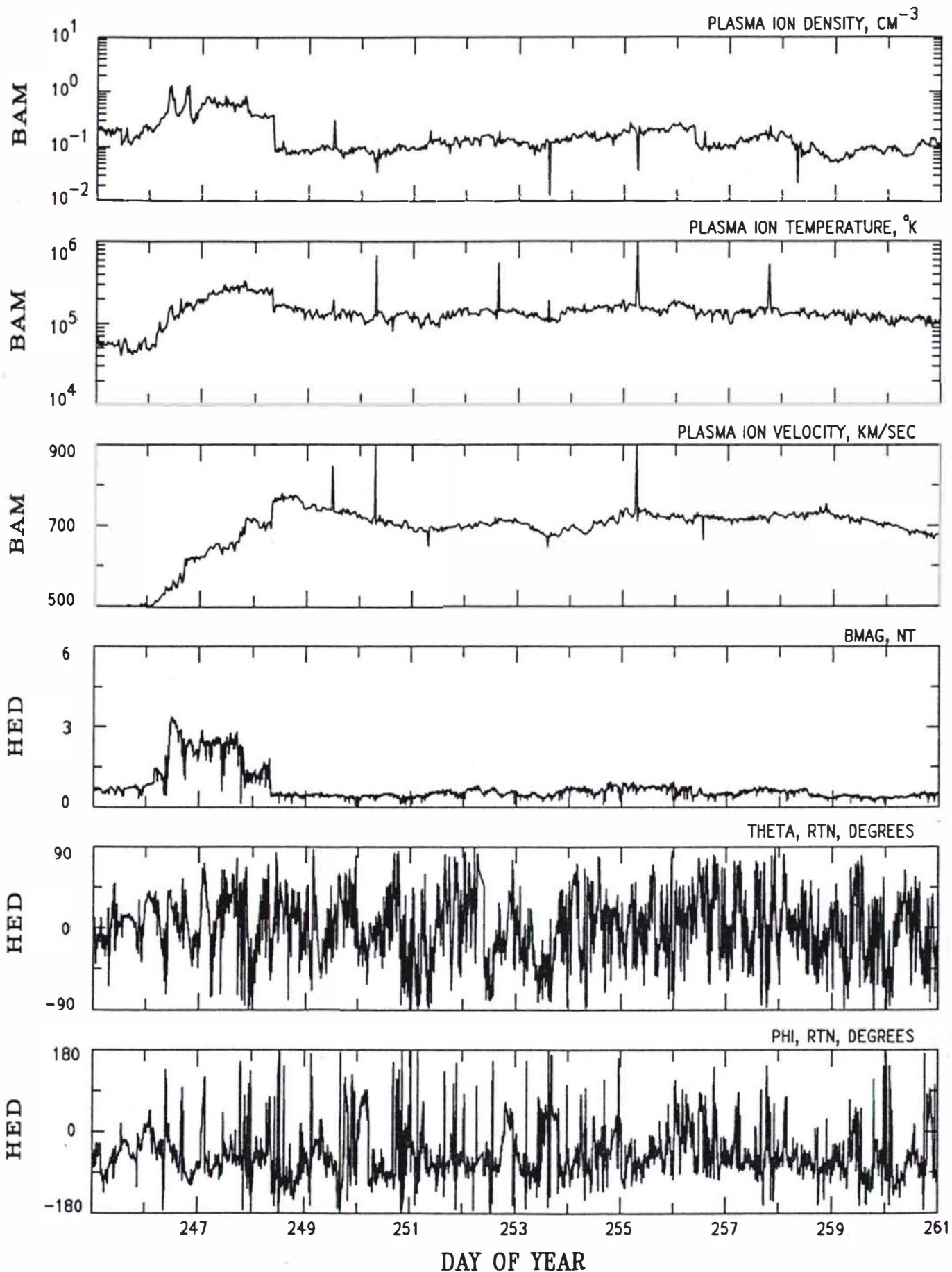


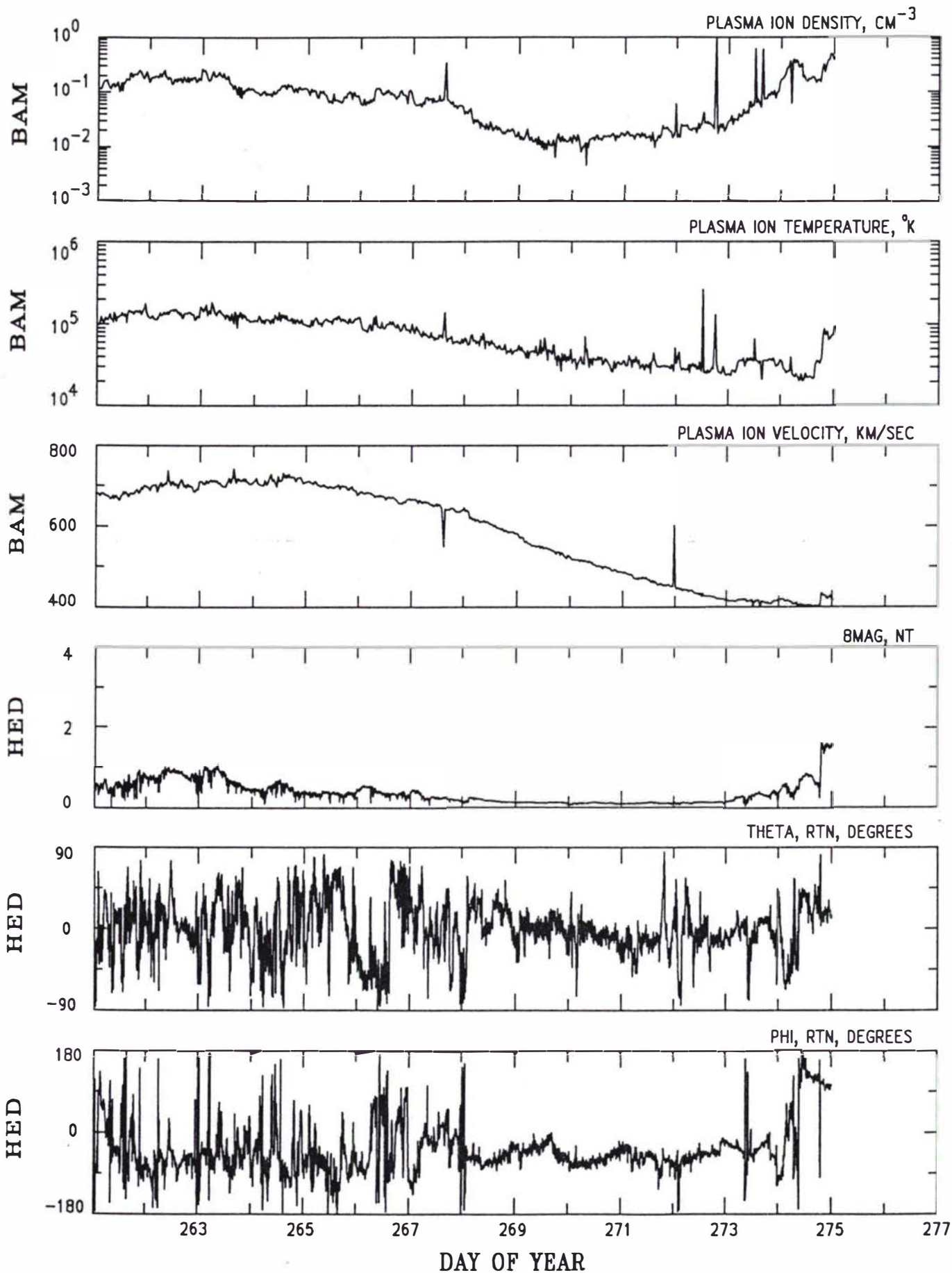
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 245 SEP 1 00:00:00.000 - 96 261 SEP 17 00:00:00.000



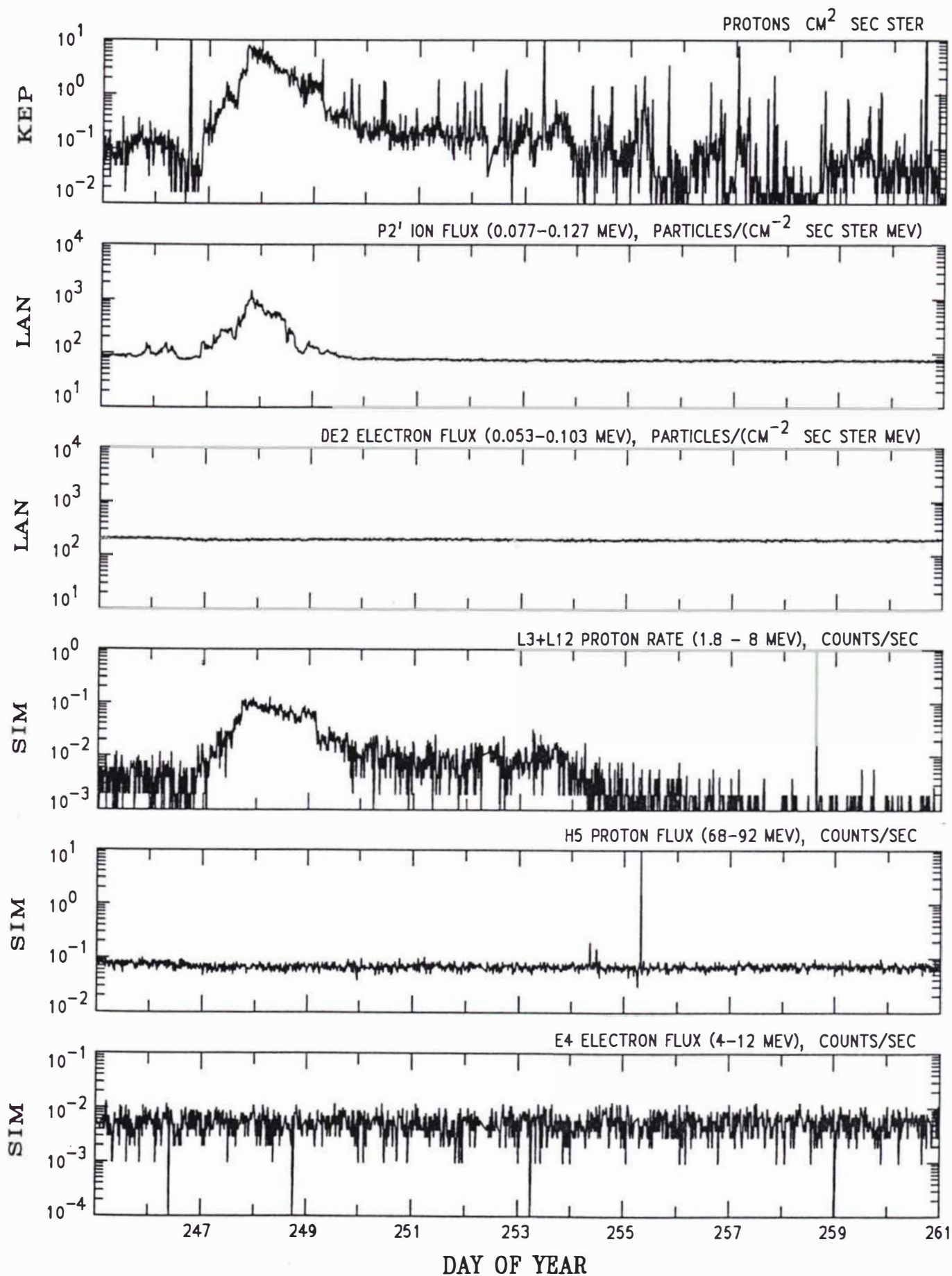
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

96 261 SEP 17 00:00:00.000 - 96 277 OCT 3 00:00:00.000



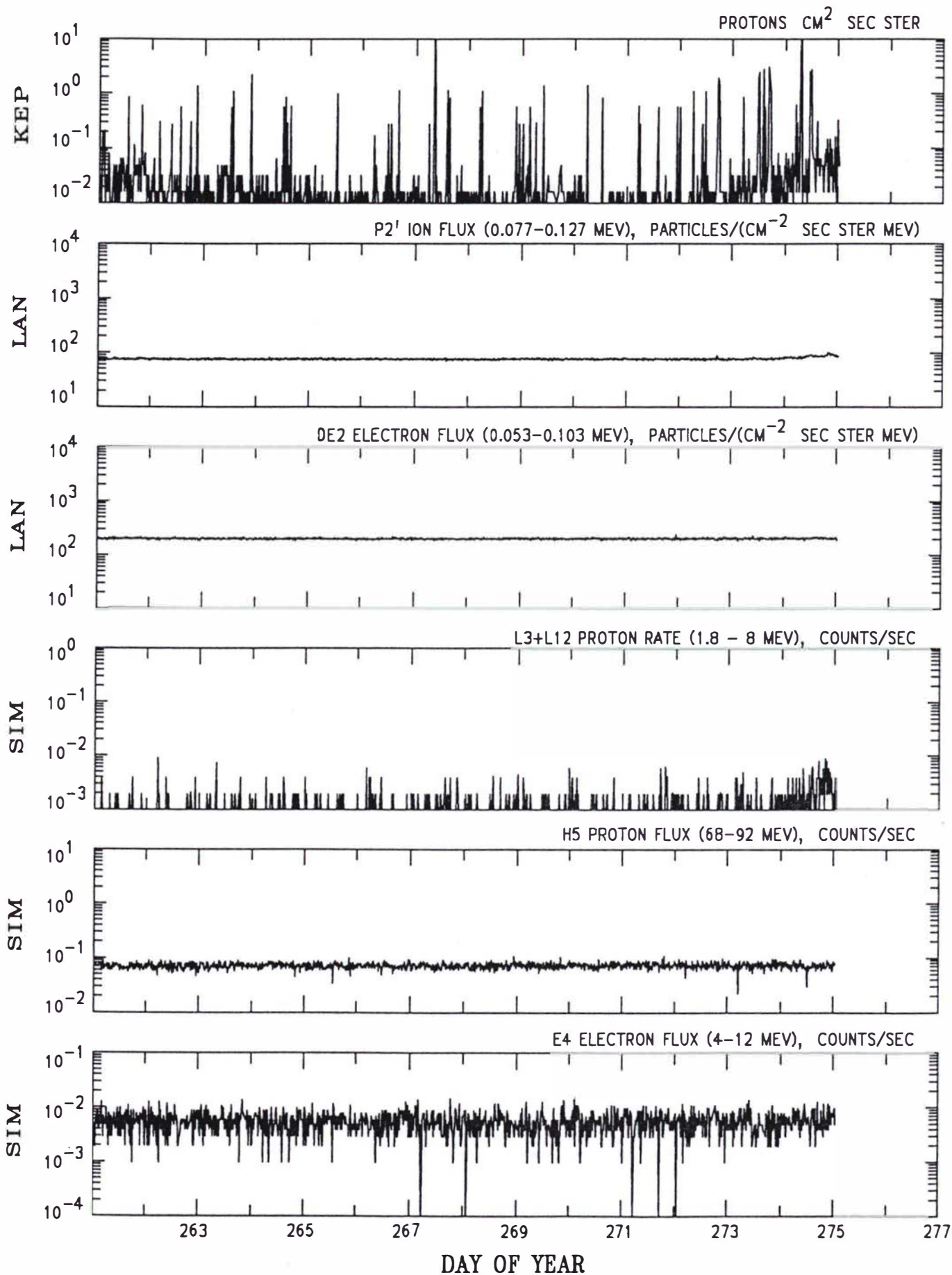
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

96 245 SEP 1 00:00:00.000 - 96 261 SEP 17 00:00:00.000



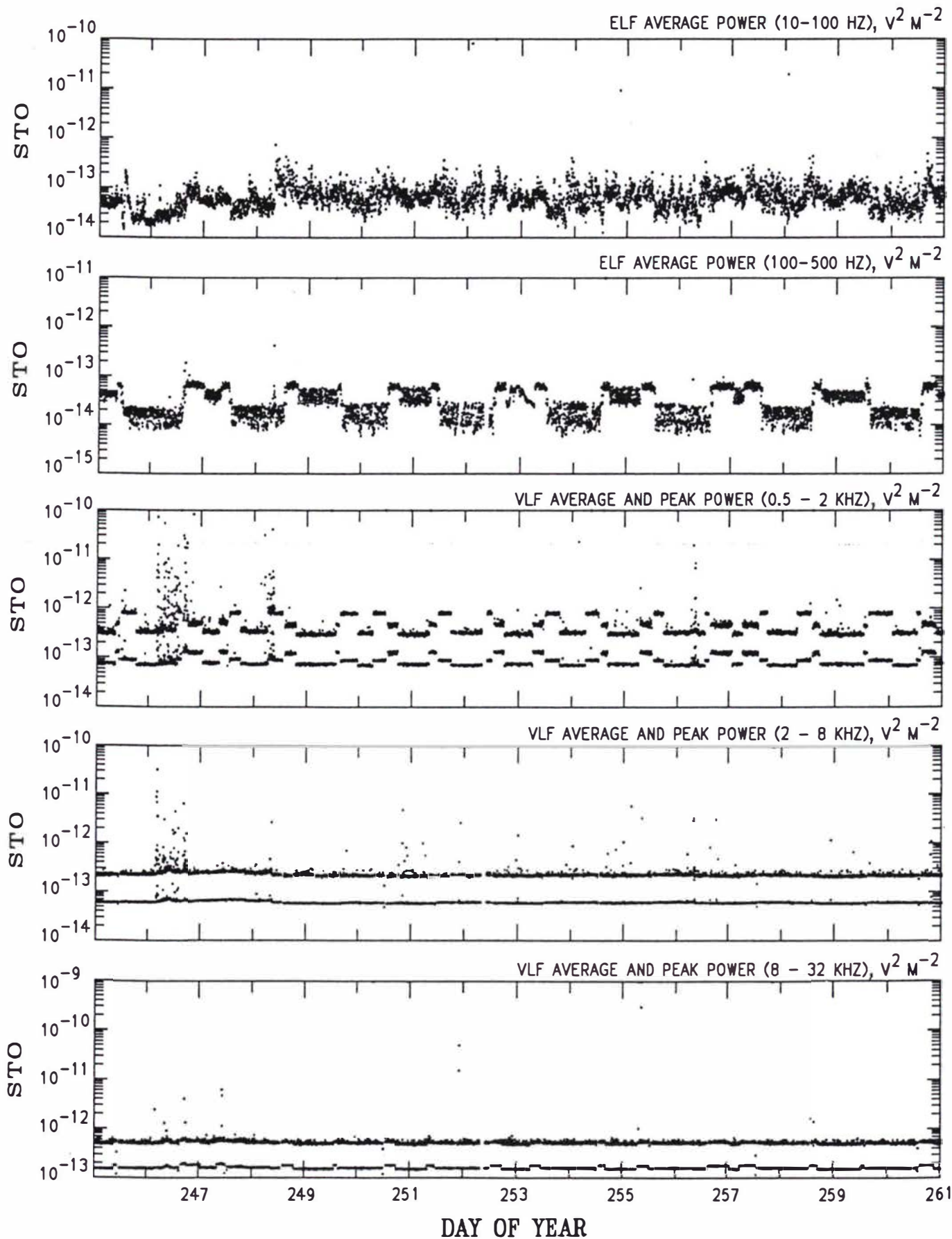
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

96 261 SEP 17 00:00:00.000 - 96 277 OCT 3 00:00:00.000



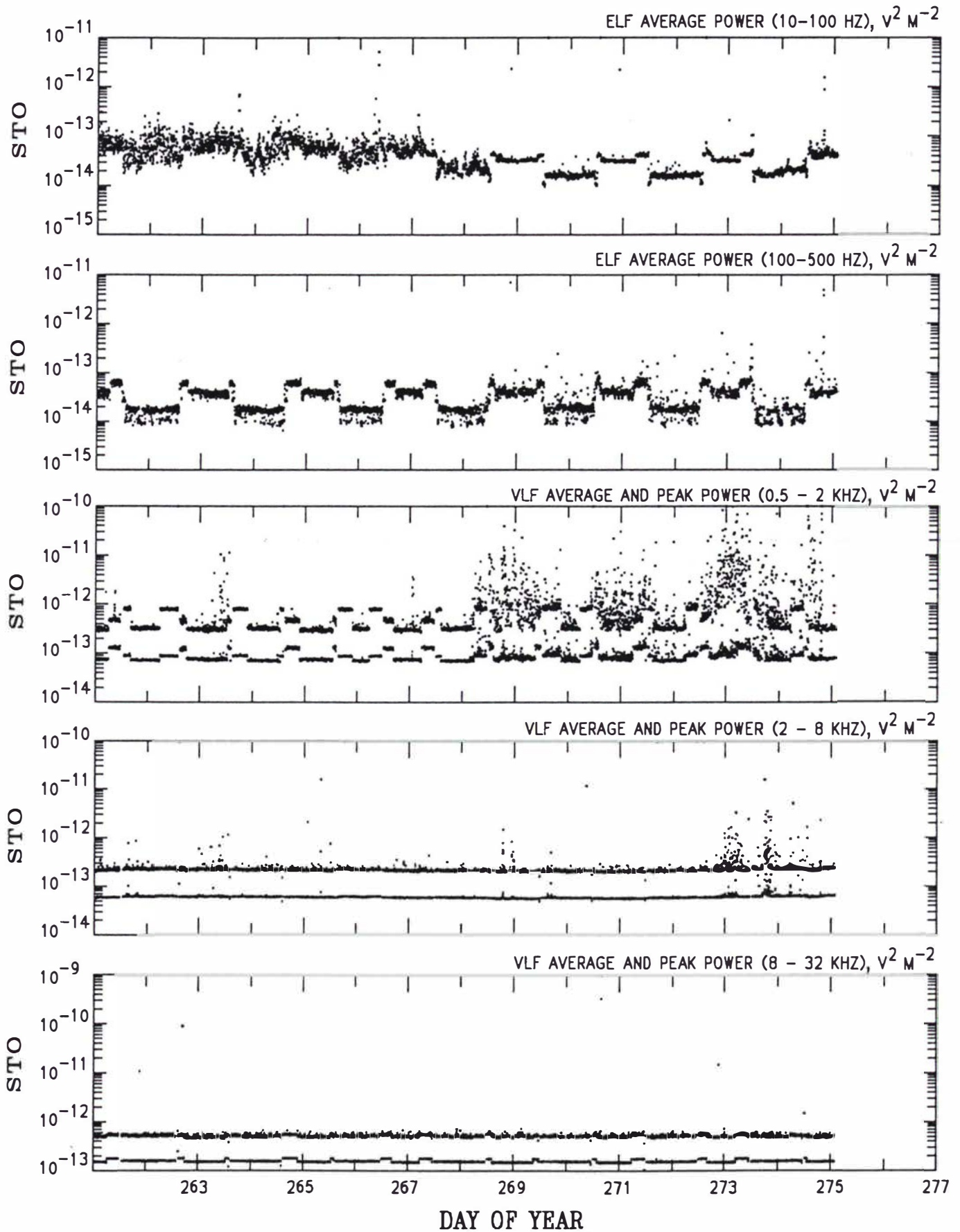
ULYSSES CDR - PLASMA WAVE

96 245 SEP 1 00:00:00.000 - 96 261 SEP 17 00:00:00.000



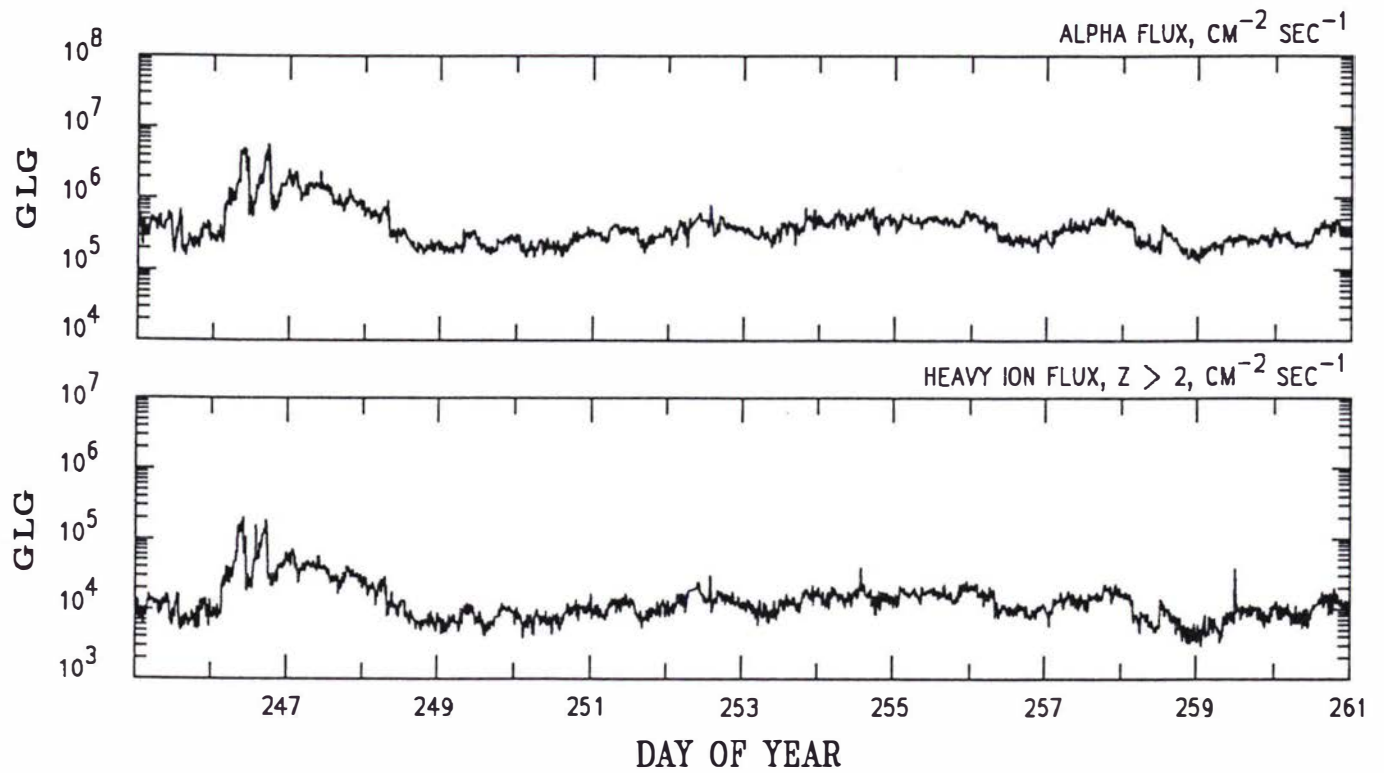
ULYSSES CDR - PLASMA WAVE

96 261 SEP 17 00:00:00.000 - 96 277 OCT 3 00:00:00.000



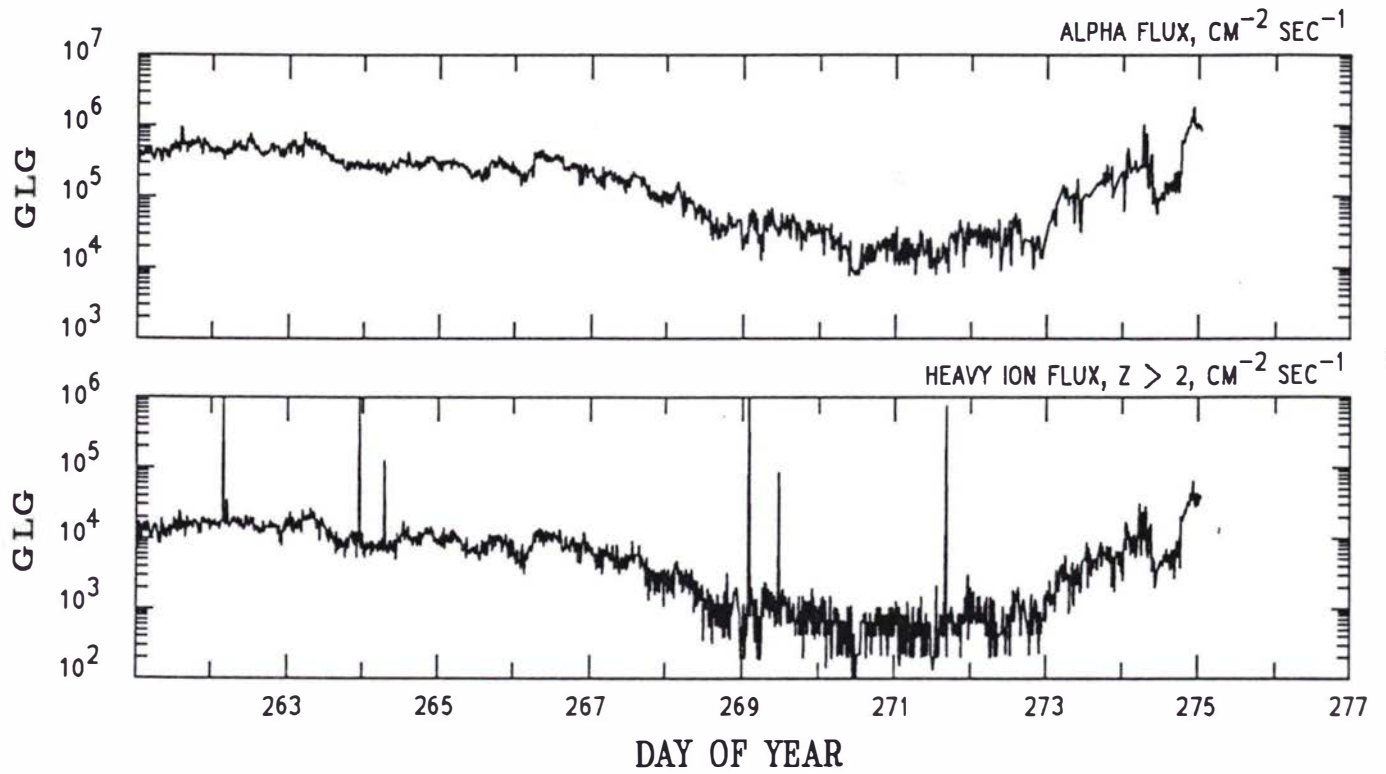
ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 245 SEP 1 00:00:00.000 - 96 261 SEP 17 00:00:00.000

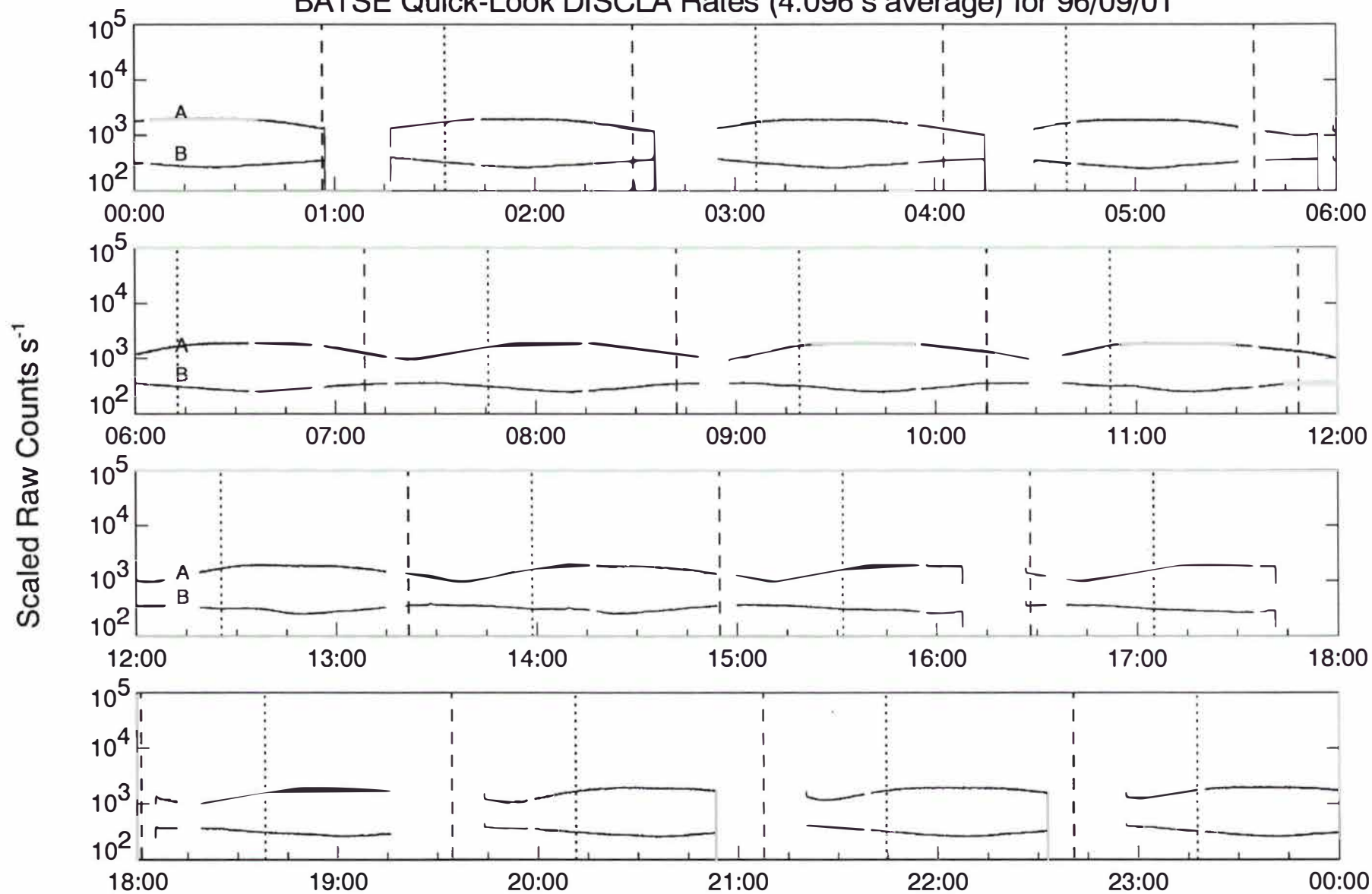


ULYSSES CDR - SOLAR WIND ION COMPOSITION

96 261 SEP 17 00:00:00.000 - 96 277 OCT 3 00:00:00.000



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/01

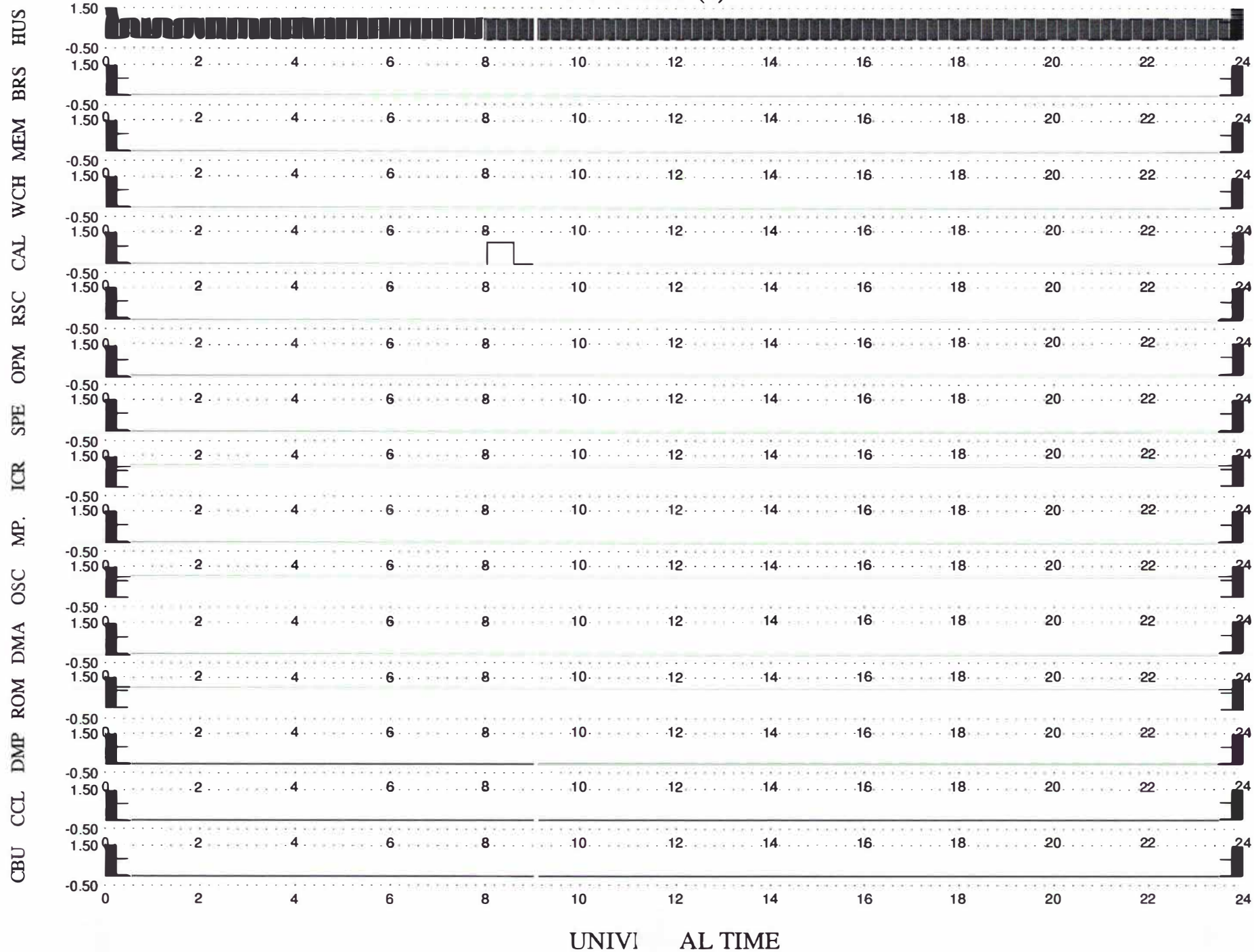


Current Time: 96/09/03, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

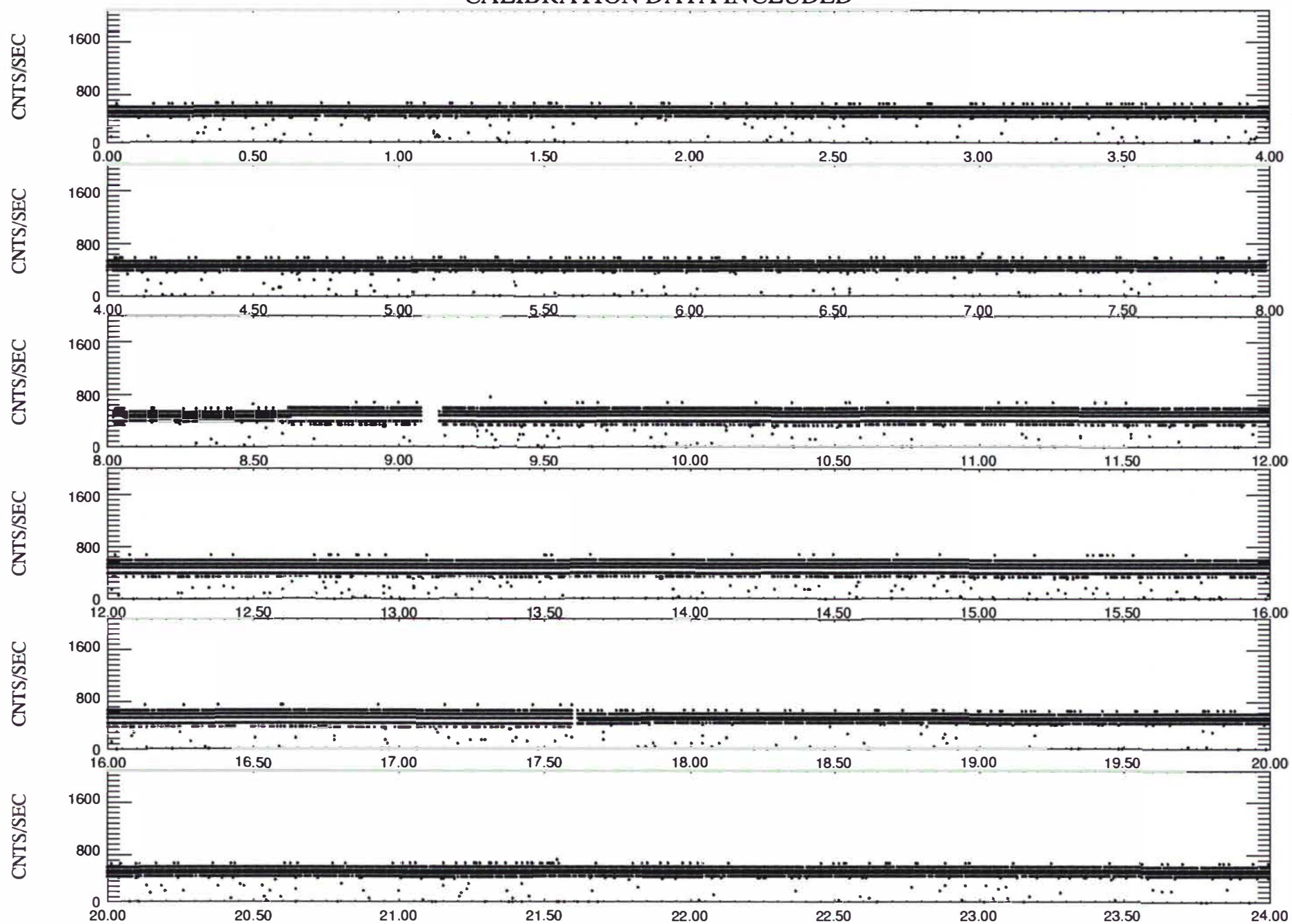
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

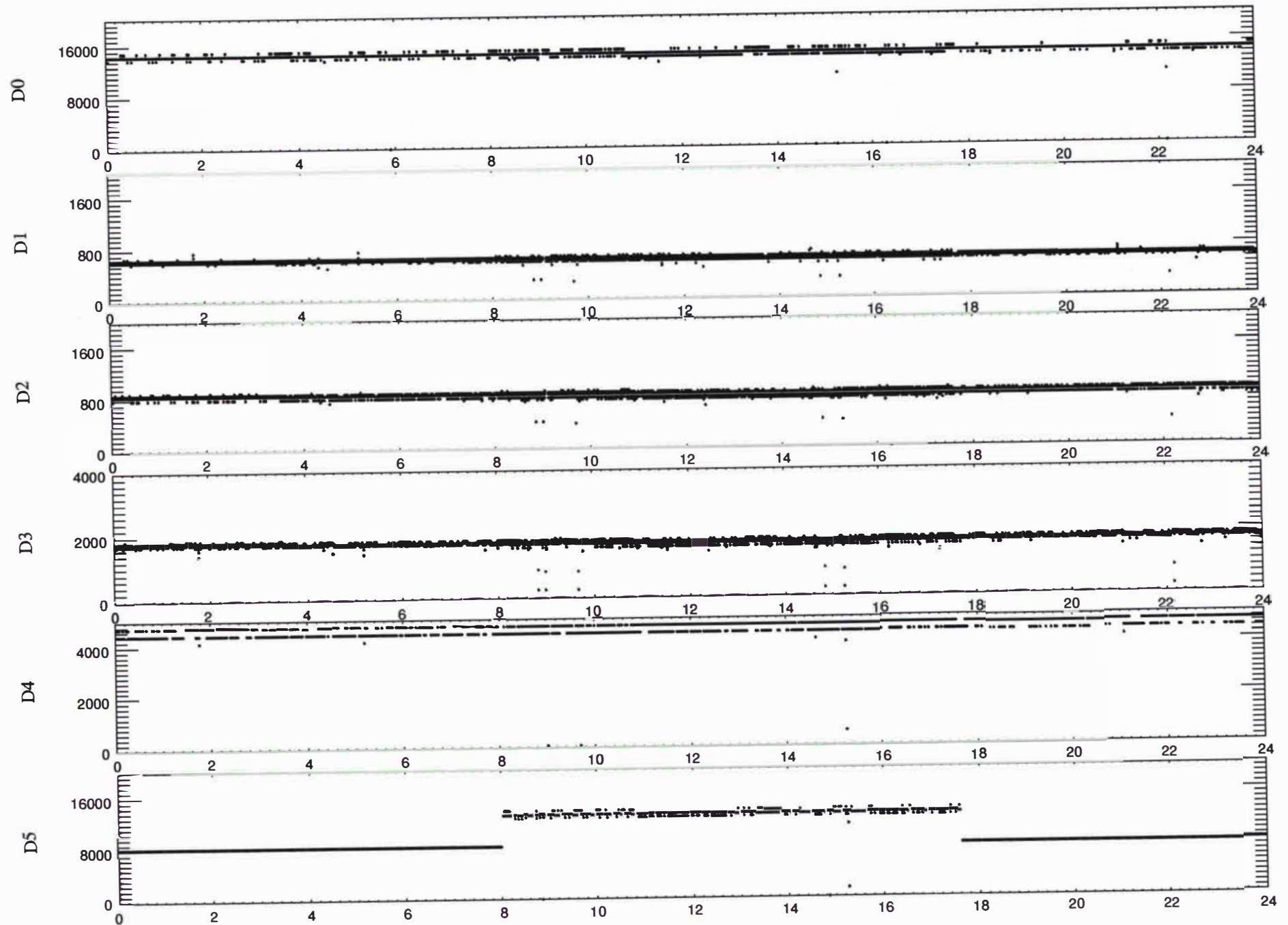
NO BURST (8)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV! AL TIME

KONUS

ULYSSES RT

15 / 02 / 00

02 / 09 / 96 12168.466 s

0.500 S INTERVALS REGROUPED BY 7

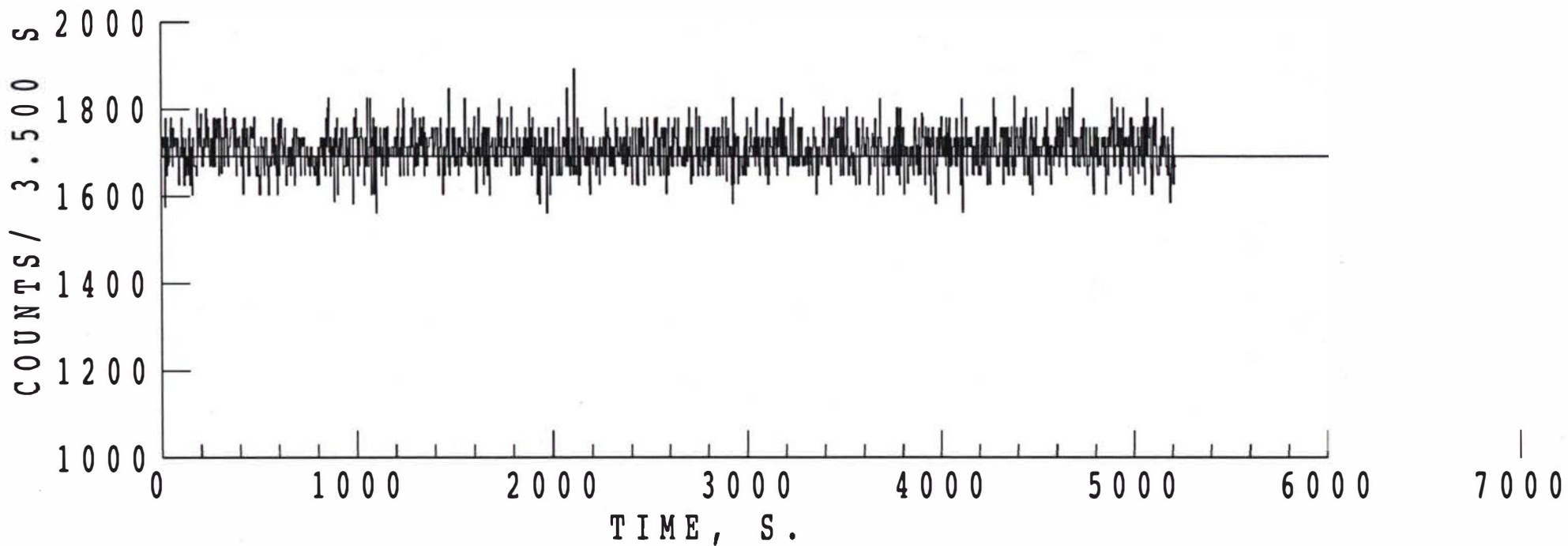
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



Date: Aug 21 '08

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

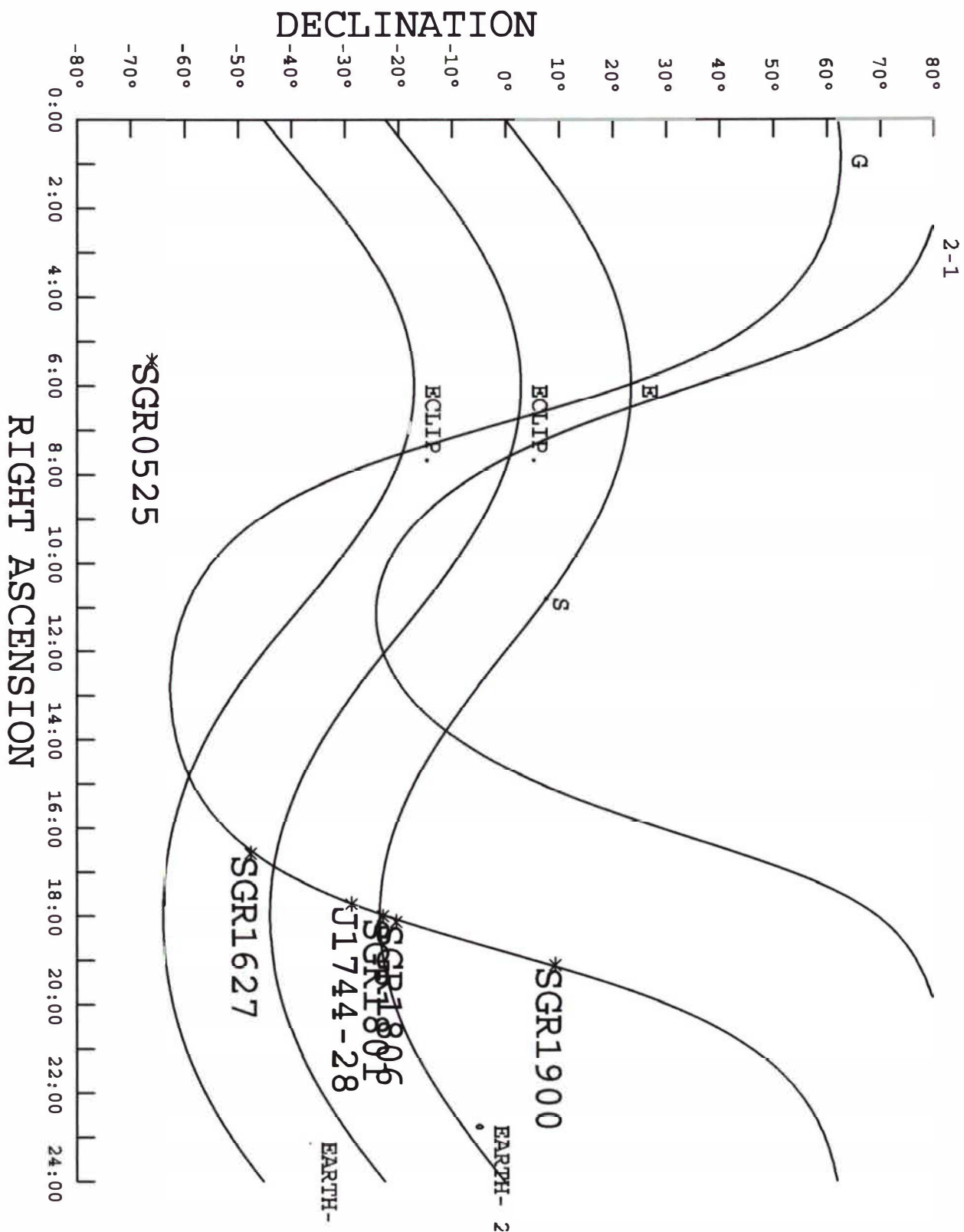
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS1

EVENT OF SEP 2, 1996 15:47

21/ 8/ 8



KONUS1

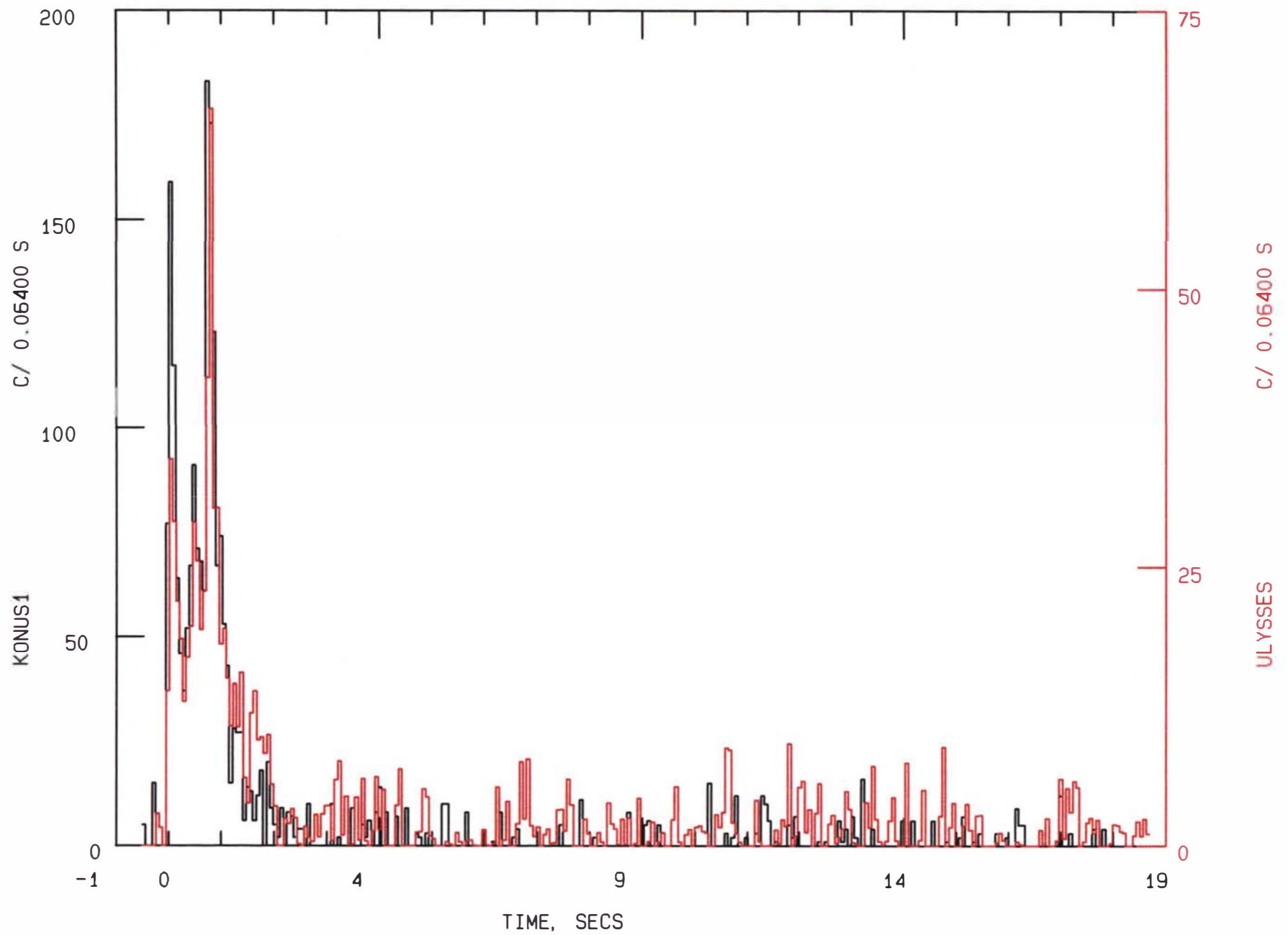
-ULYSSES

CORRELATION

02/09/96

58097.128

21/ 8/ 8



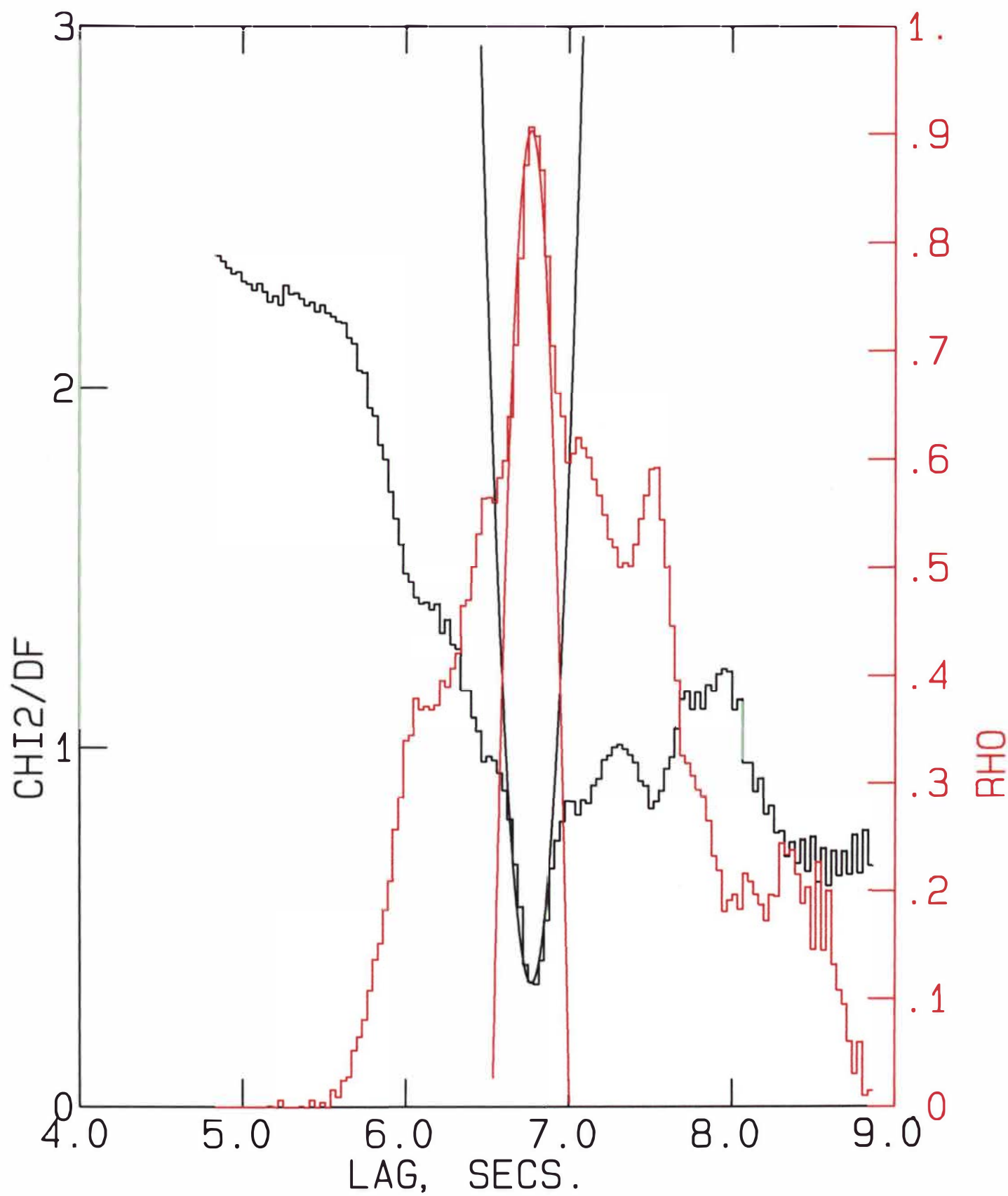
KONUS1

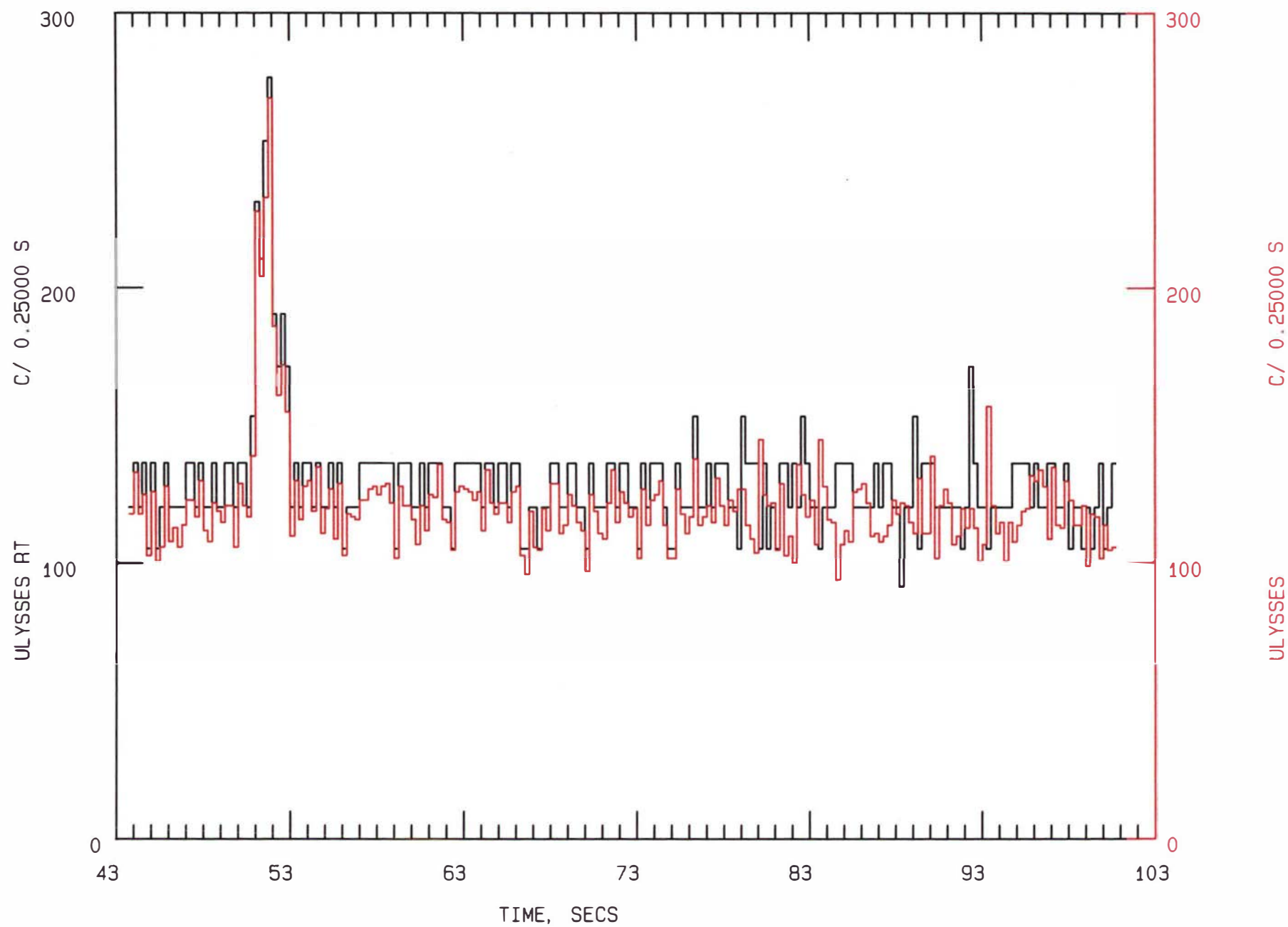
-ULYSSES

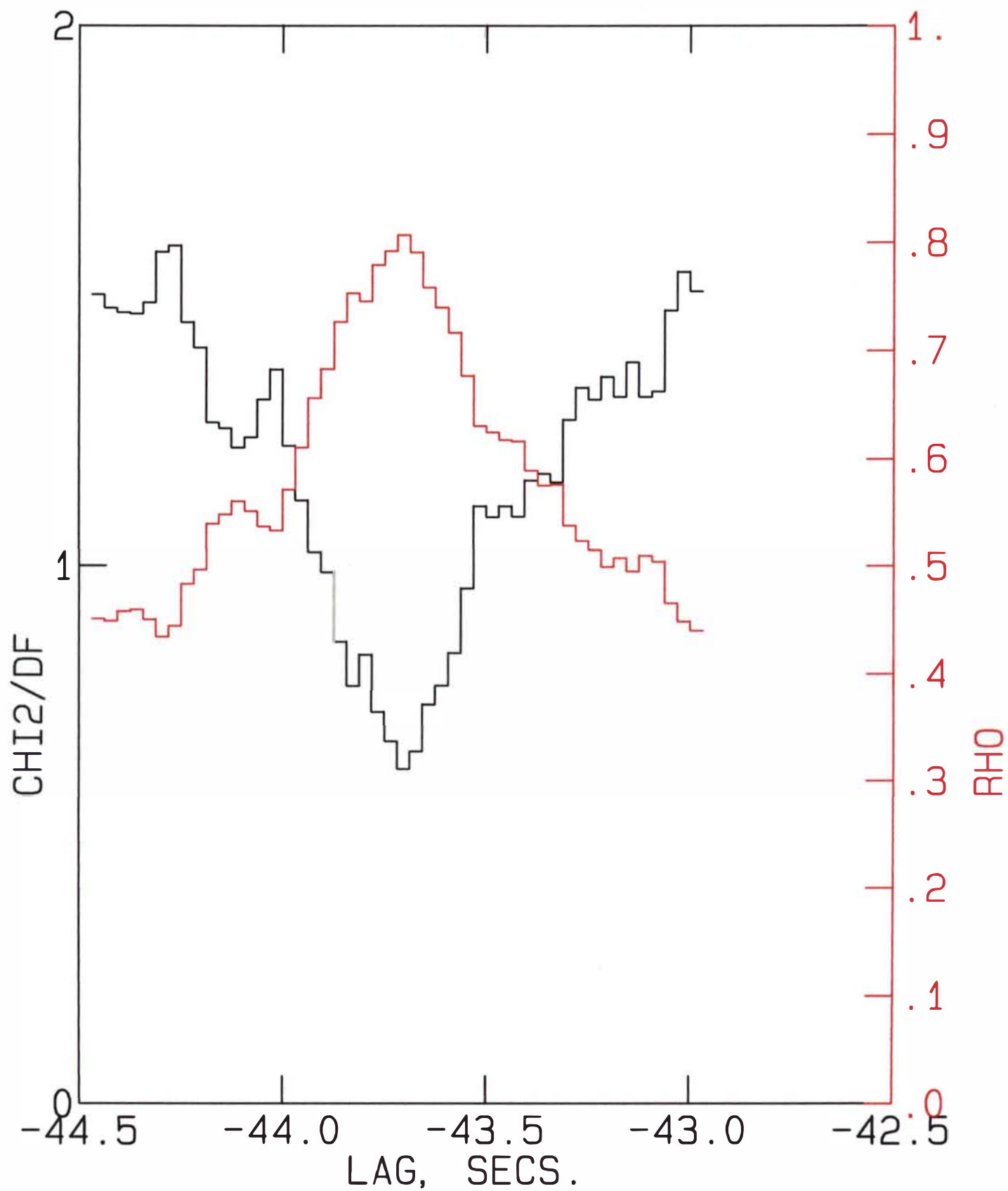
CORRELATION

02/09/96

58097.128





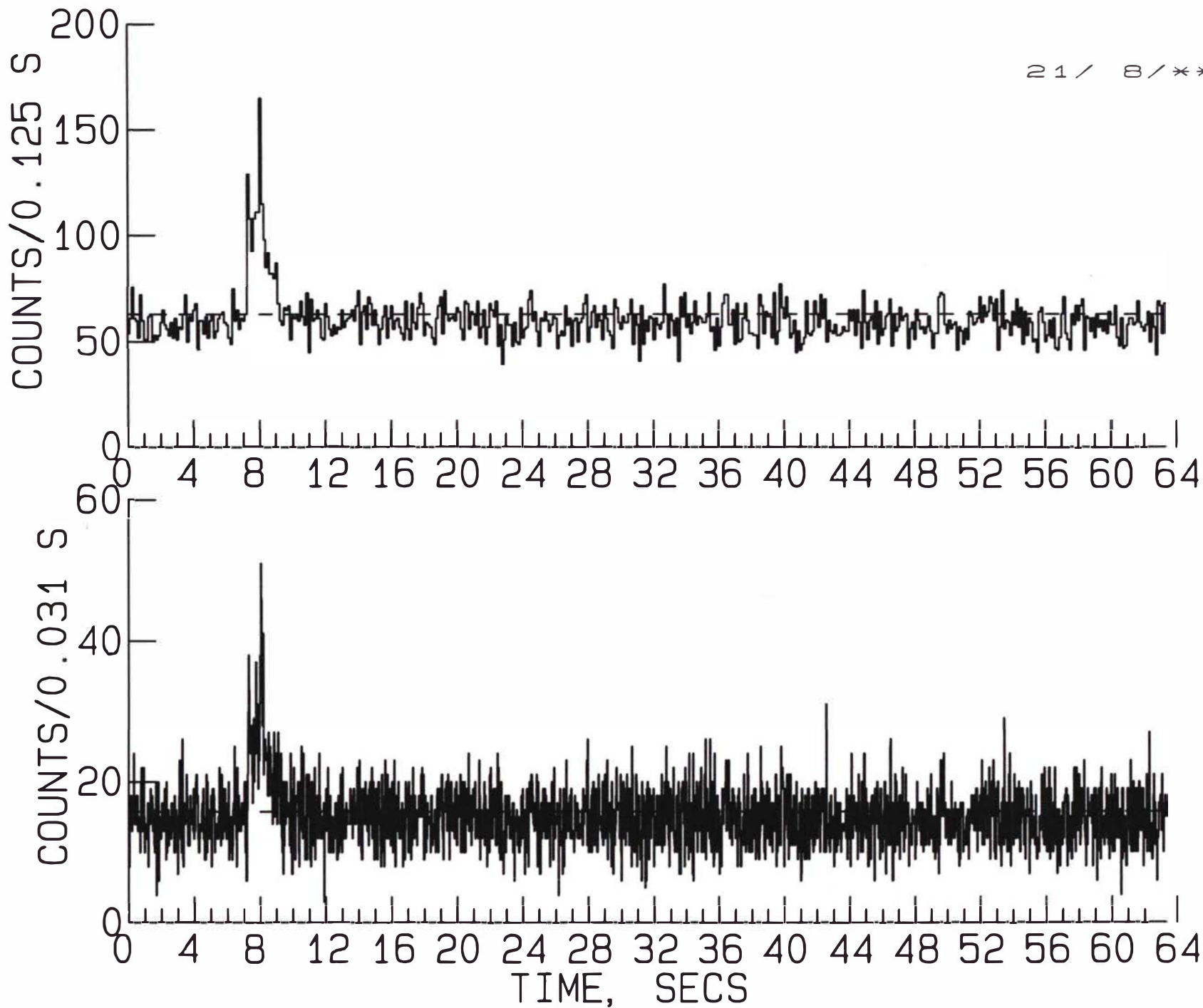


ULYSSES

02/09/96

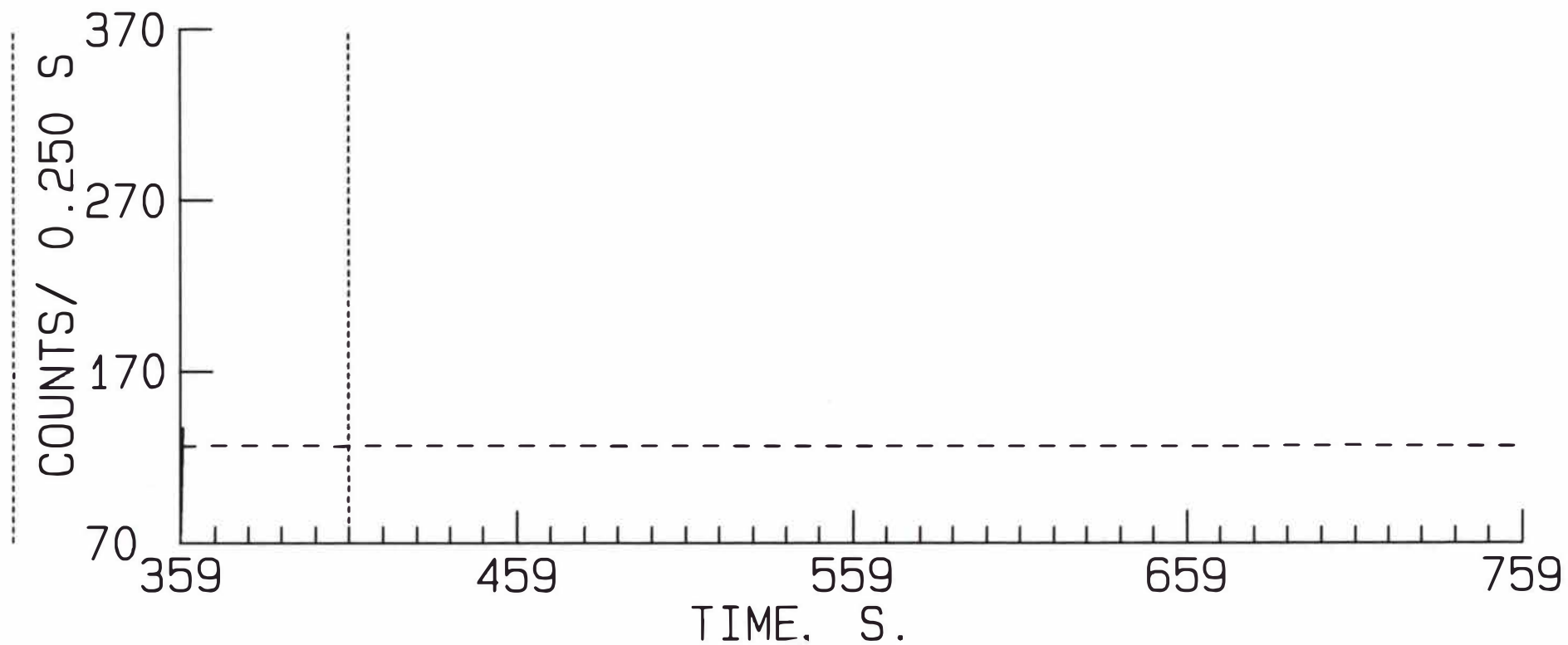
Ttrig=56838.099

21- 146 keV



ULYSSES RT
2/ 9/96 56664.039 s
21- 146 keV

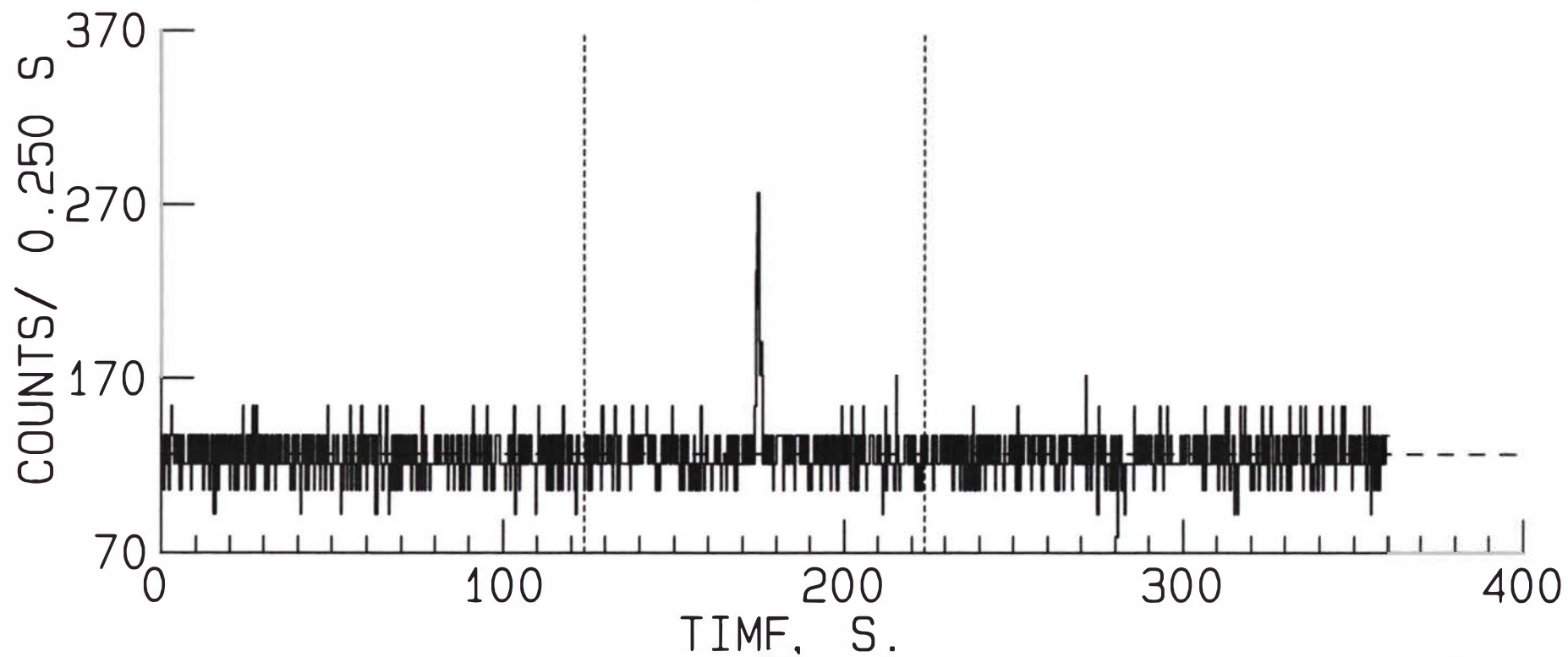
21 / 8 / 8



ULYSSES RT
2/ 9/96 56664.039 s
21- 146 keV

21 / 8 / 8

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

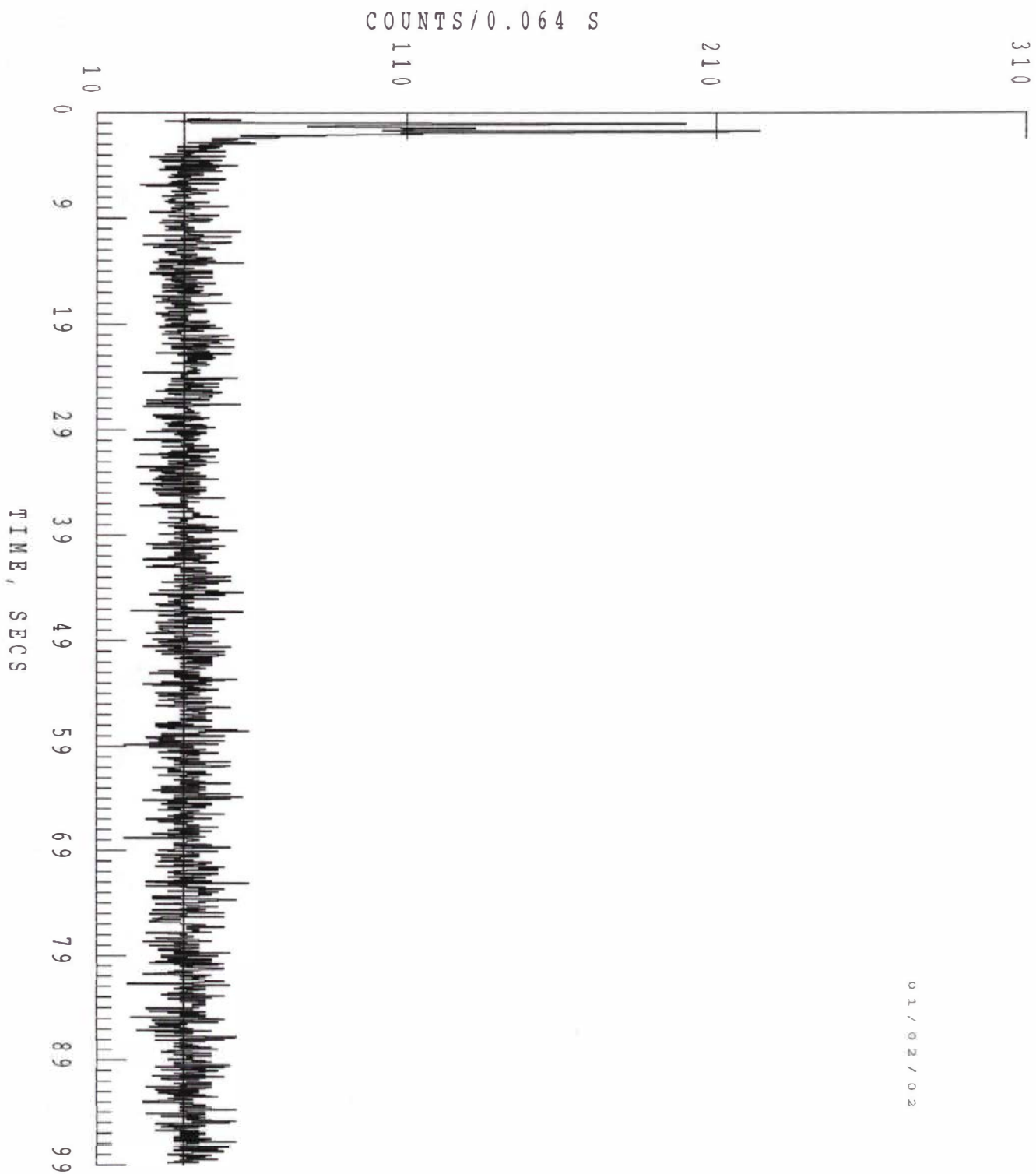


KONUS1

02/09/96

58097.128

50 - 200 keV



01/02/02

KONUS1 19960902 58097

ULYSSES RT

01 / 02 / 02

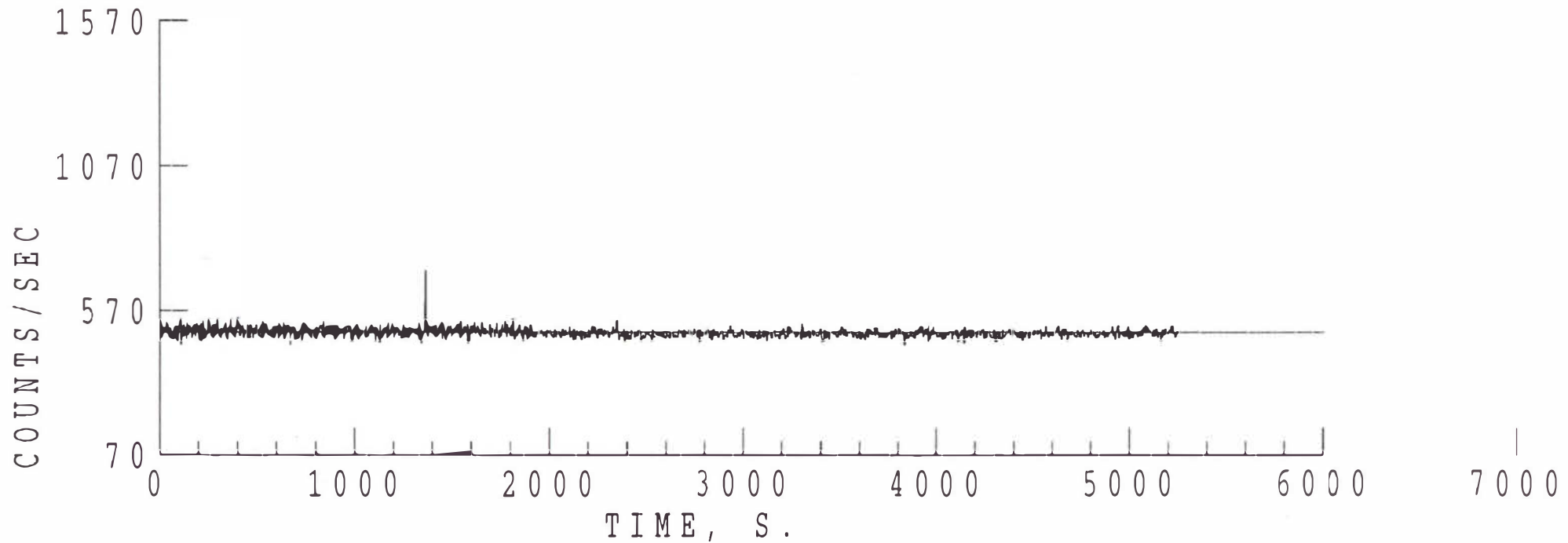
02 / 09 / 96 55476.027 s

INTERVALS REGROUPED BY 10

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

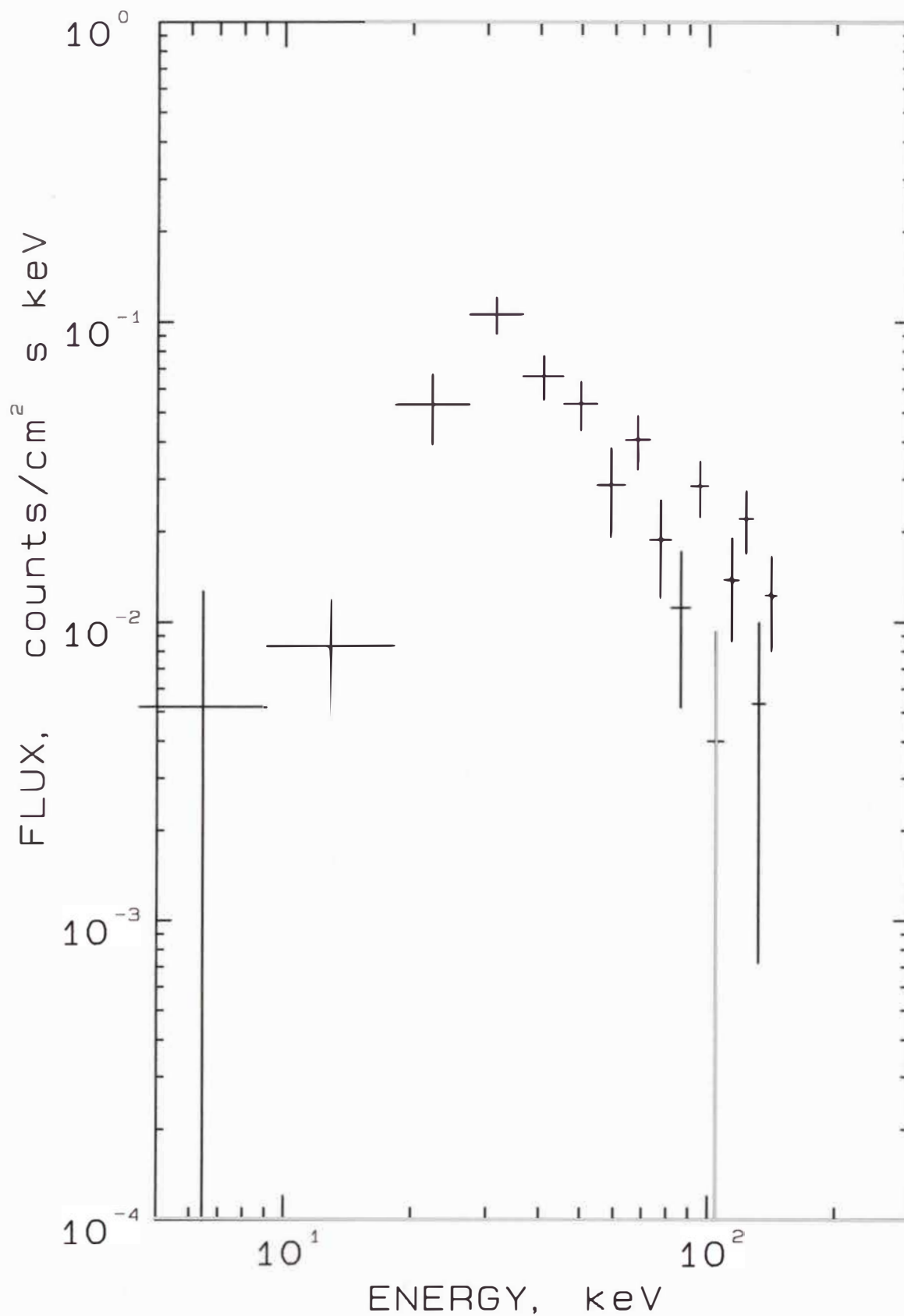
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES 02/09/96 56838.136

25/11/97

SPECTRUM INTEGRATED OVER 21.4 SECONDS, INTERVALS 2 TO 20



ULYSSES 02/09/96 56838.136 BURST SPECTRAL COUNT RATES

4- 18 keV

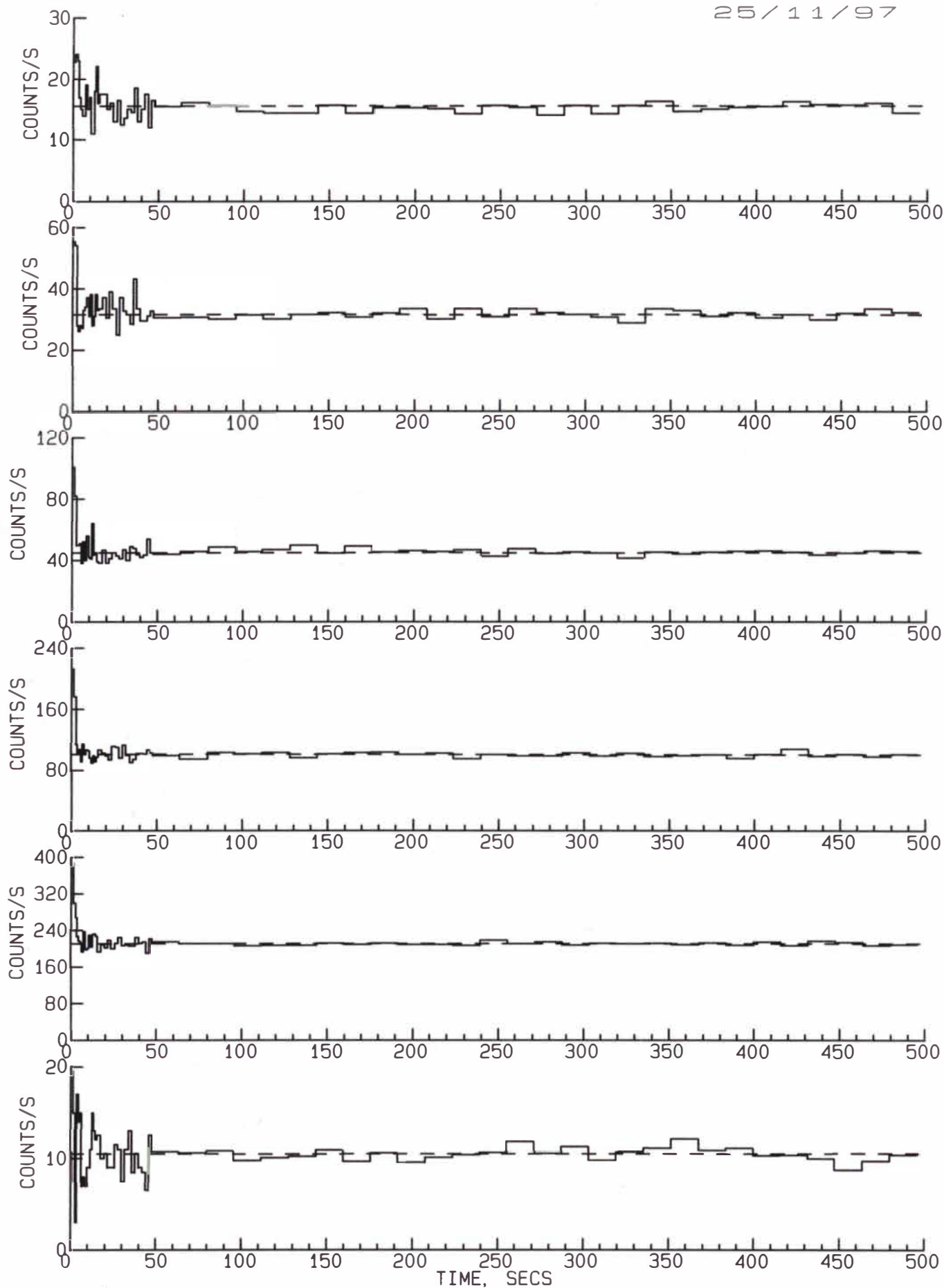
18- 45 keV

45- 72 keV

72-100 keV

100-127 keV

127-145 keV



25 / 11 / 97

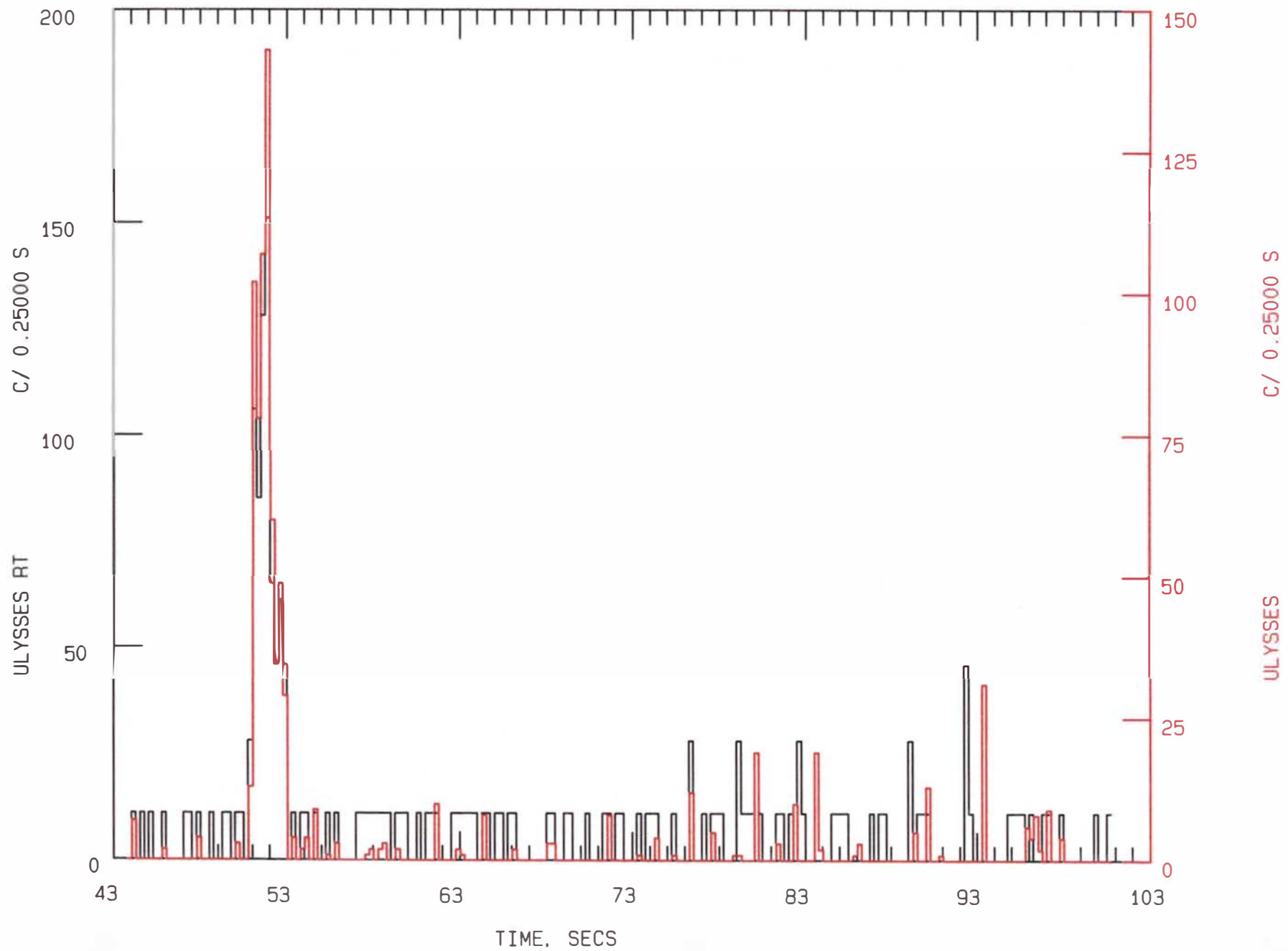
ULYSSES RT-ULYSSES

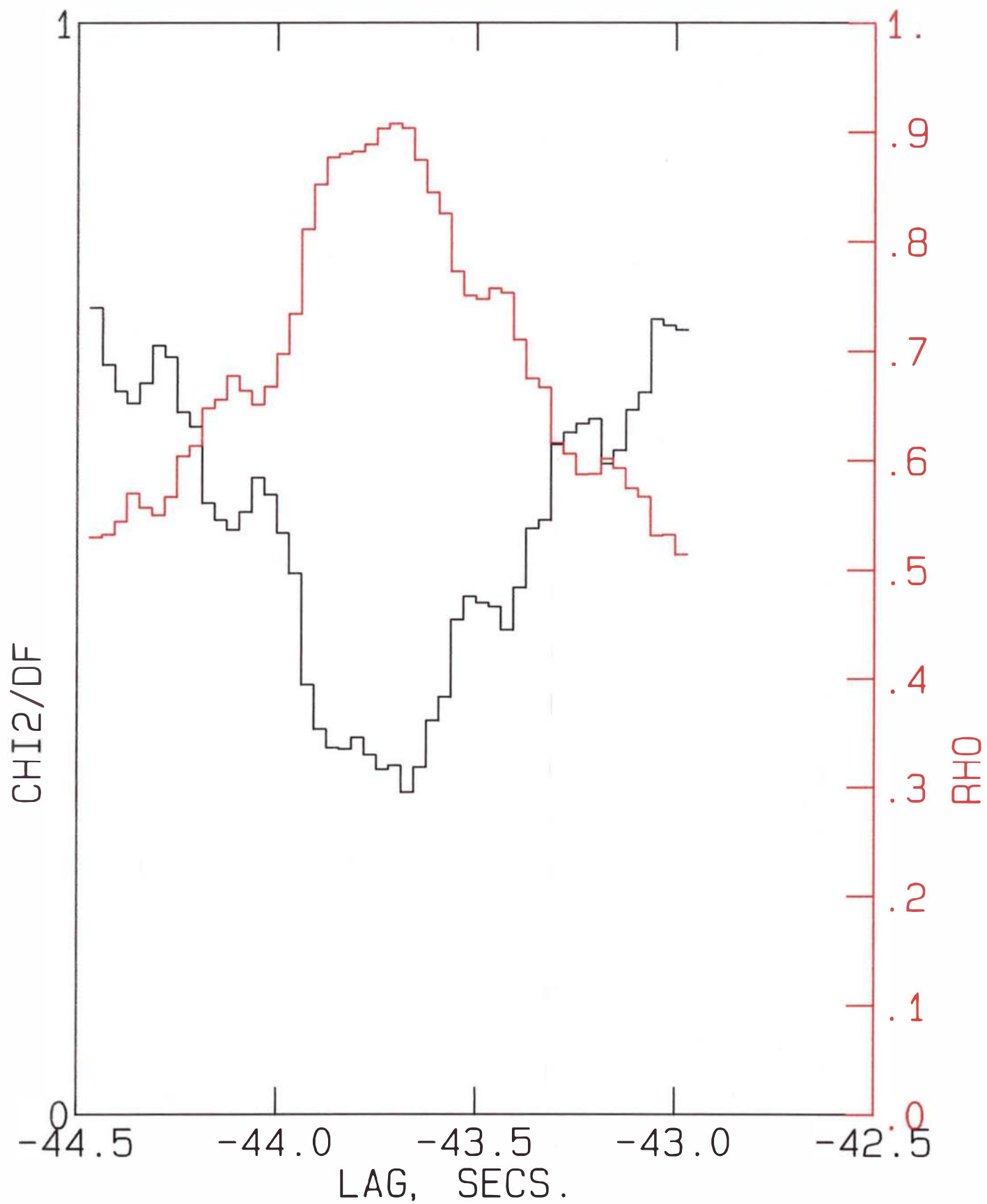
CORRELATION

2/ 9/96

56787.032

25/11/97





ULYSSES

02/09/96

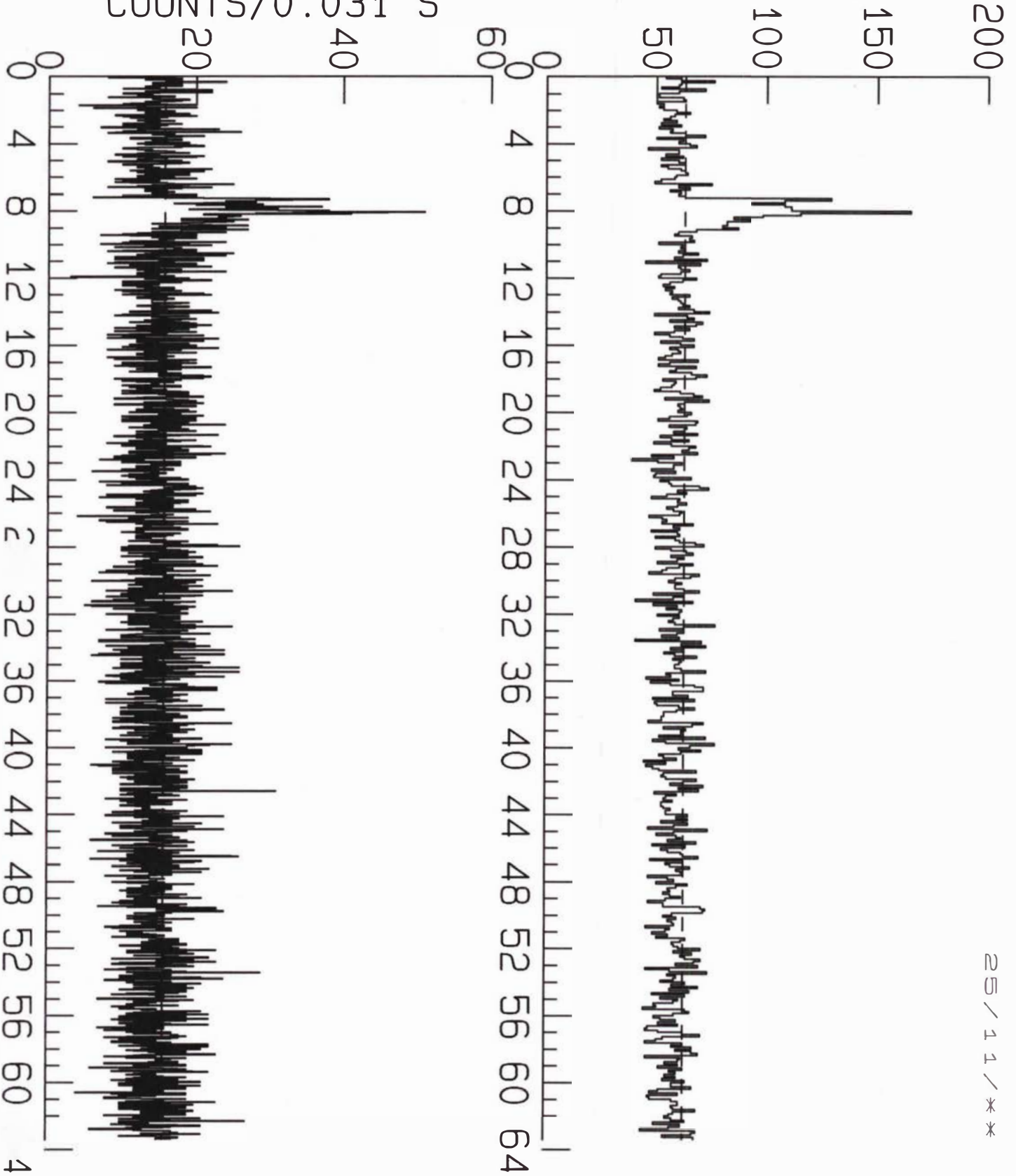
Ttrig=56838.129

0- 0 keV

25 / 11 / **

COUNTS/0.125 S

COUNTS/0.031 S

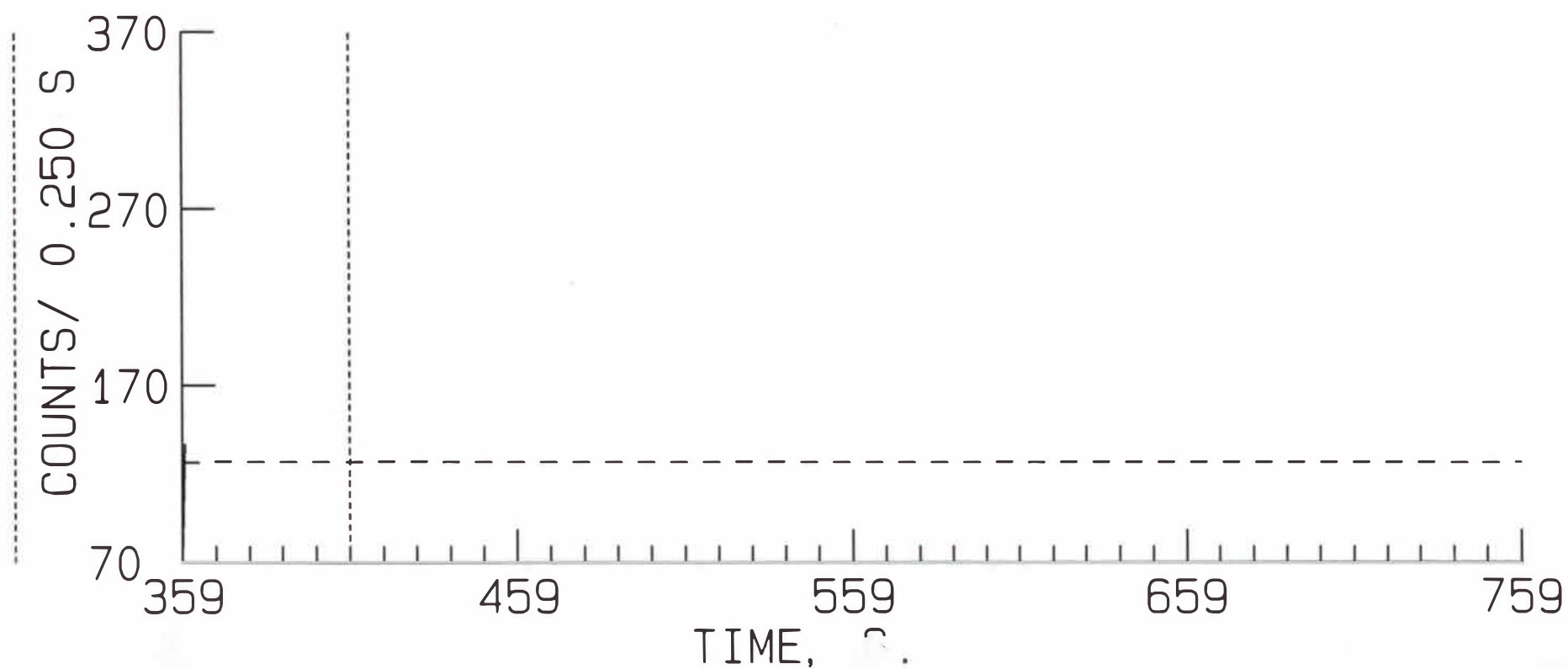


ULYSSES RT

25 / 11 / 97

2 / 9 / 96 56664.042 s

21- 145 keV



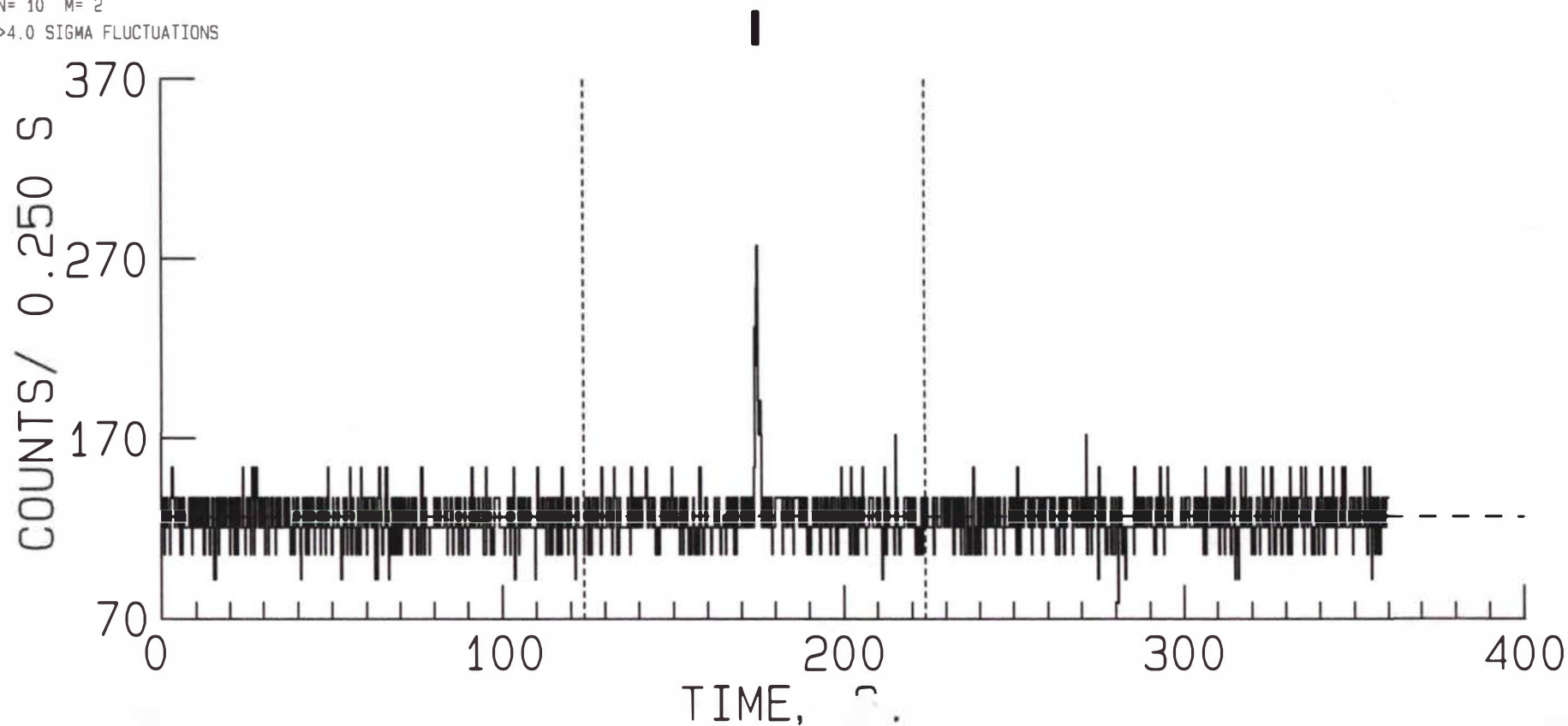
ULYSSES RT

25 / 11 / 97

2/ 9/96 56664.042 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



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?

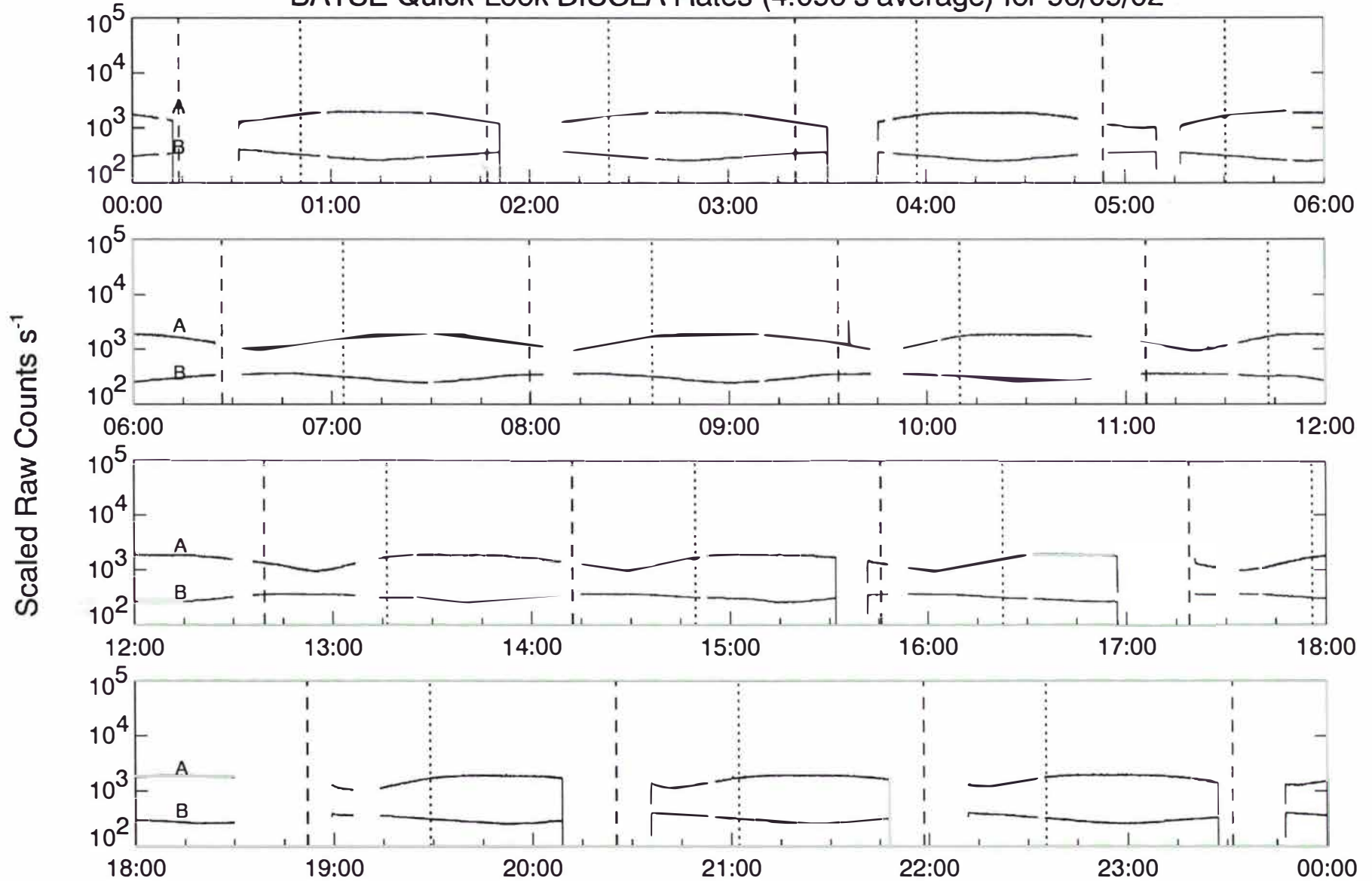
CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, marar, teegarden, terrell, yoshimori)

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	
5	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 + 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	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 + 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

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/02

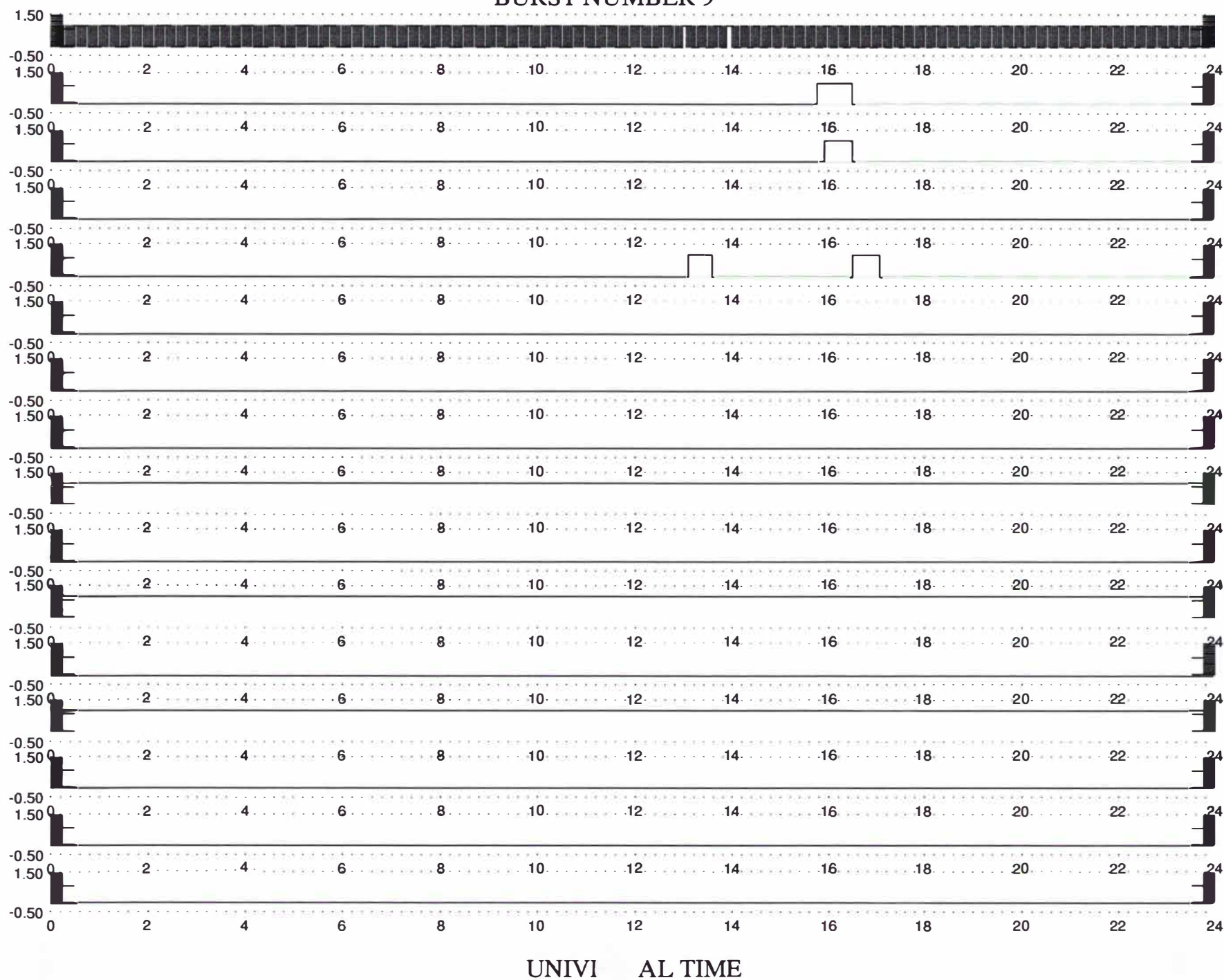


Current Time: 96/09/04, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

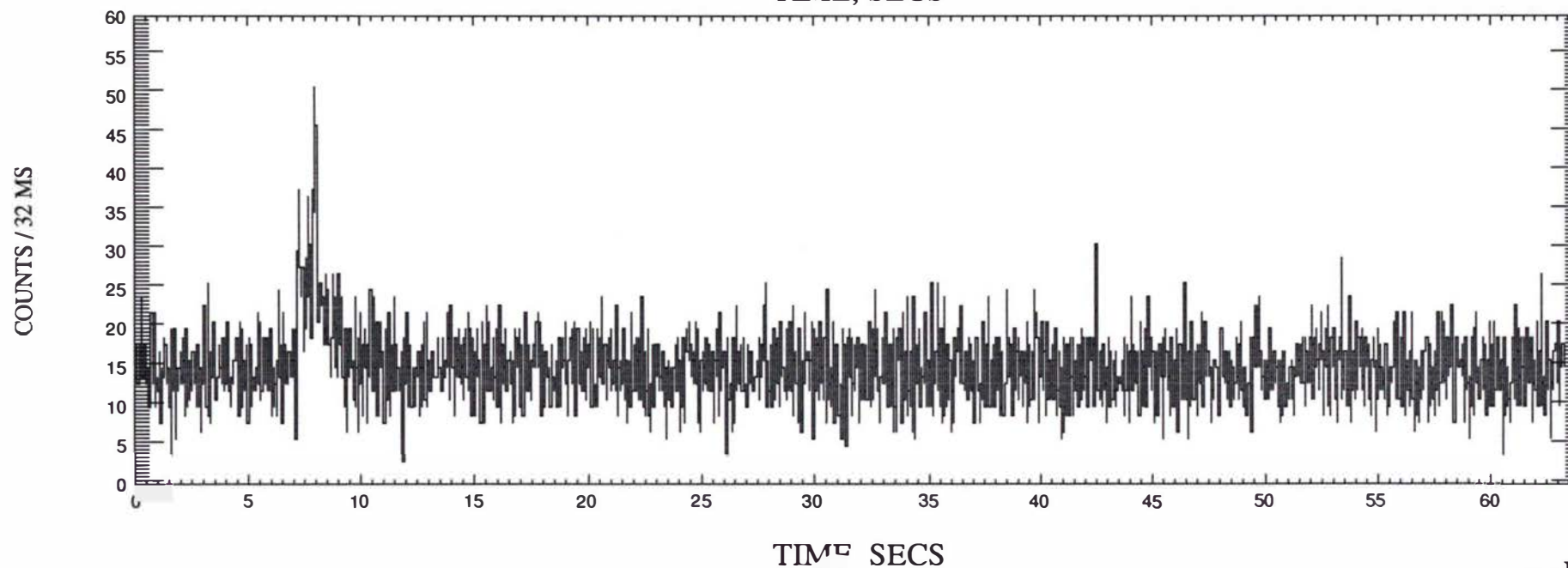
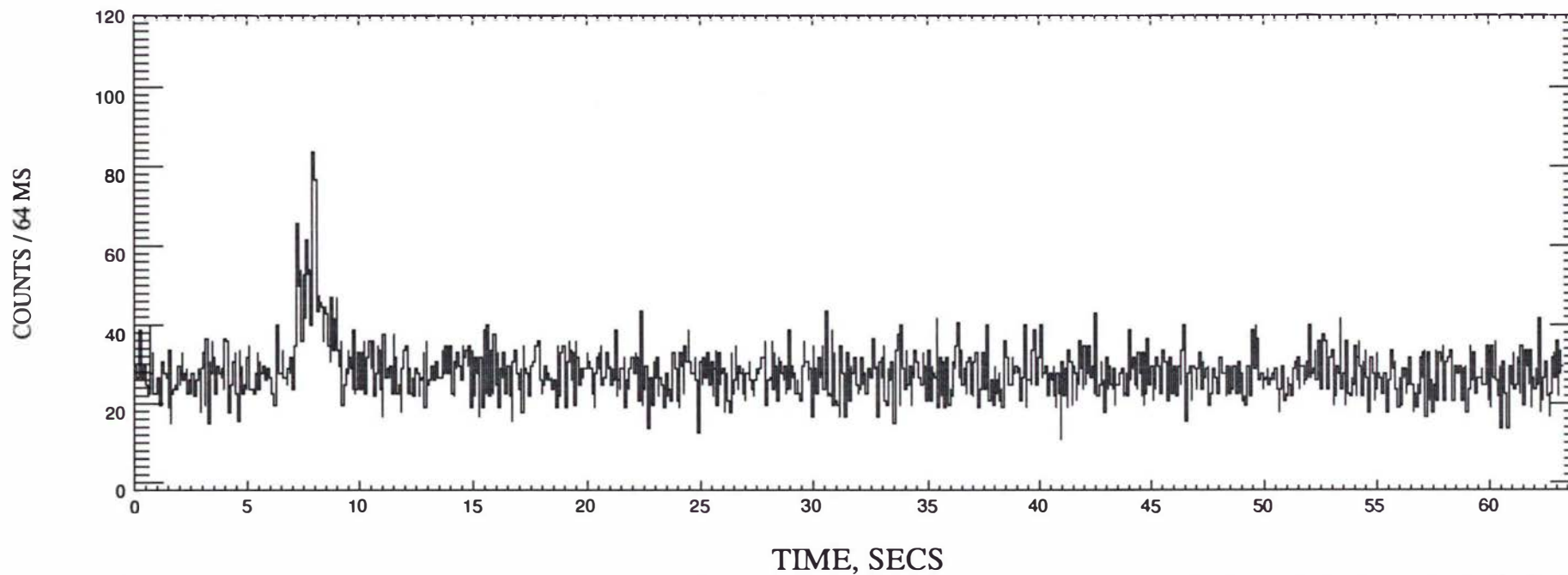
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

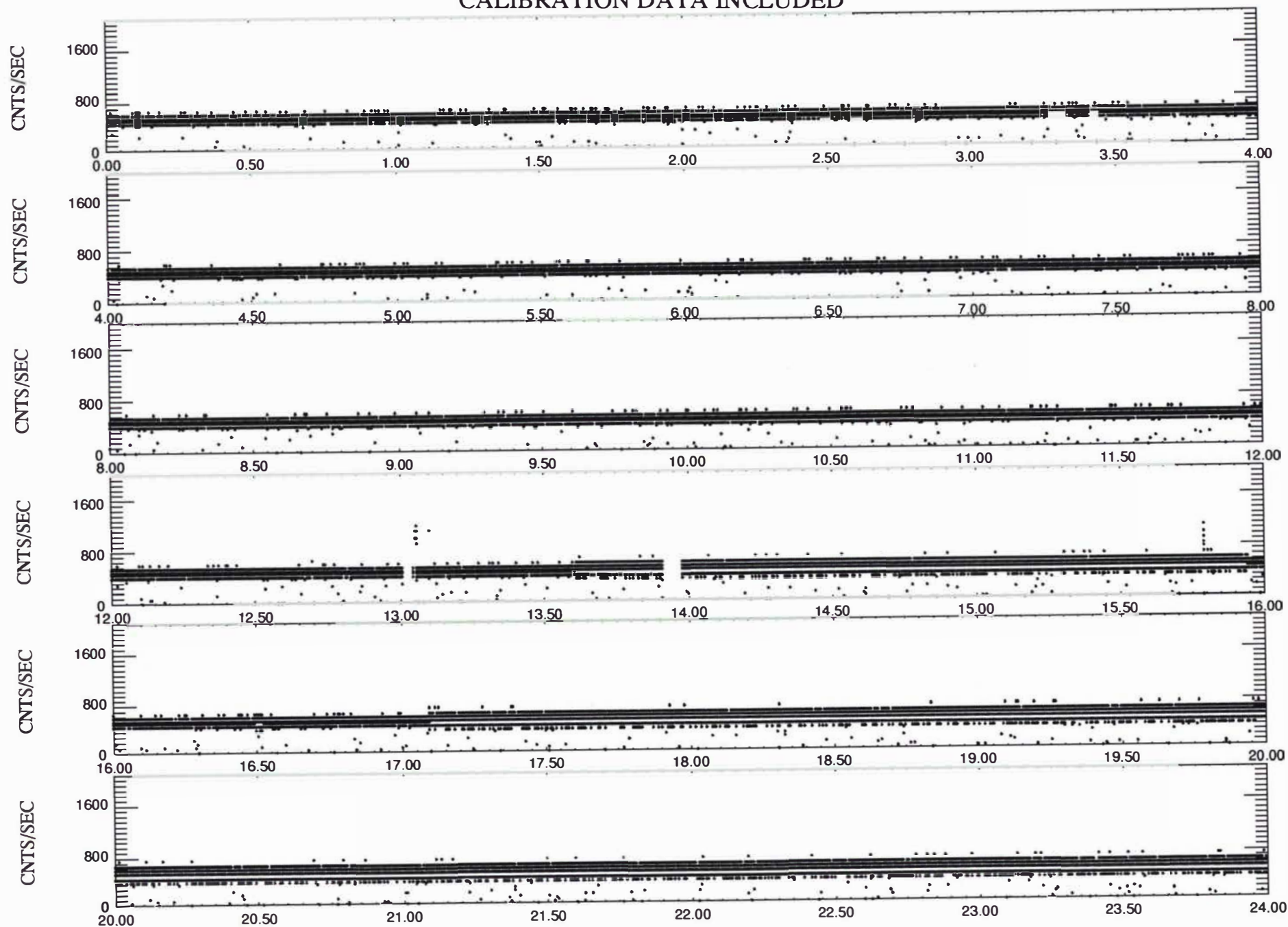
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



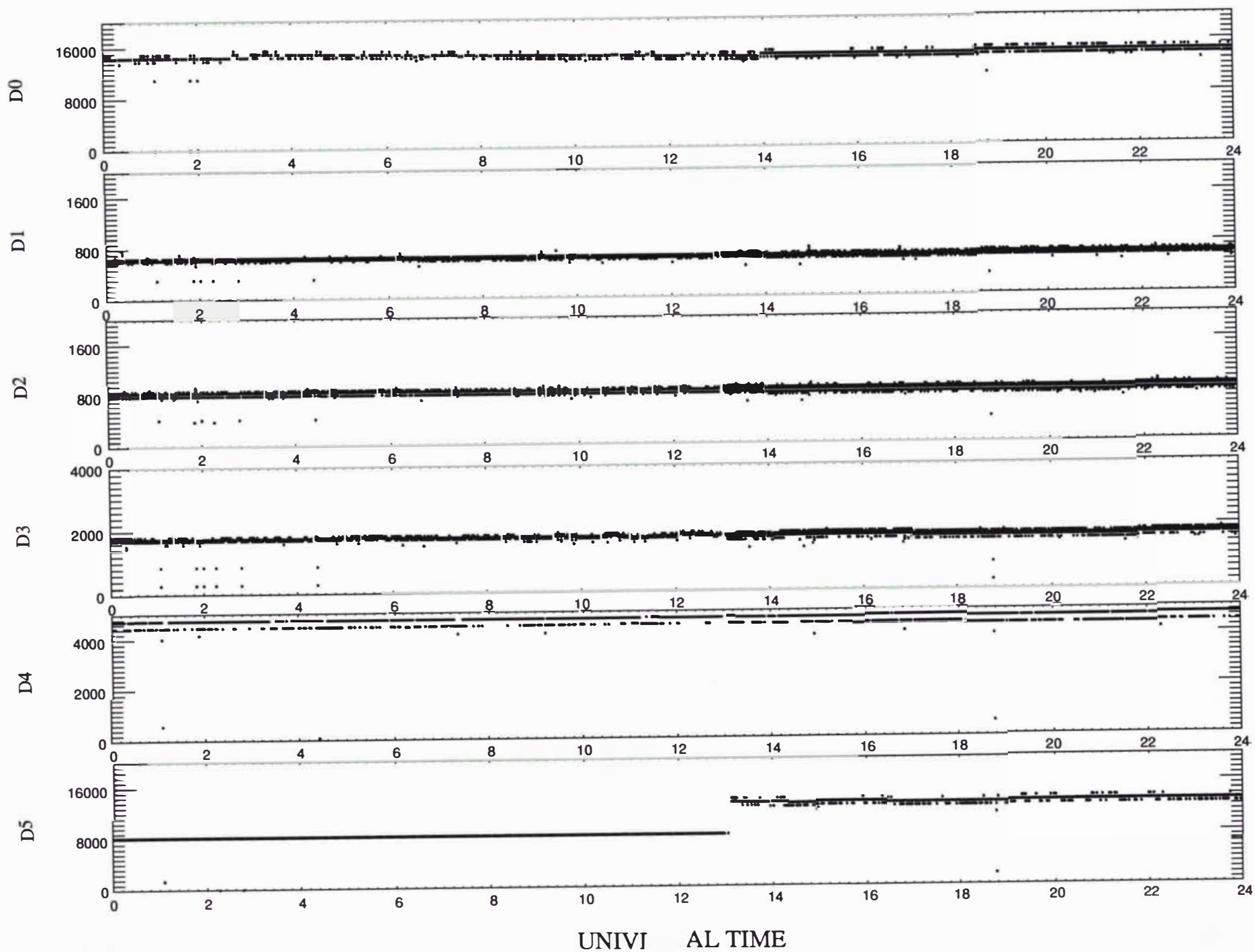
Burst Counter 9 at UT=15.788371204800 h=56838.136 s 15:47:18.136



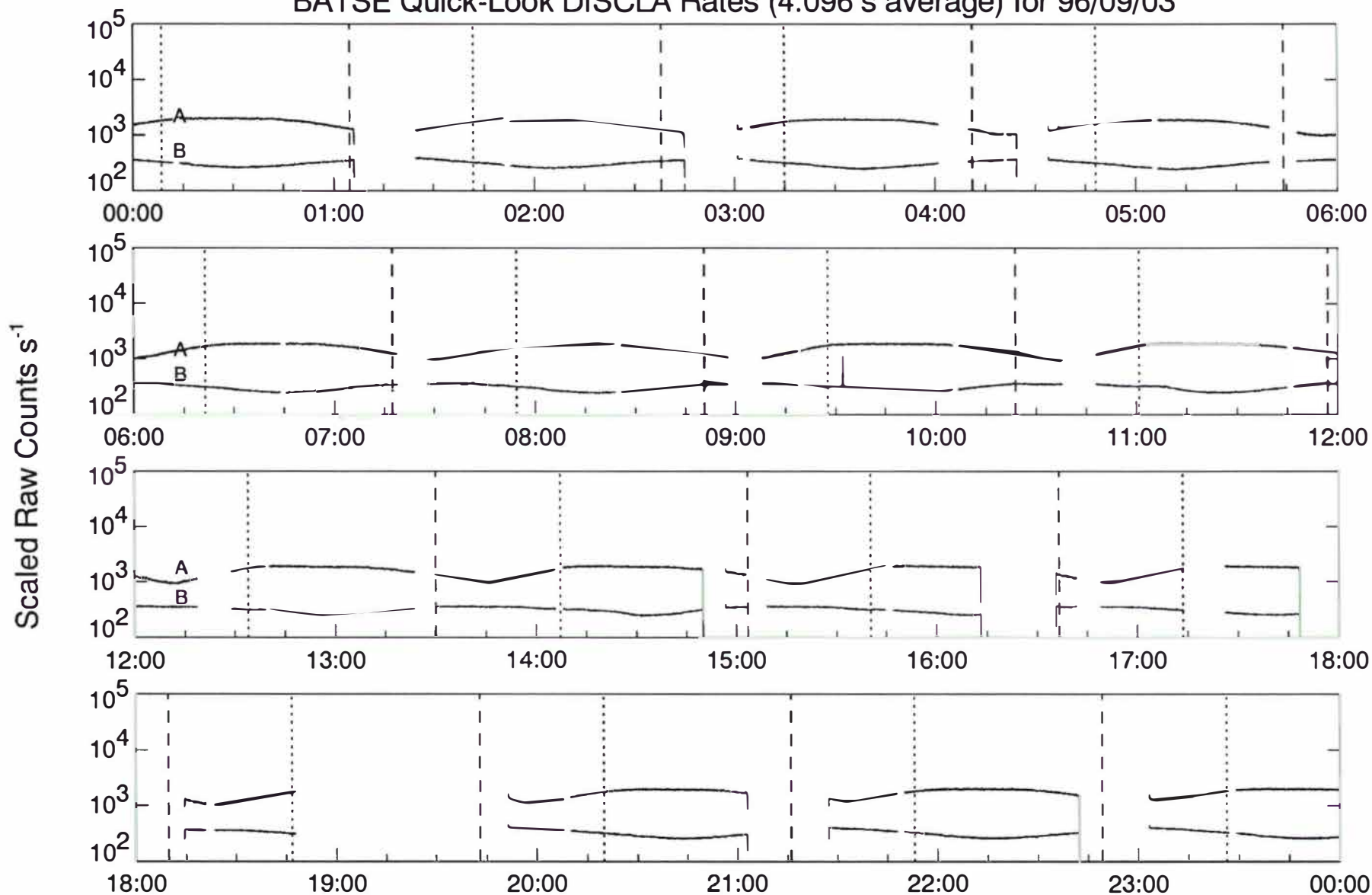
CALIBRATION DATA INCLUDED



UNIV AL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/03



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

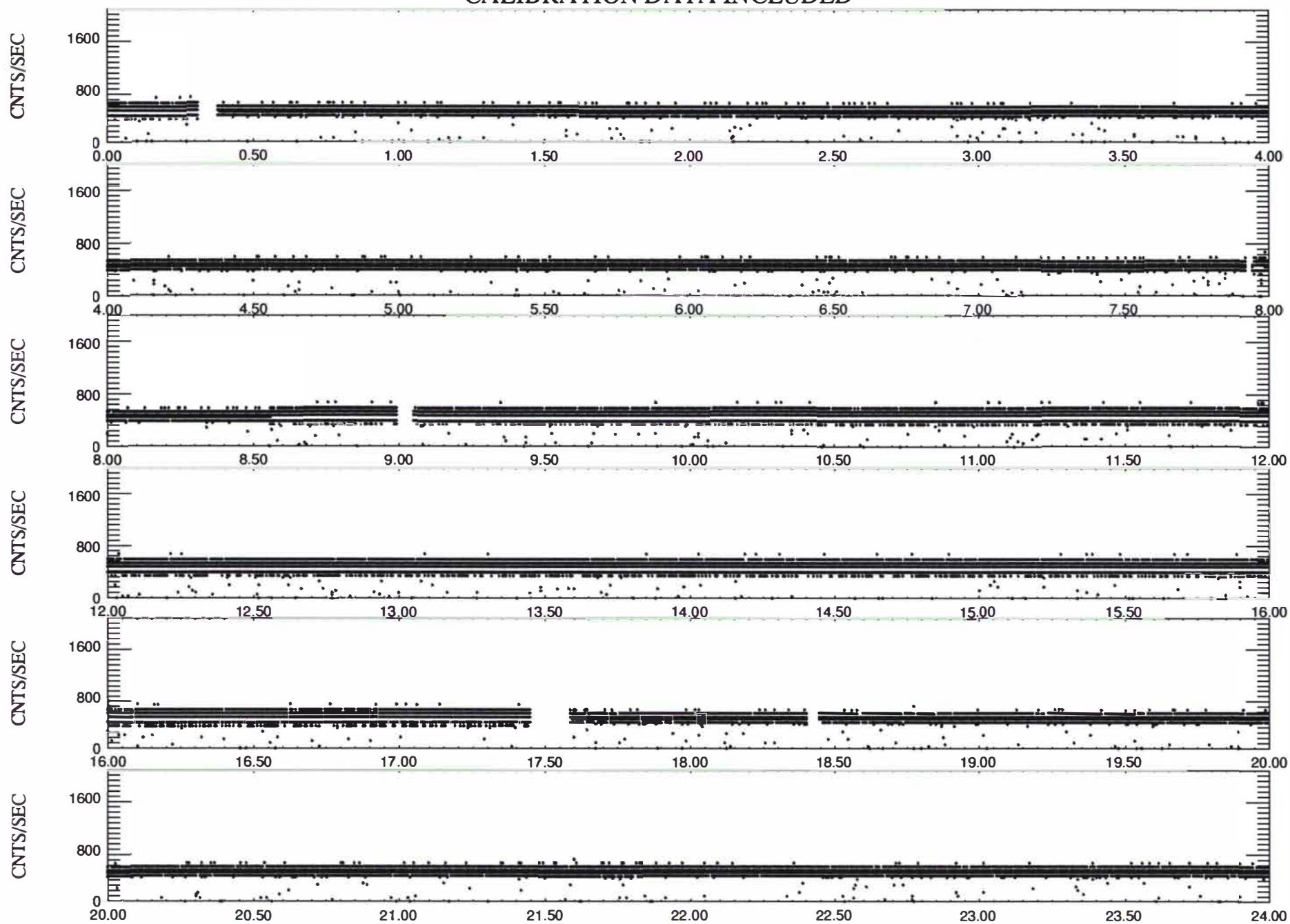
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

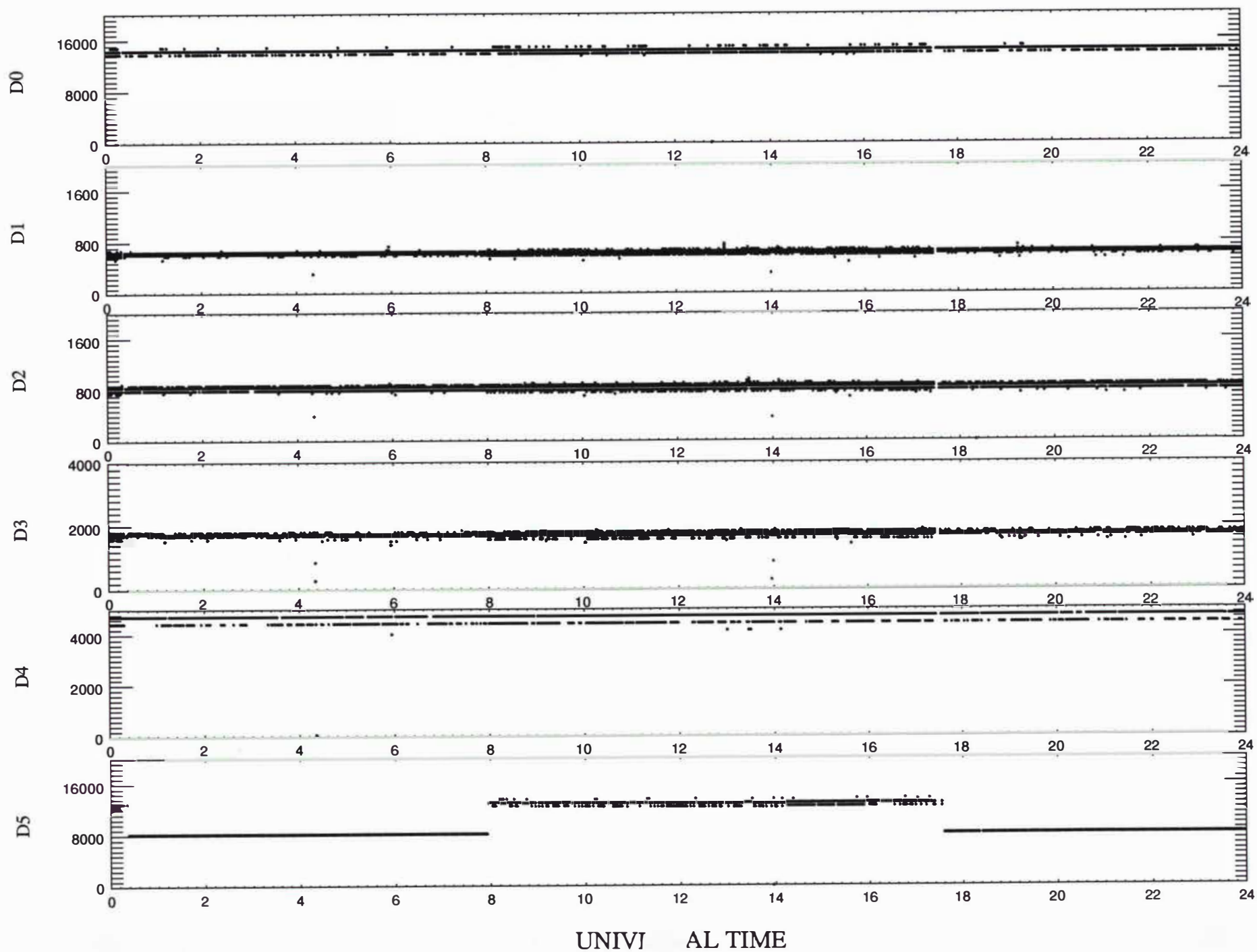
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



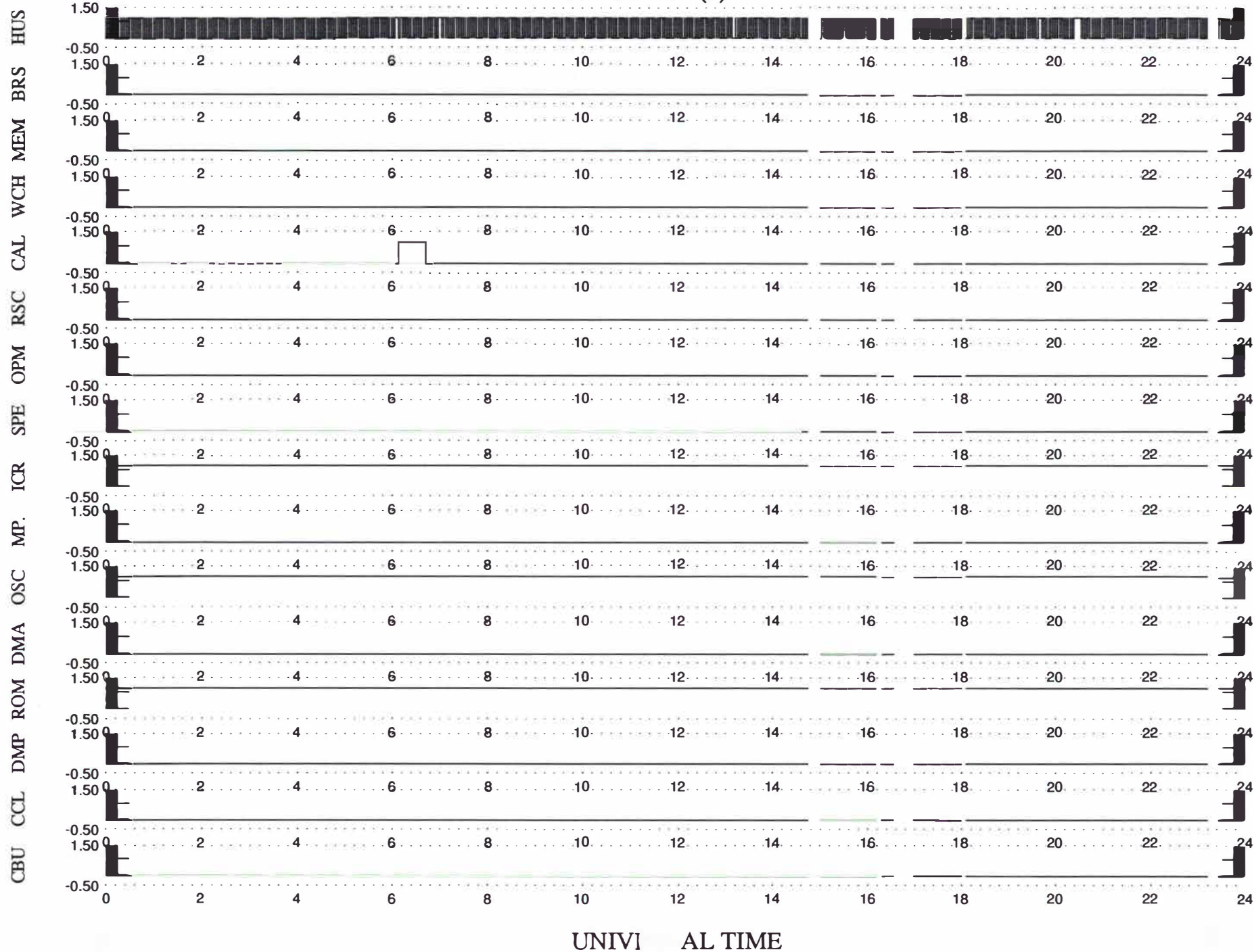
CALIBRATION DATA INCLUDED



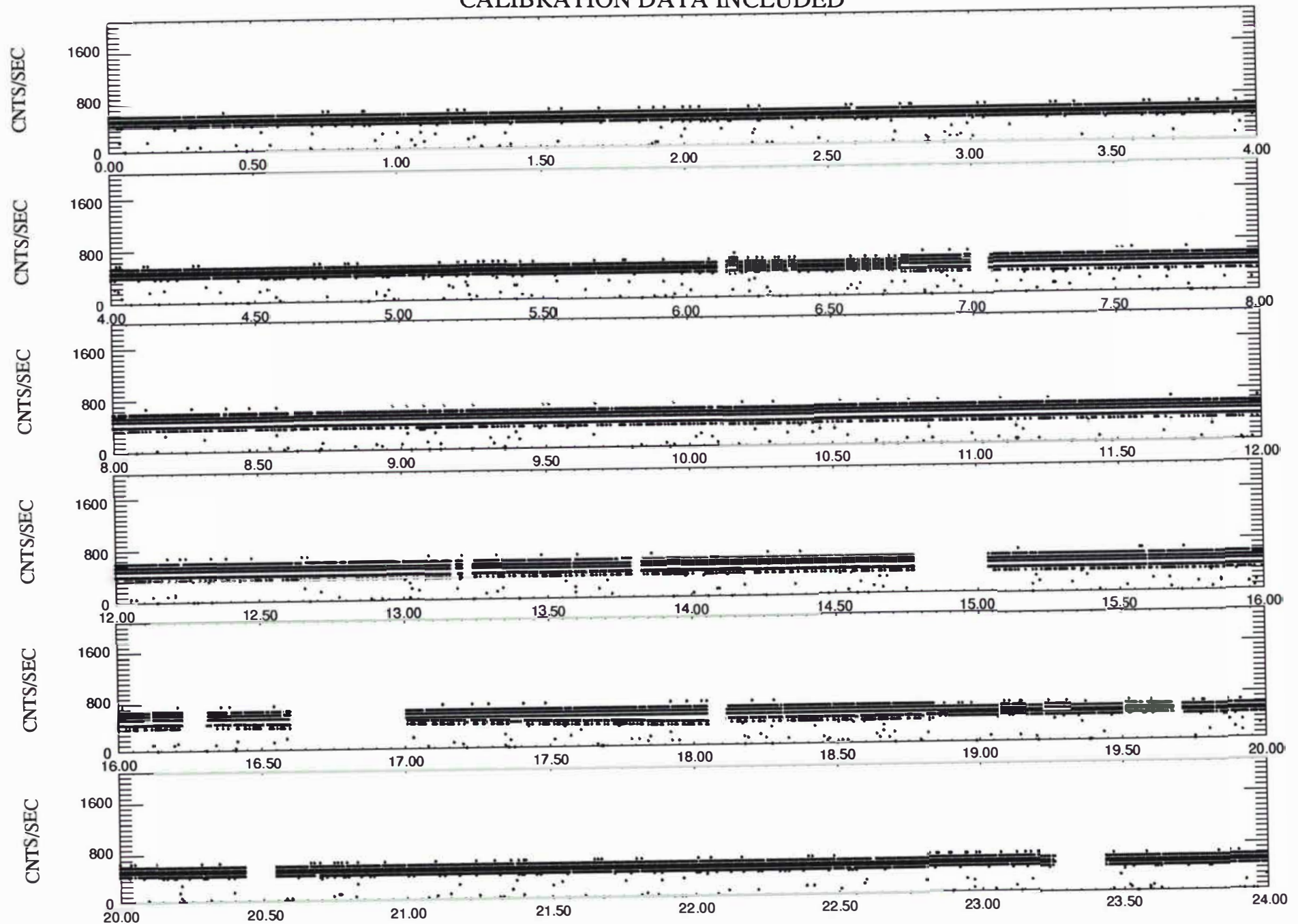
UNIVERAL TIME



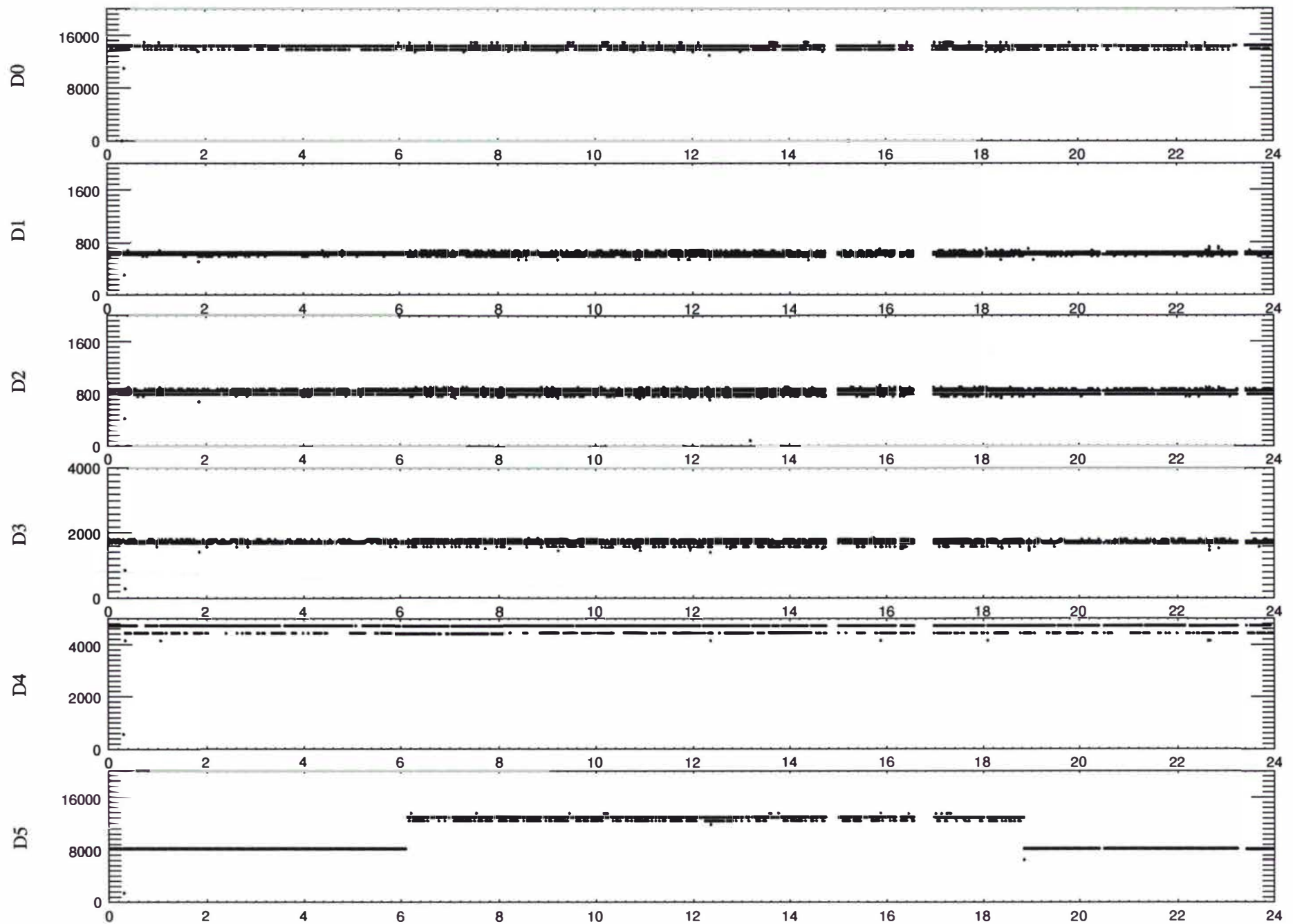
NO BURST (9)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV AL TIME

From BUTTERWORTH@lheavx.gsfc.nasa.gov Wed Sep 11 11:29 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Wed, 11 Sep 1996 14:26:35 -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 detected the Ulysses event of 960908, but not that of 960905

Hi Everyone,

Konus didn't trigger on 5 September and there are no indications of a GRB in the waiting-mode data (collected every 1.5 seconds). There was a single short gap in telemetry from about 21.41 to 21.42UT.

There was a short intense trigger in the north-facing detector at 06:57:08.442 on 8 September. Below 200 keV there was a single symmetrical peak lasting 0.3 seconds (maximum at T + 0.15 seconds). Above 200 keV there was an almost square pulse, starting at T - 0.05 seconds and lasting till T + 0.25 seconds.

Paul.

Date: Wed, 11 Sep 1996 08:26:04 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609111526.IAA19395@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: GRB960905 & 960908
X-Sun-Charset: US-ASCII

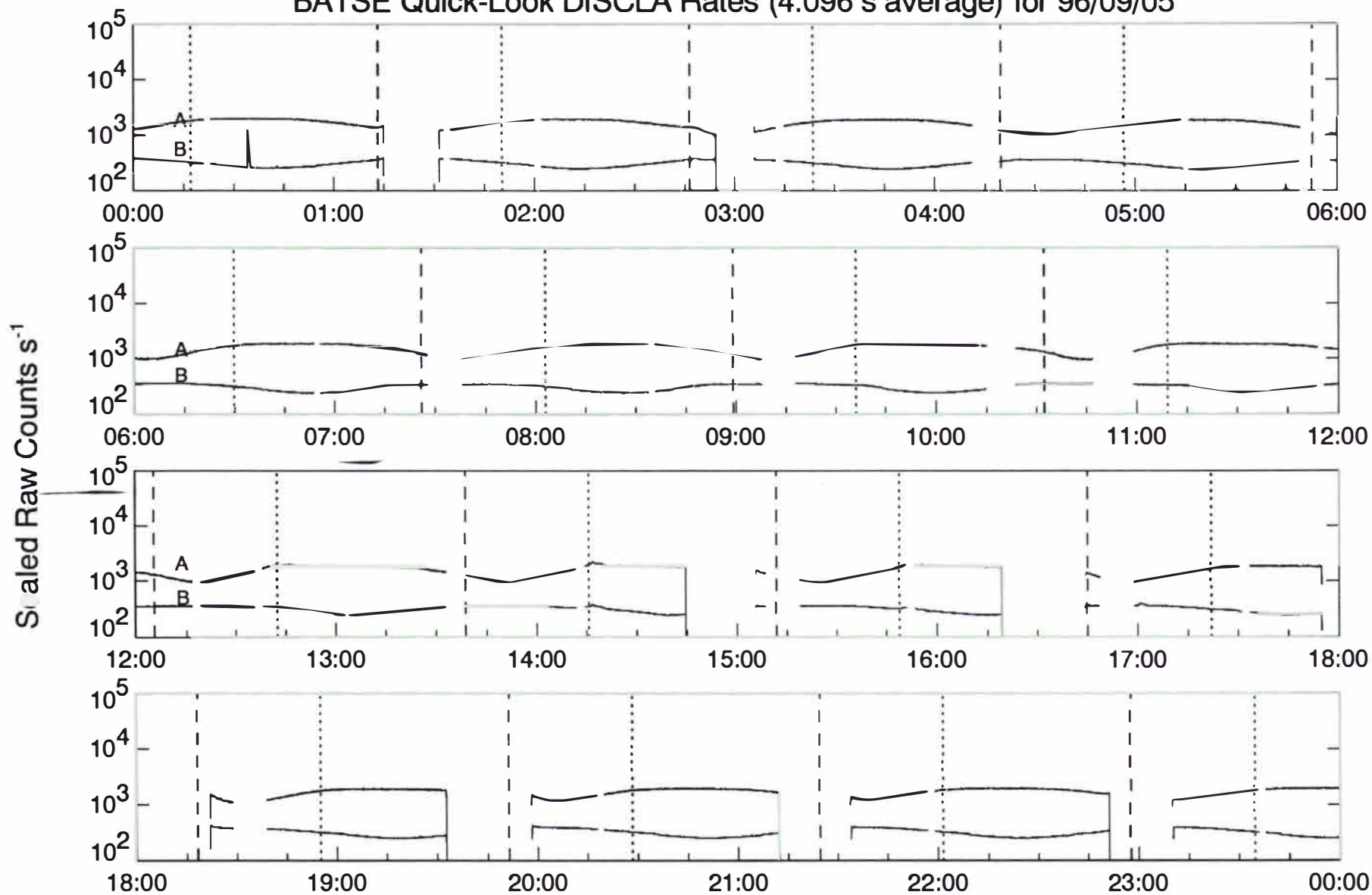
ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed a weak, short bursts September 5 1996 at 21:10 Ulysses time. Ulysses detected an intense, 100 ms long event on September 8 at 06:45. The spacecraft was about 2575 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 96/09/05

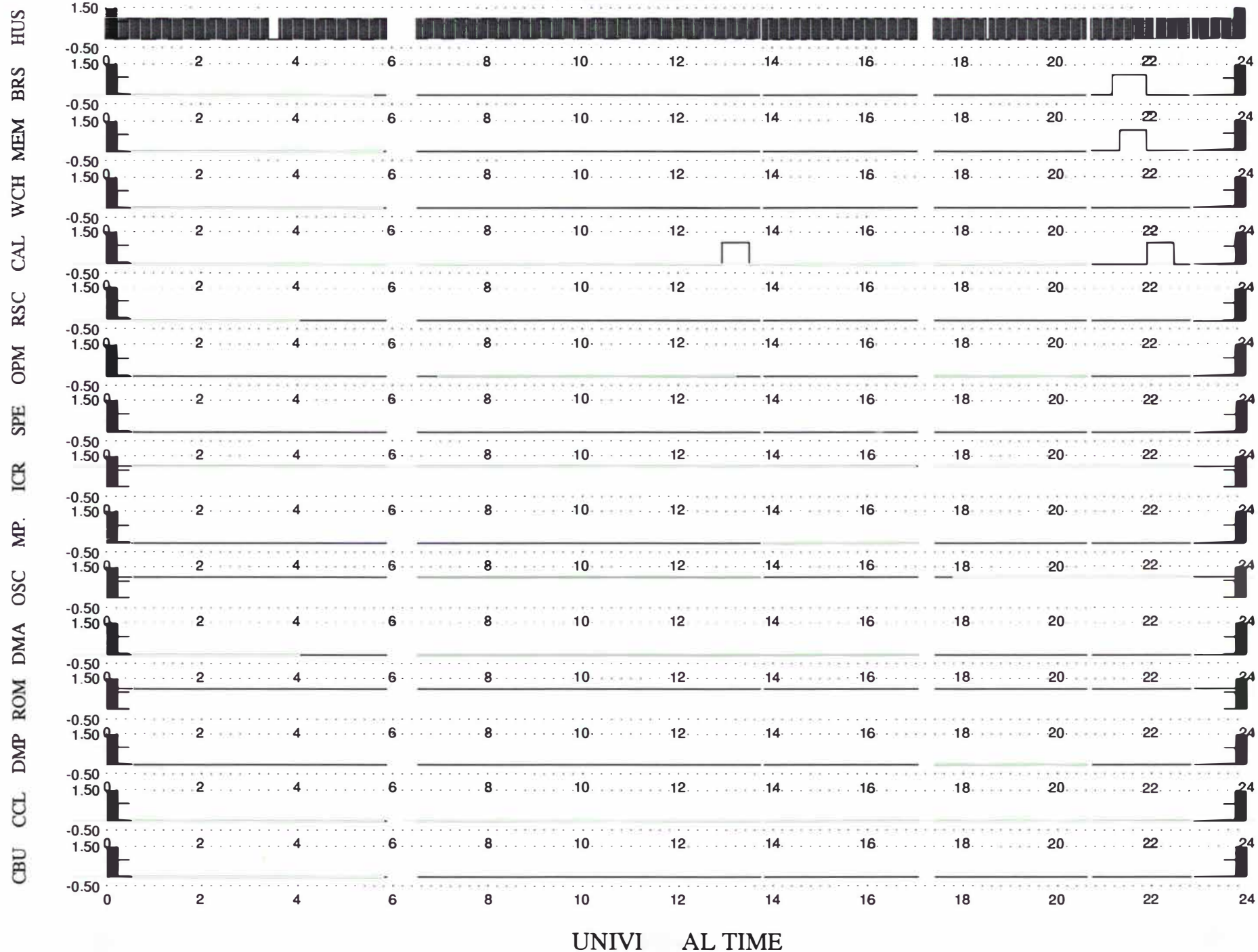


Current Time: 96/09/07, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

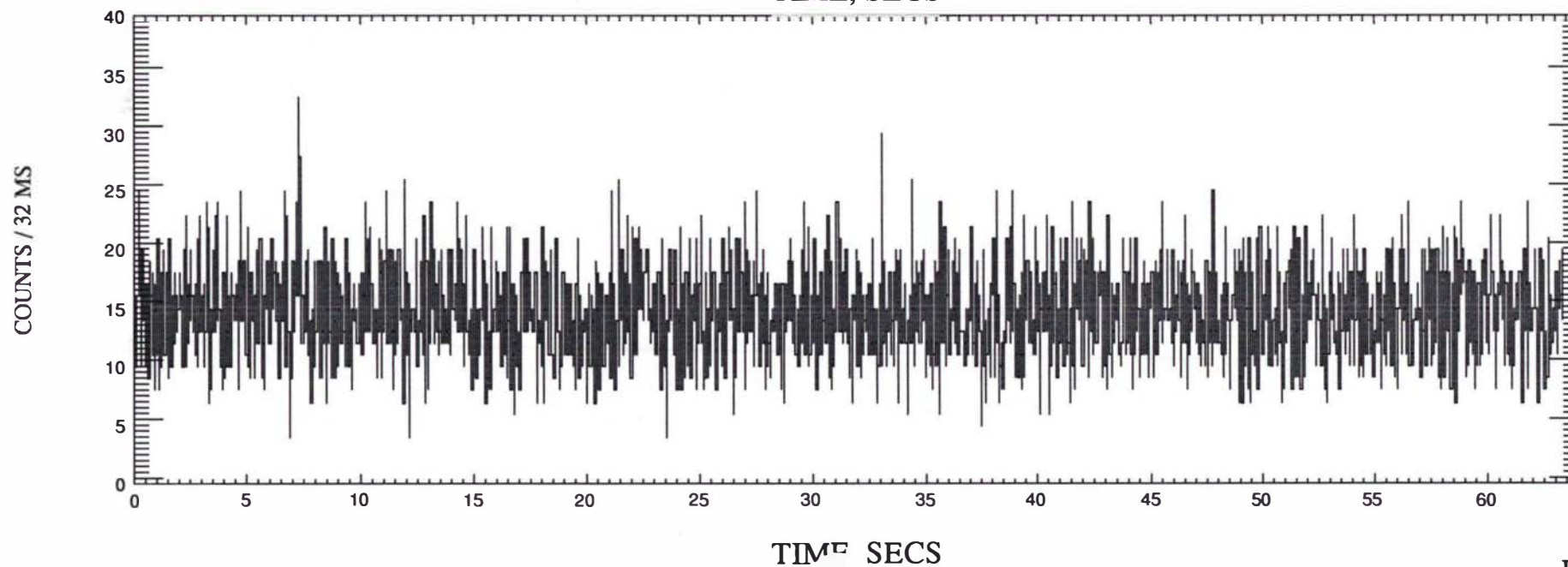
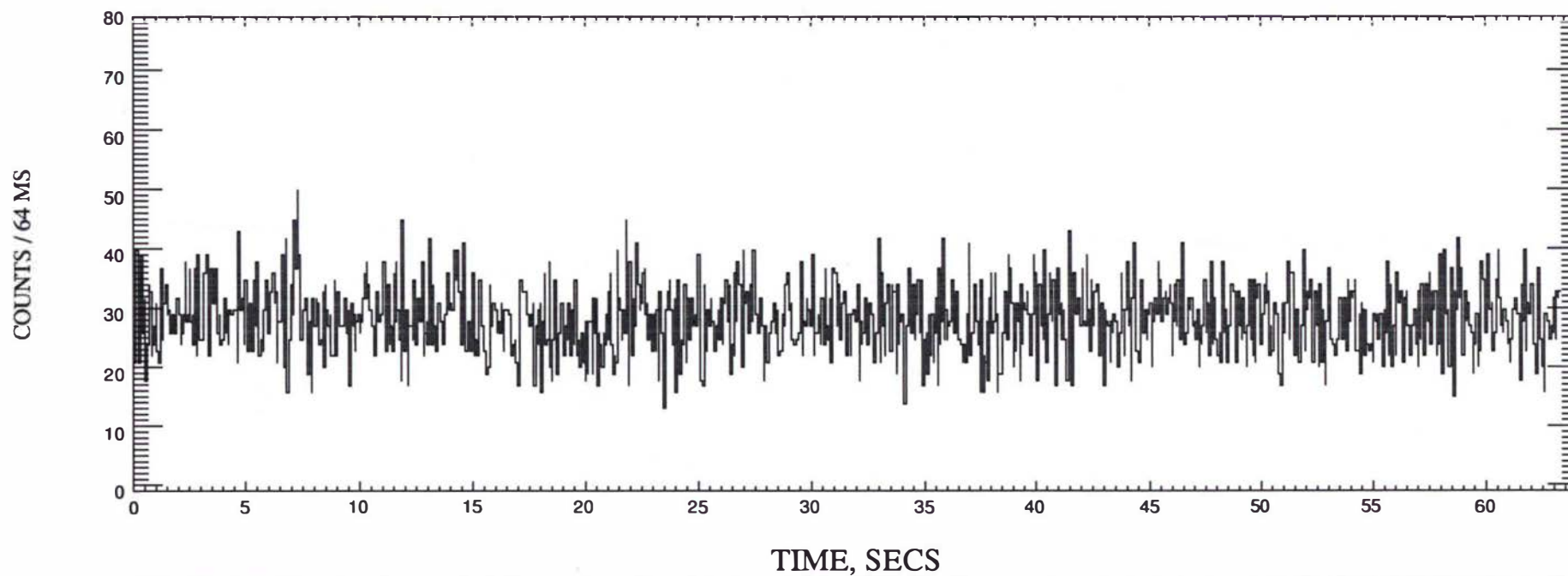
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

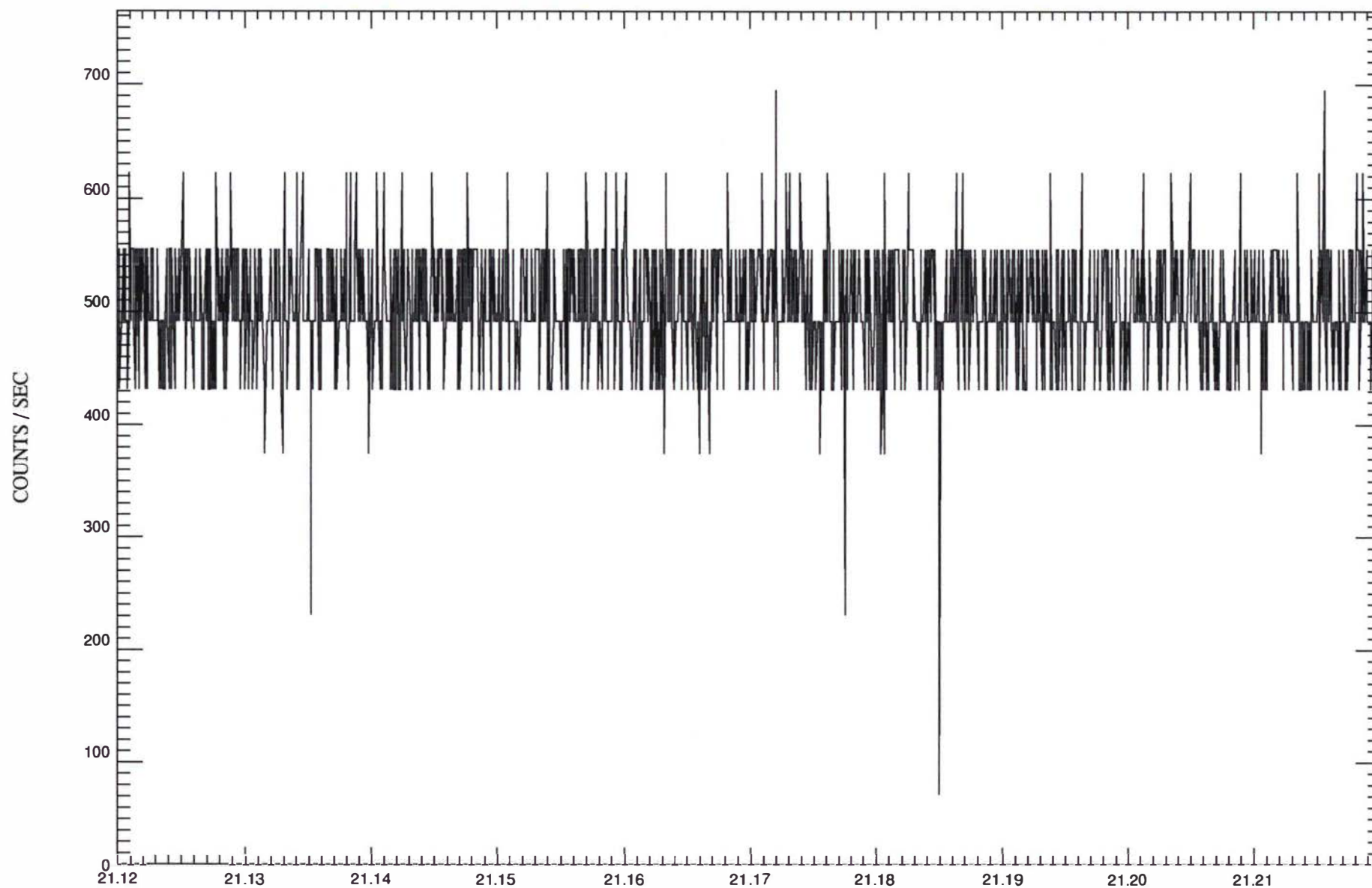
BURST NUMBER 10



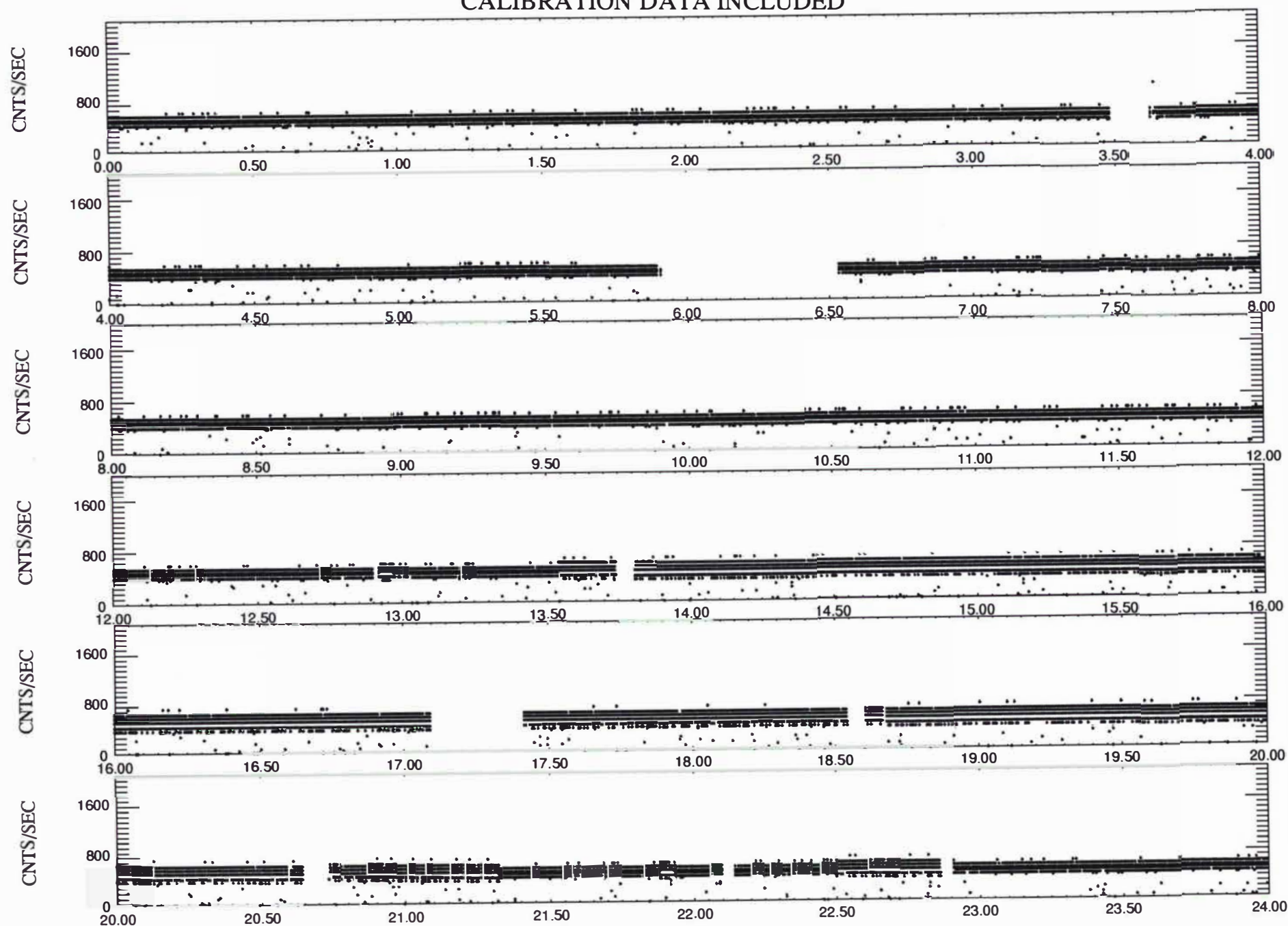
Burst Counter 10 at UT=21.172084562514 h=76219.504 s 21:10:19.504



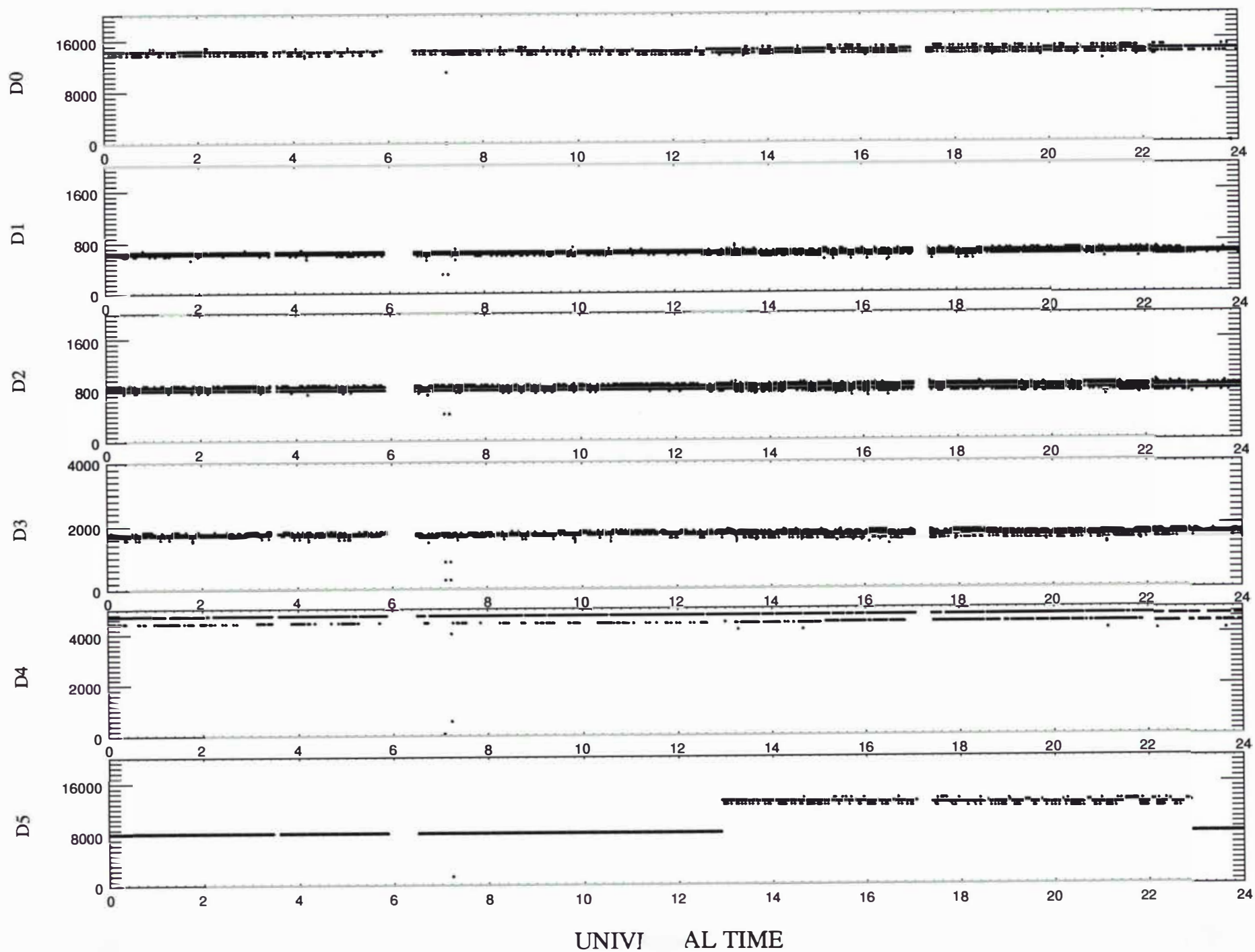
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV AL TIME



From HENZE@ssl.msfc.nasa.gov Mon Sep 9 14:51 PDT 1996
Date: Mon, 9 Sep 1996 16:50:35 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5592

ND

BATSEARCH PROGRAM

BATSE BURST # 5592
EVENT OF 1996 SEP 6 DAY OF YEAR=250
EVENT CROSSING TIME AT BATSE : 69336. S. OR 19:15:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 330.000 30.000
BATSE PEAK COUNTING RATE: 5600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 9/ 96 IS:
RA= 167.252 DEC= 36.006 DIST= 5.153 AU
BATSE-ULYSSES DISTANCE = 770817447. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 964.50 SECS.
CROSSING TIME AT ULYSSES IS 70301. S. OR 19:31:40 +/- 478.45 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 9/ 96 IS:
RA= 119.852 DEC= 21.529 DIST= 2.091 AU
MARS-BATSE DISTANCE = 312819040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 535.45 SECS.
CROSSING TIME AT MARS IS 69871. S. OR 19:24:31 +/- 163.62 SECONDS

BATSE BURST TRIGGER

NO.: 5592

TIME: TJD=0332 SECONDS=69336

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=047.5 AZIMUTH=131.5 ERROR=007.0 DEGREES

COMMENTS:

DOUBLE PULSE, DUR. ~0.35 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5592	960906	10332	69336	5600	330	+30	.35

BATSE #

5592

10 / 9 / 96

ULYSSES RT

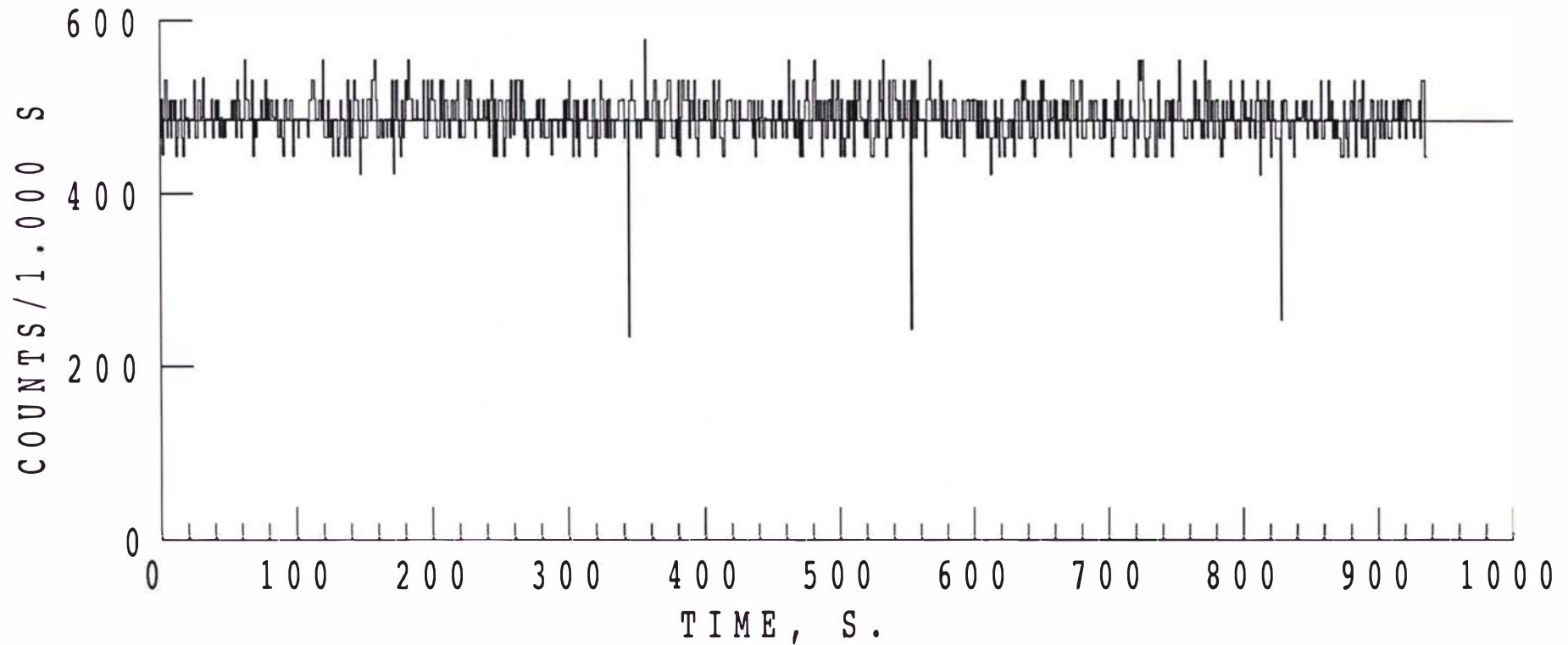
6 / 9 / 96 69840.078 s

0.500 S INTERVALS REGROUPED BY 2

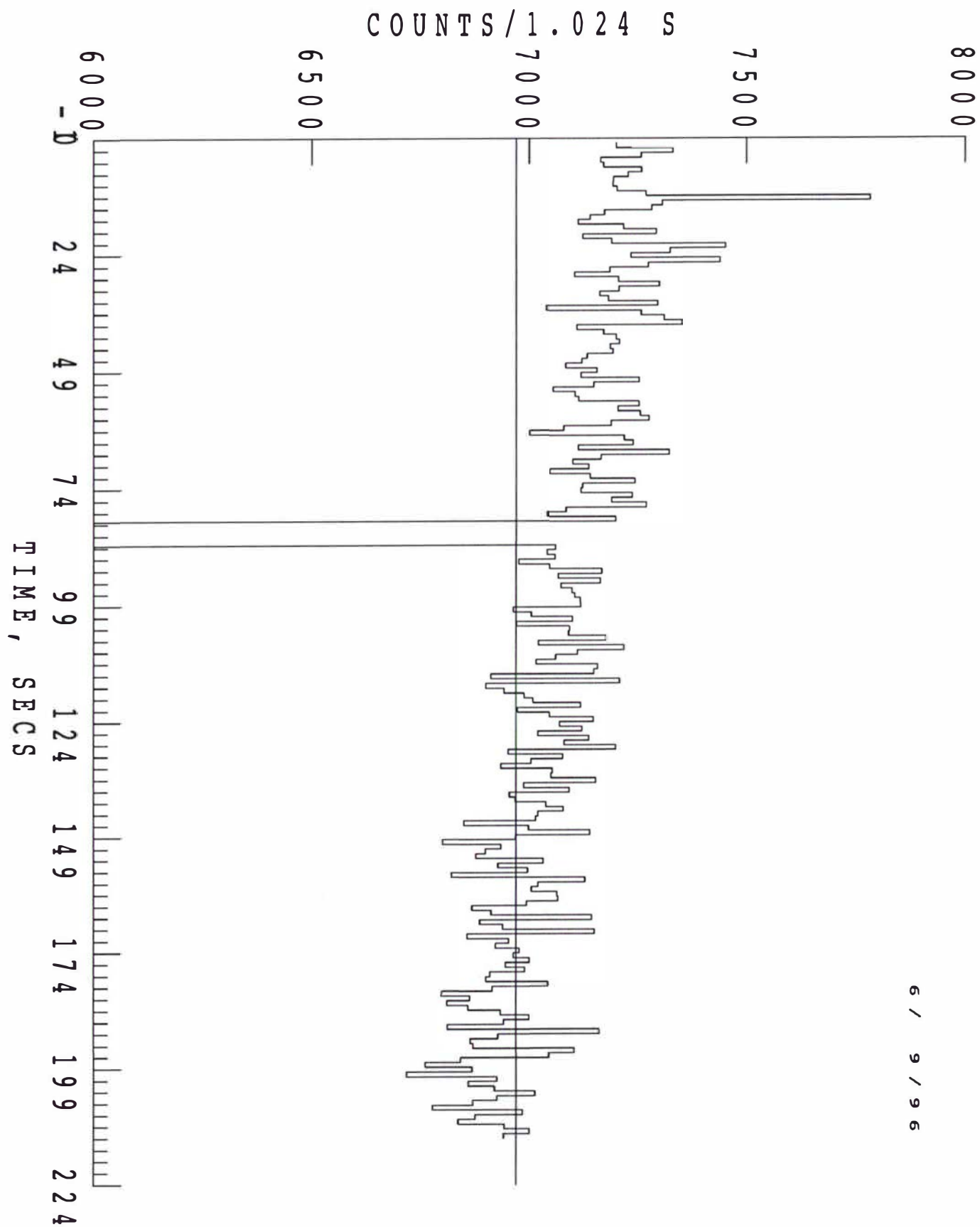
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BACODINE 5592 06/09/96 69324.489
25- 100 keV



From HENZE@ssl.msfc.nasa.gov Mon Sep 9 14:52 PDT 1996
Date: Mon, 9 Sep 1996 16:52:08 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5593

RI

BATSEARCH PROGRAM

BATSE BURST # 5593
EVENT OF 1996 SEP 6 DAY OF YEAR=250
EVENT CROSSING TIME AT BATSE : 81588. S. OR 22:39:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 65.000 -42.000
BATSE PEAK COUNTING RATE: 13000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 9/ 96 IS:
RA= 167.280 DEC= 35.989 DIST= 5.153 AU
BATSE-ULYSSES DISTANCE = 770847194. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1339.87 SECS.
CROSSING TIME AT ULYSSES IS 82928. S. OR 23:02:07 +/- 451.36 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 9/ 96 IS:
RA= 119.852 DEC= 21.529 DIST= 2.091 AU
MARS-BATSE DISTANCE = 312819040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -159.05 SECS.
CROSSING TIME AT MARS IS 81429. S. OR 22:37:08 +/- 176.63 SECONDS

BATSE BURST TRIGGER

NO.: 5593

TIME: TJD=0332 SECONDS=81588

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.1 AZIMUTH=230.1 ERROR=000.8 DEGREES

COMMENTS:

SINGLE PULSE WITH SUBSTRUCTURE. TOTAL DUR. ~40 S.
VISIBLE ABOVE 300 KEV.
POSSIBLE SUCCESSOR EMISSION AT ~T+90 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5593	960906	10332	81588	13000	065	-42	40

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	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 + 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

Date: Mar 16 '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

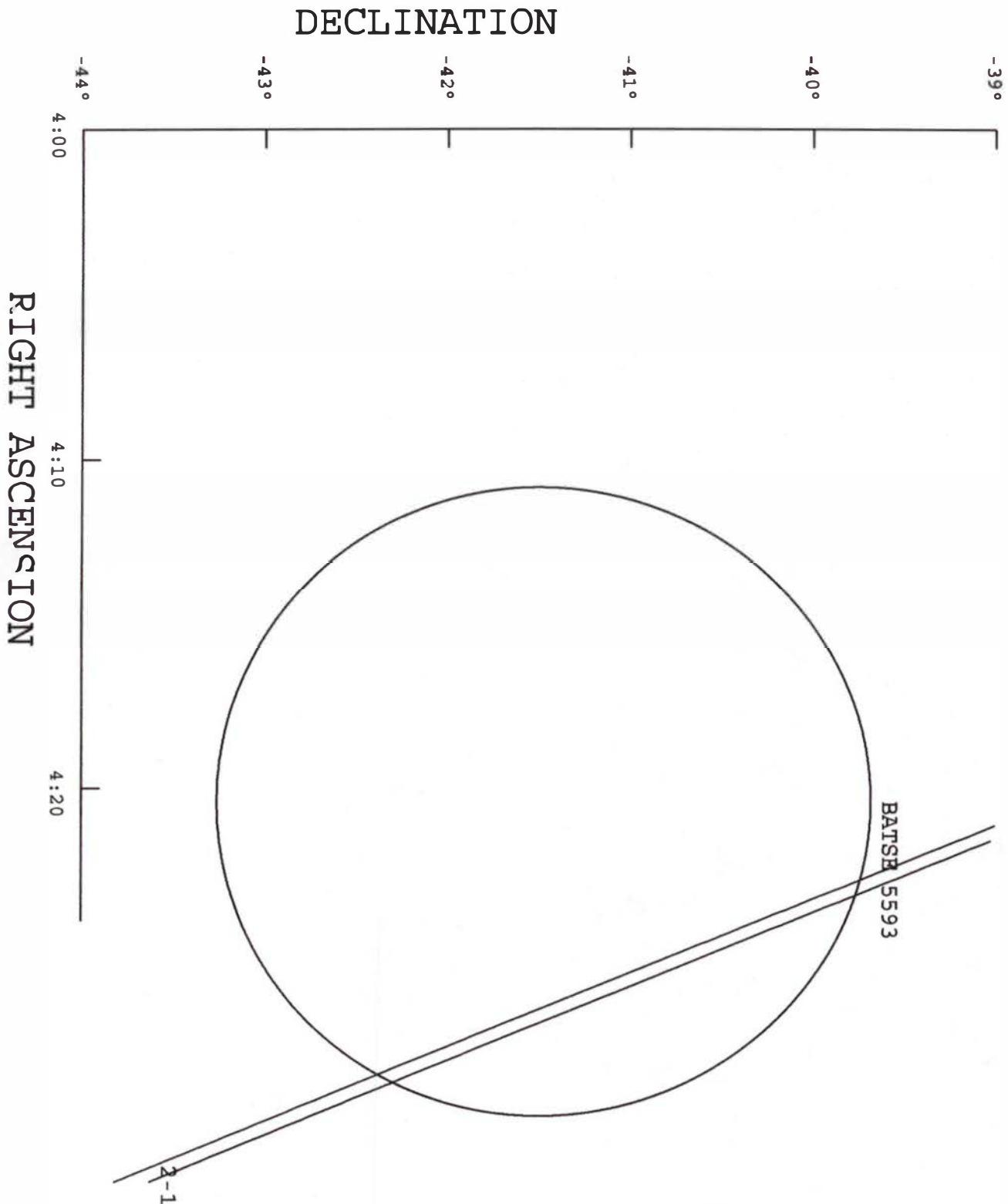
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF SEP 6, 1996 23:00

16/ 3/98



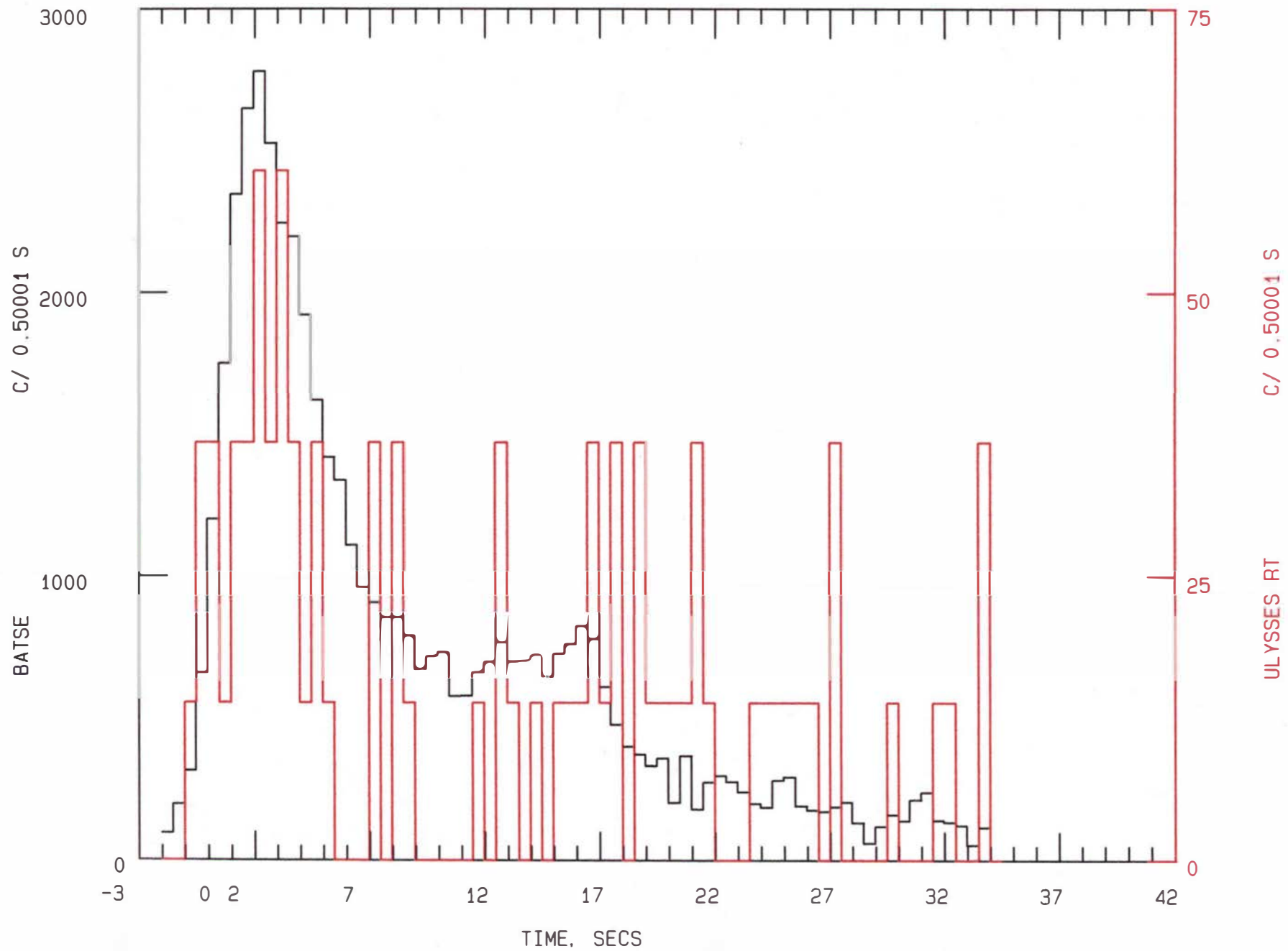
BATSE

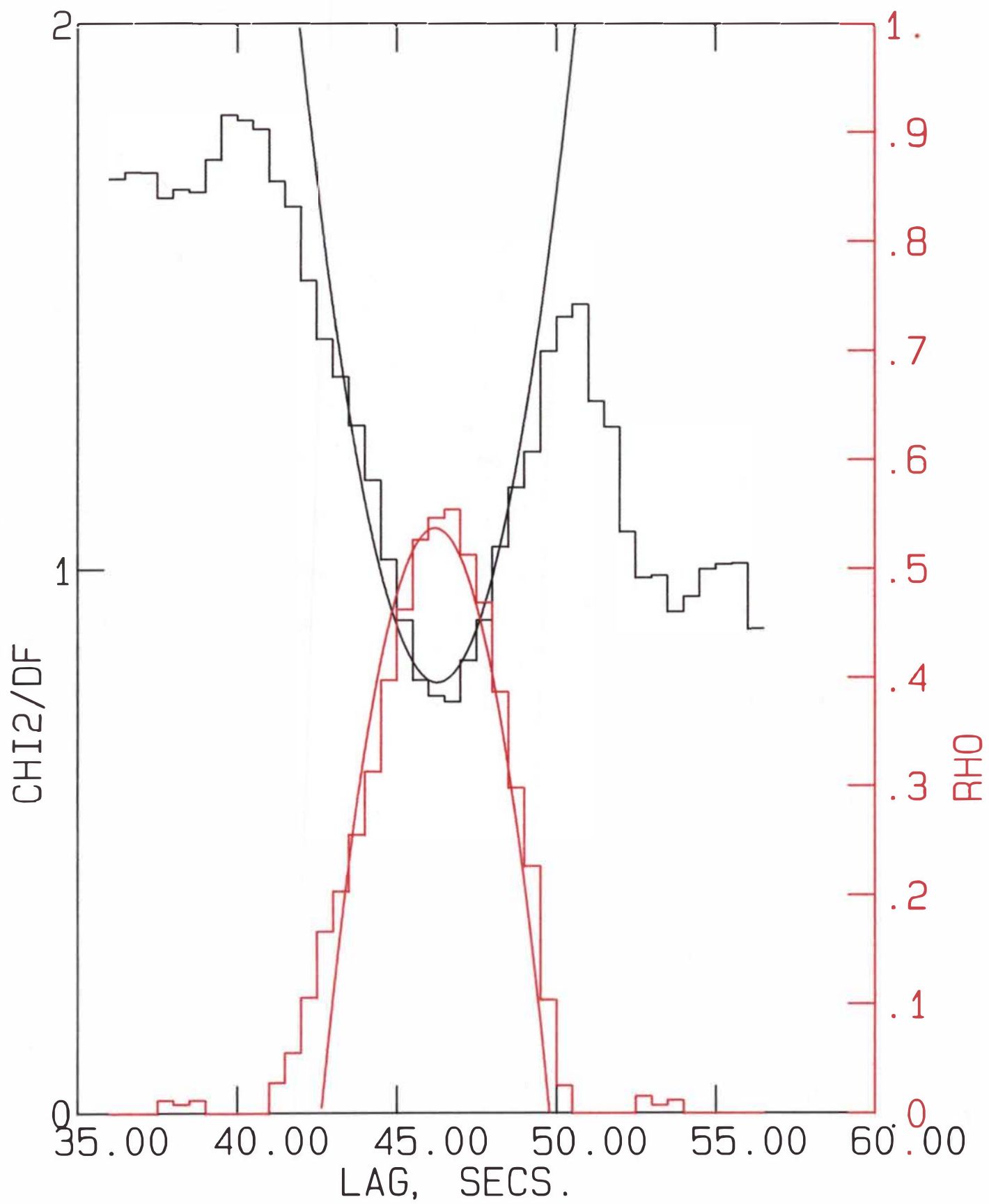
-ULYSSES RT CORRELATION

6/ 9/96

81588.938

16/ 3/98





ULYSSES RT

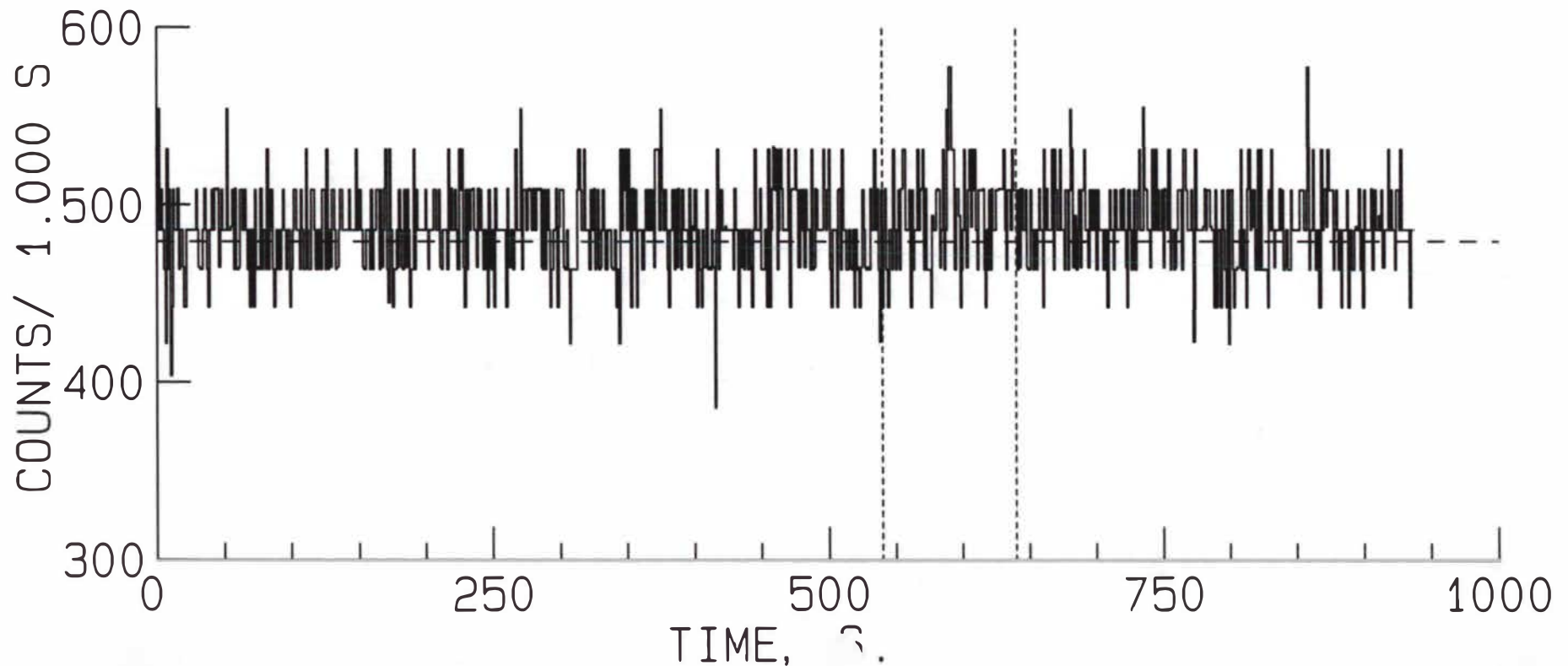
16 / 3 / 98

6 / 9 / 96 82296.240 s

0.500 S INTERVALS REGROUPED BY 2

21- 146 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE

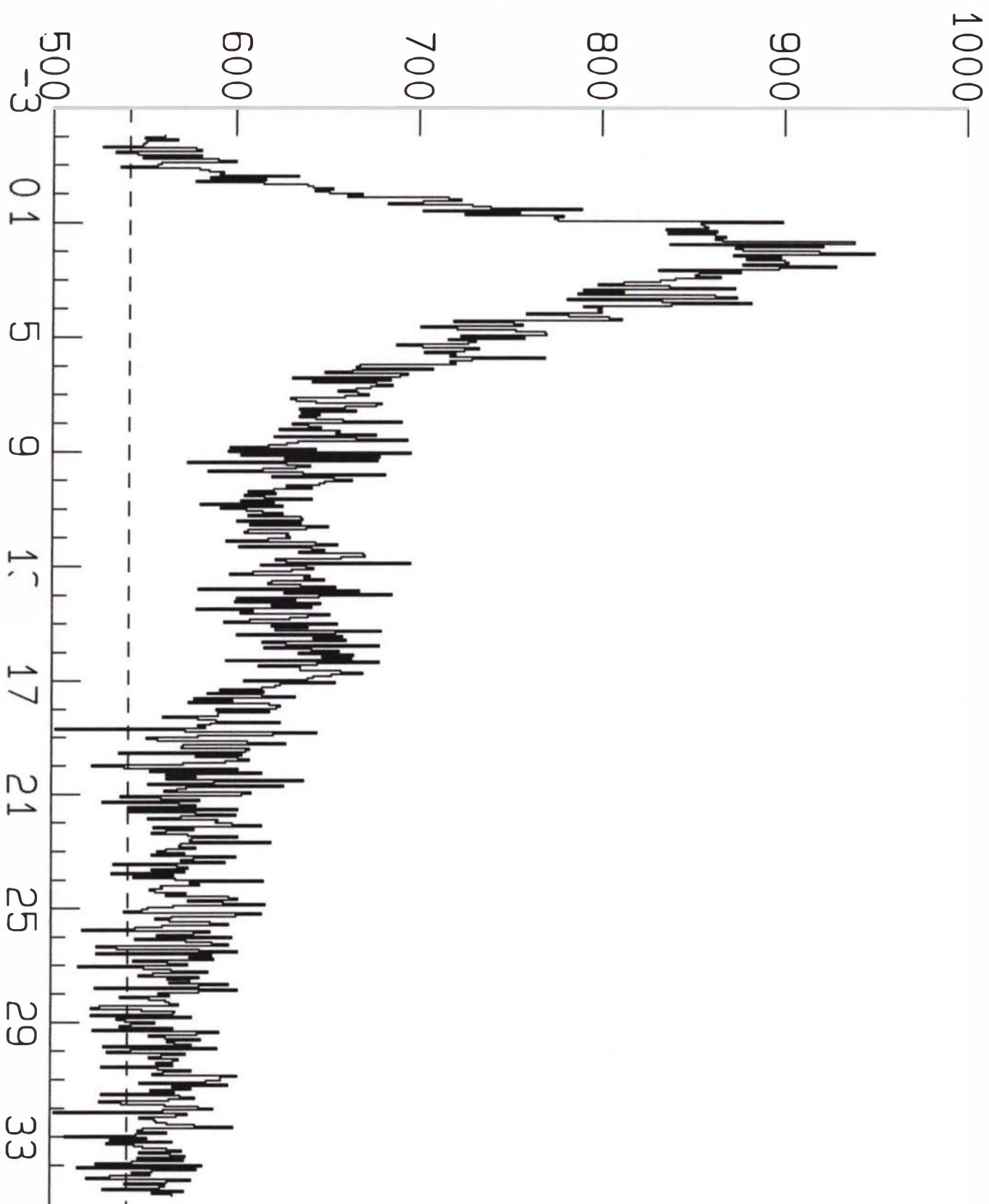
06/09/96

81588.938

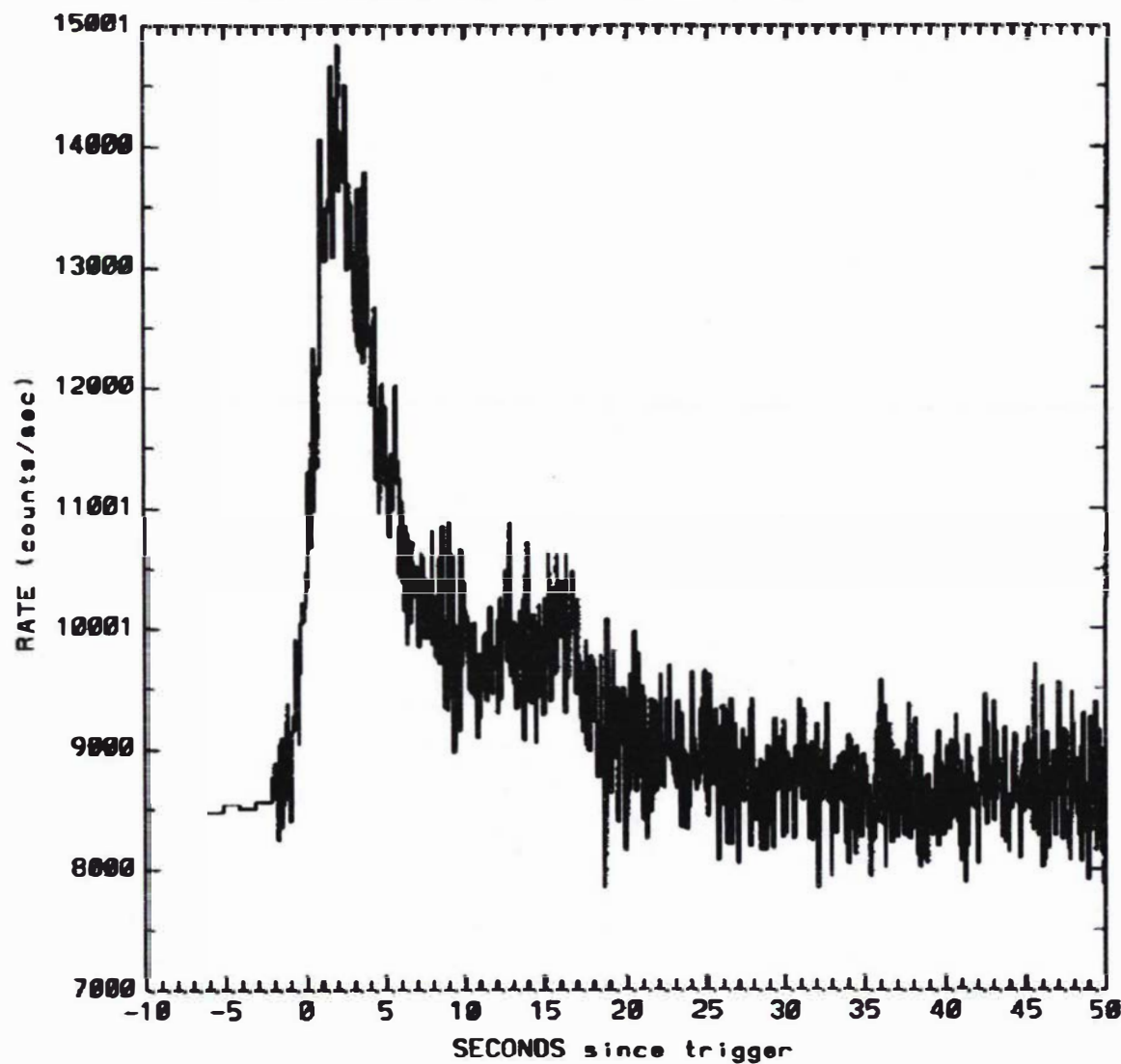
25- 100 keV

COUNTS/0.064 S

28 / 9/96



DISCSC Data for K. Hurley. No. 5593



16-SEP-1996 09:34.01

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

Trigger * . 5593

Trigger Time:
10332 / 01500.938

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

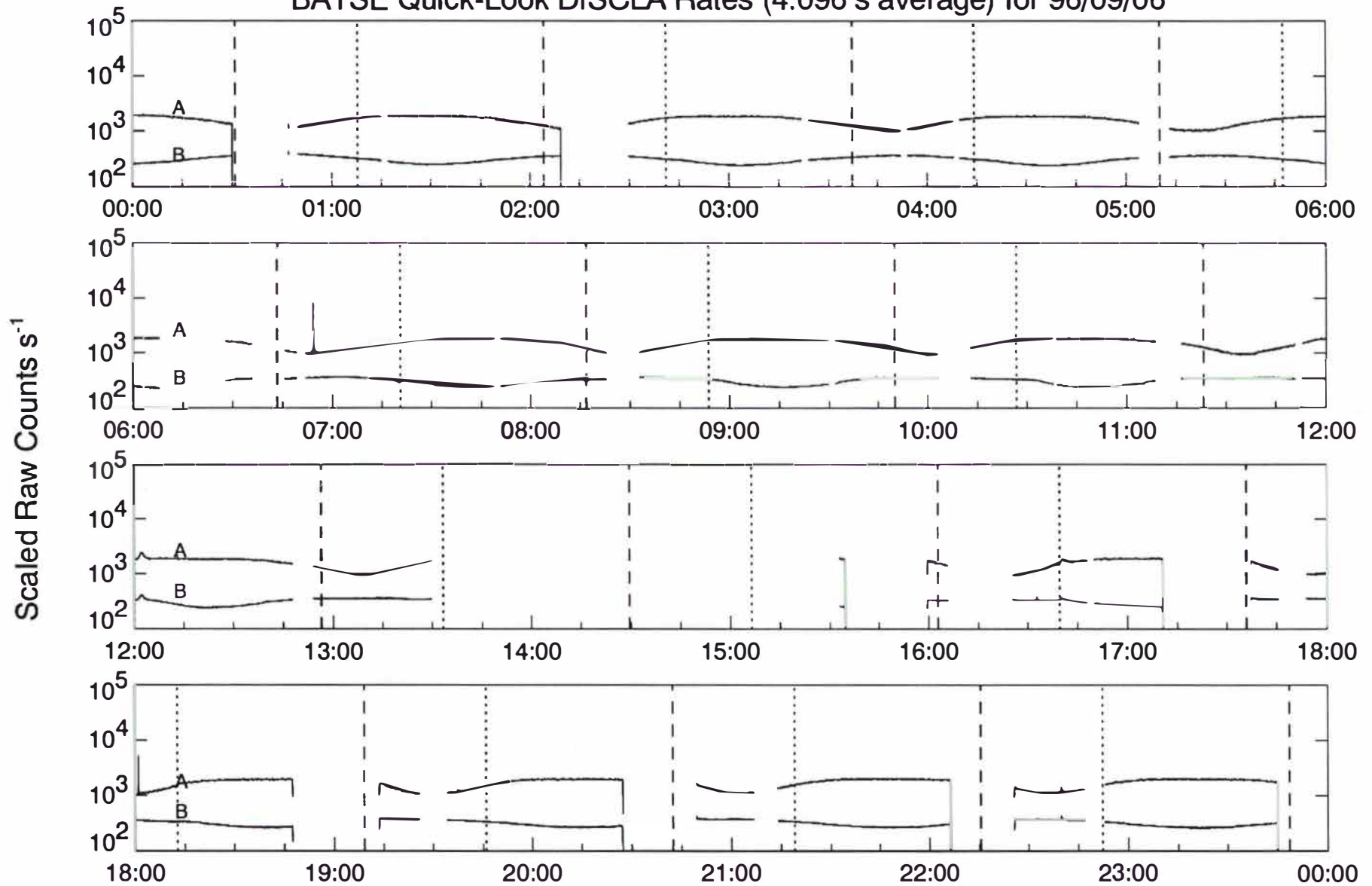
Minimum Integ. Time:
0.064 seconds

Detectors (7..0).
76--3---

Discriminators:
(1 . 2)

Quality Mask:
001SP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/06



Current Time: 96/09/08, 1003 EDT

A: Channel 0 Most Sunward LAD

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

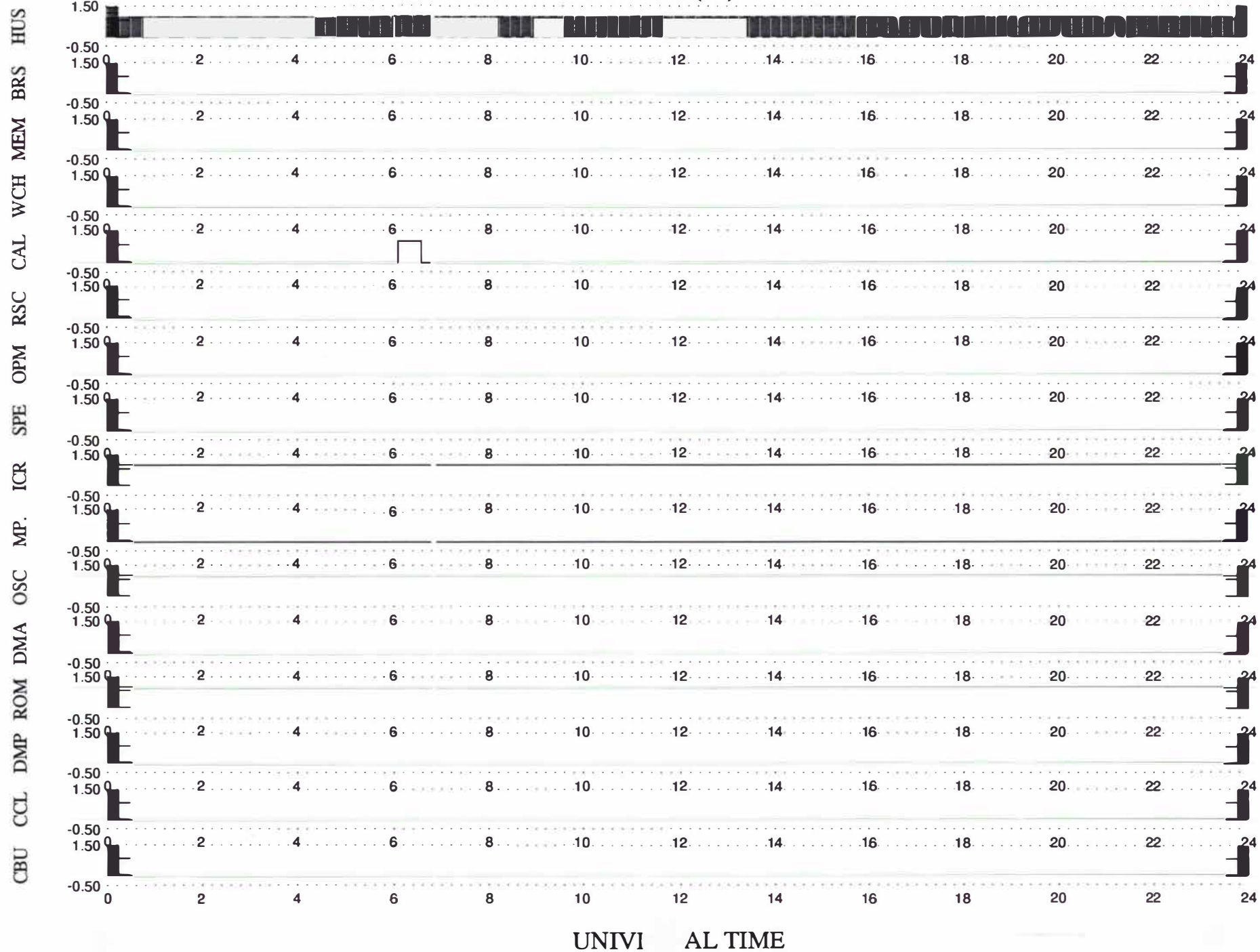
Dotted line: Day entry

Dashed line: Night entry

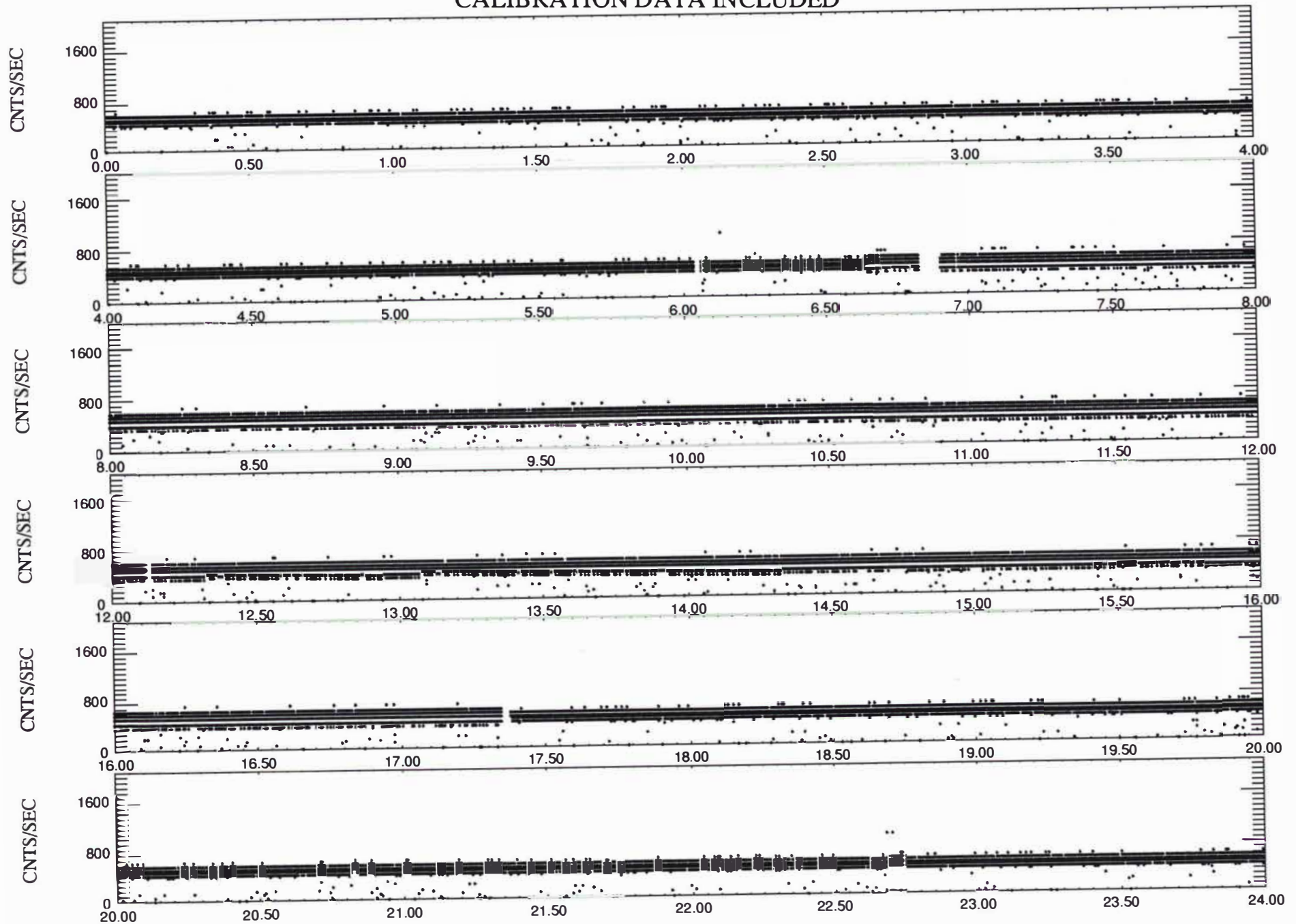
* Solar Burst Trigger

+ Solar Flare

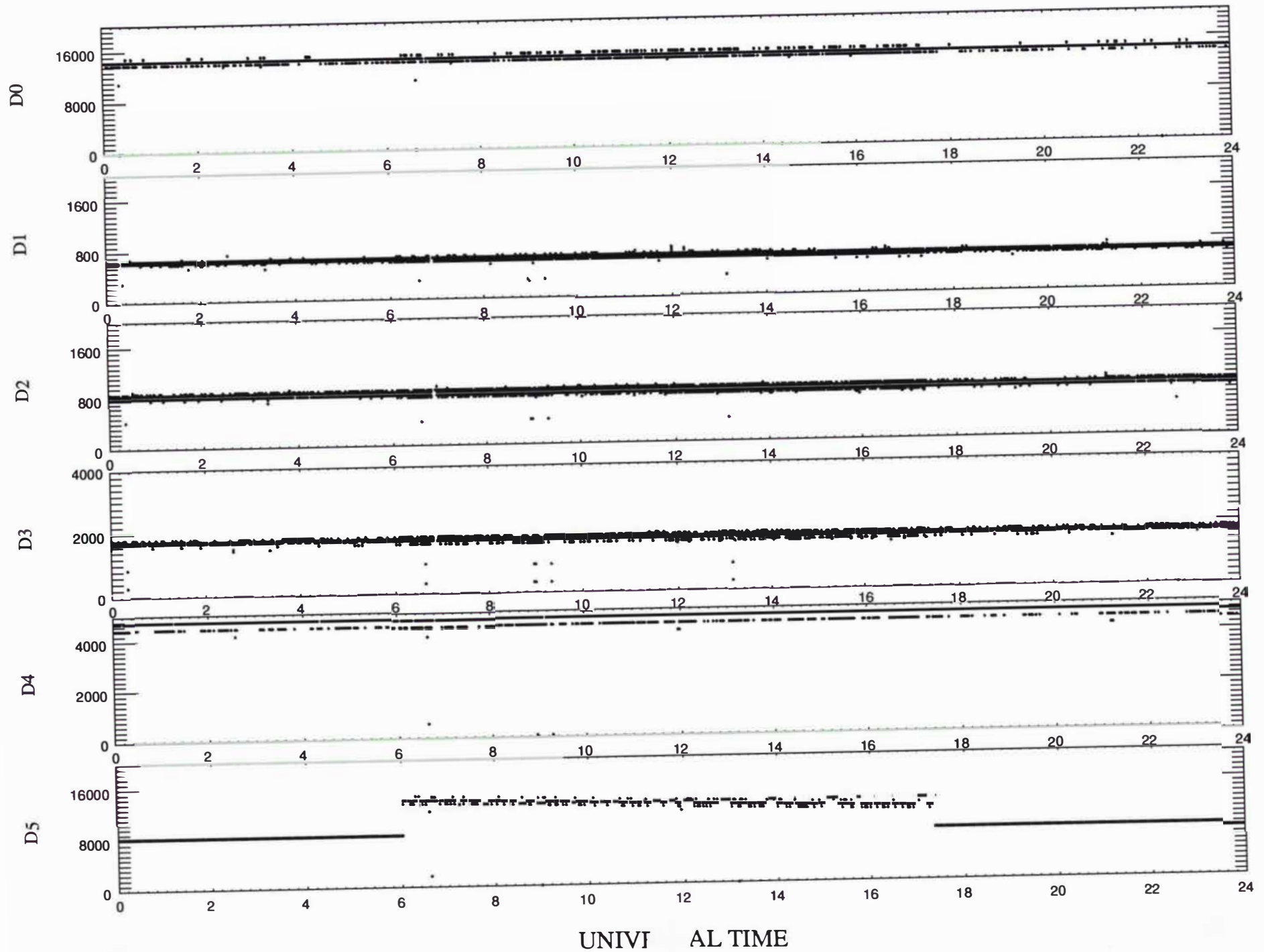
NO BURST (10)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From DEAL@fender.msfc.nasa.gov Tue Sep 10 06:29 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 10 Sep 1996 8:29:37 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5594

RI

BATSEARCH PROGRAM

BATSE BURST # 5594
EVENT OF 1996 SEP 7 DAY OF YEAR=251
EVENT CROSSING TIME AT BATSE : 24611. S. OR 06:50:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 144.000 50.000
BATSE PEAK COUNTING RATE: 2700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 9/ 96 IS:
RA= 167.347 DEC= 35.94 DIST= 5.153 AU
BATSE-ULYSSES DISTANCE = 770909469. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=158.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2384.96 SECS.
CROSSING TIME AT ULYSSES IS 22226. S. OR 06:10:26 +/- 180.71 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 9/ 96 IS:
RA= 120.519 DEC= 21.414 DIST= 2.086 AU
MARS-BATSE DISTANCE = 312040000. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=145.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -862.39 SECS.
CROSSING TIME AT MARS IS 23749. S. OR 06:35:48 +/- 88.09 SECONDS

BATSE BURST TRIGGER

NO.: 5594

TIME: TJD=0333 SECONDS=24611

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=54.6 AZIMUTH=332.6 ERROR=3.7 DEGREES

COMMENTS:

GRB LASTING ~ 15 S. SINGLE PULSE. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5594	960907	10333	24611	2700	144	+50	15

Date: Mar 16 '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

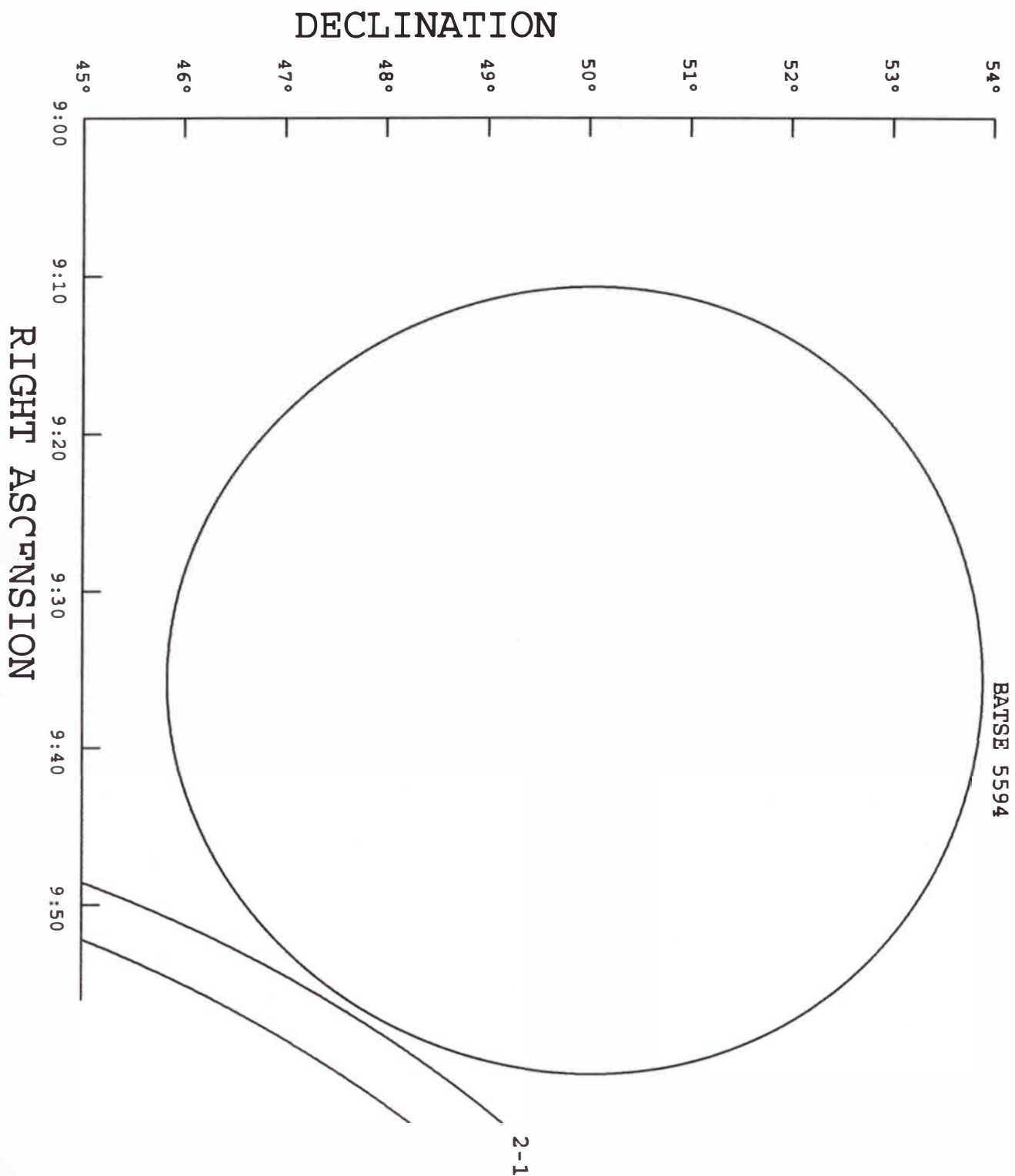
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF SEP 7, 1996 6:08

16/ 3/98



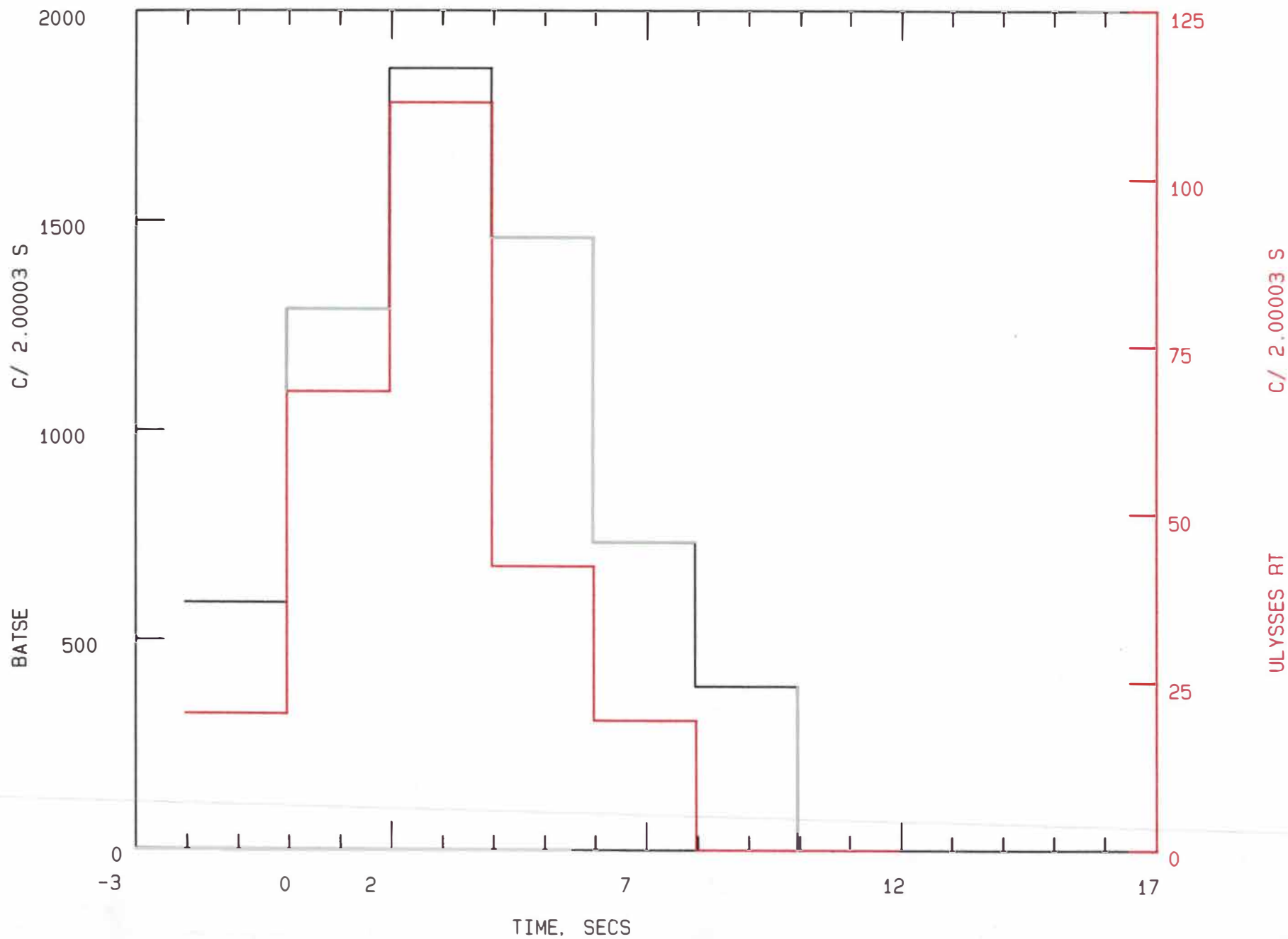
BATSE

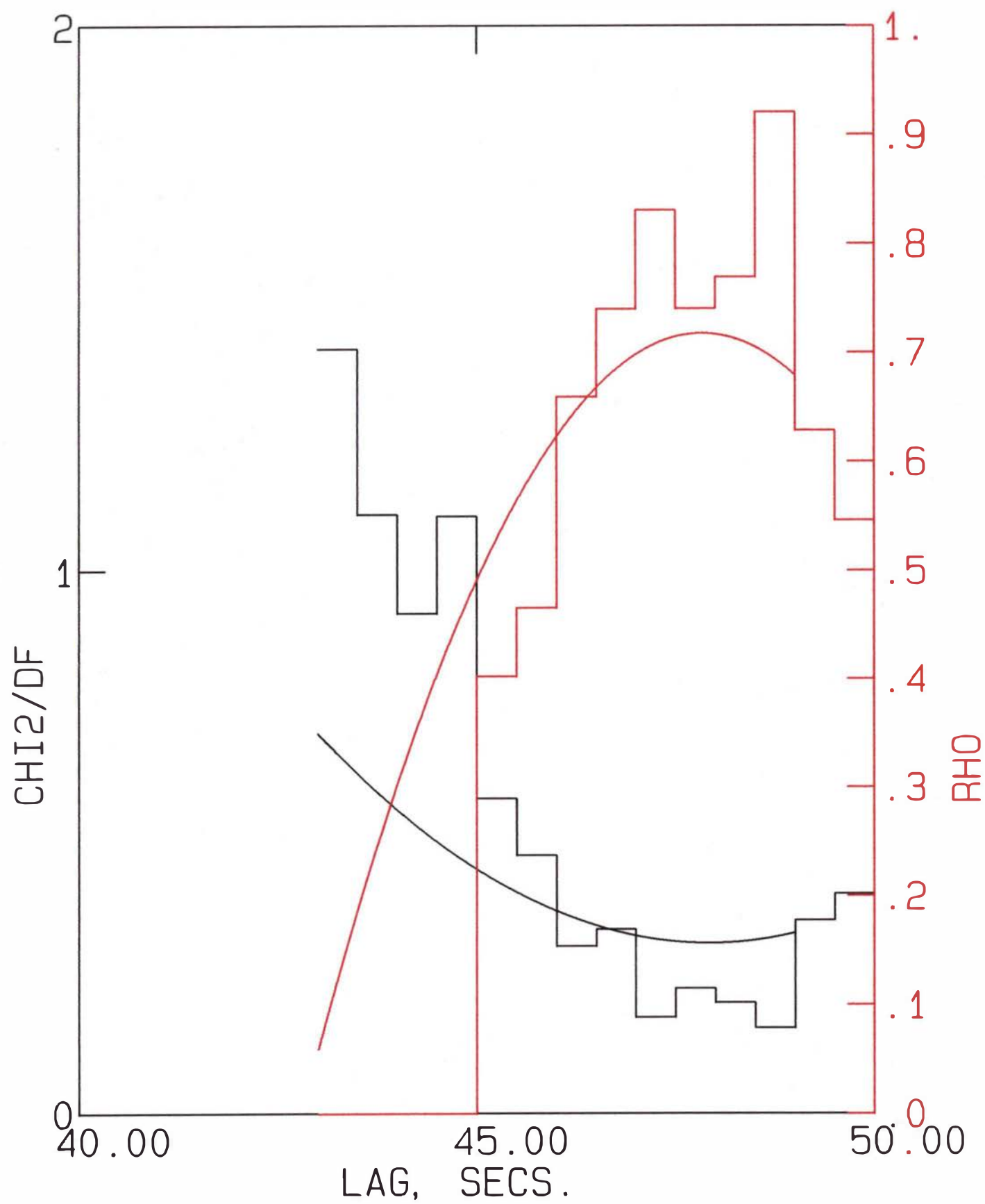
-ULYSSES RT CORRELATION

7/ 9/96

24611.273

16/ 3/98





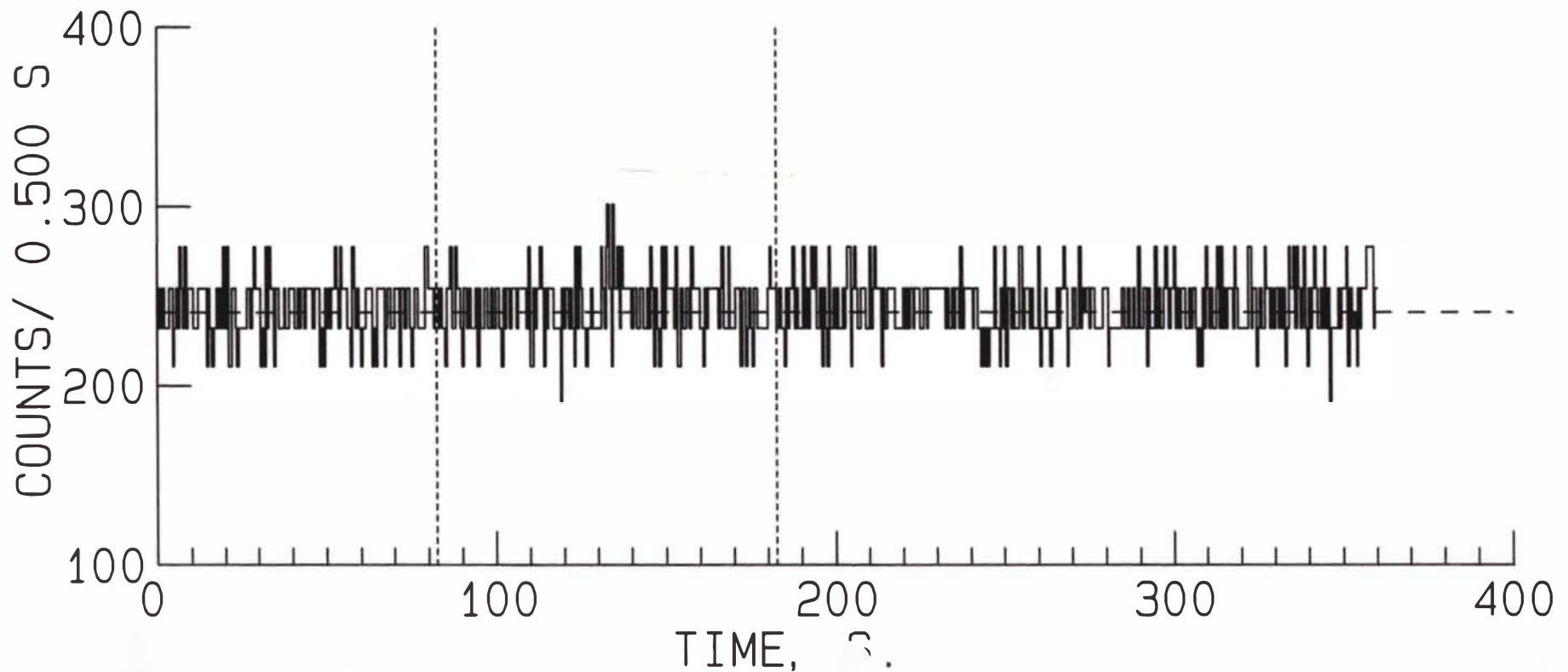
ULYSSES RT

16 / 3 / 98

7 / 9 / 96 22032.071 s

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



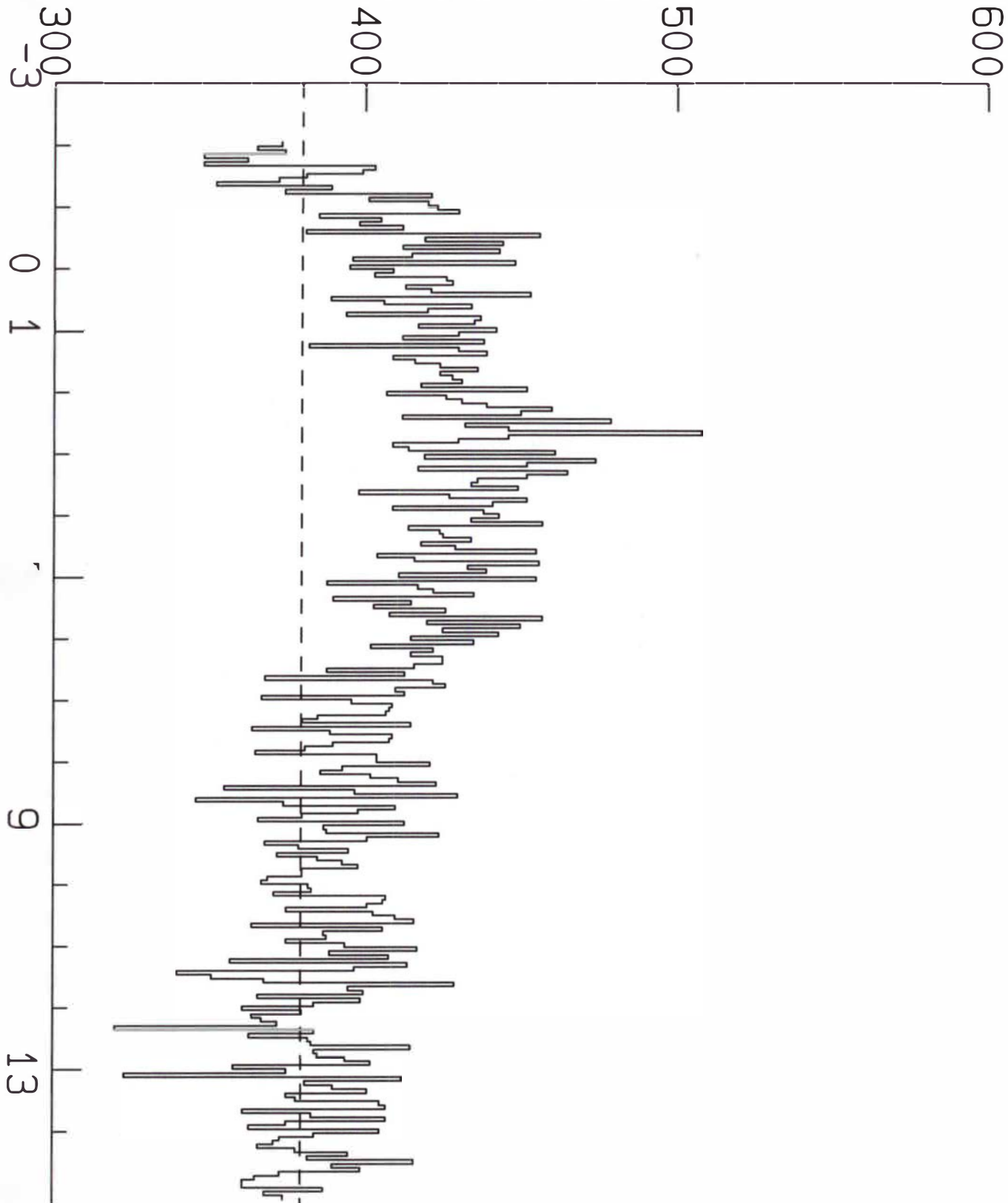
BATSE

07/09/96

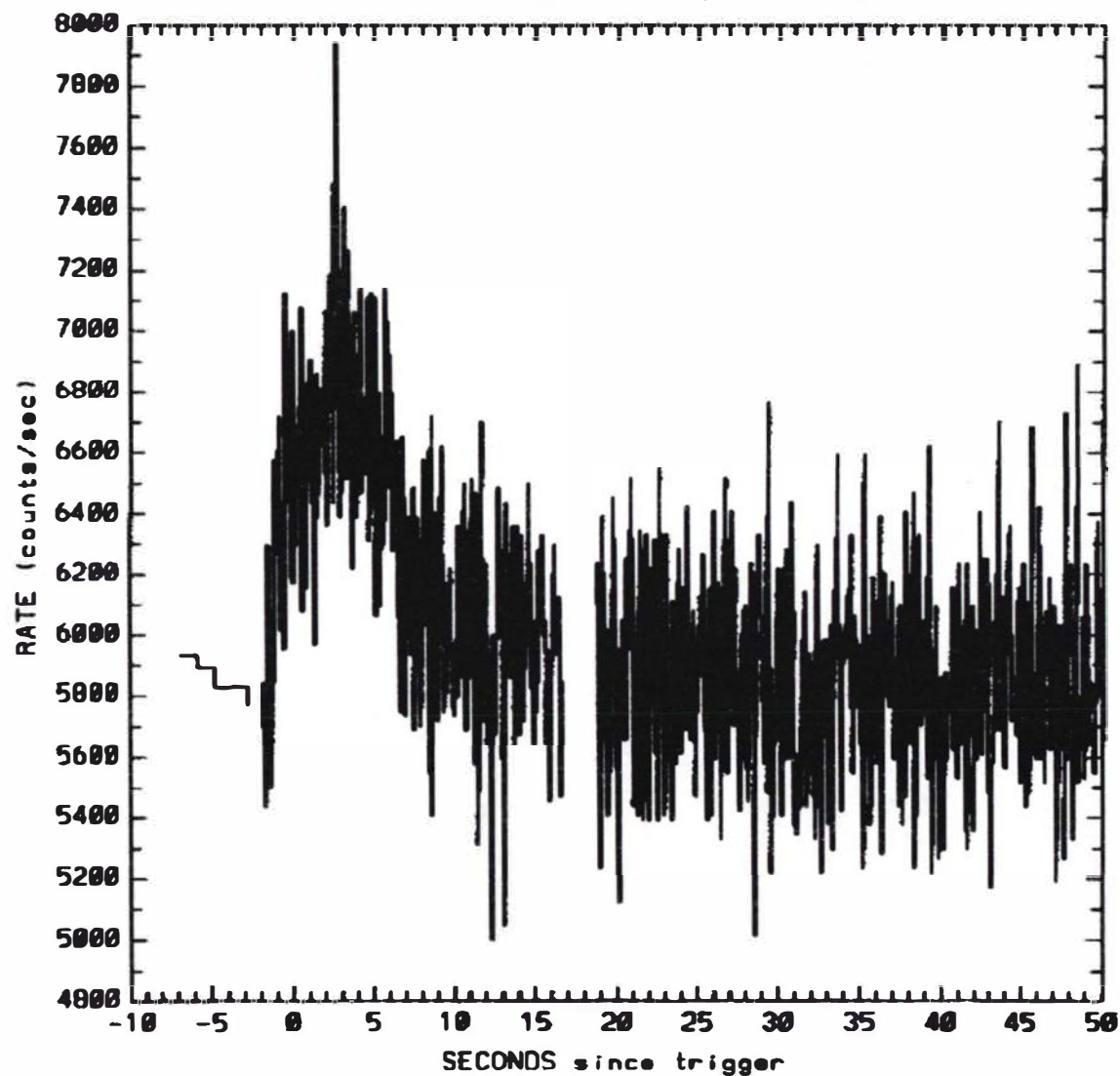
24611.273

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5594



16-SEP-1996 09:38:03

Created by NOPS 80
(Burst Display)
Version 12.25

Trigger # : 5594

Trigger Time:
18333 / 24611.274

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

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

Discriminators:
[f . 2]

Quality Mask:
BDISP1

From DEAL@fender.msfc.nasa.gov Tue Sep 10 06:31 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 10 Sep 1996 8:31:04 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5595

ND

BATSEARCH PROGRAM

BATSE BURST # 5595
EVENT OF 1996 SEP 7 DAY OF YEAR=251
EVENT CROSSING TIME AT BATSE : 28714. S. OR 07:58:34.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 320.000 -5.000
BATSE PEAK COUNTING RATE: 8500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 9/ 96 IS:
RA= 167.356 DEC= 35.942 DIST= 5.153 AU
BATSE-ULYSSES DISTANCE = 770917886. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 39.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1973.62 SECS.
CROSSING TIME AT ULYSSES IS 30688. S. OR 08:31:27 +/- 366.17 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 9/ 96 IS:
RA= 120.519 DEC= 21.414 DIST= 2.086 AU
MARS-BATSE DISTANCE = 312040000. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 25.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 943.17 SECS.
CROSSING TIME AT MARS IS 29657. S. OR 08:14:17 +/- 90.75 SECONDS

BATSE BURST TRIGGER

NO.: 5595

TIME: TJD=0333 SECONDS=28714

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.9 AZIMUTH=134.5 ERROR=5.5 DEGREES

COMMENTS:

GRB, DOUBLE PEAKED, LASTING ~ 2.5 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5595	960907	10333	28714	8500	320	-05	2.5

BATSE #

5595

10 / 9 / 96

ULYSSES RT

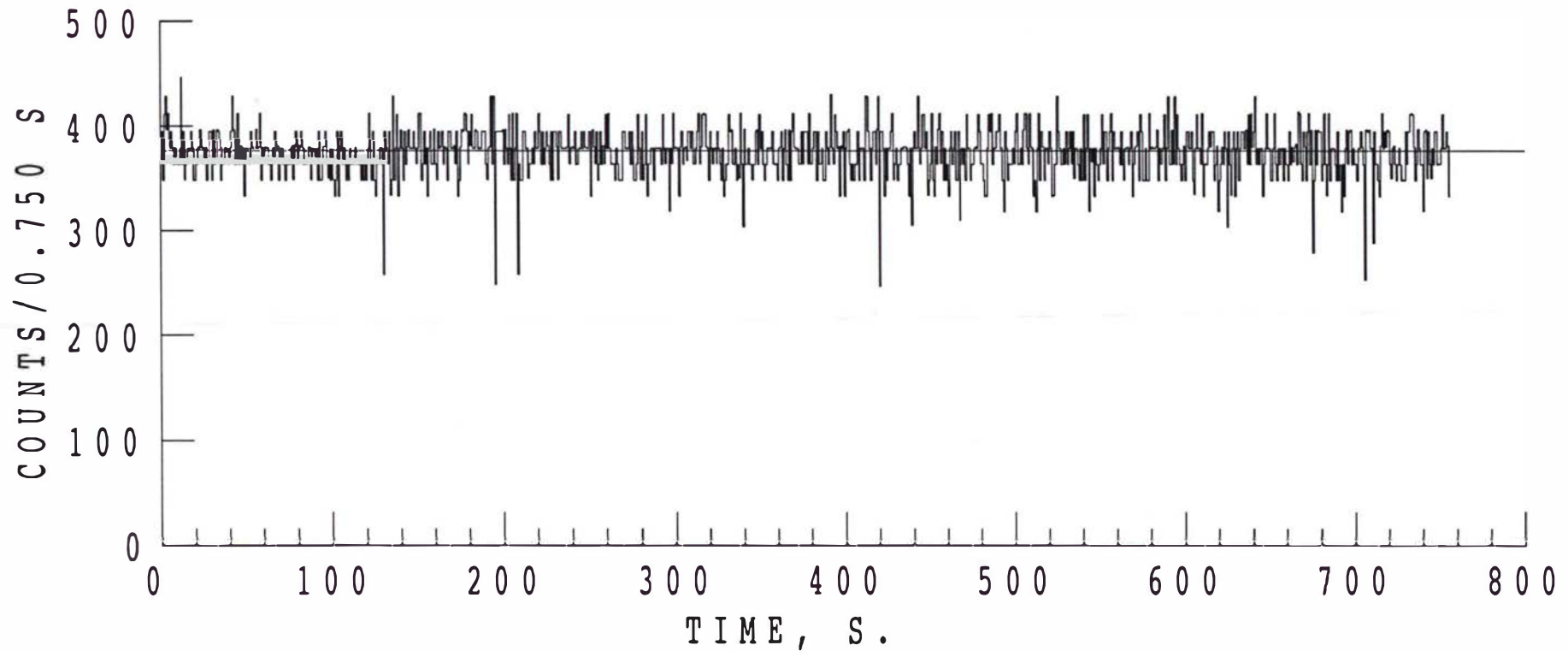
7 / 9 / 96 30312.180 s

0.250 S INTERVALS REGROUPED BY 3

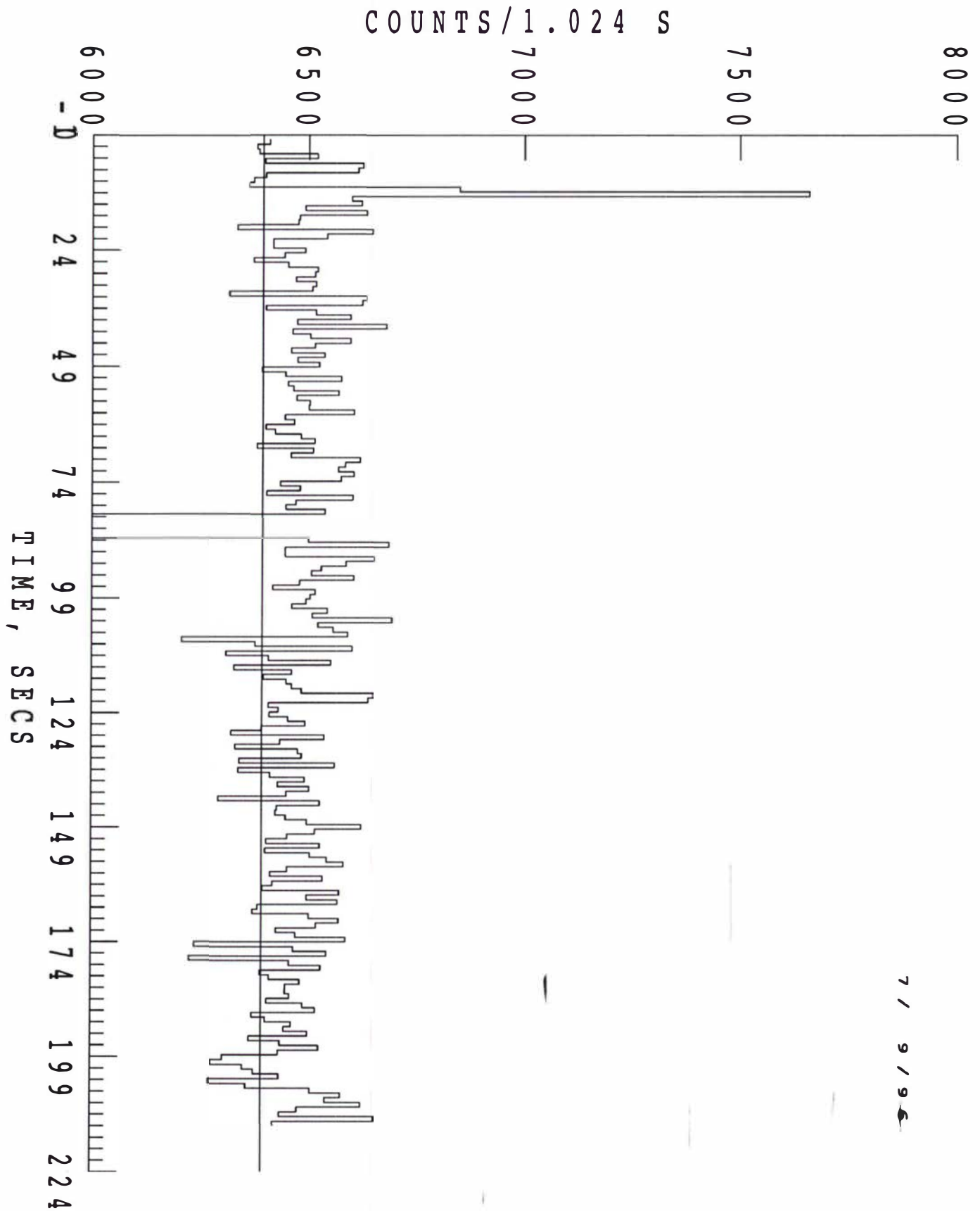
0 - 0 keV

W= 10 M= 2

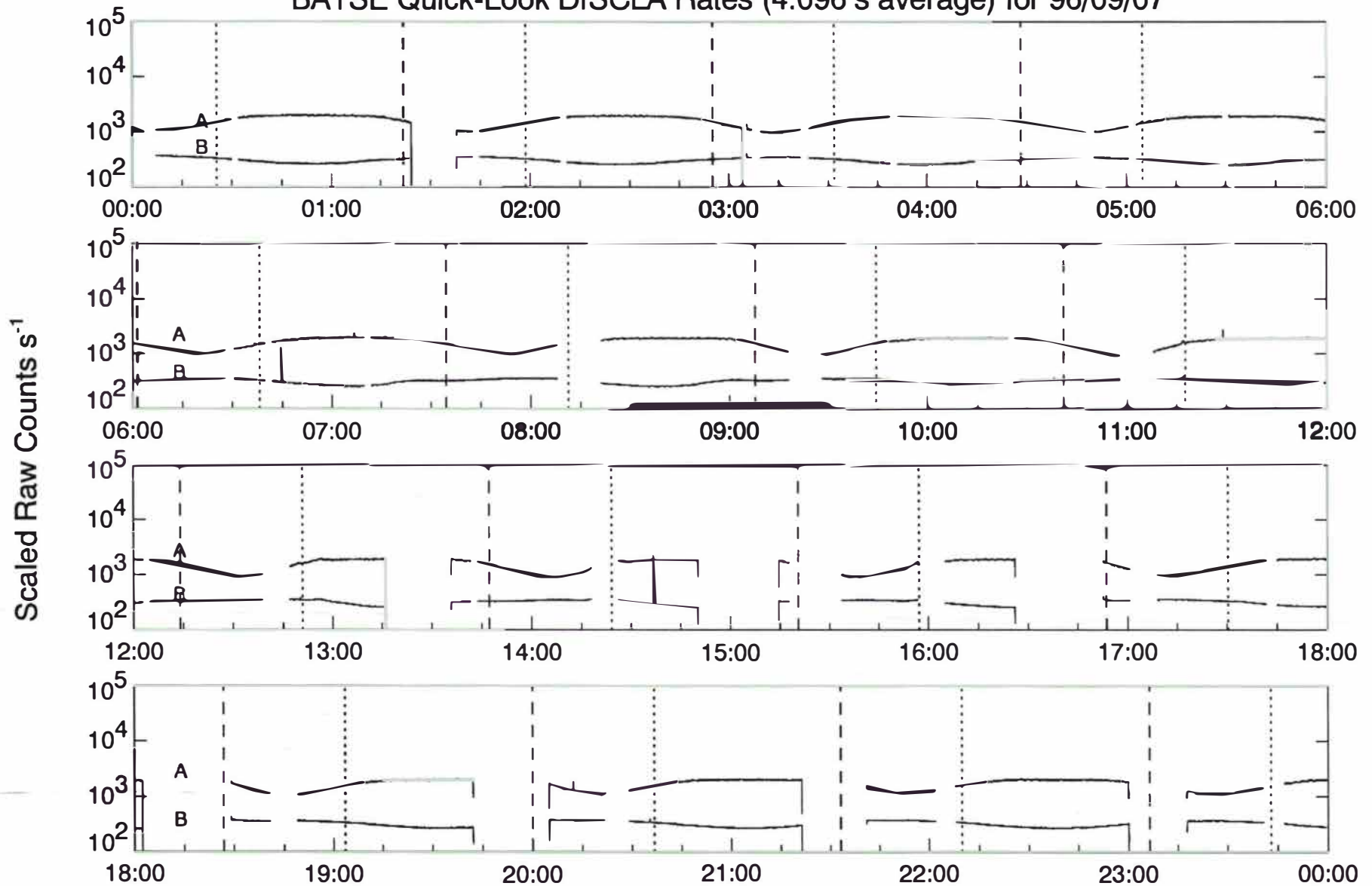
>4.0 SIGMA FLUCTUATIONS



BACODINE 5595 07/09/96 28703.433
25 - 100 keV



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



Current Time: 96/09/09, 1004 EDT

A: Channel 0 Most Sunward LAD

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

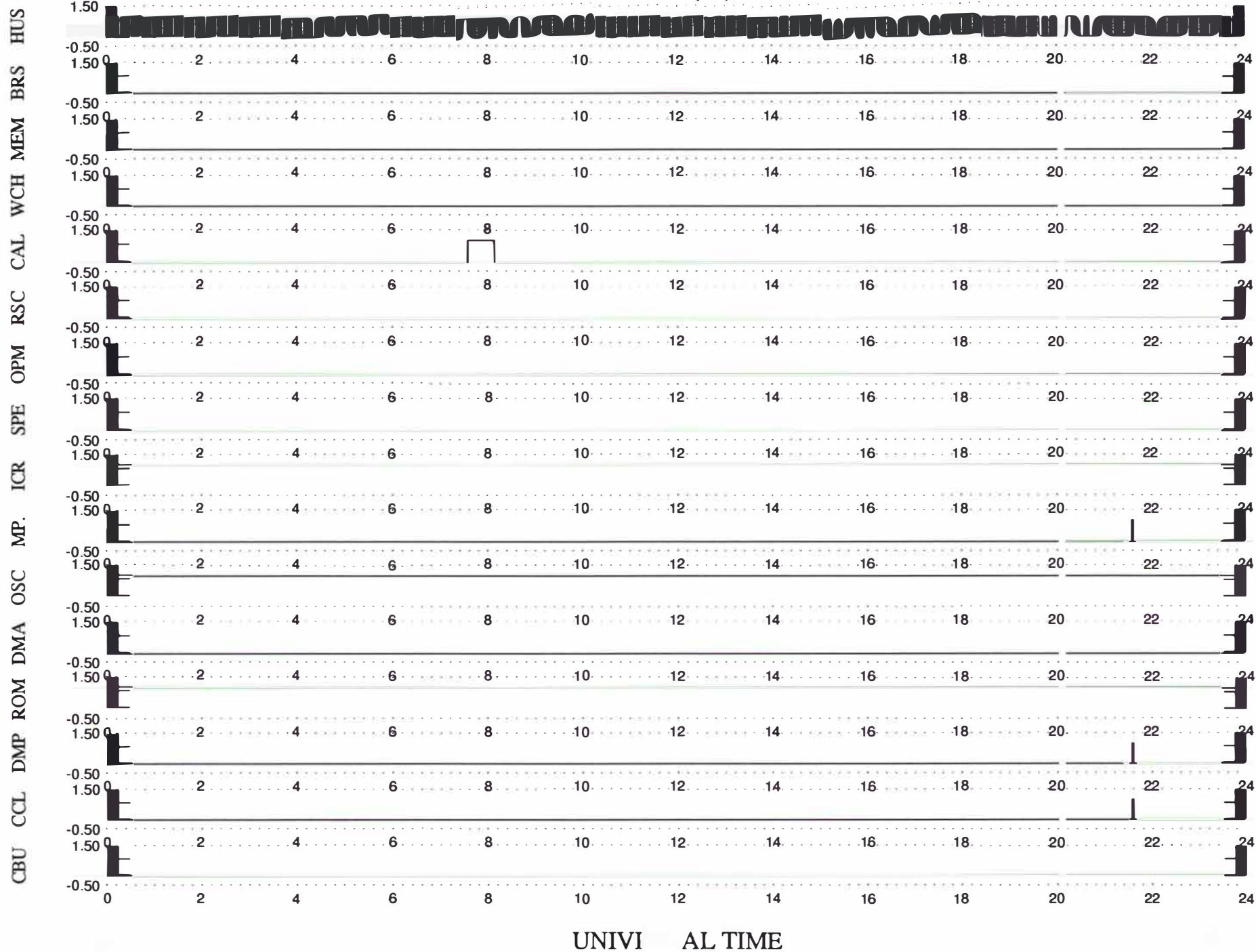
Dotted line: Day entry

Dashed line: Night entry

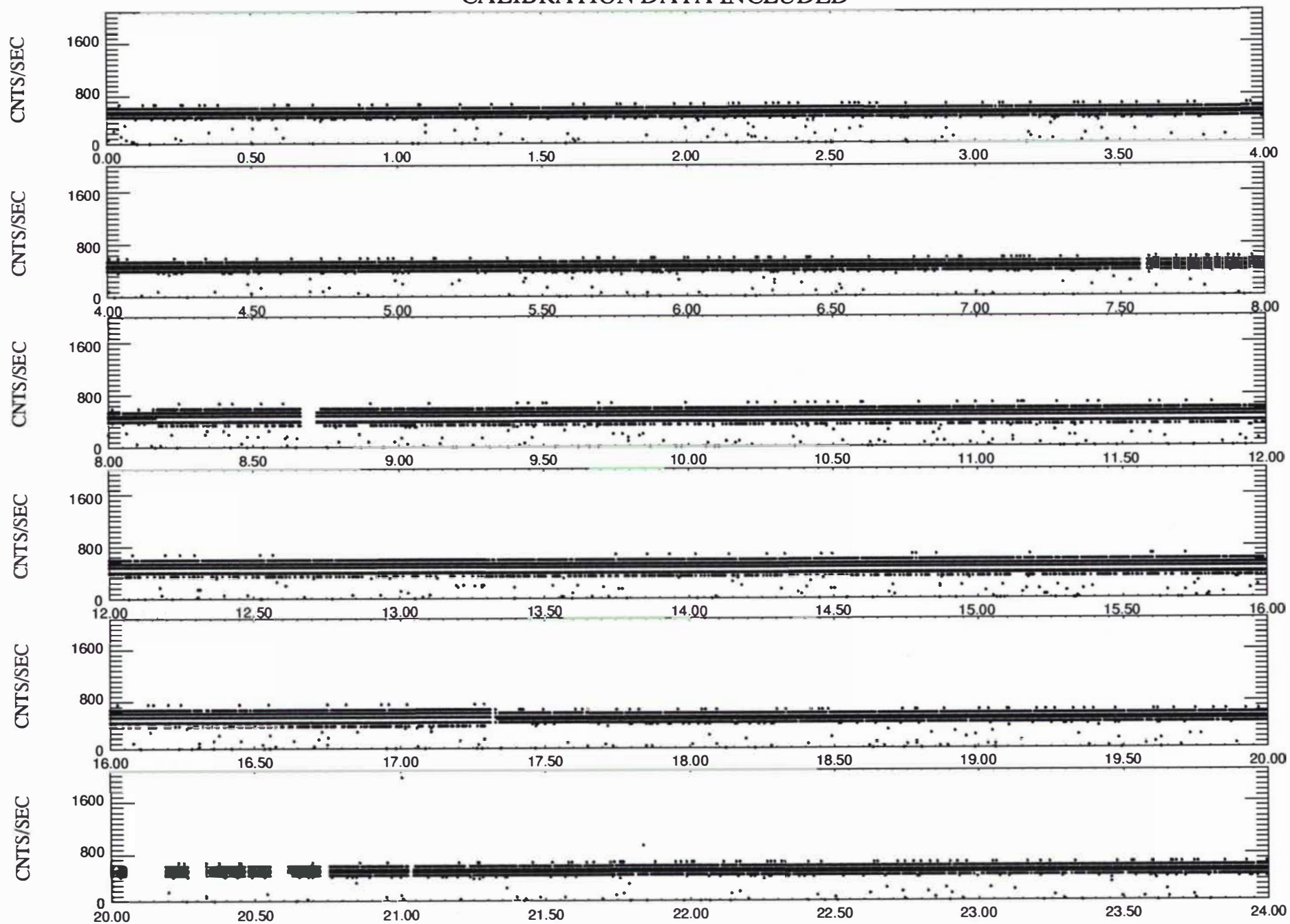
* Solar Burst Trigger

+ Solar Flare

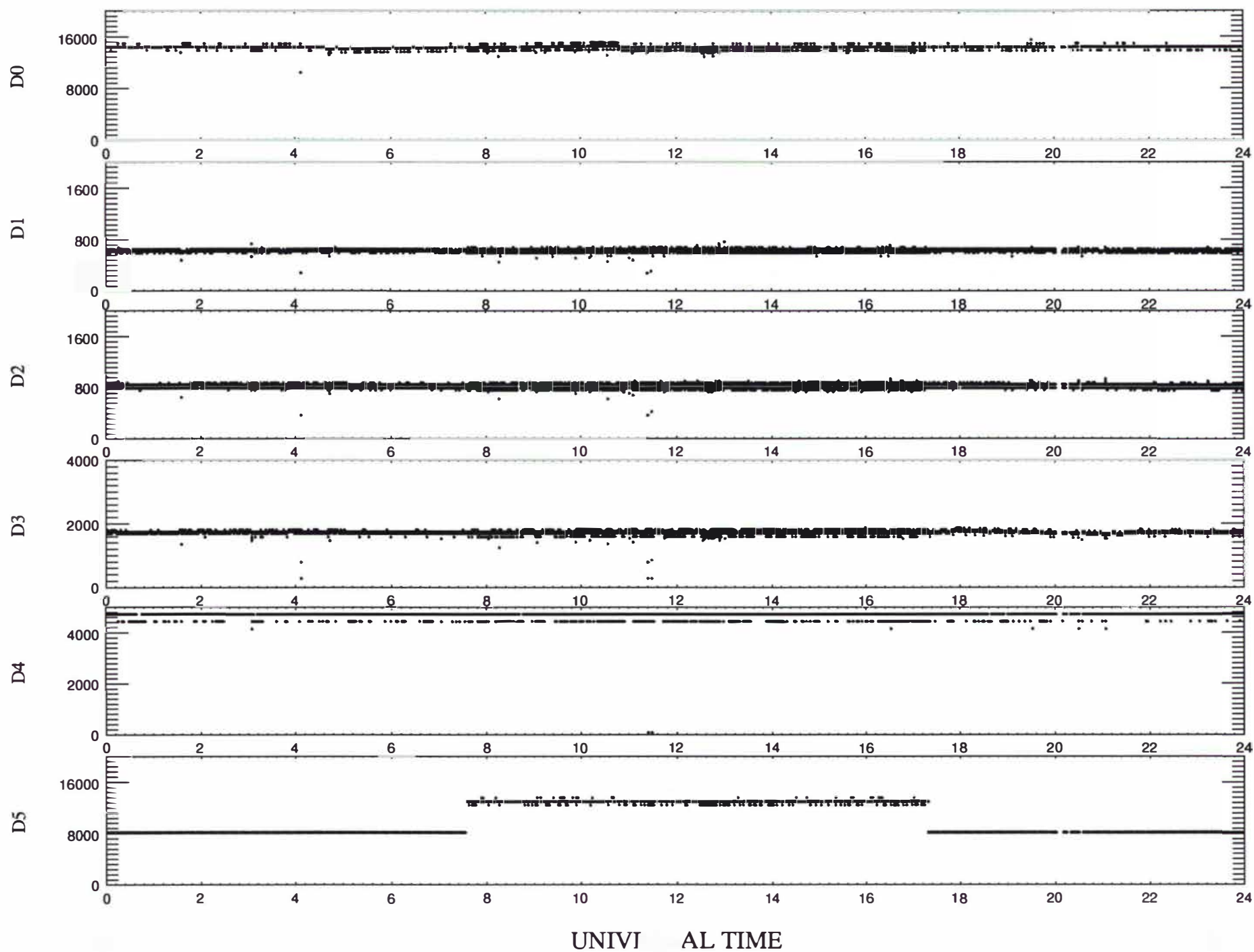
NO BURST (10)



CALIBRATION DATA INCLUDED



UNIV AL TIME



Date: Aug 22 '08

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

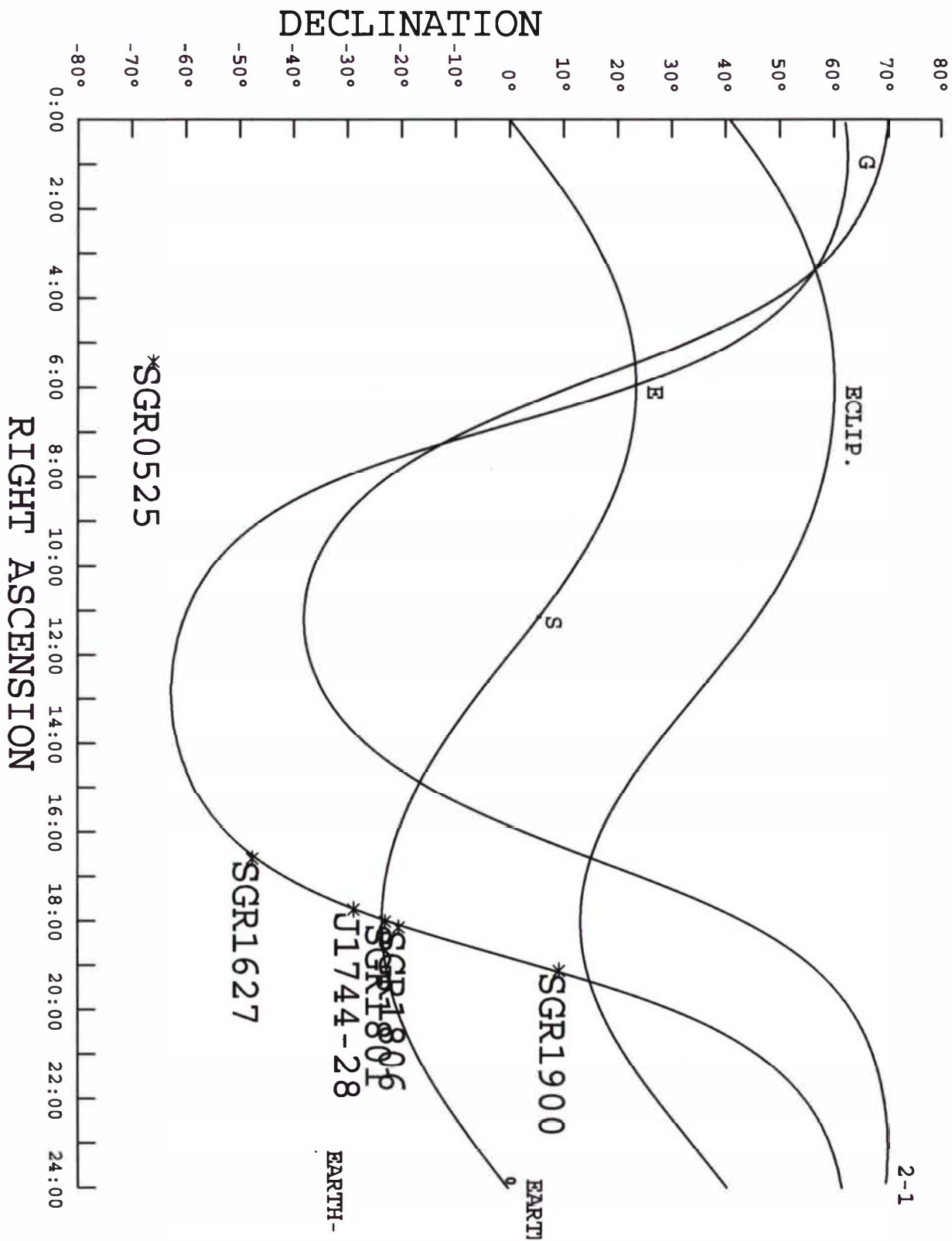
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS2

EVENT OF SEP 8, 1996 6:45

22 / 8 / 8



KONUS2

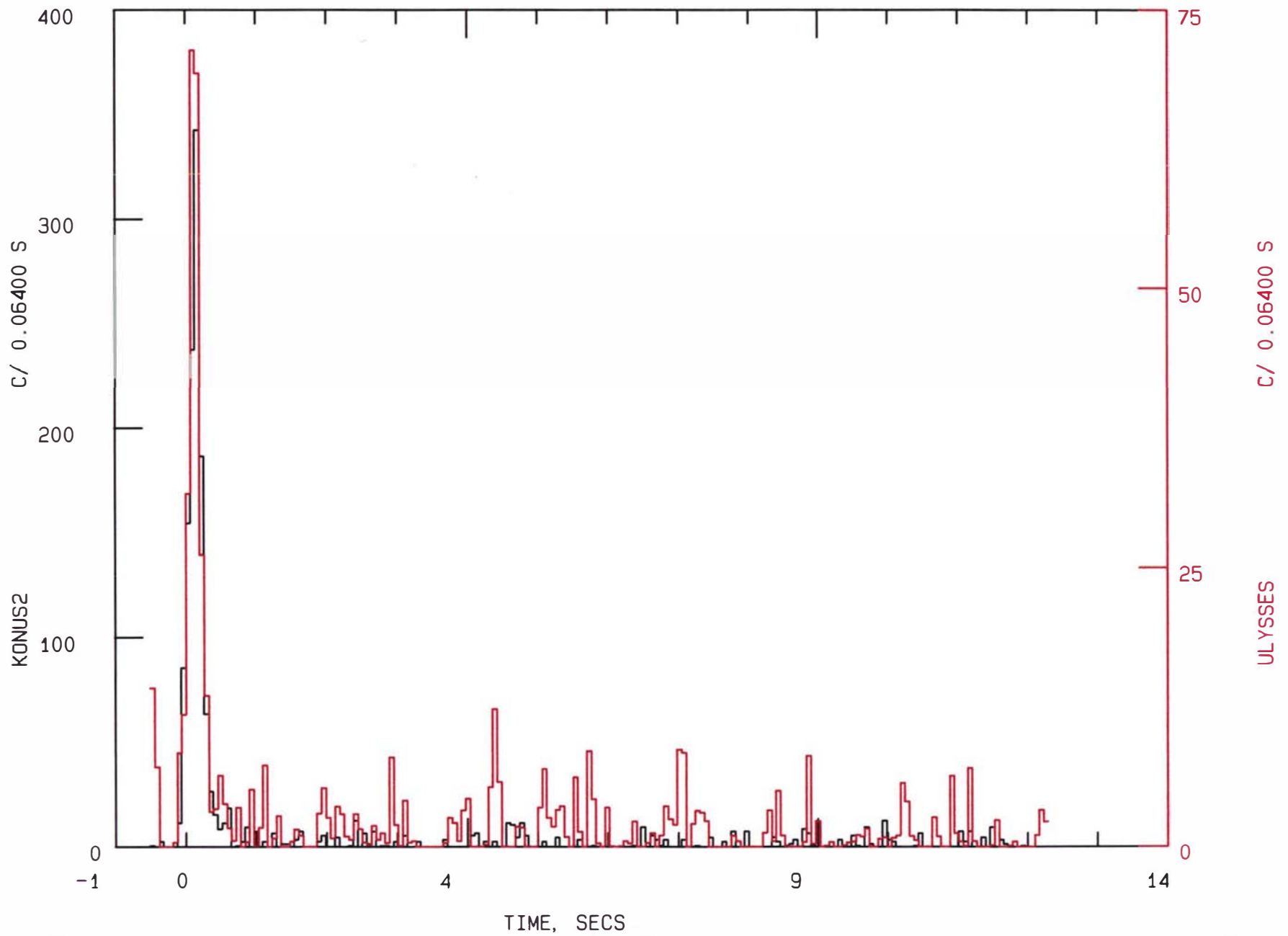
-ULYSSES

CORRELATION

08/09/96

25028.442

22/ 8/ 8



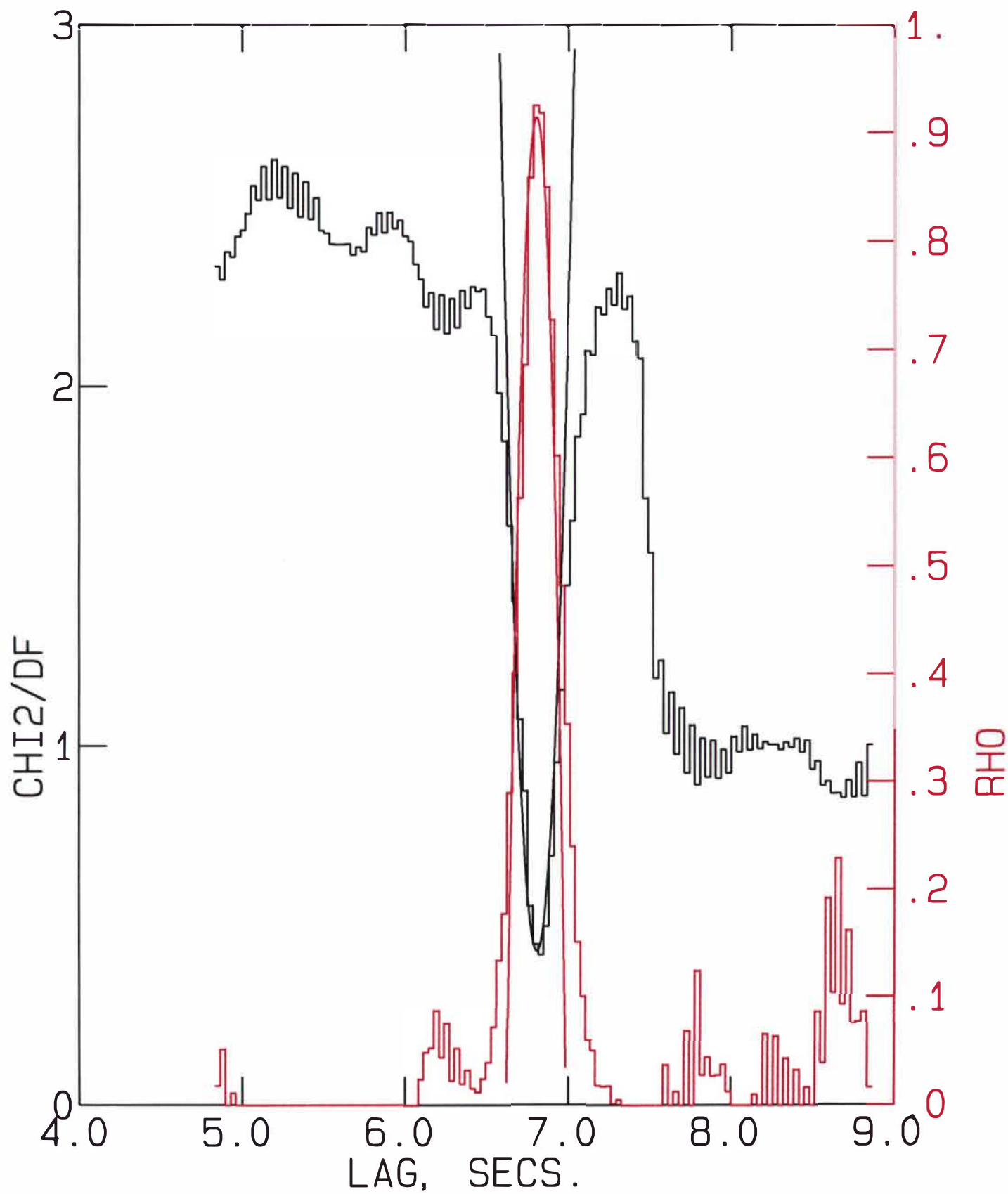
KONUS2

-ULYSSES

CORRELATION

08/09/96

25028.442



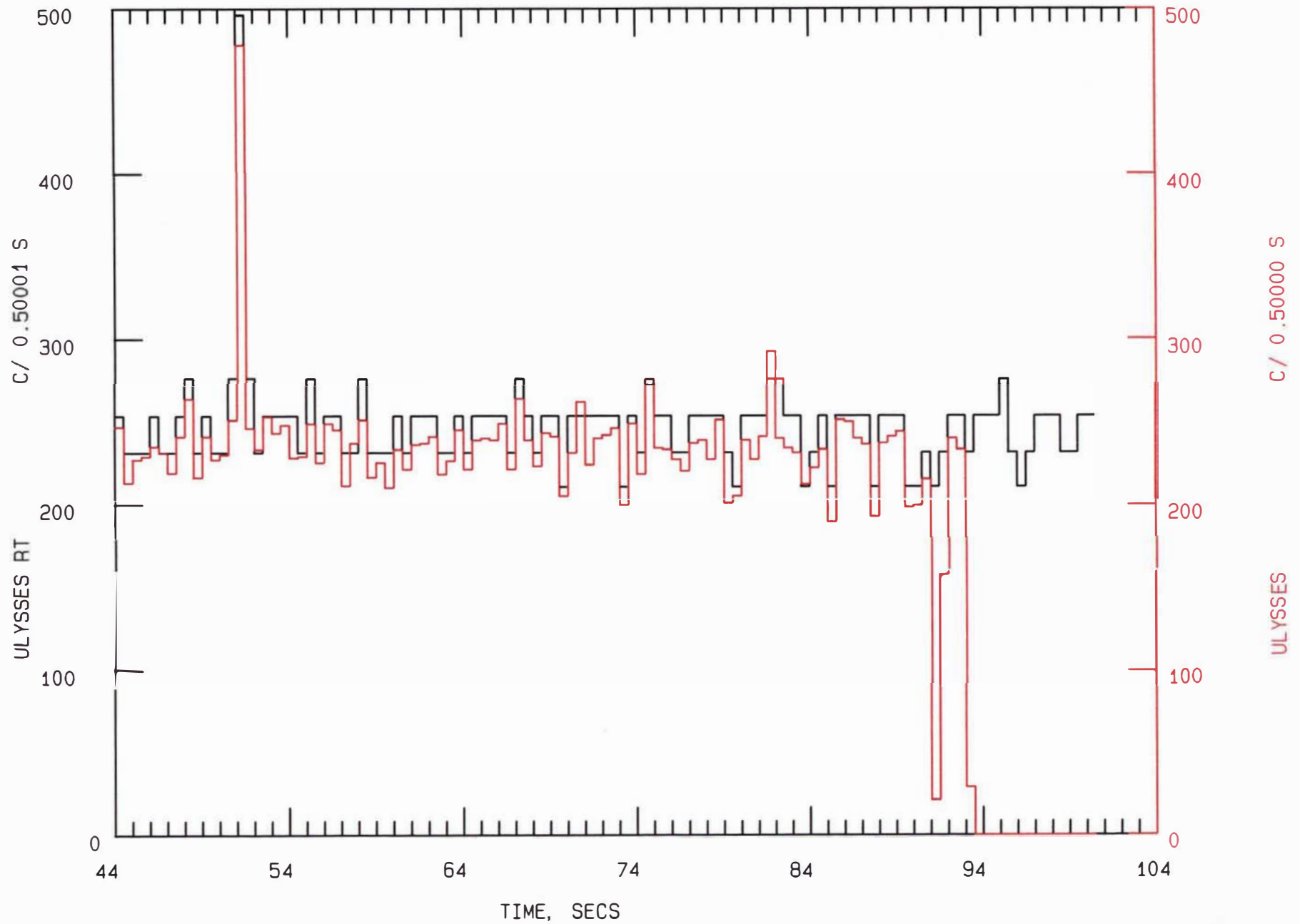
ULYSSES RT-ULYSSES

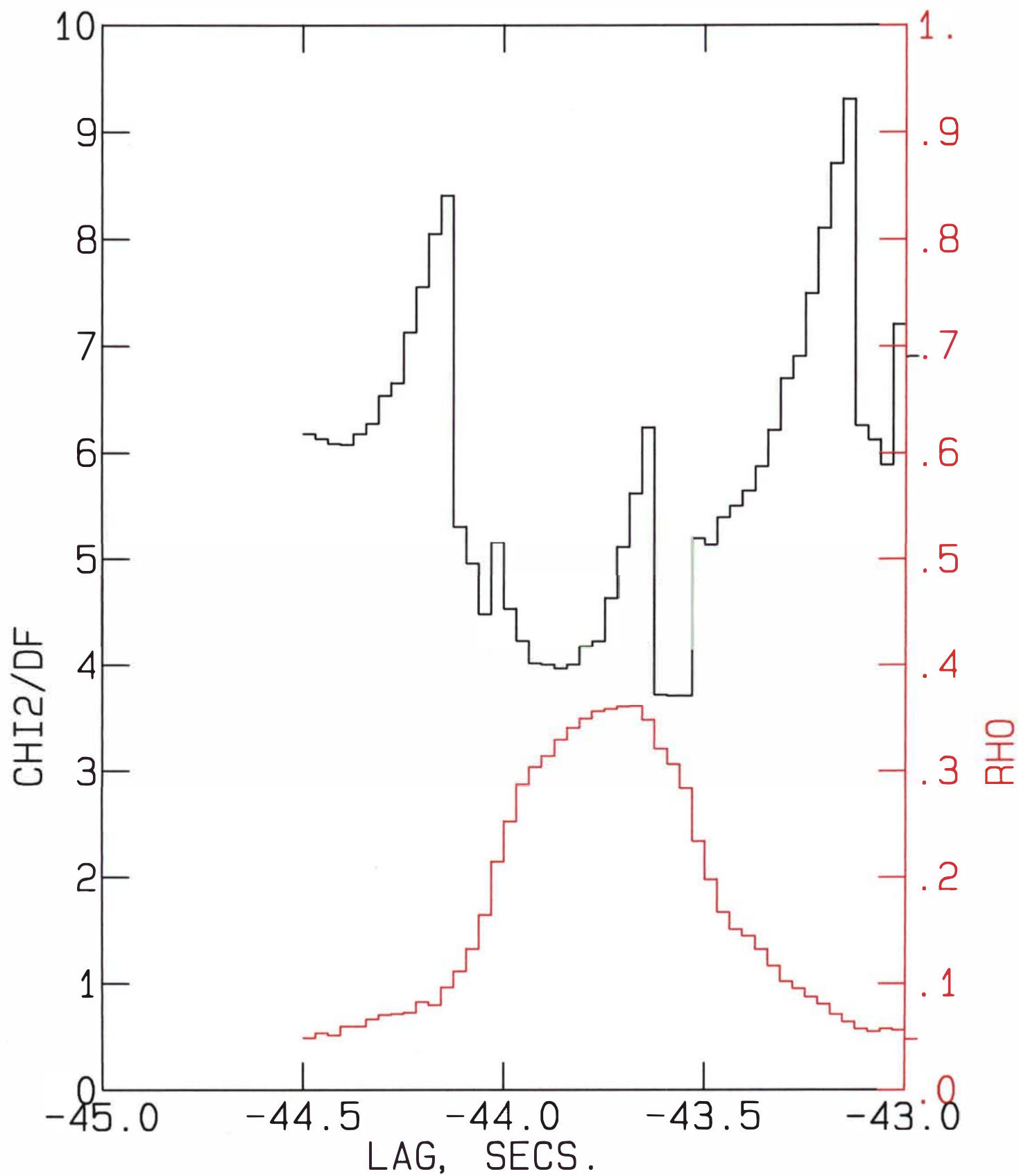
CORRELATION

8/ 9/96

24257.215

22/ 8/ 8



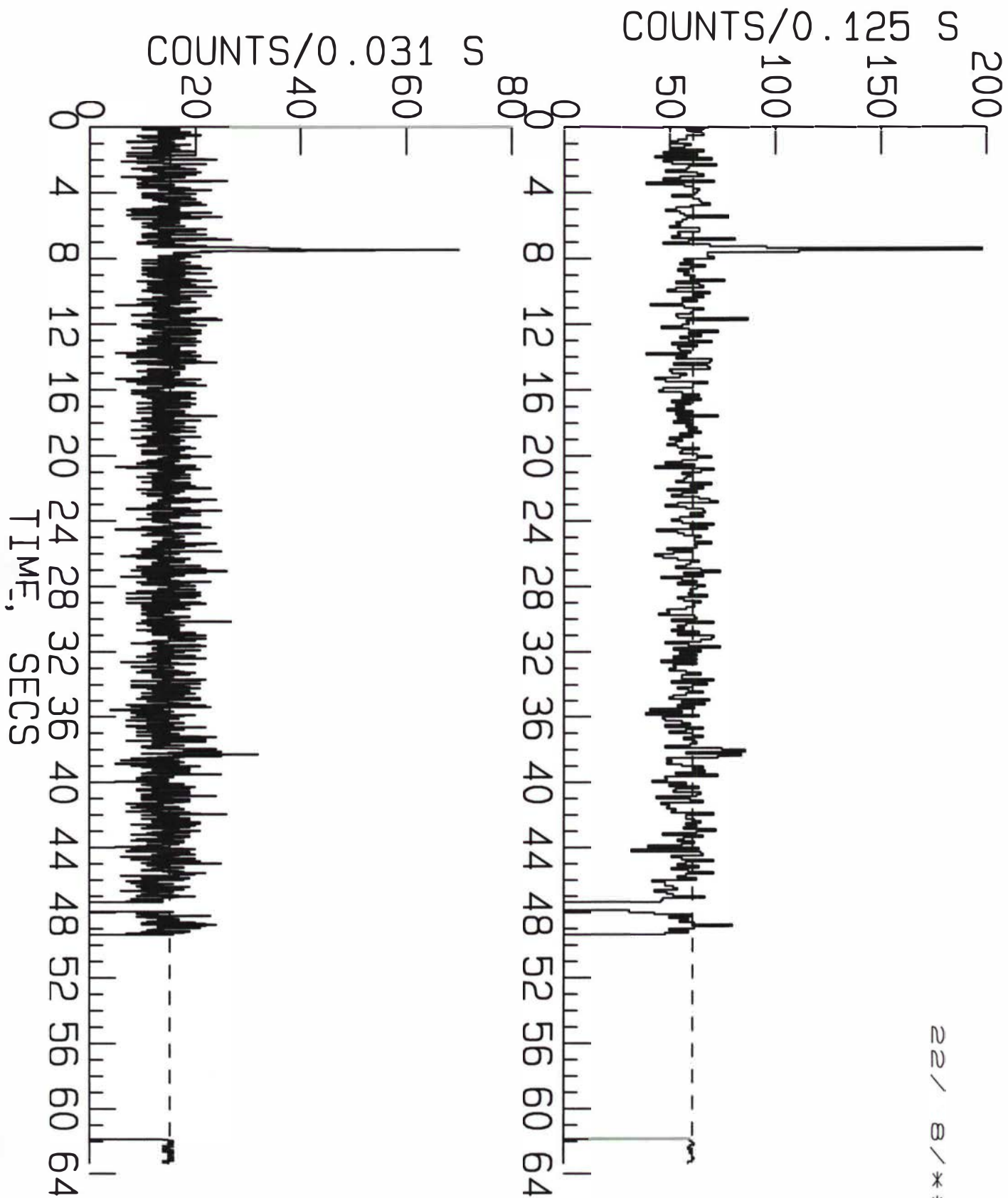


ULYSSES

08/09/96

Ttrig=24308.339

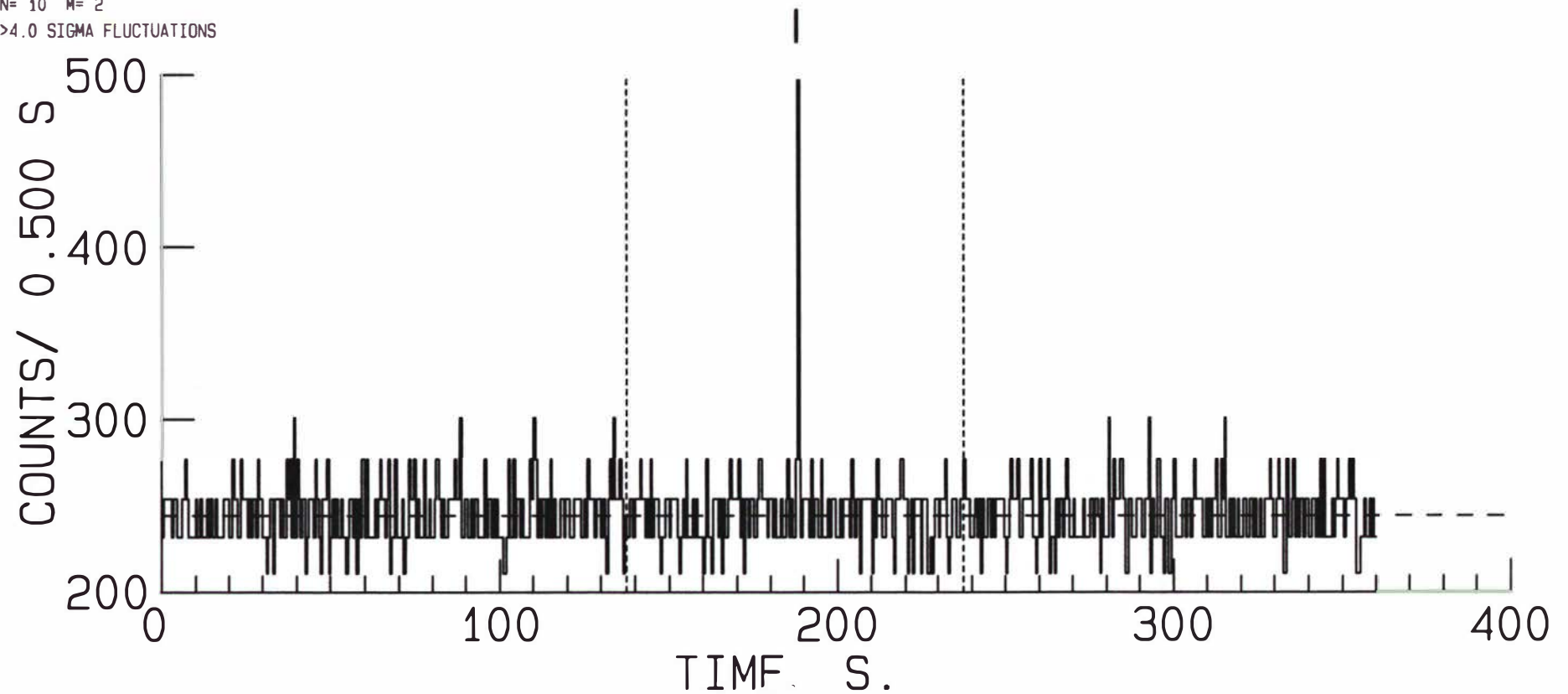
21- 145 keV



ULYSSES RT
8/ 9/96 24120.195 s
21- 145 keV

22/ 8/ 8

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



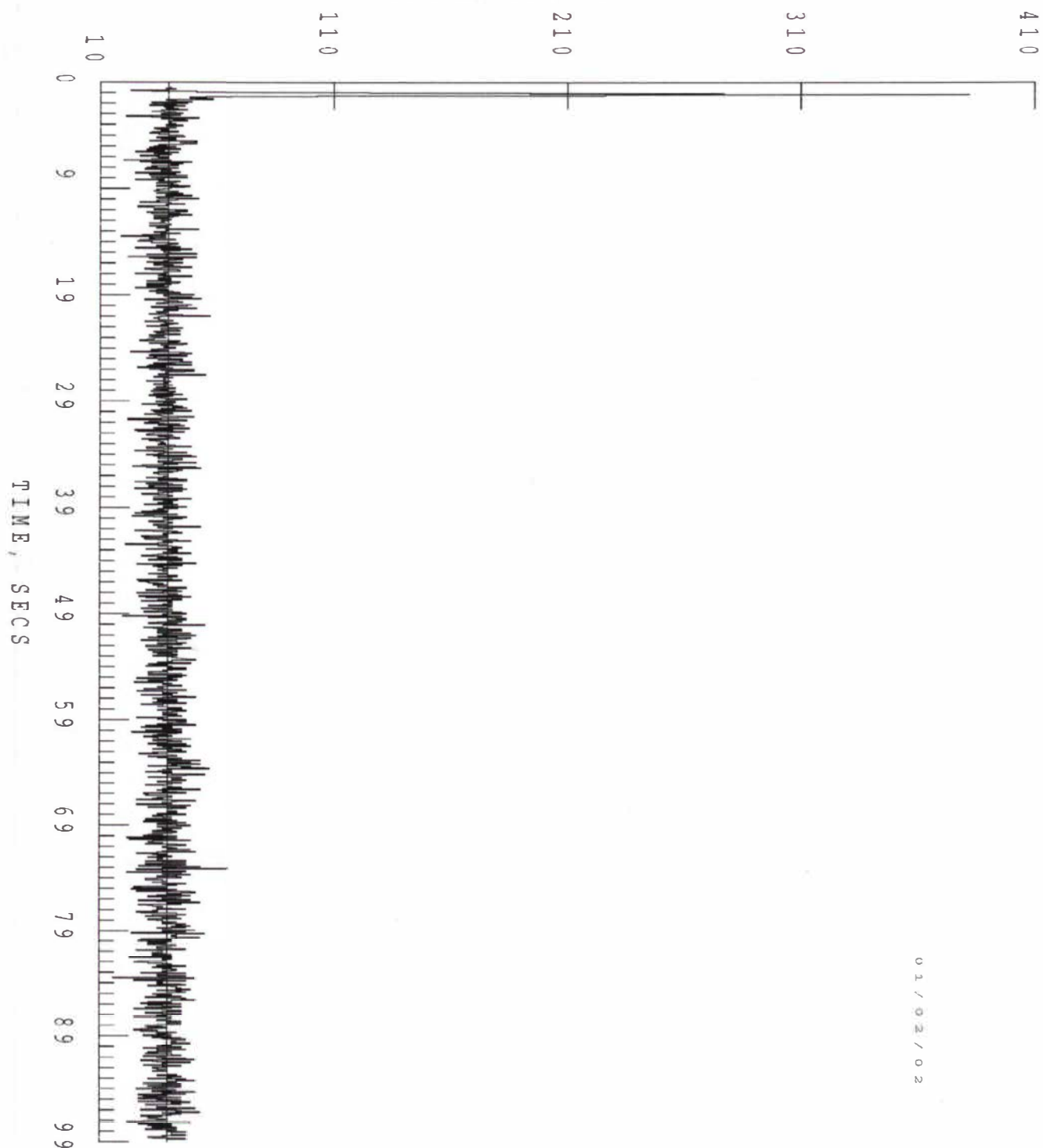
KONUS2

08/09/96

25028.442

50 - 200 keV

COUNTS/0.064 S



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 + 255	RI
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI KA	
5	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 + 255	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 255	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 + 255	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 + 255	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 + 255	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 + 255	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 + 255	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 255	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 255	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 255	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 255	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 + 255	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 + 255	RI

TLG

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

From BUTTERWORTH@lheavx.gsfc.nasa.gov Wed Sep 11 11:29 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Wed, 11 Sep 1996 14:26:35 -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 detected the Ulysses event of 960908, but not that of 960905

Hi Everyone,

Konus didn't trigger on 5 September and there are no indications of a GRB in the waiting-mode data (collected every 1.5 seconds). There was a single short gap in telemetry from about 21.41 to 21.42UT.

There was a short intense trigger in the north-facing detector at 06:57:08.442 on 8 September. Below 200 keV there was a single symmetrical peak lasting 0.3 seconds (maximum at T + 0.15 seconds). Above 200 keV there was an almost square pulse, starting at T - 0.05 seconds and lasting till T + 0.25 seconds.

Paul.

Date: Wed, 11 Sep 1996 08:26:04 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609111526.IAA19395@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: GRB960905 & 960908
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed a weak, short bursts September 5 1996 at 21:10 Ulysses time. Ulysses detected an intense, 100 ms long event on September 8 at 06:45. The spacecraft was about 2575 light seconds from Earth.

Were these events detected by anyone else?

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

From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Sep 10 07:09 PDT 1996
Date: Tue, 10 Sep 1996 9:06:39 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5596

TIME: TJD=0334 SECONDS=43745

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

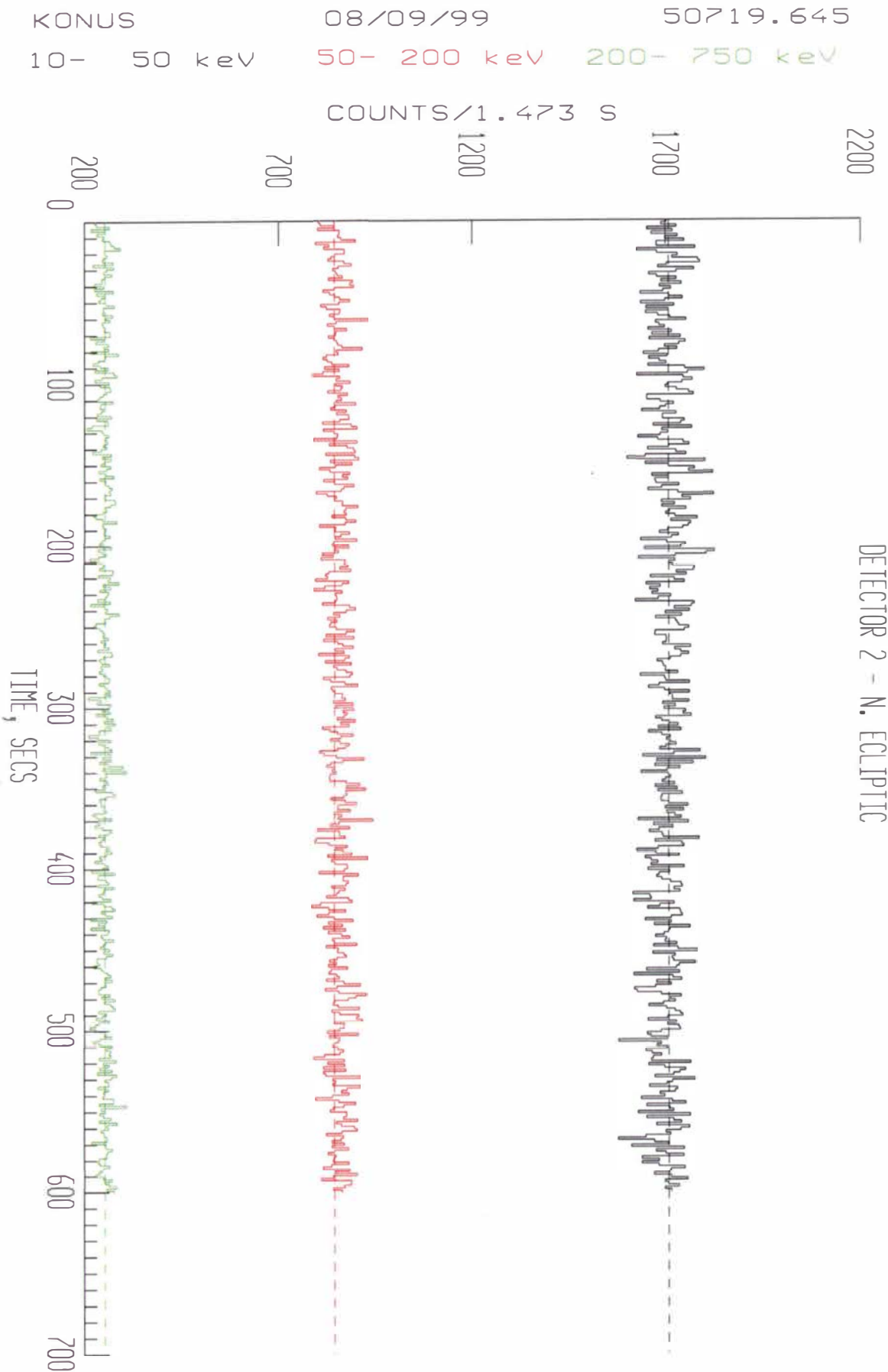
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT

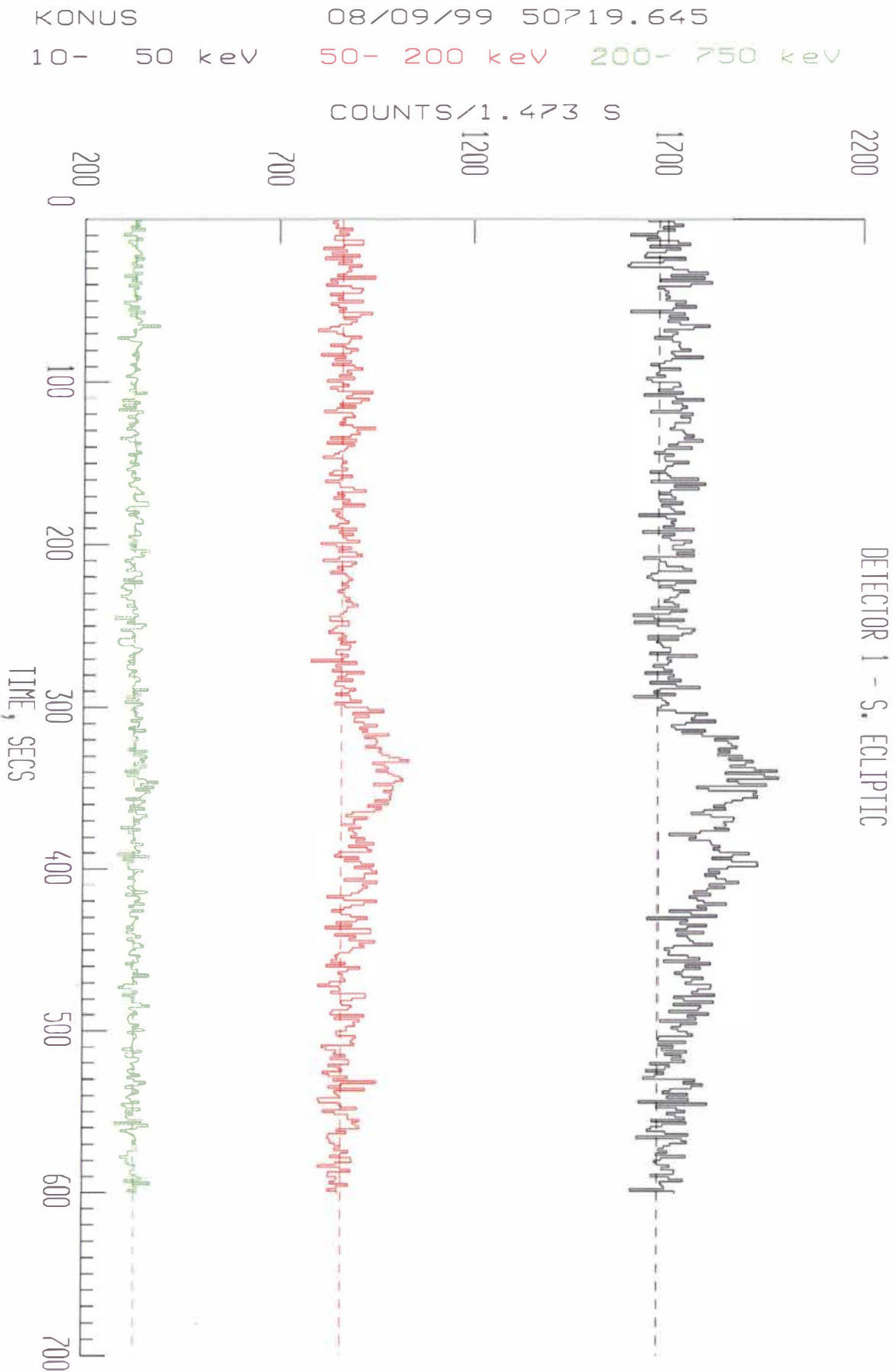
18/10/2011

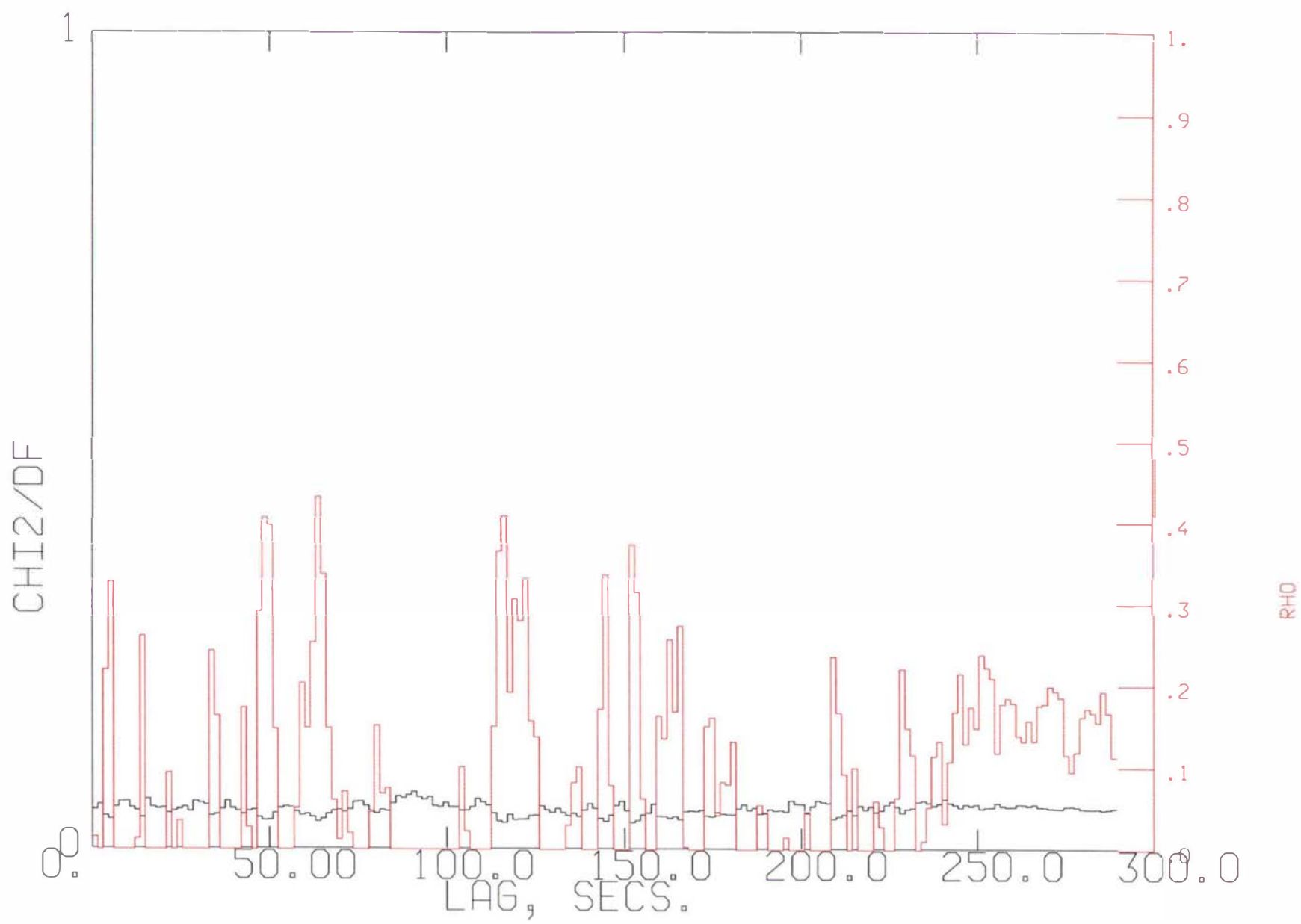
DETECTOR 2 - N. ECLIP TIC

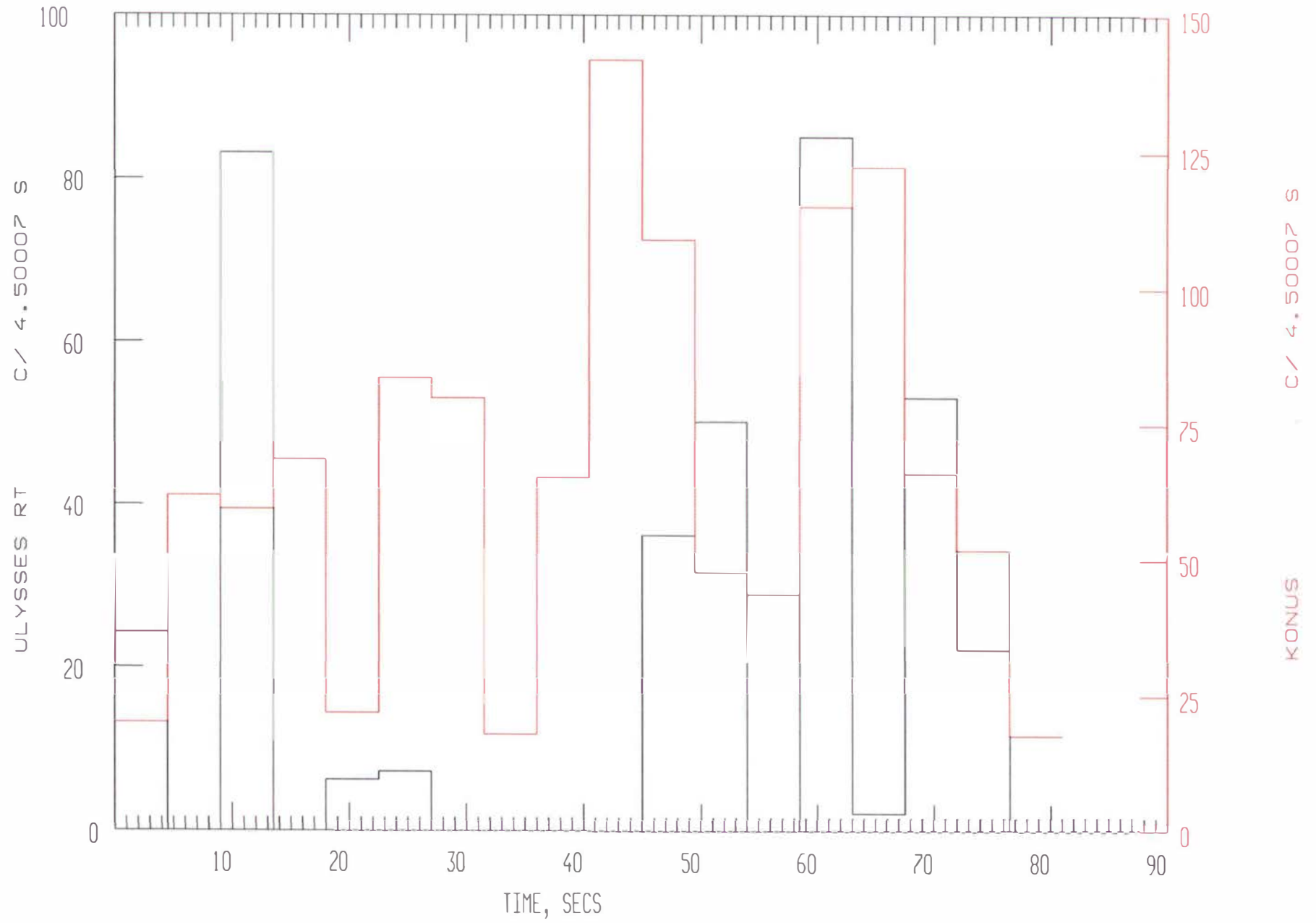


18/10/2011

DETECTOR 1 - S. ECLIP TIC







KONUS 19960908 51584

ULYSSES RT

10 / 10 / 11

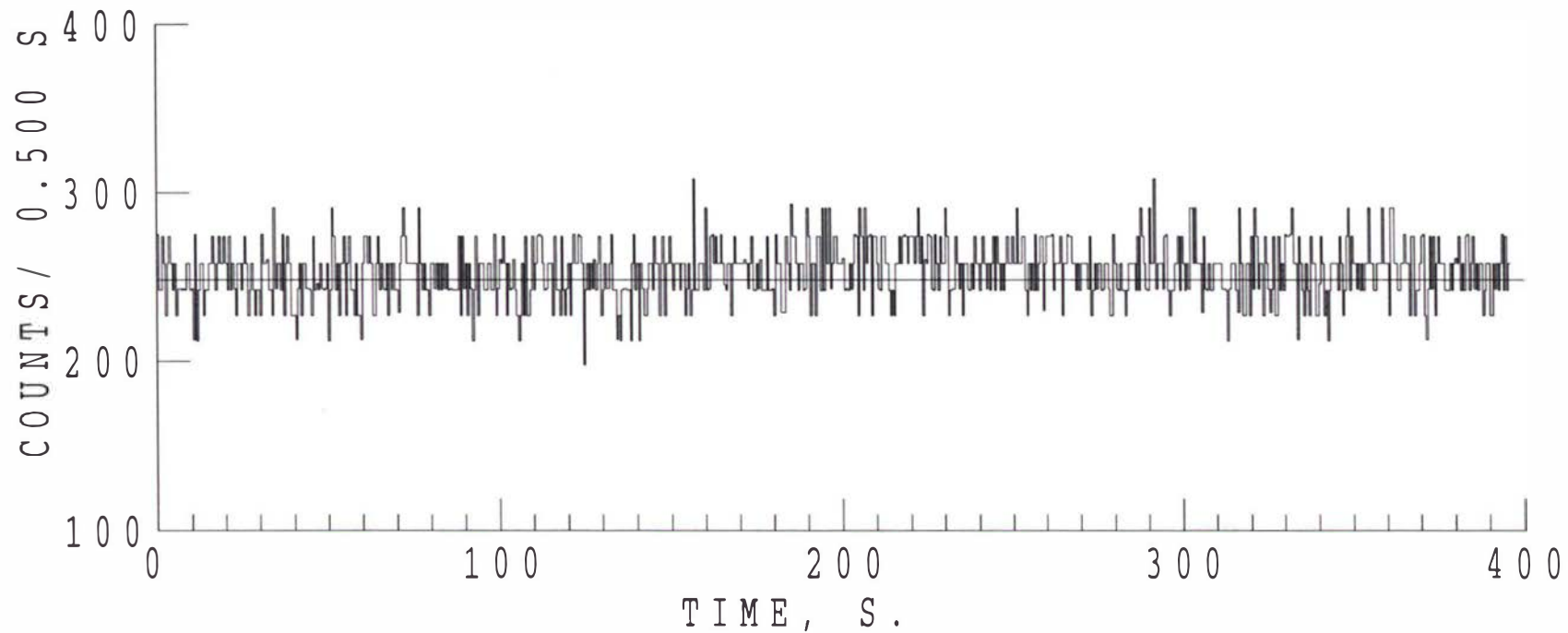
08/09/96 51372.043 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

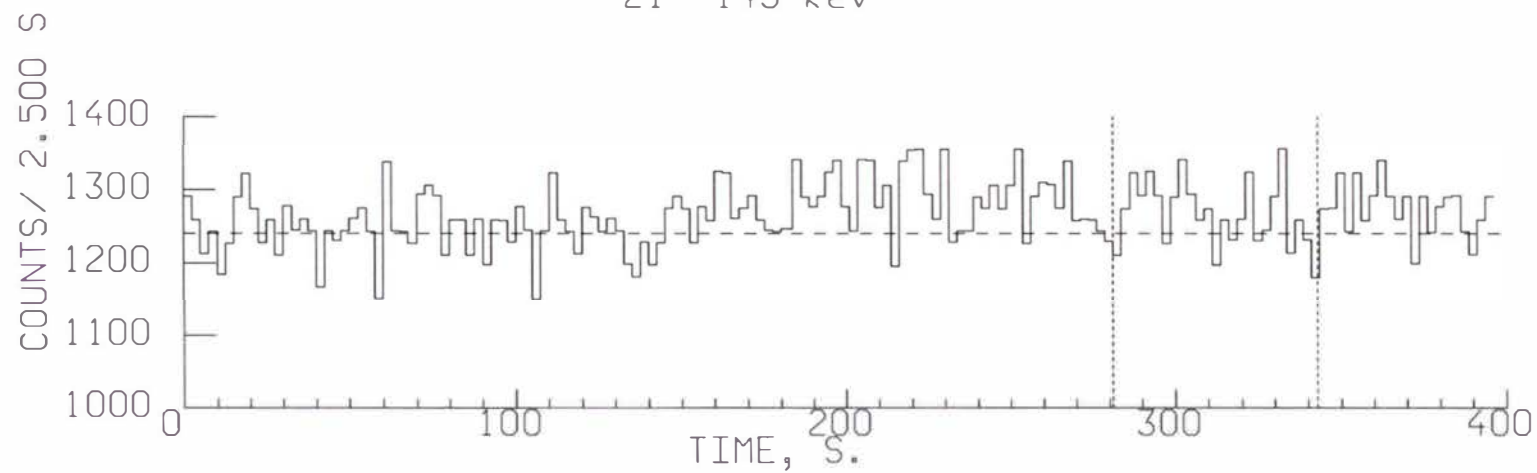
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



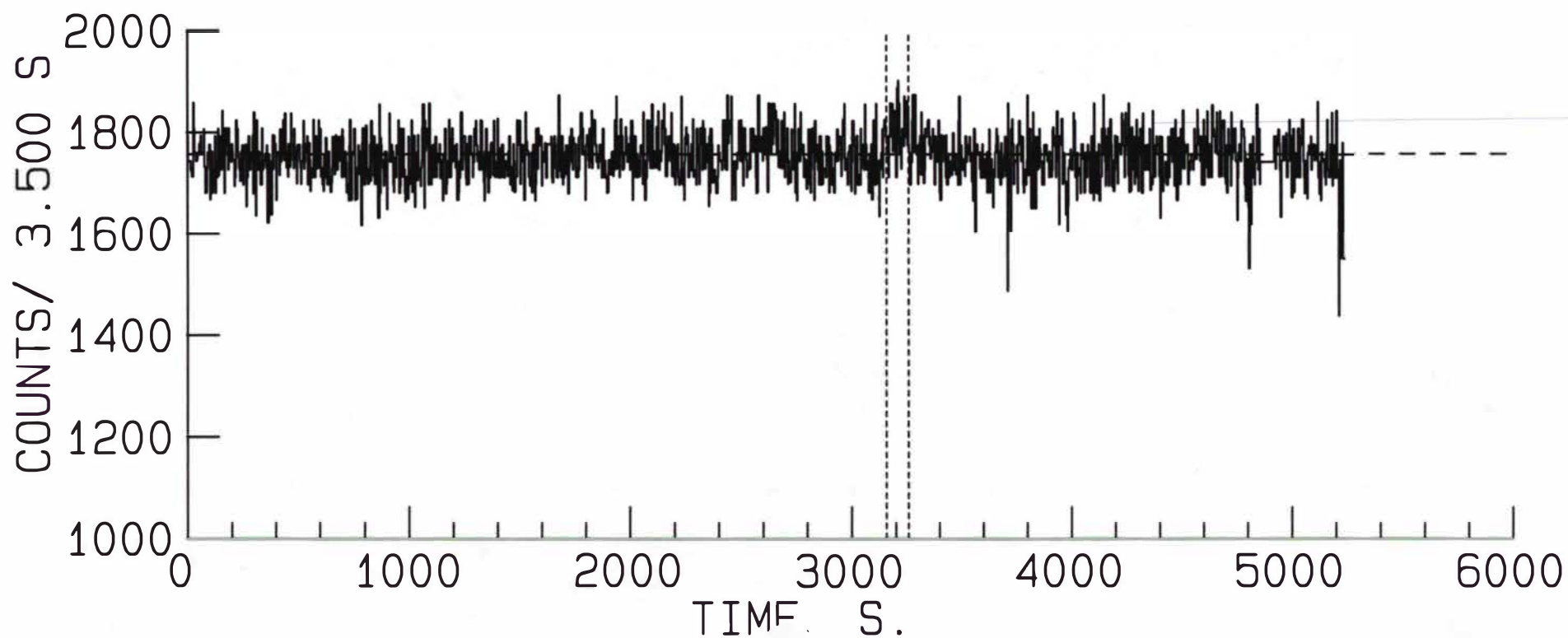
ULYSSES RT
8/ 9/96 51372.043 s
0.250 S INTERVALS REGROUPED BY 10
21- 145 keV

11/10/11



ULYSSES RT
8/ 9/96 48384.008 s
0.250 S INTERVALS REGROUPED BY 14
21- 145 keV

1 / 2 / 0



From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Sep 10 07:12 PDT 1996
Date: Tue, 10 Sep 1996 9:11:49 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5597

BATSEARCH PROGRAM

BATSE BURST # 5597
EVENT OF 1996 SEP 8 DAY OF YEAR=252
EVENT CROSSING TIME AT BATSE : 50517. S. OR 14:01:57.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 187.000 -63.000
BATSE PEAK COUNTING RATE: 14500 C/S

ND

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 9/ 96 IS:
RA= 167.602 DEC= 35.791 DIST= 5.155 AU
BATSE-ULYSSES DISTANCE = 771122689. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 79.99 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 446.90 SECS.
CROSSING TIME AT ULYSSES IS 50964. S. OR 14:09:23 +/- 496.57 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 9/ 96 IS:
RA= 121.184 DEC= 21.297 DIST= 2.081 AU
MARS-BATSE DISTANCE = 311252576. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 156.09 SECS.
CROSSING TIME AT MARS IS 50673. S. OR 14:04:33 +/- 180.57 SECONDS

BATSE BURST TRIGGER

NO.: 5597

TIME: TJD=0334 SECONDS=50517

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=172.7 AZIMUTH=331.7 ERROR=0.9 DEGREES

COMMENTS:

GRB. SPIKEY EVENT WITH SLOW DECAY. DUR.~40SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5597	960908	10334	50517	14500	187	-63	40

BATSE #

5597

10 / 9 / 96

ULYSSES RT

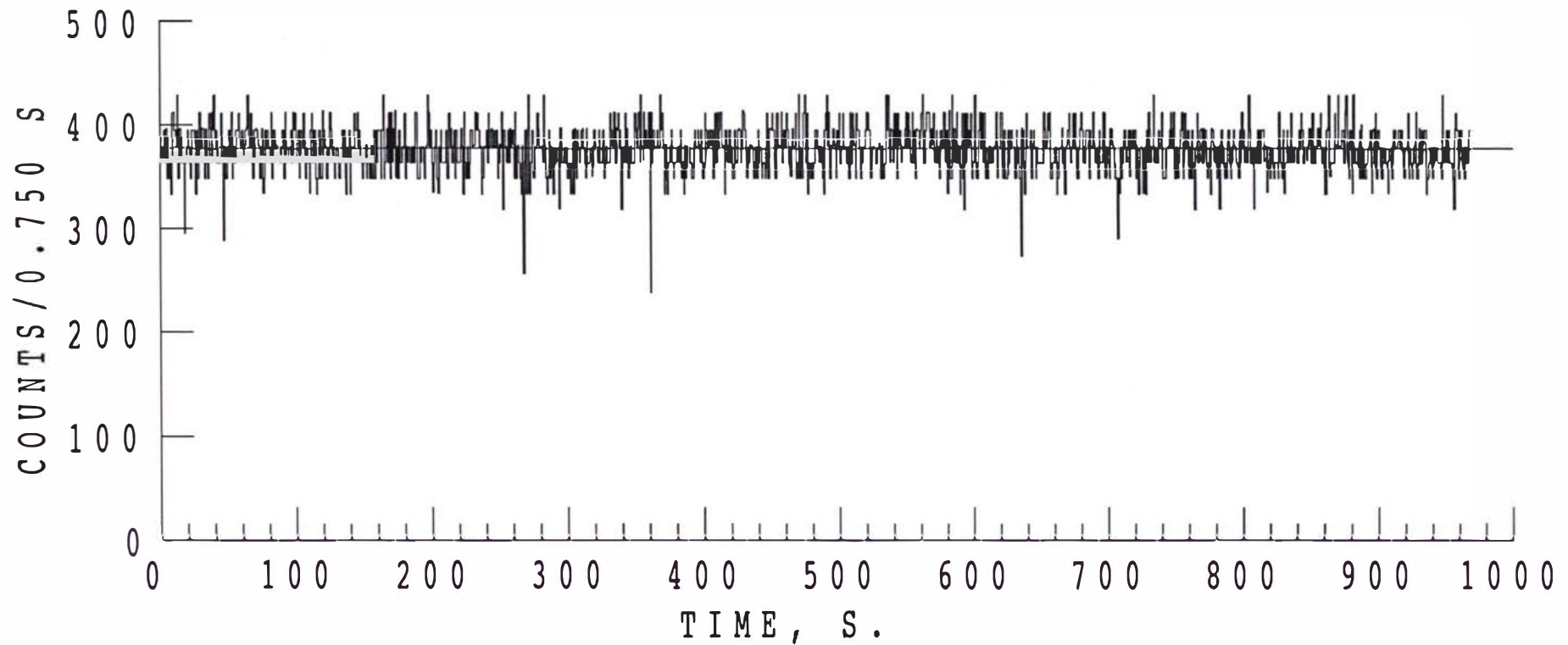
8 / 9 / 96 50472.031 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

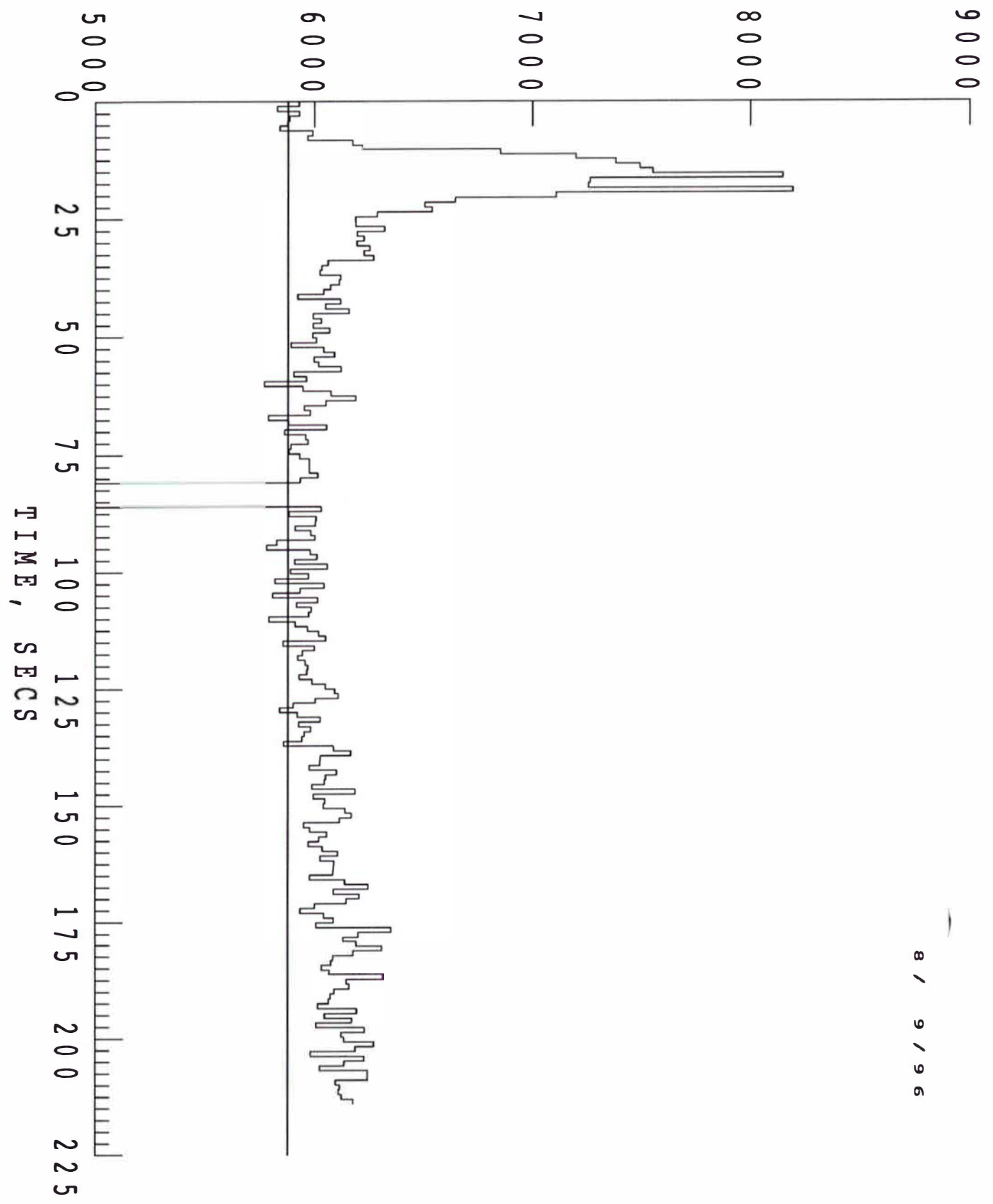
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

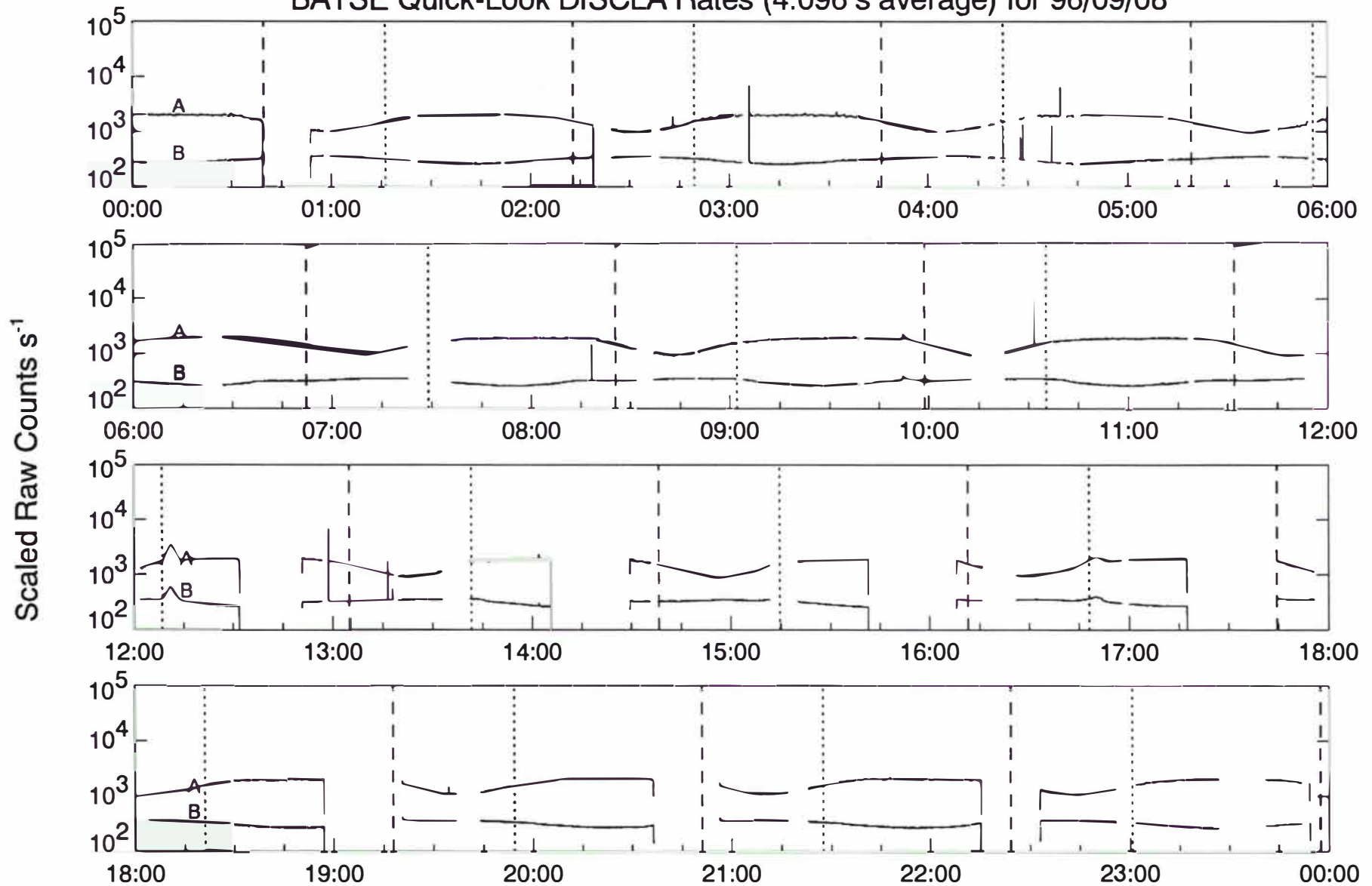


BACODINE 5597 08/09/96 50505.417
25- 100 keV

COUNTS/1.024 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/08

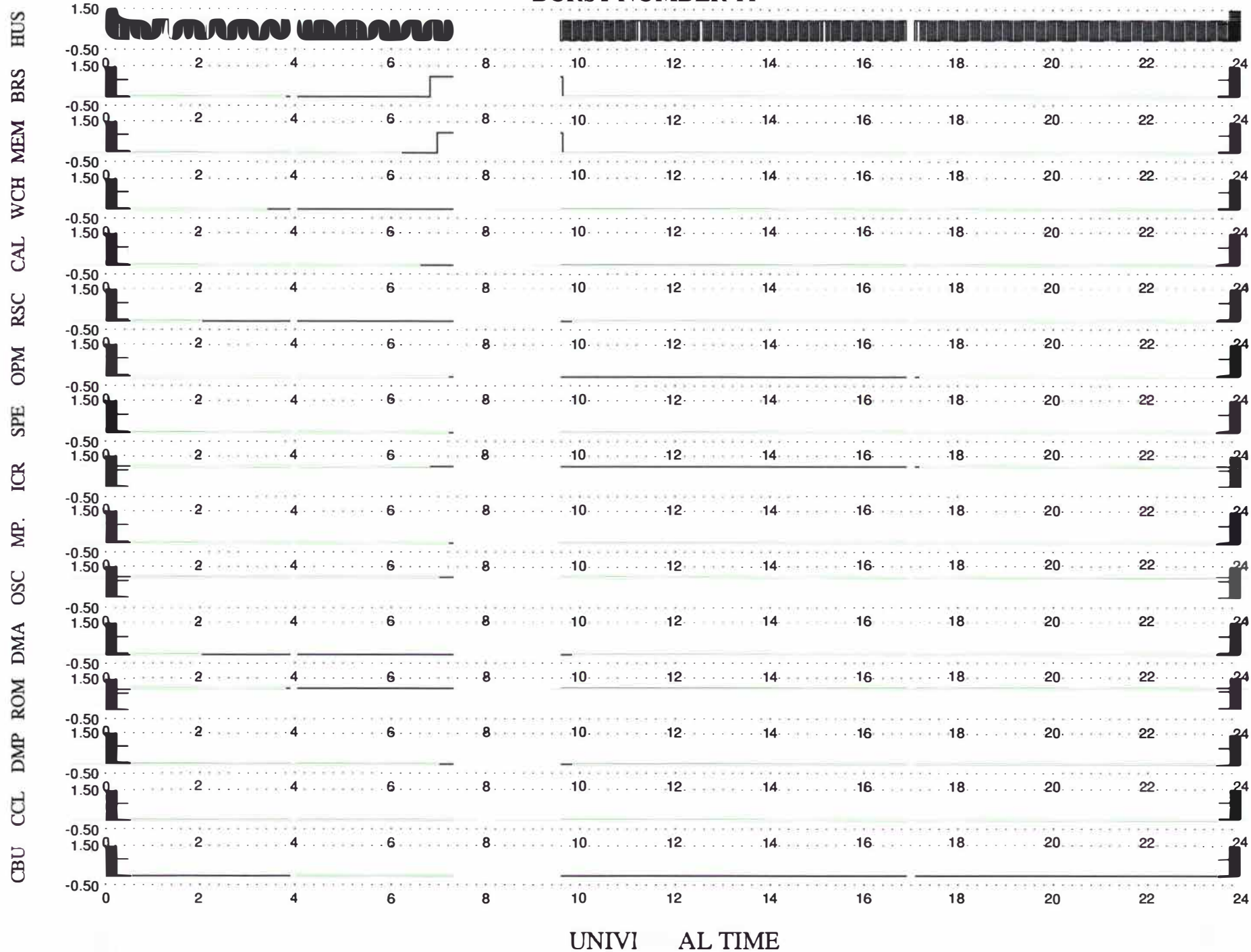


Current Time: 96/09/10, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

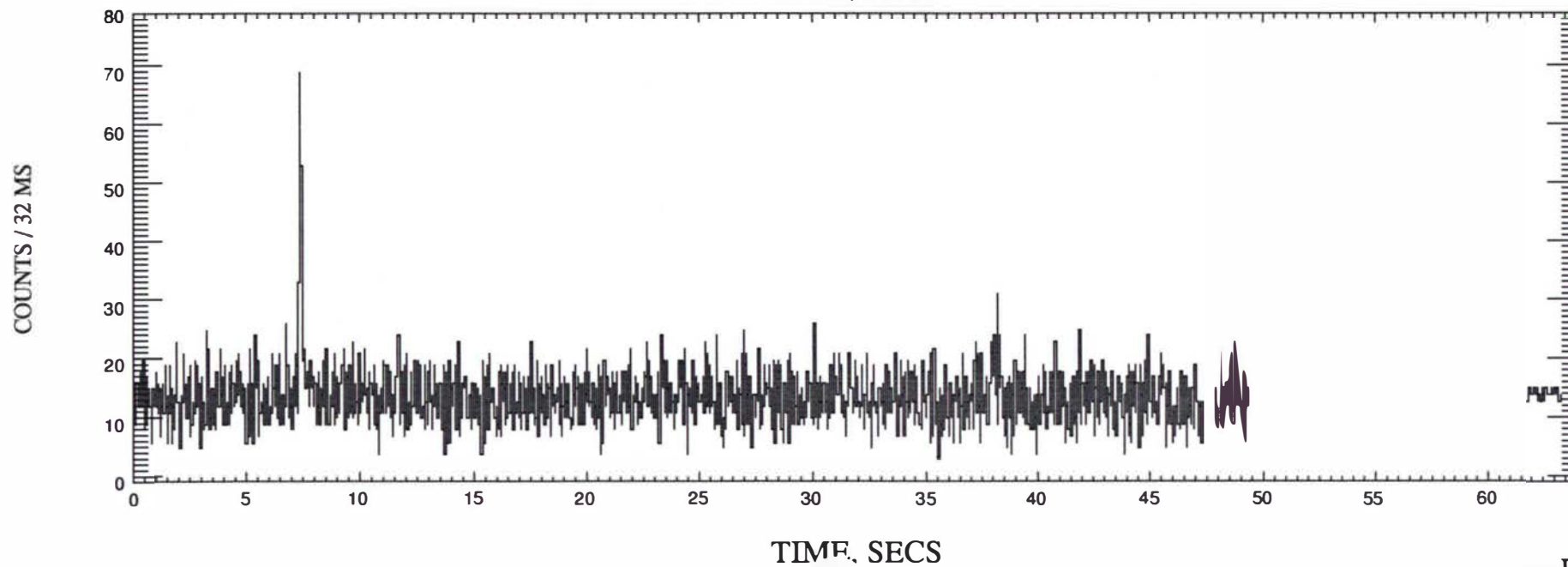
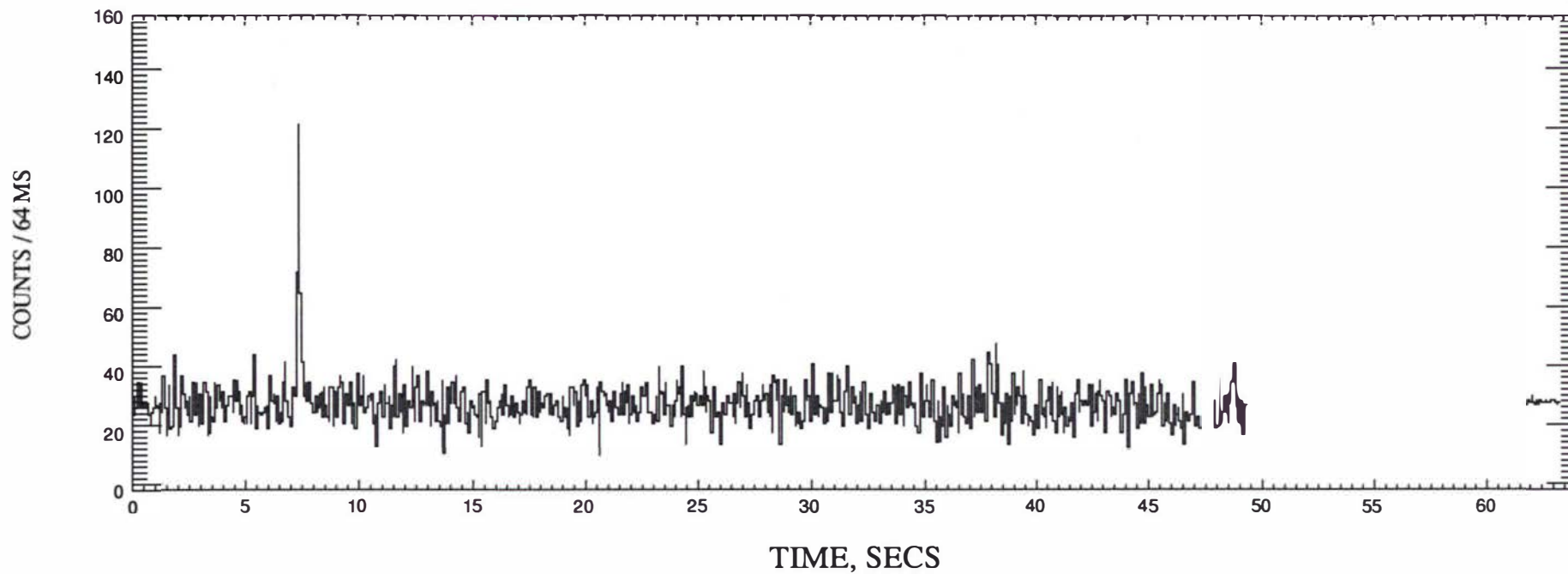
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

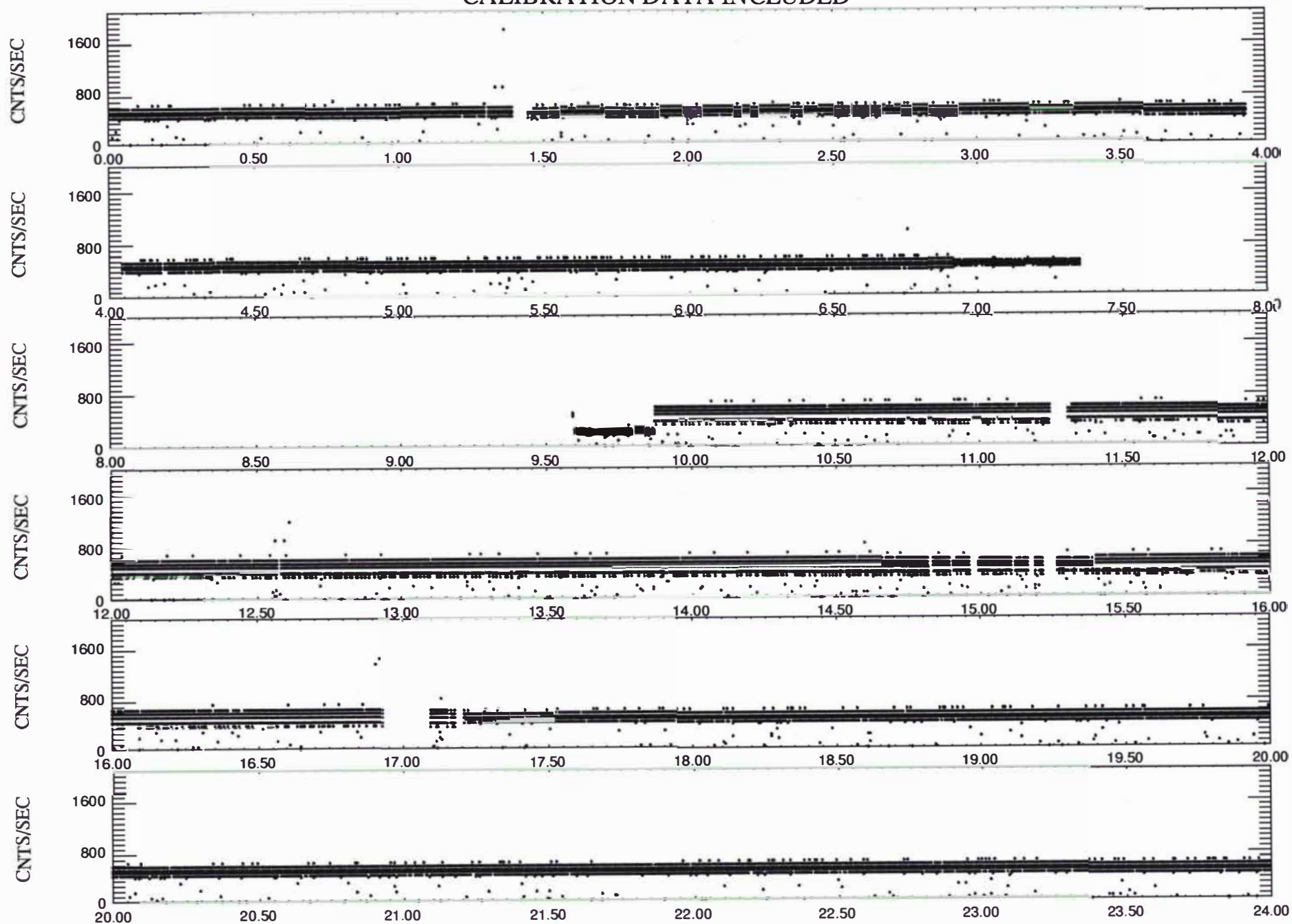
BURST NUMBER 11



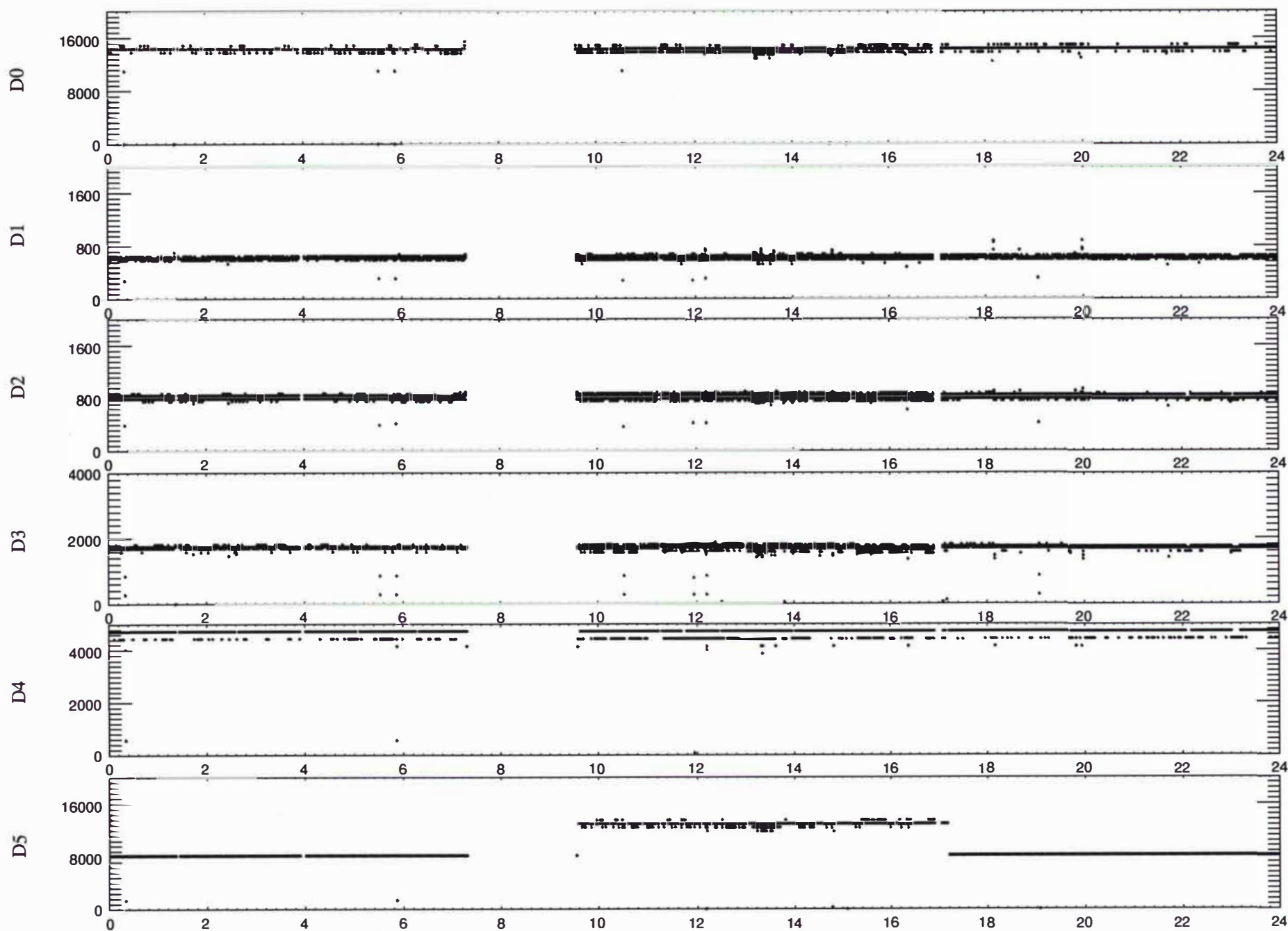
Burst Counter 11 at UT= 6.752309396532 h=24308.314 s 06:45:08.314



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV AL TIME

From DEAL@fender.msfc.nasa.gov Tue Sep 10 10:47 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 10 Sep 1996 12:46:02 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.nasa.gov,
scott@circe.gsfc.nasa.gov, butterworth@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.: 5598

TIME: TJD=0335 SECONDS=42071

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=101.5 AZIMUTH=155.8 ERROR=6.4 DEGREES

COMMENTS:

TGF LASTING ~ 0.015 S.

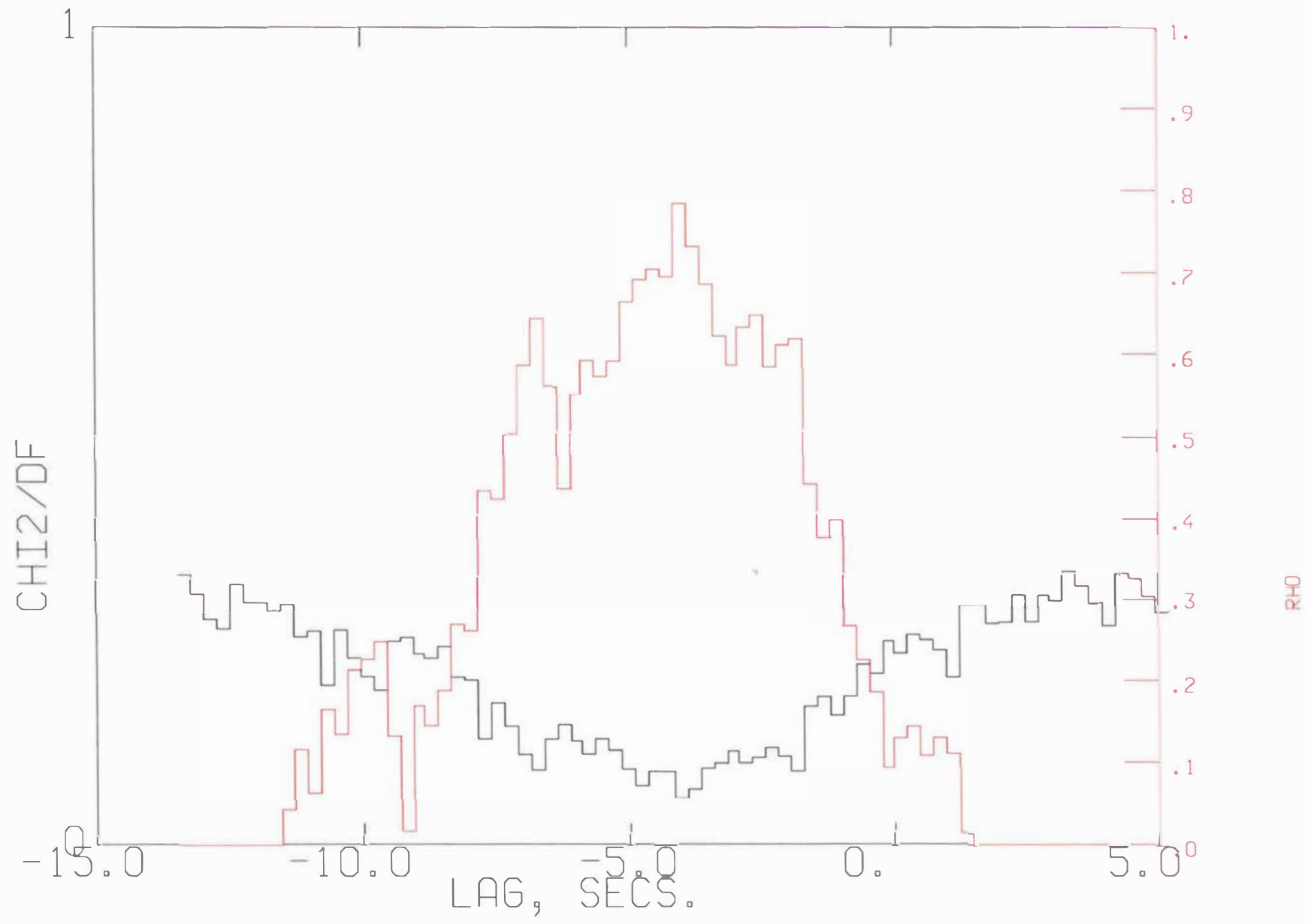
KONUS

-ULYSSES RT CORRELATION

09/09/96

51535.641

11/10/11



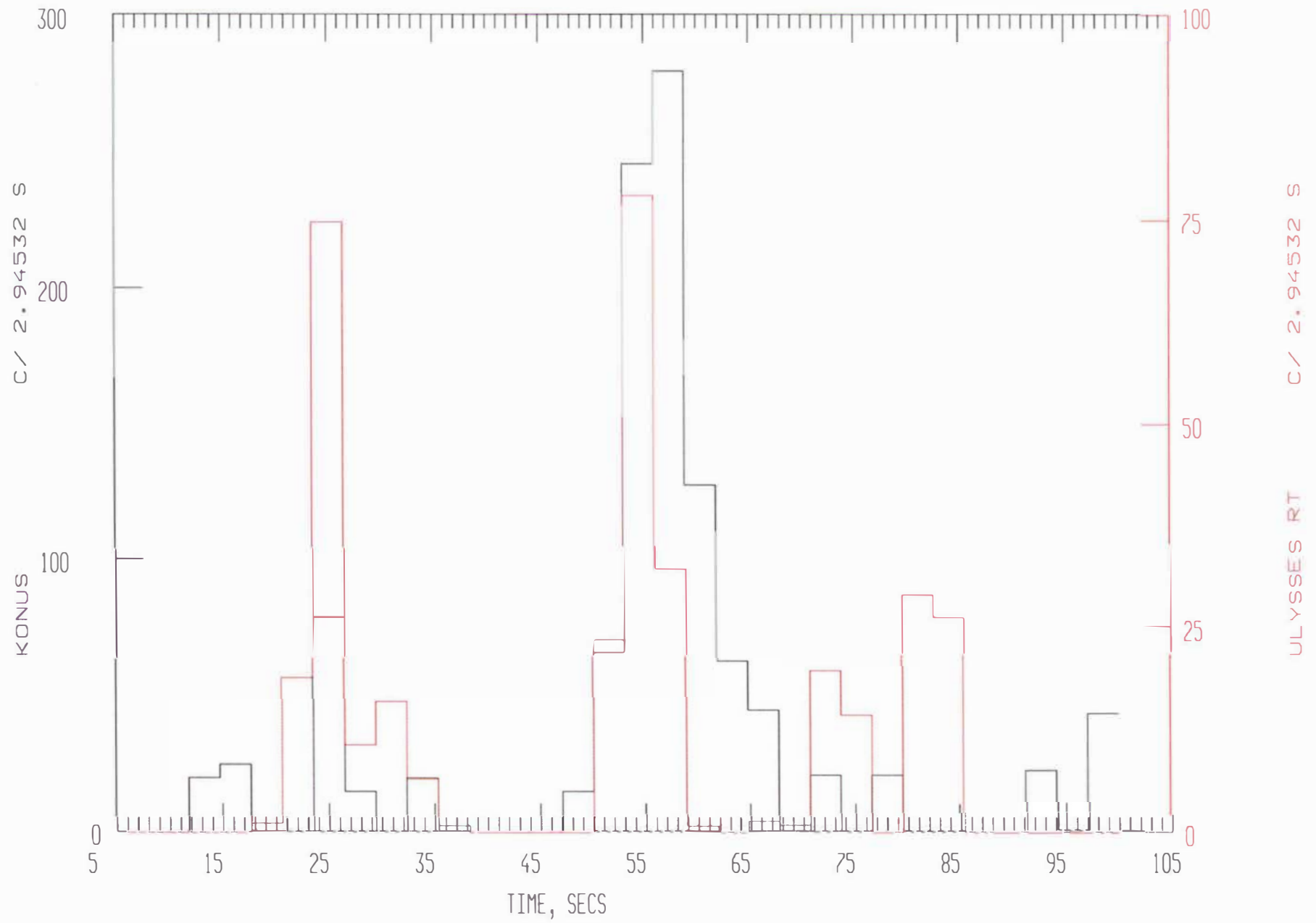
KONUS

-ULYSSES RT CORRELATION

09/09/96

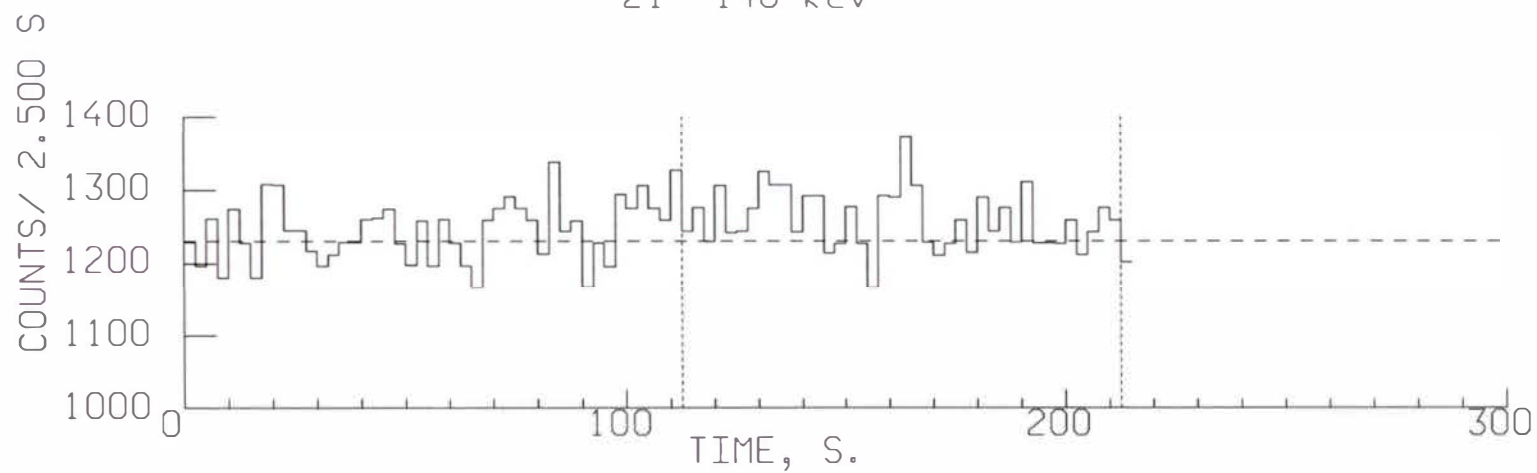
51535.641

11/10/11



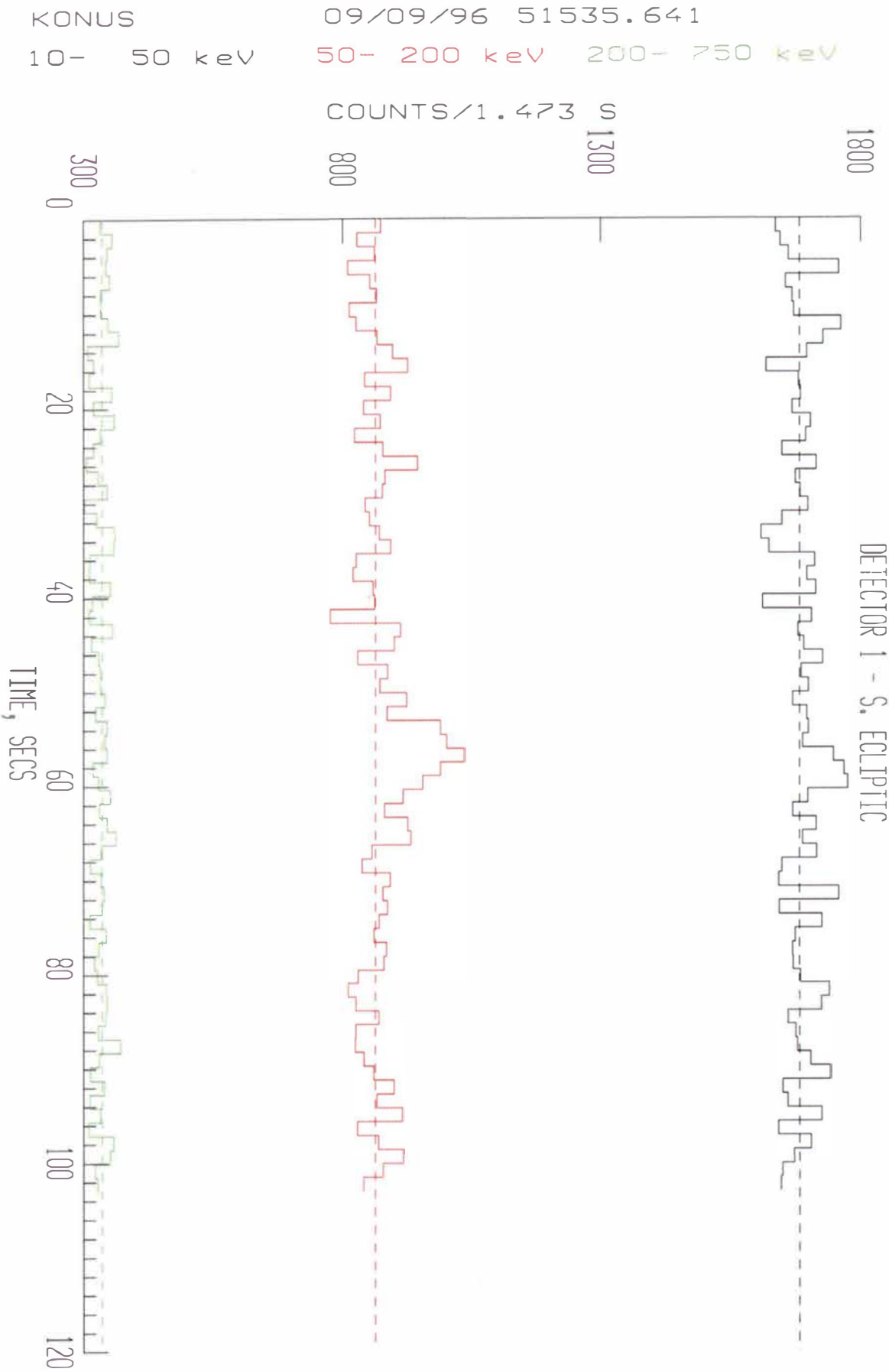
ULYSSES RT
9/ 9/96 51660.145 s
0.250 S INTERVALS REGROUPED BY 10
21- 146 keV

11/10/11

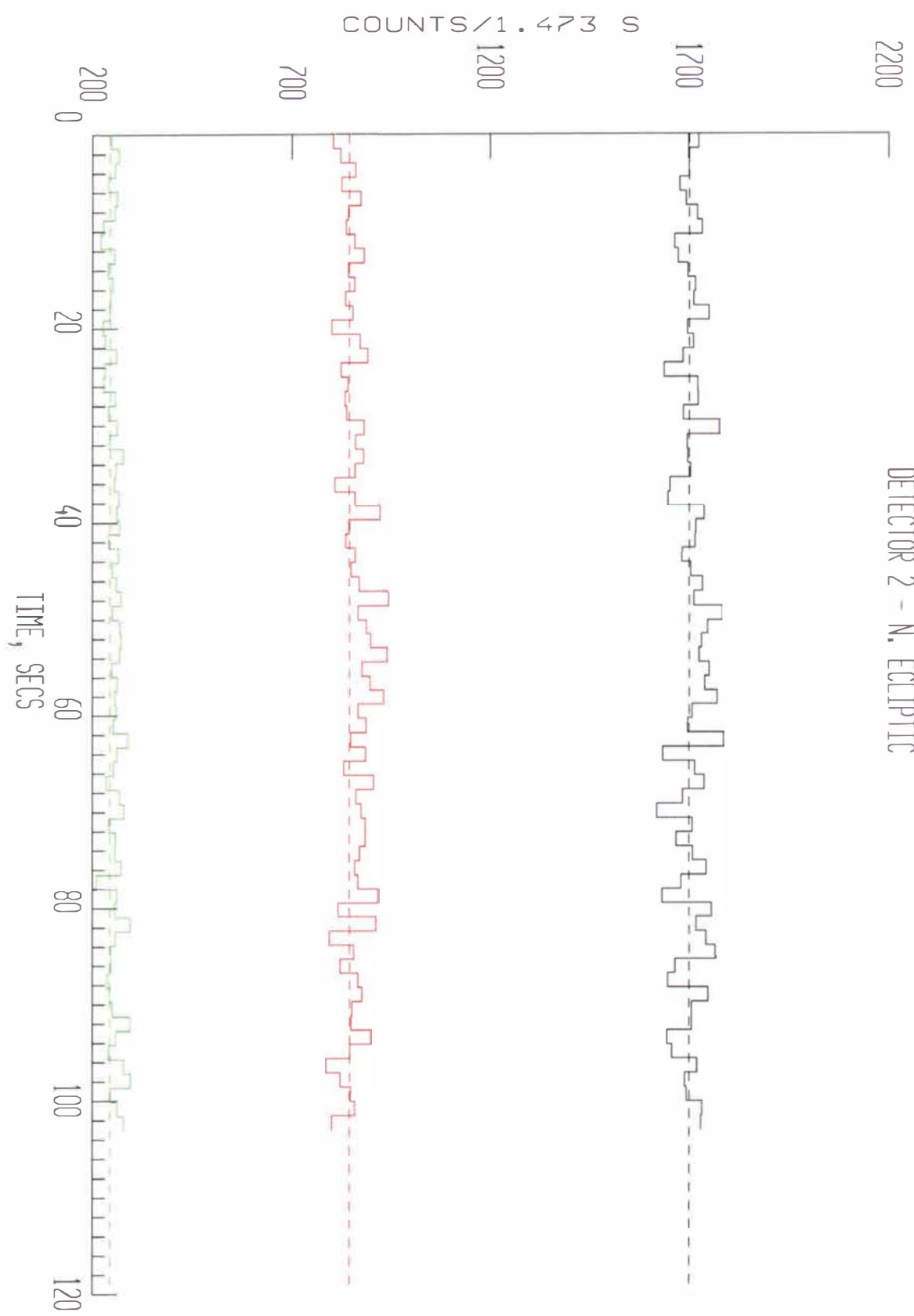


11/10/2011

DETECTOR 1 - S, ECLIPSE



KONUS 09/09/96 51535.641
10- 50 keV 50- 200 keV 200- 750 keV



DETECTOR 2 - N. ECLIPTEIC

11/10/2011

KONUS 19960909 51760

ULYSSES RT

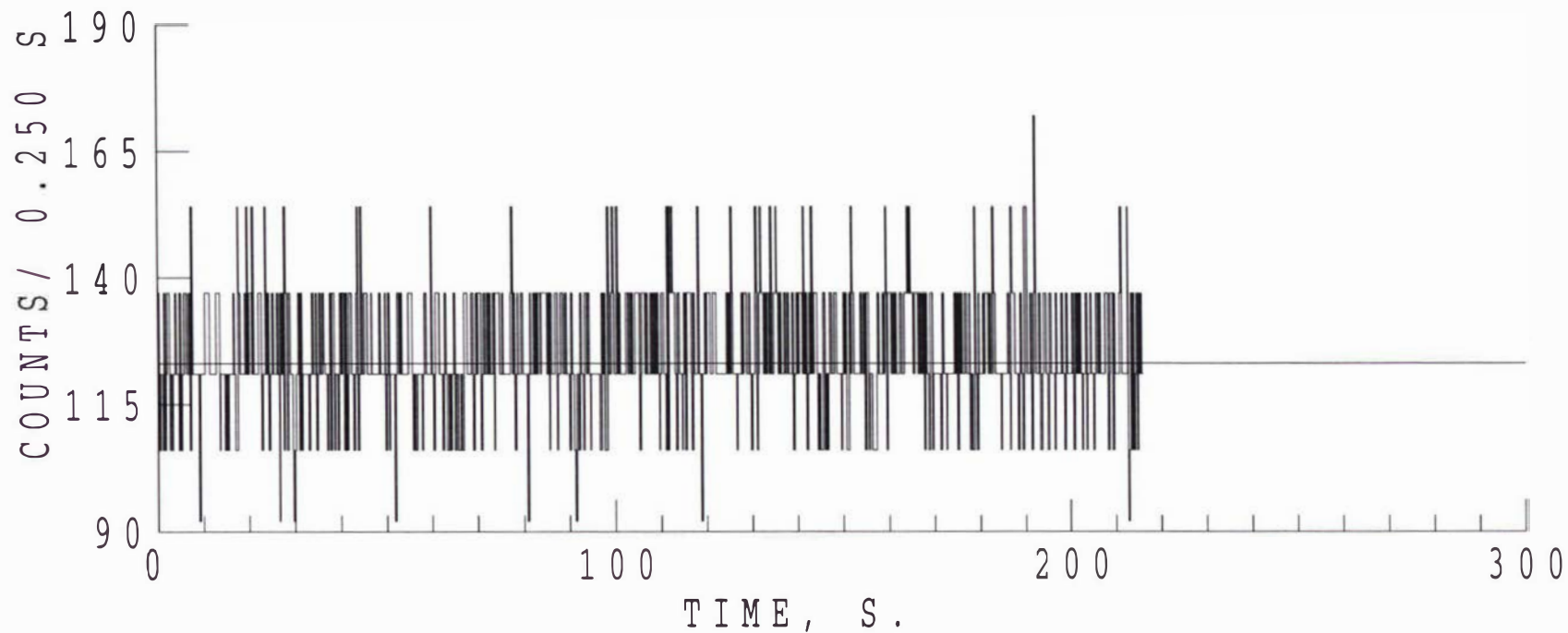
10/10/11

09/09/96 51660.145 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

15 / 02 / 00

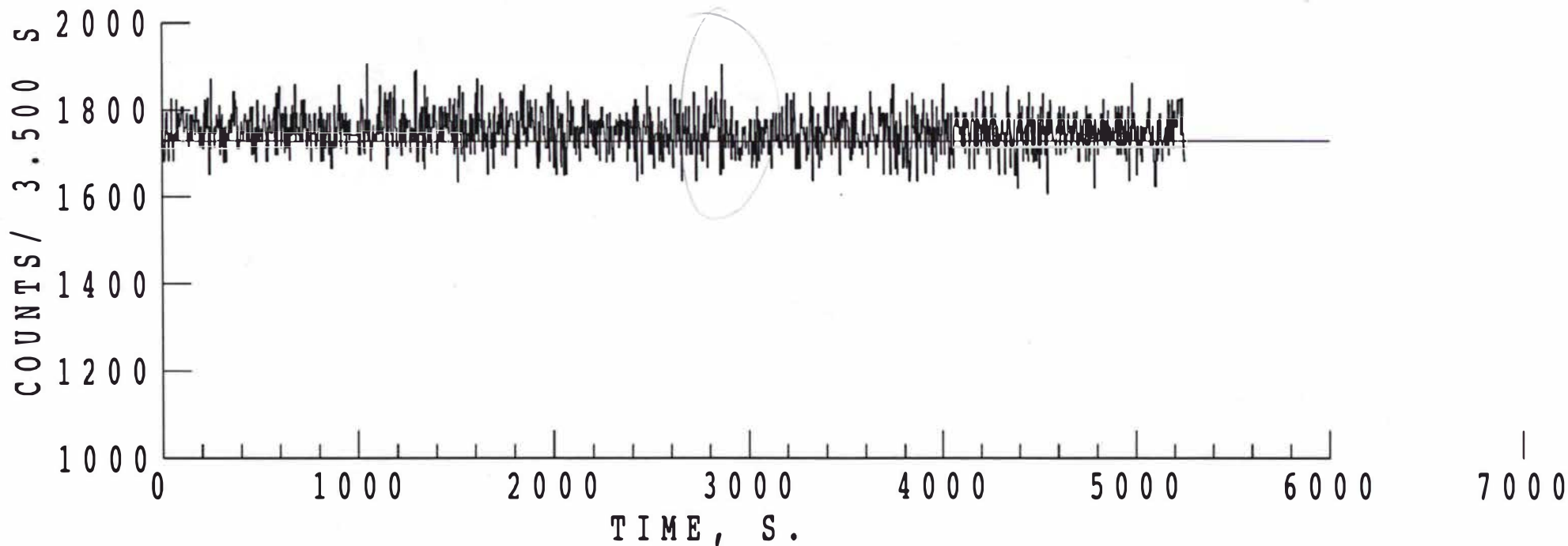
09 / 09 / 96 48960.113 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Tue Sep 10 10:52 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Tue, 10 Sep 1996 12:52:15 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5599

BATSEARCH PROGRAM

BATSE BURST # 5599
EVENT OF 1996 SEP 9 DAY OF YEAR=253
EVENT CROSSING TIME AT BATSE : 74442. S. OR 20:40:42.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 26.000 -8.000
BATSE PEAK COUNTING RATE: 19000 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 9/ 96 IS:
RA= 167.850 DEC= 35.640 DIST= 5.156 AU
BATSE-ULYSSES DISTANCE = 771283905. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1836.86 SECS.
CROSSING TIME AT ULYSSES IS 76279. S. OR 21:11:18 +/- 390.64 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 9/ 96 IS:
RA= 121.846 DEC= 21.178 DIST= 2.075 AU
MARS-BATSE DISTANCE = 310456768. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 149.47 SECS.
CROSSING TIME AT MARS IS 74591. S. OR 20:43:11 +/- 180.18 SECONDS

BATSE BURST TRIGGER

NO.: 5599

TIME: TJD=0335 SECONDS=74442

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

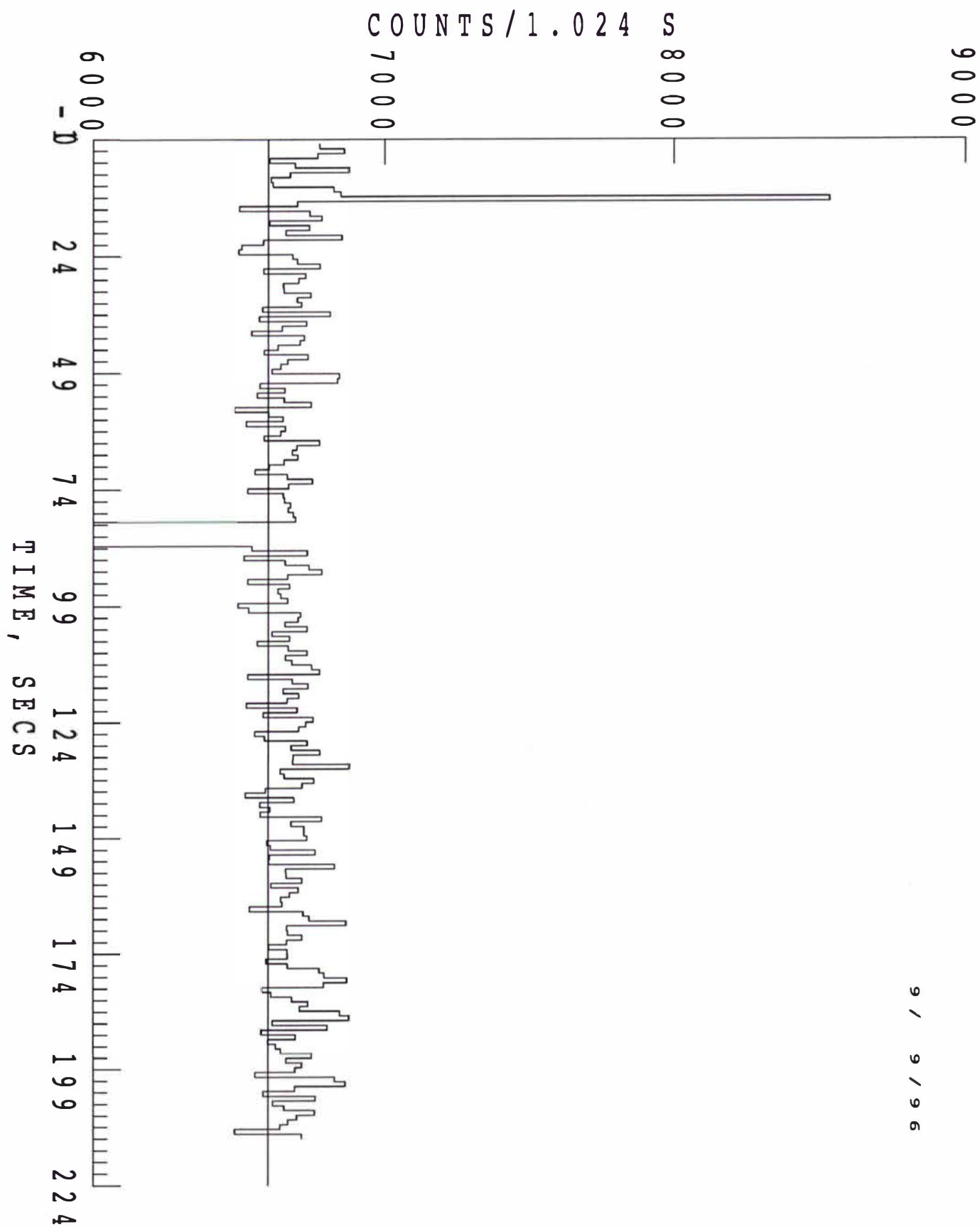
LOCATION: ZENITH=77.2 AZIMUTH=200.6 ERROR=2.4 DEGREES

COMMENTS:

GRB LASTING ~ 1 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5599	960909	10335	74442	19000	026	-08	1

BACODINE 5599 09/09/96 74431.177
25- 100 keV



BATSE #

5599

12 / 9 / 96

ULYSSES RT

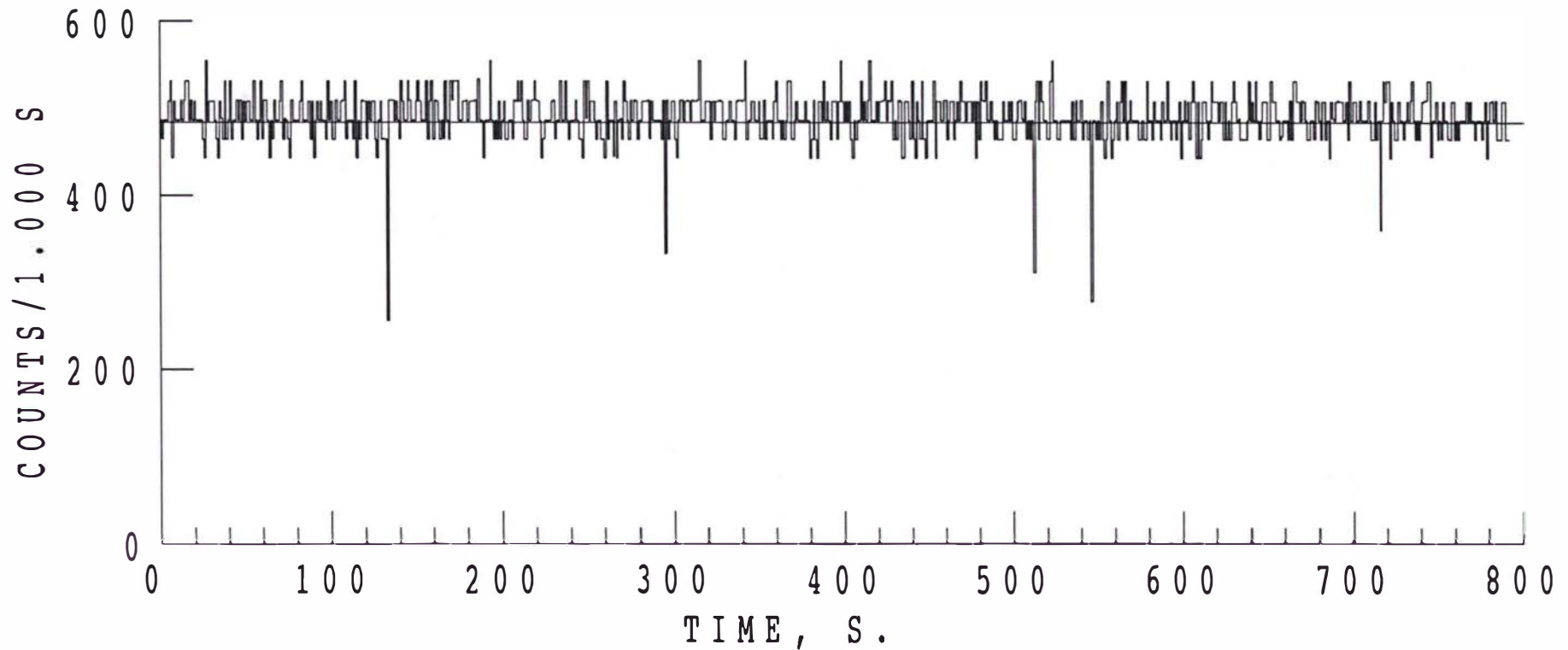
9 / 9 / 96 75888.445 s

0.500 S INTERVALS REGROUPED BY 2

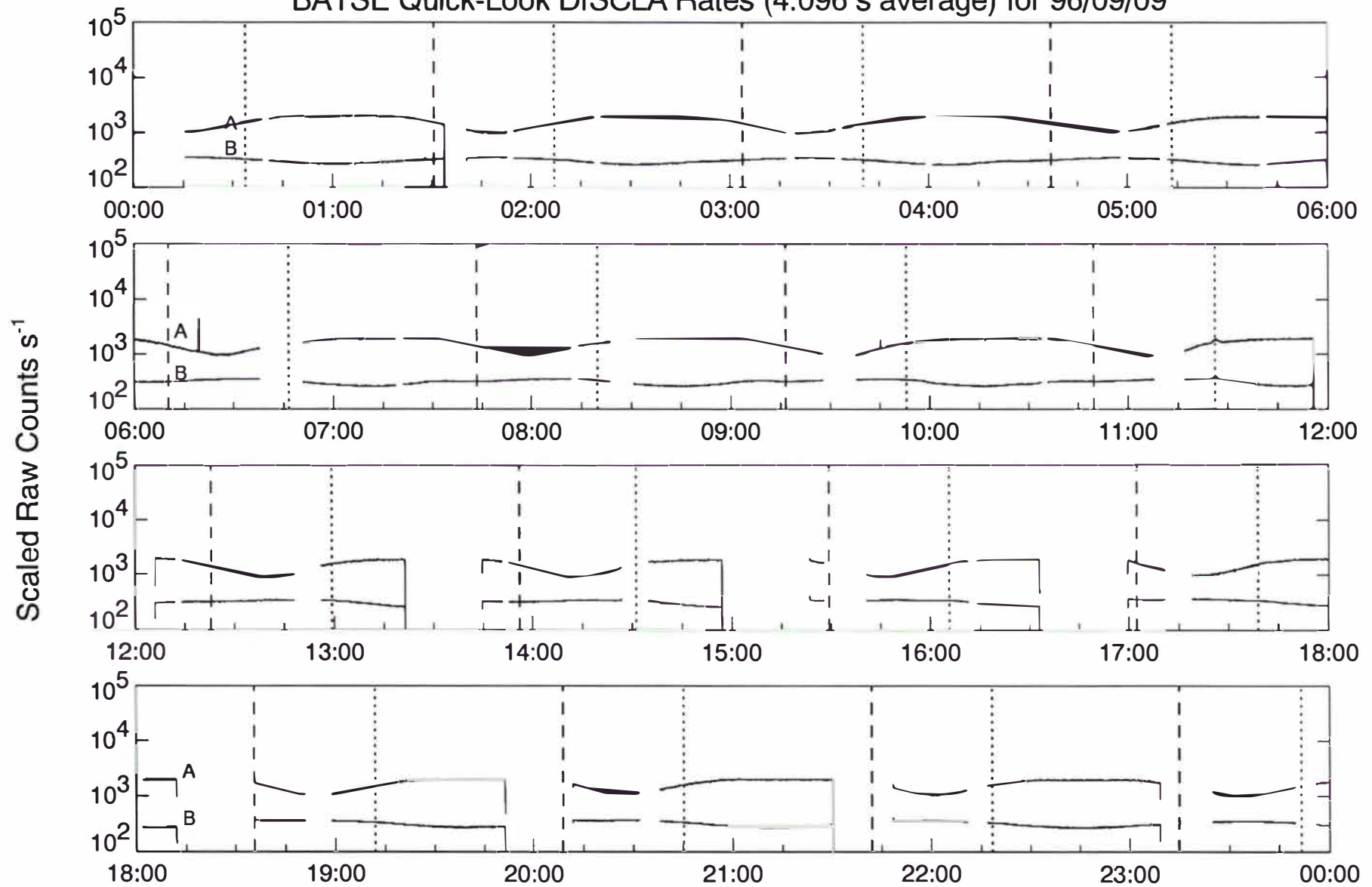
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



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



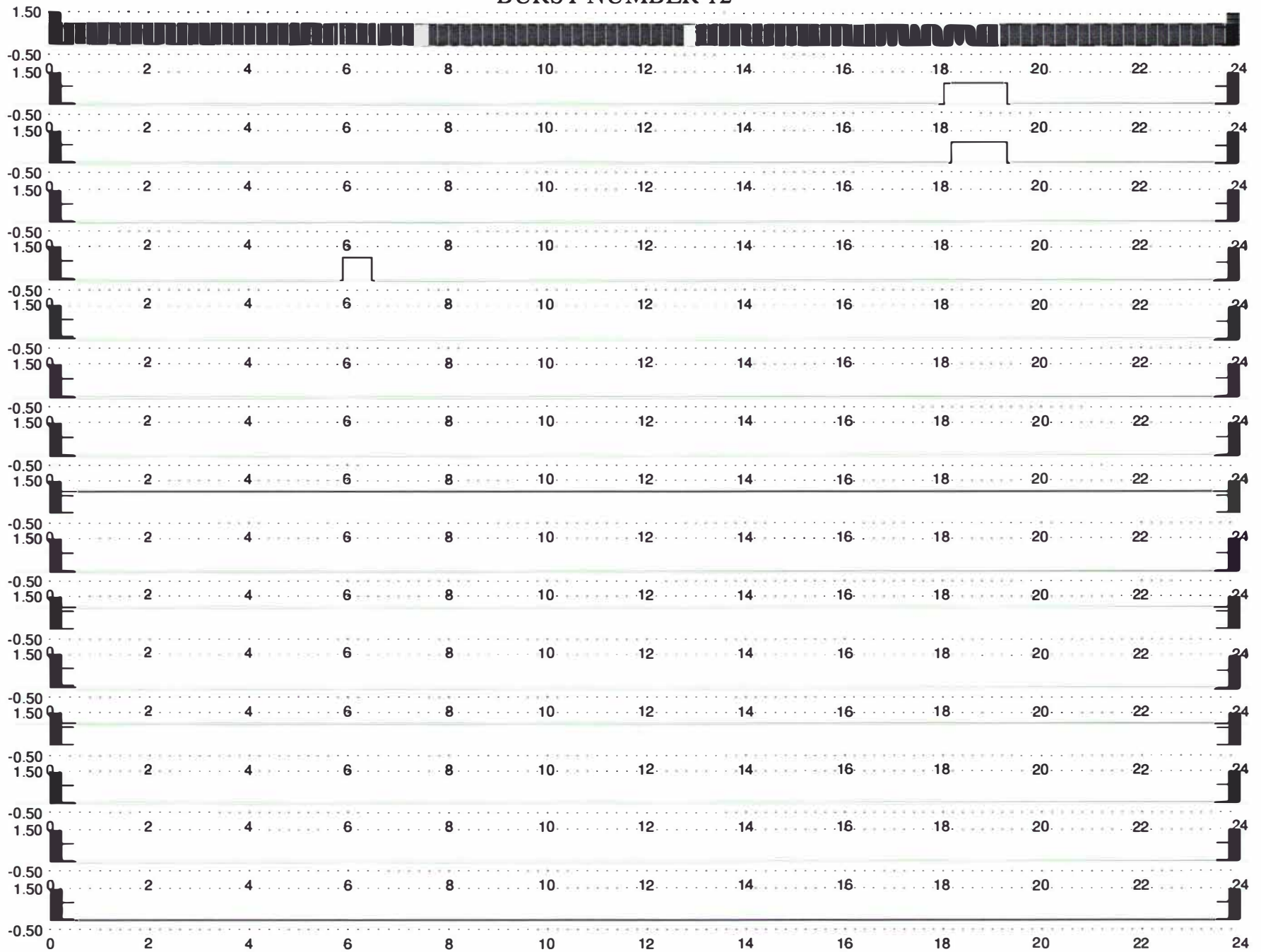
Current Time: 96/09/11, 1005 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

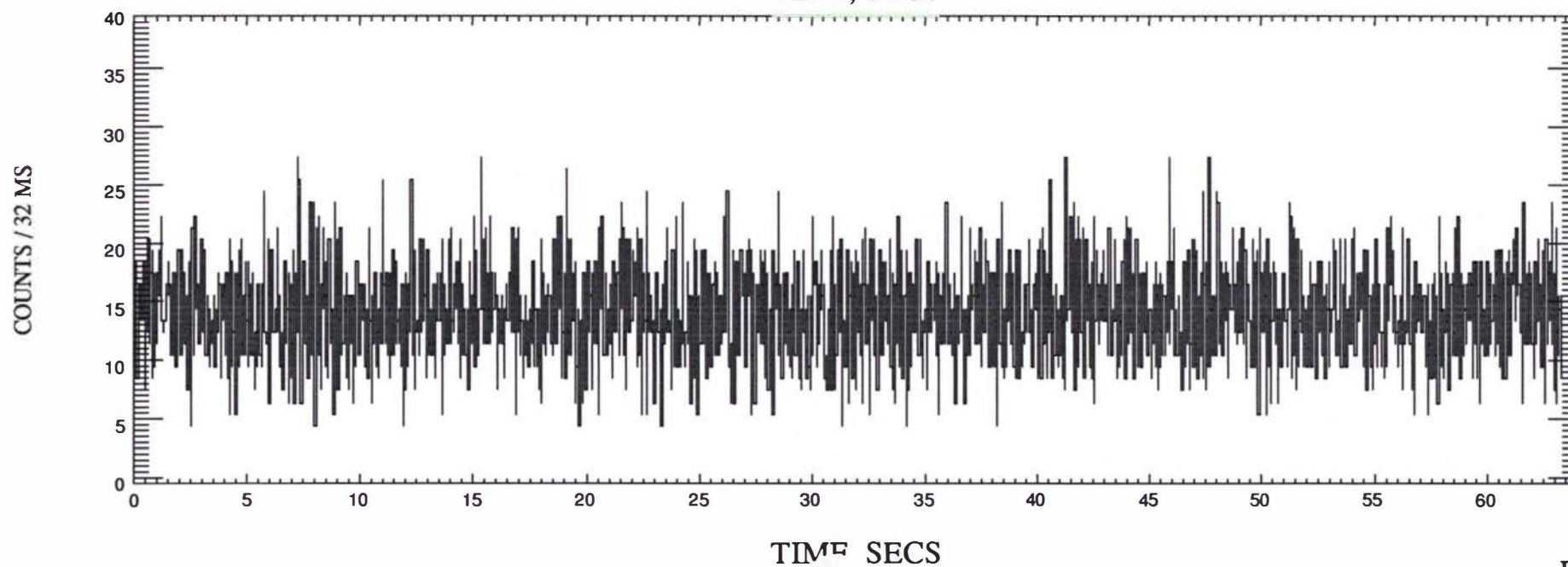
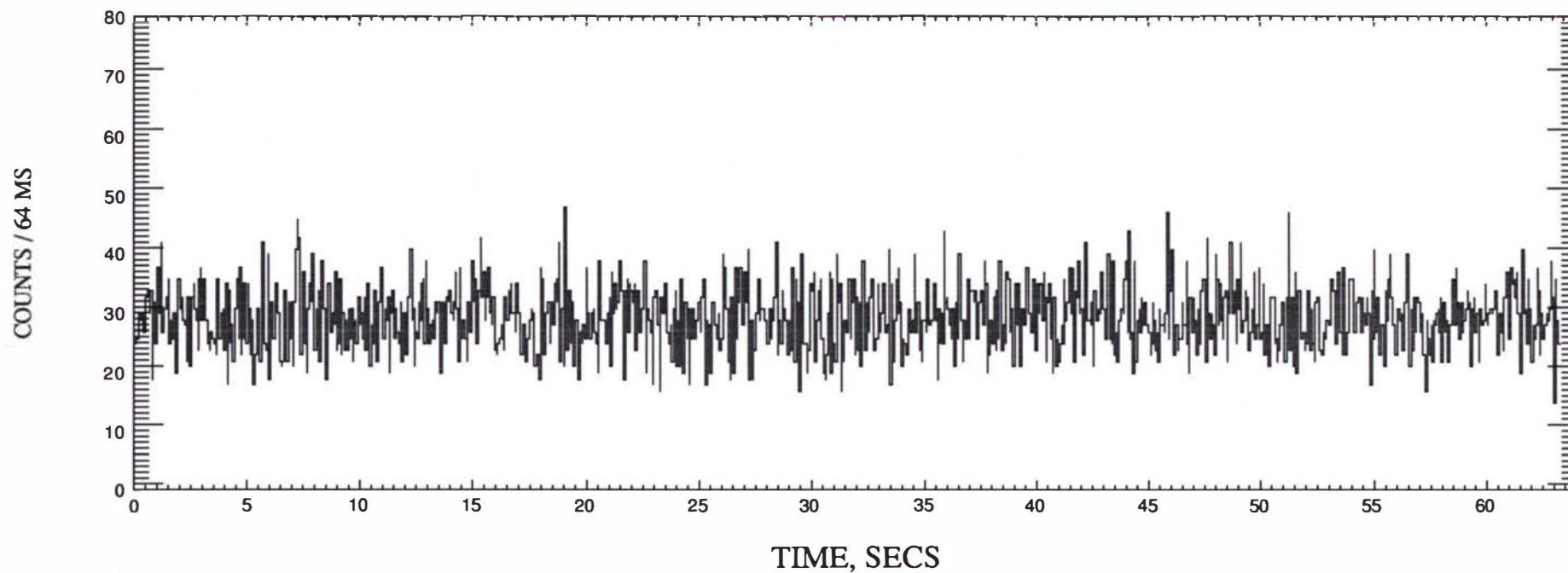
BURST NUMBER 12

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

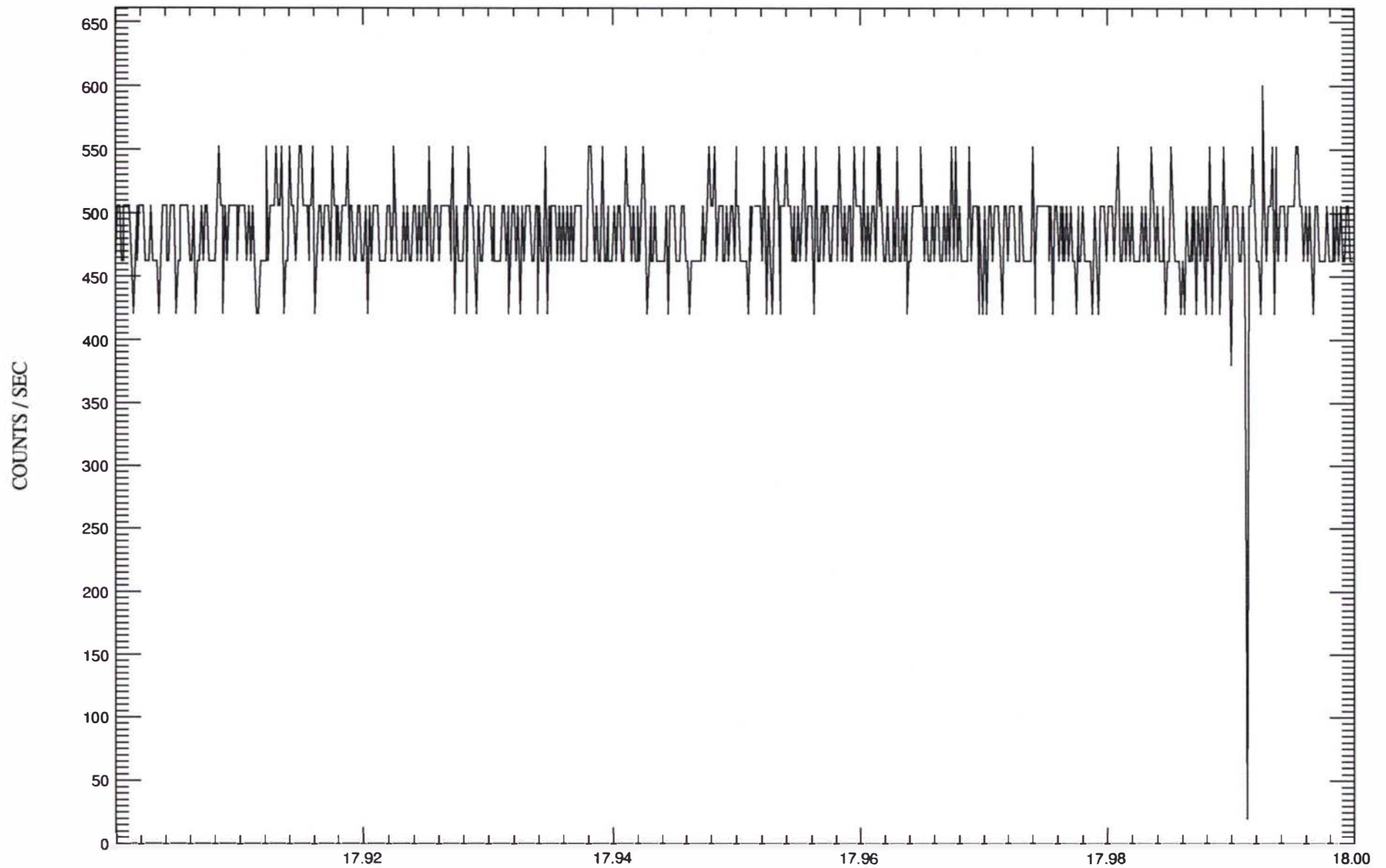


UNIVI AL TIME

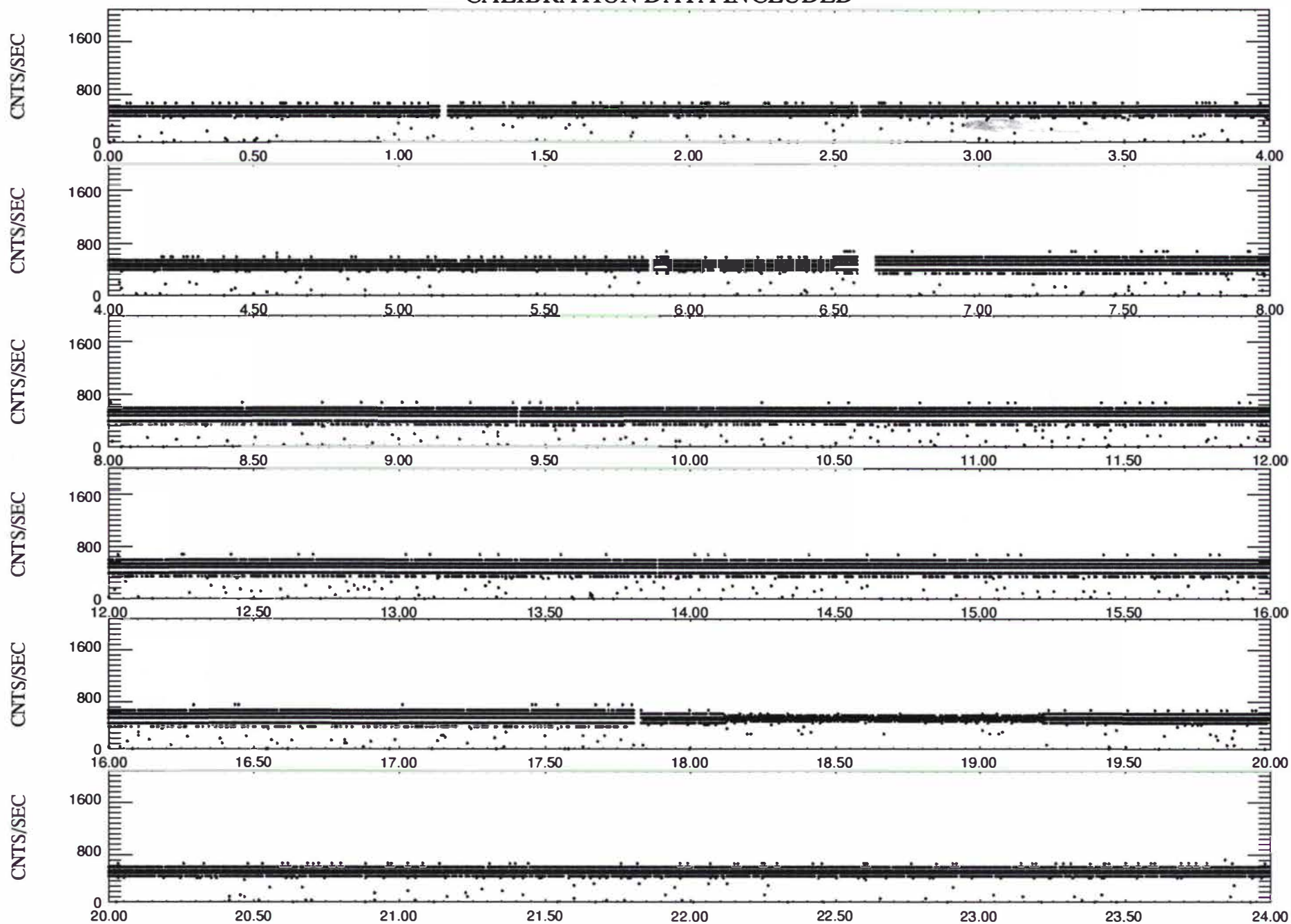
Burst Counter 12 at UT=17.950189459059 h=64620.682 s 17:57:00.682



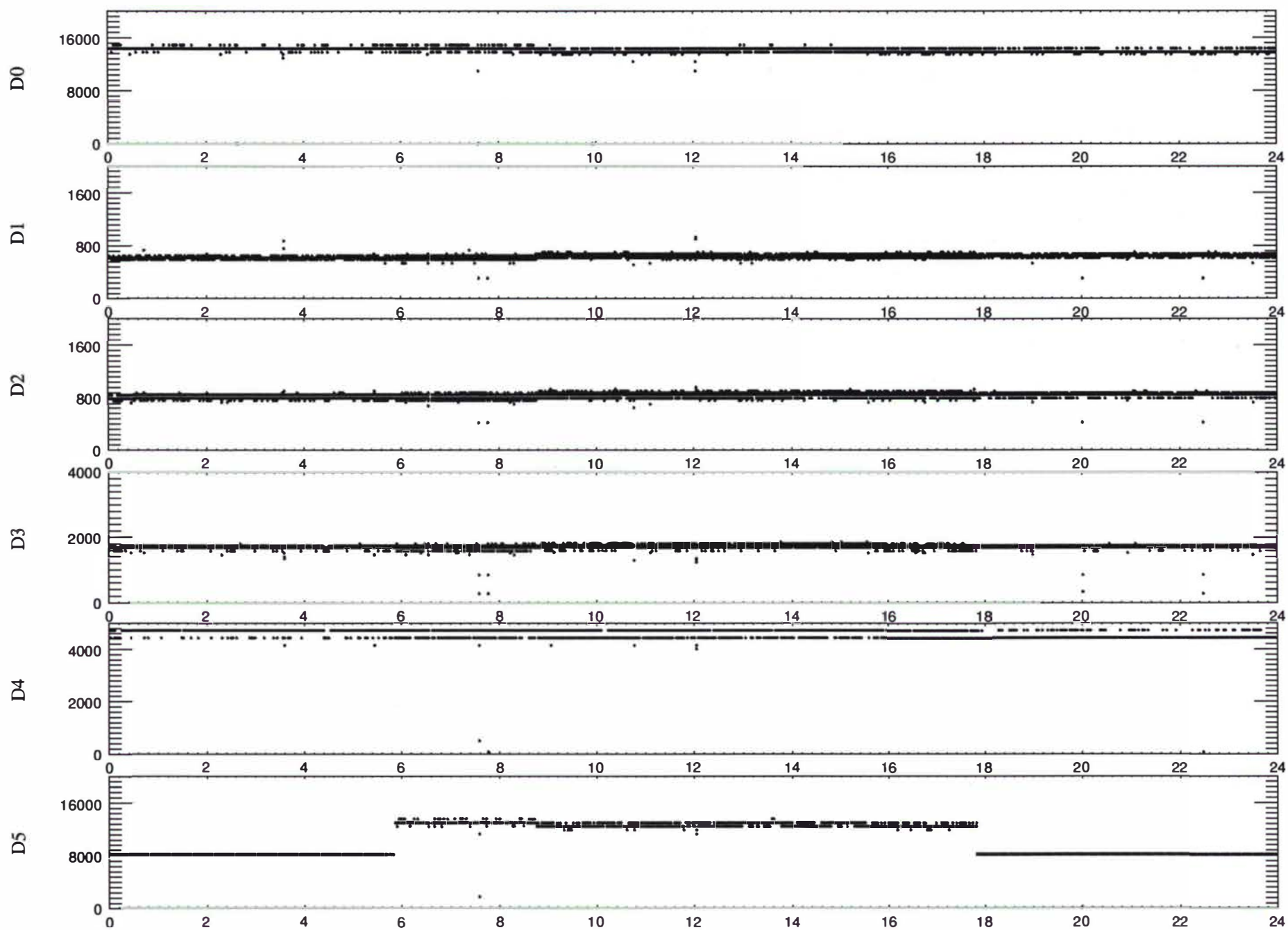
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV! AL TIME

From WOODSP@SSLLES.MSFC.NASA.GOV Thu Sep 12 08:03 PDT 1996
Date: Thu, 12 Sep 1996 10:02:01 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5600

TIME: TJD=0336 SECONDS=32539

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

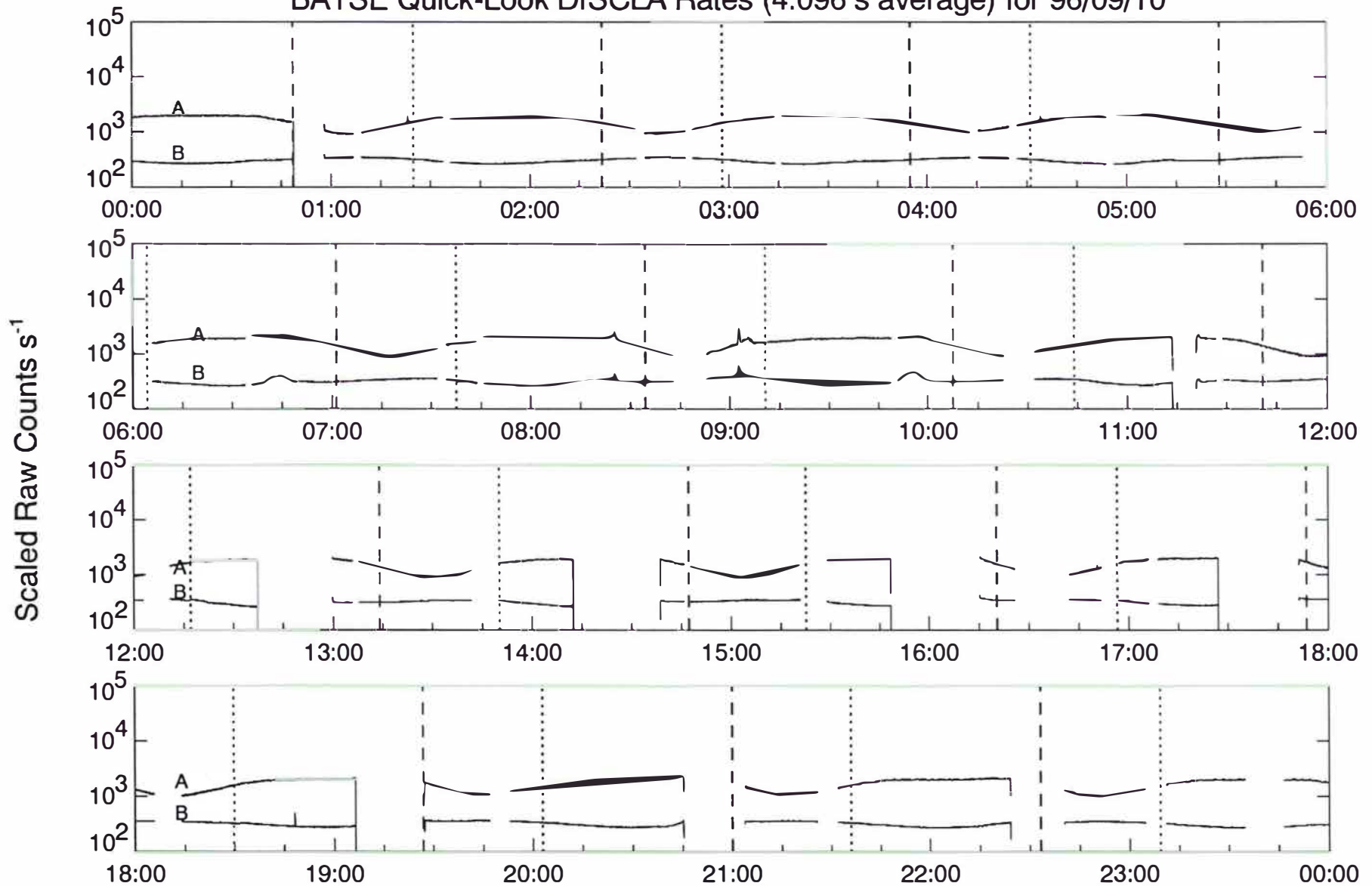
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/10

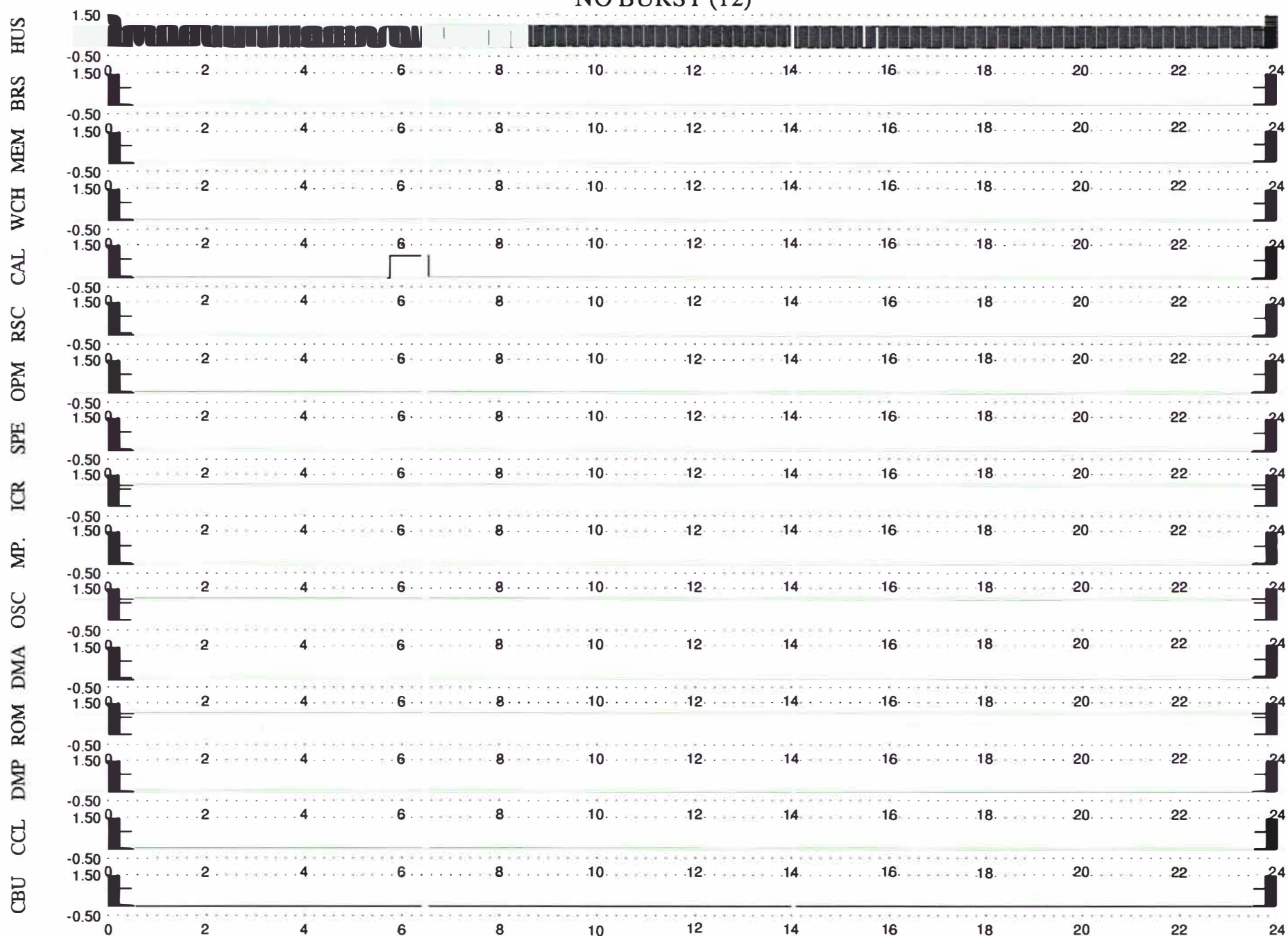


Current Time: 96/09/12, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

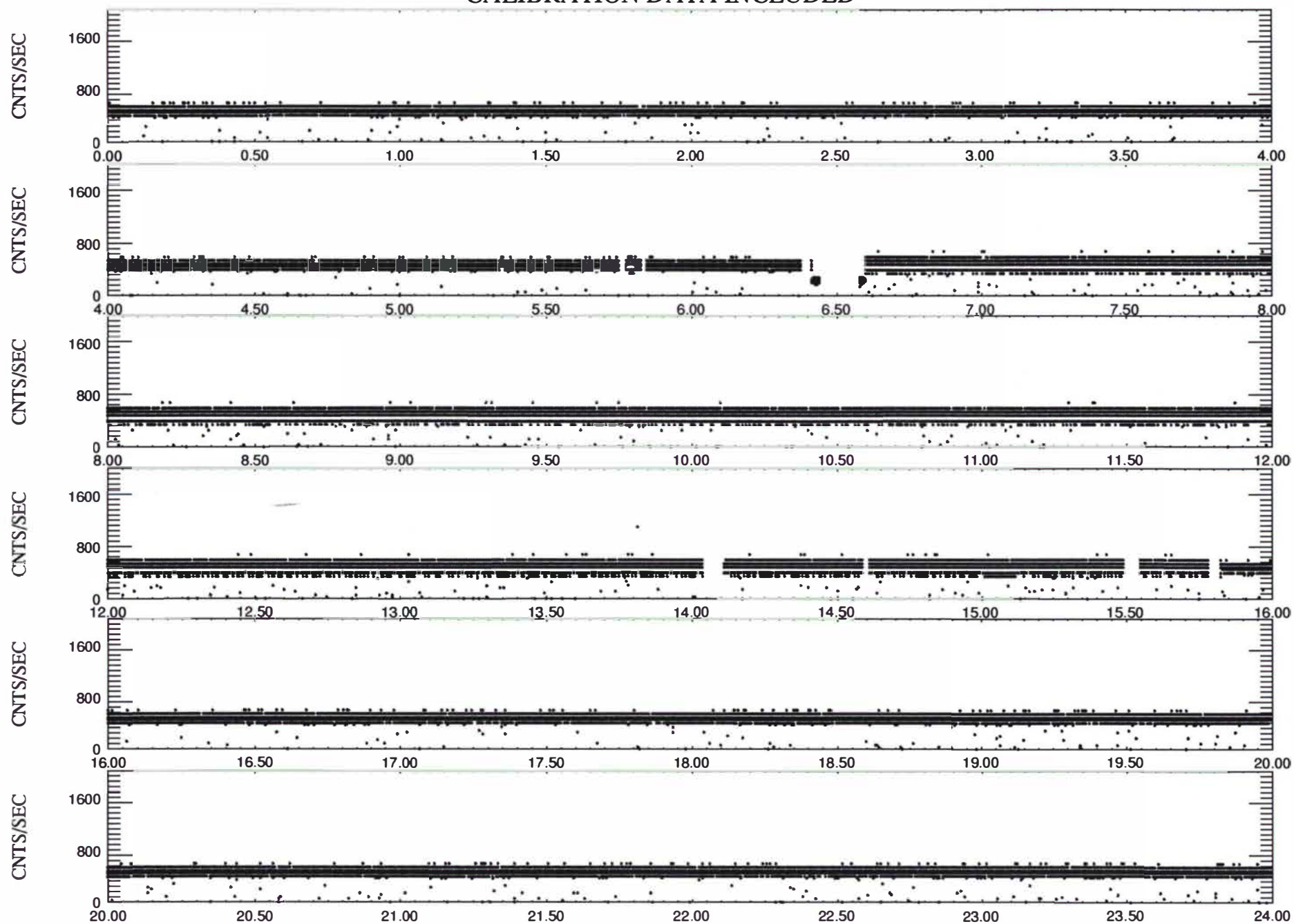
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

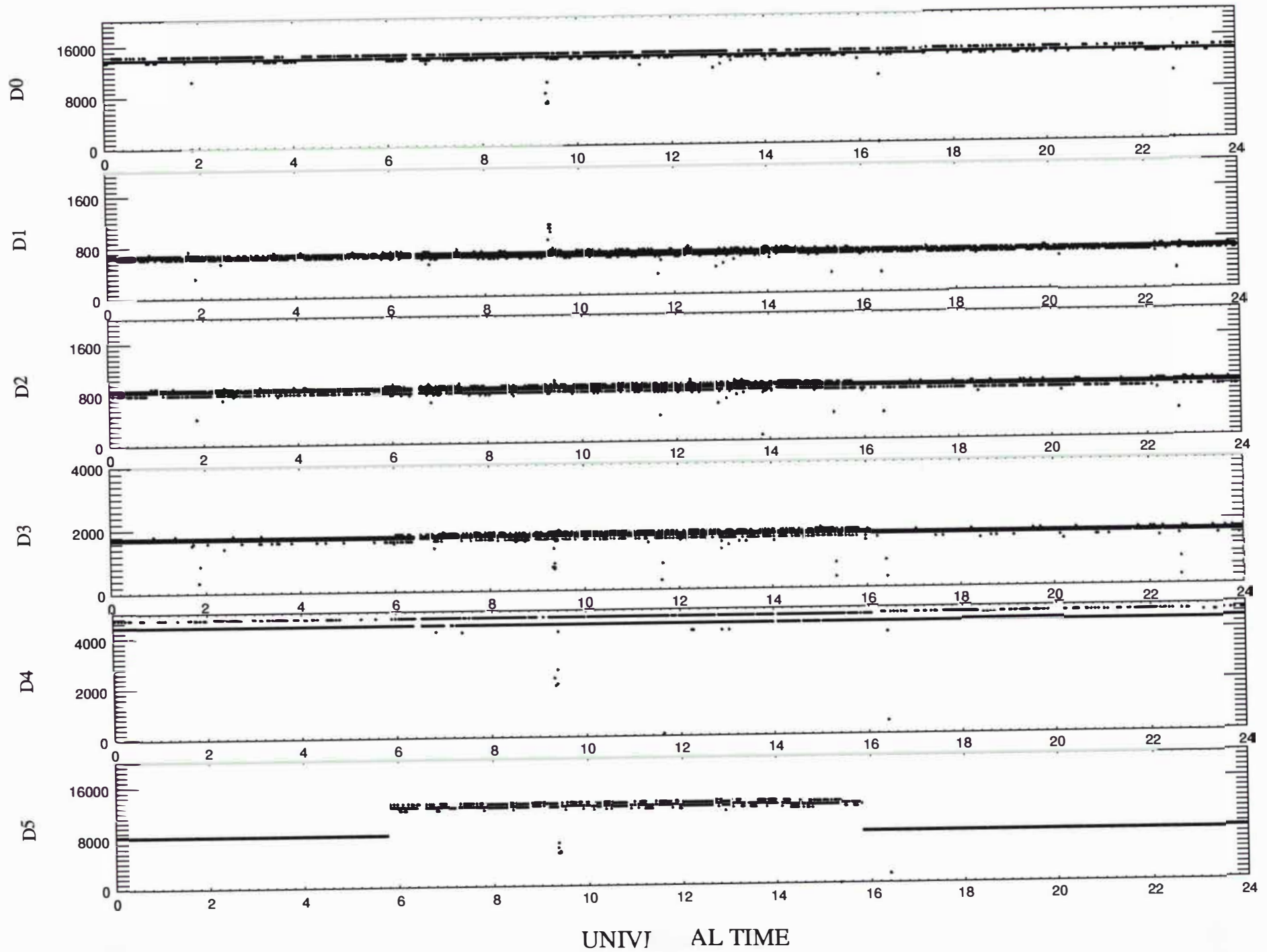
UNIVERSAL TIME



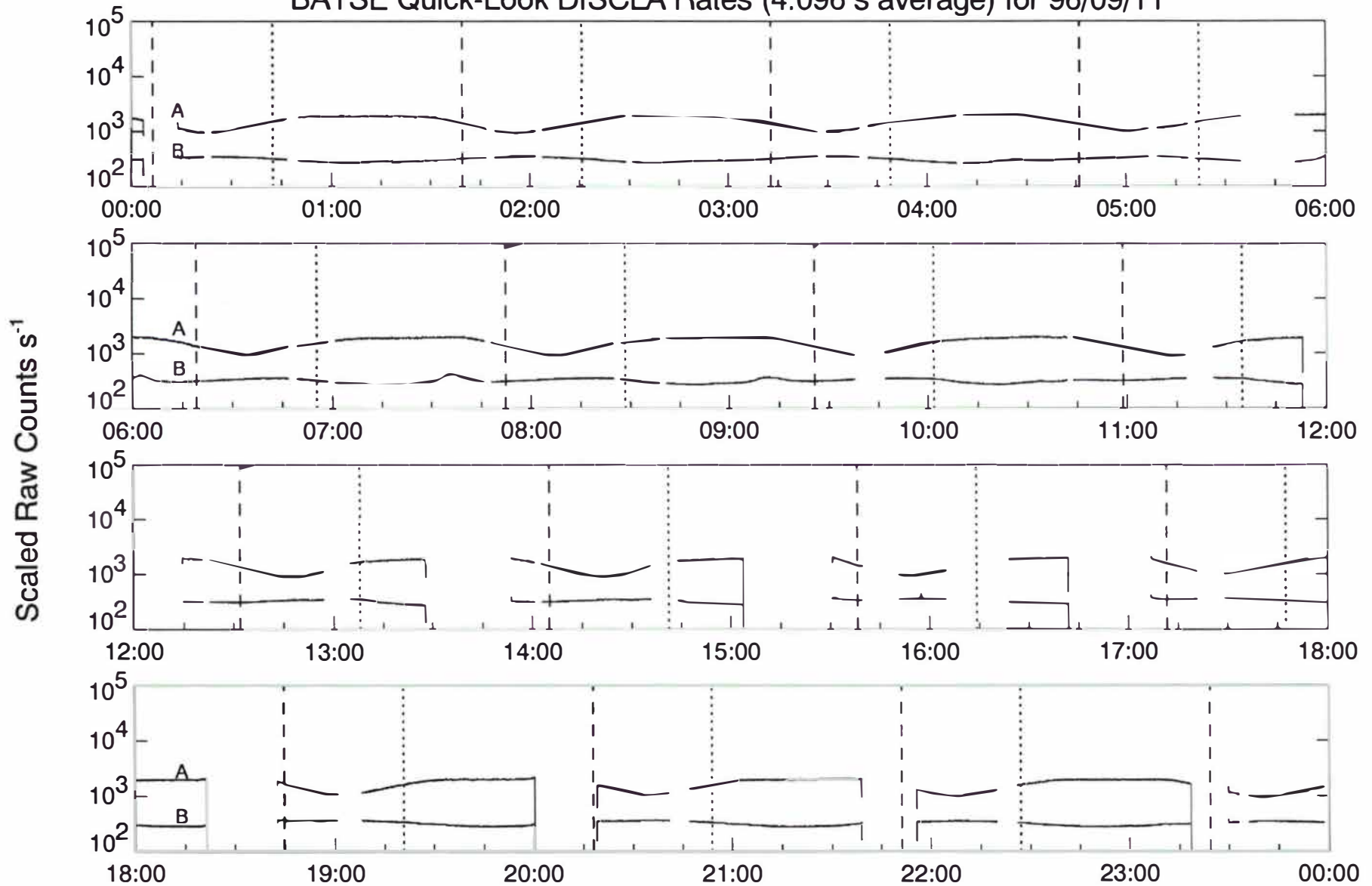
CALIBRATION DATA INCLUDED



UNIV AL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/11

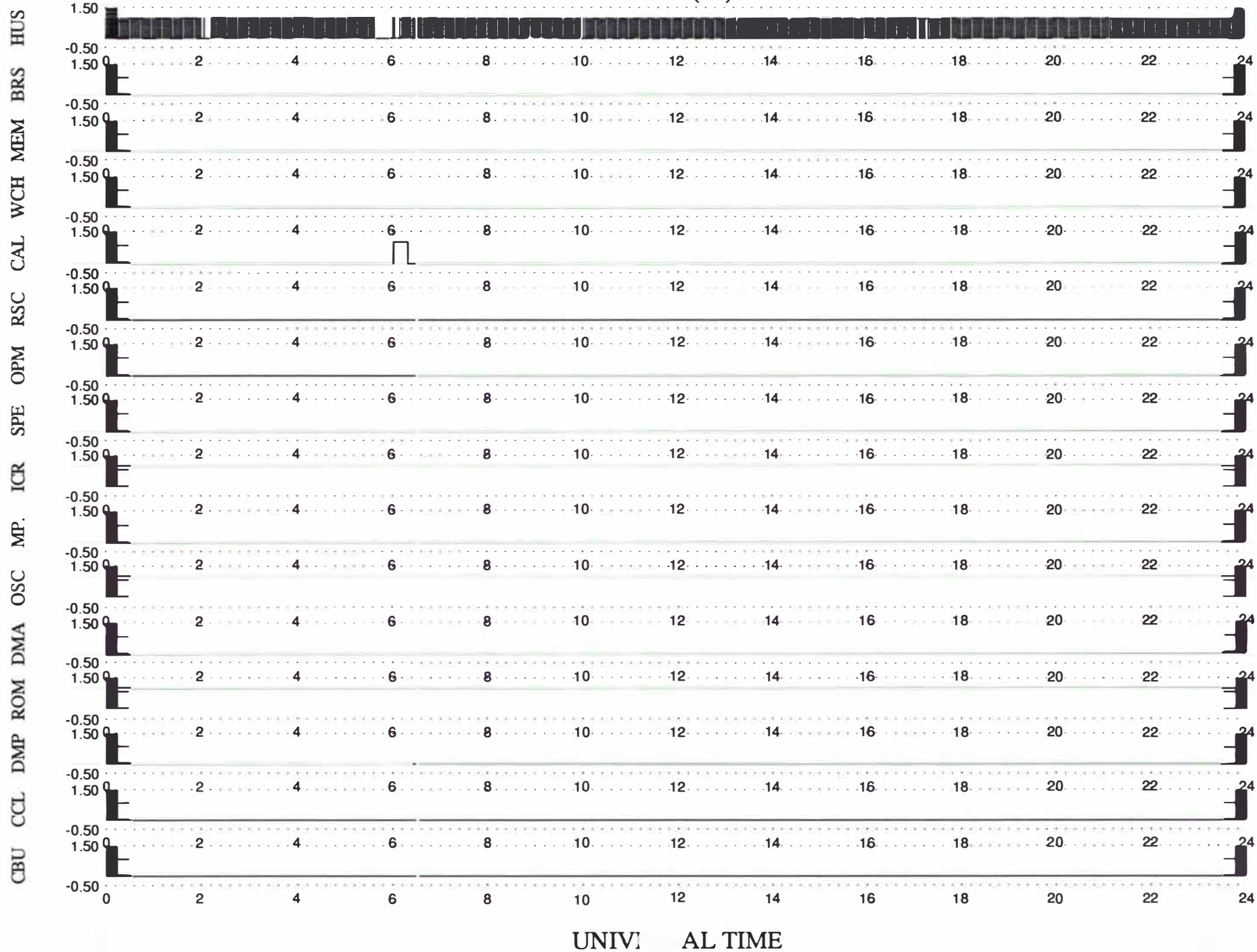


Current Time: 96/09/13, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

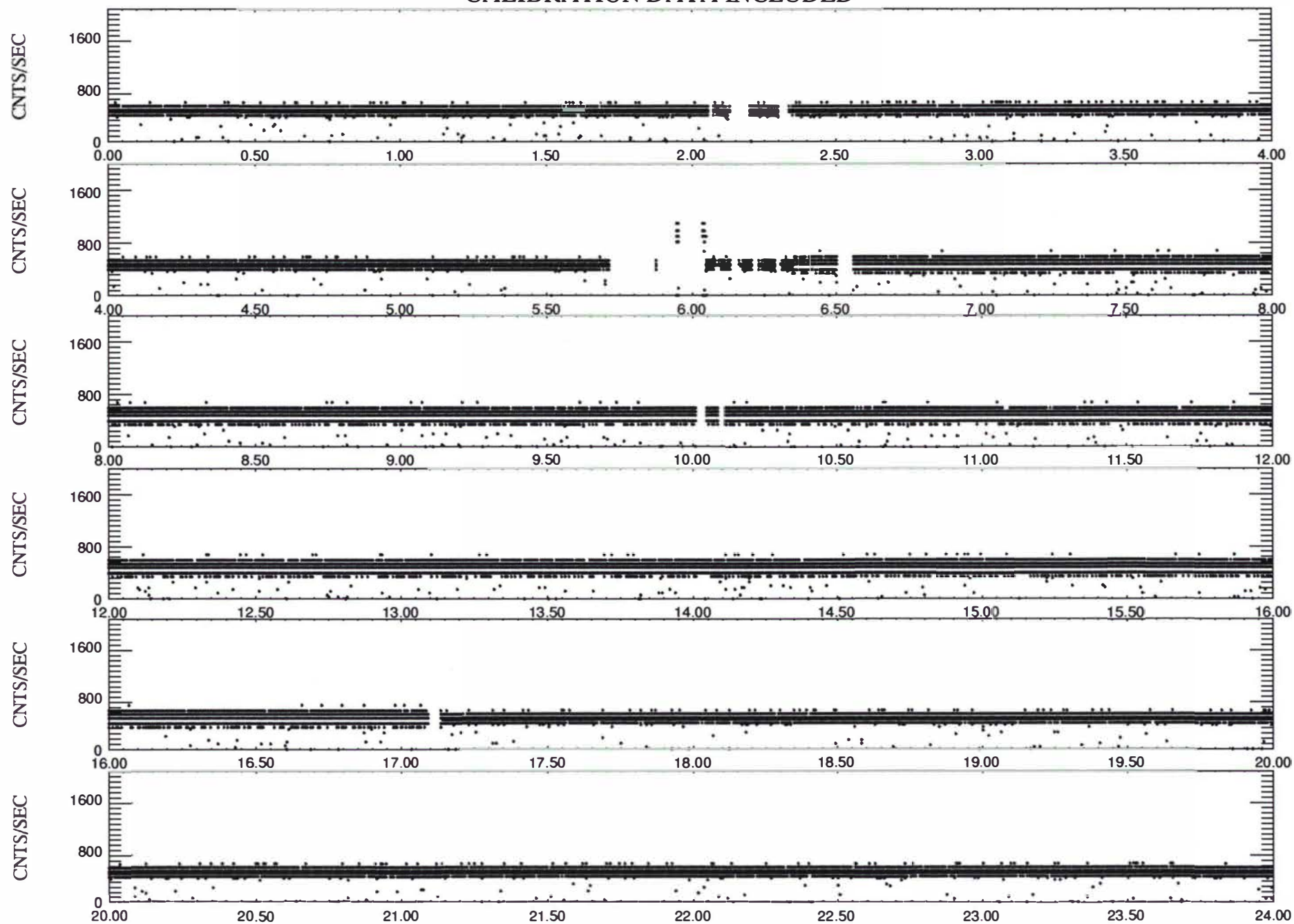
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

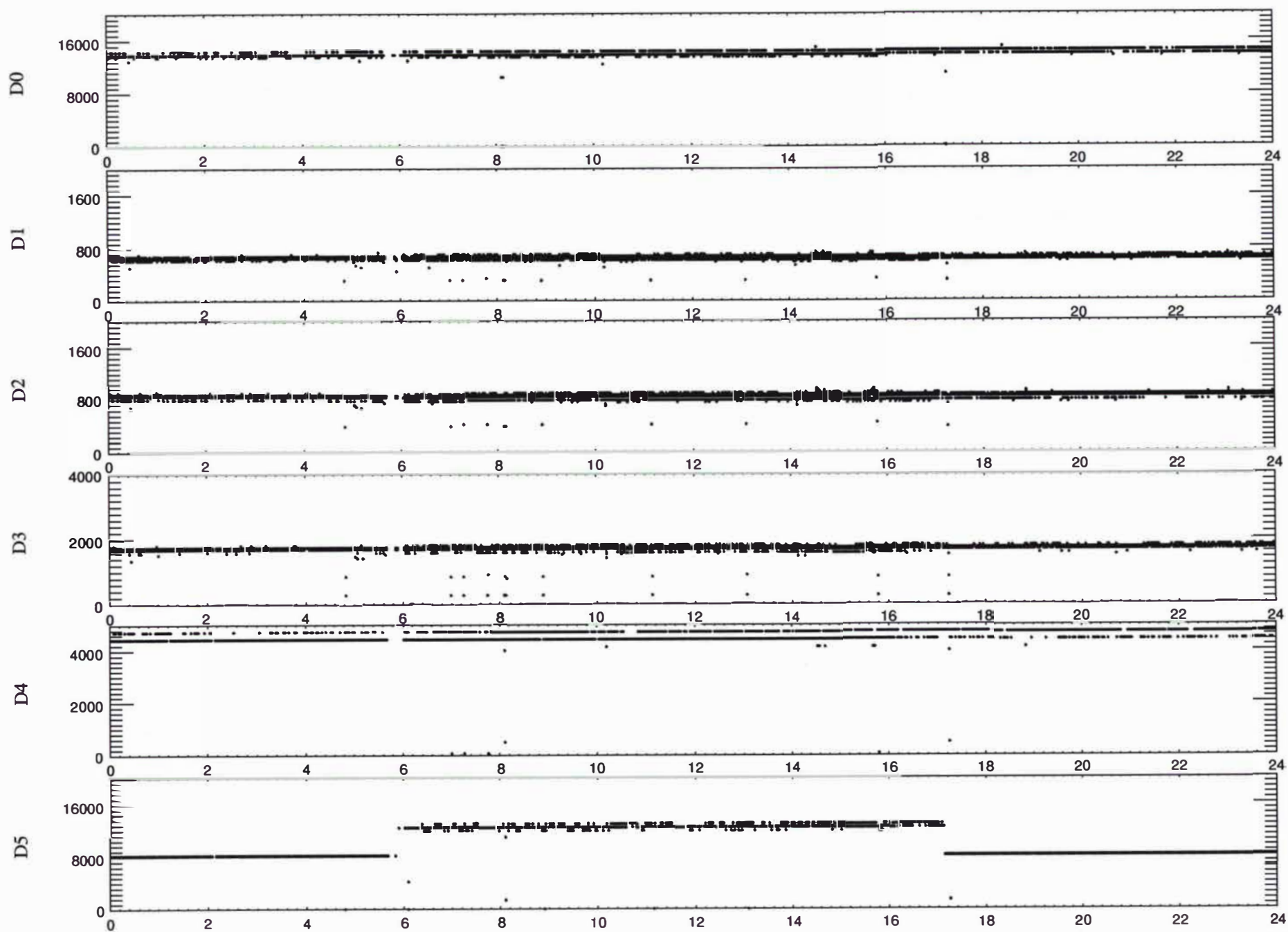
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV! AL TIME

From: BUTTERWORTH@lheavx.gsfc.nasa.gov Mon Sep 23 11:12 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Mon, 23 Sep 1996 14:11:29 -0400 (EDT)
To: khurley@sunspot.ssi.berkeley.edu, kmarar@isac.ernet.in, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botesi.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 event on September 12 was not detected by Konus

Hi Everyone,

Konus did not trigger near the time of interest. Between 9.38 and 10.39 UT there are no indications of a GRB in the waiting-mode data. From 9.24 to 9.38 and 10.39 to 10.47 there was solar activity that will have obscured any non-solar events.

Paul.

Date: Mon, 23 Sep 1996 09:28:24 -0700
From: khurley@sunspot.ssi.berkeley.edu (Kevin Hurley)
Message-Id: <199609231628.JAA28530@scylla.berkeley.edu>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssi.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@botesi.tesre.bo.cnr.it
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses observed a weak, 32 ms long burst September 12 1996 at 10:13 Ulysses time. The spacecraft was about 2575 light seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list
(bartheim, butterworth, cline, frontera, marar, teegarden, terreil, yoshimori)

From DEAL@fender.msfc.nasa.gov Fri Sep 13 09:16 PDT 1996
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA09211; Fri, 13 Sep 1996 09:16:37 -0700
From: DEAL@fender.msfc.nasa.gov
Date: Fri, 13 Sep 1996 11:16:16 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <960913111616.212052ab@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5601
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

RT

BATSEARCH PROGRAM

BATSE BURST # 5601
EVENT OF 1996 SEP 12 DAY OF YEAR=256
EVENT CROSSING TIME AT BATSE : 50247. S. OR 13:57:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 95.000 77.000
BATSE PEAK COUNTING RATE: 15000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 9/ 96 IS:
RA= 168.377 DEC= 35.326 DIST= 5.157 AU
BATSE-ULYSSES DISTANCE = 771453254. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1584.90 SECS.
CROSSING TIME AT ULYSSES IS 48662. S. OR 13:31:02 +/- 377.90 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 9/ 96 IS:
RA= 123.820 DEC= 20.808 DIST= 2.059 AU
MARS-BATSE DISTANCE = 308018976. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=122.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -544.92 SECS.
CROSSING TIME AT MARS IS 49702. S. OR 13:48:22 +/- 142.95 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5601	960912	10338	50247	15000	095	+77	32

BATSE BURST TRIGGER

NO.: 5601

TIME: TJD=0338 SECONDS=50247

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=21.9 AZIMUTH=335.8 ERROR=0.6 DEGREES

COMMENTS:

GRB LASTING ~ 32 S. VISIBLE ABOVE 300 KEV.

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	5575
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	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 + 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

TLG

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

Helio corr removed 2/17/00
Date: Mar 16 '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*

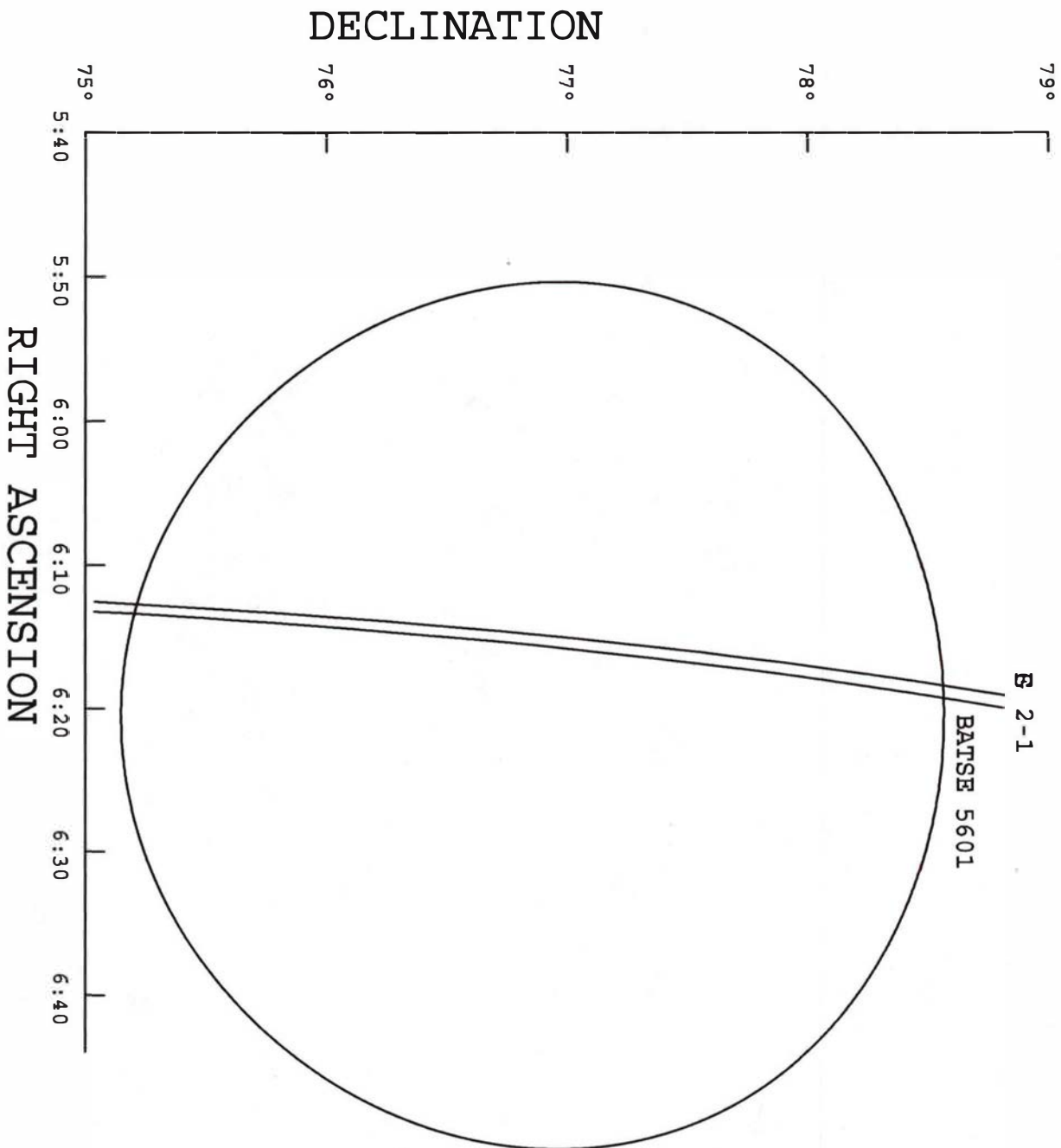
3. PVO Data

- ☐ 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 SEP 12, 1996 13:30

17 / 2 / 0



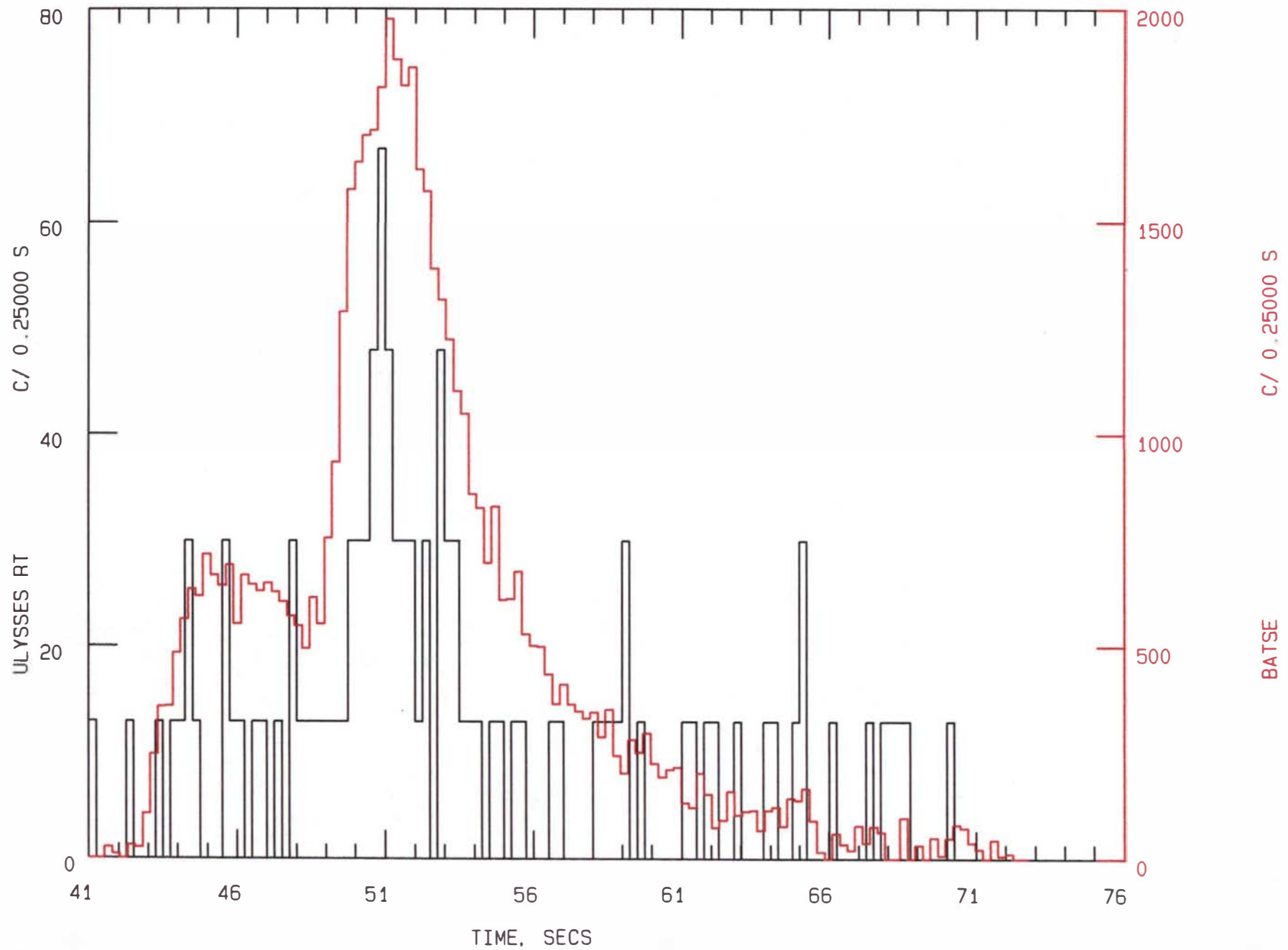
ULYSSES RT-BATSE

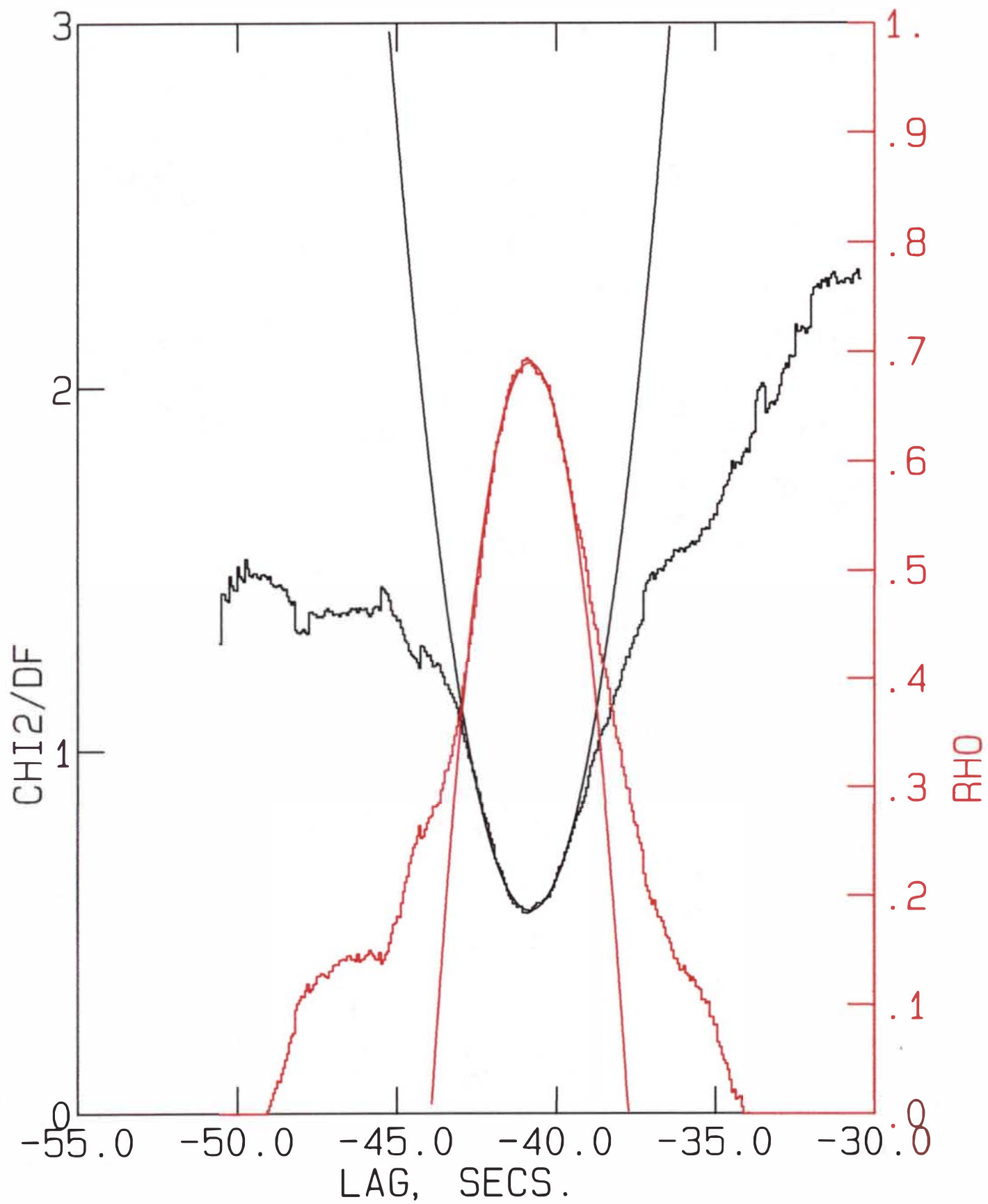
CORRELATION

12/ 9/96

48638.245

16/ 3/98





ULYSSES RT

16 / 3 / 98

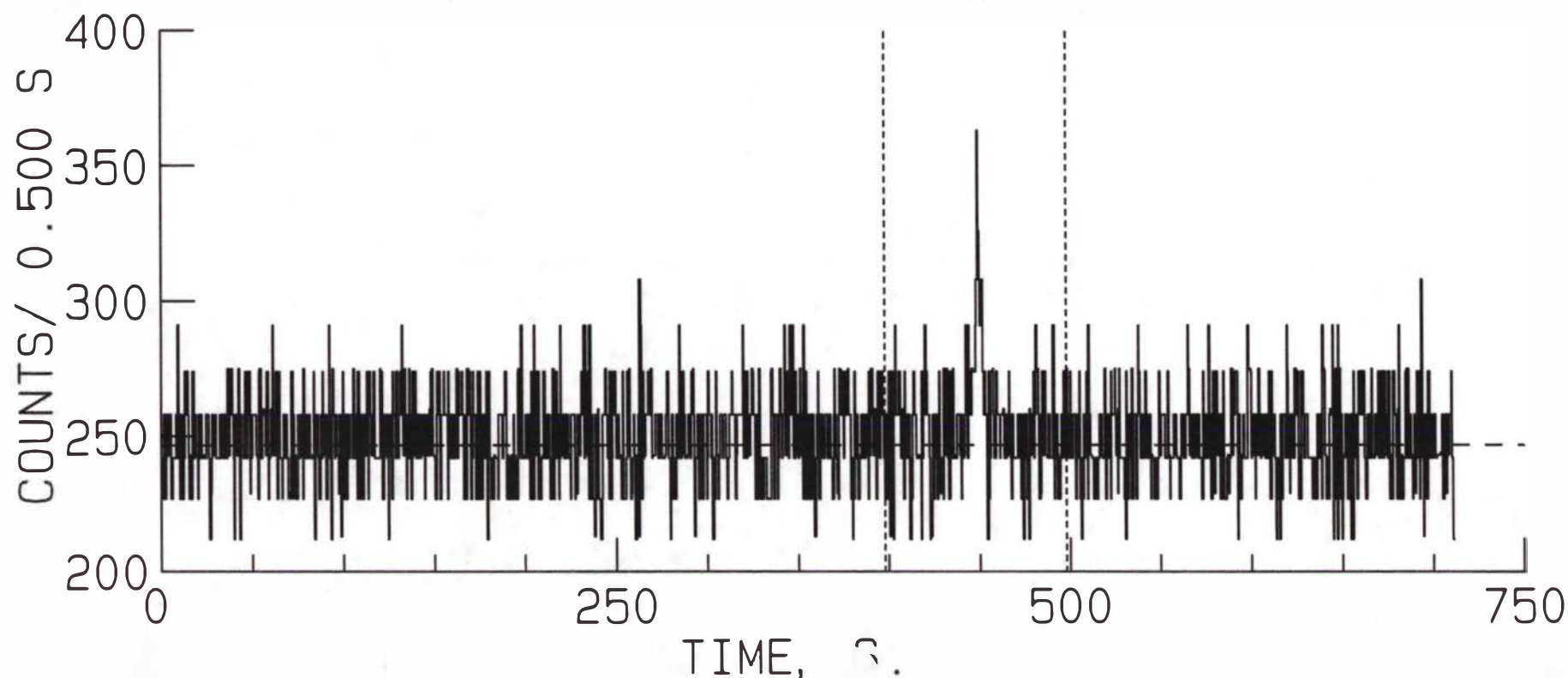
12 / 9 / 96 48240.145 s

0.250 S INTERVALS REGROUPED BY 2

21- 146 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE

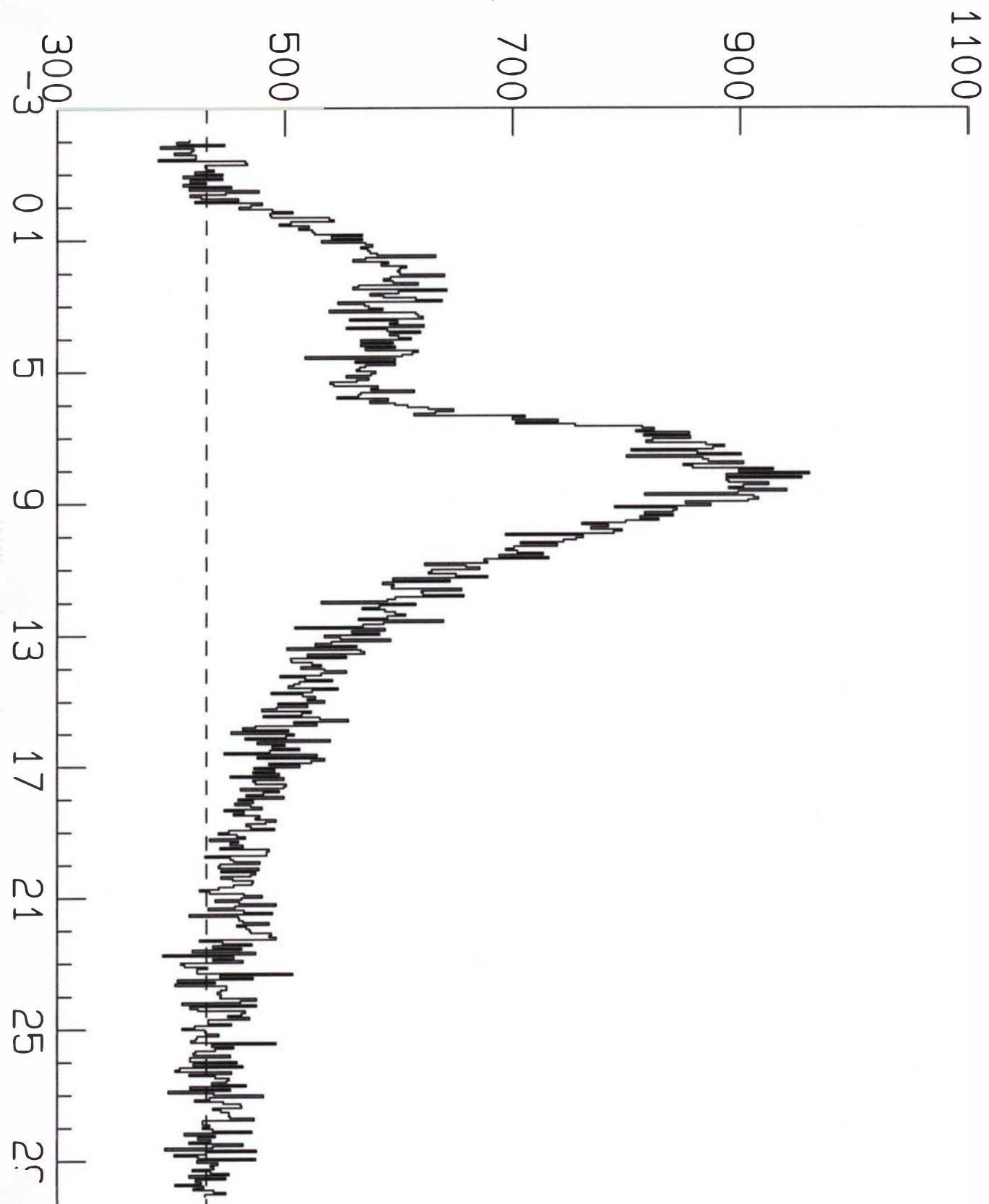
12/09/96

50247.626

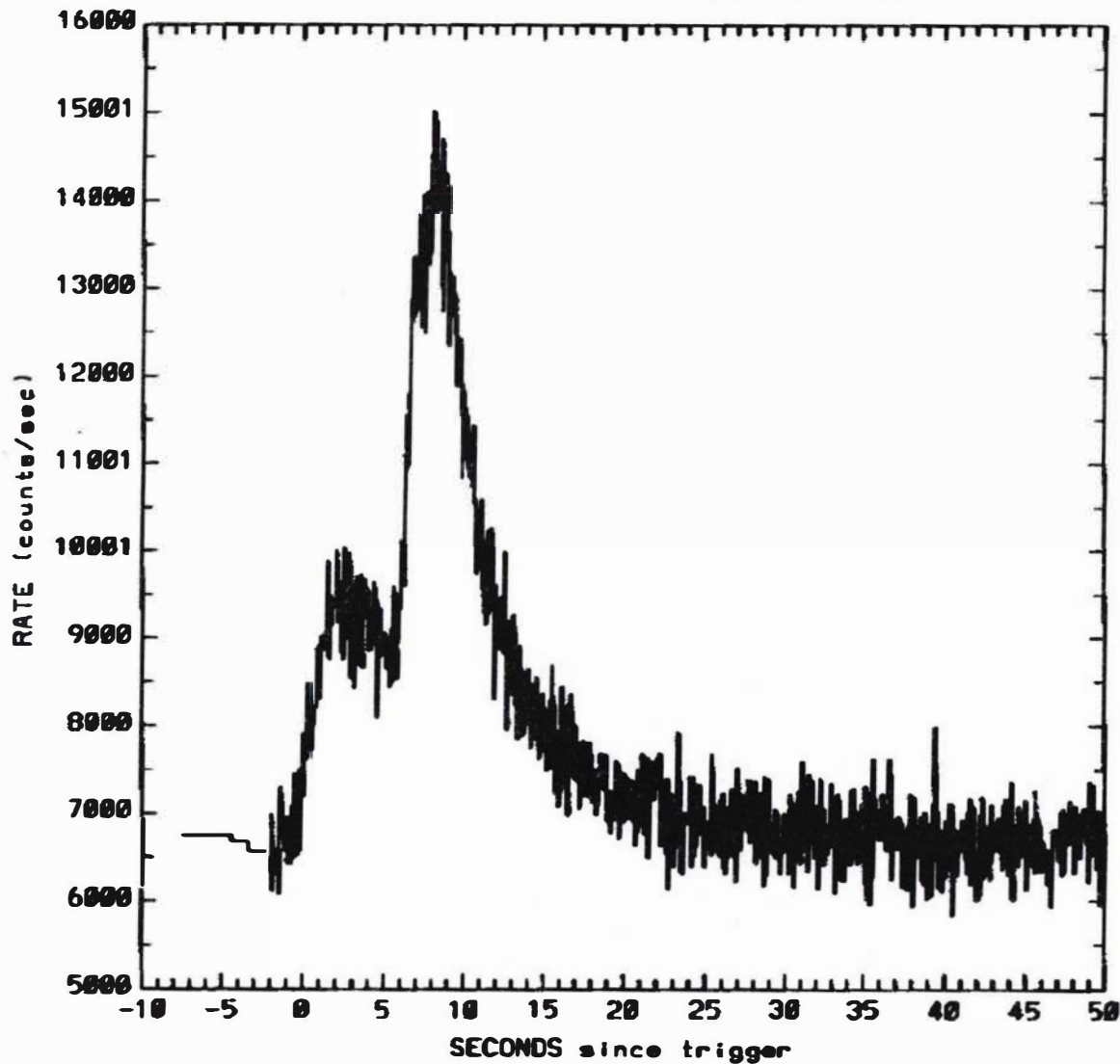
25- 100 keV

COUNTS/0.064 S

28 / 9/96



DISCSC Data for K. Hurley. No. 5601



25-SEP-1996 18:05:33

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 5601

Trigger Time:
18338 / 58247.626Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..8).
-----2-8Discriminators:
(1 . 2)Quality Mask:
8DISP1

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		
96	8	13	37739.252	S2	550	660	100	0.06	2	17	361	RI KA		
5	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	NO	18:47:01
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

KONUS 32

ULYSSES RT

25 / 11 / 96

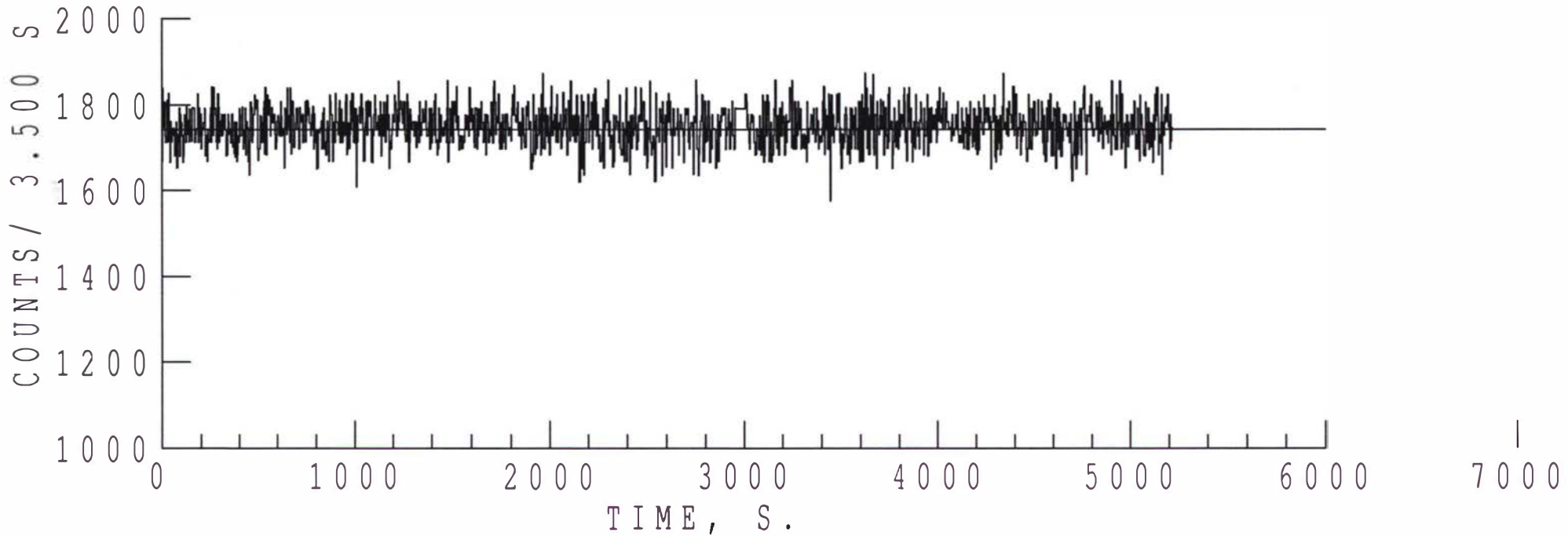
12 / 9 / 96 65016.109 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@ssl.msfc.nasa.gov Mon Sep 16 10:46 PDT 1996
Date: Mon, 16 Sep 1996 12:46:25 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5602

BATSEARCH PROGRAM

BATSE BURST # 5602
EVENT OF 1996 SEP 12 DAY OF YEAR=256
EVENT CROSSING TIME AT BATSE : 85984. S. OR 23:53:04.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 198.000 -45.000
BATSE PEAK COUNTING RATE: 2000 C/S

No

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 9/ 96 IS:
RA= 168.456 DEC= 35.278 DIST= 5.157 AU
BATSE-ULYSSES DISTANCE = 771463170. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -241.40 SECS.
CROSSING TIME AT ULYSSES IS 85743. S. OR 23:49:02 +/- 491.13 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 9/ 96 IS:
RA= 123.820 DEC= 20.808 DIST= 2.059 AU
MARS-BATSE DISTANCE = 308018976. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 72.94 SECS.
CROSSING TIME AT MARS IS 86057. S. OR 23:54:16 +/- 179.04 SECONDS

BATSE BURST TRIGGER

NO.: 5602

TIME: TJD=0338 SECONDS=85984

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=155.4 AZIMUTH=012.1 ERROR=003.6 DEGREES

COMMENTS:

SINGLE PULSE, DUR. ~10 S, IN DATA GAP. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5602	960912	10338	85984	2000	198	-45	10

BATSE #

5602

16 / 9 / 96

ULYSSES RT

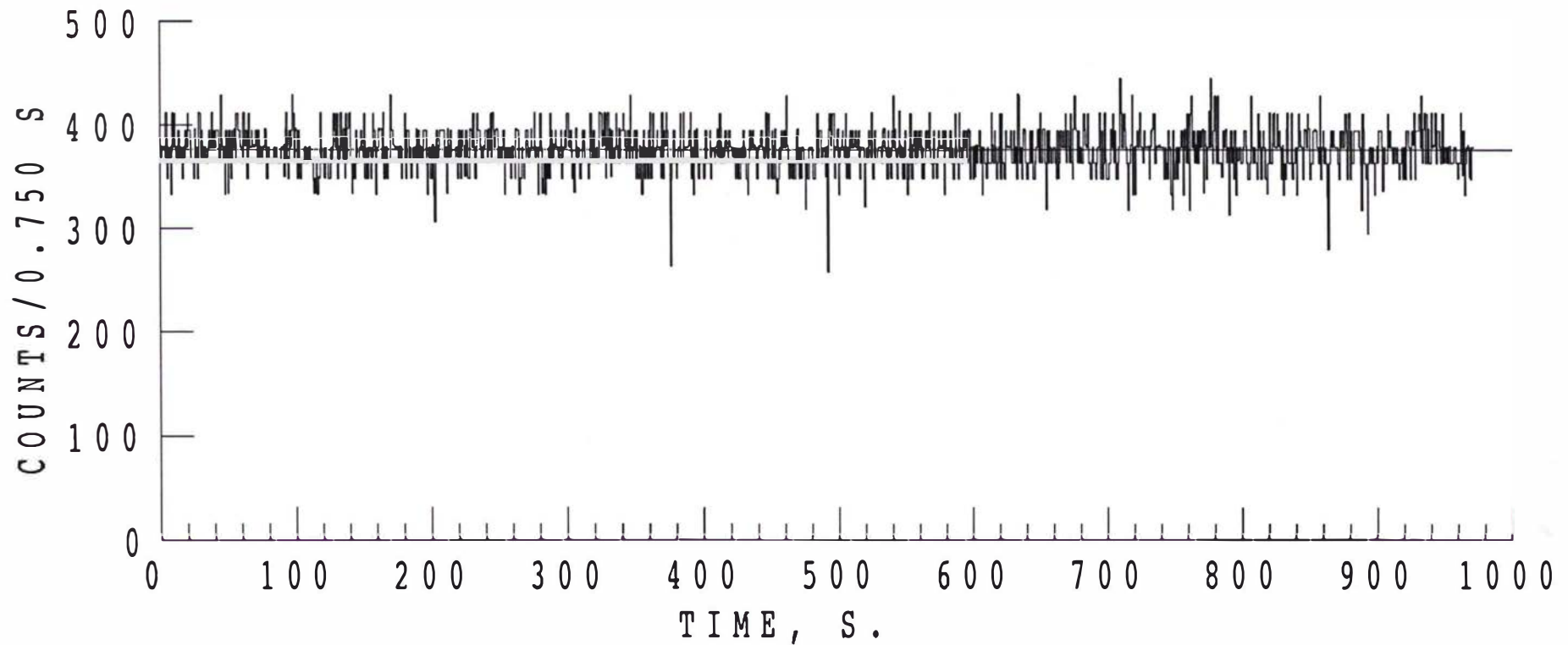
12 / 9 / 96 85248.109 s

0.250 S INTERVALS REGROUPED BY 3

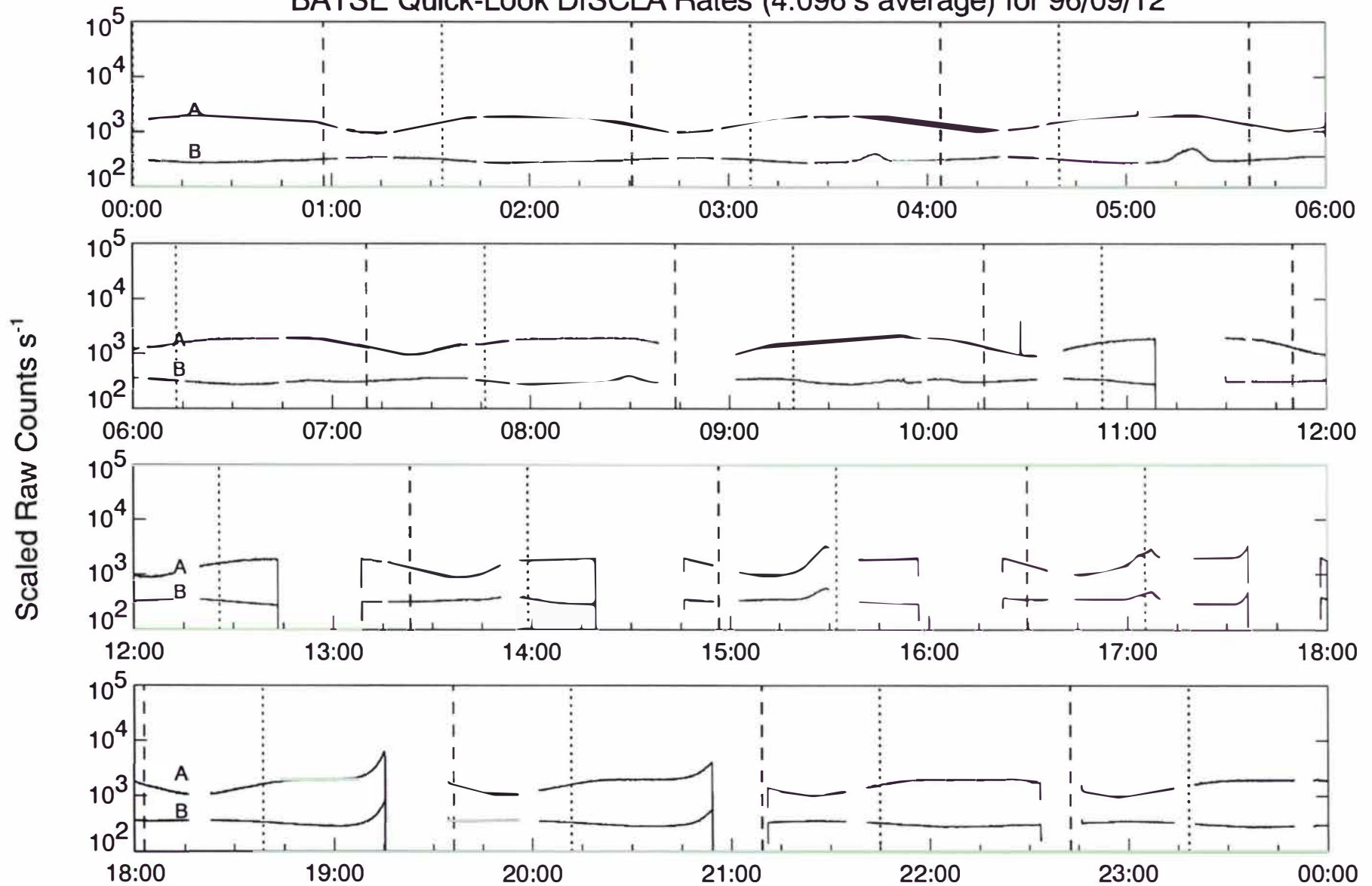
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/12



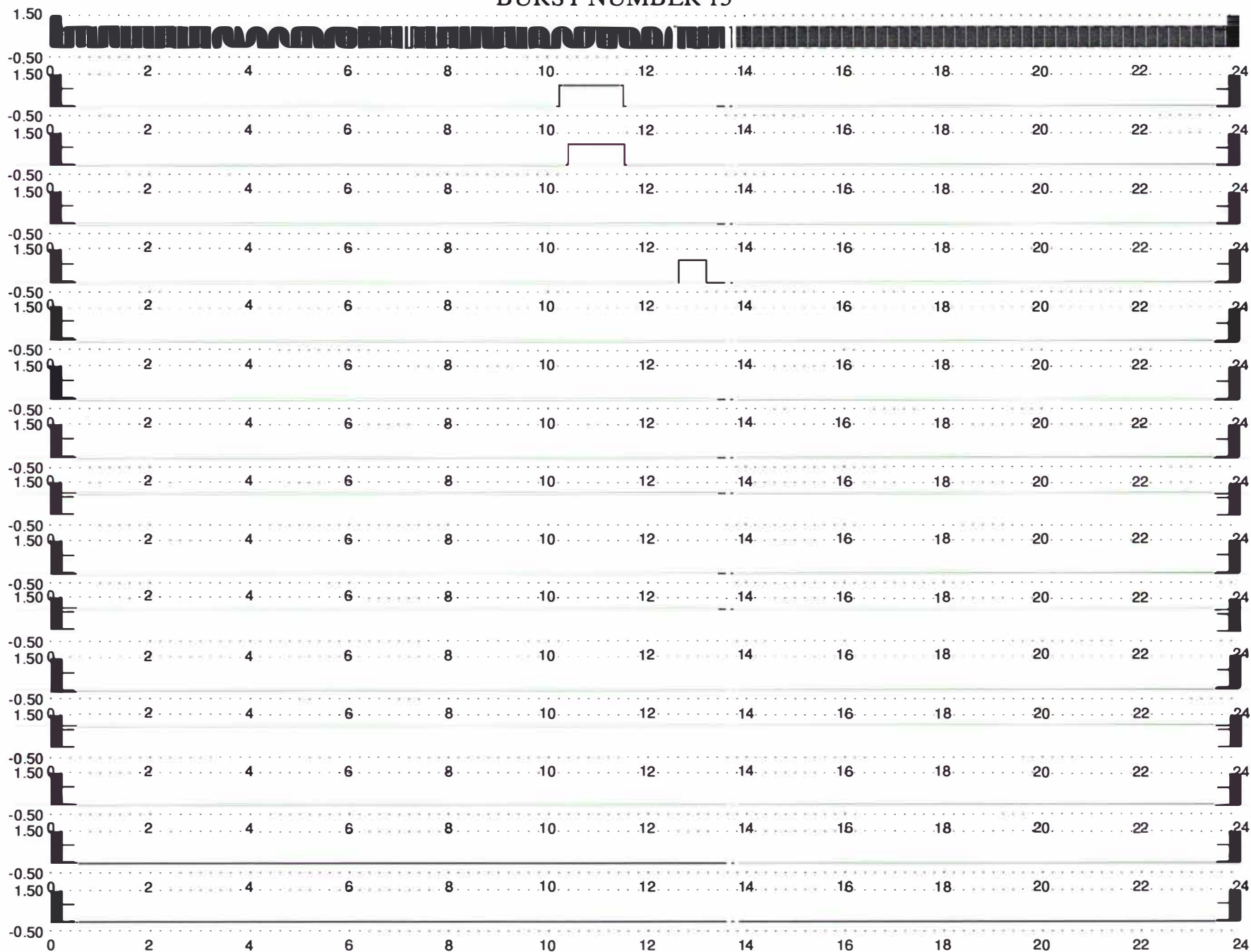
Current Time: 96/09/14, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

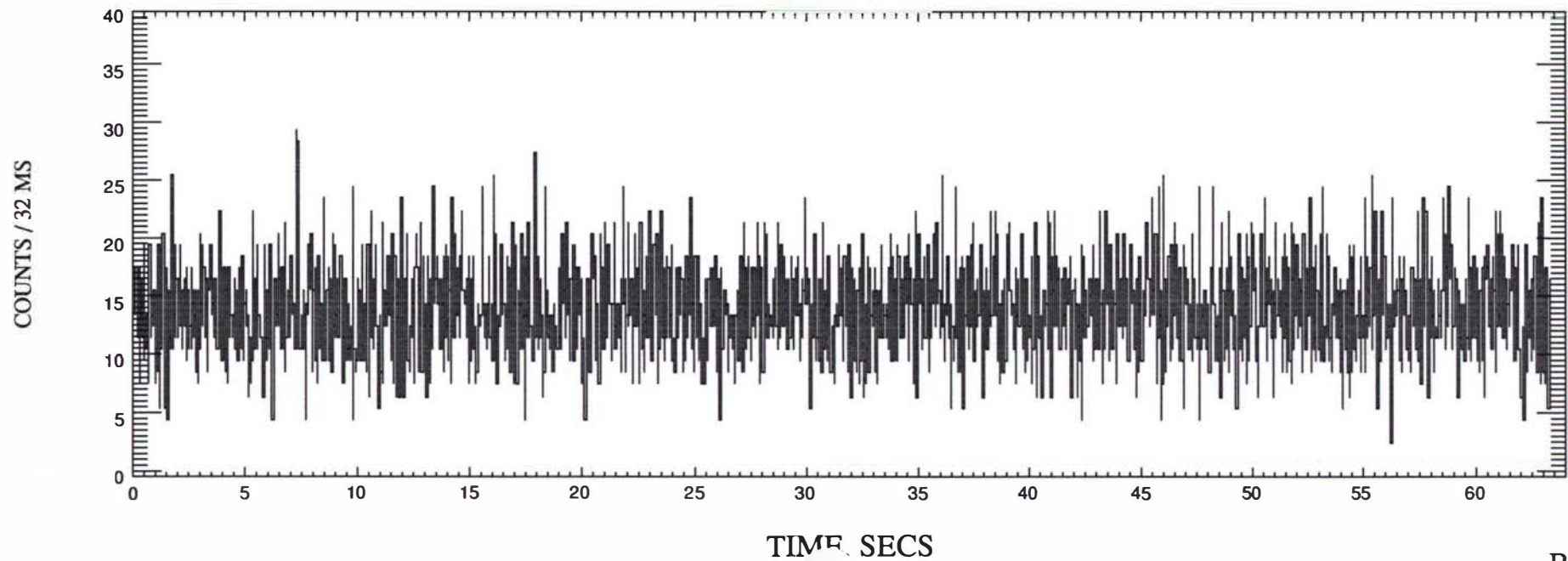
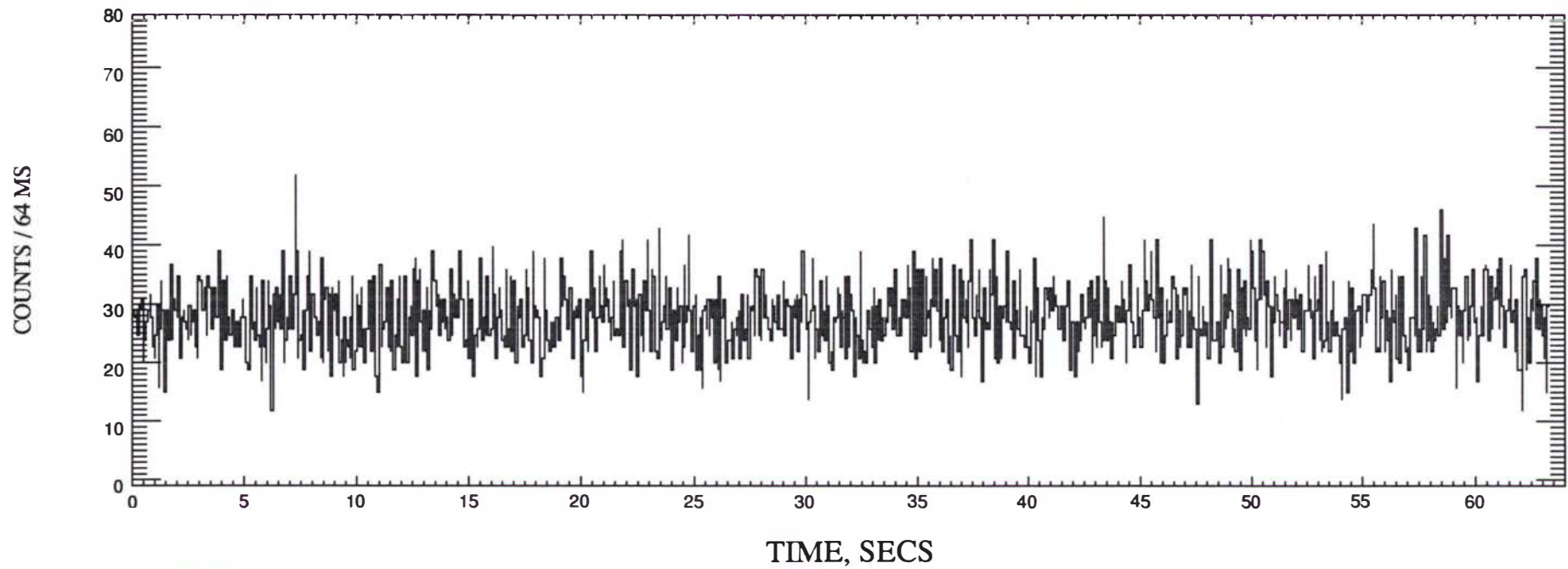
BURST NUMBER 13

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

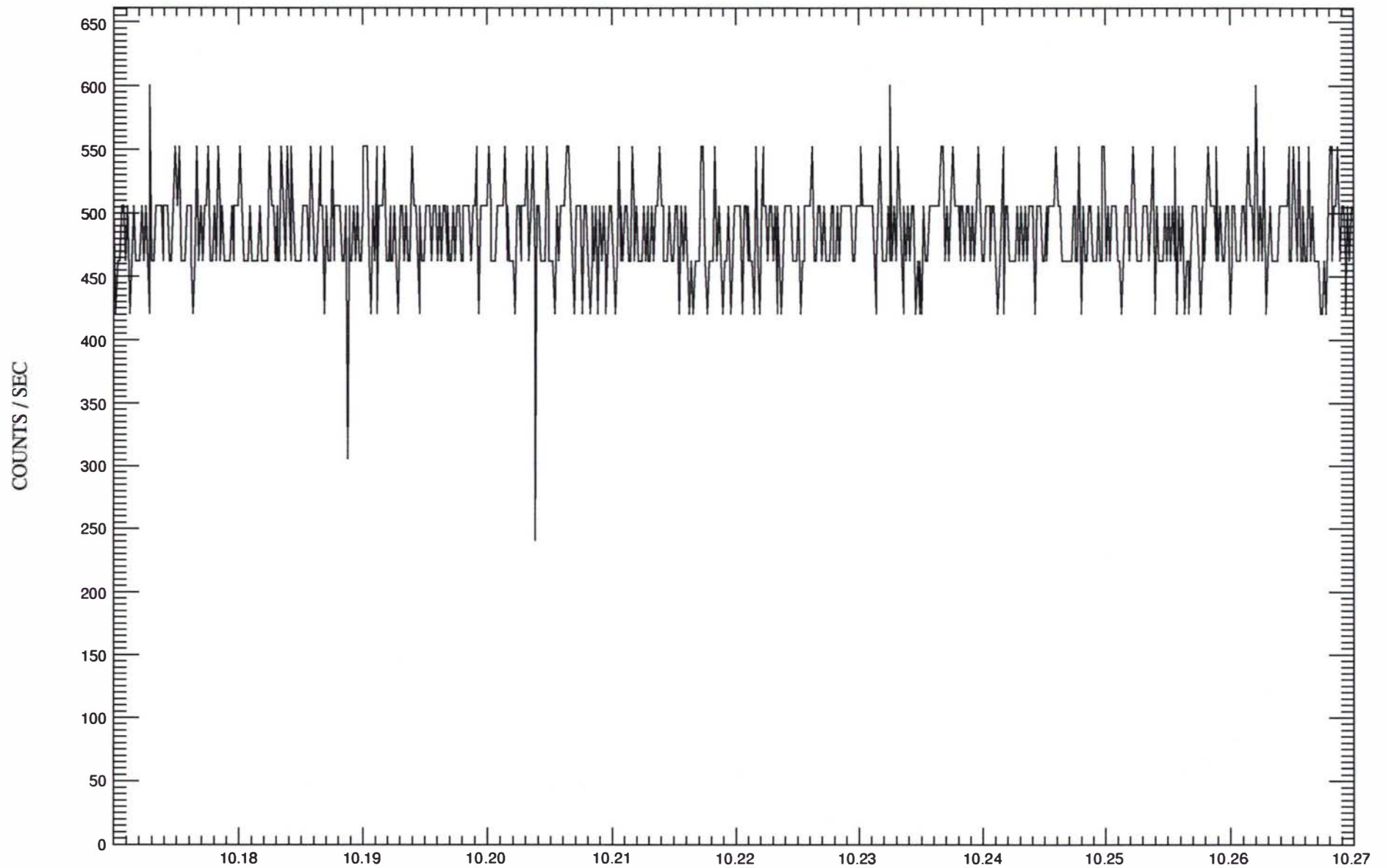


UNIV. AL TIME

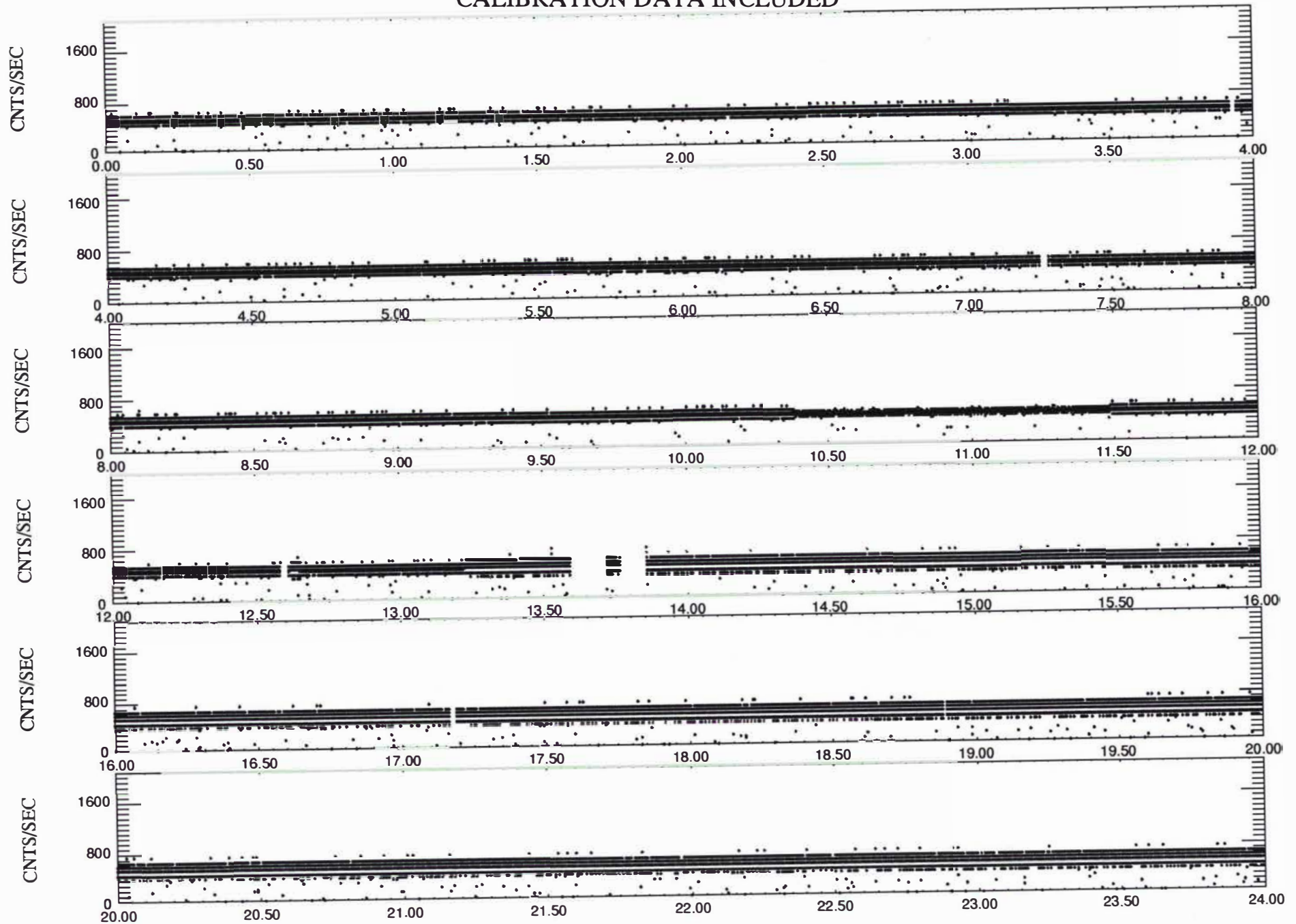
Burst Counter 13 at UT=10.218503858778 h=36786.614 s 10:13:06.614



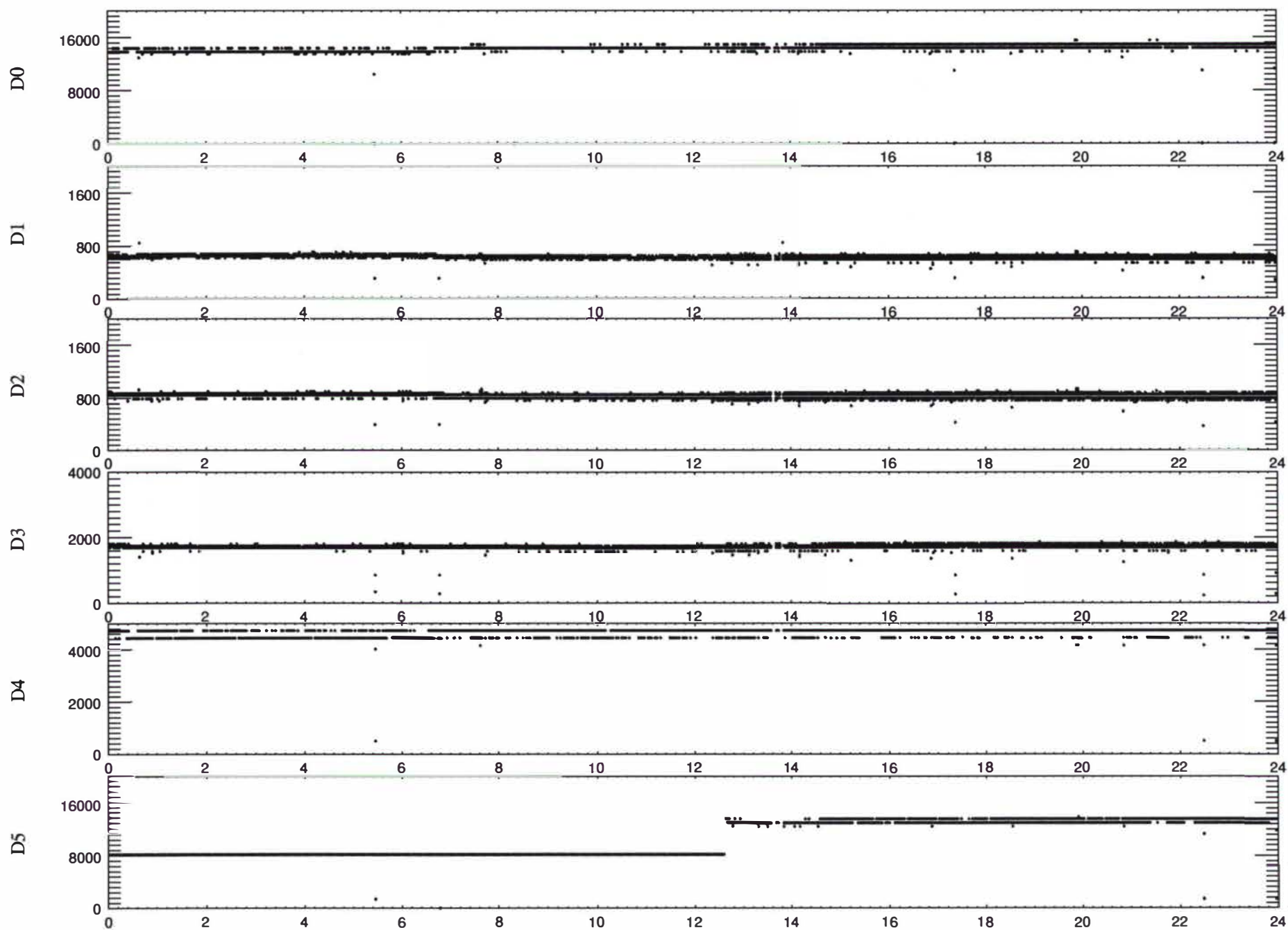
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV! AL TIME

From HENZE@SSLLES.MSFC.NASA.GOV Mon Sep 16 10:48 PDT 1996
From: HENZE@SSLLES.MSFC.NASA.GOV
Date: Mon, 16 Sep 1996 12:48:09 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5603

BATSEARCH PROGRAM

BATSE BURST # 5603
EVENT OF 1996 SEP 13 DAY OF YEAR=257
EVENT CROSSING TIME AT BATSE : 14614. S. OR 04:03:34.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 137.000 -40.000
BATSE PEAK COUNTING RATE: 4500 C/S

NO

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 9/ 96 IS:
RA= 168.490 DEC= 35.259 DIST= 5.157 AU
BATSE-ULYSSES DISTANCE = 771461957. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 99.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -417.74 SECS.
CROSSING TIME AT ULYSSES IS 14196. S. OR 03:56:36 +/- 484.50 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 9/ 96 IS:
RA= 124.474 DEC= 20.681 DIST= 2.053 AU
MARS-BATSE DISTANCE = 307189600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=118.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -484.28 SECS.
CROSSING TIME AT MARS IS 14130. S. OR 03:55:29 +/- 149.42 SECONDS

BATSE BURST TRIGGER

NO.: 5603

TIME: TJD=0339 SECONDS=14614

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=137.2 AZIMUTH=293.1 ERROR=002.6 DEGREES

COMMENTS:

SINGLE PULSE WITH SUBSTRUCTURE, DUR. ~60 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5603	960913	10339	14614	4500	137	-40	60

BATSE #

5603

18 / 9 / 96

ULYSSES RT

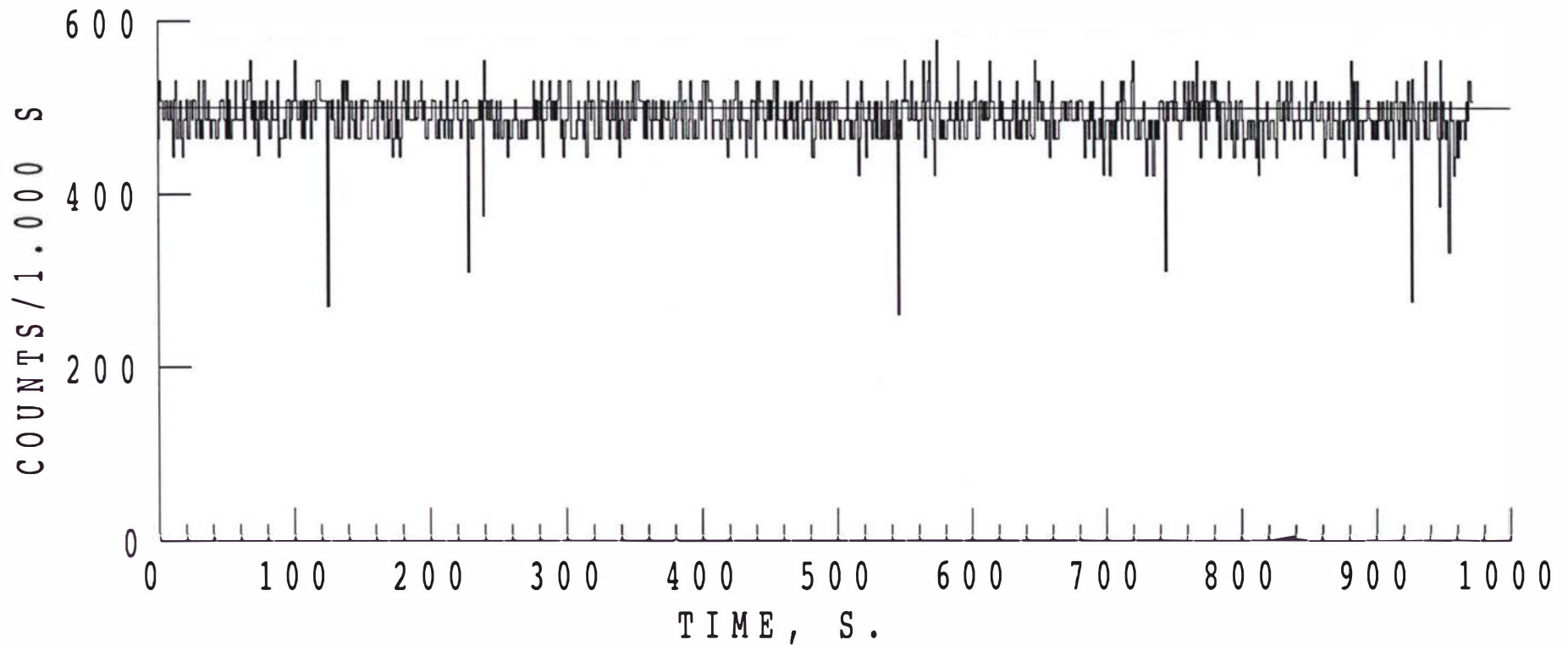
13 / 9 / 96 13716.054 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From HENZE@ssl.msfc.nasa.gov Mon Sep 16 10:49 PDT 1996
Date: Mon, 16 Sep 1996 12:49:23 -0500 (CDT)
From: HENZE@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5604

BATSEARCH PROGRAM

RI

BATSE BURST # 5604
EVENT OF 1996 SEP 13 DAY OF YEAR=257
EVENT CROSSING TIME AT BATSE : 83118. S. OR 23:05:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 183.000 -23.000
BATSE PEAK COUNTING RATE: 10700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 9/ 96 IS:
RA= 168.642 DEC= 35.169 DIST= 5.157 AU
BATSE-ULYSSES DISTANCE = 771456036. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.26 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1296.71 SECS.
CROSSING TIME AT ULYSSES IS 81821. S. OR 22:43:41 +/- 416.20 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 9/ 96 IS:
RA= 124.474 DEC= 20.681 DIST= 2.053 AU
MARS-BATSE DISTANCE = 307189600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -319.33 SECS.
CROSSING TIME AT MARS IS 82799. S. OR 22:59:58 +/- 164.19 SECONDS

BATSE BURST TRIGGER

NO.: 5604

TIME: TJD=0339 SECONDS=83118

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=133.3 AZIMUTH=353.0 ERROR=000.9 DEGREES

COMMENTS:

STRONG. SINGLE PULSE WITH SUBSTRUCTURE, DUR. ~15 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5604	960913	10339	83118	10700	183	-23	15

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 + 255	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 + 255	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 255	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 + 255	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 + 255	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 + 255	RI
96	9	24	42119.310	S1	13500	33000	17400	1.6	8	10	384	Trig	5611
96	9	27	13645.217	S2	160	300	120	<0.04	7	24	385	RI	5612
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 + 255	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 + 255	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 255	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 255	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 255	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 255	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	5646
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 + 255	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 + 255	RI

TLC

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

Helio corr removed 17/2/00

Date: Mar 16 '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*

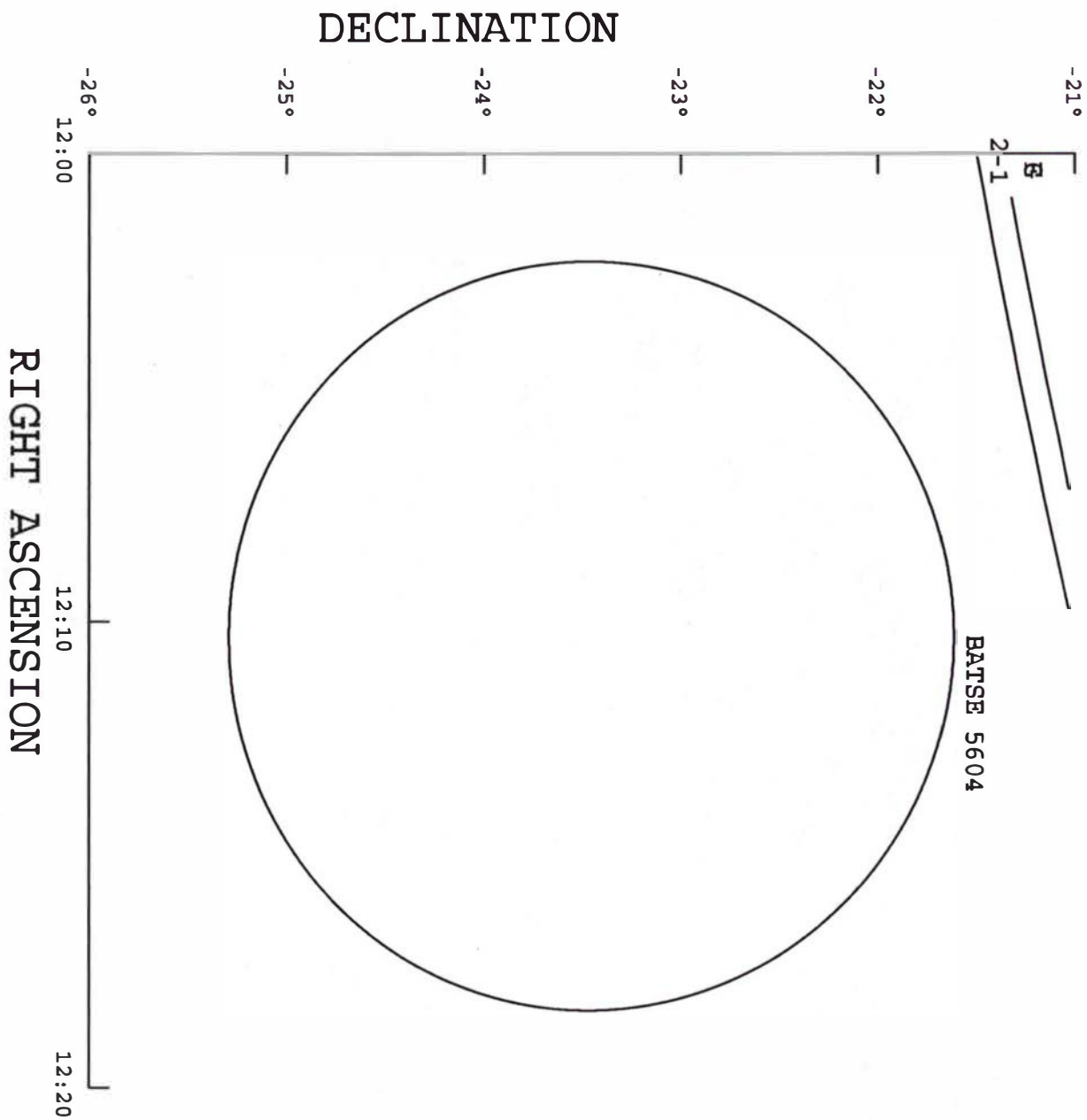
3. PVO Data

- ☐ 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 SEP 13, 1996 22:41

17/ 2/ 0



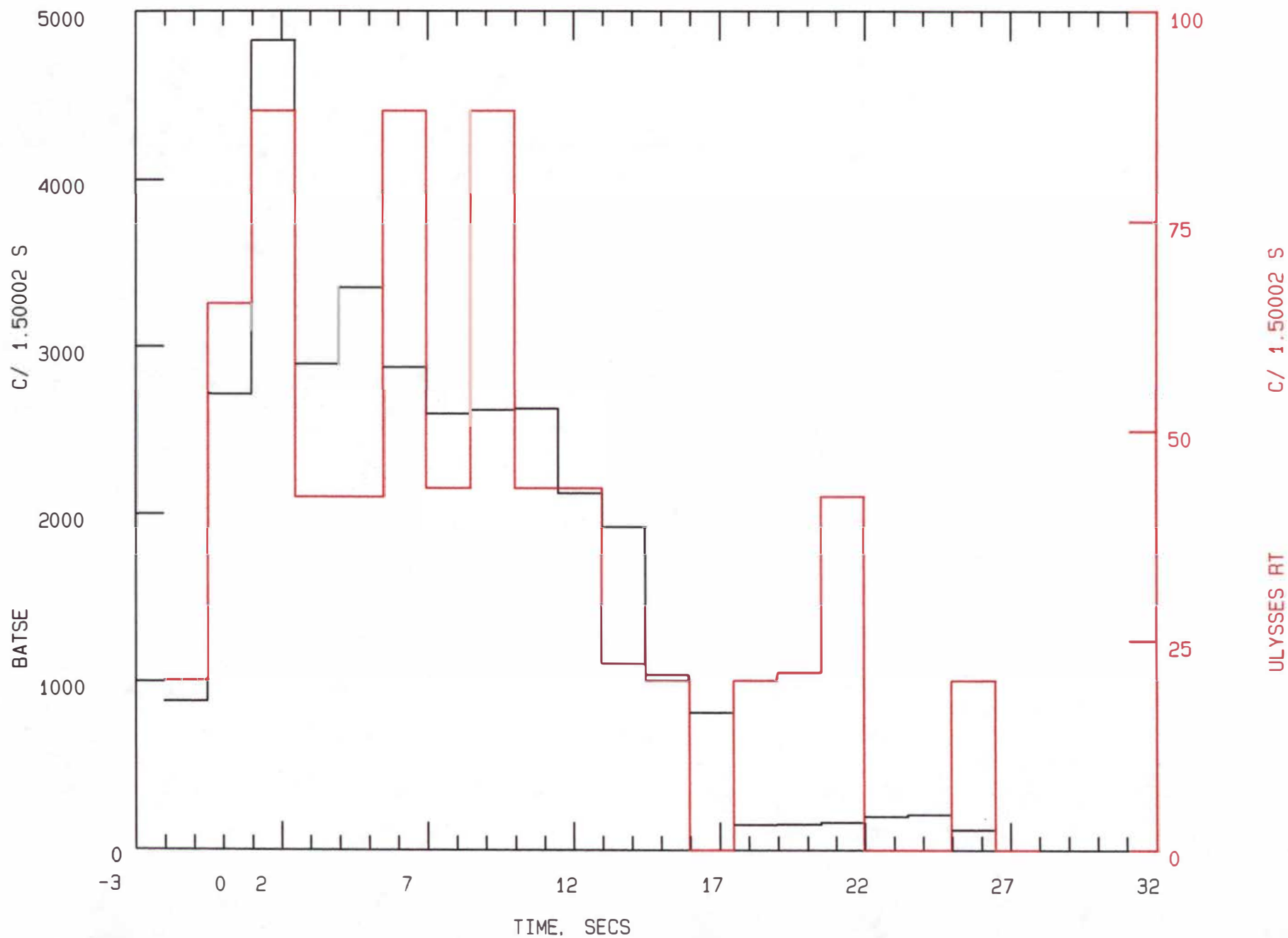
BATSE

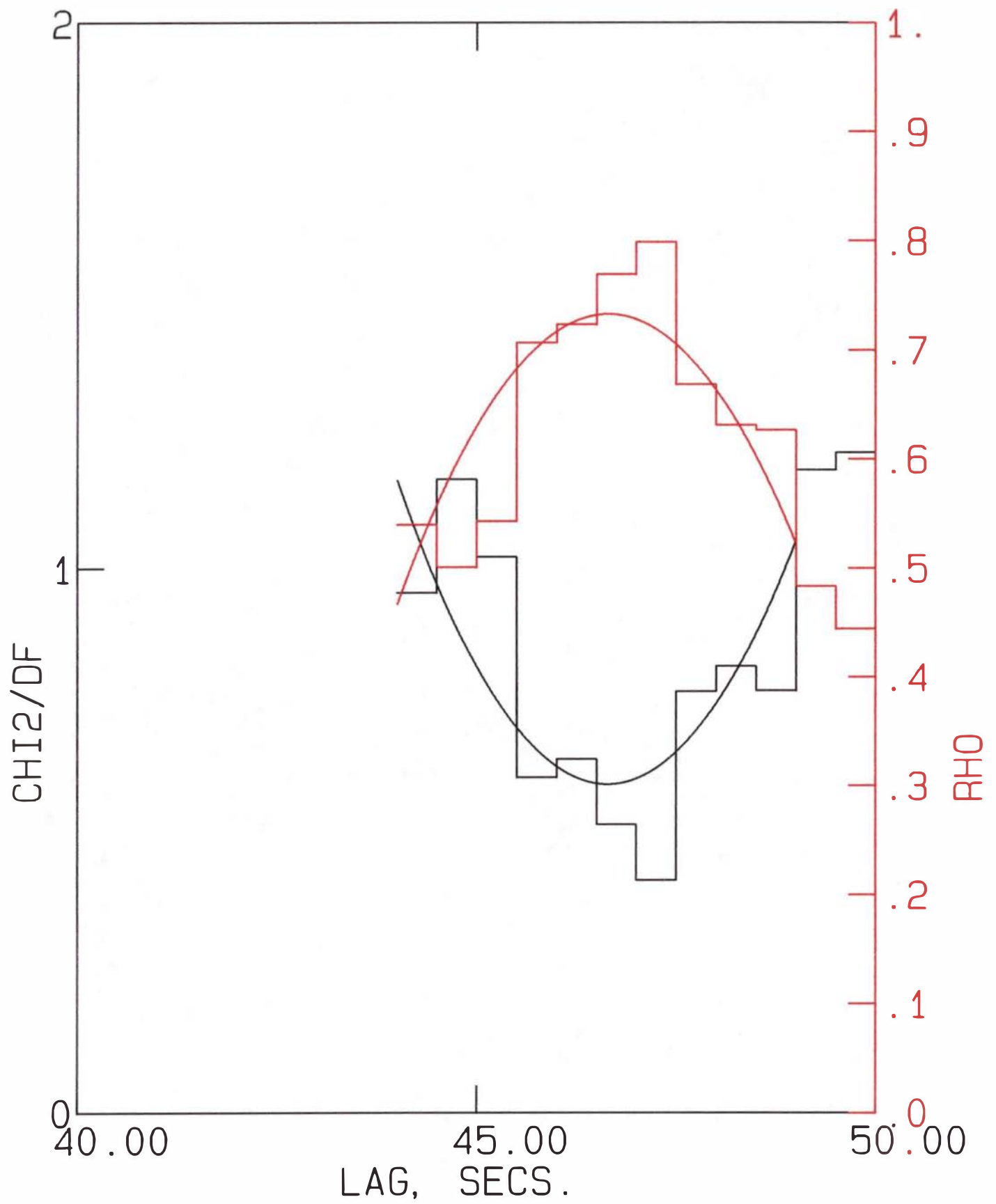
-ULYSSES RT CORRELATION

13/ 9/96

83118.793

16/ 3/98





ULYSSES RT

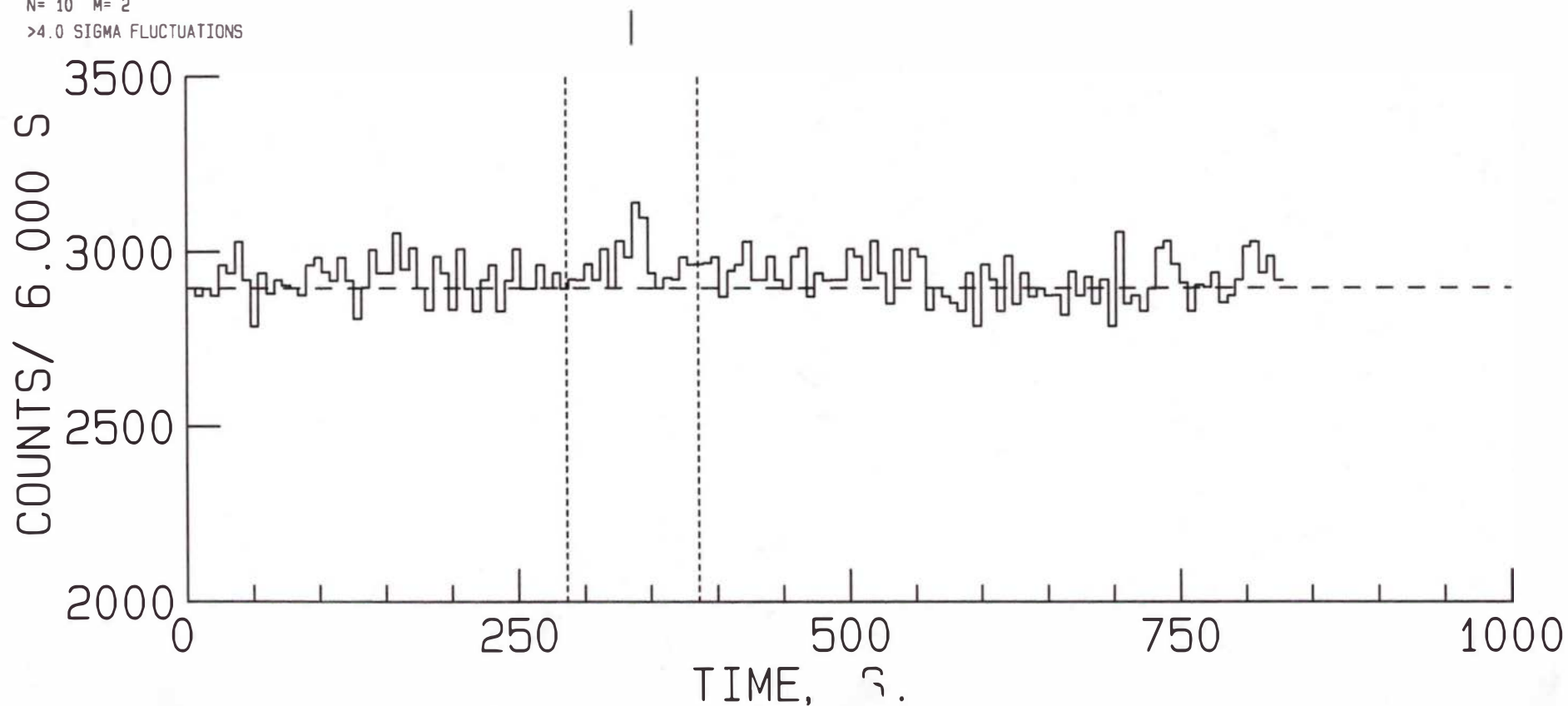
16 / 3 / 98

13 / 9 / 96 81396.409 s

0.500 S INTERVALS REGROUPED BY 12

21- 145 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



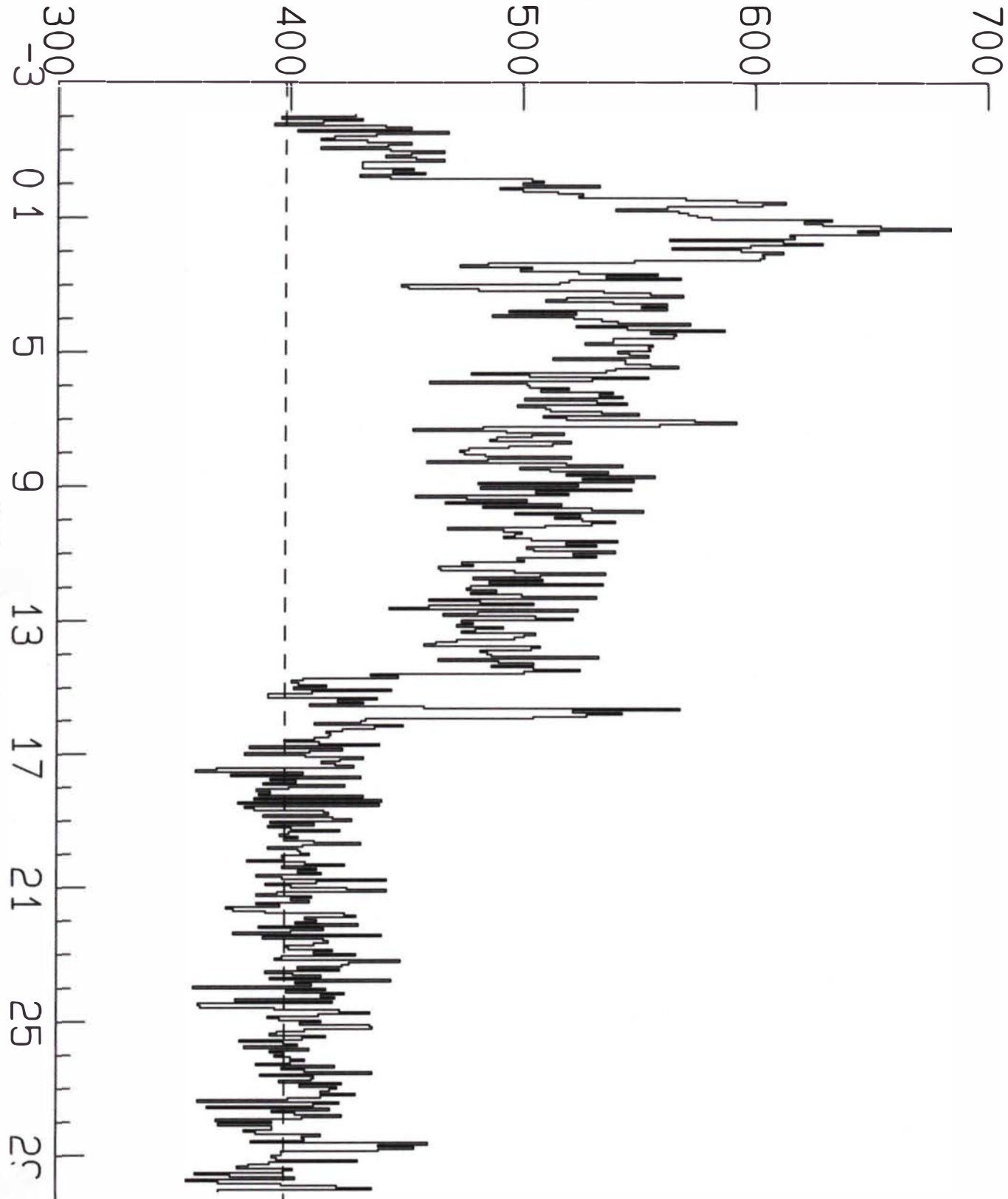
BATSE

13/09/96

83118.793

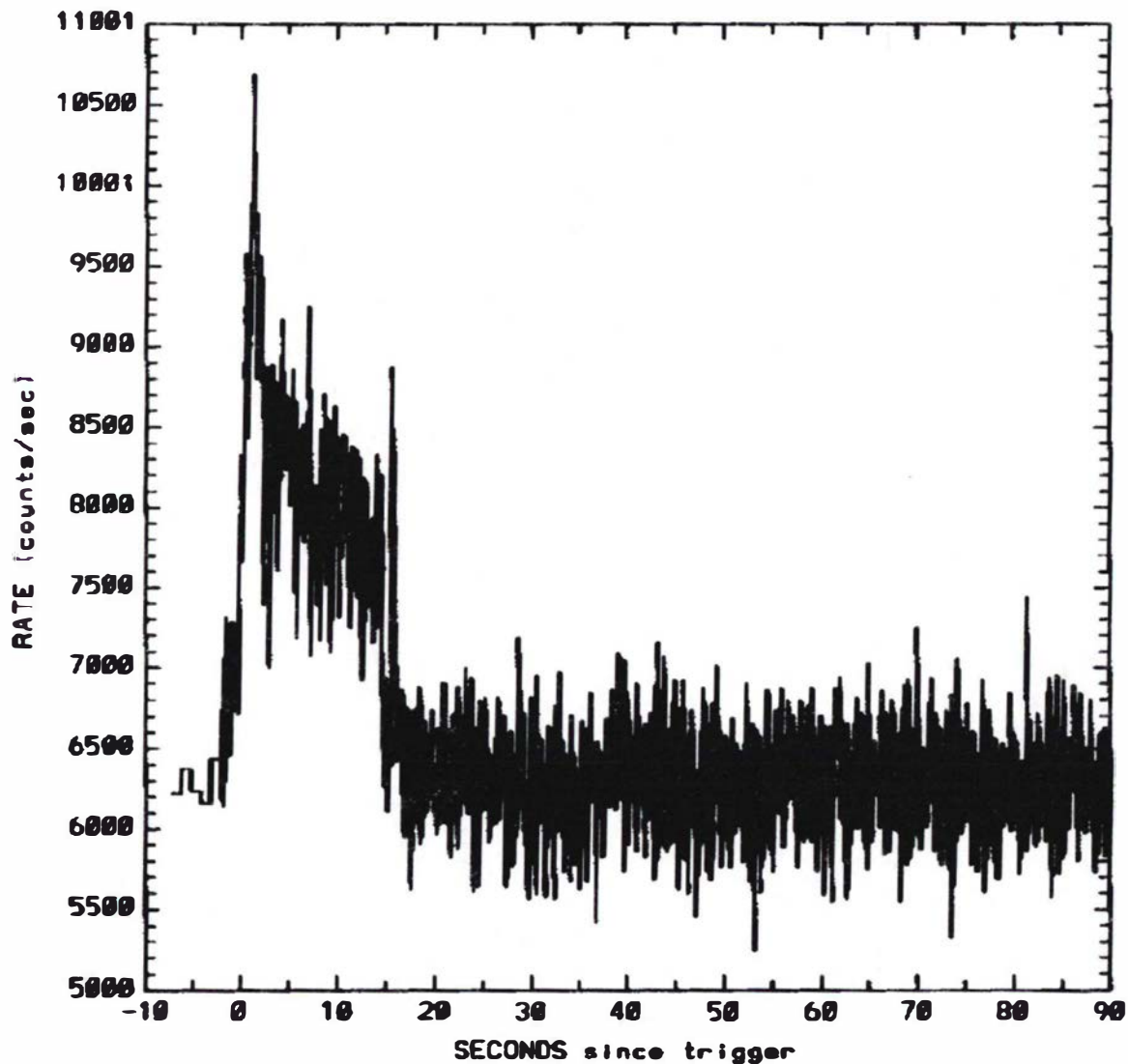
25- 100 keV

COUNTS/0.064 S



28 / 9 / 96

DISCSC Data for K. Hurley. No. 5604



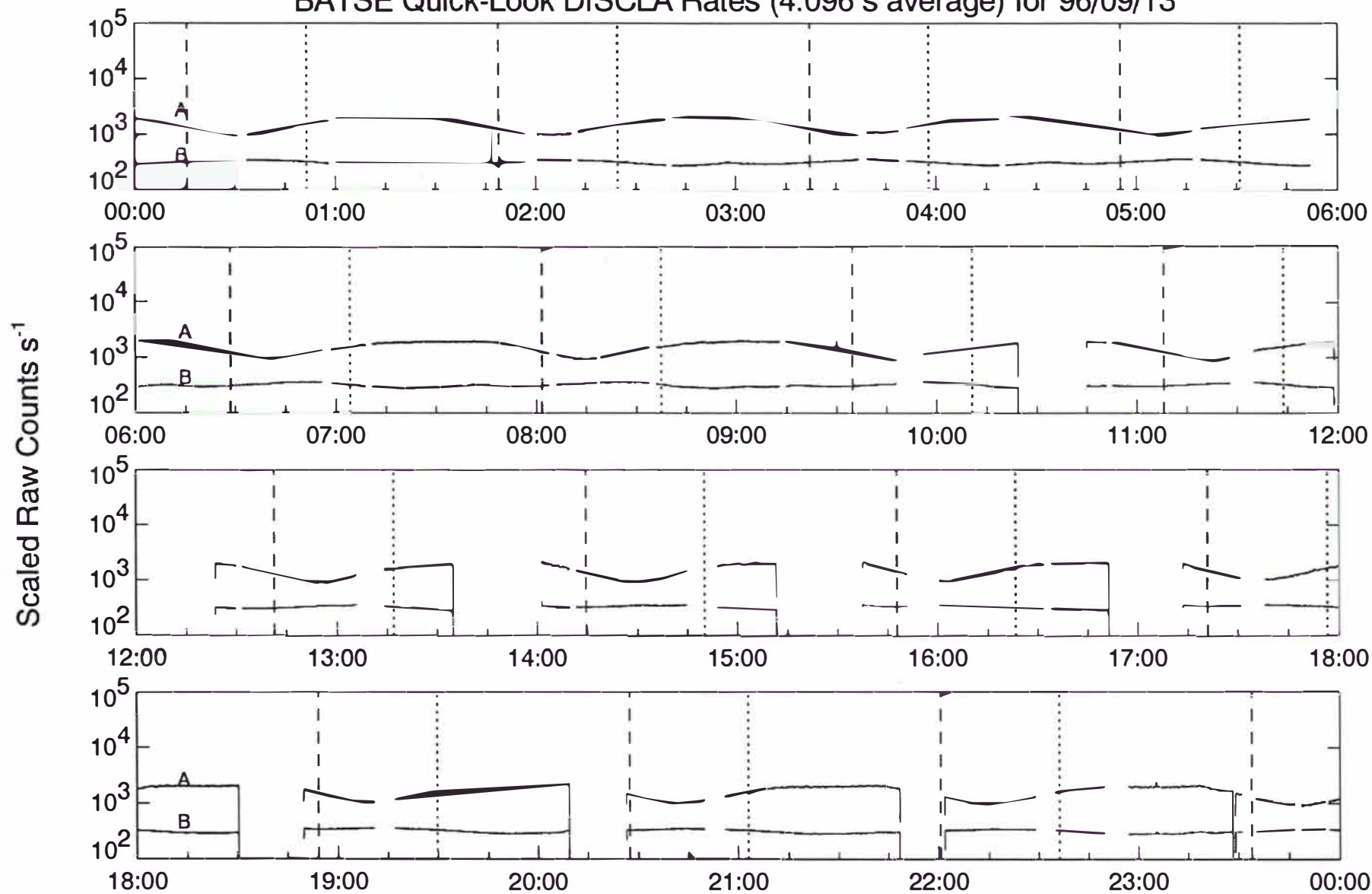
25-SEP-1996 18:07:37

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 5604

Trigger Time:
18339 / 83118.794Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..0].
----3-1-Discriminators:
(1 , 2)Quality Mask:
001SP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/13

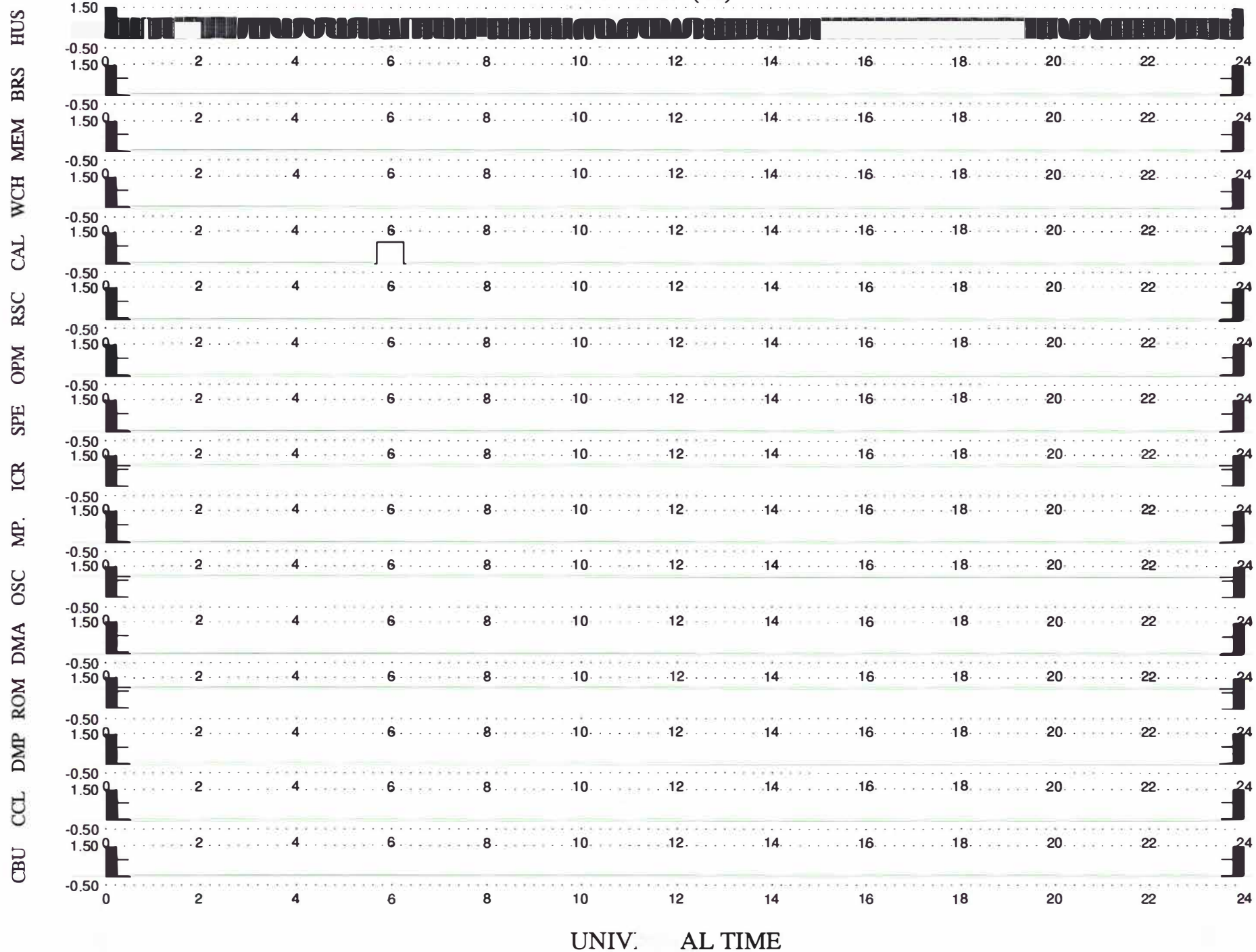


Current Time: 96/09/15, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

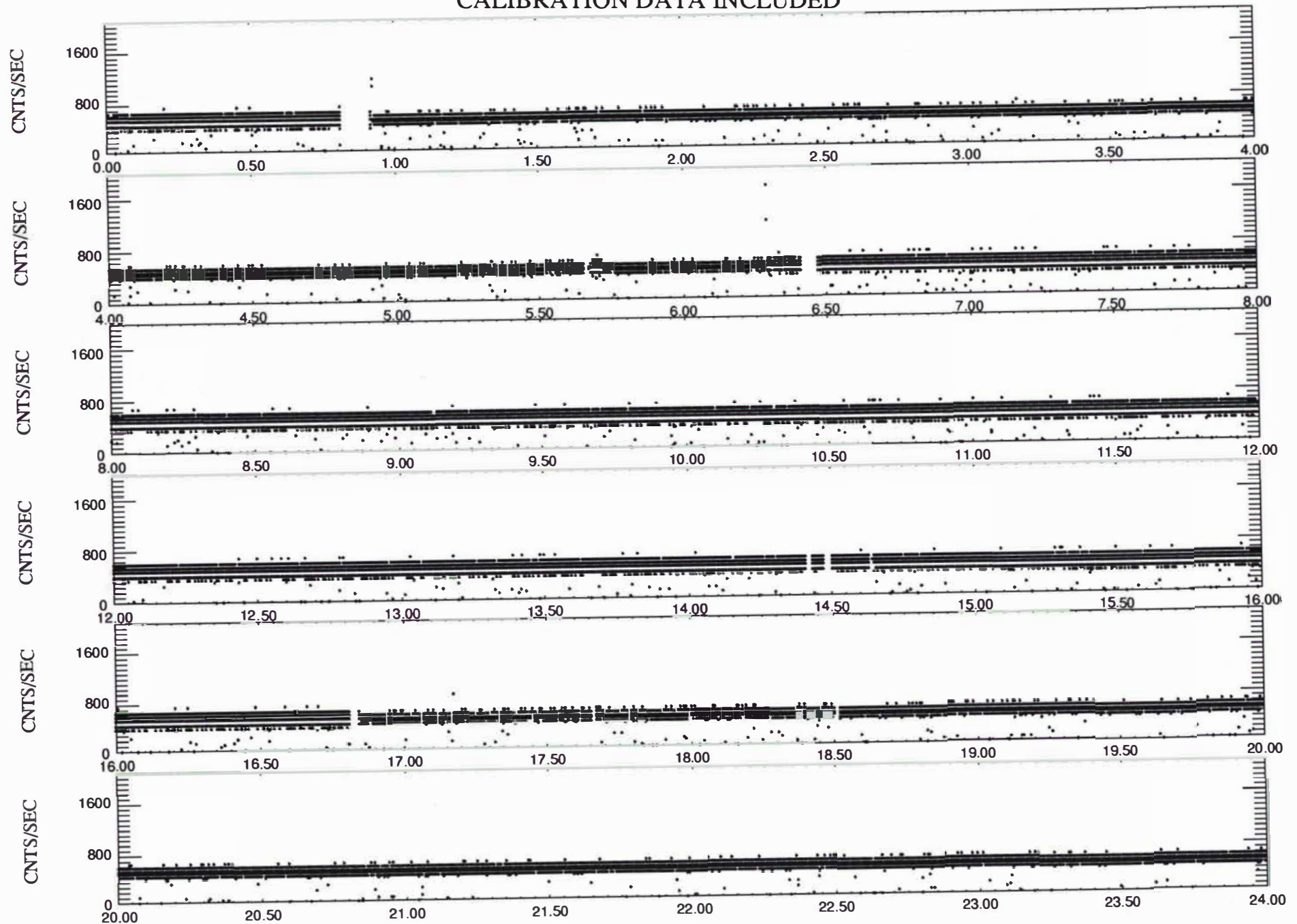
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

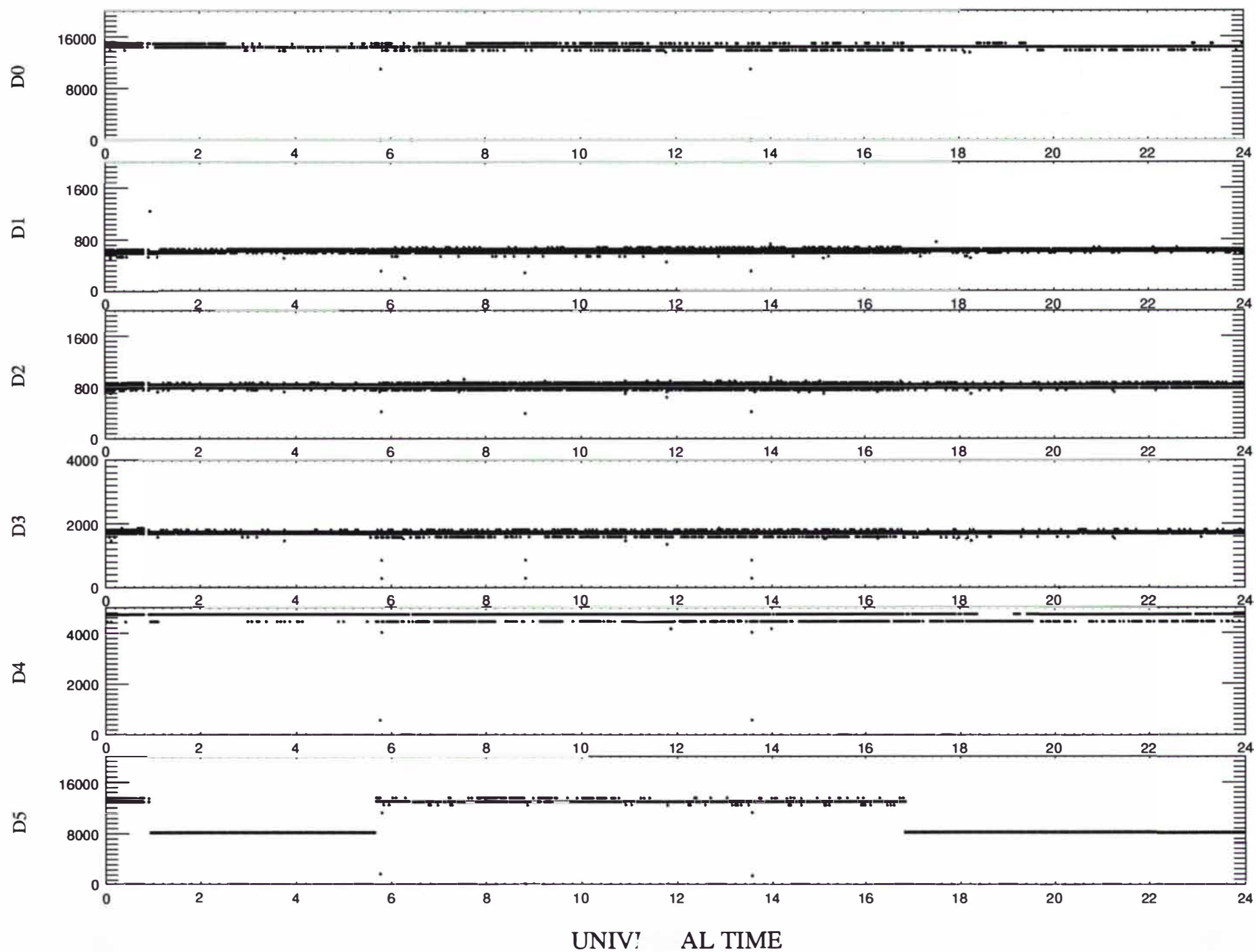
NO BURST (13)



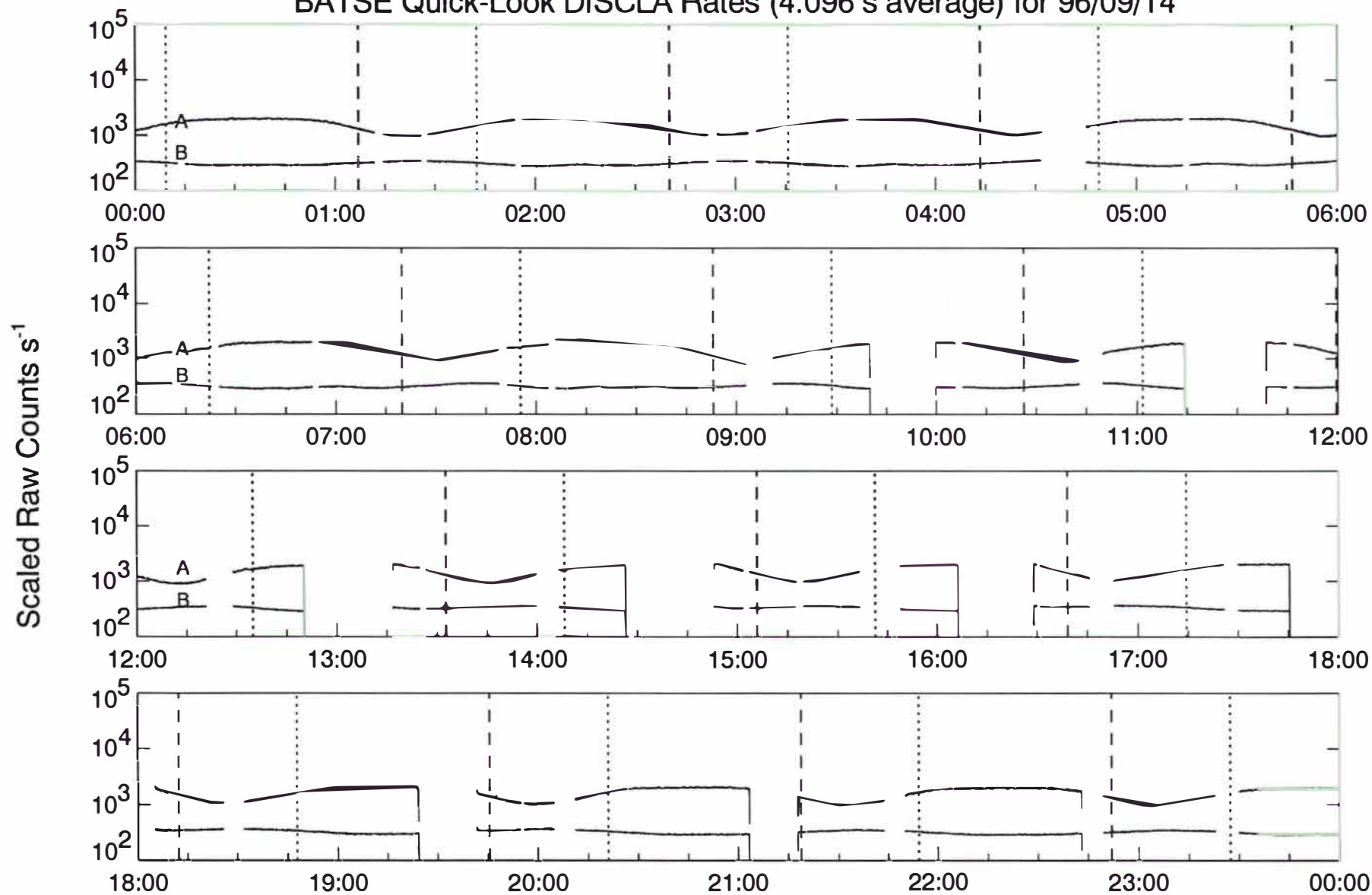
CALIBRATION DATA INCLUDED



UNIV AL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/14

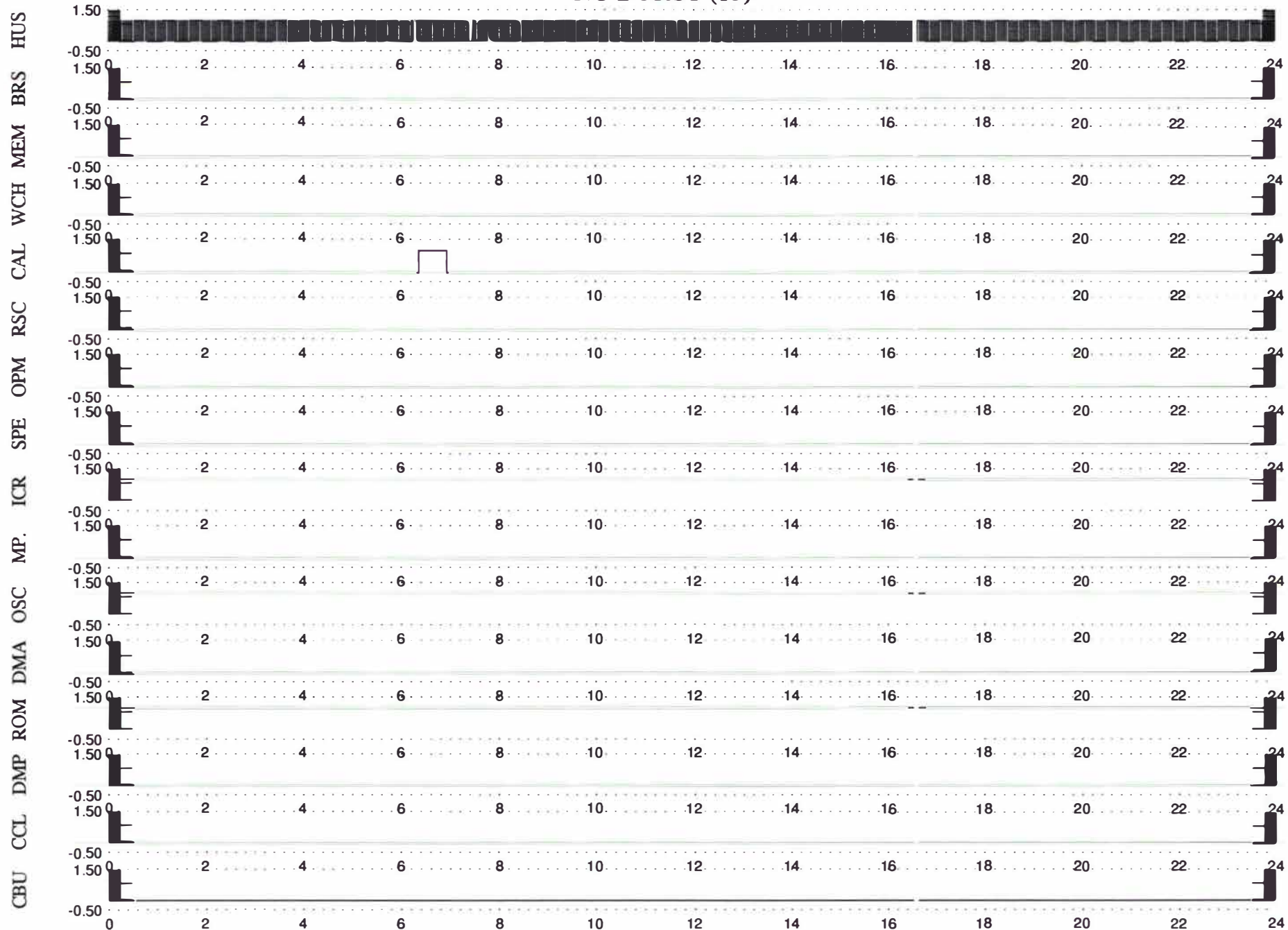


Current Time: 96/09/16, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

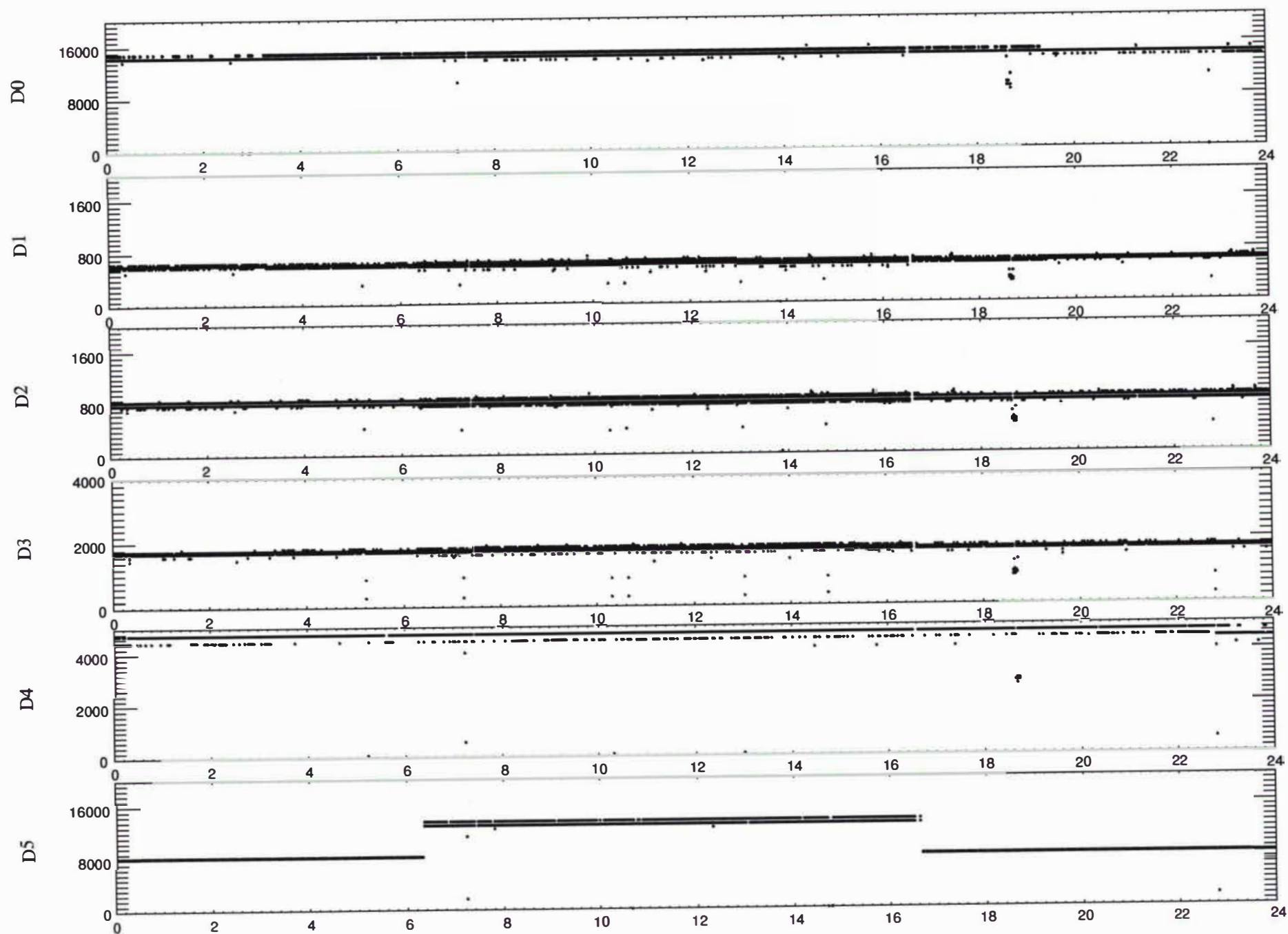
UNIVERSAL TIME



CALIBRATION DATA INCLUDED

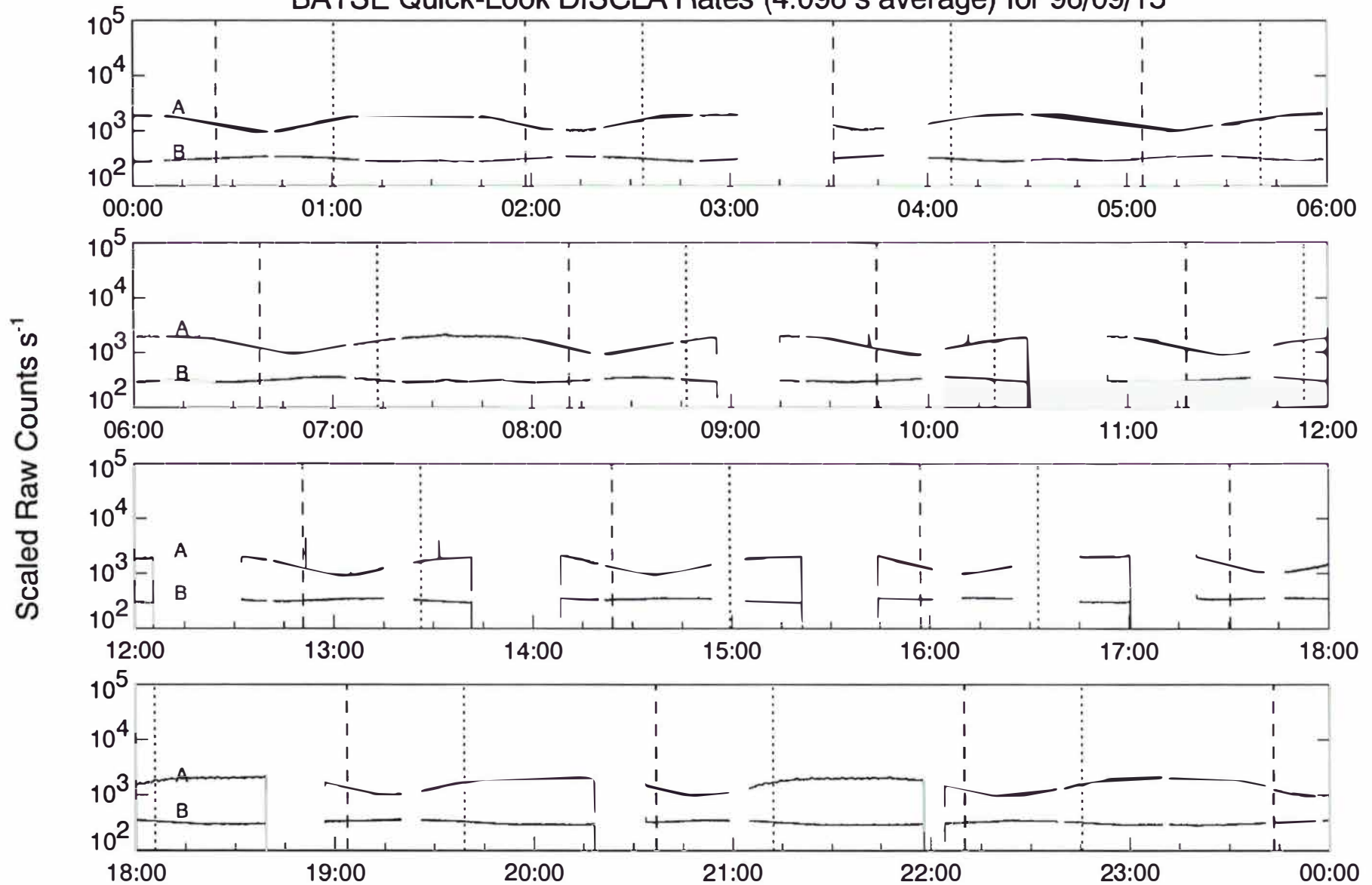


UNIVERSAL TIME



UNIV! AL TIME

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/15



Current Time: 96/09/17, 1003 EDT

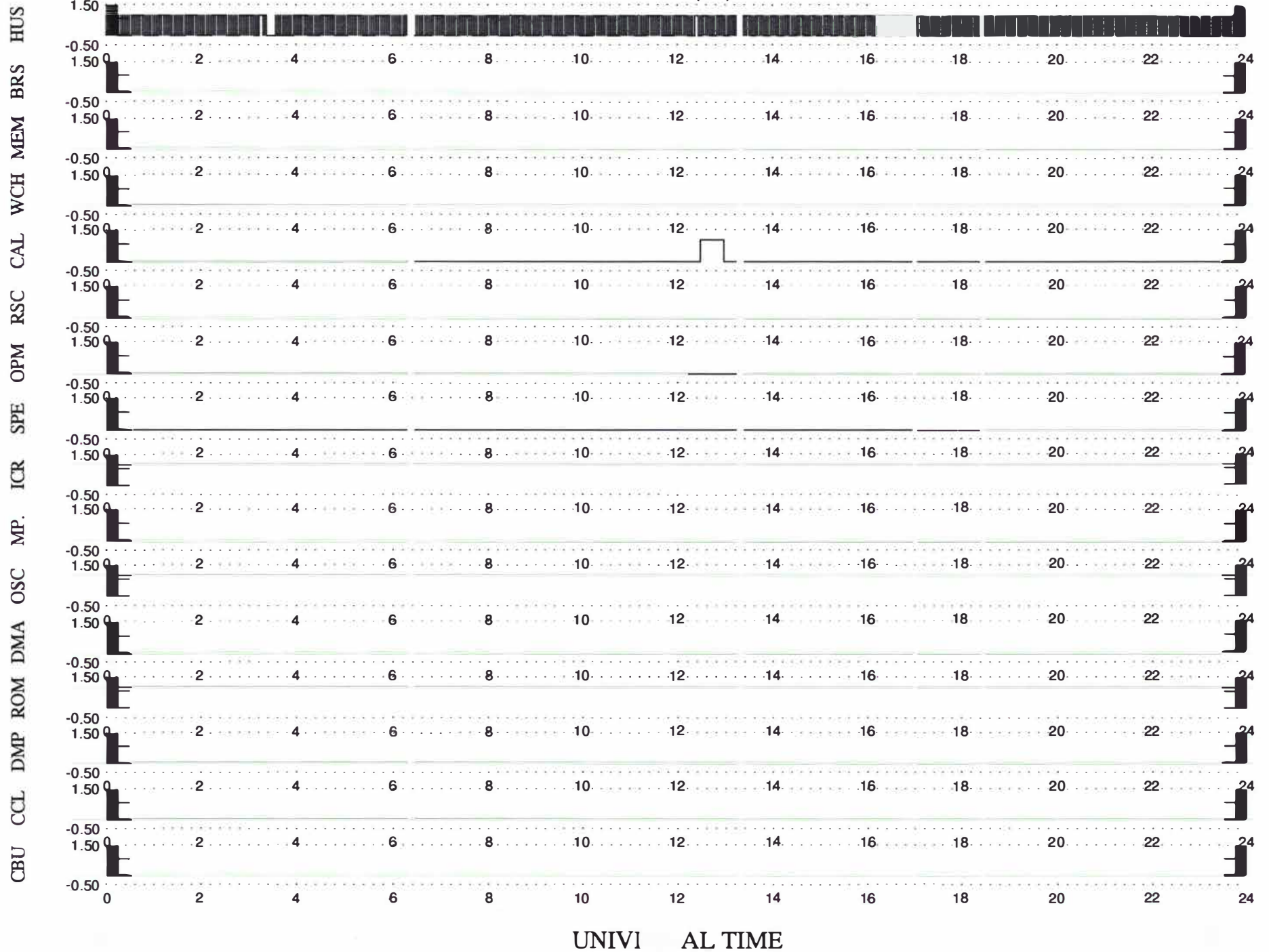
A: Channel 0 Most Sunward LAD

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

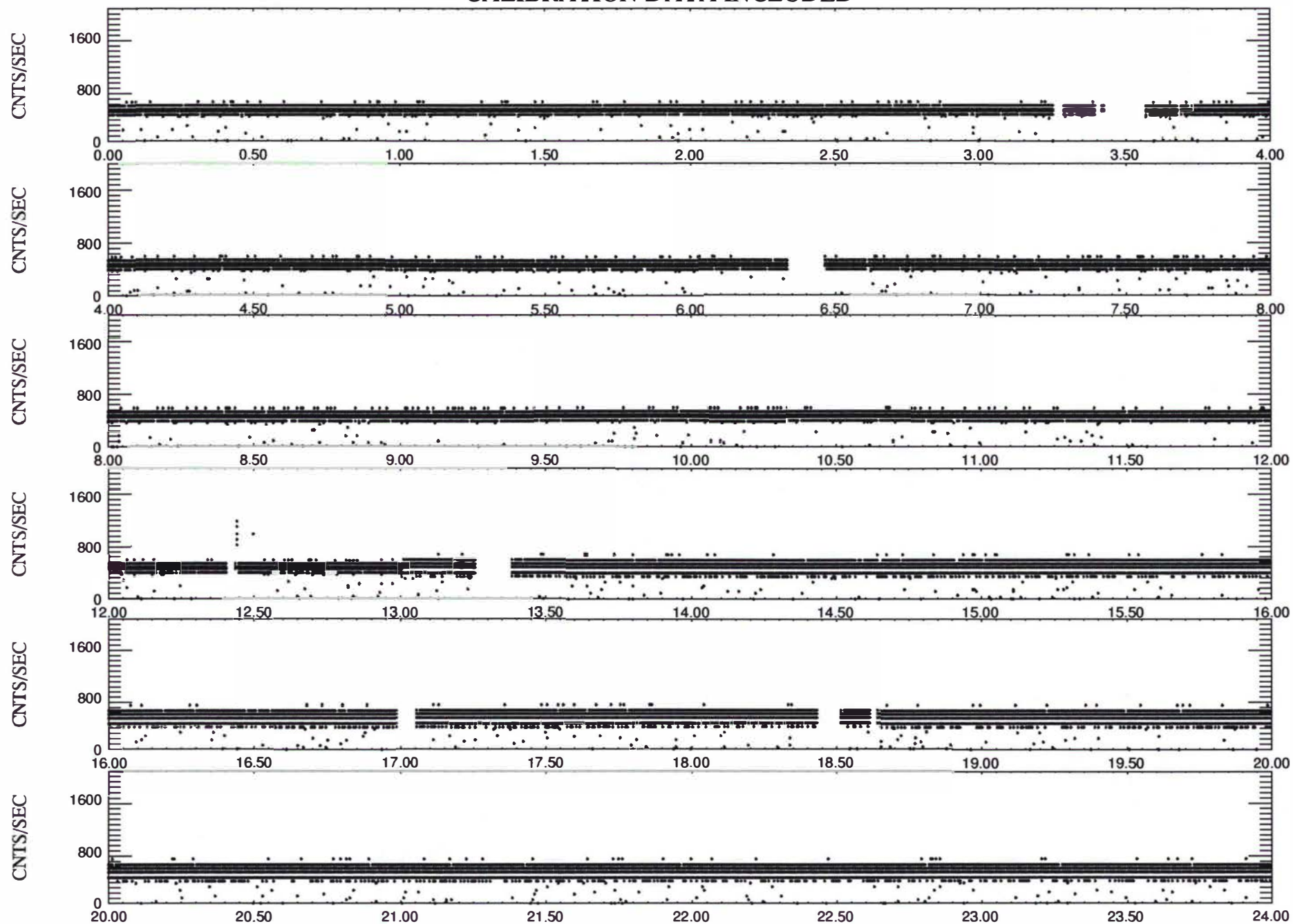
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

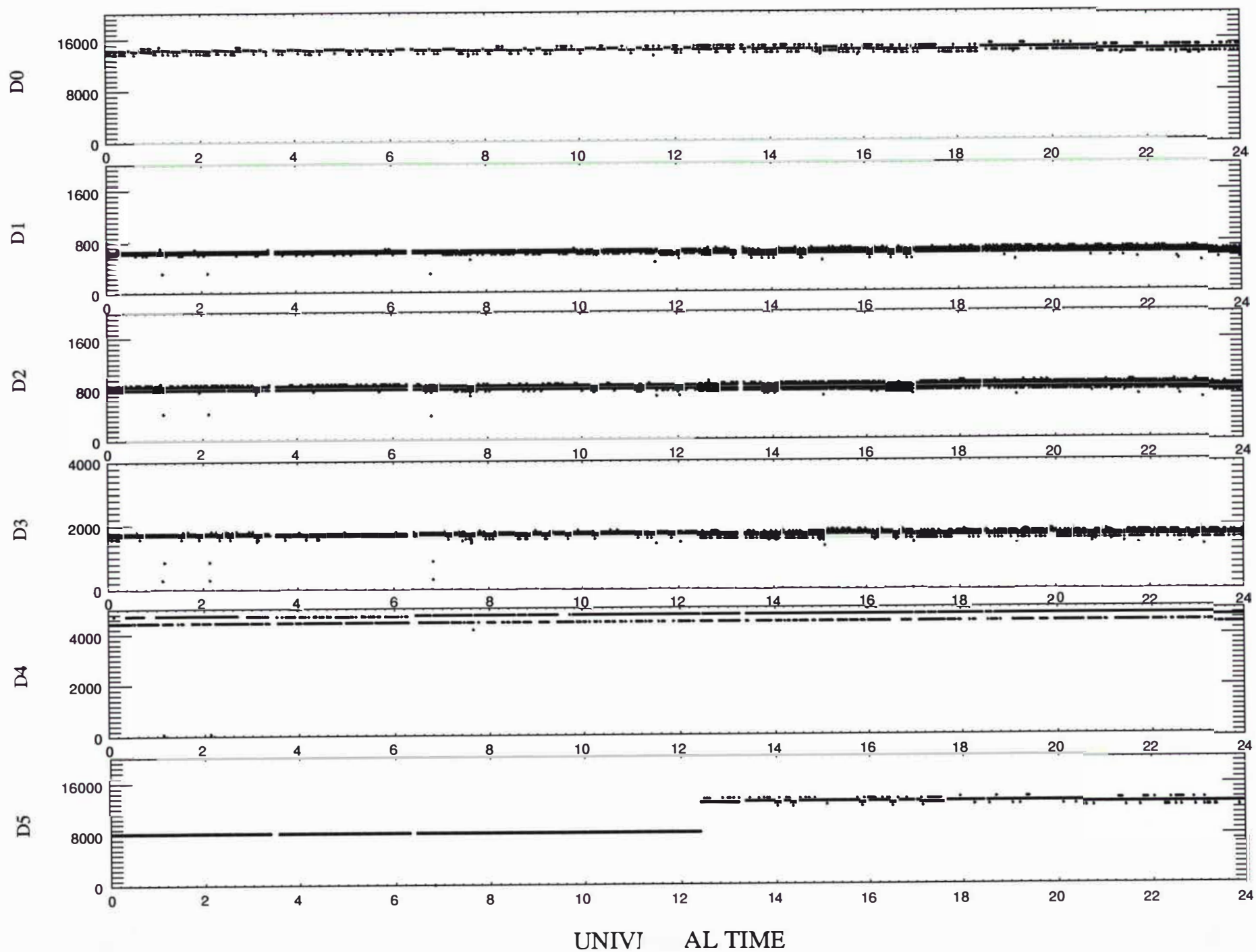
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV AL TIME



Sax

HUS DATA

19 / 07 / 05

ULYSSES RT

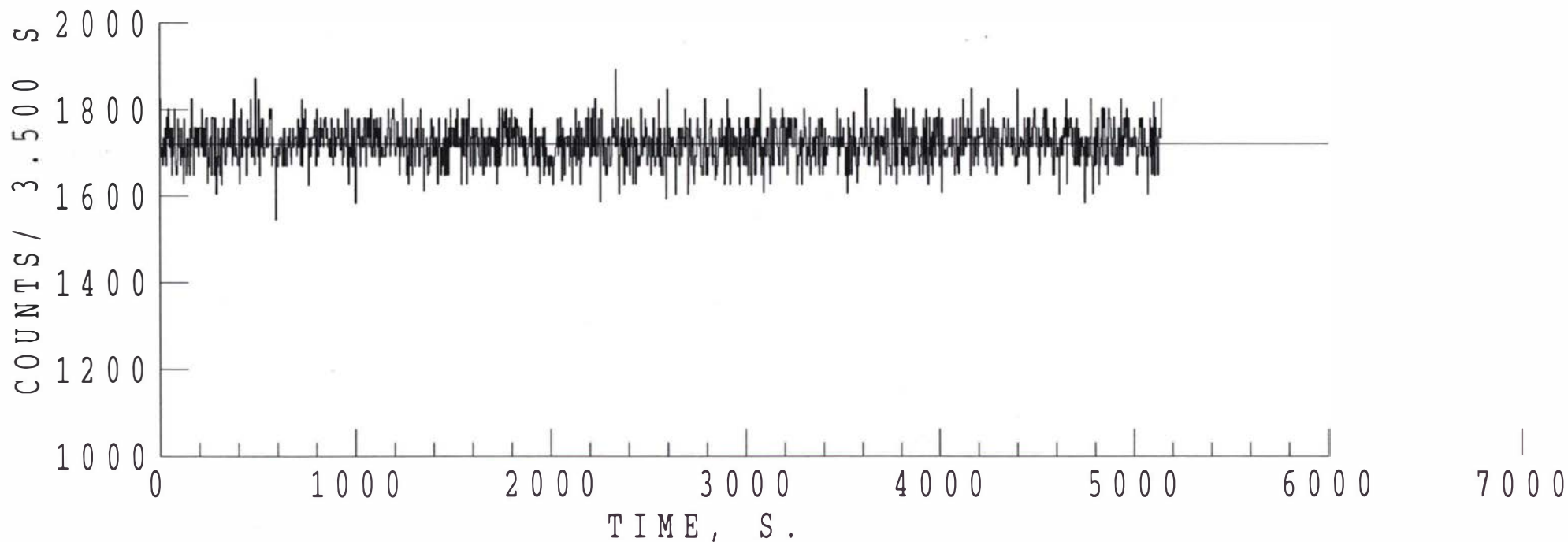
16 / 09 / 96 11304.313 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

W= 10 H= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 H= 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? *There are 2 SAX GRBH events. This one, and one 5 min earlier. Konus duration of this one is ~ 300 s, so they might be the same.*

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

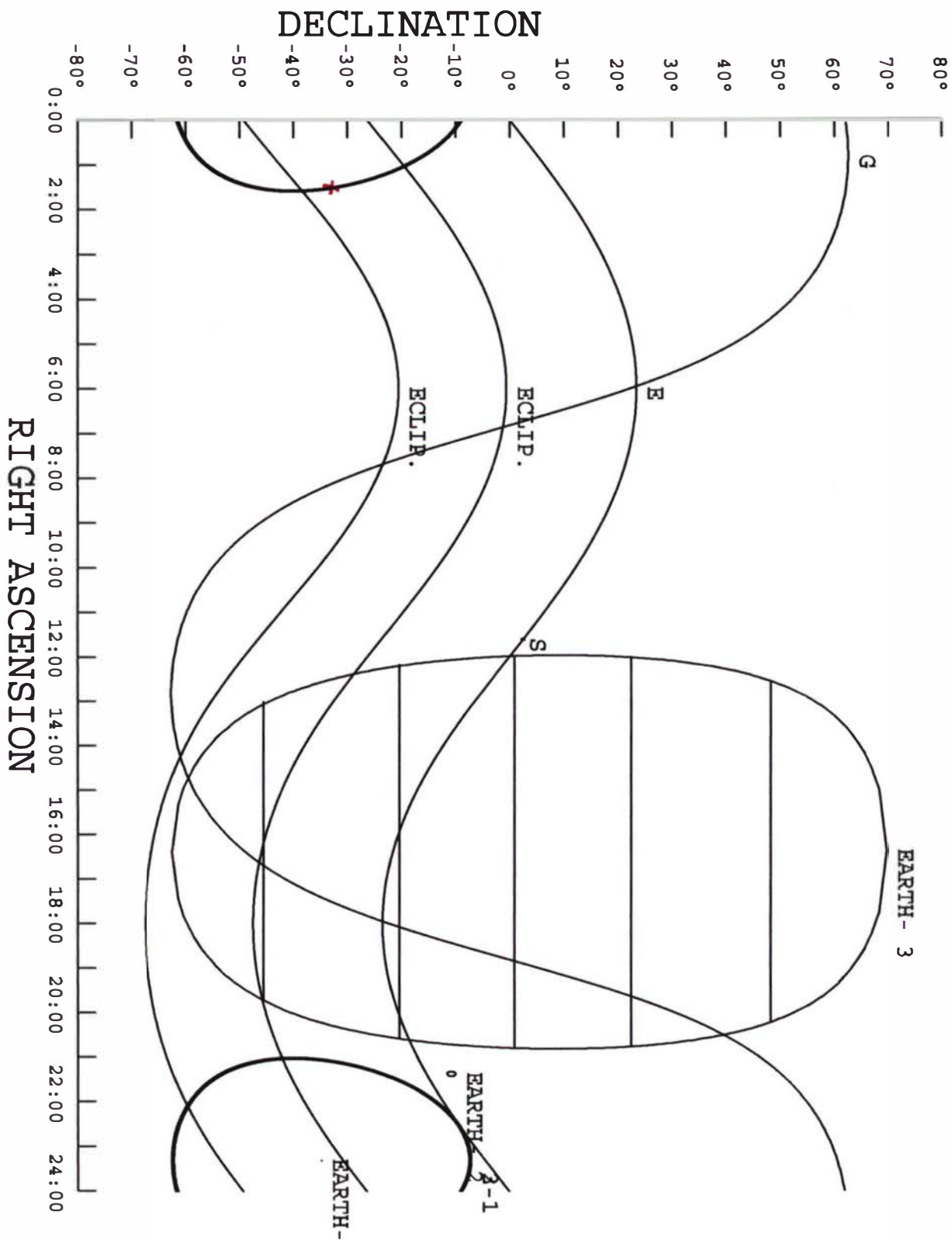
1 ULYSSES

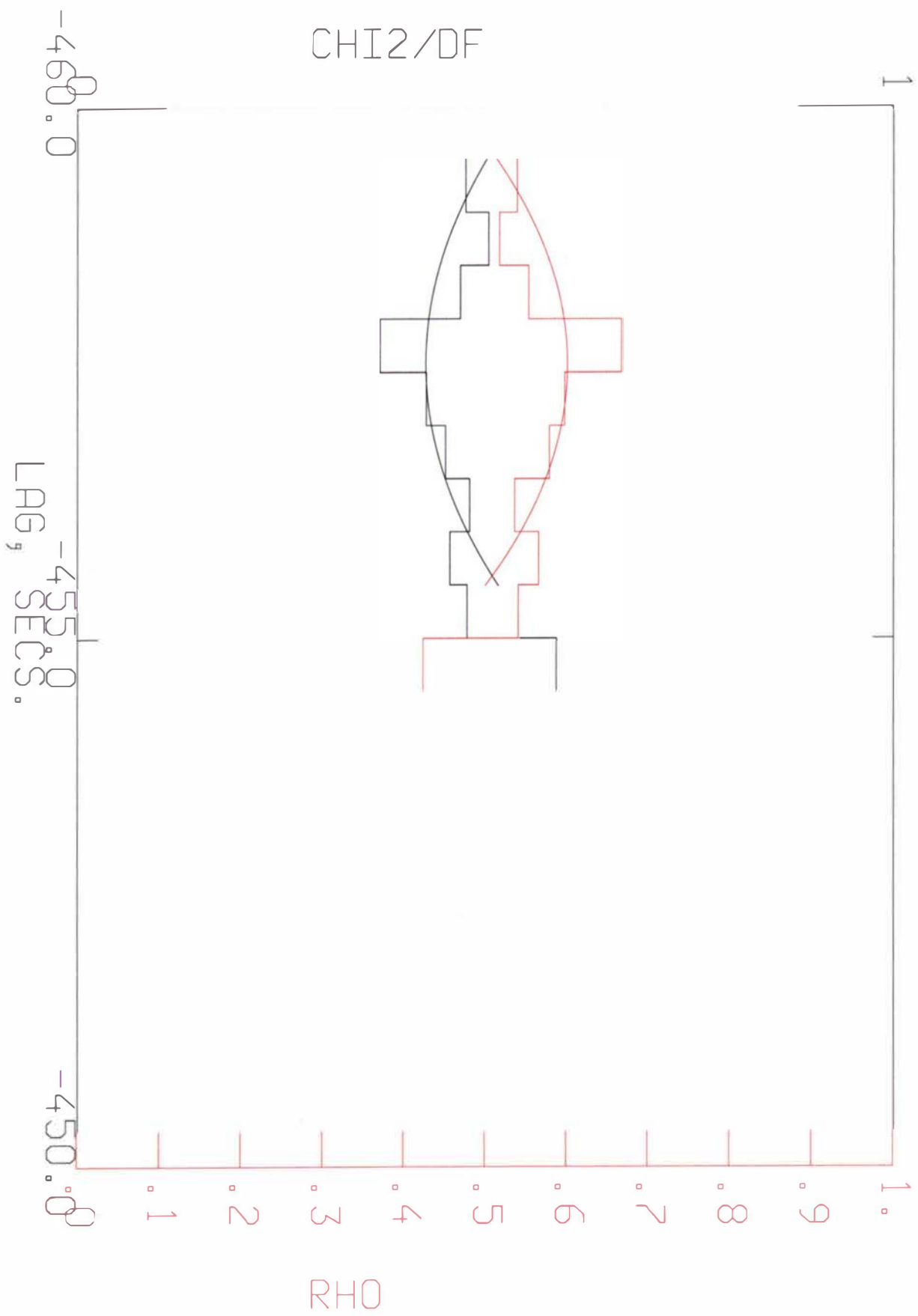
2 KONUS

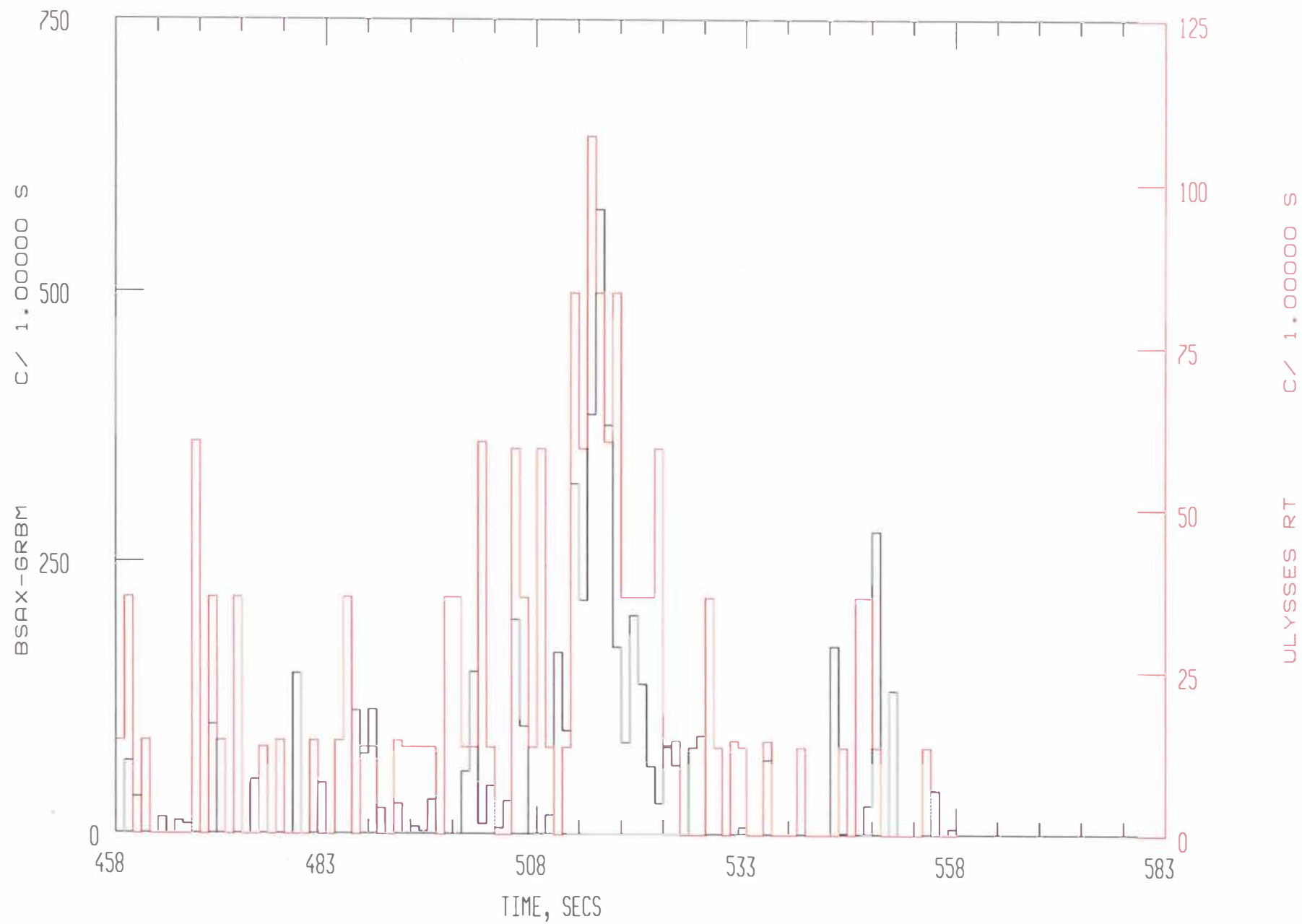
3 SAX

EVENT OF SEP 16, 1996 4:33

5 / 1/10





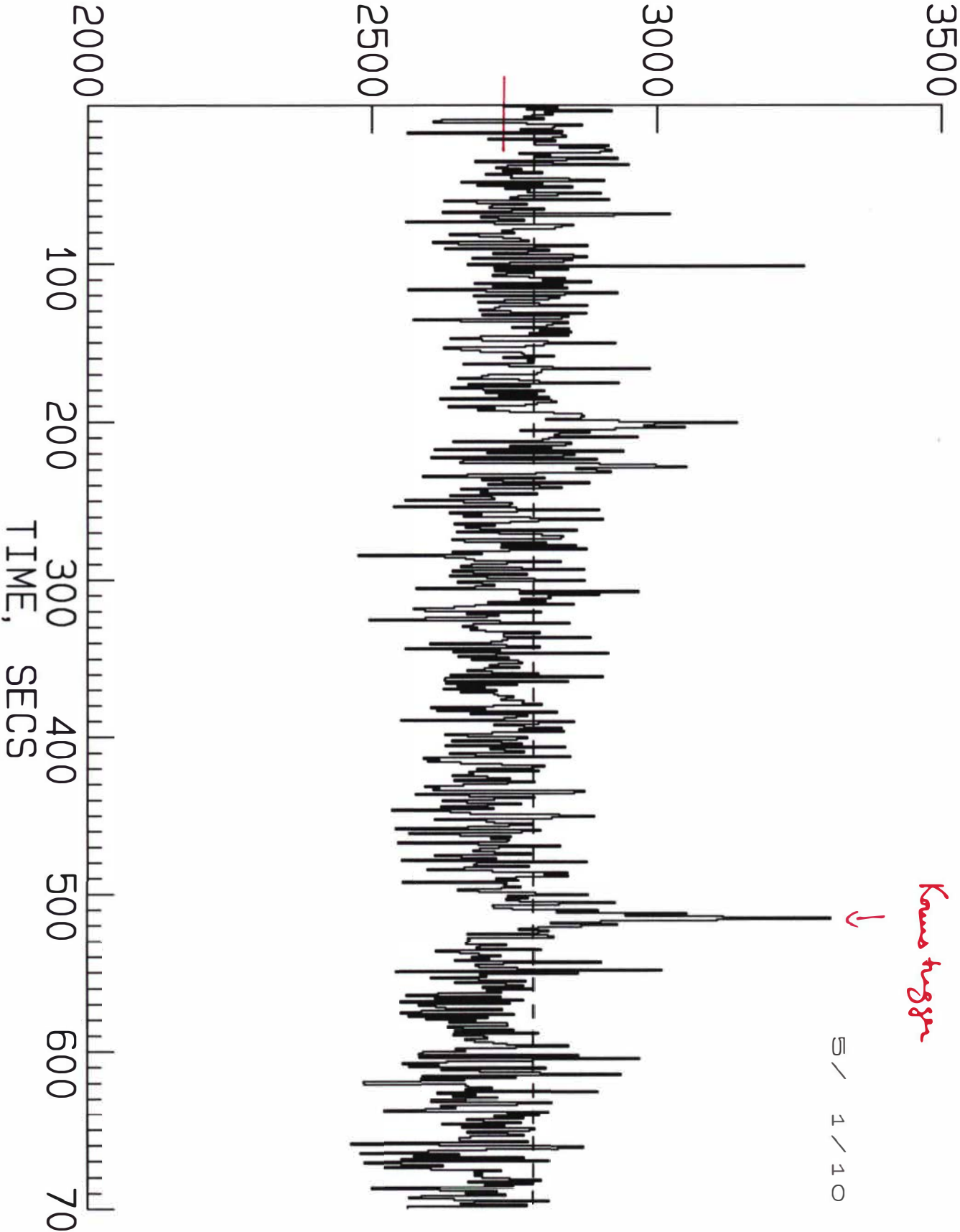


SAX GRBM

16/09/96 13668.338

40- 700 keV

COUNTS/1.000 S



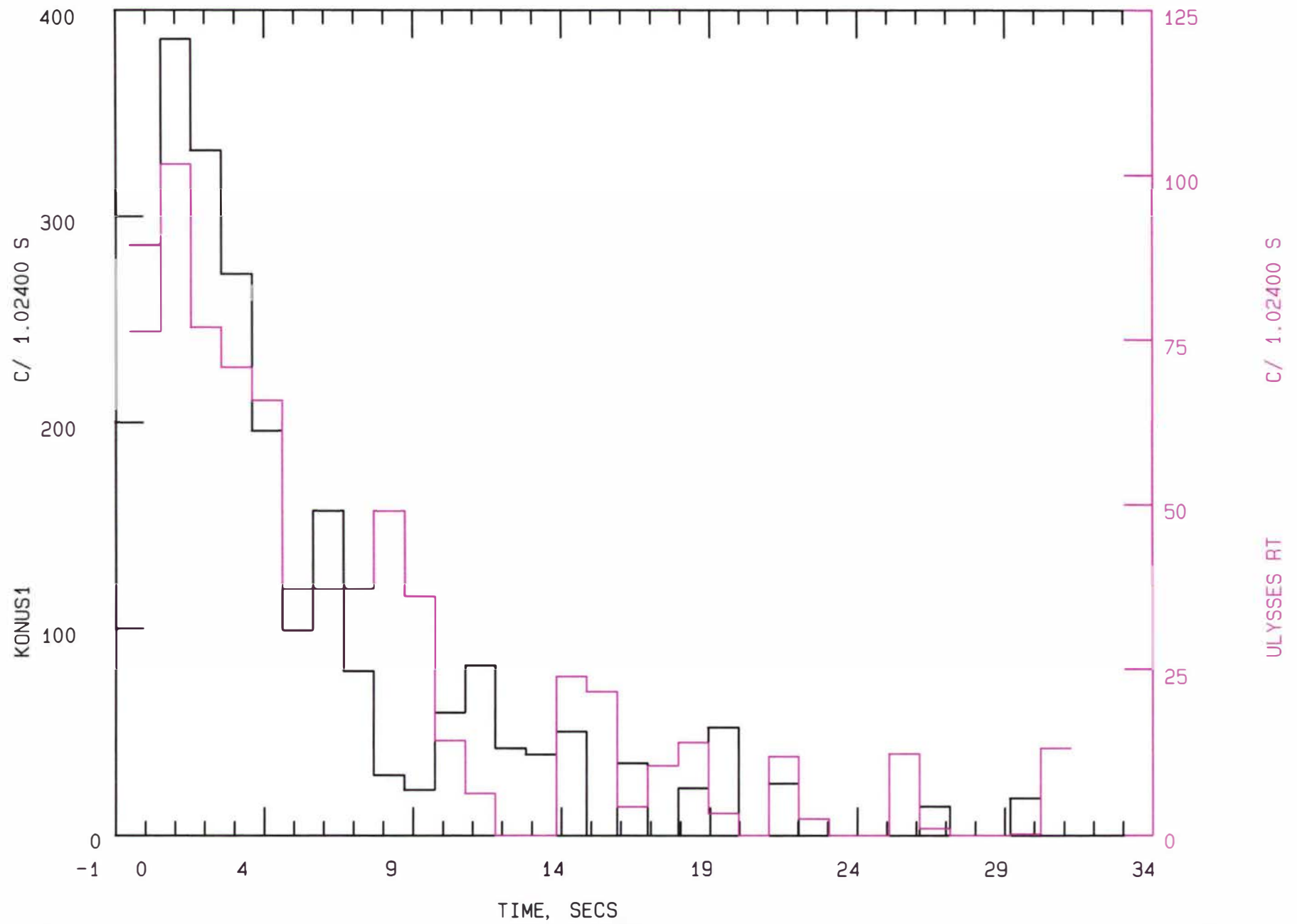
KONUS1

-ULYSSES RT CORRELATION

16/09/96

14182.498

30/ 9/ 9

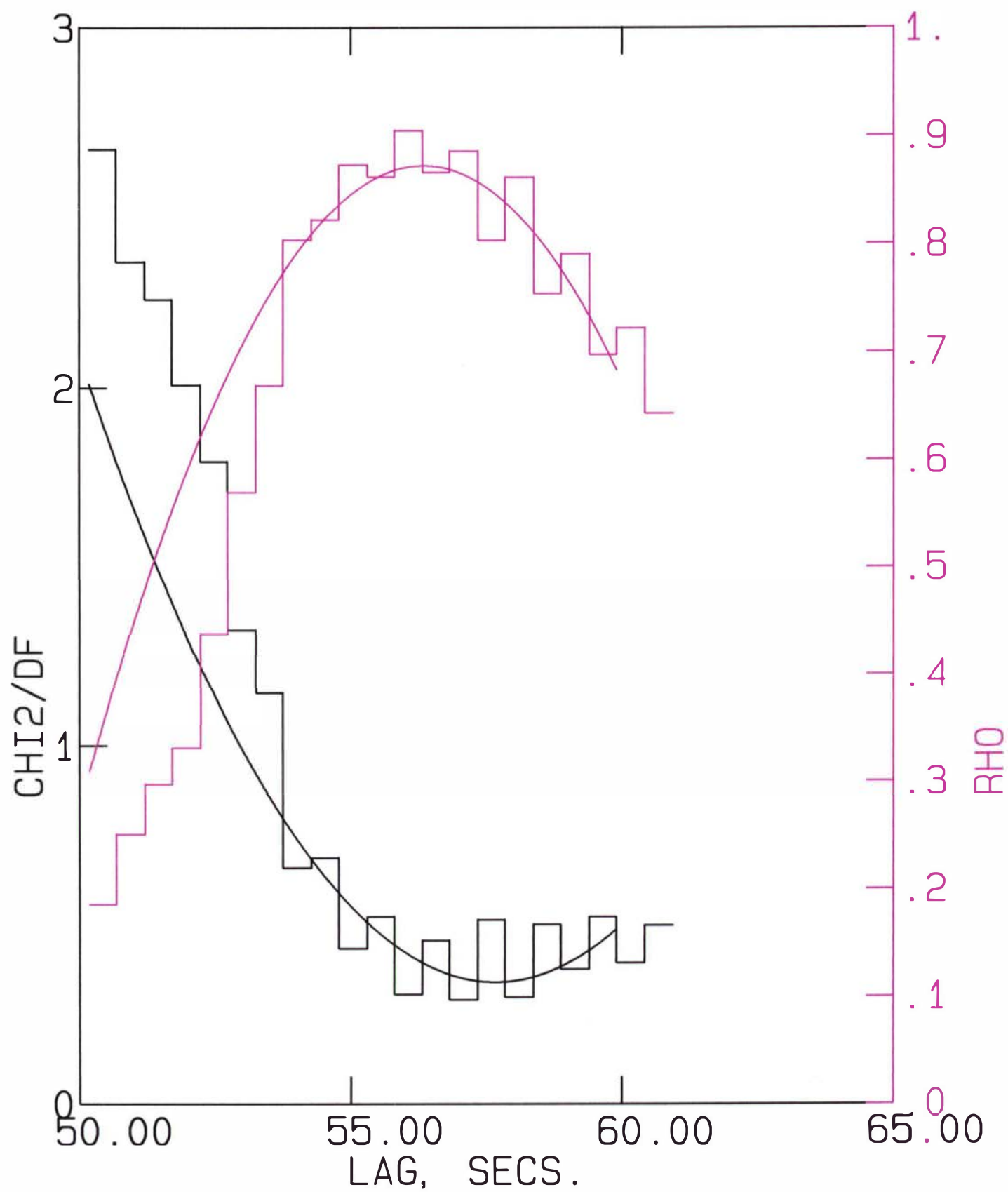


KONUS1

-ULYSSES RT CORRELATION

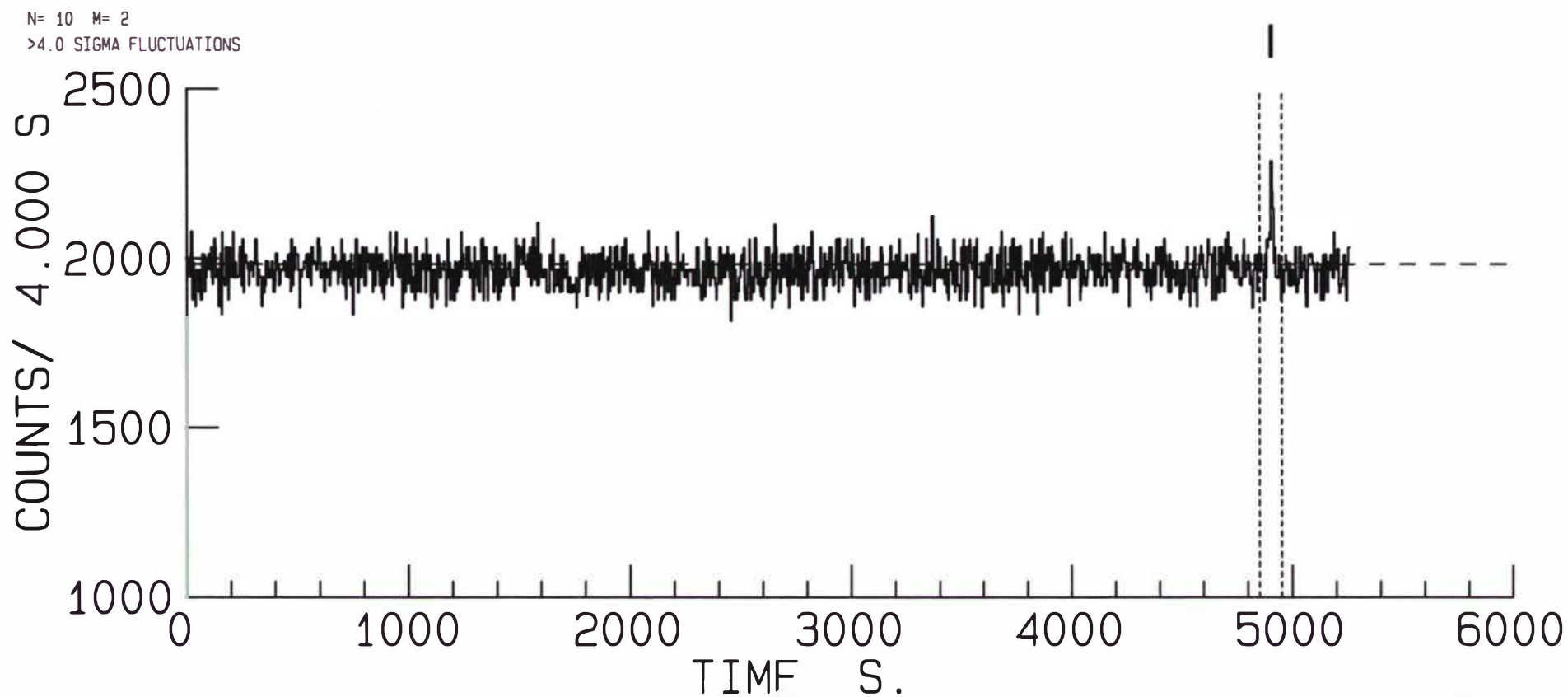
16/09/96

14182.498



ULYSSES RT
16/ 9/96 11556.313 s
0.500 S INTERVALS REGROUPED BY 8
21- 146 keV

30 / 9 / 9



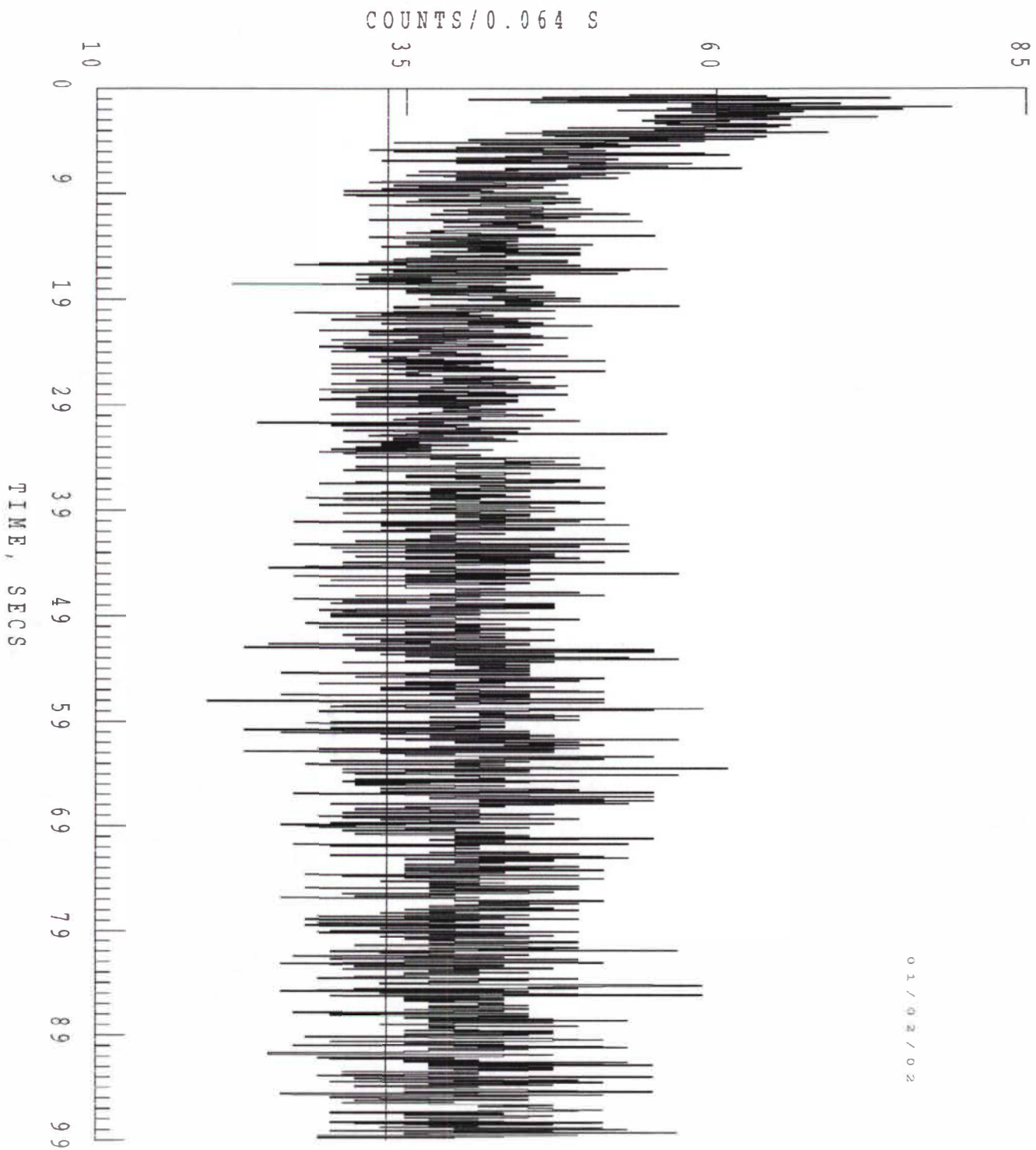
KONUS1

16/09/96

14182.498

50 - 200 keV

03:56:22



KONUS

16/09/96 14009.452

10- 50 keV

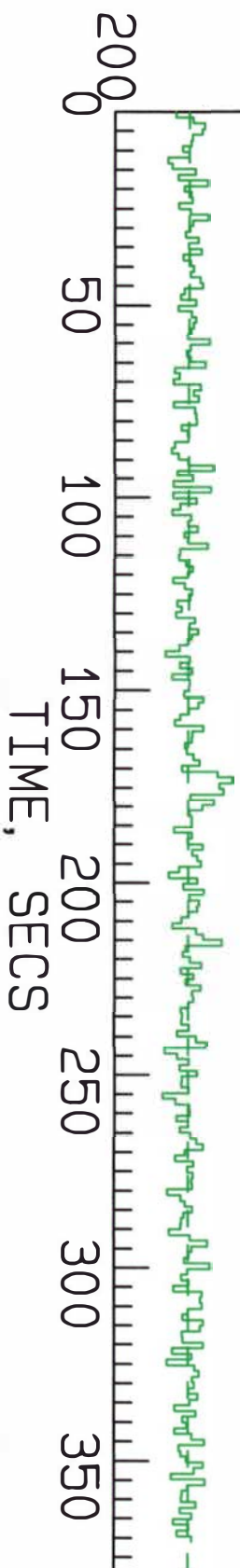
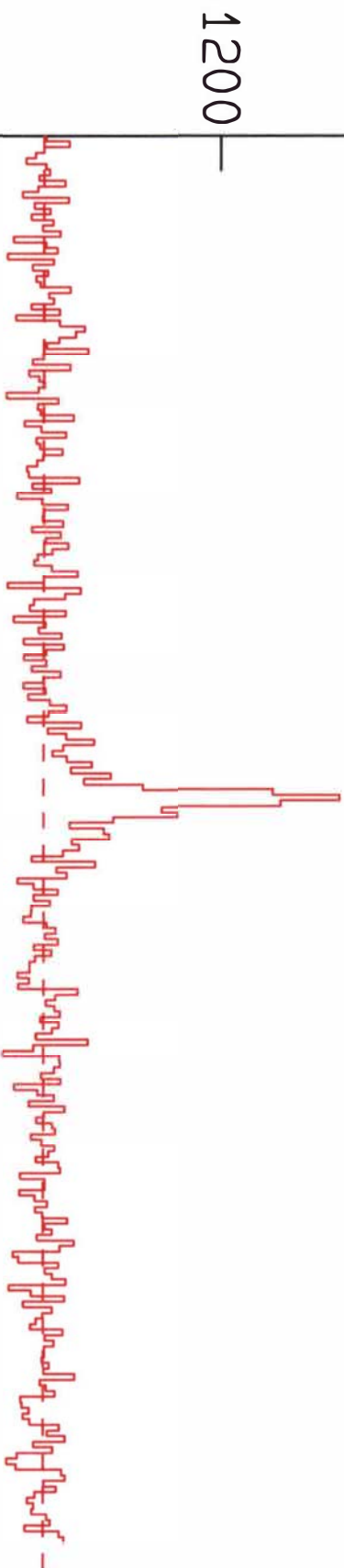
50- 200 keV 200- 750 keV

COUNTS/1.473 S

2200

DETECTOR 1 - S. ECLIPTEIC

01/10/09



KONUS

16/09/96 14009.452

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/1.473 S

2200

DETECTOR 2 - N. ECLIPTIC

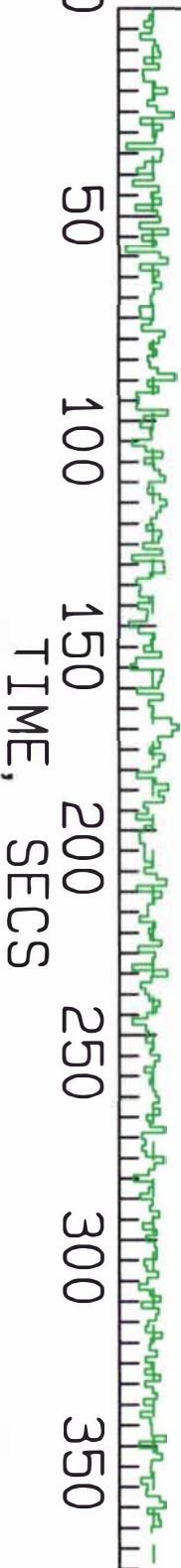
01/10/09

1700

1200

700

200



~~Sax~~
HUS DATA

ULYSSES RT

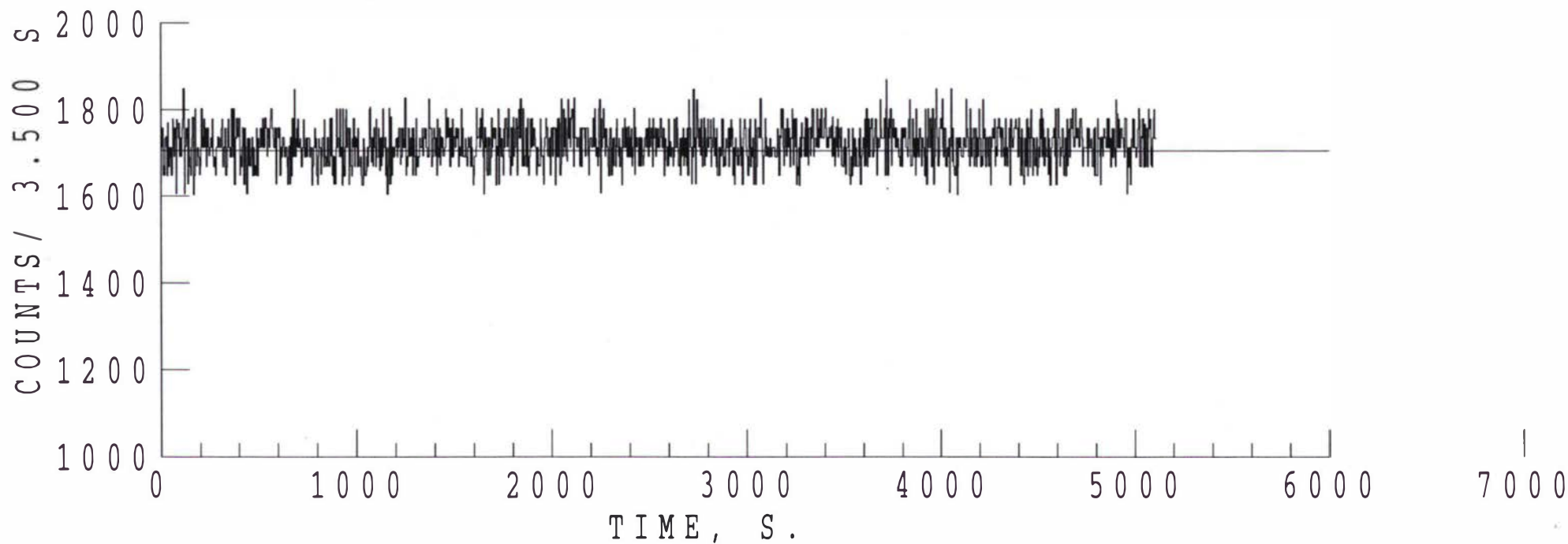
19 / 07 / 05

16 / 09 / 96 28116.027 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX 19960916 54913

ULYSSES RT

25 / 08 / 09

16/09/96 52308.090 s

0.250 S INTERVALS REGROUPED BY 14

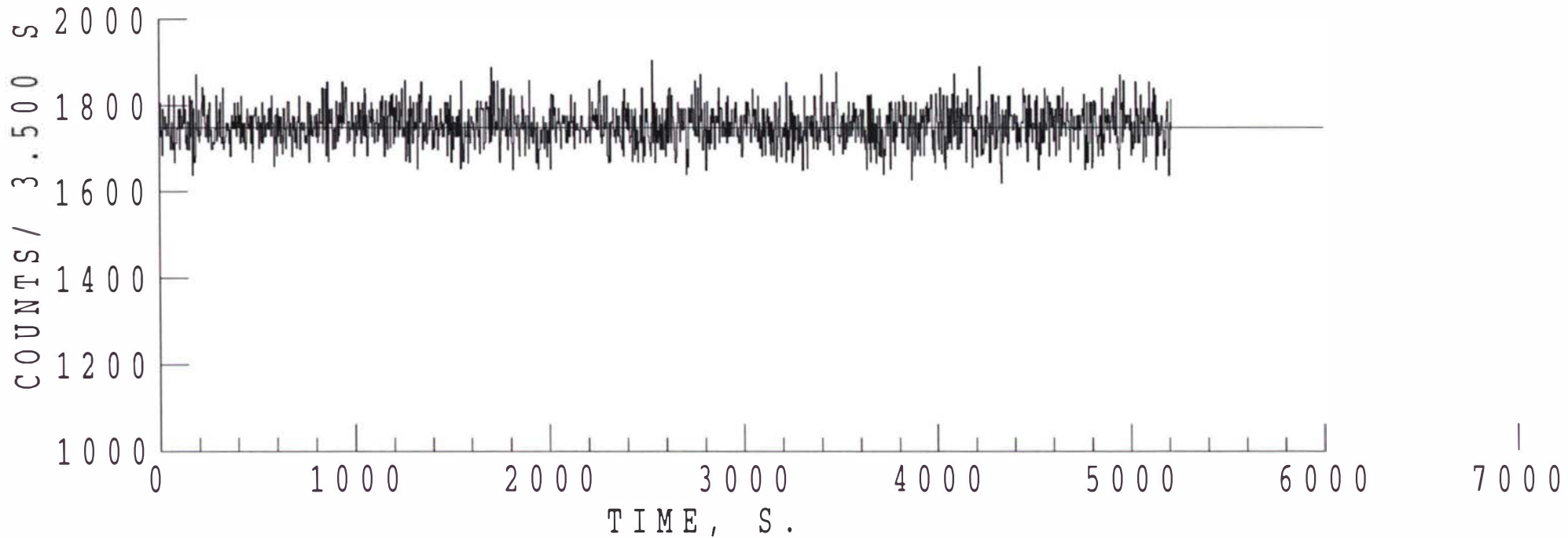
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SURASAK@ssl.msfc.nasa.gov Tue Sep 17 14:25 PDT 1996
Date: Tue, 17 Sep 1996 16:25:25 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5605

BATSEARCH PROGRAM

BATSE BURST # 5605
EVENT OF 1996 SEP 16 DAY OF YEAR=260
EVENT CROSSING TIME AT BATSE : 85700. S. OR 23:48:20.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 154.000 57.000
BATSE PEAK COUNTING RATE: 2900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 9/ 96 IS:
RA= 169.218 DEC= 34.837 DIST= 5.155 AU
BATSE-ULYSSES DISTANCE = 771250164. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=155.57 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2342.20 SECS.
CROSSING TIME AT ULYSSES IS 83358. S. OR 23:09:17 +/- 199.18 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 9/ 96 IS:
RA= 126.421 DEC= 20.285 DIST= 2.036 AU
MARS-BATSE DISTANCE = 304651648. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=138.04 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -755.63 SECS.
CROSSING TIME AT MARS IS 84944. S. OR 23:35:44 +/- 106.50 SECONDS

BATSE BURST TRIGGER

NO.: 5605

TIME: TJD=0342 SECONDS=85700

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL: N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=49.3 AZIMUTH=343.1 ERROR=9.186 DEGREES

COMMENTS:

GRB. DUR~5S. SINGLE PULSE. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5605	960916	10342	85700	2900	154	+57	5

BATSE #

5605

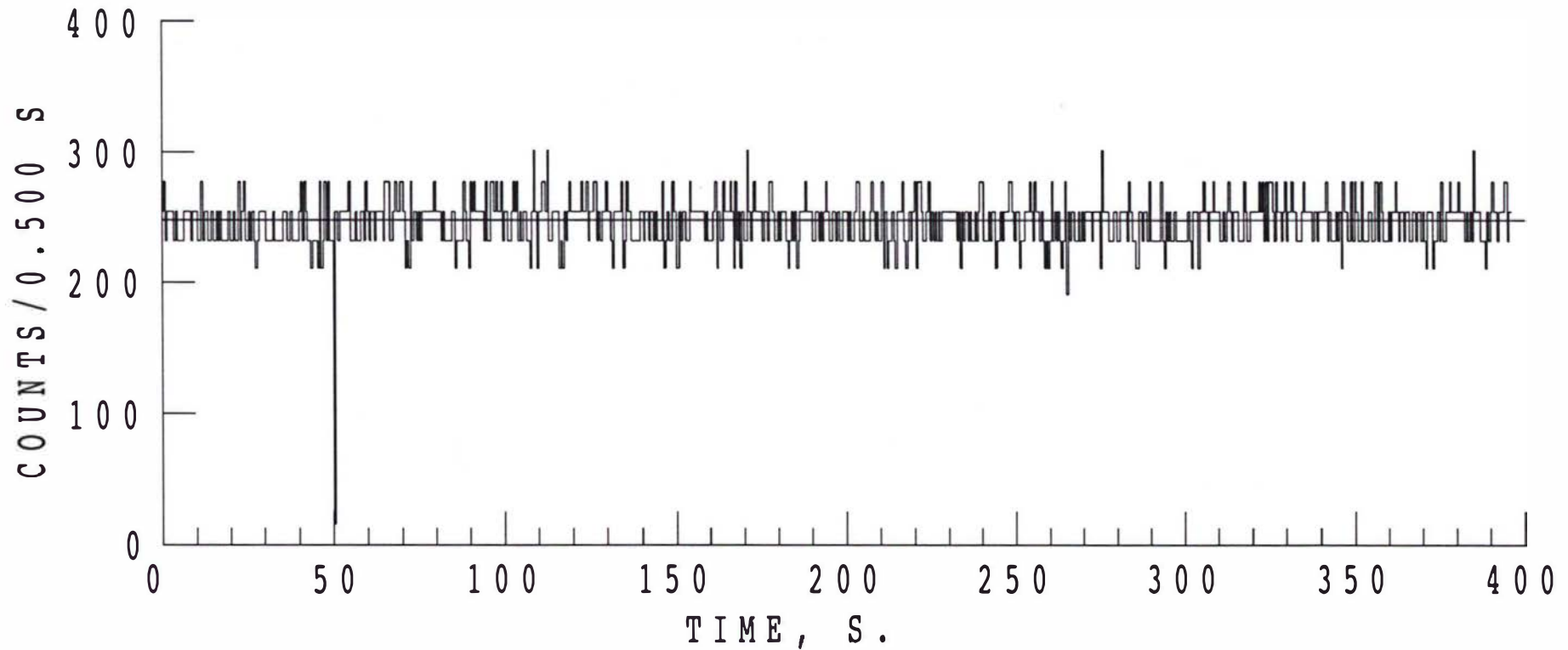
18 / 9 / 96

ULYSSES RT

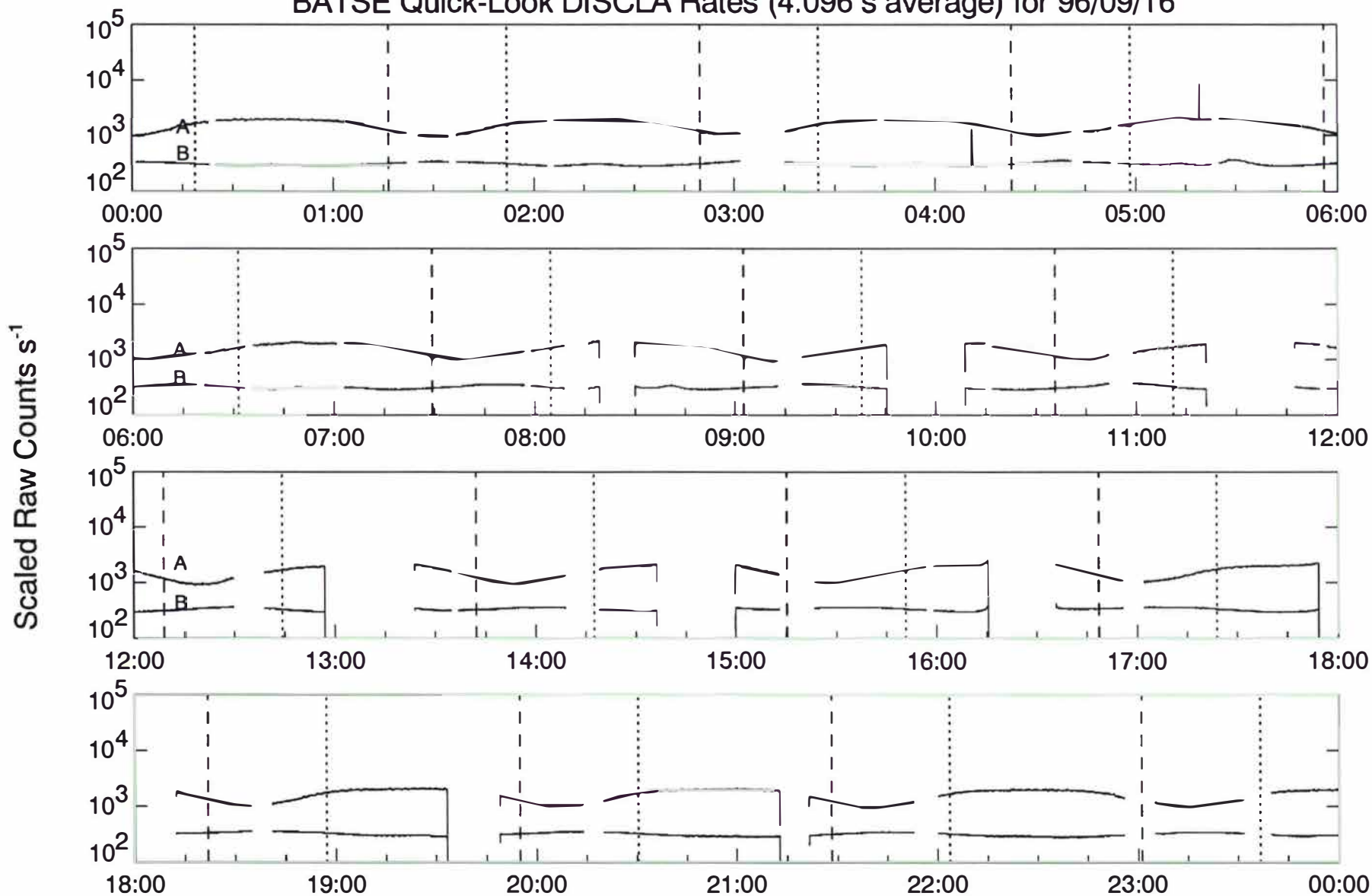
16 / 9 / 96 83160.227 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/16



Current Time: 96/09/18, 1003 EDT

A: Channel 0 Most Sunward LAD

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

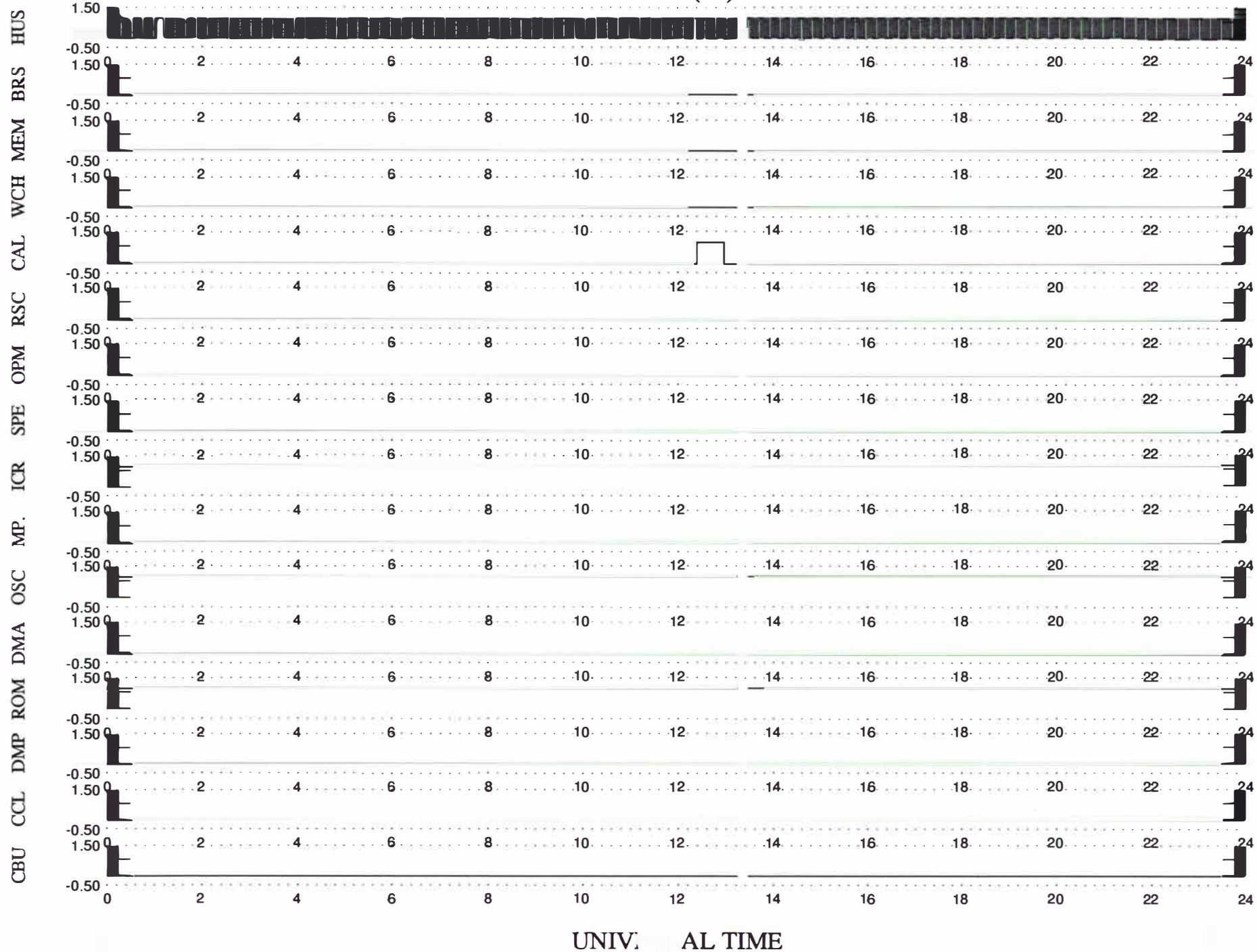
Dotted line: Day entry

Dashed line: Night entry

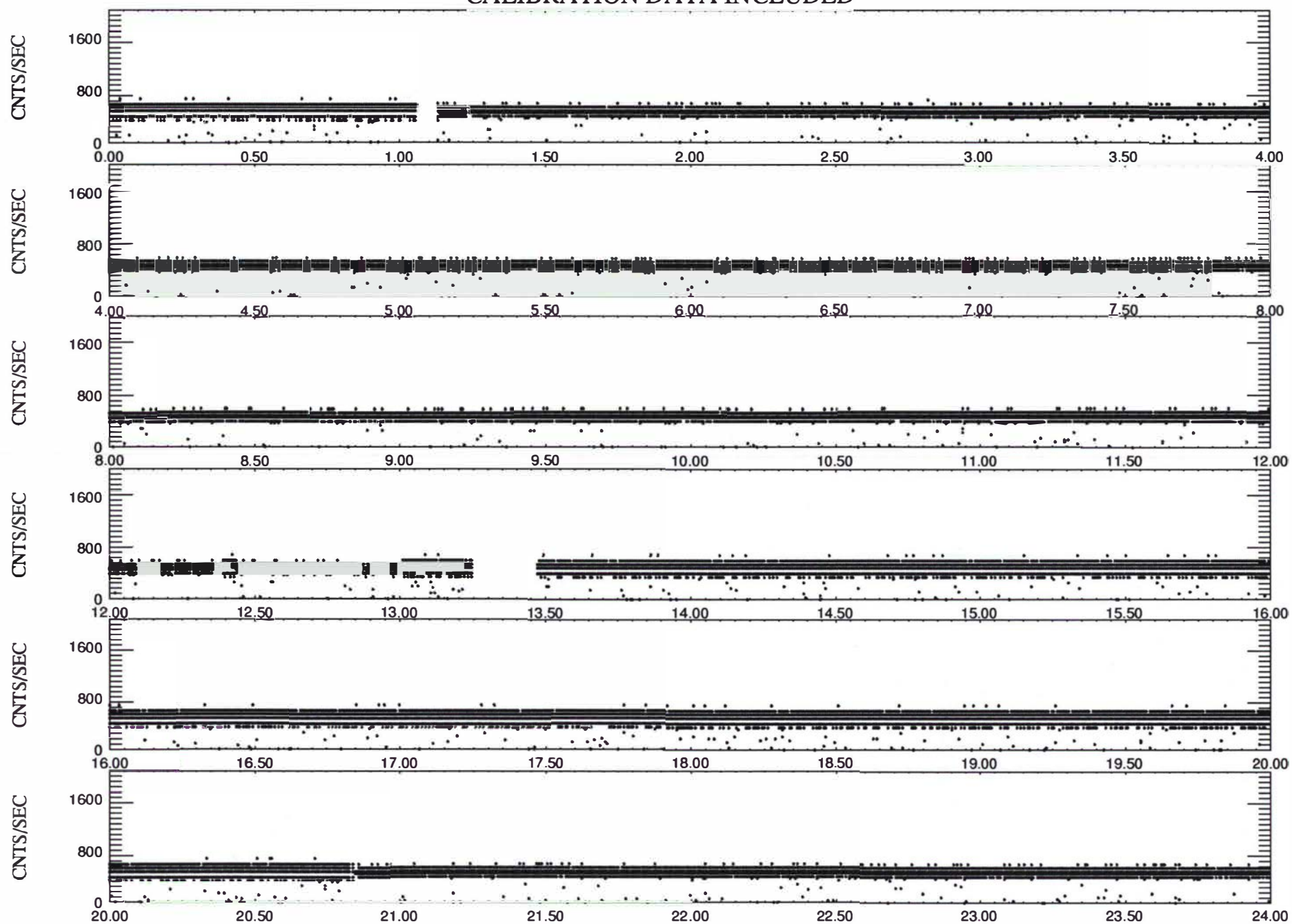
* Solar Burst Trigger

+ Solar Flare

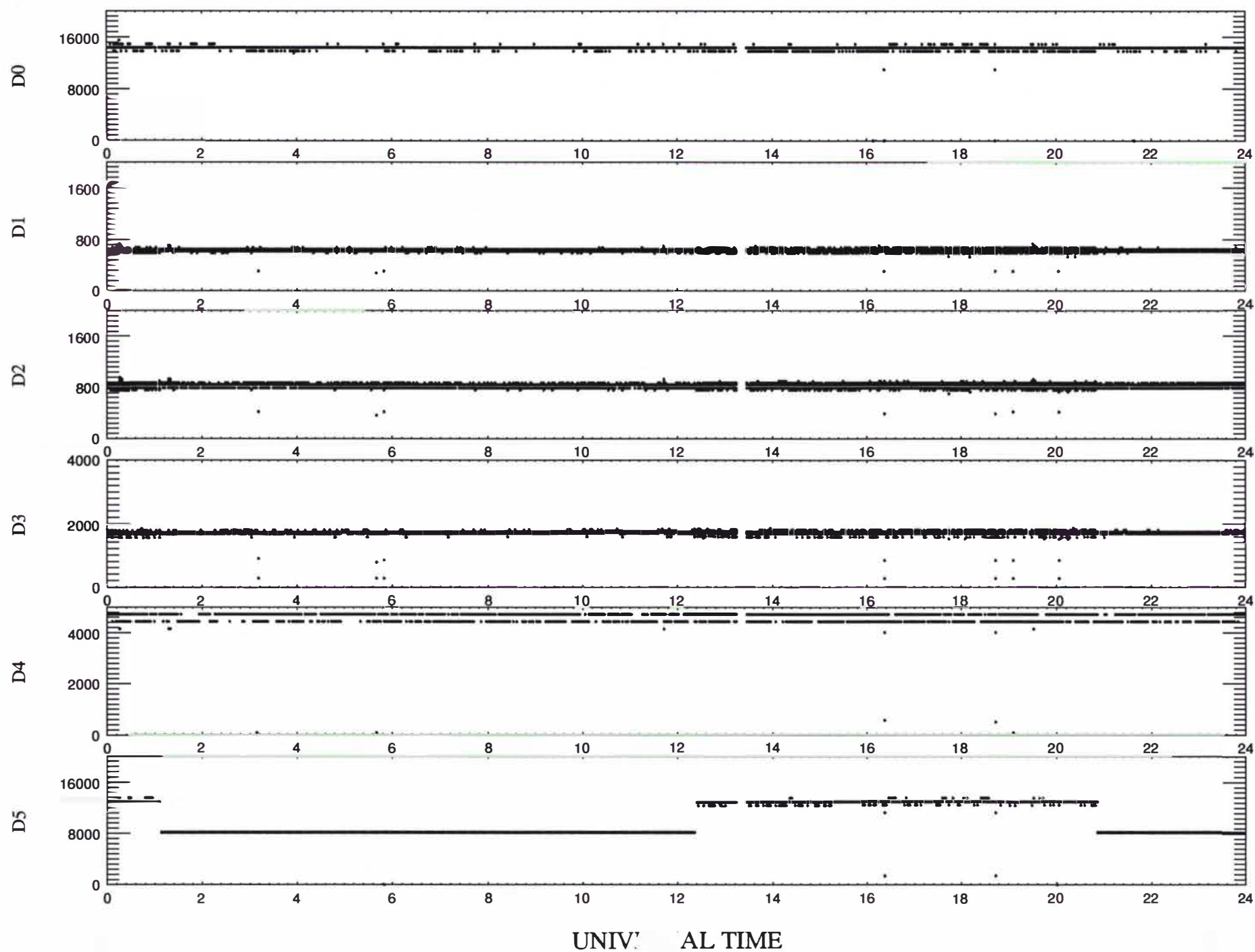
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV! AL TIME



From WOODSP@SSLLES.MSFC.NASA.GOV Wed Sep 18 09:28 PDT 1996
Date: Wed, 18 Sep 1996 11:16:59 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5606

BATSEARCH PROGRAM

BATSE BURST # 5606
EVENT OF 1996 SEP 17 DAY OF YEAR=261
EVENT CROSSING TIME AT BATSE : 80552. S. OR 22:22:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 314.000 -34.000
BATSE PEAK COUNTING RATE: 8200 C/S

RI

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 17/ 9/ 96 IS:
RA= 169.395 DEC= 34.736 DIST= 5.155 AU
BATSE-ULYSSES DISTANCE = 771126469. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 29.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2248.10 SECS.
CROSSING TIME AT ULYSSES IS 82800. S. OR 23:00:00 +/- 301.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 17/ 9/ 96 IS:
RA= 127.065 DEC= 20.150 DIST= 2.031 AU
MARS-BATSE DISTANCE = 303789184. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 15.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 978.10 SECS.
CROSSING TIME AT MARS IS 81530. S. OR 22:38:50 +/- 60.84 SECONDS

BATSE BURST TRIGGER

NO.: 5606

TIME: TJD=0343 SECONDS=80552

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=113.1 AZIMUTH=138.2 ERROR=0.7 DEGREES

COMMENTS:

GRB LASTING ~ 200 SEC. PRECURSOR @ T-70 SEC. MAIN PEAK SHOWS FINE
STRUCTURE. QUESTIONABLE THIRD PEAK @ T+240 SEC. VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5606	960917	10343	80552	8200	314	-34	200

Helio corr removed 17/2/00

Date: Mar 16 '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 - back 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*

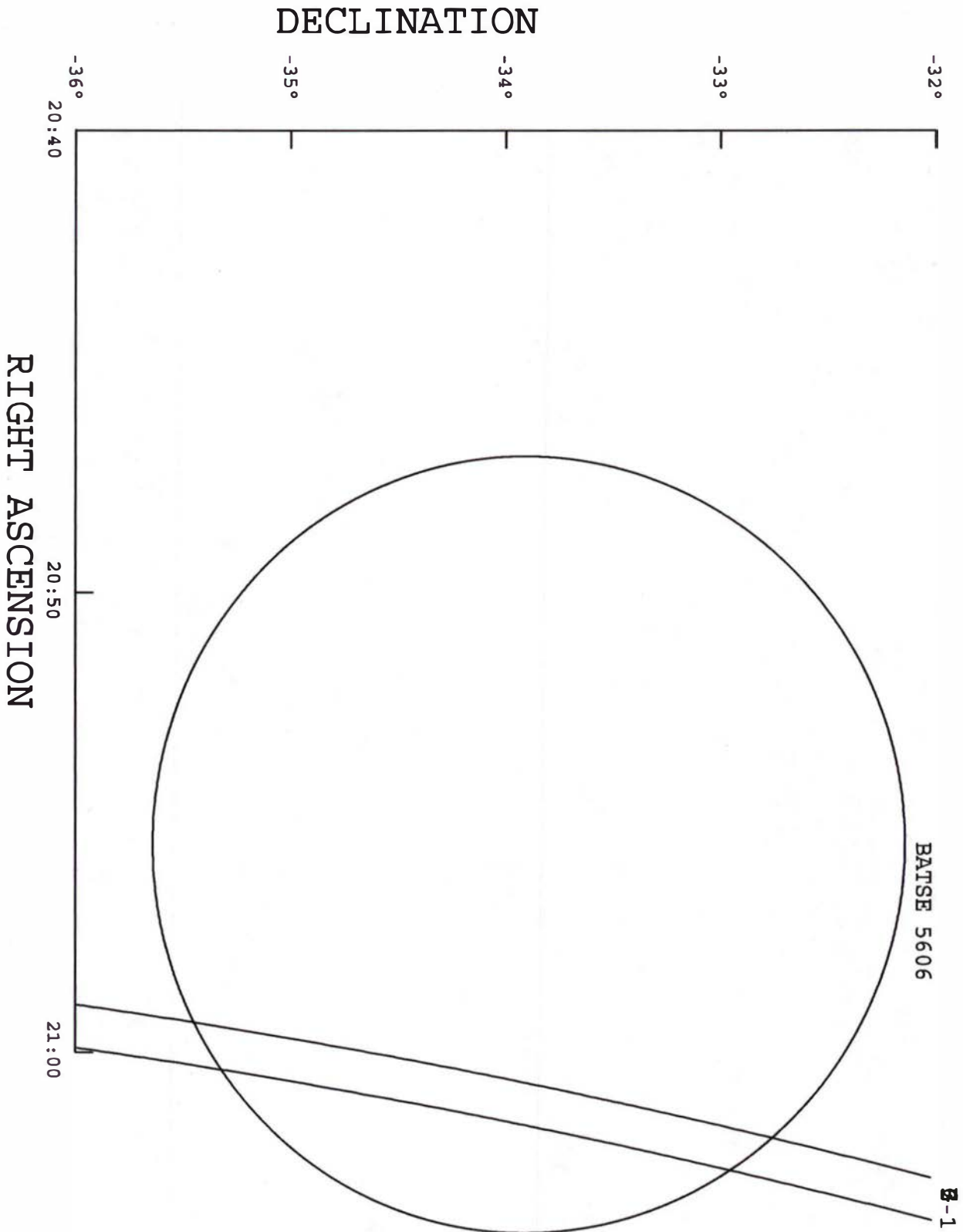
3. PVO Data

- ☐ 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 SEP 17, 1996 22:59

17 / 2 / 0



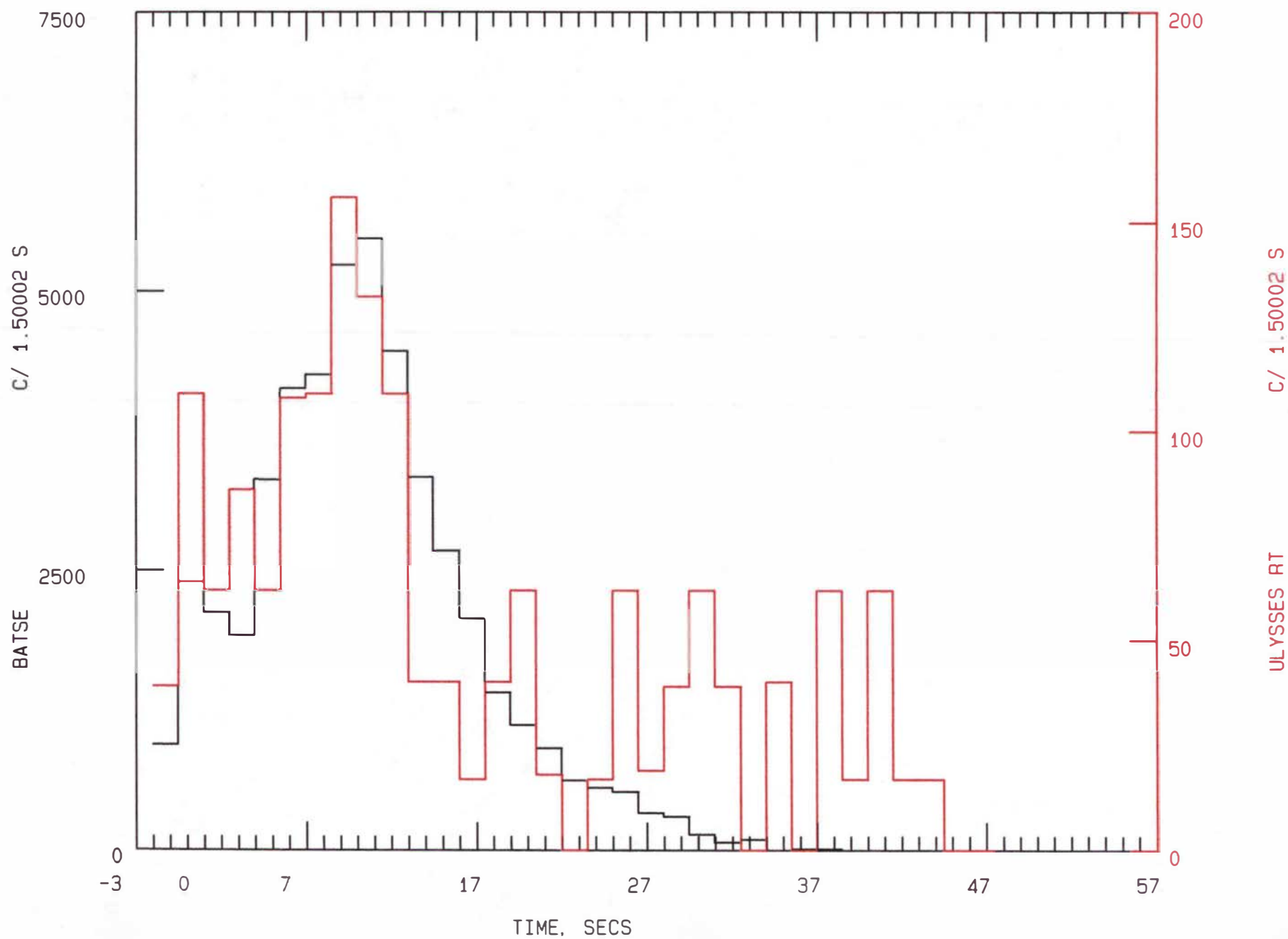
BATSE

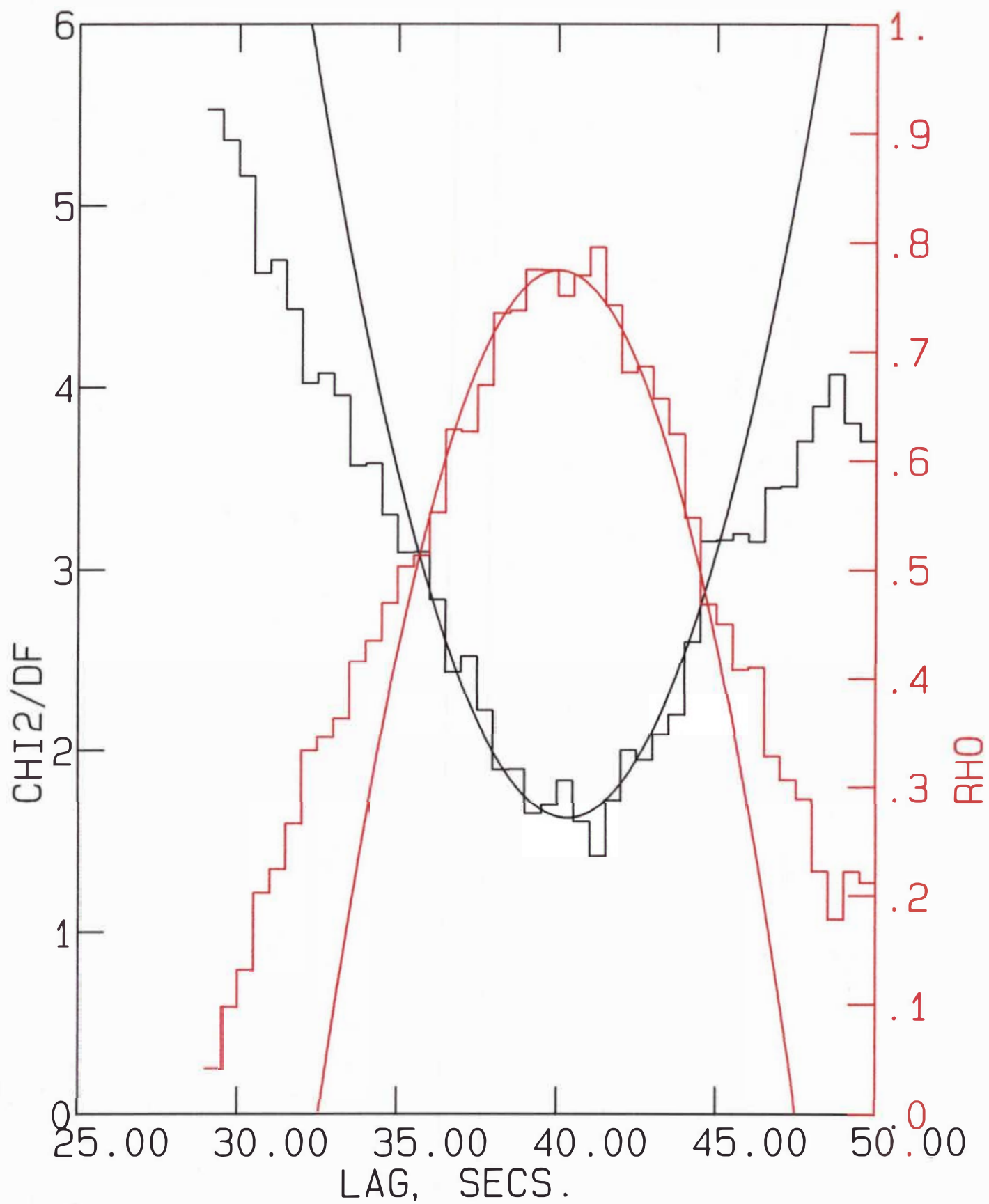
-ULYSSES RT CORRELATION

17/ 9/96

80552.905

16/ 3/98





ULYSSES RT

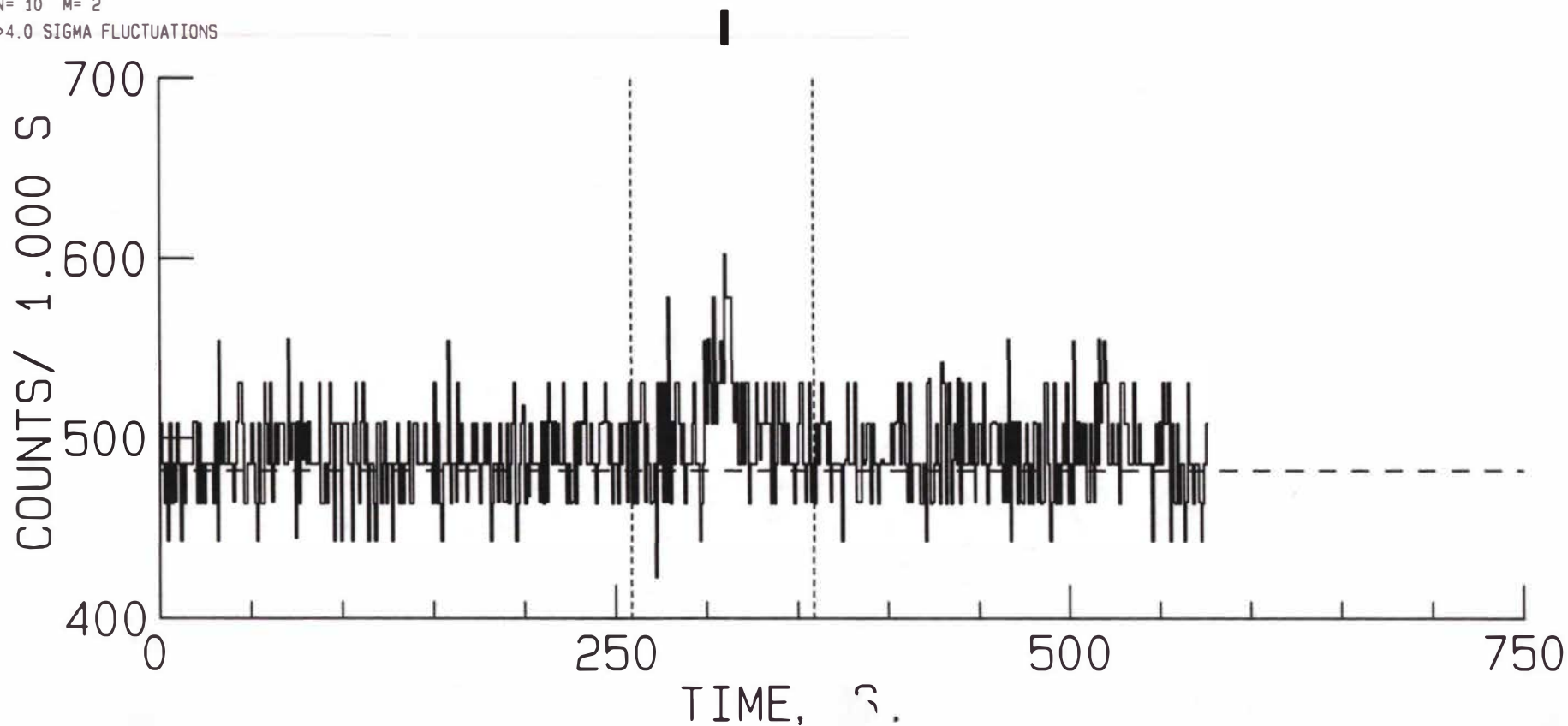
16 / 3 / 98

17 / 9 / 96 82512.311 s

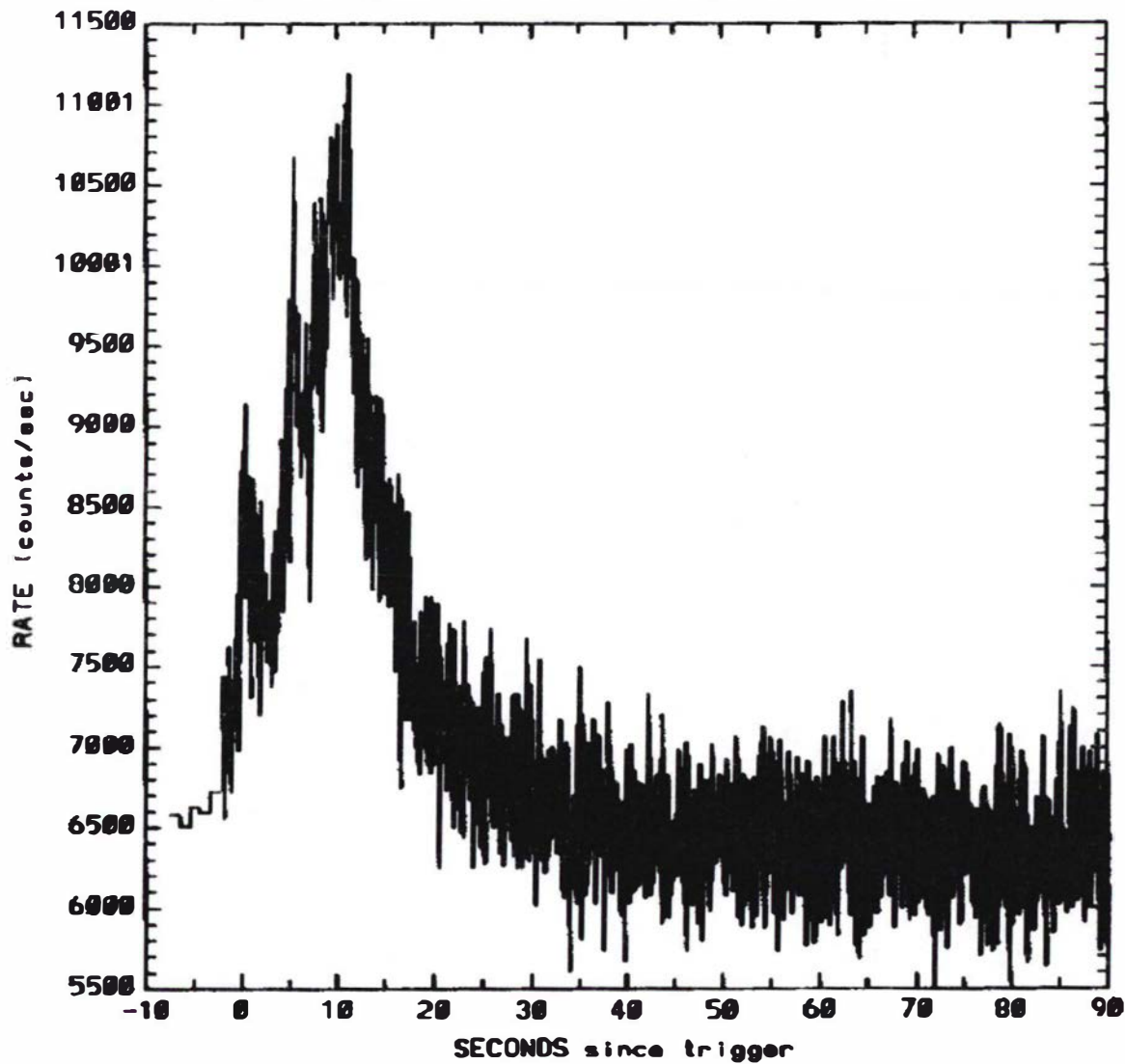
0.500 S INTERVALS REGROUPED BY 2

21- 147 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



DISCSC Data for K. Hurley, No. 5606



25-SEP-1996 18.12.34

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger = . 5606

Trigger Time:
18343 / 08552.906Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PRED + DISCLA
Minimum Integ. Time:
8.064 seconds
Detectors (7..8):
--54----Discriminators:
(1, 2)Quality Mark:
B01SP1

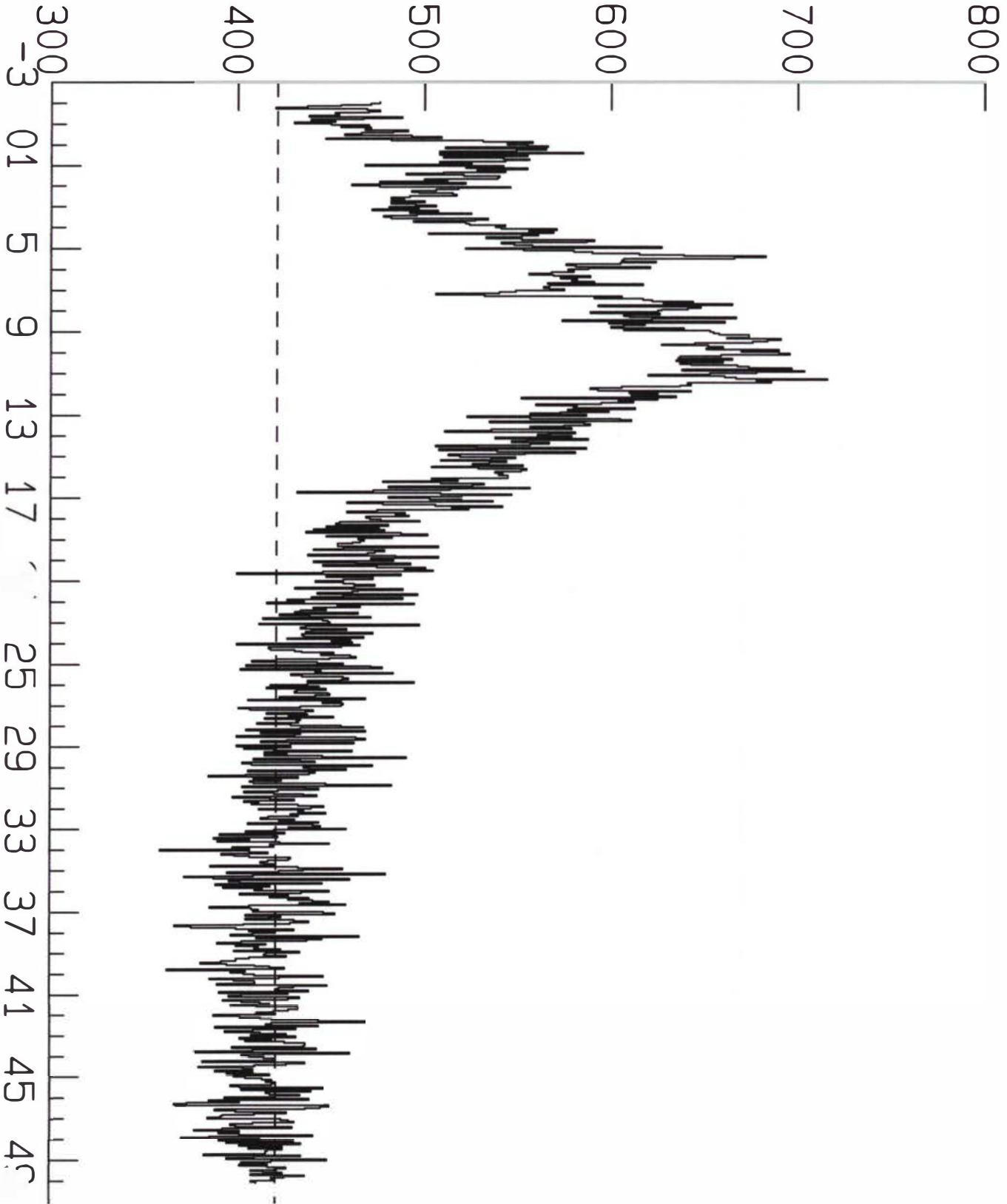
BATSE

17/09/96

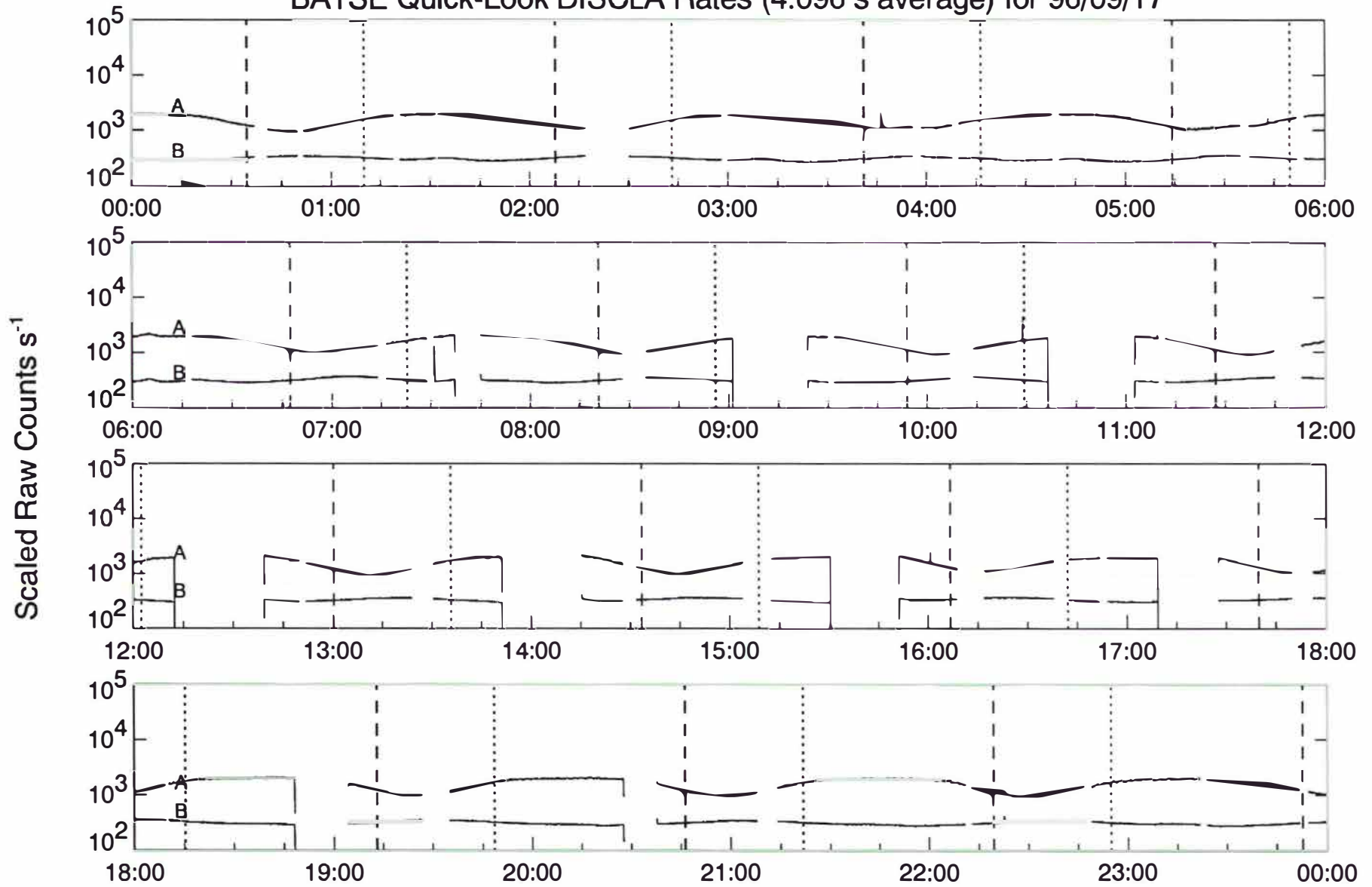
80552.905

25- 100 keV

COUNTS/0.064 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/17



Current Time: 96/09/19, 1003 EDT

A: Channel 0 Most Sunward LAD

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

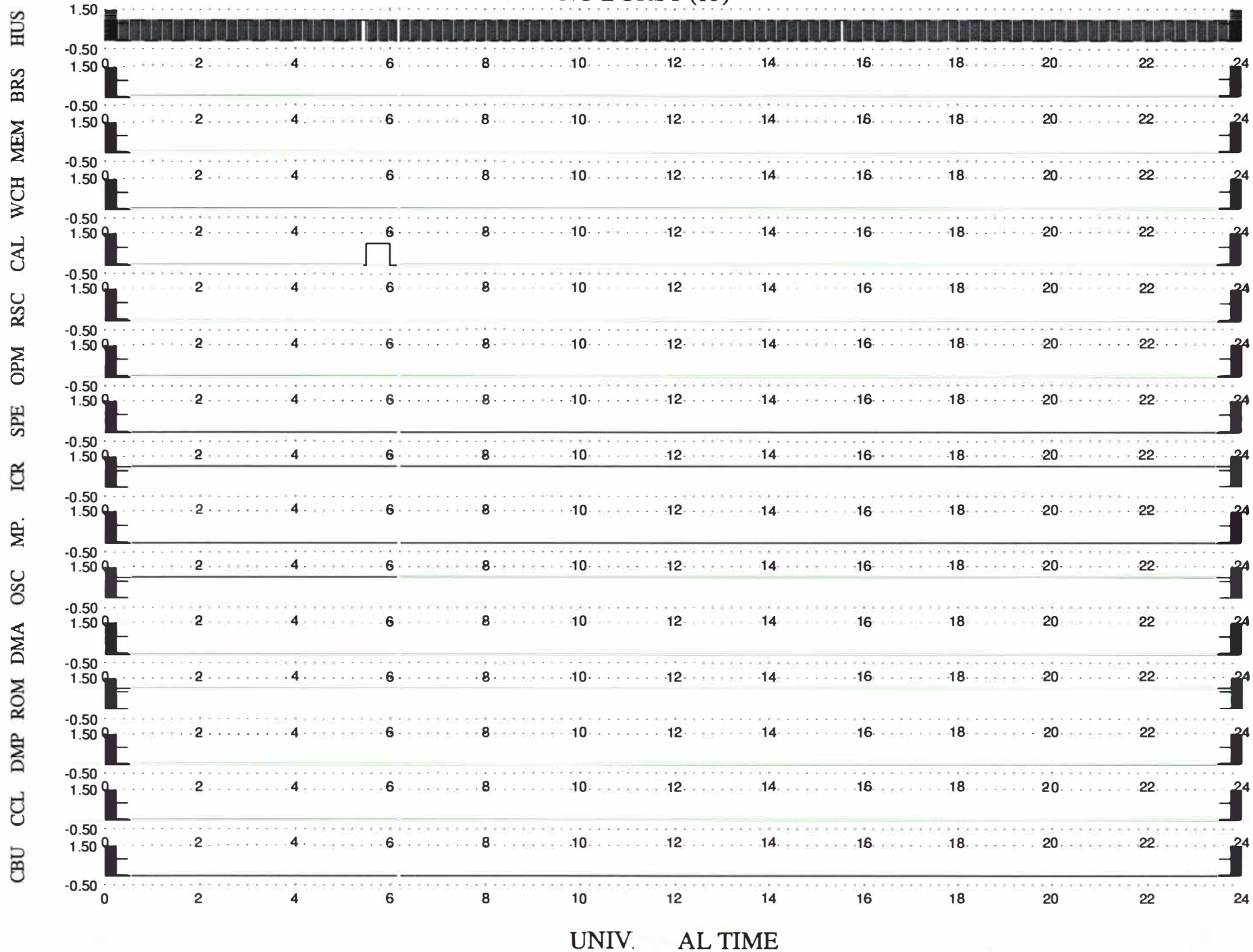
Dotted line: Day entry

Dashed line: Night entry

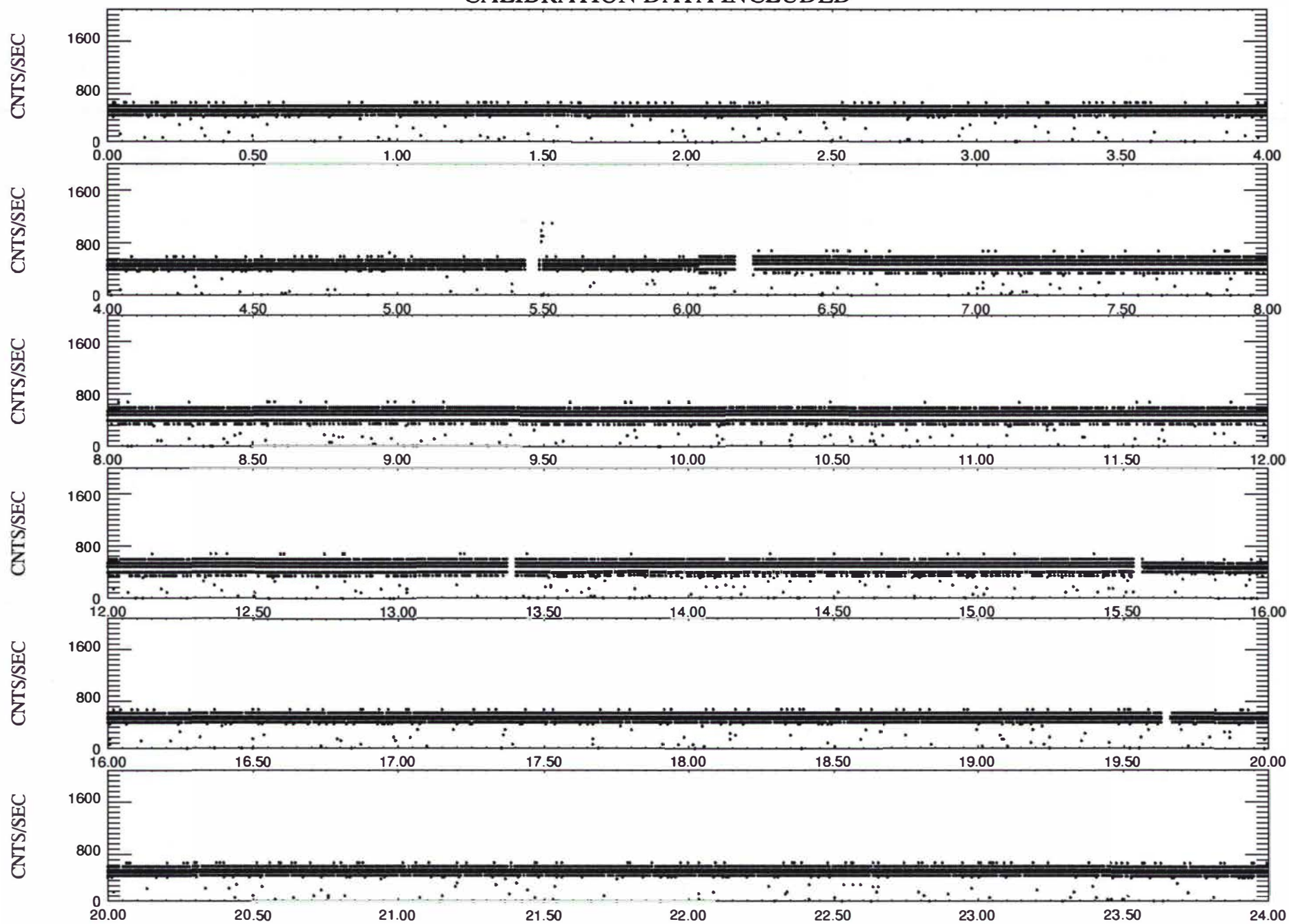
* Solar Burst Trigger

+ Solar Flare

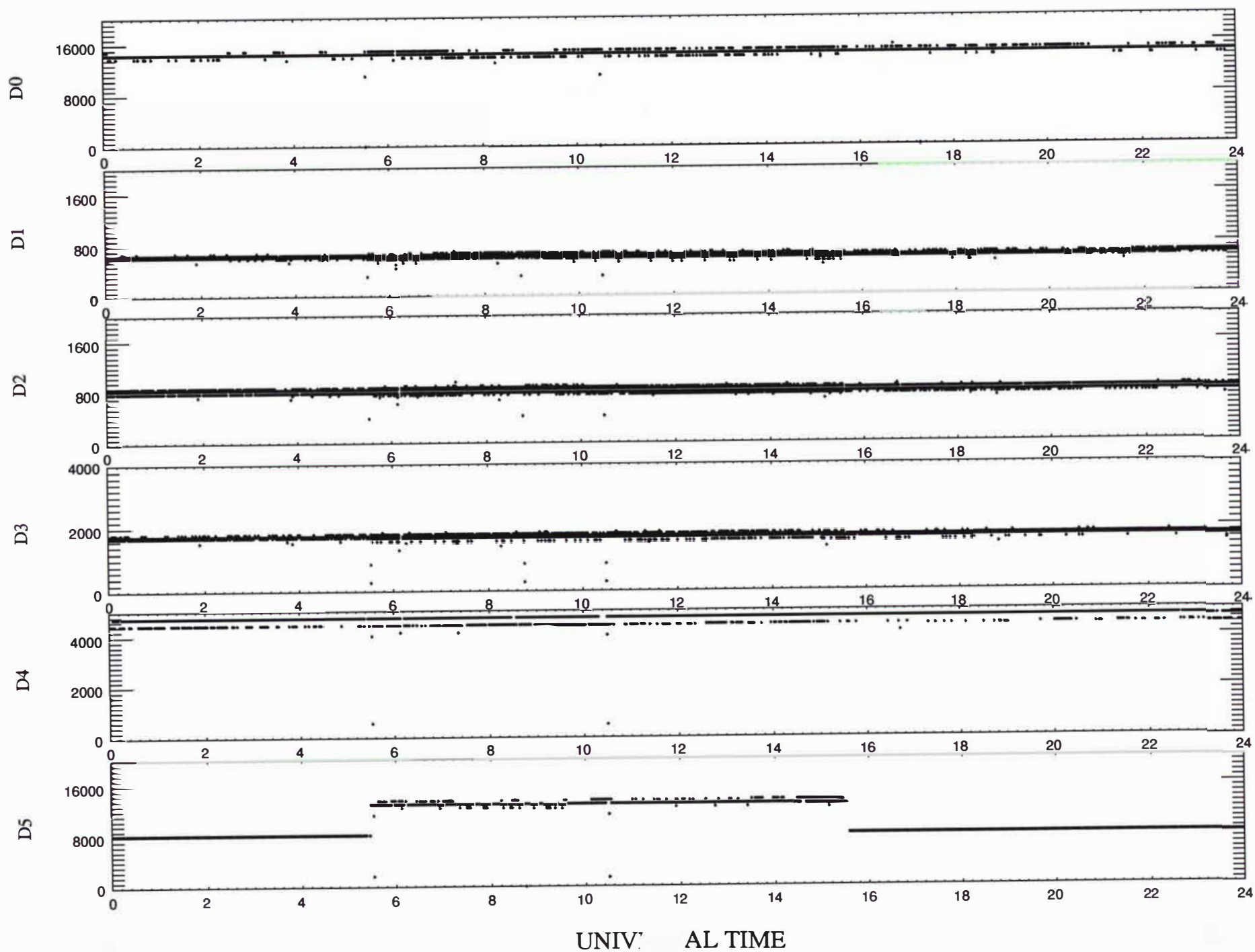
NO BURST (13)



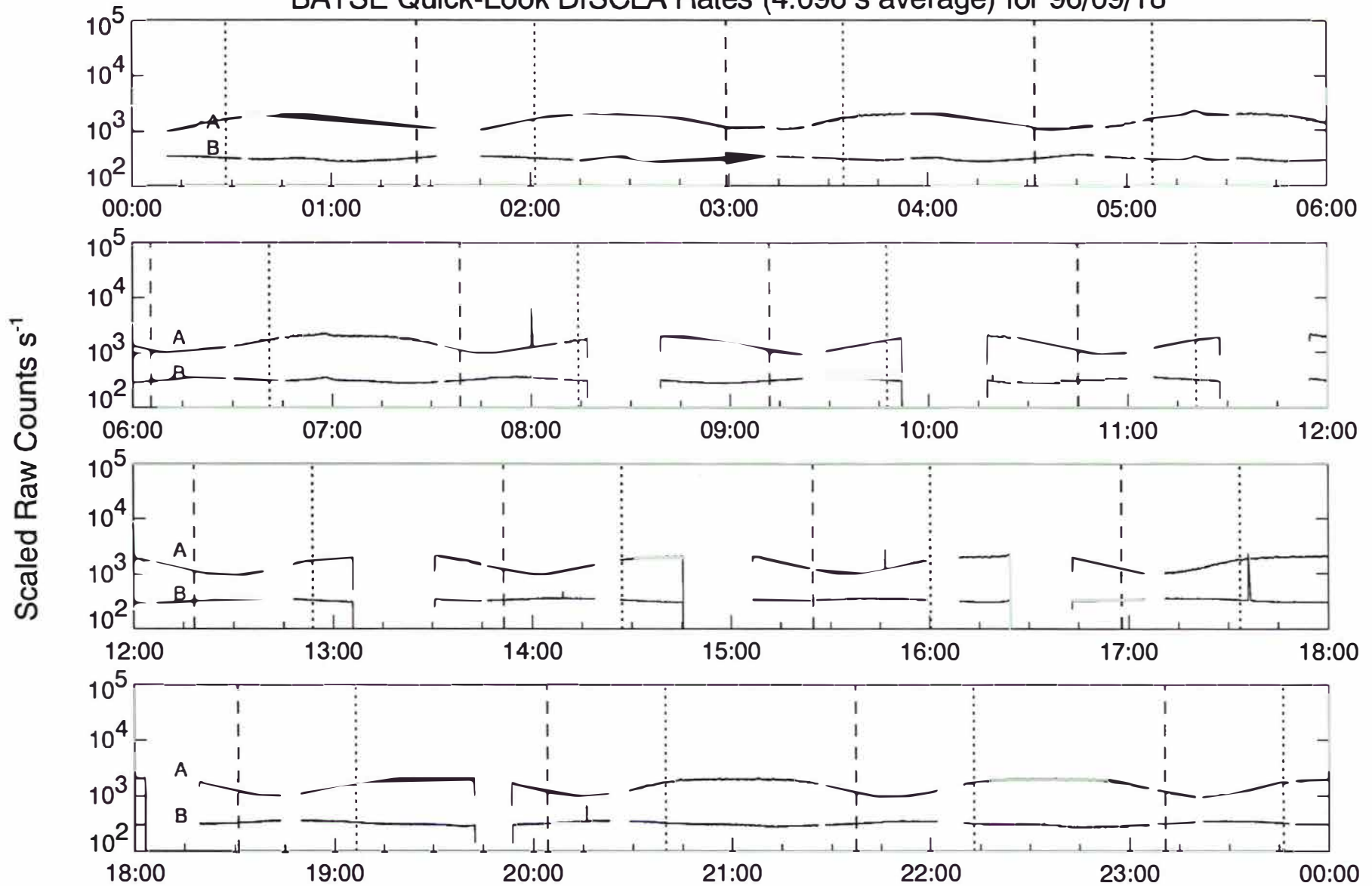
CALIBRATION DATA INCLUDED



UNIV! AL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/18

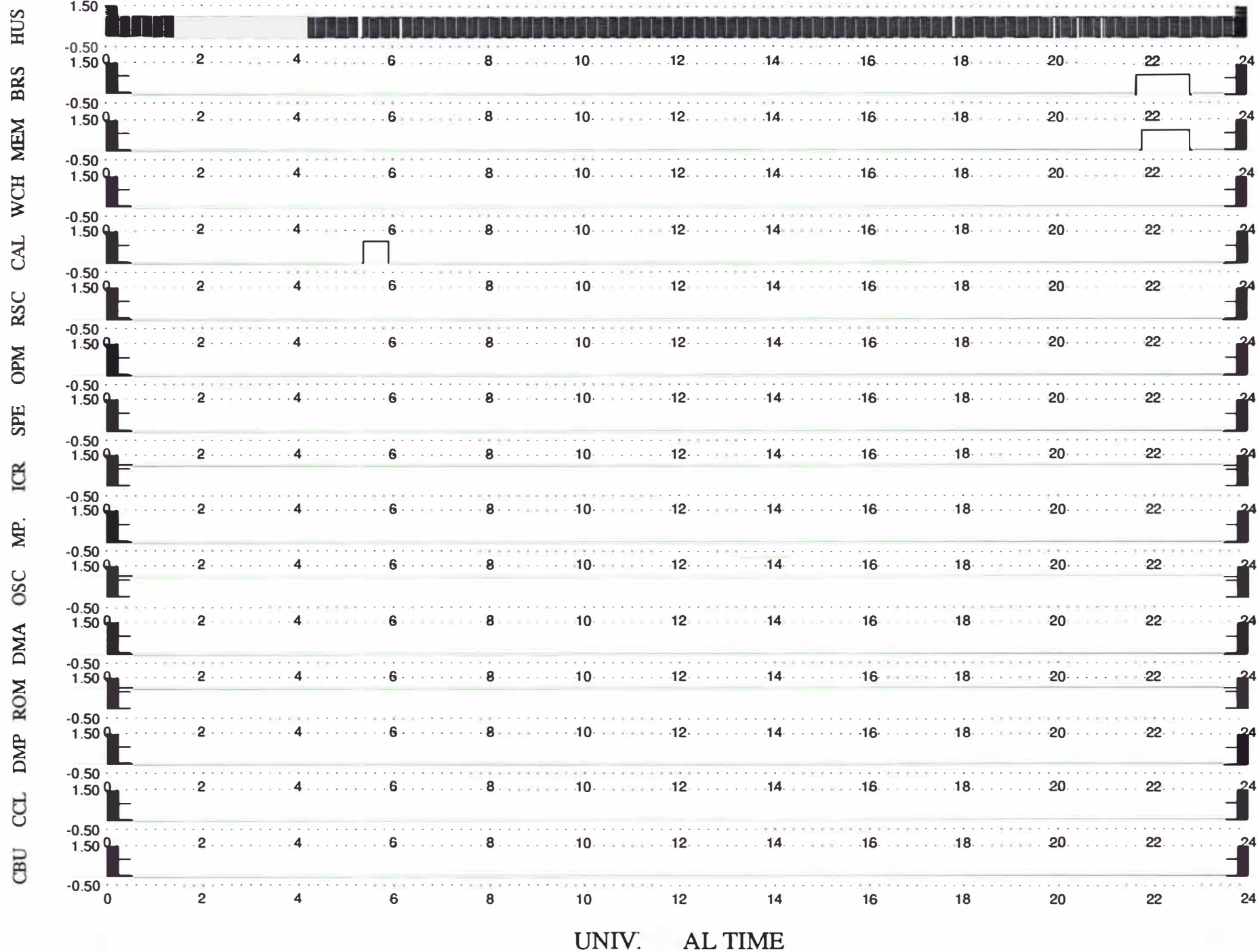


Current Time: 96/09/20, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

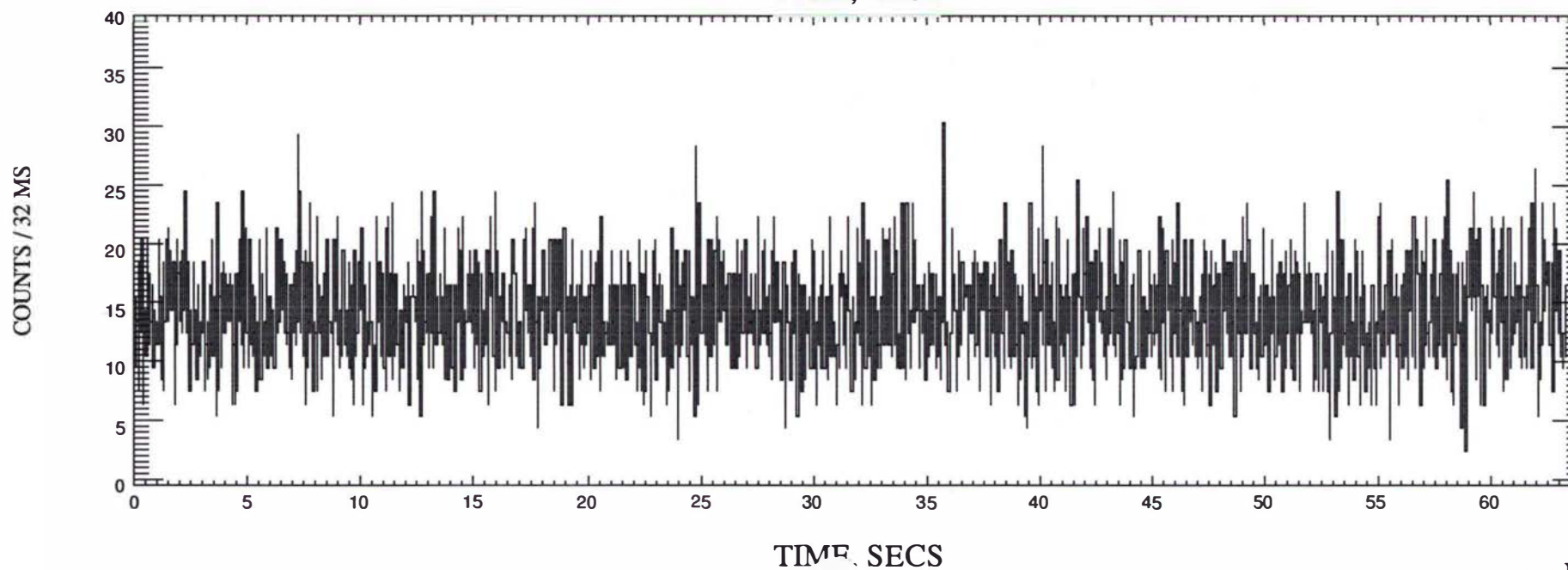
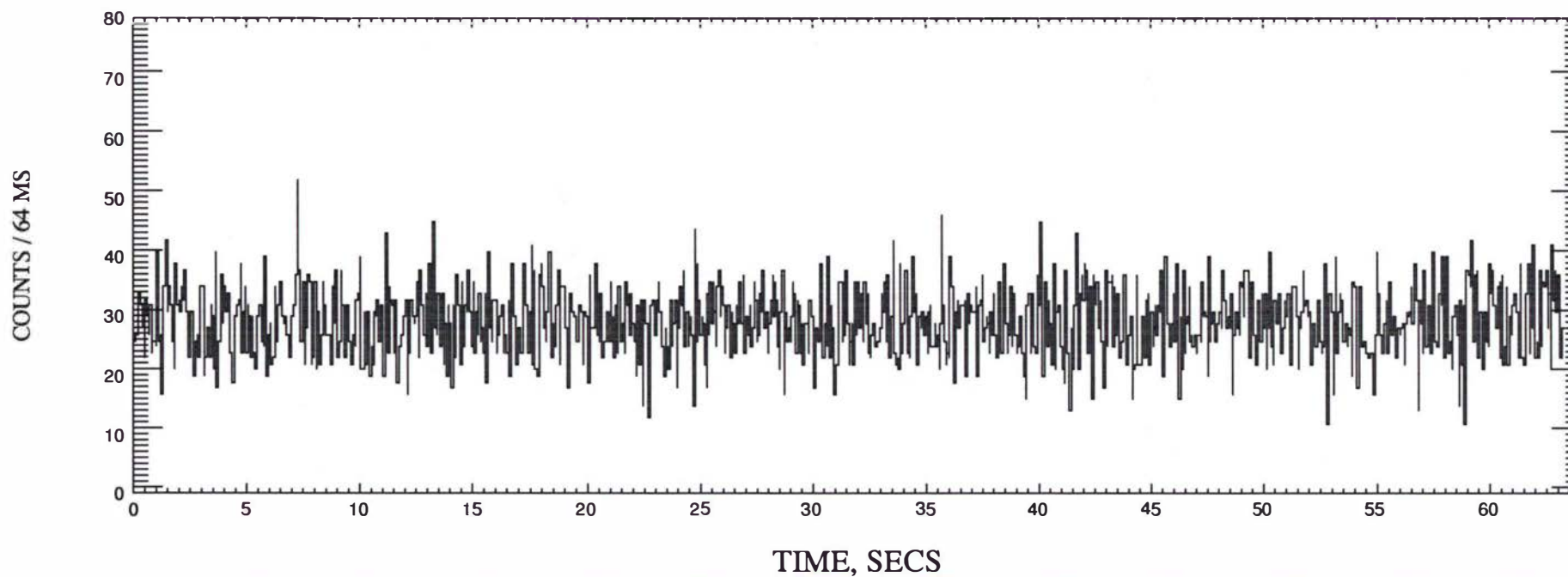
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

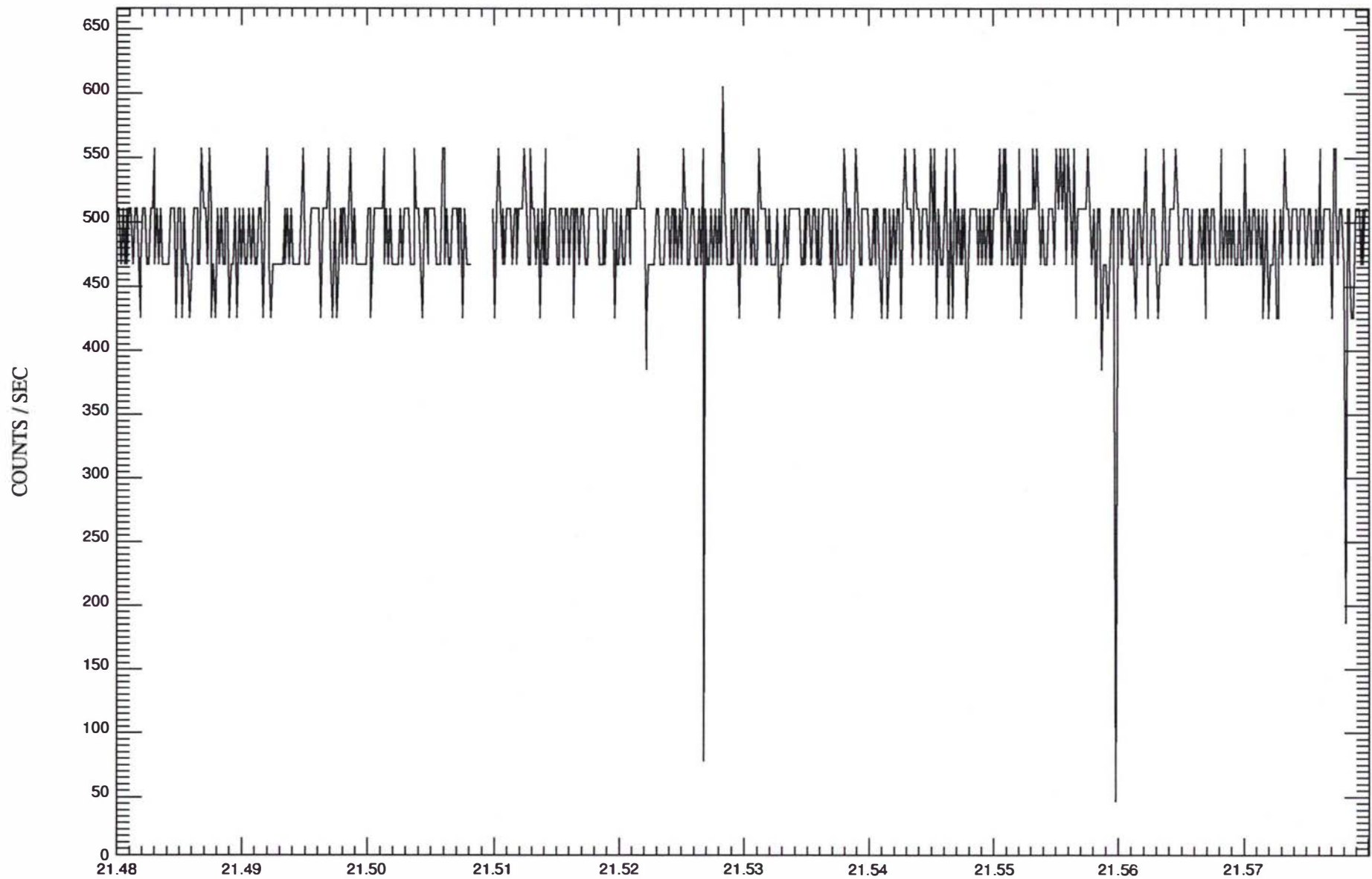
BURST NUMBER 14



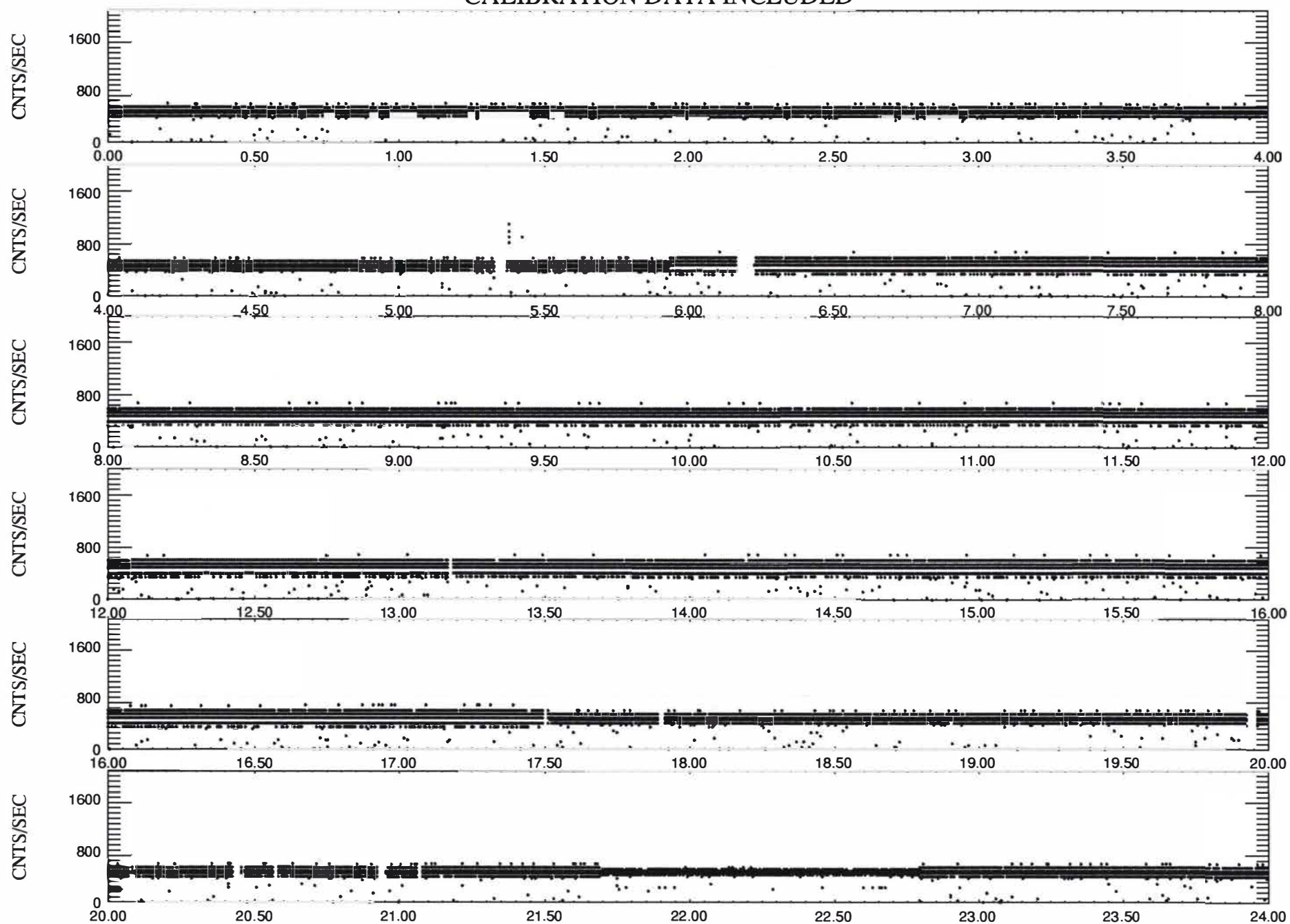
Burst Counter 14 at UT=21.528463266161 h=77502.468 s 21:31:42.468



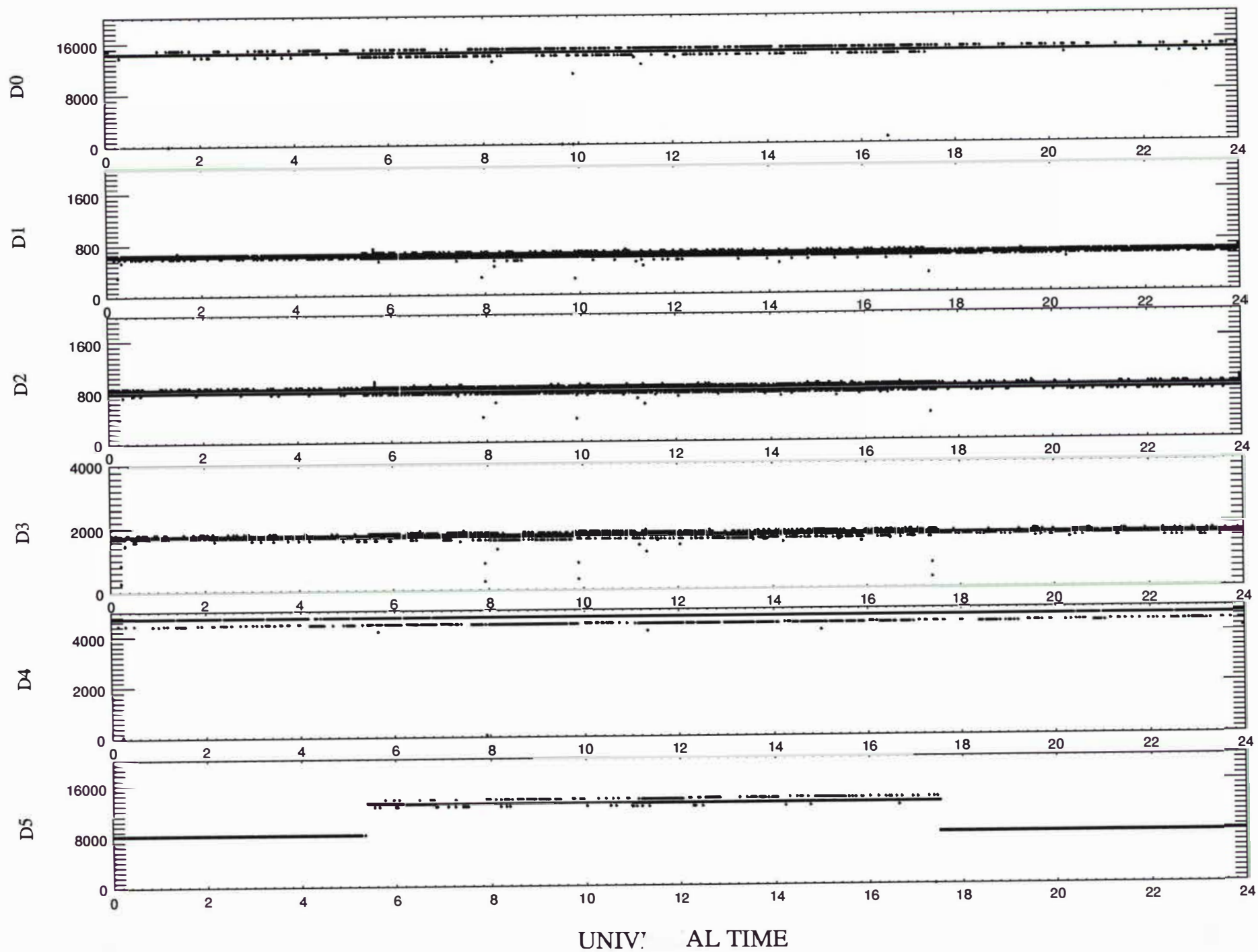
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV AL TIME



KONUS

ULYSSES RT

31 / 01 / 00

19 / 09 / 96 32436.369 s

0.500 S INTERVALS REGROUPED BY 8

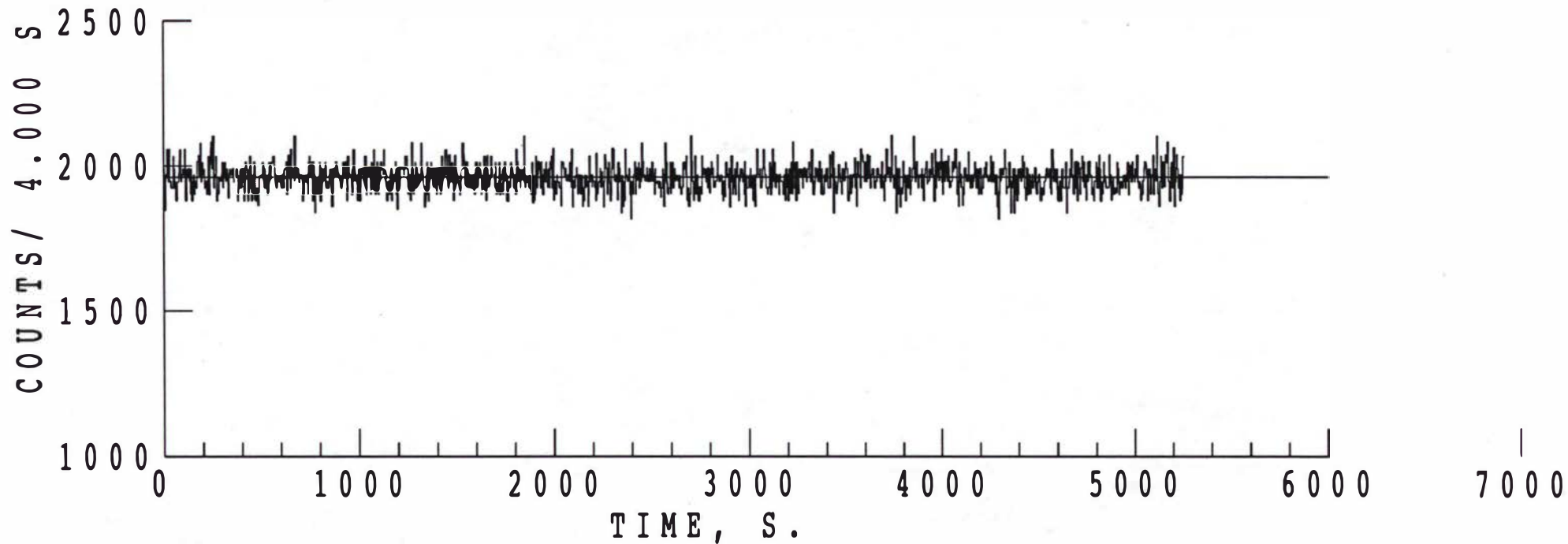
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Fri Sep 20 09:38 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Fri, 20 Sep 1996 11:37:45 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5607

BATSEARCH PROGRAM

BATSE BURST # 5607
EVENT OF 1996 SEP 19 DAY OF YEAR=263
EVENT CROSSING TIME AT BATSE : 80880. S. OR 22:28:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 233.000 22.000
BATSE PEAK COUNTING RATE: 22000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 9/ 96 IS:
RA= 169.771 DEC= 34.526 DIST= 5.152 AU
BATSE-ULYSSES DISTANCE = 770777000. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=123.81 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1430.49 SECS.
CROSSING TIME AT ULYSSES IS 79450. S. OR 22:04:09 +/- 399.18 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 9/ 96 IS:
RA= 128.346 DEC= 19.873 DIST= 2.019 AU
MARS-BATSE DISTANCE = 302039808. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 84.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 93.95 SECS.
CROSSING TIME AT MARS IS 80974. S. OR 22:29:33 +/- 175.58 SECONDS

BATSE BURST TRIGGER

NO.: 5607

TIME: TJD=0345 SECONDS=80880

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=85.7 AZIMUTH=45.2 ERROR=3.6 DEGREES

COMMENTS:

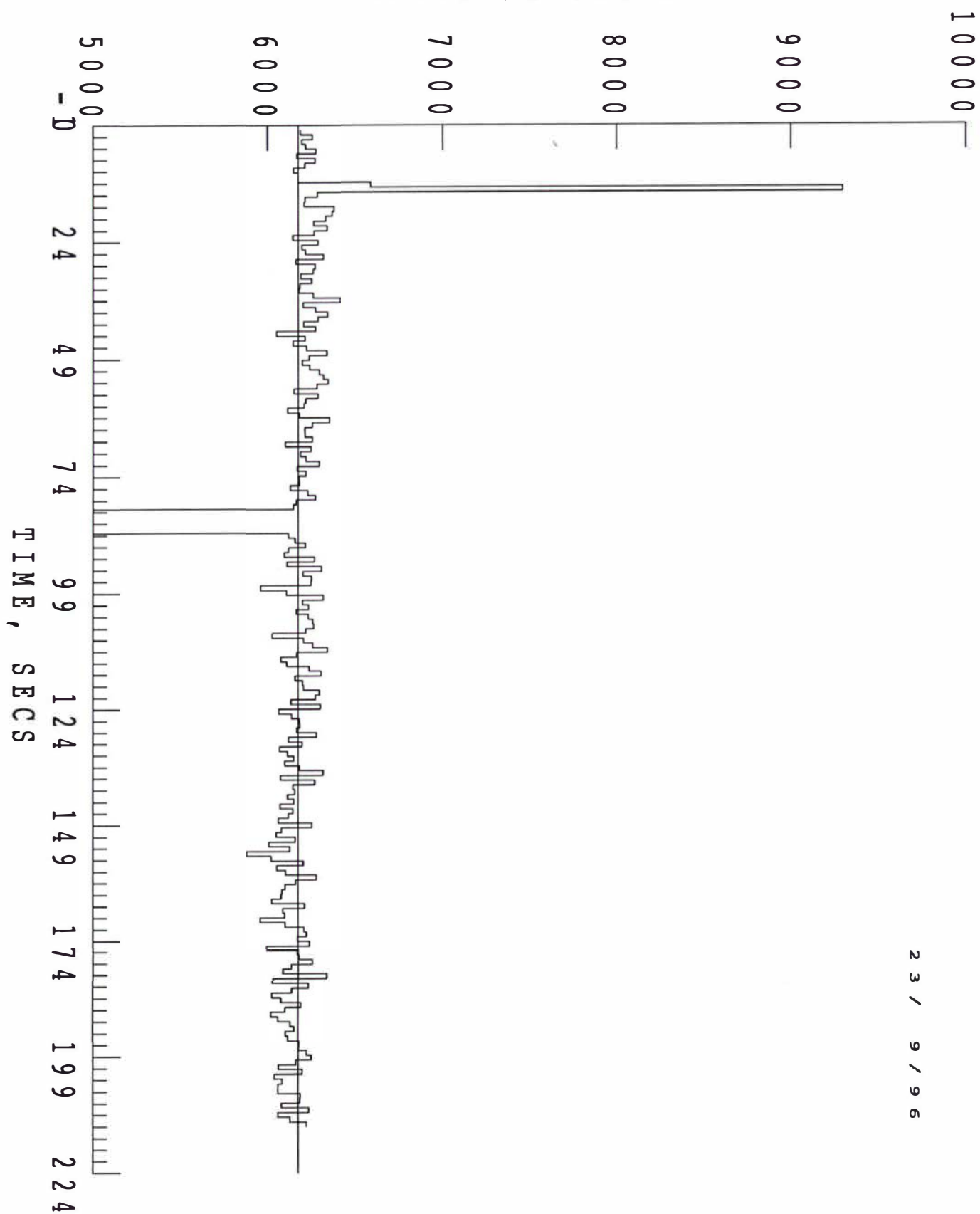
GRB LASTING ~ 2 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5607	960919	10345	80880	22000	233	+22	2

BACODINE 5607 19/09/96 80868.041

25 - 100 keV

COUNTS/1.024 S



BATSE #

5607

23 / 9 / 96

ULYSSES RT

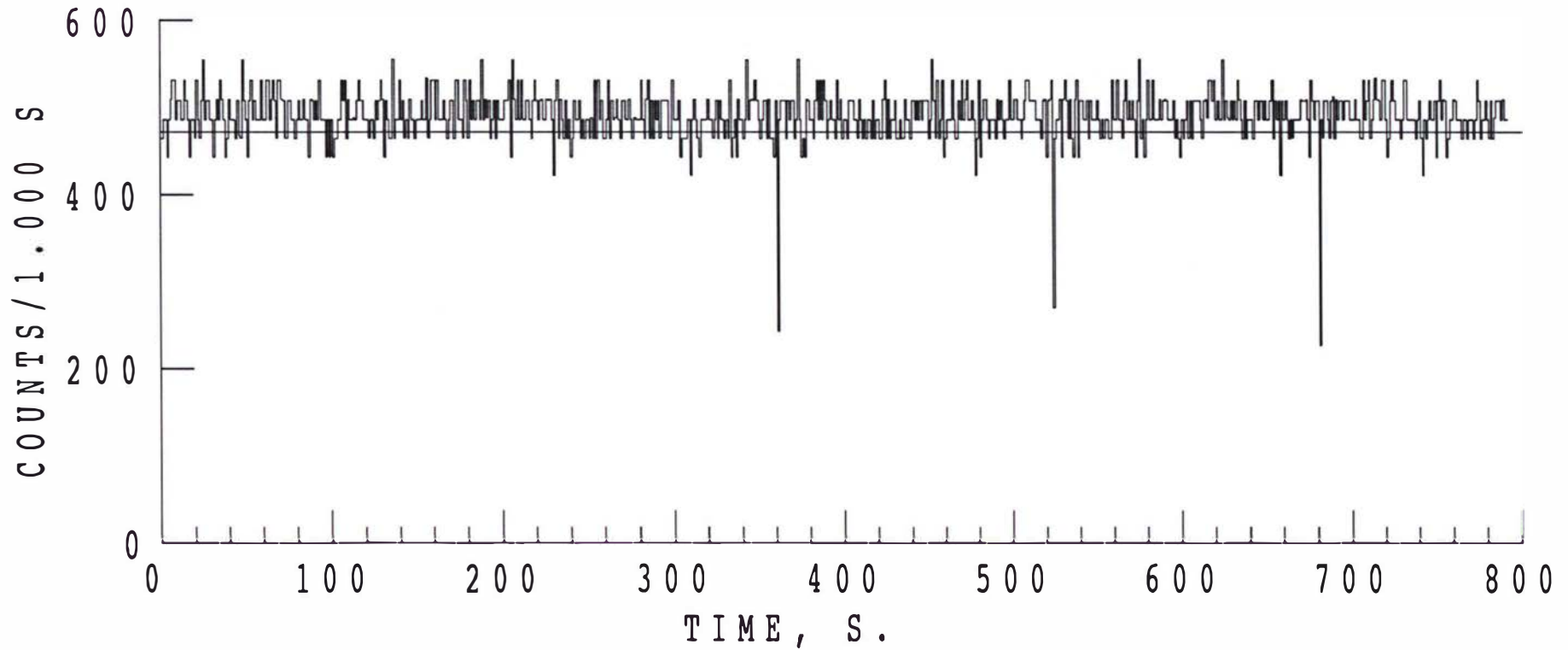
19 / 9 / 96 79056.461 s

0.500 S INTERVALS REGROUPED BY 2

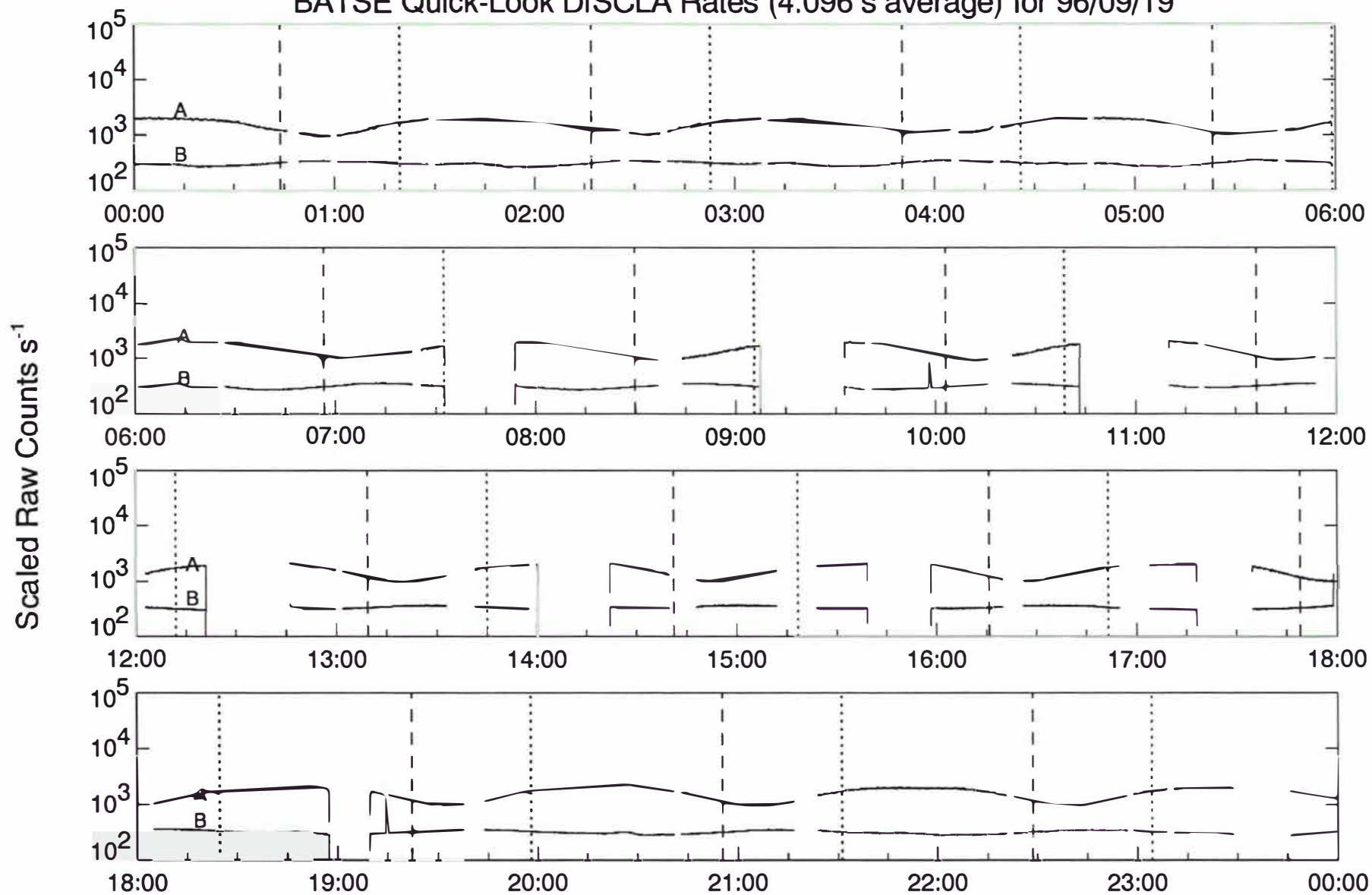
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/19

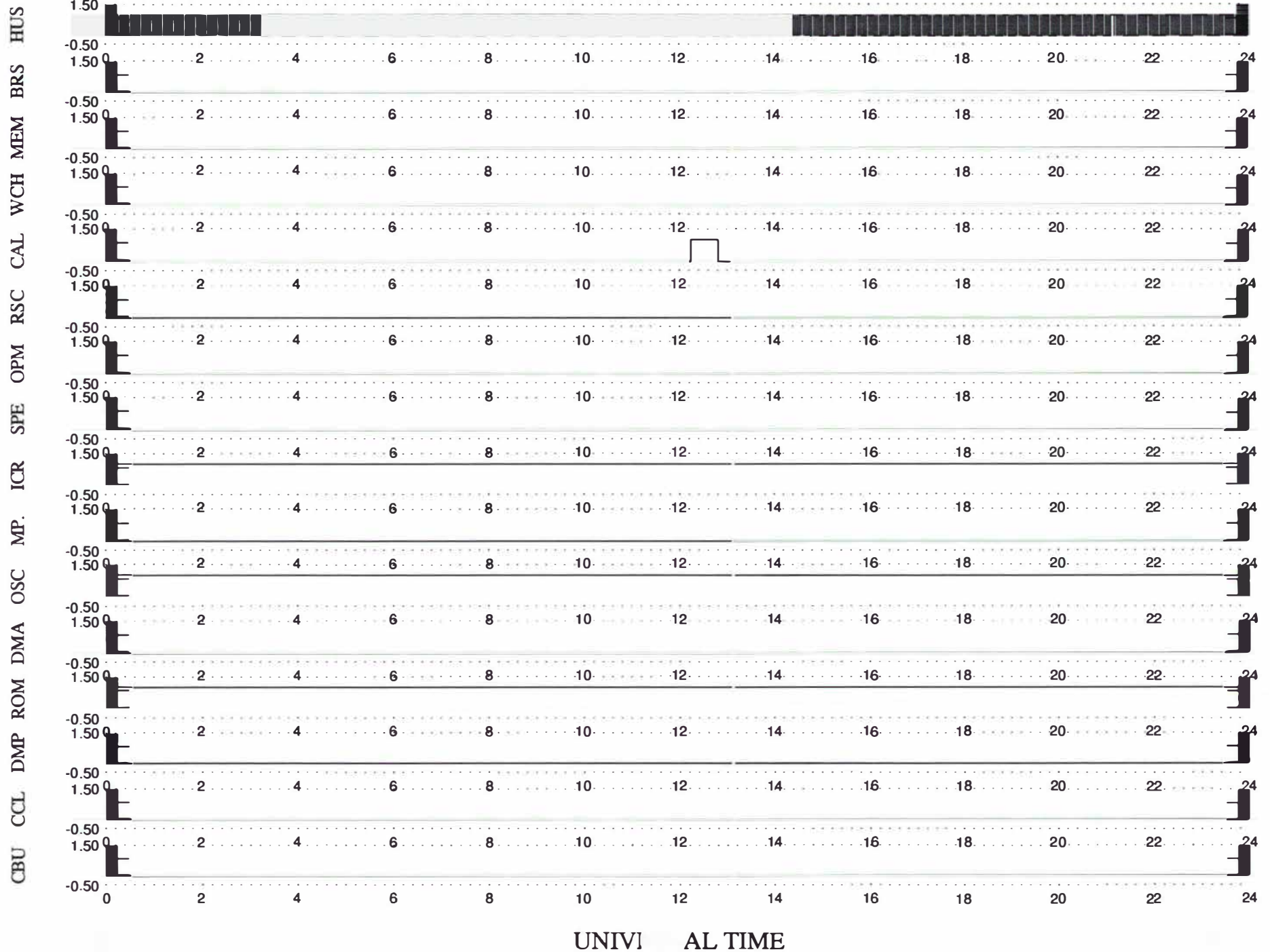


Current Time: 96/09/21, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

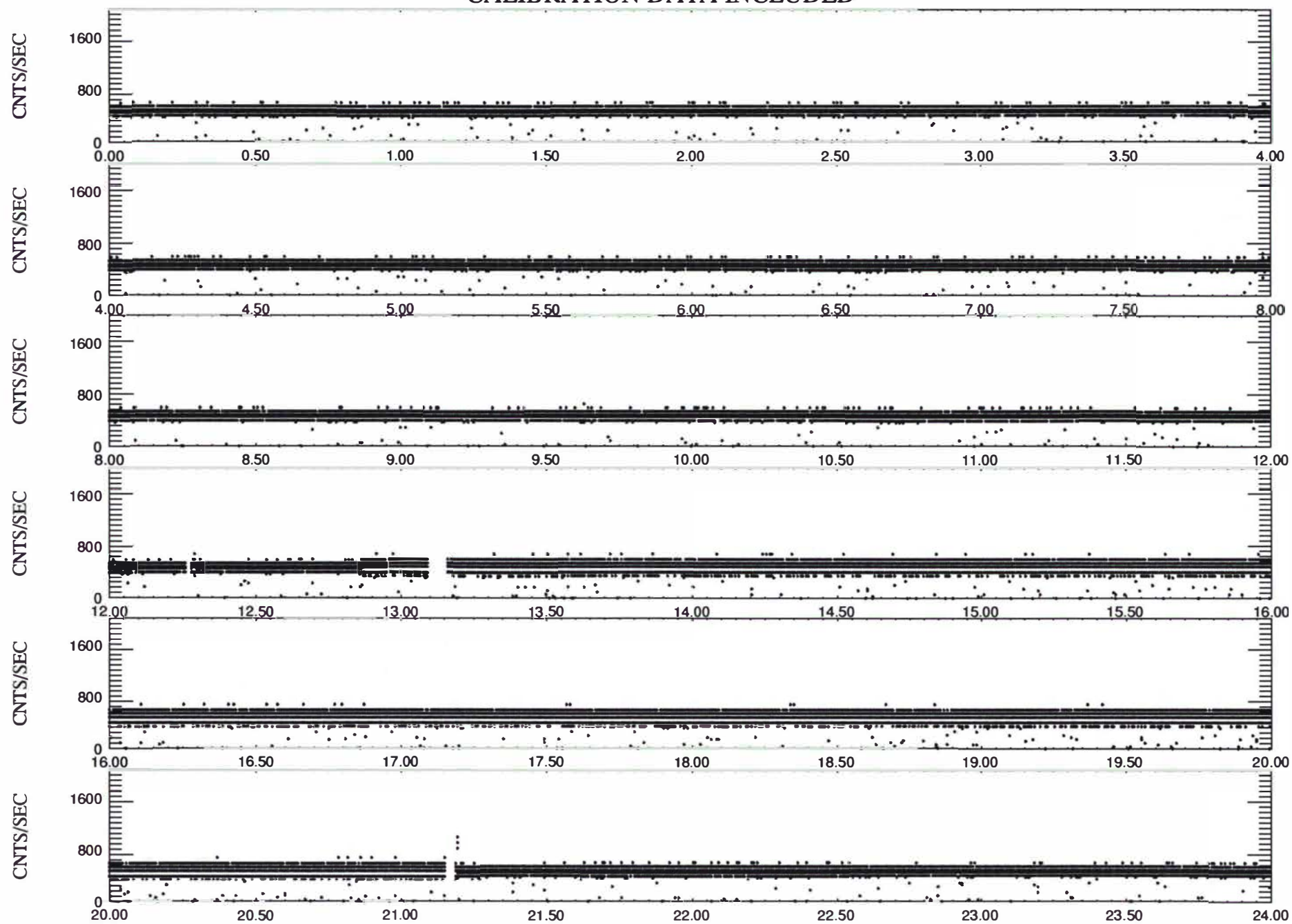
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

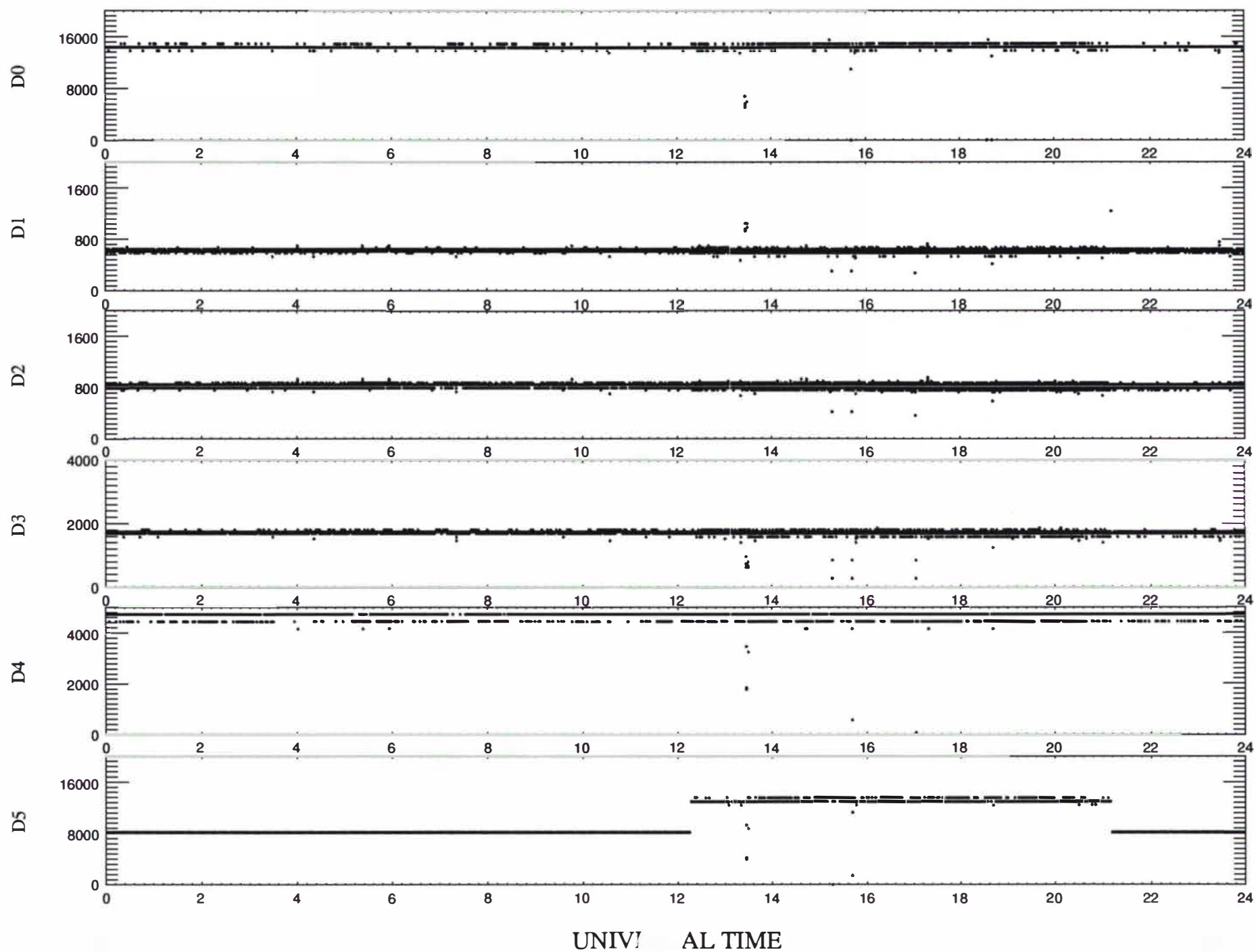
NO BURST (14)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From BUTTERWORTH@lheavx.gsfc.nasa.gov Tue Sep 24 11:29 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Tue, 24 Sep 1996 14:28:19 -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 events on 960920 were not detected by Konus

Hi Everyone,

Konus didn't trigger on 20 September and no events are visible in the waiting mode data (1.5 second accumulations). There were two telemetry gaps in the periods of interest, near 7:13 and 19:38, each lasting about 10 seconds.

Paul.

Date: Tue, 24 Sep 1996 08:14:38 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609241514.IAA29931@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, bonnard@lheamail.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it
Subject: GRBs on 960920
X-Sun-Charset: US-ASCII

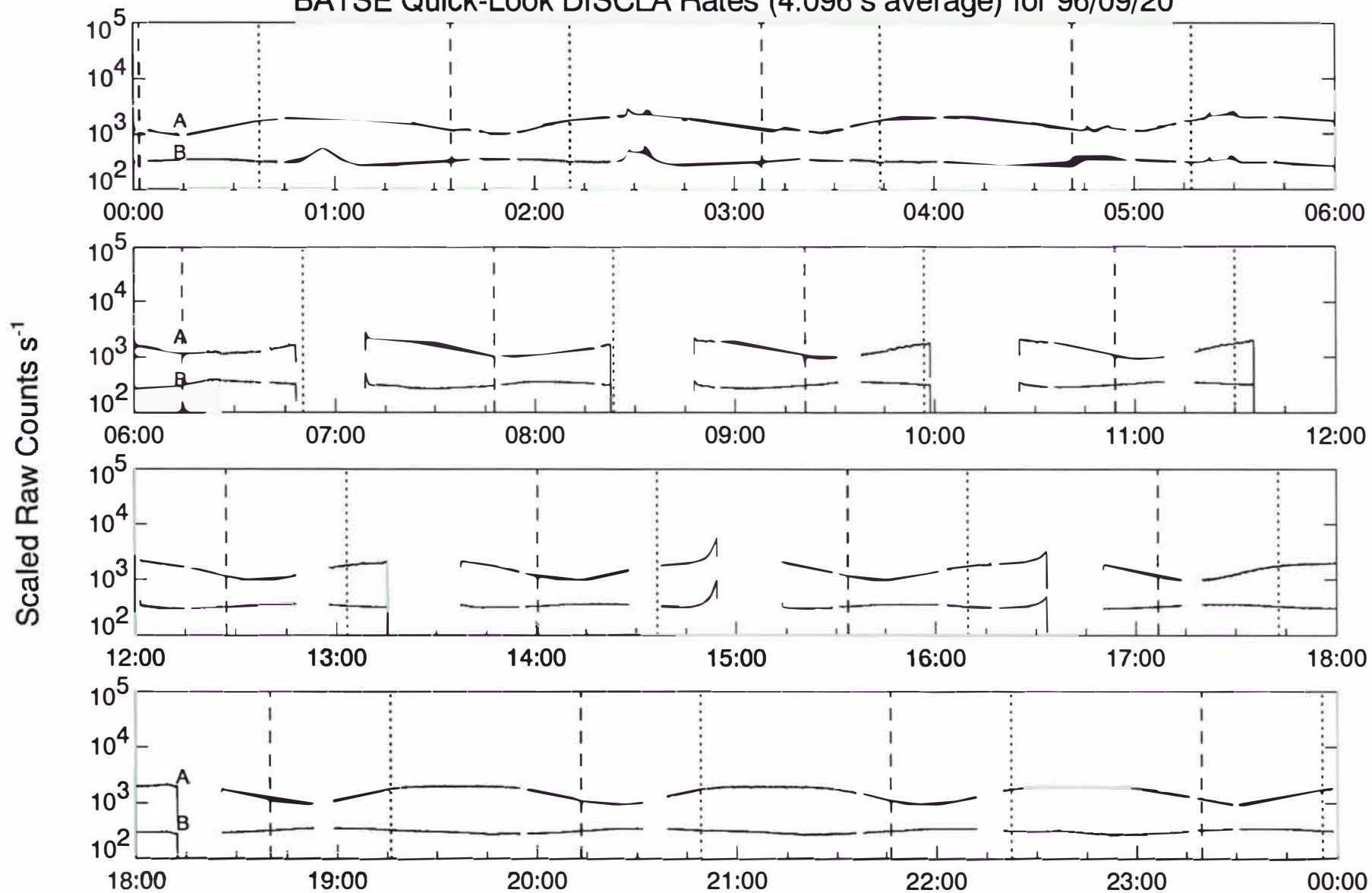
ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed two weak, 32 ms long bursts September 20 1996 at 06:45 and 19:16 Ulysses time. The spacecraft was about 2575 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 96/09/20

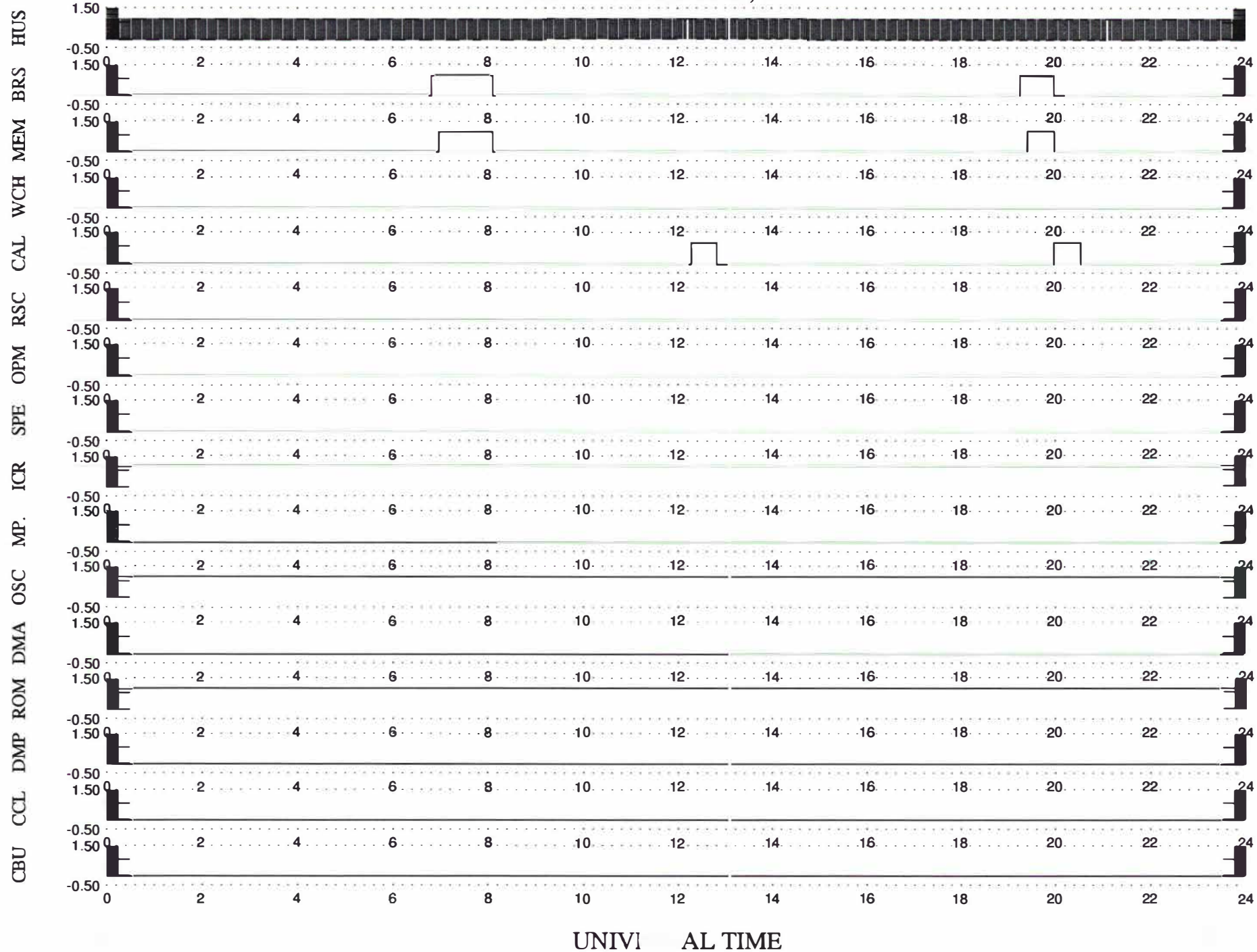


Current Time: 96/09/22, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

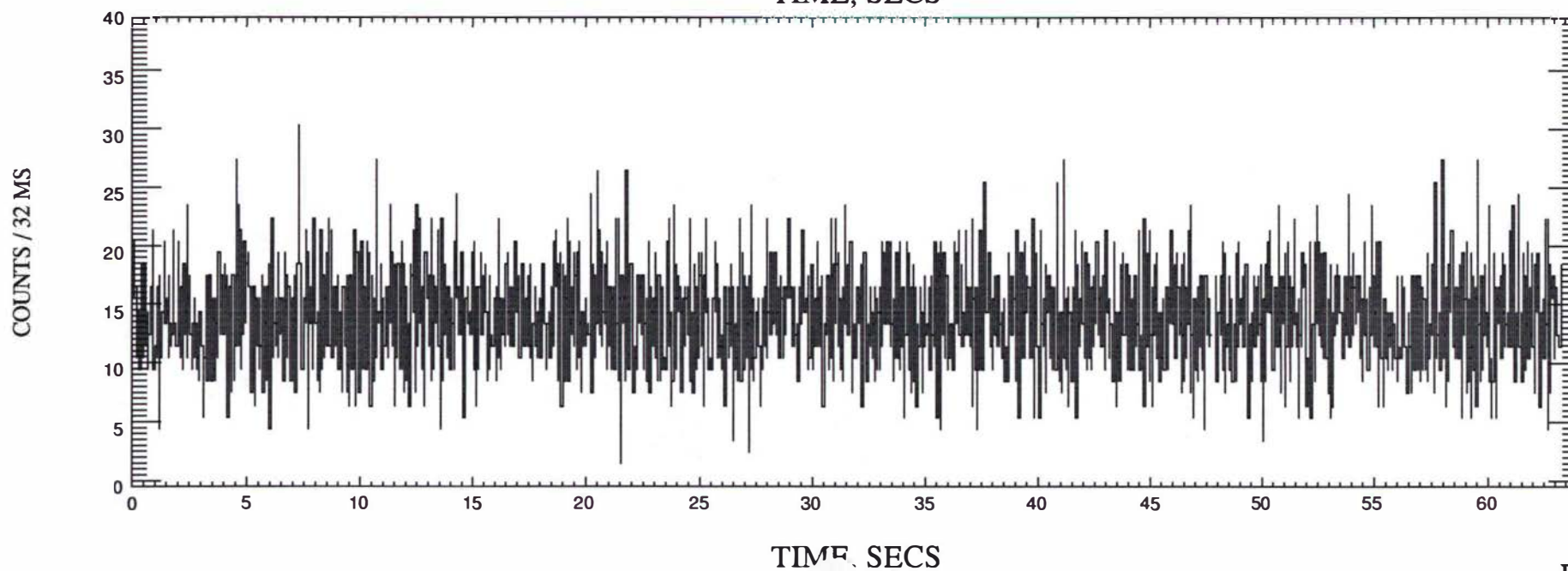
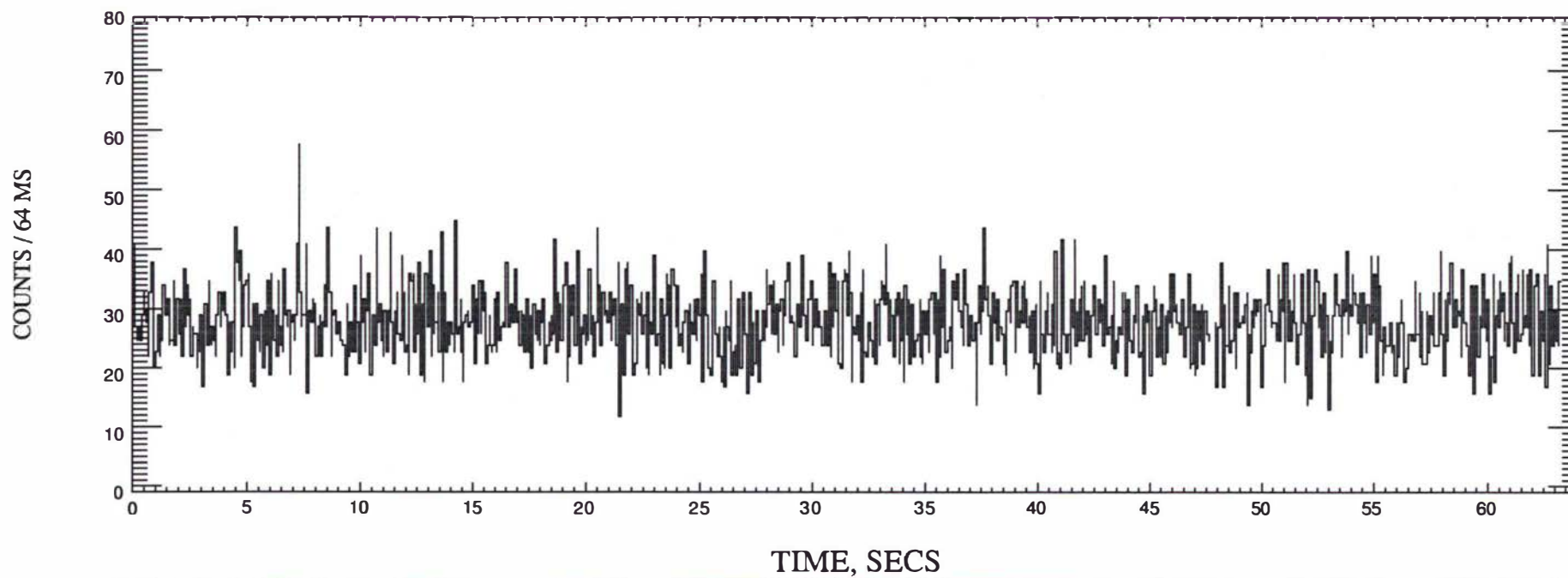
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

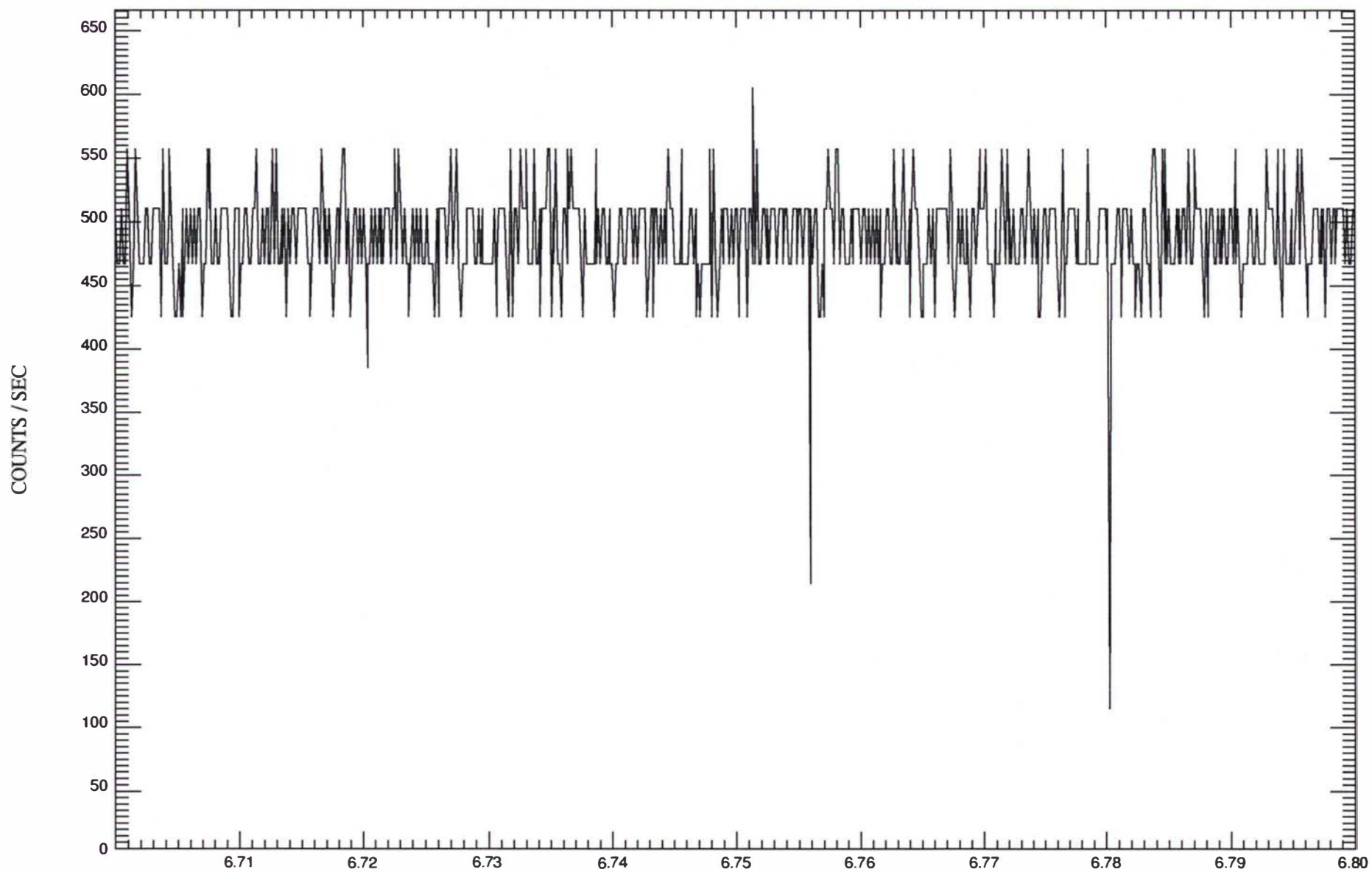
BURST NUMBER 15,0



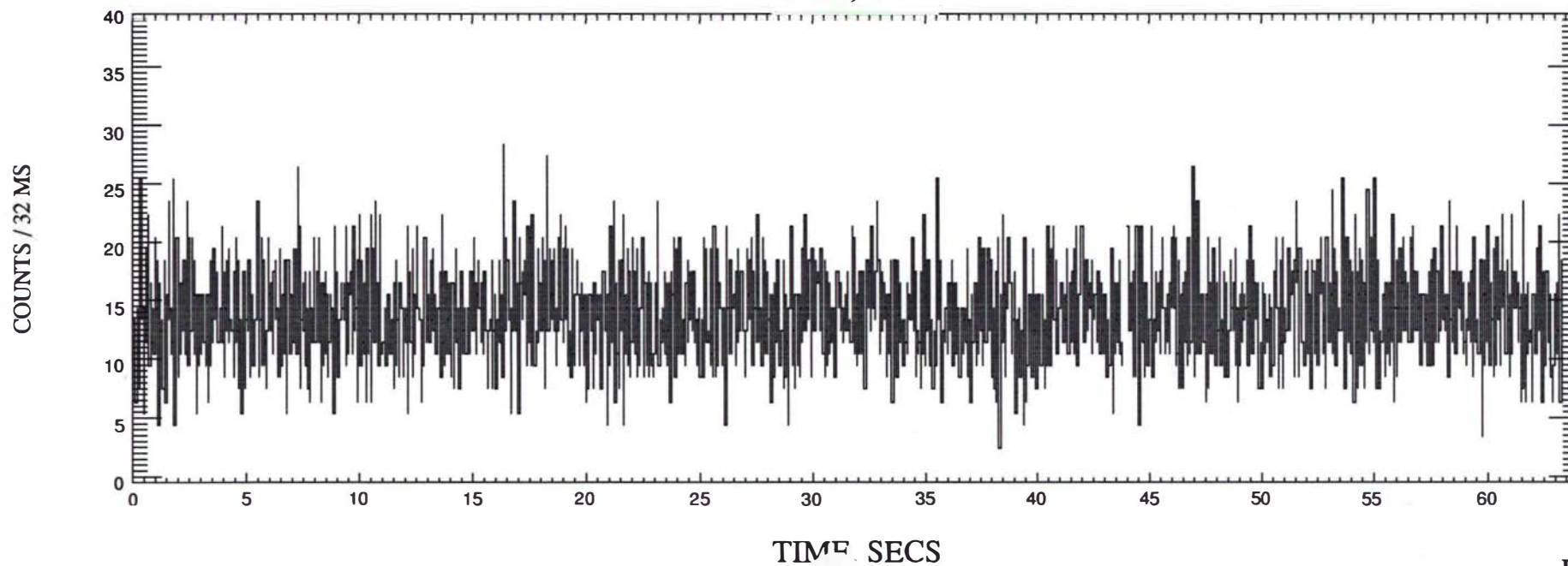
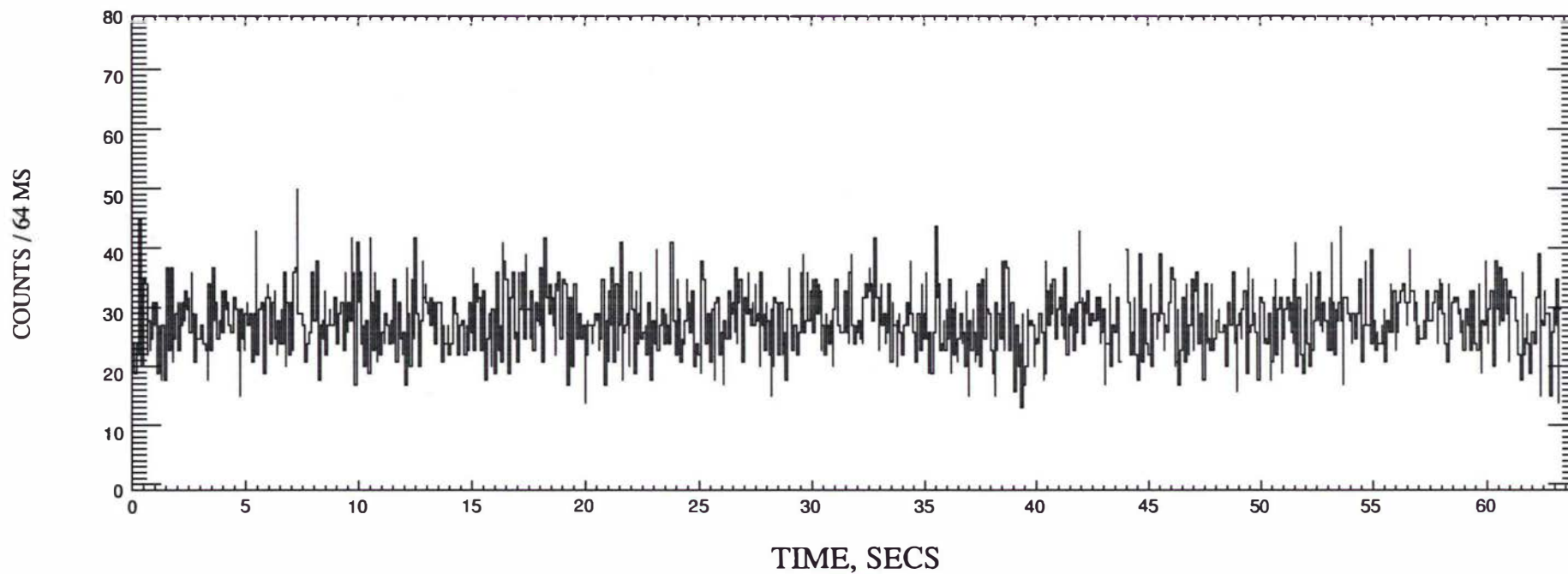
Burst Counter 15 at UT= 6.751523907979 h=24305.486 s 06:45:05.486



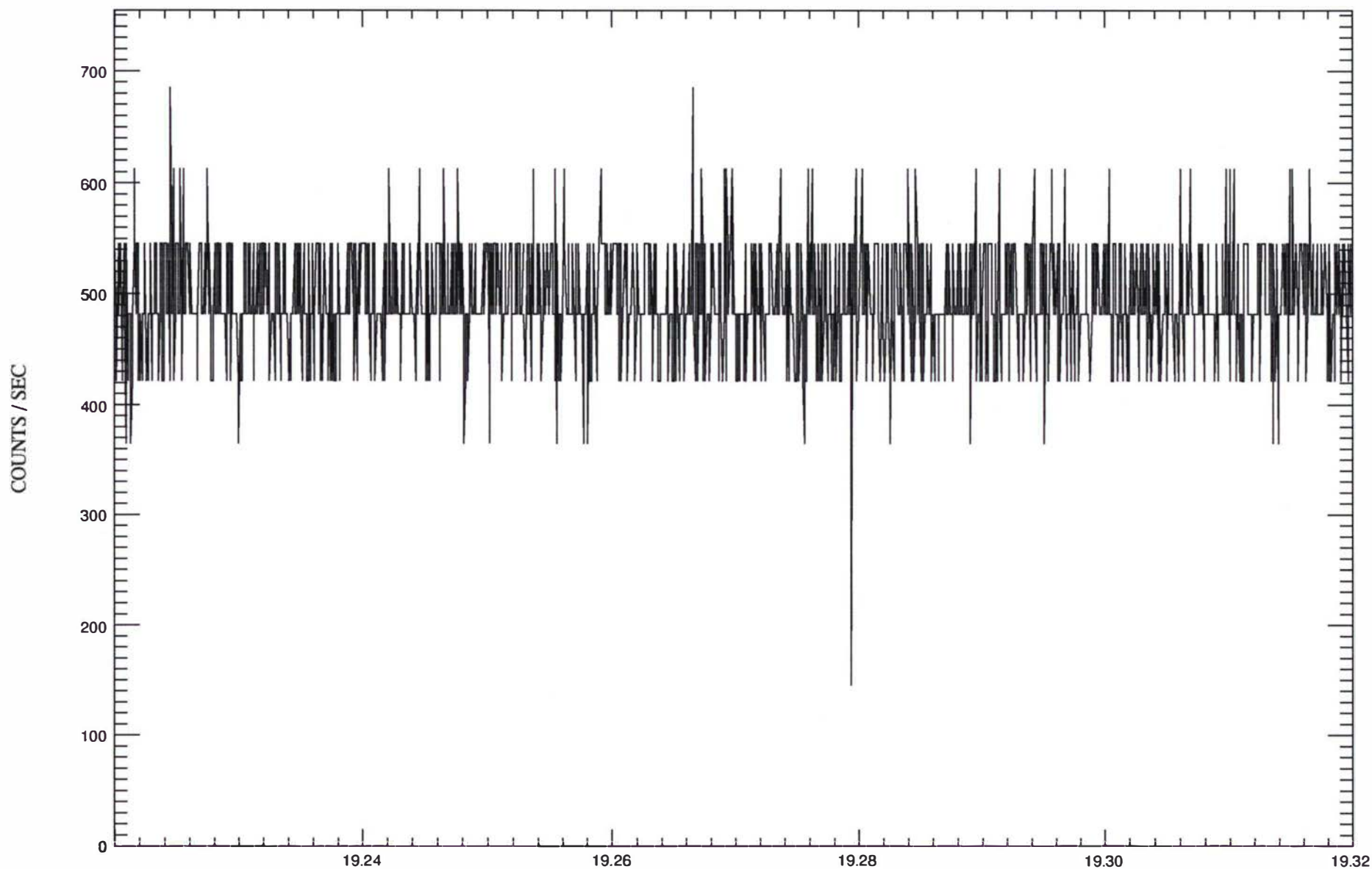
CALIBRATION DATA INCLUDED



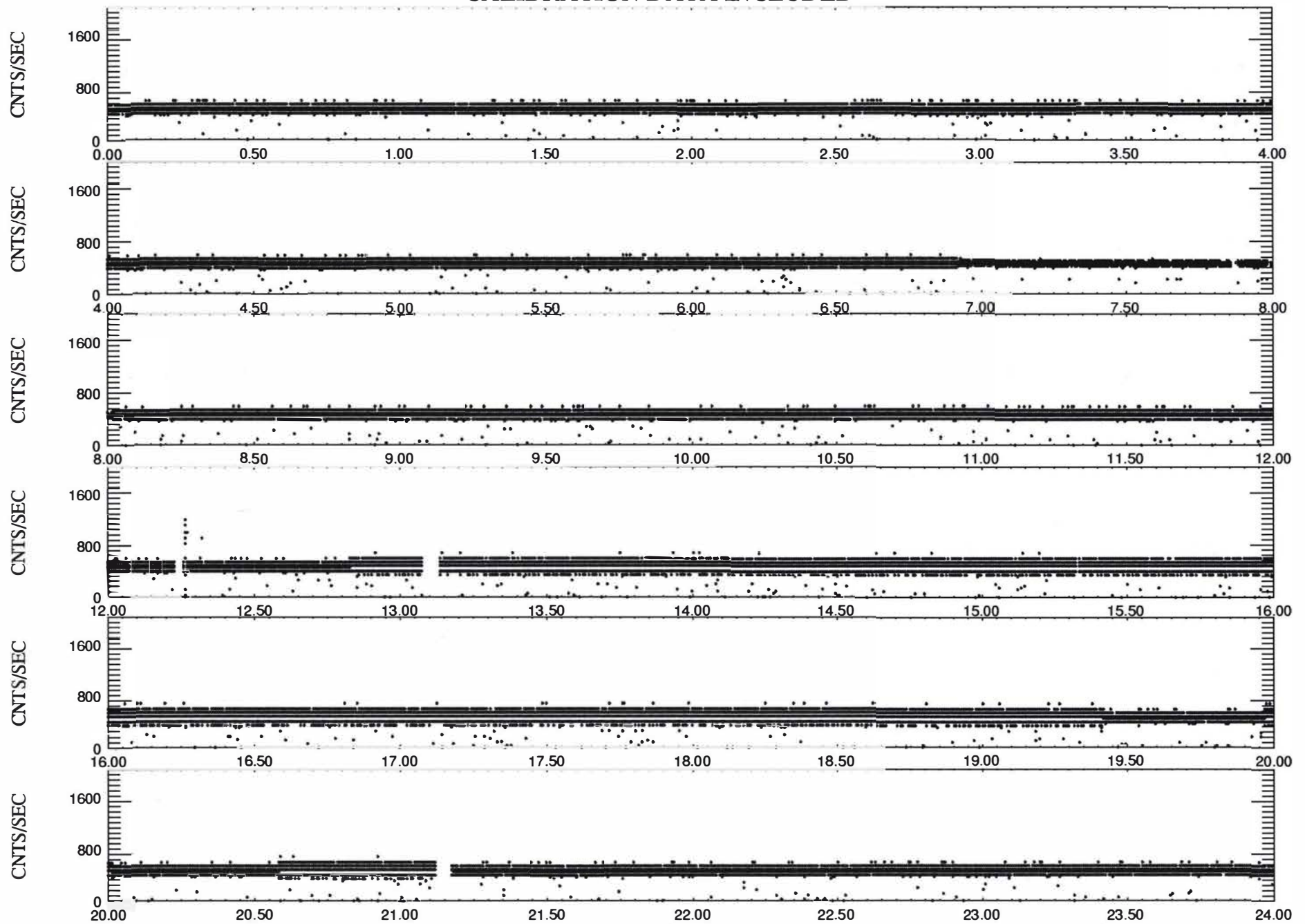
Burst Counter 0 at UT=19.266719072130 h=69360.189 s 19:16:00.189



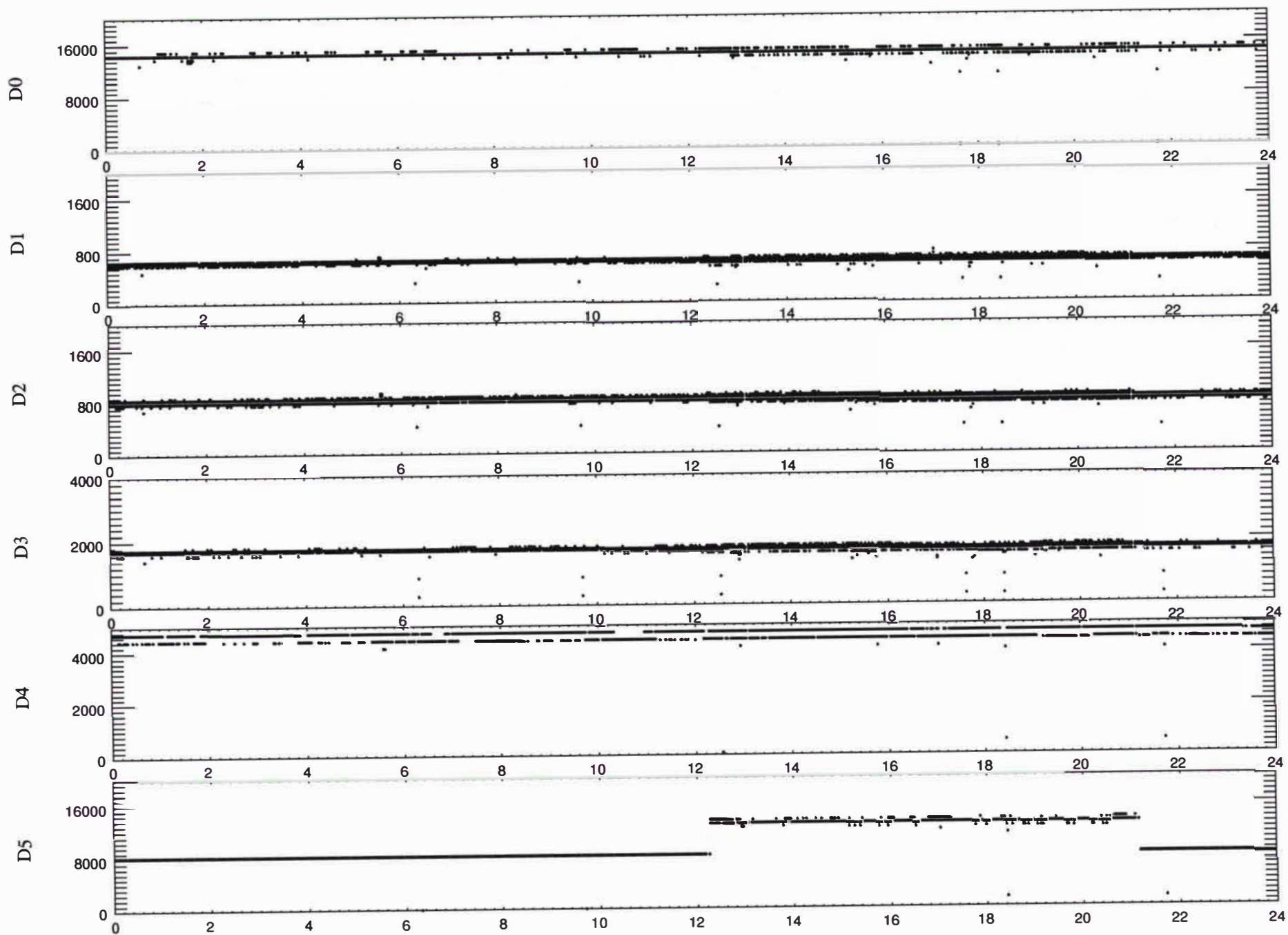
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV! AL TIME



UNIV AL TIME

From RICHARDSON@ssl.msfc.nasa.gov Mon Sep 23 09:34 PDT 1996
Date: Mon, 23 Sep 1996 11:28:59 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5608

BATSEARCH PROGRAM

BATSE BURST # 5608
EVENT OF 1996 SEP 21 DAY OF YEAR=265
EVENT CROSSING TIME AT BATSE : 29090. S. OR 08:04:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 223.000 -25.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 9/ 96 IS:
RA= 170.031 DEC= 34.382 DIST= 5.150 AU
BATSE-ULYSSES DISTANCE = 770458062. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -544.33 SECS.
CROSSING TIME AT ULYSSES IS 28546. S. OR 07:55:45 +/- 477.80 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 9/ 96 IS:
RA= 129.618 DEC= 19.589 DIST= 2.007 AU
MARS-BATSE DISTANCE = 300258112. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 192.36 SECS.
CROSSING TIME AT MARS IS 29282. S. OR 08:08:02 +/- 173.57 SECONDS

BATSE BURST TRIGGER

NO.: 5608

TIME: TJD=0347 SECONDS=29090

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=133.6 AZIMUTH=44.8 ERROR=1.7 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH STRUCTURE. DUR.~18 SEC. SLIGHTLY VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5608	960921	10347	29090	4500	223	-25	18

BATSE #

5608

23 / 9 / 96

ULYSSES RT

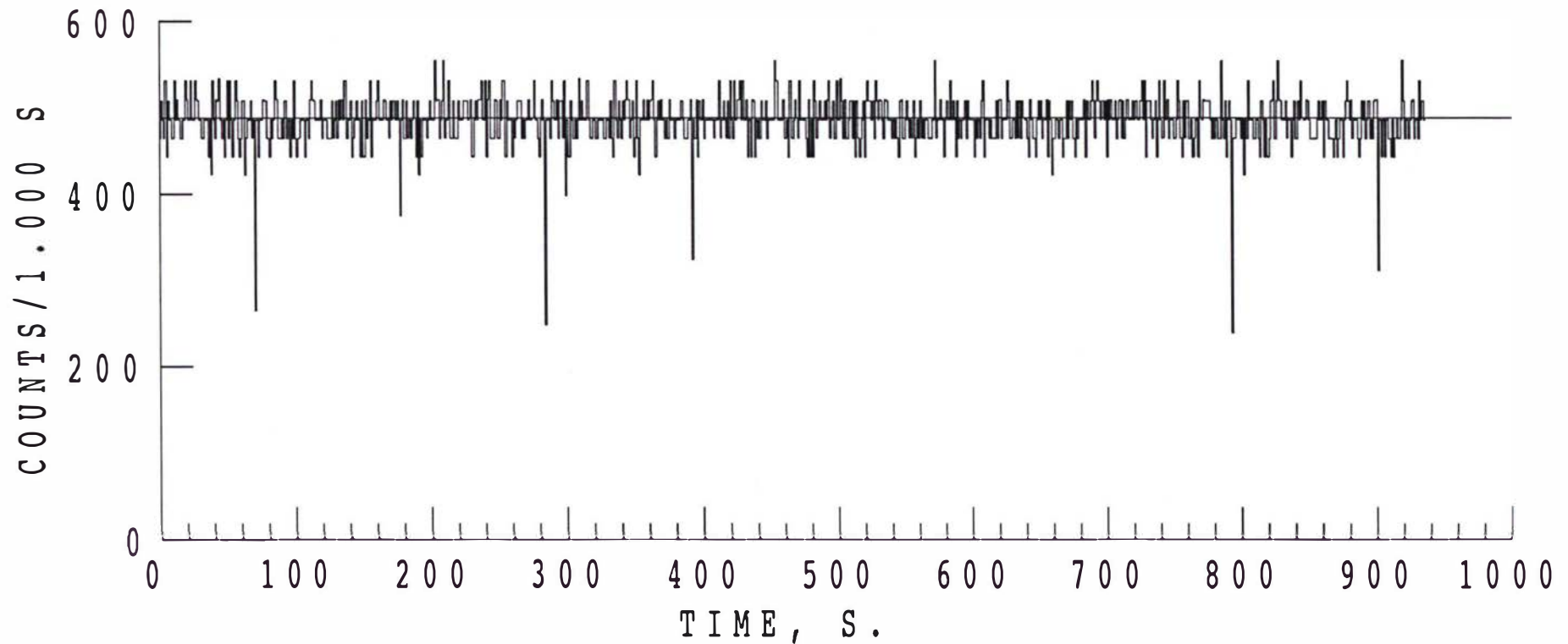
21 / 9 / 96 28080.010 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

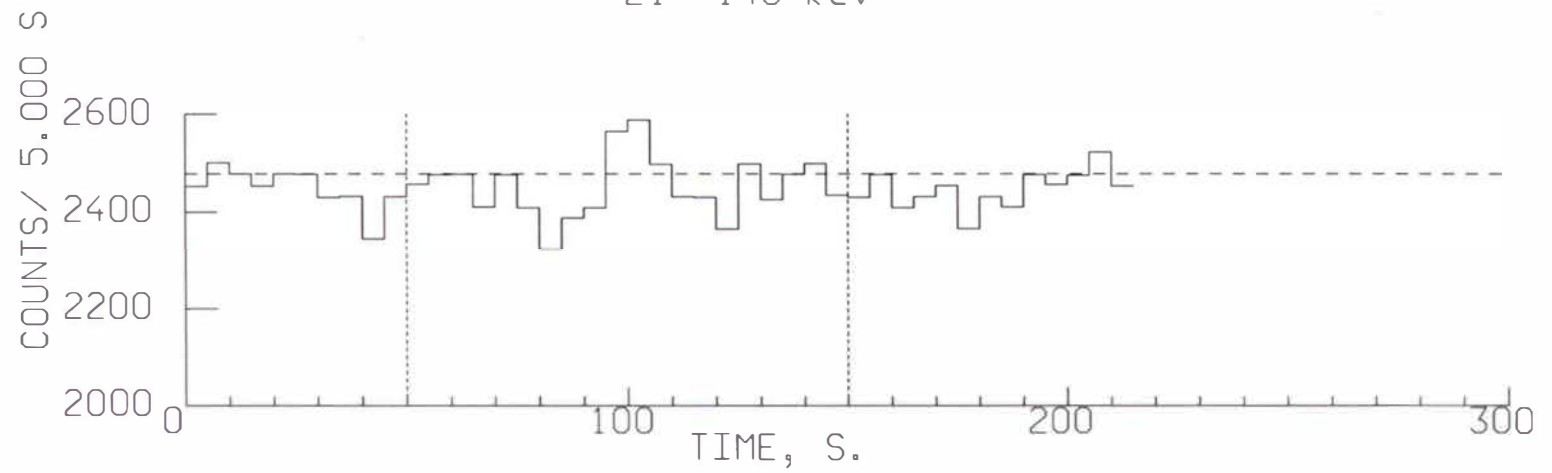
N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



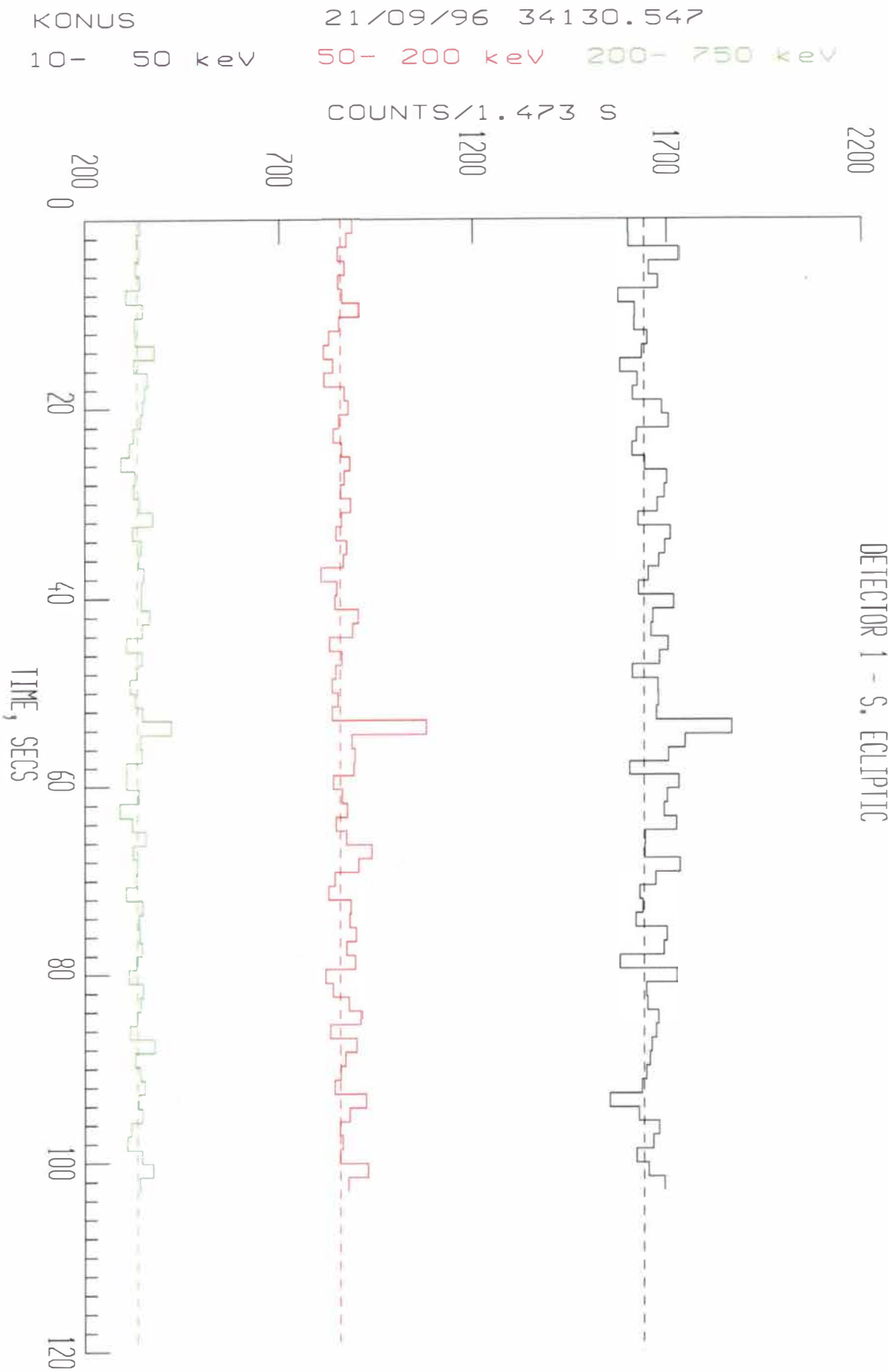
ULYSSES RT
21/ 9/96 32868.074 s
0.500 S INTERVALS REGROUPED BY 10
21- 146 keV

11/10/11

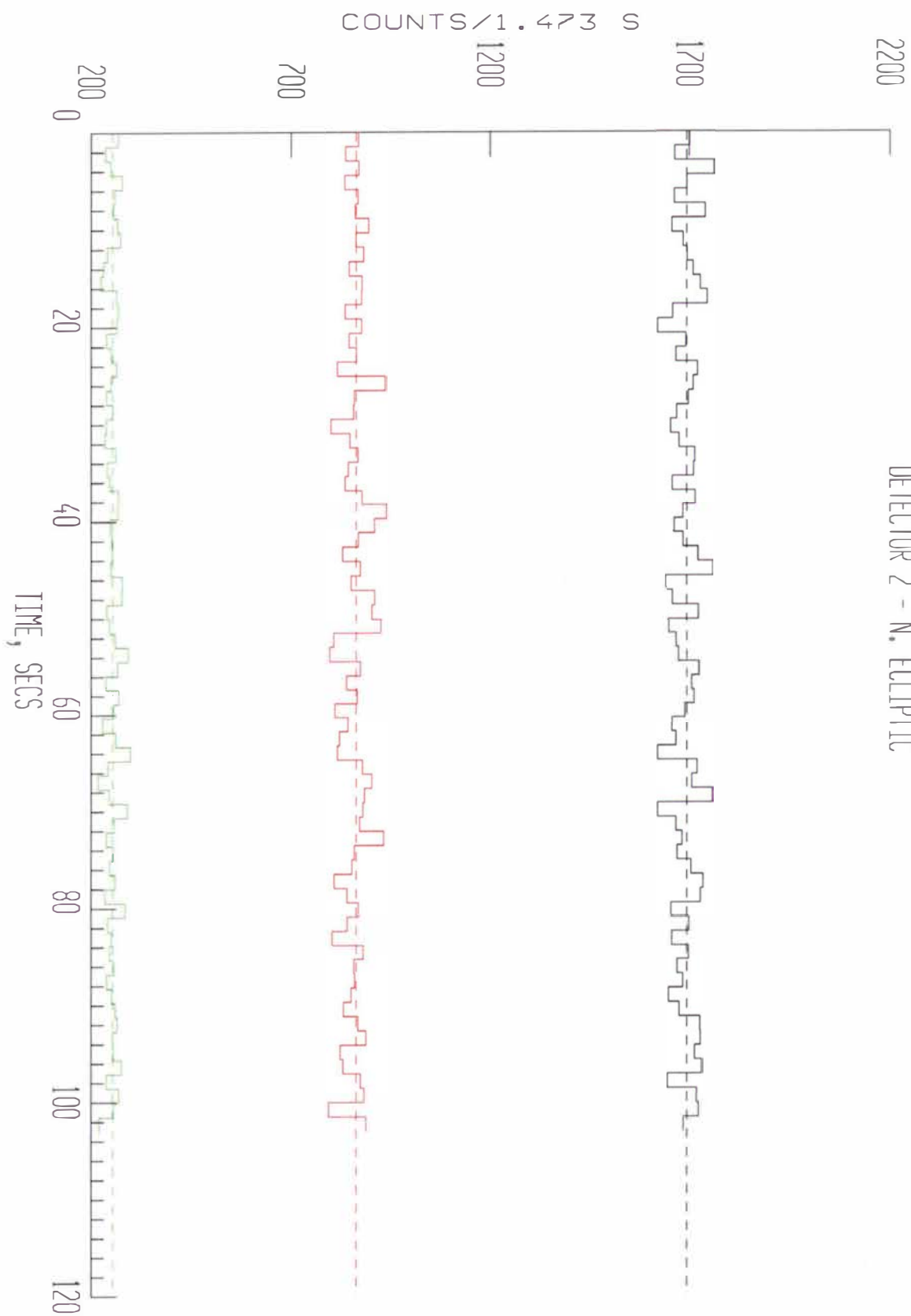


11/10/2011

DETECTOR 1 - S, ECLIPSE



KONUS 21/09/96 34130.547
10- 50 keV 50- 200 keV 200- 750 keV



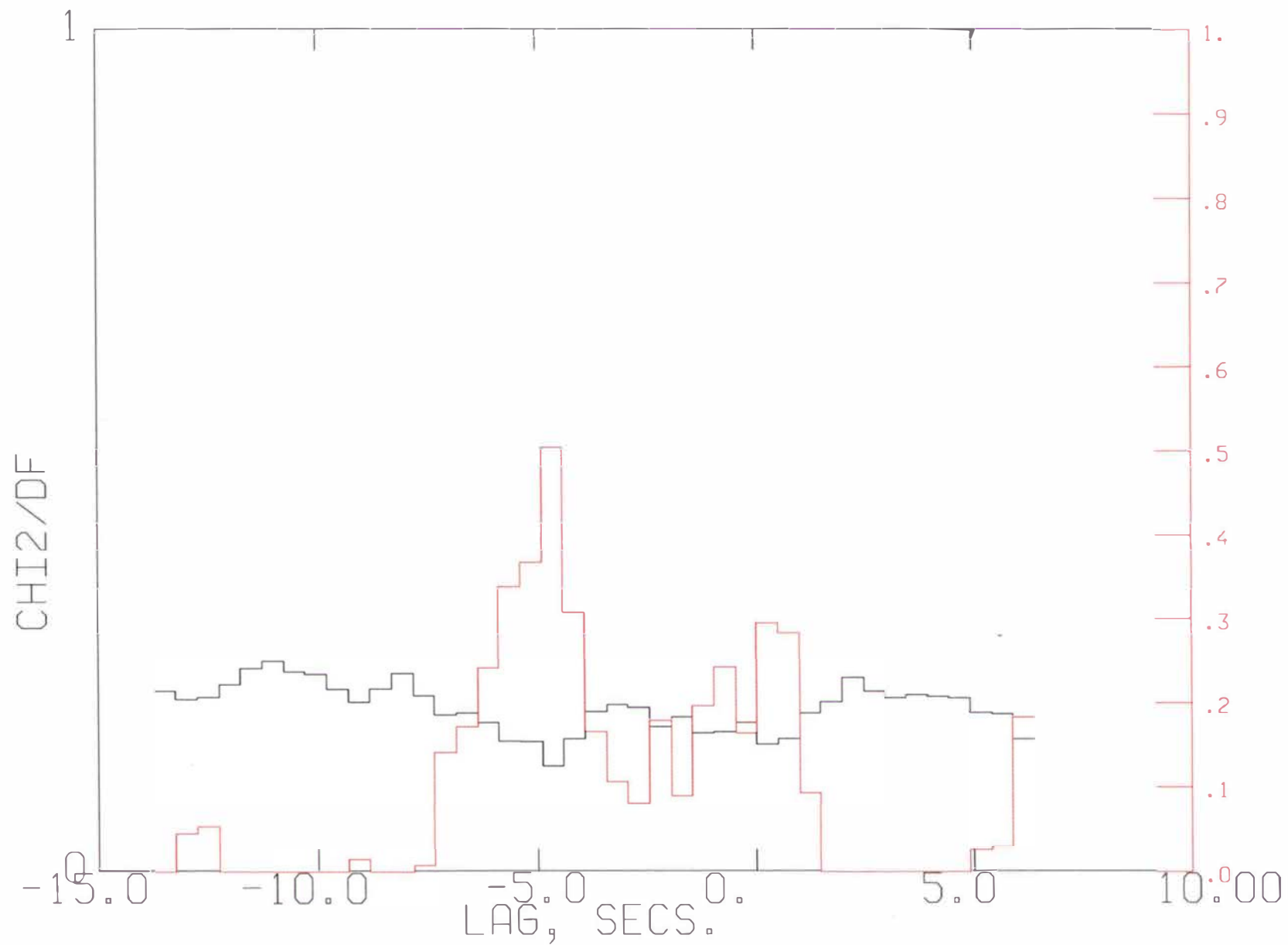
KONUS

-ULYSSES RT CORRELATION

21/09/96

34130.547

11/10/11



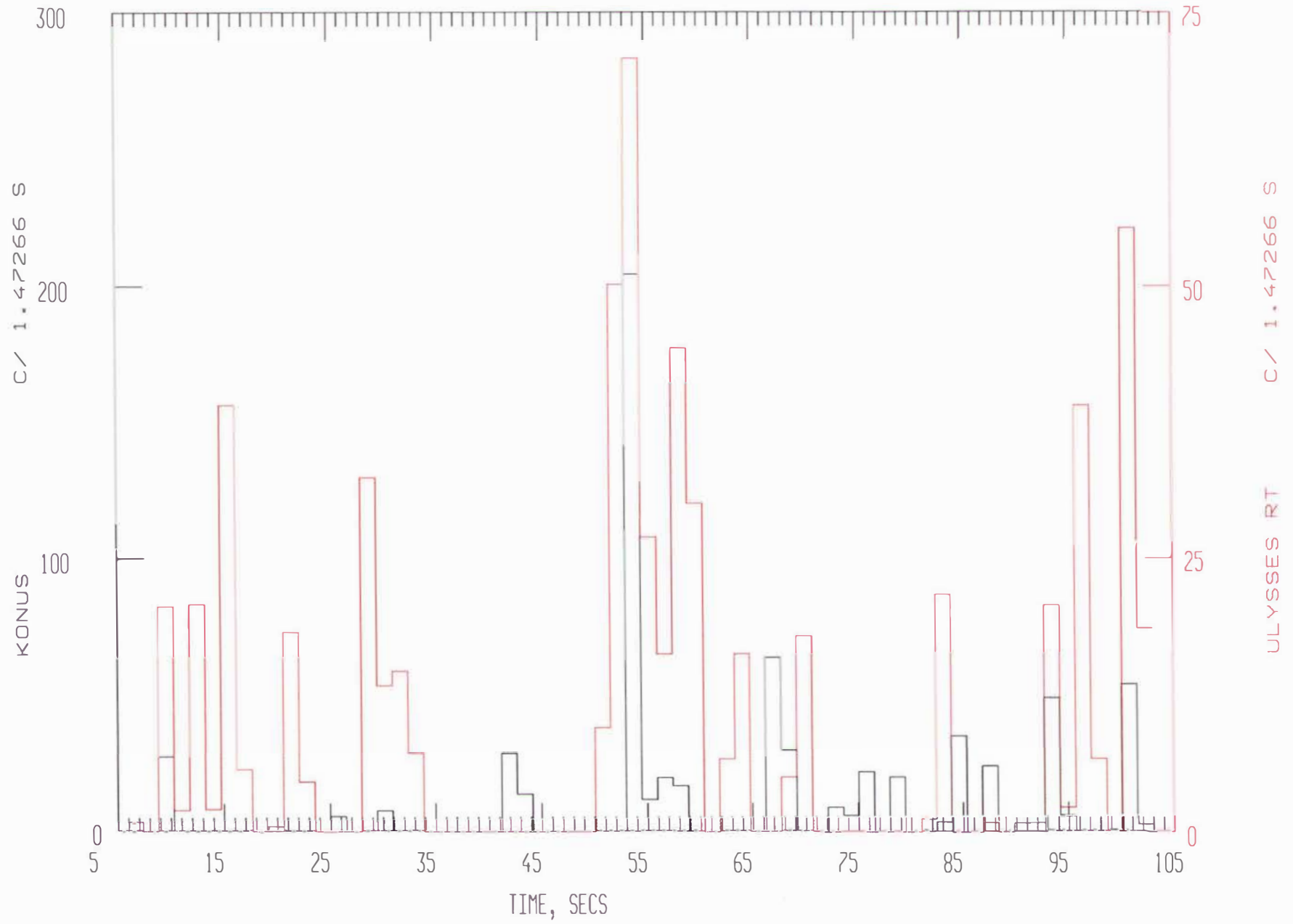
KONUS

-ULYSSES RT CORRELATION

21/09/96

34130.547

11/10/11



KONUS 19960921 32972

ULYSSES RT

10 / 10 / 11

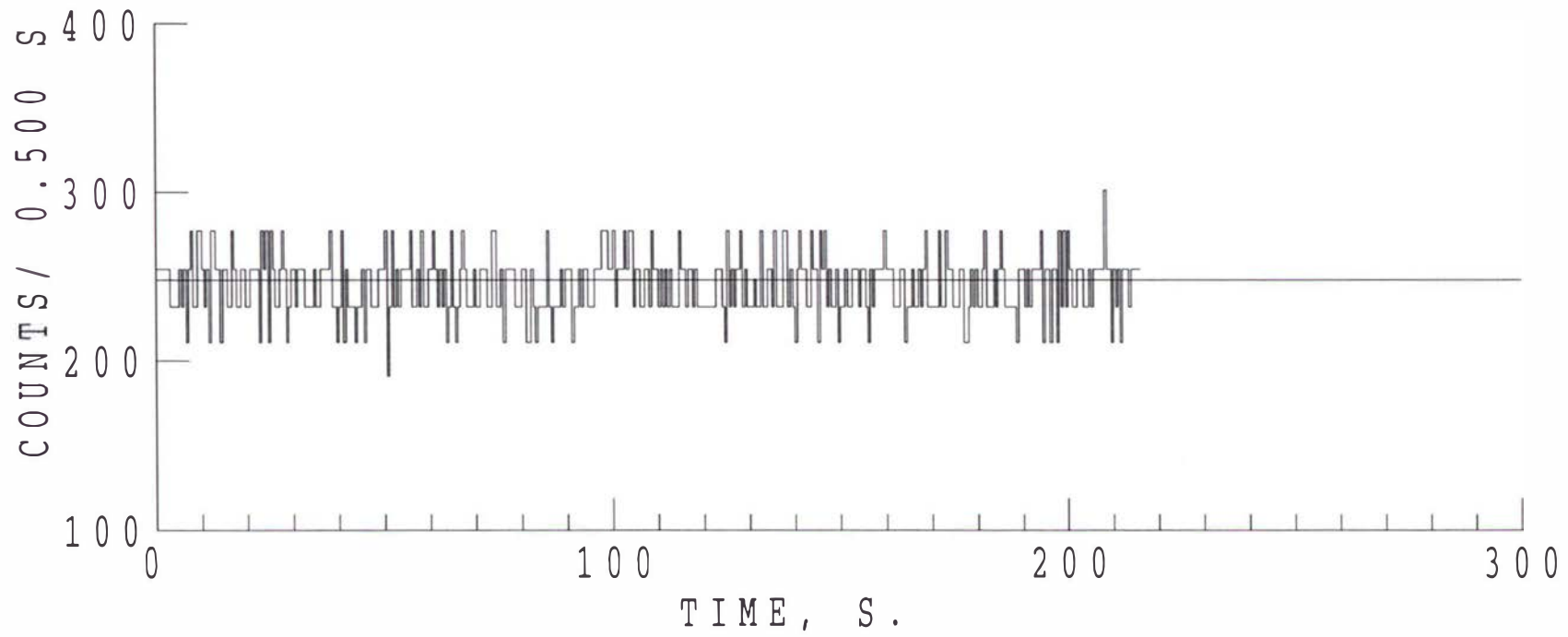
21/09/96 32868.074 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

||

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

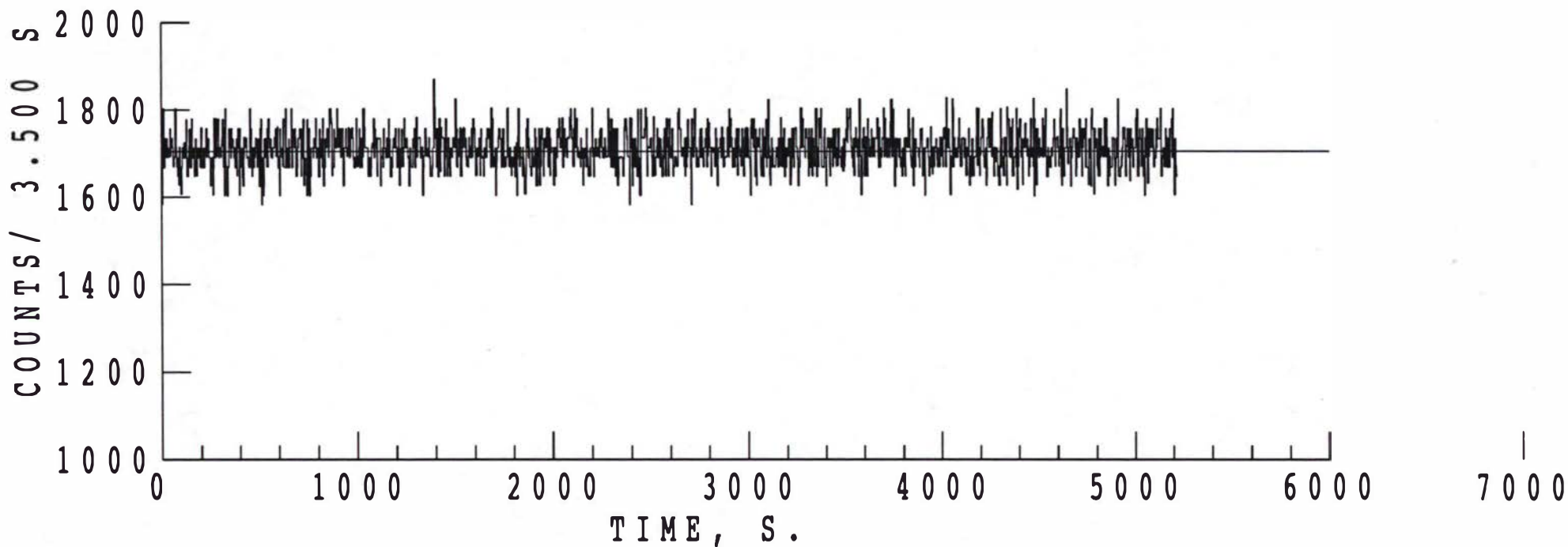
31 / 01 / 00

21 / 09 / 96 31572.057 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@SSLLES.MSFC.NASA.GOV Tue Sep 24 08:00 PDT 1996
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
Date: Tue, 24 Sep 1996 10:00:22 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5609

BATSEARCH PROGRAM

BATSE BURST # 5609
EVENT OF 1996 SEP 21 DAY OF YEAR=265
EVENT CROSSING TIME AT BATSE : 54228. S. OR 15:03:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 345.000 -29.000
BATSE PEAK COUNTING RATE: 60000 C/S

Trigger

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 9/ 96 IS:
RA= 170.085 DEC= 34.352 DIST= 5.150 AU
BATSE-ULYSSES DISTANCE = 770384088. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 6.88 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2551.22 SECS.
CROSSING TIME AT ULYSSES IS 56779. S. OR 15:46:19 +/- 142.19 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 9/ 96 IS:
RA= 129.618 DEC= 19.589 DIST= 2.007 AU
MARS-BATSE DISTANCE = 300258112. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 835.65 SECS.
CROSSING TIME AT MARS IS 55064. S. OR 15:17:43 +/- 108.54 SECONDS

TIME: TJD=0347 SECONDS=54228

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.6 AZIMUTH=163.6 ERROR=0.2 DEGREES

COMMENTS:
GRB. PULSE WITH SUBSTRUCTURE. DUR.~16SEC. POST EMISSION PULSE AT ~T+27SEC.
WITH DUR.~12SEC. TOTAL DUR.~40SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5609	960921	10347	54228	60000	345	-29	40

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 + 2550	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 + 2550	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 2550	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 + 2550	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 + 2550	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 + 2550	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 + 2550	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 + 2550	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 2550	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 2550	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 2550	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 2550	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 + 2550	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 + 2550	RI

TLC

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

Helio corr removed 17/2/00

Date: Mar 16 '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?

3. PVO Data

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

- ☒ ACCESS database updated?

BATSE

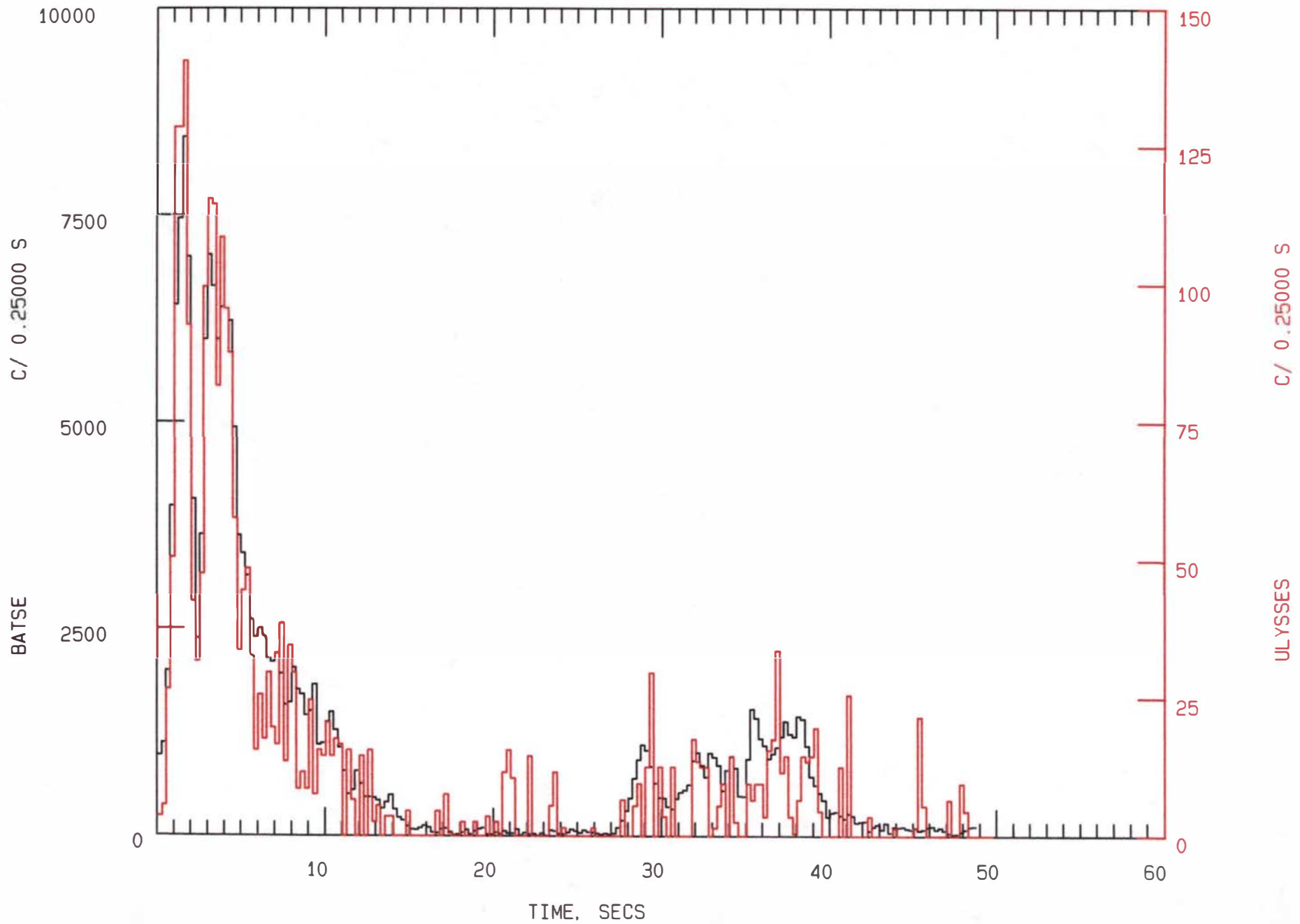
-ULYSSES

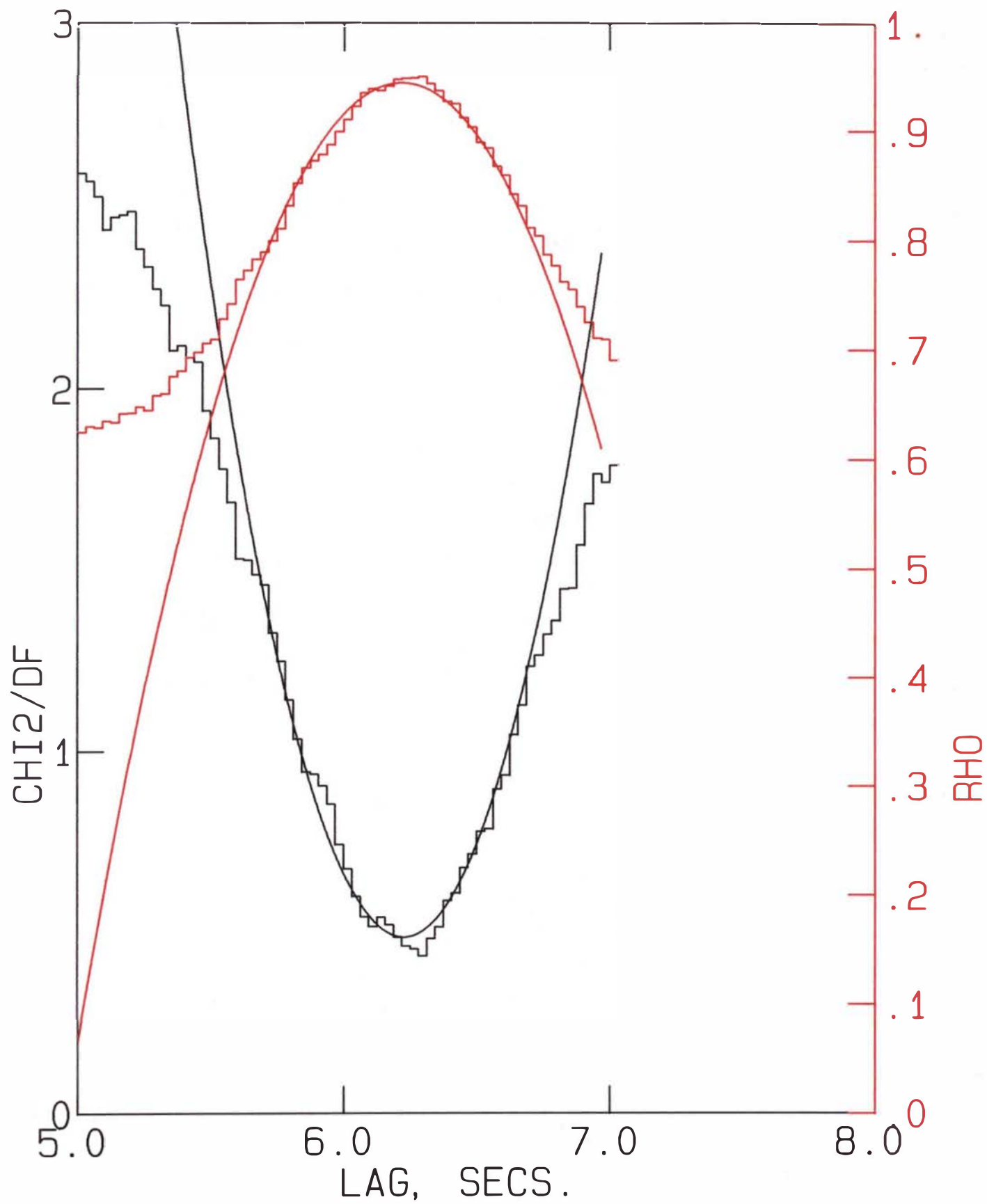
CORRELATION

21/ 9/96

54228.810

16/ 3/98





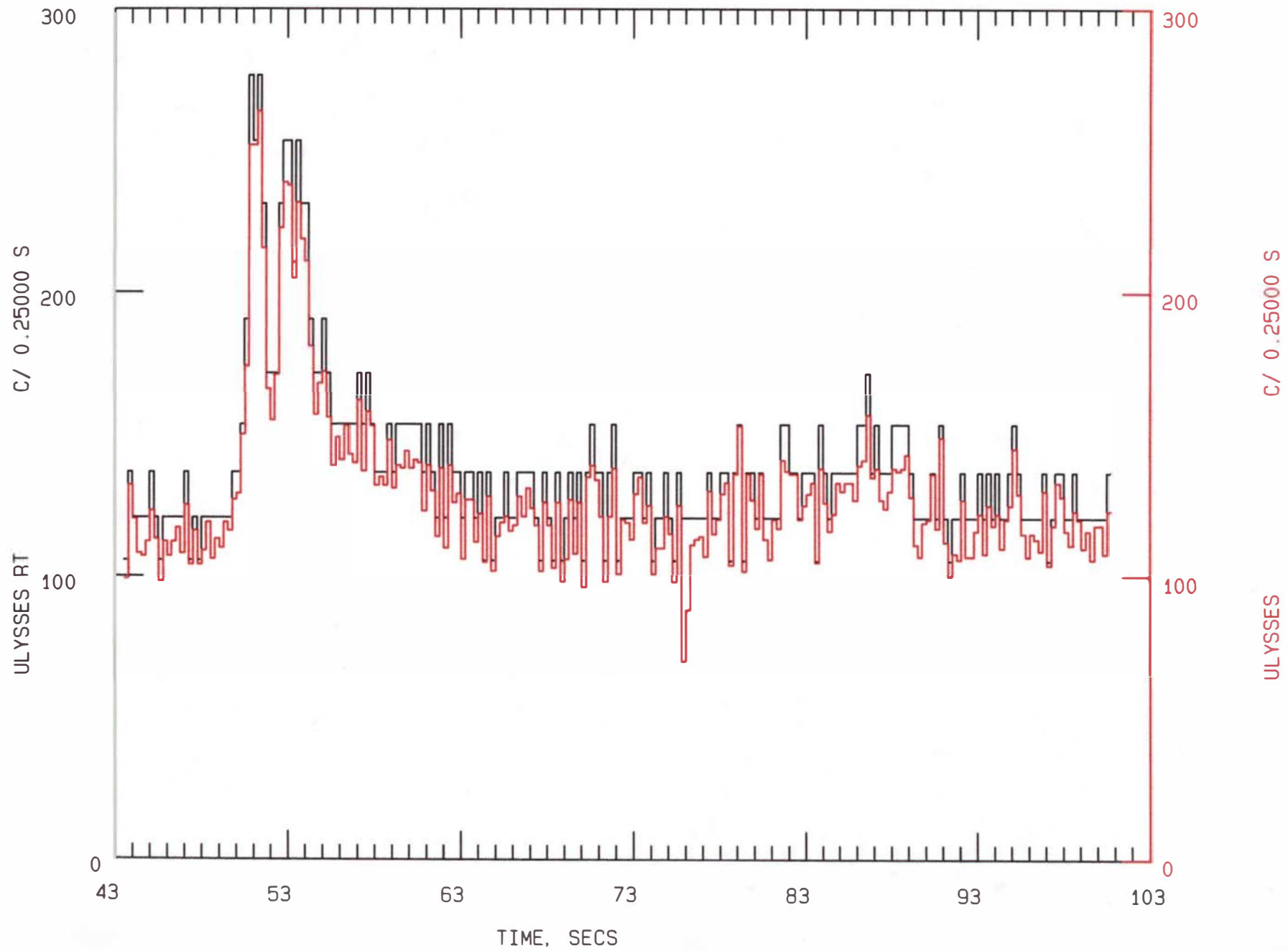
ULYSSES RT-ULYSSES

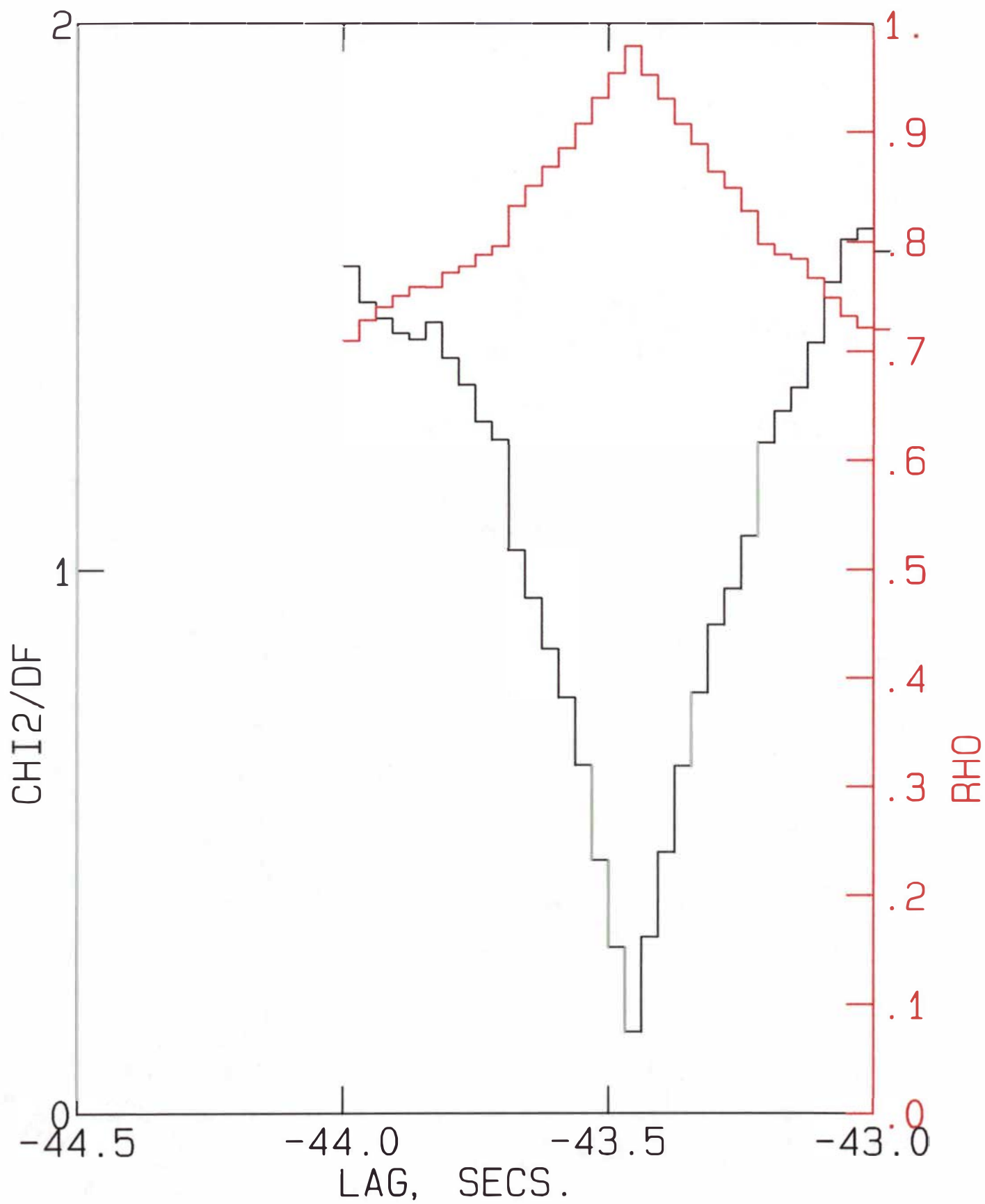
CORRELATION

21/ 9/96

56738.263

16/ 3/98

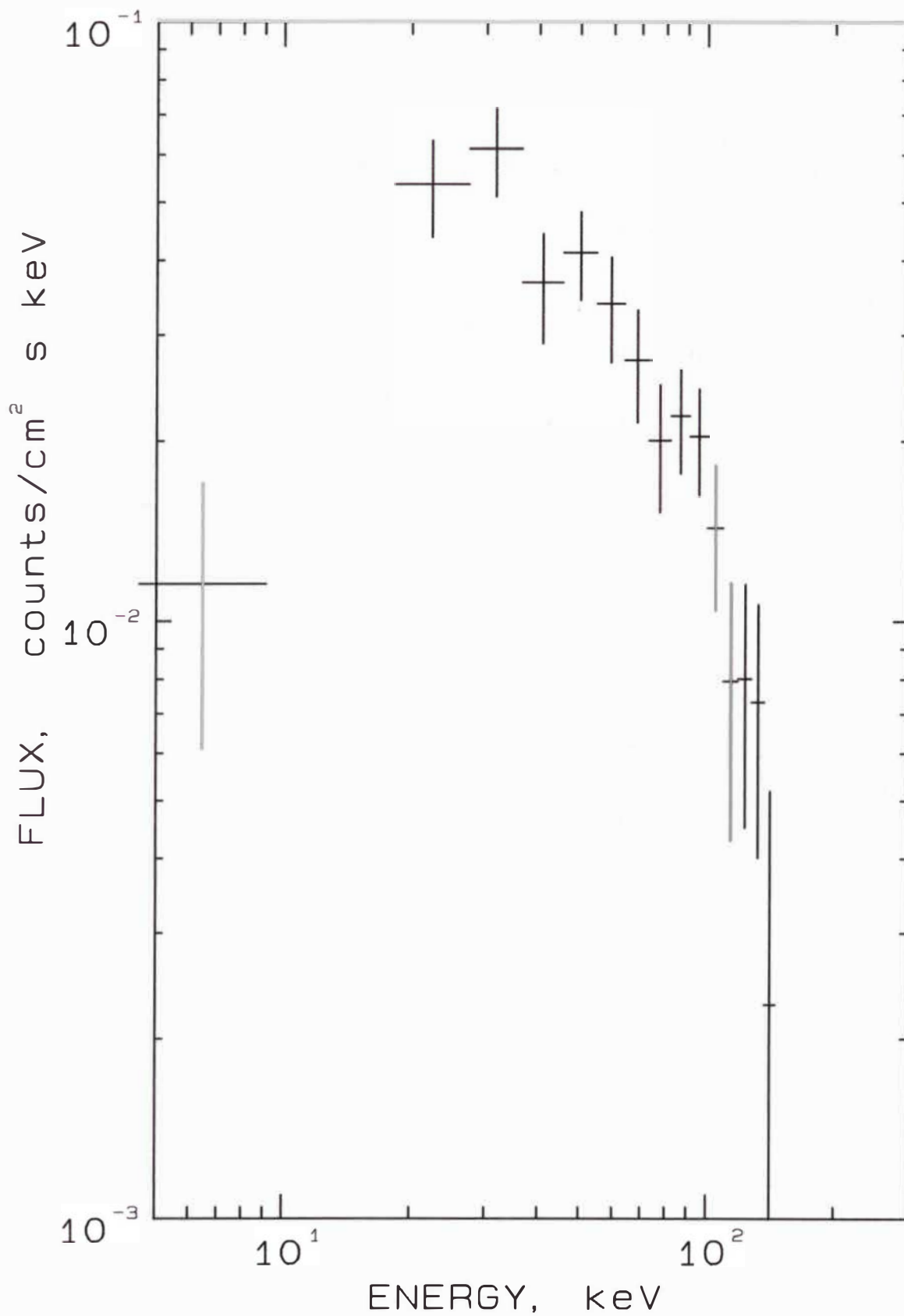




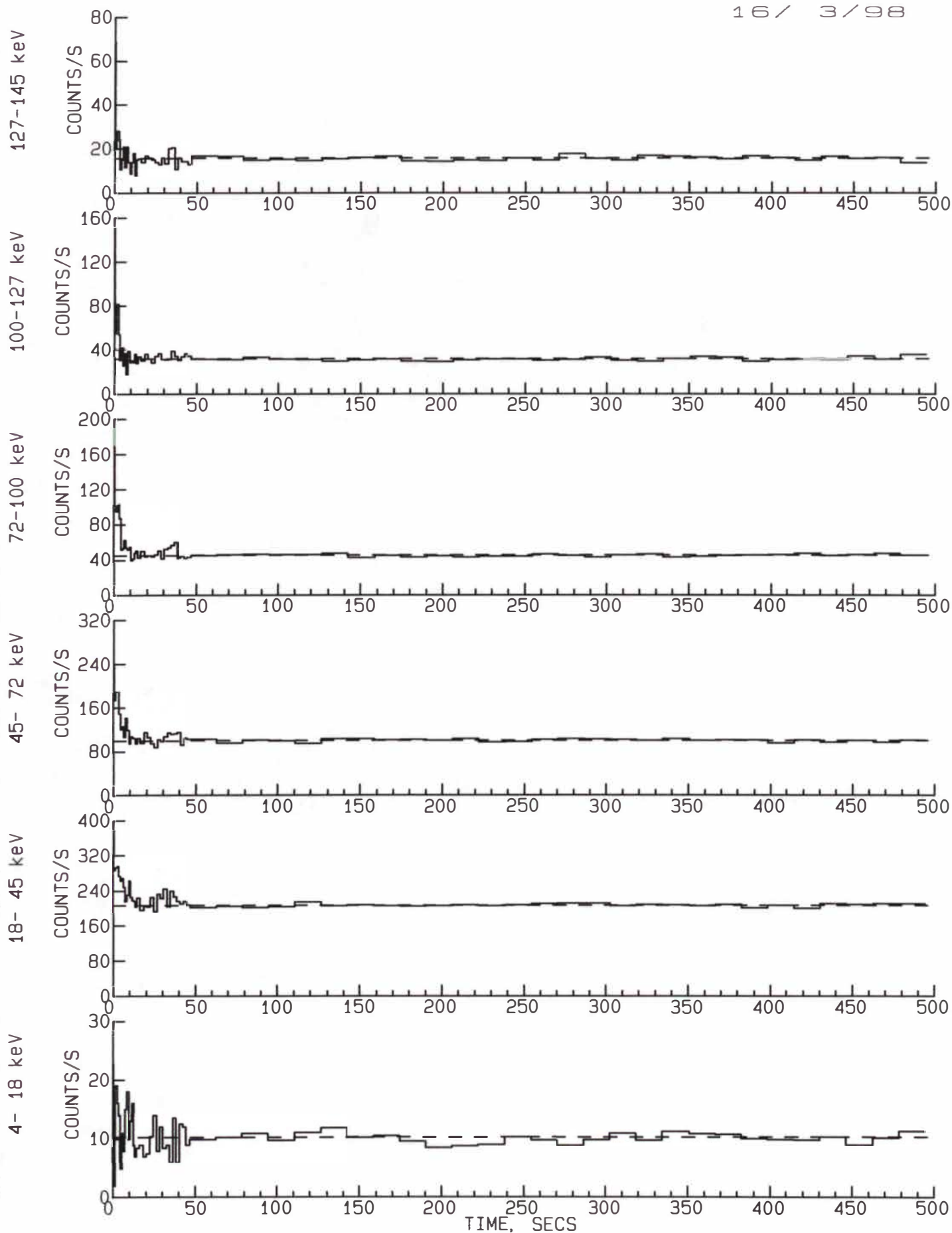
ULYSSES 21/09/96 56788.977

16/ 3/98

SPECTRUM INTEGRATED OVER 62.4 SECONDS, INTERVALS 2 TO 34



ULYSSES 21/09/96 56788.977 BURST SPECTRAL COUNT RATES



ULYSSES

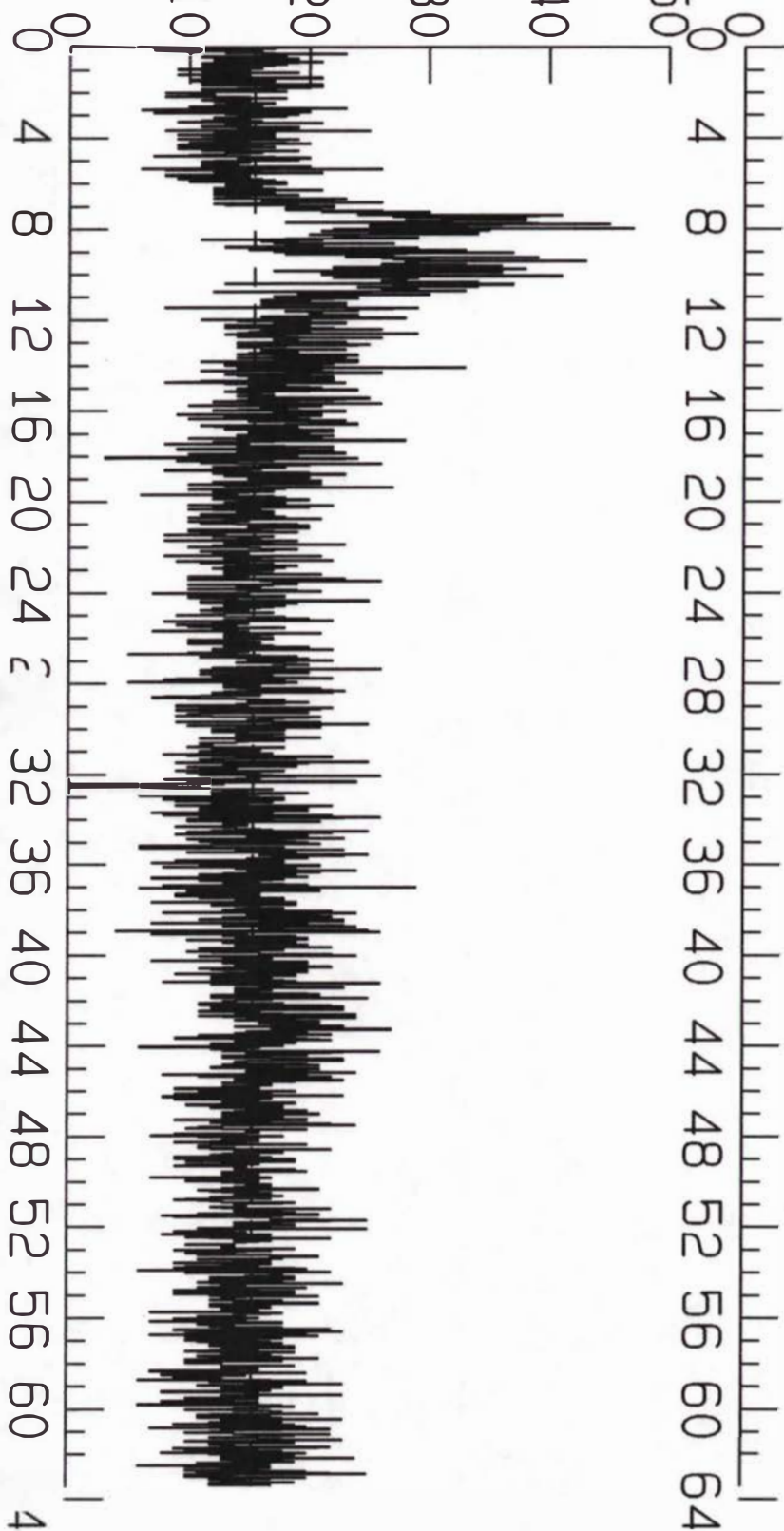
21/09/96

Ttrig=56789.121

21- 146 keV

COUNTS/0.031 S

COUNTS/0.125 S



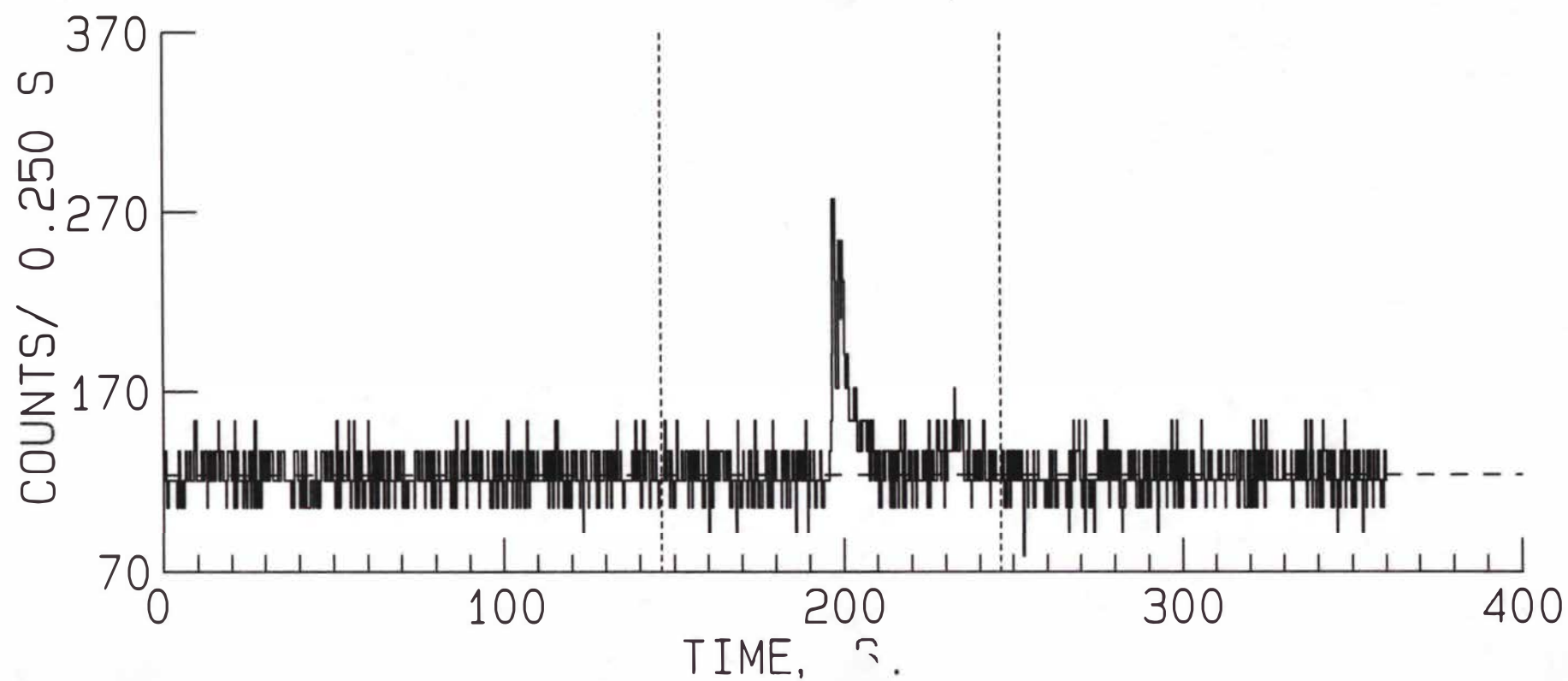
ULYSSES RT

16 / 3 / 98

21 / 9 / 96 56592.125 s

21- 146 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



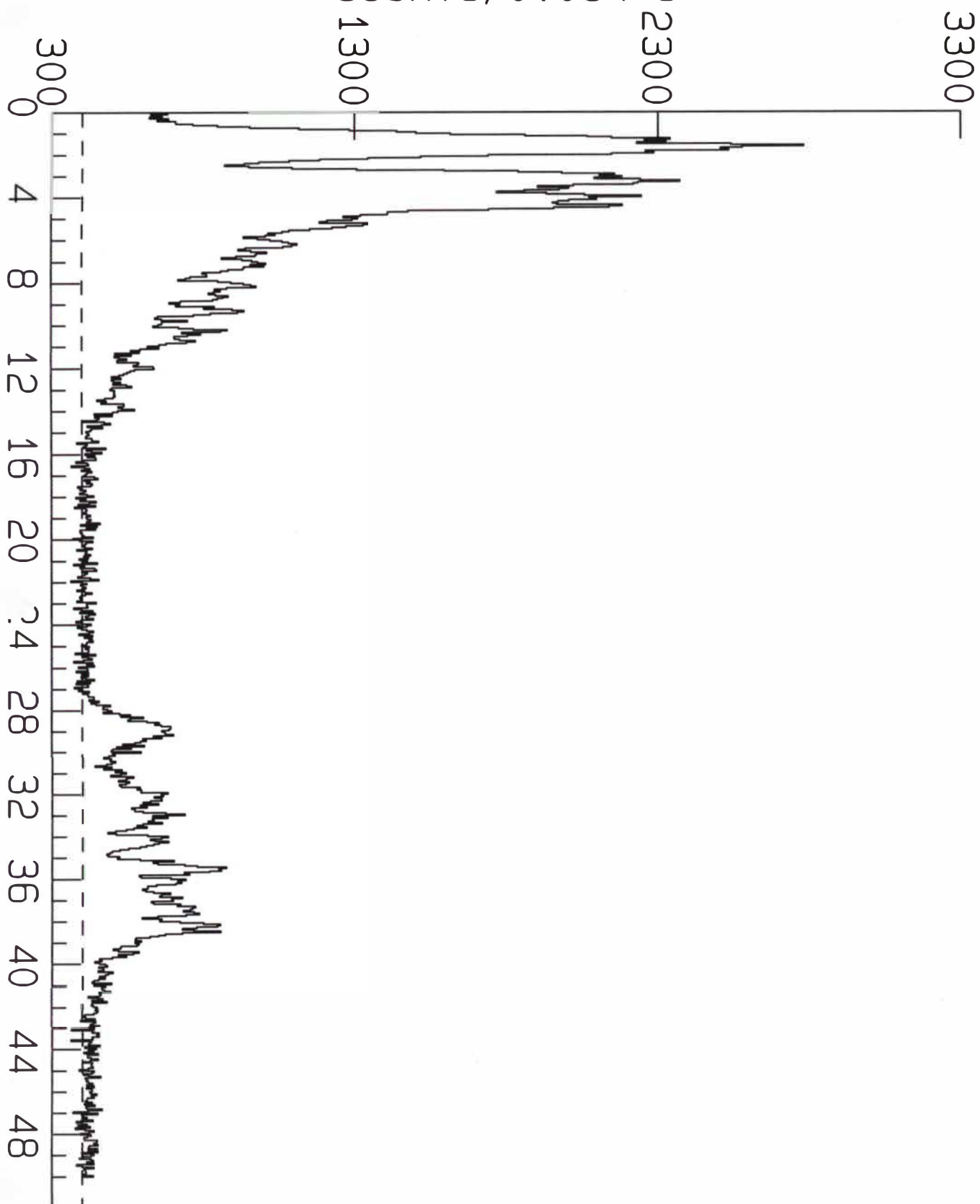
BATSE

21/09/96

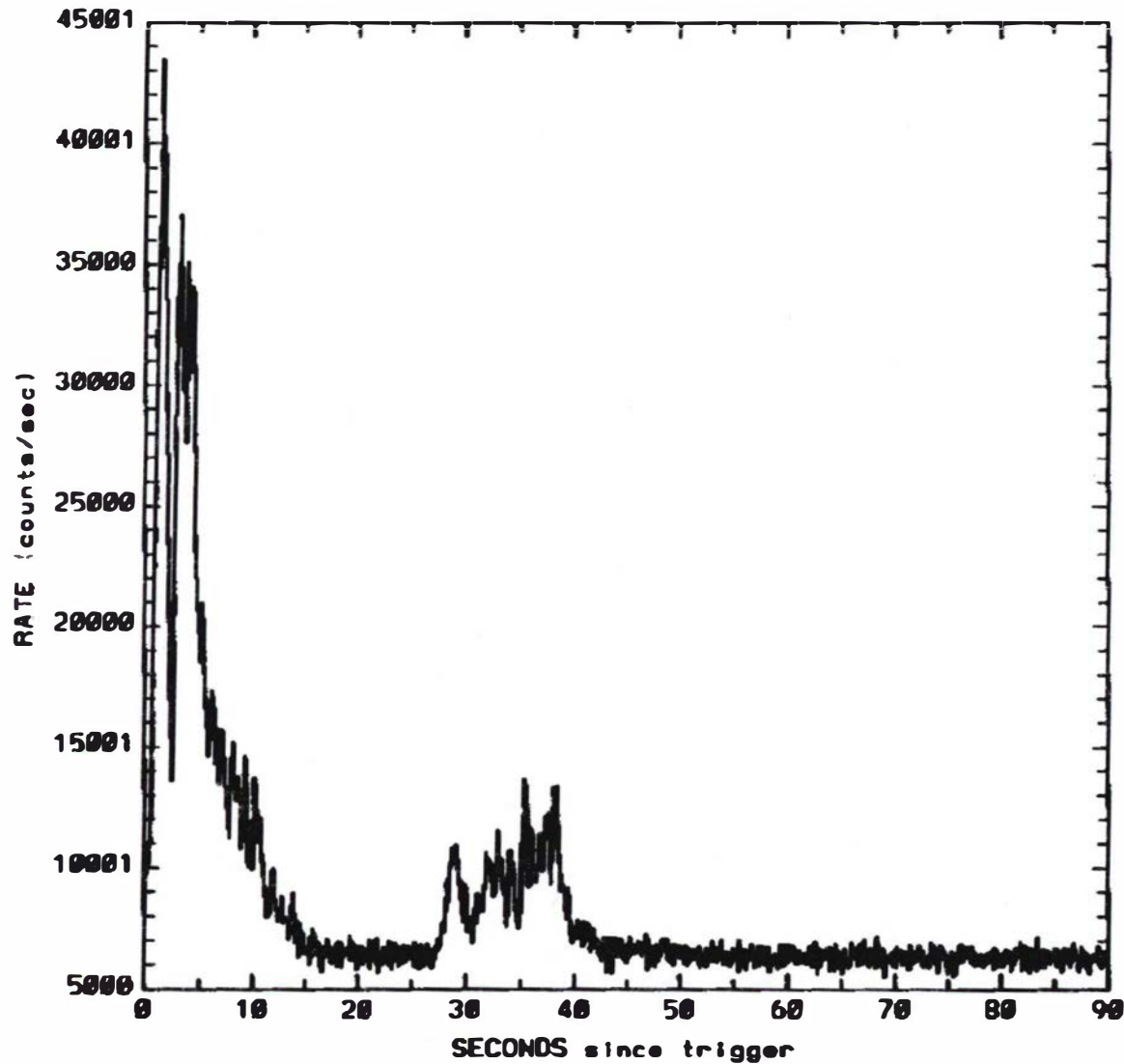
54228.810

25- 100 keV

COUNTS/0.064 S



MER Data for K. Hurley, No. 5609



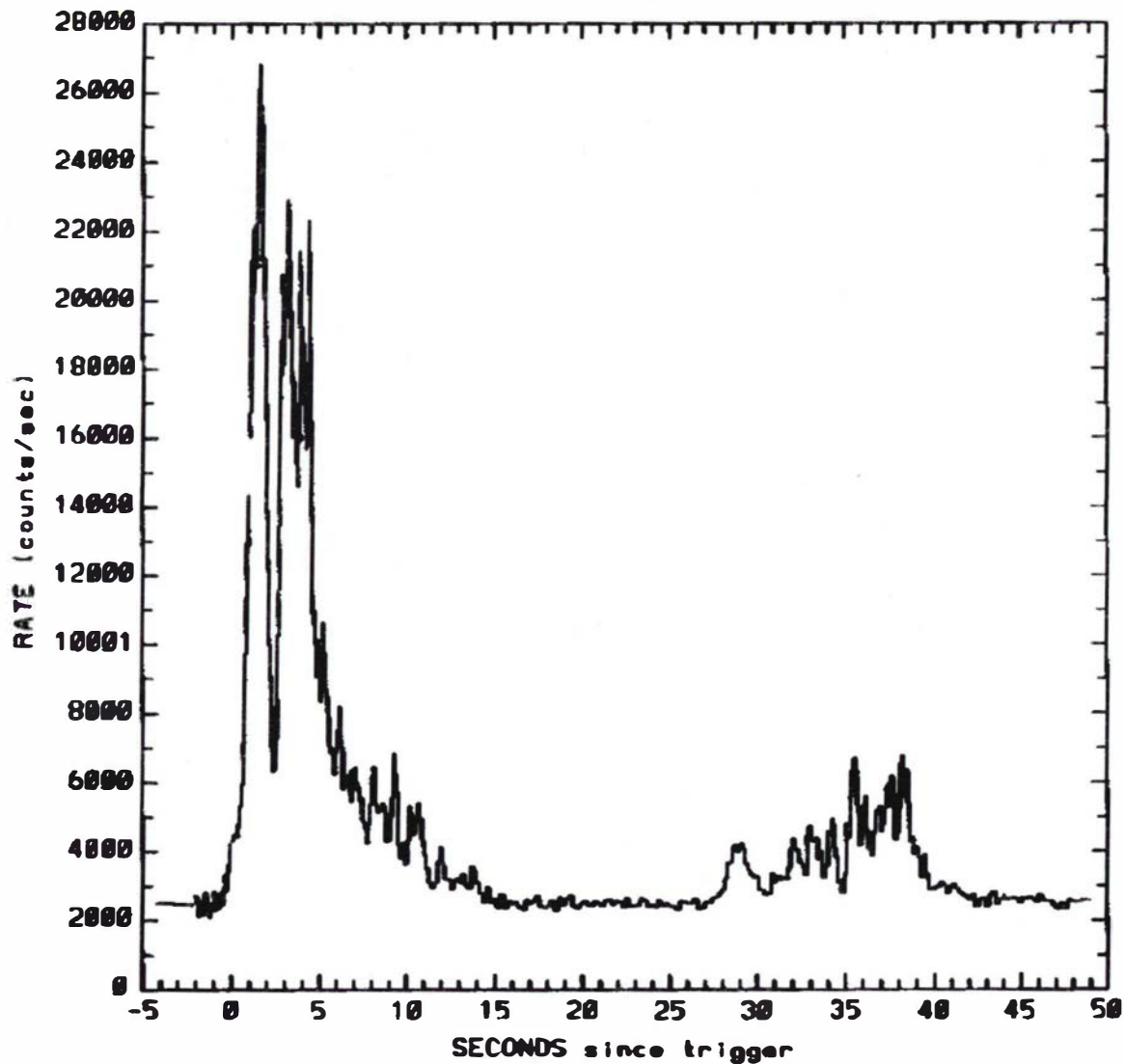
25-SEP-1996 10:15:28

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger # : 5609

Trigger Time:
18347 / 54228.818Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
8.864 secondsDetectors (7..8).
7-5----Channels:
(8 . 6)Quality Mask:
8019P1

TTS Data for K. Hurley, No. 5609



25-SEP-1996 10:16:28

Created by NOPS 80
(Burst Display)
Version 12.25

Trigger # : 5609

Trigger Time:
18347 / 54228.818Burst Data Type:
TTS

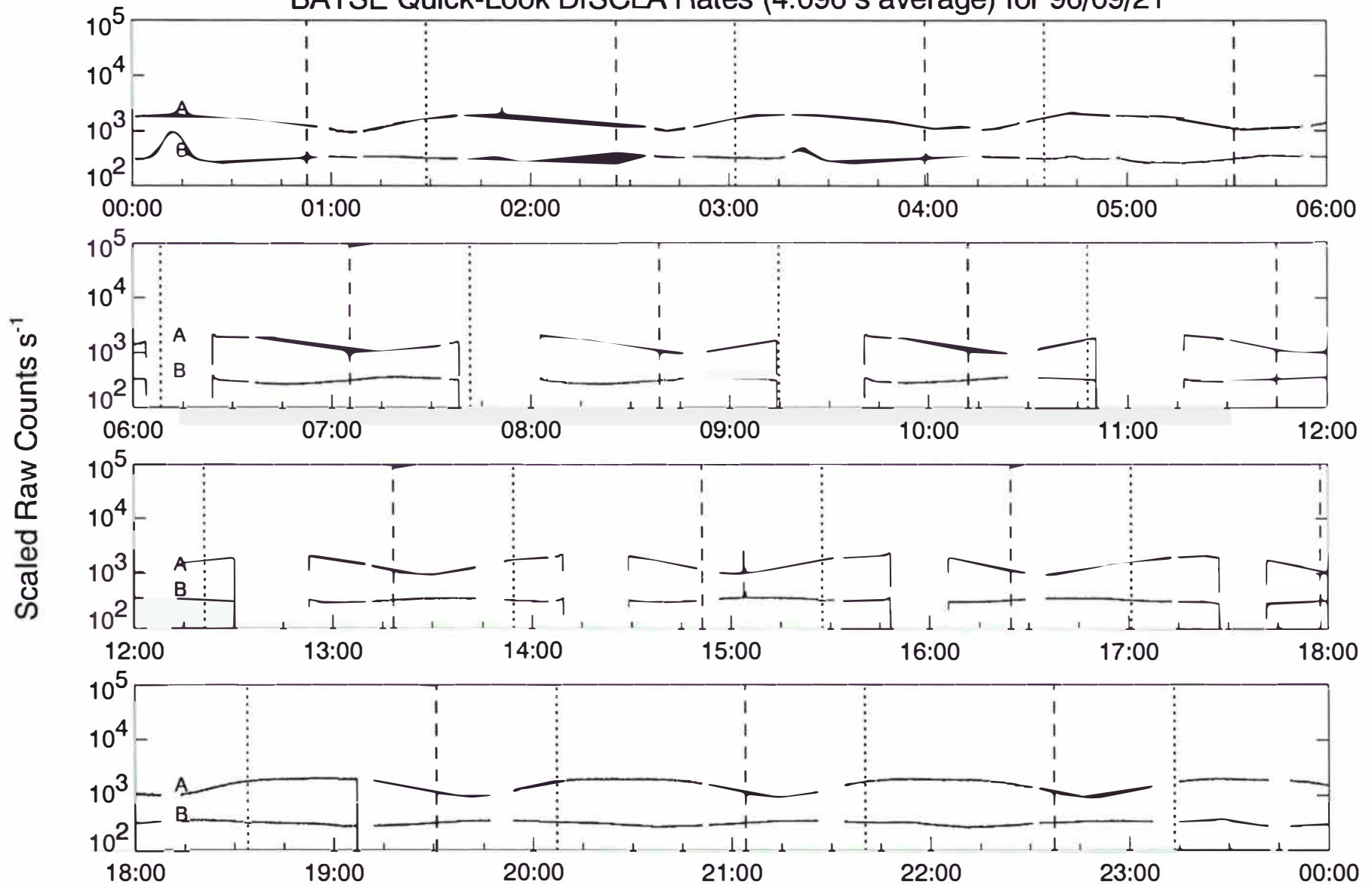
Time Corrected: Y

Maximum Time Error:
0.07839 secondsDeadtime
Corrected: NBackground Data
Type: PREB + DISCLA

Bin Count: 8

Detectors (7..8):
7-5----Discriminators:
(2 , 2)Quality Mask:
80ISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/21

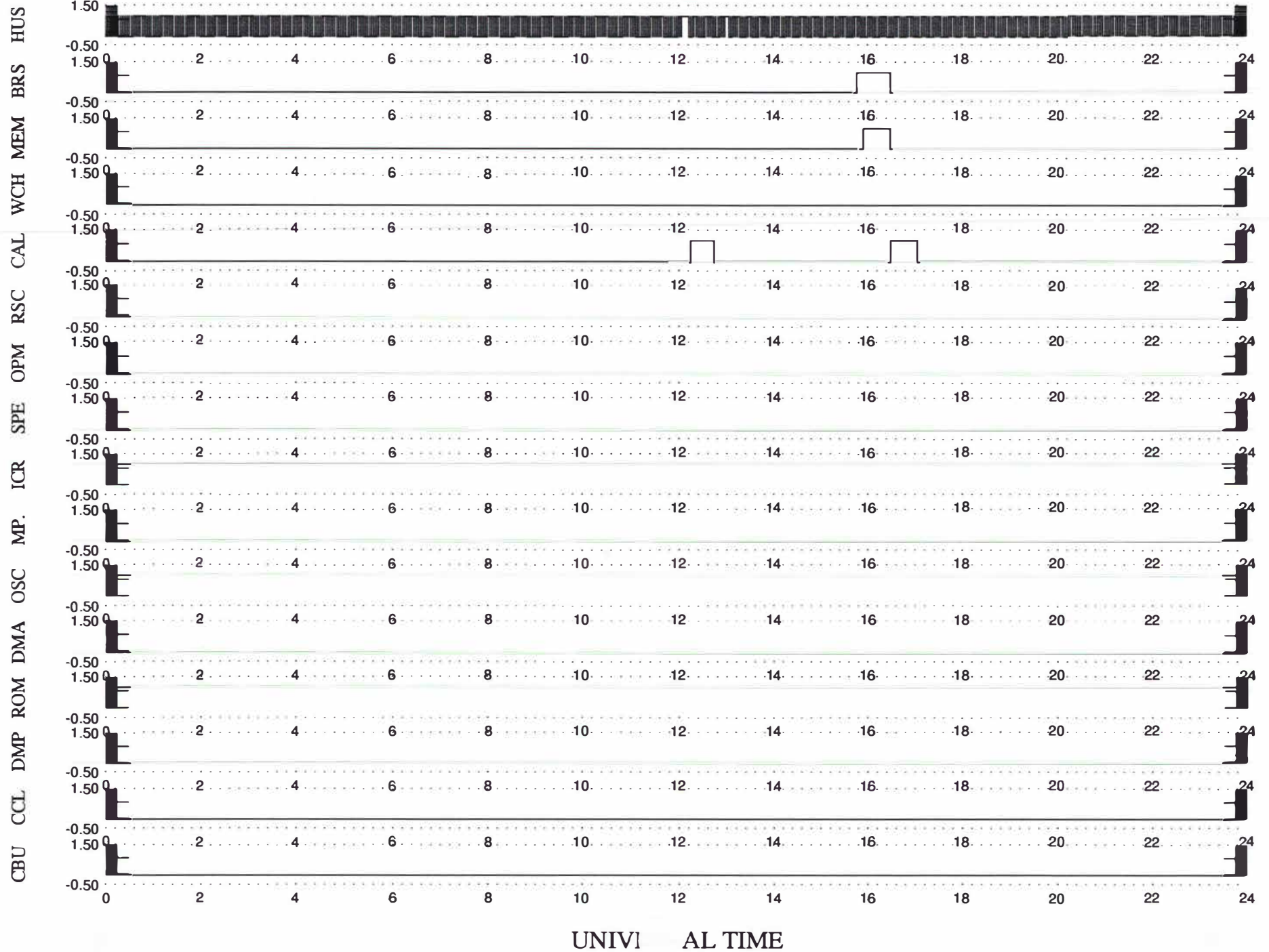


Current Time: 96/09/23, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

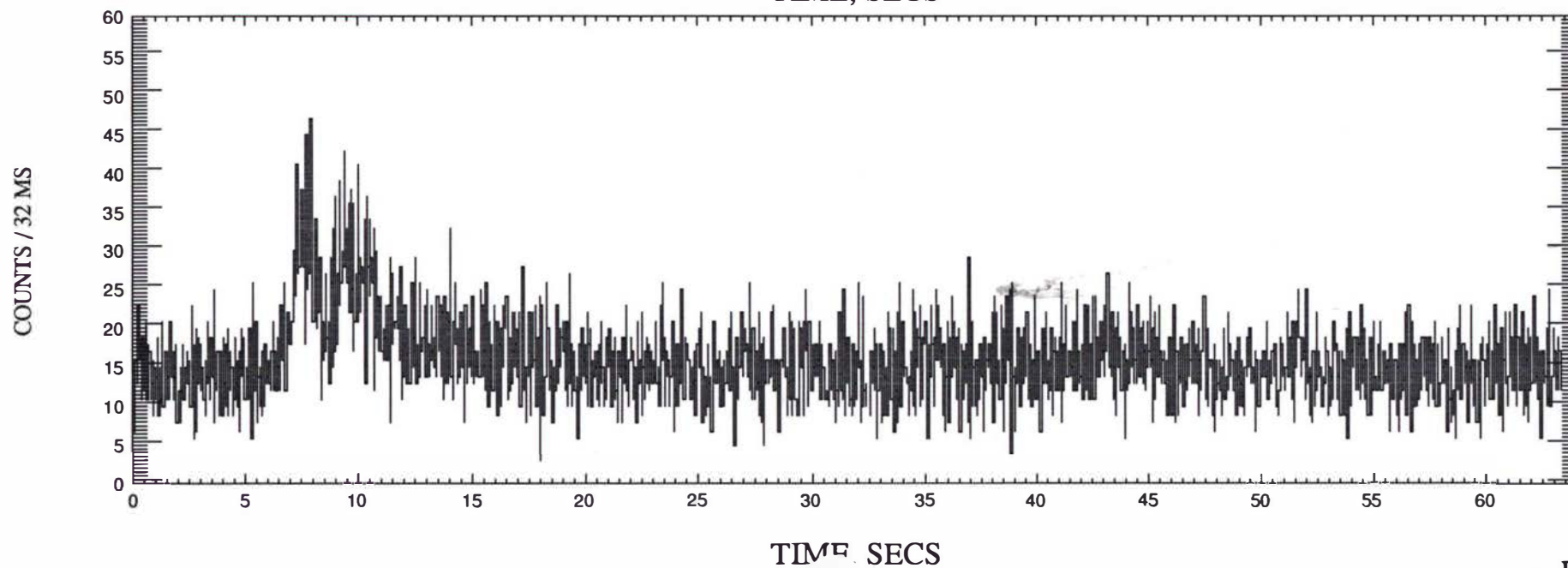
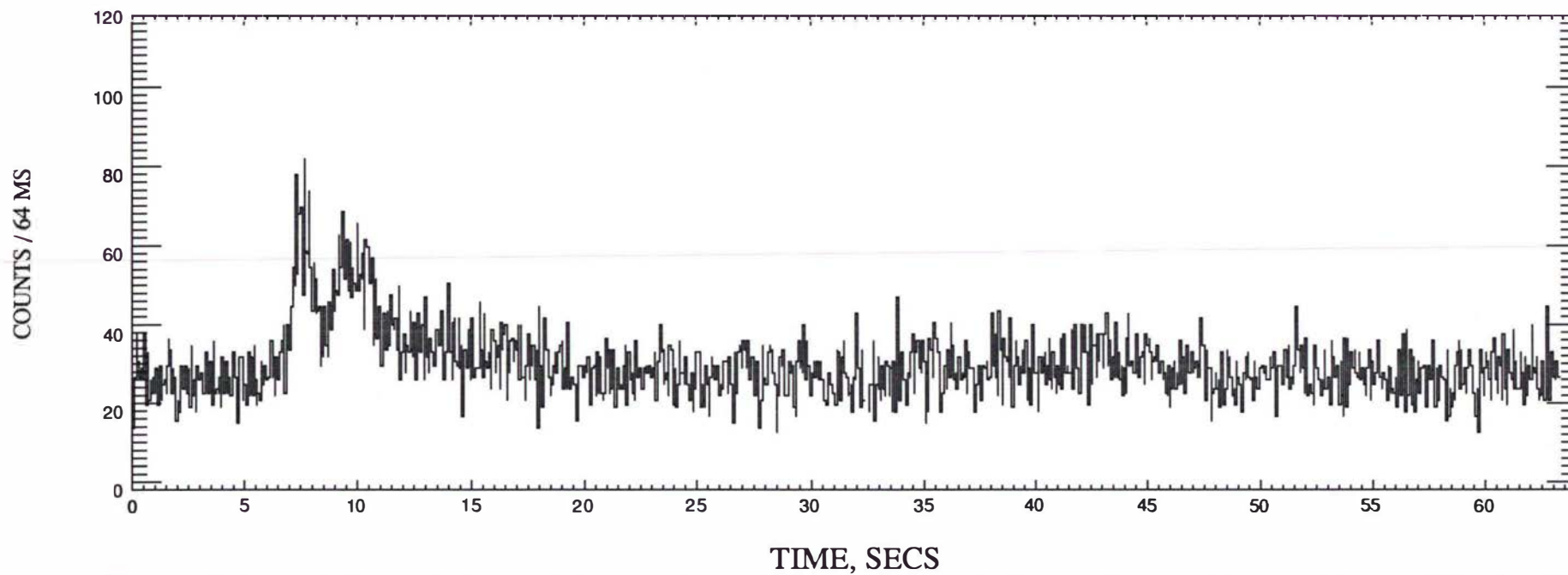
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

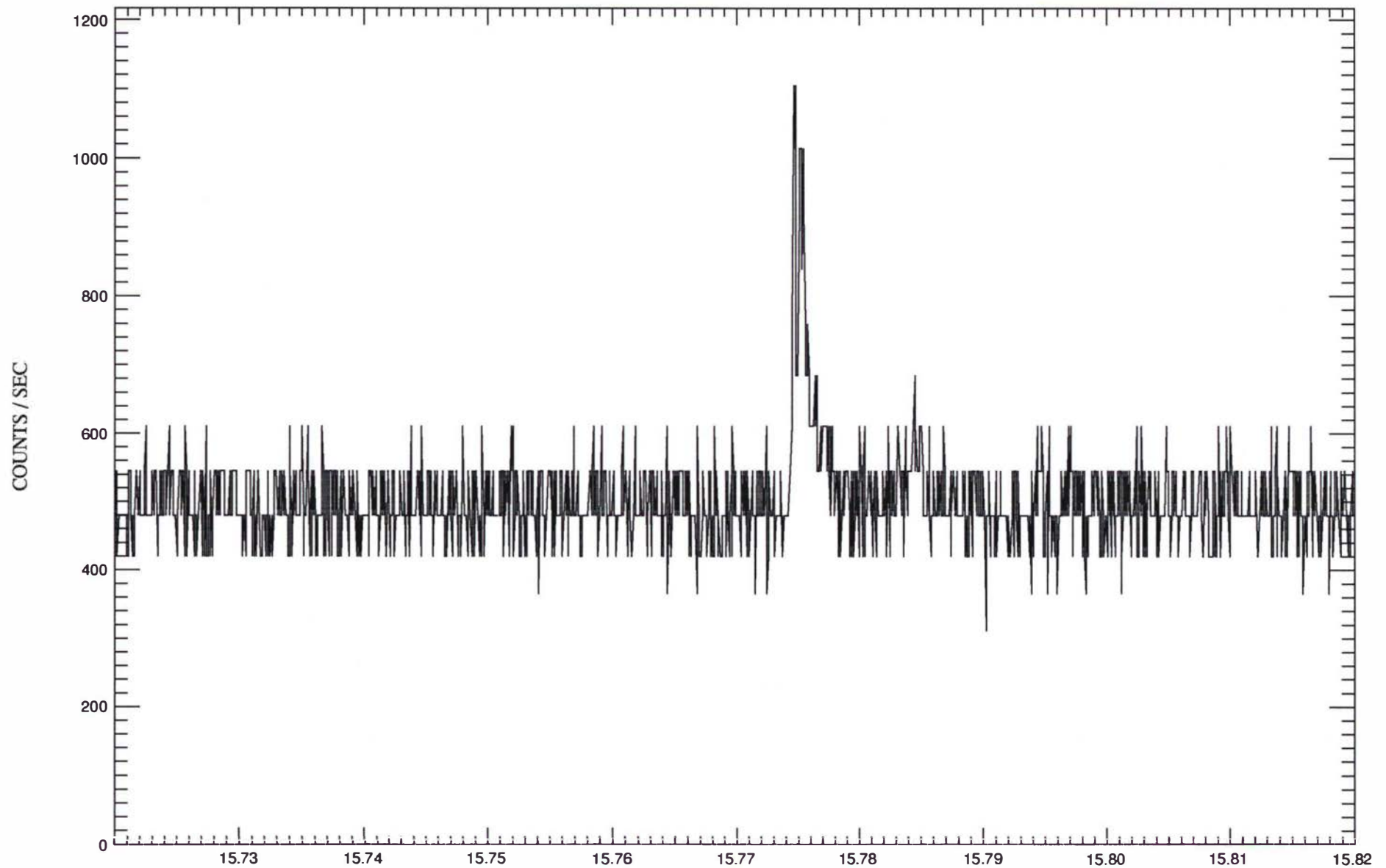
BURST NUMBER 1



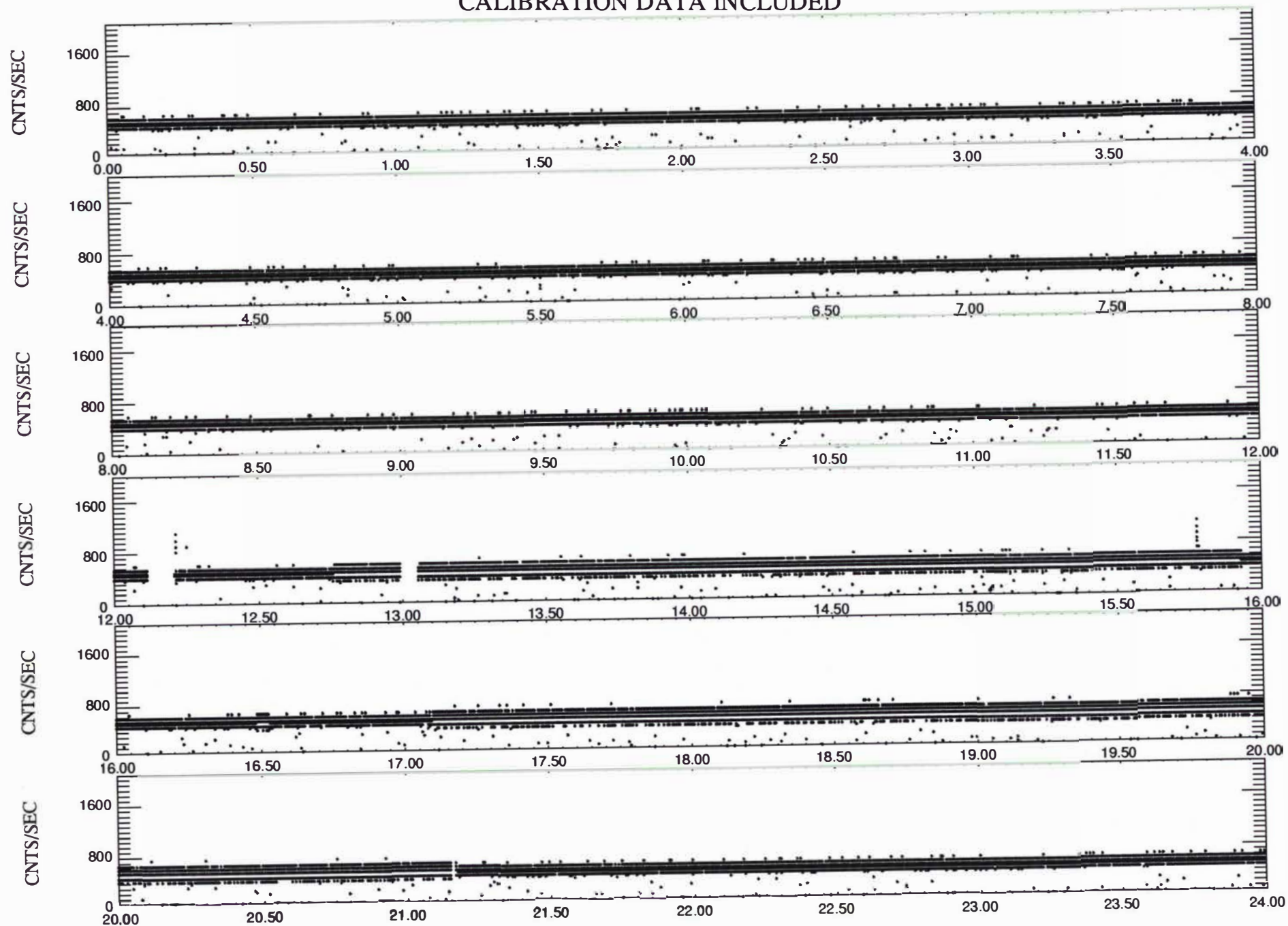
Burst Counter 1 at UT=15.774715936449 h=56788.977 s 15:46:28.977



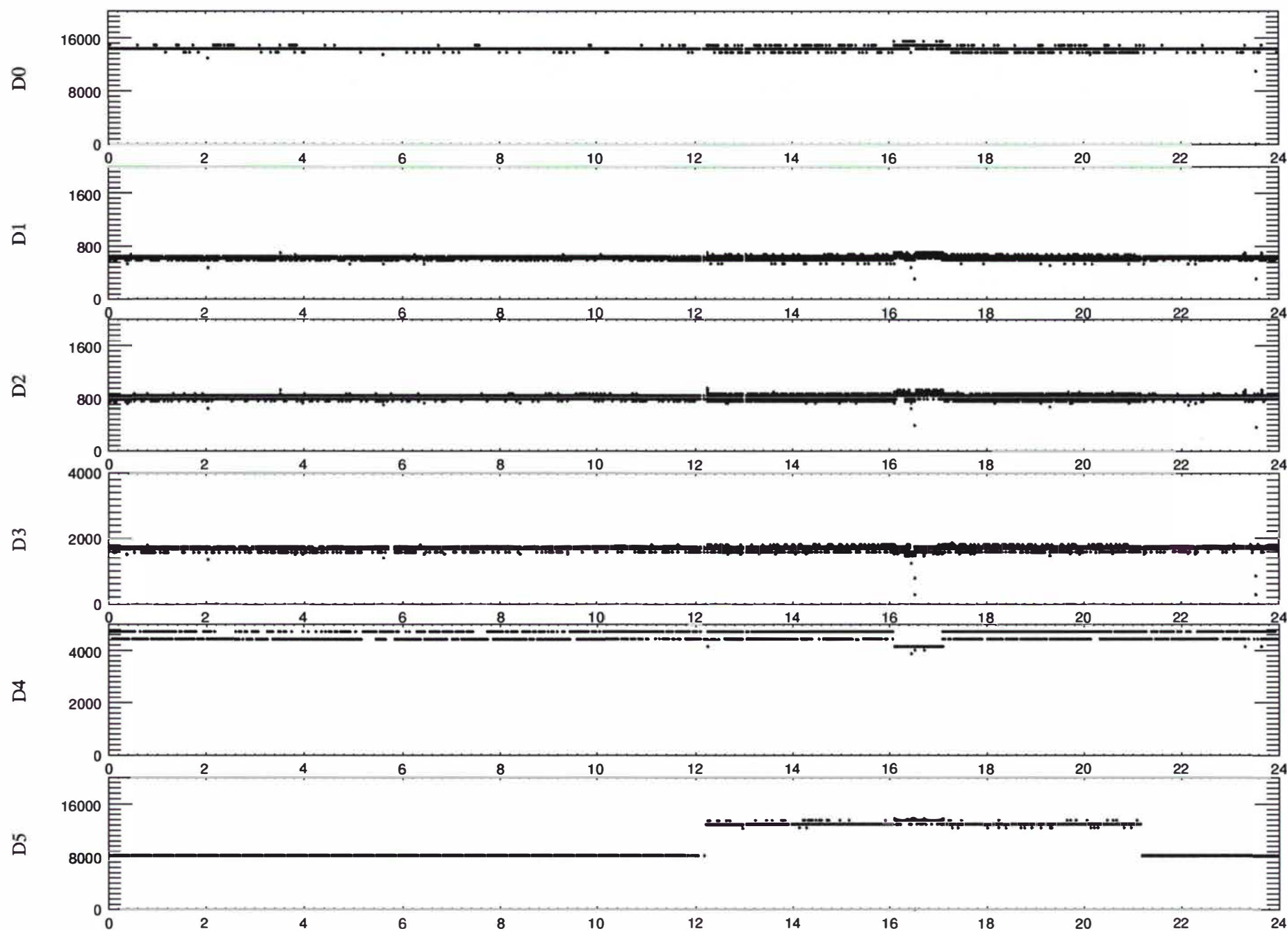
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV' AL TIME



UNIV! AL TIME

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

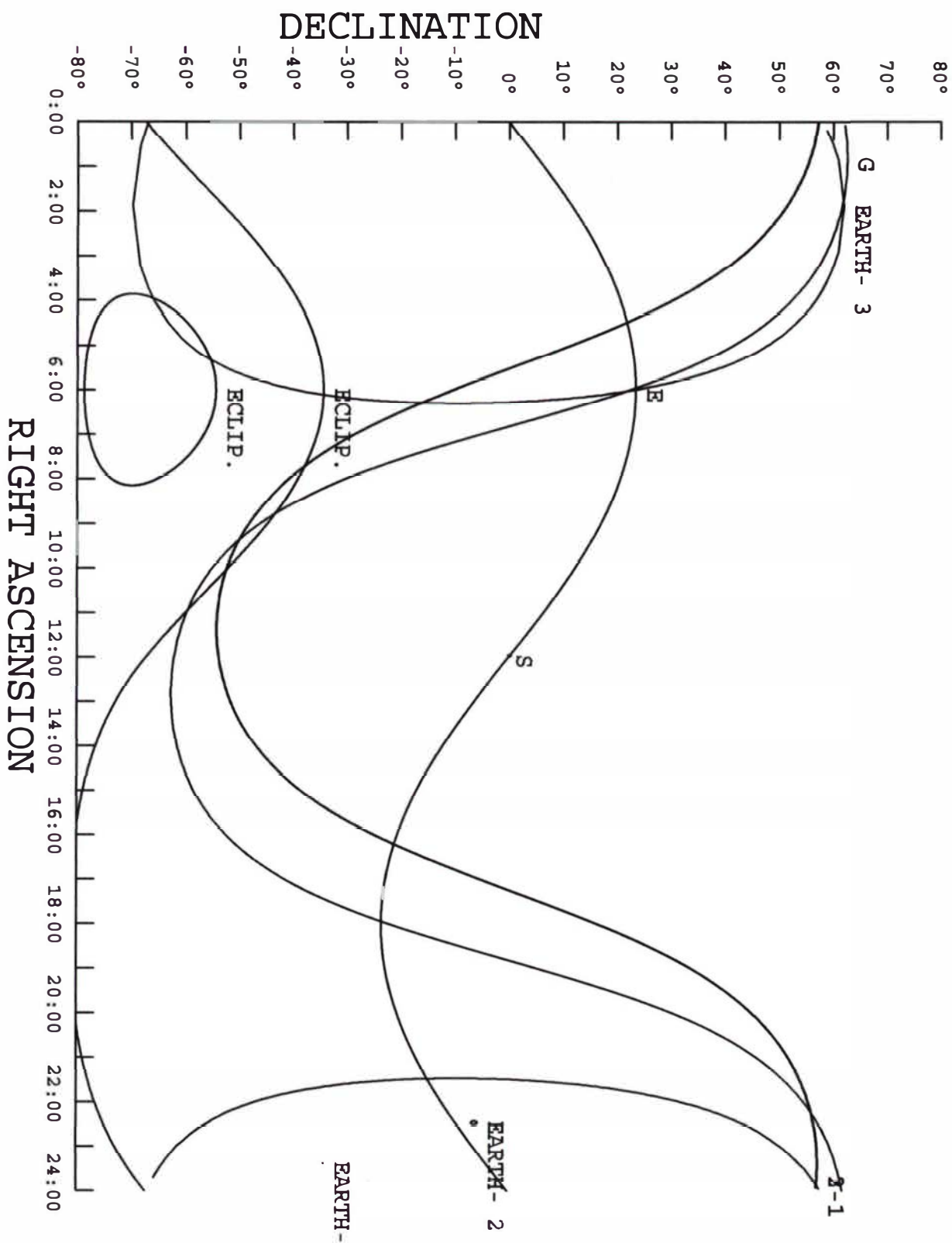
1 ULYSSES

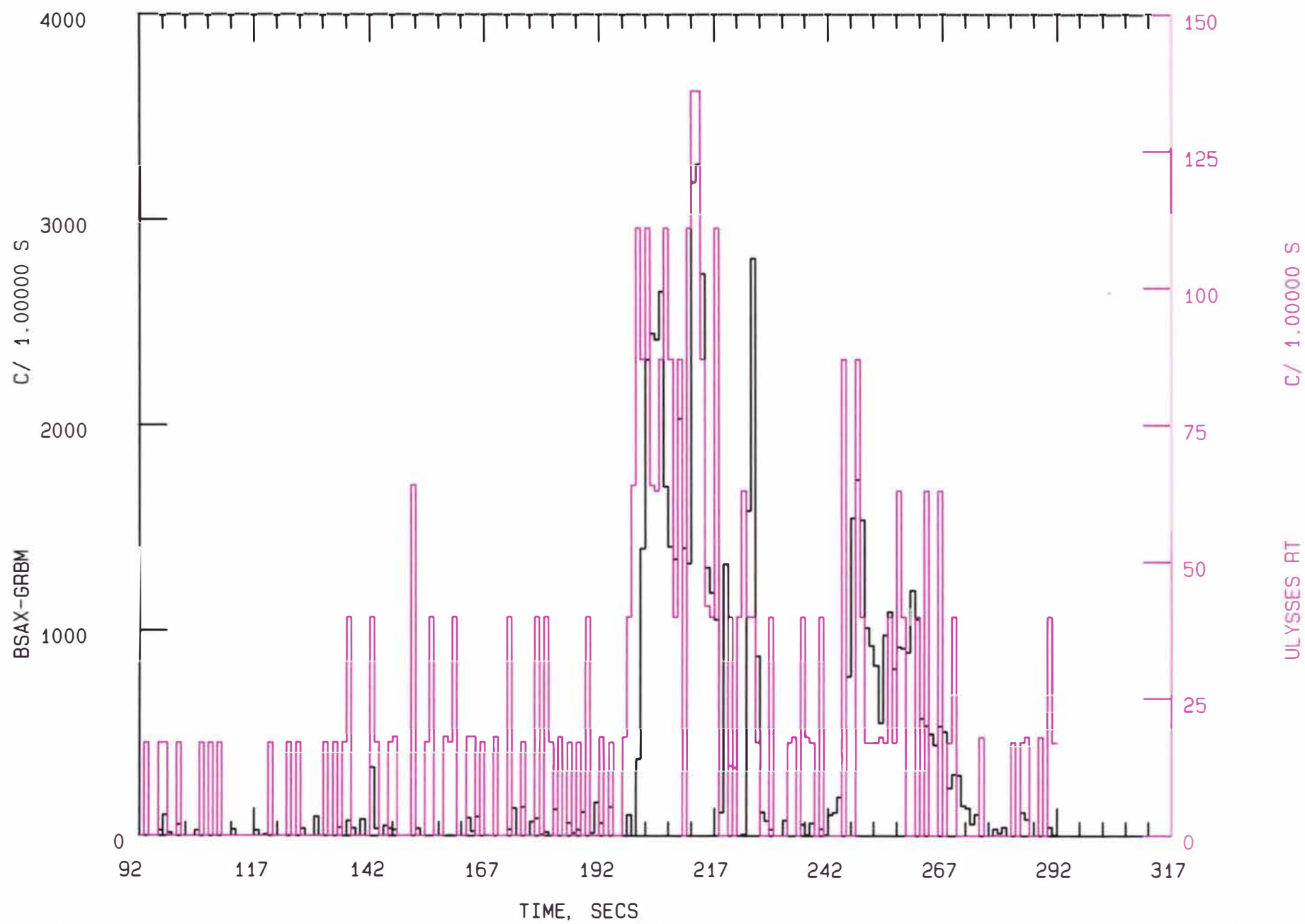
2 KONUS1

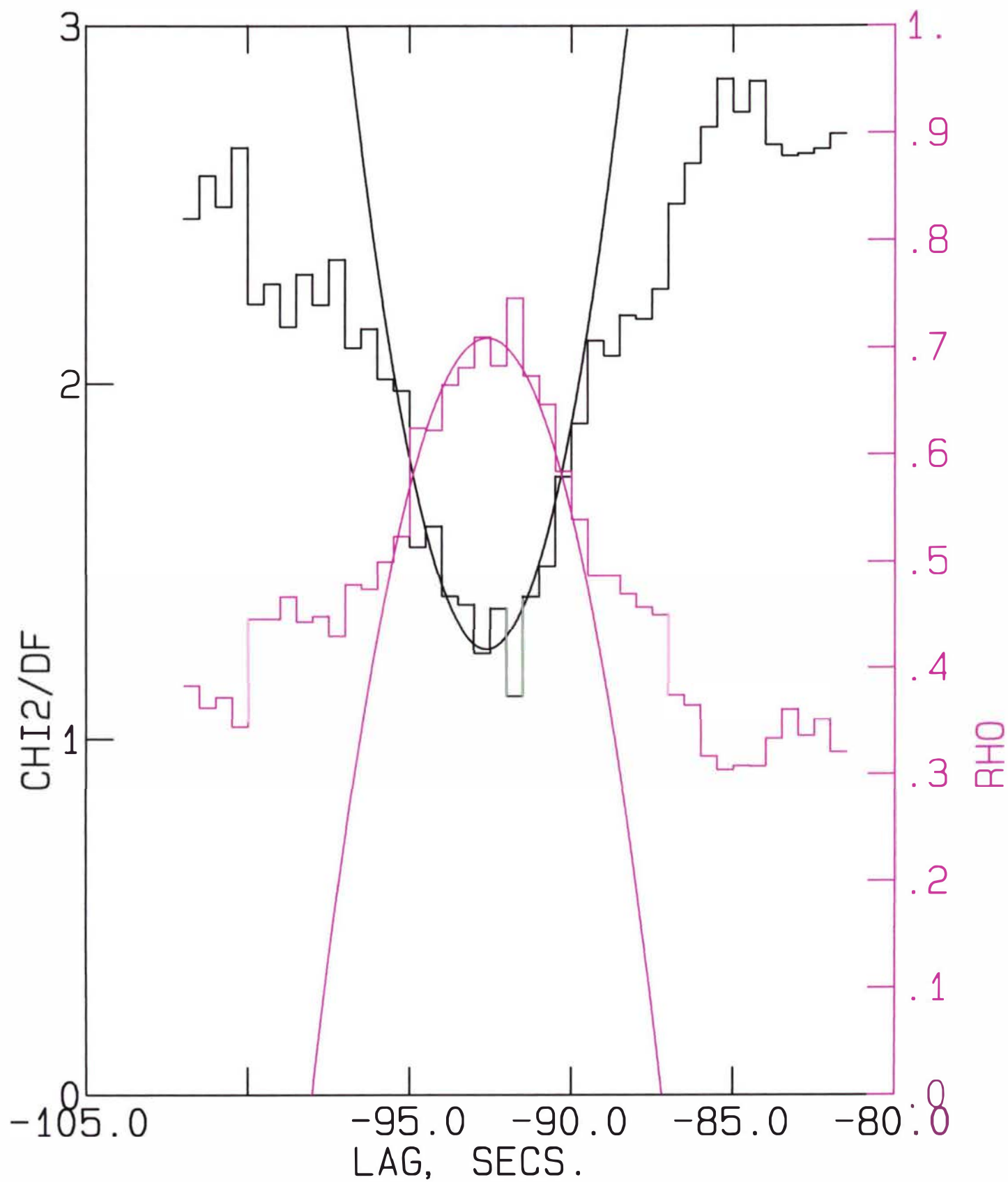
3 SAX

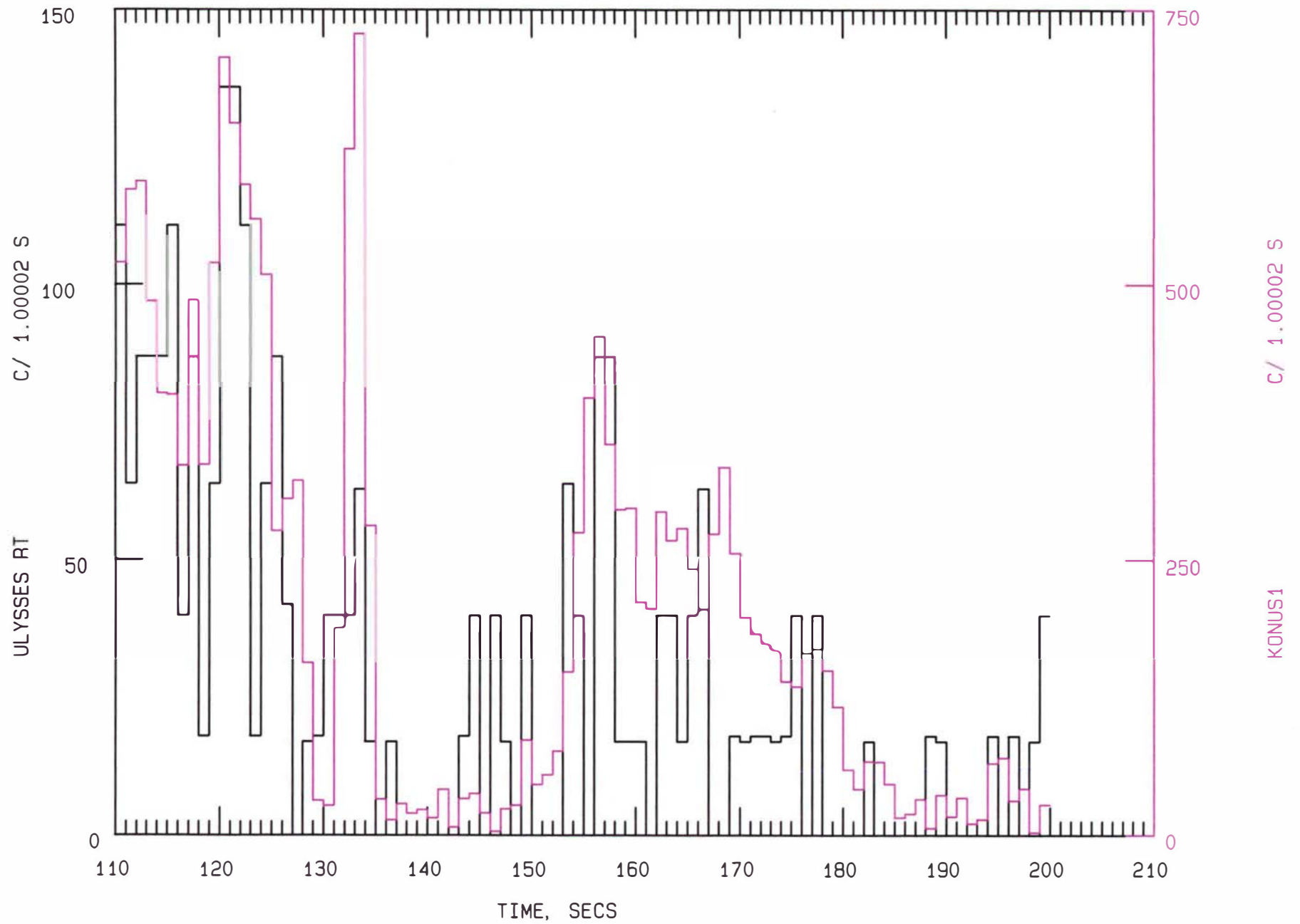
EVENT OF SEP 22, 1996 5:03

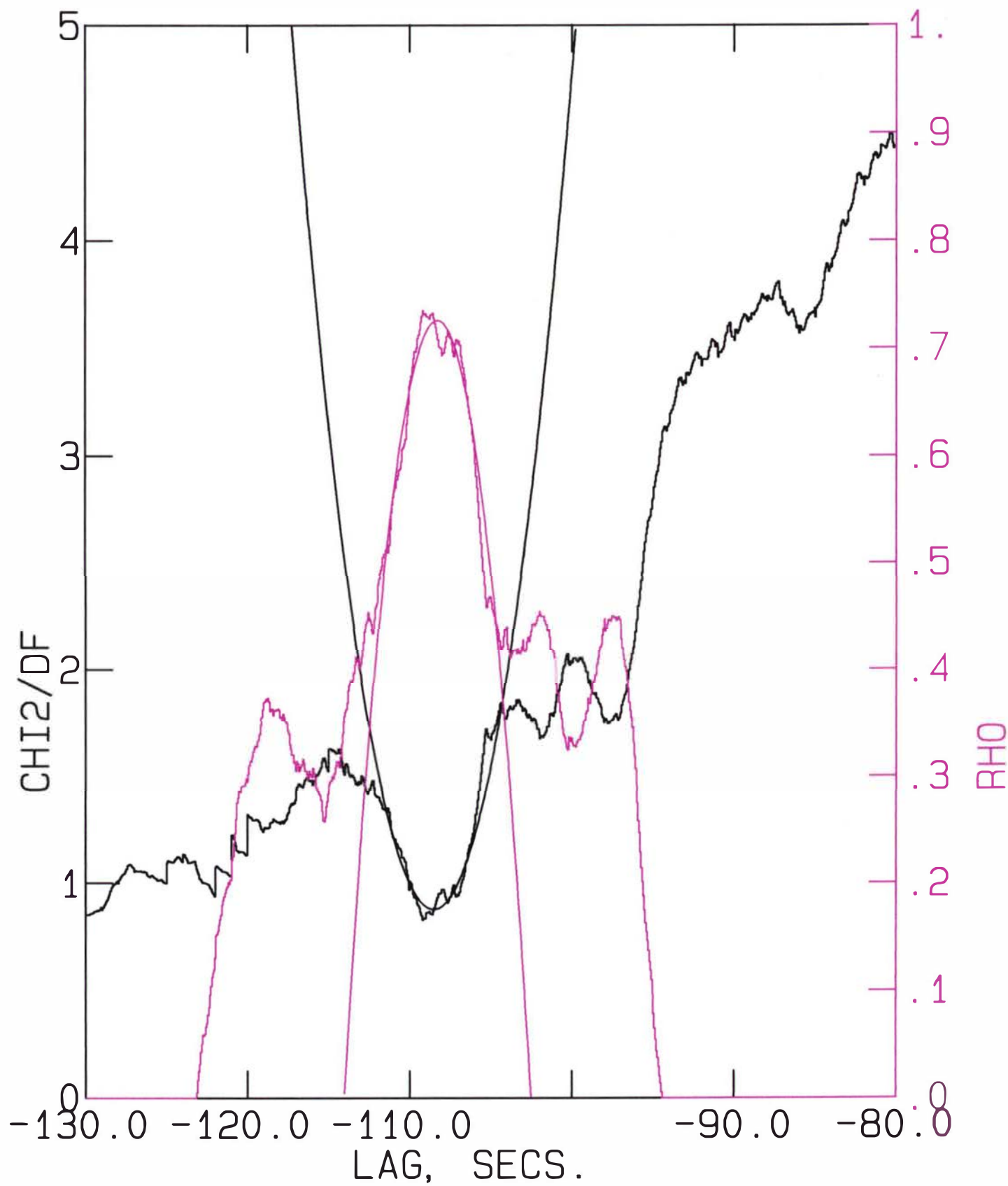
30 / 9 / 9





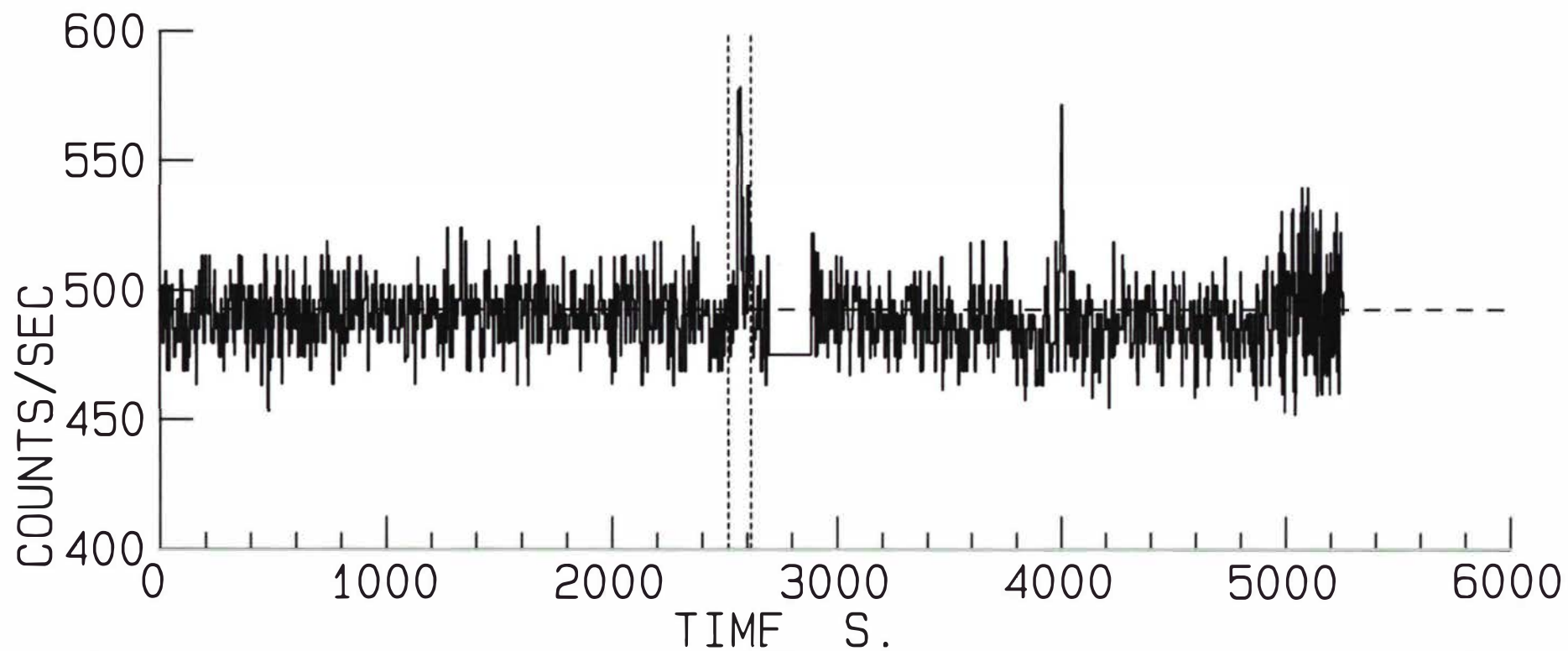






ULYSSES RT
22/ 9/96 15732.451 s
INTERVALS REGROUPED BY 8
21- 145 keV

30 / 9 / 9



KONUS

22/09/96 18314.420

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/1.471 S

3200

2200

1200

200

DETECTOR 1 - S. ECLIPHTIC

24/01/07

2nd SAX burst
↑

500 1000 1500 2000
TIME, SECS

KONUS

22/09/96 18314.420

10- 50 keV

50- 200 keV 200- 750 keV

COUNTS/1.471 S

3200

2200

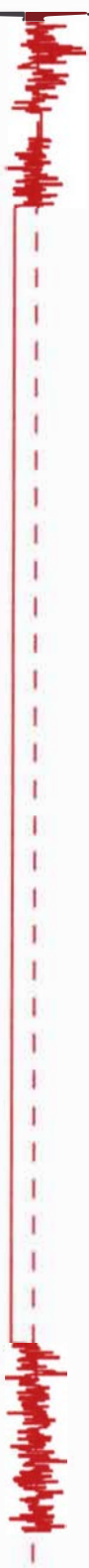
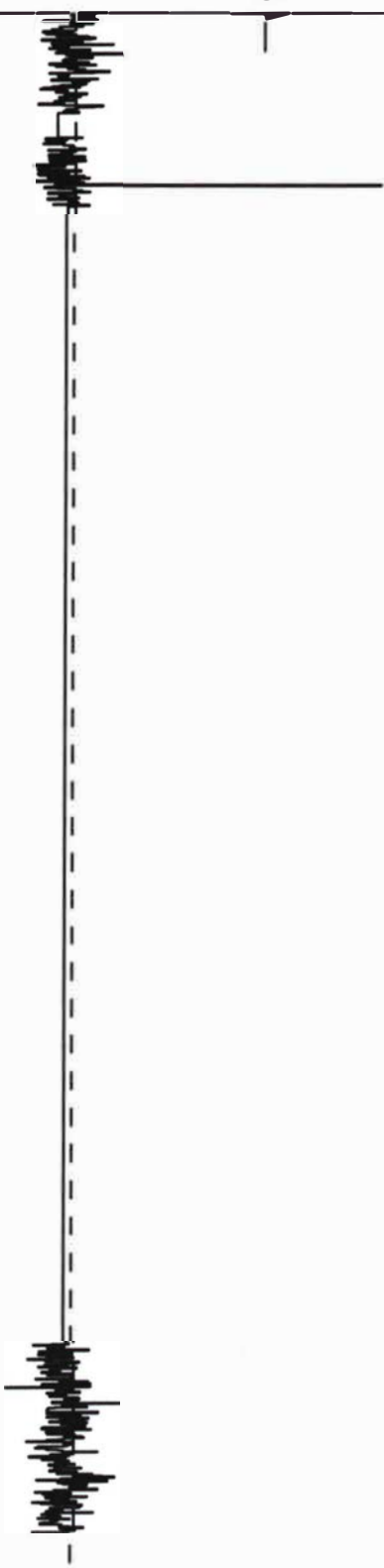
1200

200

DETECTOR 2 - N. ECLIPHTIC

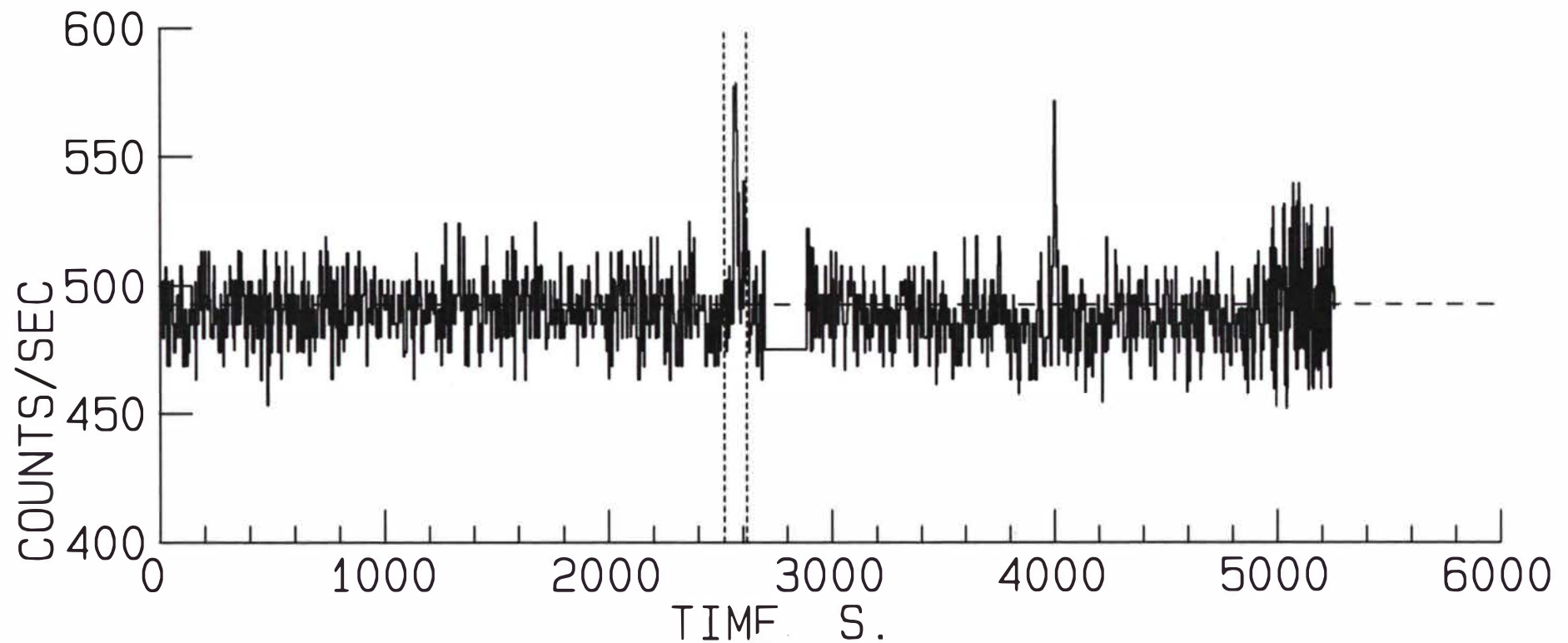
24/01/07

500 1000 1500 2000
TIME, SECS



ULYSSES RT
22/ 9/96 15732.451 s
INTERVALS REGROUPED BY 8
21- 145 keV

25 / 1 / 7



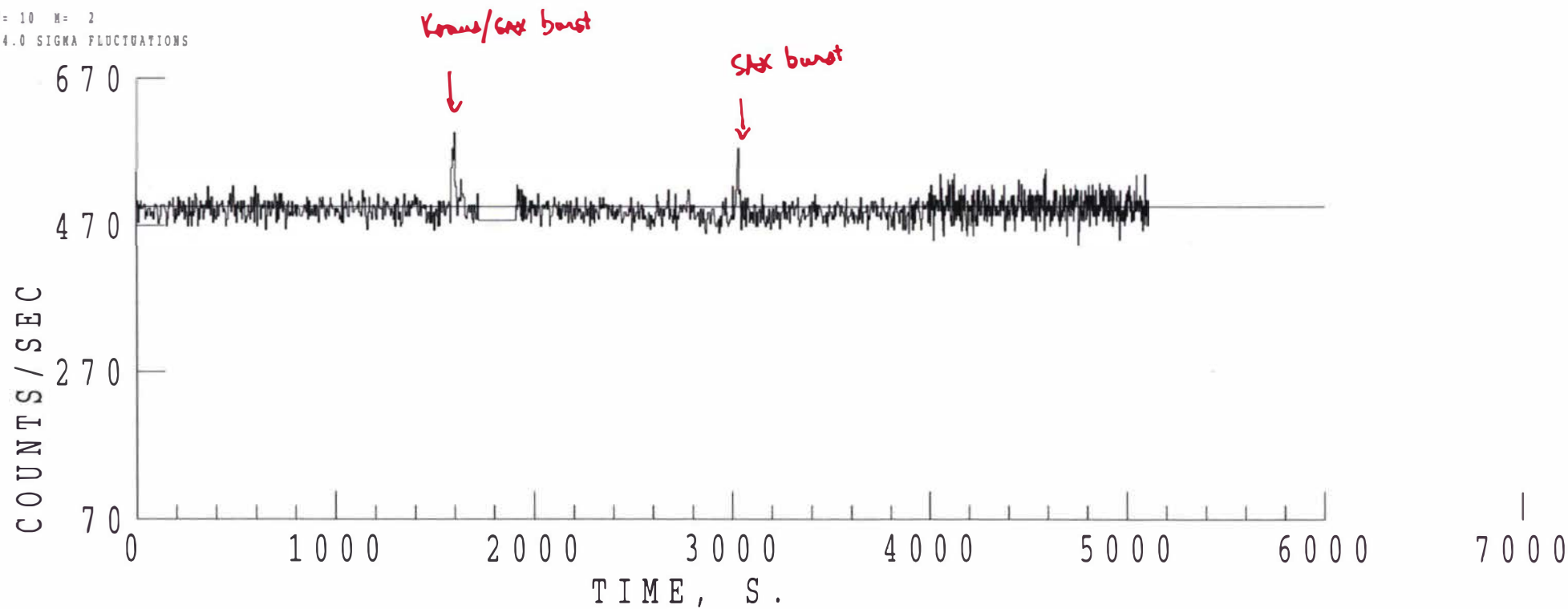
~~Sax~~
HUS DATA

19 / 07 / 05

ULYSSES RT
22 / 09 / 96 16704.465 s
INTERVALS REGROUPED BY 9
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

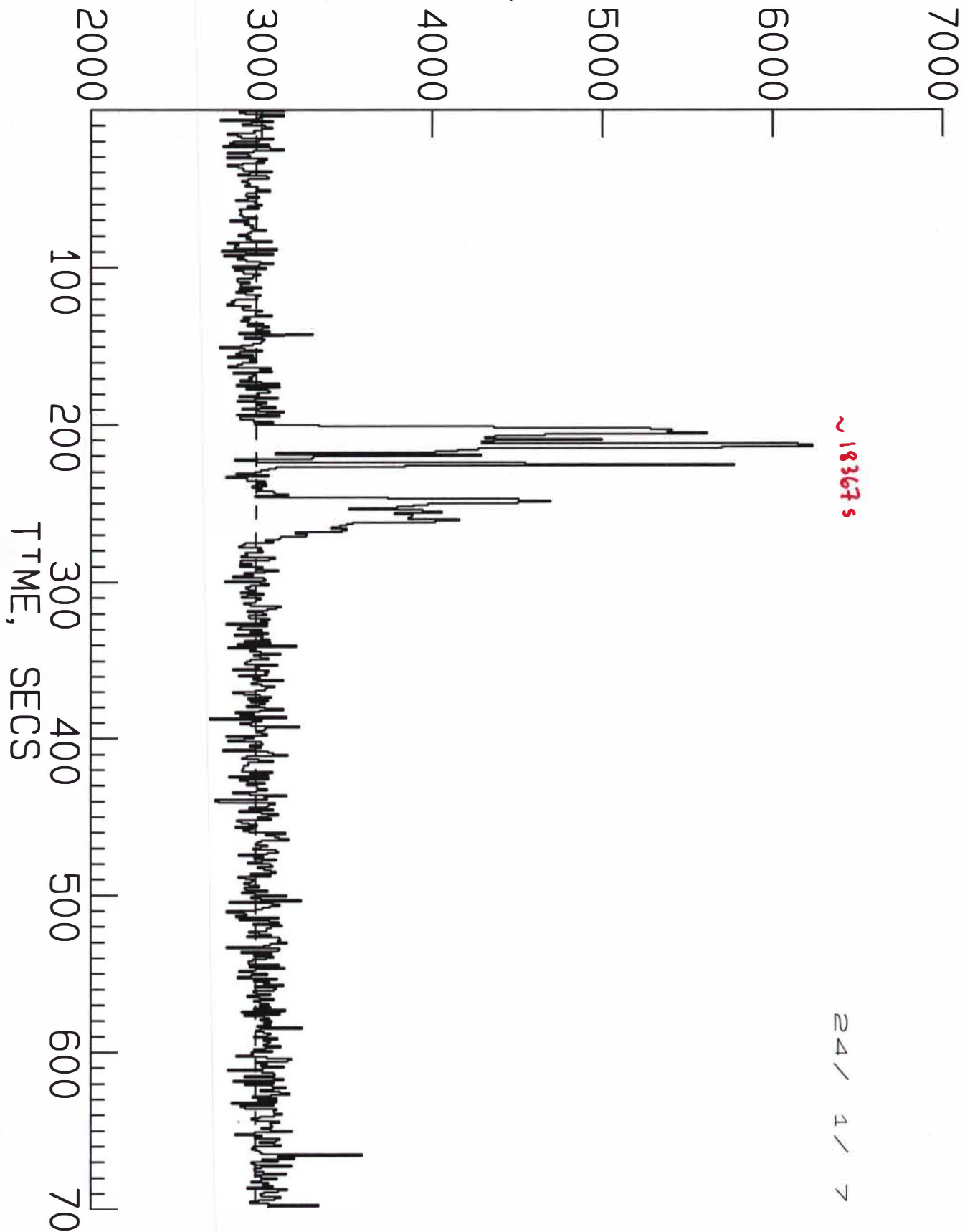


SAX GRBM

22/09/96 18167.810

40- 700 keV

COUNTS/1.000 S



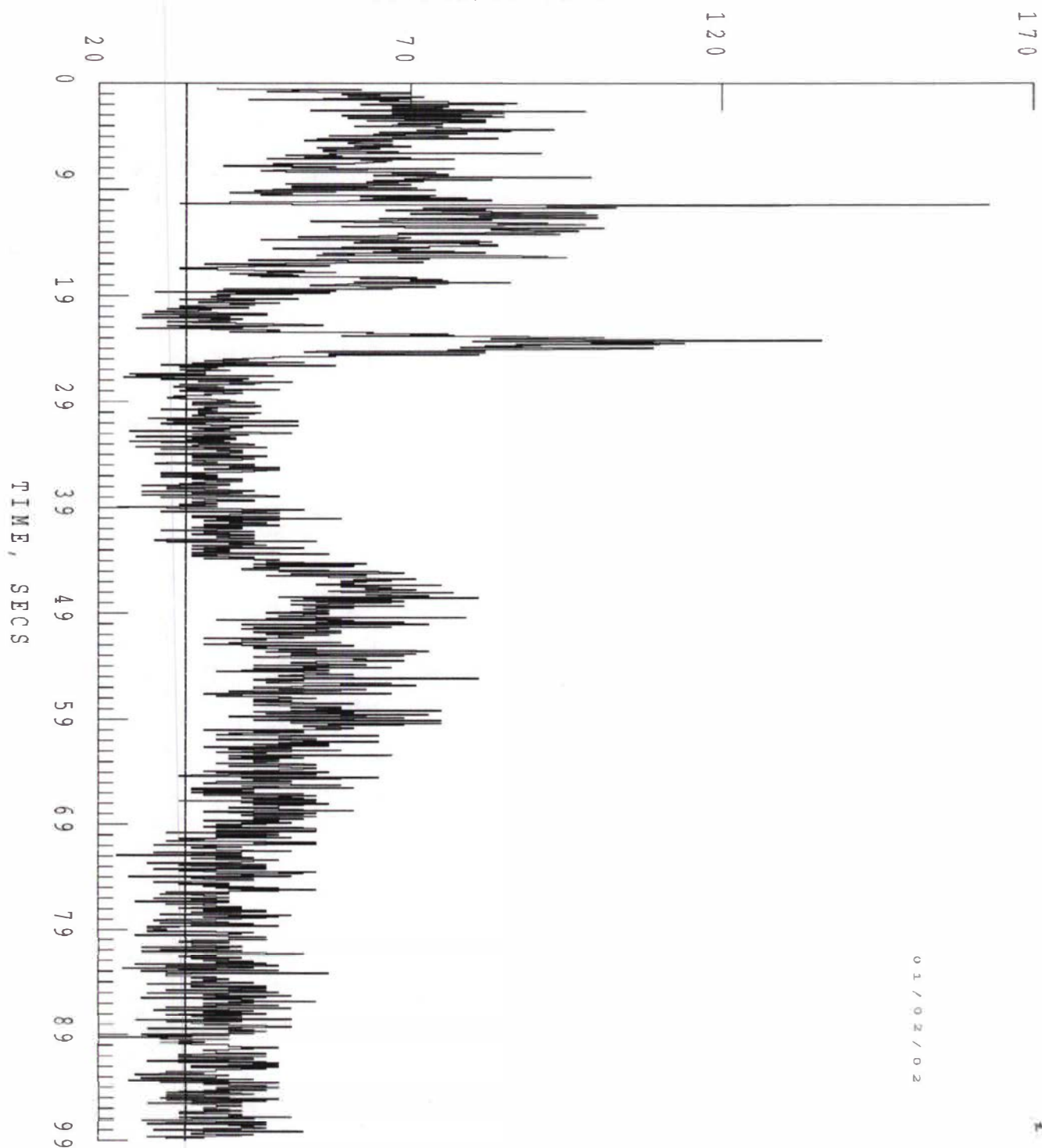
KONUS1

22/09/96

18368.358

50 - 200 keV

COUNTS/0.064 S



01/02/02

Date: Jan 25 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☐ Konus ecliptic latitude used with latest calibration? *N/A*

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 *N/A*

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

3. For INTEGRAL events

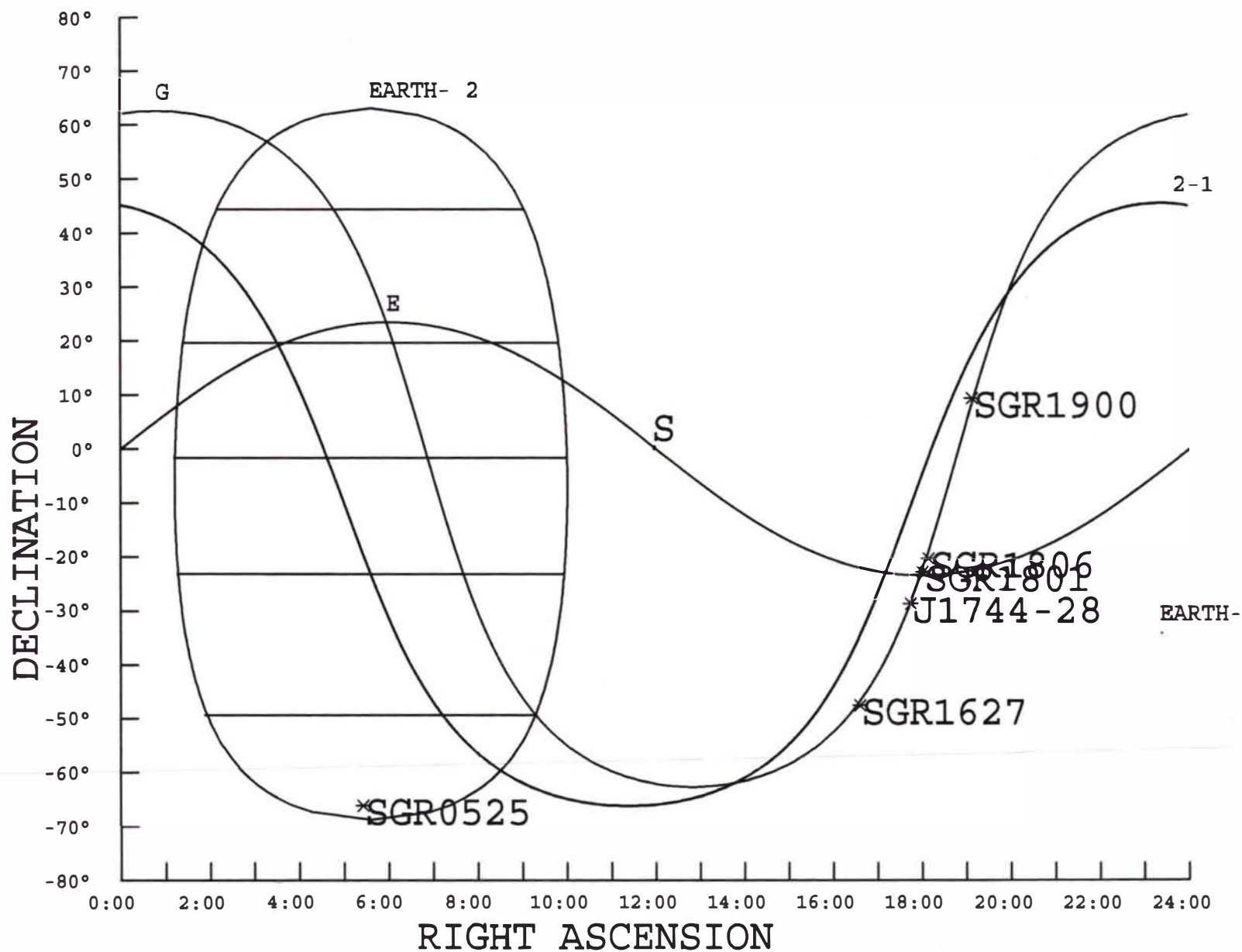
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

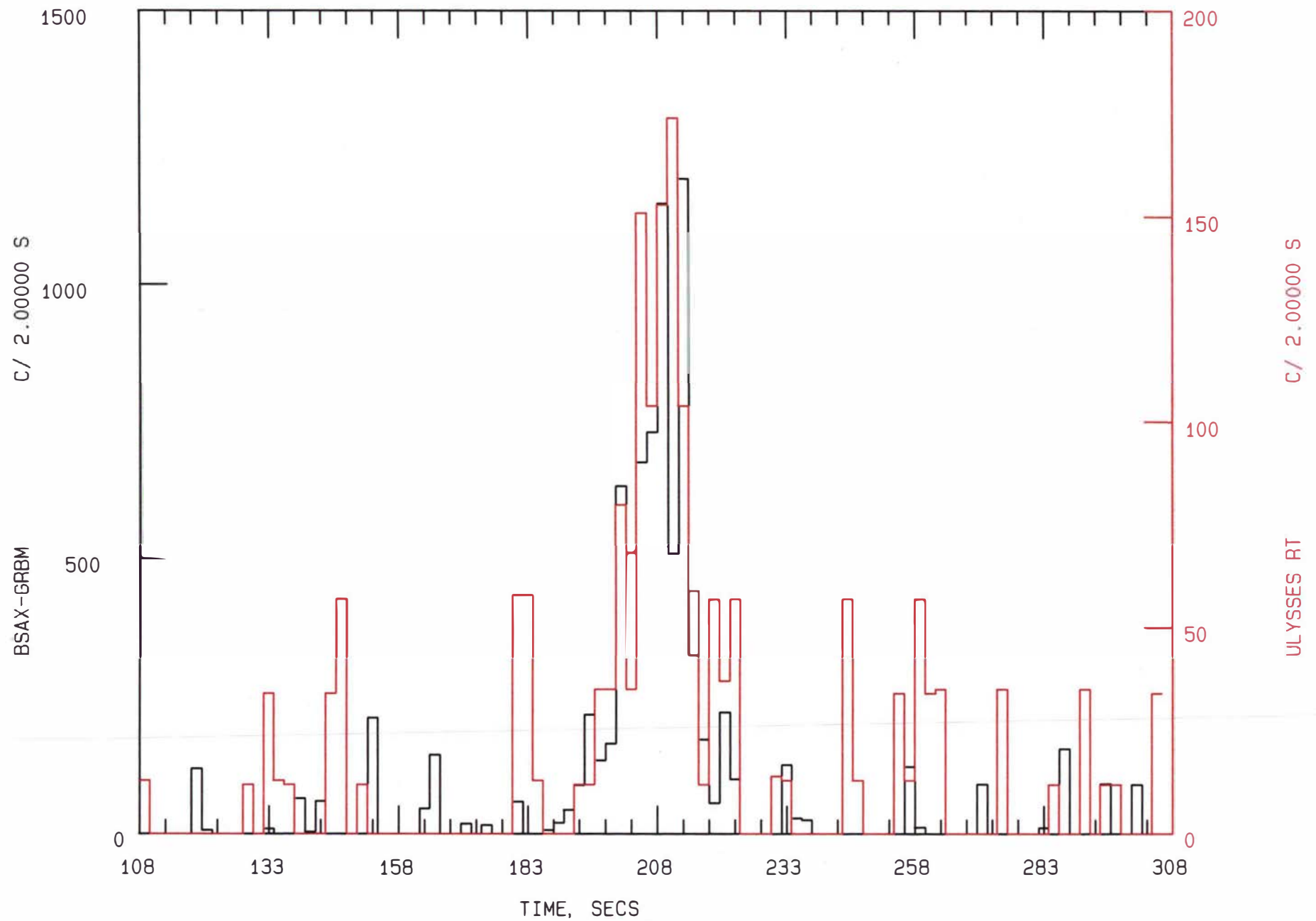
-
- ☒ ACCESS and MBL4 databases updated?

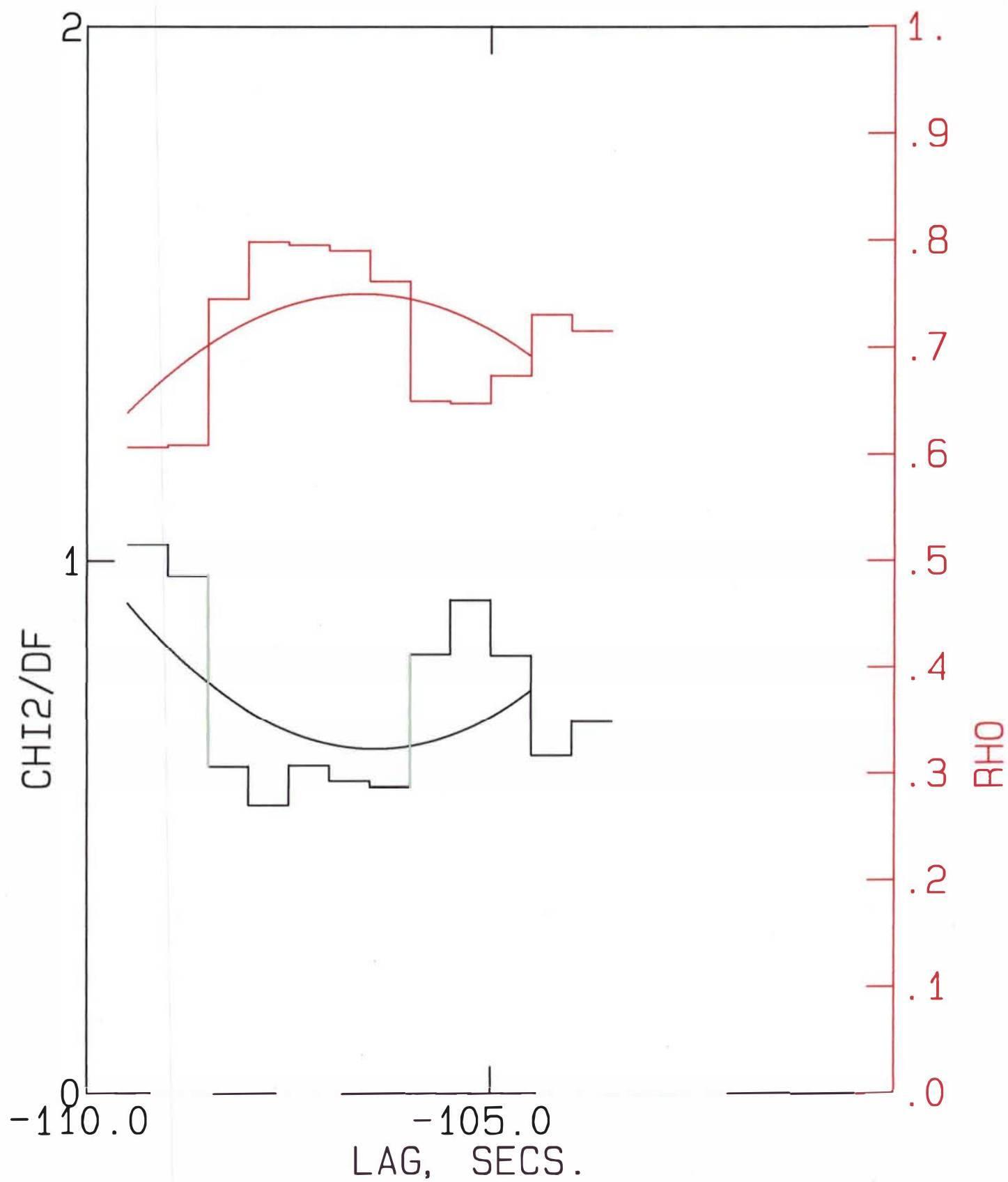
EVENT OF SEP 22, 1996 5:27

25/ 1/ 7

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

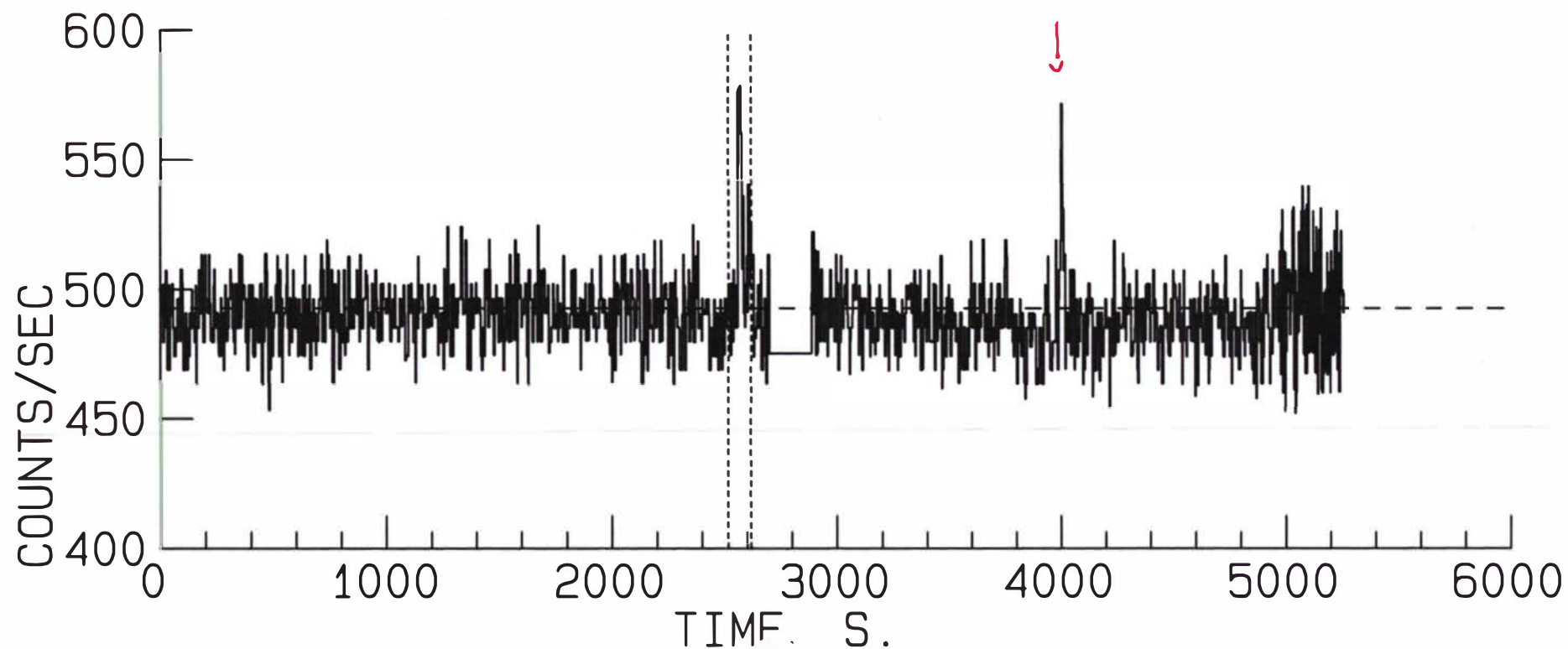






ULYSSES RT
22/ 9/96 15732.451 s
INTERVALS REGROUPED BY 8
21- 145 keV

25 / 1 / 7

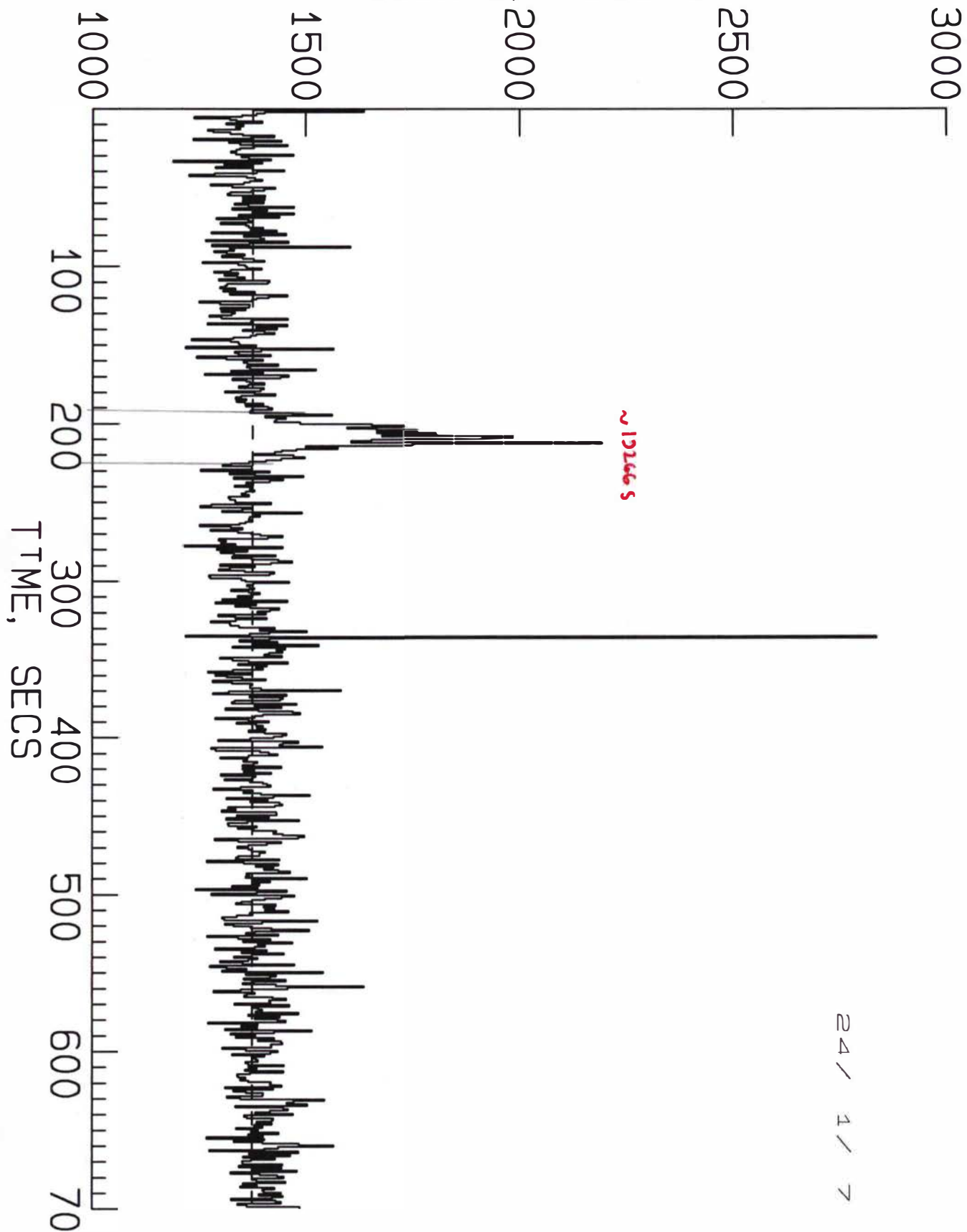


SAX GRBM

22/09/96 19066.810

40- 700 keV

COUNTS/1.000 S



KONUS1 19960922 18368

ULYSSES RT

01 / 02 / 02

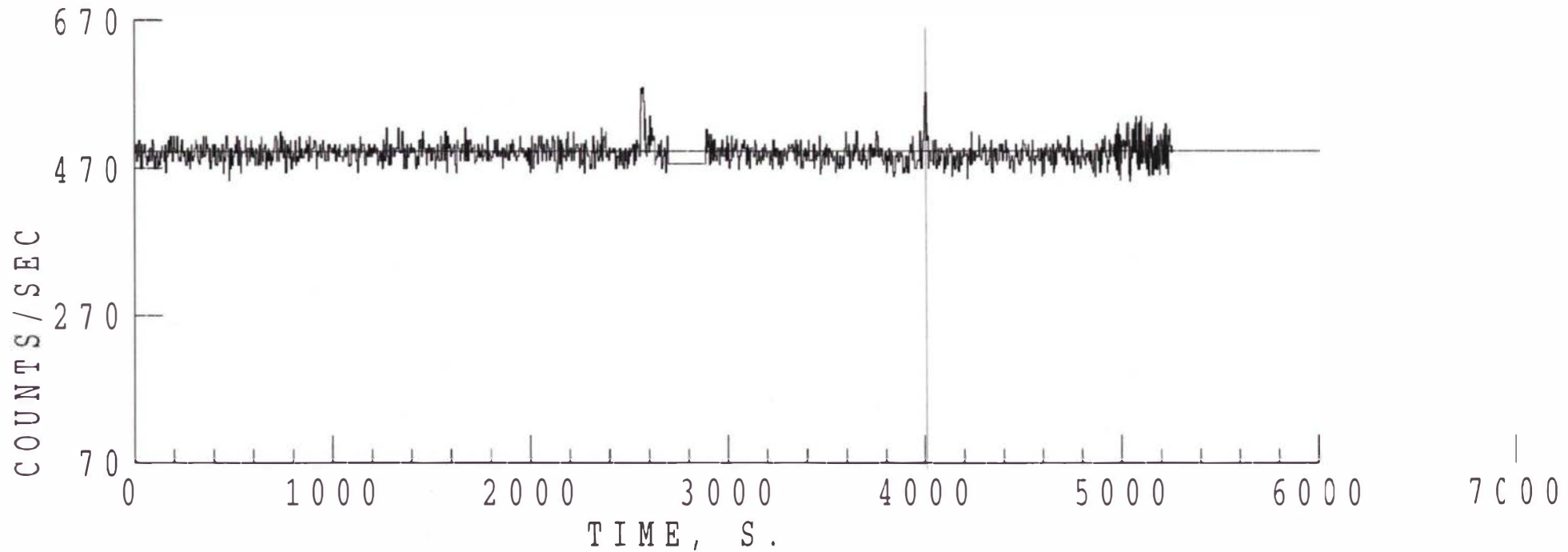
22 / 09 / 96 15732.451 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From BUTTERWORTH@lheavx.gsfc.nasa.gov Wed Sep 25 11:16 PDT 1996
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Wed, 25 Sep 1996 14:15:21 -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 event on 960922 was not detected by Konus

Hi Everyone,

Konus didn't trigger near this event, nor are there any indications of a GRB in the waiting-mode data (accumulated every 1.5 seconds). There was a loss of telemetry covering the period from 23:45:46 to 23:46:16.

Paul.

Date: Wed, 25 Sep 1996 08:16:58 -0700
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199609251516.IAA07060@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, bonnard@lheamail.gsfc.nasa.gov,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it
Subject: GRB960922
X-Sun-Charset: US-ASCII

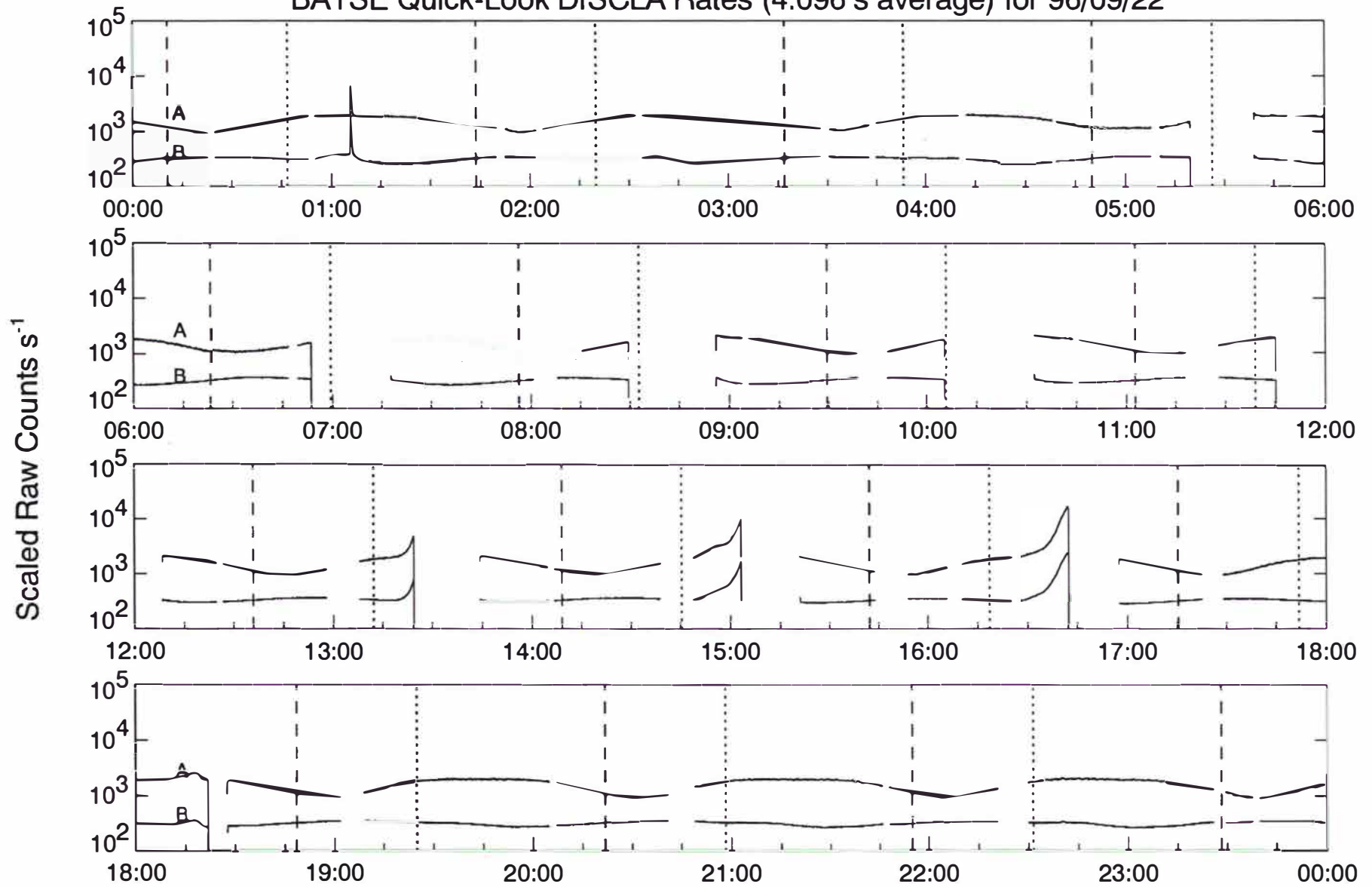
ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses observed a weak, 32 ms long burst September 22 1996 at 23:35 Ulysses time. The spacecraft was about 2575 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 96/09/22



Current Time: 96/09/24, 1003 EDT

A: Channel 0 Most Sunward LAD

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

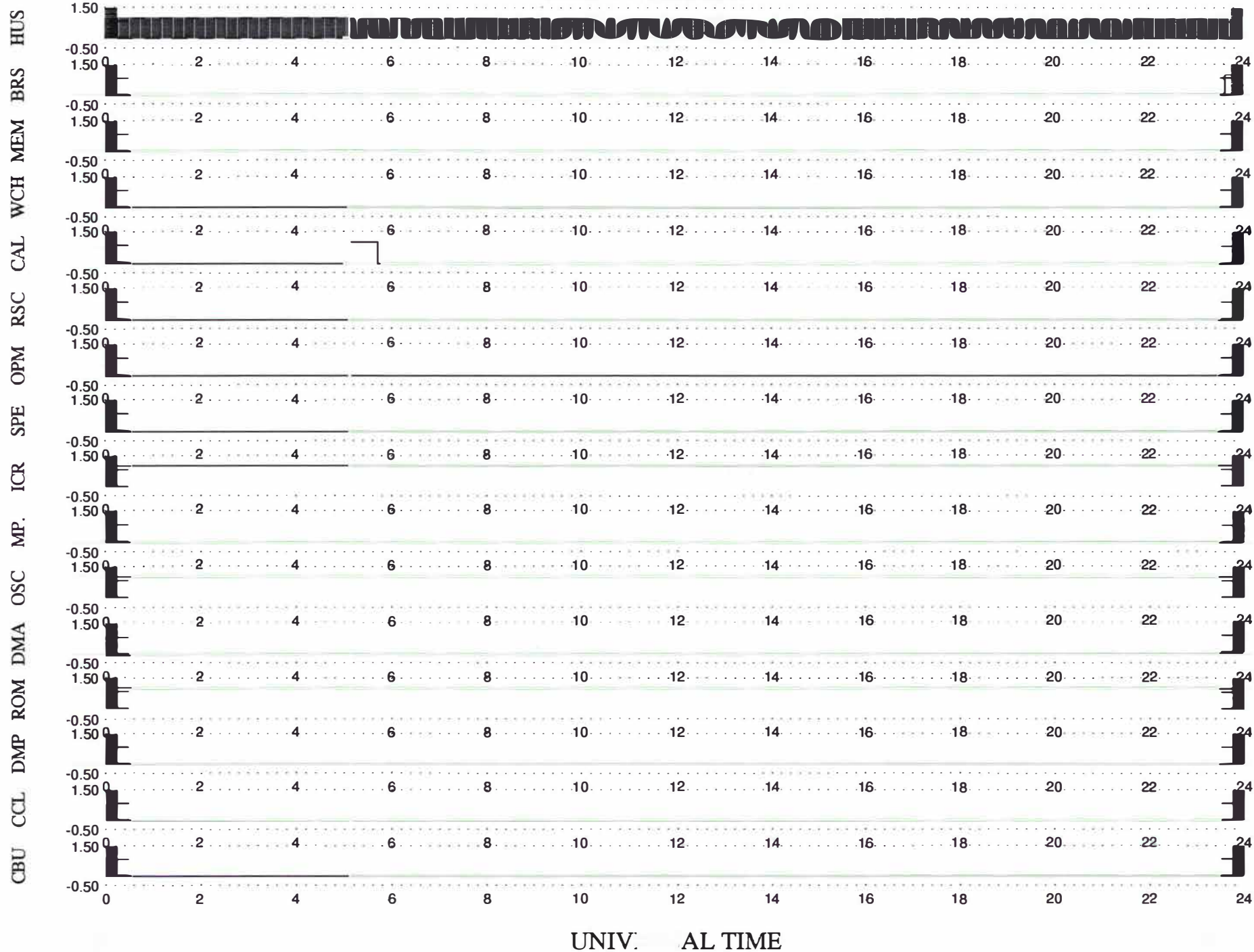
Dotted line: Day entry

Dashed line: Night entry

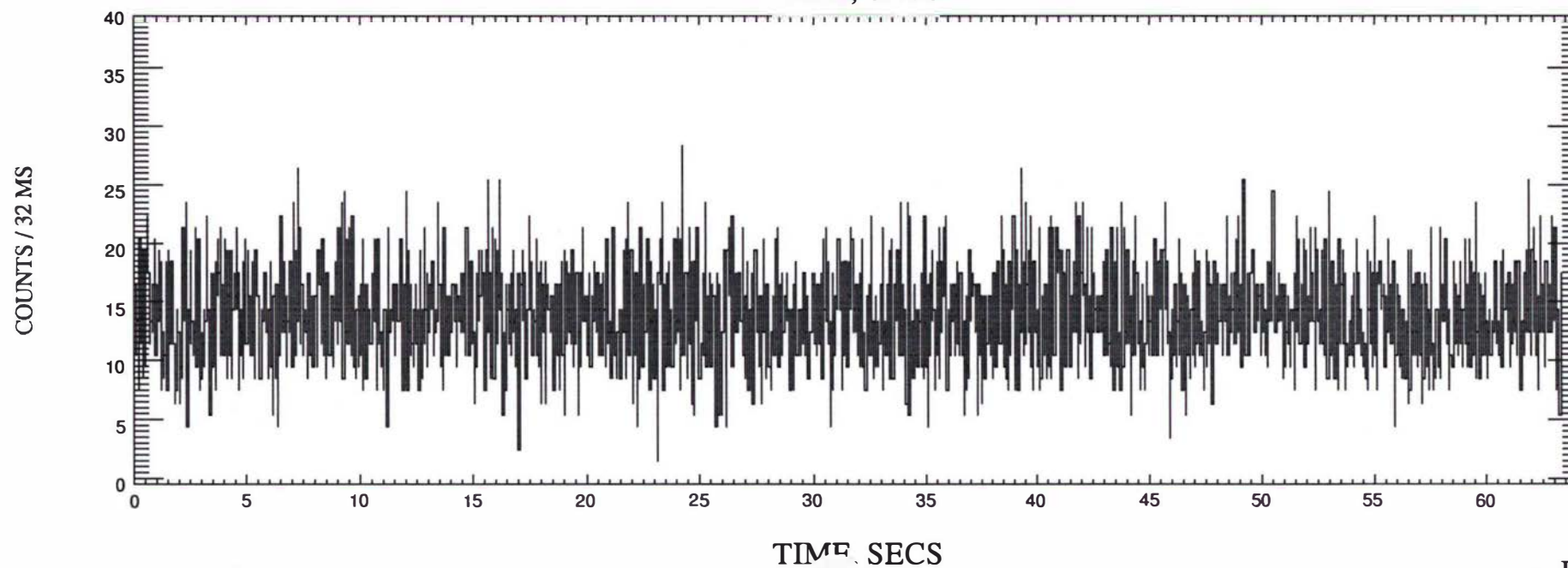
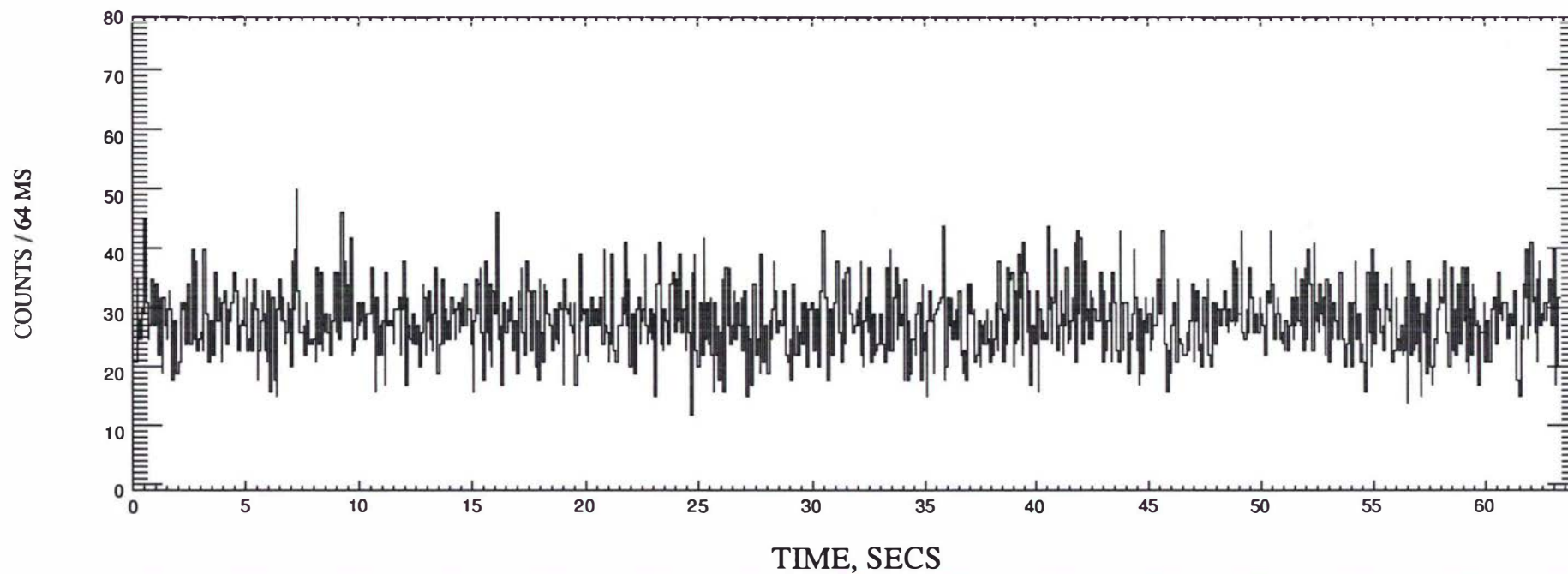
* Solar Burst Trigger

+ Solar Flare

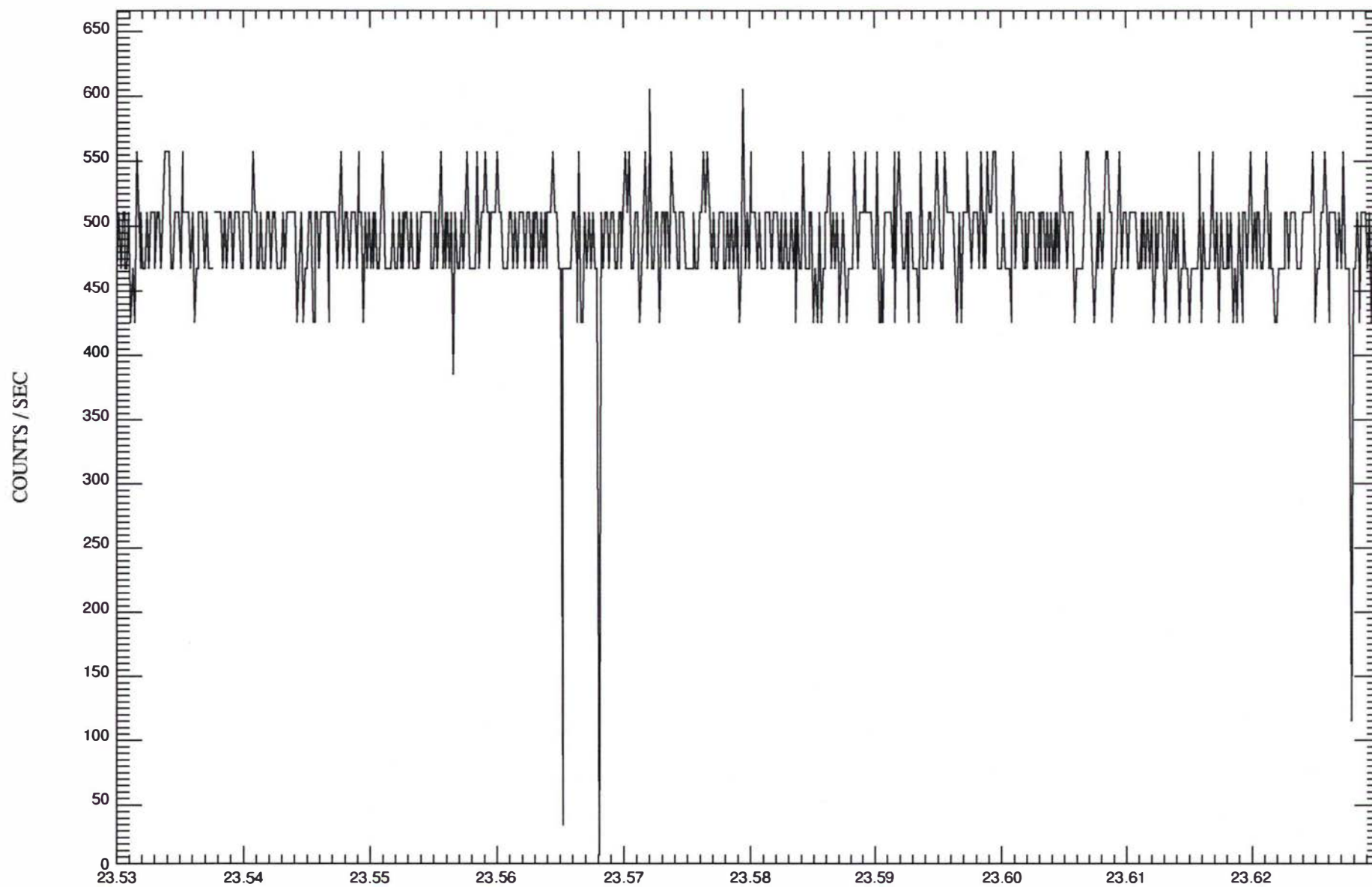
BURST NUMBER 2



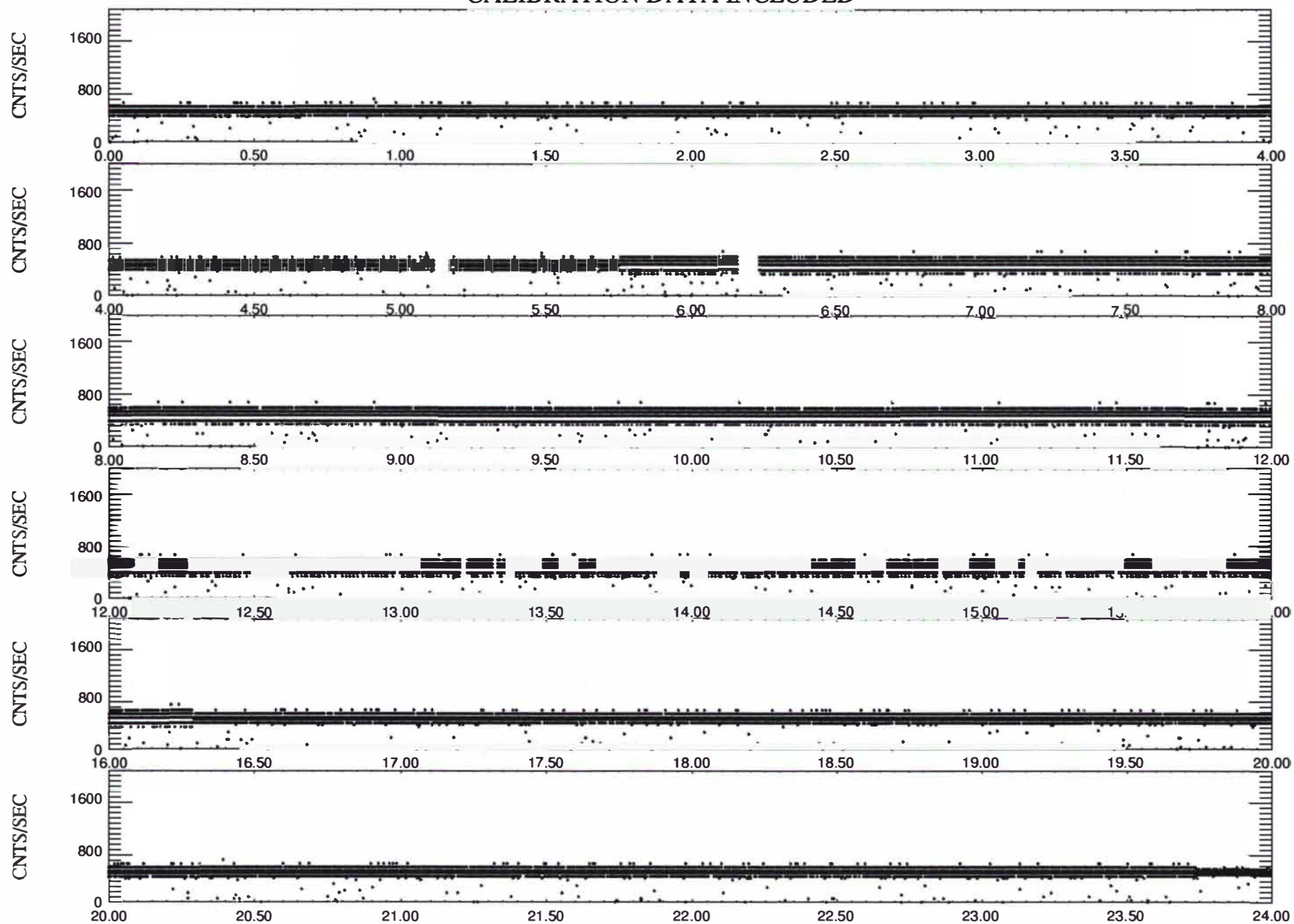
Burst Counter 2 at UT=23.579671677483 h=84886.818 s 23:34:46.818



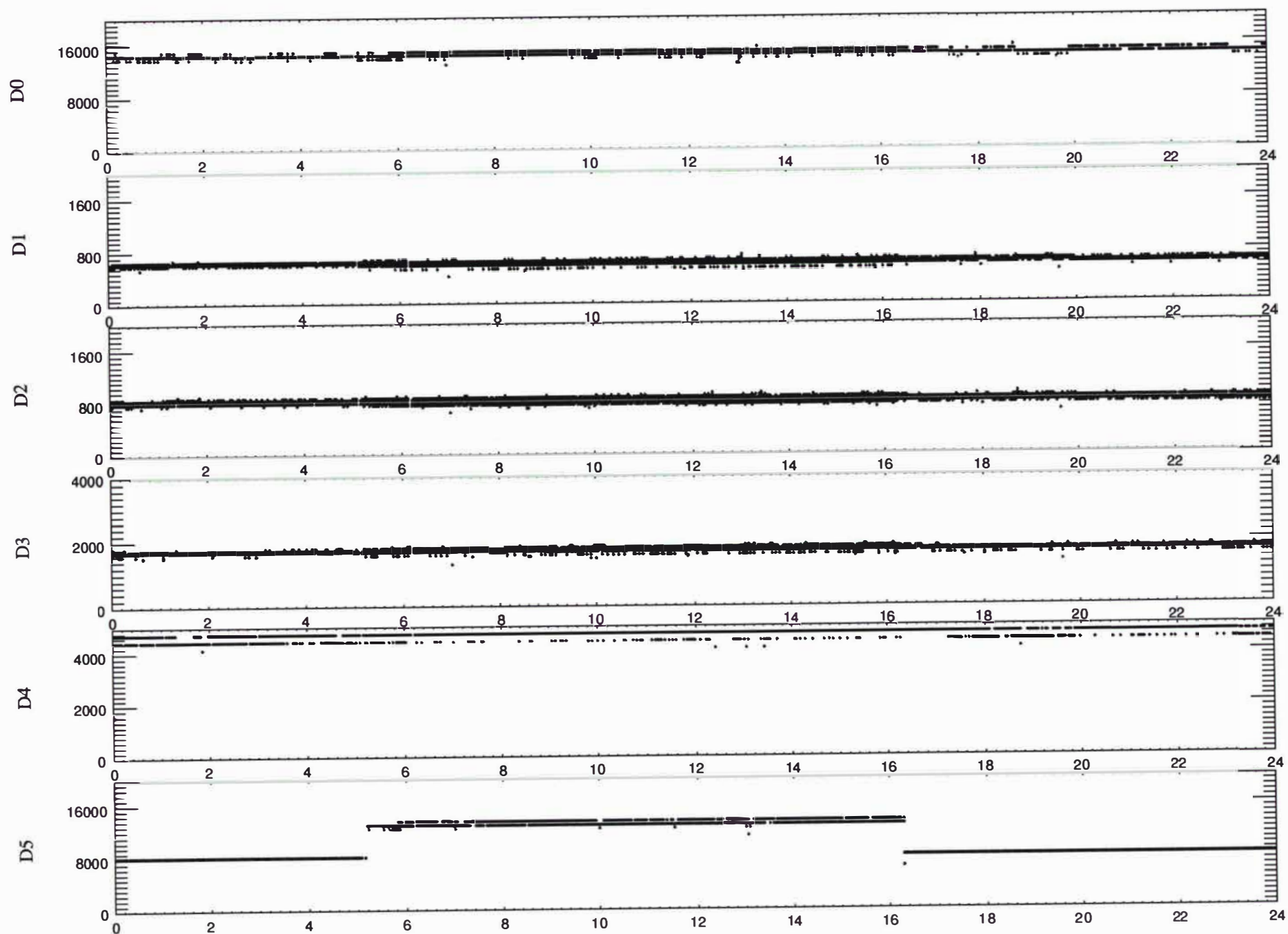
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV' AL TIME

From WOODSP@ssl.msfc.nasa.gov Wed Sep 25 13:33 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 25 Sep 1996 15:32:57 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5610

BATSEARCH PROGRAM

BATSE BURST # 5610
EVENT OF 1996 SEP 23 DAY OF YEAR=267
EVENT CROSSING TIME AT BATSE : 2297. S. OR 00:38:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 256.000 57.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 9/ 96 IS:
RA= 170.342 DEC= 34.212 DIST= 5.147 AU
BATSE-ULYSSES DISTANCE = 769998951. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.37 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1298.73 SECS.
CROSSING TIME AT ULYSSES IS 998. S. OR 00:16:38 +/- 414.99 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 9/ 96 IS:
RA= 130.881 DEC= 19.297 DIST= 1.995 AU
MARS-BATSE DISTANCE = 298444416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 18.48 SECS.
CROSSING TIME AT MARS IS 2315. S. OR 00:38:35 +/- 173.09 SECONDS

BATSE BURST TRIGGER

NO.: 5610

TIME: TJD=0349 SECONDS=2297

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=46.6 AZIMUTH=51.6 ERROR=2.7 DEGREES

COMMENTS:

GRB LASTING ~ 100 SEC. MULTIPLE PEAKS WITH AN ABRUPT END TO THE EMISSION.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5610	960923	10349	02297	2500	256	+57	100

BATSE #

5610

26 / 9 / 96

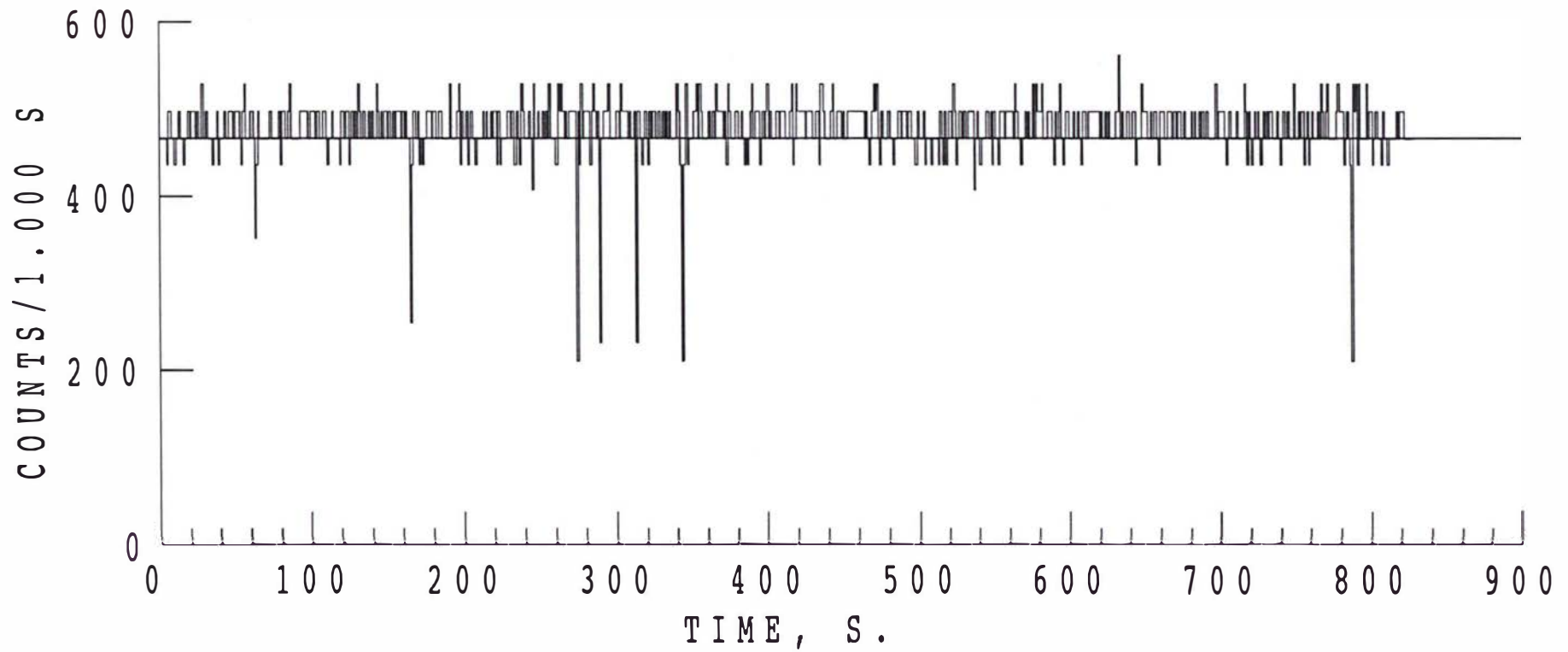
ULYSSES RT

23 / 9 / 96 576.858 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLLES.MSFC.NASA.GOV Wed Sep 25 13:39 PDT 1996
Date: Wed, 25 Sep 1996 15:38:28 -0500 (CDT)
From: WOODSP@ssl.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
"LHEAVX::CLINE"@ssl.msfc.nasa.gov,
"LHEAVX::BARTHELMY"@ssl.msfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 5611

TIME: TJD=0349 SECONDS=17704

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From WOODSP@ssl.msfc.nasa.gov Wed Sep 25 13:34 PDT 1996
From: WOODSP@ssl.msfc.nasa.gov
Date: Wed, 25 Sep 1996 15:34:17 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5612

BATSEARCH PROGRAM

BATSE BURST # 5612
EVENT OF 1996 SEP 23 DAY OF YEAR=267
EVENT CROSSING TIME AT BATSE : 71205. S. OR 19:46:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 88.000 20.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 23/ 9/ 96 IS:
RA= 170.488 DEC= 34.134 DIST= 5.145 AU
BATSE-ULYSSES DISTANCE = 769751062. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -753.86 SECS.
CROSSING TIME AT ULYSSES IS 70451. S. OR 19:34:11 +/- 464.68 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 23/ 9/ 96 IS:
RA= 130.881 DEC= 19.297 DIST= 1.995 AU
MARS-BATSE DISTANCE = 298444416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=139.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -759.49 SECS.
CROSSING TIME AT MARS IS 70446. S. OR 19:34:05 +/- 100.20 SECONDS

BATSE BURST TRIGGER

NO.: 5612

TIME: TJD=0349 SECONDS=71205

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

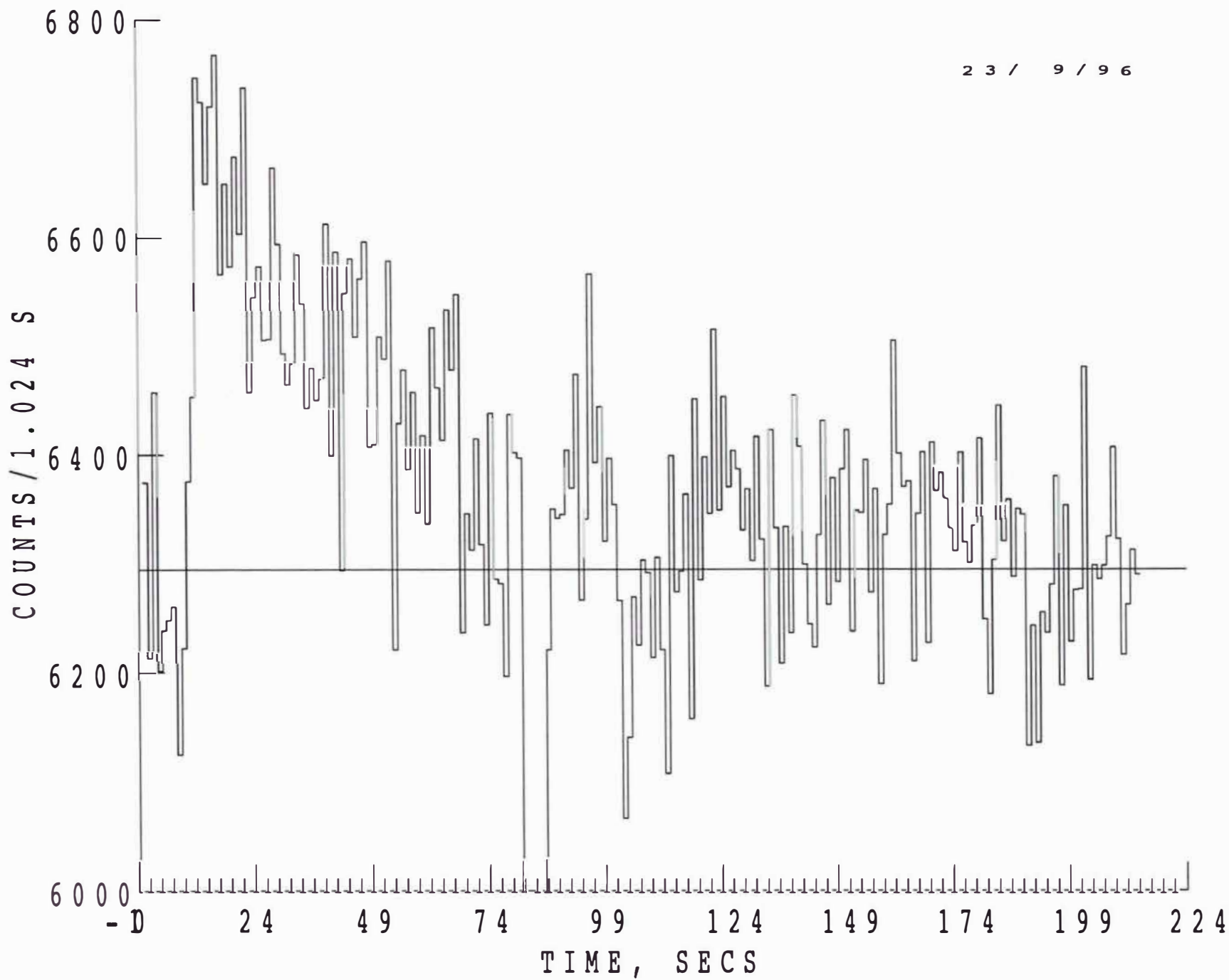
LOCATION: ZENITH=64.5 AZIMUTH=271.4 ERROR=4.0 DEGREES

COMMENTS:

GRB LASTING ~ 95 SEC. FRED WITH HARD SPECTRUM. VISIBLE ABOVE
300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5612	960923	10349	71205	2000	088	+20	95

BACODINE 5612 23/09/96 71193.289
25- 100 keV



BATSE #

5612

26 / 9 / 96

ULYSSES RT

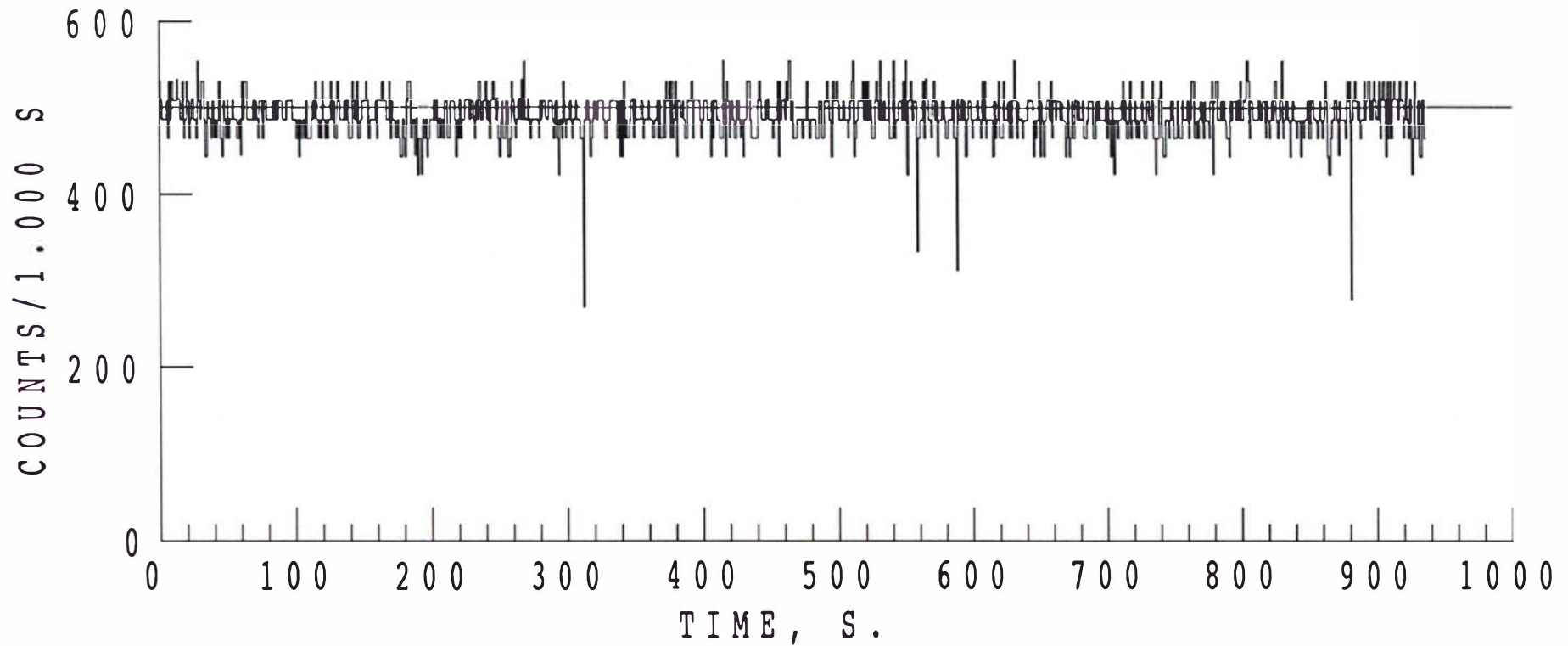
23 / 9 / 96 69984.242 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N = 10 M = 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@ssl.msfc.nasa.gov Thu Sep 26 09:37 PDT 1996
Date: Thu, 26 Sep 1996 11:36:19 -0500 (CDT)
From: RICHARDSON@SSLLES.MSFC.NASA.GOV
To: burst@comptel.sr.unh.edu, grobad@ests2.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.: 5613

TIME: TJD=0350 SECONDS=21051

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

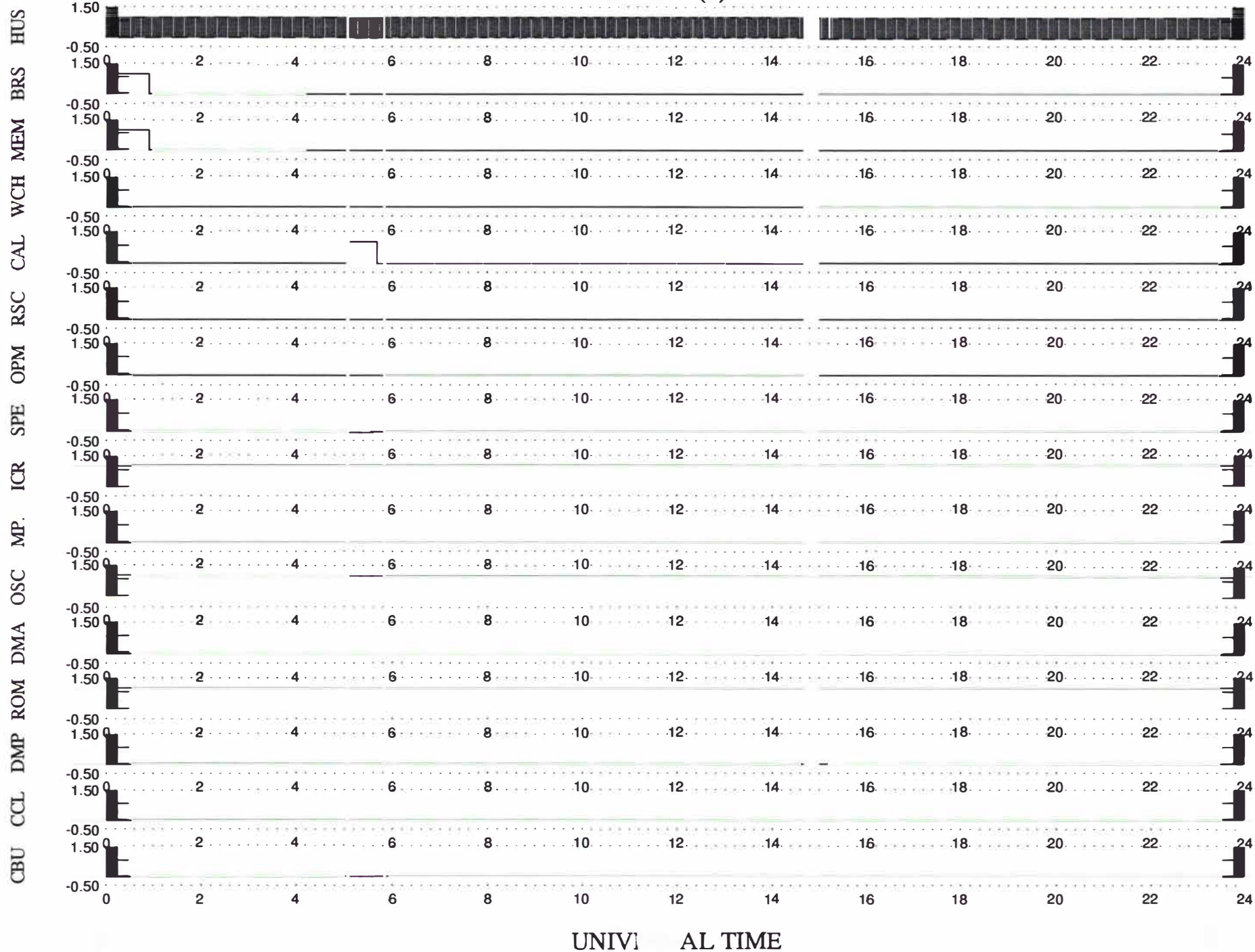
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

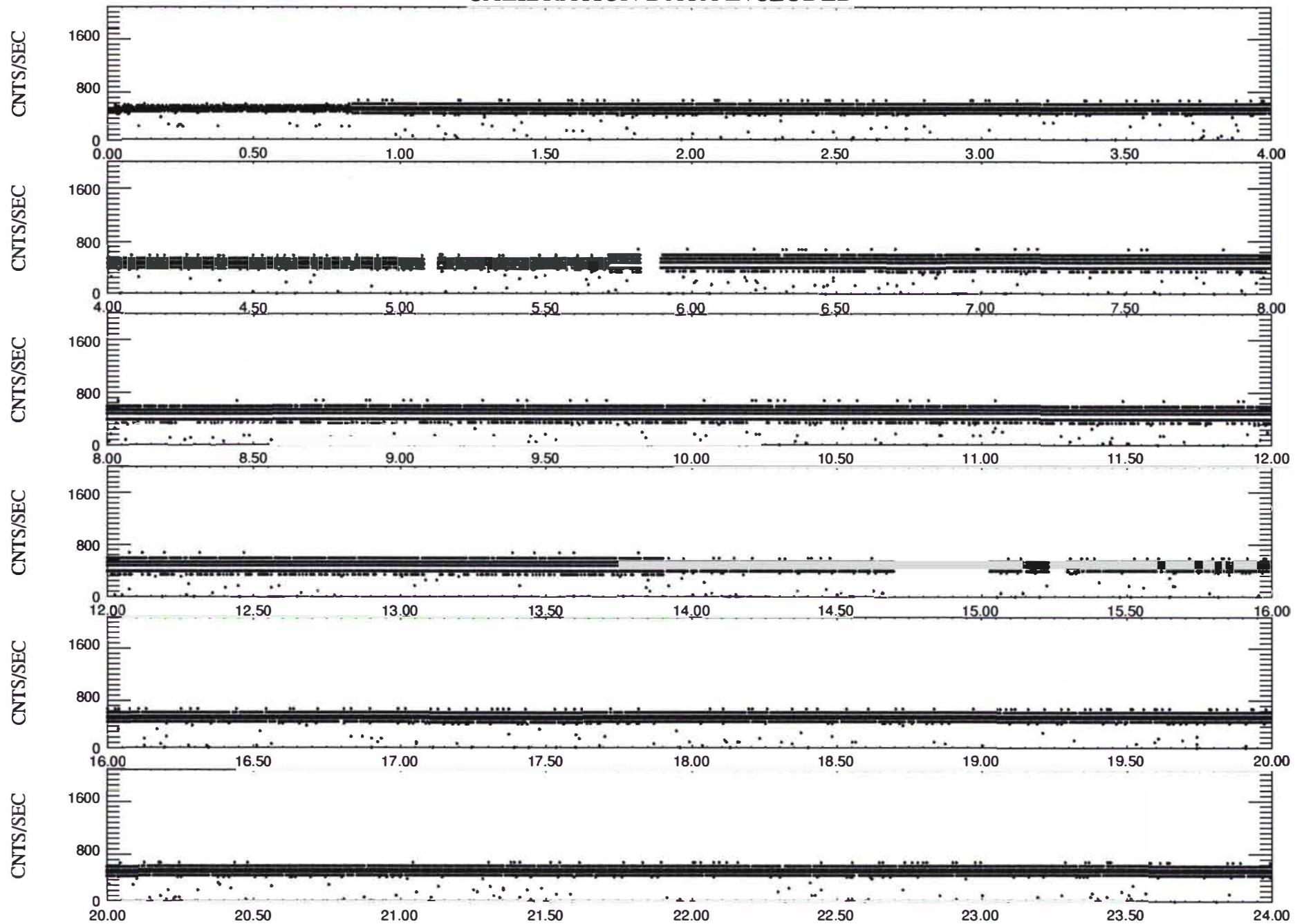
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

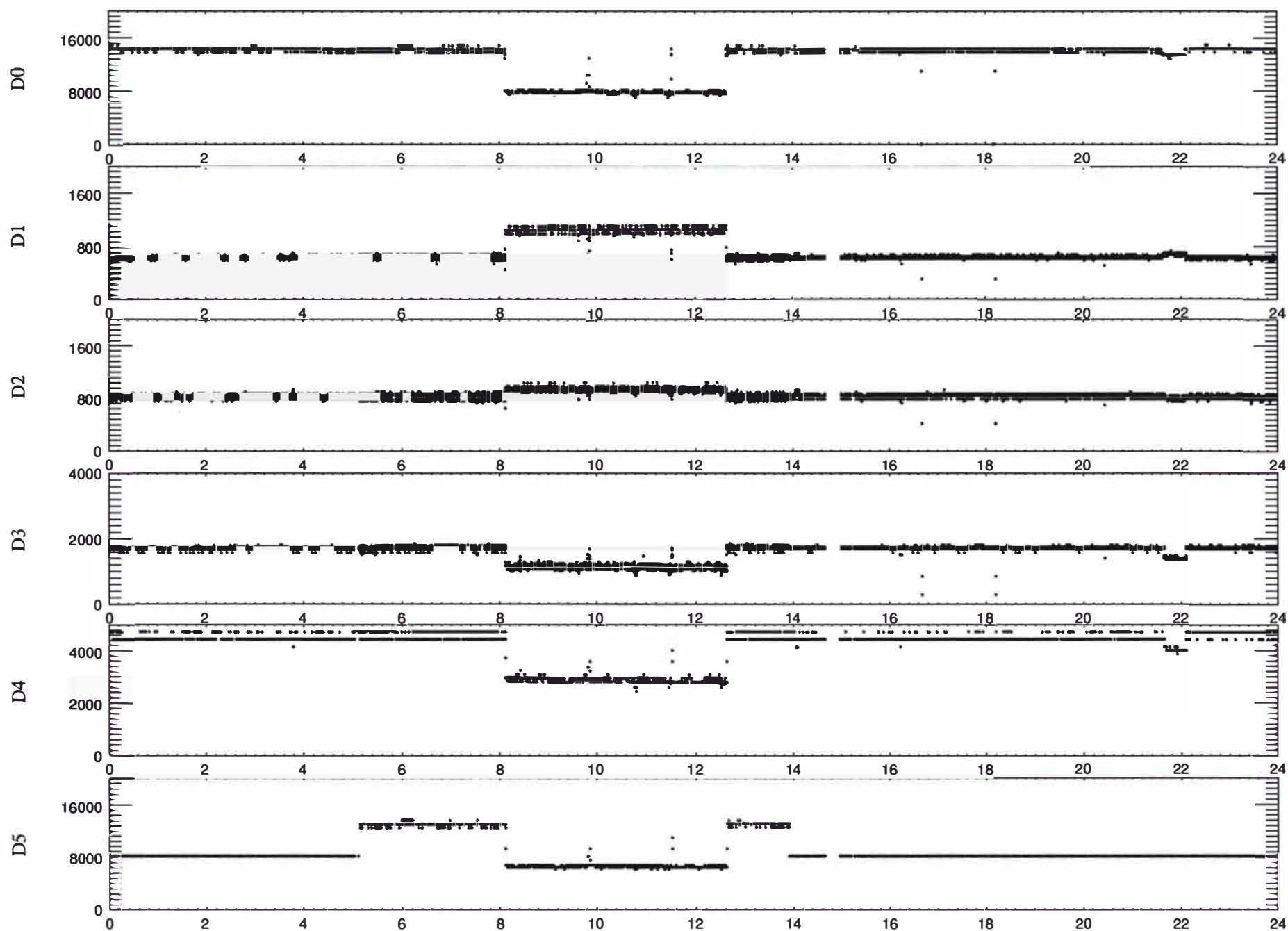
NO BURST (2)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV AL TIME

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

Hi Kevin,

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

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

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

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

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

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

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

Roger and J

From RICHARDSON@SSLLES.MSFC.NASA.GOV Wed Sep 25 11:17 PDT 1996
Date: Wed, 25 Sep 1996 13:16:38 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5614

BATSEARCH PROGRAM

BATSE BURST # 5614
EVENT OF 1996 SEP 24 DAY OF YEAR=268
EVENT CROSSING TIME AT BATSE : 42110. S. OR 11:41:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 37.000 3.000
BATSE PEAK COUNTING RATE: 500000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 9/ 96 IS:
RA= 170.608 DEC= 34.070 DIST= 5.144 AU
BATSE-ULYSSES DISTANCE = 769529924. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 57.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1389.29 SECS.
CROSSING TIME AT ULYSSES IS 43499. S. OR 12:04:59 +/- 445.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 9/ 96 IS:
RA= 131.508 DEC= 19.149 DIST= 1.989 AU
MARS-BATSE DISTANCE = 297525600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 56.55 SECS.
CROSSING TIME AT MARS IS 42167. S. OR 11:42:46 +/- 172.88 SECONDS

BATSE BURST TRIGGER

NO.: 5614

TIME: TJD=0350 SECONDS=42110

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=67.7 AZIMUTH=213.5 ERROR=1.5 DEGREES

COMMENTS:

GRB. VERY STRONG. TWO PULSES, THE FIRST STARTS AT T-1SEC W/ DUR.~8SEC.
THE SECOND PULSE BEGINS AT THE END OF THE FIRST, BUT DOES NOT GO BACK TO
BACKGROUND BEFORE IT STARTS. DUR. OF THE SECOND ~300SEC. THE SECOND HAS A
SHARP RISE WITH STRUCTURE IN THE DECAY. VISIBLE ABOVE 300KEV.
SECOND PULSE IS MUCH STRONGER THAN THE FIRST.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5614	960924	10350	42110	500000	037	+03	300

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 + 2550	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 + 2550	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search + 2550	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 + 2550	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 + 2550	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 + 2550	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 + 2550	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 + 2550	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search + 2550	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search + 2550	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search + 2550	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search + 2550	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 + 2550	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 + 2550	RI

TLC

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

Helio corr removed 17/2/00

Date: Mar 16 '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?

Uncertainty in trigger time } Due to DPI bug - 3 s
Time histories different } error - corrected

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

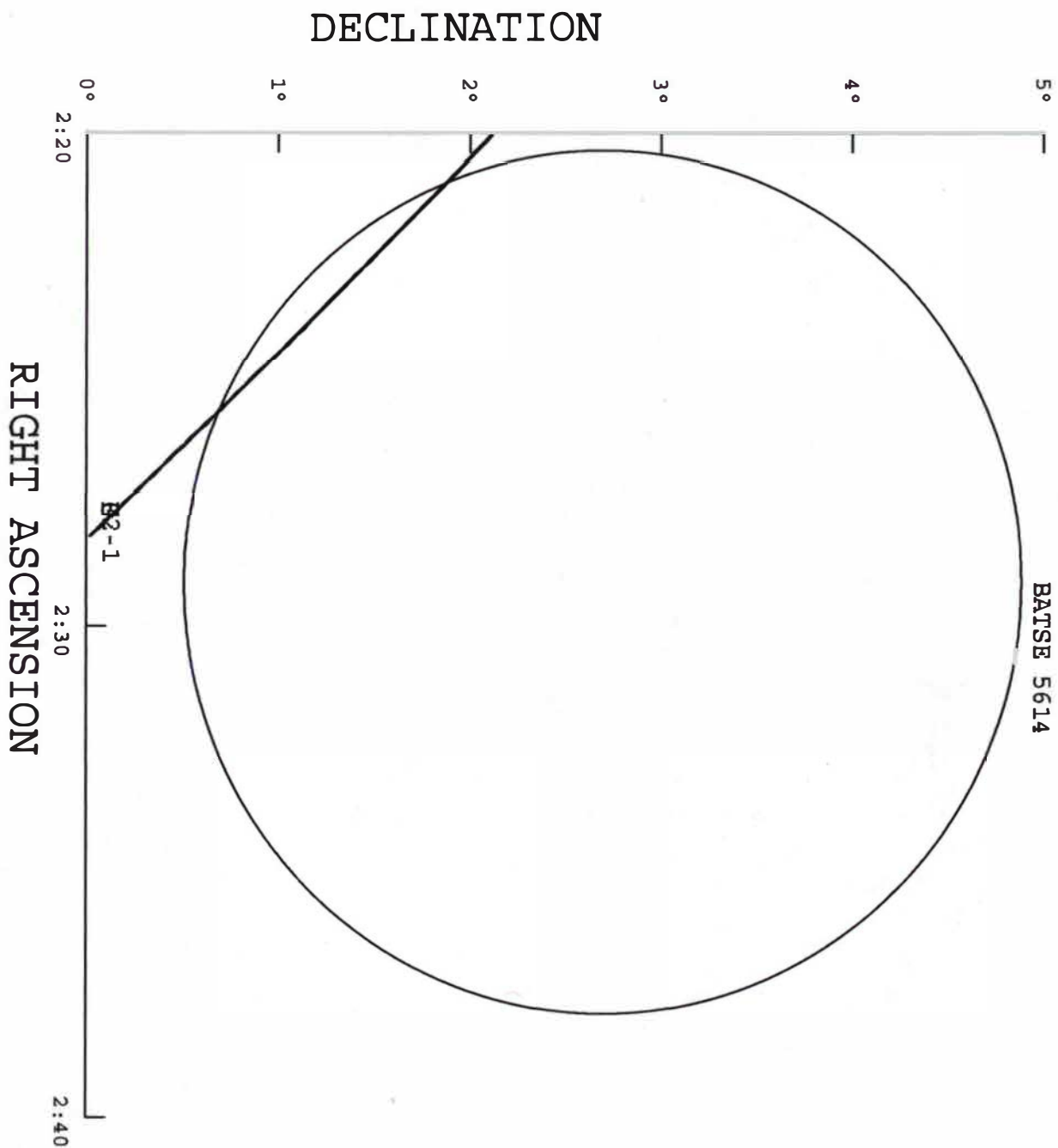
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF SEP 24, 1996 12:06

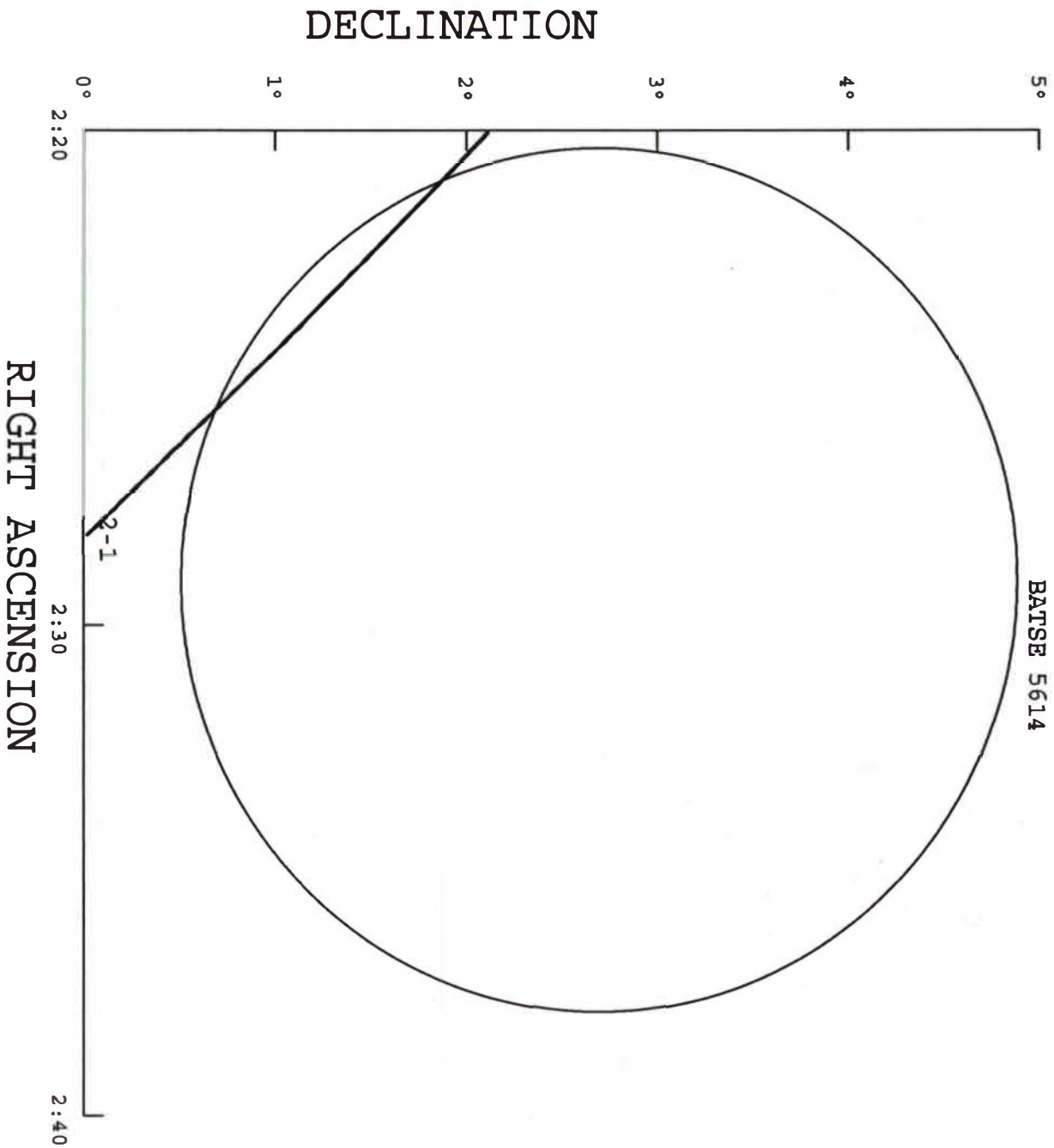
17 / 2 / 0



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

EVENT OF SEP 24, 1996 12:06

New - BPI by corrected
2/10/98



BATSE

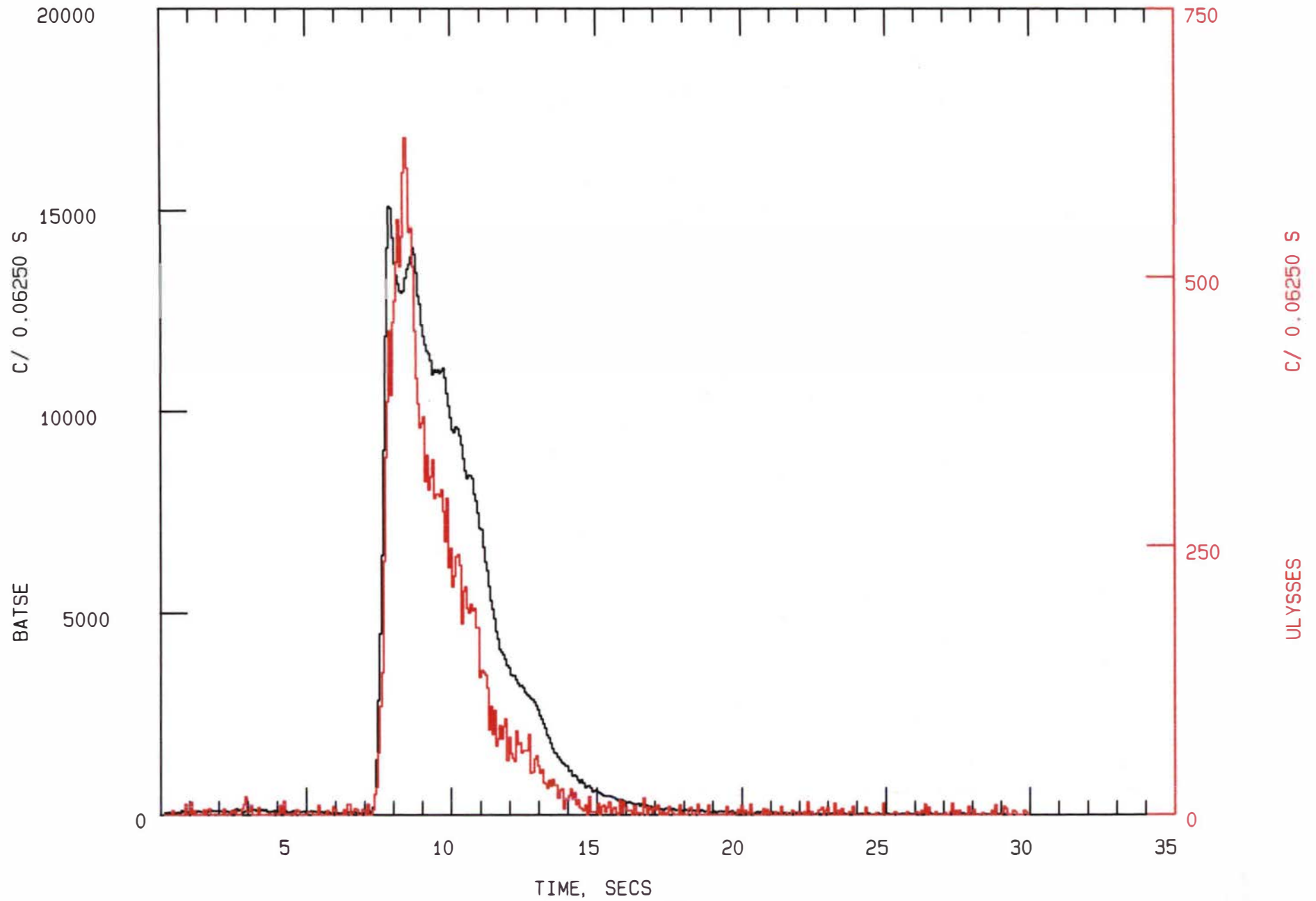
-ULYSSES

CORRELATION

24/ 9/96

42110.666

2/10/98



BATSE

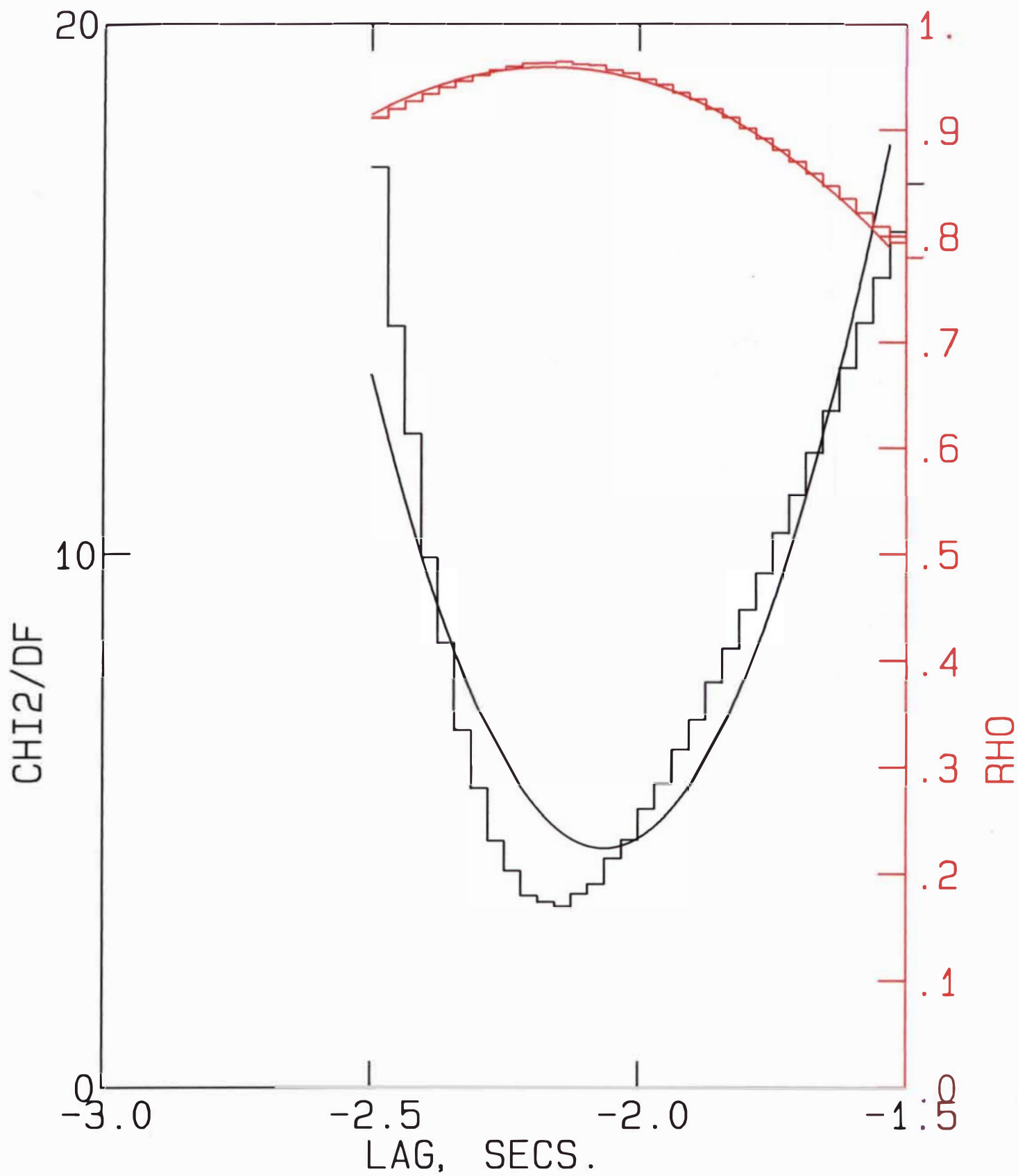
-ULYSSES

CORRELATION

24/ 9/96

42110.666

2/10/98



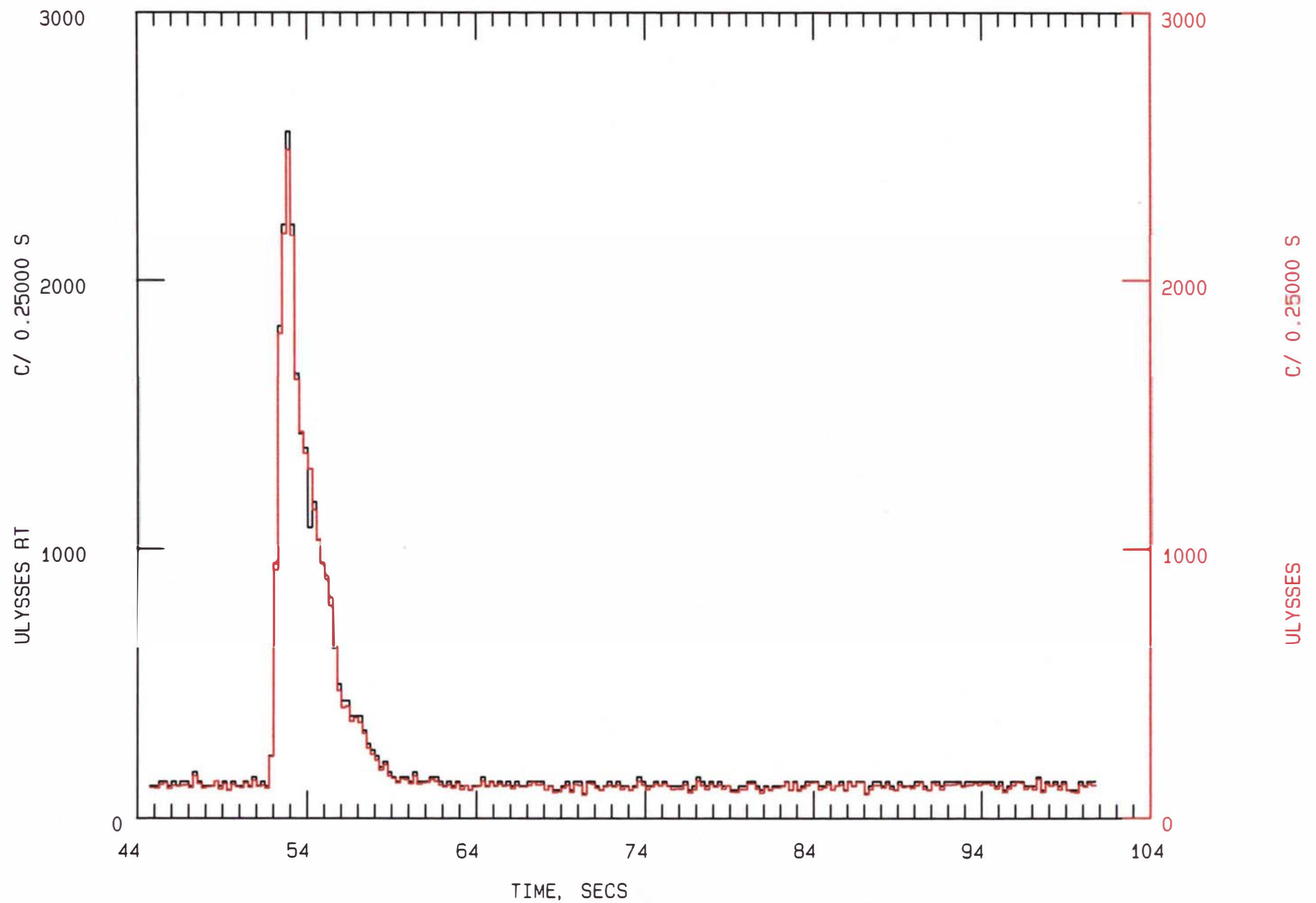
ULYSSES RT-ULYSSES

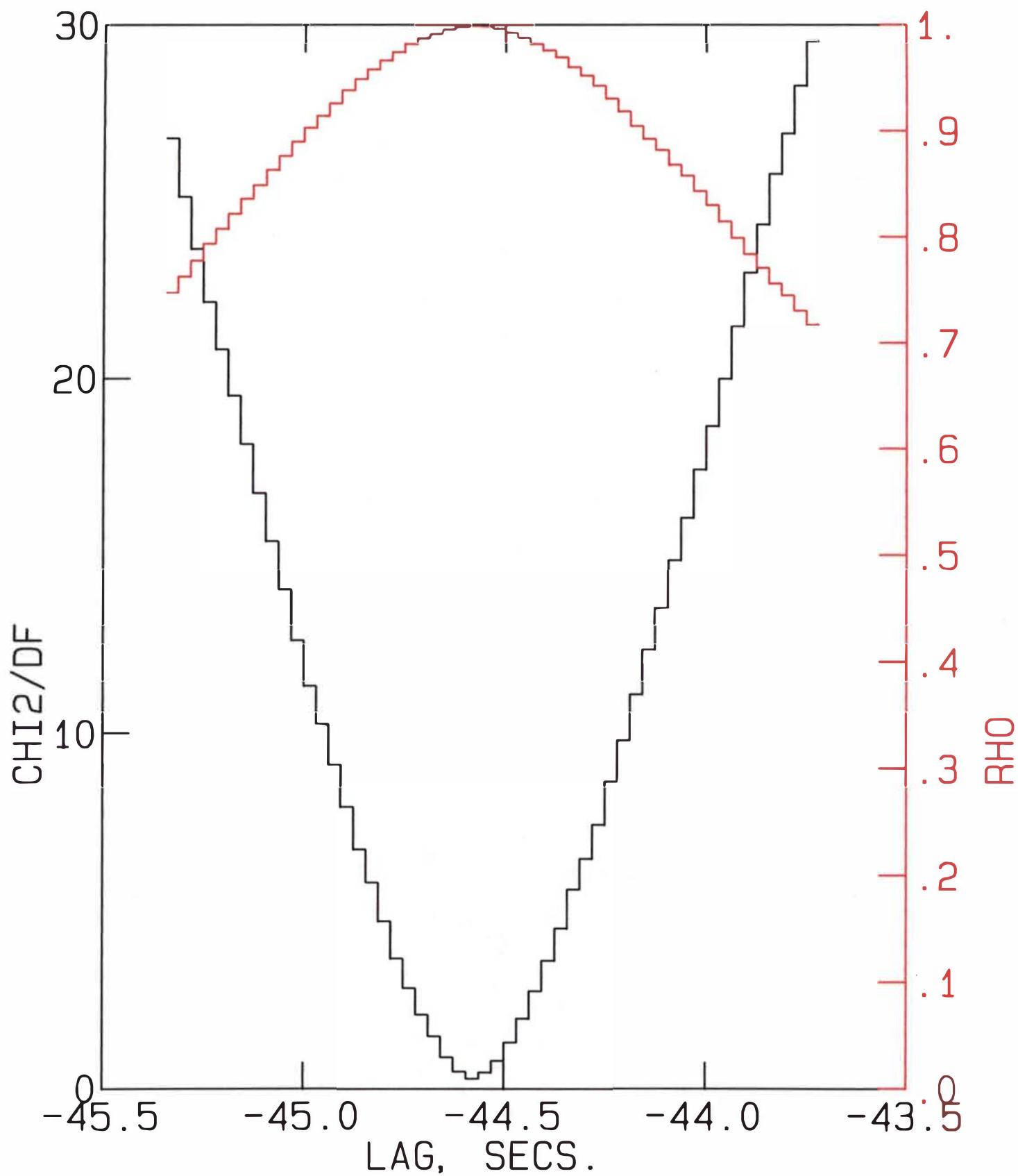
CORRELATION

24/ 9/96

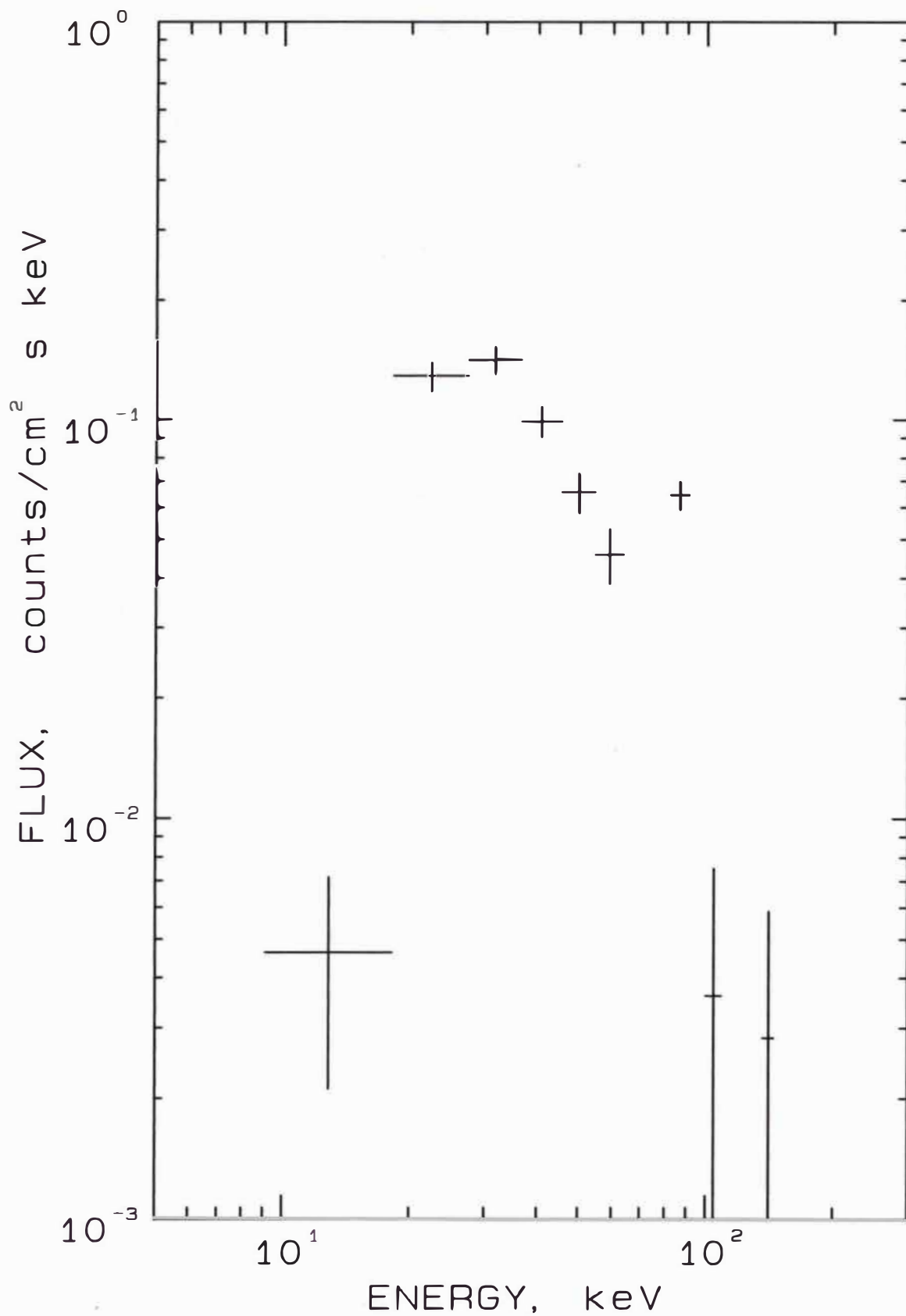
43548.143

2/10/98



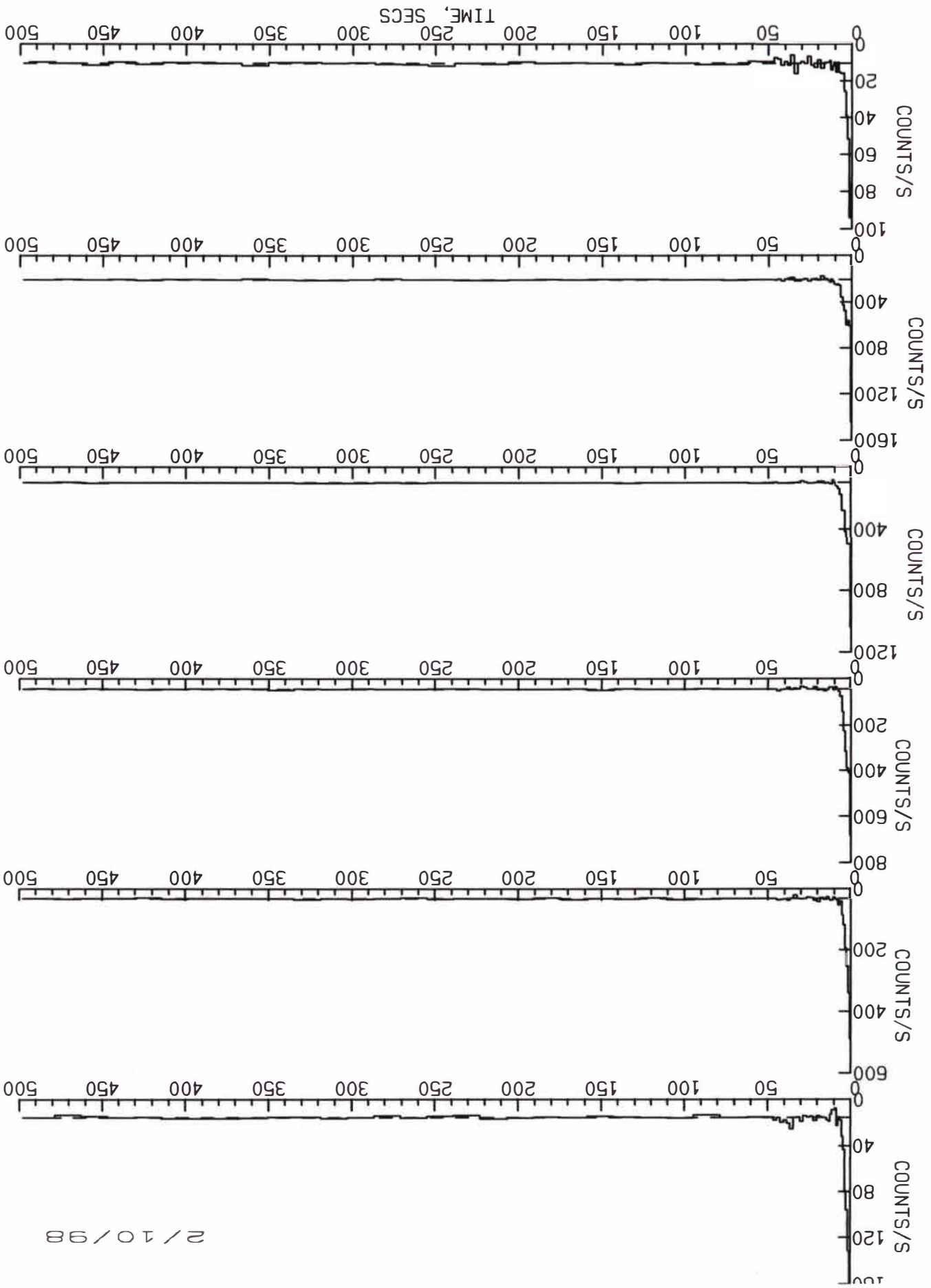


SPECTRUM INTEGRATED OVER 40.6 SECONDS, INTERVALS 2 TO 30



ULYSSES 24/09/96 43596.971 BURST SPECTRAL COUNT RATES

Energy Range (keV)
4 - 18
18 - 45
45 - 72
72 - 100
100 - 127
127 - 145

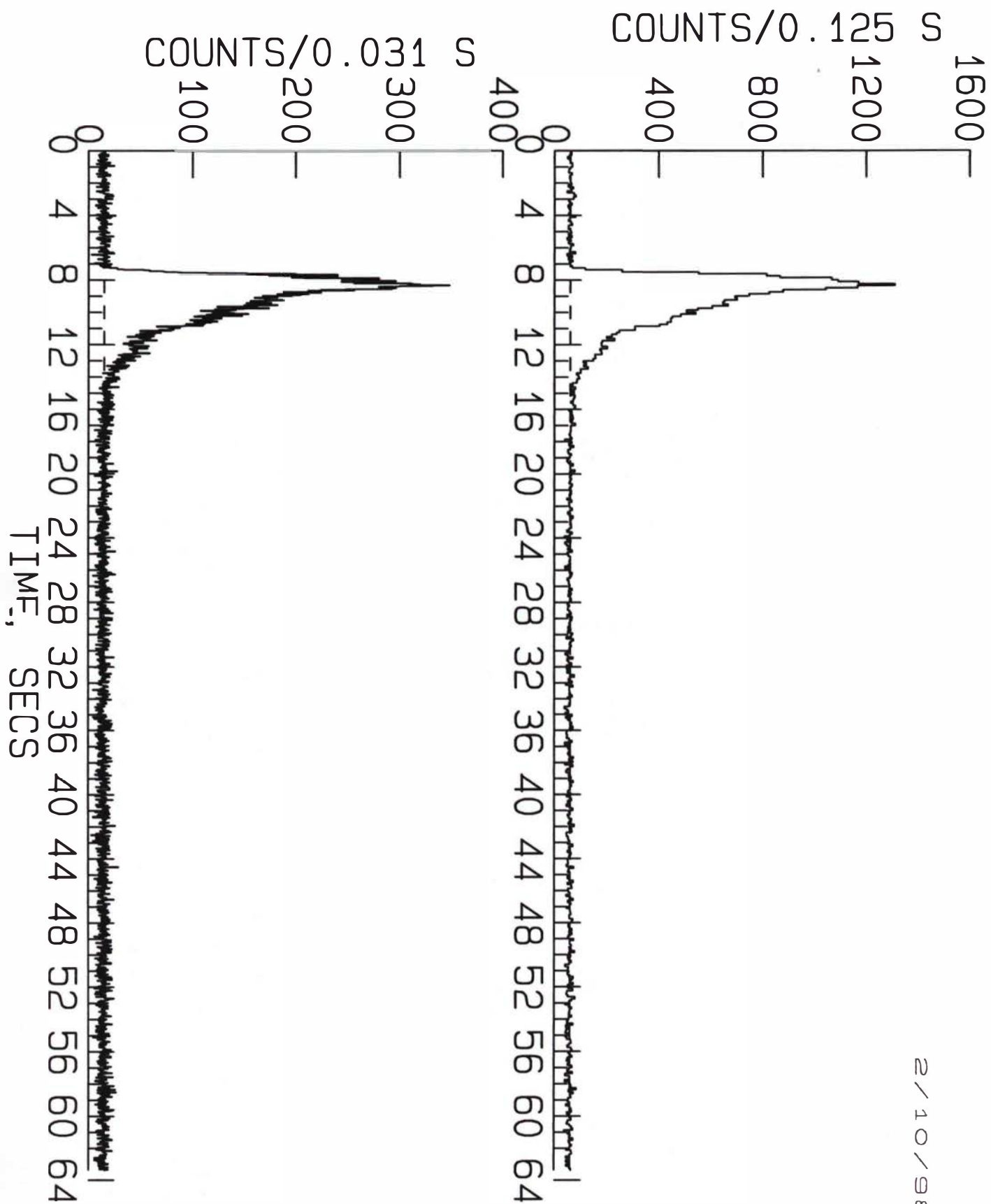


ULYSSES

24/09/96

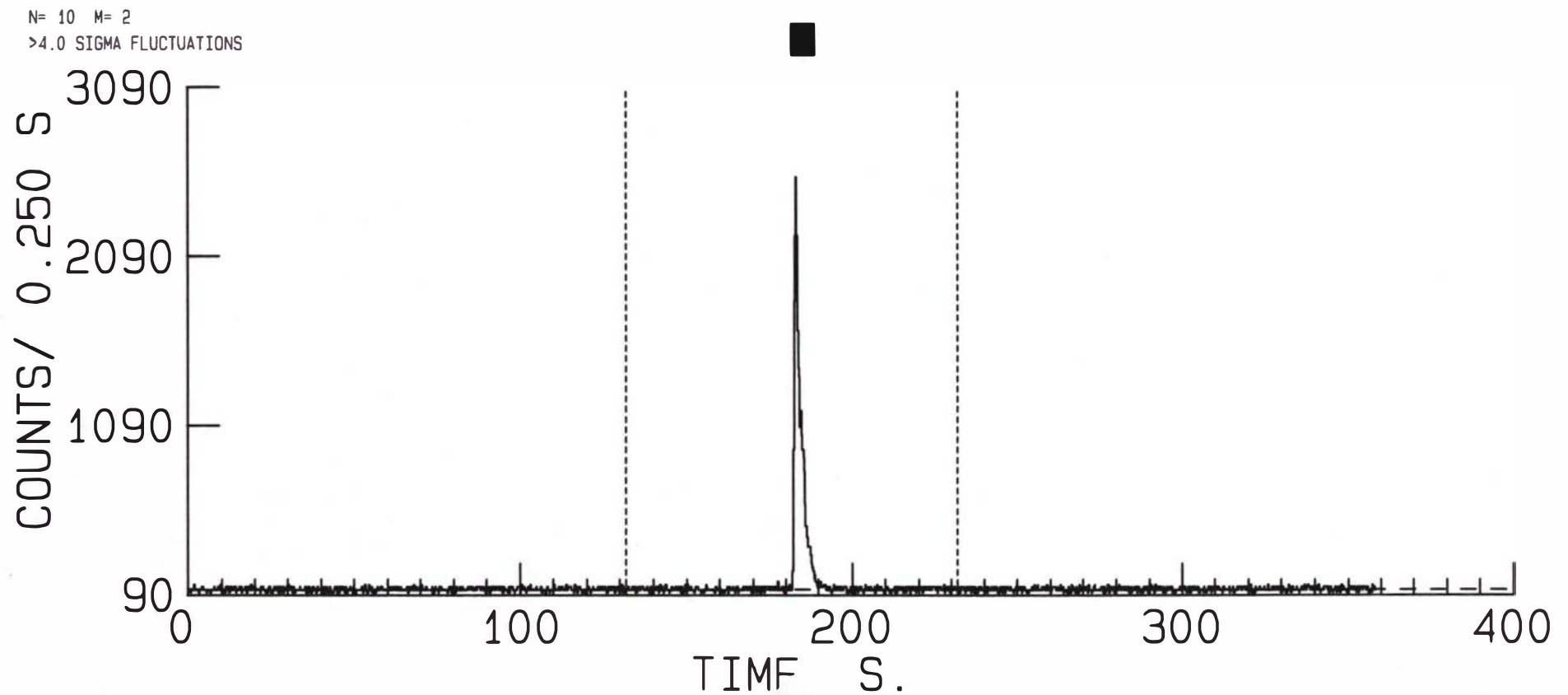
Ttrig=43600.122

21- 146 keV



ULYSSES RT
24/ 9/96 43417.751 s
21- 146 keV

2/10/98



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

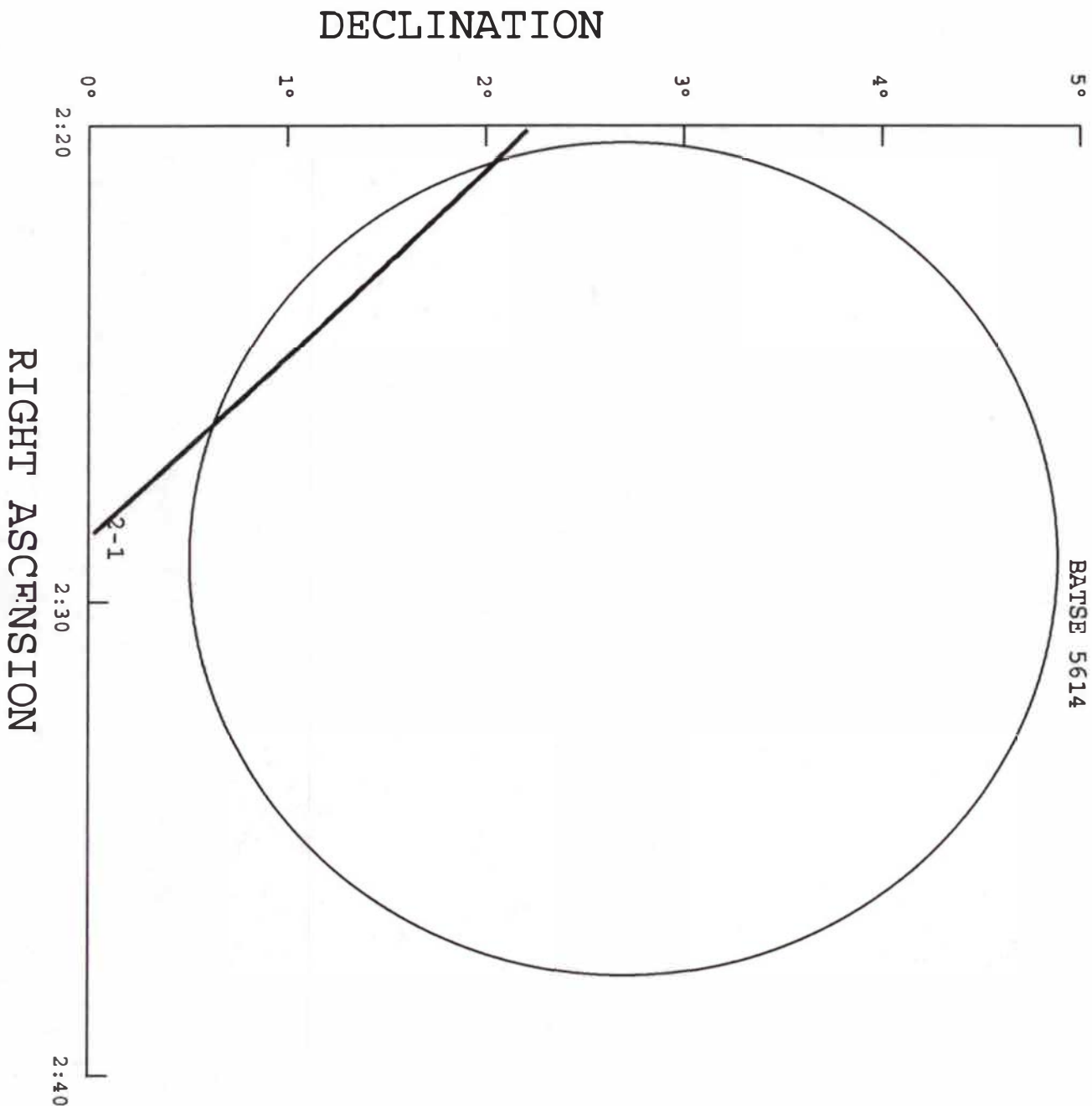
1 ULYSSES

2 BATSE

EVENT OF SEP 24, 1996 12:06

*OLD - DPI bug caused
~3 s difference*

16 / 3 / 98



BATSE

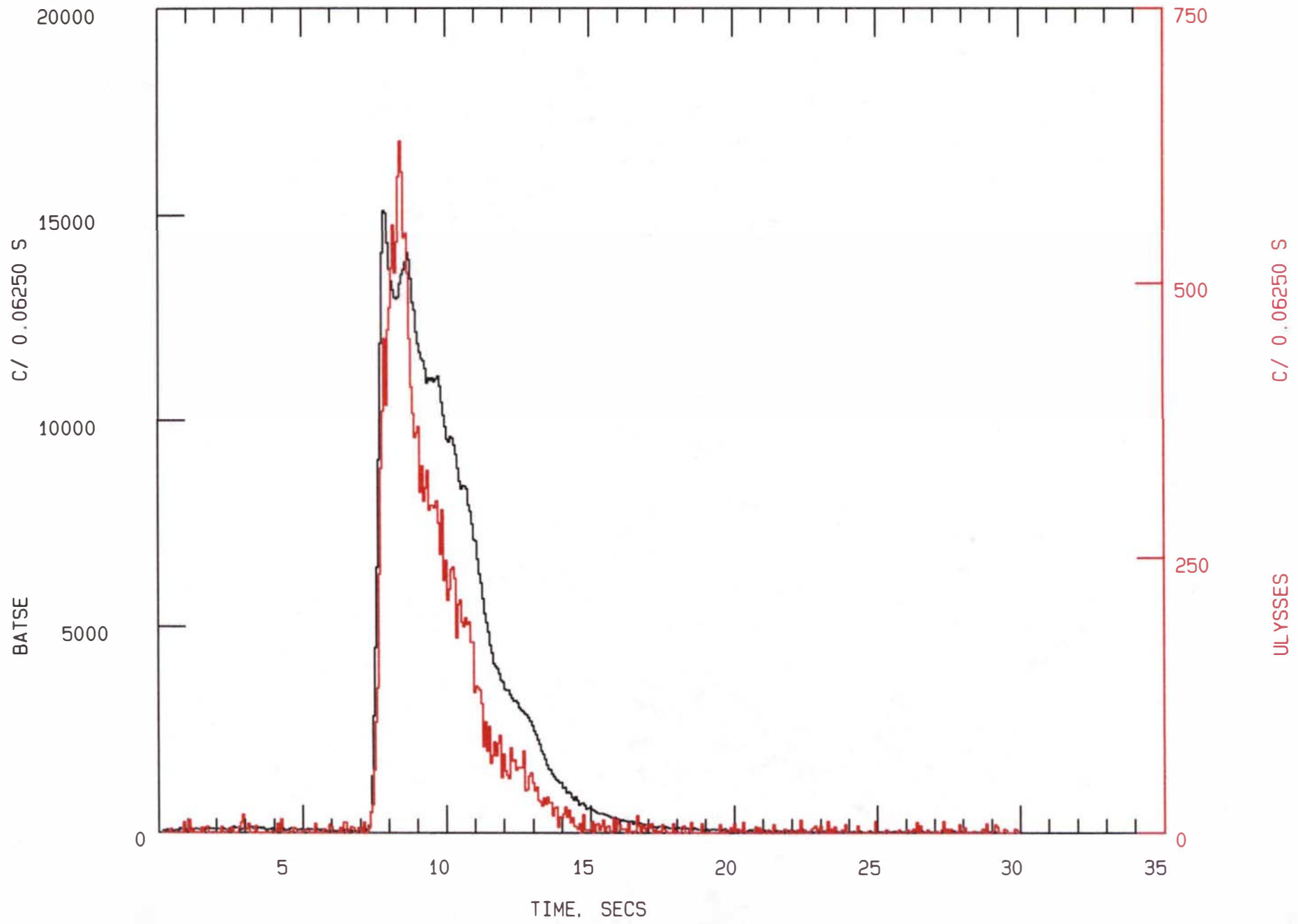
-ULYSSES

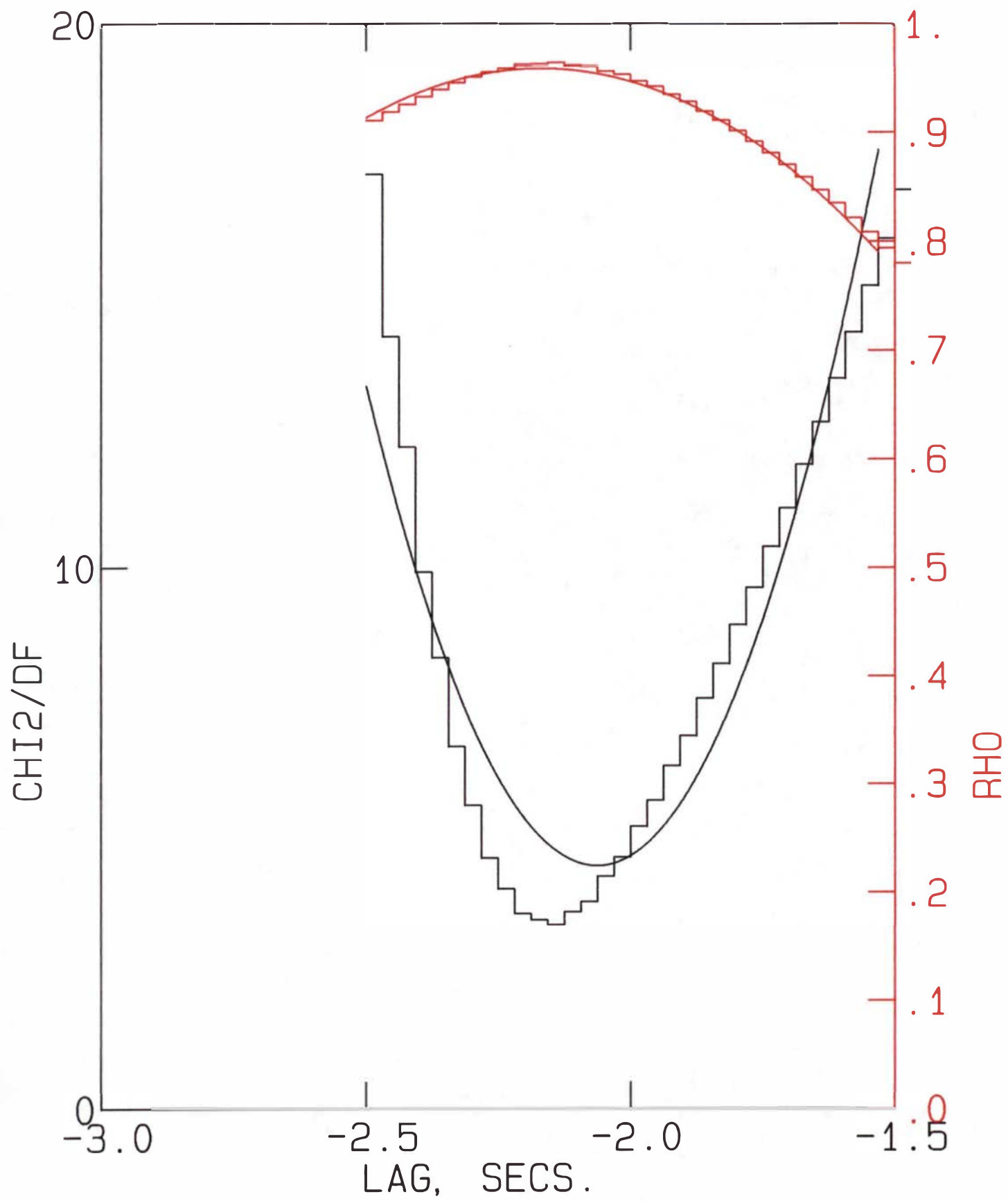
CORRELATION

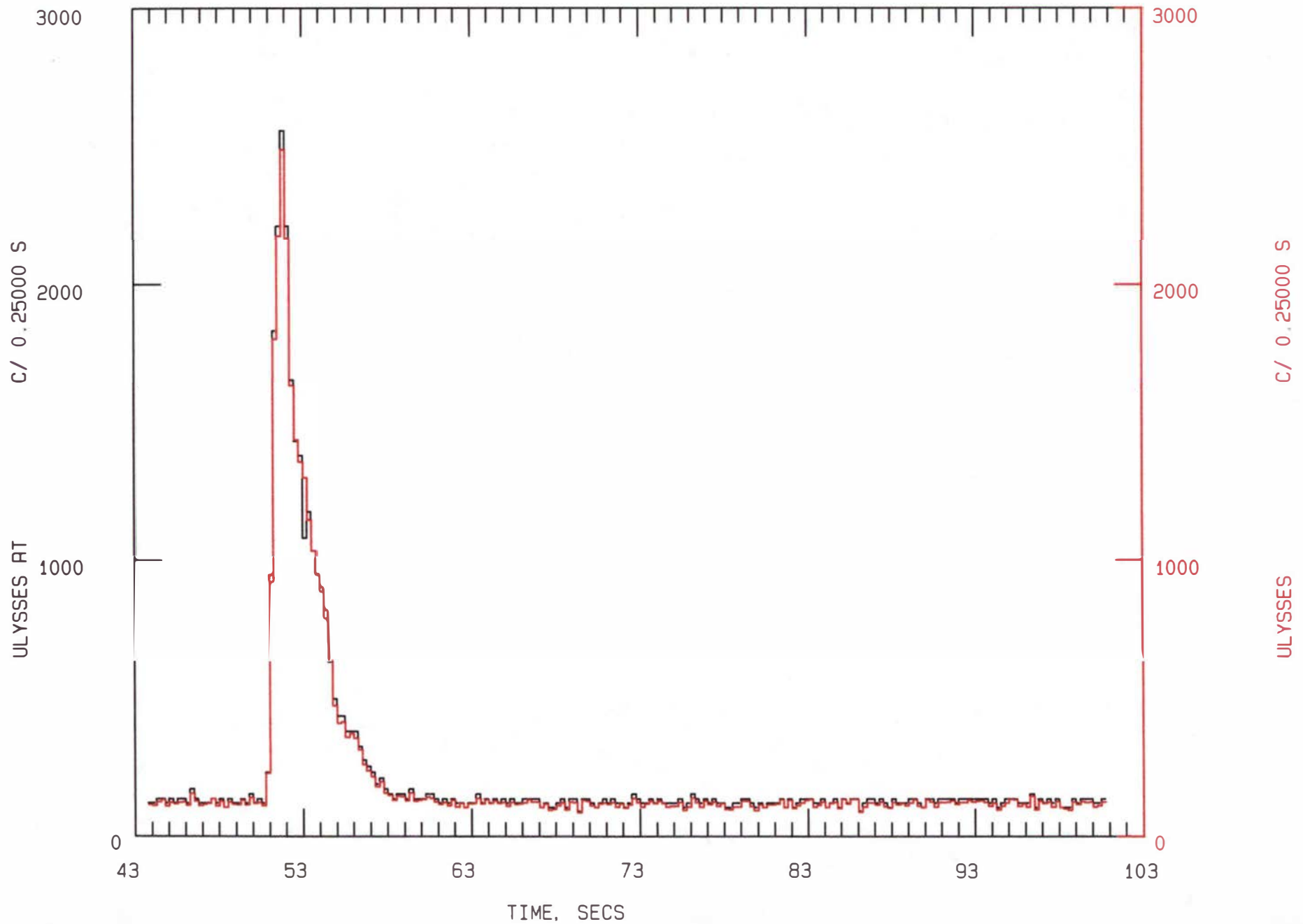
24/ 9/96

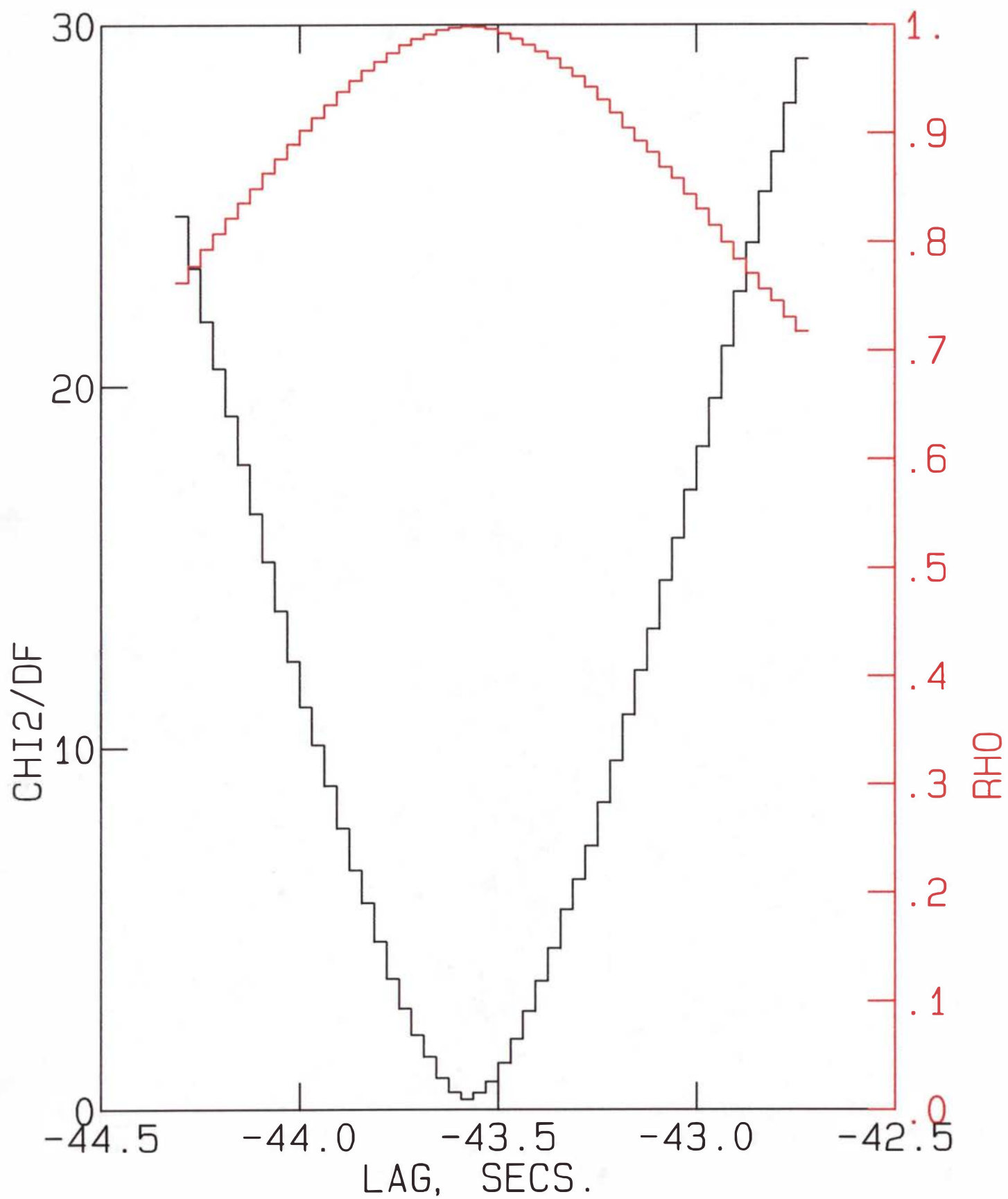
42110.666

16/ 3/98





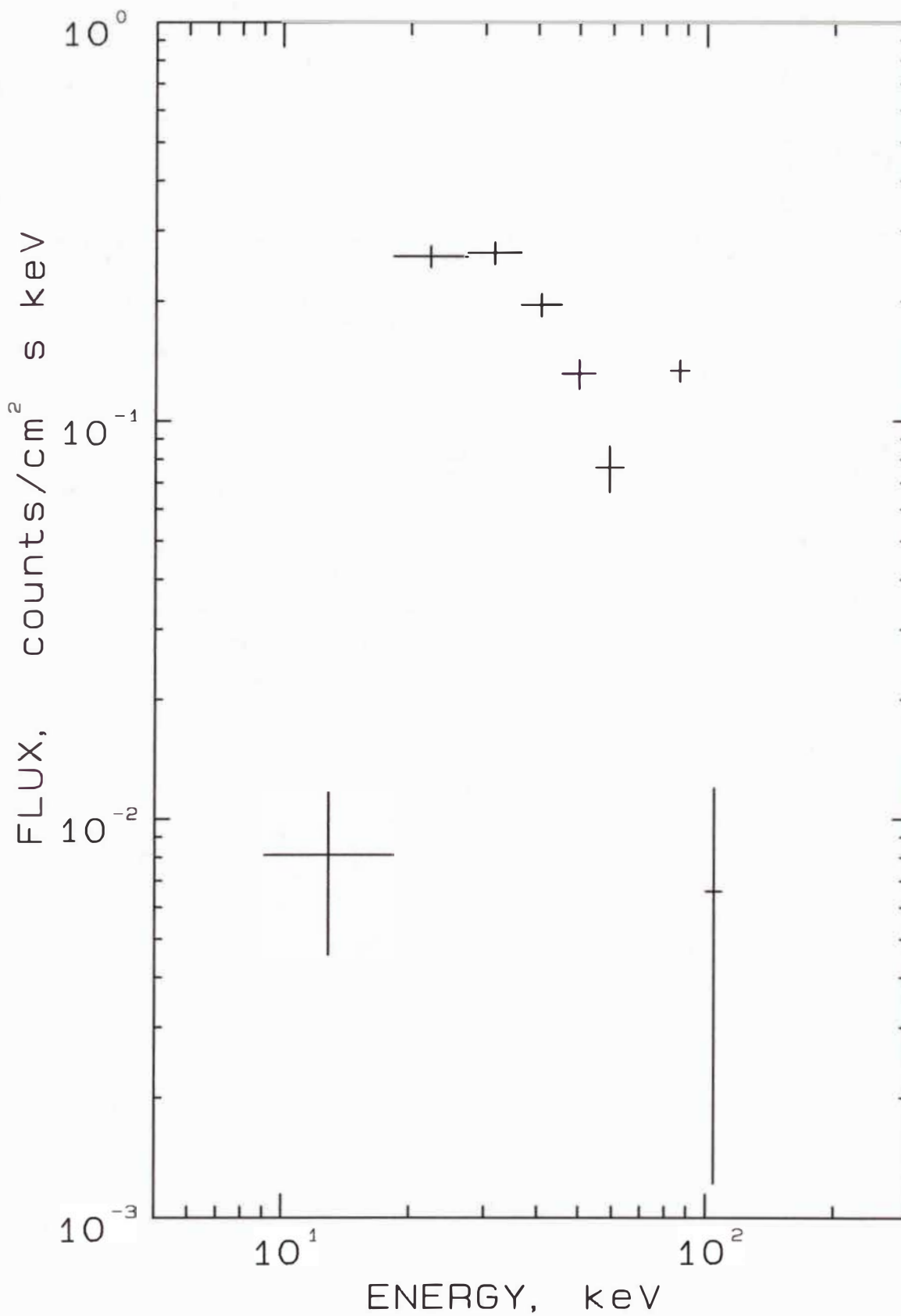




ULYSSES 24/09/96 43596.971

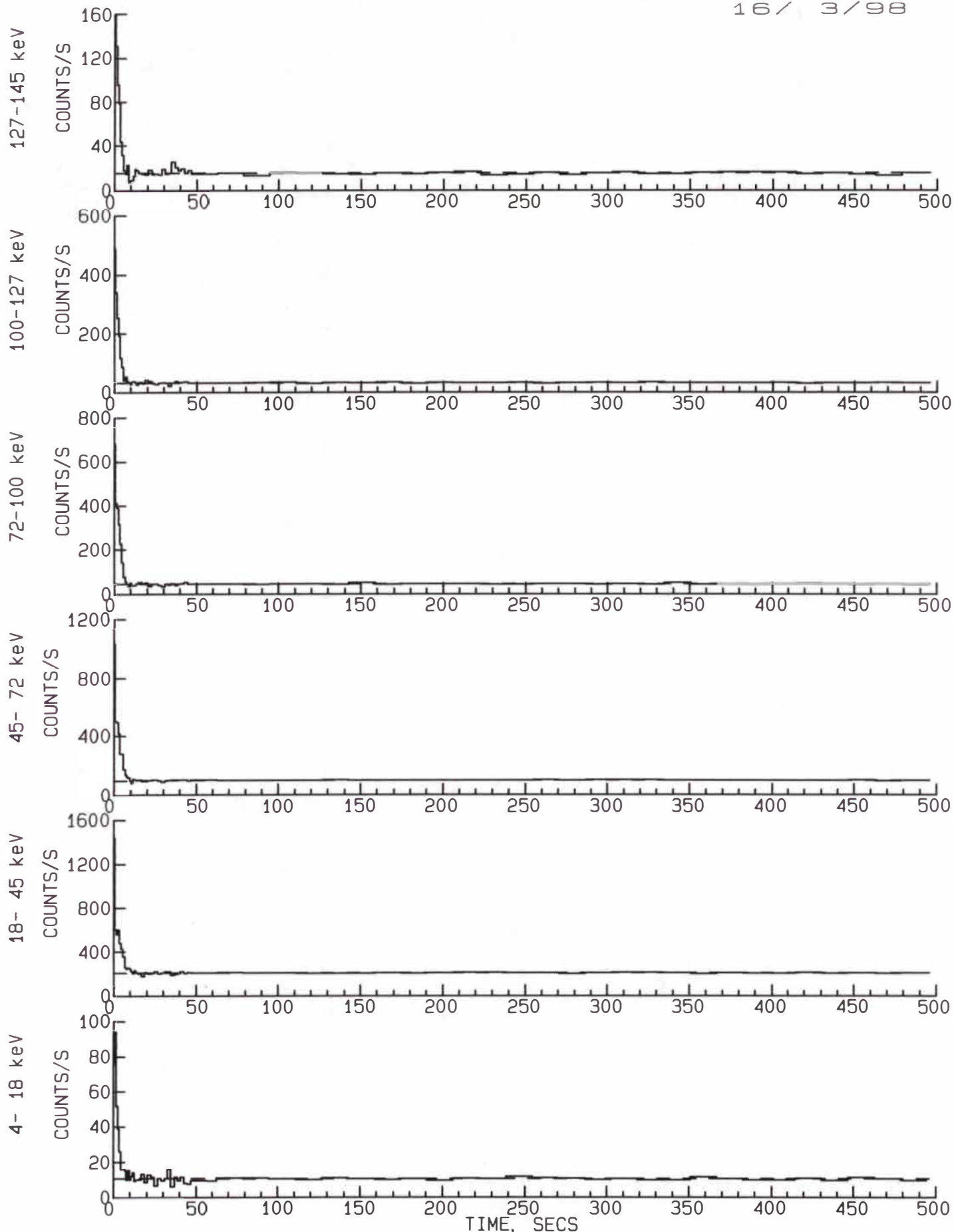
16/ 3/98

SPECTRUM INTEGRATED OVER 20.6 SECONDS, INTERVALS 2 TO 20



16 / 3 / 98

ULYSSES 24/09/96 43596.971 BURST SPECTRAL COUNT RATES



ULYSSES

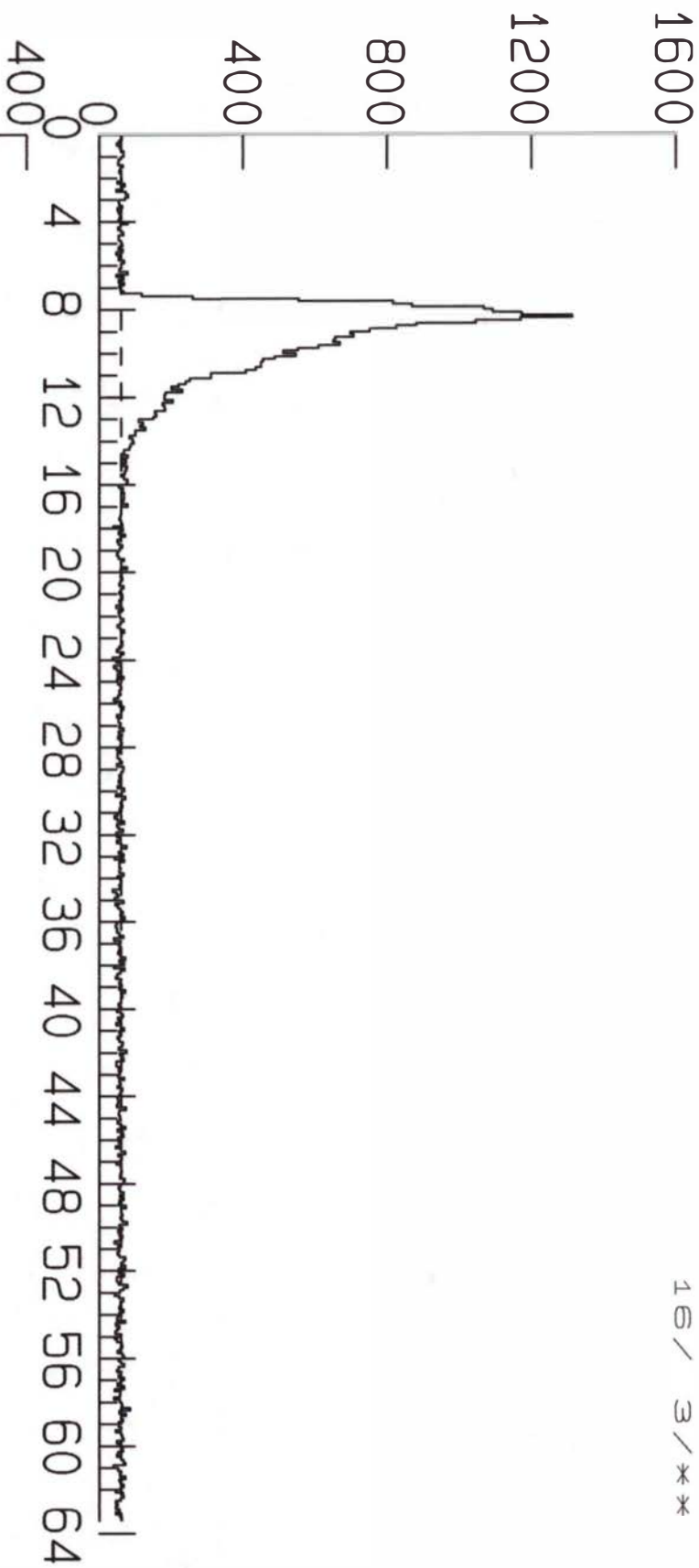
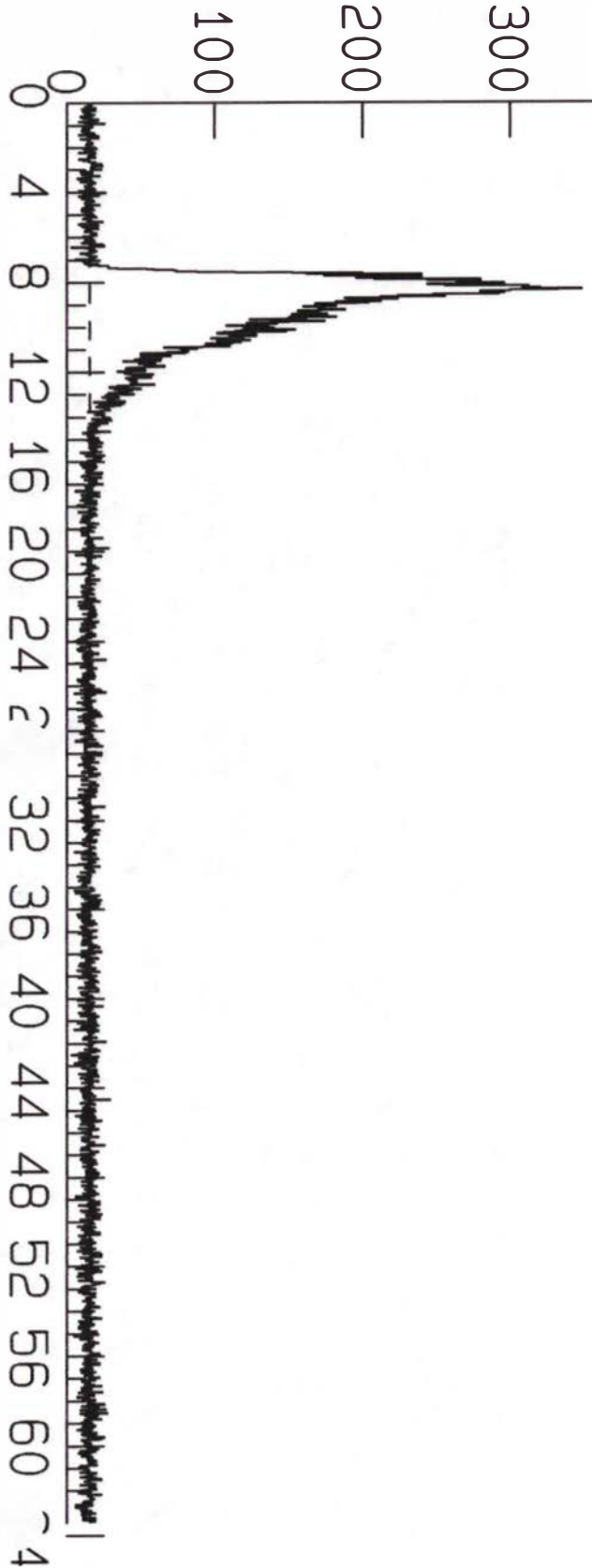
24/09/96

Ttrig=43088.115

21- 146 keV

COUNTS/0.031 S

COUNTS/0.125 S

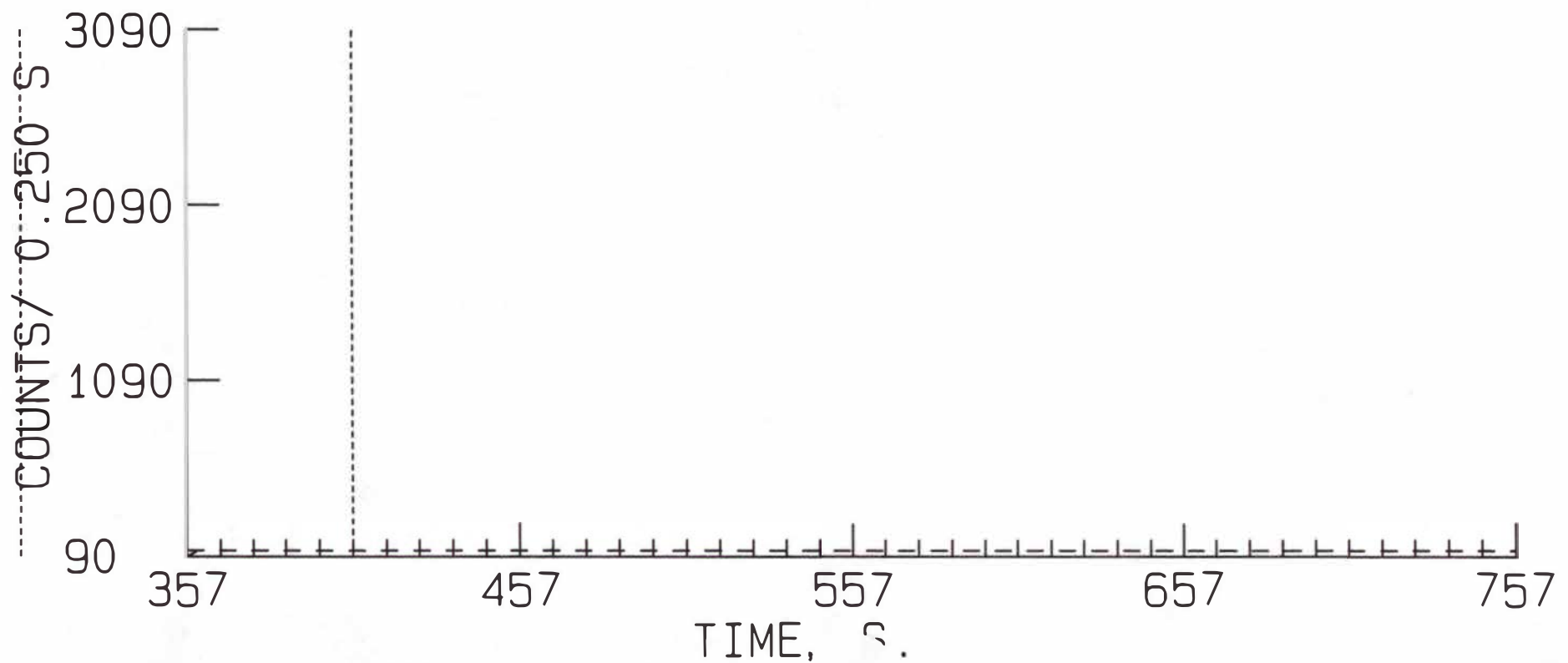


ULYSSES RT

16 / 3 / 98

24 / 9 / 96 43416.001 s

21- 146 keV



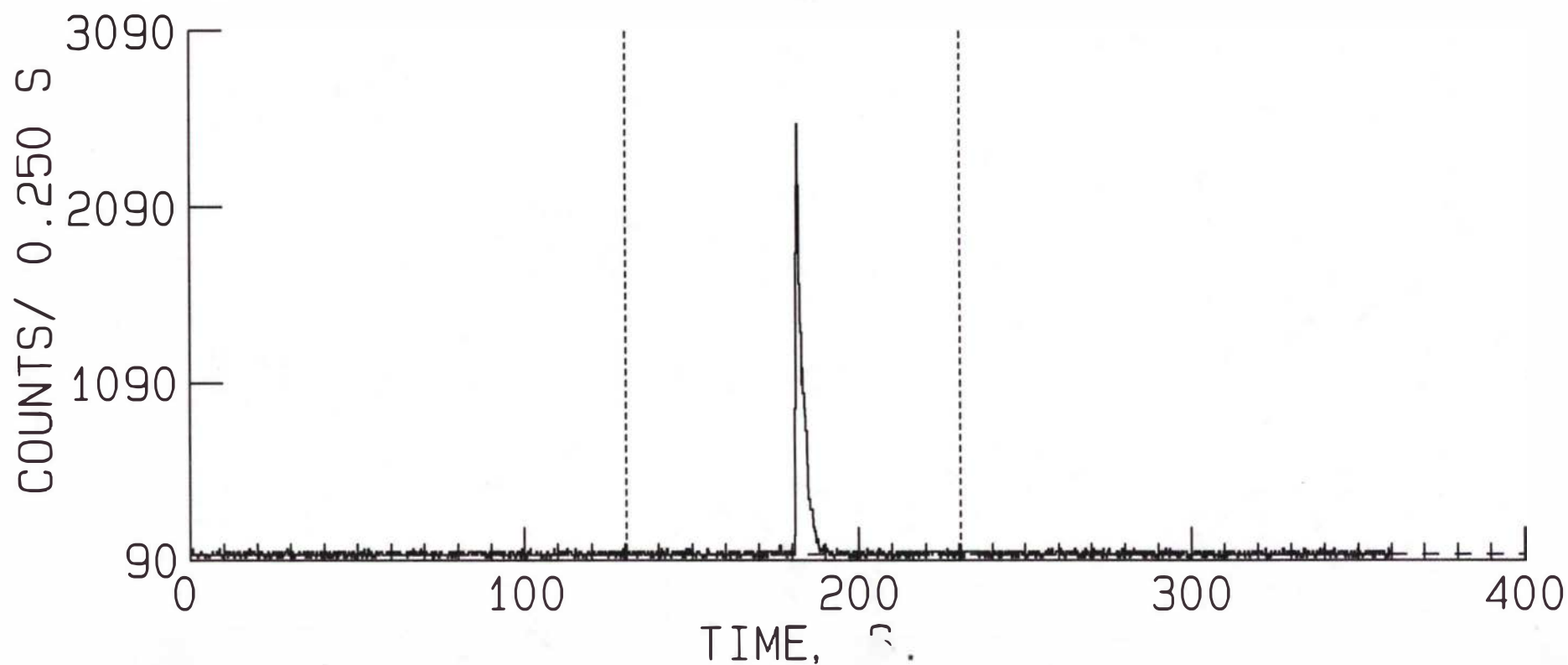
ULYSSES RT

16 / 3 / 98

24 / 9 / 96 43416.001 s

21- 146 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From klose@wegwienix.tls-tautenburg.de Wed Apr 16 00:48 PDT 1997
From: Sylvio Klose <klose@tls-tautenburg.de>
Subject: Re: GRB 960924
To: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Date: Wed, 16 Apr 1997 09:47:59 +0200 (MET DST)
Cc: klose@wegwienix.tls-tautenburg.de (Sylvio Klose)
MIME-Version: 1.0
Content-Transfer-Encoding: 8bit

Dear Kevin:

thank you very much for your e-mail. In fact, currently we did not find strong evidence for any transient on our images of the GRB 960924 error box.

"Currently" means that currently I have only follow-up observations (data from a second survey)

from the area around the bright galaxy (RA, DEC (J 2000) = 2:23:58.0, 1:13:39) near the most likely position of the burst and from the area around a relatively red star, both lying within the IPN annulus reported on the e-mail circular from September 27. In my opinion, within the cosmological model this galaxy - including a possible system of gravitationally bound dwarf galaxies around it - is the very best candidate as the host of this extraordinary strong burst. It is a relatively bright galaxy ($K = 12.4$), what makes the probability relatively low to find it in the reported 0.027 deg width IPN annulus (I mapped approximately 80 arcmin² of this annulus, and altogether about 0.4 deg²).

It is a great idea to improve the coordinates of this annulus.

I have no problem with more authors (of course, we would pay for any page charge). However, there is one point: The background behind this paper is indeed not GRB 960924, but GRB 970228. However, I found it very difficult to make a paper based only on our JHK observations of GRB 970228, since so many groups have observed this error box (and, surely, already submitted their papers). On the other hand, things look better, if we combine our 970228-data with our 960924-data. In other words, the paper should be a Letter (ApJ) and it should be submitted to the ApJ within the next 2-3 weeks. Could you please approximately estimate, how long it could take your colleagues to read the draft of a Letter, to correct (or reject) it (if necessary), and to provide an improved IPN annulus? (Of main interest would only be how the improved IPN annulus lies with respect to the mentioned bright galaxy. Does this galaxy still lie within the annulus, or not? -- If not, the paper could have a problem, of course.)

Best regards,

Sylvio Klose

From khurley@sunspot Tue Apr 22 09:07 PDT 1997
Date: Tue, 22 Apr 1997 09:07:15 -0700
From: khurley@sunspot (Kevin Hurley)
To: klose@tls-tautenburg.de
Subject: Re: GRB 960924
Cc: khurley@sunspot

Dear Sylvio,

Enclosed are the semi-final triangulation data for this event.
I am still waiting for the final spacecraft coordinates. When
I get them, within a few days (I hope) the annulus width will
decrease to perhaps 1'. But in the meantime, I hope this will
help you with the draft of your paper.

This burst was also observed by the TGRS instrument aboard
the WIND spacecraft, but because it was so close to Earth,
the information is essentially redundant and I have not included
it.

Regards,

Kevin

SATELLITE POSITIONAL INFORMATION AND BURST ARRIVAL TIMES

NO	NAME	DIST. FROM EARTH, KM.	ALPHA, DEG.	DELTA, DEG.
1	ULYSSES	769843744.0000+/-	500.0000000 171.10020+/-	0.00500 33.89080+/-
2	BATSE	6808.6880+/-	50.0000000 49.99600+/-	0.01000 -9.54700+/-

JULIAN DAY NUMBER IS 35331.00 DAYS SINCE 1900 JAN 0.5

15.00 BY 15.00 CM MAP FOR RA= 34.00 TO 40.00, DEC= 0.00 TO 6.00

INTERSATELLITE CORRELATIONS

SEPARATION BETWEEN SATELLITES 1 AND 2 IS 2567.93366 LIGHT SECONDS. TIME DELAY IS -1478
CORRELATION BETWEEN SATELLITE 1 (ULYSSES) AND SATELLITE 2 (BATSE
GIVES A CIRCLE OF RADIUS 54.838735 DEG. CENTERED AT ALPHA=351.100715 DEG. =23.H24.M24.17S DELTA
ERROR IN DETERMINATION OF RADIUS IS +/- 0.013412 DEGREES OR 1.609409 ' TOTAL WIDTH
' (0.007953 DUE TO POSITION, 0.005459 DEGREES DUE TO TIMING)
INTERSATELLITE TIMING ERROR IS 200000 MICROSECONDS

BASED ON THIS ANNULUS, THE EARTH CROSSING TIME IS 42067.188+/- 0.016 SECS.

AT SATELLITE 1, EARTH SUBTENDS 0.000474 DEGREES HALF ANGLE CENTERED AT ALPHA=351.100200 DEGRE
AT SATELLITE 2, EARTH SUBTENDS 69.248958 DEGREES HALF ANGLE CENTERED AT ALPHA=229.996000 DEGRE

CIRCLE CENTERED AT ALPHA= 37.000 DEG, DELTA= 3.000 DEG, RADIUS= 2.200 DEG WILL BE TRACED WITH
MINIMUM DISTANCE BETWEEN THE POINT OR CENTER OF THE CIRCLE AND THE TRIANGULATION ANNULUS IS 1.
SUBROUTINE FINDSAX CALLED
POSITION AT RA,DEC= 37.00, 3.00 WILL BE CORRECTED FOR ABERRATION - REAL MINUS APPARENT RA,DEC=-

POSITION AT RA,DEC= 37.00, 3.00 WILL BE CORRECTED FOR ABERRATION - REAL MINUS APPARENT RA,DEC=-

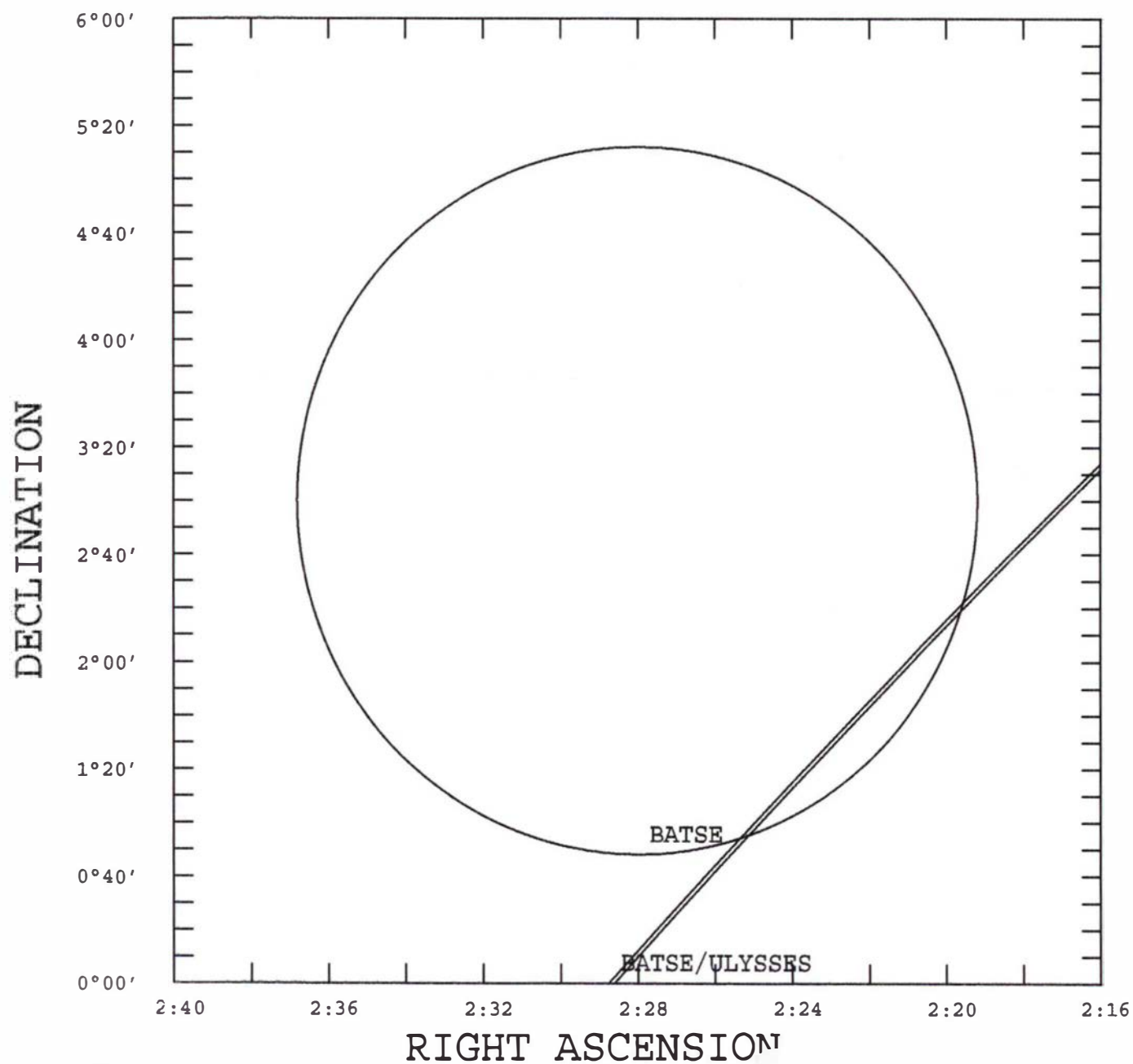
CORNERS OF ERROR BOX FORMED BY ULYSSES	TO BATSE	ANNULUS AND BATSE	CIRCLE
RA	DEC		
36.333473= 2.H25.M20.03S	0.899695= 0.D 53.M 58.90S		
34.886092= 2.H19.M32.66S	2.365747= 2.D 21.M 56.69S		
36.278947= 2.H25.M 6.95S	0.917668= 0.D 55.M 3.60S		
34.903361= 2.H19.M36.81S	2.310997= 2.D 18.M 39.59S		

SUN IS AT ALPHA=181.579415 DEGREES, DELTA= -0.684654 DEGREES

TODAY IS 22/ 4/97

<This message contains 1 attachments (not printed)>

To S. Klose



From klose@wegwienix.tls-tautenburg.de Tue Apr 15 06:52 PDT 1997
Return-Path: <klose@wegwienix.tls-tautenburg.de>
Received: from wegwienix.tls-tautenburg.de by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id GAA16146; Tue, 15 Apr 1997 06:52:37 -0700
Received: (from klose@localhost) by wegwienix.tls-tautenburg.de (8.7.5/8.7.3) id PAA00218; Tue,
From: Sylvio Klose <klose@tls-tautenburg.de>
Message-Id: <199704151351.PAA00218@wegwienix.tls-tautenburg.de>
Subject: GRB 960924
To: khurley@sunspot.ssl.berkeley.edu
Date: Tue, 15 Apr 1997 15:51:57 +0200 (MET DST)
Cc: klose@wegwienix.tls-tautenburg.de (Sylvio Klose)
X-Mailer: ELM [version 2.4 PL25]
MIME-Version: 1.0
Content-Transfer-Encoding: 8bit
X-Lines: 32
Status: RO

Dear Dr. Hurley:

We are preparing a paper, where we want to present first data obtained from an NIR imaging of the error box of GRB 960924. This burst occurred when I was at the Calar Alto observatory, Spain, for a 4-day observing run to survey GRB error boxes in JHK. Thanks to the BACODINE/IPN/Huntsville Localization network, I got the data of the IPN localization at the beginning of my last night at the Calar Alto, only 3.5 days after the burst.

^~. I could survey a large field centered at the reported
t likely position of the burst (RA = 36.150, DEC = 1.078).

I would like to ask you whether the preliminary IPN burst position of this burst reported on the above mentioned e-mail circular dated Fri, 27.09.1996 (Scott Barthelmy)
-- "... All follow-up queries should be addressed to K. Hurley..." --
was confirmed, or improved? Furthermore, could you please give me a hint, how we can cite this e-mail as well as the e-mail from 25.09.1996, where the burst detection was reported to all BACODINE sites.

Sincerely yours,

S. Klose
Thüringer Landessternwarte Tautenburg
D-07778 Tautenburg
Germany
e-mail: klose@tls-tautenburg.de

Texas Symp 1996 Poster

Klose et al 960924

BACO/IPN

Colo Altaz, JHK' survey to 16.5, 15.5, 15.5 3.5d after GRB

279 objects in annulus, none with anomalous colors

No variable obj in K'

From scott@rosserv.gsfc.nasa.gov Sun Oct 13 16:40 PDT 1996
From: Scott Barthelmy <scott@rosserv.gsfc.nasa.gov>
Subject: Obs of GRB960924
To: dermer@osse.nrl.navy.mil, wreich@mpifr-bonn.mpg.de,
p337sch@mpifr-bonn.mpg.de
Date: Sun, 13 Oct 1996 19:40:06 -0400 (EDT)
Cc: cline@lheavx.gsfc.nasa.gov, gehrels@lheavx.gsfc.nasa.gov,
scott@rosserv.gsfc.nasa.gov, butterworth@lheavx.gsfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Chuck & Reinhard,

Congrats on the observations of GRB960924 with Effelsberg.
I am writting to make you know about all the locational information
of that burst. In addition to the BACO/IPN notice I sent out, there
is now a full IPN box (using BATSE/Ulysses/Wind-TGRS 3-spacecraft data).
You should contact K.Hurley to get the actual location numbers of the box.
(There is also corroborating lcoation data from Wind-TGRS using their rotating
occulter and from Wind-KONUS using the ration between the North & South
detectors.)

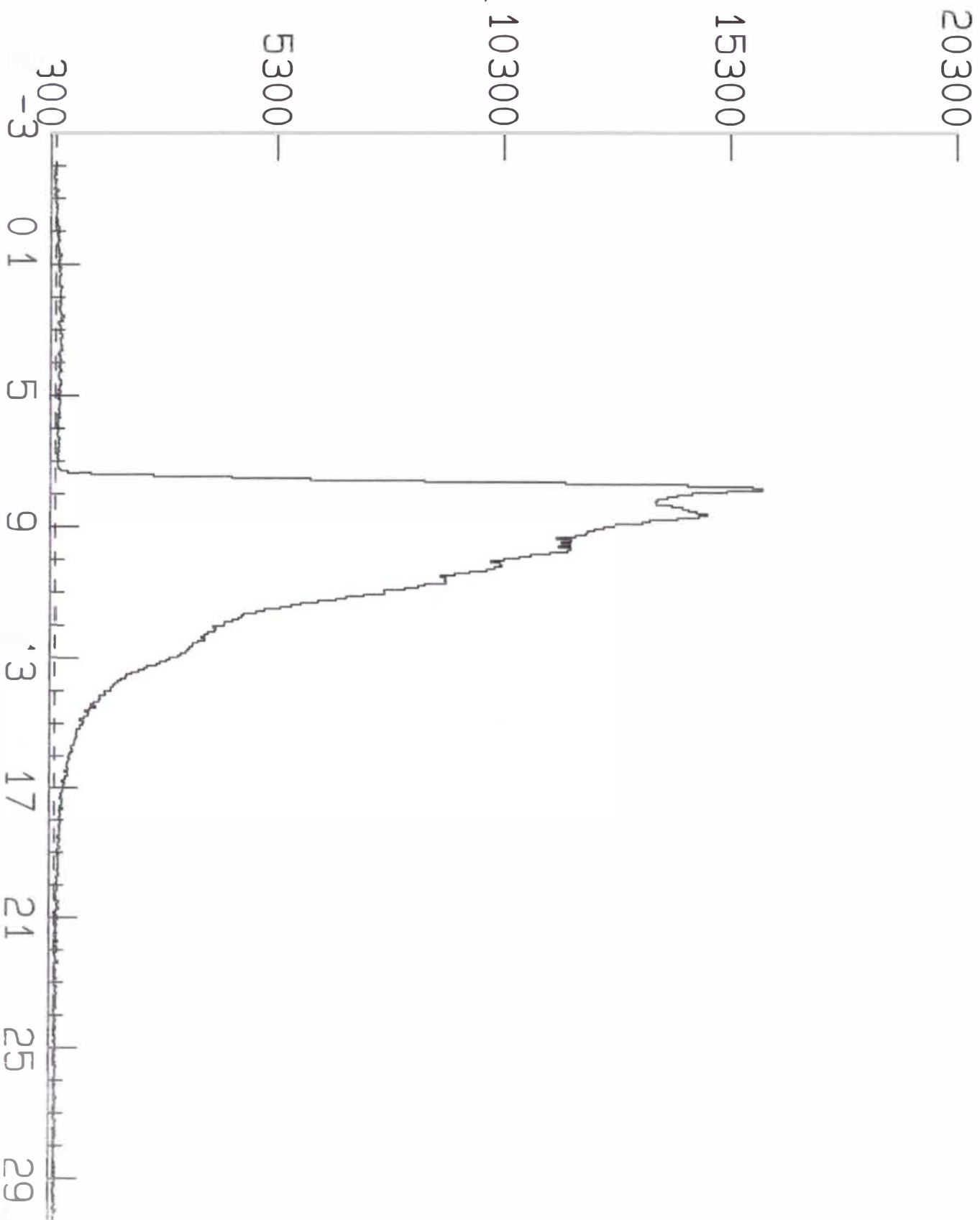
--scott

BATSE

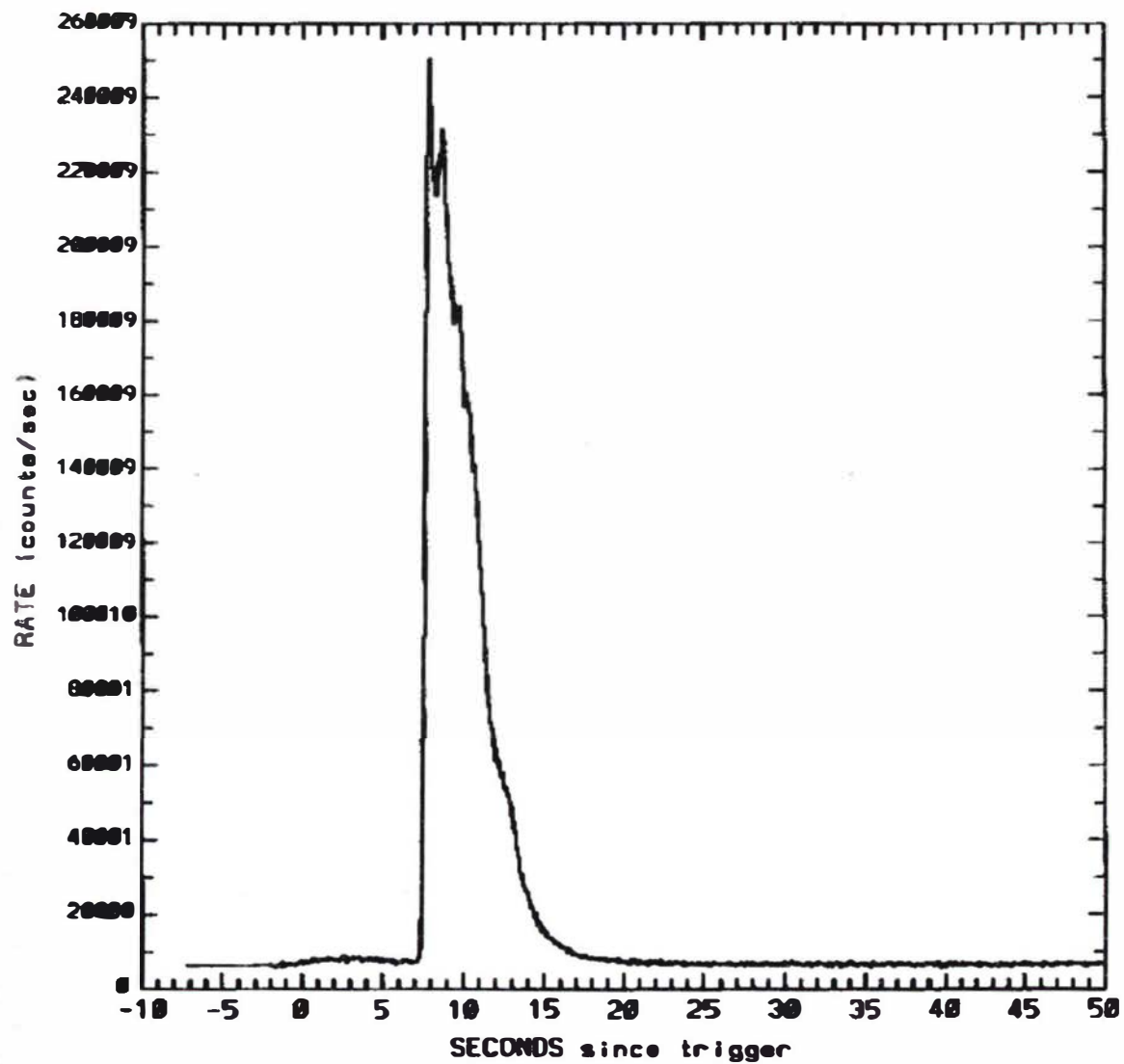
24/09/96

42110.666

25- 100 keV
COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 5614



26-SEP-1996 10:27:36

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # . 5614

Trigger Time:
10350 / 42110.666Burst Data Type:
DISCSCDeadtime
Corrected. NBackground Data
Type: PWEB + DISCLAMinimum (integ. Time:
0.064 seconds)Detectors (7..8).
-6-4----Discriminators:
(1 . 2)Quality Mask.
BDISP1

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

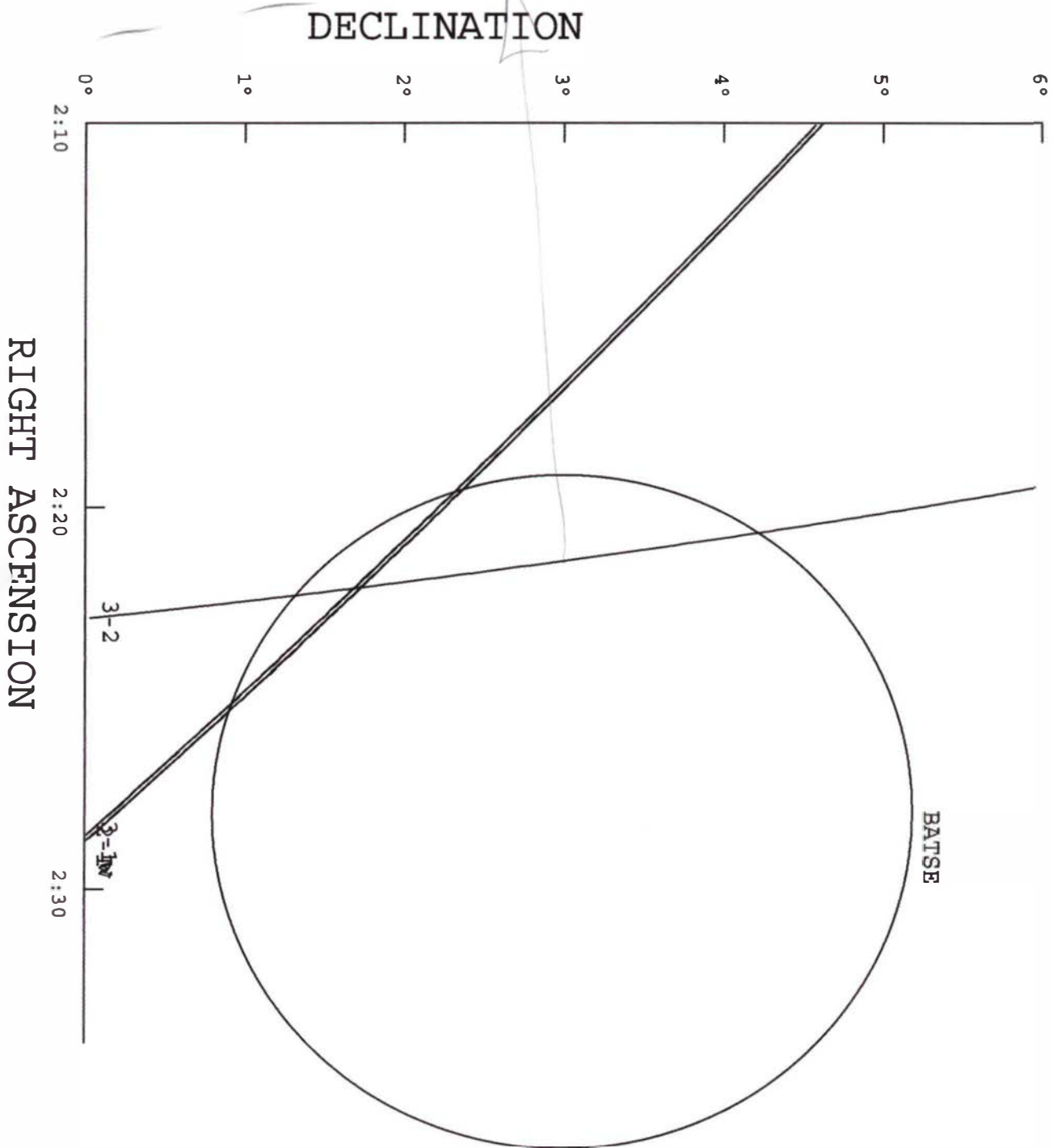
1 ULYSSES

2 BATSE

3 WIND

EVENT OF SEP 24, 1996 12:05

27 / 9/96



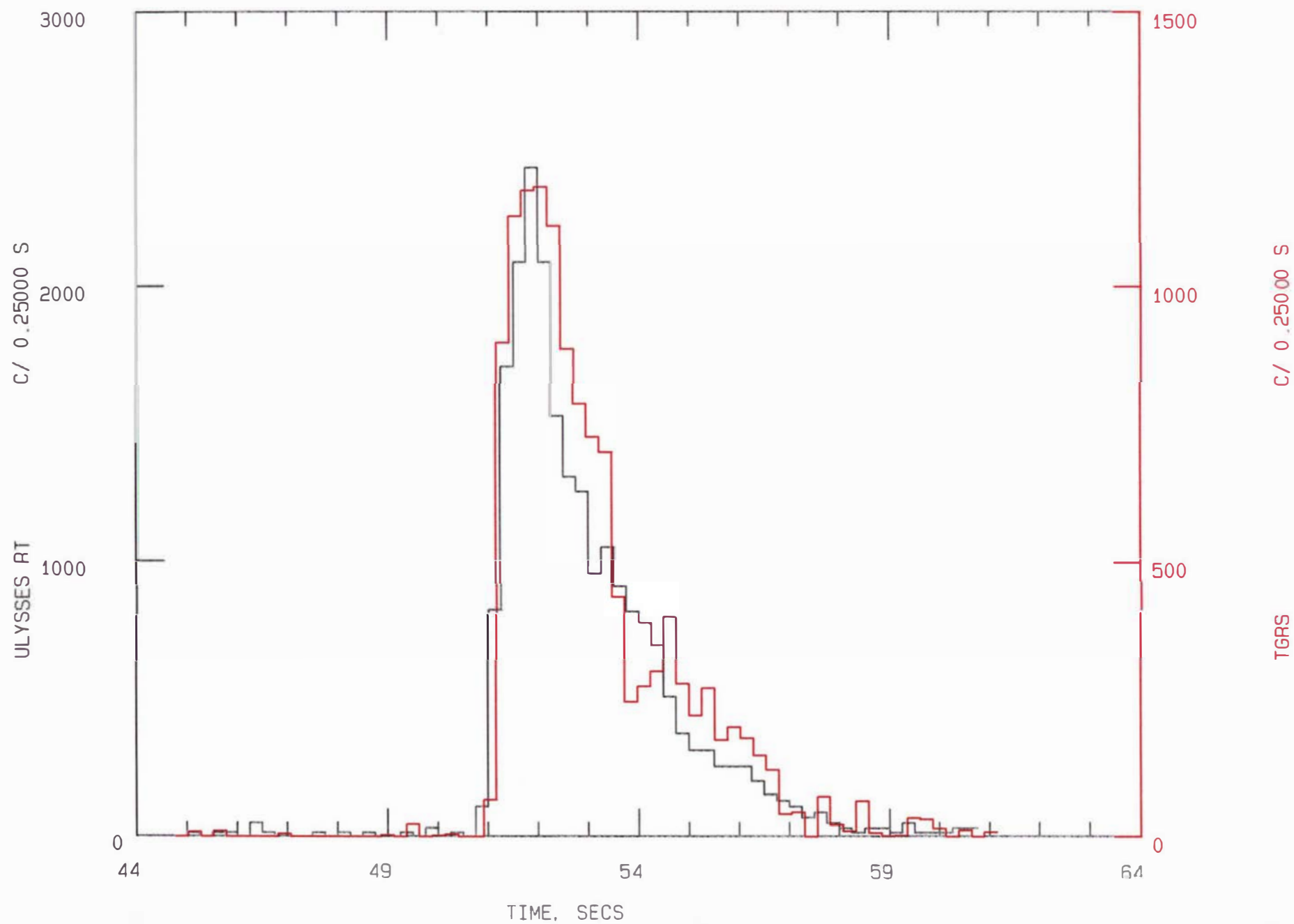
ULYSSES RT-TGRS

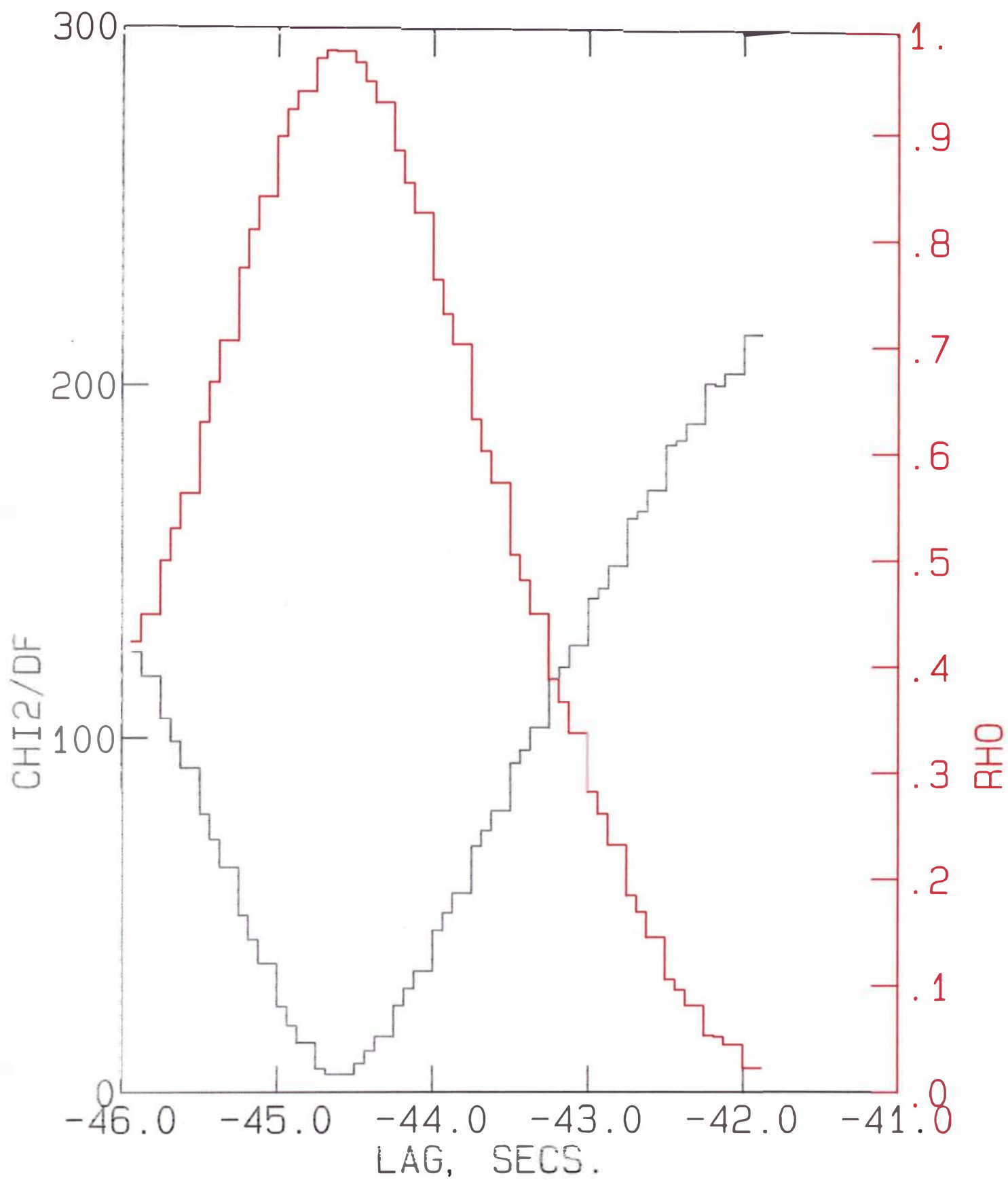
CORRELATION

24/ 9/96

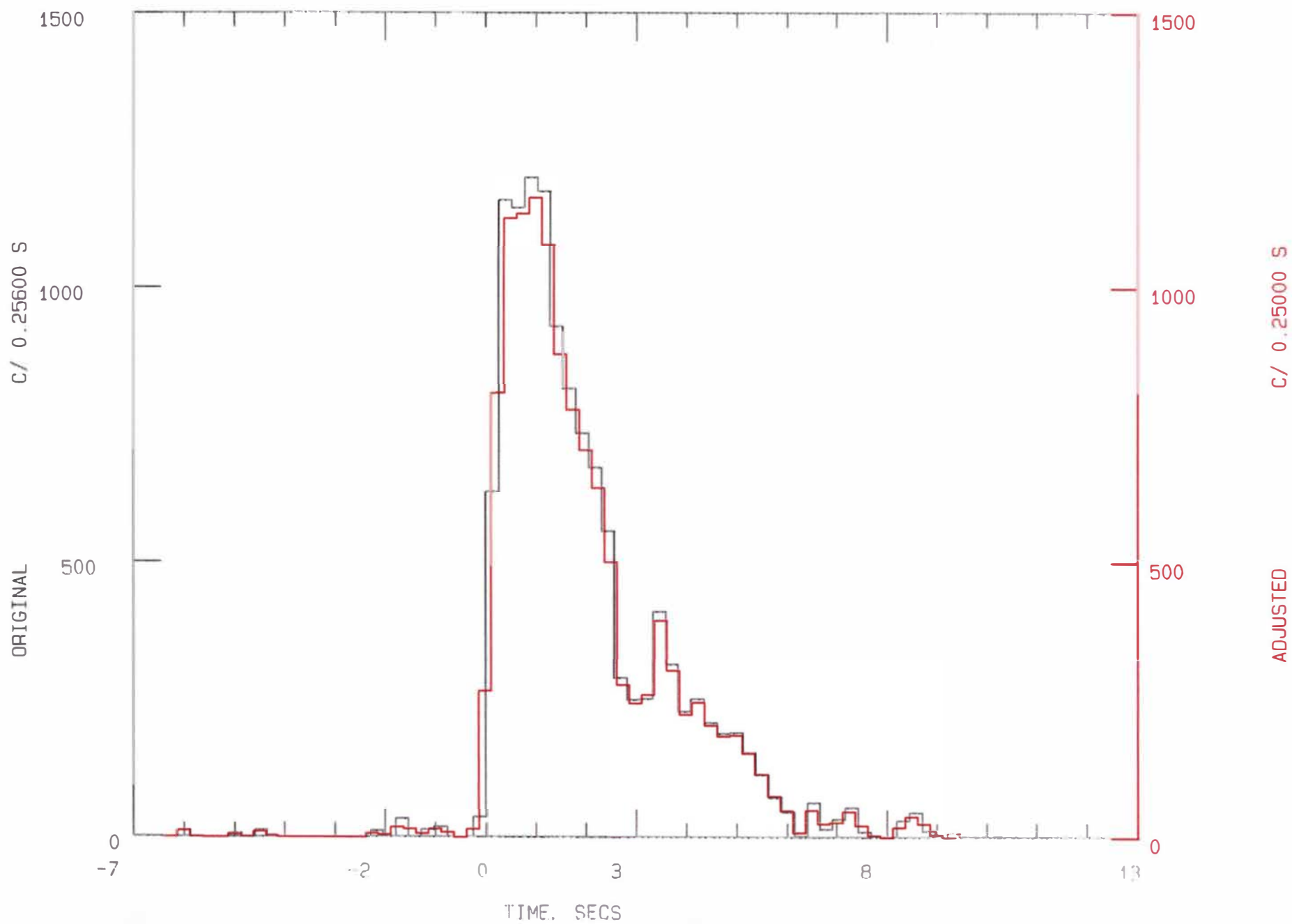
43546.002

27/ 9/96



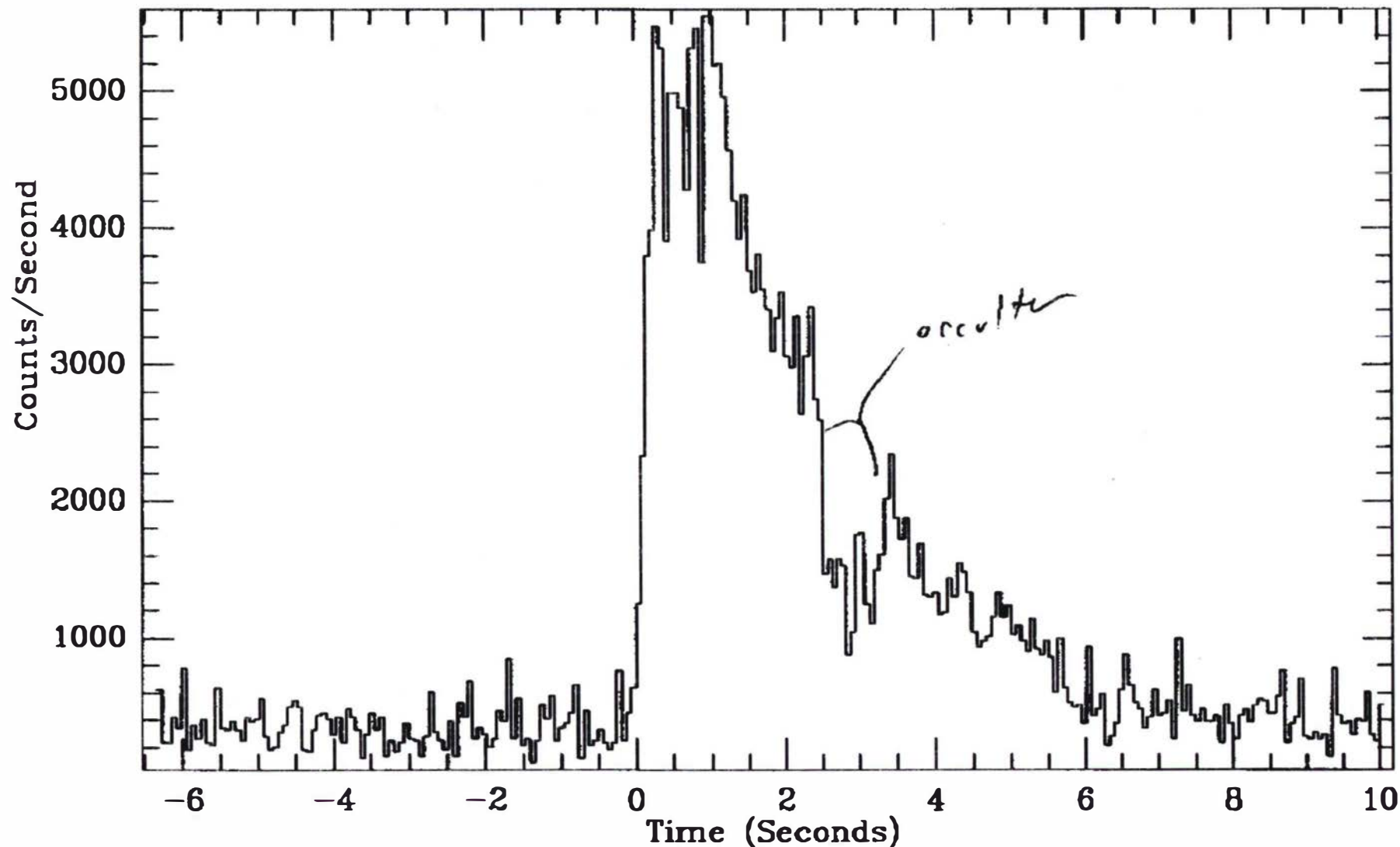


27/ 9/96

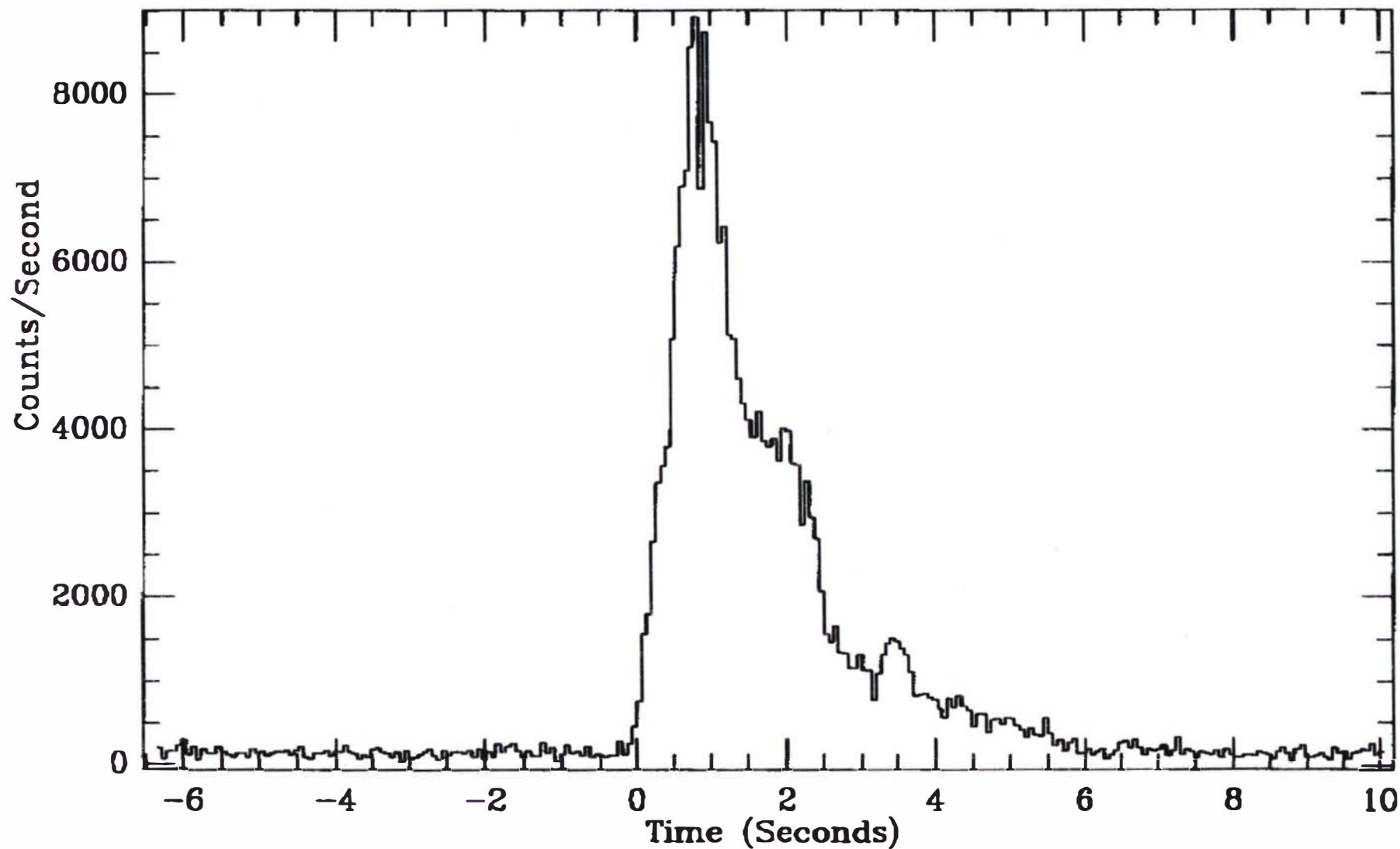


PDB Entry: 960924_42119 Trigger Number: 480
File: USR4:[PALMER.TGRS.TPDB.TIME_HISTORY]960924_42119_T_1_15.TH
form: [1.0*C(35.669,100.736)]
Time Resolution: INTRN Data Types: P&BRATE D1(D2*)
Time History ID: 15 Trig Time: 960924_42119.501687
Data Limits: 0.00 -100000 Quality Mask: 1E0FF (Hex)

27-SEP-96 12:18:47



PDB Entry: 960924_42119 Trigger Number: 480
File: USR4:[PALMER.TGRS.TPDB.TIME_HISTORY]960924_42119_T_1_16.TH
form: [1.0*C(100.736,301.994)]
Time Resolution: INTRN Data Types: P&BRATE D2(D3*)
Time History ID: 16 Trig Time: 960924_42119.501887
Data Limits: 0.00 - 100000 Quality Mask: 1E0FF (Hex)



PDB Entry: 960924_42119 Trigger Number: 480

27-SEP-96 12:24:29

File: USR4:[PALMER.TGRS.TPDB.TIME_HISTORY]960924_42119_T_1_17.TH

form: [1.0*C(301.994,8009.946)]

Time Resolution: INTRN

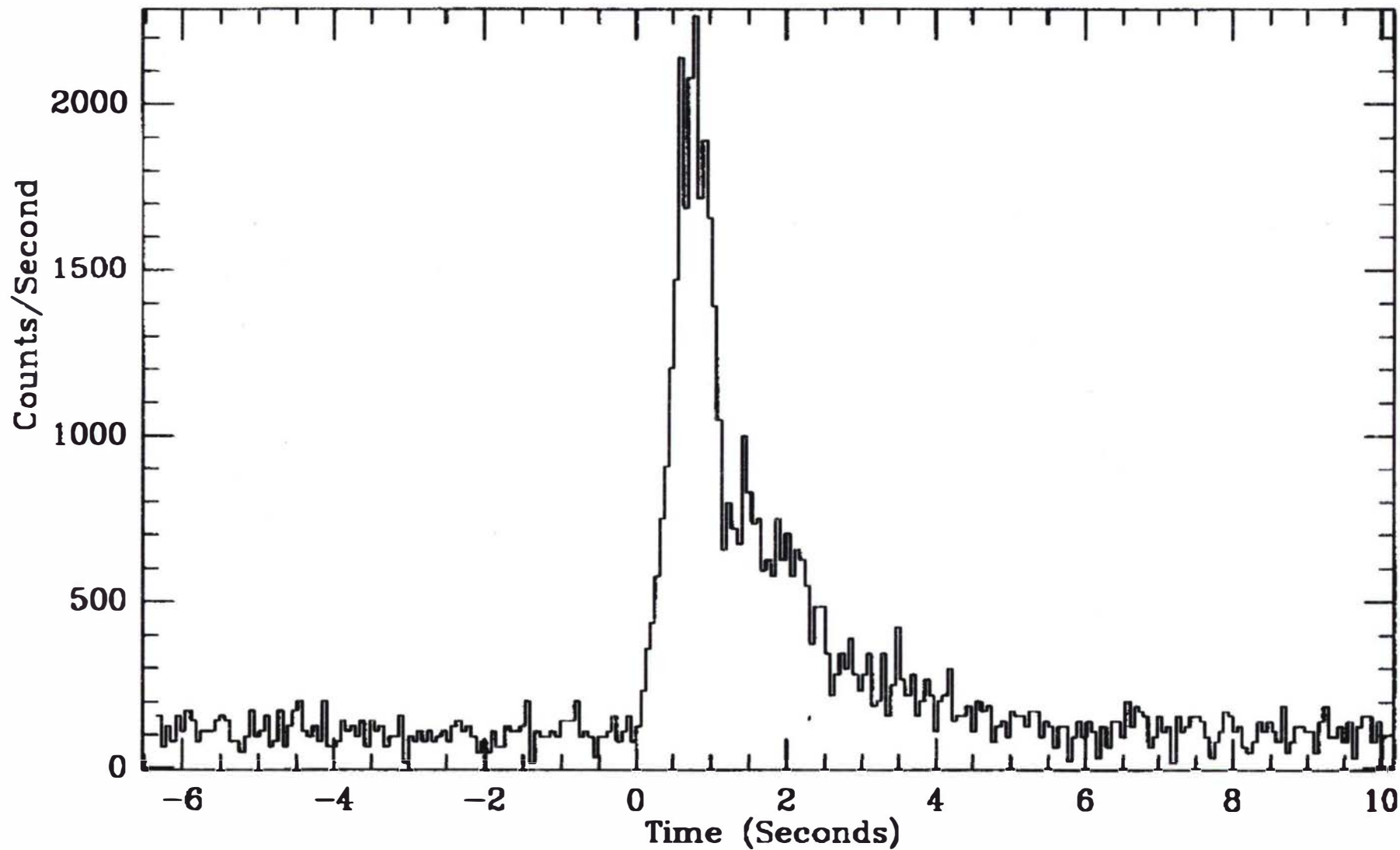
Data Types: P&BRATE D3(DU*)

Time History ID: 17

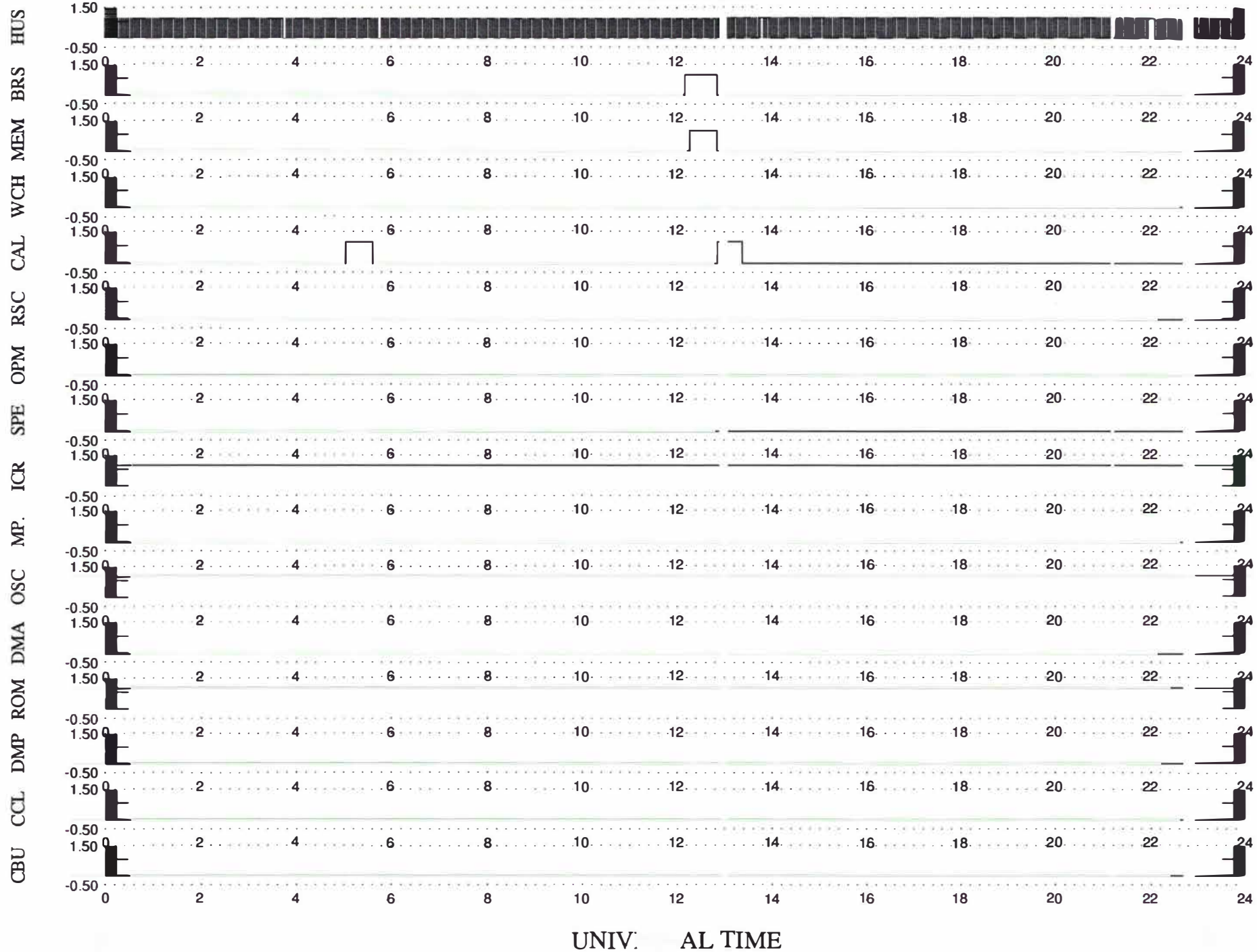
Trig Time: 960924 42119.501687

Data Limits: 0.00 -100000 Quality Mask: 1E0FF

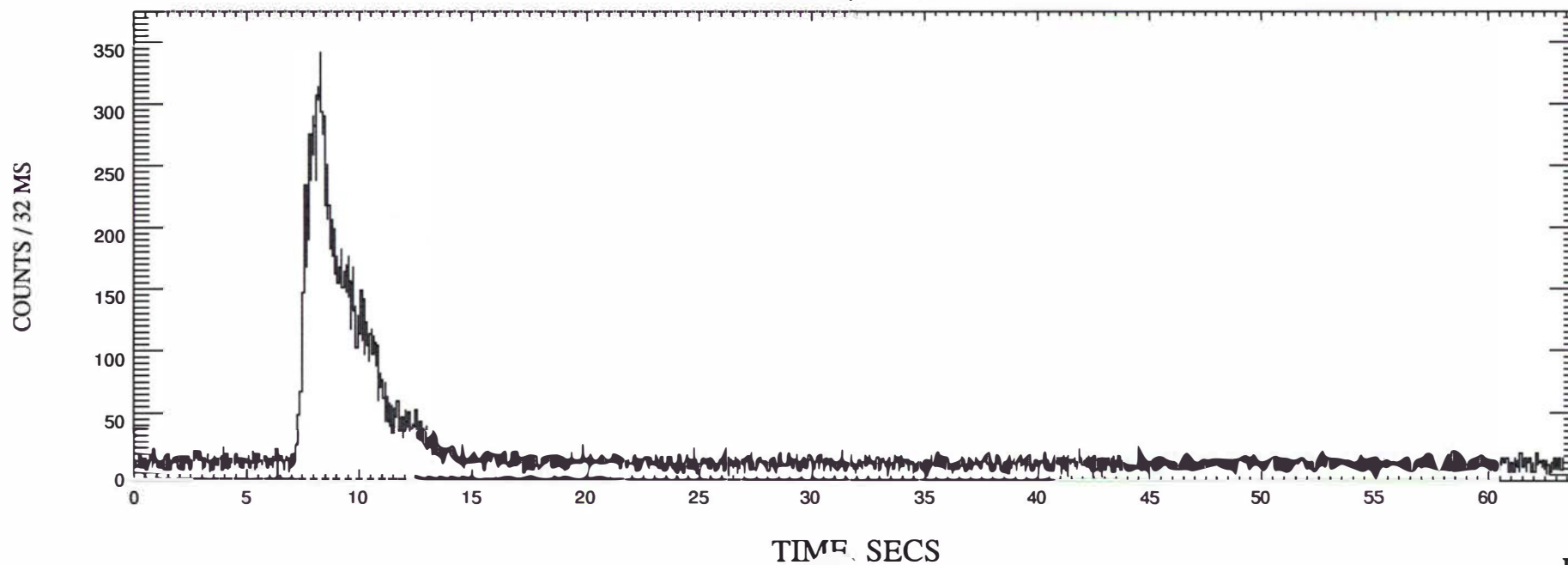
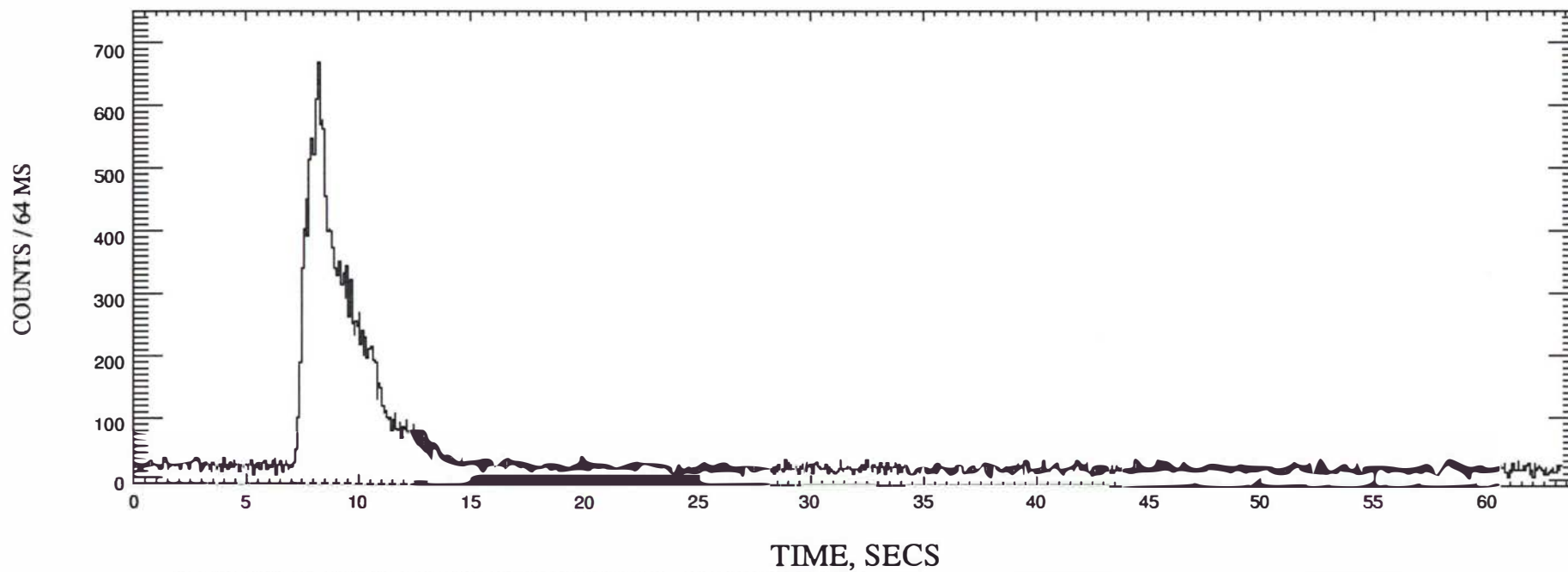
(Hex)



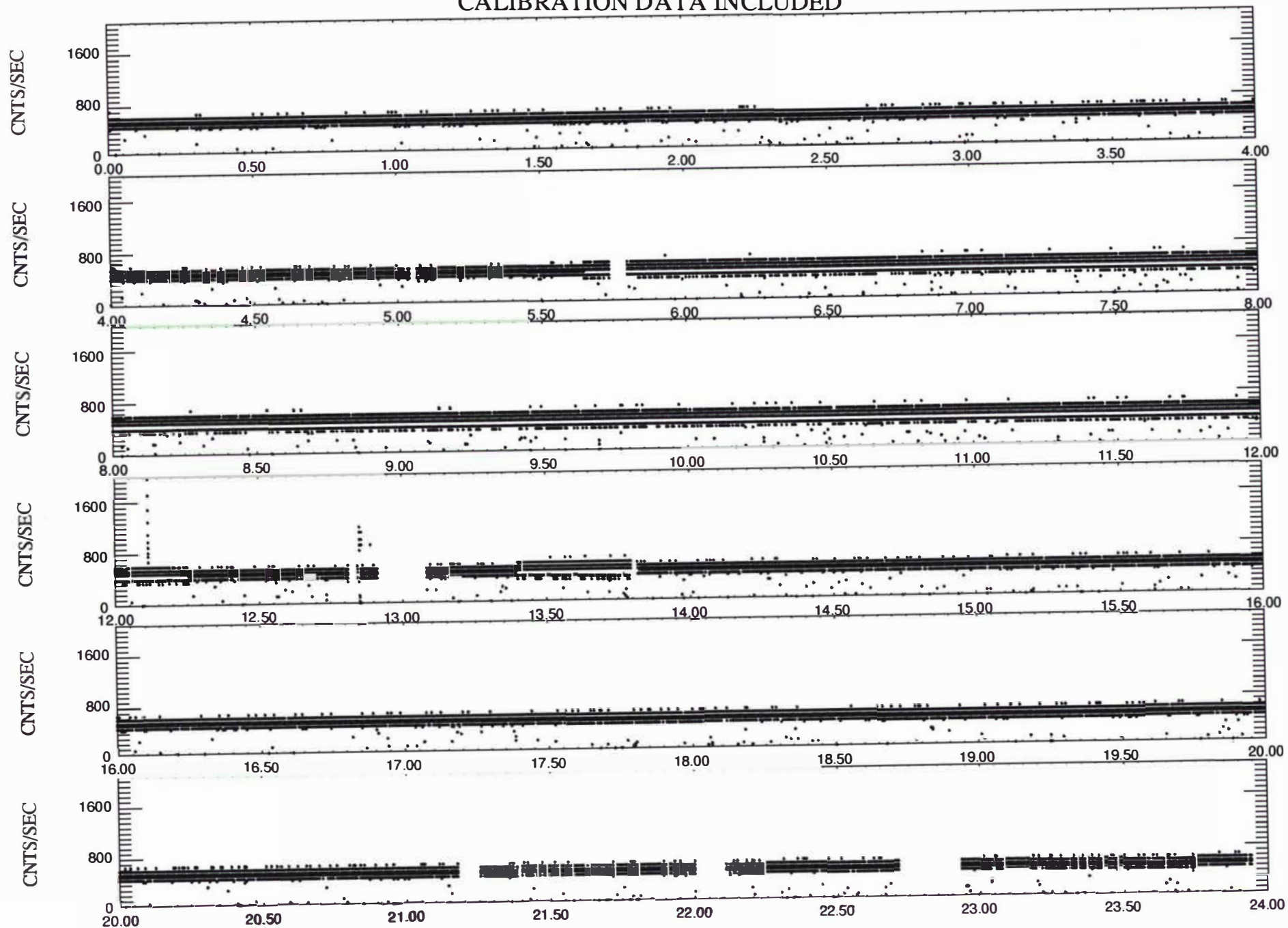
BURST NUMBER 3



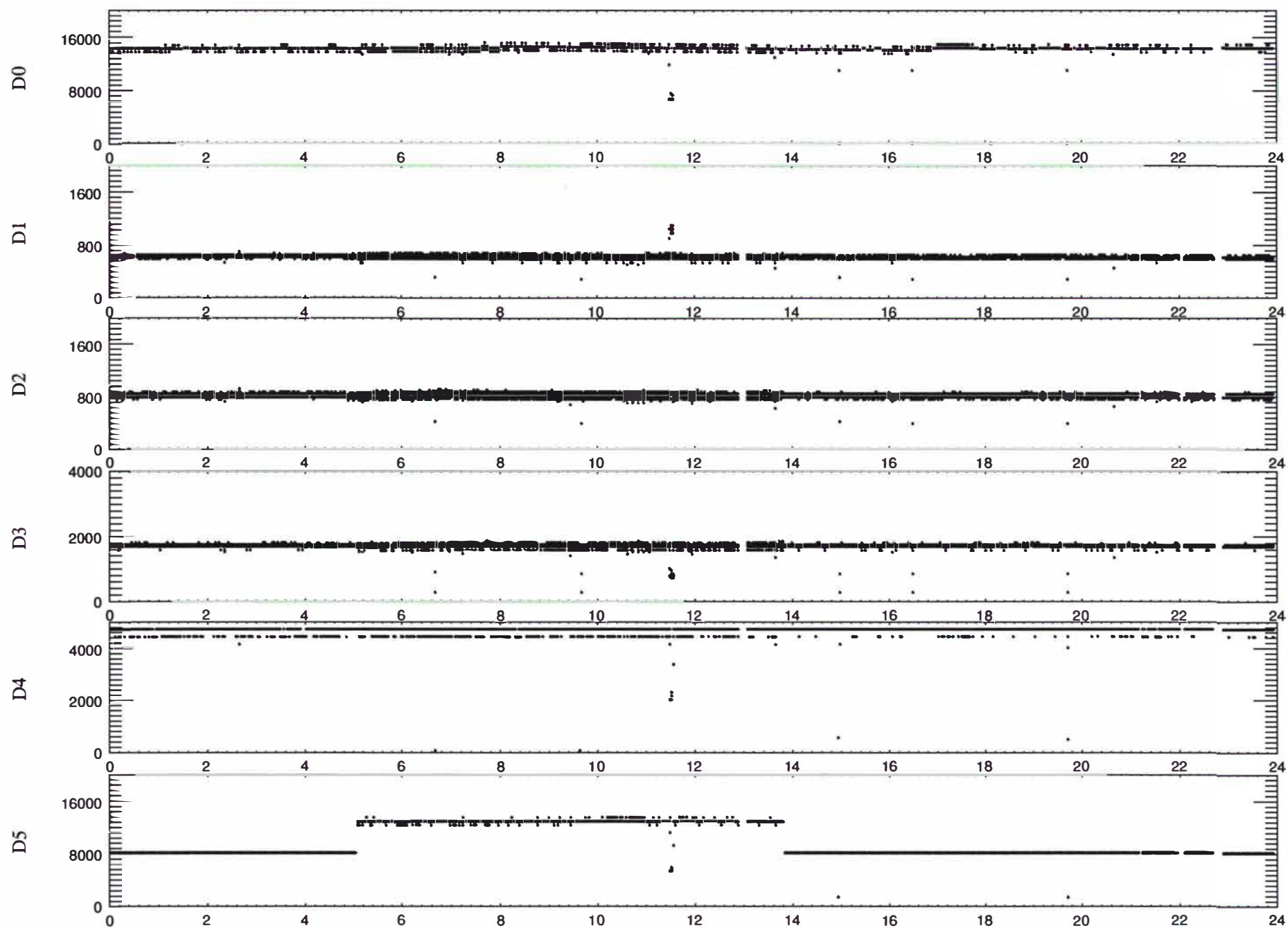
Burst Counter 3 at UT=12.110269610087 h=43596.971 s 12:06:36.971



CALIBRATION DATA INCLUDED



UNIVL AL TIME



UNIV AL TIME

From SURASAK@SSLLES.MSFC.NASA.GOV Fri Sep 27 11:22 PDT 1996
Date: Fri, 27 Sep 1996 13:21:57 -0500 (CDT)
From: SURASAK@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 5615

BATSEARCH PROGRAM

BATSE BURST # 5615
EVENT OF 1996 SEP 25 DAY OF YEAR=269
EVENT CROSSING TIME AT BATSE : 12435. S. OR 03:27:15.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 29.000 -14.000
BATSE PEAK COUNTING RATE: 2700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 9/ 96 IS:
RA= 170.728 DEC= 34.007 DIST= 5.142 AU
BATSE-ULYSSES DISTANCE = 769300726. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 39.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1967.64 SECS.
CROSSING TIME AT ULYSSES IS 14403. S. OR 04:00:02 +/- 365.86 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 9/ 96 IS:
RA= 132.134 DEC= 18.999 DIST= 1.983 AU
MARS-BATSE DISTANCE = 296598848. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 284.16 SECS.
CROSSING TIME AT MARS IS 12719. S. OR 03:31:59 +/- 168.84 SECONDS

BATSE BURST TRIGGER

NO.: 5615

TIME: TJD=0351 SECONDS=12435

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.5 AZIMUTH=203.6 ERROR=8.453 DEGREES

COMMENTS:

GRB. DUR~1S. SINGLE PULSE. NOT VISIBLE ABOVE 300KEV.
THIS BURST OCCURED OVER THE TOP OF PARTICLE EVENT.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5615	960925	10351	12435	2700	029	-14	1

BATSE #

5615

27 / 9 / 96

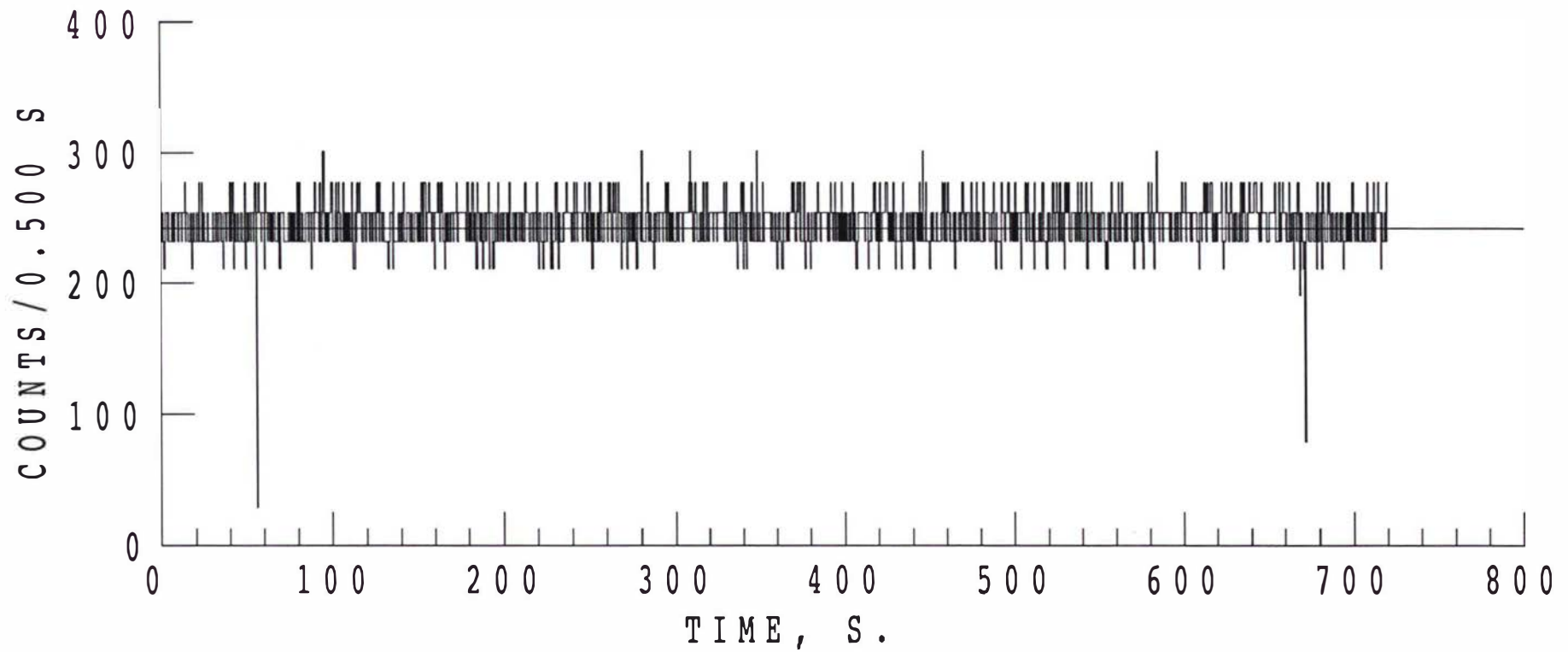
ULYSSES RT

25 / 9 / 96 14040.222 s

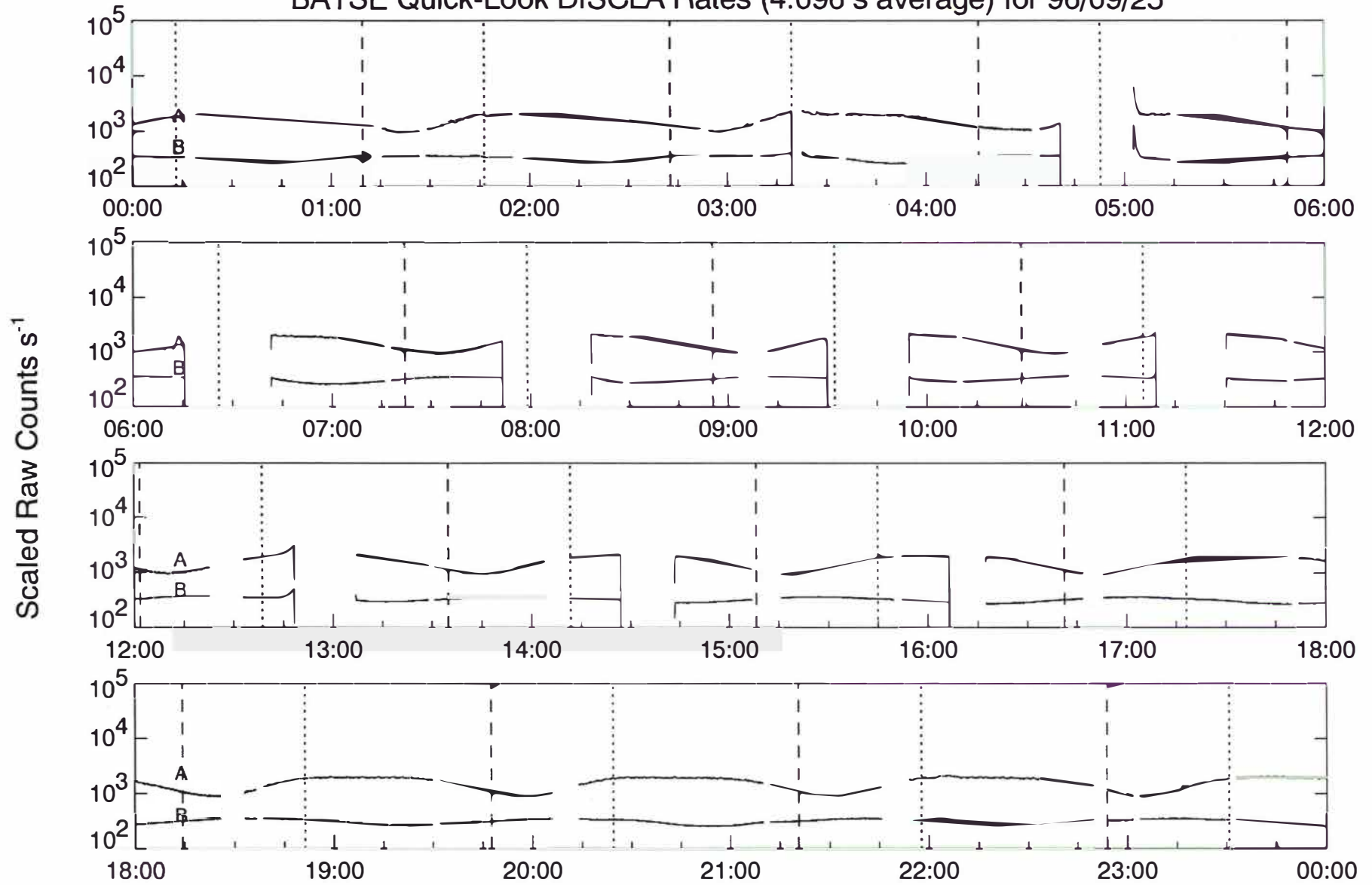
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/25

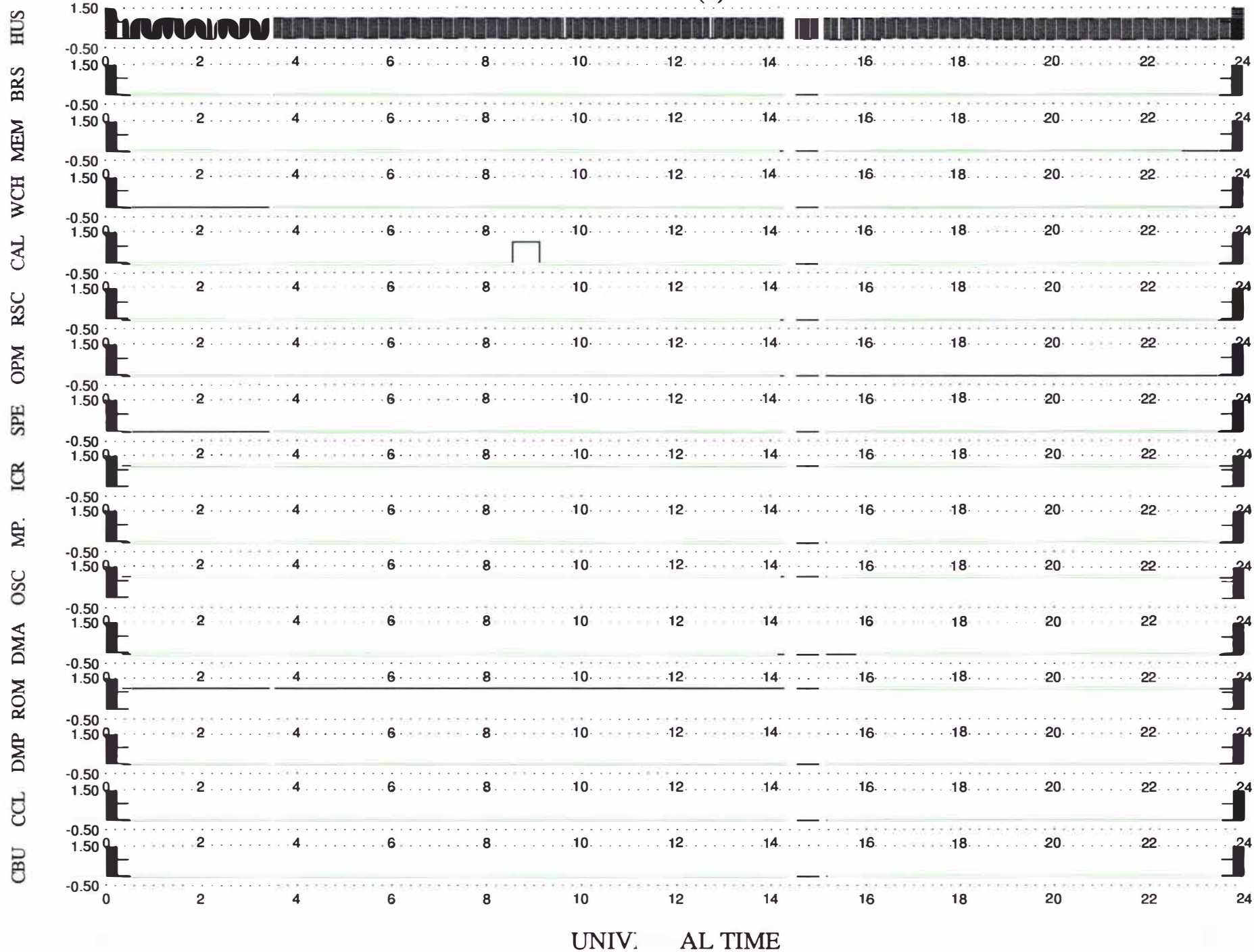


Current Time: 96/09/27, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

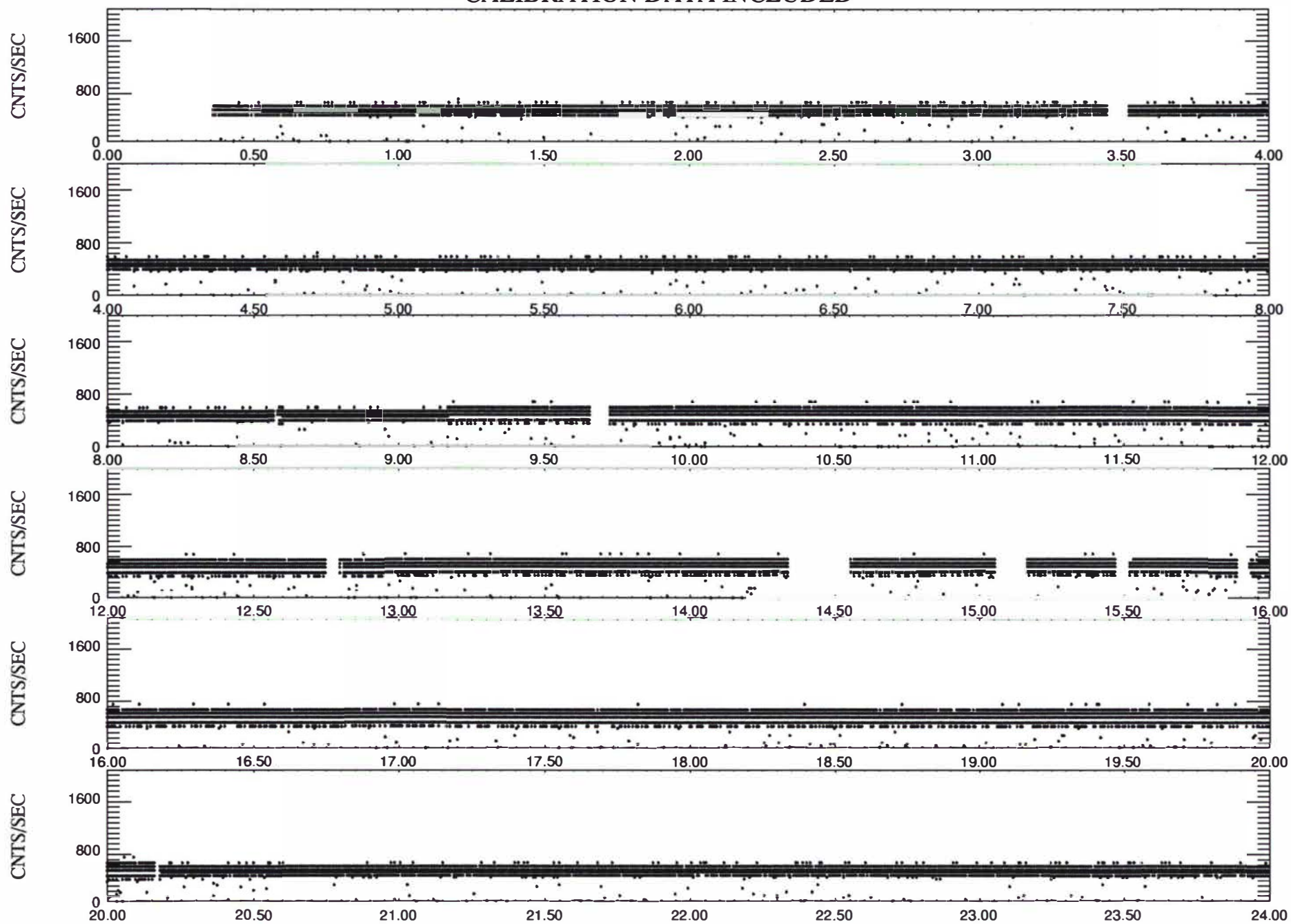
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

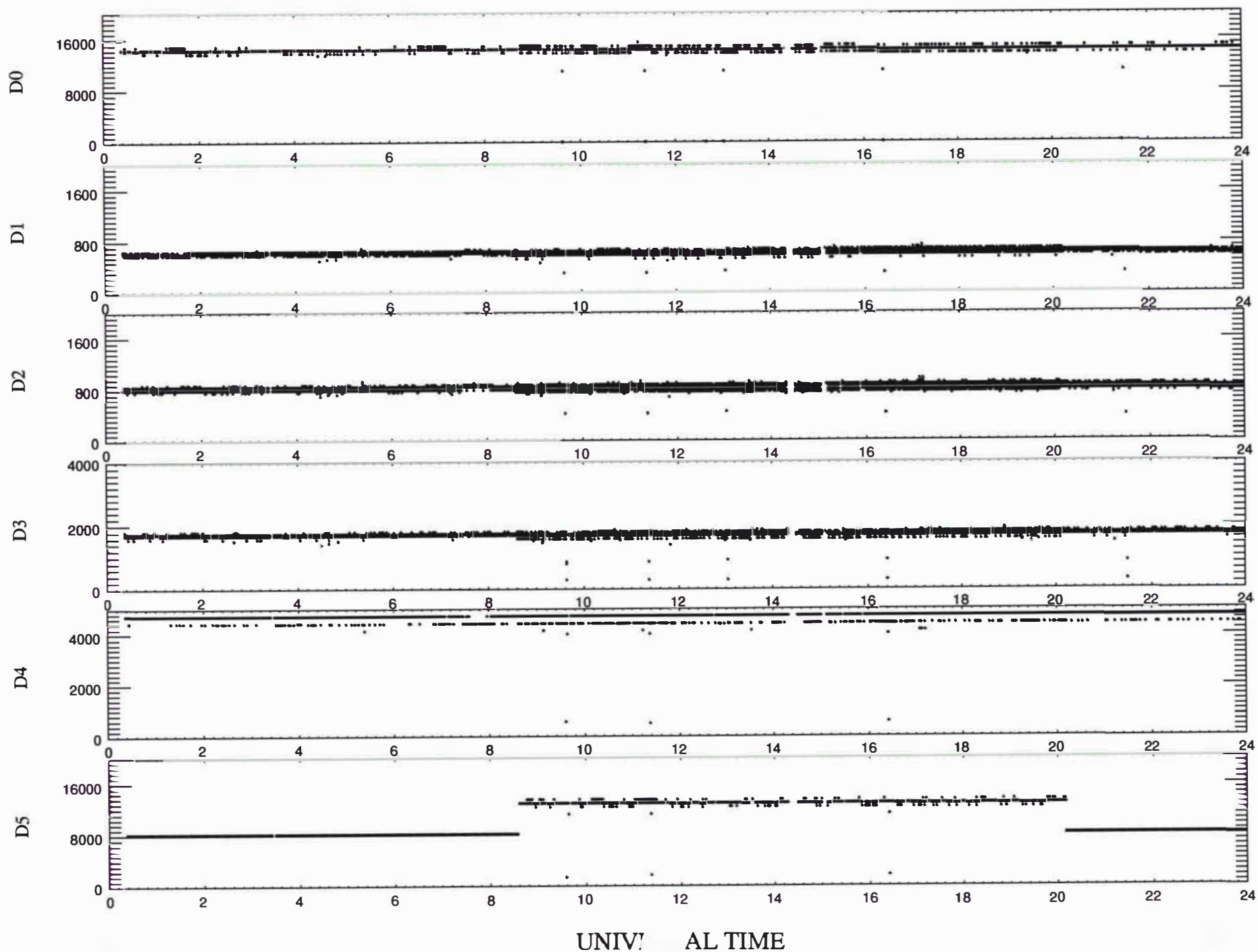
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIV. TIME



From DEAL@fender.msfc.nasa.gov Fri Sep 27 08:45 PDT 1996
From: DEAL@fender.msfc.nasa.gov
Date: Fri, 27 Sep 1996 10:43:59 -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.: 5616

TIME: TJD=0352 SECONDS=82177

TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:N

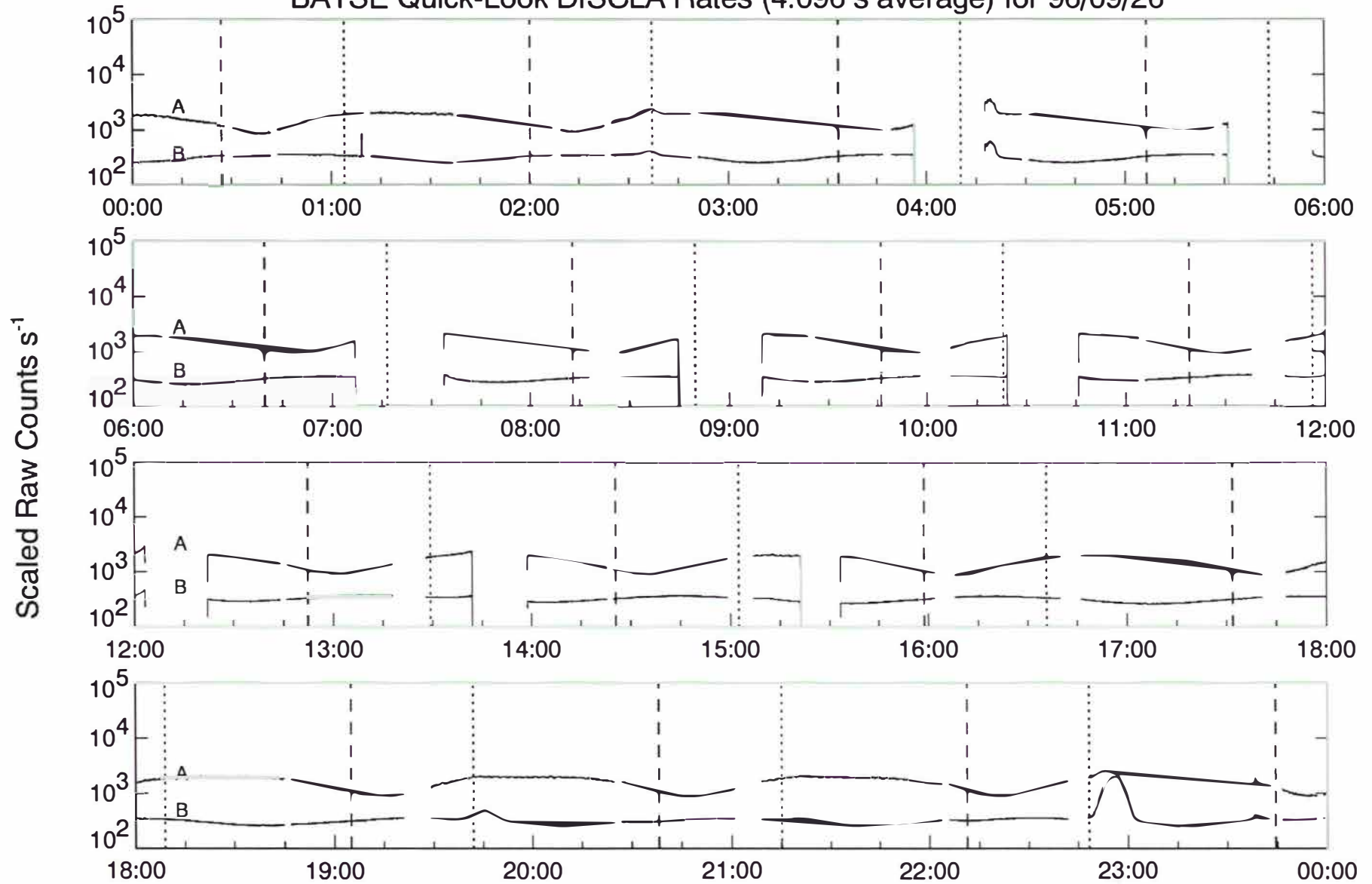
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/26



Current Time: 96/09/28, 1003 EDT

A: Channel 0 Most Sunward LAD

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

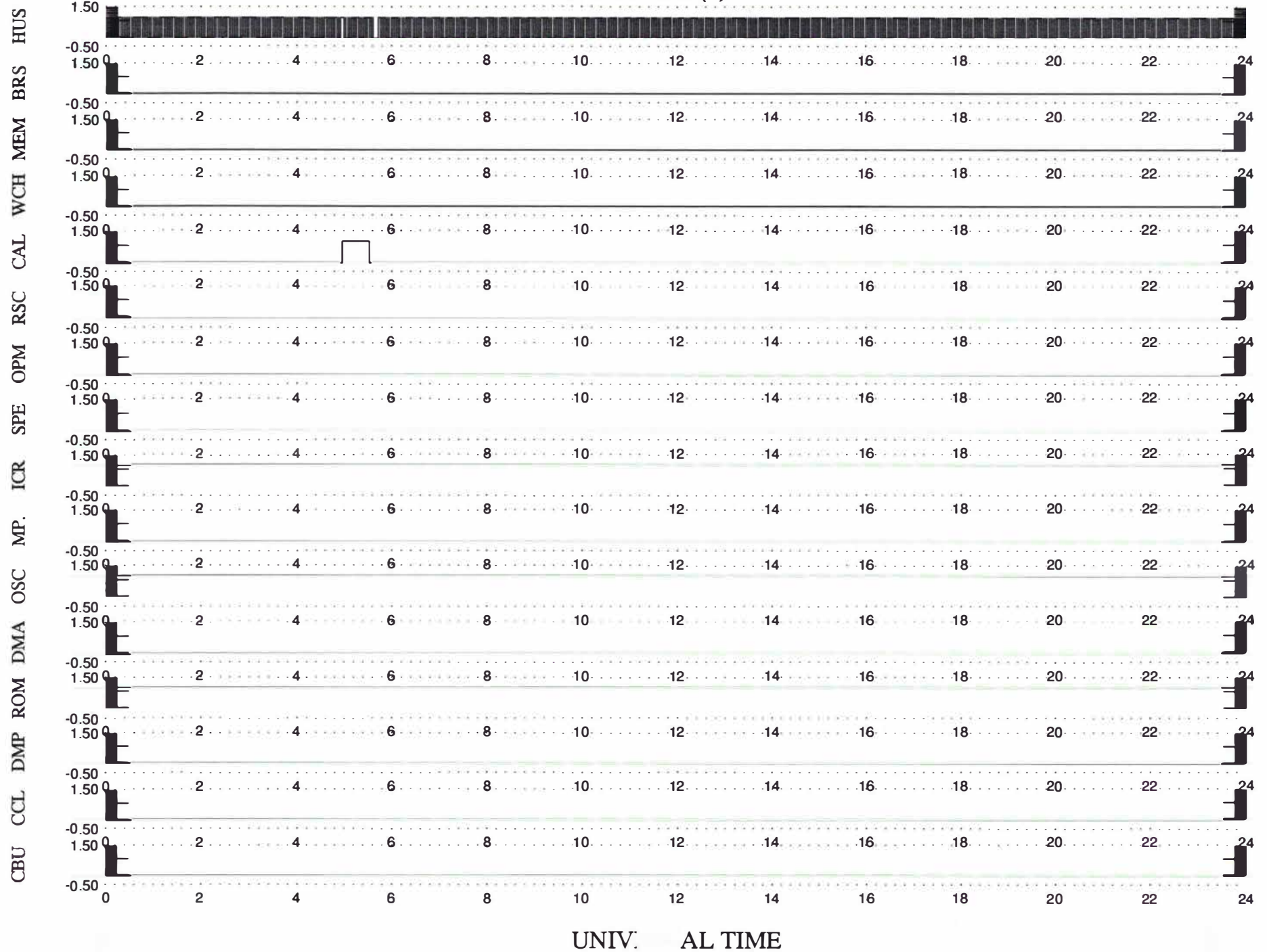
Dotted line: Day entry

Dashed line: Night entry

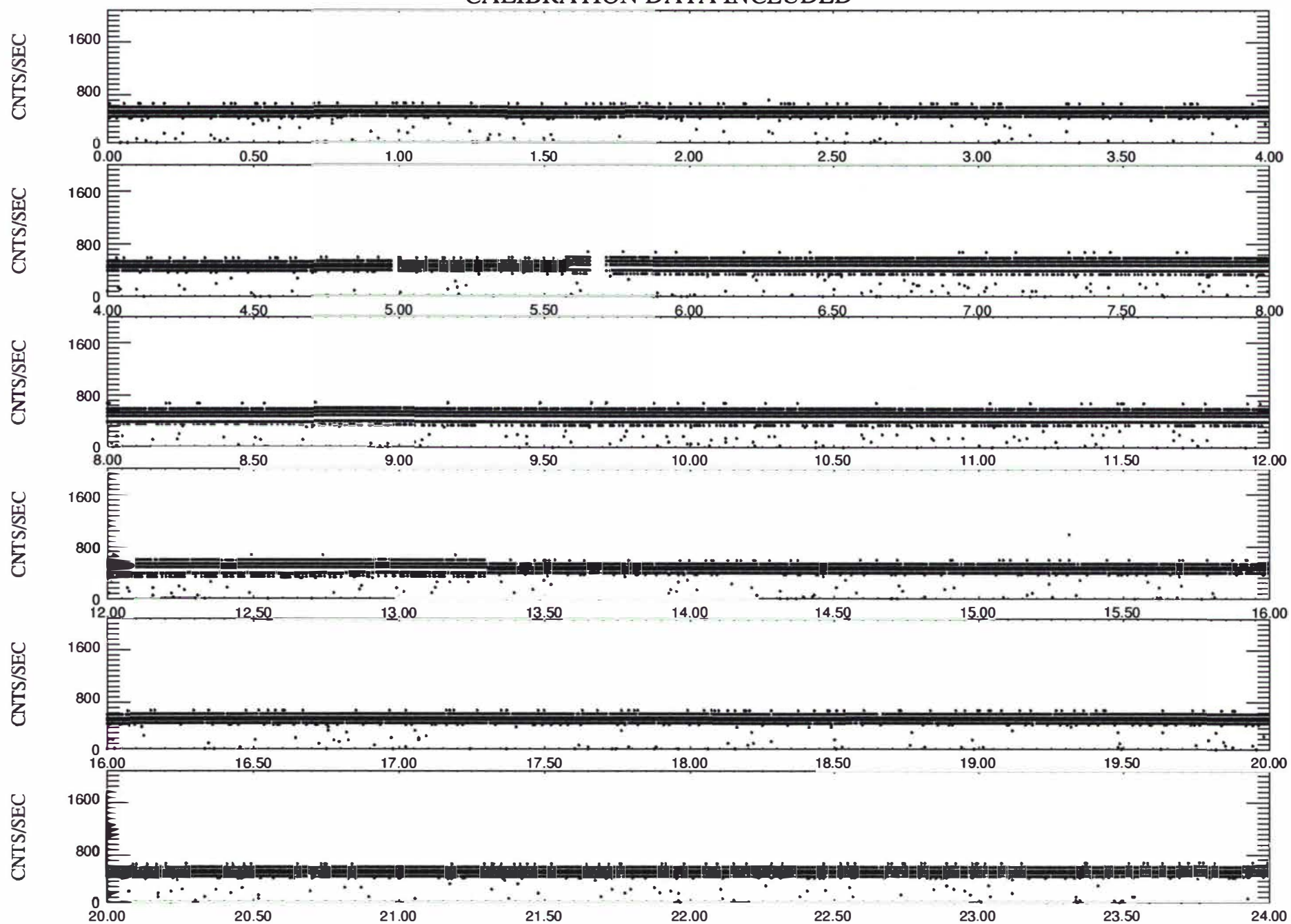
* Solar Burst Trigger

+ Solar Flare

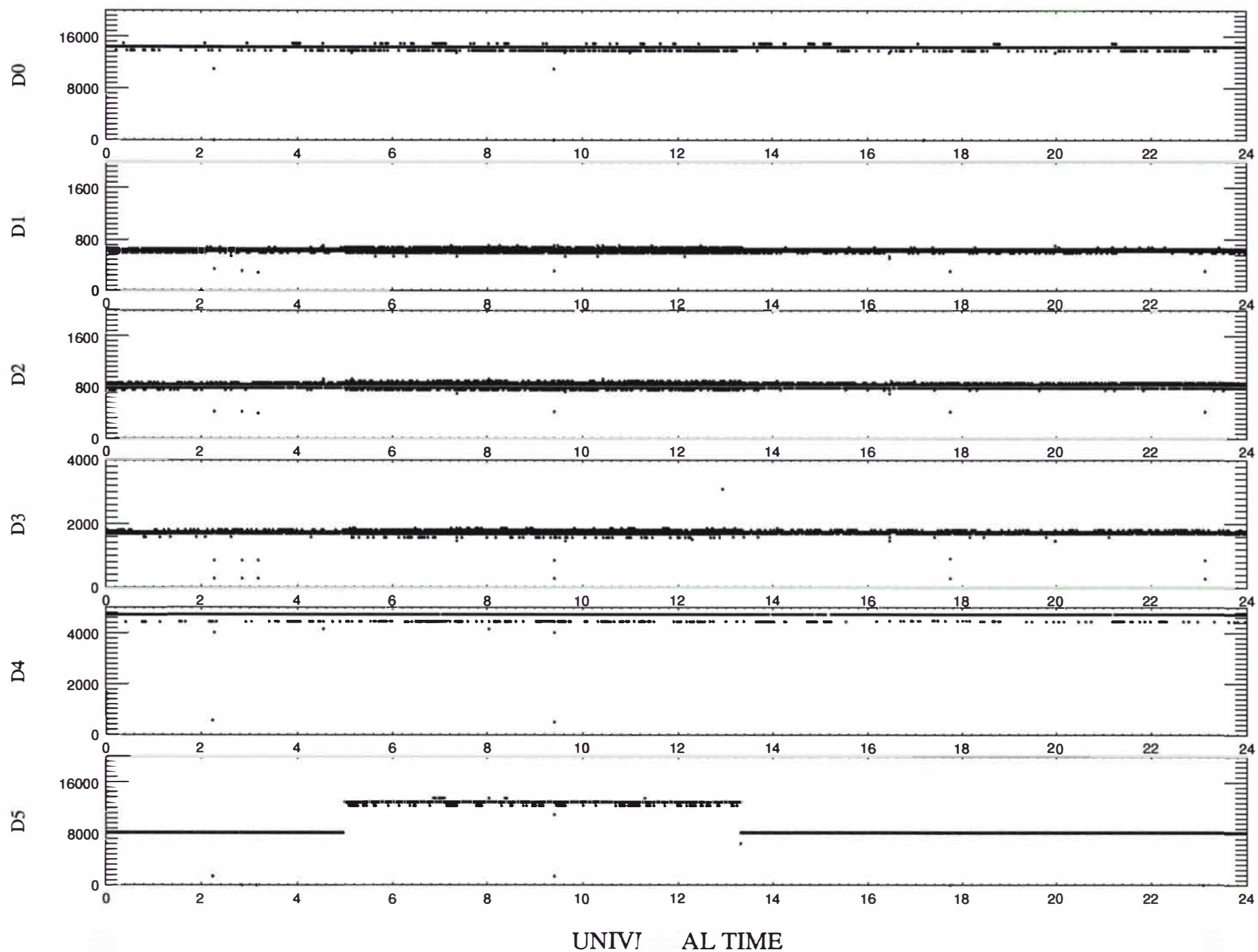
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIV AL TIME



burst5617

Tue Oct 1 08:16:21 1996

1

From SURASAK@SSLLES.MSFC.NASA.GOV Mon Sep 30 11:55 PDT 1996
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA01951; Mon, 30 Sep 1996 11:54:58 -0700
Date: Mon, 30 Sep 1996 13:54:46 -0500 (CDT)
From: SURASAK@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <960930135446.22e2led2@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 5617
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: 0

RI

BATSEARCH PROGRAM

BATSE BURST # 5617
EVENT OF 1996 SEP 27 DAY OF YEAR=271
EVENT CROSSING TIME AT BATSE : 13638. S. OR 03:47:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 200.000 74.000
BATSE PEAK COUNTING RATE: 7000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 9/ 96 IS:
RA= 171.091 DEC= 33.816 DIST= 5.137 AU
BATSE-ULYSSES DISTANCE = 768511548. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=137.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1885.29 SECS.
CROSSING TIME AT ULYSSES IS 11753. S. OR 03:15:52 +/- 322.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 9/ 96 IS:
RA= 133.377 DEC= 18.695 DIST= 1.970 AU
MARS-BATSE DISTANCE = 294721408. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=114.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -404.74 SECS.
CROSSING TIME AT MARS IS 13233. S. OR 03:40:33 +/- 149.40 SECONDS

BATSE BURST TRIGGER

NO.: 5617

TIME: TJD=0353 SECONDS=13638

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=36.7 AZIMUTH=13.1 ERROR=0.976 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUB STRUCTURE. DUR~40S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5617	960927	10353	13638	7000	200	+74	40

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 5537	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	5535
96	8	21	13940.971	S1	520	720	360	6	2	11	368	Search 5537	RI
96	8	25	01388.008	S2	760	900	240	<0.02	12	145	369	Search 5537	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 5537	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 5537	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 5537	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 5537	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 5537	RI
96	10	17	42405.539	S1					0.3	1.5	396	Search 5537	NO
96	10	21	53569.142	S1	270	360	60	2.7	2	60	398	Search 5537	RI
96	10	22	68464.575	S1	340	450	160	6.5	14	67	399	Search 5537	RI
96	10	23	67314.887	S1	360	750	220	3.4	1	8	400	Search 5537	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 5537	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 5537	RI

TLC

-- E. L. Cline ----- LHEAVX::CLINE

Helio corr removed 17/2/00

Date: *Mar 16 '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

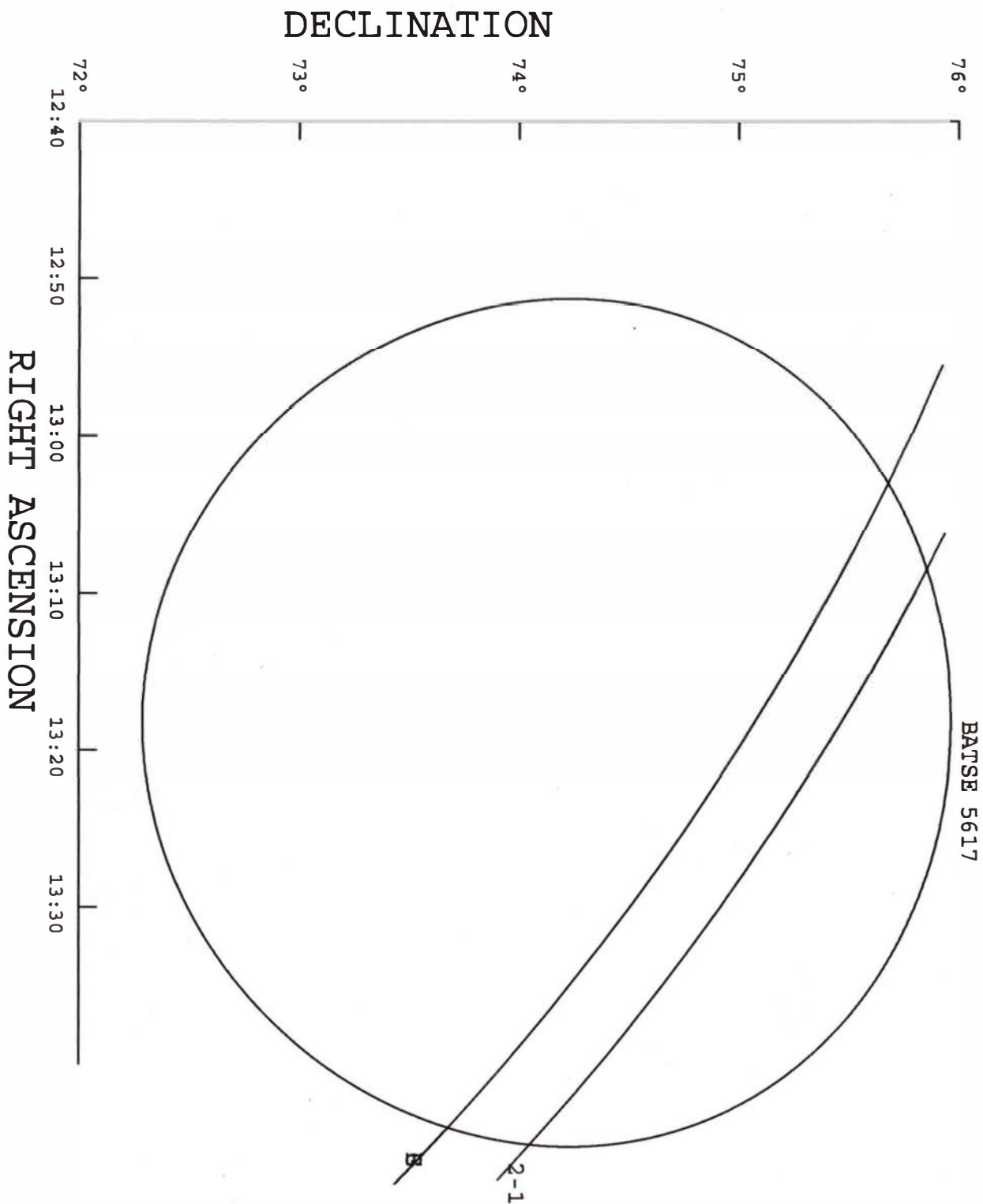
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF SEP 27, 1996 3:15

17 / 2 / 0



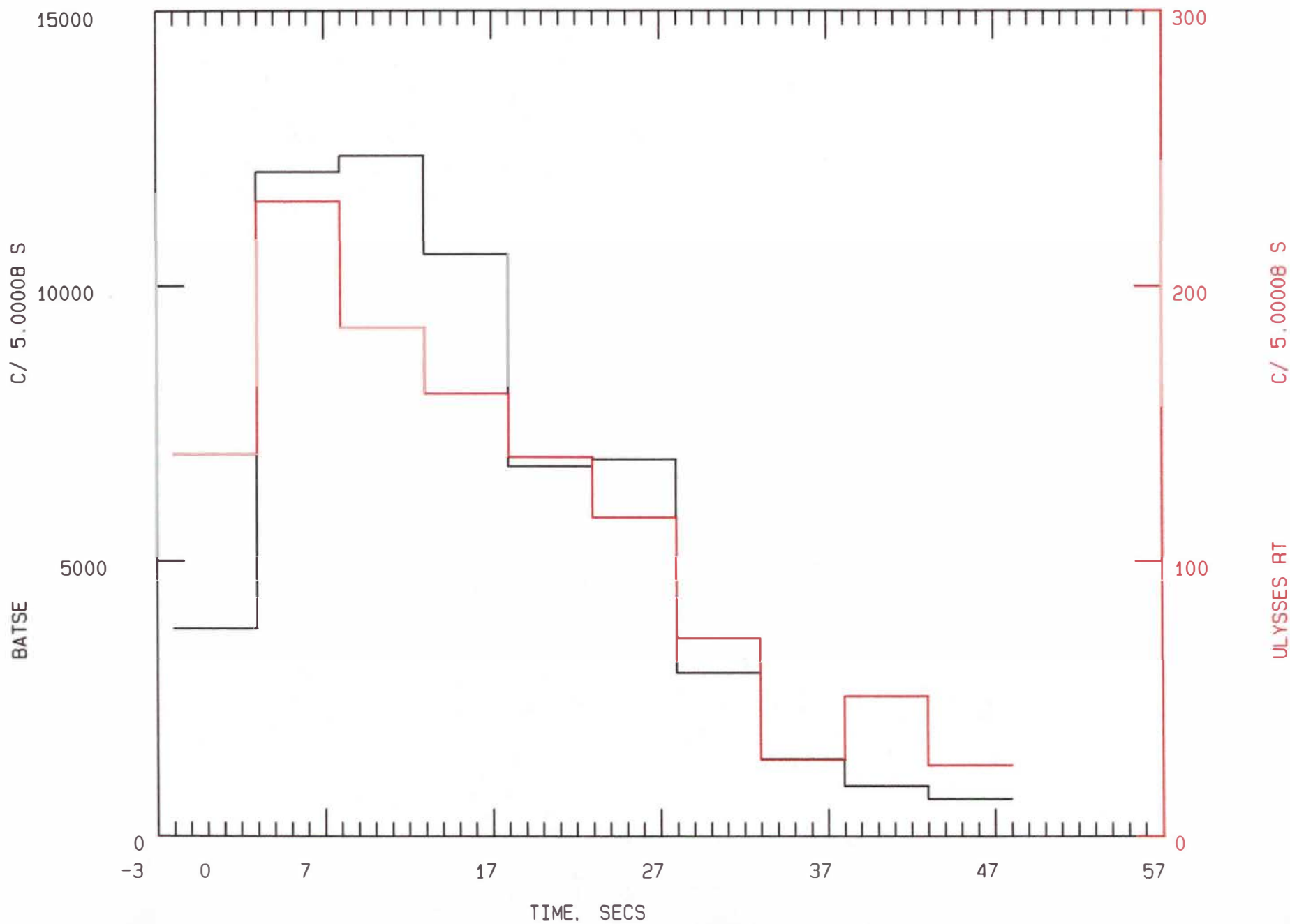
BATSE

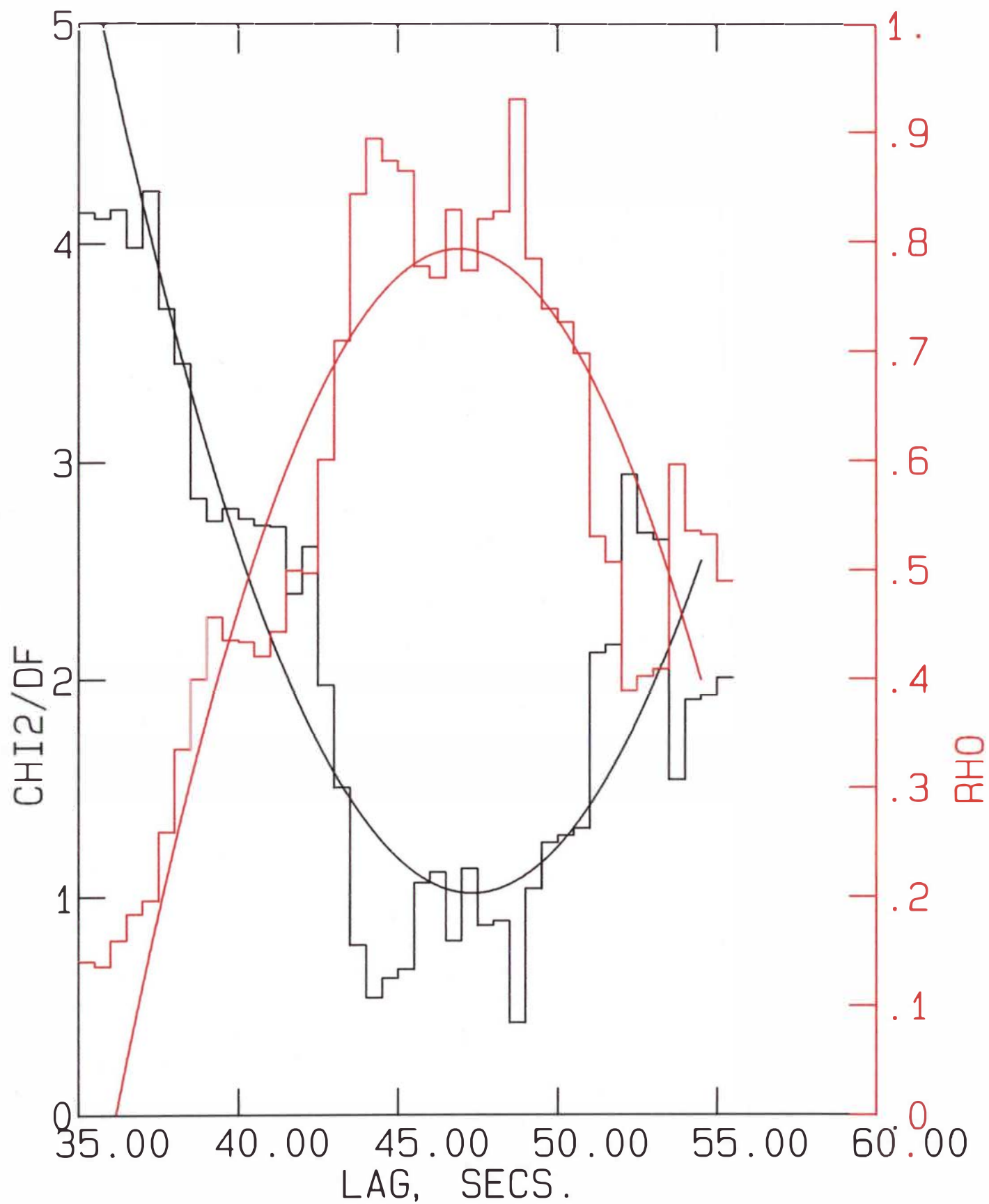
-ULYSSES RT CORRELATION

27/ 9/96

13638.345

16/ 3/98





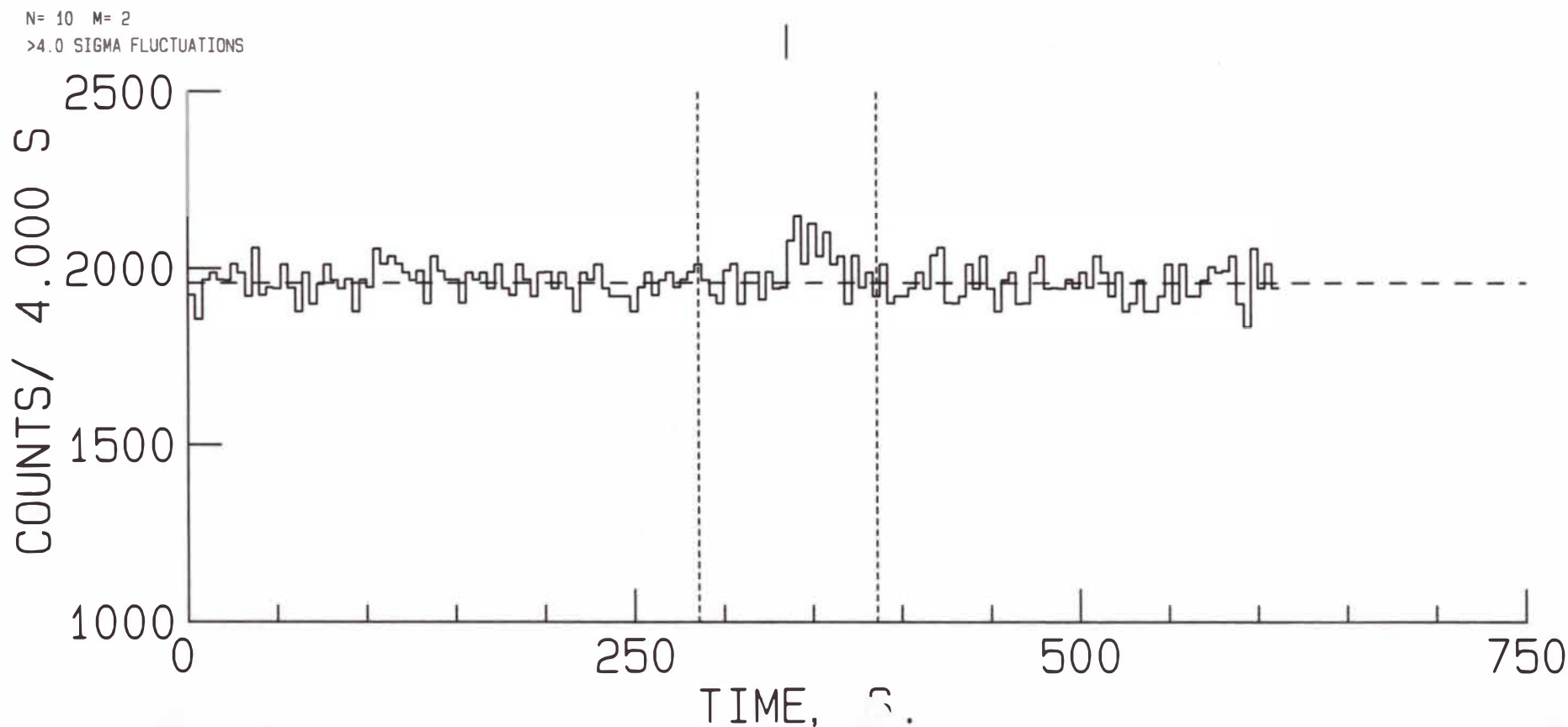
ULYSSES RT

16 / 3 / 98

27 / 9 / 96 11448.384 s

0.500 S INTERVALS REGROUPED BY 8

21- 146 keV



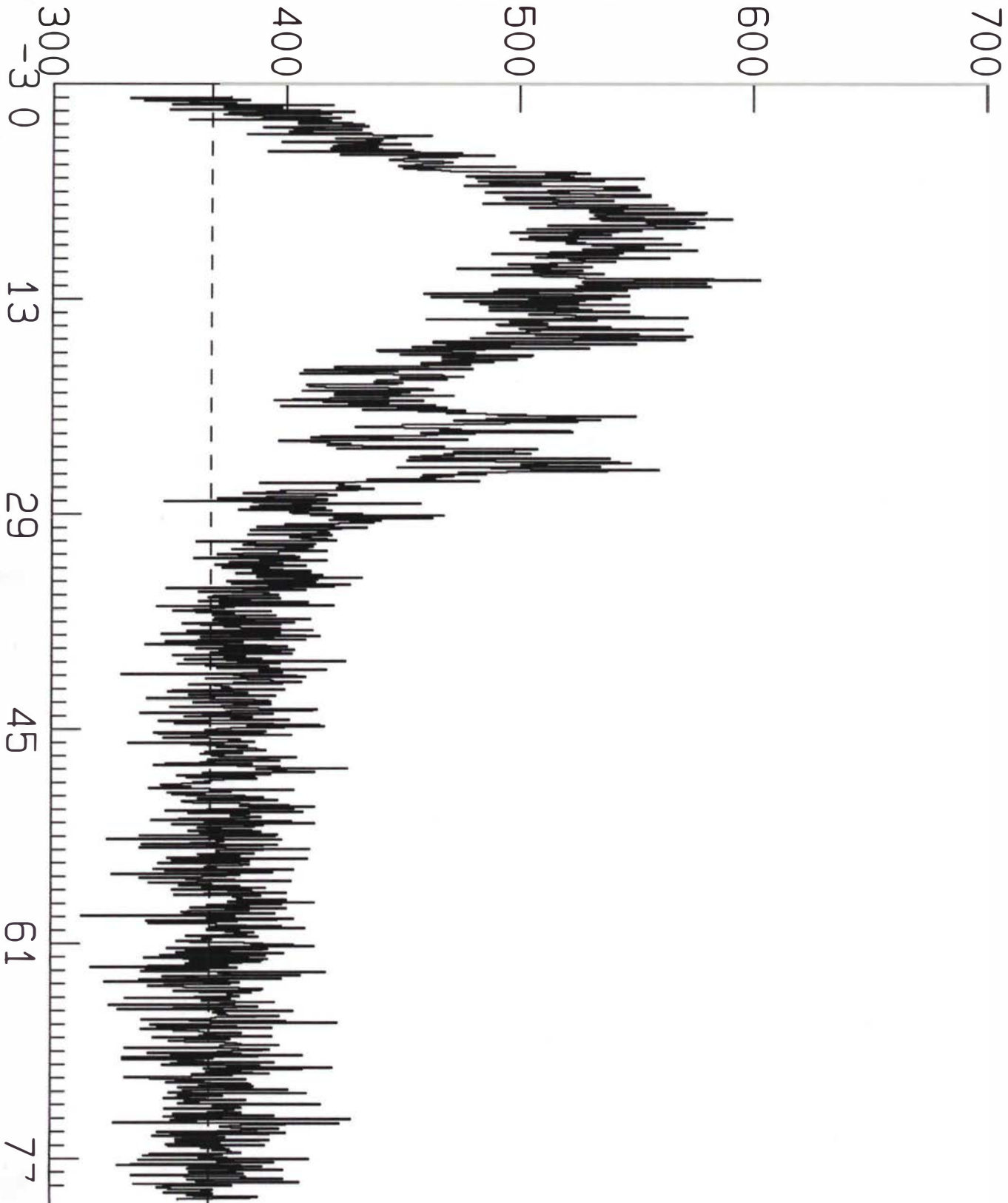
BATSE

27/09/96

13638.345

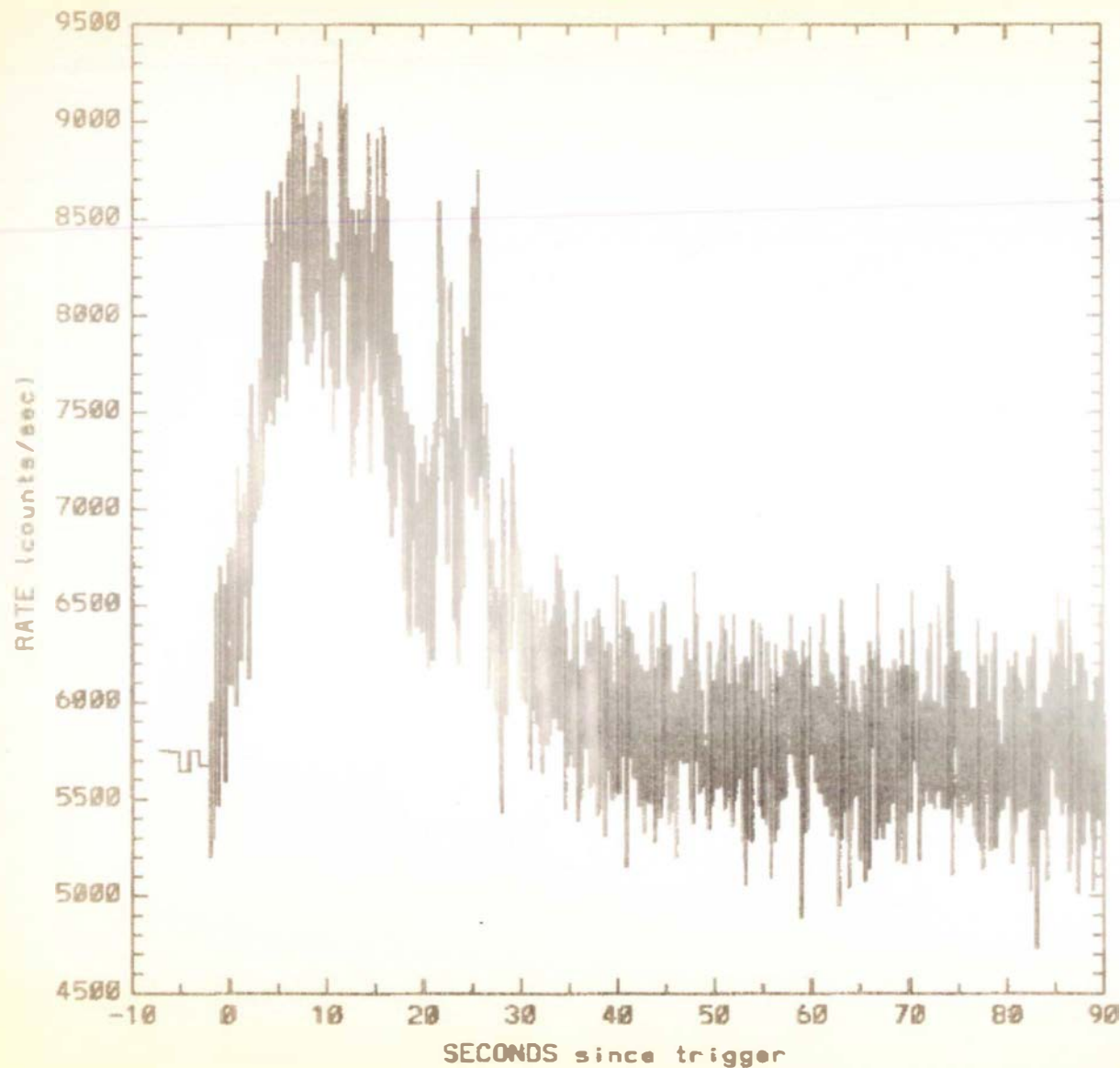
25- 100 keV

COUNTS/0.064 S



4/10/96

DISCSC Data for K. Hurley, No. 5617



4-OCT-1996 09:56:05

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 5617

Trigger Time:
19353 / 13638.346

Burst Data Type:
DISCSC

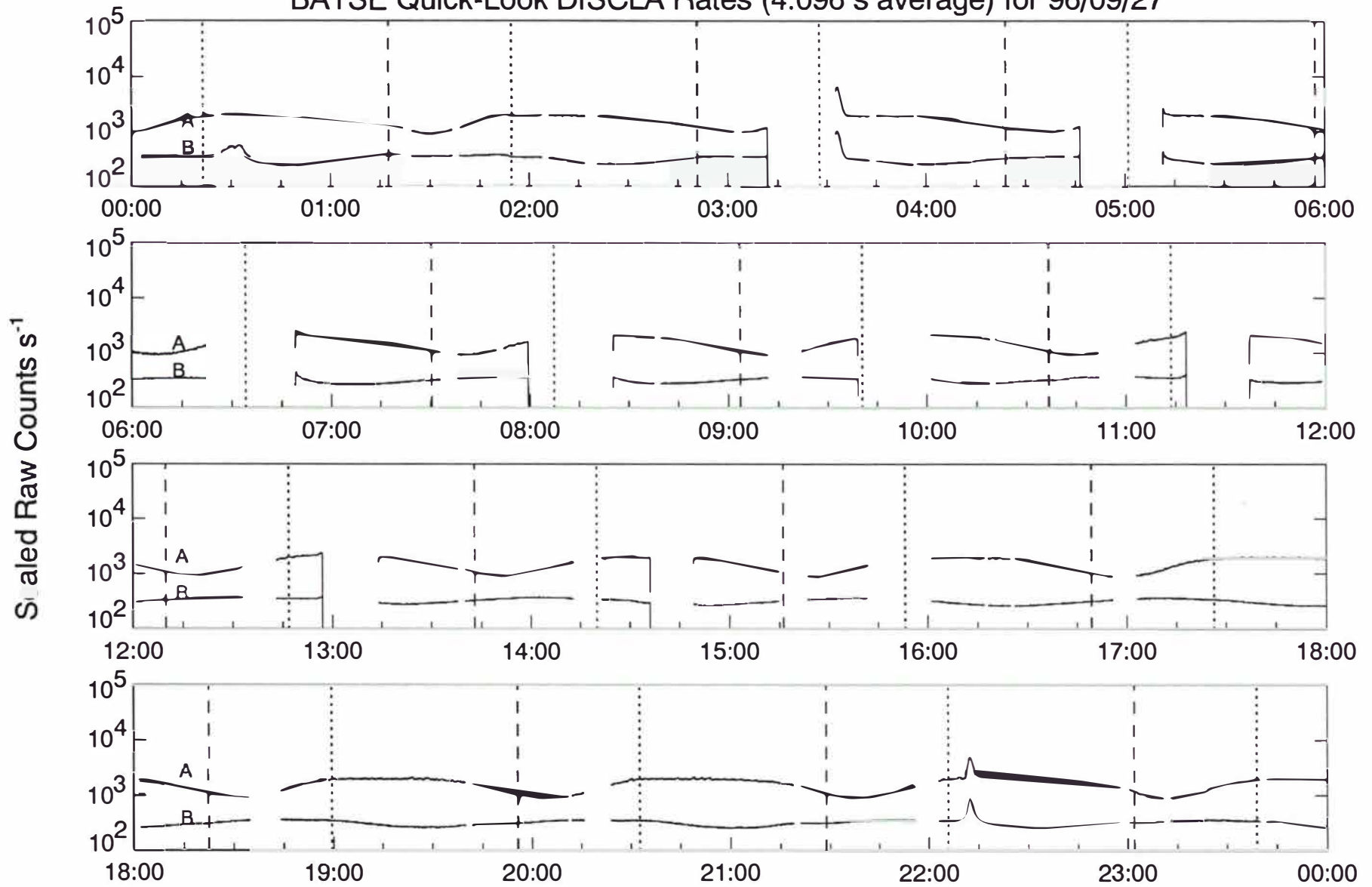
Correction
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
(0.064 seconds)

Detectors (7..8):
2-8

Discriminators:
(1..2)

Quality Mask:
80ISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/27

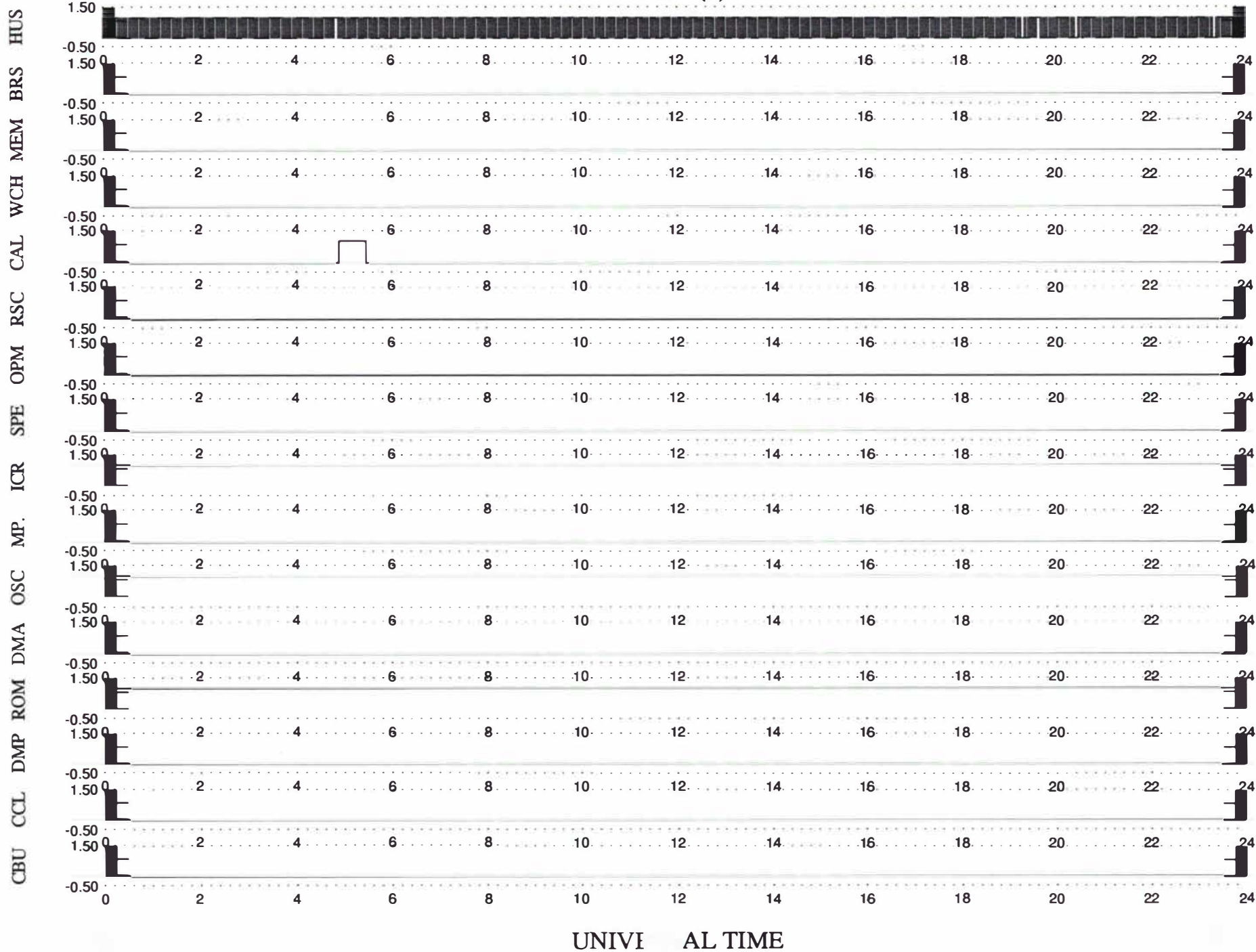


Current Time: 96/09/29, 1003 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

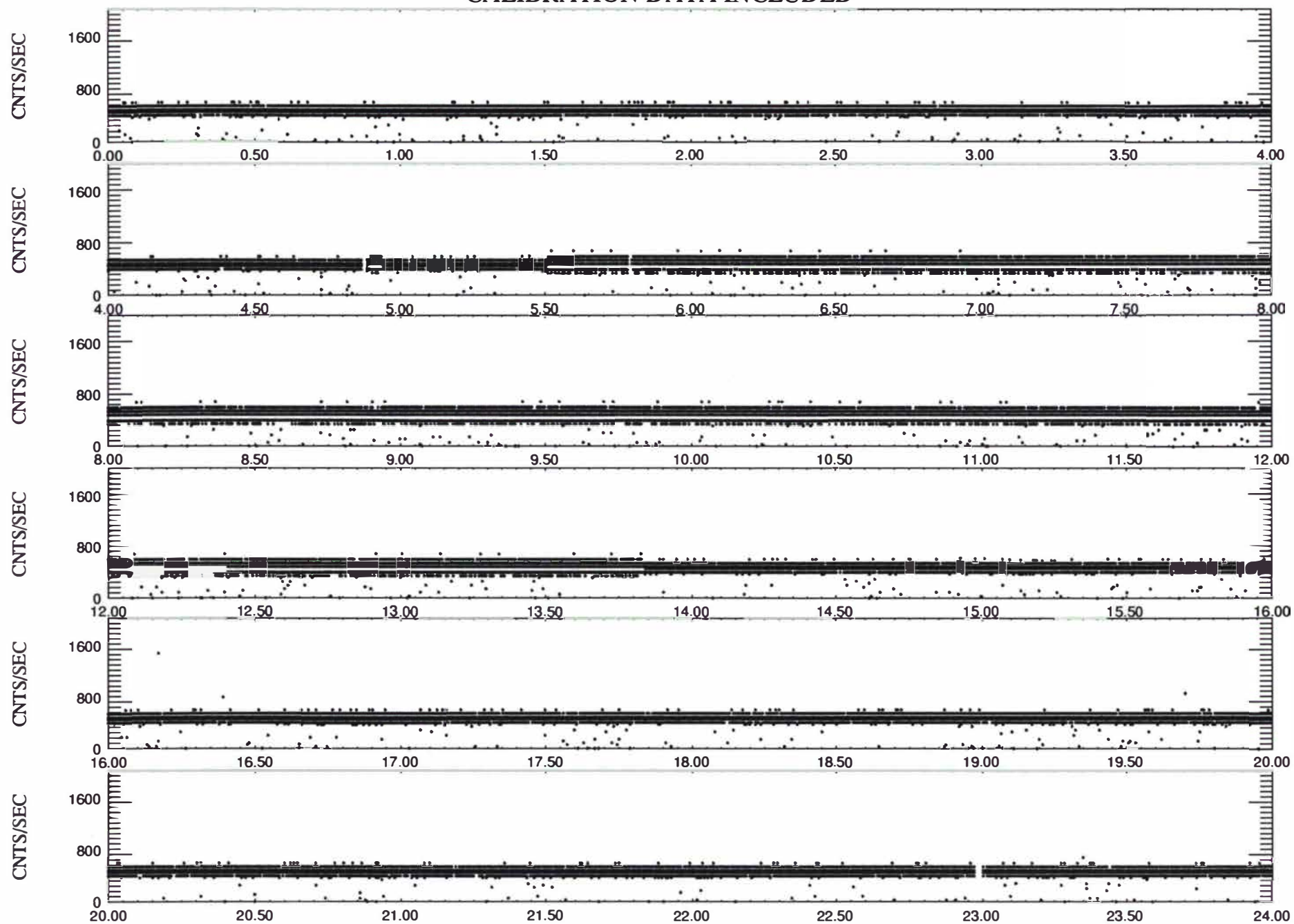
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

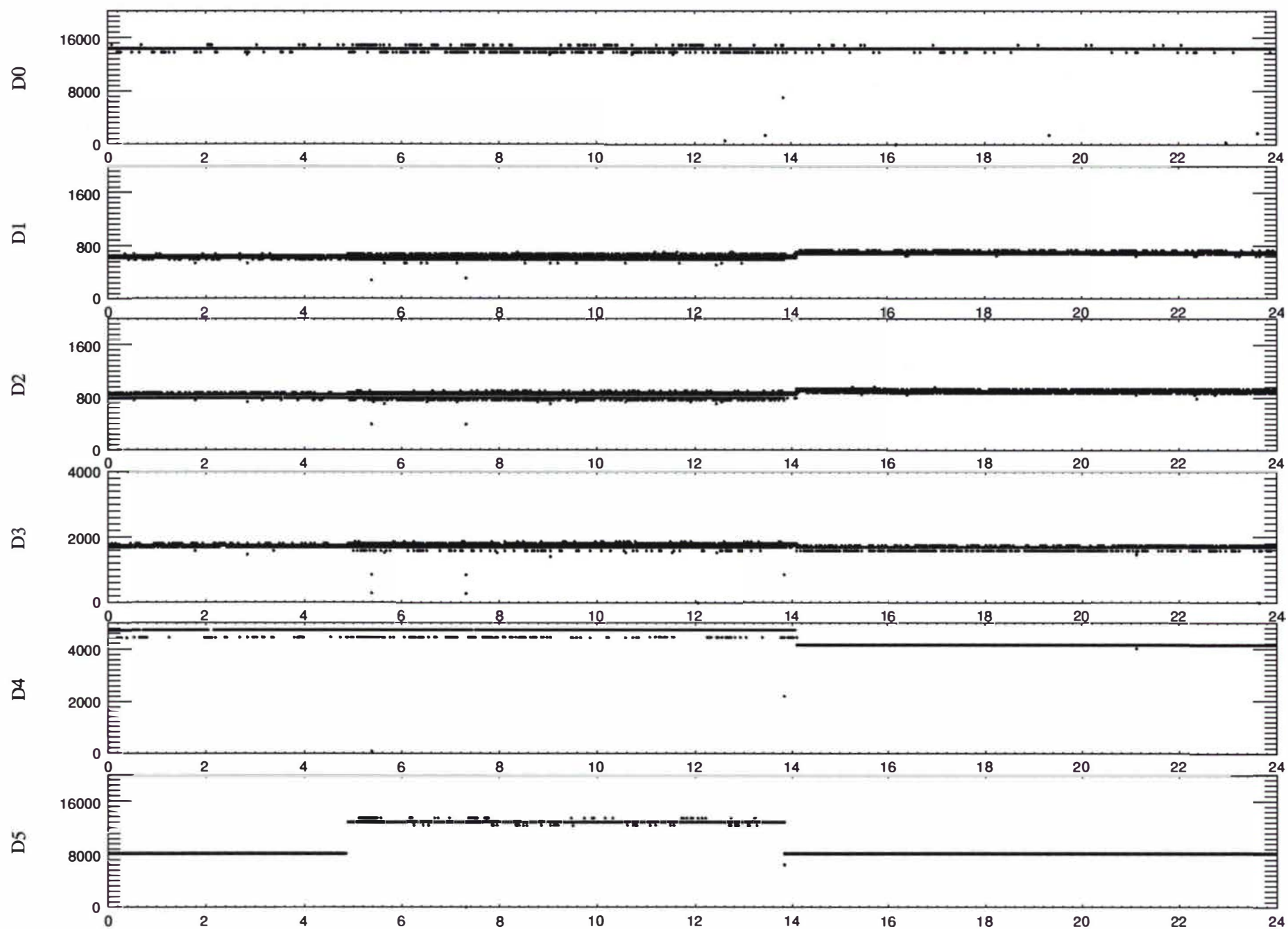
NO BURST (3)



CALIBRATION DATA INCLUDED

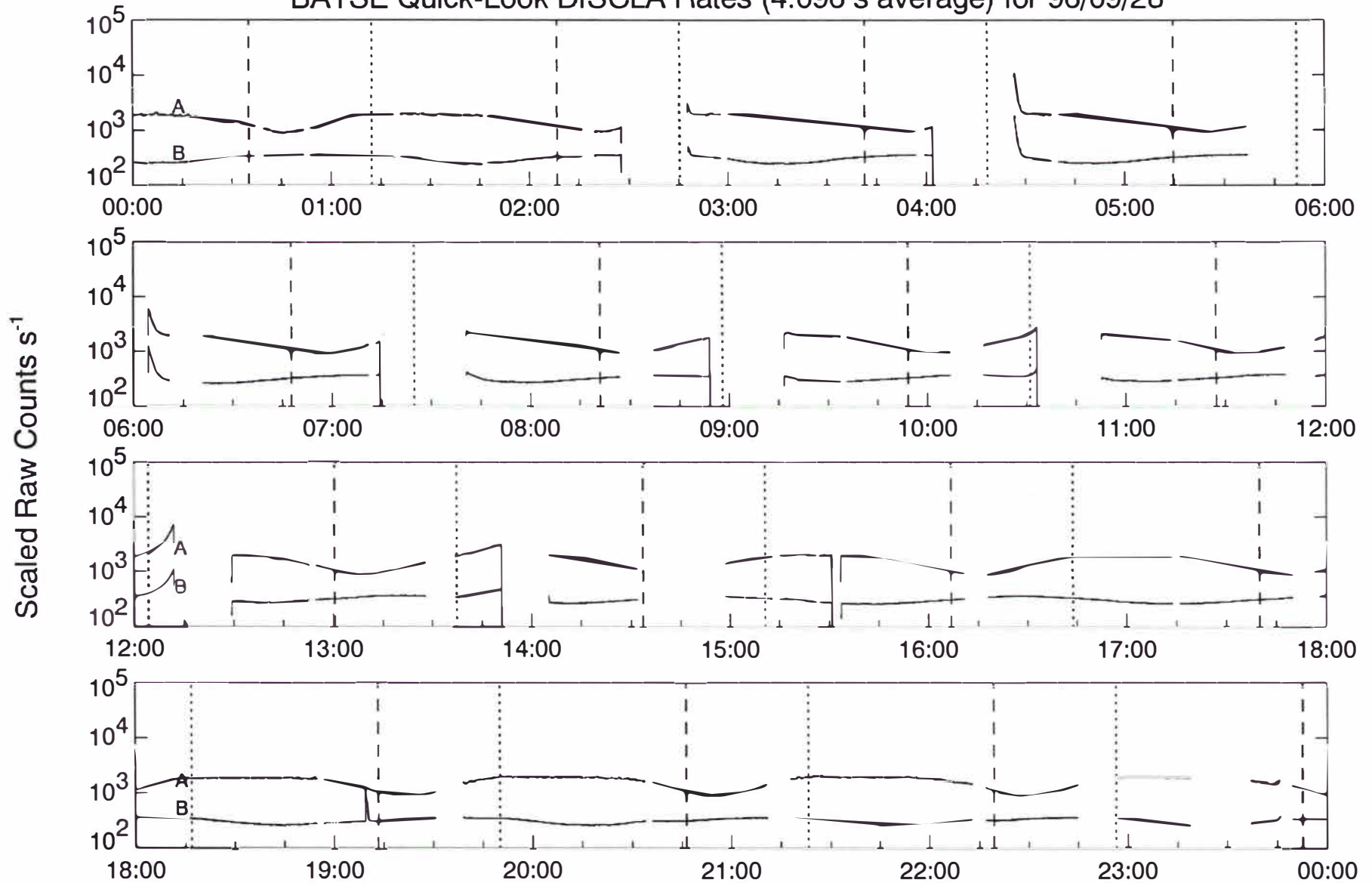


UNIVERAL TIME



UNIV AL TIME

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/28



Current Time: 96/09/30, 1003 EDT

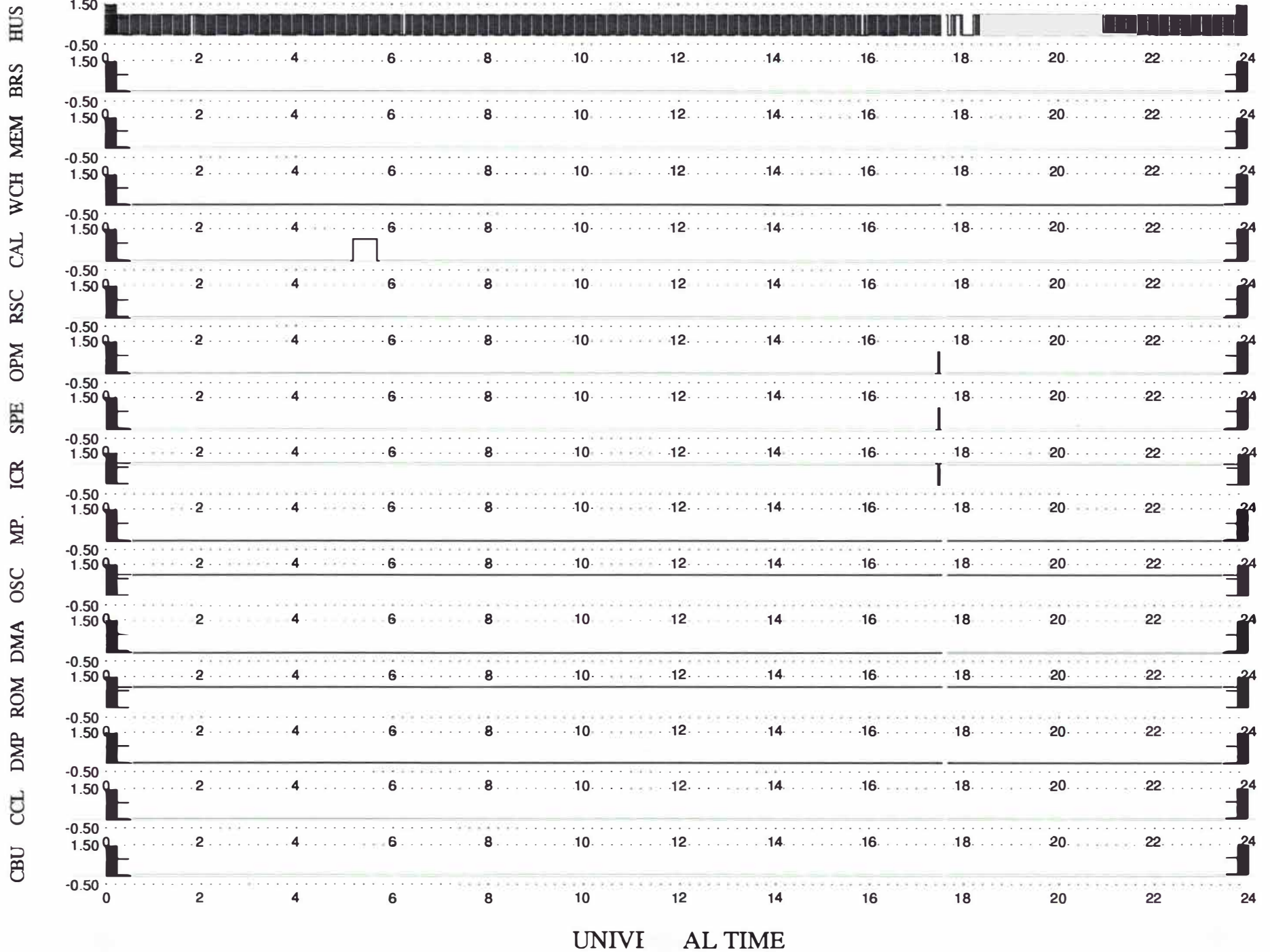
A: Channel 0 Most Sunward LAD

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

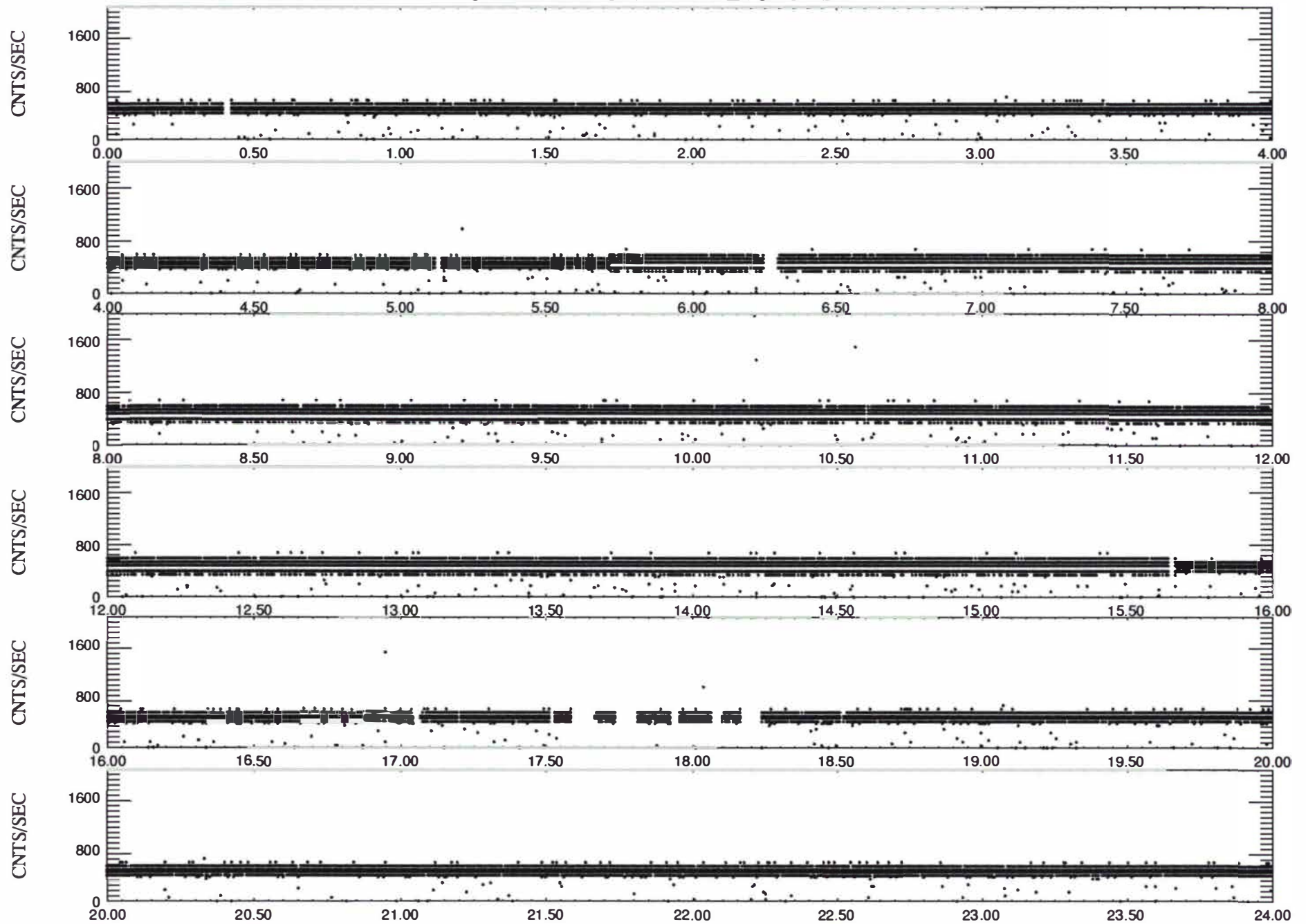
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

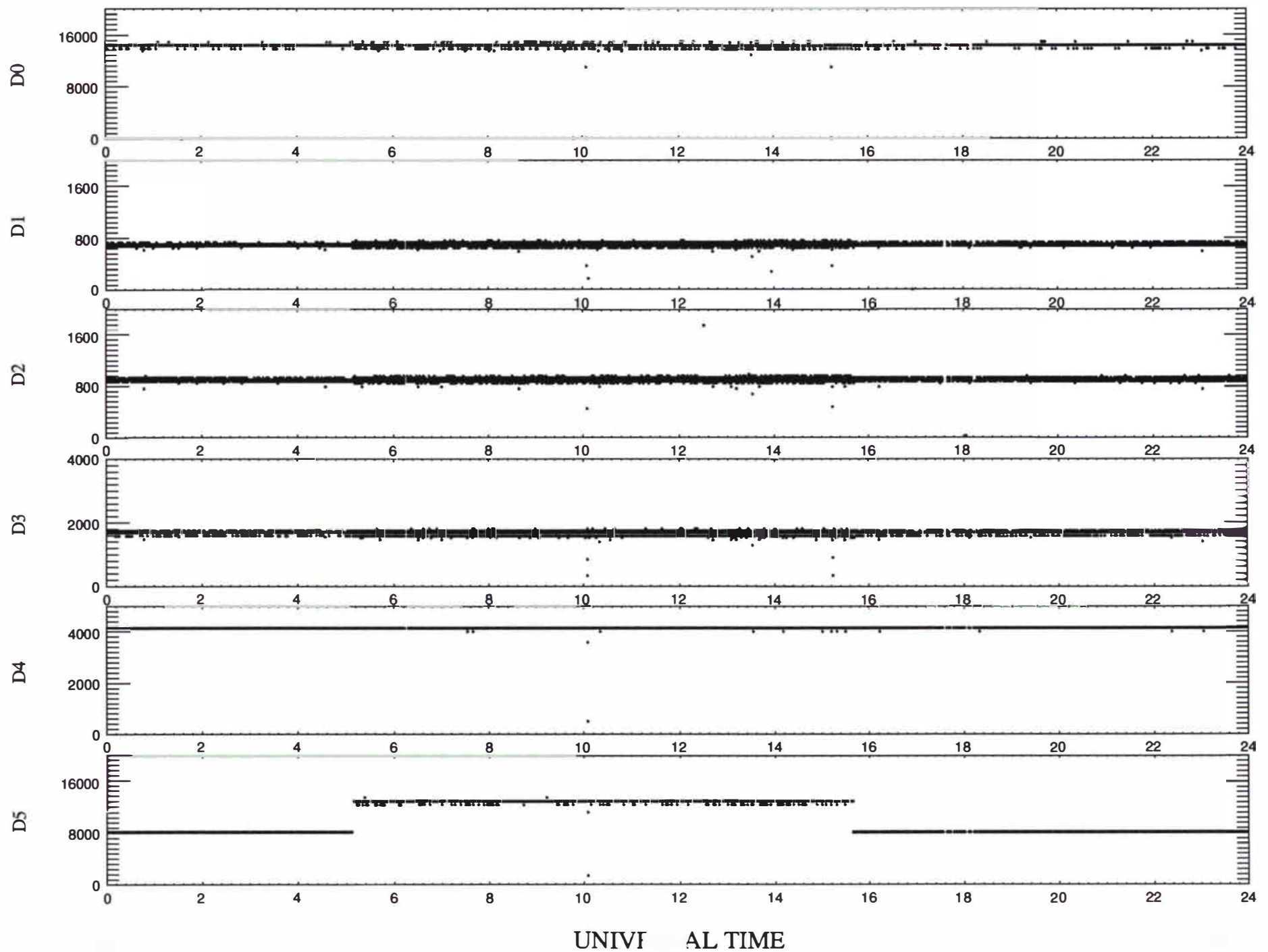
NO BURST (3)



CALIBRATION DATA INCLUDED



UNIV AL TIME



burst5618

Tue Oct 1 08:20:27 1996

1

From DEAL@fender.msfc.nasa.gov Mon Sep 30 11:23 PDT 1996
Return-Path: <DEAL@fender.msfc.nasa.gov>
Received: from east.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA00275; Mon, 30 Sep 1996 11:23:09 -0700
Received: by east.gsfc.nasa.gov (5.57/Ultrix3.0-C)
id AA20936; Mon, 30 Sep 96 14:22:57 -0400
From: DEAL@fender.msfc.nasa.gov
Date: Mon, 30 Sep 1996 13:22:49 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <960930132249.21205f05@fender.msfc.nasa.gov> NO
Subject: Crossing Windows for BATSE Burst 5618
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 5618
EVENT OF 1996 SEP 29 DAY OF YEAR=273
EVENT CROSSING TIME AT BATSE : 1037. S. OR 00:17:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 59.000 -3.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 9/ 96 IS:
RA= 171.421 DEC= 33.646 DIST= 5.132 AU
BATSE-ULYSSES DISTANCE = 767678857. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 886.20 SECS.
CROSSING TIME AT ULYSSES IS 1923. S. OR 00:32:03 +/- 480.56 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 9/ 96 IS:
RA= 134.611 DEC= 18.384 DIST= 1.957 AU
MARS-BATSE DISTANCE = 292812000. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -213.88 SECS.
CROSSING TIME AT MARS IS 823. S. OR 00:13:43 +/- 162.21 SECONDS

BATSE BURST TRIGGER

NO.: 5618

TIME: TJD=0355 SECONDS=1037

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=77.0 AZIMUTH=235.2 ERROR=7.3 DEGREES

COMMENTS:
GRB LASTING ~ 18 S. WEAKLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5618	960929	10355	01037	4500	059	-03	18

BATSE #

5618

30 / 9 / 96

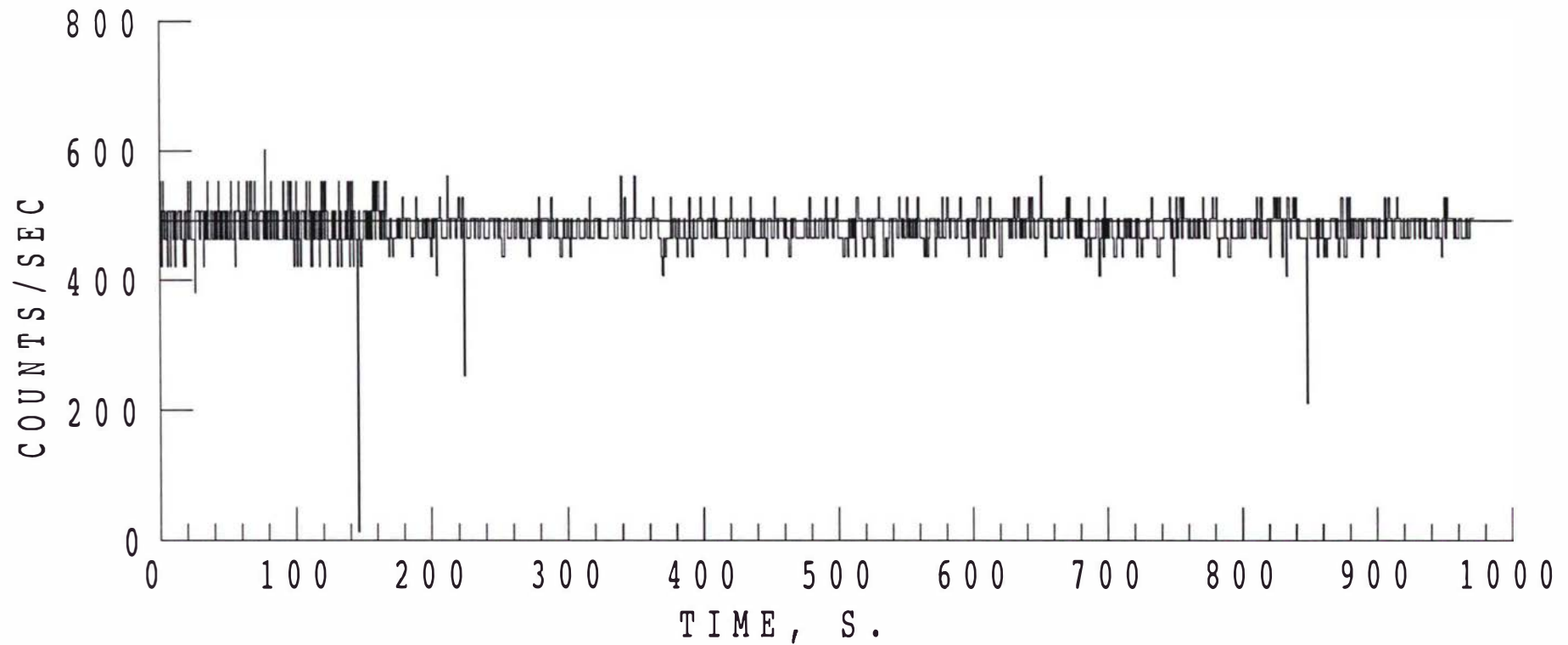
ULYSSES RT

29 / 9 / 96 1440.453 s

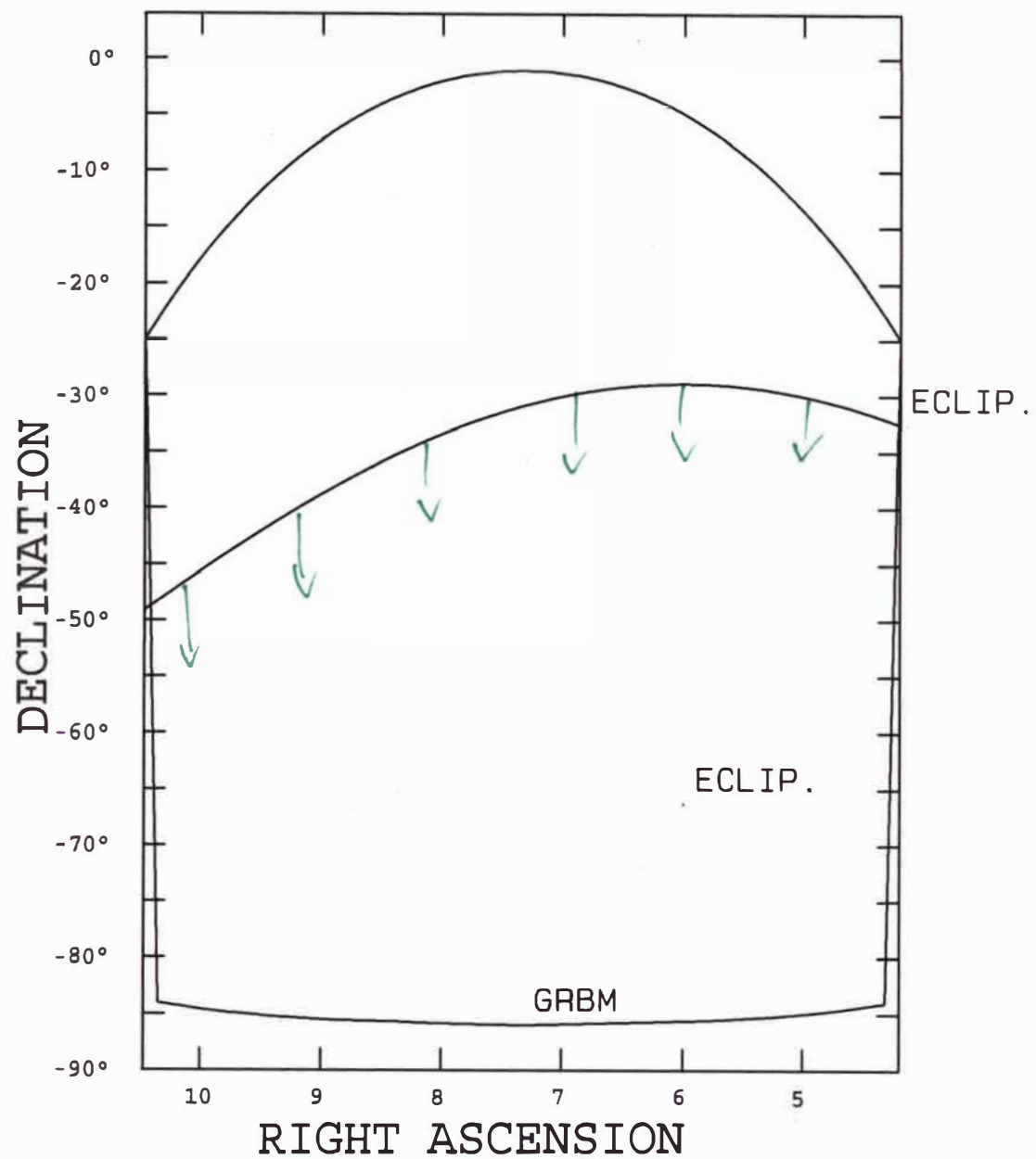
0 - 0 keV

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



GRB 960929 06:36:22



KONUS

ULYSSES RT

31 / 01 / 00

29 / 09 / 96 21168.201 s

0.250 S INTERVALS REGROUPED BY 14

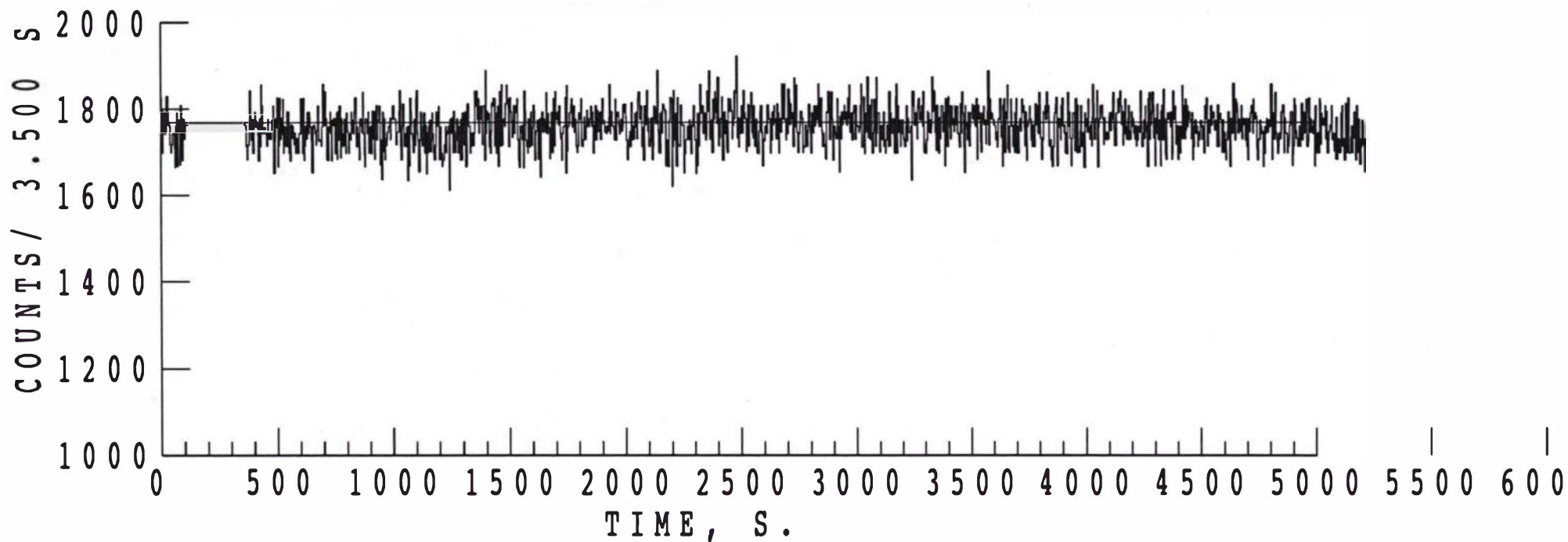
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



burst5619

Tue Oct 1 10:30:52 1996

1

From SURASAK@ssl.msfc.nasa.gov Tue Oct 1 09:22 PDT 1996
Return-Path: <SURASAK@ssl.msfc.nasa.gov>
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA18482; Tue, 1 Oct 1996 09:22:12 -0700
Date: Tue, 1 Oct 1996 11:22:04 -0500 (CDT)
From: SURASAK@SSLLES.MSFC.NASA.GOV
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <961001112204.23a0992b@SSLLES.MSFC.NASA.GOV>
Subject: Crossing Windows for BATSE Burst 5619
Content-Type: text
Content-Length: 1135
X-Lines: 26
Status: RO

NO

BATSEARCH PROGRAM

BATSE BURST # 5619
EVENT OF 1996 SEP 29 DAY OF YEAR=273
EVENT CROSSING TIME AT BATSE : 63009. S. OR 17:30:09.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 55.000 45.000
BATSE PEAK COUNTING RATE: 12700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 9/ 96 IS:
RA= 171.547 DEC= 33.581 DIST= 5.129 AU
BATSE-ULYSSES DISTANCE = 767325179. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -327.17 SECS.
CROSSING TIME AT ULYSSES IS 62682. S. OR 17:24:41 +/- 485.76 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 9/ 96 IS:
RA= 134.611 DEC= 18.384 DIST= 1.957 AU
MARS-BATSE DISTANCE = 292812000. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=110.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -336.00 SECS.
CROSSING TIME AT MARS IS 62673. S. OR 17:24:32 +/- 154.12 SECONDS

BATSE BURST TRIGGER

NO.: 5619

TIME: TJD=0355 SECONDS=63009

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=30.1 AZIMUTH=249.2 ERROR=7.929 DEGREES

COMMENTS:

GRB. SINGLE SPIKE WITH SUBSTRUCTURE, DUR~0.15 S.
VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
5619	960929	10355	63009	12700	055	+45	.15

BATSE #

5619

1 / 10 / 96

ULYSSES RT

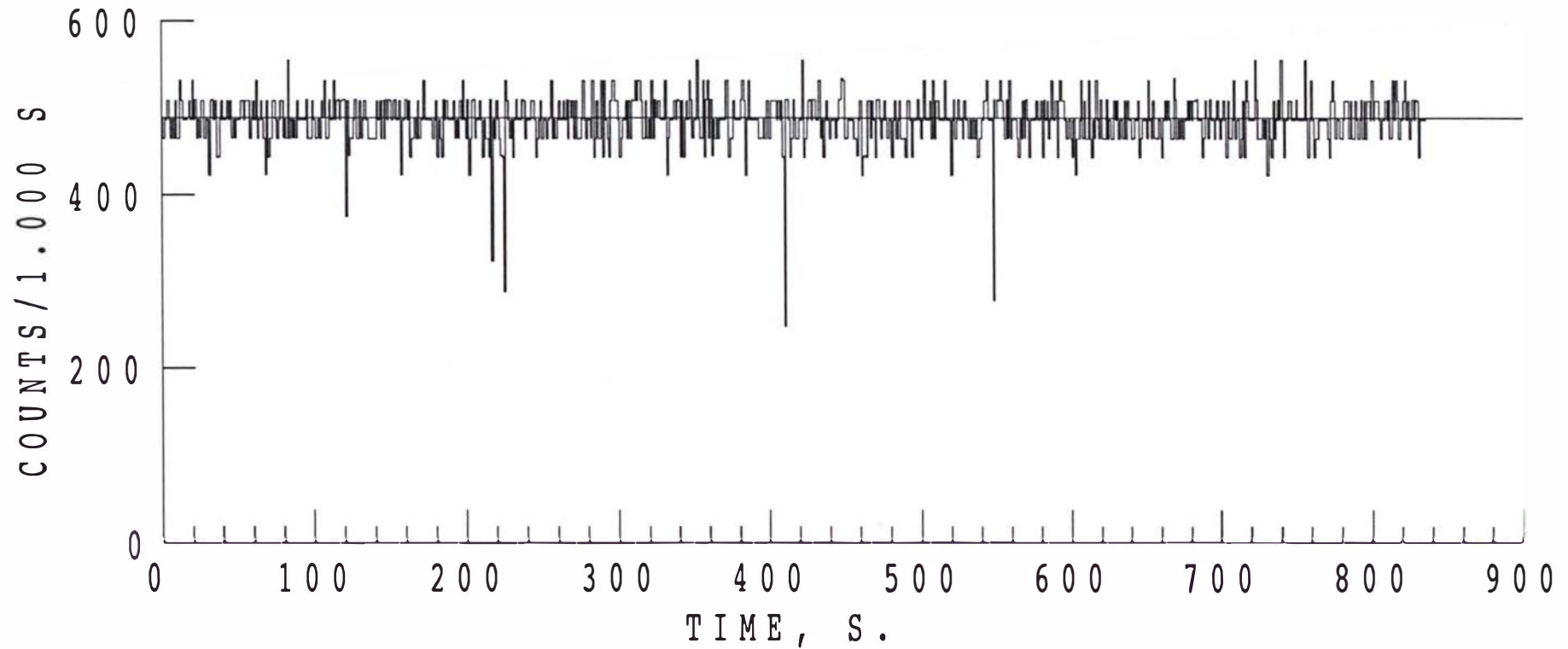
29 / 9 / 96 62343.727 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

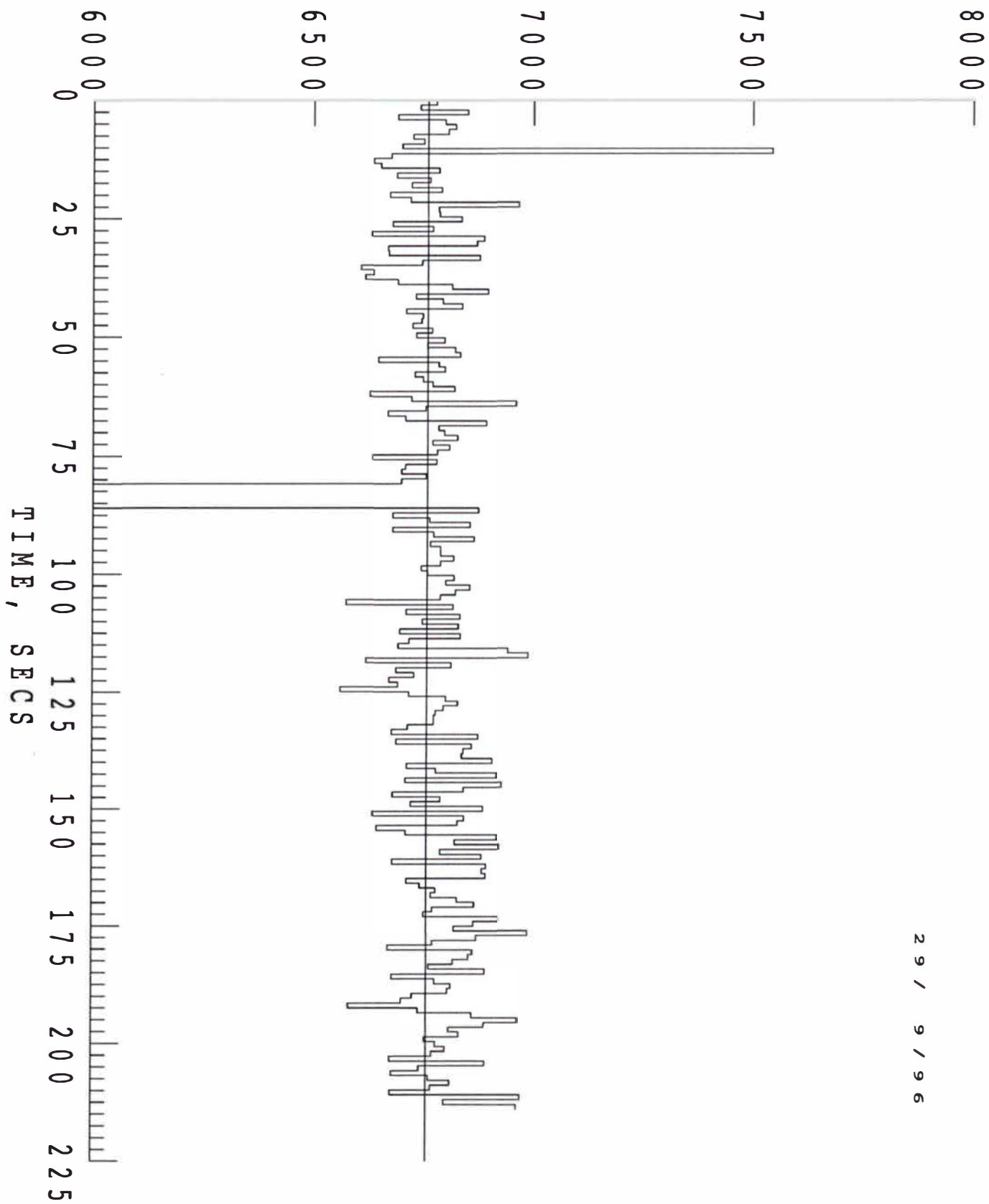
>4.0 SIGMA FLUCTUATIONS



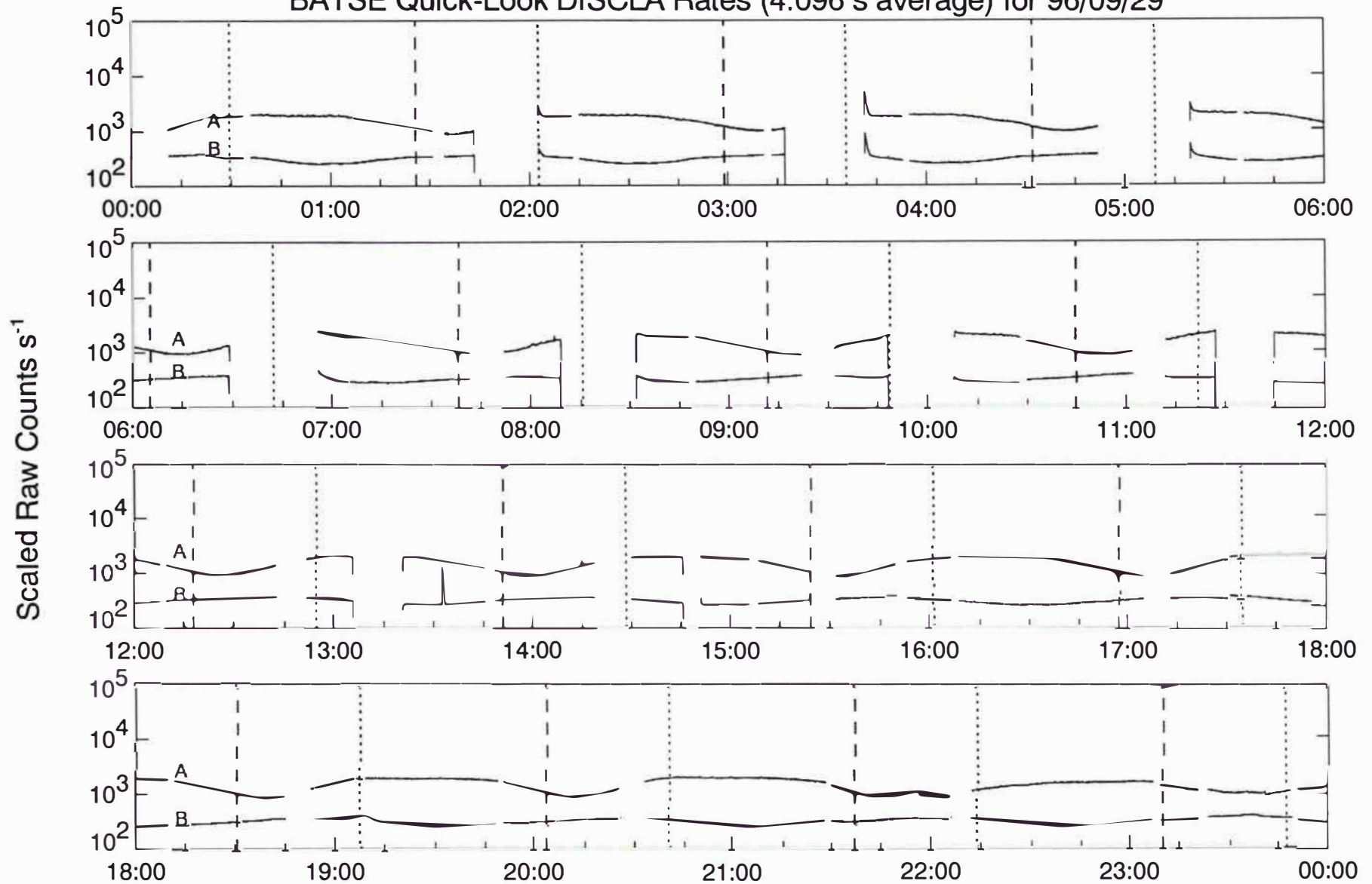
BACODINE 5619 29/09/96 62999.241

25 - 100 keV

COUNTS/1.024 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/29

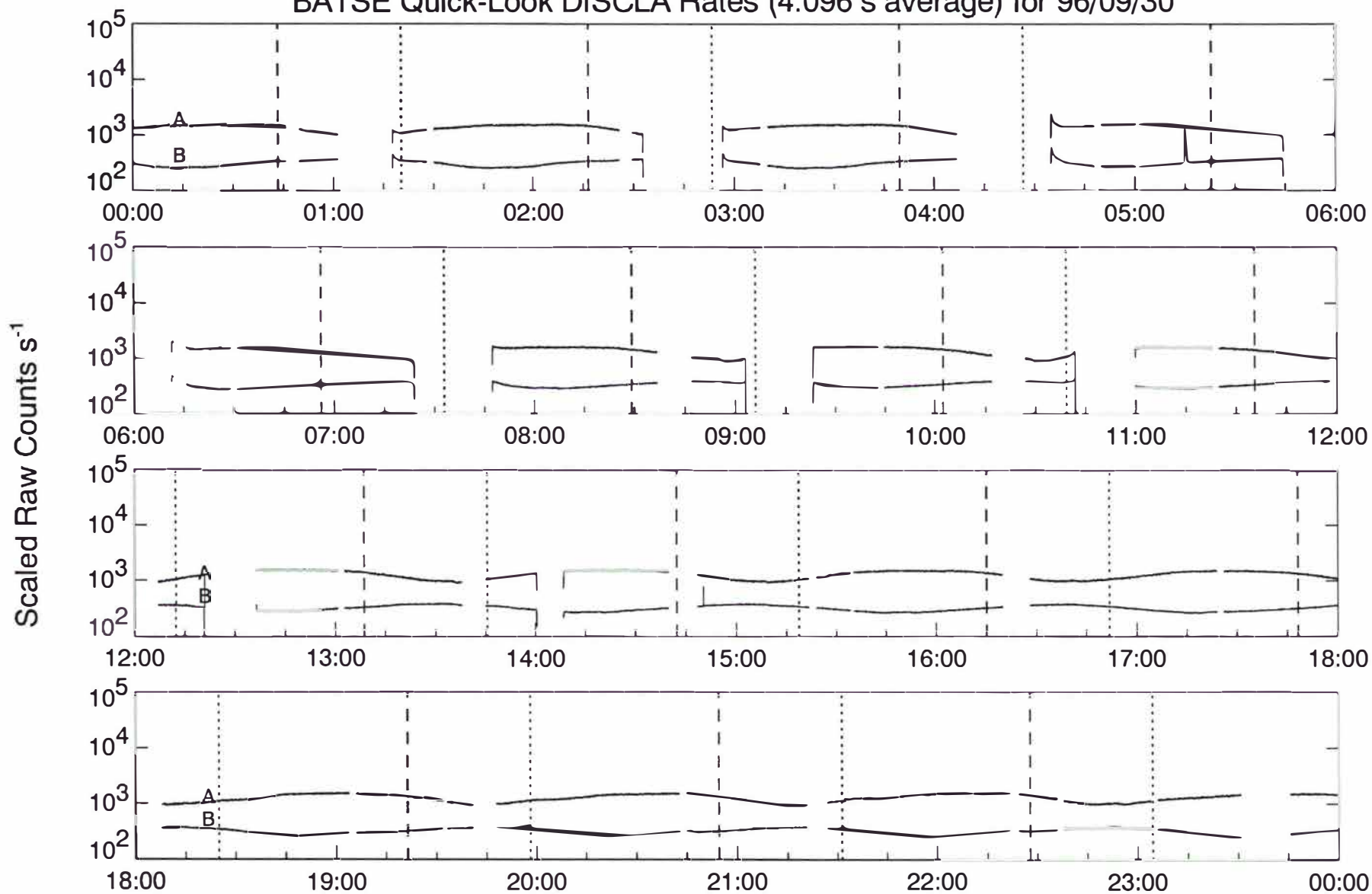


Current Time: 96/10/01, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

BATSE Quick-Look DISCLA Rates (4.096 s average) for 96/09/30

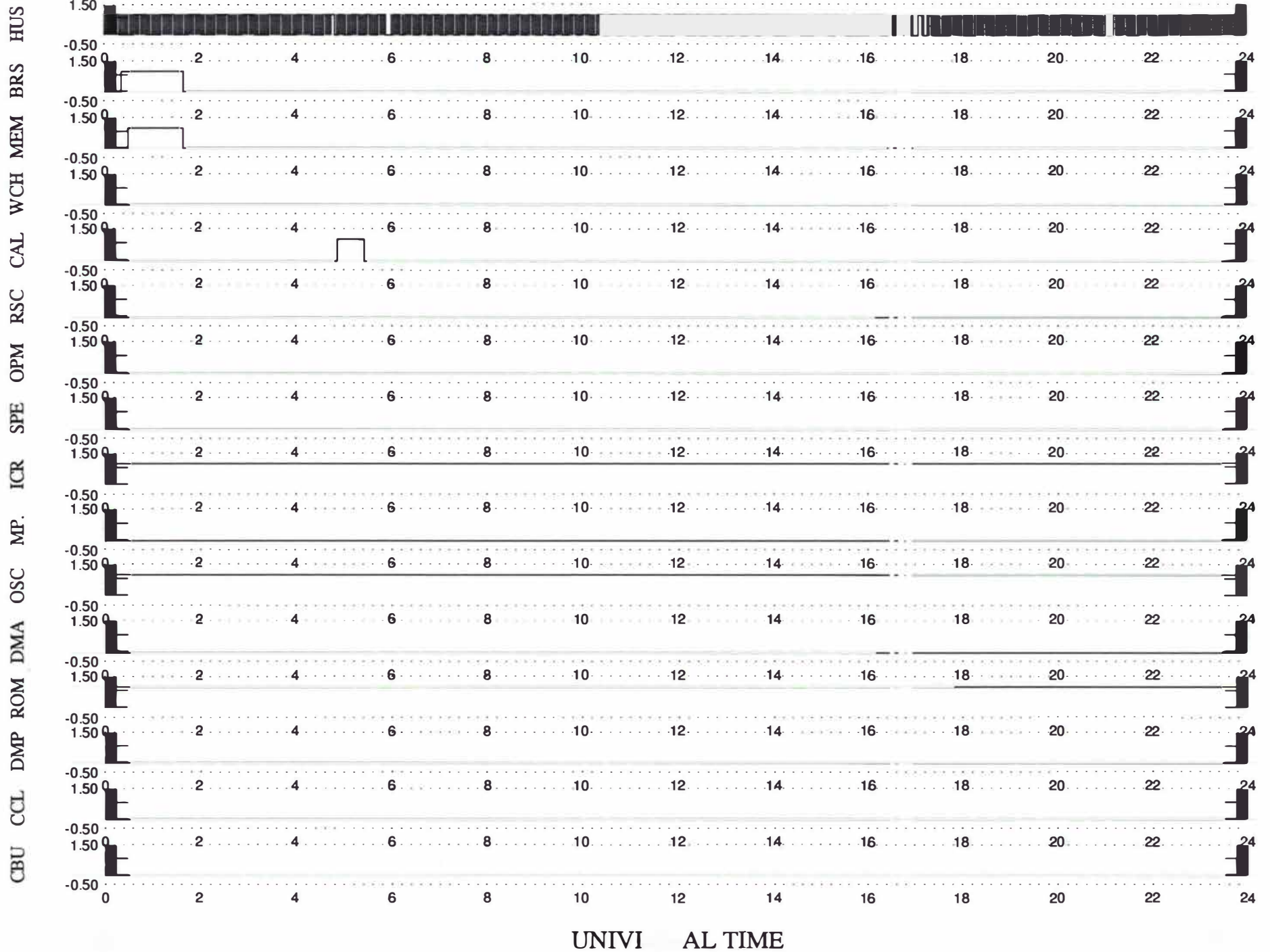


Current Time: 96/10/02, 1003 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

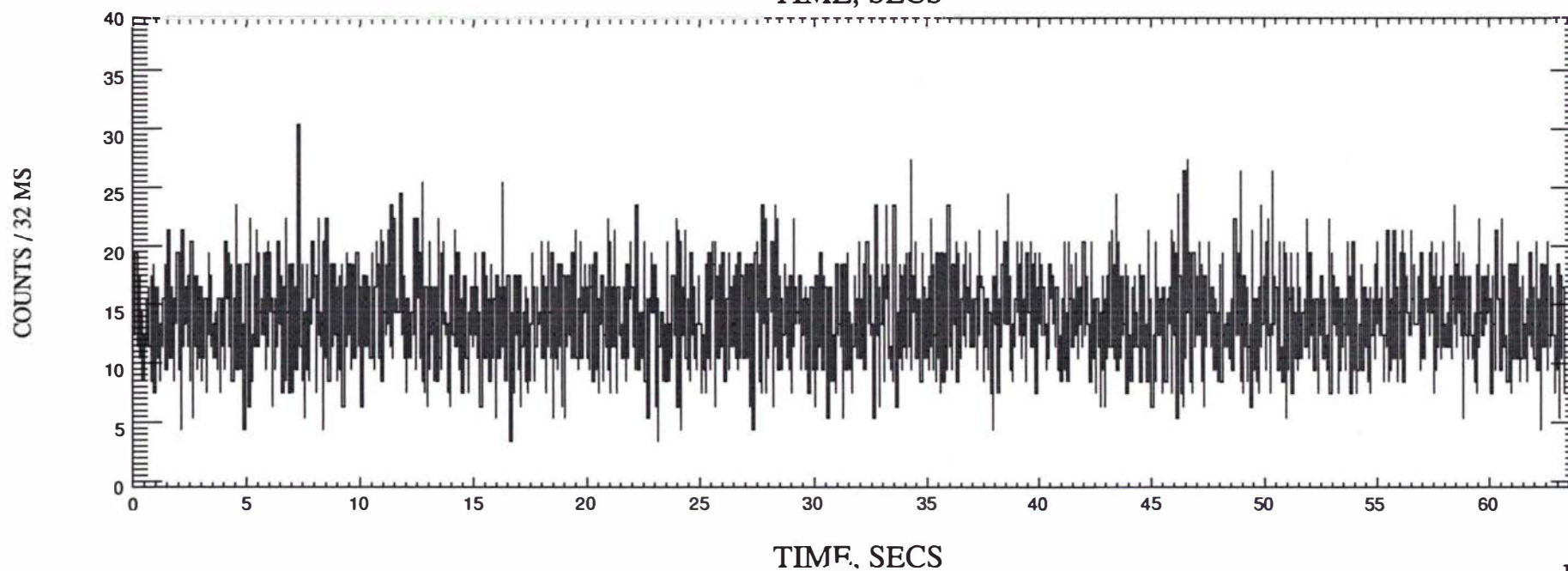
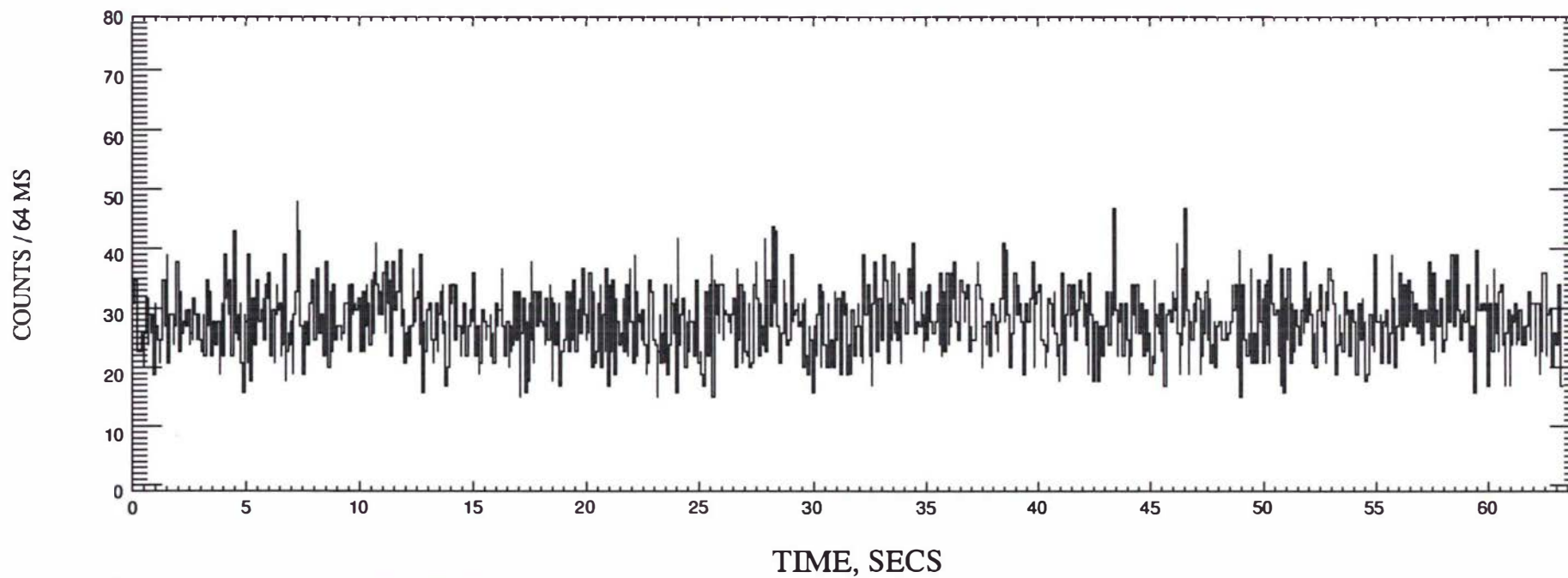
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

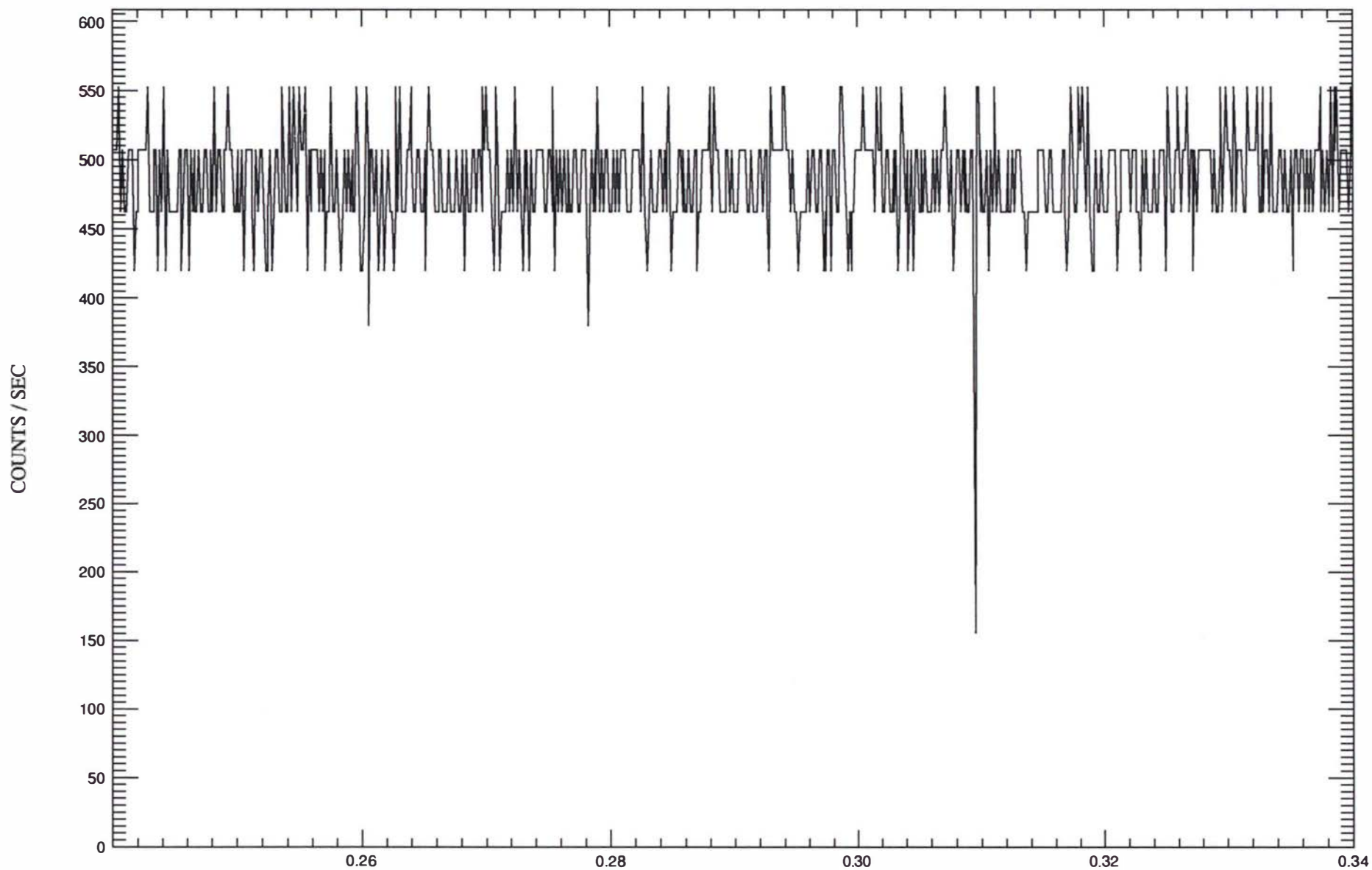
BURST NUMBER 4



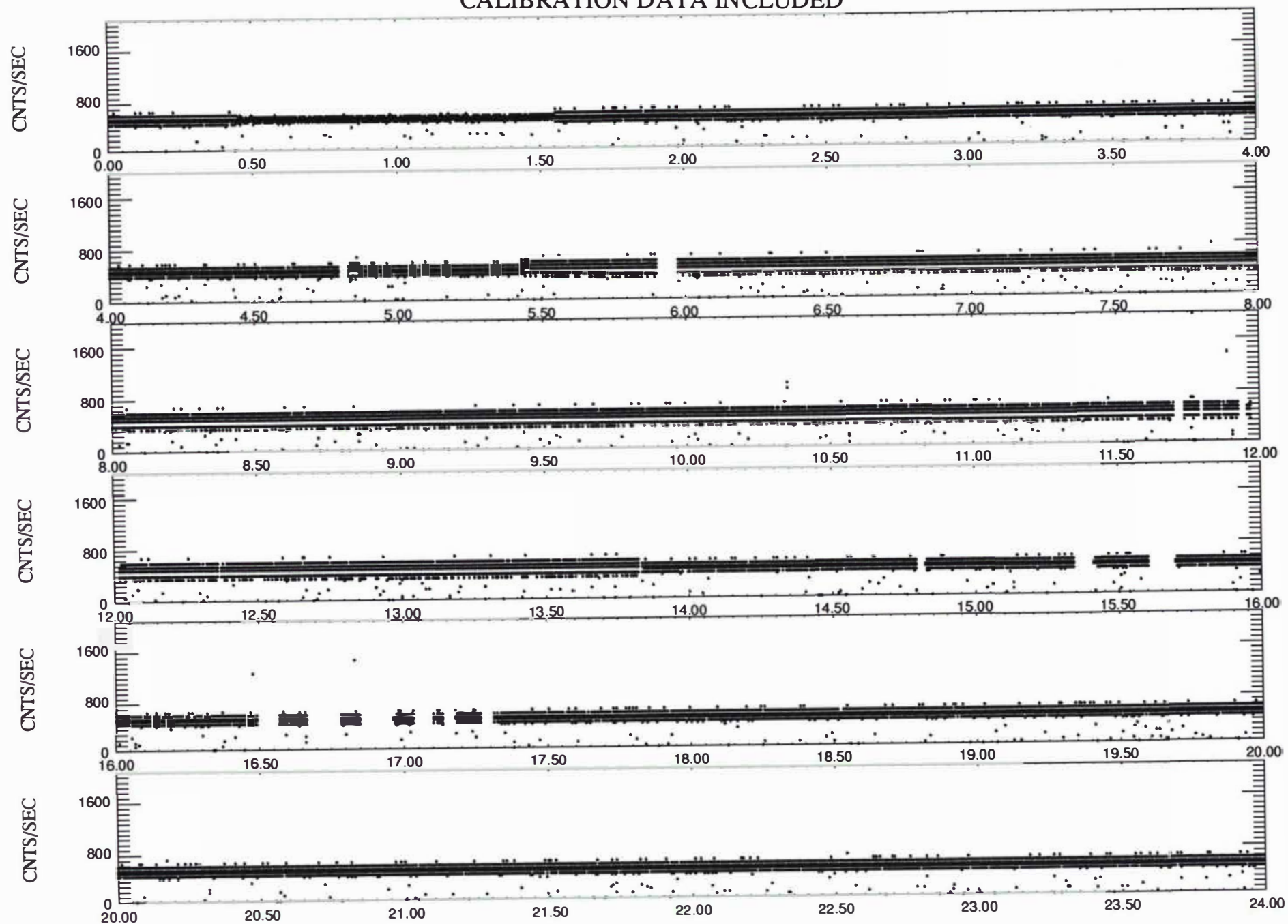
Burst Counter 4 at UT= 0.293073361715 h= 1055.064 s 00:17:35.064



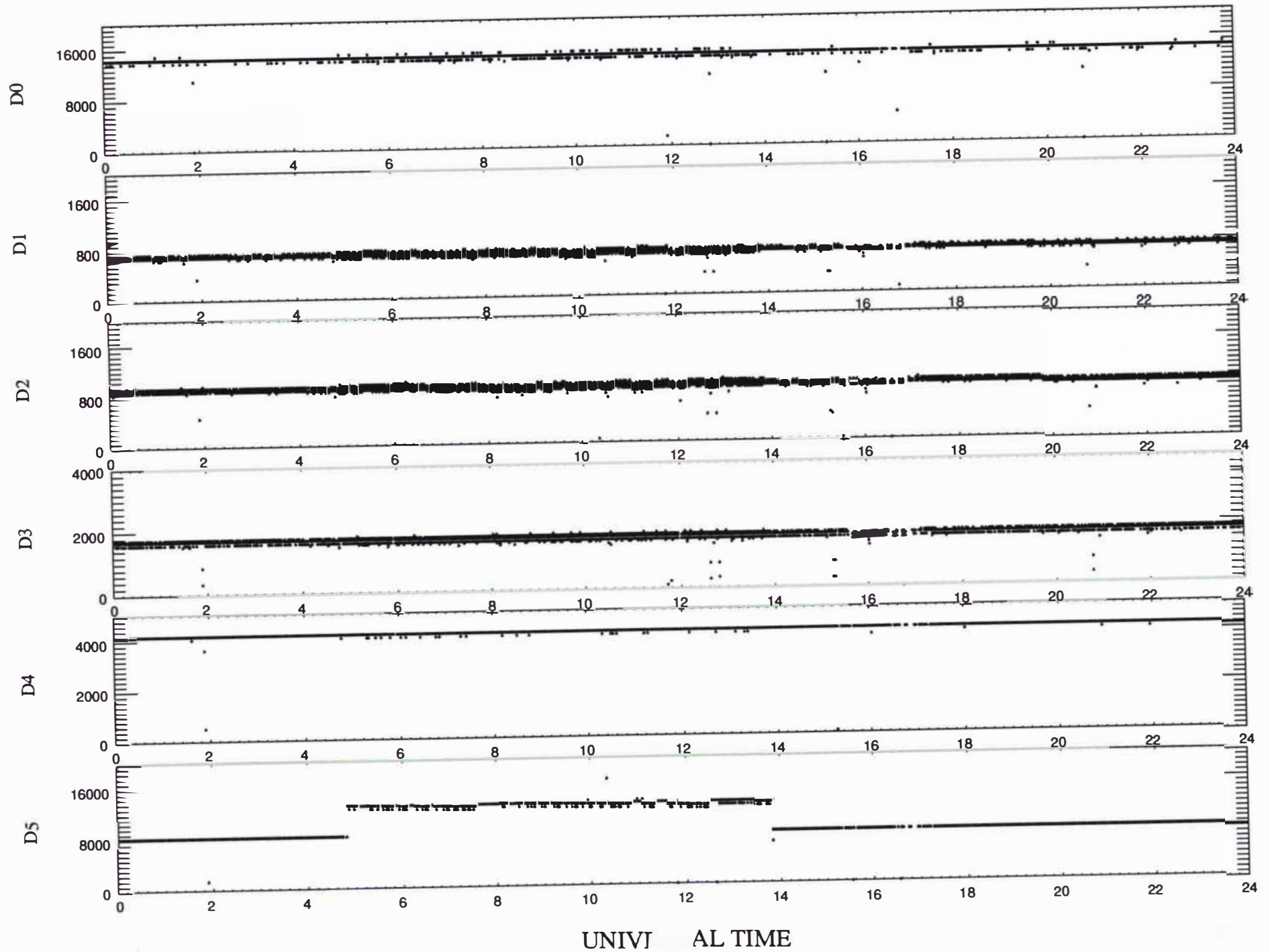
CALIBRATION DATA INCLUDED



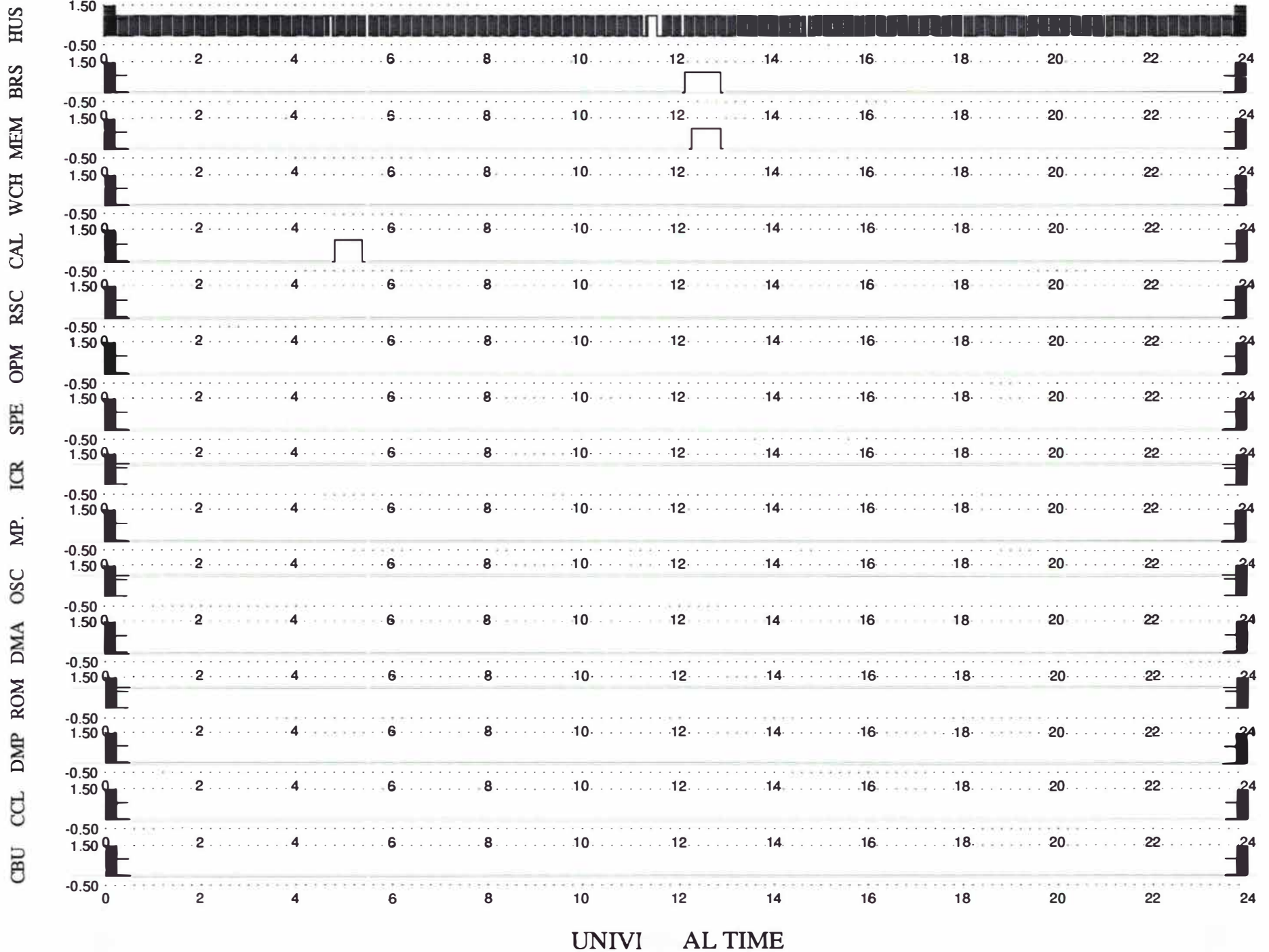
CALIBRATION DATA INCLUDED



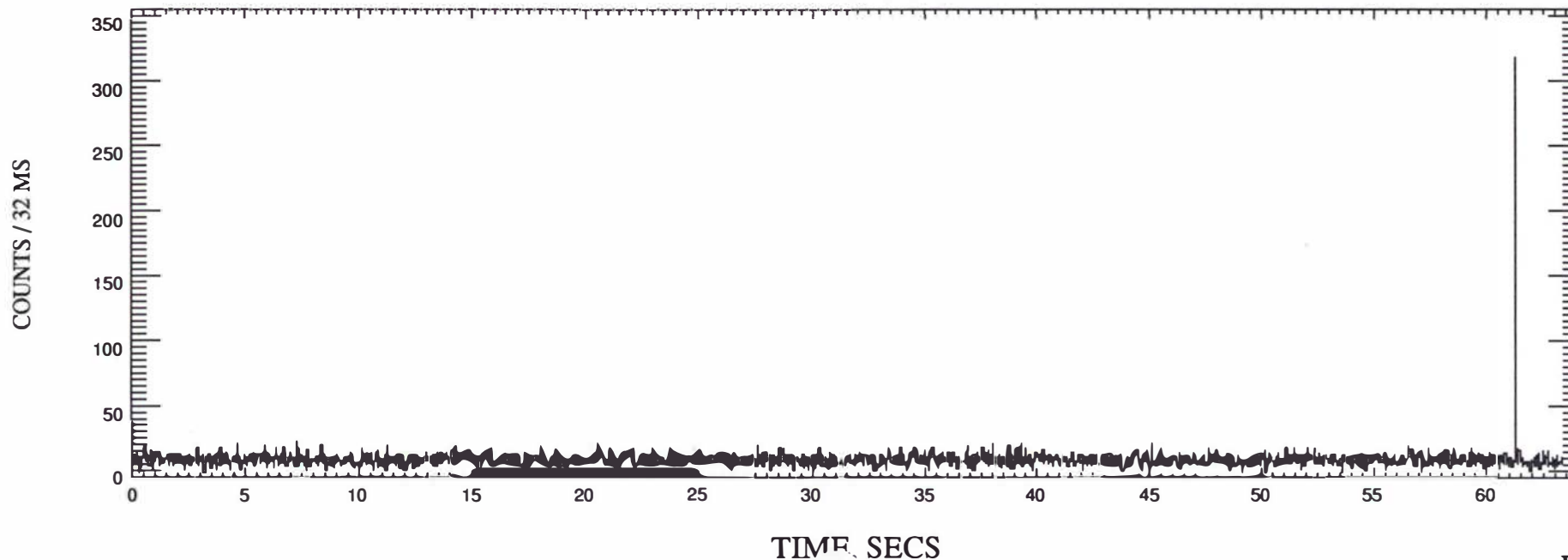
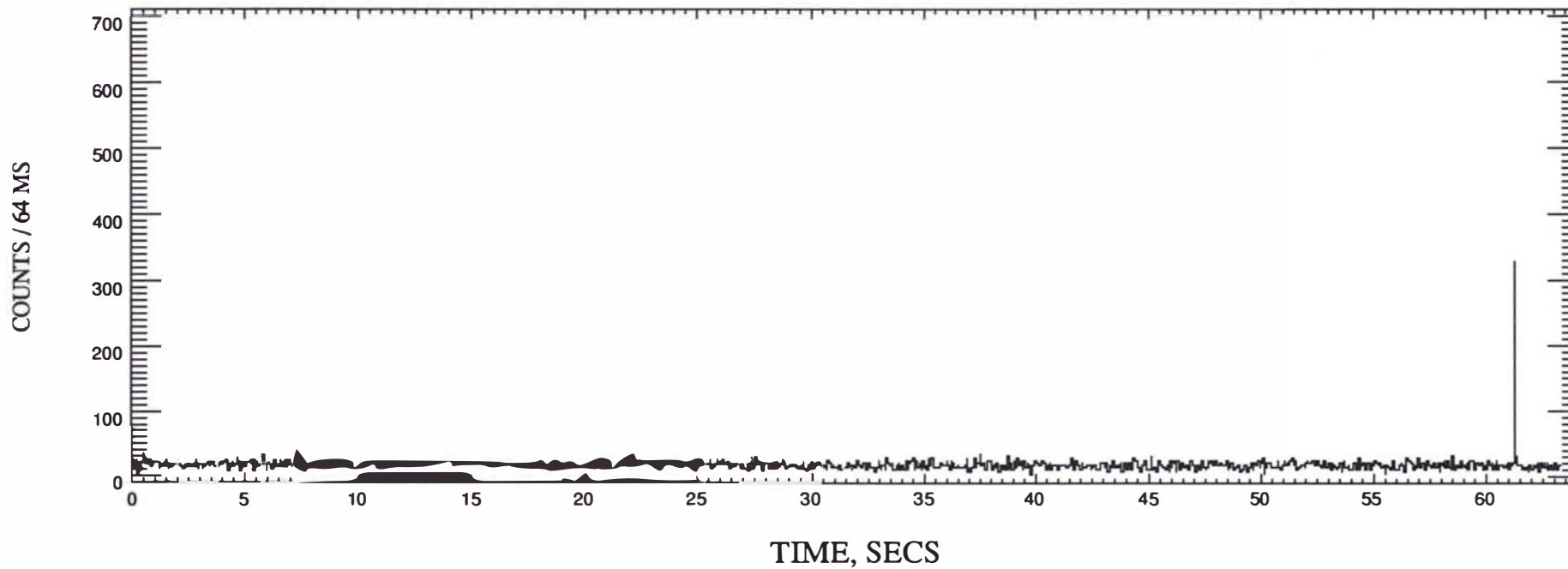
UNIVI AL TIME



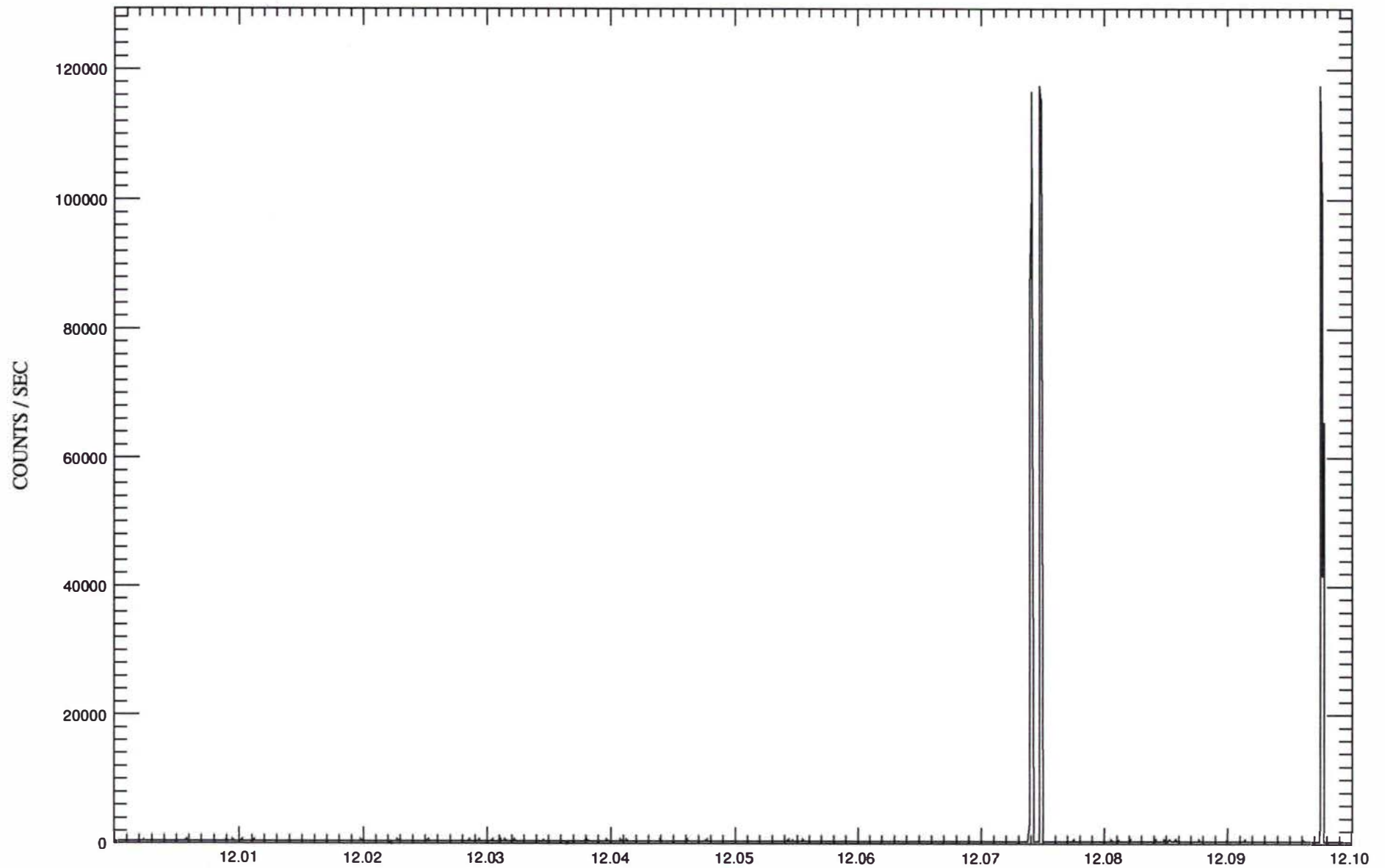
BURST NUMBER 5



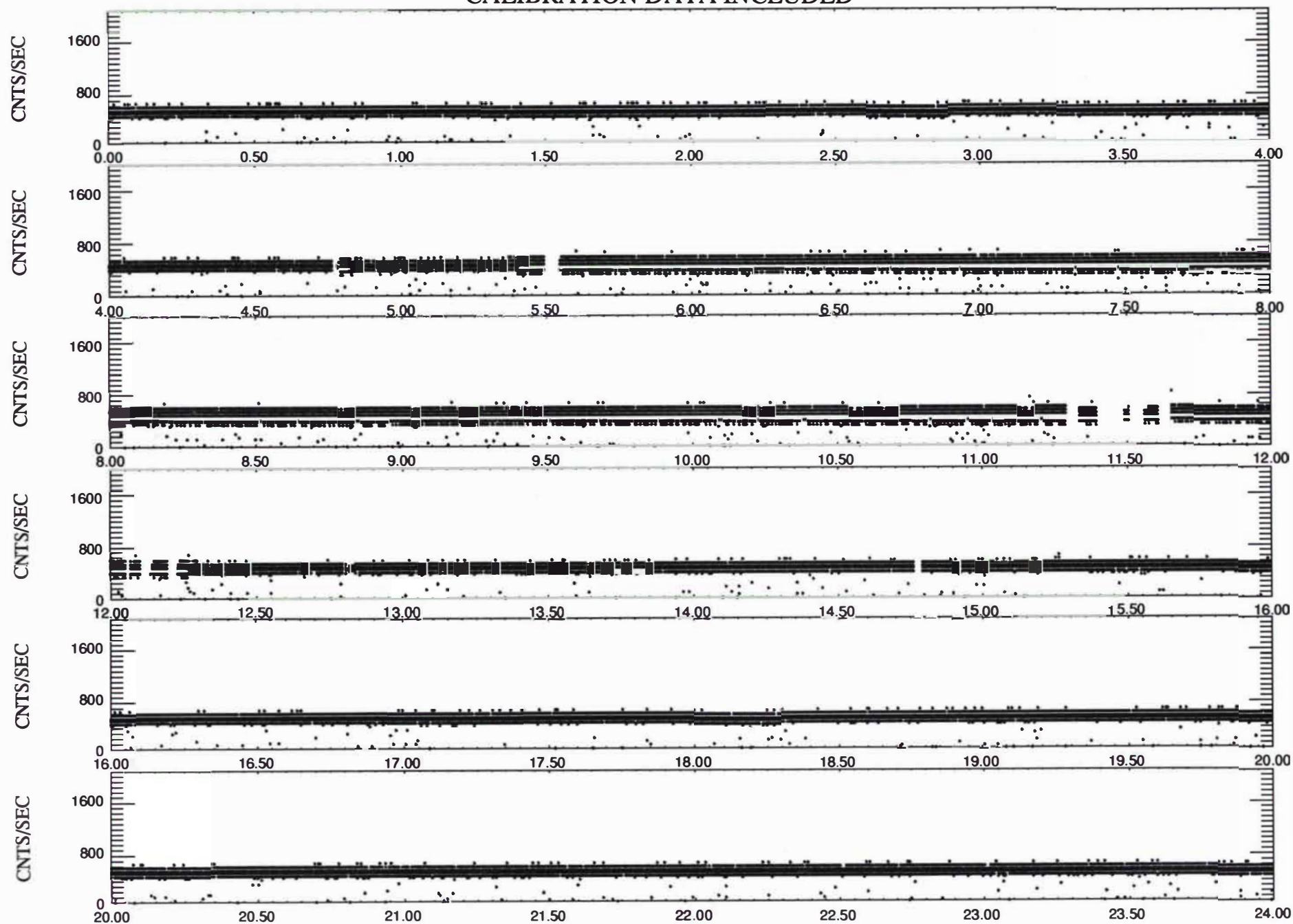
Burst Counter 5 at UT=12.046166742113 h=43366.200 s 12:02:46.200



CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIVI AL TIME

