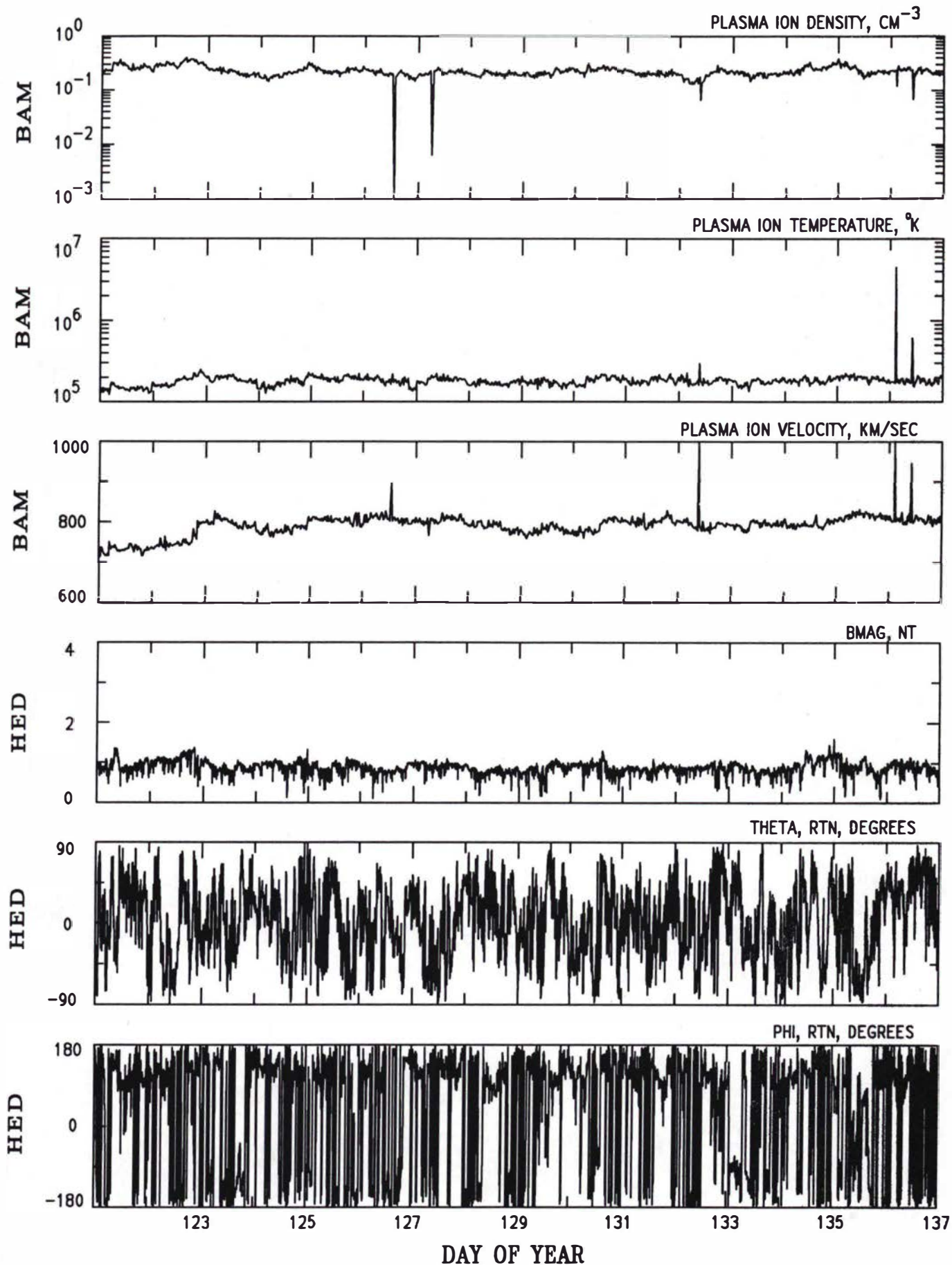


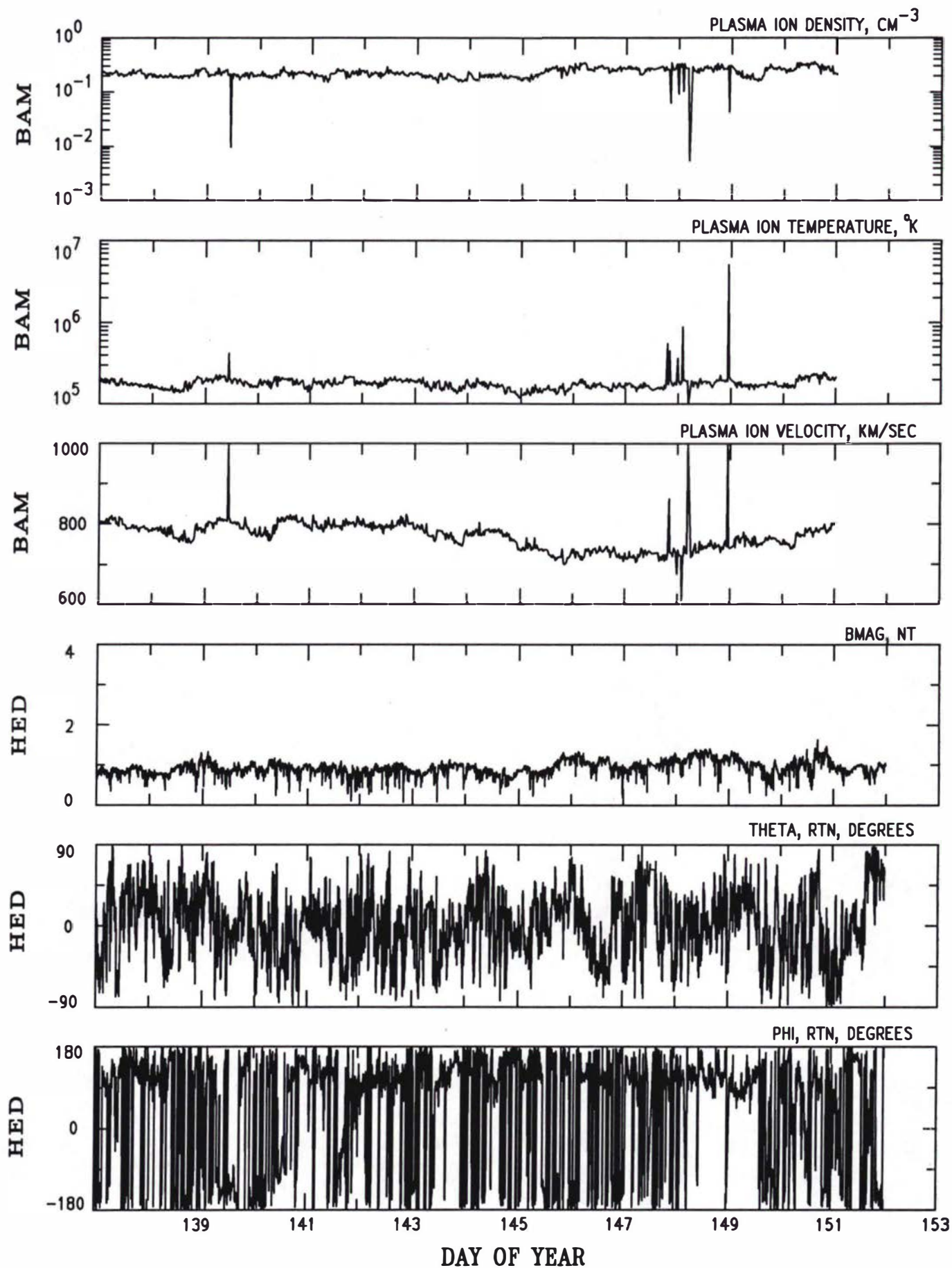
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



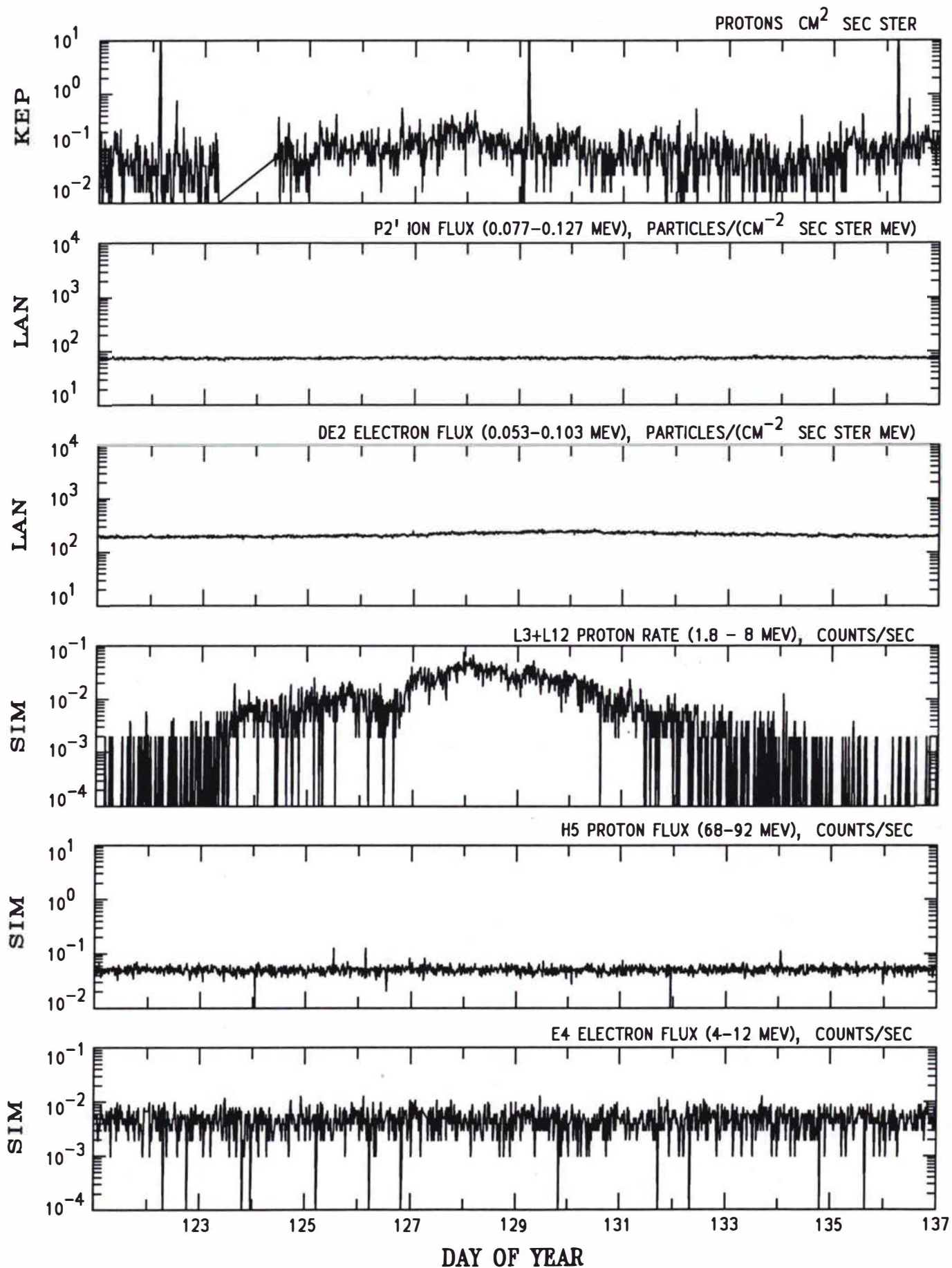
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



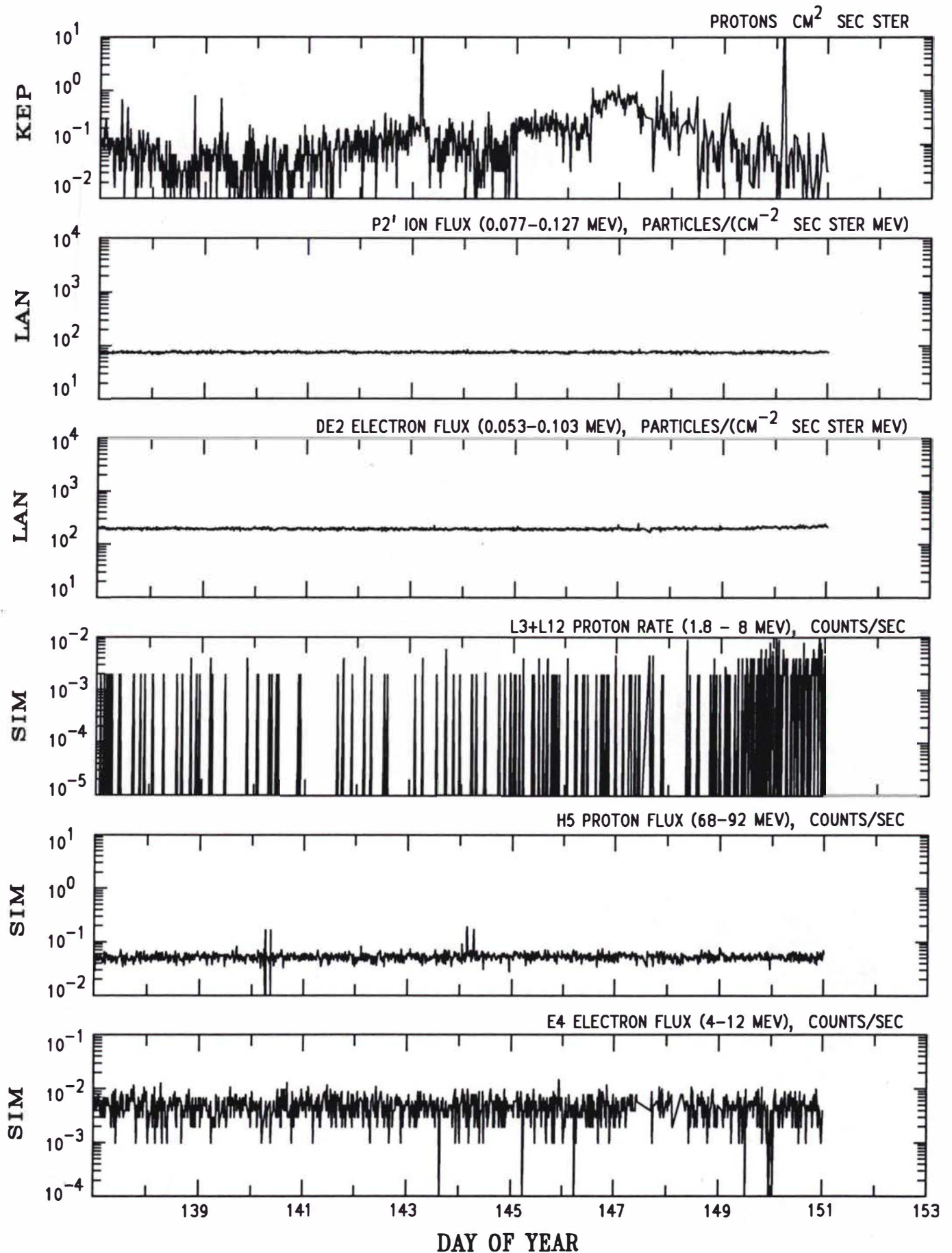
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



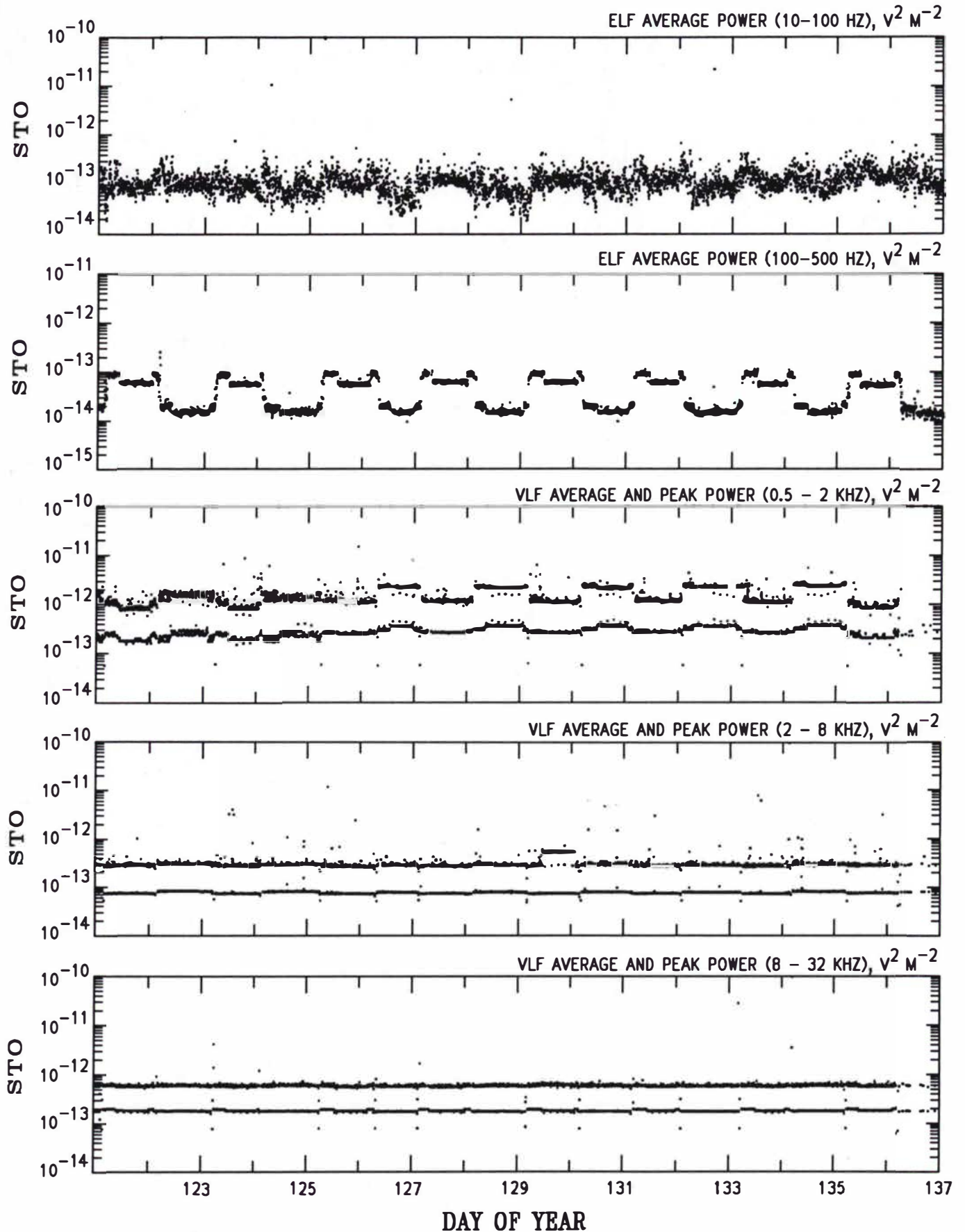
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



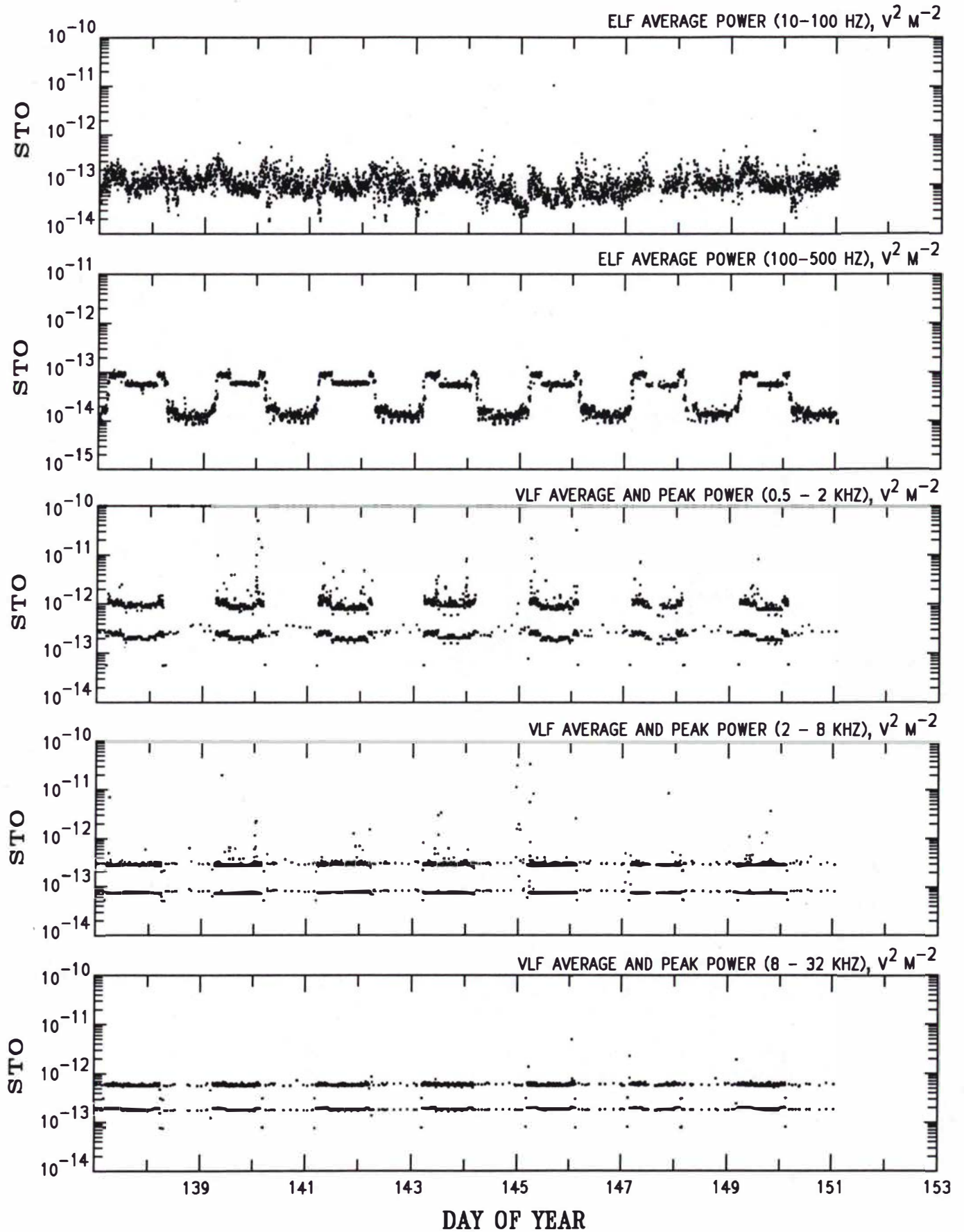
ULYSSES CDR - PLASMA WAVE

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



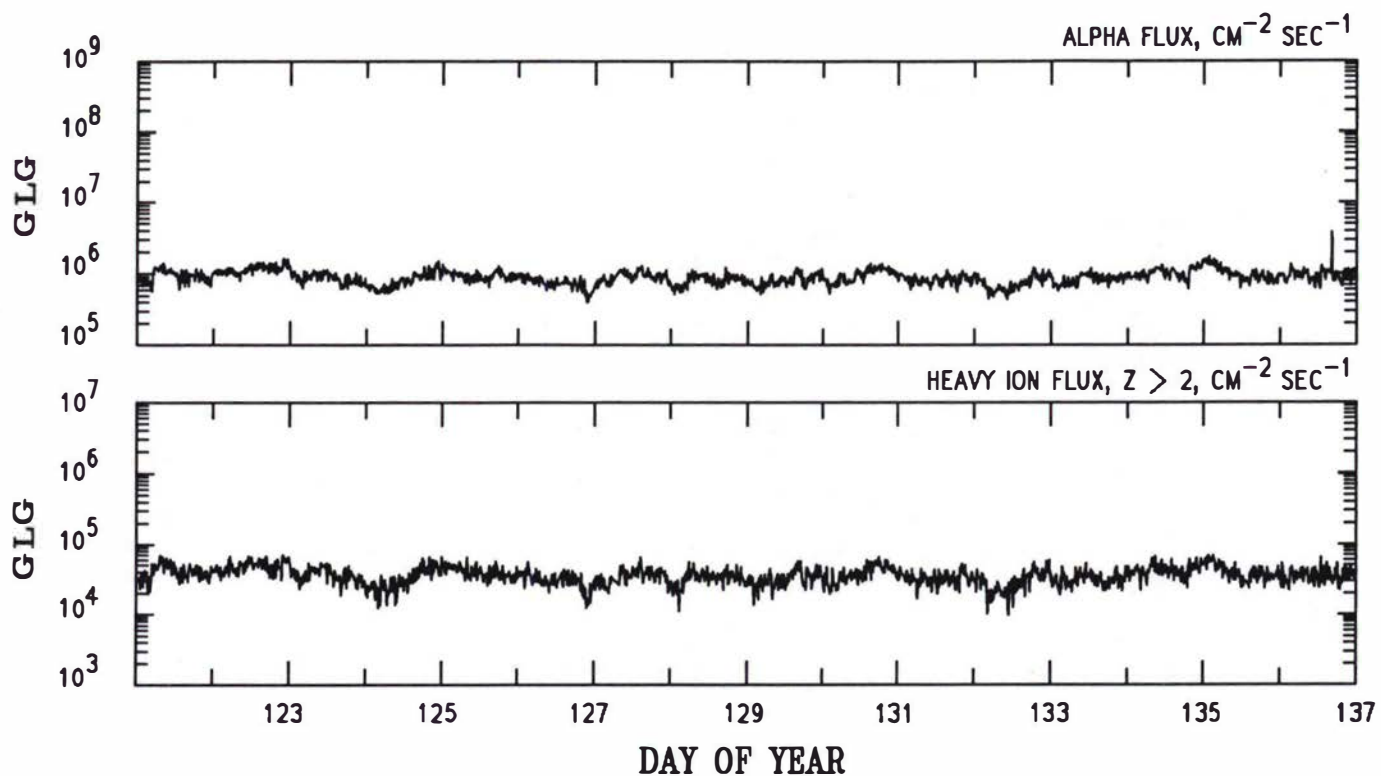
ULYSSES CDR - PLASMA WAVE

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



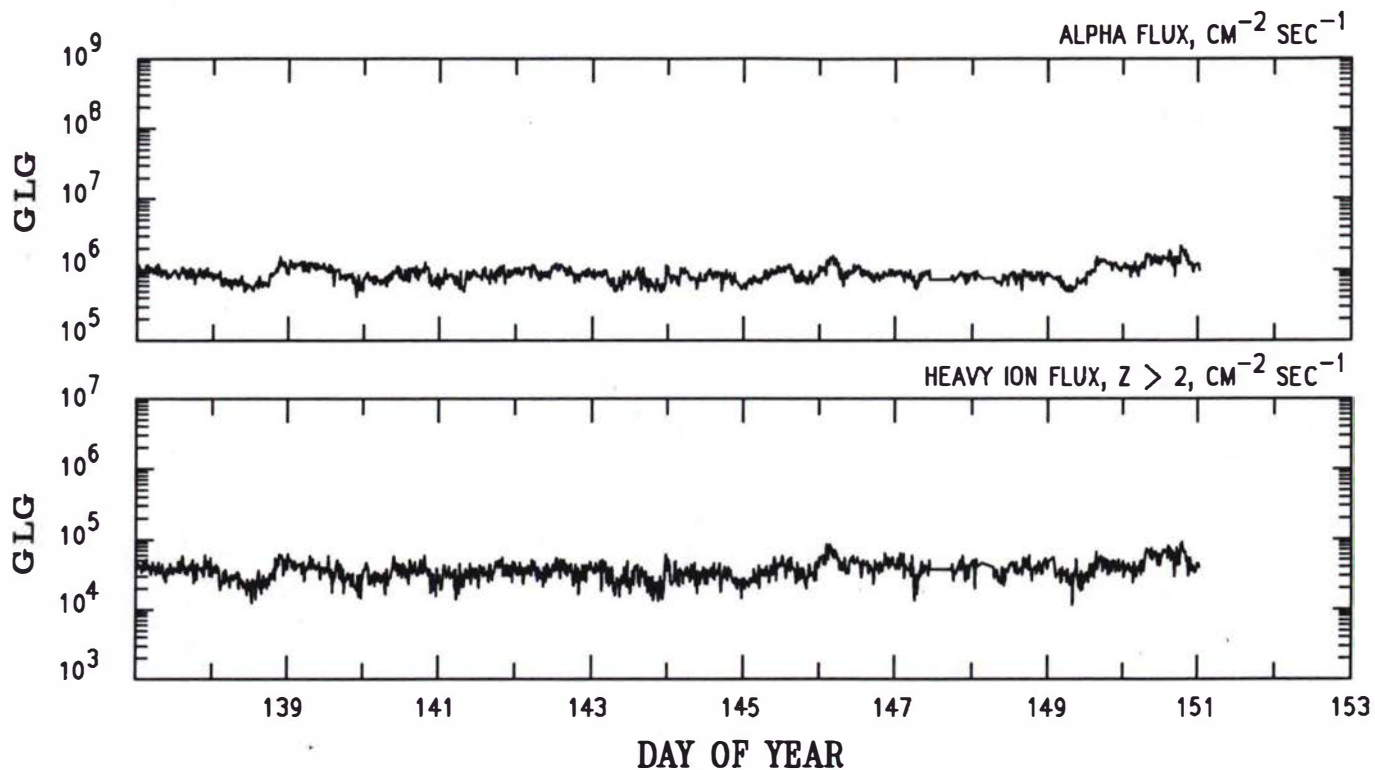
ULYSSES CDR - SOLAR WIND ION COMPOSITION

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



.94.121.00.35.21.818

HUS monthly long term thermal data

818 HOLD RET

E002 2ARADTMP S/C

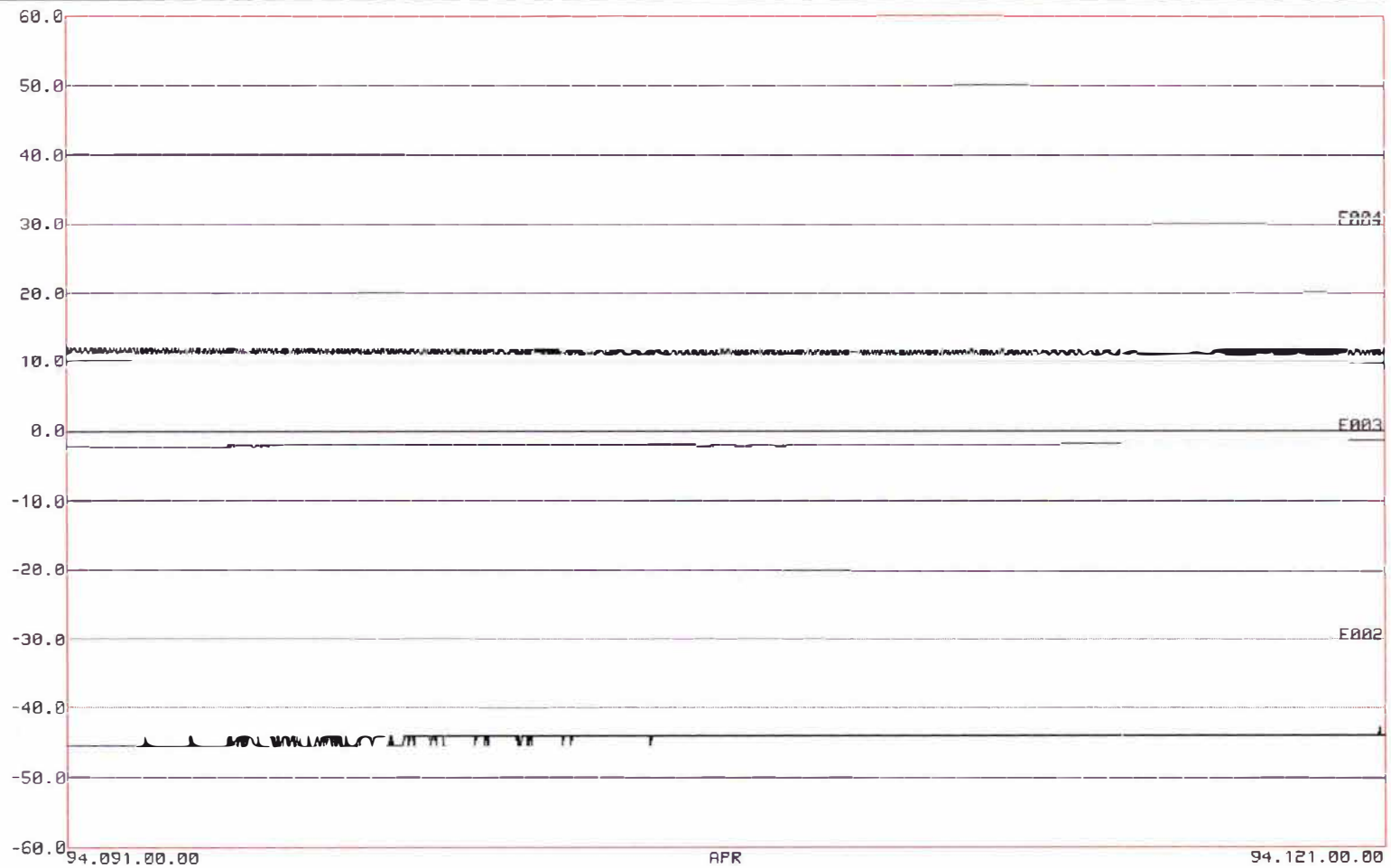
-1.4

E003 2BSENTMP S/C

-44.0

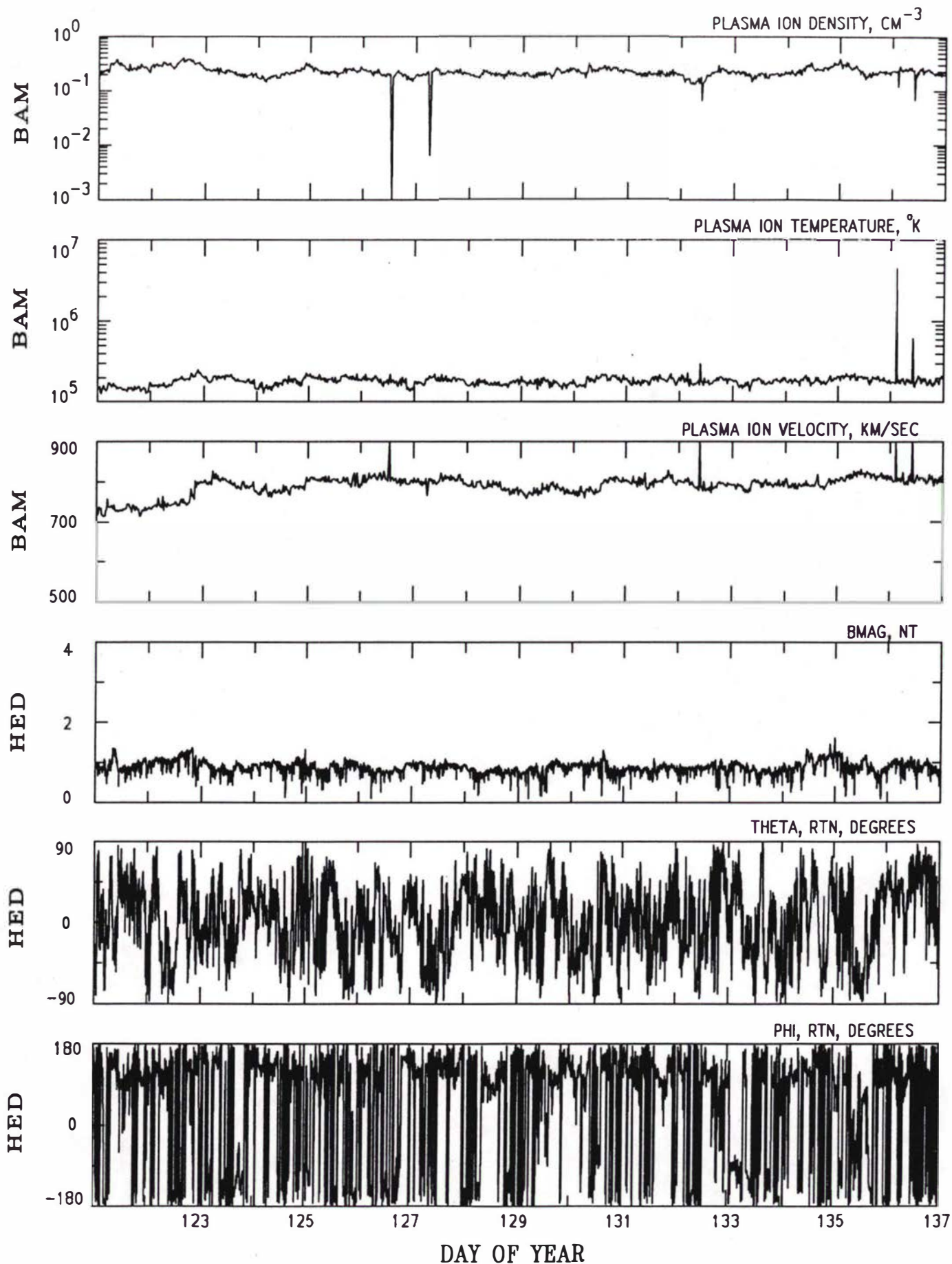
E004 2ASENSTMP EX

11.82



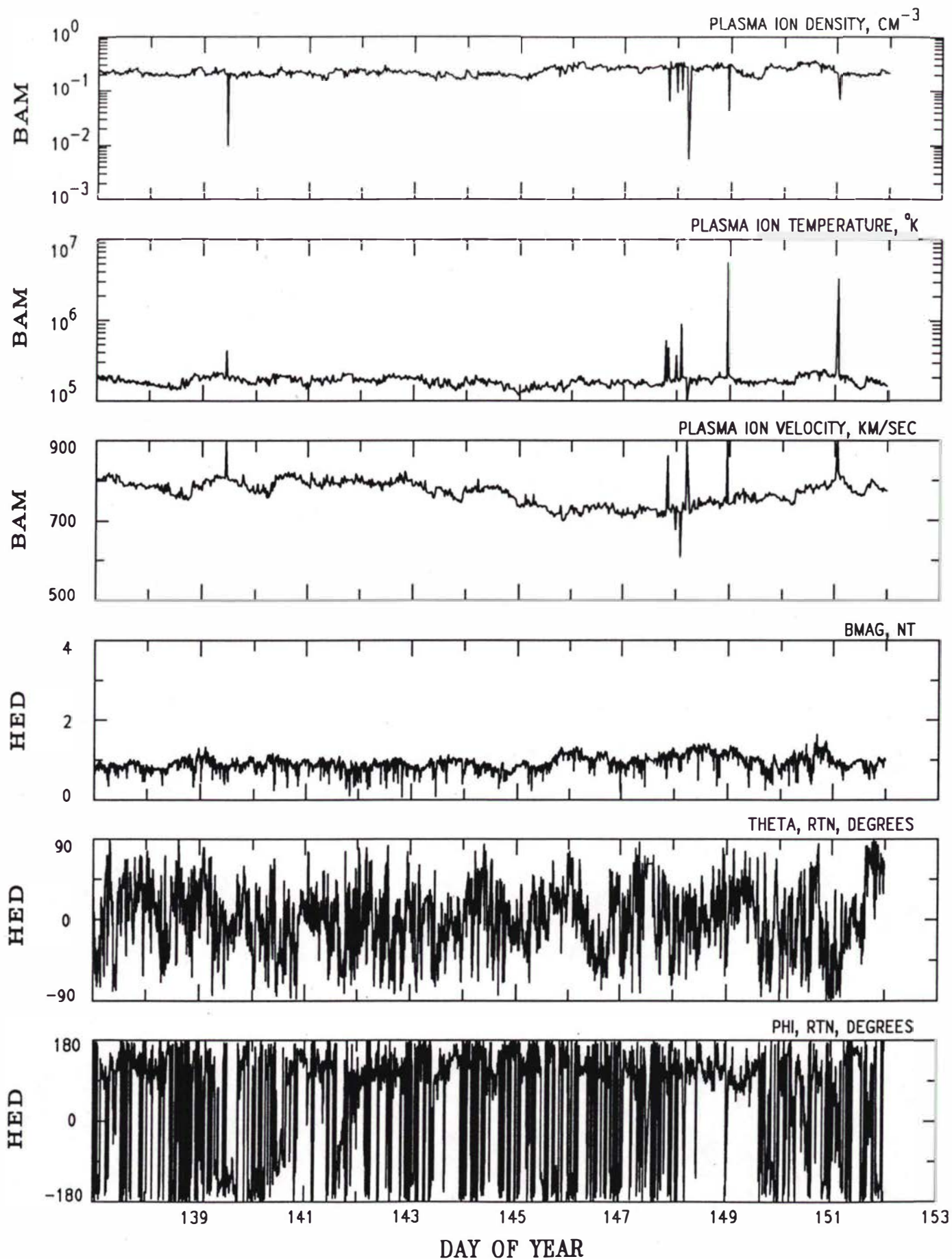
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



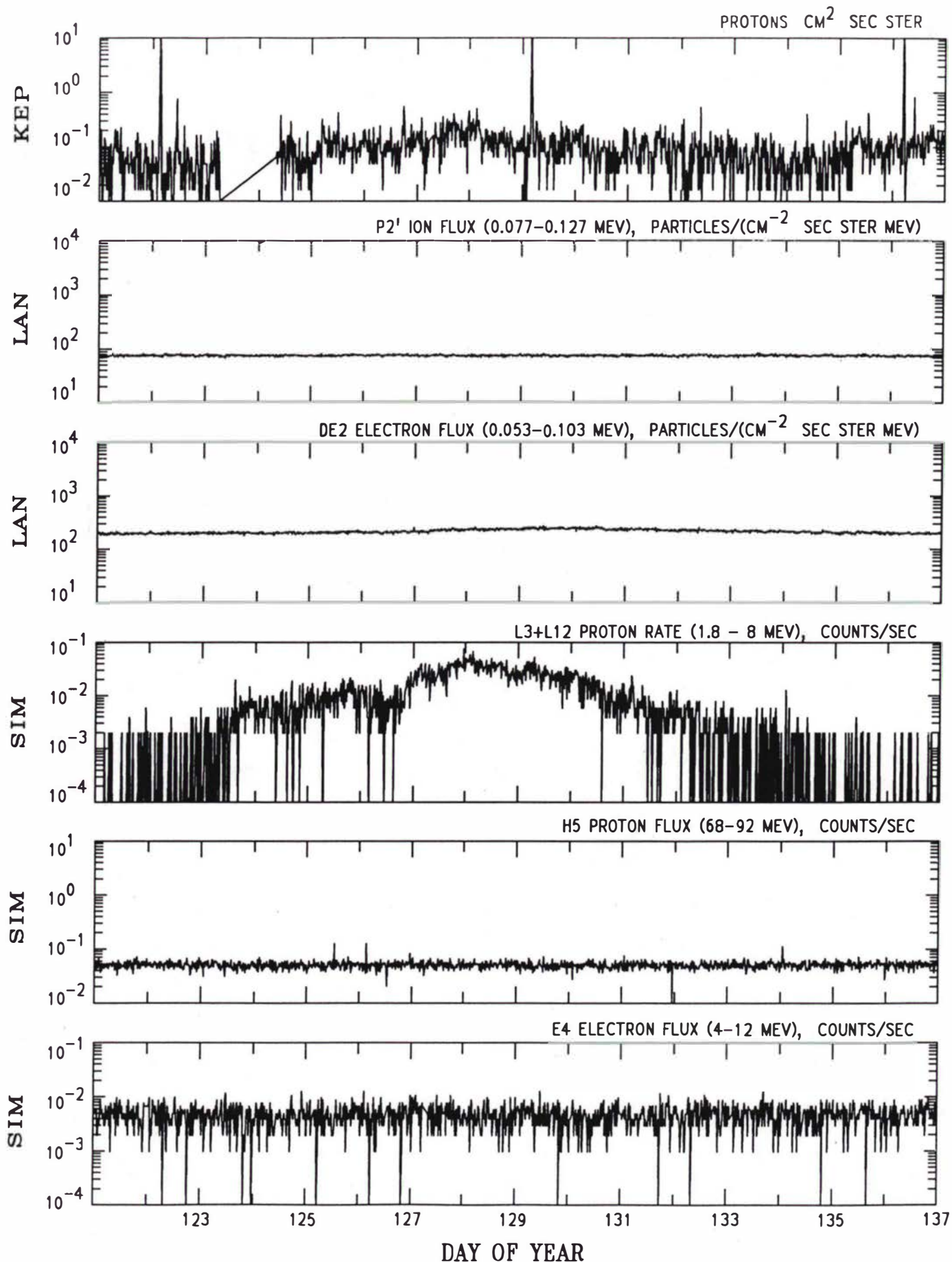
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



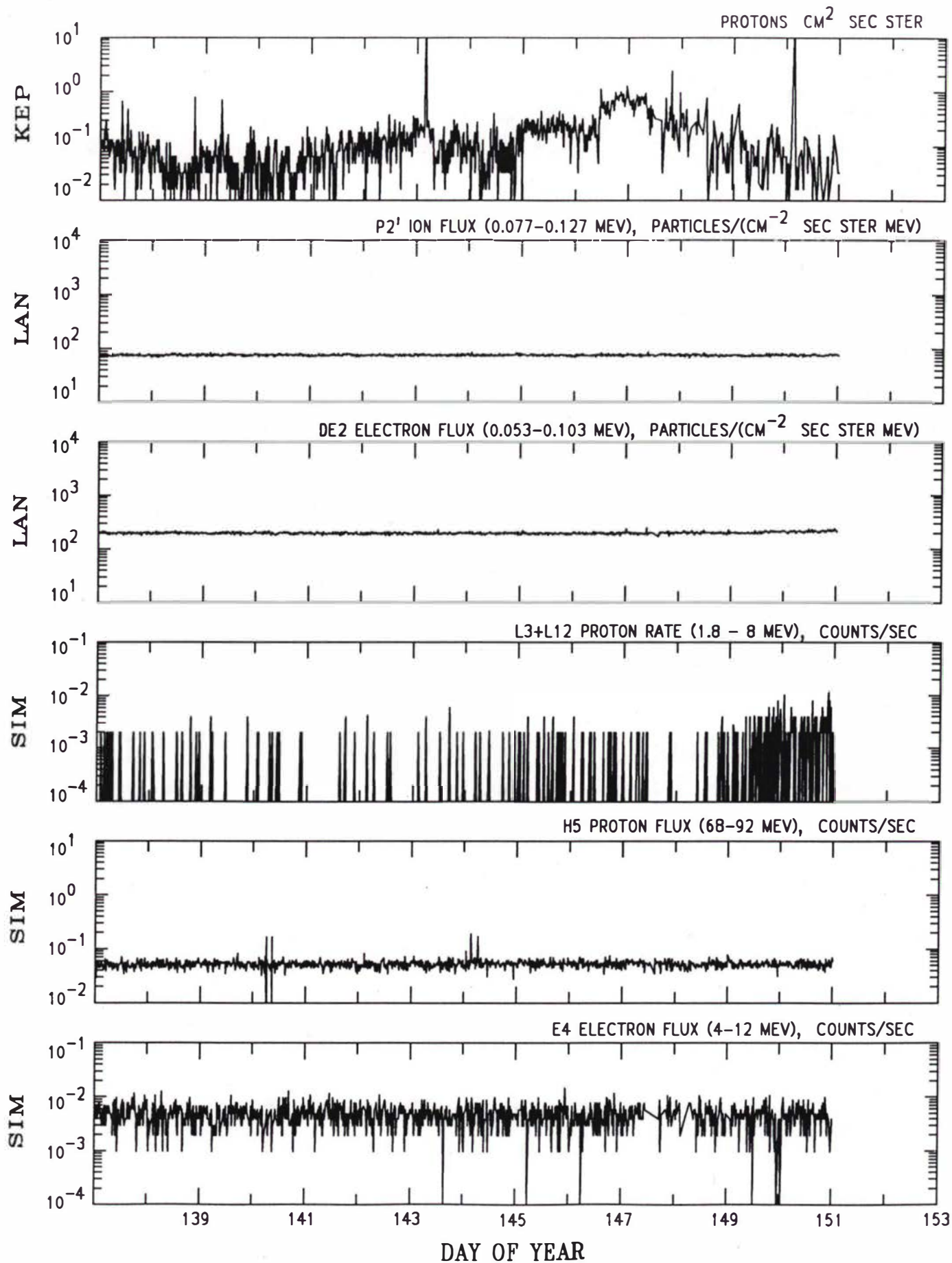
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



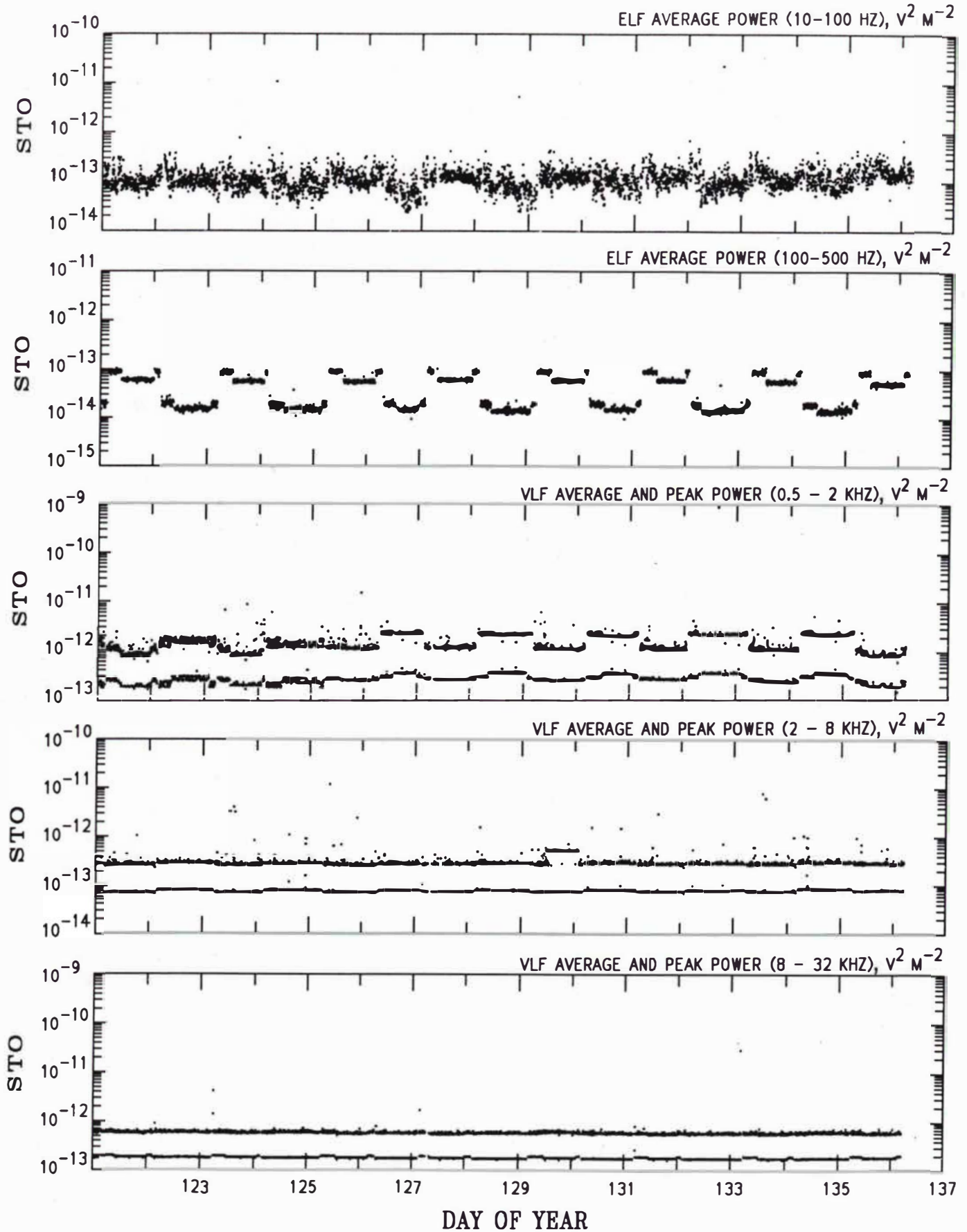
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



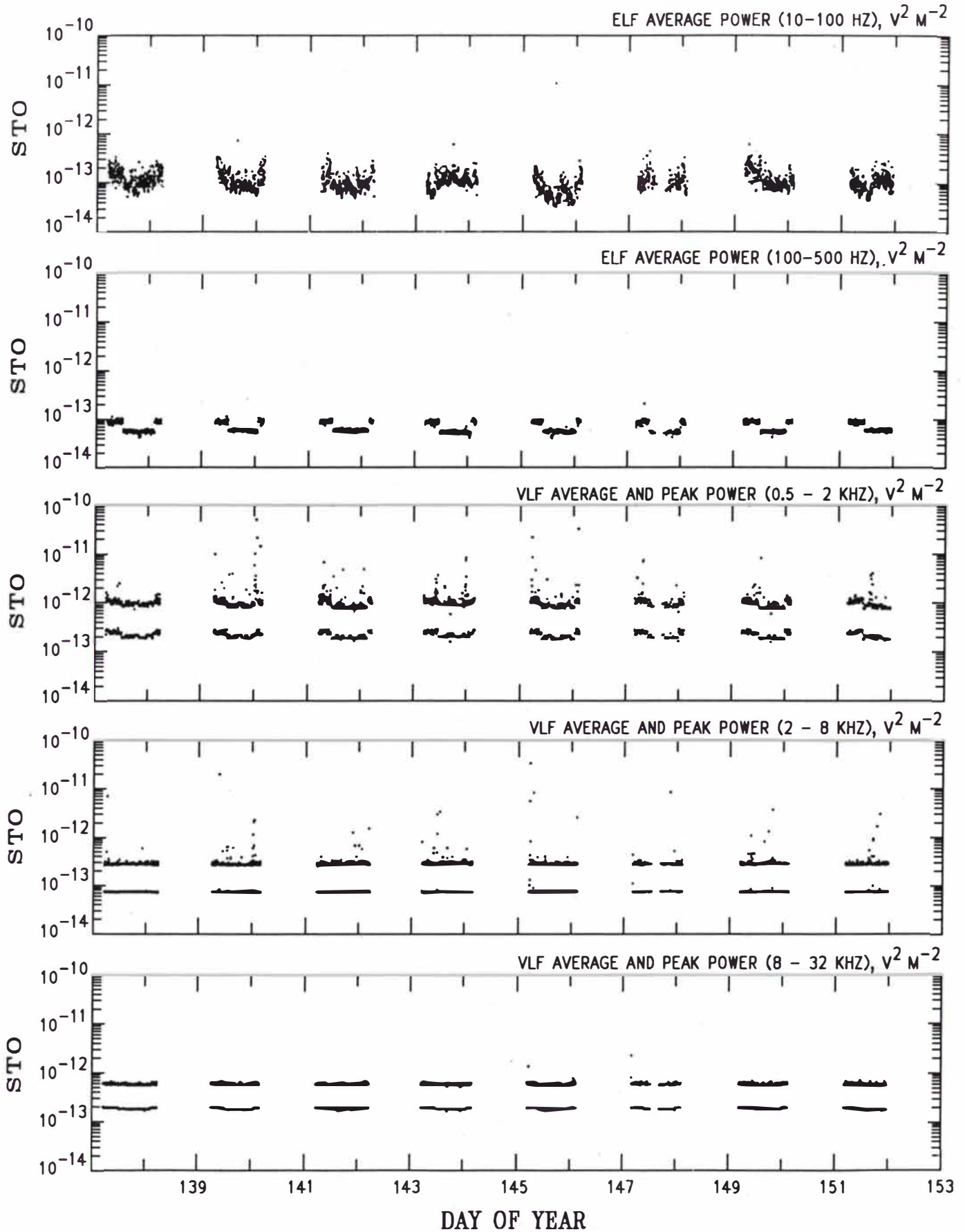
ULYSSES CDR - PLASMA WAVE

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



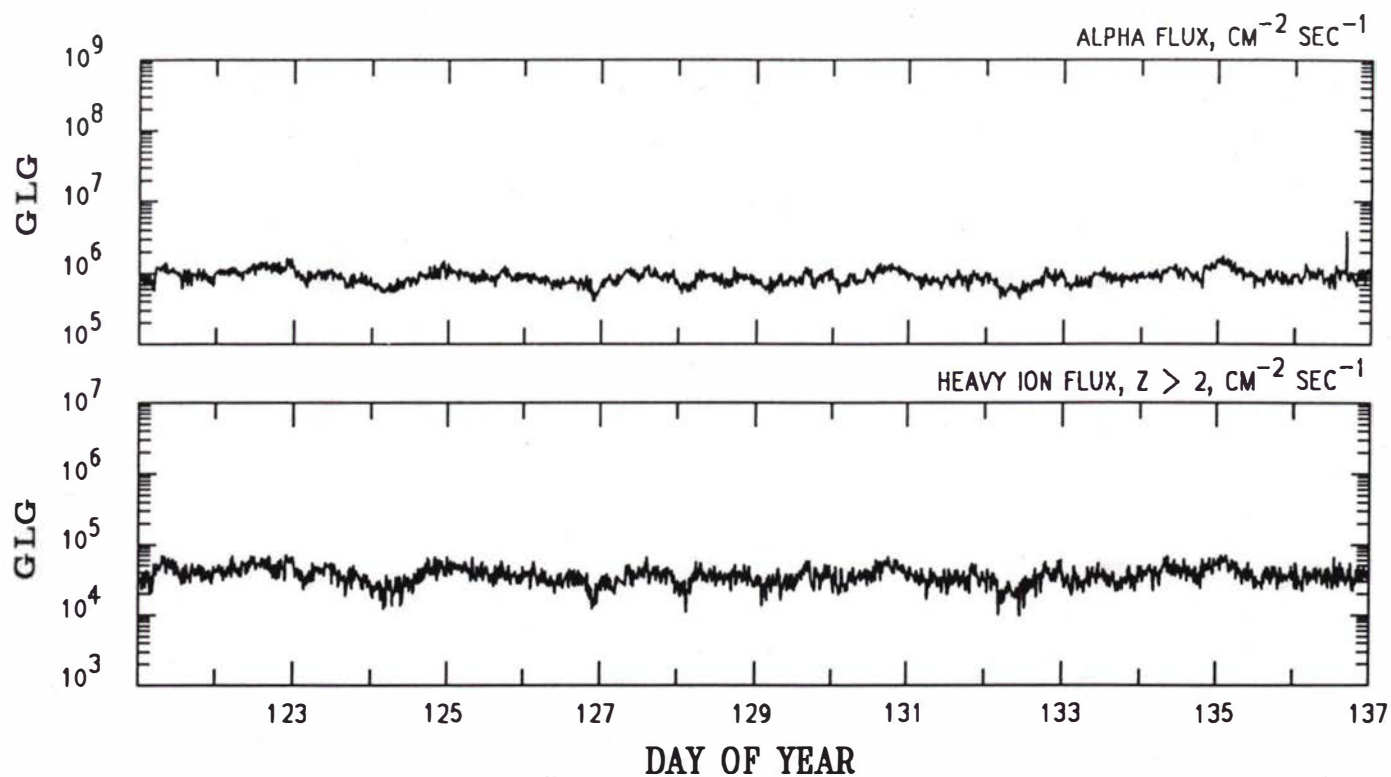
ULYSSES CDR - PLASMA WAVE

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



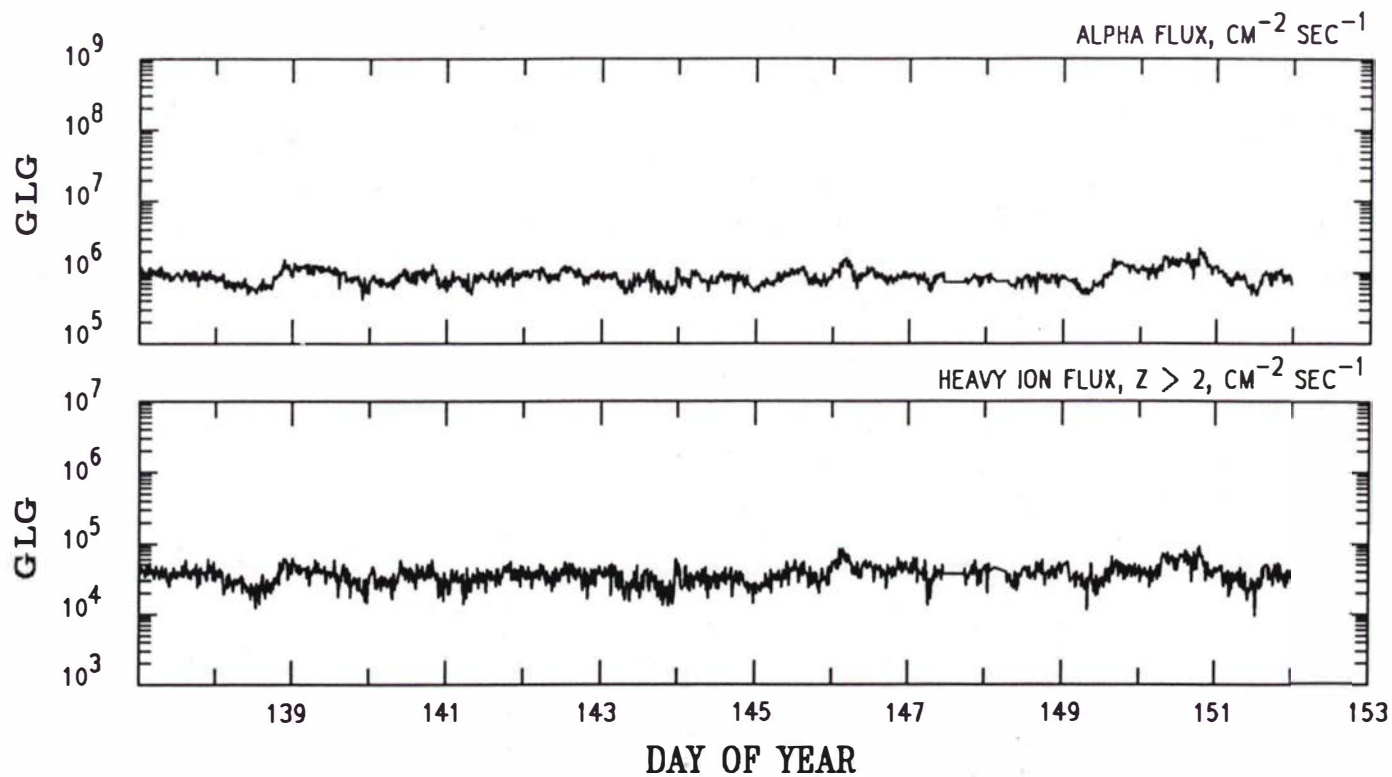
ULYSSES CDR - SOLAR WIND ION COMPOSITION

94 121 MAY 1 00:00:00.000 - 94 137 MAY 17 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

94 137 MAY 17 00:00:00.000 - 94 153 JUN 2 00:00:00.000



From KOSHUT@ssl.msfc.nasa.gov Mon May 2 12:33 PDT 1994
Date: Mon, 2 May 1994 14:33:17 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1296

BATSE BURST TRIGGER

NO.: 02955

TIME: TJD=9473 SECONDS=35887

TYPE: TGF SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=88. AZIMUTH=160. ERROR= DEGREES

COMMENTS:
TERRESTRIAL GAMMA FLASH. DURATION ~ 0.5 MS, WITH EMISSION OBSERVED ABOVE
300 KEV.

From KOSHUT@ssl.msfc.nasa.gov Mon May 2 12:49 PDT 1994
Date: Mon, 2 May 1994 14:49:16 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02956

TIME: TJD=9473 SECONDS=82032

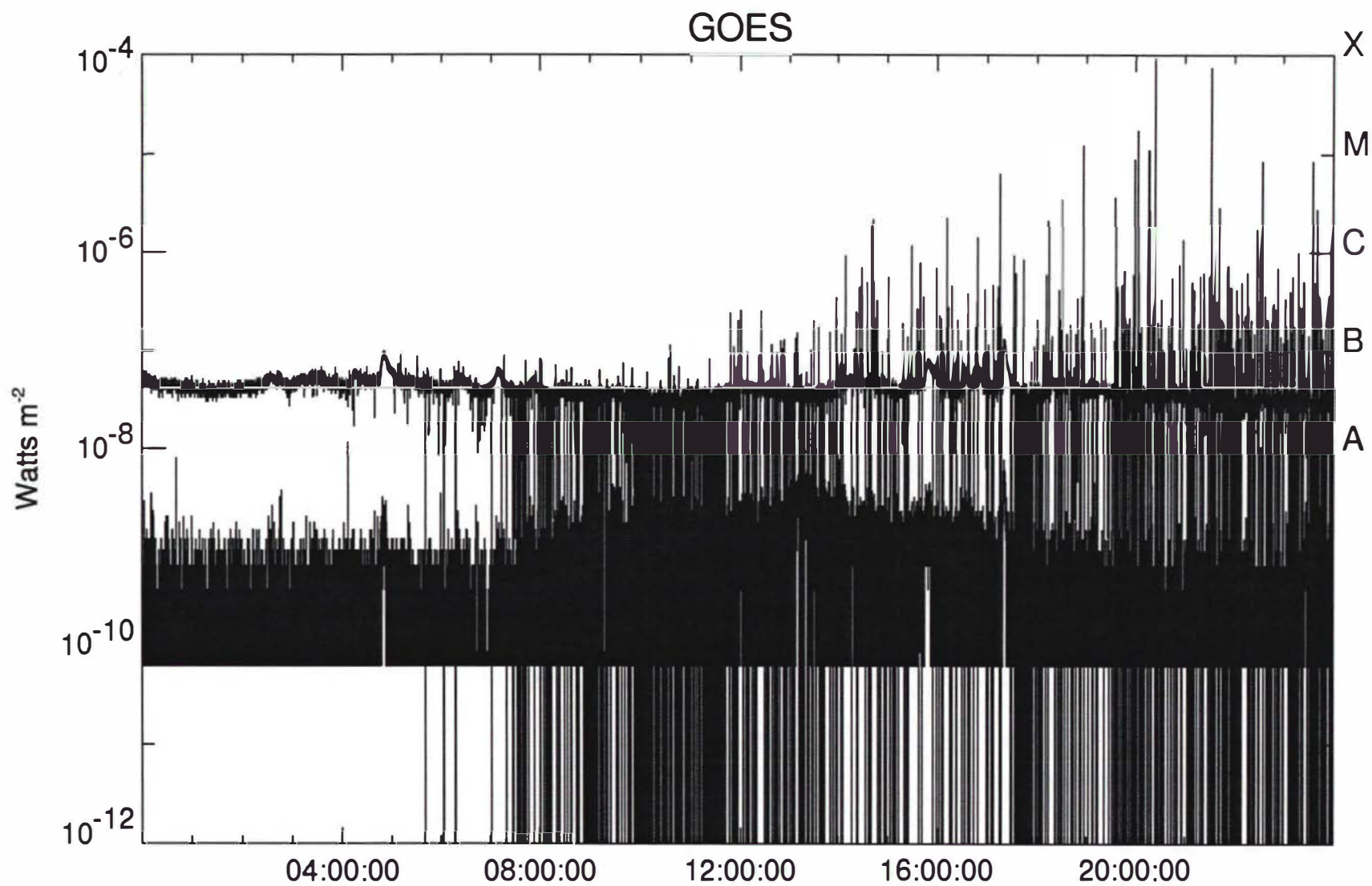
TYPE: SAA ENT SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGERED ON ENTRY INTO SAA.



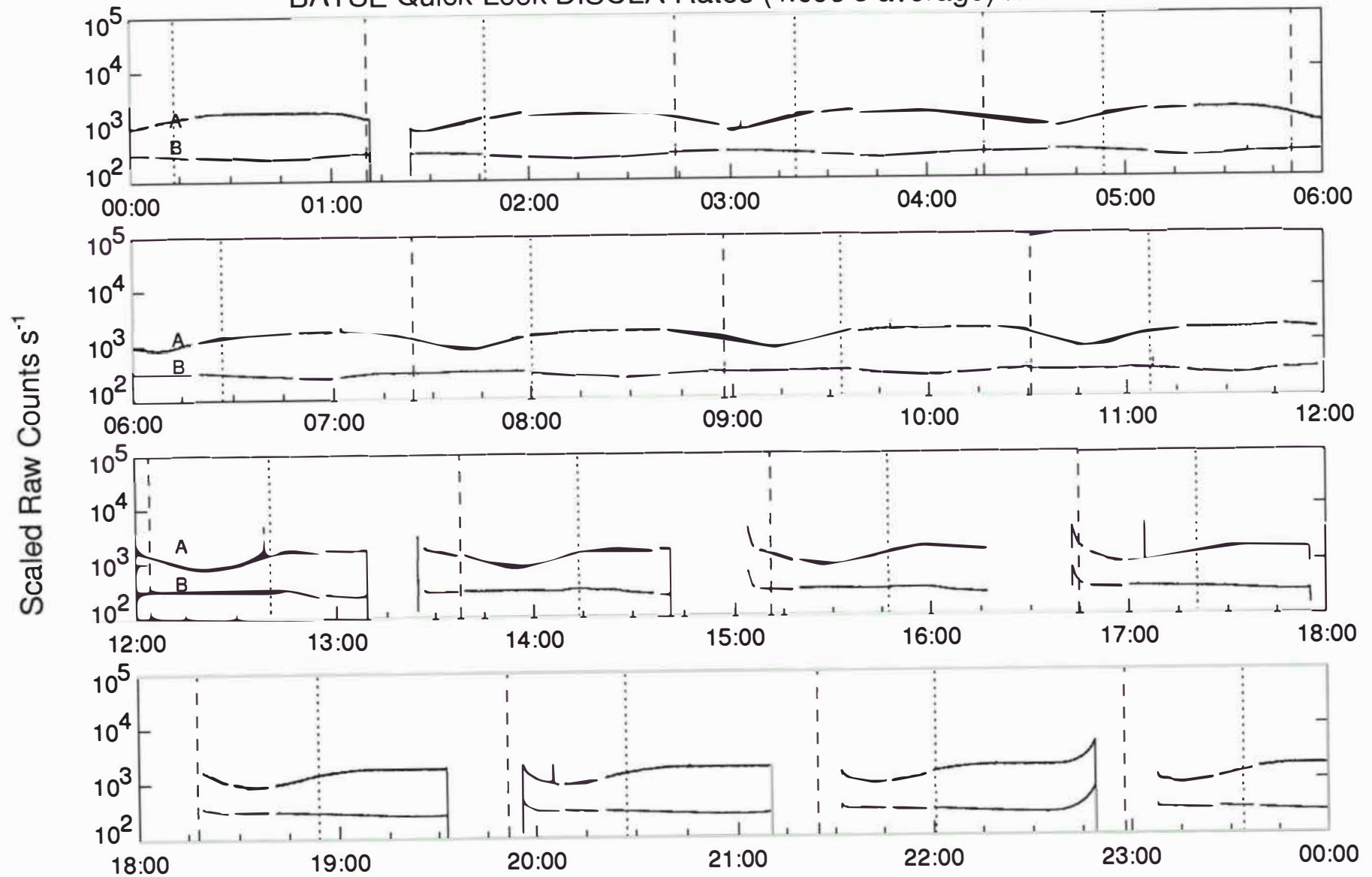
Data Start: 94/05/01, 0000:01

Plot created: 94/05/04, 1848

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/01

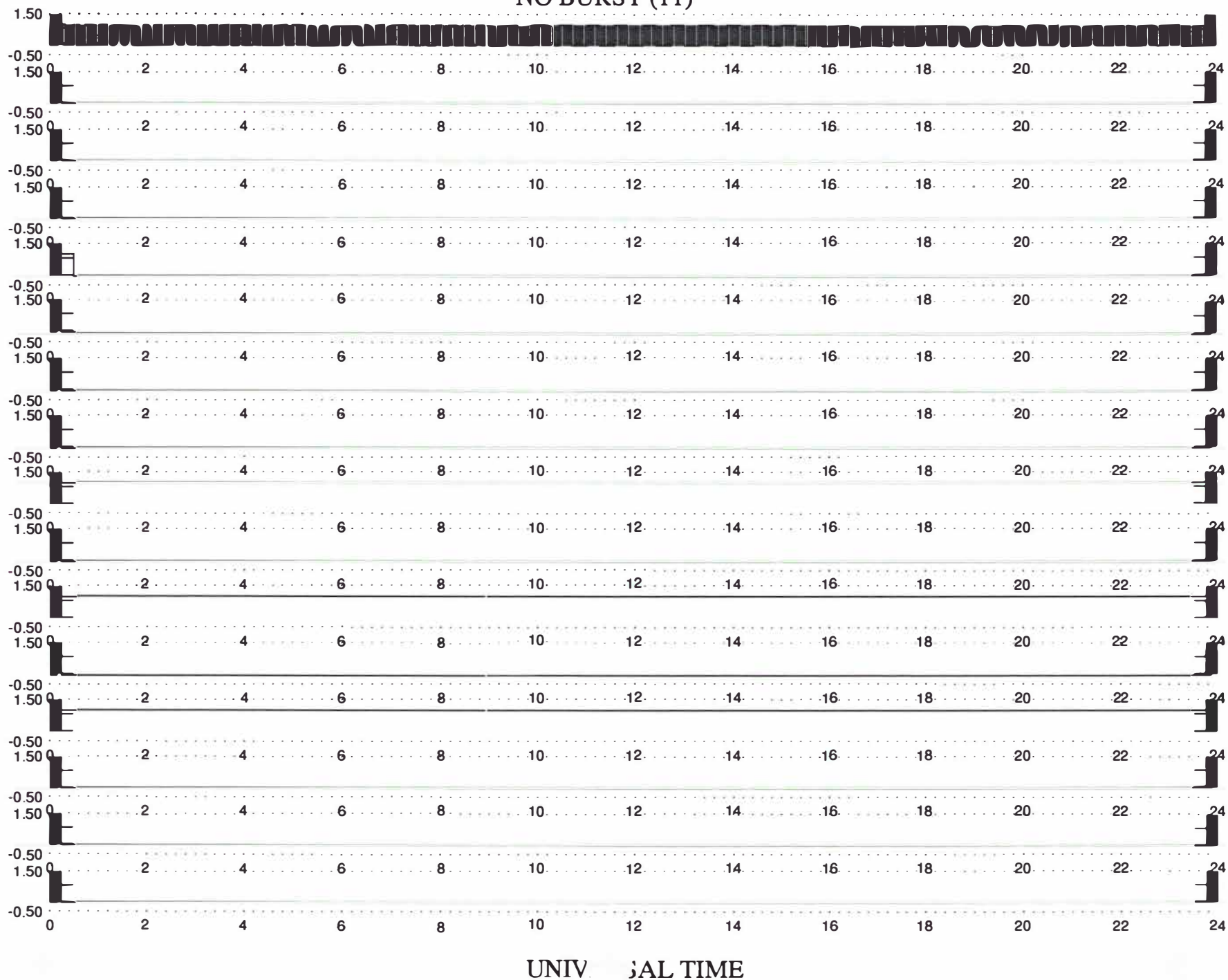


Current Time: 94/05/04, 1841 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

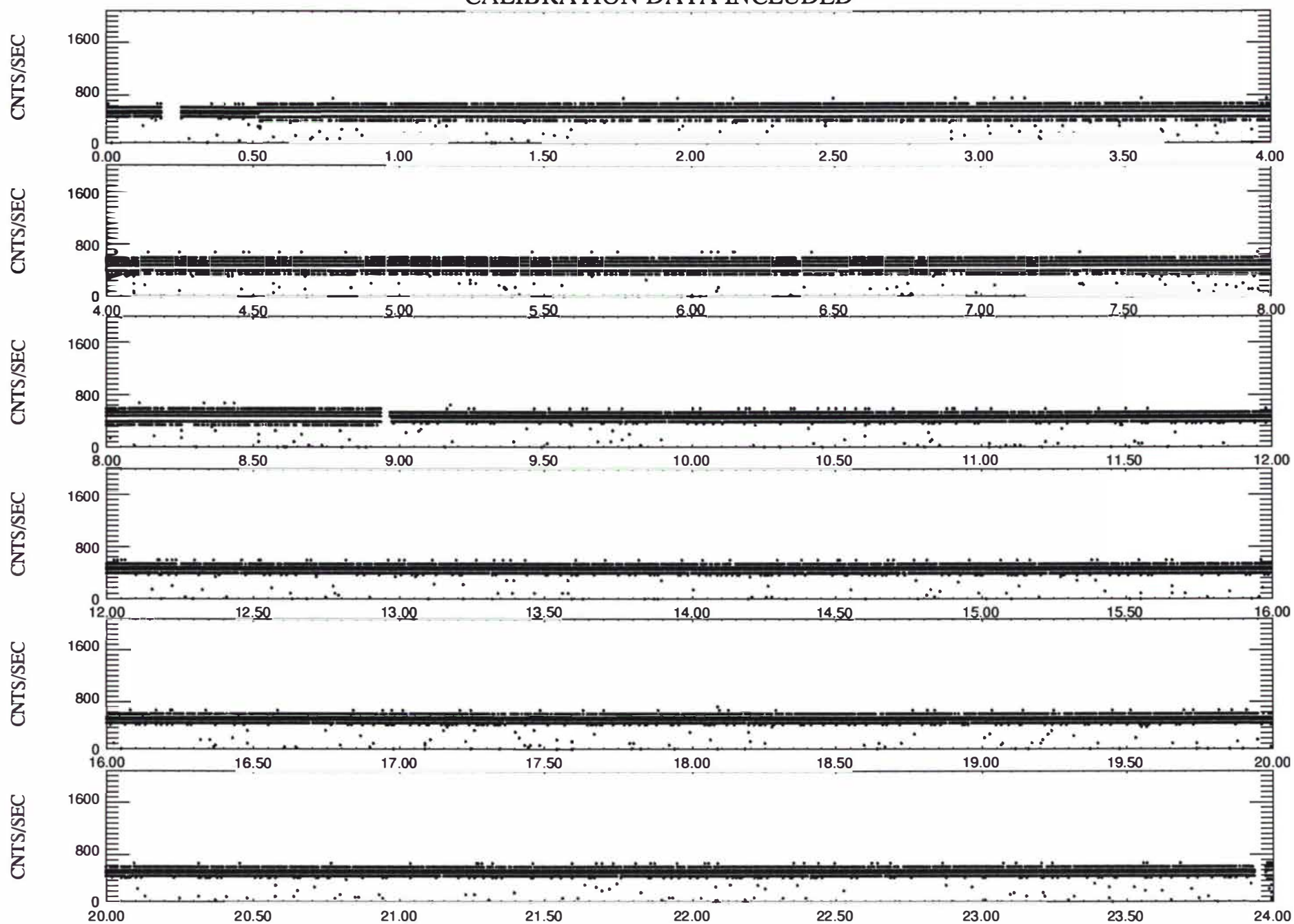
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

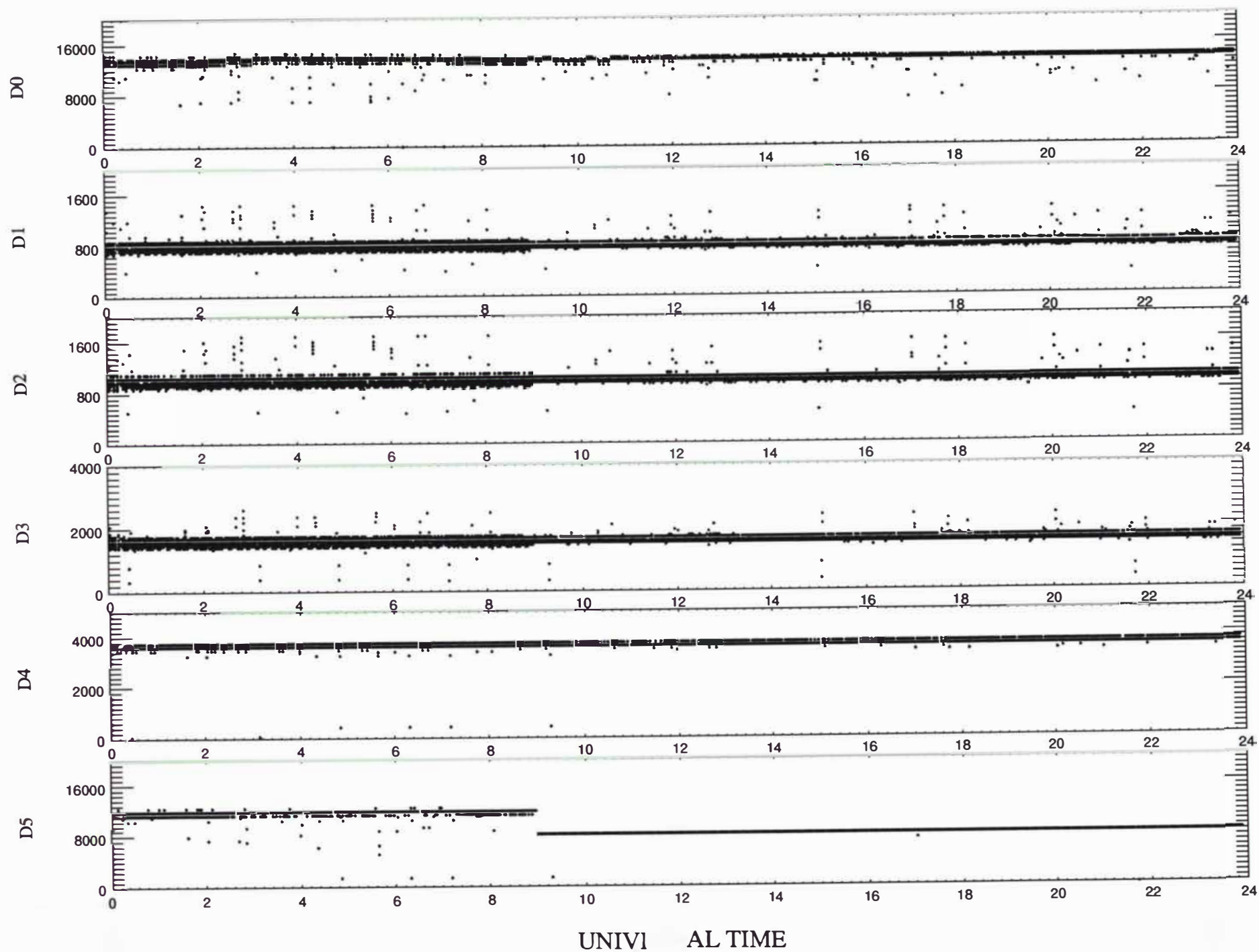
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

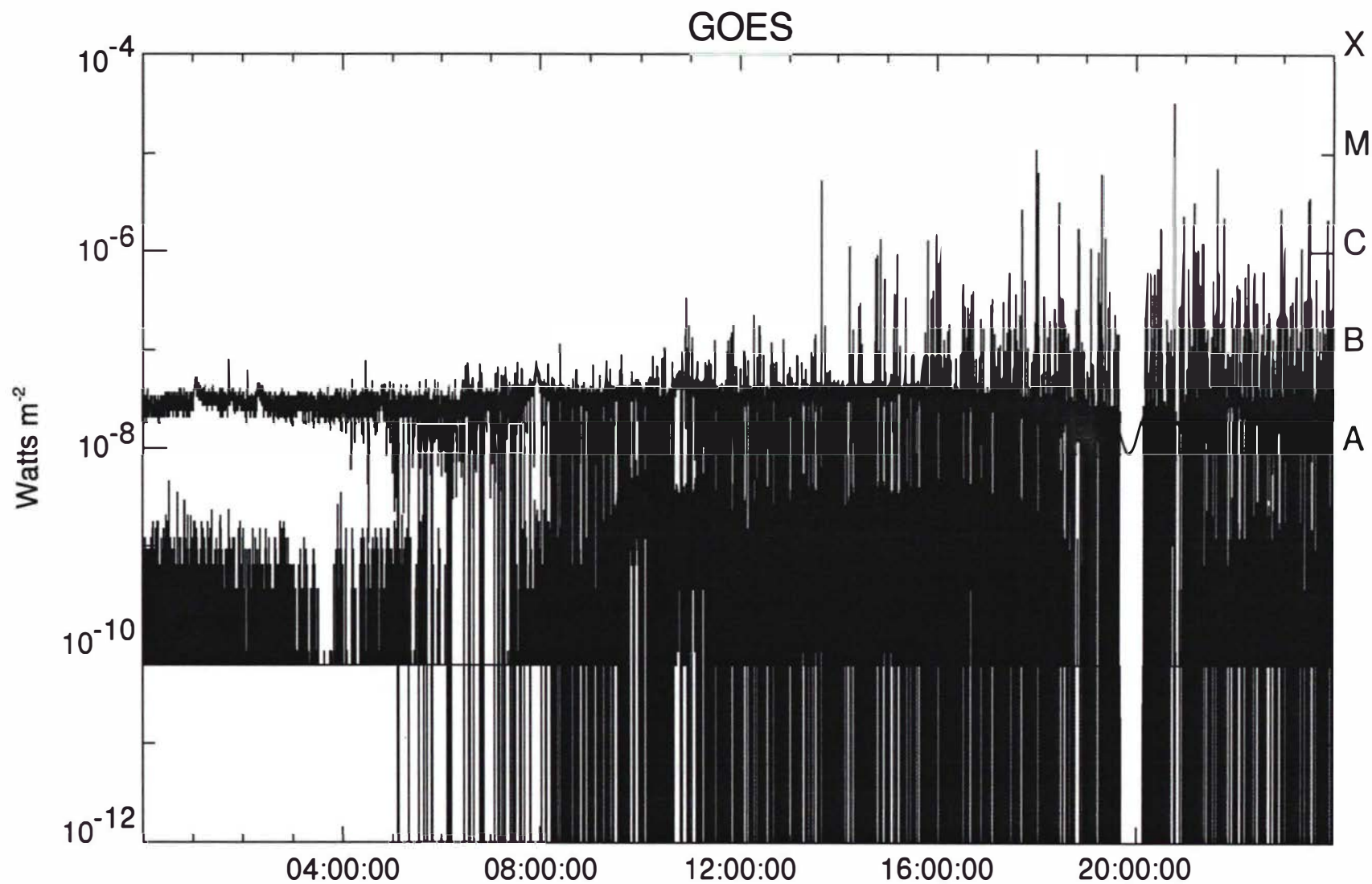


CALIBRATION DATA INCLUDED



UNIV 3AL TIME





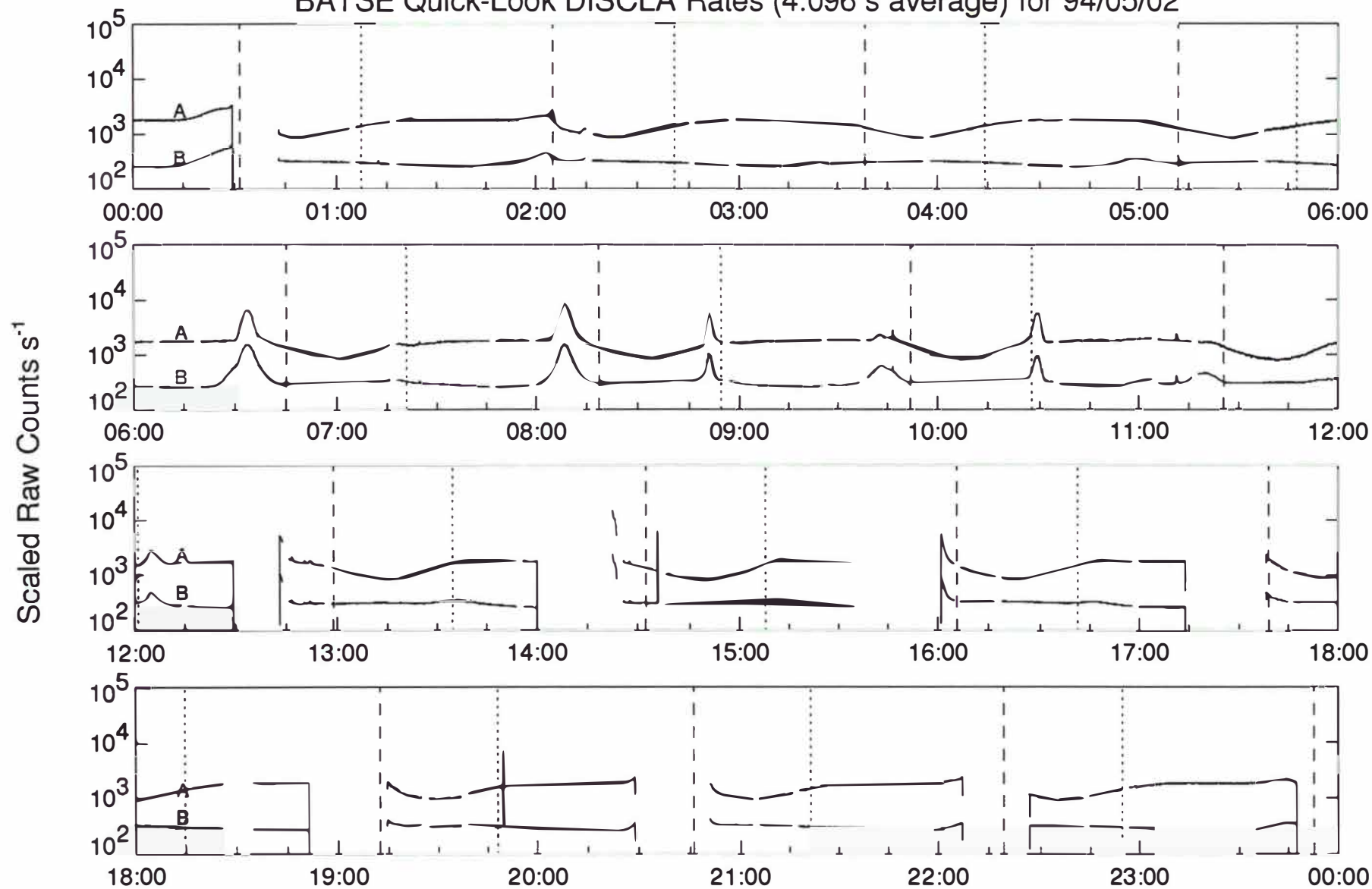
Data Start: 94/05/02, 0000:01

Plot created: 94/05/04, 1848

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/02



Current Time: 94/05/04, 1841 EDT

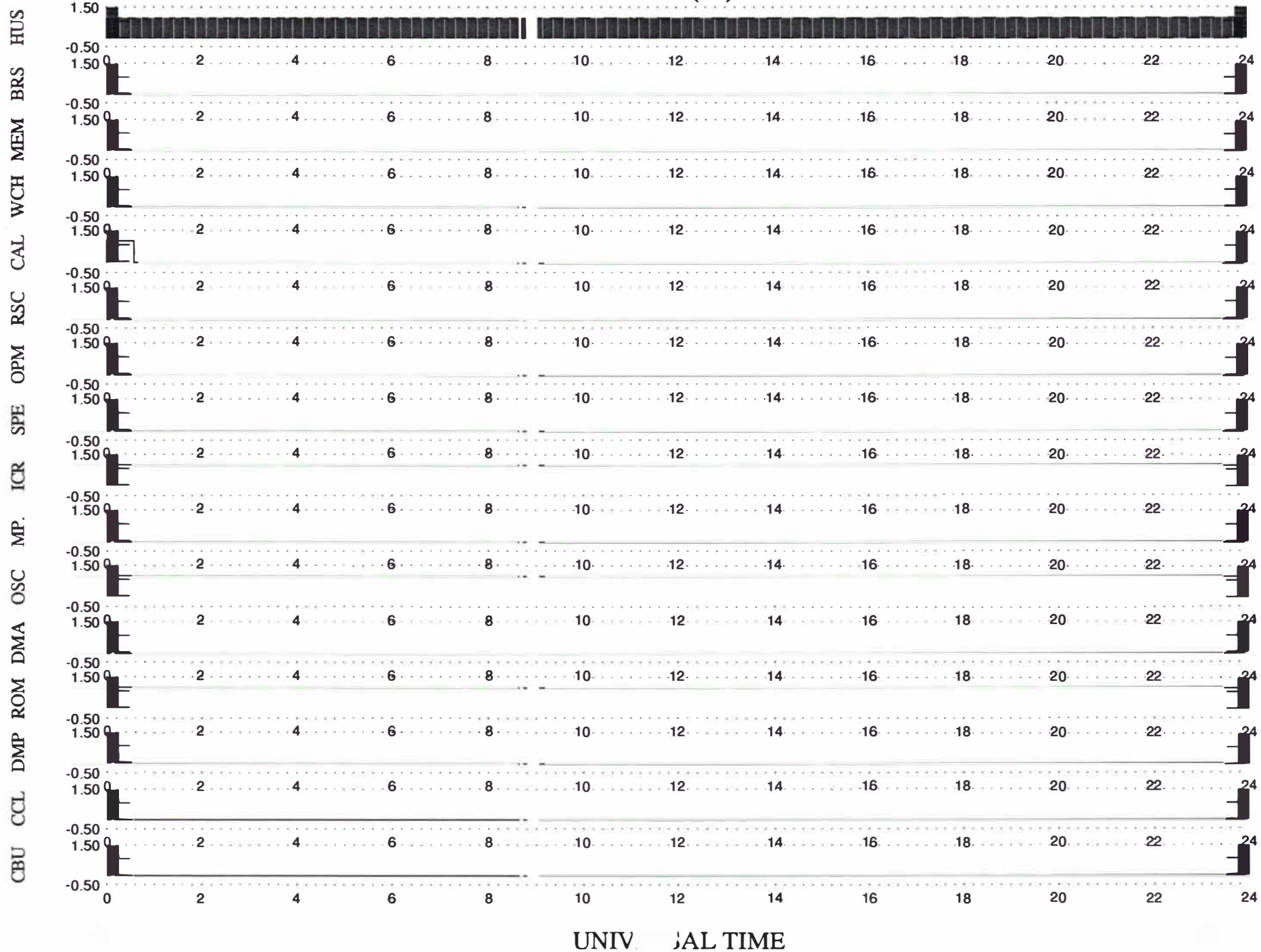
A: Channel 1 Most Sunward LAD

B: Sum Channel 1 Anti-Sunward LADs X .05

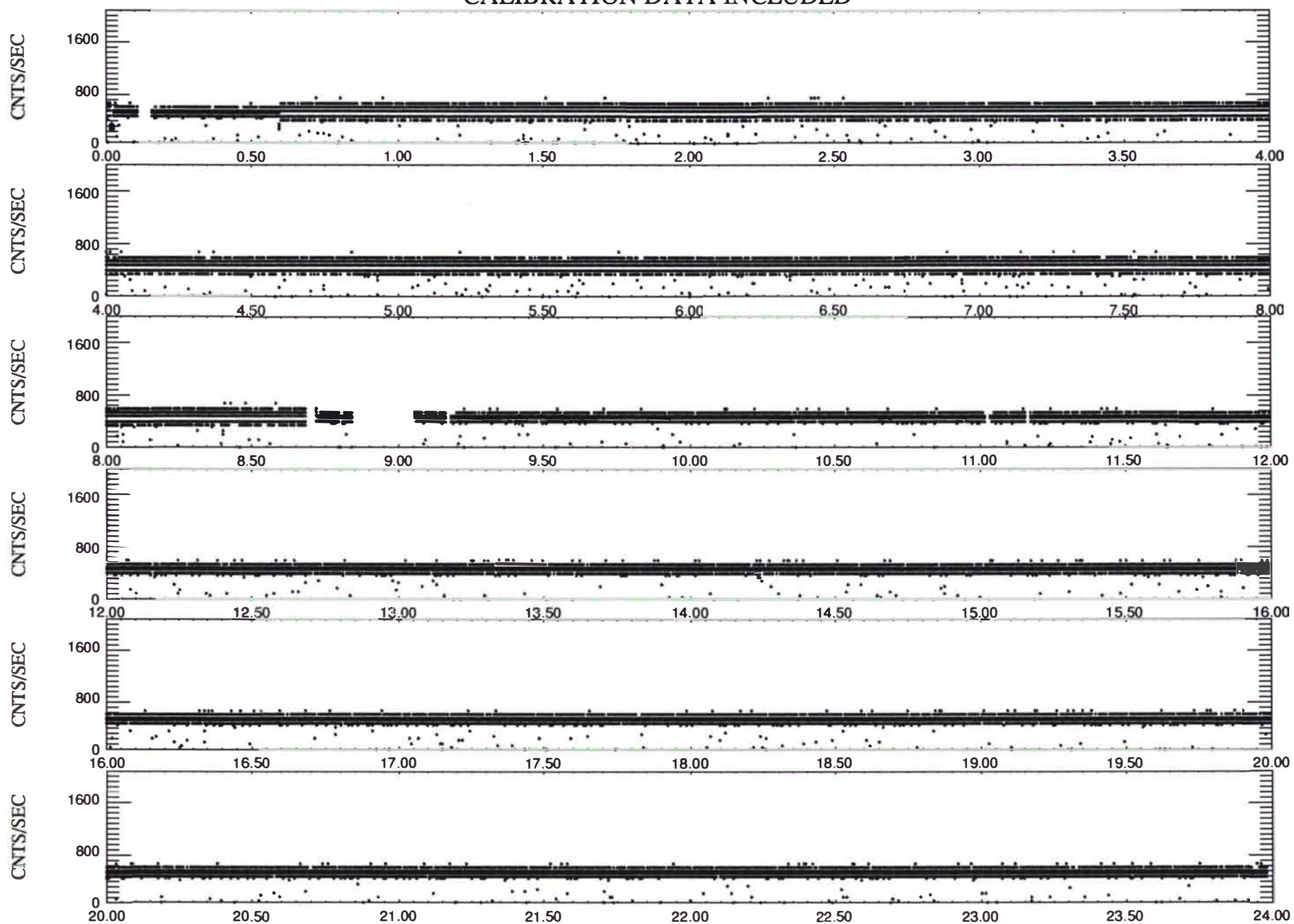
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

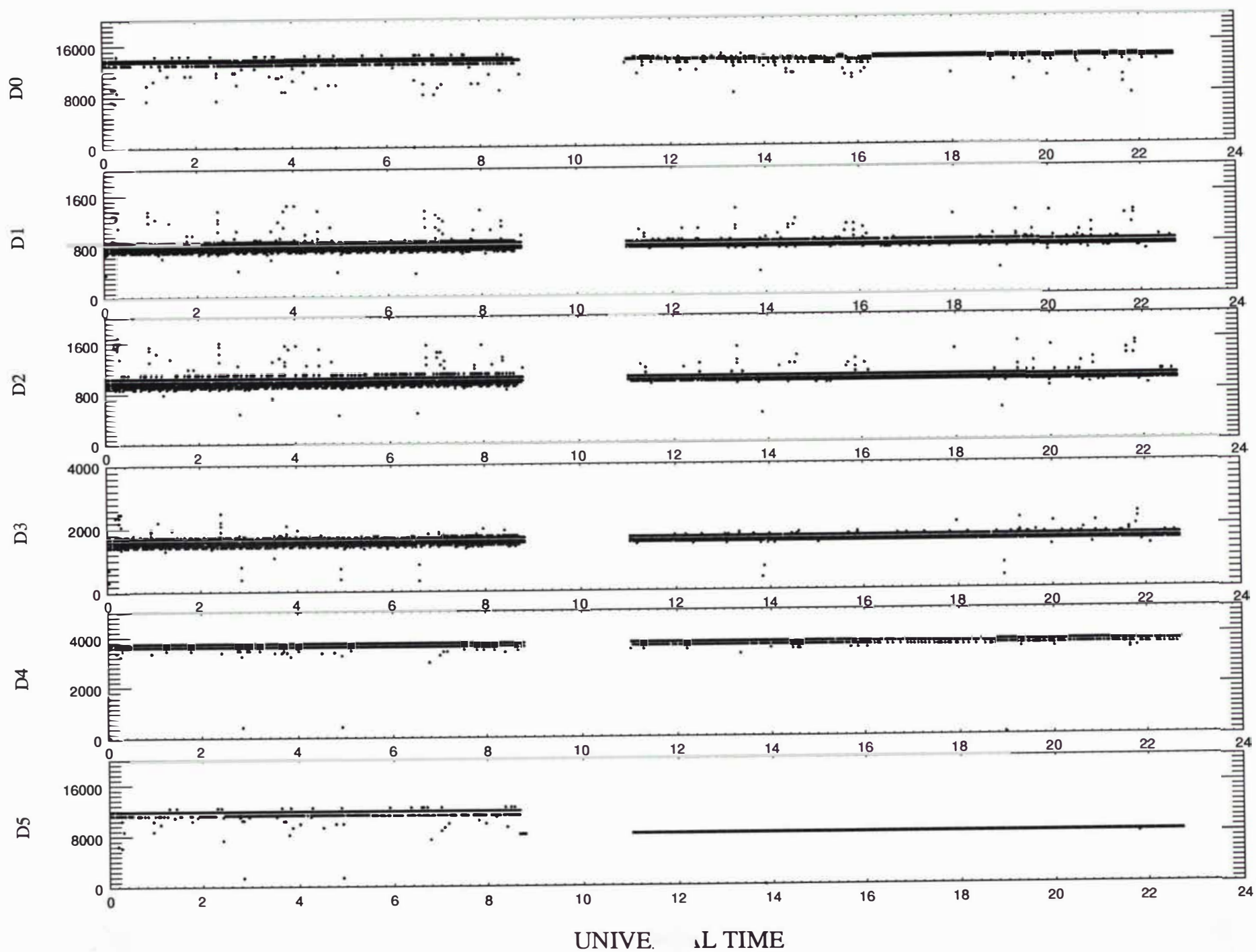
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV UNIV TIME



From MALLOZZI@ssl.msfc.nasa.gov Wed May 4 14:12 PDT 1994
Date: Wed, 4 May 1994 16:12:38 -0500 (CDT)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02957

TIME: TJD=9475 SECONDS=15052

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From MALLOZZI@ssl.msfc.nasa.gov Wed May 4 14:18 PDT 1994
Date: Wed, 4 May 1994 16:18:32 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2958
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2958
EVENT OF 1994 MAY 3 DAY OF YEAR=123
EVENT CROSSING TIME AT BATSE : 18464. S. OR 05:07:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 161.000 10.000
BATSE PEAK COUNTING RATE: 11000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 5/ 94 IS:
RA= 119.785 DEC= -43.736 DIST= 2.937 AU
BATSE-ULYSSES DISTANCE = 439410373. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=114.53 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -608.59 SECS.
CROSSING TIME AT ULYSSES IS 17855. S. OR 04:57:35 +/- 272.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 5/ 94 IS:
RA= 13.350 DEC= 4.670 DIST= 2.190 AU
MARS-BATSE DISTANCE = 327692640. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 35.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 890.91 SECS.
CROSSING TIME AT MARS IS 19355. S. OR 05:22:34 +/- 123.48 SECONDS

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2958	940503	9475	18464	11000	161	+10

BATSE BURST TRIGGER

NO.: 02958

TIME: TJD=9475 SECONDS=18464

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=097.3 AZIMUTH=098.9 ERROR= DEGREES

COMMENTS:

BURST WITH TWO SEPARATE PEAKS, EACH WITH A FAST RISE AND EXPONENTIAL DECAY. FIRST PEAK SOMEWHAT SOFTER THAN THE SECOND; BOTH ARE OBSERVED ABOVE 300 KEV. TOTAL DURATION OF THE EVENT IS APPROX. 45 SECONDS.

Helio corr removed

Date: Jan 28 '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

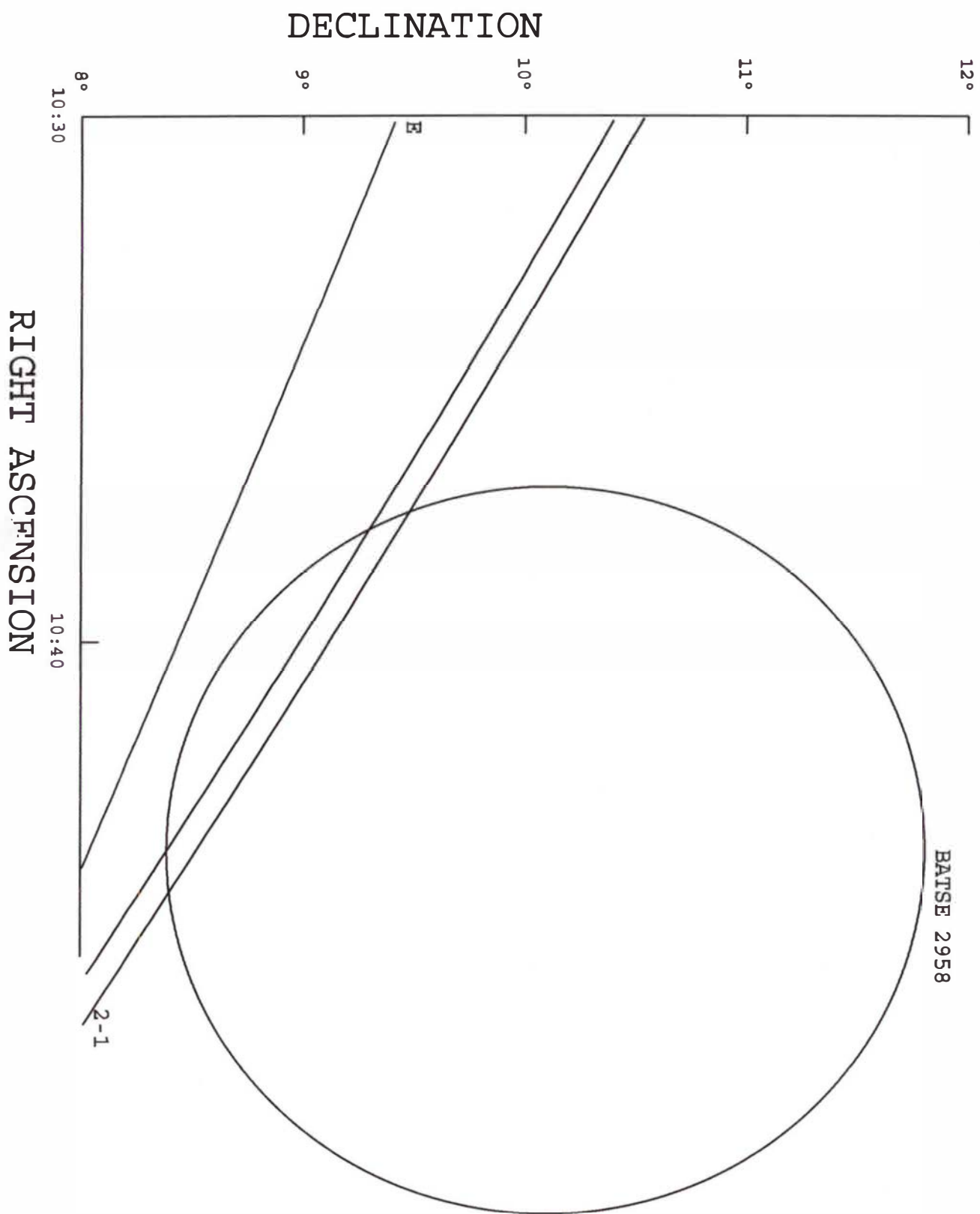
G=GALACTIC EQUATOR

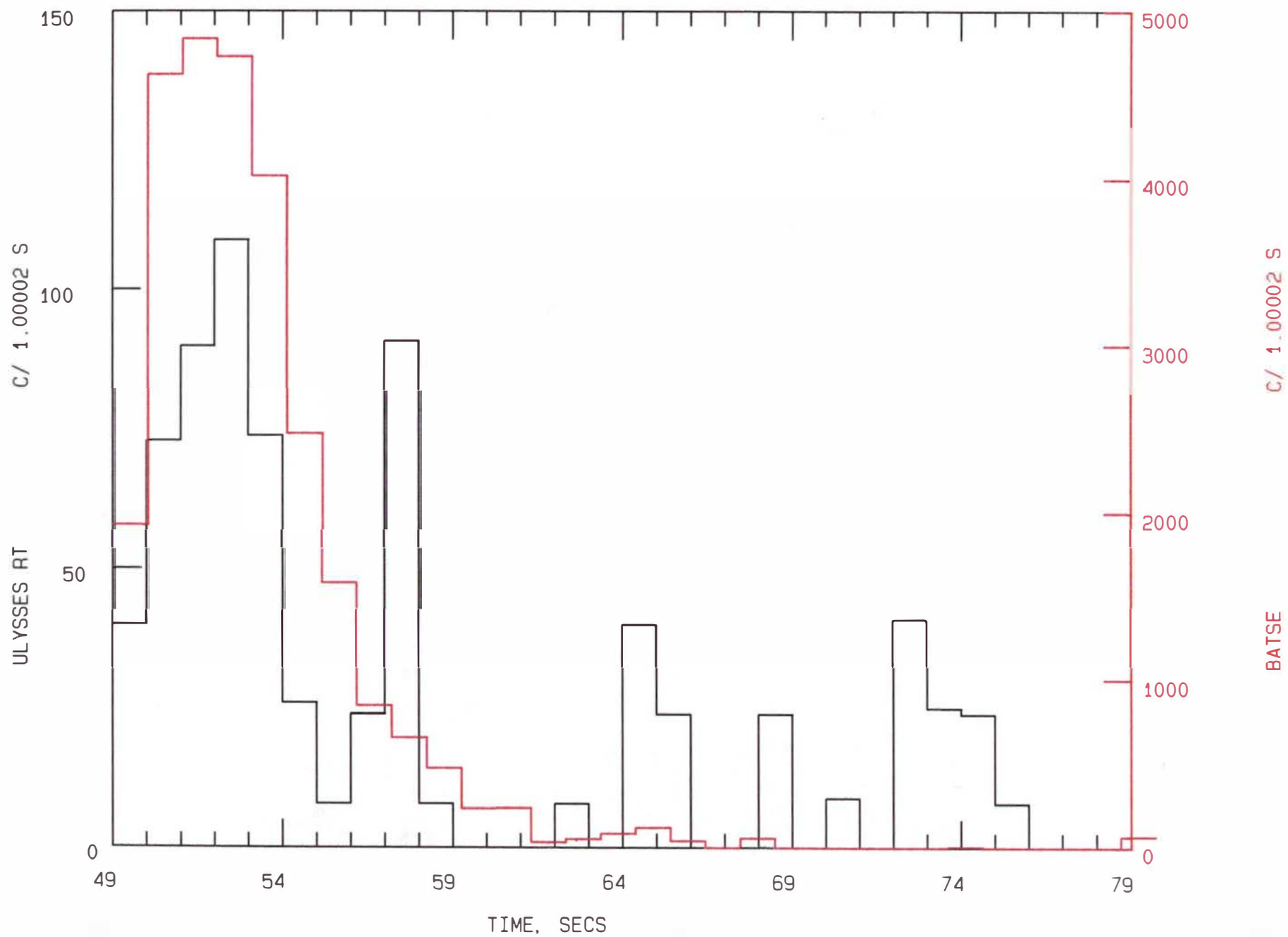
1 ULYSSES

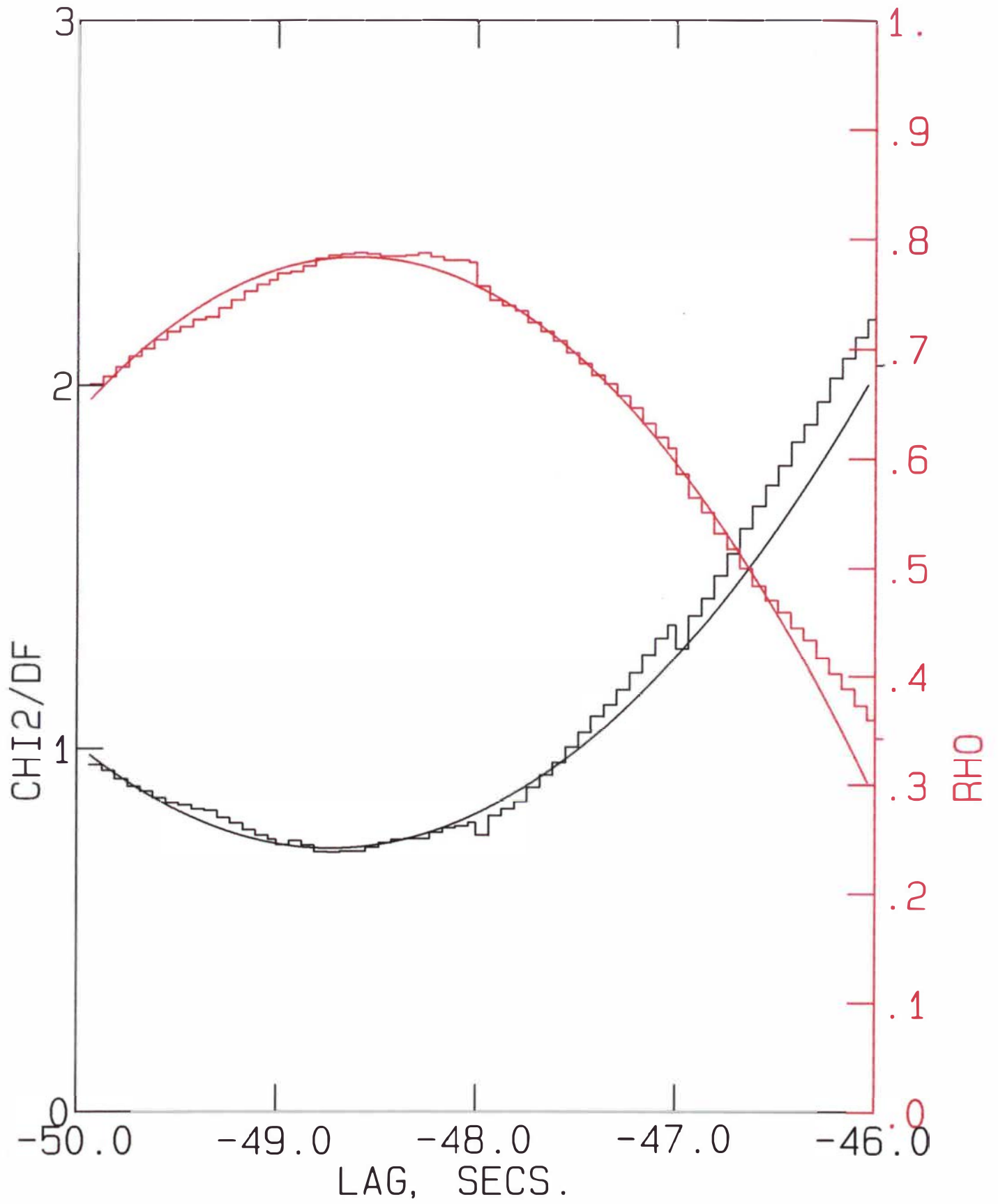
2 BATSE

EVENT OF MAY 3, 1994 4:56

28 / 1/98







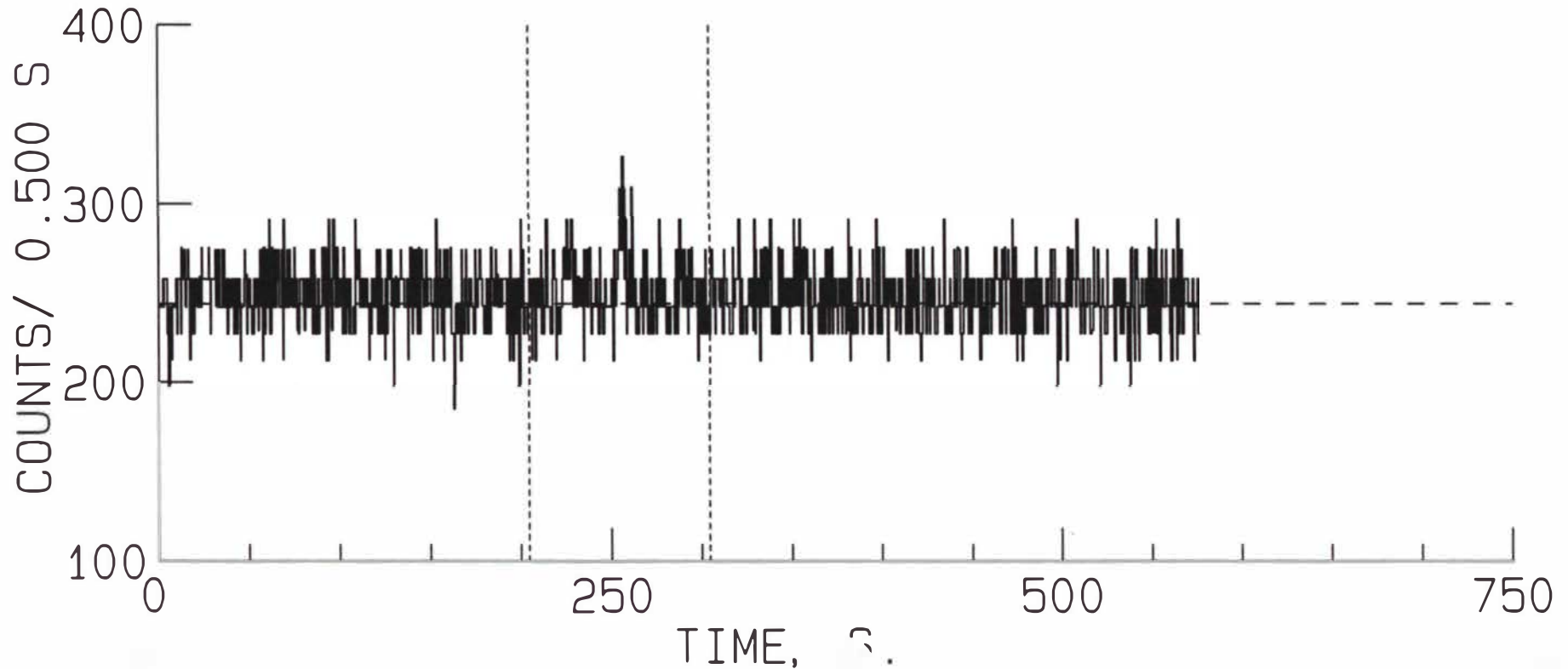
ULYSSES RT

28 / 1 / 98

3 / 5 / 94 17568.153 s

0.250 S INTERVALS REGROUPED BY 2
22- 147 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



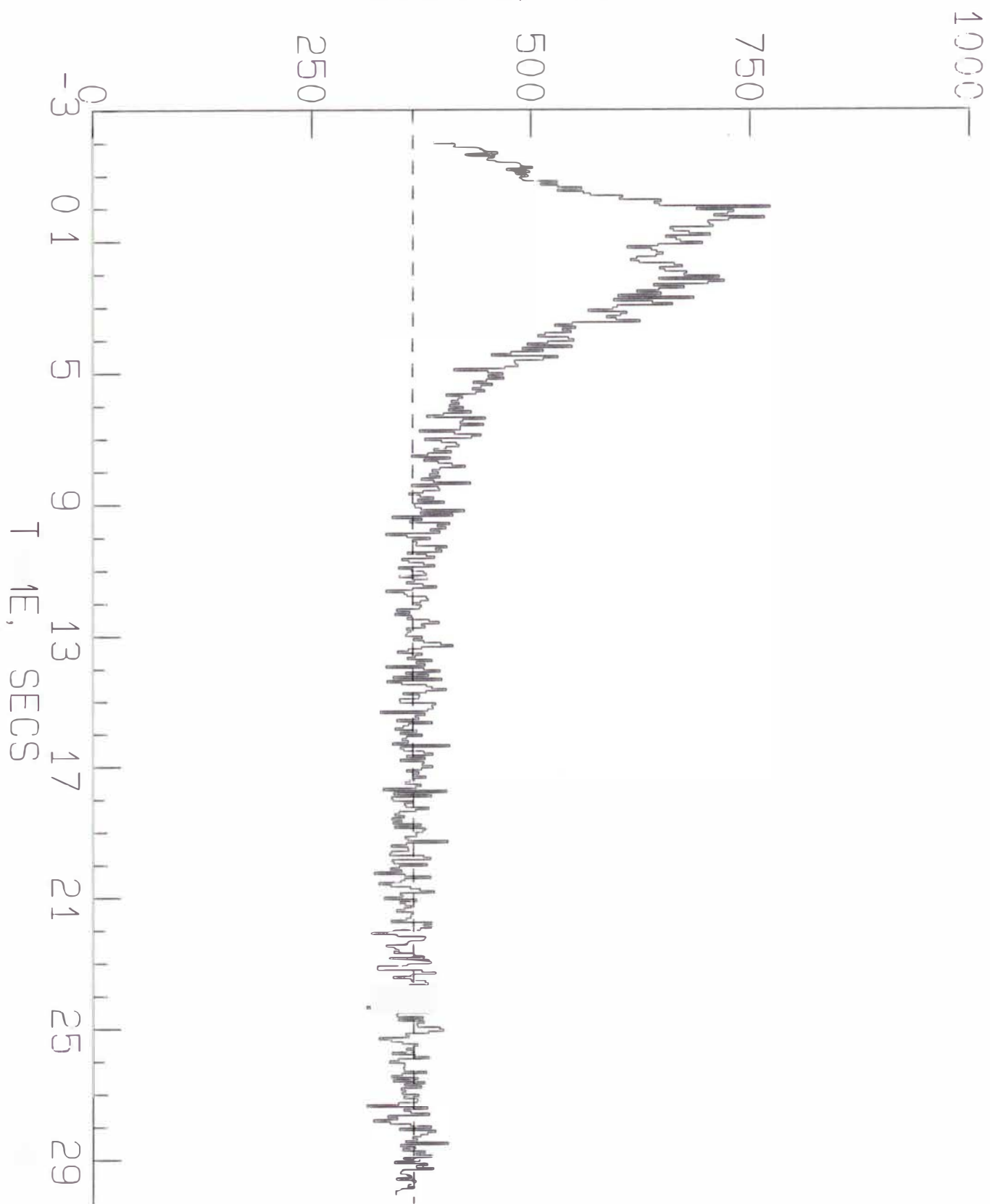
BATSE

03/05/94

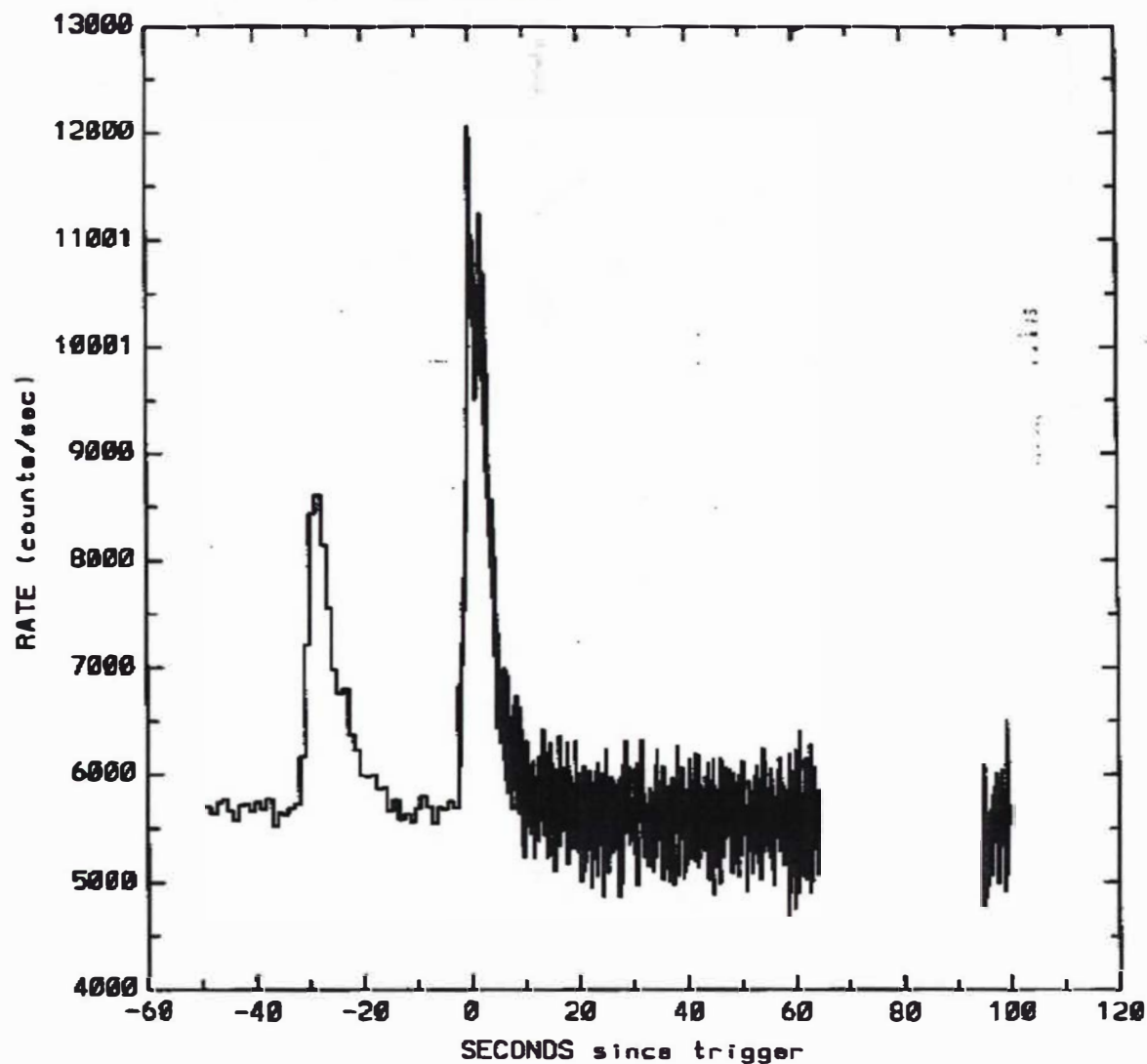
18464.602

25- 100 keV

COUNTS/ .064 S



DATA FOR K. HURLEY



17-JUN-1994 09:10:50

Created by MOPS BD
(Burst Display)
Version 2.20

Trigger # : 2958

Trigger Time:
9475 / 18464.682Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum (Integ. Time:
9.864 seconds)Detectors [7..8]:
80110000Discriminators:
(1, 2)Quality Mask:
BDISP1

From MALLOZZI@ssl.msfc.nasa.gov Wed May 4 14:19 PDT 1994
Date: Wed, 4 May 1994 16:19:47 -0500 (CDT)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02959

TIME: TJD=9475 SECONDS=42470

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

From MALLOZZI@ssl.msfc.nasa.gov Wed May 4 14:21 PDT 1994
Date: Wed, 4 May 1994 16:22:04 -0500 (CDT)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02960

TIME: TJD=9475 SECONDS=71231

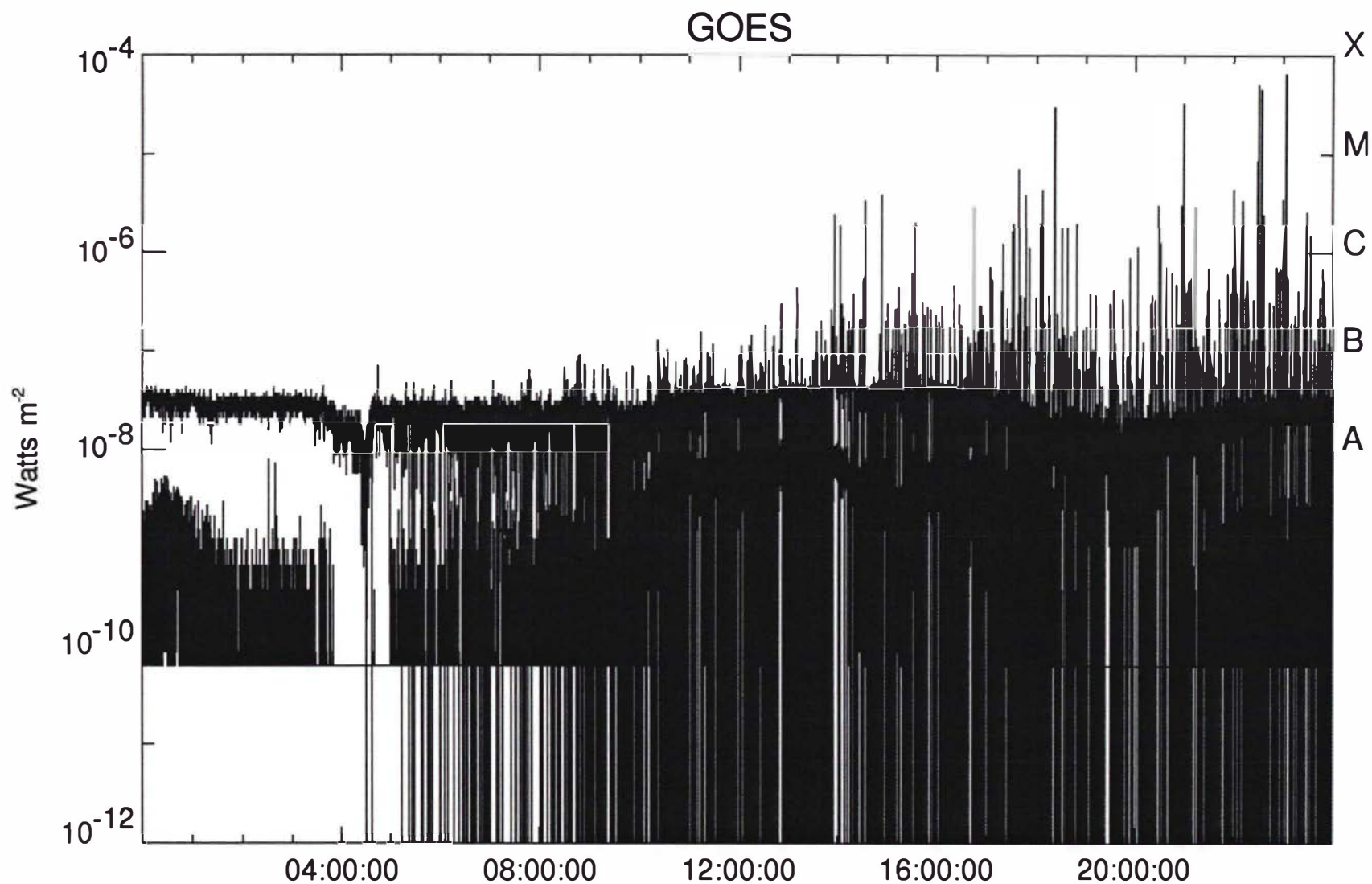
TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGERED ON ENTRY INTO SAA.



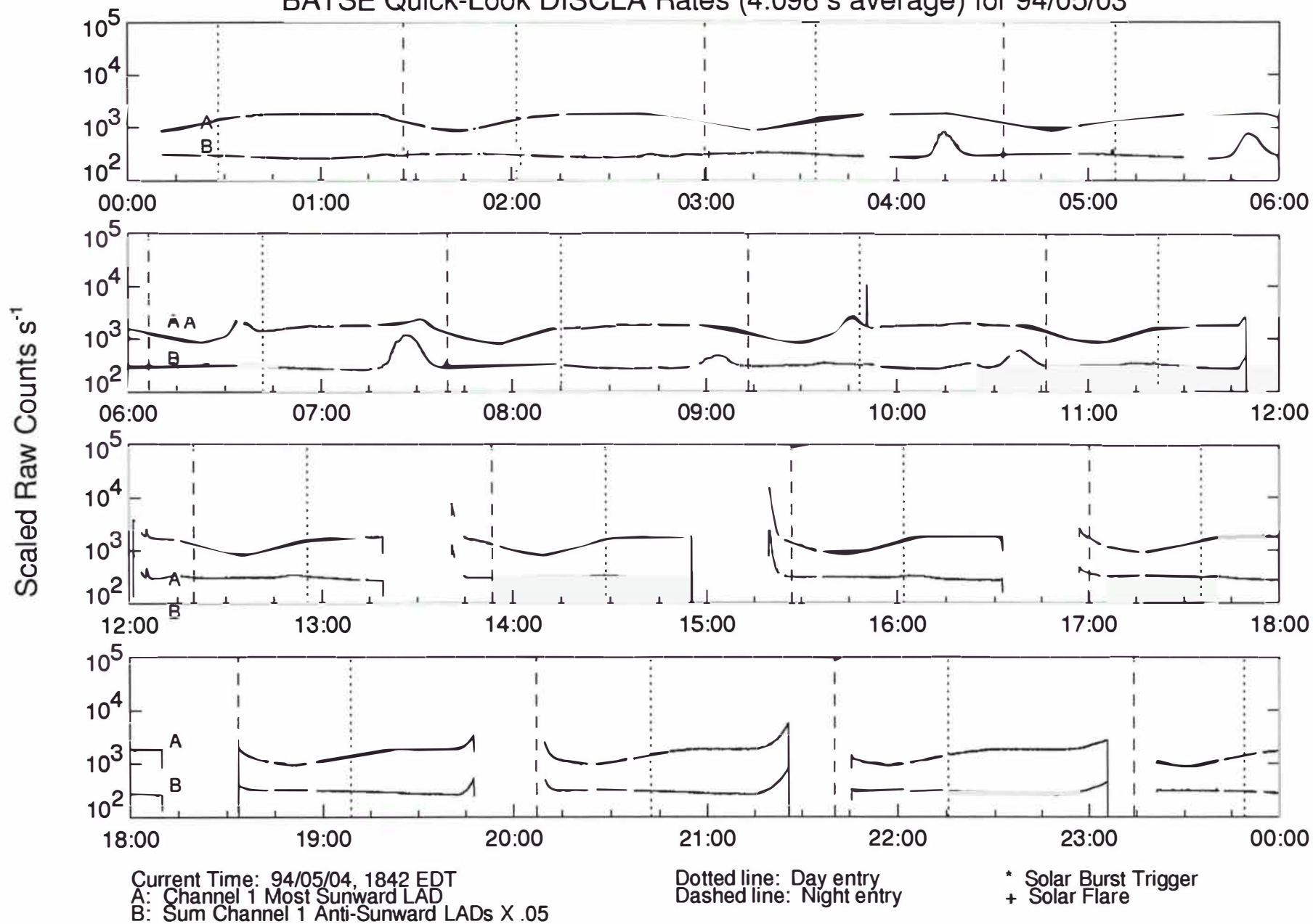
Data Start: 94/05/03, 0000:01

Plot created: 94/05/04, 1849

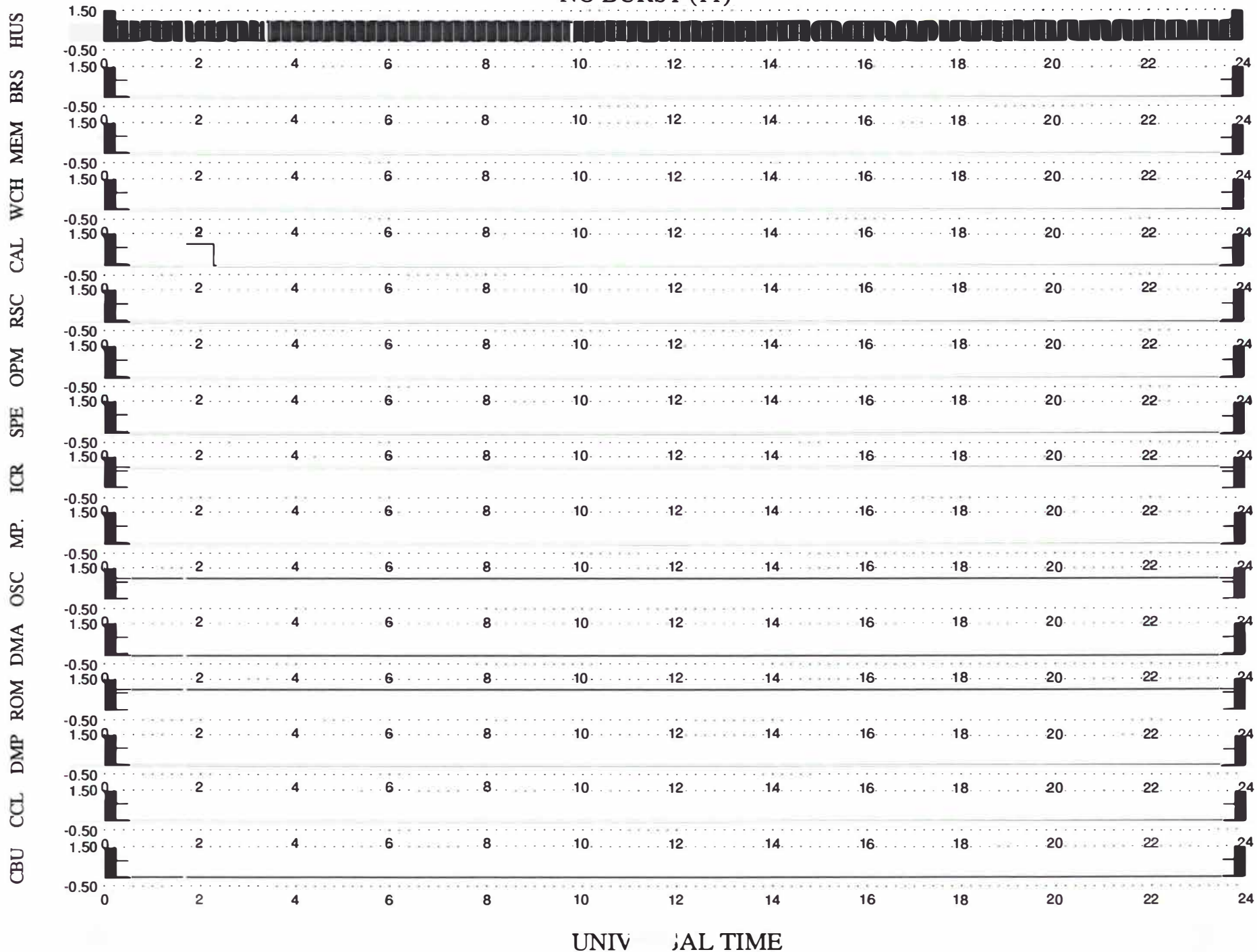
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

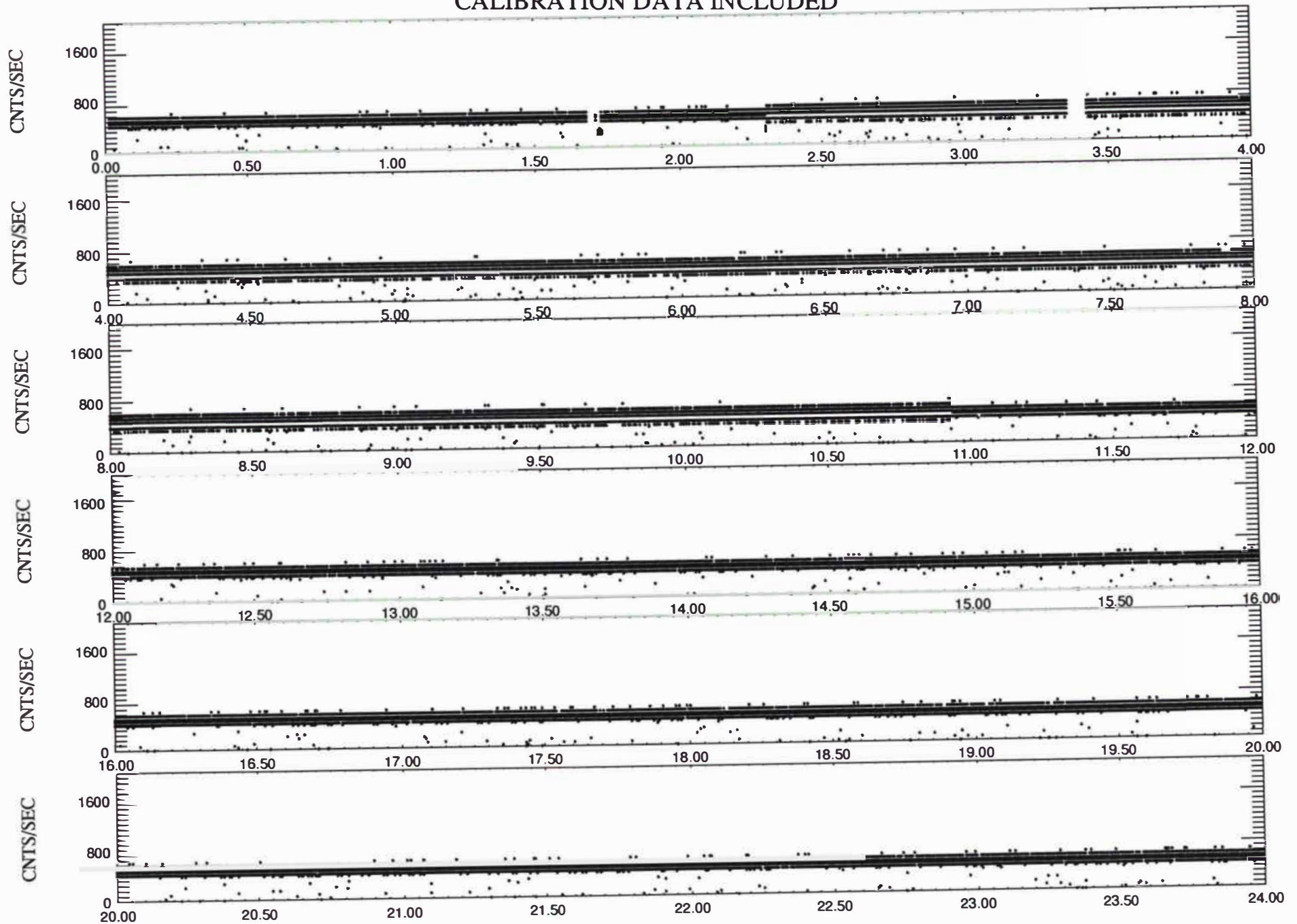
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/03



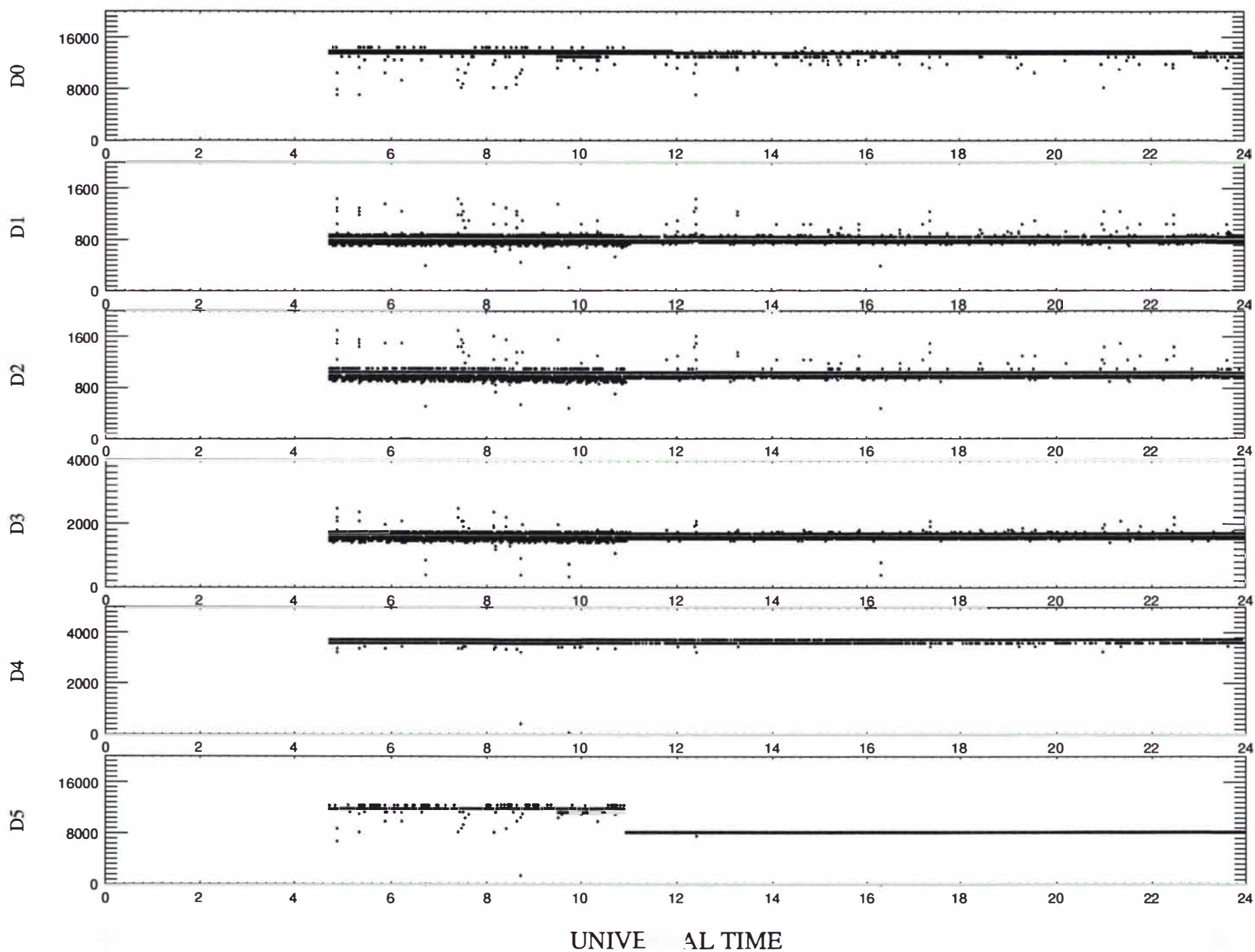
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV CAL TIME



From SHARIFF@ssl.msfc.nasa.gov Thu May 5 09:33 PDT 1994
Date: Thu, 5 May 1994 11:34:04 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2961
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2961
EVENT OF 1994 MAY 4 DAY OF YEAR=124
EVENT CROSSING TIME AT BATSE : 31484. S. OR 08:44:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 162.000 42.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 5/ 94 IS:
RA= 119.718 DEC= -43.543 DIST= 2.941 AU
BATSE-ULYSSES DISTANCE = 439922486. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 91.62 SECS.
CROSSING TIME AT ULYSSES IS 31576. S. OR 08:46:15 +/- 305.66 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 5/ 94 IS:
RA= 14.058 DEC= 4.972 DIST= 2.188 AU
MARS-BATSE DISTANCE = 327359040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 55.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 621.84 SECS.
CROSSING TIME AT MARS IS 32106. S. OR 08:55:05 +/- 165.28 SECONDS

100

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2961	940504	9476	31484	2500	162	+42

BATSE BURST TRIGGER

NO.: 02961

TIME: TJD=9476 SECONDS=31484

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=073.3 AZIMUTH=120.0 ERROR= DEGREES

COMMENTS:

BURST, MULTIPLE PEAKS, LASTING ~95 SECONDS. VISIBLE ABOVE 300KEV.

5 / 5 / 94

ULYSSES RT

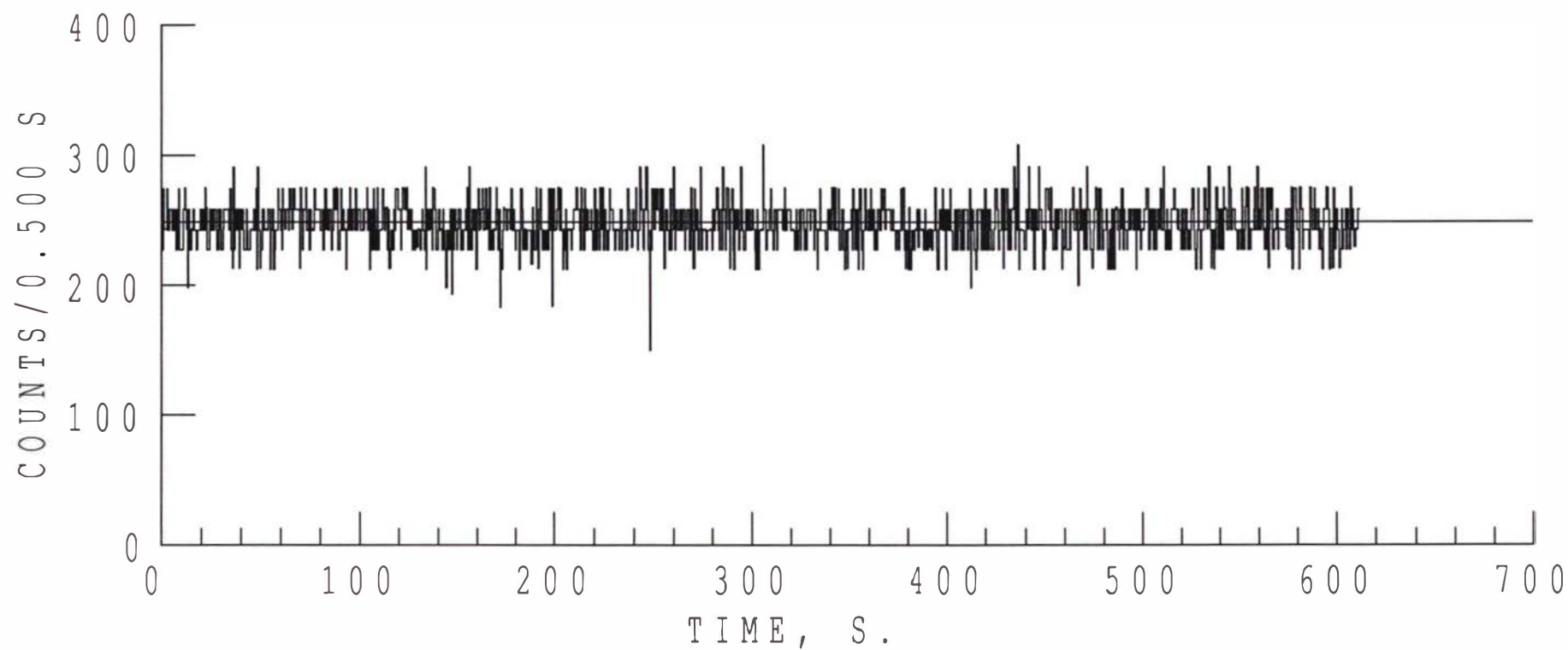
4 / 5 / 94 31284.143 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SHARIFF@ssl.msfc.nasa.gov Thu May 5 09:31 PDT 1994
Date: Thu, 5 May 1994 11:32:23 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02962

TIME: TJD=9476 SECONDS=40013

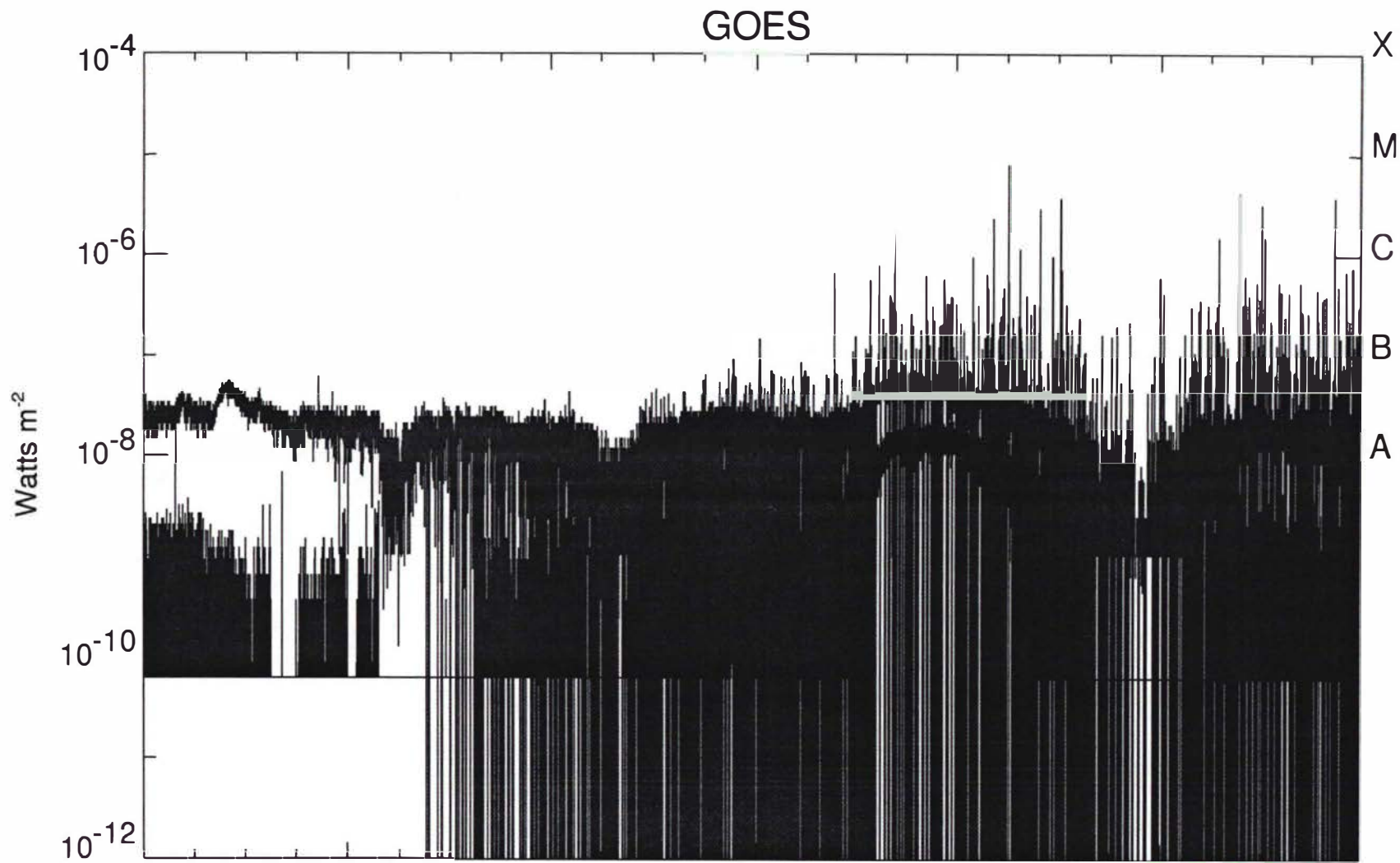
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY (PARTICLES).



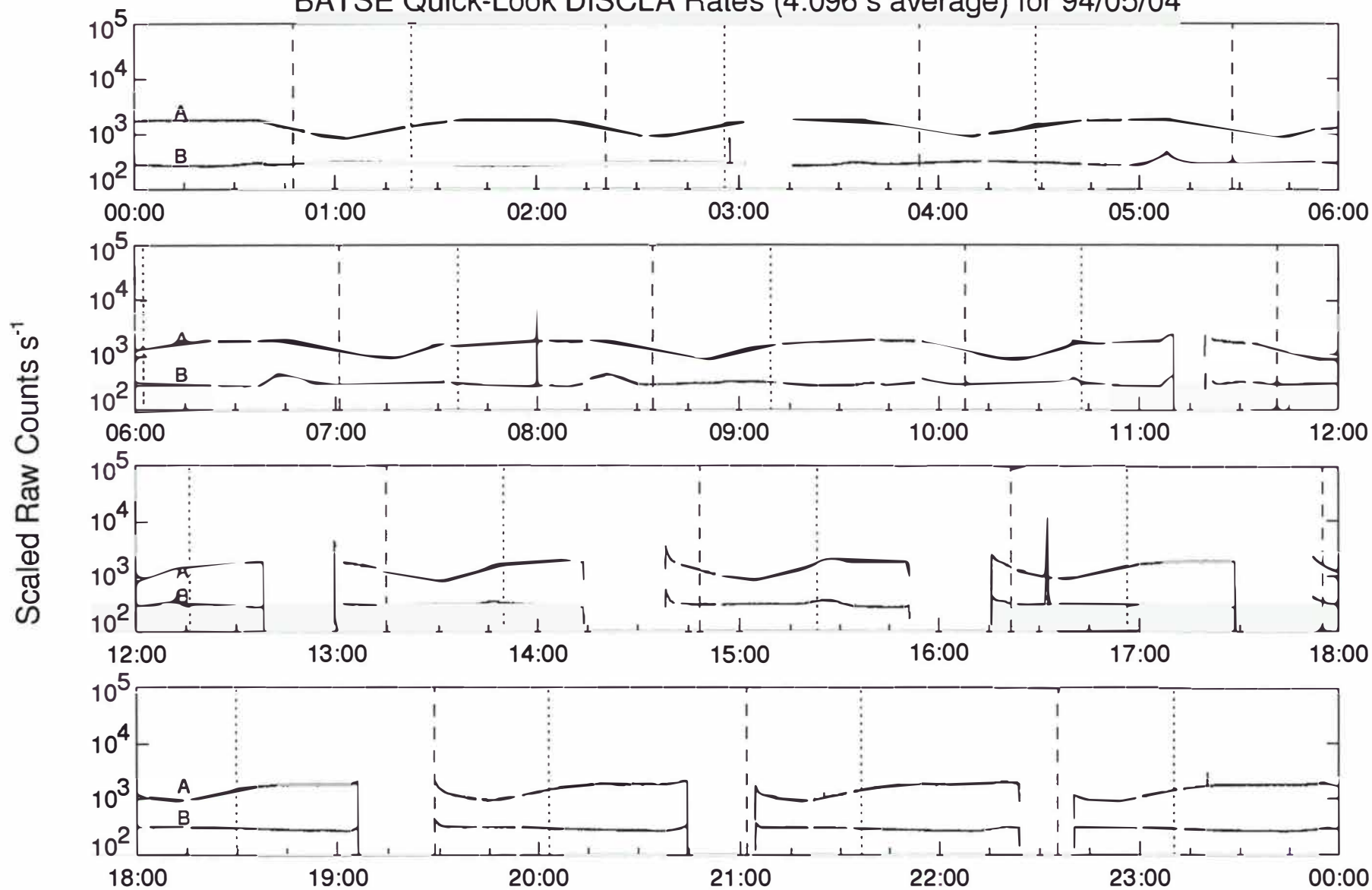
Data Start: 94/05/04, 0000:00

Plot created: 94/05/06, 1722

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/04

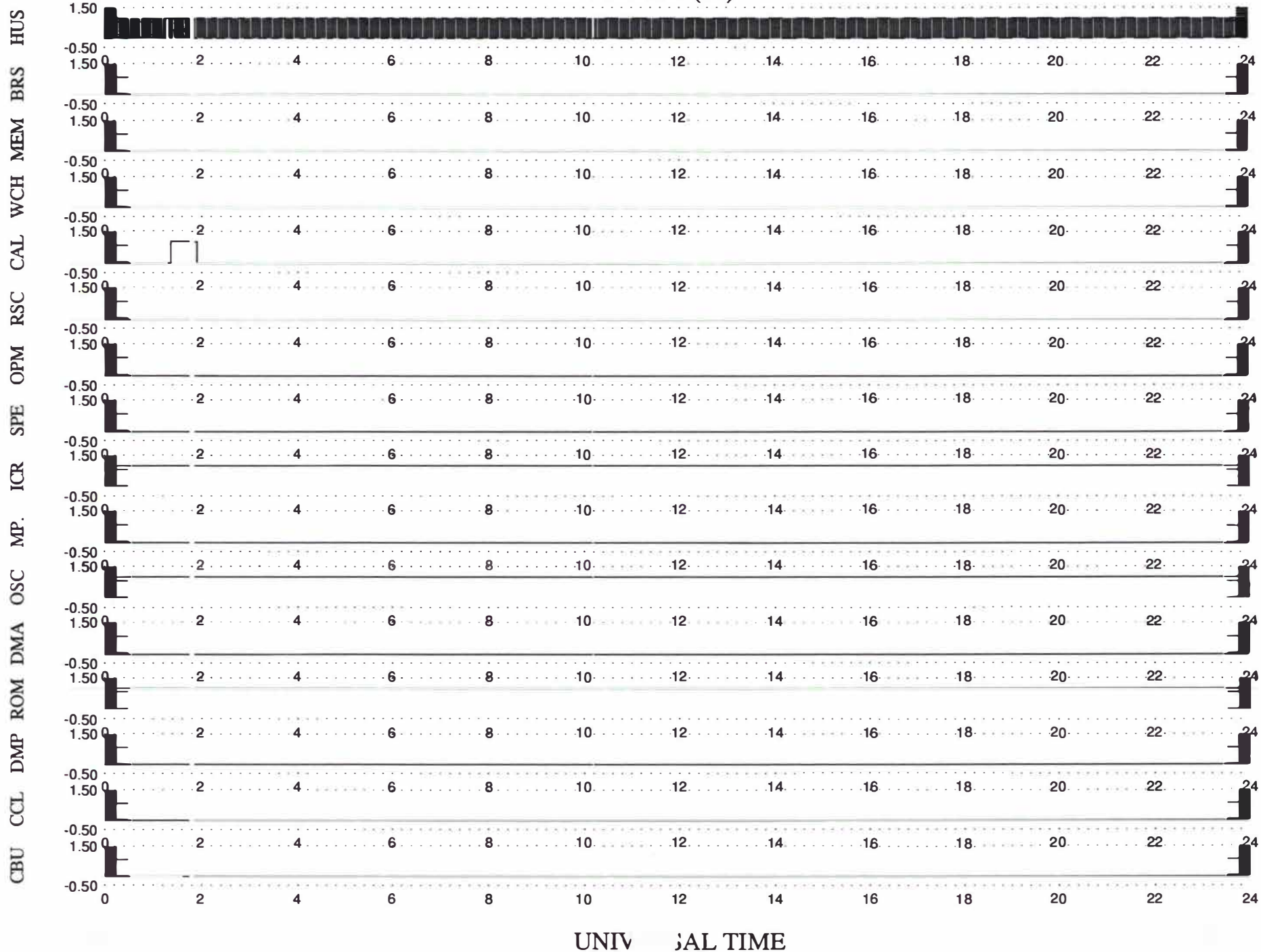


Current Time: 94/05/06, 1733 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

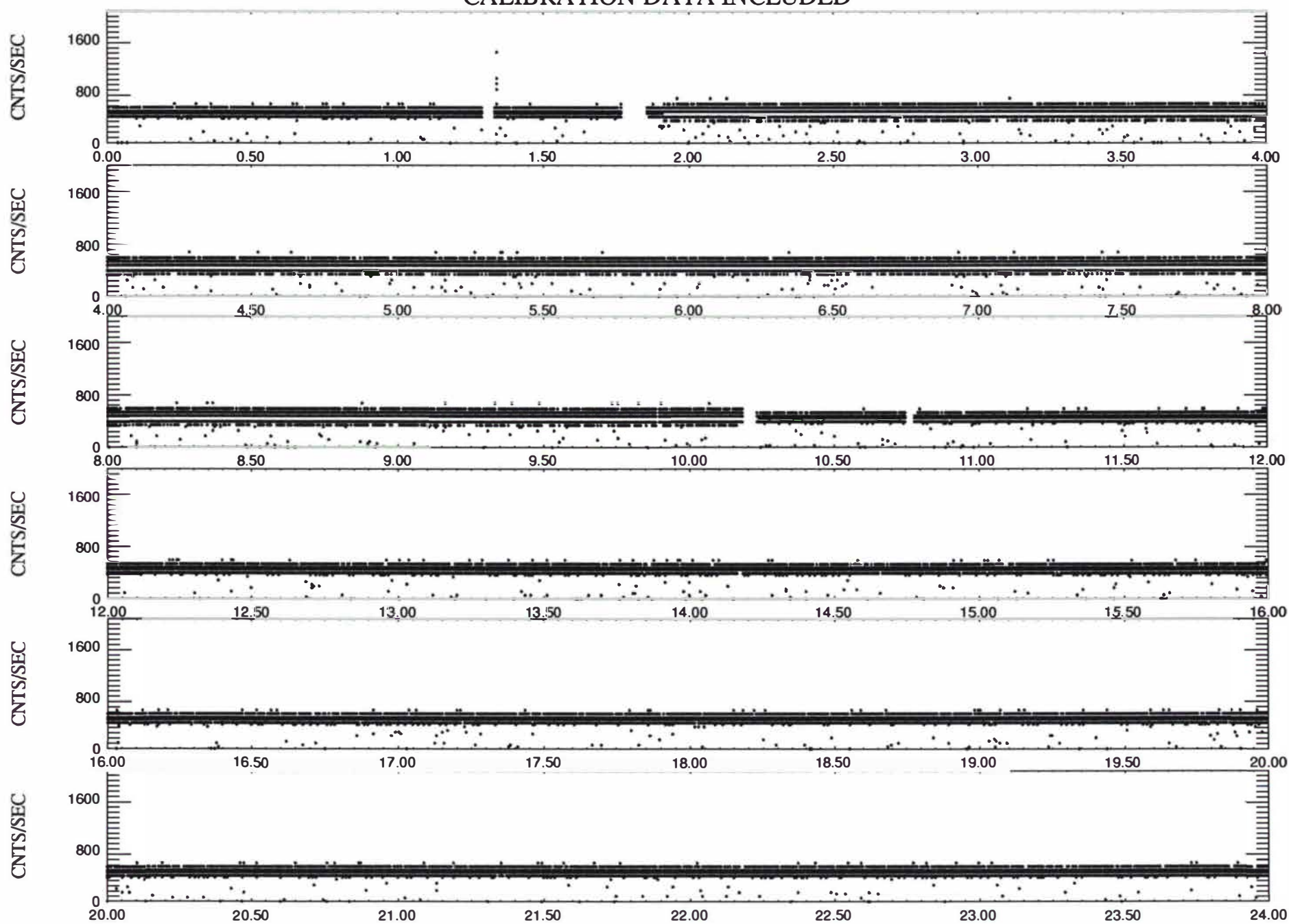
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

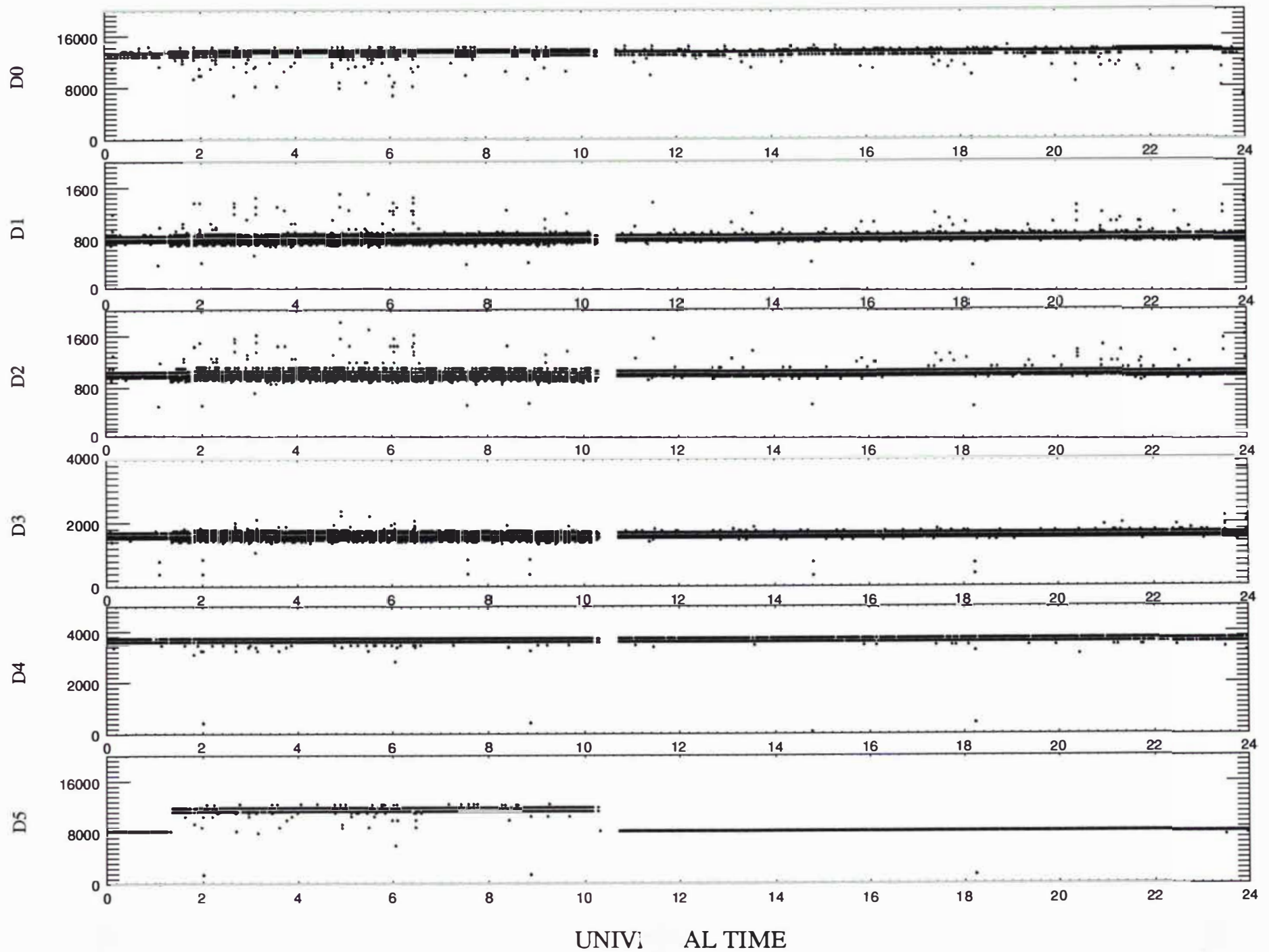
NO BURST (11)

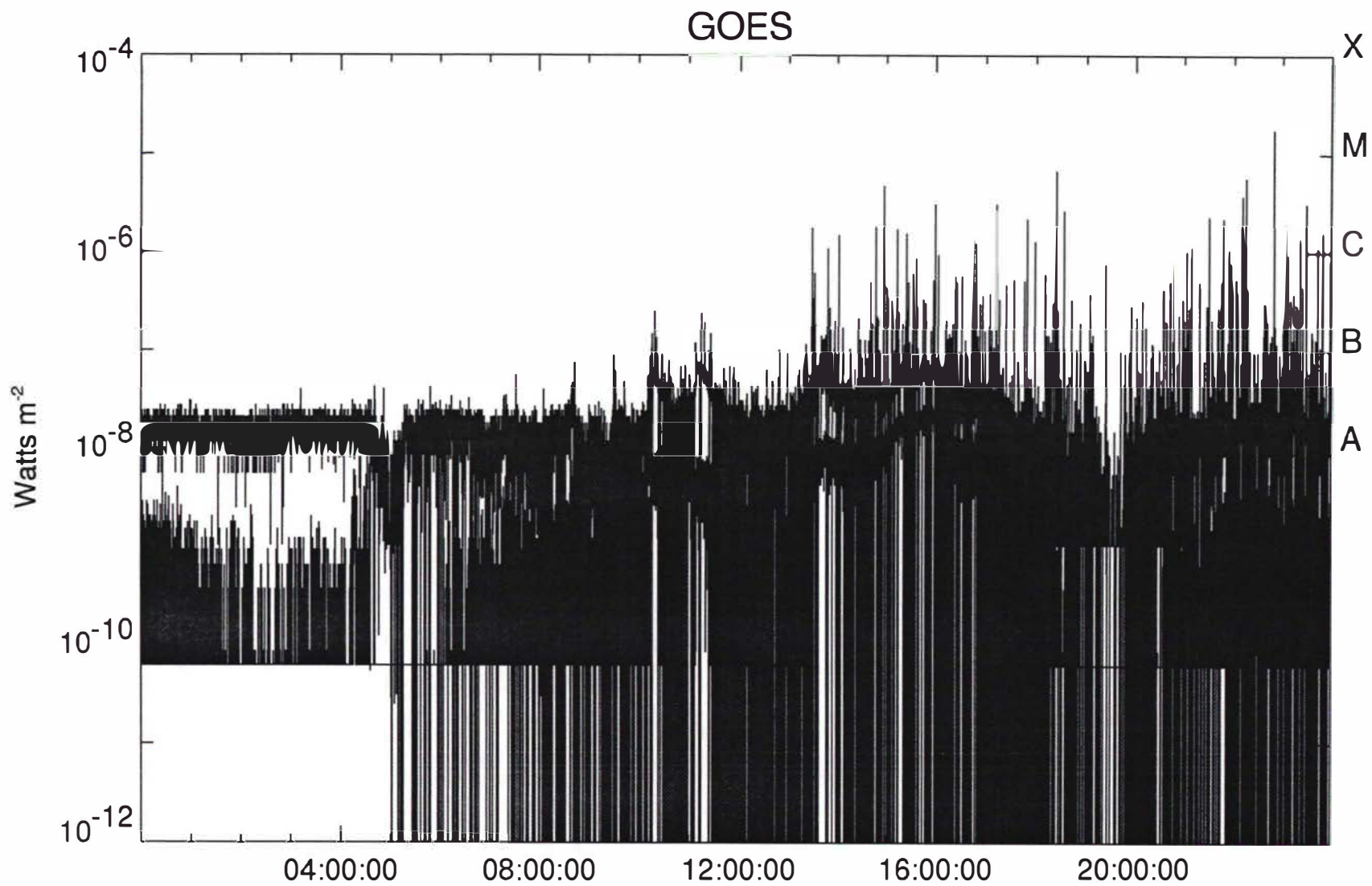


CALIBRATION DATA INCLUDED



UNIV SAL TIME





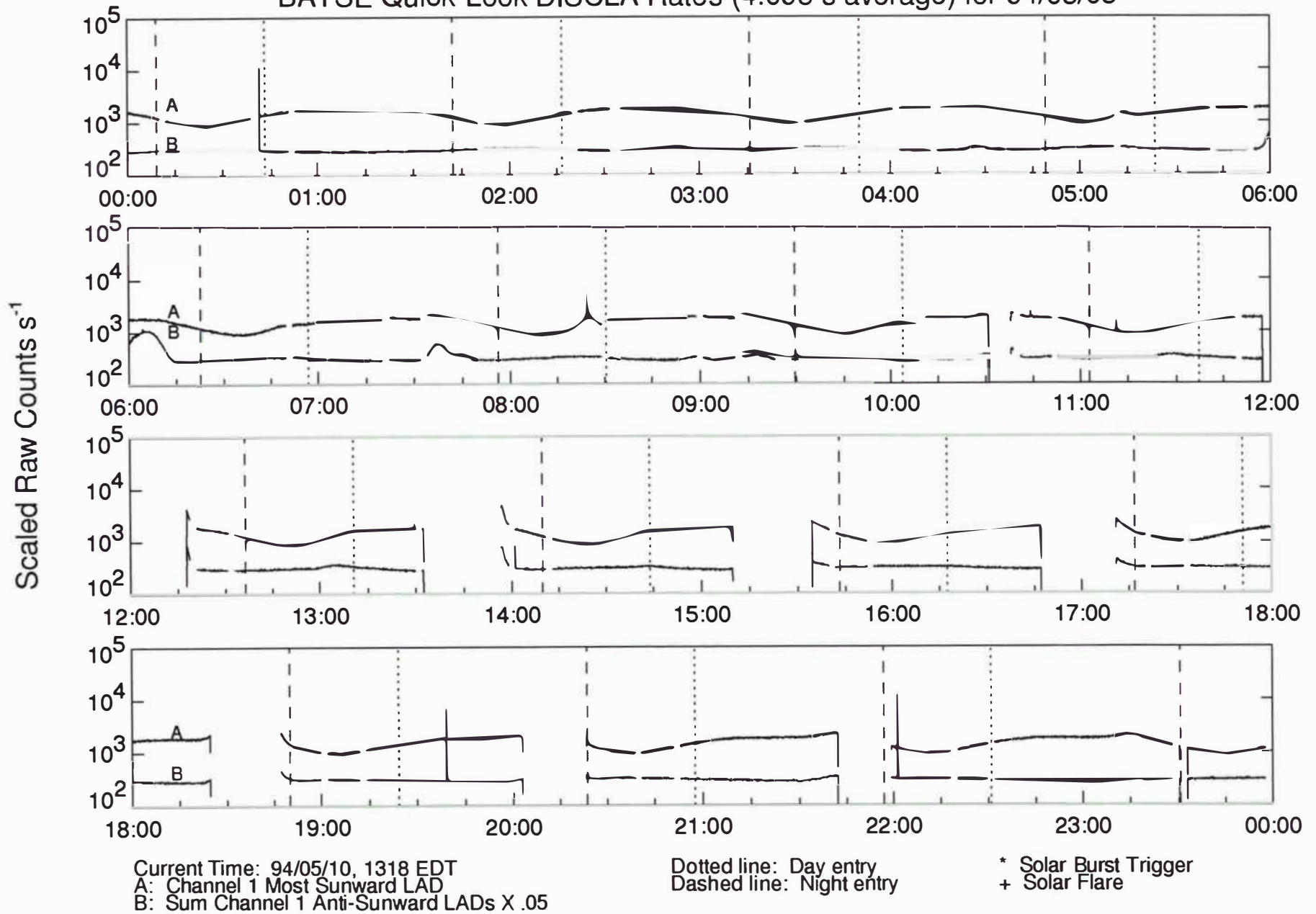
Data Start: 94/05/05, 0000:00

Plot created: 94/05/06, 1724

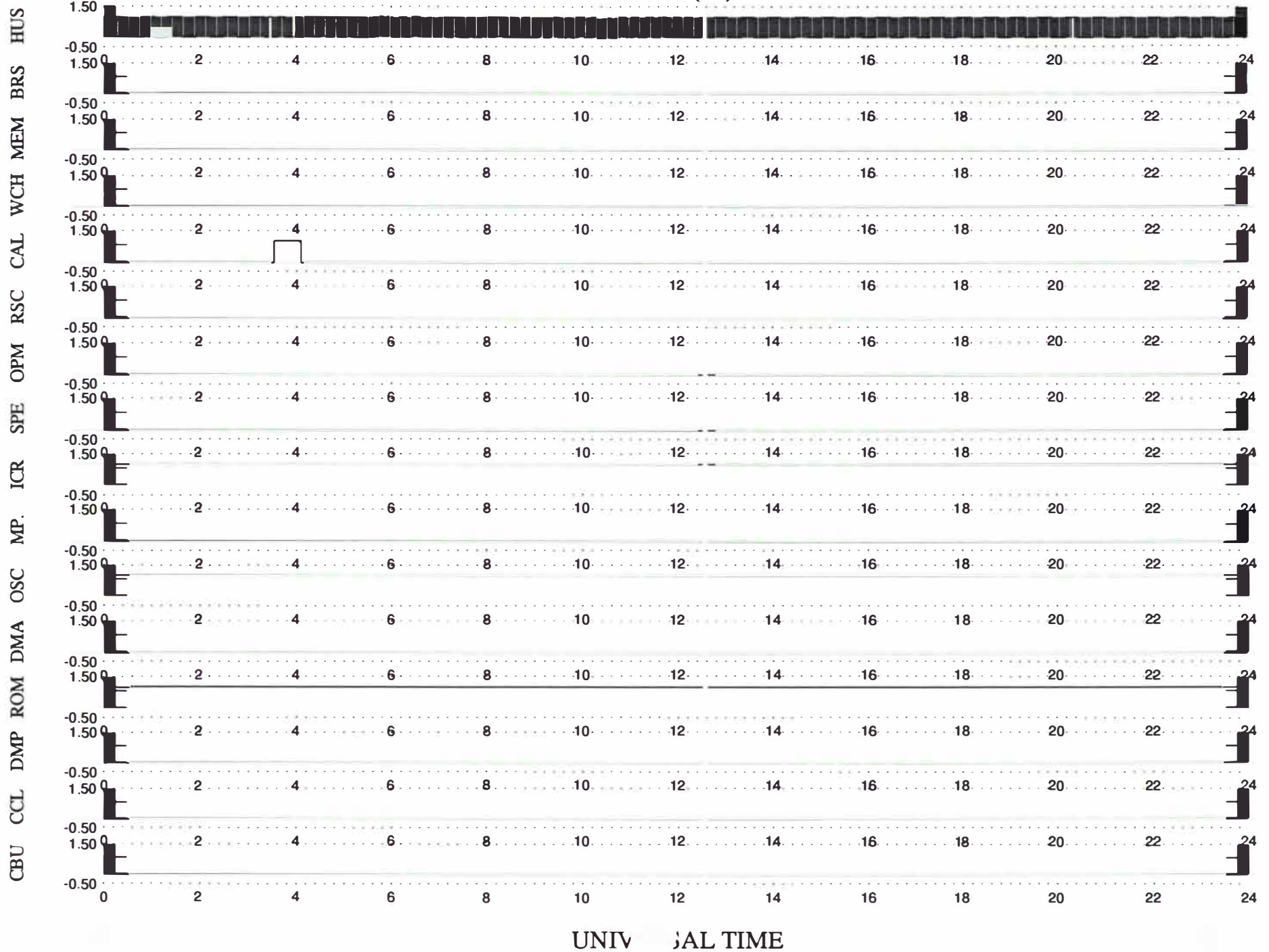
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

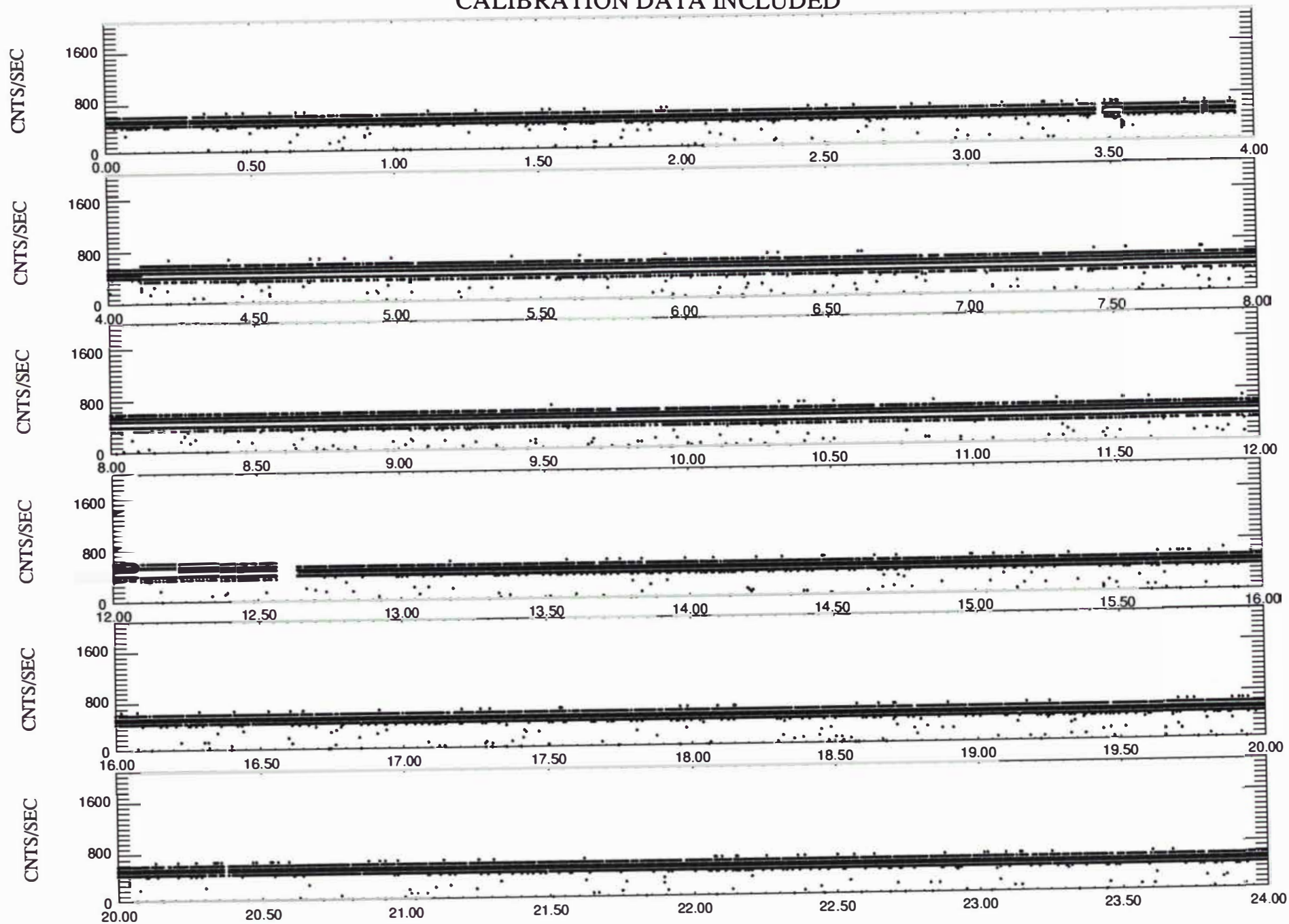
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/05



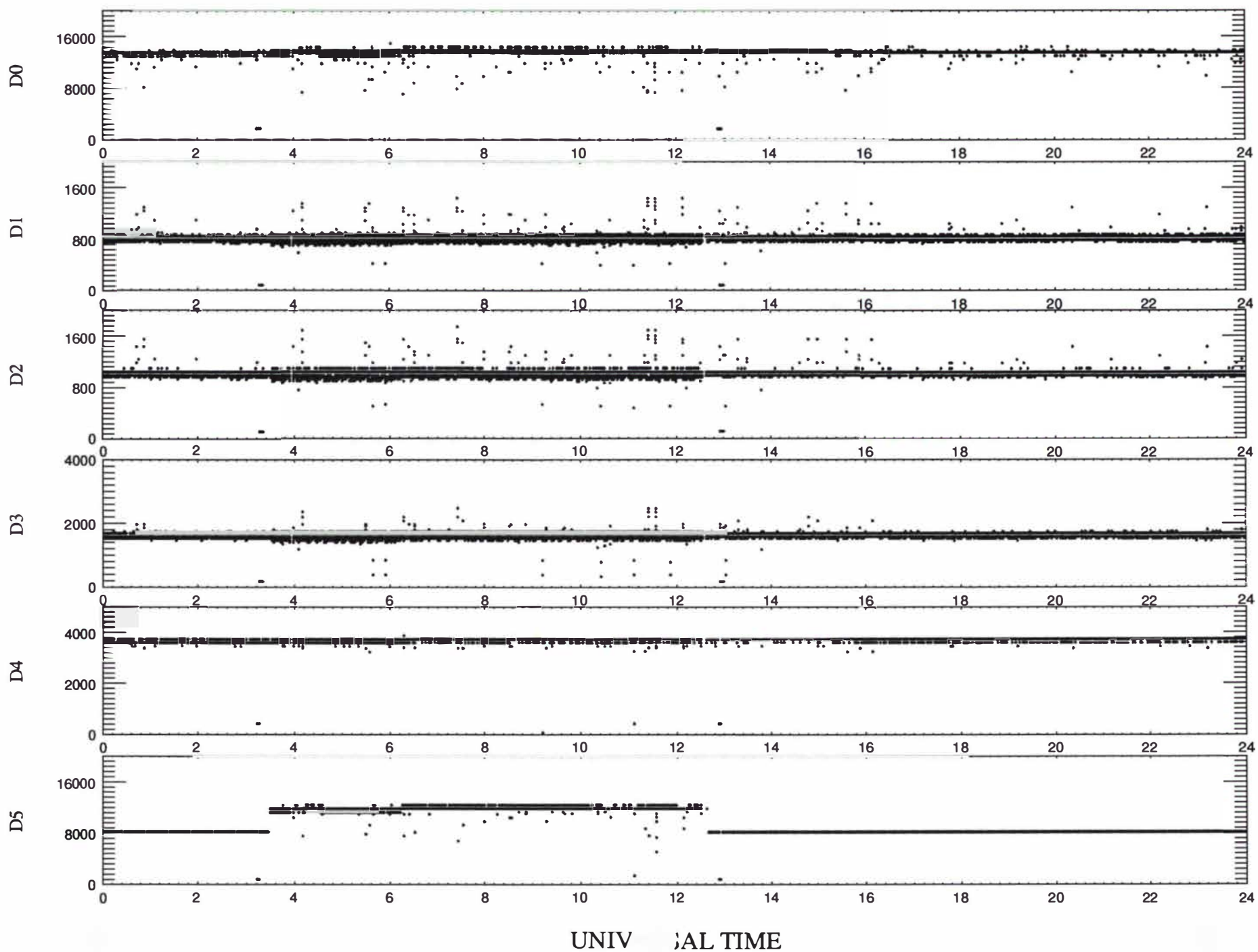
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From DEAL@fender.msfc.nasa.gov Mon May 9 09:31 PDT 1994
Date: Mon, 9 May 1994 11:32:10 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.nasa.gov,
LHEAVXKWOK@fender.msfc.nasa.gov, 15733SCHAEFER@fender.msfc.nasa.gov,
CASS09BAND@fender.msfc.nasa.gov, CASS09GRUBER@fender.msfc.nasa.gov,
CASS09MATTESON@fender.msfc.nasa.gov, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1219

BATSE BURST TRIGGER

NO.: 02963

TIME: TJD=9478 SECONDS=30510

TYPE: ELECTRON

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

From DEAL@fender.msfc.nasa.gov Mon May 9 09:39 PDT 1994
Date: Mon, 9 May 1994 11:40:34 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2964
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2964
EVENT OF 1994 MAY 6 DAY OF YEAR=126
EVENT CROSSING TIME AT BATSE : 73551. S. OR 20:25:51.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 13.000 69.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 5/ 94 IS:
RA= 119.606 DEC= -43.138 DIST= 2.948 AU
BATSE-ULYSSES DISTANCE = 441029318. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1049.02 SECS.
CROSSING TIME AT ULYSSES IS 74600. S. OR 20:43:20 +/- 244.99 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 5/ 94 IS:
RA= 15.472 DEC= 5.572 DIST= 2.184 AU
MARS-BATSE DISTANCE = 326687456. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.55 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -487.09 SECS.
CROSSING TIME AT MARS IS 73064. S. OR 20:17:43 +/- 161.84 SECONDS

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2964	940506	9478	73551	4500	013	+69

BATSE BURST TRIGGER

NO.: 02964

TIME: TJD=9478 SECONDS=73551

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=28.5 AZIMUTH=192.7 ERROR= DEGREES

COMMENTS:

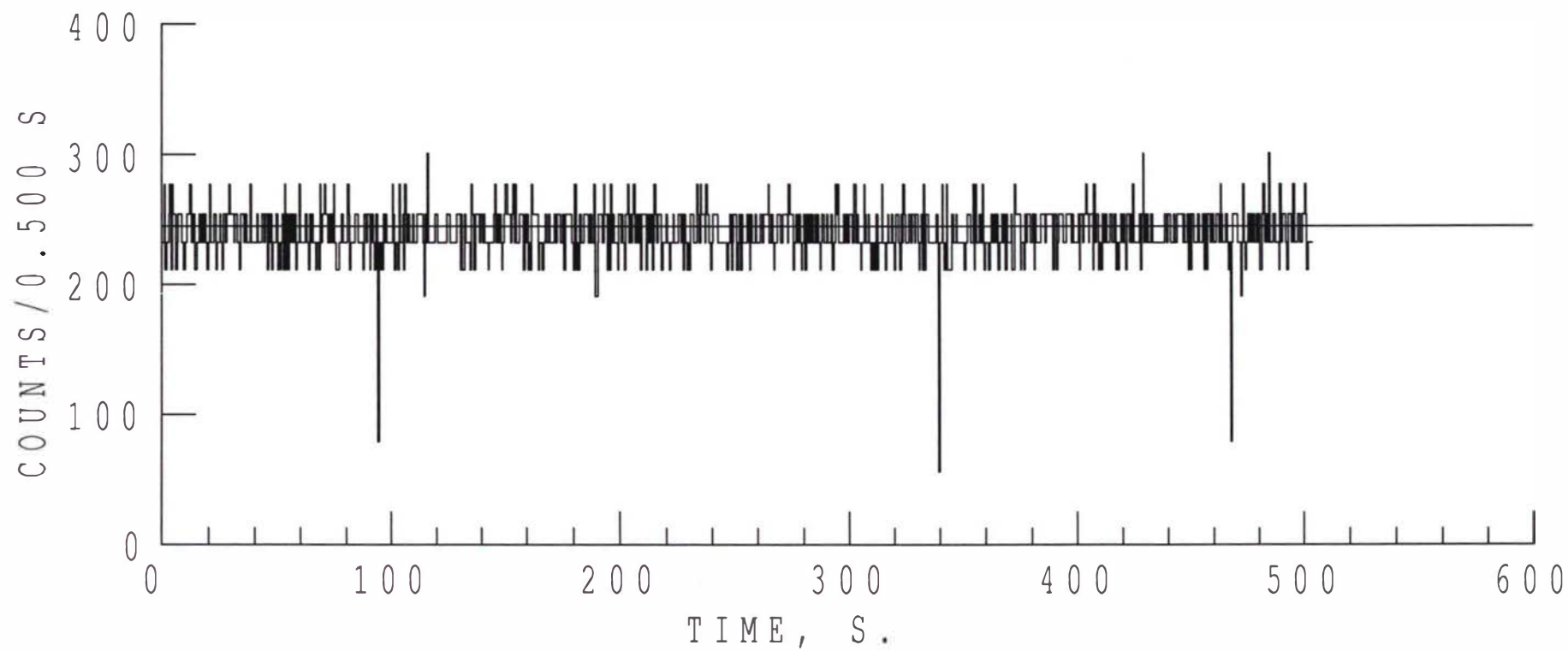
WEAK BURST, SINGLE SPIKE LASTING ~ 0.5S. NOT VISIBLE ABOVE 300KEV.

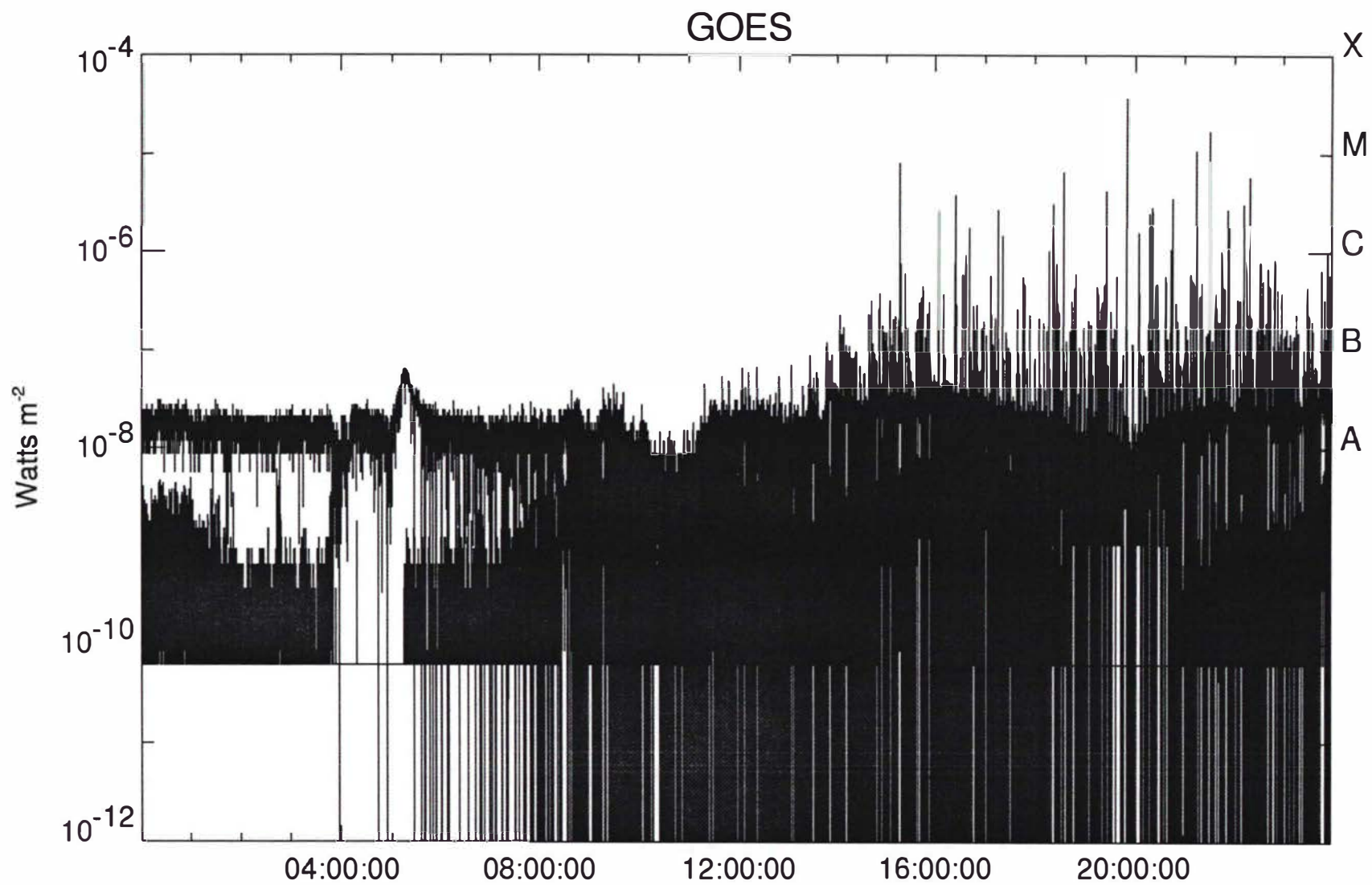
9 / 5 / 94

ULYSSES RT
6 / 5 / 94 74340.344 s
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





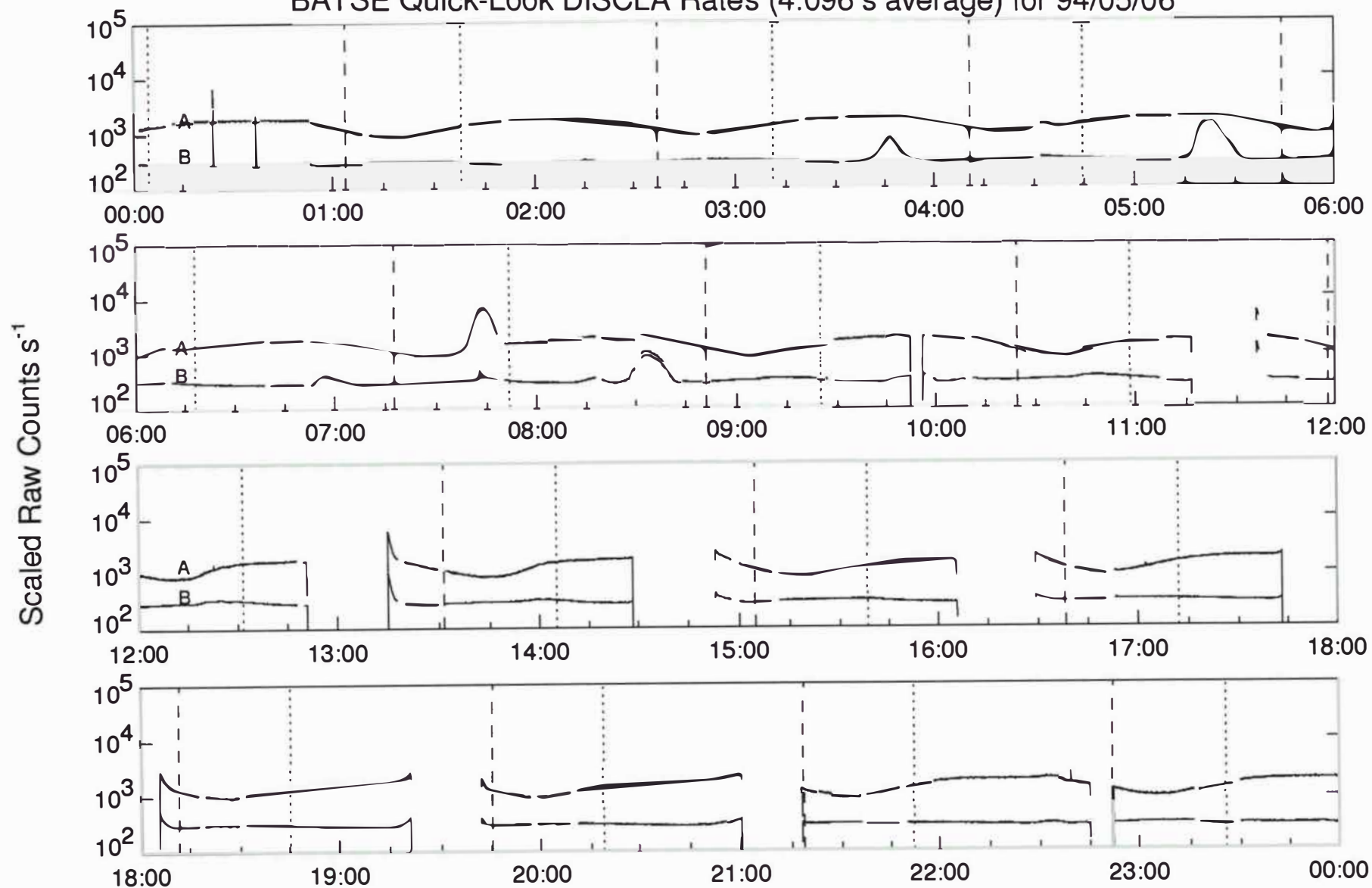
Data Start: 94/05/06, 0000:00

Plot created: 94/05/10, 1319

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/06

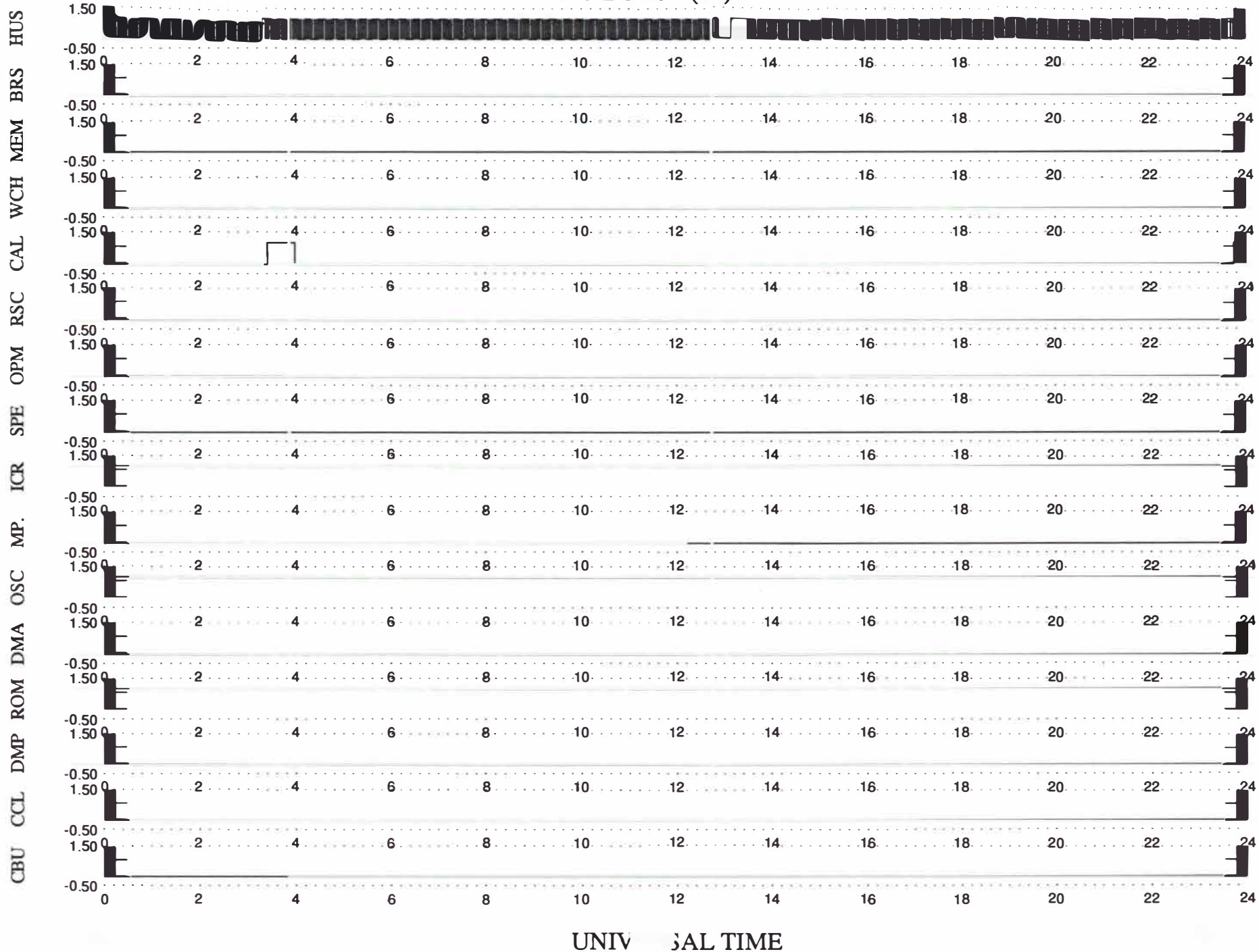


Current Time: 94/05/10, 1318 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

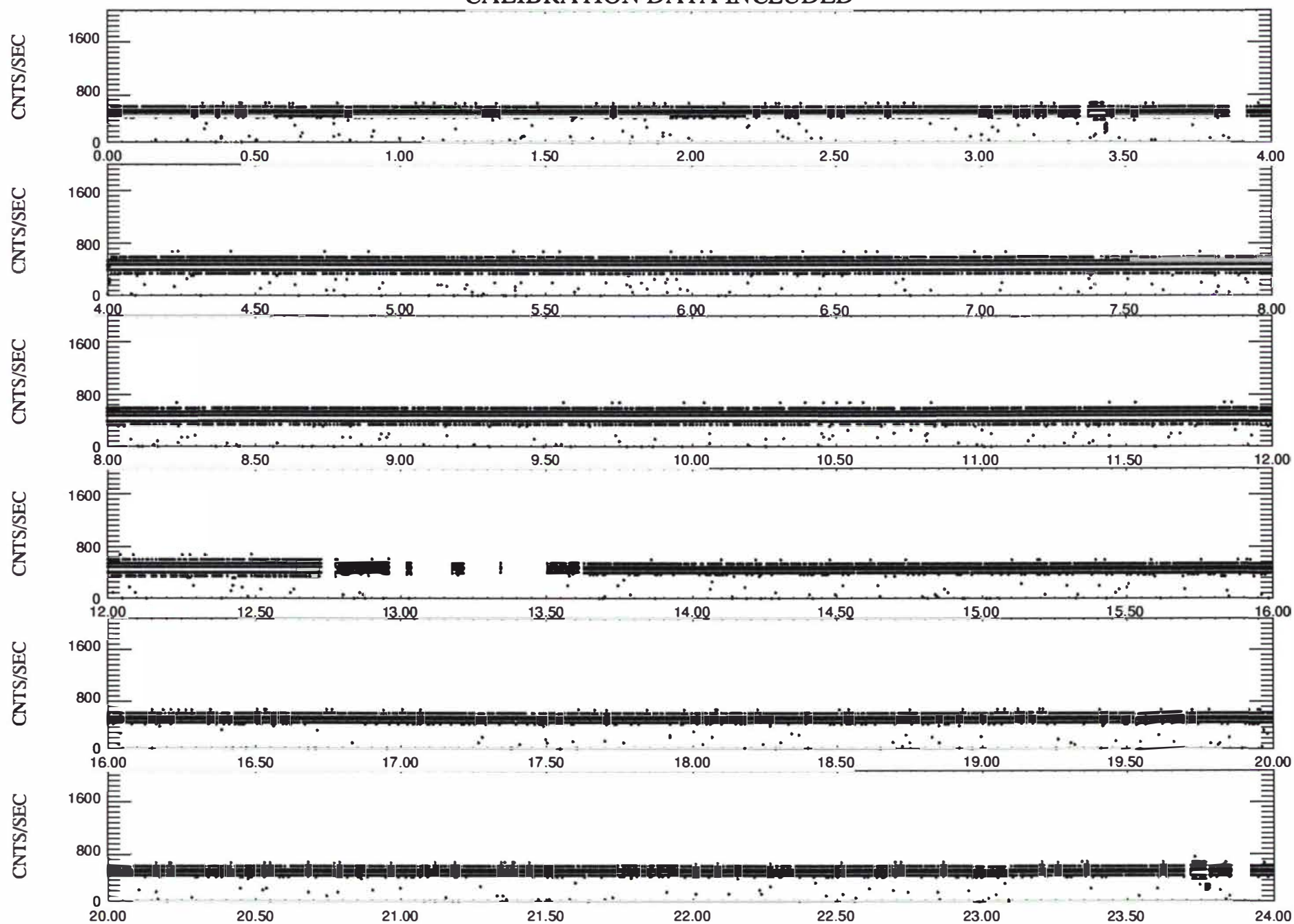
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

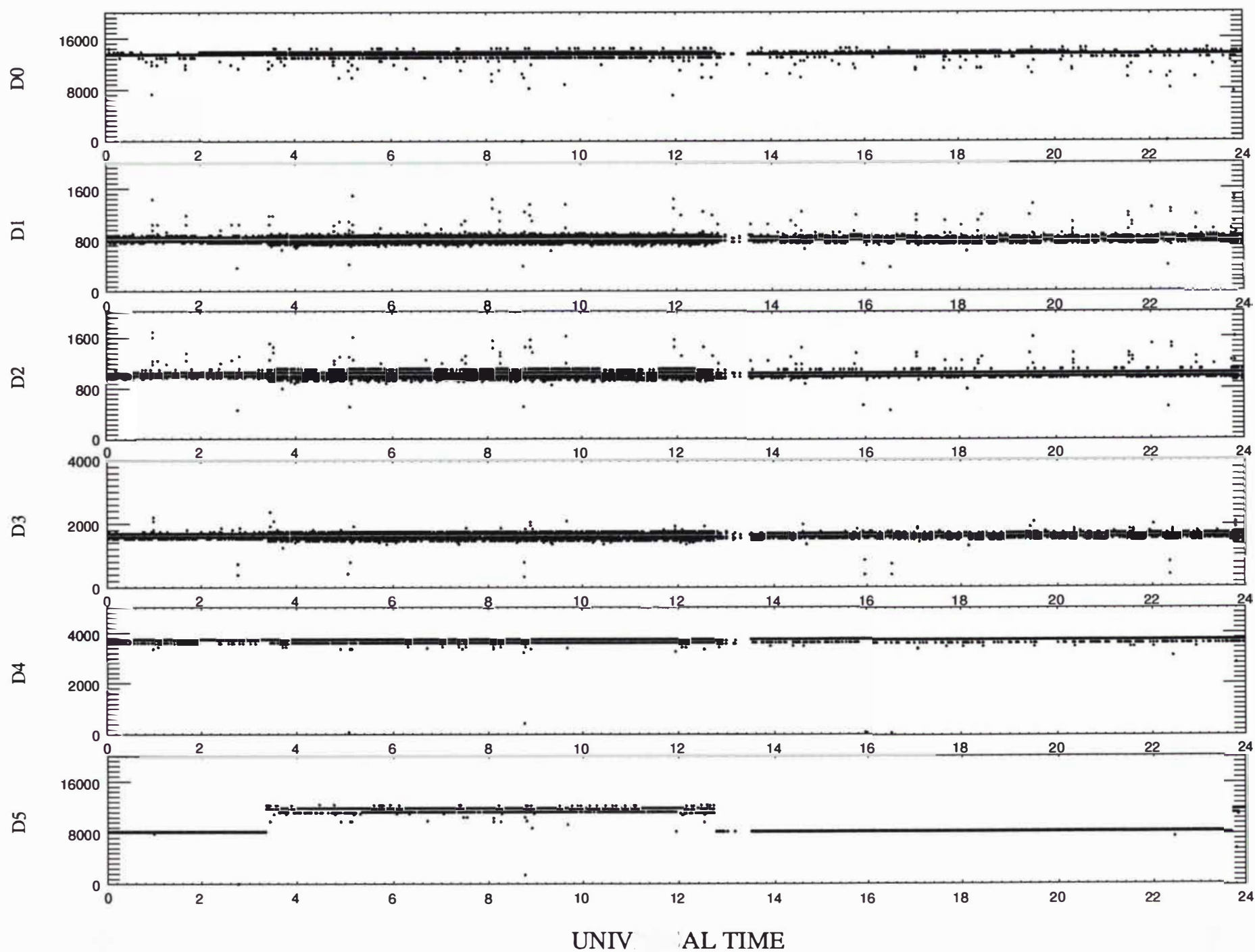
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From RICHARDSON@ssl.msfc.nasa.gov Mon May 9 10:24 PDT 1994
Date: Mon, 9 May 1994 12:15:48 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02965

TIME: TJD=9479 SECONDS=28089

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT

From RICHARDSON@ssl.msfc.nasa.gov Wed May 11 07:13 PDT 1994
Date: Wed, 11 May 1994 9:13:47 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2966
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2966
EVENT OF 1994 MAY 7 DAY OF YEAR=127
EVENT CROSSING TIME AT BATSE : 70316. S. OR 19:31:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 207.000 -20.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 7/ 5/ 94 IS:
RA= 119.575 DEC= -42.985 DIST= 2.951 AU
BATSE-ULYSSES DISTANCE = 441460644. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=105.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -388.86 SECS.
CROSSING TIME AT ULYSSES IS 69927. S. OR 19:25:27 +/- 290.68 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 7/ 5/ 94 IS:
RA= 16.180 DEC= 5.871 DIST= 2.181 AU
MARS-BATSE DISTANCE = 326349312. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 17.61 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1037.56 SECS.
CROSSING TIME AT MARS IS 71354. S. OR 19:49:13 +/- 72.94 SECONDS

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2966	940507	9479	70316	3500	207	-20

BATSE BURST TRIGGER

NO.: 2966

TIME: TJD=9479 SECONDS=70316

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=147.6 AZIMUTH=125.8 ERROR= DEGREES

COMMENTS:

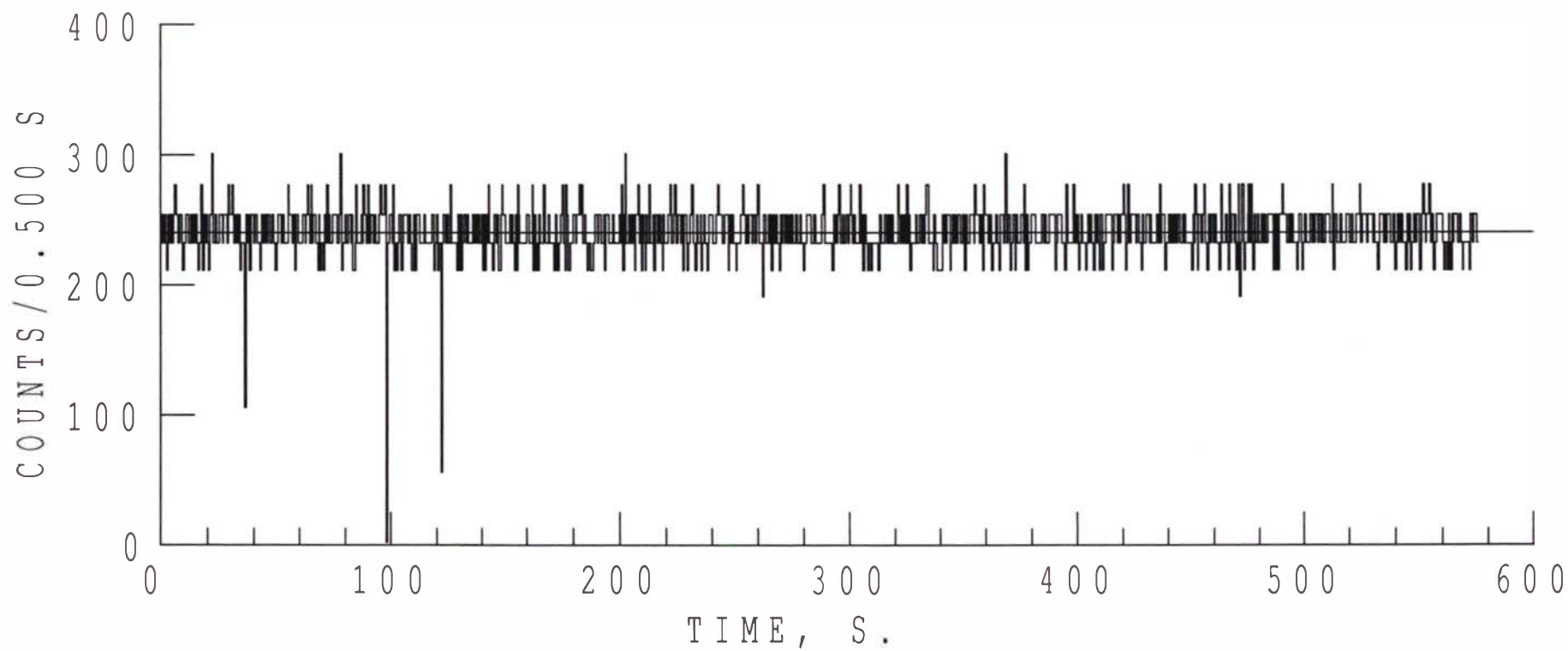
SHORT EVENT WITH STRUCTURE. LASTING ~1SEC. NOT VISIBLE ABOVE 300KEV.

11 / 5 / 94

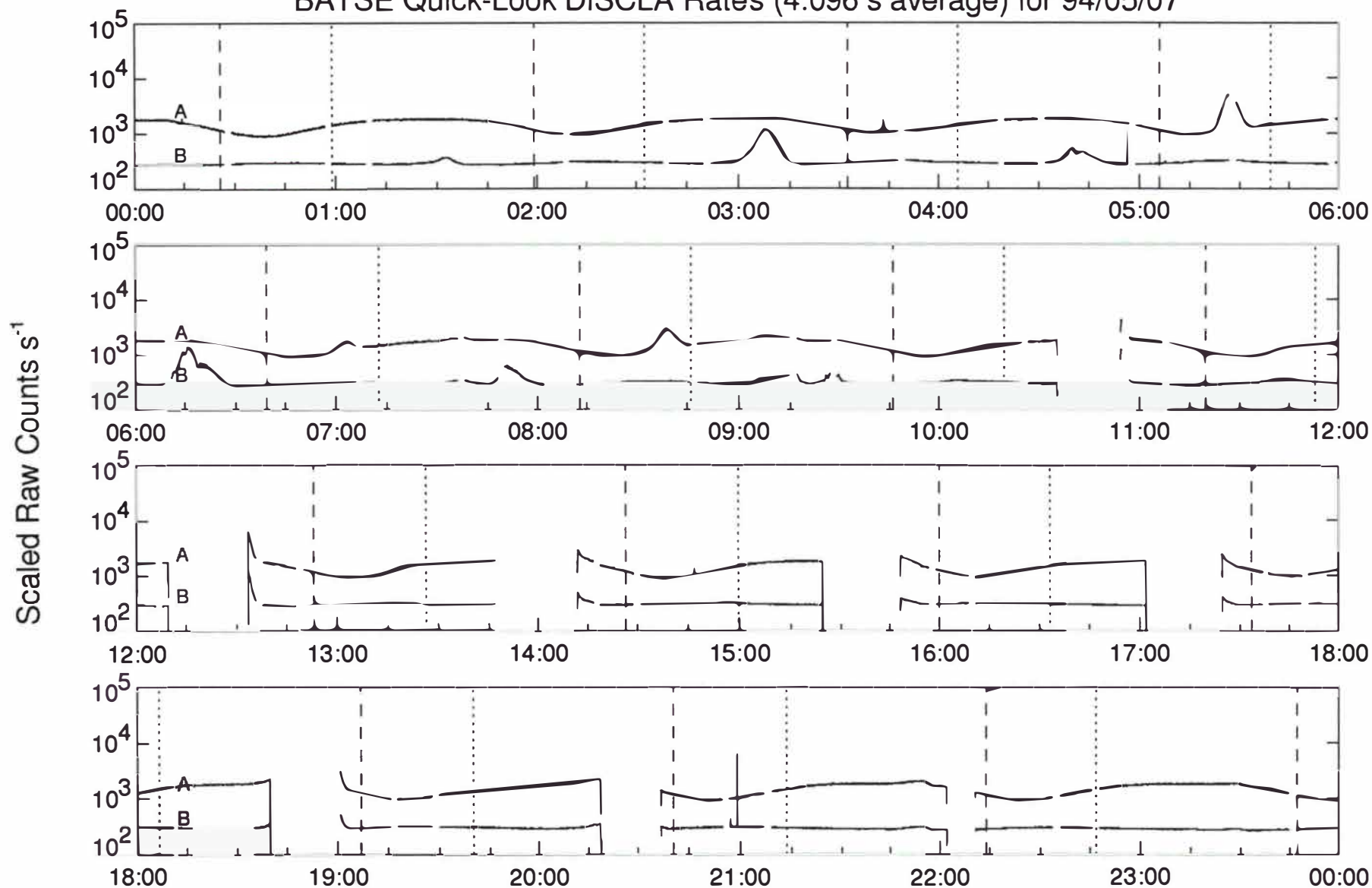
ULYSSES RT
7 / 5 / 94 69624.062 s
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/07

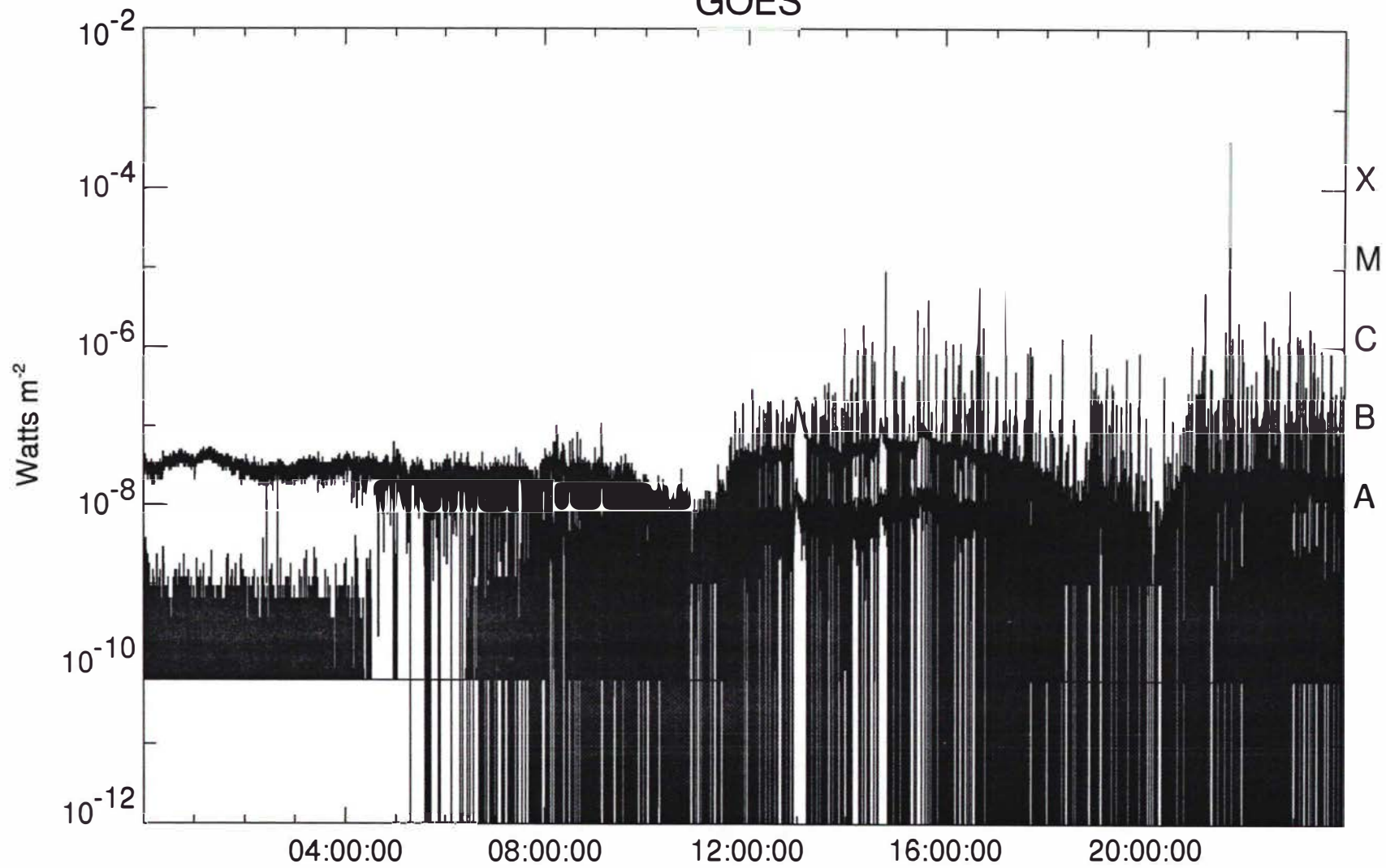


Current Time: 94/05/10, 1318 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES



Data Start: 94/05/07, 0000:00

Plot created: 94/05/10, 1319

Channel

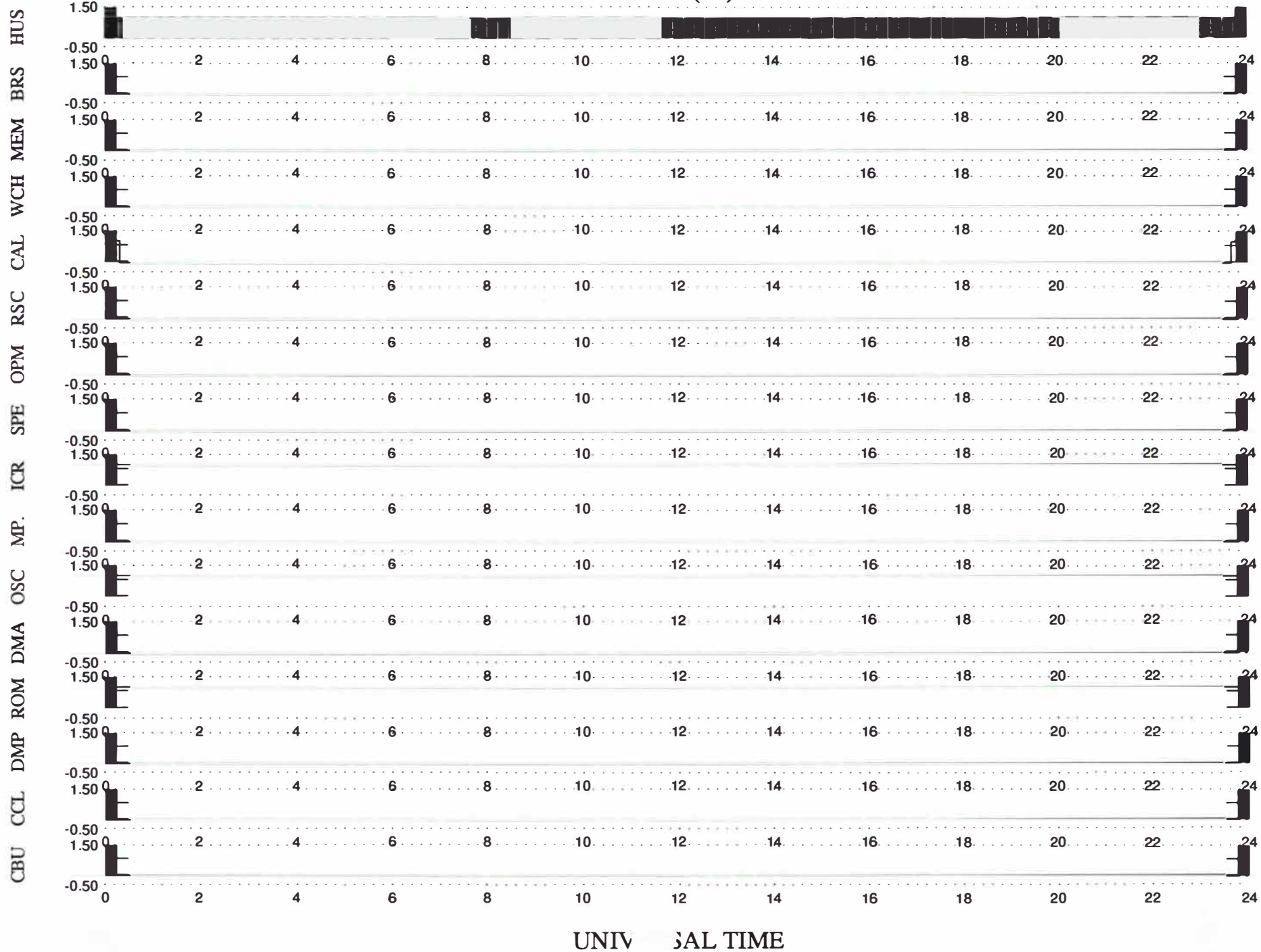
1 (1.0 - 8.0 Angstroms)

Background not subtracted

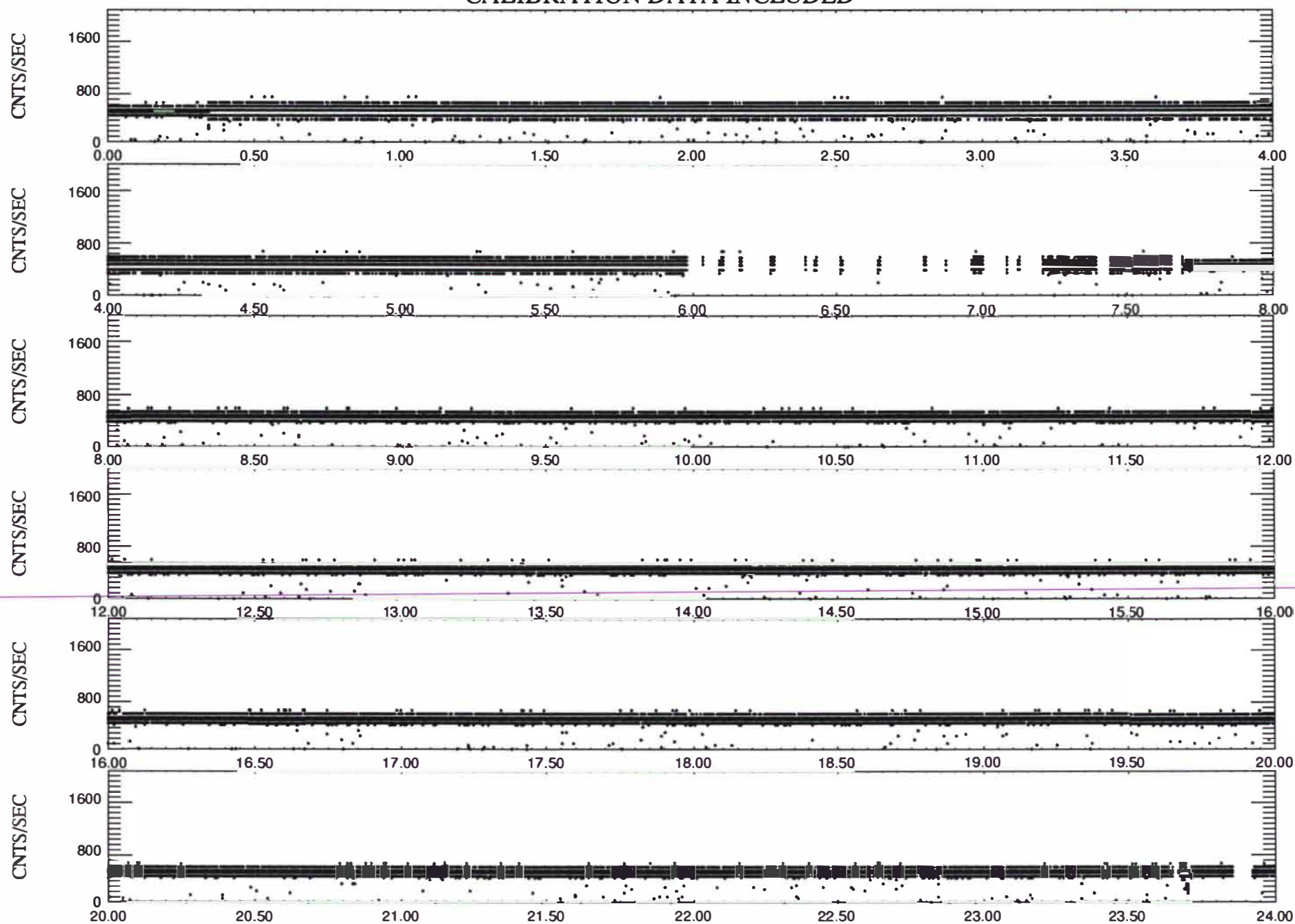
2 (0.5 - 4.0 Angstroms)

Background not subtracted

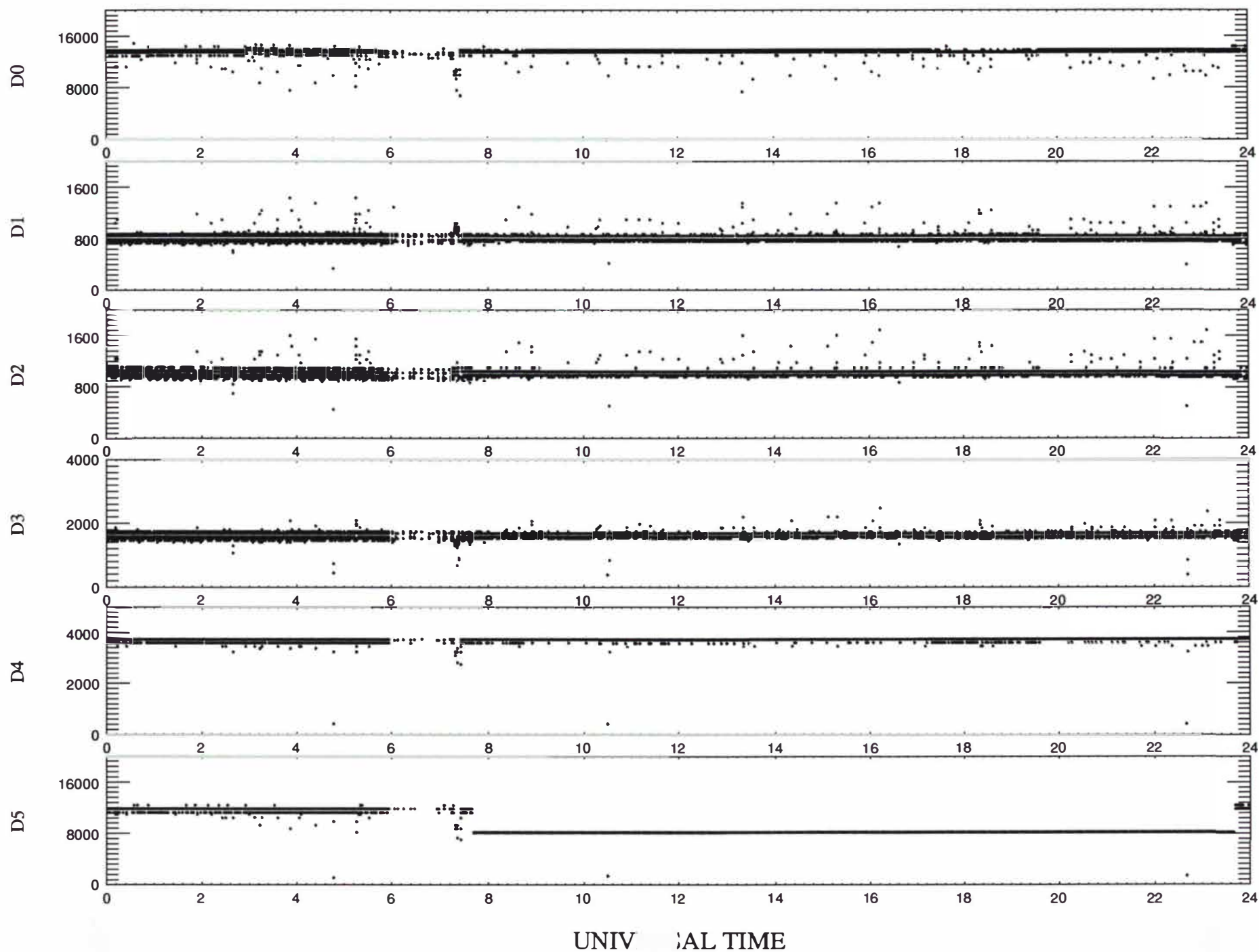
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From SHARIFF@ssl.msfc.nasa.gov Mon May 9 20:42 PDT 1994
Date: Mon, 9 May 1994 22:42:45 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02967

TIME: TJD=9480 SECONDS=25597

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PREC. EVENT.

From SHARIFF@ssl.msfc.nasa.gov Mon May 9 20:44 PDT 1994
Date: Mon, 9 May 1994 22:45:29 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02968

TIME: TJD=9480 SECONDS=44413

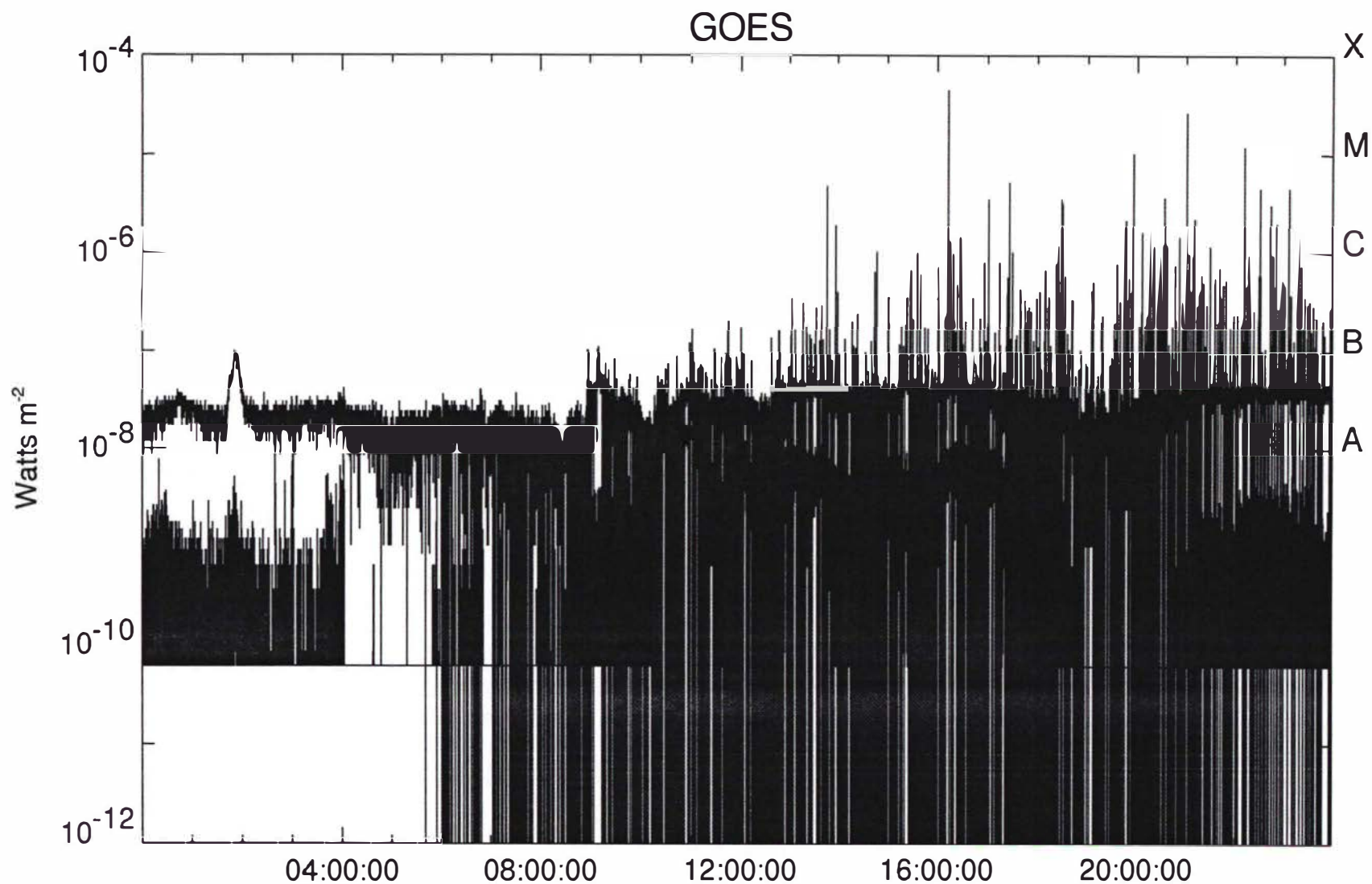
TYPE: CYG X-1 SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=078.8 AZIMUTH=220.3 ERROR= DEGREES

COMMENTS:
RISE OF CYG X-1.



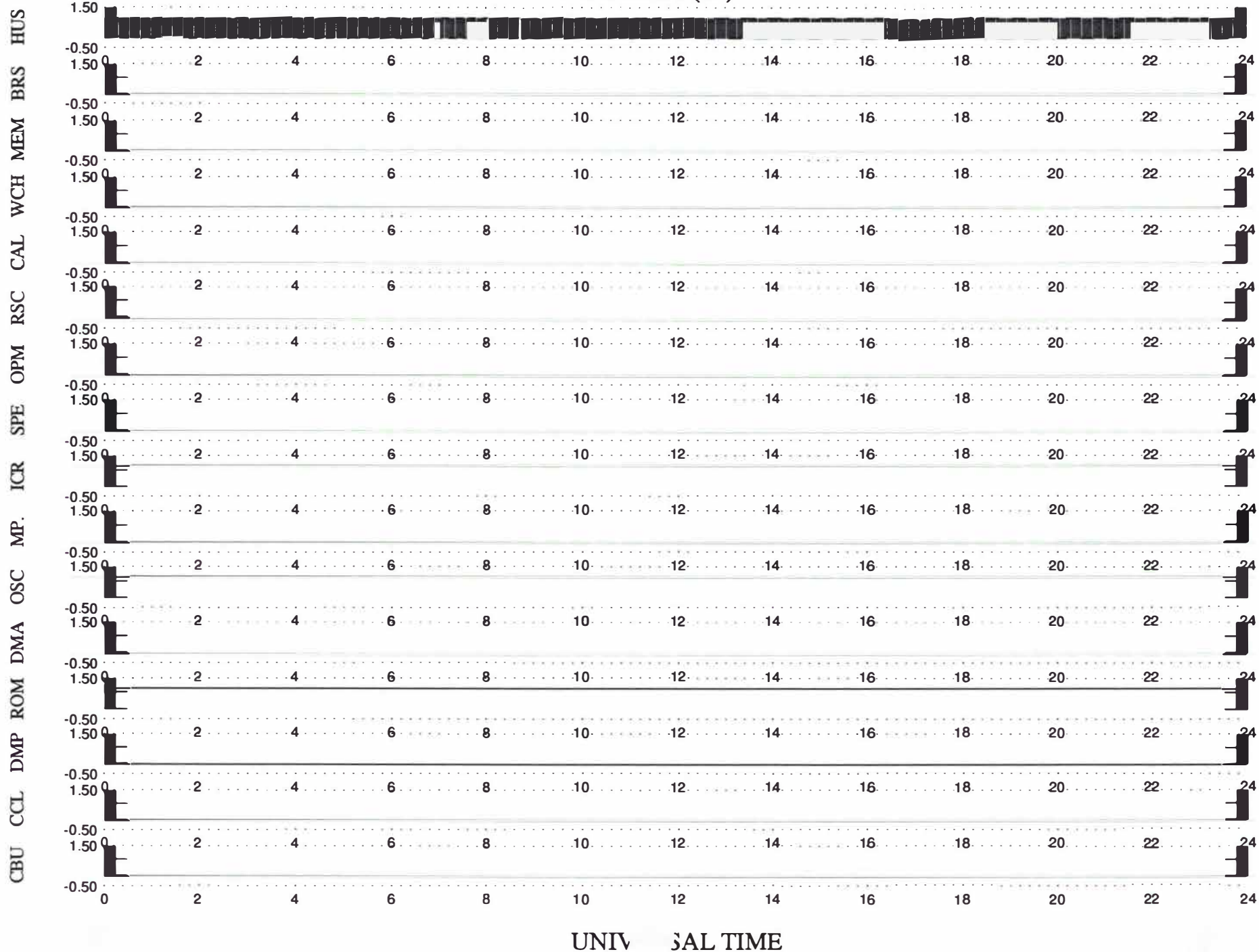
Data Start: 94/05/08, 0000:02

Plot created: 94/05/10, 1320

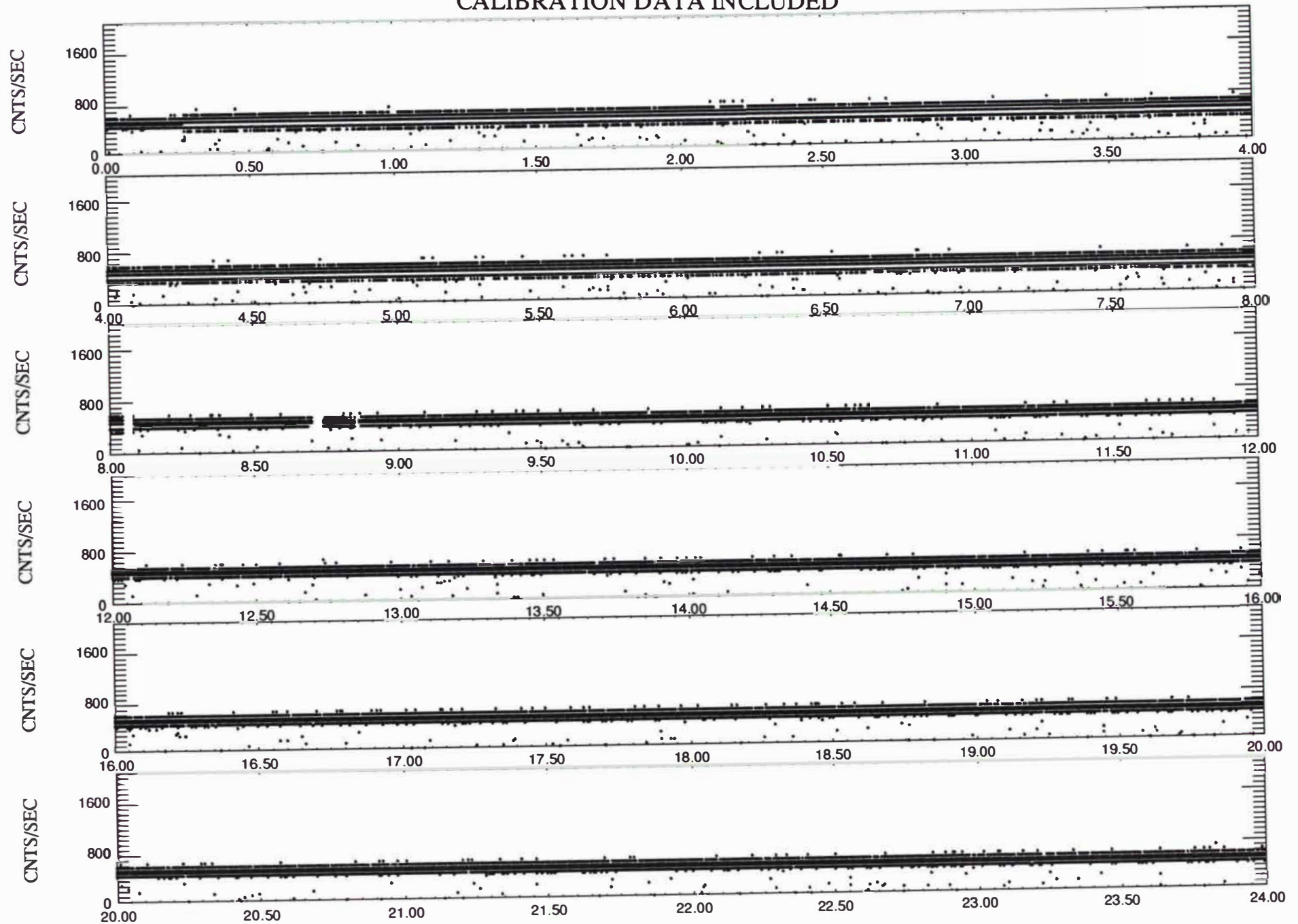
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

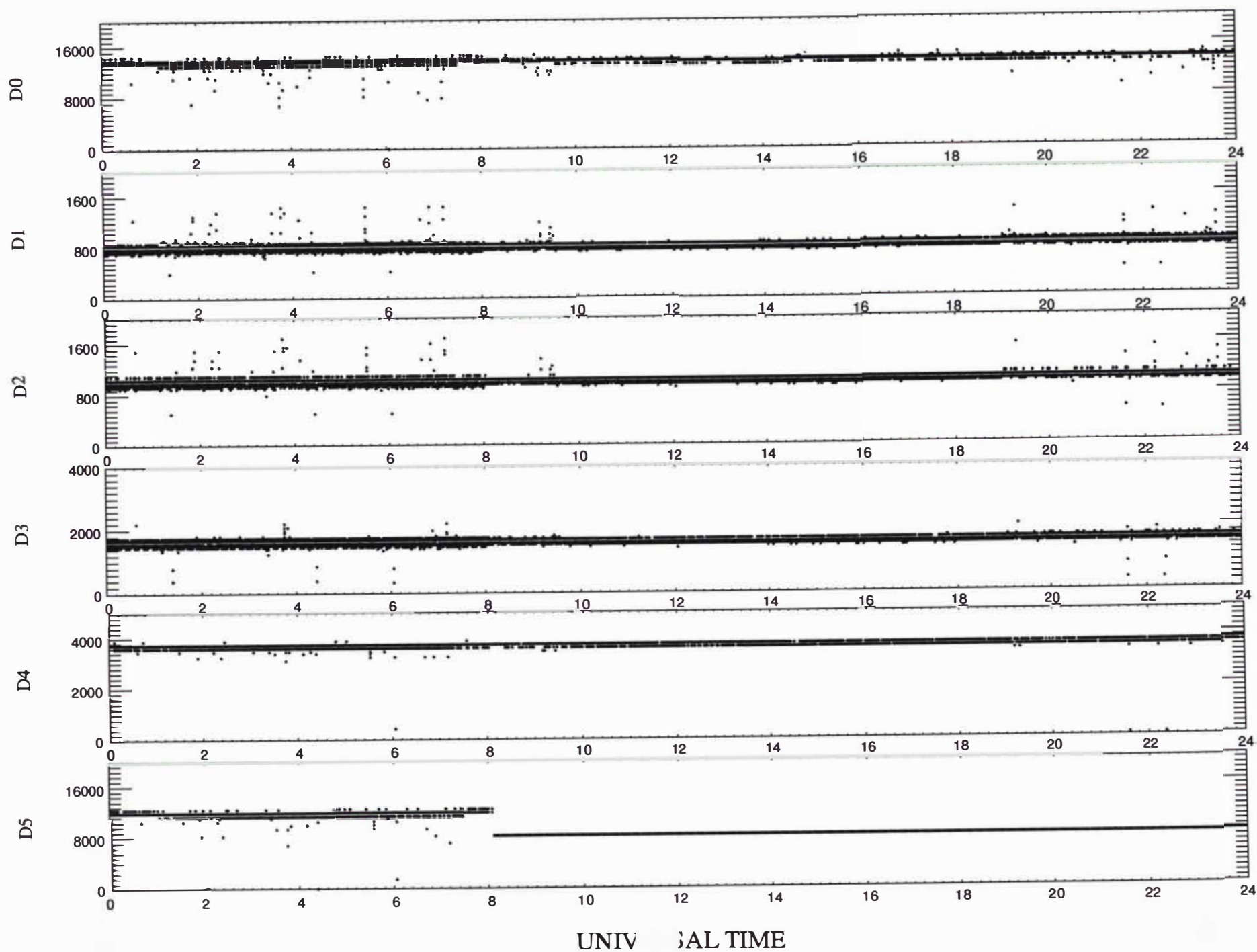
NO BURST (11)

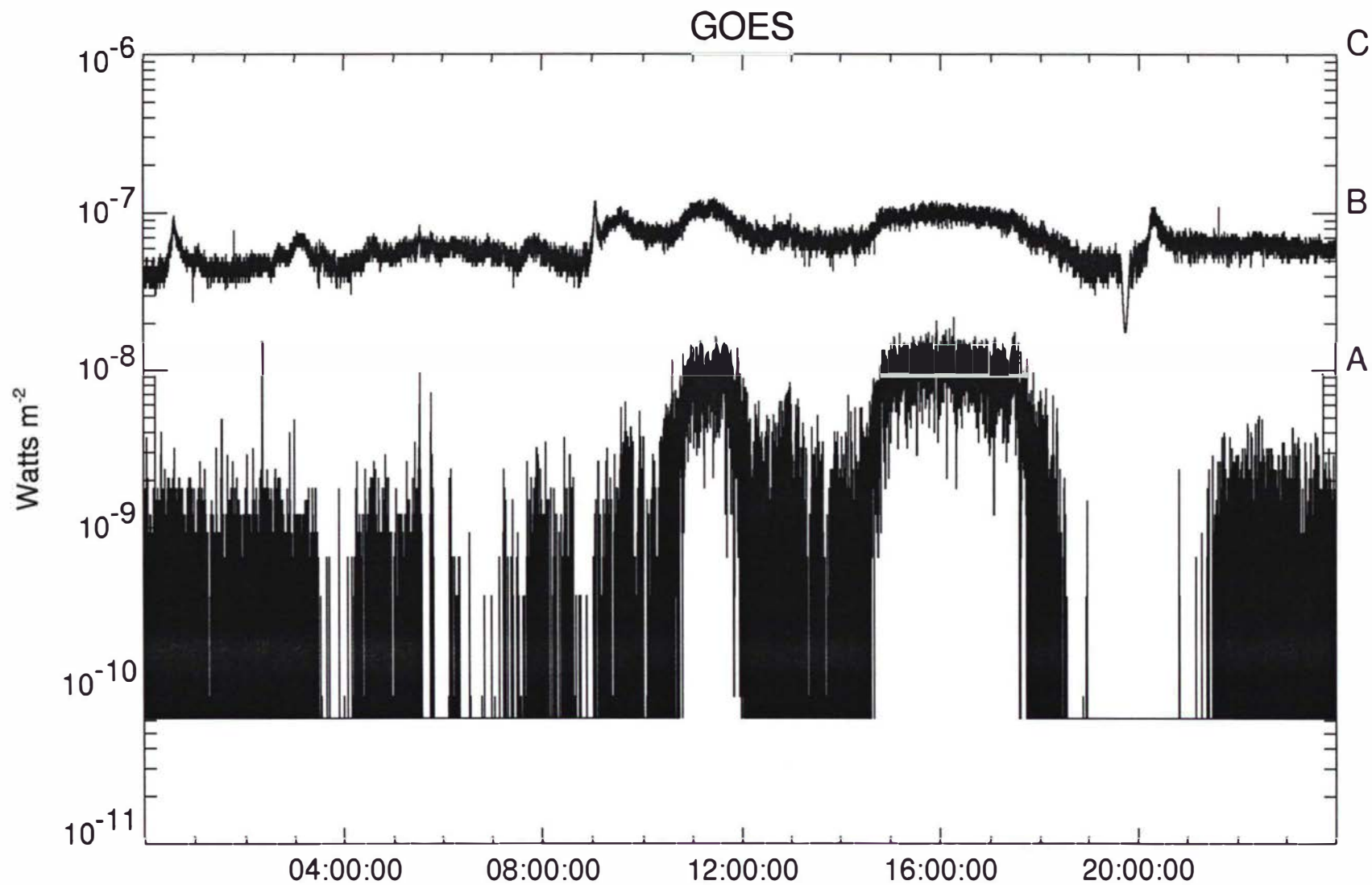


CALIBRATION DATA INCLUDED



UNIV SAL TIME





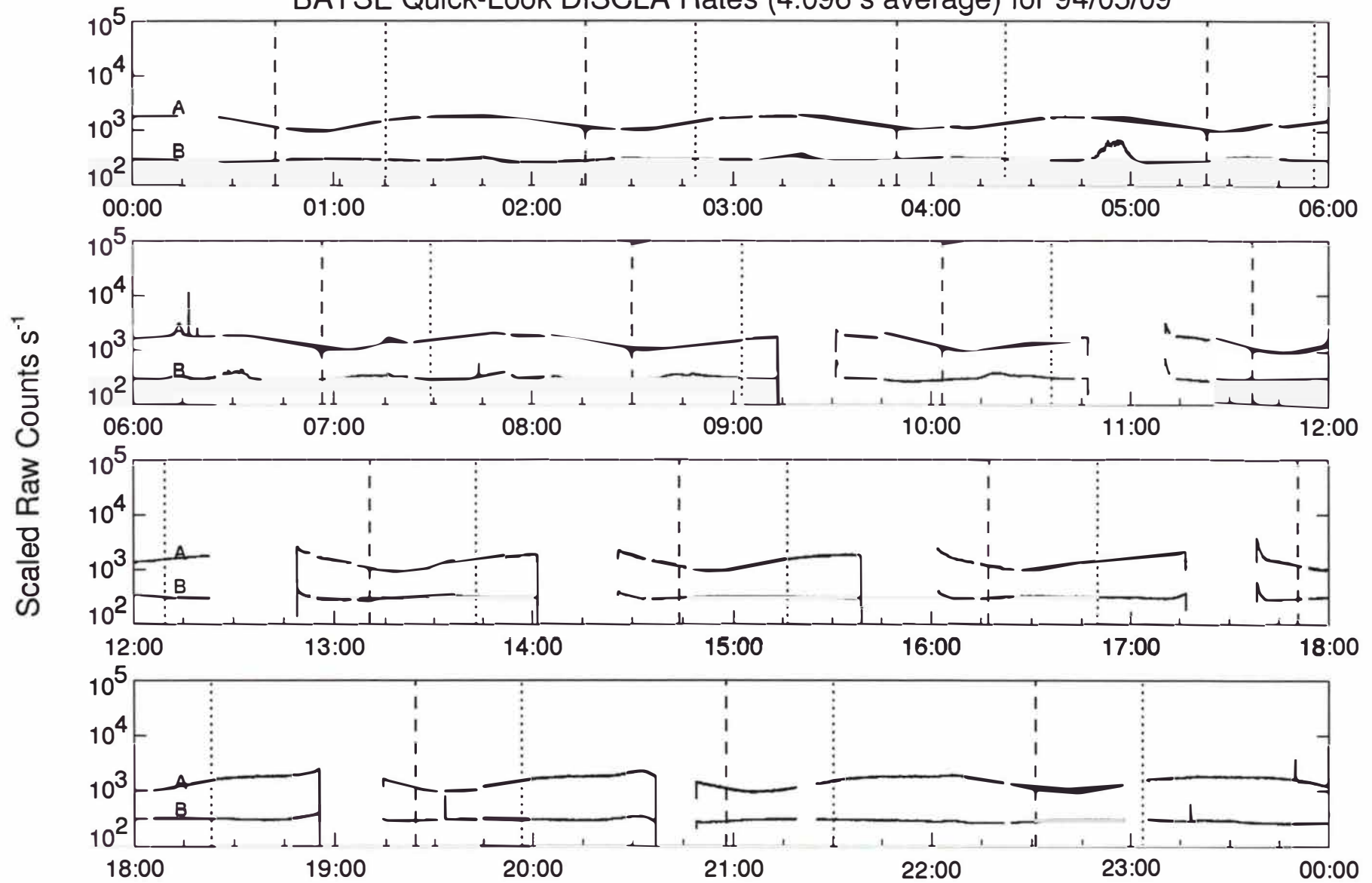
Data Start: 94/05/09, 0000:02

Plot created: 94/05/17, 1603

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/09

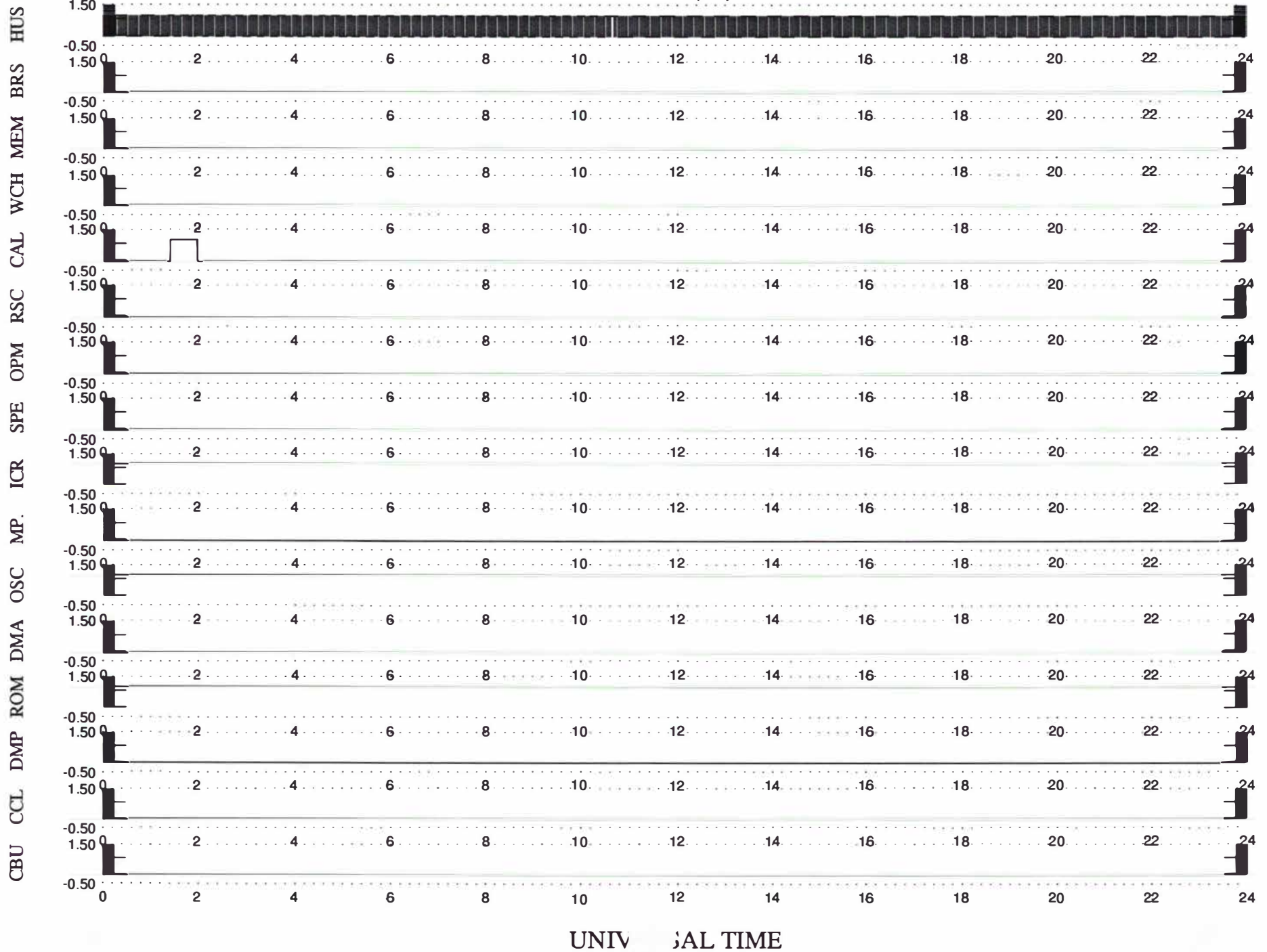


Current Time: 94/05/20, 1251 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

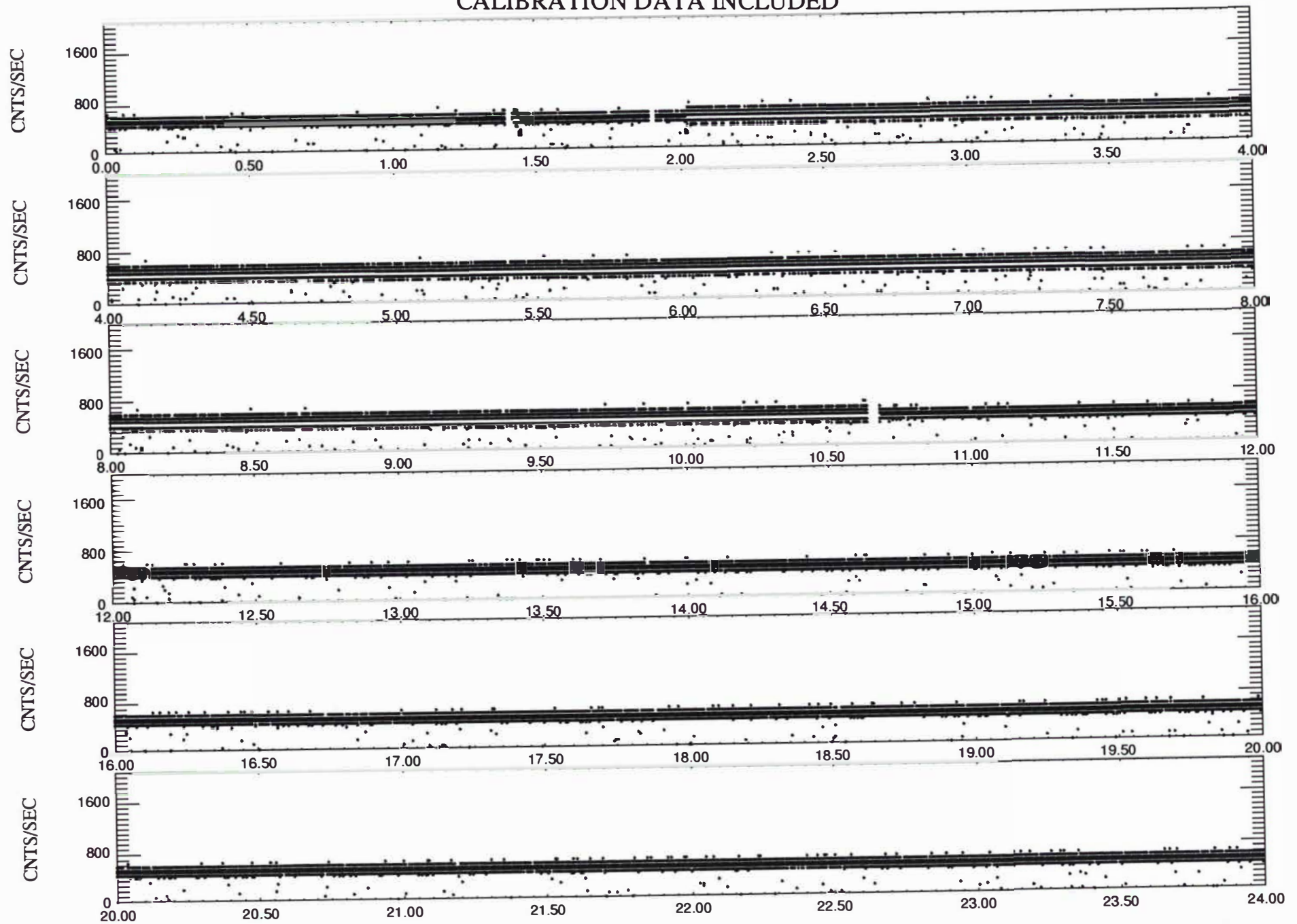
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

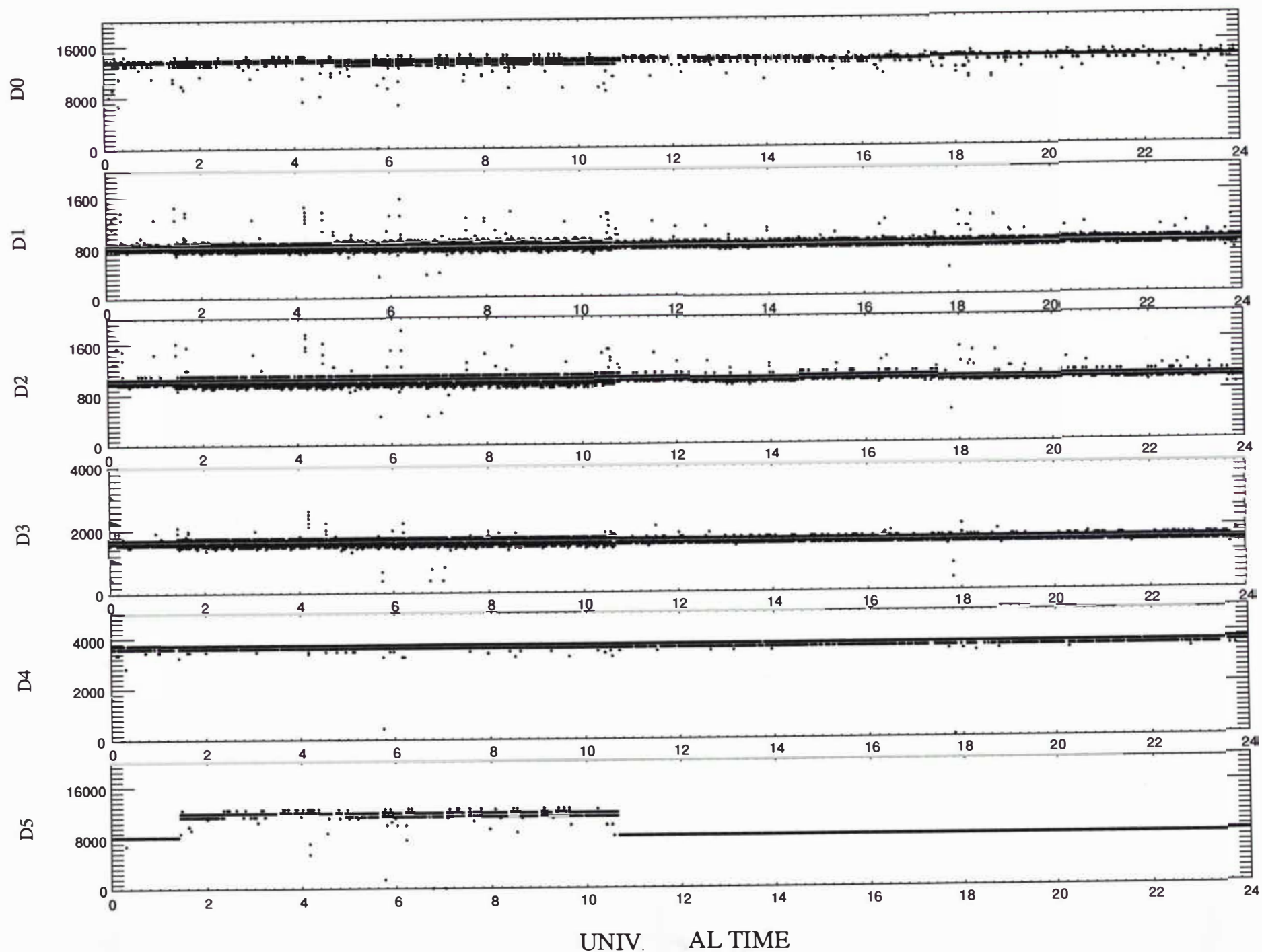
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV CAL TIME



From MALLOZZI@ssl.msfc.nasa.gov Wed May 11 12:32 PDT 1994
Date: Wed, 11 May 1994 14:33:06 -0500 (CDT)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02969

TIME: TJD=9482 SECONDS=26364

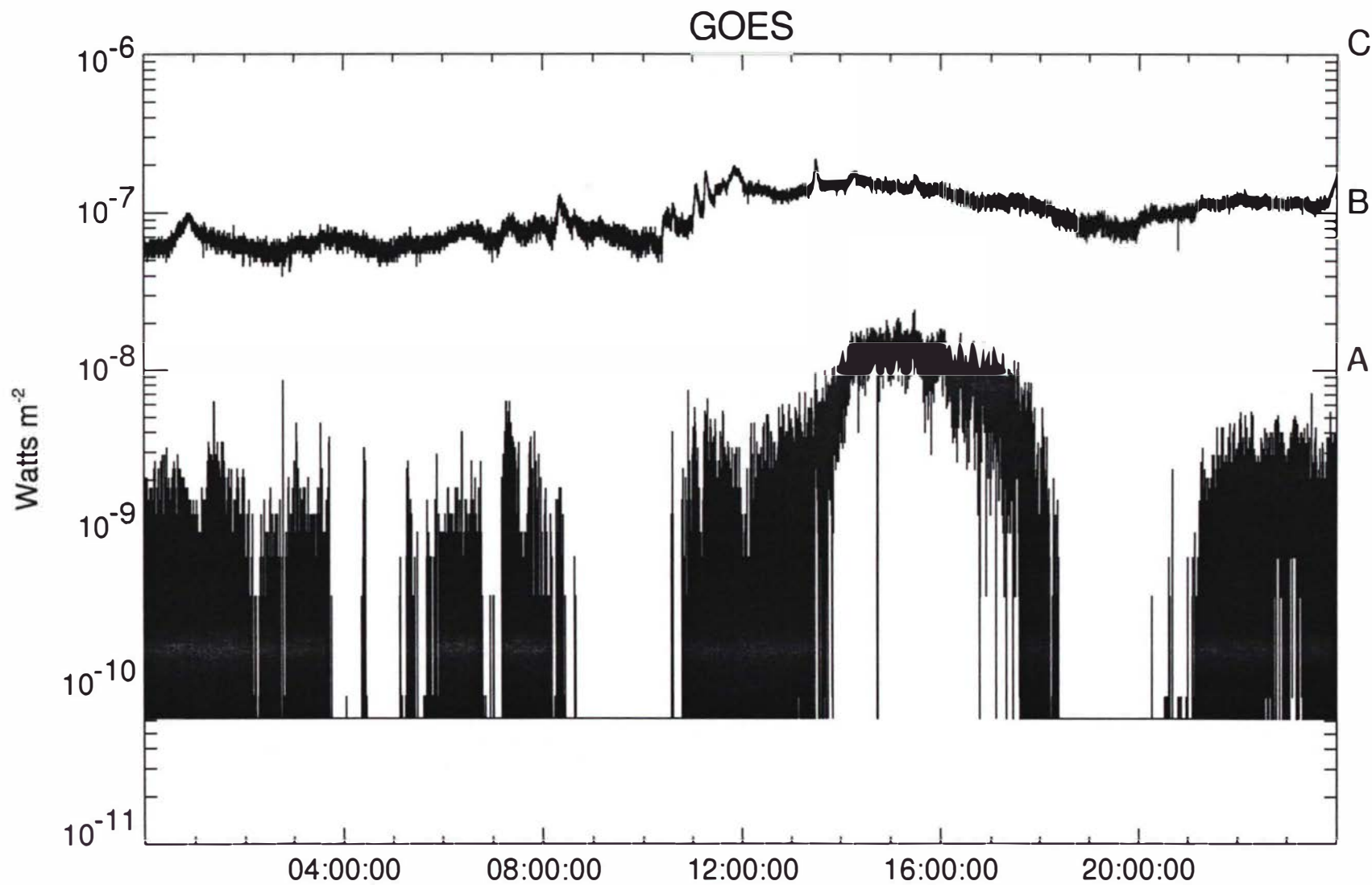
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.



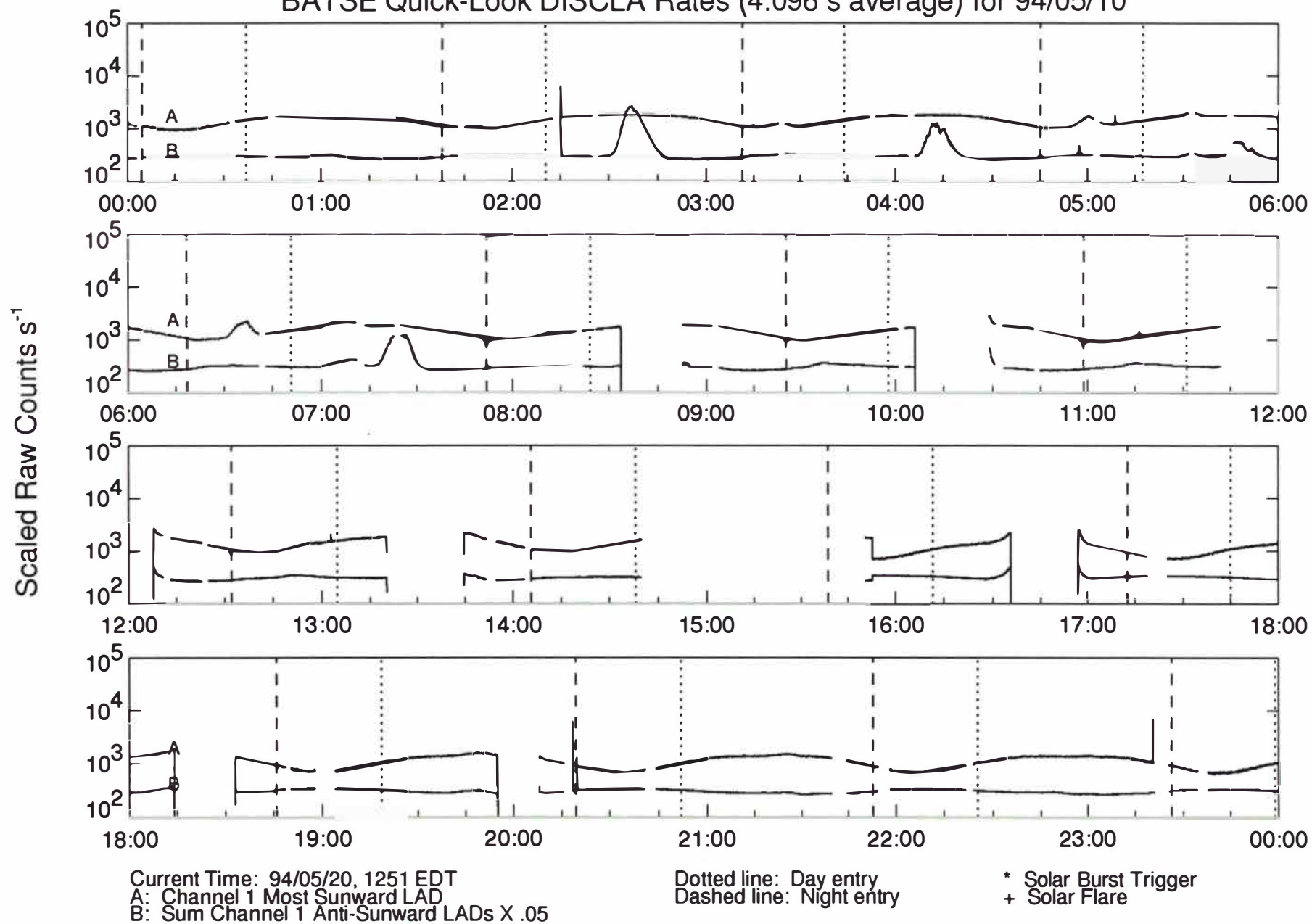
Data Start: 94/05/10, 0000:02

Plot created: 94/05/17, 1604

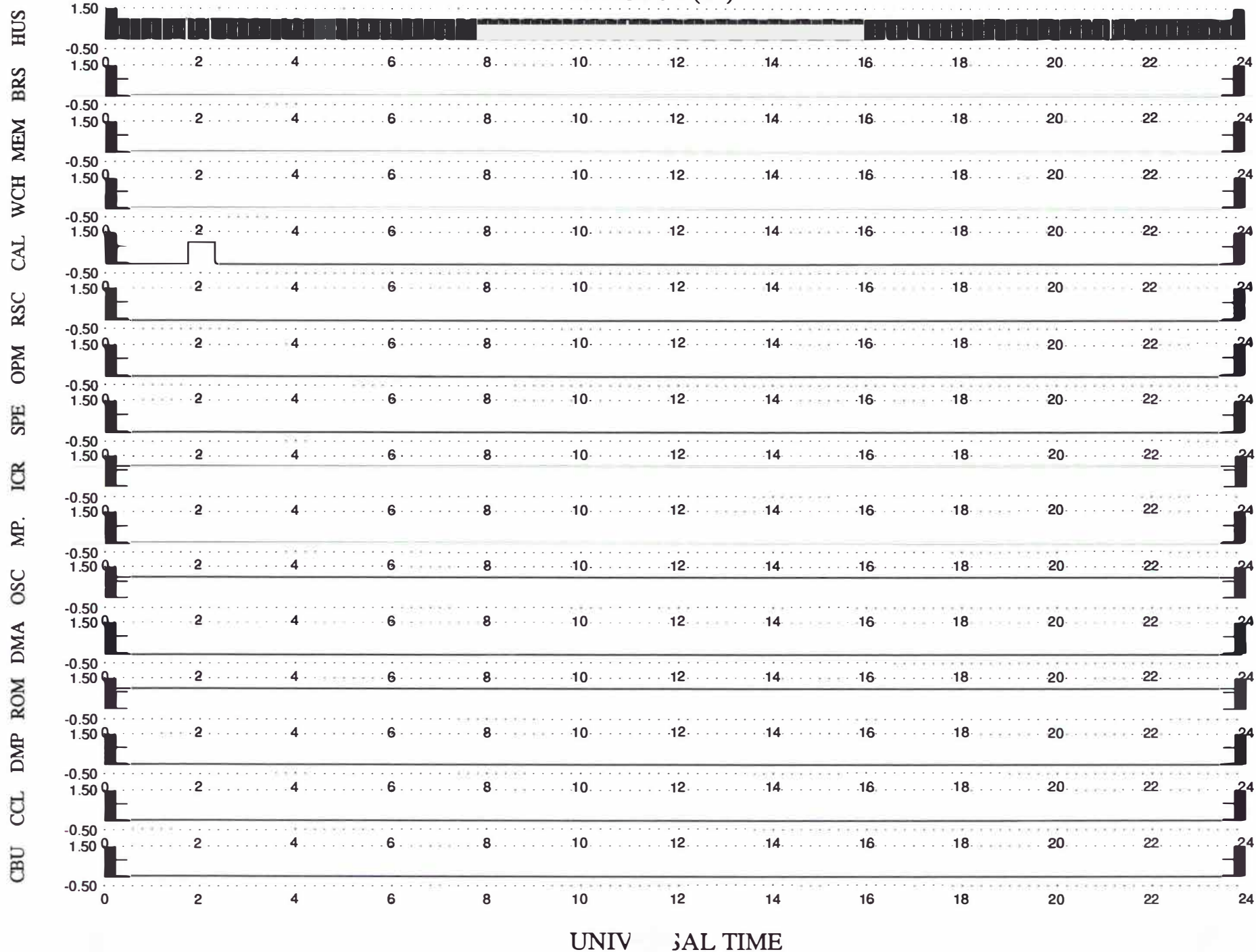
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

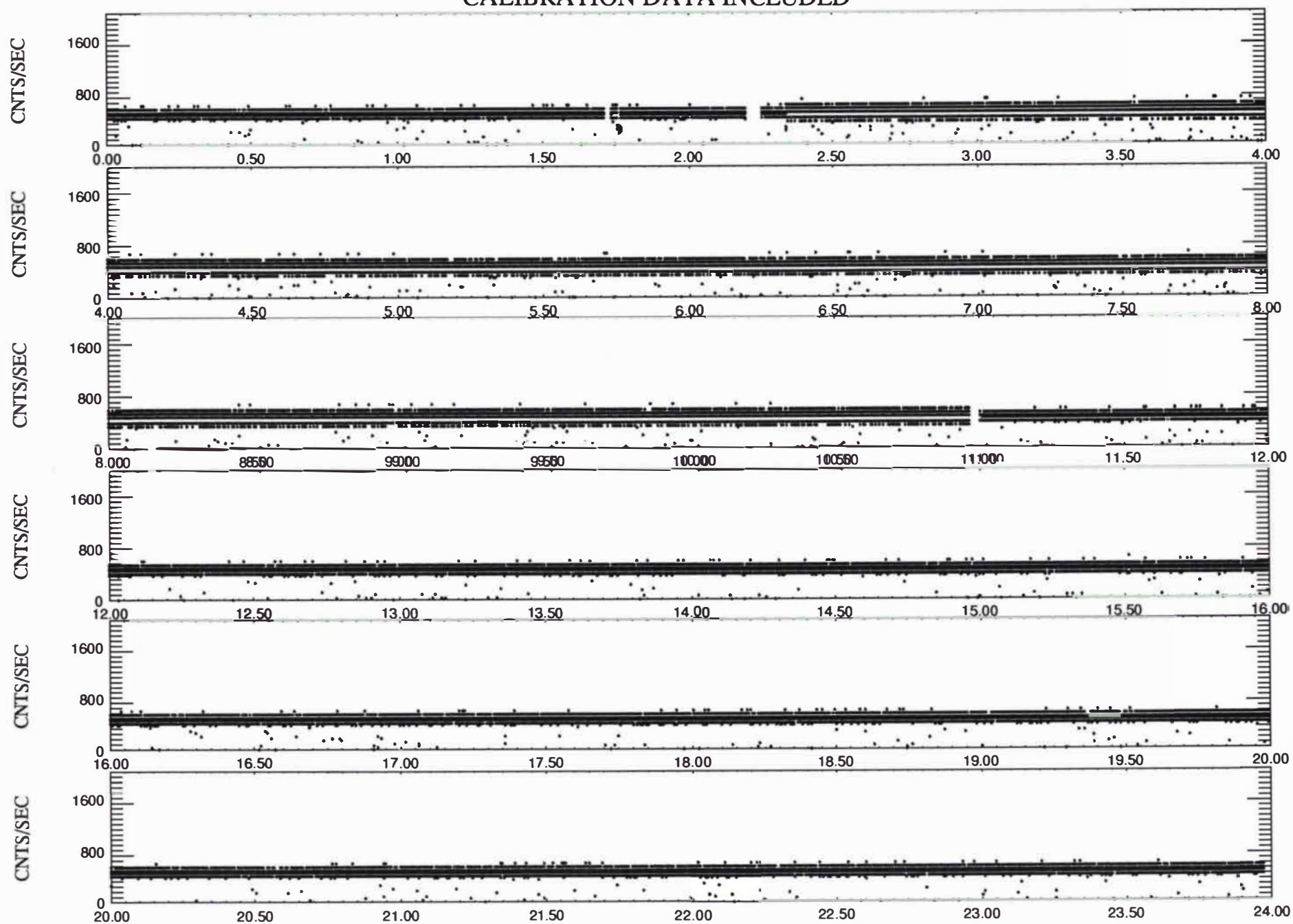
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/10



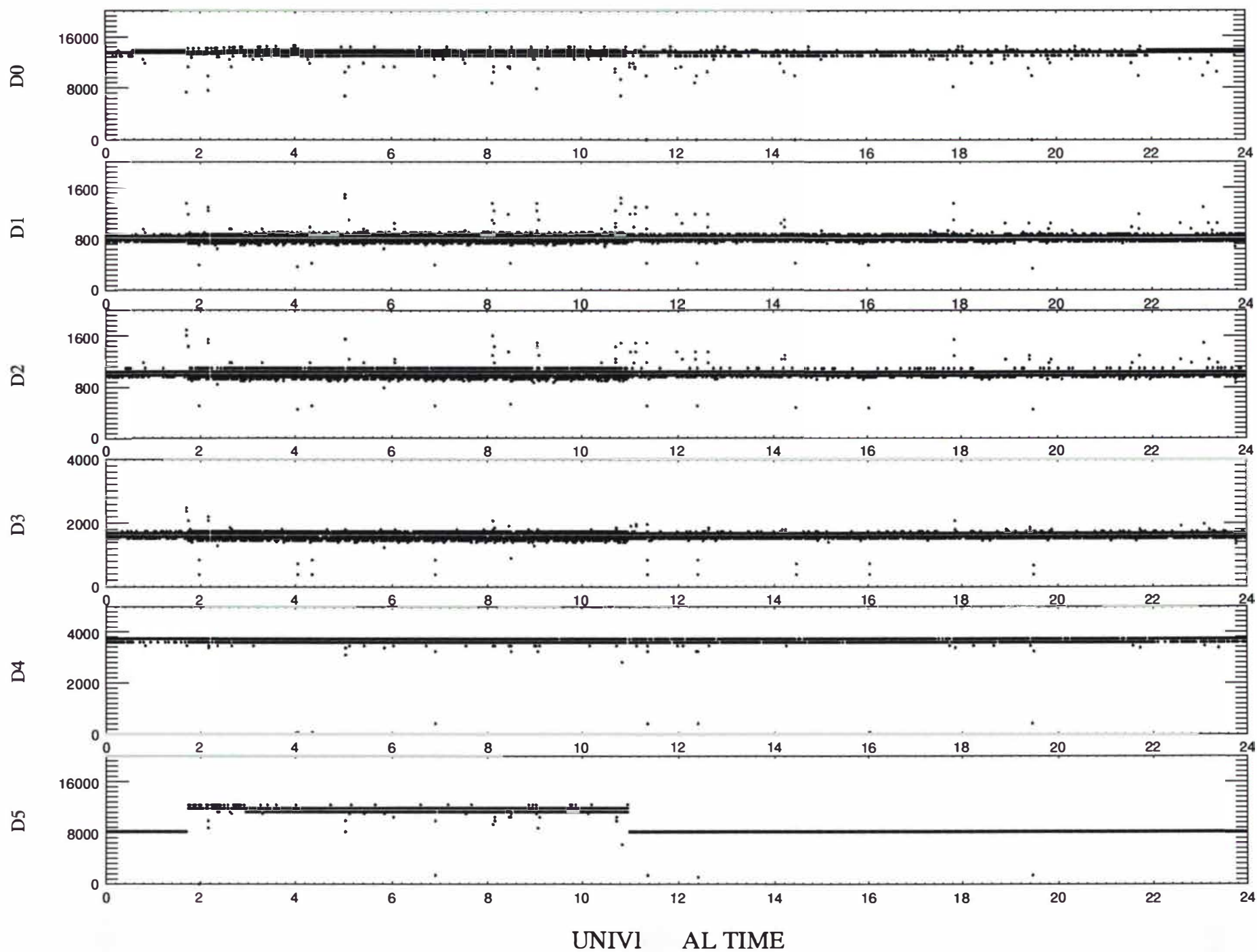
NO BURST (11)



CALIBRATION DATA INCLUDED



UNIV JAL TIME



From RICHARDSON@ssl.msfc.nasa.gov Thu May 12 11:24 PDT 1994
Date: Thu, 12 May 1994 13:25:27 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2970

TIME: TJD=9483 SECONDS=24049

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT AT A DISTANCE.

From RICHARDSON@ssl.msfc.nasa.gov Thu May 12 11:27 PDT 1994
Date: Thu, 12 May 1994 13:28:31 -0500 (CDT)
From: RICHARDSON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2971

TIME: TJD=9483 SECONDS=85372

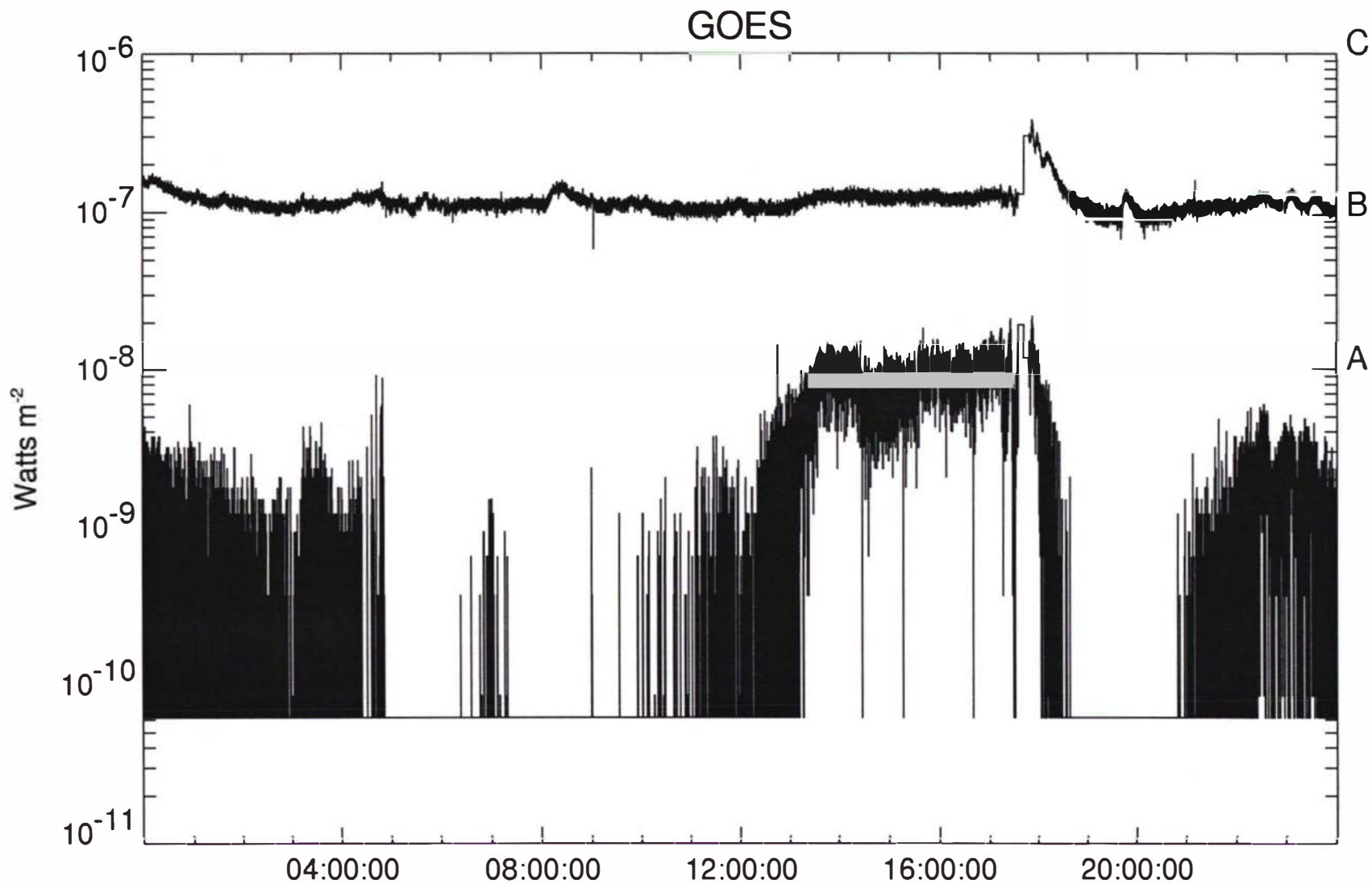
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT AT A DISTANCE.



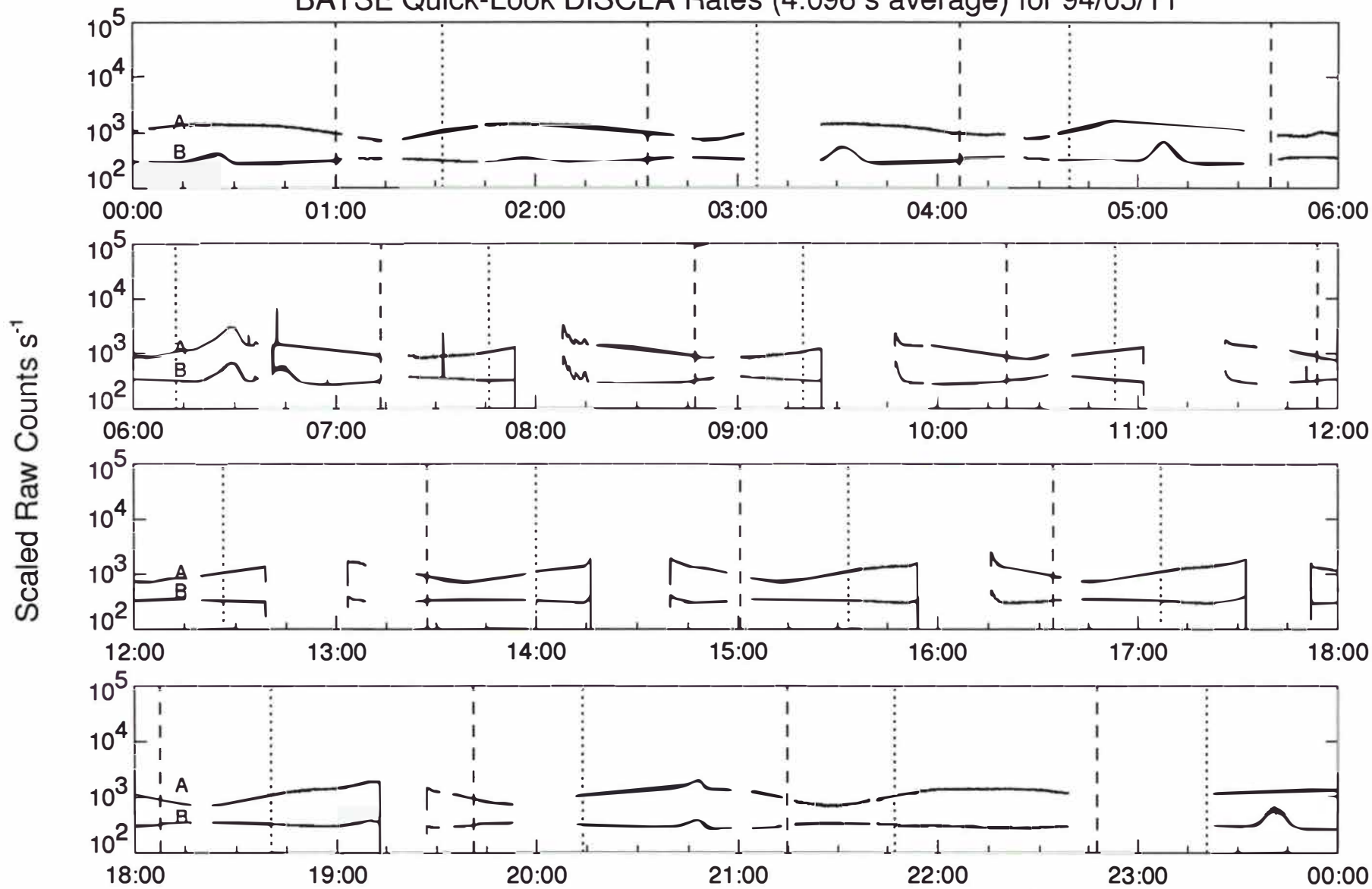
Data Start: 94/05/11, 0000:01

Plot created: 94/05/17, 1604

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/11



Current Time: 94/05/20, 1251 EDT

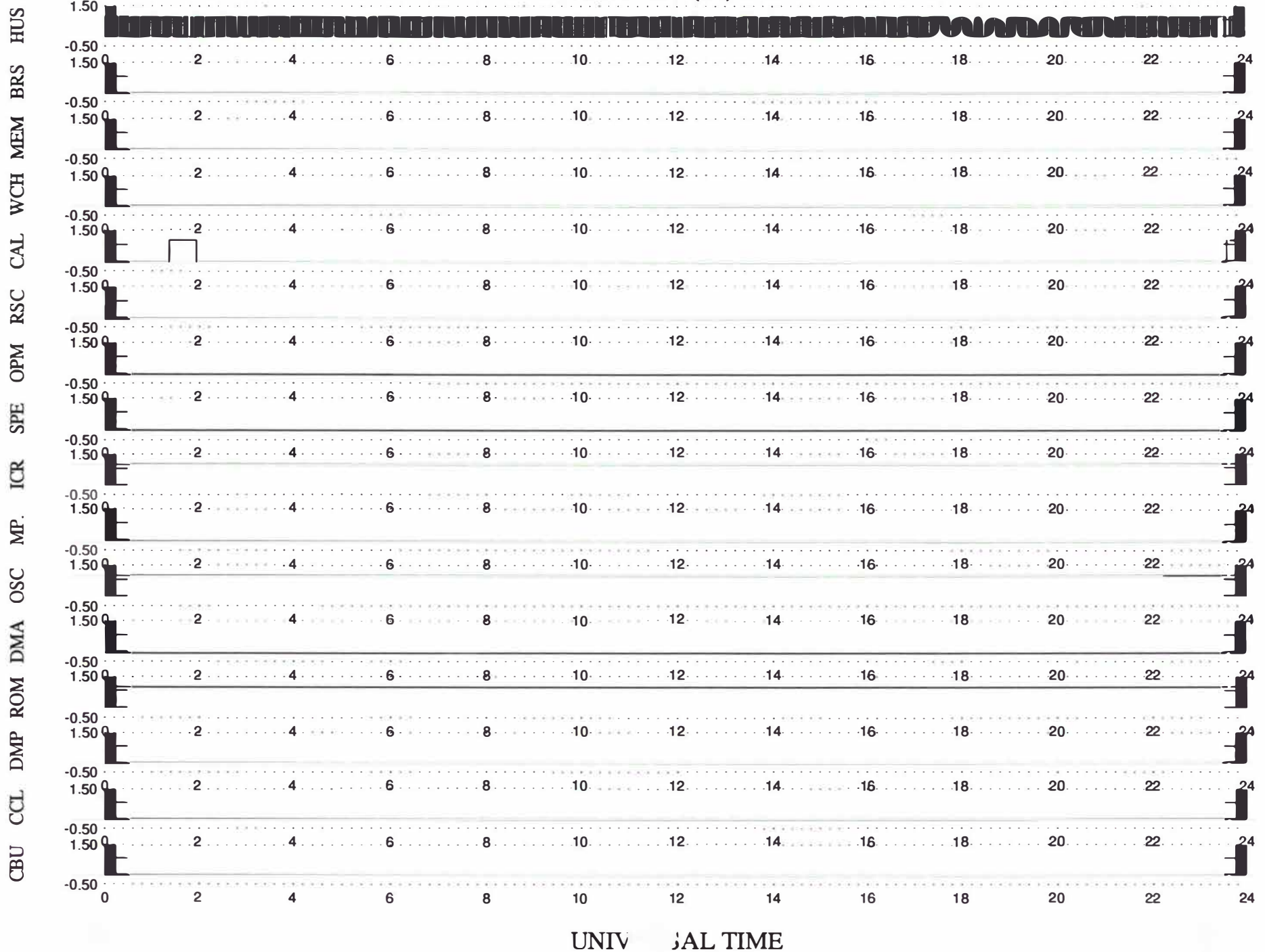
A: Channel 1 Most Sunward LAD

B: Sum Channel 1 Anti-Sunward LADs X .05

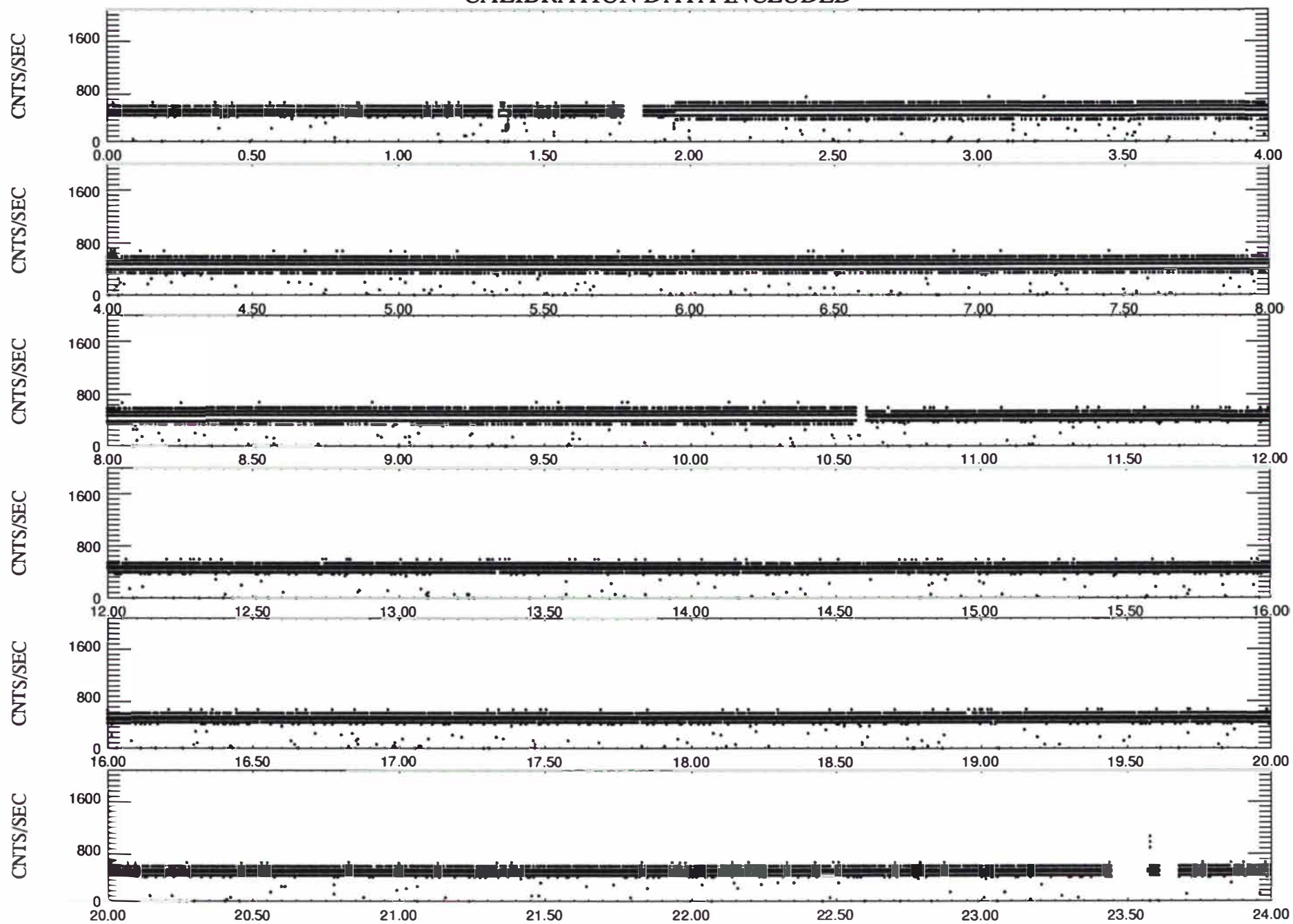
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

NO BURST (11)

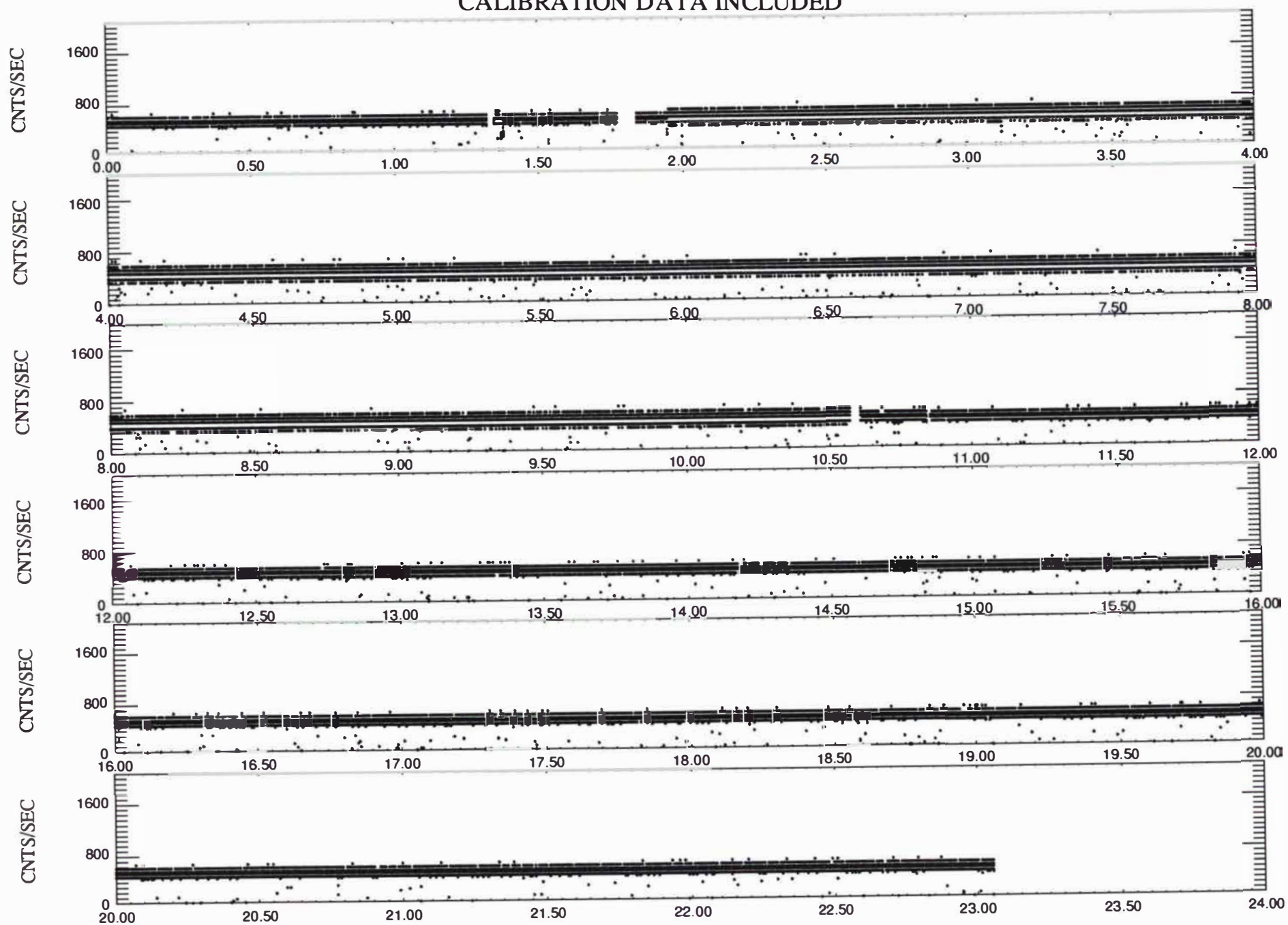


CALIBRATION DATA INCLUDED



UNIV 3AL TIME

CALIBRATION DATA INCLUDED



UNIVI AL TIME

From DEAL@fender.msfc.nasa.gov Mon May 16 09:27 PDT 1994
Date: Mon, 16 May 1994 11:28:21 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.nasa.gov,
LHEAVXKWOK@fender.msfc.nasa.gov, 15733SCHAEFER@fender.msfc.nasa.gov,
CASS09BAND@fender.msfc.nasa.gov, CASS09GRUBER@fender.msfc.nasa.gov,
CASS09MATTESON@fender.msfc.nasa.gov, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2972

TIME: TJD=9484 SECONDS=14905

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=093.1 AZIMUTH=006.6 ERROR= DEGREES

COMMENTS:

SOLAR FLARE B7.6. DURATION ~ 18S. NOT VISIBLE ABOVE 300KEV.

From DEAL@fender.msfc.nasa.gov Mon May 16 09:57 PDT 1994
Date: Mon, 16 May 1994 11:58:10 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2973
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2973
EVENT OF 1994 MAY 12 DAY OF YEAR=132
EVENT CROSSING TIME AT BATSE : 60584. S. OR 16:49:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 78.000 -75.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 5/ 94 IS:
RA= 119.518 DEC= -42.241 DIST= 2.965 AU
BATSE-ULYSSES DISTANCE = 443638425. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=142.45 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1173.22 SECS.
CROSSING TIME AT ULYSSES IS 59411. S. OR 16:30:10 +/- 188.77 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 5/ 94 IS:
RA= 19.720 DEC= 7.345 DIST= 2.170 AU
MARS-BATSE DISTANCE = 324633280. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.66 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -12.42 SECS.
CROSSING TIME AT MARS IS 60572. S. OR 16:49:31 +/- 187.80 SECONDS

100

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2973	940512	9484	60584	5000	078	-75

BATSE BURST TRIGGER

NO.: 02973

TIME: TJD=9484 SECONDS=60584

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=111.6 AZIMUTH=106.4 ERROR= DEGREES

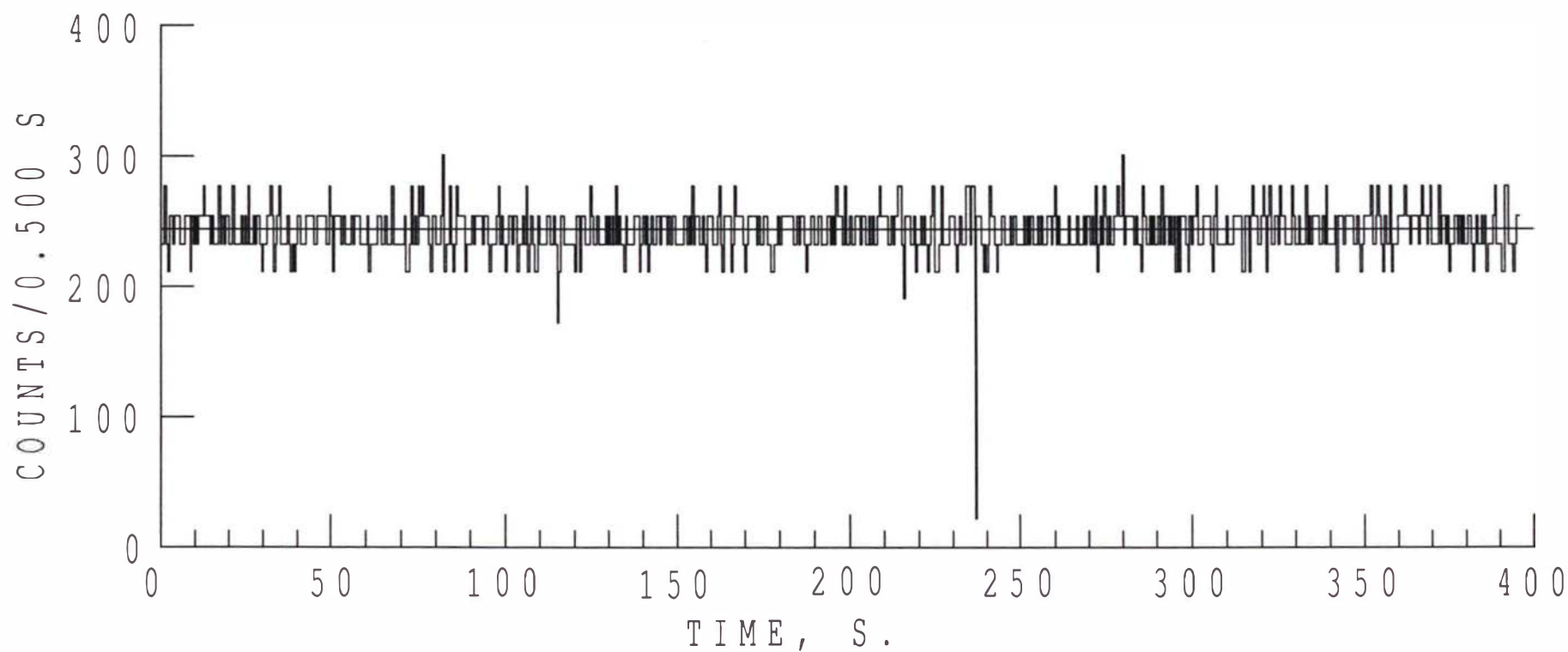
COMMENTS:

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

17 / 5 / 94

ULYSSES RT
12 / 5 / 94 60372.375 s
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From DEAL@fender.msfc.nasa.gov Mon May 16 09:34 PDT 1994
Date: Mon, 16 May 1994 11:35:52 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2974
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2974
EVENT OF 1994 MAY 12 DAY OF YEAR=132
EVENT CROSSING TIME AT BATSE : 63470. S. OR 17:37:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 232.000 56.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 5/ 94 IS:
RA= 119.518 DEC= -42.236 DIST= 2.966 AU
BATSE-ULYSSES DISTANCE = 443653405. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 44.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1058.98 SECS.
CROSSING TIME AT ULYSSES IS 64529. S. OR 17:55:28 +/- 245.55 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 5/ 94 IS:
RA= 19.720 DEC= 7.345 DIST= 2.170 AU
MARS-BATSE DISTANCE = 324633280. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 68.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 392.98 SECS.
CROSSING TIME AT MARS IS 63863. S. OR 17:44:22 +/- 181.15 SECONDS

TRIGGER

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2974	940512	9484	63470	30000	232	+56

BATSE BURST TRIGGER

NO.: 02974

TIME: TJD=9484 SECONDS=63470

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=056.3 AZIMUTH=263.6 ERROR= DEGREES

COMMENTS:

BURST LASTING ~ 0.5S. VISIBLE ABOVE 300KEV.

Helio corr removed

Date: Jan 28 '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 - BATSE TTS data

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

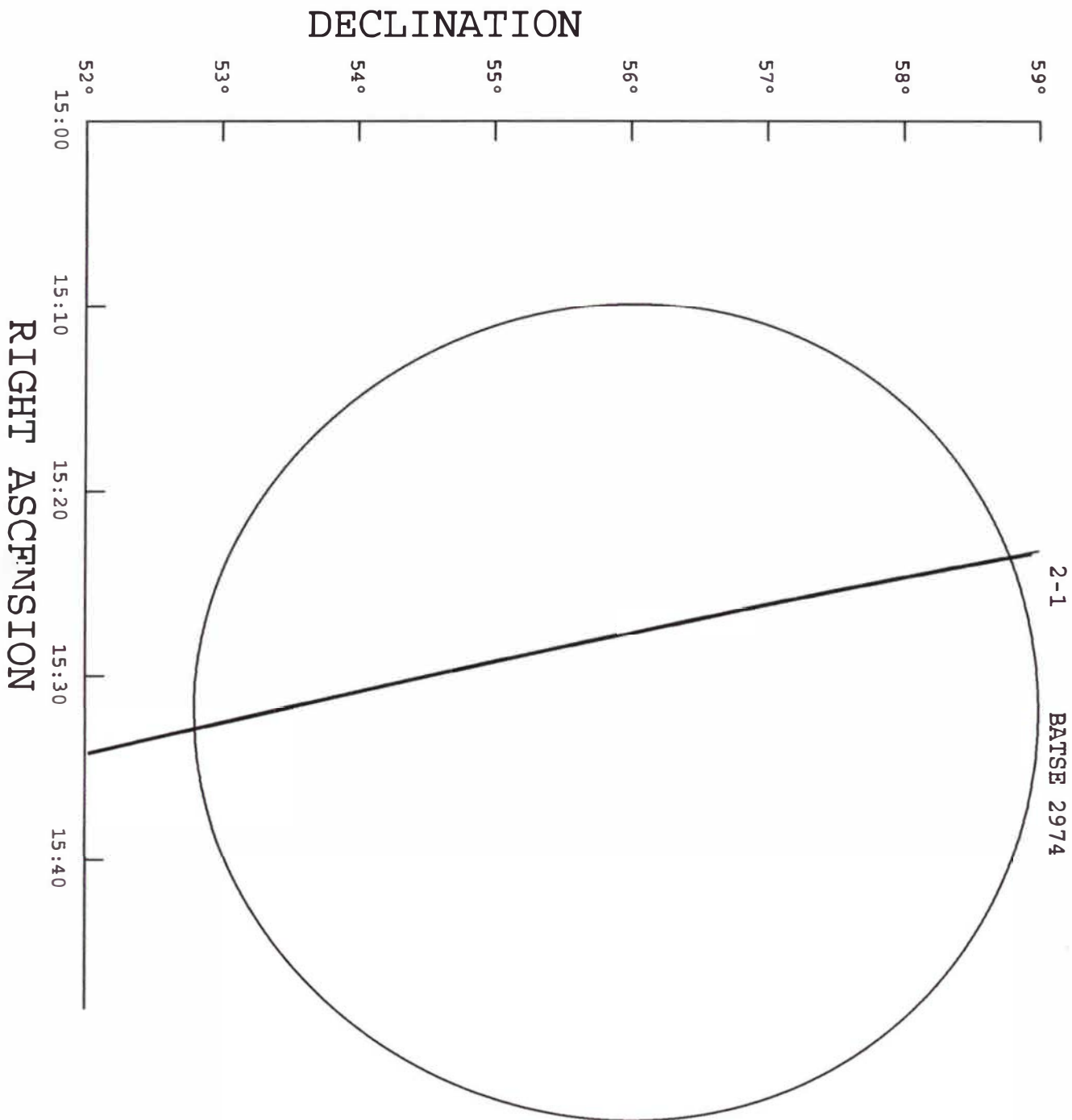
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 12, 1994 17:55

28 / 1/98



BATSE

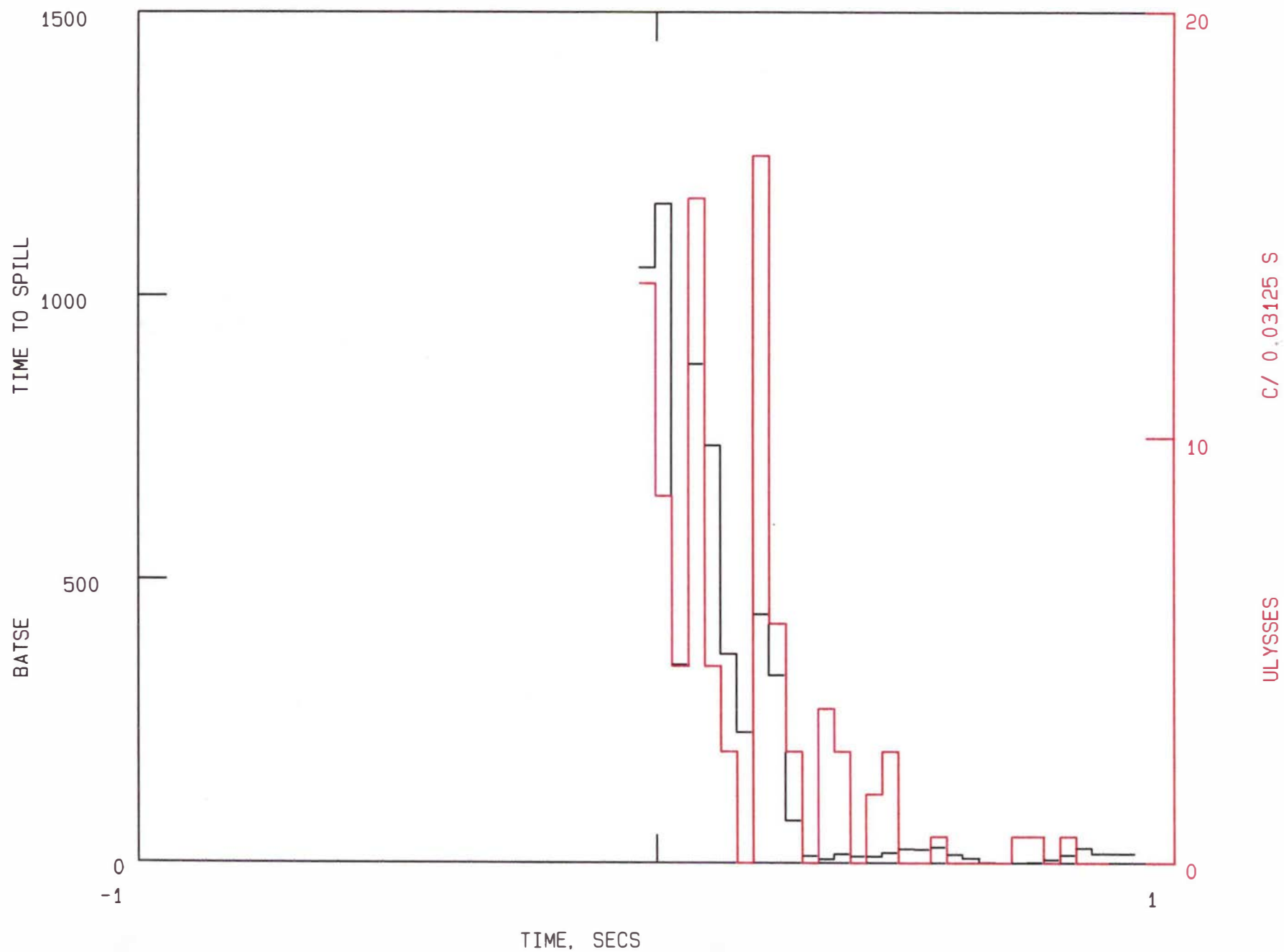
-ULYSSES

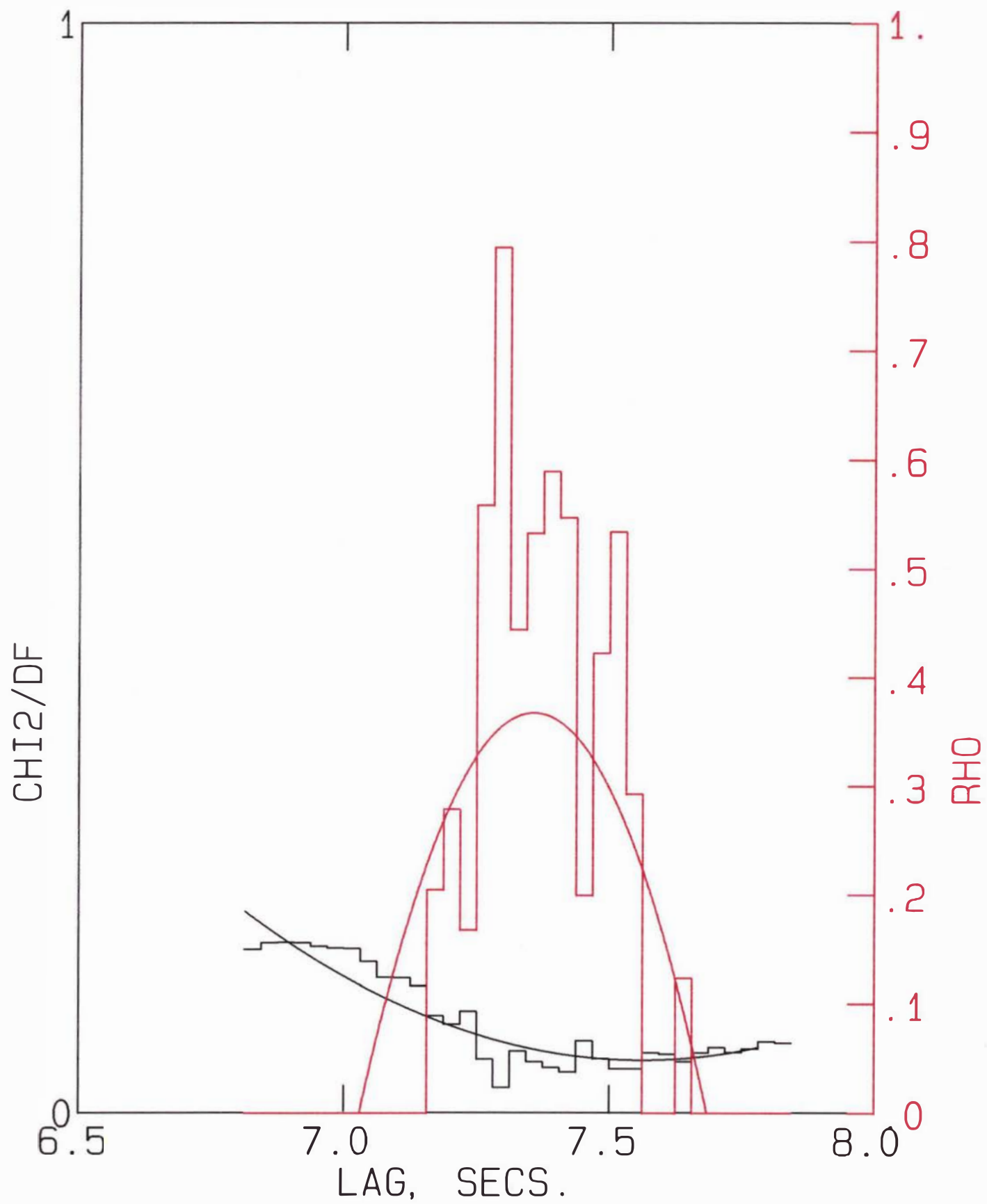
CORRELATION

12/ 5/94

63470.298

28/ 1/98





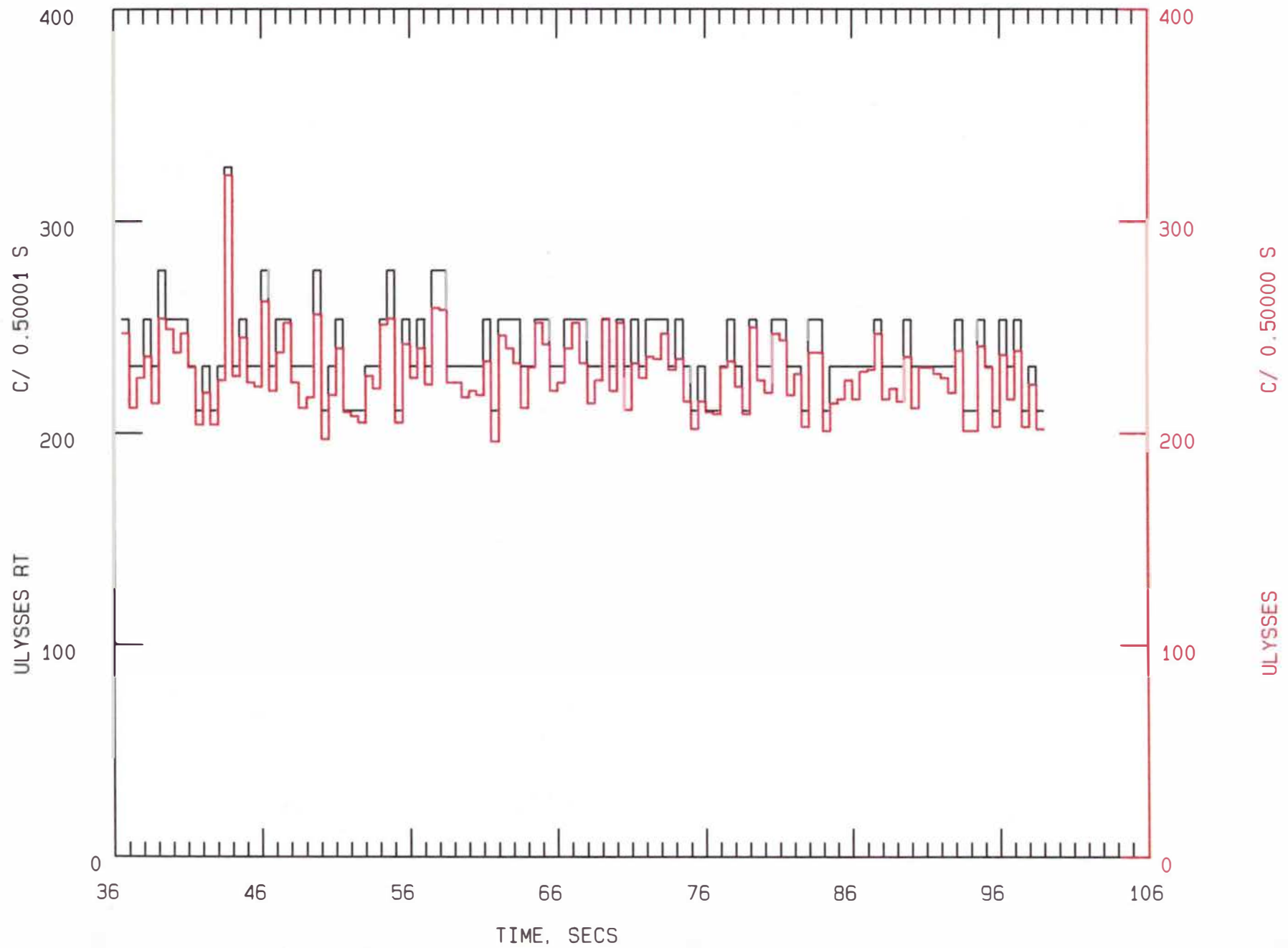
ULYSSES RT-ULYSSES

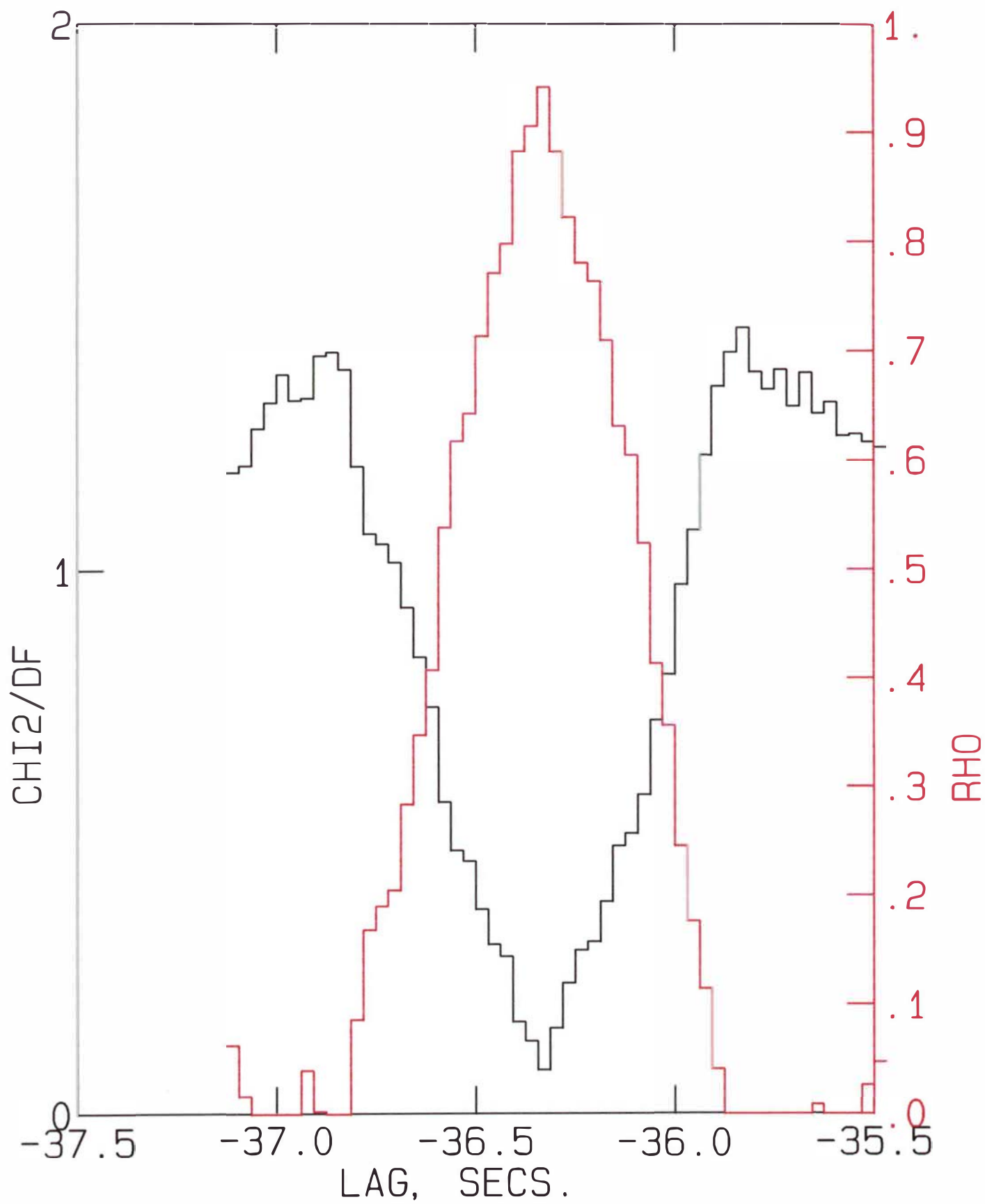
CORRELATION

12/ 5/94

64482.363

28/ 1/98

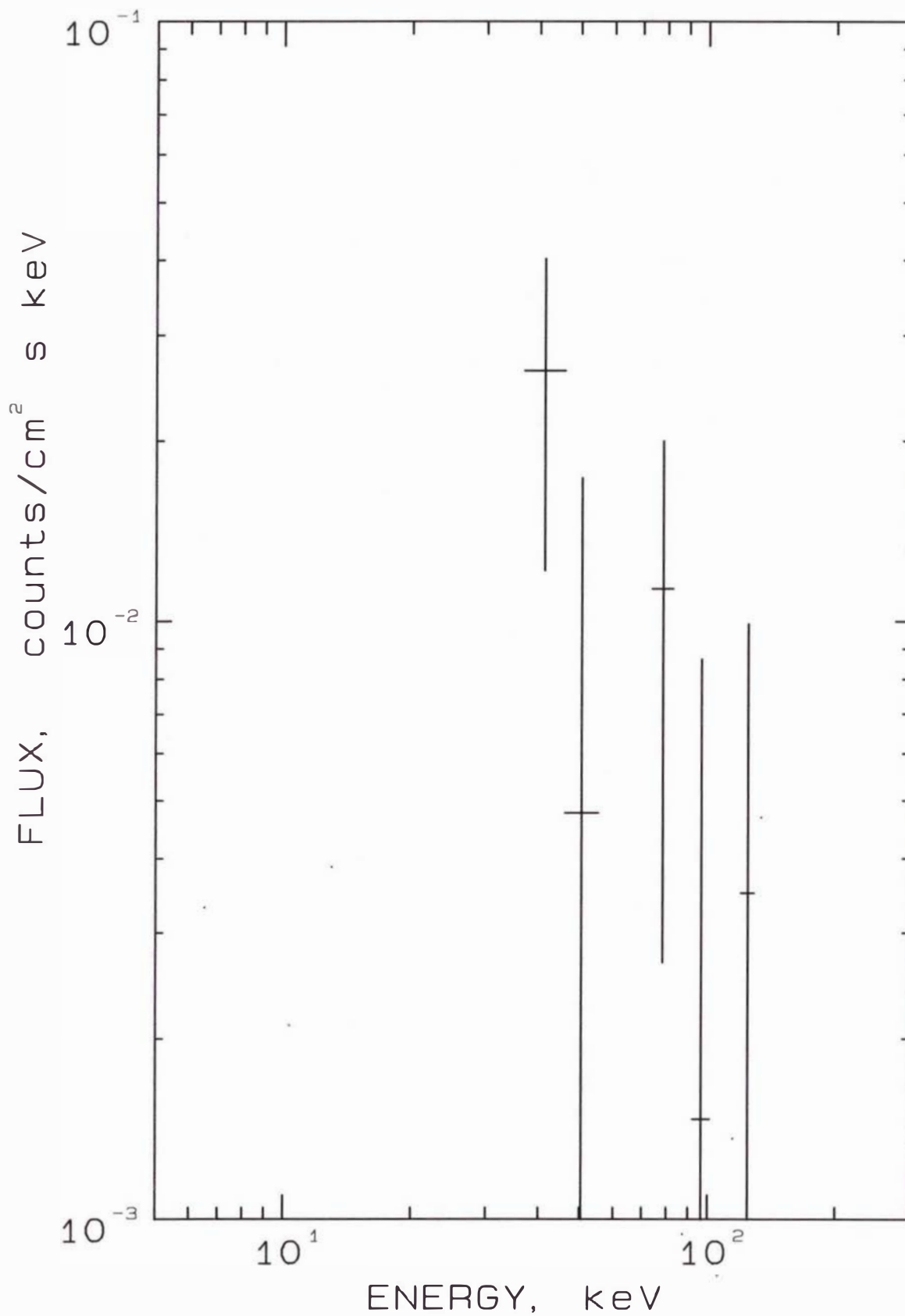




ULYSSES 12/05/94 64526.171

28/ 1/98

SPECTRUM INTEGRATED OVER 10.8 SECONDS, INTERVALS 2 TO 12



ULYSSES 12/05/94 64526.171 BURST SPECTRAL COUNT RATES

4- 18 keV

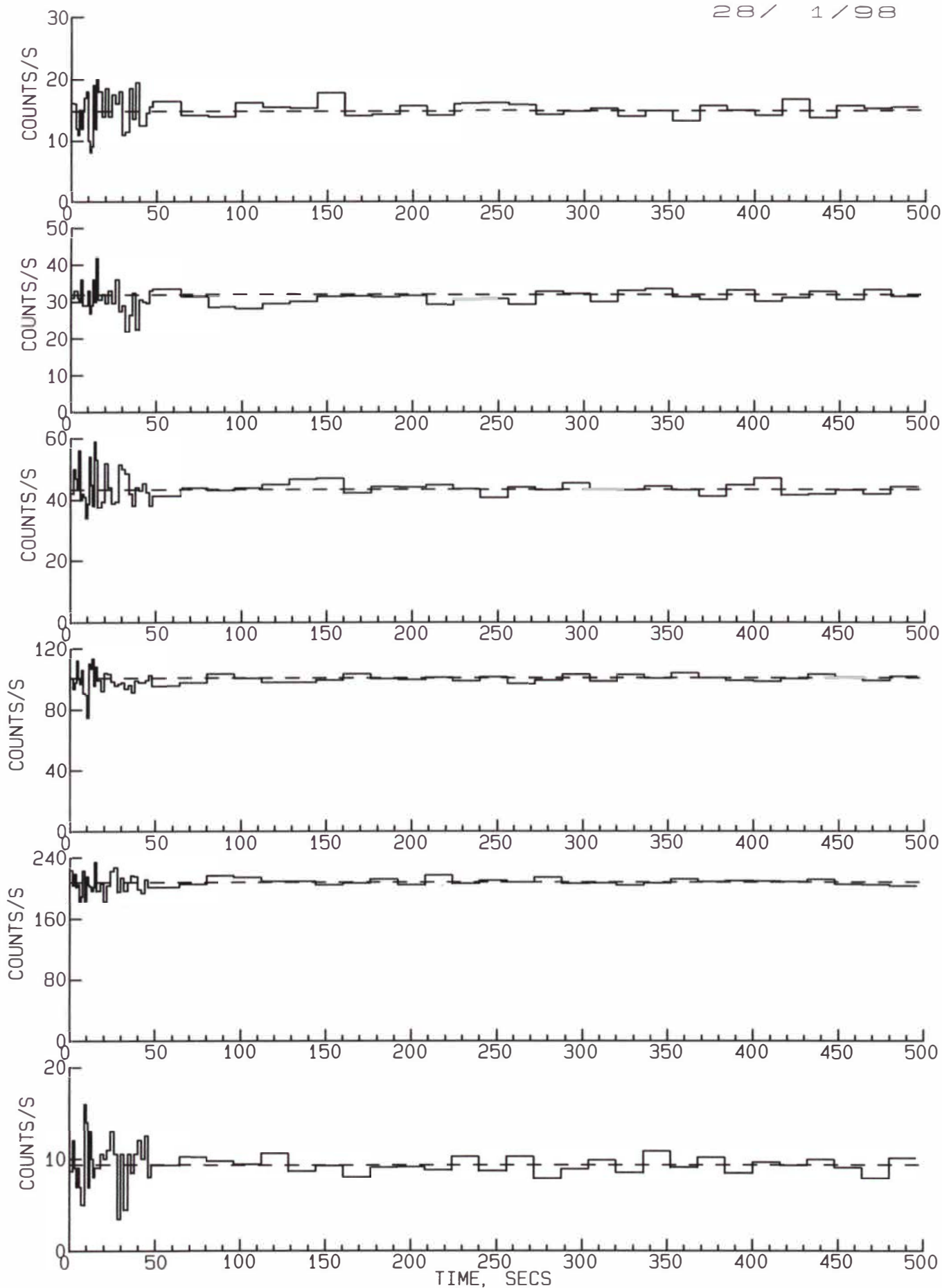
18- 46 keV

46- 73 keV

73-101 keV

101-129 keV

129-147 keV



ULYSSES

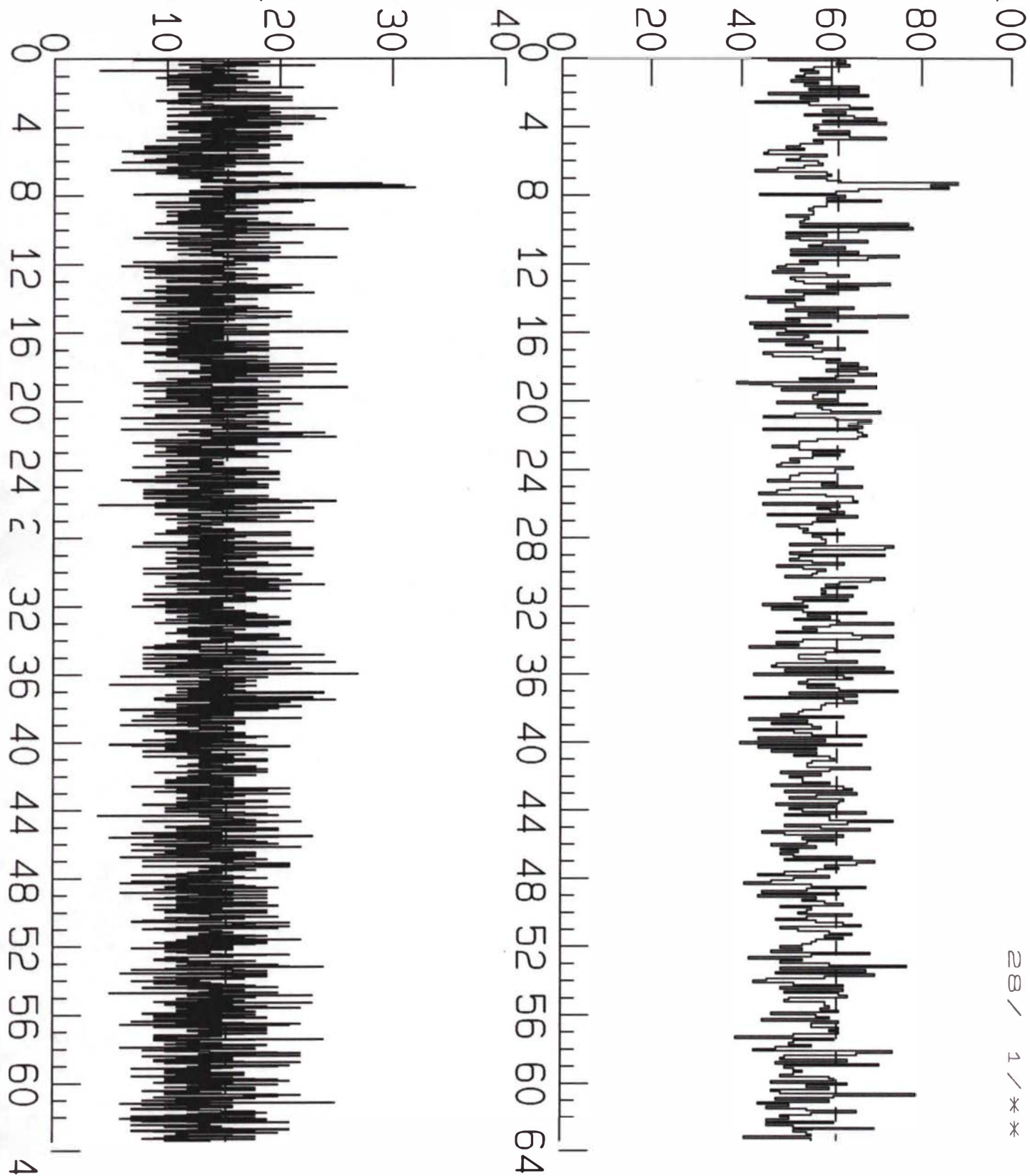
12/05/94

Ttrig=64526.112

22- 147 keV

COUNTS/0.031 S

COUNTS/0.125 S

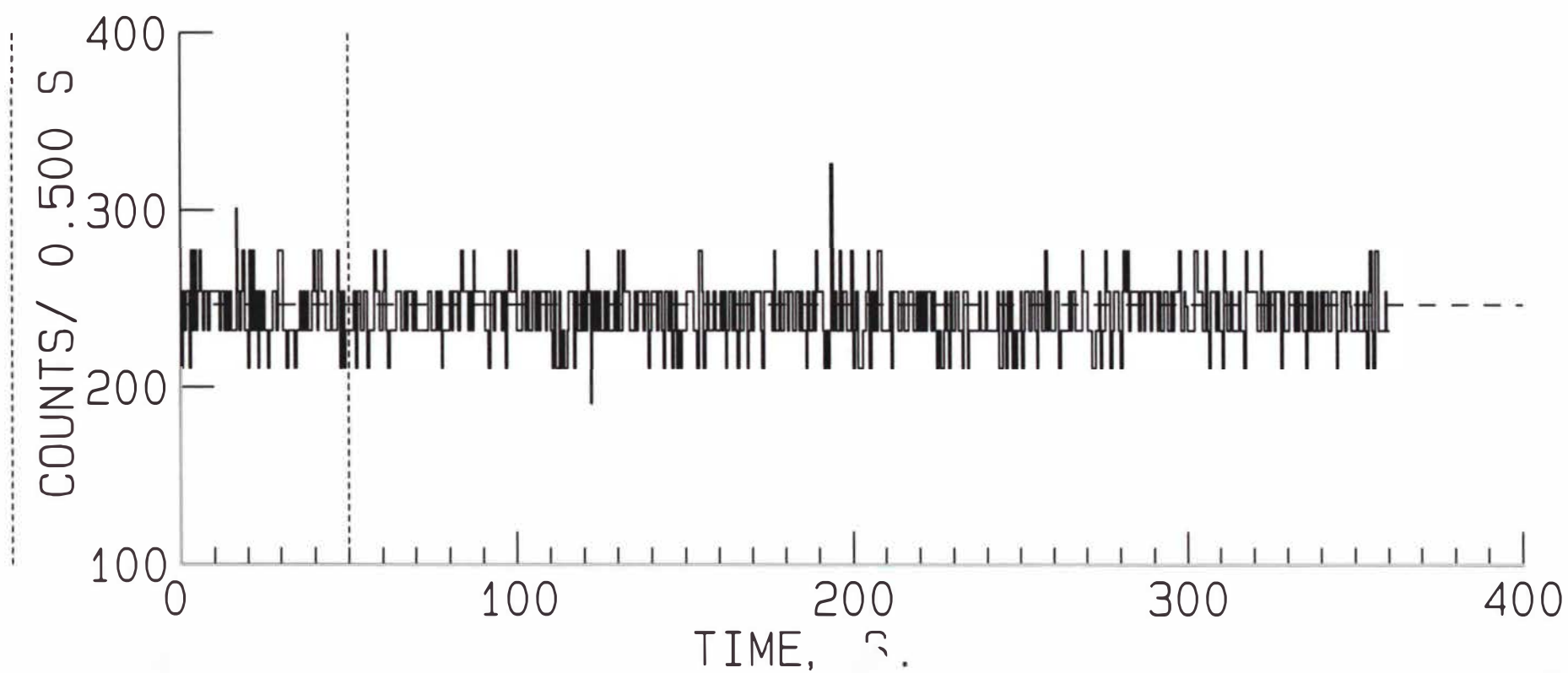


ULYSSES RT

28 / 1 / 98

12/ 5/94 64332.428 s

22- 147 keV



BATSE

12/05/94

63470.298

25- 100 keV

COUNTS/S TTS

20000
40000
60000
80000

-1
0



0

3

7

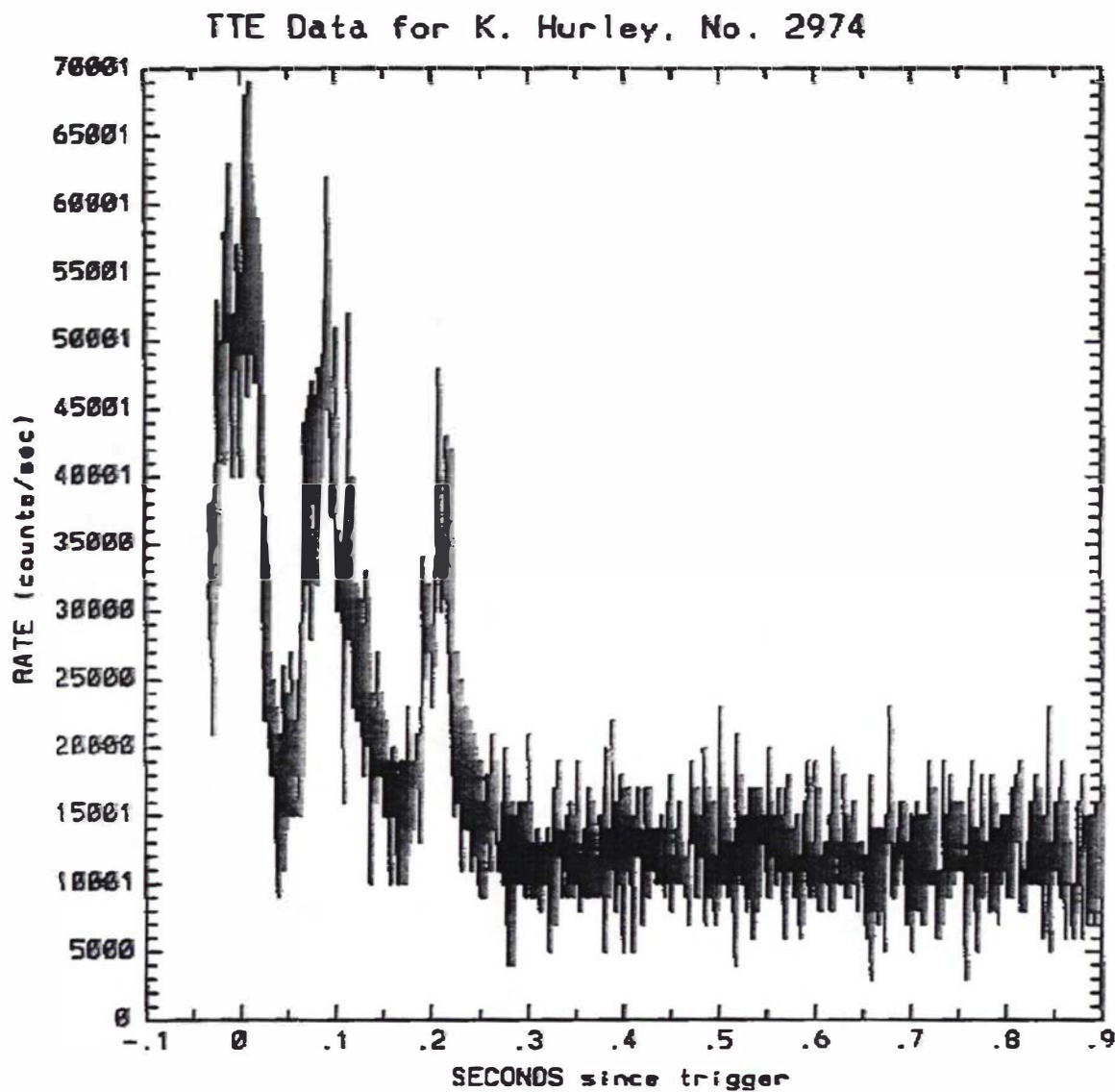
11

15

19

TIME, SECS

20/10/94



28-OCT-1994 11:42:54

Created by NOPS 80
(Burst Display)
Version 2.22

Trigger # = 2974

Trigger Time:
9484 / 63478.298

Burst Data Type:
TTE

Multiple Events
Ignored: 76

Deadtime:
Corrected: K

Background Data
Type: DISCLA

Minimum Integ. Time:
0.001000 seconds

Detectors [7..8]:
76--32--

Discriminators:
(1, 2)

Quality Mask:
80ISP1

From DEAL@fender.msfc.nasa.gov Mon May 16 09:47 PDT 1994
Date: Mon, 16 May 1994 11:48:36 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2975
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2975
EVENT OF 1994 MAY 12 DAY OF YEAR=132
EVENT CROSSING TIME AT BATSE : 78730. S. OR 21:52:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 343.000 -51.000
BATSE PEAK COUNTING RATE: 10500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 5/ 94 IS:
RA= 119.519 DEC= -42.210 DIST= 2.966 AU
BATSE-ULYSSES DISTANCE = 443733407. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -272.20 SECS.
CROSSING TIME AT ULYSSES IS 78458. S. OR 21:47:37 +/- 298.46 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 5/ 94 IS:
RA= 19.720 DEC= 7.345 DIST= 2.170 AU
MARS-BATSE DISTANCE = 324633280. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.64 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -434.17 SECS.
CROSSING TIME AT MARS IS 78296. S. OR 21:44:55 +/- 165.63 SECONDS

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2975	940512	9484	78730	10500	343	-51

BATSE BURST TRIGGER

NO.: 02975

TIME: TJD=9484 SECONDS=78730

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=160.0 AZIMUTH=111.4 ERROR= DEGREES

COMMENTS:

BURST LASTING ~ 0.5S. VISIBLE ABOVE 300KEV.

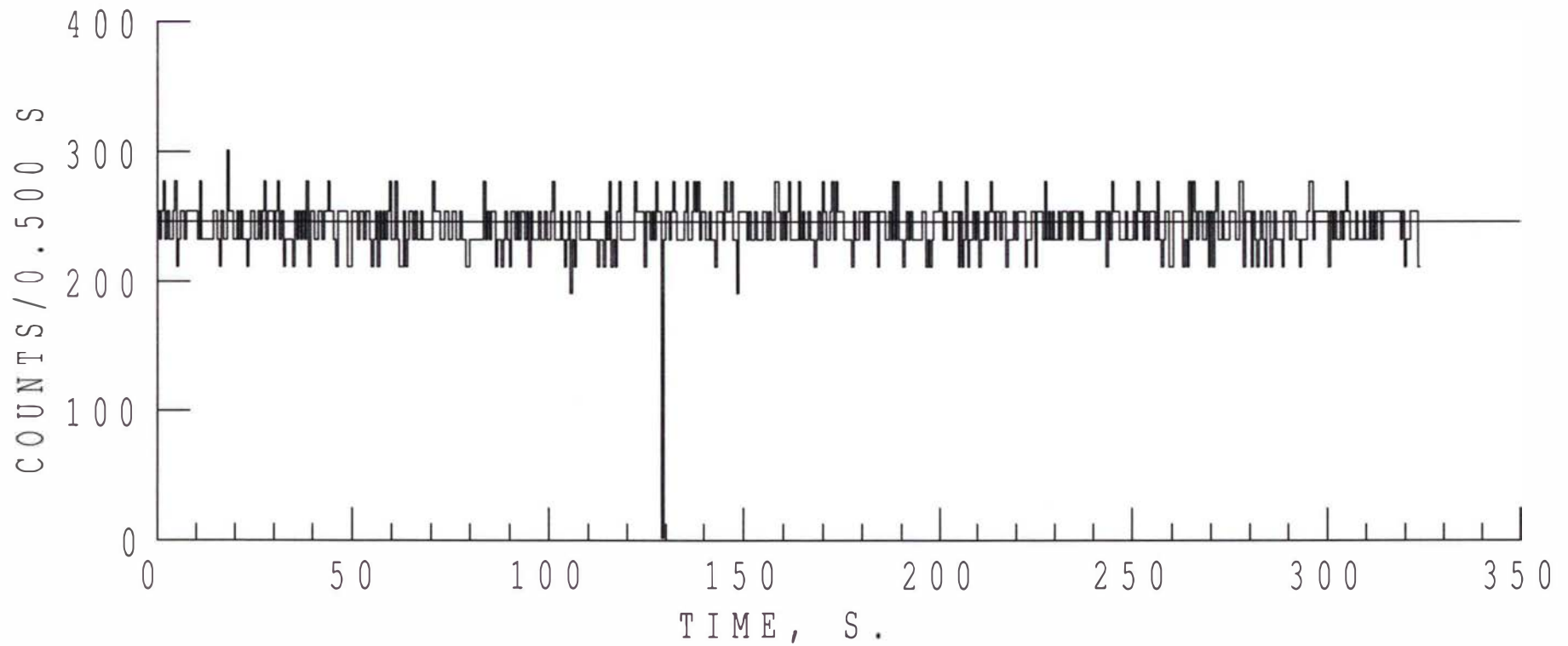
17 / 5 / 94

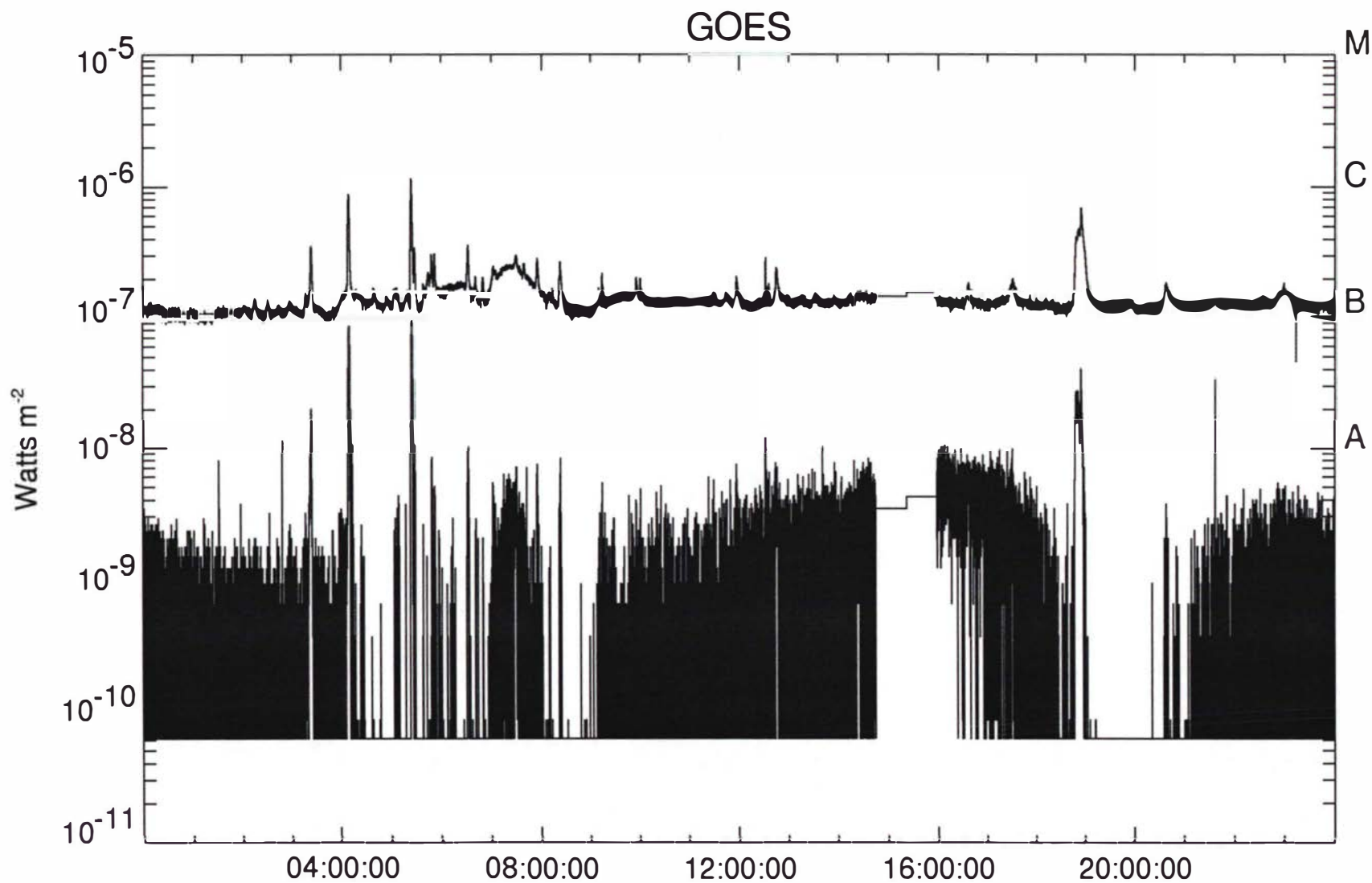
ULYSSES RT

12 / 5 / 94 78120.133 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





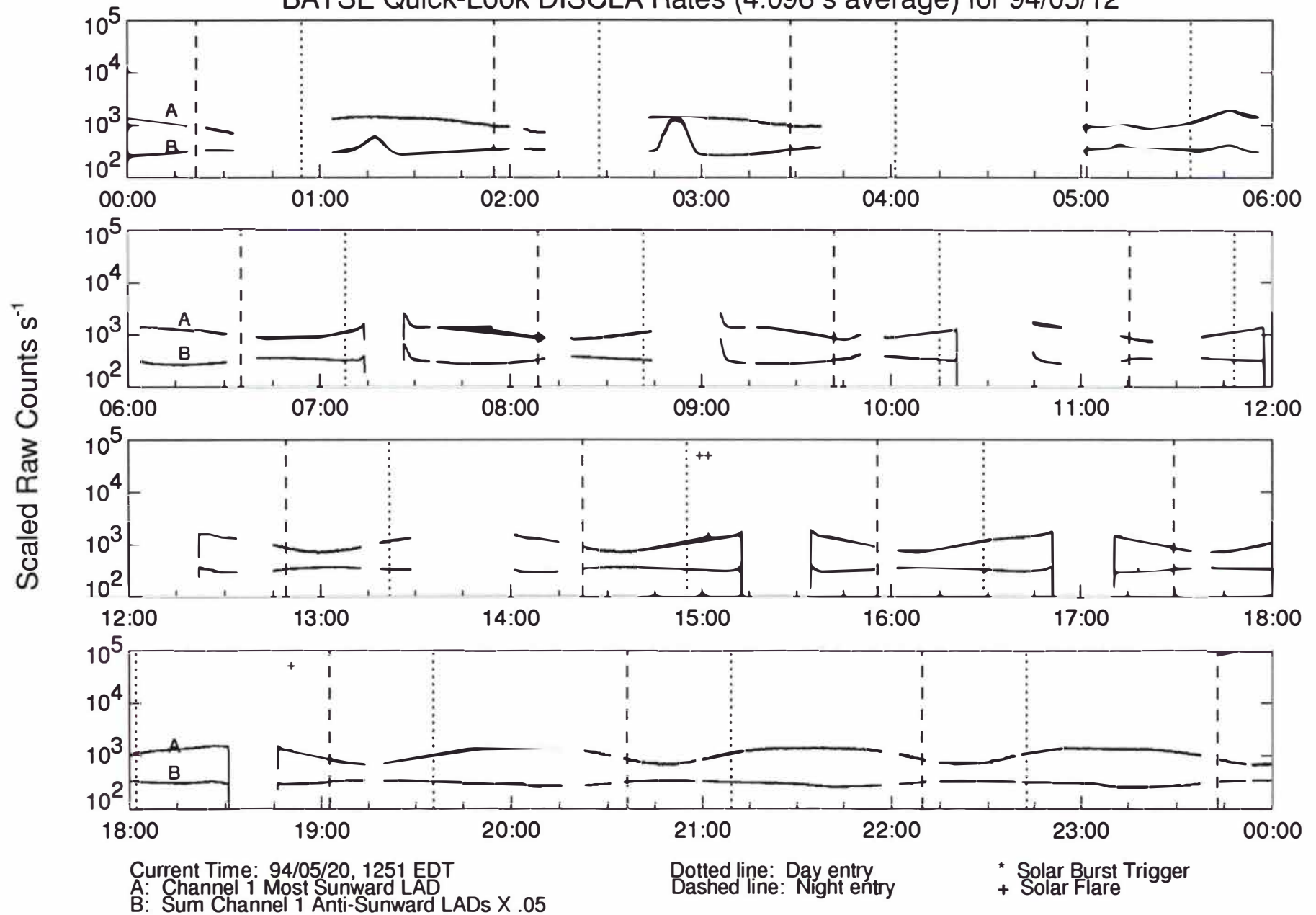
Data Start: 94/05/12, 0000:01

Plot created: 94/05/17, 1605

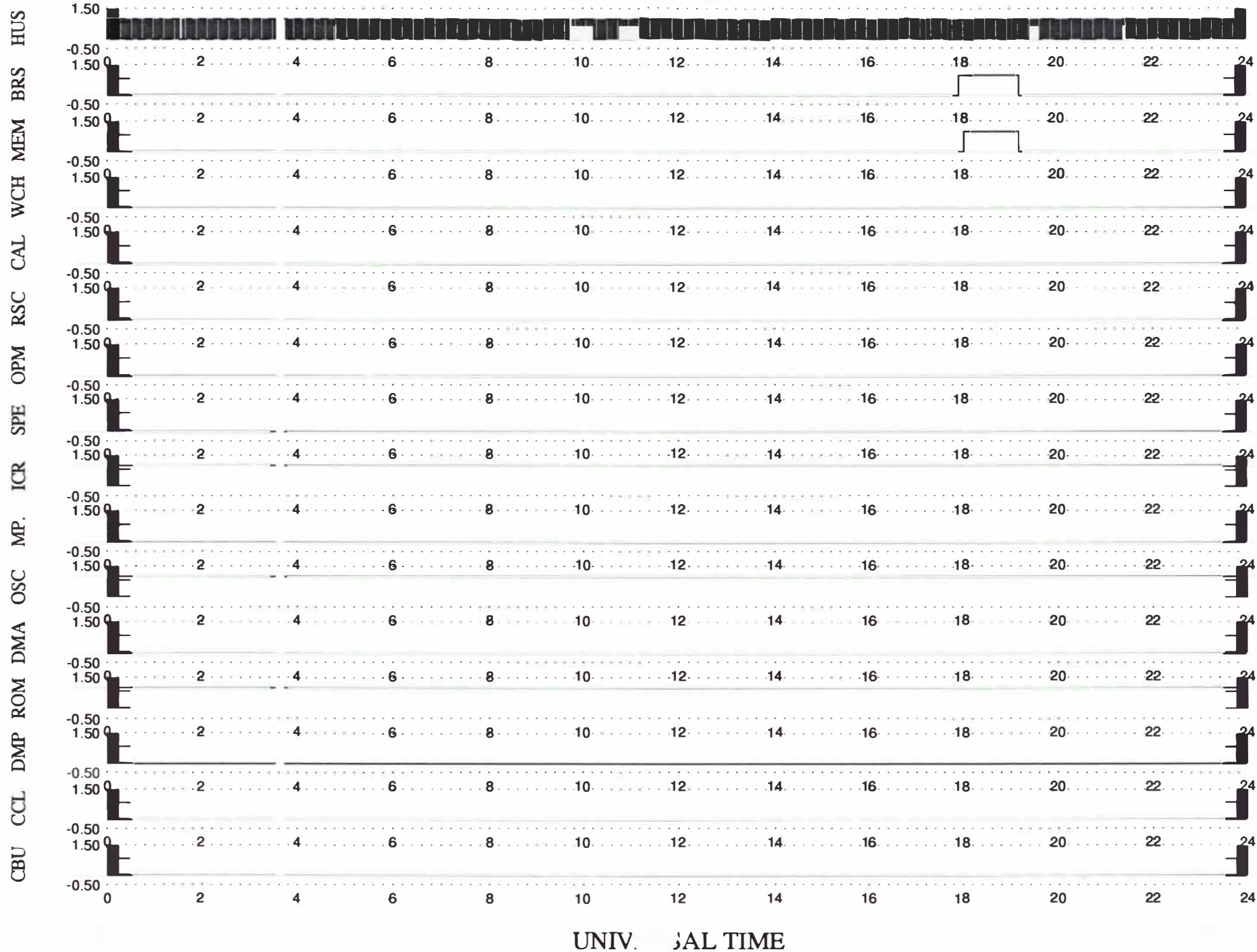
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

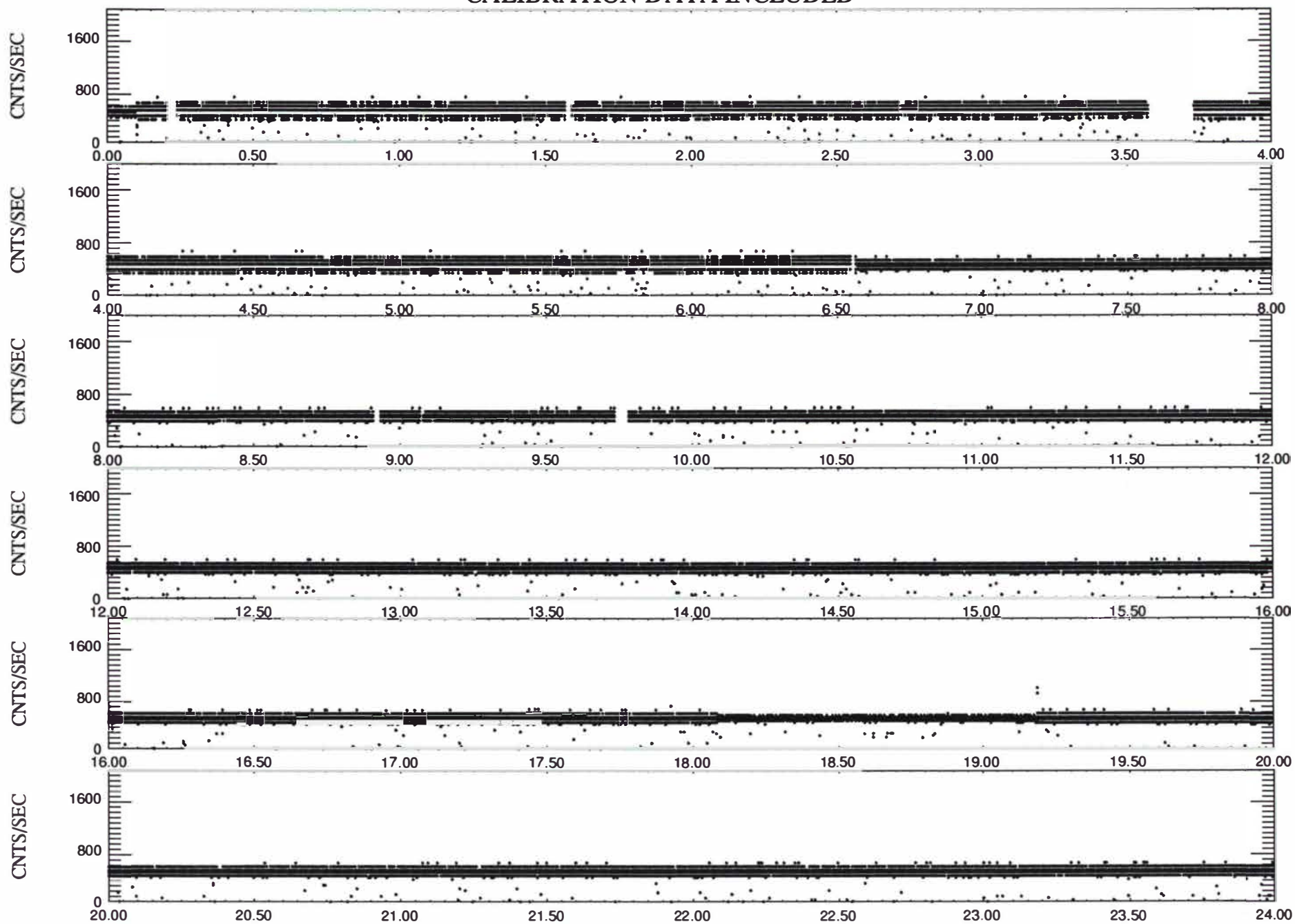
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/12



BURST NUMBER 12

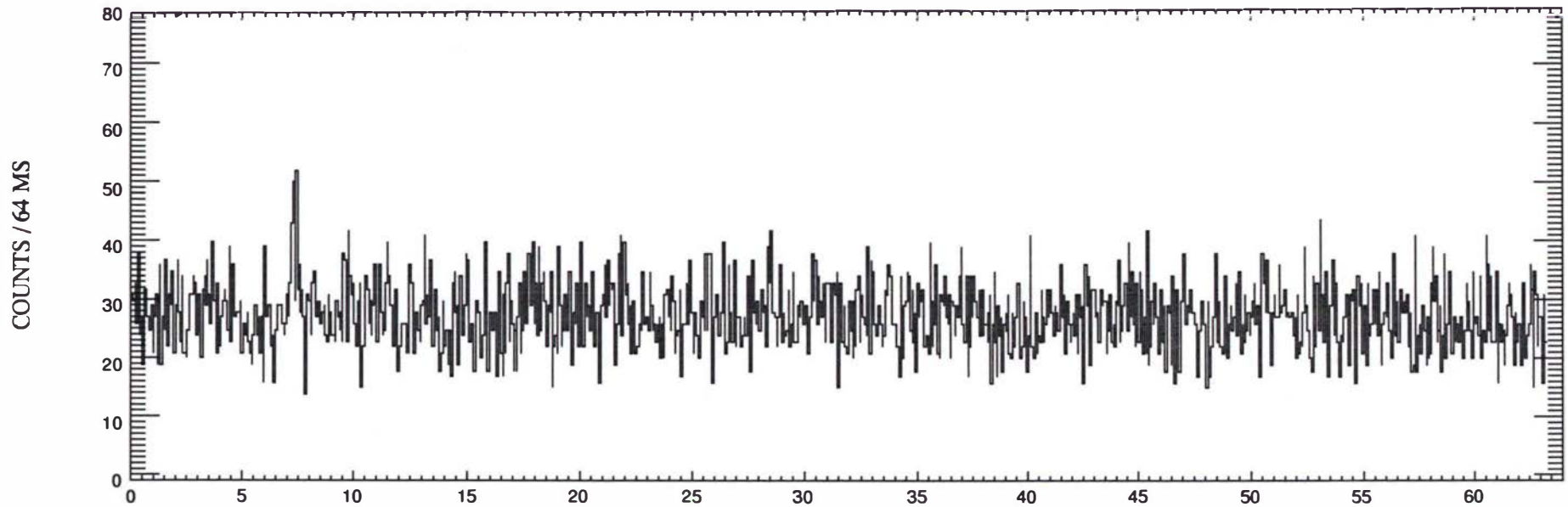


CALIBRATION DATA INCLUDED

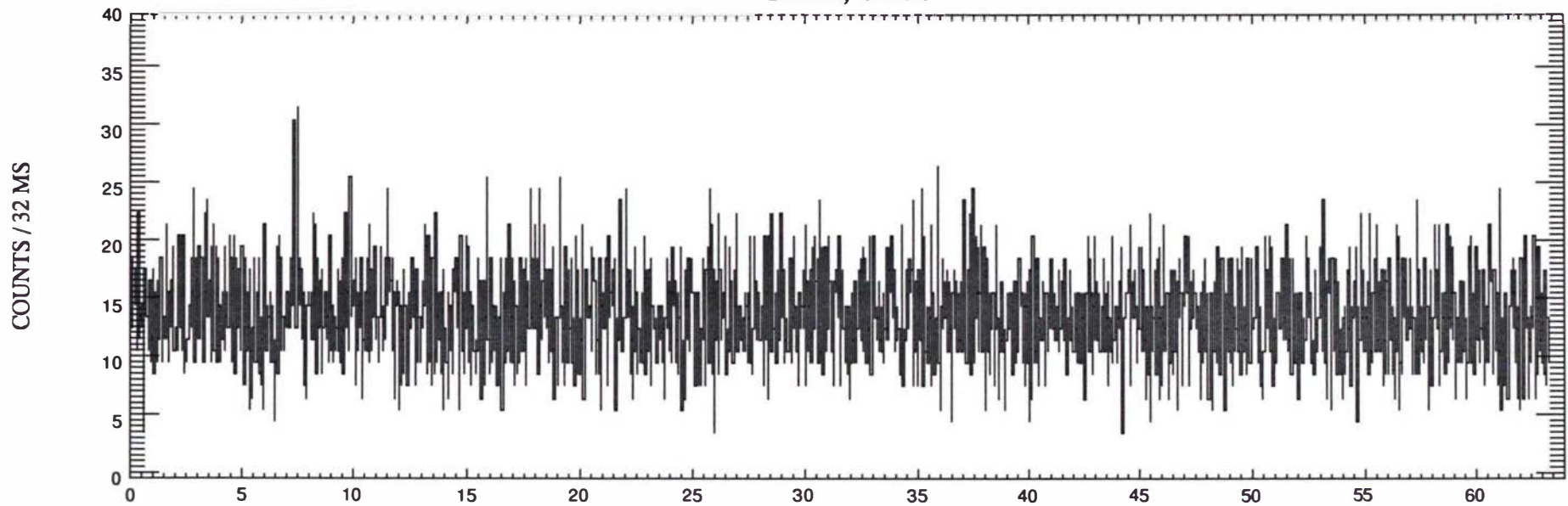


UNIV 3AL TIME

Burst Counter 12 at UT=17.923936411540 h=64526.171 s 17:55:26.171

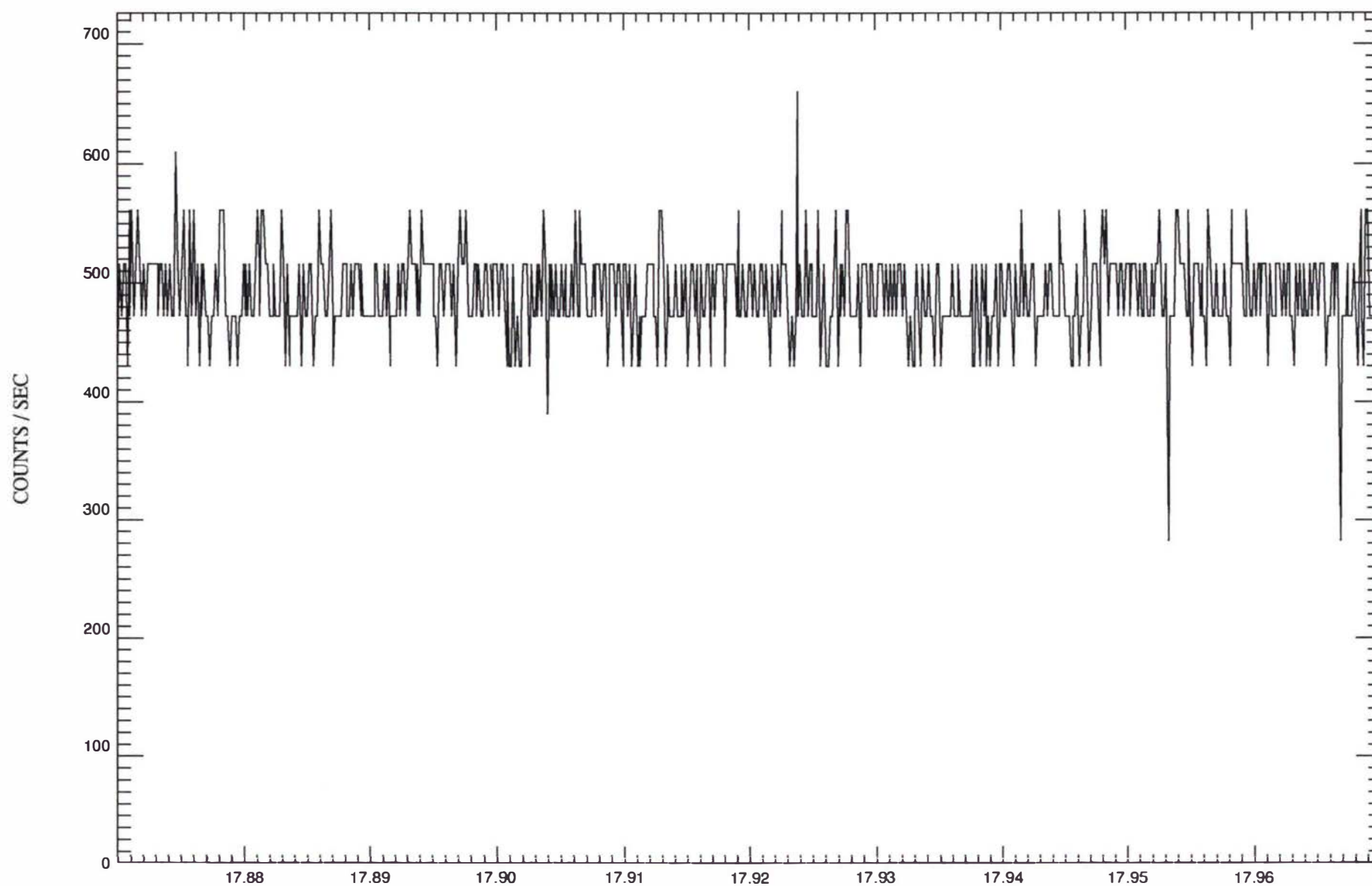


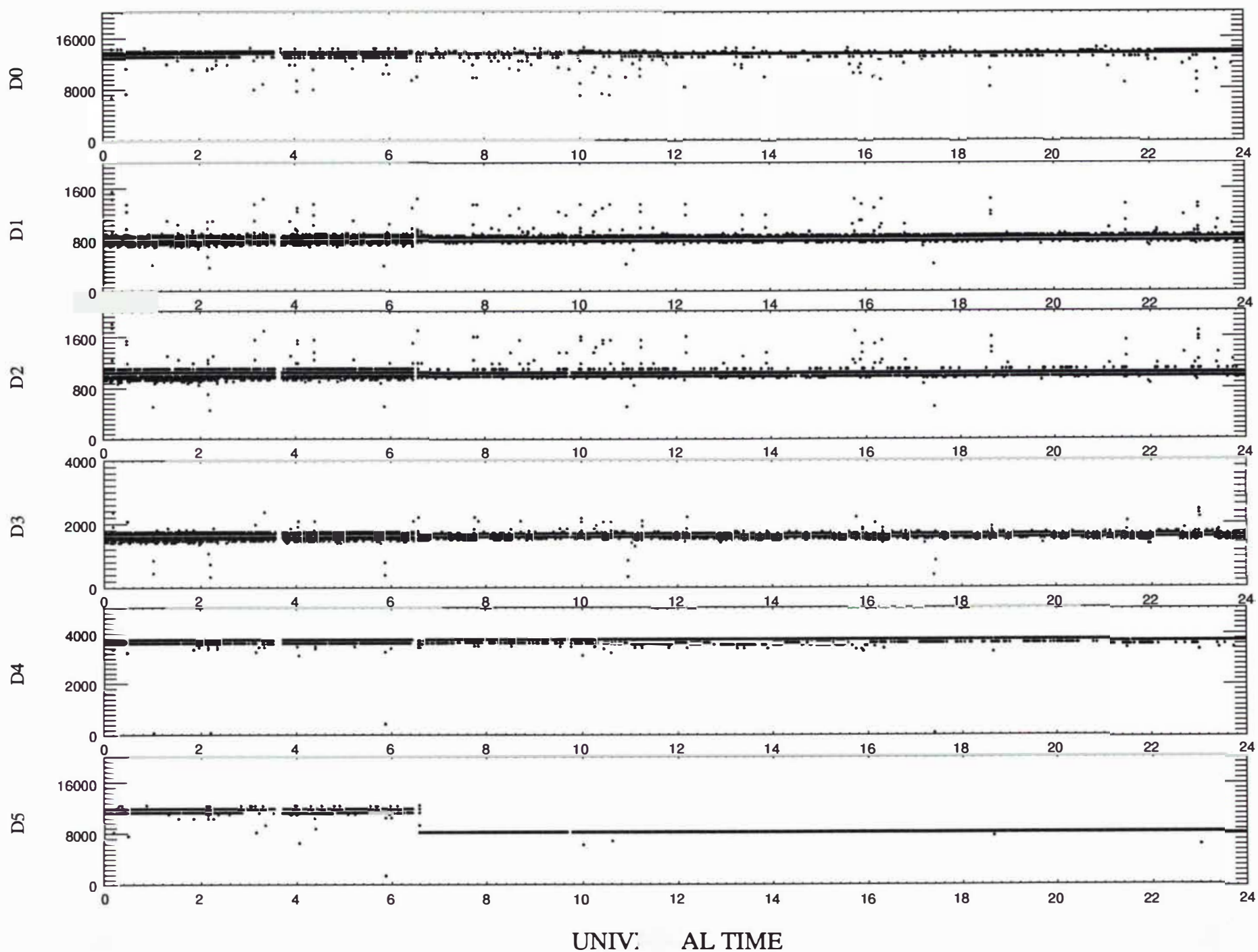
TIME, SECS

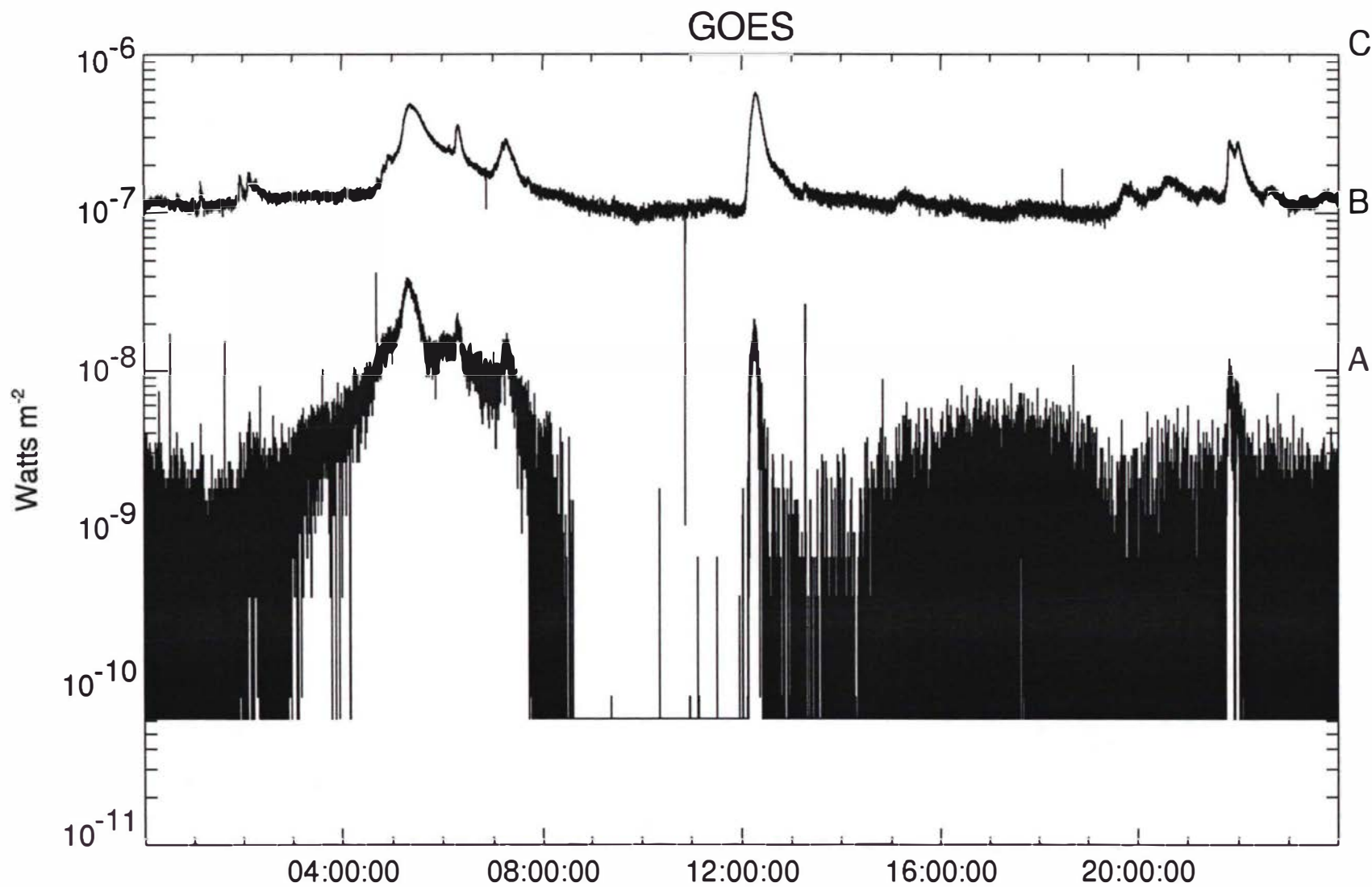


TIME, SECS

CALIBRATION DATA INCLUDED







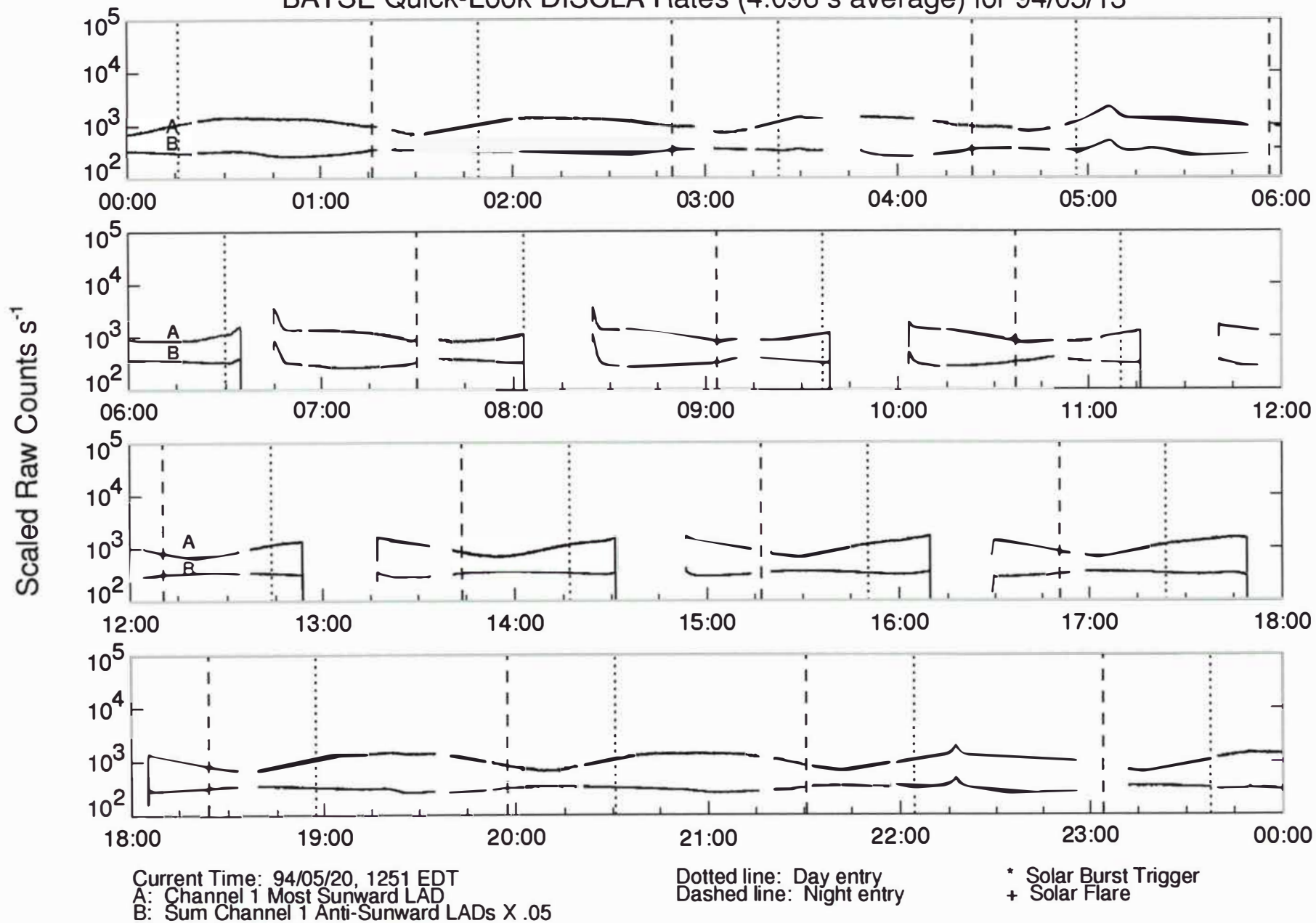
Data Start: 94/05/13, 0000:01

Plot created: 94/05/17, 1605

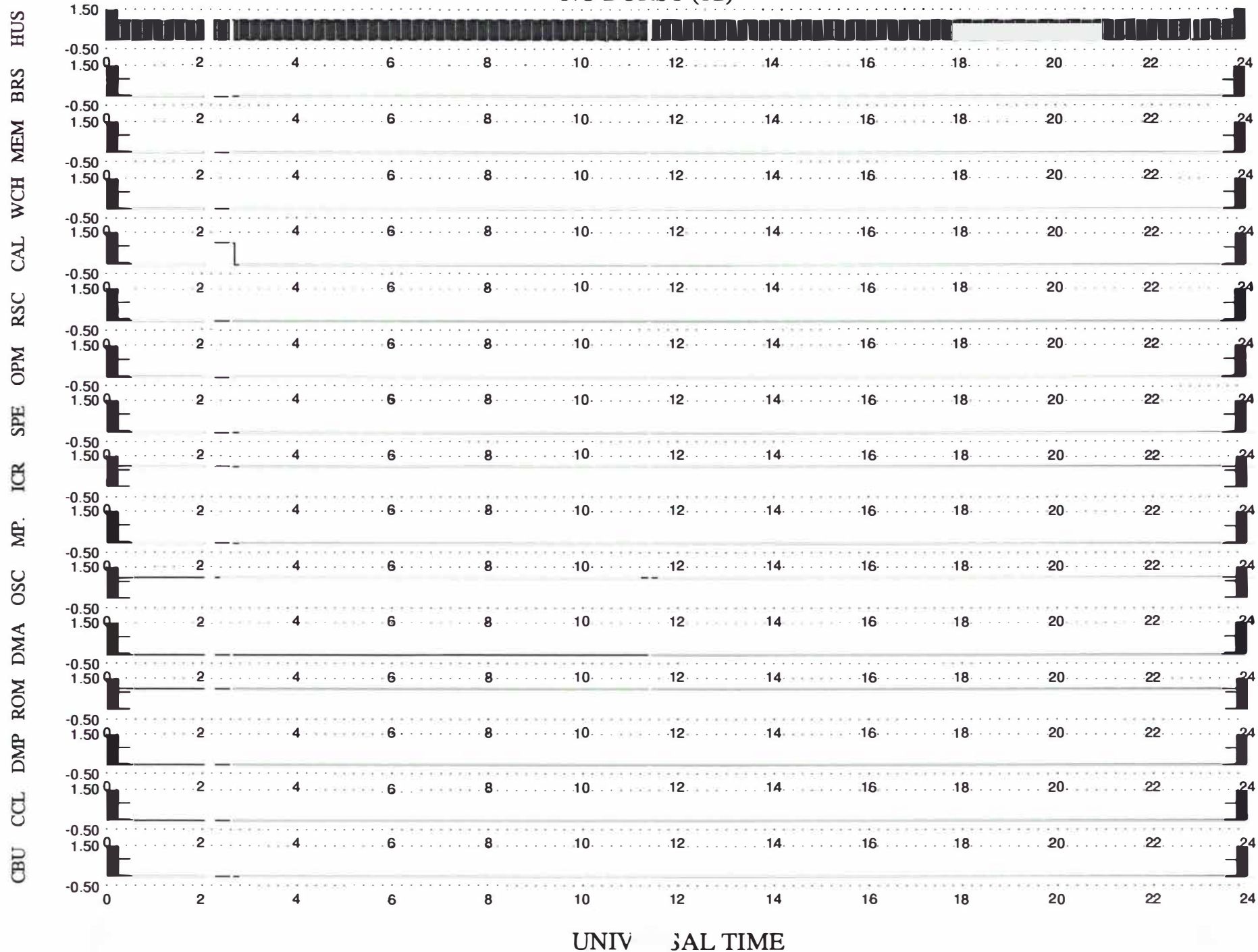
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

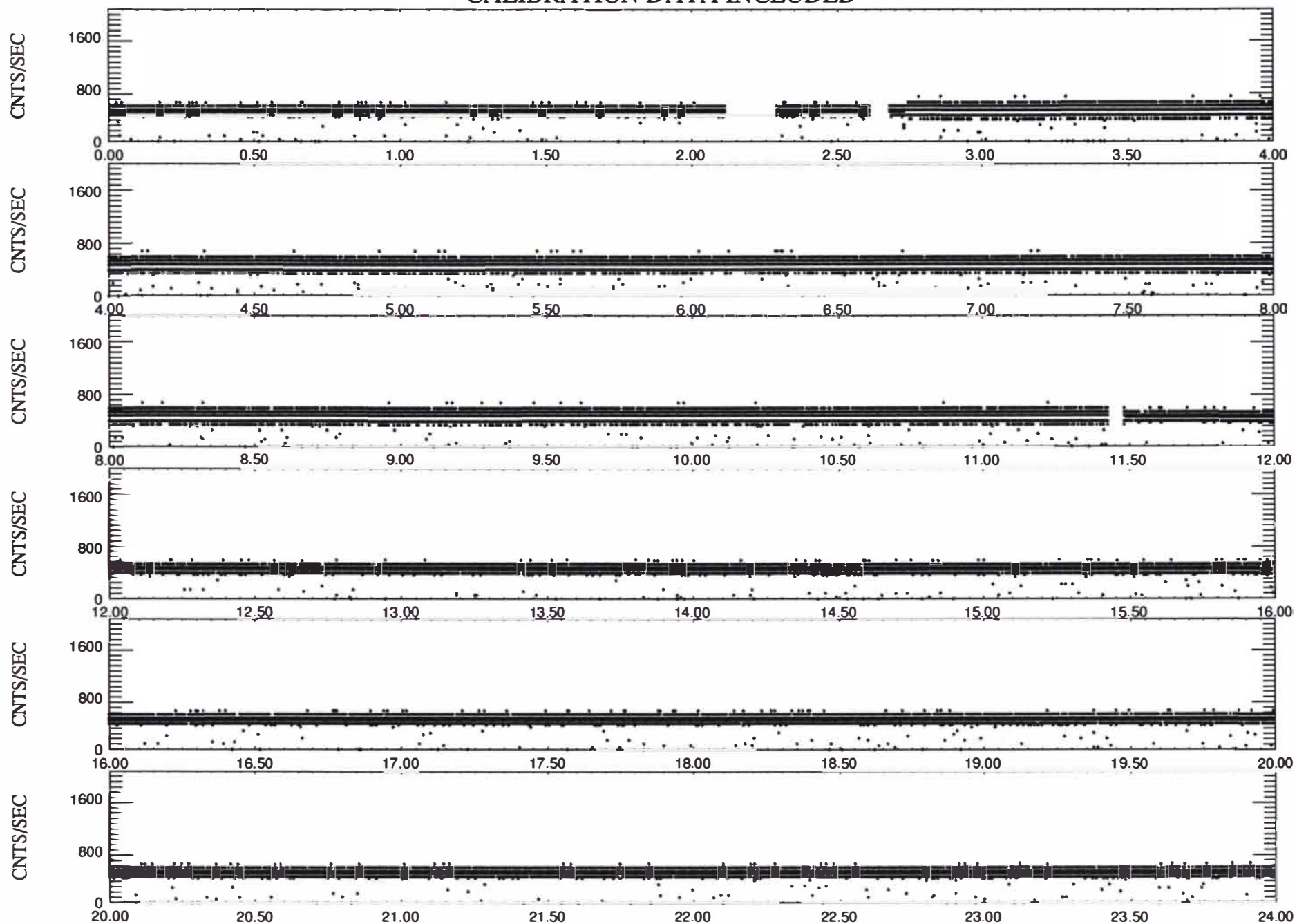
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/13



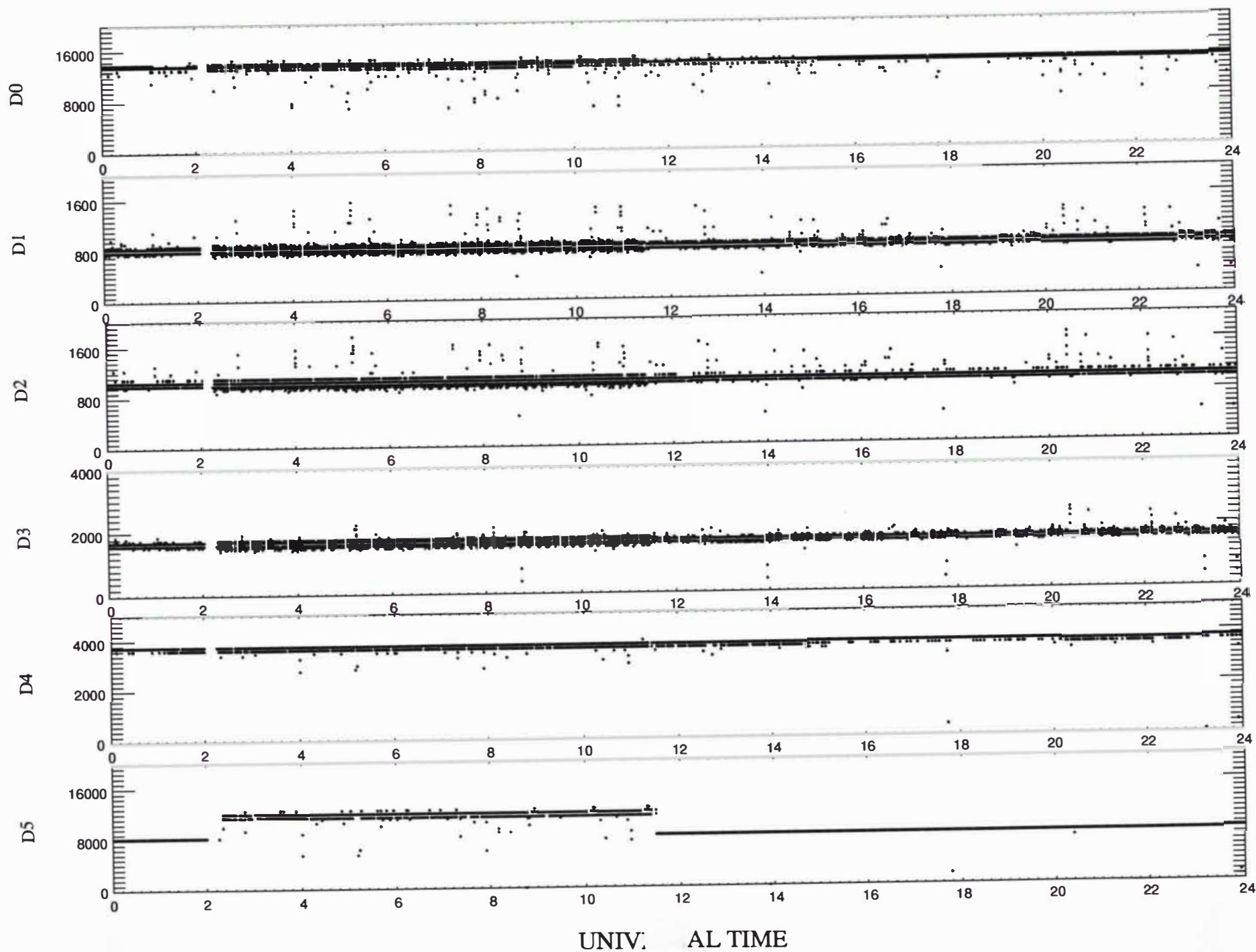
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From SHARIFF@ssl.msfc.nasa.gov Mon May 16 08:23 PDT 1994
Date: Mon, 16 May 1994 10:24:18 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2976
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2976
EVENT OF 1994 MAY 14 DAY OF YEAR=134
EVENT CROSSING TIME AT BATSE : 14865. S. OR 04:07:45.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 322.000 -6.000
BATSE PEAK COUNTING RATE: 8000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 5/ 94 IS:
RA= 119.532 DEC= -42.030 DIST= 2.970 AU
BATSE-ULYSSES DISTANCE = 444282222. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 52.22 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 907.96 SECS.
CROSSING TIME AT ULYSSES IS 15773. S. OR 04:22:52 +/- 267.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 5/ 94 IS:
RA= 21.137 DEC= 7.925 DIST= 2.165 AU
MARS-BATSE DISTANCE = 323934592. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.40 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -530.42 SECS.
CROSSING TIME AT MARS IS 14335. S. OR 03:58:54 +/- 155.38 SECONDS

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2976	940514	9486	14865	8000	322	-06

BATSE BURST TRIGGER

NO.:02976

TIME: TJD=9486 SECONDS=14865

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=150.8 AZIMUTH=272.9 ERROR= DEGREES

COMMENTS:

BURST, SINGLE SPIKE, LASTING ~0.5 SECONDS. VISIBLE ABOVE 300 KEV.

17 / 5 / 94

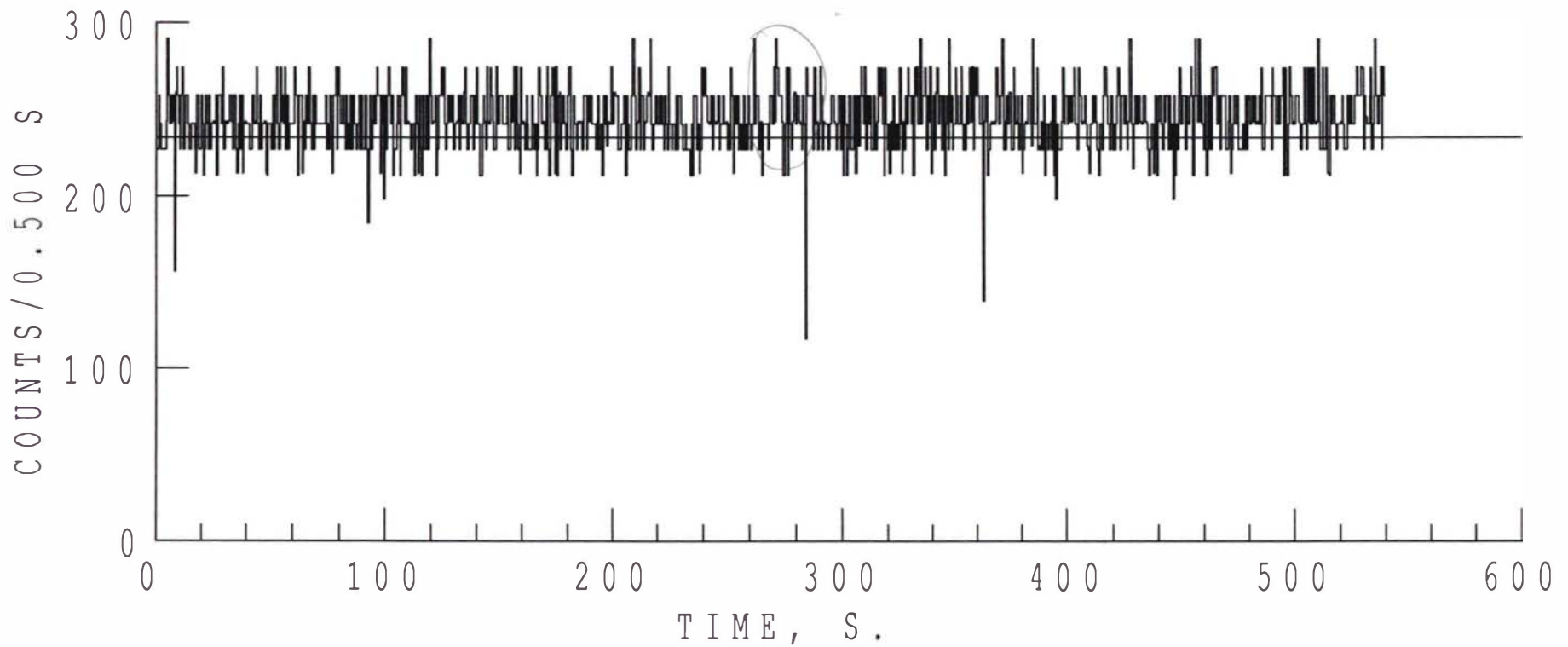
ULYSSES RT

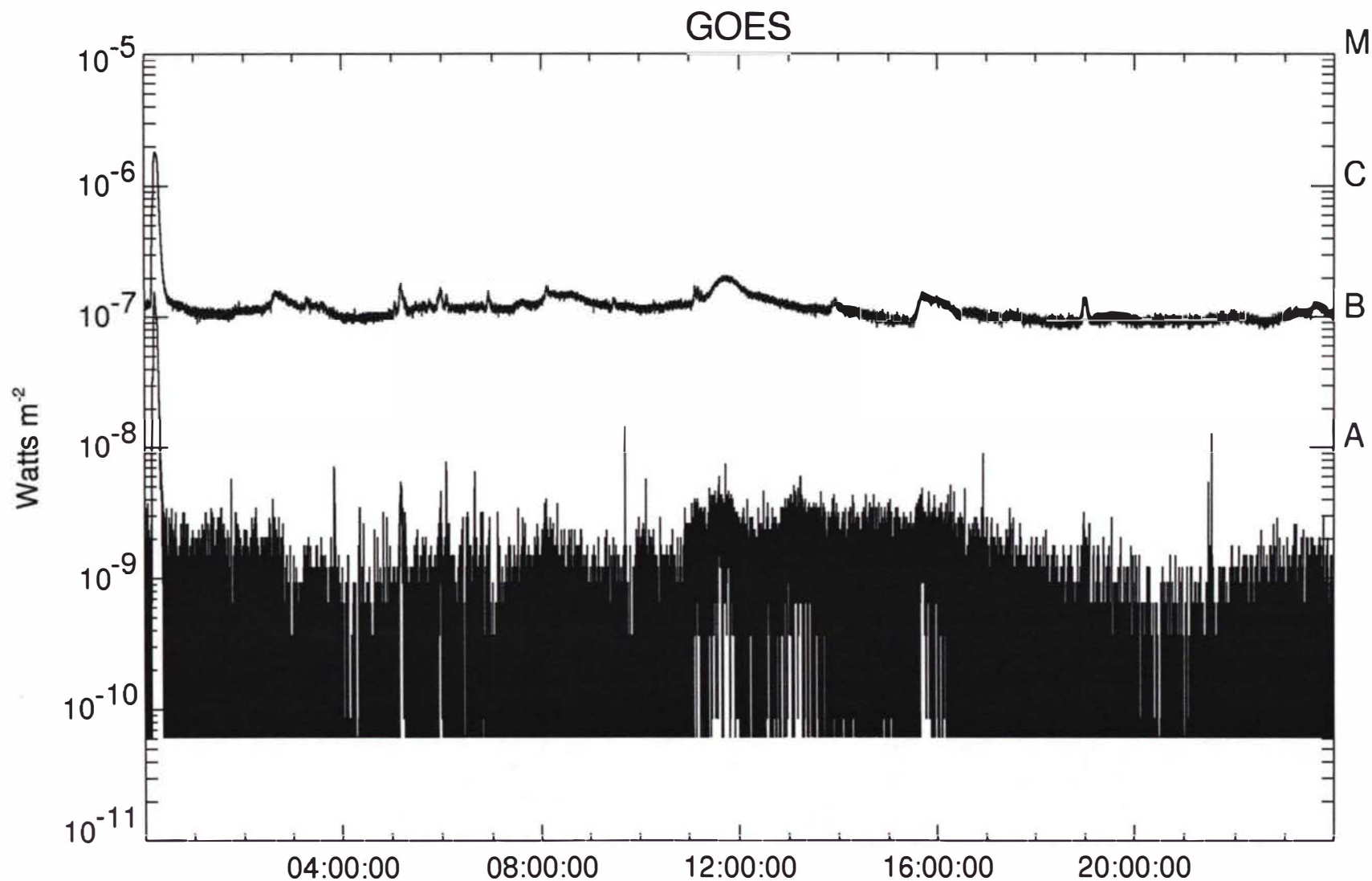
14 / 5 / 94 15516.034 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





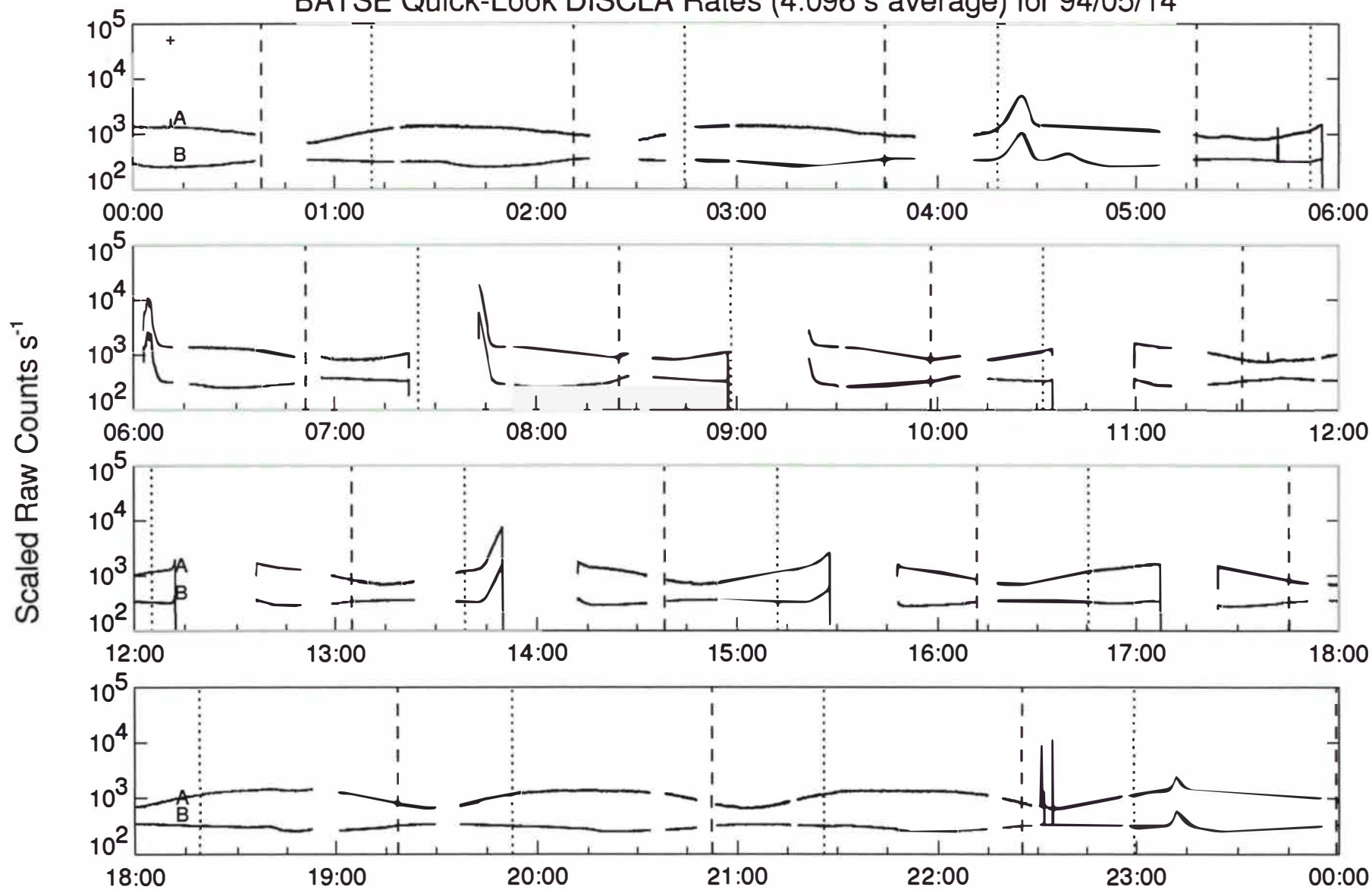
Data Start: 94/05/14, 0000:01

Plot created: 94/05/17, 1605

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/14

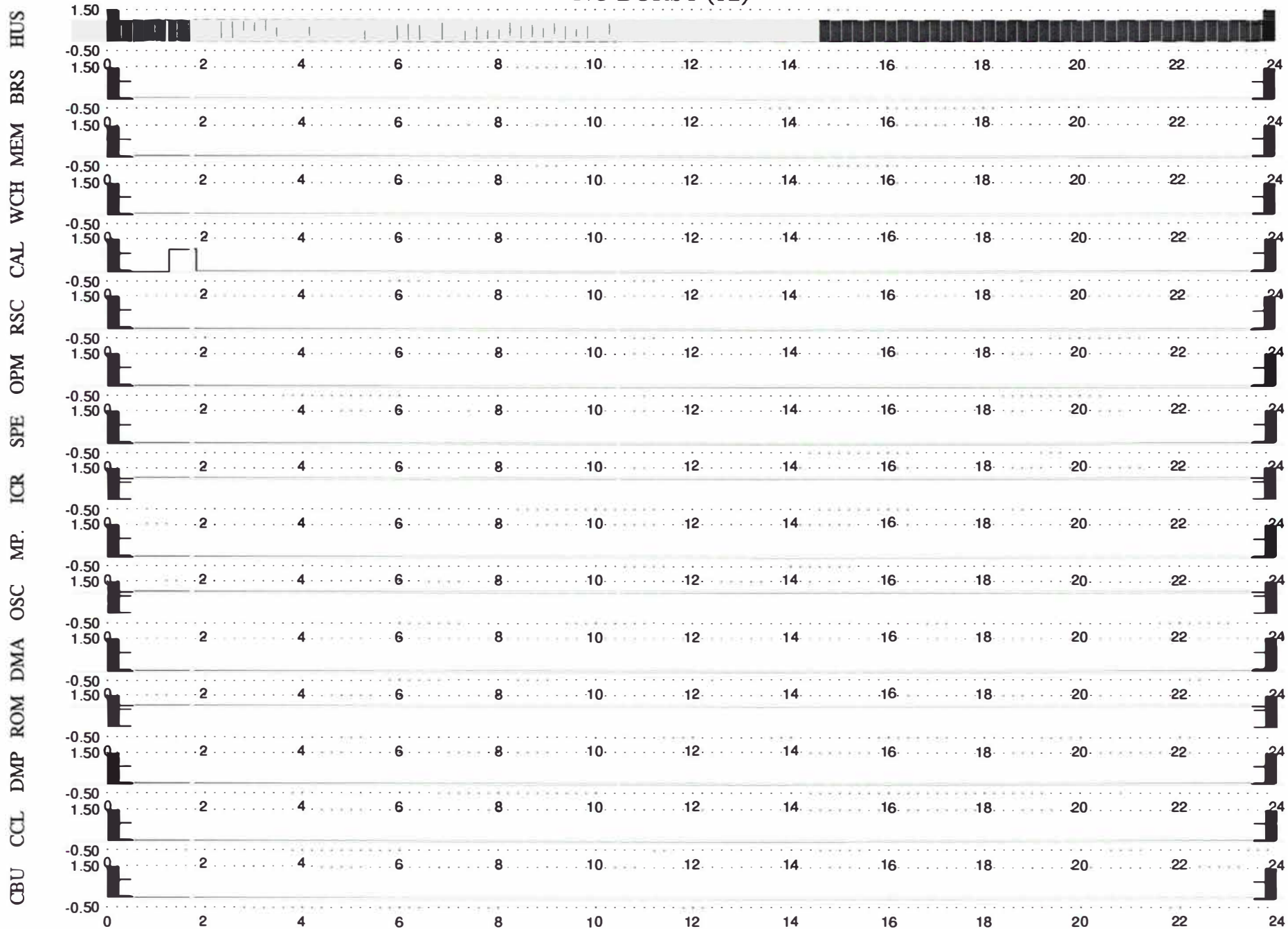


Current Time: 94/05/20, 1251 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

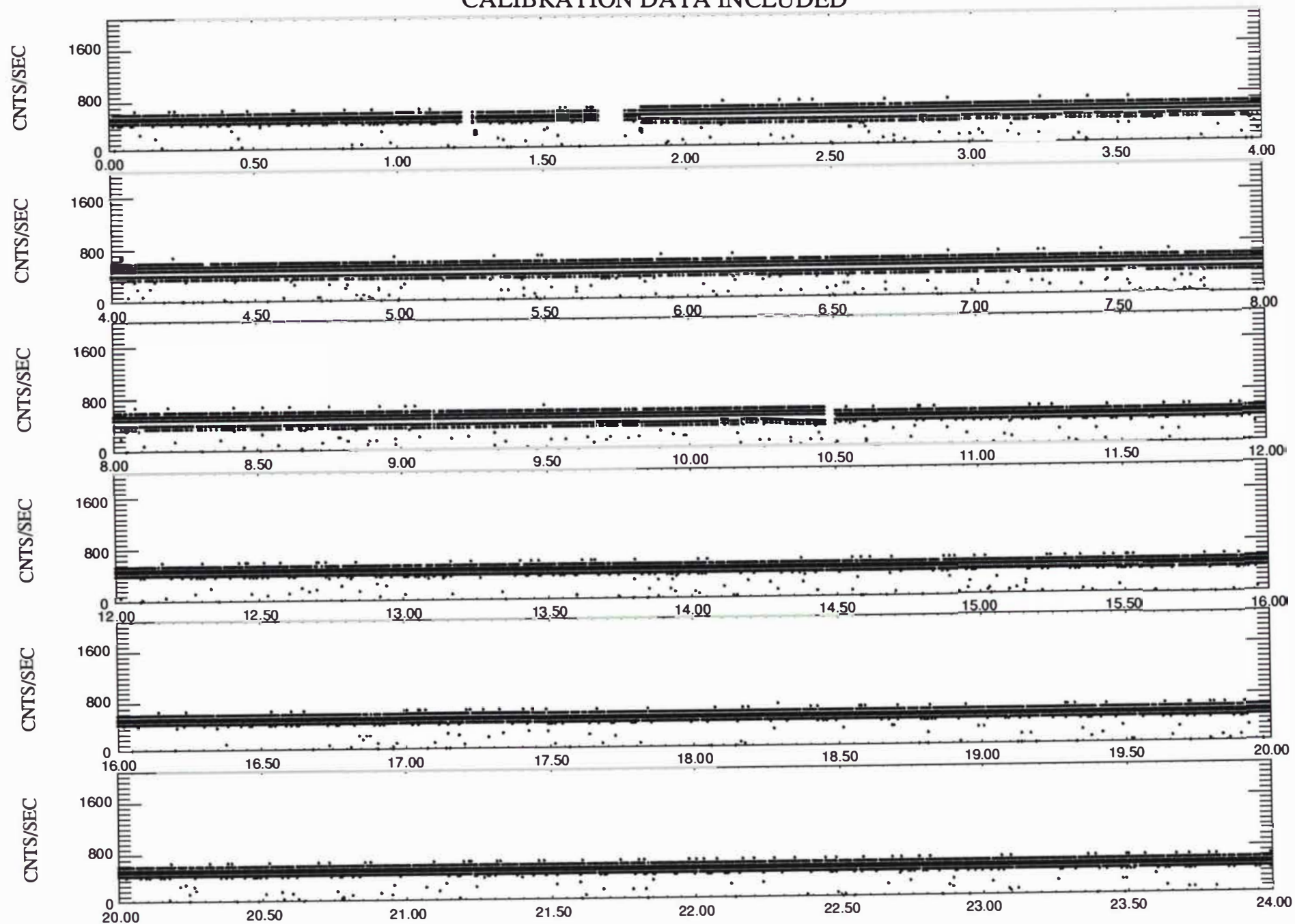
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

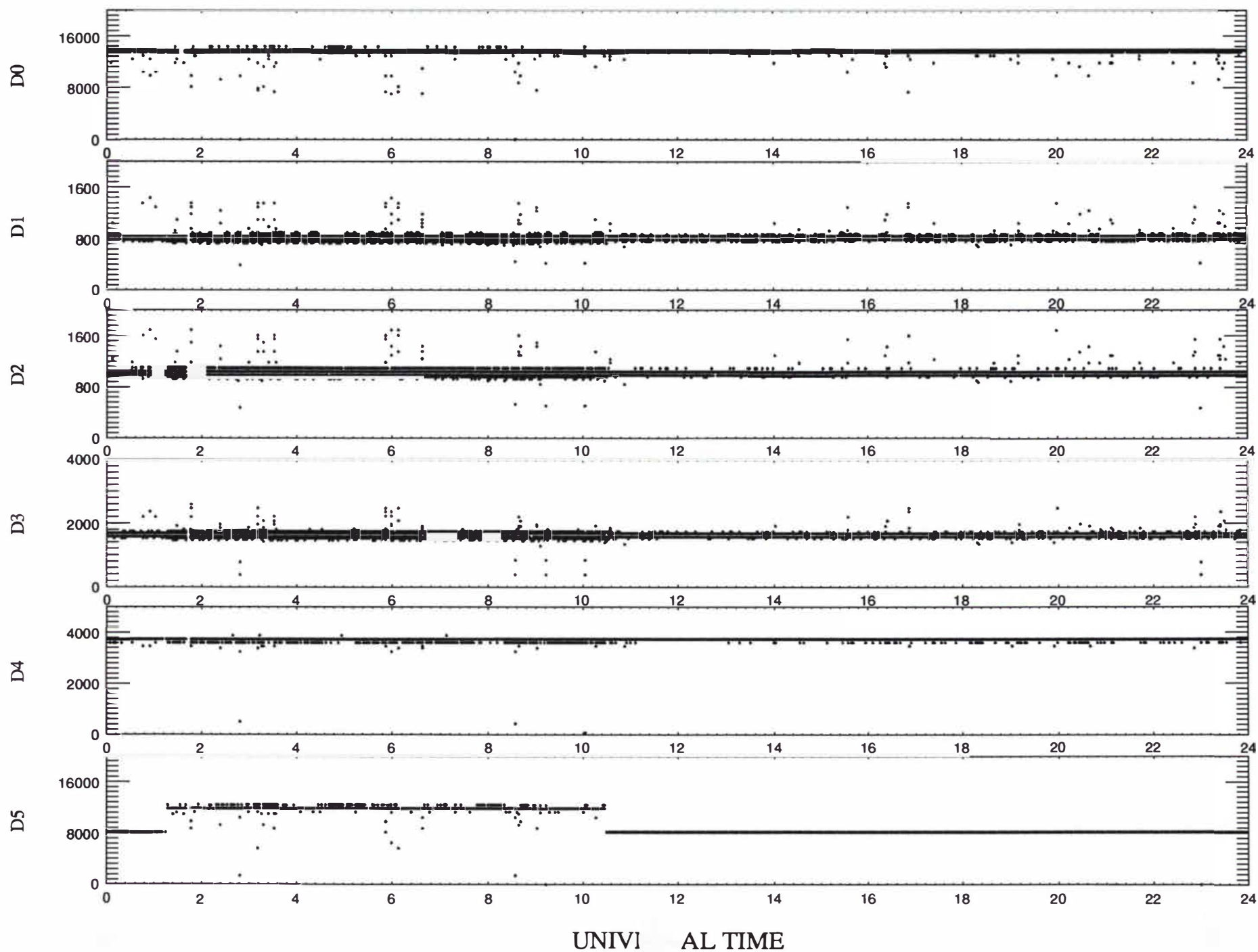
UNIV ;AL TIME



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From KOSHUT@fender.msfc.nasa.gov Tue May 17 07:23 PDT 1994
Date: Tue, 17 May 1994 9:25:10 -0500 (CDT)
From: KOSHUT@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2977
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2977
EVENT OF 1994 MAY 15 DAY OF YEAR=135
EVENT CROSSING TIME AT BATSE : 7330. S. OR 02:02:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 345.000 -44.000
BATSE PEAK COUNTING RATE: 14000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 5/ 94 IS:
RA= 119.547 DEC= -41.901 DIST= 2.972 AU
BATSE-ULYSSES DISTANCE = 444677346. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -131.04 SECS.
CROSSING TIME AT ULYSSES IS 7199. S. OR 01:59:58 +/- 304.52 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 5/ 94 IS:
RA= 21.846 DEC= 8.212 DIST= 2.163 AU
MARS-BATSE DISTANCE = 323582592. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=118.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -507.85 SECS.
CROSSING TIME AT MARS IS 6822. S. OR 01:53:42 +/- 157.64 SECONDS

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2977	940515	9487	07330	14000	345	-44

NO.: 02977 BATSE BURST TRIGGER

TIME: TJD=9487 SECONDS=07330

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=166 AZIMUTH=97 ERROR= DEGREES

COMMENTS:

SHORT BURST (DURATION ~ 0.4 SECONDS) WITH EMISSION OBSERVED ABOVE
300 KEV. TIME HISTORY CONSISTS OF TWO PULSES, WITH SUBSTRUCTURE.

17 / 5 / 94

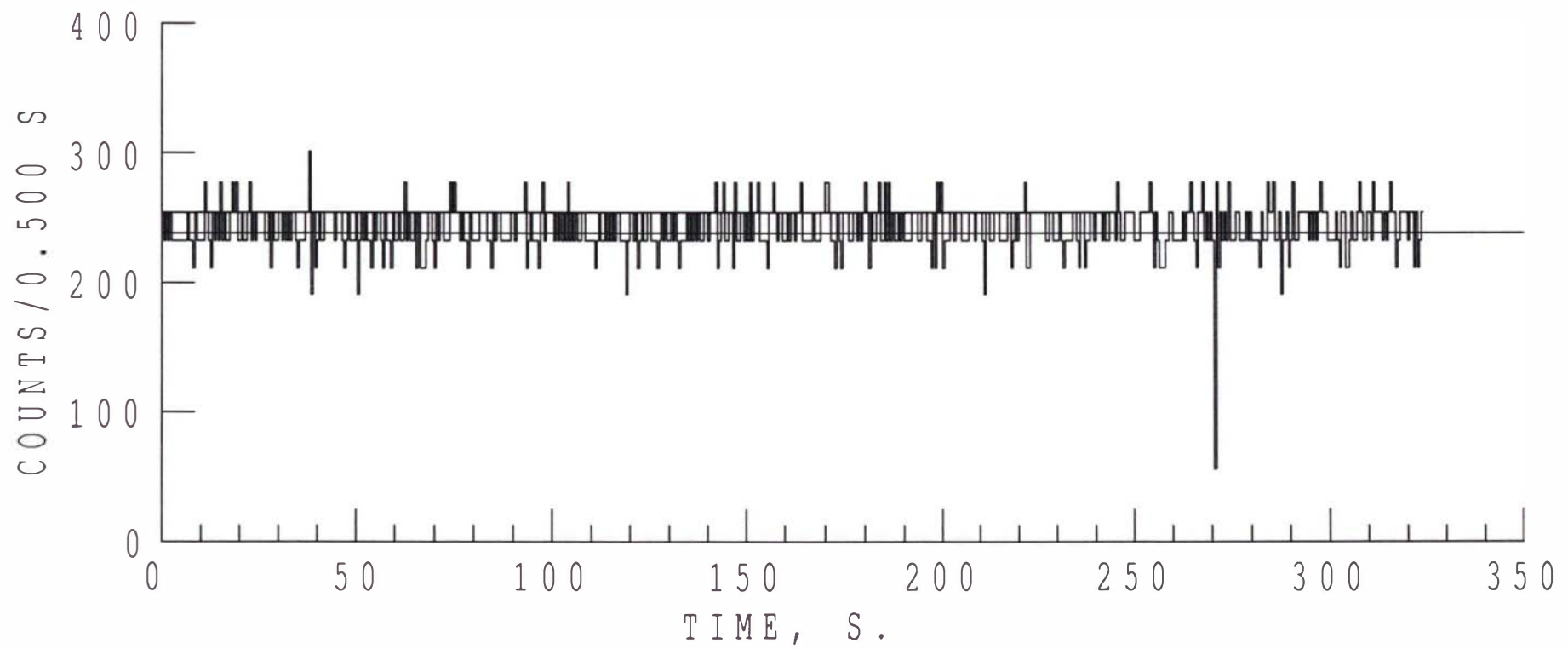
ULYSSES RT

15 / 5 / 94 6660.439 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From KOSHUT@fender.msfc.nasa.gov Tue May 17 08:16 PDT 1994
Date: Tue, 17 May 1994 10:18:01 -0500 (CDT)
From: KOSHUT@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2978
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2978
EVENT OF 1994 MAY 15 DAY OF YEAR=135
EVENT CROSSING TIME AT BATSE : 62563. S. OR 17:22:43.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 114.000 79.000
BATSE PEAK COUNTING RATE: 24000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 5/ 94 IS:
RA= 119.562 DEC= -41.813 DIST= 2.974 AU
BATSE-ULYSSES DISTANCE = 444955338. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 59.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 761.27 SECS.
CROSSING TIME AT ULYSSES IS 63324. S. OR 17:35:24 +/- 282.77 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 5/ 94 IS:
RA= 21.846 DEC= 8.212 DIST= 2.163 AU
MARS-BATSE DISTANCE = 323582592. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 97.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -143.68 SECS.
CROSSING TIME AT MARS IS 62419. S. OR 17:20:19 +/- 183.54 SECONDS

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2978	940515	9487	62563	24000	114	+79

BATSE BURST TRIGGER

NO.: 2978

TIME: TJD=9487 SECONDS=62563

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=51. AZIMUTH=313 ERROR= DEGREES

COMMENTS:

SHORT BURST (DURATION ~ 0.2 SECONDS) WITH EMISSION OBSERVED ABOVE 300 KEV. TIME HISTORY IS A SINGLE SPIKE WITH LITTLE OR NO SUBSTRUCTURE.

17 / 5 / 94

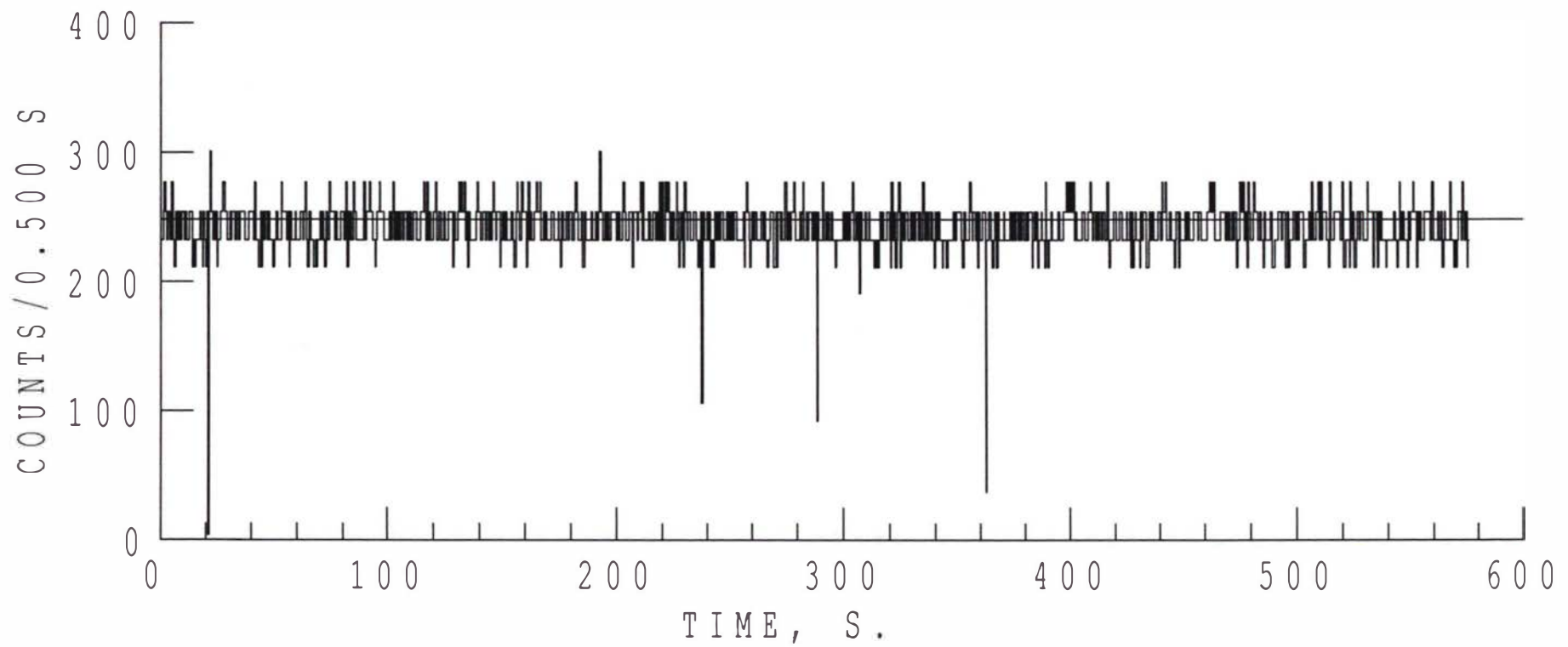
ULYSSES RT

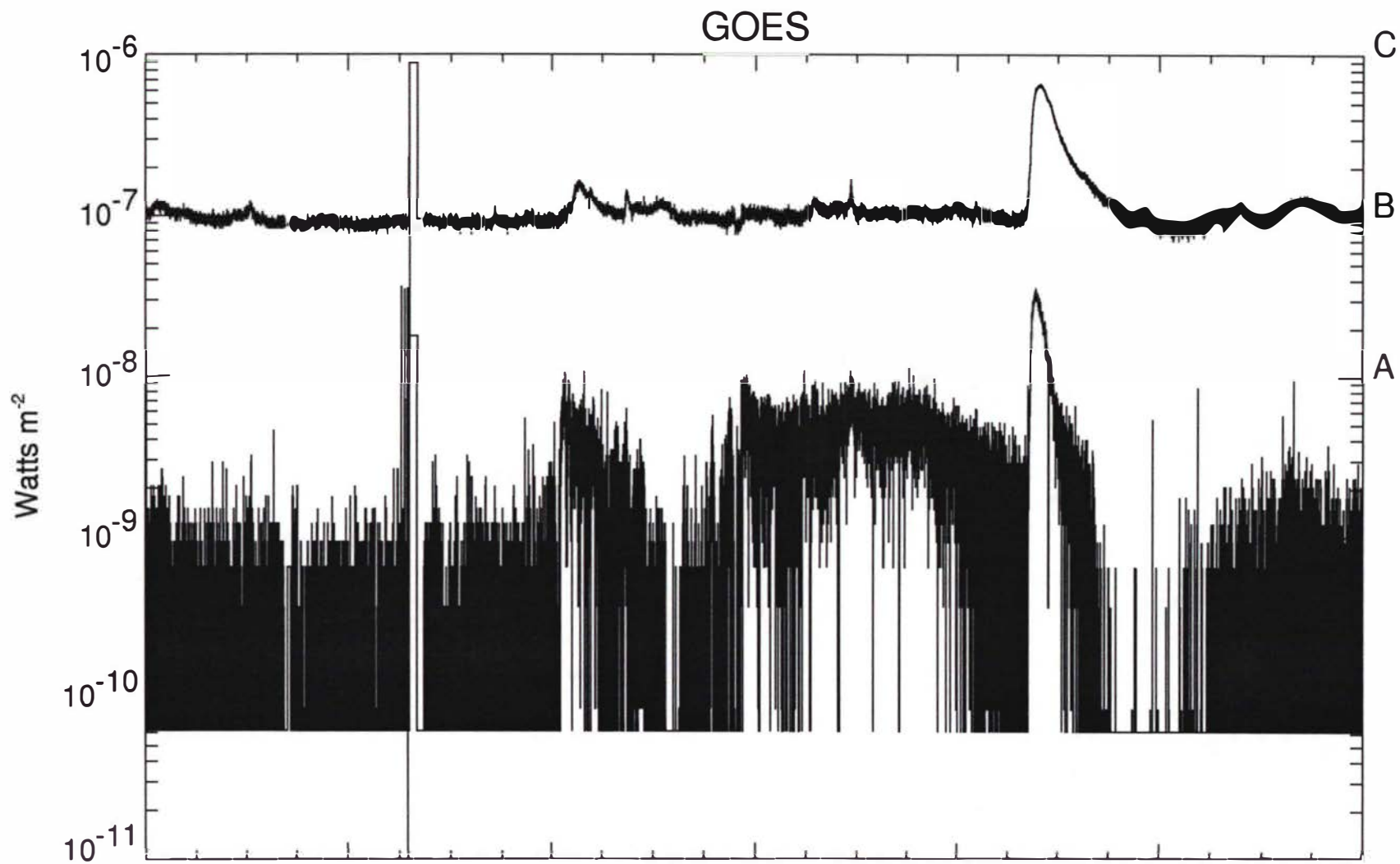
15 / 5 / 94 63036.285 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





Data Start: 94/05/15, 0000:00

Plot created: 94/05/17, 1606

Channel

1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

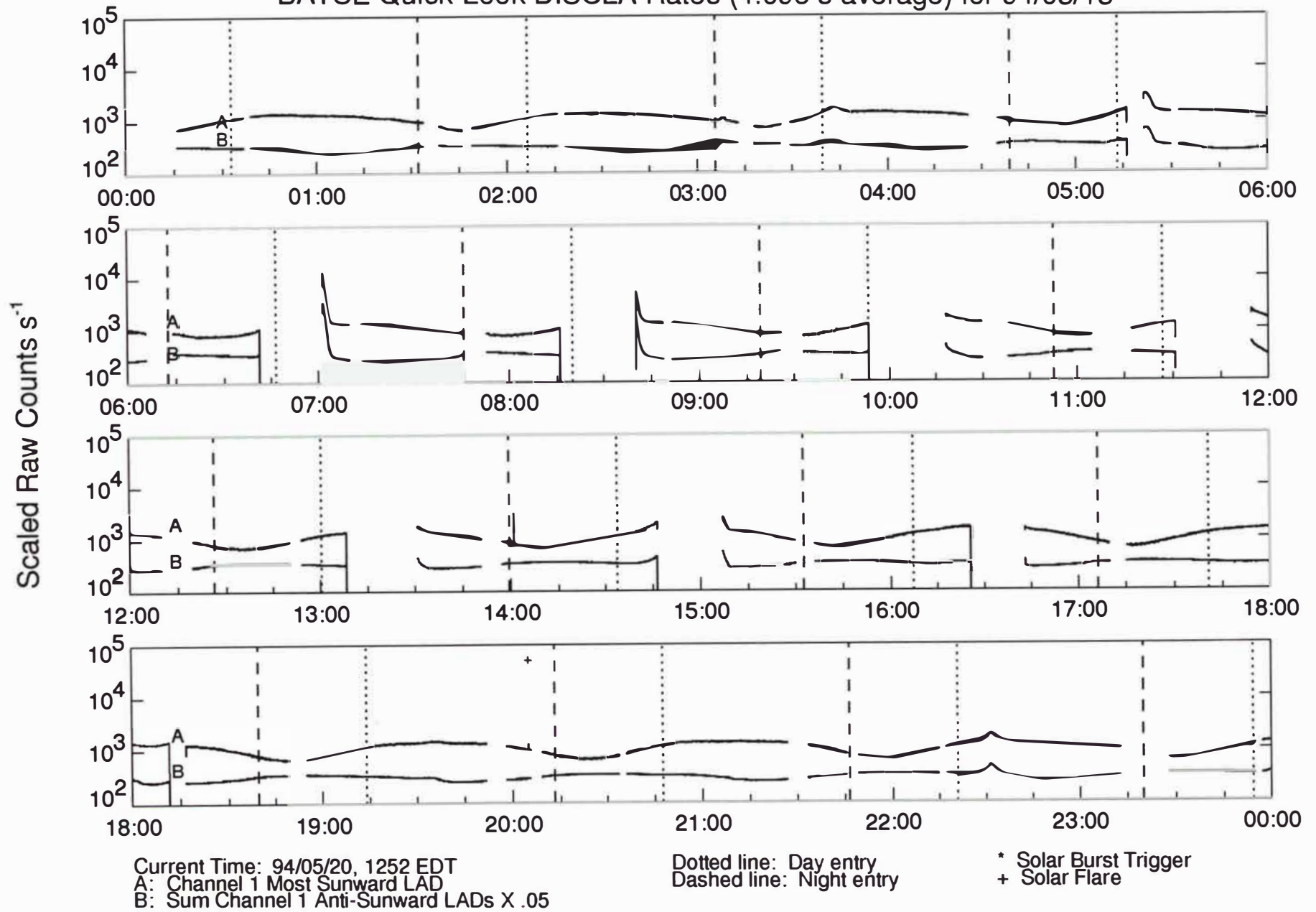
Background not subtracted

up

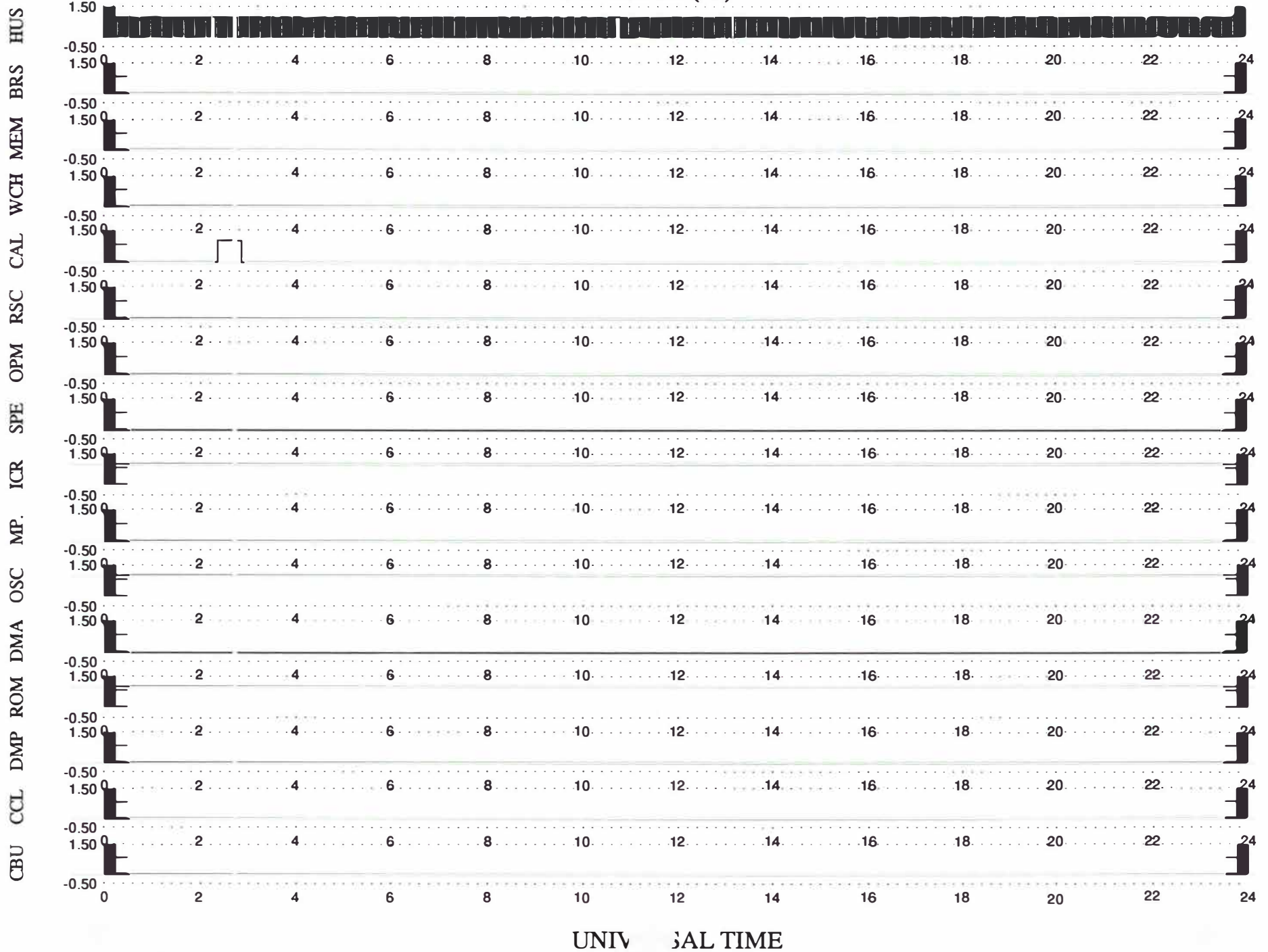


down

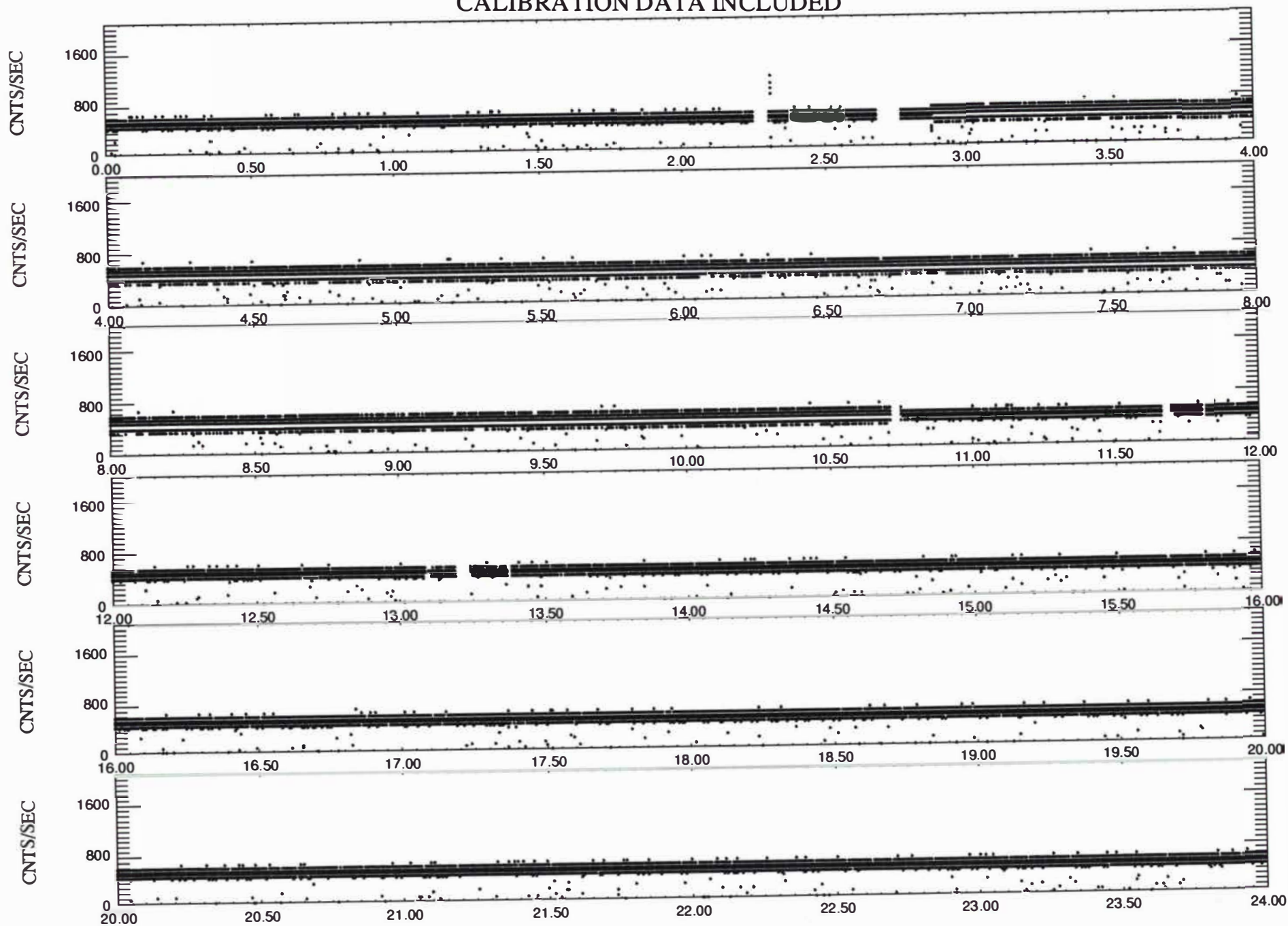
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/15



NO BURST (12)

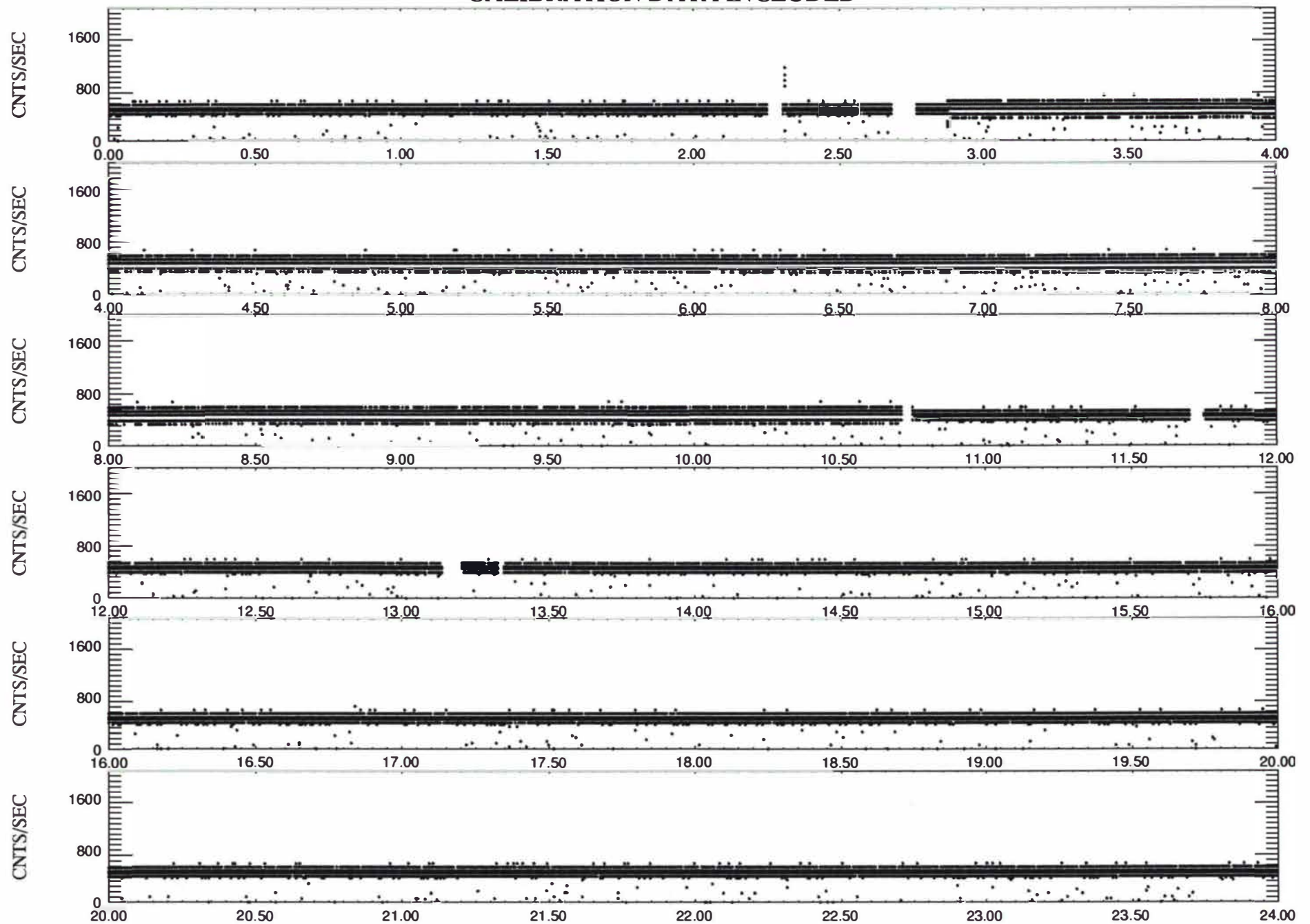


CALIBRATION DATA INCLUDED



UNIV CAL TIME

CALIBRATION DATA INCLUDED



UNIVERSAL TIME

From HAGEDON@ssl.msfc.nasa.gov Tue May 17 13:58 PDT 1994
Date: Tue, 17 May 1994 15:59:04 -0500 (CDT)
From: HAGEDON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2979

TIME: TJD=9488 SECONDS=16597

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT.

From HAGEDON@fender.msfc.nasa.gov Tue May 17 14:08 PDT 1994
Date: Tue, 17 May 1994 16:10:08 -0500 (CDT)
From: HAGEDON@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2980
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2980
EVENT OF 1994 MAY 16 DAY OF YEAR=136
EVENT CROSSING TIME AT BATSE : 29533. S. OR 08:12:13.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 176.000 13.000
BATSE PEAK COUNTING RATE: 3200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 5/ 94 IS:
RA= 119.578 DEC= -41.728 DIST= 2.976 AU
BATSE-ULYSSES DISTANCE = 445223592. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -374.91 SECS.
CROSSING TIME AT ULYSSES IS 29158. S. OR 08:05:58 +/- 293.79 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 5/ 94 IS:
RA= 22.556 DEC= 8.498 DIST= 2.161 AU
MARS-BATSE DISTANCE = 323228704. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 34.03 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 893.55 SECS.
CROSSING TIME AT MARS IS 30427. S. OR 08:27:06 +/- 118.32 SECONDS

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2980	940516	9488	29533	3200	176	+13

BATSE BURST TRIGGER

NO.: 2980

TIME: TJD=9488 SECONDS=29533

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=26.2 AZIMUTH=171.6 ERROR= DEGREES

COMMENTS:

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

17 / 5 / 94

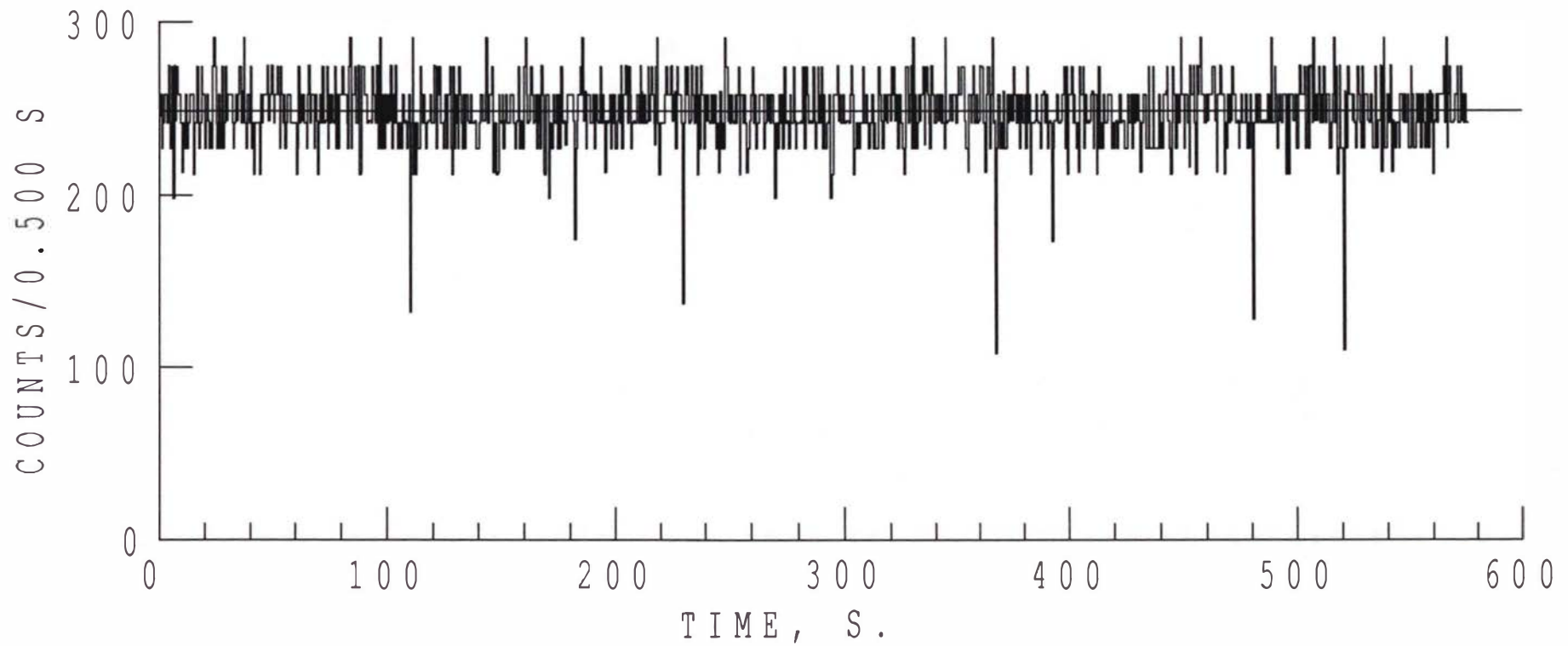
ULYSSES RT

16 / 5 / 94 28872.062 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HAGEDON@ssl.msfc.nasa.gov Tue May 17 14:05 PDT 1994
Date: Tue, 17 May 1994 16:06:18 -0500 (CDT)
From: HAGEDON@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 2981

TIME: TJD=9488 SECONDS=44730

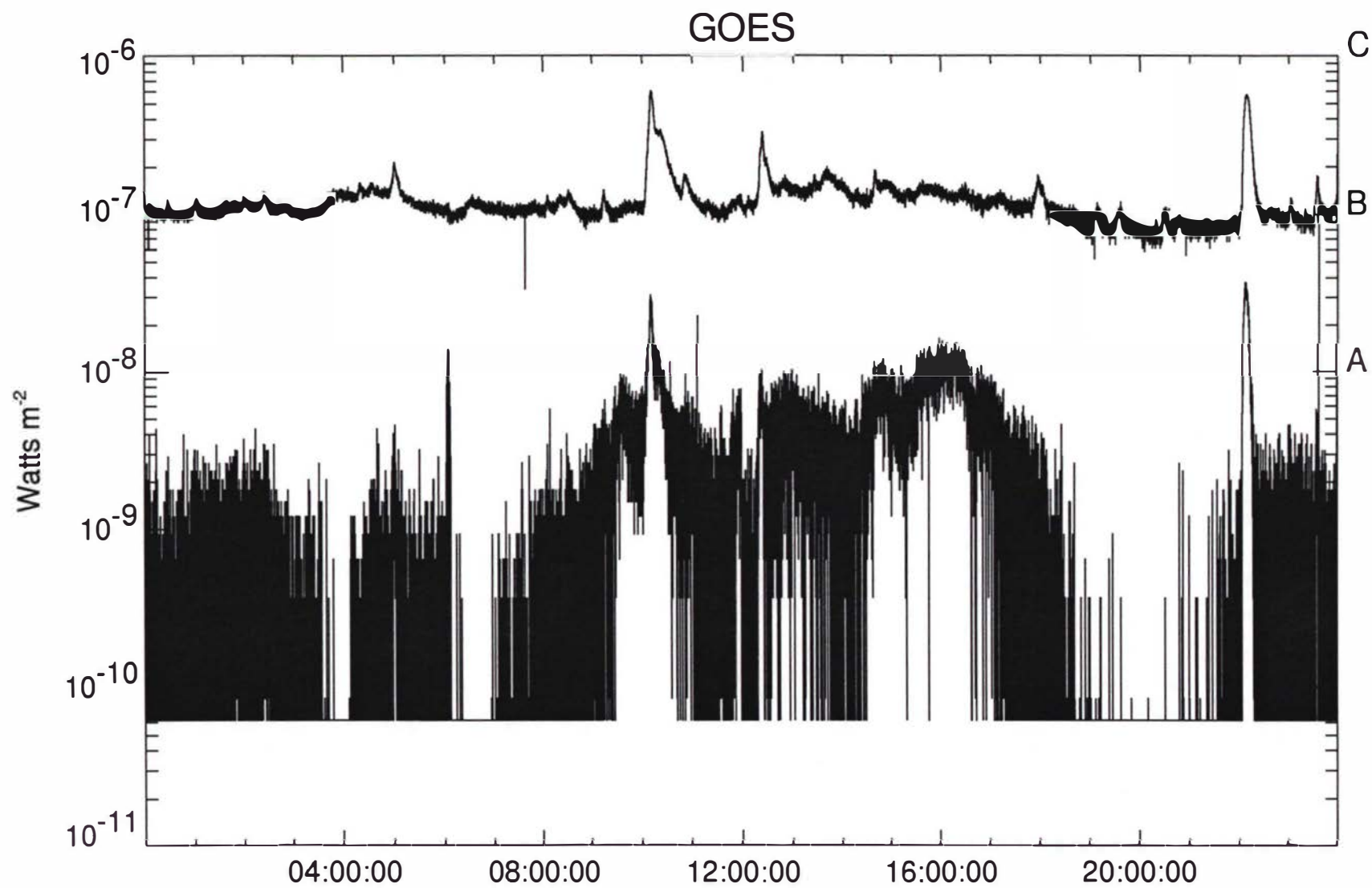
TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.



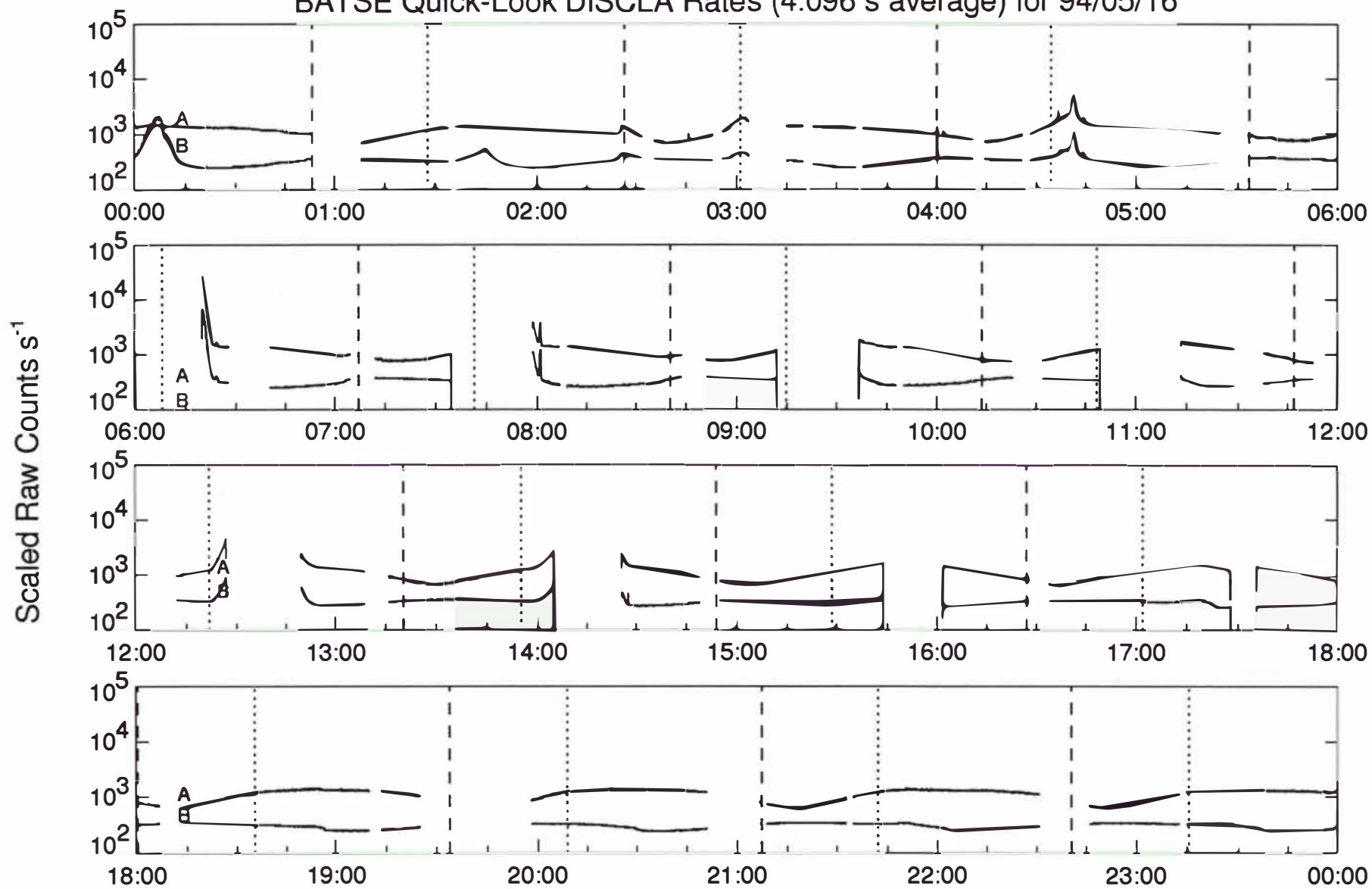
Data Start: 94/05/16, 0000:00

Plot created: 94/05/17, 1606

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/16

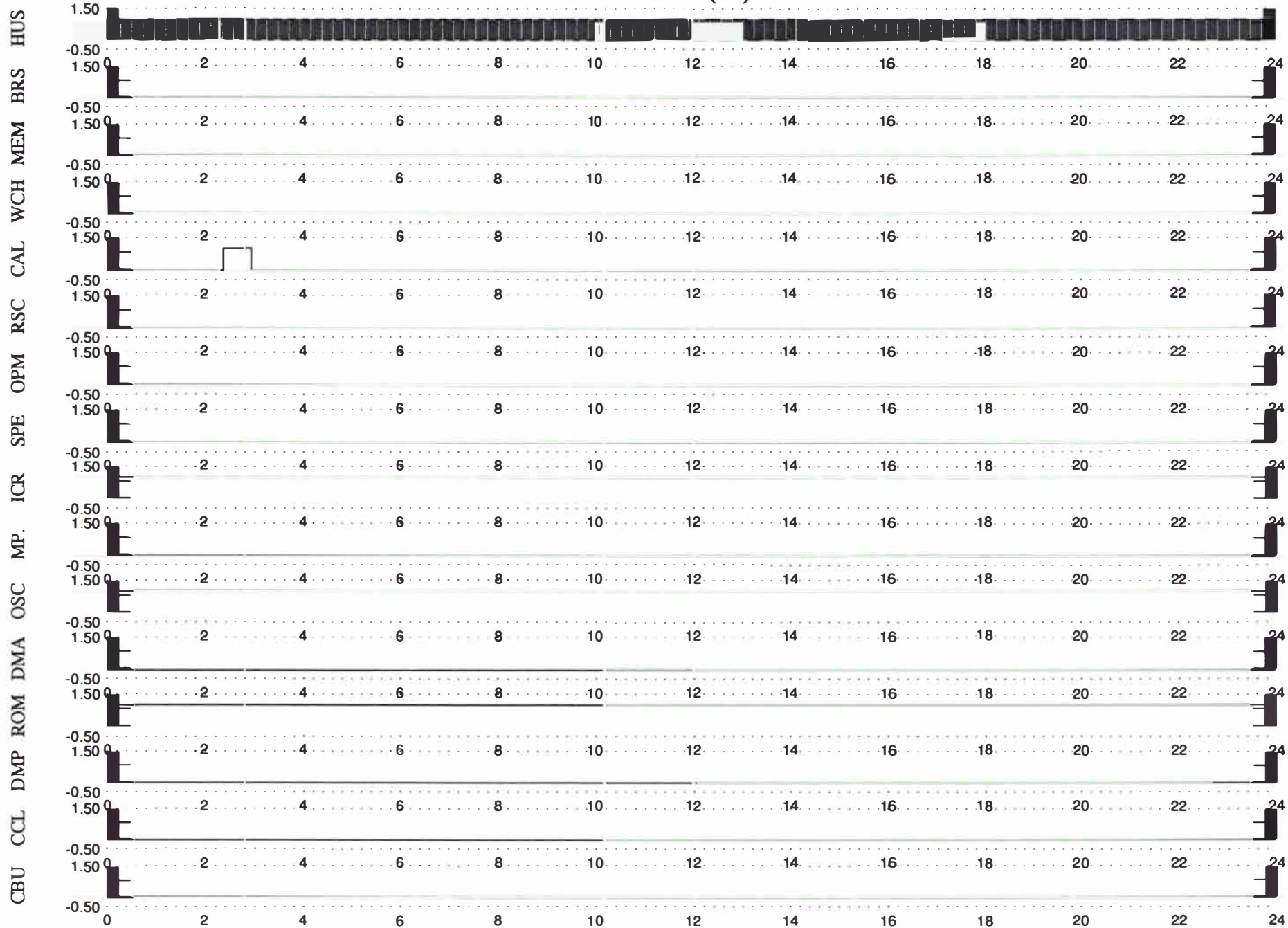


Current Time: 94/05/20, 1252 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

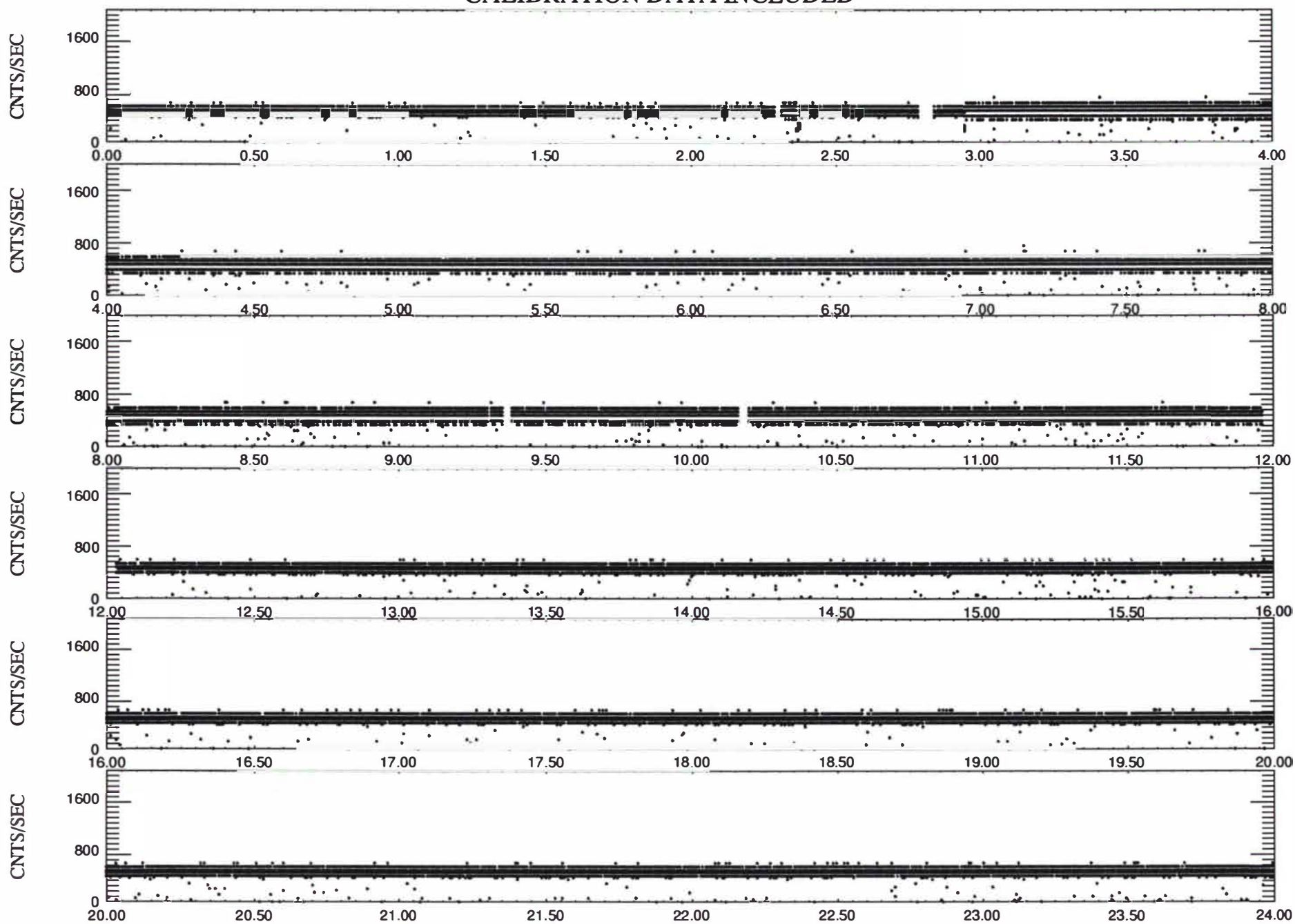
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

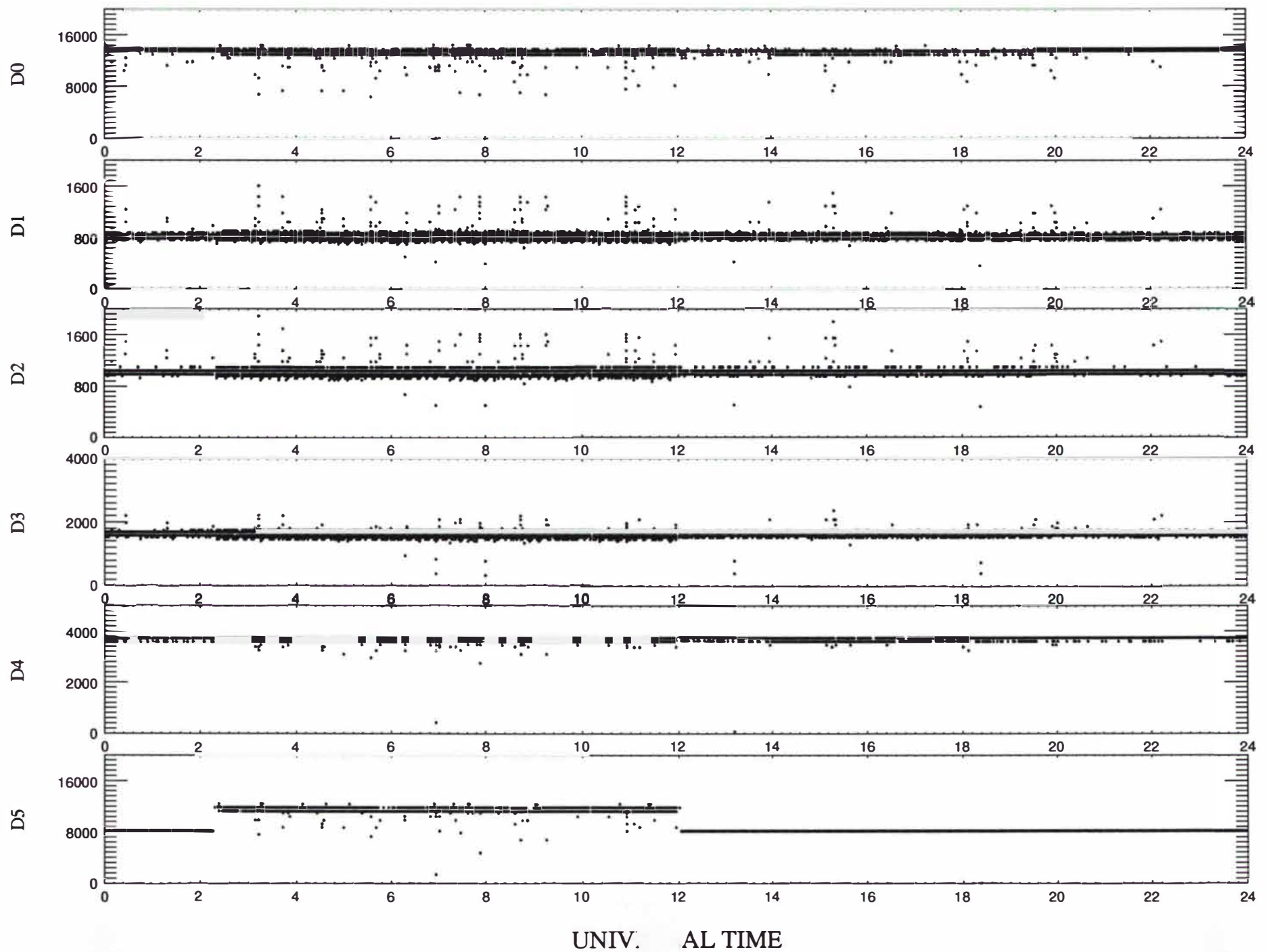
UNIVERSAL TIME

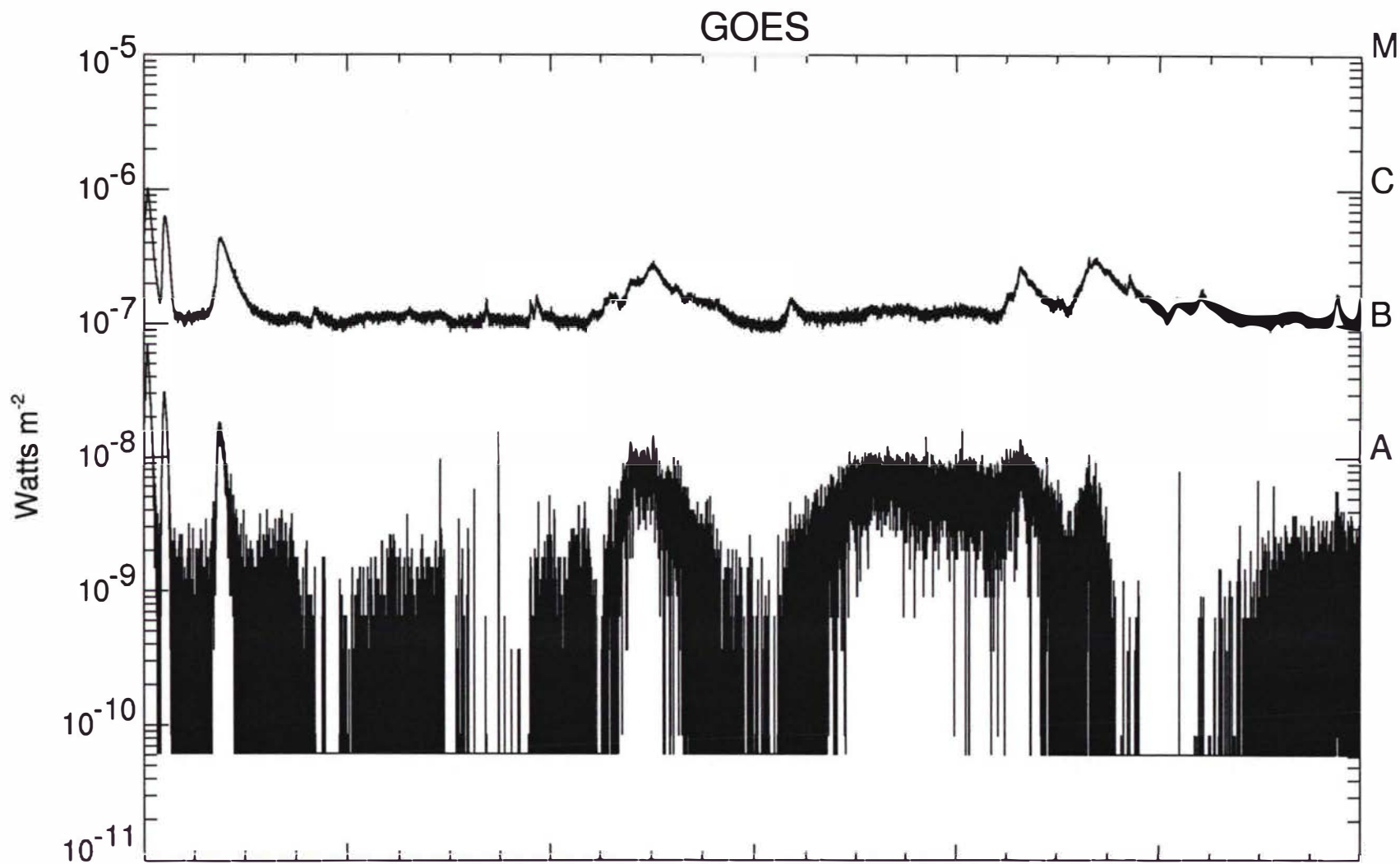


CALIBRATION DATA INCLUDED



UNIV JAL TIME





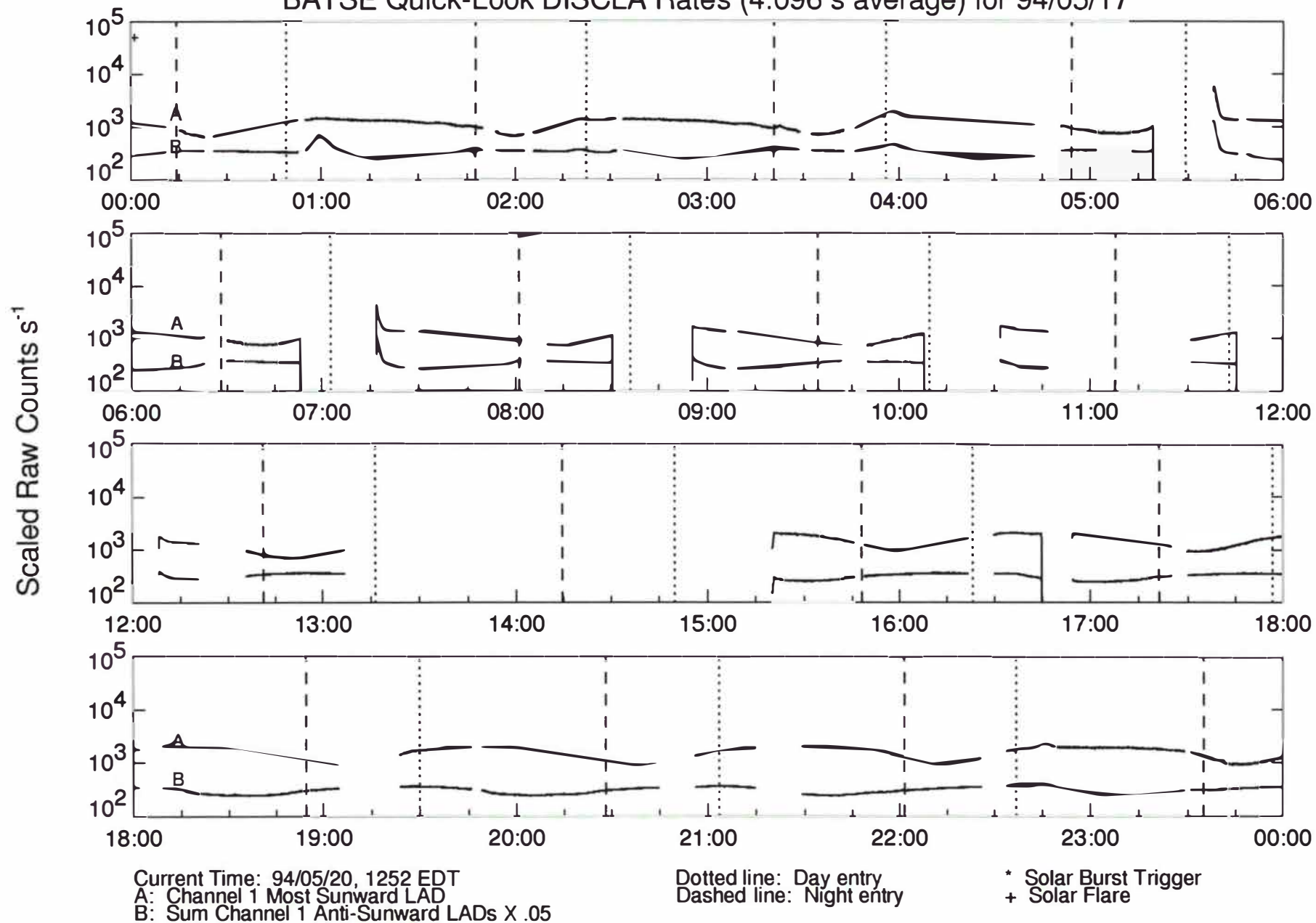
Data Start: 94/05/17, 0000:00

Plot created: 94/05/20, 1327

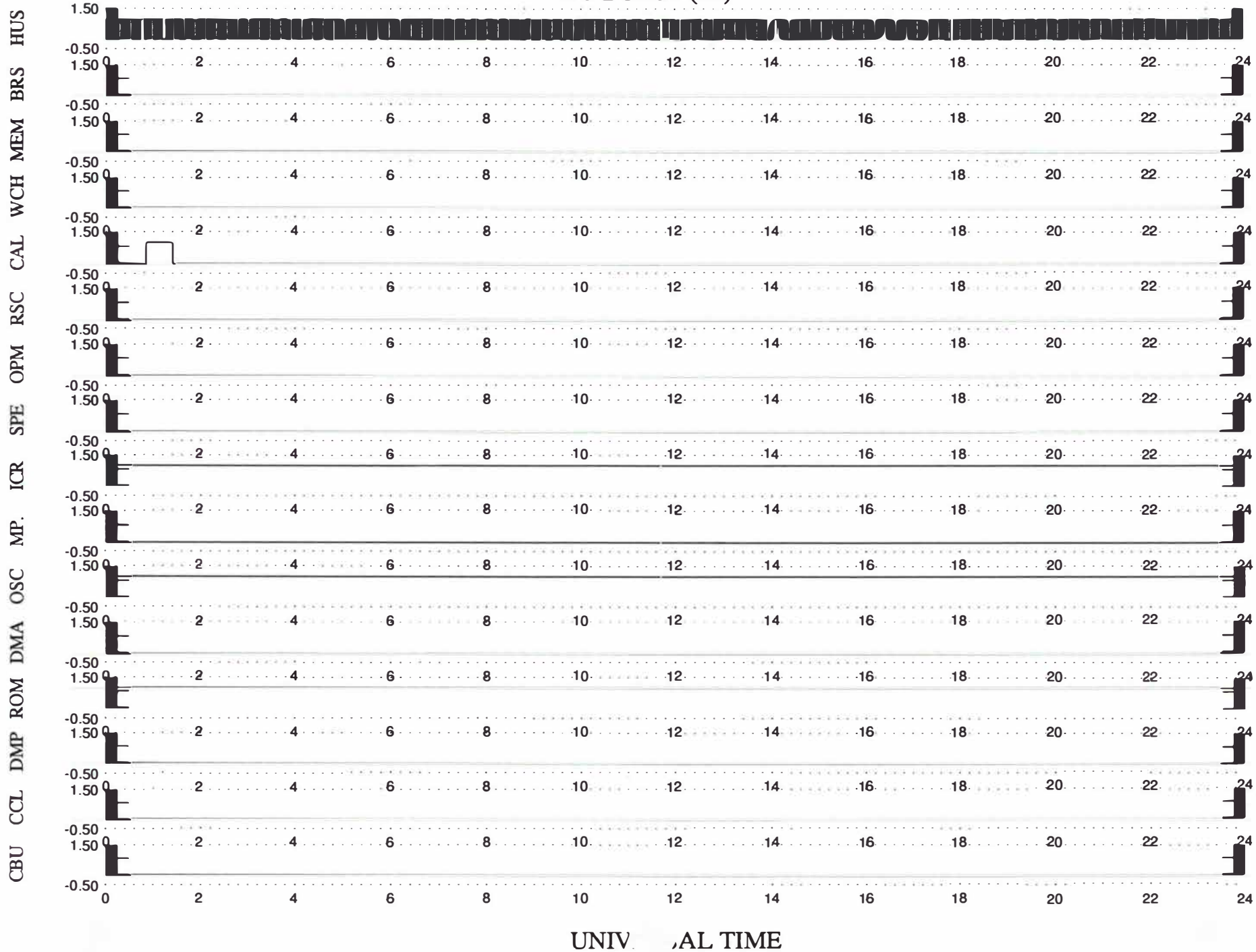
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

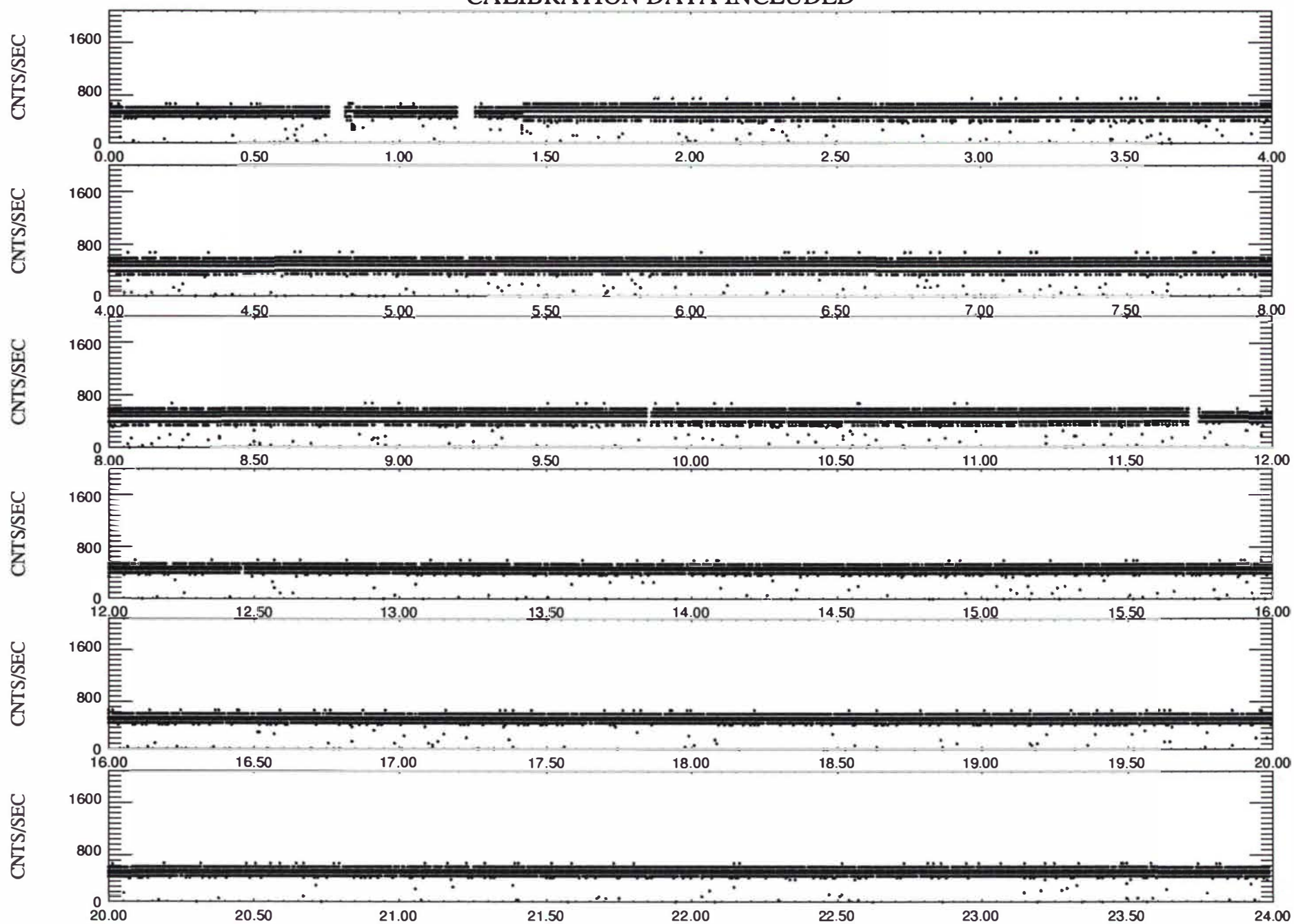
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/17



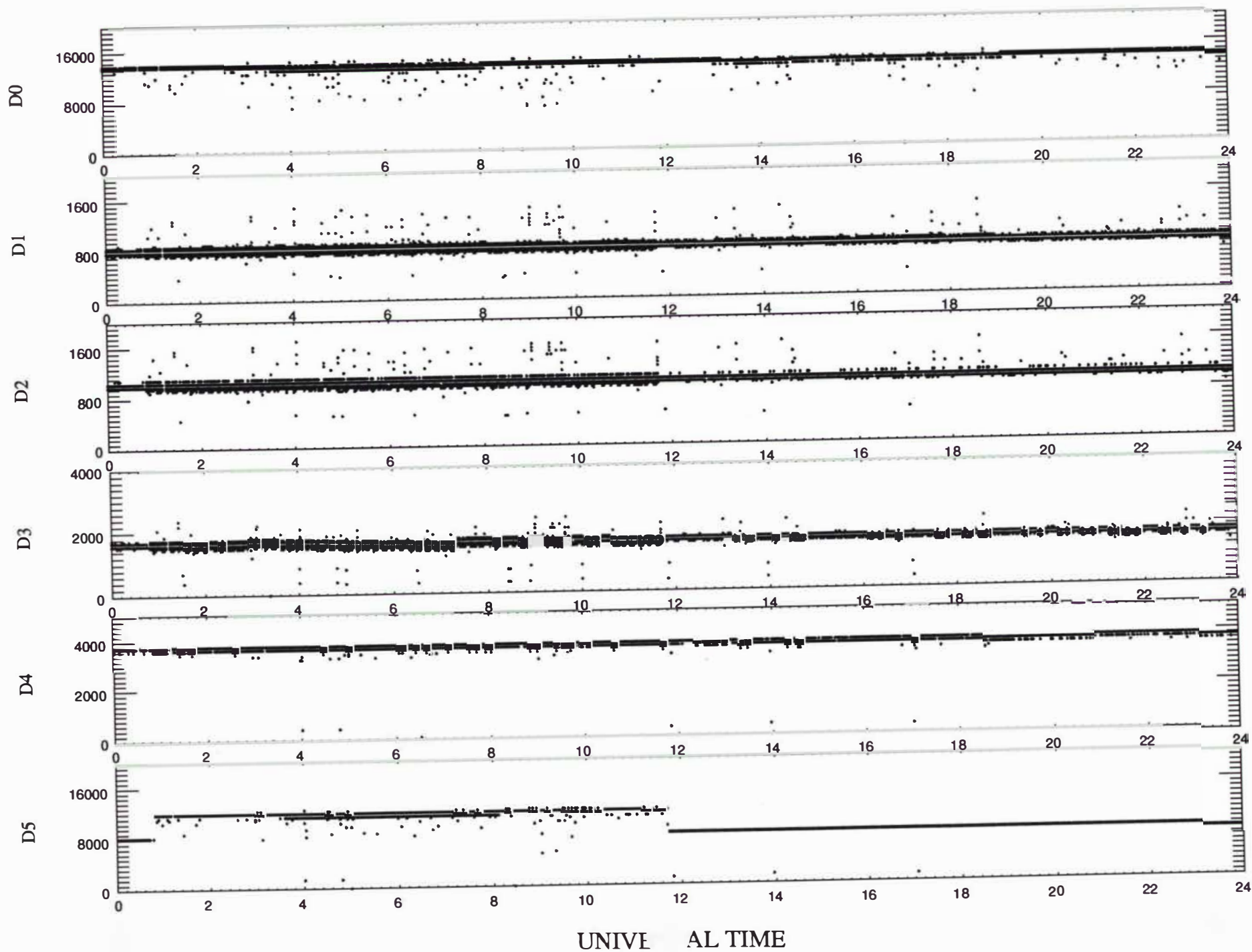
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV CAL TIME



From MEEGAN@ssl.msfc.nasa.gov Thu May 19 13:52 PDT 1994
Date: Thu, 19 May 1994 15:52:51 -0500 (CDT)
From: MEEGAN@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02982

TIME: TJD=9490 SECONDS=65375

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

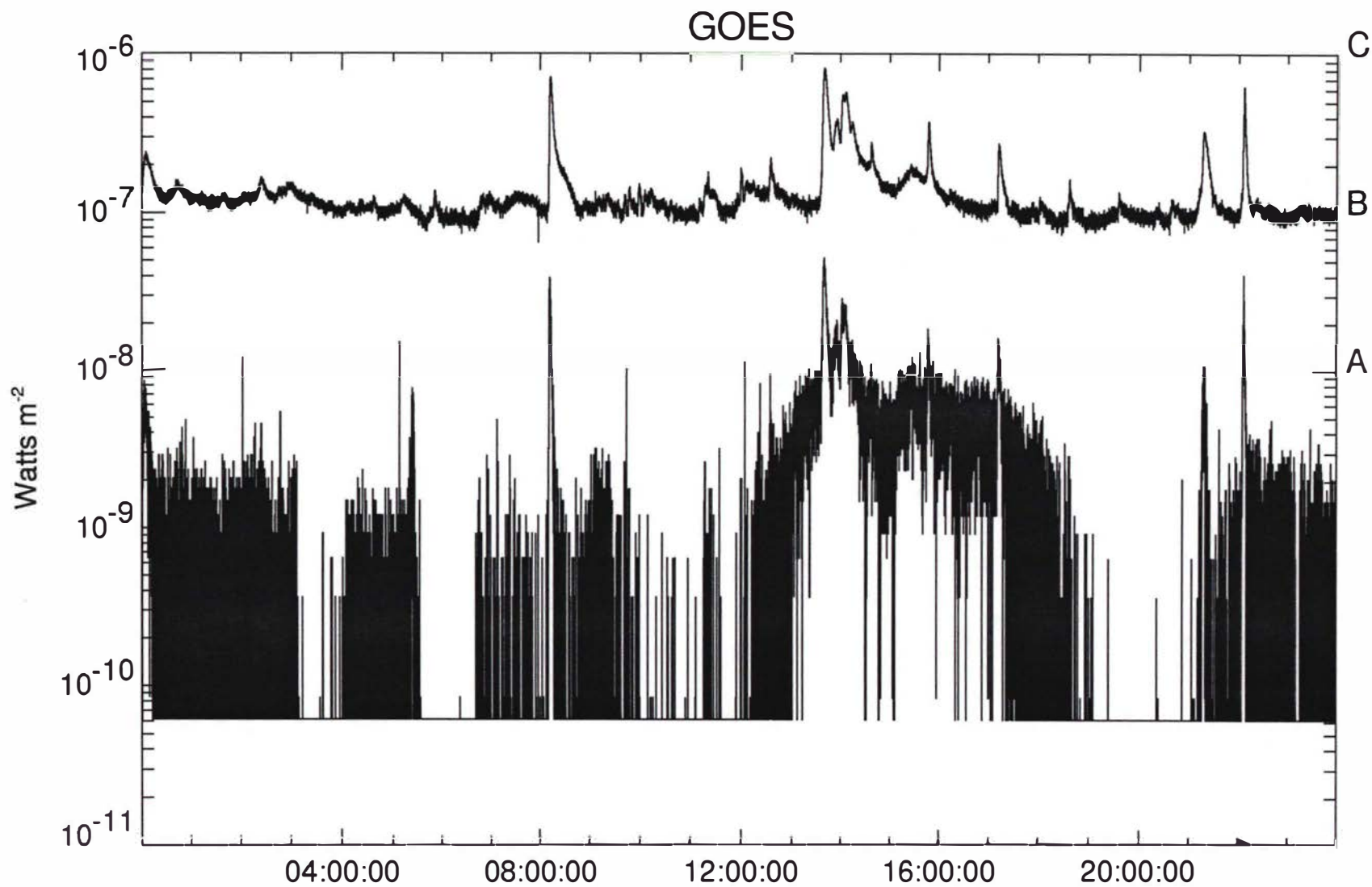
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

TRIGGERED ON RISE OF CYGNUS X-1.



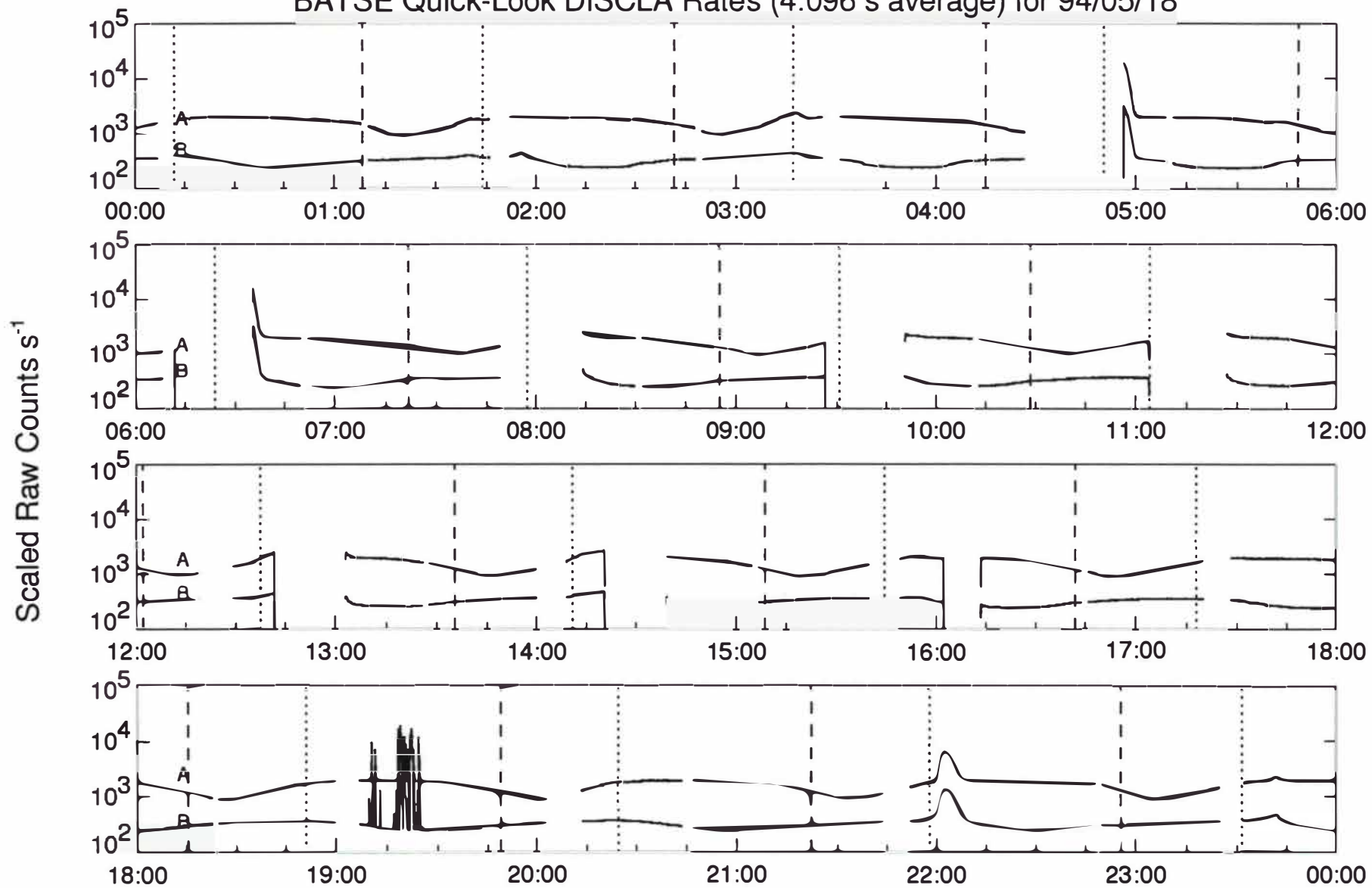
Data Start: 94/05/18, 0000:00

Plot created: 94/05/20, 1328

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/18

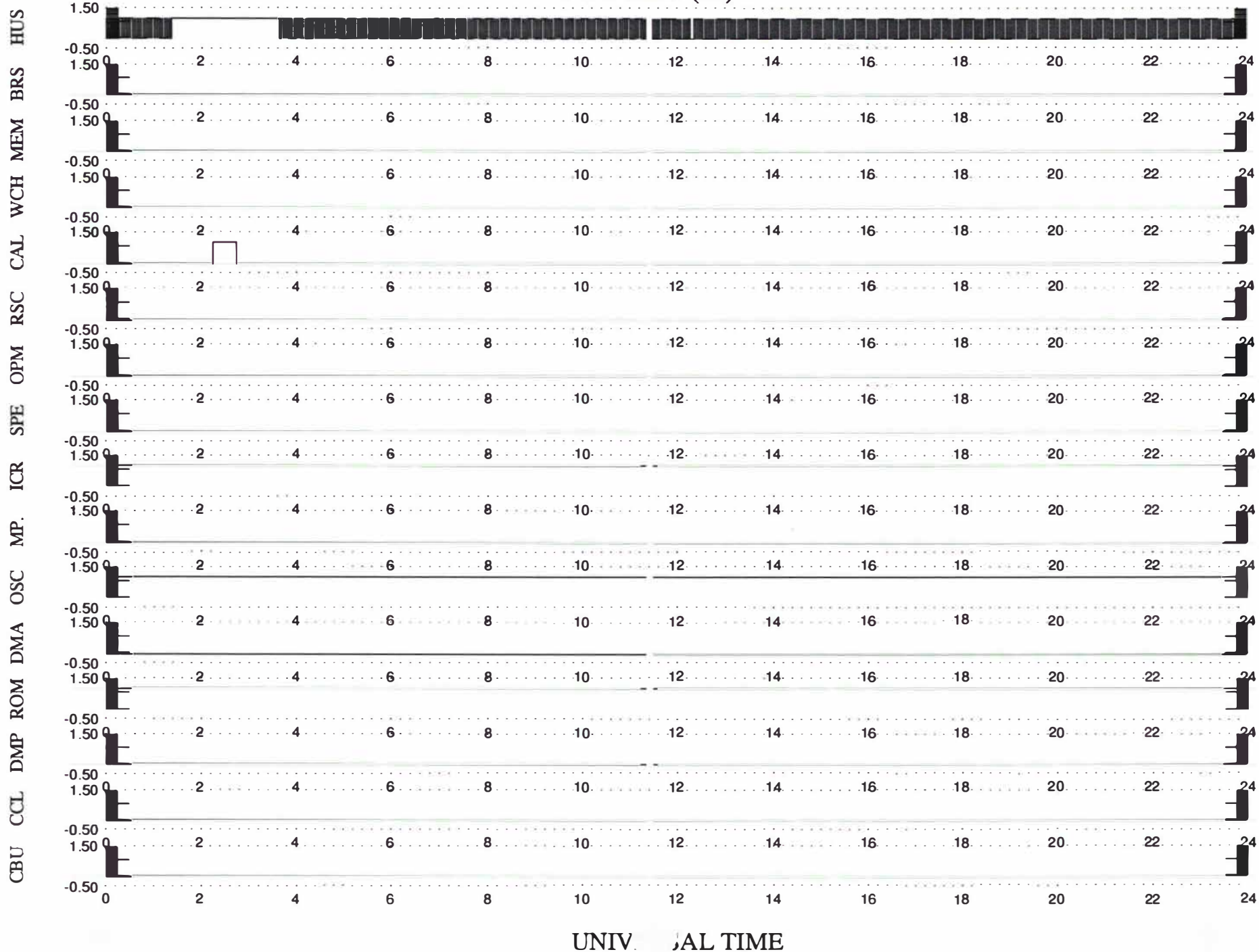


Current Time: 94/05/20, 1252 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

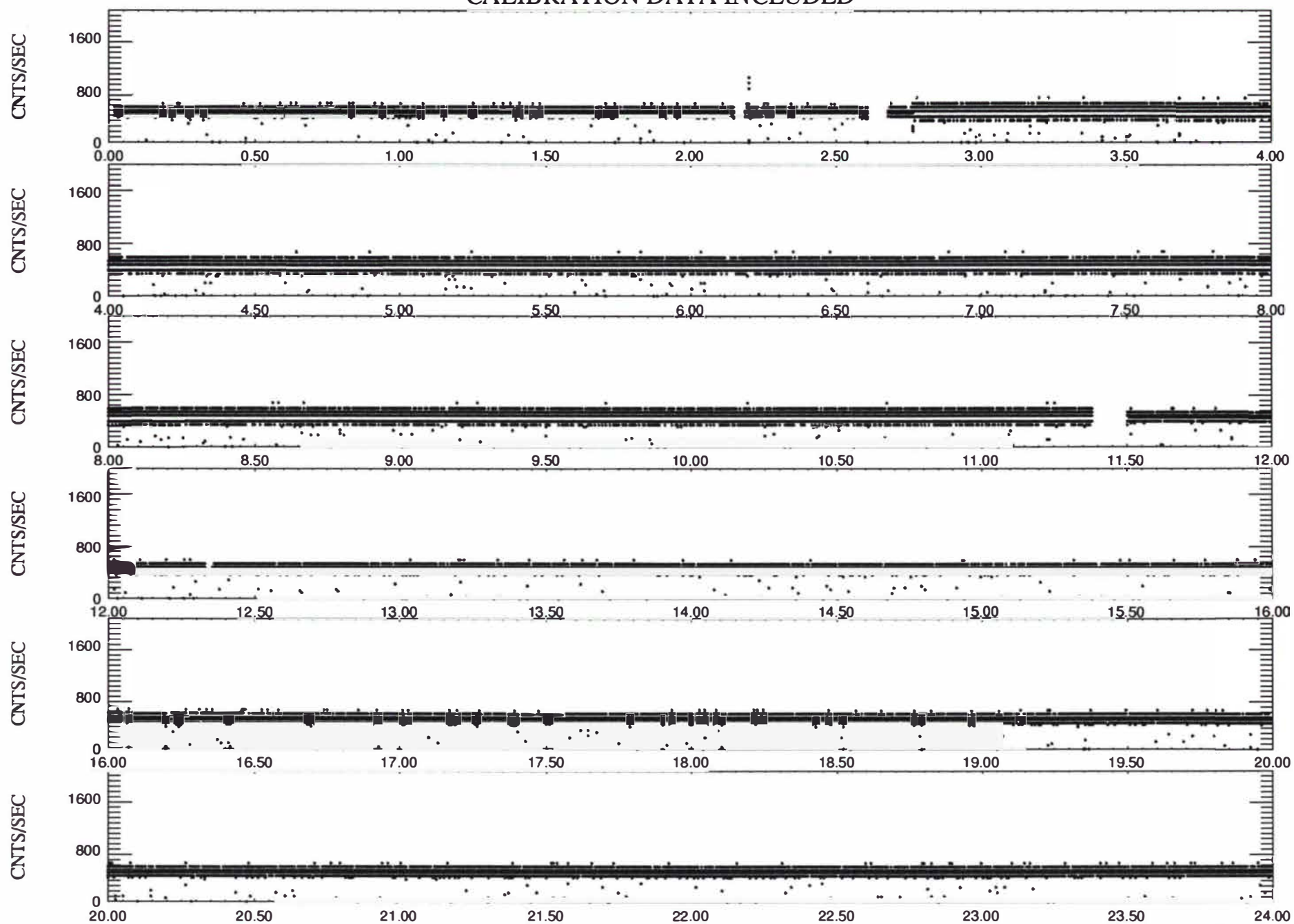
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

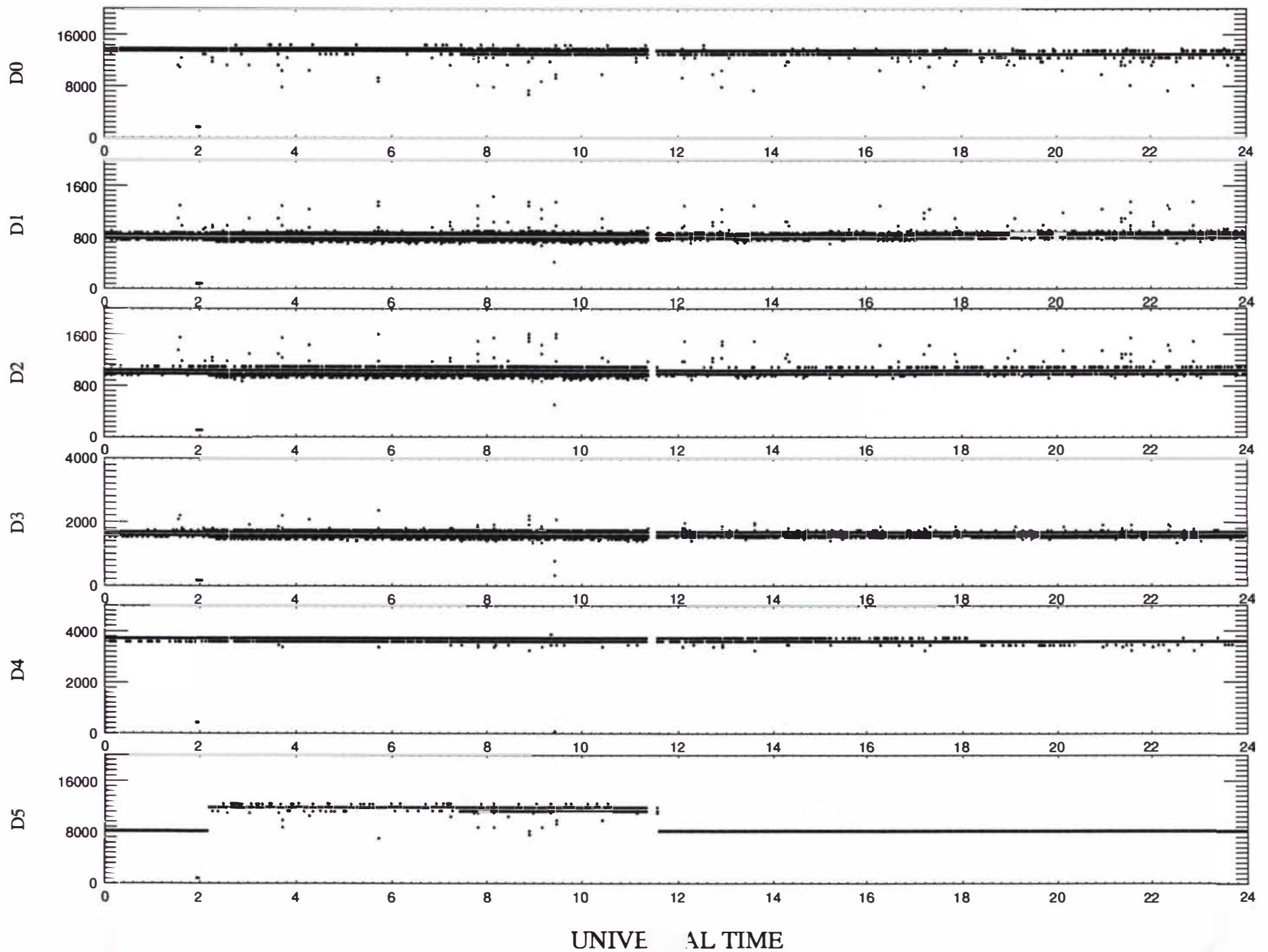
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV CAL TIME



From DEAL@fender.msfc.nasa.gov Wed May 25 08:06 PDT 1994
Date: Wed, 25 May 1994 10:07:51 -0500 (CDT)
From: DEAL@fender.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@fender.msfc.nasa.gov, LHEAVXBARTHELMY@fender.msfc.nasa.gov,
LHEAVXKWOK@fender.msfc.nasa.gov, 15733SCHAEFER@fender.msfc.nasa.gov,
CASS09BAND@fender.msfc.nasa.gov, CASS09GRUBER@fender.msfc.nasa.gov,
CASS09MATTESON@fender.msfc.nasa.gov, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02983

TIME: TJD=9491 SECONDS=09467

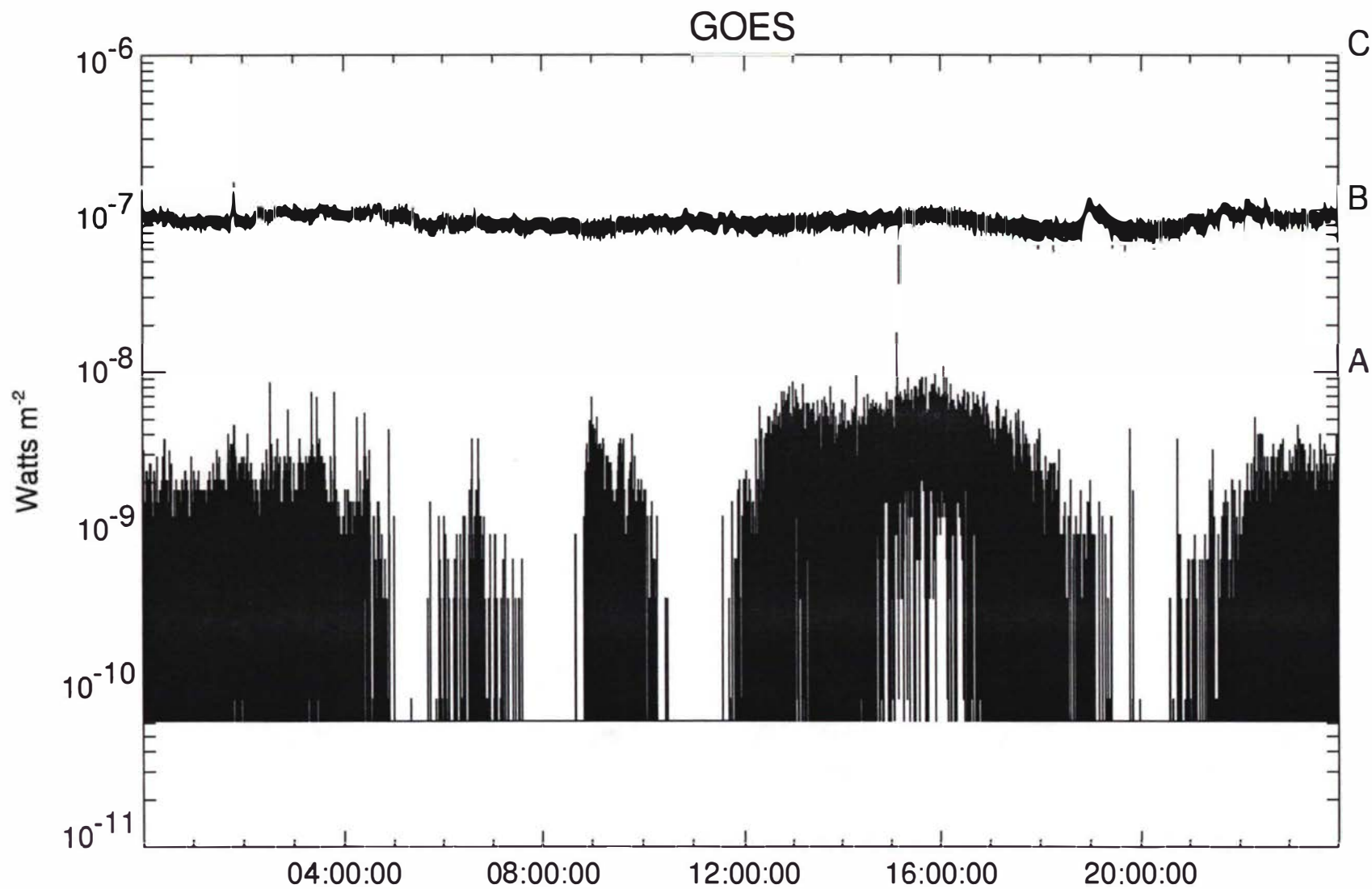
TYPE: ELECTRO SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON EVENT



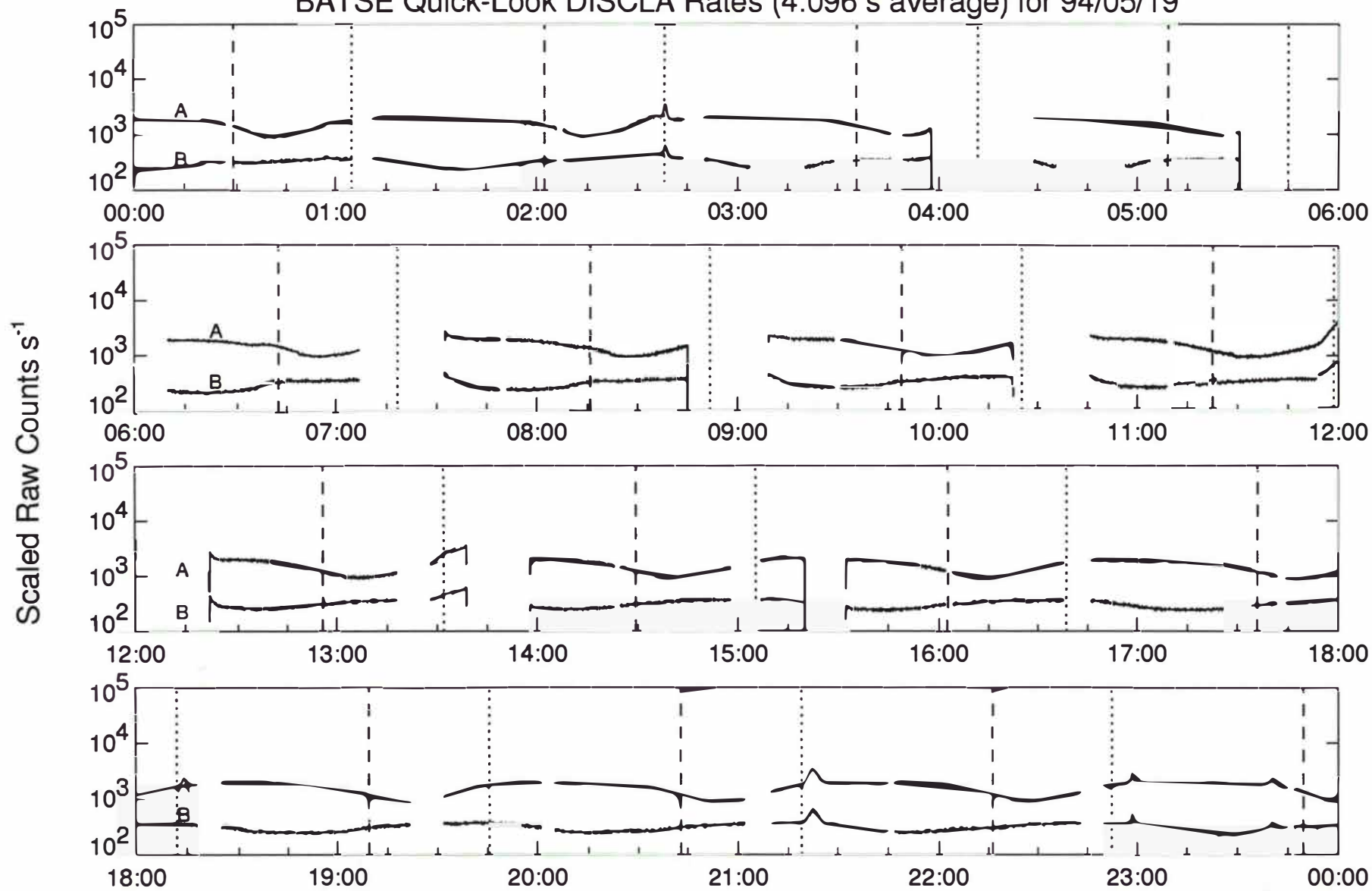
Data Start: 94/05/19, 0000:00

Plot created: 94/05/20, 1328

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/19

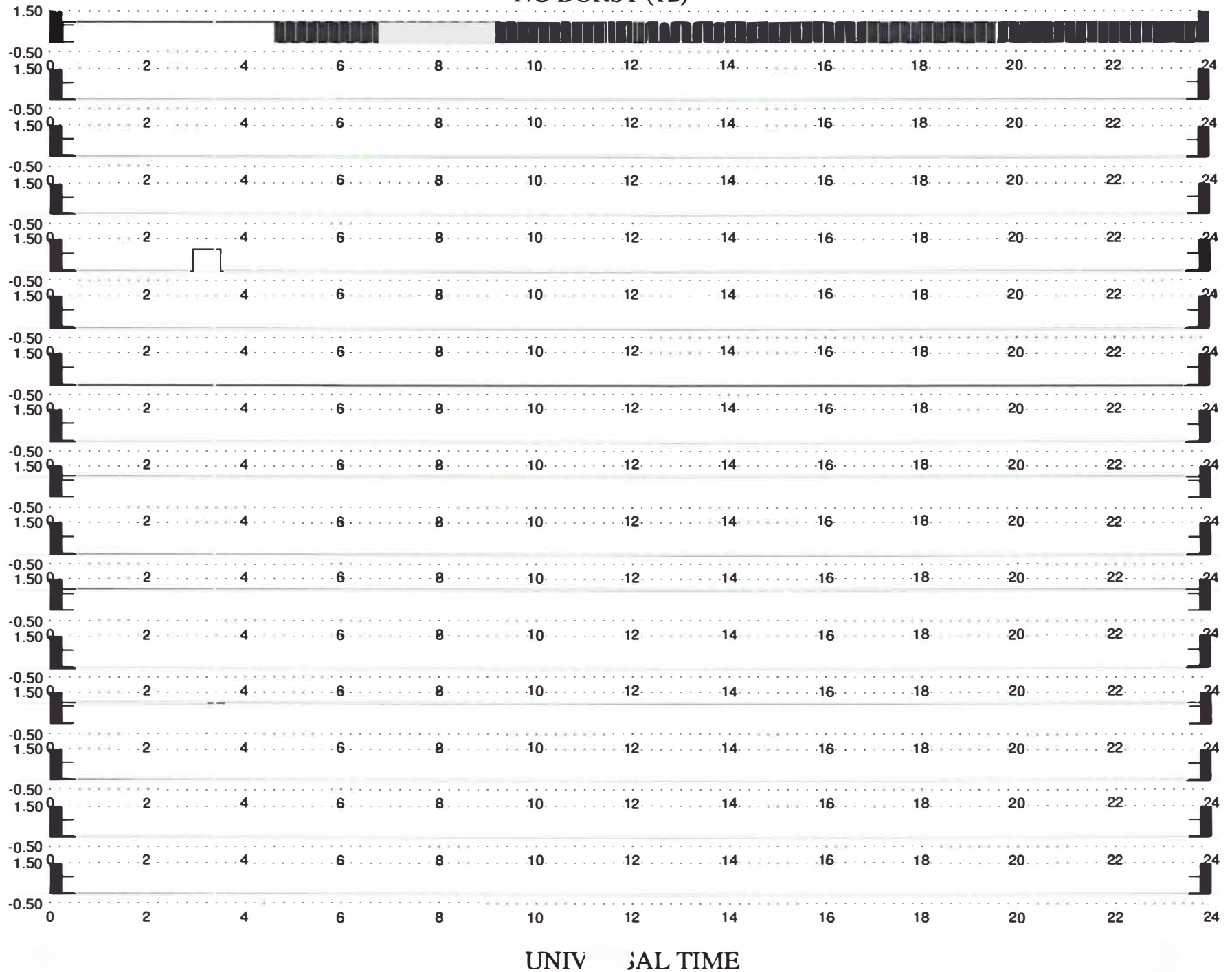


Current Time: 94/05/24, 1758 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

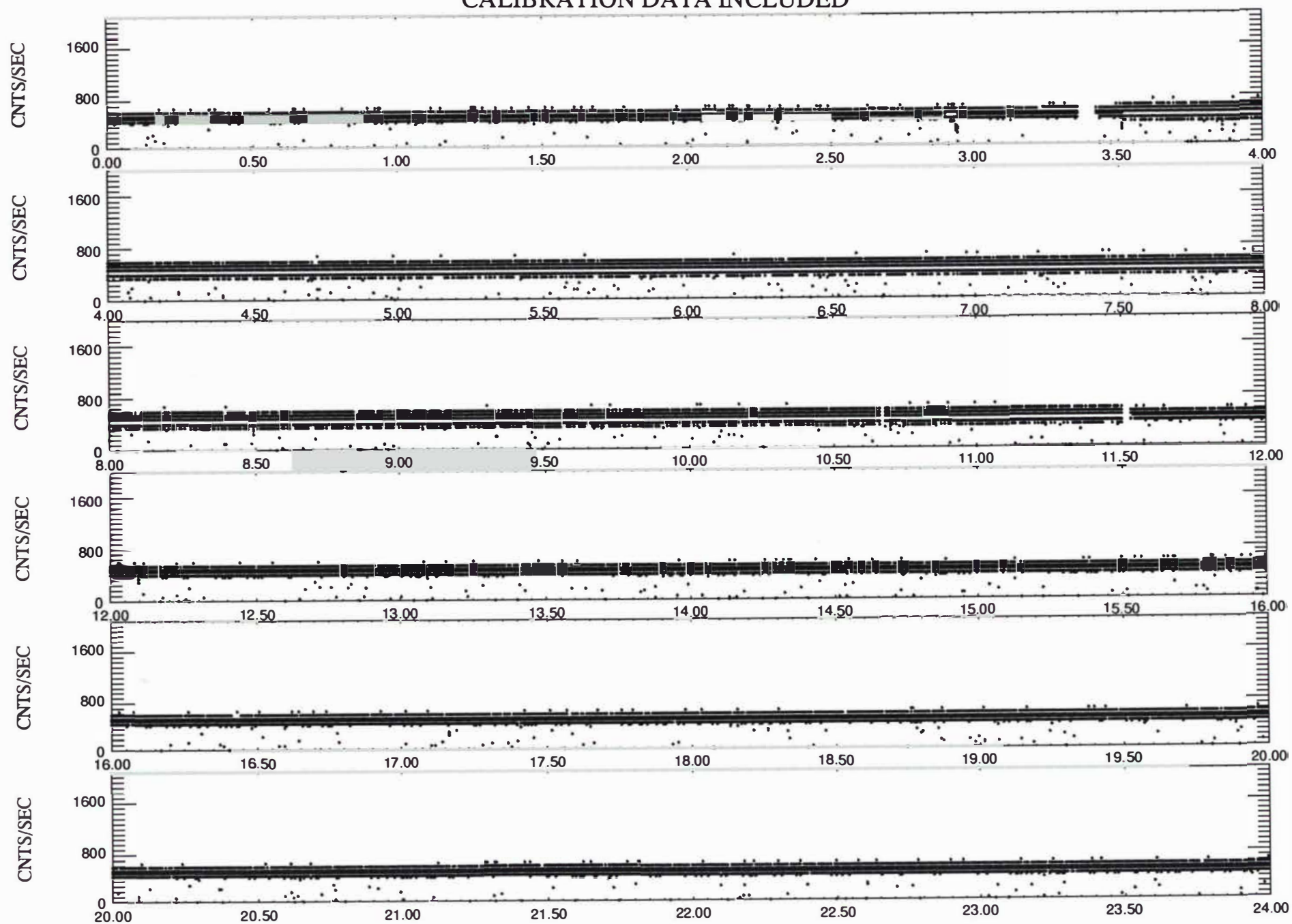
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

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

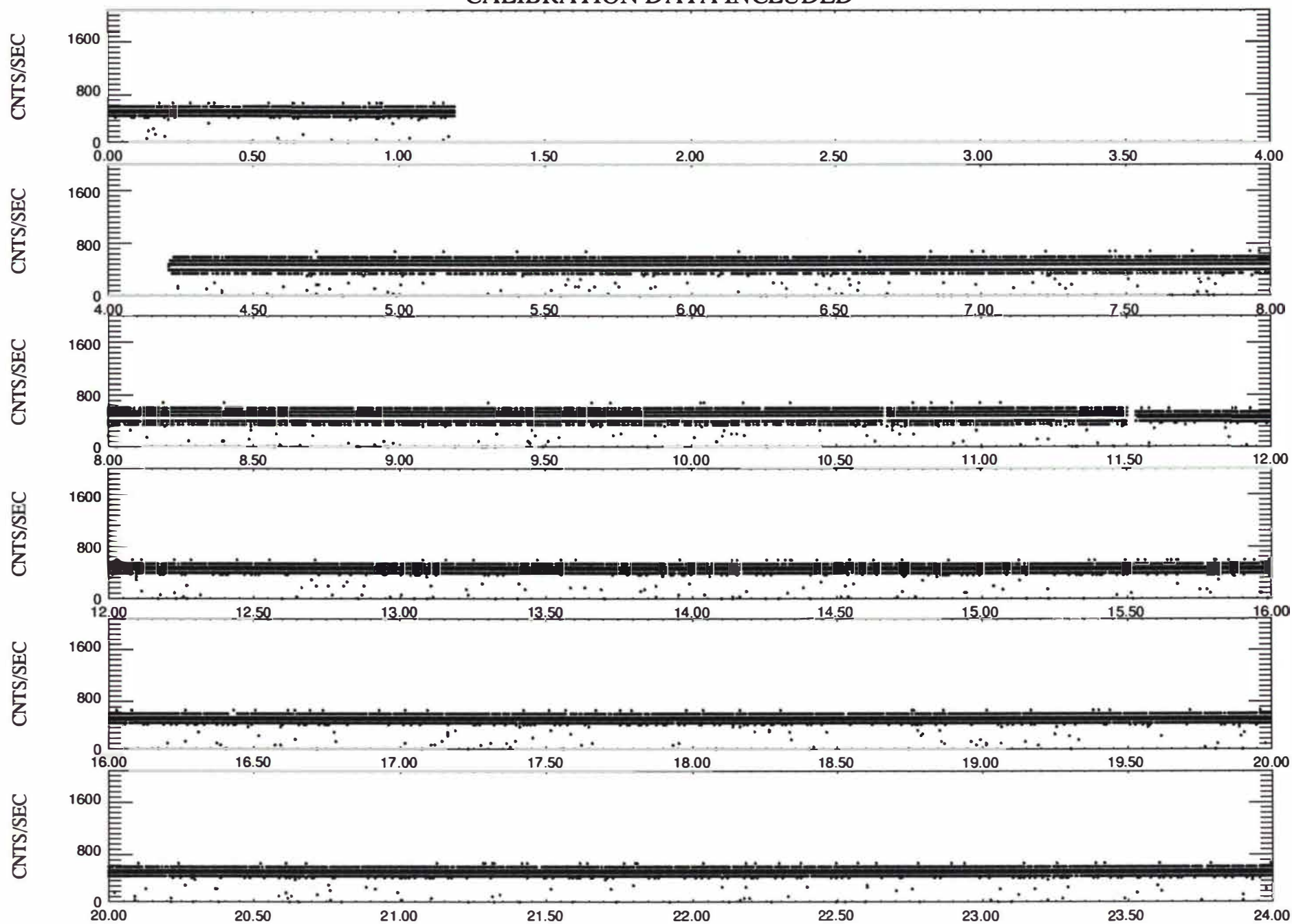


CALIBRATION DATA INCLUDED



UNIV AL TIME

CALIBRATION DATA INCLUDED



UNIV AL TIME

From SHARIFF@ssl.msfc.nasa.gov Sat May 21 12:02 PDT 1994
Date: Sat, 21 May 1994 14:04:12 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2984
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2984
EVENT OF 1994 MAY 20 DAY OF YEAR=140
EVENT CROSSING TIME AT BATSE : 1298. S. OR 00:21:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 325.000 7.000
BATSE PEAK COUNTING RATE: 32000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 5/ 94 IS:
RA= 119.720 DEC= -41.249 DIST= 2.986 AU
BATSE-ULYSSES DISTANCE = 446772165. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1125.36 SECS.
CROSSING TIME AT ULYSSES IS 2423. S. OR 00:40:23 +/- 236.71 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 5/ 94 IS:
RA= 25.397 DEC= 9.626 DIST= 2.151 AU
MARS-BATSE DISTANCE = 321795776. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -540.76 SECS.
CROSSING TIME AT MARS IS 757. S. OR 00:12:37 +/- 152.77 SECONDS

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2984	940520	9492	01298	32000	325	+07

NO.: 02984 BATSE BURST TRIGGER

TIME: TJD=9492 SECONDS=01298

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=022.8 AZIMUTH=143.8 ERROR= DEGREES

COMMENTS:

BURST, COMPLEX, LASTING ~45 SECONDS. VISIBLE ABOVE 300KEV.

Helio corr removed

Date: Jan 28 '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

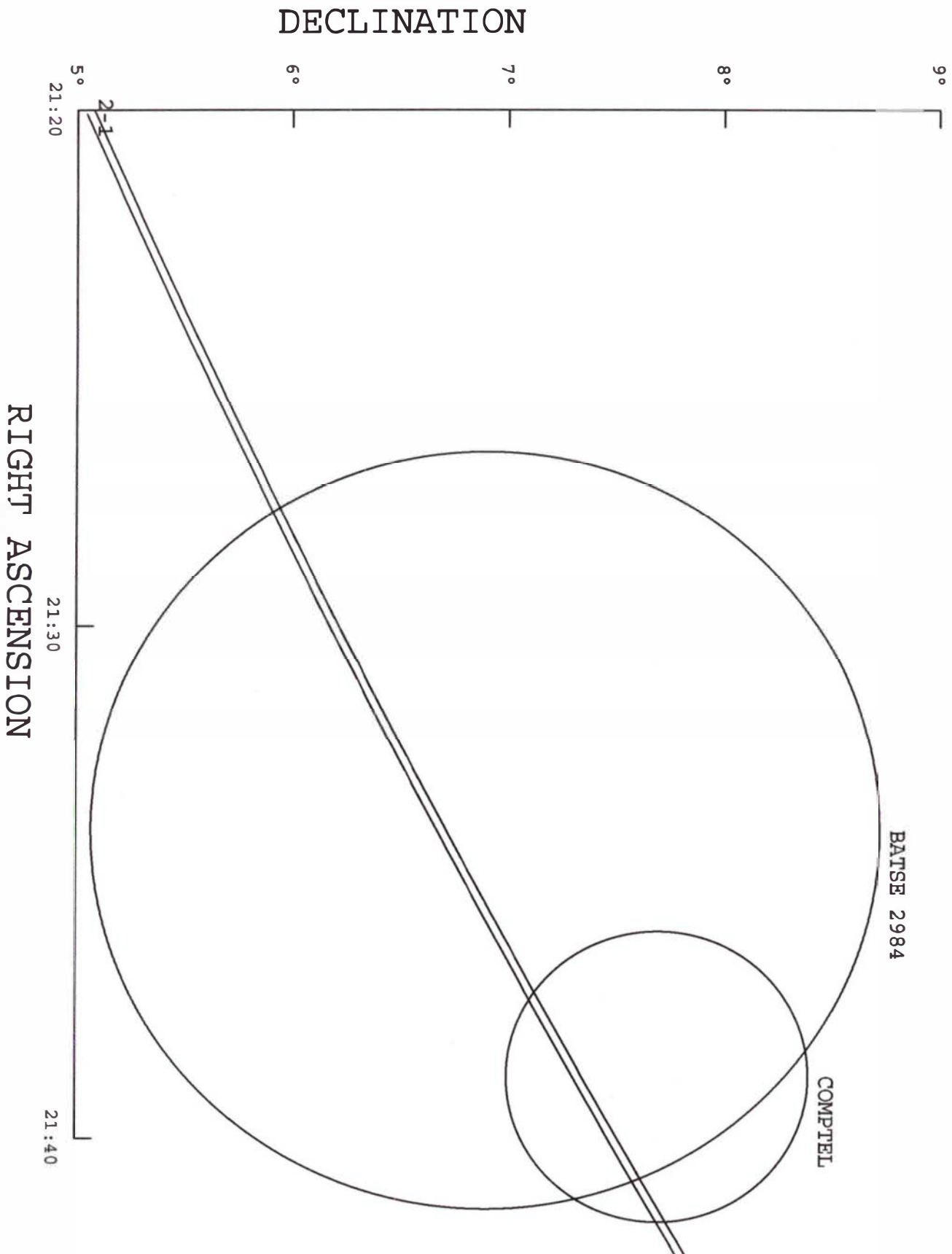
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 20, 1994 0:39

28 / 1/98



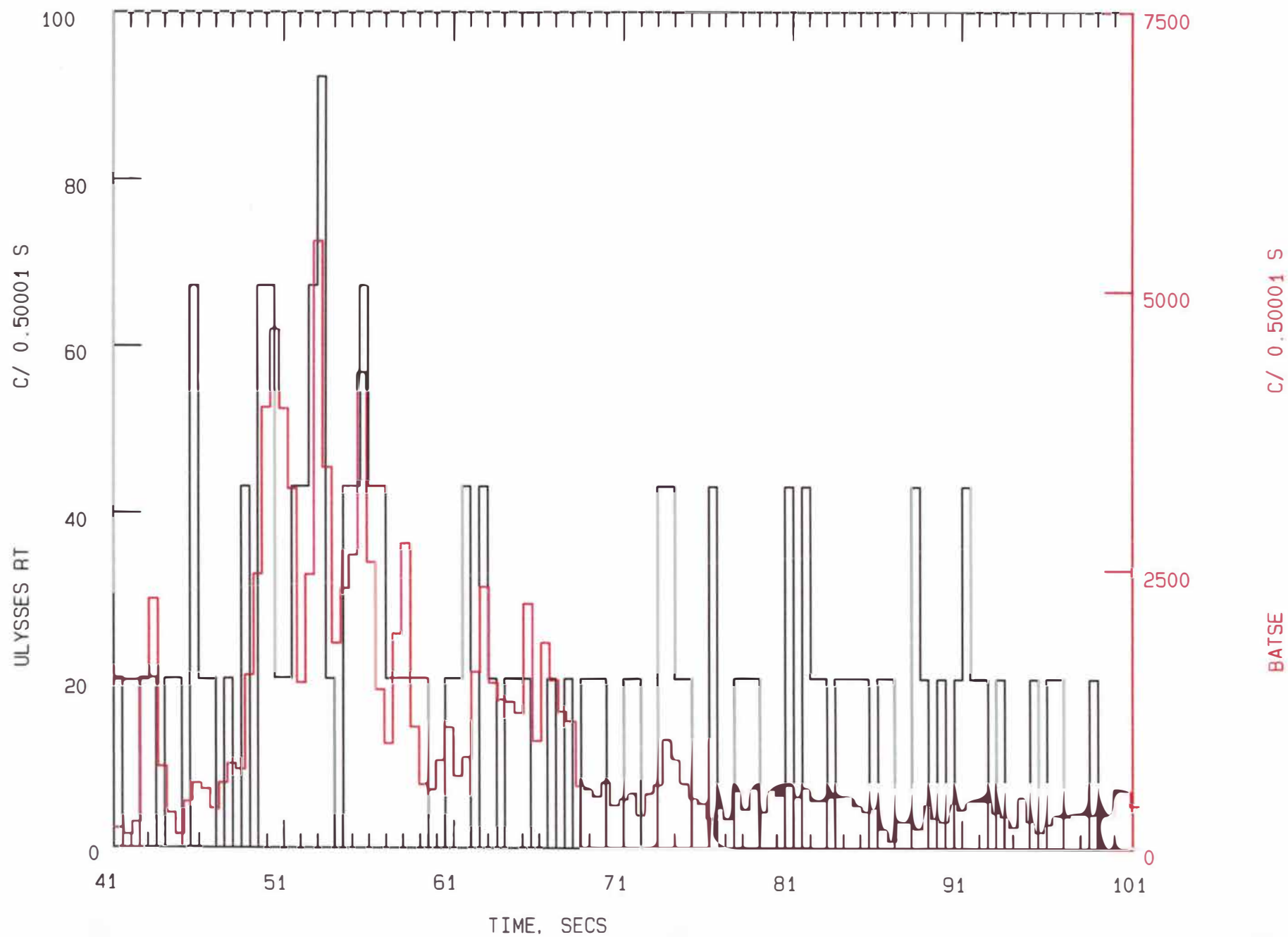
ULYSSES RT-BATSE

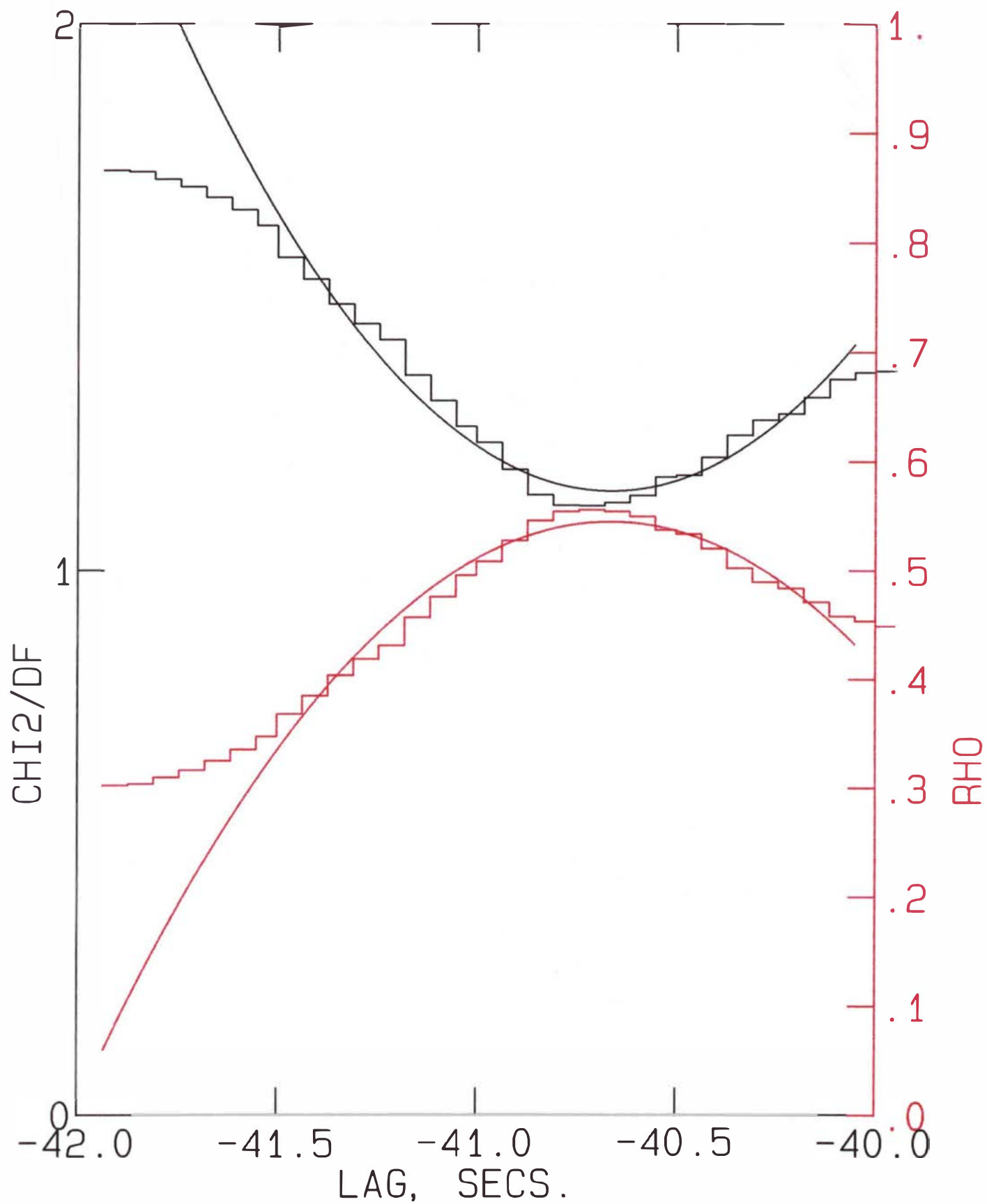
CORRELATION

20/ 5/94

2390.255

28/ 1/98





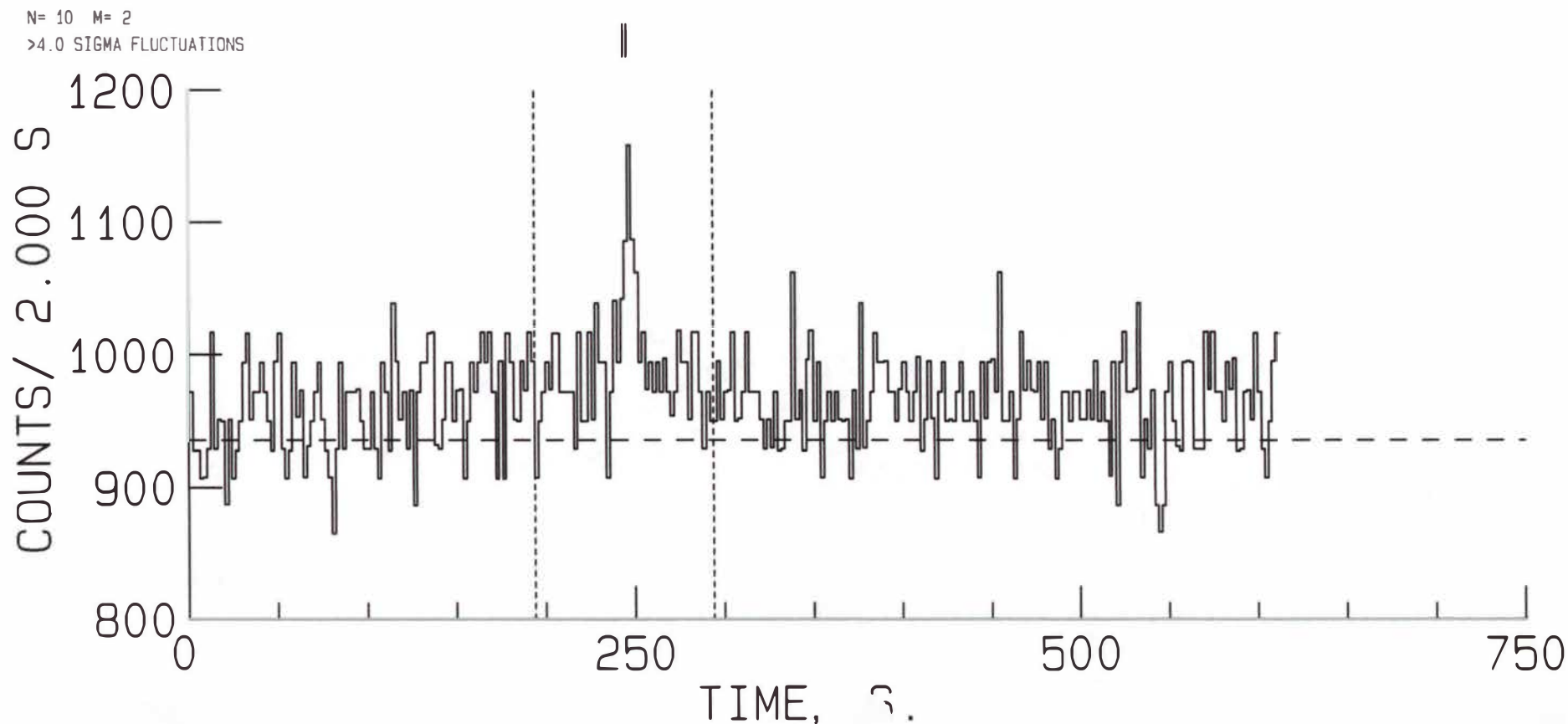
ULYSSES RT

28 / 1 / 98

20 / 5 / 94 2196.324 s

0.500 S INTERVALS REGROUPED BY 4

22- 148 keV



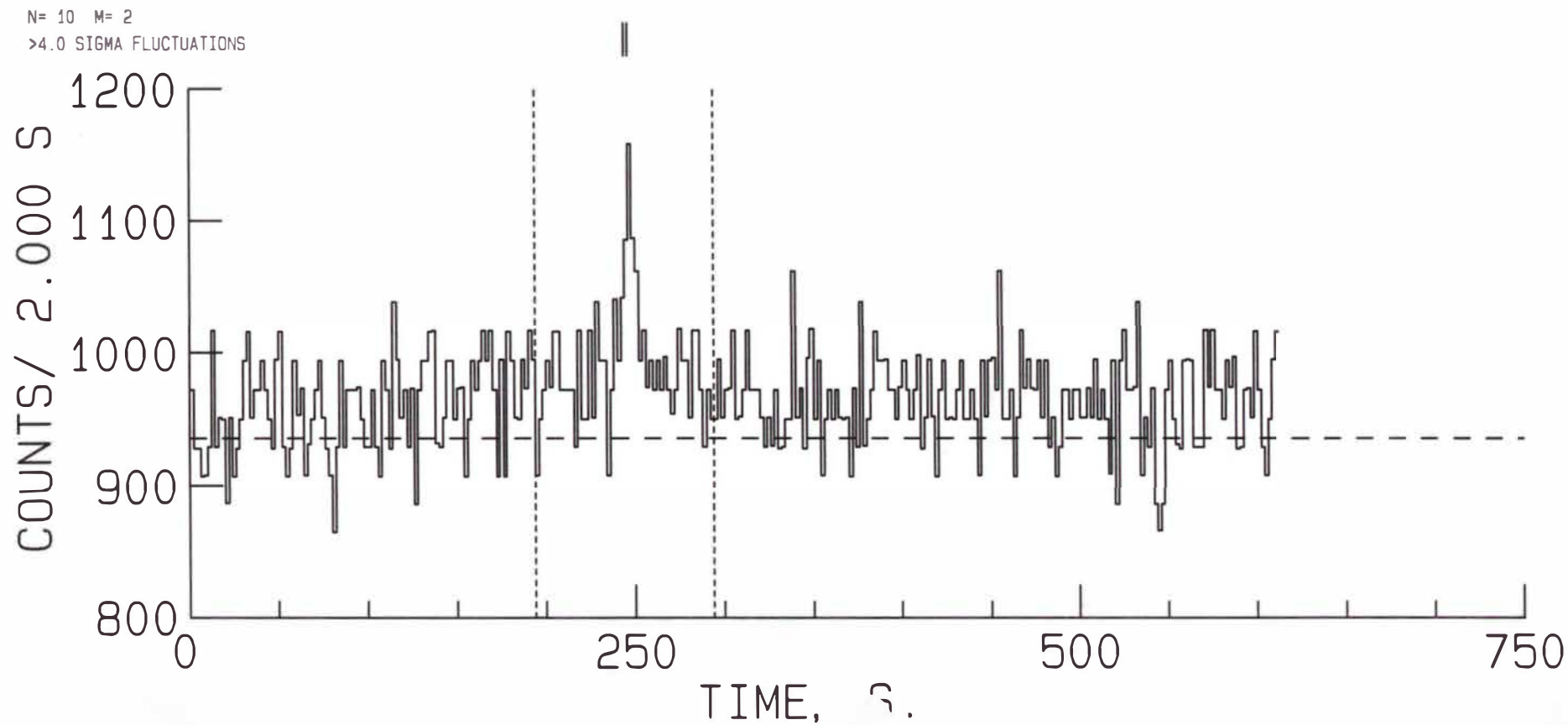
ULYSSES RT

28 / 1 / 98

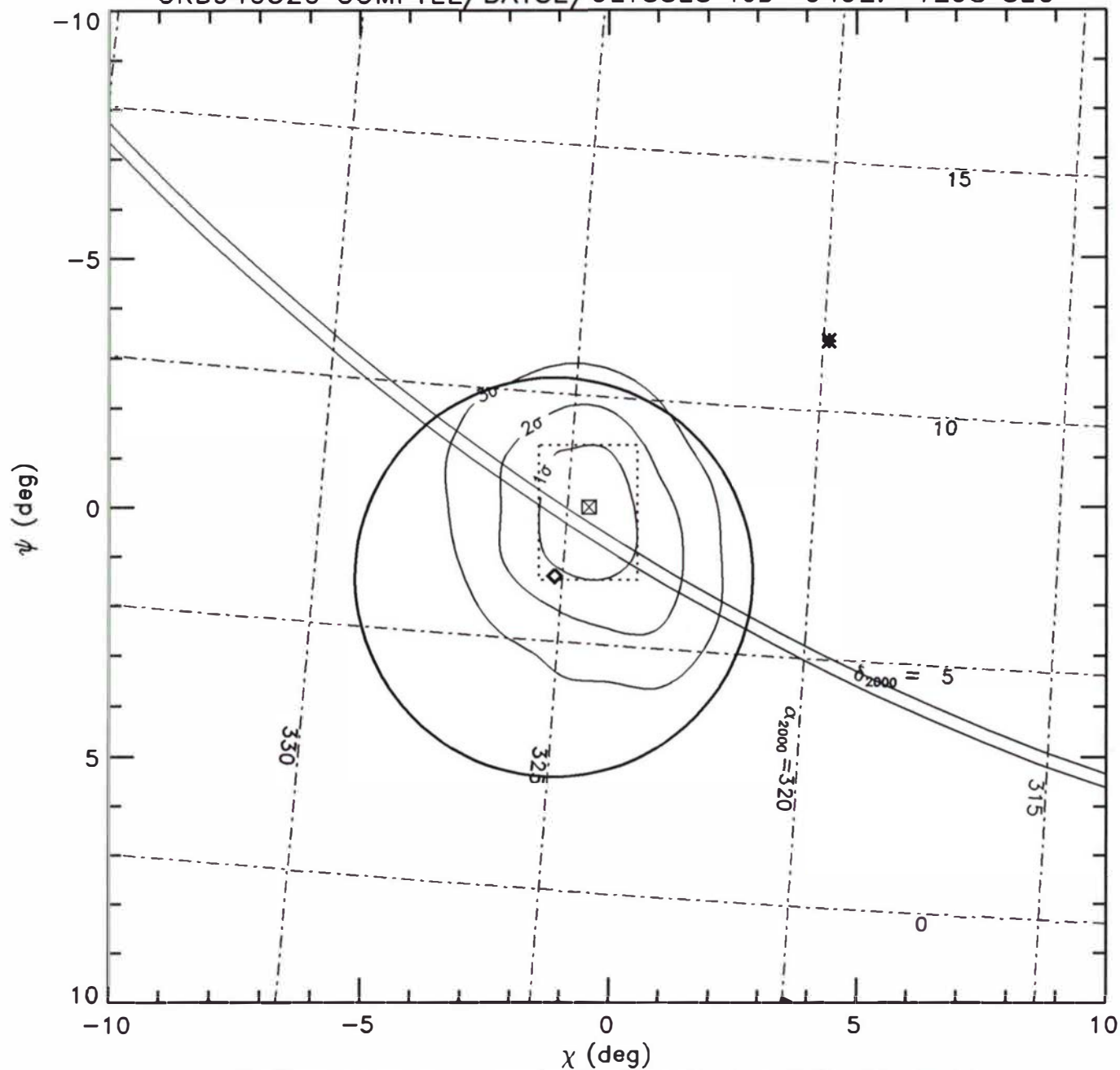
20 / 5 / 94 2196.324 s

0.500 S INTERVALS REGROUPED BY 4

22- 148 keV



GRB940520 COMPTTEL/BATSE/ULYSSES TJD 9492: 1298 SEC



[CHI, PSI] [α_{2000} , δ_{2000}]	[CHI, PSI] [α_{2000} , δ_{2000}]
◇ [-1.10, 1.40] [325.16, 6.32] BATSE	✕ [-0.40, 0.00] [324.56, 7.76] Max Lik Position
✕ [4.45, -3.32] [319.88, 11.40] BATSE (BACODINE)	1 [-1.41, -1.25] [325.68, 8.94] 1 σ Error Box Coords
	2 [-1.41, 1.48] [325.47, 6.22]
	3 [0.57, 1.48] [323.48, 6.36]
	4 [0.57, -1.25] [323.67, 9.08]

From khurley@space6.ssl.berkeley.edu Fri May 20 16:45 PDT 1994
Date: Fri, 20 May 94 16:37:30
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 2108

To Schaefer, Palmer,
Barthelemy, Baer, McNamara,
Kouveliotou, Kippen

The approximate IPN annulus for the May 20 location follows. Please keep in mind that this was done by eye, using the 1 second BACODINE light curve, so some improvement, perhaps a factor of two or so, is possible.

Kevin

SATELLITE POSITIONAL INFORMATION AND BURST ARRIVAL TIME

NO	NAME	DIST. FROM EARTH, KM.	ALPHA, DEG.	DELTA, DEG.
1	ULYSSES	446772500.0000+/-	500.0000000 120.14840+/-	.00500 -41.38680+/-
2	BATSE	6800.0000+/-	50.0000000 .00000+/-	180.00000 .00000+/-

JULIAN DAY NUMBER IS 34472.53 DAYS SINCE 1900 JAN 0.5

14.27 BY 15.00 CM MAP FOR RA= 320.00 TO 330.00, DEC= .00 TO 10.00

INTERSATELLITE CORRELATIONS

SEPARATION BETWEEN SATELLITES 1 AND 2 IS 1490.28099 LIGHT SECONDS. TIME DELAY IS -1
CORRELATION BETWEEN SATELLITE 1(ULYSSES) AND SATELLITE 2(BATSE)
GIVES A CIRCLE OF RADIUS 40.379534 DEGREES CENTERED AT ALPHA=300.149405 DEGREES, DELTA= 41.3
ERROR IN DETERMINATION OF RADIUS IS .133211 DEGREES OR 15.985348 ' TOTAL WIDTH
(.014377 DUE TO POSITION, .118834 DEGREES DUE TO TIMING)
INTERSATELLITE TIMING ERROR IS 2000000 MICROSECONDS

BASED ON THIS ANNULUS, THE EARTH CROSSING TIME IS 1306.580+/- .014 SECS.

AT SATELLITE 1, EARTH SUBTENDS .000817 DEGREES HALF ANGLE CENTERED AT ALPHA=300.148400 DE
AT SATELLITE 2, EARTH SUBTENDS 69.443033 DEGREES HALF ANGLE CENTERED AT ALPHA=180.000000 DE

CIRCLE CENTERED AT ALPHA=324.400 DEG, DELTA= 7.610 DEG, RADIUS= 4.000 DEG WILL BE TRACED WITH
MINIMUM DISTANCE BETWEEN THE POINT OR CENTER OF THE CIRCLE AND THE TRIANGULATION ANNULUS IS

SUN IS AT ALPHA= 56.564678 DEGREES, DELTA= 19.890941 DEGREES
TODAY IS 20/ 5/94

From root Fri May 20 11:50 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA12496; Fri, 20 May 94 11:50:55
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA14117; Fri, 20 May 1994 11:59:06 +0800
Received: (from scott@localhost) by xtelab.gsfc.nasa.gov (LHEA9404/940426.sl) id PAA01098; Fri
Date: Fri, 20 May 1994 15:00:28 -0400
From: Scott Barthelmy <scott@xtelab.gsfc.nasa.gov>
Message-Id: <199405201900.PAA01098@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu, khurley@sunspot.ssl.berkeley.edu
Subject: any IPN?
Content-Length: 562
Status: R

Kevin,

Although I'm sure you guessed that I would be interested in any IPN arc on GRB940520, I never explicitly asked about it. I think there a reasonable possibility of invoking the KPNO schmidt ToO on this. I wouldn't pull all the stops on this but it is middling interesting.

Since I am leaving town for two days starting in a few hours, I am turning all the Kitt Peak ToO over to Brad Schaefer (he's a co-i on this proposal). His number is 301-286-6955 (work) and 301-249-6888 (home call any time).

We don't know yet if egret saw any photons.

--scott

From root Fri May 20 12:07 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA12499; Fri, 20 May 94 12:07:28
Received: from xtelab.gsfc.nasa.gov by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA14427; Fri, 20 May 1994 12:15:40 +0800
Received: (from scott@localhost) by xtelab.gsfc.nasa.gov (LHEA9404/940426.sl) id PAA01134; Fri
Date: Fri, 20 May 1994 15:17:00 -0400
From: Scott Barthelmy <scott@xtelab.gsfc.nasa.gov>
Message-Id: <199405201917.PAA01134@xtelab.gsfc.nasa.gov>
To: khurley@space6.ssl.berkeley.edu, khurley@sunspot.ssl.berkeley.edu
Subject: 940520
Content-Length: 430
Status: R

Kevin,

EGRET looked and did NOT see any spark chamber photons. Bummer. Given that and that you don't get any data from just after UT midnight untill the next day (at least that is what i understood the JPL data transfer procedure to be for the last burt), then the importance of this burst is decreasing. So I repeat, don't pull out the stops in processing this one. Use your favor/credits on one that is more likely.

--scott

From root Fri May 20 00:02 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA12304; Fri, 20 May 94 00:01:41
Received: from pamir.inria.fr by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA10390; Fri, 20 May 1994 00:09:45 +0800
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/;
Relayed; 20 May 94 09:11:06+0200
X400-Received: by /PRMD=cnes/ADMD=atlas/C=FR/;
Relayed; 20 May 94 09:10:09+0200
Date: 20 May 94 09:10:09+0200
From: boer@cesr.cnes.fr
Message-Id: <9405200710.AA16810@cesr.cnes.fr>
To: khurley@space6.ssl.berkeley.edu
Subject: GRB 940520
Content-Length: 517
Status: R

Salut Kevin,
Y a t'il un anneau pour GRB 940529, de maniere a faire une observation radio
(la boite COMPTTEL est trop grande).

Merci, Amities
Michel

Michel Boer	Telephone: (33) 61 55 66 40
CESR	Telefax: (33) 61 55 67 01
BP 4346	
F 31029 Toulouse Cedex	Internet: boer@cesr.cnes.fr
France	

From tharriso@NMSU.Edu Wed Aug 24 12:10 PDT 1994
From: tharriso@NMSU.Edu
Date: Wed, 24 Aug 1994 13:10:39 -0600
To: khurley@sunspot.ssl.berkeley.edu
Subject: IPN Data

Dear Kevin:

I am currently in the process of analyzing and writing-up the first year's results from our Rapid-Response Network. We have 10 bursts for which we have obtained some amount of coverage. You have kindly provided me IPN data for four of those bursts. I'd like to get from you the other IPN results if they have been calculated (or letting me know whether they were detected by the IPN). Are these data routinely published (or available from) somewhere? I hate to continually bother you about them.

We appreciate your help, and would welcome your participation on the resulting paper.

-Tom

The bursts for which IPN annuli are needed are:

GRB931031:

BATSE triggered on an intense GRB on 931031 at 04:06:35 UT. The event lasted approximately 15 second(s). Final BATSE location: RA = 329 deg, Dec = +60 deg (~4 deg error circle).

Follow-up observations are encouraged. Intense double episode event. Second pulse appears at ~ T+12 s. Seen well above 300 keV. First pulse lasts ~ 2 s and shows substructure.

GRB931226:

BATSE trigger time: 12/26/93 at 72669 s UT (20:11:09), the BATSE position was RA=208, Dec=28.

GRB940520:

TITLE: BACODINE BURST POSITION NOTICE
NOTICE_DATE: Fri 20 May 94 00:24:46 UT
TRIGGER_NUM: 2984
GRB_RA: 319.88d {+21h 19m 31s} (J2000),
GRB_DEC: +11.40d {+11d 24' 14"} (J2000),
GRB_INTEN: 2805 [cnts] Peak=2805 [cnts/sec]
GRB_TIME: 1300.12 SOD {00:21:40.12} UT
GRB_DATE: 9492 TJD; 140 DOY; 94/05/20

Sent BACODINE/Unigres annulus 11/19

GRB940622:

TITLE: BACODINE BURST POSITION NOTICE
NOTICE_DATE: Wed 22 Jun 94 13:18:19 UT
NOTICE_TYPE: Original
TRIGGER_NUM: 3039
GRB_RA: 300.62d {+20h 02m 30s} (J2000),
GRB_DEC: -40.43d {-40d 26' 03"} (J2000),
GRB_INTEN: 1940 [cnts] Peak=1940 [cnts/sec]
GRB_TIME: 47898.26 SOD {13:18:18.26} UT
GRB_DATE: 9525 TJD; 173 DOY; 94/06/22

GRB940708:

The BATSE position of the burst is: RA(2000)= 20h 08m Dec(2000)= +21 deg.

TITLE : COMPTTEL BURST POSITION NOTICE: GRB940708
NOTICE_DATE: Sat Jul 9 01:16:32 GMT 1994
BURST_DATE : 9541 TJD; 8-JUL-1994
BURST_TIME : 74526.00 SEC; 20:42: 6 UT
BURST_SCZEN: 6.0 Deg.
BURST_SCAZI: 139.0 Deg.
BURST_CLASS: Weak (Approx 37 events)

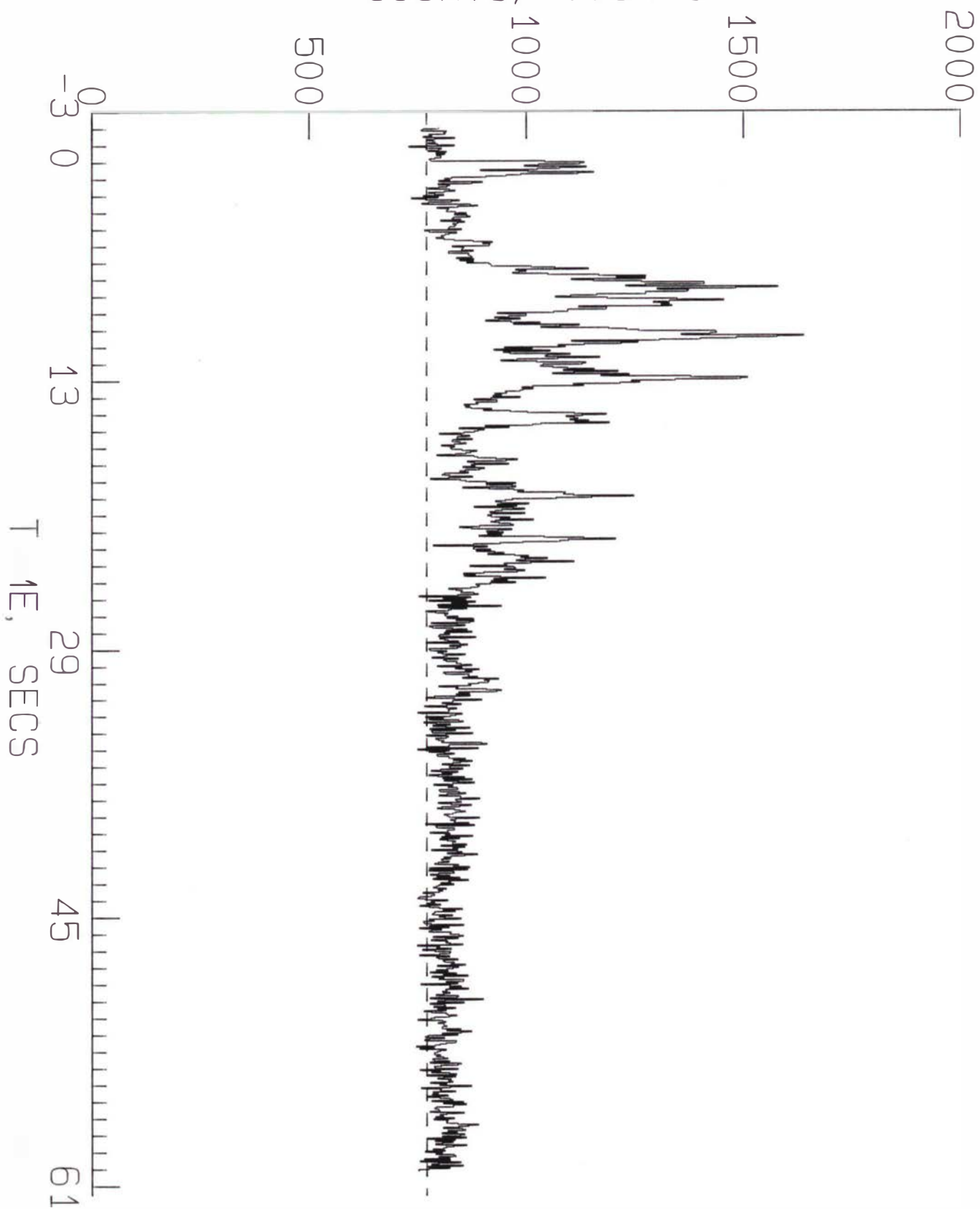
BATSE

20/05/94

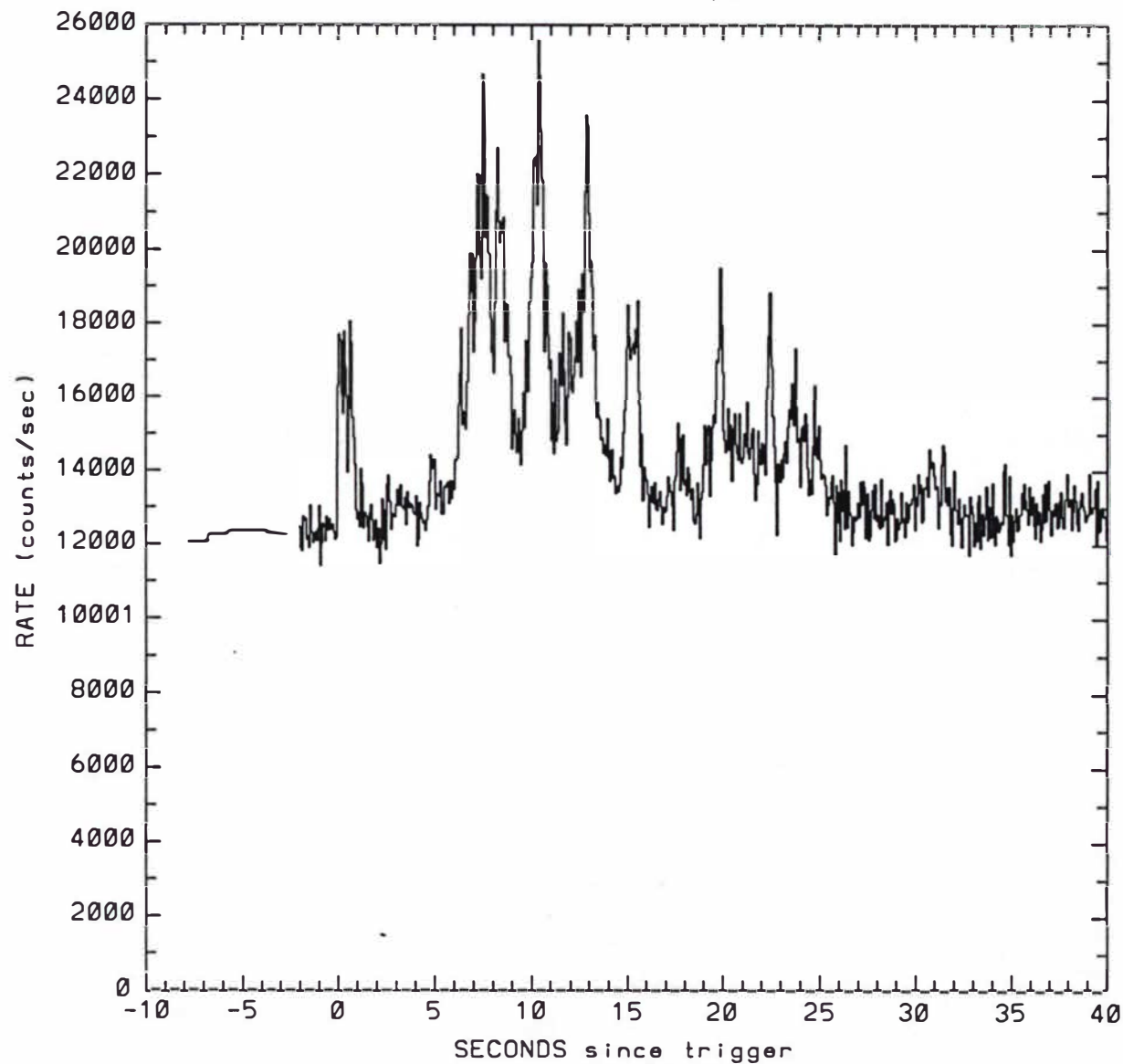
1298.714

25- 100 keV

COUNTS/ .064 S



DISCSC Data for K. Hurley, No. 2984



25-OCT-1994 14.12.53

Created by MOPS 8D
(Burst Display)
Version 2.22

Trigger # : 2984

Trigger Time:
9492 / 1298.714

Burst Data Type:
DISCSC

Deadtime
Corrected: N

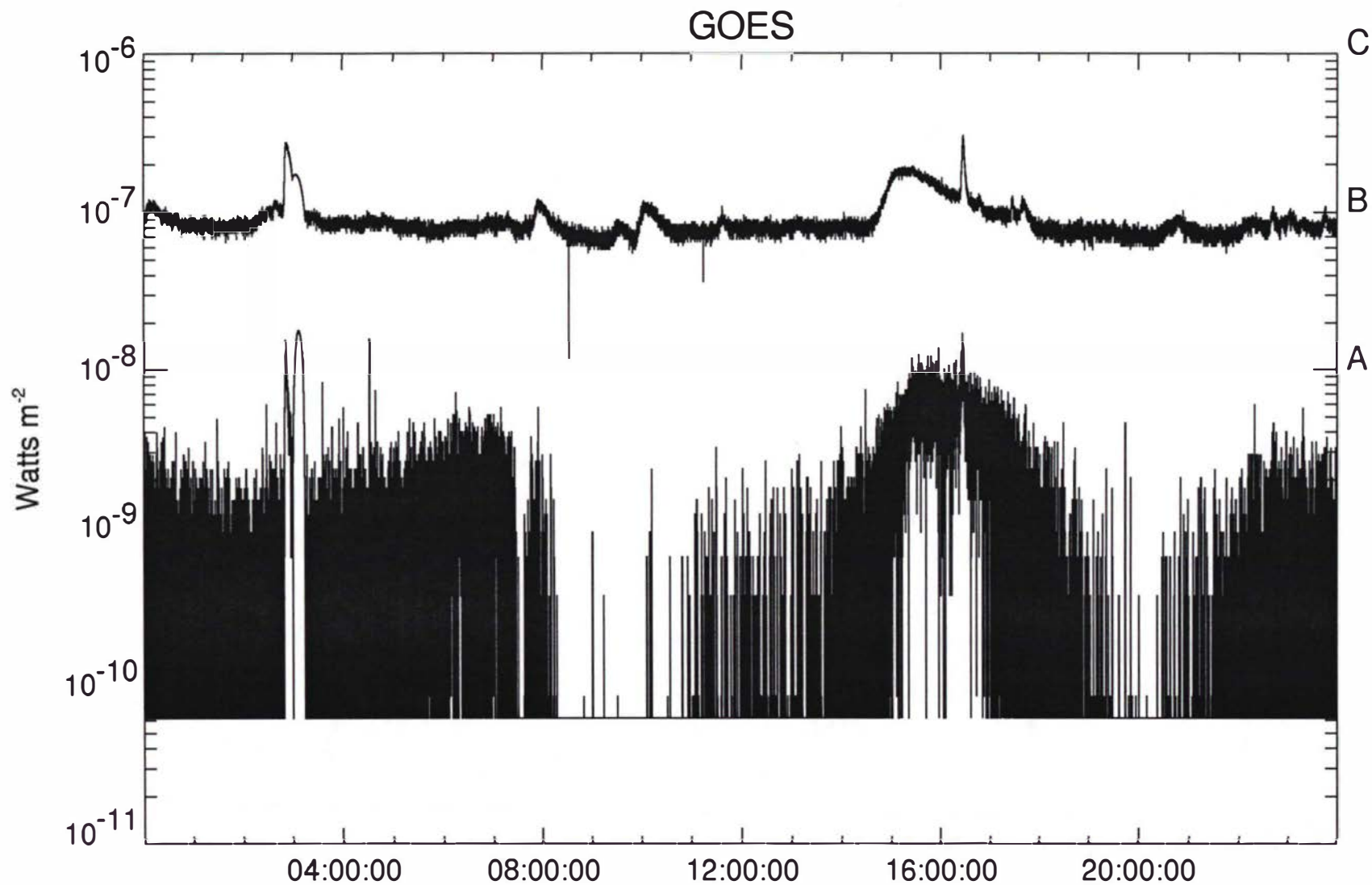
Background Data
Type: PREB + DISCLA

Minimum Integ. Time:
0.064 seconds

Detectors [7..0]:
-6-4-2-0

Discriminators:
(1, 2)

Quality Mask:
BDISP1



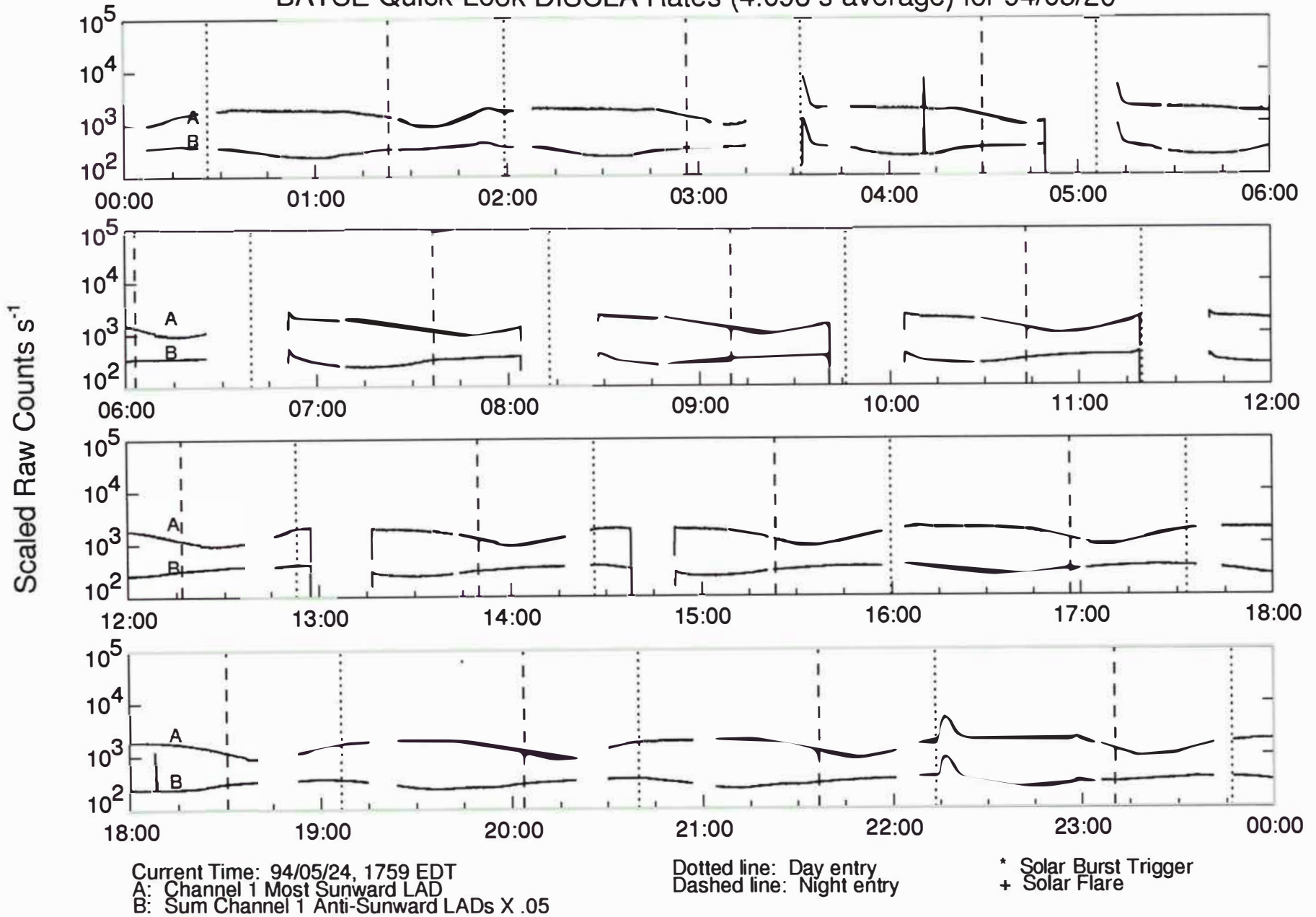
Data Start: 94/05/20, 0000:02

Plot created: 94/05/24, 1802

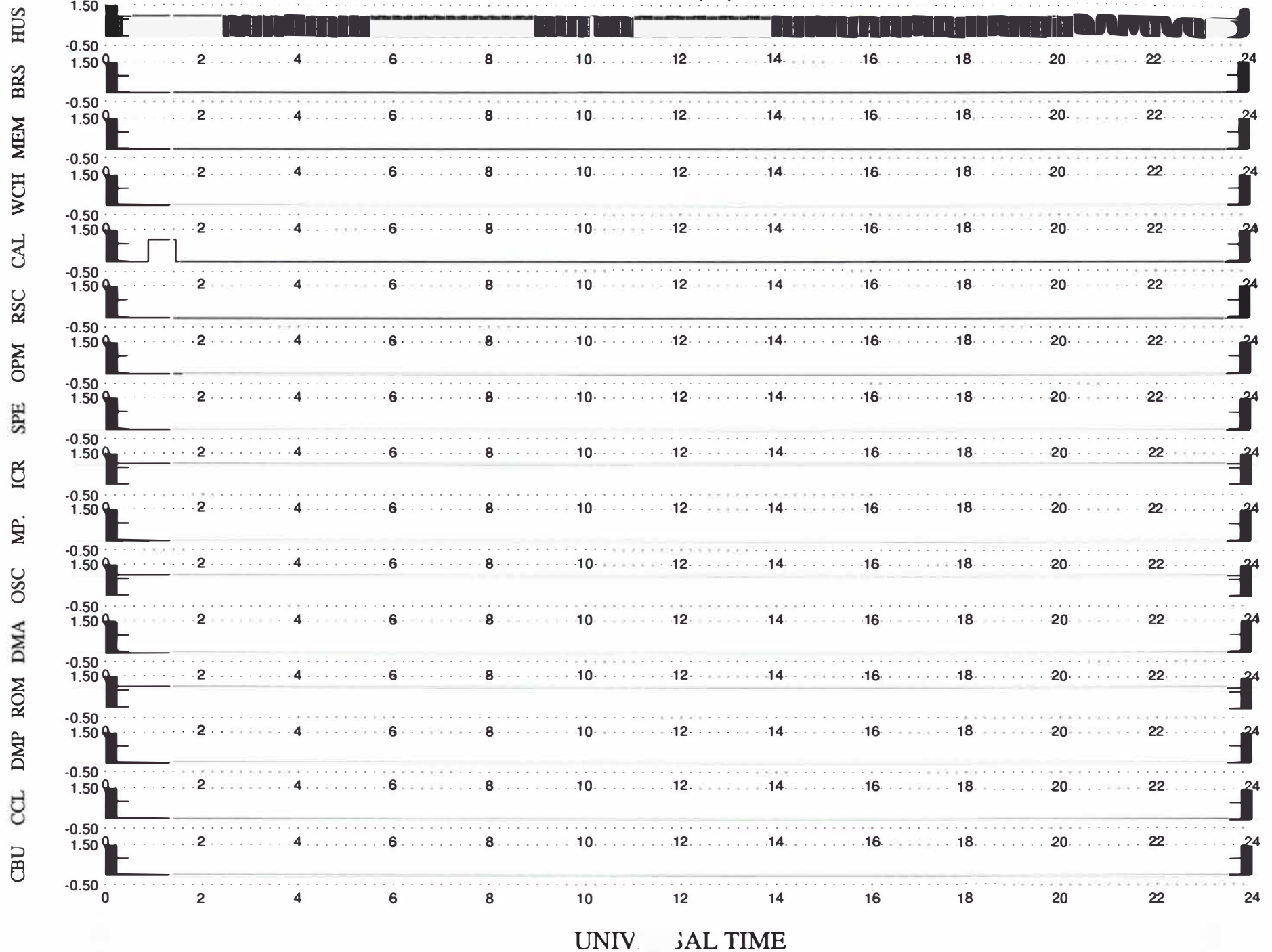
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

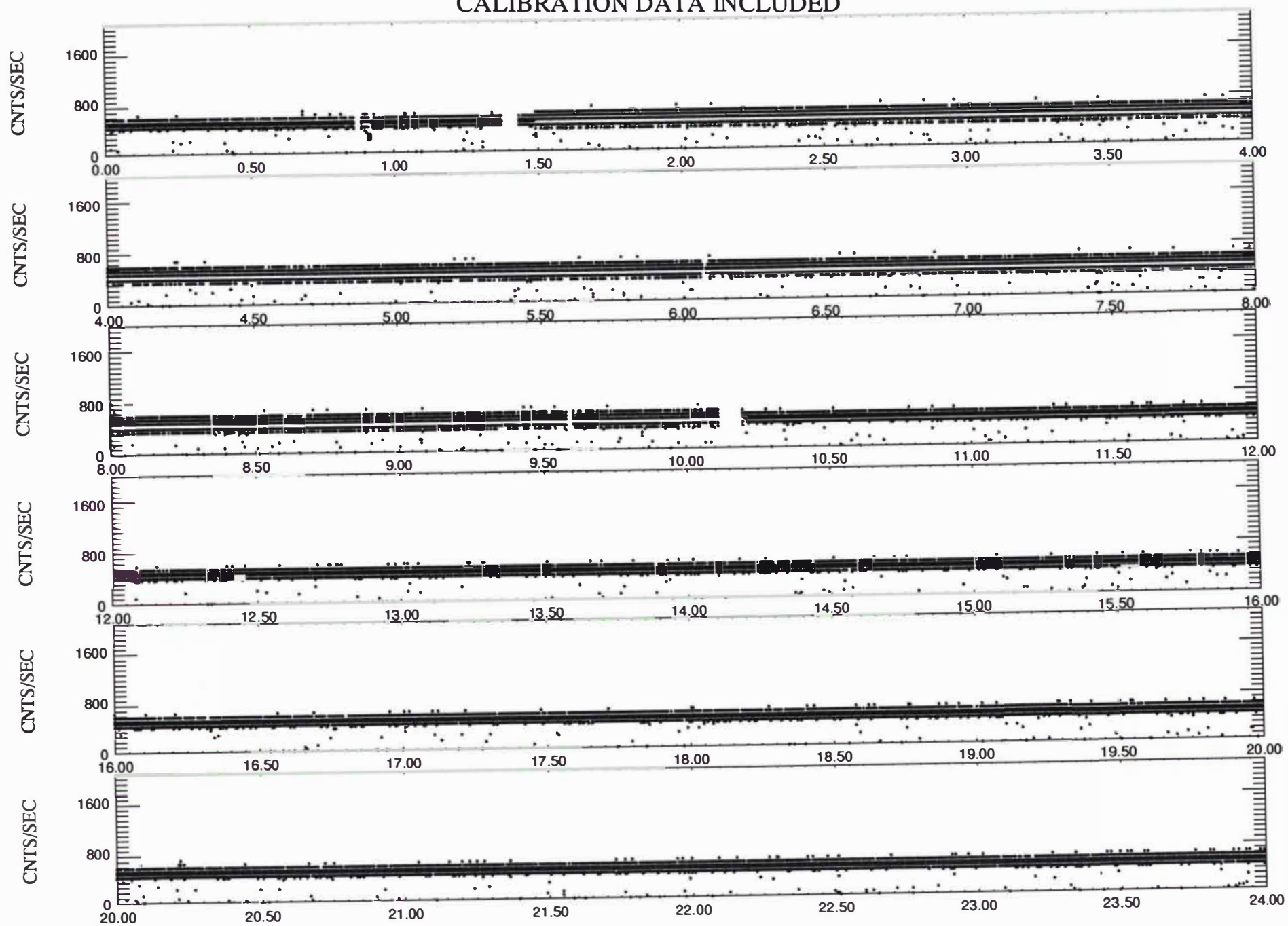
BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/20



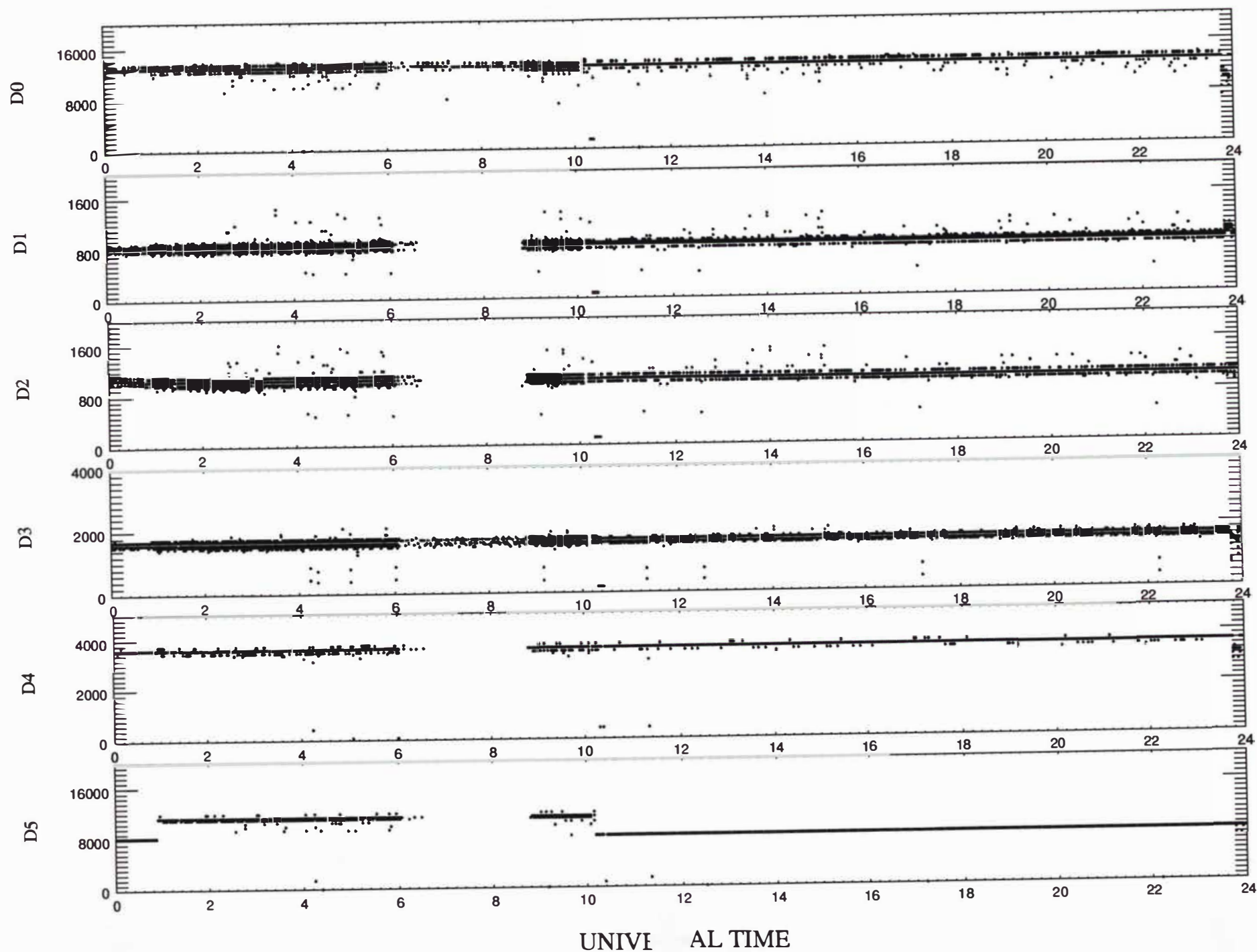
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV. TIME



From khurley@space6.ssl.berkeley.edu Tue May 24 08:03 PDT 1994
Date: Tue, 24 May 94 07:55:42
From: khurley@space6.ssl.berkeley.edu
Content-Type: text
Content-Length: 259

To C. Barat, A. Claret, N. Lund, O. Terekhov, and R. Sunyaev

Ulysses detected an intense gamma-ray burst on May 21, 1994, at 03:10 Ulysses time. The spacecraft was 1500 light-seconds from Earth. Was this event detected by WATCH, PHEBUS, or SIGMA?

Kevin

From root Fri May 27 06:31 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA15637; Fri, 27 May 94 06:30:54
Received: from pamir.inria.fr by sunspot.ssl.berkeley.edu (5.0/SMI-SVR4)
id AA12993; Fri, 27 May 1994 06:38:42 +0800
X400-Received: by /PRMD=inria/ADMD=atlas/C=fr/;
Relayed; 27 May 94 15:40:22+0200
X400-Received: by /PRMD=cnes/ADMD=atlas/C=FR/;
Relayed; 27 May 94 13:34:59+0000
Date: 27 May 94 13:34:59+0000
From: BARAT@cnesta.span.cnes.fr
To: khurley@space6.ssl.berkeley.edu
Message-Id: <0097F0ED.A72A6D40.1@cnesta.cnes.fr>
Subject: On the 1994 May 21 GRB
Content-Length: 149
Status: R

Mon cher Kevin,

Sorry ! Granat etait arrete depuis la fin avril et les operations n'ont repris que le 21 May 94 vers 10:00.

Amities

Claude

TELEFAX MESSAGE**Commissariat à l'Energie Atomique
Direction des Sciences de la Matière****DAPNIA
SERVICE D'ASTROPHYSIQUE****Date : 24 May 1994****Pages : 1 + 0****From : Arnaud Claret****To : Kevin Hurley**

Cher Kevin,

Nous n'avons pas encore reçu de compte-rendu relatif aux observations SIGMA depuis que la nouvelle équipe est présente en station à l'evpatoria. Cela dit, si le programme d'observation s'est déroulé comme prévu, les observations SIGMA n'ont débuté que le 21 mai à 10:30 TU. Domage pour le GRB détecté par ULYSSES ! Evidemment, je te tiendrai au courant si j'ai du nouveau.

Amitiés,

Arnaud Claret

From HAGEDON@fender.msfc.nasa.gov Mon May 23 10:07 PDT 1994
Date: Mon, 23 May 1994 12:08:52 -0500 (CDT)
From: HAGEDON@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2985
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2985
EVENT OF 1994 MAY 21 DAY OF YEAR=141
EVENT CROSSING TIME AT BATSE : 42318. S. OR 11:45:18.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 131.000 -62.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 5/ 94 IS:
RA= 119.799 DEC= -41.069 DIST= 2.990 AU
BATSE-ULYSSES DISTANCE = 447366847. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=158.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1383.72 SECS.
CROSSING TIME AT ULYSSES IS 40934. S. OR 11:22:14 +/- 125.98 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 5/ 94 IS:
RA= 26.108 DEC= 9.903 DIST= 2.149 AU
MARS-BATSE DISTANCE = 321433056. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.29 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 290.26 SECS.
CROSSING TIME AT MARS IS 42608. S. OR 11:50:08 +/- 183.61 SECONDS

10

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2985	940521	9493	42318	3500	131	-62

BATSE BURST TRIGGER

NO.: 2985

TIME: TJD=9493 SECONDS=42318

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=117.6 AZIMUTH=255.8 ERROR= DEGREES

COMMENTS:

BURST. COMPLEX EVENT. DUR.~30 SEC. NOT VISIBLE ABOVE 300 KEV.

23 / 5 / 94

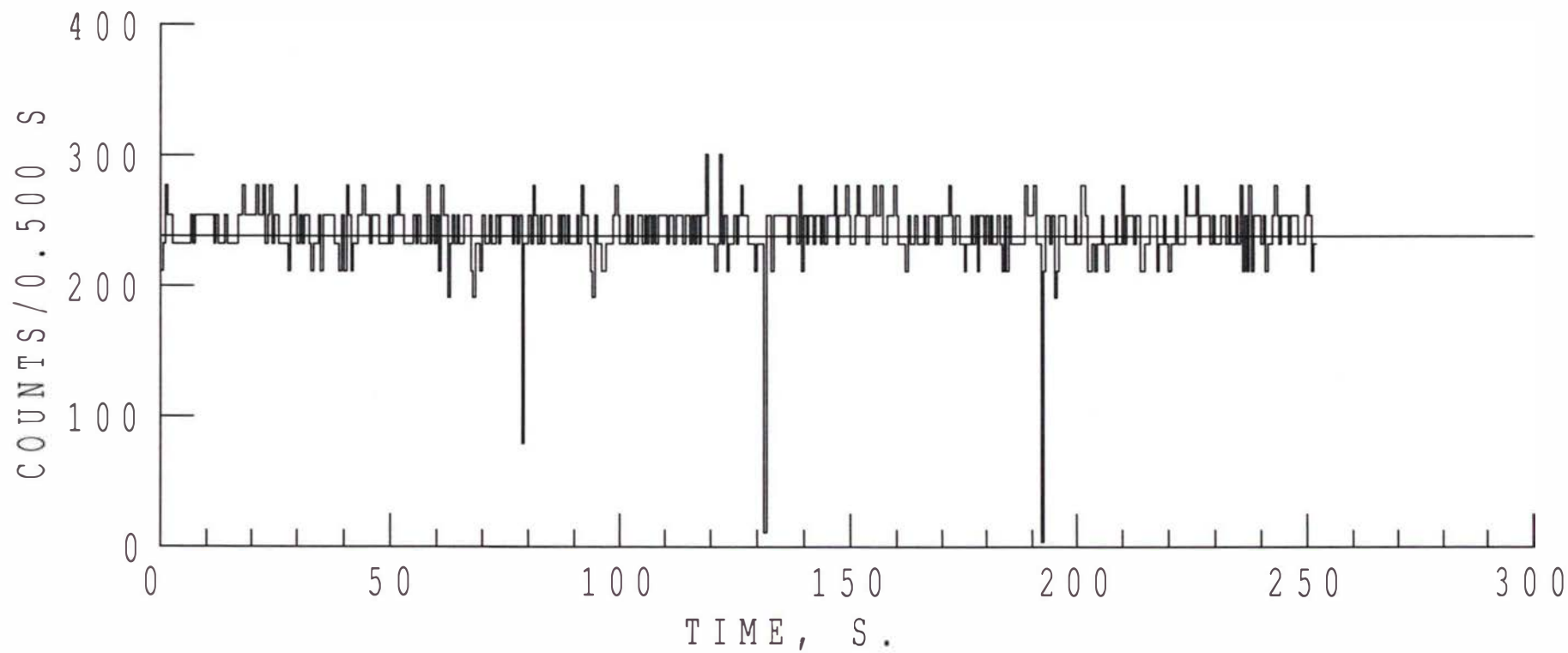
ULYSSES RT

21 / 5 / 94 40824.191 s

0 - 0 keV

M= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From HAGEDON@fender.msfc.nasa.gov Mon May 23 10:10 PDT 1994
Date: Mon, 23 May 1994 12:11:40 -0500 (CDT)
From: HAGEDON@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2986
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2986
EVENT OF 1994 MAY 21 DAY OF YEAR=141
EVENT CROSSING TIME AT BATSE : 56744. S. OR 15:45:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 294.000 51.000
BATSE PEAK COUNTING RATE: 2800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 5/ 94 IS:
RA= 119.809 DEC= -41.049 DIST= 2.991 AU
BATSE-ULYSSES DISTANCE = 447434152. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 10.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1466.39 SECS.
CROSSING TIME AT ULYSSES IS 58210. S. OR 16:10:10 +/- 120.51 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 5/ 94 IS:
RA= 26.108 DEC= 9.903 DIST= 2.149 AU
MARS-BATSE DISTANCE = 321433056. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.36 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -118.86 SECS.
CROSSING TIME AT MARS IS 56625. S. OR 15:43:45 +/- 183.20 SECONDS

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2986	940521	9493	56744	2800	294	+51

BATSE BURST TRIGGER

NO.: 2986

TIME: TJD=9493 SECONDS=56744

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=63.6 AZIMUTH=91.7 ERROR= DEGREES

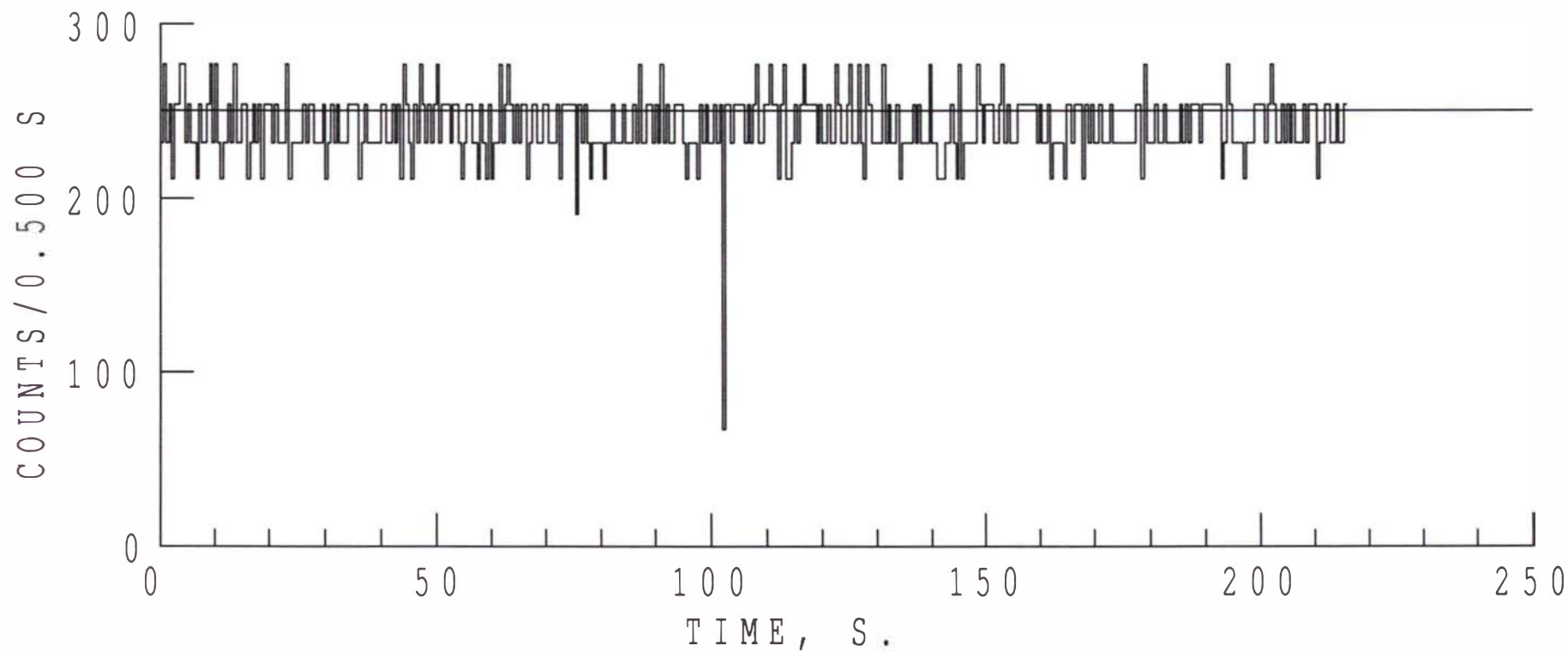
COMMENTS:

BURST. WEAK SINGLE PULSE. DUR.~5 SEC. NOT VISIBLE ABOVE 300 KEV.

23 / 5 / 94

ULYSSES RT
21 / 5 / 94 58104.445 s
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HAGEDON@fender.msfc.nasa.gov Mon May 23 10:12 PDT 1994
Date: Mon, 23 May 1994 12:14:17 -0500 (CDT)
From: HAGEDON@fender.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2987
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2987
EVENT OF 1994 MAY 21 DAY OF YEAR=141
EVENT CROSSING TIME AT BATSE : 79344. S. OR 22:02:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 319.000 -76.000
BATSE PEAK COUNTING RATE: 5700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 5/ 94 IS:
RA= 119.824 DEC= -41.018 DIST= 2.992 AU
BATSE-ULYSSES DISTANCE = 447539620. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -693.26 SECS.
CROSSING TIME AT ULYSSES IS 78651. S. OR 21:50:50 +/- 269.01 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 5/ 94 IS:
RA= 26.108 DEC= 9.903 DIST= 2.149 AU
MARS-BATSE DISTANCE = 321433056. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 85.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 79.53 SECS.
CROSSING TIME AT MARS IS 79424. S. OR 22:03:43 +/- 186.84 SECONDS

10

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2987	940521	9493	79344	5700	319	-76

BATSE BURST TRIGGER

NO.: 2987

TIME: TJD=9493 SECONDS=79344

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.0 AZIMUTH=230.1 ERROR= DEGREES

COMMENTS:

BURST. SINGLE SPIKE. DUR.~0.2 SEC. NOT VISIBLE ABOVE 300 KEV.

23 / 5 / 94

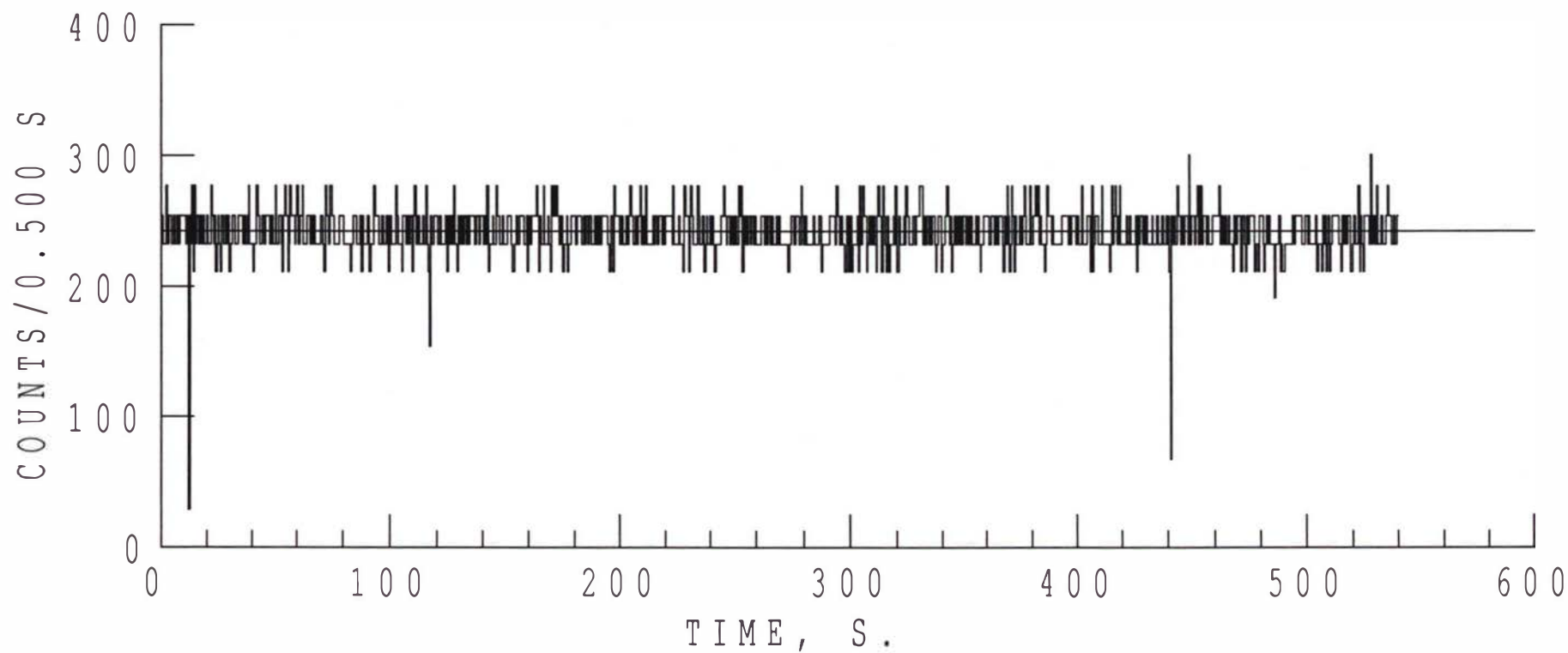
ULYSSES RT

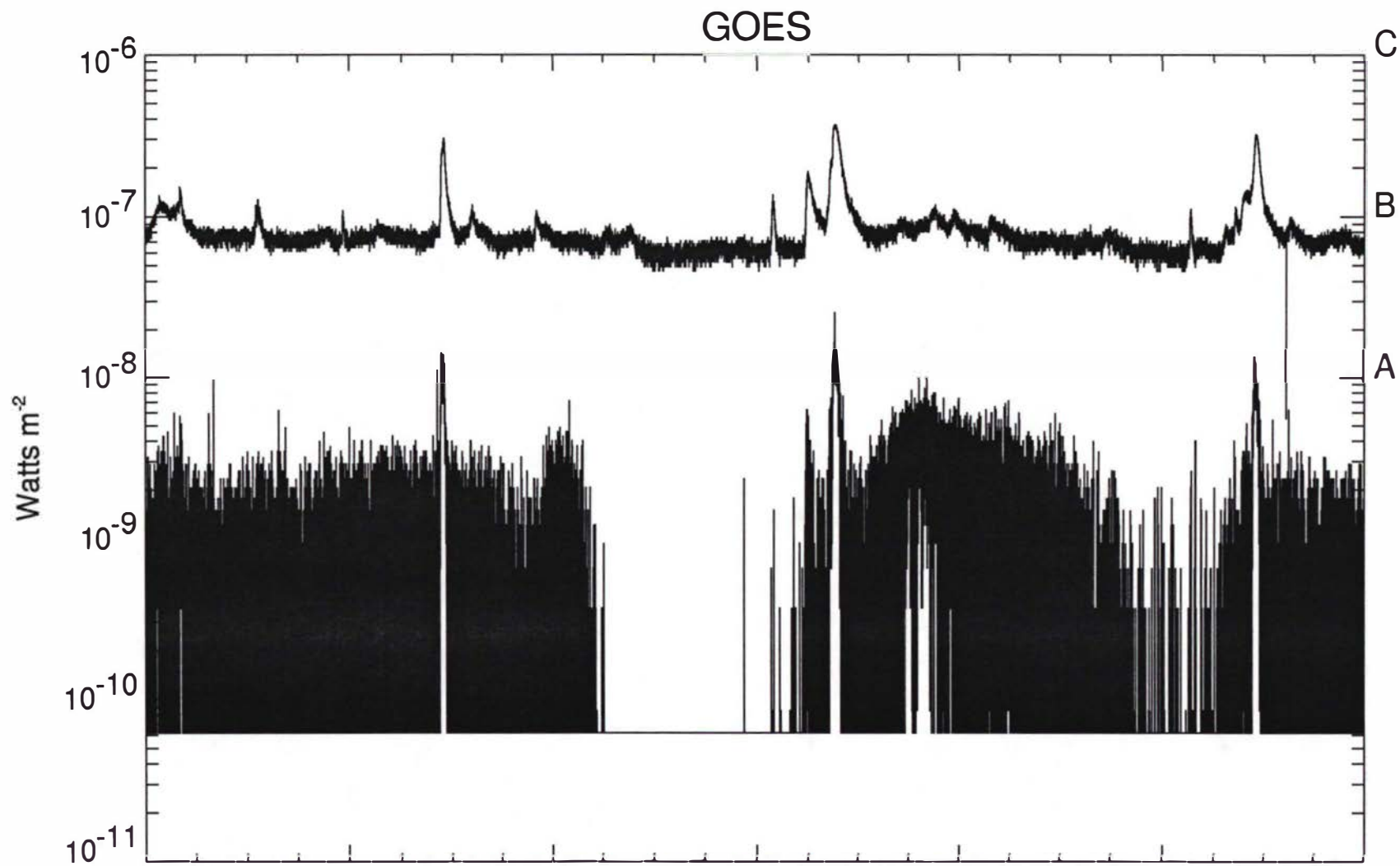
21 / 5 / 94 78372.250 s

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS

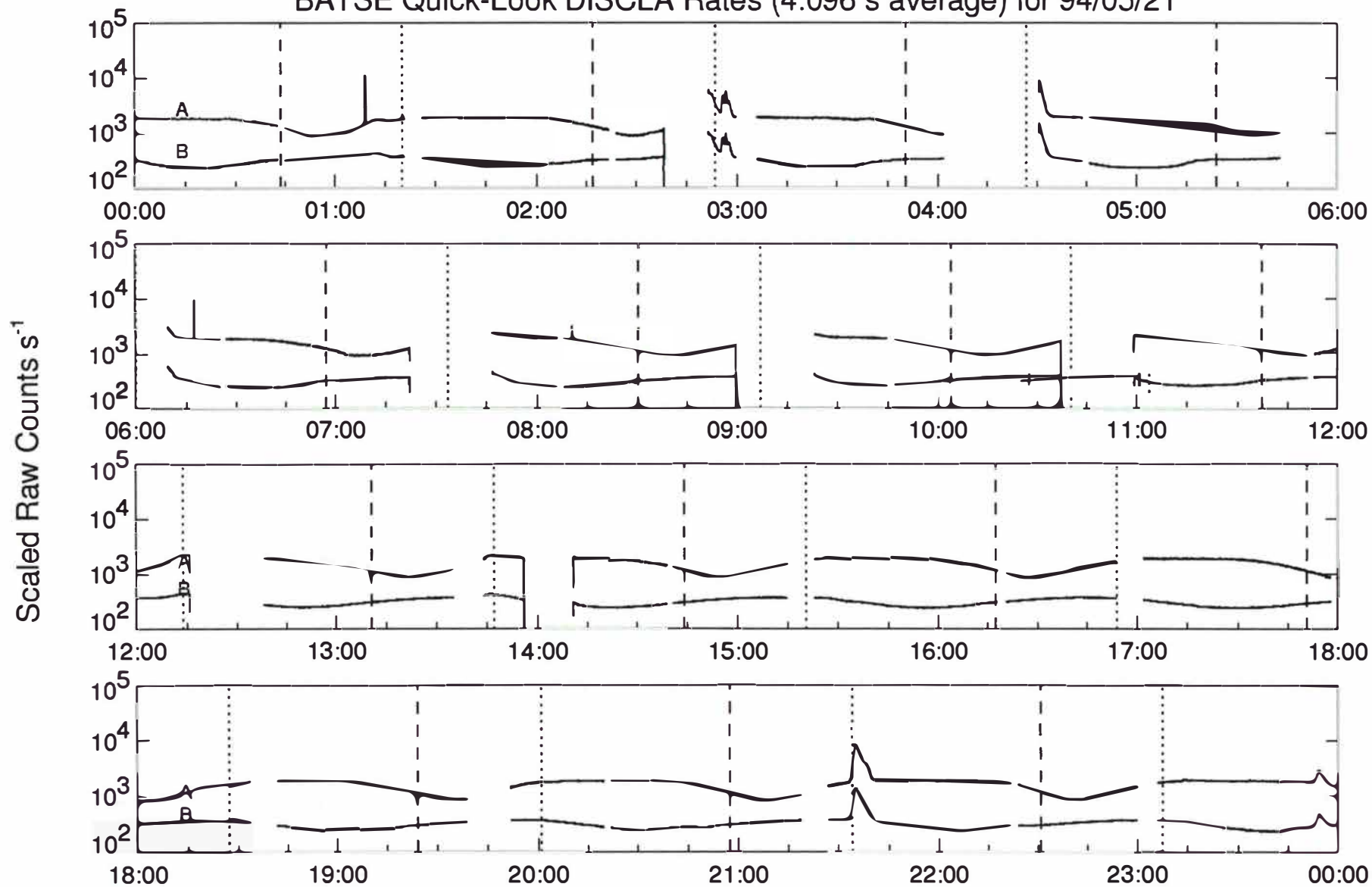




Data Start: 94/05/21, 0000:02 Plot created: 94/05/24, 1802

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

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/21

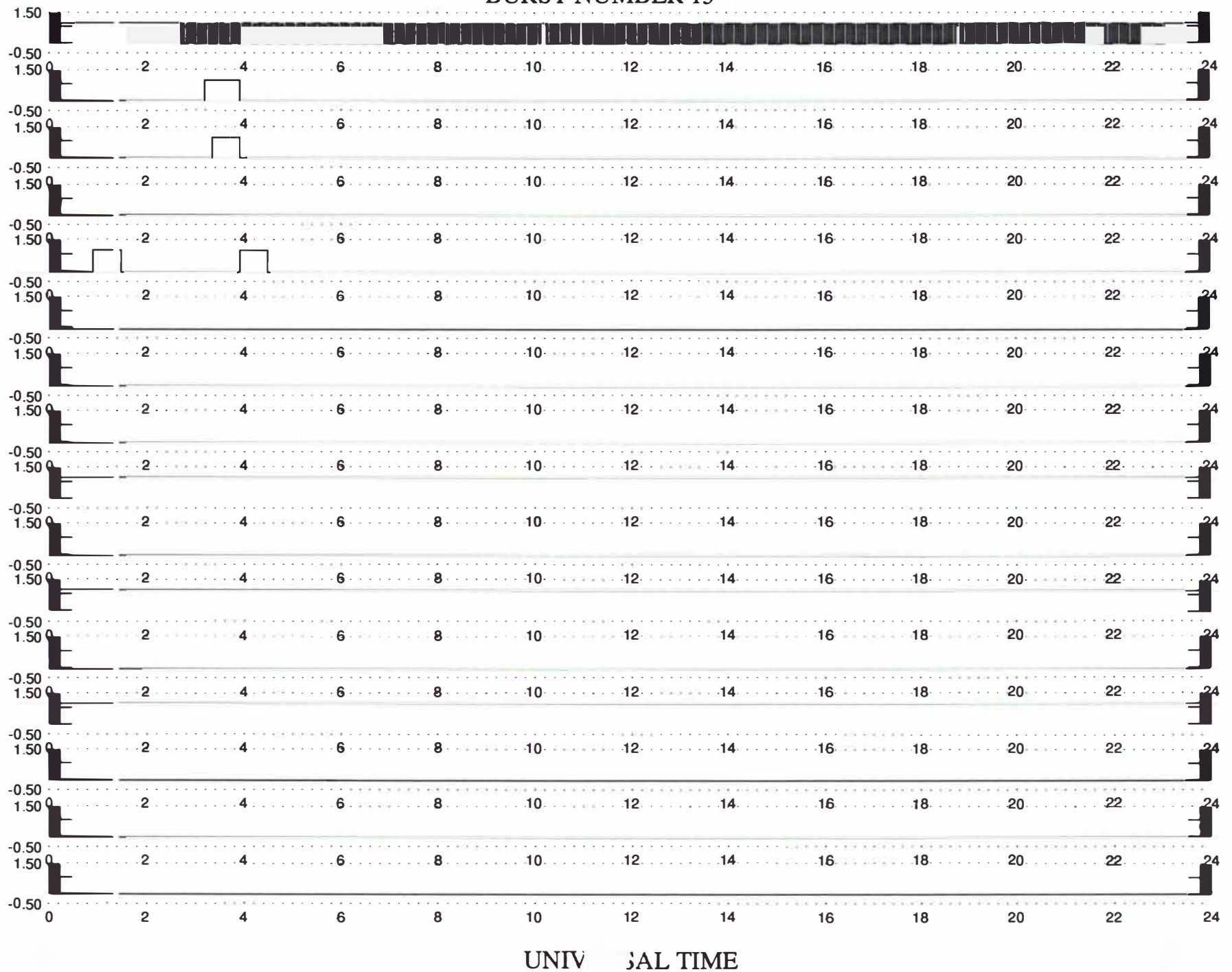


Current Time: 94/05/24, 1759 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

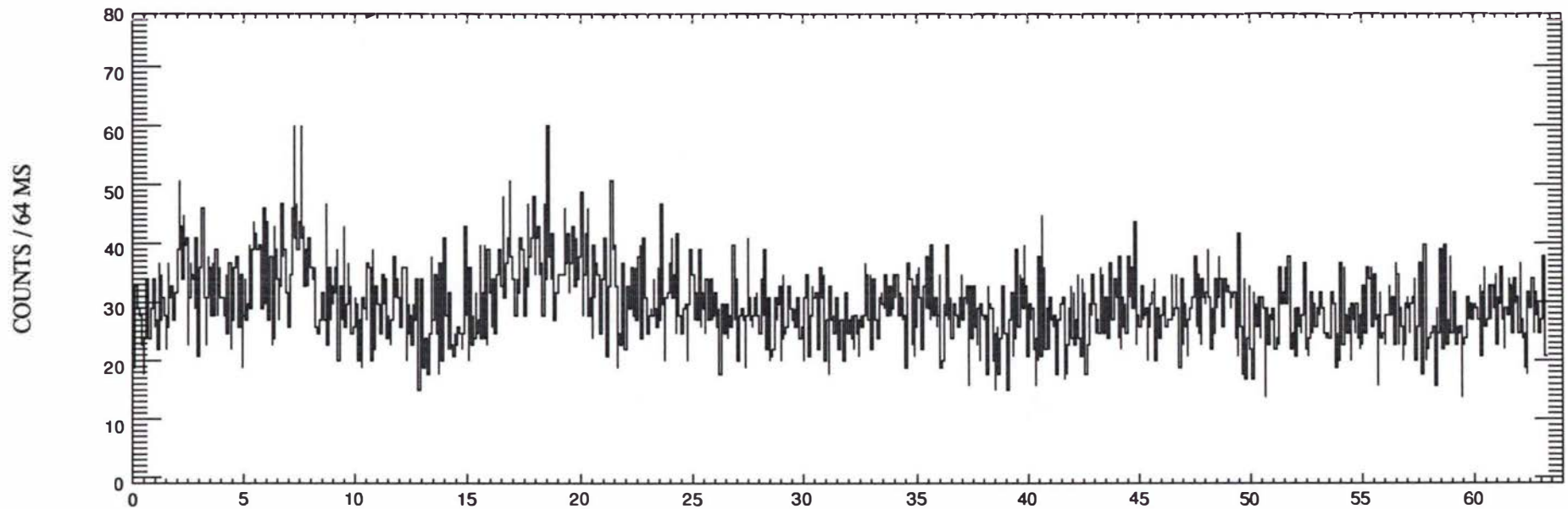
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

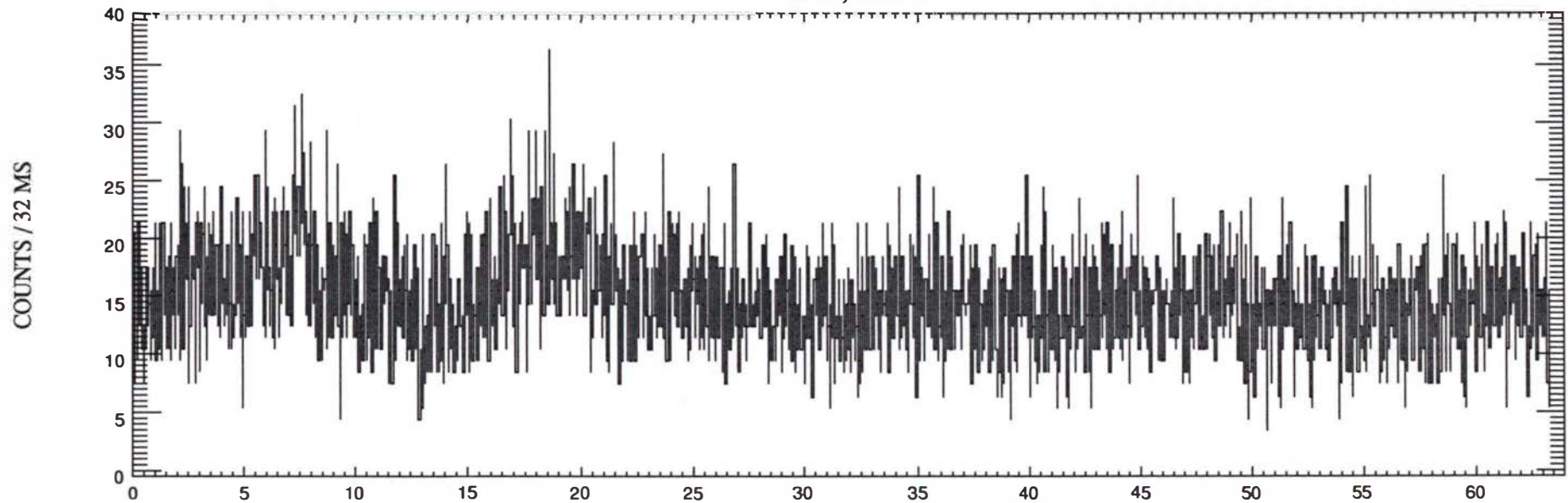
CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



Burst Counter 13 at UT= 3.176109186808 h=11433.993 s 03:10:33.993

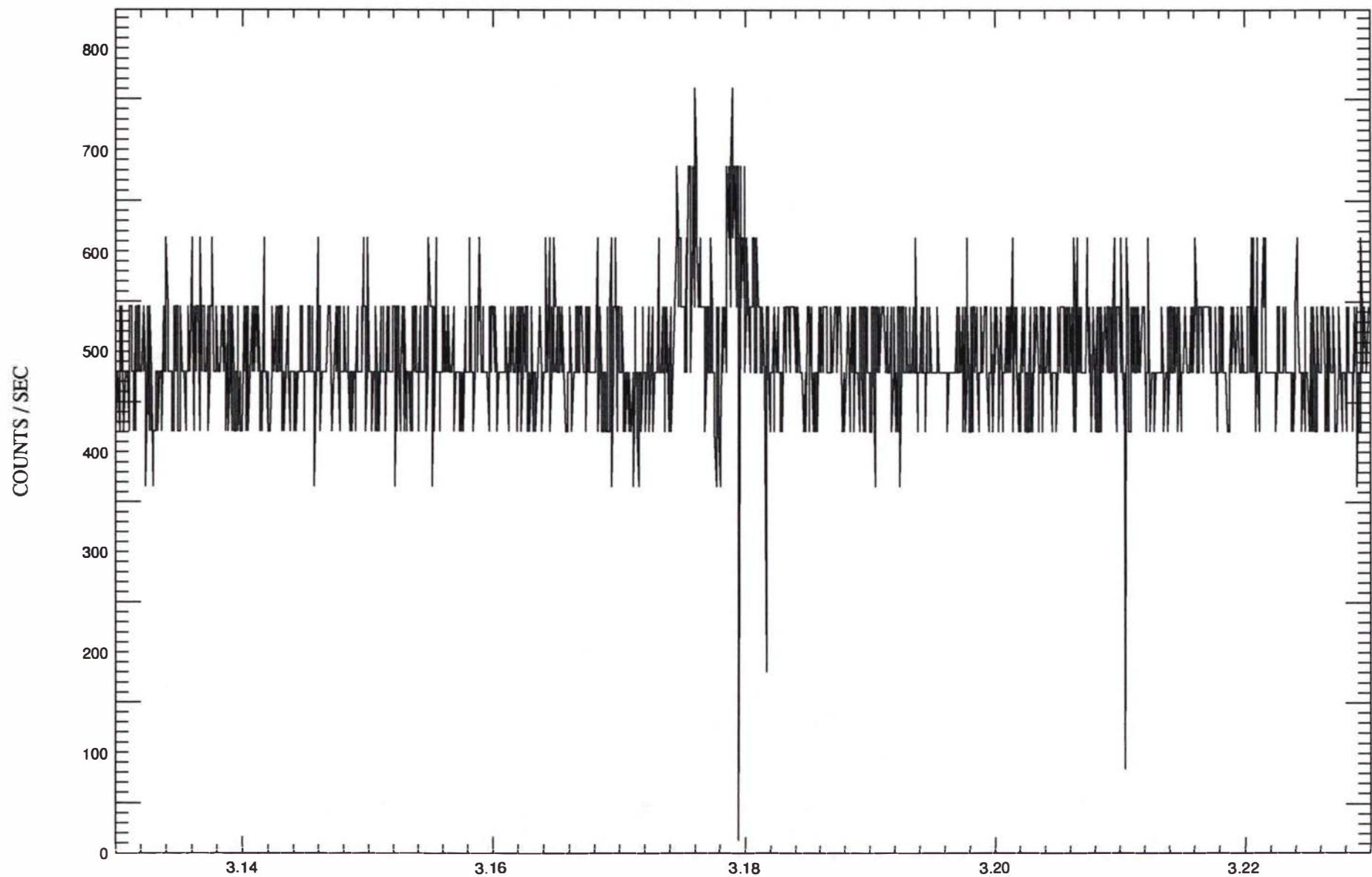


TIME, SECS

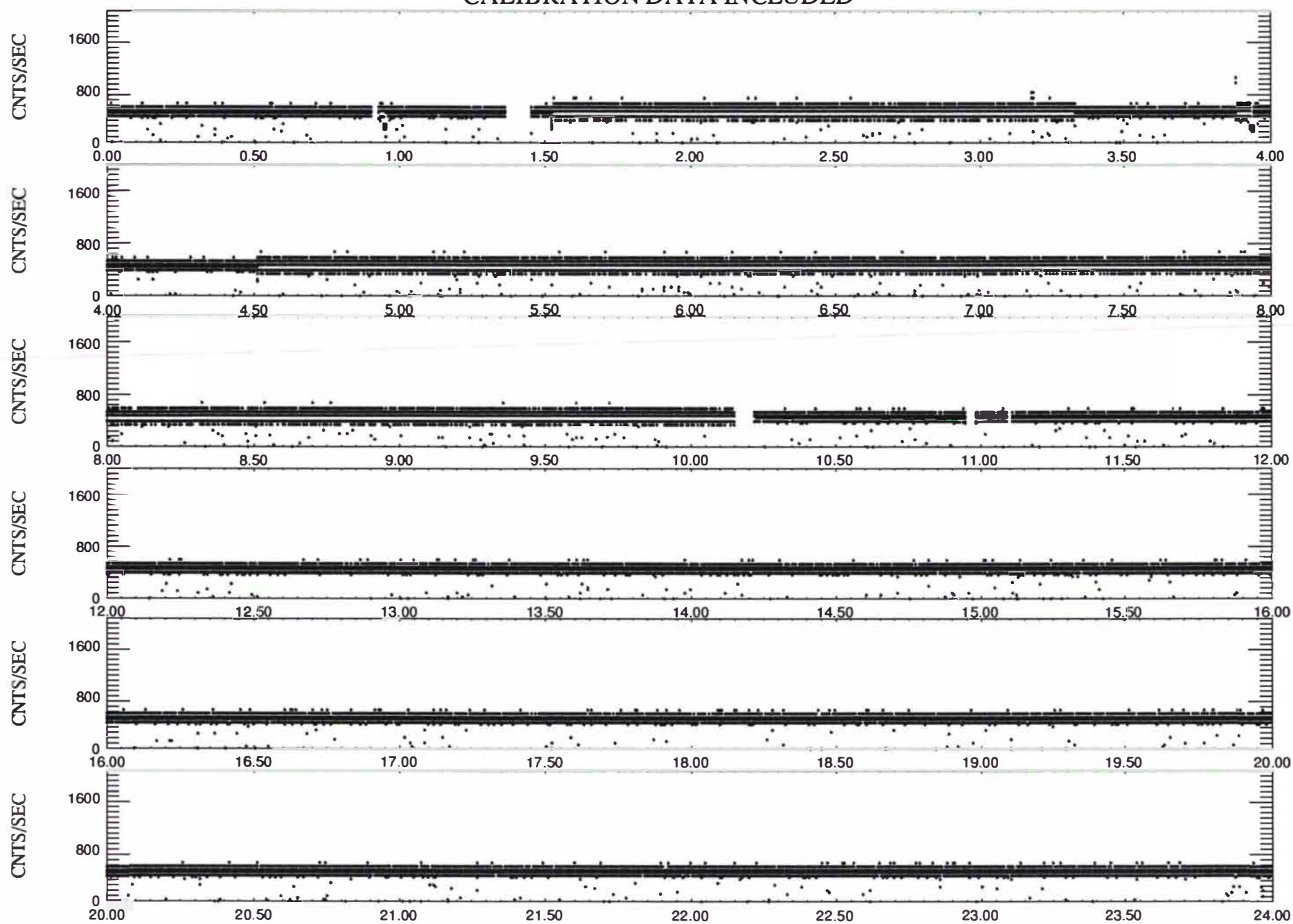


TIME, SECS

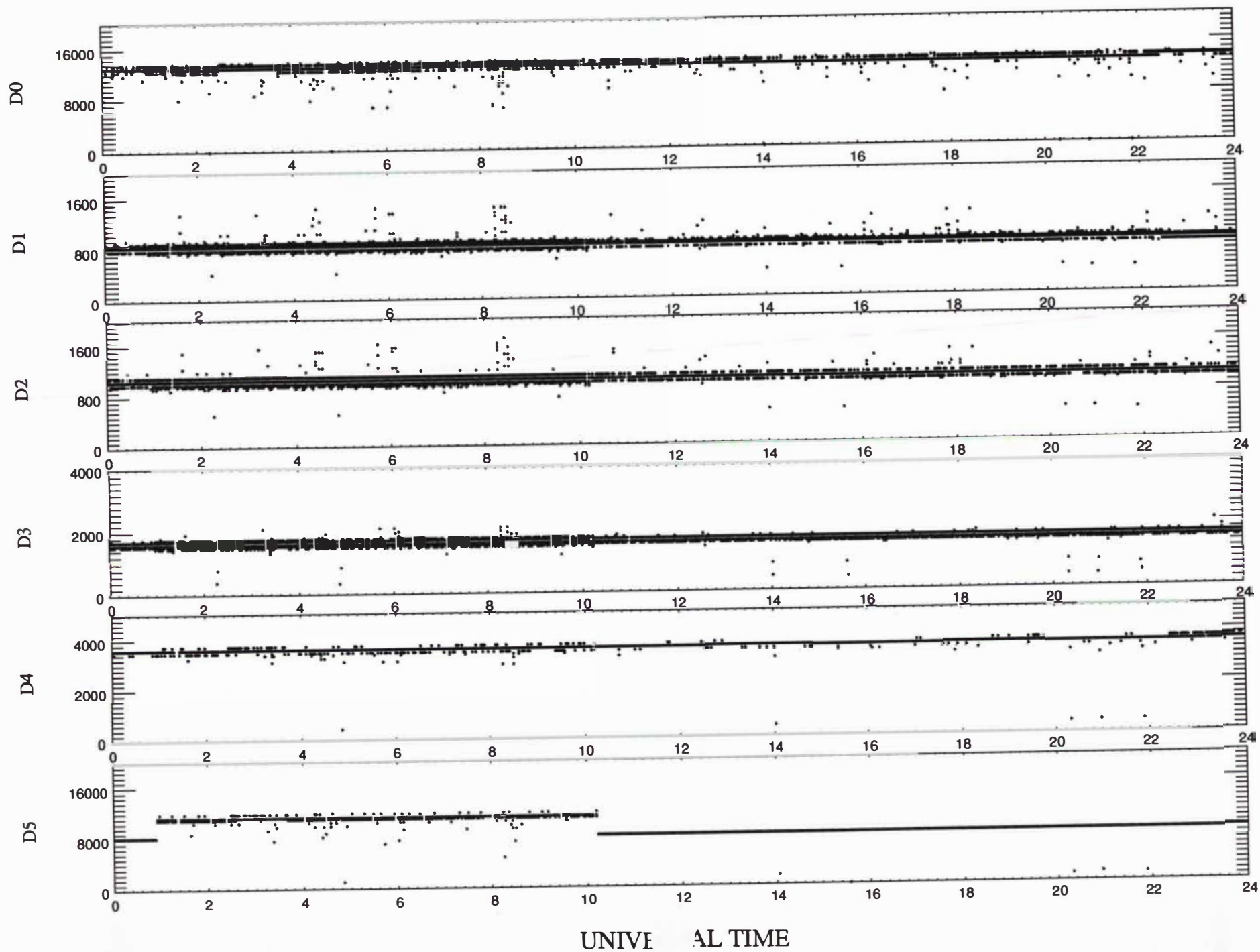
CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED



UNIV TIME



P H E B U S

6 / 1 2 / 9 6

U L Y S S E S R T

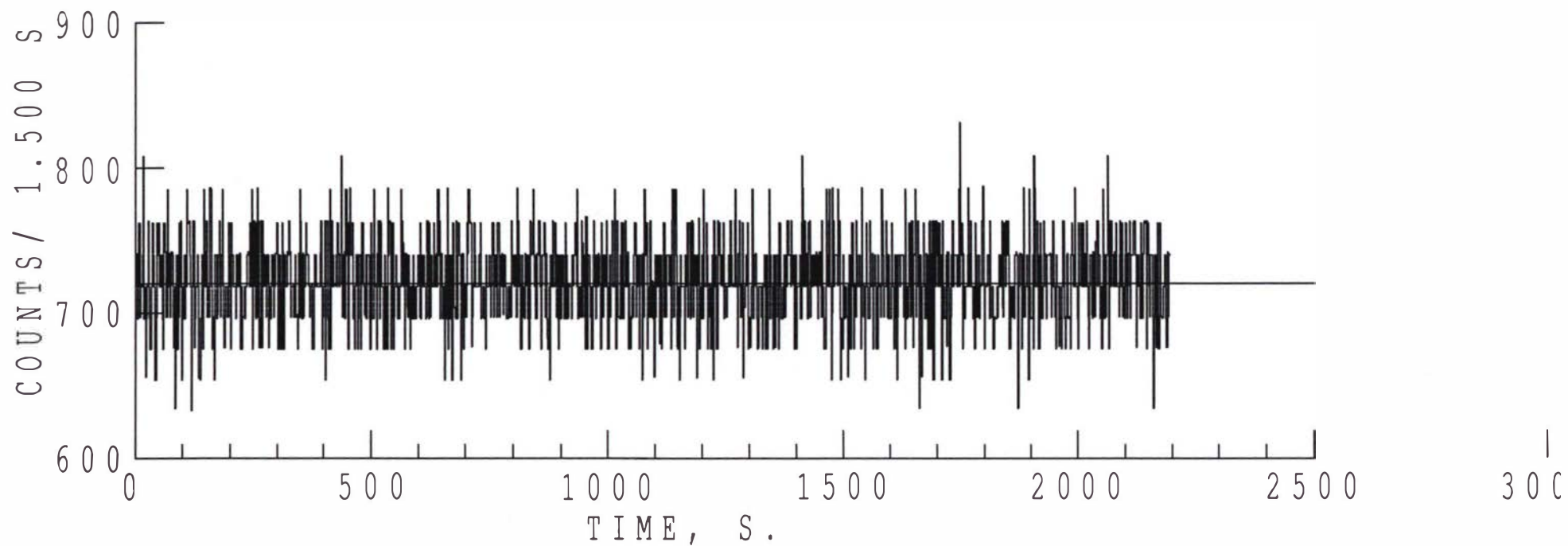
2 2 / 5 / 9 4 5 4 9 3 6 . 1 9 1 s

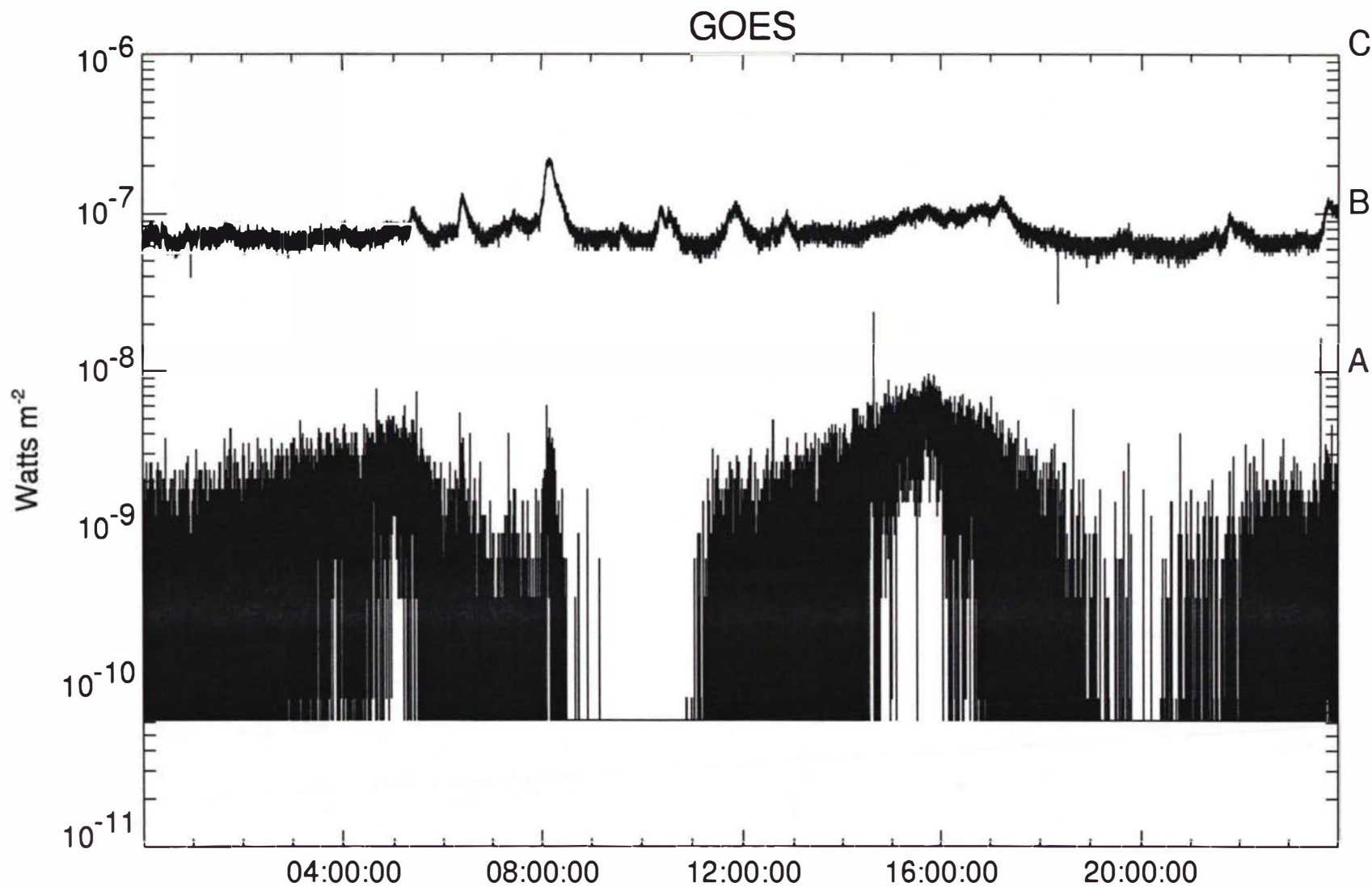
0 . 5 0 0 S I N T E R V A L S R E G R O U P E D B Y 3

0 - 0 k e V

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





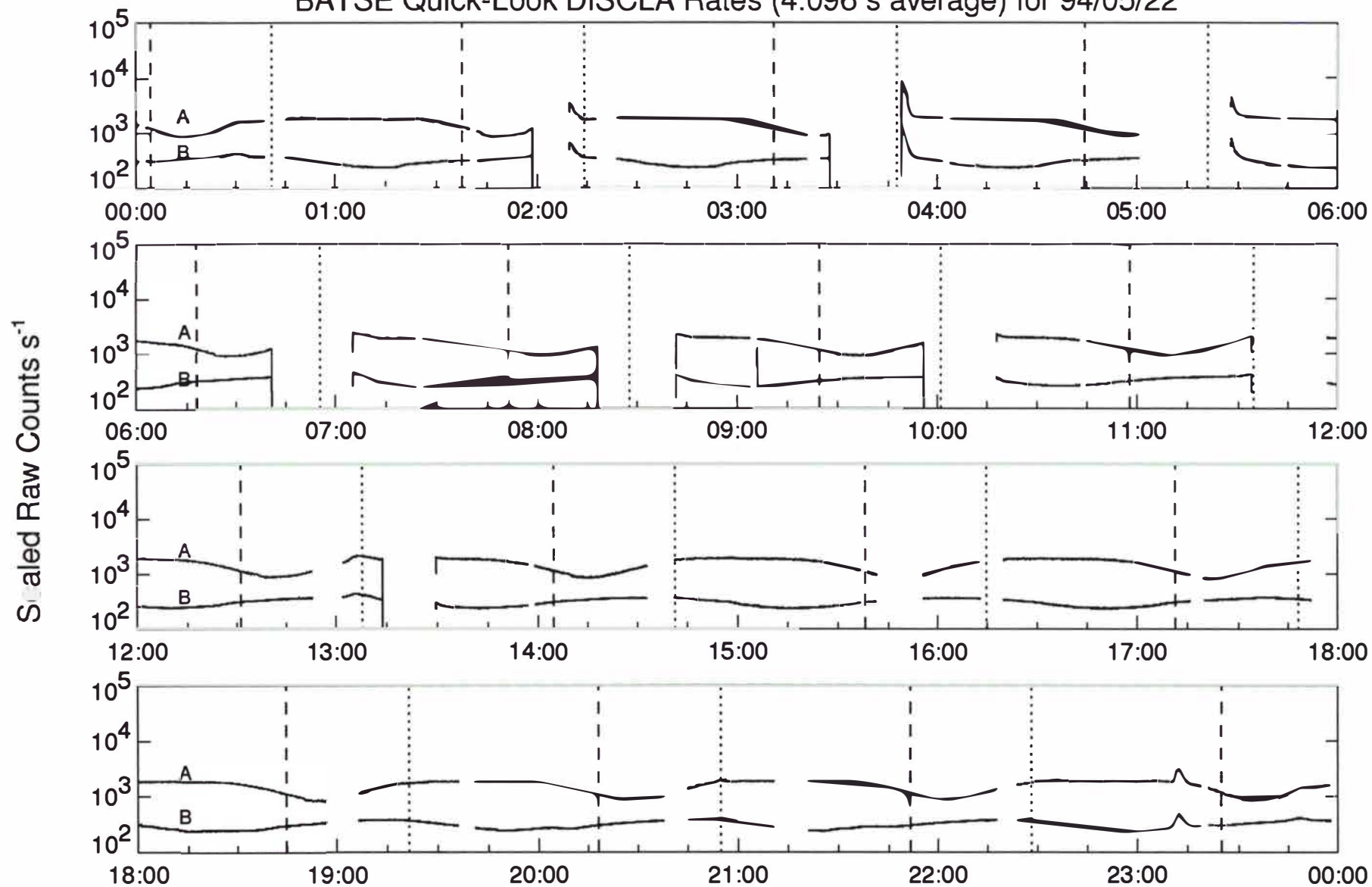
Data Start: 94/05/22, 0000:02

Plot created: 94/05/24, 1803

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/22

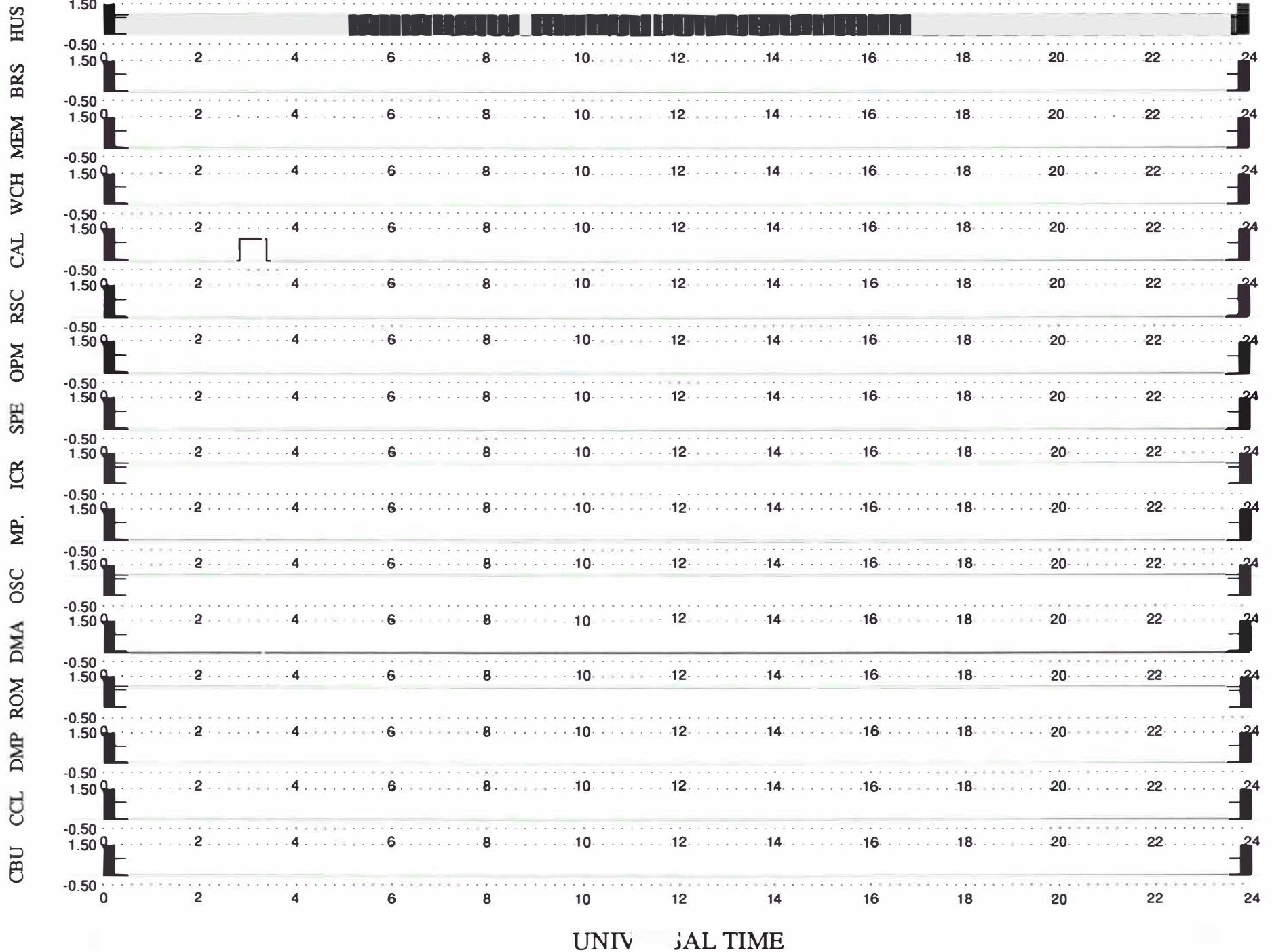


Current Time: 94/05/24, 1759 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

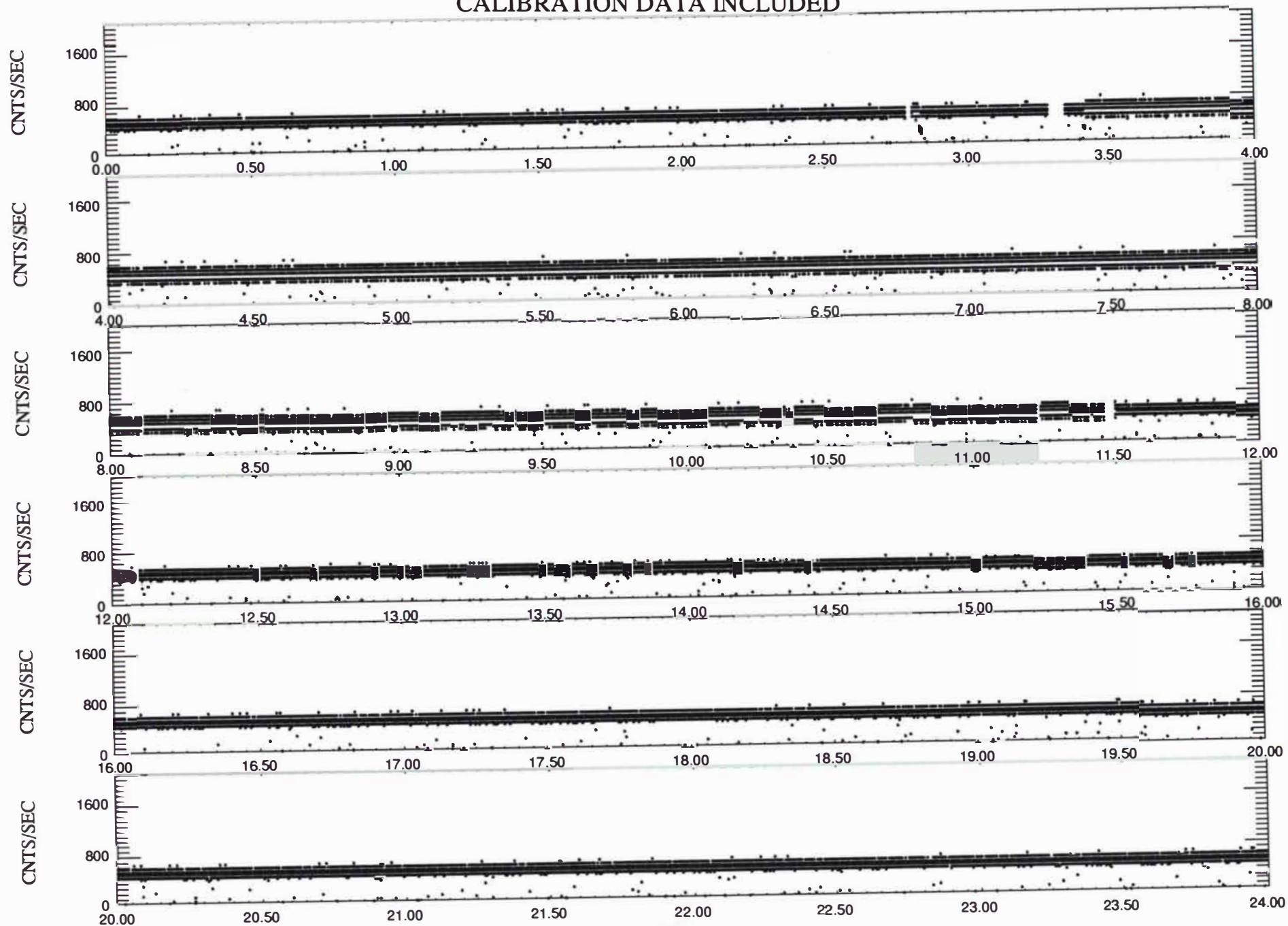
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

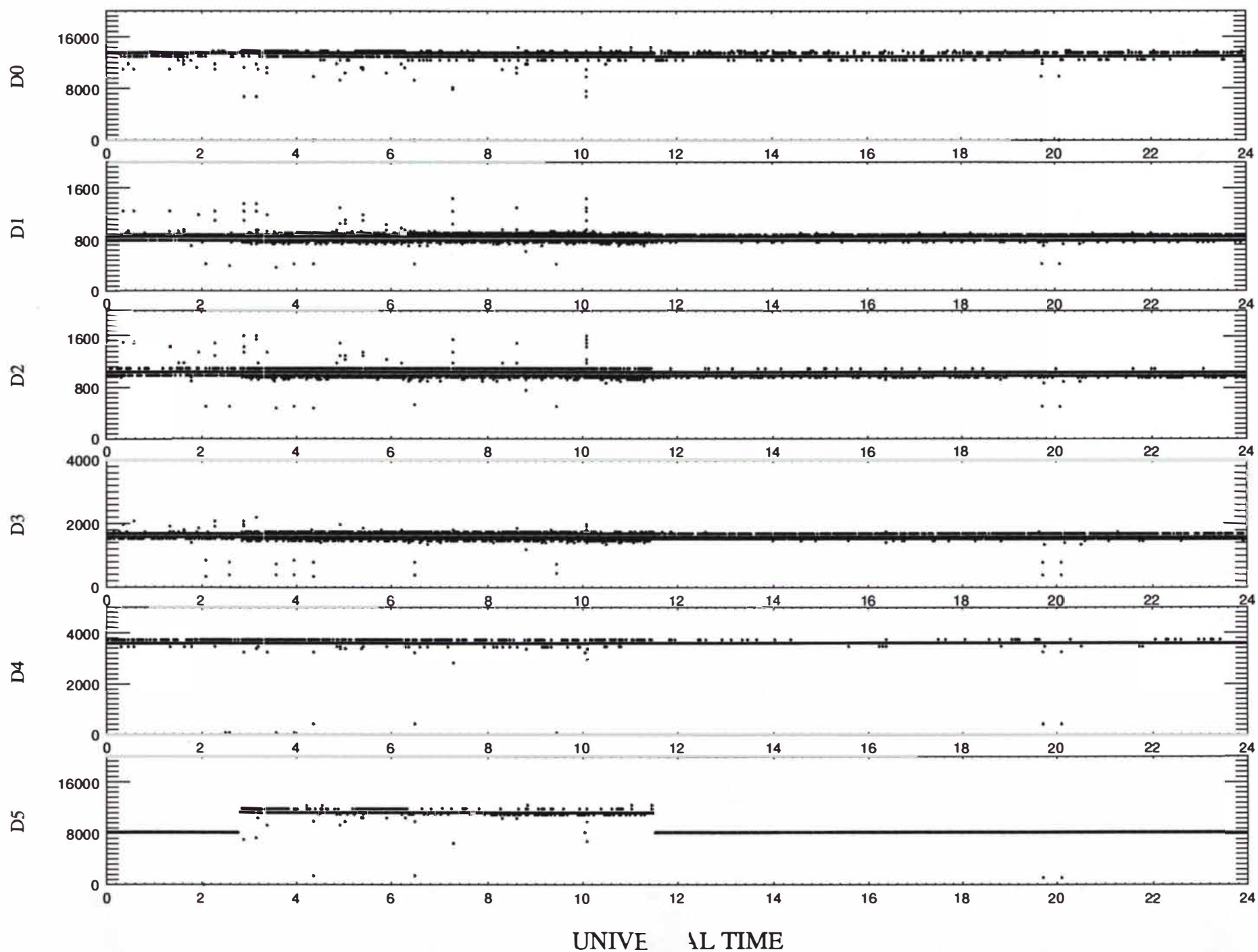
NO BURST (13)

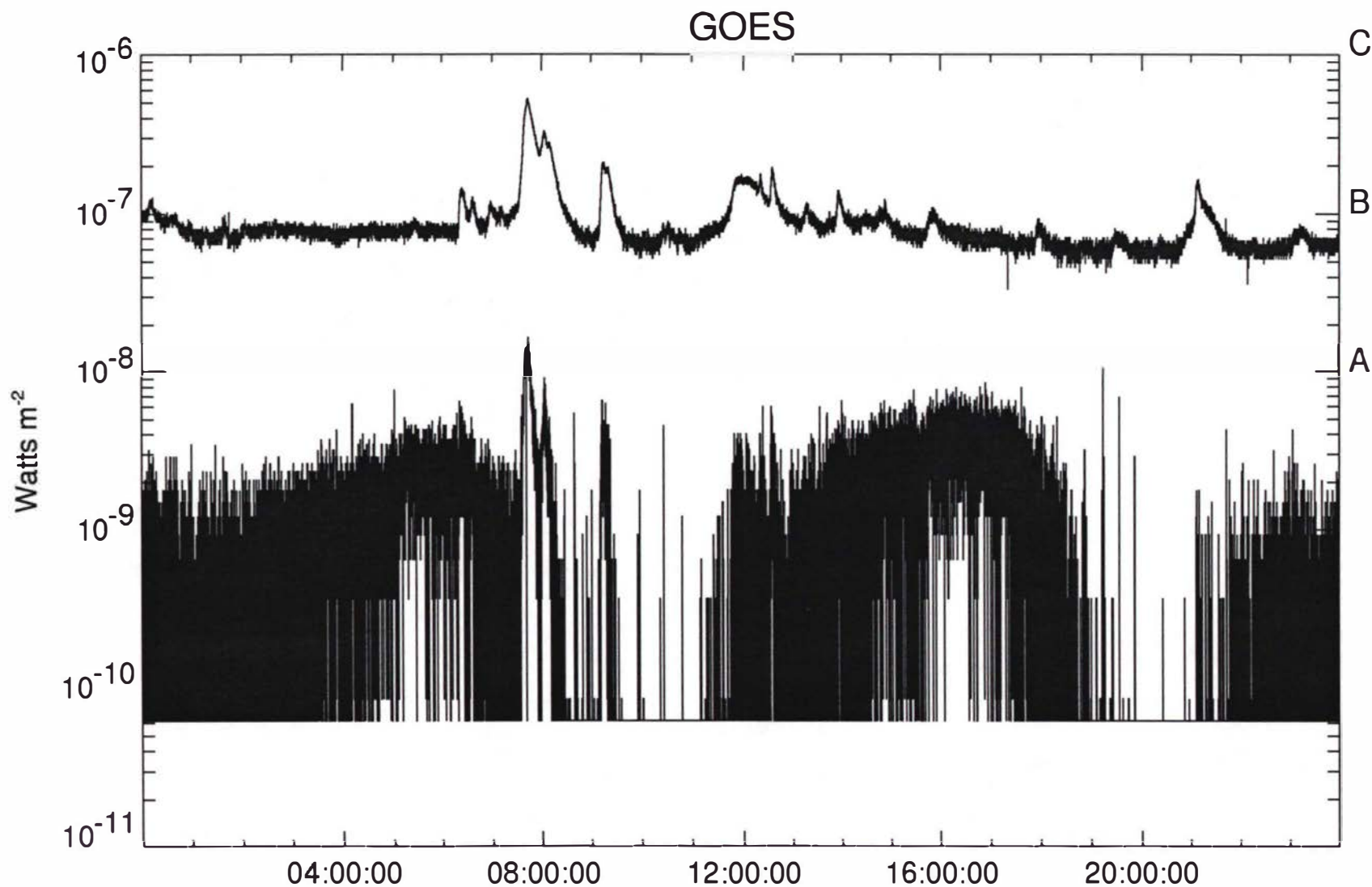


CALIBRATION DATA INCLUDED



UNIV. CAL TIME





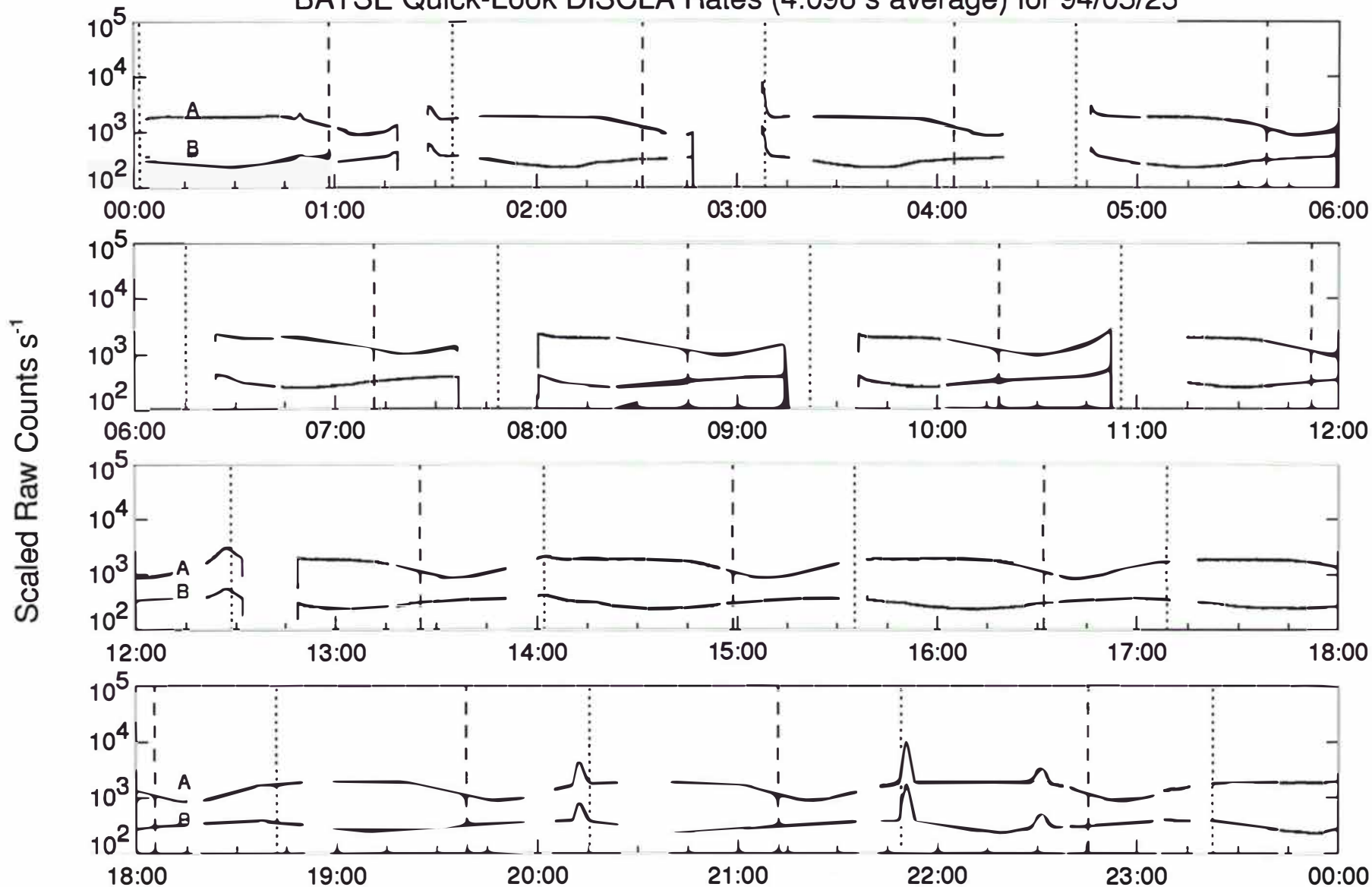
Data Start: 94/05/23, 0000:02

Plot created: 94/05/24, 1803

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/23

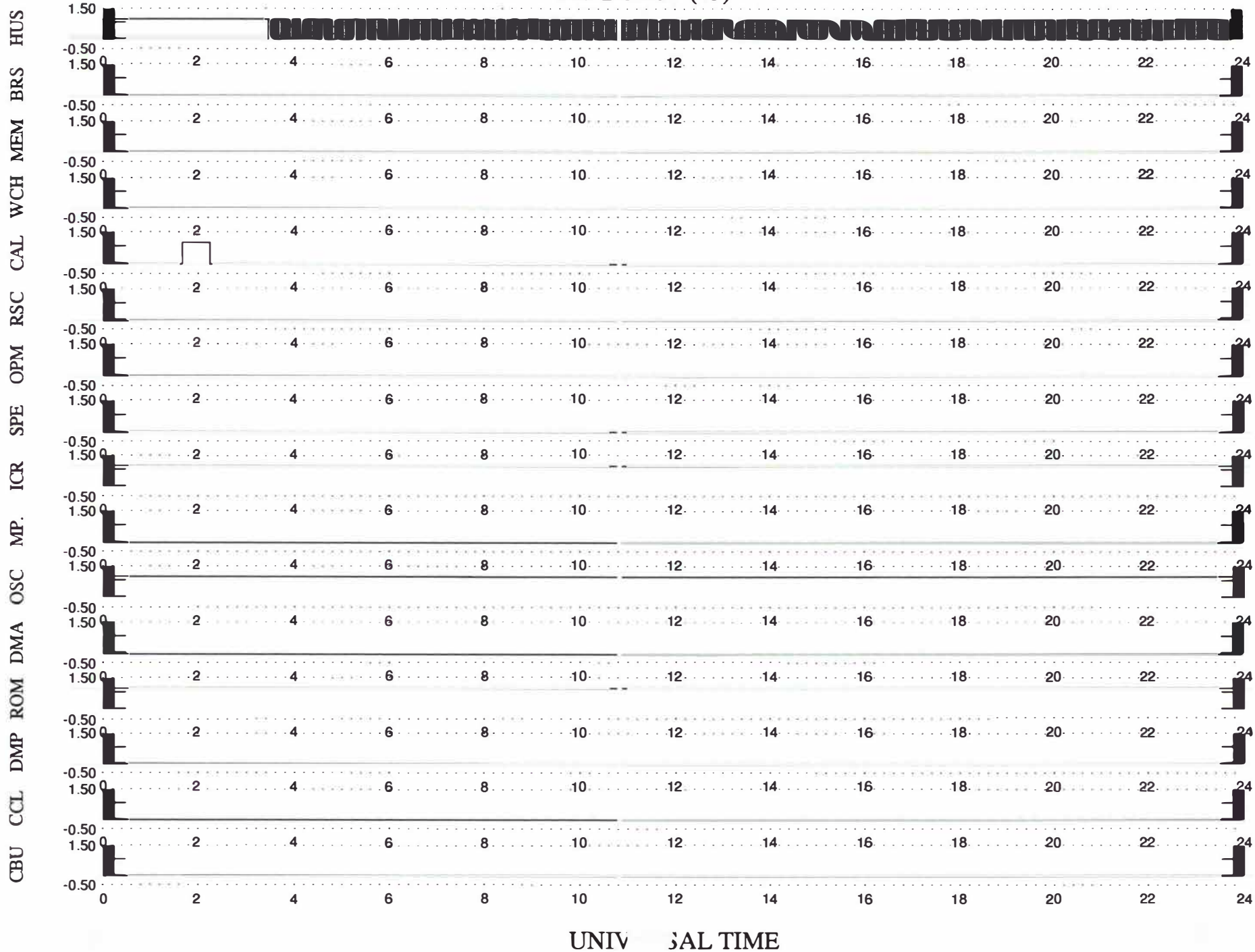


Current Time: 94/05/27, 1629 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

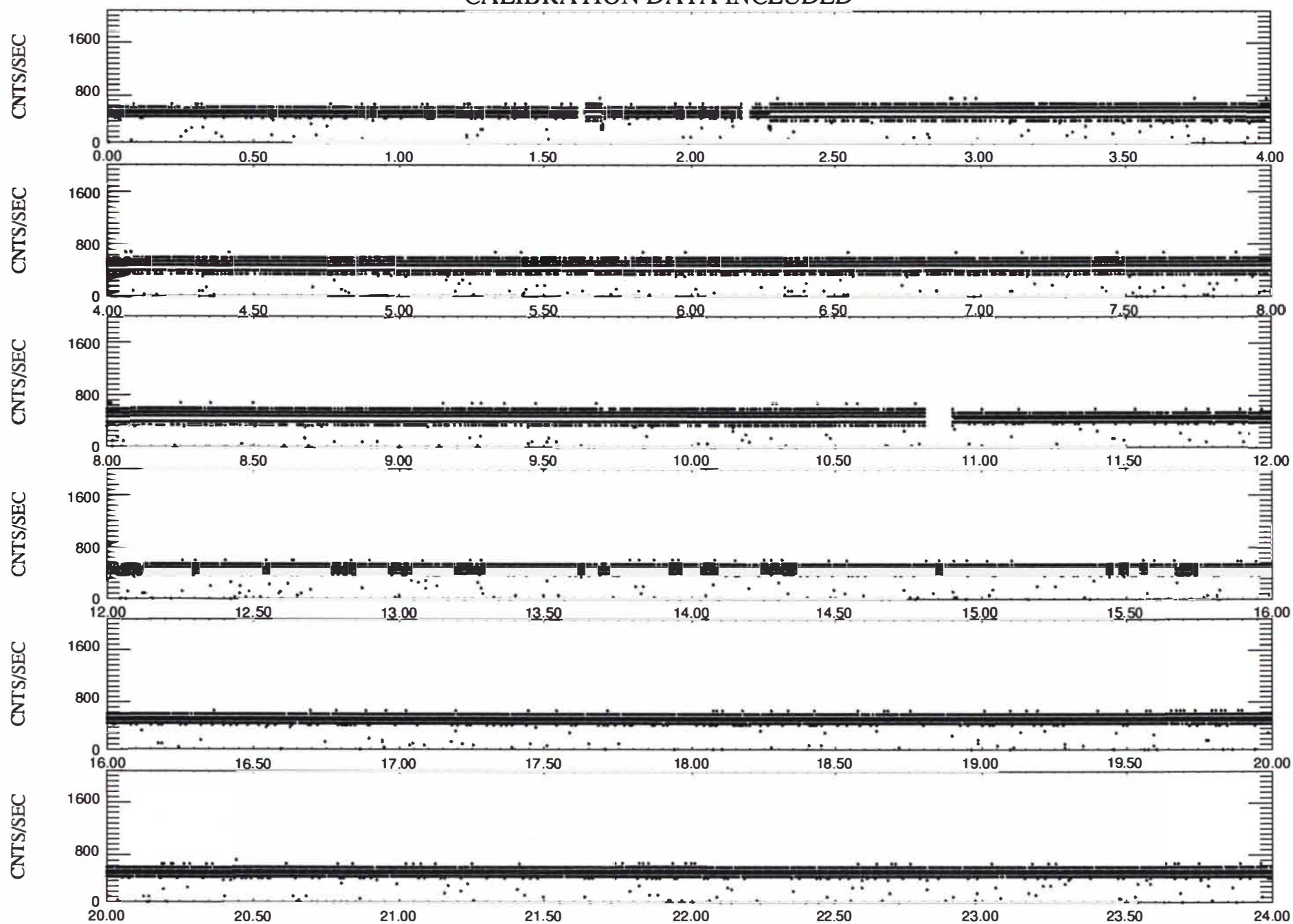
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

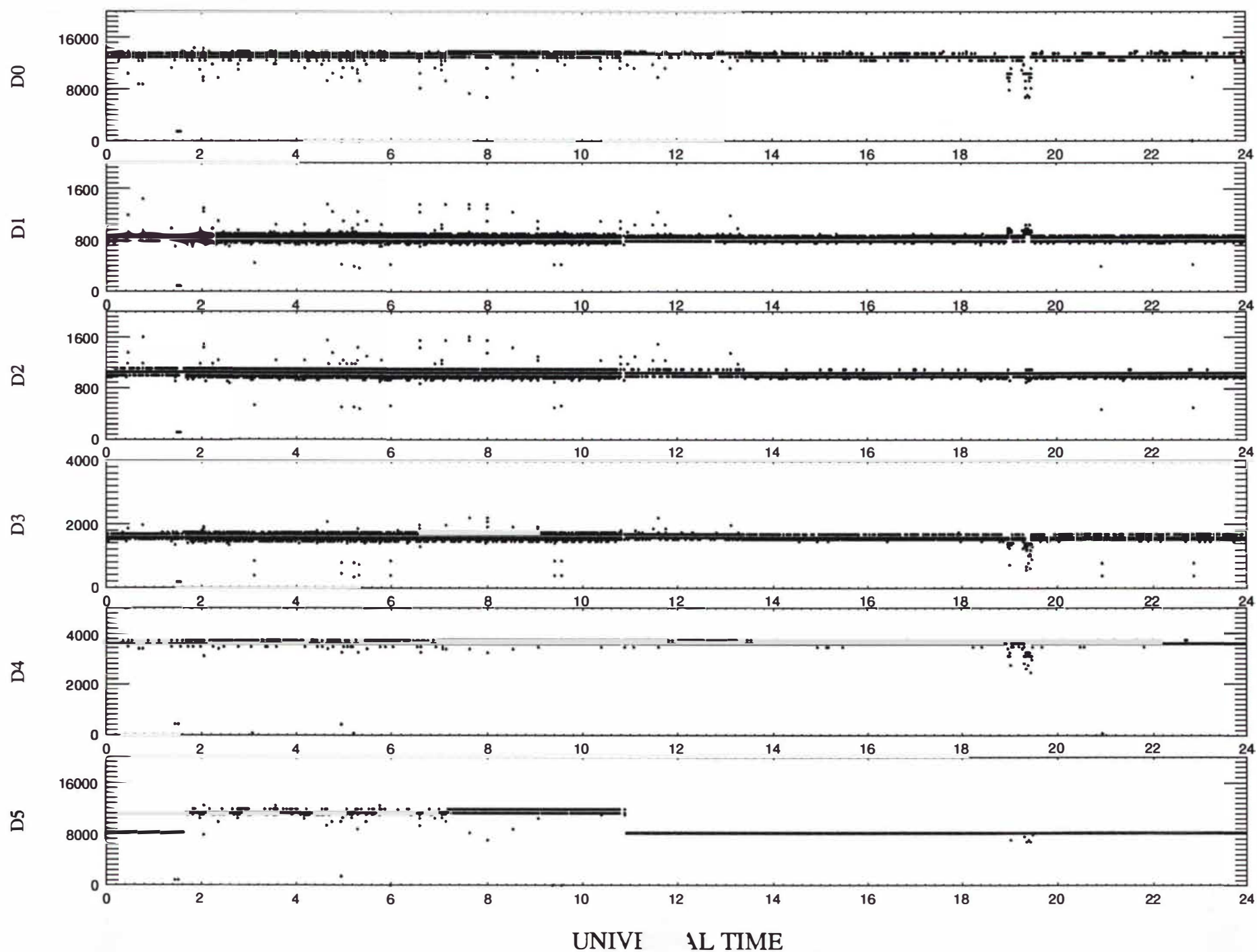
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From MALLOZZI@ssl.msfc.nasa.gov Wed May 25 14:48 PDT 1994
Date: Wed, 25 May 1994 16:49:23 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2988
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

New

BATSE BURST # 2988
EVENT OF 1994 MAY 24 DAY OF YEAR=144
EVENT CROSSING TIME AT BATSE : 23007. S. OR 06:23:27.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 137.000 -4.000
BATSE PEAK COUNTING RATE: 29800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 5/ 94 IS:
RA= 119.981 DEC= -40.748 DIST= 2.998 AU
BATSE-ULYSSES DISTANCE = 448450174. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1149.10 SECS.
CROSSING TIME AT ULYSSES IS 21858. S. OR 06:04:17+/- 198.82 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 5/ 94 IS:
RA= 28.244 DEC= 10.725 DIST= 2.141 AU
MARS-BATSE DISTANCE = 320333728. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 70.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 350.62 SECS.
CROSSING TIME AT MARS IS 23358. S. OR 06:29:17 +/- 180.56 SECONDS

No.

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2988	940524	9496	23007	29800	137	-04

BATSE BURST TRIGGER

NO.: 02988

TIME: TJD=9496 SECONDS=23007

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=149.2 AZIMUTH=328.5 ERROR= DEGREES

COMMENTS:

TWO DISTINCT PEAKS, EACH OF DURATION APPROX. 1 SECOND.
ONLY THE SECOND, MORE INTENSE PULSE IS OBSERVED ABOVE 300 KEV.
TOTAL DURATION OF THE EVENT IS APPROX. 5 SECONDS.

Now

26 / 5 / 94

ULYSSES RT

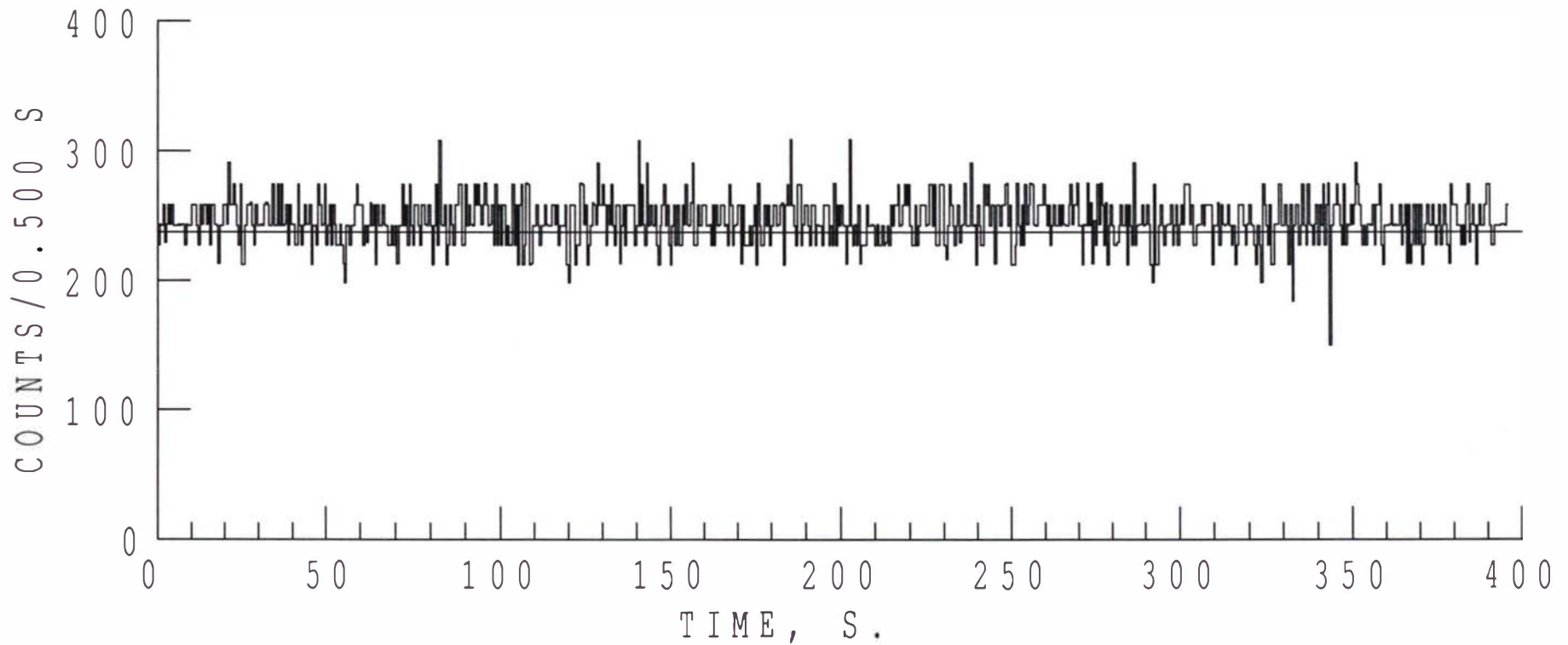
24 / 5 / 94 21672.023 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From MALLOZZI@ssl.msfc.nasa.gov Wed May 25 14:35 PDT 1994
Date: Wed, 25 May 1994 16:36:26 -0500 (CDT)
From: "ROBERT S. MALLOZZI 205-544-6257" <MALLOZZI@ssl.msfc.nasa.gov>
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02989

TIME: TJD=9496 SECONDS=30763

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

TRIGGERED ON ENTRY INTO SAA.

From MALLOZZI@ssl.msfc.nasa.gov Wed May 25 14:50 PDT 1994
Date: Wed, 25 May 1994 16:52:19 -0500 (CDT)
From: MALLOZZI@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2990
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2990
EVENT OF 1994 MAY 24 DAY OF YEAR=144
EVENT CROSSING TIME AT BATSE : 34199. S. OR 09:29:59.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 164.000 11.000
BATSE PEAK COUNTING RATE: 2200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 24/ 5/ 94 IS:
RA= 119.990 DEC= -40.733 DIST= 2.998 AU
BATSE-ULYSSES DISTANCE = 448499145. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=114.23 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -614.08 SECS.
CROSSING TIME AT ULYSSES IS 33585. S. OR 09:19:44 +/- 277.52 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 24/ 5/ 94 IS:
RA= 28.244 DEC= 10.725 DIST= 2.141 AU
MARS-BATSE DISTANCE = 320333728. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 700.33 SECS.
CROSSING TIME AT MARS IS 34899. S. OR 09:41:39 +/- 150.75 SECONDS

kb

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2990	940524	9496	34199	2200	164	+11

NO.: 02990 BATSE BURST TRIGGER

TIME: TJD=9496 SECONDS=34199

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=163.5 AZIMUTH=044.5 ERROR= DEGREES

COMMENTS:
SINGLE MAIN PEAK OF DURATION APPROX. 10 SECONDS.
NO EMISSION OBSERVED ABOVE 300 KEV.

26 / 5 / 94

ULYSSES RT

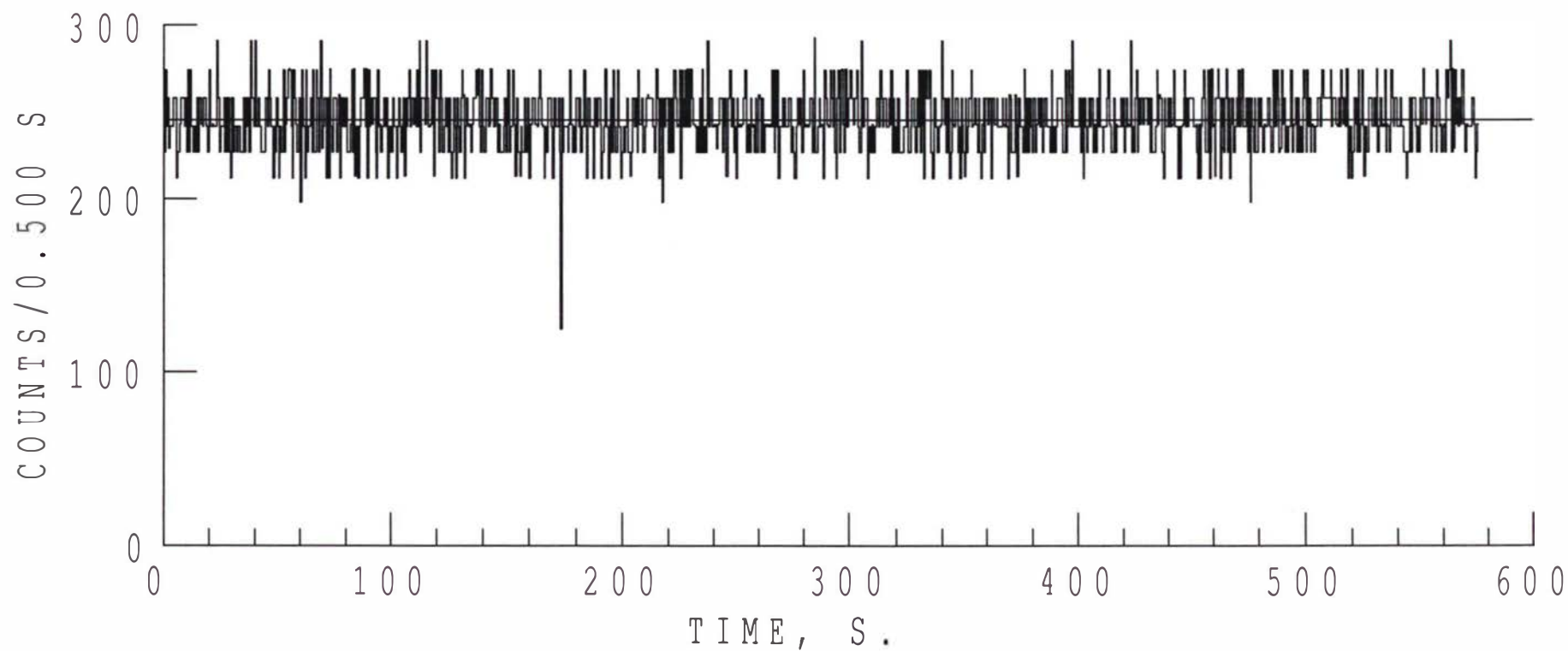
24 / 5 / 94 33300.199 s

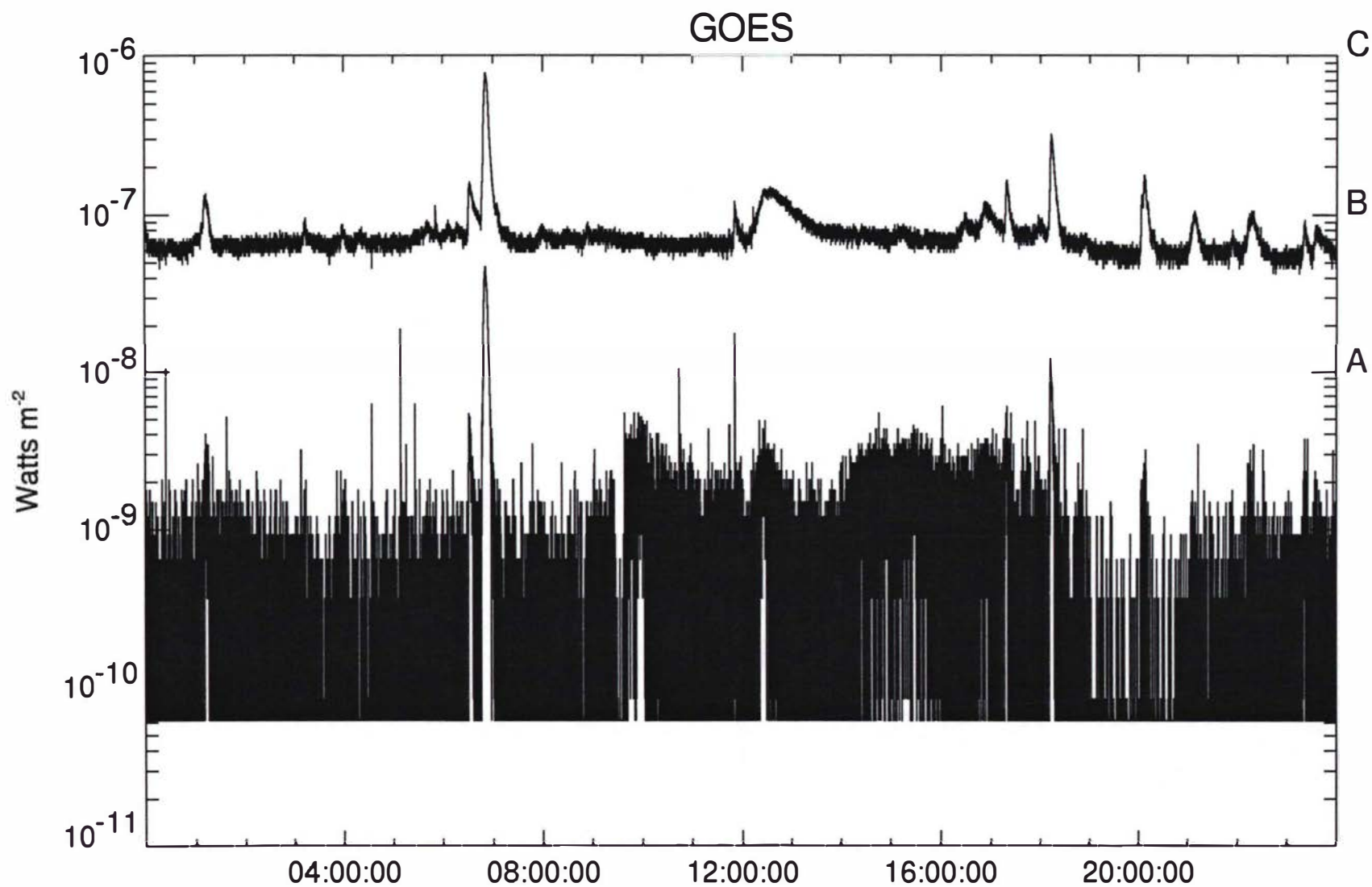
0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





Data Start: 94/05/24, 0000:02

Plot created: 94/05/27, 1617

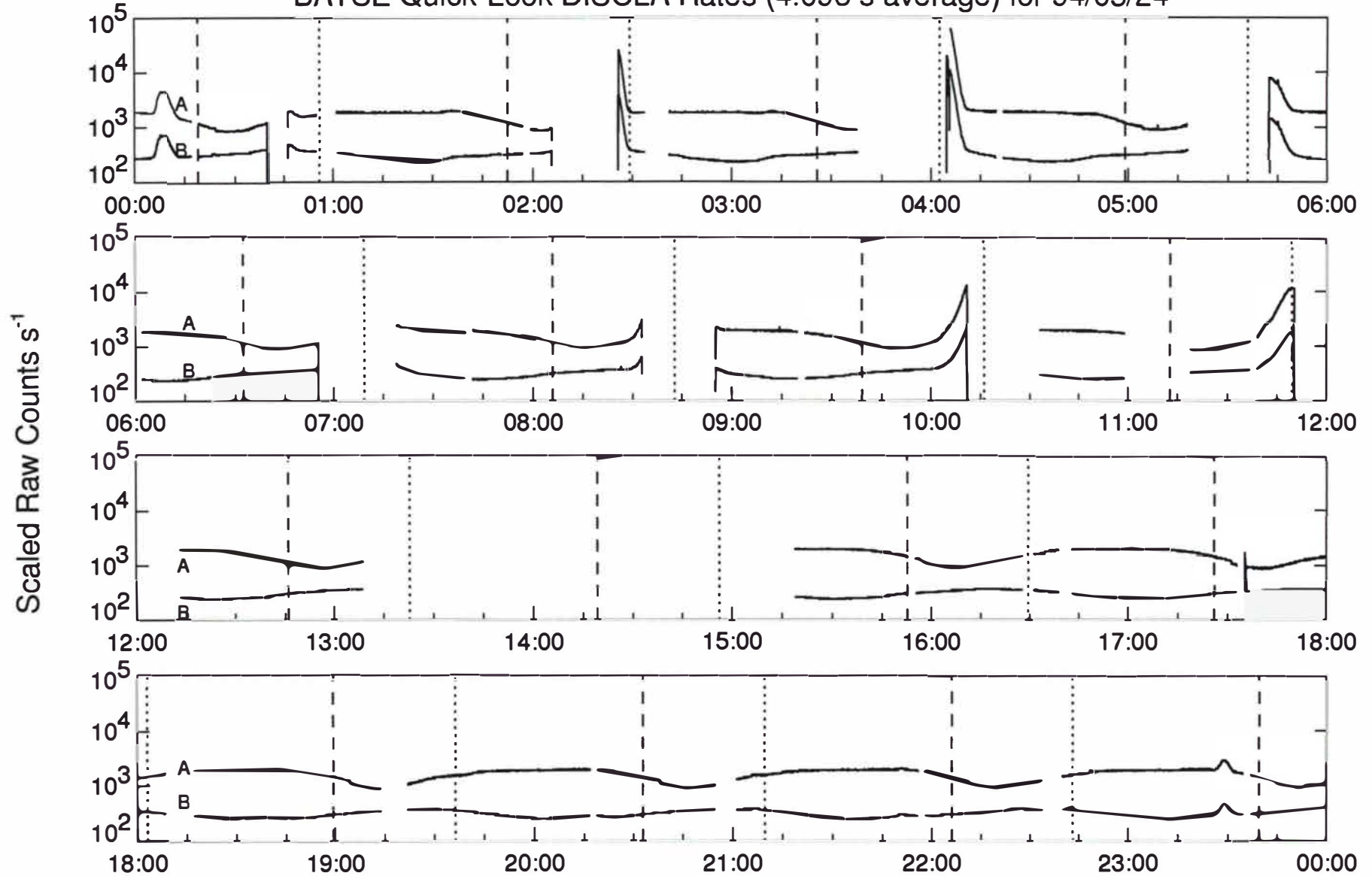
Channel 1 (1.0 - 8.0 Angstroms)

Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/24

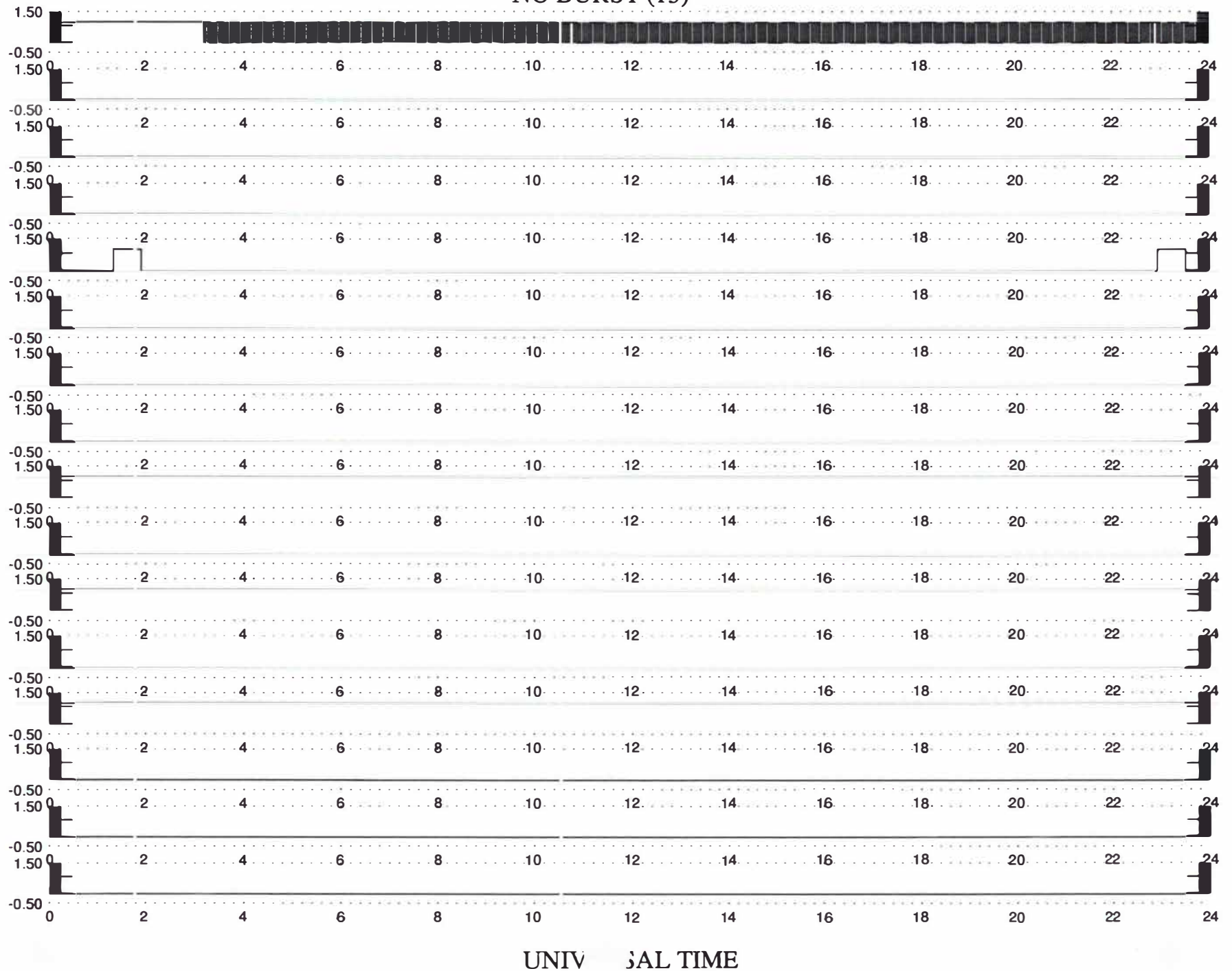


Current Time: 94/05/27, 1629 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

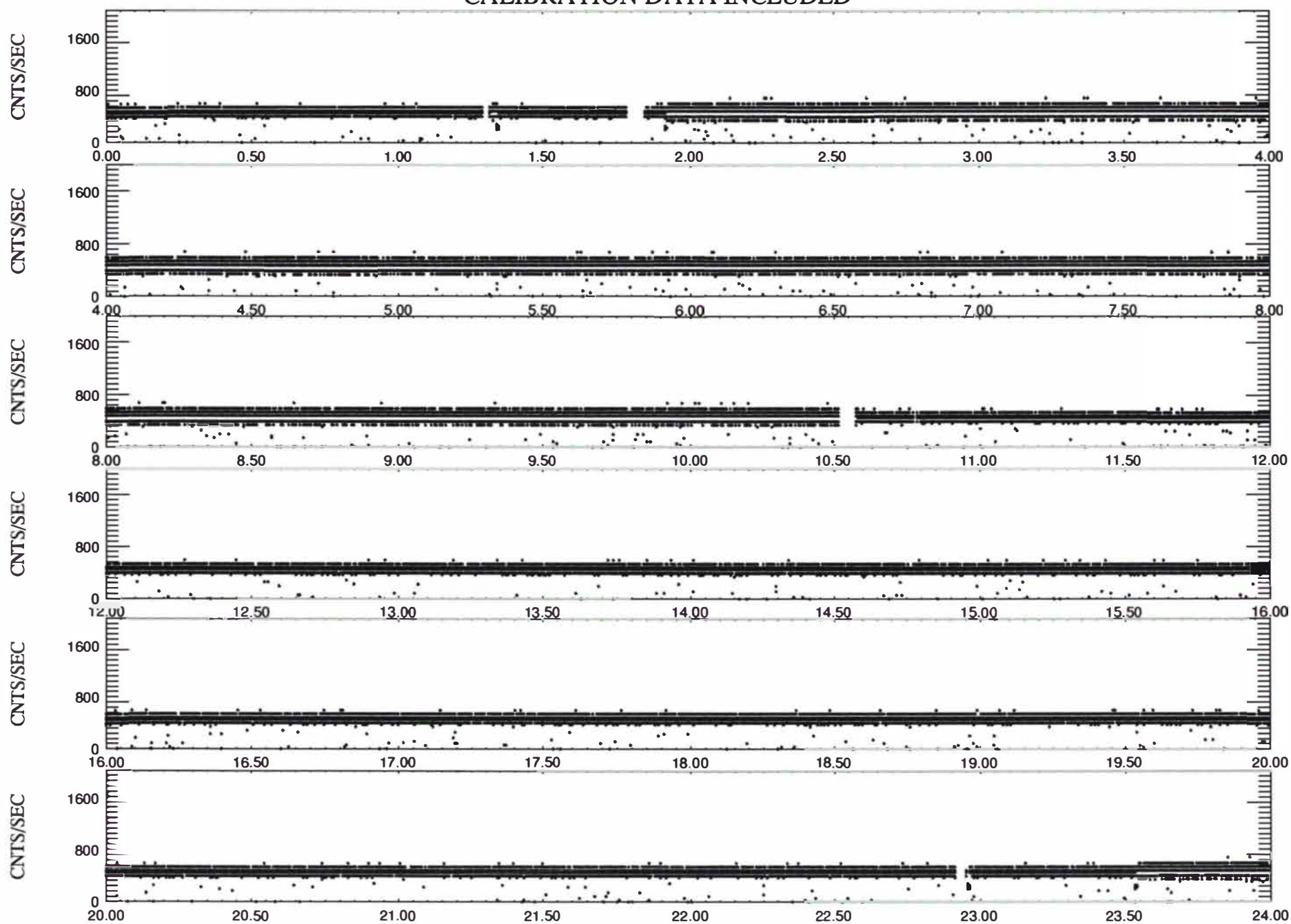
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

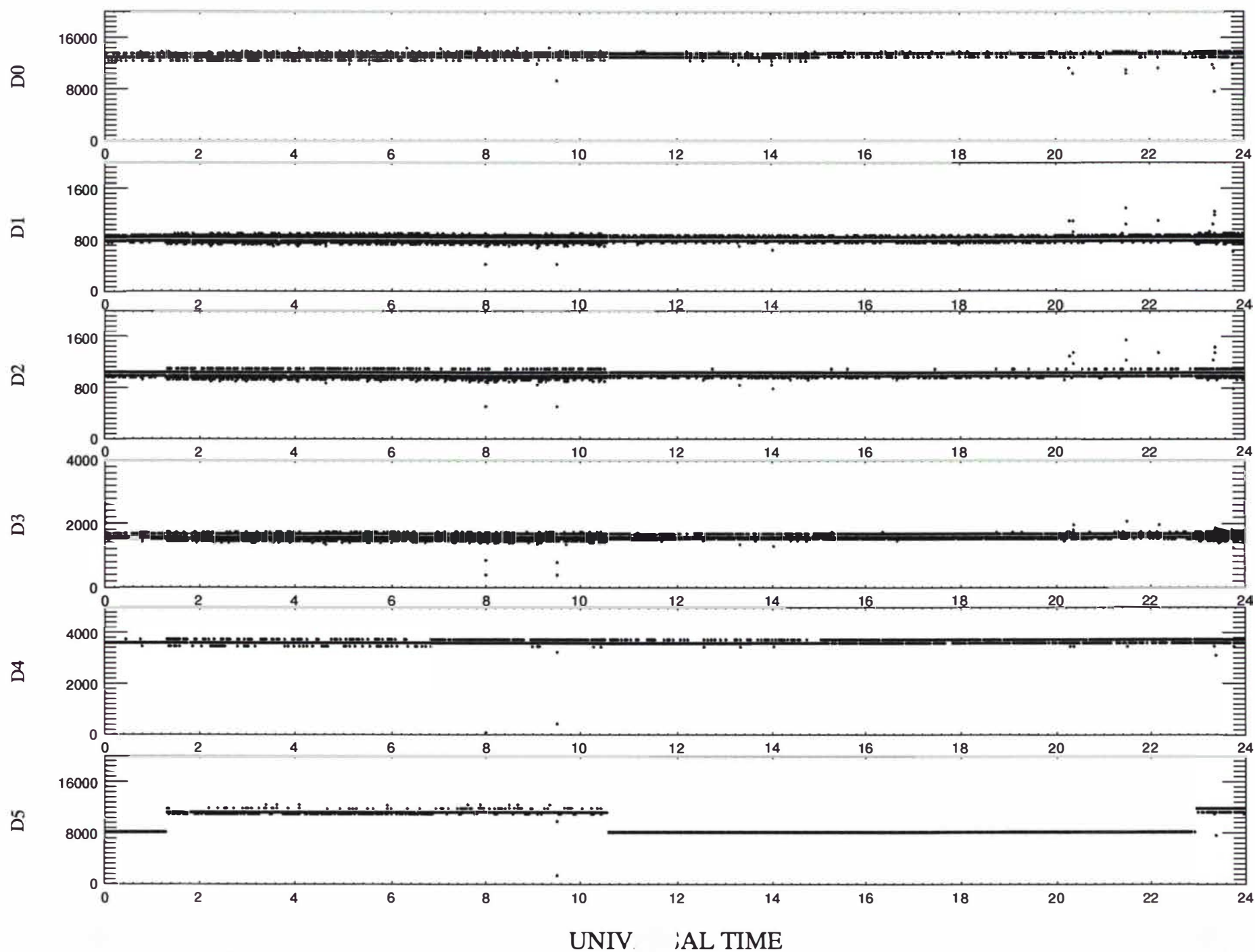
CBU CCL DMP ROM DMA OSC MP. ICR SPE OPM RSC CAL WCH MEM BRS HUS

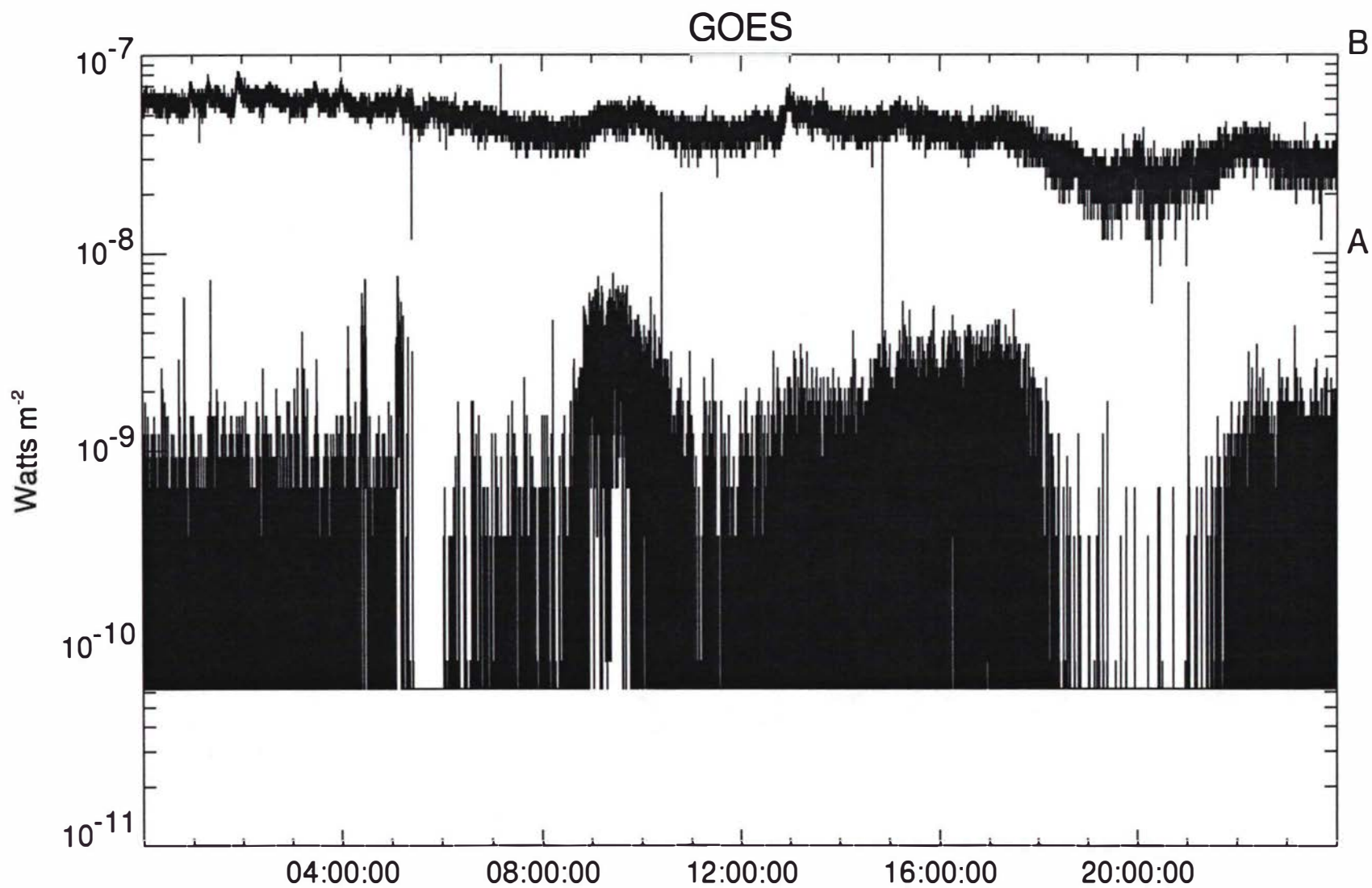


CALIBRATION DATA INCLUDED



UNIV 3AL TIME



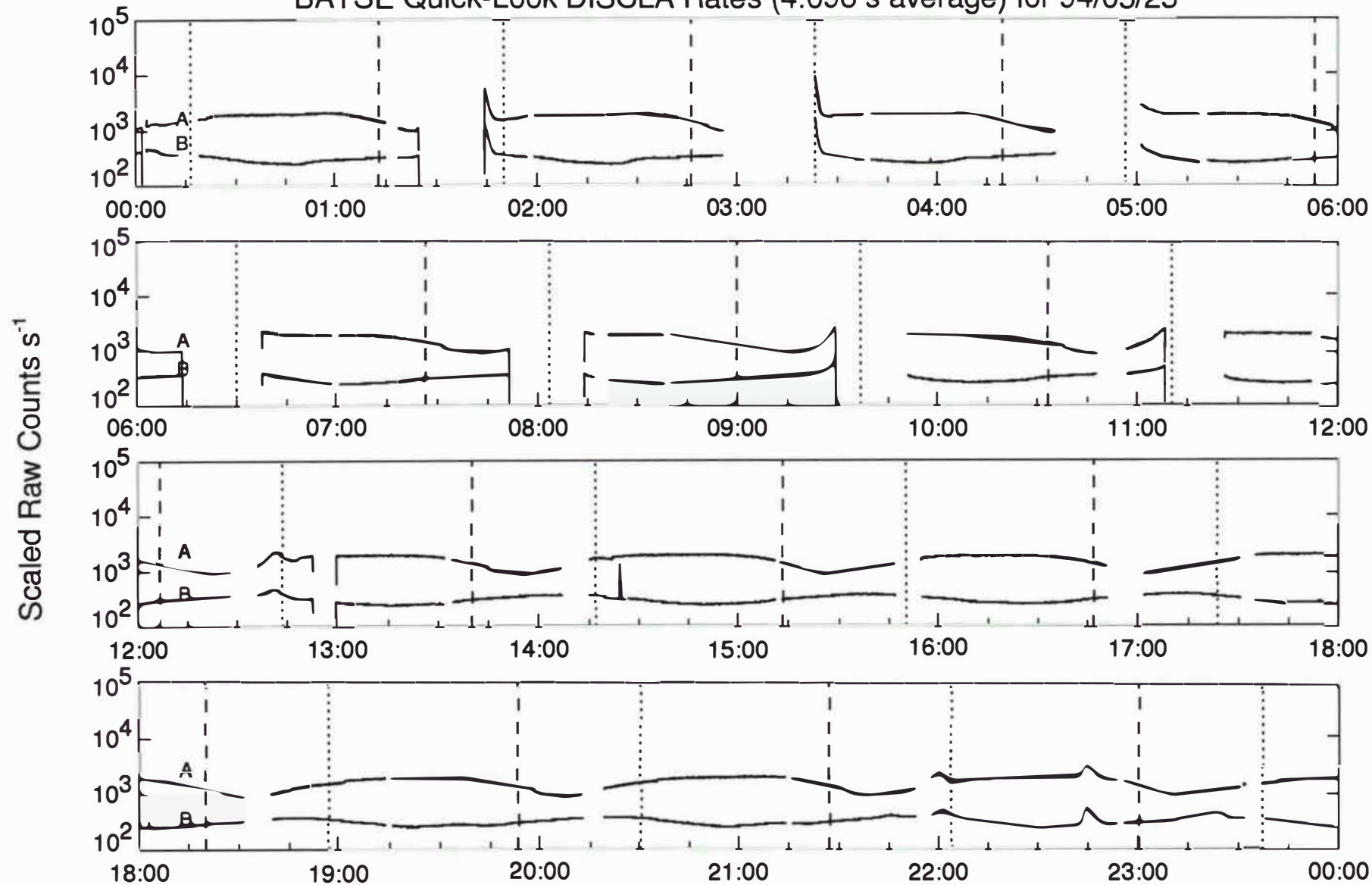


Data Start: 94/05/25, 0000:01

Plot created: 94/05/27, 1621

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

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/25

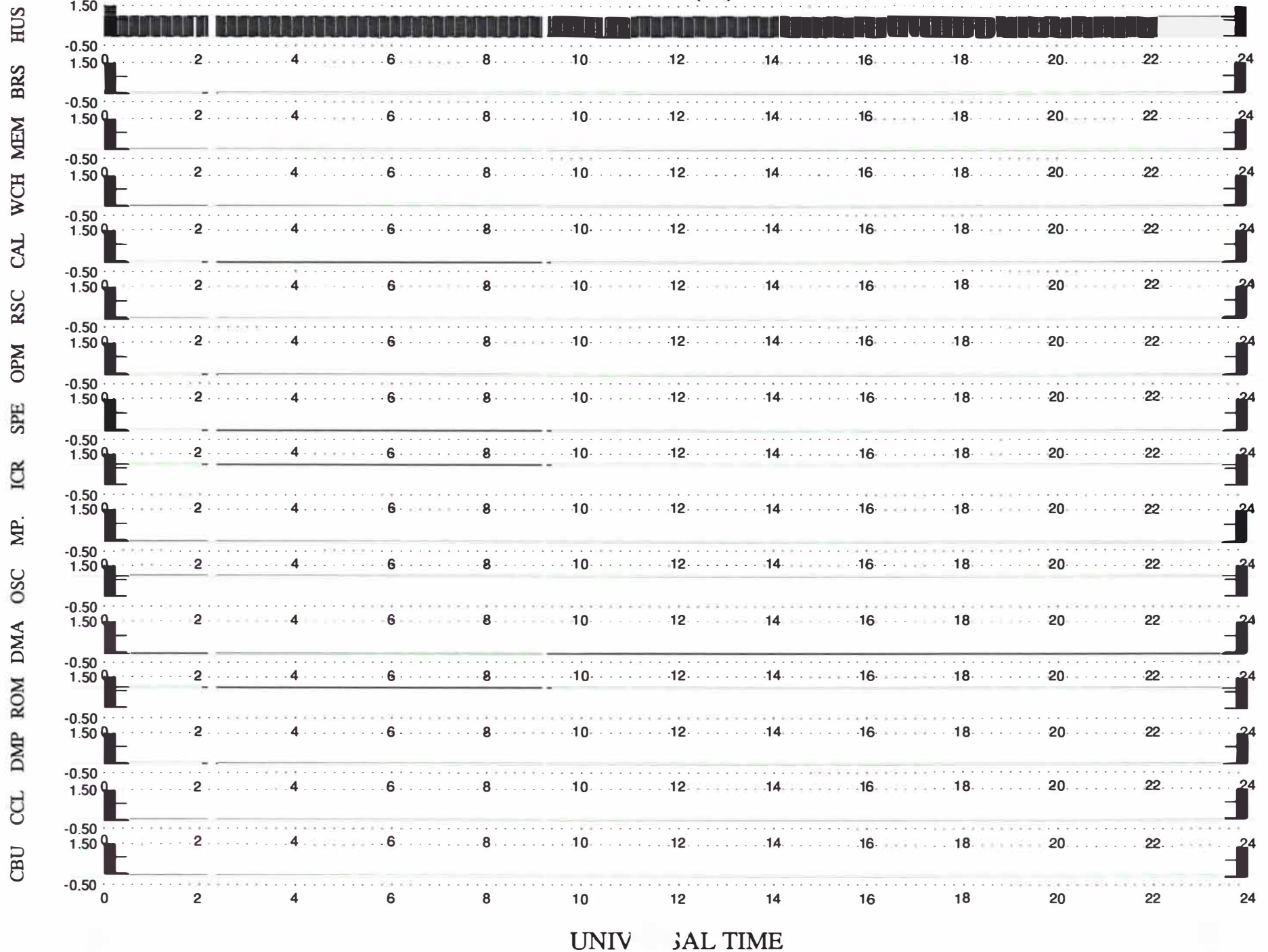


Current Time: 94/05/27, 1629 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

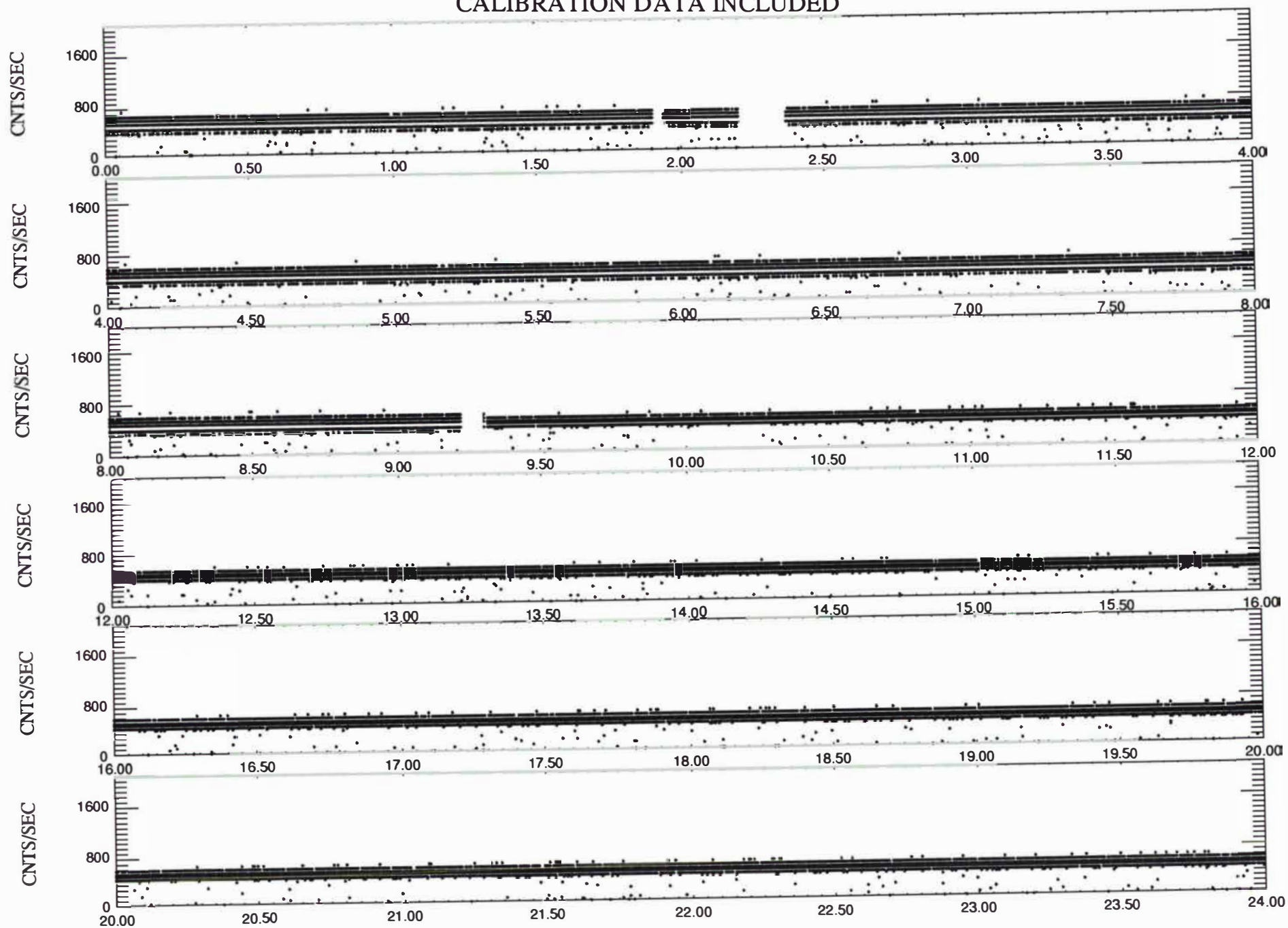
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

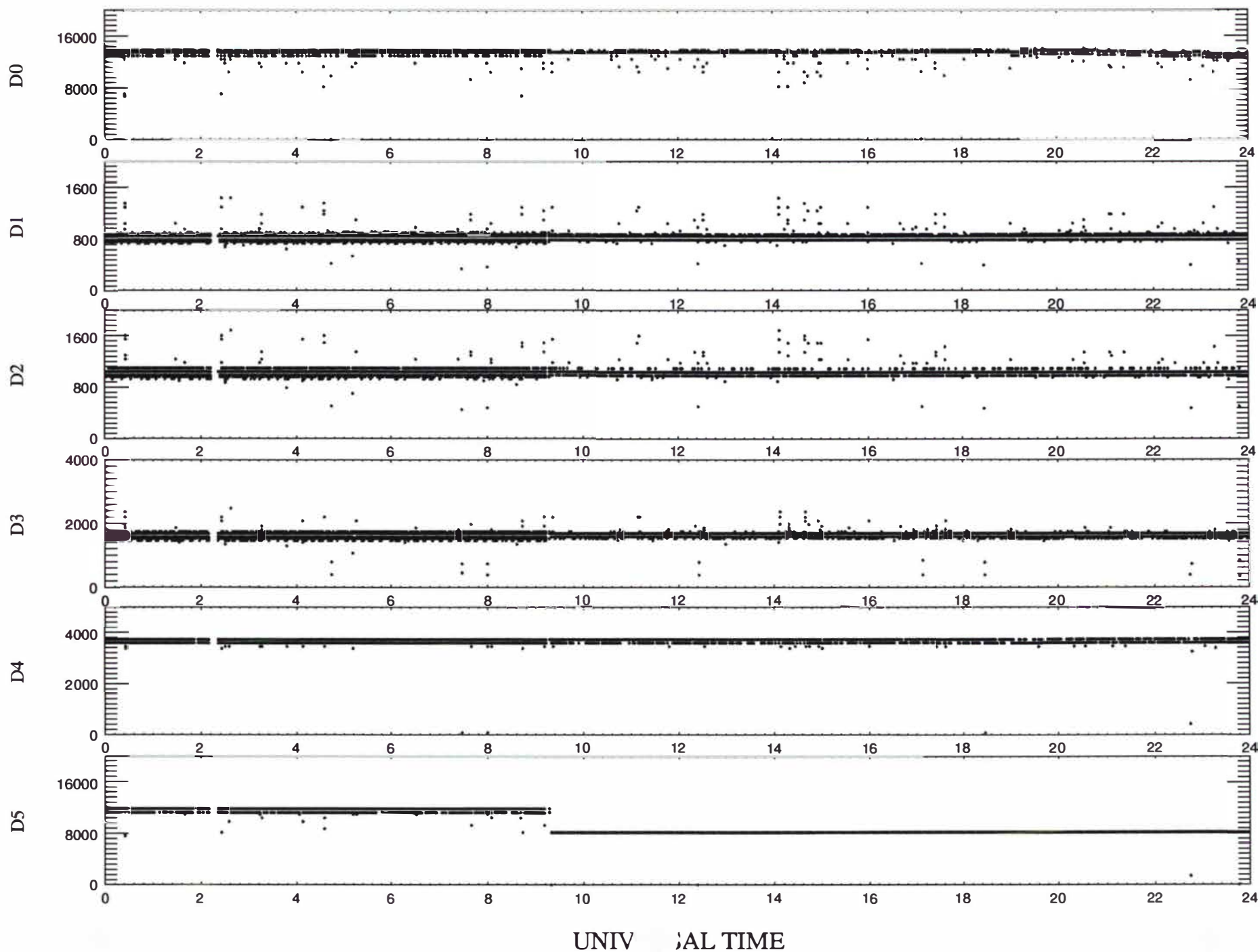
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From SHARIFF@ssl.msfc.nasa.gov Fri May 27 09:26 PDT 1994
Date: Fri, 27 May 1994 11:27:48 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02991

TIME: TJD=9498 SECONDS=02602

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA ENTRY (PARTICLES).

From SHARIFF@ssl.msfc.nasa.gov Fri May 27 09:52 PDT 1994
Date: Fri, 27 May 1994 11:54:17 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2992
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2992
EVENT OF 1994 MAY 26 DAY OF YEAR=146
EVENT CROSSING TIME AT BATSE : 12370. S. OR 03:26:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 309.000 51.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 5/ 94 IS:
RA= 120.126 DEC= -40.543 DIST= 3.002 AU
BATSE-ULYSSES DISTANCE = 449150218. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 12.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1464.75 SECS.
CROSSING TIME AT ULYSSES IS 13835. S. OR 03:50:34 +/- 126.91 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 5/ 94 IS:
RA= 29.670 DEC= 11.263 DIST= 2.136 AU
MARS-BATSE DISTANCE = 319591040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -268.47 SECS.
CROSSING TIME AT MARS IS 12102. S. OR 03:21:41 +/- 175.04 SECONDS

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2992	940526	9498	12370	2000	309	+51

BATSE BURST TRIGGER

NO.: 02992

TIME: TJD=9498 SECONDS=12370

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=023.9 AZIMUTH=012.8 ERROR= DEGREES

COMMENTS:

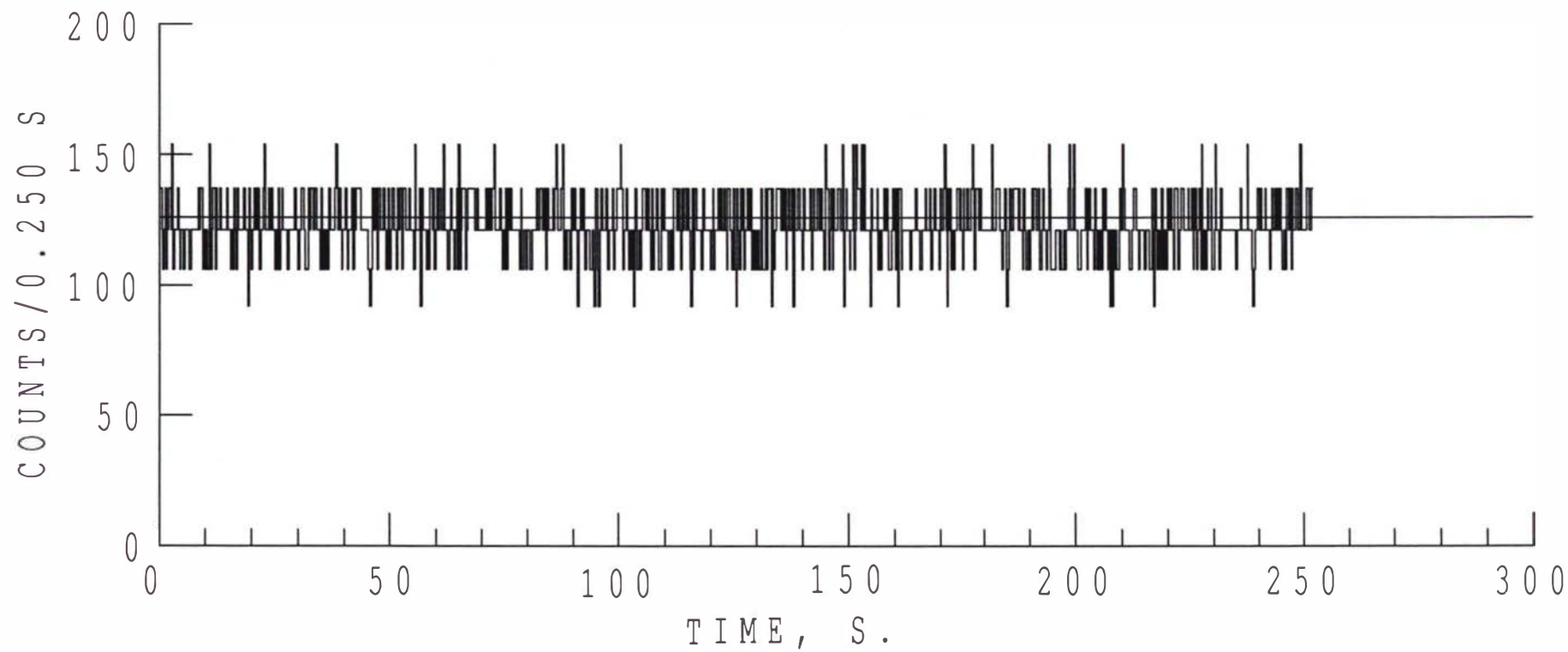
BURST, SINGLE PULSE, LASTING ~4 SECONDS. VISIBLE ABOVE 300KEV.

27 / 5 / 94

ULYSSES RT
26 / 5 / 94 13716.238 s
0 - 0 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From SHARIFF@ssl.msfc.nasa.gov Fri May 27 09:54 PDT 1994
Date: Fri, 27 May 1994 11:55:54 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2993
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2993
EVENT OF 1994 MAY 26 DAY OF YEAR=146
EVENT CROSSING TIME AT BATSE : 39326. S. OR 10:55:26.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 83.000 -32.000
BATSE PEAK COUNTING RATE: 18000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 5/ 94 IS:
RA= 120.152 DEC= -40.511 DIST= 3.003 AU
BATSE-ULYSSES DISTANCE = 449262214. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=149.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1285.96 SECS.
CROSSING TIME AT ULYSSES IS 38040. S. OR 10:34:00 +/- 164.06 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 5/ 94 IS:
RA= 29.670 DEC= 11.263 DIST= 2.136 AU
MARS-BATSE DISTANCE = 319591040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -419.18 SECS.
CROSSING TIME AT MARS IS 38907. S. OR 10:48:26 +/- 163.81 SECONDS

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2993	940526	9498	39326	18000	083	-32

BATSE BURST TRIGGER

NO.: 02993

TIME: TJD=9498 SECONDS=39326

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=149.0 AZIMUTH=282.2 ERROR= DEGREES

COMMENTS:

BURST, COMPLEX, LASTING ~65 SECONDS. VISIBLE ABOVE 300KEV.
(PLEASE NOTE THE CORRECTION MADE (GRO Az.) AND DISREGARD THE PREVIOUS VERSION).

Helo corr removed
Date: Jan 28 '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

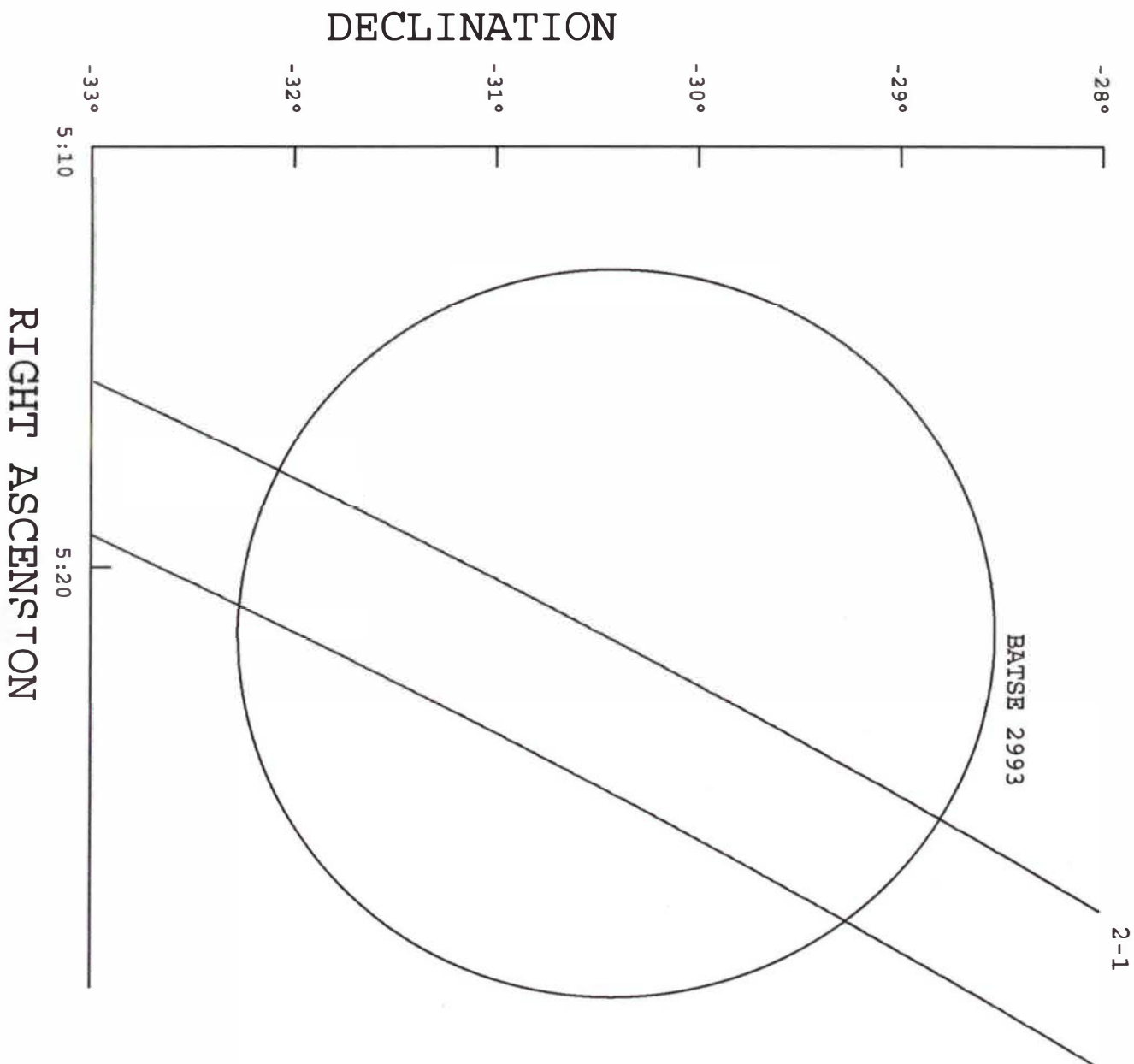
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 26, 1994 10:33

28 / 1/98



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

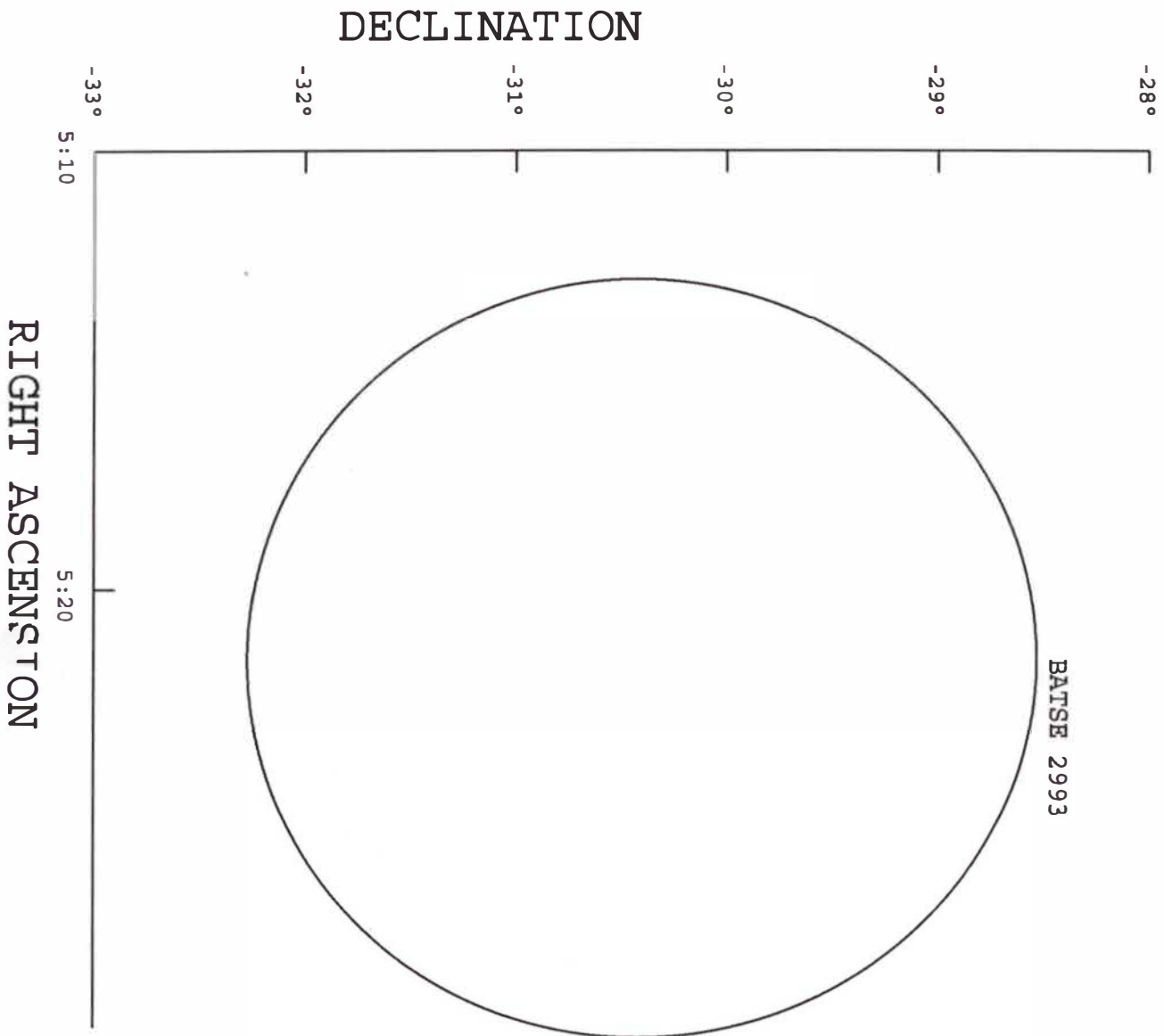
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 26, 1994 10:33

28 / 1/98



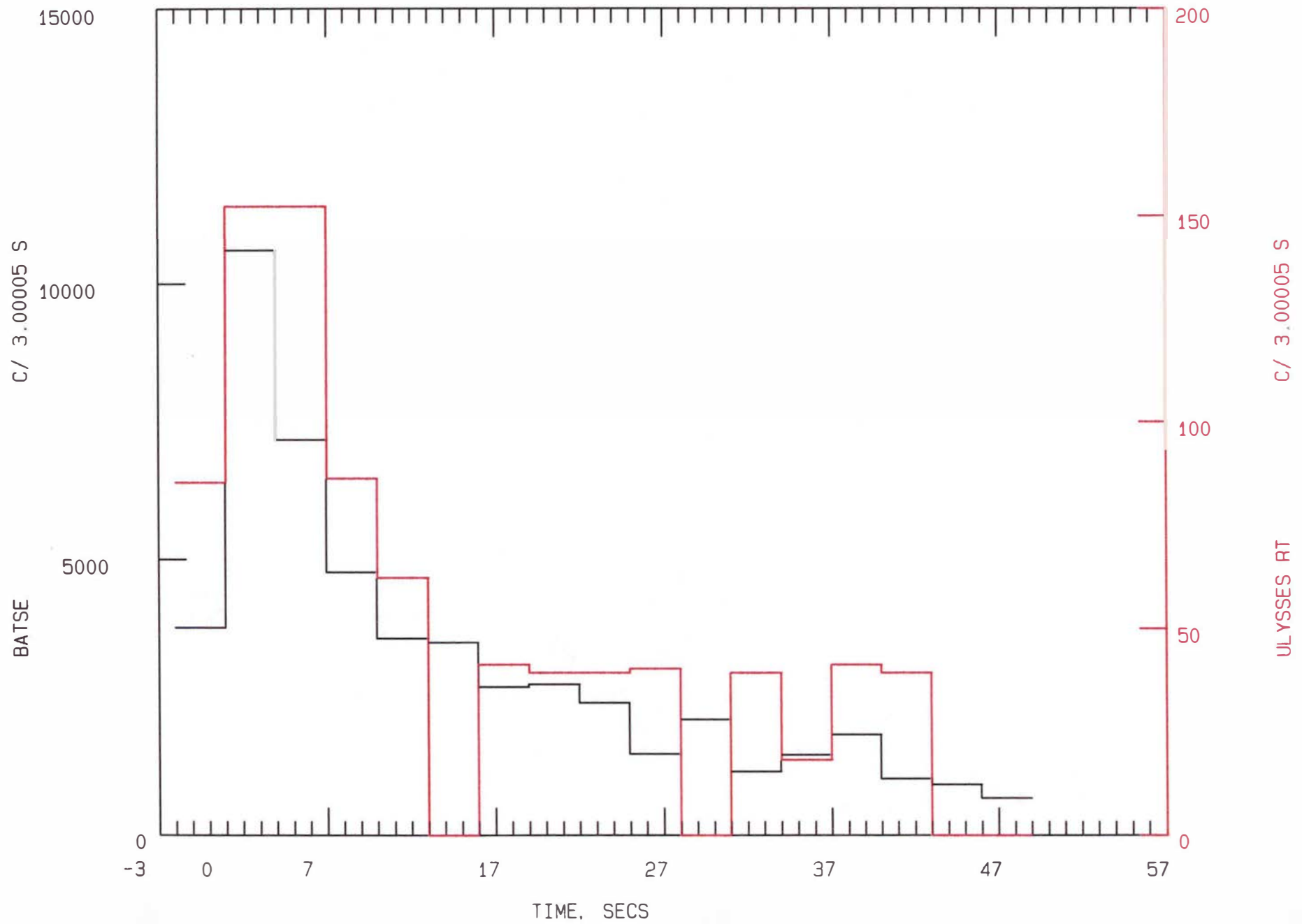
BATSE

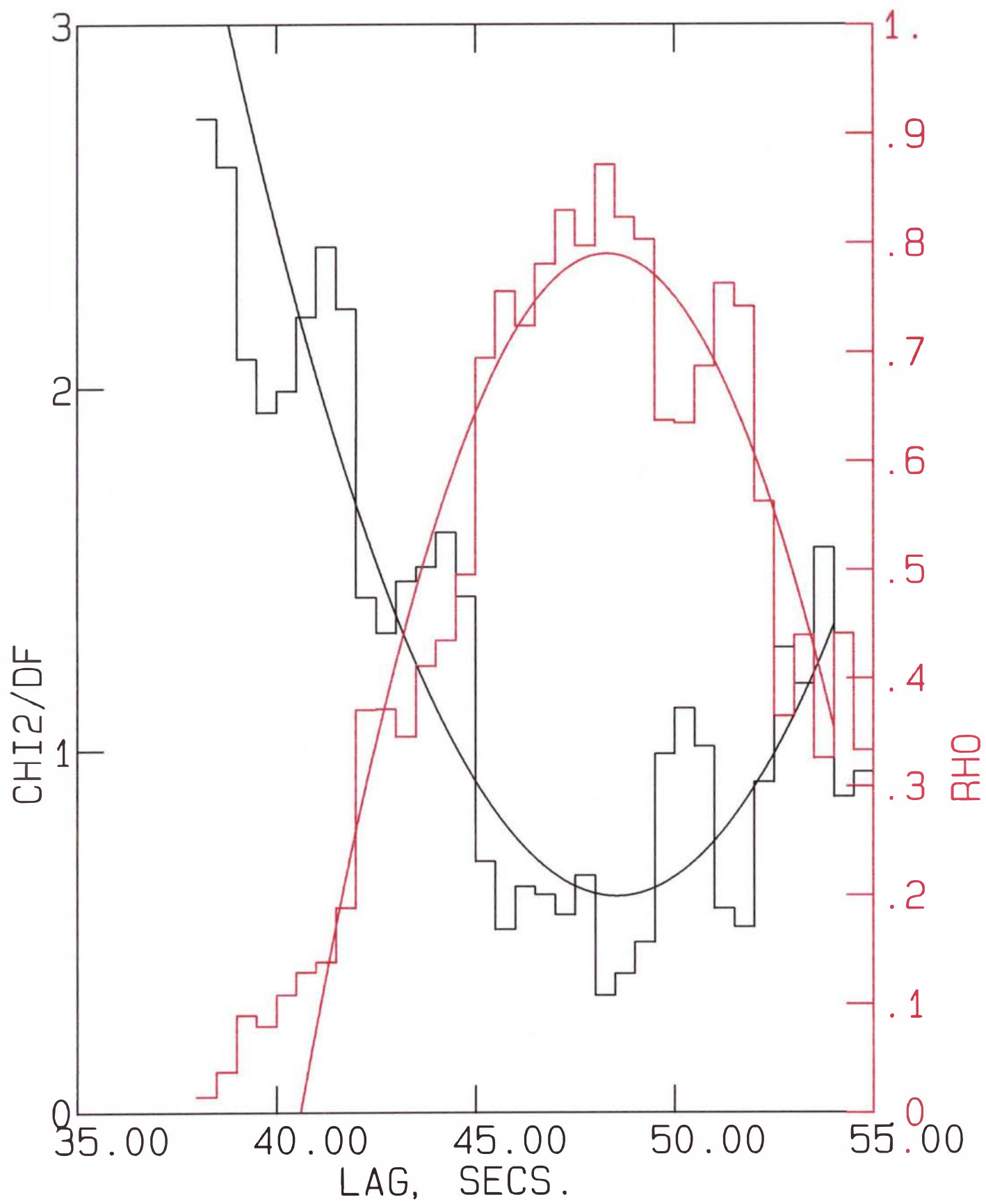
-ULYSSES RT CORRELATION

3/ 5/94

39326.810

28/ 1/98





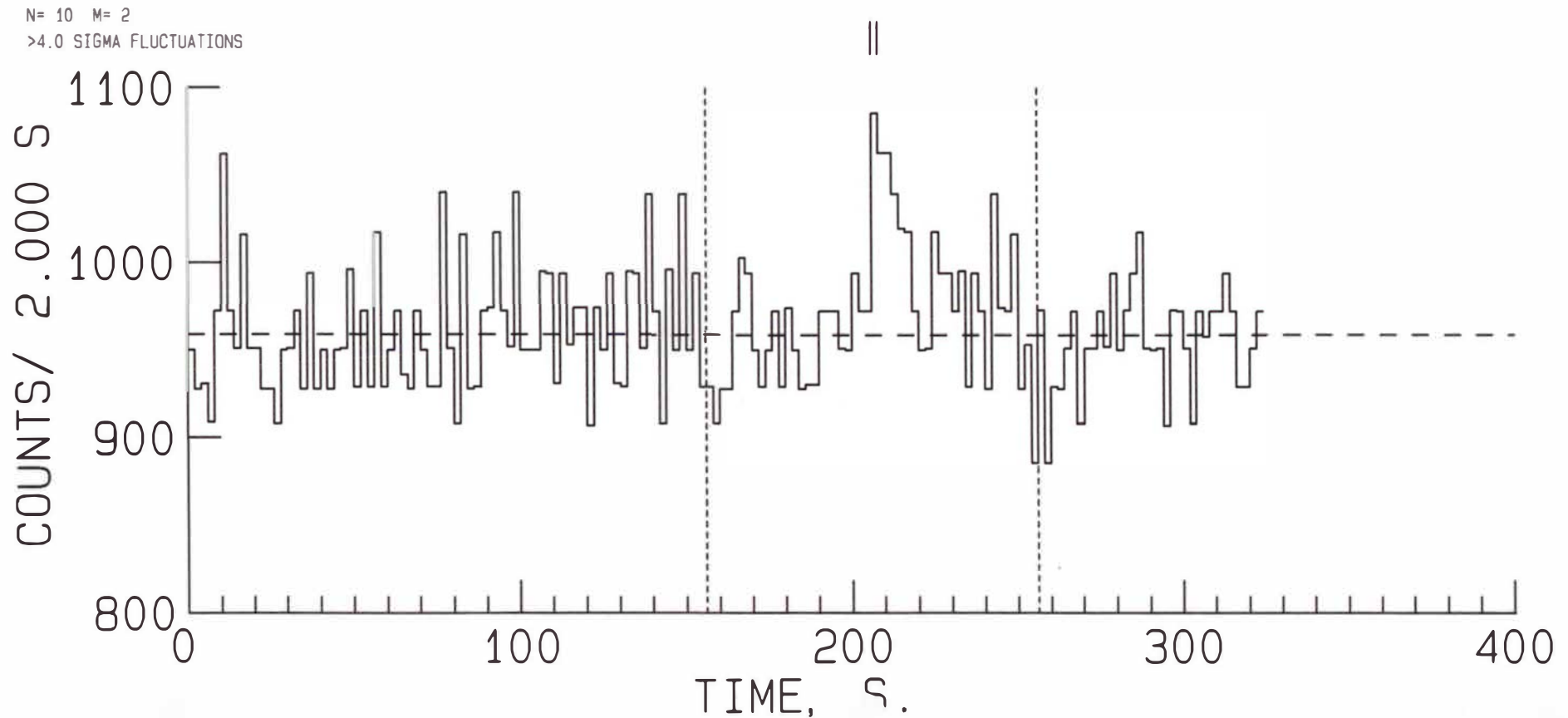
ULYSSES RT

28 / 1 / 98

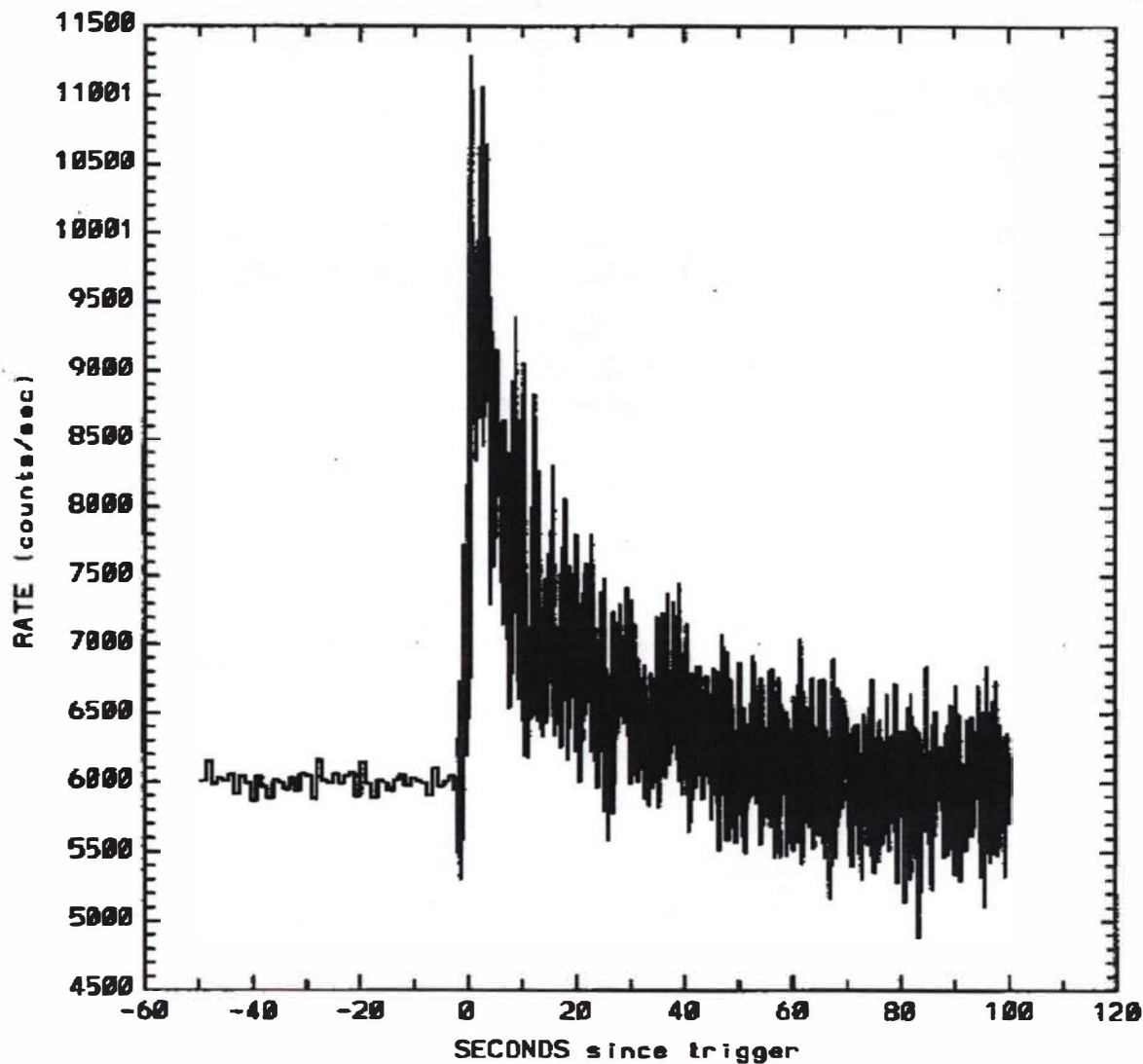
26 / 5 / 94 37872.093 s

0.500 S INTERVALS REGROUPED BY 4

22- 148 keV



DATA FOR K. HURLEY



19-JUN-1994 16:37:11

Created by MOPS 80
(Burst Display)
Version 2.20

Trigger * . 2993

Trigger Time:
9498 / 39326.810Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..8),
10001000Discriminators:
(1, 2)Quality Mask:
BDISP1

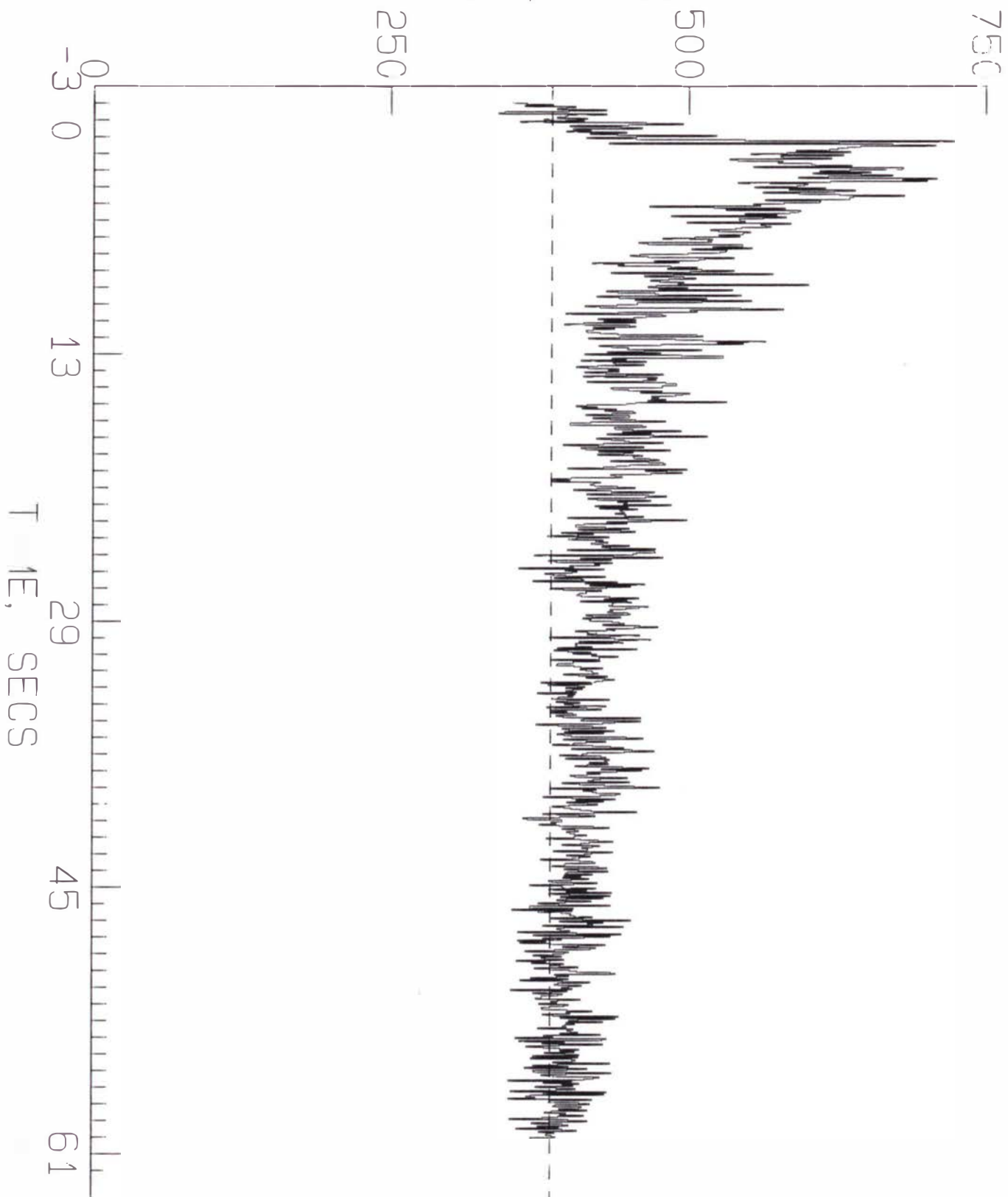
BATSE

03/05/94

39326.810

25- 100 keV

COUNTS/ .064 S



23 / 6 / 94

From SHARIFF@ssl.msfc.nasa.gov Fri May 27 09:57 PDT 1994
Date: Fri, 27 May 1994 11:59:07 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2994
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2994
EVENT OF 1994 MAY 26 DAY OF YEAR=146
EVENT CROSSING TIME AT BATSE : 73205. S. OR 20:20:05.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 138.000 33.000
BATSE PEAK COUNTING RATE: 78000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 5/ 94 IS:
RA= 120.185 DEC= -40.470 DIST= 3.004 AU
BATSE-ULYSSES DISTANCE = 449403243. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.71 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -380.64 SECS.
CROSSING TIME AT ULYSSES IS 72824. S. OR 20:13:44 +/- 295.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 5/ 94 IS:
RA= 29.670 DEC= 11.263 DIST= 2.136 AU
MARS-BATSE DISTANCE = 319591040. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.24 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 162.36 SECS.
CROSSING TIME AT MARS IS 73367. S. OR 20:22:47 +/- 185.39 SECONDS

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2994	940526	9498	73205	78000	138	+33

BATSE BURST TRIGGER

NO.: 02994

TIME: TJD=9498 SECONDS=73205

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.5 AZIMUTH=046.2 ERROR= DEGREES

COMMENTS:

BURST, COMPLEX, LASTING ~70 SECONDS. VISIBLE ABOVE 300KEV.

Helio corr removed

Date: *Jan 28 '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

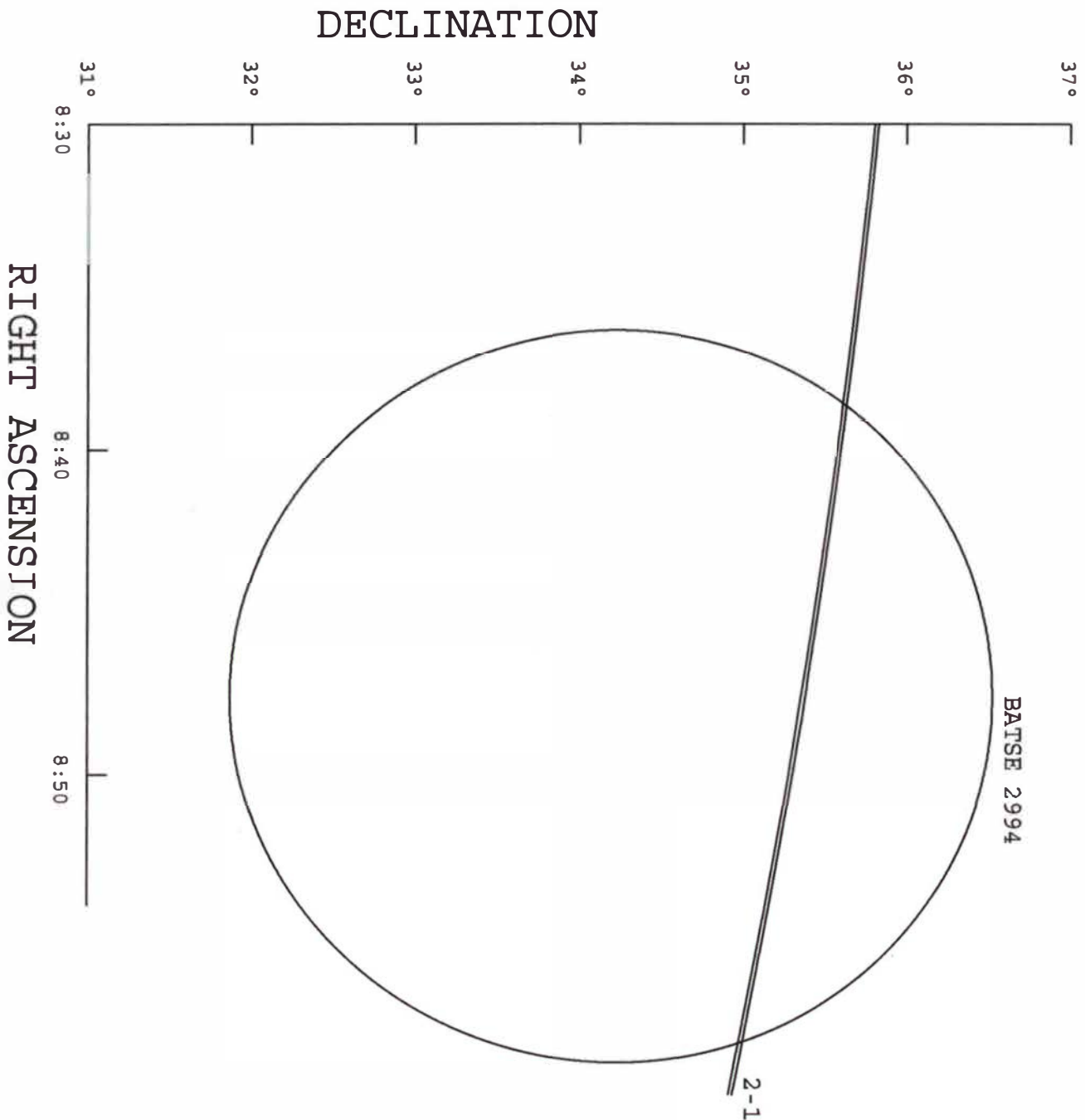
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 26, 1994 20:13

28 / 1/98



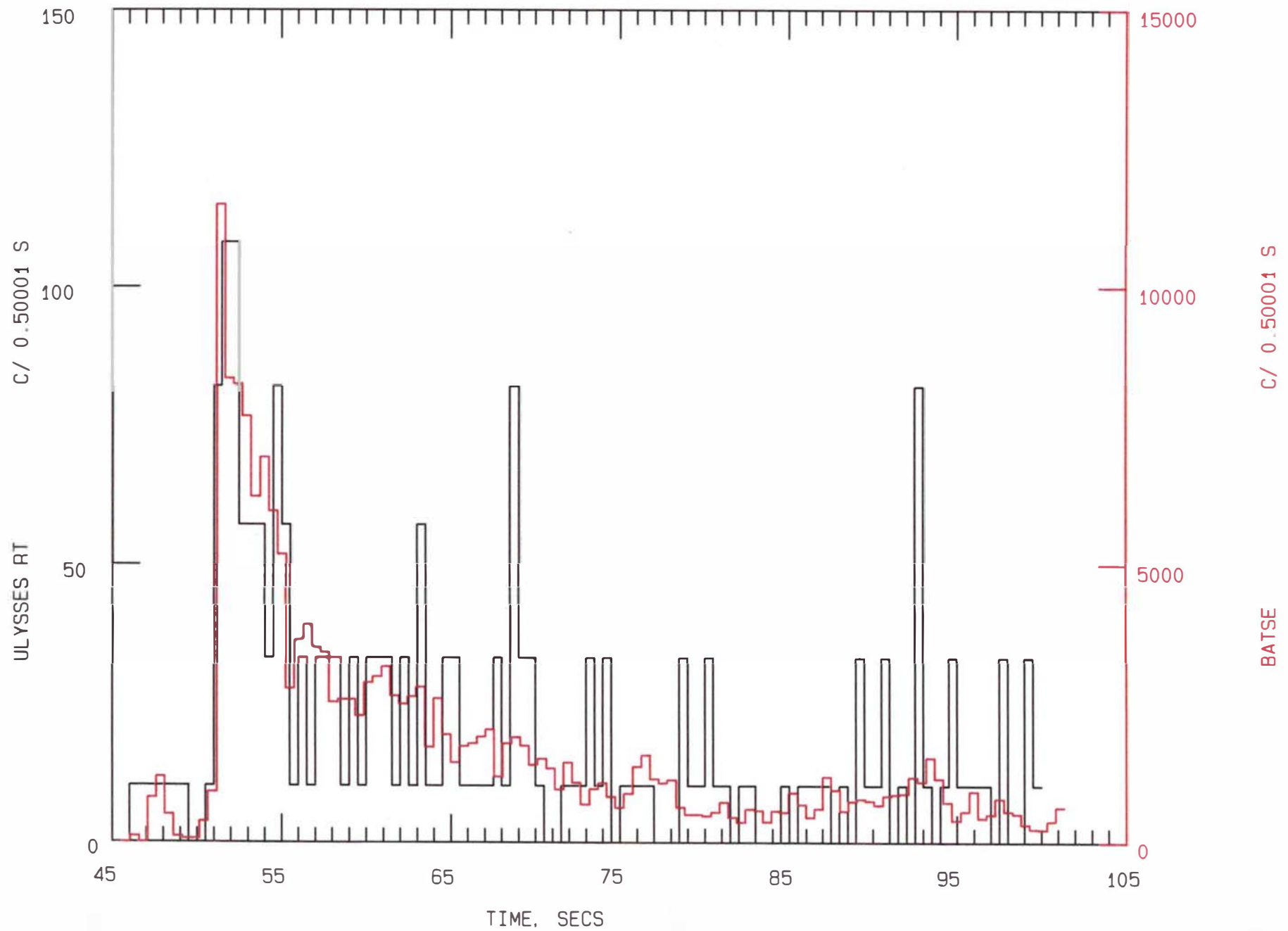
ULYSSES RT-BATSE

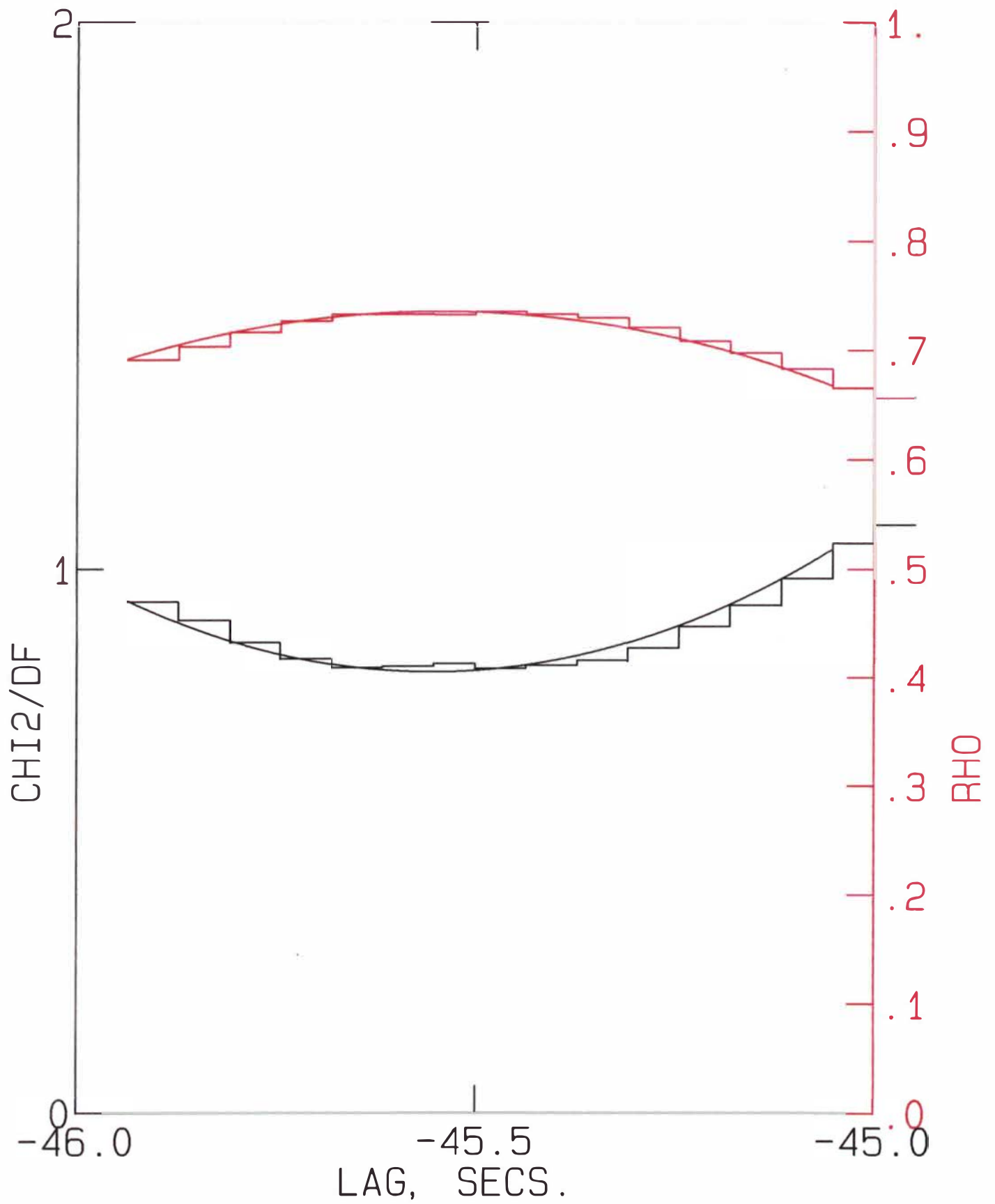
CORRELATION

26/ 5/94

72813.061

28/ 1/98





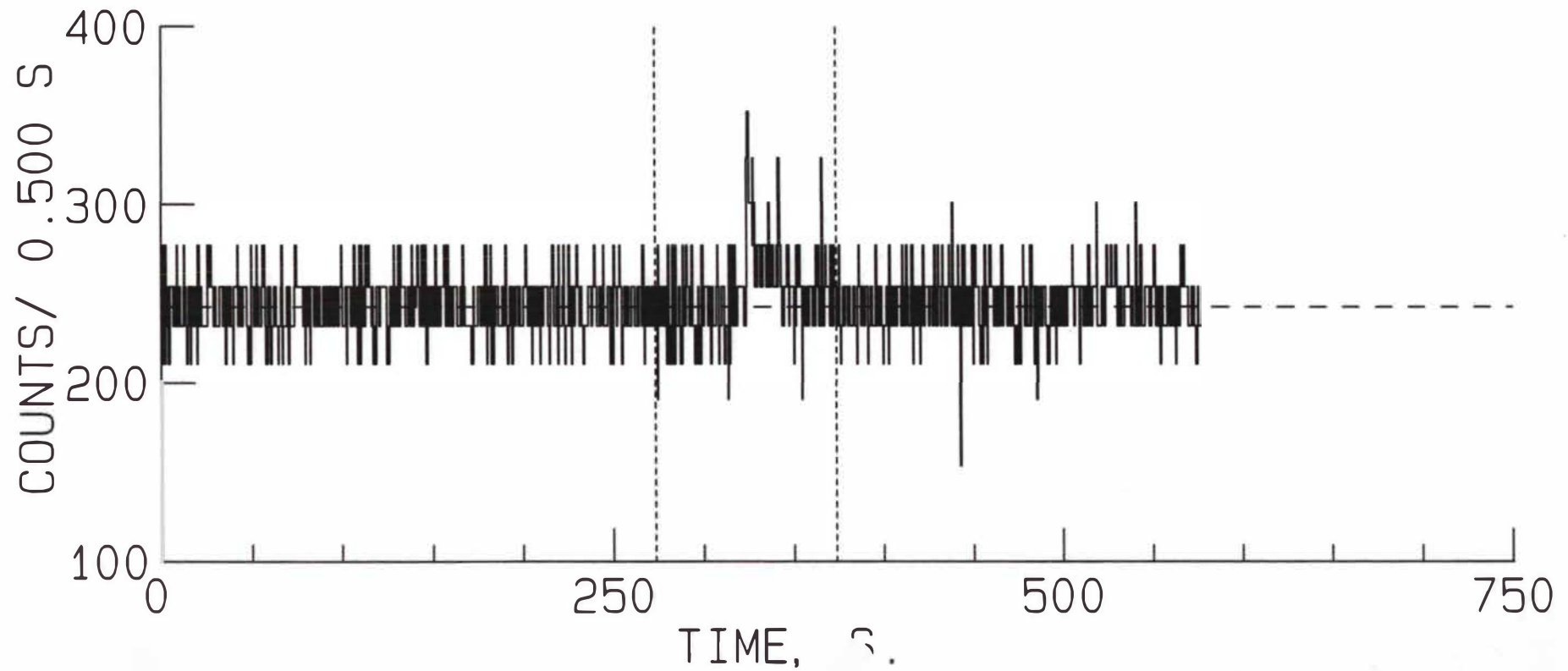
ULYSSES RT

28 / 1 / 98

26/ 5/94 72540.113 s

22- 148 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



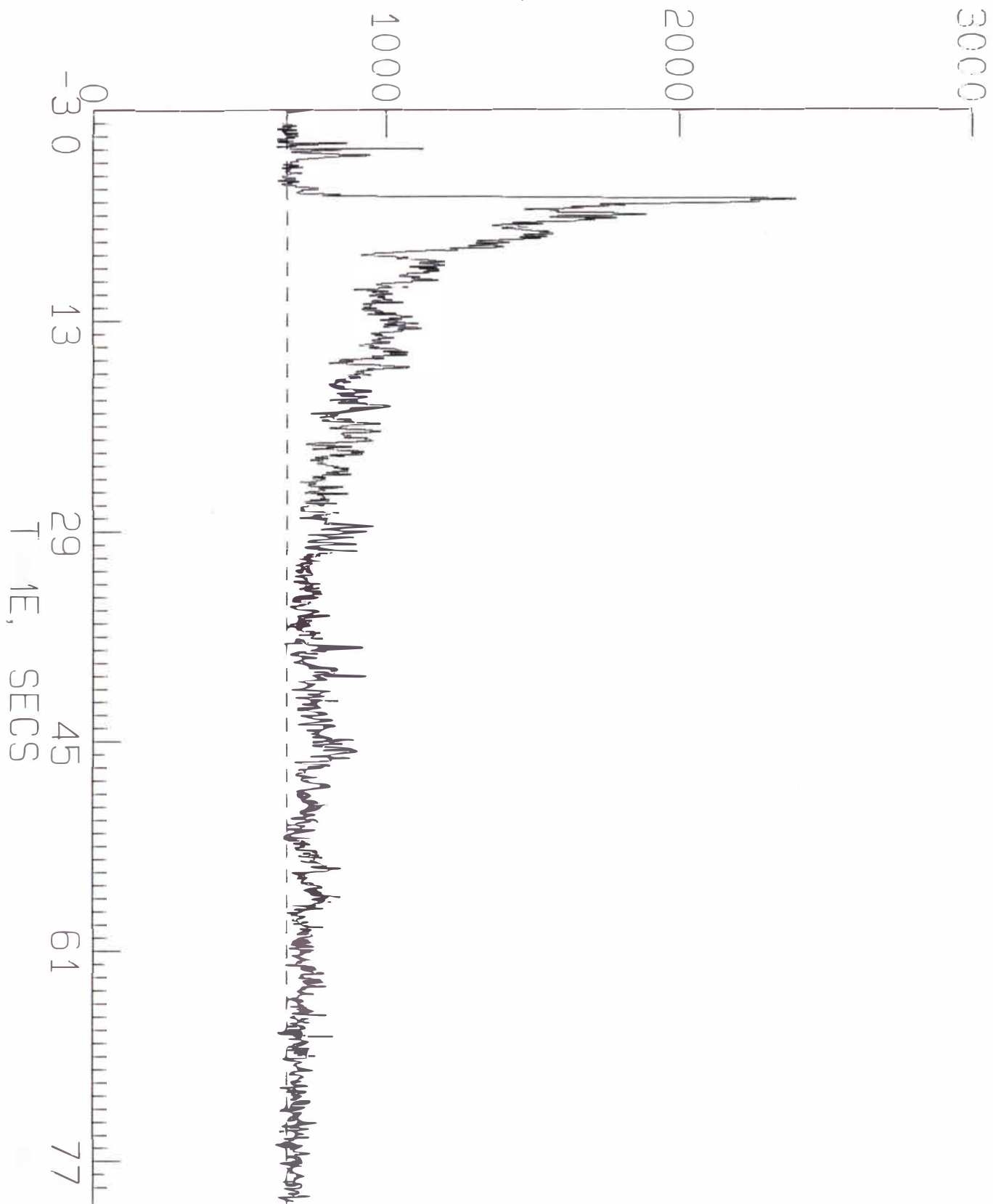
BATSE

26/05/94

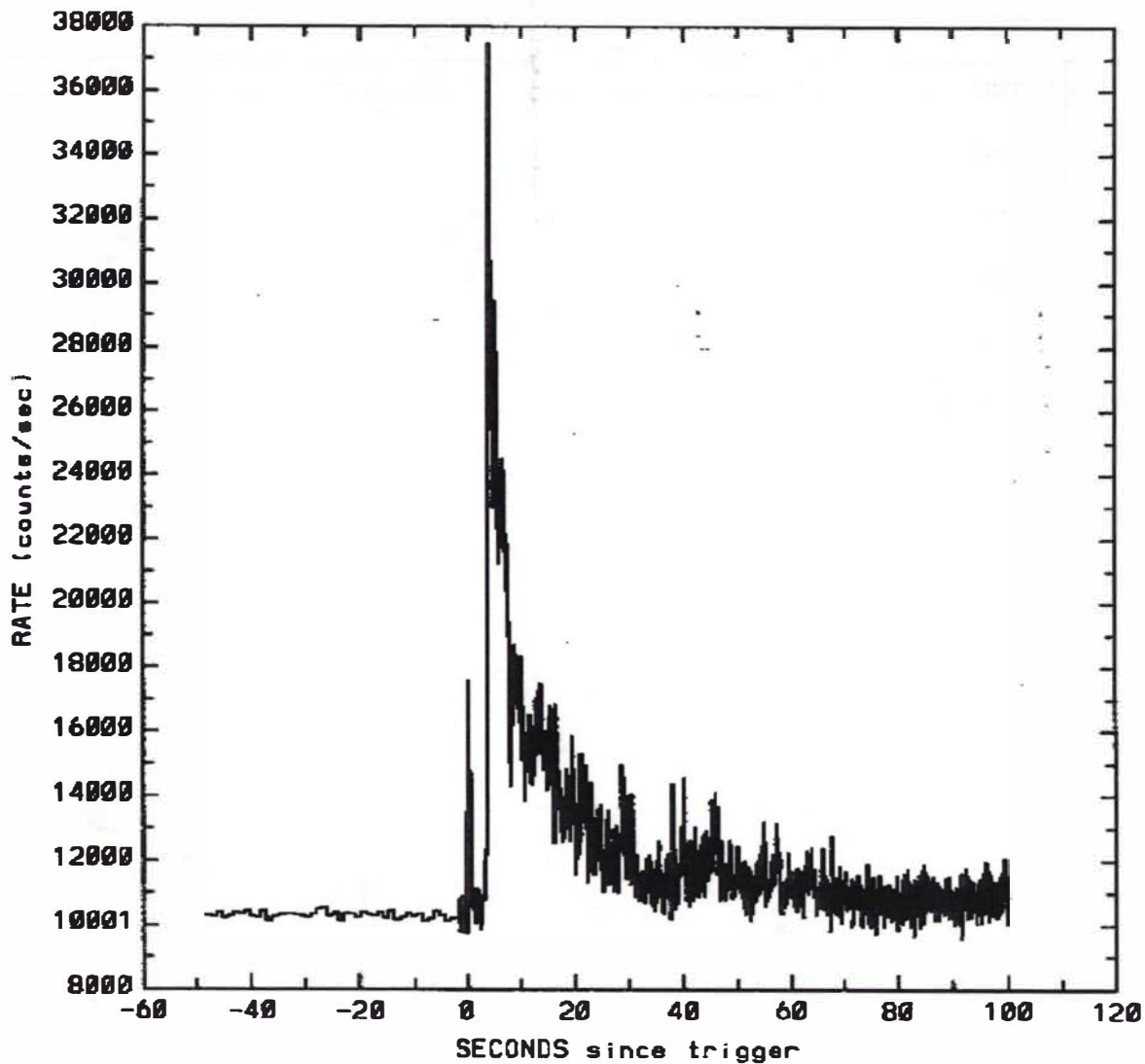
73205.786

25- 100 keV

COUNTS/ .064 S



DATA FOR K. HURLEY



19-JUN-1994 16.45.08

Created by MOPS 80
(Burst Display)
Version 2.28

Trigger # : 2994

Trigger Time:
9498 / 73205.786

Burst Data Type:
DISCSC

Deadline

Corrected: N

Background Data

Type: PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..01:
00110011

Discriminators:
(1, 2)

Quality Mask:
BDISP1

From root Thu Jun 9 04:06 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA18991; Thu, 9 Jun 94 04:06:27
Received: from hea.iki.rssi.msk.su (kisa.iki.rssi.msk.su) by sunspot.ssl.berkeley.edu (5.0/SMI)
id AA03735; Thu, 9 Jun 1994 04:13:47 +0800
Received: from dolly.iki.rssi.msk.su by hea.iki.rssi.msk.su (8.6.7/8.6.6(hea-iki-relay:27/03/94))
id PAA23417; Thu, 9 Jun 1994 15:14:34 +0400
Received: from star by dolly.iki.rssi.msk.su (4.1/SMI-4.1(hea-iki:25/03/94))
id AA01943; Thu, 9 Jun 94 15:14:14 MSK
Message-Id: <9406091114.AA01943@dolly.iki.rssi.msk.su>
To: barat@cnesta.span.cnes.fr, fishman%ssl.span@sdsc.bitnet.msk.su
Cc: khurley@space6.ssl.berkeley.edu, bp@astro.princeton.edu,
kouveliotou%ssl.span@sdsc.bitnet.msk.su,
meegan%ssl.span@sdsc.bitnet.msk.su
Subject: GRB 940526 & 940529
Date: Thu, 09 Jun 1994 15:13:53 +0400
From: "R.A. Sunyaev" <sunyaev@kisa.iki.rssi.msk.su>
Content-Length: 1522
Status: R

To: Dr. C.Barat, Dr. G.Fishman, Dr. K.Hurley, Dr. C.Kouveliotou,
Dr. C.Meegan, B.Paczynski

D.Denisenko, R.Sunyaev, O.Terekhov, Space Research Institute, Moscow;
C.Barat, J.-P.Dezalay, Centre d'Etude Spatiale des Rayonnements,
Toulouse, report:

GRB 940526

Gamma-ray burst 940526 reported by BATSE was observed by the PHEBUS instrument onboard GRANAT. The burst trigger time T_0 is 20h20m09s UT (4 seconds after BATSE triggering). Its duration (T_{90}) is 29.5 ± 0.8 s. The burst fluence (>100 keV) is $\sim 1.4E-4$ erg/cm², maximum flux (>100 keV) $\sim 6E-5$ erg/cm²/s.

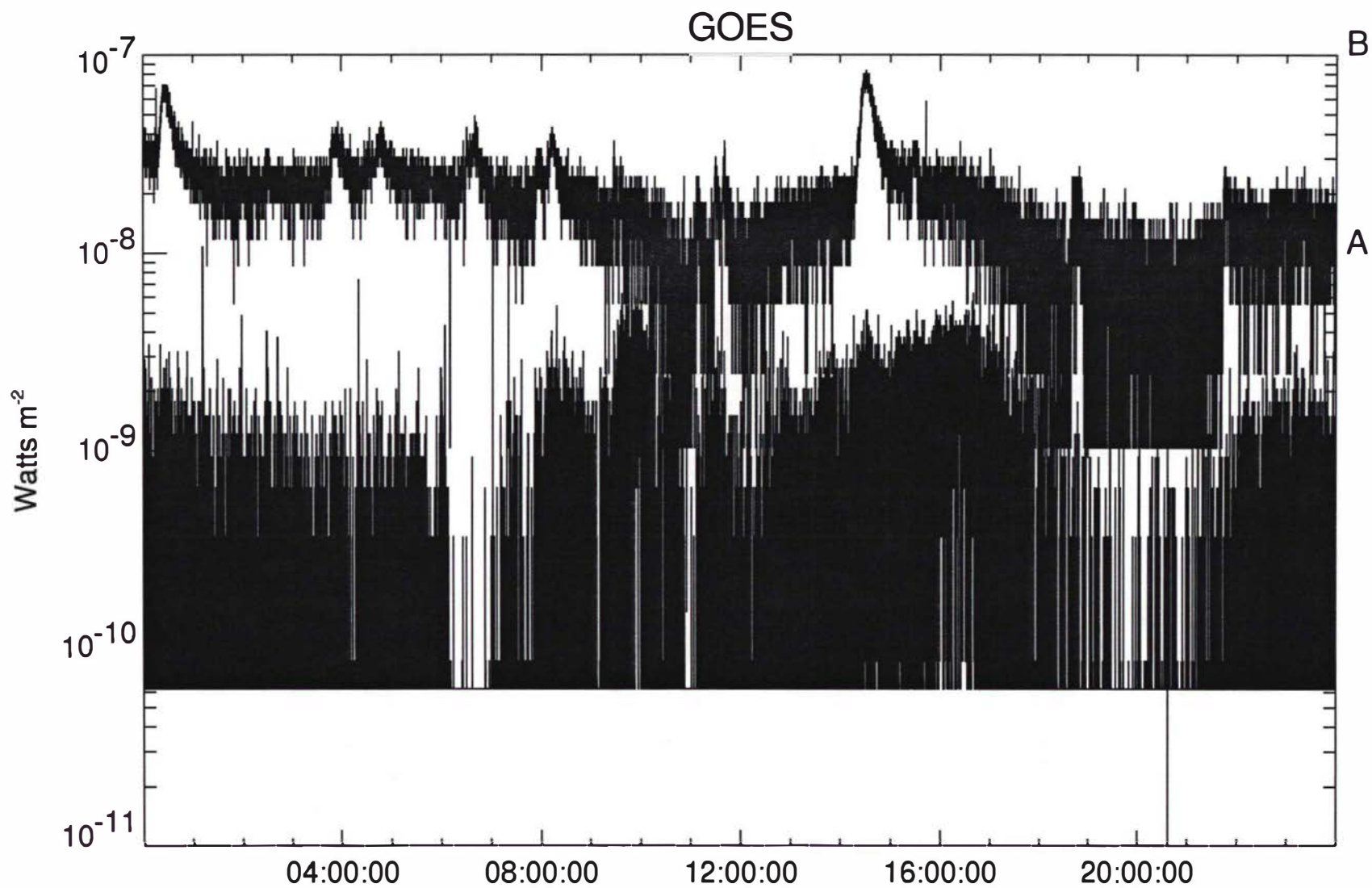
The event is confidently detected up to 10 MeV, its energy spectrum being well fitted in the broad range (400 keV - 12 MeV) by the power law with the index -1.8. Below 400 keV the spectrum was steeper. This fact as well as the complicated but similar time profiles makes this burst look like GRB910814 ($T=19h14m33s$) which was about 3 times stronger as seen by PHEBUS ($C_{max}/C = 9.0$ versus 3.2 for 940526).

GRB 940529

PHEBUS triggering time for this burst is 16h22m49s (UT). The event duration (T_{90}) is 5.2 ± 1.4 s. The burst fluence (>100 keV) is $\sim 2E-6$ erg/cm², maximum flux (>100 keV) $\sim 2E-6$ erg/cm²/s, C_{max}/C ratio ~ 1.3 . The energy spectrum between 100 and 800 keV is fitted by power law with the index -1.6.

GRB 940528 candidate

Another event was detected by PHEBUS on the 28th of May, 1994 at 3h02m56s UT. It has $T_{90}=6.4 \pm 0.7$ s, $C_{max}/C=2.9 \pm 0.3$ and rather soft spectrum (photon index -2.3).

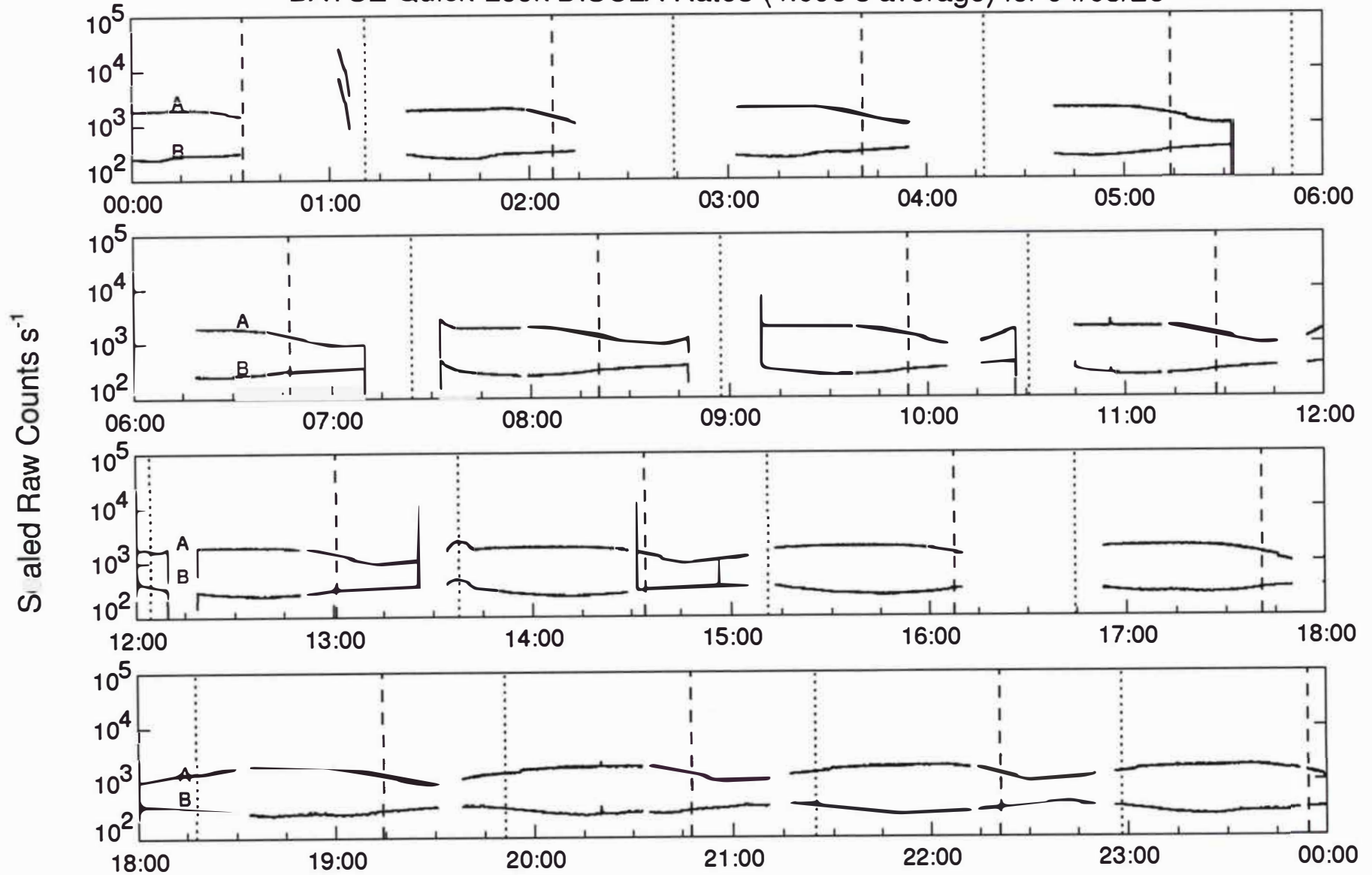


Data Start: 94/05/26, 0000:01

Plot created: 94/05/27, 1624

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

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/26

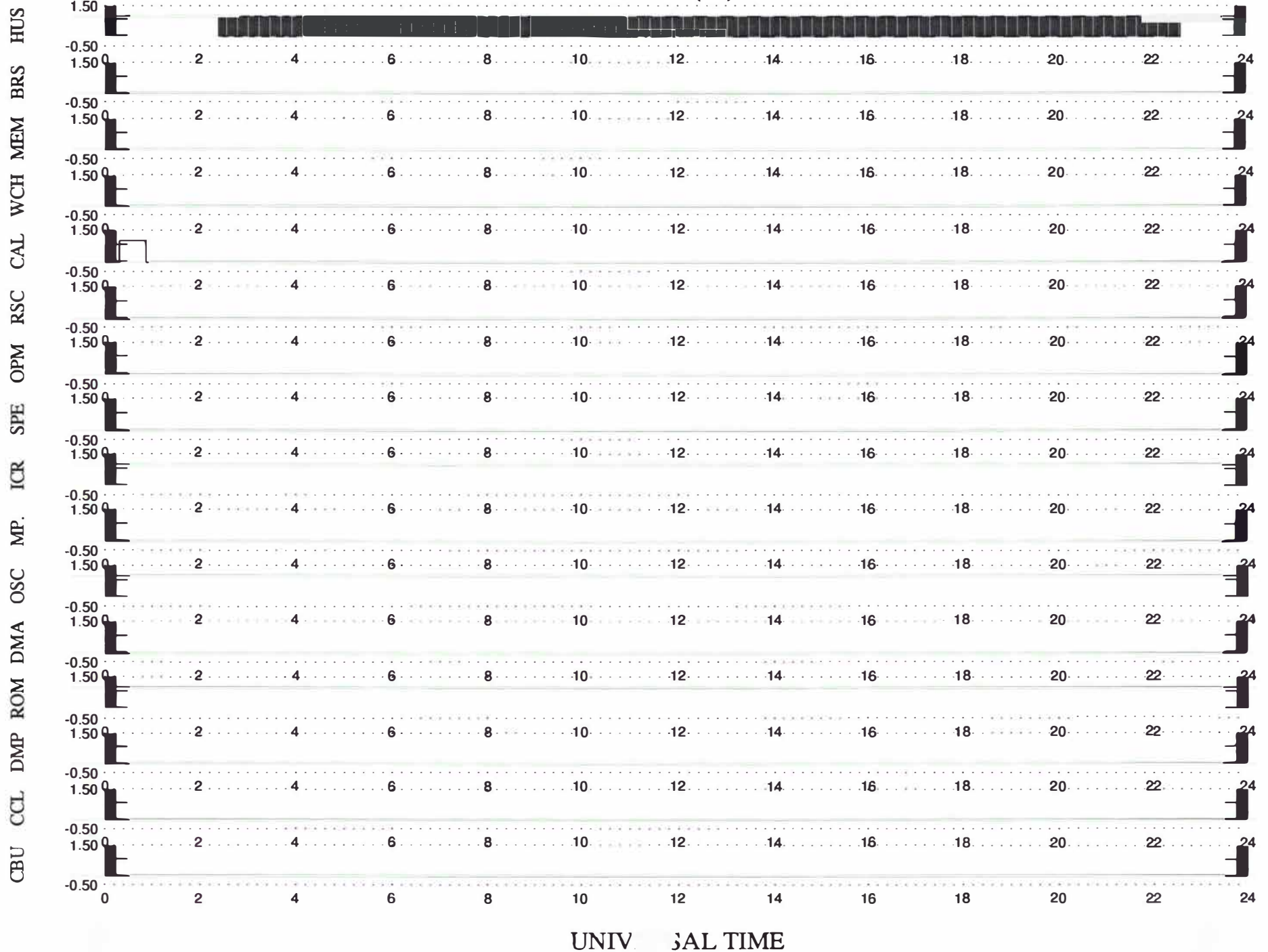


Current Time: 94/06/01, 1721 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

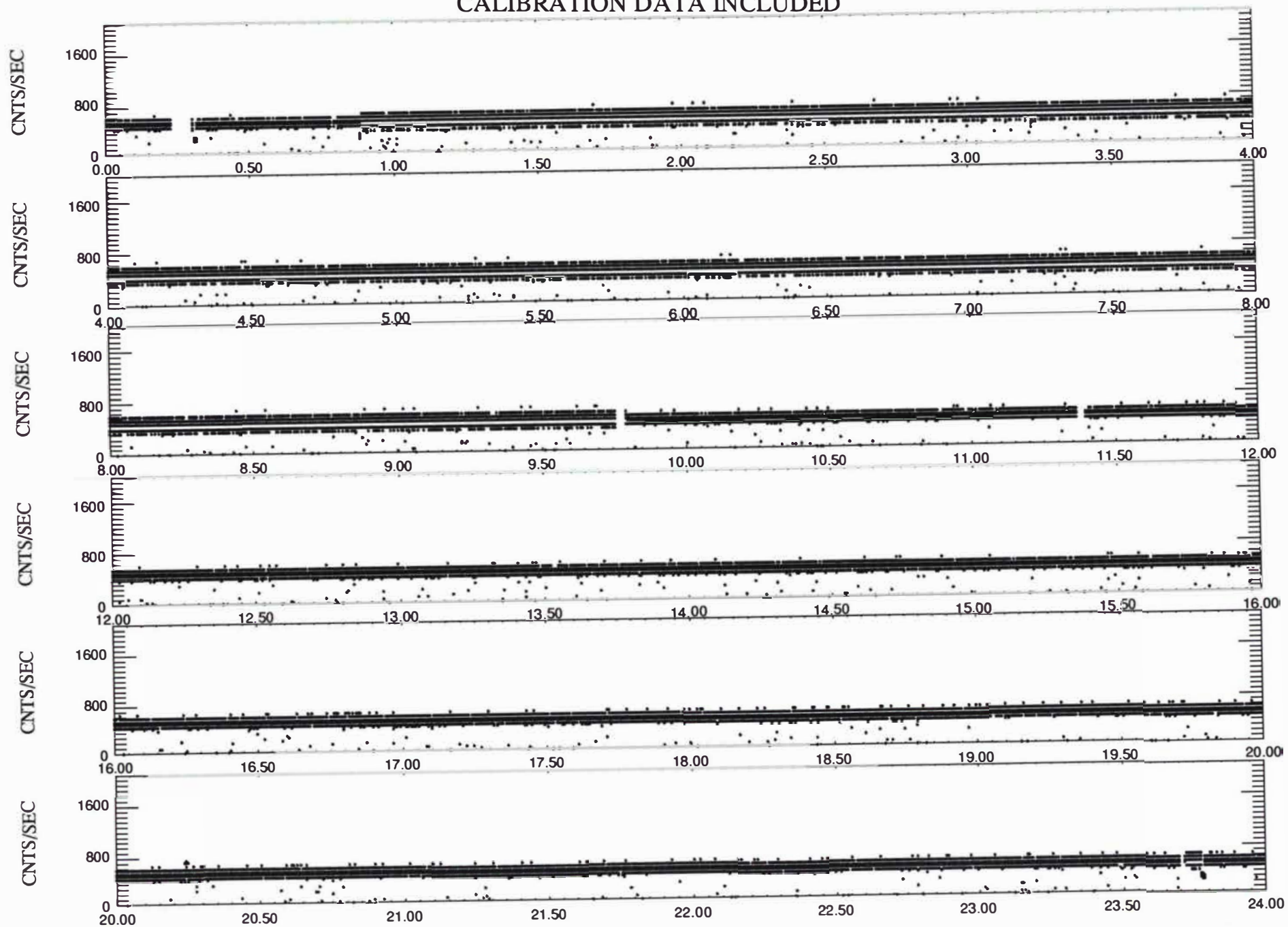
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

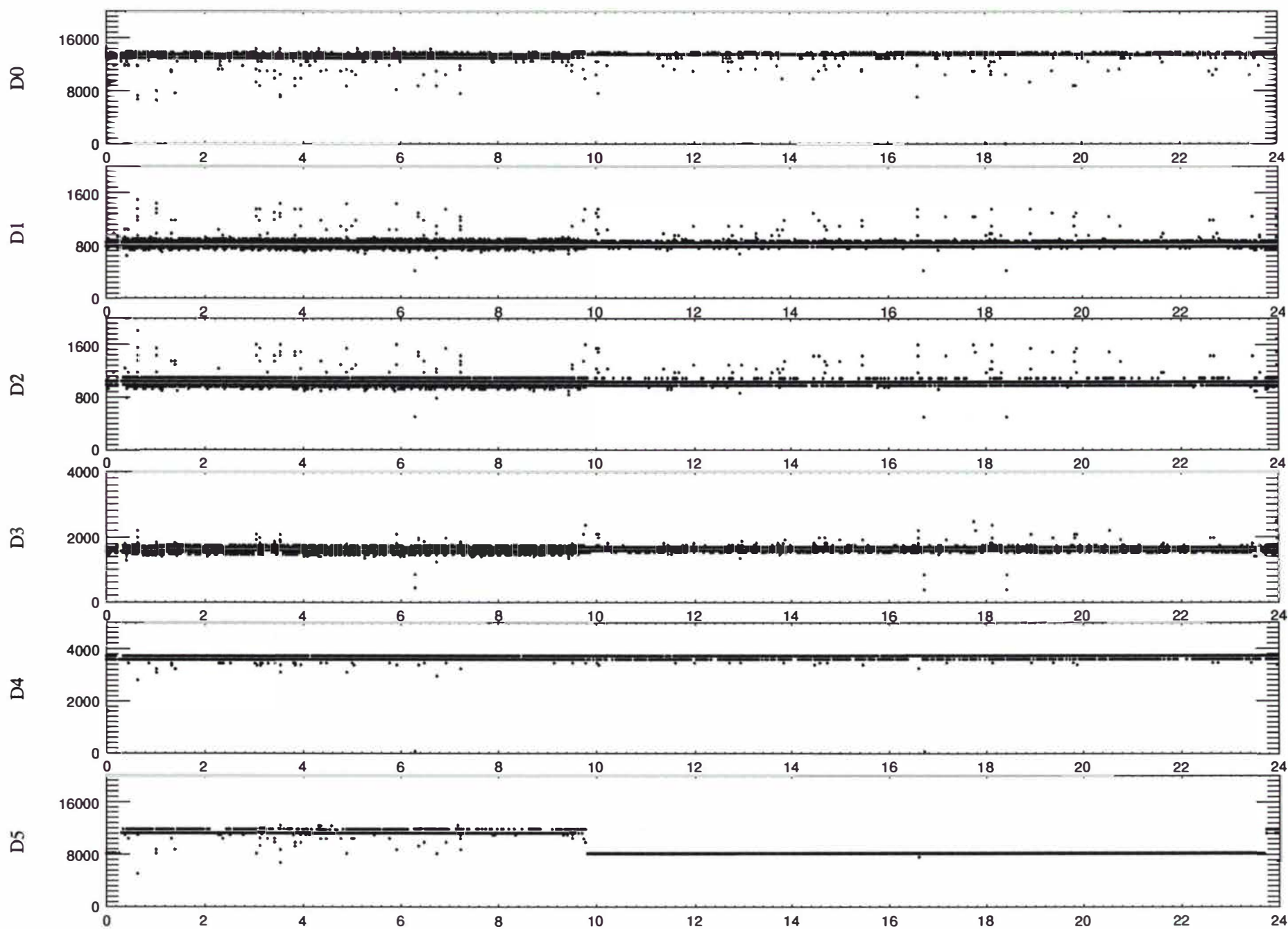
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIV: AL TIME

From SHARIFF@ssl.msfc.nasa.gov Sat May 28 15:00 PDT 1994
Date: Sat, 28 May 1994 17:02:47 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2995
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2995
EVENT OF 1994 MAY 27 DAY OF YEAR=147
EVENT CROSSING TIME AT BATSE : 46884. S. OR 13:01:24.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 31.000 -43.000
BATSE PEAK COUNTING RATE: 13000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 5/ 94 IS:
RA= 120.247 DEC= -40.399 DIST= 3.006 AU
BATSE-ULYSSES DISTANCE = 449645140. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.70 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -673.93 SECS.
CROSSING TIME AT ULYSSES IS 46210. S. OR 12:50:10 +/- 272.40 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 5/ 94 IS:
RA= 30.384 DEC= 11.529 DIST= 2.134 AU
MARS-BATSE DISTANCE = 319216544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=125.47 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -617.85 SECS.
CROSSING TIME AT MARS IS 46266. S. OR 12:51:06 +/- 141.18 SECONDS

N/O

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2995	940527	9499	46884	13000	031	-43

BATSE BURST TRIGGER

NO.: 02995

TIME: TJD=9499 SECONDS=46884

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=110.1 AZIMUTH=259.2 ERROR= DEGREES

COMMENTS:

BURST, SINGLE SPIKE, LASTING ~0.3 SECONDS. VISIBLE ABOVE 300 KEV.

From SHARIFF@ssl.msfc.nasa.gov Sat May 28 15:03 PDT 1994
Date: Sat, 28 May 1994 17:05:45 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2996
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2996
EVENT OF 1994 MAY 27 DAY OF YEAR=147
EVENT CROSSING TIME AT BATSE : 58694. S. OR 16:18:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 266.000 -56.000
BATSE PEAK COUNTING RATE: 1700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 5/ 94 IS:
RA= 120.259 DEC= -40.385 DIST= 3.006 AU
BATSE-ULYSSES DISTANCE = 449692113. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -277.67 SECS.
CROSSING TIME AT ULYSSES IS 58416. S. OR 16:13:36 +/- 301.71 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 5/ 94 IS:
RA= 30.384 DEC= 11.529 DIST= 2.134 AU
MARS-BATSE DISTANCE = 319216544. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.63 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 505.91 SECS.
CROSSING TIME AT MARS IS 59200. S. OR 16:26:39 +/- 170.35 SECONDS

NO

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2996	940527	9499	58694	1700	266	-56

NO.: 02996 BATSE BURST TRIGGER

TIME: TJD=9499 SECONDS=58694

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=088.2 AZIMUTH=190.6 ERROR= DEGREES

COMMENTS:

BURST, WEAK SINGLE PULSE WITH SUBSTRUCTURE, LASTING ~48 SECONDS. NOT VISIBLE ABO
VE 300KEV. (Please note the change in the trigger Number and disregard the
previous message. Sorry for the typo).

31 / 5 / 94

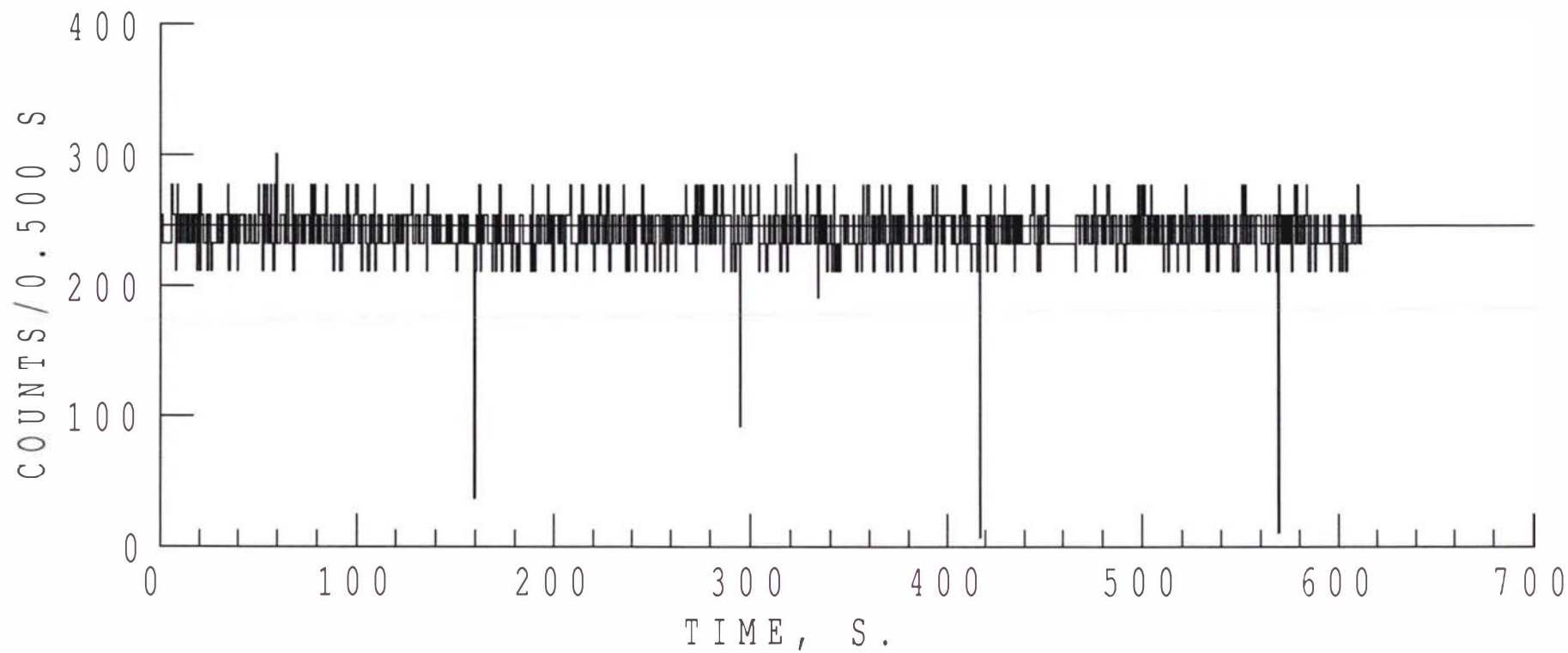
ULYSSES RT

27 / 5 / 94 58104.191 s

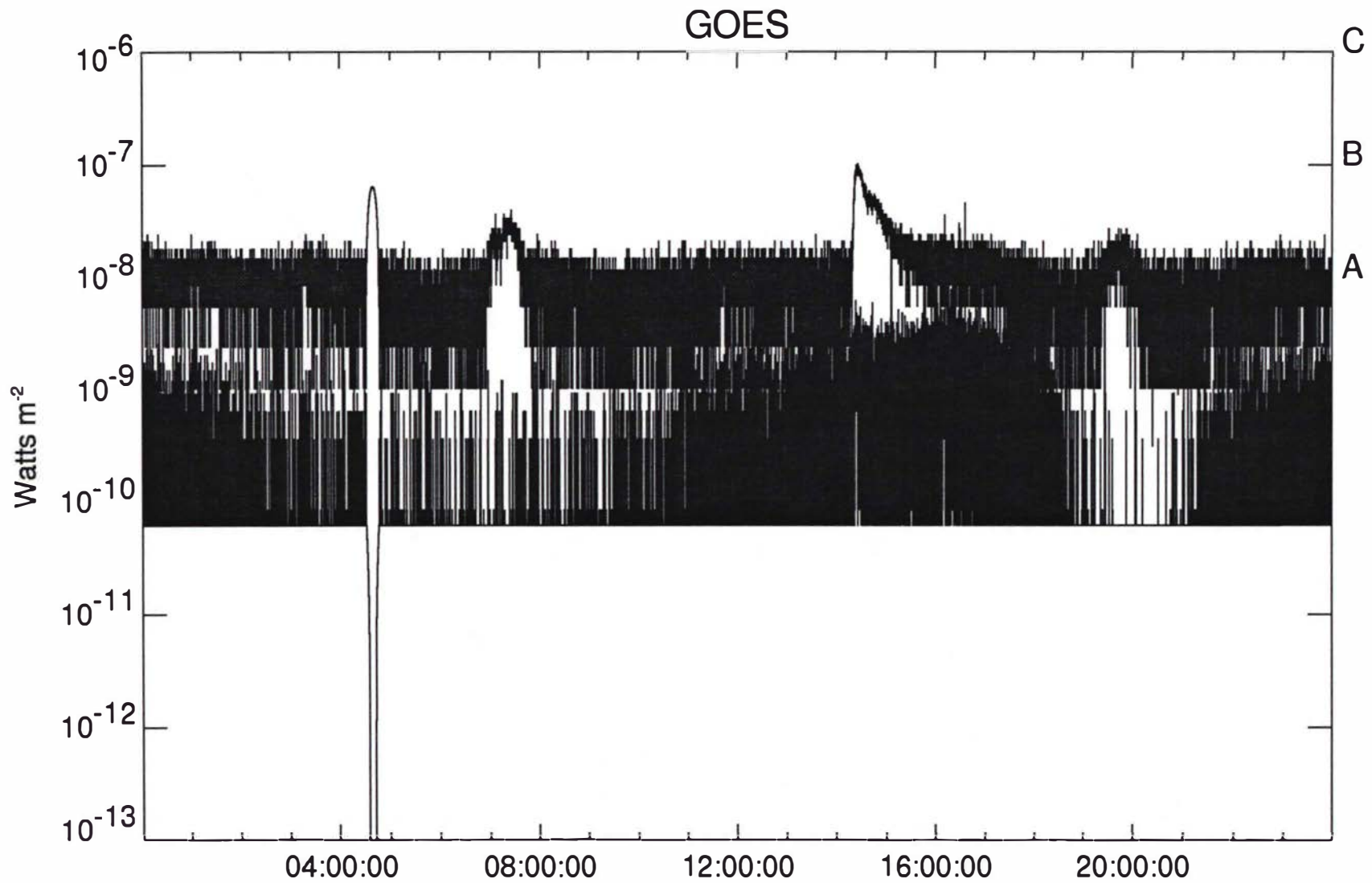
0 - 0 keV

W= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



M

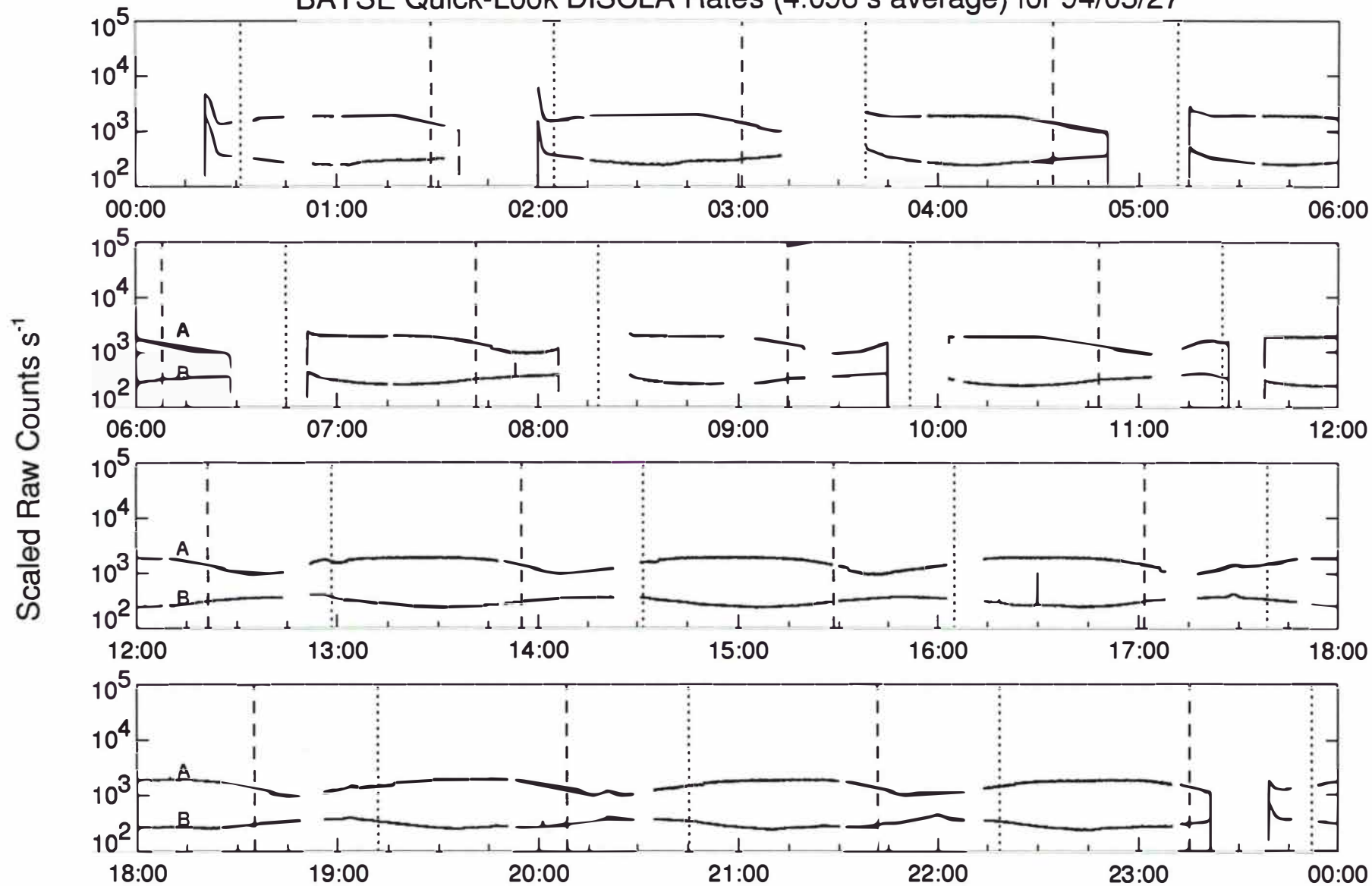


C

B

A

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/27

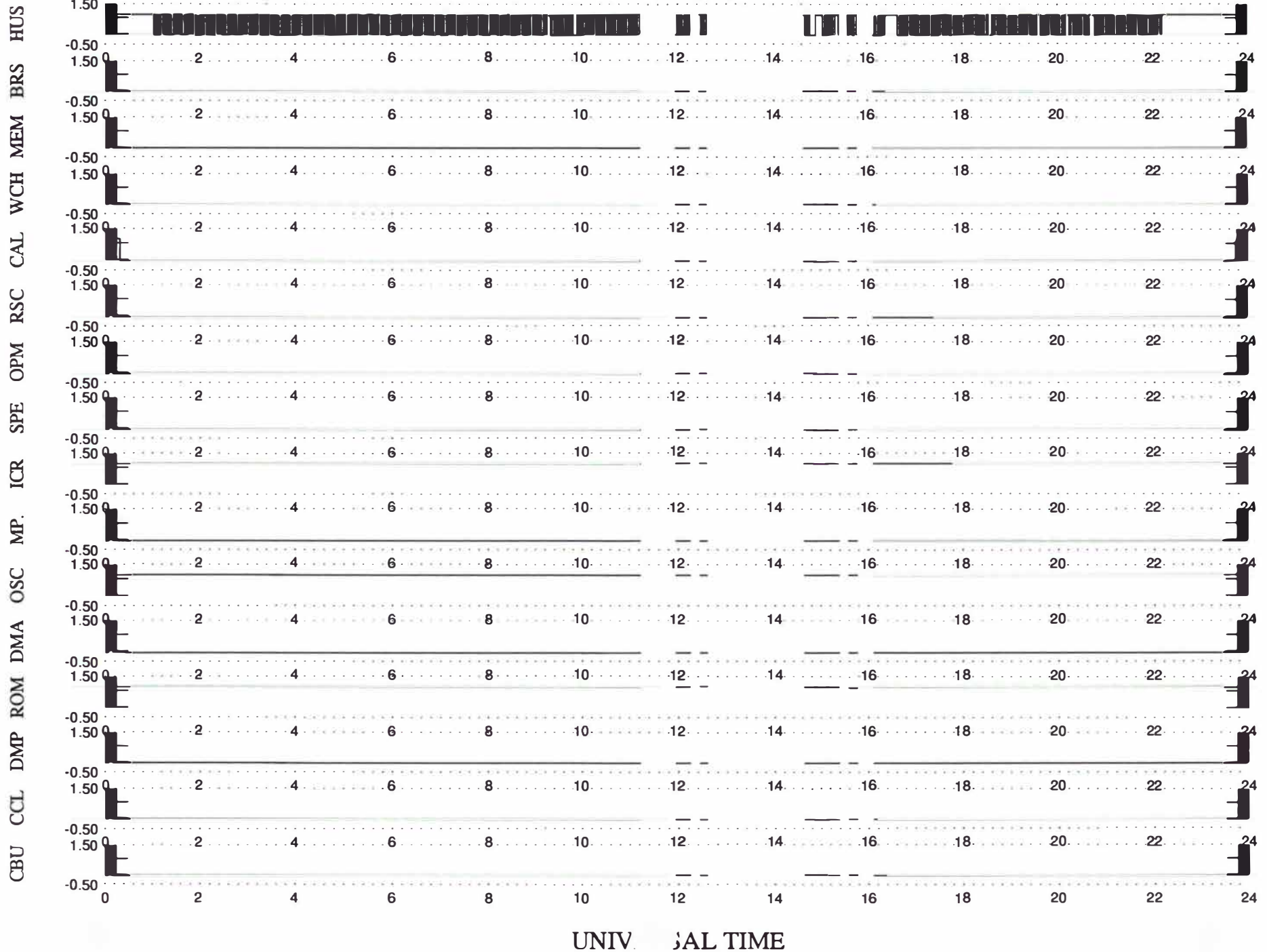


Current Time: 94/06/01, 1722 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

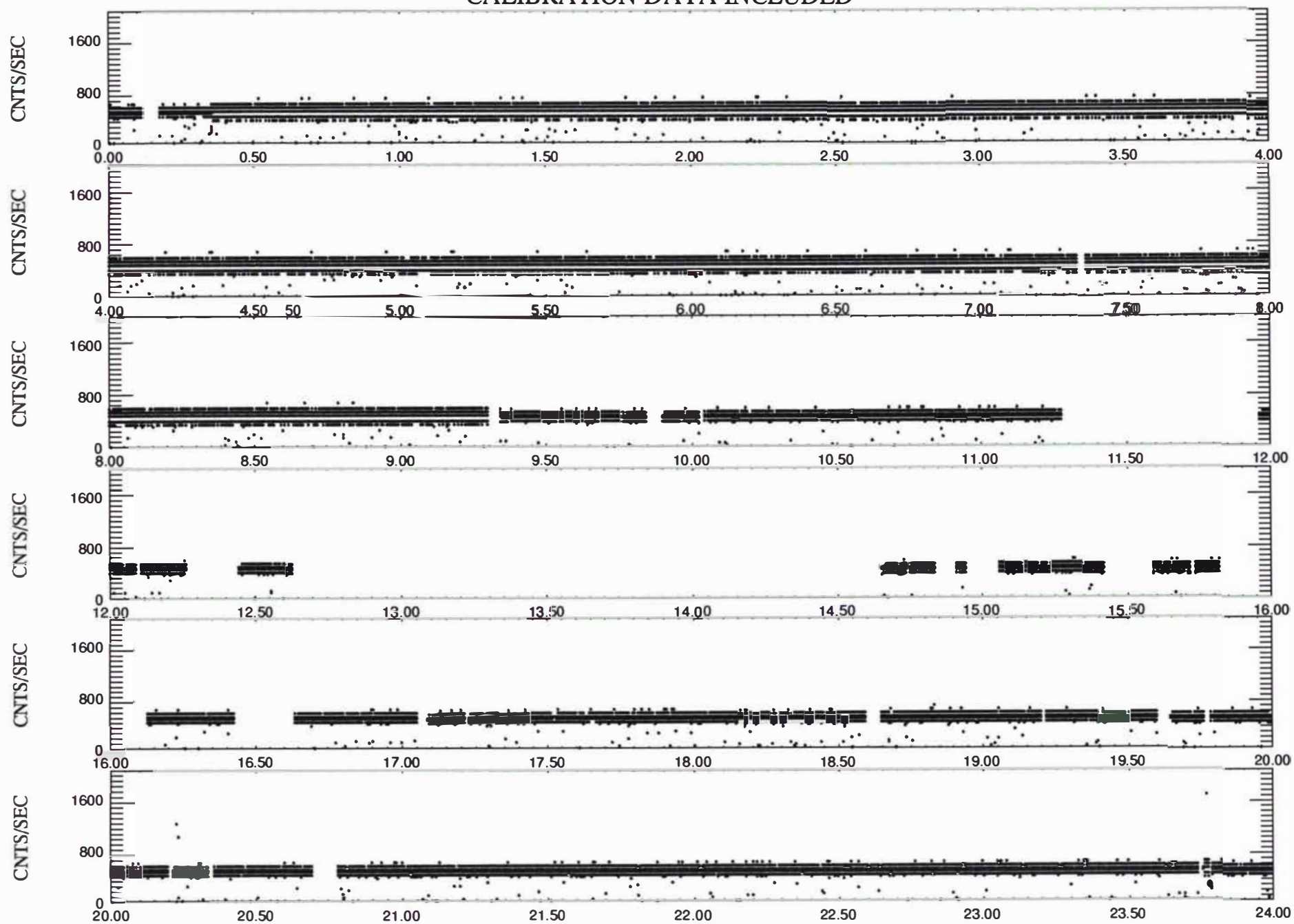
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

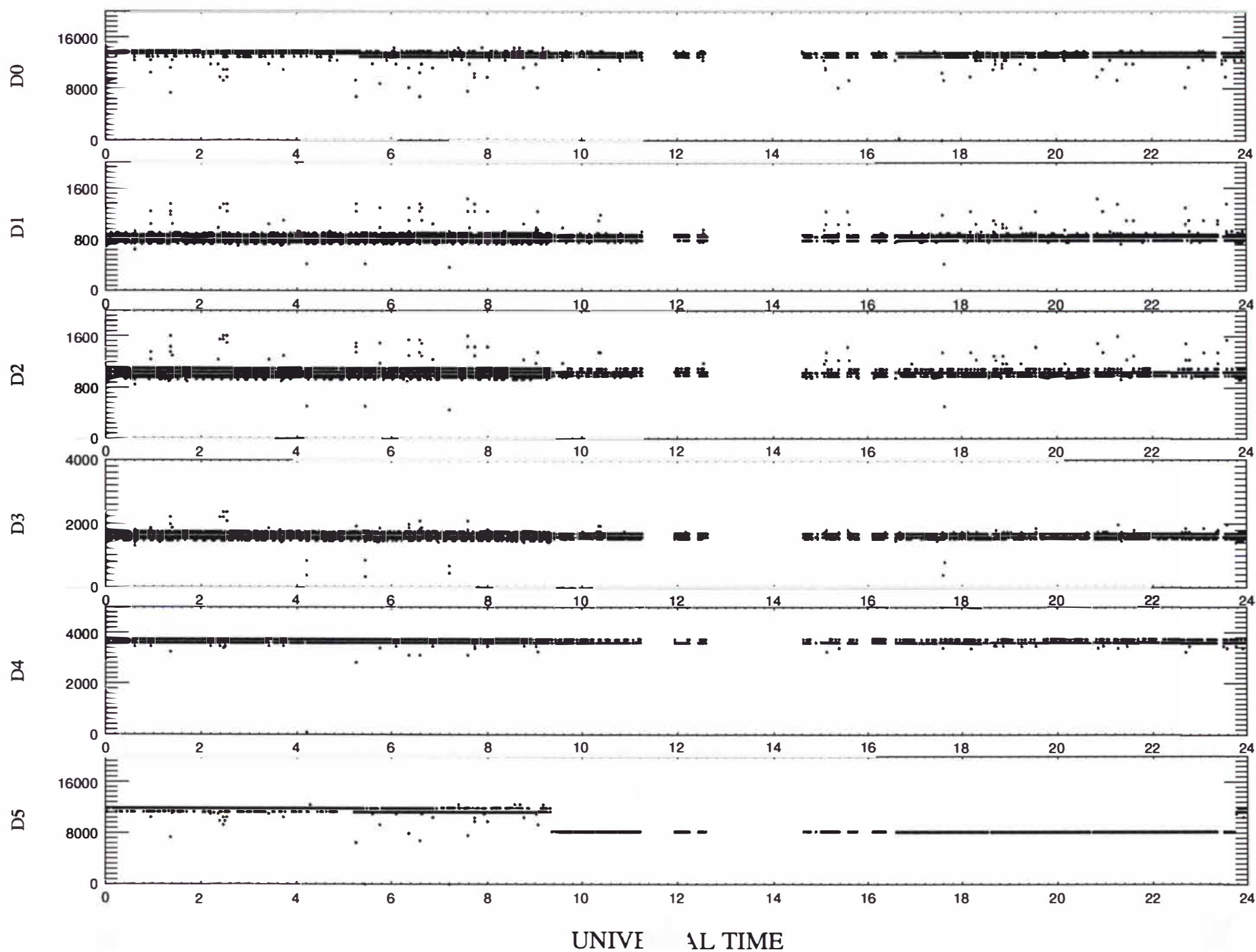
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIV TIME



Date: Aug 8 2011

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

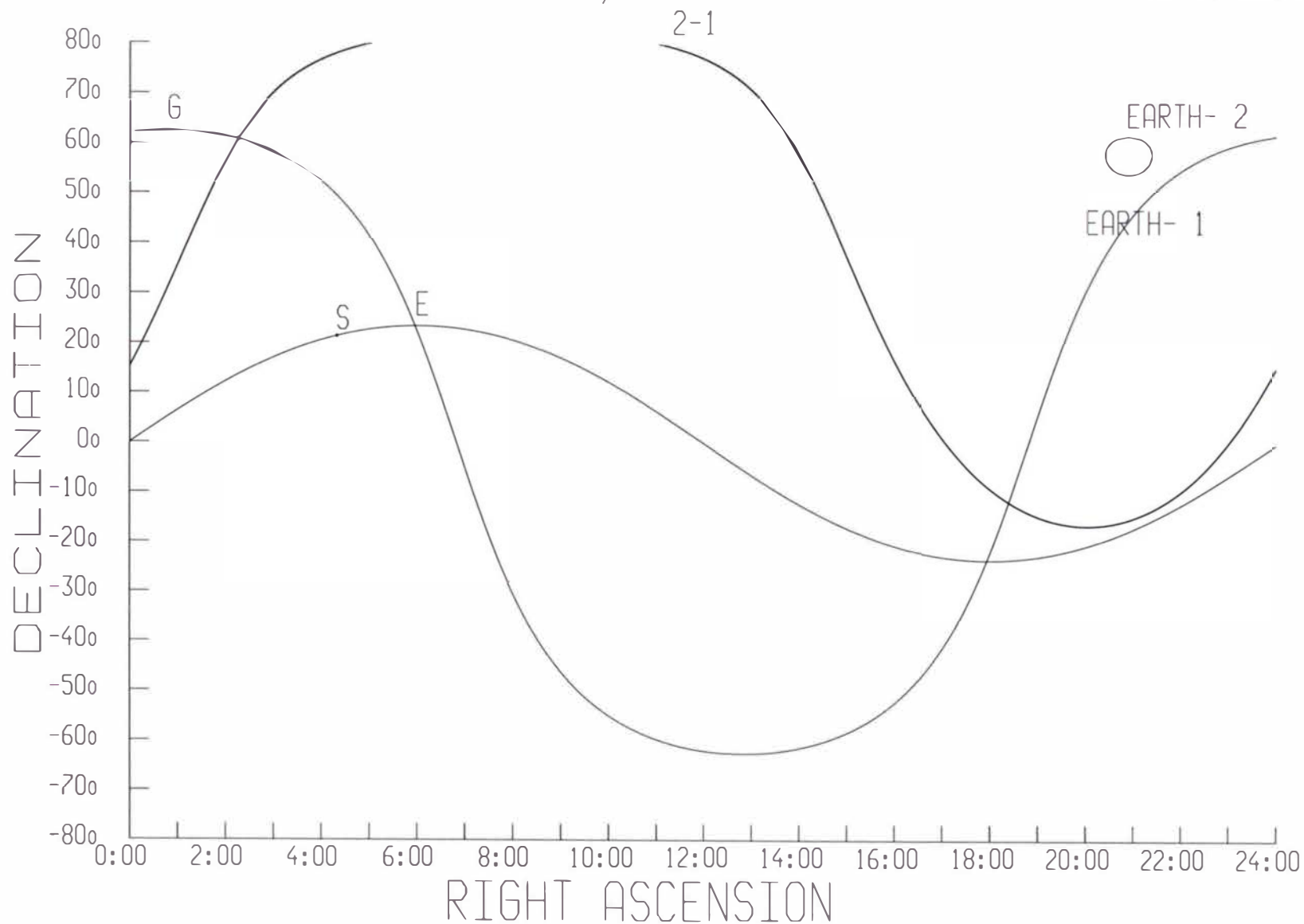
3. PVO Data

- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS and MBL databases updated with identical times?

EVENT OF MAY 28, 1994 3:15

08/08/2011

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



PHEBUS 19940528 11782

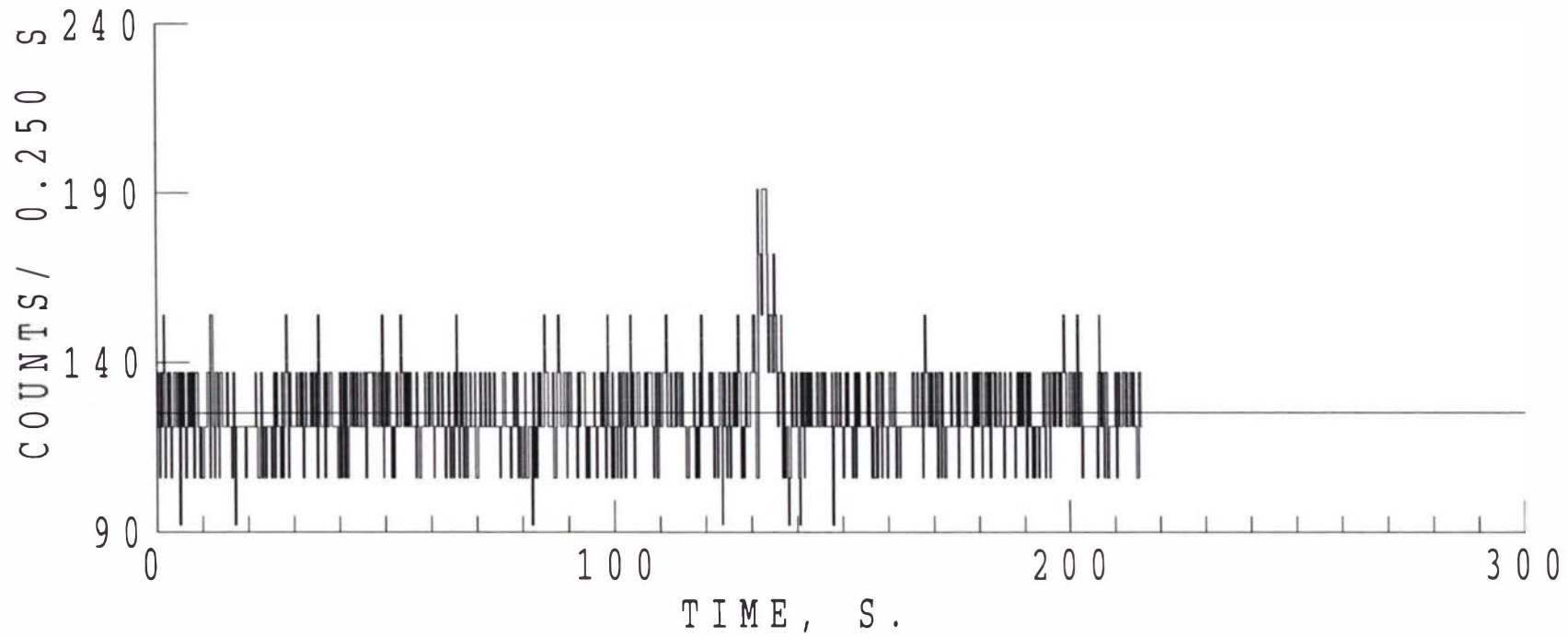
ULYSSES RT

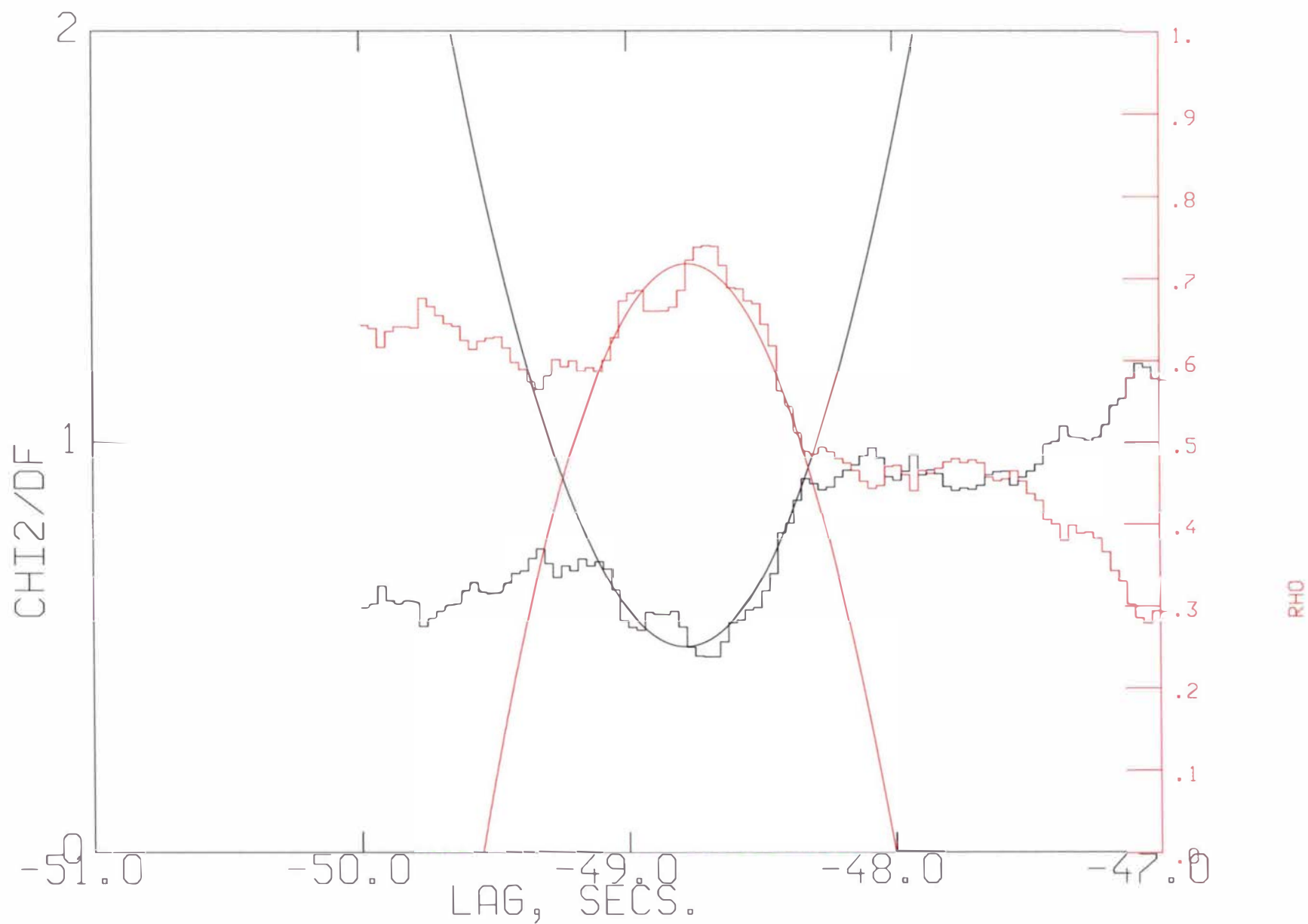
08/08/11

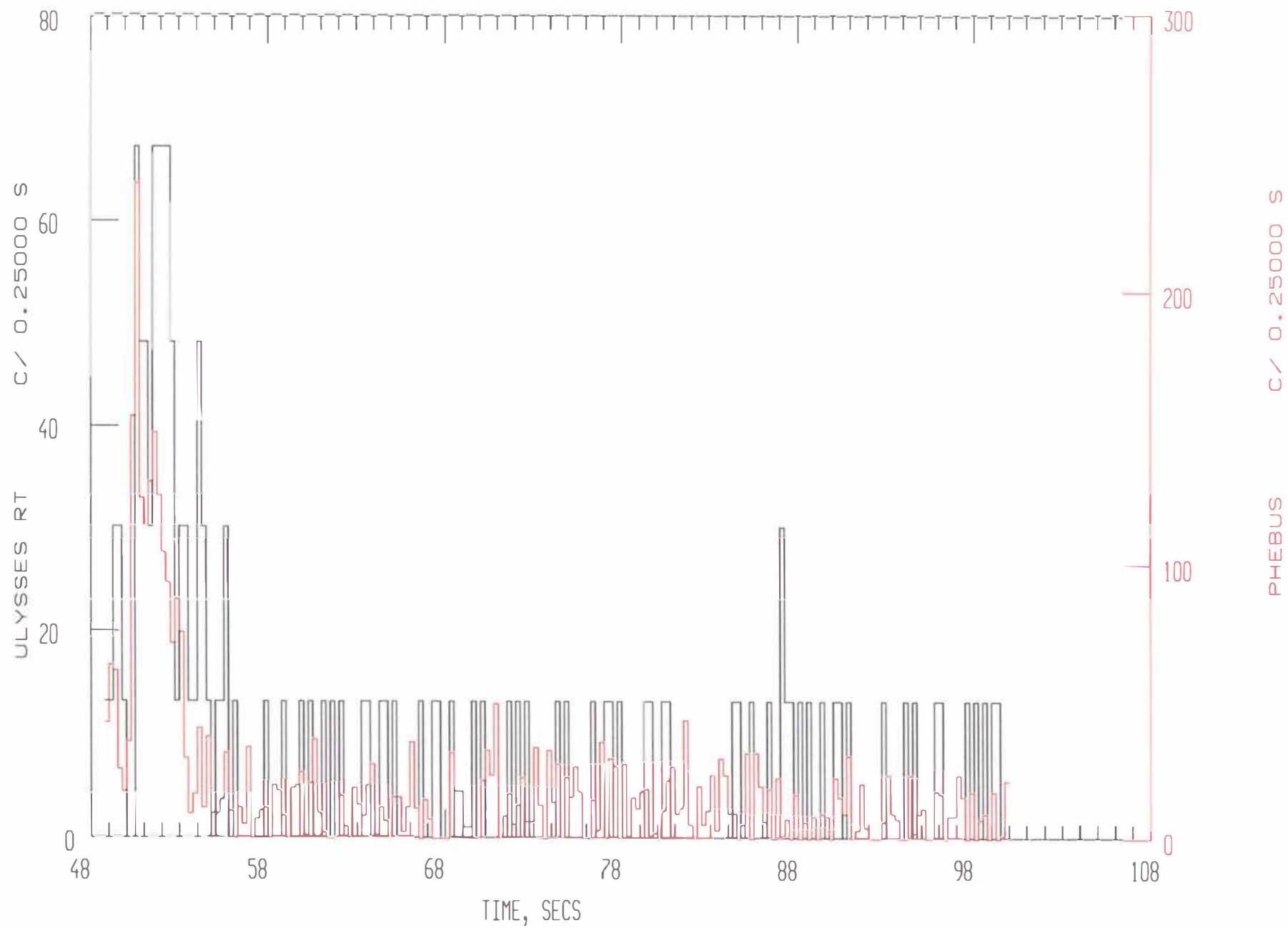
28/05/94 11664.036 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS







PHEBUS

28/ 5/94 10974.310 s

100- 1600 keV

s

COUNTS/0.03125

75

50

25

0

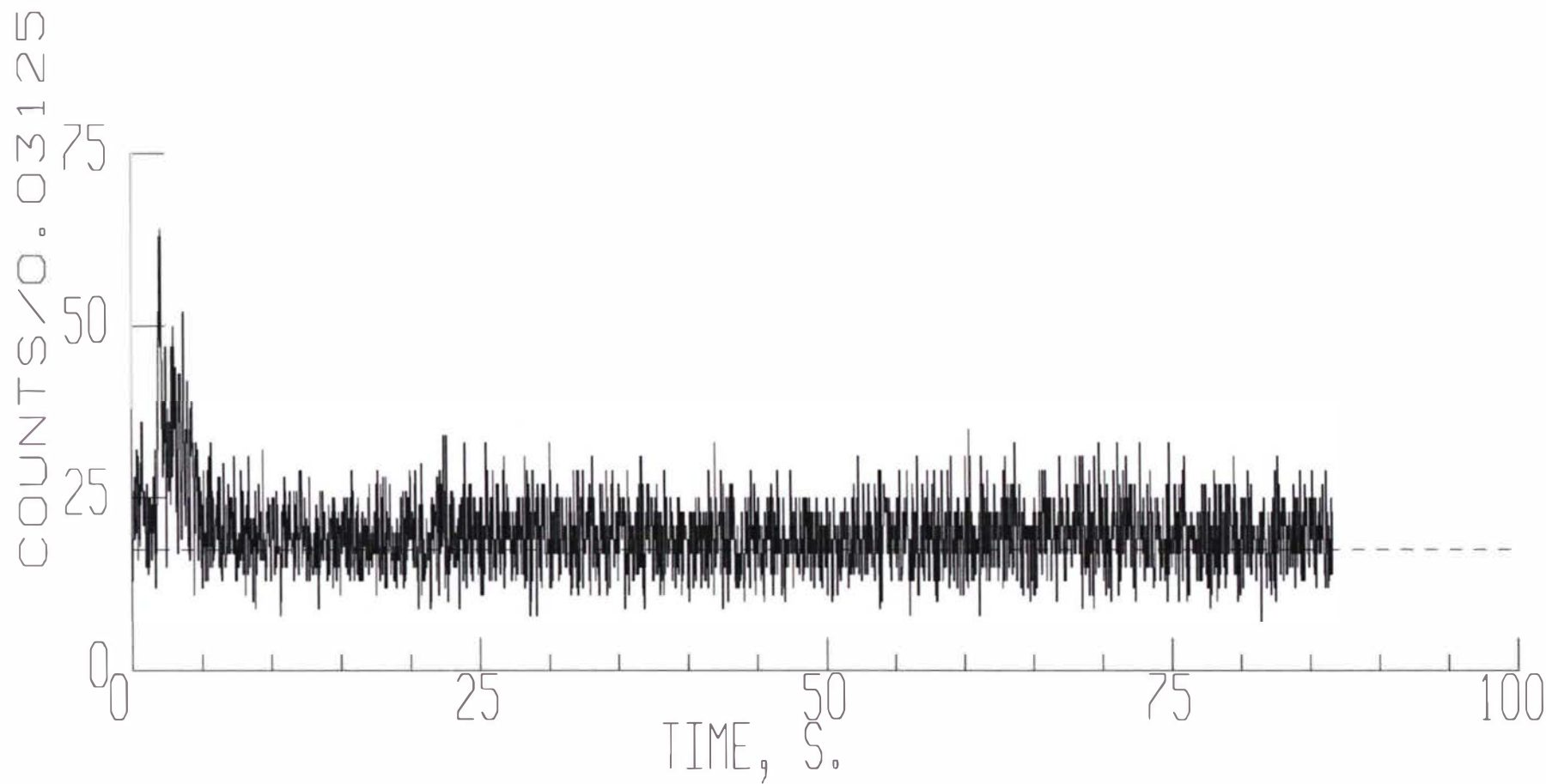
25

50

75

100

TIME, S.



From SHARIFF@ssl.msfc.nasa.gov Sun May 29 13:57 PDT 1994
Date: Sun, 29 May 1994 15:59:13 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02997

TIME: TJD=9500 SECONDS=79925

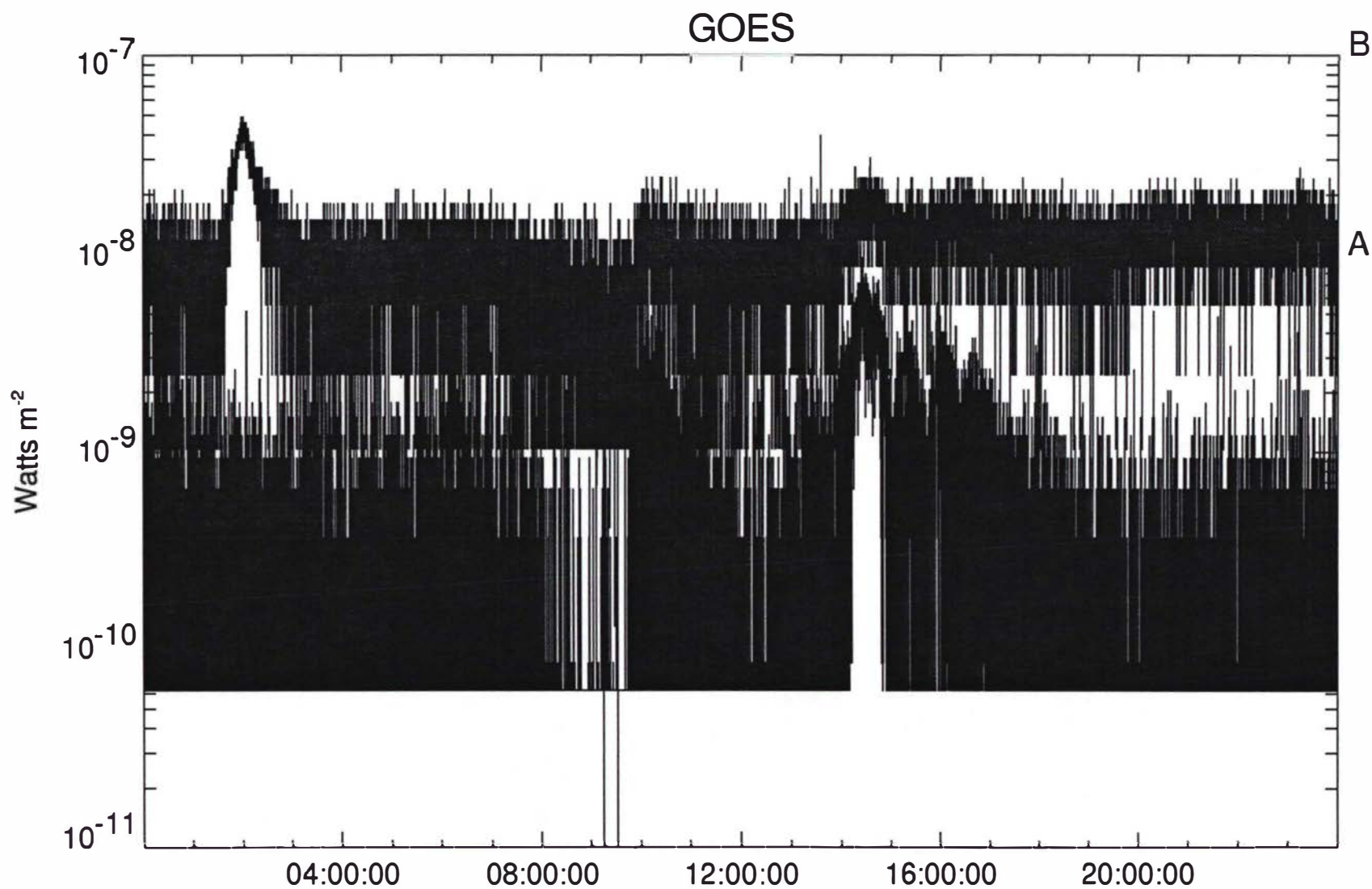
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PREC. EVENT



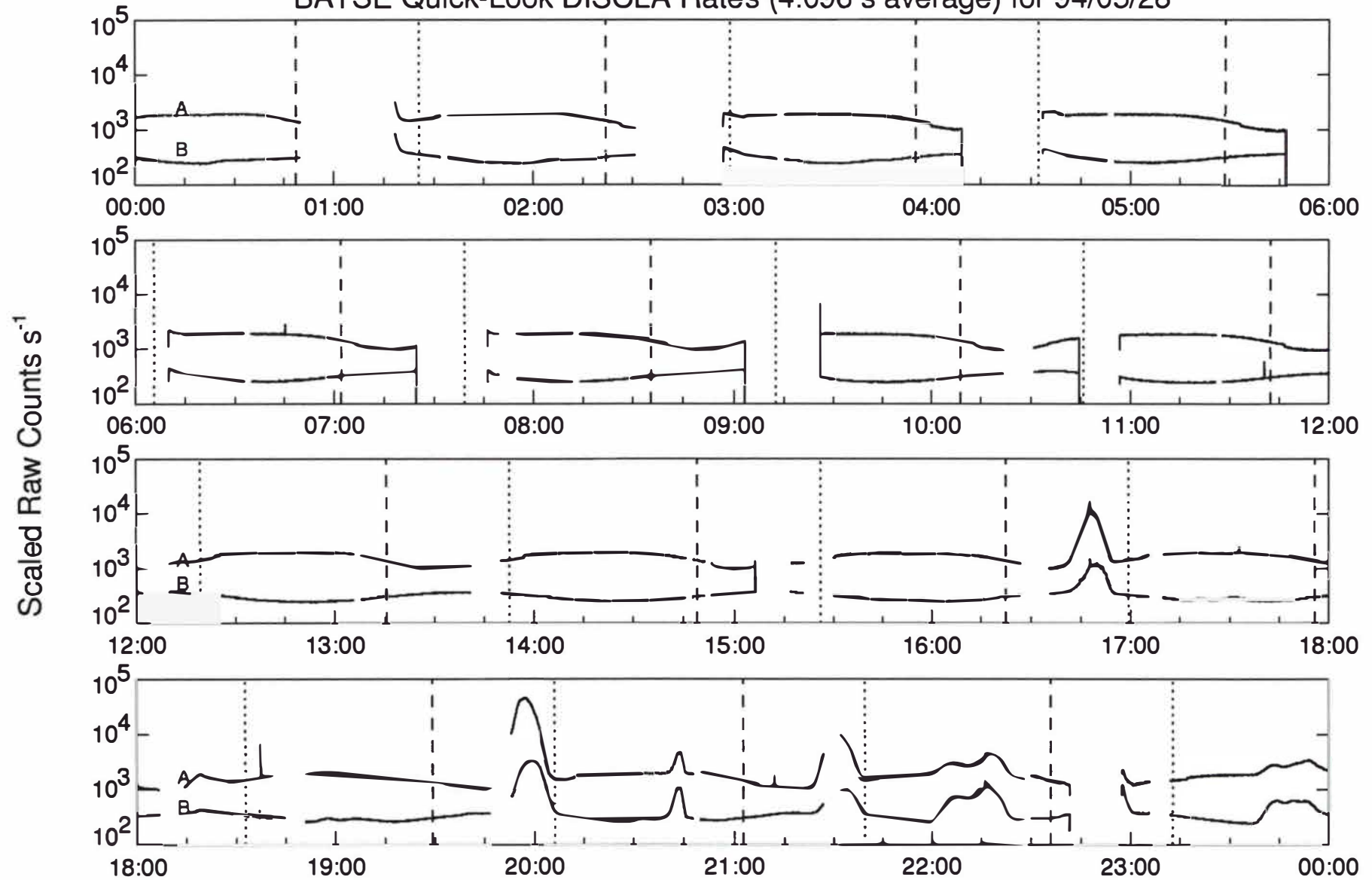
Data Start: 94/05/28, 0000:01

Plot created: 94/06/01, 1726

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/28



Current Time: 94/06/01, 1722 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

From root Thu Jun 9 04:06 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA18991; Thu, 9 Jun 94 04:06:27
Received: from hea.iki.rssi.msk.su (kisa.iki.rssi.msk.su) by sunspot.ssl.berkeley.edu (5.0/SMI)
id AA03735; Thu, 9 Jun 1994 04:13:47 +0800
Received: from dolly.iki.rssi.msk.su by hea.iki.rssi.msk.su (8.6.7/8.6.6(hea-iki-relay:27/03/94))
id PAA23417; Thu, 9 Jun 1994 15:14:34 +0400
Received: from star by dolly.iki.rssi.msk.su (4.1/SMI-4.1(hea-iki:25/03/94))
id AA01943; Thu, 9 Jun 94 15:14:14 MSK
Message-Id: <9406091114.AA01943@dolly.iki.rssi.msk.su>
To: barat@cnesta.span.cnes.fr, fishman%ssl.span@sdsc.bitnet.msk.su
Cc: khurley@space6.ssl.berkeley.edu, bp@astro.princeton.edu,
kouveliotou%ssl.span@sdsc.bitnet.msk.su,
meegan%ssl.span@sdsc.bitnet.msk.su
Subject: GRB 940526 & 940529
Date: Thu, 09 Jun 1994 15:13:53 +0400
From: "R.A. Sunyaev" <sunyaev@kisa.iki.rssi.msk.su>
Content-Length: 1522
Status: R

To: Dr. C.Barat, Dr. G.Fishman, Dr. K.Hurley, Dr. C.Kouveliotou,
Dr. C.Meegan, B.Paczynski

D.Denisenko, R.Sunyaev, O.Terekhov, Space Research Institute, Moscow;
C.Barat, J.-P.Dezalay, Centre d'Etude Spatiale des Rayonnements,
Toulouse, report:

GRB 940526

Gamma-ray burst 940526 reported by BATSE was observed by the PHEBUS instrument onboard GRANAT. The burst trigger time T_0 is 20h20m09s UT (4 seconds after BATSE triggering). Its duration (T_{90}) is 29.5 ± 0.8 s. The burst fluence ($>100\text{keV}$) is $\sim 1.4\text{E-4 erg/cm}^2$, maximum flux ($>100\text{keV}$) $\sim 6\text{E-5 erg/cm}^2/\text{s}$.

The event is confidently detected up to 10 MeV, its energy spectrum being well fitted in the broad range (400 keV - 12 MeV) by the power law with the index -1.8. Below 400 keV the spectrum was steeper. This fact as well as the complicated but similar time profiles makes this burst look like GRB910814 ($T=19\text{h}14\text{m}33\text{s}$) which was about 3 times stronger as seen by PHEBUS ($C_{\text{max}}/C = 9.0$ versus 3.2 for 940526).

GRB 940529

PHEBUS triggering time for this burst is 16h22m49s (UT). The event duration (T_{90}) is 5.2 ± 1.4 s. The burst fluence ($>100\text{keV}$) is $\sim 2\text{E-6 erg/cm}^2$, maximum flux ($>100\text{keV}$) $\sim 2\text{E-6 erg/cm}^2/\text{s}$, C_{max}/C ratio ~ 1.3 . The energy spectrum between 100 and 800 keV is fitted by power law with the index -1.6.

GRB 940528 candidate

Another event was detected by PHEBUS on the 28th of May, 1994 at 3h02m56s UT. It has $T_{90}=6.4 \pm 0.7$ s, $C_{\text{max}}/C=2.9 \pm 0.3$ and rather soft spectrum (photon index -2.3).

Dear Rashid,

Ulysses triggered on the PHEBUS burst of 940528.

Kevin

cc: C. Barat

From root Mon Jun 13 08:03 1994

Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)

id AA19582; Mon, 13 Jun 94 08:03:51

Received: from hea.iki.rssi.msk.su (kisa.iki.rssi.msk.su) by sunspot.ssl.berkeley.edu (5.0/SMI

id AA14211; Mon, 13 Jun 1994 08:13:15 +0800

Received: from dolly.iki.rssi.msk.su by hea.iki.rssi.msk.su (8.6.7/8.6.6(hea-iki-relay:27/03/94

id TAA27991 for <khurley@space6.ssl.berkeley.edu>; Mon, 13 Jun 1994 19:13:09 +0400

Received: from star by dolly.iki.rssi.msk.su (4.1/SMI-4.1(hea-iki:25/03/94))

id AA08407; Mon, 13 Jun 94 19:13:02 MSK

Message-Id: <9406131513.AA08407@dolly.iki.rssi.msk.su>

To: khurley@space6.ssl.berkeley.edu

In-Reply-To: Your message of "Sat, 11 Jun 1994 10:05:16."

Date: Mon, 13 Jun 1994 19:12:58 +0400

From: "R.A. Sunyaev" <sunyaev@kisa.iki.rssi.msk.su>

Content-Length: 73

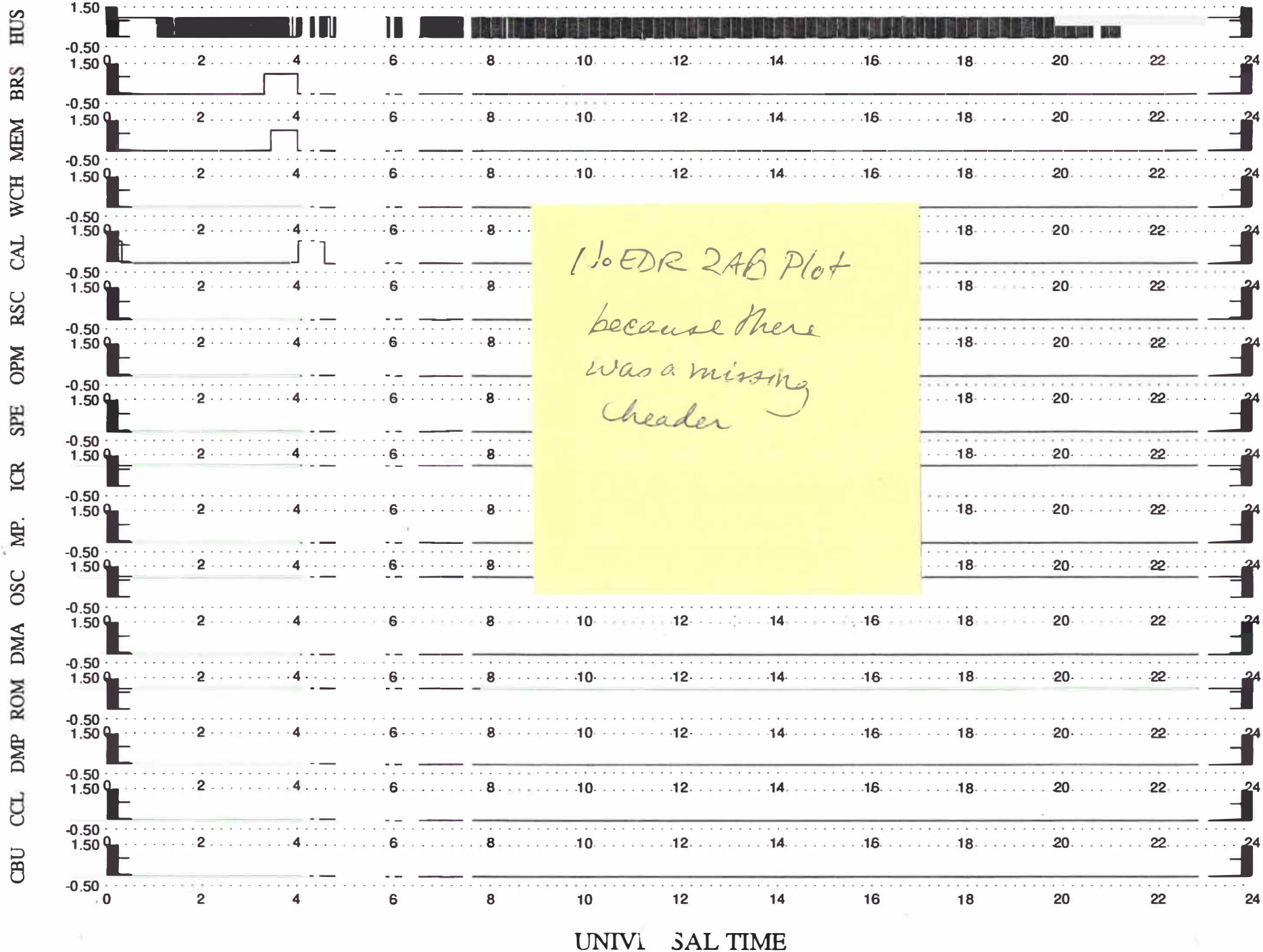
Status: R

Dear Kevin

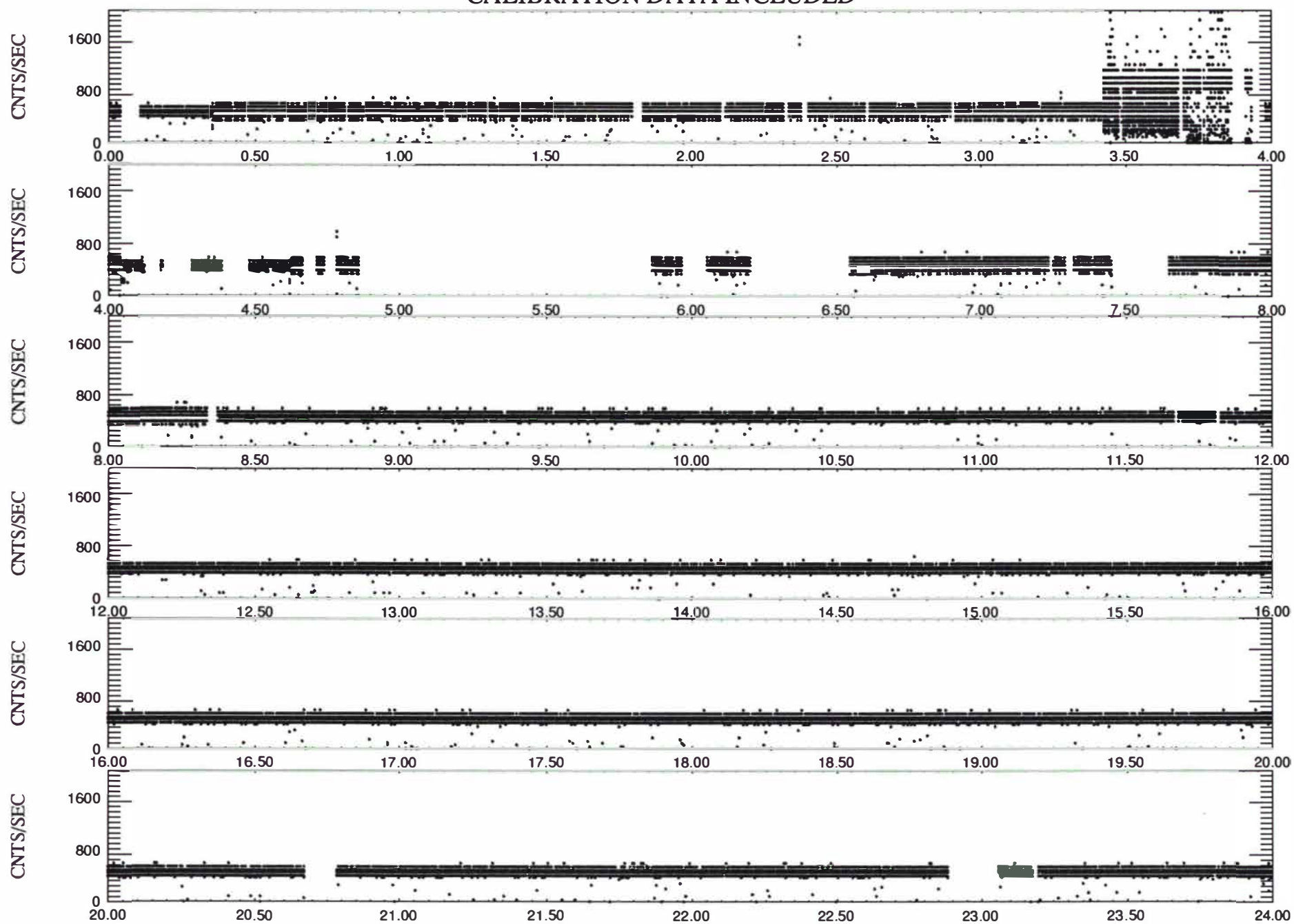
Thank you for the message.

Best regards Rashid Sunyaev

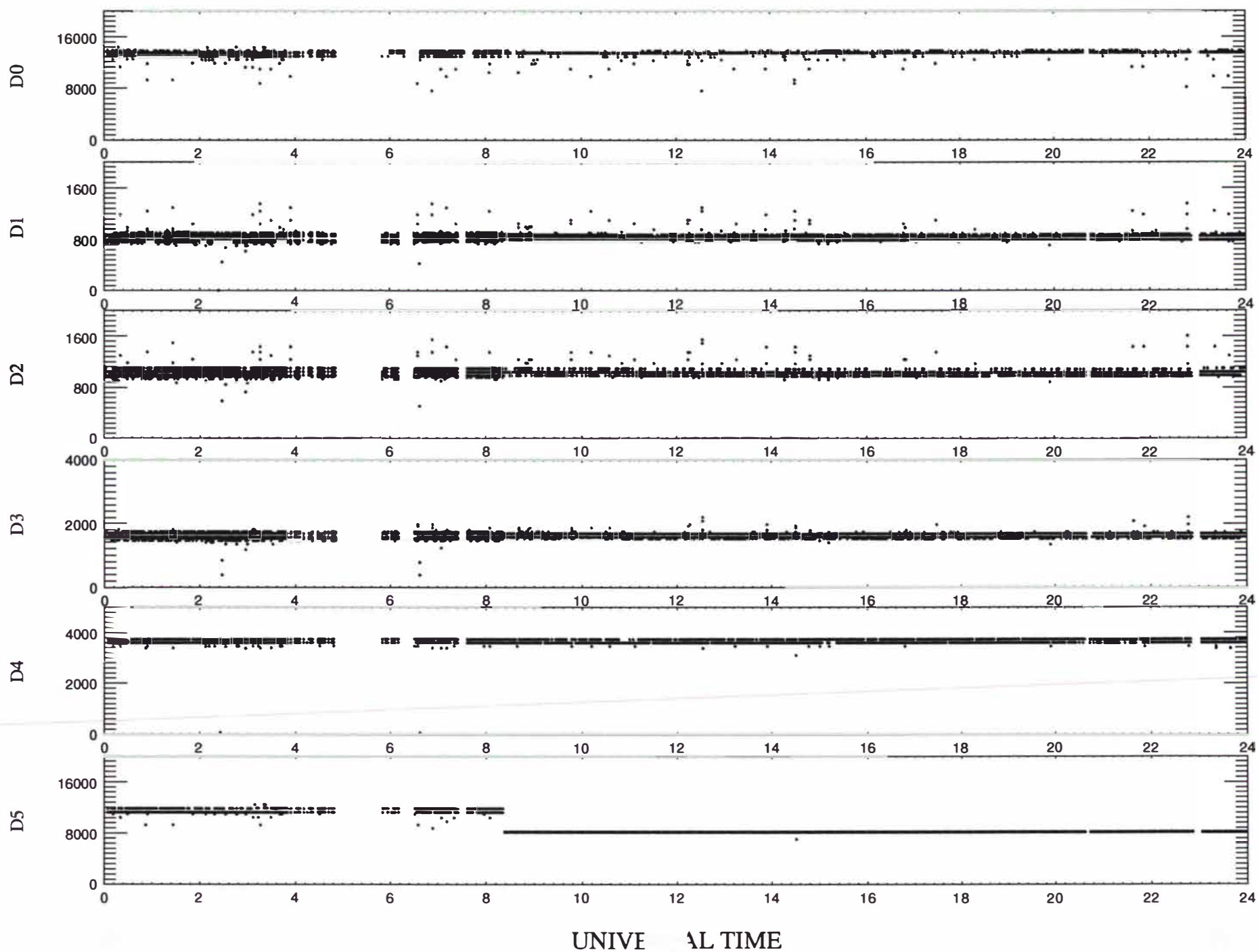
BURST NUMBER 14



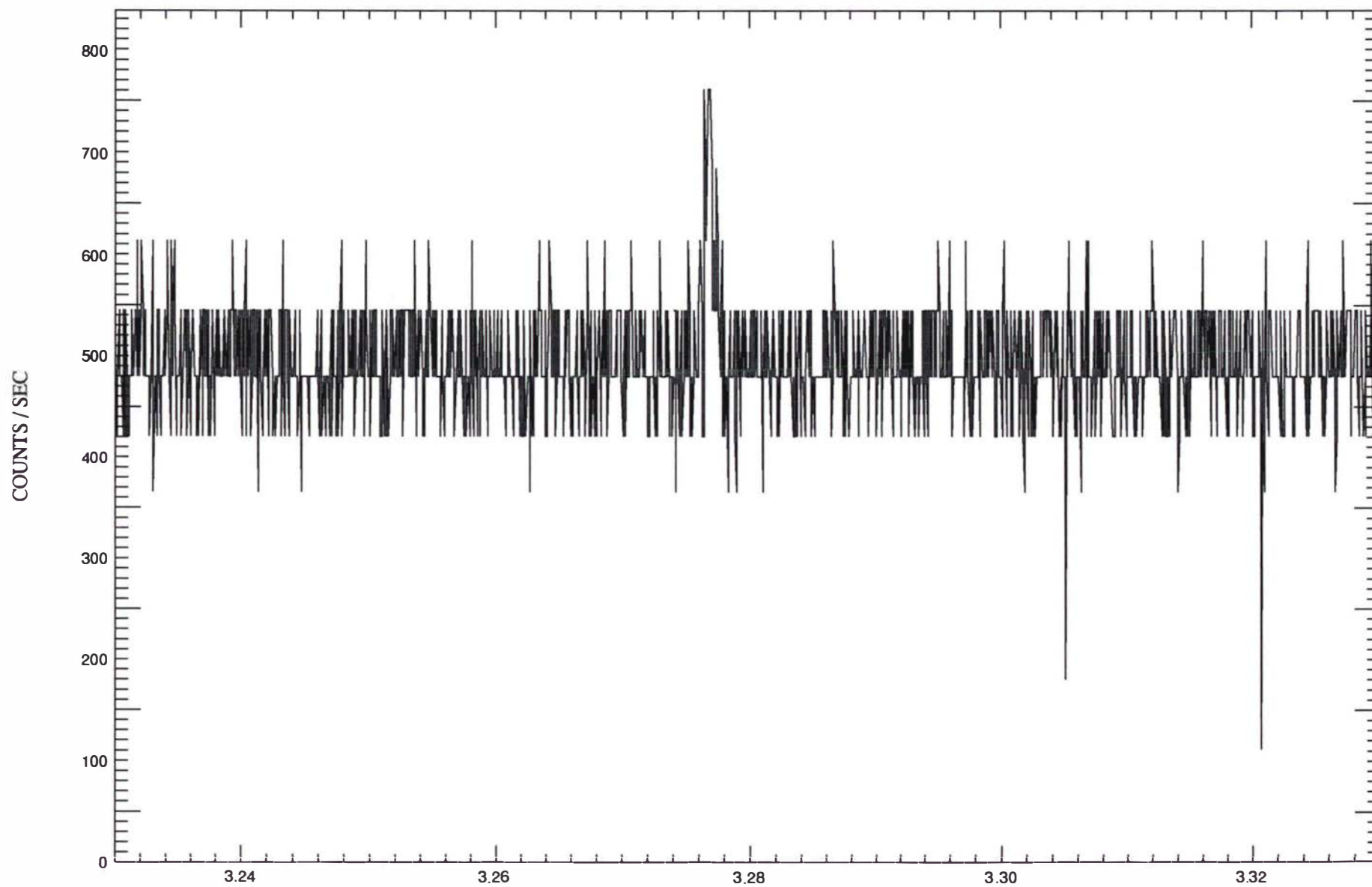
CALIBRATION DATA INCLUDED



UNIV TIME



CALIBRATION DATA INCLUDED



From SHARIFF@ssl.msfc.nasa.gov Mon May 30 22:01 PDT 1994
Date: Tue, 31 May 1994 0:03:26 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 2998
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 2998
EVENT OF 1994 MAY 29 DAY OF YEAR=149
EVENT CROSSING TIME AT BATSE : 11822. S. OR 03:17:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 162.000 -23.000
BATSE PEAK COUNTING RATE: 5200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 5/ 94 IS:
RA= 120.396 DEC= -40.242 DIST= 3.009 AU
BATSE-ULYSSES DISTANCE = 450191315. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.06 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1168.03 SECS.
CROSSING TIME AT ULYSSES IS 10654. S. OR 02:57:33 +/- 196.12 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 5/ 94 IS:
RA= 31.814 DEC= 12.054 DIST= 2.129 AU
MARS-BATSE DISTANCE = 318460800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 48.51 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 703.73 SECS.
CROSSING TIME AT MARS IS 12526. S. OR 03:28:45 +/- 148.84 SECONDS

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
2998	940529	9501	11822	5200	162	-23

BATSE BURST TRIGGER

NO.: 02998

TIME: TJD=9501 SECONDS=11822

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=140.5 AZIMUTH=120.4 ERROR= DEGREES

COMMENTS:

BURST, TWO PULSES WITH A PRECURSOR, TOTAL DUR. ~45 SECONDS. PRECURSOR IS VISIBLE ABOVE 300KEV AND THE FIRST PEAK IS WEAKLY VISIBLE ABOVE 300KEV.

Helio corr removed

Date: Jan 28 '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

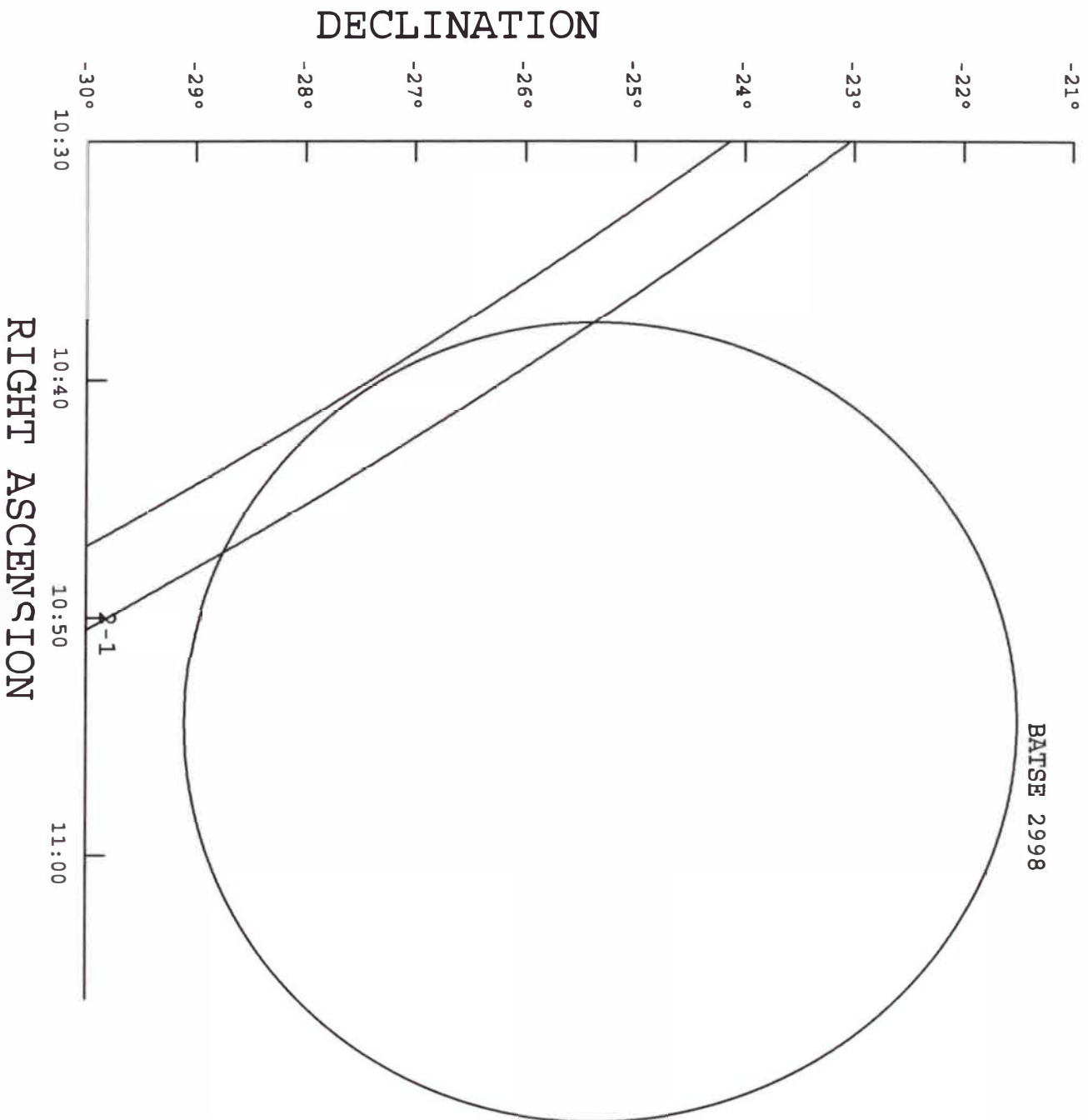
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAY 29, 1994 2:55

28 / 1/98



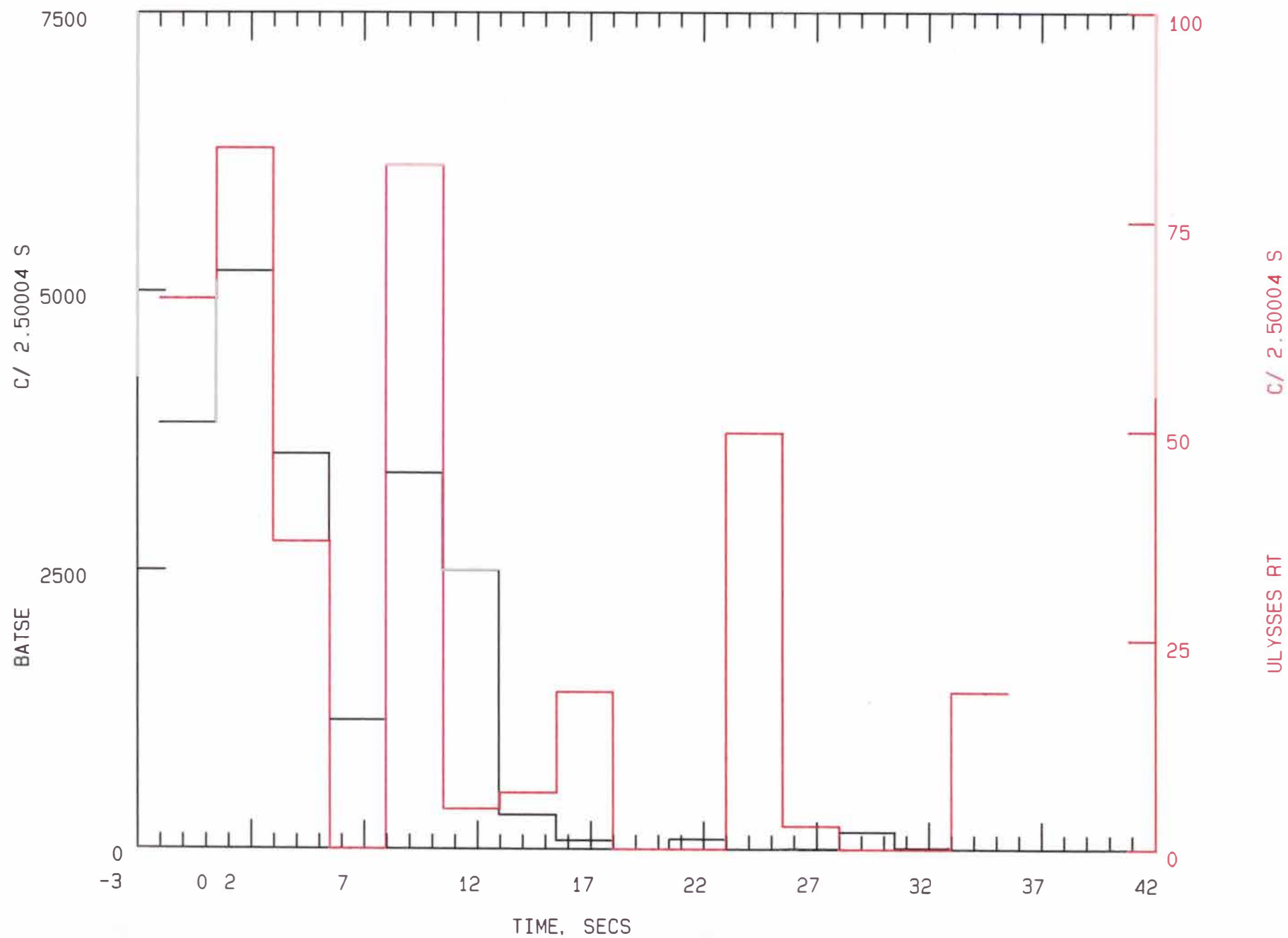
BATSE

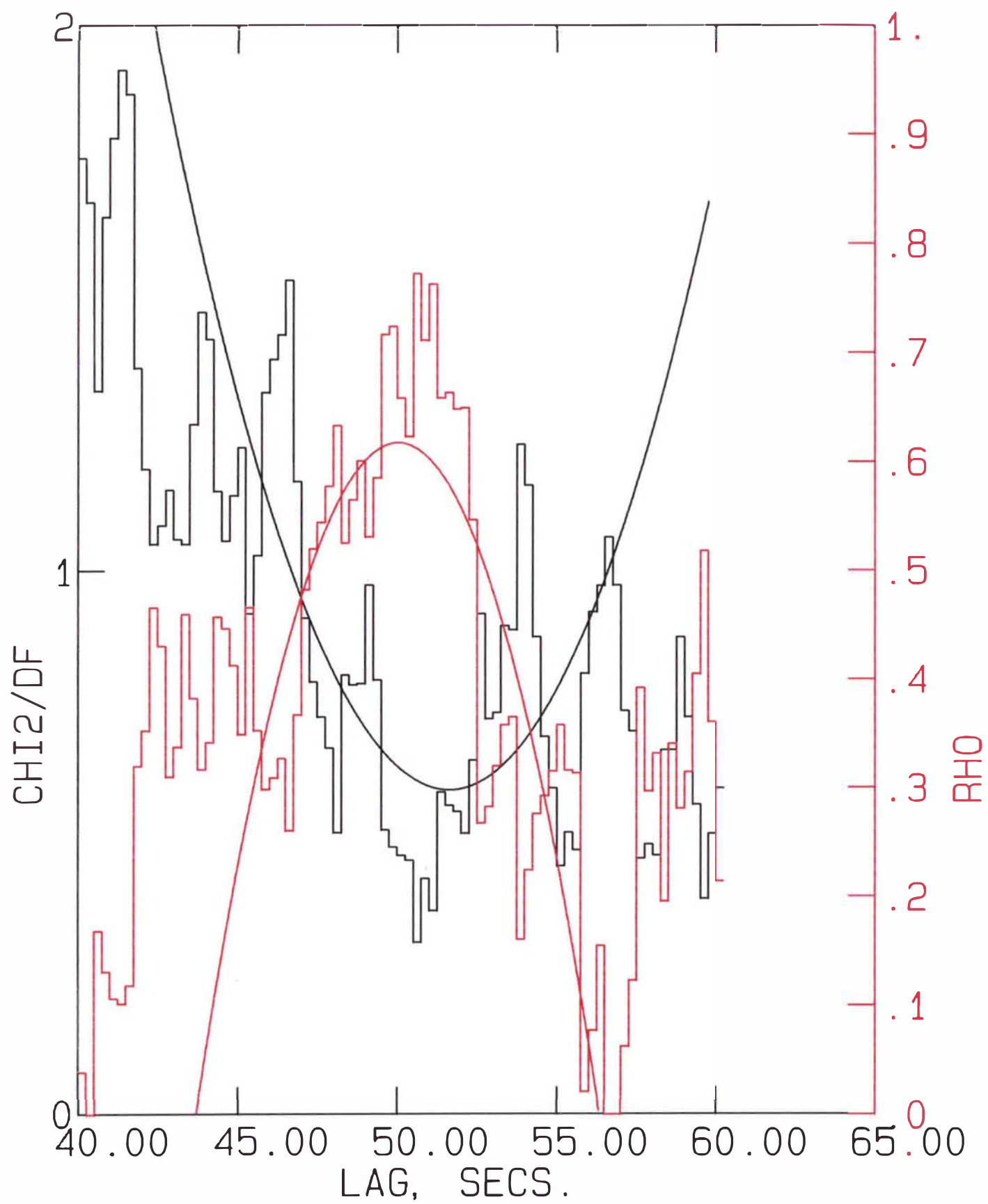
-ULYSSES RT CORRELATION

29/ 5/94

11822.746

28/ 1/98





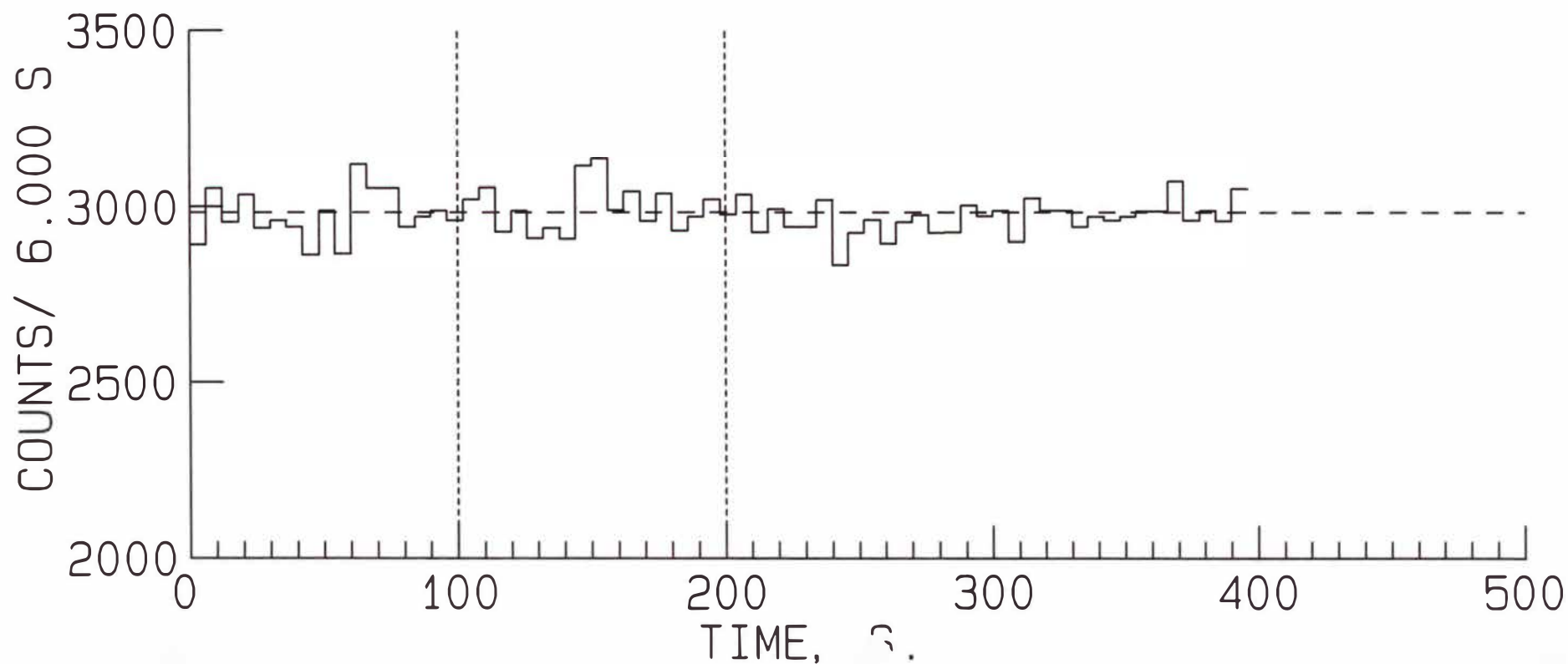
ULYSSES RT

28 / 1 / 98

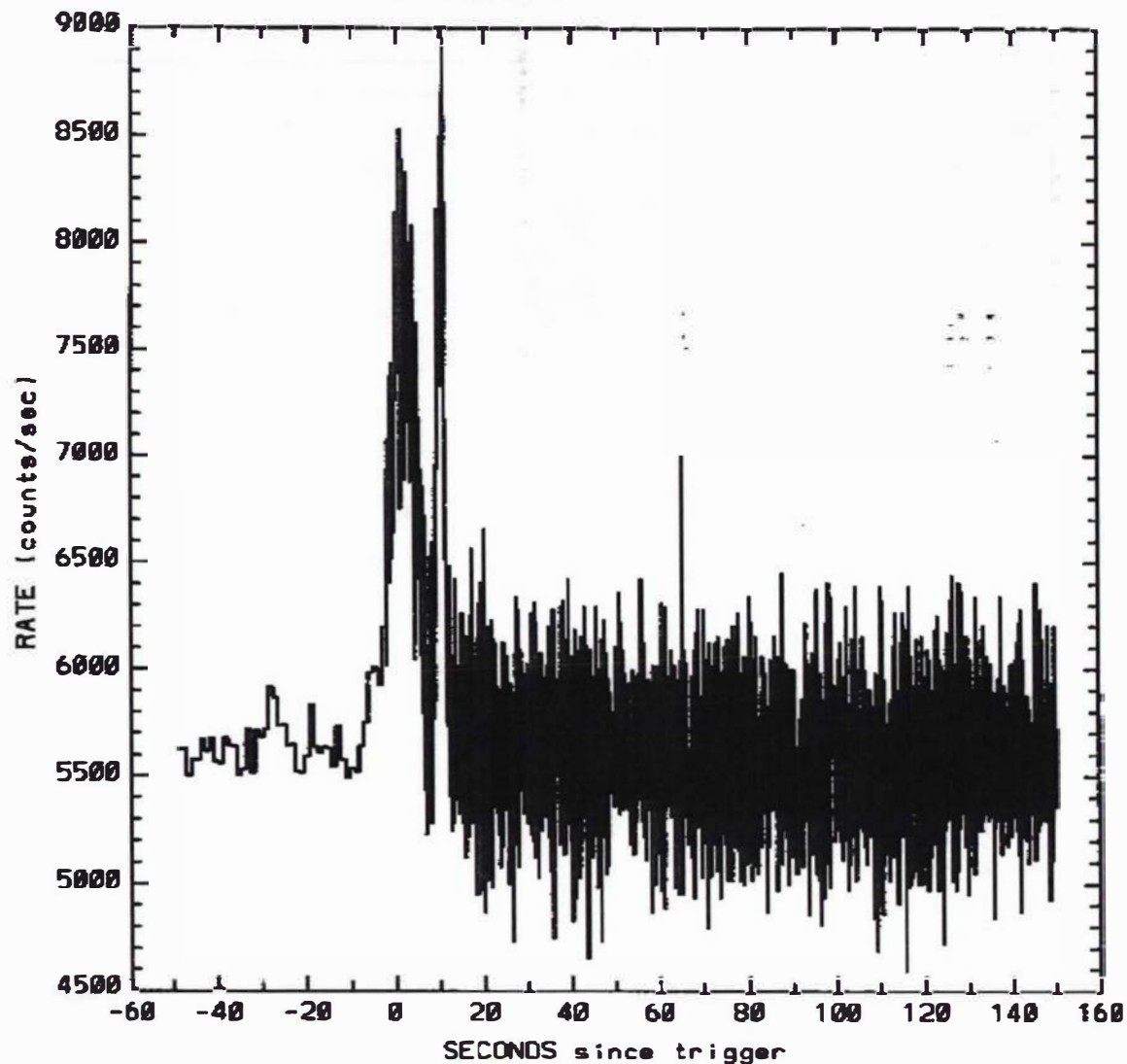
29 / 5 / 94 10440.058 s

0.250 S INTERVALS REGROUPED BY 24

22- 148 keV



DATA FOR K. HURLEY



19-JUN-1994 16:47:57

Created by NOPS BD
(Burst Display)
Version 2.20

Trigger * . 2998

Trigger Time:
9501 / 11822.746Burst Data Type:
DISCSCDeadtime
Corrected: N
Background Data
Type: PREB + DISCLA
Minimum Integ. Time:
0.064 secondsDetectors (7..0).
00100010Discriminators:
(1, 2)Quality Mask:
80ISP1

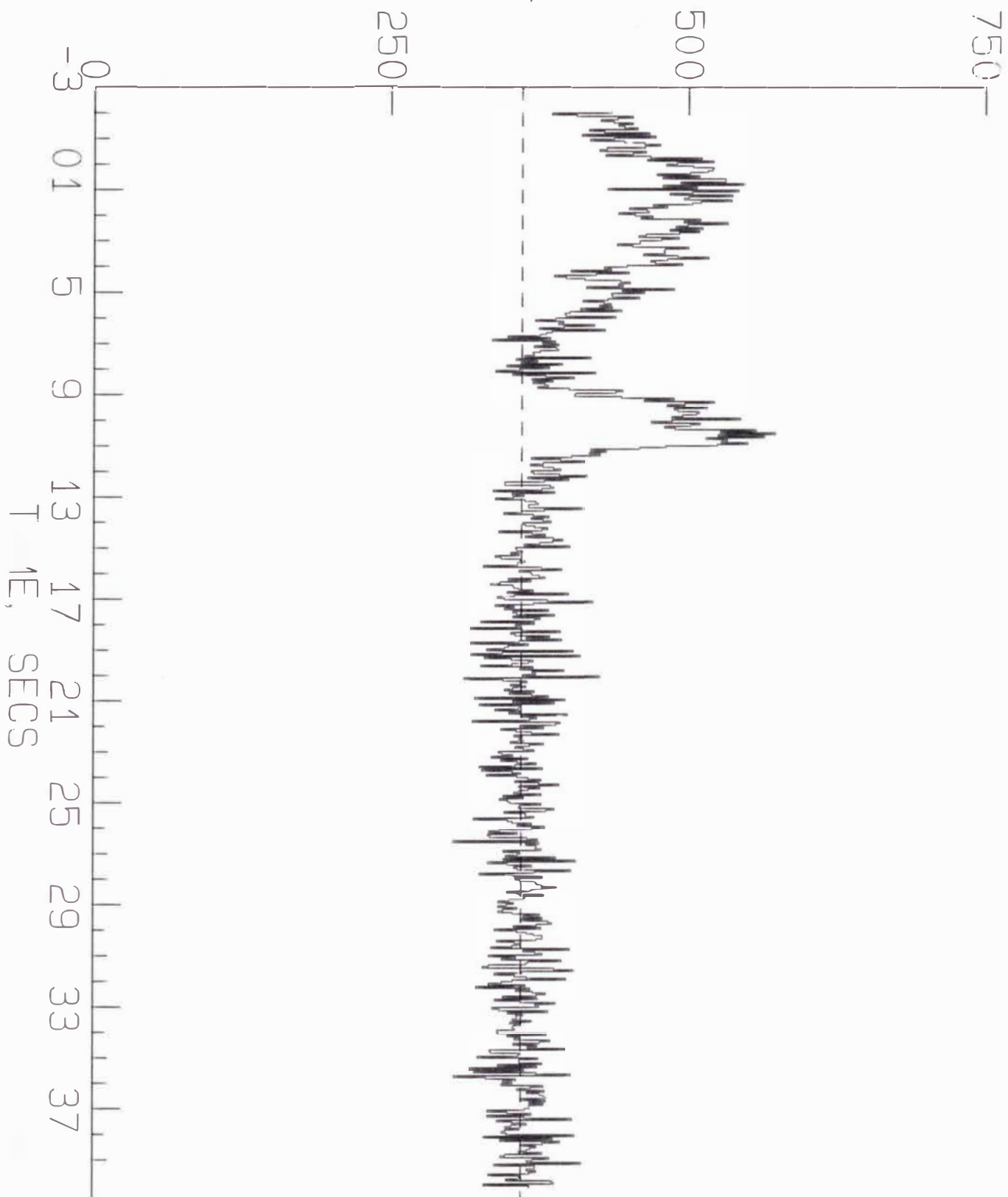
BATSE

29/05/94

11822.746

25- 100 keV

COUNTS/ .064 S



23 / 6 / 94

From SHARIFF@ssl.msfc.nasa.gov Mon May 30 21:41 PDT 1994
Date: Mon, 30 May 1994 23:42:49 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 02999

TIME: TJD=9501 SECONDS=24065

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY (PARTICLES).

From SHARIFF@ssl.msfc.nasa.gov Mon May 30 21:43 PDT 1994
Date: Mon, 30 May 1994 23:45:22 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 03000

TIME: TJD=9501 SECONDS=35825

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY (PARTICLES).

From SHARIFF@ssl.msfc.nasa.gov Mon May 30 22:03 PDT 1994
Date: Tue, 31 May 1994 0:05:06 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 3001
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 3001
EVENT OF 1994 MAY 29 DAY OF YEAR=149
EVENT CROSSING TIME AT BATSE : 43637. S. OR 12:07:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 103.000 -48.000
BATSE PEAK COUNTING RATE: 13000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 5/ 94 IS:
RA= 120.432 DEC= -40.207 DIST= 3.010 AU
BATSE-ULYSSES DISTANCE = 450313262. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=165.31 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1452.96 SECS.
CROSSING TIME AT ULYSSES IS 42184. S. OR 11:43:04 +/- 94.08 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 5/ 94 IS:
RA= 31.814 DEC= 12.054 DIST= 2.129 AU
MARS-BATSE DISTANCE = 318460800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 93.20 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -59.32 SECS.
CROSSING TIME AT MARS IS 43578. S. OR 12:06:17 +/- 183.24 SECONDS

No

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
3001	940529	9501	43637	13000	103	-48

BATSE BURST TRIGGER

NO.: 03001

TIME: TJD=9501 SECONDS=43637

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=157.0 AZIMUTH=236.2 ERROR= DEGREES

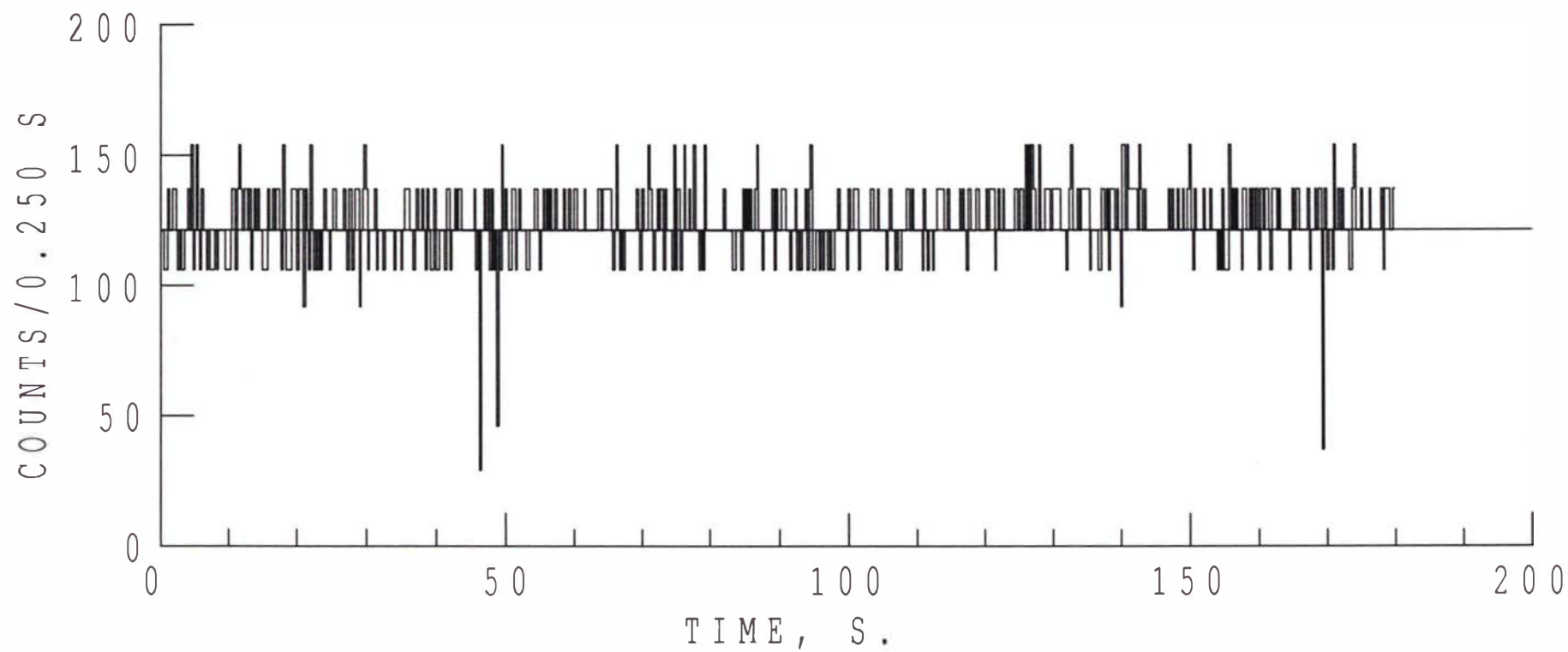
COMMENTS:

BURST, MULTIPLE PEAKS, LASTING ~33 SECONDS. VISIBLE ABOVE 300KEV.

31 / 5 / 94

ULYSSES RT
29 / 5 / 94 42084.031 s
0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SHARIFF@ssl.msfc.nasa.gov Mon May 30 22:04 PDT 1994
Date: Tue, 31 May 1994 0:06:30 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 3002
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 3002
EVENT OF 1994 MAY 29 DAY OF YEAR=149
EVENT CROSSING TIME AT BATSE : 58836. S. OR 16:20:36.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 68.000 -23.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 5/ 94 IS:
RA= 120.450 DEC= -40.191 DIST= 3.011 AU
BATSE-ULYSSES DISTANCE = 450371007. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1022.61 SECS.
CROSSING TIME AT ULYSSES IS 57813. S. OR 16:03:33 +/- 225.53 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 5/ 94 IS:
RA= 31.814 DEC= 12.054 DIST= 2.129 AU
MARS-BATSE DISTANCE = 318460800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -685.13 SECS.
CROSSING TIME AT MARS IS 58151. S. OR 16:09:10 +/- 130.54 SECONDS

RI

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
3002	940529	9501	58836	4000	068	-23

BATSE BURST TRIGGER

NO.: 03002

TIME: TJD=9501 SECONDS=58836

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=134.0 AZIMUTH=292.6 ERROR= DEGREES

COMMENTS:

BURST, COMPLEX, LASTING ~145 SECONDS. VISIBLE ABOVE 300KEV. (THIS IS AN UPDATED MESSAGE FOR TRIGGER #3002. PLEASE NOTE THE CHANGE IN DURATION AND HARDNESS. THE LOCATION IS SAME AS THE PREVIOUS MESSAGE).

Helio corr removed

Date: Jan 28 '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

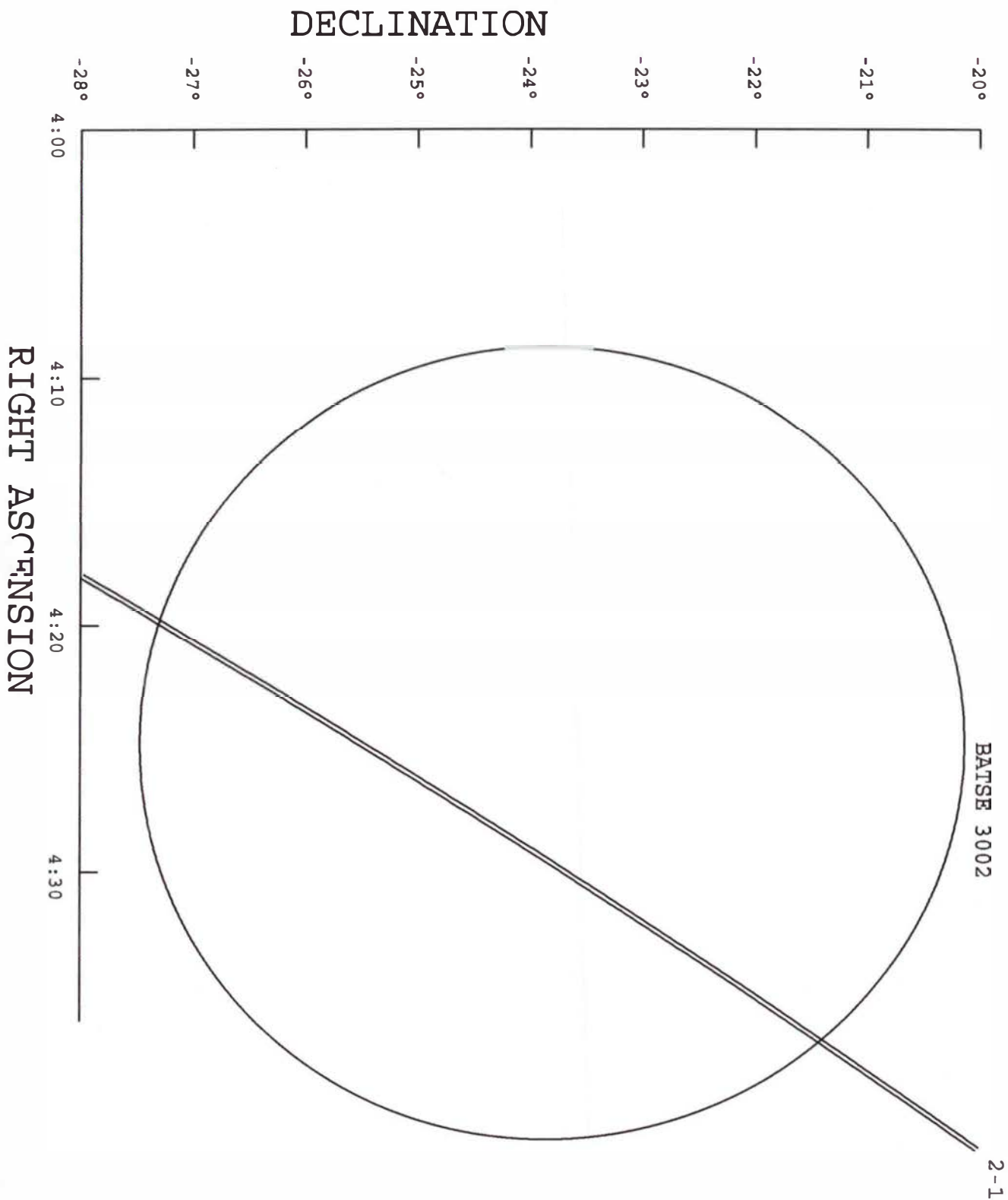
G=GALACTIC EQUATOR

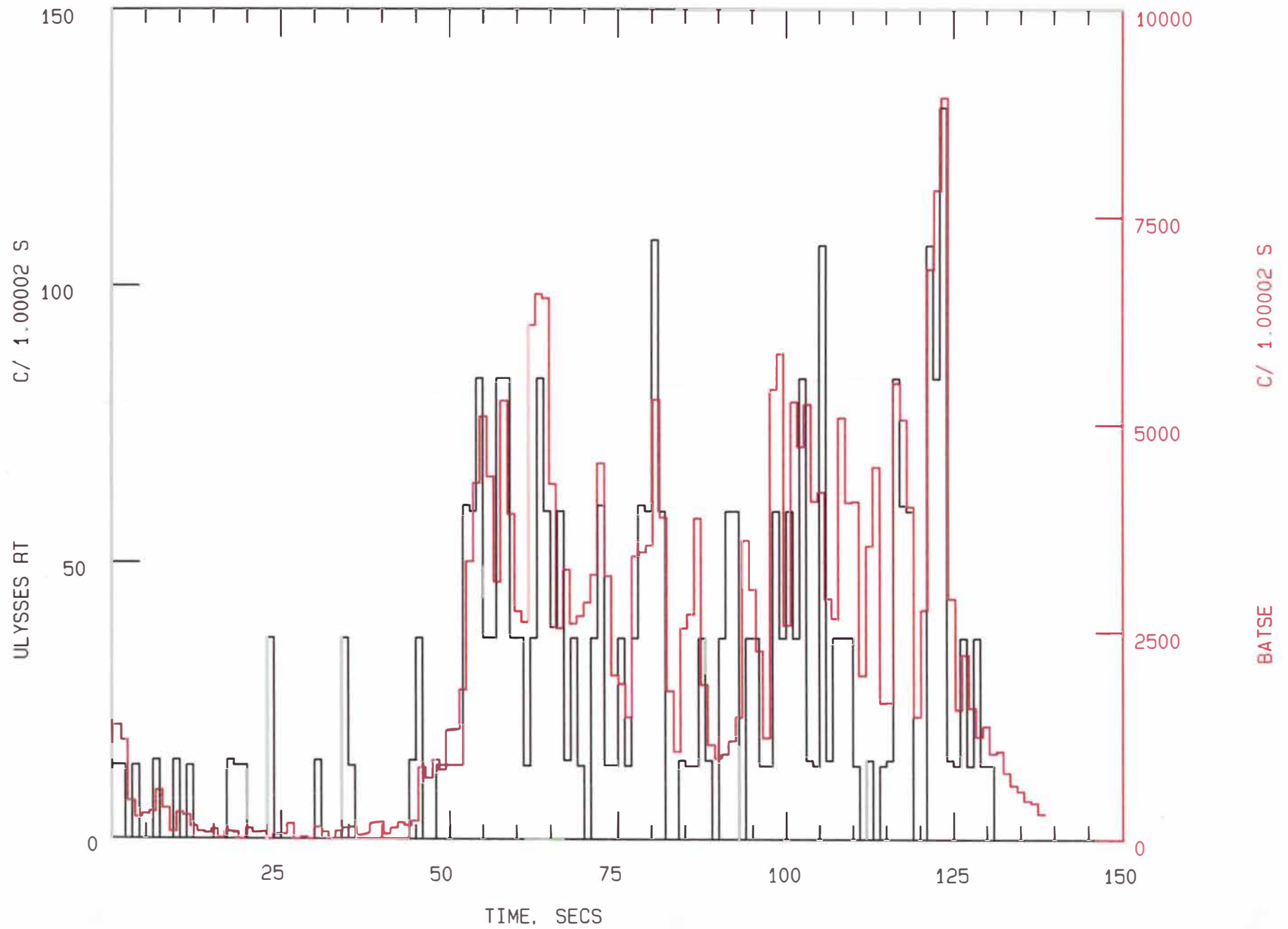
1 ULYSSES

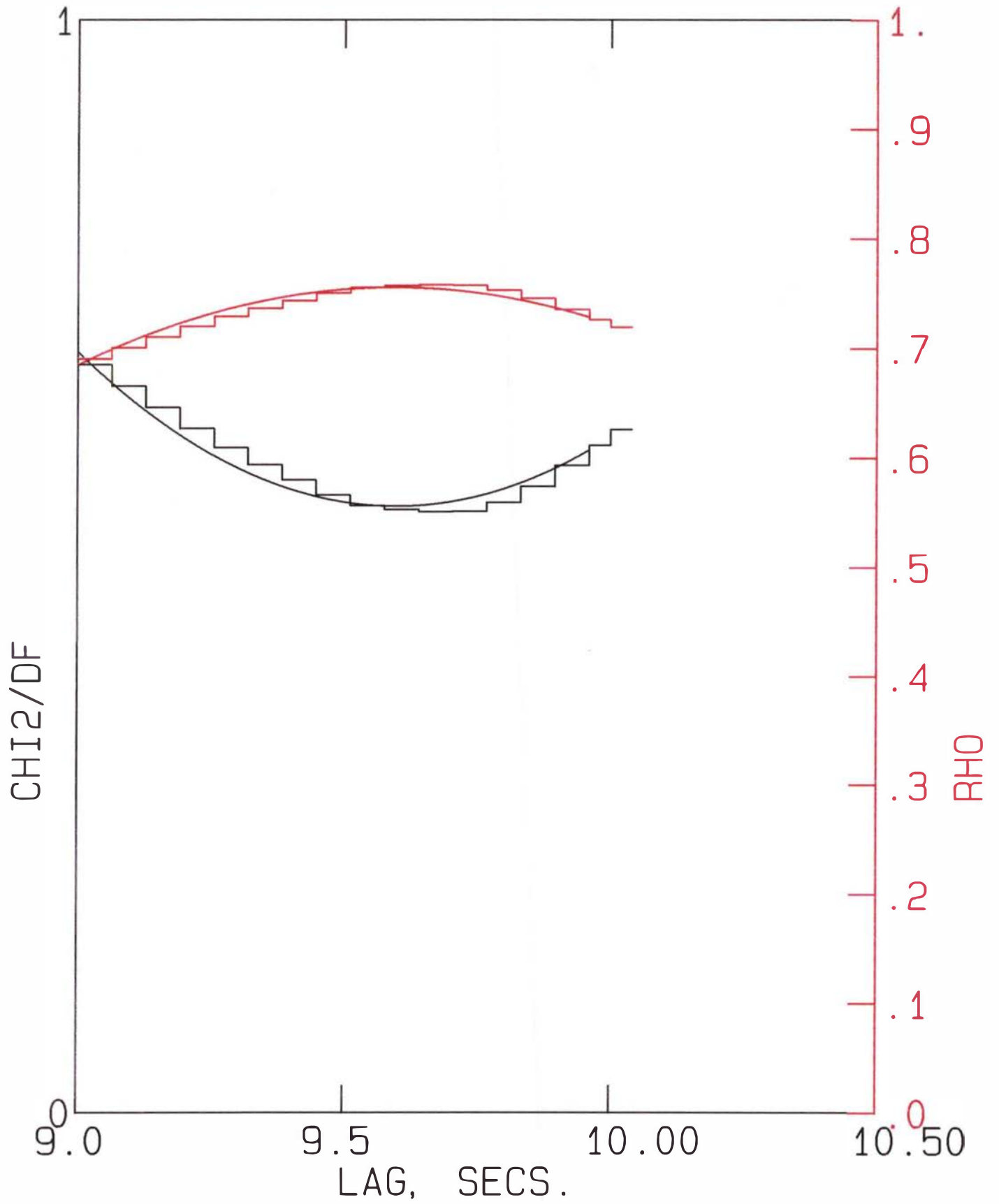
2 BATSE

EVENT OF MAY 29, 1994 16:03

28/ 1/98







ULYSSES RT

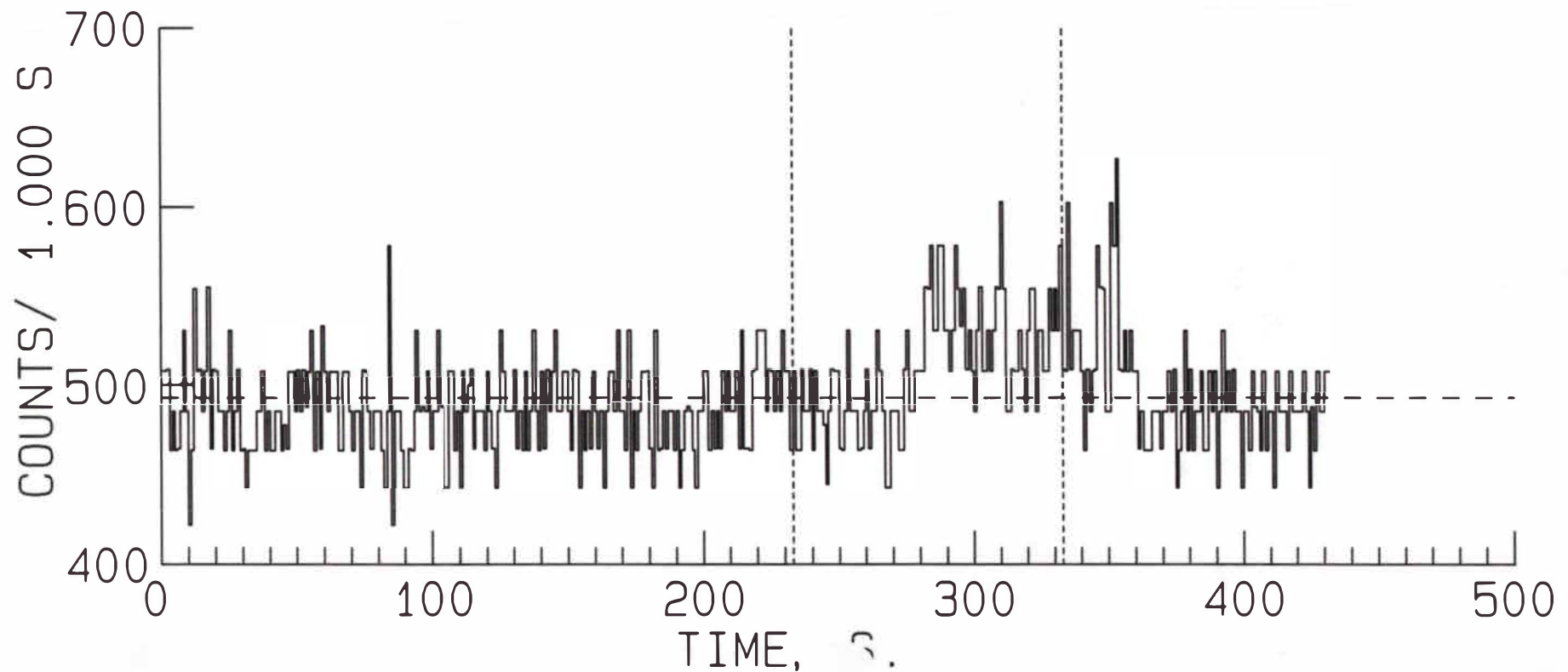
28 / 1 / 98

29 / 5 / 94 57600.258 s

0.500 S INTERVALS REGROUPED BY 2

22- 148 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



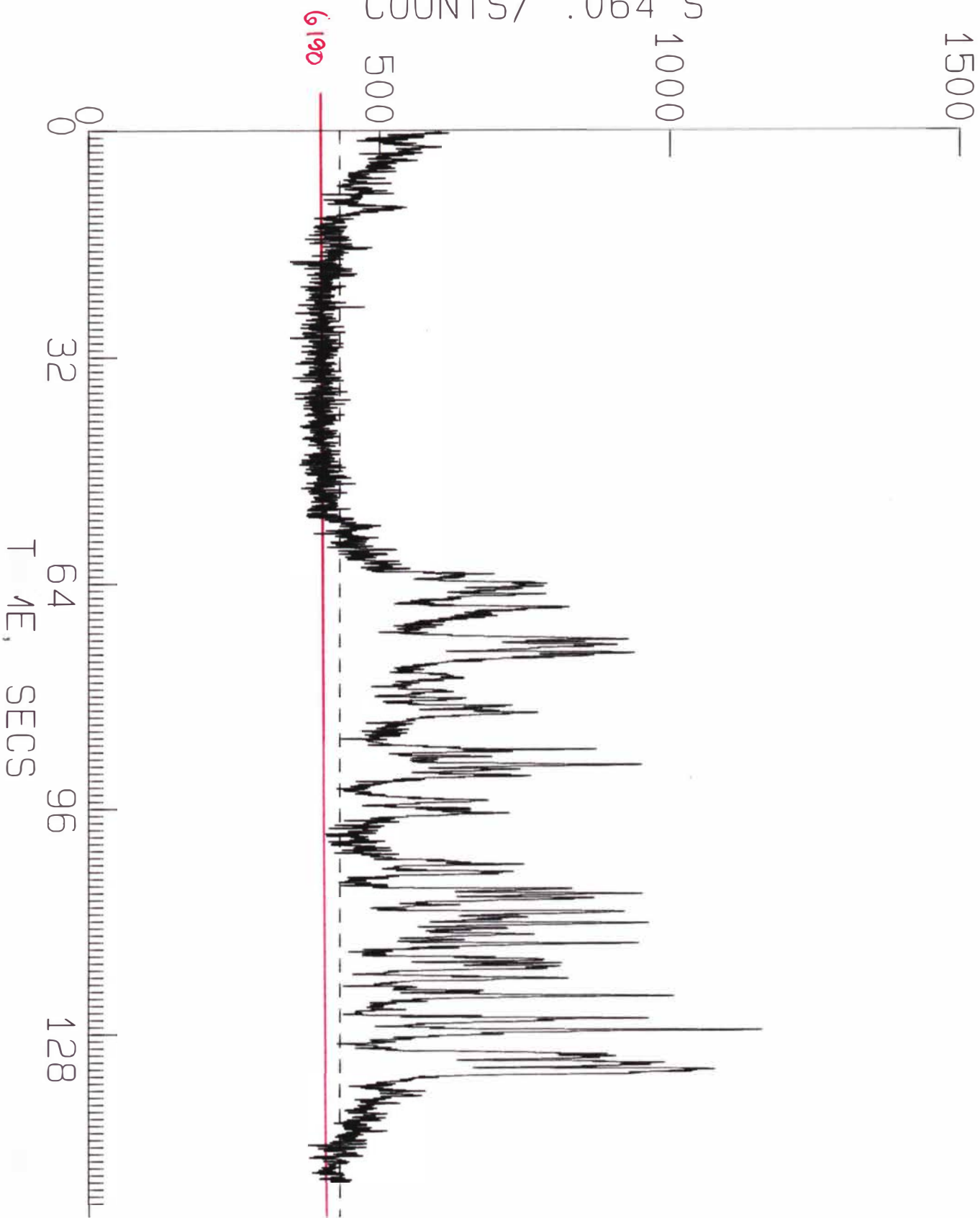
BATSE

29/05/94

58836.634

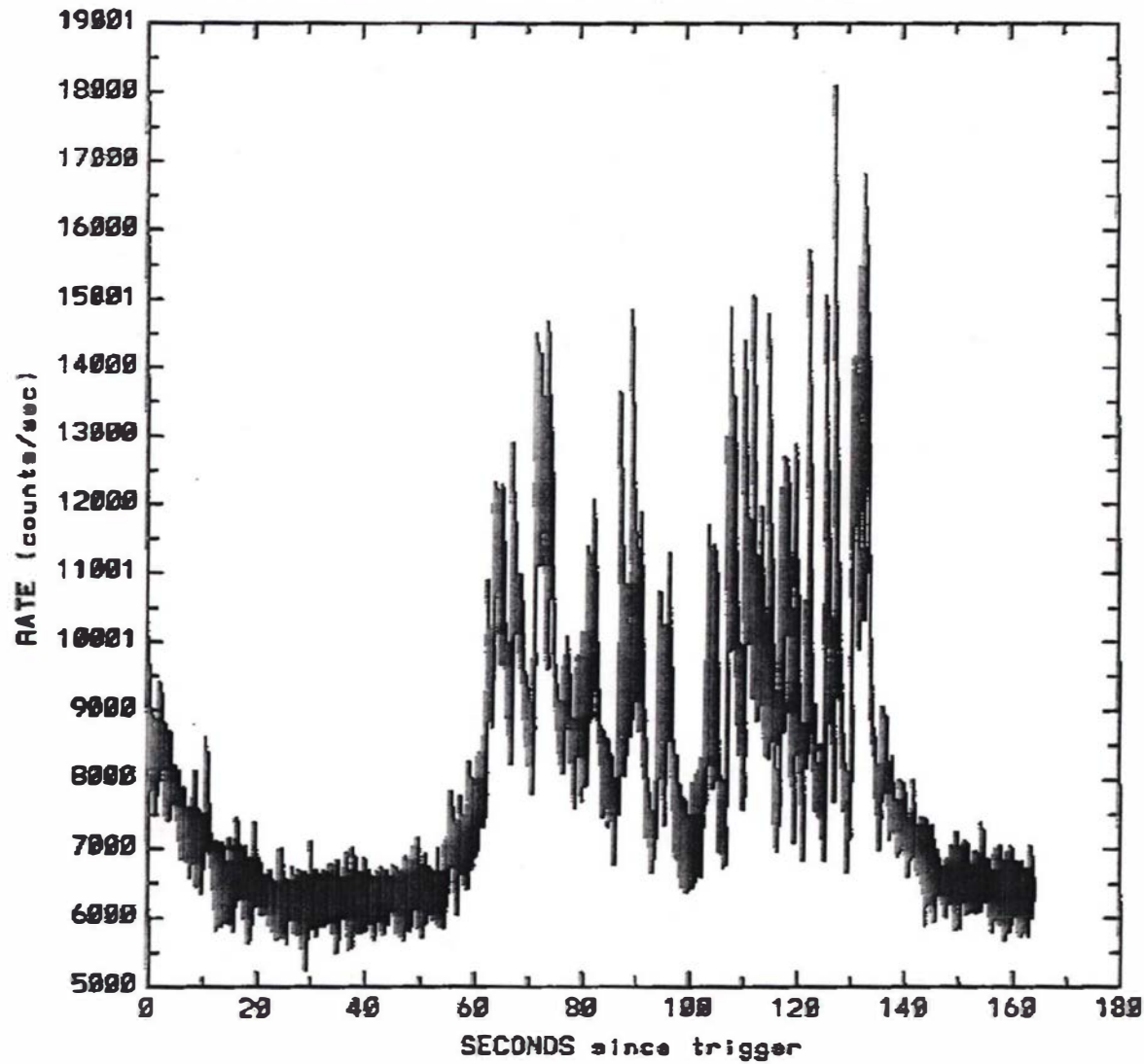
25- 100 keV

COUNTS/ .064 S



18/10/94

MER Data for K. Hurley, No. 3002



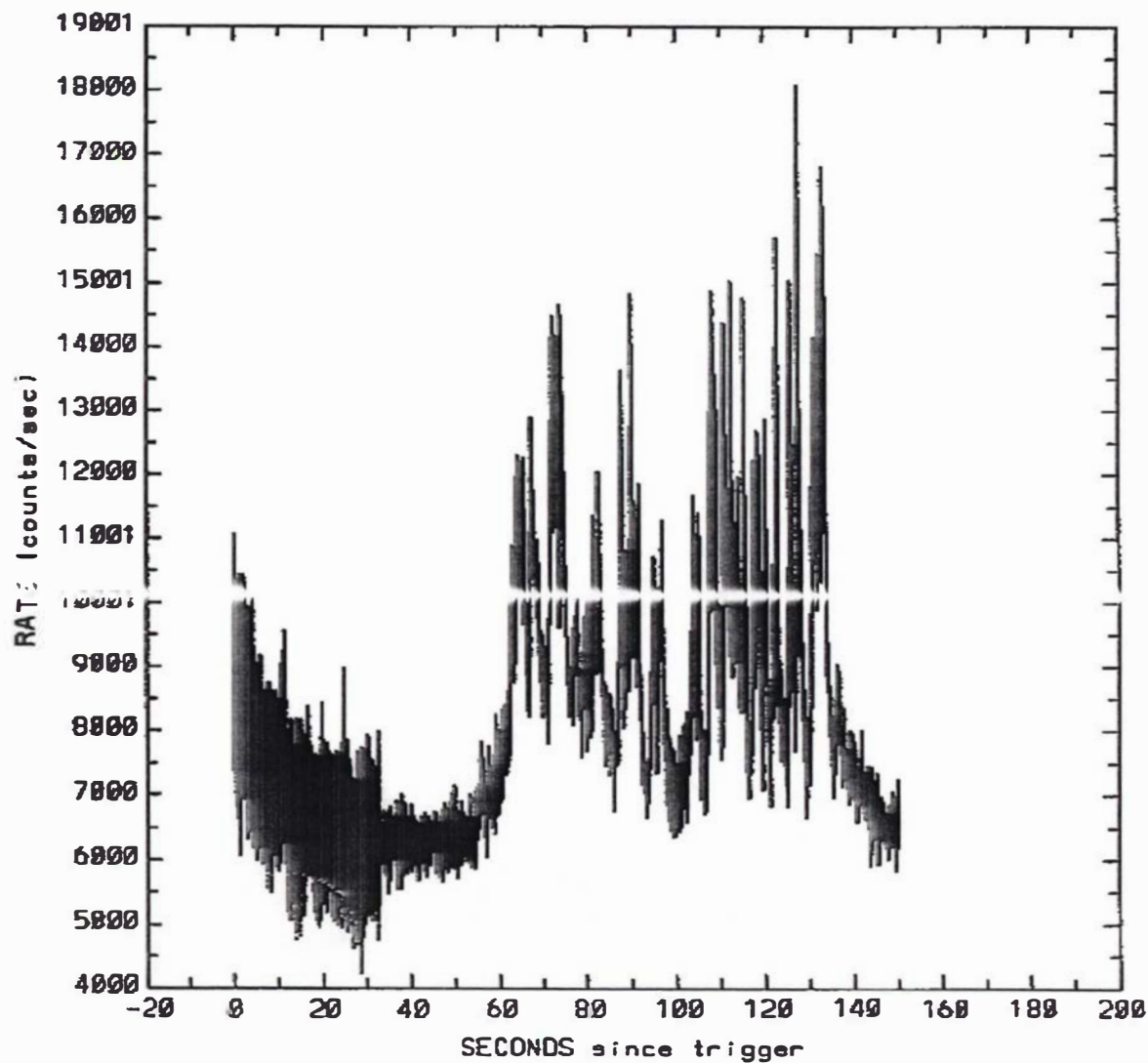
29-OCT-1994 14:13:26

Created by MOPS BD
(Burst Display)
Version 2.22

Trigger # : 3002

Trigger Time:
9591 / 58836.634Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
8.964 secondsDetectors [7..8],
7-3--Channels:
1 8. 6)Quality Mask:
B01SP1

DATA FOR K. HURLEY



2-AUG-1994 18:16:34

Created by MOPS 8D
(Burst Display)
Version t2.22

Trigger # : 3882

Trigger Time:
9581 / 58836.634Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: CONTMinimum Integ. Time:
0.016 secondsDetectors (7.0):
19891888Channels:
(8. 6)Quality Mask:
BDISP1

From root Thu Jun 9 04:06 1994
Received: by space6.ssl.berkeley.edu (AIX 2.1 2/4.03)
id AA18991; Thu, 9 Jun 94 04:06:27
Received: from hea.iki.rssi.msk.su (kisa.iki.rssi.msk.su) by sunspot.ssl.berkeley.edu (5.0/SM)
id AA03735; Thu, 9 Jun 1994 04:13:47 +0800
Received: from dolly.iki.rssi.msk.su by hea.iki.rssi.msk.su (8.6.7/8.6.6(hea-iki-relay:27/03/94))
id PAA23417; Thu, 9 Jun 1994 15:14:34 +0400
Received: from star by dolly.iki.rssi.msk.su (4.1/SMI-4.1(hea-iki:25/03/94))
id AA01943; Thu, 9 Jun 94 15:14:14 MSK
Message-Id: <9406091114.AA01943@dolly.iki.rssi.msk.su>
To: barat@cnesta.span.cnes.fr, fishman%ssl.span@sdsc.bitnet.msk.su
Cc: khurley@space6.ssl.berkeley.edu, bp@astro.princeton.edu,
kouveliotou%ssl.span@sdsc.bitnet.msk.su,
meegan%ssl.span@sdsc.bitnet.msk.su
Subject: GRB 940526 & 940529
Date: Thu, 09 Jun 1994 15:13:53 +0400
From: "R.A. Sunyaev" <sunyaev@kisa.iki.rssi.msk.su>
Content-Length: 1522
Status: R

To: Dr. C.Barat, Dr. G.Fishman, Dr. K.Hurley, Dr. C.Kouveliotou,
Dr. C.Meegan, B.Paczynski

D.Denisenko, R.Sunyaev, O.Terekhov, Space Research Institute, Moscow;
C.Barat, J.-P.Dezalay, Centre d'Etude Spatiale des Rayonnements,
Toulouse, report:

GRB 940526

Gamma-ray burst 940526 reported by BATSE was observed by the PHEBUS instrument onboard GRANAT. The burst trigger time T_0 is 20h20m09s UT (4 seconds after BATSE triggering). Its duration (T_{90}) is 29.5 ± 0.8 s. The burst fluence ($>100\text{keV}$) is $\sim 1.4\text{E-4 erg/cm}^2$, maximum flux ($>100\text{keV}$) $\sim 6\text{E-5 erg/cm}^2/\text{s}$.

The event is confidently detected up to 10 MeV, its energy spectrum being well fitted in the broad range (400 keV - 12 MeV) by the power law with the index -1.8. Below 400 keV the spectrum was steeper. This fact as well as the complicated but similar time profiles makes this burst look like GRB910814 ($T=19\text{h}14\text{m}33\text{s}$) which was about 3 times stronger as seen by PHEBUS ($C_{\text{max}}/C = 9.0$ versus 3.2 for 940526).

GRB 940529

PHEBUS triggering time for this burst is 16h22m49s (UT). The event duration (T_{90}) is 5.2 ± 1.4 s. The burst fluence ($>100\text{keV}$) is $\sim 2\text{E-6 erg/cm}^2$, maximum flux ($>100\text{keV}$) $\sim 2\text{E-6 erg/cm}^2/\text{s}$, C_{max}/C ratio ~ 1.3 . The energy spectrum between 100 and 800 keV is fitted by power law with the index -1.6.

GRB 940528 candidate

Another event was detected by PHEBUS on the 28th of May, 1994 at 3h02m56s UT. It has $T_{90}=6.4 \pm 0.7$ s, $C_{\text{max}}/C=2.9 \pm 0.3$ and rather soft spectrum (photon index -2.3).

From SHARIFF@ssl.msfc.nasa.gov Mon May 30 22:06 PDT 1994
Date: Tue, 31 May 1994 0:07:59 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 3003
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 3003
EVENT OF 1994 MAY 29 DAY OF YEAR=149
EVENT CROSSING TIME AT BATSE : 76736. S. OR 21:18:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 214.000 59.000
BATSE PEAK COUNTING RATE: 9500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 5/ 94 IS:
RA= 120.470 DEC= -40.171 DIST= 3.011 AU
BATSE-ULYSSES DISTANCE = 450438847. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 54.75 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 867.20 SECS.
CROSSING TIME AT ULYSSES IS 77603. S. OR 21:33:23 +/- 276.19 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 5/ 94 IS:
RA= 31.814 DEC= 12.054 DIST= 2.129 AU
MARS-BATSE DISTANCE = 318460800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 71.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 344.51 SECS.
CROSSING TIME AT MARS IS 77081. S. OR 21:24:40 +/- 179.69 SECONDS

RT

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
3003	940529	9501	76736	9500	214	+59

BATSE BURST TRIGGER

NO.: 03003

TIME: TJD=9501 SECONDS=76736

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=063.6 AZIMUTH=063.5 ERROR= DEGREES

COMMENTS:

BURST, SINGLE PULSE WITH SUBSTRUCTURE, LASTING ~30 SECONDS. VISIBLE ABOVE 300KEV

Helio corr removed

Date: Jan 28 '28

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*

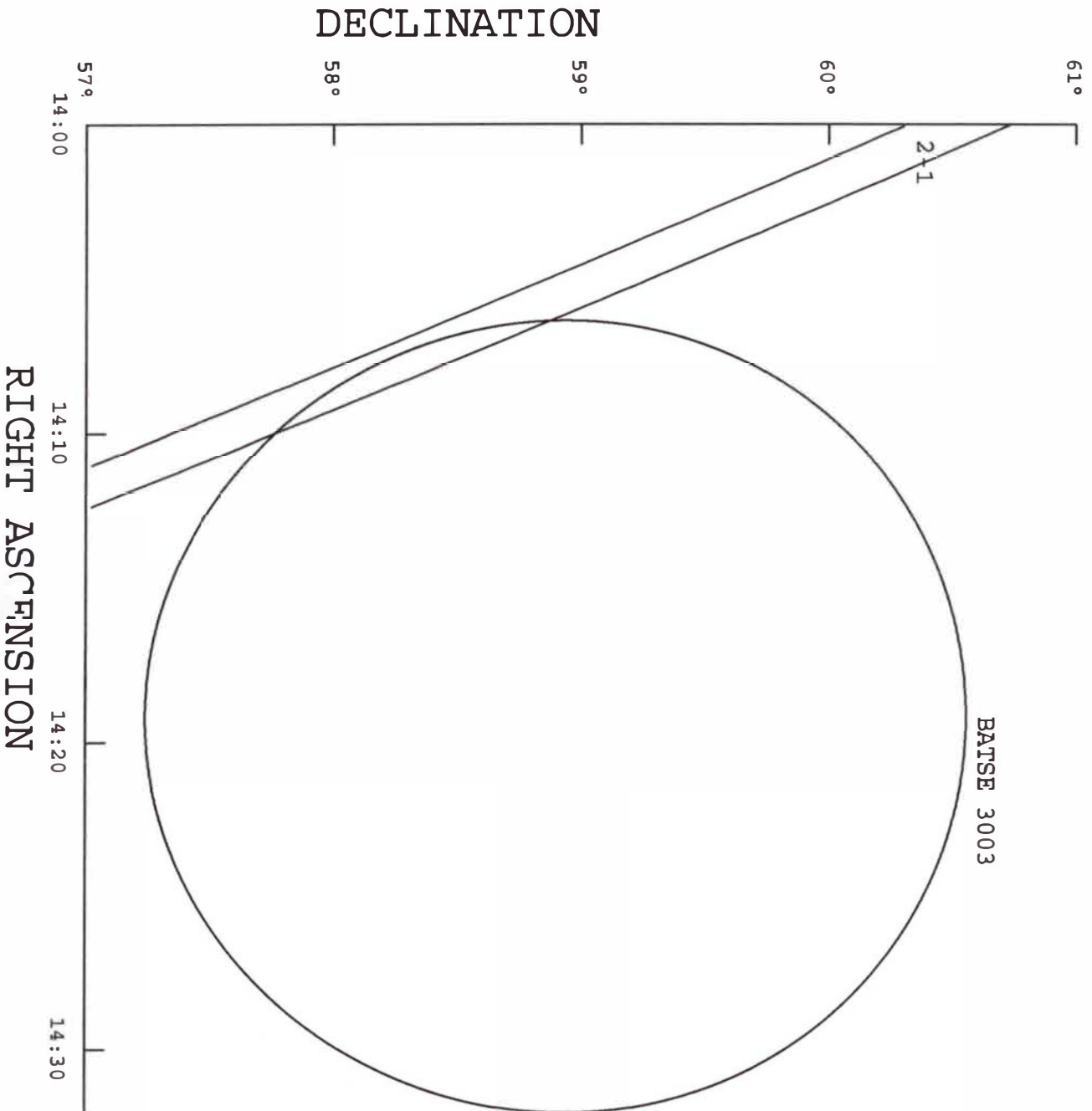
3. PVO Data

- ☐ 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 MAY 29, 1994 21:32

28 / 1/98



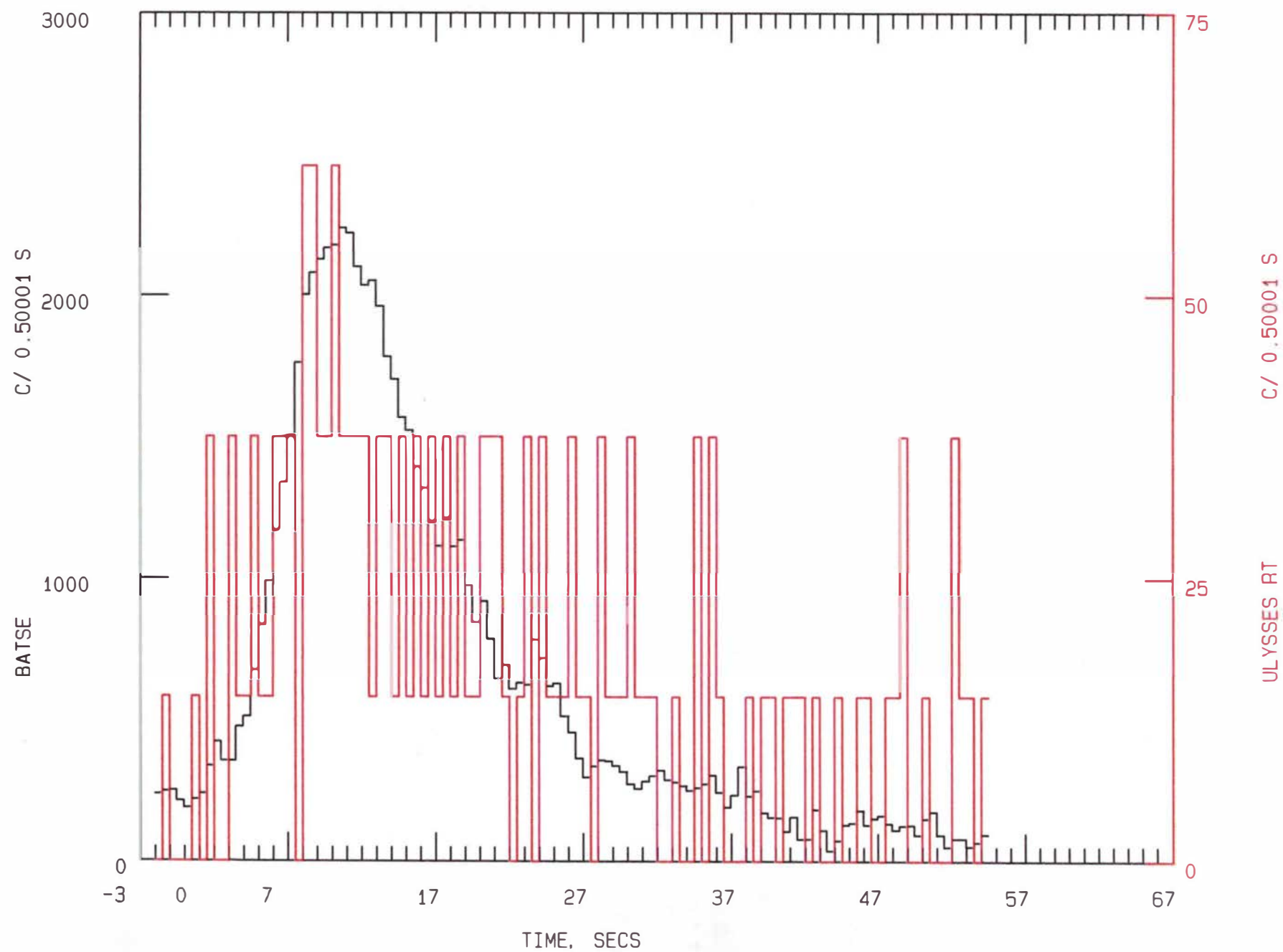
BATSE

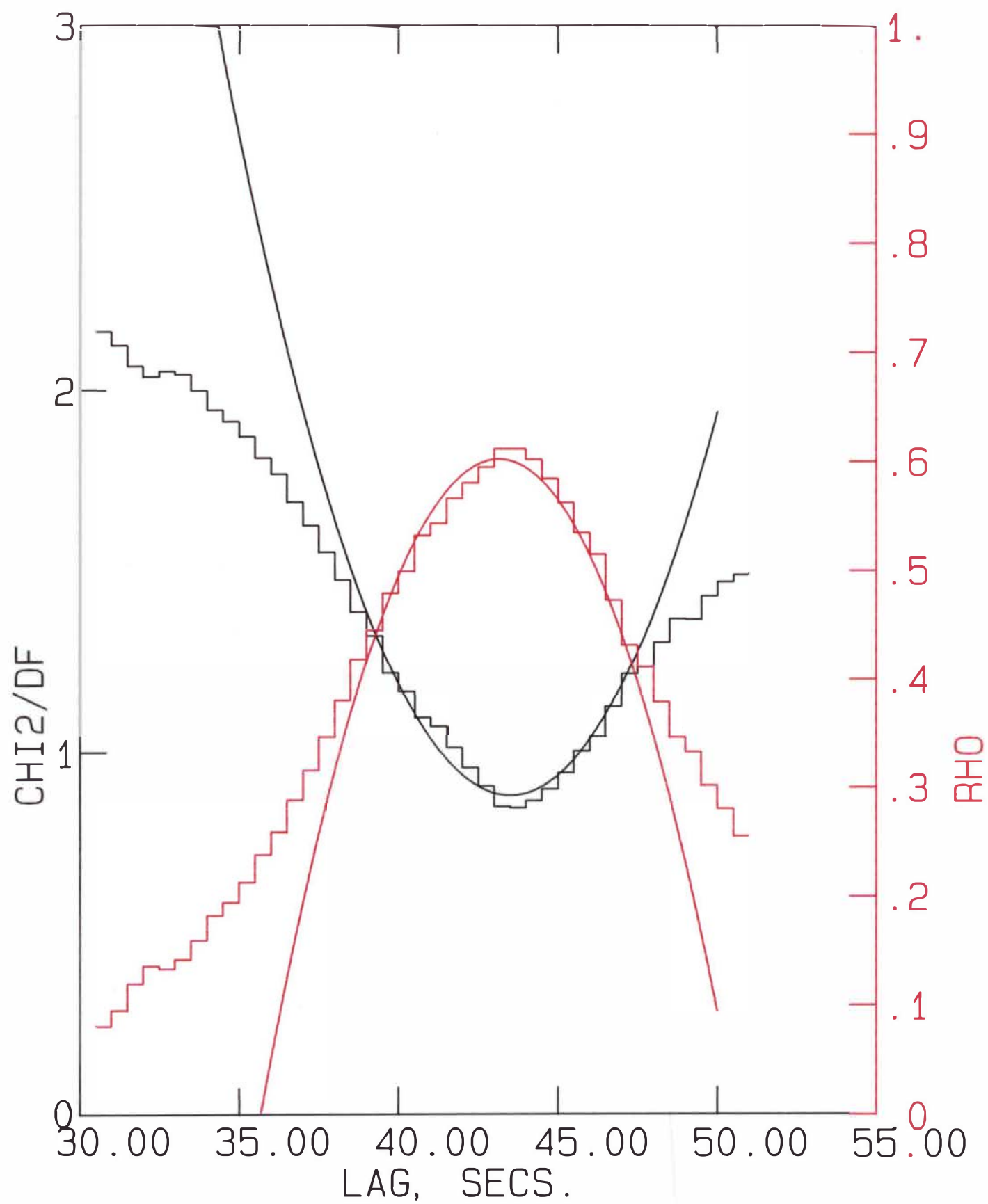
-ULYSSES RT CORRELATION

29/ 5/94

76736.154

28/ 1/98





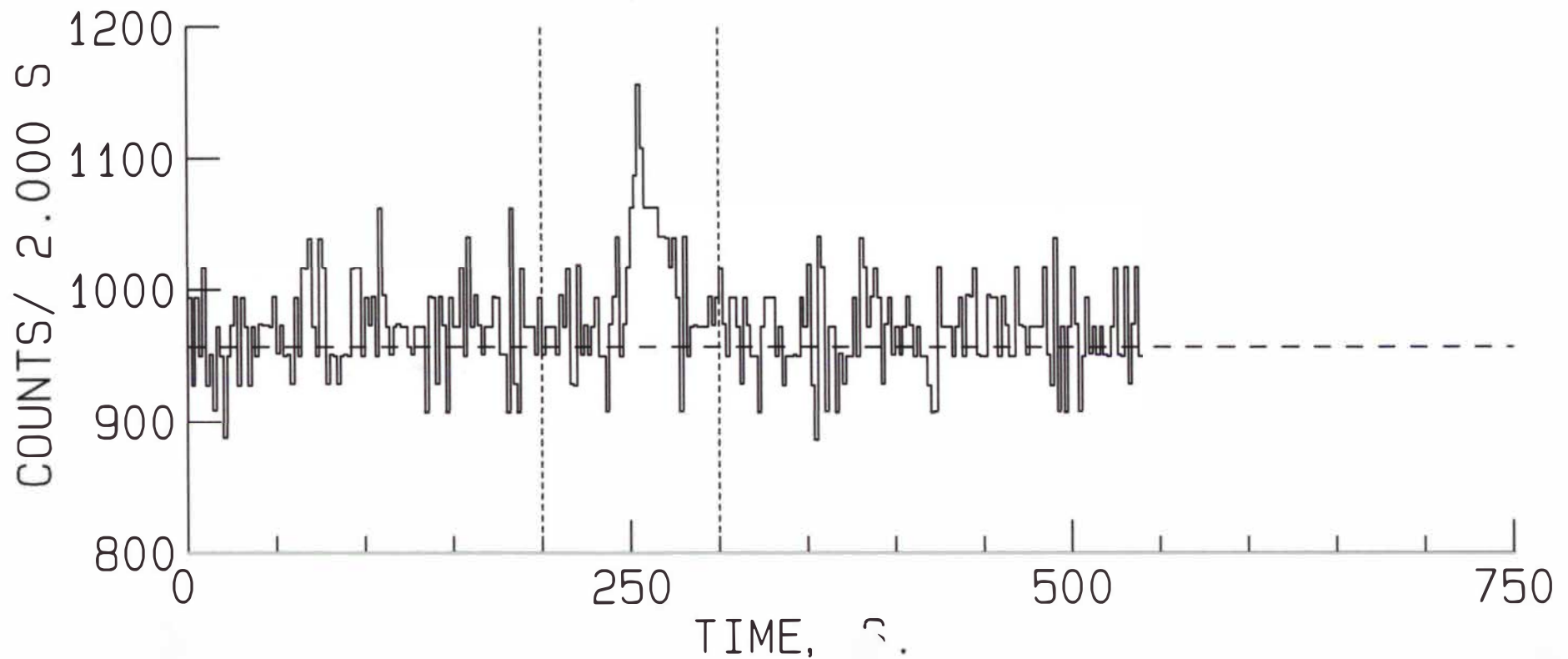
ULYSSES RT

28 / 1 / 98

29 / 5 / 94 77328.056 s

0.500 S INTERVALS REGROUPED BY 4
22- 148 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



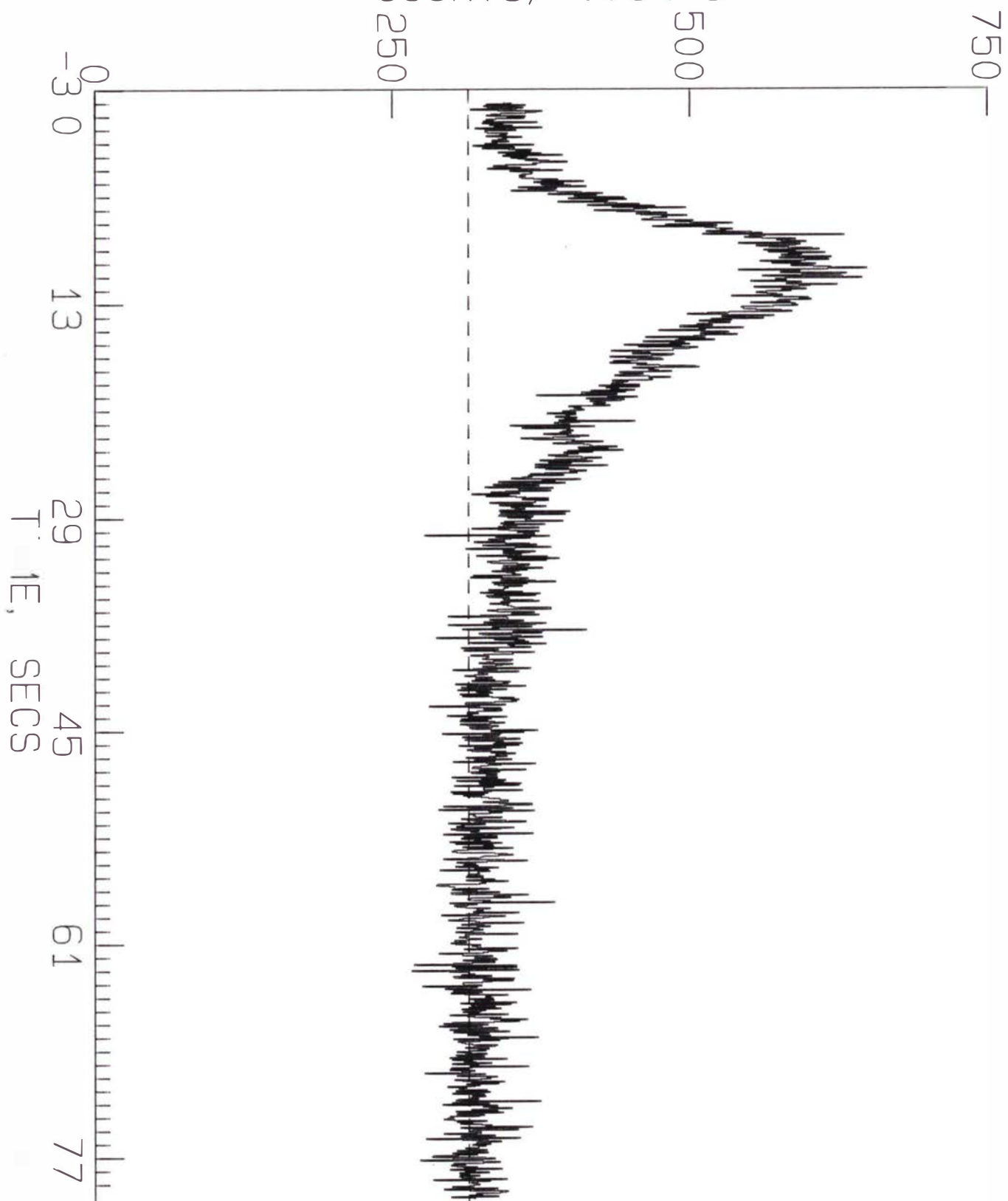
BATSE

29/05/94

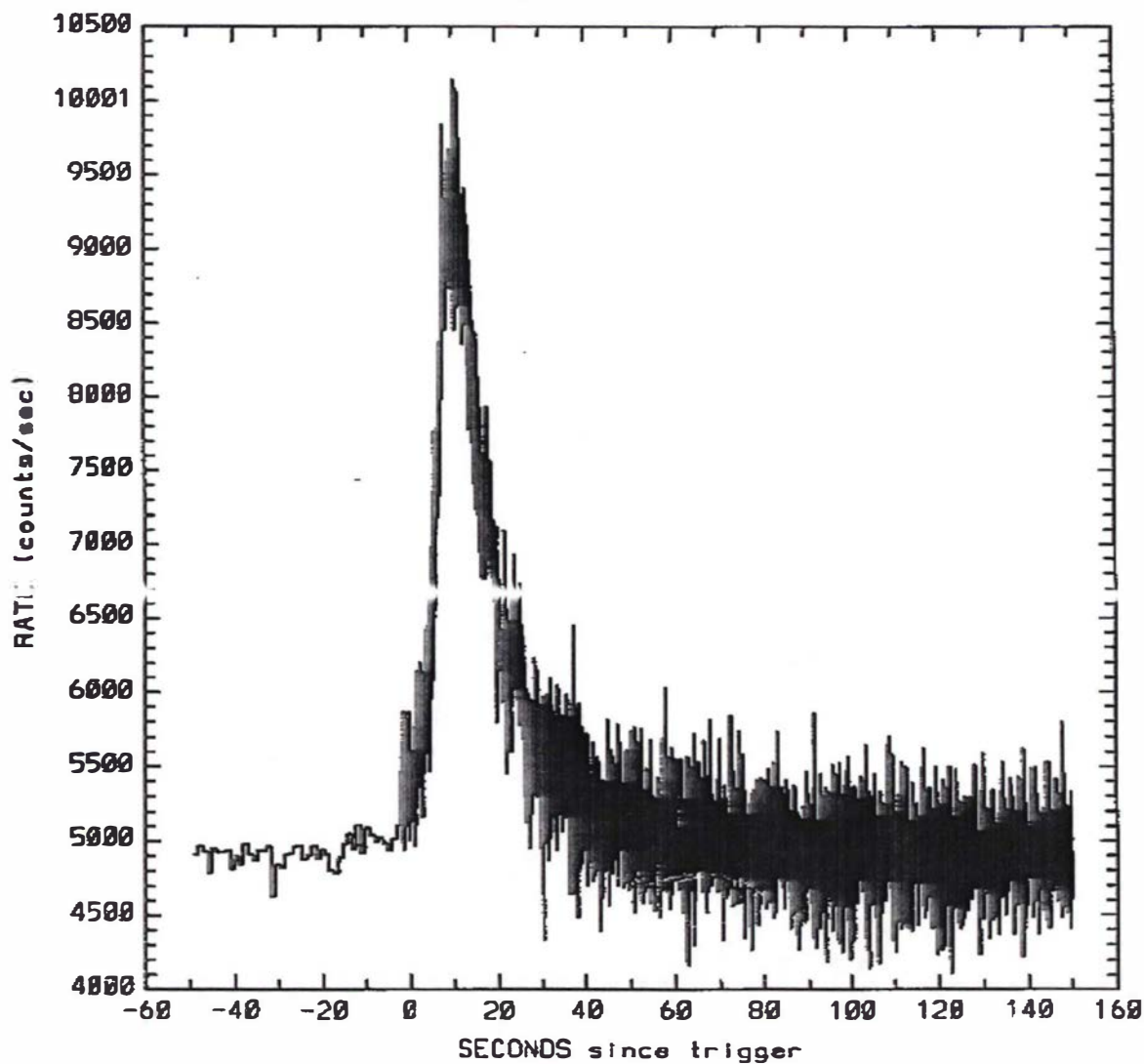
76736.154

25- 100 keV

COUNTS/ .064 S



DATA FOR K. HURLEY



2-AUG-1994 10.22.09

Created by NOPS BD
(Burst Display)
Version 12.22

Trigger #: 3003

Trigger Time:
9501 / 76736.154Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 second(s)Detectors [7..0]:
00010001Discriminators:
1 1. 2)Quality Mask:
BDISP1

From SHARIFF@ssl.msfc.nasa.gov Mon May 30 21:55 PDT 1994
Date: Mon, 30 May 1994 23:57:08 -0500 (CDT)
From: SHARIFF@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 03004

TIME: TJD=9501 SECONDS=83526

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PREC. EVENT.

Fax to 00-1-510-643-8640

इसरो उपग्रह केन्द्र

अन्तरिक्ष विभाग

भारत सरकार

हवाईपत्तन मार्ग, विमानपुर डाक घर,

बैंगलूर-560 017, भारत

तार: 'उपग्रह' टेलिक्स : 0845-2325 और 2769

दूरभाष : 566251



ISRO SATELLITE CENTRE

DEPARTMENT OF SPACE

GOVERNMENT OF INDIA

AIRPORT ROAD, VIMANAPURA P. O.,

BANGALORE-560 017. INDIA

Telegram : UPAGRAH Telex : 0845-2325 & 2769

Telephone : 566251

25 June 94

Dear Kevin,

Our GRB expt. on SROSS-C2 is working satisfactorily. The satellite is in 436 x 920 km orbit and so we have plenty of triggers - mostly false! Starting today, the orbit manoeuvres will take place and by July 10th, we expect to reach an orbit of 436 x 620 km. Till then the payloads are switched off.

Following interesting triggers need a check from your end:

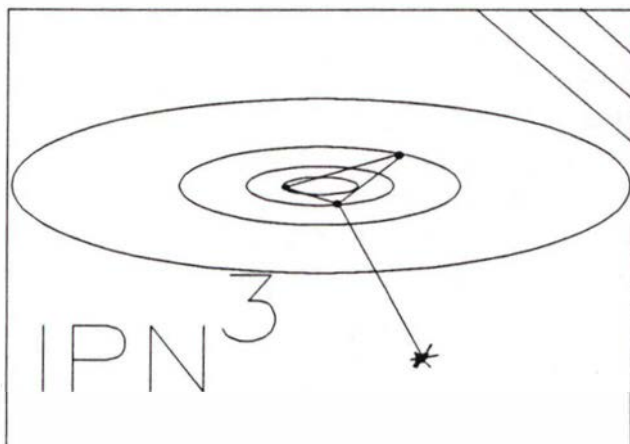
Orbit	Date	Time (UT)
371	29 May	05 ^h 32 ^m 23 ^s
374	29 May	10 42 34
514	7 JUNE	23 05 47
521	8 JUNE	11 40 37
558	10 JUNE	23 08 49
391	30 MAY	14 56 43
389	30 MAY	11 16 24.

I would appreciate it if you can check these events in the IPN files.
Many thanks.

Krishnam

Our FAX 91-80-558 5409
91-80-558-5401

भारतीय अन्तरिक्ष अनुसंधान संगठन INDIAN SPACE RESEARCH ORGANISATION (ISRO)



FAX FROM K. HURLEY
UNIVERSITY OF CALIFORNIA
SPACE SCIENCES LABORATORY
BERKELEY, CA. 94720
PHONE: (510) 643-9173
FAX: (510) 643-8640 (OFFICE), -8302 (SECT'Y)
E-MAIL: khurley@sunspot.ssl.berkeley.edu

TO: K. Marar

FAX #: 0091 080 5585490 *Bangalore India*

DATE: June 25, 1994

TOTAL NUMBER OF PAGES: 1

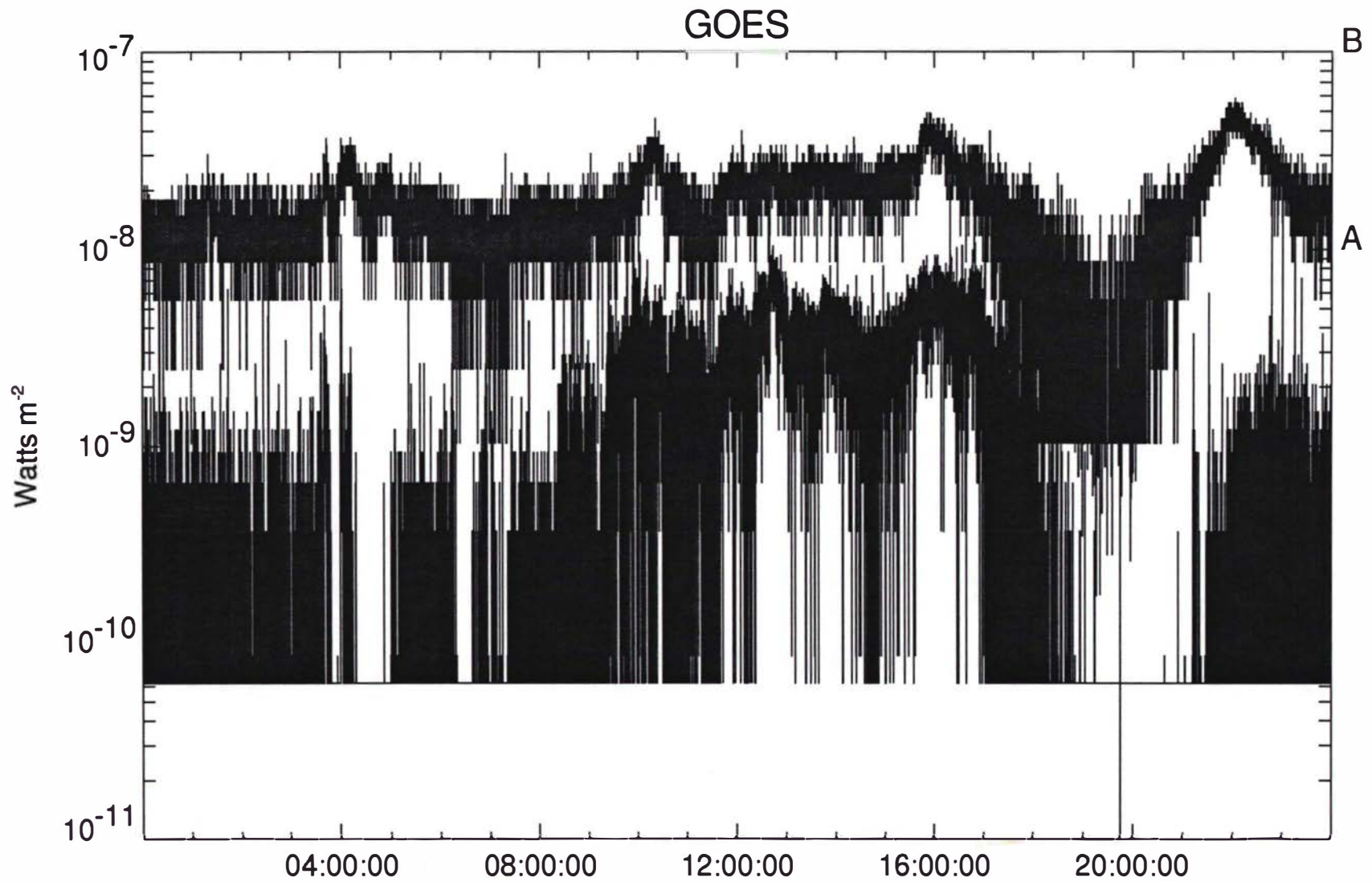
FAXED
6/30/94

Dear Krishnan,

Unfortunately none of the events you listed corresponds to an IPN event. It is still possible that some of them could be confirmed if I look in the Ulysses real time data, but to do that, it would be best to get the SROSS earth center position and distance for these events, so that I can limit the time window to search.

Kevin

PS It would be good if we could communicate by e-mail, but I can't find a gateway to India here in the U.S. Any ideas?



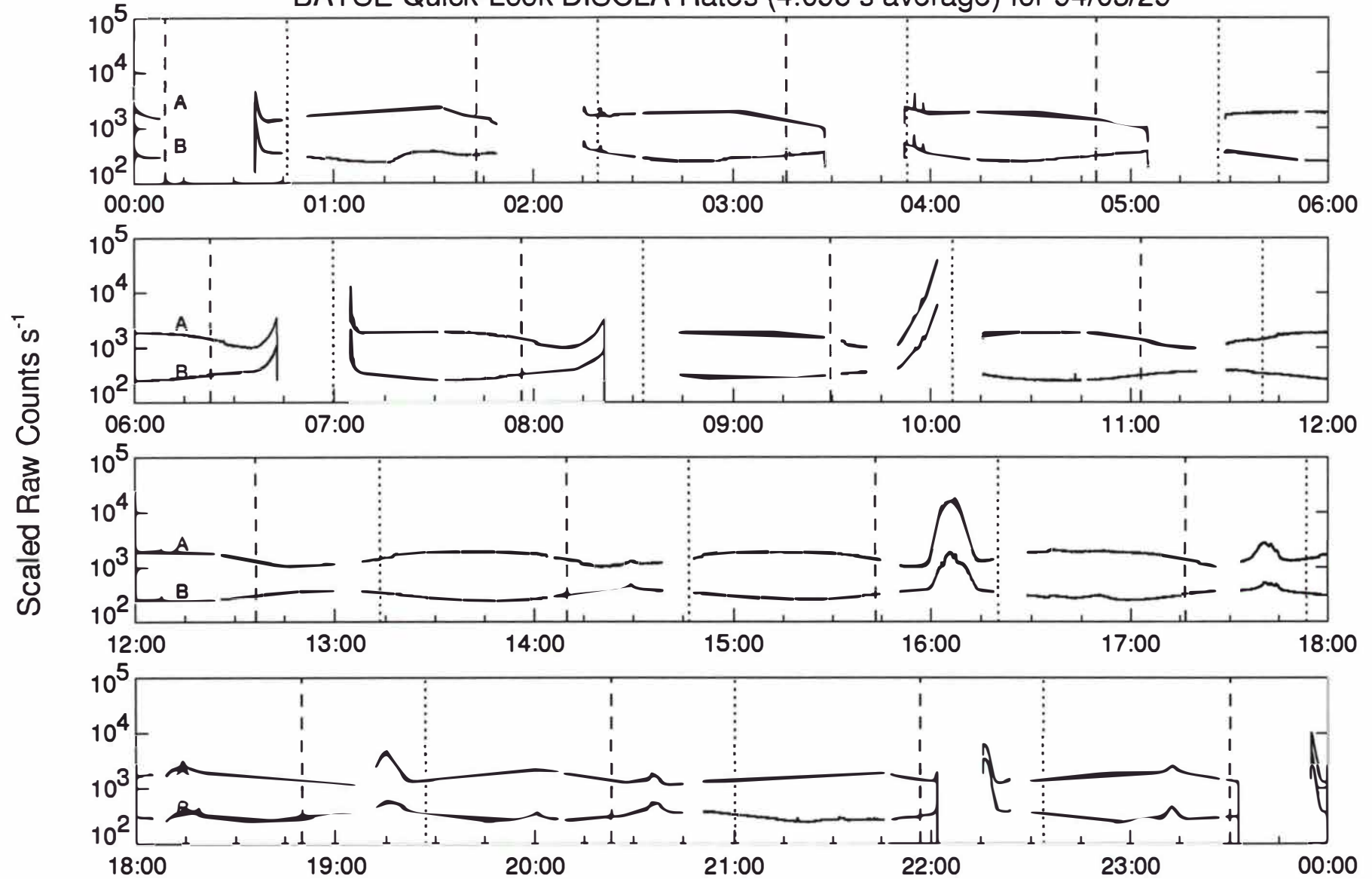
Data Start: 94/05/29, 0000:00

Plot created: 94/06/01, 1726

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

2 (0.5 - 4.0 Angstroms) Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/29

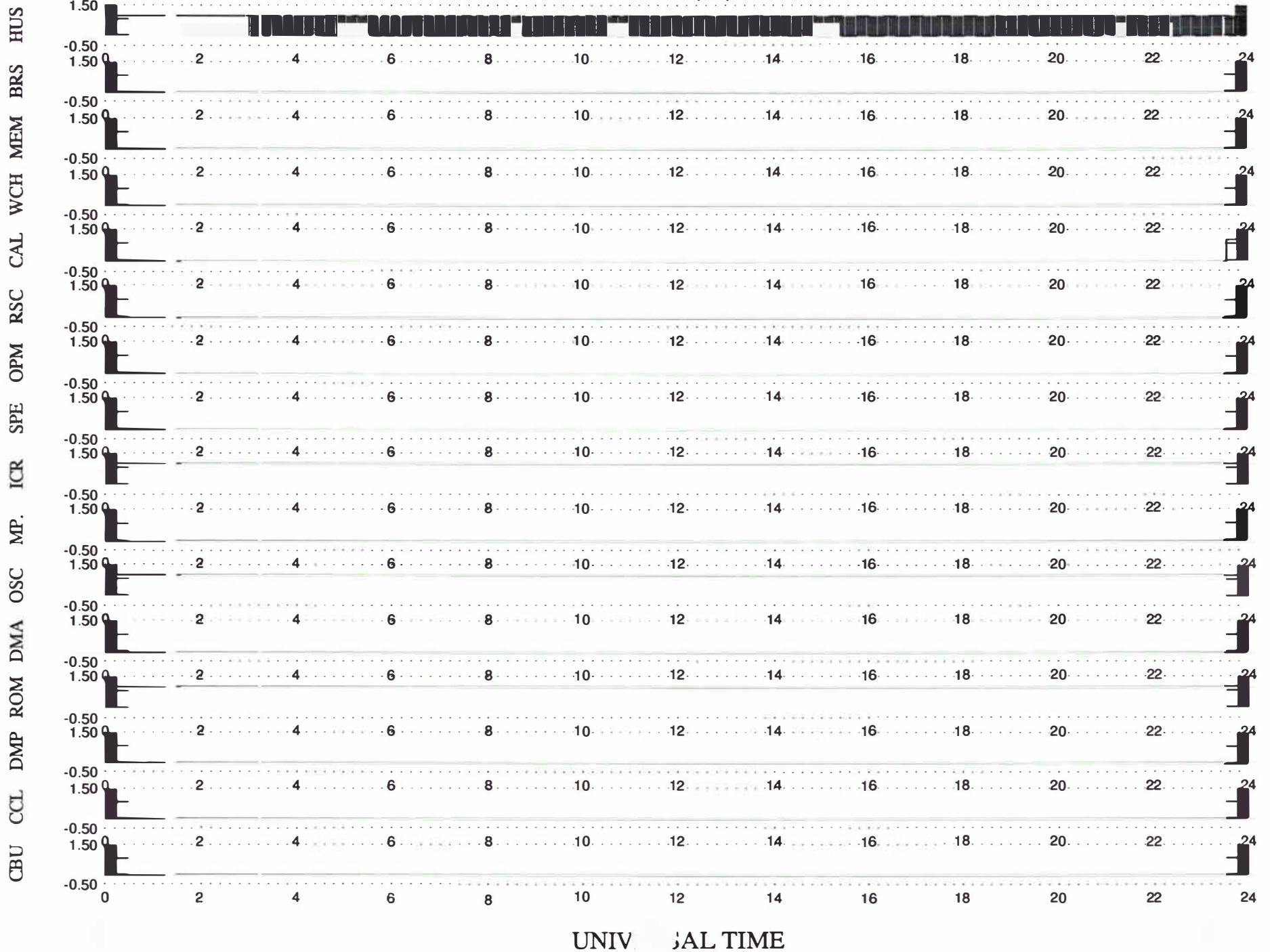


Current Time: 94/06/01, 1722 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

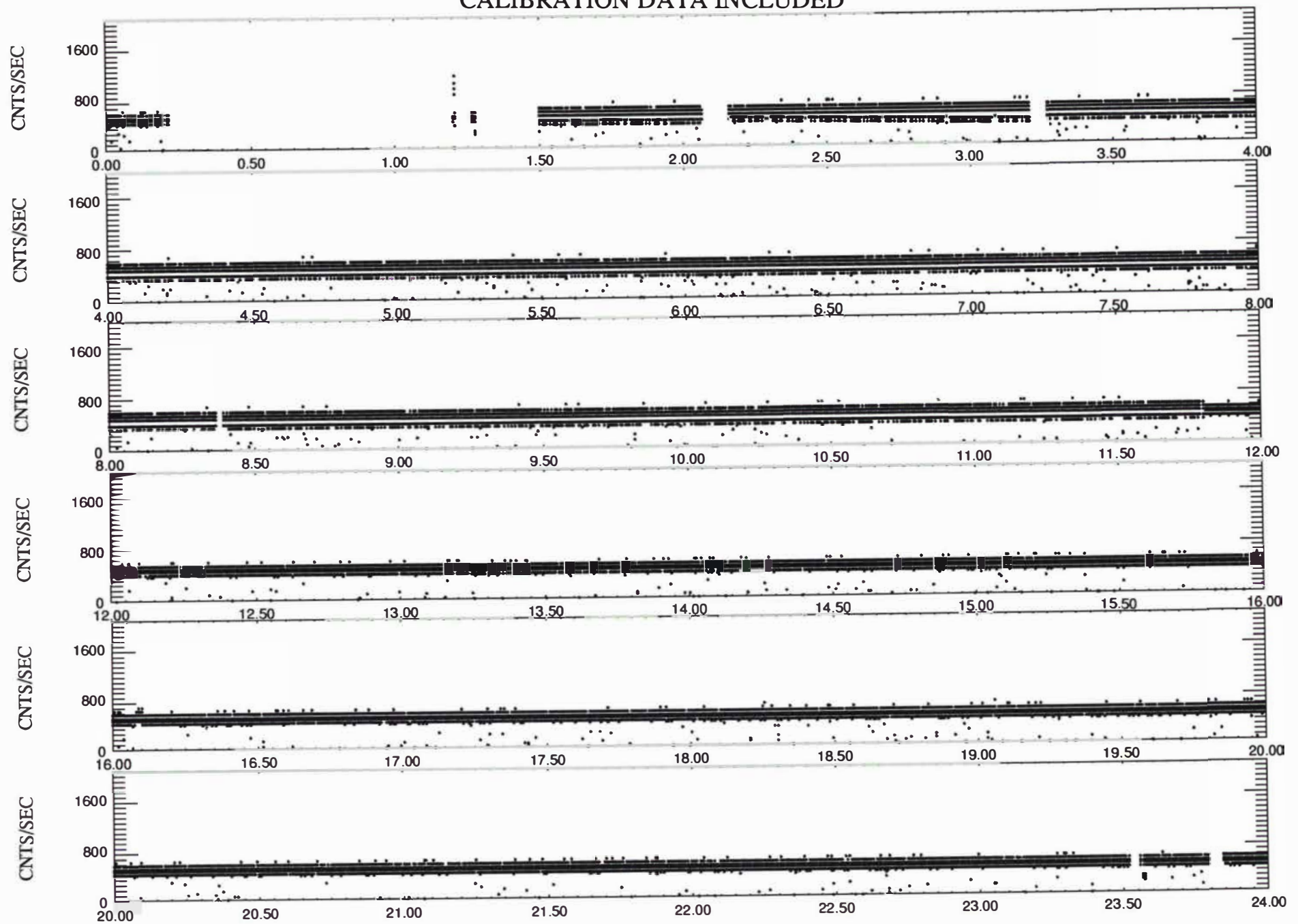
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

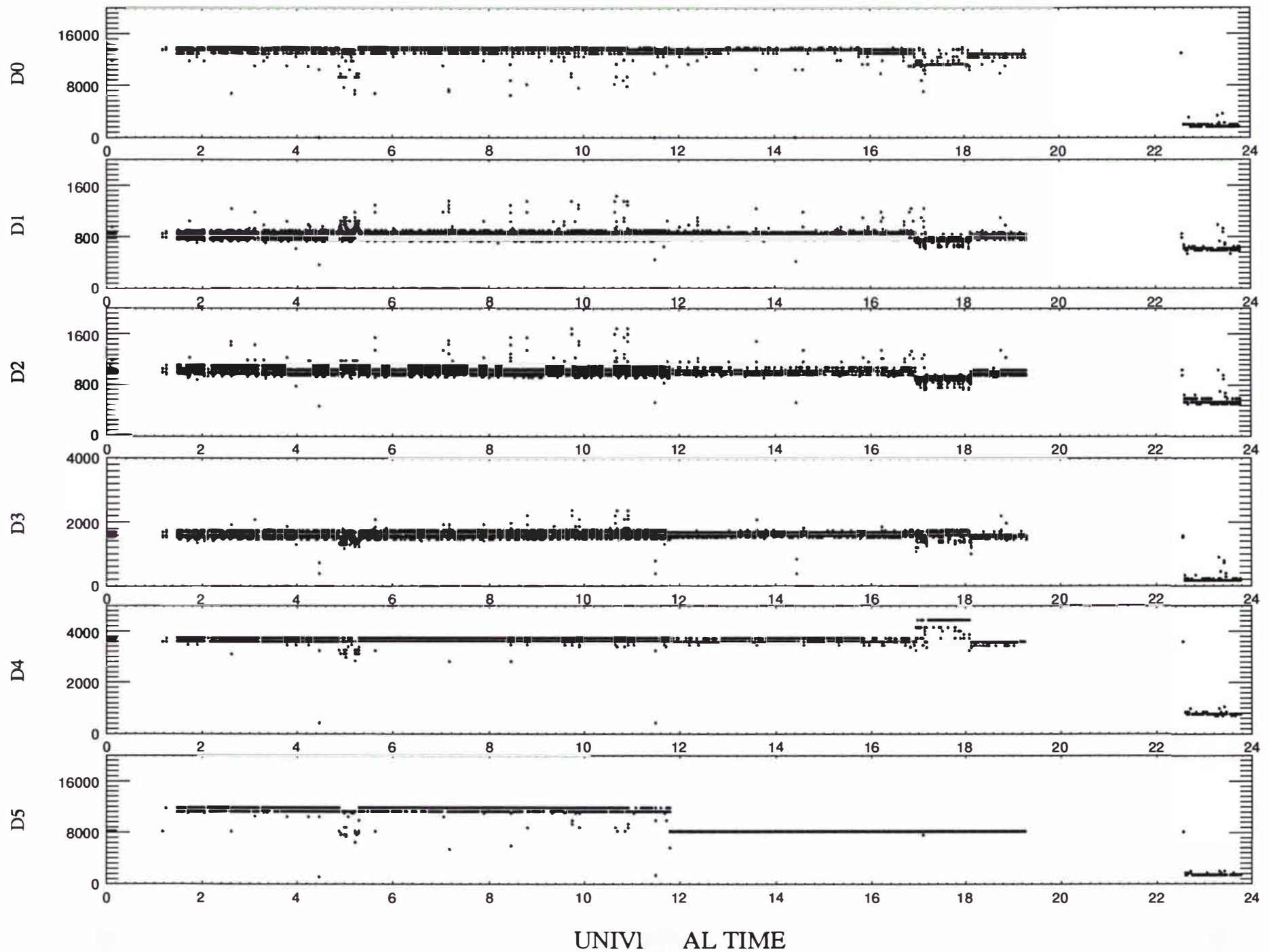
NO BURST (14)



CALIBRATION DATA INCLUDED



UNIV TIME



From KOSHUT@ssl.msfc.nasa.gov Tue May 31 12:38 PDT 1994
Date: Tue, 31 May 1994 14:39:58 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 3005
Content-Type: text
Content-Length: 1135

BATSEARCH PROGRAM

BATSE BURST # 3005
EVENT OF 1994 MAY 30 DAY OF YEAR=150
EVENT CROSSING TIME AT BATSE : 32258. S. OR 08:57:38.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 107.000 -3.000
BATSE PEAK COUNTING RATE: 2600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 30/ 5/ 94 IS:
RA= 120.520 DEC= -40.127 DIST= 3.012 AU
BATSE-ULYSSES DISTANCE = 450598351. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=140.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1166.57 SECS.
CROSSING TIME AT ULYSSES IS 31091. S. OR 08:38:11 +/- 196.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 30/ 5/ 94 IS:
RA= 32.530 DEC= 12.314 DIST= 2.126 AU
MARS-BATSE DISTANCE = 318079392. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -265.31 SECS.
CROSSING TIME AT MARS IS 31993. S. OR 08:53:12 +/- 174.32 SECONDS

100

BATSE #	Date	TJD	sec	Max ct/s	RA	Dec
3005	940530	9502	32258	2600	107	-03

BATSE BURST TRIGGER

NO.: 03005

TIME: TJD=9502 SECONDS=32258

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=153. AZIMUTH=2. ERROR= DEGREES

COMMENTS:

BURST OF ~ 20 SECONDS DURATION, WITH EMISSION OBSERVED ABOVE 300 KEV.
TIME HISTORY CONSISTS OF A FAST RISE TO THE PEAK RATE (~ 2600 C/S)
FOLLOWED BY A NEARLY-EXPONENTIAL DECAY.

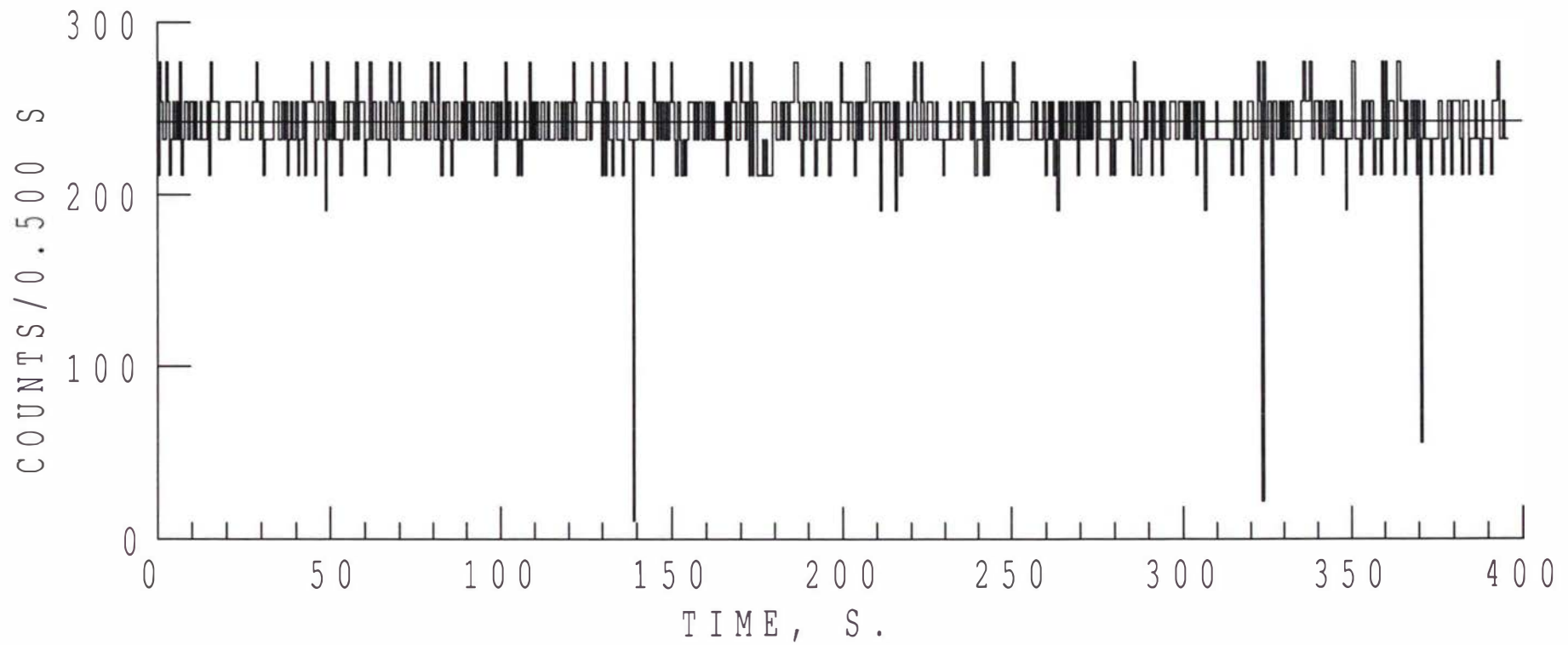
31 / 5 / 94

ULYSSES RT

30 / 5 / 94 30888.156 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From KOSHUT@ssl.msfc.nasa.gov Tue May 31 12:43 PDT 1994
Date: Tue, 31 May 1994 14:45:16 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 03006

TIME: TJD=9502 SECONDS=39169

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE PRECIPITATION EVENT.

From KOSHUT@ssl.msfc.nasa.gov Tue May 31 12:48 PDT 1994
Date: Tue, 31 May 1994 14:50:09 -0500 (CDT)
From: KOSHUT@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 03007

TIME: TJD=9502 SECONDS=76828

TYPE: SAA SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
TRIGGERED ON ENTRY INTO SAA.

Fax to 00-1-510-643-8640

इसरो उपग्रह केन्द्र

अन्तरिक्ष विभाग

भारत सरकार

हवाई पत्तन मार्ग, विमानपुर हाथ पर,

बैंगलूर - 560 017, भारत

तार: 'उपग्रह' टेलिग्राम : 0845-2325 और 2769

दूरभाष : 566251



ISRO SATELLITE CENTRE

DEPARTMENT OF SPACE

GOVERNMENT OF INDIA

AIRPORT ROAD, VIMANAPURA P. O.,

BANGALORE-560 017. INDIA

Telegram : UPAGRAH Telex : 0845-2325 & 2769

Telephone : 566251

25 June 94

Dear Kevin,

Our GRB expt. on SROSS-C2 is working satisfactorily. The satellite is in 436×920 km orbit and so we have plenty of triggers - mostly false! Starting today, the orbit manoeuvres will take place and by July 10th, we expect to reach an orbit of 436×620 km. Till then the payloads are switched off.

Following interesting triggers need a check from your end:

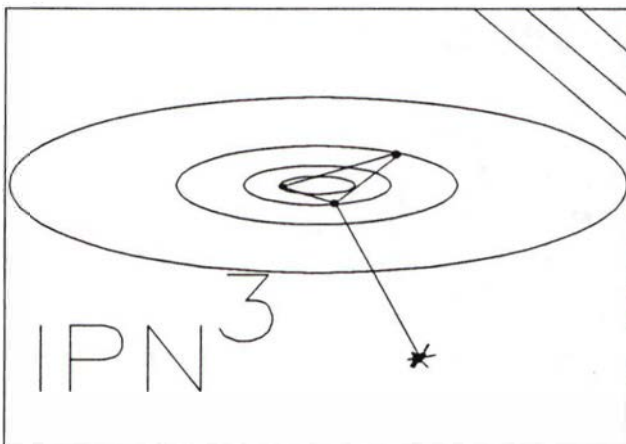
Orbit	Date	Time (UT)
371	29 May	05 ^h 32 ^m 23 ^s
374	29 May	10 42 34
514	7 JUNE	23 05 47
521	8 JUNE	11 40 37
558	10 JUNE	23 08 49
391	30 MAY	14 56 43
389	30 MAY	11 16 24

I would appreciate it if you can check these events in the IPN files.
Many thanks.

— Krishnam

Our FAX 91-80-558 5409
91-80-558-5407

भारतीय अन्तरिक्ष अनुसंधान संगठन INDIAN SPACE RESEARCH ORGANISATION (ISRO)



FAX FROM K. HURLEY
UNIVERSITY OF CALIFORNIA
SPACE SCIENCES LABORATORY
BERKELEY, CA. 94720
PHONE: (510) 643-9173
FAX: (510) 643-8640 (OFFICE), -8302 (SECT'Y)
E-MAIL: khurley@sunspot.ssl.berkeley.edu

TO: K. Marar

FAX #: 0091 080 5585490 *Bangalore India*

DATE: June 25, 1994

TOTAL NUMBER OF PAGES: 1

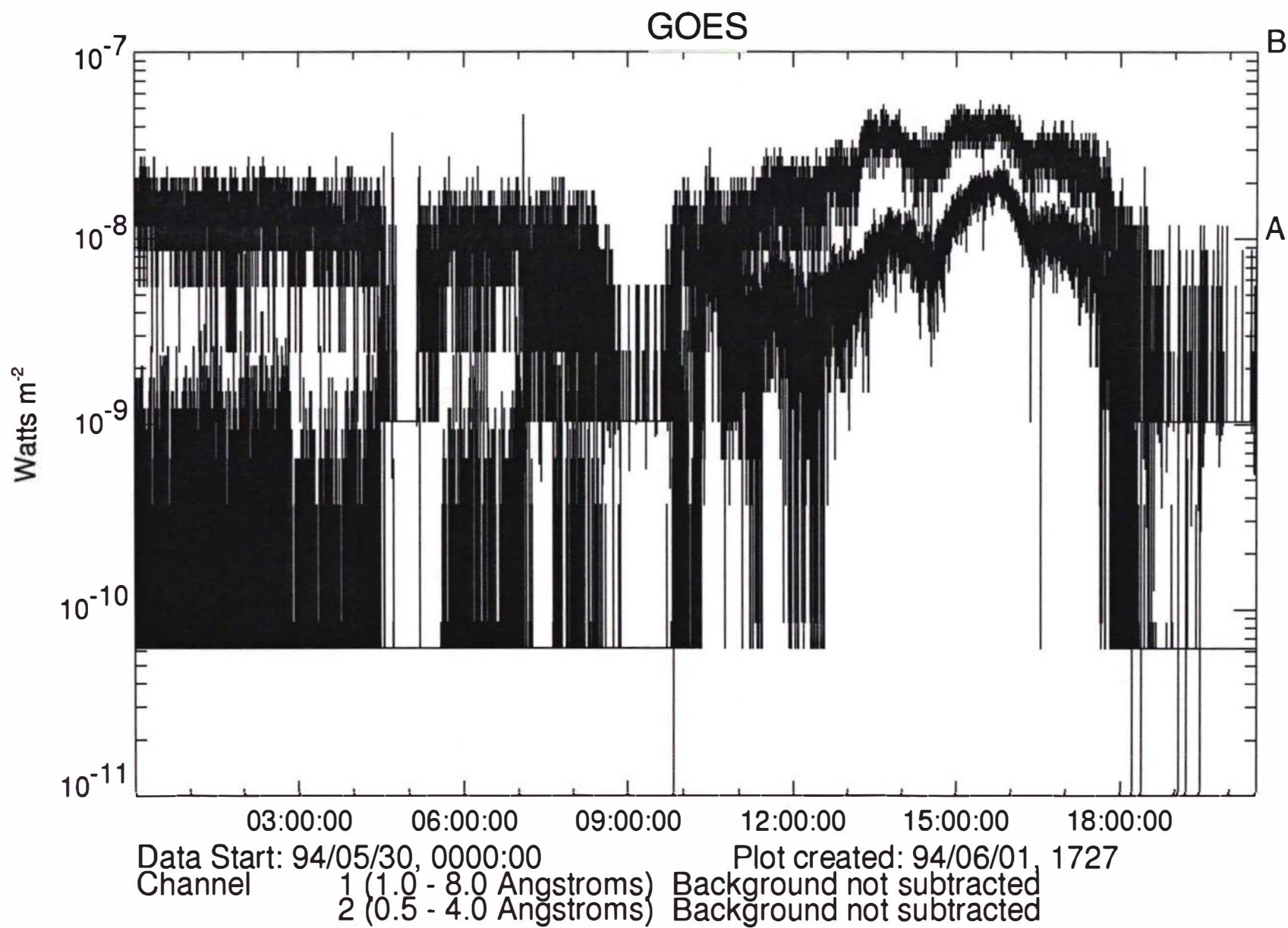
FAXED
6/30/94

Dear Krishnan,

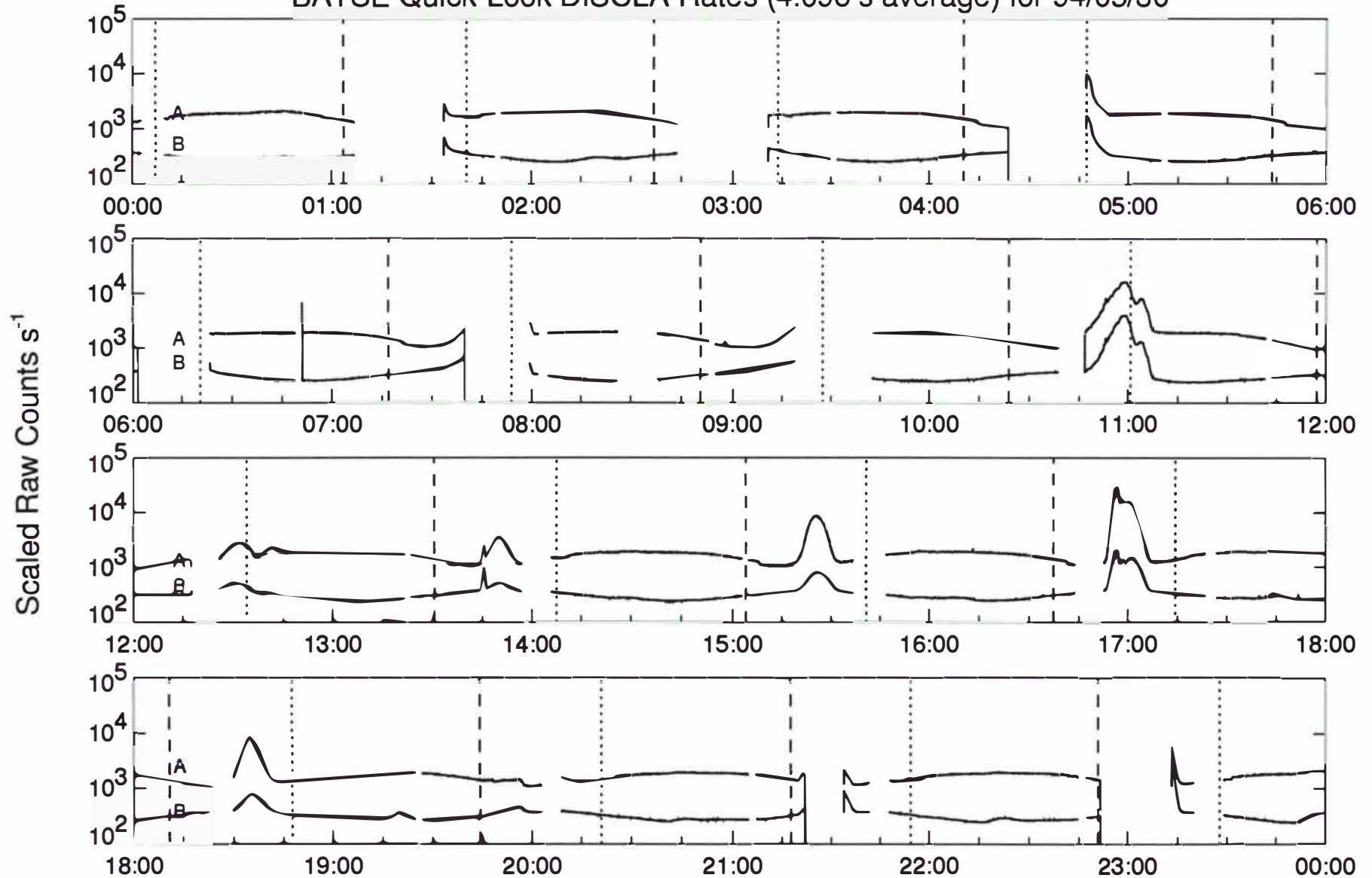
Unfortunately none of the events you listed corresponds to an IPN event. It is still possible that some of them could be confirmed if I look in the Ulysses real time data, but to do that, it would be best to get the SROSS earth center position and distance for these events, so that I can limit the time window to search.

Kevin

PS It would be good if we could communicate by e-mail, but I can't find a gateway to India here in the U.S. Any ideas?



BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/30

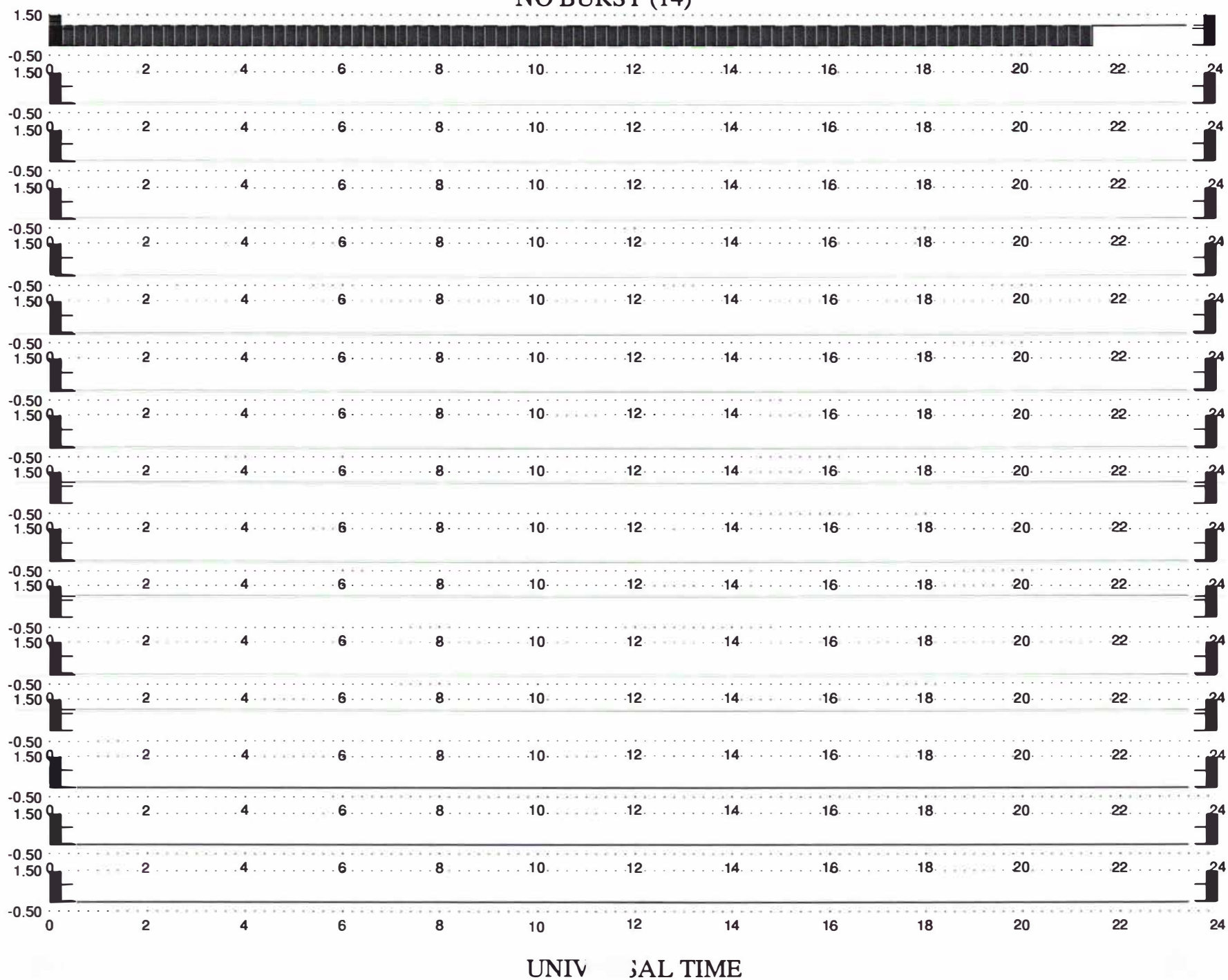


Current Time: 94/06/01, 1722 EDT
 A: Channel 1 Most Sunward LAD
 B: Sum Channel 1 Anti-Sunward LADs X .05

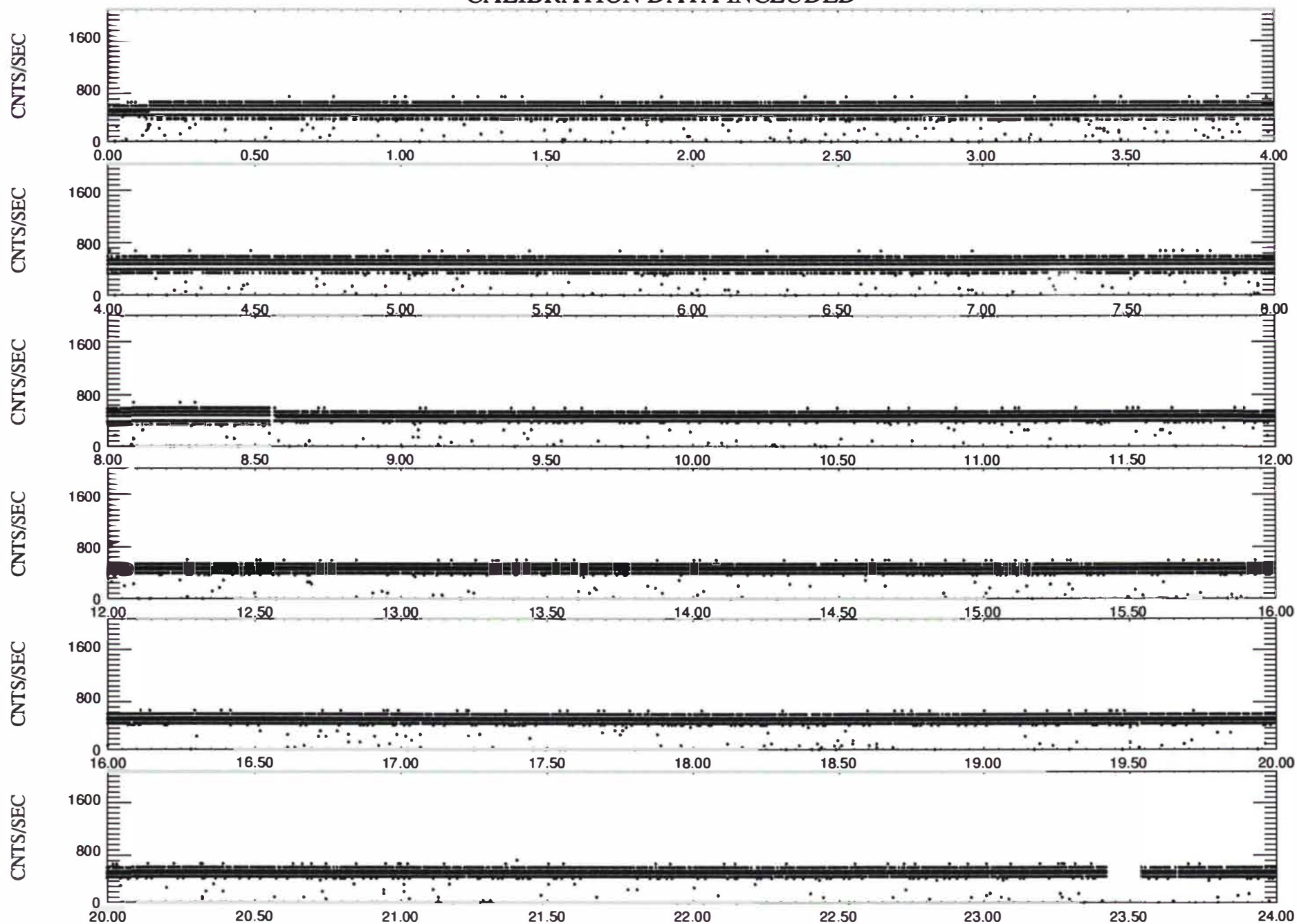
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

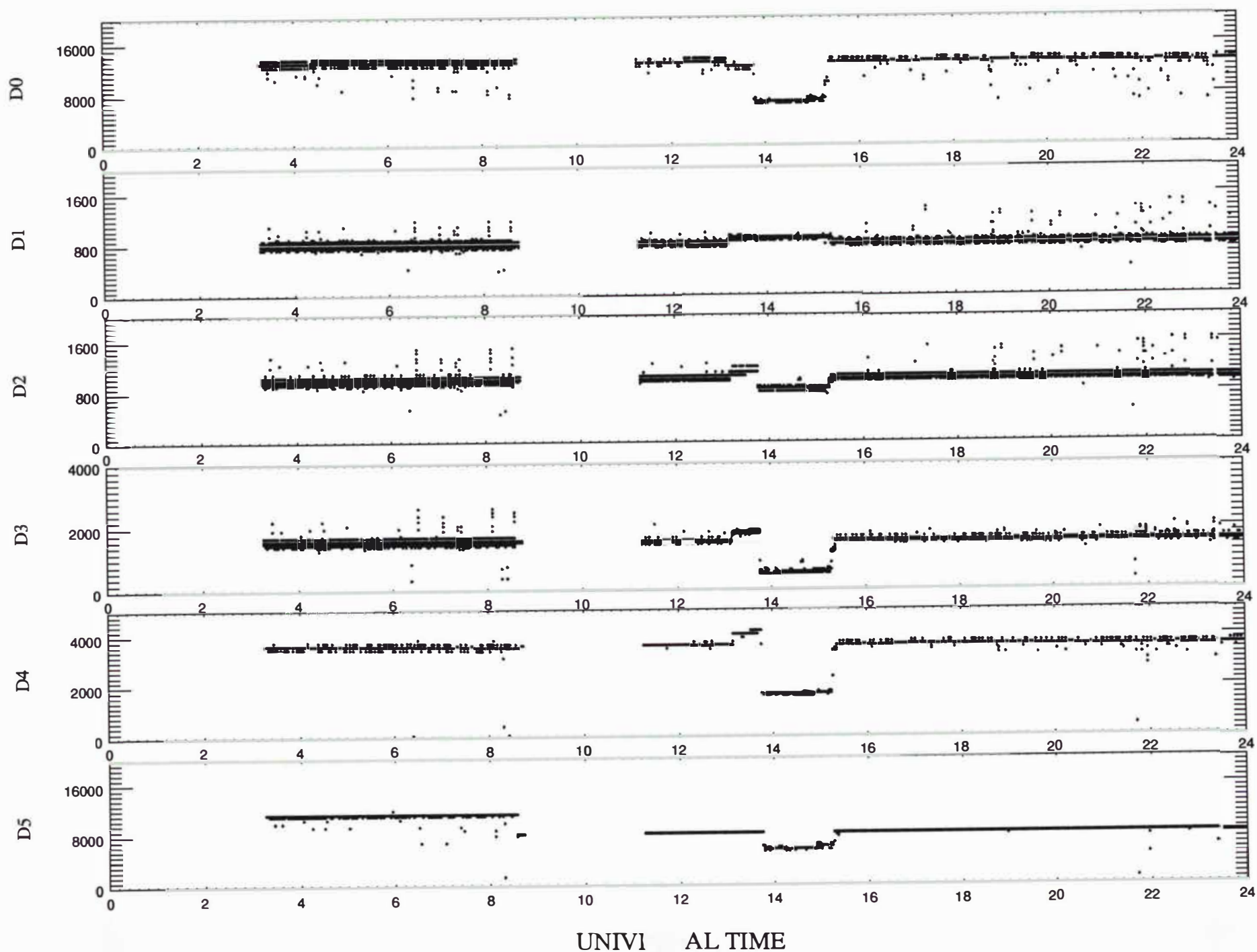
CBU	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



CALIBRATION DATA INCLUDED



UNIV UNIV TIME



From MEEGAN@ssl.msfc.nasa.gov Fri Jun 3 09:16 PDT 1994
Date: Fri, 3 Jun 1994 11:17:58 -0500 (CDT)
From: MEEGAN@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 03008

TIME: TJD=9503 SECONDS=13303

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
SAA ENTRY.

From MEEGAN@ssl.msfc.nasa.gov Fri Jun 3 09:22 PDT 1994
Date: Fri, 3 Jun 1994 11:24:04 -0500 (CDT)
From: MEEGAN@ssl.msfc.nasa.gov
To: burst@comptel.unh.edu, grobad@vmprofs.estec.esa.nl,
LHEAVXCLINE@ssl.msfc.nasa.gov, LHEAVXBARTHELMY@ssl.msfc.nasa.gov,
LHEAVXKWOK@ssl.msfc.nasa.gov, 15733SCHAEFER@ssl.msfc.nasa.gov,
CASS09BAND@ssl.msfc.nasa.gov, CASS09GRUBER@ssl.msfc.nasa.gov,
CASS09MATTESON@ssl.msfc.nasa.gov, PACIESAS@ssl.msfc.nasa.gov,
HORACK@ssl.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu
Subject: Burst Trigger Message
Content-Type: text
Content-Length: 1215

BATSE BURST TRIGGER

NO.: 03009

TIME: TJD=9503 SECONDS=74347

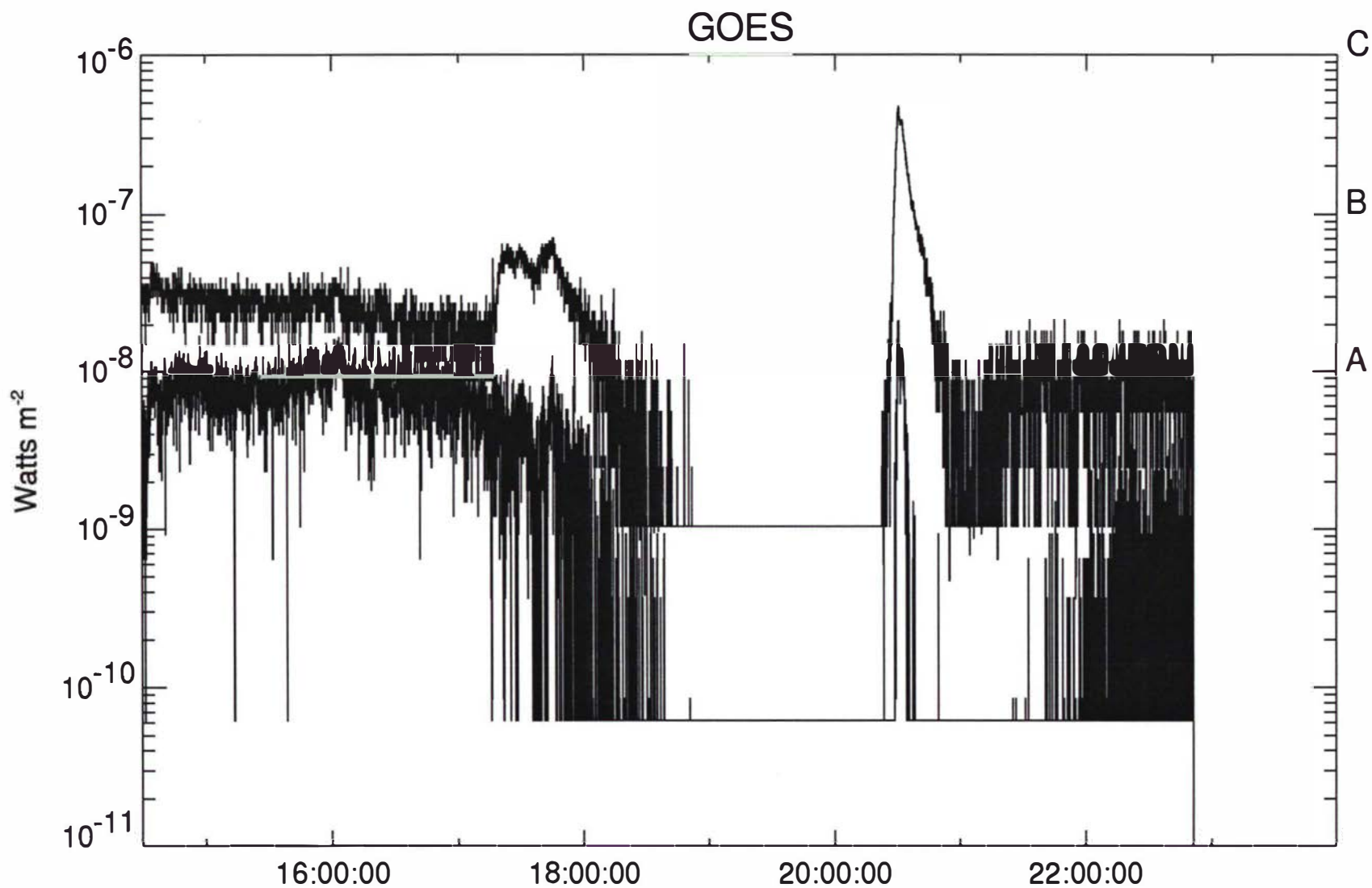
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
ELECTRON PRECIPITATION EVENT.



Data Start: 94/05/31, 1429:44

Plot created: 94/06/01, 1728

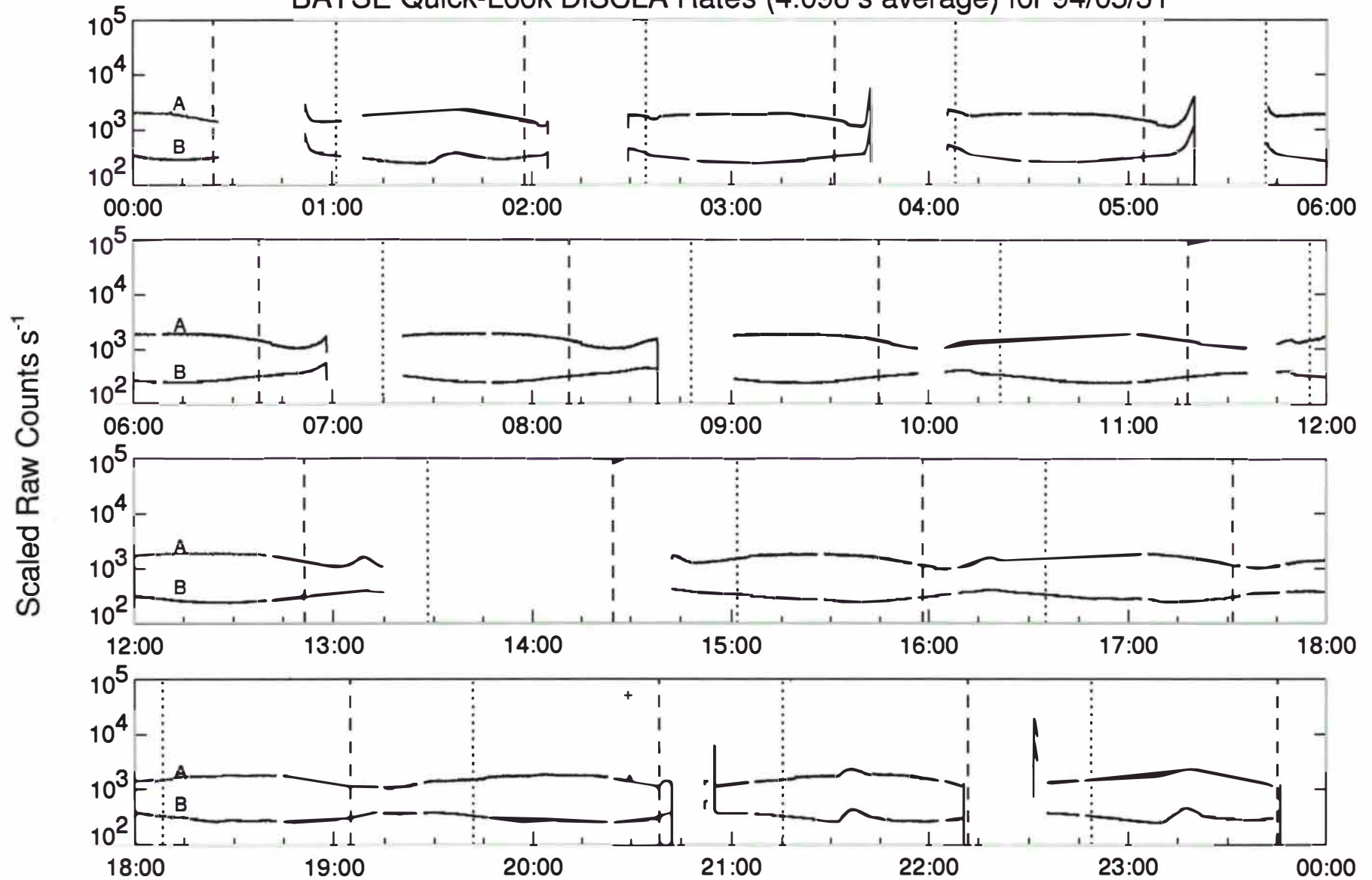
Channel 1 (1.0 - 8.0 Angstroms)

Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted

BATSE Quick-Look DISCLA Rates (4.096 s average) for 94/05/31

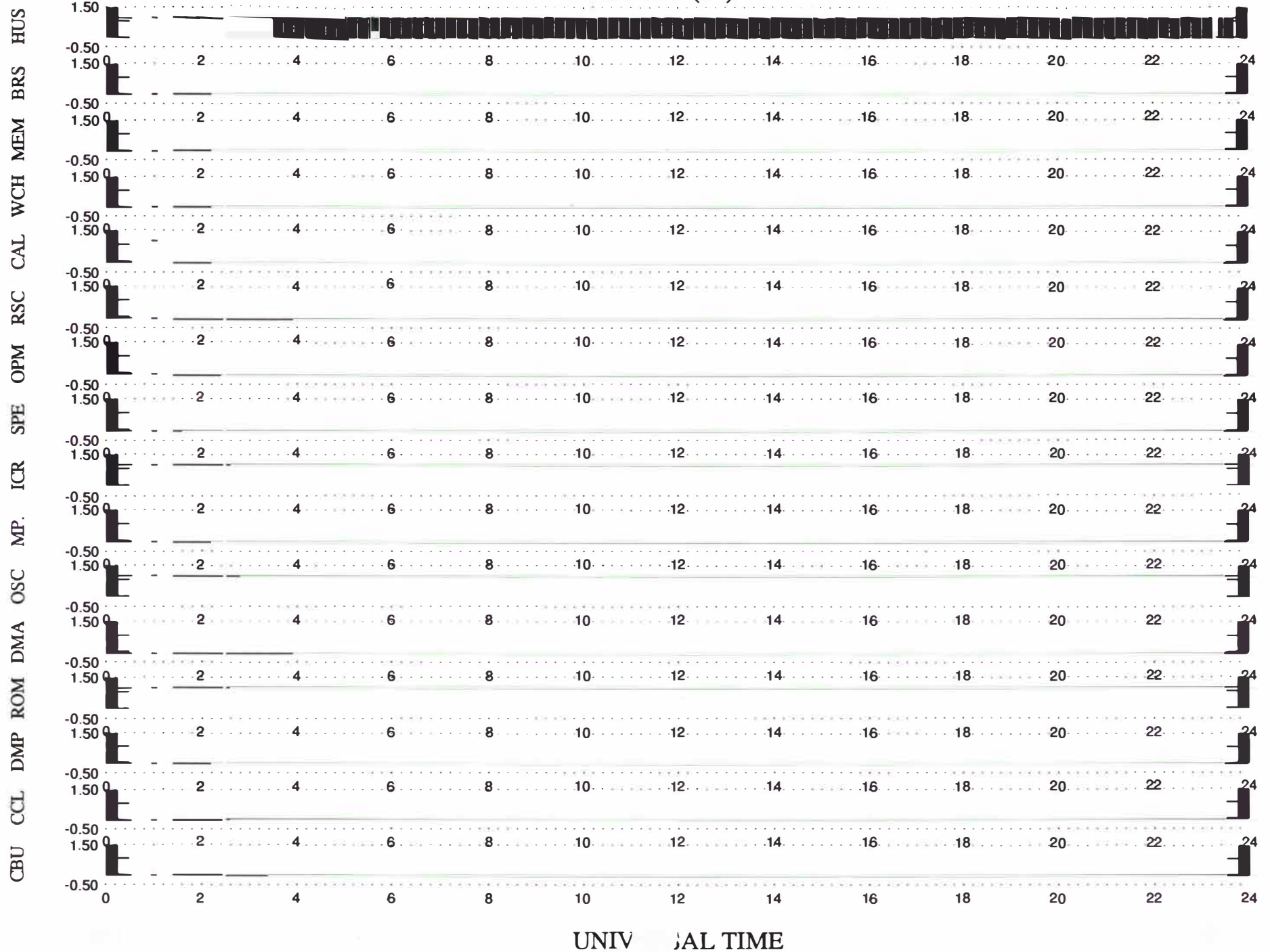


Current Time: 94/06/07, 1407 EDT
A: Channel 1 Most Sunward LAD
B: Sum Channel 1 Anti-Sunward LADs X .05

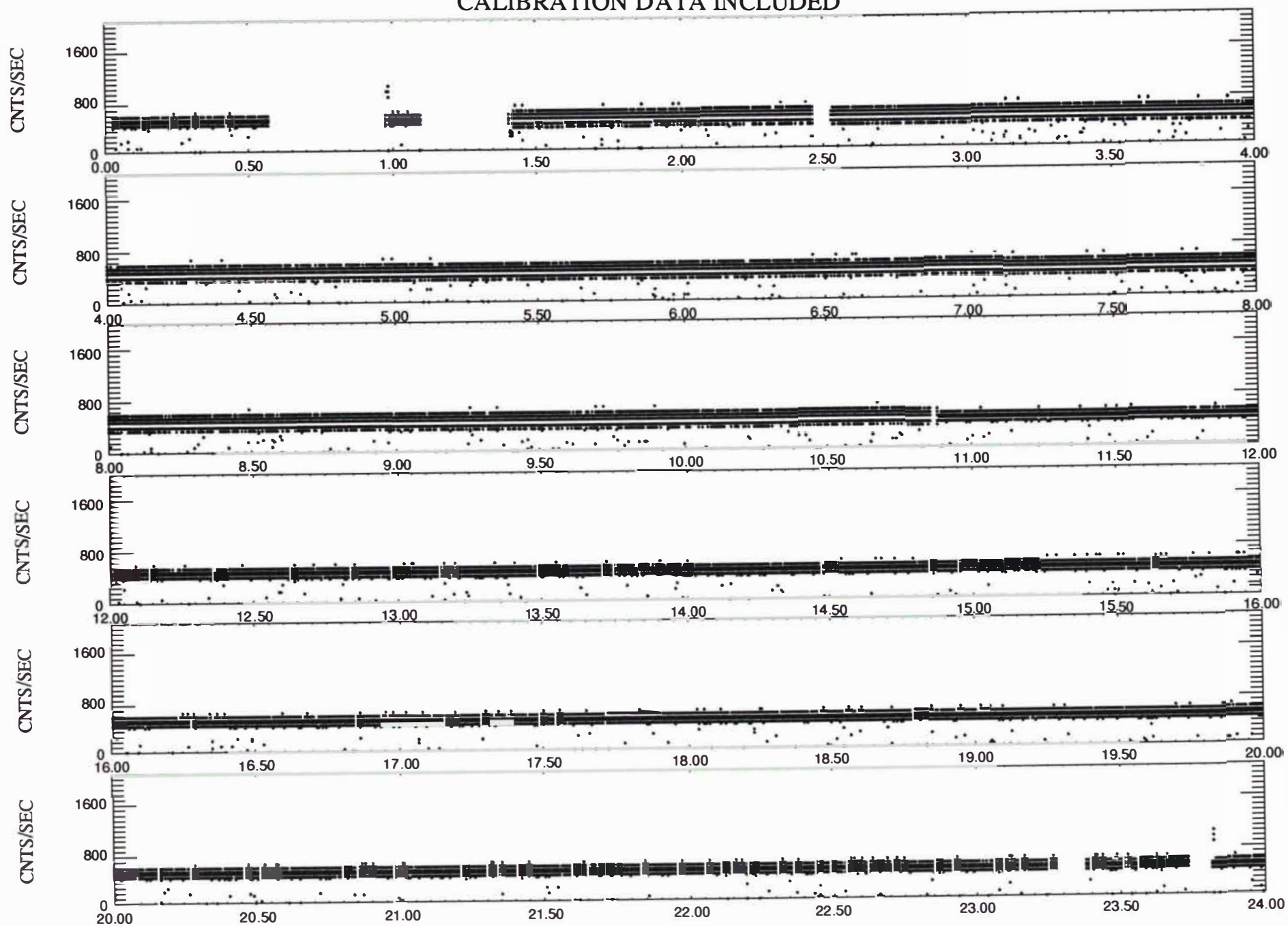
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

NO BURST (14)



CALIBRATION DATA INCLUDED



UNIV CAL TIME

