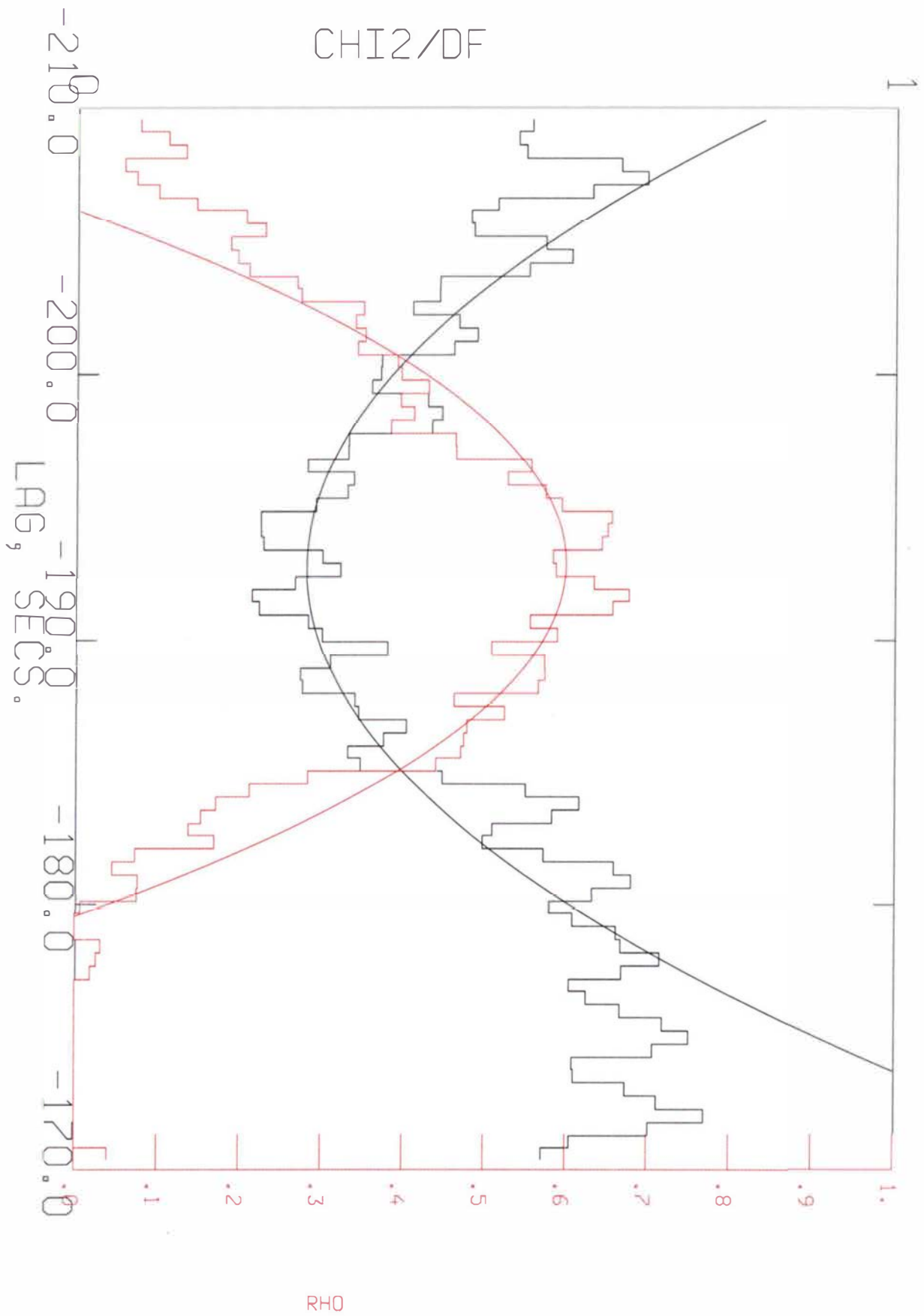
KONUS

-ULYSSES RT CORRELATION

09/08/96

62527.891

14/10/11



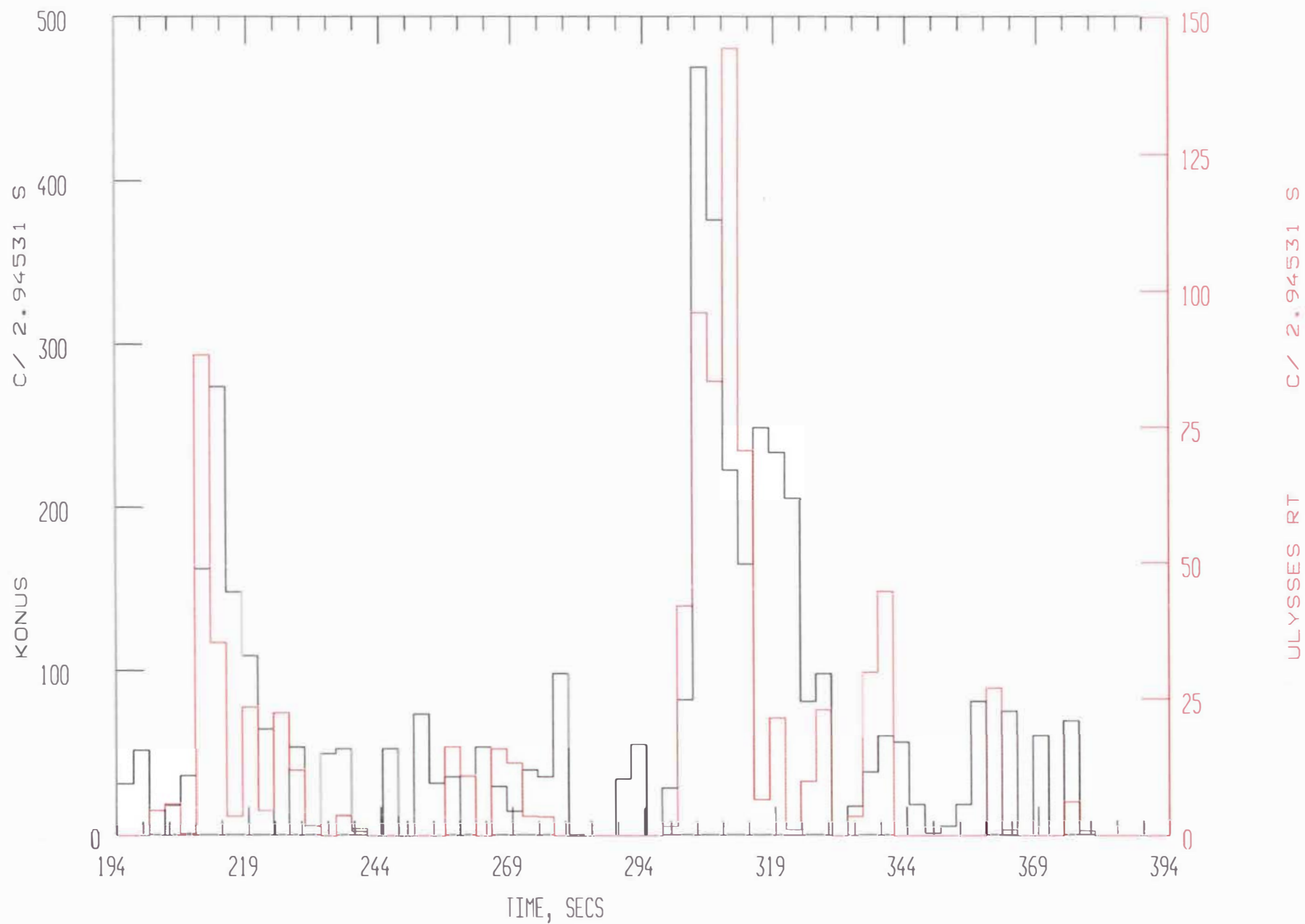
KONUS

-ULYSSES RT CORRELATION

09/08/96

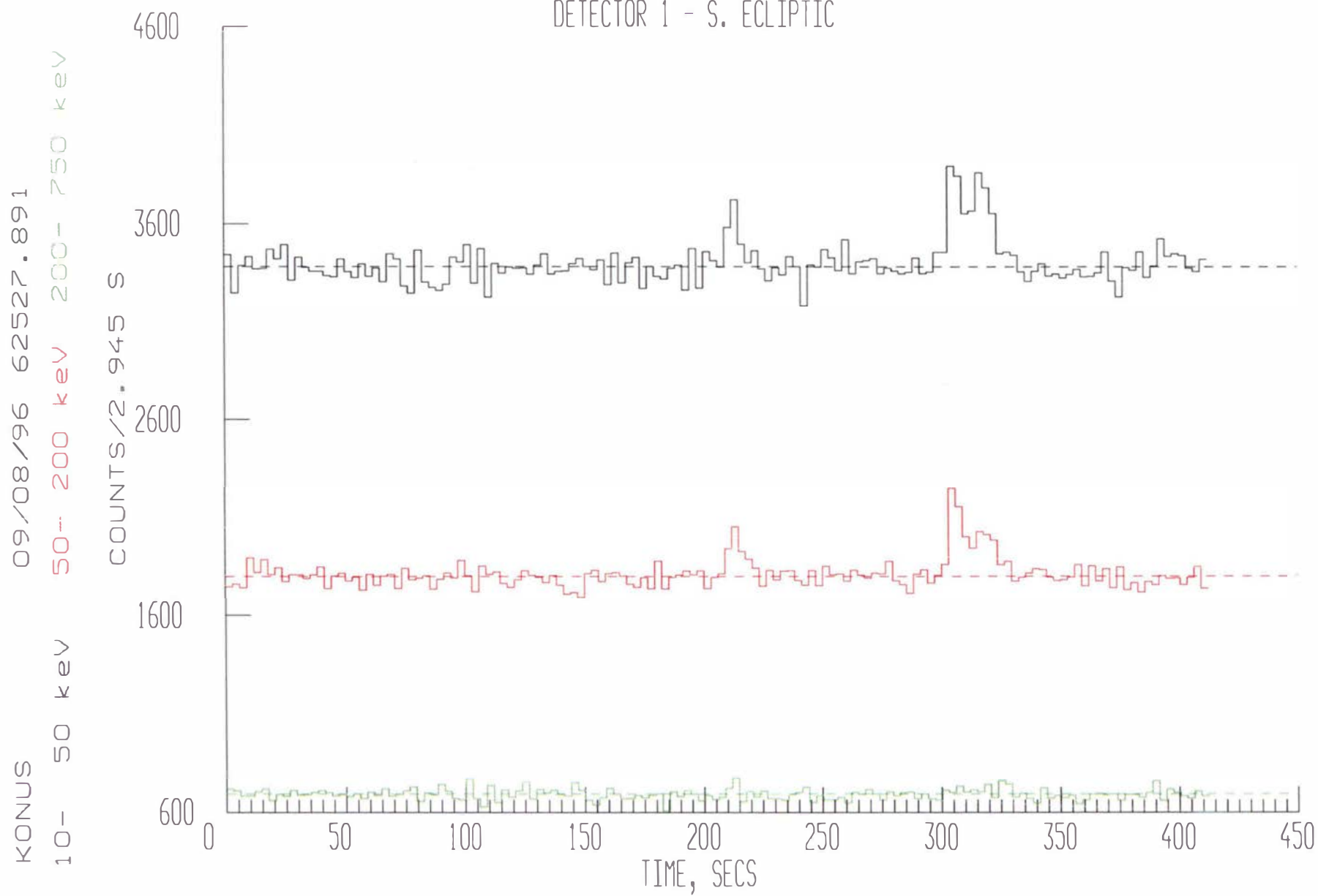
62527.891

14/10/11



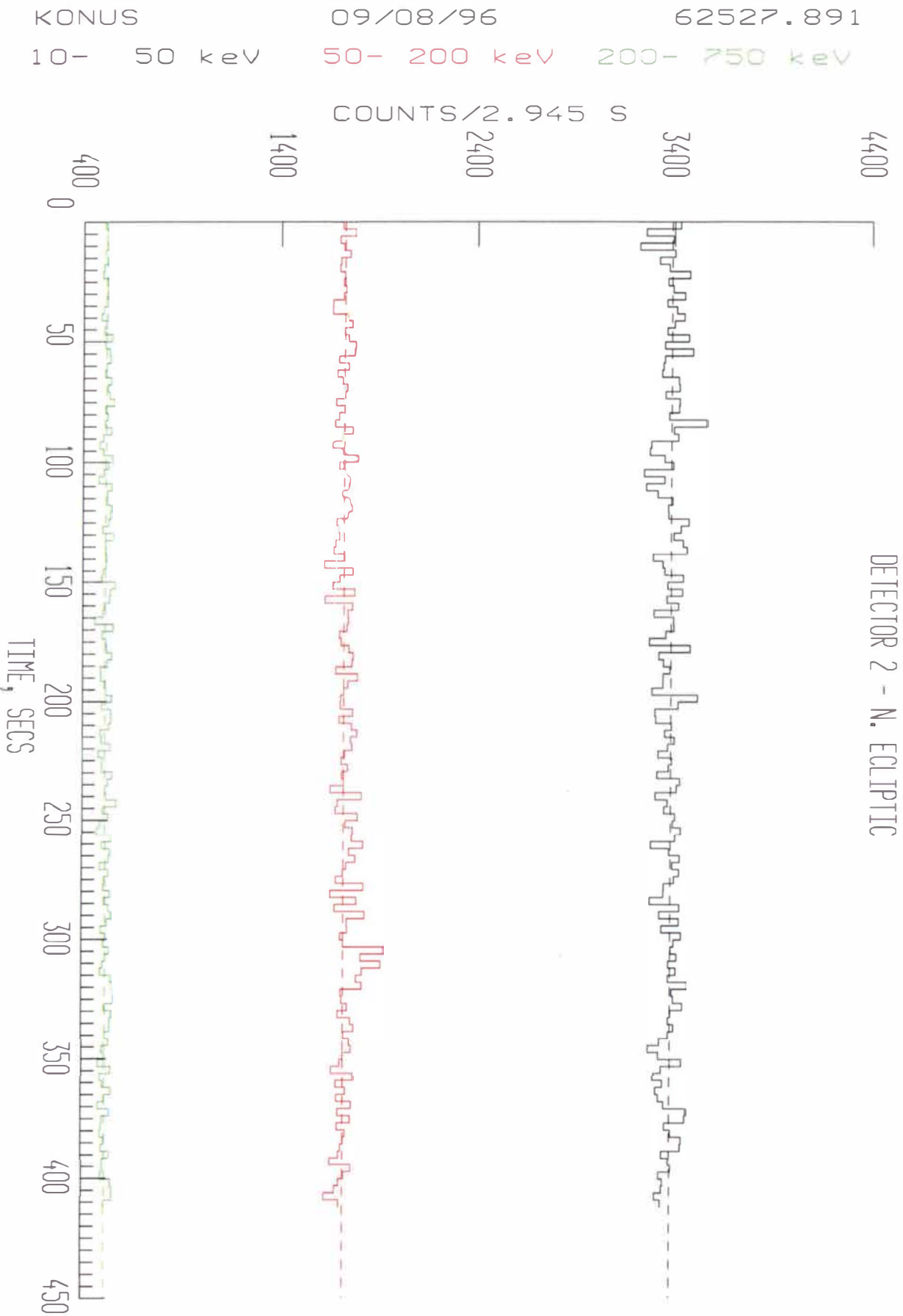
14/10/2011

DETECTOR 1 - S. ECLIPTIC



14/10/2011

DETECTOR 2 - N. ECLIP TIC



KONUS 19960809 61342

ULYSSES RT

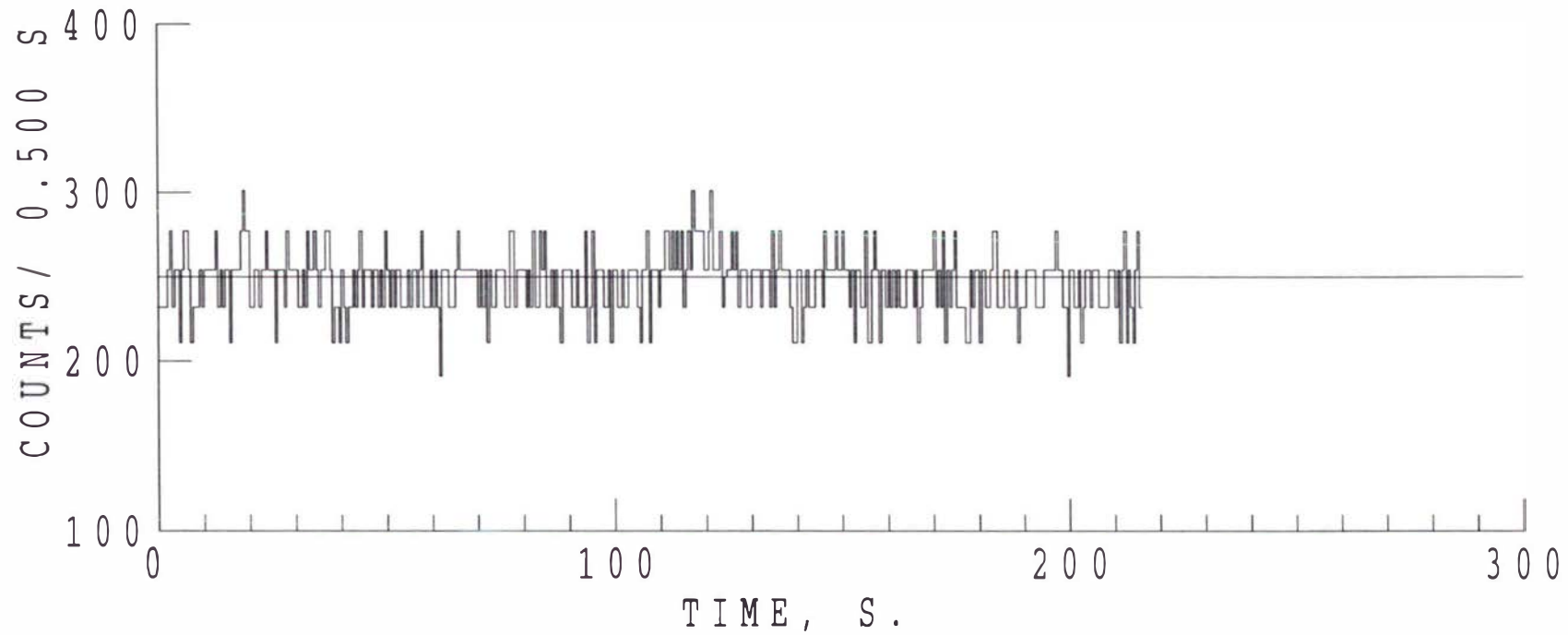
05/10/11

09/08/96 61236.145 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

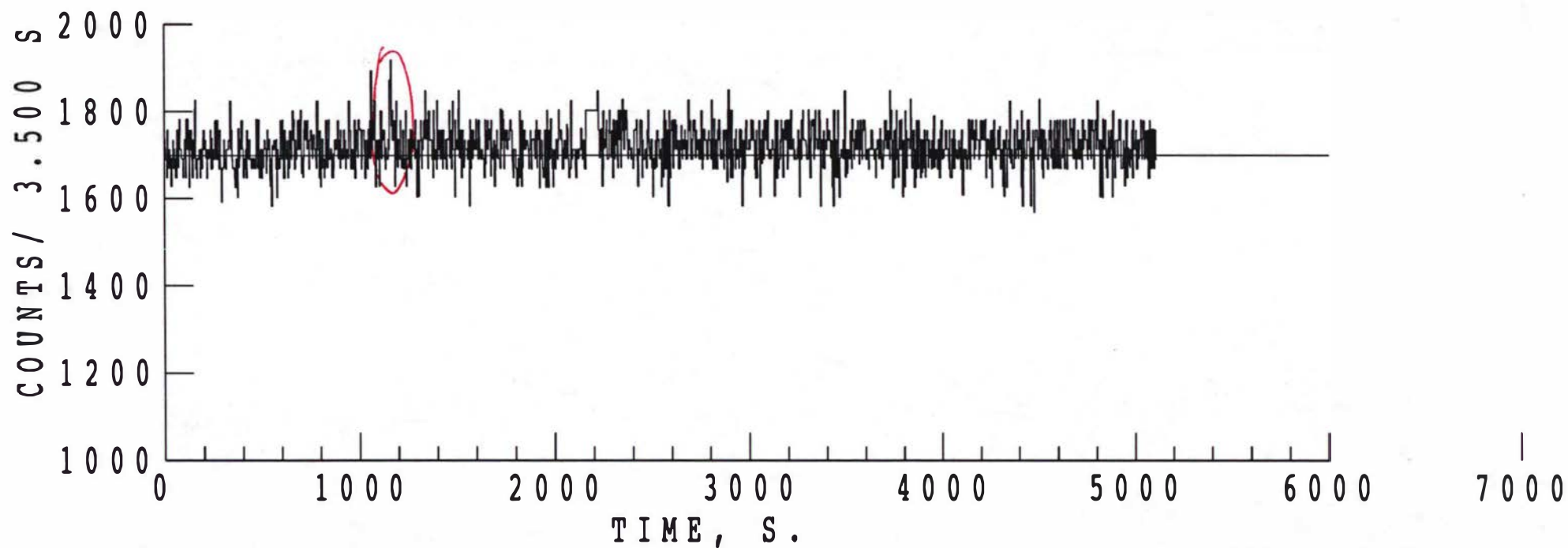
31 / 01 / 00

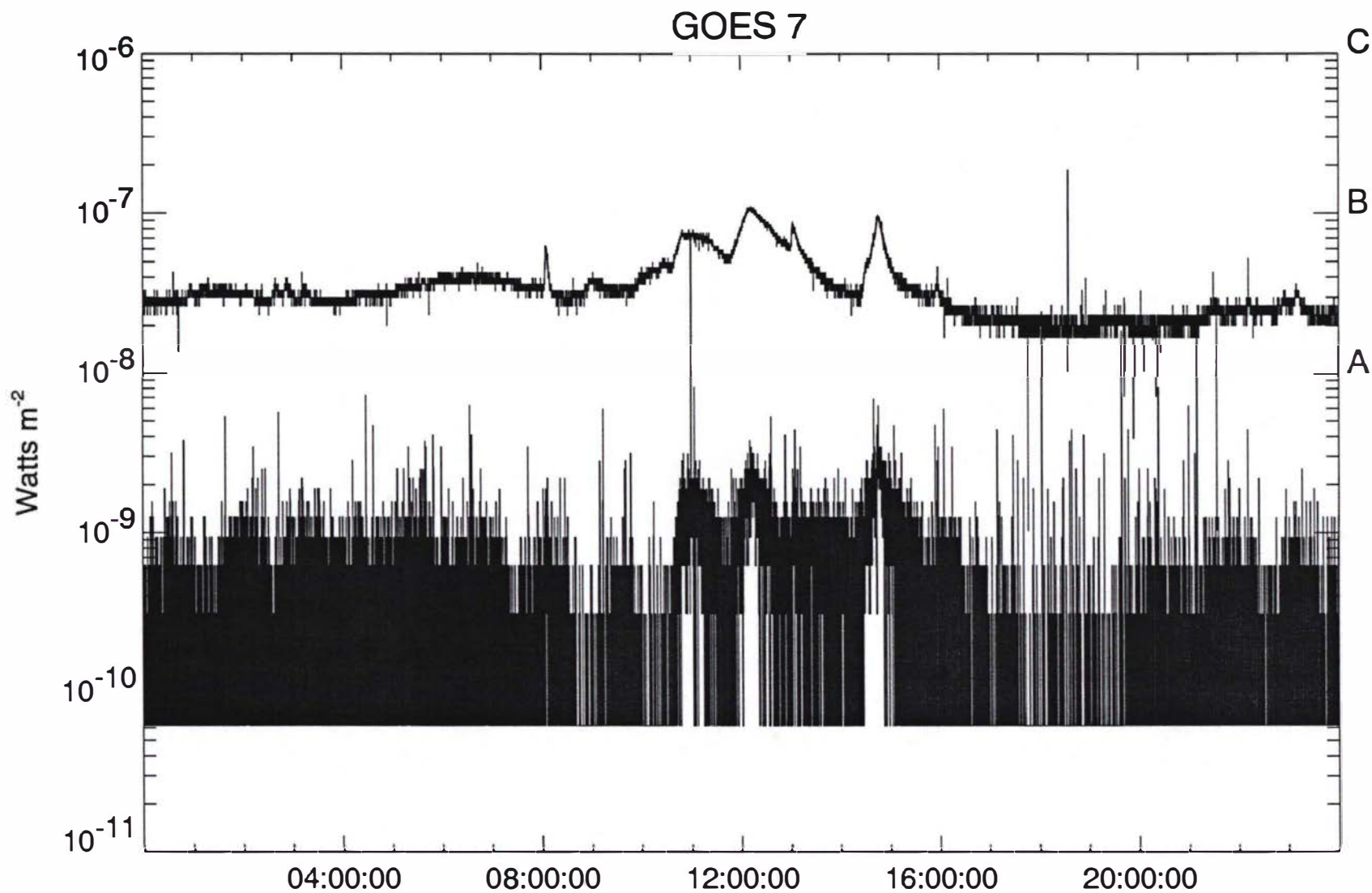
09 / 08 / 96 60192.129 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 N= 2
>4.0 SIGMA FLUCTUATIONS





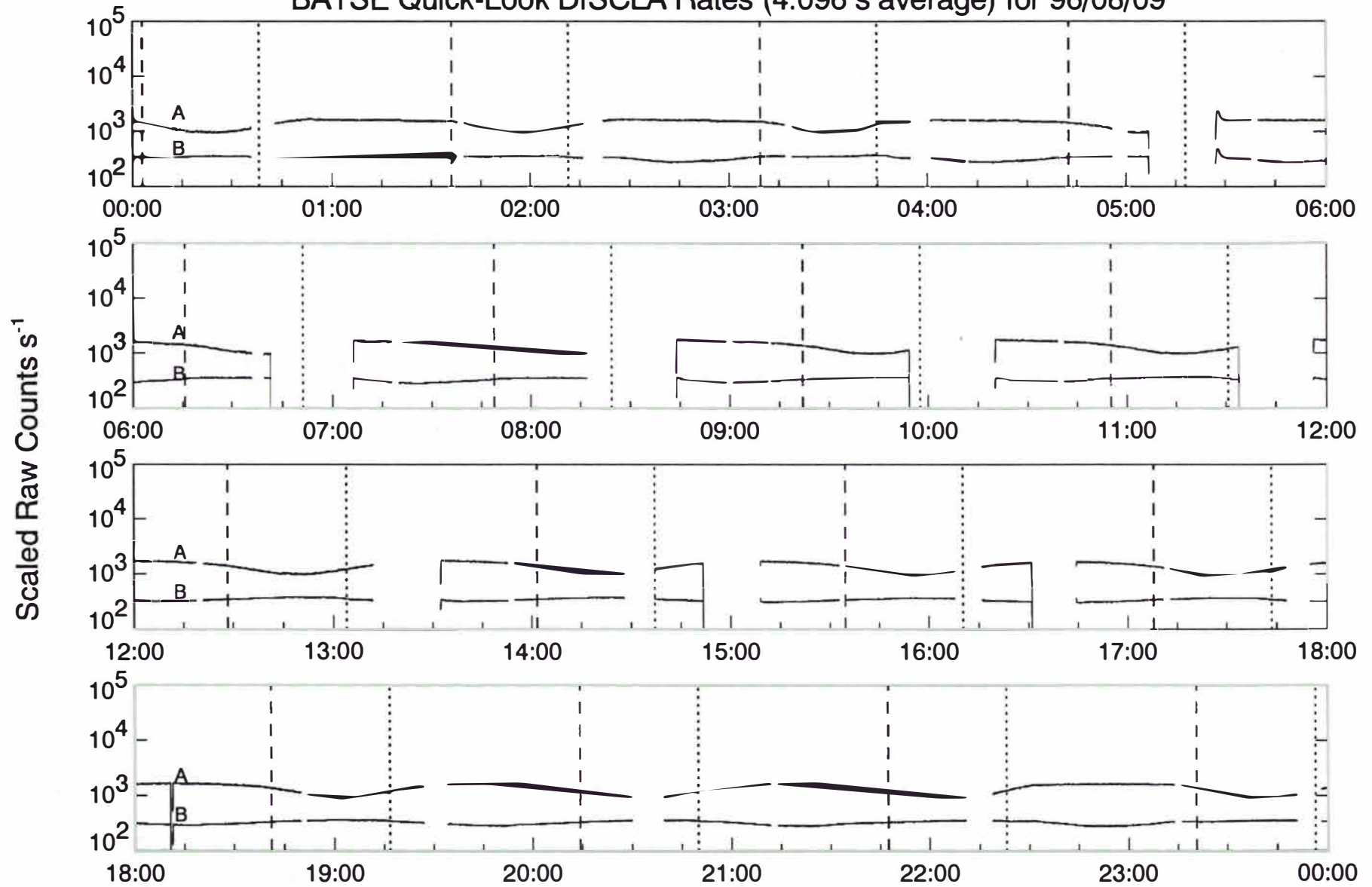
Data Start: 96/08/09, 0000:01

Plot created: 96/08/11, 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 96/08/09

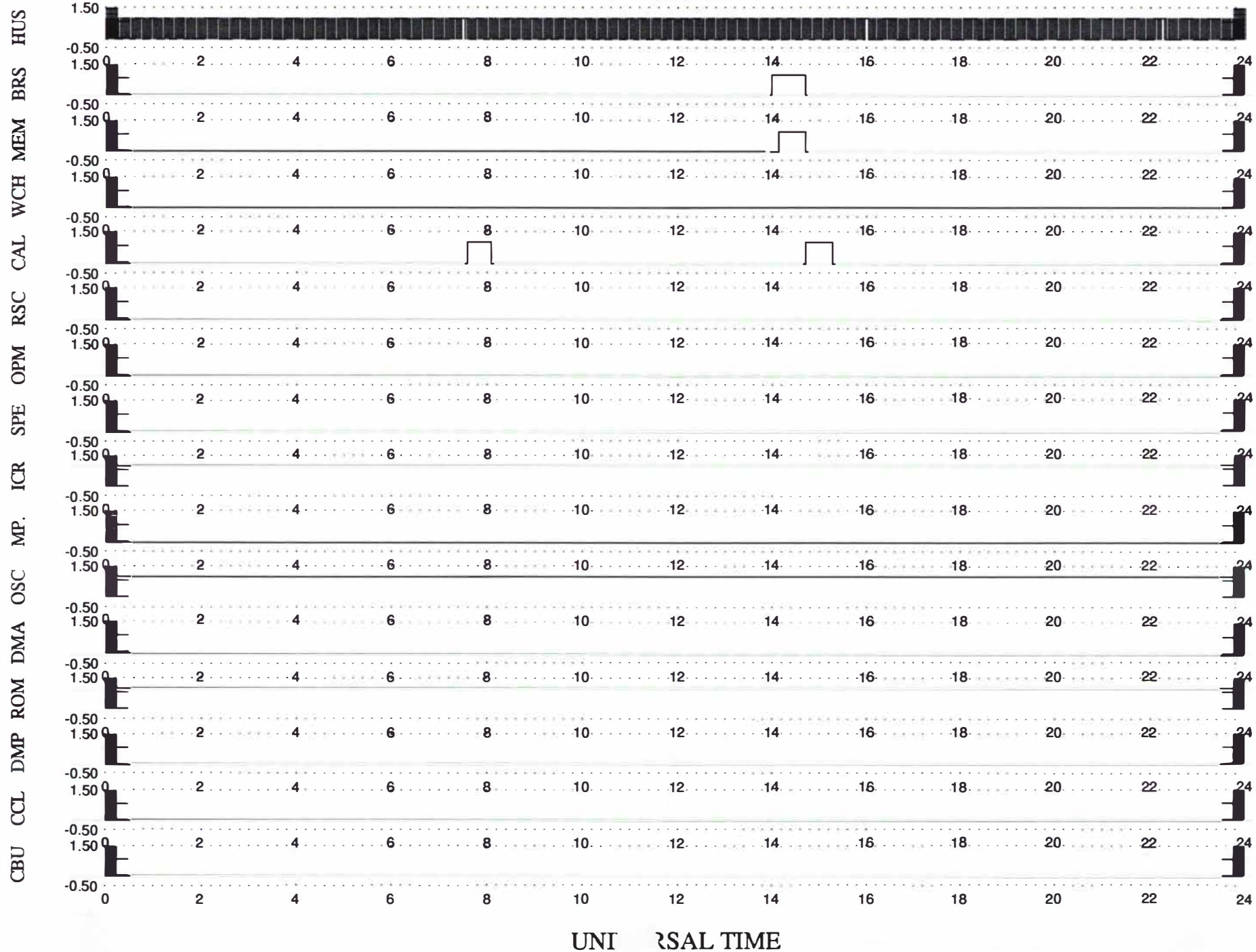


Current Time: 96/08/11, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

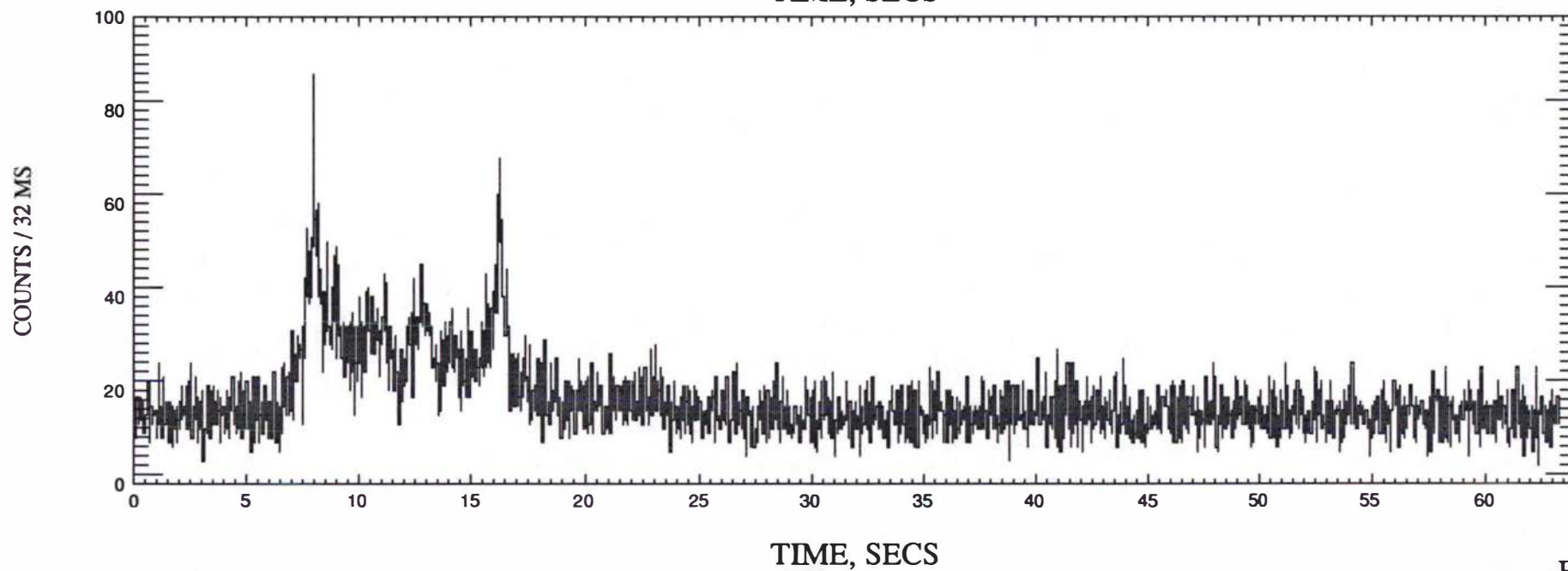
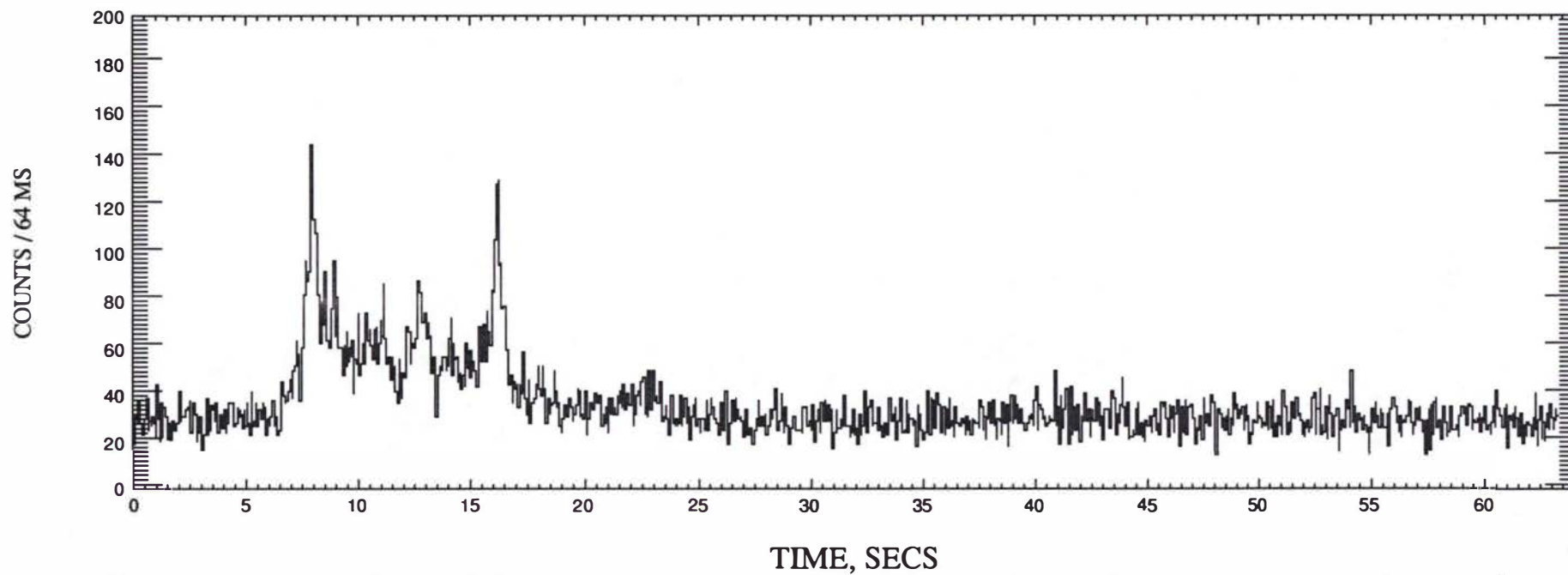
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

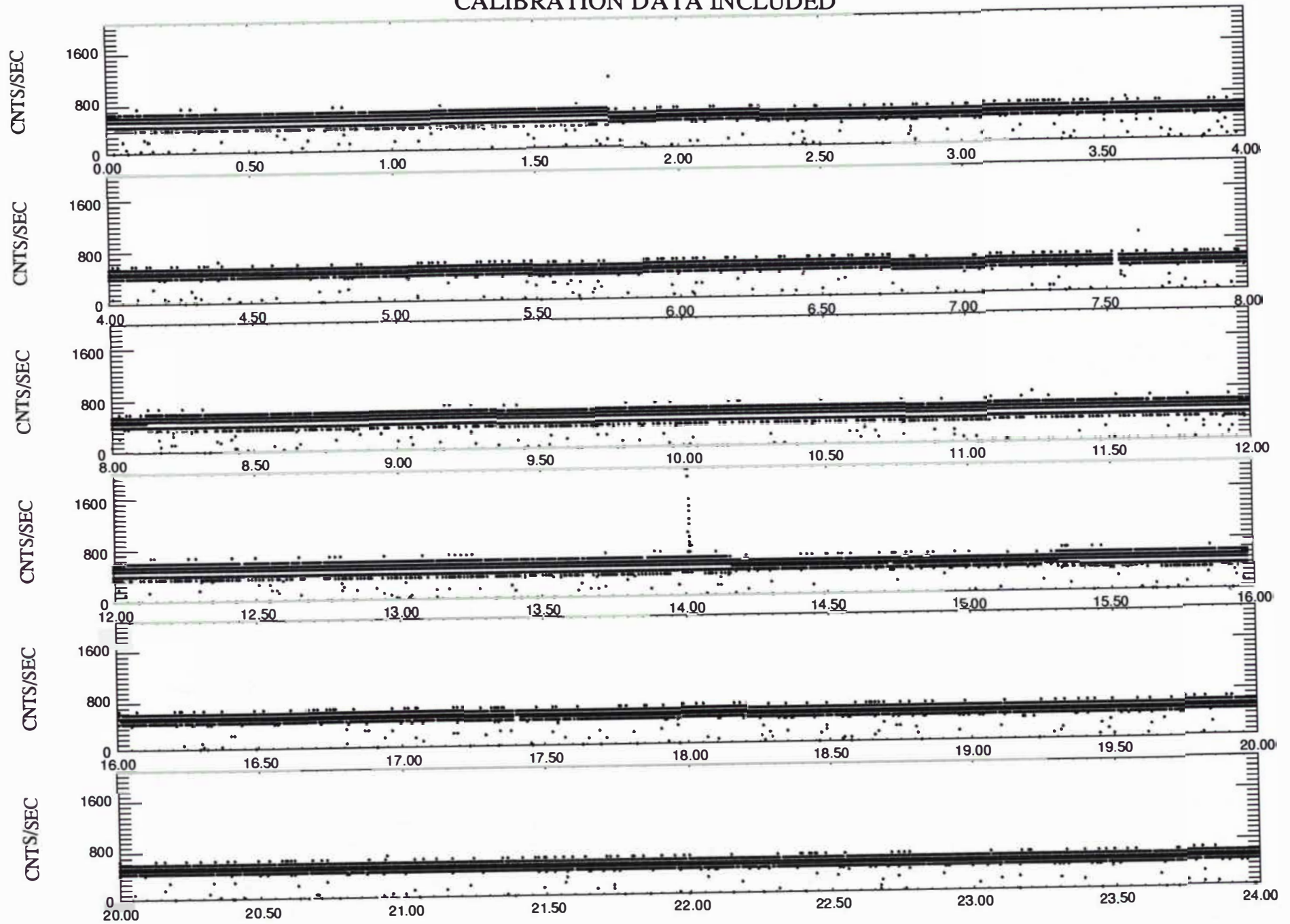
BURST NUMBER 10



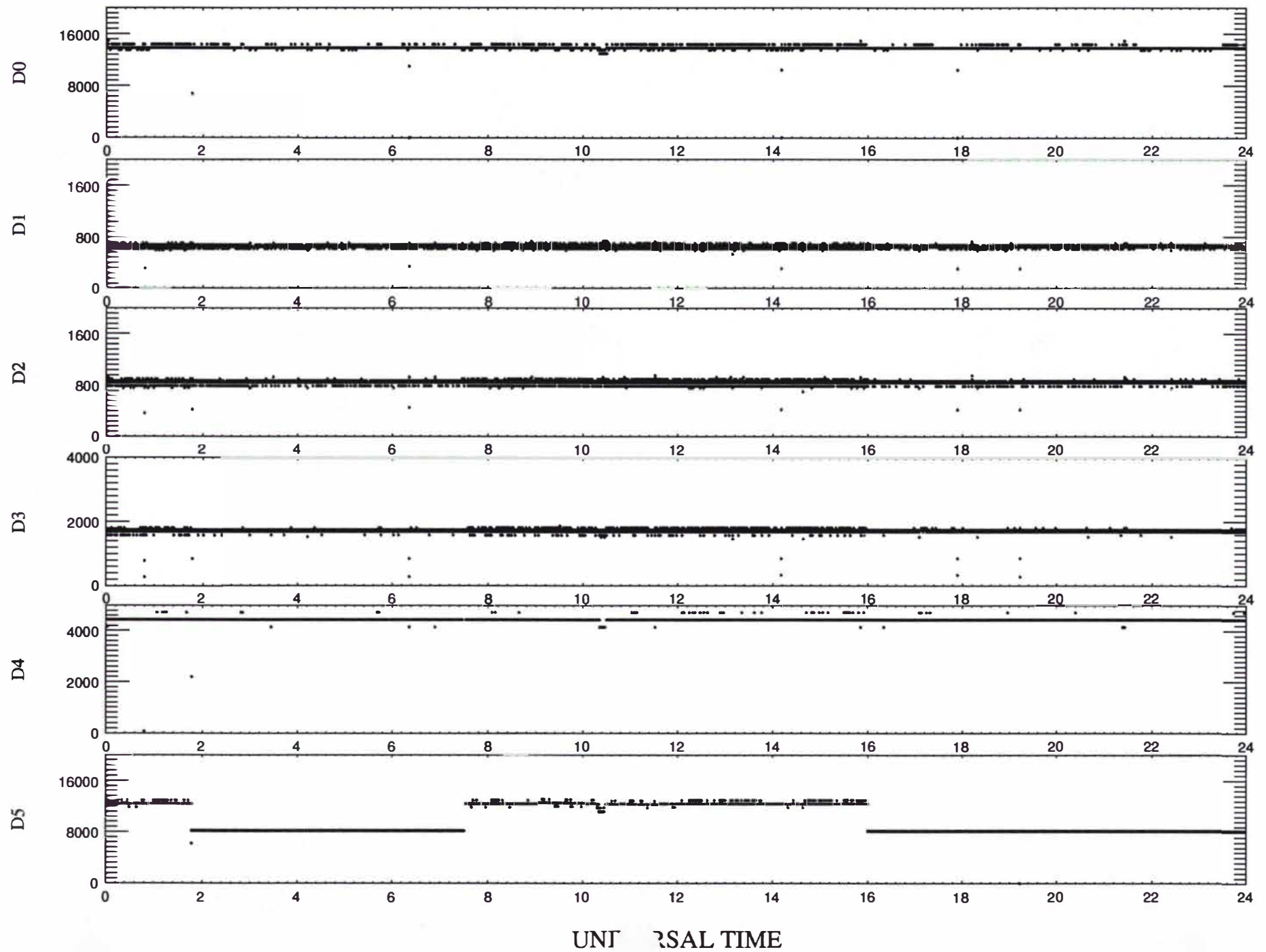
Burst Counter 10 at UT=14.006728002760 h=50424.221 s 14:00:24.221



CALIBRATION DATA INCLUDED



UNT RSAL TIME



Date: Jan 24 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
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2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

- ☐ Was CHECKMO run to eliminate data gaps?
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- ☐ GRS and HEND data cross-correlated to check timing?

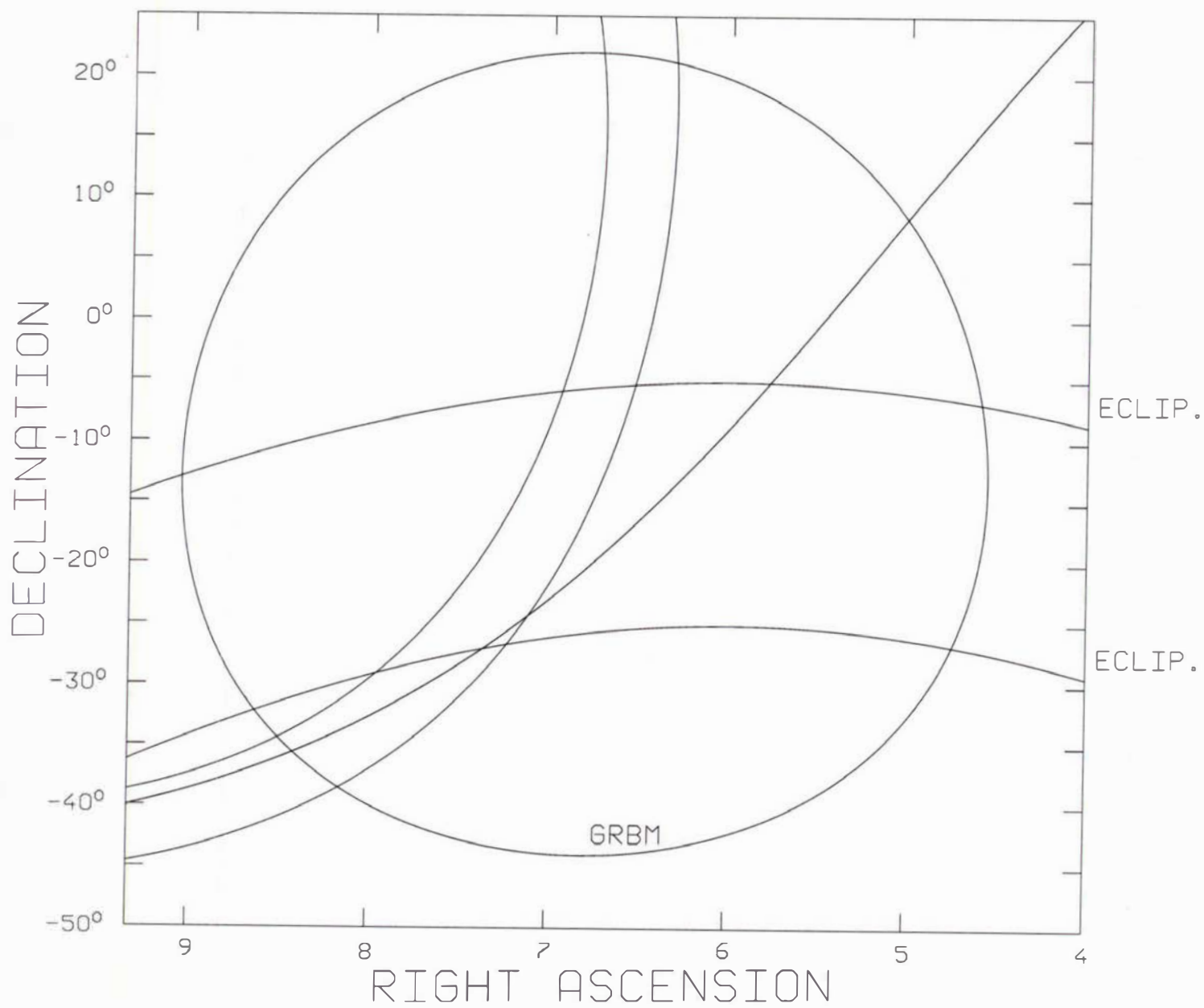
2. For 3 or More Spacecraft events

- ☒ $\Sigma 3\Delta t$'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?



EVENT OF AUG 10, 1996 6:56

14/ 5/ 9

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

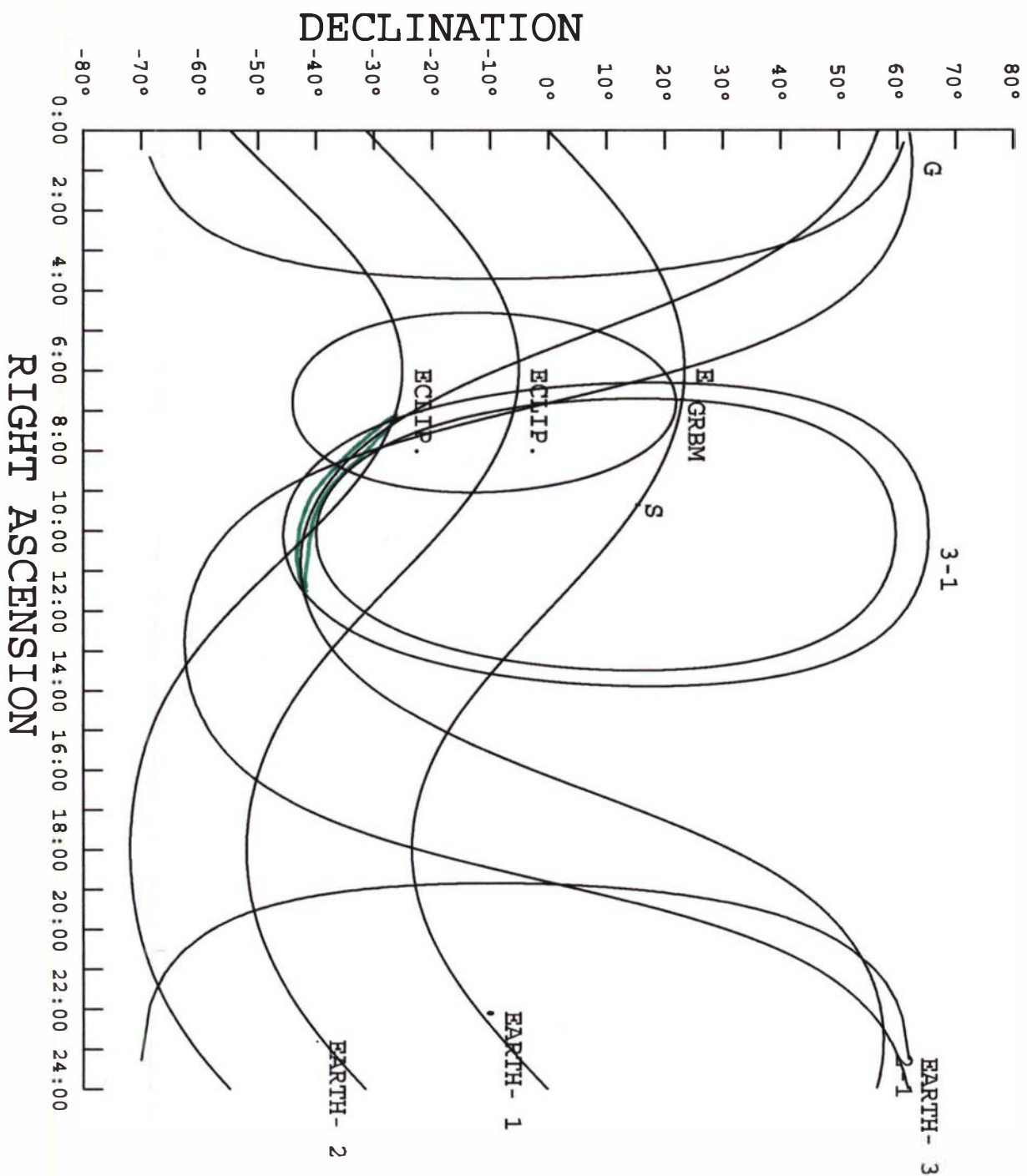
E=ECLIPTIC

G=GALACTIC EQUATOR

1 KONUS1

2 ULYSSES

3 SAX



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

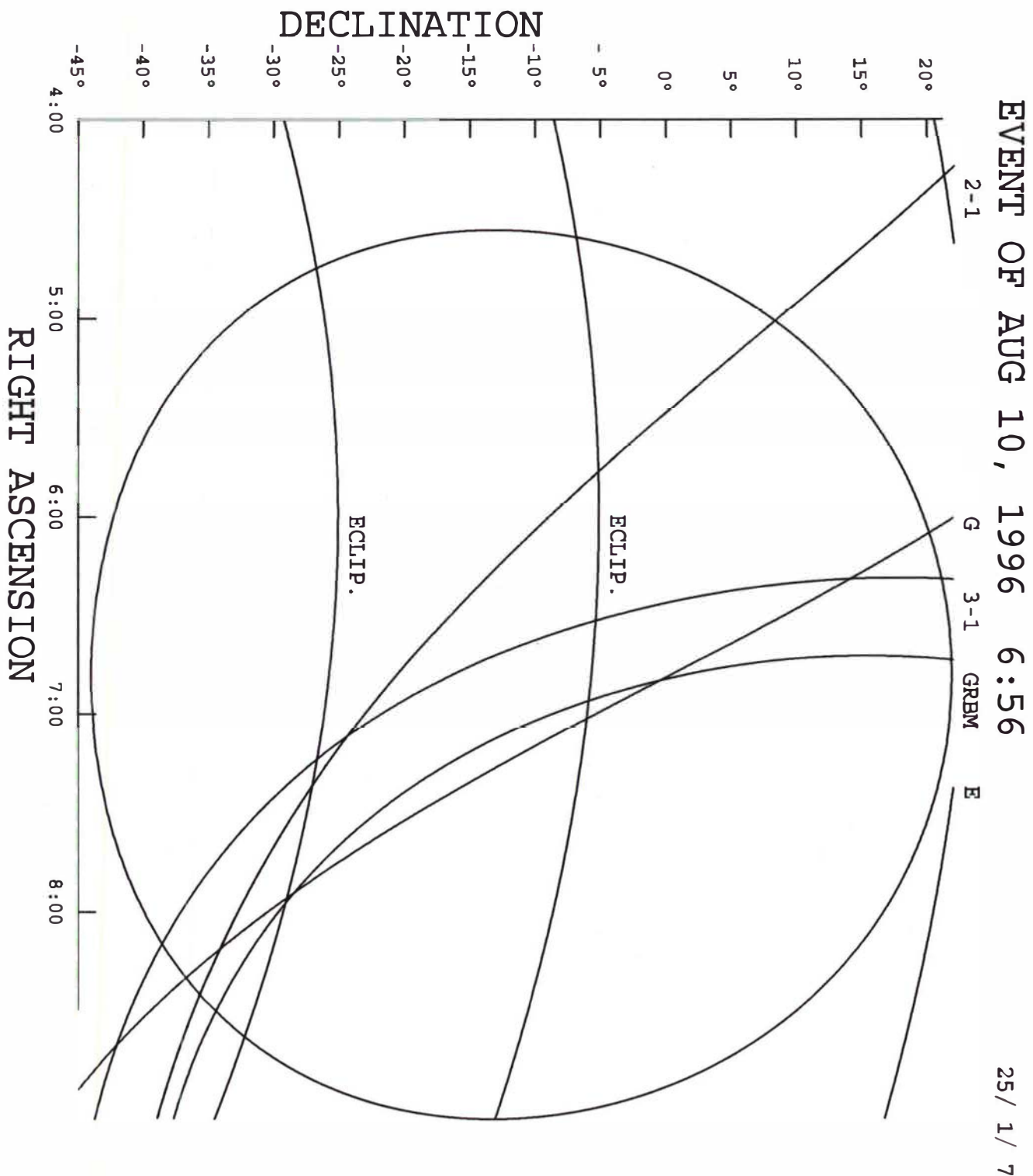
E=ECLIPTIC

G=GALACTIC EQUATOR

1 KONUS1

2 ULYSSES

3 SAX



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

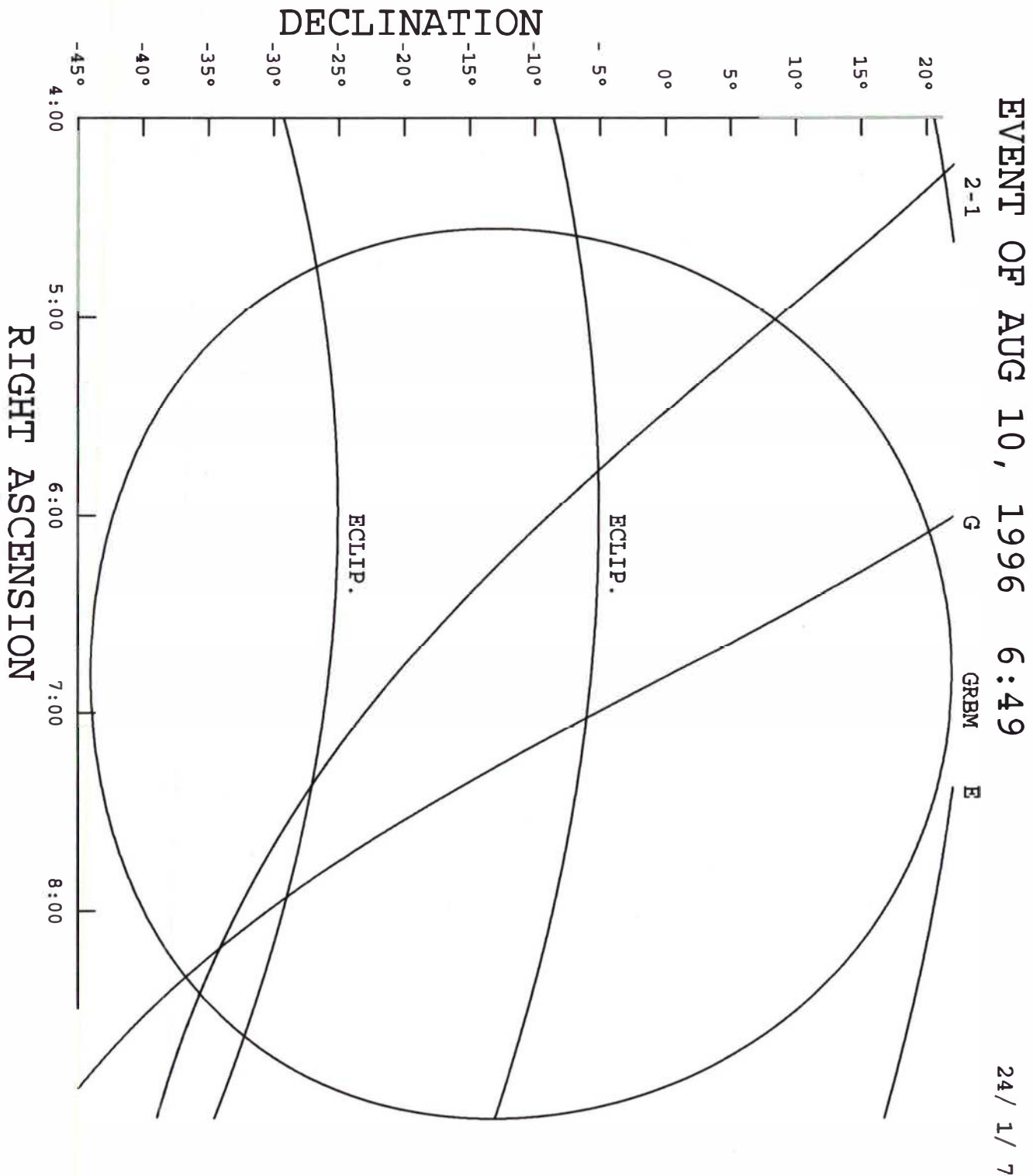
S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS1



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

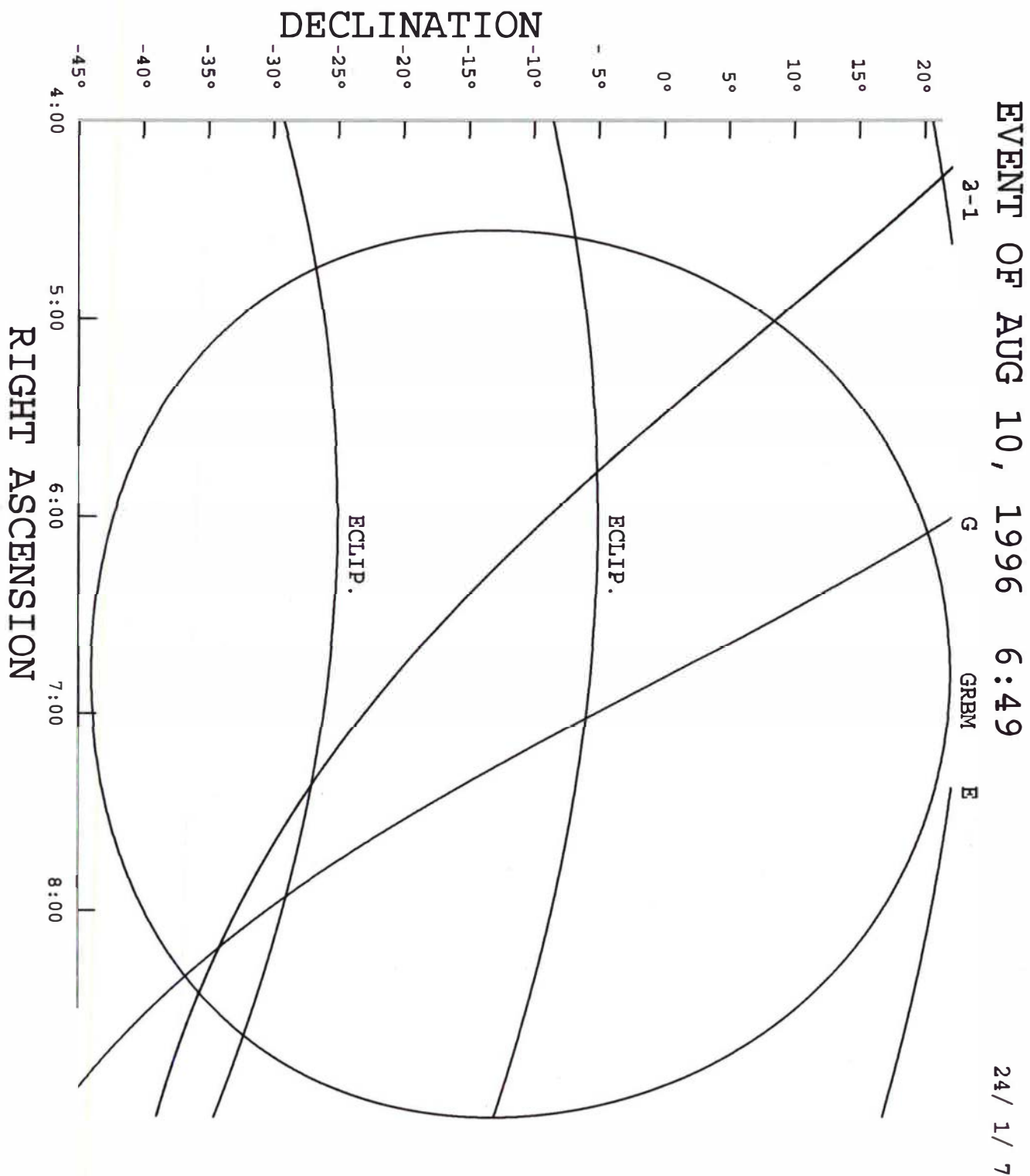
E=ECLIPTIC

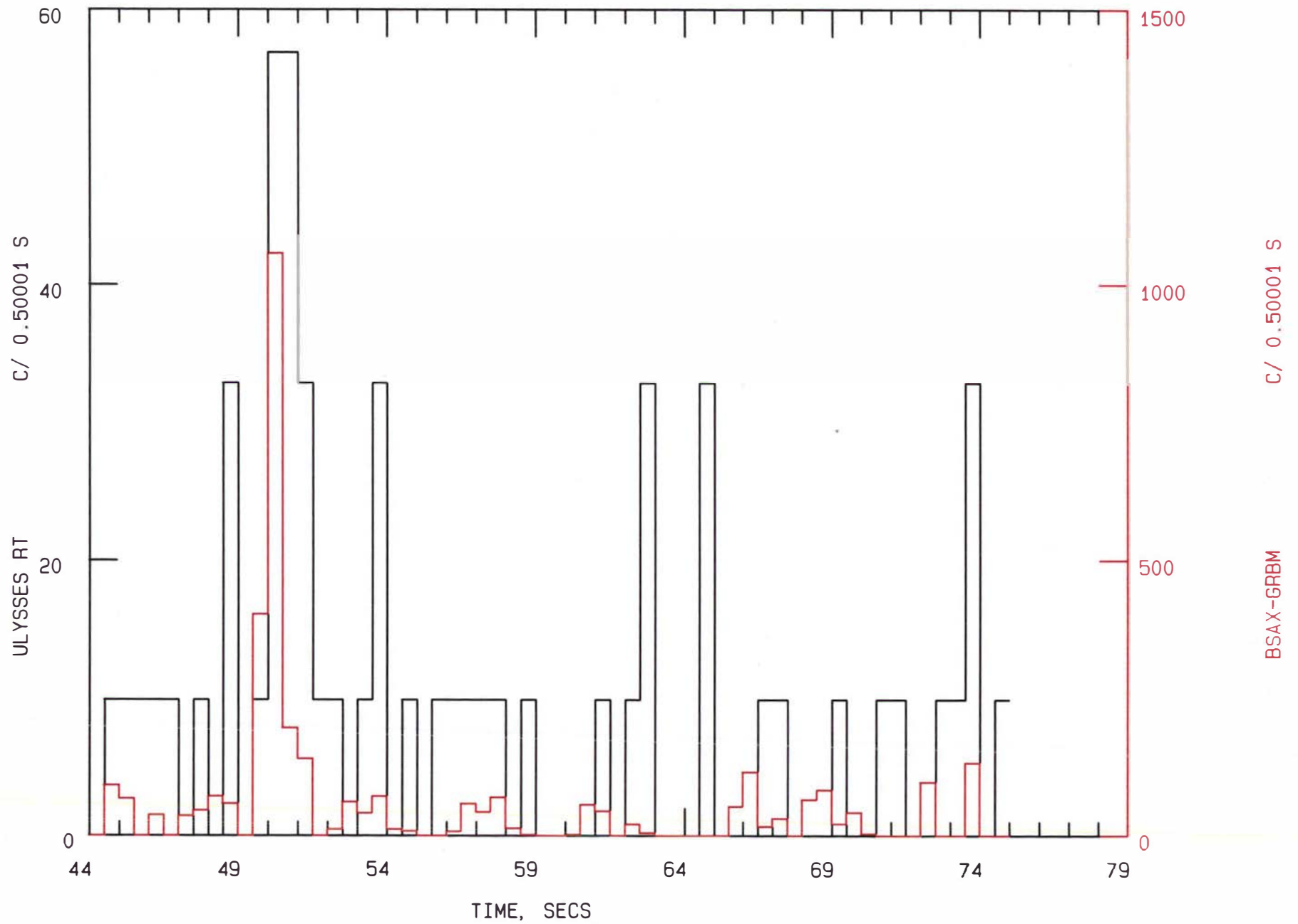
G=GALACTIC EQUATOR

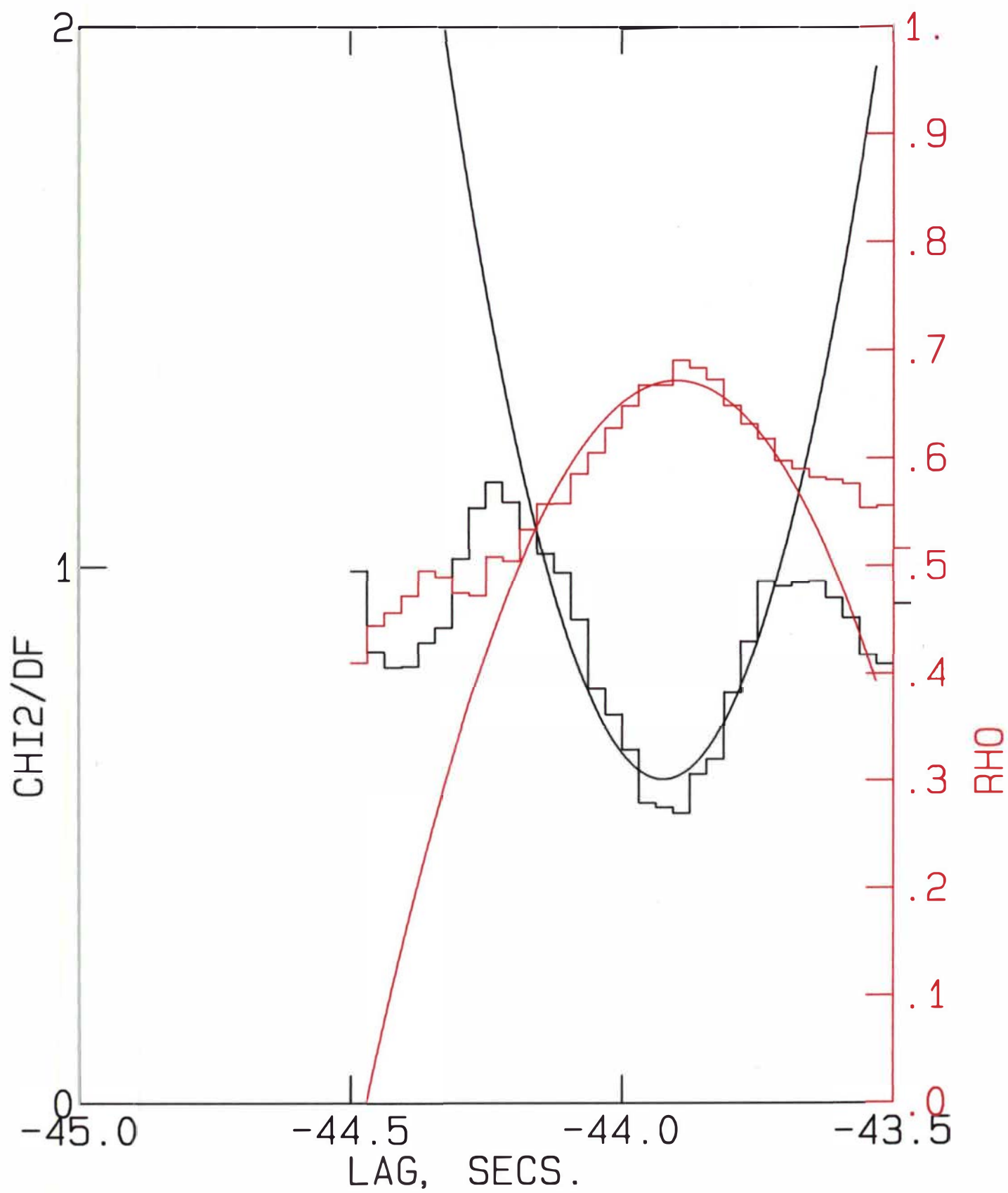
1 ULYSSES

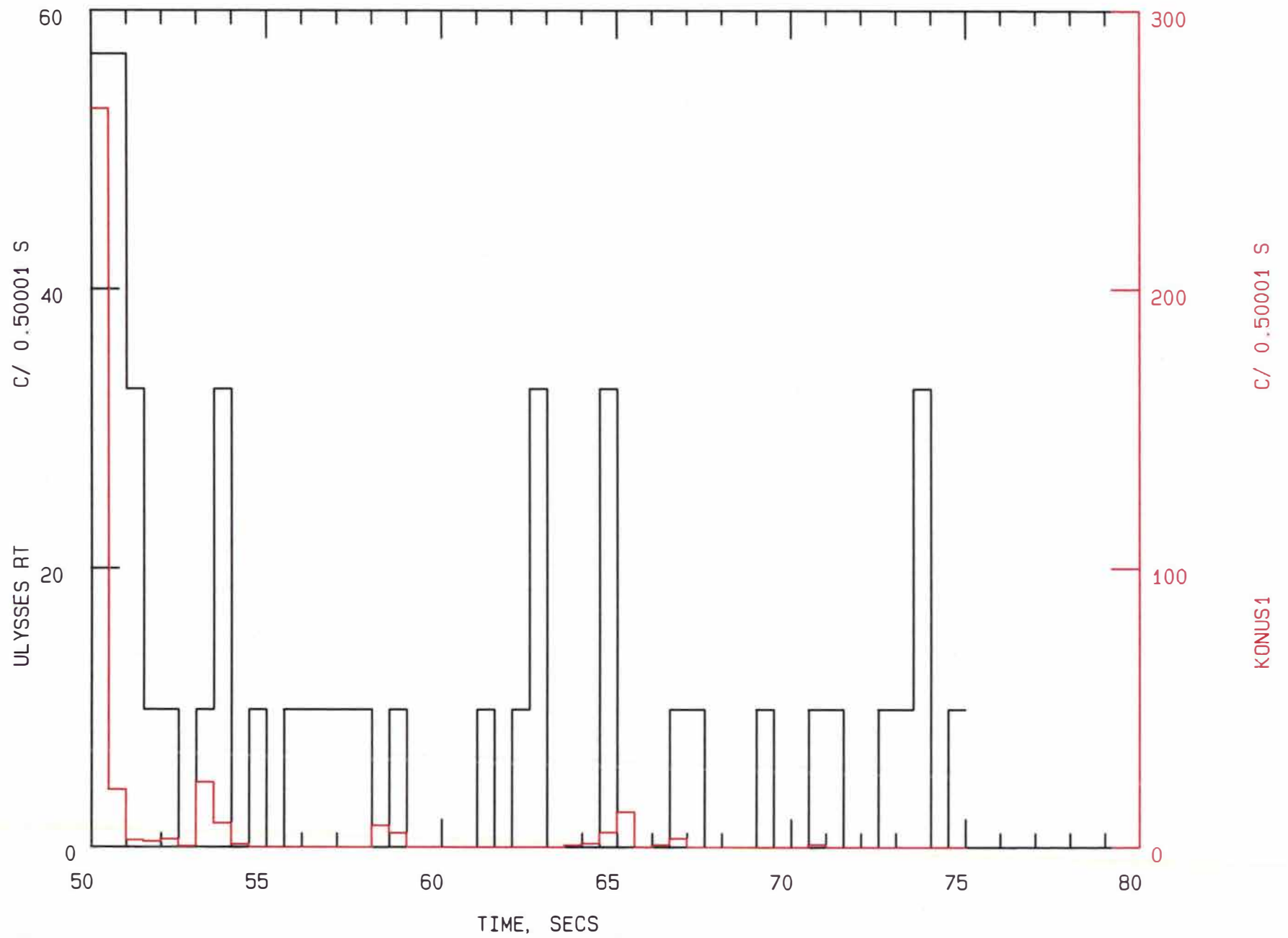
2 KONUS1

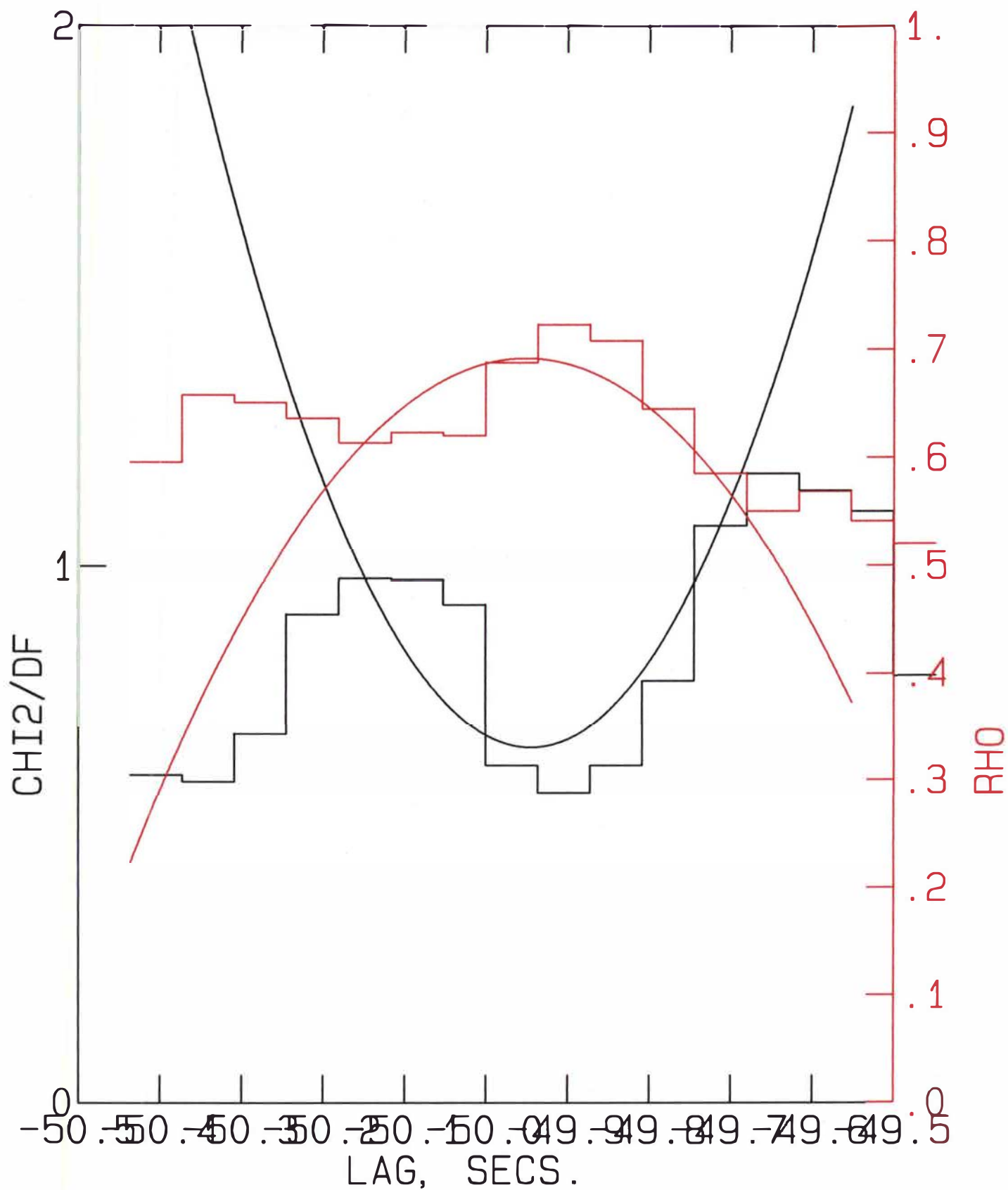
3 SAX











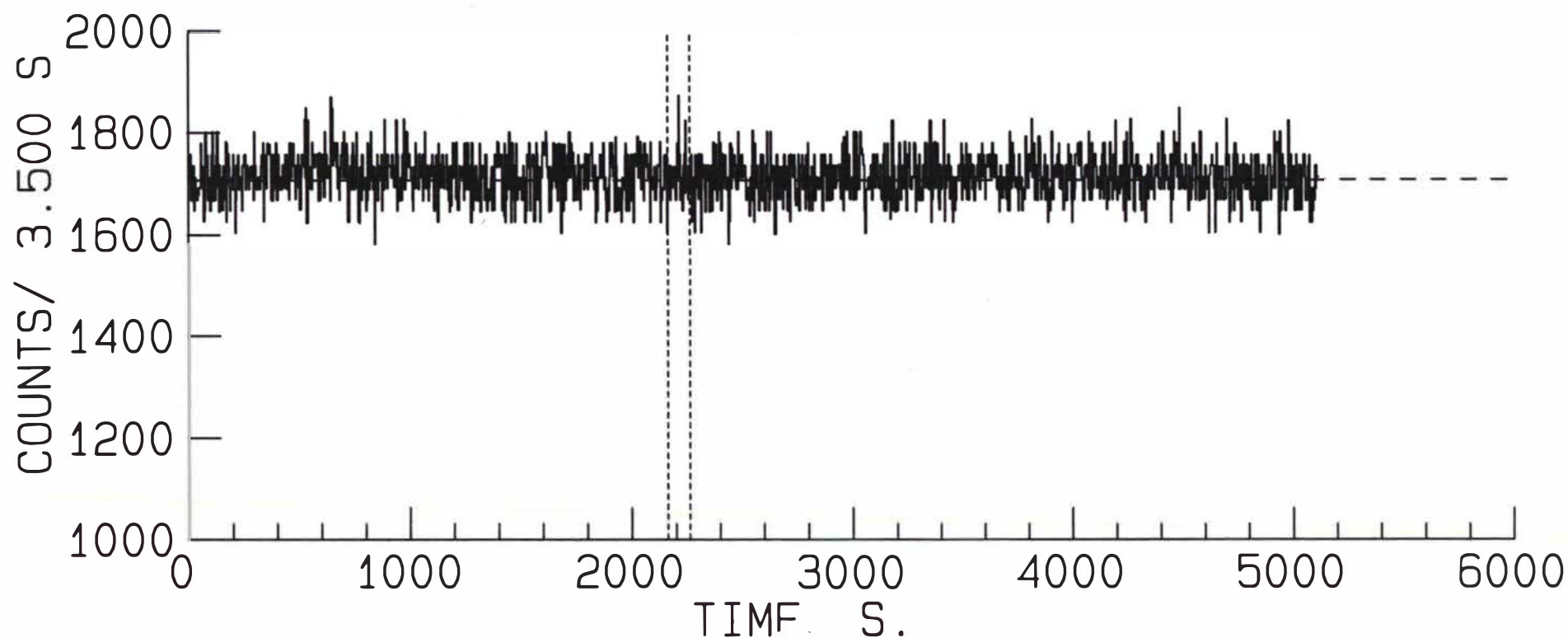
ULYSSES RT

24 / 1 / 7

10 / 8 / 96 22428.256 s

0.500 S INTERVALS REGROUPED BY 7

21- 146 keV



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

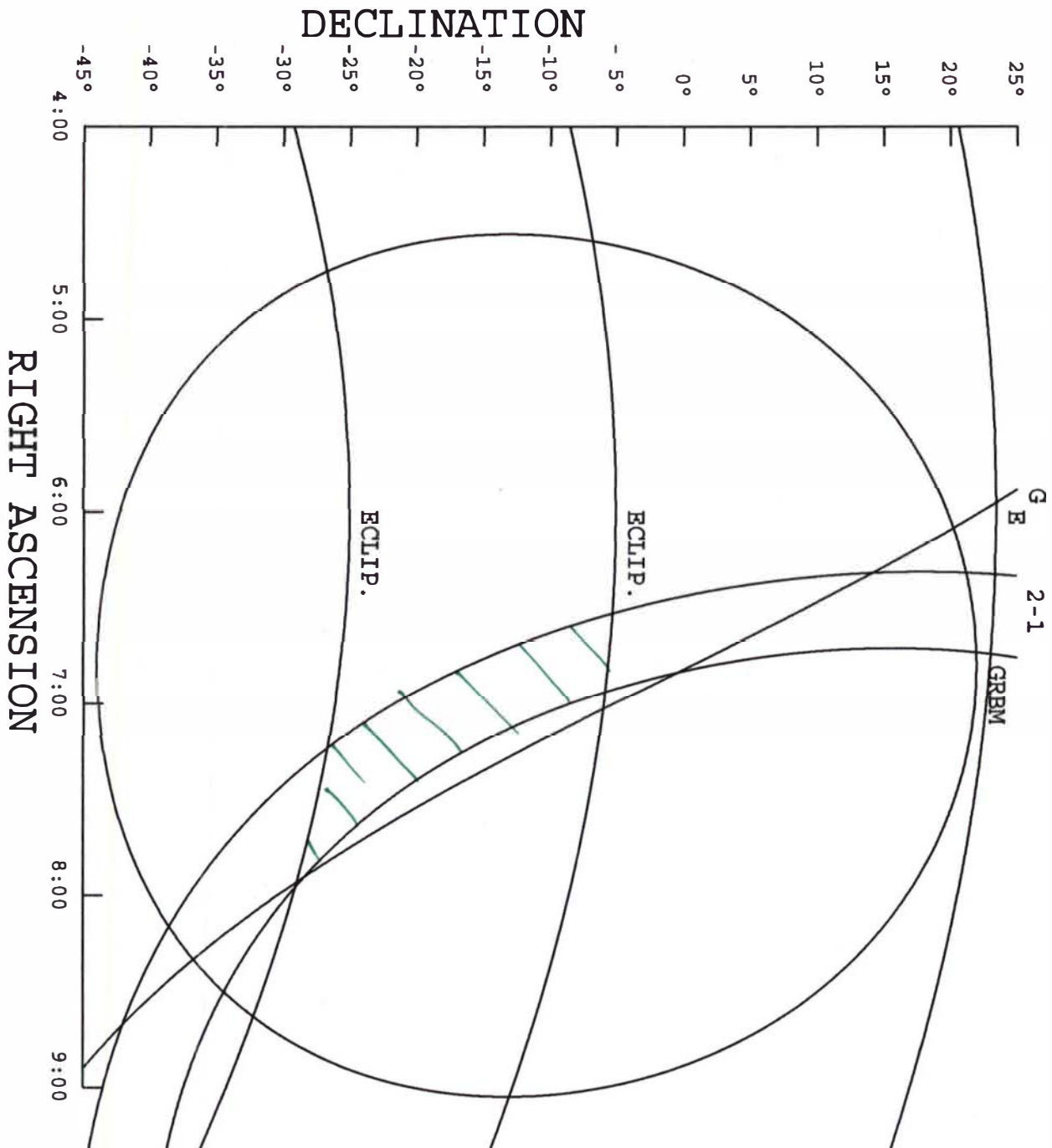
G=GALACTIC EQUATOR

1 KONUS1

2 SAX

EVENT OF AUG 10, 1996 6:56

24 / 1 / 7



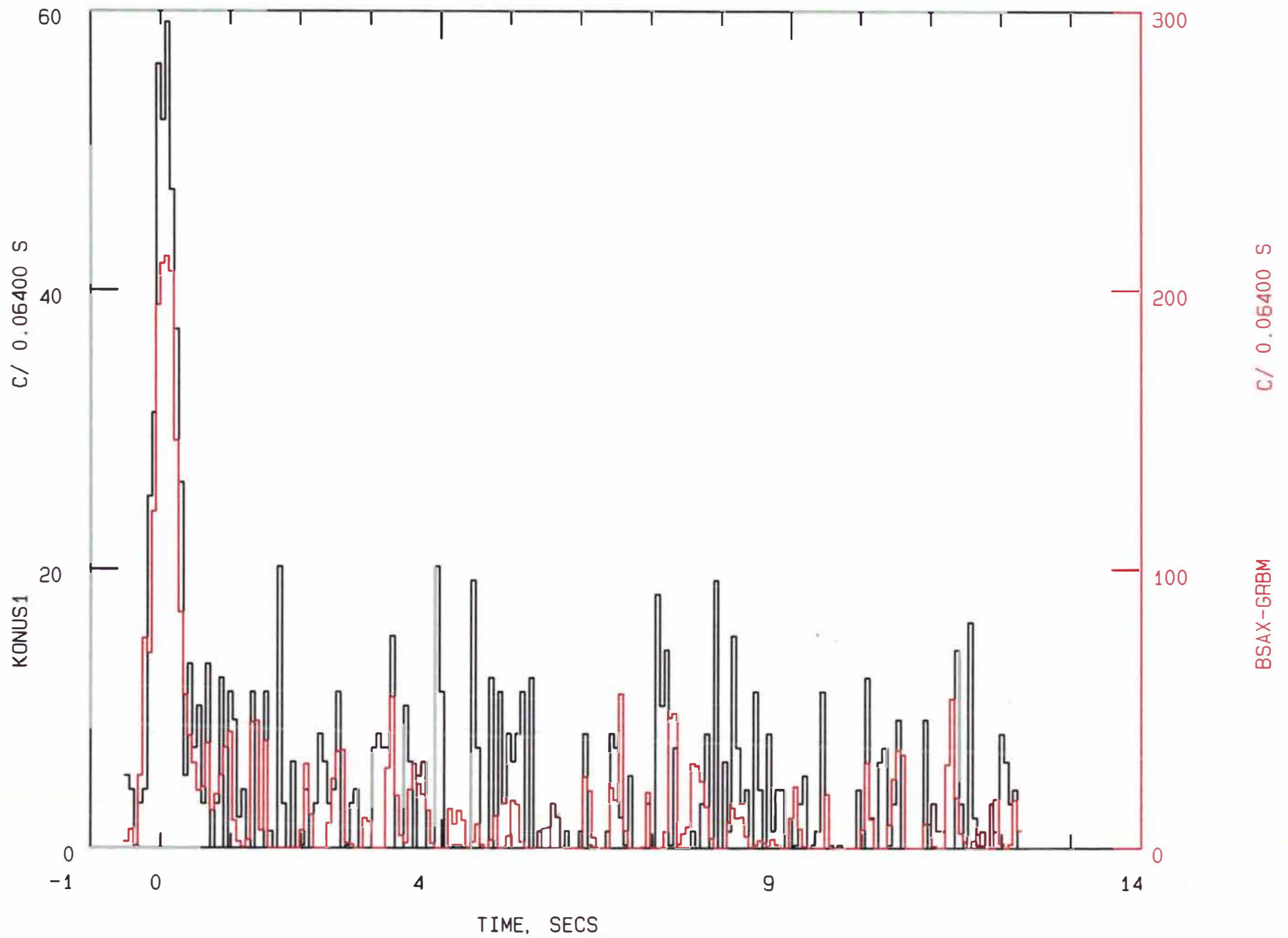
KONUS1

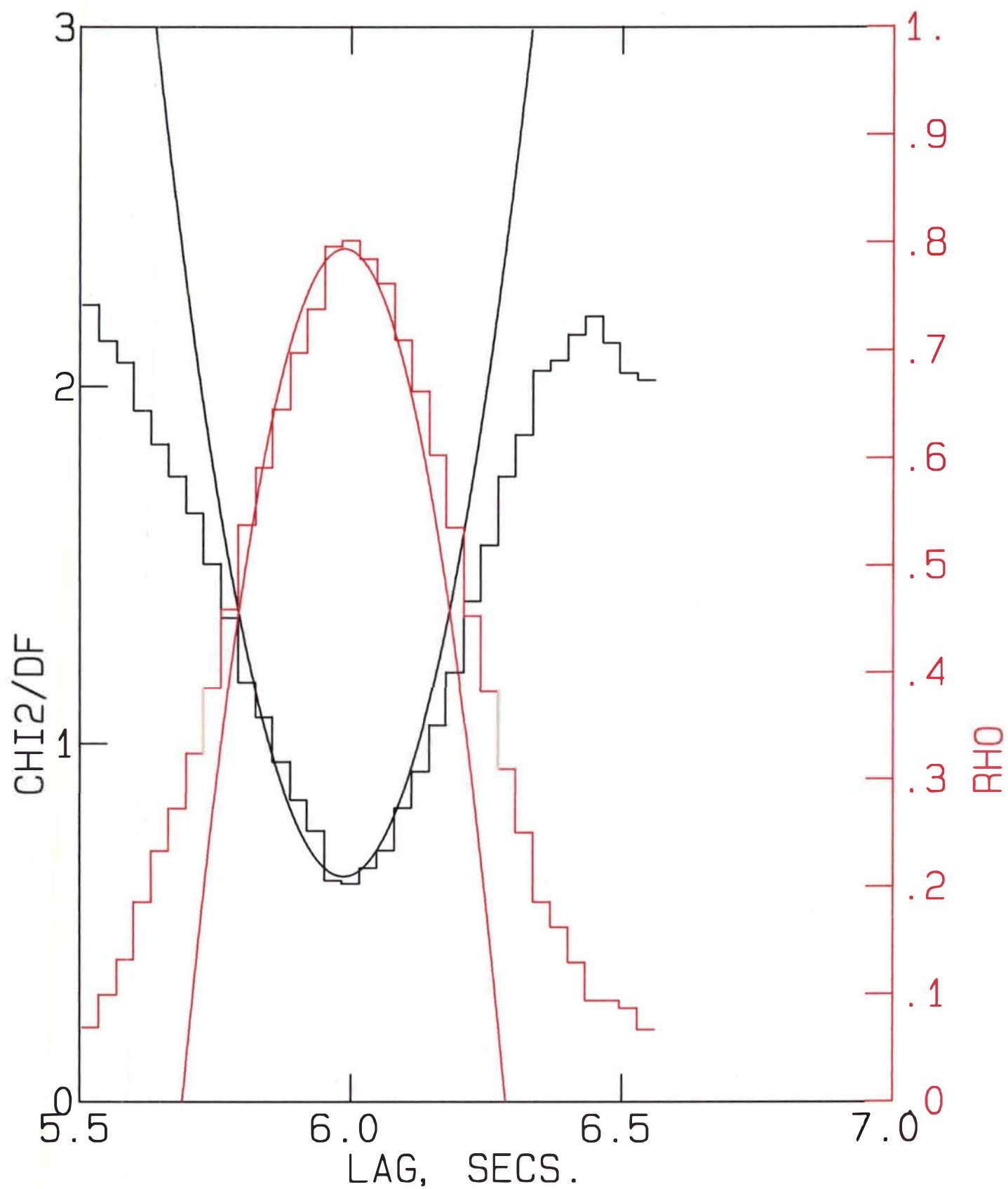
-BSAX-GRBM CORRELATION

10/08/96

24974.750

24/ 1/ 7



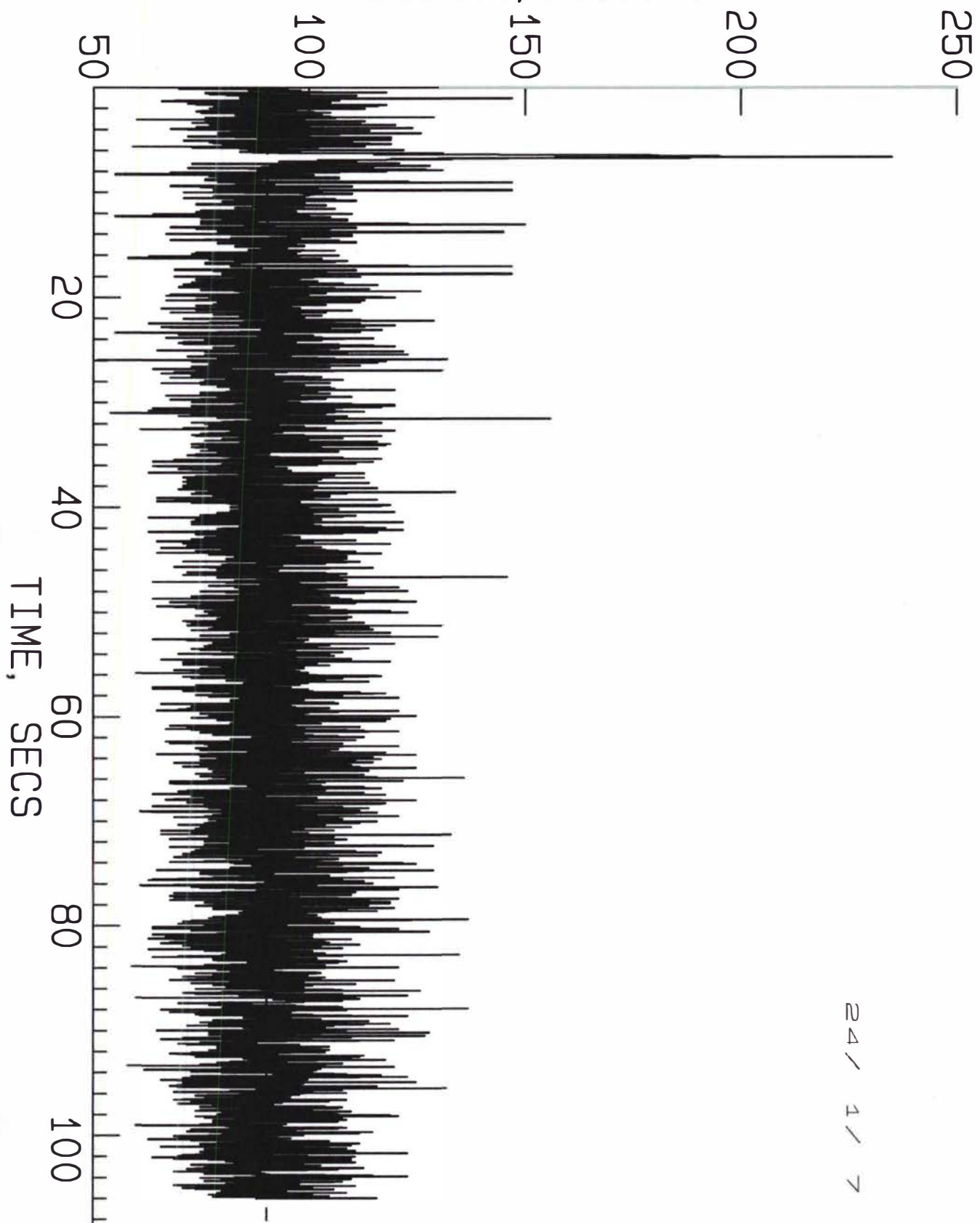


SAX GRBM

10/08/96 24969.827

40- 700 keV

COUNTS/0.031 S

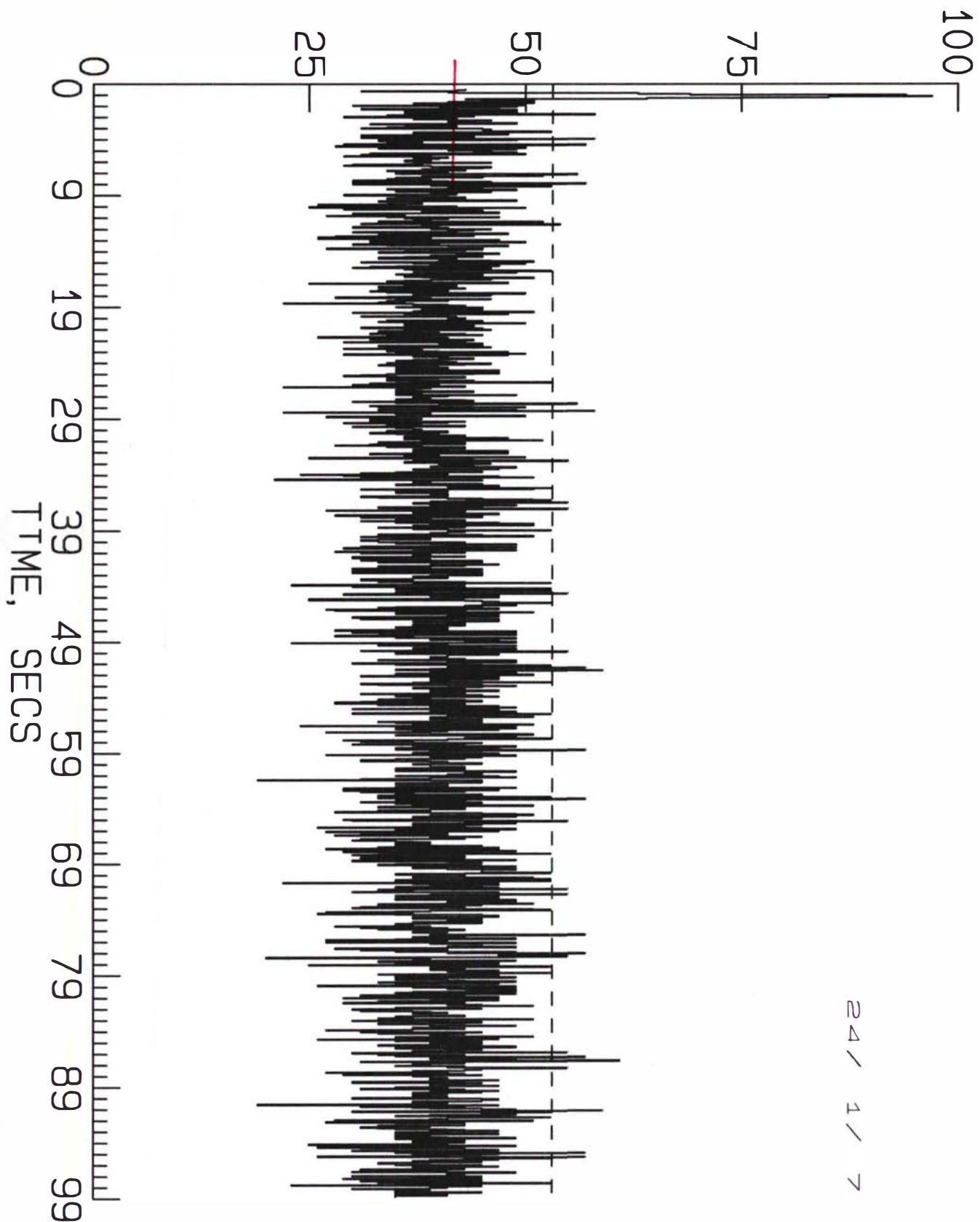


KONUS

10/08/96 24974.700

50- 200 keV

COUNTS/0.064 S



From HAGEDON@fender.msfc.nasa.gov Mon Aug 12 12:01 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Mon, 12 Aug 1996 14:00:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5569

BATSEARCH PROGRAM

NO

BATSE BURST # 5569
EVENT OF 1996 AUG 10 DAY OF YEAR=223
EVENT CROSSING TIME AT BATSE : 24571. S. OR 06:49:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 185.000 -35.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 8/ 96 IS:
RA= 161.686 DEC= 39.849 DIST= 5.039 AU
BATSE-ULYSSES DISTANCE = 753908237. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -528.11 SECS.
CROSSING TIME AT ULYSSES IS 24043. S. OR 06:40:42 +/- 468.85 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 8/ 96 IS:
RA= 101.097 DEC= 23.632 DIST= 2.212 AU
MARS-BATSE DISTANCE = 330844864. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 165.78 SECS.
CROSSING TIME AT MARS IS 24737. S. OR 06:52:16 +/- 191.94 SECONDS

BATSE BURST TRIGGER

NO.: 5569

TIME: TJD=0305 SECONDS=24571

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=107.7 AZIMUTH=352.1 ERROR=2.5 DEGREES

COMMENTS:

BURST. WEAK SINGLE PULSE. FASTER RISE THAN DECAY. DUR.~35 SEC.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5569	960810	10305	24571	3500	185	-35	35

BATSE #

5569

13 / 8 / 96

ULYSSES RT

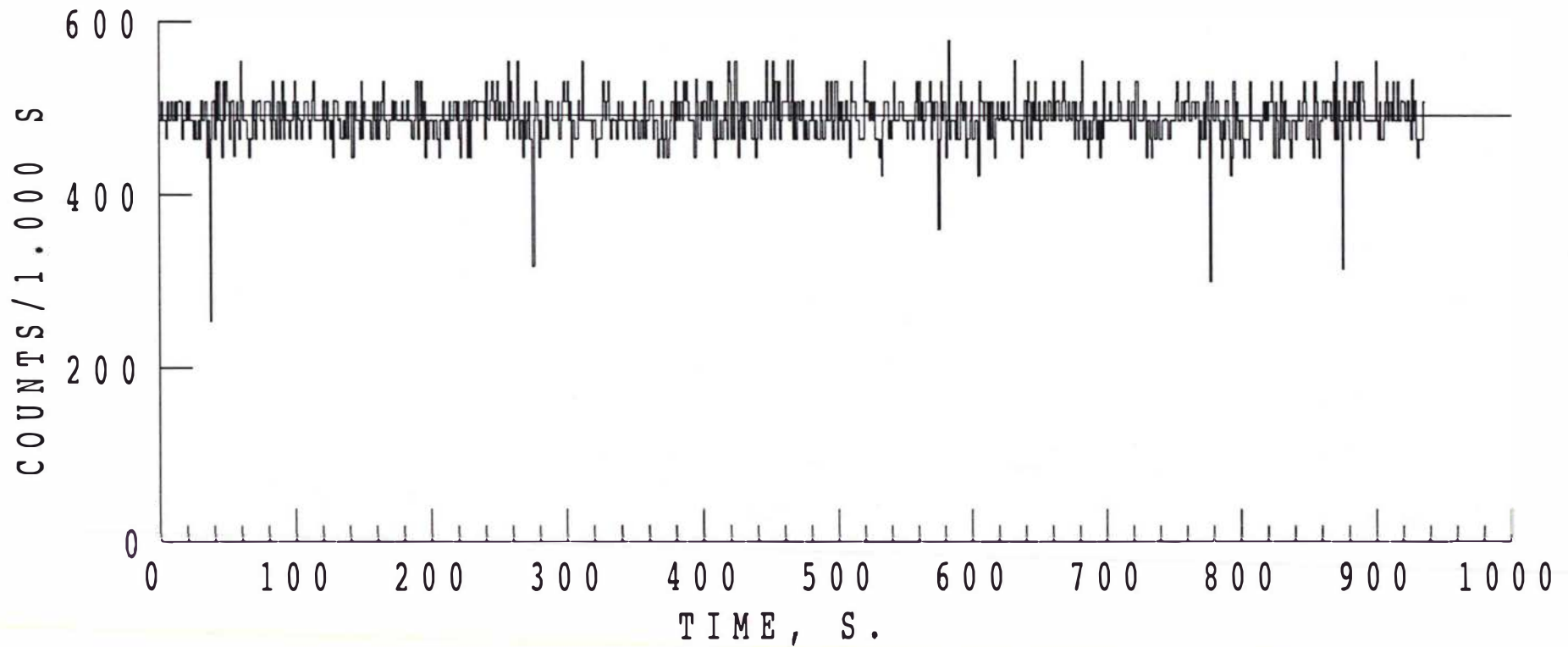
10 / 8 / 96 23580.270 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

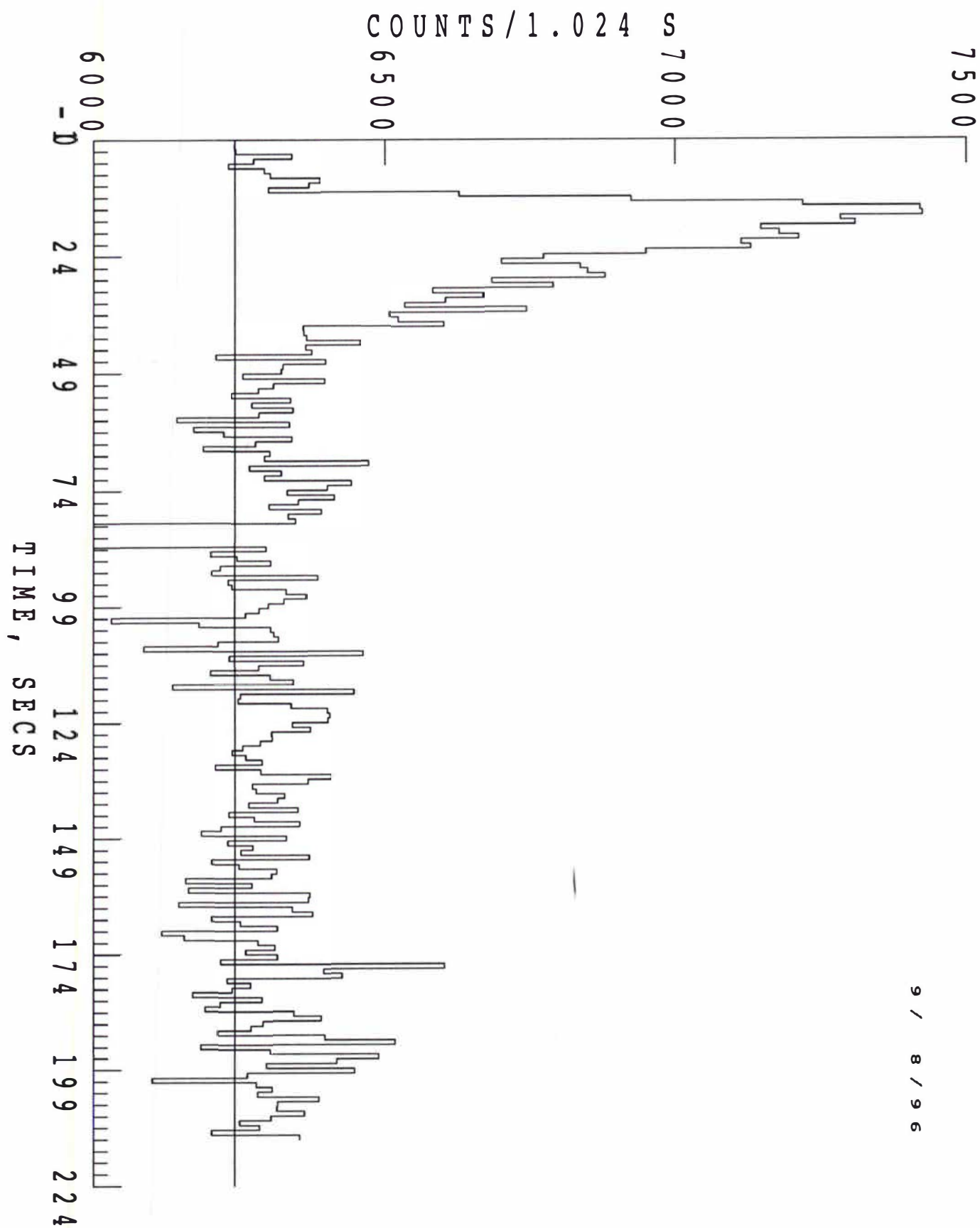
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BACODINE 5569 10/08/96 24560.329

25 - 100 keV



From HAGEDON@fender.msfc.nasa.gov Mon Aug 12 12:03 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Mon, 12 Aug 1996 14:02:17 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5570

BATSEARCH PROGRAM

BATSE BURST # 5570
EVENT OF 1996 AUG 10 DAY OF YEAR=223
EVENT CROSSING TIME AT BATSE : 83459. S. OR 23:10:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 5.000 8.000
BATSE PEAK COUNTING RATE: 13500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 8/ 96 IS:
RA= 161.826 DEC= 39.742 DIST= 5.044 AU
BATSE-ULYSSES DISTANCE = 754599400. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1538.01 SECS.
CROSSING TIME AT ULYSSES IS 84997. S. OR 23:36:37 +/- 419.29 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 8/ 96 IS:
RA= 101.097 DEC= 23.632 DIST= 2.212 AU
MARS-BATSE DISTANCE = 330844864. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 44.77 SECS.
CROSSING TIME AT MARS IS 83504. S. OR 23:11:43 +/- 192.12 SECONDS

BATSE BURST TRIGGER

NO.: 5570

TIME: TJD=0305 SECONDS=83459

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=79.9 AZIMUTH=198.1 ERROR=2.6 DEGREES

COMMENTS:

BURST. SHORT, DOUBLE-PEAKED PULSE. DUR.~0.35 SEC. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5570	960810	10305	83459	13500	005	+08	.35

BATSE #

5570

13 / 8 / 96

ULYSSES RT

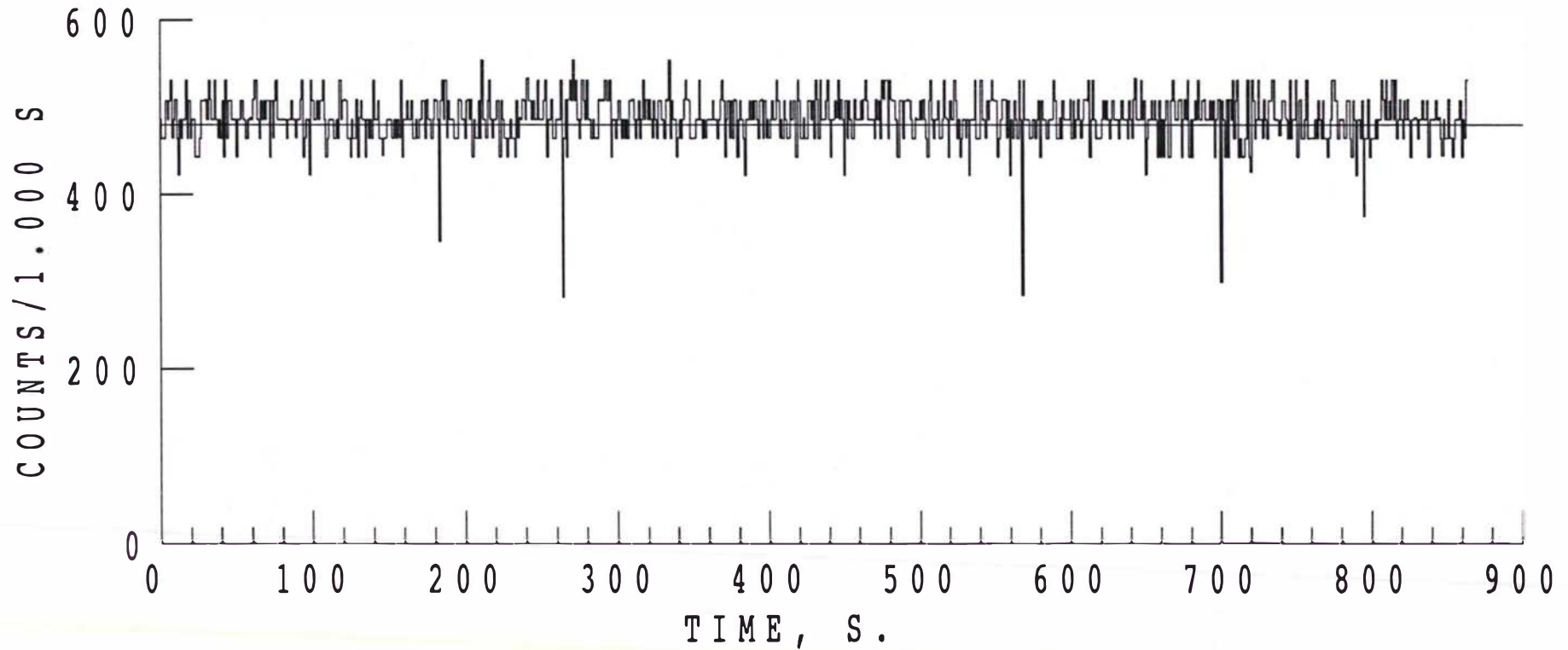
10 / 8 / 96 84564.055 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



96	8	7	71369.324	S2	1200	2740	1000	0.25	6	10	358	Trig	5567
96	8	9	52229.443	S2	6500	10000	9500	0.06	5	40	359	Trig	
96	8	10	24974.750	S1	740	860	250	4	0.5	0.6	360	Search ± 2500 RI	
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI KA	
6	8	15	36027.501	S1	470	1250	370	3.2	0.5	12	362	Trig	5575
6	8	21	13940.971	S1	520	720	360	6	2	11	368	Search ± 2500	
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search ± 2500	
96	8	31	37775.300	S2	420	500	210	0.1	64	98	370	RI	5591
96	9	2	58097.128	S1	1750	3200	1060	3	0.05	1.5	371	Trig KA	
96	9	6	81590.312	S1	240	470	170	13	2	16	372	RI	5593
96	9	8	25028.442	S2	10000	7000	2500	<0.04	0.04	0.3	373	Trig	
96	9	12	50250.066	S2	420	600	320	<0.03	3	15	378	RI	5601
96	9	12	67621.610	S1	2000	380		3.4	270	0.5	379	Search ± 2600	
96	9	13	83120.562	S1		320	70	1.7	2	14	380	RI	5604
96	9	16	14182.498	S1	250	420	60	3.4	300	12	381	Search ± 2600	
96	9	21	54231.399	S1	1160	2900	830	2.5	0.5	40	382	Trig	5609
96	9	22	18368.358	S1	800	1100	280	14	2	70	383	Search ± 2600	
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5614
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5617
96	10	1	75186.385	S2	1600	3800	1800	0.08	1	12	386	Trig	5621
96	10	2	75235.745	S1	1100	1600	250	8	11	6	387	Search ± 2600	
96	10	9	33560.099	S2	1020	1360	300	0.03	6	13	393	NO	5628
96	10	9	49065.989	S1	600	900	320	23	3	24	394	RI	5629
96	10	15	42782.014	S2	160	290	100	0.7	3	80	395	Search ± 2600	
96	10	17	42405.539	S1					0.3	1.5	396	Search ± 2600	
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search ± 2600	
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search ± 2600	
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search ± 2600	
96	10	26	05631.940	S1	6000	3000		1	0.04	0.04	401	Trig	
96	10	26	22311.118	S2	400	560	300	0.3	2	3	402	RI	5644
96	10	29	24354.087	S1	4000	3700	1250	25	7	300	404	Trig	
96	10	29	68710.804	S1	570	620	120	>20	2	11	405	Search ± 2600	
96	11	1	58062.904	S2	1020	1450	600	<0.04	1	18	406	Trig	
96	11	2	41907.802	S2	350	610	230	0.08	5	90	407	Search ± 2600	

TLC

-- F. L. Cline ----- LHEAVX::CLINE

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

KONUS 29

ULYSSES RT

25 / 11 / 96

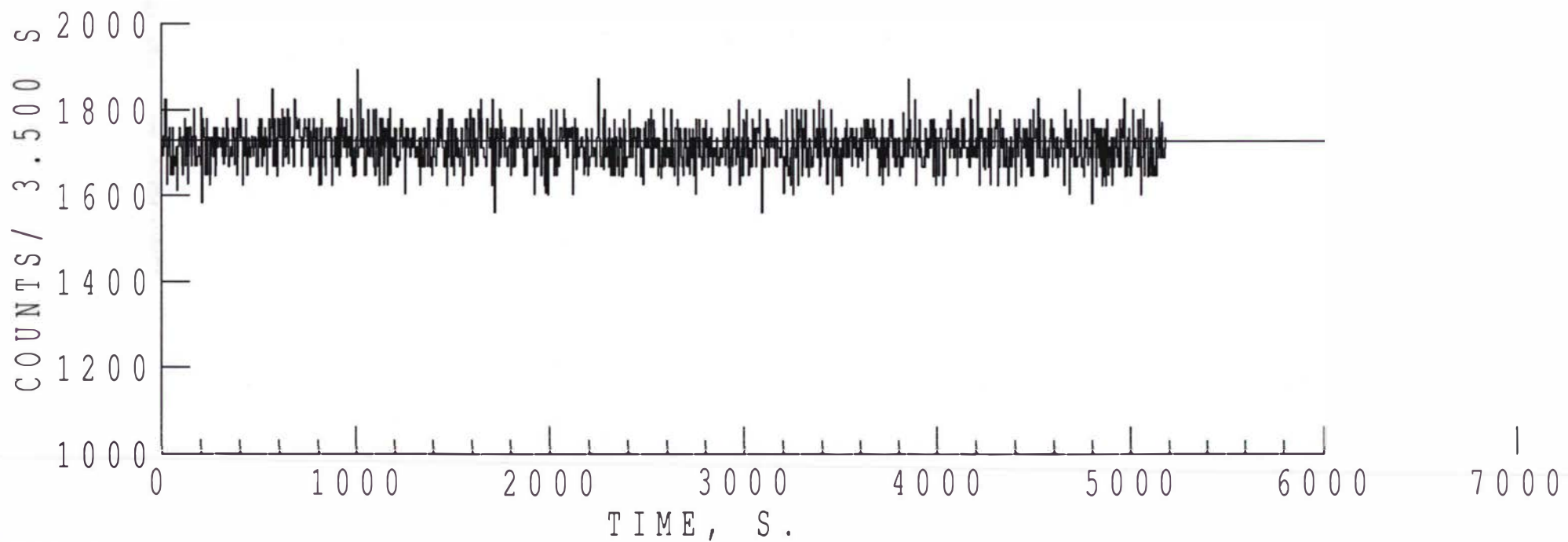
10 / 8 / 96 22392.256 s

0.500 S INTERVALS REGROUPED BY 7

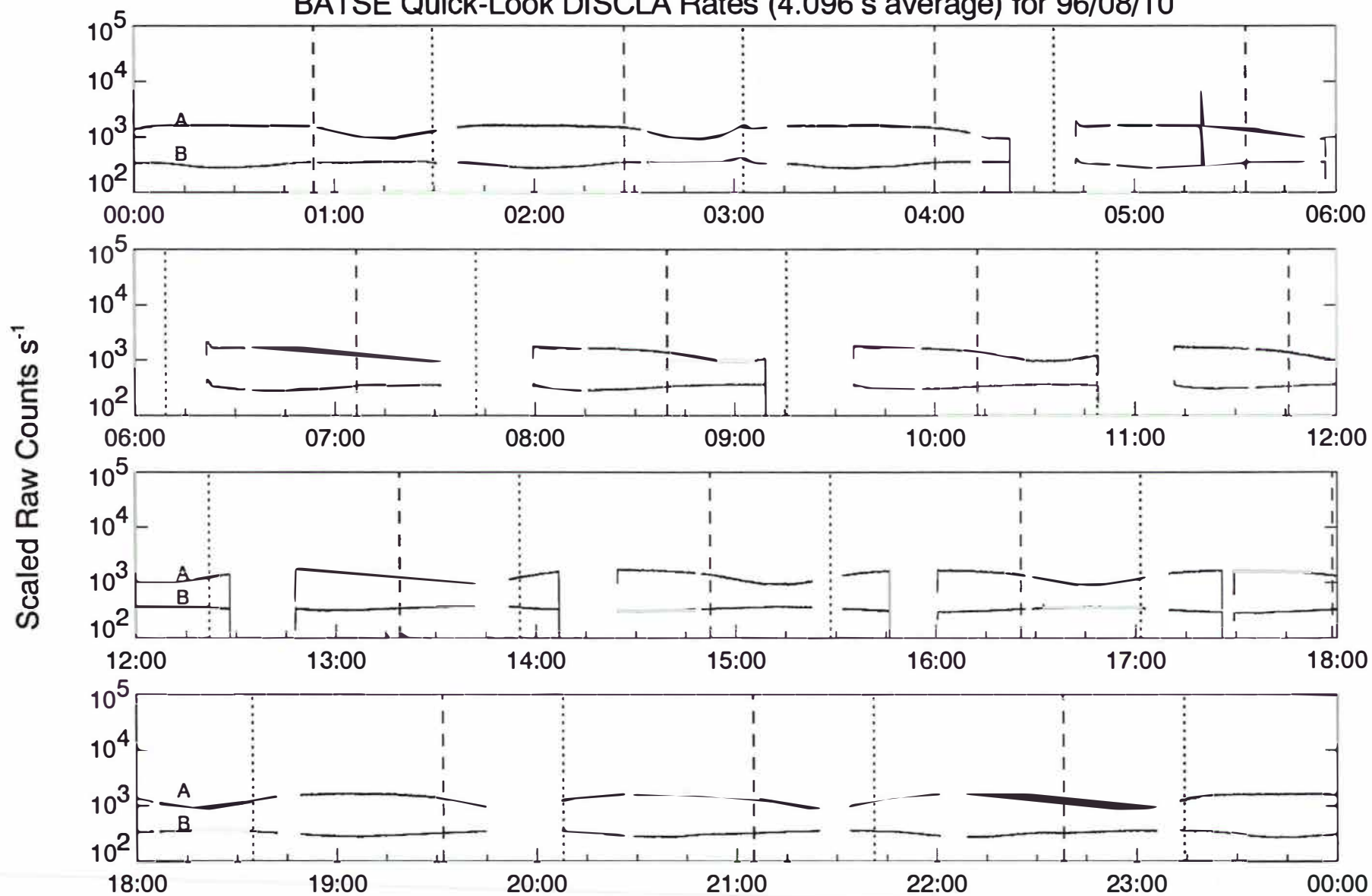
0 - 0 keV

N= 19 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/10

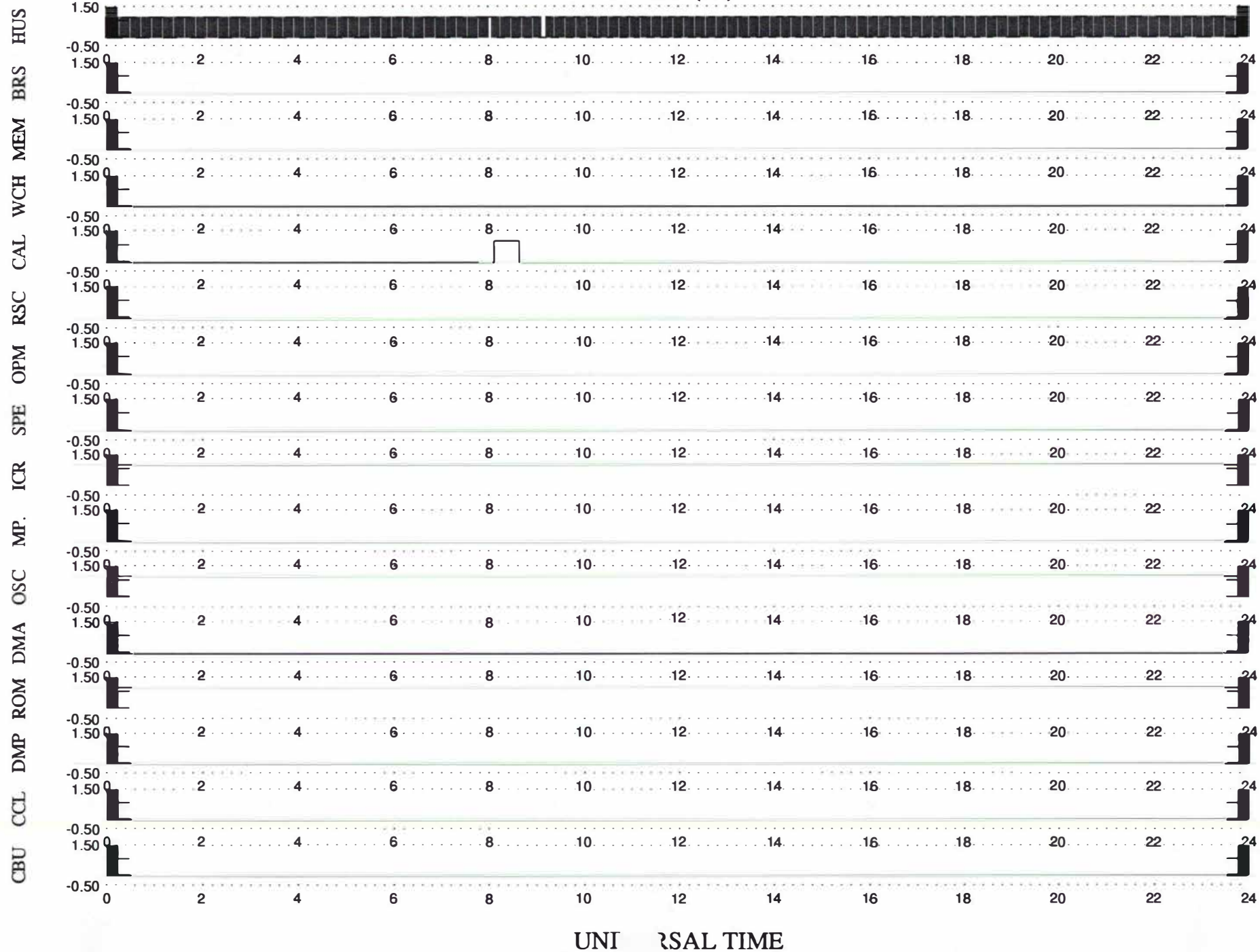


Current Time: 96/08/12, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

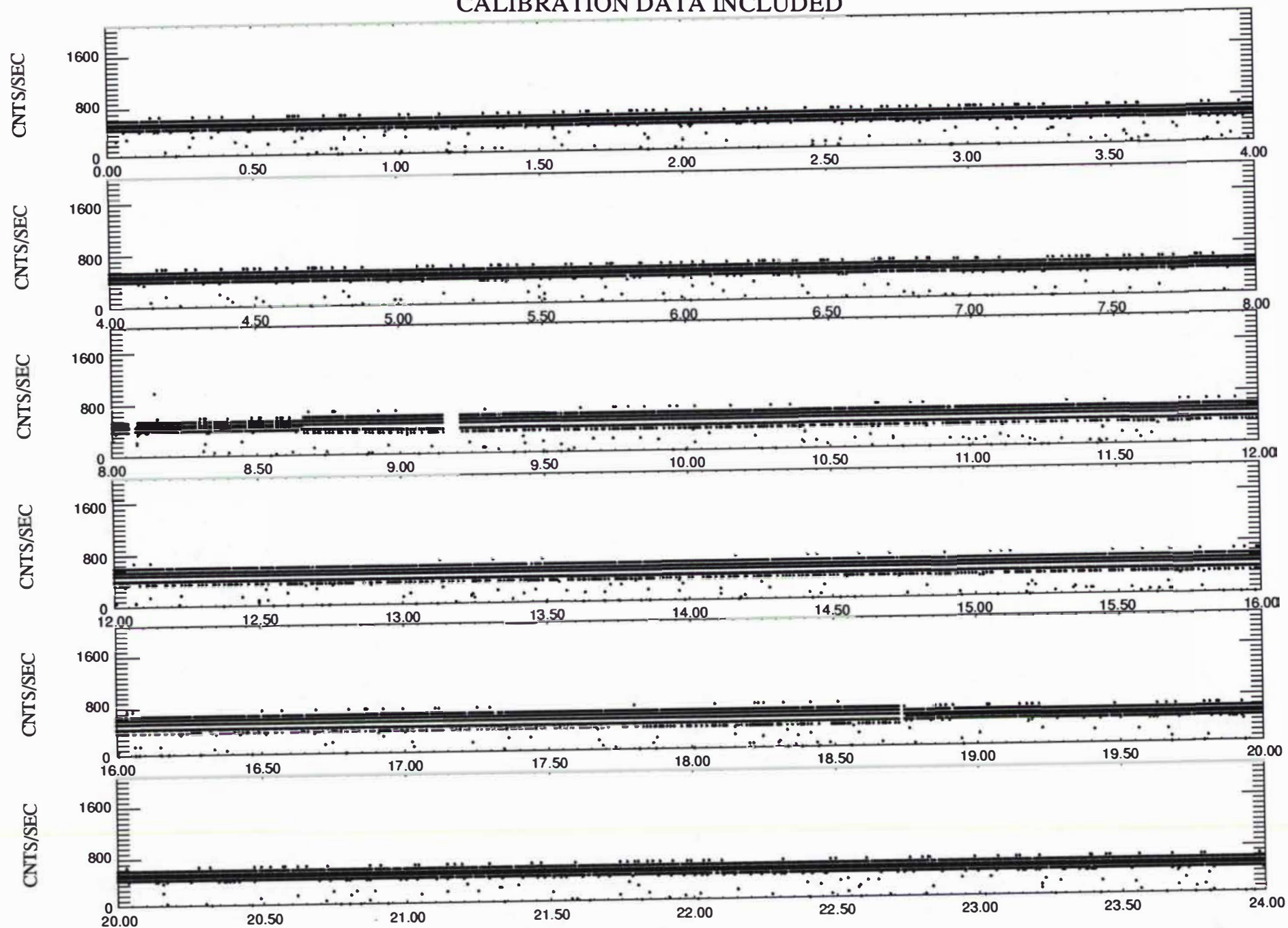
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

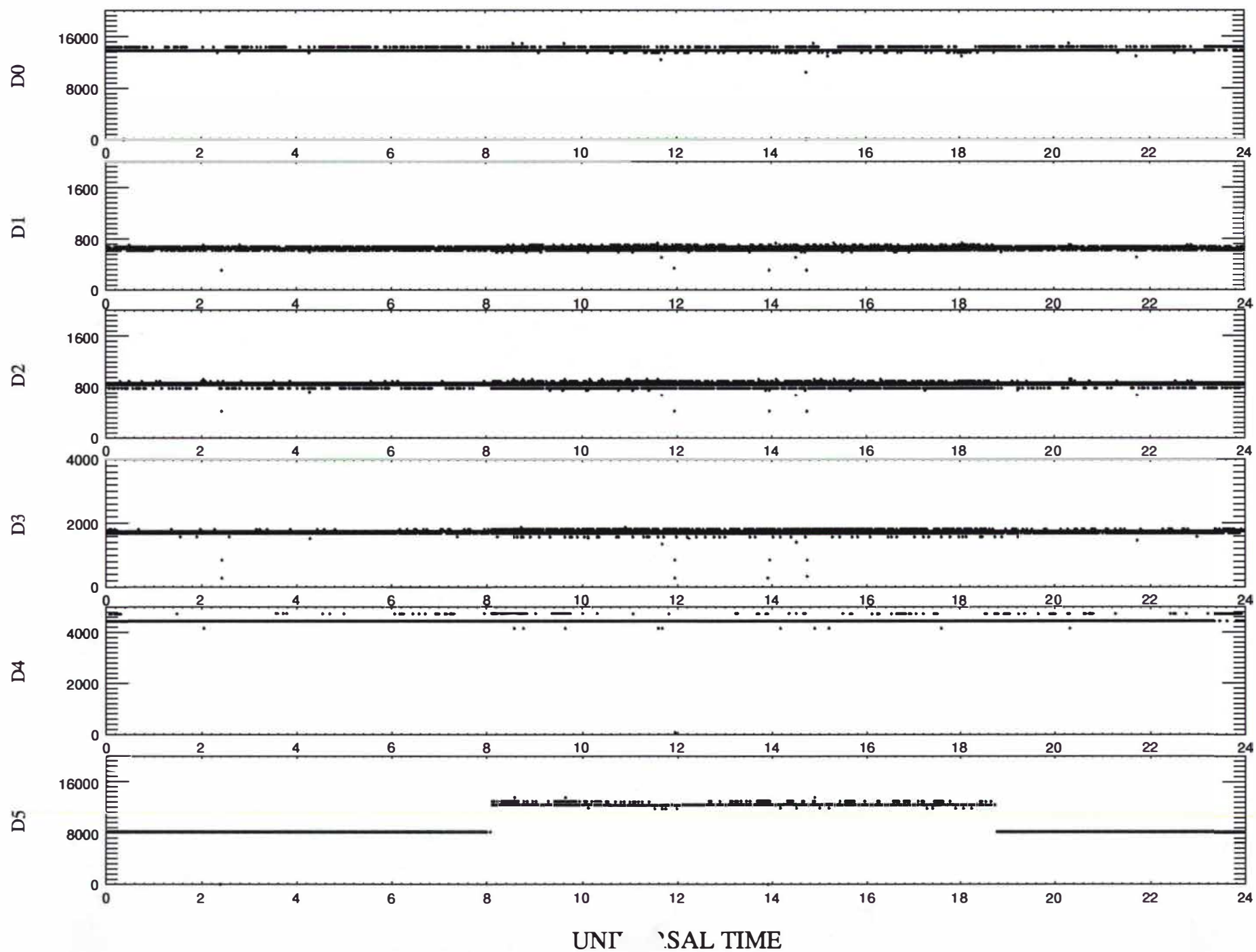
NO BURST (10)



CALIBRATION DATA INCLUDED



UNIT VSAL TIME



SAX 19960811 07617

ULYSSES RT

20/08/09

11/08/96 5040.142 s

0.500 S INTERVALS REGROUPED BY 7

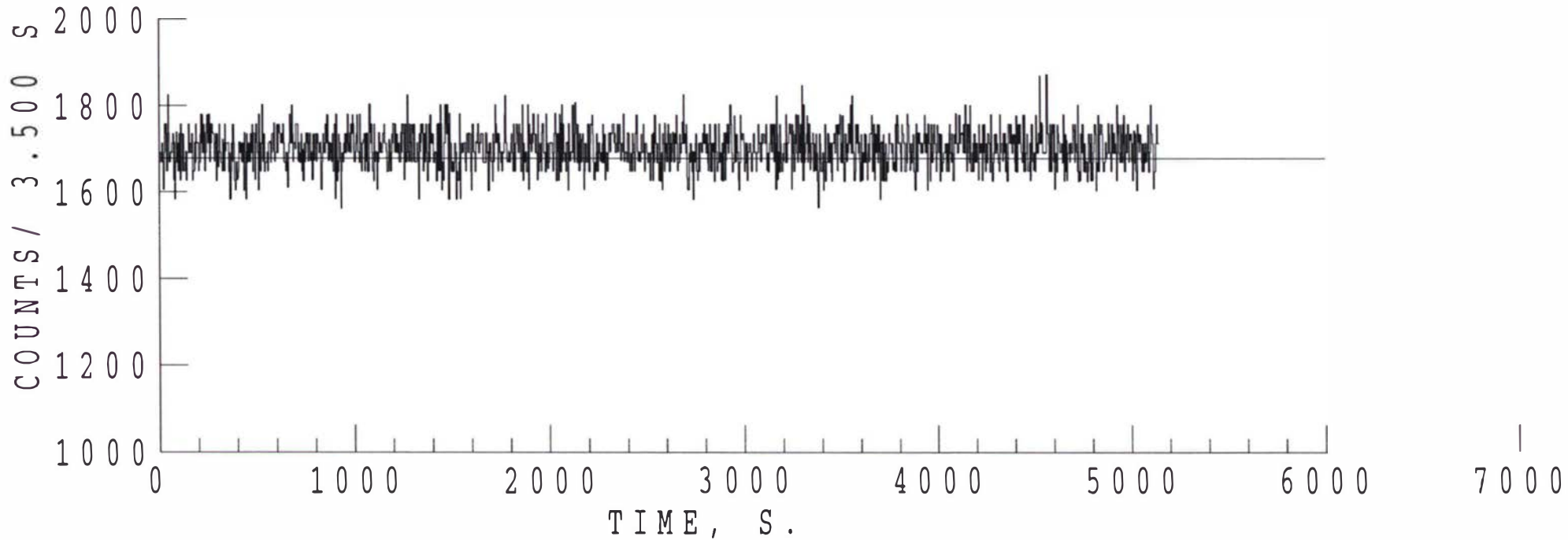
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

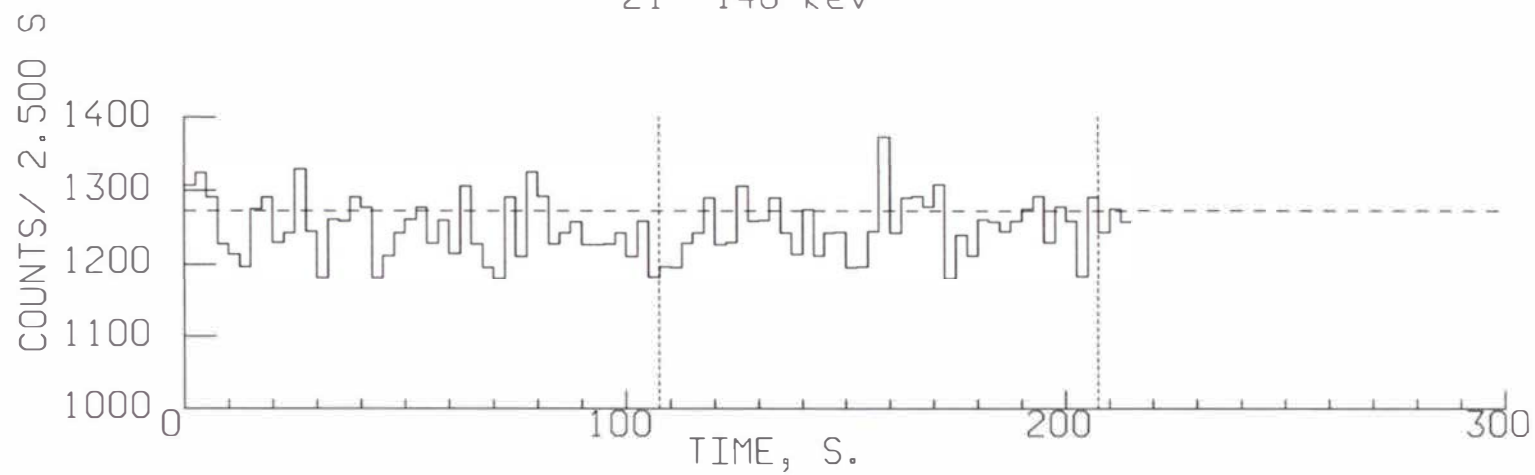
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
11/ 8/96 62784.145 s
0.250 S INTERVALS REGROUPED BY 10
21- 146 keV

5/10/11



KONUS 19960811 62887

ULYSSES RT

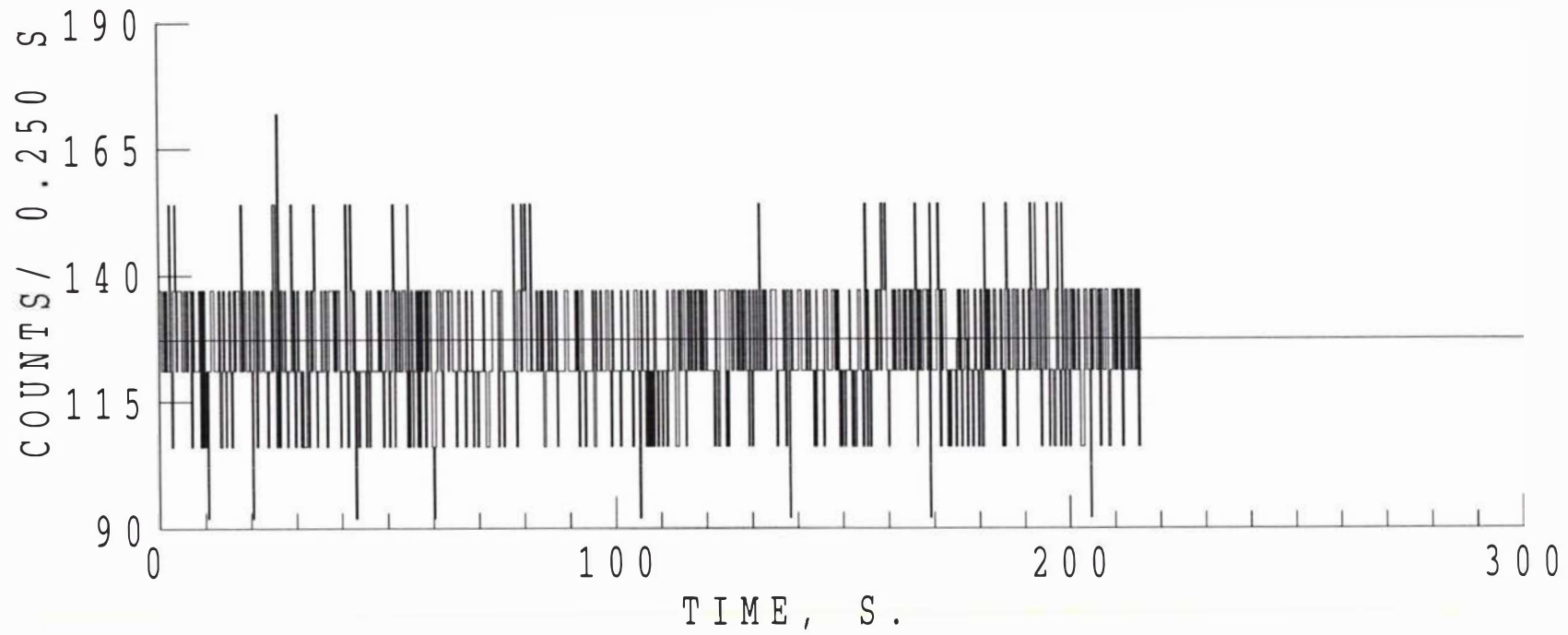
05 / 10 / 11

11 / 08 / 96 62784.145 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

31 / 01 / 00

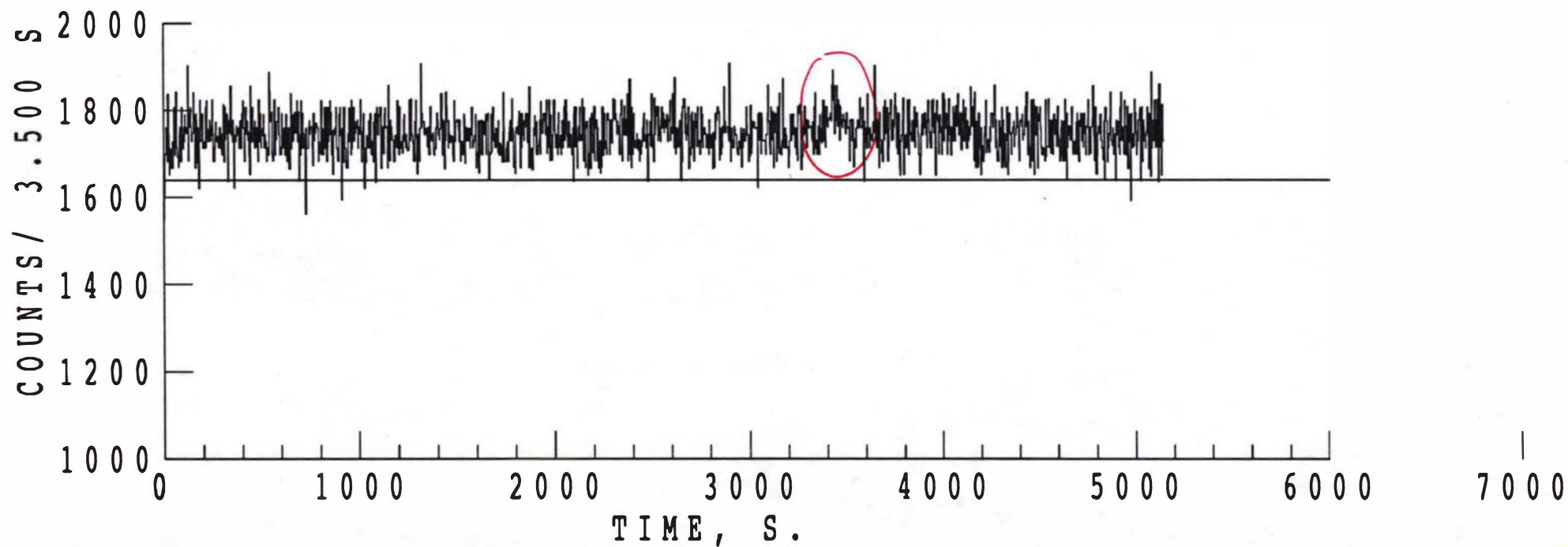
11/08/96 59688.105 s

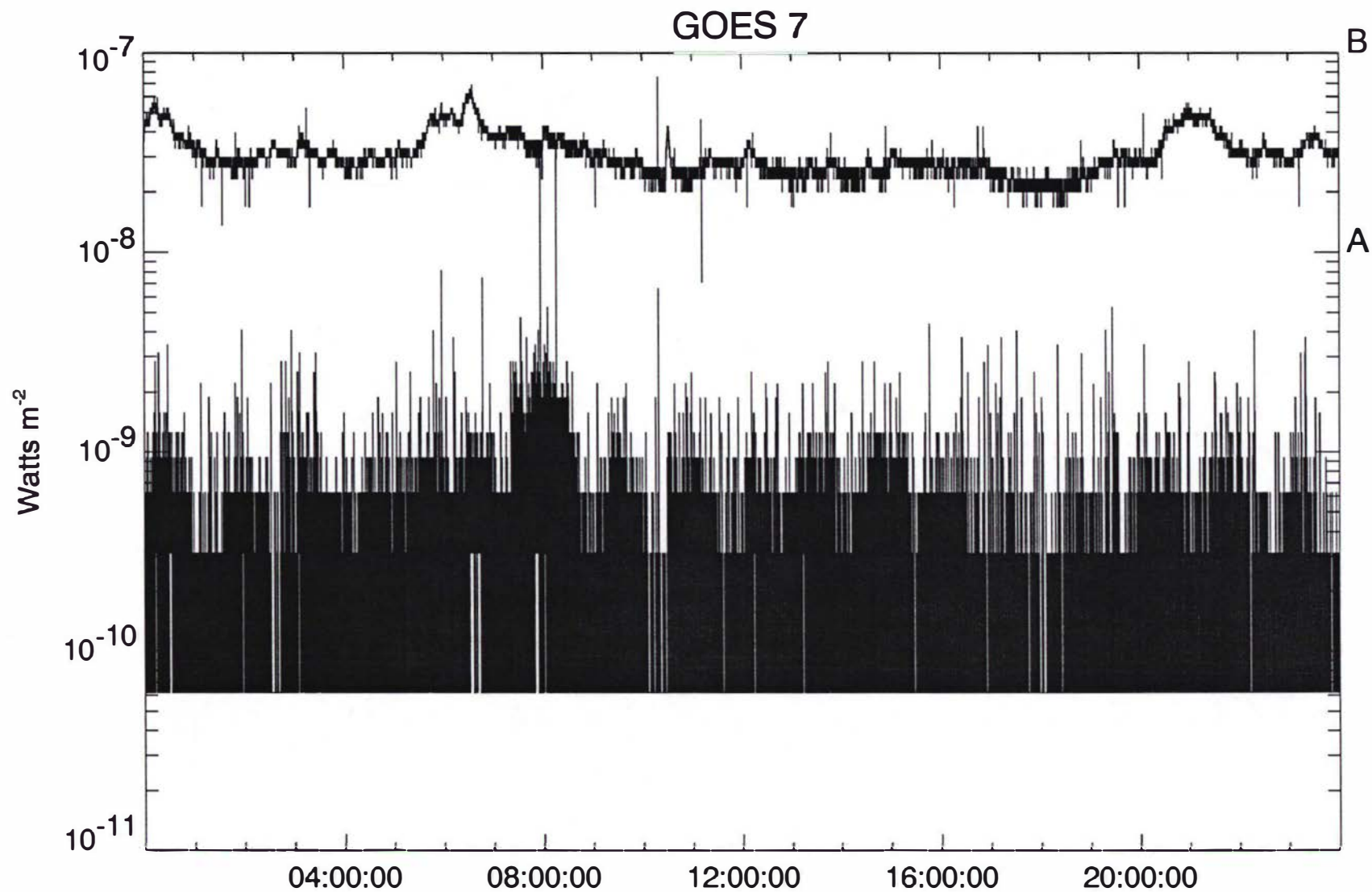
0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





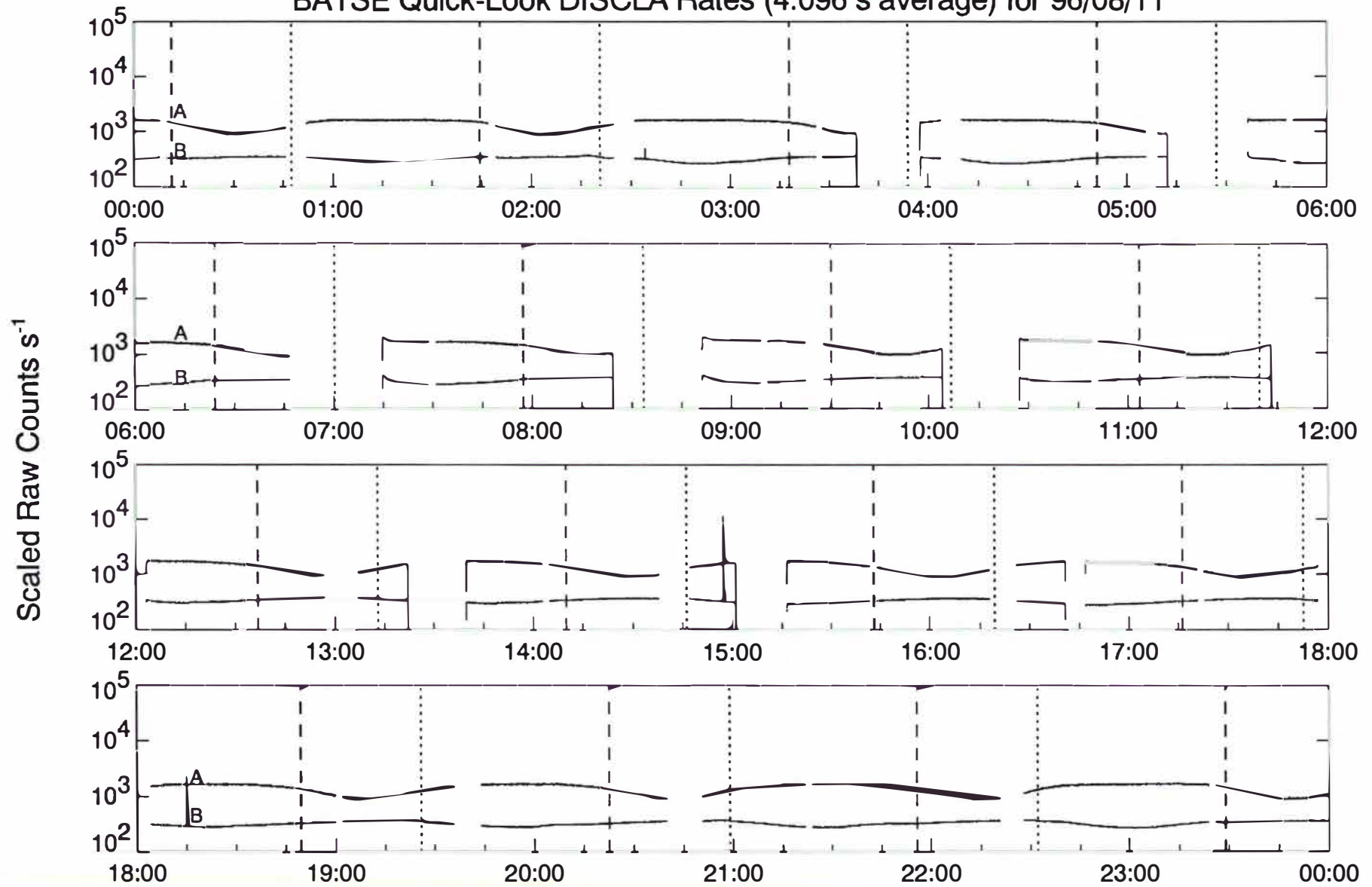
Data Start: 96/08/11, 0000:00

Plot created: 96/08/13, 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 96/08/11

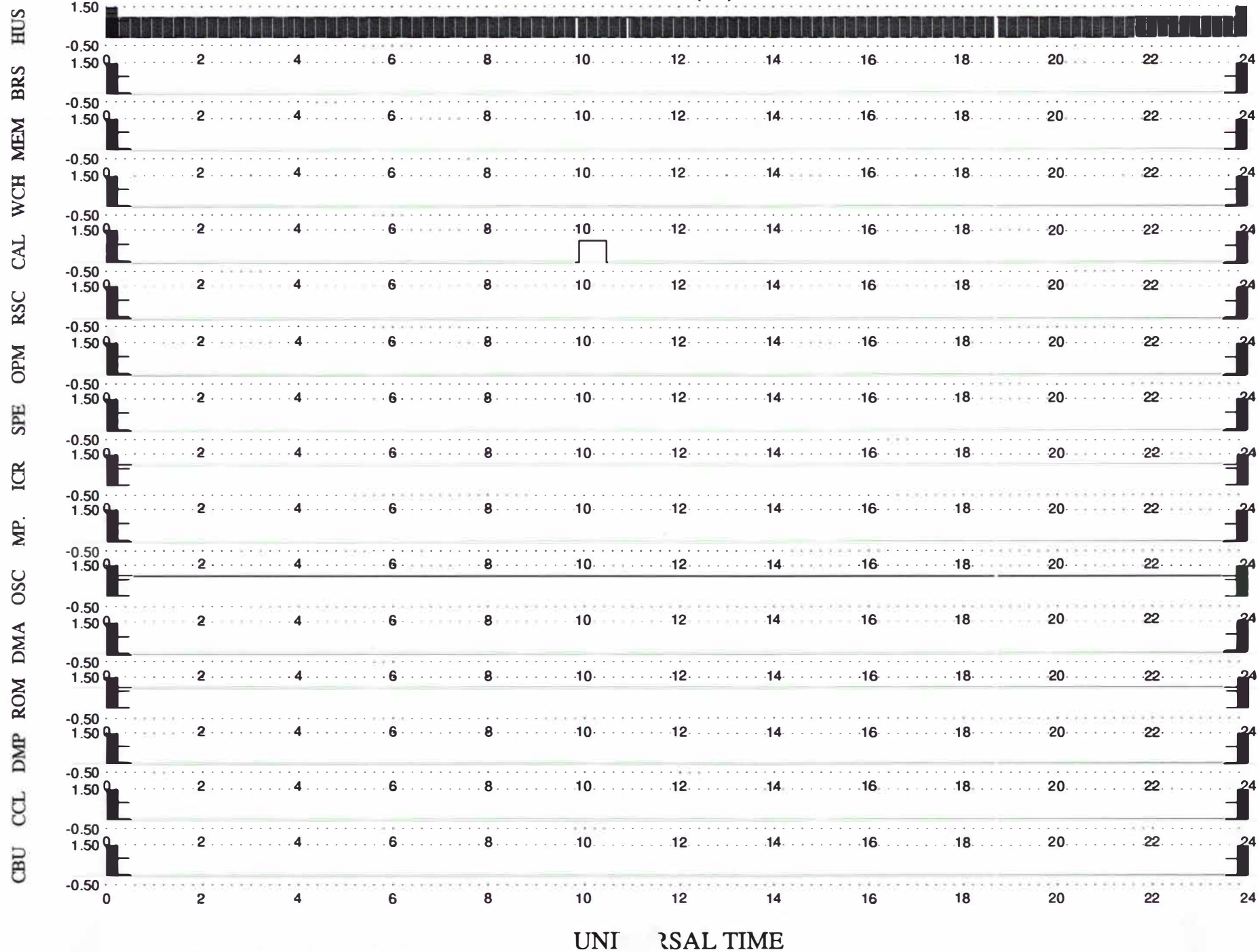


Current Time: 96/08/13, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

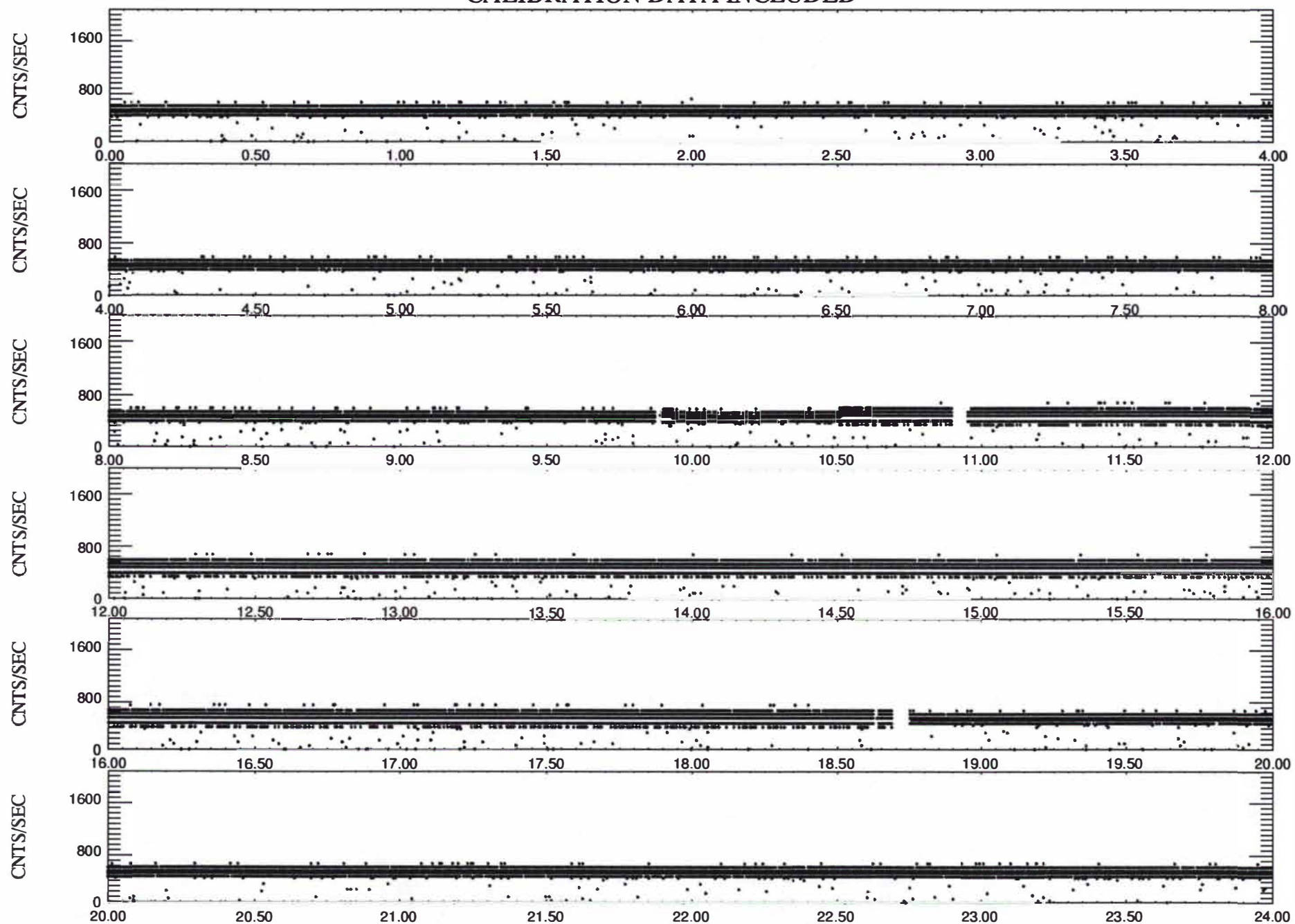
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

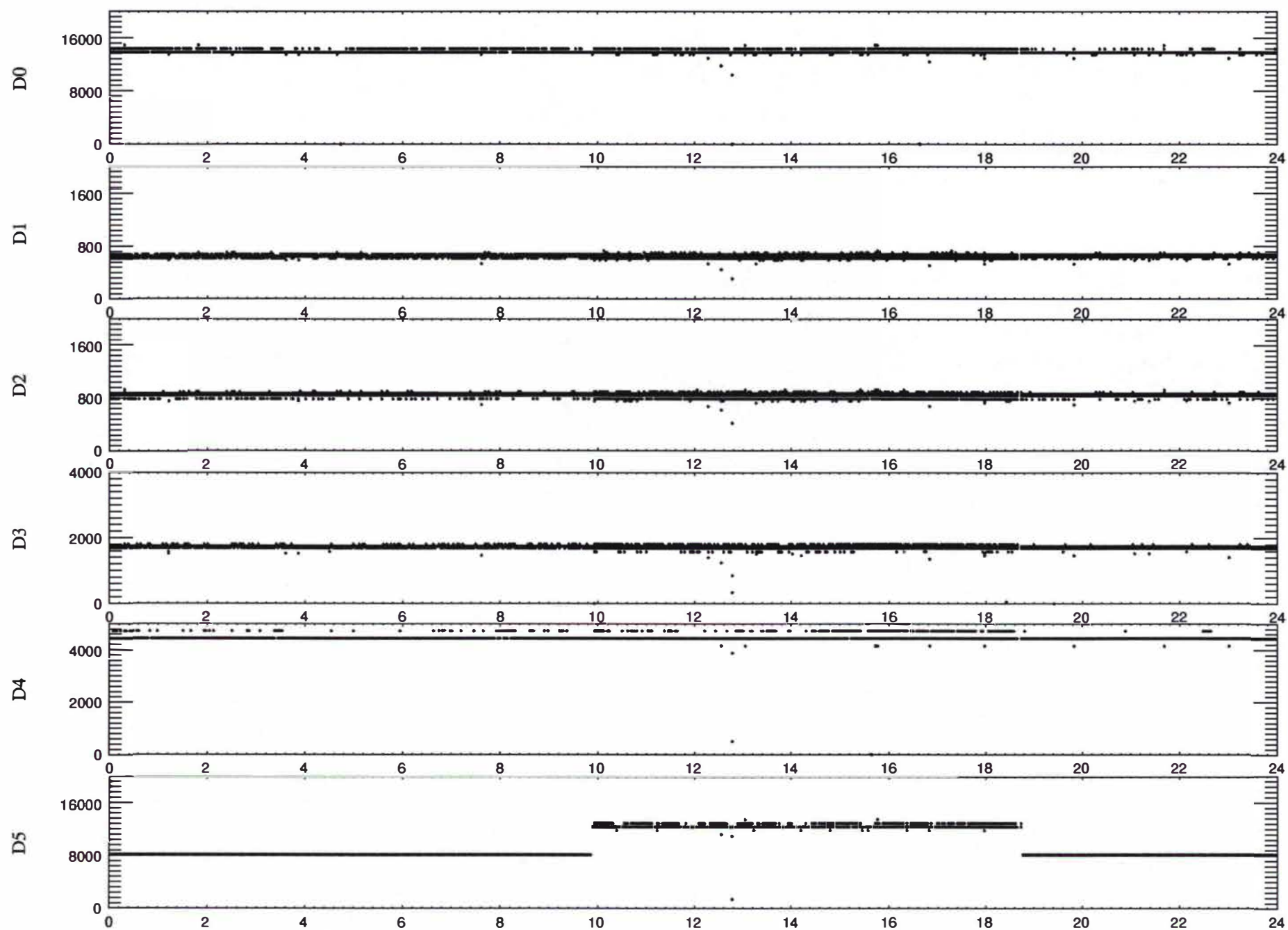
NO BURST (10)



CALIBRATION DATA INCLUDED



UNT RSAL TIME



UNIVERSAL TIME

From DEAL@fender.msfc.nasa.gov Tue Aug 13 09:19 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 13 Aug 1996 11:18:33 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5571

BATSEARCH PROGRAM

10

BATSE BURST # 5571
EVENT OF 1996 AUG 12 DAY OF YEAR=225
EVENT CROSSING TIME AT BATSE : 50665. S. OR 14:04:25.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 97.000 40.000
BATSE PEAK COUNTING RATE: 8500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 8/ 96 IS:
RA= 162.159 DEC= 39.491 DIST= 5.055 AU
BATSE-ULYSSES DISTANCE = 756176827. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=131.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1657.53 SECS.
CROSSING TIME AT ULYSSES IS 49007. S. OR 13:36:47 +/- 354.92 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 8/ 96 IS:
RA= 102.531 DEC= 23.548 DIST= 2.204 AU
MARS-BATSE DISTANCE = 329704928. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=162.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1051.15 SECS.
CROSSING TIME AT MARS IS 49614. S. OR 13:46:53 +/- 40.18 SECONDS

BATSE BURST TRIGGER

NO.: 5571

TIME: TJD=0307 SECONDS=50665

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=21.1 AZIMUTH=92.2 ERROR=2.8 DEGREES

COMMENTS:

SINGLE PULSE GRB LASTING ~ 4 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5571	960812	10307	50665	8500	097	+40	4

BATSE #

5571

13 / 8 / 96

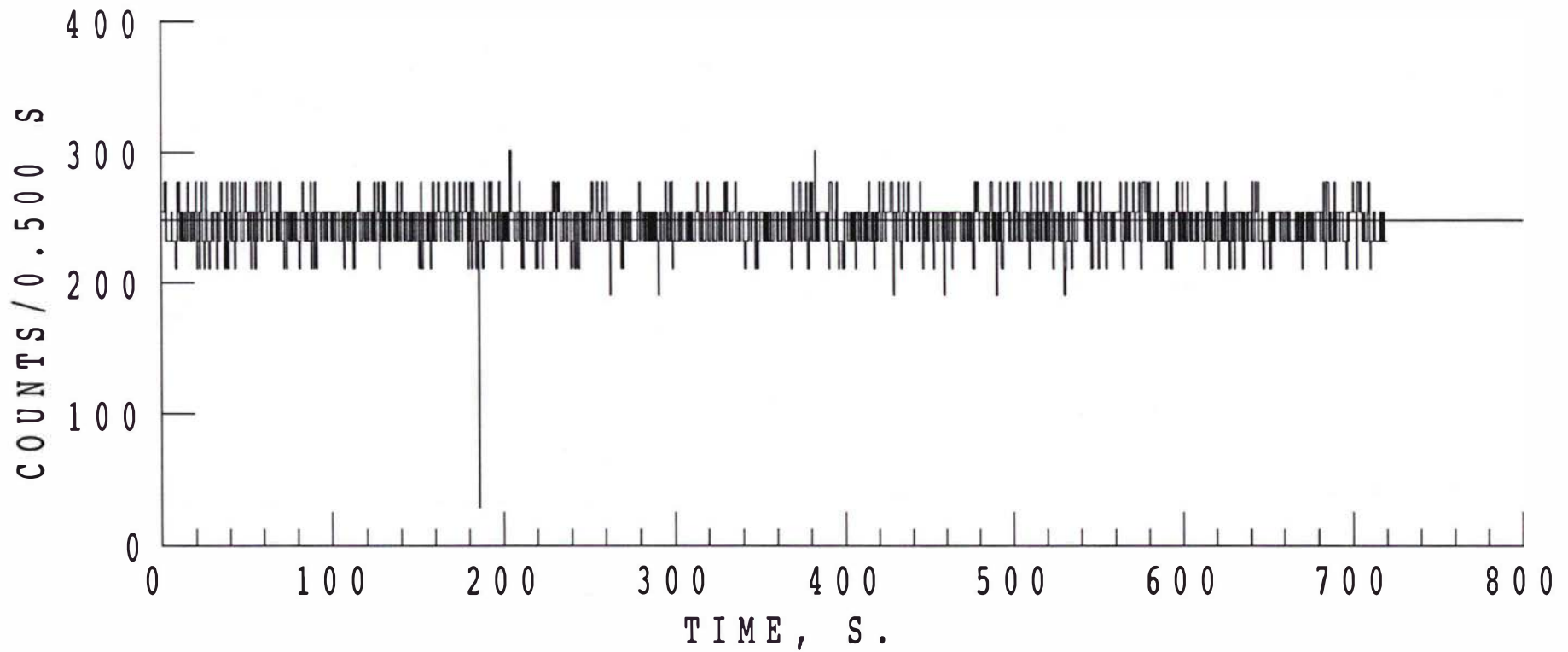
ULYSSES RT

12 / 8 / 96 48636.324 s

0 - 0 keV

H= 10 M= 2

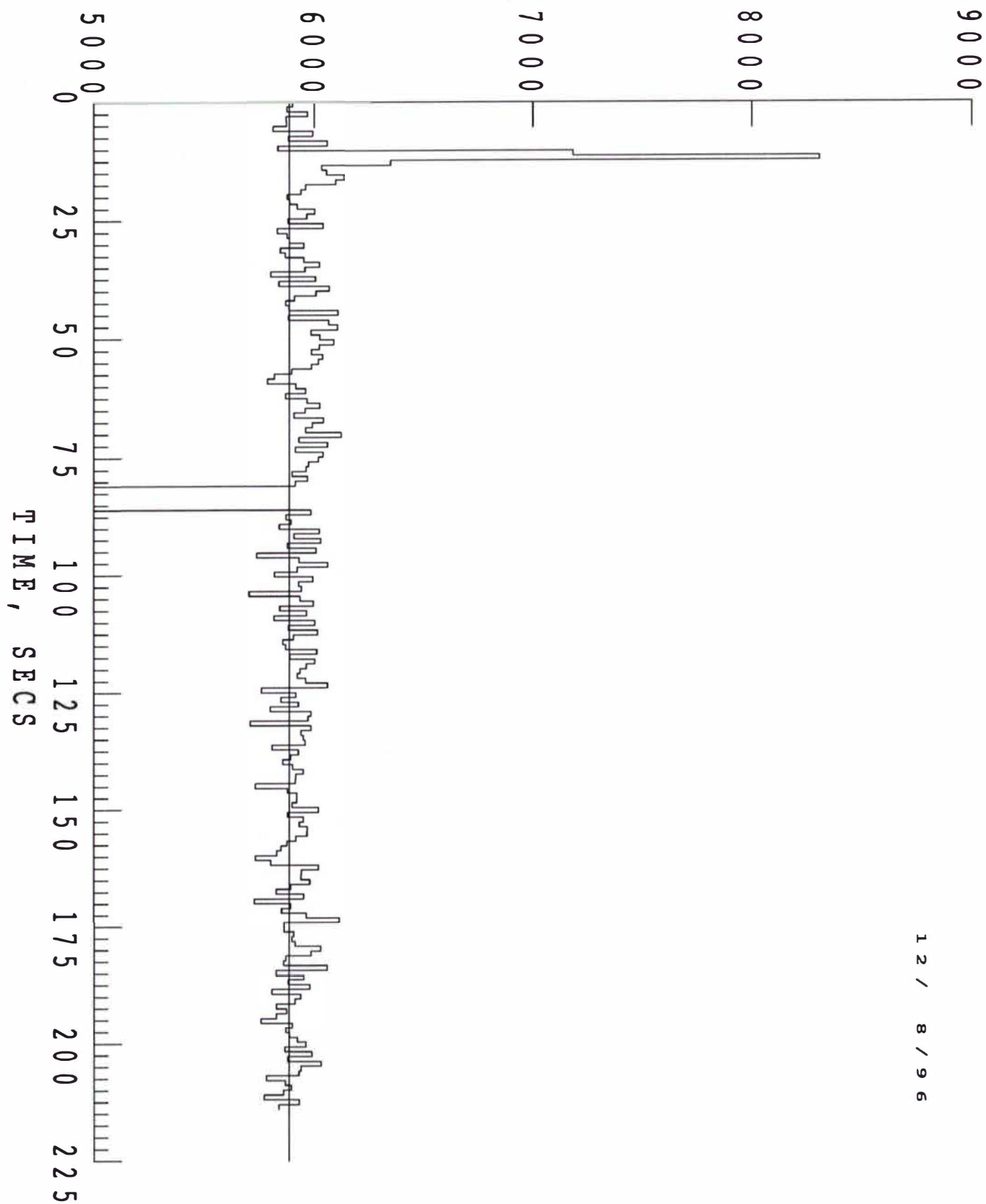
>4.0 SIGMA FLUCTUATIONS



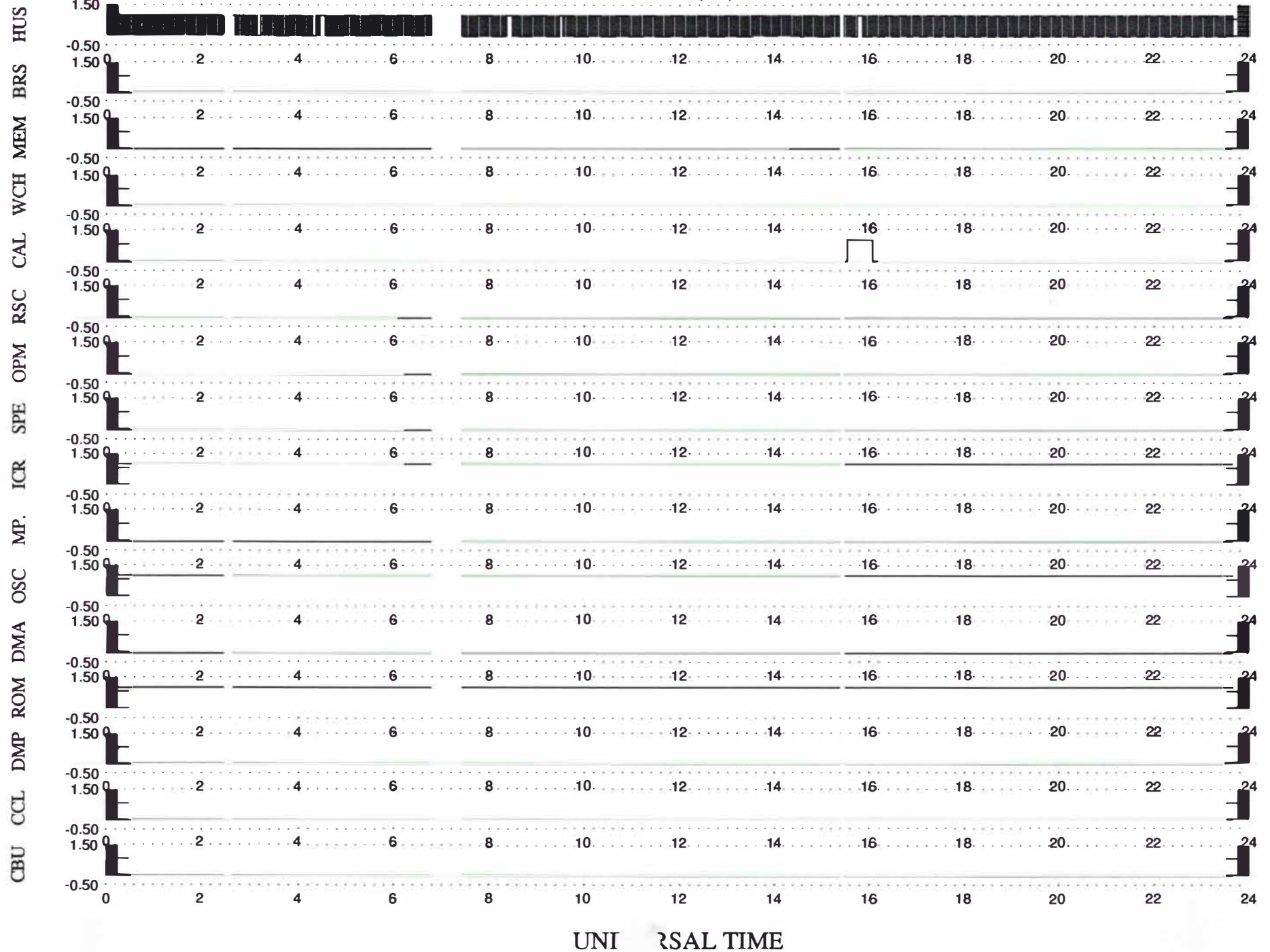
BACODINE 5571 12/08/96 50653.897

25 - 100 keV

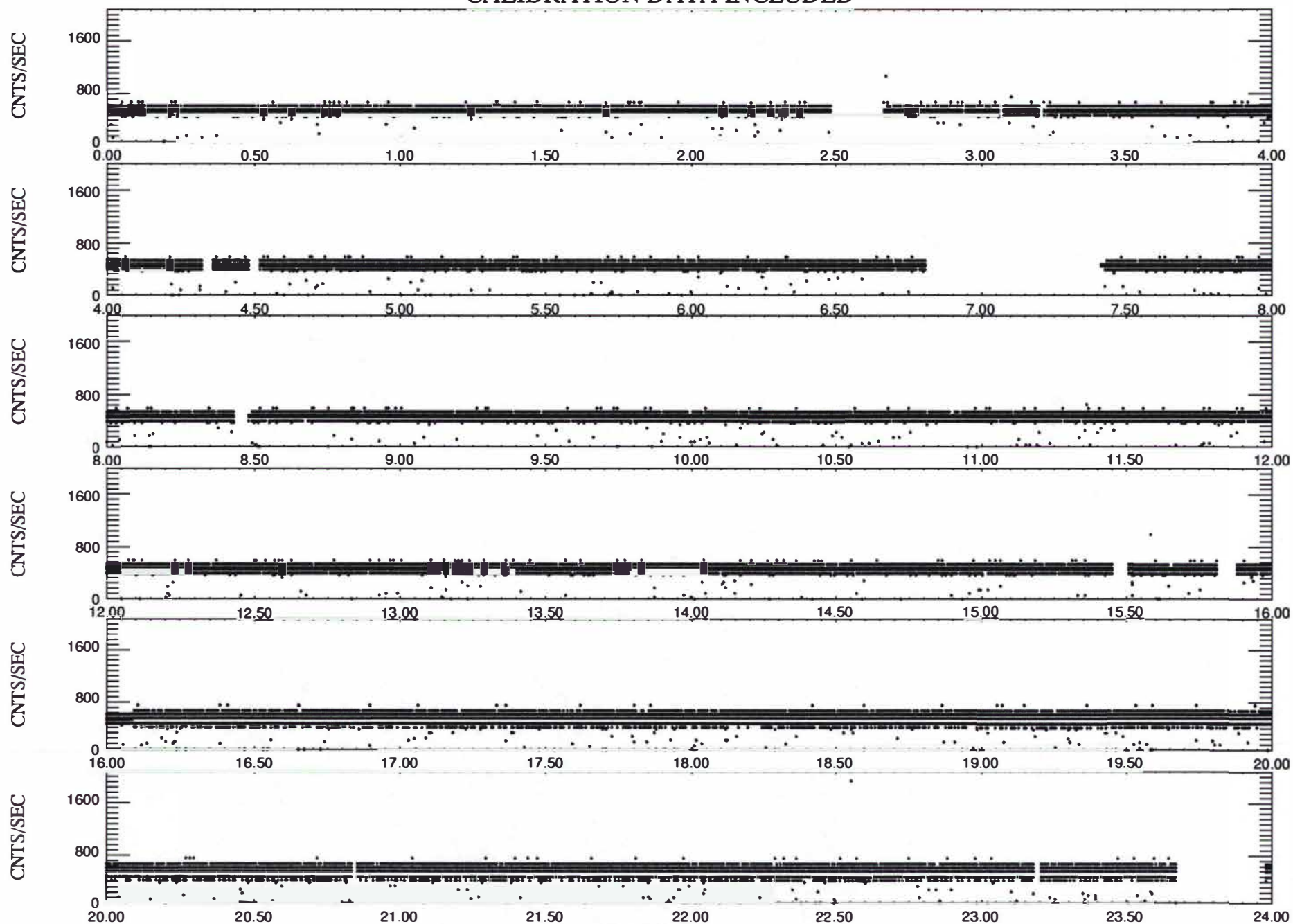
COUNTS/1.024 S



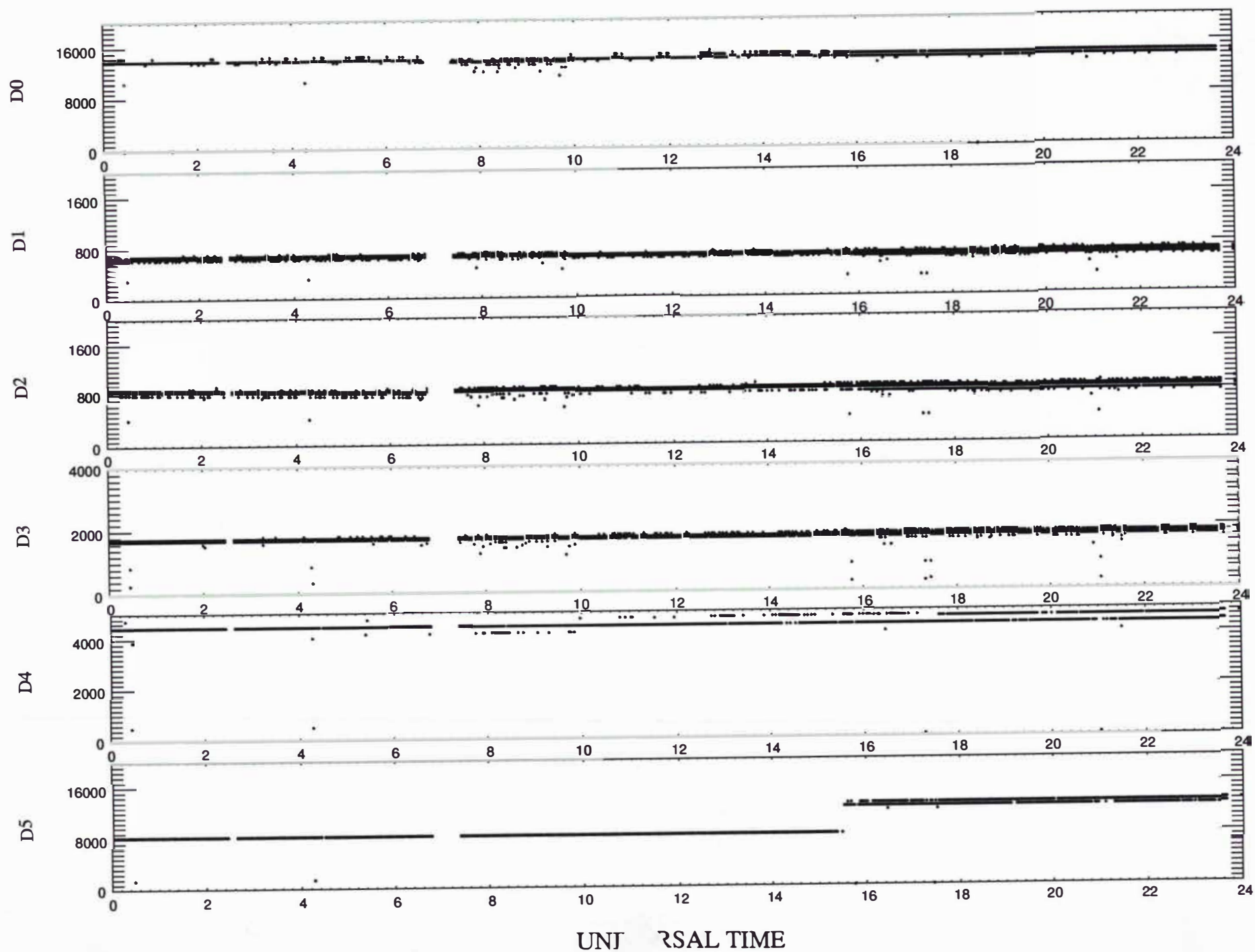
NO BURST (10)



CALIBRATION DATA INCLUDED



UNJ RSAL TIME



From DEAL@fender.msfc.nasa.gov Wed Aug 14 11:55 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 14 Aug 1996 13:54:54 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5572

BATSEARCH PROGRAM

NO

BATSE BURST # 5572
EVENT OF 1996 AUG 13 DAY OF YEAR=226
EVENT CROSSING TIME AT BATSE : 20770. S. OR 05:46:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 90.000 15.000
BATSE PEAK COUNTING RATE: 33000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 8/ 96 IS:
RA= 162.293 DEC= 39.390 DIST= 5.059 AU
BATSE-ULYSSES DISTANCE = 756795443. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -987.78 SECS.
CROSSING TIME AT ULYSSES IS 19782. S. OR 05:29:42 +/- 438.33 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 8/ 96 IS:
RA= 103.246 DEC= 23.502 DIST= 2.200 AU
MARS-BATSE DISTANCE = 329123264. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=164.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1059.90 SECS.
CROSSING TIME AT MARS IS 19710. S. OR 05:28:30 +/- 33.58 SECONDS

BATSE BURST TRIGGER

NO.: 5572

TIME: TJD=0308 SECONDS=20770

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=6.1 AZIMUTH=316. ERROR=1.2 DEGREES

COMMENTS:

MULTI PULSED GRB LASTING ~ 6 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5572	960813	10308	20770	33000	090	+15	6

BATSE #

5572

16 / 8 / 96

ULYSSES RT

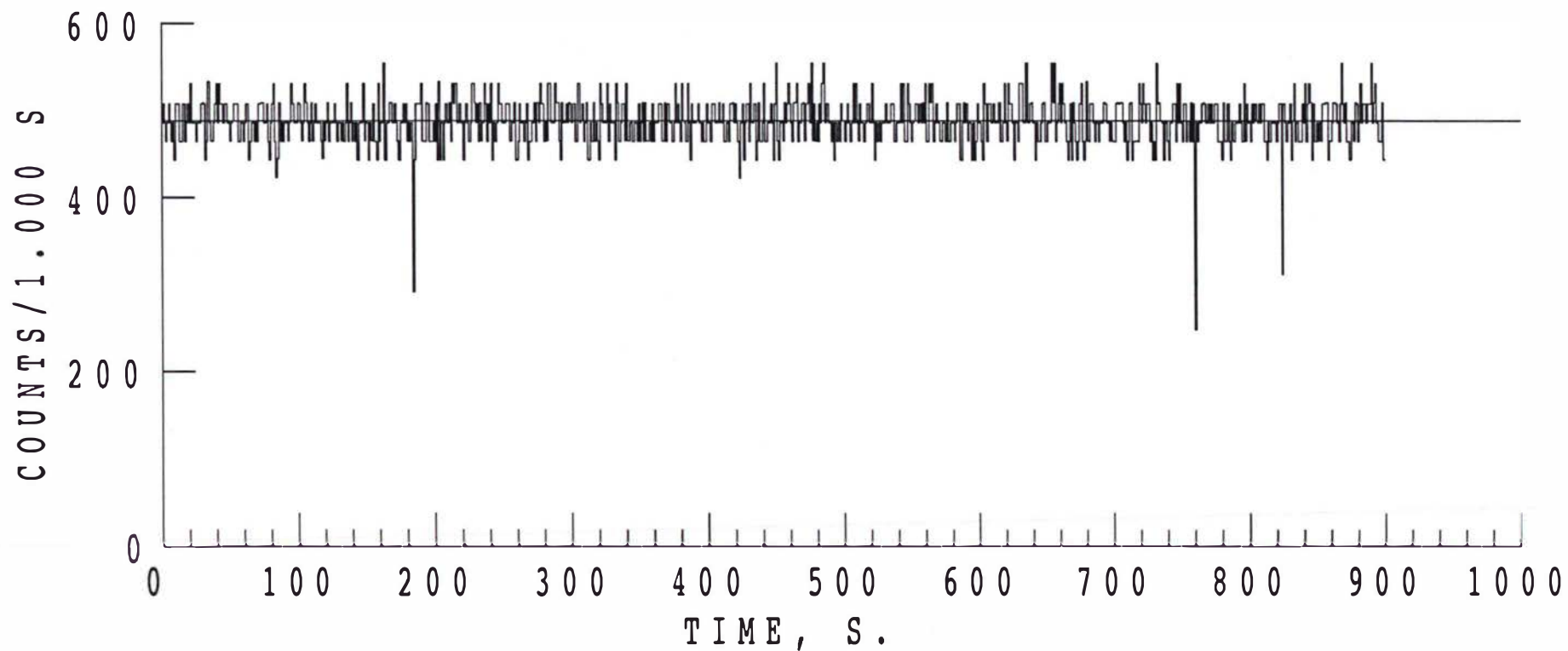
13 / 8 / 96 19332.061 s

0.500 S INTERVALS REGROUPED BY 2

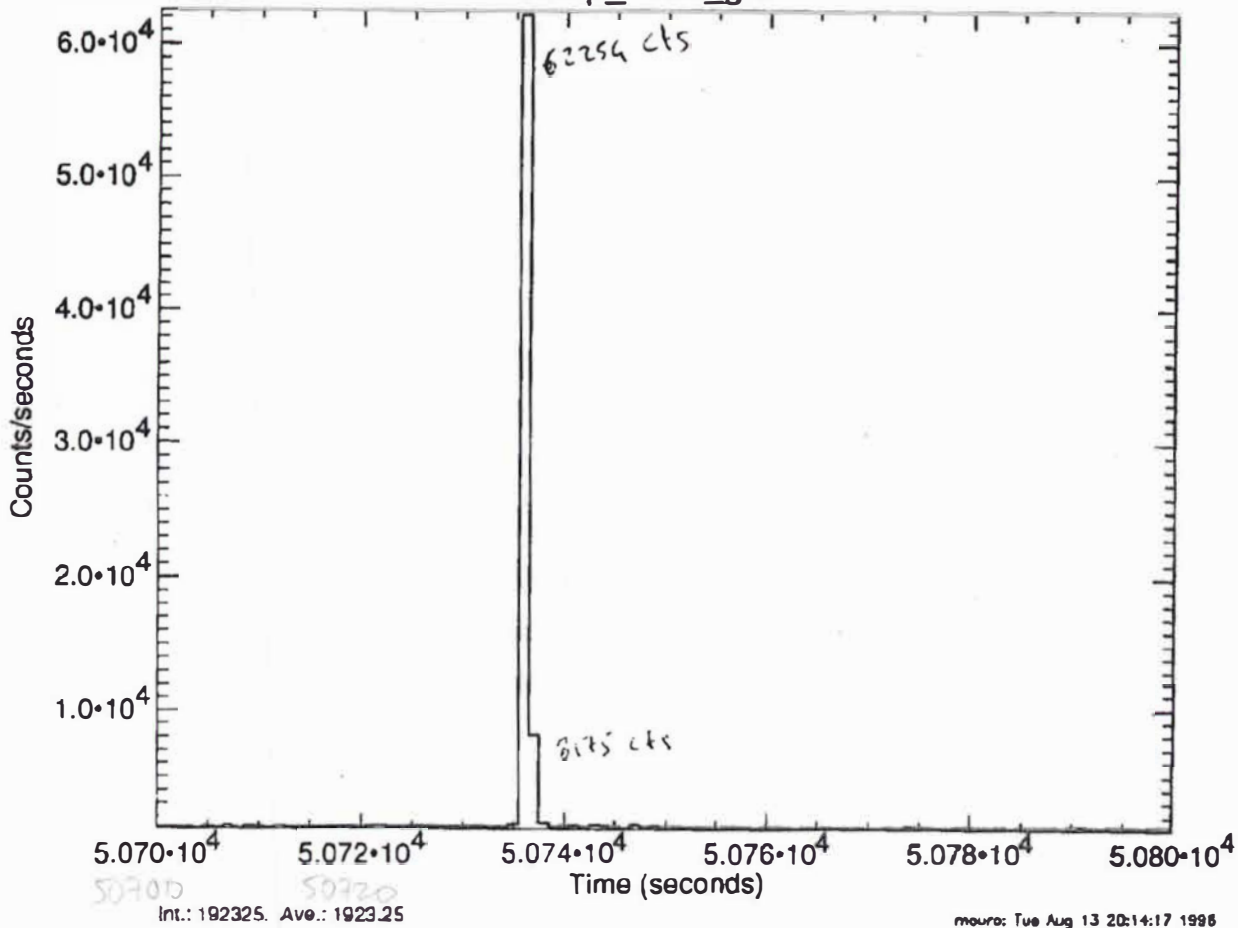
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

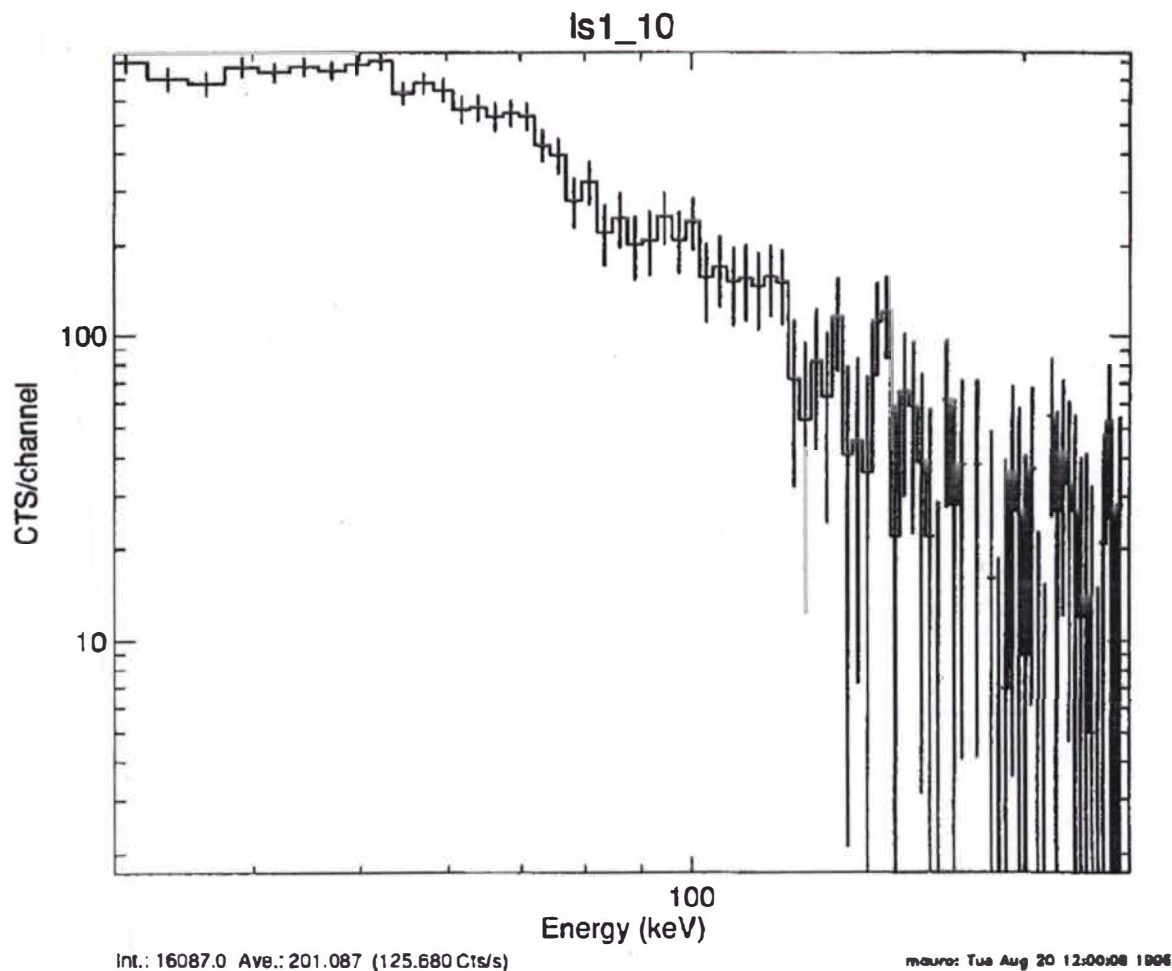


13/Aug/Event
dump_1468_grbm1



GRBM is ratemeter

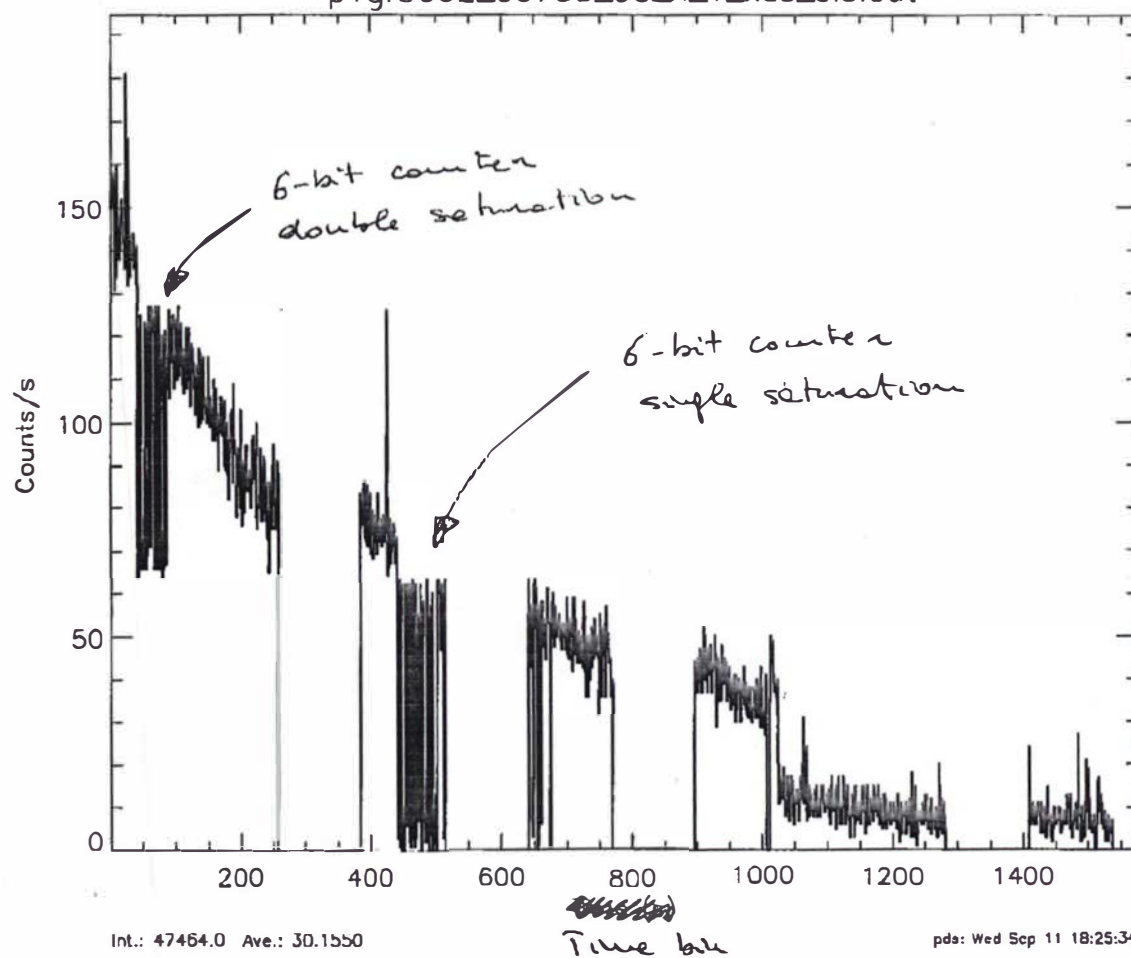
13/Aug Event



GRB background subtracted spectrum

13/Aug event

p1grb002_00755_30_n_1_xas_bis.out



(X-range: 1 - 1574)

(Total time: 4s)

COUNTERS ARE CORRECTED BY HAND
FOR SATURATION - GAPS ARE DUE TO
DATA CORRUPTION

SAX 19960813 39354

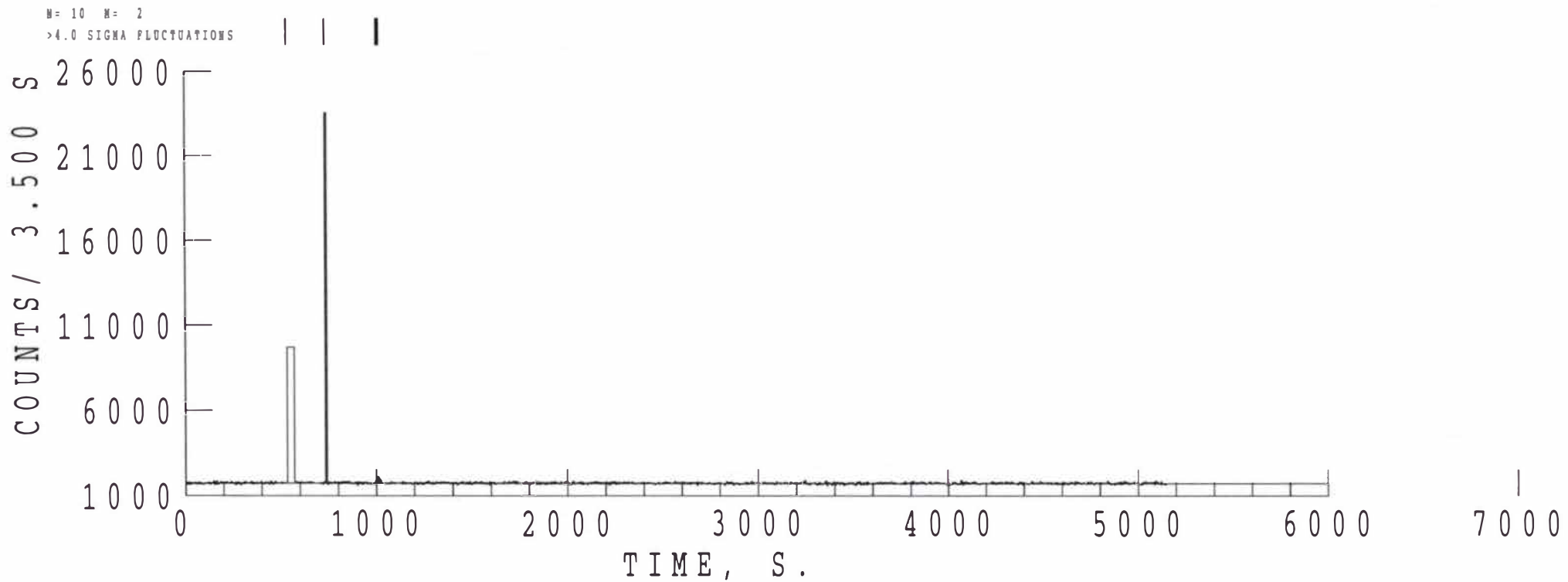
ULYSSES RT

20/08/09

13/08/96 36792.035 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV



Date: Oct 5 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?

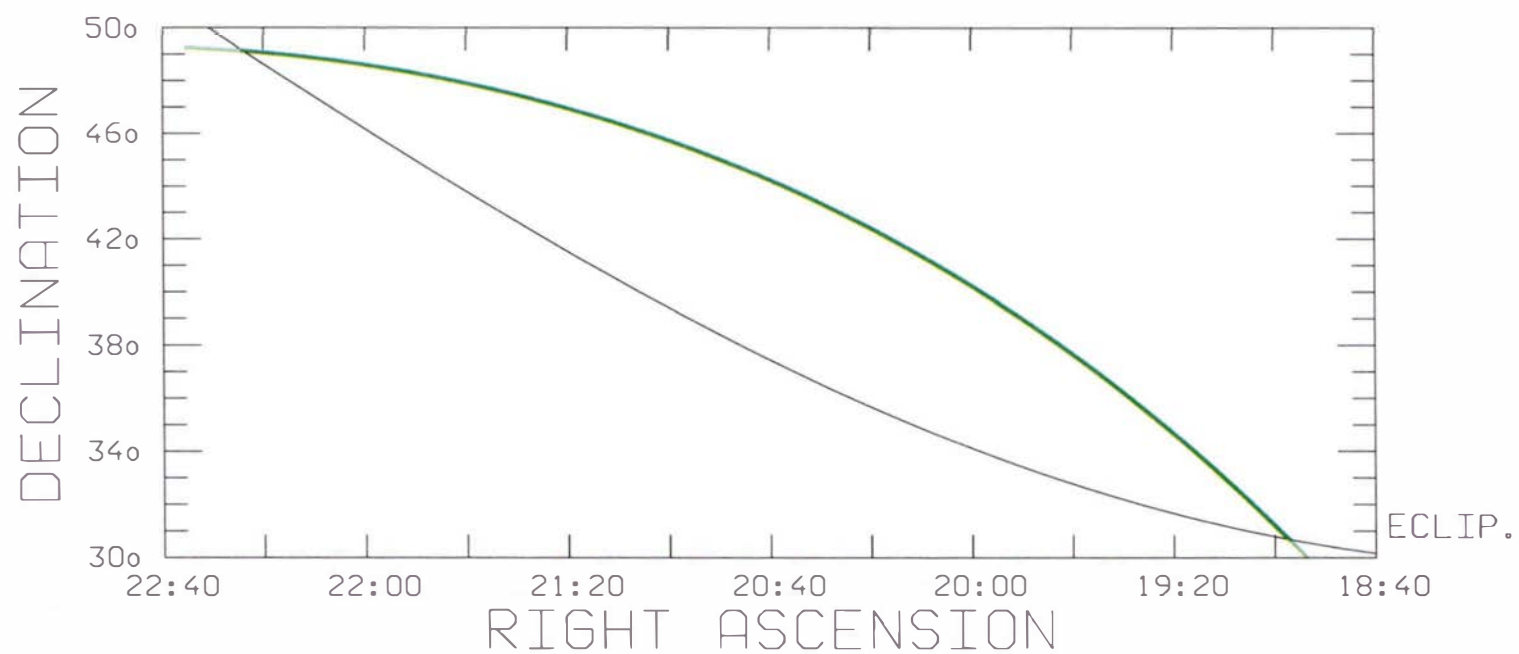
2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

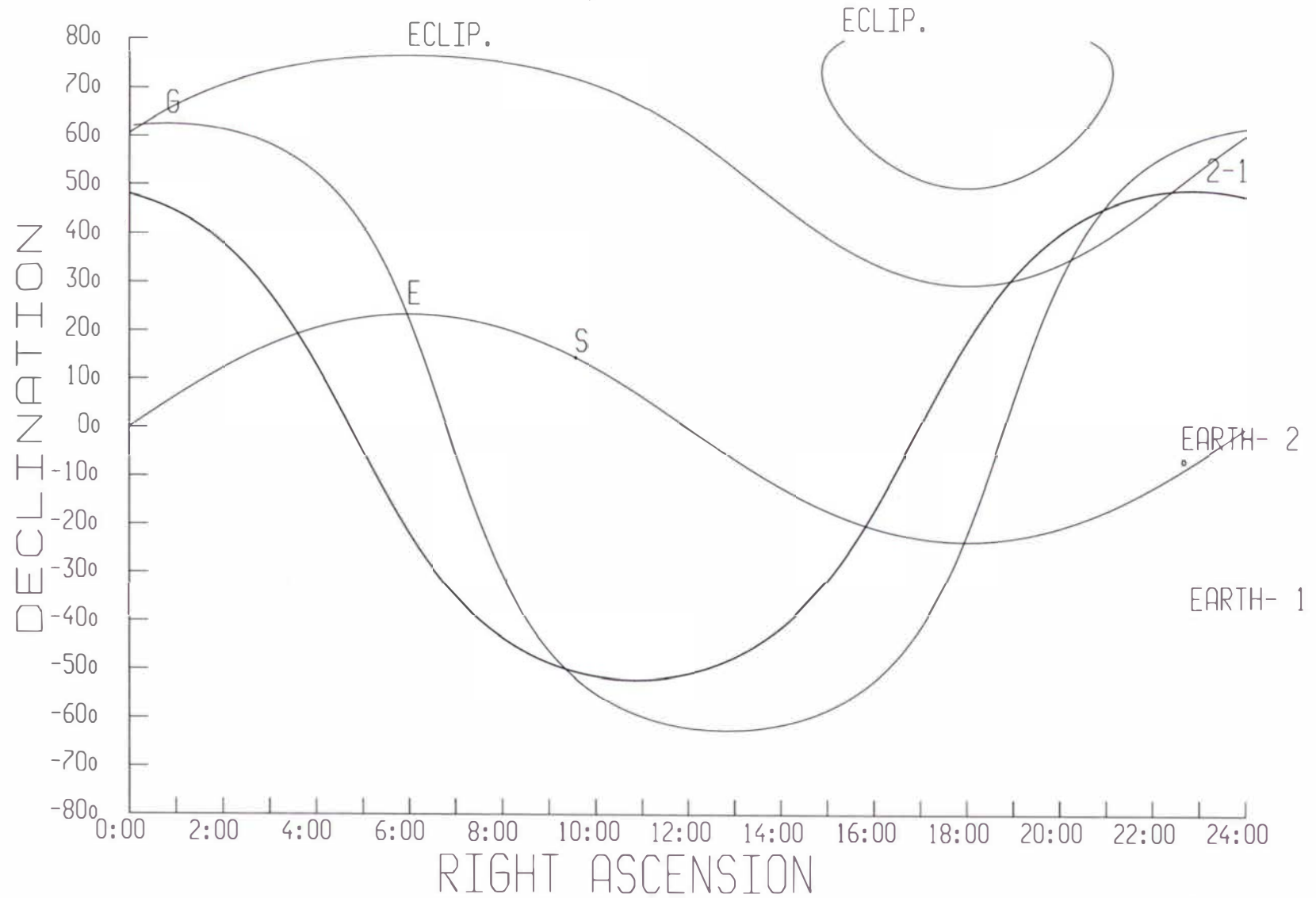
-
- ☒ ACCESS and MBL4 databases updated with identical times?

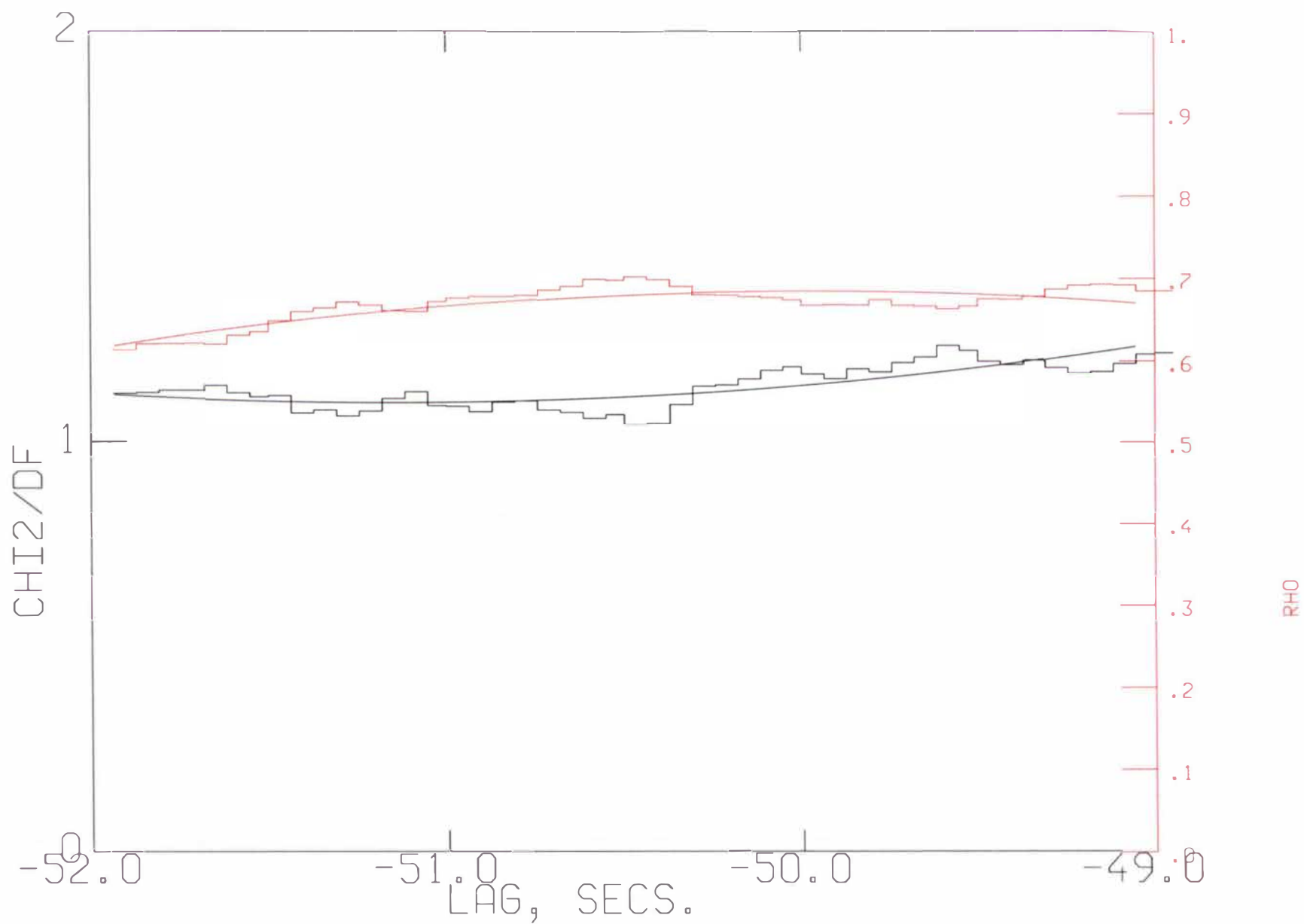


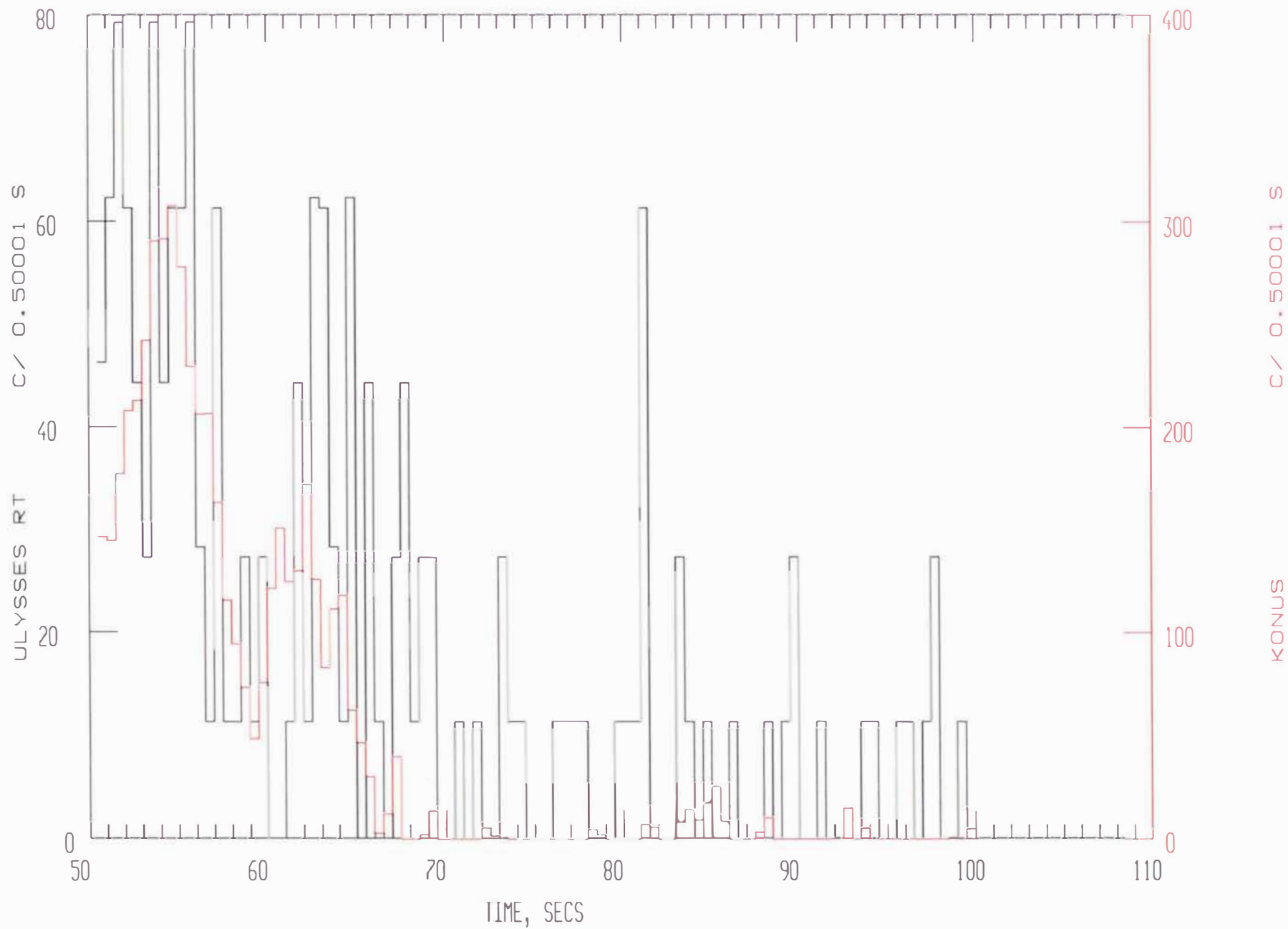
EVENT OF AUG 13, 1996 10:29

05/10/2011

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







KONUS 19960813 37792

ULYSSES RT

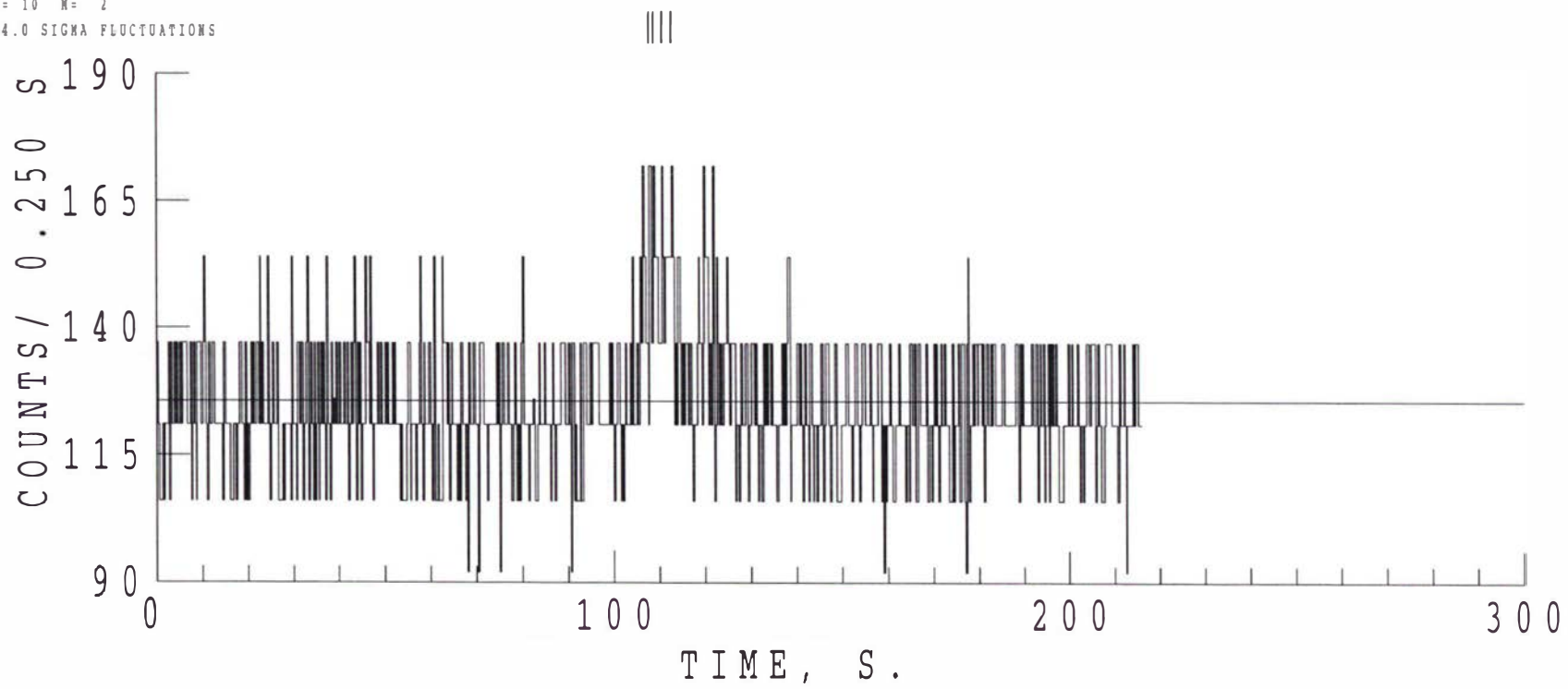
05 / 10 / 11

13 / 08 / 96 37692.047 s

0 - 0 keV

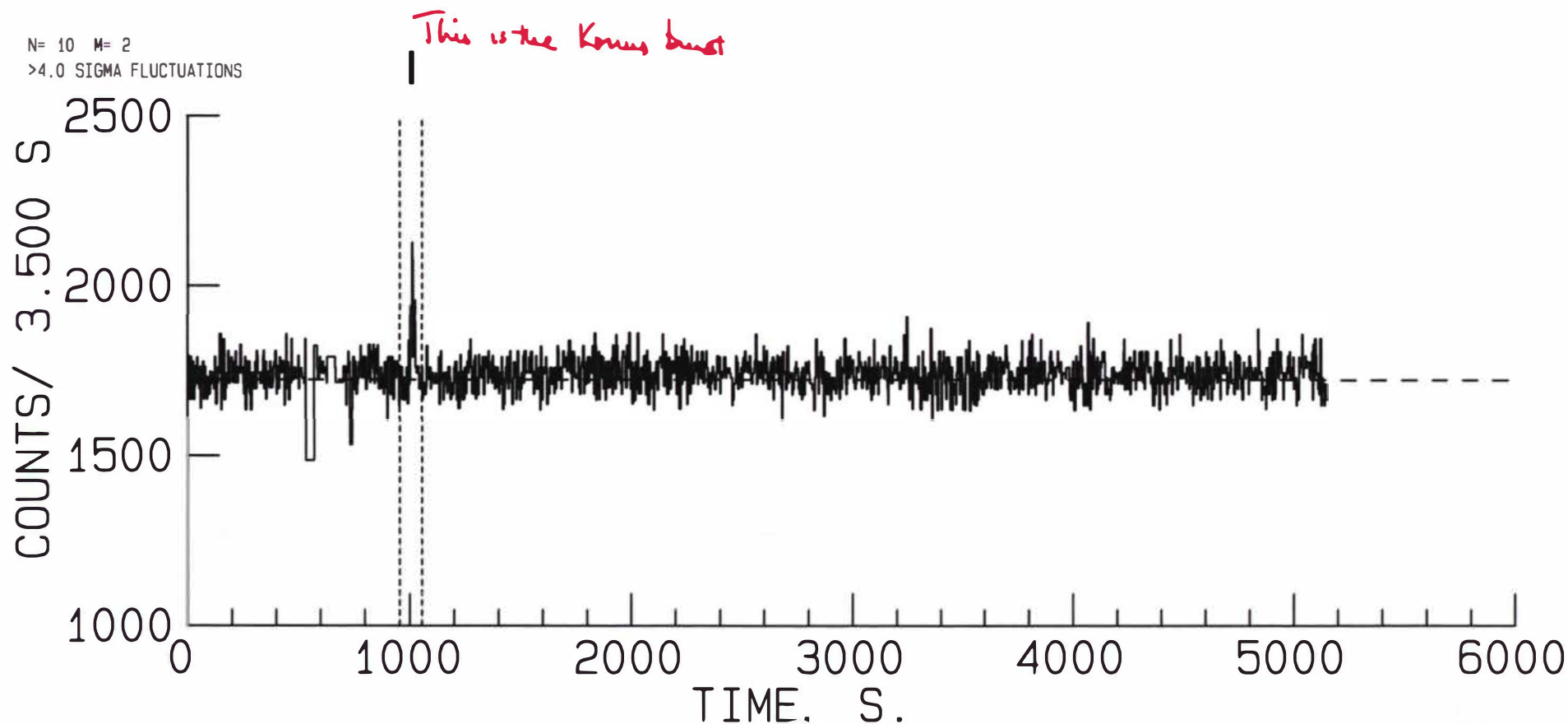
H= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
13/ 8/96 36792.035 s
0.250 S INTERVALS REGROUPED BY 14
21- 145 keV

25 / 8 / 9



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 SAX

3 KONUS

DECLINATION

EVENT OF AUG 13, 1996 10:29

2-1

9/10/96

Caution -

*20 min difference
in SAX and KONUS
times. SAX event
is probably not
the same as
KONUS/ulysses*

3-1

E

S

W

W

EARTH - 3

EARTH - 1

EARTH - 2

0:00 2:00 4:00 6:00 8:00 10:00 12:00 14:00 16:00 18:00 20:00 22:00 24:00

RIGHT ASCENSION

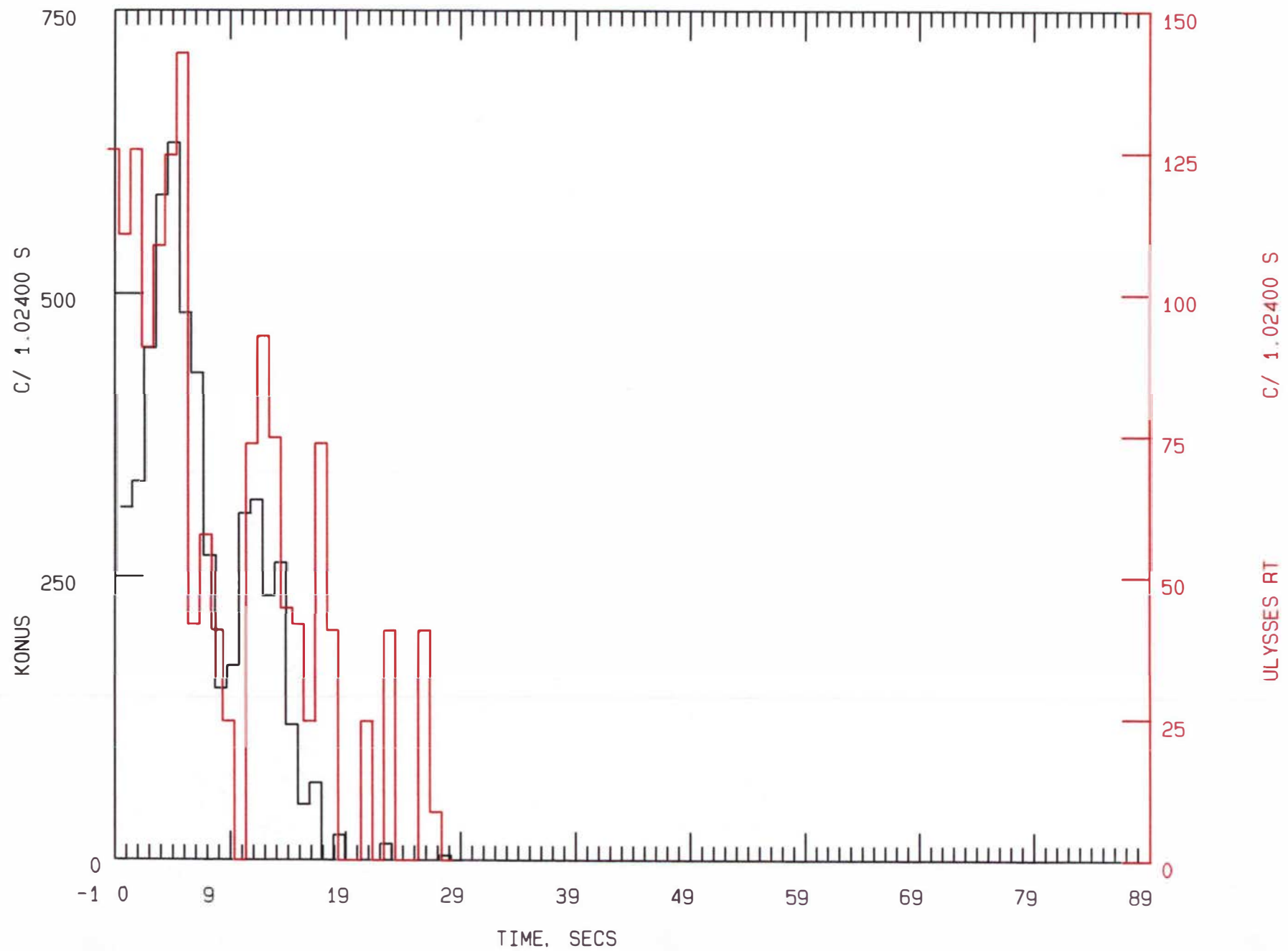
KONUS

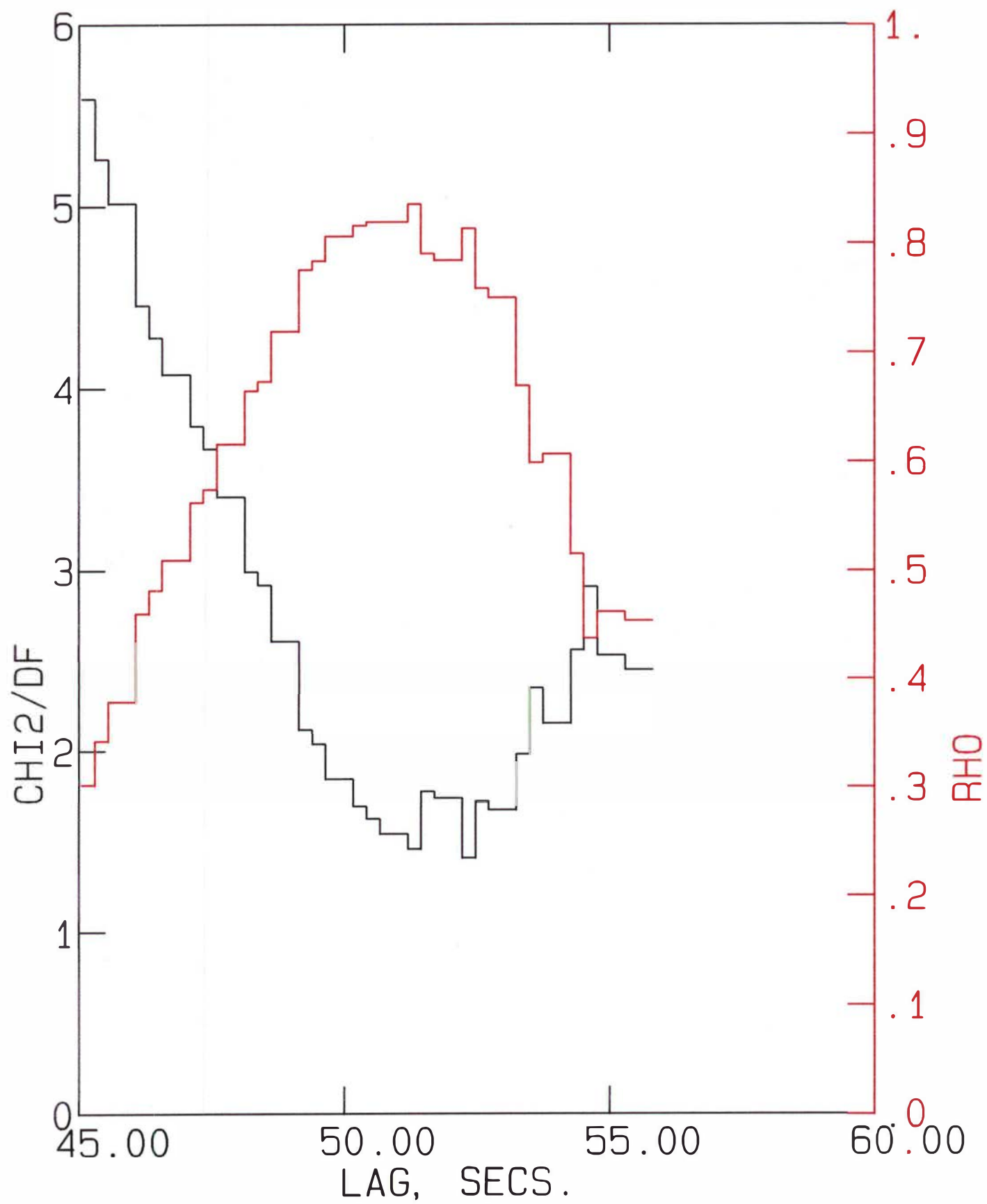
-ULYSSES RT CORRELATION

13/ 8/96

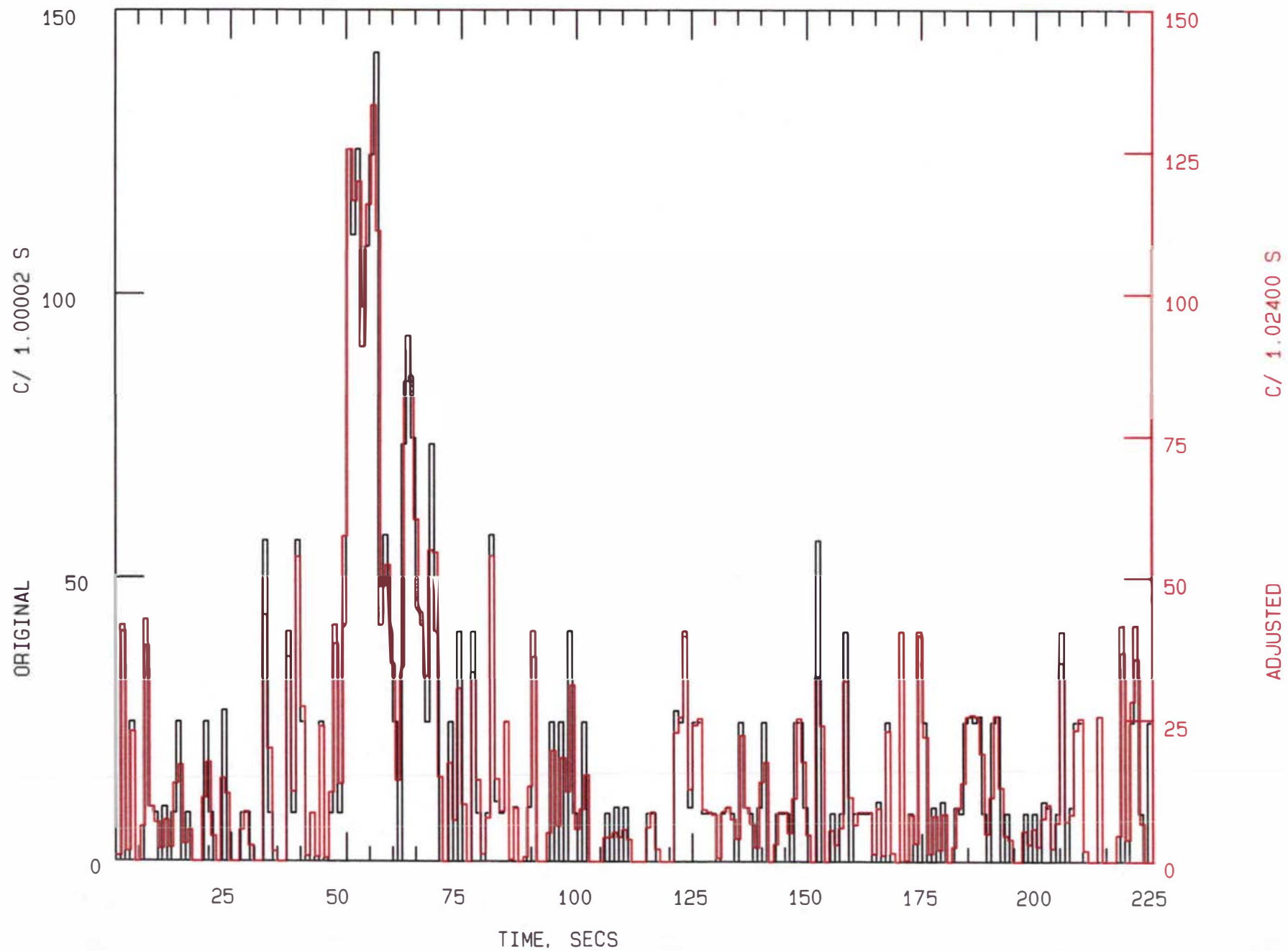
37739.252

8/10/96





8/10/96



From feroci@saturn.ias.fra.cnr.it Tue Oct 1 03:01 PDT 1996
 Date: Tue, 1 Oct 1996 11:58:19 +0100 (NFT)
 From: Marco Feroci <feroci@saturn.ias.fra.cnr.it>
 X-Sender: feroci@altachiara.ias.fra.cnr.it
 Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
 Subject: Re: GRB960813
 Mime-Version: 1.0

Dear Kevin,
 please find enclosed the SAX coordinates for the 13/Aug event:

		X	Y	Z			
1996	8	13	10	49	26.0	-2308.081	-6576.438
1996	8	13	10	49	27.0	-2300.958	-6578.938
1996	8	13	10	49	28.0	-2293.832	-6581.430

Our trigger time was: 10:49:27.32

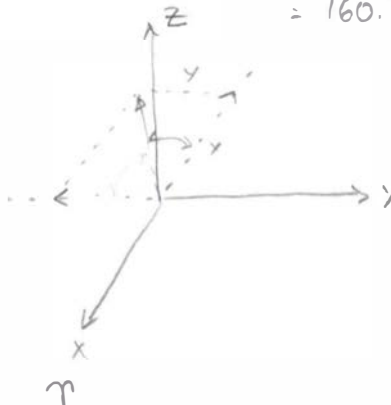
The legenda of columns is:

UTC Year
 UTC Month
 UTC Day
 UTC Hour
 UTC Minute
 UTC Second
 X Component of the Position Vector (Km)
 Y Component of the Position Vector (Km)
 Z Component of the Position Vector (Km)
 X Component of the Velocity Vector (Km/s)
 Y Component of the Velocity Vector (Km/s)
 Z Component of the Velocity Vector (Km/s)

$$R = 6970$$

$$\delta = \sin^{-1} \frac{Z}{R} = \sin^{-1} \frac{-80}{6970} = -0.658^\circ$$

$$\alpha = \tan^{-1} \frac{Y}{X} = \frac{-6579}{-2301} = 70.723^\circ \rightarrow 90 + 70.723 = 160.723$$



Hope this information can help.

Bye
 Marco

 Marco Feroci

Phone: +39-6-9424589
 Fax : +39-6-9416847

Istituto di Astrofisica Spaziale - C.N.R.
 Via E. Fermi 21, I-00044 Frascati, ITALY
 E-mail: feroci@saturn.ias.fra.cnr.it
 feroci@alpha1.ias.fra.cnr.it

From BUTTERWORTH@PIZZA.GSFC.NASA.GOV Thu Sep 19 11:23 PDT 1996
 Date: Thu, 19 Sep 1996 14:23:33 -0400 (EDT)
 From: BUTTERWORTH@PIZZA.GSFC.NASA.GOV
 Subject: requested Wind ephemeris for GRB960813
 To: khurley@sunspot.ssl.berkeley.edu
 X-Vmsmail-To: SMTP%"khurley@sunspot.ssl.berkeley.edu"

GCI X/Y/Z coordinates of the Wind spacecraft near the time of Konus trigger
 960813 (10:28:59.252 UT) ($\approx .8988$)

10:10:00.000	-590693.75408	214731.04923	72661.83298
10:20:00.000	-590431.89275	214368.13884	72514.83102
10:30:00.000	-590169.68492	214005.11421	72367.79166
10:40:00.000	-589907.13003	213641.97536	72220.71492

-590195

214041

72381

$$R = 631967$$

$$\delta = \sin^{-1} \frac{72381}{631967} = 6.577^\circ$$

$$\alpha = \tan^{-1} \frac{Y}{X} = -19.934^\circ \rightarrow 180 - 19.934 = 160.07$$

Konus 960813 waiting-mode data
shows data from both N and S

61 (10keV - 50keV)
2400

detectors. (N detector has signal).



62 (50keV - 200keV)
1800



63 (200keV - 750keV)
300



18:26:19

18:26:00

18:30:00

WIN

NET

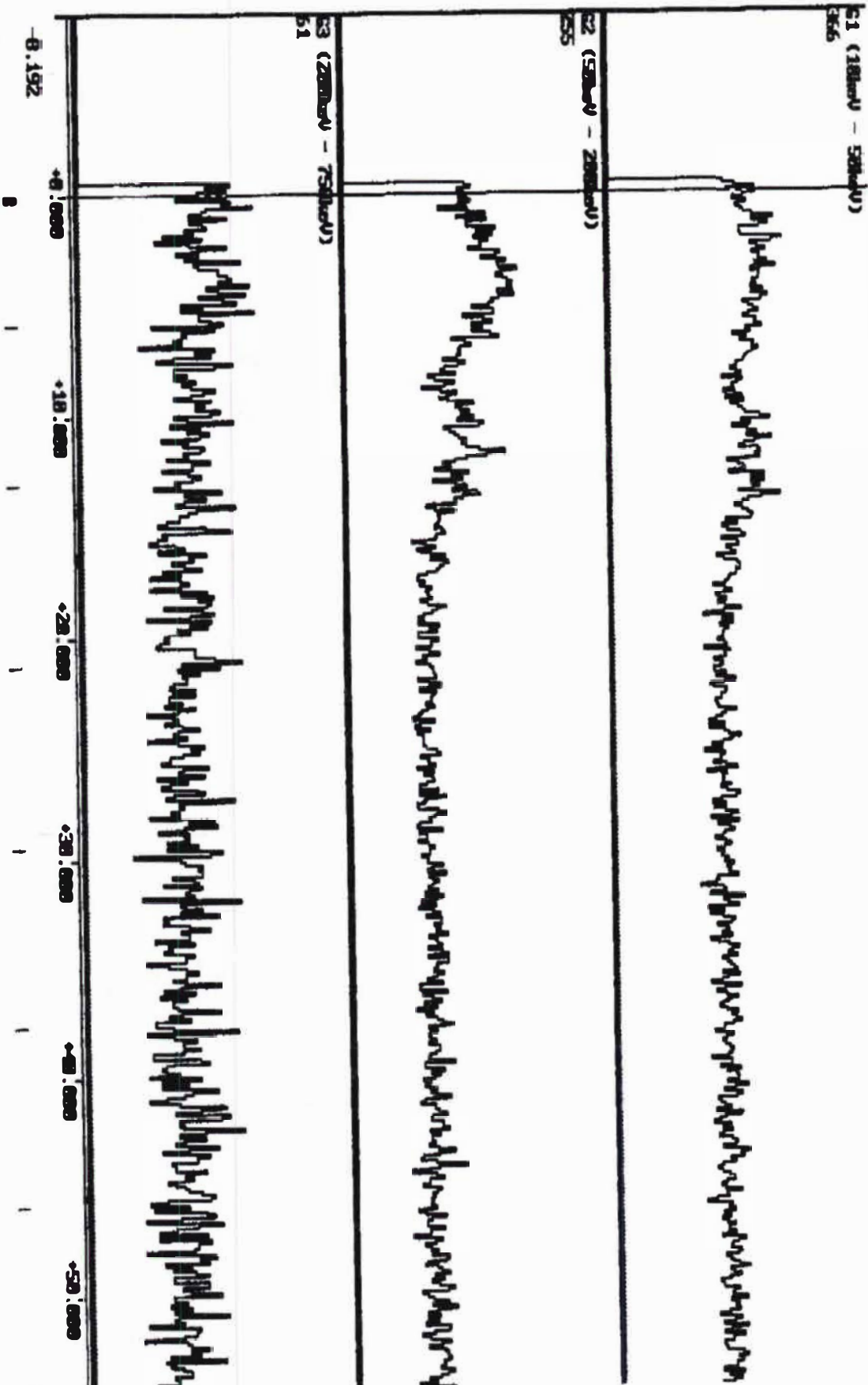
NET

NET

NET

NET

Konus 760815 10:28:57.25 <
trigger time
burst mode data at 128ms res.



96	8	7	71369.324	S2	1200	2740	1000	0.25	6	10	358	Trig	5567
96	8	9	52229.443	S2	6500	10000	9500	0.06	5	40	359	Trig	
96	8	10	24974.750	S1	740	860	250	4	0.5	0.6	360	Search + 250	RI
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI	KA
96	8	15	36027.501	S1	470	1250	370	3.2	0.5	12	362	Trig	5525
96	8	21	13940.971	S1	520	720	360	6	2	11	368	Search + 250	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 250	RI
96	8	31	37775.300	S2	420	500	210	0.1	64	98	370	RI	5591
96	9	2	58097.128	S1	1750	3200	1060	3	0.05	1.5	371	Trig	KA
96	9	6	81590.312	S1	240	470	170	13	2	16	372	RI	5593
96	9	8	25028.442	S2	10000	7000	2500	<0.04	0.04	0.3	373	Trig	
96	9	12	50250.066	S2	420	600	320	<0.03	3	15	378	RI	5601
96	9	12	67621.610	S1	2000	380		3.4	270	0.5	379	Search + 250	NO
96	9	13	83120.562	S1		320	70	1.7	2	14	380	RI	5604
96	9	16	14182.498	S1	250	420	60	3.4	300	12	381	Search + 250	RI
96	9	21	54231.399	S1	1160	2900	830	2.5	0.5	40	382	Trig	5609
96	9	22	18368.358	S1	800	1100	280	14	2	70	383	Search + 250	RI
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5612
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5617
96	10	1	75186.385	S2	1600	3800	1800	0.08	1	12	386	Trig	5621
96	10	2	75235.745	S1	1100	1600	250	8	11	6	387	Search + 250	RI
96	10	9	33560.099	S2	1020	1360	300	0.03	6	13	393	NO	5628
96	10	9	49065.989	S1	600	900	320	23	3	24	394	RI	5629
96	10	15	42782.014	S2	160	290	100	0.7	3	80	395	Search + 250	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 250	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 250	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 250	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 250	RI
96	10	26	05631.940	S1	6000	3000		1	0.04	0.04	401	Trig	
96	10	26	22311.118	S2	400	560	300	0.3	2	3	402	RI	5644
96	10	29	24354.087	S1	4000	3700	1250	25	7	300	404	Trig	
96	10	29	68710.804	S1	570	620	120	>20	2	11	405	Search + 250	NO
96	11	1	58062.904	S2	1020	1450	600	<0.04	1	18	406	Trig	
96	11	2	41907.802	S2	350	610	230	0.08	5	90	407	Search + 250	RI

TLC

-- T. L. Cline ----- LHEAVX::CLINE

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	scri	
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	scri	
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	scri	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

From BUTTERWORTH@lheavx.gsfc.nasa.gov Fri Aug 23 09:07 PDT 1996

From: BUTTERWORTH@lheavx.gsfc.nasa.gov

Date: Fri, 23 Aug 1996 12:06:15 -0400 (EDT)

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov

CC: BUTTERWORTH@lheavx.gsfc.nasa.gov

Subject: Ulysses/SAX GRB960813 was seen by Konus

Hi Everyone,

Konus triggered at 10:28:59.252 in the detector facing towards ecliptic north. The moderately intense, rather soft event lasted 20 seconds with two broad peaks.

Paul.

Date: Thu, 22 Aug 1996 16:08:54 -0700

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

Message-Id: <199608222308.QAA01171@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@botes1.tesre.bo.cnr.it

Subject: GRB960813

3un-Charset: US-ASCII

ULYSSES/SAX GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses and SAX observed a moderately intense, 20 s long event August 13 1996 around 10:49 UT at SAX.

Was this event detected by anyone else?

CC: ulyssesbursts alias list

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

From feroci@saturn.ias.fra.cnr.it Tue Aug 20 08:40 PDT 1996
Date: Tue, 20 Aug 1996 17:39:00 +0100 (NFT)
From: Marco Feroci <feroci@saturn.ias.fra.cnr.it>
X-Sender: feroci@titan.ias.fra.cnr.it
To: Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
Subject: SAX/GRBM Trigger
Mime-Version: 1.0

Dear Kevin

we have detected a very intense GRB candidate on 13/Aug/1996, 10:49:?? UT.
We still don't have the satellite attitude and position, as well as the
exact trigger time. We detected about 60000 cts/s on our detector, while
the complete BATSE list does not report a burst at that time of the day.

Did Ulysses see anything at about the same time?

Thanks, regards
Marco

Marco Feroci

Istituto di Astrofisica Spaziale - C.N.R.
Via E. Fermi 21, I-00044 Frascati, ITALY
E-mail: feroci@saturn.ias.fra.cnr.it
feroci@alpha1.ias.fra.cnr.it

Phone: +39-6-9424589
Fax : +39-6-9416847

From feroci@saturn.ias.fra.cnr.it Thu Sep 12 03:30 PDT 1996
Date: Thu, 12 Sep 1996 12:28:39 +0100 (NFT)
From: Marco Feroci <feroci@saturn.ias.fra.cnr.it>
X-Sender: feroci@titan.ias.fra.cnr.it
Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
Enrico Costa <costa@saturn.ias.fra.cnr.it>,
Filippo Frontera <filippo@tesre.bo.cnr.it>,
Luigi Piro - SAX Mission Scientist <saxsci@alpha1.ias.fra.cnr.it>
Subject: SAX data on 13/Aug event
Mime-Version: 1.0

Dear Kevin

this mail is to inform you about the situation of our data of the
13/Aug/1996 burst.

As probably I already told you, that was a very intense burst, about 65000
counts in less than 2 seconds.

Unfortunately the burst was so intense that our high frequency counters
were saturated, and recycled (they have 6 bits, on 0.48 ms). From a
reconstruction of the profile (caution: based on our hypothesis of the
resetting of the counters!) we can see the light curve of the burst.
It has a very sharp leading edge (rise time of the order of about ten ms)
and a very gentle decrease, but for a secondary peak (increasing the count
rate of about a factor of 1.5, and lasting about 100 ms), after which
there is a step in the decrease, and then the count rate decreases gently
again. Everything is vanished after about 1-1.5 seconds from the trigger
me.

I have seen your light curve, and I guess that a cross-correlation of the
light curves cannot be performed in these conditions. Anyway, since our
rise time is extremely sharp, maybe you could use just this for a burst
position rough estimate. Is that possible?

We see the sharp increase at:

13/AUG/1996 10:49:27.32 UT

I have also heard of a detection from Konus. Maybe this could help.
Let me know your opinion.

Ciao
Marco

Marco Feroci

Phone: +39-6-9424589
Fax : +39-6-9416847

Istituto di Astrofisica Spaziale - C.N.R.
Via E. Fermi 21, I-00044 Frascati, ITALY
E-mail: feroci@saturn.ias.fra.cnr.it
feroci@alpha1.ias.fra.cnr.it

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

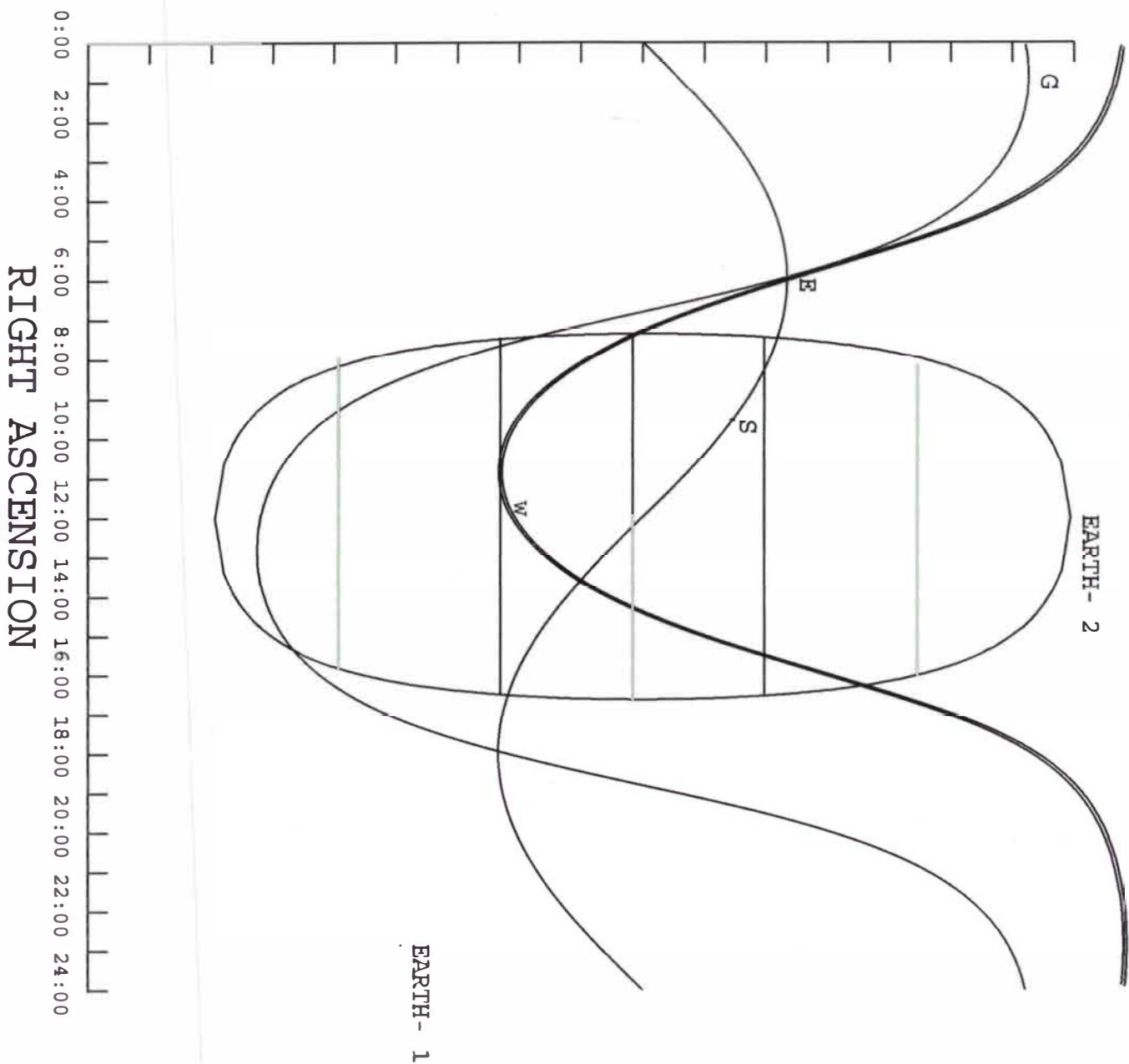
2 SAX

DECLINATION

EVENT OF AUG 13, 1996 10:29

2-1

27 / 9/96



ULYSSES RT

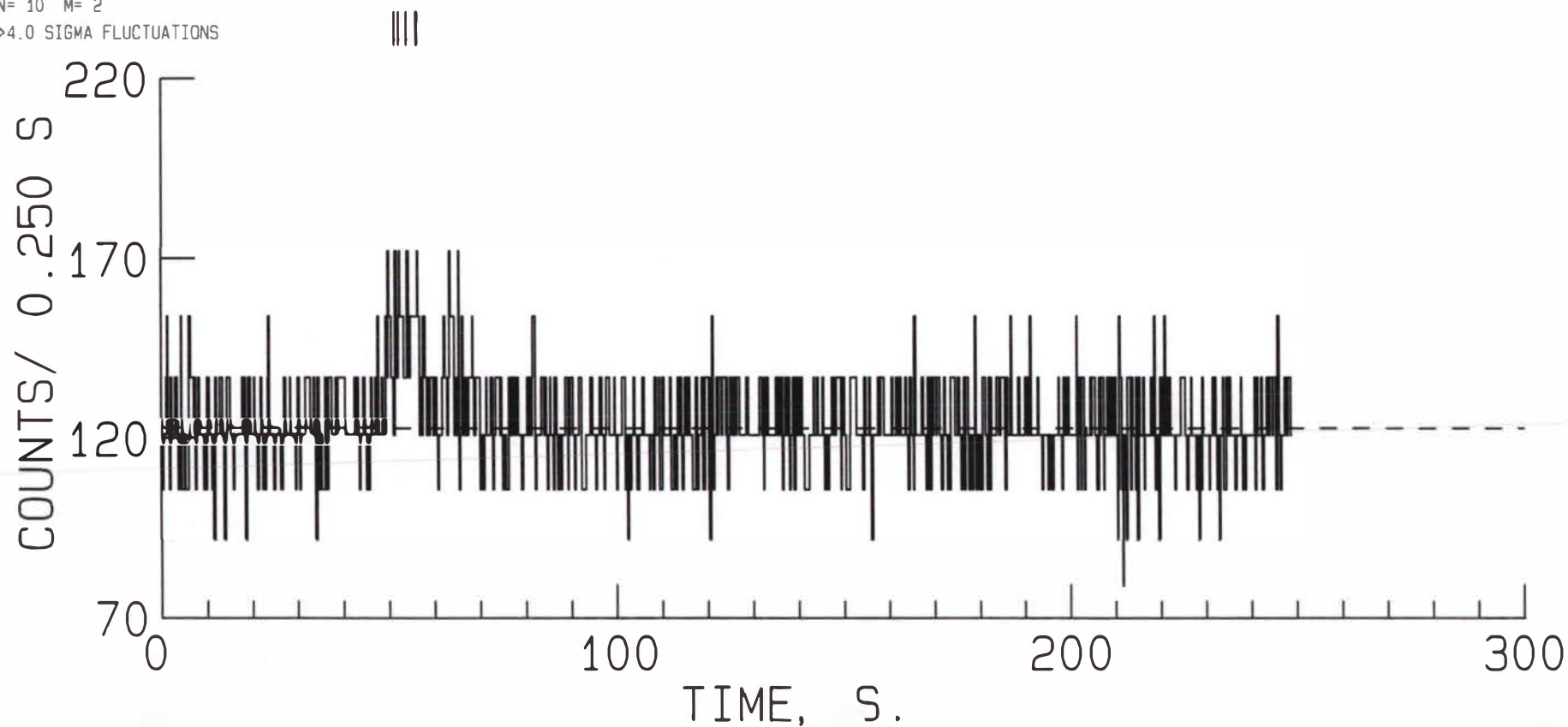
5 / 9 / 96

13 / 8 / 96 37748.549 s

21- 145 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



ULYSSES RT

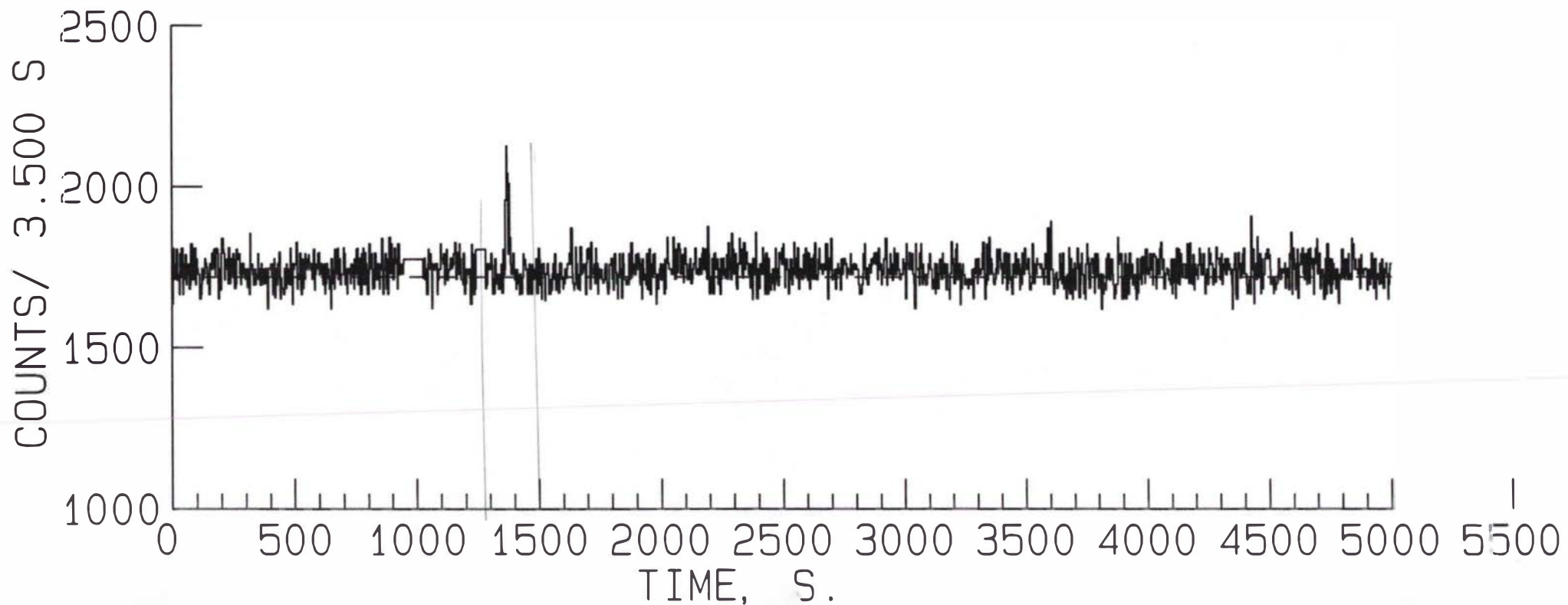
22 / 8 / 96

13 / 8 / 96 36432.029 s

0.250 S INTERVALS REGROUPED BY 14

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



S A X

2 2 / 8 / 9 6

ULYSSES RT

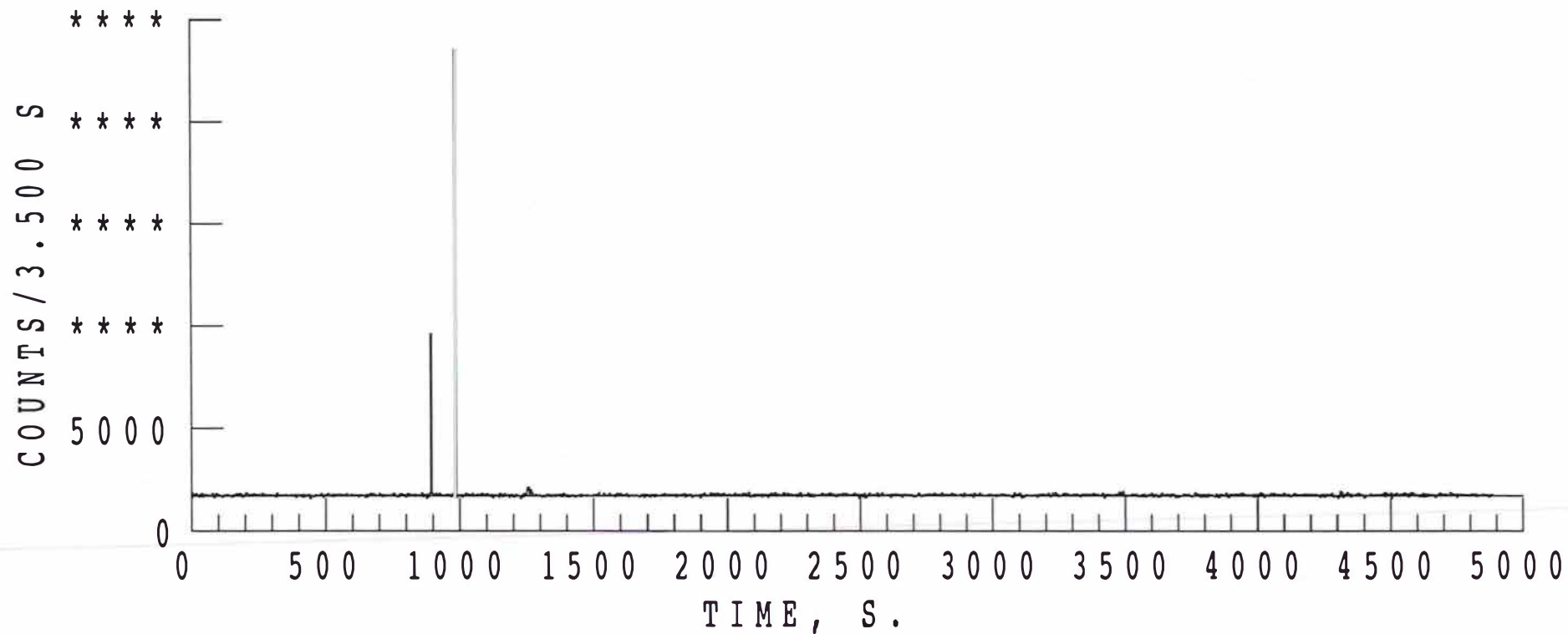
13 / 8 / 96 36432.027 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Wed Aug 14 11:57 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Wed, 14 Aug 1996 13:57:14 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5573

BATSEARCH PROGRAM

BATSE BURST # 5573 ND
EVENT OF 1996 AUG 13 DAY OF YEAR=226
EVENT CROSSING TIME AT BATSE : 78438. S. OR 21:47:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 187.000 42.000
BATSE PEAK COUNTING RATE: 1900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 8/ 96 IS:
RA= 162.430 DEC= 39.288 DIST= 5.063 AU
BATSE-ULYSSES DISTANCE = 757414487. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=161.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2392.06 SECS.
CROSSING TIME AT ULYSSES IS 76046. S. OR 21:07:25 +/- 154.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 8/ 96 IS:
RA= 103.246 DEC= 23.502 DIST= 2.200 AU
MARS-BATSE DISTANCE = 329123264. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -374.33 SECS.
CROSSING TIME AT MARS IS 78064. S. OR 21:41:03 +/- 173.49 SECONDS

BATSE BURST TRIGGER

NO.: 5573

TIME: TJD=0308 SECONDS=78438

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=81.9 AZIMUTH=66.0 ERROR=8.3 DEGREES

COMMENTS:

WEAK GRB LASTING ~ 5 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5573	960813	10308	78438	1900	187	+42	5

BATSE #

5573

16 / 8 / 96

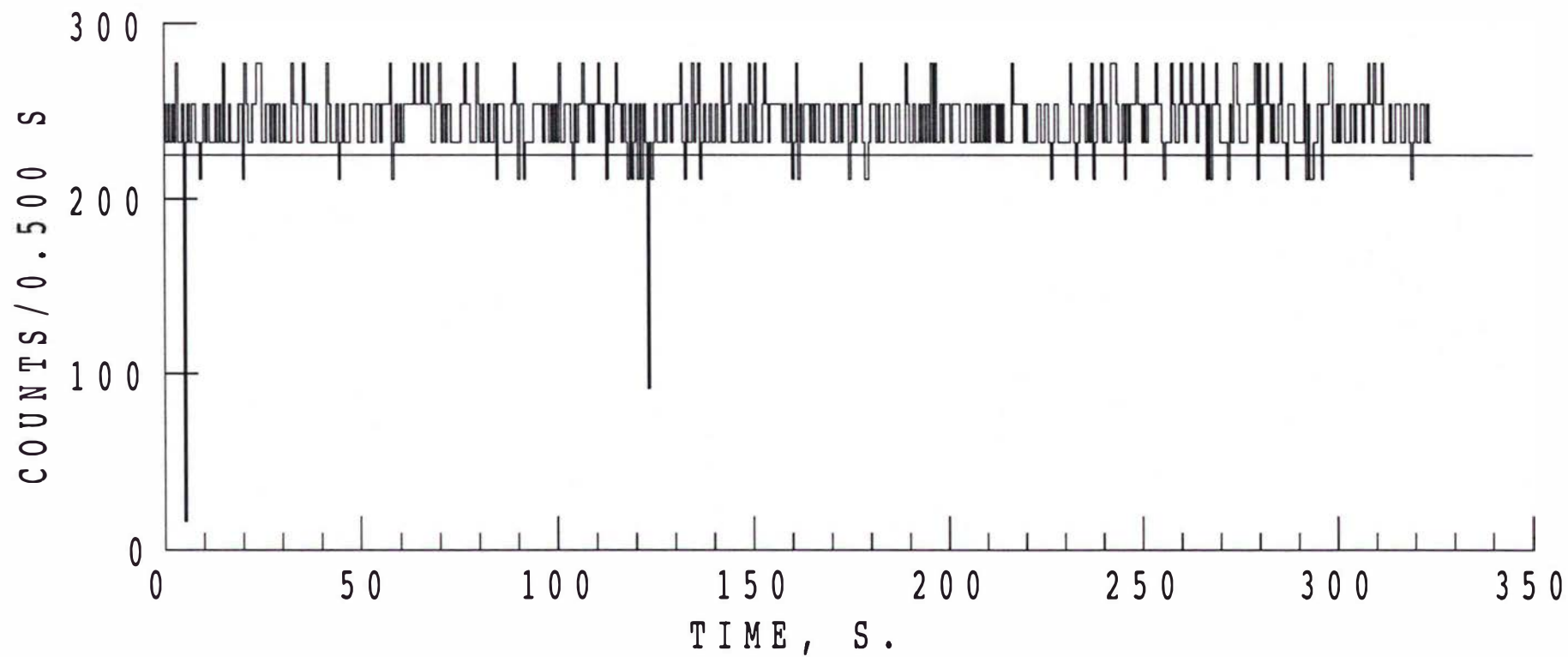
ULYSSES RT

13 / 8 / 96 75888.289 s

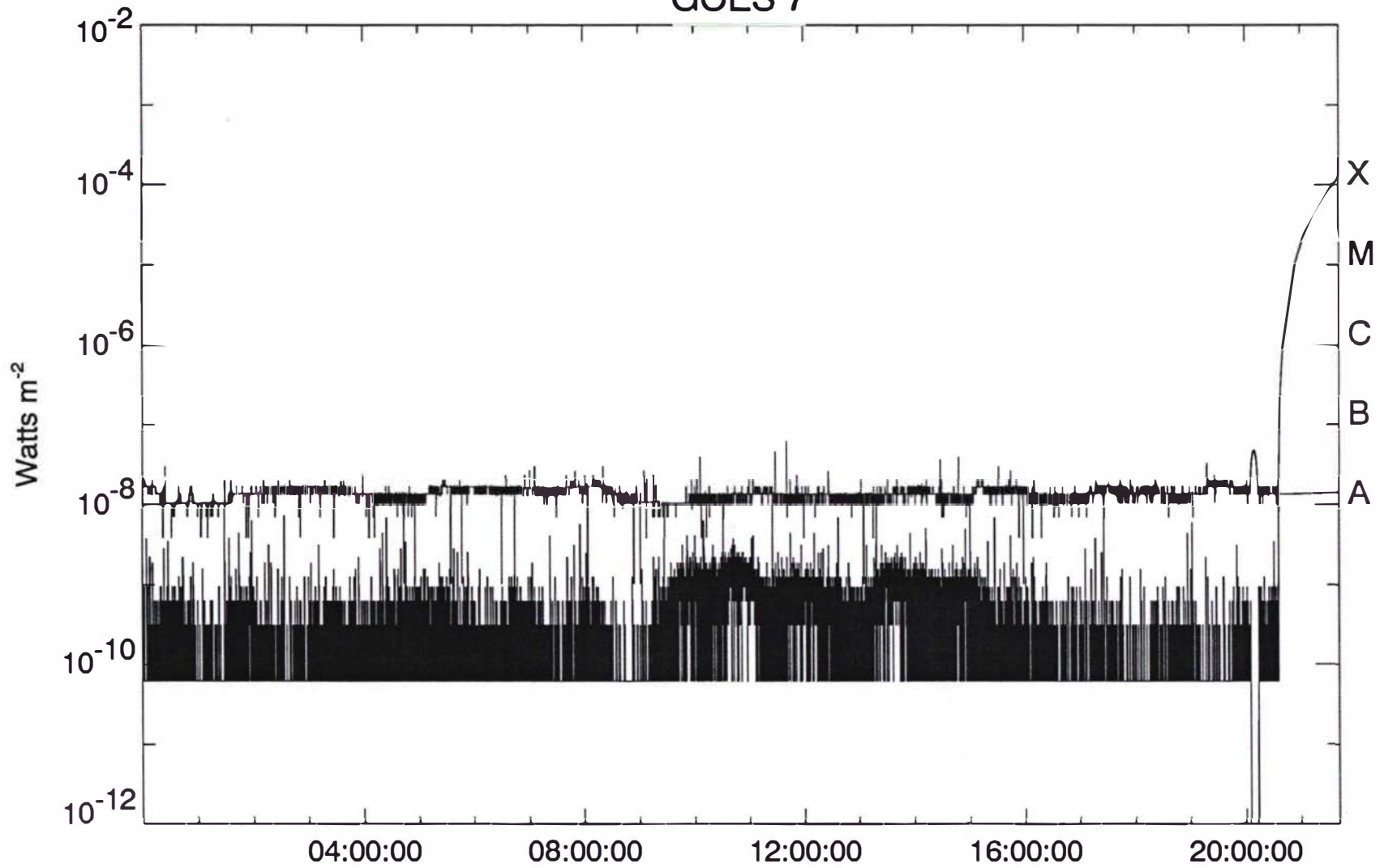
0 - 0 keV

M= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



GOES 7

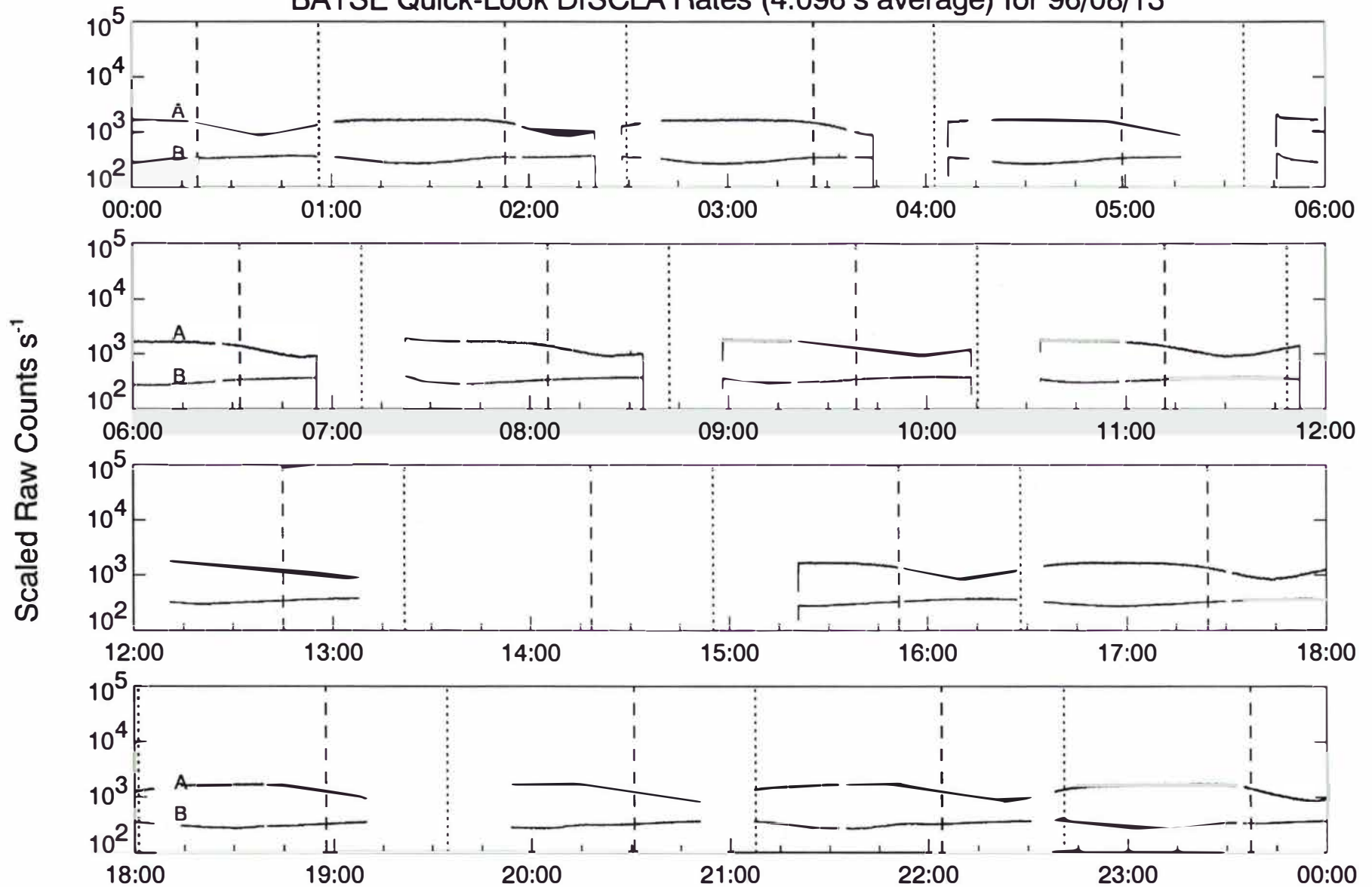


Data Start: 96/08/13, 0000:02

Plot created: 96/08/15, 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 96/08/13



Current Time: 96/08/15, 1004 EDT

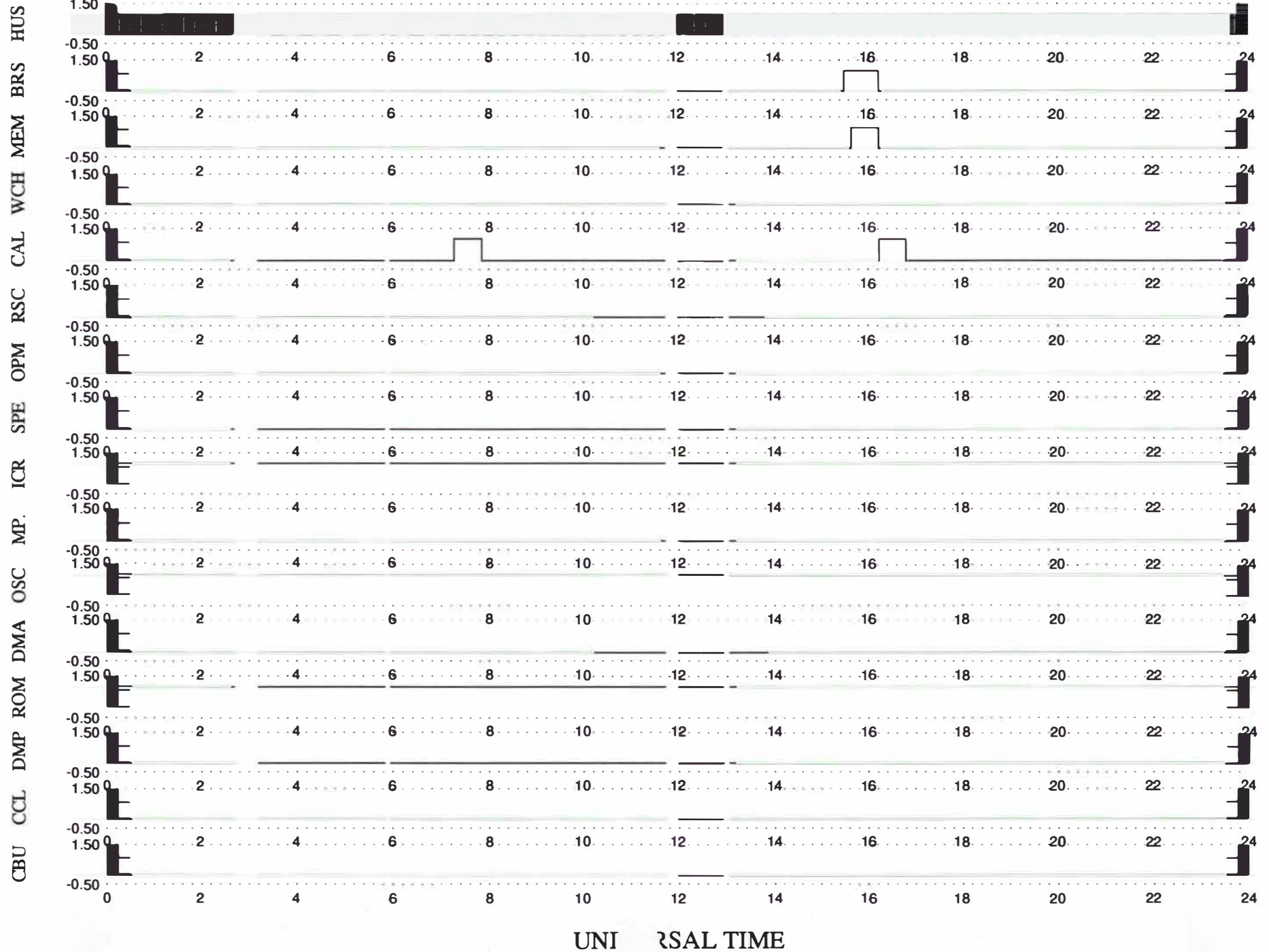
A: Channel 0 Most Sunward LAD

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

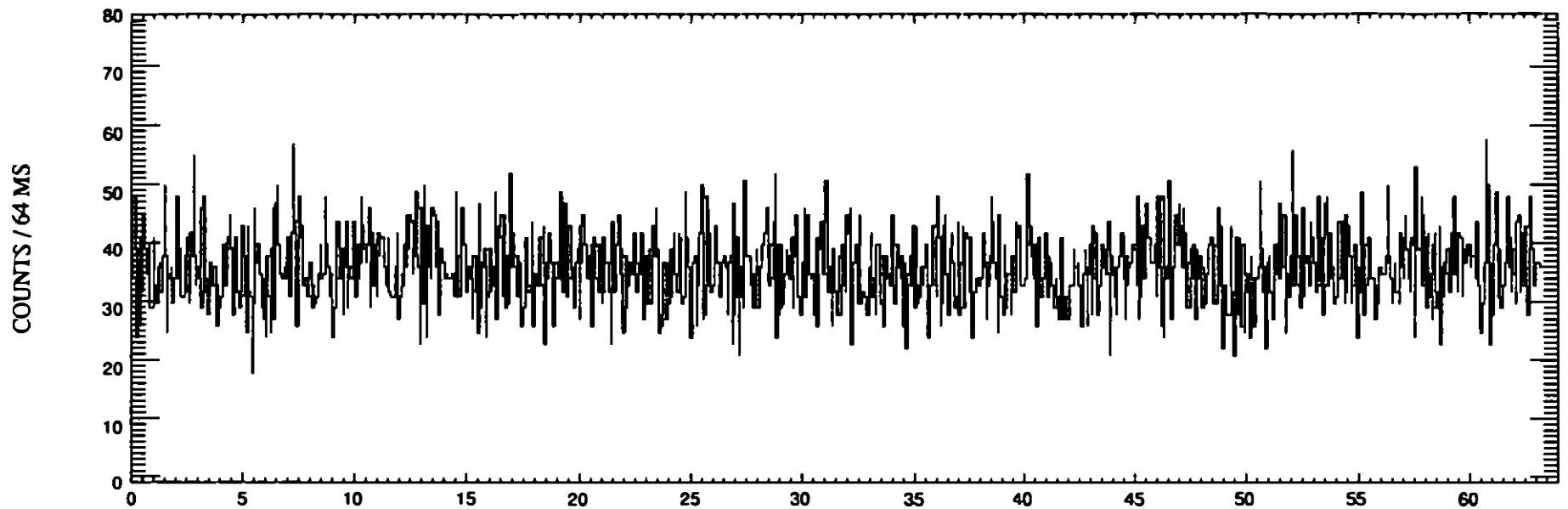
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

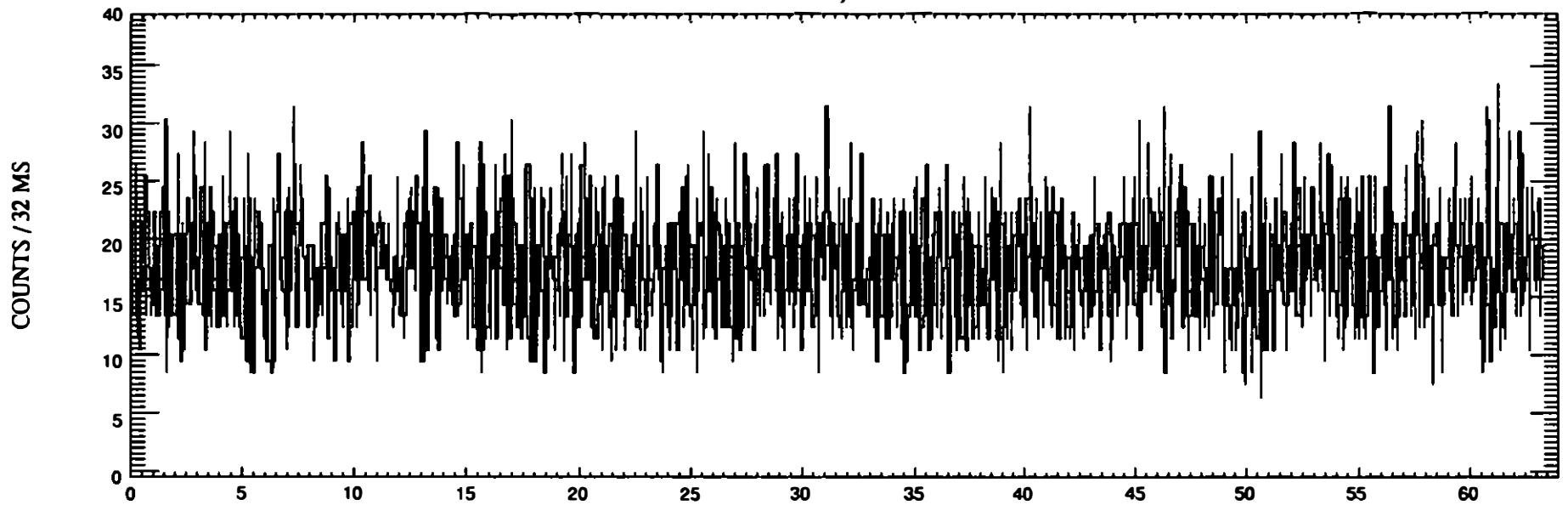
BURST NUMBER 11



Burst Counter 11 at UT=15.517853745355 h=55864.273 s 15:31:04.273

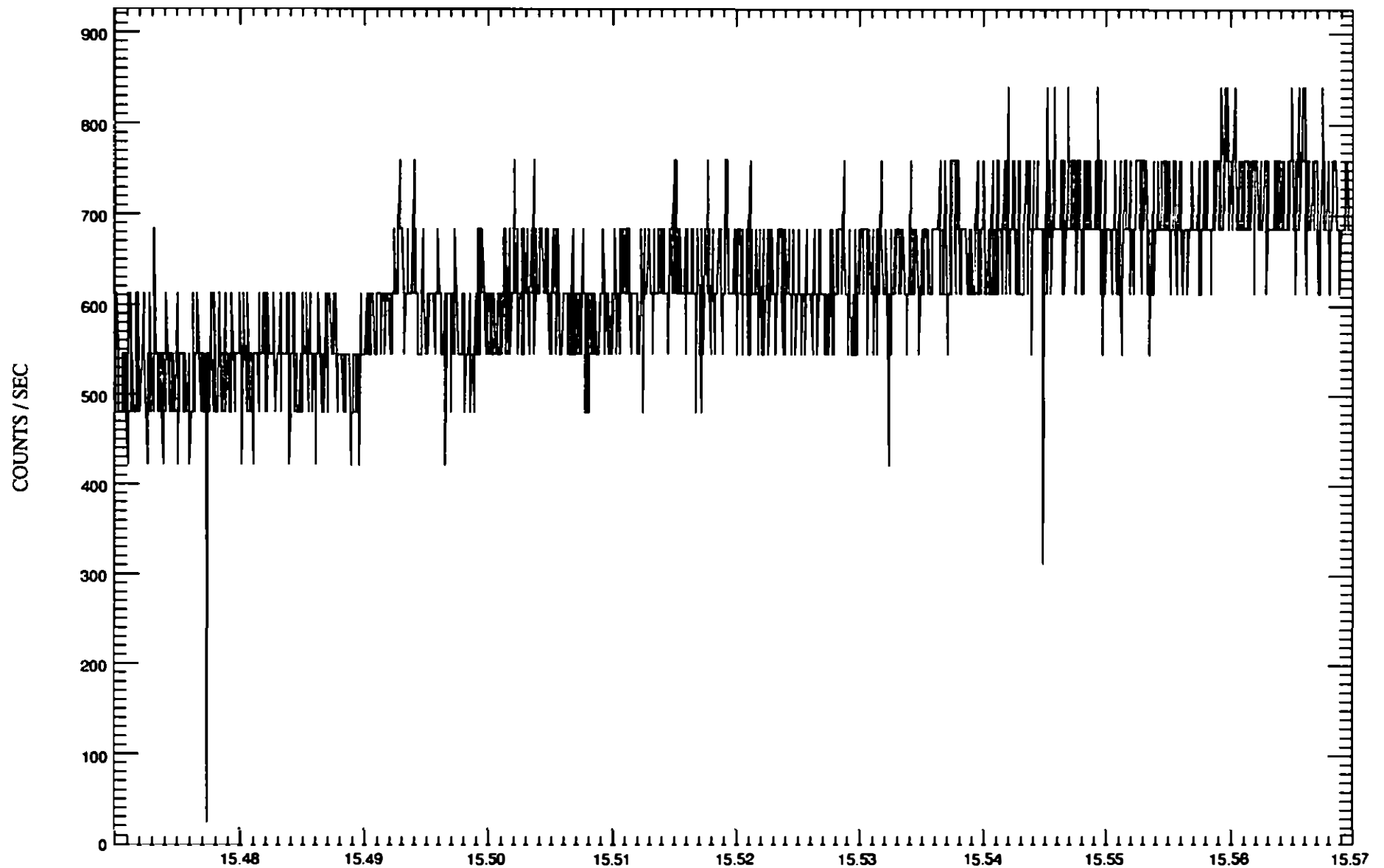


TIME, SECS

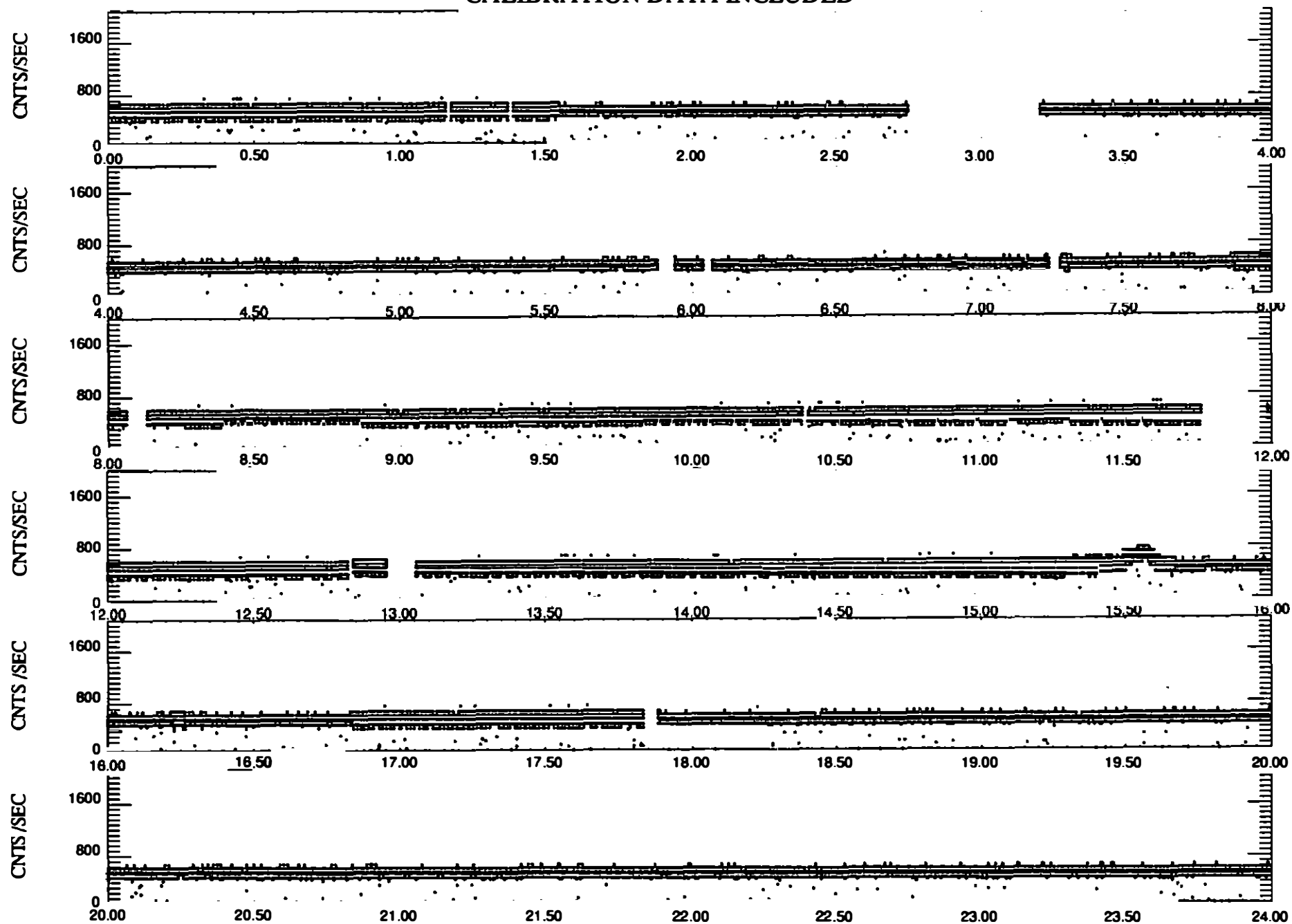


TIME, SECS

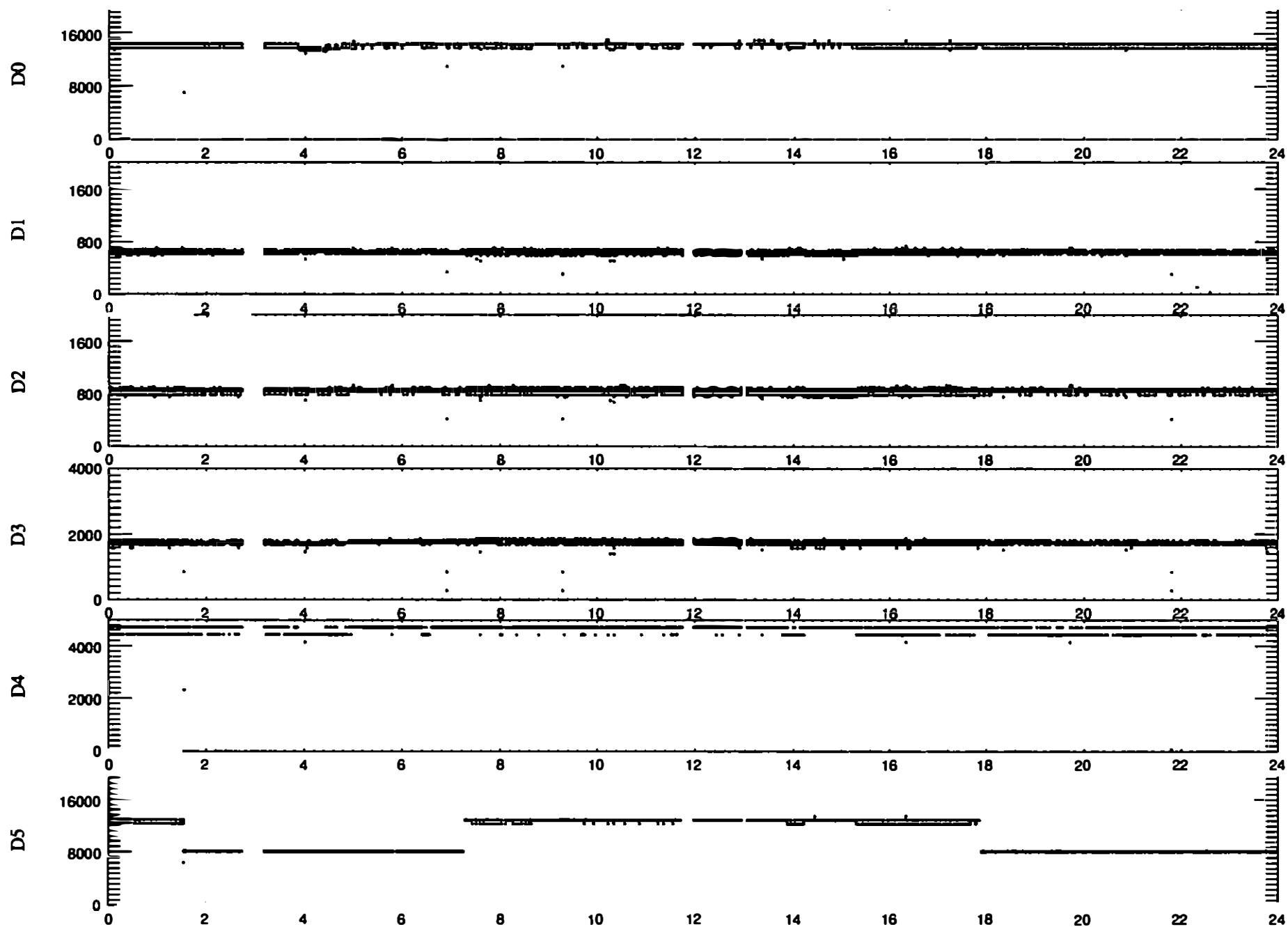
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNT RSAL TIME



UNIVERSAL TIME

From WOODSP@ssl.msfc.nasa.gov Thu Aug 15 10:58 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Thu, 15 Aug 1996 12:58:32 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5574

BATSEARCH PROGRAM

BATSE BURST # 5574 NO
EVENT OF 1996 AUG 14 DAY OF YEAR=227
EVENT CROSSING TIME AT BATSE : 58847. S. OR 16:20:47.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 193.000 -49.000
BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 8/ 96 IS:
RA= 162.589 DEC= 39.171 DIST= 5.068 AU ;
BATSE-ULYSSES DISTANCE = 758110715. KM. !
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 87.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 96.24 SECS.
CROSSING TIME AT ULYSSES IS 58943. S. OR 16:22:23 +/- 490.18 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 8/ 96 IS:
RA= 103.959 DEC= 23.452 DIST= 2.196 AU
MARS-BATSE DISTANCE = 328533760. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 318.12 SECS.
CROSSING TIME AT MARS IS 59165. S. OR 16:26:05 +/- 186.90 SECONDS

BATSE BURST TRIGGER

NO.: 5574

TIME: TJD=0309 SECONDS=58847

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=112.4 AZIMUTH=338.6 ERROR=1.6 DEGREES

COMMENTS:

GRB LASTING ABOUT 110 SEC. SINGLE PULSE WITH COMPLEX STRUCTURE AND
AN EXTENDED TAIL OF EMISSION. MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5574	960814	10309	58847	3900	193	-49	110

BATSE #

5574

16 / 8 / 96

ULYSSES RT

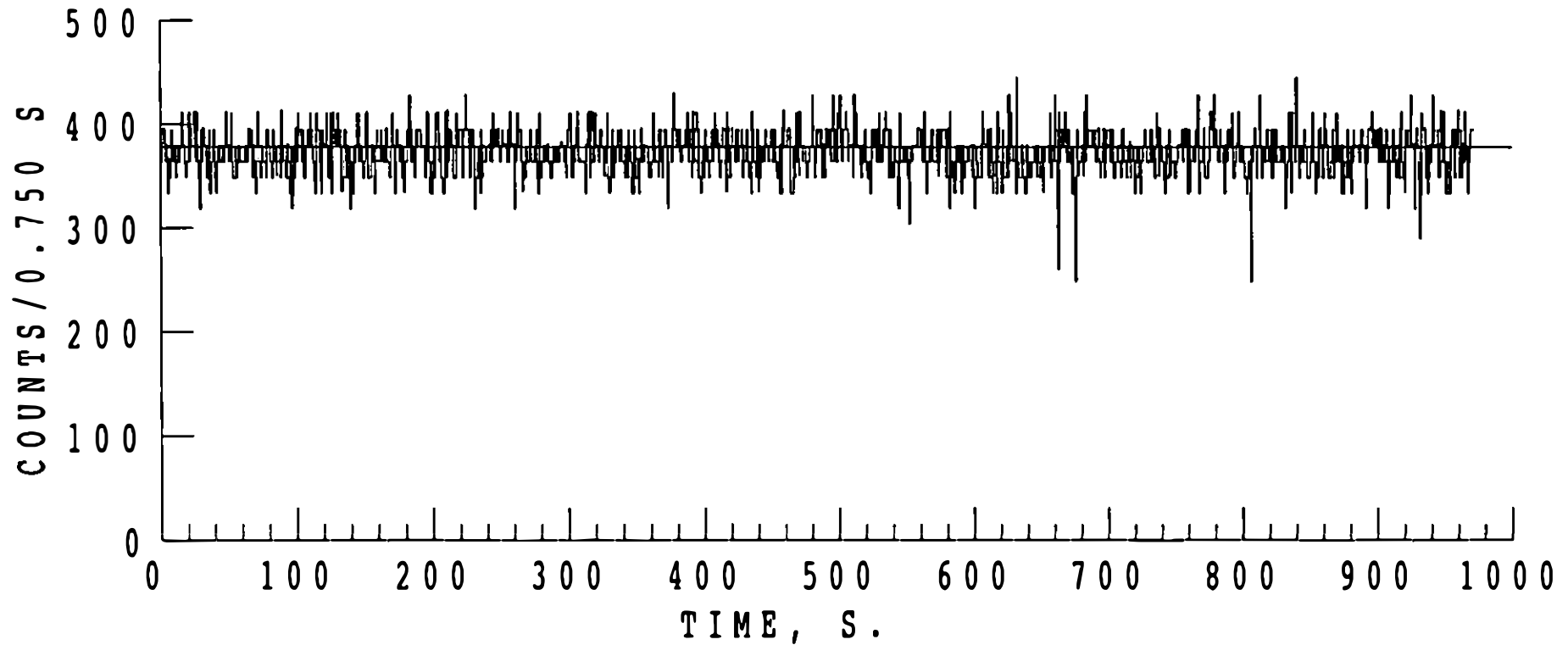
14 / 8 / 96 58464.176 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

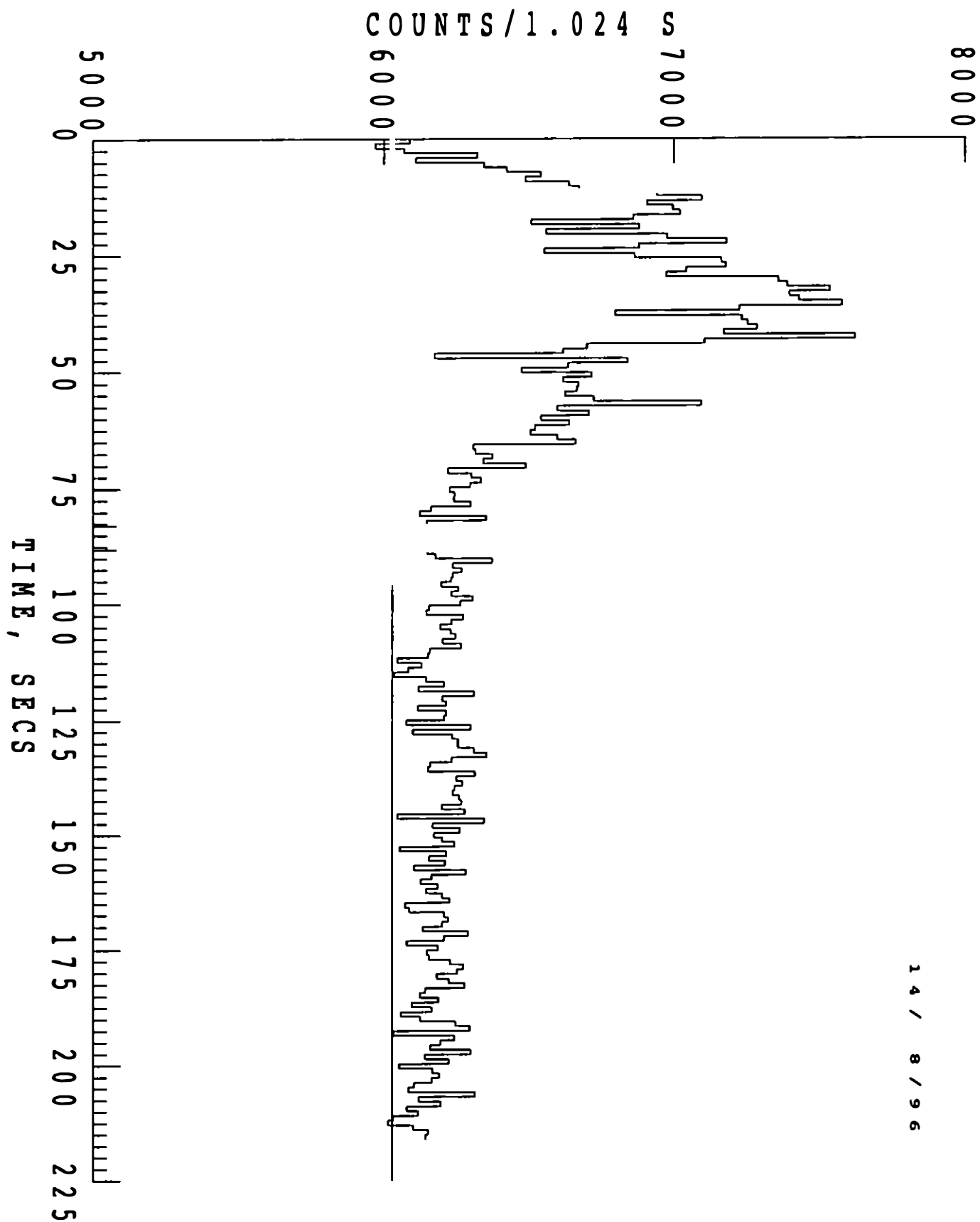
N=10 M=2

>4.0 SIGMA FLUCTUATIONS

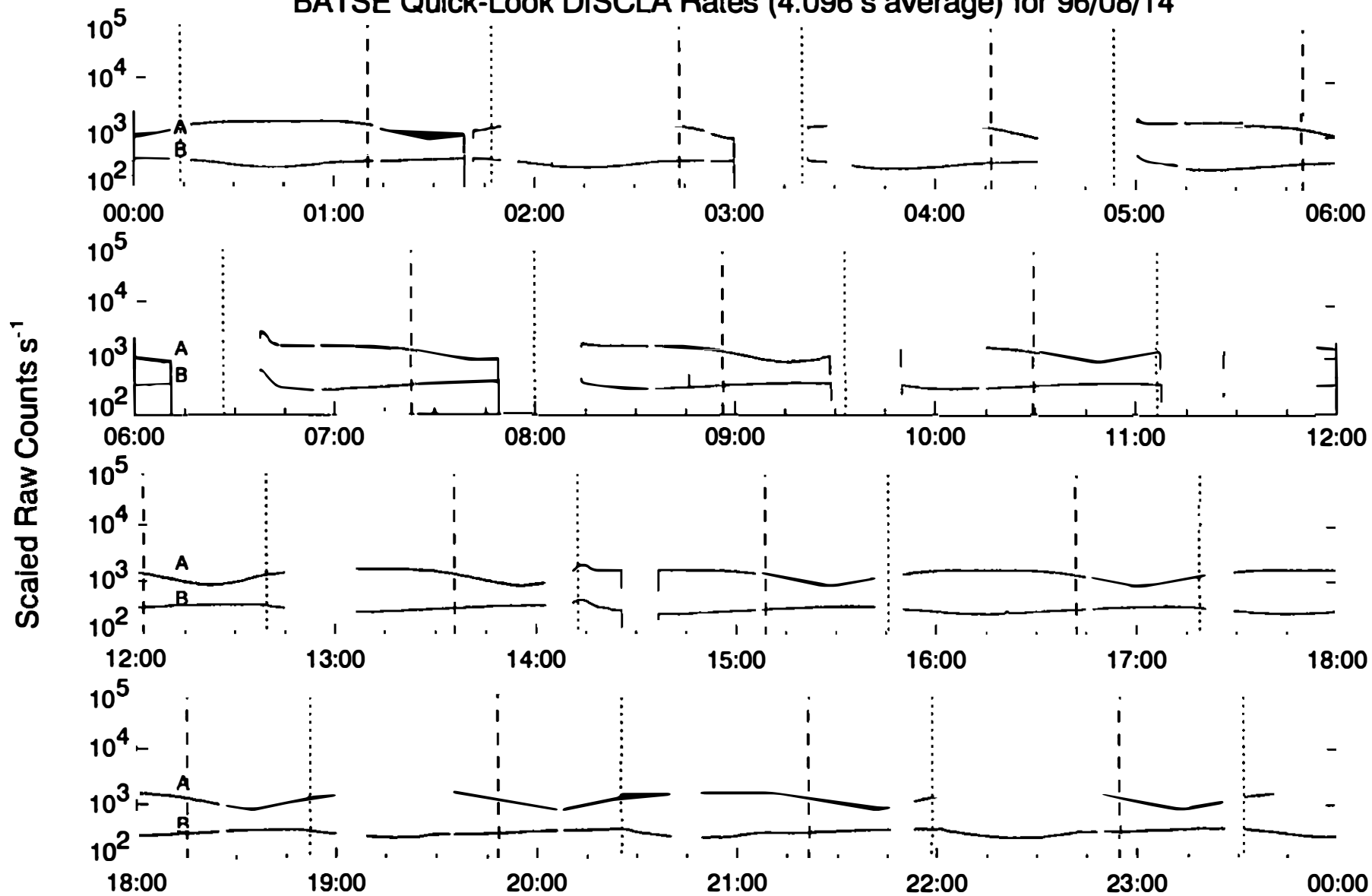


BACODINE 5574 14/08/96 58835.657

25- 100 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/14



Current Time: 96/08/16, 1003 EDT

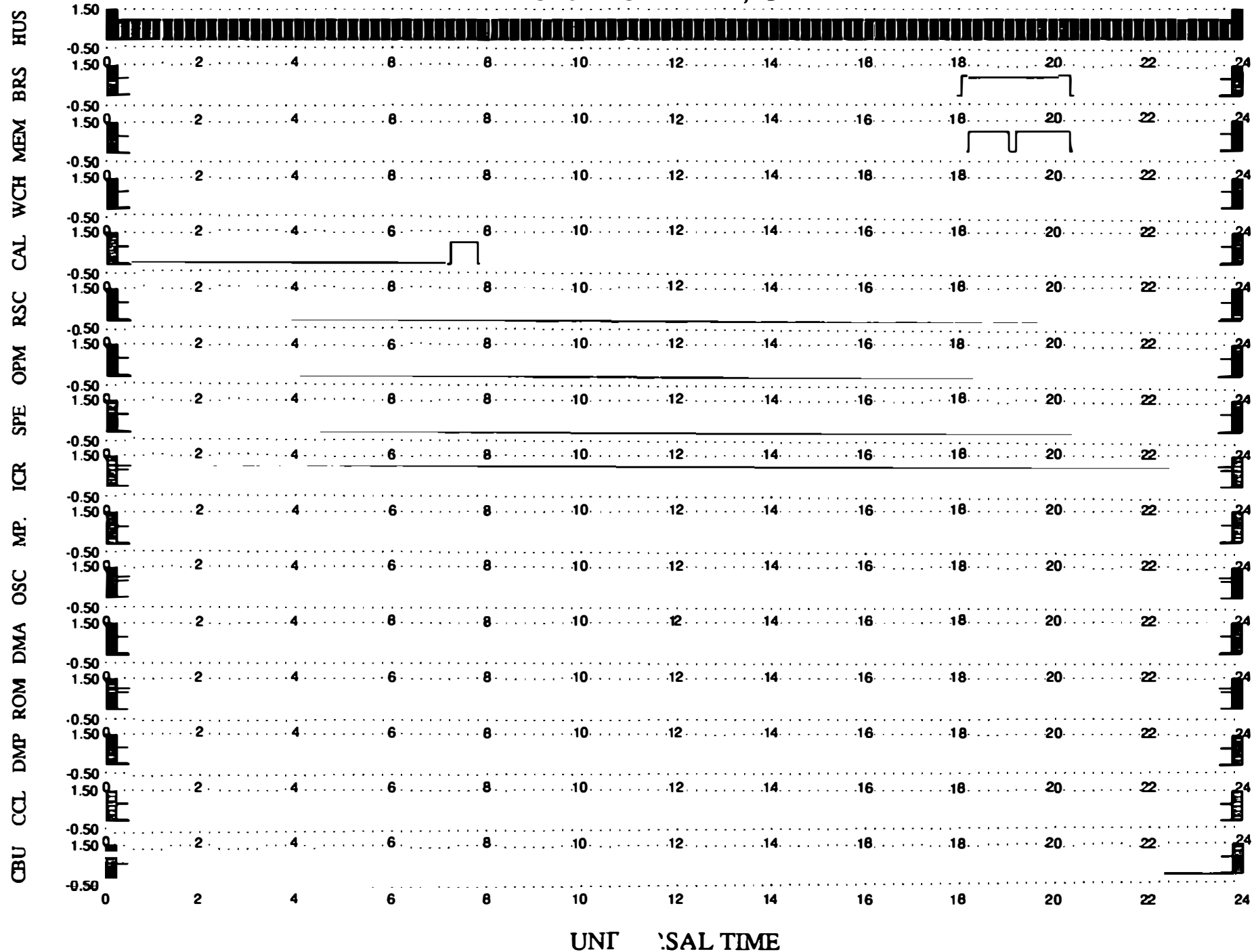
A: Channel 0 Most Sunward LAD

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

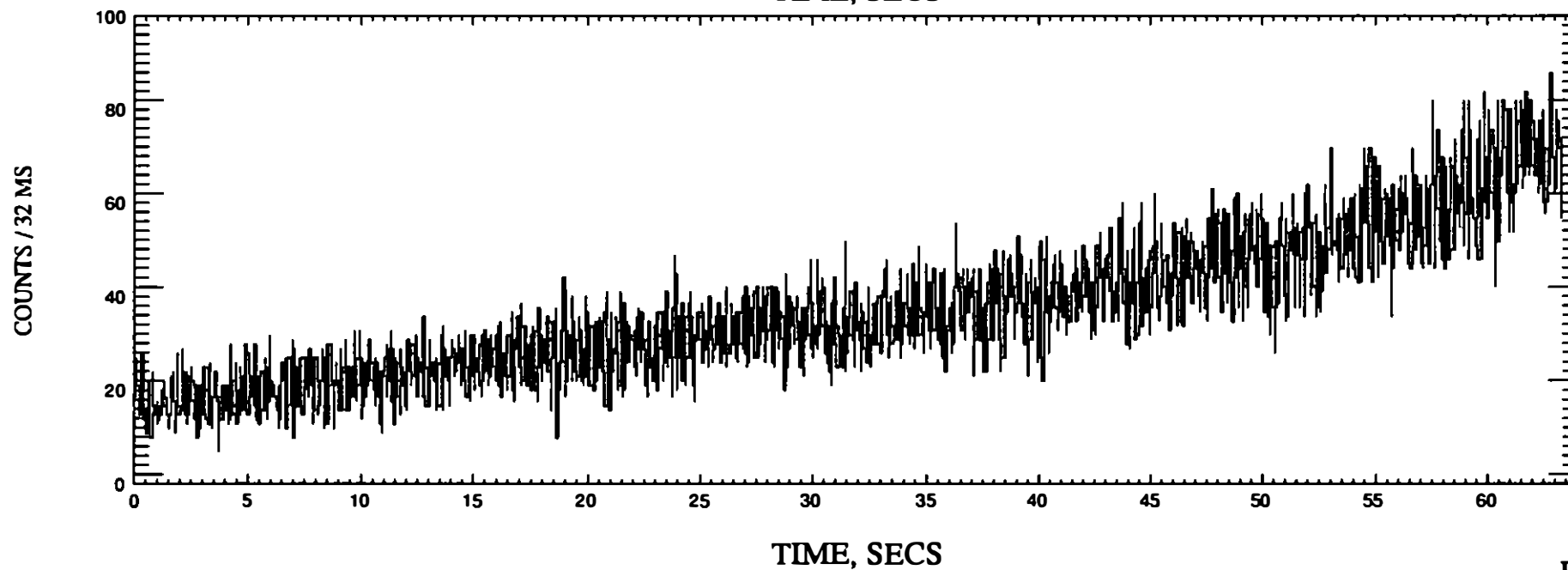
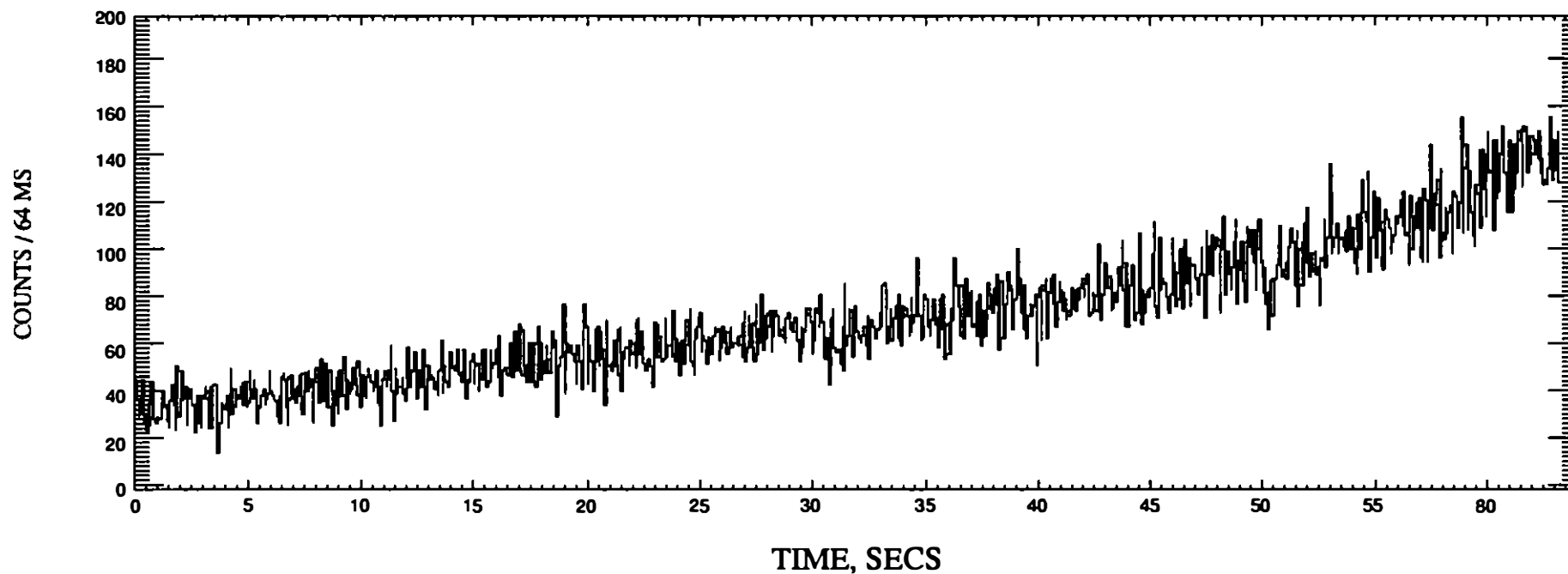
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

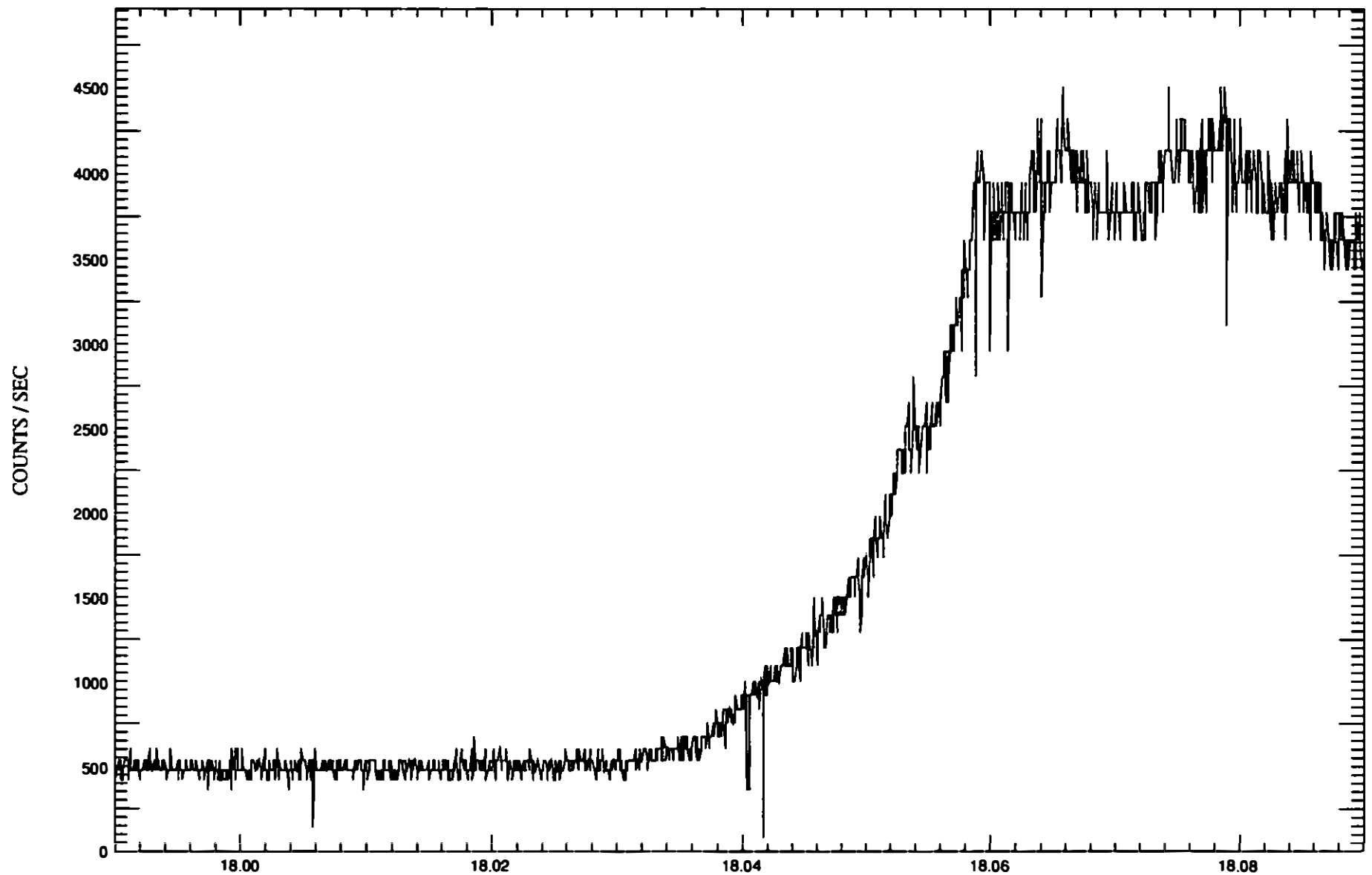
BURST NUMBER 12, 13



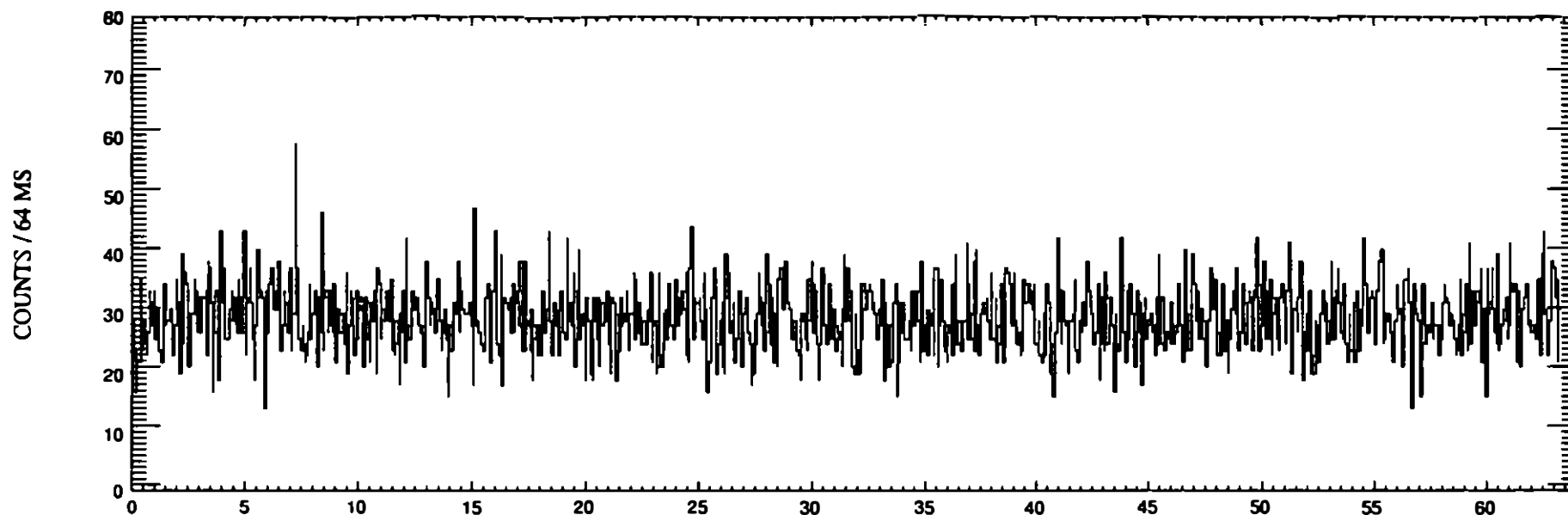
Burst Counter 12 at UT=18.037743835449 h=64935.878 s 18:02:15.878



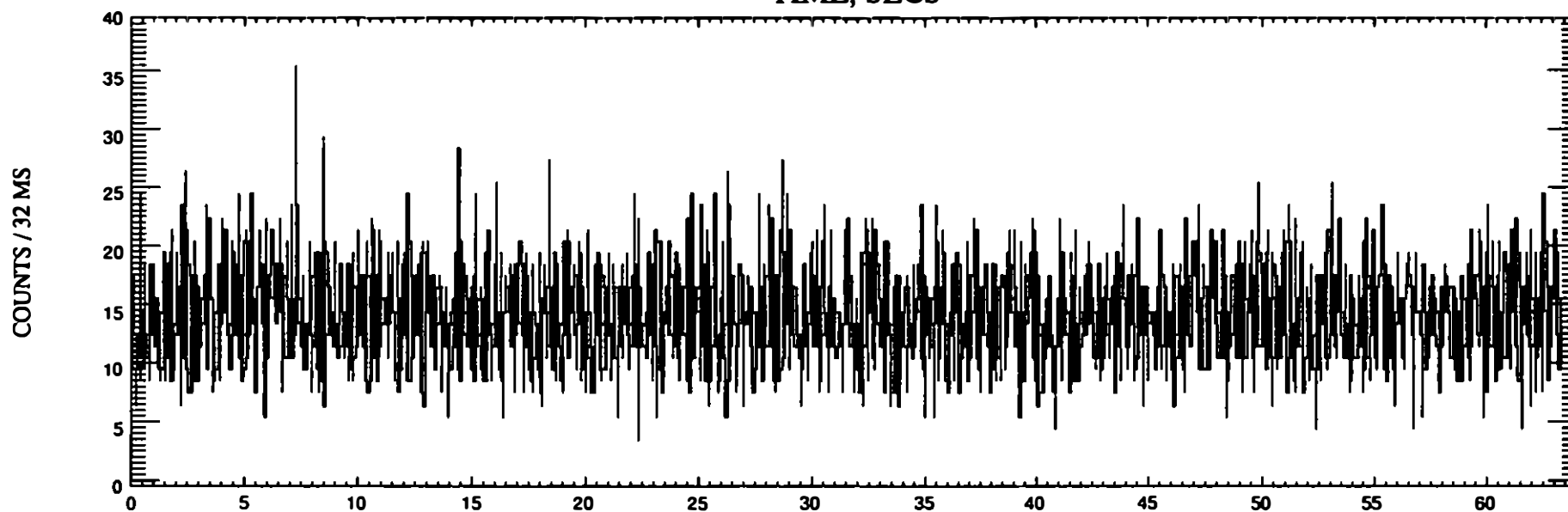
CALIBRATION DATA INCLUDED



Burst Counter 13 at UT=19.041192342970 h=68548.292 s 19:02:28.292

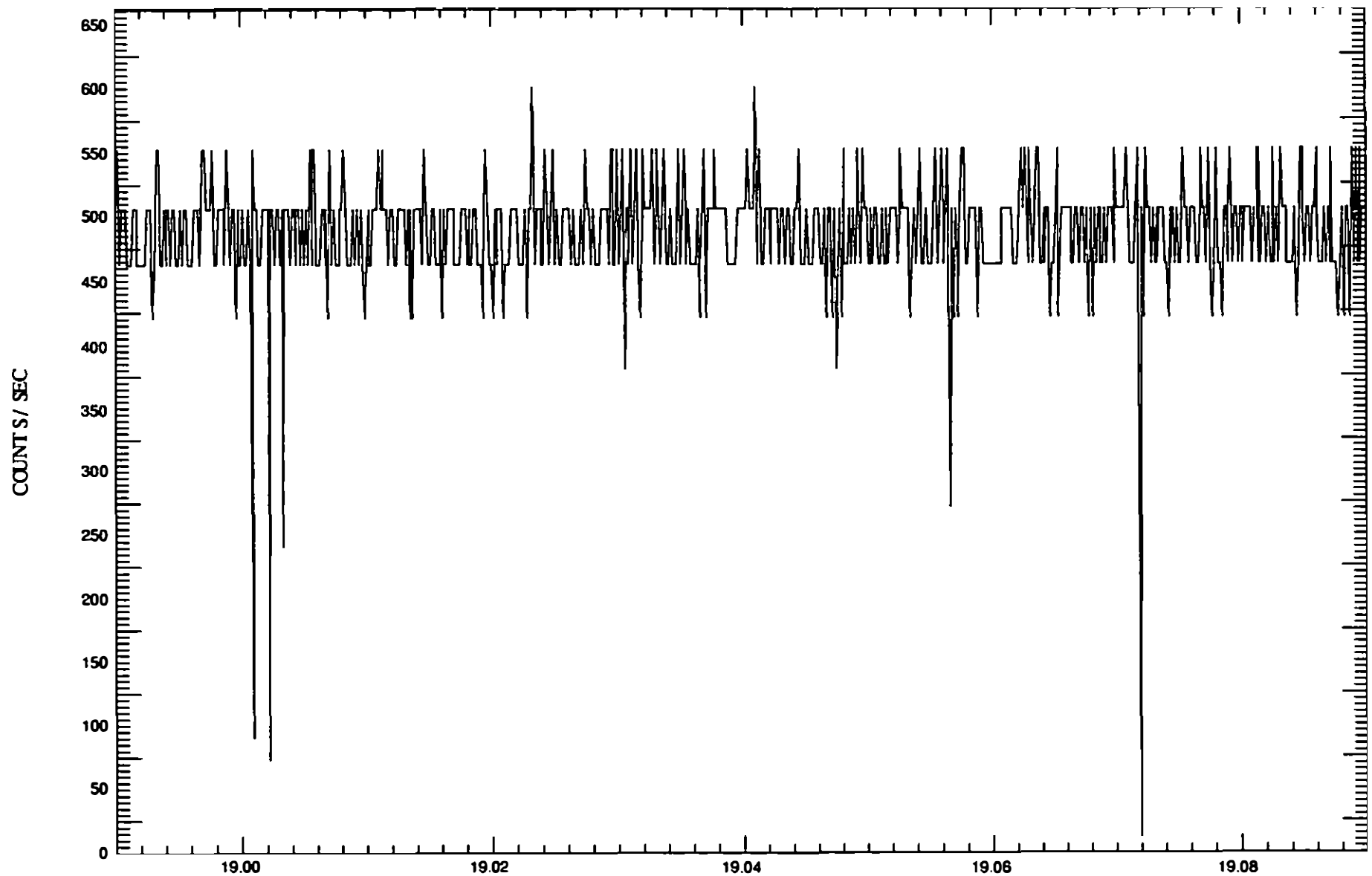


TIME, SECS

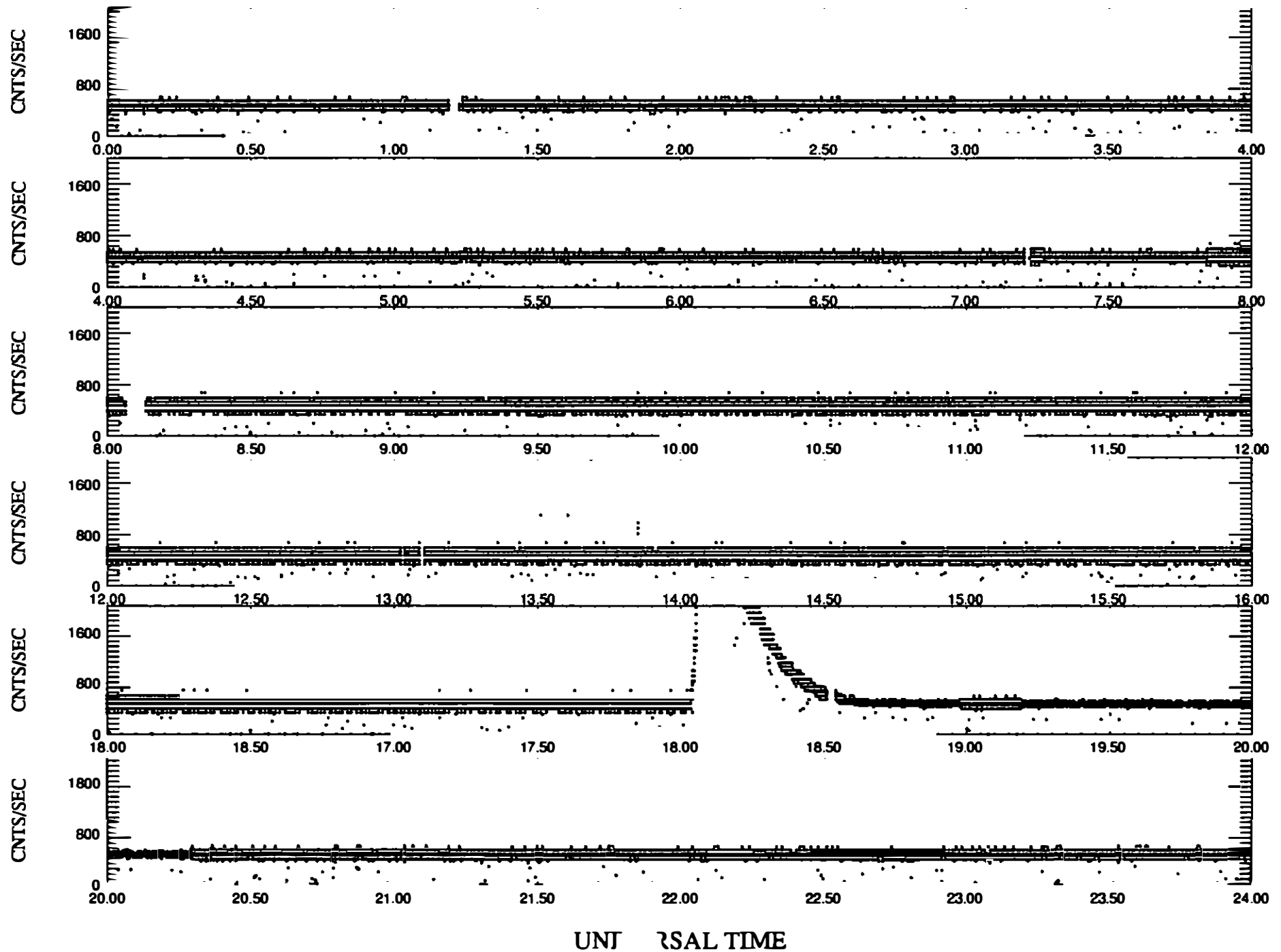


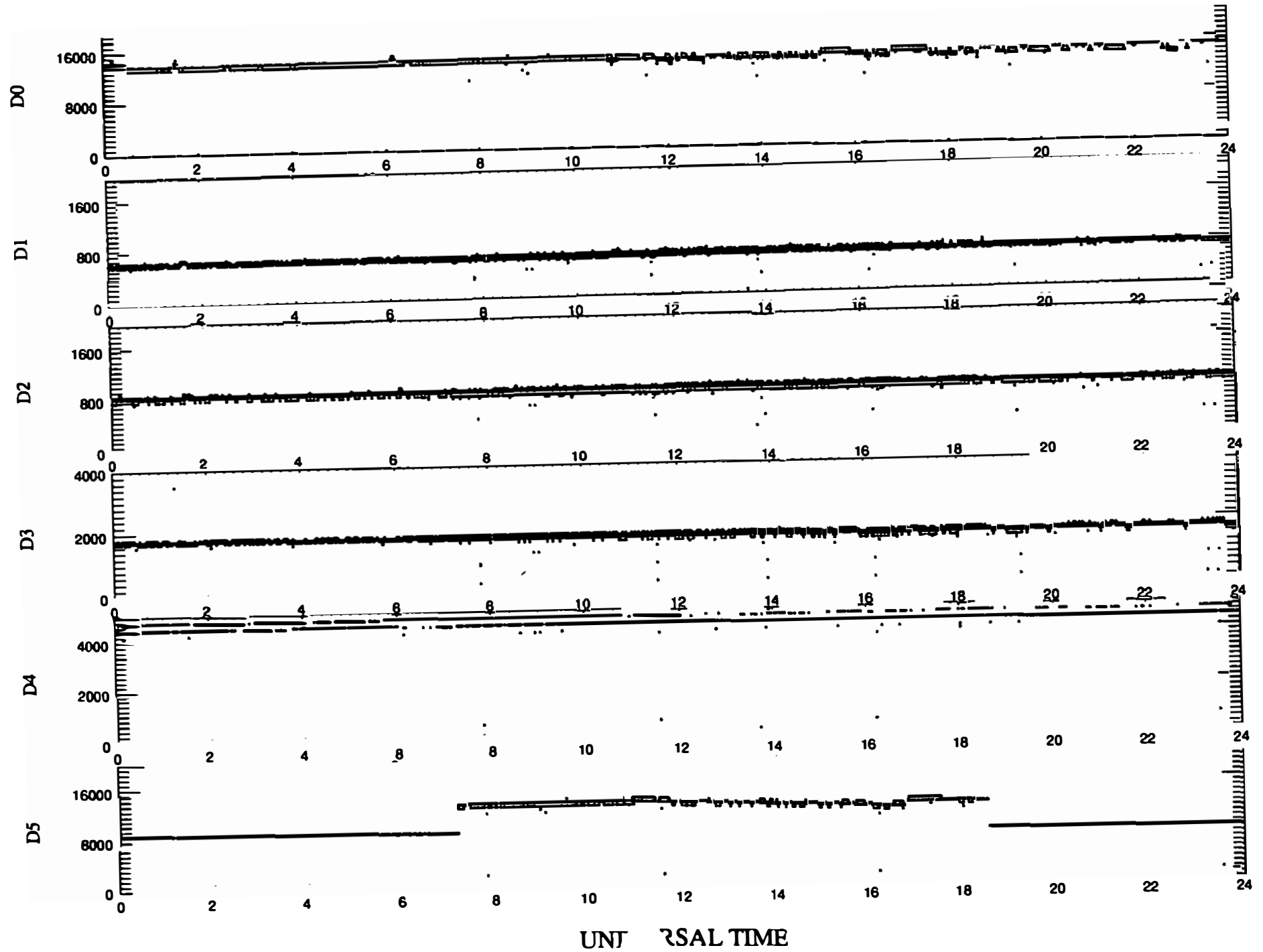
TIME, SECS

CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From PANJEVG@ssl.msfc.nasa.gov Fri Aug 16 14:02 PDT 1996
From: PANJEVG@ssl.msfc.nasa.gov
Date: Fri, 16 Aug 1996 16:02:42 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5575

BATSEARCH PROGRAM

Trigger

BATSE BURST # 5575
EVENT OF 1996 AUG 15 DAY OF YEAR=228
EVENT CROSSING TIME AT BATSE : 36027. S. OR 10:00:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 271.000 -52.000
BATSE PEAK COUNTING RATE: 23000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 8/ 96 IS:
RA= 162.741 DEC= 39.059 DIST= 5.072 AU
BATSE-ULYSSES DISTANCE = 758761217. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1635.82 SECS.
CROSSING TIME AT ULYSSES IS 37663. S. OR 10:27:42 +/- 410.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 8/ 96 IS:
RA= 104.671 DEC= 23.399 DIST= 2.192 AU
MARS-BATSE DISTANCE = 327936384. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 30.46 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 942.89 SECS.
CROSSING TIME AT MARS IS 36970. S. OR 10:16:09 +/- 110.60 SECONDS

BATSE BURST TRIGGER

NO.: 5575

TIME: TJD=0310 SECONDS=36027

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=147.5 AZIMUTH=293.5 ERROR=1.17 DEGREES

COMMENTS:

GRB LASTING ~17S. 2 MAIN EPISODES.

1ST EPISODE HAS FRED STRUCTURE. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5575	960815	10310	36027	23000	271	-52	17

Helio corr removed

Date: Oct 23 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

96	8	7	71369.324	S2	1200	2740	1000	0.25	6	10	358	Trig	5537
96	8	9	52229.443	S2	6500	10000	9500	0.06	5	40	359	Trig	
96	8	10	24974.750	S1	740	860	250	4	0.5	0.6	360	Search	RI
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI	KA
96	8	15	36027.501	S1	470	1250	370	3.2	0.5	12	362	Trig	5575
96	8	21	13940.971	S1	520	720	360	6	2	11	368	Search	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search	RI
96	8	31	37775.300	S2	420	500	210	0.1	64	98	370	RI	5591
96	9	2	58097.128	S1	1750	3200	1060	3	0.05	1.5	371	Trig	KA
96	9	6	81590.312	S1	240	470	170	13	2	16	372	RI	5593
96	9	8	25028.442	S2	10000	7000	2500	<0.04	0.04	0.3	373	Trig	
96	9	12	50250.066	S2	420	600	320	<0.03	3	15	378	RI	5601
96	9	12	67621.610	S1	2000	380		3.4	270	0.5	379	Search	NO
96	9	13	83120.562	S1		320	70	1.7	2	14	380	RI	5604
96	9	16	14182.498	S1	250	420	60	3.4	300	12	381	Search	RI
96	9	21	54231.399	S1	1160	2900	830	2.5	0.5	40	382	Trig	5609
96	9	22	18368.358	S1	800	1100	280	14	2	70	383	Search	RI
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5612
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5613
96	10	1	75186.385	S2	1600	3800	1800	0.08	1	12	386	Trig	5621
96	10	2	75235.745	S1	1100	1600	250	8	11	6	387	Search	RI
96	10	9	33560.099	S2	1020	1360	300	0.03	6	13	393	NO	5628
96	10	9	49065.989	S1	600	900	320	23	3	24	394	RI	5629
96	10	15	42782.014	S2	160	290	100	0.7	3	80	395	Search	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search	RI
96	10	26	05631.940	S1	6000	3000		1	0.04	0.04	401	Trig	
96	10	26	22311.118	S2	400	560	300	0.3	2	3	402	RI	5640
96	10	29	24354.087	S1	4000	3700	1250	25	7	300	404	Trig	
96	10	29	68710.804	S1	570	620	120	>20	2	11	405	Search	NO
96	11	1	58062.904	S2	1020	1450	600	<0.04	1	18	406	Trig	
96	11	2	41907.802	S2	350	610	230	0.08	5	90	407	Search	RI

TLC

-- T. L. Cline ----- LHEAVX::CLINE

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 AUG 15, 1996 10:24

15/10/97

DECLINATION

-56° —

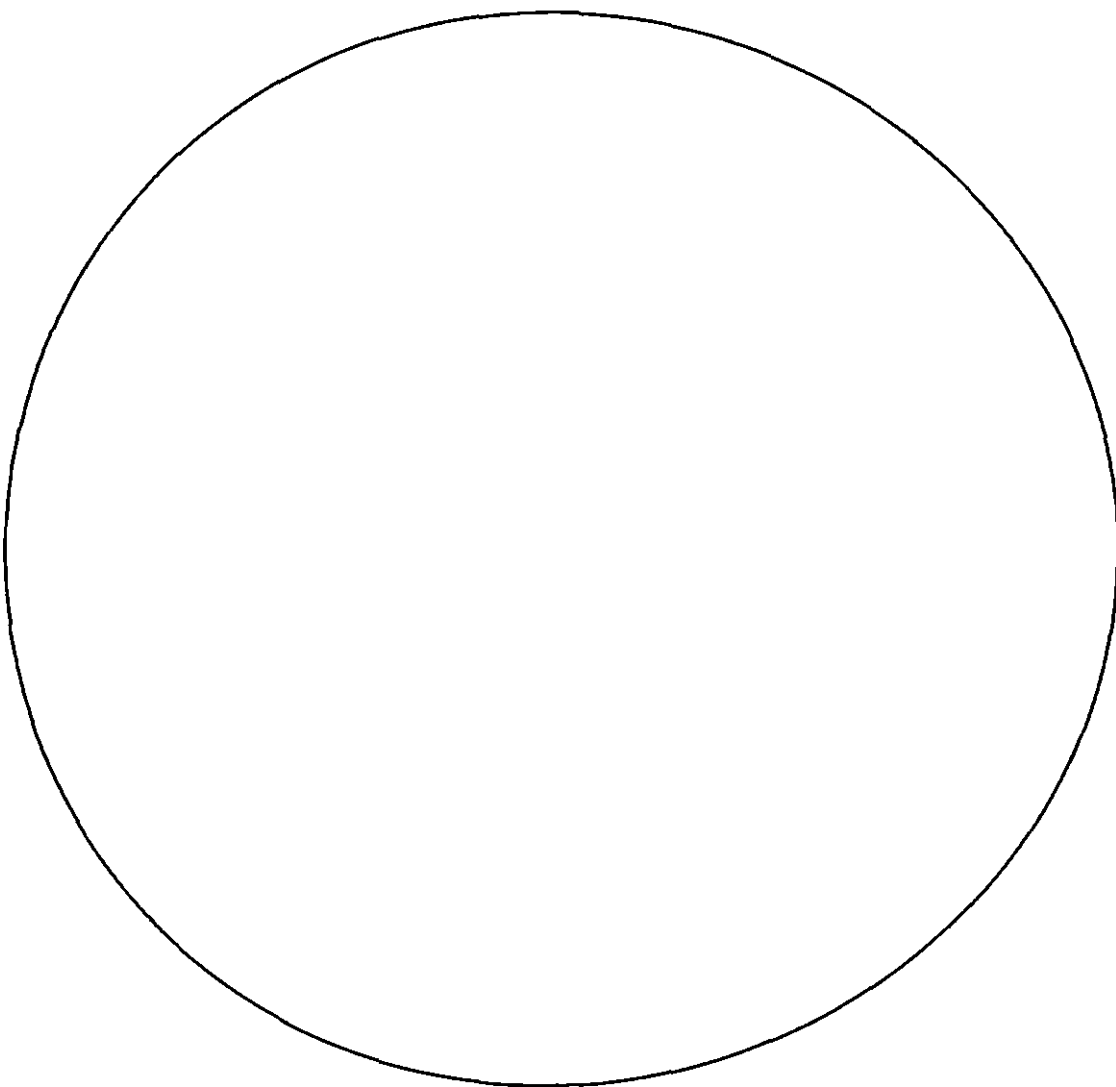
BATSE 5575

-57° —

-58° —

-59° —

-60°
17:20



RIGHT ASCENSION

17:30

17:40

17:50

ULYSSES

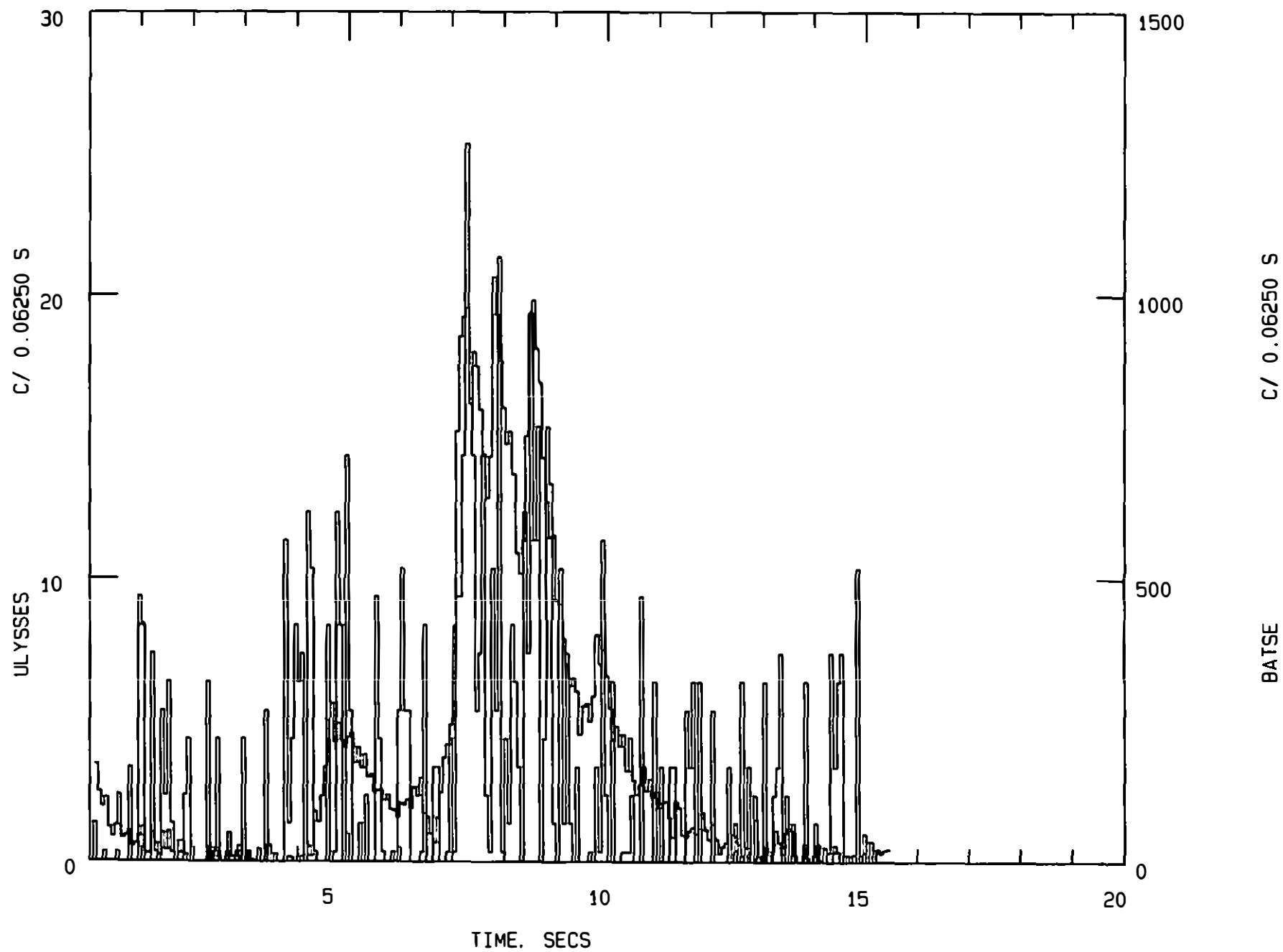
-BATSE

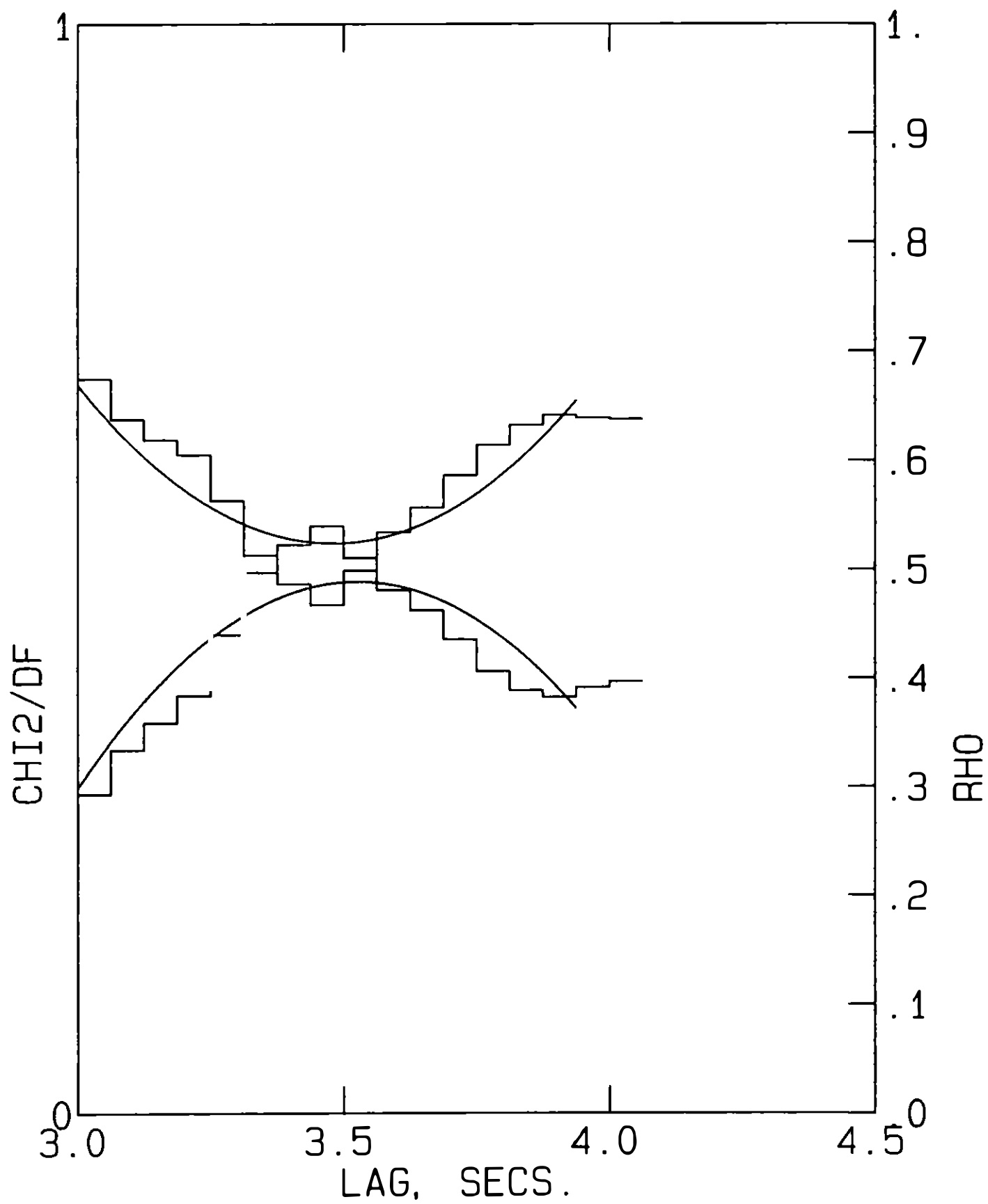
CORRELATION

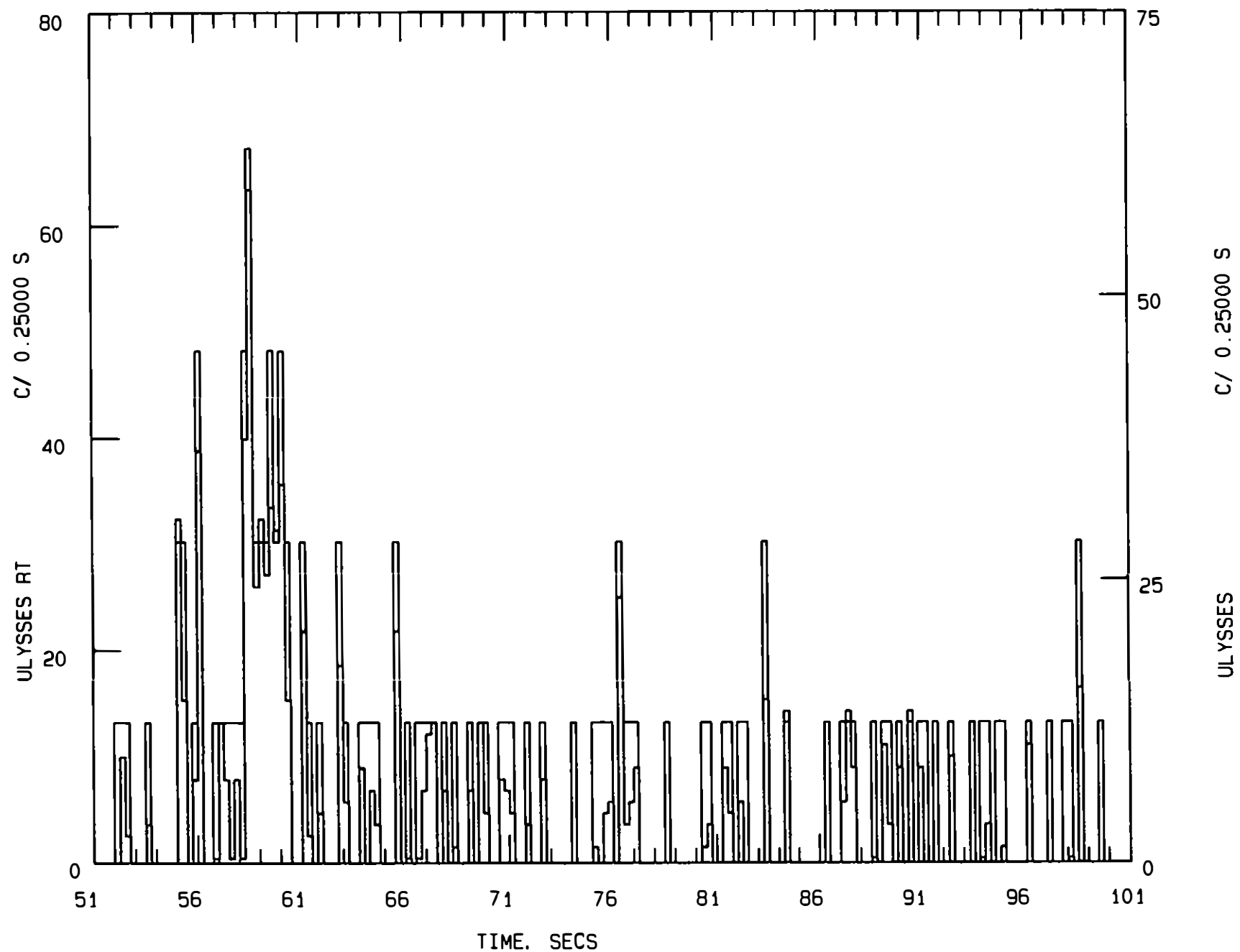
15/08/96

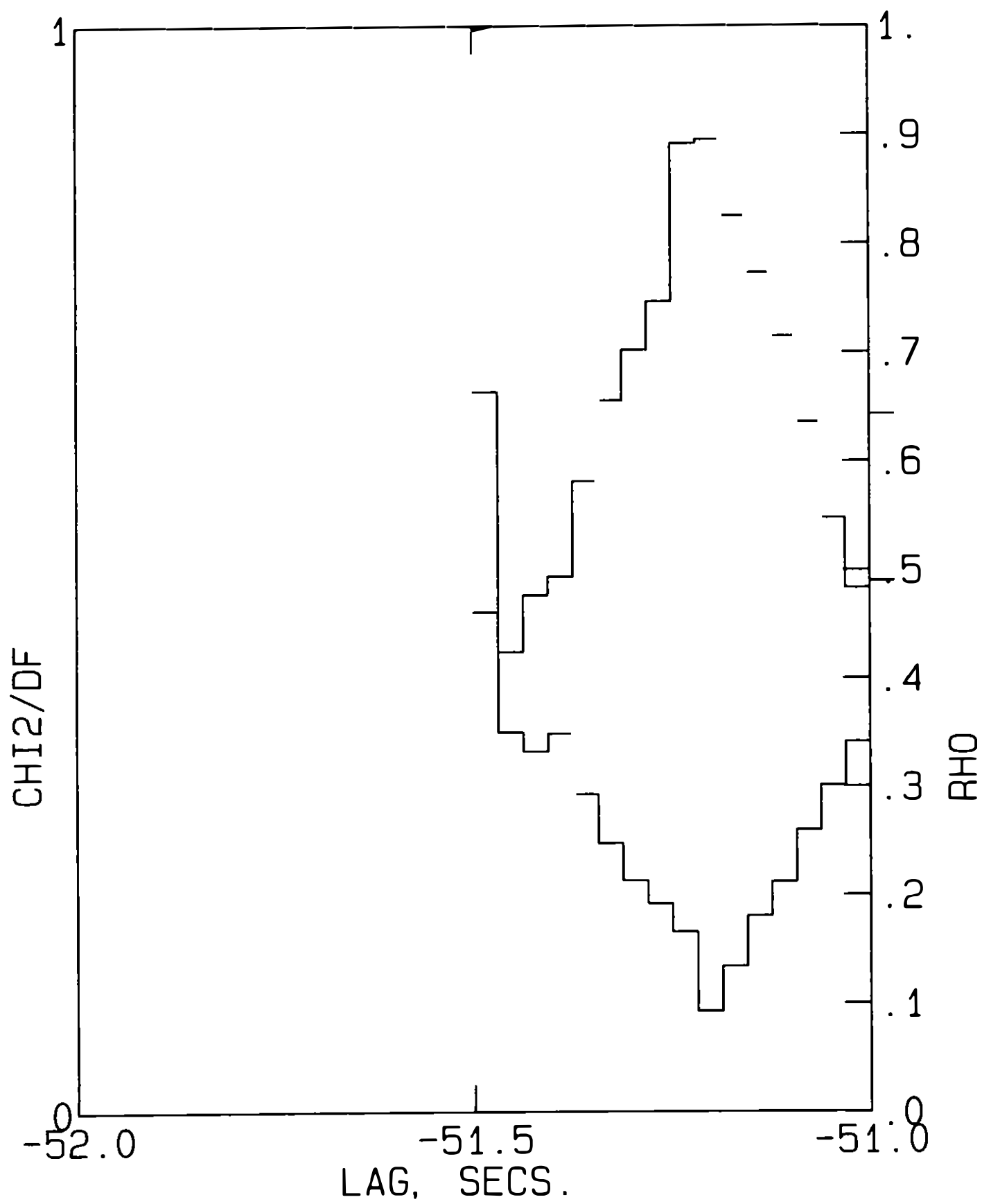
37441.652

15/10/97





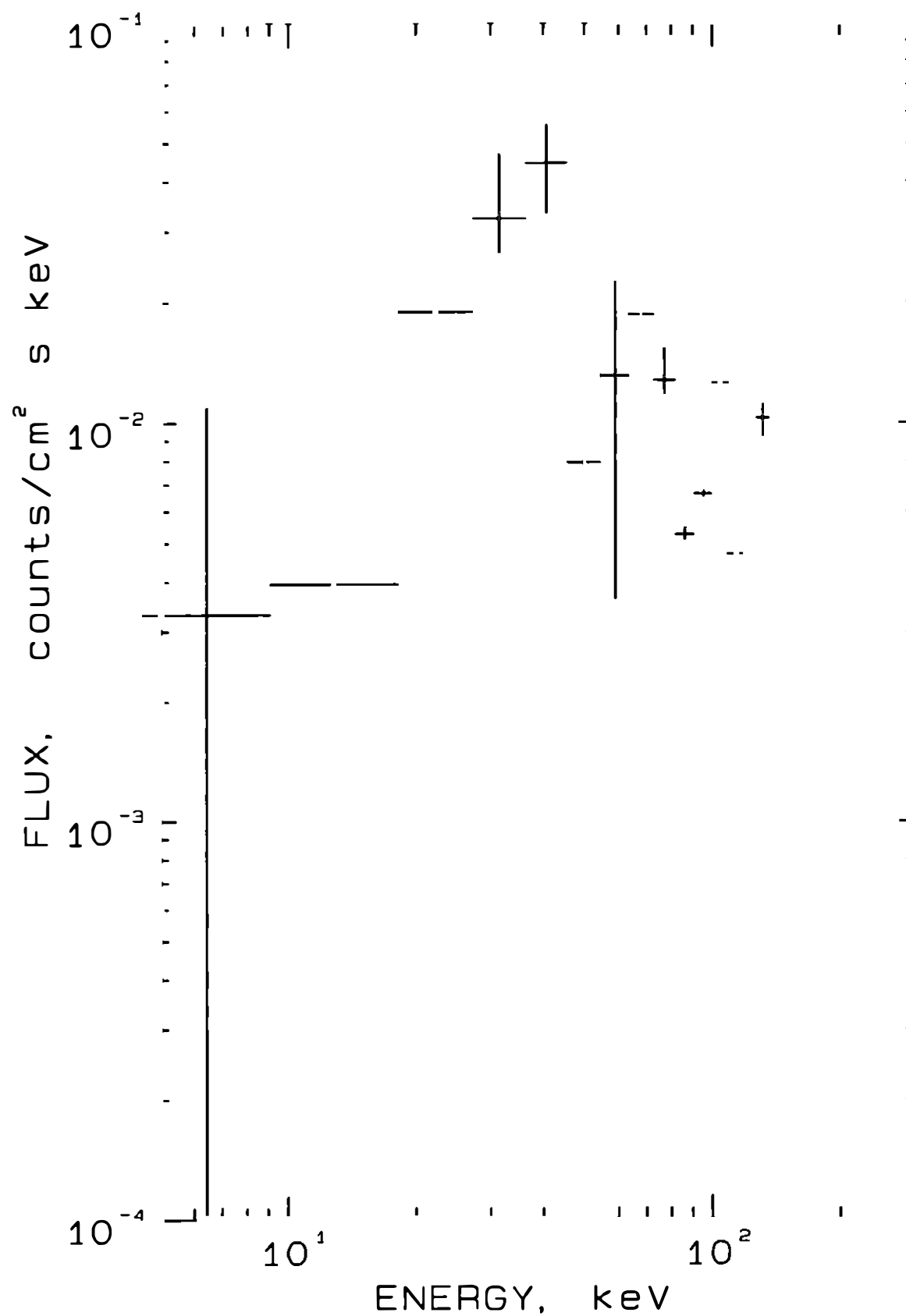




ULYSSES 15/08/96 37441.639

15/10/97

SPECTRUM INTEGRATED OVER 20.4 SECONDS, INTERVALS 2 TO 20



ULYSSES 15/08/96 37441.639 BURST SPECTRAL COUNT RATES

4- 18 keV

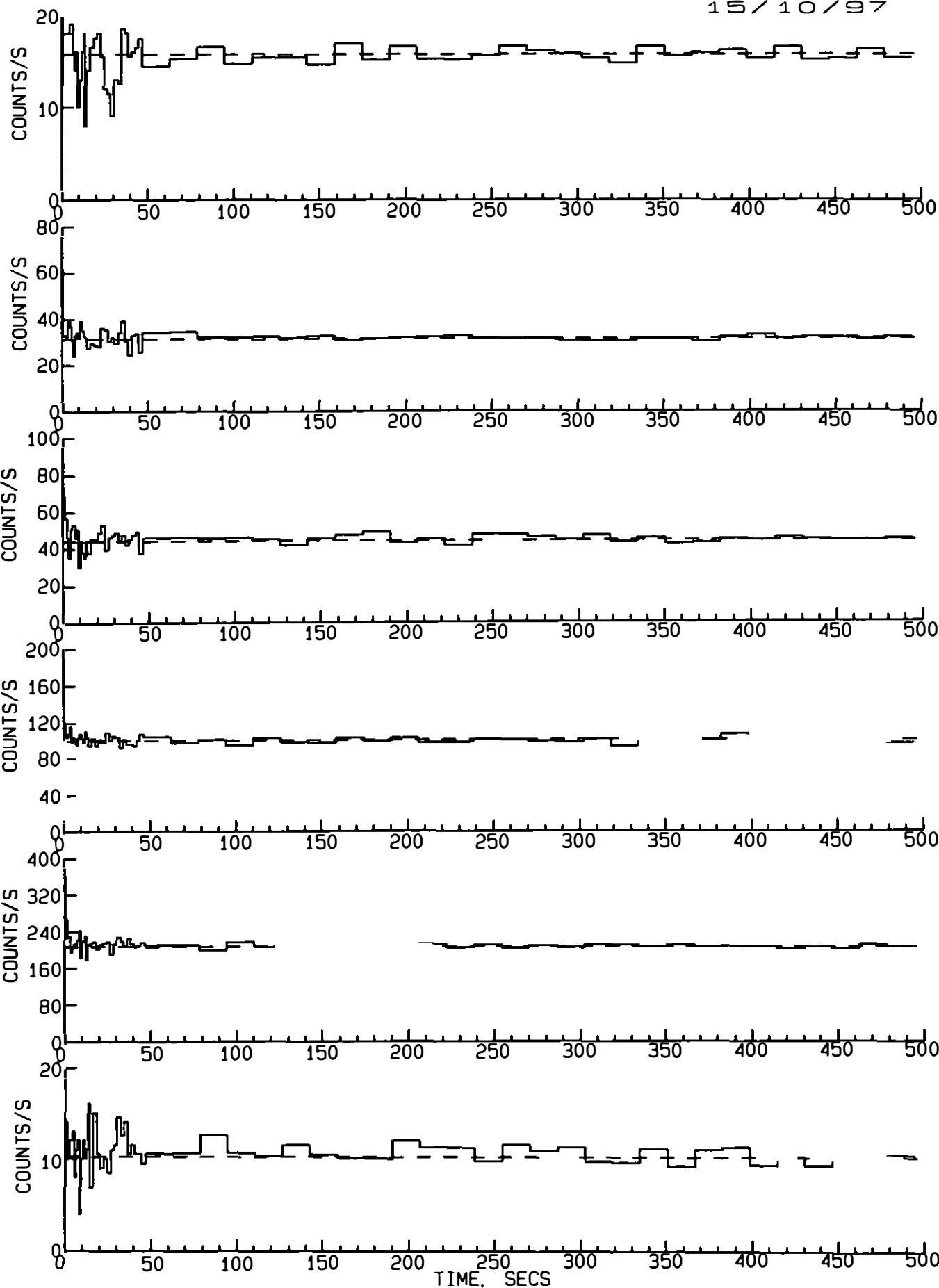
18- 45 keV

45- 72 keV

72- 99 keV

99-127 keV

127-145 keV



15/10/97

ULYSSES

15/08/96

Ttrig=37441.652

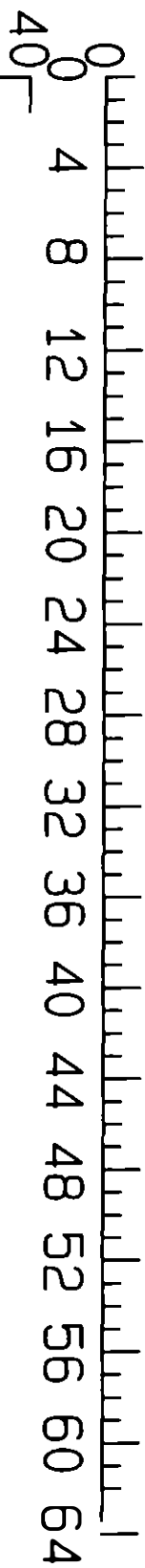
0- 0 keV

60-

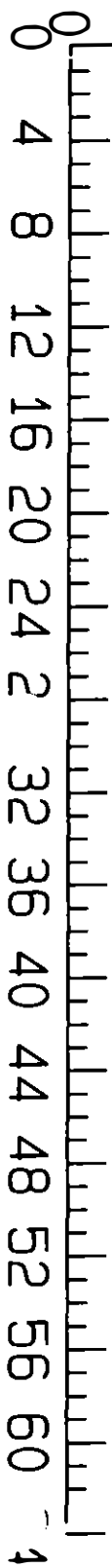
COUNTS/0.062 S



15/10/96



COUNTS/0.031 S



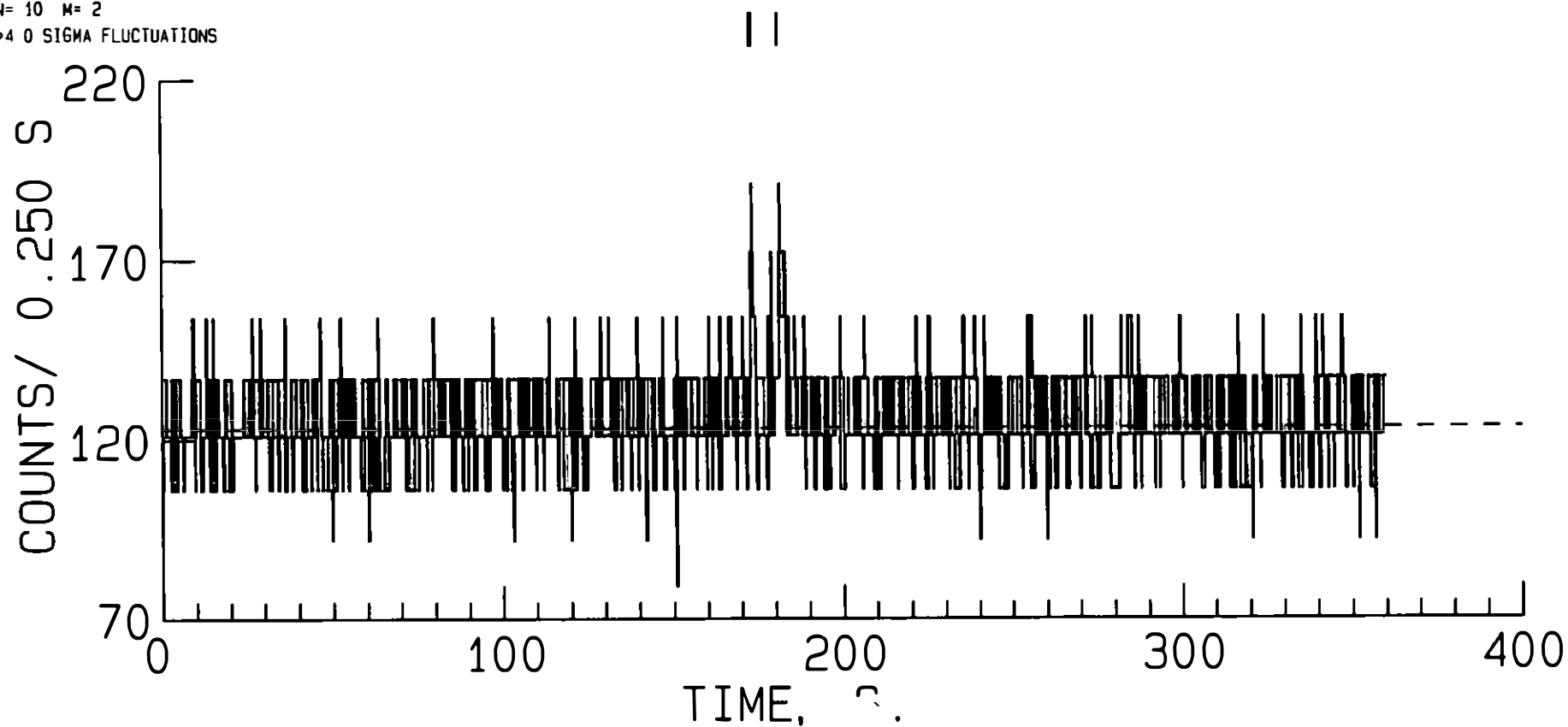
ULYSSES RT

15/10/97

15/ 8/96 37260.021 s

21- 145 keV

N= 10 M= 2
>4 0 SIGMA FLUCTUATIONS



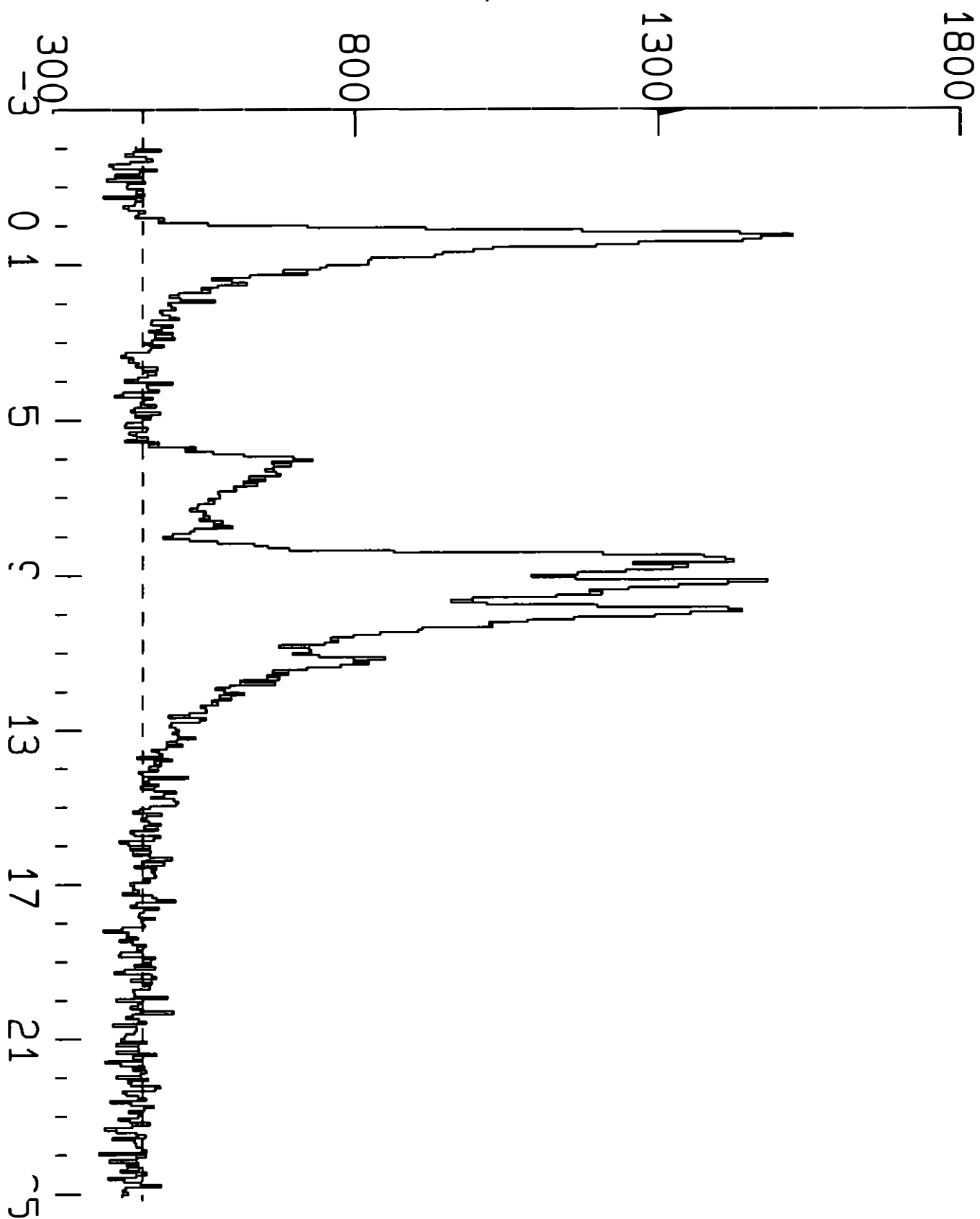
BATSE

15/08/96

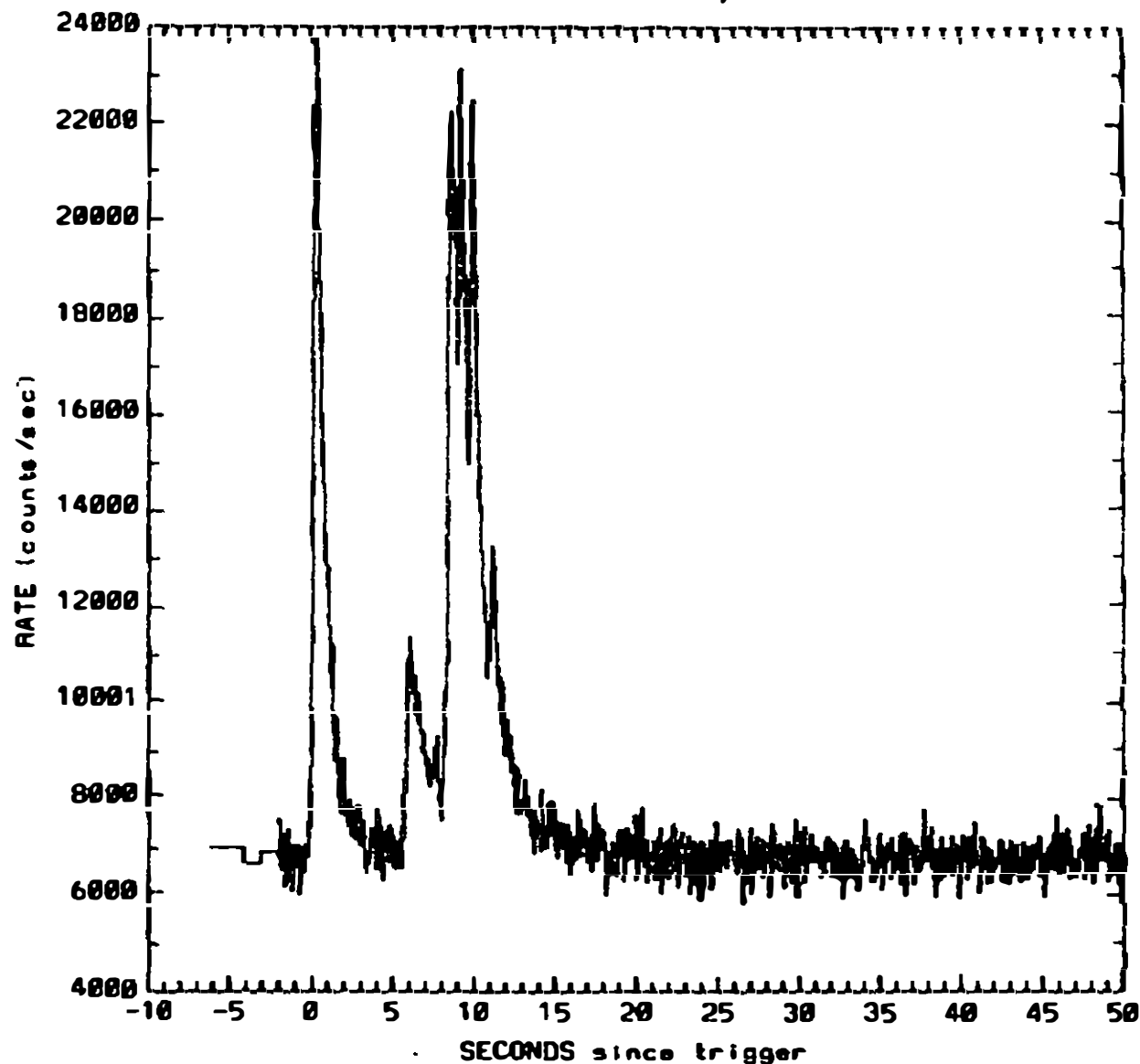
36027.082

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5575



28-AUG-1996 18:23:38

Created by WOPS 80
(Burst Display)
Version 12.25

Trigger # = 5575

Trigger Time:
18318 / 36827.082

Burst Data Type:
DISCSC

Deadline
Corrected: N

Background Data
Type: PREB = DISCLA

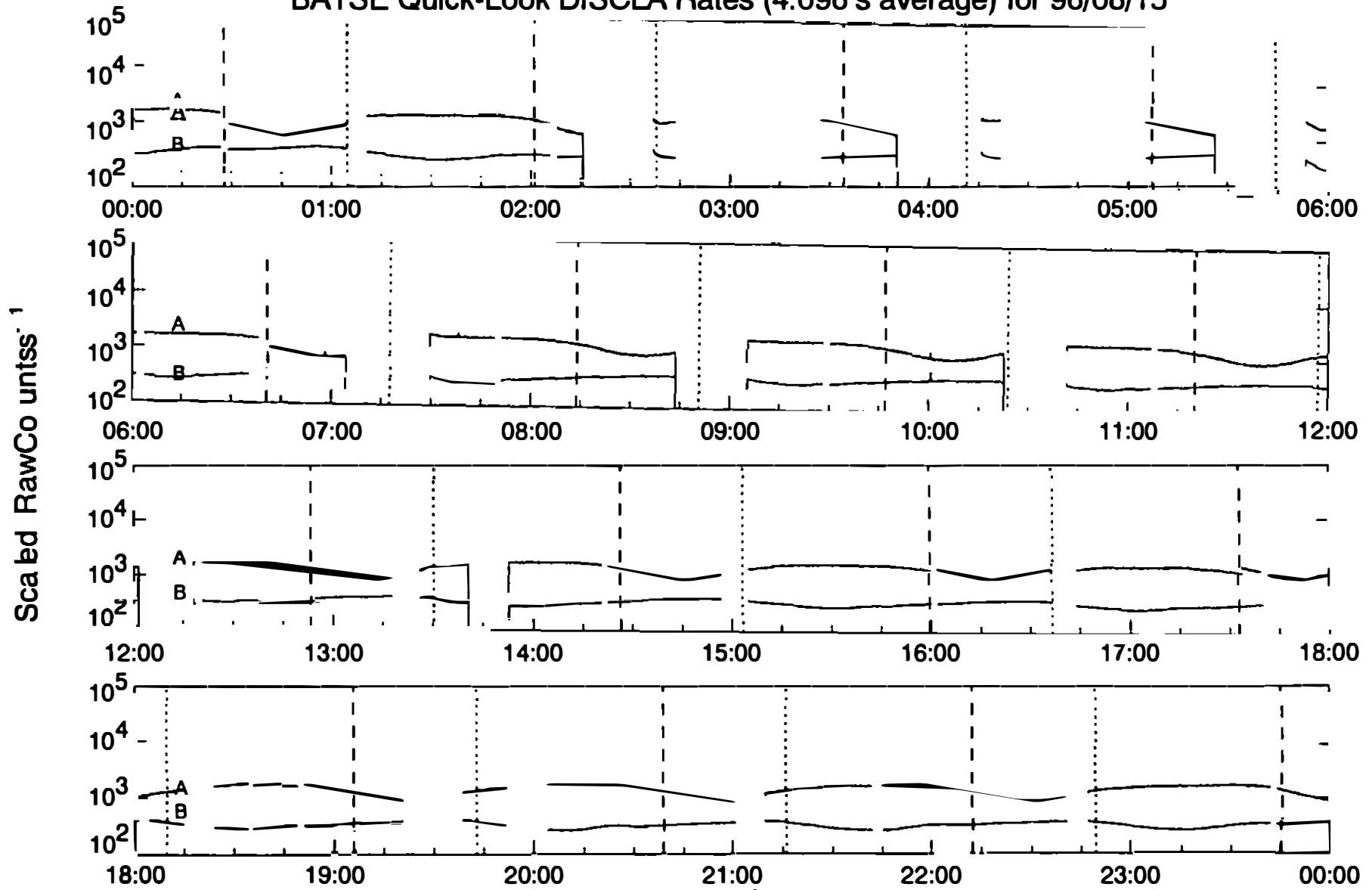
Minimum Integ. Time:
0.064 seconds

Detectors [7..8]:
7---3---

Discriminators:
(1, 2)

Quality Mask:
80ISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/15



Current Time: 96/08/17, 1003 EDT

A: Channel 0 Most Sunward LAD

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

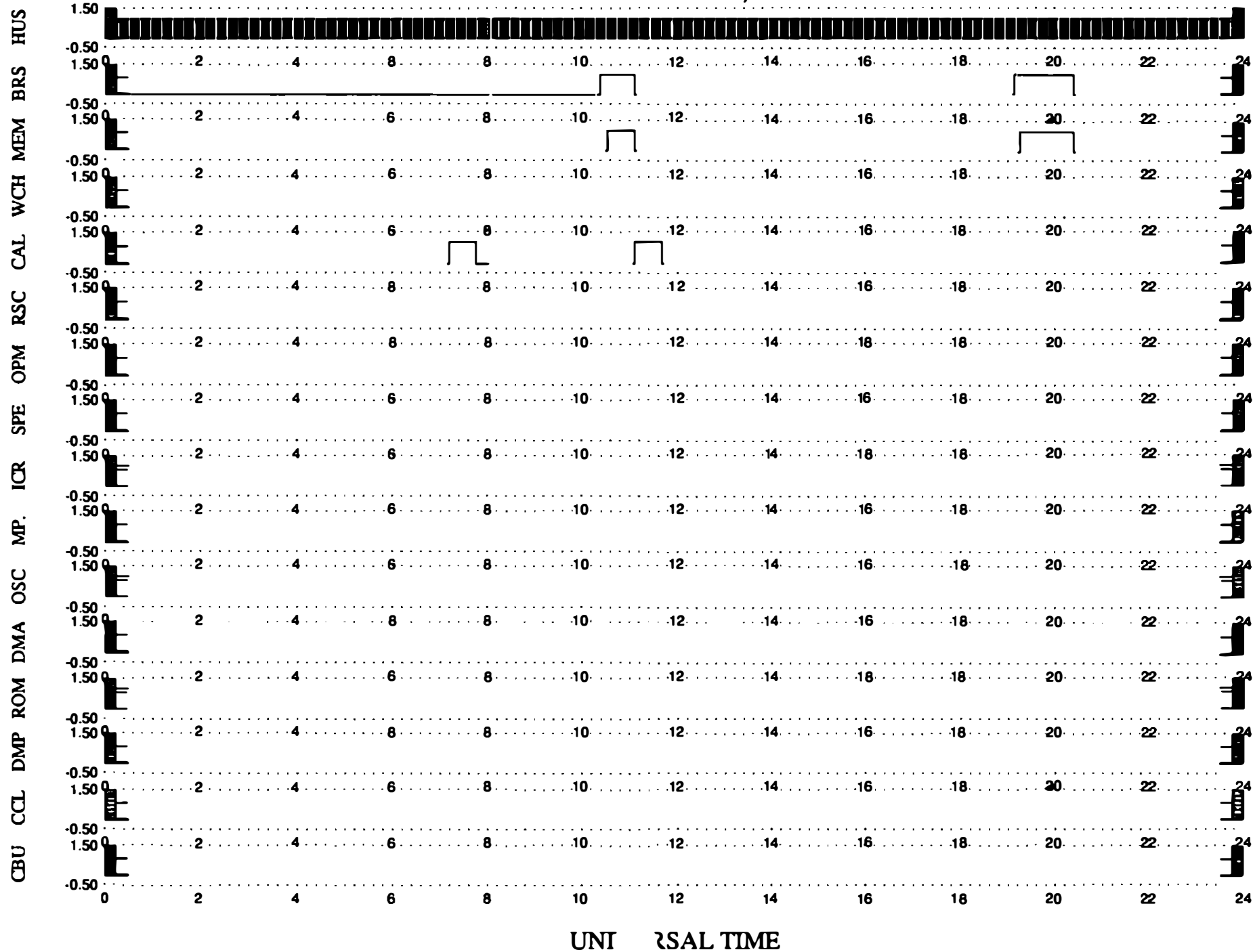
Dotted line: Day entry

Dashed line: Night entry

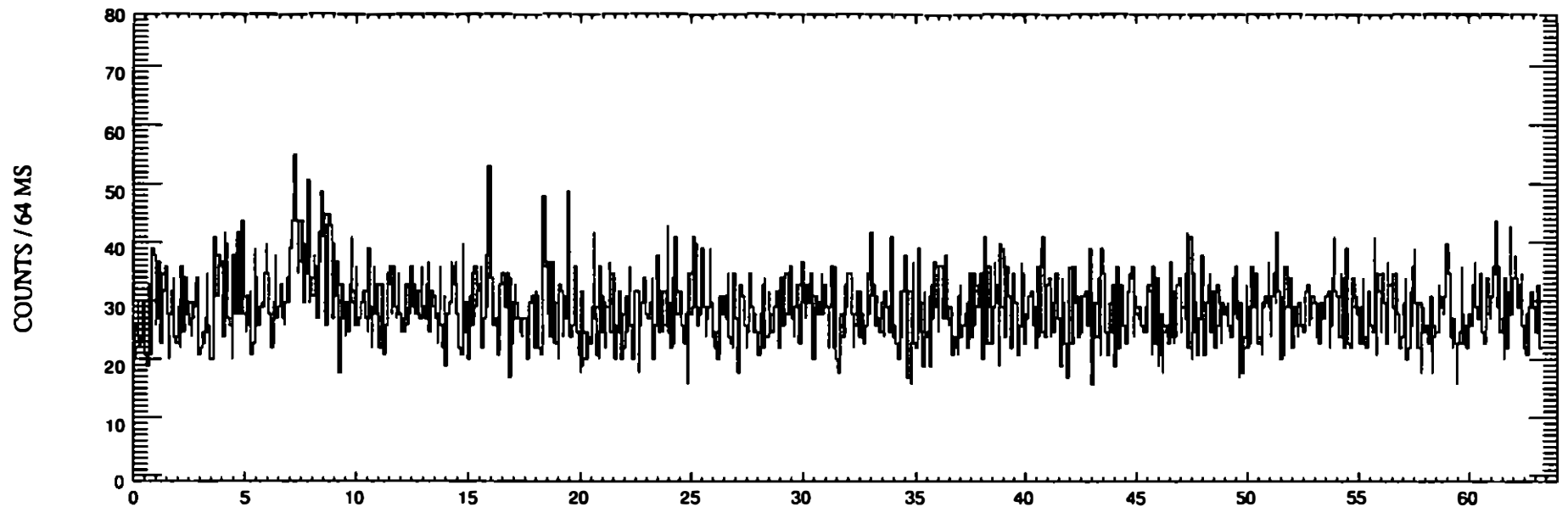
* Solar Burst Trigger

+ Solar Flare

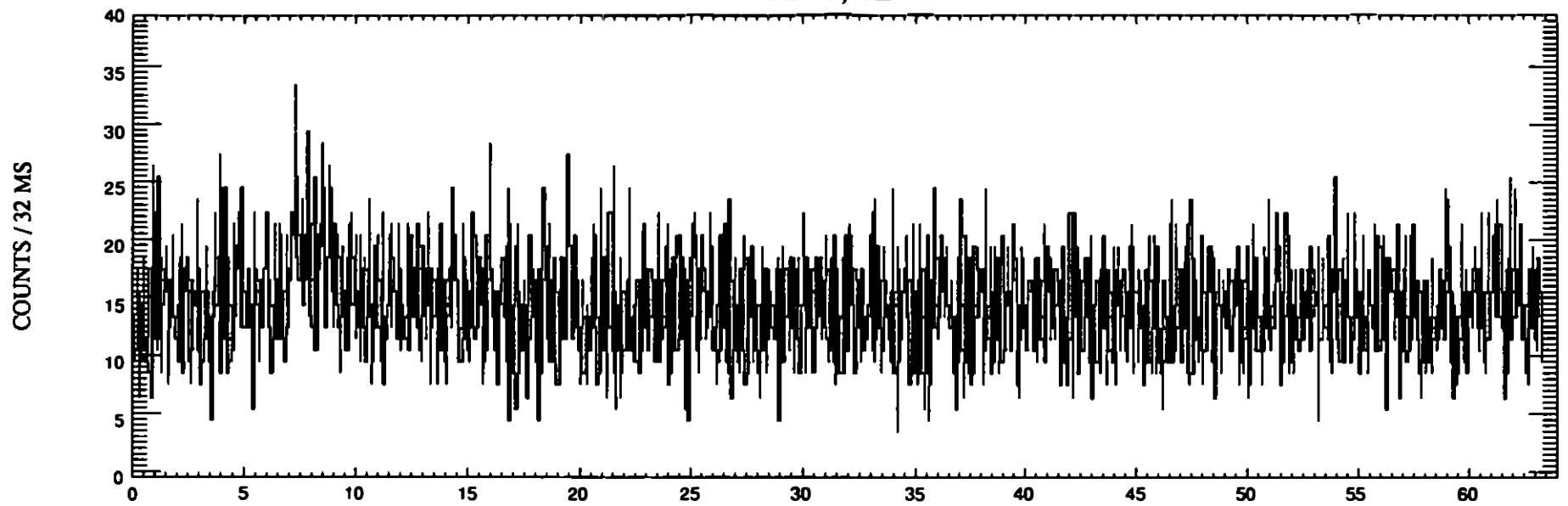
BURST NUMBER 14, 15



Burst Counter 14 at UT=10.400455279880 h=37441.639 s 10:24:01.639

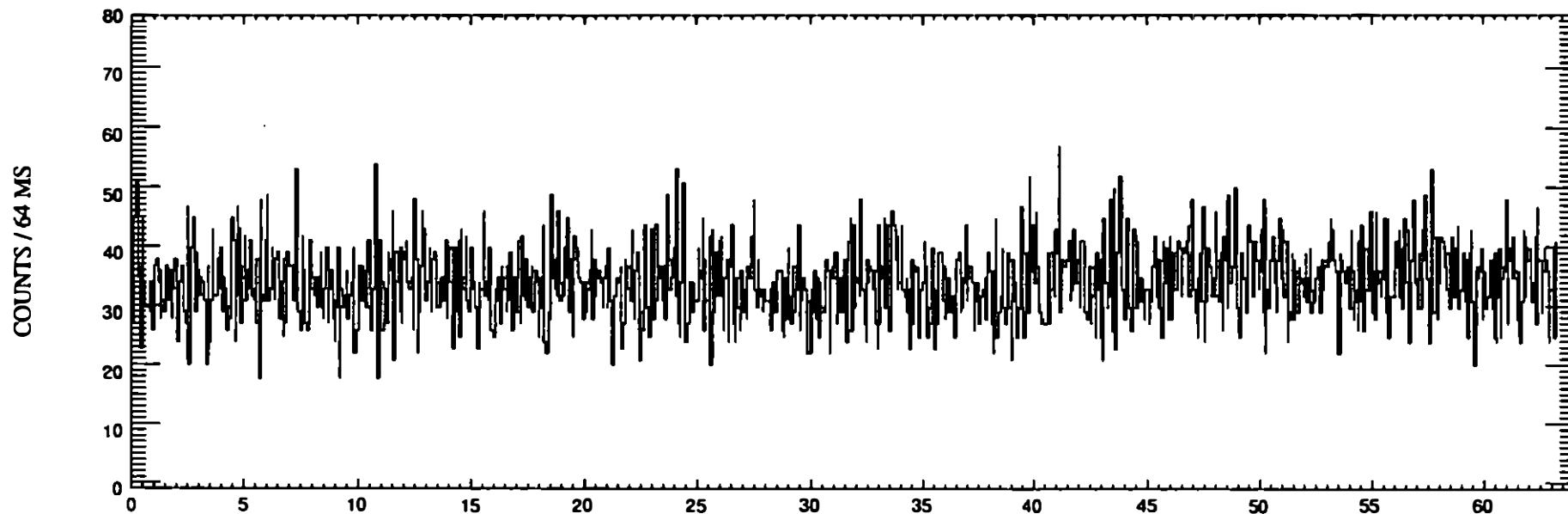


TIME, SECS

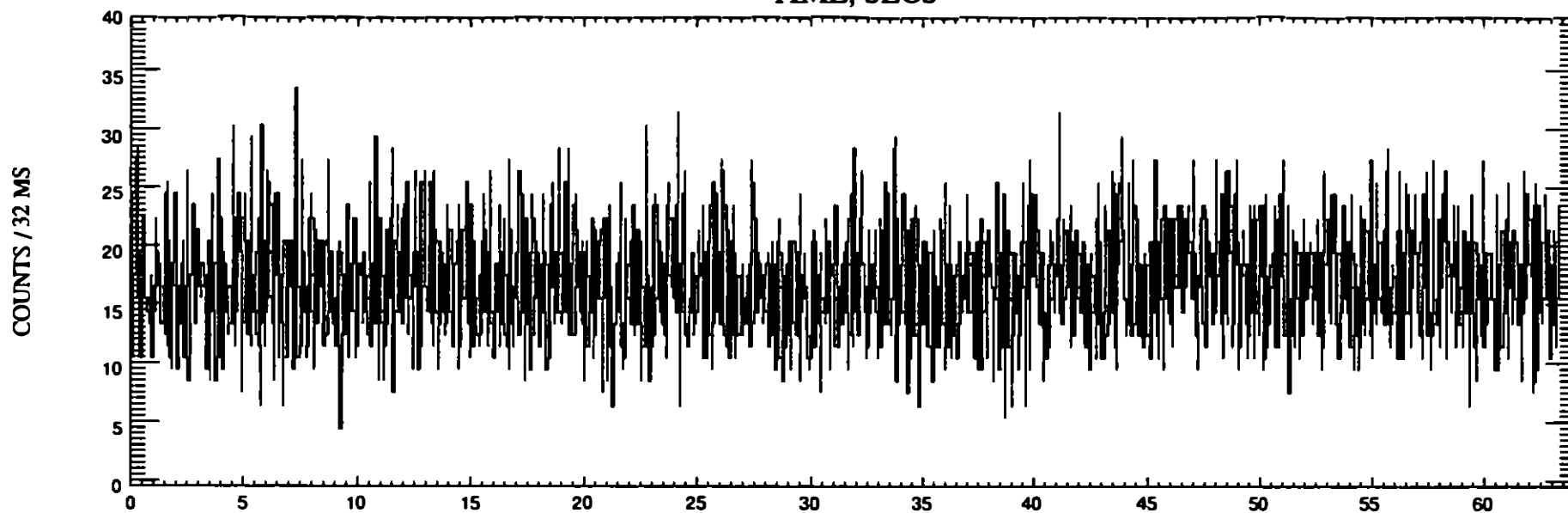


TIME, SECS

Burst Counter 15 at UT=19.129350543552 h=68865.662 s 19:07:45.662

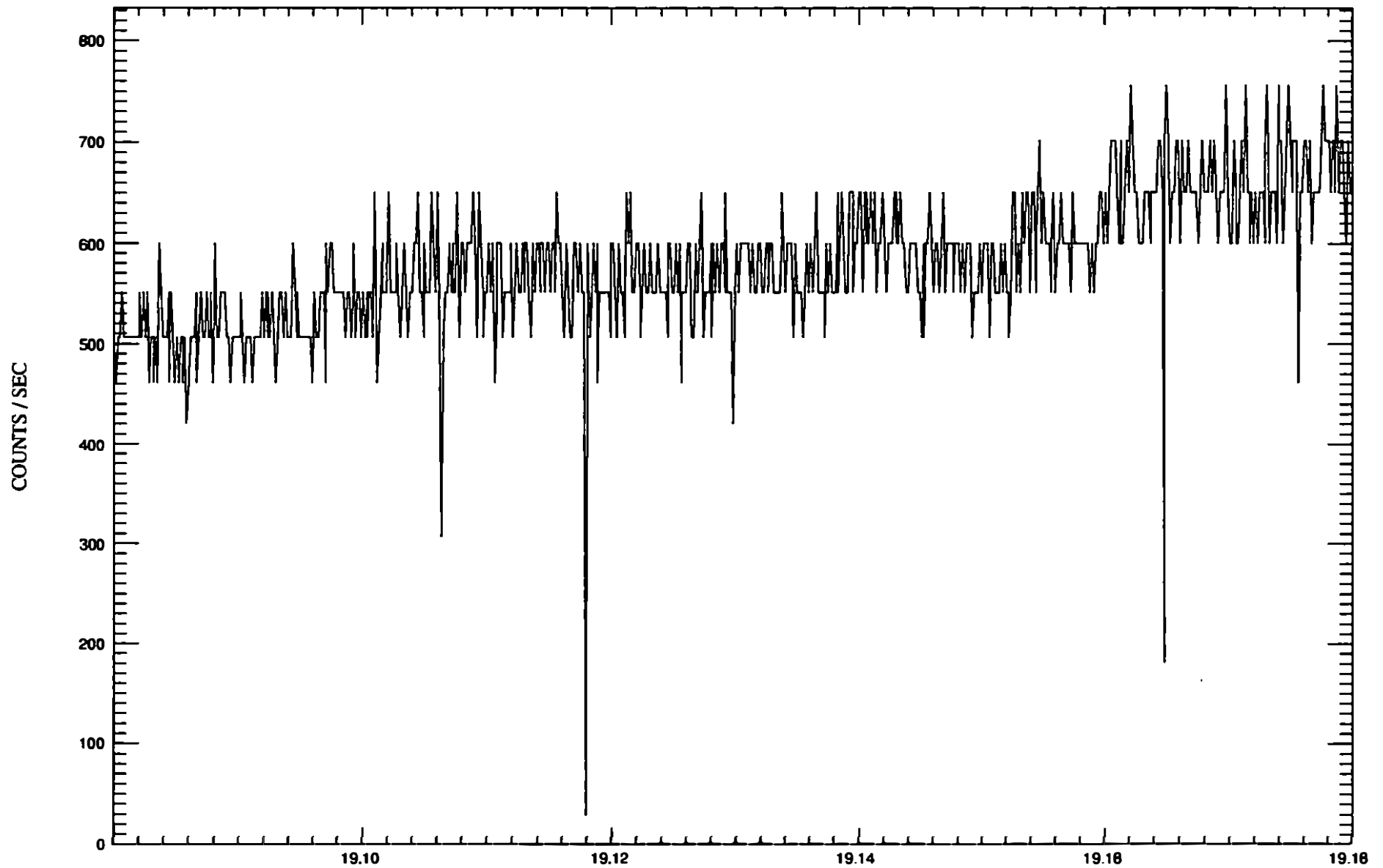


TIME, SECS

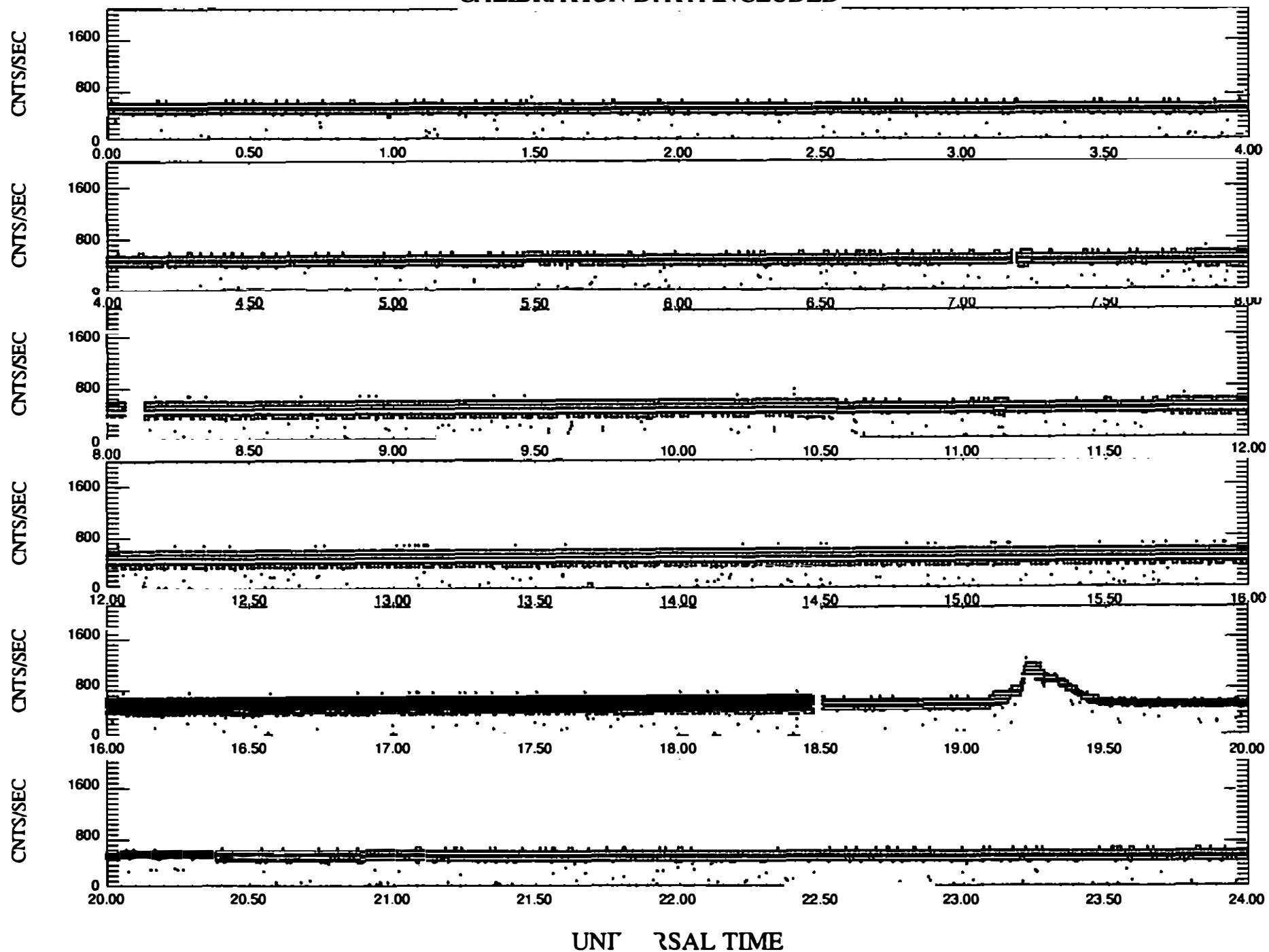


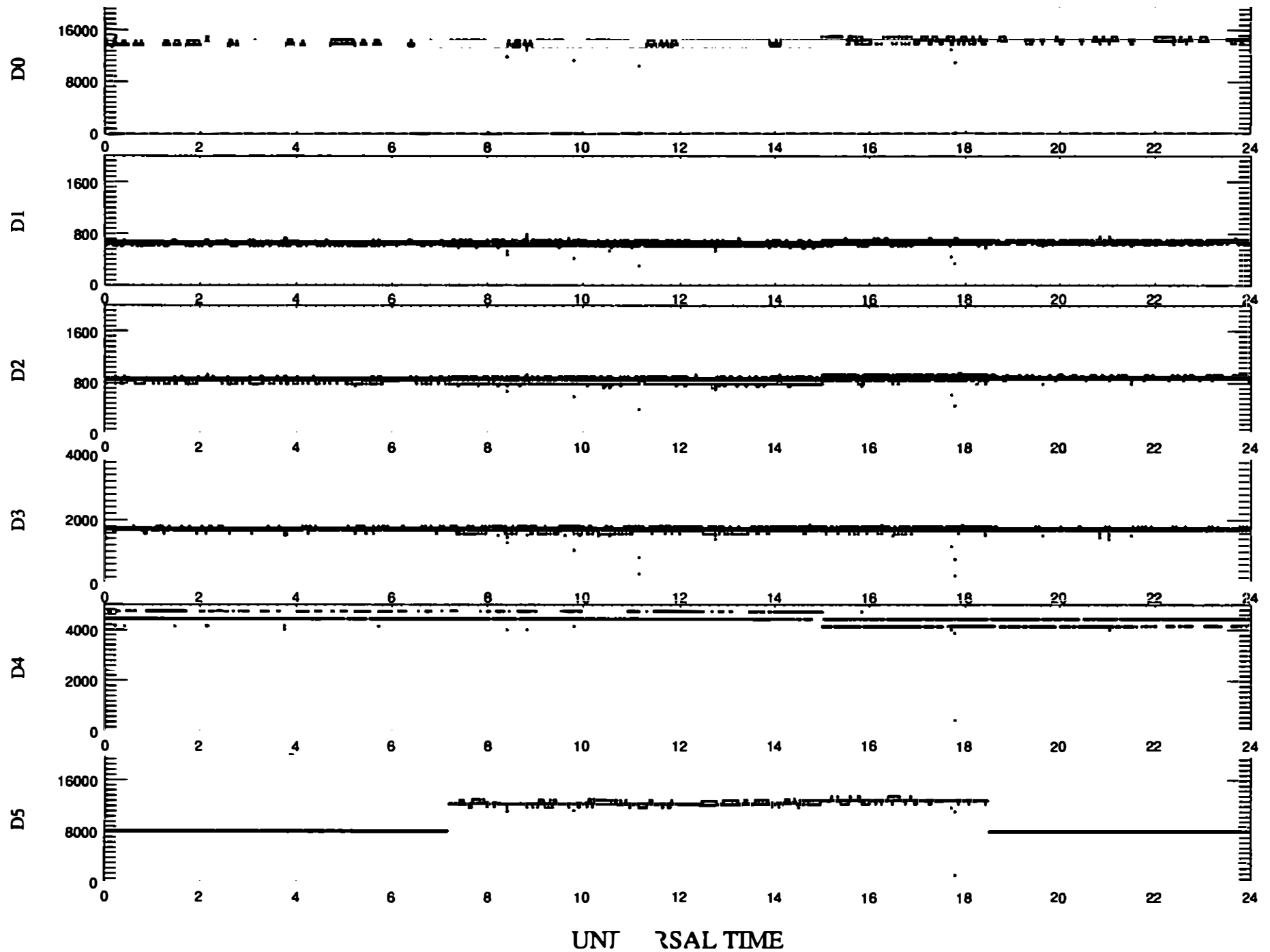
TIME, SECS

CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From HAGEDON@fender.msfc.nasa.gov Mon Aug 19 11:02 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Mon, 19 Aug 1996 13:02:26 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5576

BATSEARCH PROGRAM

Data Gap!

N/O

BATSE BURST # 5576
EVENT OF 1996 AUG 16 DAY OF YEAR=229
EVENT CROSSING TIME AT BATSE : 8167. S. OR 02:16:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 188.000 57.000
BATSE PEAK COUNTING RATE: 2700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 8/ 96 IS:
RA= 162.879 DEC= 38.957 DIST= 5.076 AU
BATSE-ULYSSES DISTANCE = 759346020. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=155.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2306.88 SECS.
CROSSING TIME AT ULYSSES IS 5860. S. OR 01:37:40 +/- 196.55 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 8/ 96 IS:
RA= 105.381 DEC= 23.344 DIST= 2.188 AU
MARS-BATSE DISTANCE = 327331200. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -432.98 SECS.
CROSSING TIME AT MARS IS 7734. S. OR 02:08:54 +/- 167.45 SECONDS

BATSE BURST TRIGGER

NO.: 5576

TIME: TJD=0311 SECONDS=08167

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=77.9 AZIMUTH=80.3 ERROR=8.5 DEGREES

COMMENTS:

BURST. WEAK SINGLE SPIKE WITH SUBSTRUCTURE. DUR.~0.3 SEC.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5576	960816	10311	08167	2700	188	+57	.3

From WOODSP@ssl.msfc.nasa.gov Tue Jul 9 11:36 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Tue, 9 Jul 1996 13:36:12 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5534

BATSEARCH PROGRAM

RT

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:

GRB LASTING 12 SEC. SINGLE PULSE WITH FRED STRUCTURE. VISIBLE ABOVE
300 KEV.

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

BATSE BURST# 5534

ULYSSES RT

20 / 12 / 96

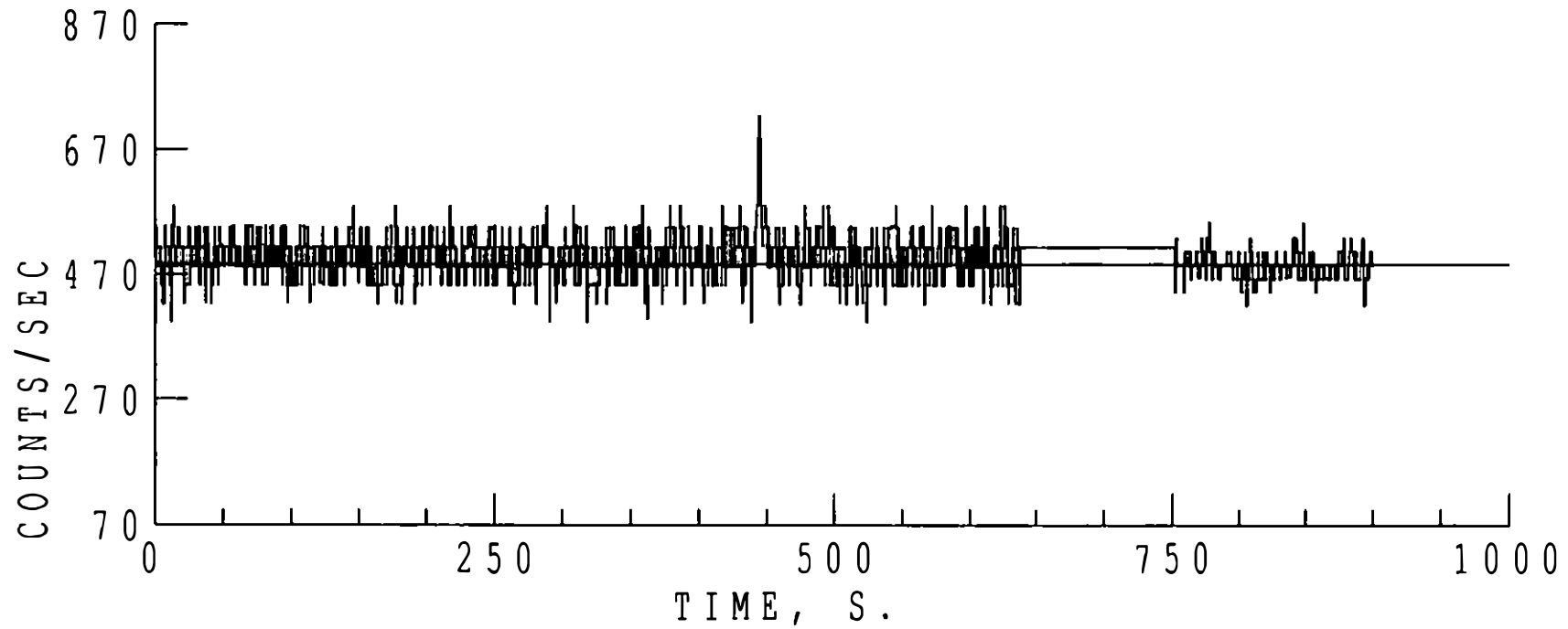
8 / 7 / 96 73260.070 s

INTERVALS REGROUPED BY 2

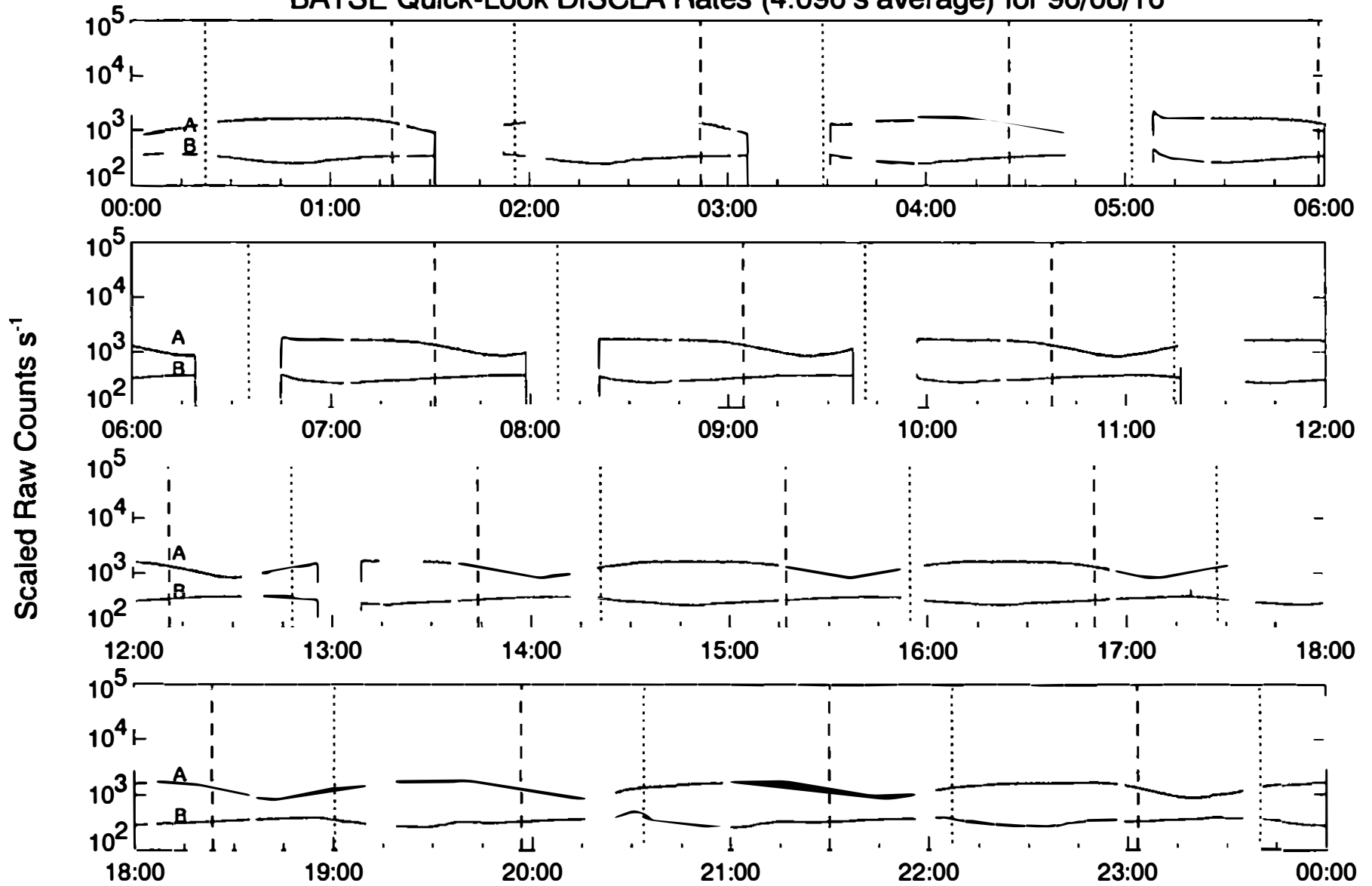
0 - 0 keV

g= 10 m=10
>4.0 SIGMA FLUCTUATIONS

g= 10 m= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/16



Current Time: 96/08/18, 1003 EDT

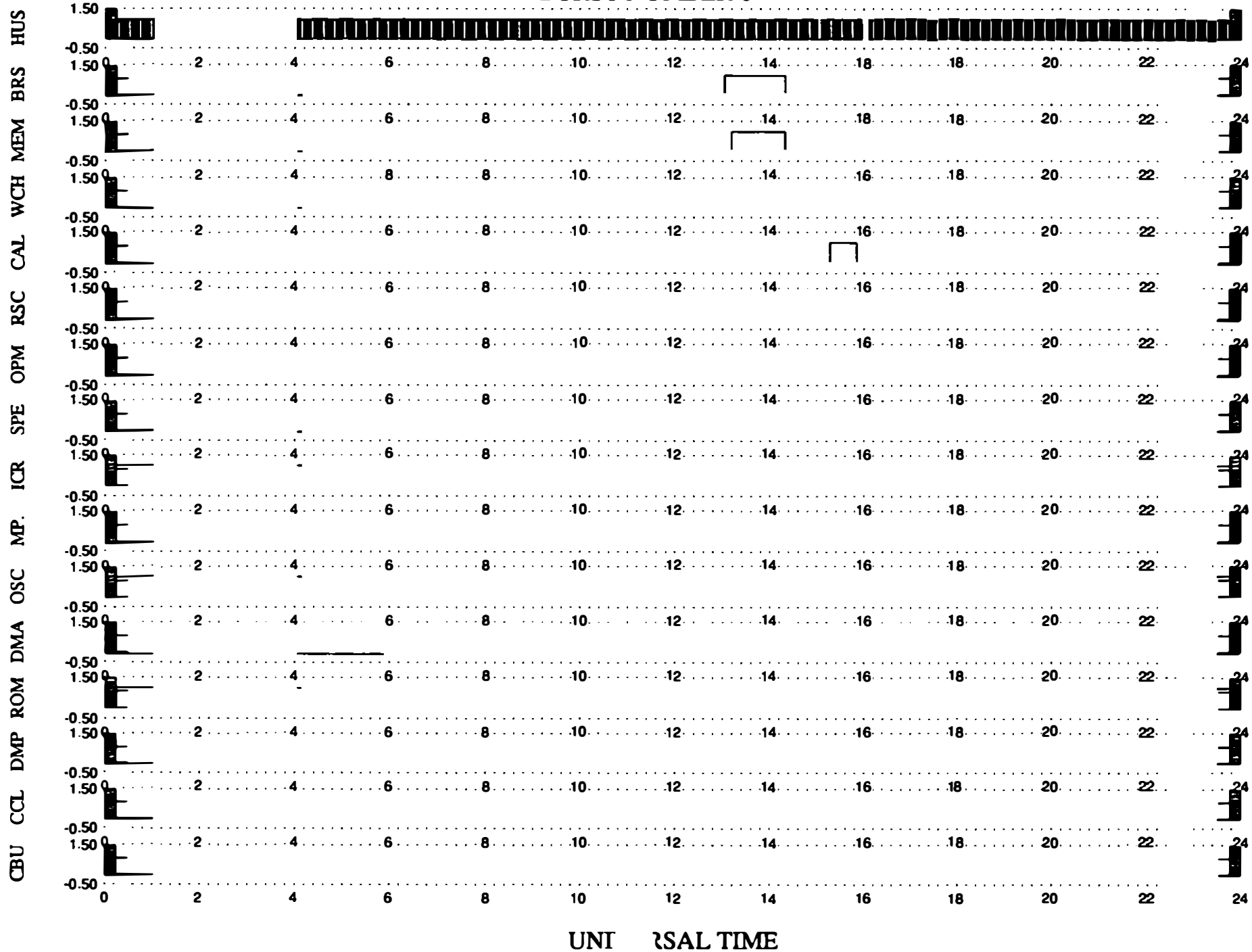
A: Channel 0 Most Sunward LAD

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

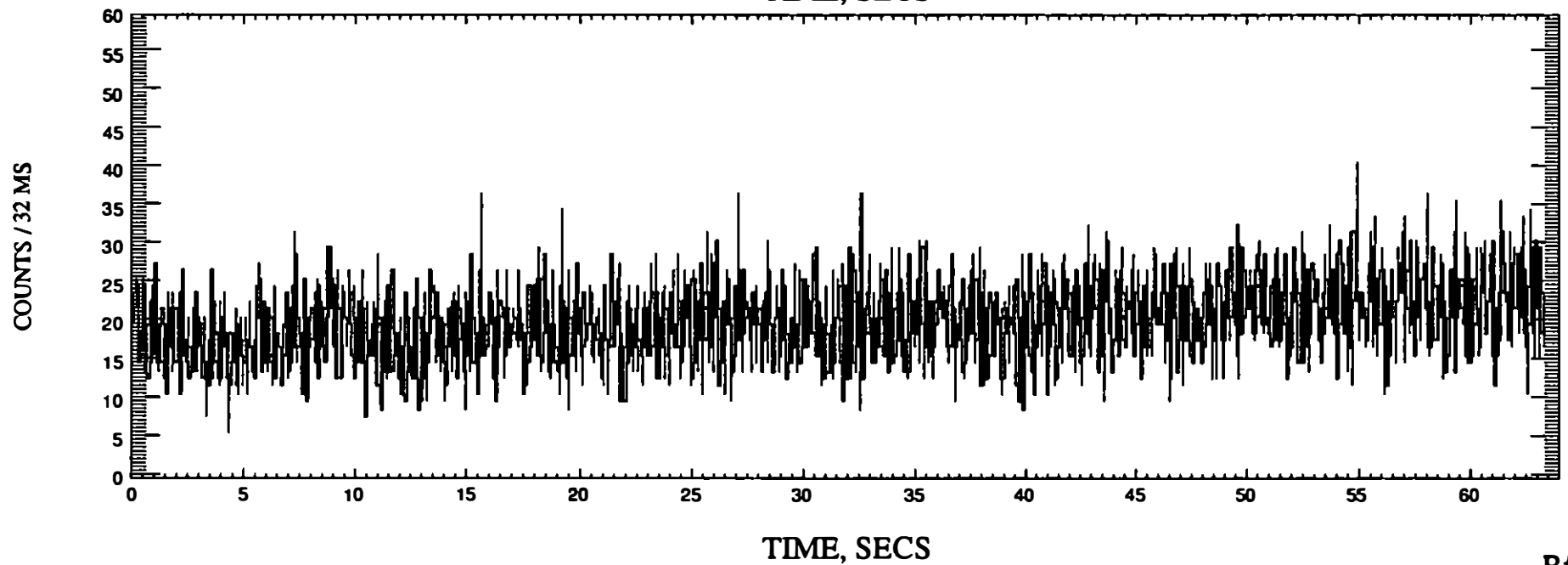
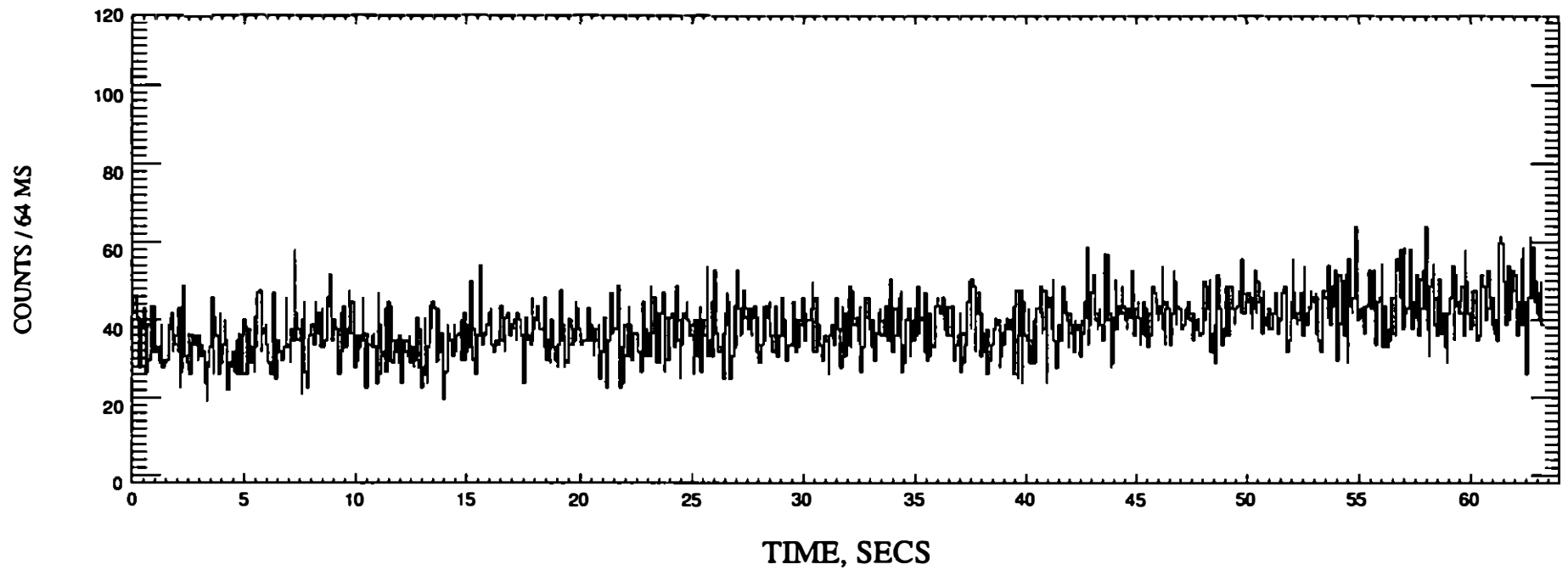
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

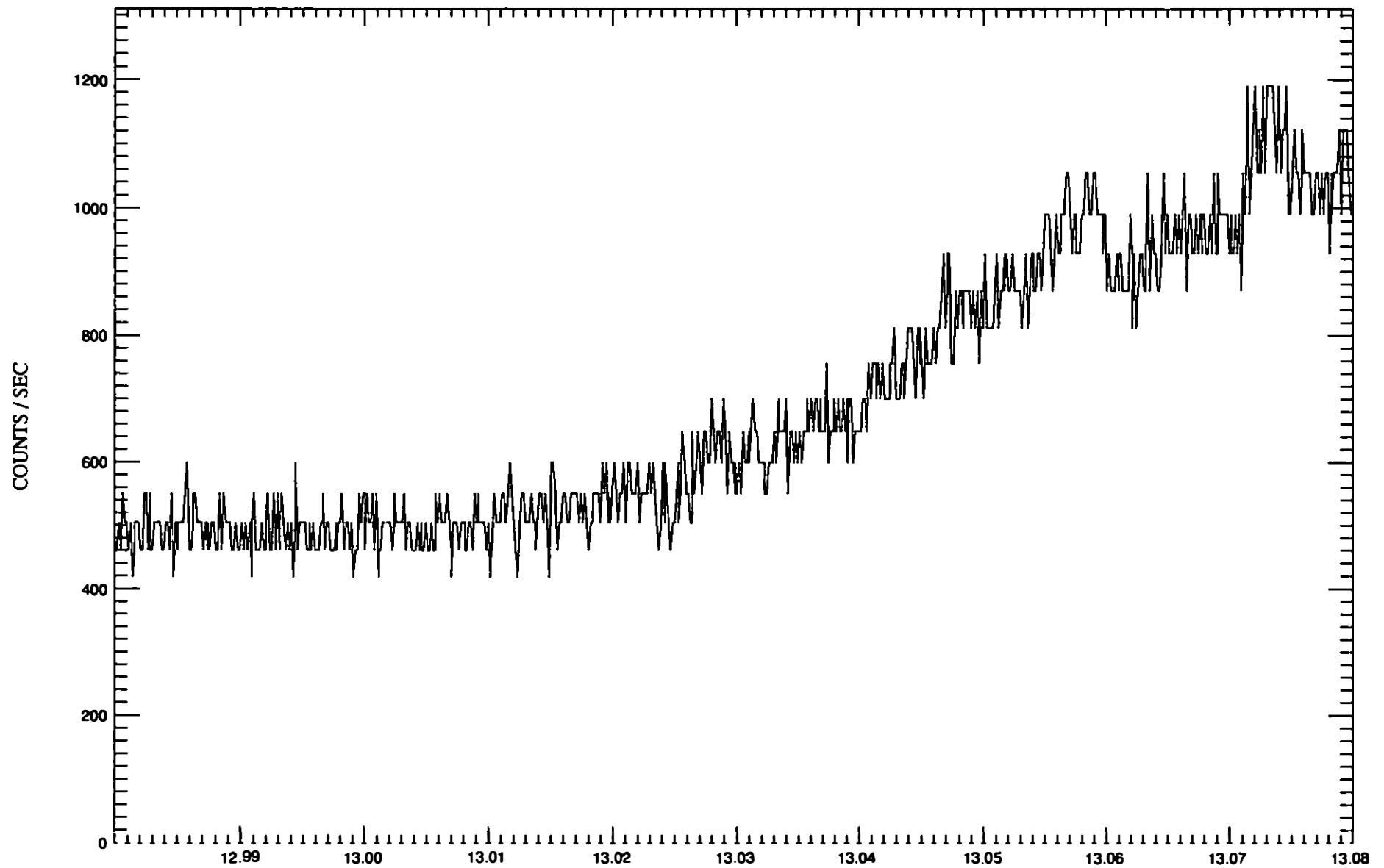
BURST NUMBER 0



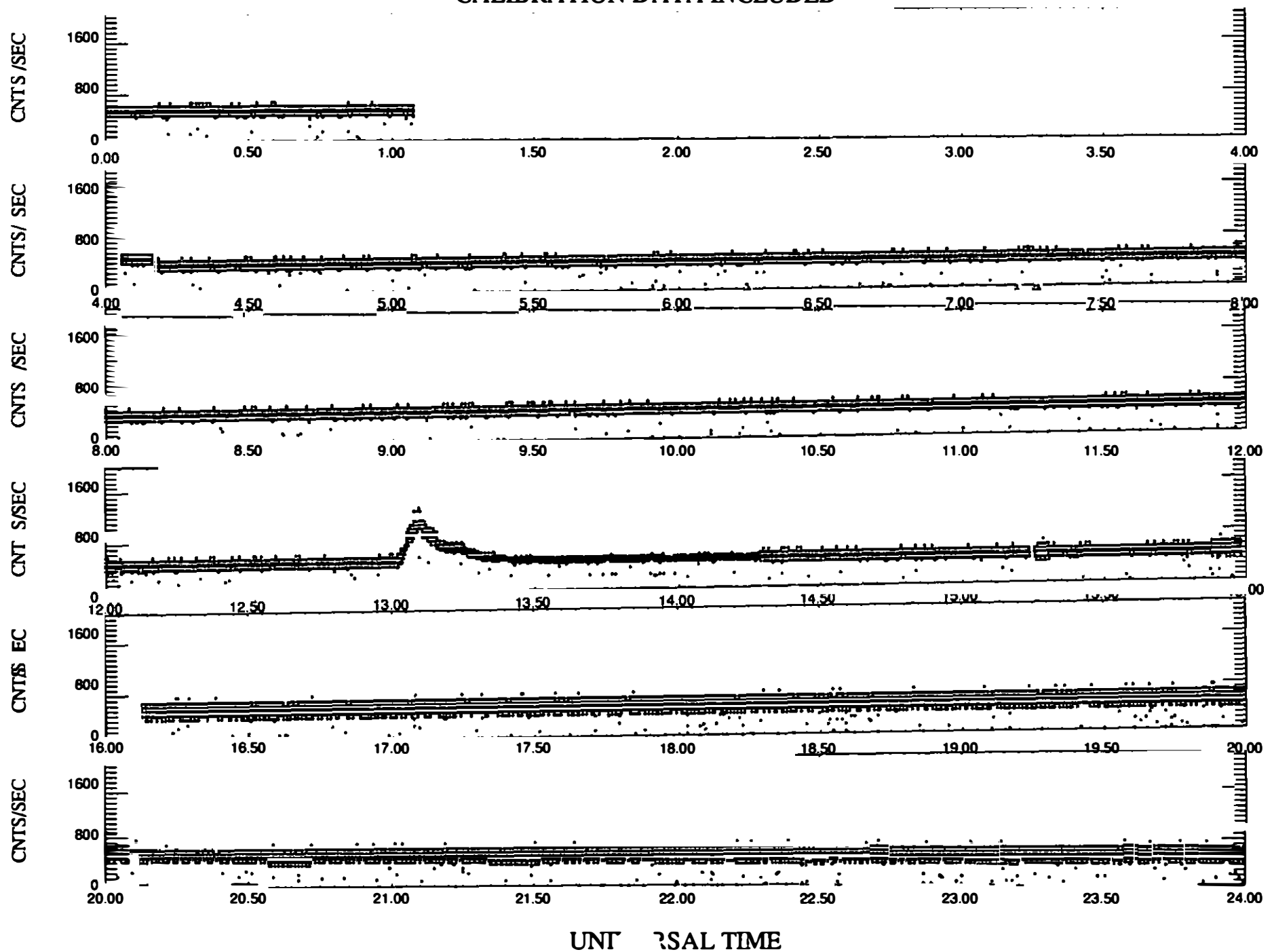
Burst Counter 0 at UT=13.031107775370 h=46911.988 s 13:01:51.988

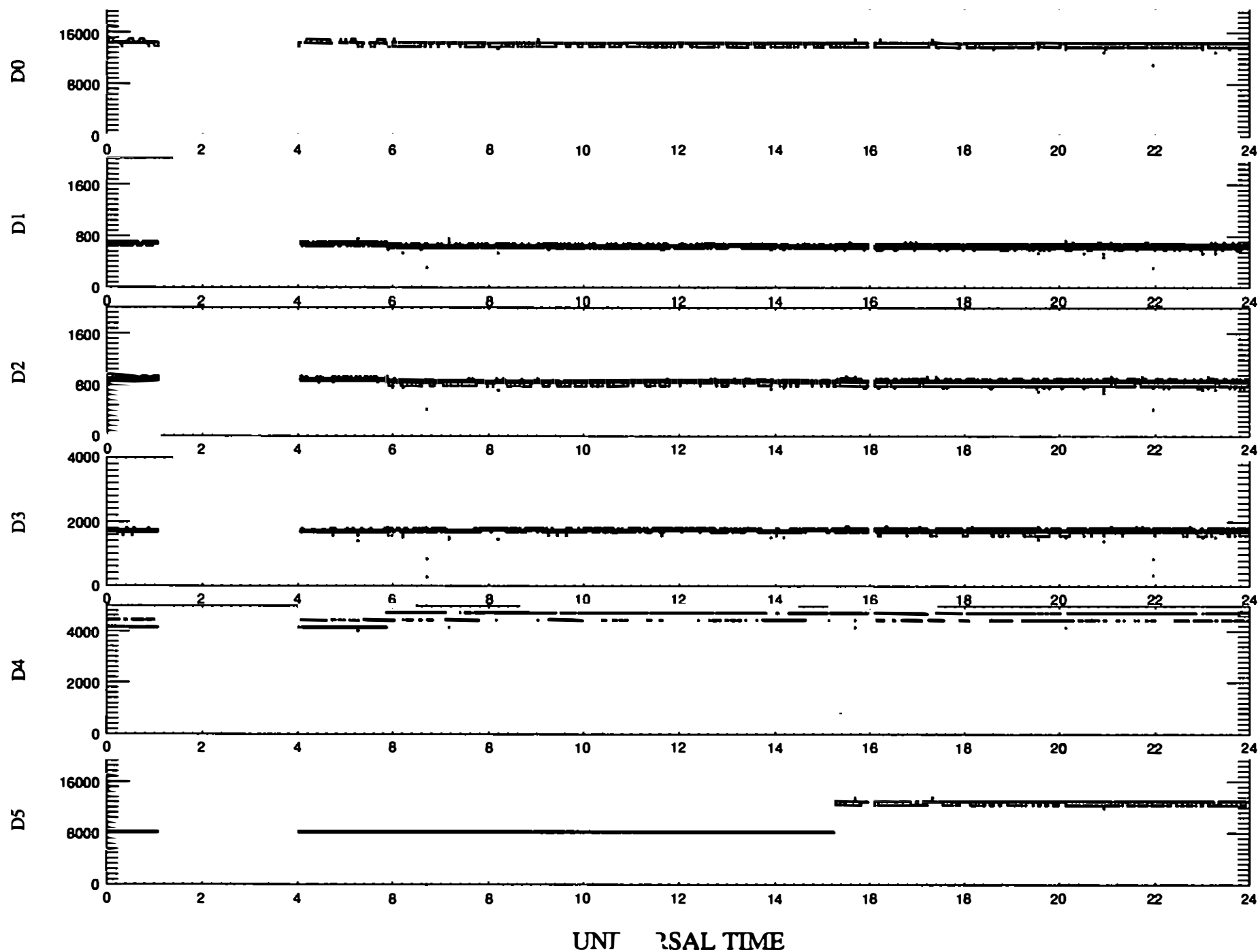


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





KONUS

ULYSSES RT

31 / 01 / 00

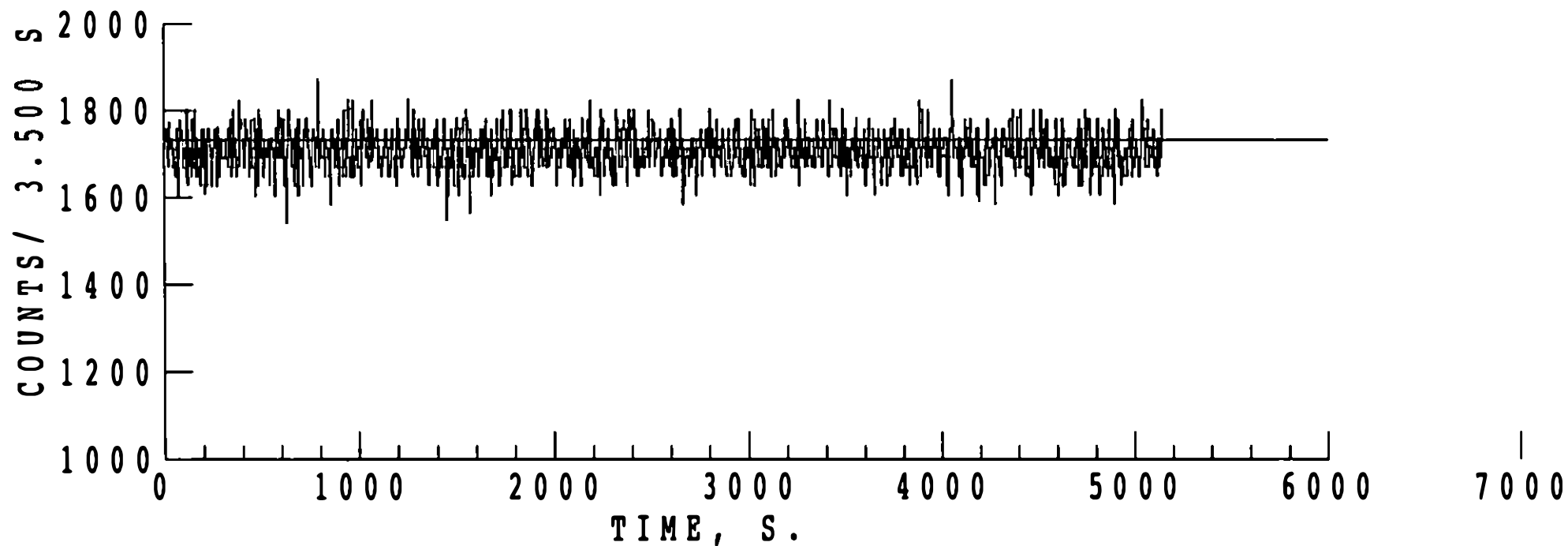
17/08/96 22068.053 s

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 ulsna@jplsp2.jpl.nasa.gov Thu Aug 22 12:36 PDT 1996

X-Sender: ulsna@jplsp2.jpl.nasa.gov

Mime-Version: 1.0

Date: Thu, 22 Aug 1996 12:39:06 -0700

a.balogh@ic.ac.uk, esmith@jplsp.jpl.nasa.gov, r.forsyth@ic.ac.uk,
khurley@sunspot.ssl.berkeley.edu,
keppler.linax1.mpa.gwdg.de@jpl.nasa.gov, witte@linax1.mpa.gwdg.de,
mazuk@courier2.aero.org, gold@slpvx7.jhuapl.edu, ed.hawkins@jhuapl.edu,
ljl@physics.att.com, simpson@odysseus.uchicago.edu,
murphy@odysseus.uchicago.edu, tsanders@estcs1.estec.esa.nl,
dave@hiauly1.hia.nrc.ca, CANOTT::BURROWS@jplsp.jpl.nasa.gov,
r.hynds@ic.ac.uk, IFKKI::KUNOW@jplsp.jpl.nasa.gov,
kwenzel@estcs1.estec.esa.nl, rmarsden@estcs1.estec.esa.nl,
mckibben@odysseus.uchicago.edu, mueller_m@ifkki.dnet.nasa.gov,
gpapelka@jpl.nasa.gov, u2rgs@lepvax.gsfc.nasa.gov,
hess@urap.gsfc.nasa.gov, xrcam@lepvax.gsfc.nasa.gov,
macd@leprjm.gsfc.nasa.gov, nicole.cornilleau@cetp.ips1.fr,
goetz@waves.spa.umn.edu, hoang@obspm.fr, pkellegg@jpl.nasa.gov,
manning@megasx.obspm.fr, xrmjr@urap.dnet.nasa.gov

From: ULSSCI <ulsna@jplsp2.jpl.nasa.gov>

Subject: DNEL Recovery

Cc: ulssci@jplsp.jpl.nasa.gov

As you are aware, there was a DNEL on board the Ulysses spacecraft on
Saturday 17 August 1996.

Details of the recovery actions have been posted on the ULSSCI bulletin
board, but the appropriate section is attached below for your information.

Please do not hesitate to contact us if you need more details.

Best regards,

Nigel Angold

230.13:00:10 Main switch off due to DNEL #7. Occurred at beginning
 of routine Earth Pointing Manoeuvre. About 10 of the planned
 34 pulses were executed before REC #8 took place at
 230.13:03:22. All experiments are off.

Extra time has been secured from DSS12 to start the DNEL
recovery.

Data losses as a result of the DNEL are as follows:

230.13:03-15:08 2h4m realtime 1024 bps plus
229.01:03-04:07 3h3m playback 512 bps plus
230.02:13-03:16 1h3m playback 512 bps data lost.

30.15:08 SCET Tx1 s/c TM on.
230.17:06 SCET Sun Sensor gain to High.
230.17:26 SCET 10W EPD off.
230.17:31 SCET LV 1/2 off.
230.18:54 SCET Main Switch on.

230.20:00 End of DSS61 pass
 230.20:00 Extra DSS12 pass
 (thanks to Voyager project for giving up time)

230.20:32 SCET Reload PT and BT.
 230.22:07 SCET Schedule REC program.

230.23:44 SCET Begin experiment converter switch ons.
 230.23:44 SCET SIM converter on.
 230.23:57 SCET STO converter on.

18 August Continuation of DNEL recovery.

231.00:03 SCET HED converter on and reconfiguration complete.
 231.00:07 SCET LAN converter on and reconfiguration complete.
 231.00:12 SCET KEP converter on.
 231.00:18 SCET GLG converter on.
 231.00:22 SCET BAM-I converter on.
 231.01:16 SCET HUS converter on.
 231.01:20 SCET BAM-E converter on.
 231.01:28 SCET GRU converter on.

231.02:55 ERT End of DSS12 extended pass.
 All experiment power converters are ON.

231.08:45 Start of DSS65 downlink only pass.
 No uplink station due to DSN launch support for
 FAST mission. This will slow our DNEL recovery.

231.12:30 Start of DSS61 uplink pass

231.13:23-13:29 6m realtime 2048 bps plus 11m playback 512 bps data lost due
 (231.04:14-04:25) to scheduled spacecraft 1-way to 2-way transition during
 playback over DSS61.

231.13:34 SCET SIM reconfiguration started.
 231.13:37 SCET STO reconfiguration started.
 231.13:41 SCET HUS reconfiguration started.
 231.14:07 SCET HUS reconfiguration complete.
 231.14:19 SCET BAM-I reconfiguration started.

231.15:00 SCET Earth pointing manoeuvre (nominal).

231.15:01 SCET KEP reconfiguration started.
 231.15:20 SCET GRU reconfiguration started.
 231.15:35 SCET GLG reconfiguration started.
 231.15:56 SCET BAM-I reconfiguration complete.
 231.16:04 SCET STO RAM load started.
 231.16:37 SCET STO reconfiguration complete.
 231.16:57 SCET KEP heavy ion RAM load started.
 231.18:21 SCET BAM-E reconfiguration started.

231.19:55 DSS61 end of track.

August Continuation of DNEL recovery.

232.09:40 DSS61 beginning of track: uplink & downlink.
 232.10:42 SCET SIM reconfiguration complete.
 232.13:02 SCET BAM-E reconfiguration complete.

232.15:45 ERT DSS15 beginning of track: downlink only.
 232.15:40 SCET KEP reconfiguration complete.
 232.16:15 ERT DSS61 end of track.

 2.16:51-16:55 5m realtime 2048 bps plus 10m playback 512 bps data lost due
 (231.21:47-21:57) to scheduled spacecraft 2-way to 1-way transition during
 playback over DSS15.

 232.19:45 ERT DSS15 end of track.

 232.20:41 ERT DSS12 extra track - thanks to ICE project. Continuing
 DNEL recovery for GLG and GRU instruments.

 20 August Continue DNEL recovery.

 233.01:02 SCET GRU reconfiguration complete.
 233.02:02 ERT DSS12 end of track.
 233.14:25 ERT DSS24 beginning of track.
 233.18:00 SCET Earth pointing manoeuvre

 21 August HED Calibration - 234.16:00 SCET.

 ~234.13:20-13:25 5m realtime 2048 bps plus 10m playback 512 bps data lost due
 ~234.06:25-06:35) to problems with U/L transfer from DSS63 (70m) to DSS61.
 DR # pending.

 22 August Reconfigure spacecraft platform to nominal Tx and AOCE.

 235.17:54 SCET GLG reconfiguration complete.

 23 August HUS Datation Test window opens.
 Earth pointing manoeuvre - 236.10:00 SCET.

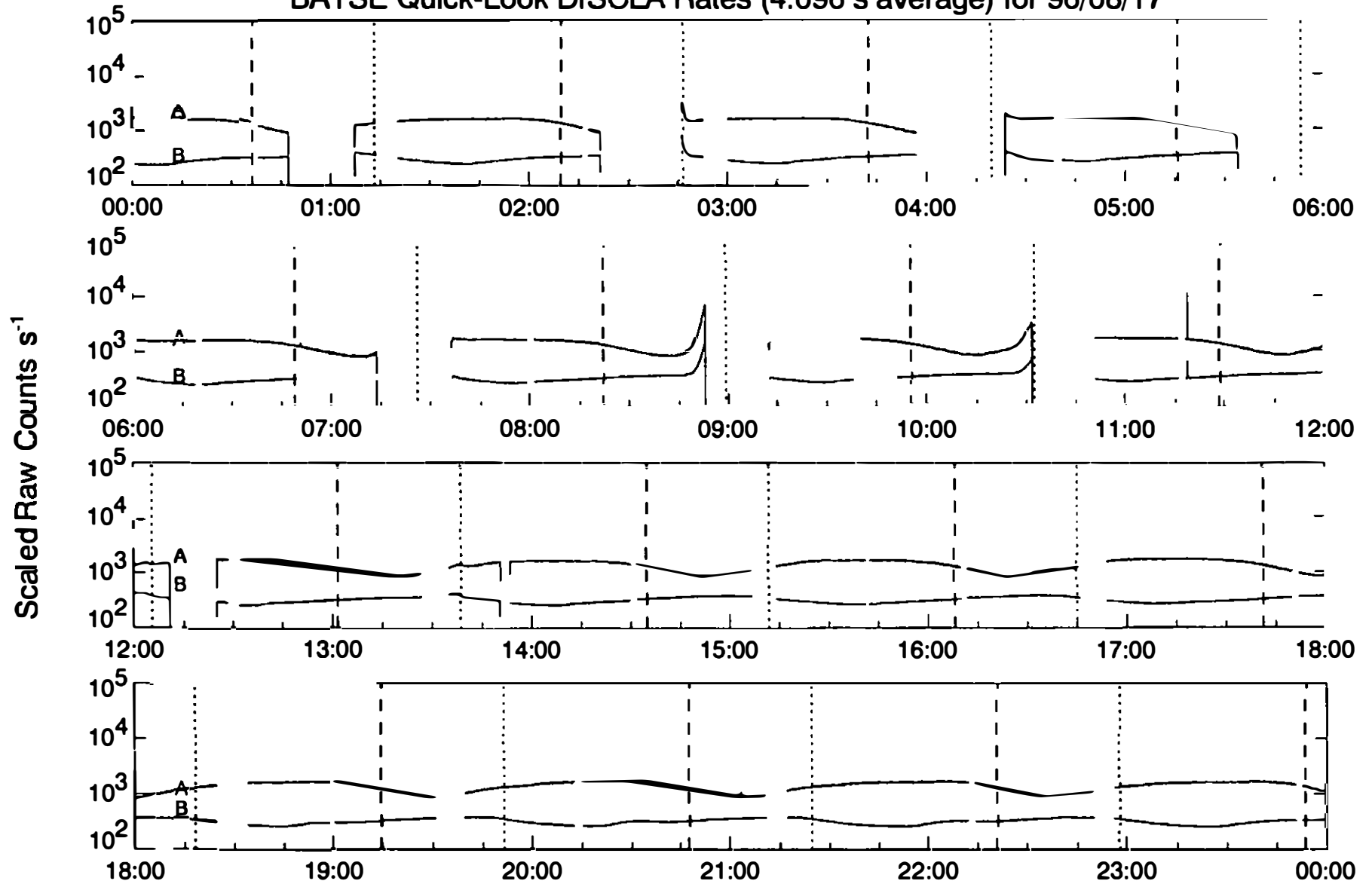
 24 August GRU Routine Noise Test.

 25 August Routine operations.

 26 August KEP IFC.
 Earth pointing manoeuvre - 239.14:00 SCET. Note that this
 manoeuvre will also be a calibration of the UA1 thruster.

 27 August KEP RAM Dump.
 KEP GAS Monthly Health Check resumes.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/17



Current Time: 96/08/19, 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

From HENZE@fender.msfc.nasa.gov Mon Aug 19 15:14 PDT 1996
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 19 Aug 1996 17:10:22 -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.: 5577

TIME: TJD=0312 SECONDS=13701

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=003.8 AZIMUTH=202.6 ERROR=011.0 DEGREES

COMMENTS:
SINGLE SPIKE, DUR. ~0.5 MILLISECONDS.
TERRESTRIAL GAMMA FLASH.

From HENZE@fender.msfc.nasa.gov Wed Aug 21 13:02 PDT 1996
From: HENZE@fender.msfc.nasa.gov
Date: Wed, 21 Aug 1996 15:01:23 -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.: 5578

TIME: TJD=0312 SECONDS=46631

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=033.0 AZIMUTH=266.2 ERROR=013.8 DEGREES

COMMENTS:

PROBABLE TERRESTRIAL GAMMA FLASH. SPARSE DATA.
DUR. LESS THAN 64 MS, PROBABLY 10 MS.

From HENZE@fender.msfc.nasa.gov Wed Aug 21 13:05 PDT 1996
From: HENZE@fender.msfc.nasa.gov
Date: Wed, 21 Aug 1996 15:05:06 -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.: 5579

TIME: TJD=0312 SECONDS=47563

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

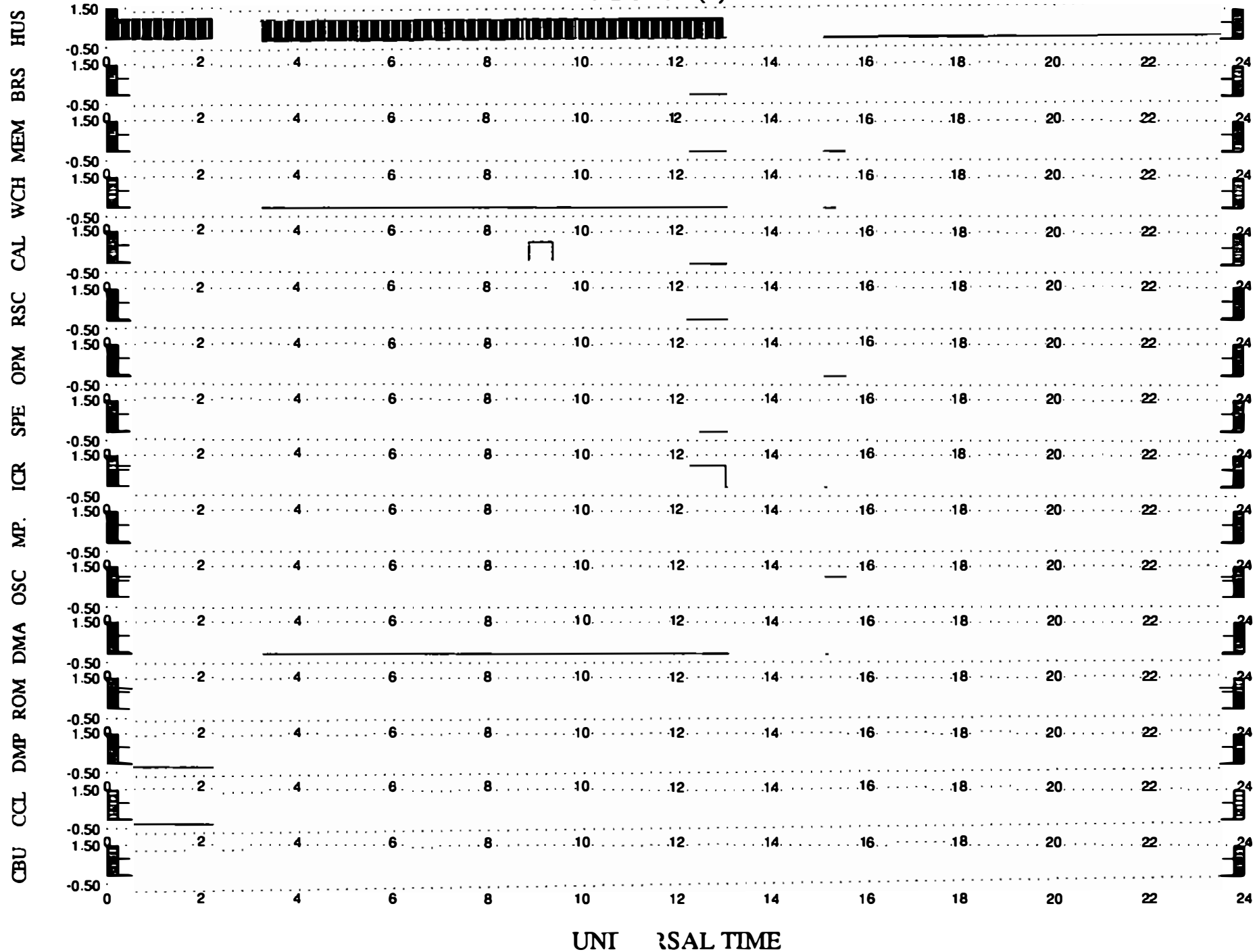
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=064.4 AZIMUTH=023.7 ERROR=013.3 DEGREES

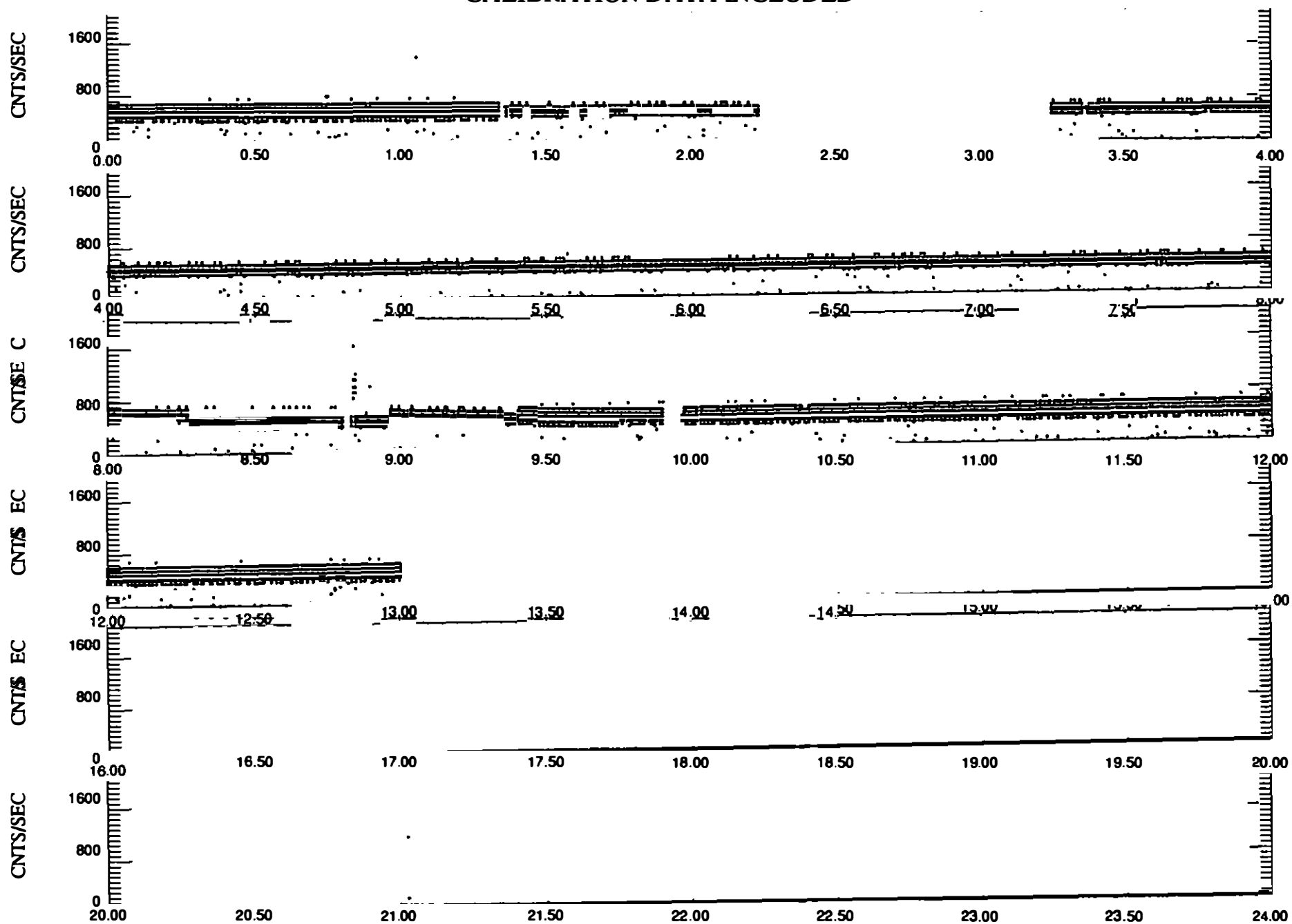
COMMENTS:

PROBABLE TERRESTRIAL GAMMA FLASH. SPARSE DATA. DUR. LESS THAN 64 MS.

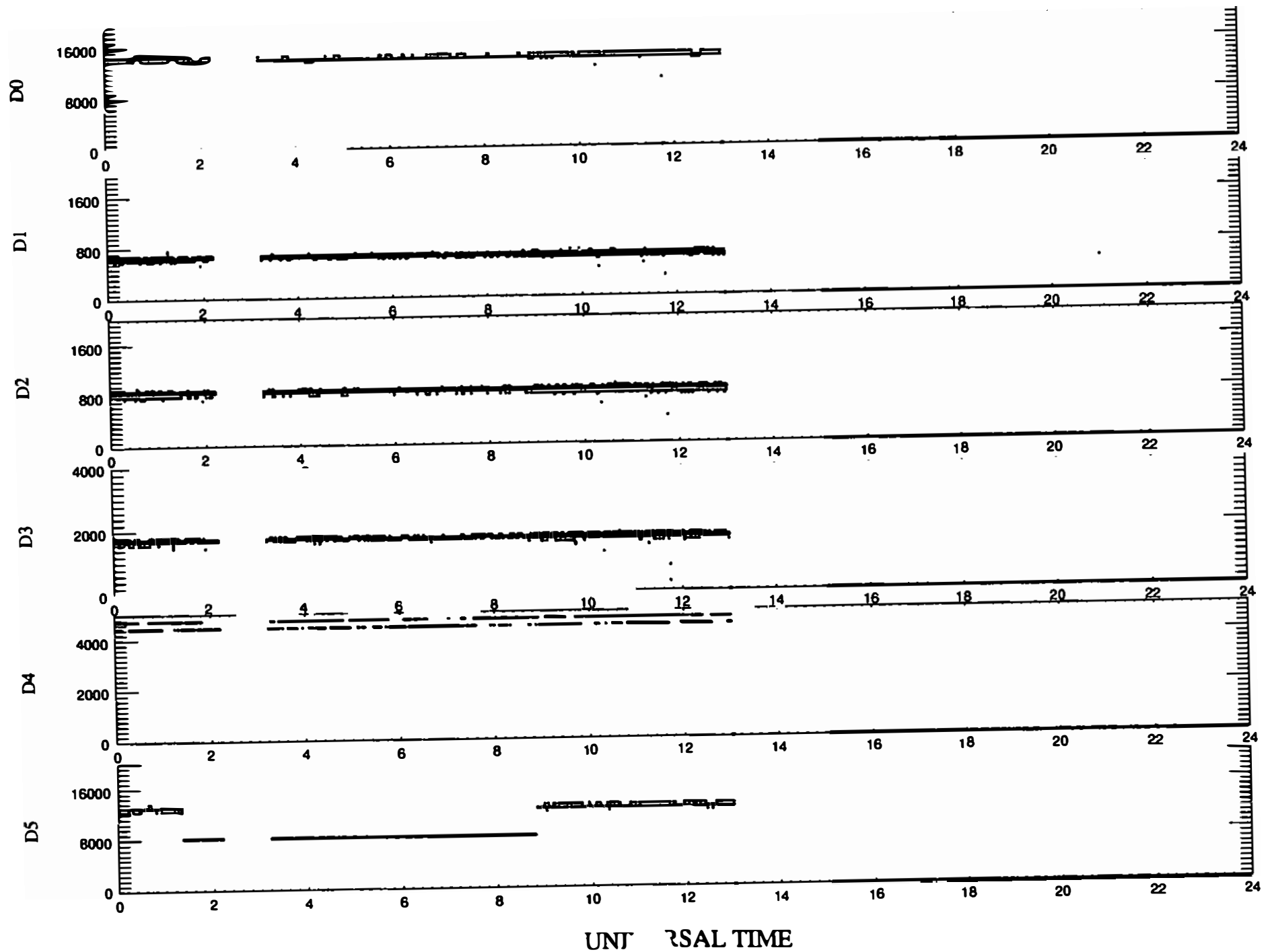
NO BURST (0)



CALIBRATION DATA INCLUDED



UNITSAL TIME



From HAGEDON@fender.msfc.nasa.gov Tue Aug 20 10:19 PDT 1996
From: HAGEDON@fender.msfc.nasa.gov
Date: Tue, 20 Aug 1996 12:17:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5580

BATSEARCH PROGRAM

BATSE BURST # 5580
EVENT OF 1996 AUG 18 DAY OF YEAR=231
EVENT CROSSING TIME AT BATSE : 57760. S. OR 16:02:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 76.000 -33.000
BATSE PEAK COUNTING RATE: 1000 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 8/ 96 IS:
RA= 163.406 DEC= 38.575 DIST= 5.090 AU
BATSE-ULYSSES DISTANCE = 761438485. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 71.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 787.21 SECS.
CROSSING TIME AT ULYSSES IS 58547. S. OR 16:15:47 +/- 481.20 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 8/ 96 IS:
RA= 106.795 DEC= 23.223 DIST= 2.180 AU
MARS-BATSE DISTANCE = 326097344. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.57 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -486.54 SECS.
CROSSING TIME AT MARS IS 57273. S. OR 15:54:33 +/- 161.52 SECONDS

BATSE BURST TRIGGER

NO.: 5580

TIME: TJD=0313 SECONDS=57760

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=53.7 AZIMUTH=279.8 ERROR=6.8 DEGREES

COMMENTS:

BURST. WEAK SINGLE PULSE IN GAP. FASTER RISE THAN DECAY. DUR.~25 SEC.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5580	960818	10313	57760	1000	076	-33	25

BATSE #

5 5 8 0

2 1 / 8 / 9 6

ULYSSES RT

18 / 8 / 96 58068.133 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N=10 M=2

>4.0 SIGMA FLUCTUATIONS

| |

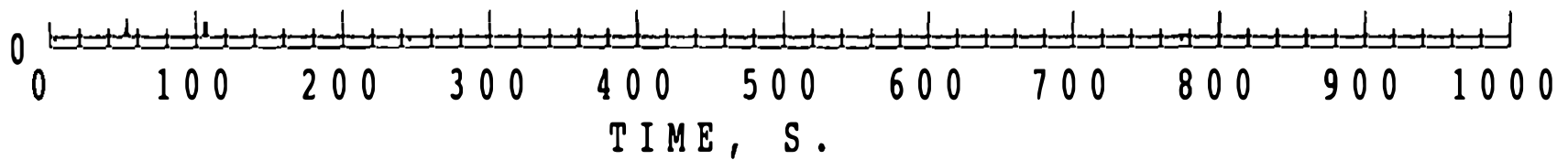
***** —

***** —

***** —

5000 —

COUNTS/0.750 S



ULYSSES RT

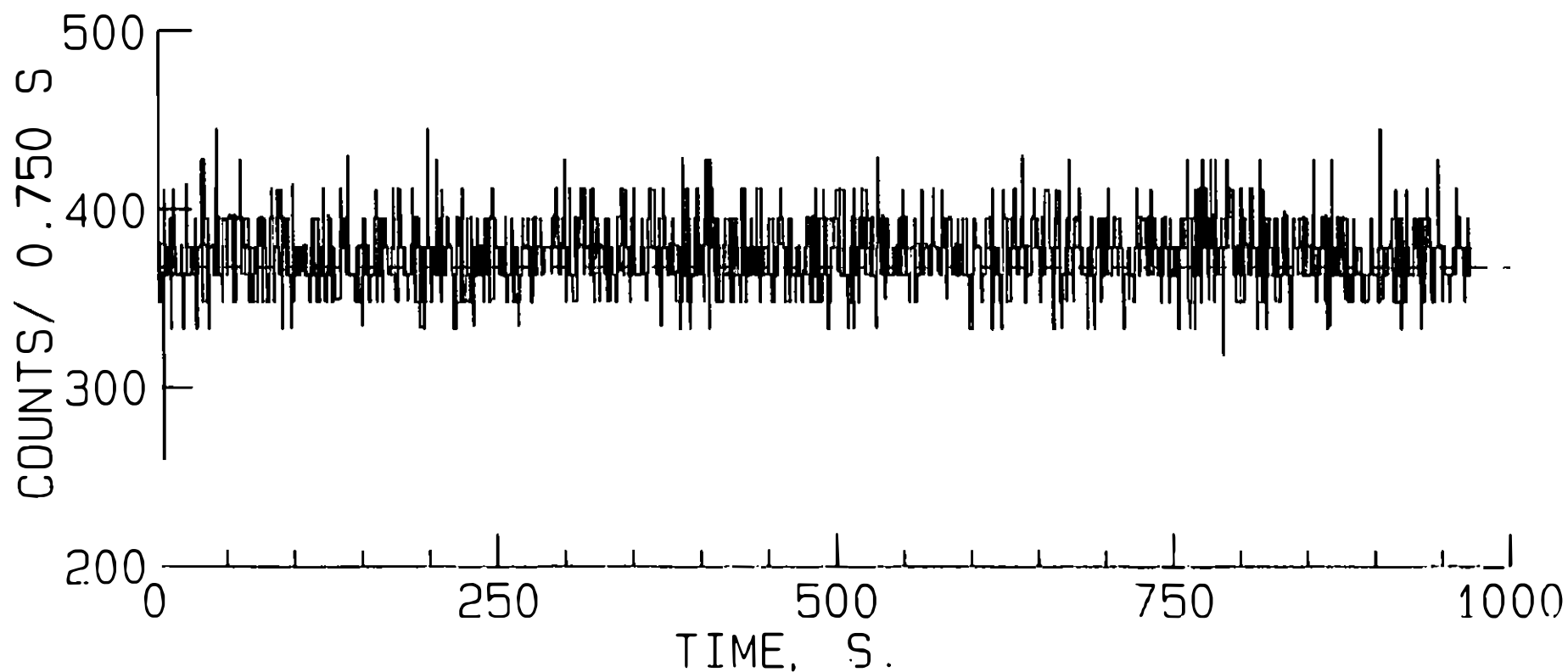
22 / 8 / 96

18 / 8 / 96 58068.132 s

0.250 S INTERVALS REGROUPED BY 3

21- 145 keV

N= 10 M= 2
>1.0 SIGMA FLUCTUATIONS



SAX

HUS DATA

19 / 07 / 05

ULYSSES RT

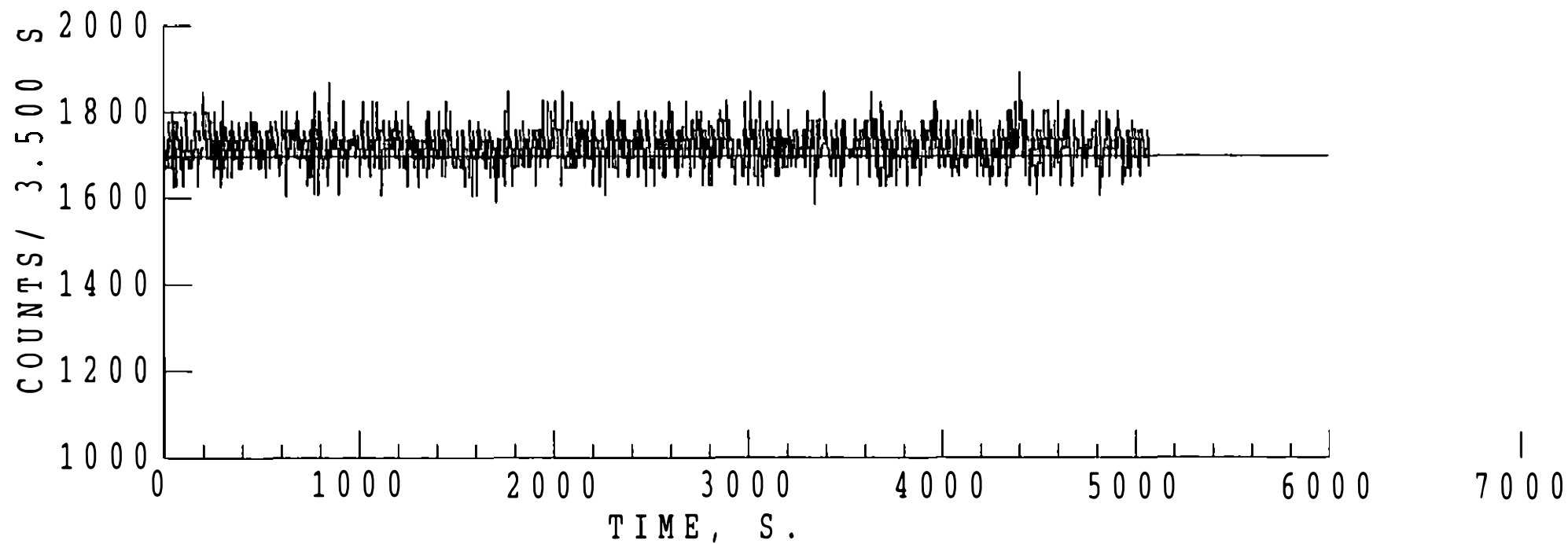
18 / 08 / 96 82404.438 s

0.500 S INTERVALS REGROUPED BY 7

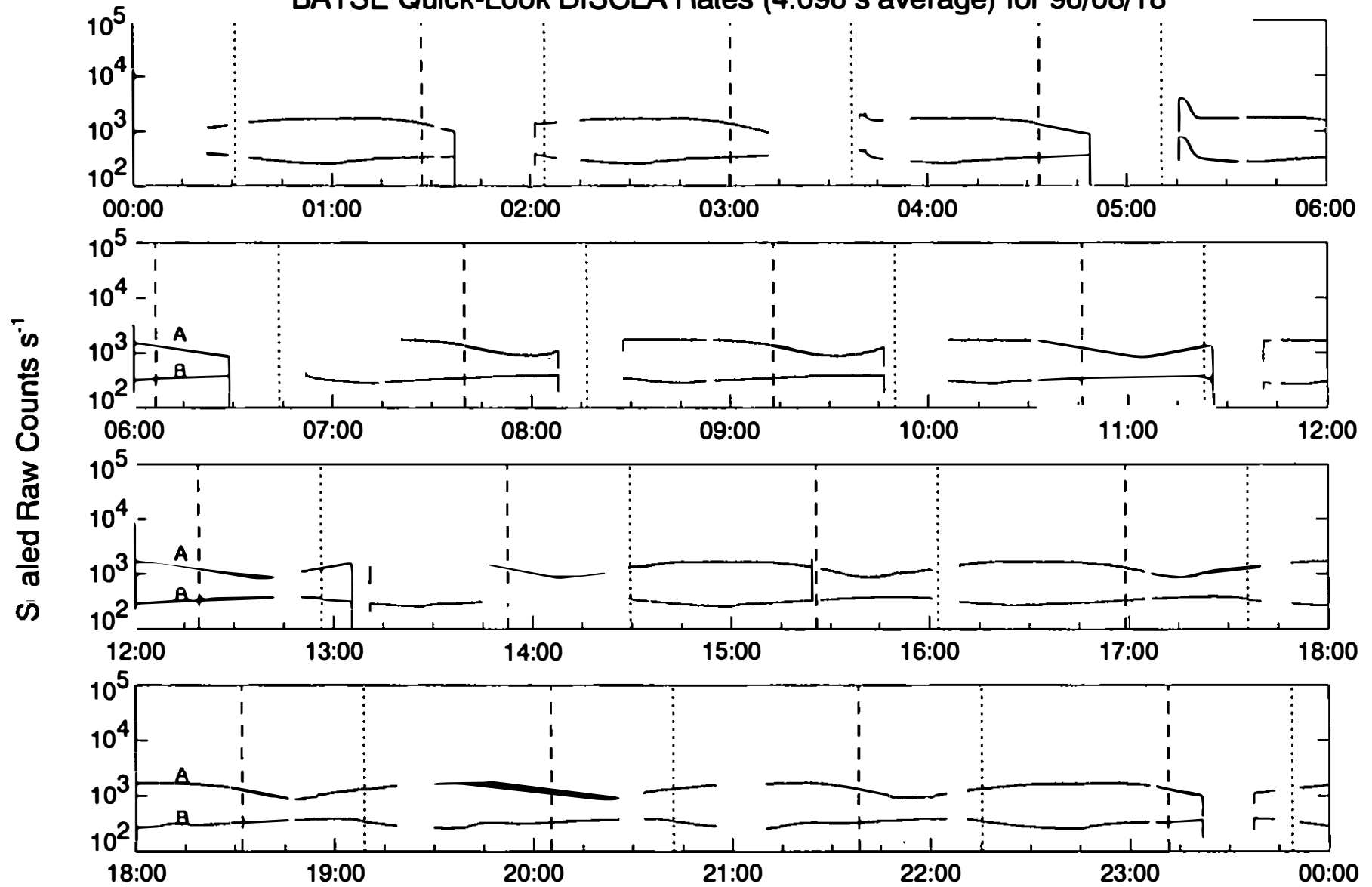
0 - 0 keV

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 96/08/18



Current Time: 96/08/20, 1004 EDT

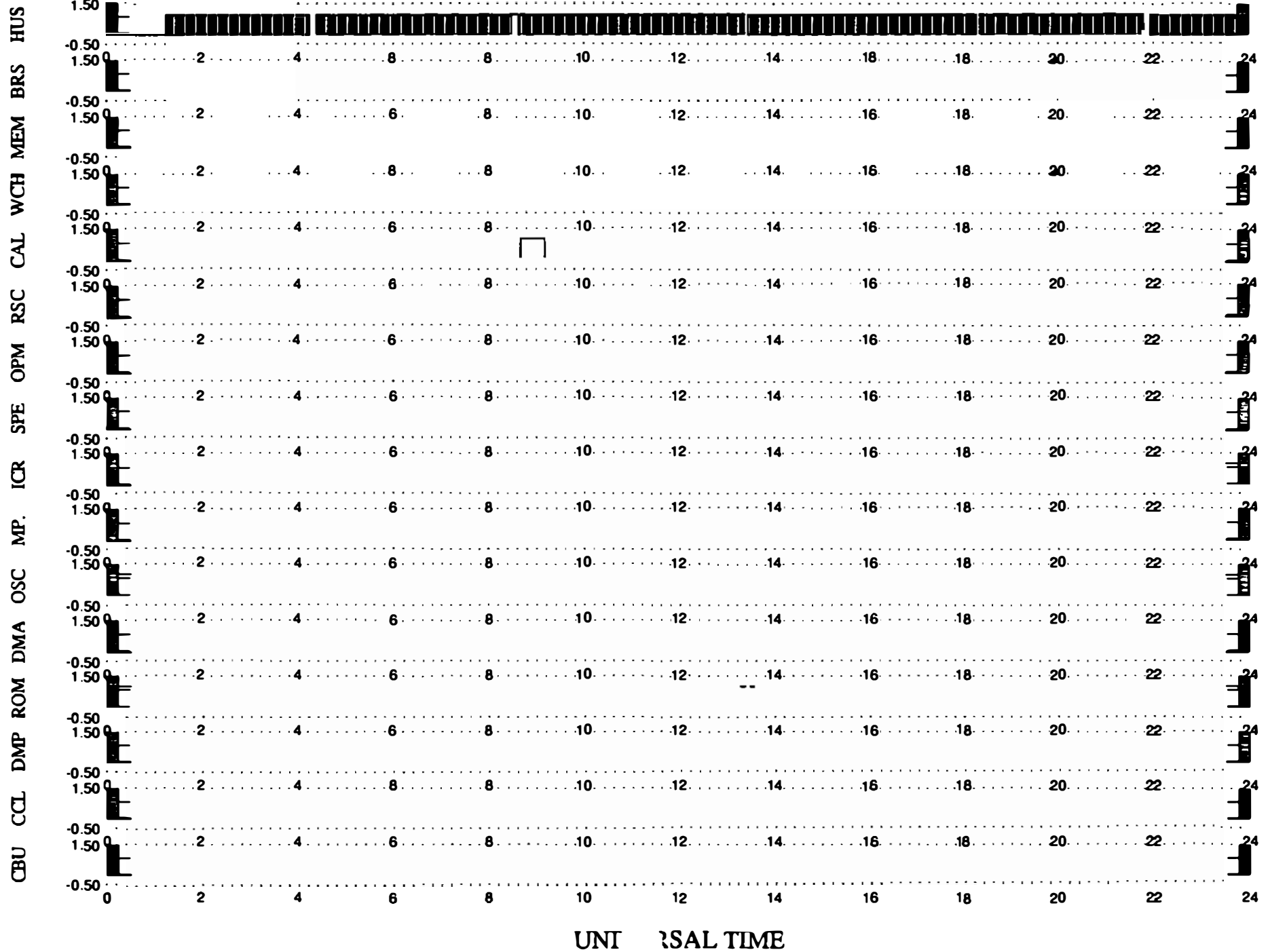
A: Channel 0 Most Sunward LAD

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

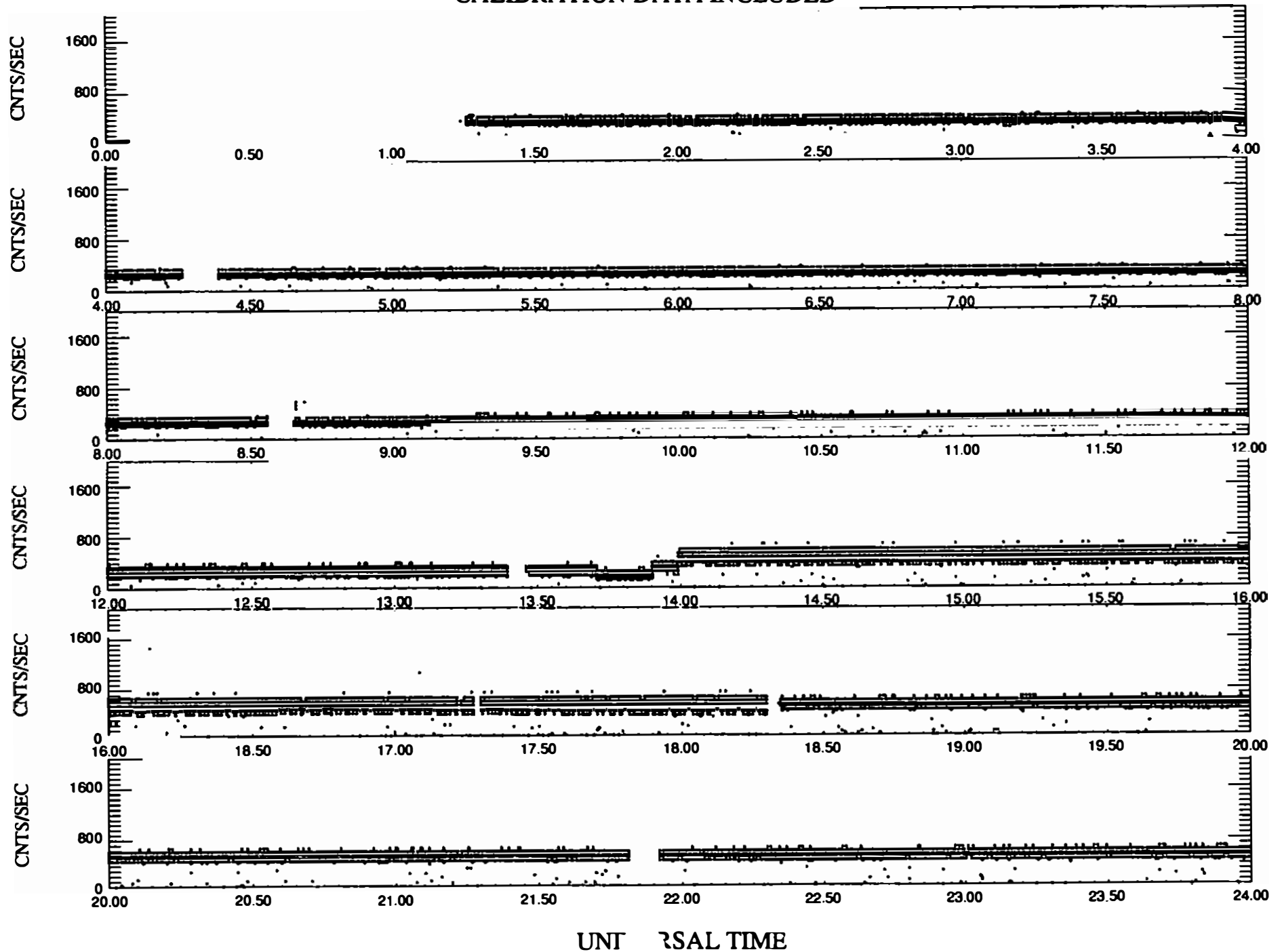
Dotted line: Day entry
Dashed line: Night entry

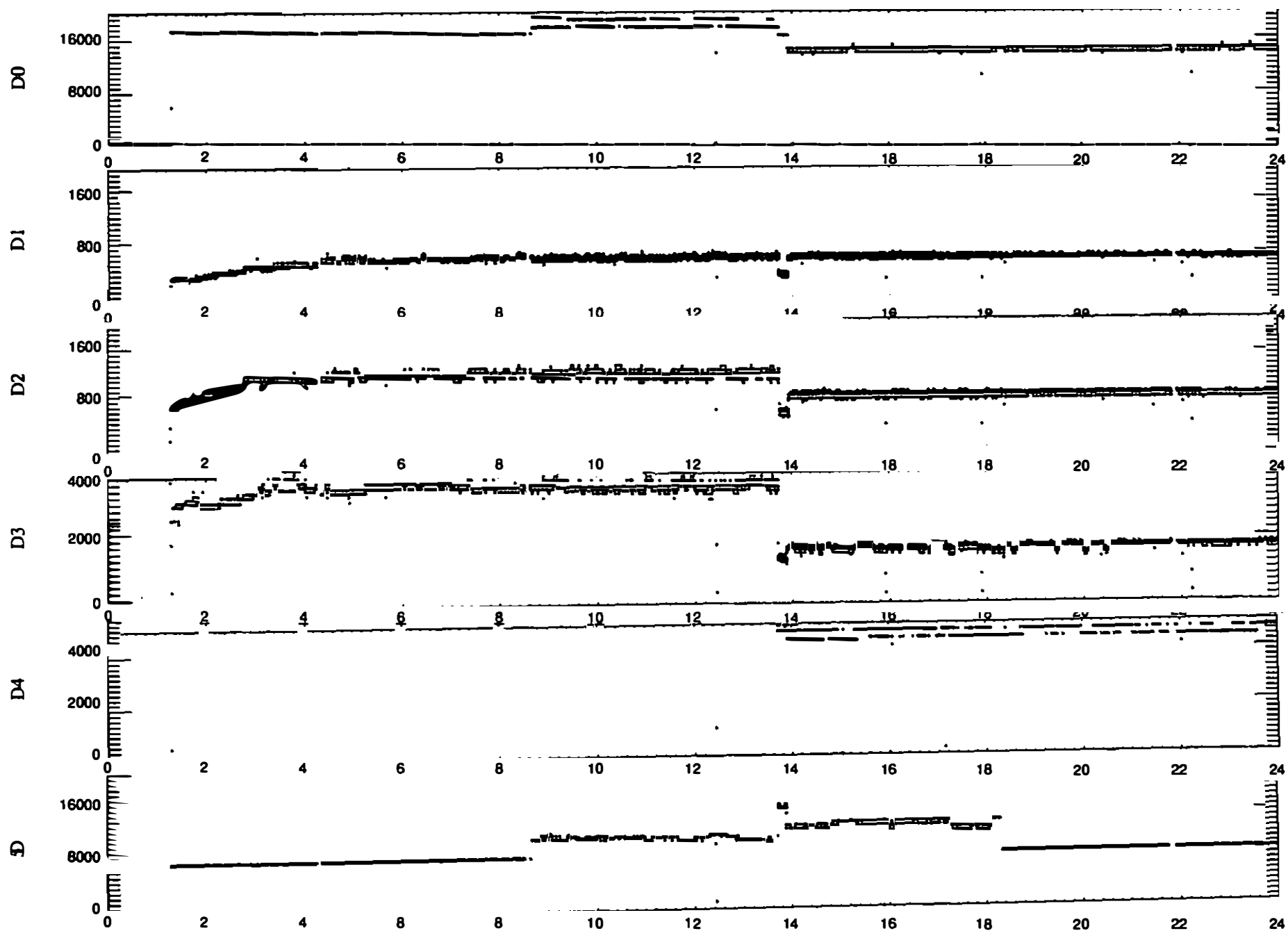
* Solar Burst Trigger
+ Solar Flare

NO BURST (0)



CALIBRATION DATA INCLUDED





UNT RSAL TIME

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Aug 20 09:35 PDT 1996
Date: Tue, 20 Aug 1996 11:35:37 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5581

BATSEARCH PROGRAM

No

BATSE BURST # 5581
EVENT OF 1996 AUG 19 DAY OF YEAR=232
EVENT CROSSING TIME AT BATSE : 74182. S. OR 20:36:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 87.000 51.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 8/ 96 IS:
RA= 163.650 DEC= 38.401 DIST= 5.096 AU
BATSE-ULYSSES DISTANCE = 762343795. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1517.13 SECS.
CROSSING TIME AT ULYSSES IS 72665. S. OR 20:11:04 +/- 381.27 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 8/ 96 IS:
RA= 107.500 DEC= 23.158 DIST= 2.176 AU
MARS-BATSE DISTANCE = 325468704. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=147.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -920.19 SECS.
CROSSING TIME AT MARS IS 73262. S. OR 20:21:01 +/- 86.04 SECONDS

BATSE BURST TRIGGER

NO.: 5581

TIME: TJD=0314 SECONDS=74182

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=31.5 AZIMUTH=118.2 ERROR=4.6 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SLOWER DECAY THAN RISE. DUR.~20SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5581	960819	10314	74182	3000	087	+51	20

BATSE #

5581

21 / 8 / 96

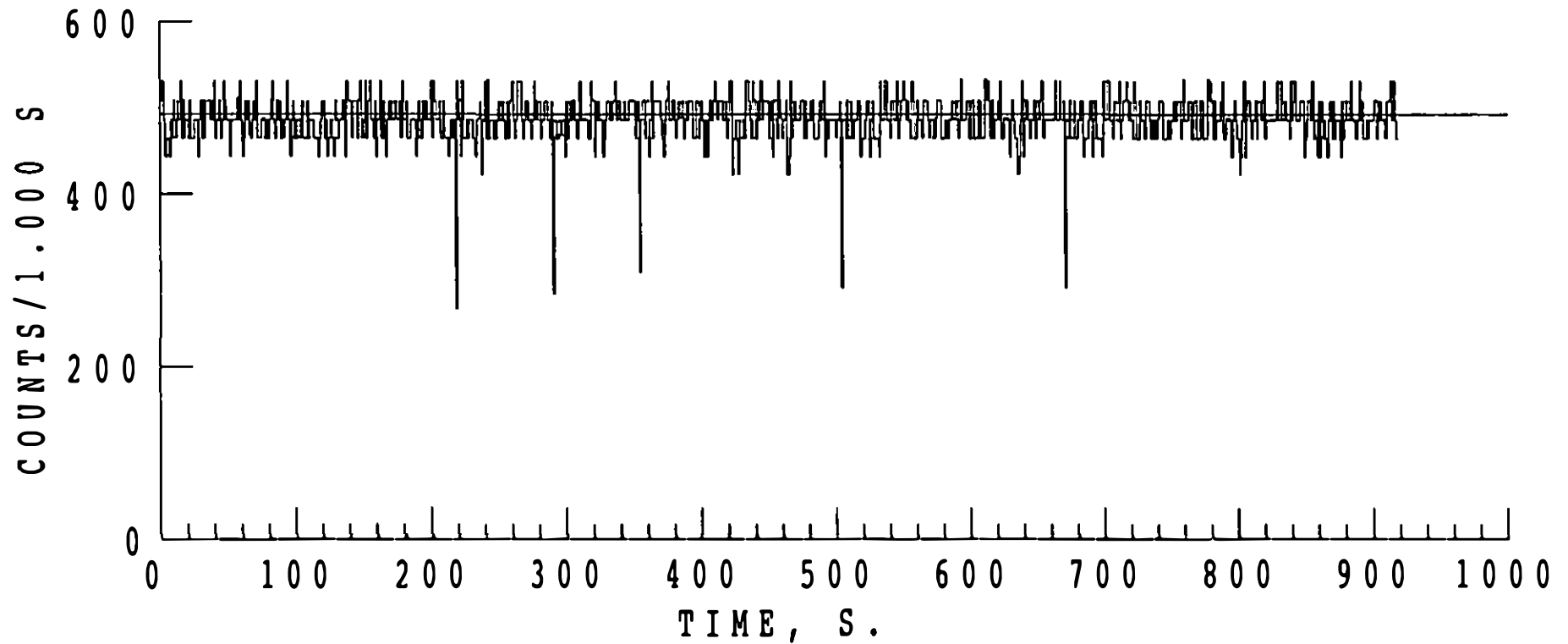
ULYSSES RT

19 / 8 / 96 72288.430 s

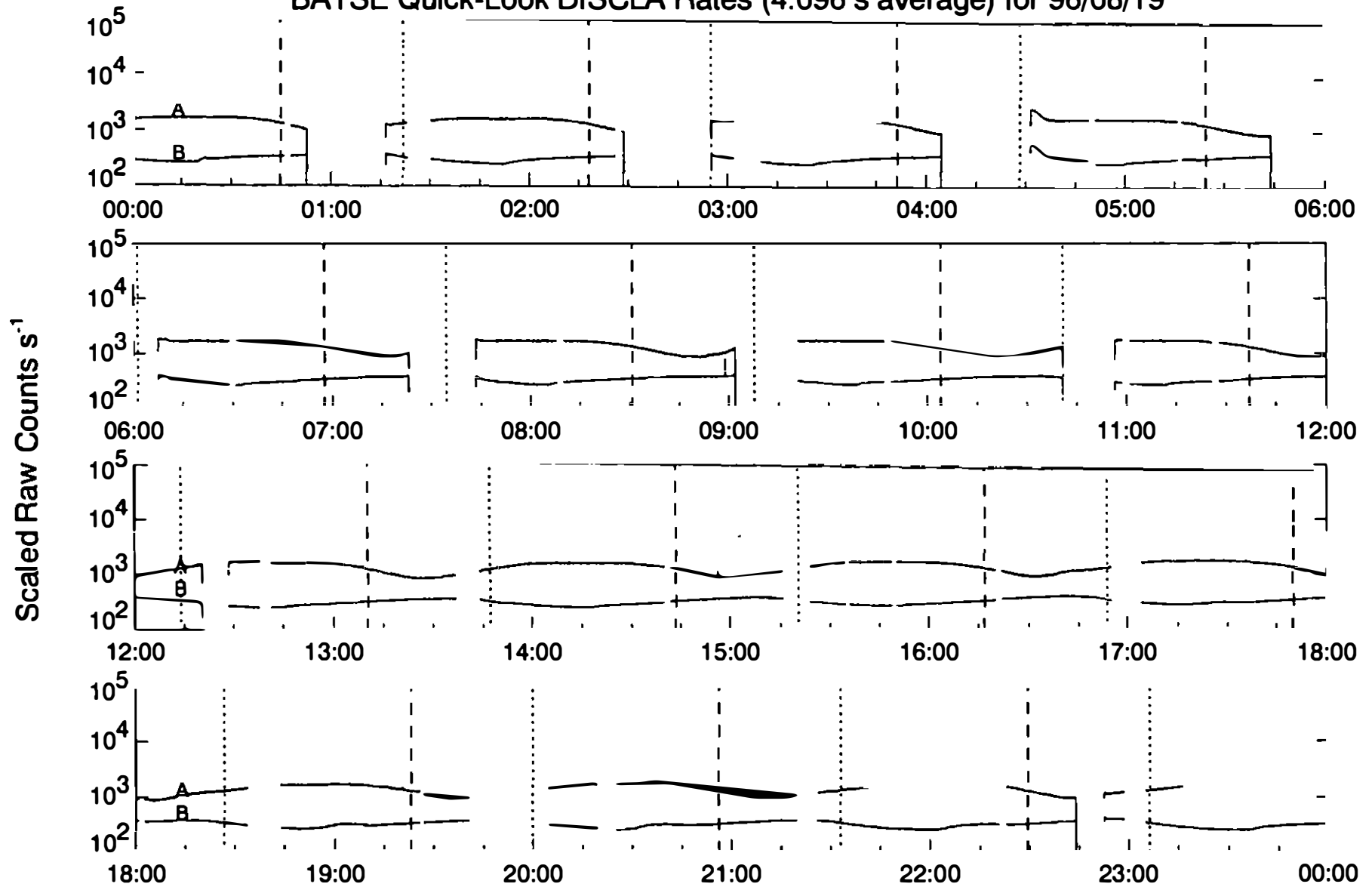
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N = 10 M = 2
>4.0 SIGMA FLUCTUATIONS



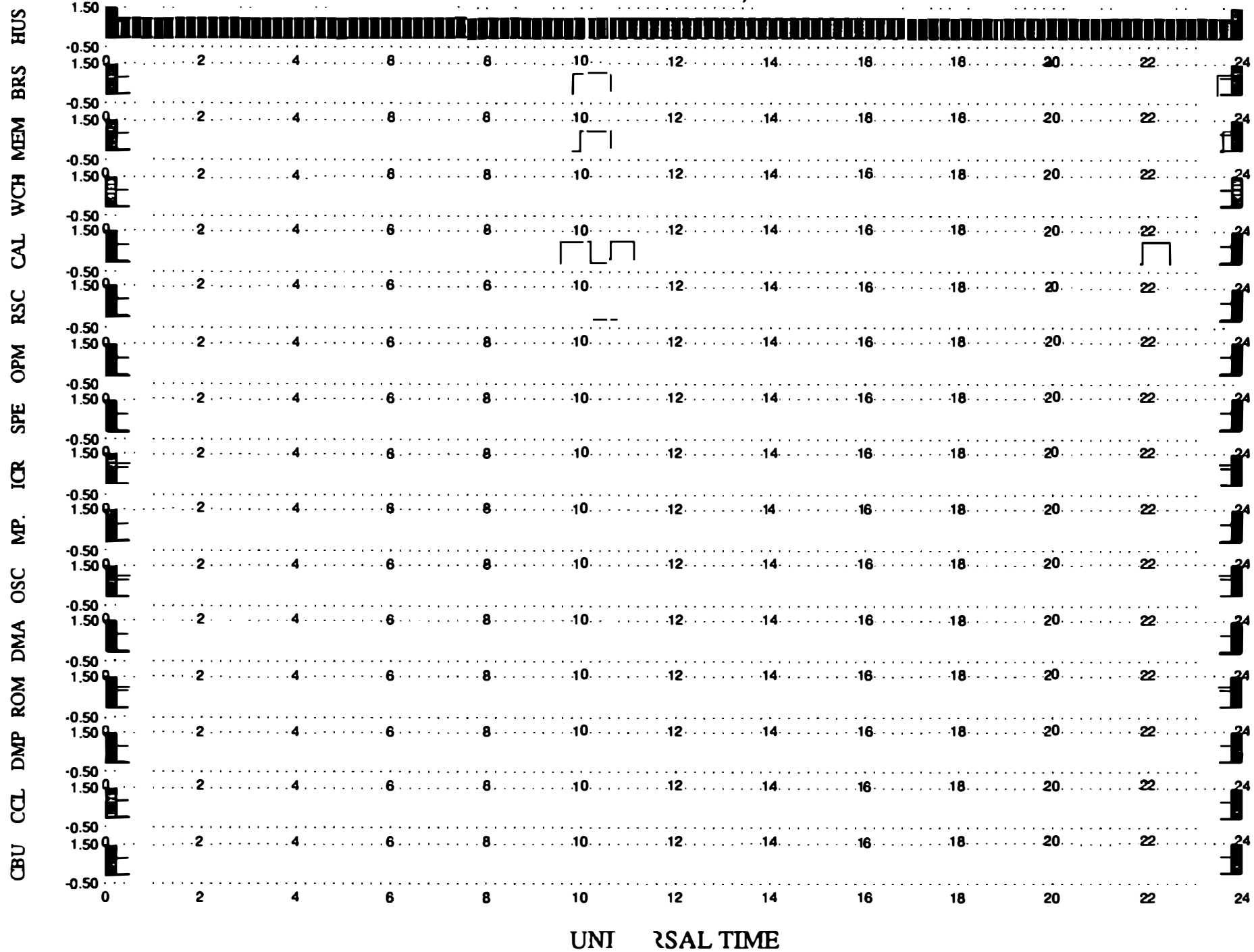
BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/19



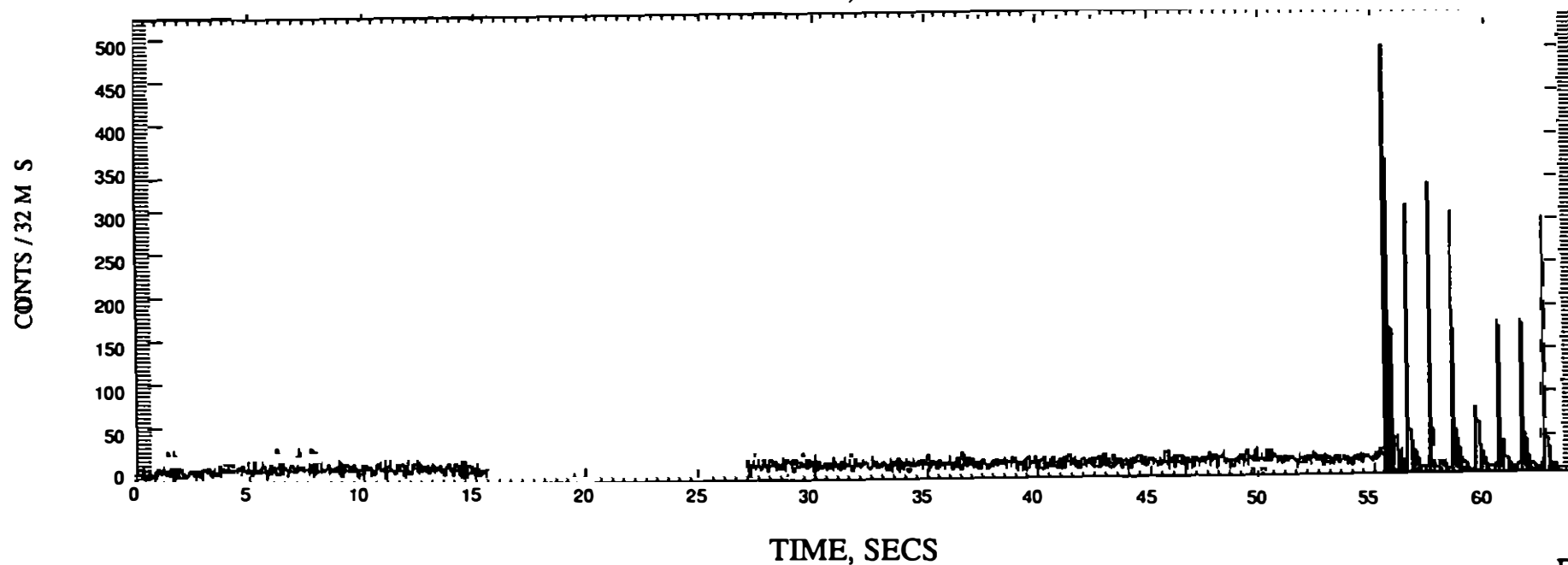
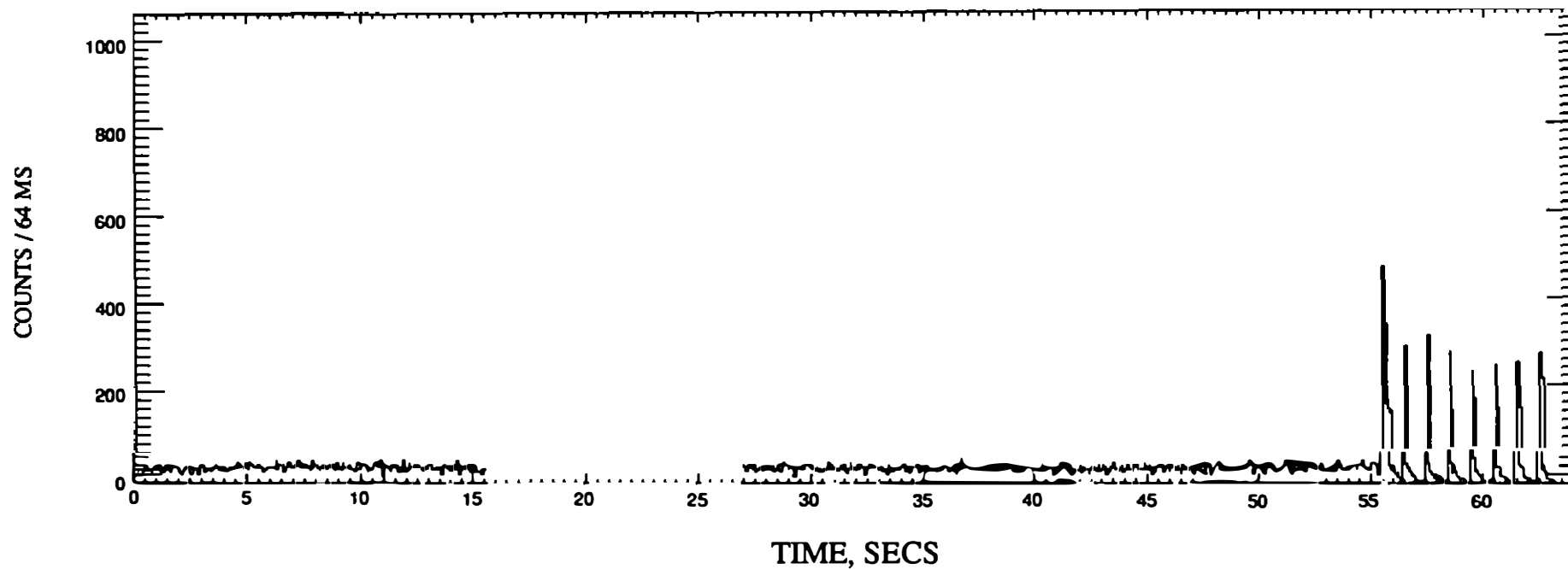
Current Time: 96/08/21, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

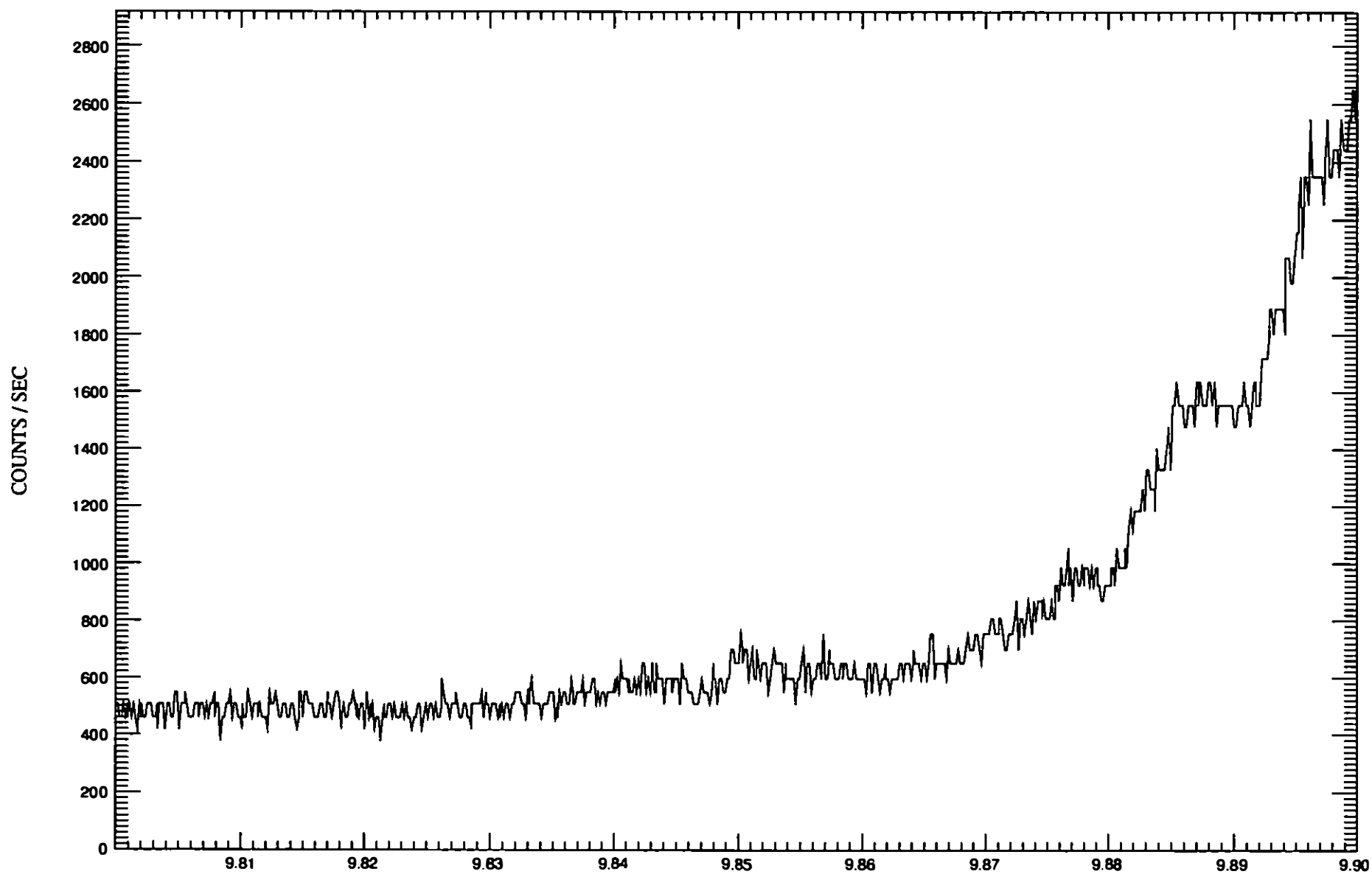
* Solar Burst Trigger
 + Solar Flare



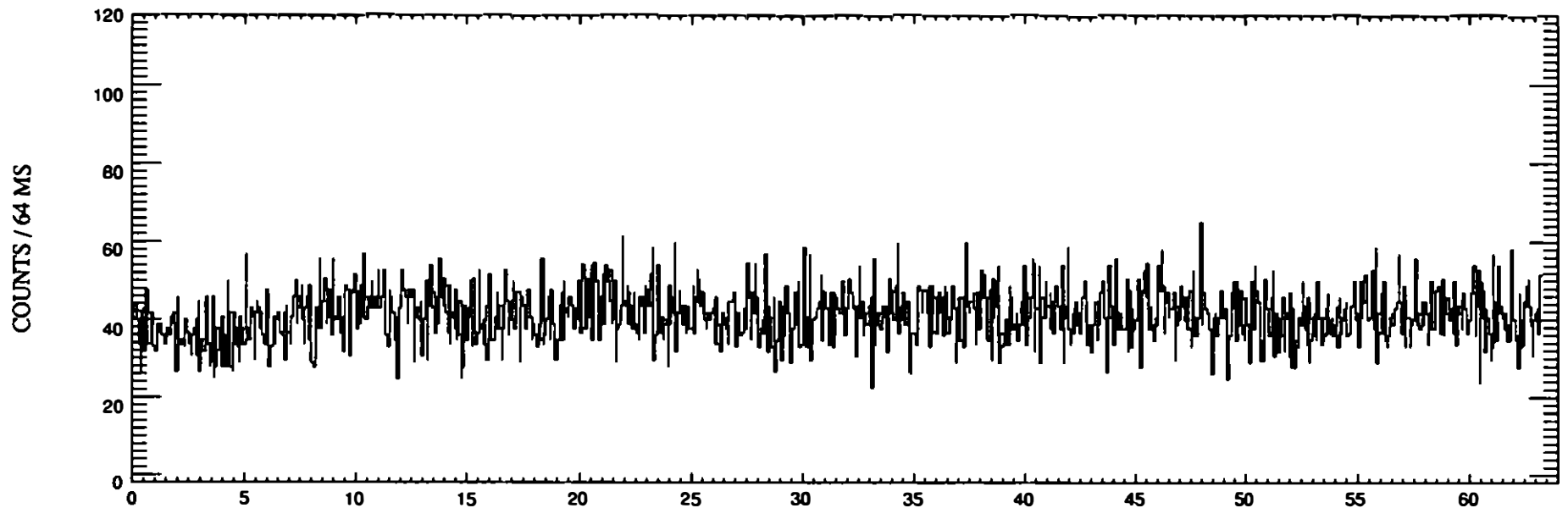
Burst Counter 1 at UT= 9.850397050646 h=35461.429 s 09:51:01.429



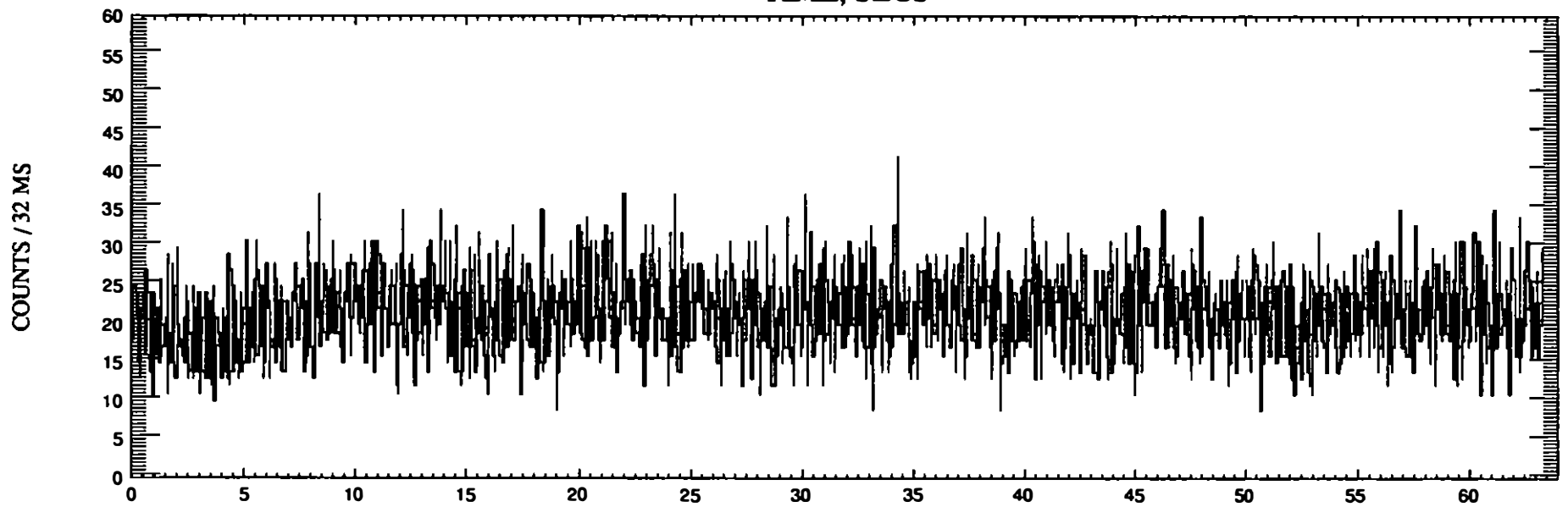
CALIBRATION DATA INCLUDED



Burst Counter 2 at UT=23.446063401964 h=84405.828 s 23:26:45.828

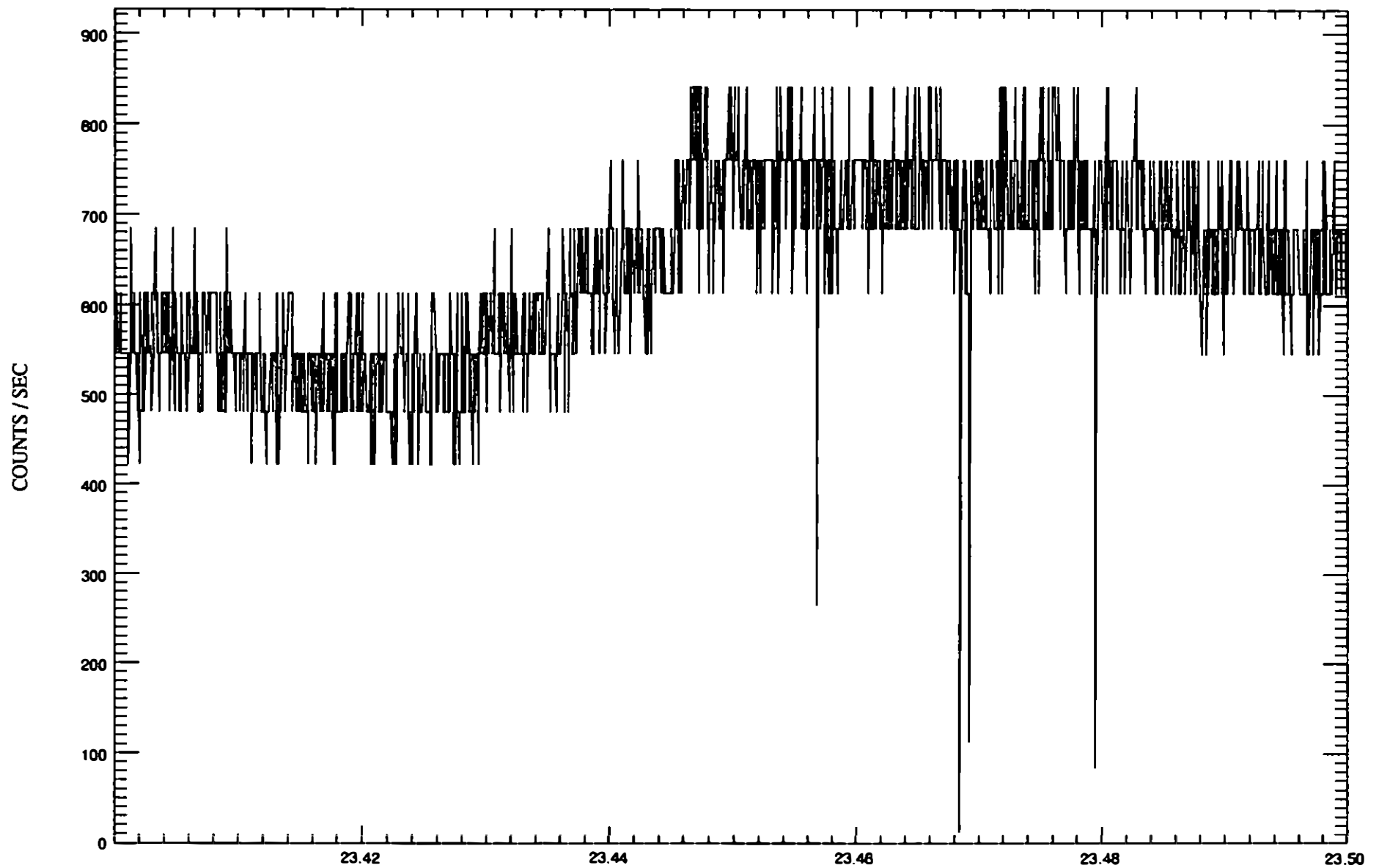


TIME, SECS

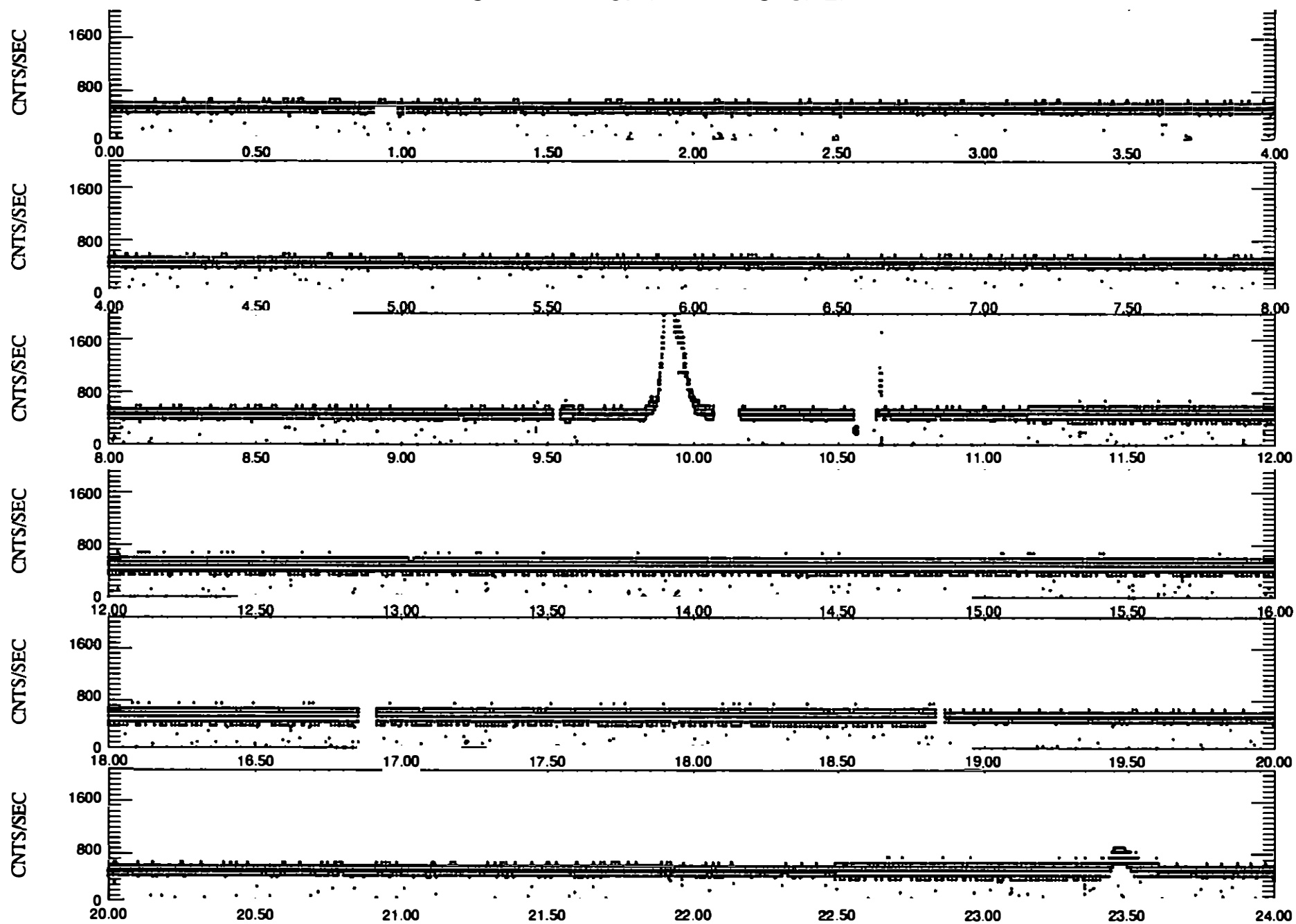


TIME, SECS

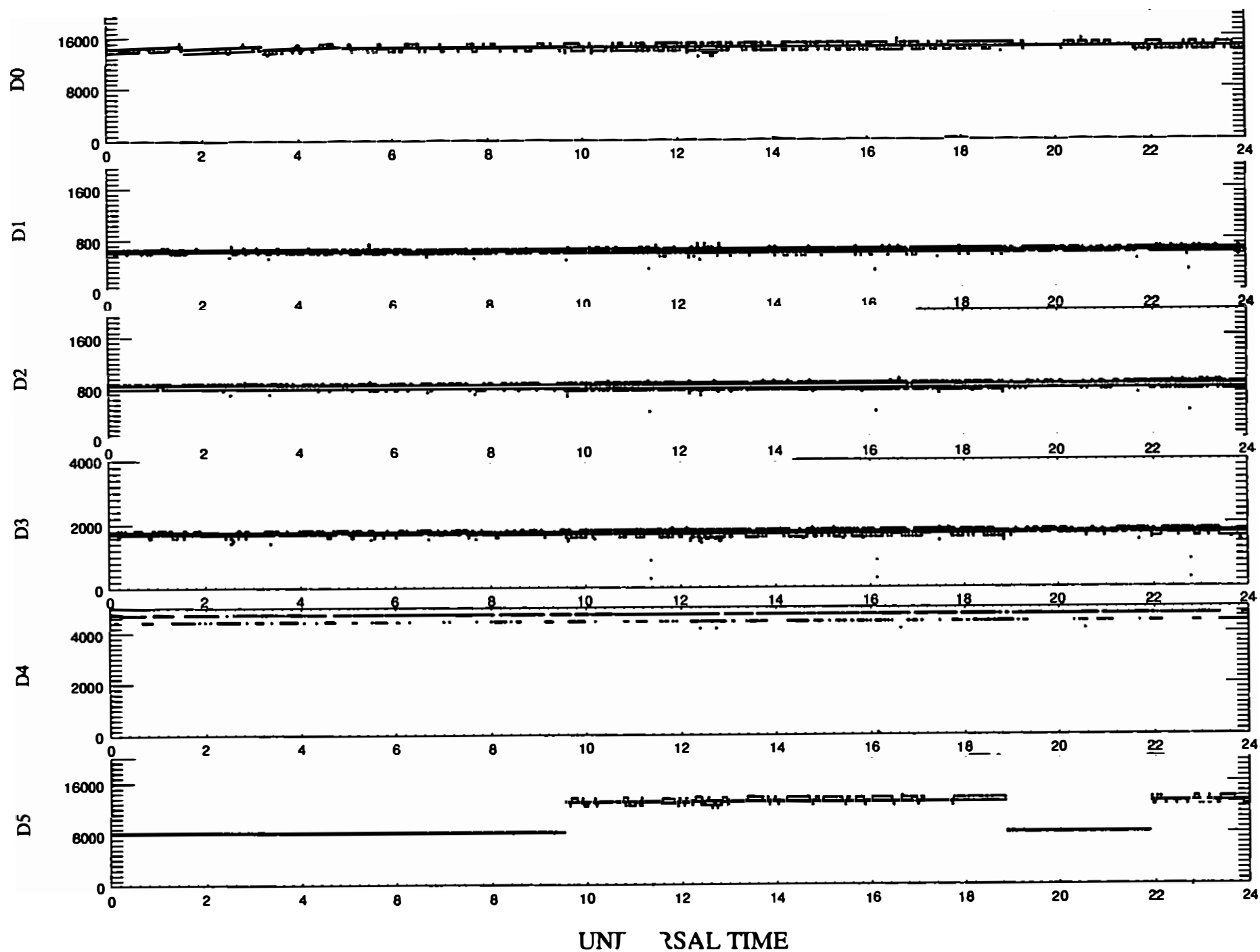
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNT RSAL TIME



From DEAL@fender.msfc.nasa.gov Thu Aug 22 12:43 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Thu, 22 Aug 1996 14:42:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5582

BATSEARCH PROGRAM

BATSE BURST # 5582
EVENT OF 1996 AUG 20 DAY OF YEAR=233
EVENT CROSSING TIME AT BATSE : 39893. S. OR 11:04:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 91.000 30.000
BATSE PEAK COUNTING RATE: 2700 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 8/ 96 IS:
RA= 163.773 DEC= 38.314 DIST= 5.099 AU
BATSE-ULYSSES DISTANCE = 762782505. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1300.75 SECS.
CROSSING TIME AT ULYSSES IS 38592. S. OR 10:43:12 +/- 409.90 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 8/ 96 IS:
RA= 108.202 DEC= 23.091 DIST= 2.171 AU
MARS-BATSE DISTANCE = 324832288. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=163.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1037.04 SECS.
CROSSING TIME AT MARS IS 38856. S. OR 10:47:35 +/- 38.76 SECONDS

BATSE BURST TRIGGER

NO.: 5582

TIME: TJD=0315 SECONDS=39893

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=10.5 AZIMUTH=109.7 ERROR=8.9 DEGREES

COMMENTS:

TGF LASTING ~ 0.01 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5582	960820	10315	39893	2700	091	+30	.01

BATSE #

5582

22 / 8 / 96

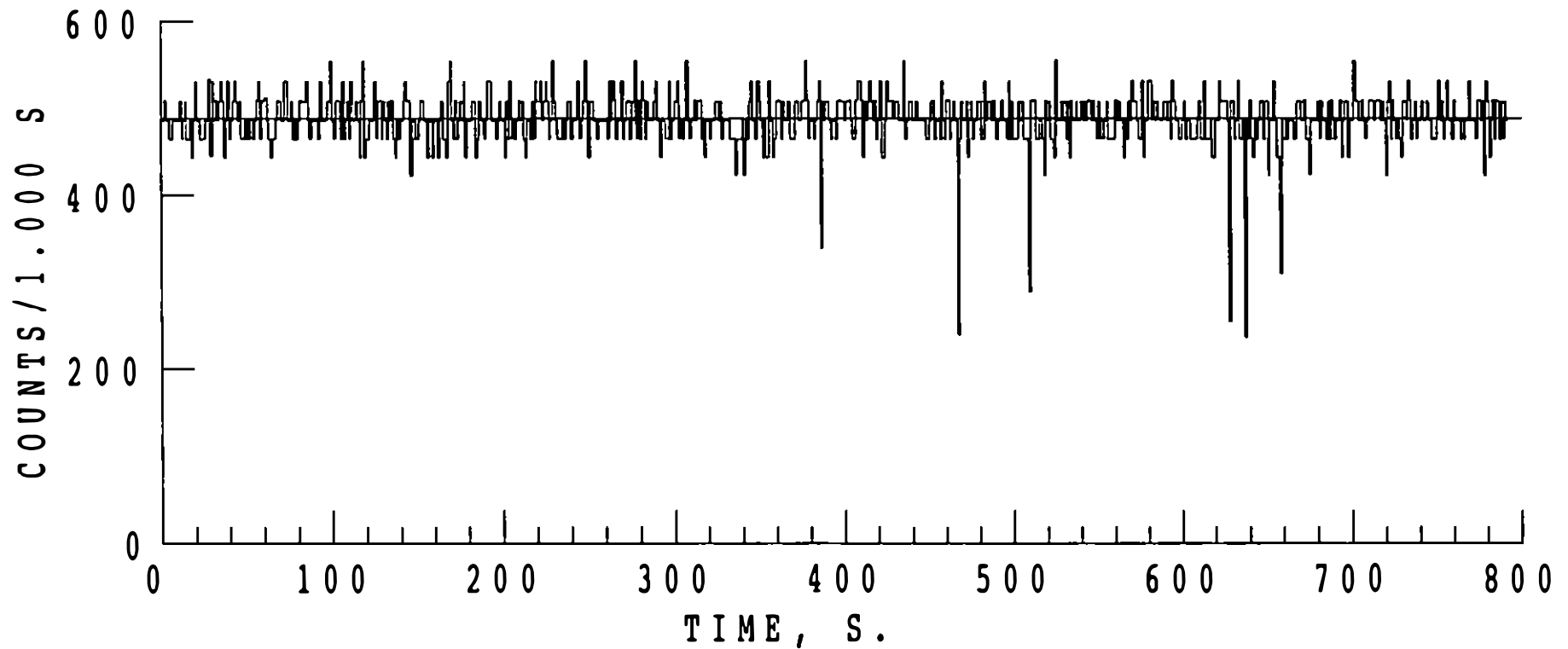
ULYSSES RT

20 / 8 / 96 38196.105 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N=10 M=2
>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Thu Aug 22 12:38 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Thu, 22 Aug 1996 14:38:21 -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.: 5583

TIME: TJD=0315 SECONDS=83982

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

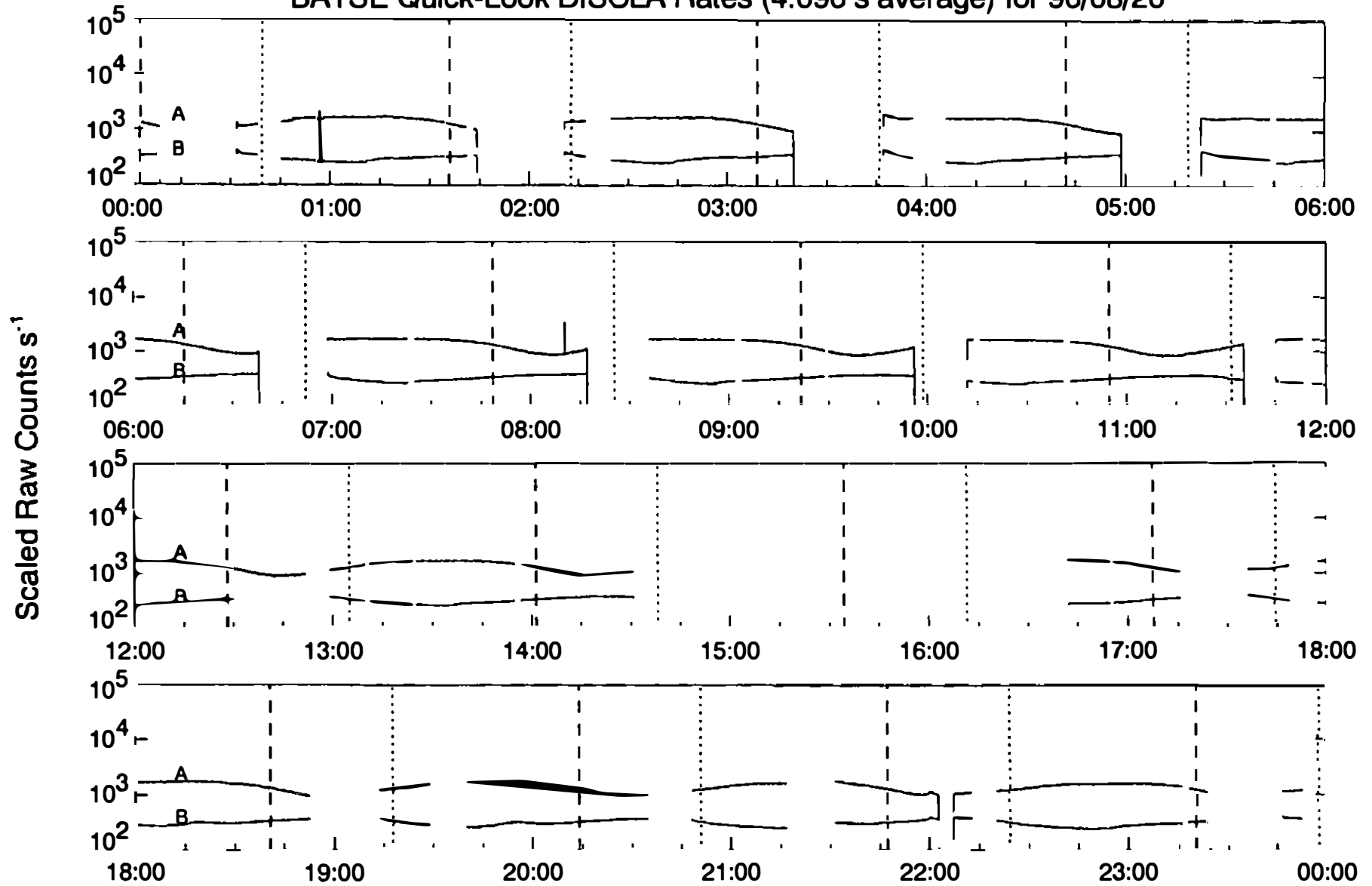
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=28.1 AZIMUTH=321.0 ERROR=12.4 DEGREES

COMMENTS:
TGF LASTING 0.01 S.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/20

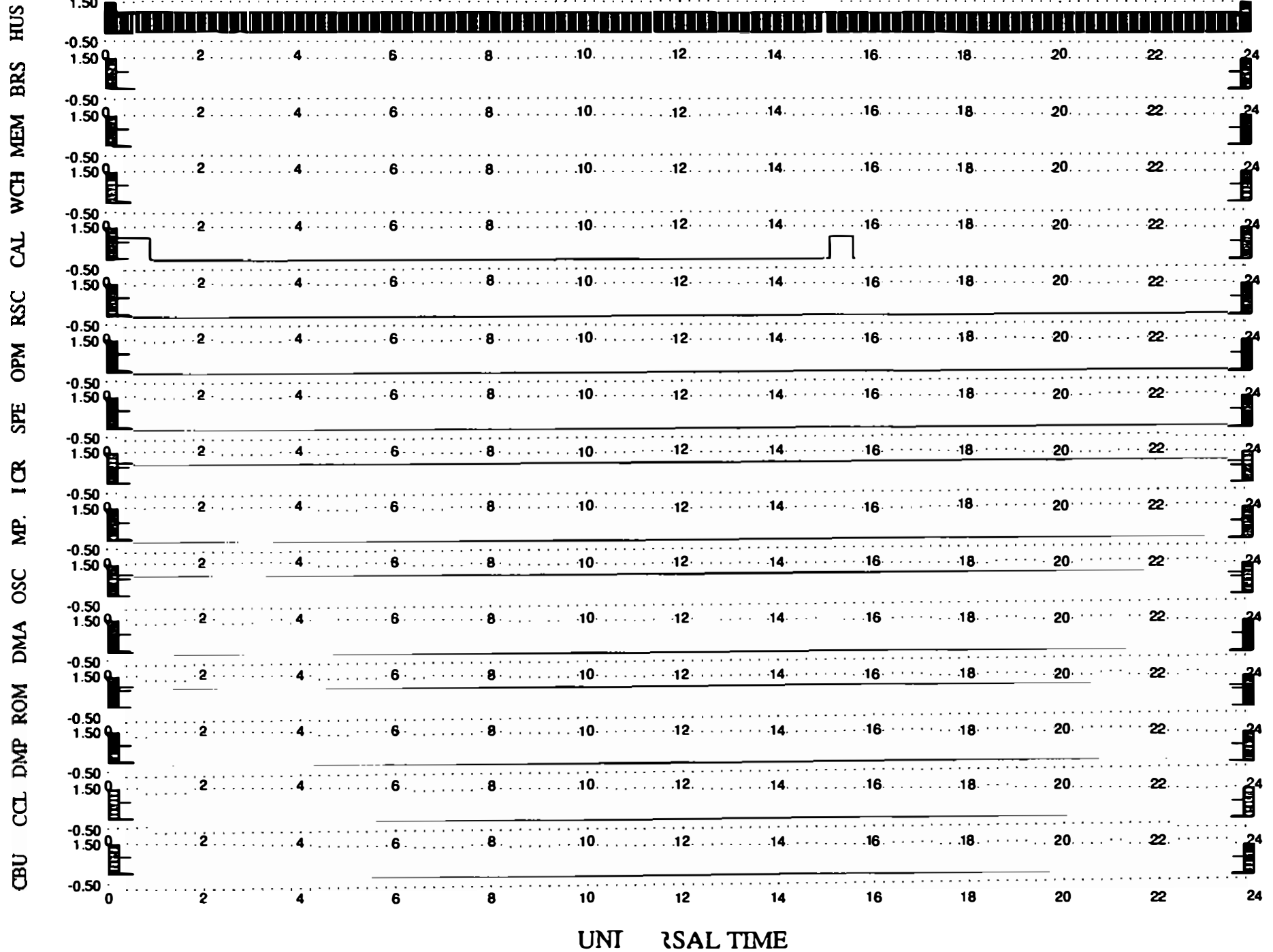


Current Time: 96/08/22, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

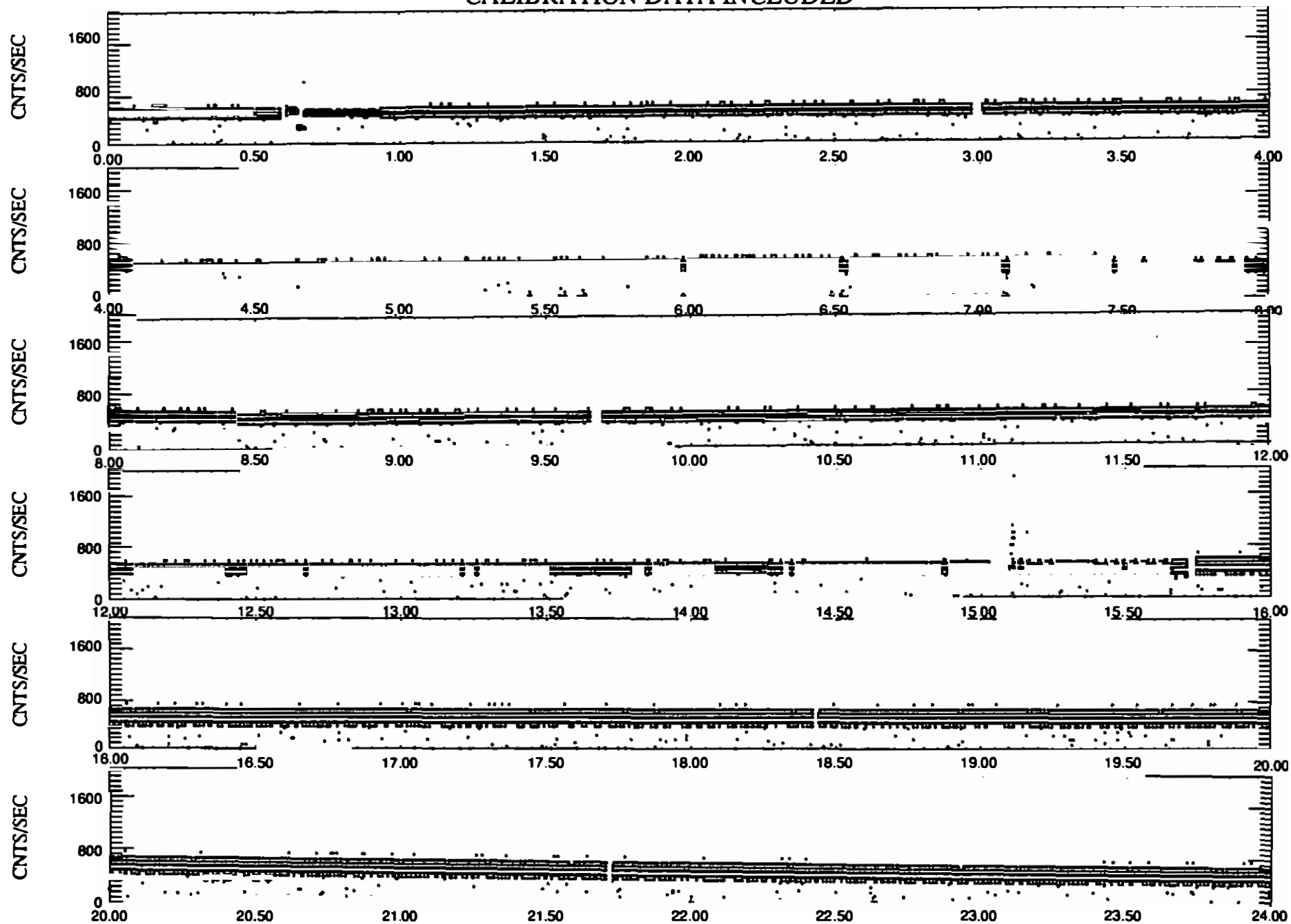
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

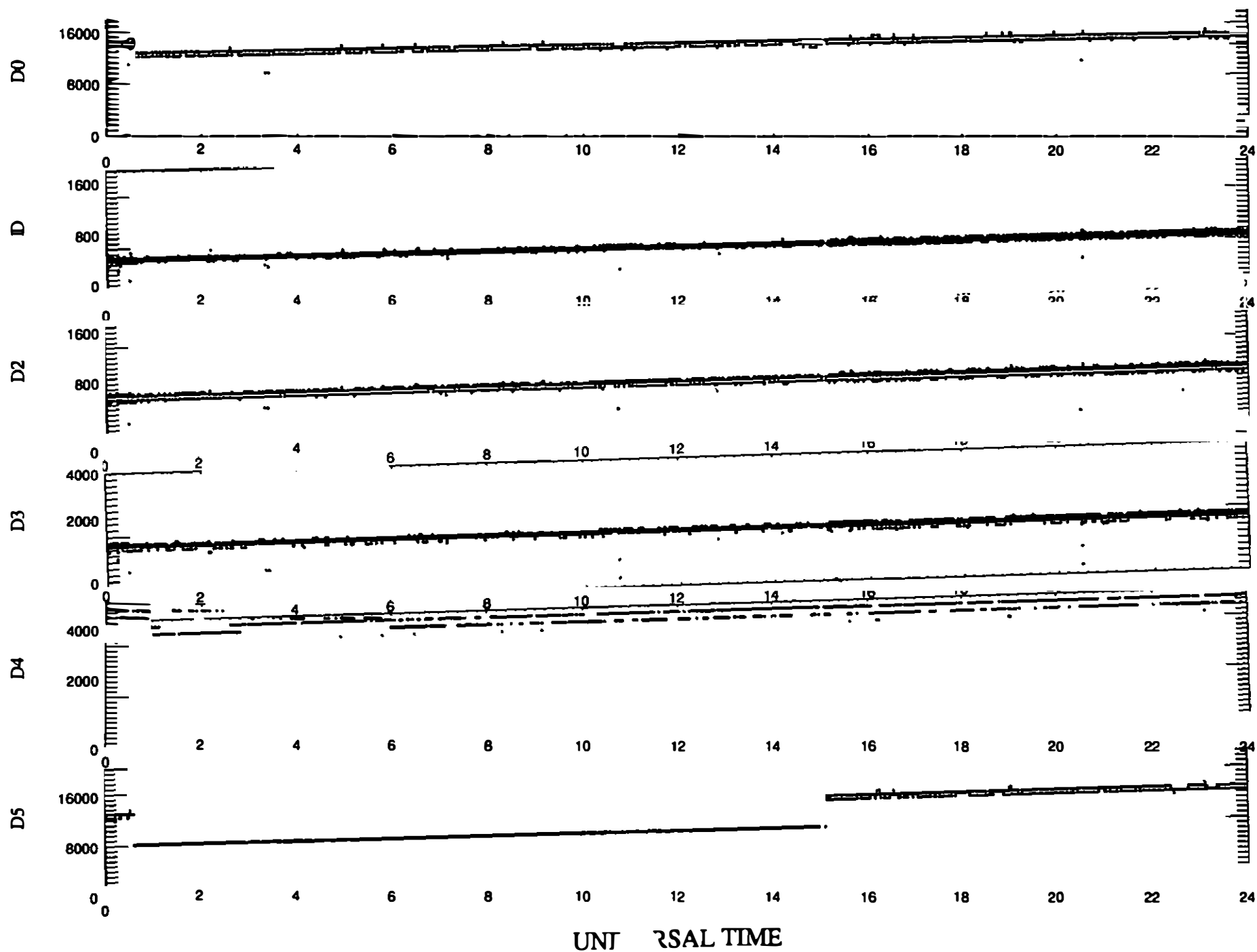
NO BURST (2)



CALIBRATION DATA INCLUDED



UNT RSAL TIME



Date: Oct 6 2011

BURST TRIANGULATION CHECKLIST

I. 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?

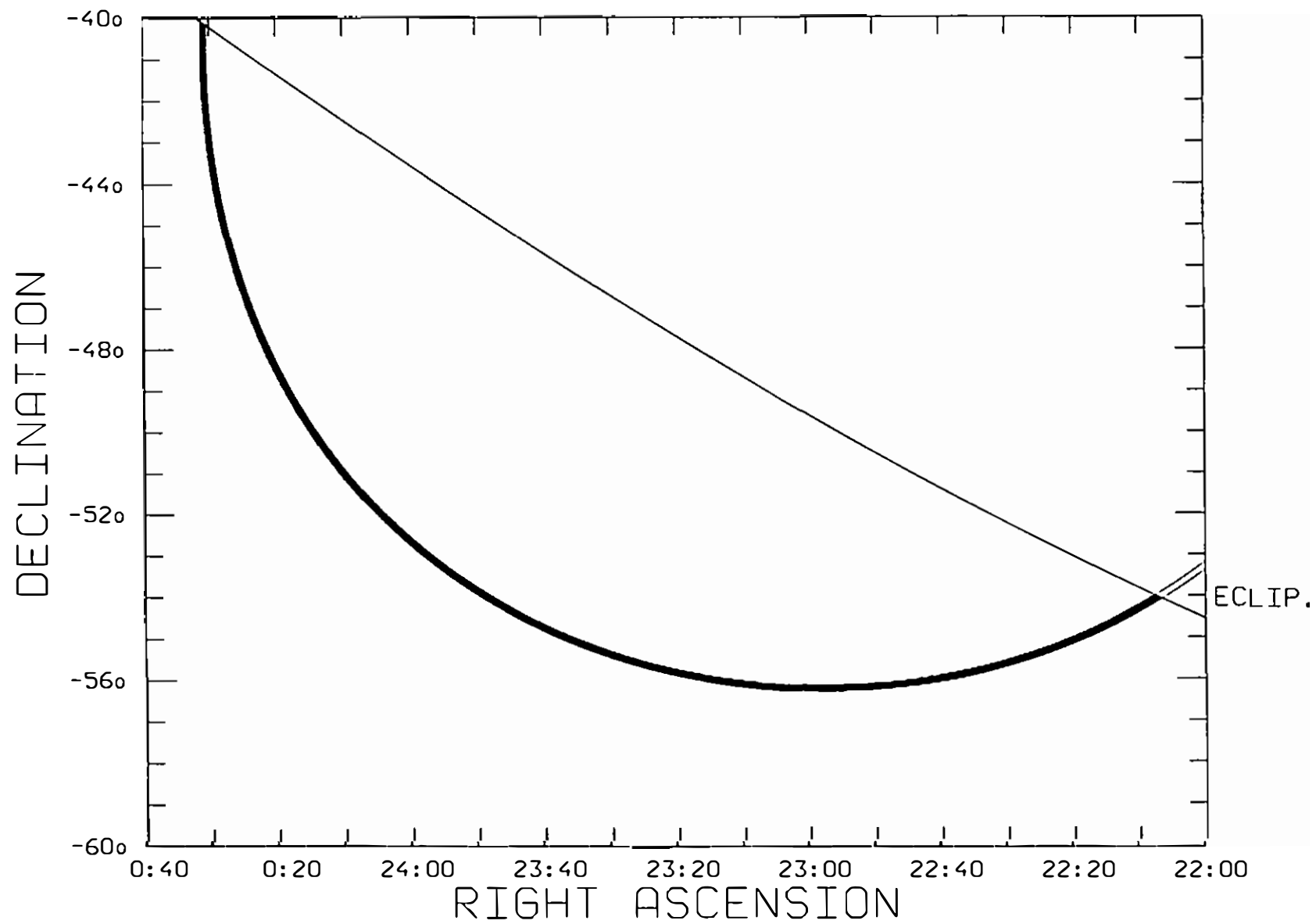
2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

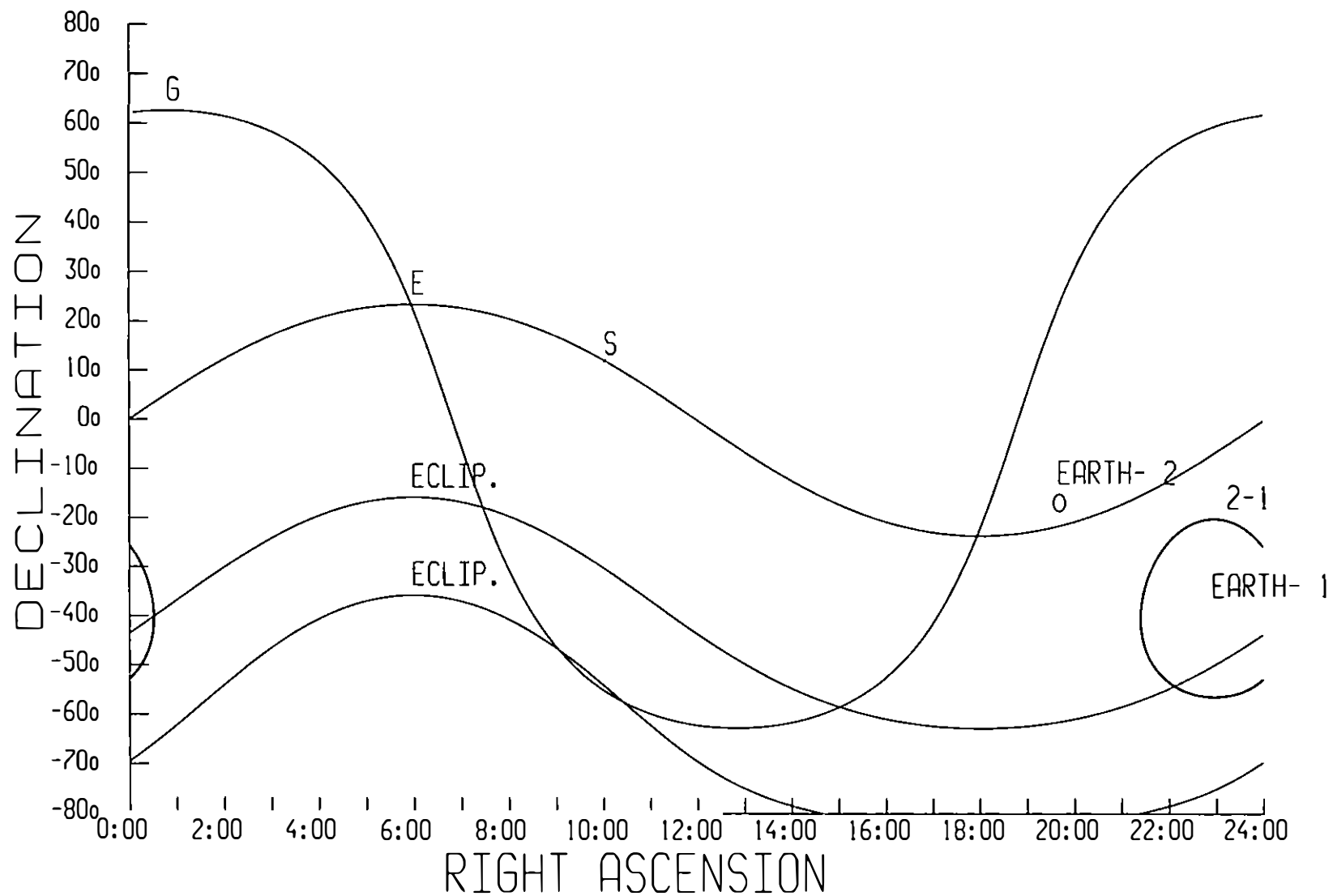
-
- ☒ ACCESS and MBL4 databases updated with identical times?

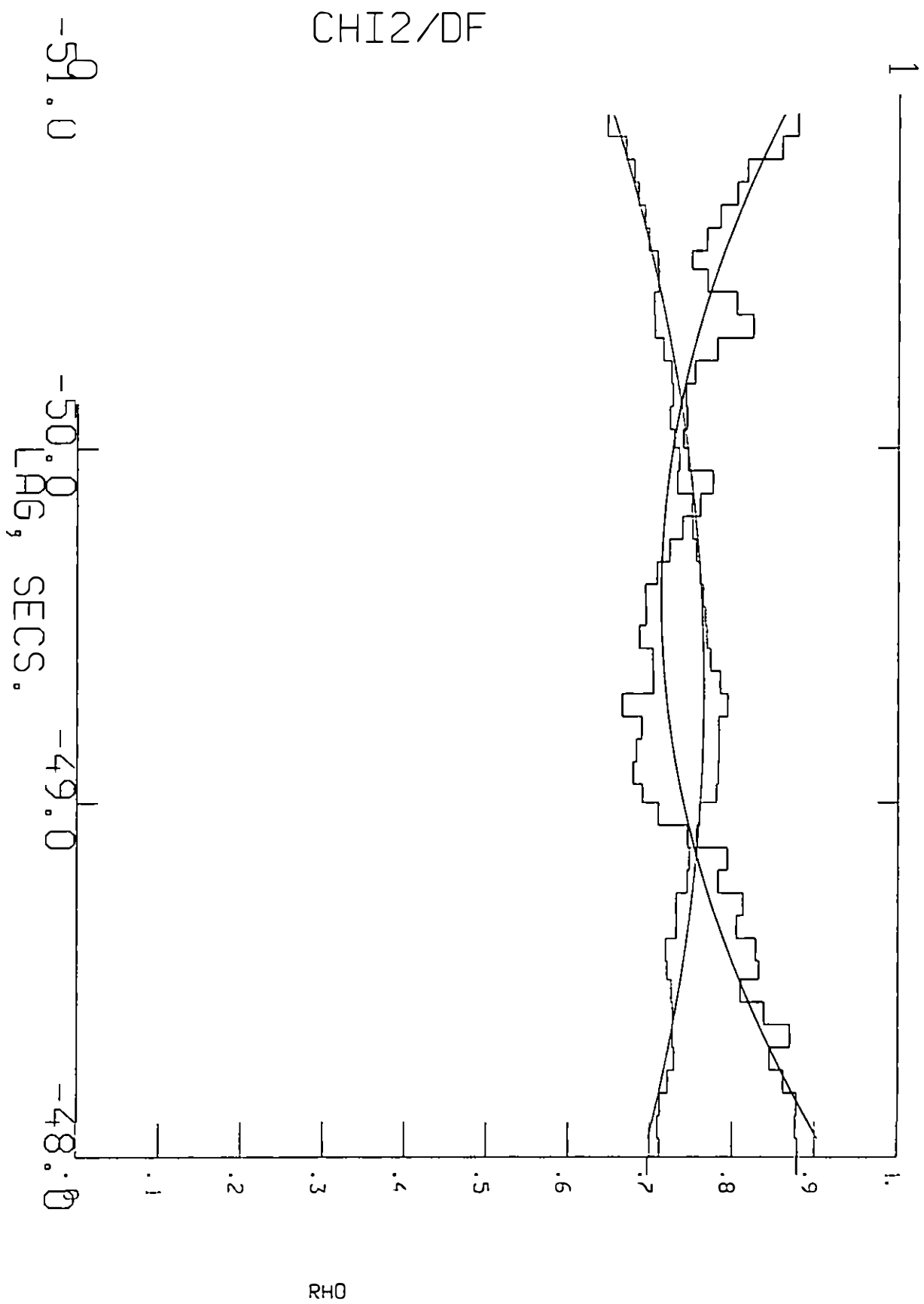


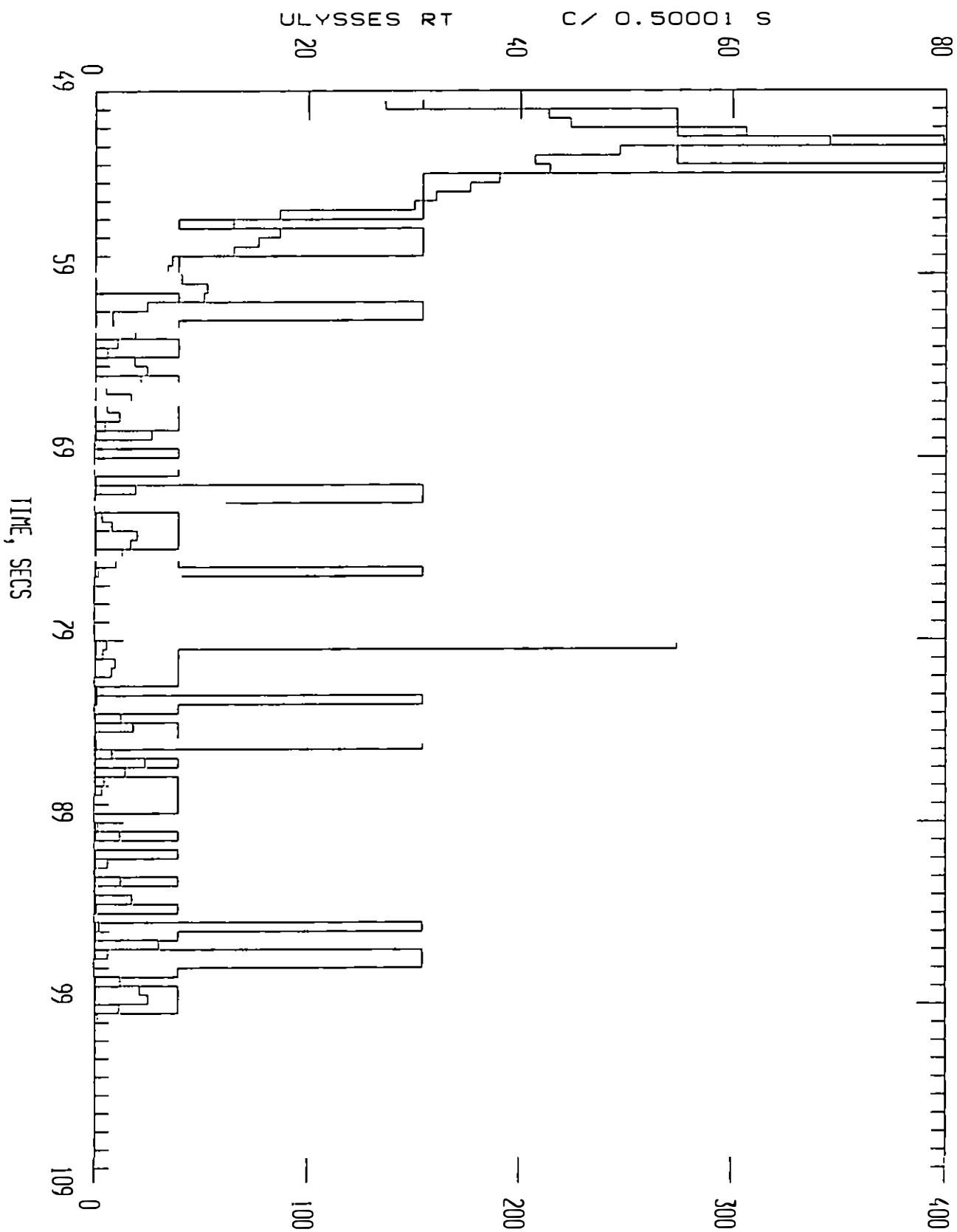
EVENT OF AUG 21, 1996 4:31

06/10/2011

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







KONUS 19960821 16340

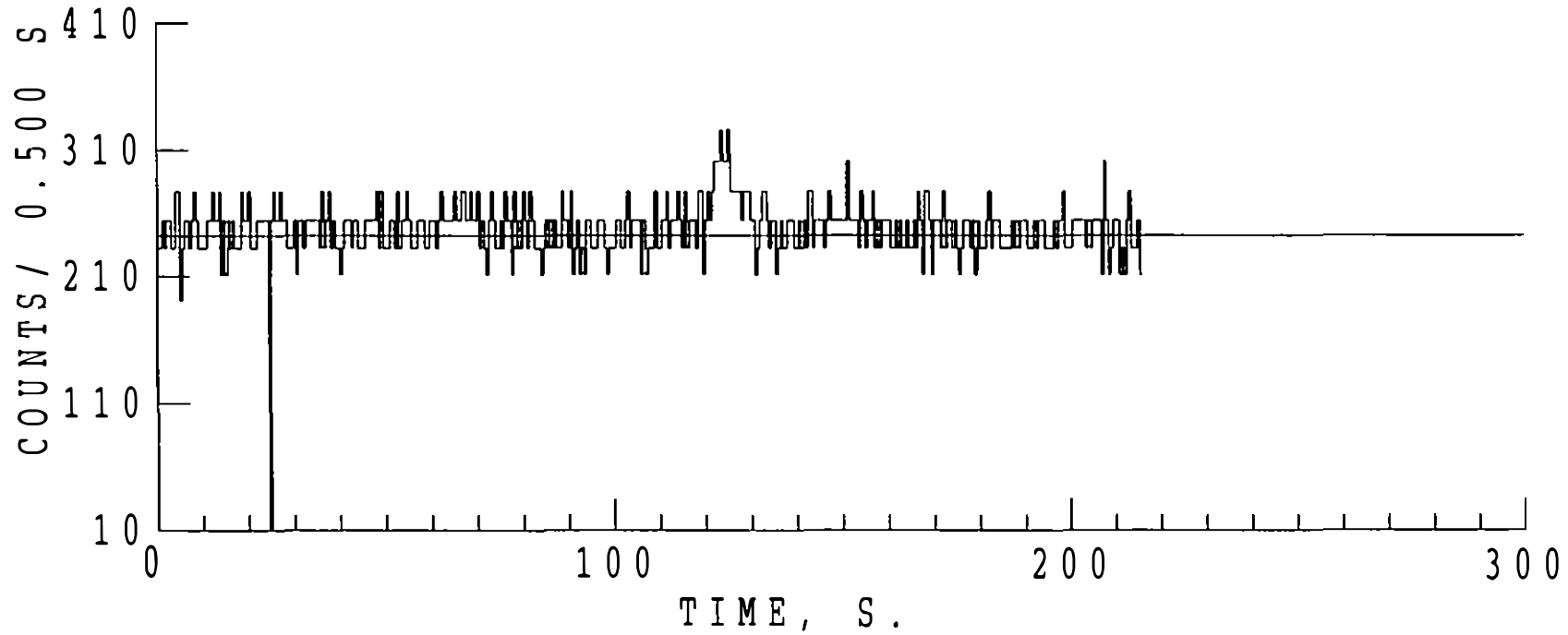
ULYSSES RT

05/10/11

21/08/96 16236.041 s

0 - 0 keV

N= 10 N= 2
>4.0 SIGMA FLUCTUATIONS



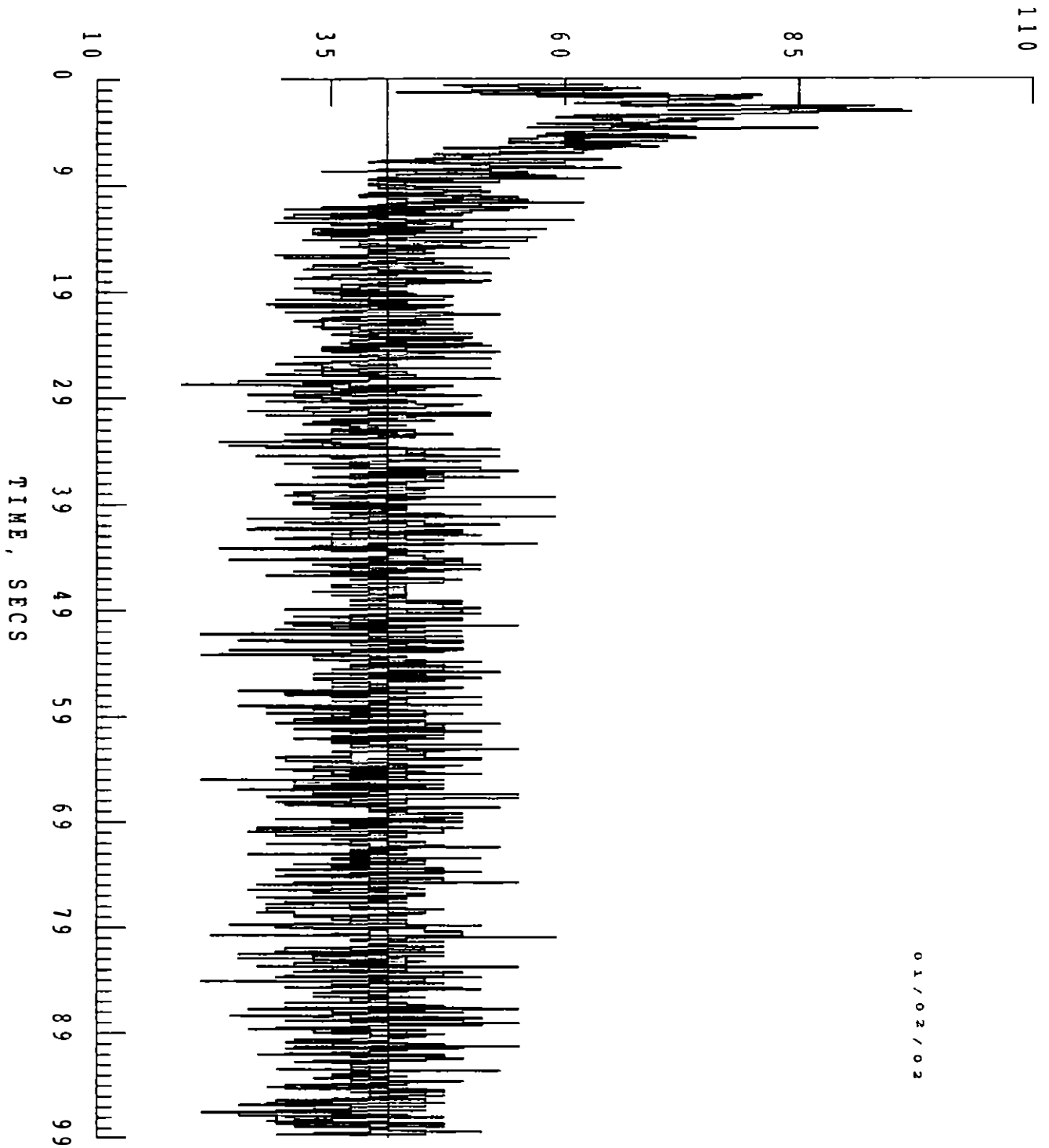
KONUS1

21/08/96

13940.971

50 - 200 keV

COUNTS/0.064 S



KONUS1 19960821 13940

ULYSSES RT

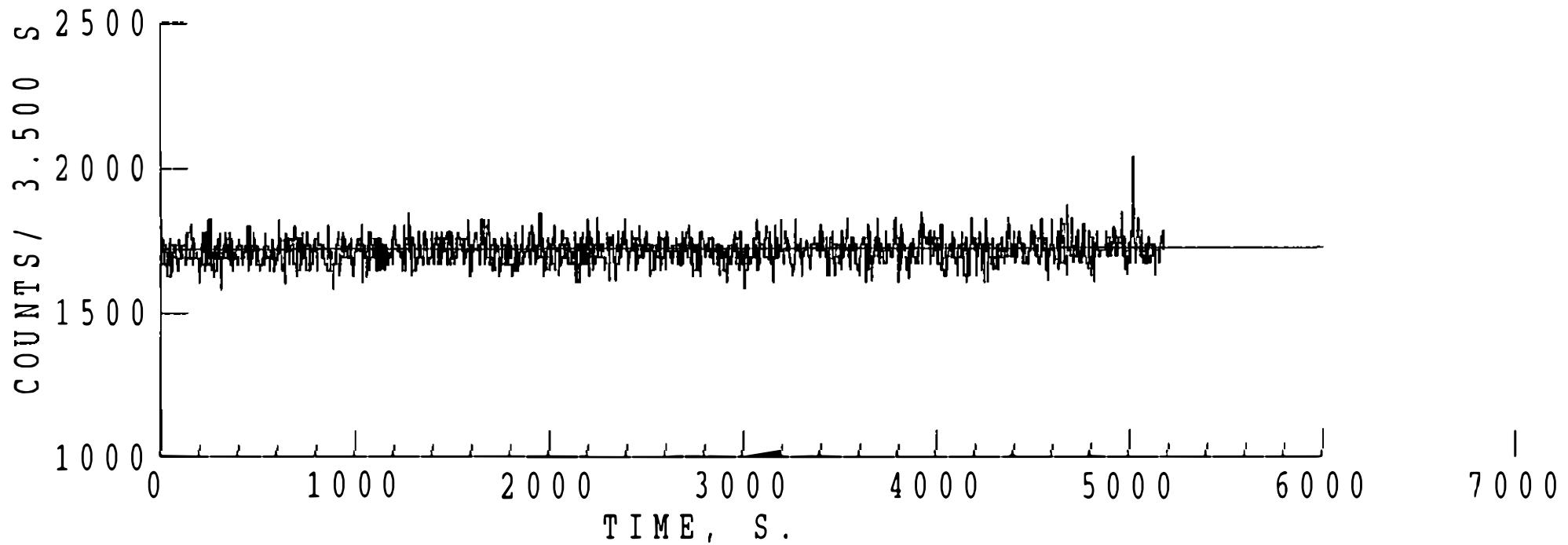
01 / 02 / 02

21/08/96 11340.479 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Fri Aug 30 11:27 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Fri, 30 Aug 1996 13:24:44 -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.: 5588

TIME: TJD=0324 SECONDS=35537

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

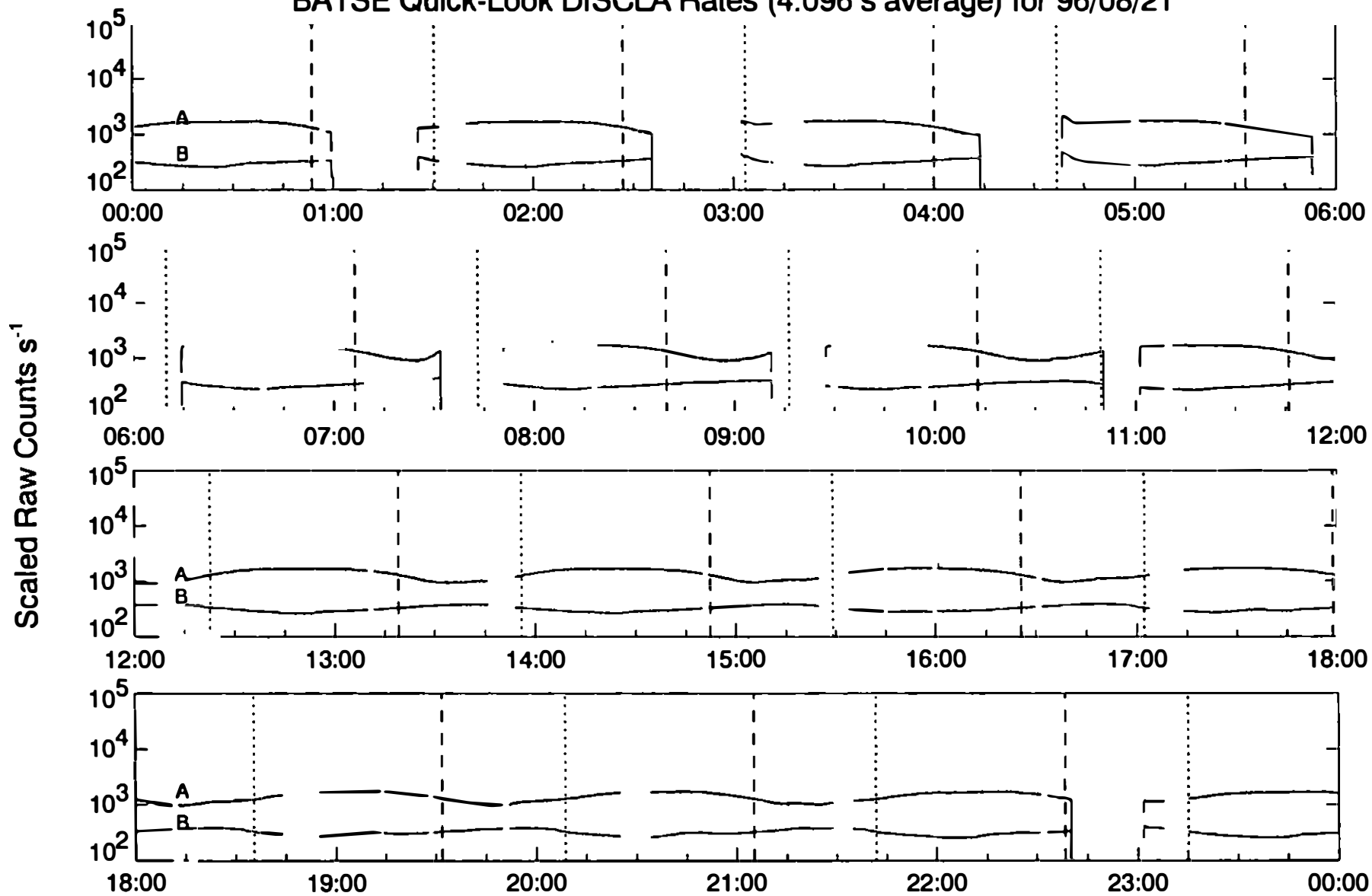
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=9.9 AZIMUTH=267.7 ERROR=7.5 DEGREES

COMMENTS:

TGF LASTING ~ 0.01 S.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/21

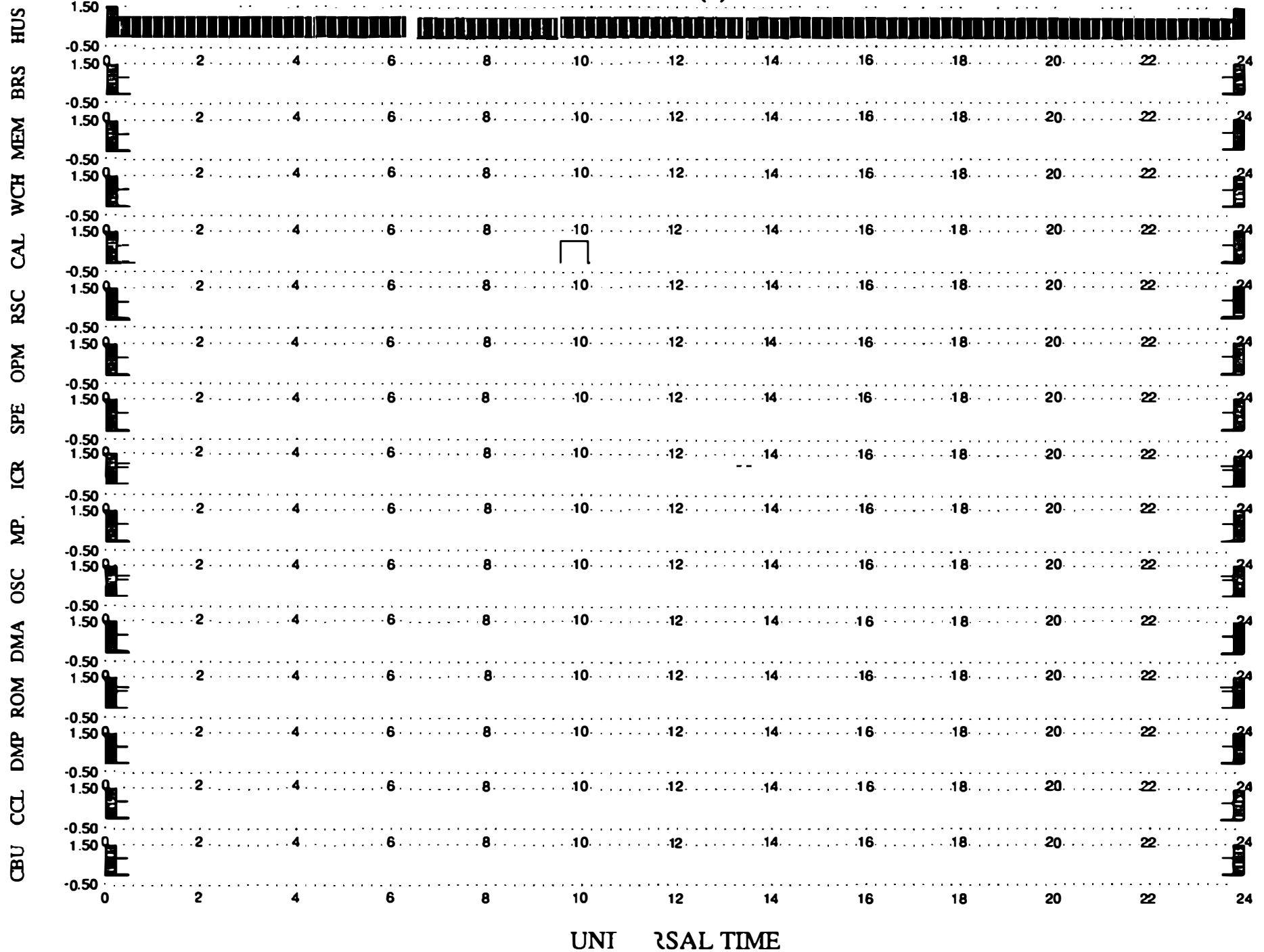


Current Time: 96/08/23, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

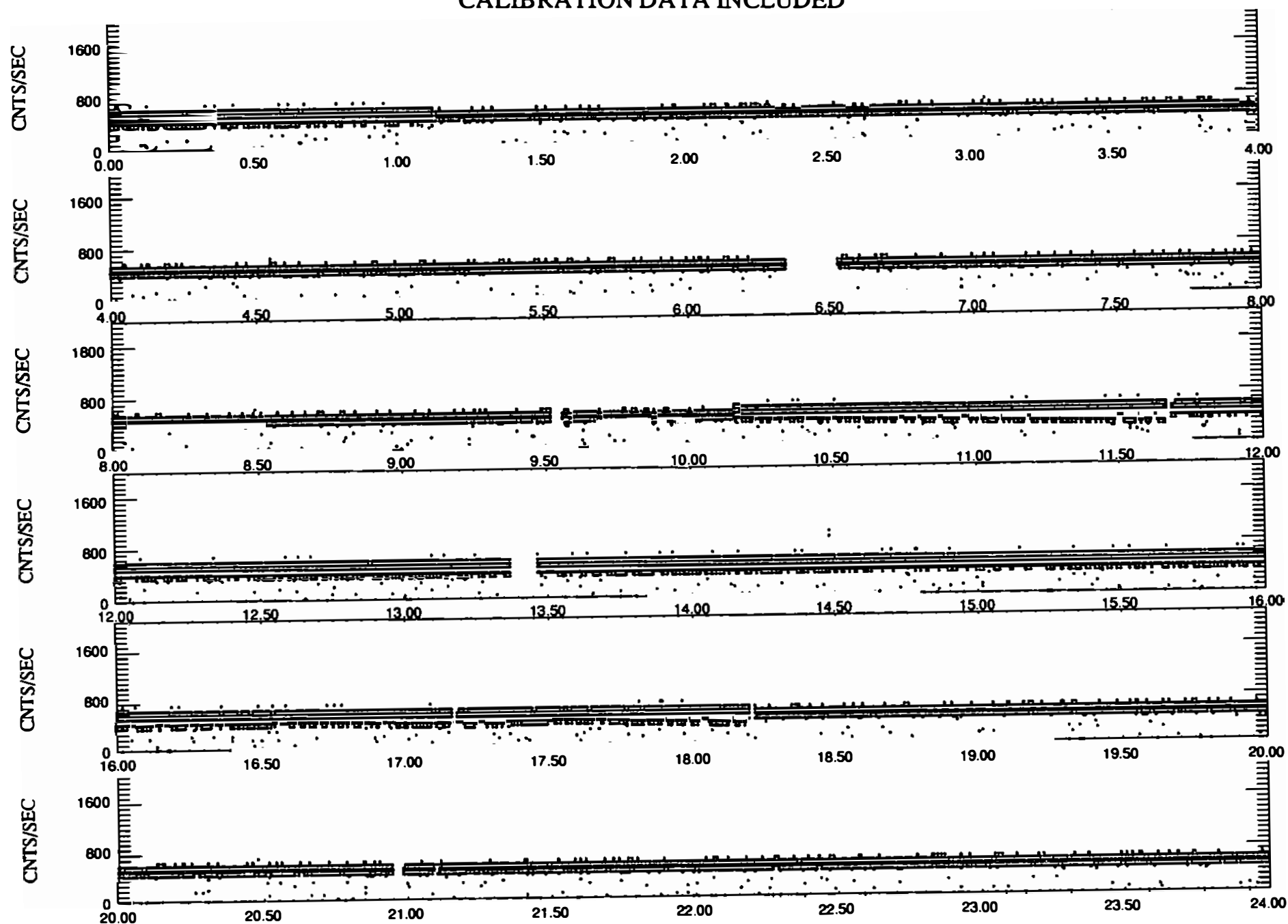
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

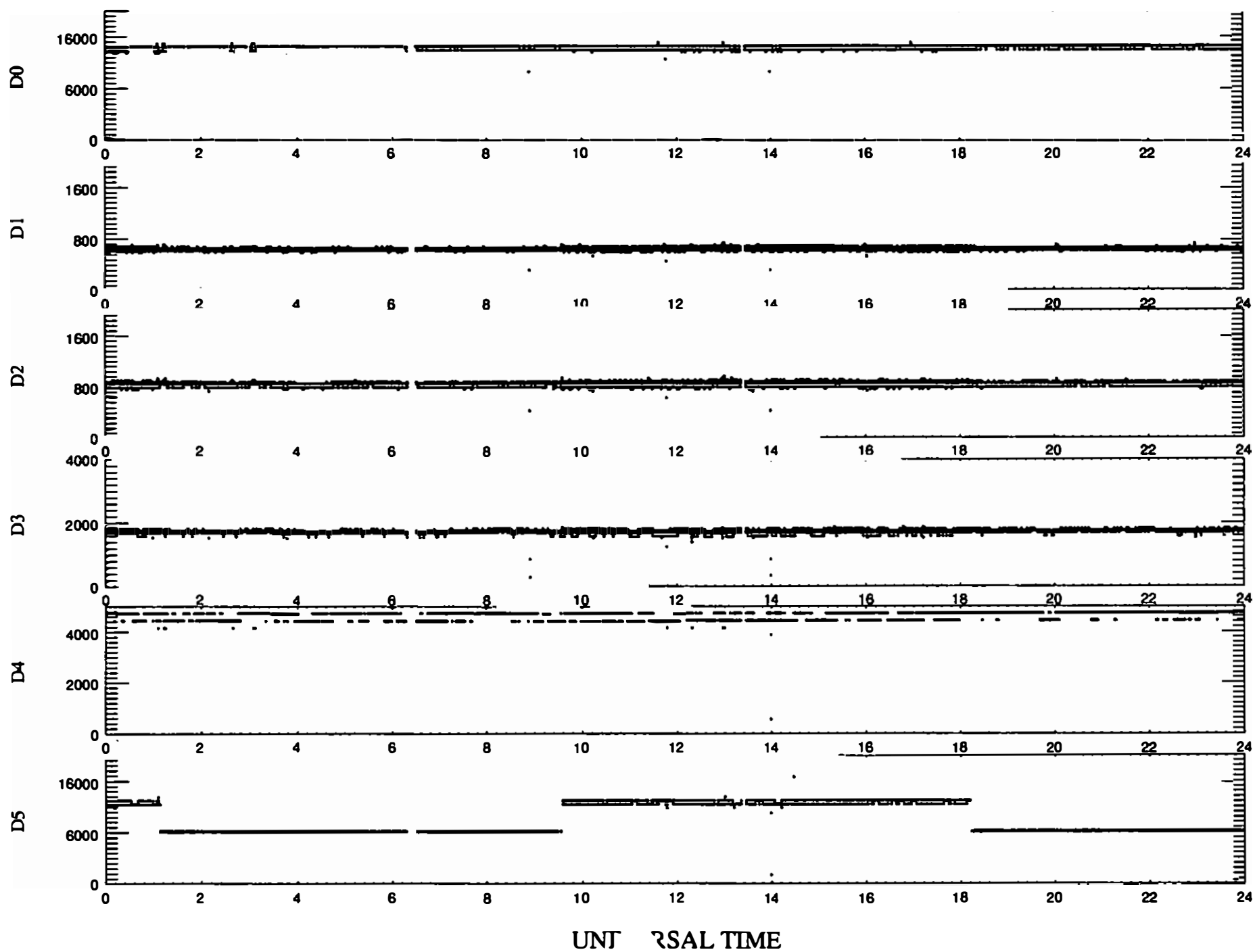
NO BURST (2)



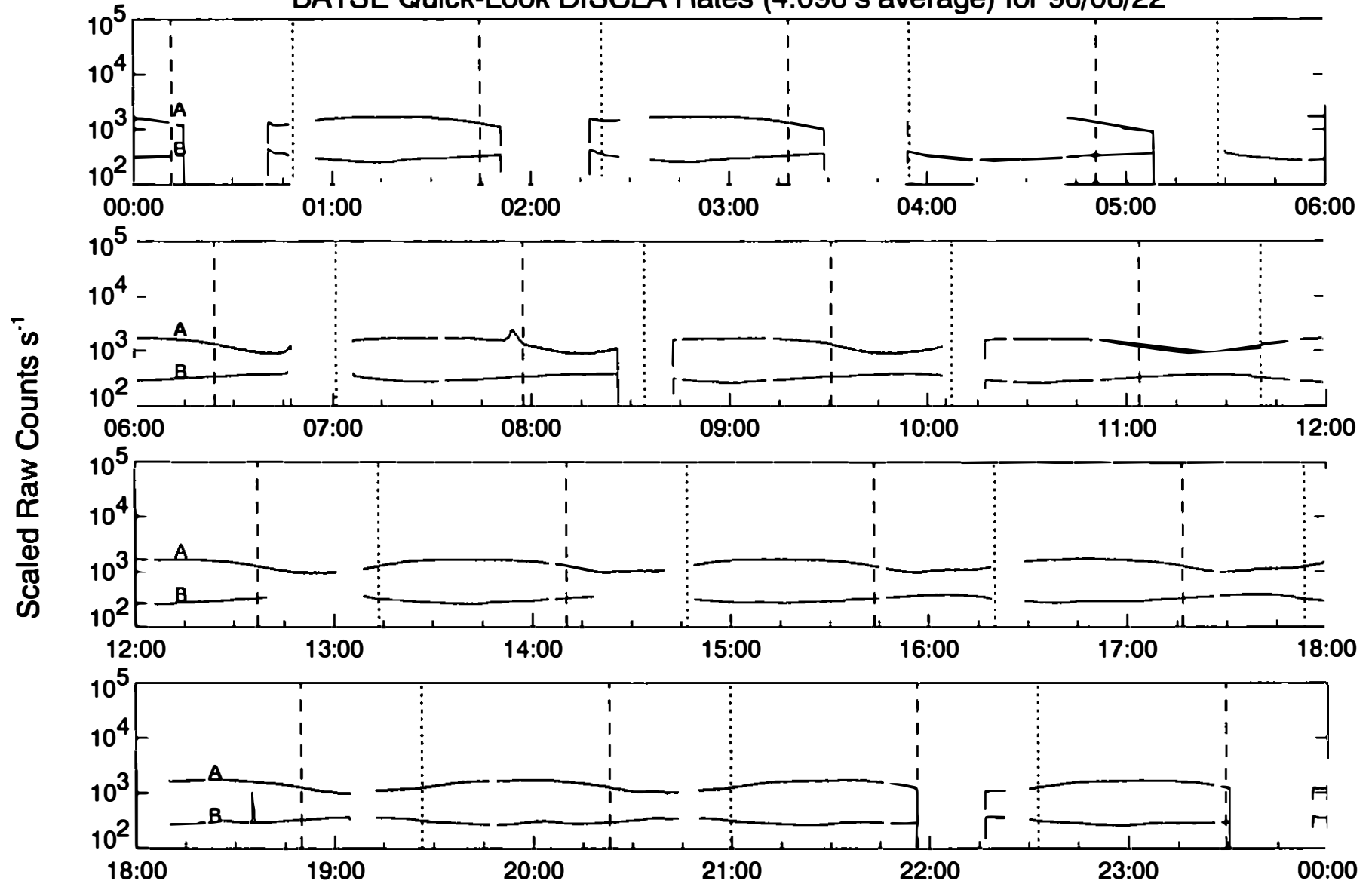
CALIBRATION DATA INCLUDED



UNJ RSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/22



Current Time: 96/08/24, 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

From BUTTERWORTH@lheavx.gsfc.nasa.gov Thu Aug 29 08:31 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Thu, 29 Aug 1996 11:29:41 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRBs960822 were not seen by Konus

Hi Everyone,

Konus didn't trigger on the 22nd or 23rd. There are no indications of a GRB anywhere in the waiting mode data either (currently recorded every 1.5 seconds). There was a weak solar flare from 7:47 to 8:02 UT on the 22nd, during which the 10 to 50 keV flux rose slowly (and without apparent short-period fluctuations) to a maximum near 7.55, before declining symmetrically. The flare was not visible above 50 keV. There were also an unusually large number of short telemetry drop-outs during the period of interest, with about 10 gaps of 1.5 to 6 seconds (corresponding to from 1 to 4 waiting-mode cycles) per hour.

Paul.

Date: Wed, 28 Aug 1996 14:54:04 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199608282154.OAA05919@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@lheamail.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it
Subject: GRBs960822
X-Sun-Charset: US-ASCII

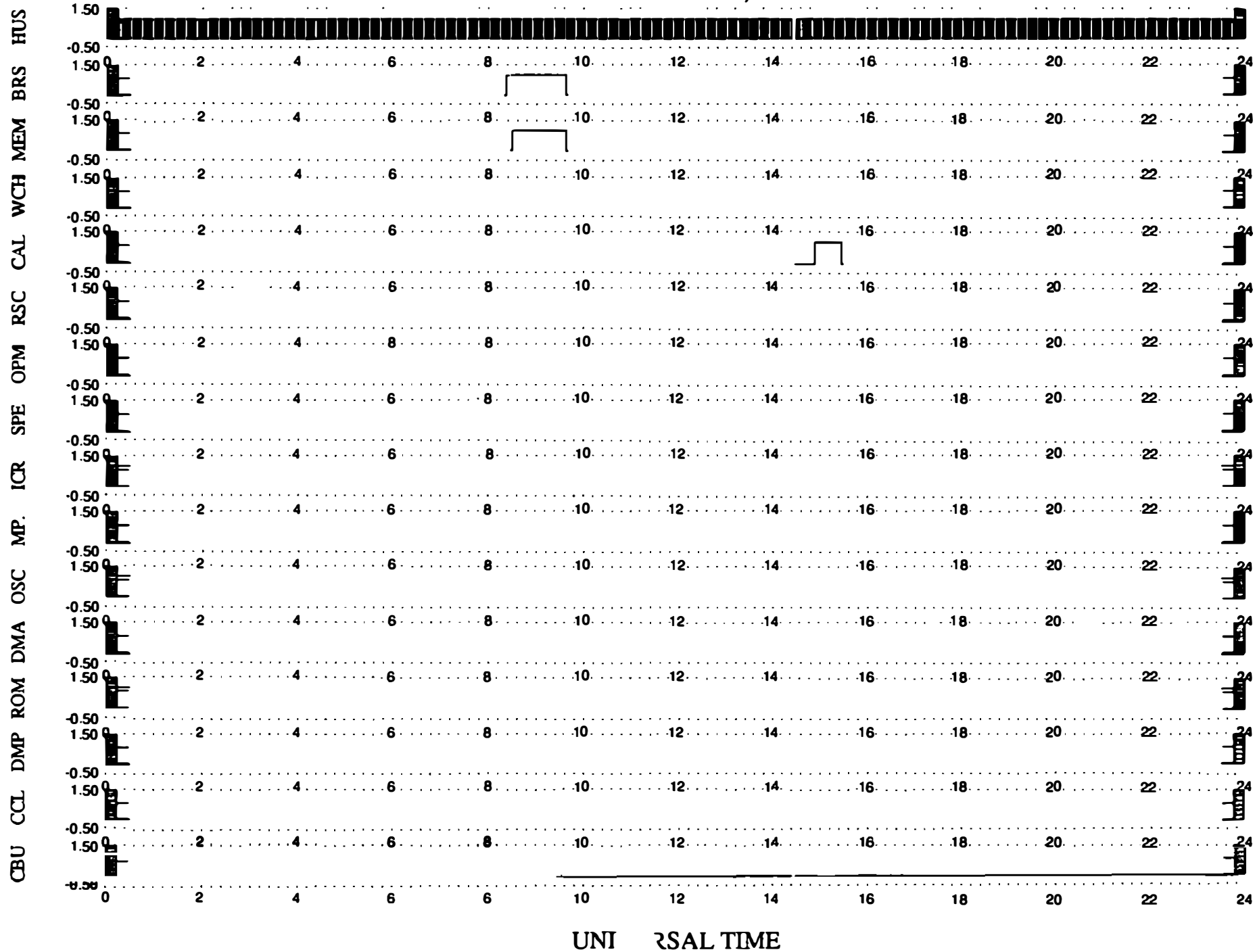
ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed two weak events August 22 1996. The first occurred at 08:21 and appeared to last several seconds; the second occurred at 23:54 and lasted less than one second.

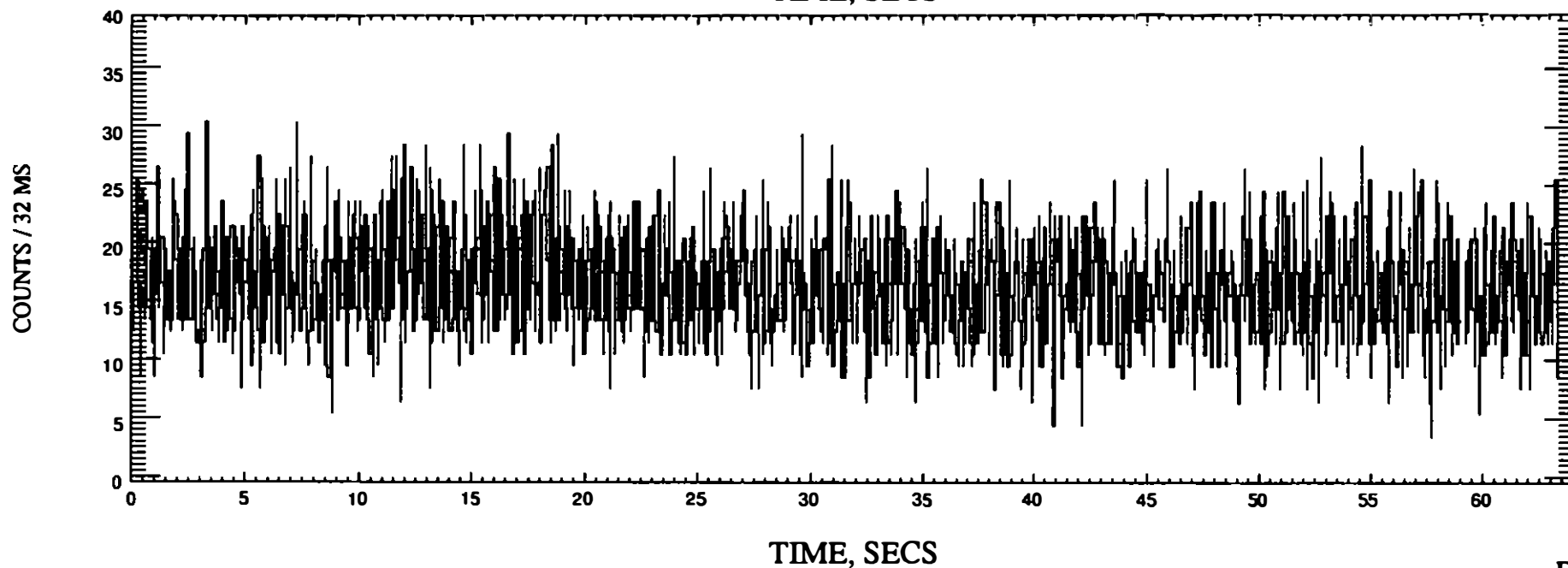
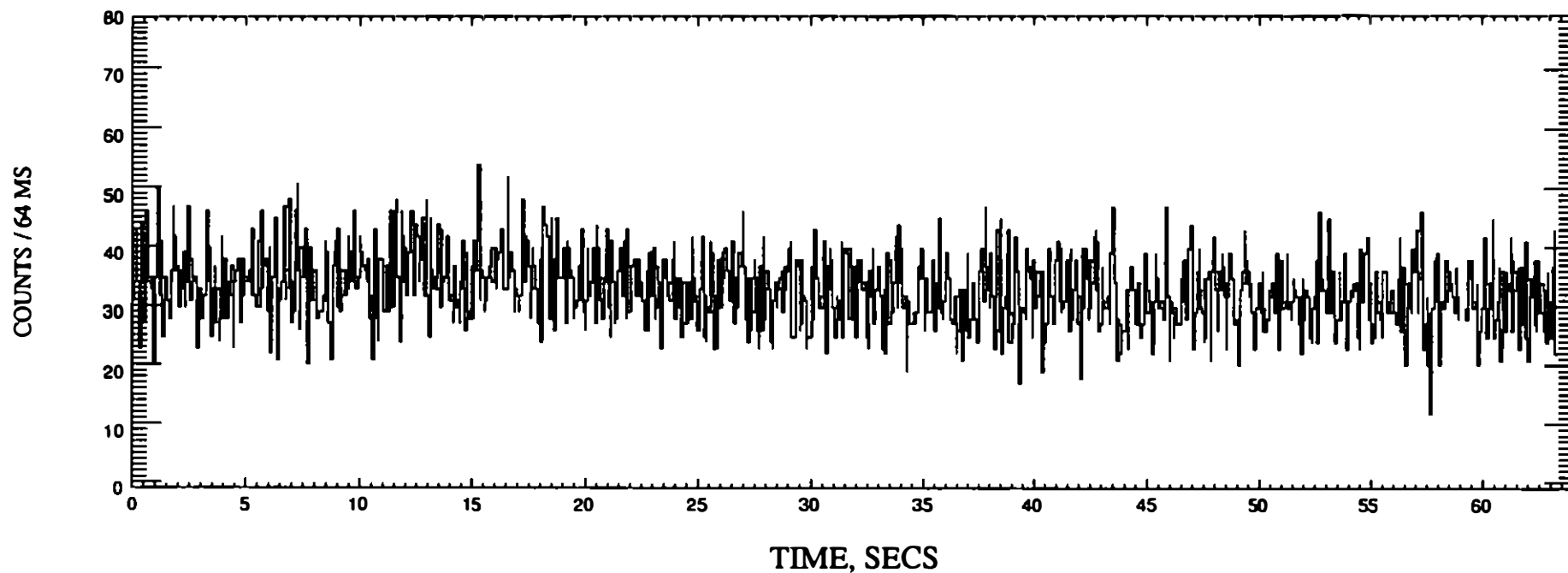
Were these events detected by anyone else?

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

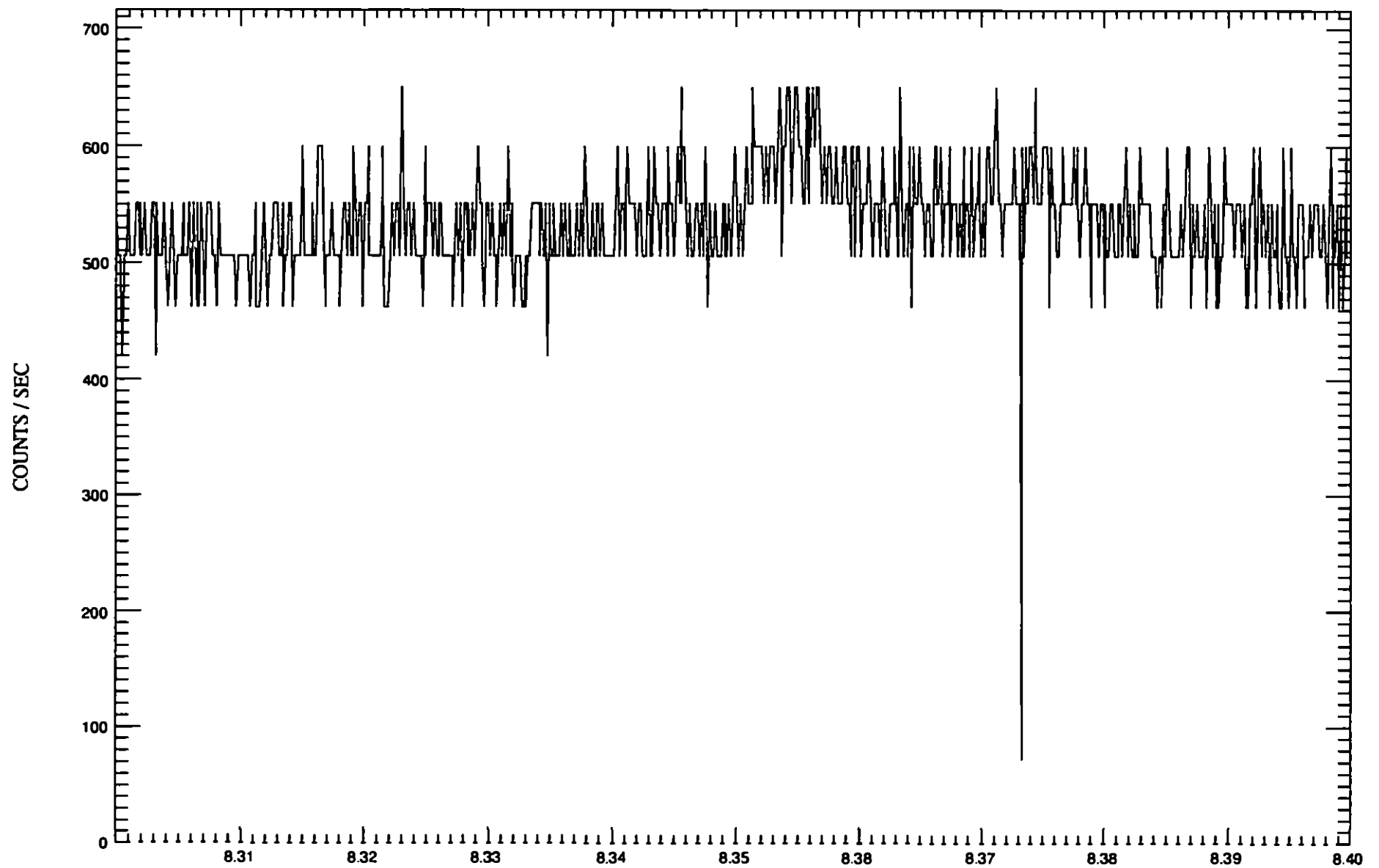
BURST NUMBER 3, 4



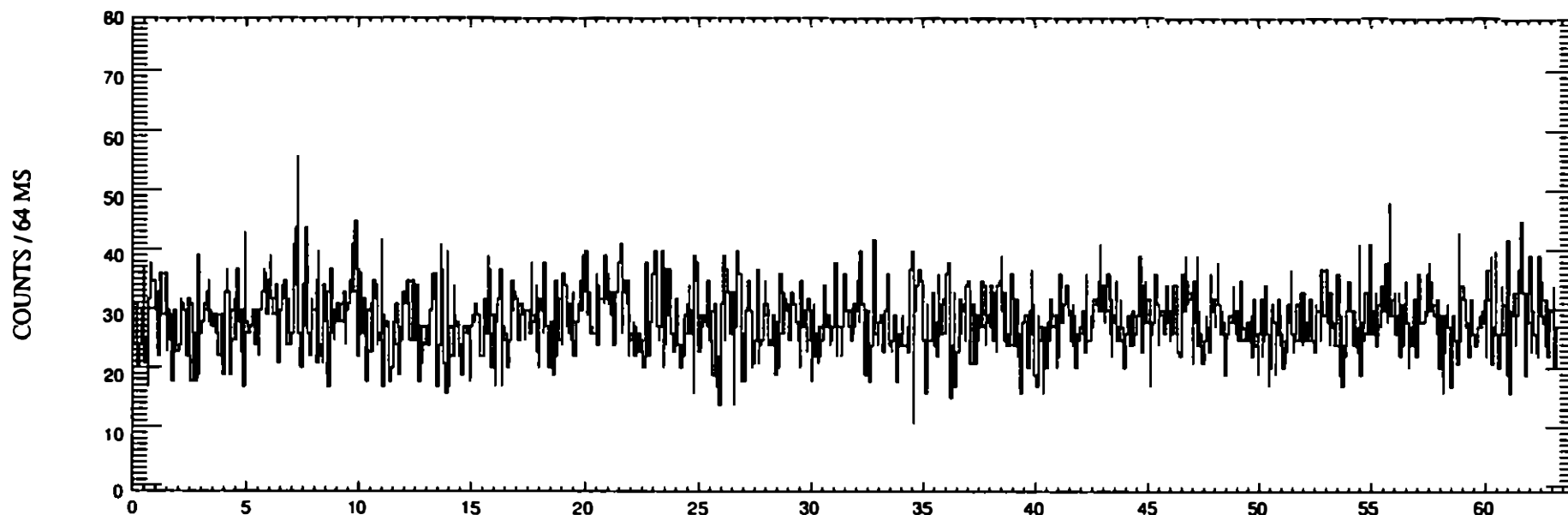
Burst Counter 3 at UT= 8.353682708740 h=30073.258 s 08:21:13.258



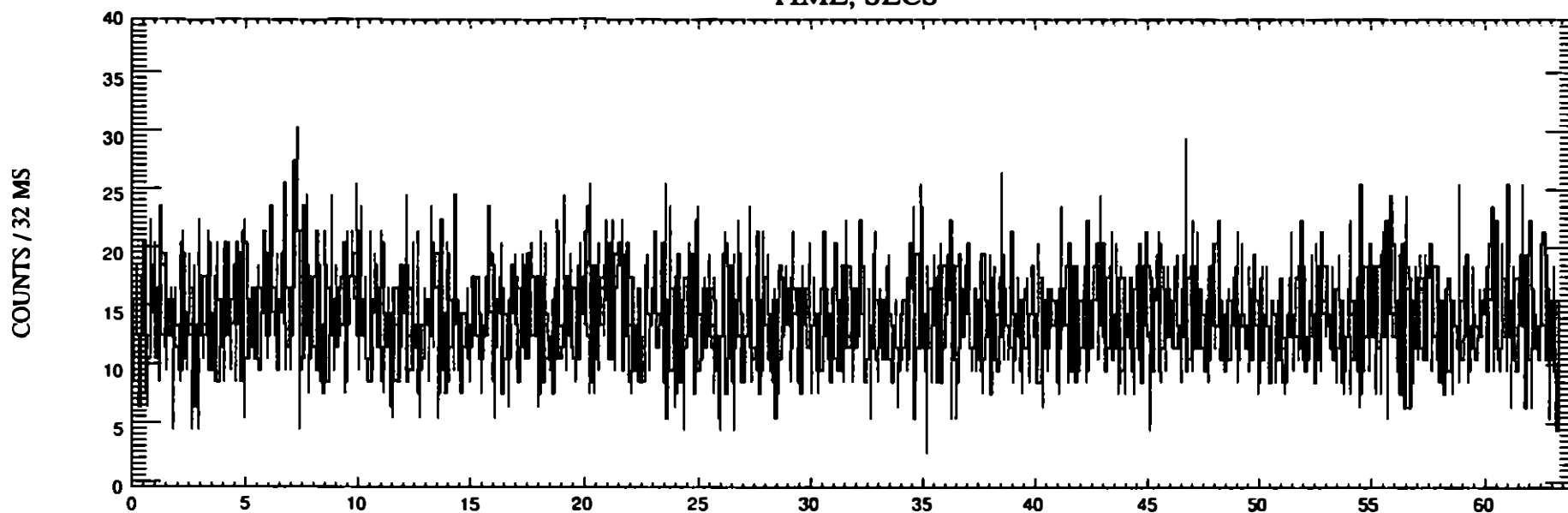
CALIBRATION DATA INCLUDED



Burst Counter 4 at UT=23.903404066298 h=86052.255 s 23:54:12.255

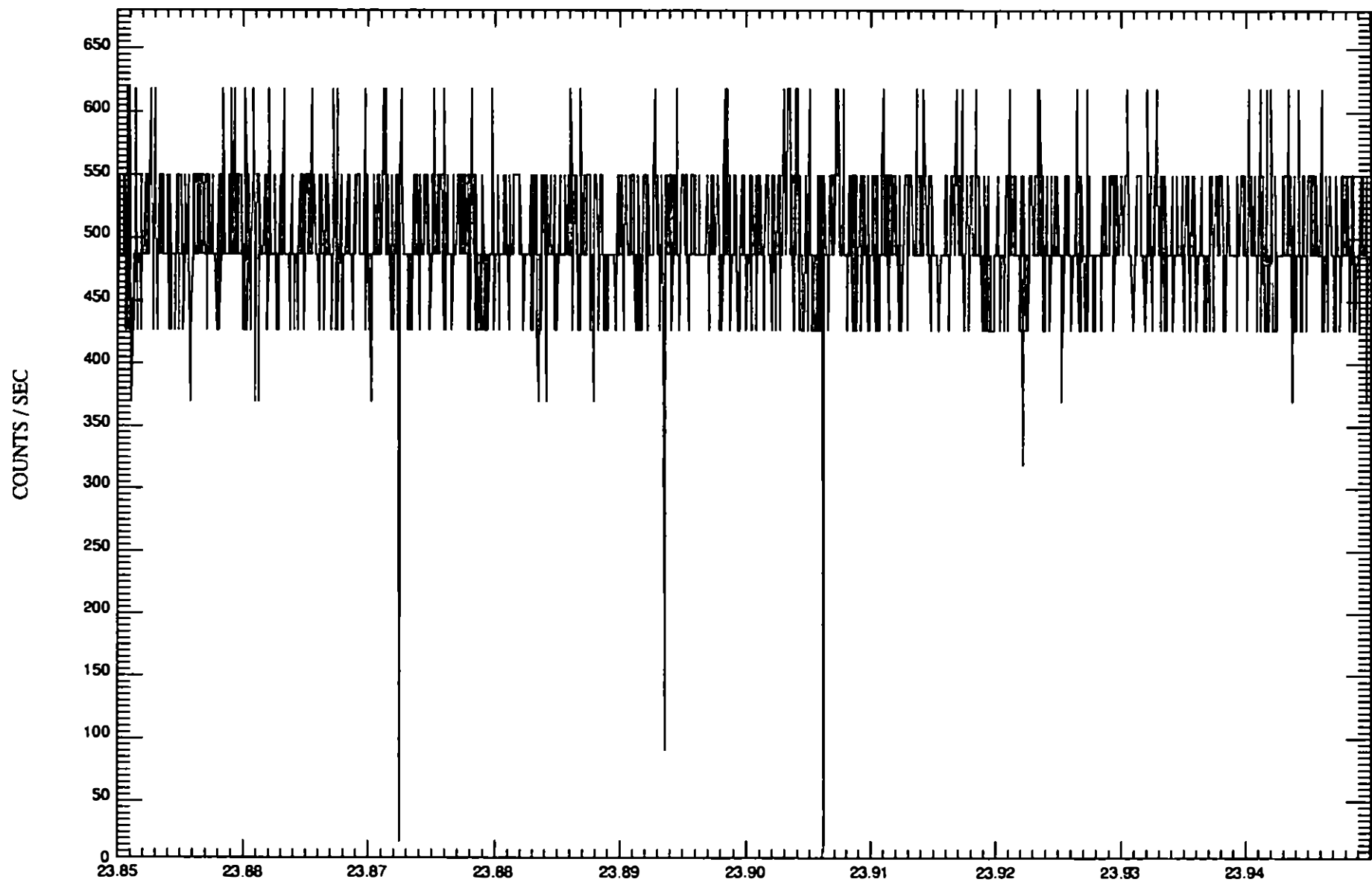


TIME, SECS

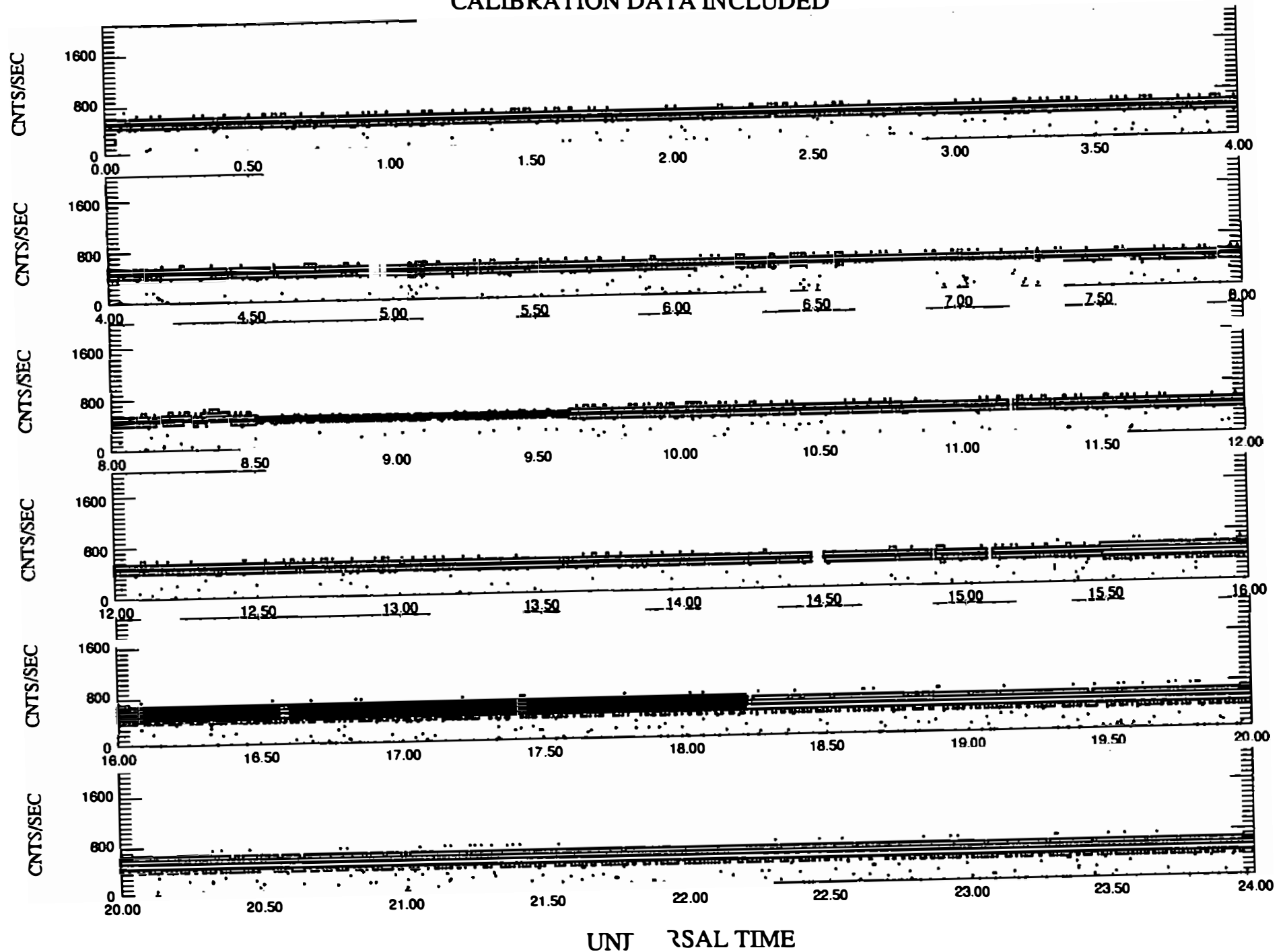


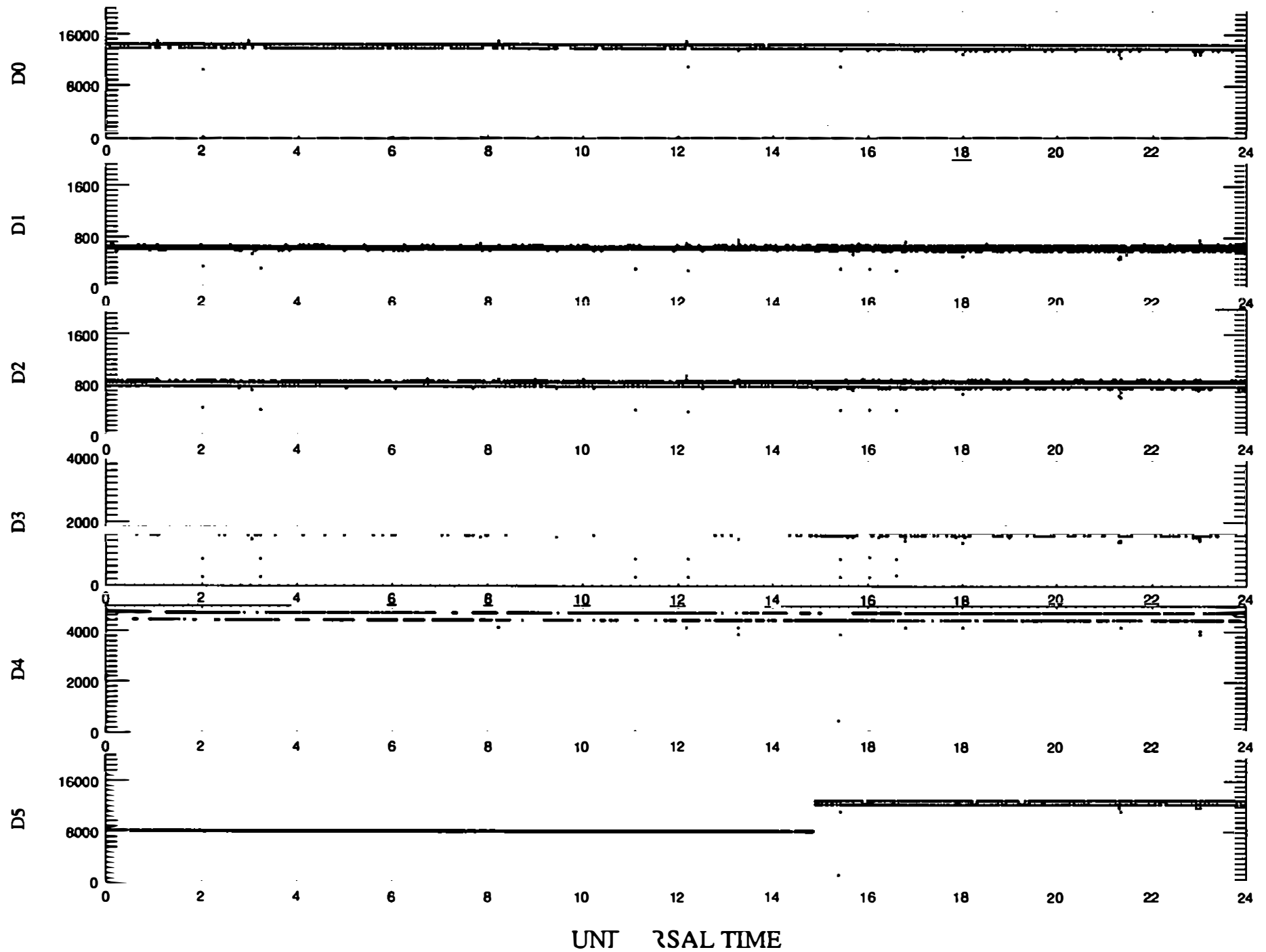
TIME, SECS

CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Mon Aug 26 09:51 PDT 1996
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 26 Aug 1996 11:50:33 -0500 (CDT)
To: burst@comptel.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.: 5584

TIME: TJD=0318 SECONDS=76304

TYPE: SAA ENT SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

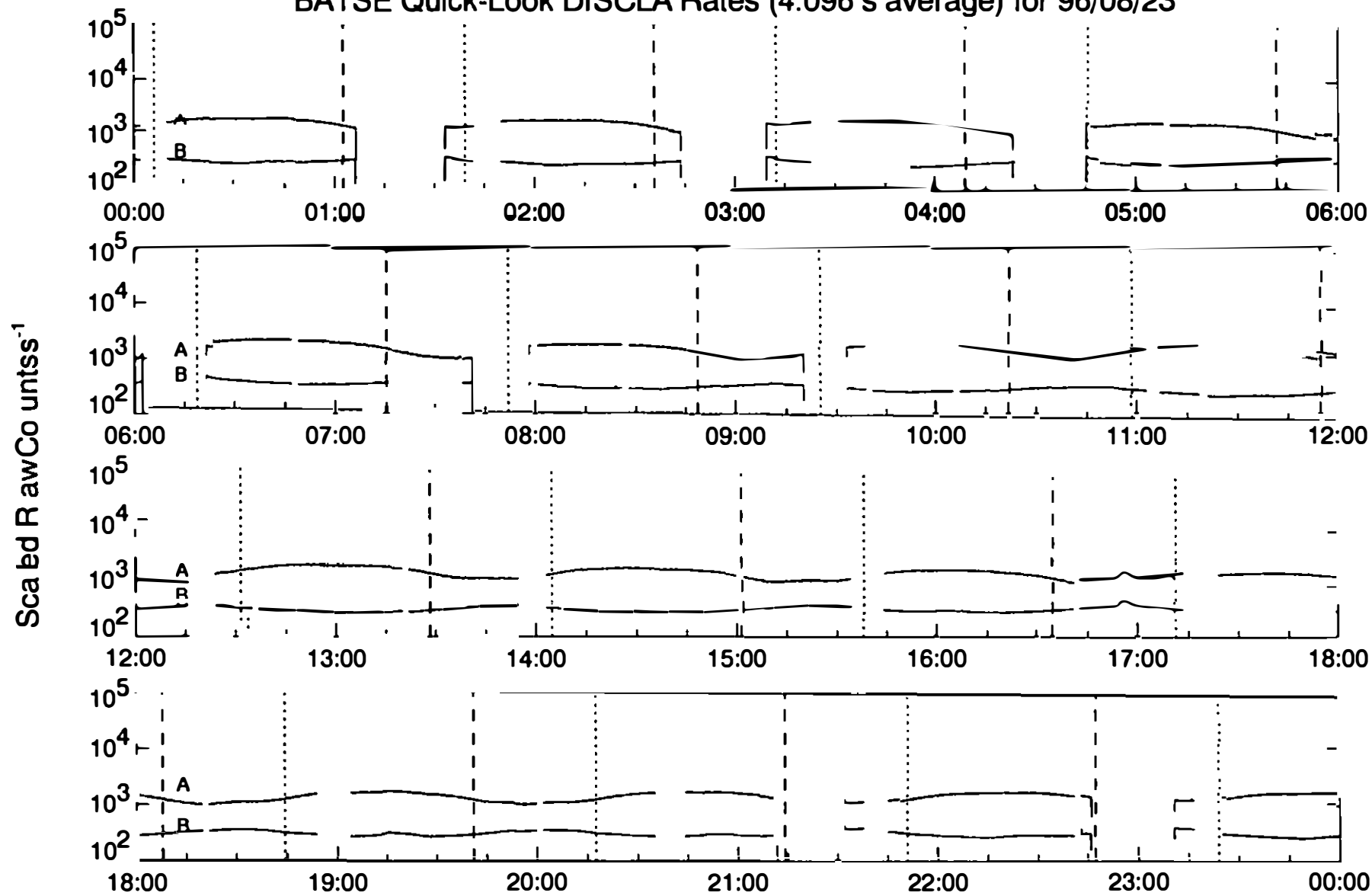
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY. HV TURNED OFF AT ~T+8 S.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/23

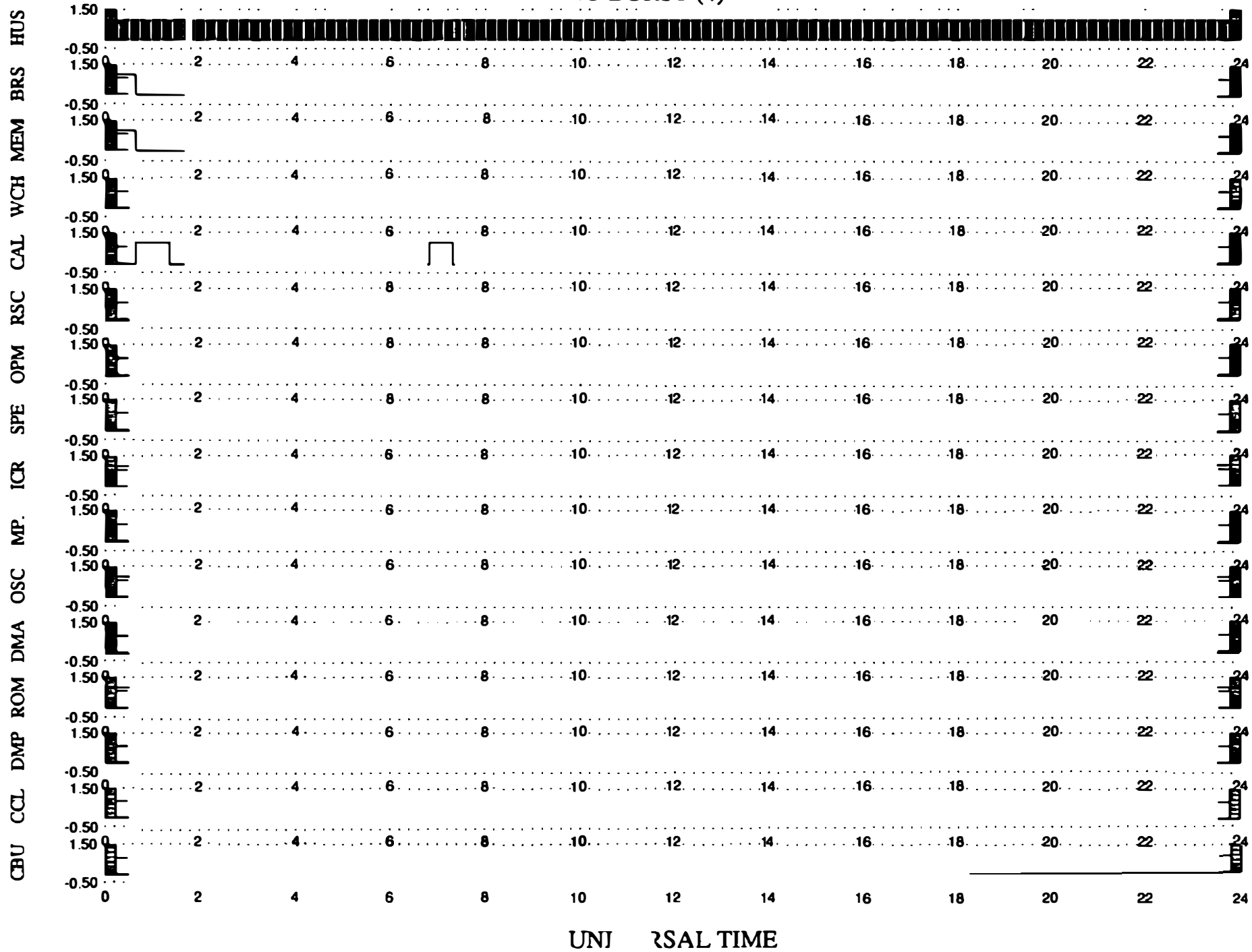


Current Time: 96/08/25, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

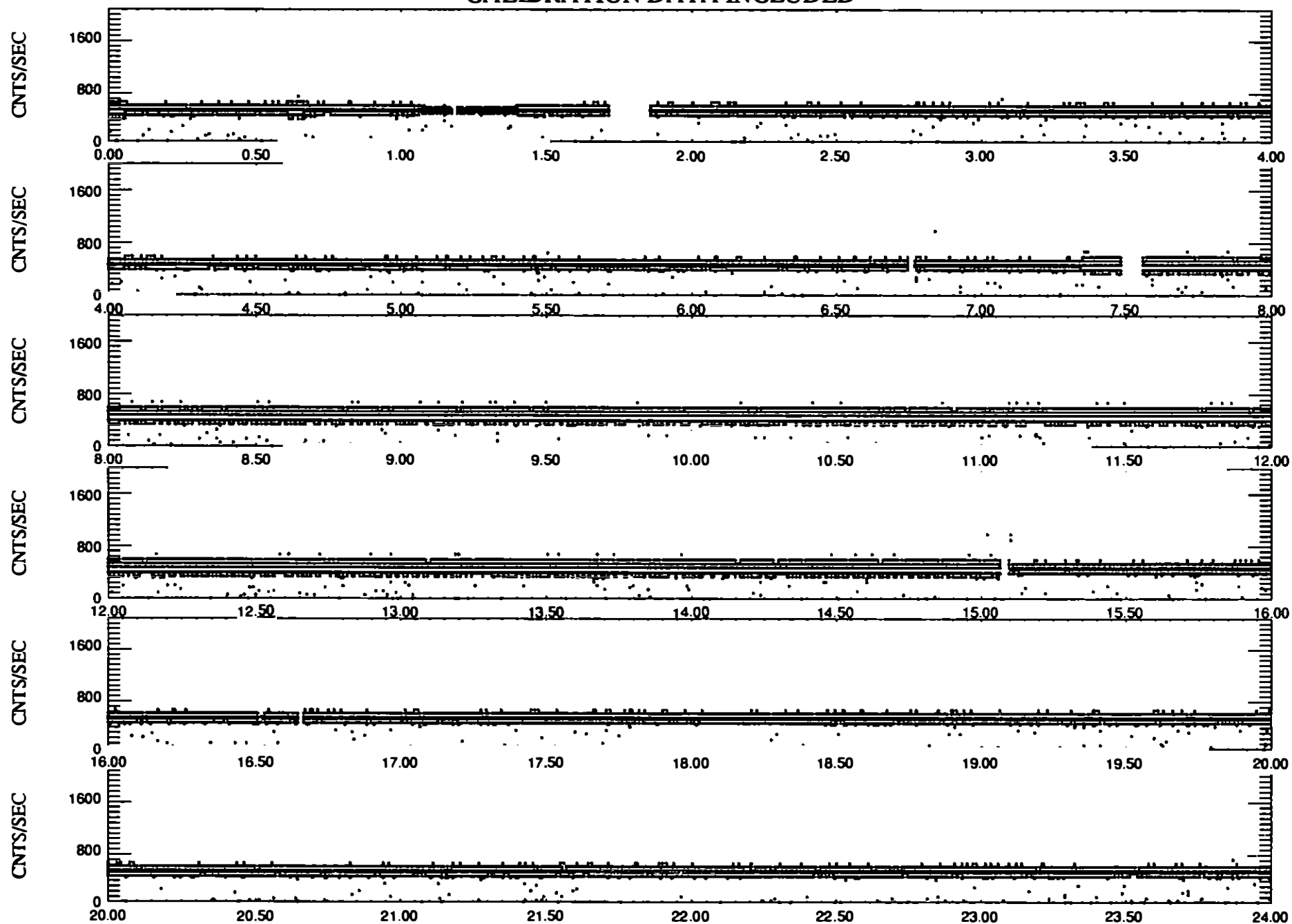
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

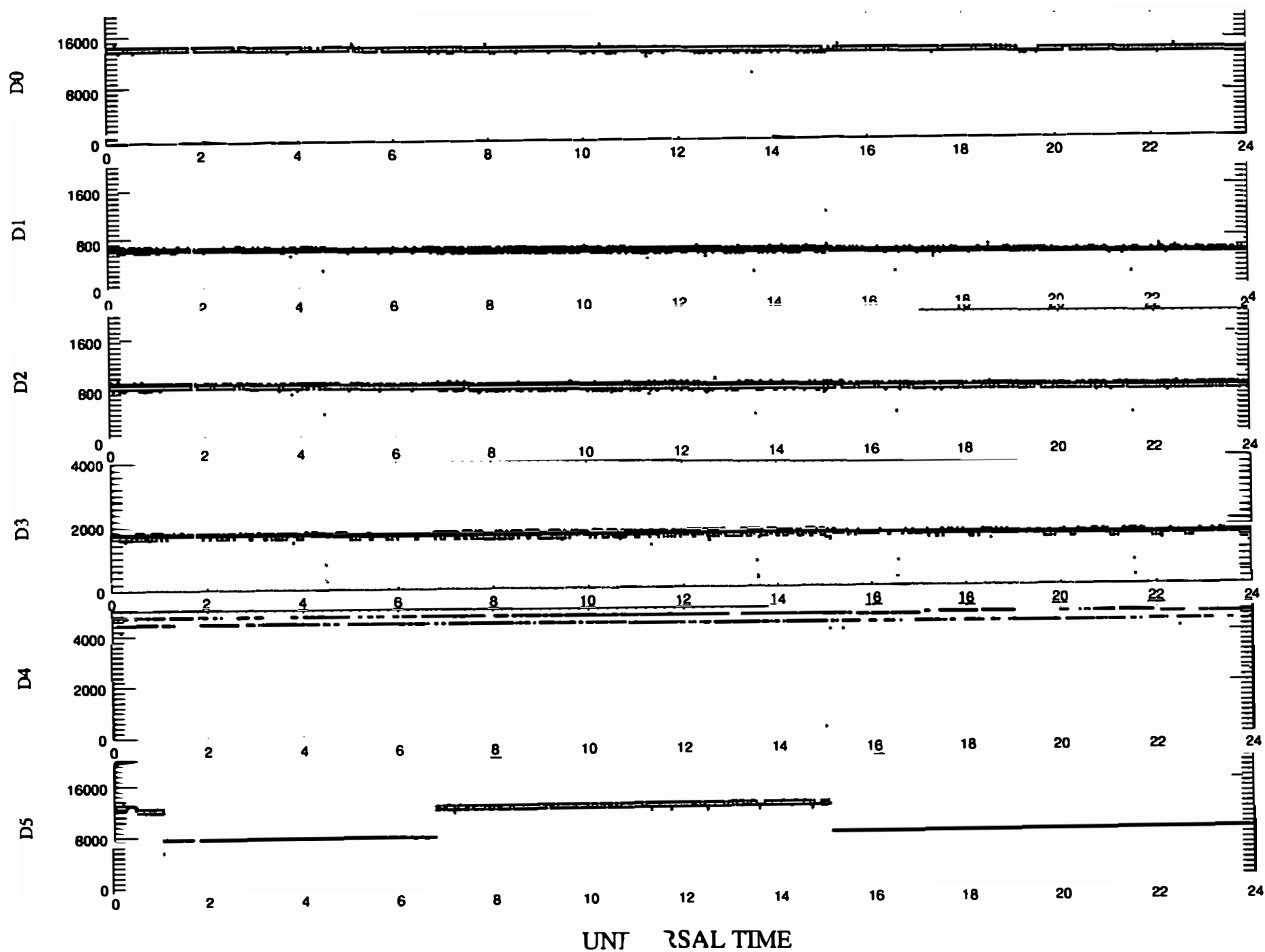
NO BURST (4)



CALIBRATION DATA INCLUDED



UNT RSAL TIME



From HENZE@SSLLES.MSFC.NASA.GOV Mon Aug 26 09:55 PDT 1996
From: HENZE@SSLLES.MSFC.NASA.GOV
Date: Mon, 26 Aug 1996 11:55:30 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5585

BATSEARCH PROGRAM

BATSE BURST # 5585
EVENT OF 1996 AUG 24 DAY OF YEAR=237
EVENT CROSSING TIME AT BATSE : 6110. S. OR 01:41:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 351.000 66.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 8/ 96 IS:
RA= 164.507 DEC= 37.802 DIST= 5.115 AU
BATSE-ULYSSES DISTANCE = 765201112. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -614.19 SECS.
CROSSING TIME AT ULYSSES IS 5496. S. OR 01:31:35 +/- 470.79 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 8/ 96 IS:
RA= 110.995 DEC= 22.792 DIST= 2.154 AU
MARS-BATSE DISTANCE = 322209152. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.58 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -178.88 SECS.
CROSSING TIME AT MARS IS 5931. S. OR 01:38:51 +/- 181.28 SECONDS

BATSE BURST TRIGGER

NO.: 5585

TIME: TJD=0319 SECONDS=06110

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=071.8 AZIMUTH=136.7 ERROR=001.9 DEGREES

COMMENTS:

THREE MAIN PULSES. TOTAL DUR. ~260 S. MAXIMA AT T, ~T+93 S, ~T+170 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5585	960824	10319	06110	6000	351	+66	260

BATSE #

5585

29 / 8 / 96

ULYSSES RT

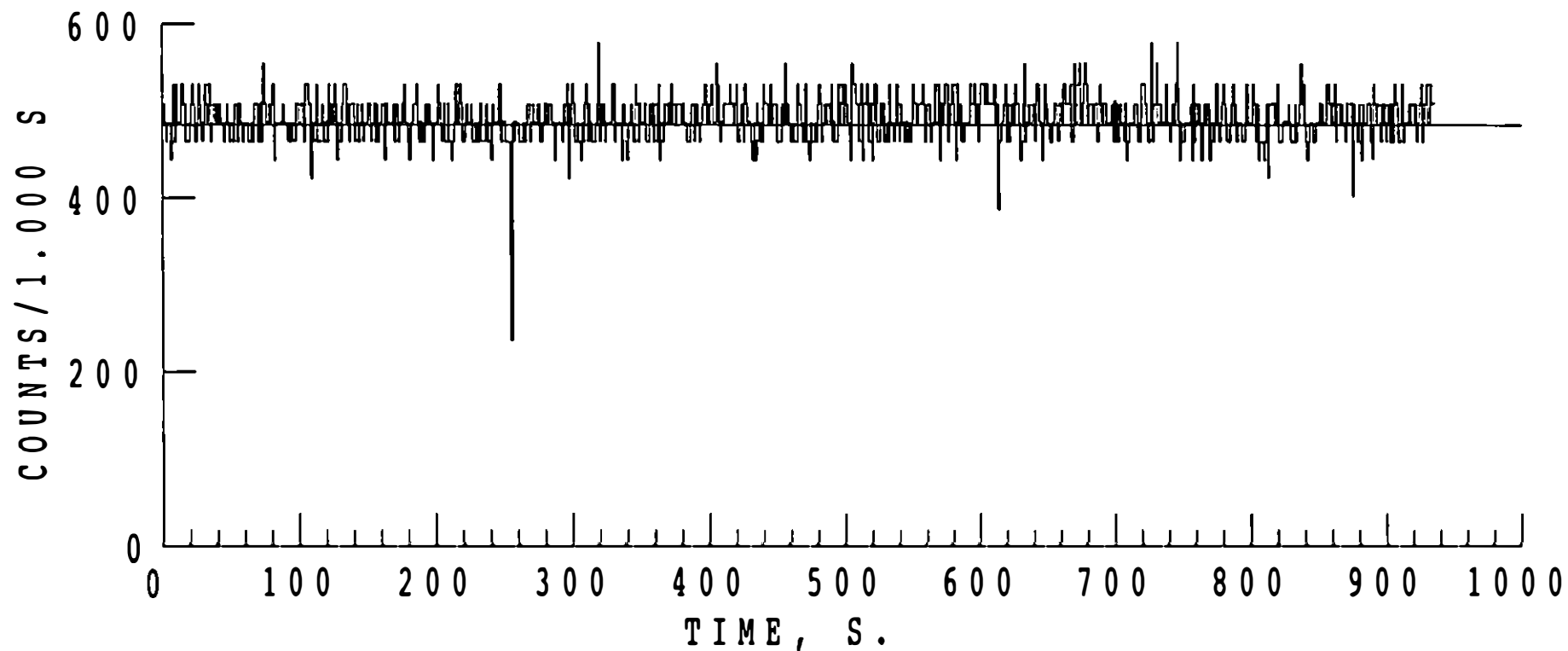
24 / 8 / 96 5040.367 s

2

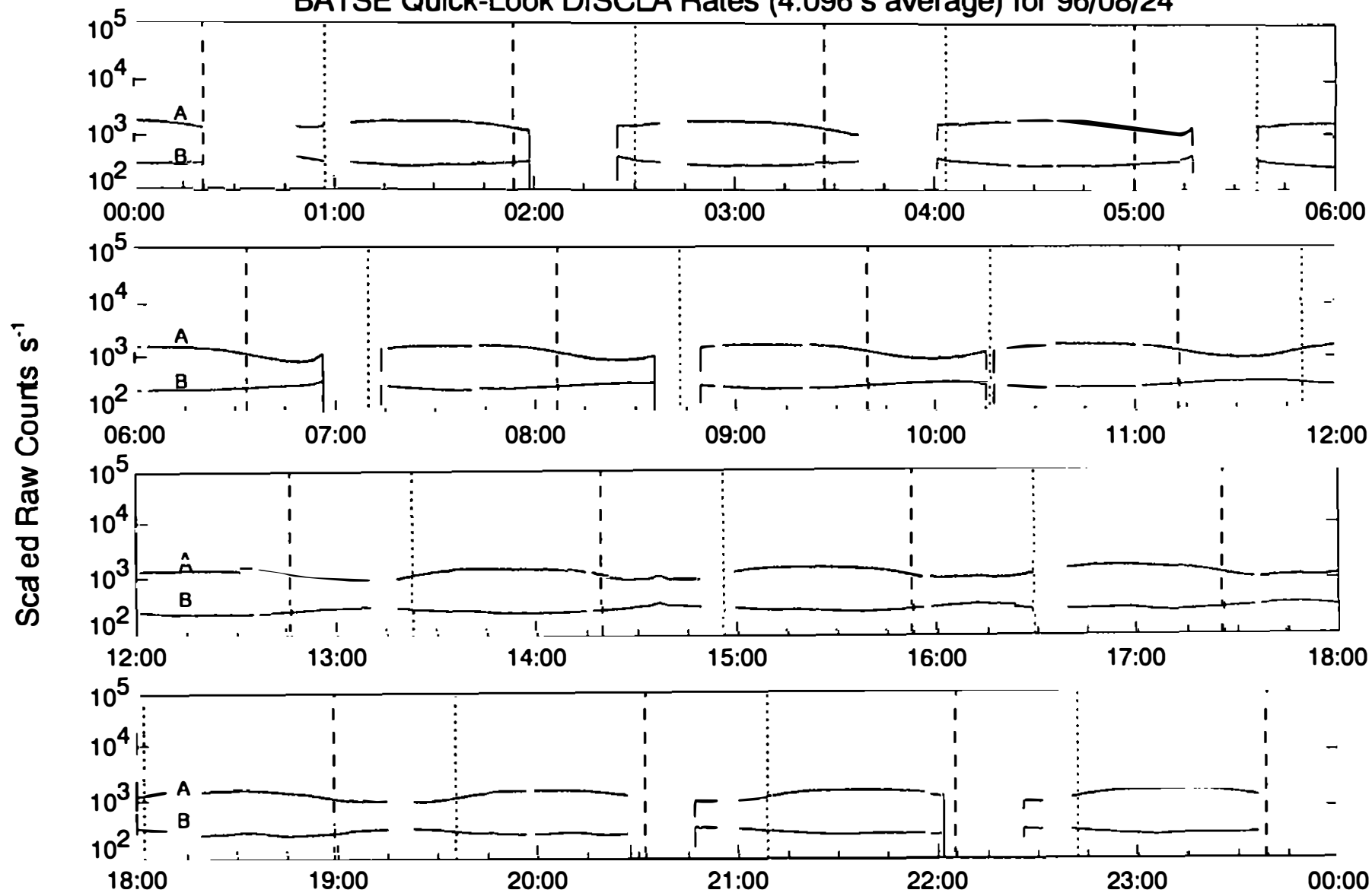
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N=10 M=2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/24



Current Time: 96/08/26, 1004 EDT

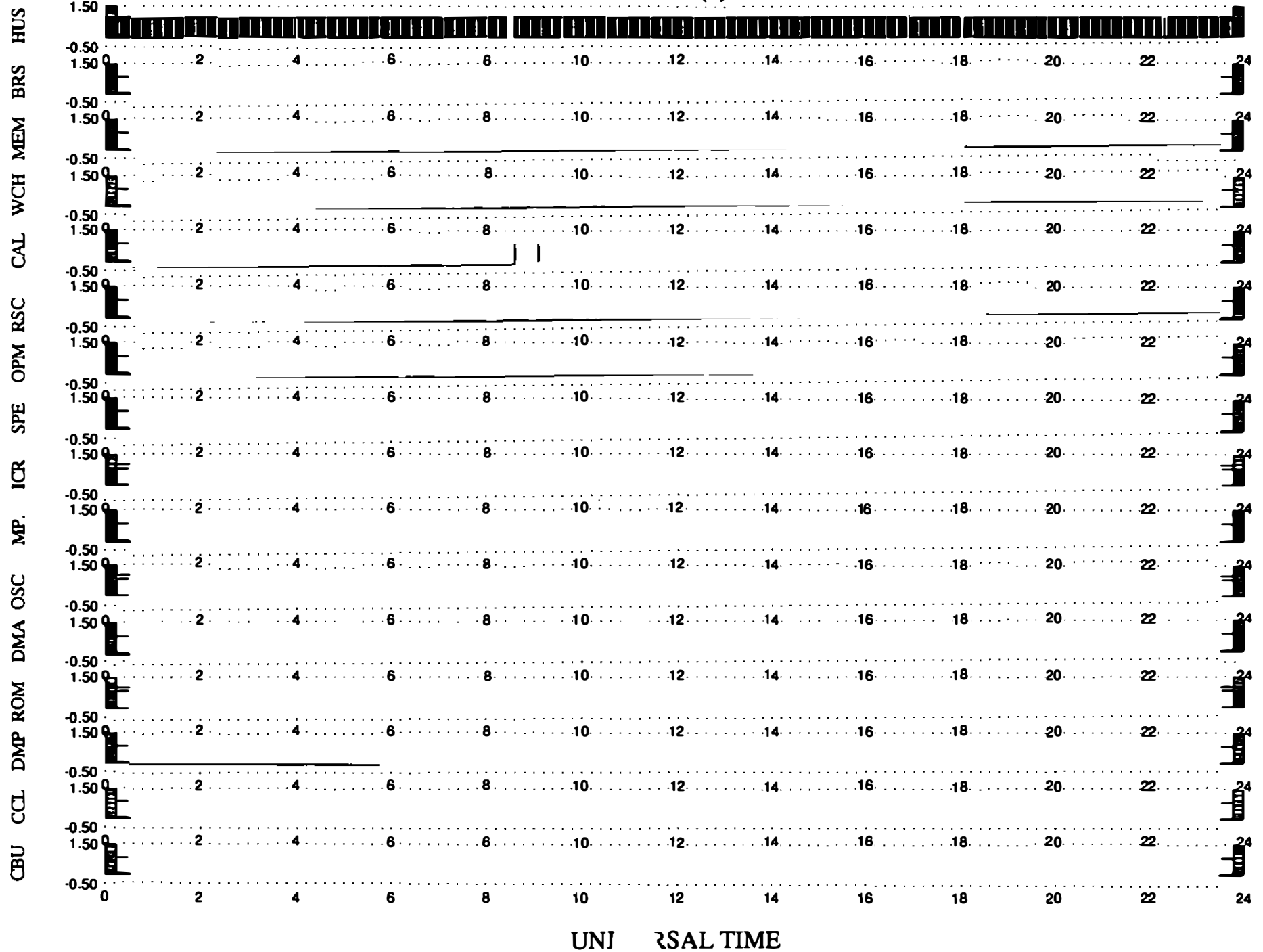
A: Channel 0 Most Sunward LAD

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

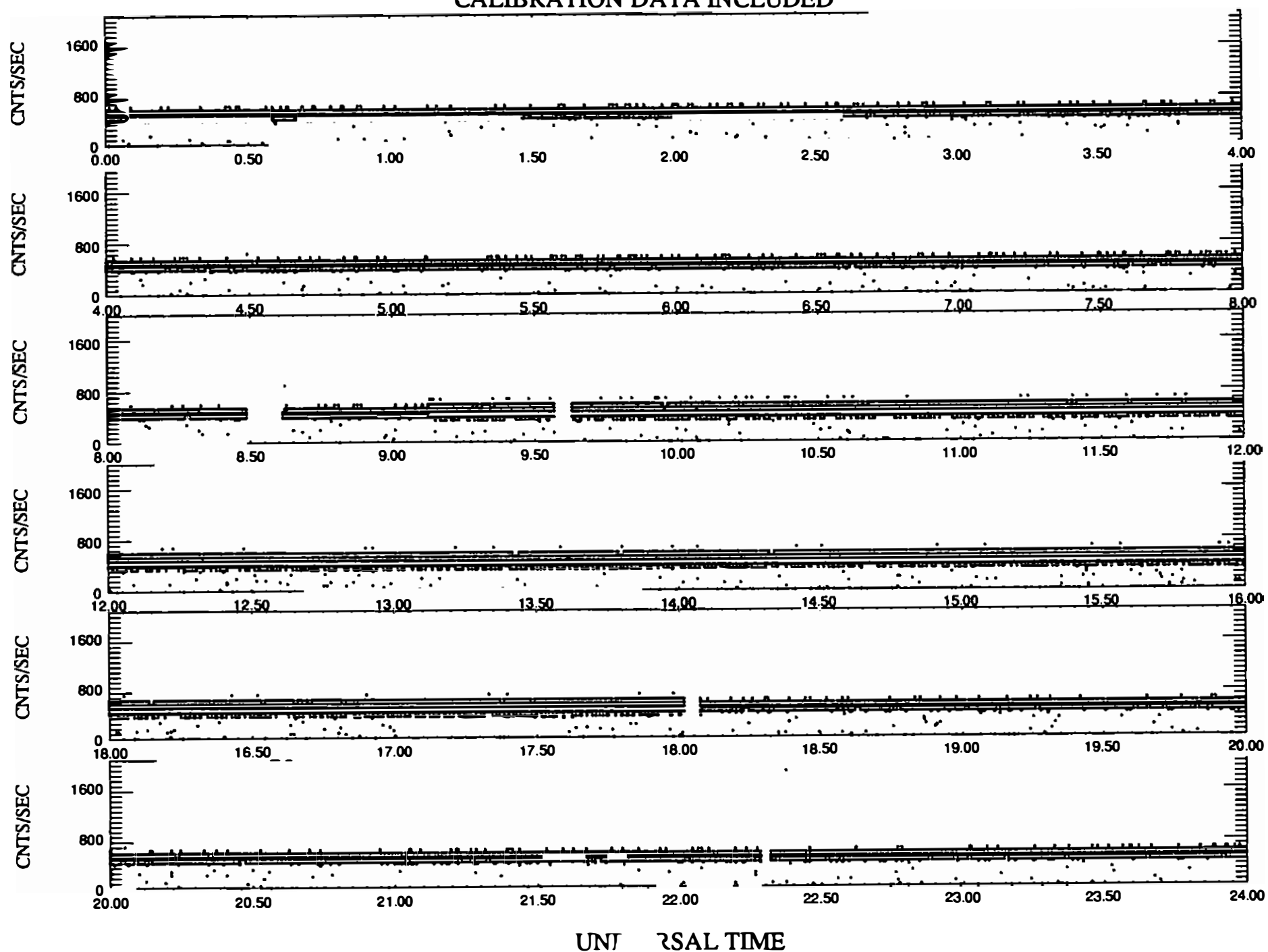
Dotted line: Day entry
Dashed line: Night entry

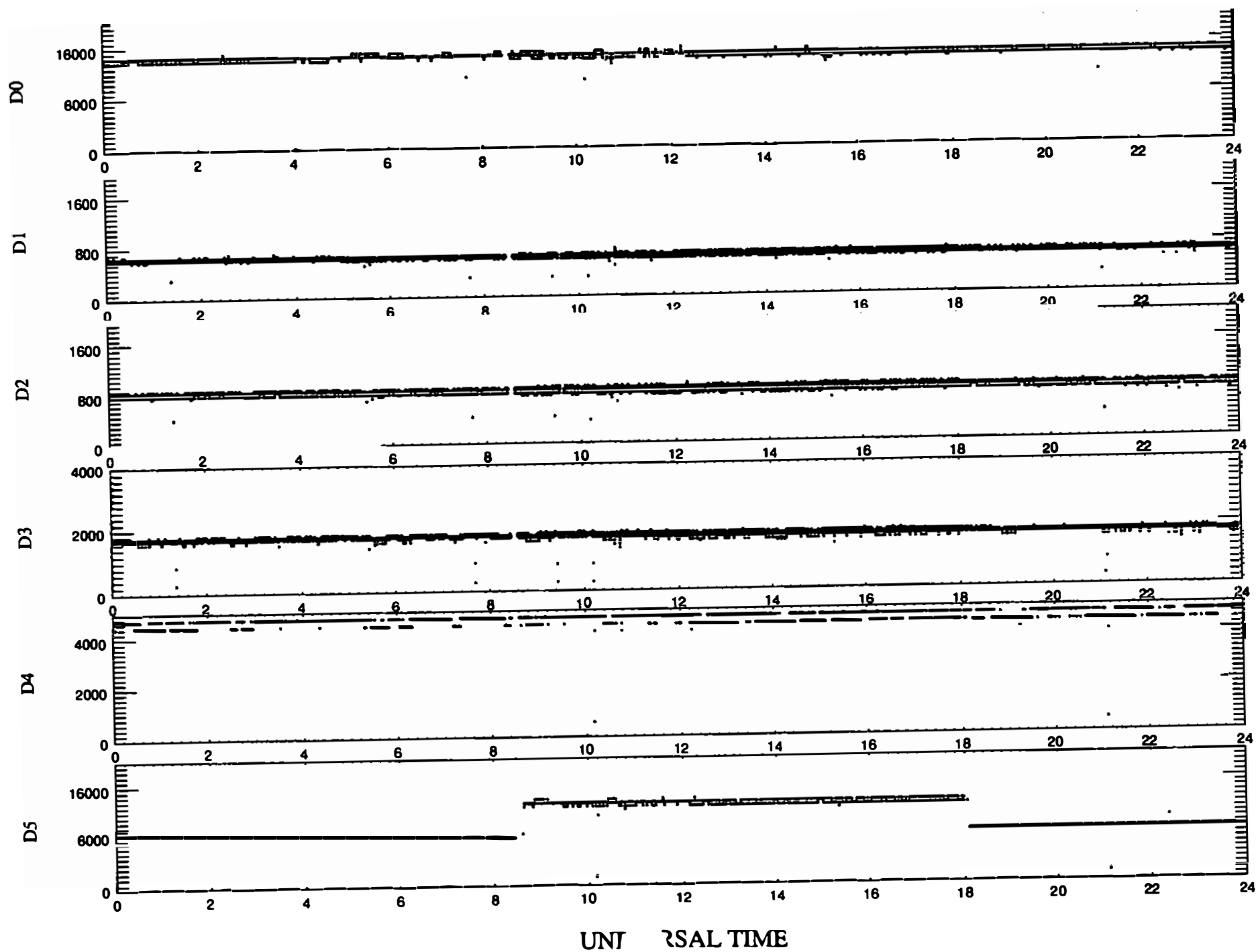
* Solar Burst Trigger
+ Solar Flare

NO BURST (4)



CALIBRATION DATA INCLUDED





Date: Sep 30 '09

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution?

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

- ☐ Was CHECKMO run to eliminate data gaps?
- ☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line "no HEND data...")
- ☐ Was Mars-blocking used?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)
- ☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).
- ☐ GRS and HEND data cross-correlated to check timing?

2. For 3 or More Spacecraft events

- ☐ $\Sigma 3\Delta t$'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?

SAX added Jan 5 '10

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

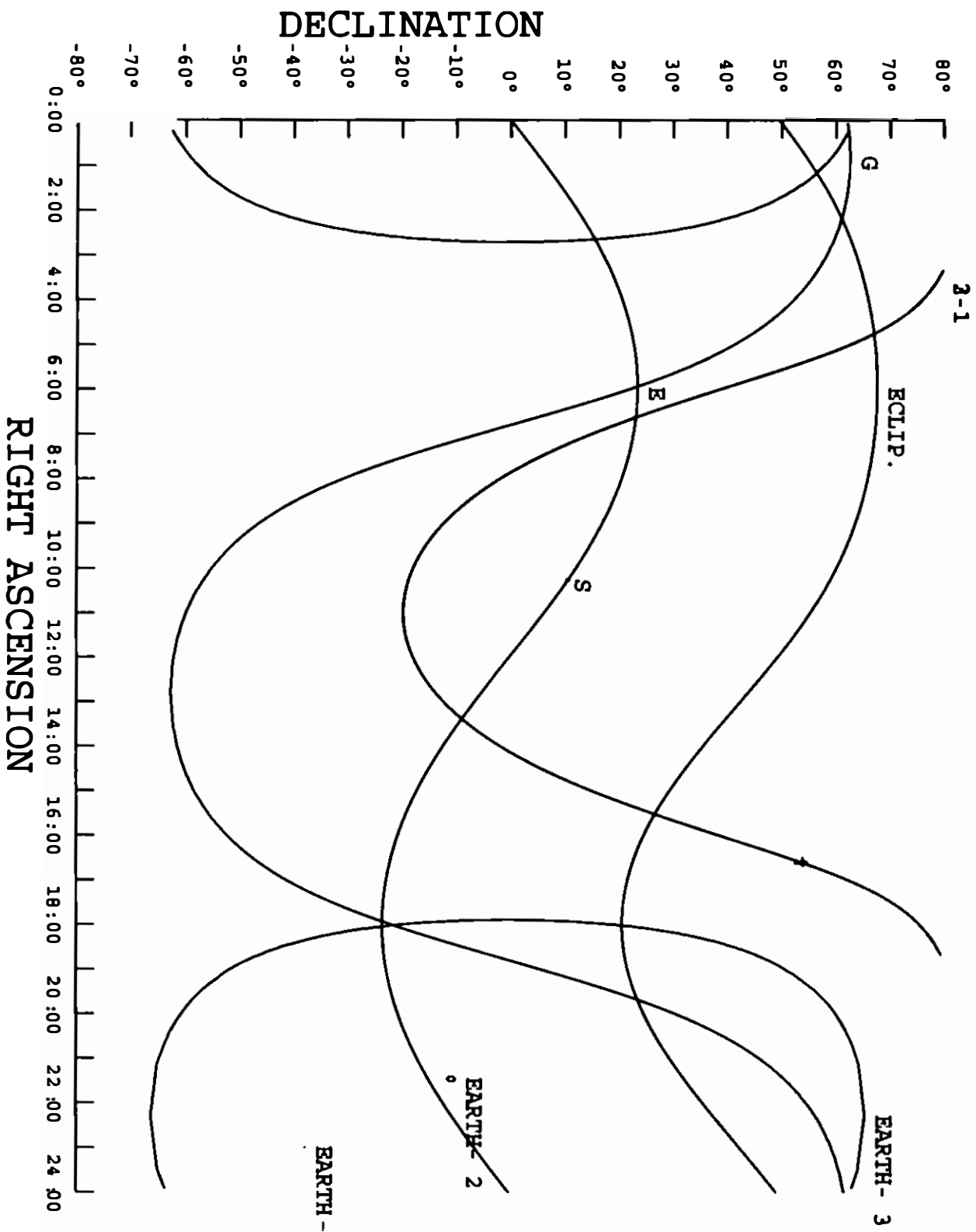
1 ULYSSES

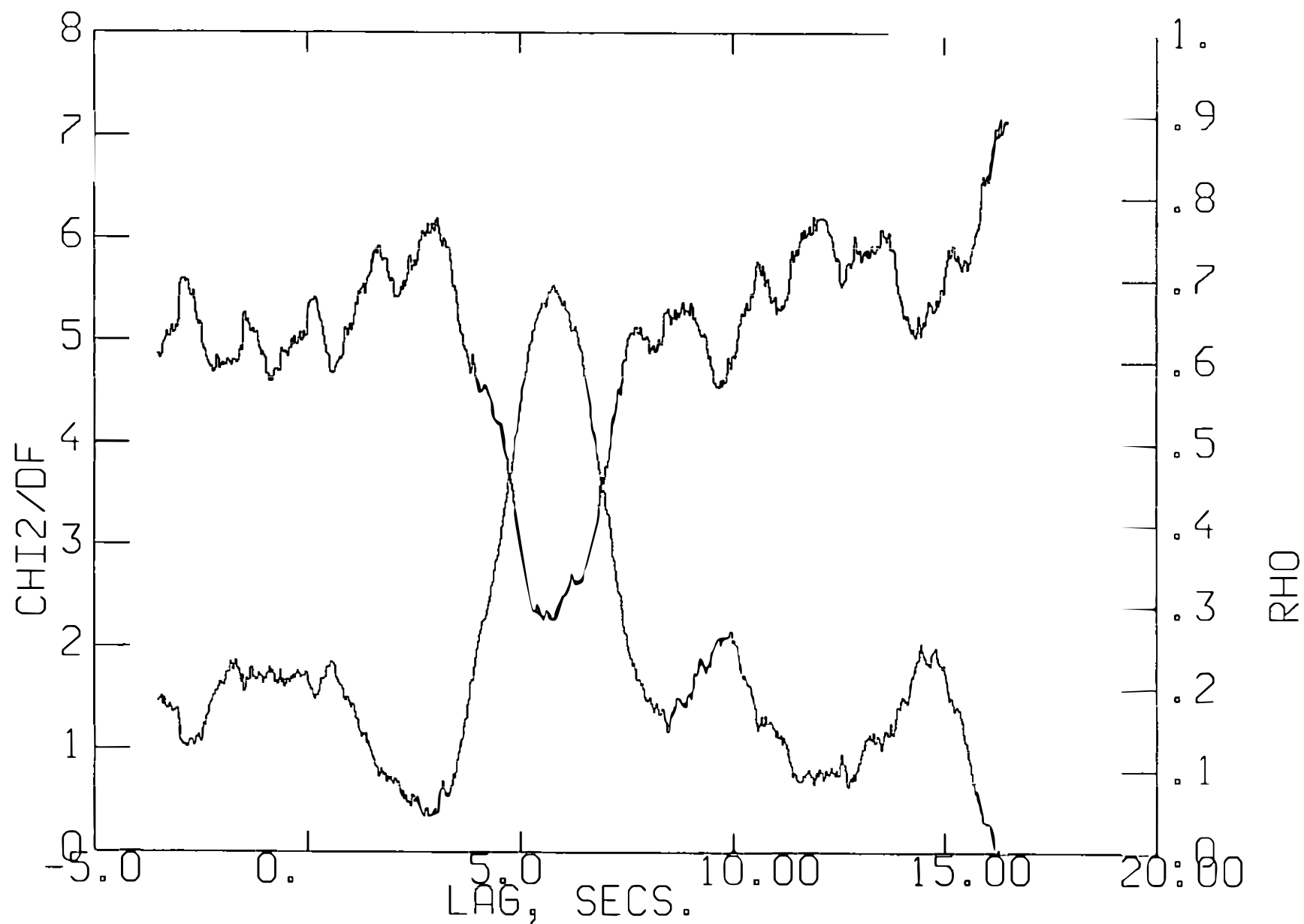
2 KONUS2

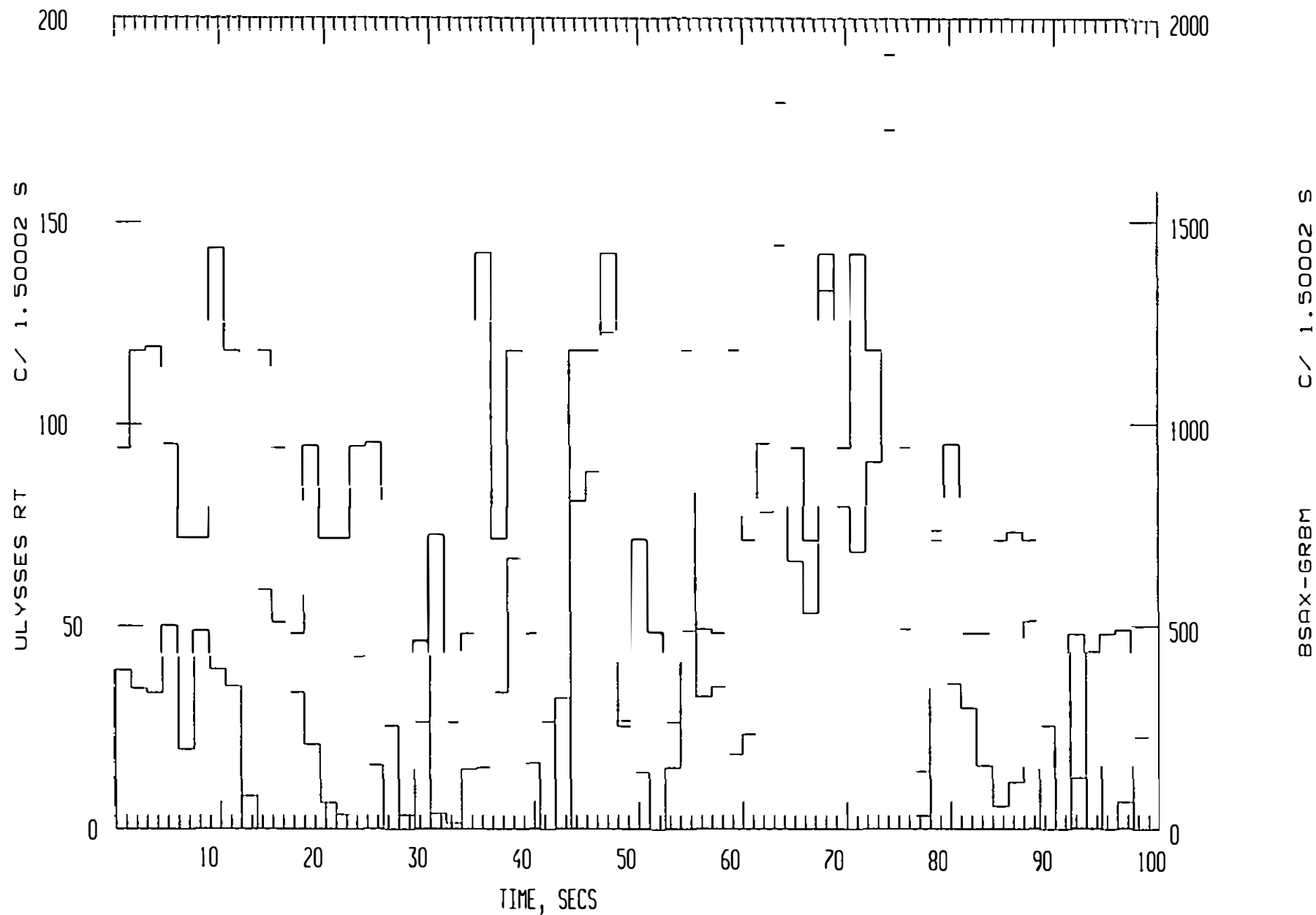
3 SAX

EVENT OF AUG 25, 1996 0:00

5 / 1/10





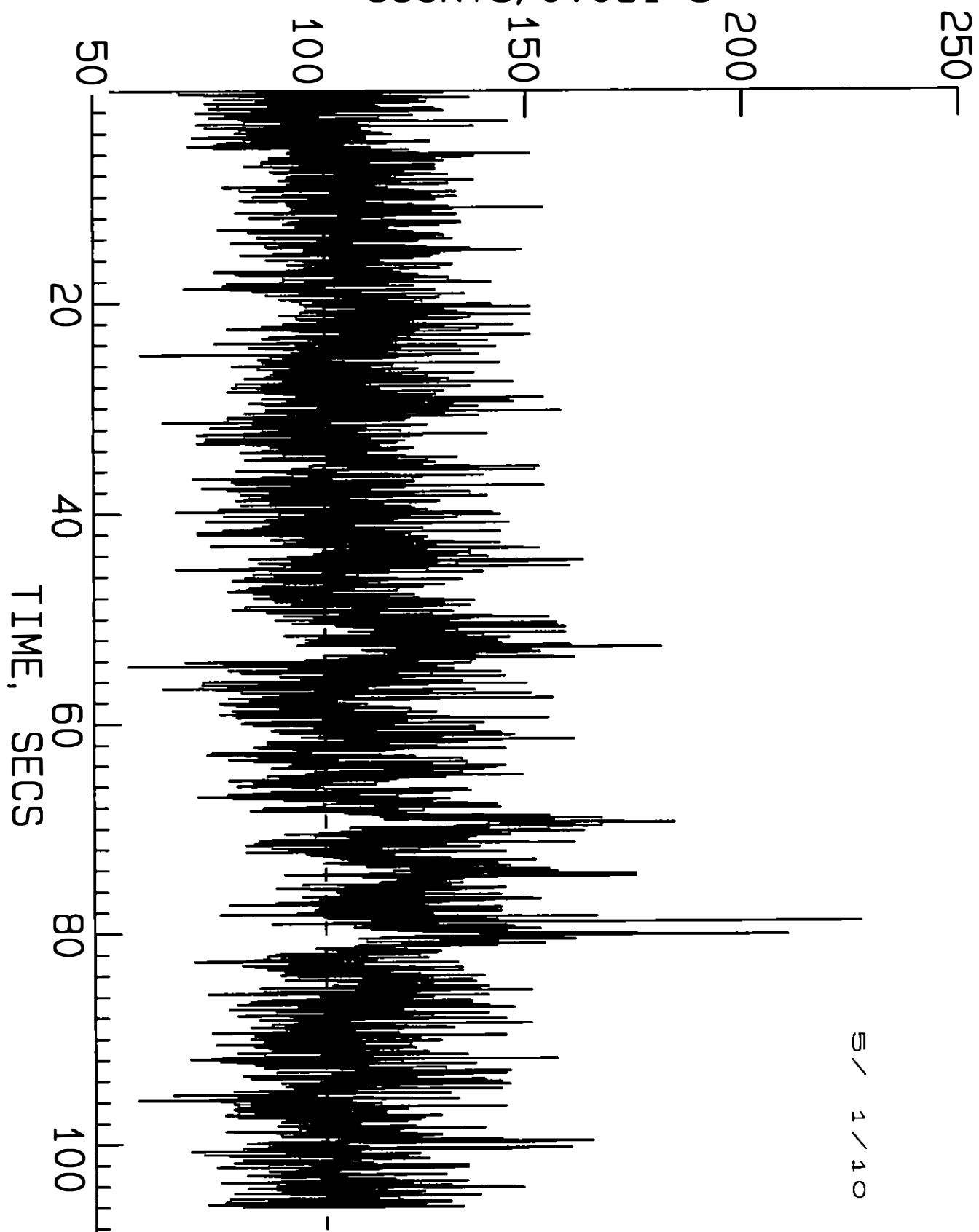


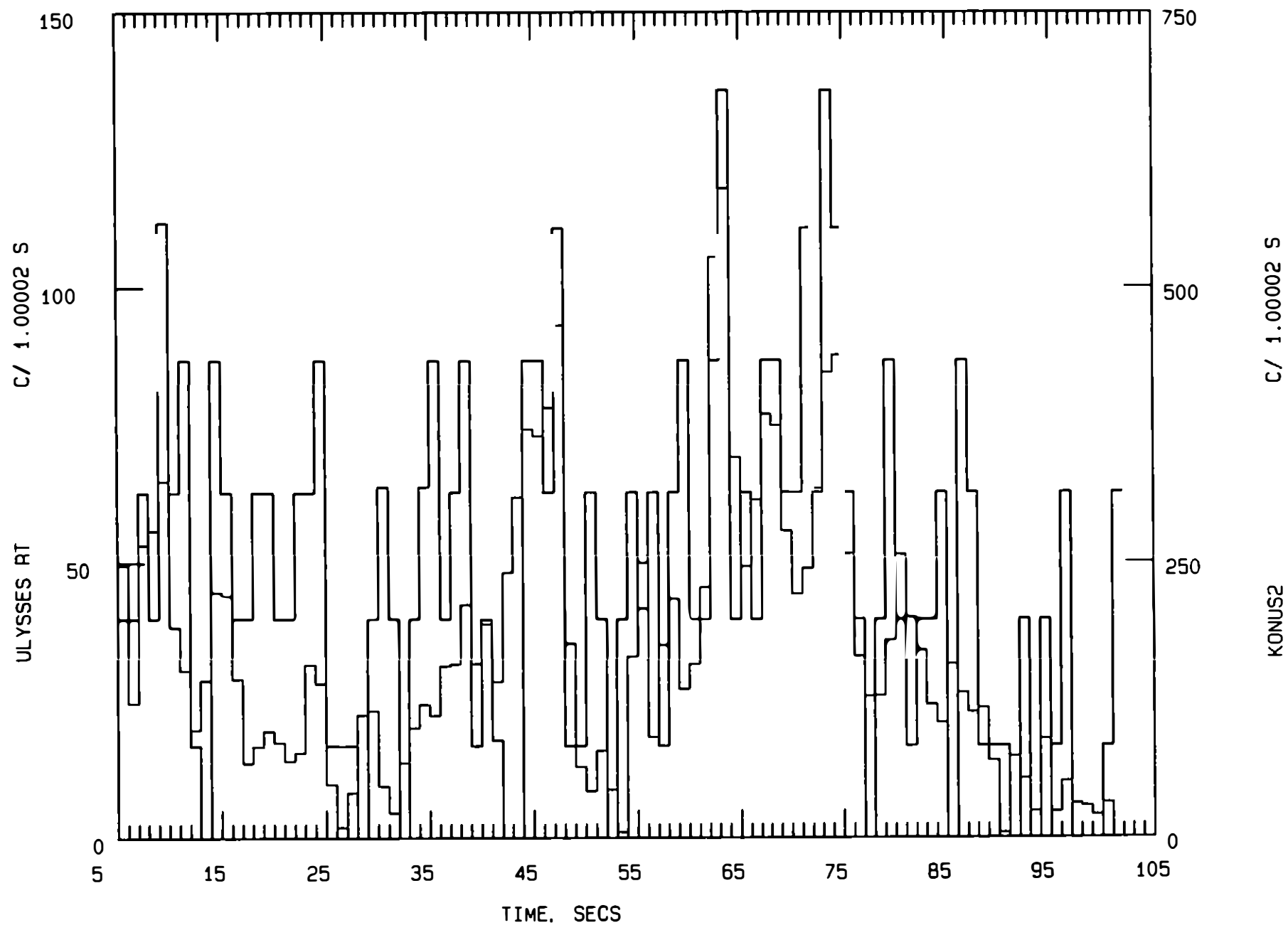
SAX GRBM

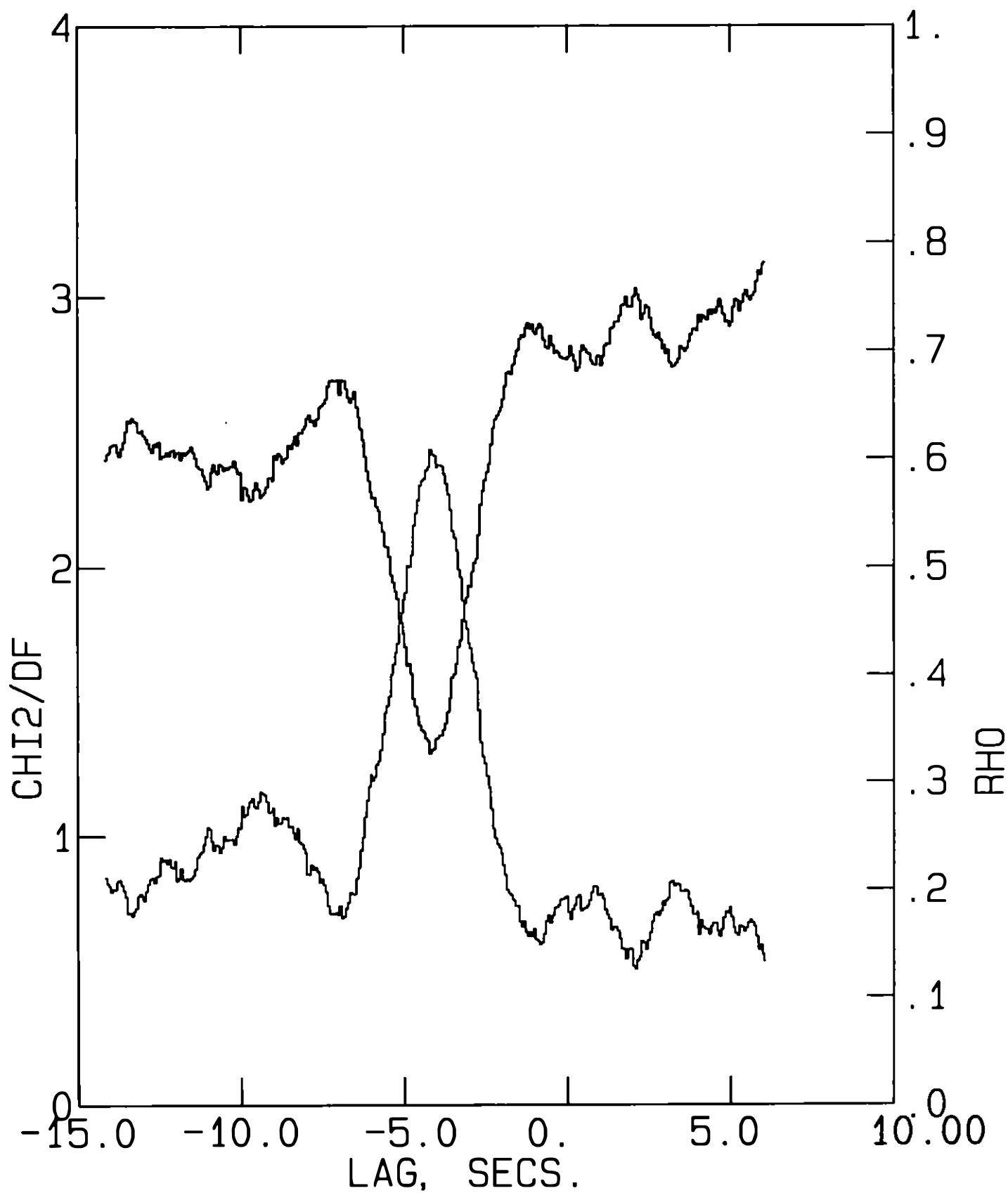
25/08/96 1377.345

40- 700 keV

COUNTS/0.031 S

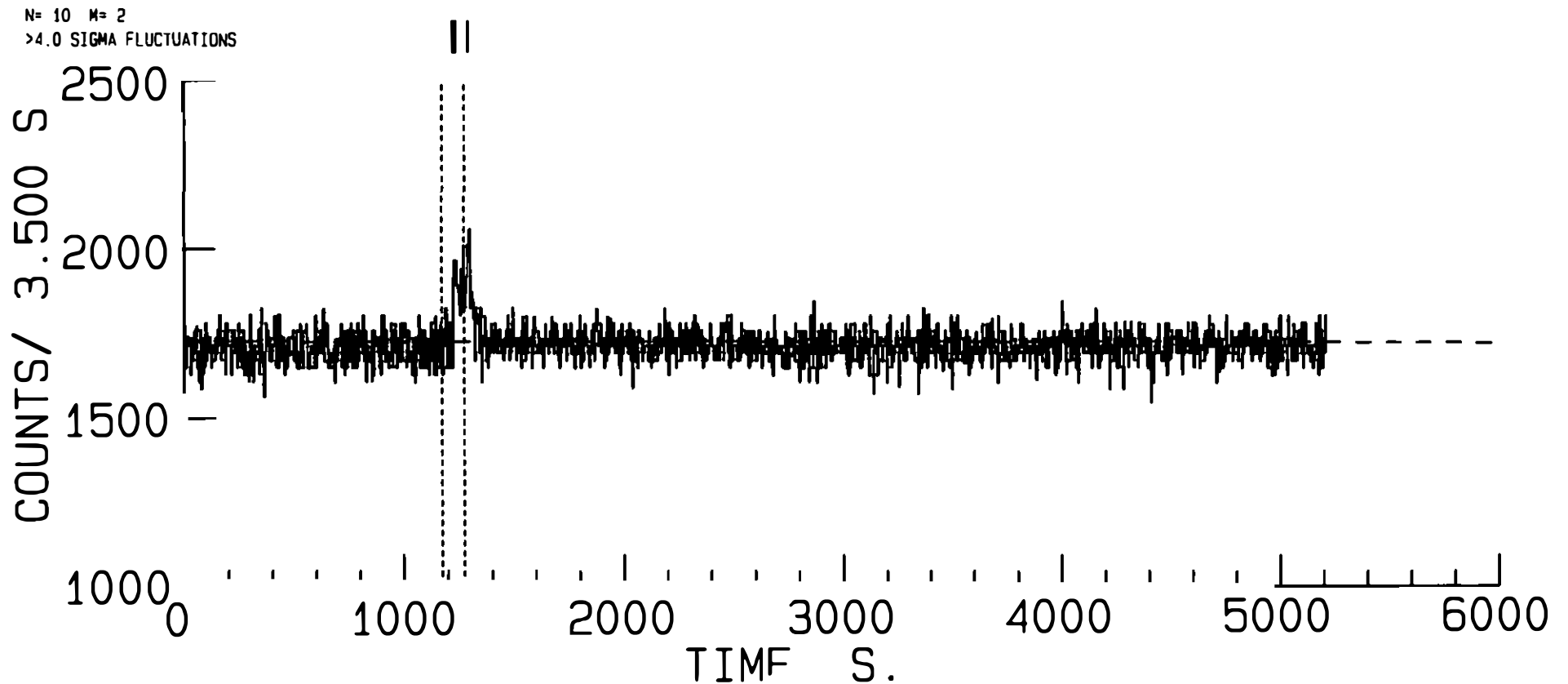






ULYSSES RT
24/ 8/96 85176.375 s
0.500 S INTERVALS REGROUPED BY 7
21- 146 keV

30 / 9 / 9



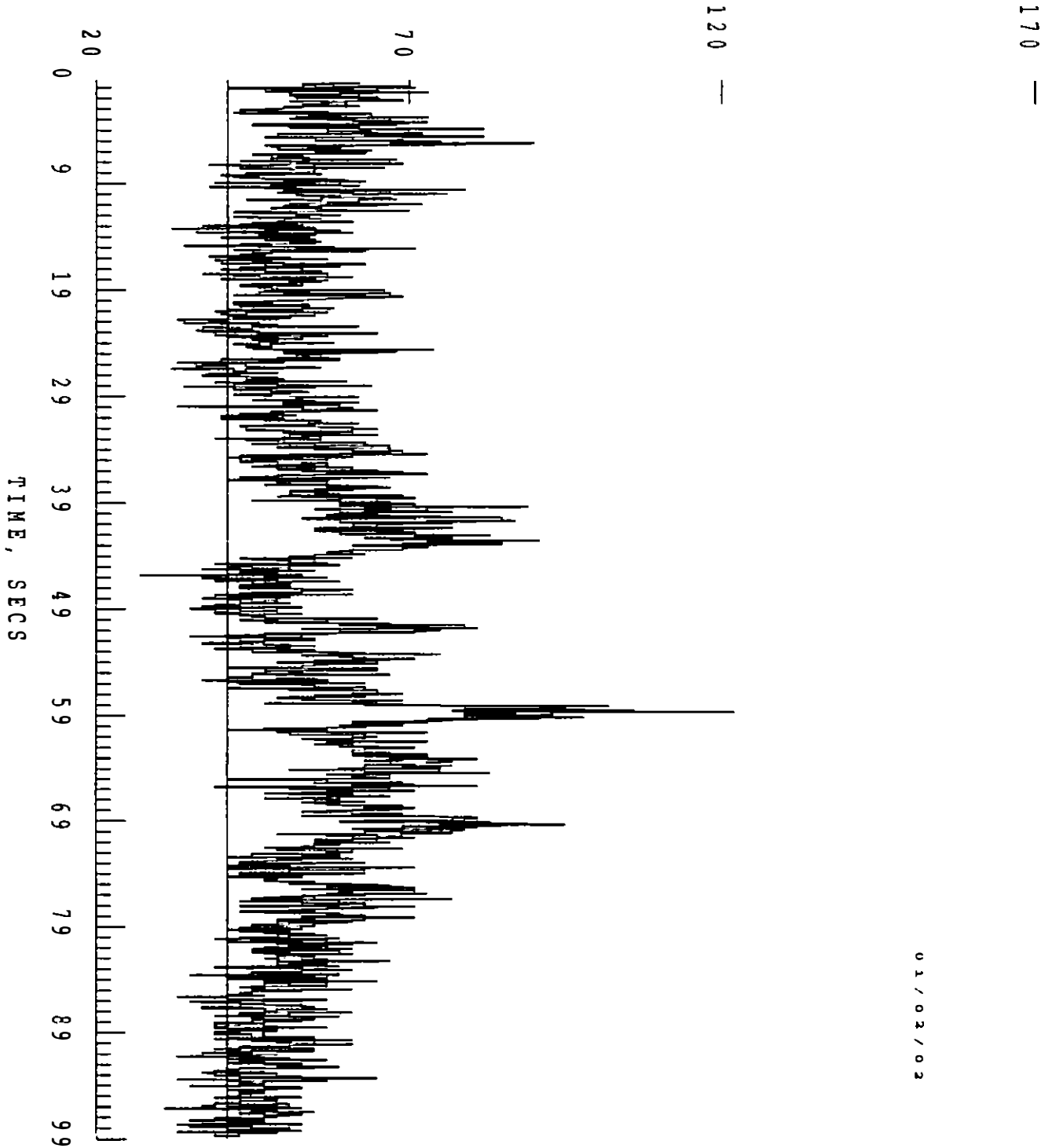
KONUS2

25/08/96

1388.008

50- 200 keV

COUNTS/0.064 S



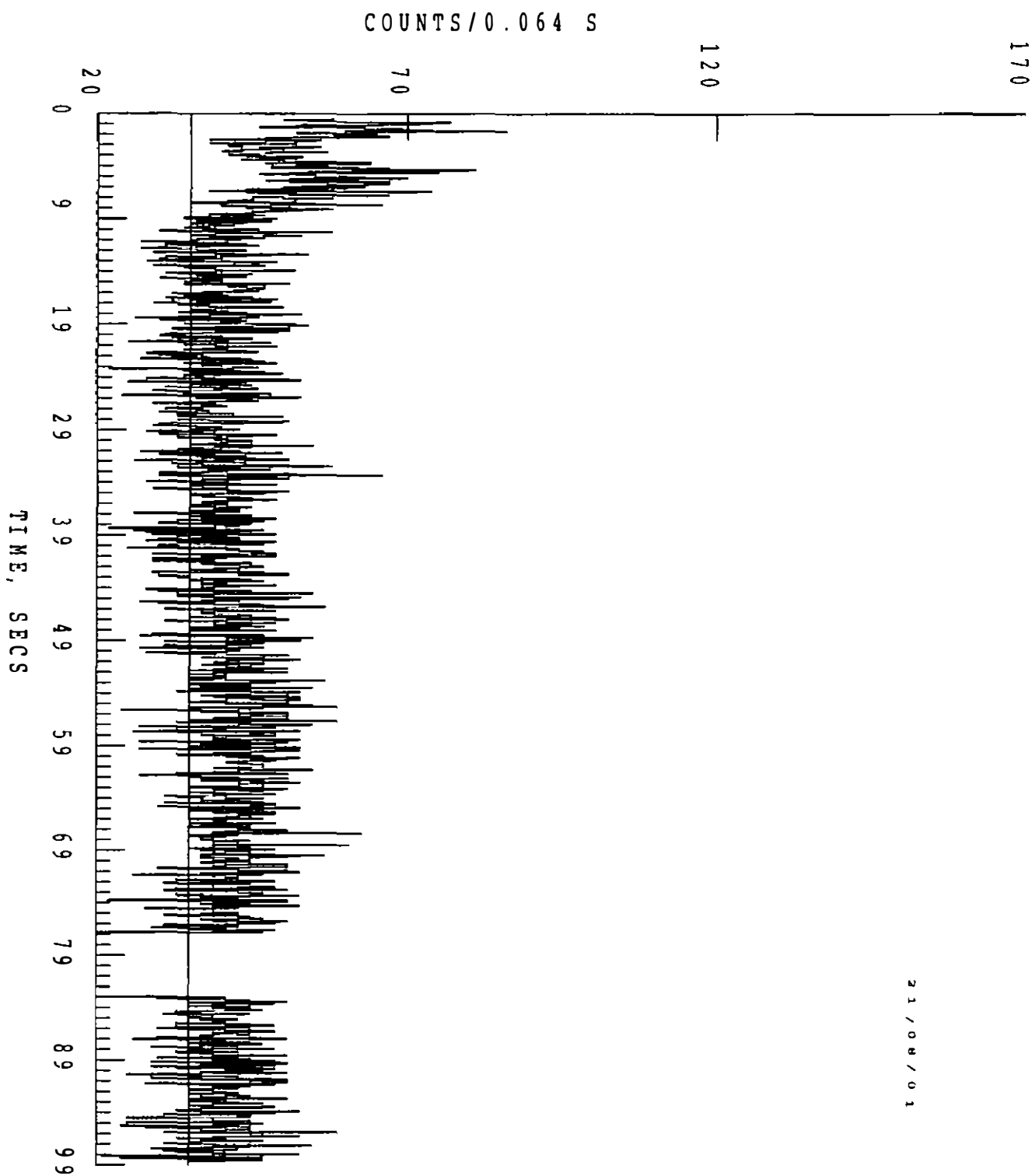
01/02/02

KONUS2

25/08/95

15863.399

50 - 200 keV



2 5 / 9 / 9 5

U L Y S S E S R T

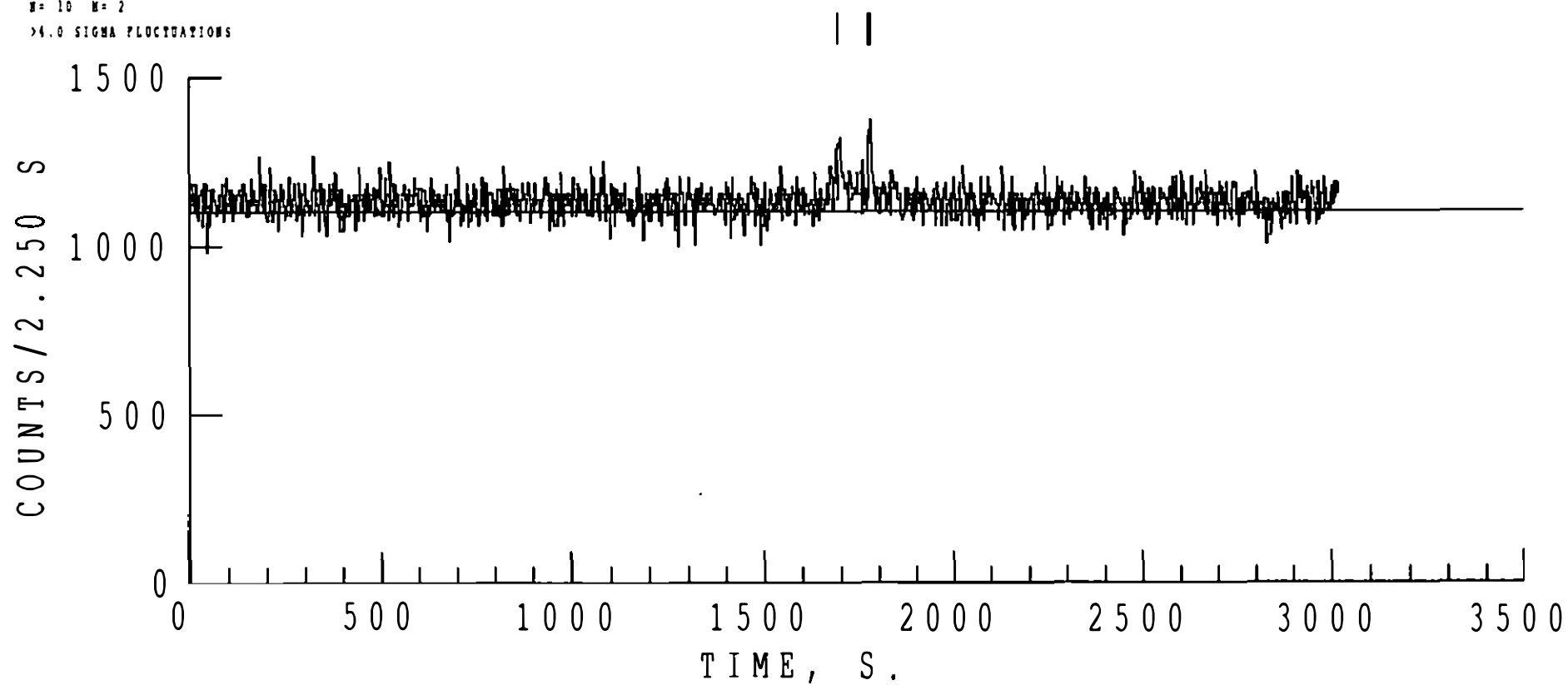
2 5 / 8 / 9 5 1 4 3 2 8 . 2 4 0 s

0 . 2 5 0 s I N T E R V A L S R E G R O U P E D B Y 9

0 - 0 k e V

N = 10 M = 2

> 4.0 SIGMA FLUCTUATIONS



KONUS 31

ULYSSES RT

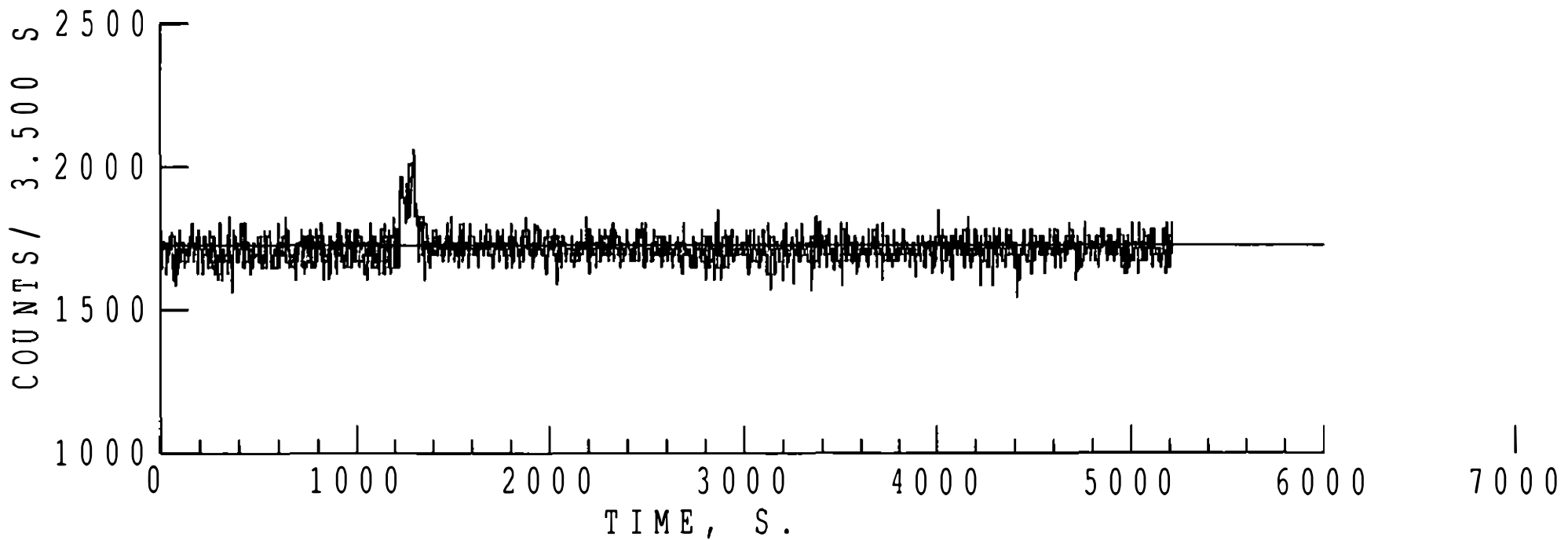
25 / 11 / 96

24 / 8 / 96 85176.375 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N = 10 M = 2
>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Tue Aug 27 07:09 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 27 Aug 1996 9:09:32 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5586

BATSEARCH PROGRAM

BATSE BURST # 5586
EVENT OF 1996 AUG 25 DAY OF YEAR=238
EVENT CROSSING TIME AT BATSE : 62837. S. OR 17:27:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 64.000 -4.000
BATSE PEAK COUNTING RATE: 7000 C/S

N_0

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 8/ 96 IS:
RA= 164.843 DEC= 37.573 DIST= 5.122 AU
BATSE-ULYSSES DISTANCE = 766178542. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 488.83 SECS.
CROSSING TIME AT ULYSSES IS 63326. S. OR 17:35:25 +/- 492.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 8/ 96 IS:
RA= 111.688 DEC= 22.711 DIST= 2.149 AU
MARS-BATSE DISTANCE = 321534112. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=126.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -635.50 SECS.
CROSSING TIME AT MARS IS 62202. S. OR 17:16:41 +/- 140.35 SECONDS

BATSE BURST TRIGGER

NO.: 5586

TIME: TJD=1032 SECONDS=62837

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=37.0 AZIMUTH=245.3 ERROR=3.5 DEGREES

COMMENTS:

GRB LASTING ~ 0.8 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5586	960825	10320	62837	7000	064	-04	.8

BATSE #

5586

30 / 8 / 96

ULYSSES RT

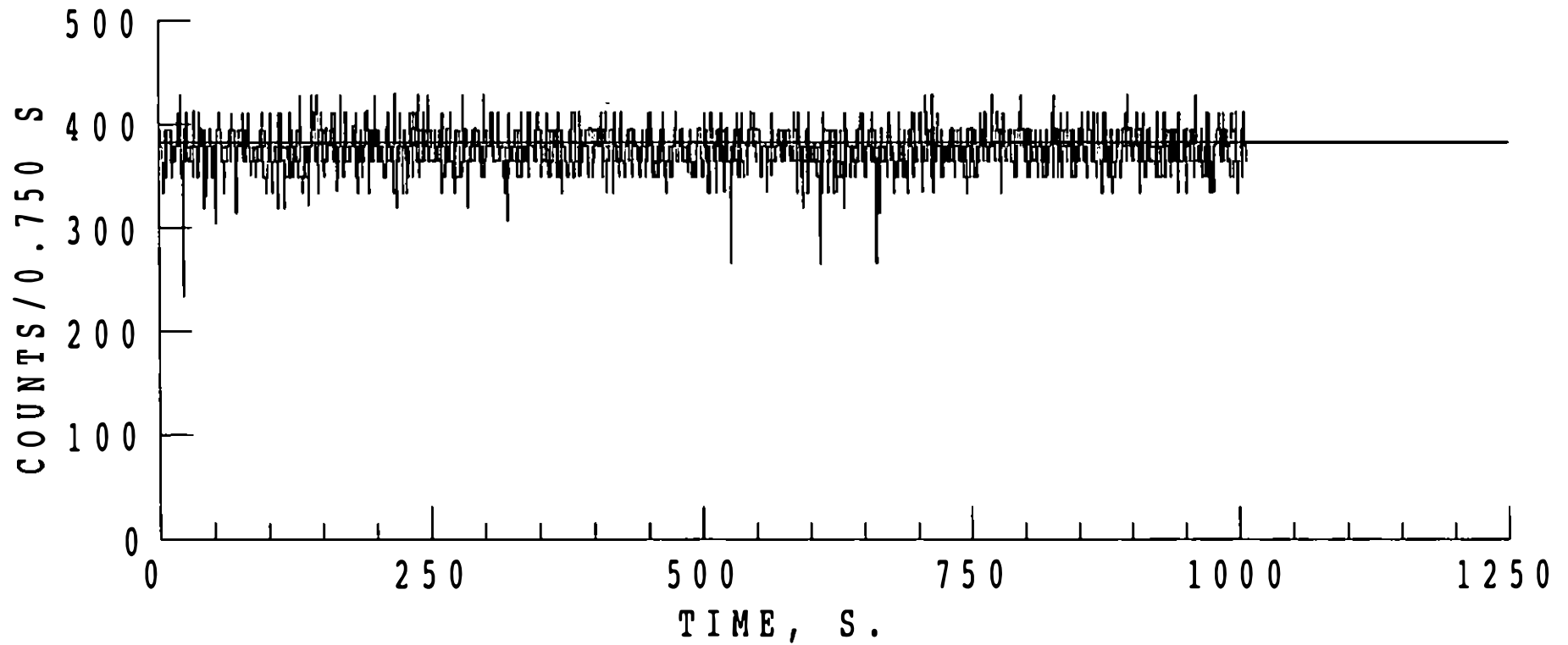
25 / 8 / 96 62820.207 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N = 10 N = 2

>4.0 SIGMA FLUCTUATIONS



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue Sep 3 11:30 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 3 Sep 1996 14:28:13 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Ulysses GRB960825 was not detected by Konus

Hi Everyone,

Konus did not trigger within several hours of this event and there is no evidence of a GRB in the waiting-mode data (integrated in 1.5 second intervals at present). There was a single 20 second long loss of telemetry near 19:38 UT.

Paul.

Date: Tue, 3 Sep 1996 10:50:34 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609031750.KAA10023@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@lheamail.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it
Subject: GRB960825
X-Sun-Charset: US-ASCII

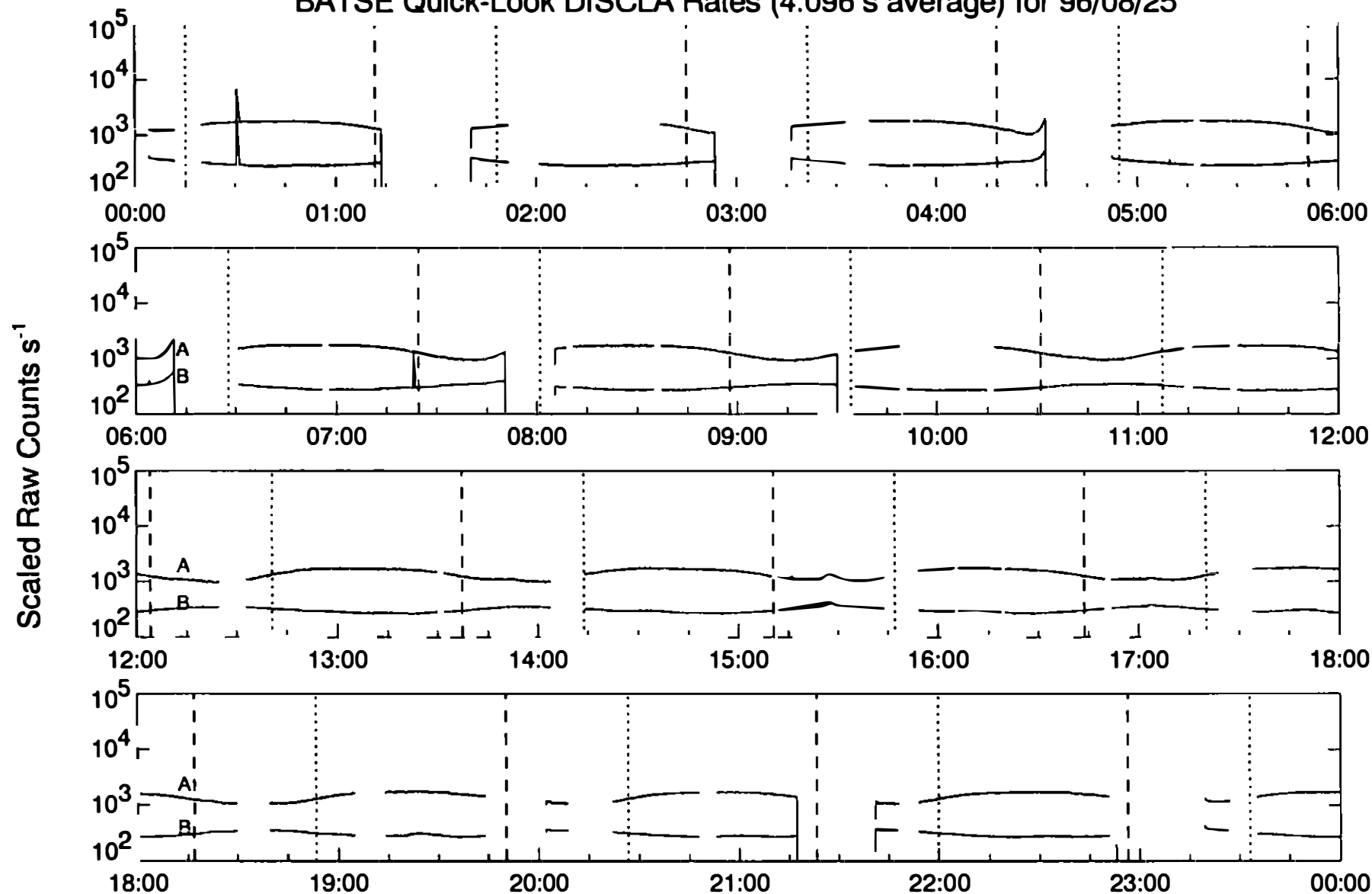
ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses observed a weak, short burst August 25 1996 at 19:23 Ulysses time. The spacecraft was about 2550 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 96/08/25

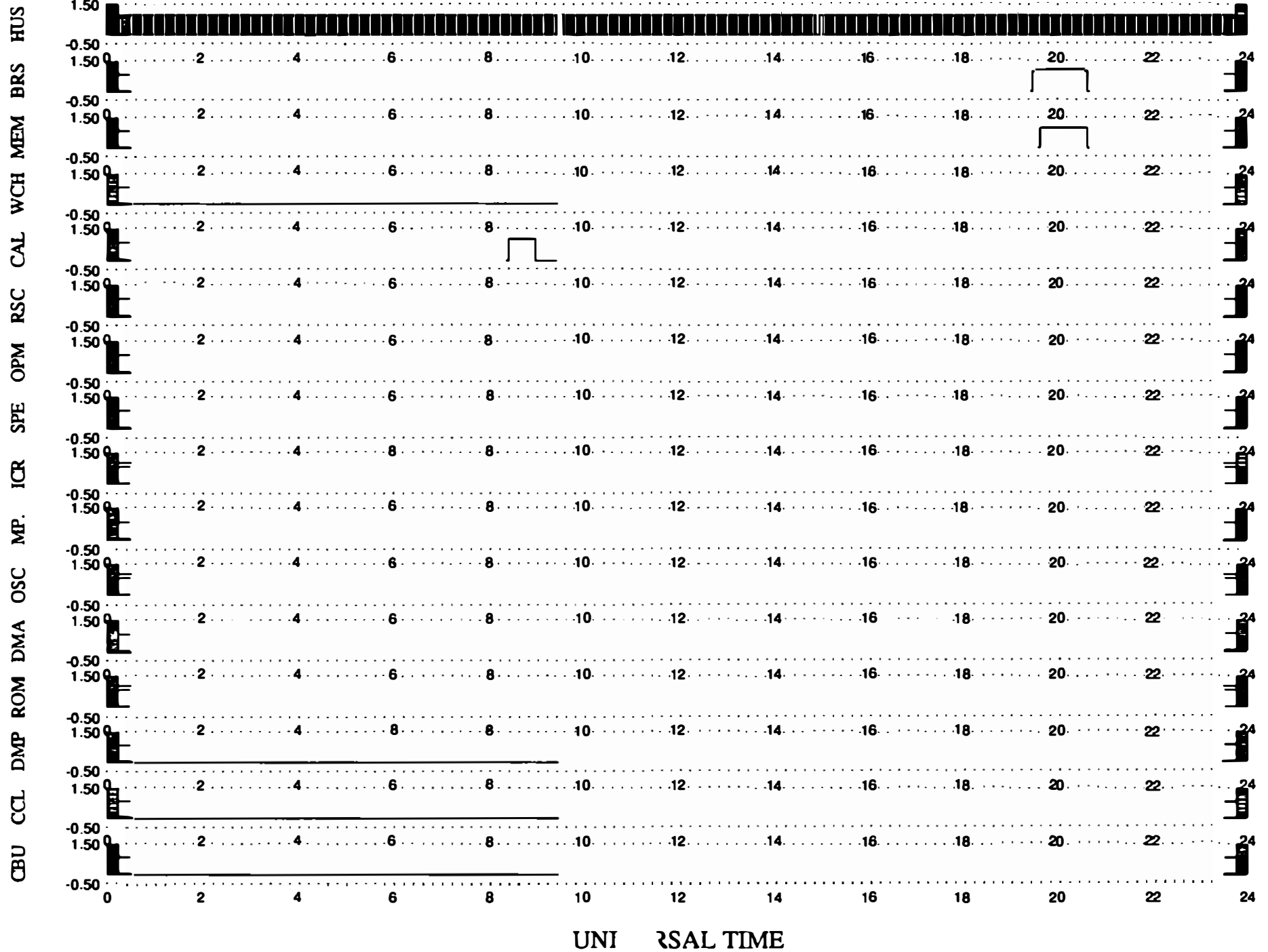


Current Time: 96/08/27, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

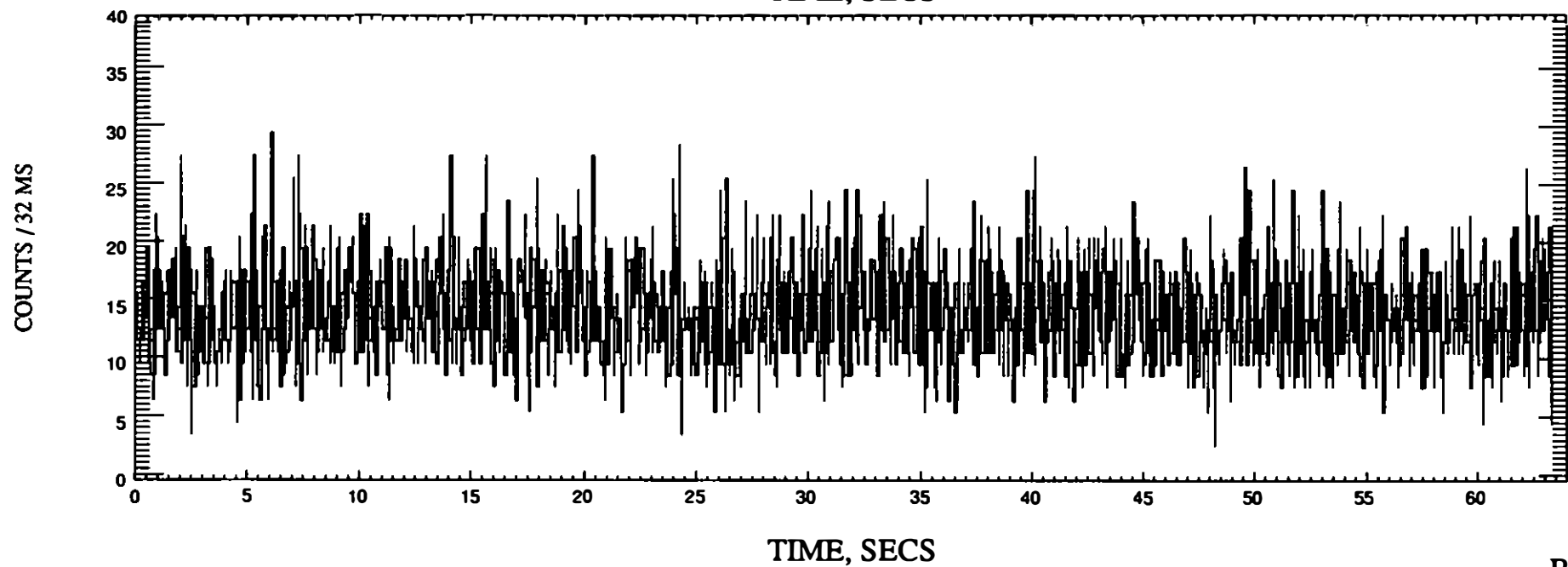
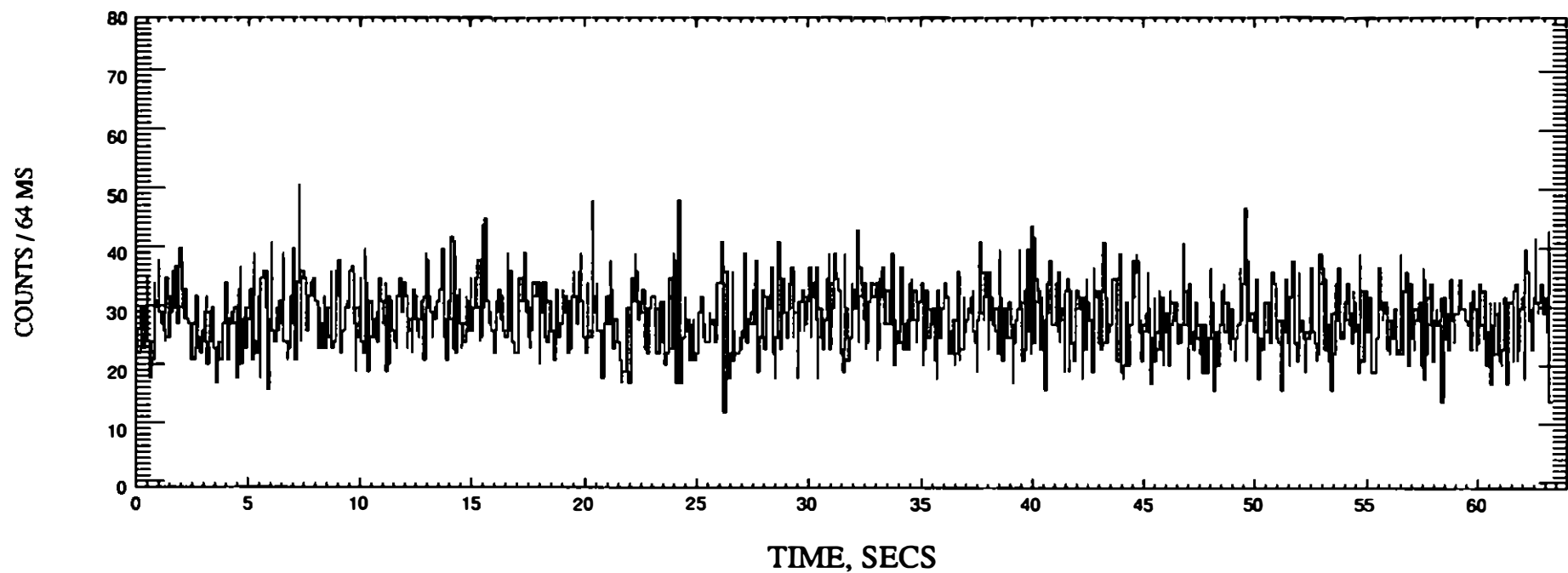
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

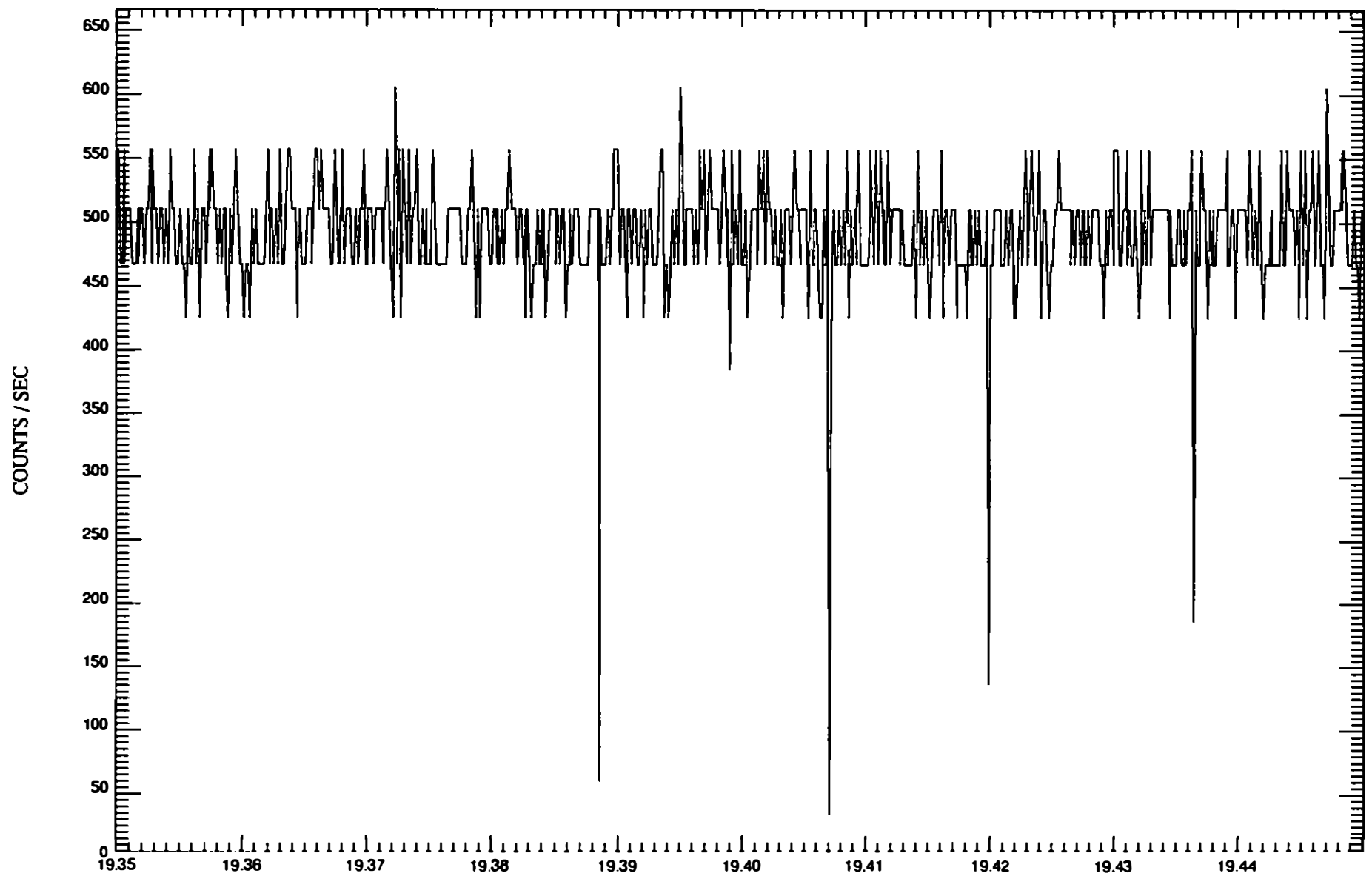
BURST NUMBER 5



Burst Counter 5 at UT=19.395183351305 h=69822.660 s 19:23:42.660



CALIBRATION DATA INCLUDED

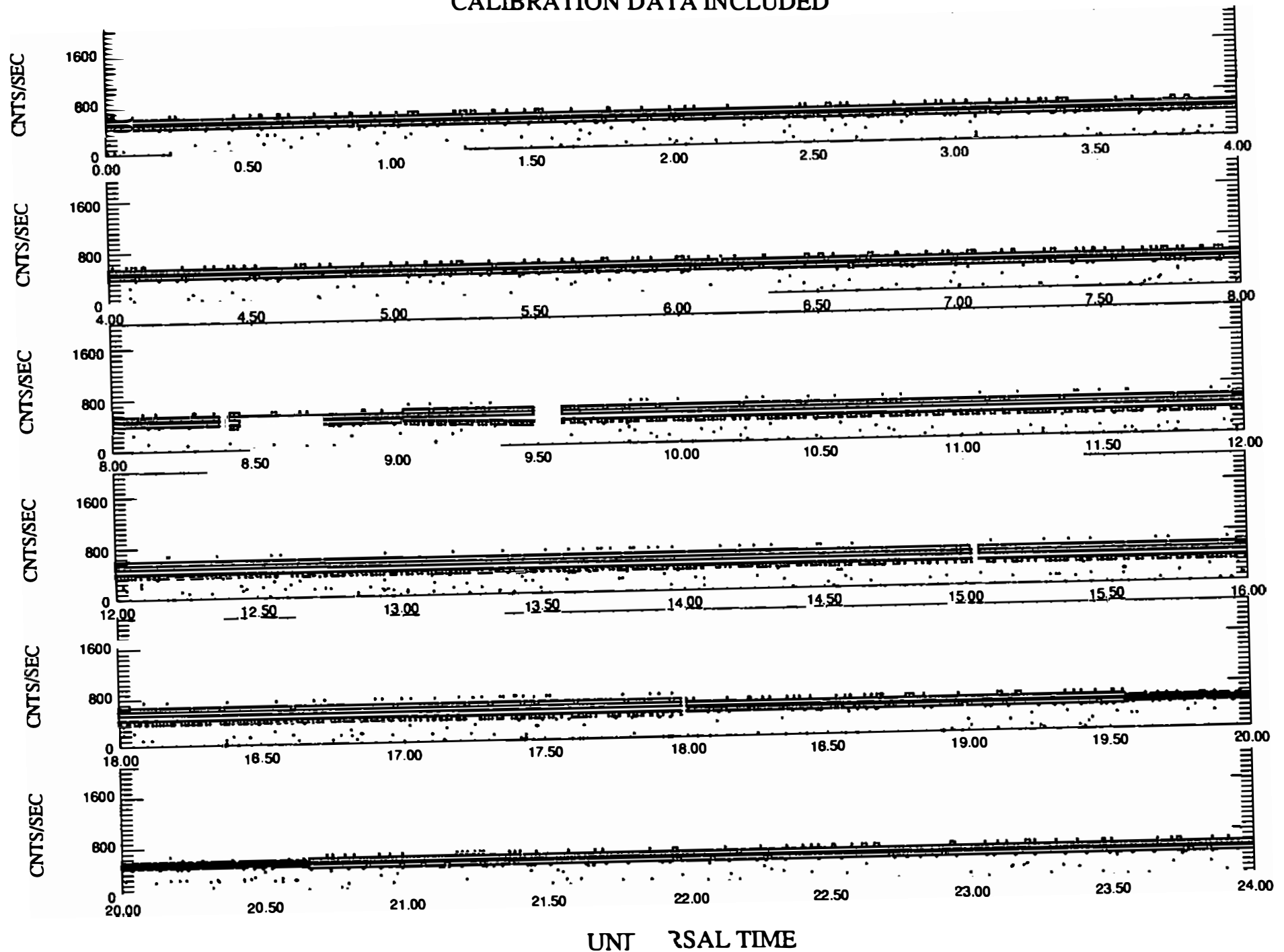


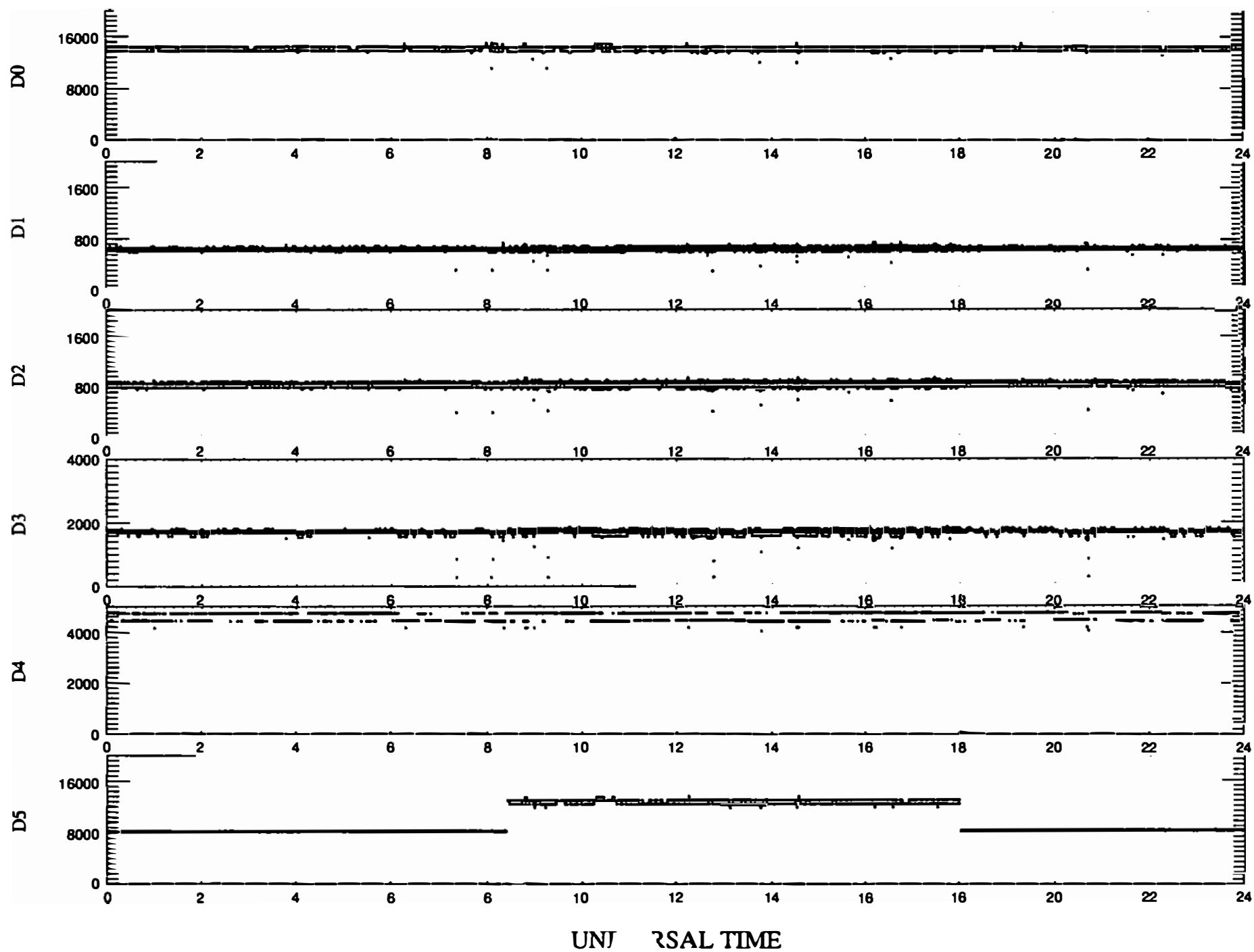
HUS 2A, MODE 1, NOT AVERAGED

EDR day 238, year 1996 to day 238, year 1996

12/11/96

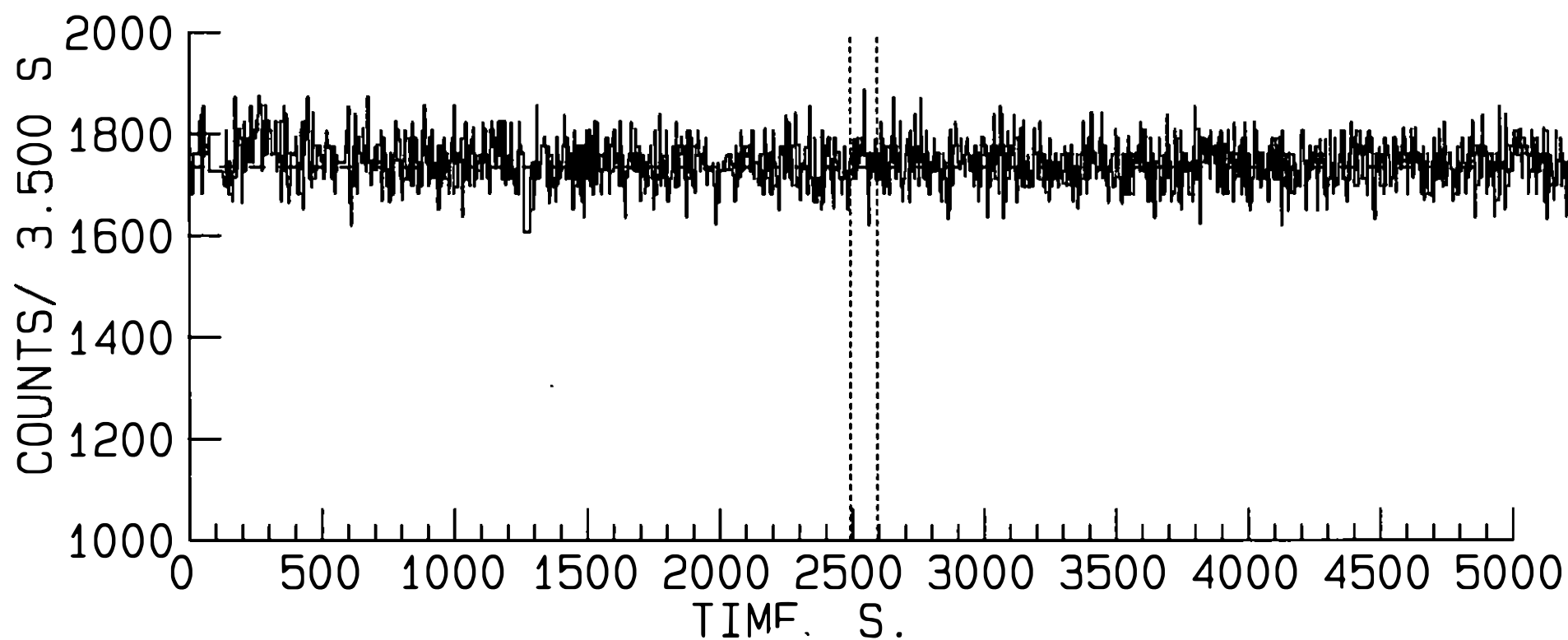
CALIBRATION DATA INCLUDED



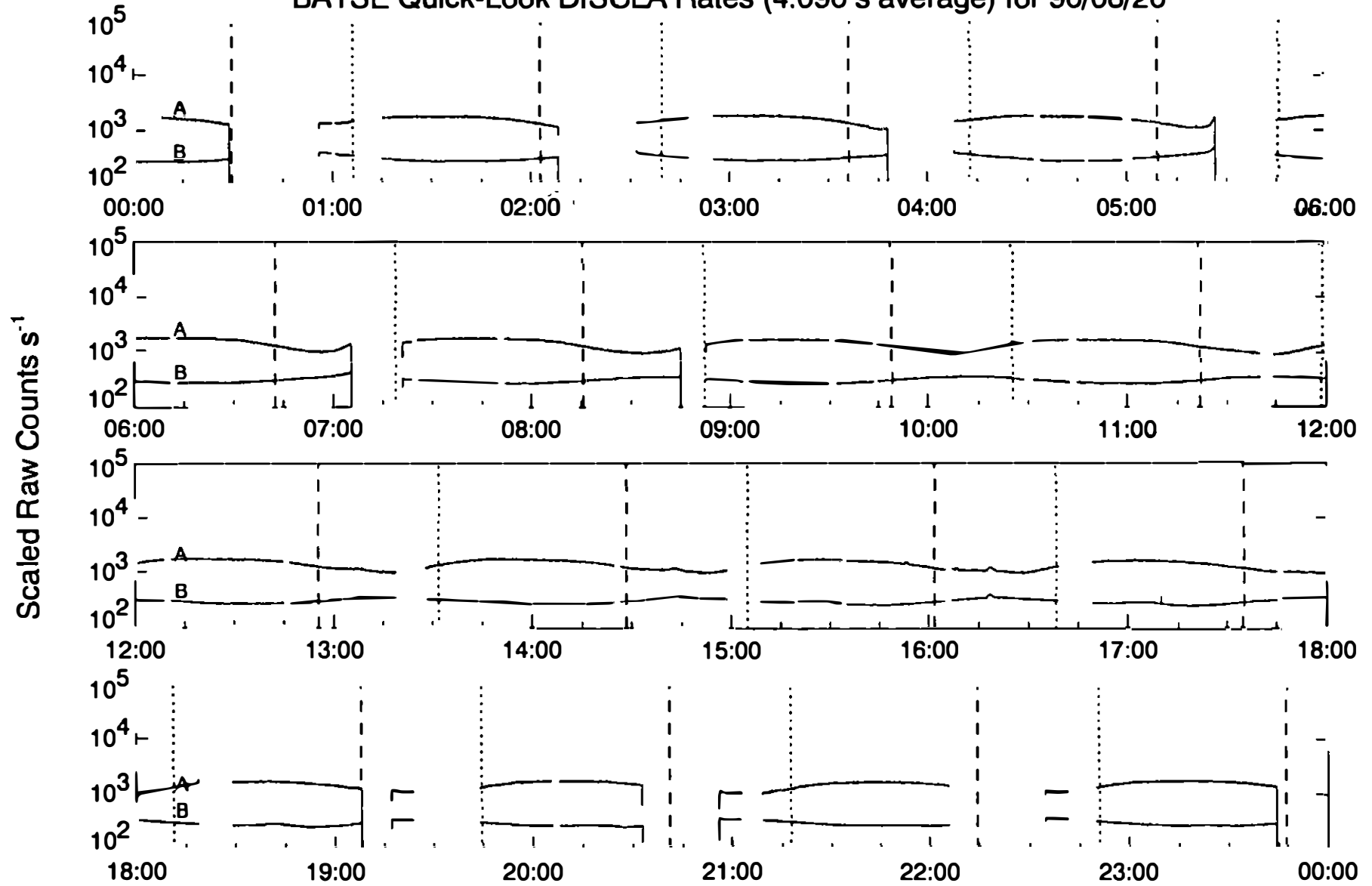


ULYSSES RT
26/ 8/96 55512.226 s
0.250 S INTERVALS REGROUPED BY 14
21- 145 keV

1 / 2 / 0



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/26

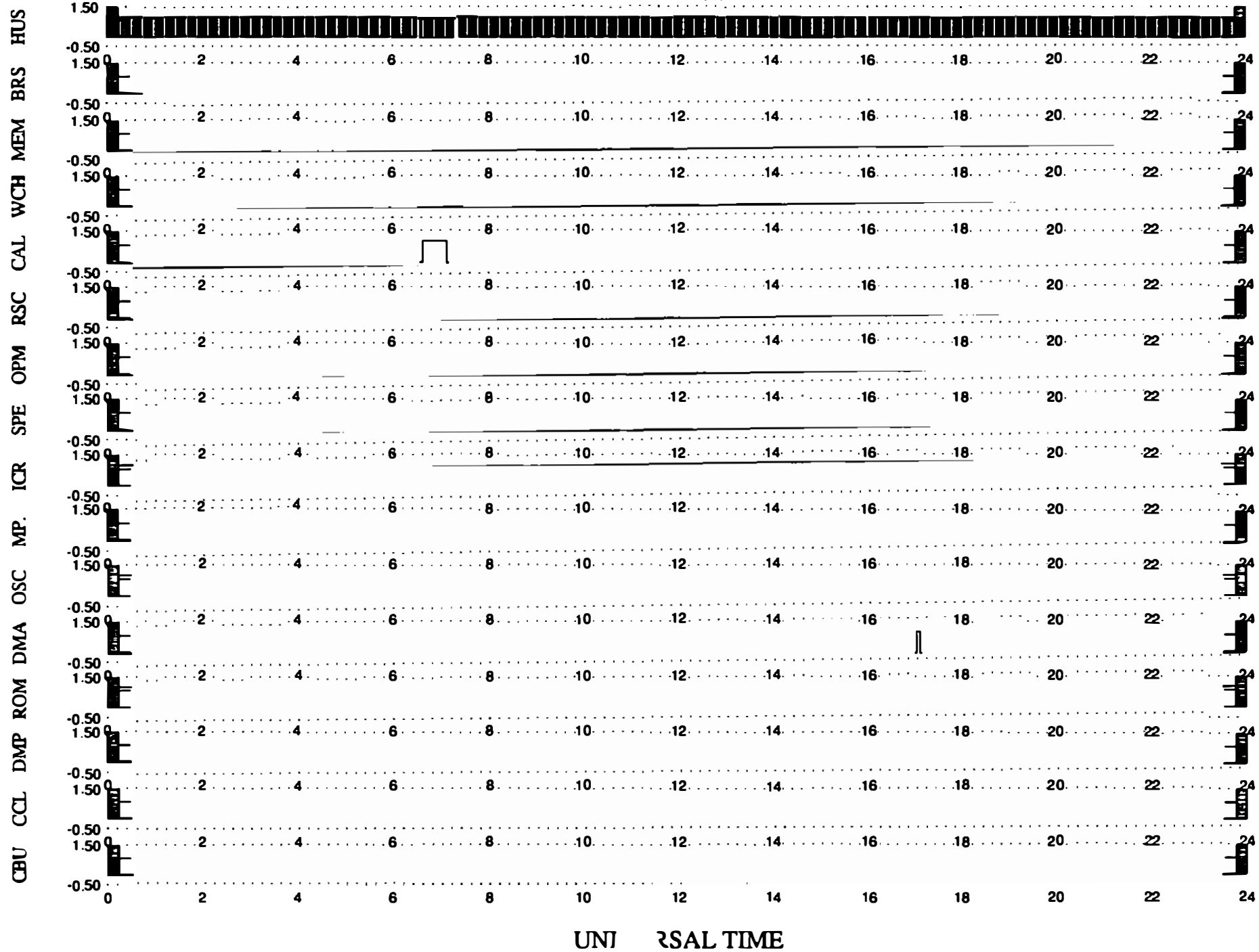


Current Time: 96/08/28, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

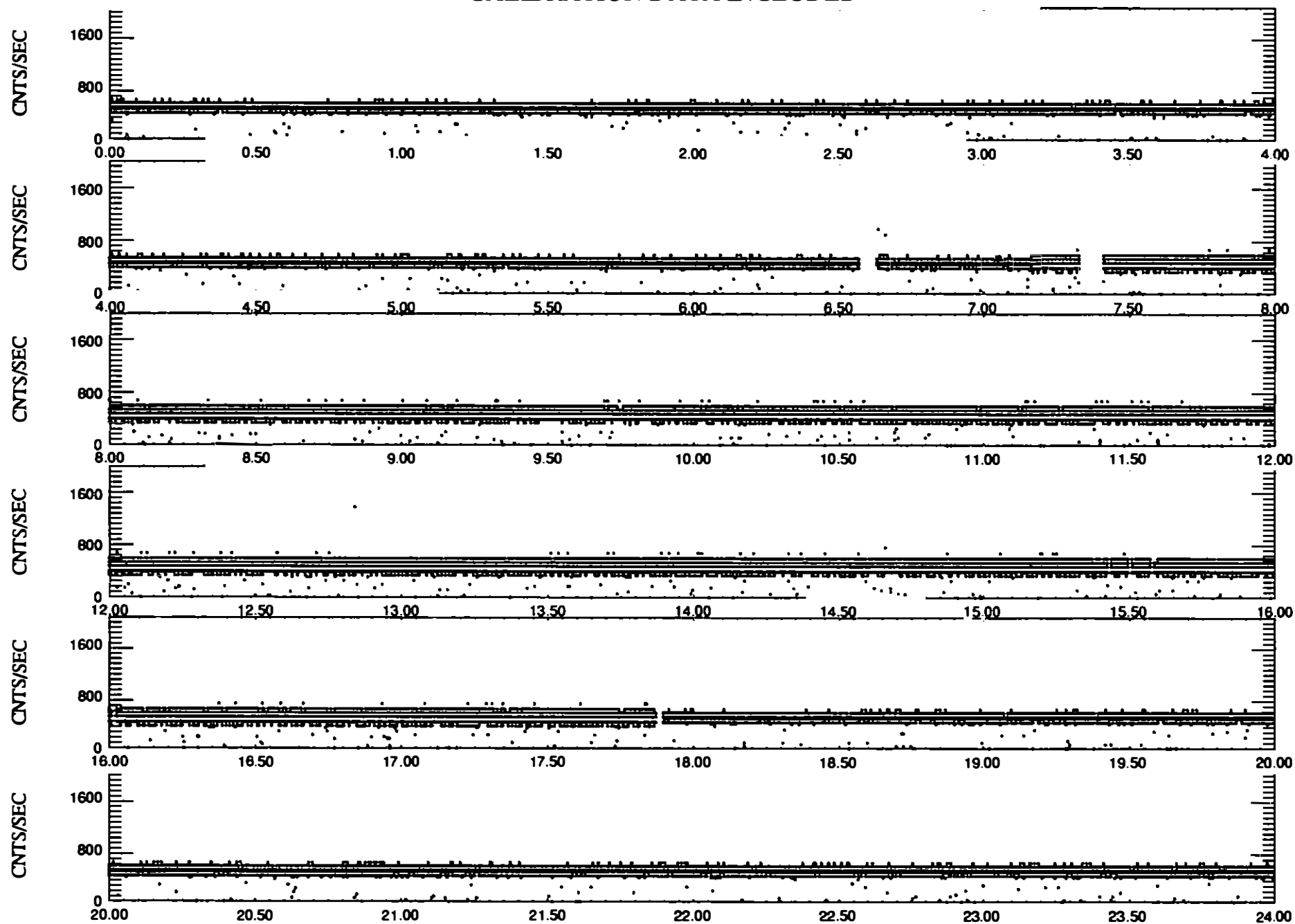
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

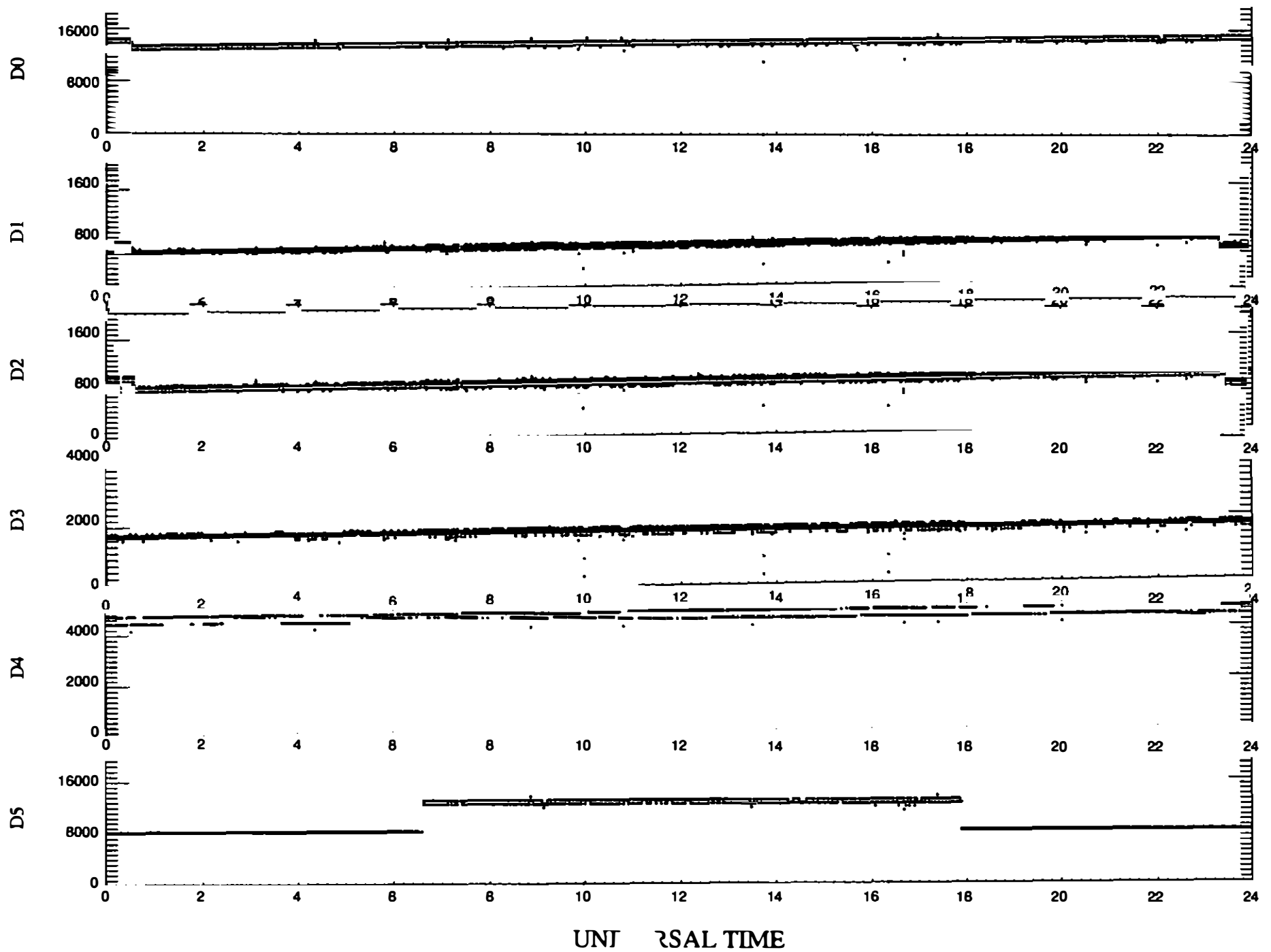
NO BURST (5)



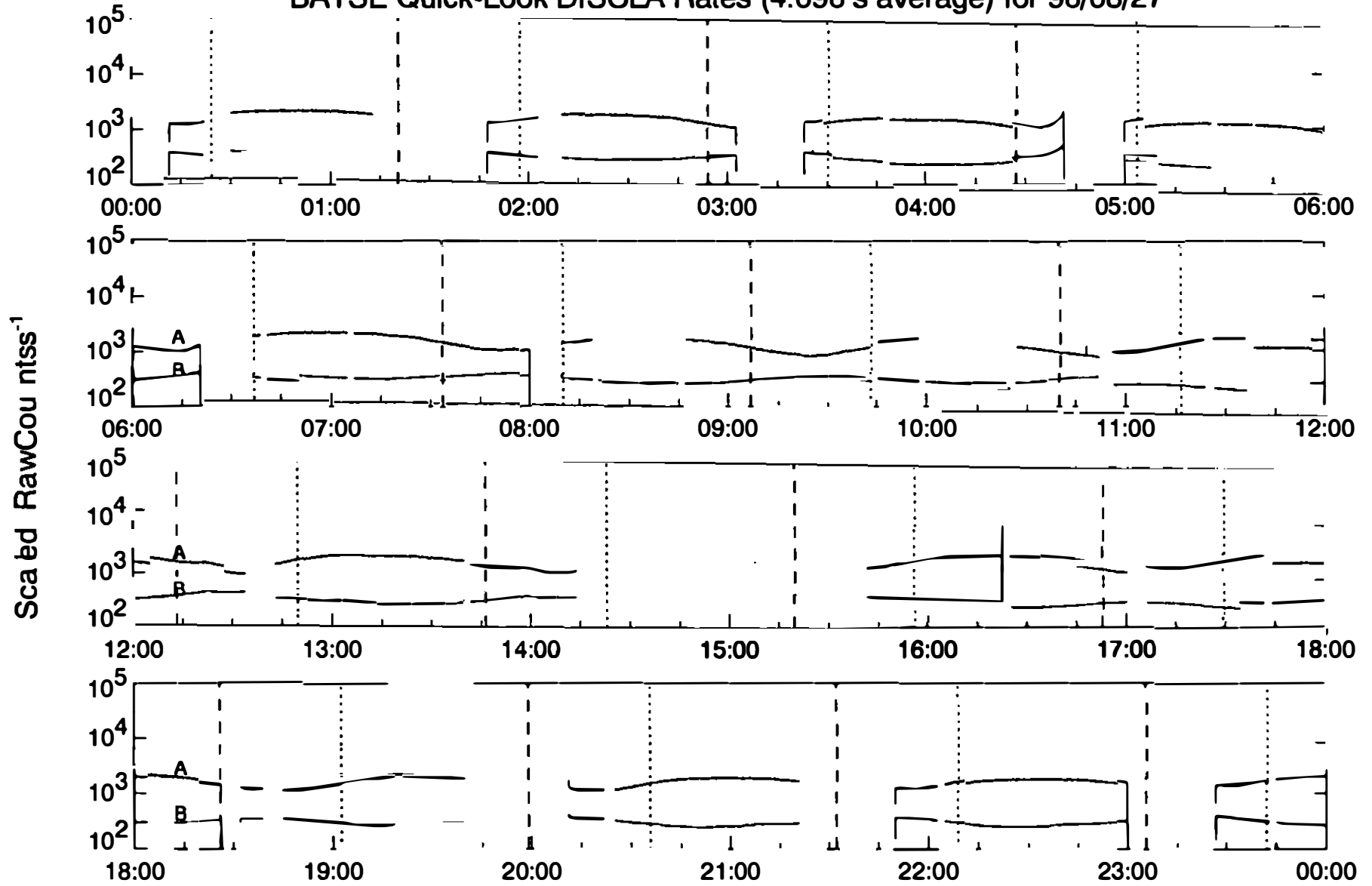
CALIBRATION DATA INCLUDED



UNRSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/27



Current Time: 96/08/29, 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

From RICHARDSON@ssl.msfc.nasa.gov Thu Aug 29 09:20 PDT 1996
Date: Thu, 29 Aug 1996 11:18:25 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
"LHEAVX::CLINE"@SSLLES.MSFC.NASA.GOV,
"LHEAVX::BARTHELMY"@SSLLES.MSFC.NASA.GOV, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5587

TIME: TJD=0322 SECONDS=74000

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

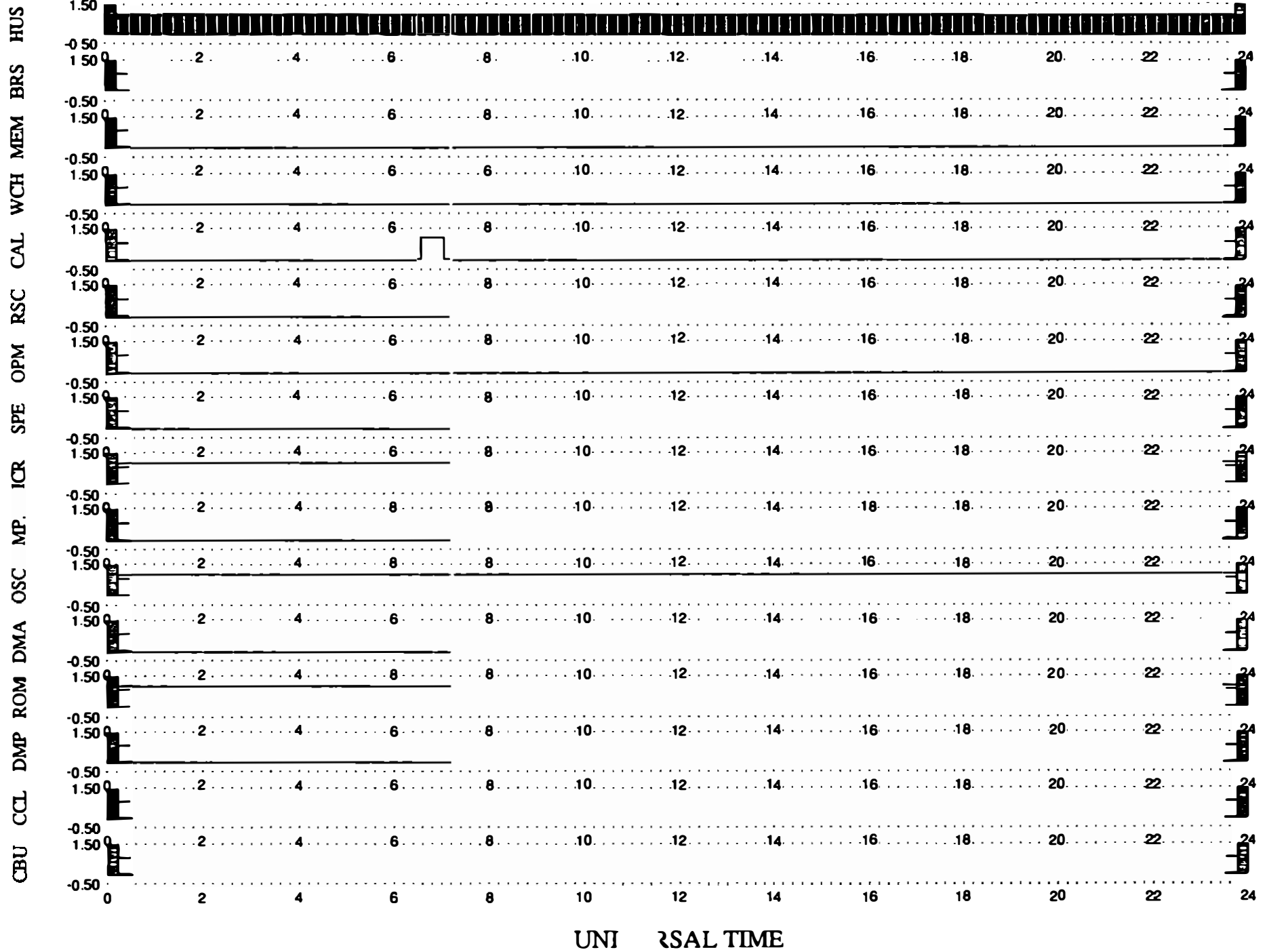
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=10.5 AZIMUTH=36.6 ERROR=11.7 DEGREES

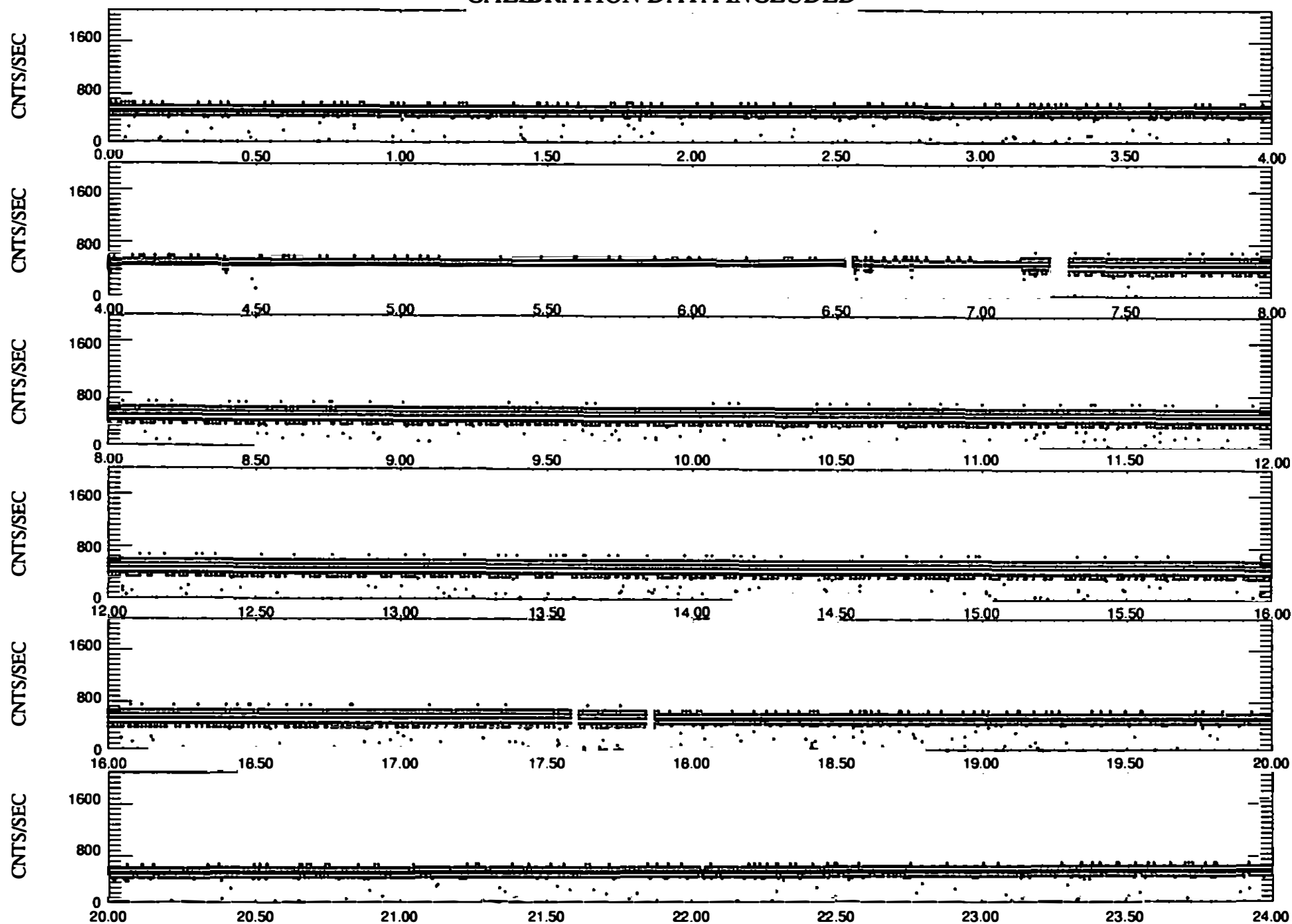
COMMENTS:

TERRESTRIAL GAMMA FLASH. SINGLE SPIKE. DUR.~0.001 SEC.

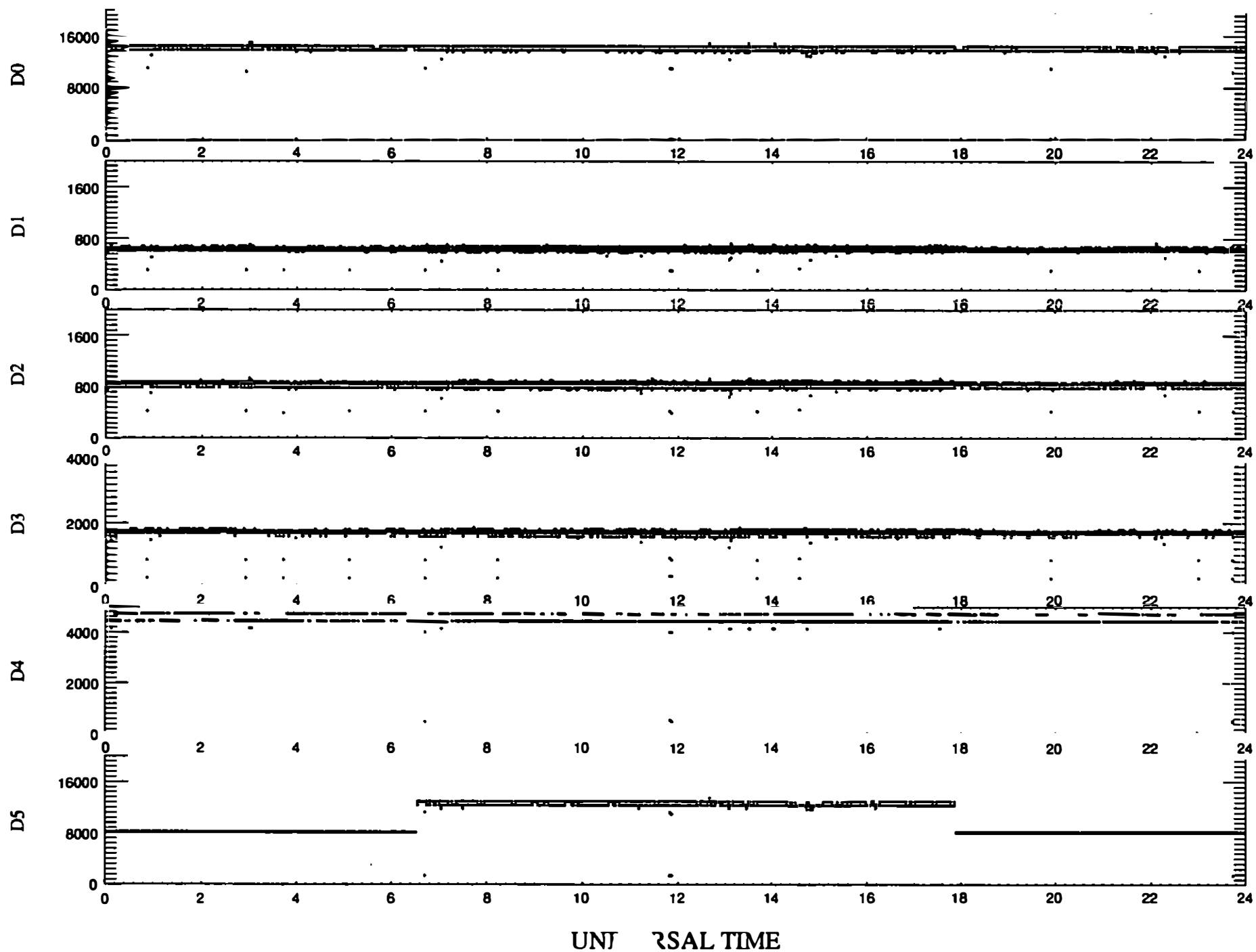
NO BURST (5)



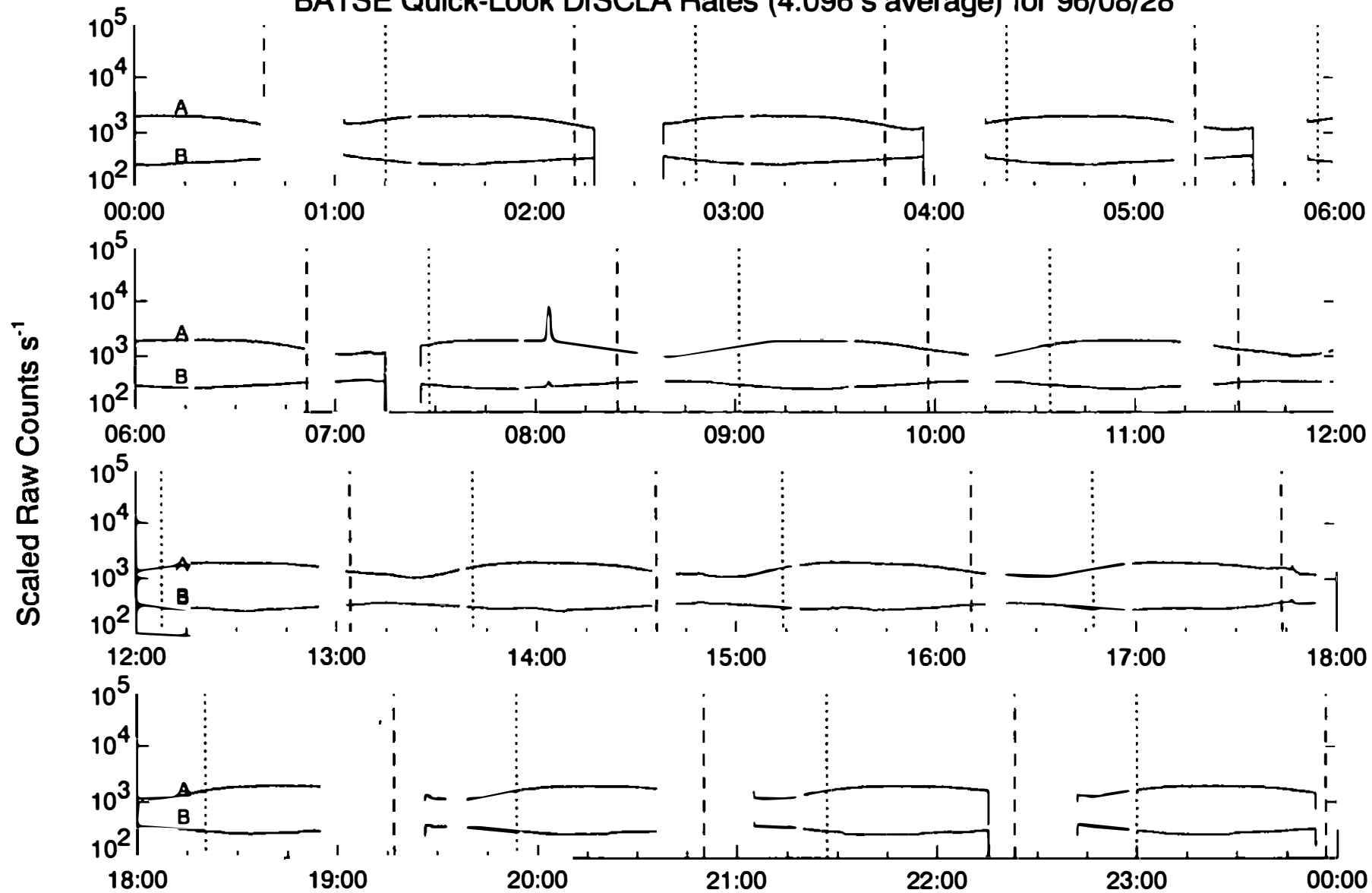
CALIBRATION DATA INCLUDED



UNF RSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/28

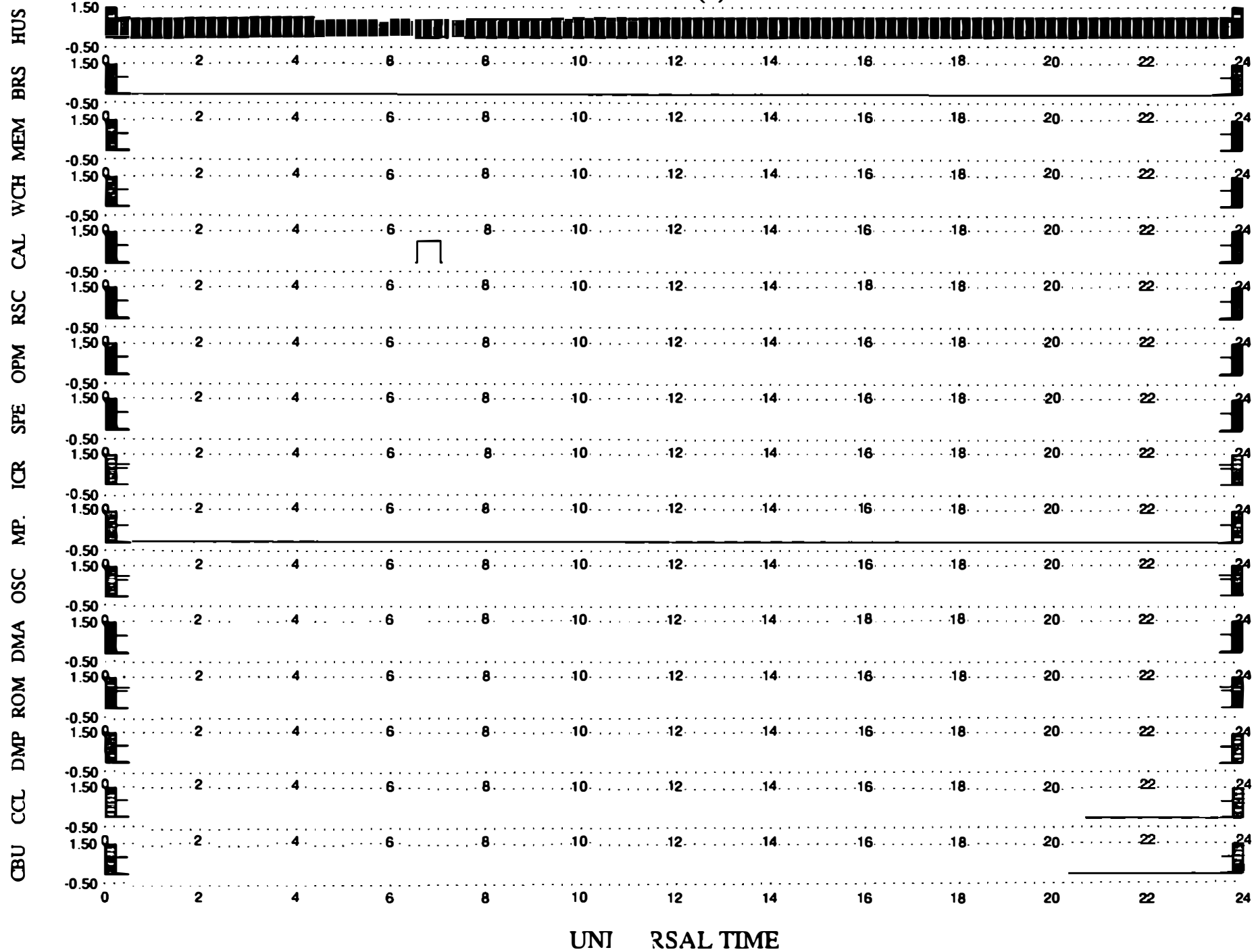


Current Time: 96/08/30, 1004 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

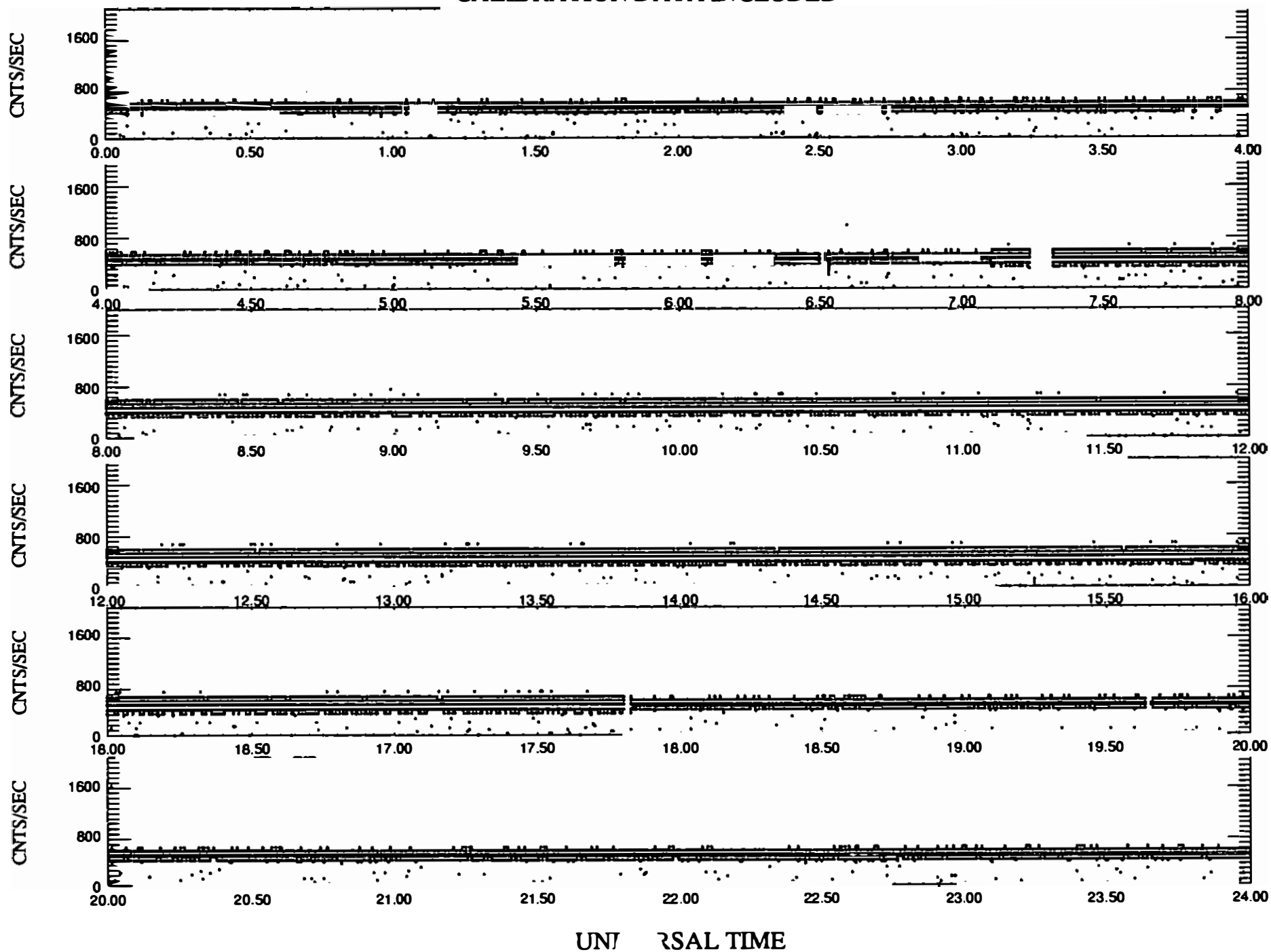
Dotted line: Day entry
Dashed line: Night entry

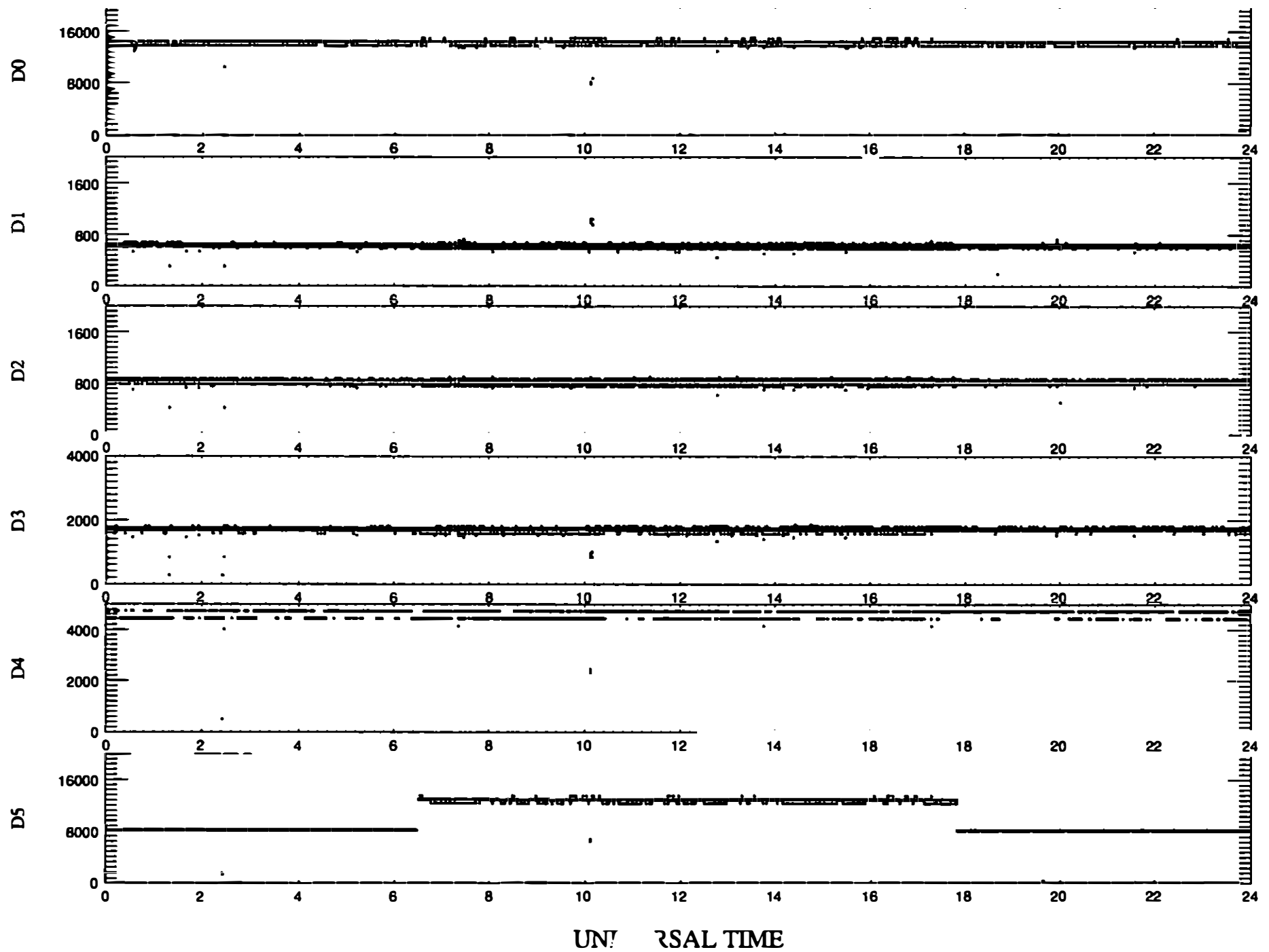
* Solar Burst Trigger
+ Solar Flare

NO BURST (5)



CALIBRATION DATA INCLUDED





From BUTTERWORTH@lheavx.gsfc.nasa.gov Thu Sep 5 11:33 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Thu, 5 Sep 1996 14:31:38 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
Subject: Konus obs. of recent Ulysses events: 8/29 no; 8/30 maybe; 9/02 yes

Hi Everyone,

Konus didn't trigger on either the 29th or 30th. No events are visible in the 1.5 second interval waiting-mode data for the 29th. There is what might be a weak GRB visible near 2:25:18 on the 30th. The event was seen by the southward-facing detector and lasted about 20 seconds. Because it lasted so long, it may not be a good match with the 'short burst' seen by Ulysses.

Konus triggered at 16:08:17.128 on the 2nd, in the southward-facing detector. This event is also visible in the waiting-mode data of the other detector, so it cannot have had a very high ecliptic latitude. There was significant flux for about 2 seconds, with maxima at T, T+0.4s and T+0.8s, and some hard-to-soft evolution.

Paul.

Date: Thu, 5 Sep 1996 08:22:32 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609051522.IAA12536@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@lheamail.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it
Subject: GRB960829, 960830, 960902
X-Sun-Charset: US-ASCII

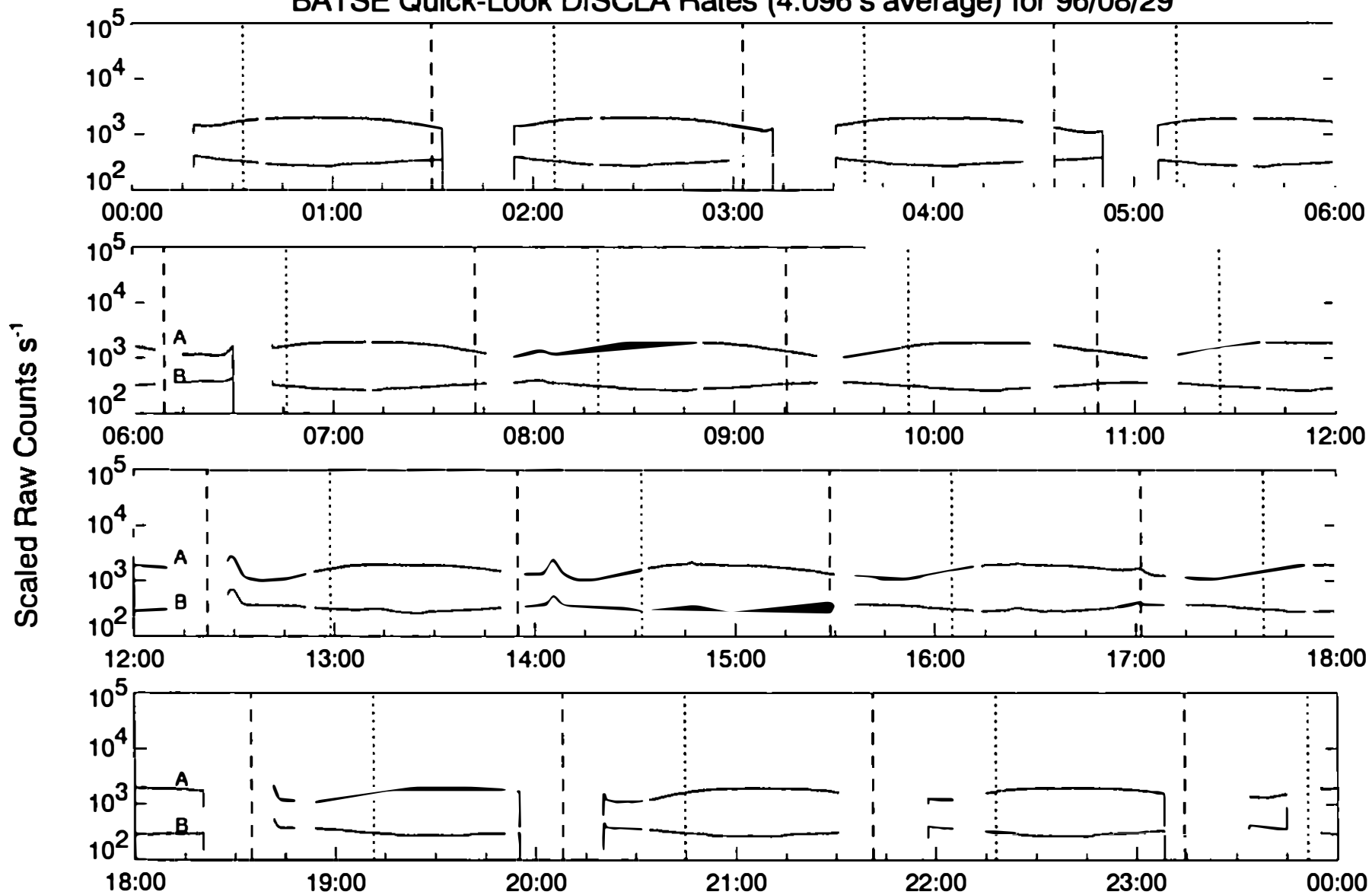
ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed two weak, short bursts August 29 1996 at 12:42 and 14:54 Ulysses time, and a similar event August 30 1996 at 02:50. Ulysses also observed a moderately intense, 3 second long burst on September 2 1996 at 15:47. The spacecraft was about 2550 light seconds from Earth.

Were these events 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 96/08/29

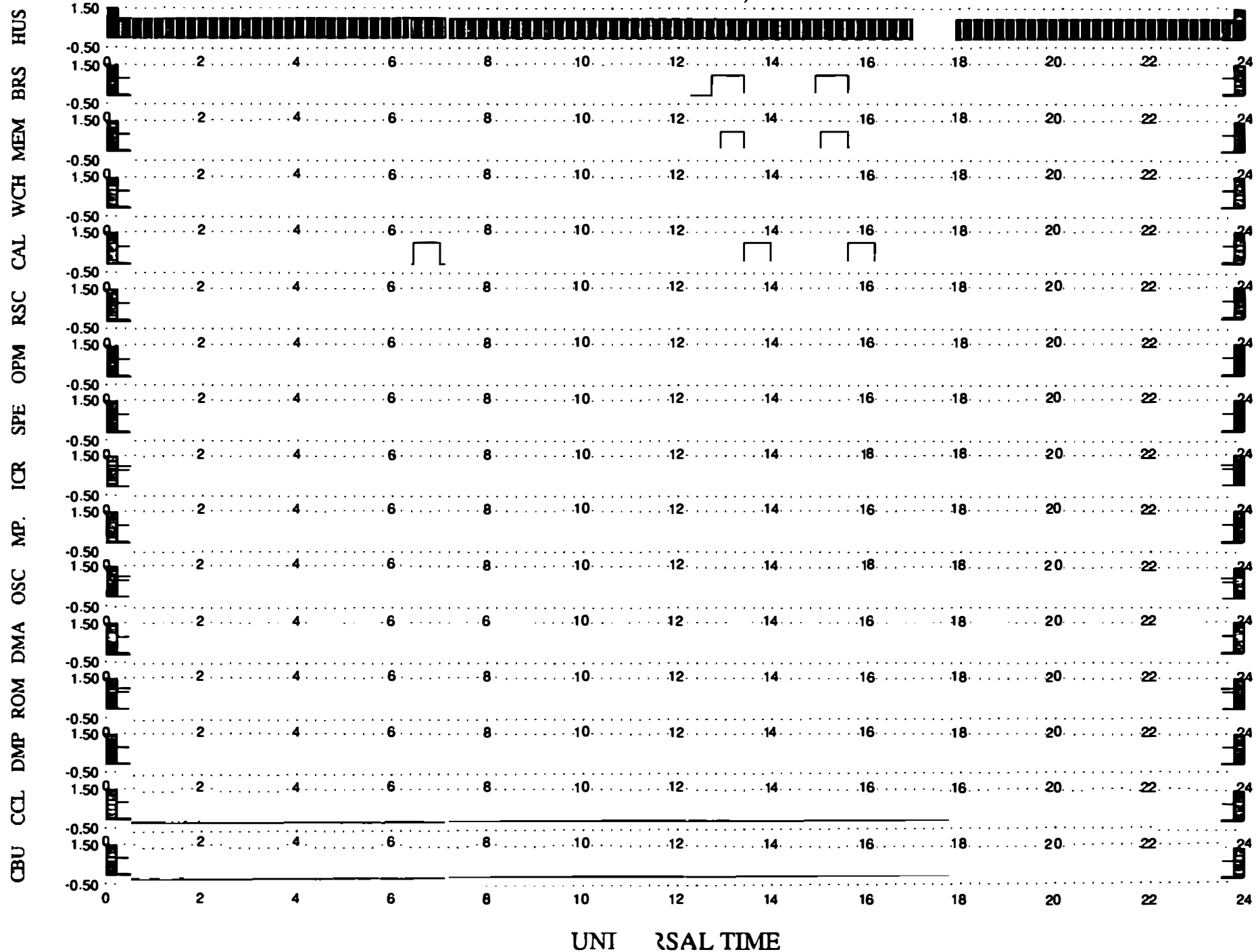


Current Time: 96/08/31, 1004 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

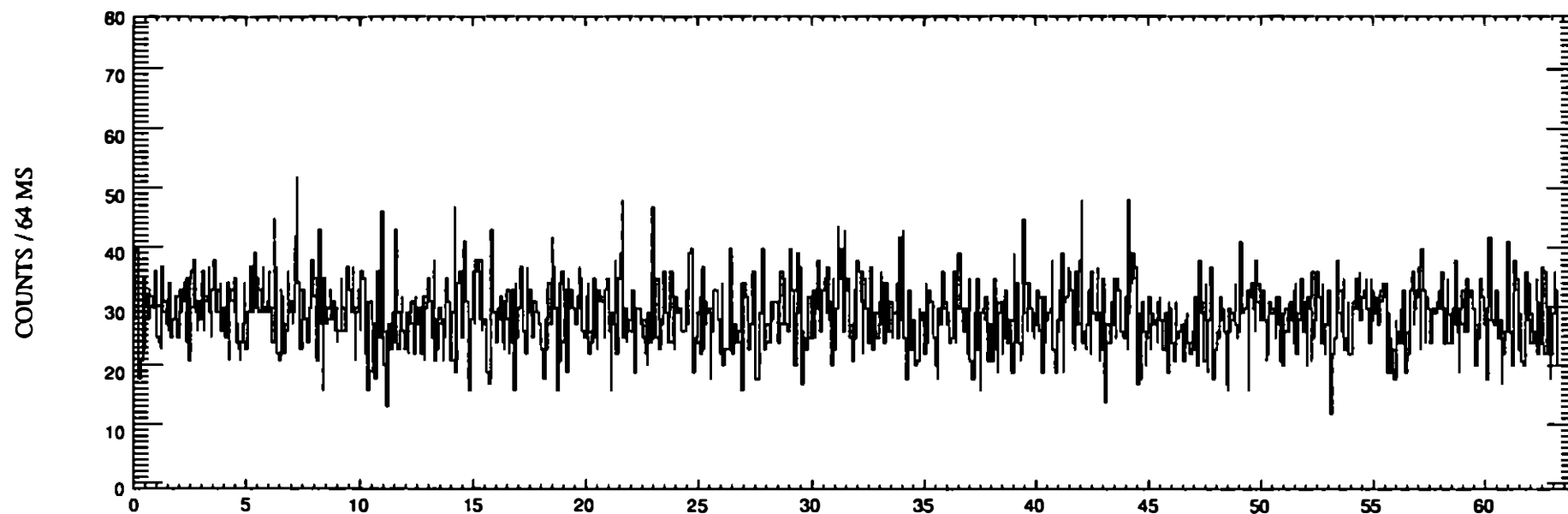
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

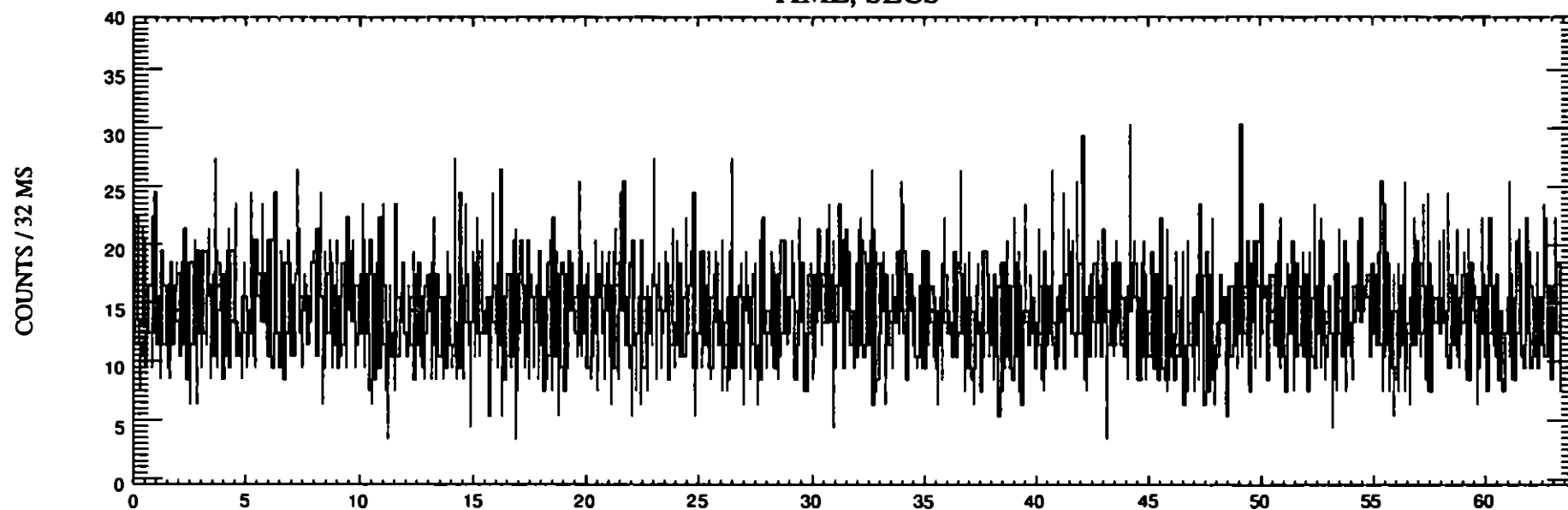
BURST NUMBER 6, 7



Burst Counter 6 at UT=12.701683201260 h=45726.060 s 12:42:06.060

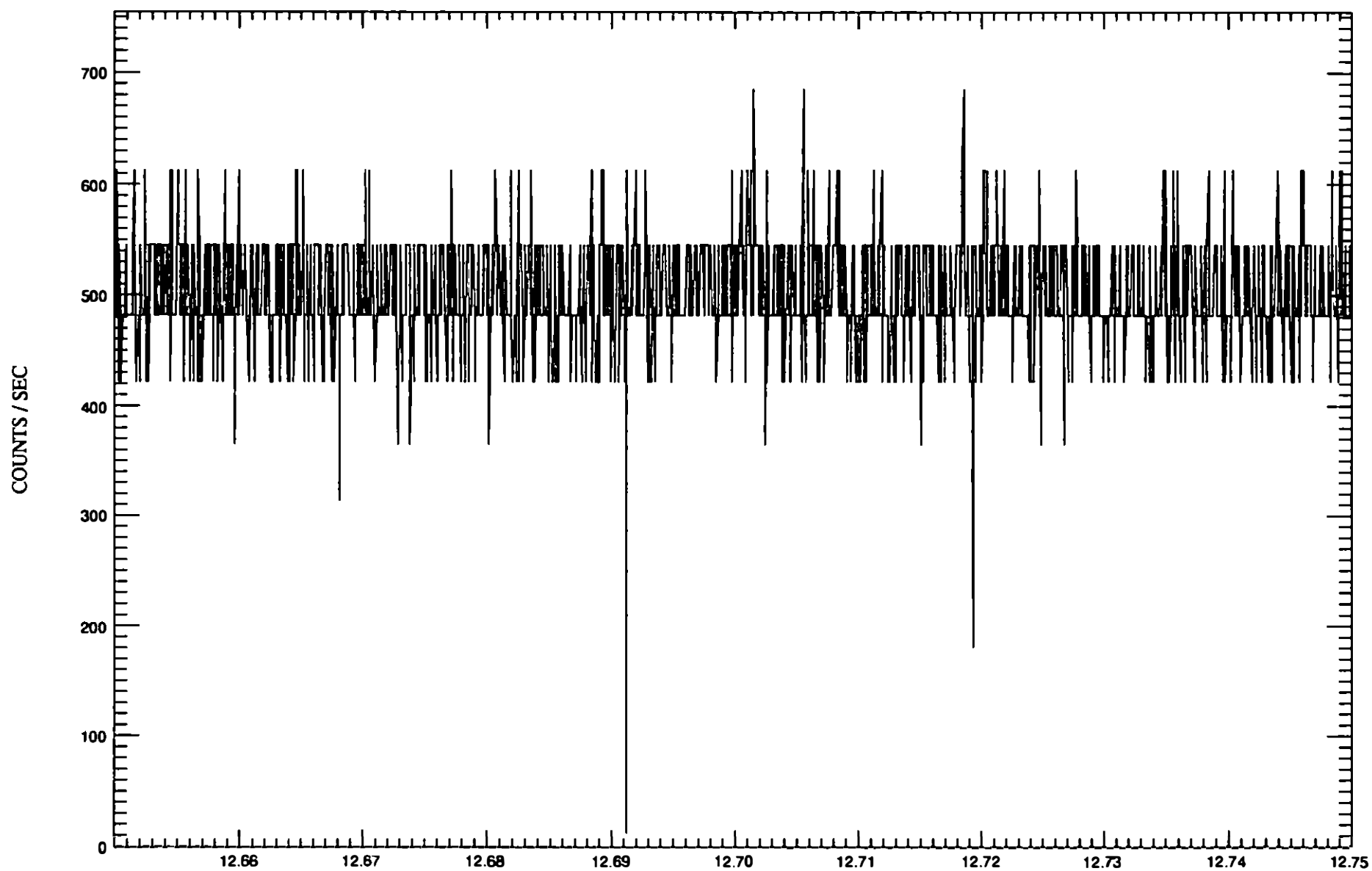


TIME, SECS

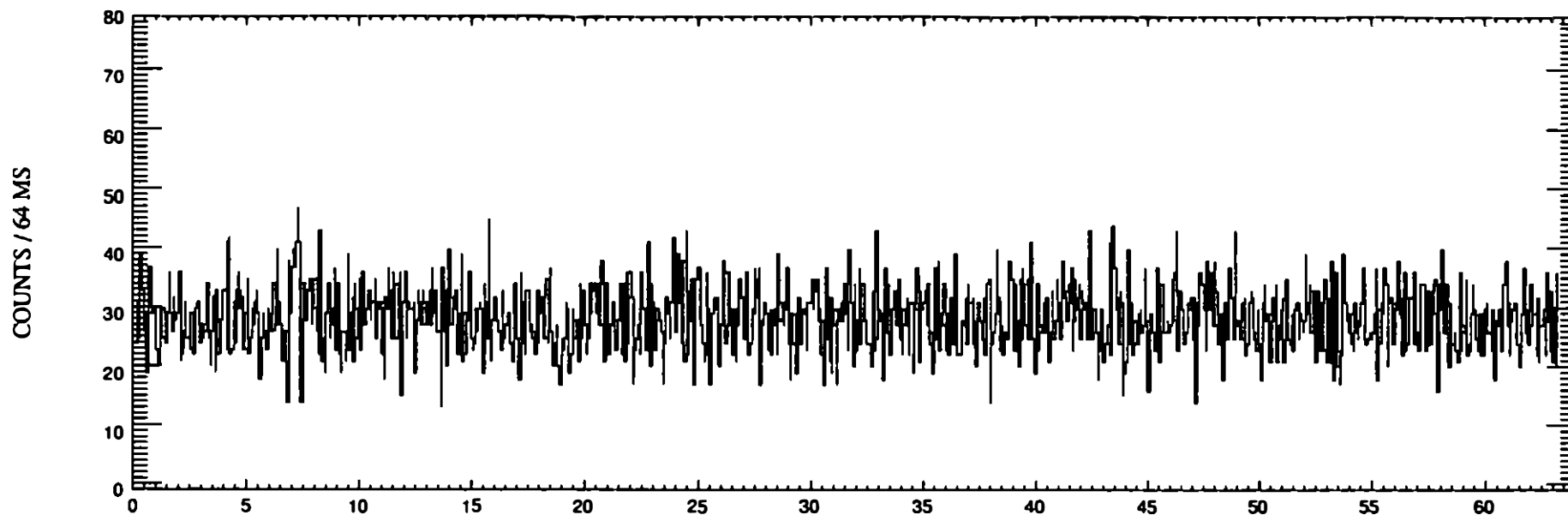


TIME, SECS

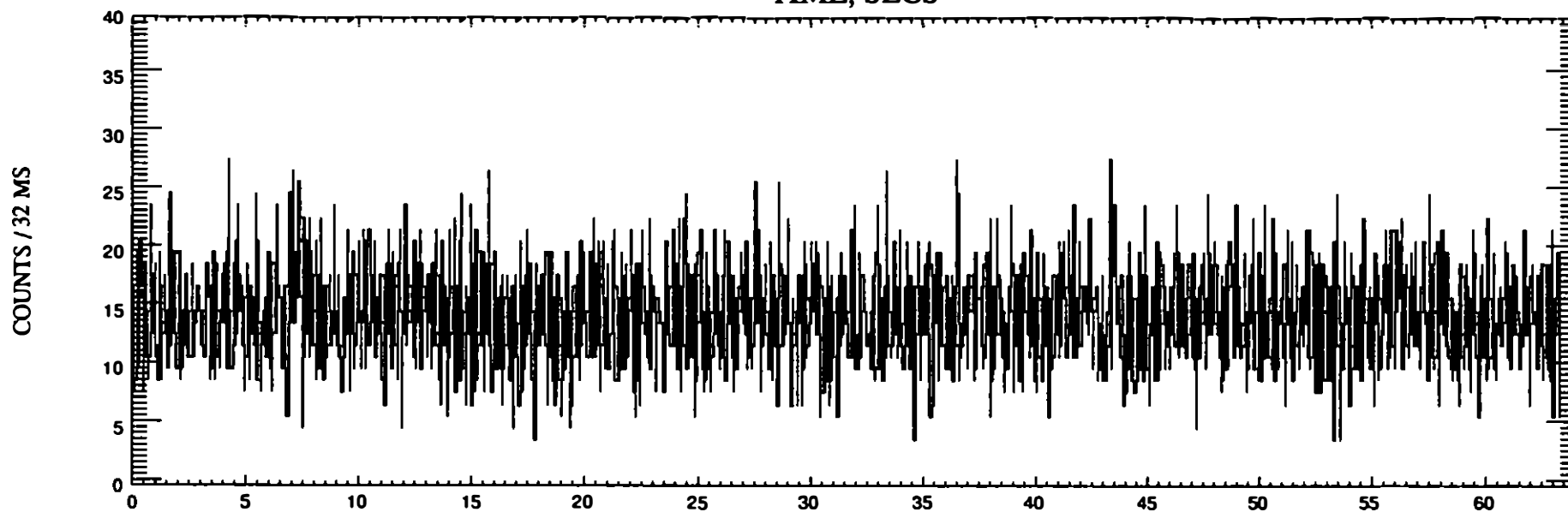
CALIBRATION DATA INCLUDED



Burst Counter 7 at UT=14.895739415487 h=53624.662 s 14:53:44.662

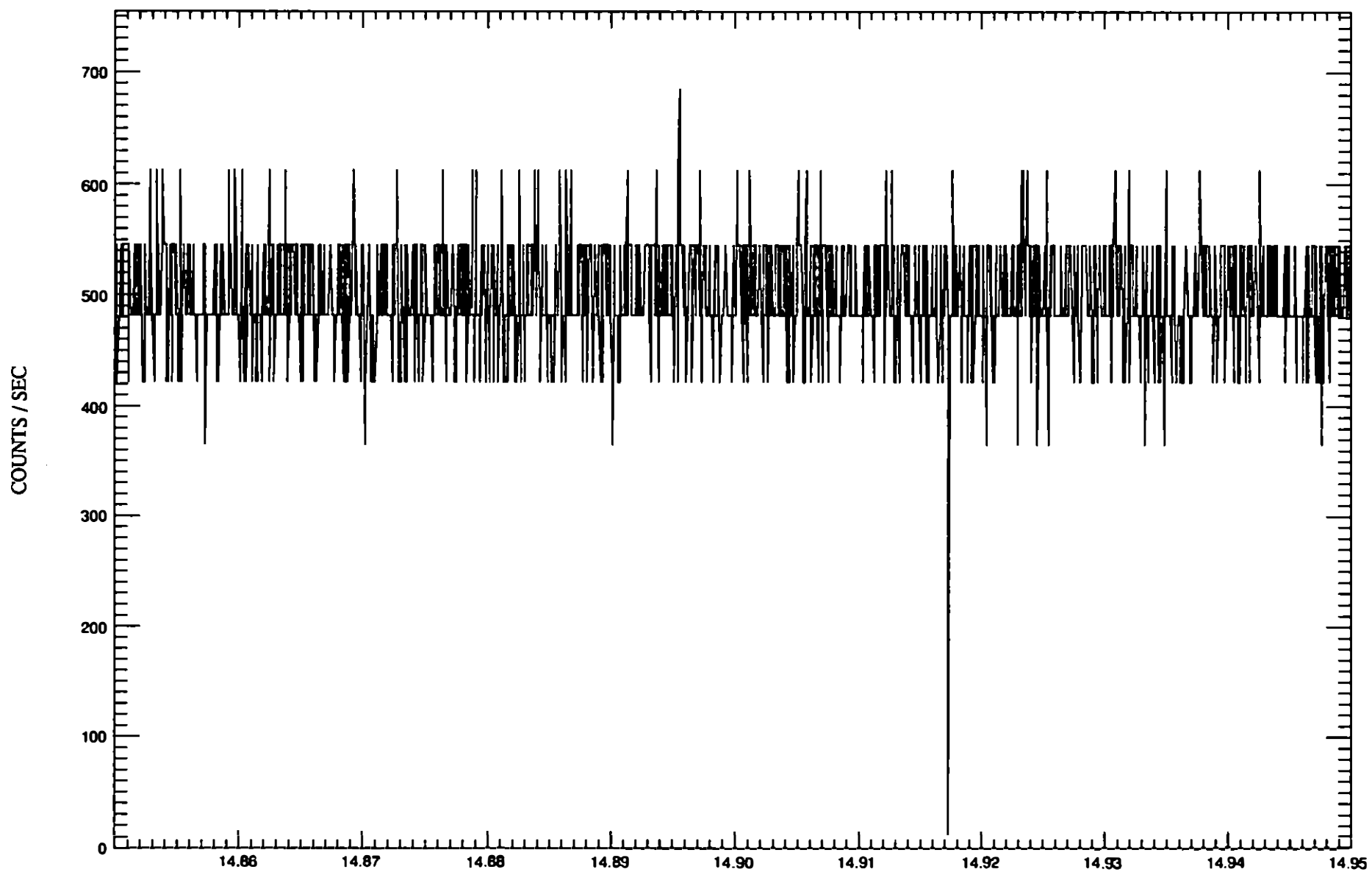


TIME, SECS

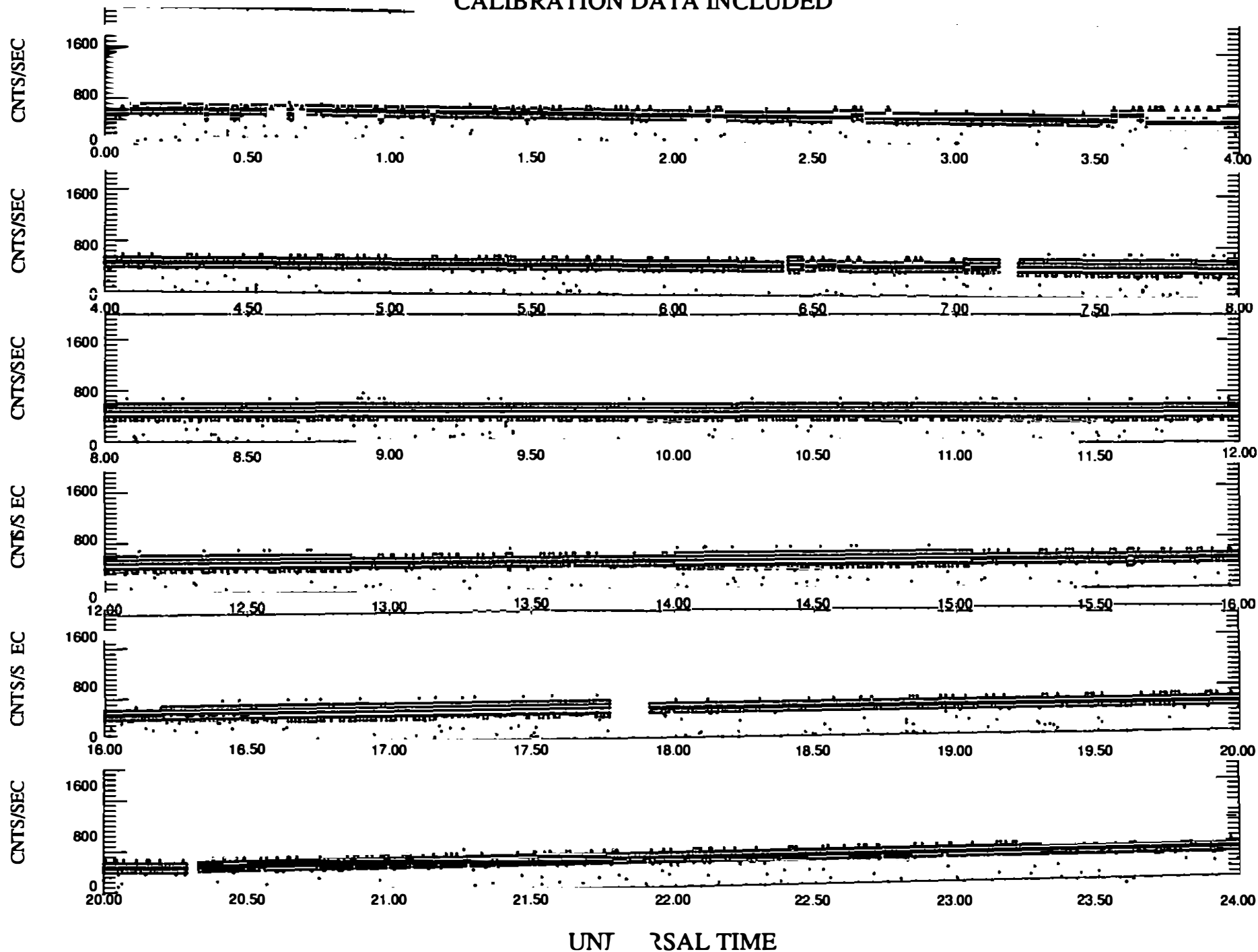


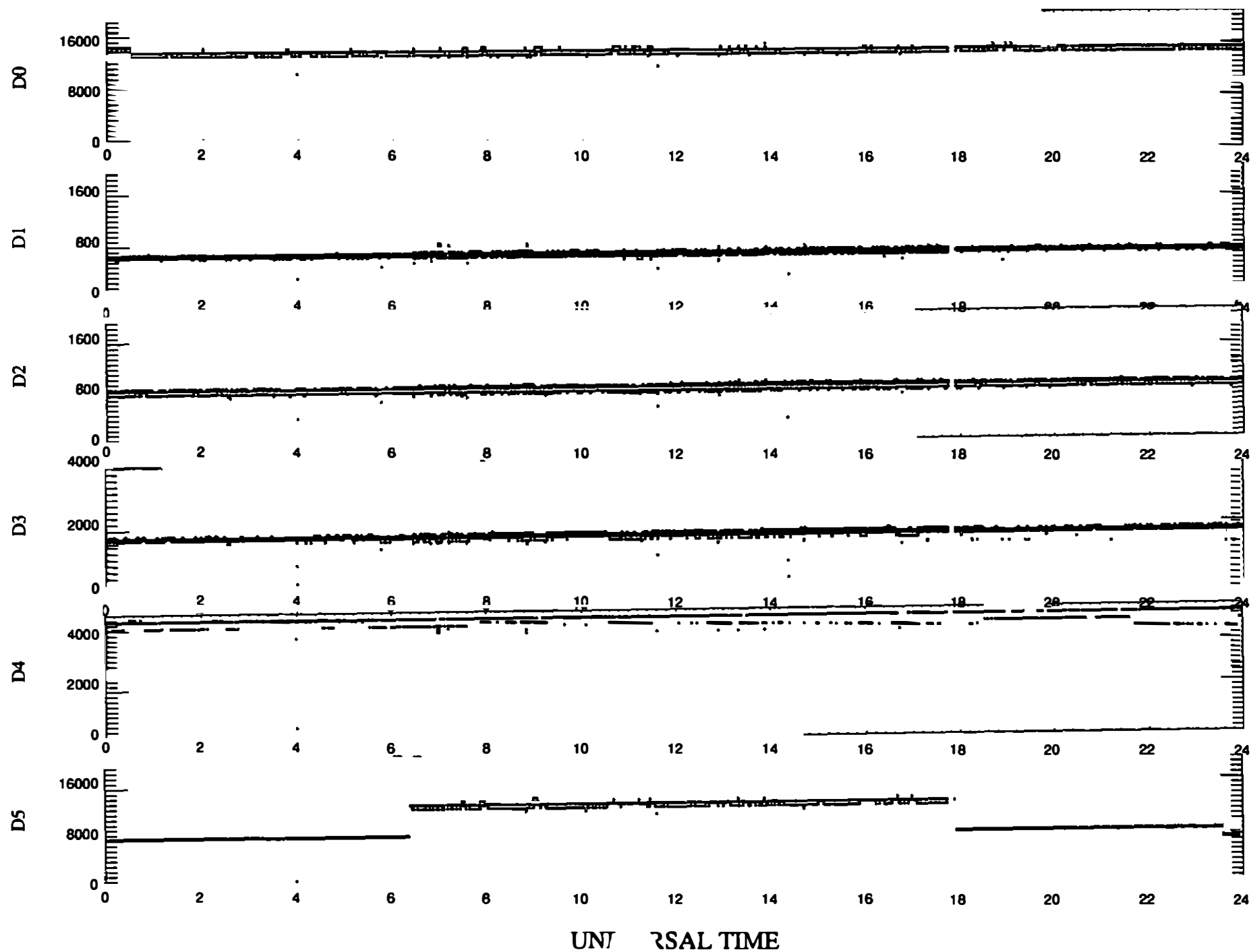
TIME, SECS

CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From BUTTERWORTH@lheavx.gsfc.nasa.gov Thu Sep 5 11:33 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Thu, 5 Sep 1996 14:31:38 -0400 (EDT)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
CLINE@lheavx.gsfc.nasa.gov, scott@rosserv.gsfc.nasa.gov,
TEEGARDEN@lheavx.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
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Paul.

Date: Thu, 5 Sep 1996 08:22:32 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609051522.IAA12536@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@lheamail.gsfc.nasa.gov,
teegarden@lheavx.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it
Subject: GRB960829, 960830, 960902
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed two weak, short bursts August 29 1996 at 12:42 and 14:54 Ulysses time, and a similar event August 30 1996 at 02:50. Ulysses also observed a moderately intense, 3 second long burst on September 2 1996 at 15:47. The spacecraft was about 2550 light seconds from Earth.

Were these events detected by anyone else?

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

From DEAL@fender.msfc.nasa.gov Tue Sep 3 11:04 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 3 Sep 1996 13:04:21 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5589

BATSEARCH PROGRAM

BATSE BURST # 5589 NO
EVENT OF 1996 AUG 30 DAY OF YEAR=243
EVENT CROSSING TIME AT BATSE : 23846. S. OR 06:37:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 130.000 -37.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 8/ 96 IS:
RA= 165.758 DEC= 36.960 DIST= 5.137 AU
BATSE-ULYSSES DISTANCE = 768444422. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -399.89 SECS.
CROSSING TIME AT ULYSSES IS 23446. S. OR 06:30:46 +/- 483.50 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 8/ 96 IS:
RA= 115.125 DEC= 22.263 DIST= 2.126 AU
MARS-BATSE DISTANCE = 318042304. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -515.94 SECS.
CROSSING TIME AT MARS IS 23330. S. OR 06:28:50 +/- 153.10 SECONDS

BATSE BURST TRIGGER

NO.: 5589

TIME: TJD=0325 SECONDS=23846

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=87.5 AZIMUTH=26.1 ERROR=5.2 DEGREES

COMMENTS:

DOUBLE PULSE BURST LASTING ~ 150 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5589	960830	10325	23846	3000	130	-37	150

BATSE #

5589

4 / 9 / 96

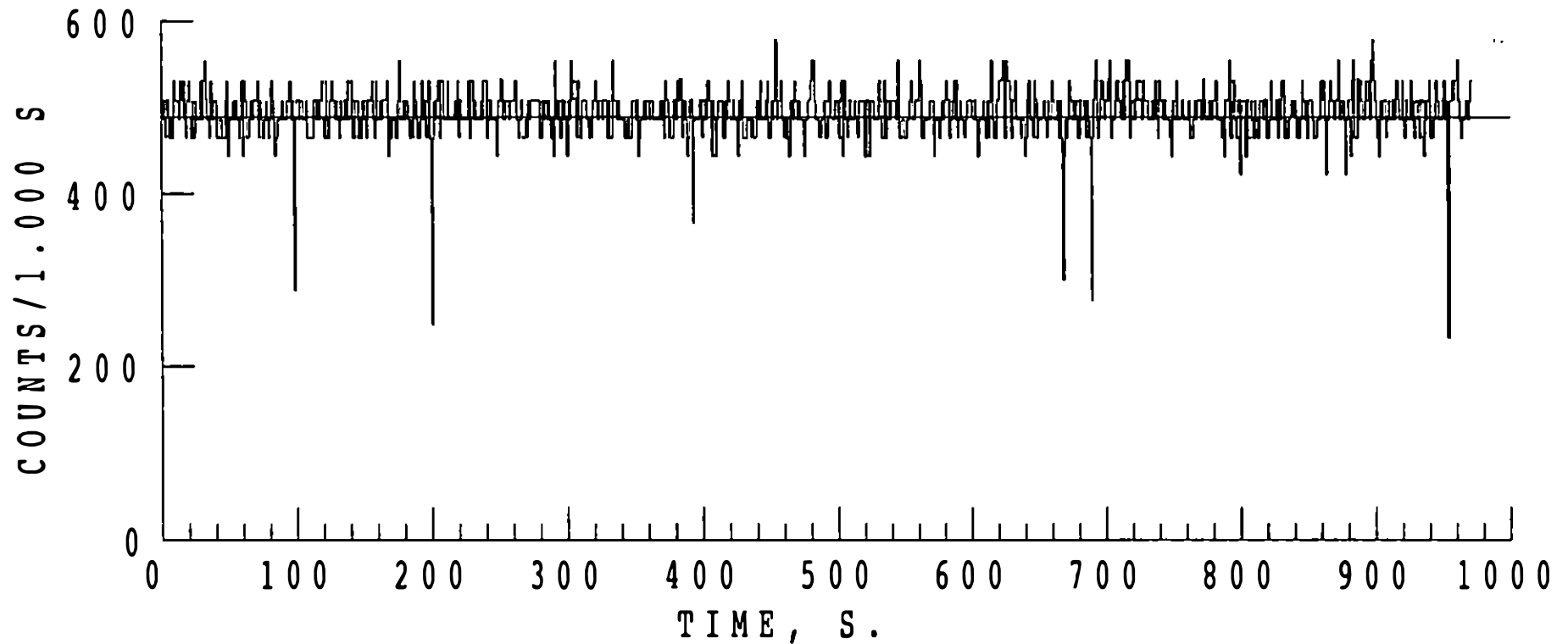
ULYSSES RT

30 / 8 / 96 22968.266 s

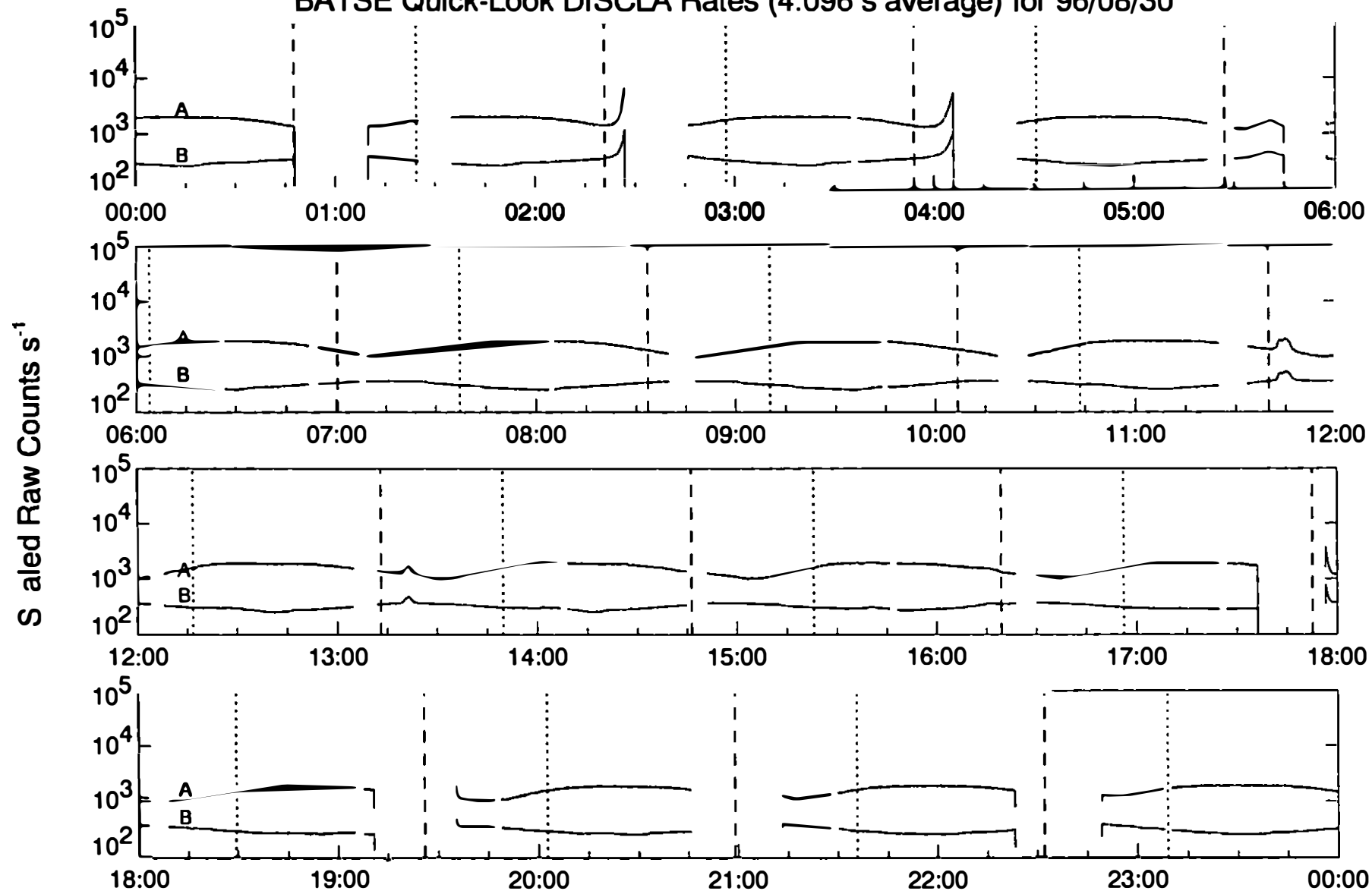
0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N=10 M=2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/30

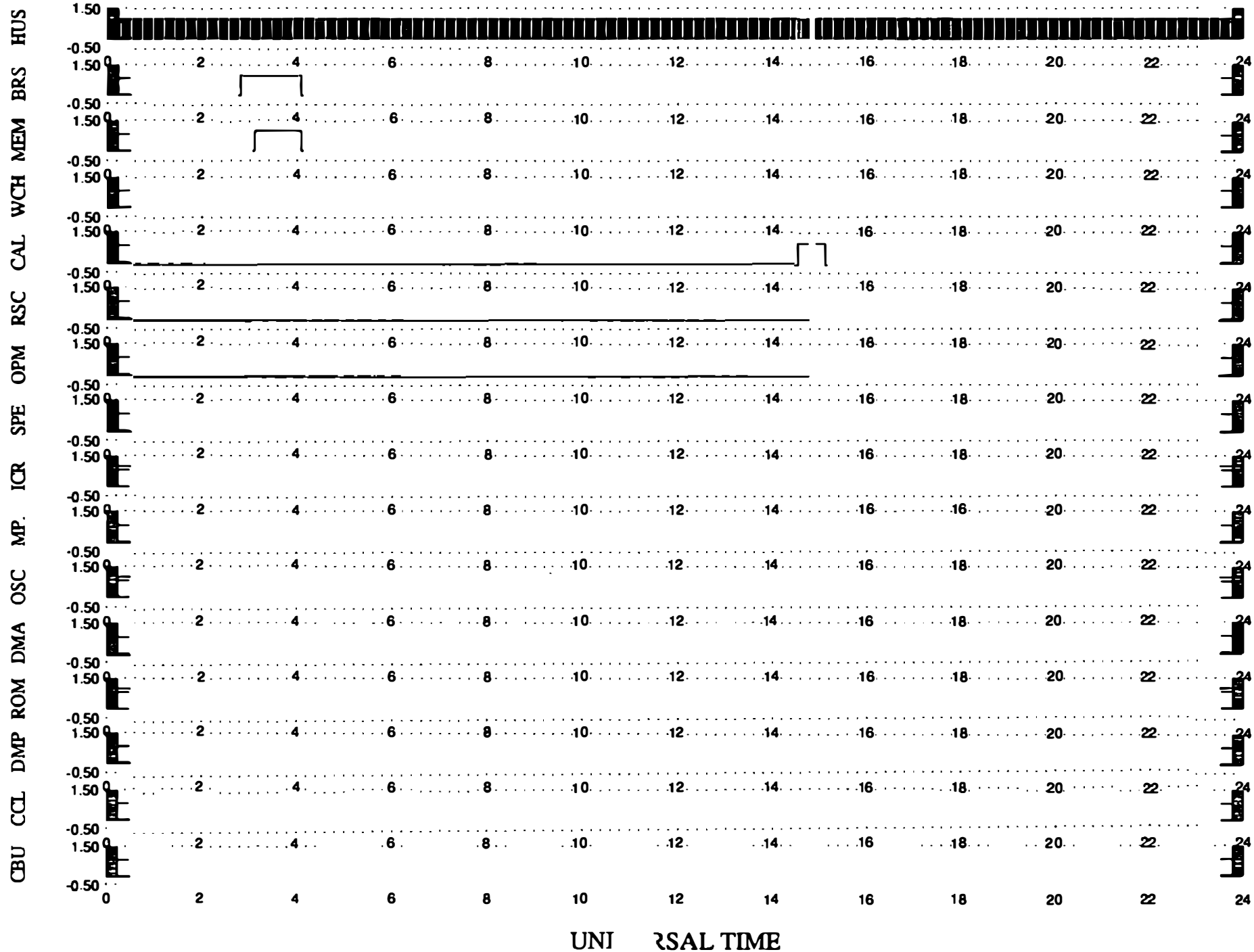


Current Time: 96/09/01, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

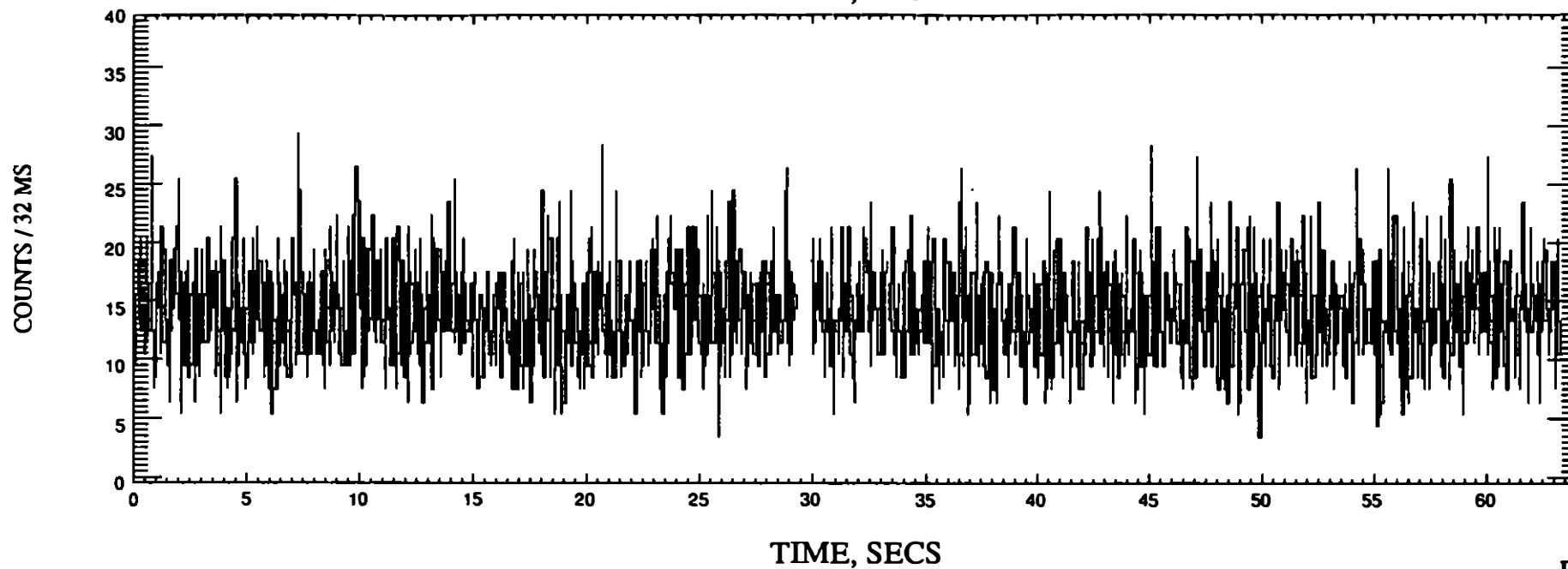
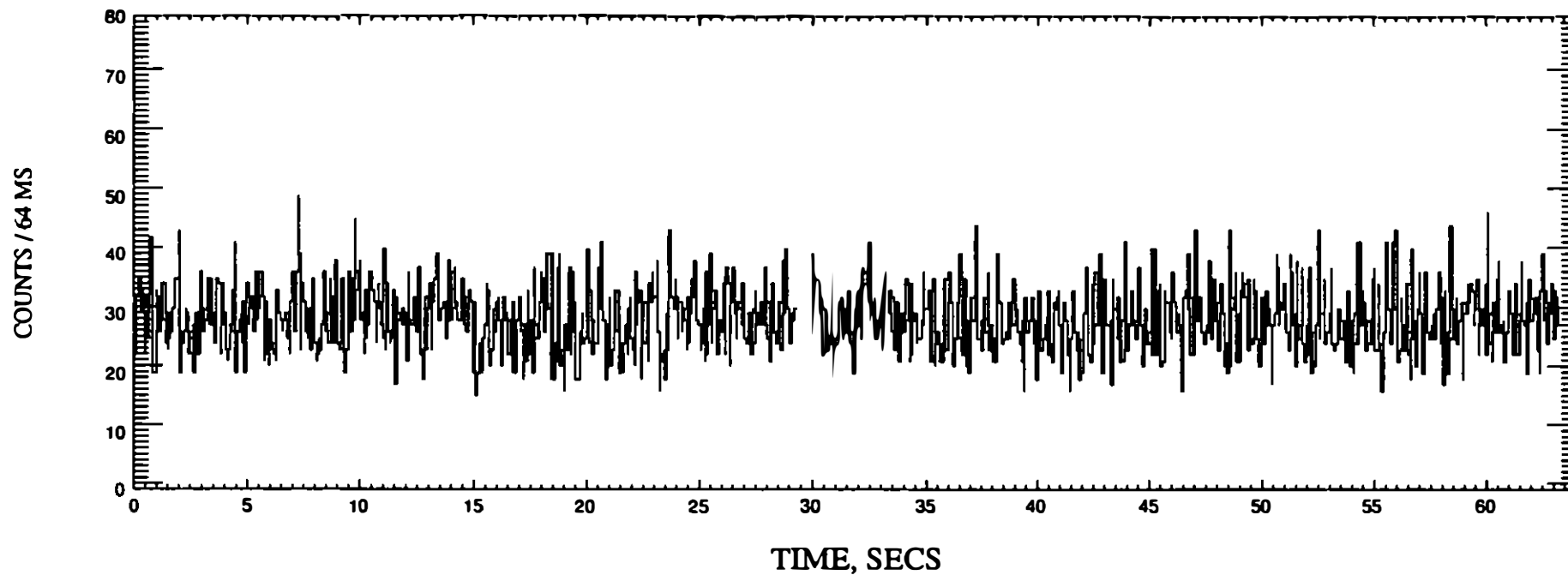
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

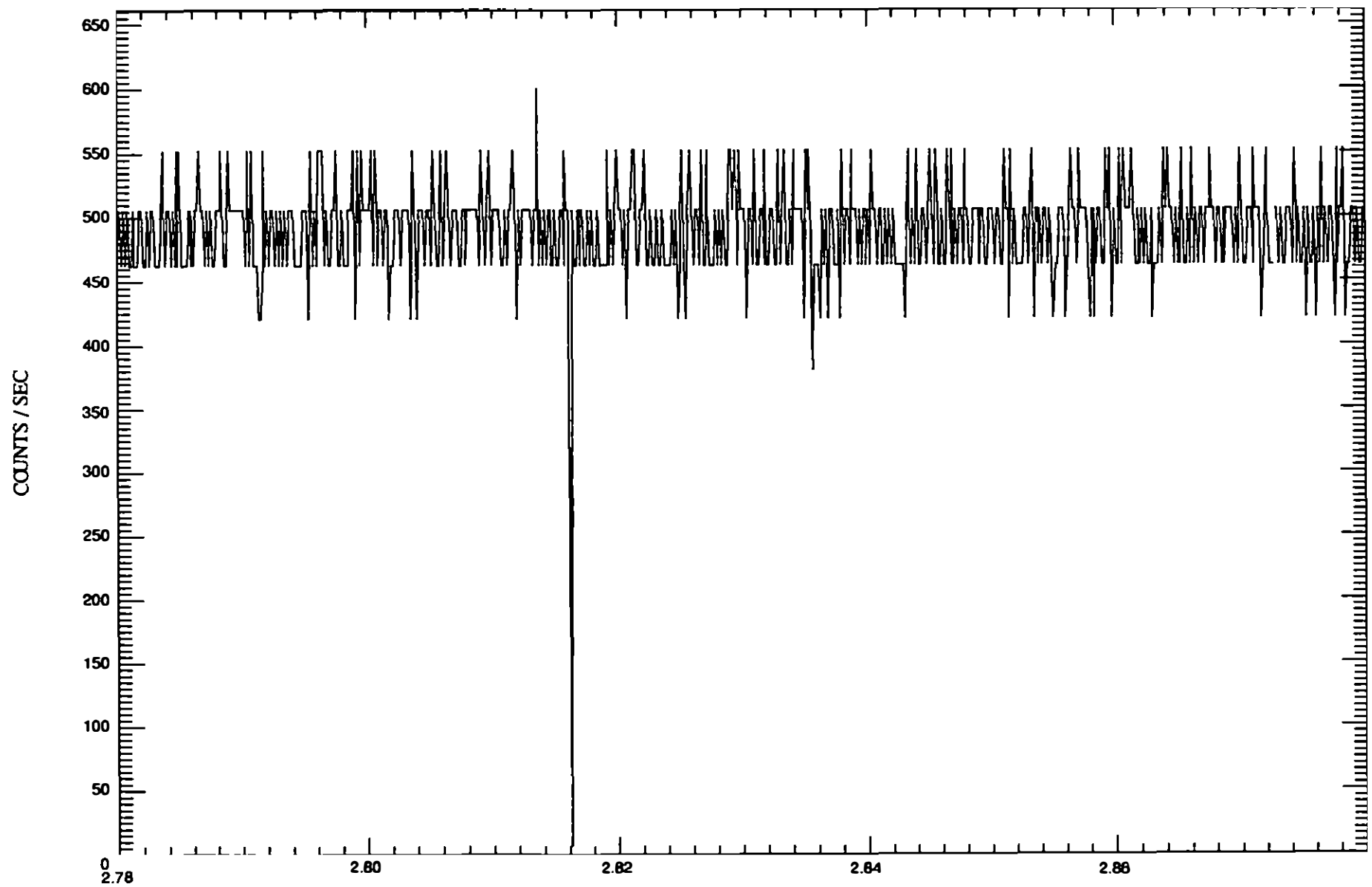
BURST NUMBER 8



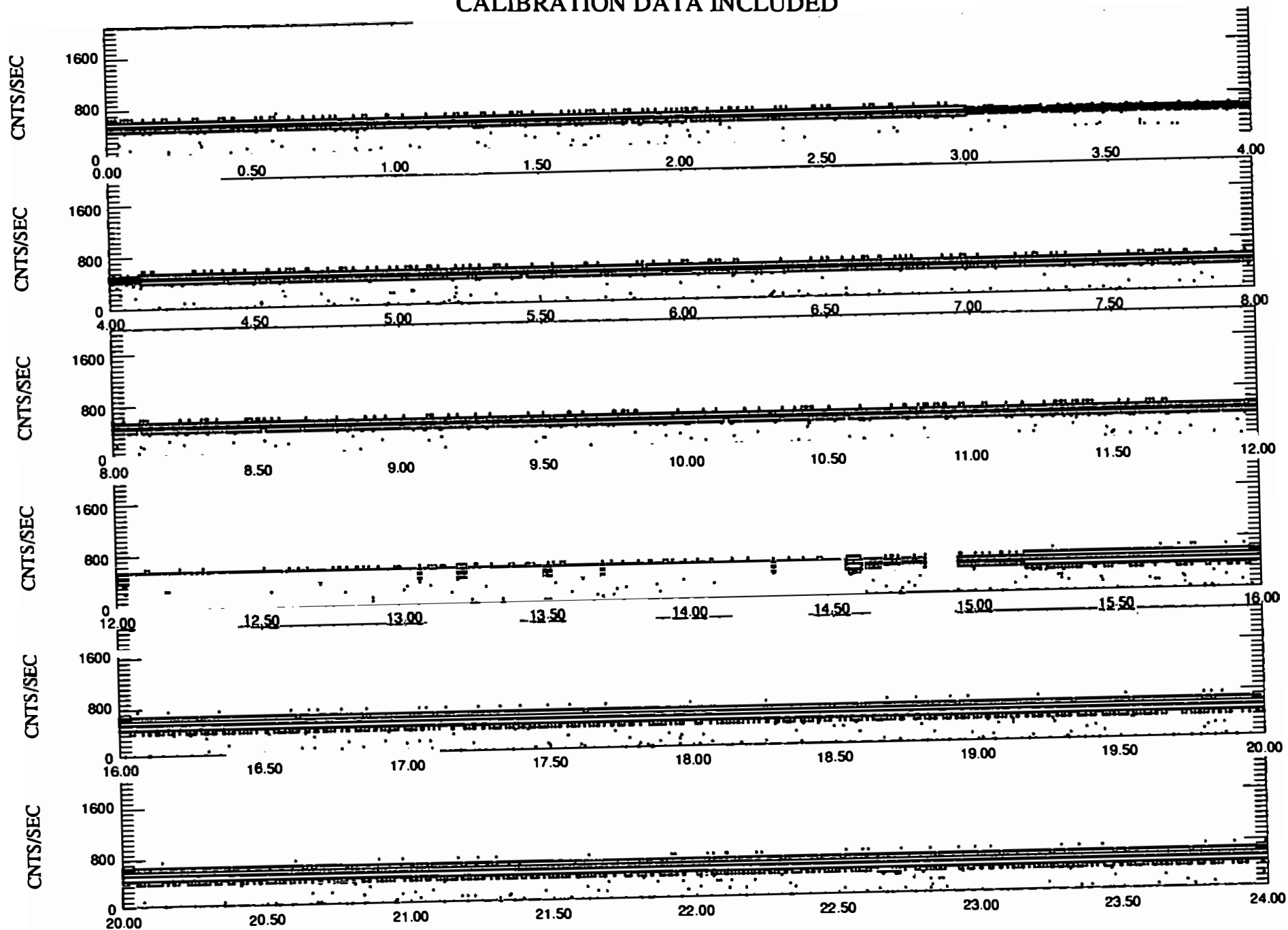
Burst Counter 8 at UT= 2.833564847310 h=10200.833 s 02:50:00.833



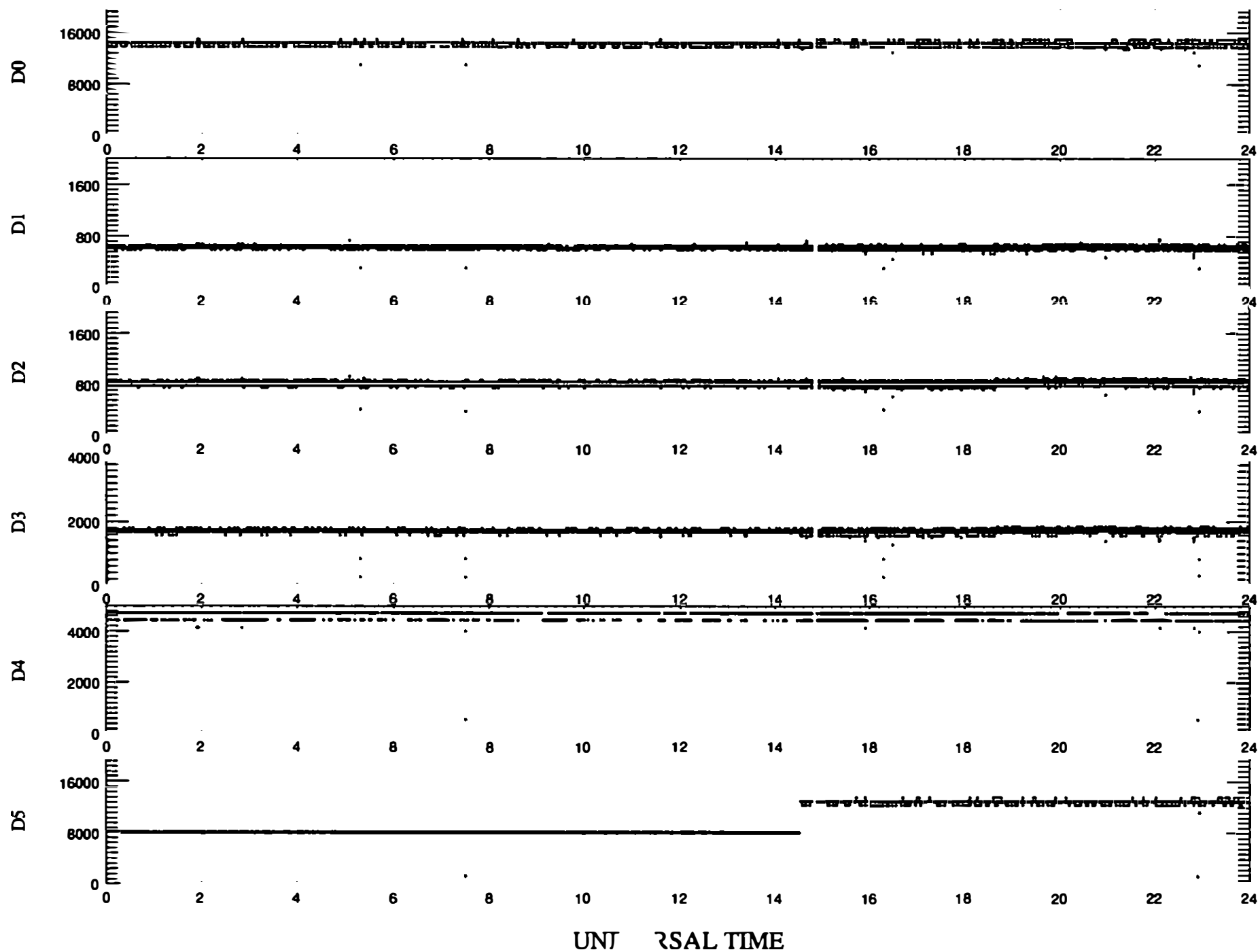
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From RICHARDSON@ssl.msfc.nasa.gov Tue Sep 3 11:34 PDT 1996
Date: Tue, 3 Sep 1996 13:34:15 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5590

BATSEARCH PROGRAM

ND

BATSE BURST # 5590
EVENT OF 1996 AUG 31 DAY OF YEAR=244
EVENT CROSSING TIME AT BATSE : 25059. S. OR 06:57:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 328.000 40.000
BATSE PEAK COUNTING RATE: 3250 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 8/ 96 IS:
RA= 166.043 DEC= 36.774 DIST= 5.141 AU
BATSE-ULYSSES DISTANCE = 769026443. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.54 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 509.50 SECS.
CROSSING TIME AT ULYSSES IS 25568. S. OR 07:06:08 +/- 494.22 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 8/ 96 IS:
RA= 115.807 DEC= 22.165 DIST= 2.121 AU
MARS-BATSE DISTANCE = 317320384. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 378.78 SECS.
CROSSING TIME AT MARS IS 25438. S. OR 07:03:57 +/- 177.35 SECONDS

BATSE BURST TRIGGER

NO.: 5590

TIME: TJD=0326 SECONDS=25059

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.8 AZIMUTH=198.6 ERROR=2.4 DEGREES

COMMENTS:

GRB. MULTIPLE SPIKES. DUR.~100SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5590	960831	10326	25059	3250	328	+40	100

BATSE #

5590

4 / 9 / 96

ULYSSES RT

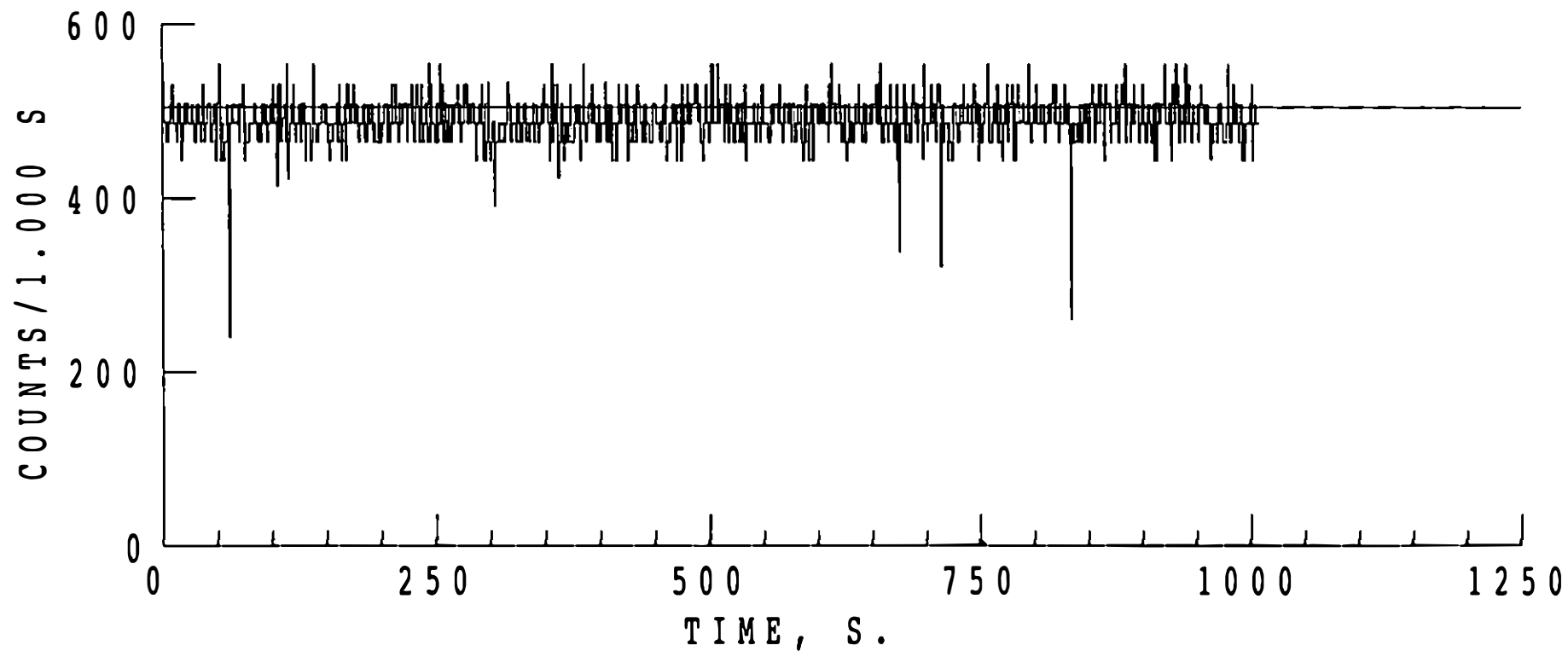
31 / 8 / 96 25056.408 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N=10 M=2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Sep 3 11:52 PDT 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Tue, 3 Sep 1996 13:51:44 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5591

BATSEARCH PROGRAM

BATSE BURST # 5591
EVENT OF 1996 AUG 31 DAY OF YEAR=244
EVENT CROSSING TIME AT BATSE : 37710. S. OR 10:28:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 242.000 25.000
BATSE PEAK COUNTING RATE: 11500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 8/ 96 IS:
RA= 166.107 DEC= 36.732 DIST= 5.141 AU
BATSE-ULYSSES DISTANCE = 769151493. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=115.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1102.68 SECS.
CROSSING TIME AT ULYSSES IS 36607. S. OR 10:10:07 +/- 435.45 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 8/ 96 IS:
RA= 115.807 DEC= 22.165 DIST= 2.121 AU
MARS-BATSE DISTANCE = 317320384. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 70.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 355.85 SECS.
CROSSING TIME AT MARS IS 38066. S. OR 10:34:25 +/- 178.47 SECONDS

BATSE BURST TRIGGER

NO.: 5591

TIME: TJD=0326 SECONDS=37710

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=65.3 AZIMUTH=259.9 ERROR=1.0 DEGREES

COMMENTS:

GRB. SPIKEY, DUR.~200SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5591	960831	10326	37710	11500	242	+25	200

96	8	7	71369.324	S2	1200	2740	1000	0.25	6	10	358	Trig	5537
96	8	9	52229.443	S2	6500	10000	9500	0.06	5	40	359	Trig	
96	8	10	24974.750	S1	740	860	250	4	0.5	0.6	360	Search	RI
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI	KA
96	8	15	36027.501	S1	470	1250	370	3.2	0.5	12	362	Trig	5525
96	8	21	13940.971	S1	520	720	360	6	2	11	368	Search	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search	RI
96	8	31	37775.300	S2	420	500	210	0.1	64	98	370	RI	5591
96	9	2	58097.128	S1	1750	3200	1060	3	0.05	1.5	371	Trig	KA
96	9	6	81590.312	S1	240	470	170	13	2	16	372	RI	5513
96	9	8	25028.442	S2	10000	7000	2500	<0.04	0.04	0.3	373	Trig	
96	9	12	50250.066	S2	420	600	320	<0.03	3	15	378	RI	5501
96	9	12	67621.610	S1	2000	380		3.4	270	0.5	379	Search	NO
96	9	13	83120.562	S1		320	70	1.7	2	14	380	RI	5604
96	9	16	14182.498	S1	250	420	60	3.4	300	12	381	Search	RI
96	9	21	54231.399	S1	1160	2900	830	2.5	0.5	40	382	Trig	5109
96	9	22	18368.358	S1	800	1100	280	14	2	70	383	Search	RI
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5614
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5617
96	10	1	75186.385	S2	1600	3800	1800	0.08	1	12	386	Trig	5621
96	10	2	75235.745	S1	1100	1600	250	8	11	6	387	Search	RI
96	10	9	33560.099	S2	1020	1360	300	0.03	6	13	393	NO	5628
96	10	9	49065.989	S1	600	900	320	23	3	24	394	RI	5629
96	10	15	42782.014	S2	160	290	100	0.7	3	80	395	Search	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search	RI
96	10	26	05631.940	S1	6000	3000		1	0.04	0.04	401	Trig	
96	10	26	22311.118	S2	400	560	300	0.3	2	3	402	RI	5644
96	10	29	24354.087	S1	4000	3700	1250	25	7	300	404	Trig	
96	10	29	68710.804	S1	570	620	120	>20	2	11	405	Search	NO
96	11	1	58062.904	S2	1020	1450	600	<0.04	1	18	406	Trig	
96	11	2	41907.802	S2	350	610	230	0.08	5	90	407	Search	RI

TLC

-- P. L. Cline ----- LHEAVX::CLINE

Date: Mar 13 '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

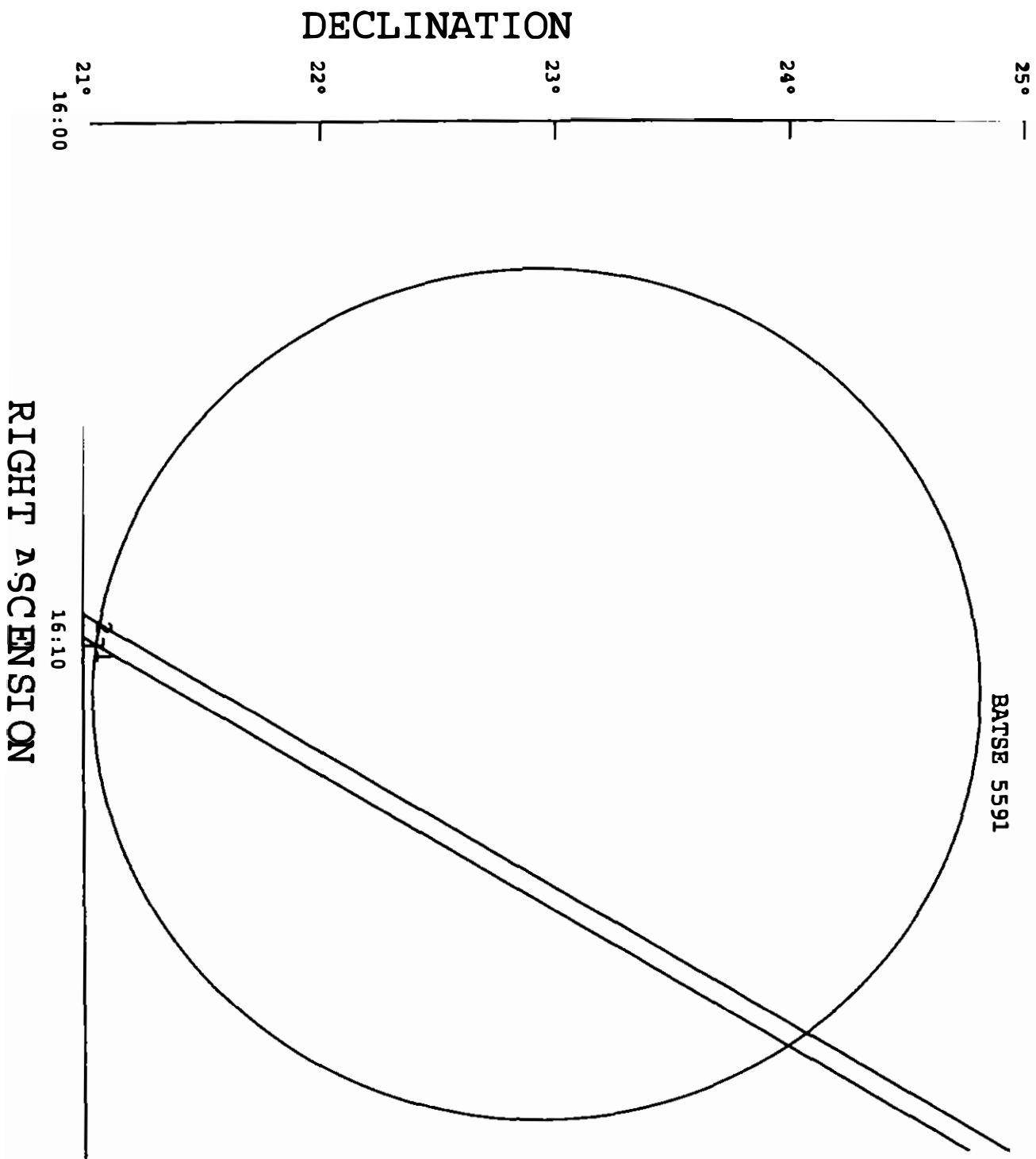
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?

- ☒ 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 AUG 31, 1996 10:11

13 / 3/98



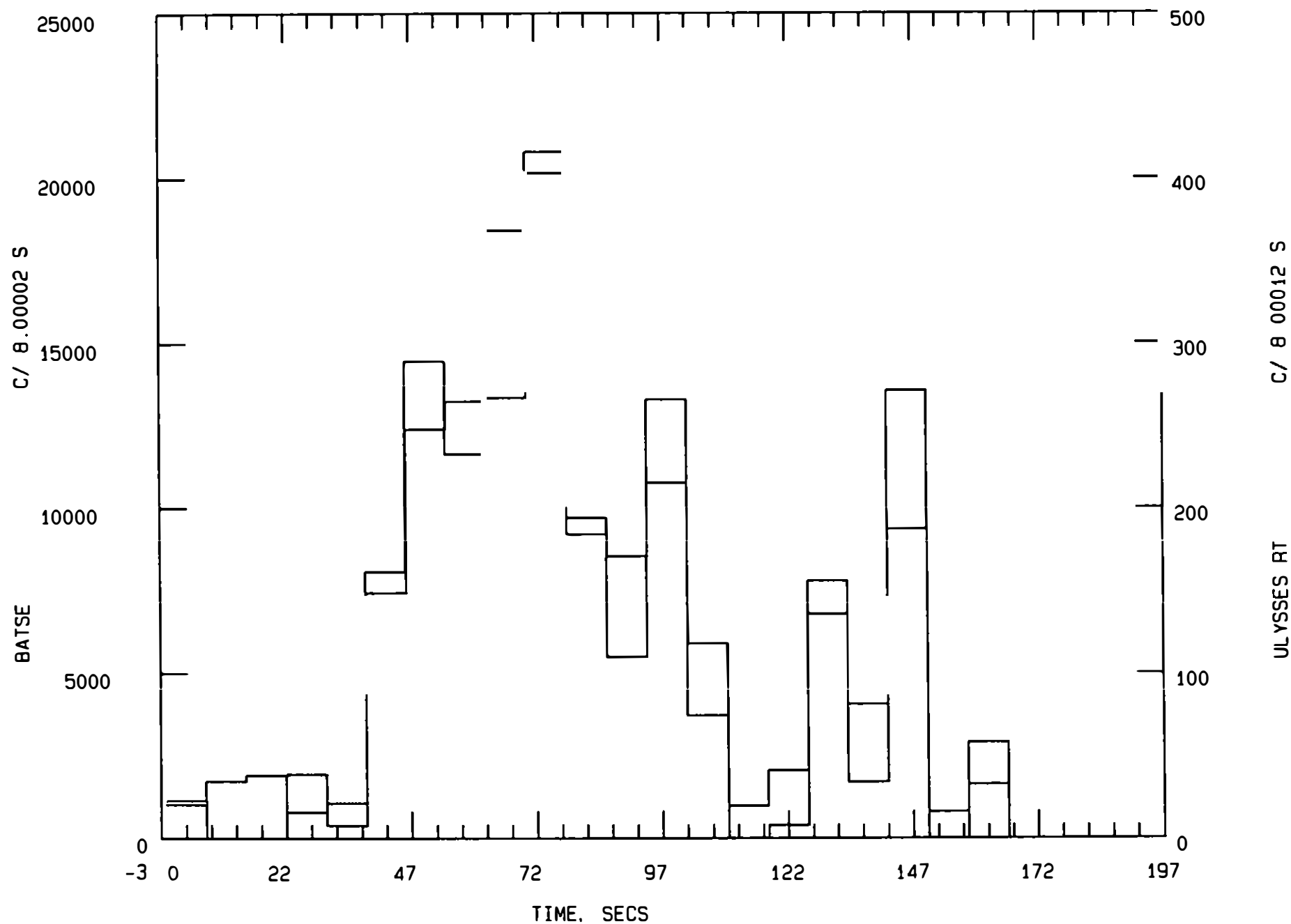
BATSE

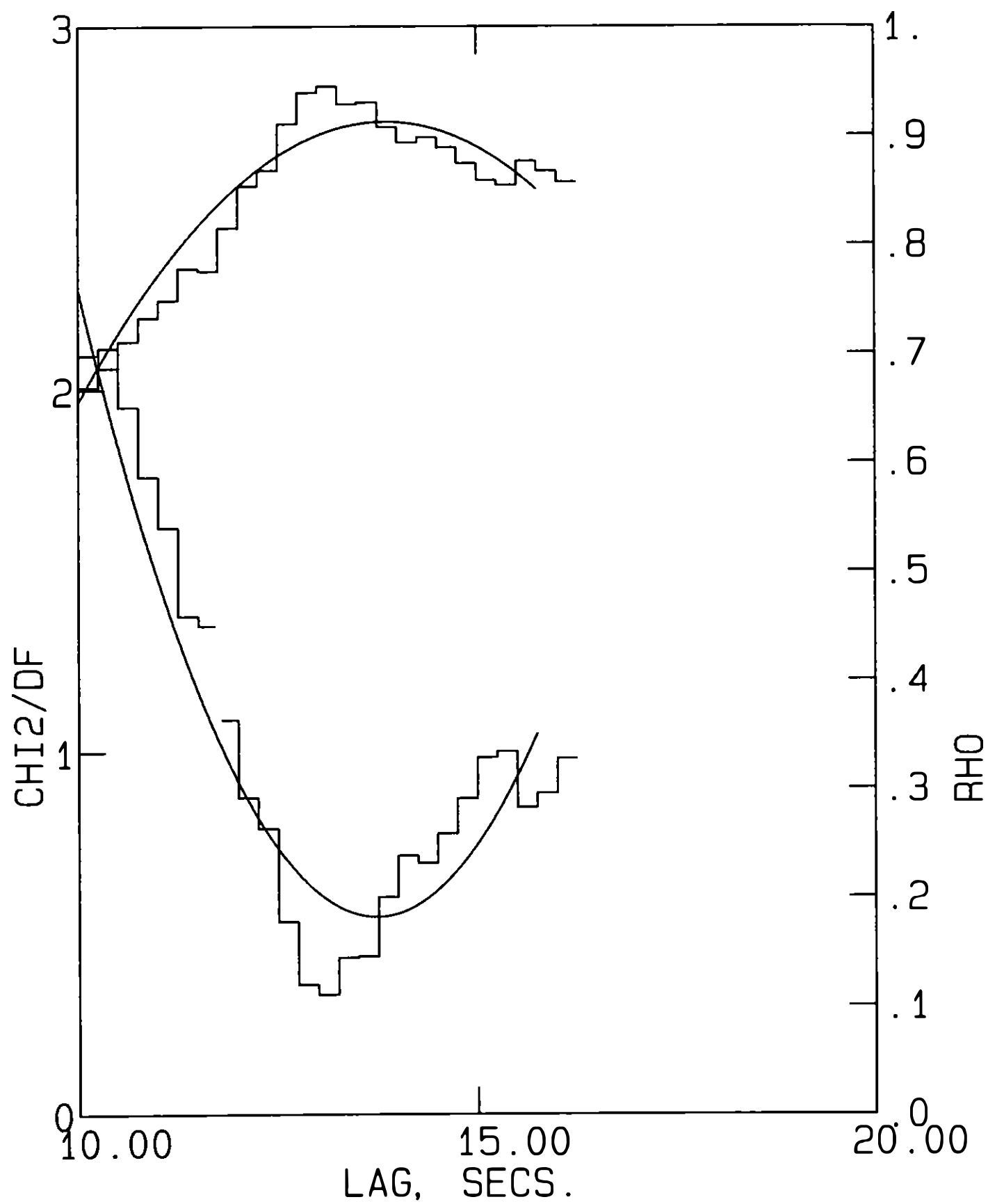
-ULYSSES RT CORRELATION

31/ 8/96

37710.538

13/ 3/98





ULYSSES RT

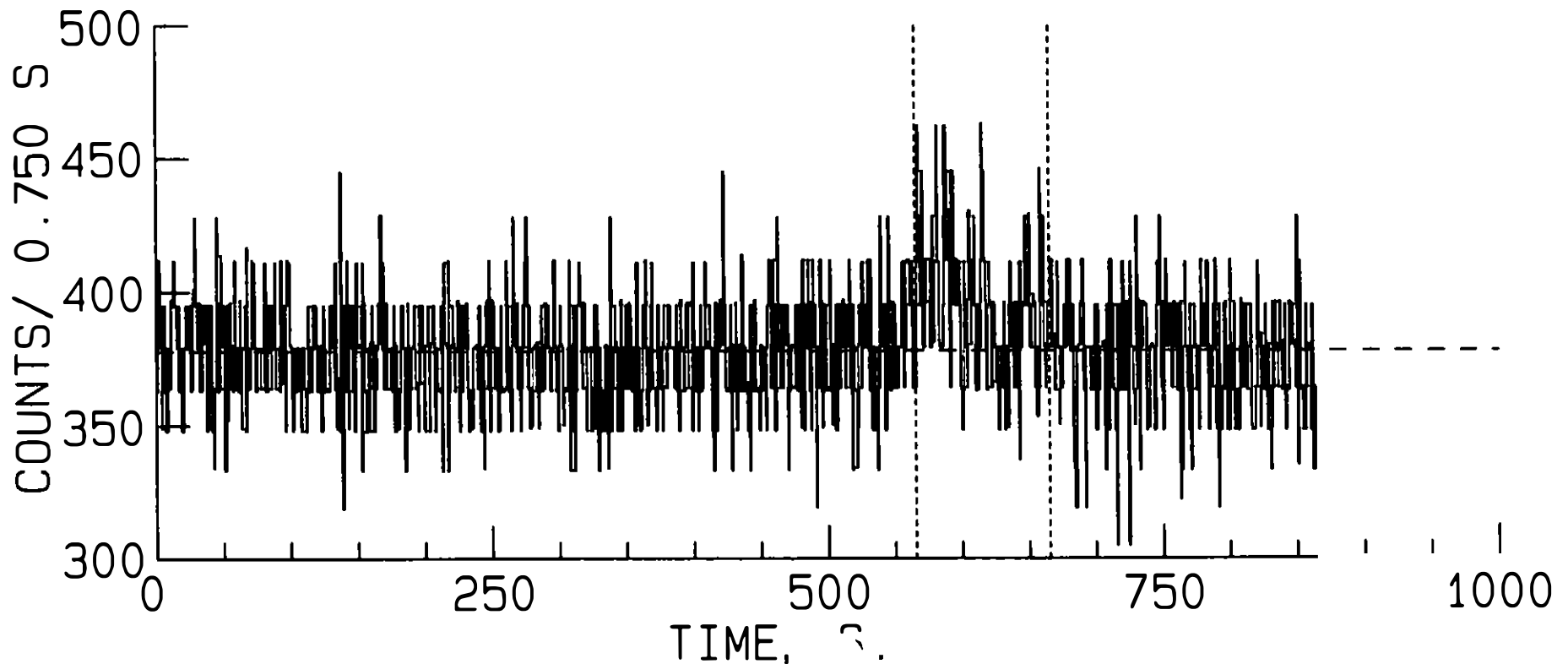
13 / 3 / 98

31 / 8 / 96 36180.049 s

0.250 S INTERVALS REGROUPED BY 3

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



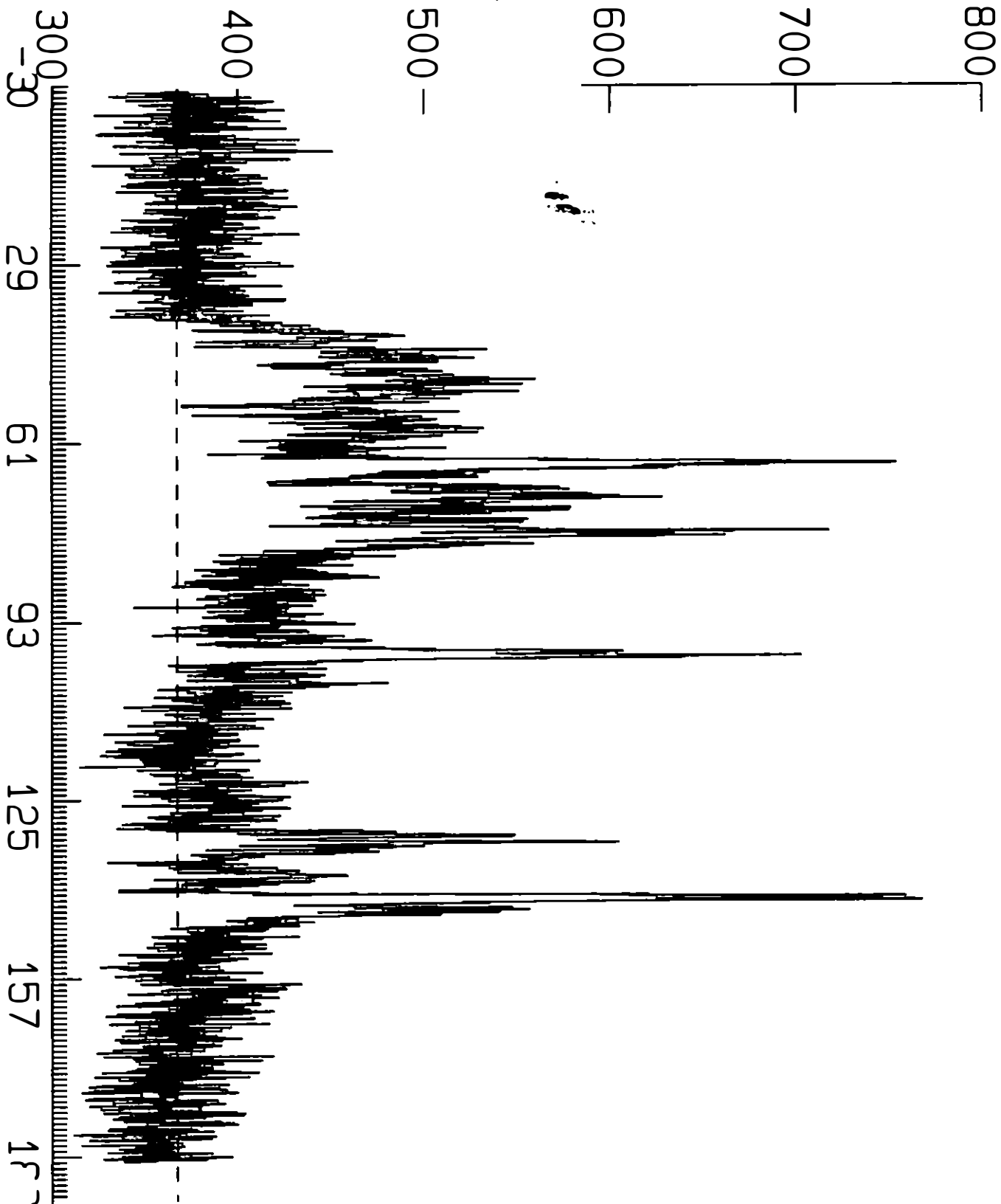
BATSE

31/08/96

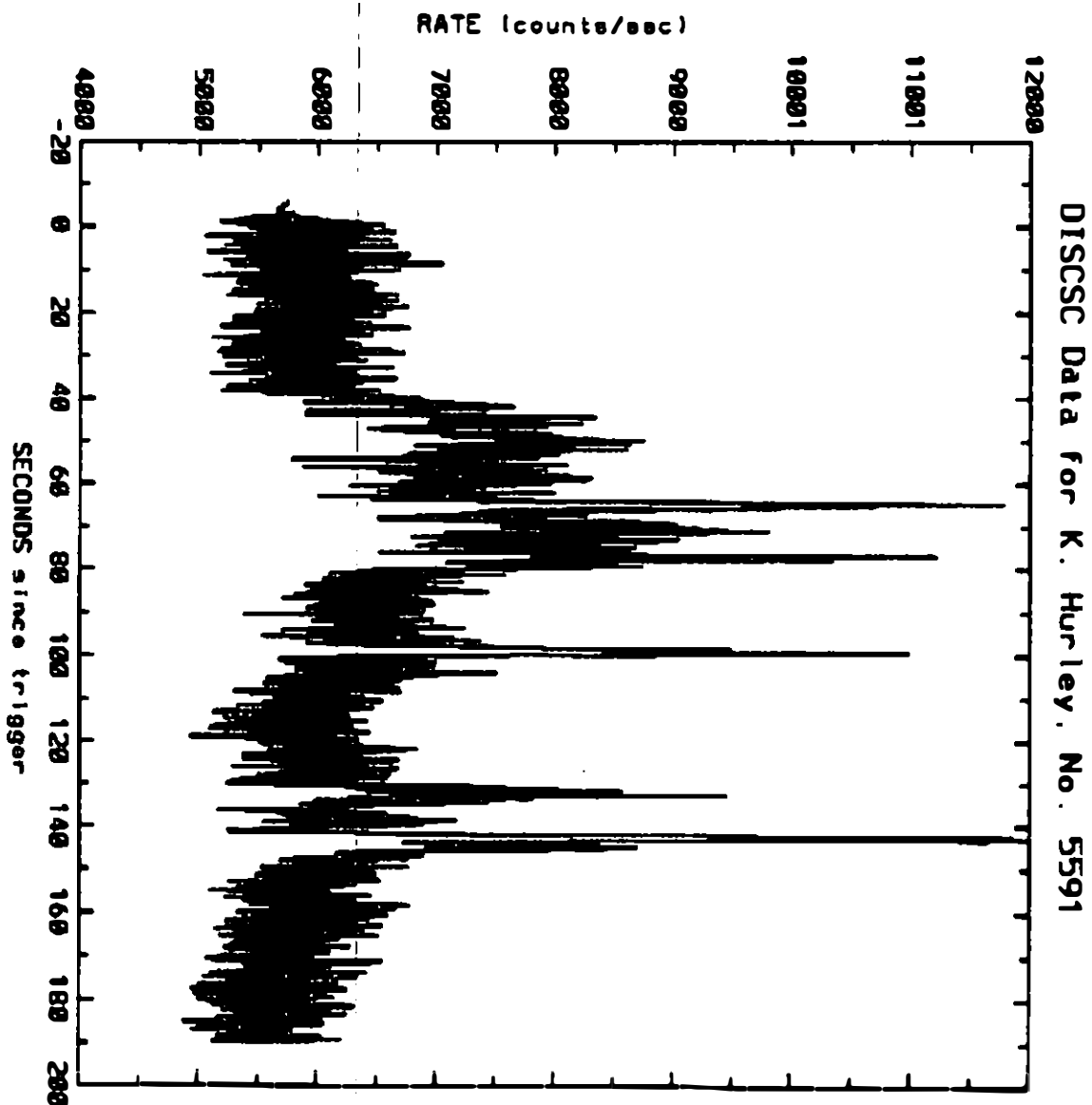
37710.538

25- 100 keV

COUNTS/0.064 S



28 / 9 / 96



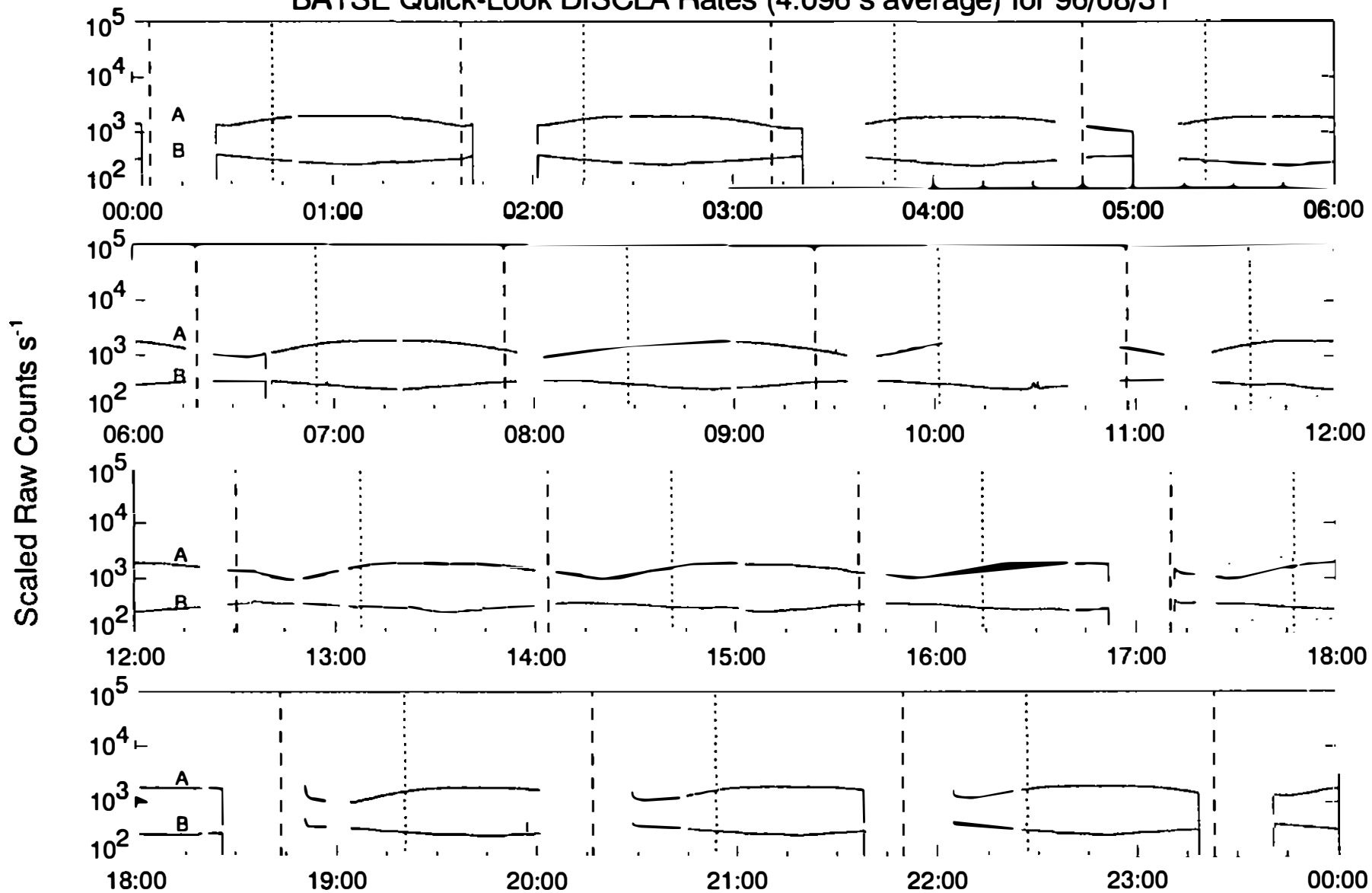
16-SEP-1996 09:31:48

Created by MOPS 80
Format Display
Version 12.25

Trigger # : 5591
Trigger Time:
16326 / 37710.538
Barrel Data Type:
DISCSC

Deadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.004 second(s)
Detectors (7.0):
76-----
Discriminators:
11.21
Quality Mask:
001001

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/08/31



Current Time: 96/09/02, 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

CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
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CALIBRATION DATA INCLUDED

