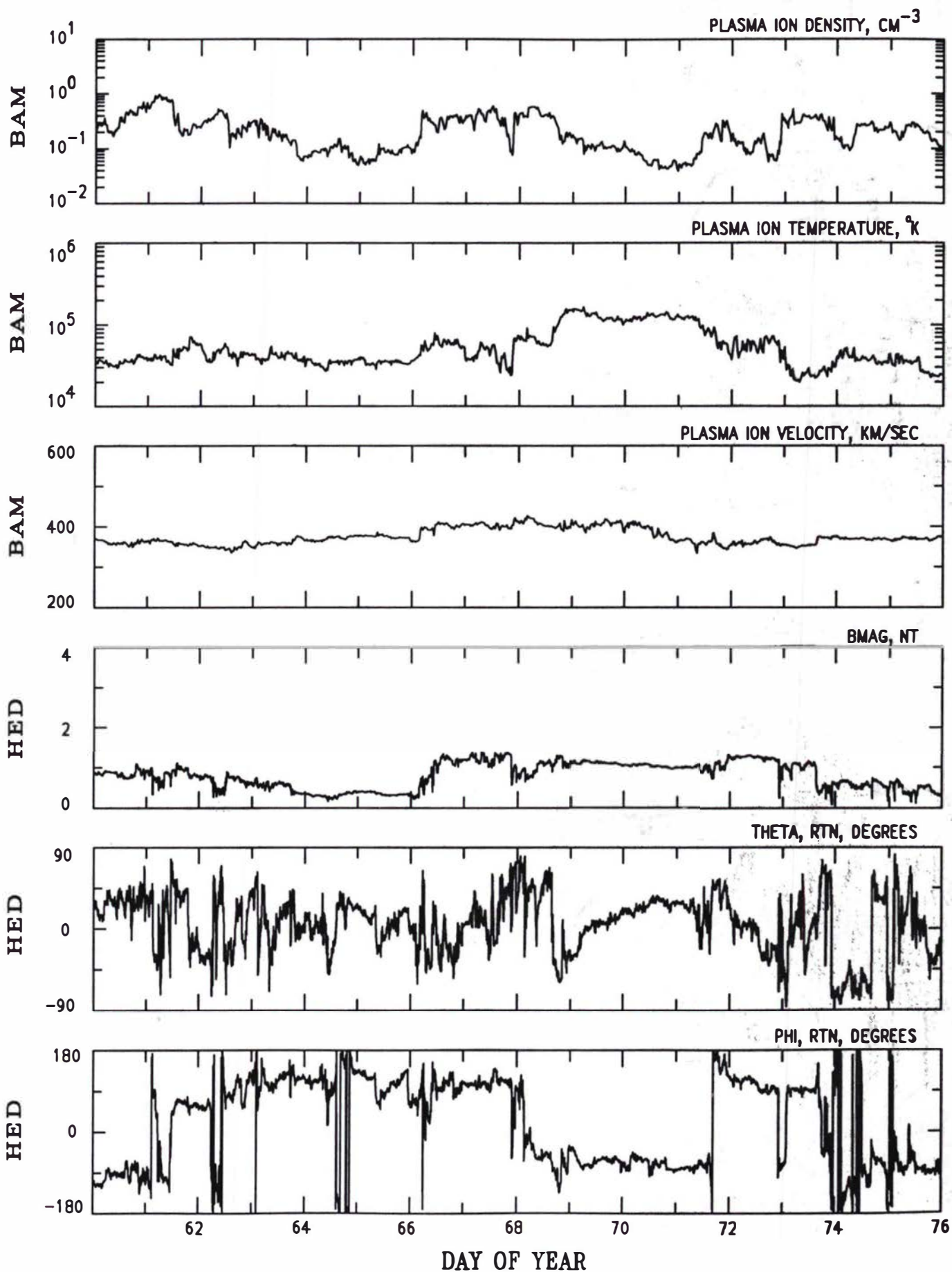


ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

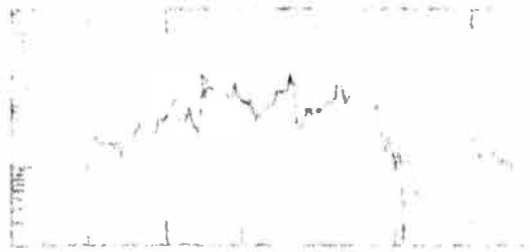
98 060 MAR 1 00:00:00.000 - 98 076 MAR 17 00:00:00.000



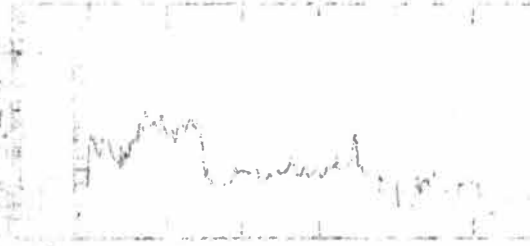
010000Z APR 68

FM 010000Z

TO 010000Z



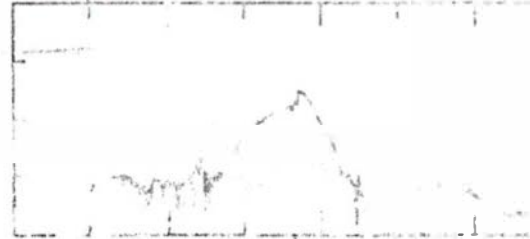
010000Z



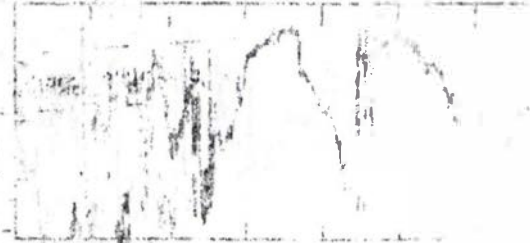
010000Z



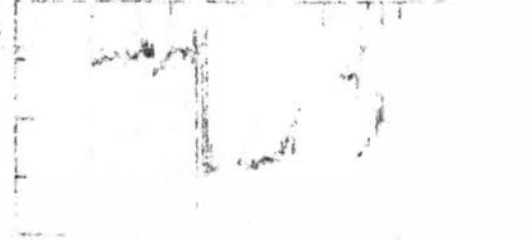
010000Z



010000Z

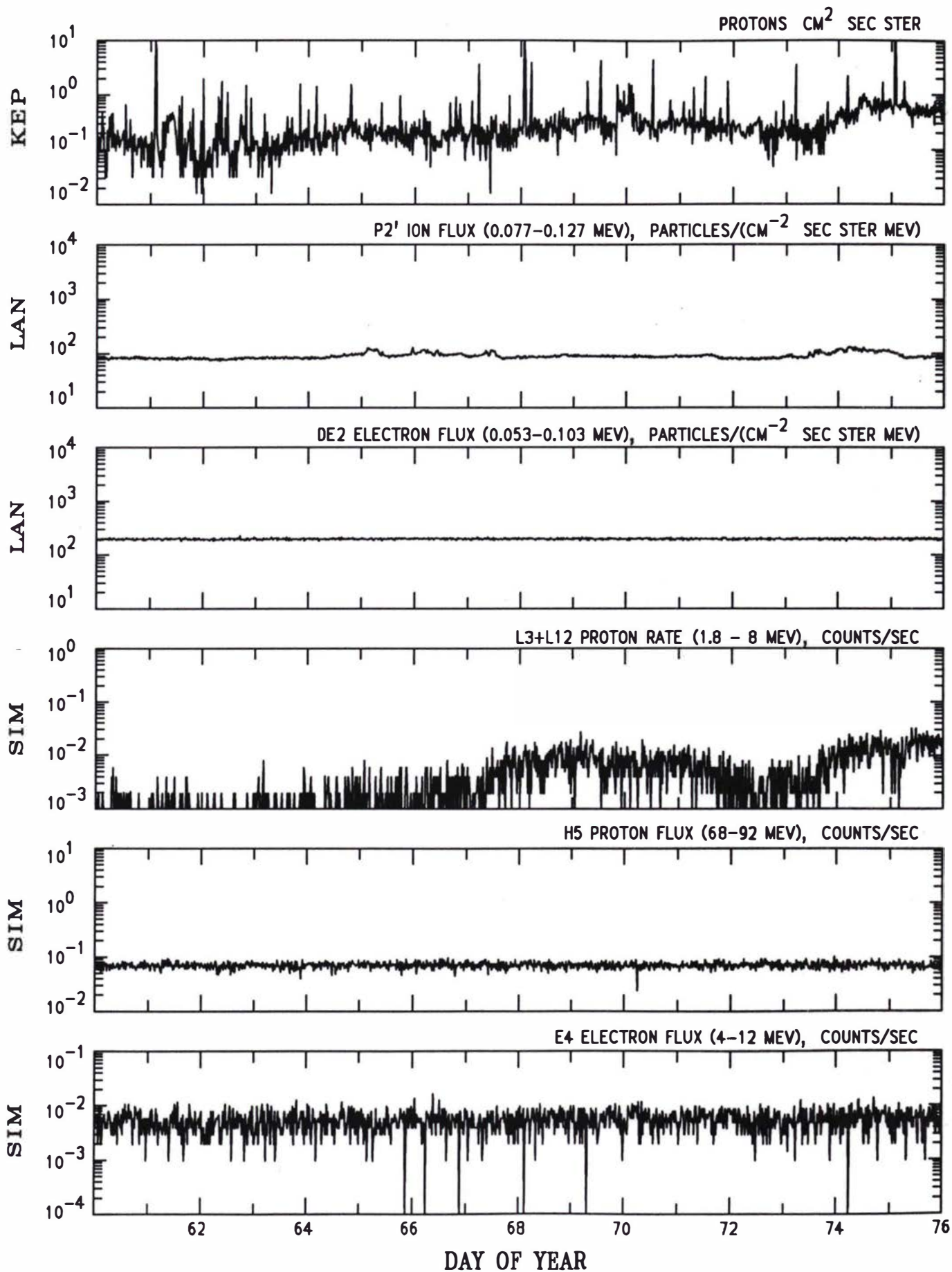


010000Z



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

98 060 MAR 1 00:00:00.000 - 98 076 MAR 17 00:00:00.000



7-12-44 3:40 PM

74-5529-5

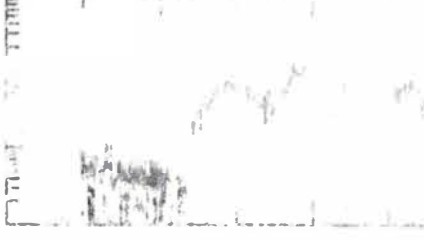
Journal of Management Inquiry 18(6)

[illegible]

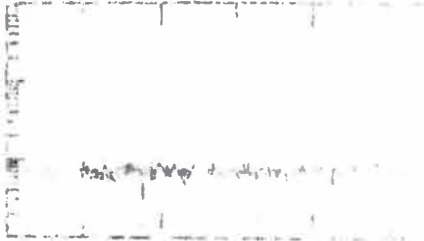
2025 RELEASE UNDER E.O. 14176



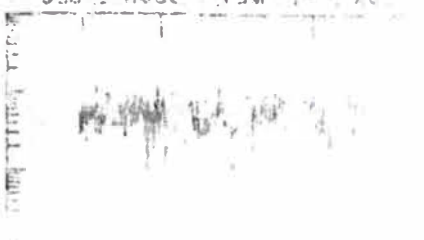
4-26-11 11:11 AM



100-271017 (MEM 00-00) 100-271017

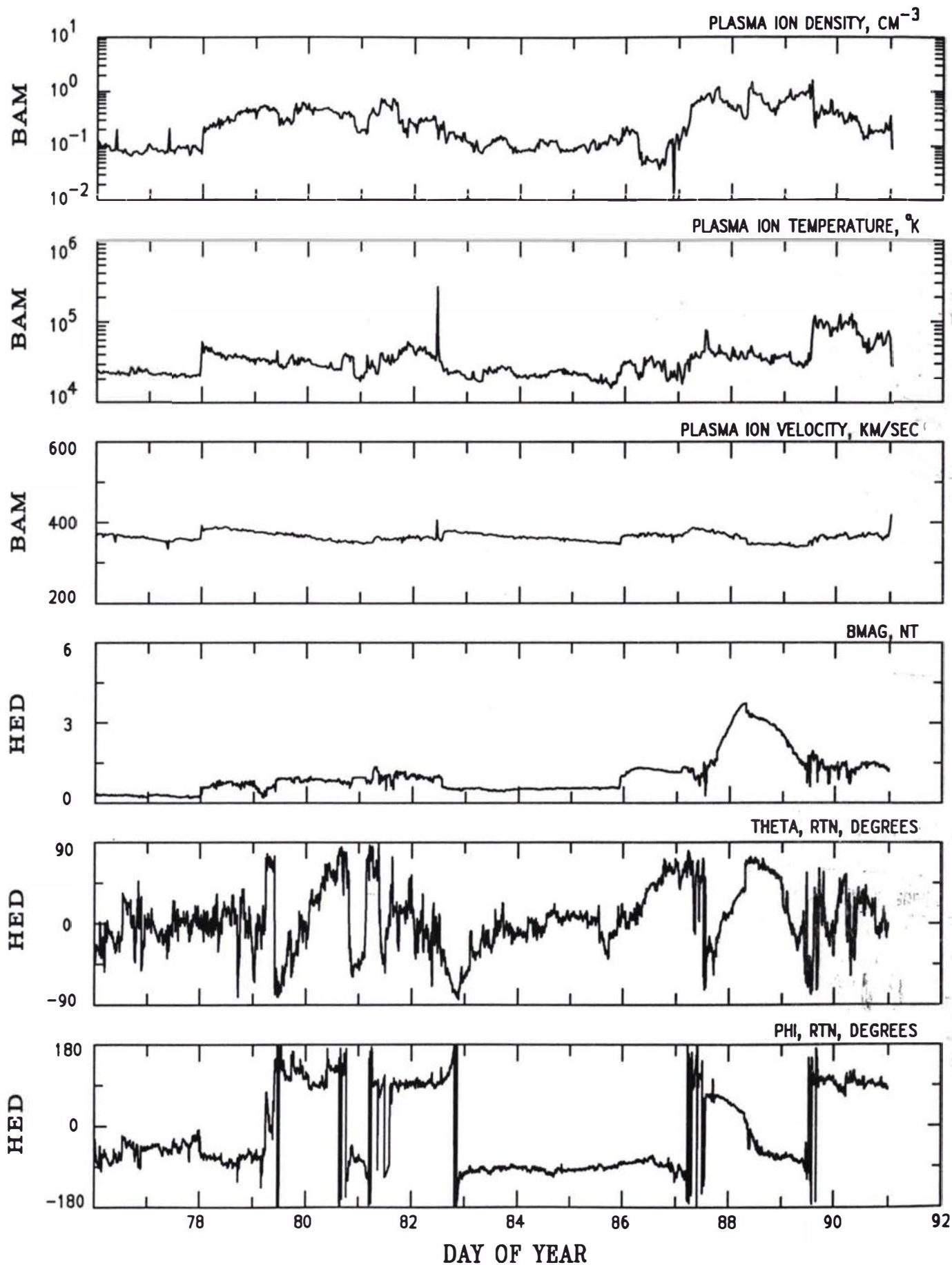


0927 2007 174 2-11



ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

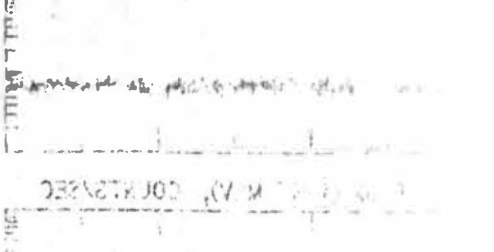
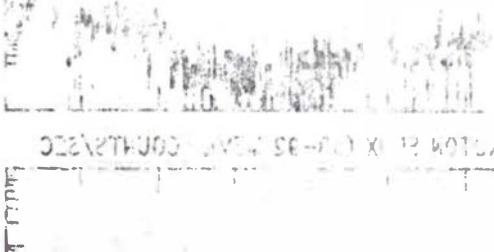
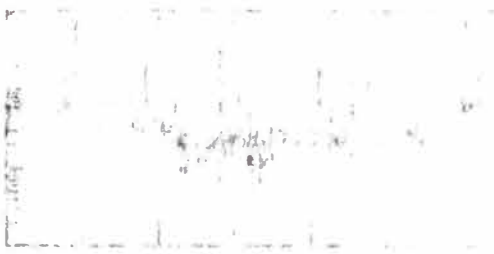
98 076 MAR 17 00:00:00.000 - 98 092 APR 2 00:00:00.000



RECORDING AND CONTROL

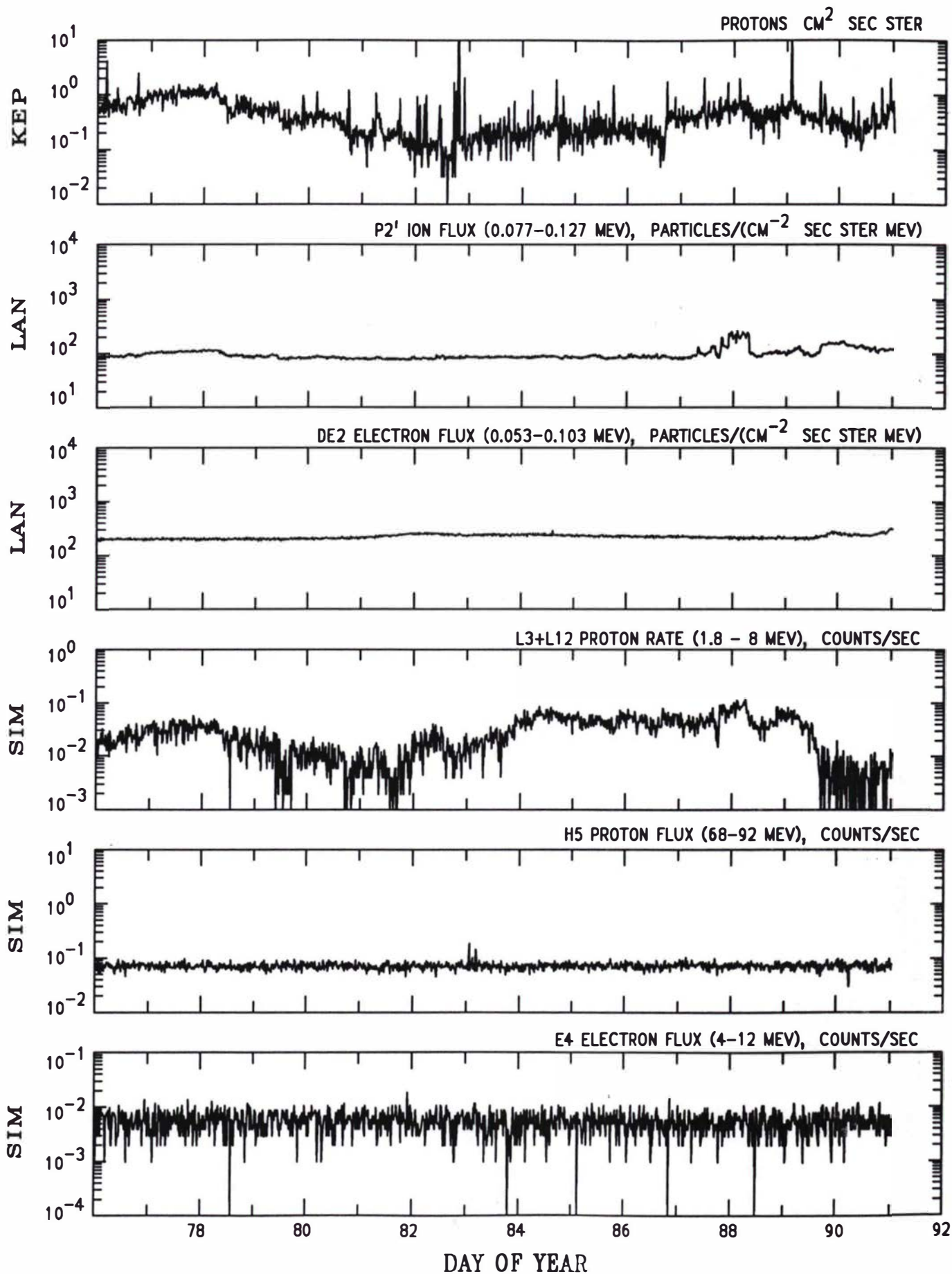
RECORDING AND CONTROL

RECORDING AND CONTROL



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

98 076 MAR 17 00:00:00.000 - 98 092 APR 2 00:00:00.000



1950-1951



1950-1951



1950-1951



1950-1951



1950-1951



1950-1951



1950-1951



1950-1951



1950-1951



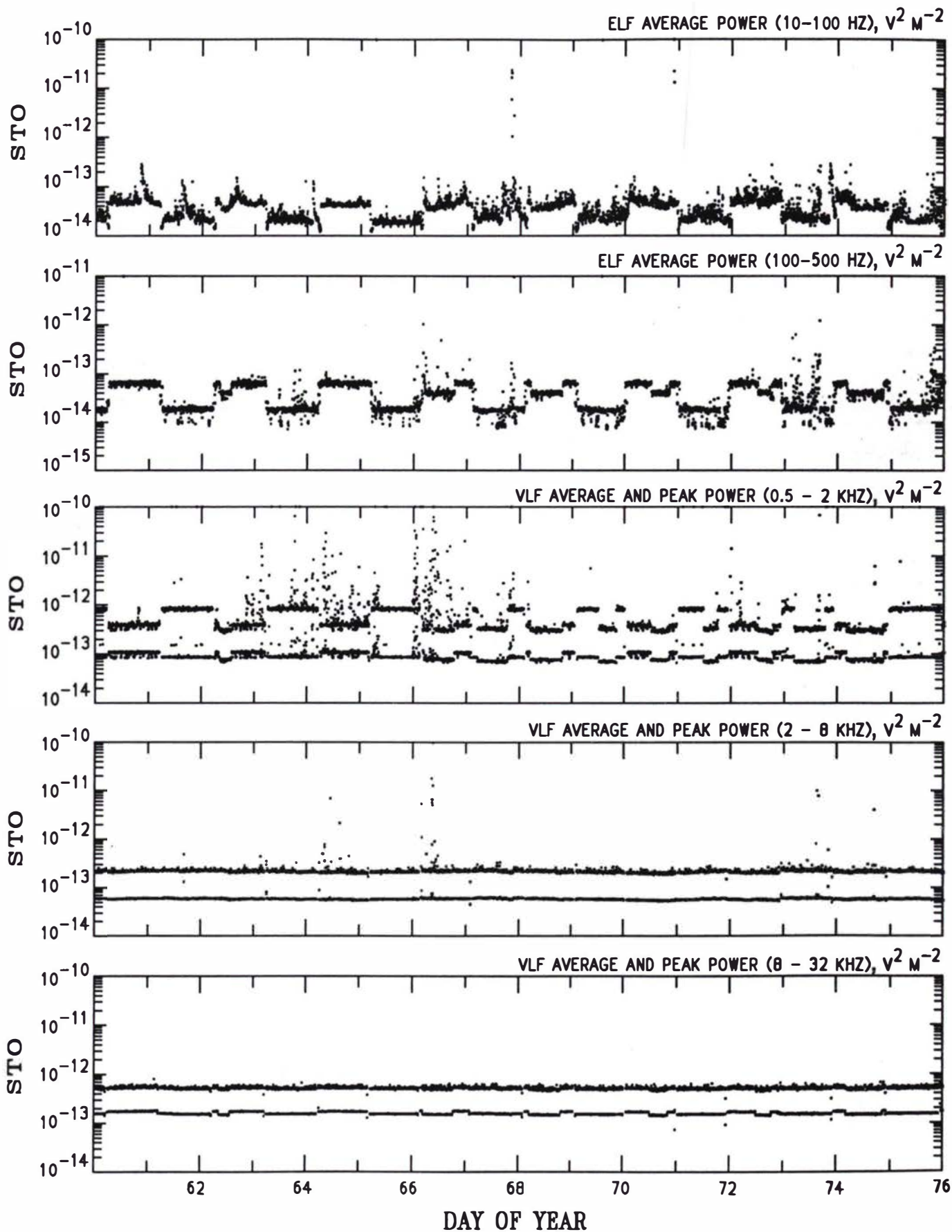
1950-1951



1950-1951

ULYSSES CDR - PLASMA WAVE

98 060 MAR 1 00:00:00.000 - 98 076 MAR 17 00:00:00.000



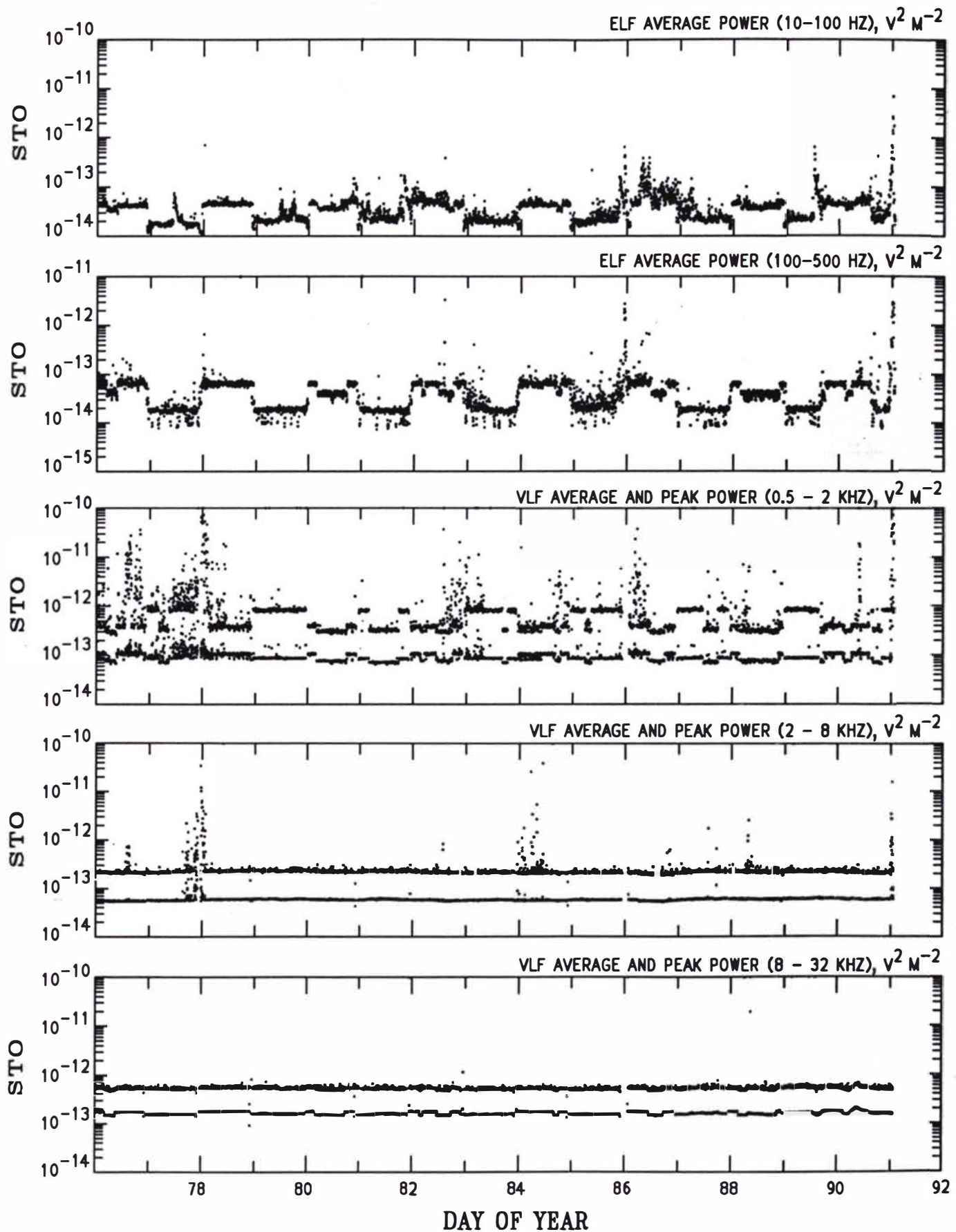
2. 2000年12月1日，甲企业向乙企业借入期限为3个月的借款100000元，年利率为6%。甲企业于2001年3月31日偿还该笔借款。甲企业应确认的利息费用为（ ）元。

5

2

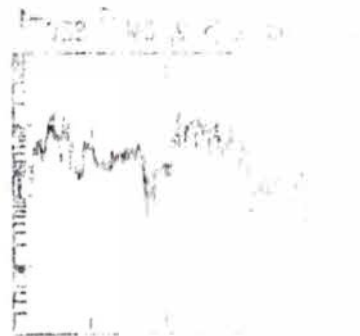
ULYSSES CDR - PLASMA WAVE

98 076 MAR 17 00:00:00.000 - 98 092 APR 2 00:00:00.000



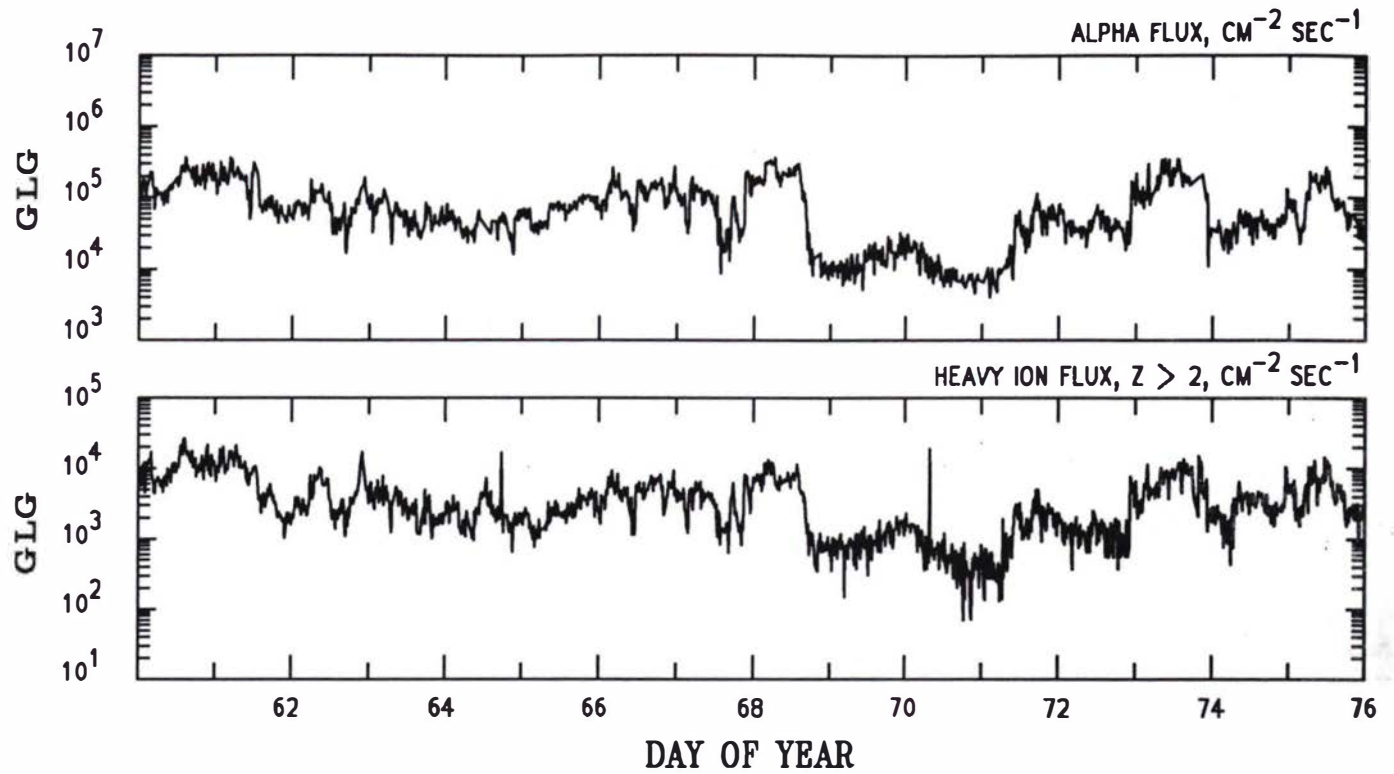
1. 10000 100000

1000000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

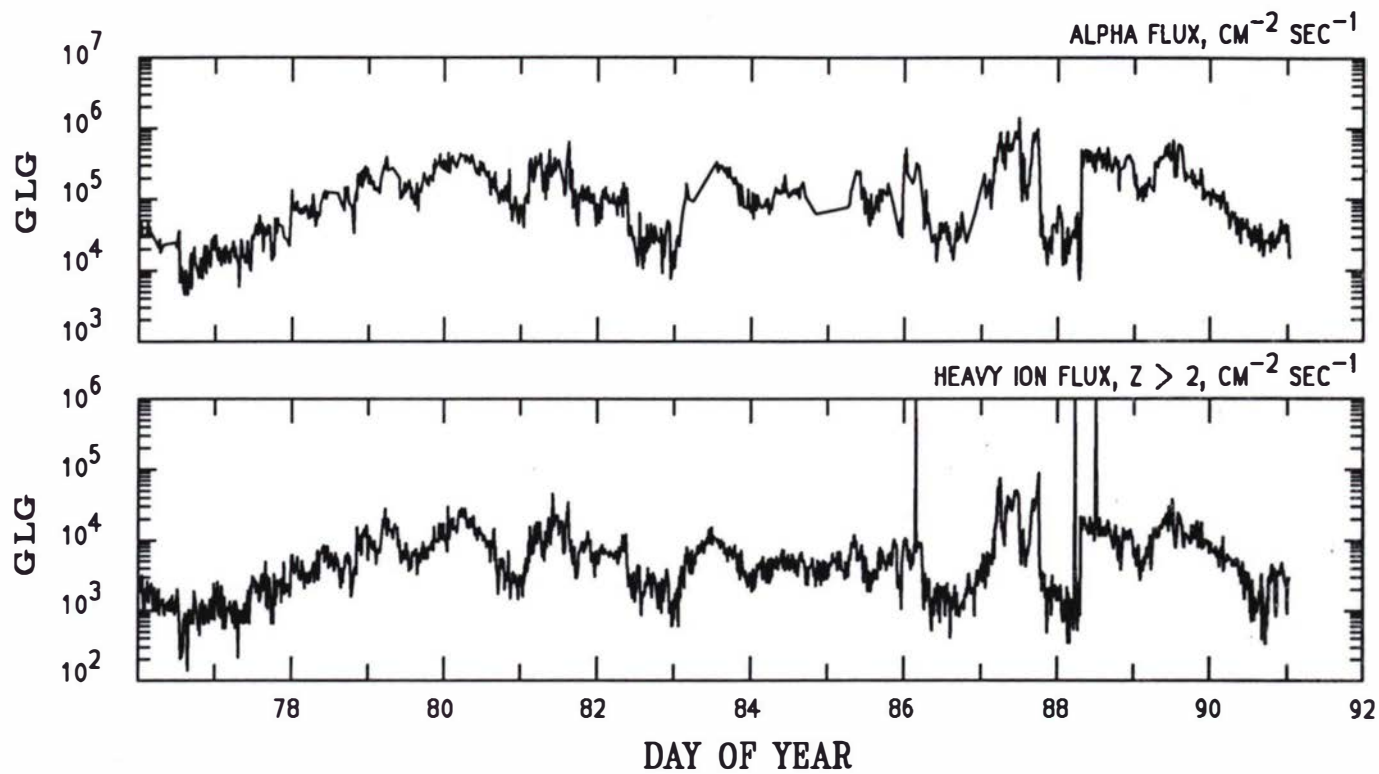
98 060 MAR 1 00:00:00.000 - 98 076 MAR 17 00:00:00.000





ULYSSES CDR - SOLAR WIND ION COMPOSITION

98 076 MAR 17 00:00:00.000 - 98 092 APR 2 00:00:00.000



From SURASAK@SSLMOR.msfc.nasa.gov Tue Mar 3 14:57:31 1998
 Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
 Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id OAA29405; Tue, 3 Mar 1998 14:57:30 -0800
 Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id OAA20281; Tue, 3 Mar 1998 14:57:28 -0800
 Date: Tue, 3 Mar 1998 16:57:30 -0600 (CST)
 From: SURASAK@SSLMOR.msfc.nasa.gov
 To: khurley@sunspot.ssl.berkeley.edu
 Message-Id: <980303165730.21e2908e@ssl.msfc.nasa.gov>
 Subject: Crossing Windows for BATSE Burst 6619
 Content-Length: 1135
 X-Lines: 26
 Status: RO

 BATSEARCH PROGRAM

BATSE BURST # 6619
 EVENT OF 1998 MAR 1 DAY OF YEAR= 60
 EVENT CROSSING TIME AT BATSE : 22018. S. OR 06:06:58.0
 COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 148.000 35.000
 BATSE PEAK COUNTING RATE: 3900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 1/ 3/ 98 IS:
 RA= 159.248 DEC= 13.080 DIST= 4.415 AU
 BATSE-ULYSSES DISTANCE = 660525797. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=155.84 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-2010.22 SECS.
 CROSSING TIME AT ULYSSES IS 20008. S. OR 05:33:27 +/- 176.06 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
 POSITION OF MARS ON 1/ 3/ 98 IS:
 RA= 357.672 DEC= -1.800 DIST= 2.318 AU
 MARS-BATSE DISTANCE = 346799520. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 43.16 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 843.78 SECS.
 CROSSING TIME AT MARS IS 22862. S. OR 06:21:01 +/- 150.20 SECONDS

BATSE BURST TRIGGER

NO.: 6619

TIME: TJD=0873 SECONDS=22018

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

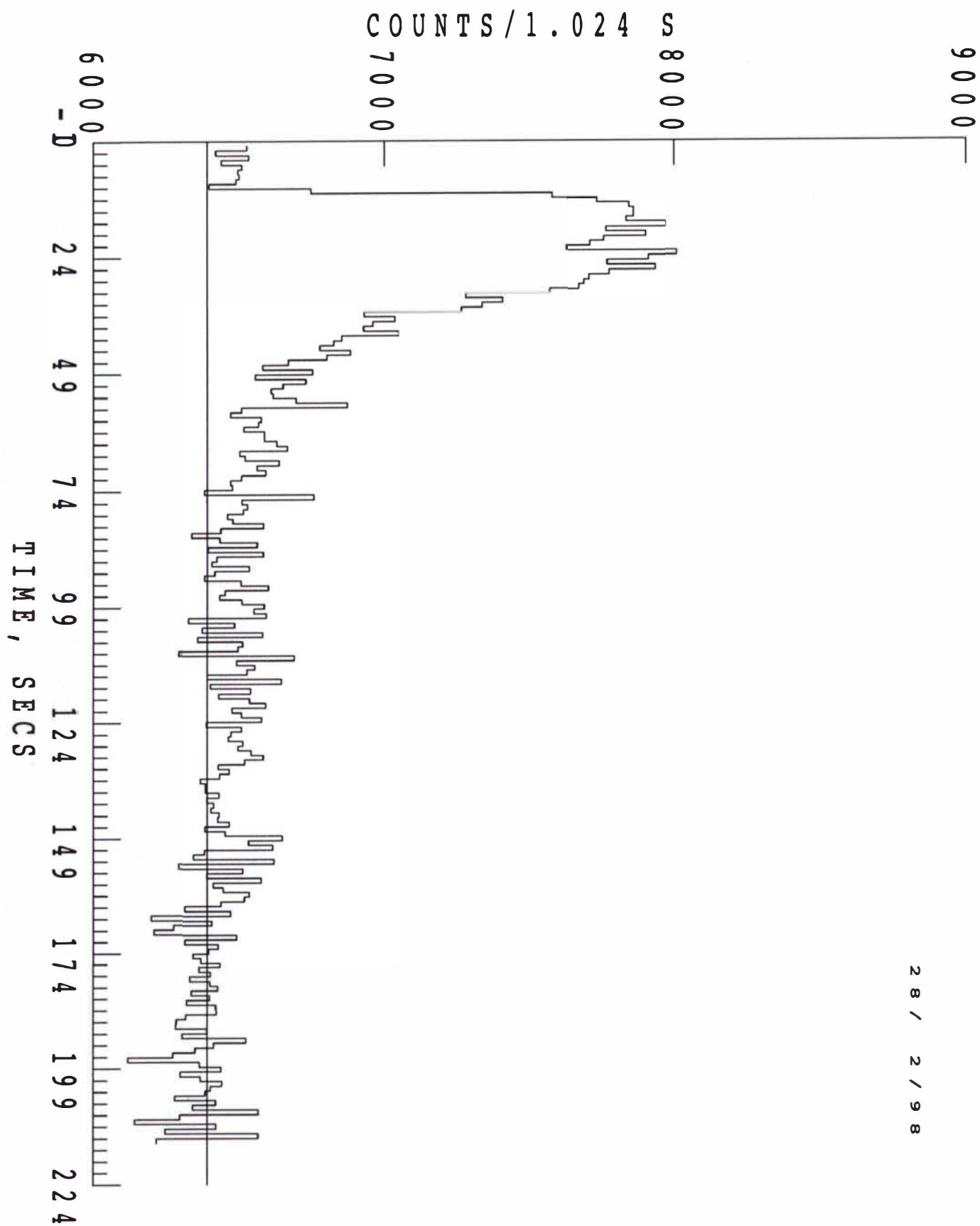
LOCATION: ZENITH=103.9 AZIMUTH=155.9 ERROR=1.27 DEGREES

COMMENTS:

GRB. SINGLE PULSE. FRED. DURATION ABOUT 45 SEC. MARGINALLY VISIBLE ABOVE
 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6619	980301	10873	22018	3900	148	+35	45

BACODINE 6619 01/03/98 22007.521
25 - 100 keV



BATSE BURST# 6619

ULYSSES RT

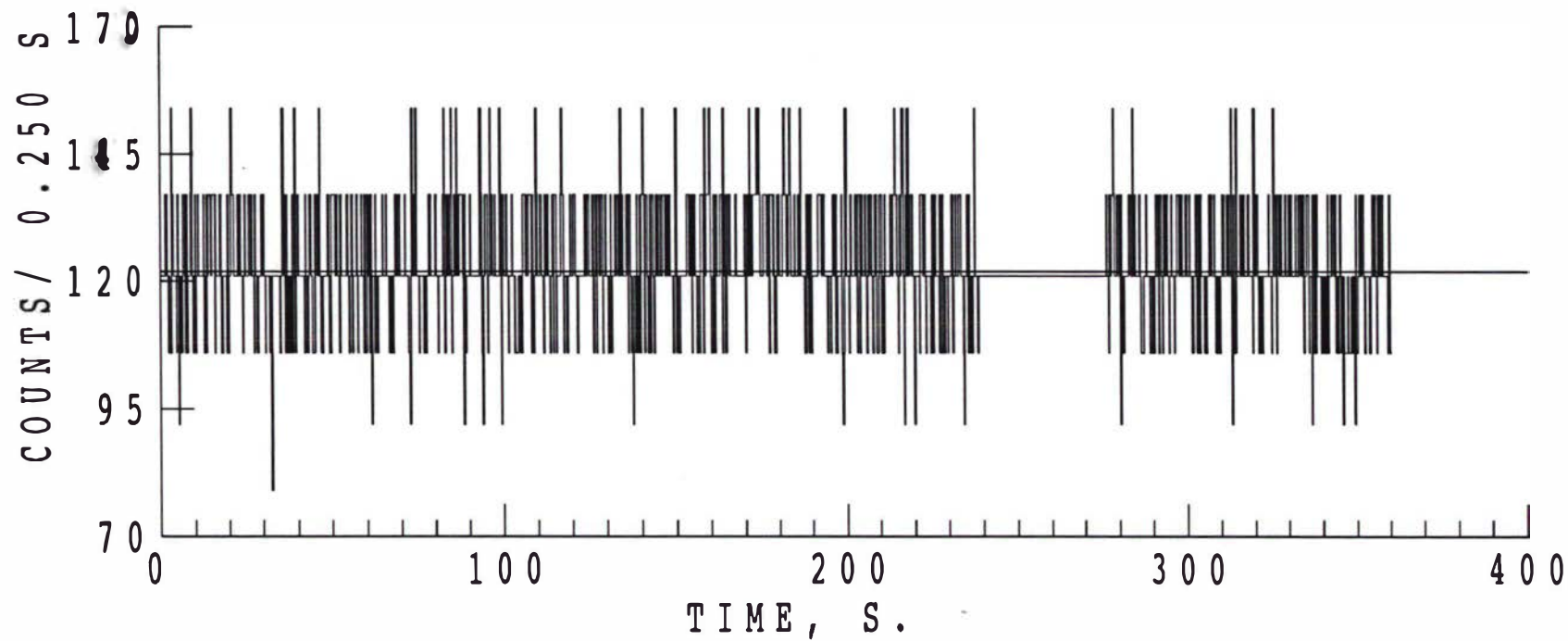
3 / 3 / 98

1 / 3 / 98 19836.084 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLMOR.msfc.nasa.gov Tue Mar 3 14:58:53 1998
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA29431; Tue, 3 Mar 1998 14:58:52 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA20310; Tue, 3 Mar 1998 14:58:50 -0800
Date: Tue, 3 Mar 1998 16:58:49 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980303165849.21e2908e@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6620
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6620
EVENT OF 1998 MAR 1 DAY OF YEAR= 60
EVENT CROSSING TIME AT BATSE : 27941. S. OR 07:45:41.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 348.000 16.000
BATSE PEAK COUNTING RATE: 3030 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 3/ 98 IS:
RA= 159.233 DEC= 13.081 DIST= 4.415 AU
BATSE-ULYSSES DISTANCE = 660540991. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 30.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1901.45 SECS.
CROSSING TIME AT ULYSSES IS 29842. S. OR 08:17:22 +/- 272.14 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 3/ 98 IS:
RA= 357.672 DEC= -1.800 DIST= 2.318 AU
MARS-BATSE DISTANCE = 346799520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=159.80 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1085.62 SECS.
CROSSING TIME AT MARS IS 26855. S. OR 07:27:35 +/- 52.87 SECONDS

BATSE BURST TRIGGER

NO.: 6620

TIME: TJD=0873 SECONDS=27941

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=21.4 AZIMUTH=337.0 ERROR=3.29 DEGREES

COMMENTS:

GRB. DOUBLE PULSE WITH SPIKEY SUBSTRUCTURE. DURATION ABOUT 110 SEC, STARTS AT ABOUT T-75 SEC, MAX AT ABOUT T+18 SEC. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6620	980301	10873	27941	3030	348	+16	110

BATSE BURST# 6620

ULYSSES RT

3 / 3 / 98

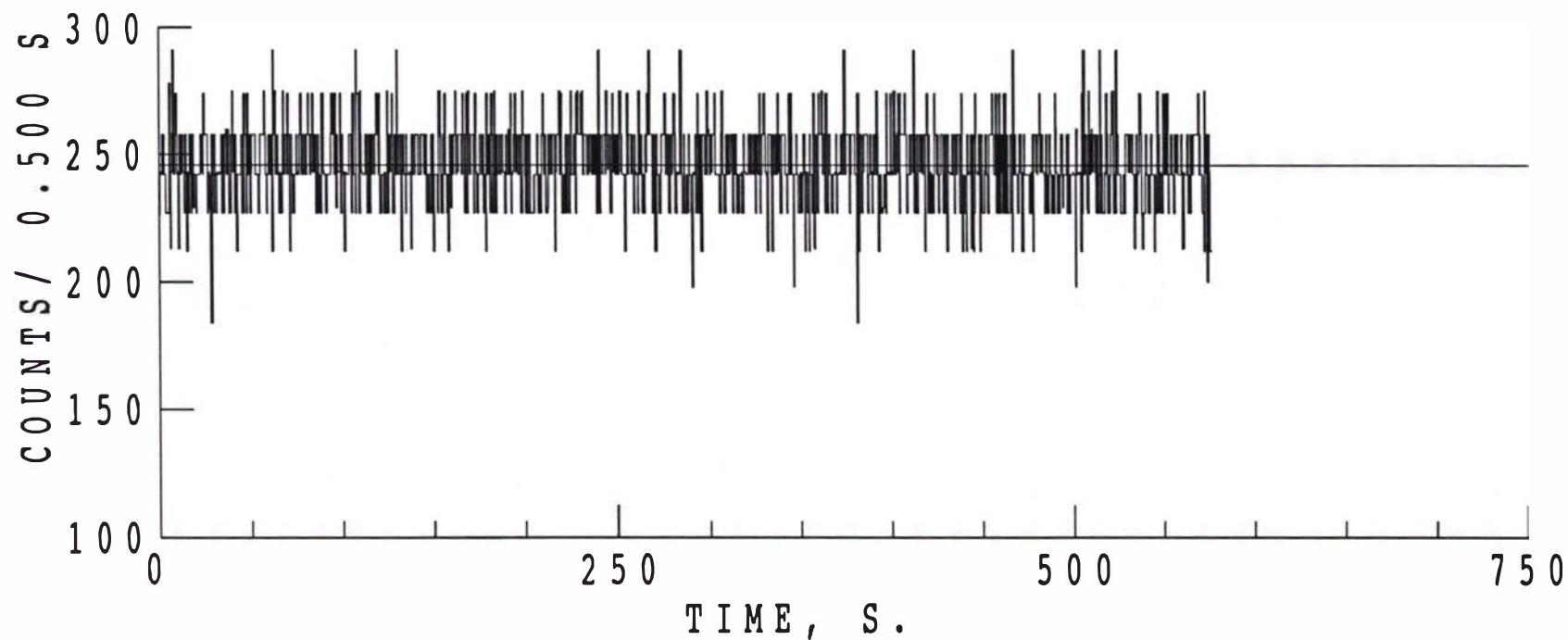
1 / 3 / 98 29556.191 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLMOR.msfc.nasa.gov Tue Mar 3 15:00:01 1998
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA29452; Tue, 3 Mar 1998 14:59:59 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA20333; Tue, 3 Mar 1998 14:59:57 -0800
Date: Tue, 3 Mar 1998 17:00:00 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980303170000.21e2908e@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6621
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6621
EVENT OF 1998 MAR 1 DAY OF YEAR= 60
EVENT CROSSING TIME AT BATSE : 32334. S. OR 08:58:54.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 99.000 -31.000
BATSE PEAK COUNTING RATE: 9600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 3/ 98 IS:
RA= 159.222 DEC= 13.083 DIST= 4.415 AU
BATSE-ULYSSES DISTANCE = 660552404. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=107.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -656.77 SECS.
CROSSING TIME AT ULYSSES IS 31677. S. OR 08:47:57 +/- 405.18 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 3/ 98 IS:
RA= 357.672 DEC= -1.800 DIST= 2.318 AU
MARS-BATSE DISTANCE = 346799520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 81.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 175.96 SECS.
CROSSING TIME AT MARS IS 32510. S. OR 09:01:49 +/- 201.17 SECONDS

BATSE BURST TRIGGER

NO.: 6621

TIME: TJD=0873 SECONDS=32334

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.5 AZIMUTH=69.3 ERROR=0.758 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, DURATION ABOUT 58 SEC. FIRST PULSE IS A SMALL PULSE, STARTS
AT ABOUT T-3 SEC, LASTS ABOUT 13 SEC. AT ABOUT T+31 SEC LATER SHOWS A MUCH
STRONGER PULSE, DURATION ABOUT 25 SEC. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6621	980301	10873	32334	9600	099	-31	58

Helio corr removed 21/2/00

Date: July 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? *N/A*
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No*

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

3. PVO Data

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

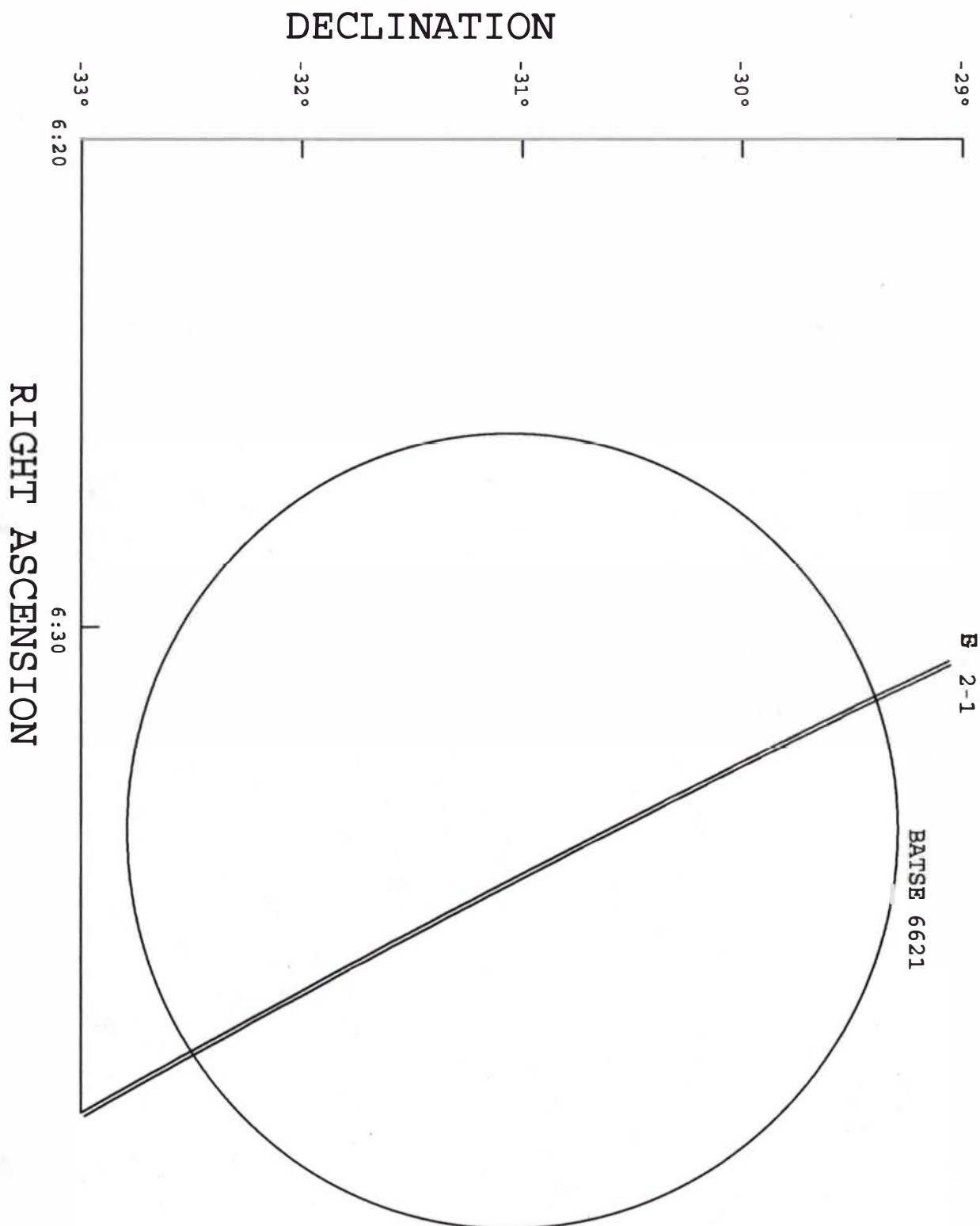
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAR 1, 1998 8:48

21 / 2 / 0



ULYSSES

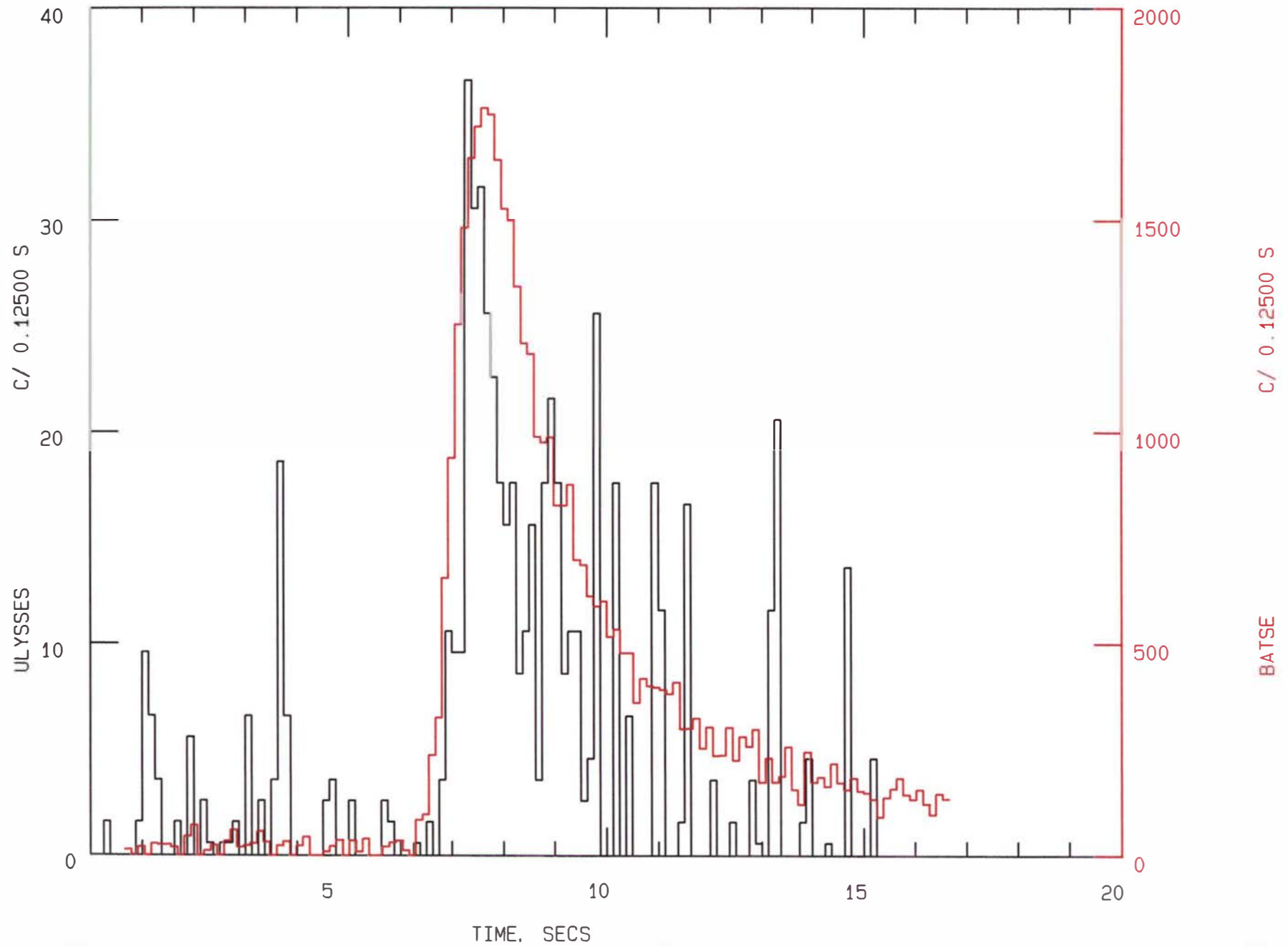
-BATSE

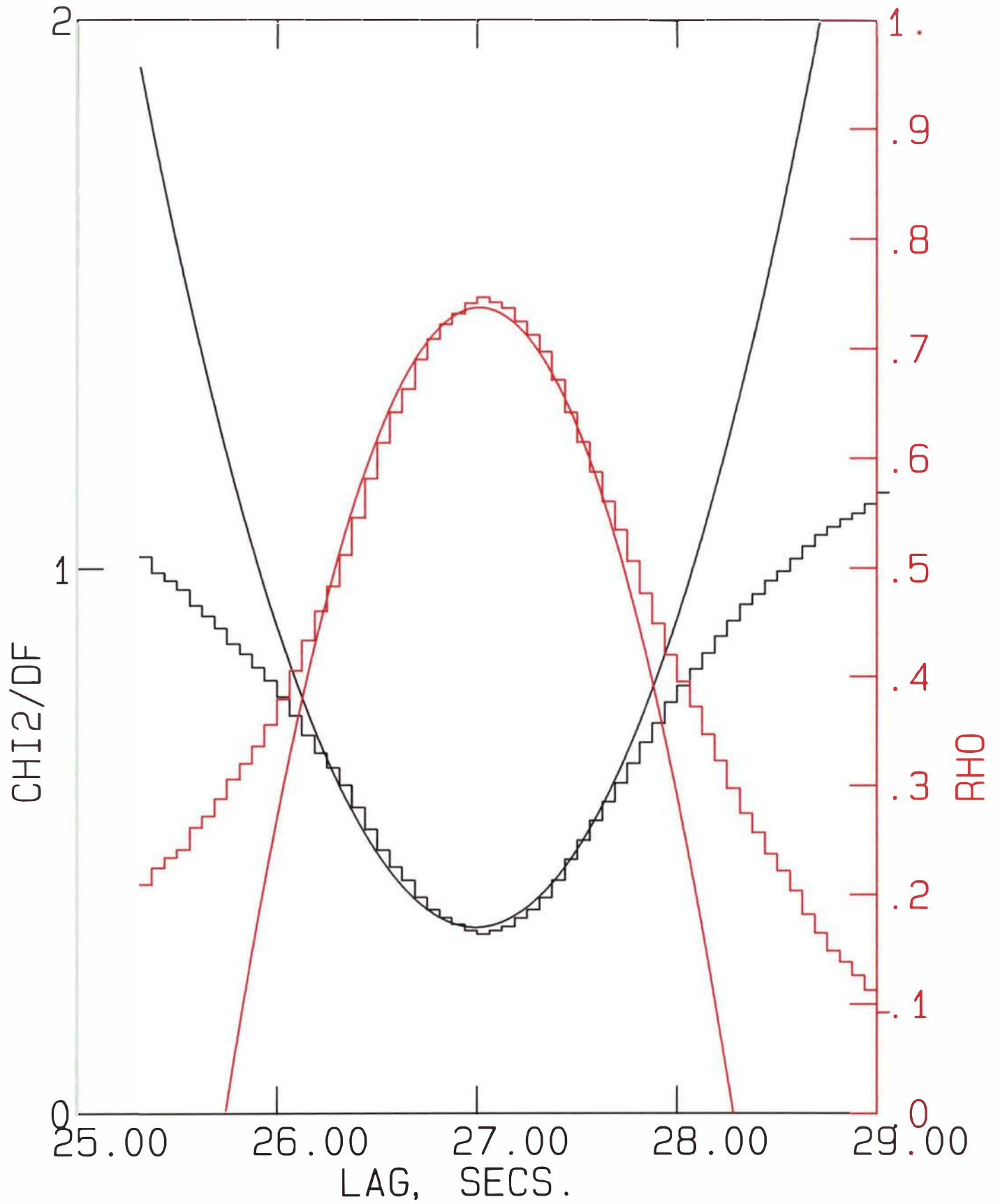
CORRELATION

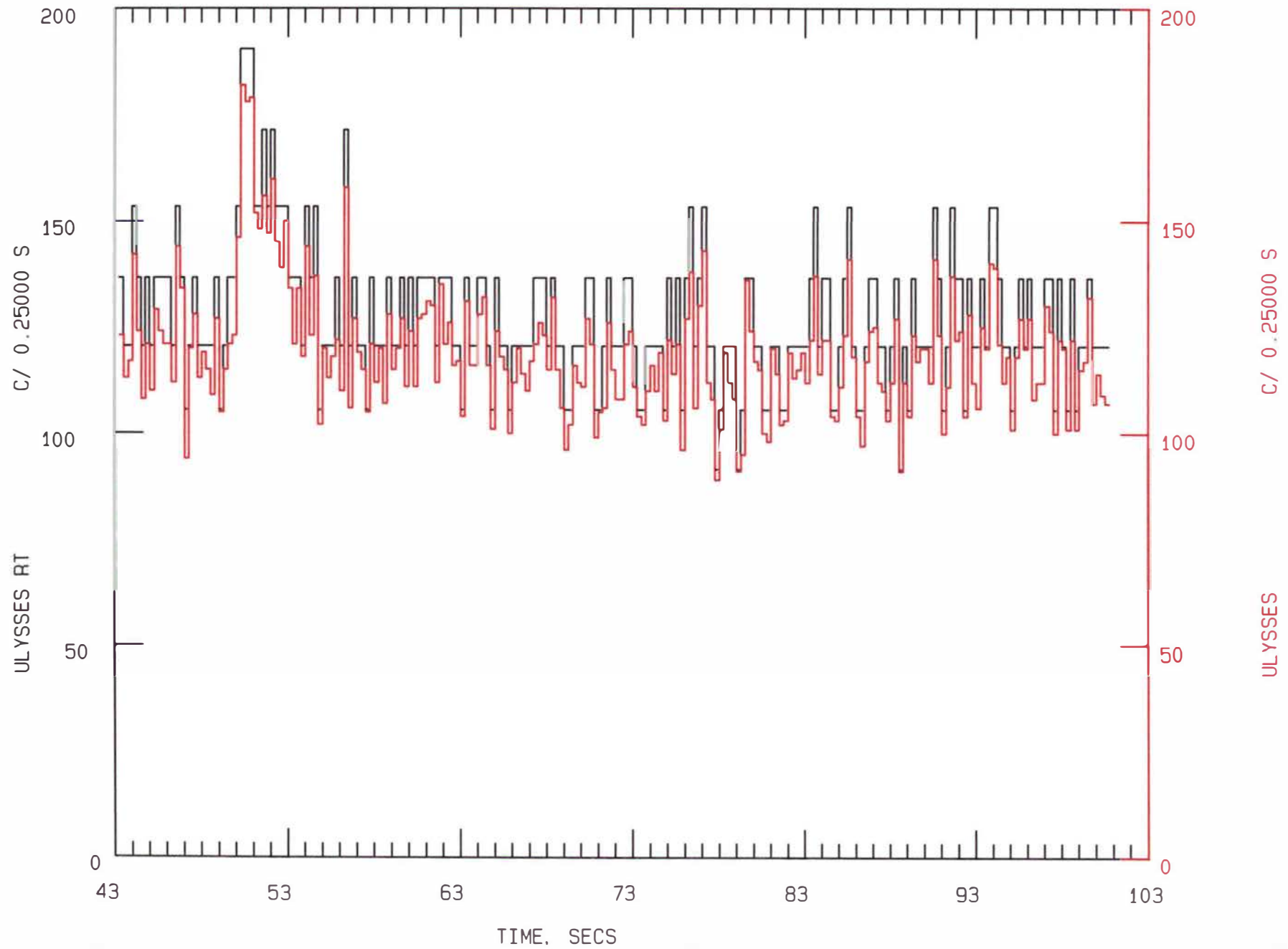
01/03/98

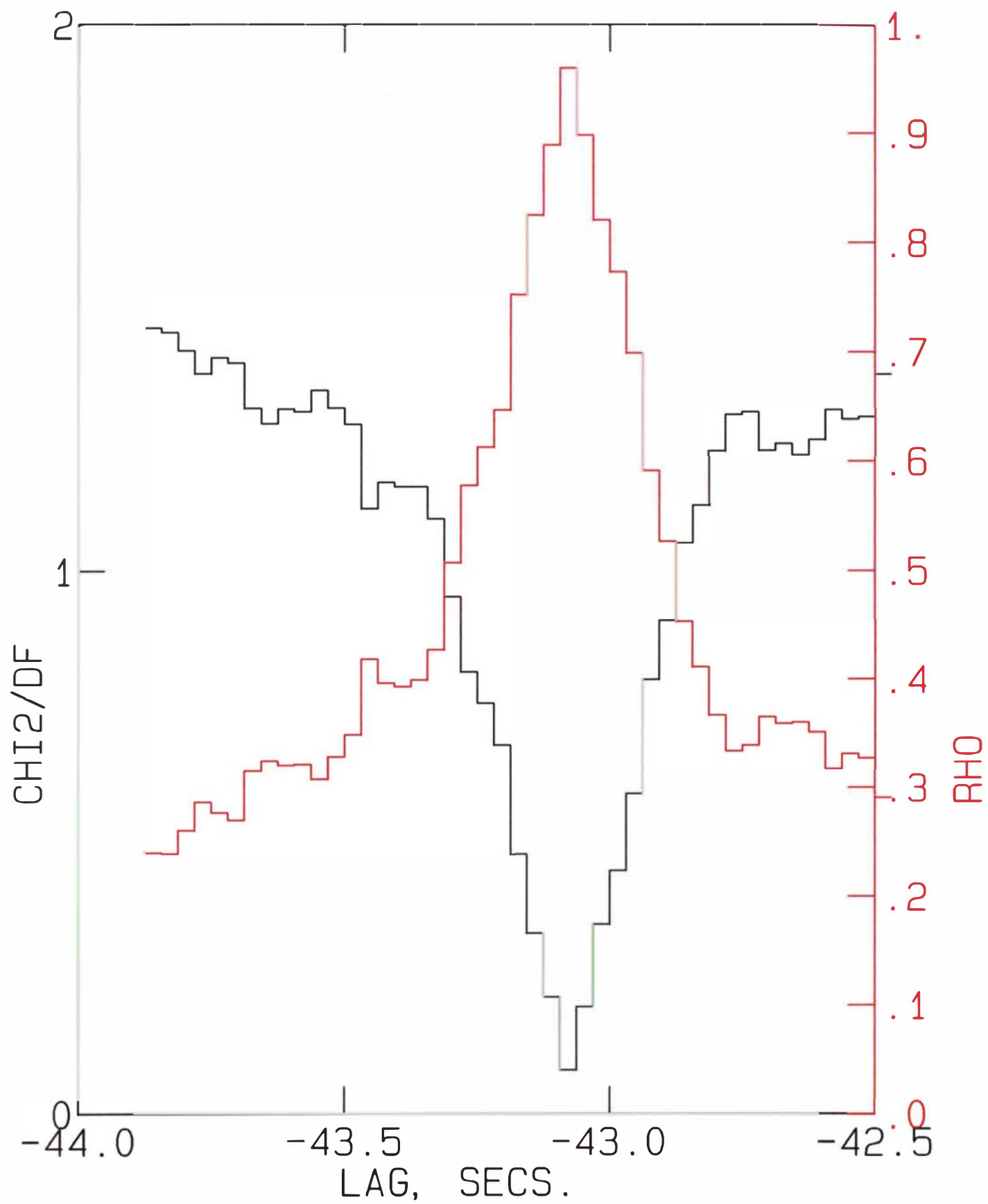
31734.692

28/ 7/98





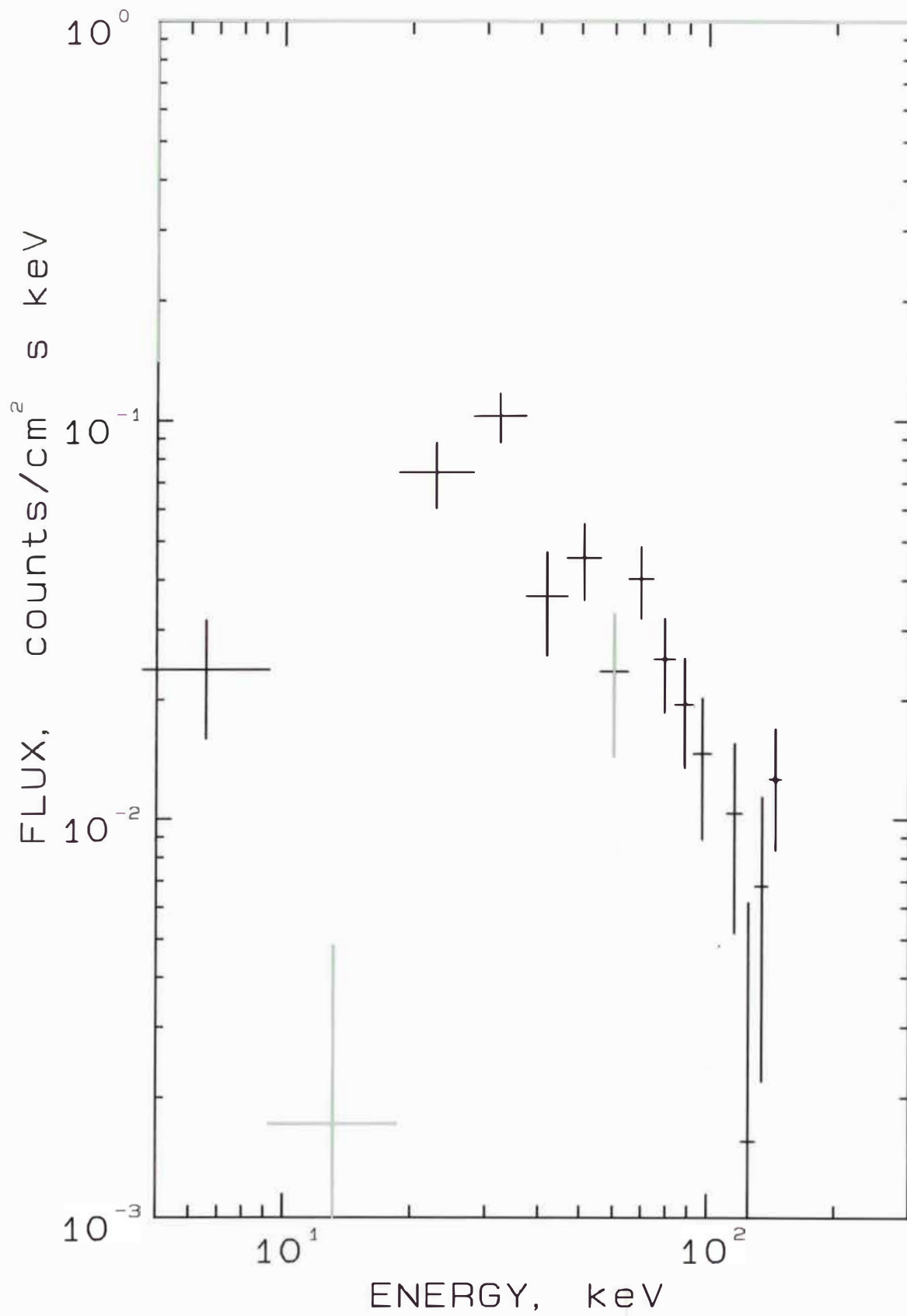




ULYSSES 01/03/98 31734.702

28/ 7/98

SPECTRUM INTEGRATED OVER 21.0 SECONDS, INTERVALS 2 TO 20



ULYSSES 01/03/98 31734.702 BURST SPECTRAL COUNT RATES

4- 18 keV

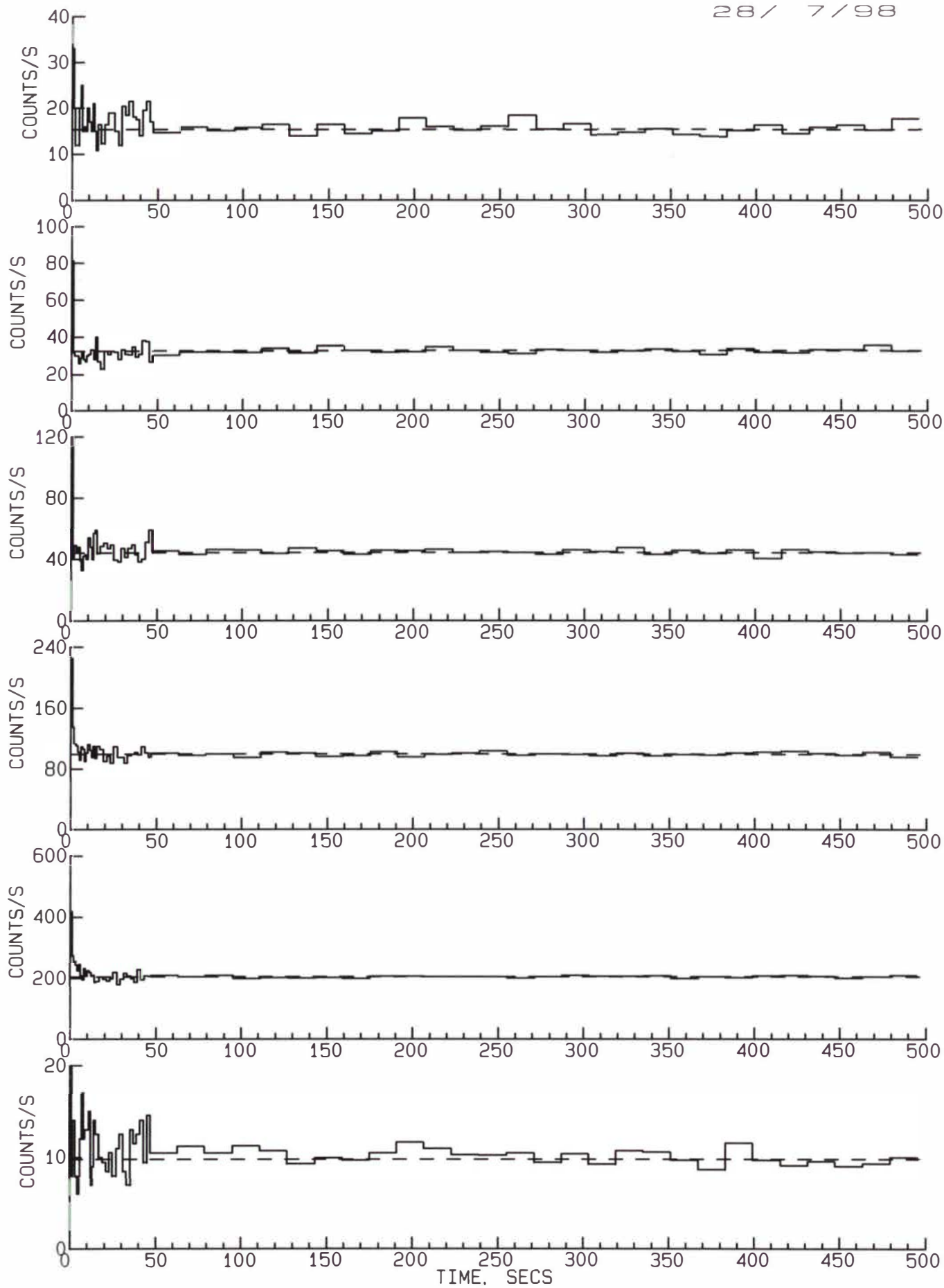
18- 46 keV

46- 74 keV

74-102 keV

102-129 keV

129-148 keV



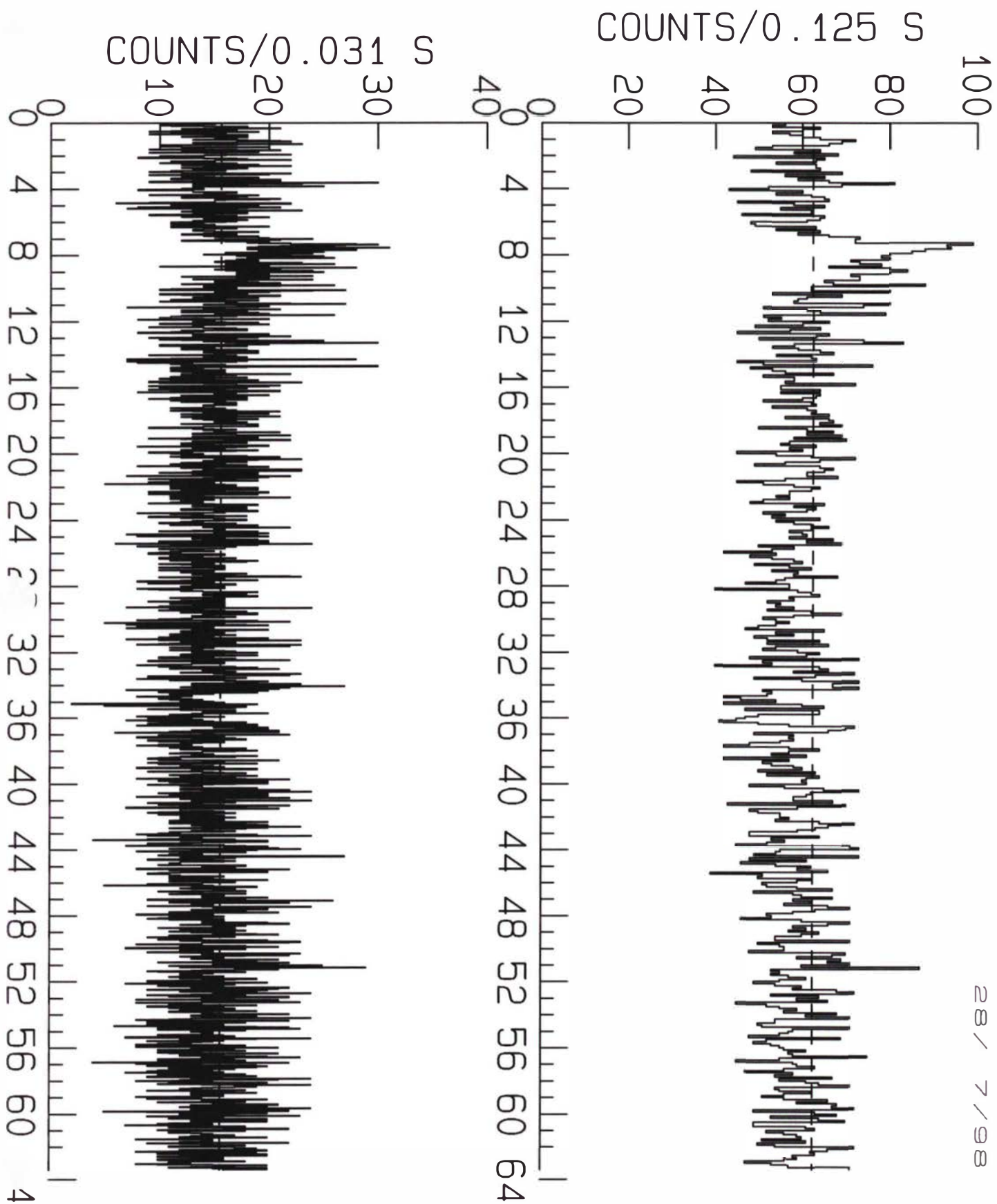
ULYSSES

01/03/98

Ttrig=31734.692

22- 148 keV

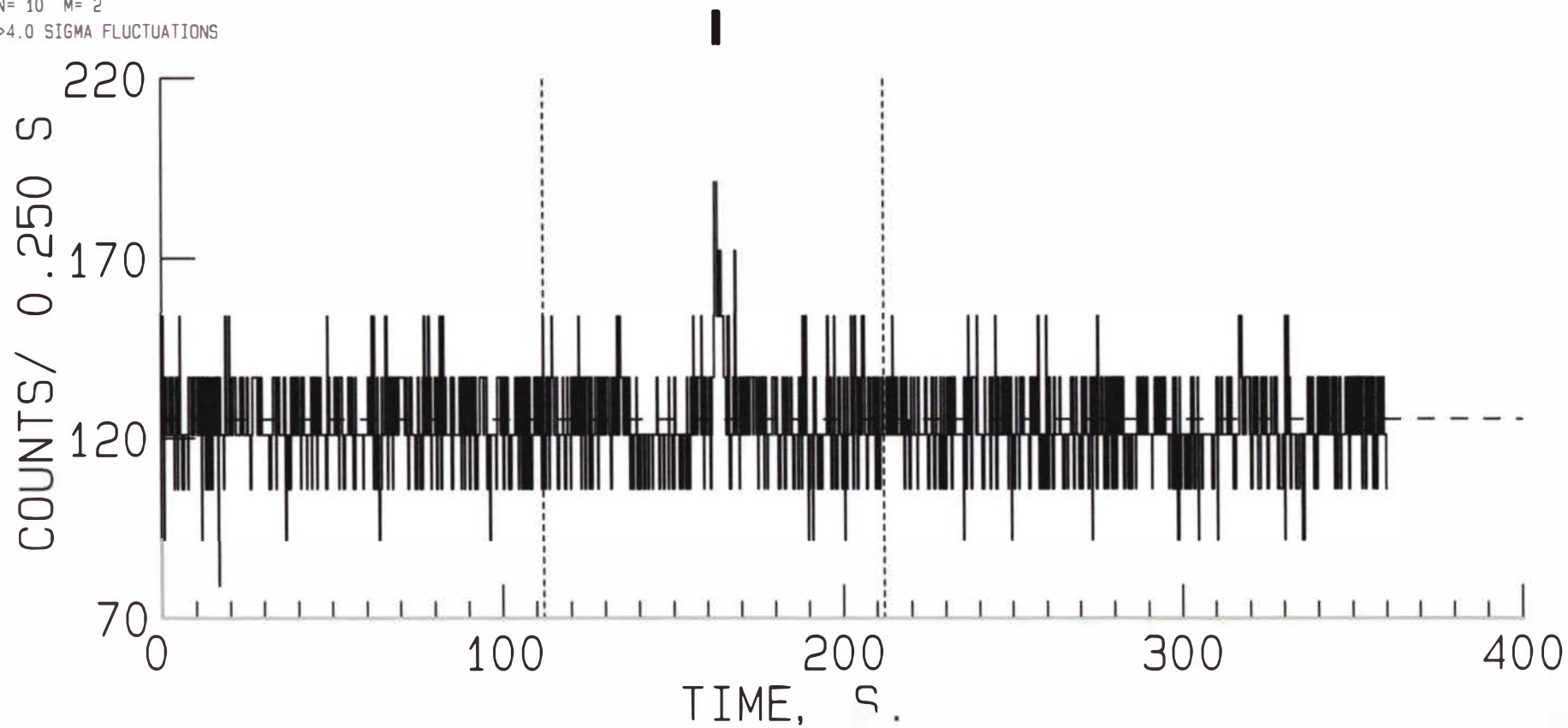
28 / 7 / 98



ULYSSES RT
1/ 3/98 31572.217 s
22- 148 keV

28 / 7 / 98

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



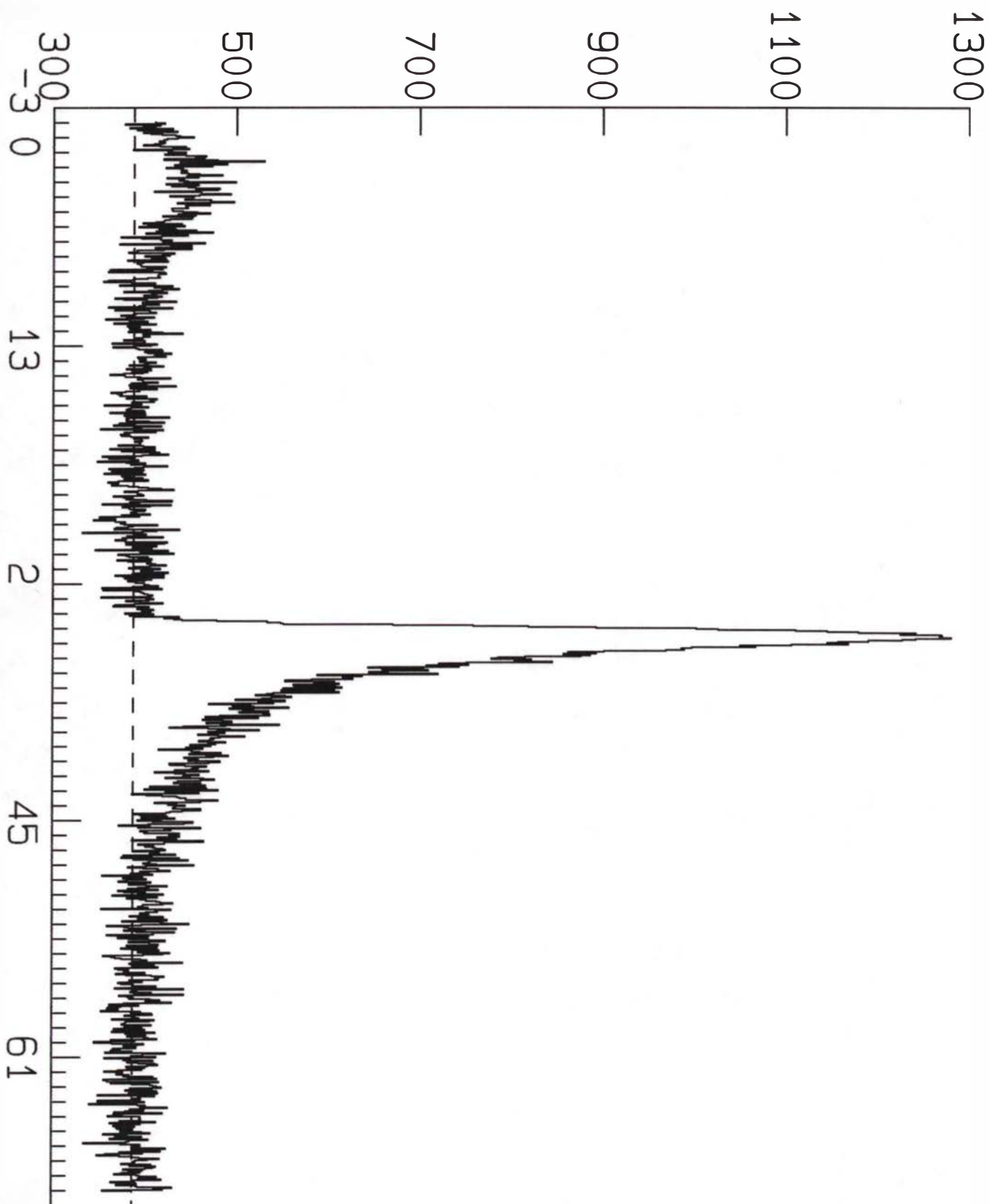
BATSE

01/03/98

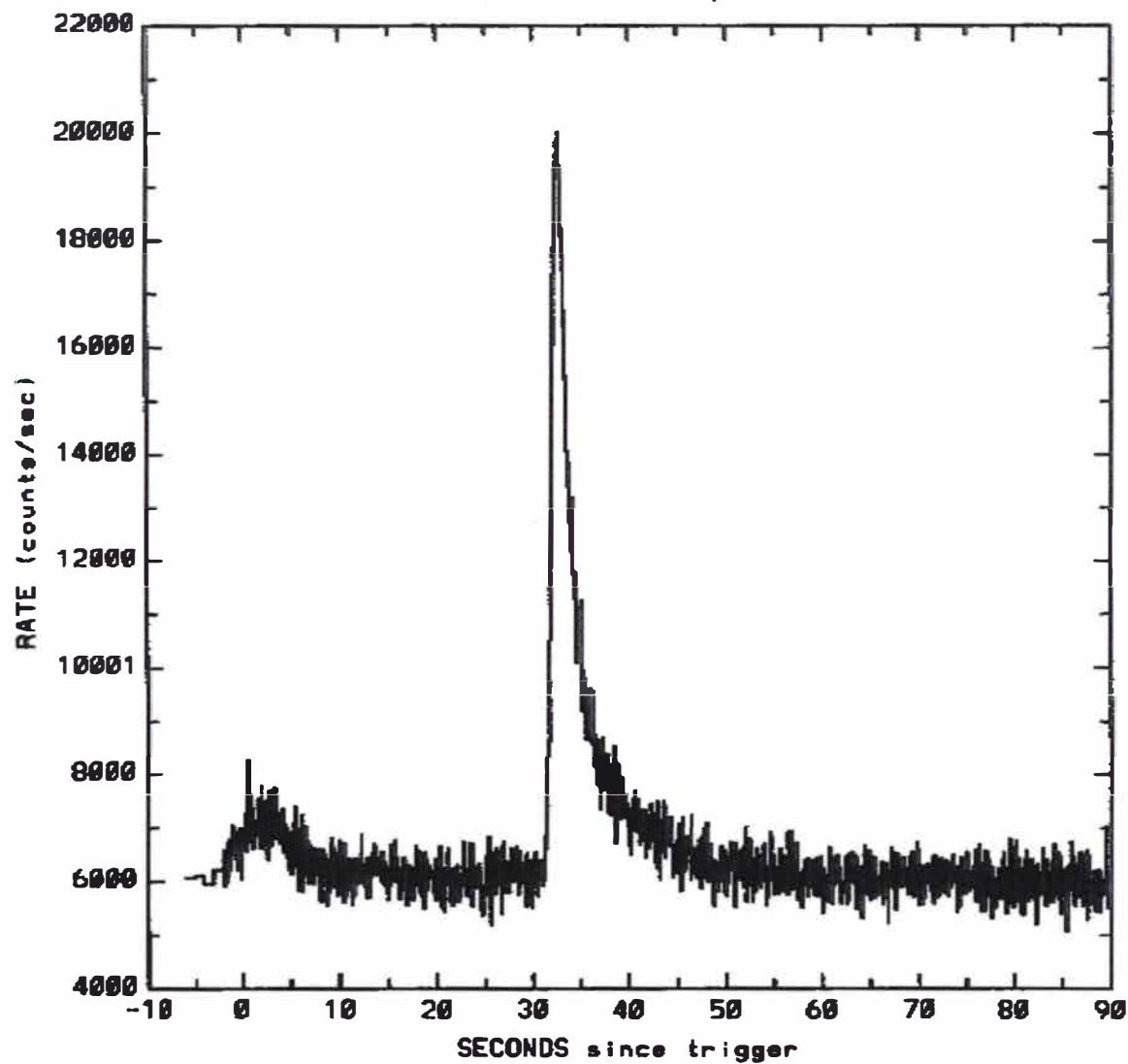
32334.561

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6621



5-MAR-1998 09:55:11

Created by MOPS 80
(Burst Display)
Version 42.25

Trigger # : 6621

Trigger Time:
10873 / 32334.561Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8].
--5--1-Discriminators:
1 1 . 2 }Quality Mask:
BDISP1

From SURASAK@SSLMOR.msfc.nasa.gov Tue Mar 3 15:01:02 1998
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id PAA29505; Tue, 3 Mar 1998 15:01:01 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id PAA20379; Tue, 3 Mar 1998 15:00:59 -0800
Date: Tue, 3 Mar 1998 17:01:01 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980303170101.21e2908e@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6622
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6622
EVENT OF 1998 MAR 1 DAY OF YEAR= 60
EVENT CROSSING TIME AT BATSE : 45737. S. OR 12:42:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 1.000 48.000
BATSE PEAK COUNTING RATE: 3720 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 1/ 3/ 98 IS:
RA= 159.186 DEC= 13.086 DIST= 4.416 AU
BATSE-ULYSSES DISTANCE = 660587858. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 64.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 962.55 SECS.
CROSSING TIME AT ULYSSES IS 46700. S. OR 12:58:19 +/- 408.75 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 1/ 3/ 98 IS:
RA= 357.672 DEC= -1.800 DIST= 2.318 AU
MARS-BATSE DISTANCE = 346799520. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=130.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -745.35 SECS.
CROSSING TIME AT MARS IS 44992. S. OR 12:29:51 +/- 142.27 SECONDS

BATSE BURST TRIGGER

NO.: 6622

TIME: TJD=0873 SECONDS=45737

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=11.7 AZIMUTH=164.5 ERROR=1.464 DEGREES

COMMENTS:

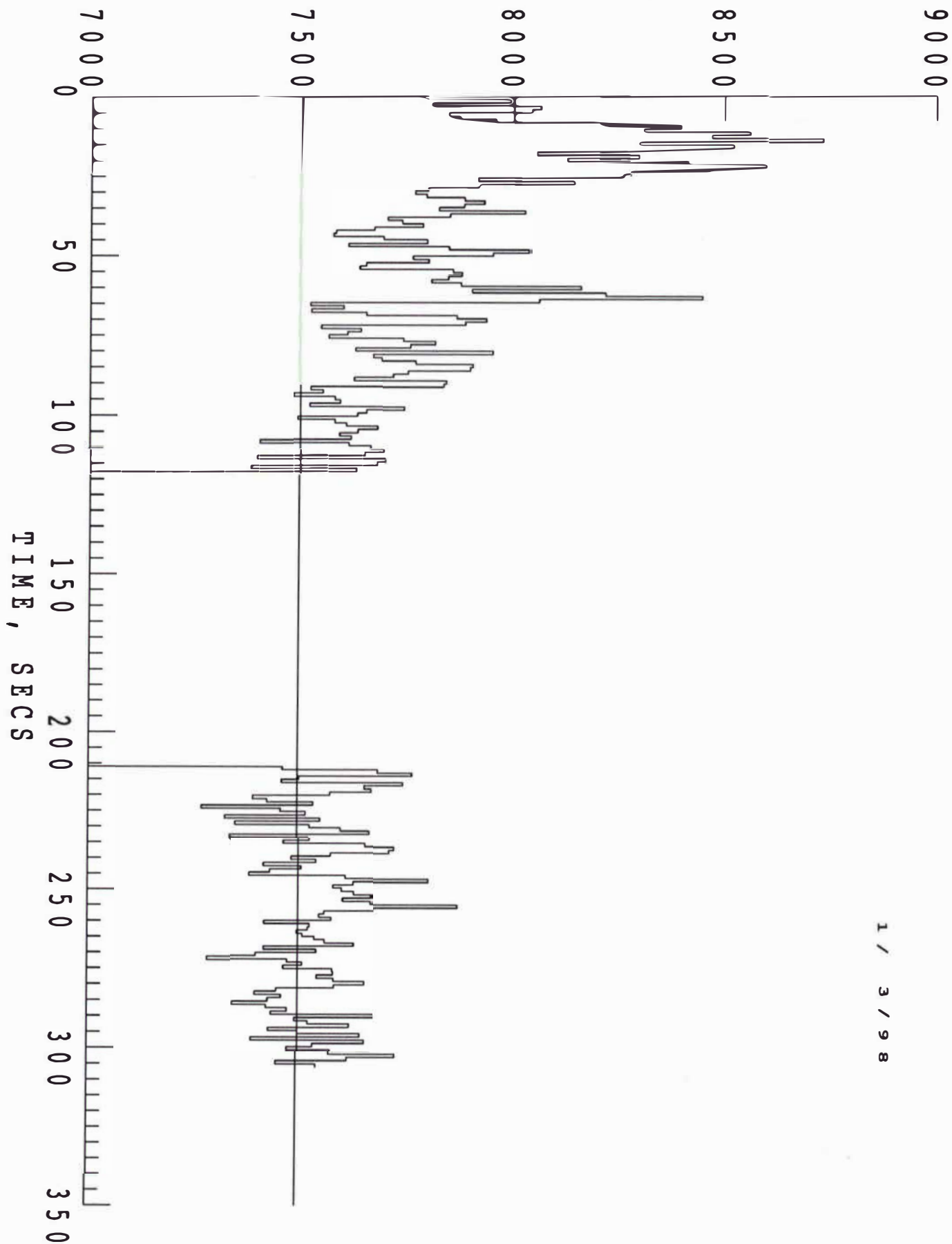
GRB. DOUBLE PULSE WITH SUBSTRUCTURE. FIRST PULSE STARTS AT ABOUT T-320 SEC.
DURATION ABOUT 150 SEC. SECOND PULSE IS STRONGER, STARTS AT ABOUT T TIME,
DURATION ABOUT 120 SEC. NOT VISIBLE ABOVE 300 KEV. TOTAL DURATION IS ABOUT
450 SEC.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6622	980301	10873	45737	3720	001	+48	450

BACODINE 6622 01/03/98 45725.409

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6622

ULYSSES RT

3 / 3 / 98

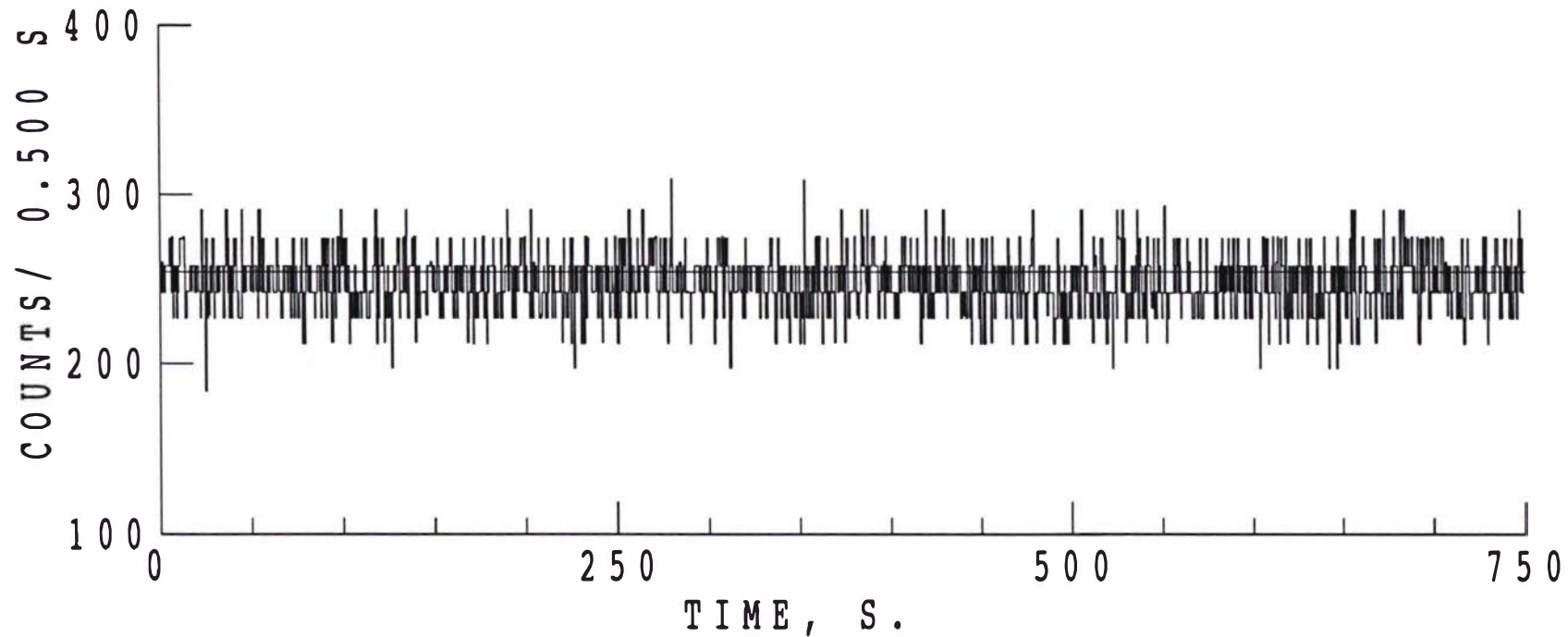
1 / 3 / 98 46375.129 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Tue Mar 3 12:44:29 1998
Date: Tue, 3 Mar 1998 14:43:58 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6623

TIME: TJD=0873 SECONDS=59852

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES AT A DISTANCE.

From HENZE@fender.msfc.nasa.gov Tue Mar 3 12:46:23 1998
Date: Tue, 3 Mar 1998 14:46:03 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@lhev.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6624

TIME: TJD=0873 SECONDS=71144

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

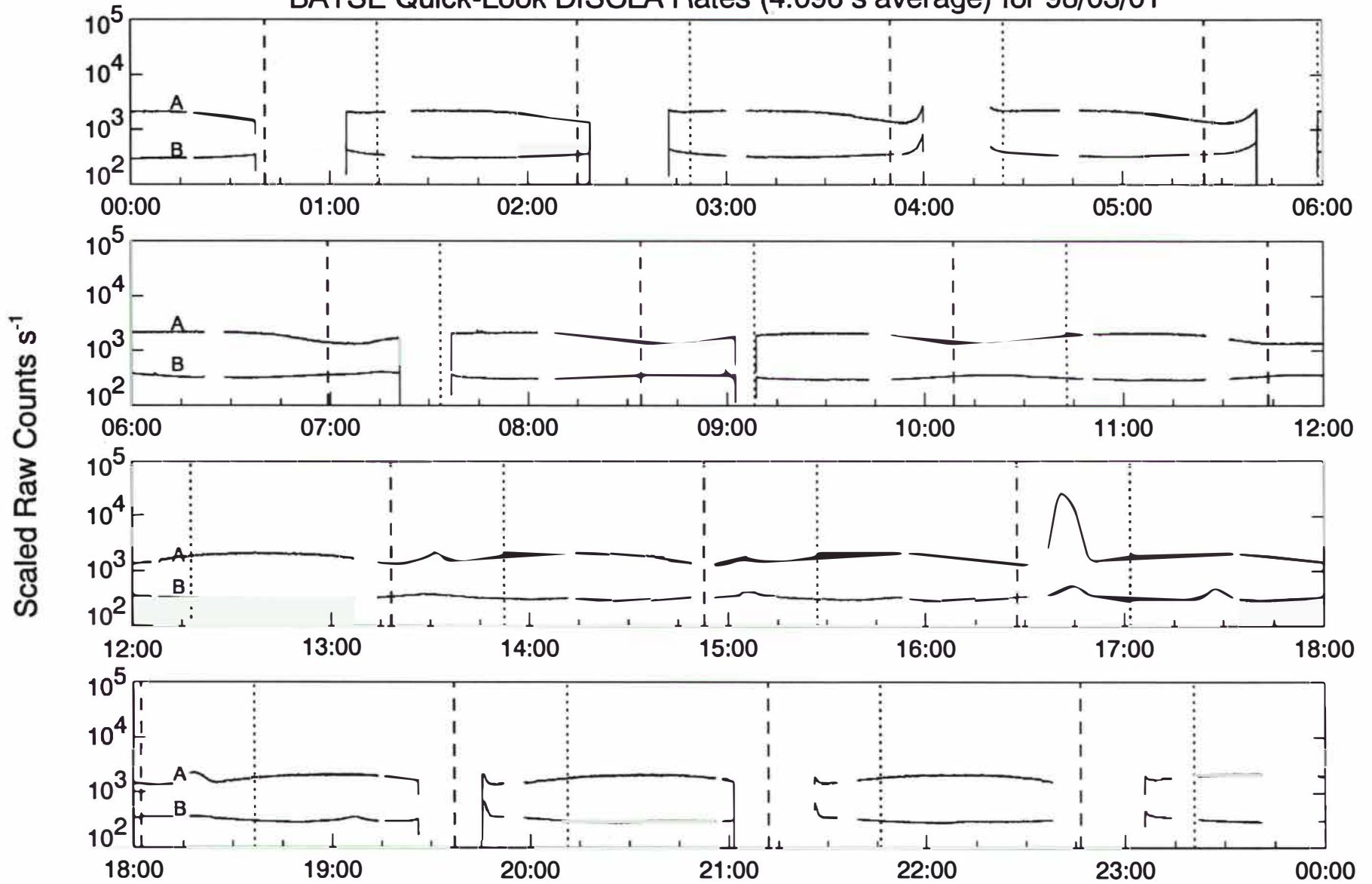
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLES, AFTER SAA EXIT.

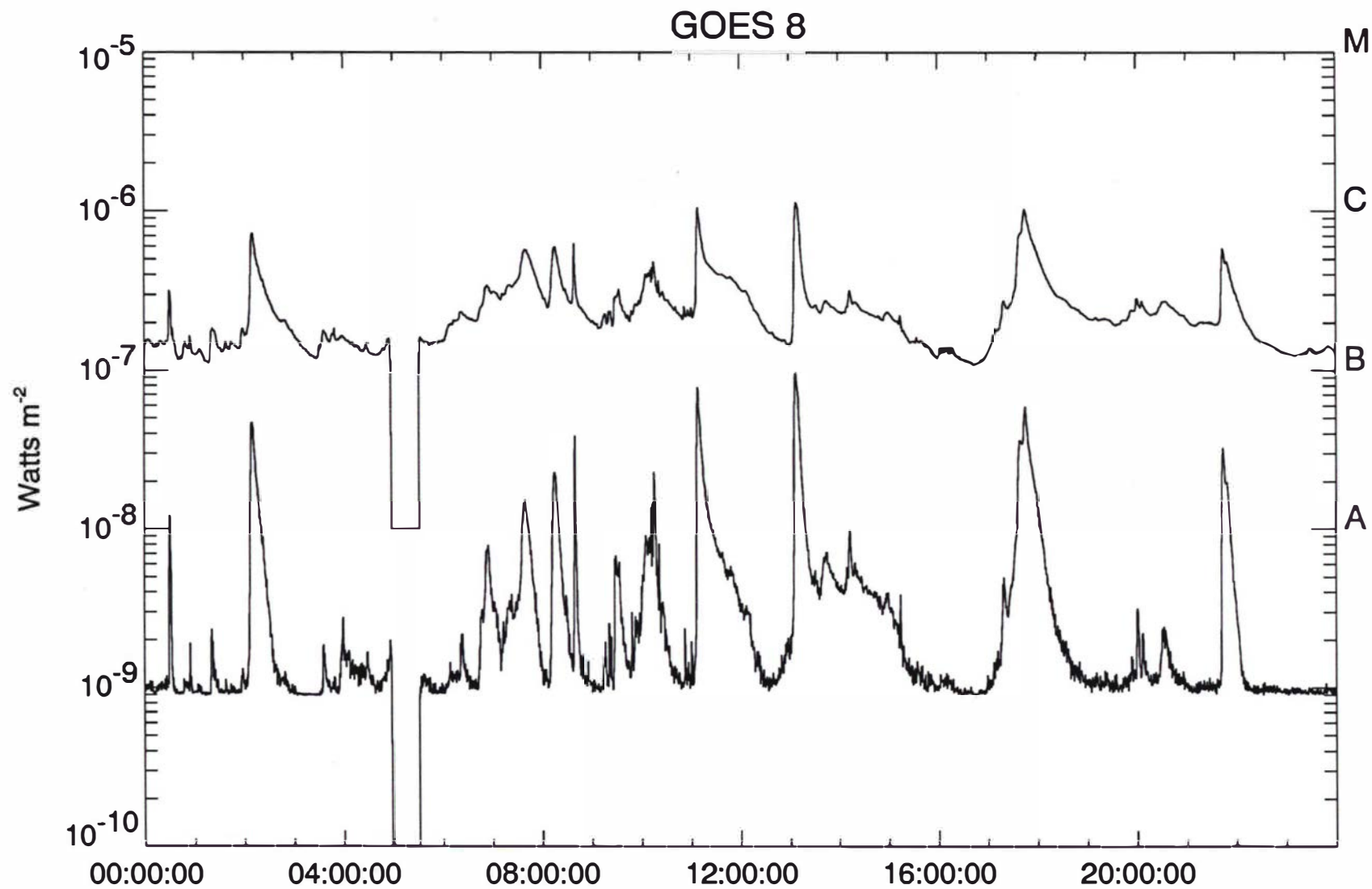
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/01



Current Time: 98/03/05, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/01, 0000:00

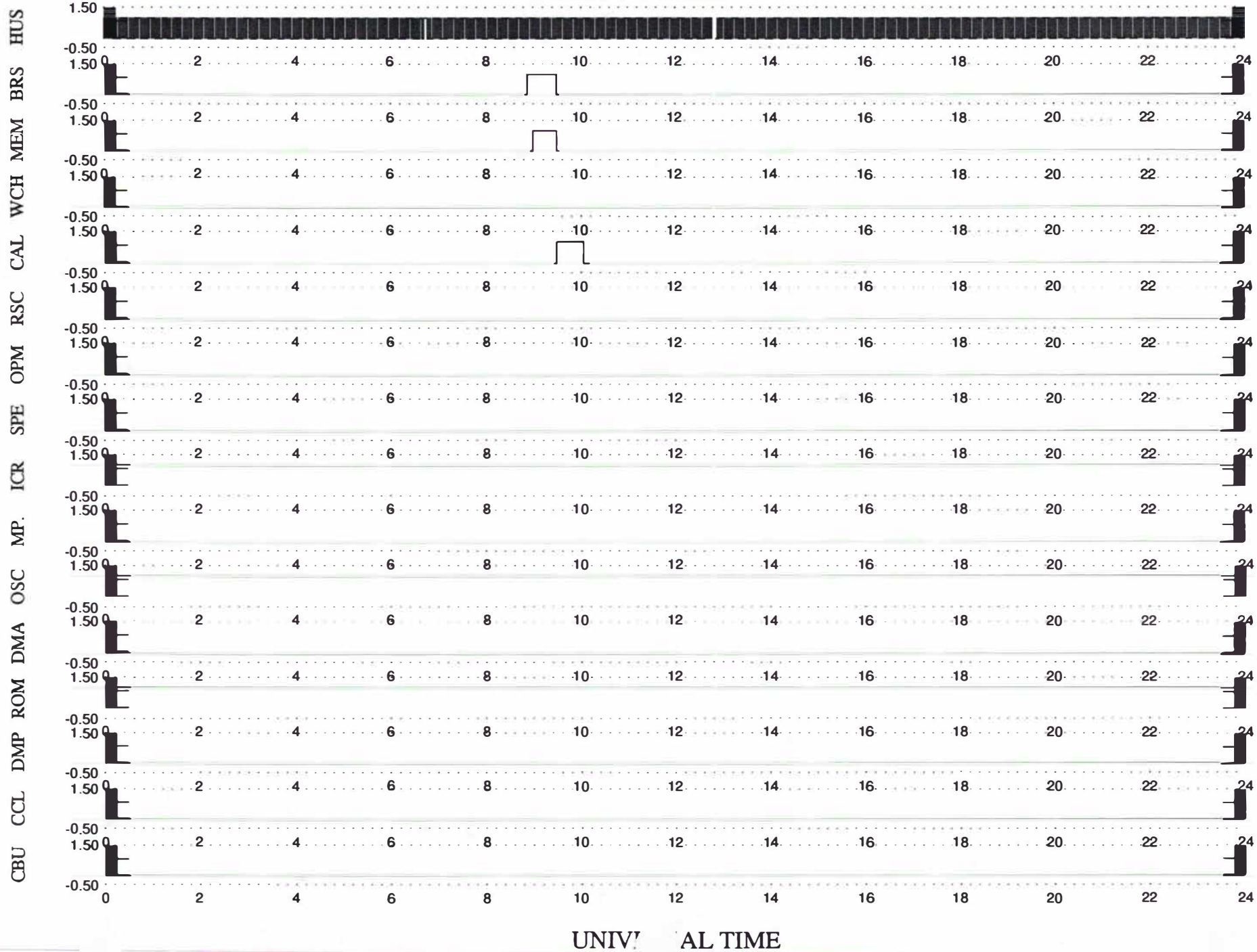
Plot created: 98/03/05, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

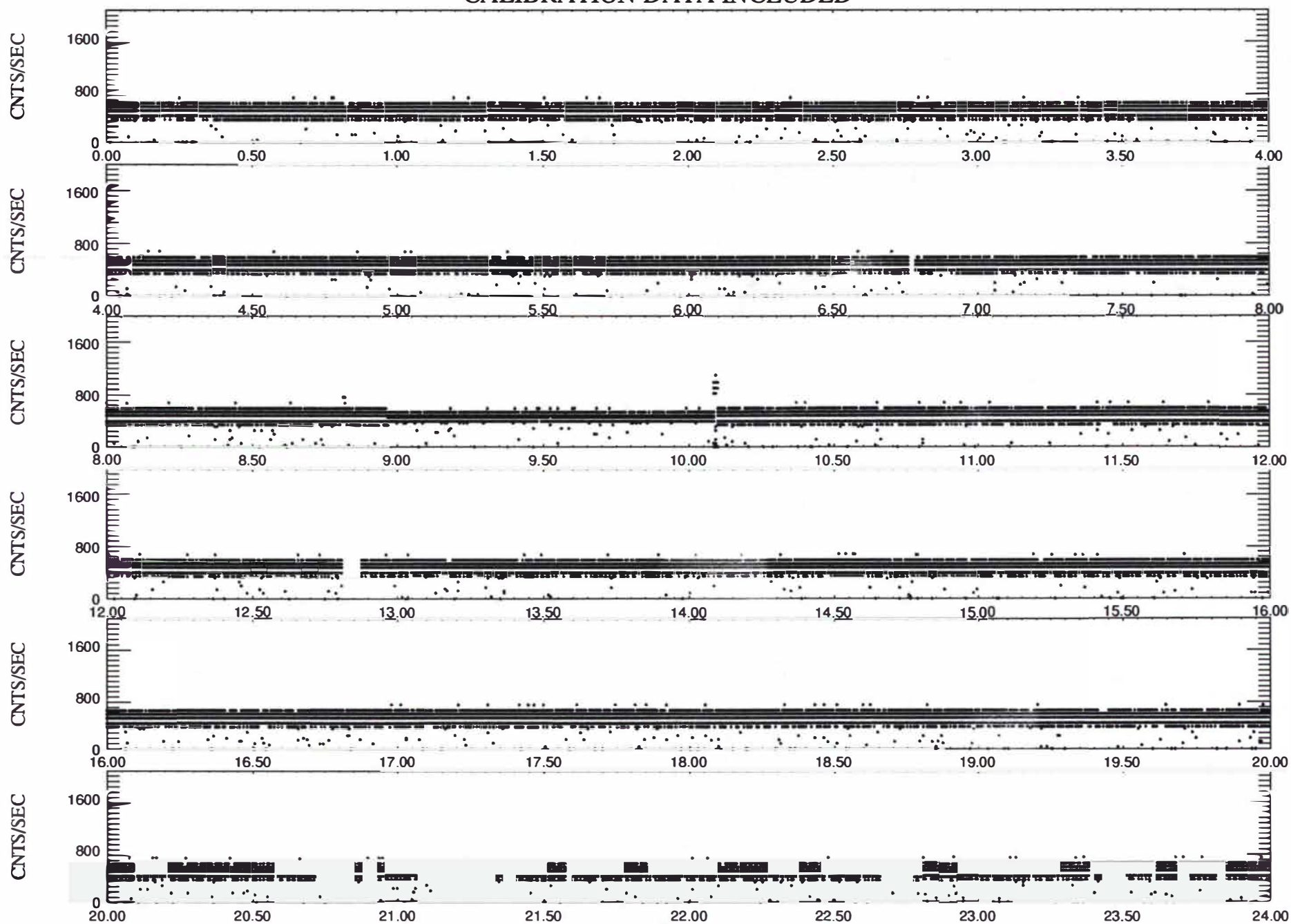
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 12

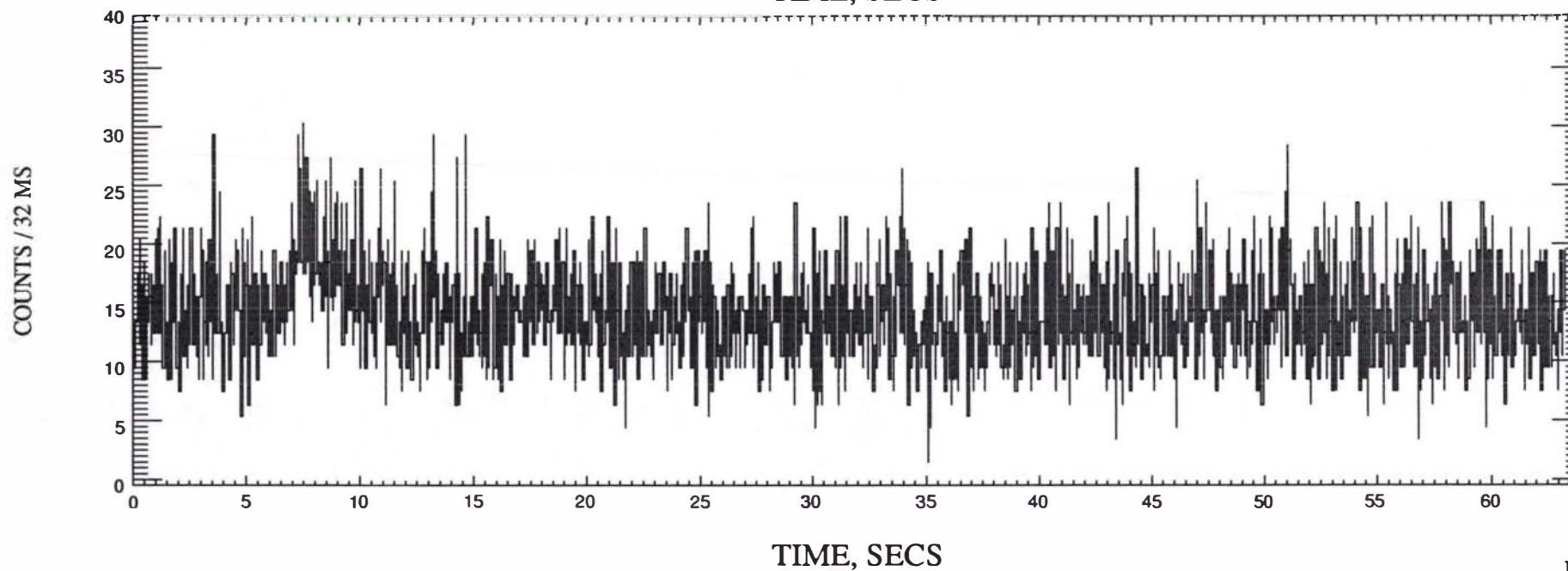
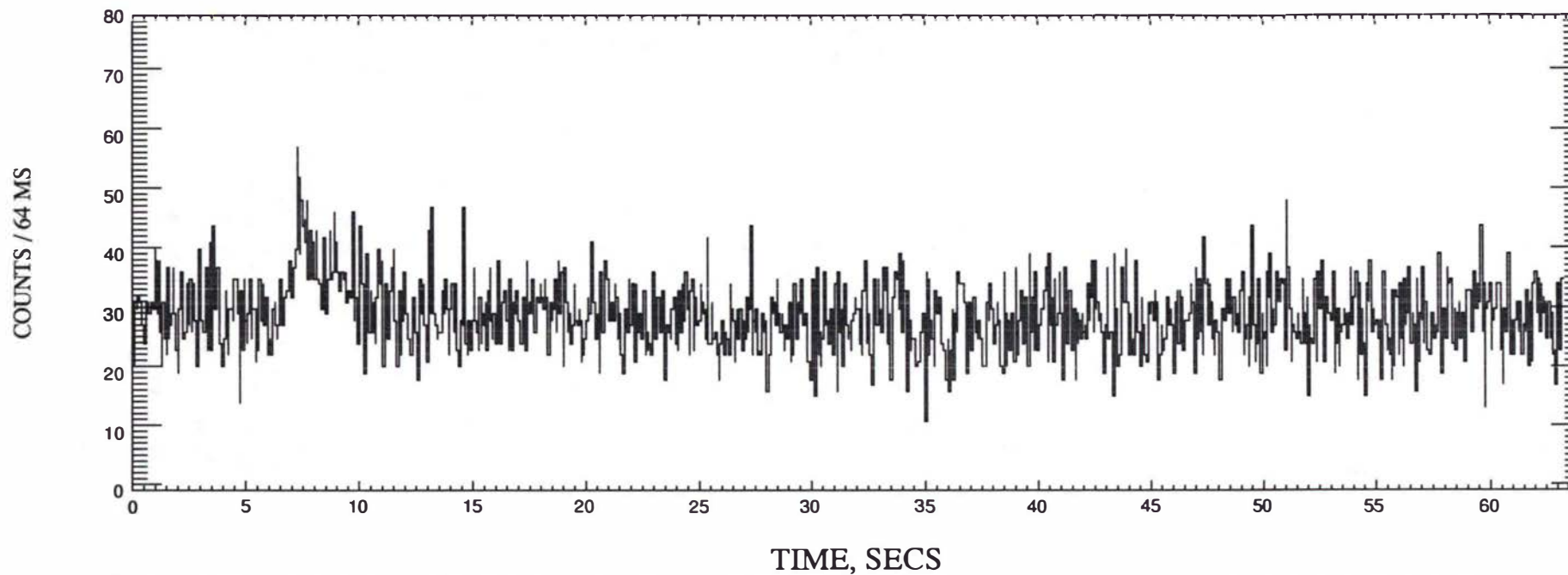


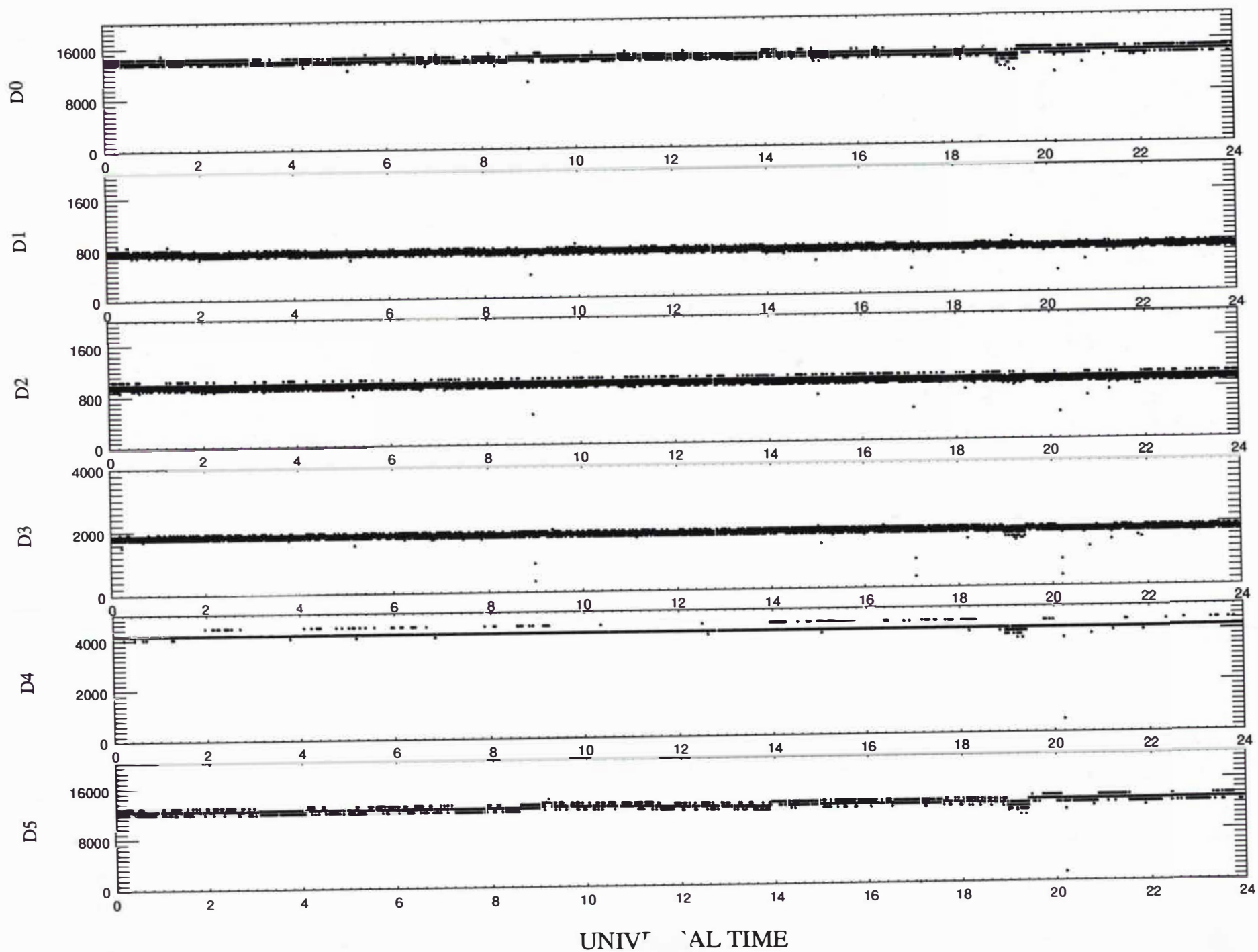
CALIBRATION DATA INCLUDED



UNIVERSAL TIME

Burst Counter 12 at UT= 8.815194947984 h=31734.702 s 08:48:54.702





From WOODSP@SSLMOR.msfc.nasa.gov Wed Mar 4 09:31:07 1998
 Return-Path: <WOODSP@SSLLES.MSFC.NASA.GOV>
 Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id JAA08708; Wed, 4 Mar 1998 09:31:06 -0800
 Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id JAA24494; Wed, 4 Mar 1998 09:31:05 -0800
 Date: Wed, 4 Mar 1998 11:31:05 -0600 (CST)
 From: WOODSP@SSLMOR.msfc.nasa.gov
 To: khurley@sunspot.ssl.berkeley.edu
 Message-Id: <980304113105.21e2970d@ssl.msfc.nasa.gov>
 Subject: Crossing Windows for BATSE Burst 6625
 Content-Length: 1135
 X-Lines: 26
 Status: RO

 BATSEARCH PROGRAM

BATSE BURST # 6625
 EVENT OF 1998 MAR 2 DAY OF YEAR= 61
 EVENT CROSSING TIME AT BATSE : 17972. S. OR 04:59:32.0
 COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 31.000 -7.000
 BATSE PEAK COUNTING RATE: 6700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 2/ 3/ 98 IS:
 RA= 159.033 DEC= 13.102 DIST= 4.417 AU
 BATSE-ULYSSES DISTANCE = 660753711. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.45 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1373.62 SECS.
 CROSSING TIME AT ULYSSES IS 19346. S. OR 05:22:25 +/- 370.11 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
 POSITION OF MARS ON 2/ 3/ 98 IS:
 RA= 358.381 DEC= -1.482 DIST= 2.321 AU
 MARS-BATSE DISTANCE = 347229376. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=147.02 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -971.61 SECS.
 CROSSING TIME AT MARS IS 17000. S. OR 04:43:20 +/- 94.70 SECONDS

BATSE BURST TRIGGER

NO.: 6625

TIME: TJD=0874 SECONDS=17972

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=54.3 AZIMUTH=43.3 ERROR=0.7 DEGREES

COMMENTS:

GRB LASTING ABOUT 130 SEC. THREE PULSES WITH LITTLE OR NO
 SUBSTRUCTURE. UNRELATED SOLAR FLARE EVENT IN TRIGGERED DETECTORS
 AT T + 200 SEC. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6625	980302	10874	17972	6700	031	-07	130

Helio corr removed

Date: July 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? *N/A*
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *No - 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

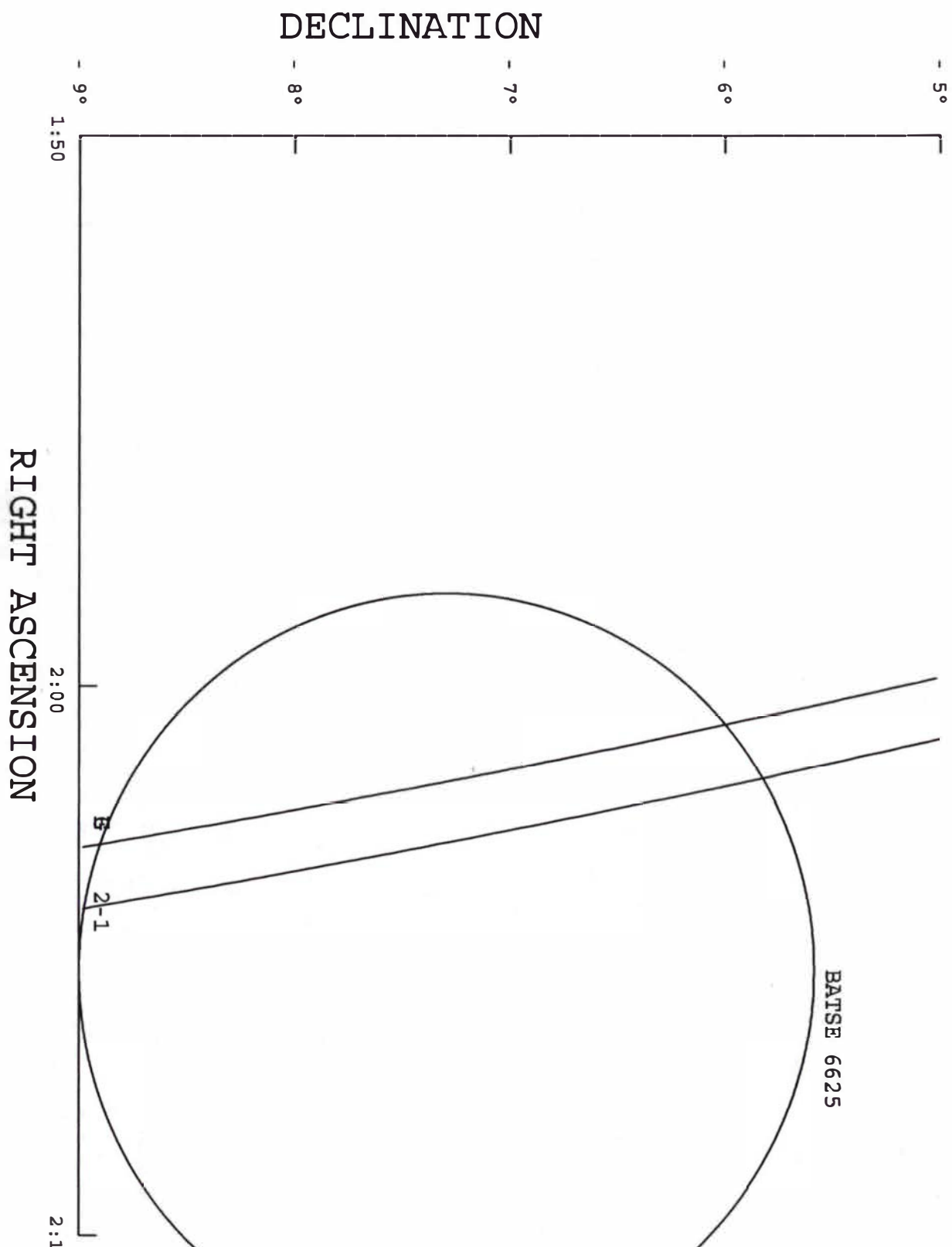
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAR 2, 1998 5:22

21/ 2/ 0



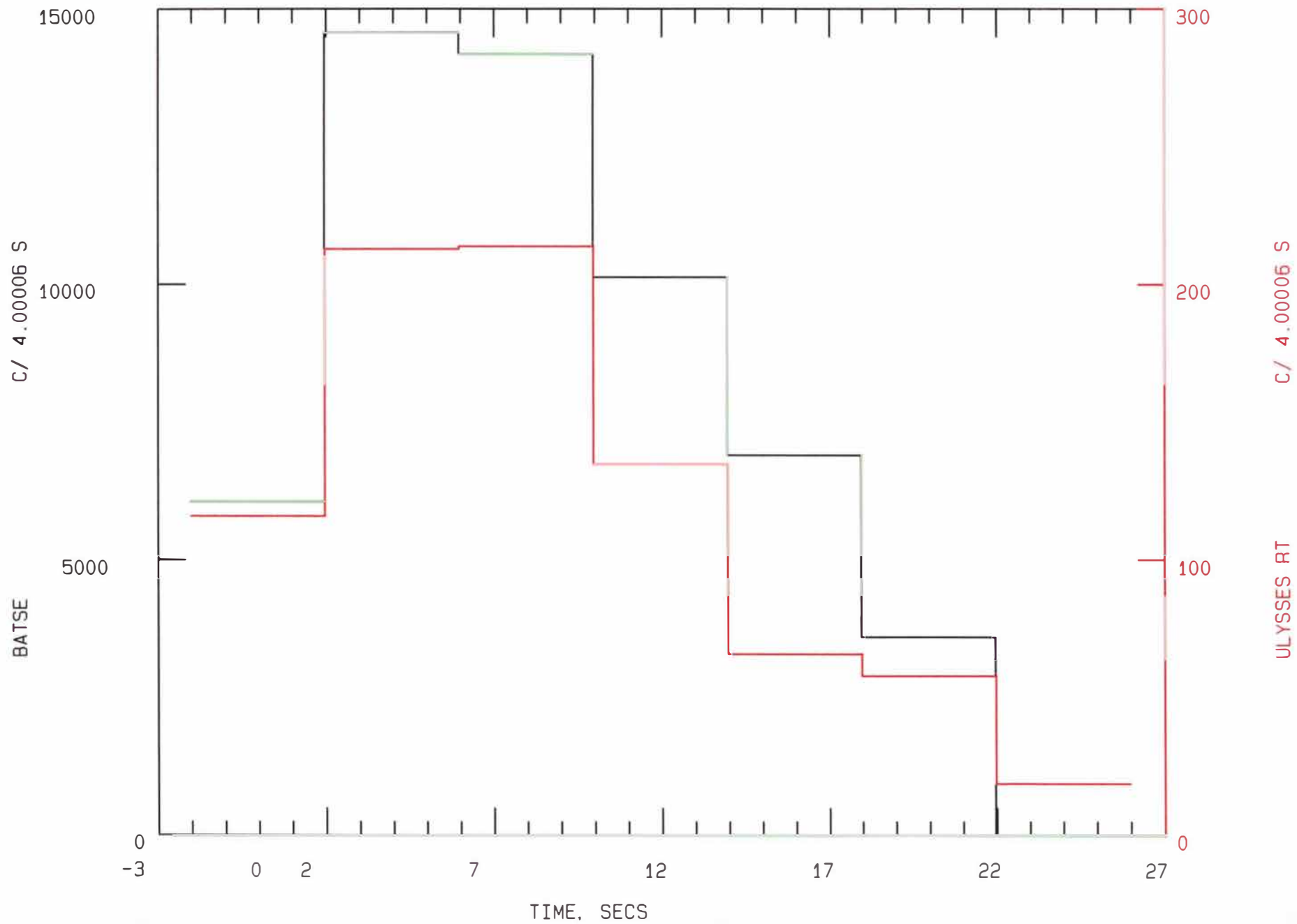
BATSE

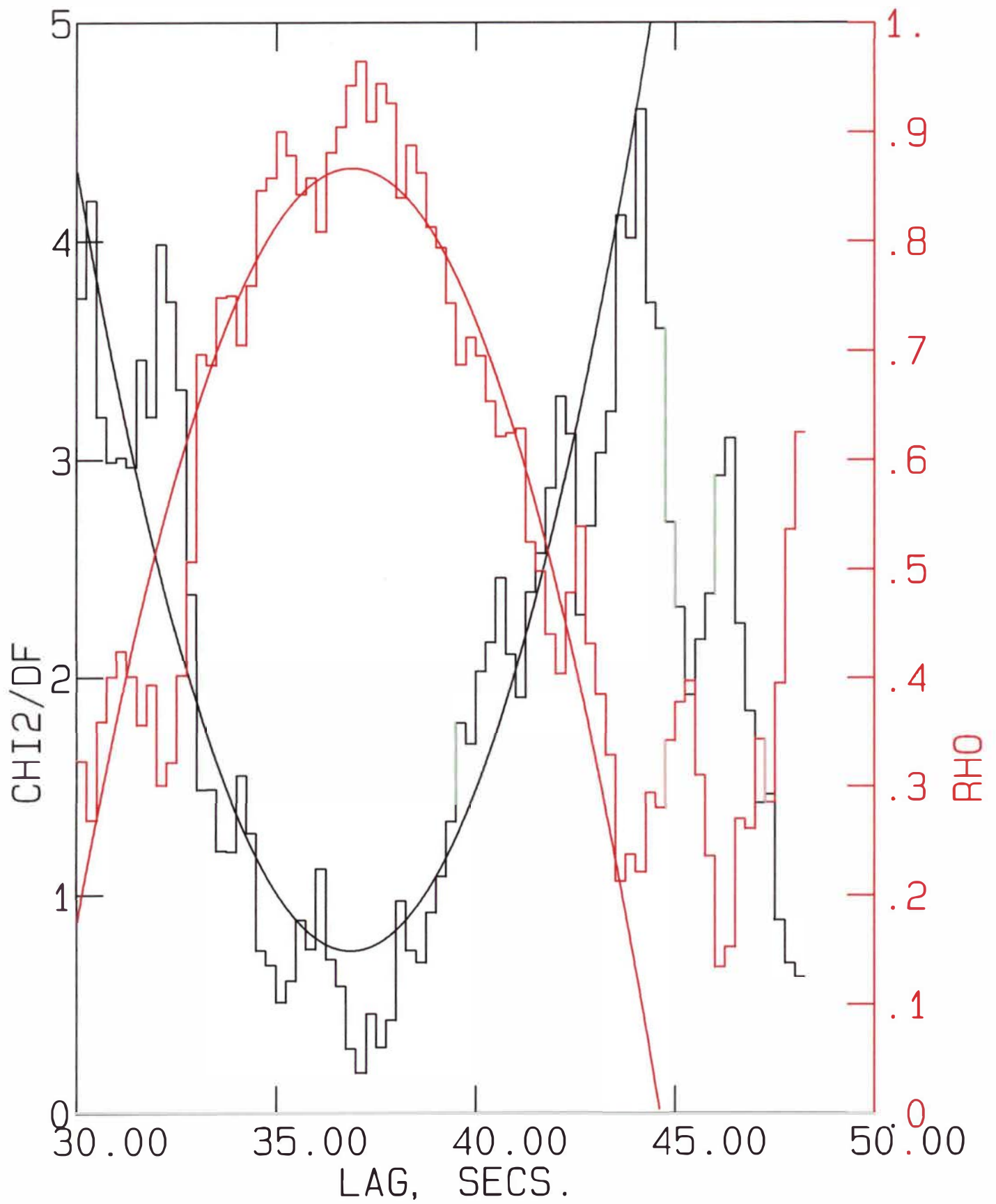
-ULYSSES RT CORRELATION

2/ 3/98

17972.962

28/ 7/98





ULYSSES RT

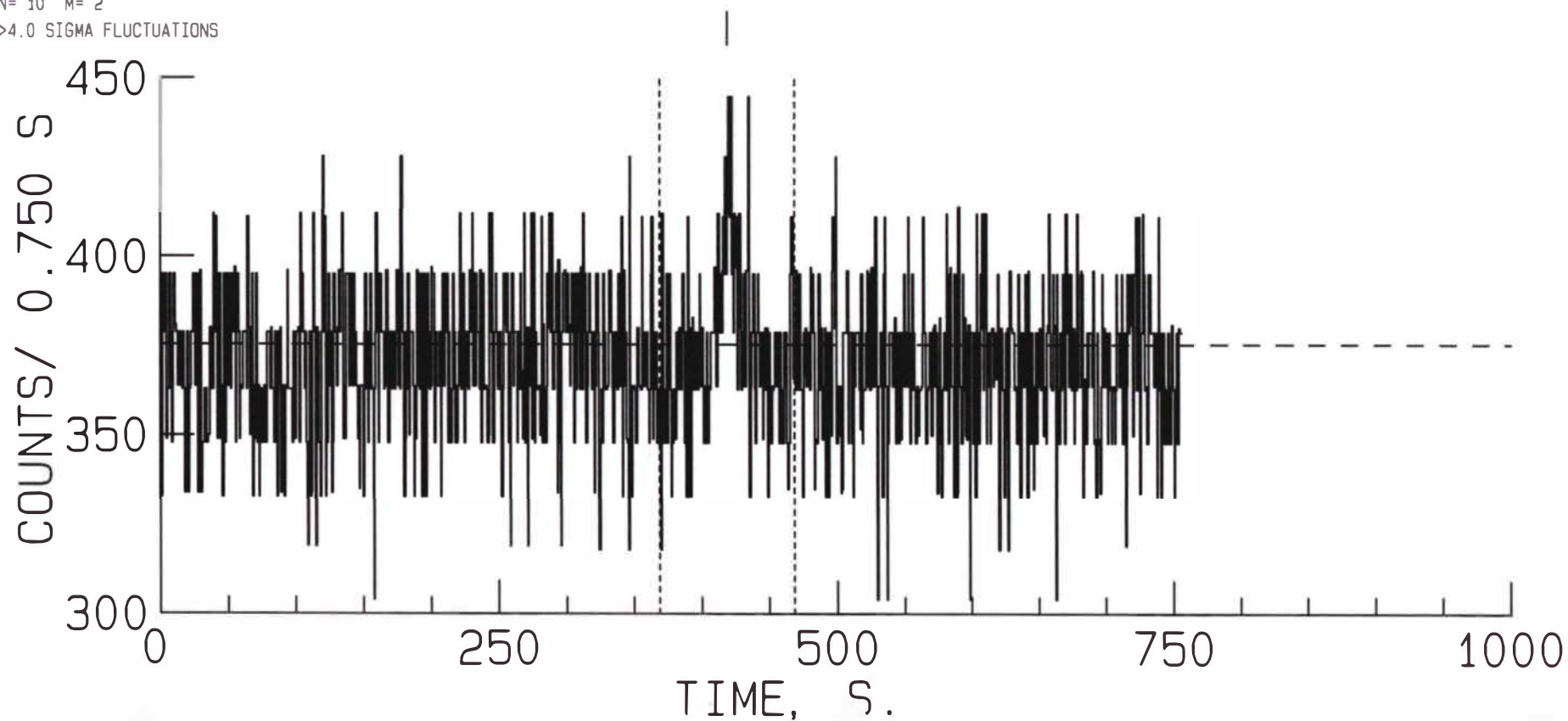
28 / 7 / 98

2 / 3 / 98 18972.027 s

0.250 S INTERVALS REGROUPED BY 3

22- 149 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



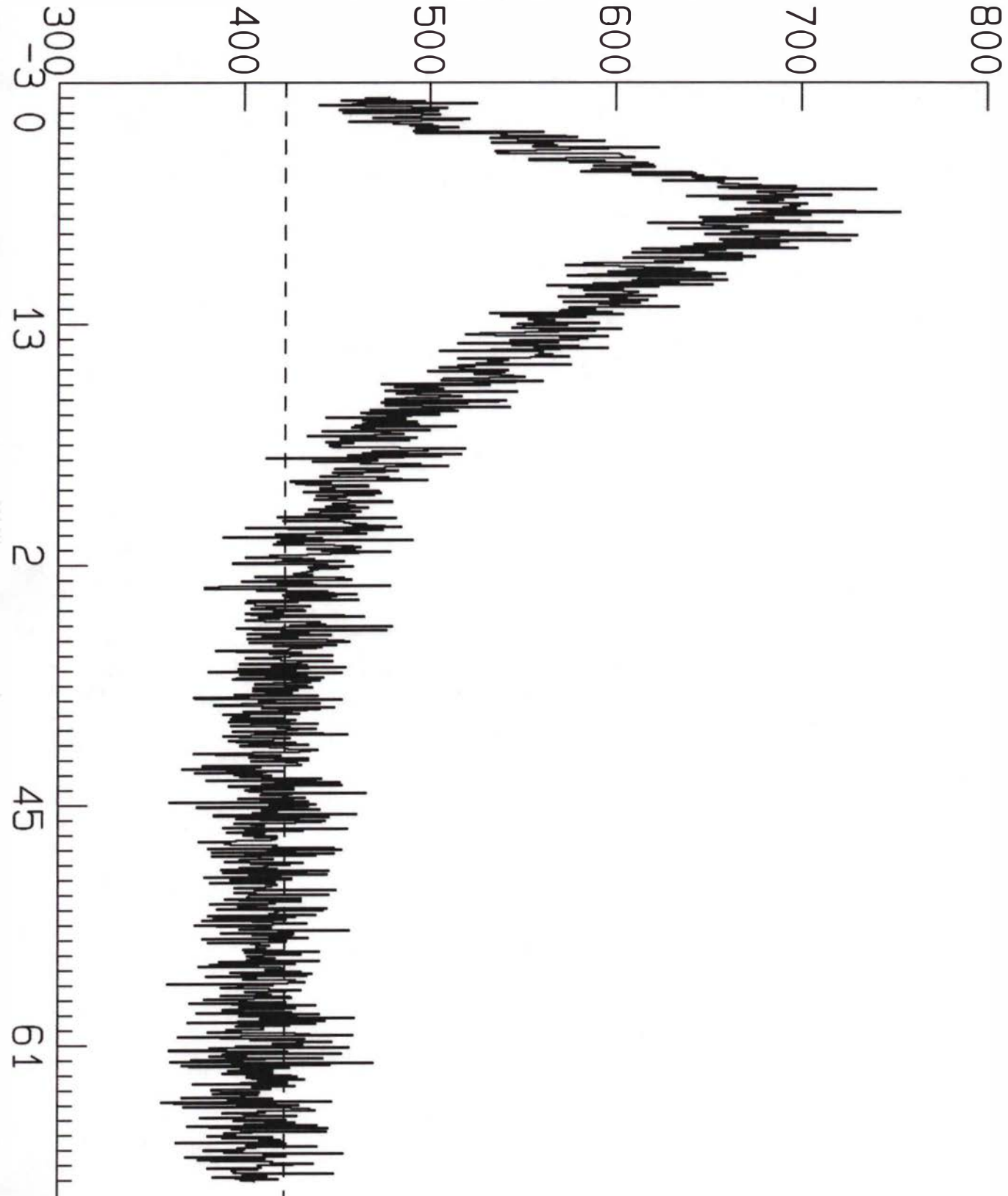
BATSE

02/03/98

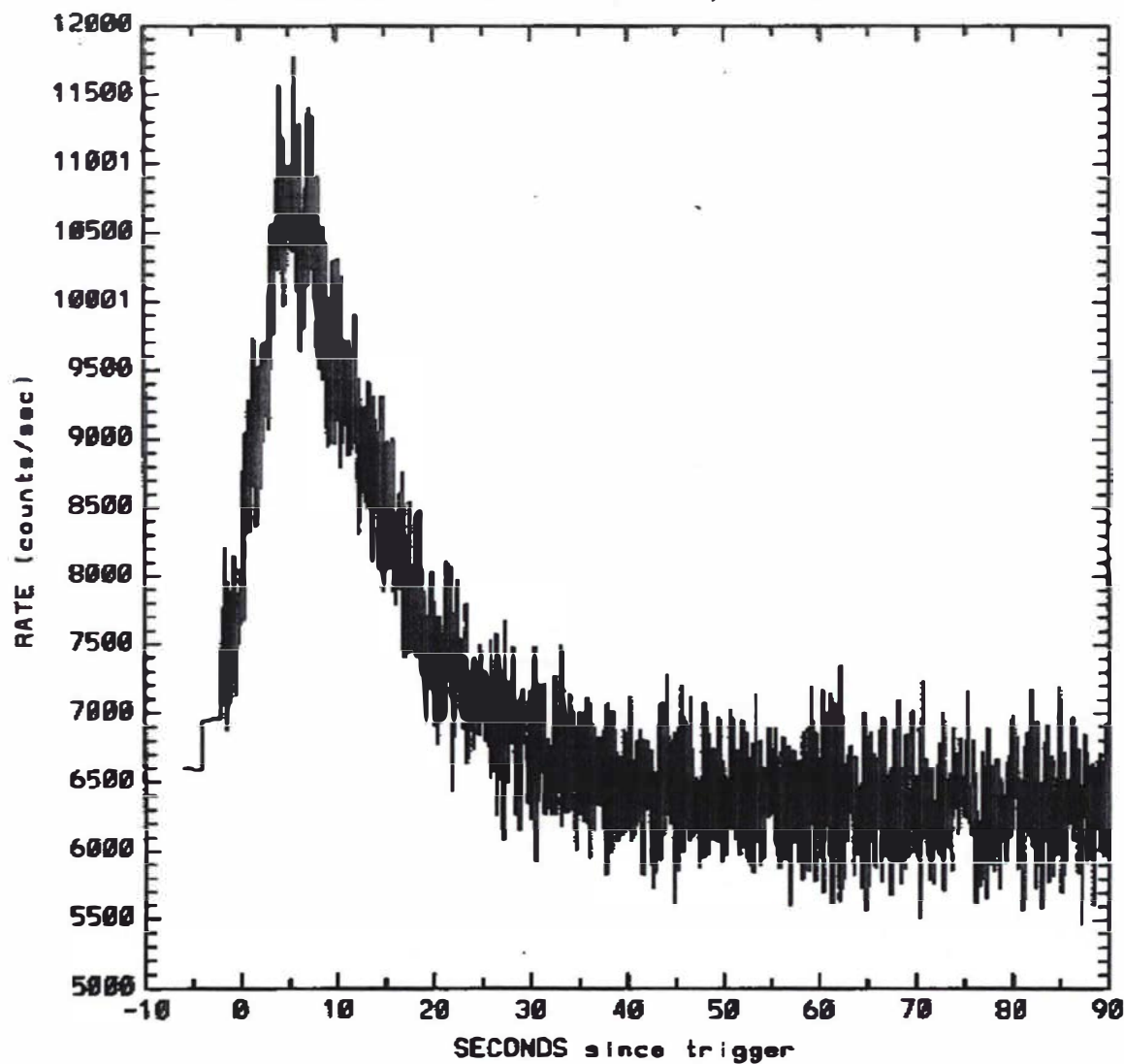
17972.962

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6625



5-MAR-1998 18:08:13

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

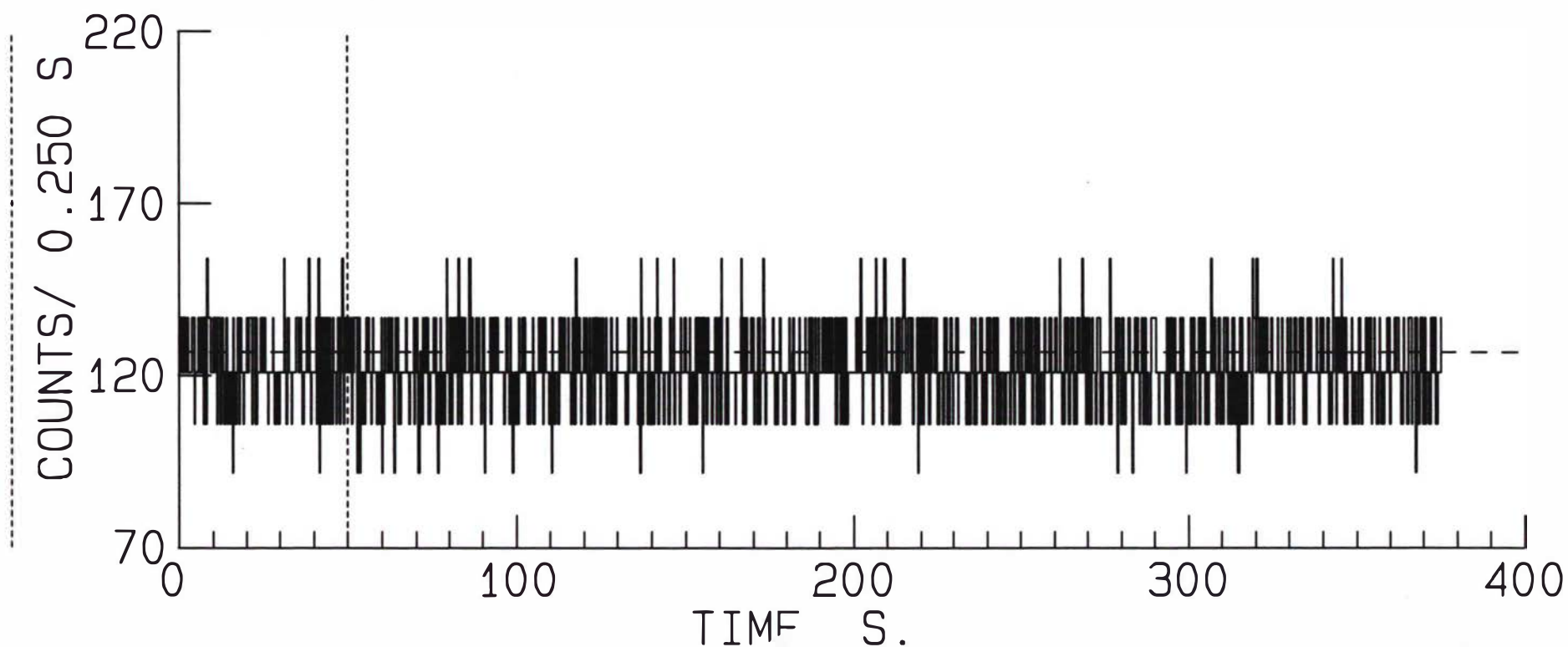
Trigger # : 6625

Trigger Time:
18874 / 17972.961Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
-----2-8Discriminators:
[1..2]Quality Mask:
B0ISP1

Konus .33 s long

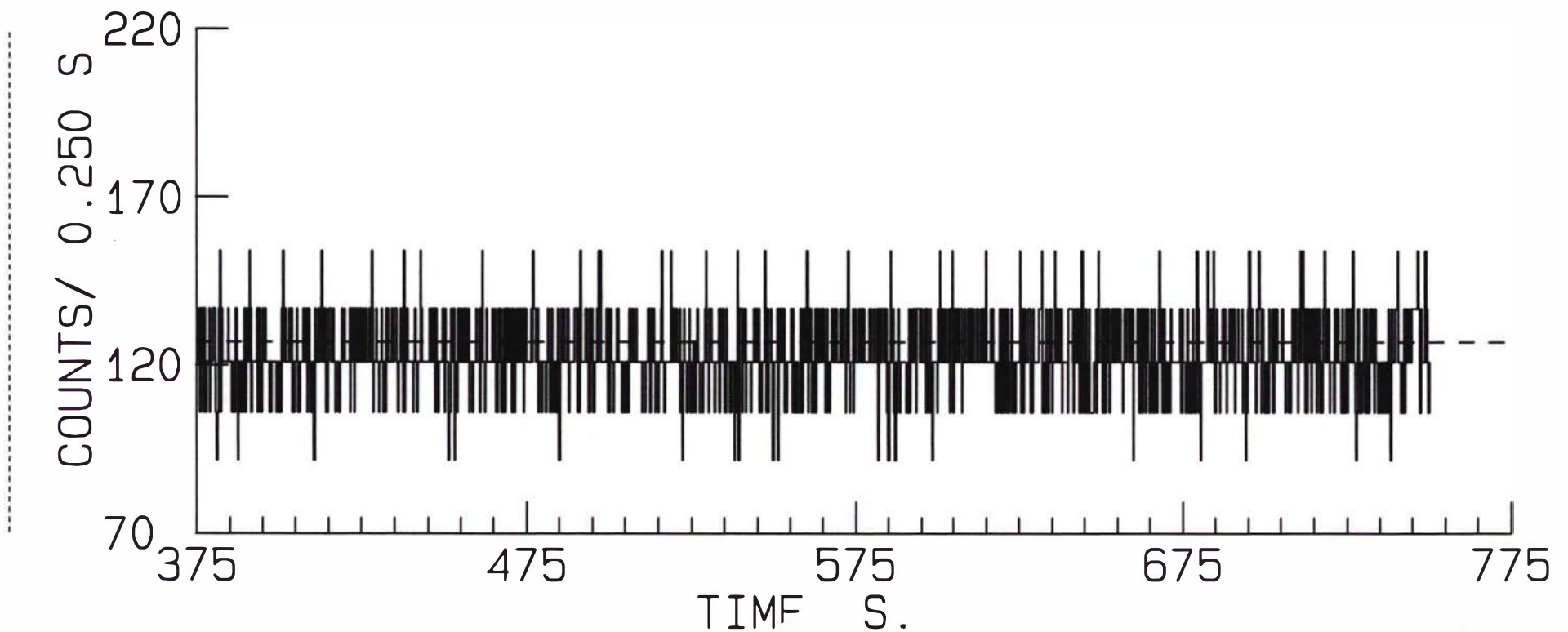
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



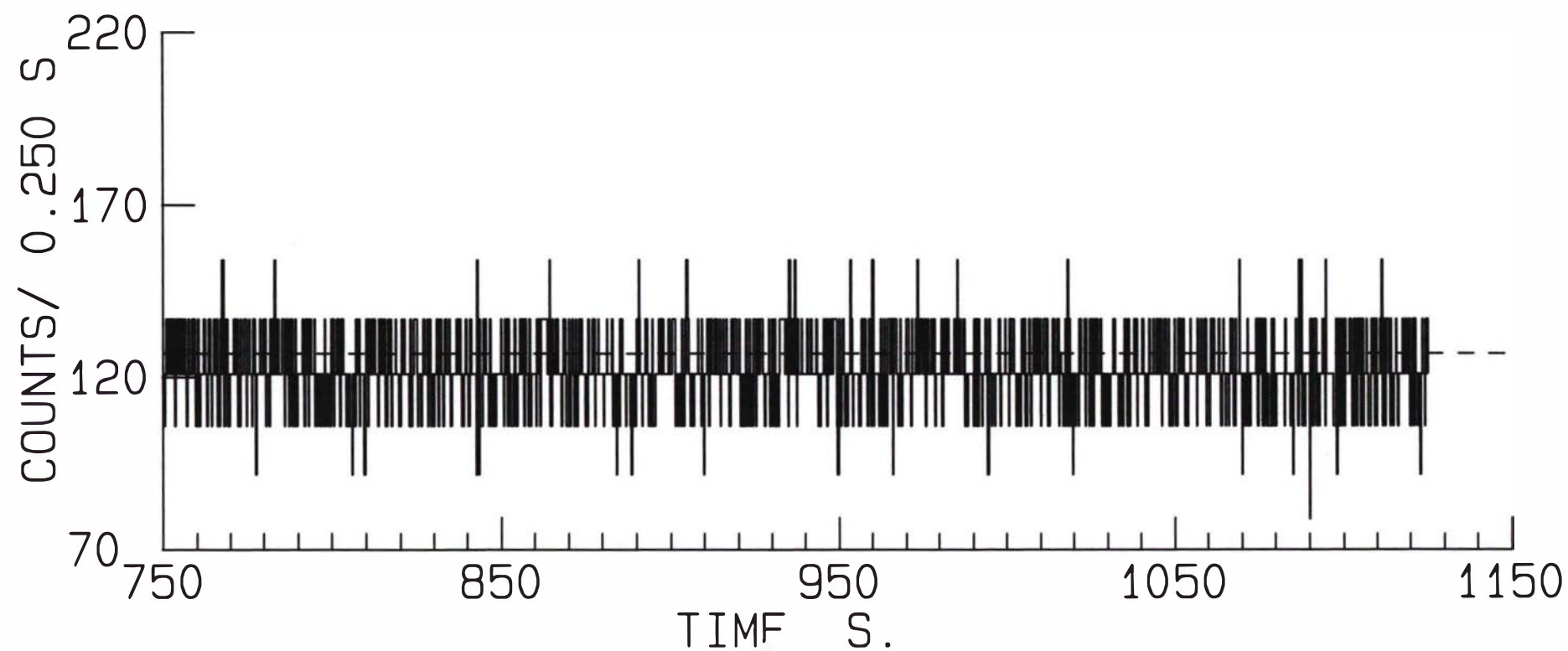
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14/11/8



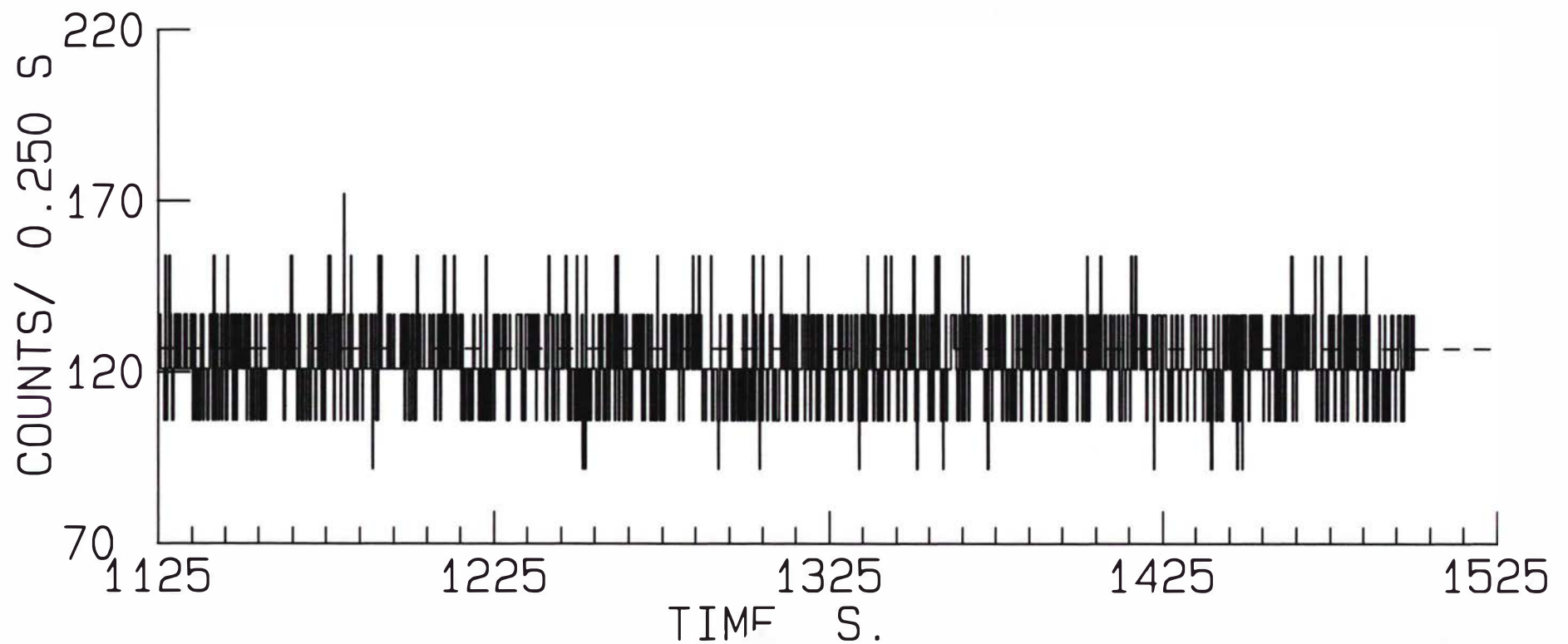
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



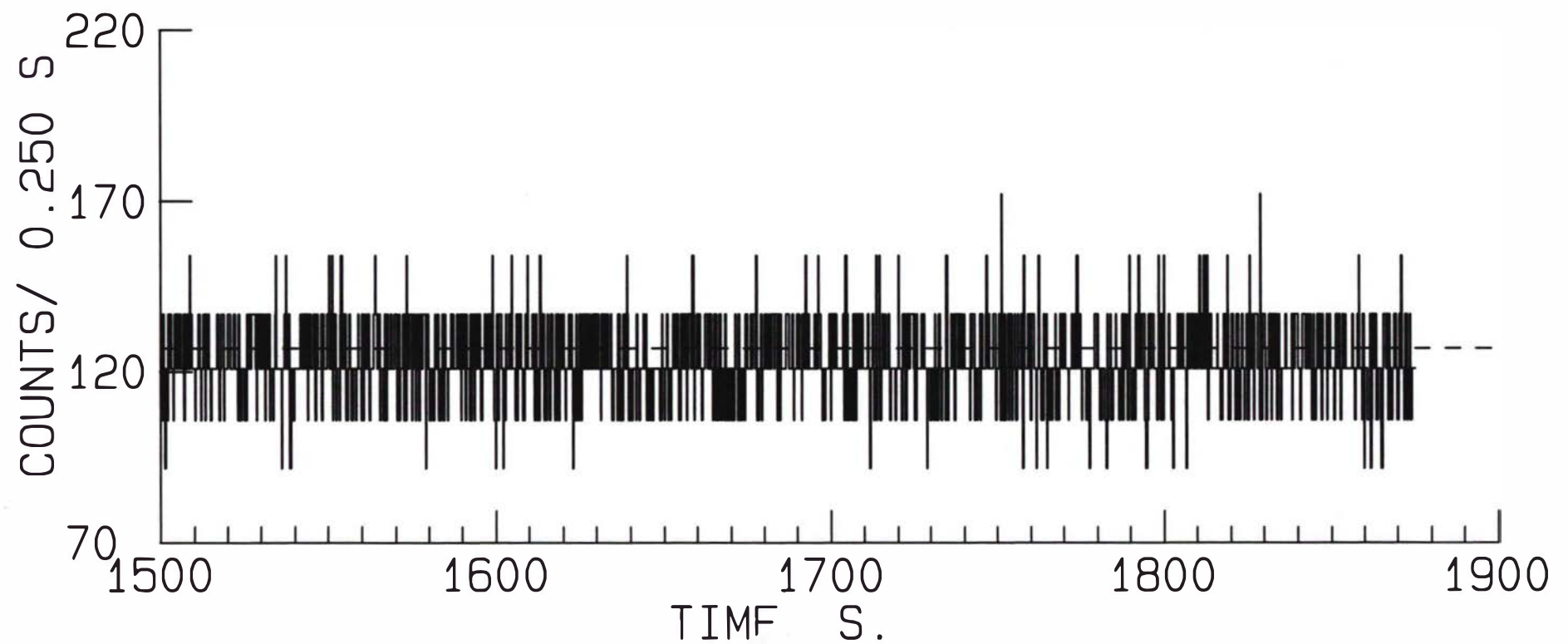
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



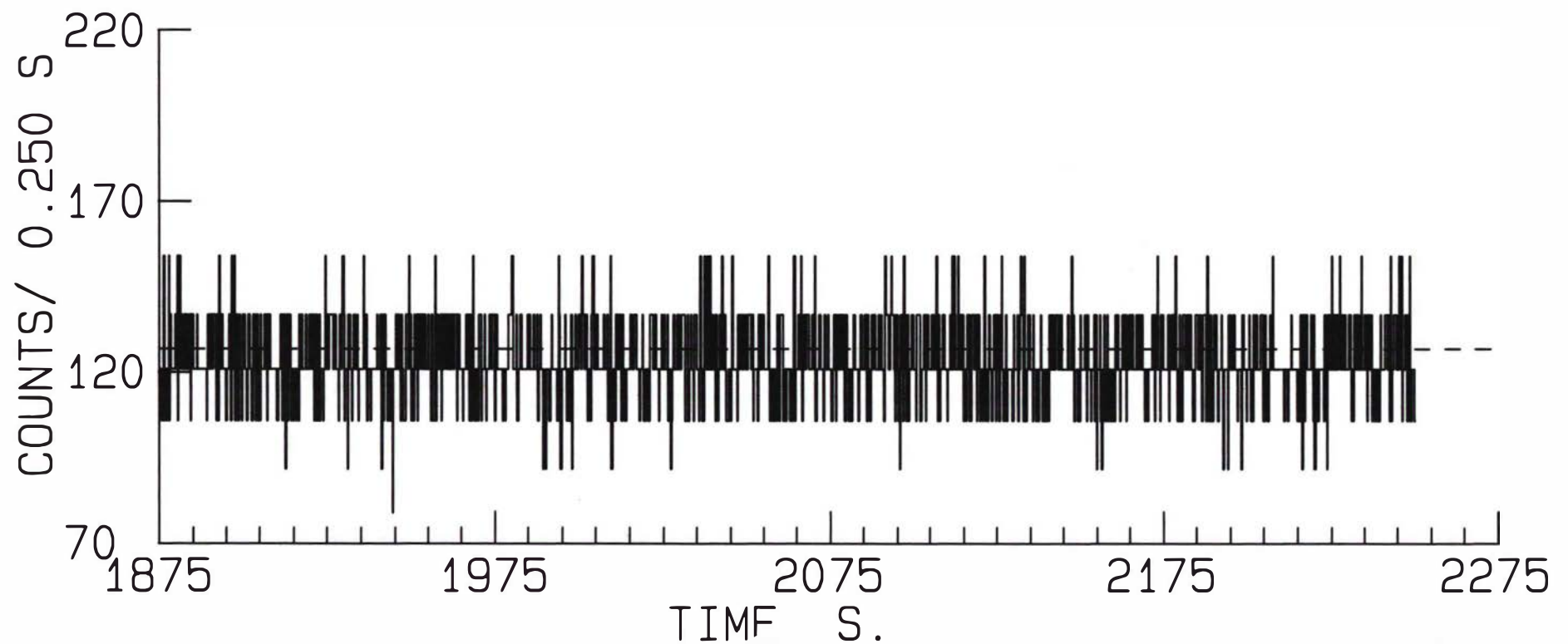
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14/11/8



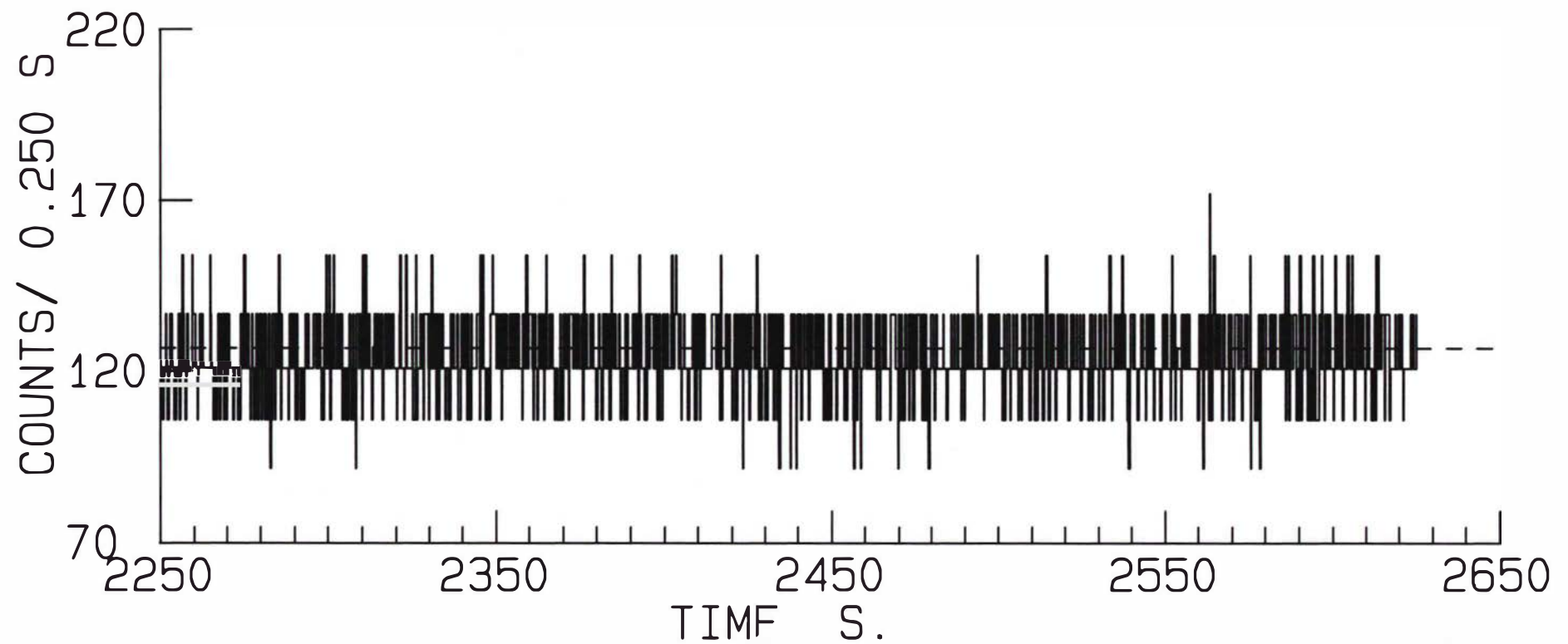
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



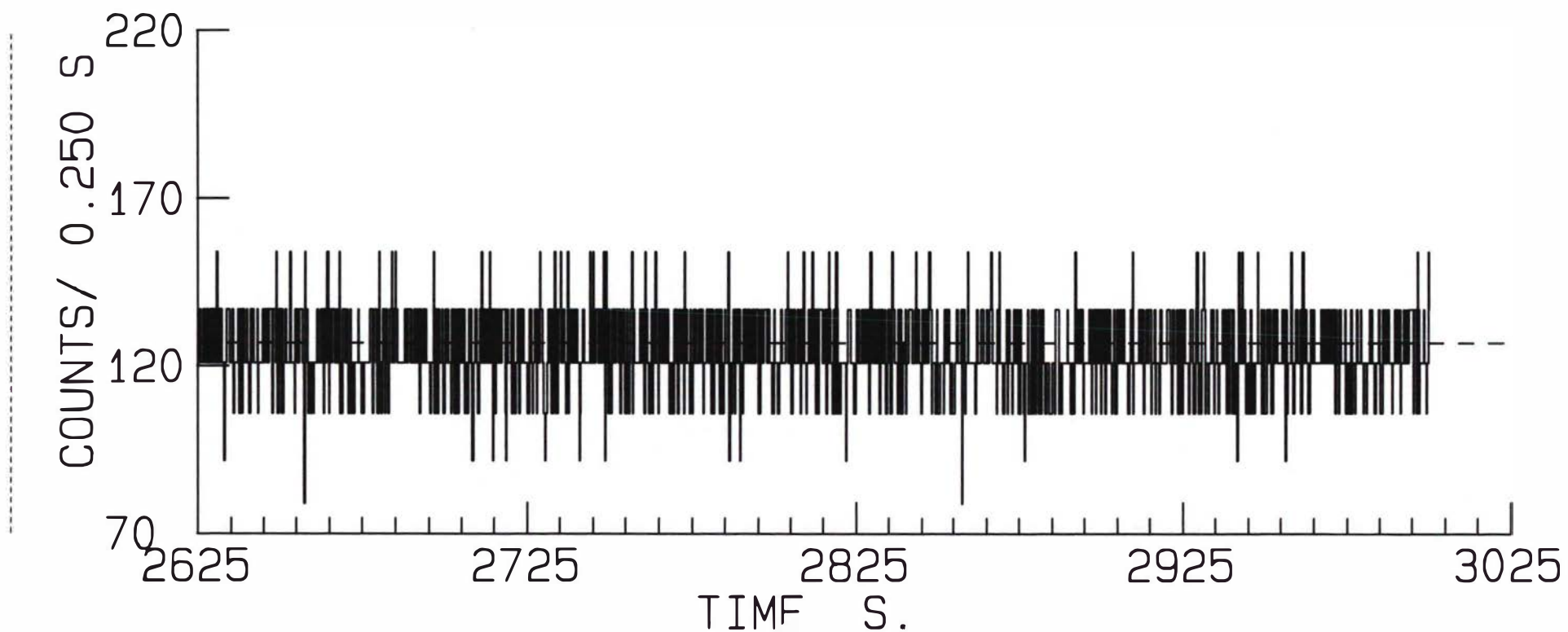
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



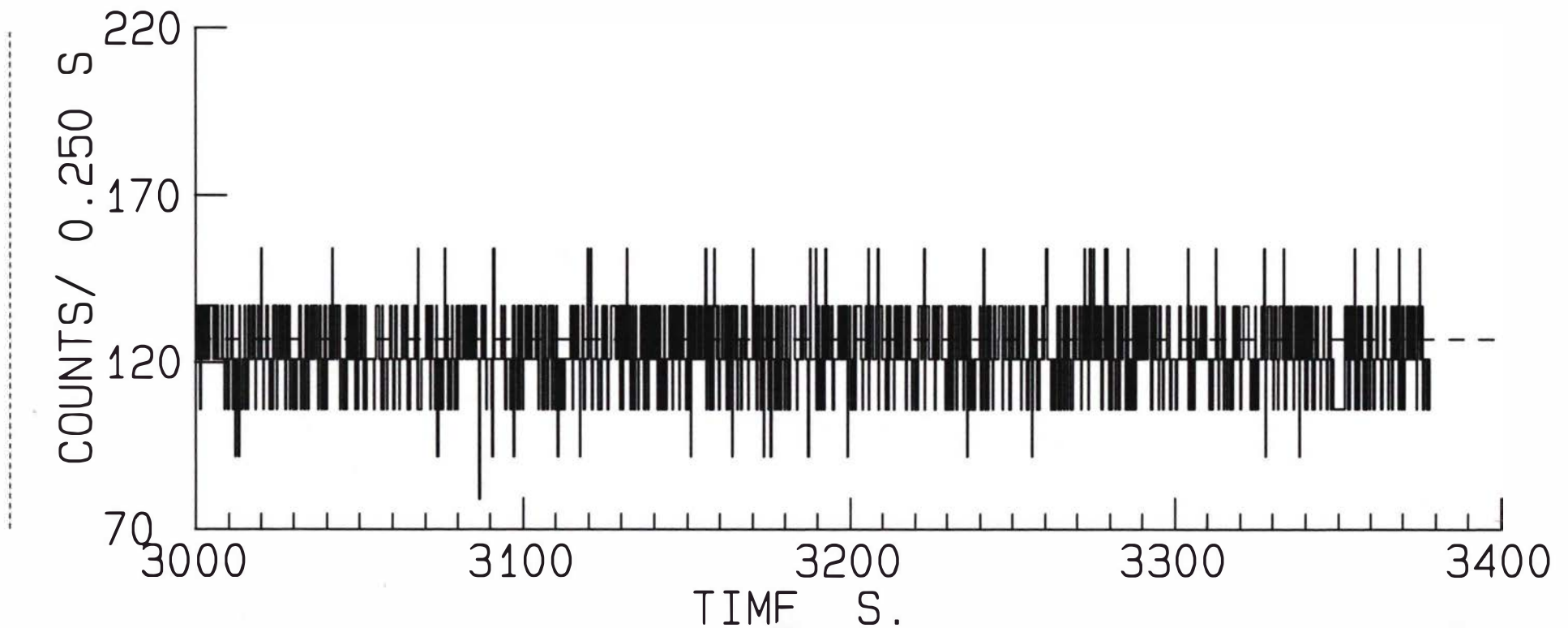
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



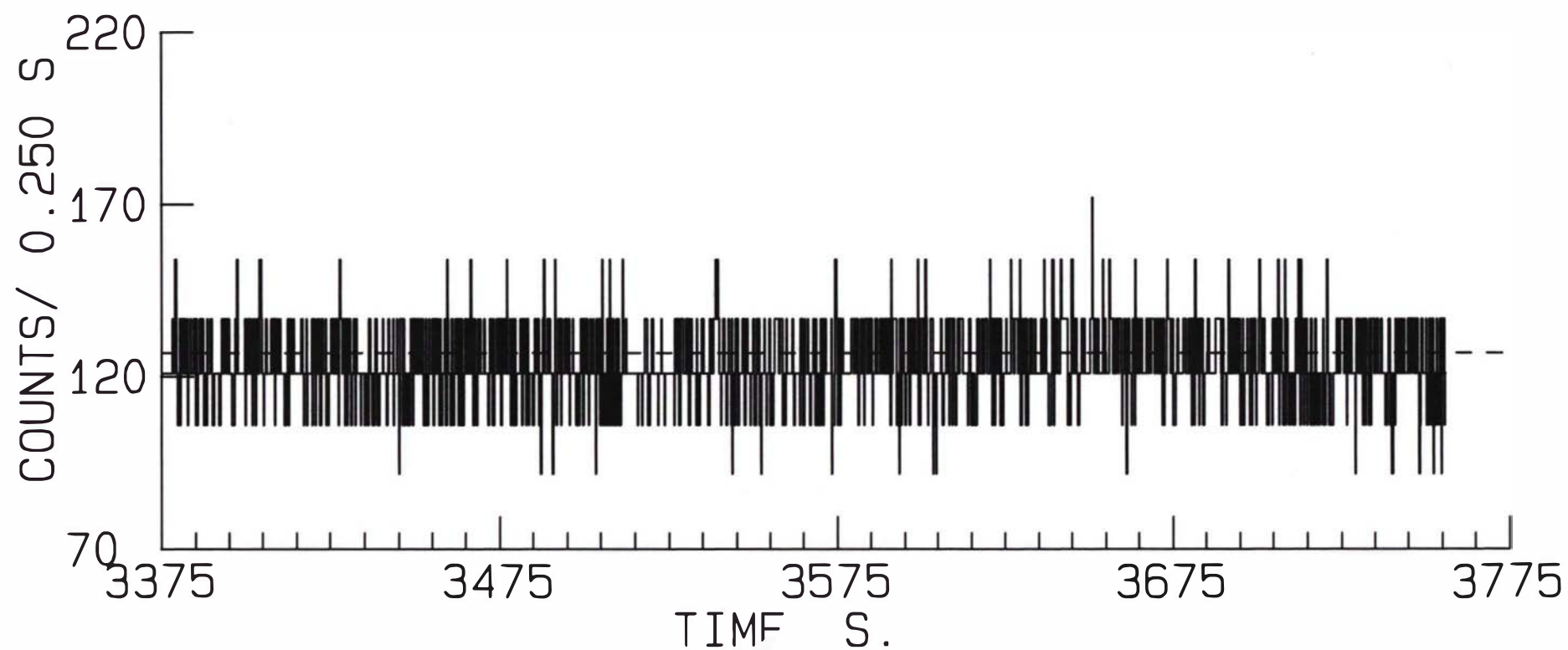
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



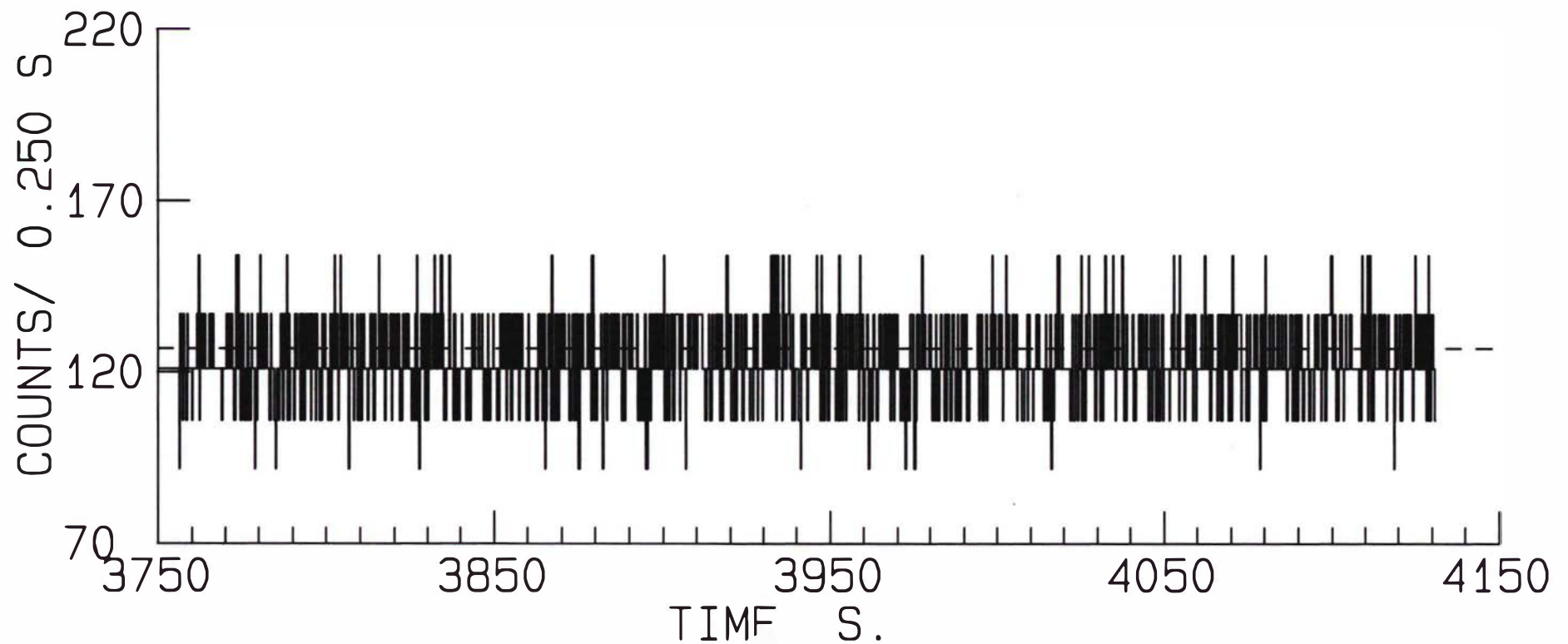
ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

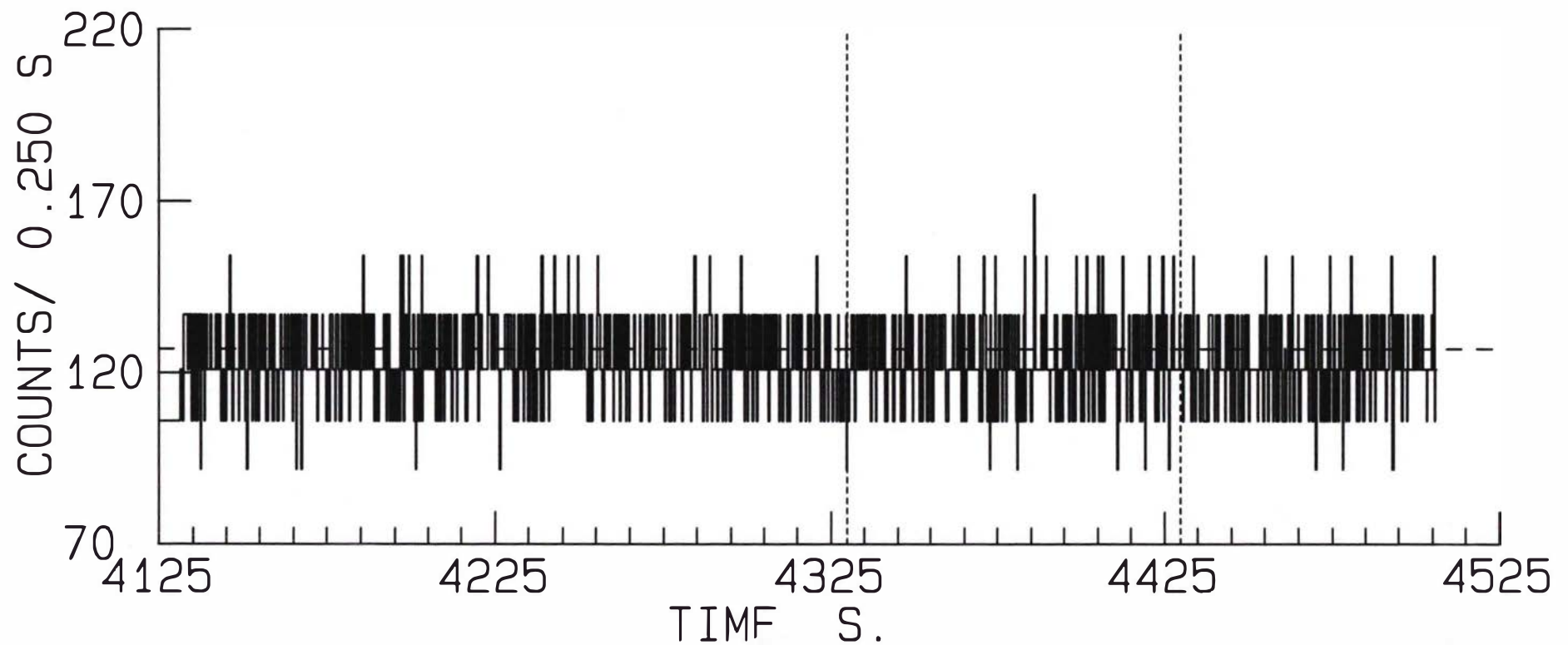
14 / 11 / 8



ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

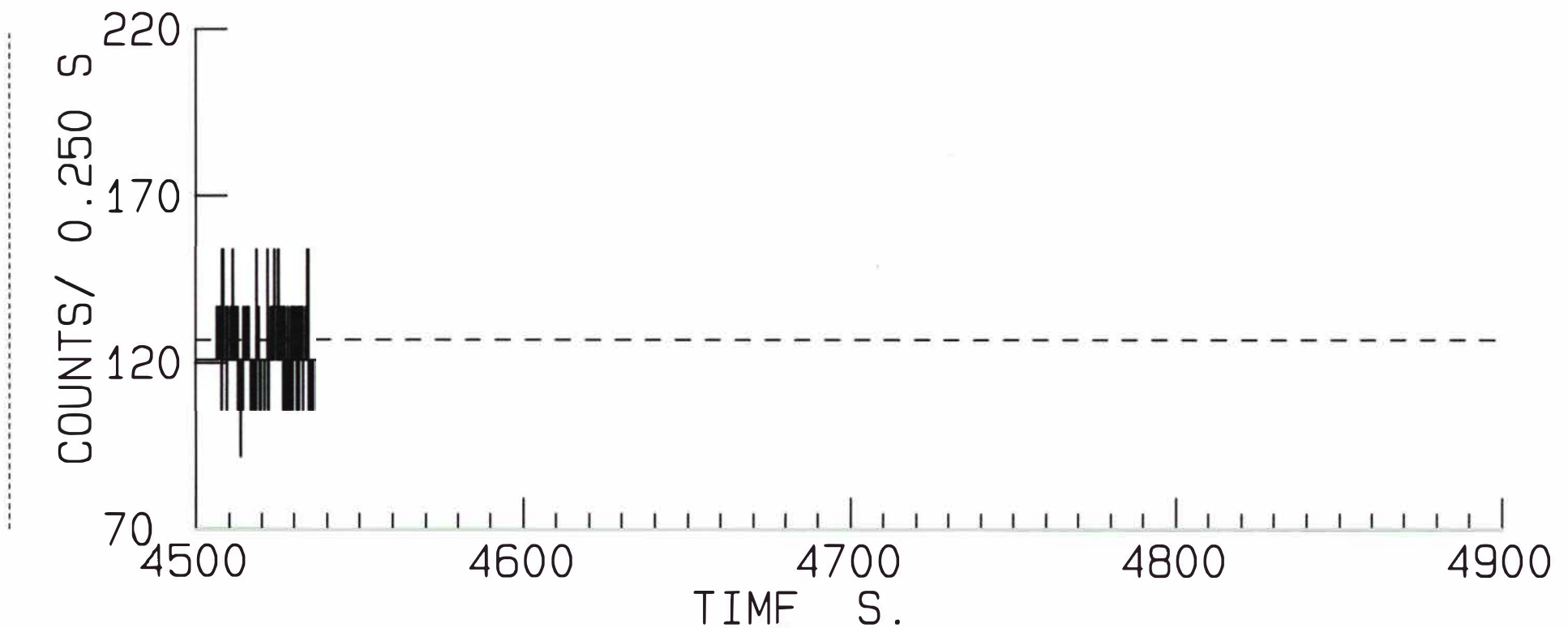
14 / 11 / 8

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
2/ 3/98 27684.123 s
22- 149 keV

14 / 11 / 8



KONUS

ULYSSES RT

08 / 02 / 00

02 / 03 / 98 27684.123 s

0.250 S INTERVALS REGROUPED BY 13

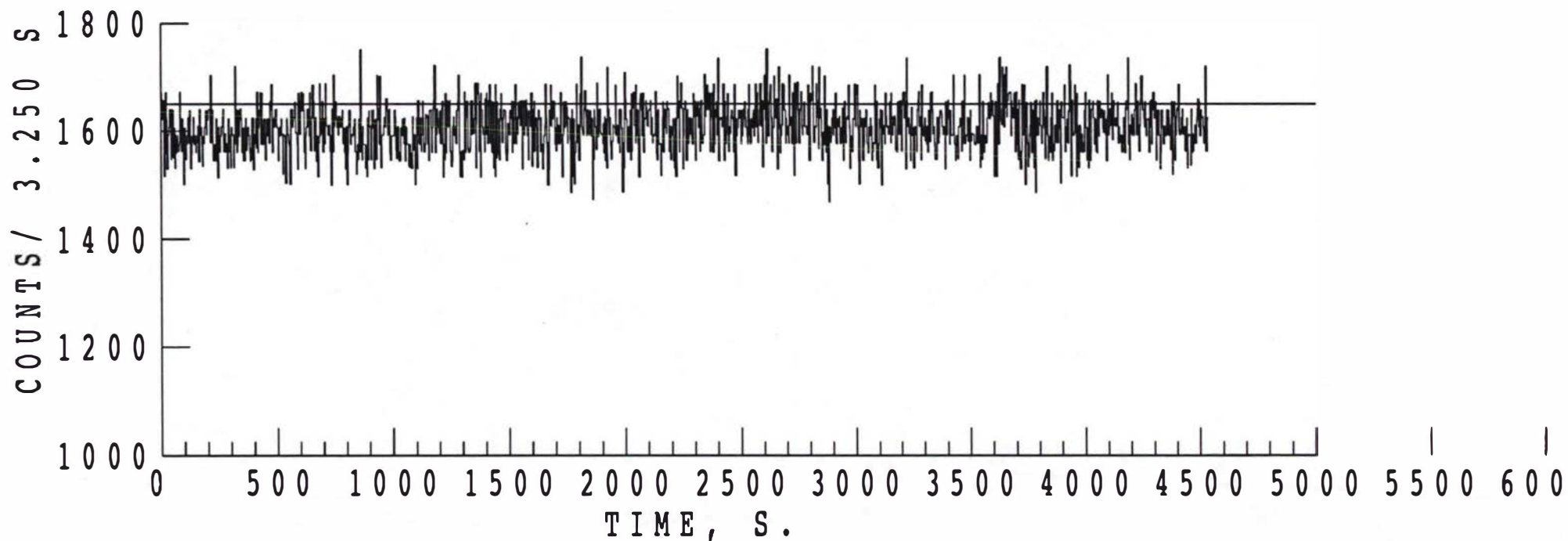
0 - 0 keV

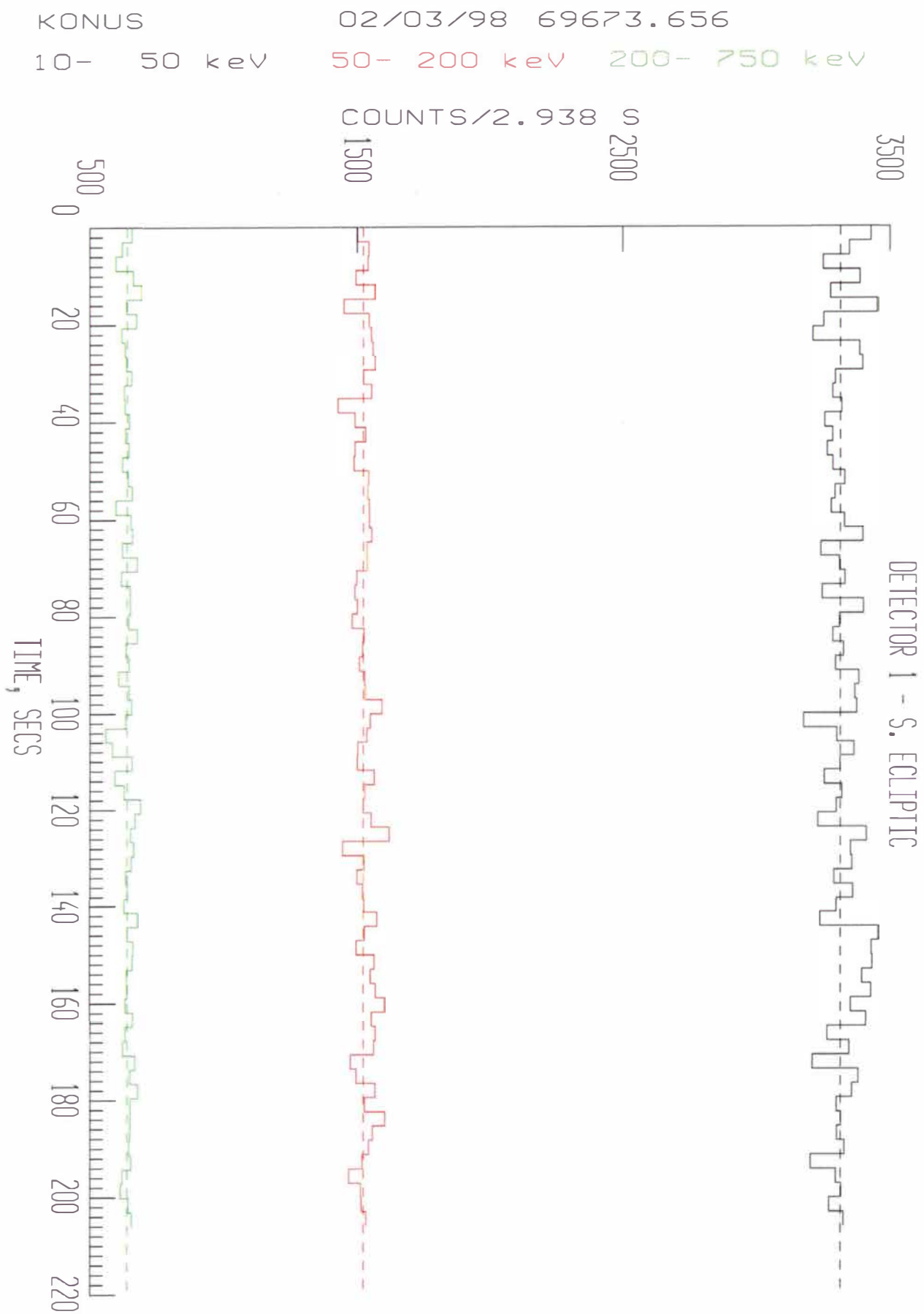
N= 10 M= 10

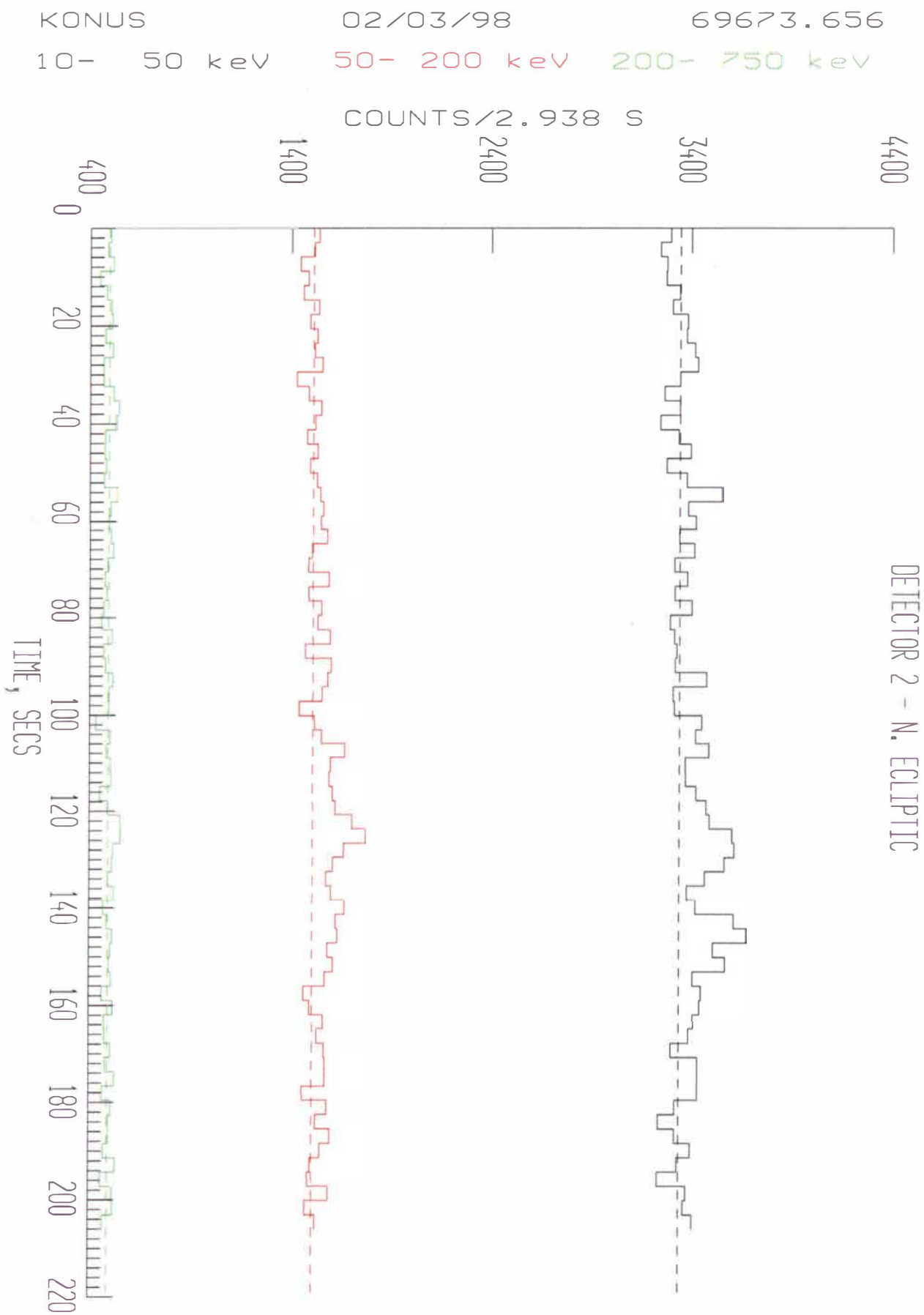
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS







B

KONUS

ULYSSES RT

08/02/00

02/03/98 67536.062 s

0.250 S INTERVALS REGROUPED BY 12

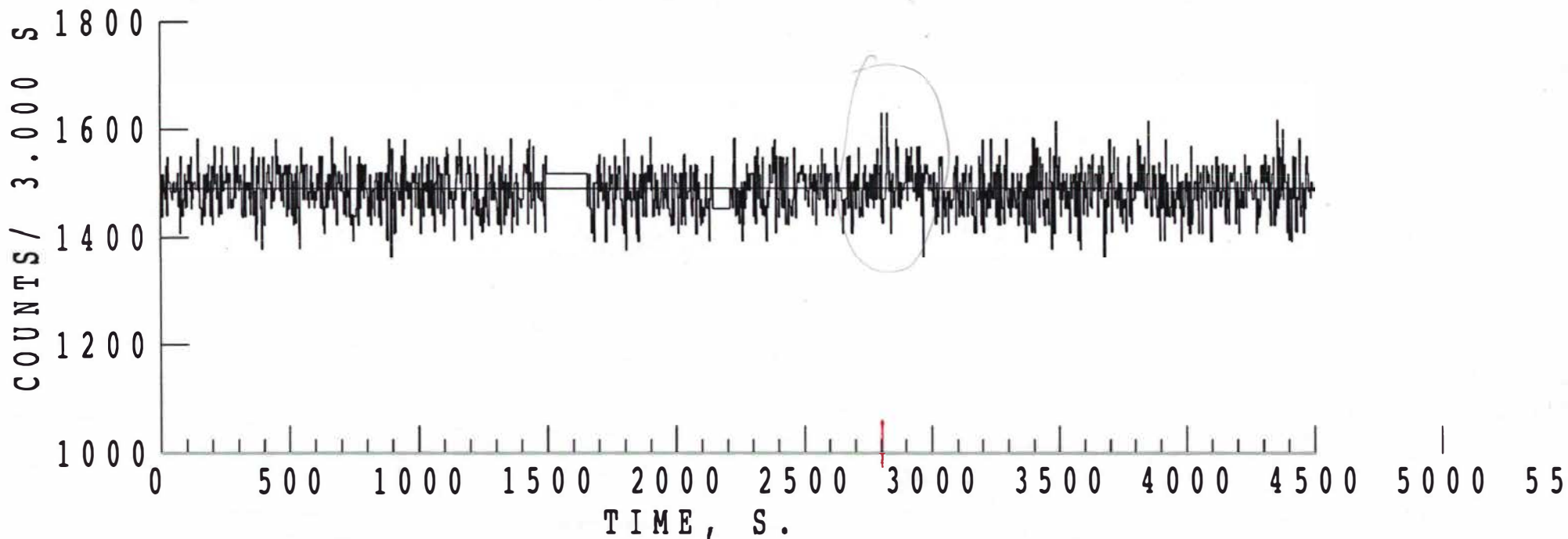
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



B

KONUS RI 19980302 70336

ULYSSES RT

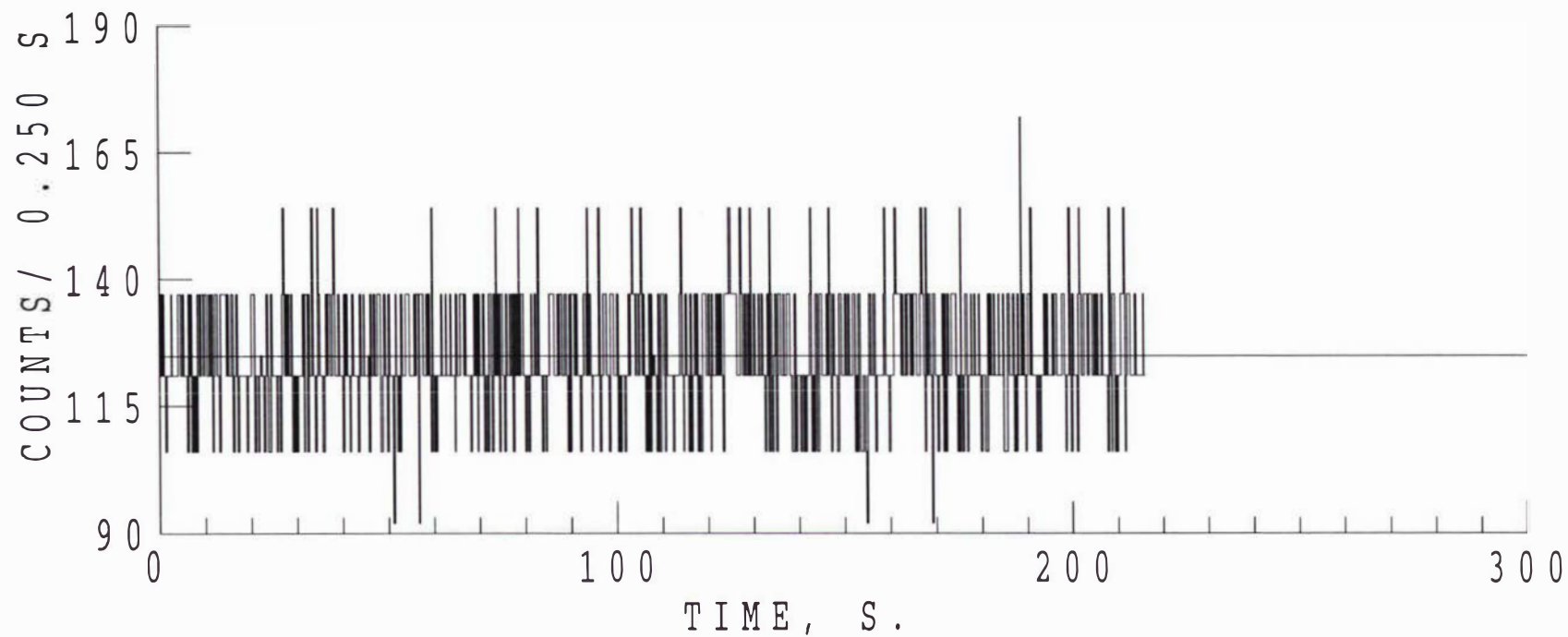
01 / 02 / 12

02 / 03 / 98 70236.094 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLMOR.msfc.nasa.gov Wed Mar 4 09:30:17 1998
Date: Wed, 4 Mar 1998 11:29:54 -0600 (CST)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6626

TIME: TJD=0874 SECONDS=69884

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

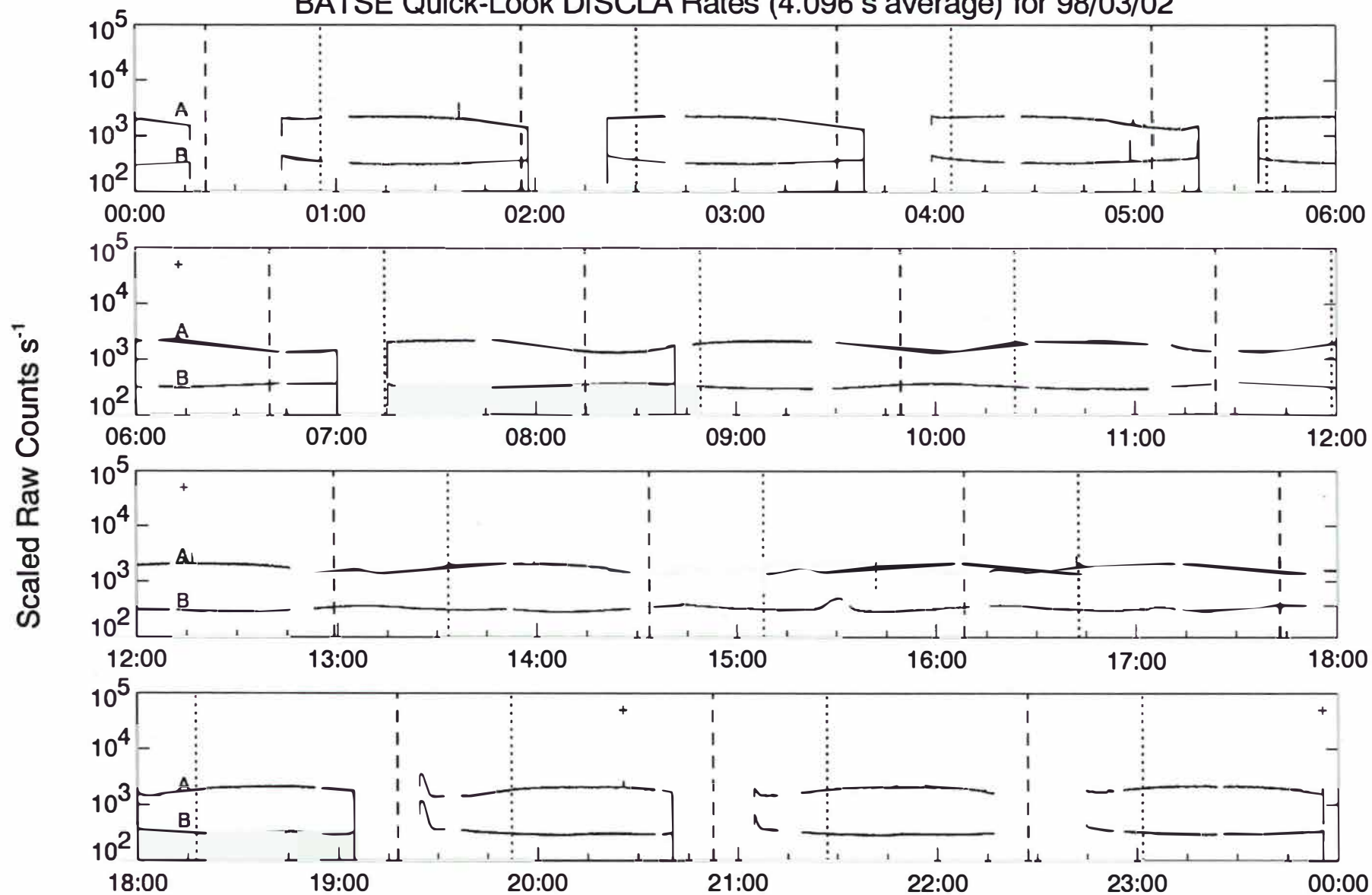
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

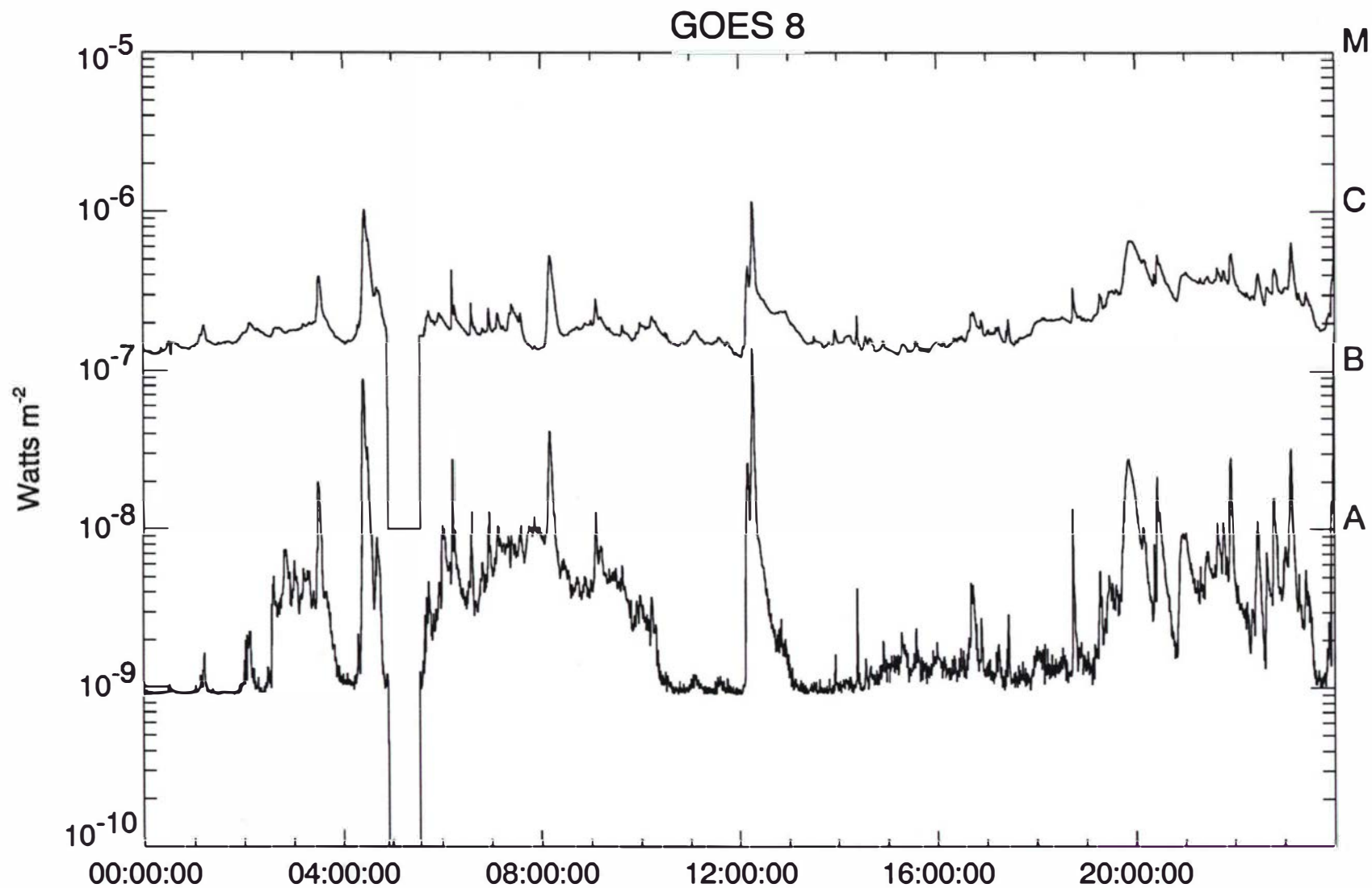
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/02



Current Time: 98/03/06, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/02, 0000:00

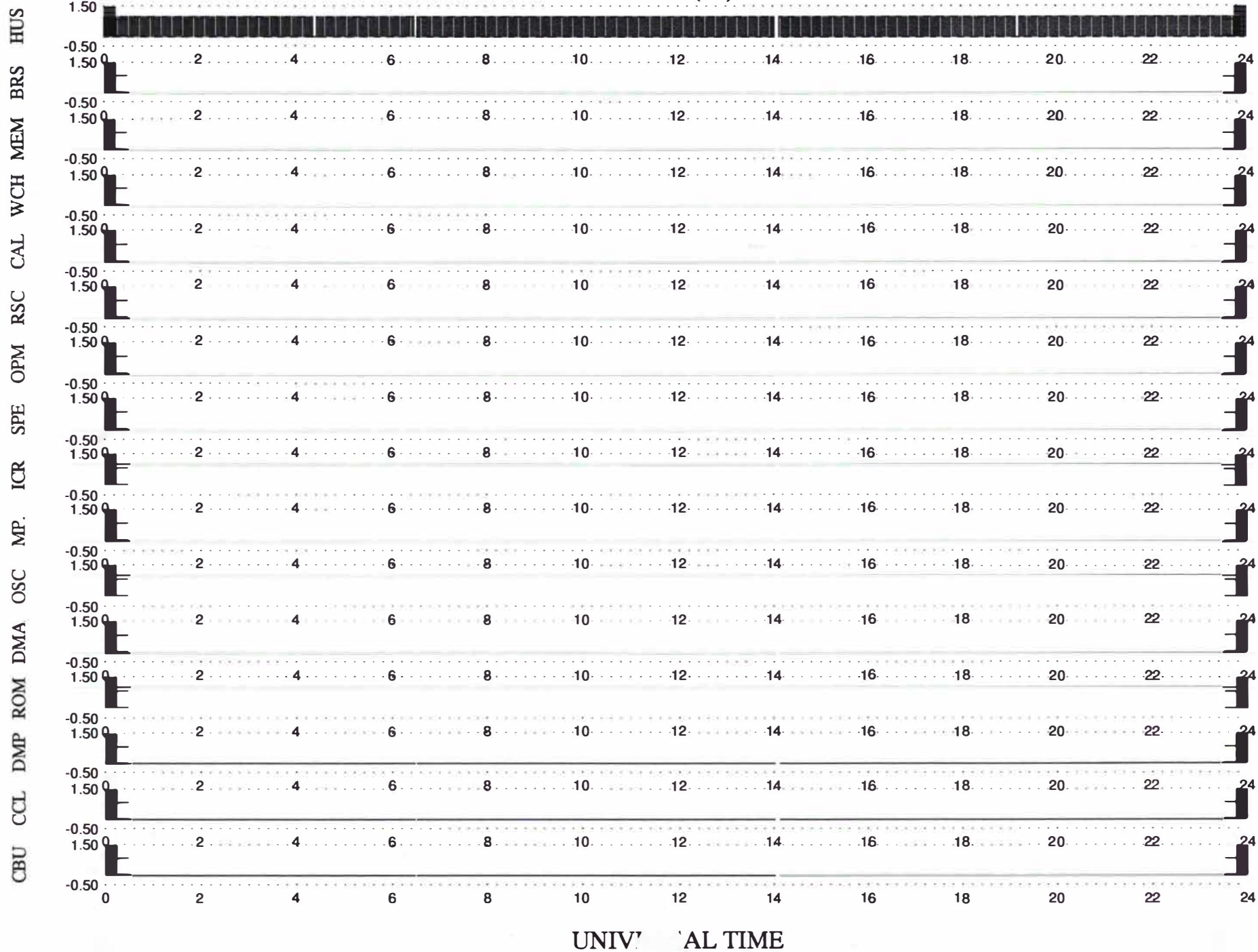
Plot created: 98/03/06, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

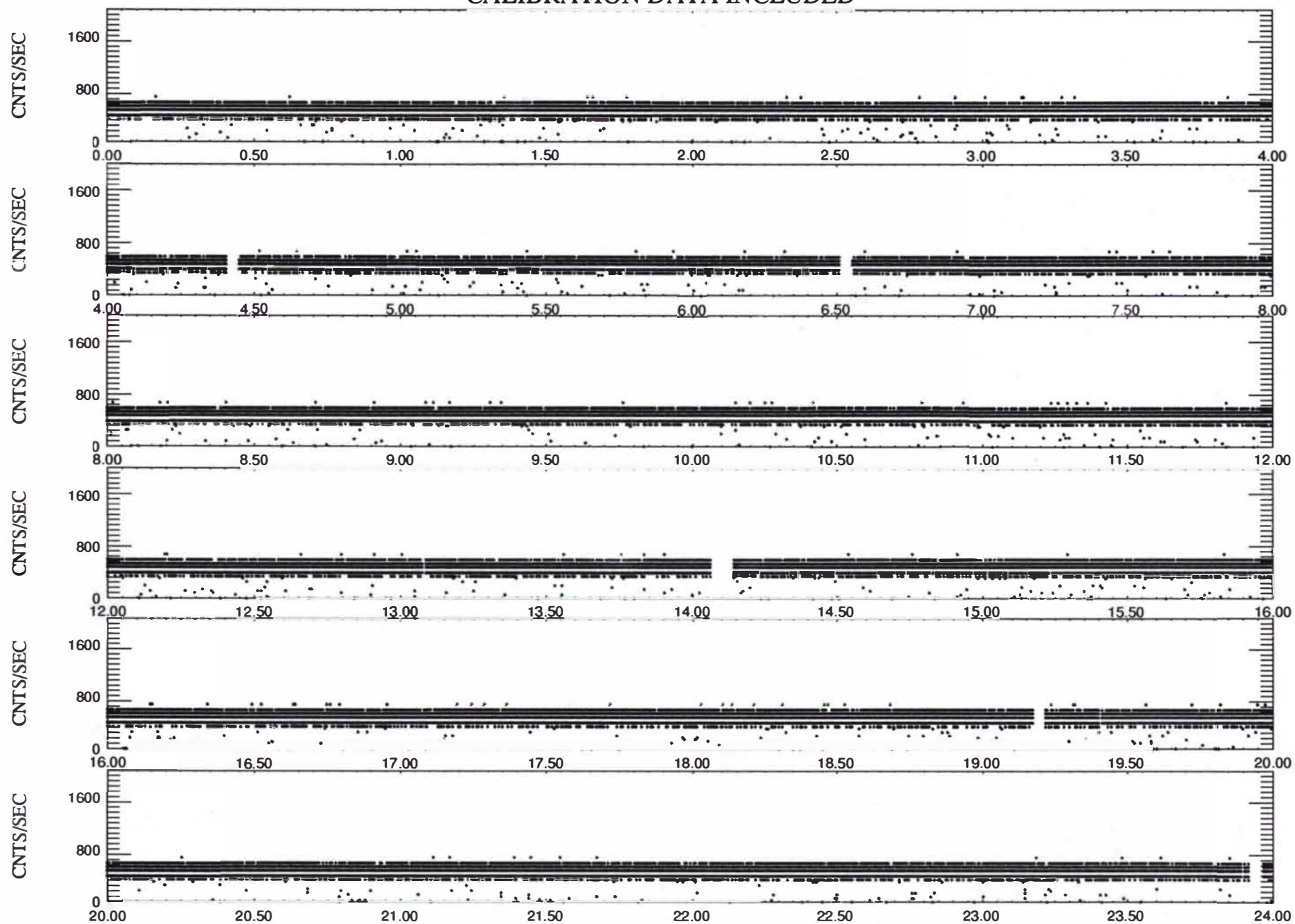
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

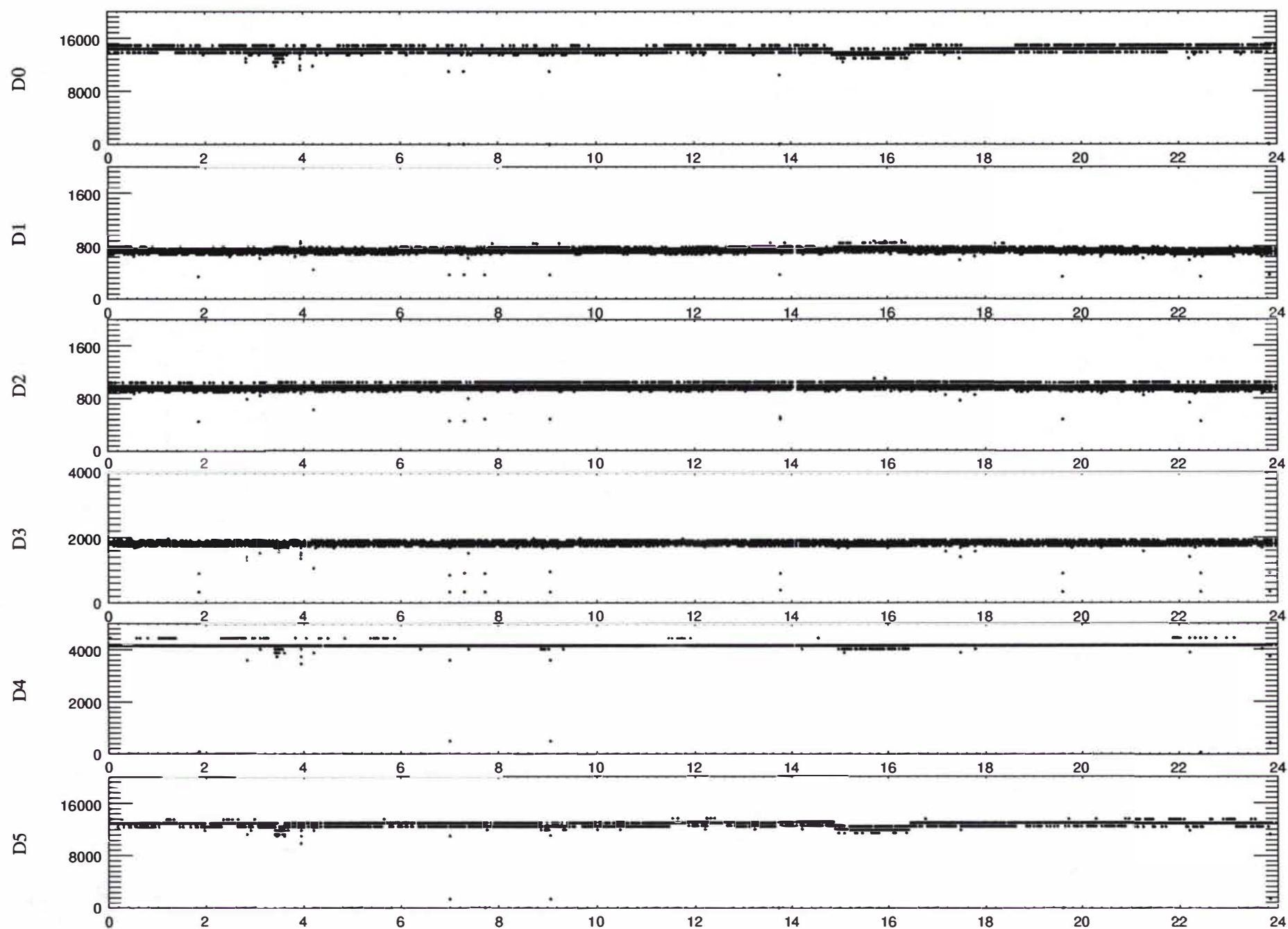
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV AL TIME



UNIVERSAL TIME

From RICHARDSON@fender.msfc.nasa.gov Wed Mar 4 09:27:10 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Wed, 4 Mar 1998 11:26:54 -0600 (CST)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6627

TIME: TJD=0875 SECONDS=26353

TYPE: FLARE

SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

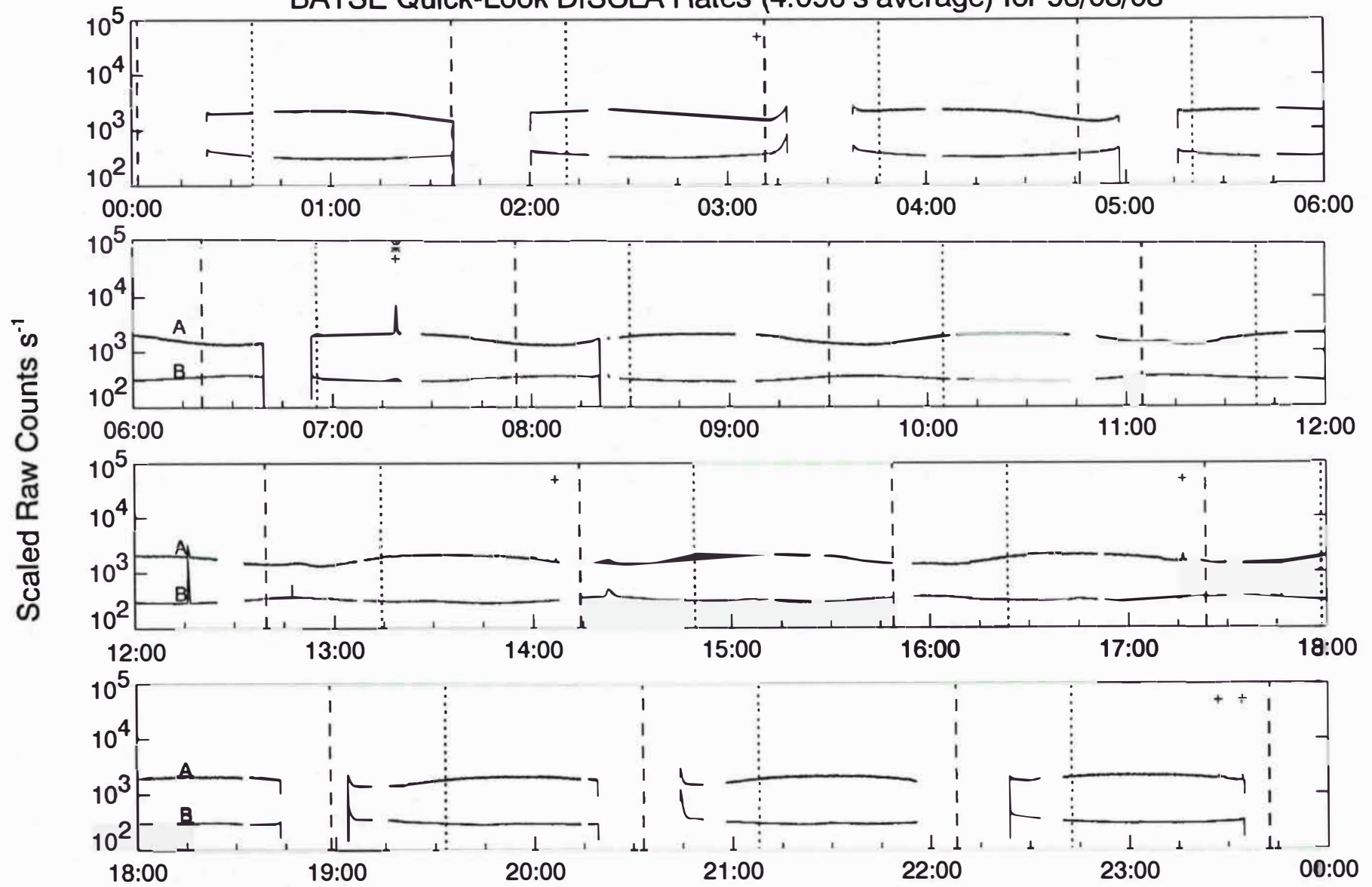
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=46.1 AZIMUTH=336.5 ERROR=0.5 DEGREES

COMMENTS:

FLARE, OPTICAL SF, GOES C1.2 SINGLE PULSE WITH STRUCTURE. DUR. APPROX. =
55 SEC. NOT VISIBLE ABOVE 300KEV.

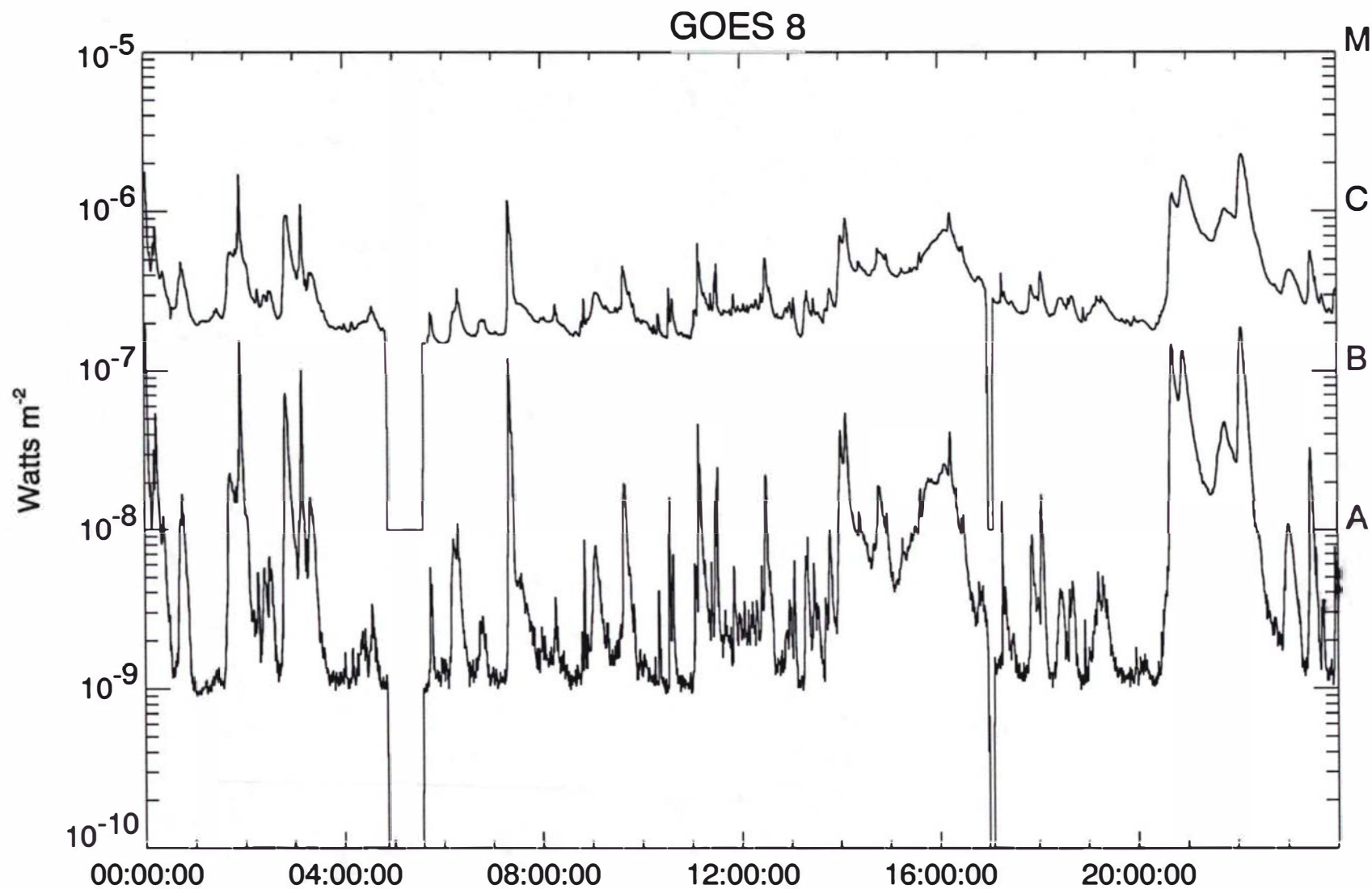
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/03



Current Time: 98/03/07, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

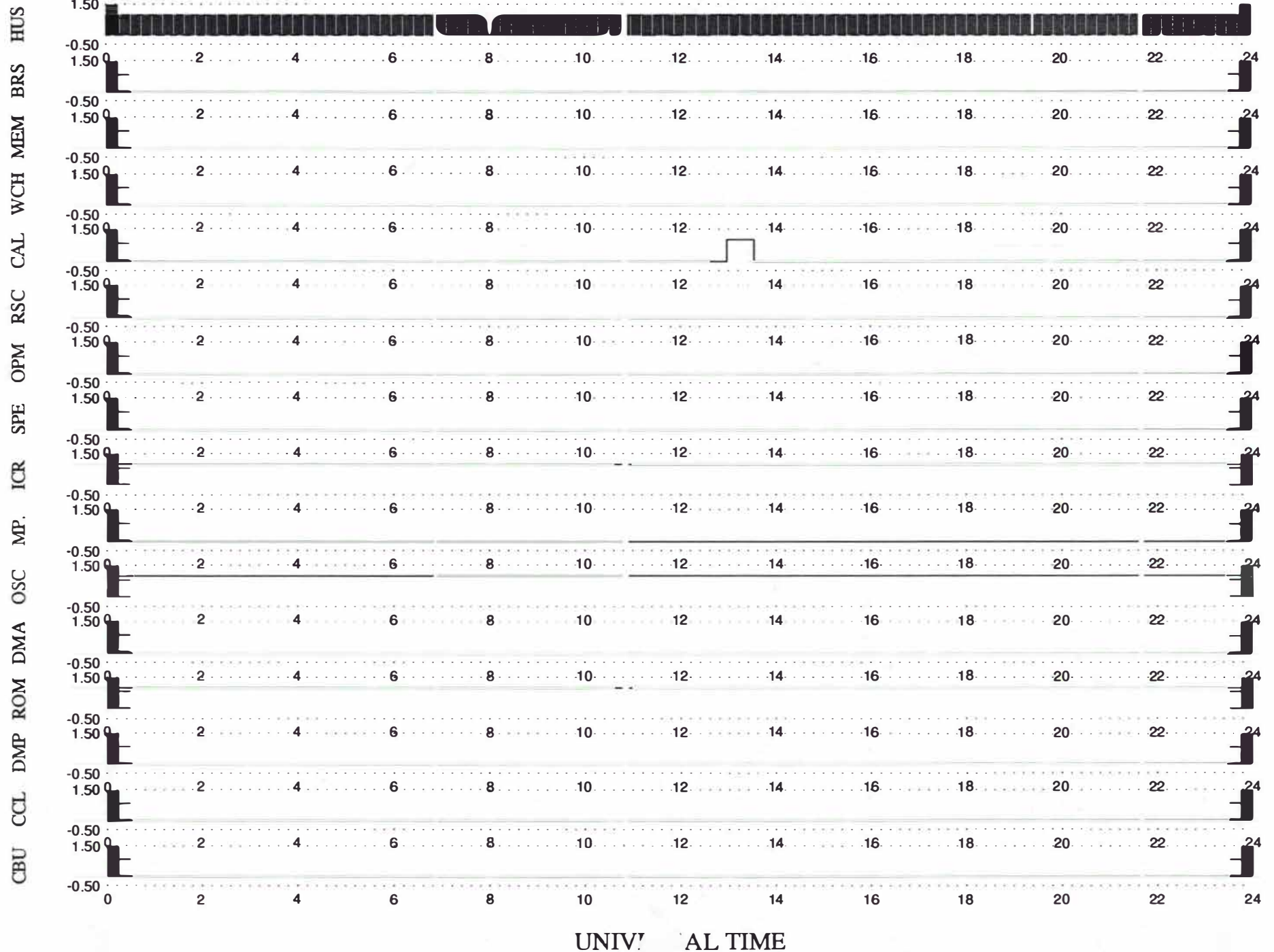


Data Start: 98/03/03, 0000:00

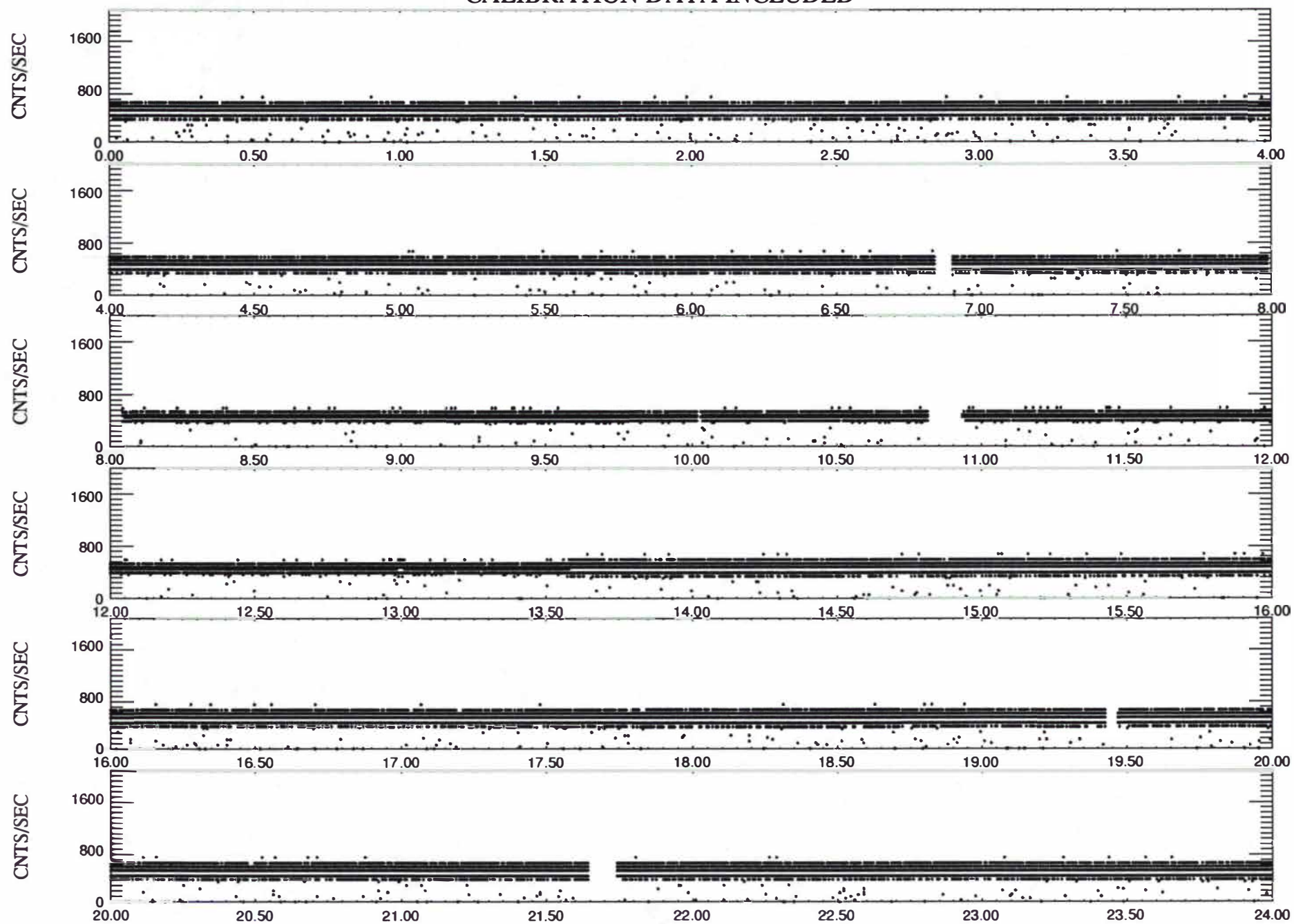
Plot created: 98/03/07, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

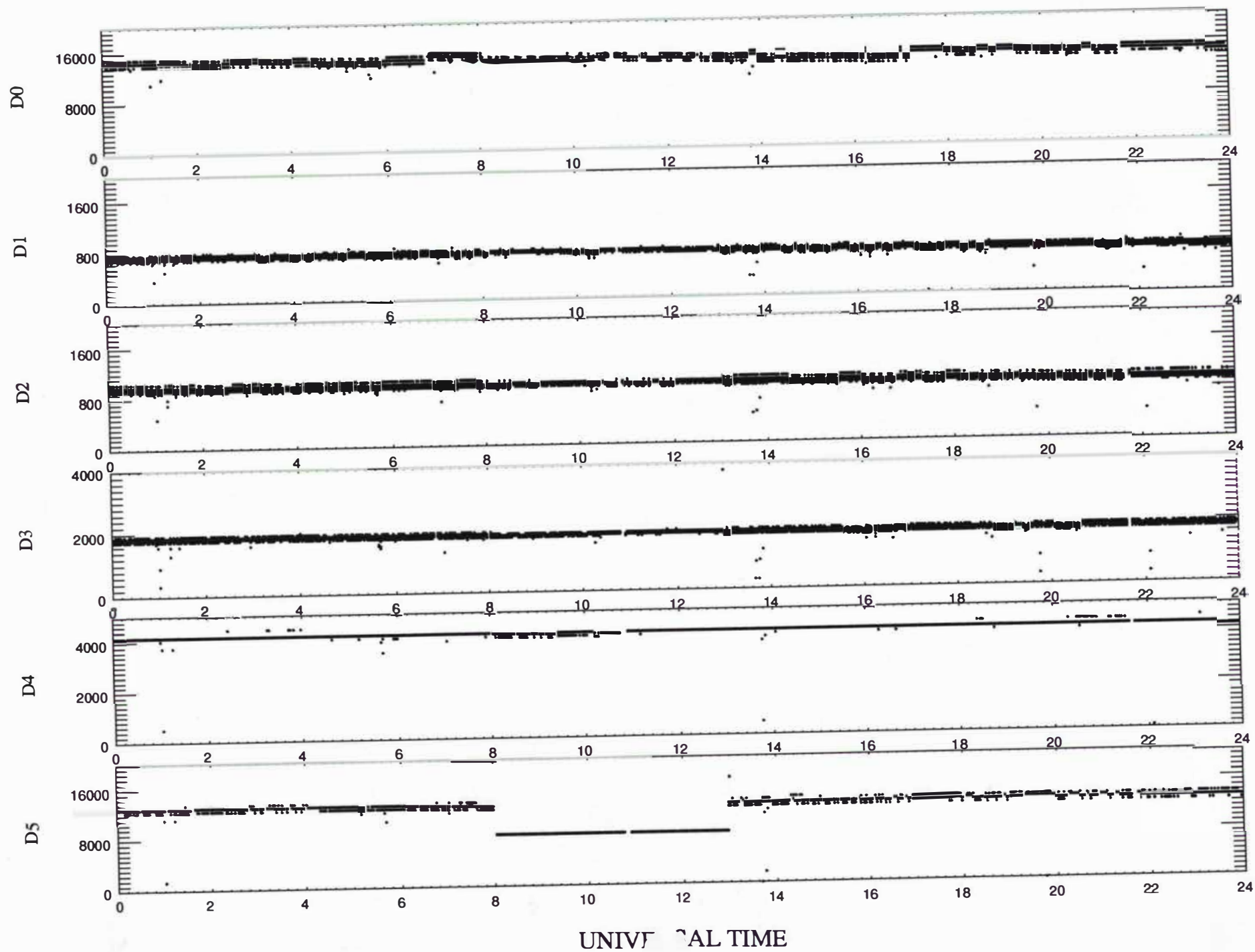
NO BURST (12)



CALIBRATION DATA INCLUDED



UNIV. TIME



From kraken@rosserv.gsfc.nasa.gov Fri Mar 13 08:50 PST 1998
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Fri, 13 Mar 1998 11:56:53 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@rosserv.gsfc.nasa.gov>
Subject: bursts not seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

The bursts listed below were not seen by TGRS as triggered events, or in waiting mode data. My apologies for the late reporting of the second burst.

Pete

March 4 1998 02:36 Ulysses time; weak burst, 64 ms long
February 11 1998 04:40 Ulysses time; weak burst, 64 ms long

From BUTTERWORTH@lheavx.gsfc.nasa.gov Thu Mar 12 11:47 PST 1998

From: BUTTERWORTH@lheavx.gsfc.nasa.gov

Date: Thu, 12 Mar 1998 14:44:11 -0500 (EST)

To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov

CC: BUTTERWORTH@lheavx.gsfc.nasa.gov

X-Vmsmail-To: @ULYSSES

X-Vmsmail-Cc: BUTTERWORTH

Subject: Ulysses event of 980304 was not detected by Konus

Hi Everyone,

Konus did not detect this event. (We have no data for the interval 03:01:28 to 03:02:45).

Paul.

Date: Sat, 7 Mar 1998 08:29:57 -0800

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

Message-Id: <199803071629.IAA14727@scylla.>

To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov

Subject: GRB980304

Content-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses observed the following burst:

March 4 1998 02:36 Ulysses time; weak burst, 64 ms long

The spacecraft was about 2200 light-seconds from Earth.

Was this event detected by anyone else?

CC: ulyssesbursts alias list

(barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczyski, marar, teegarden, t

From SURASAK@SSLMOR.msfc.nasa.gov Thu Mar 5 09:19:40 1998
Date: Thu, 5 Mar 1998 11:19:02 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6628

TIME: TJD=0876 SECONDS=26144

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=46.3 AZIMUTH=337.2 ERROR=0.825 DEGREES

COMMENTS:

SOLAR FLARE. GOES C2.7, OPT SF. SINGLE PULSE WITH SUBSTRUCTURE, STARTS AT ABOUT
T-20S. DURATION ABOUT 70 S. NOT VISIBLE ABOVE 100 KEV.

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

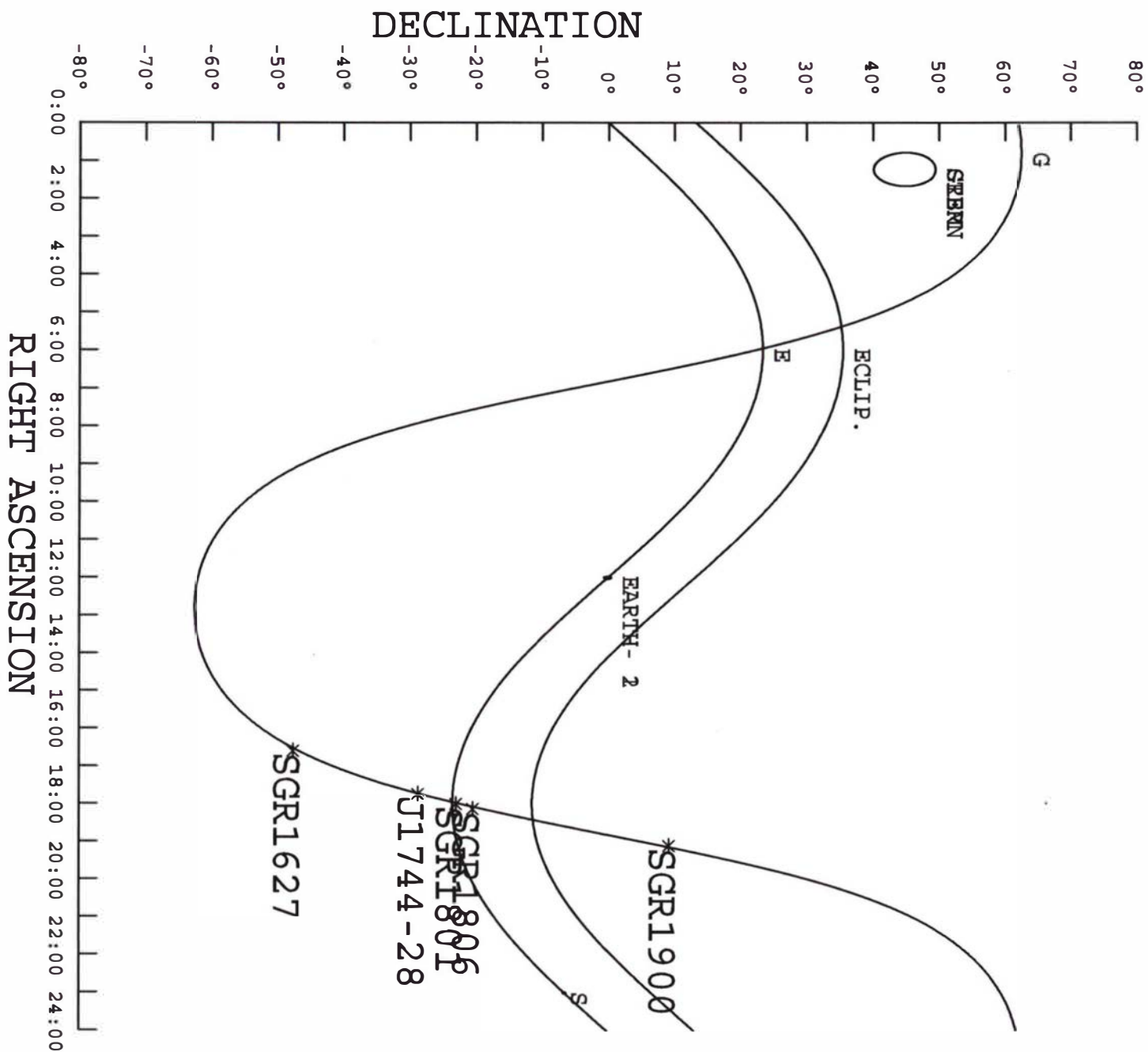
S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 SAX GRBM

2 KONUS



KONUS

ULYSSES RT

08/02/00

04/03/98 50616.027 s

0.250 S INTERVALS REGROUPED BY 12

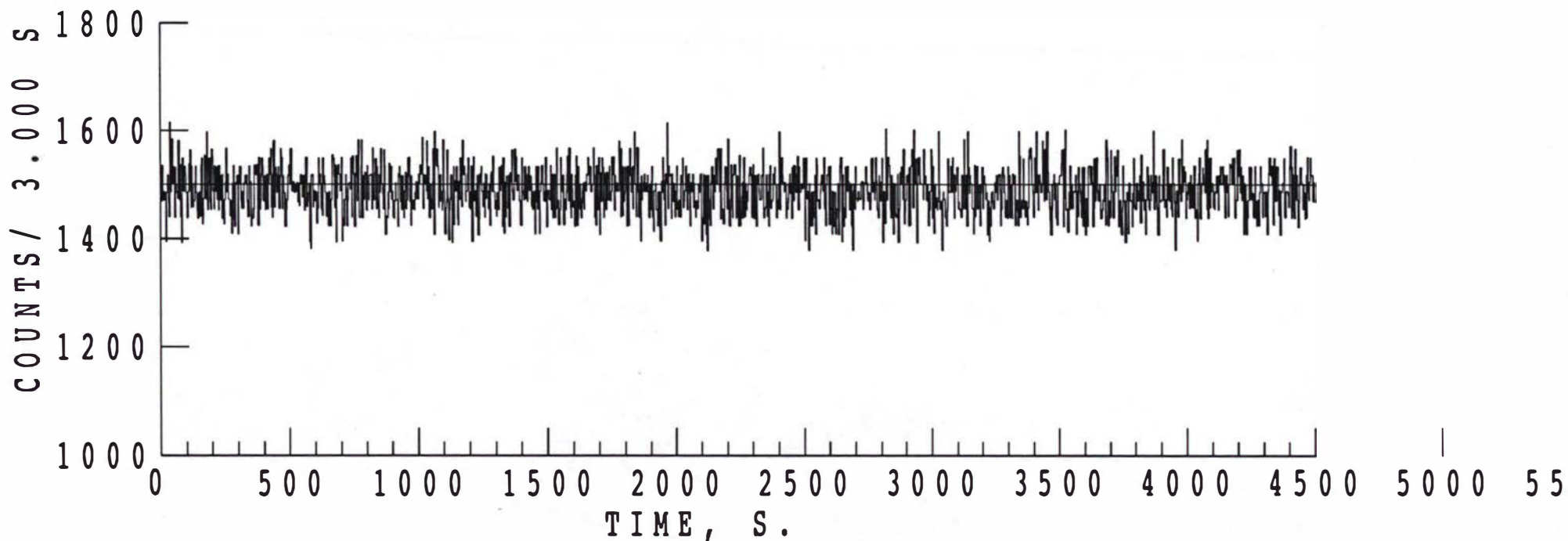
0 - 0 keV

N= 10 M= 10

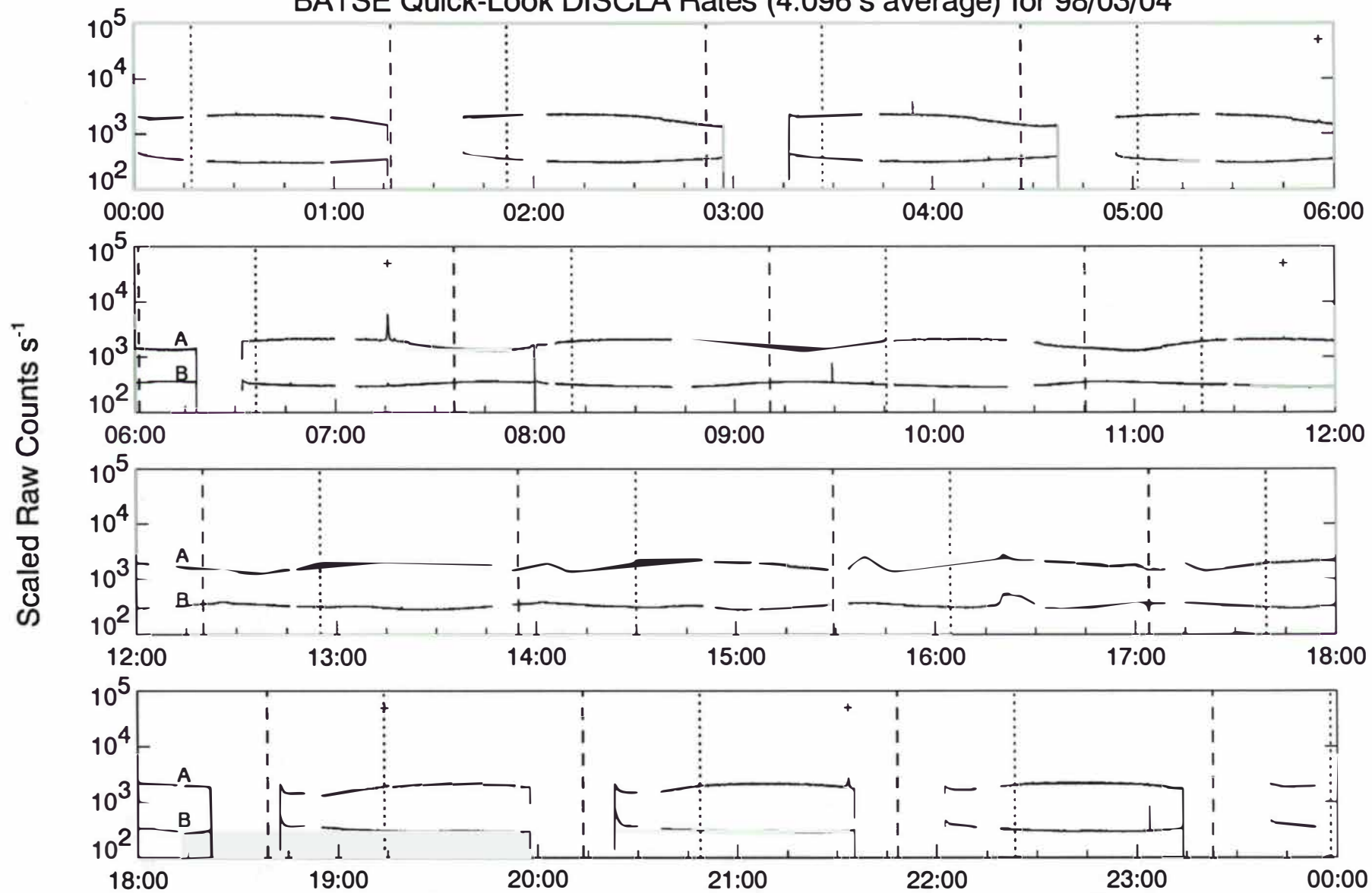
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/04

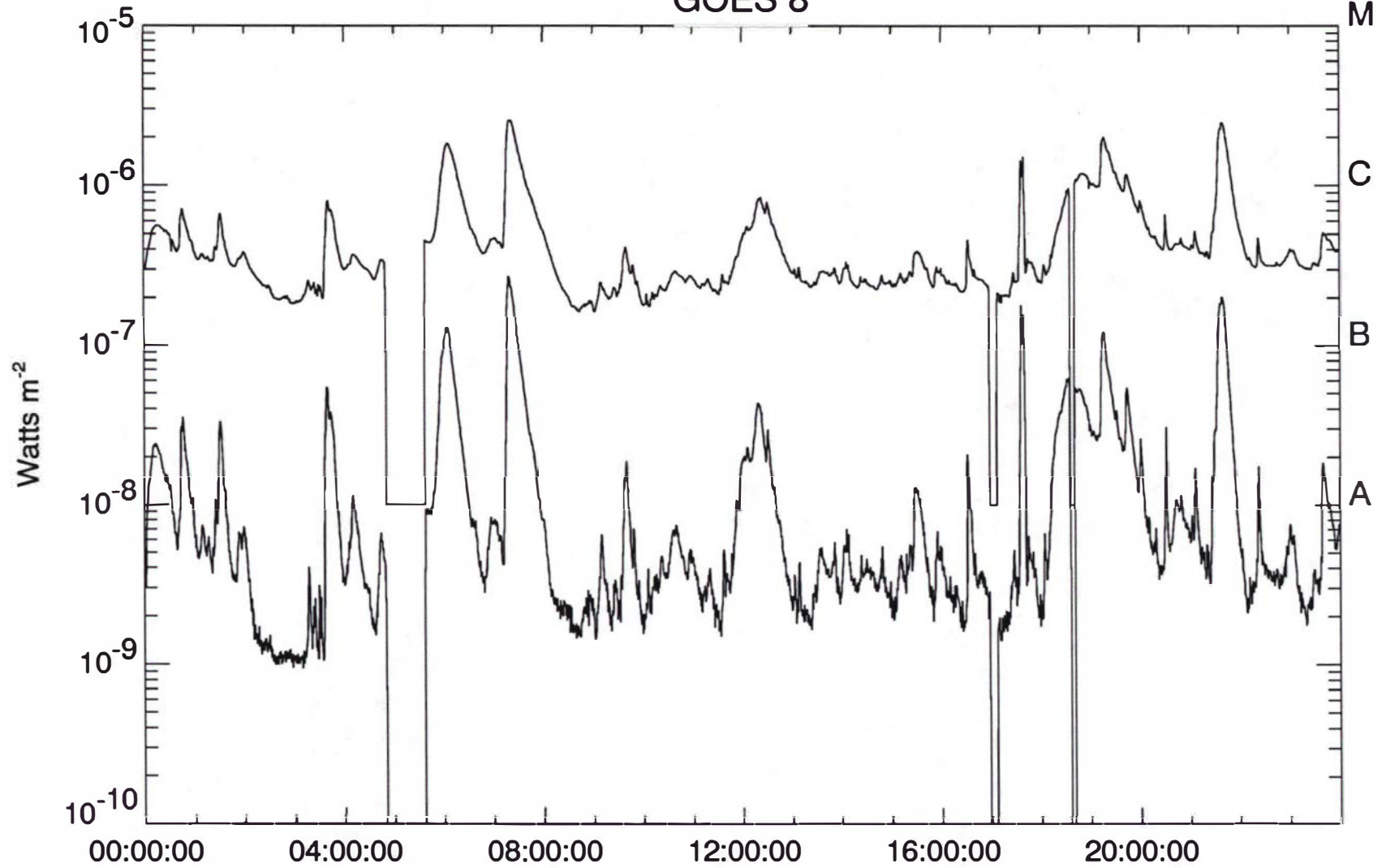


Current Time: 98/03/08, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 98/03/04, 0000:00

Plot created: 98/03/08, 1007

Channel

1 (1.0 - 8.0 Angstroms)

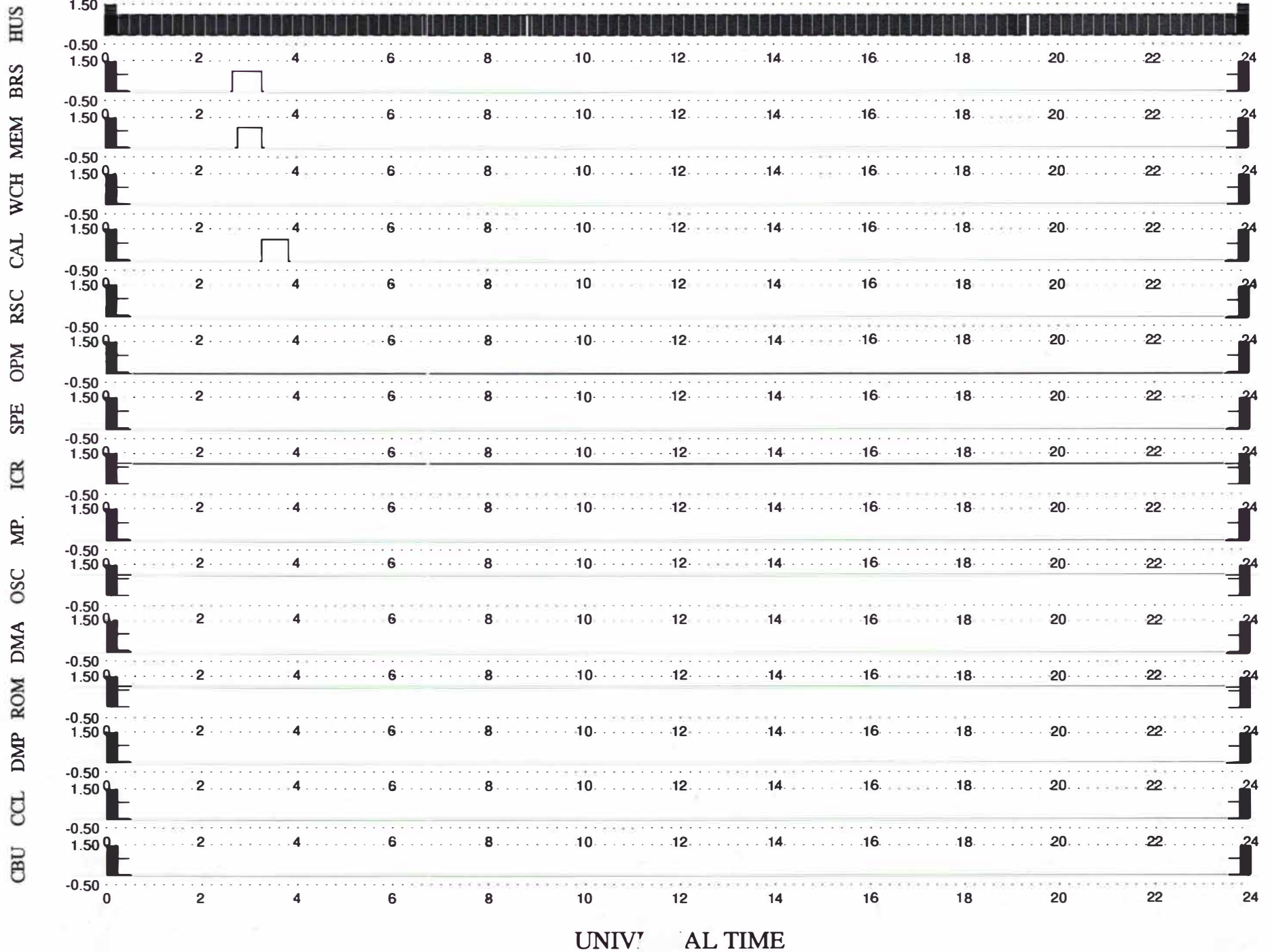
Background not subtracted

2 (0.5 - 4.0 Angstroms)

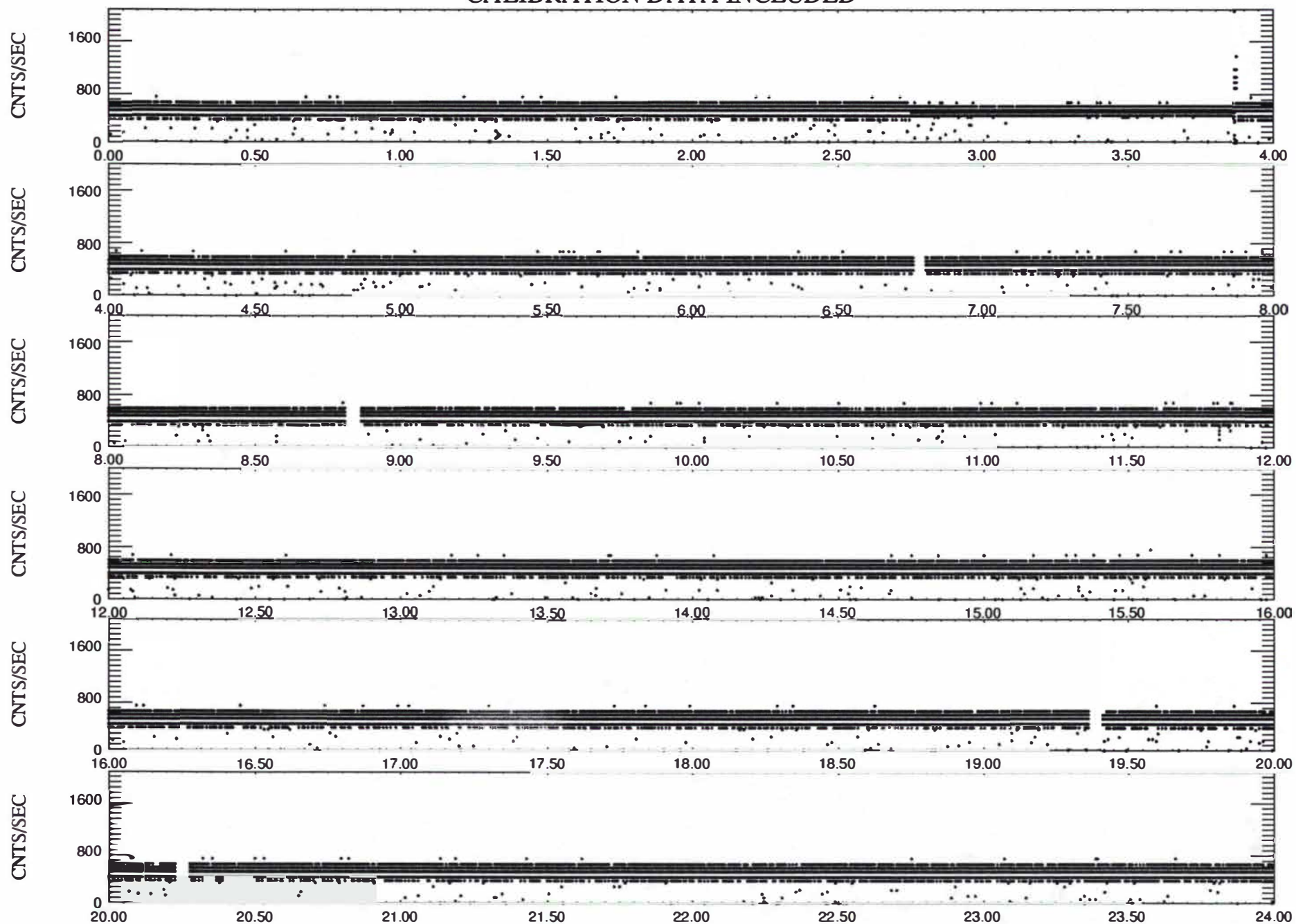
Background not subtracted

Sample average = 10

BURST NUMBER 13

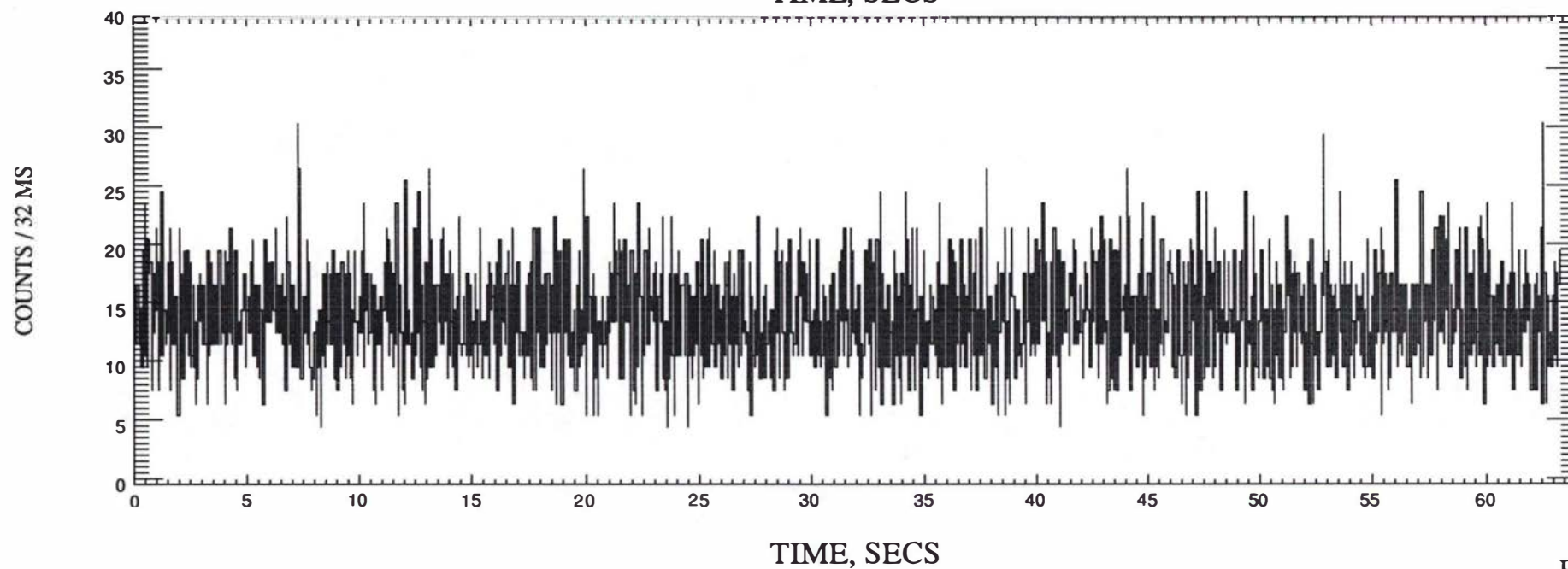
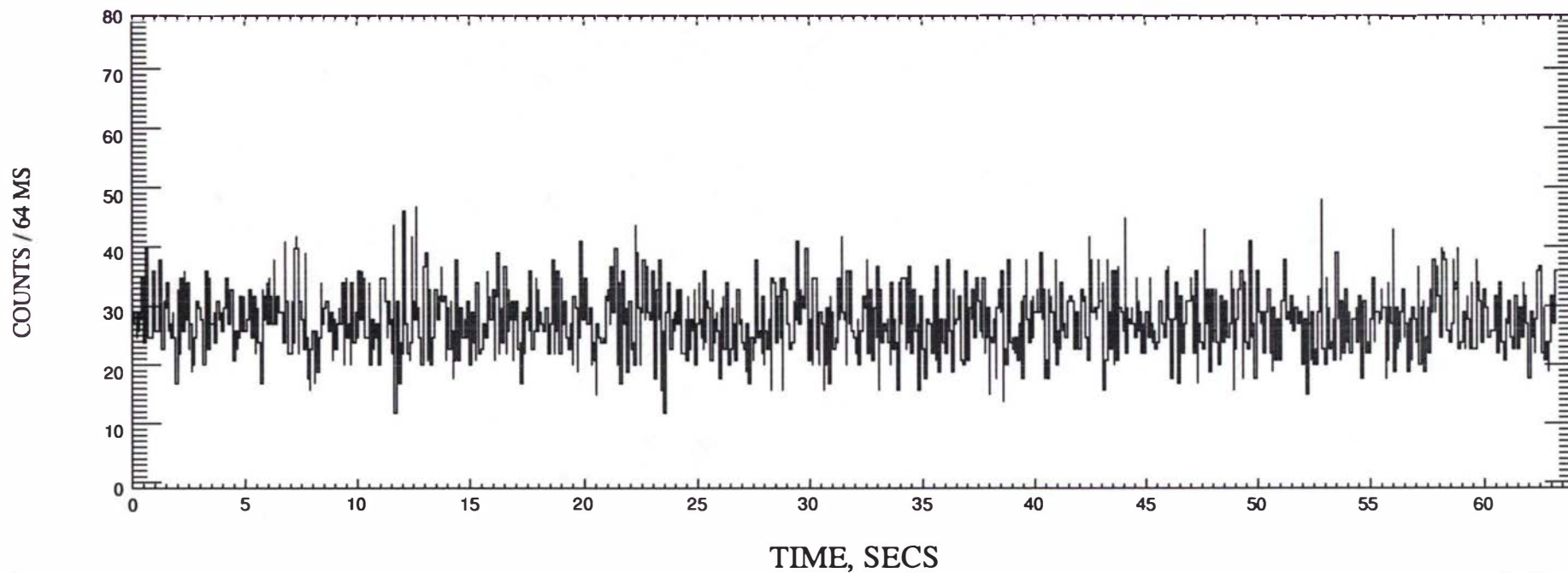


CALIBRATION DATA INCLUDED

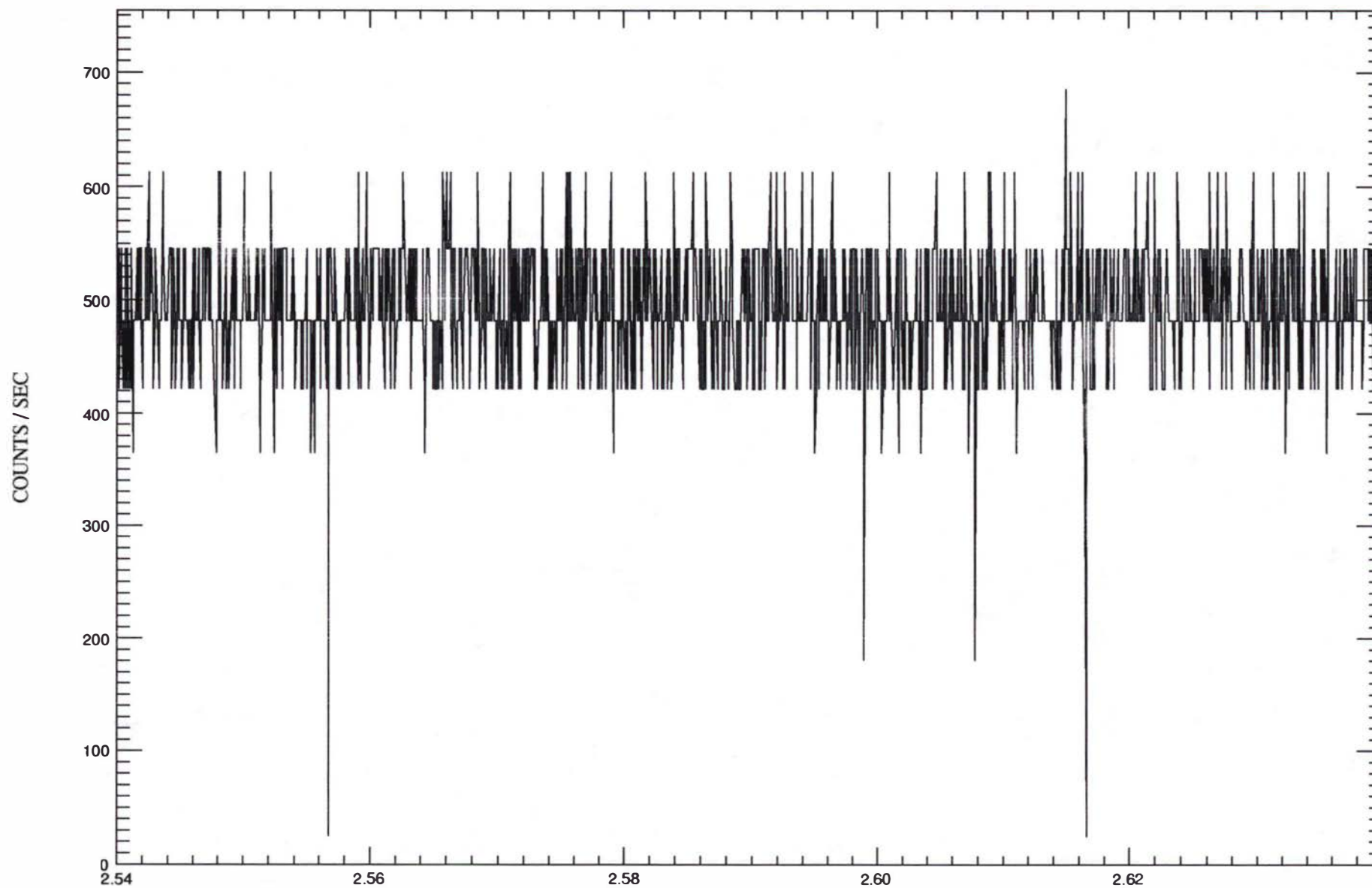


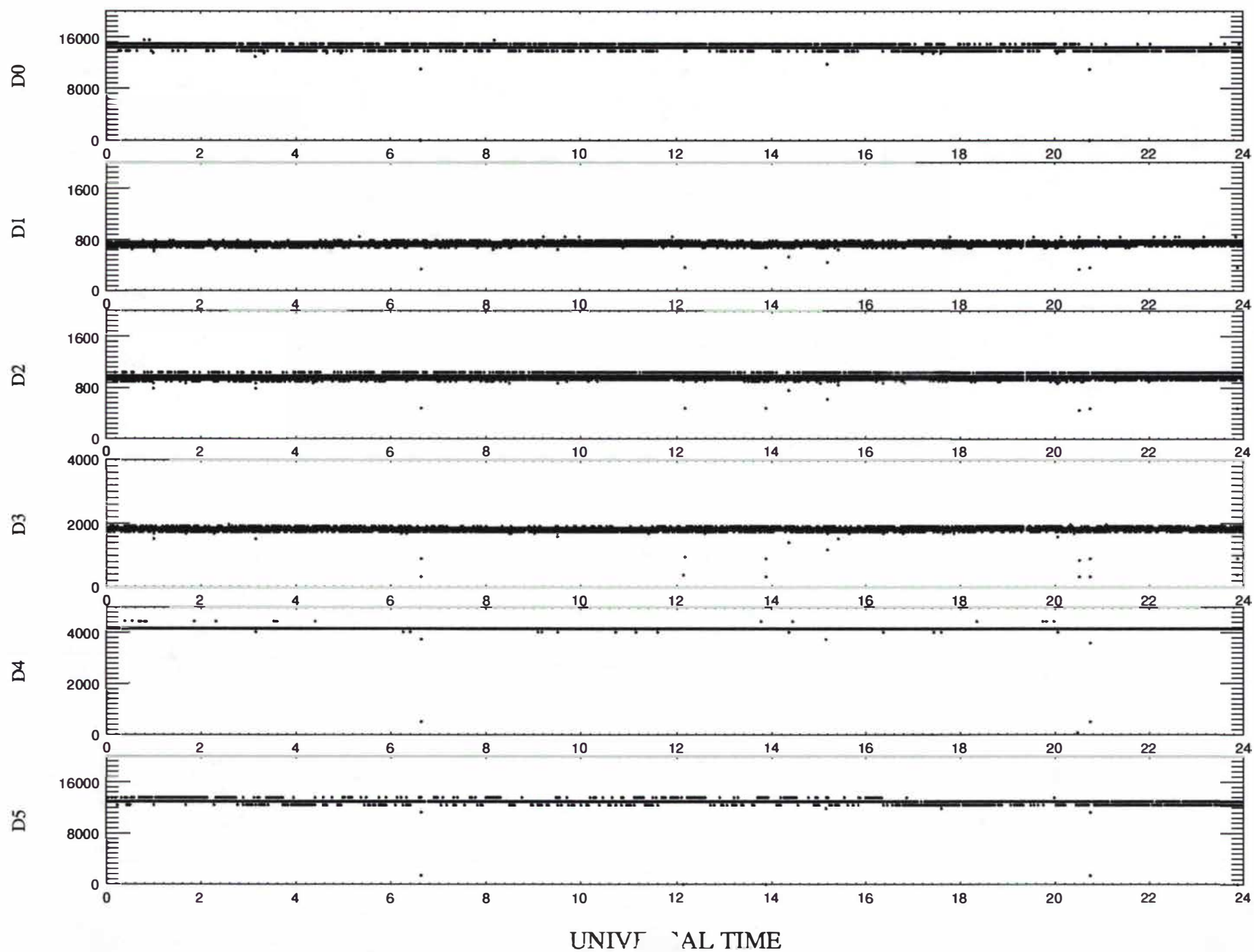
UNIV. TIME

Burst Counter 13 at UT= 2.594948484633 h= 9341.815 s 02:35:41.815

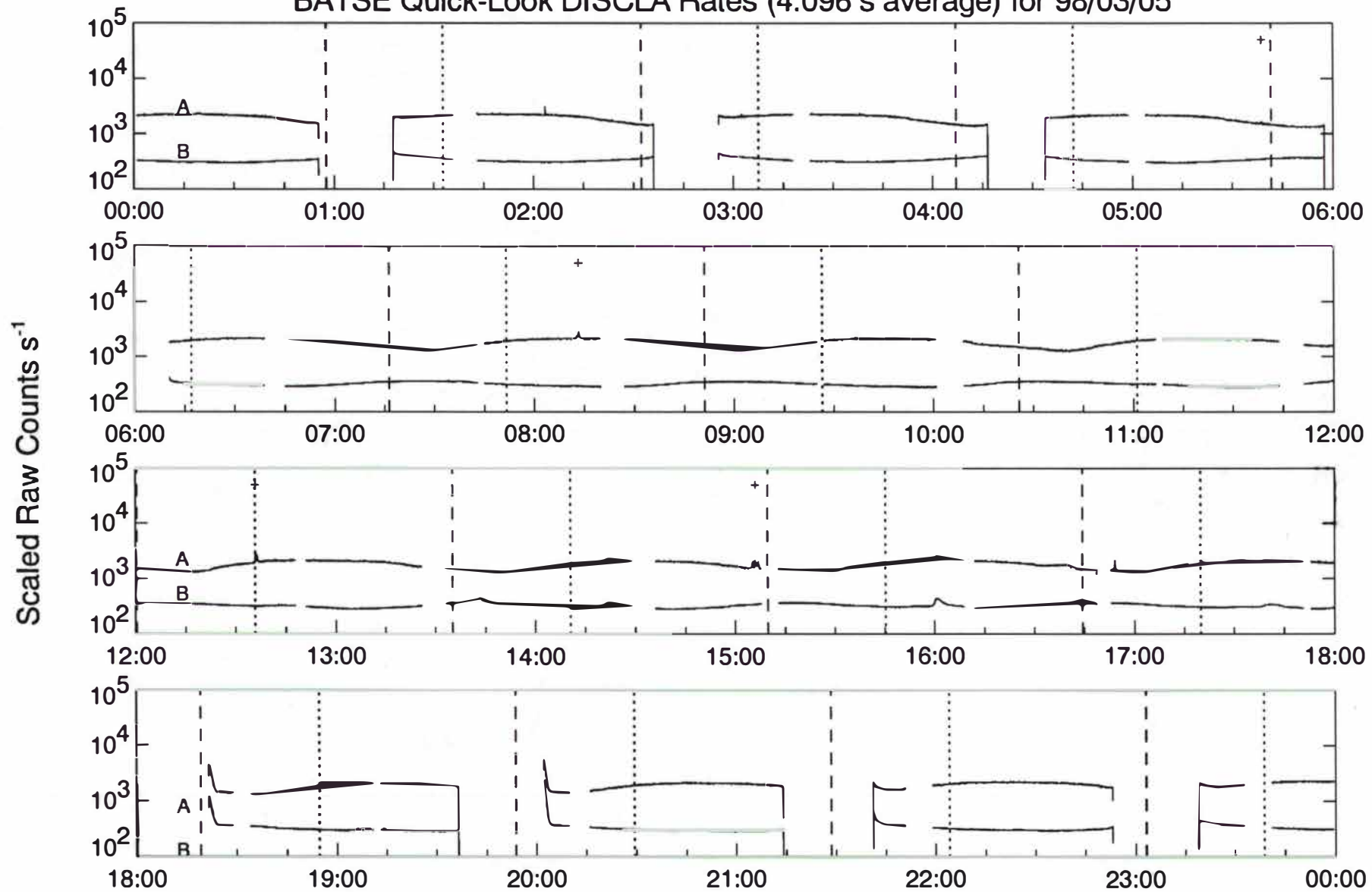


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/05

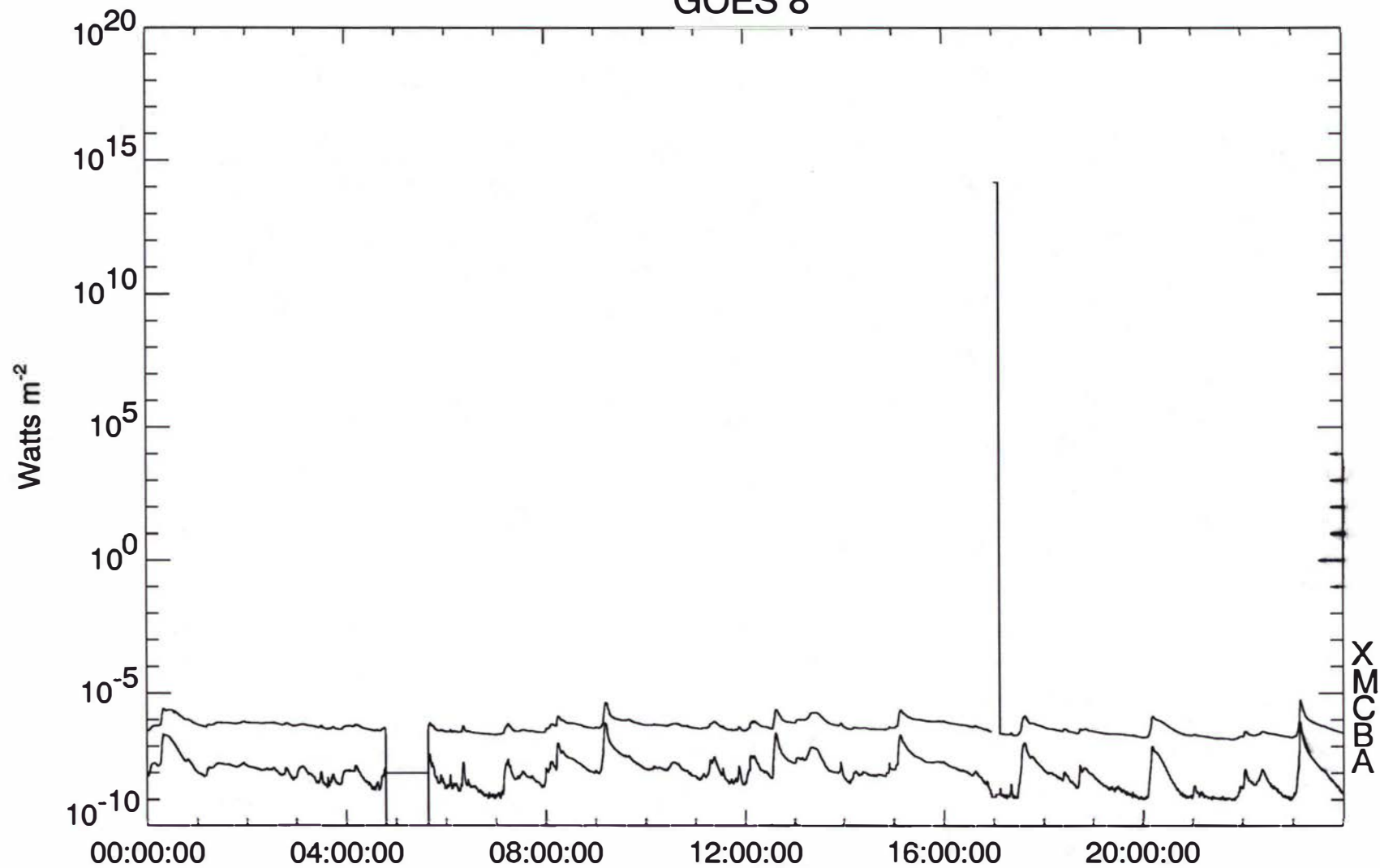


Current Time: 98/03/09, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

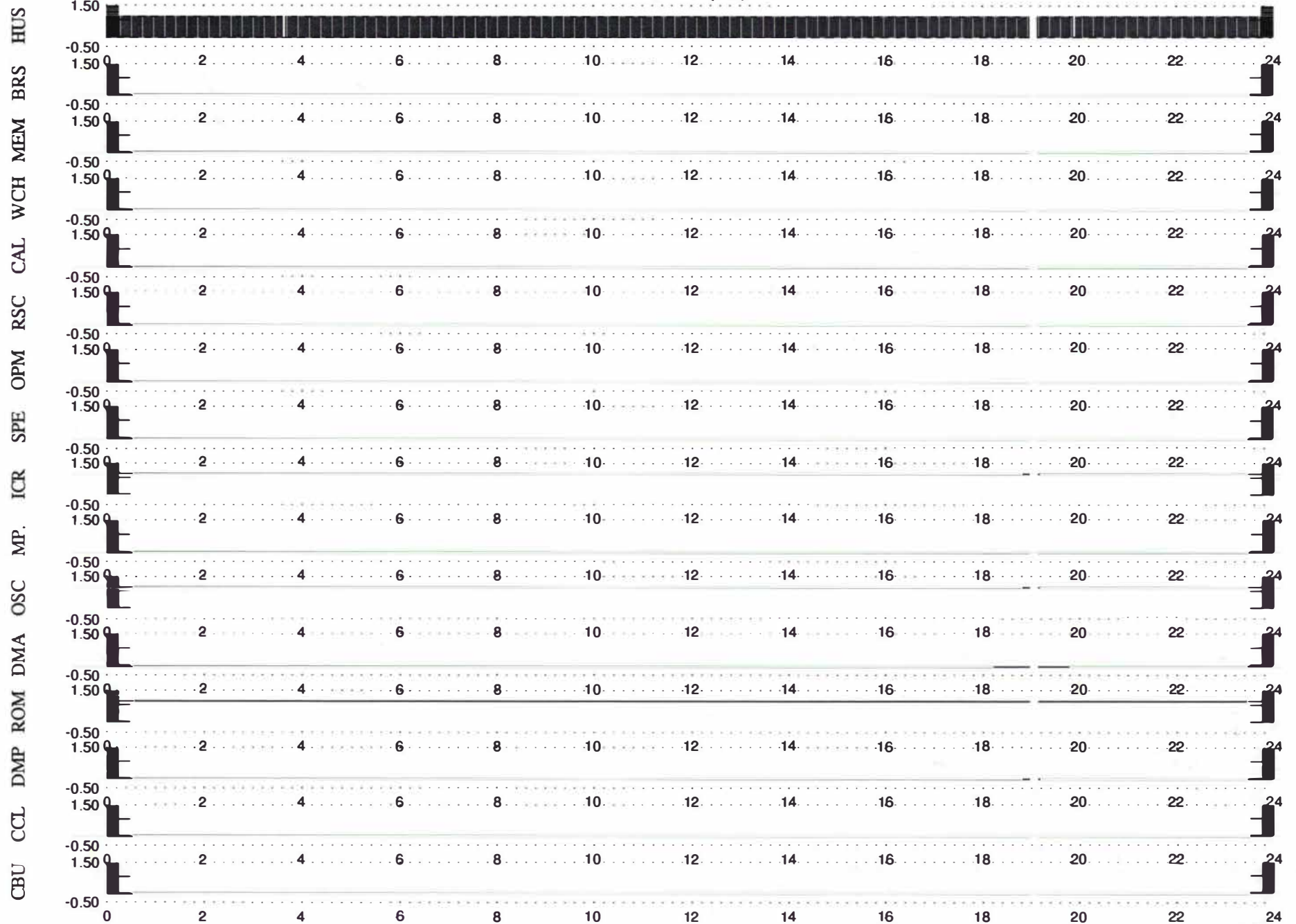


Data Start: 98/03/05, 0000:00

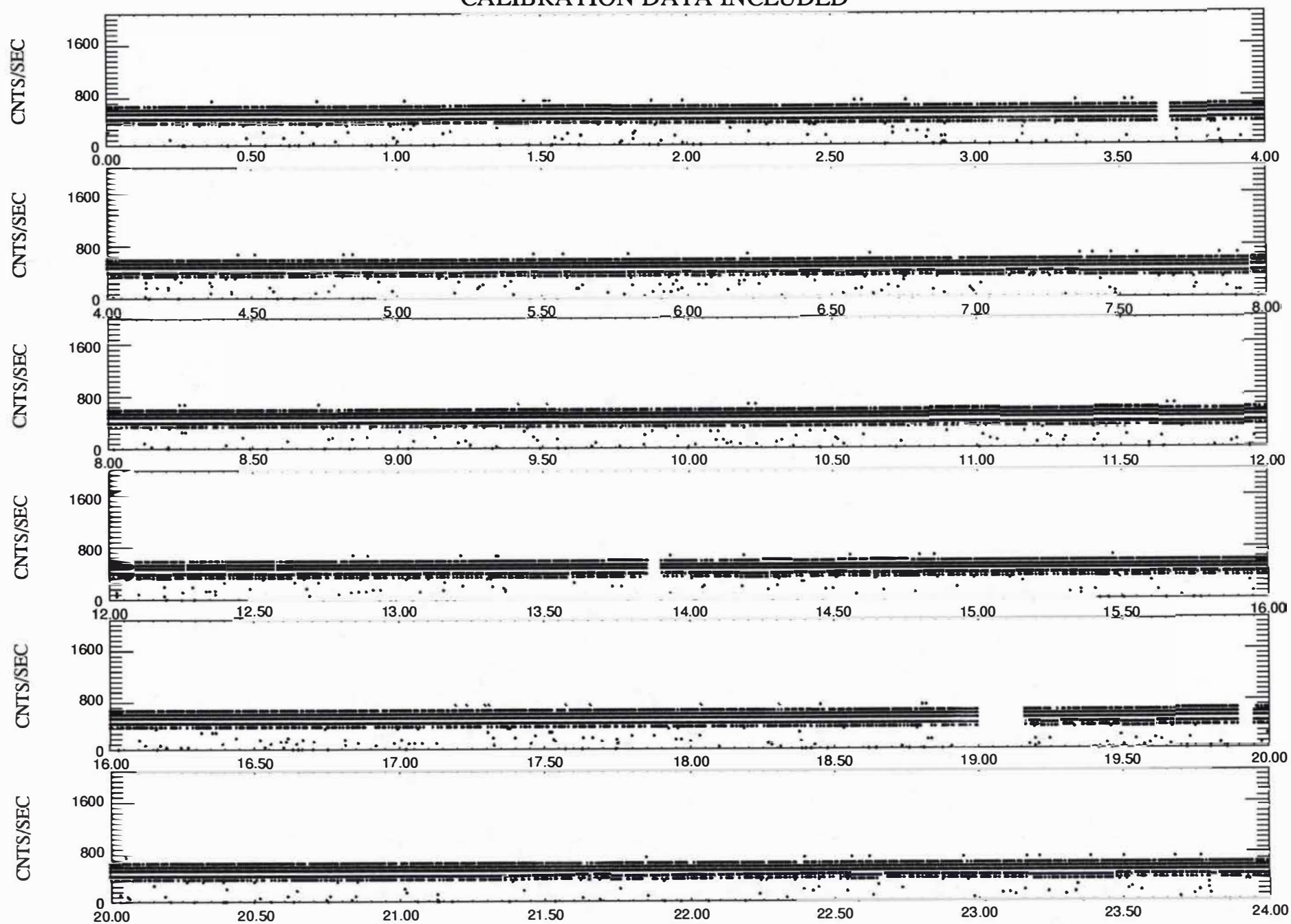
Plot created: 98/03/09, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted
 Sample average = 10

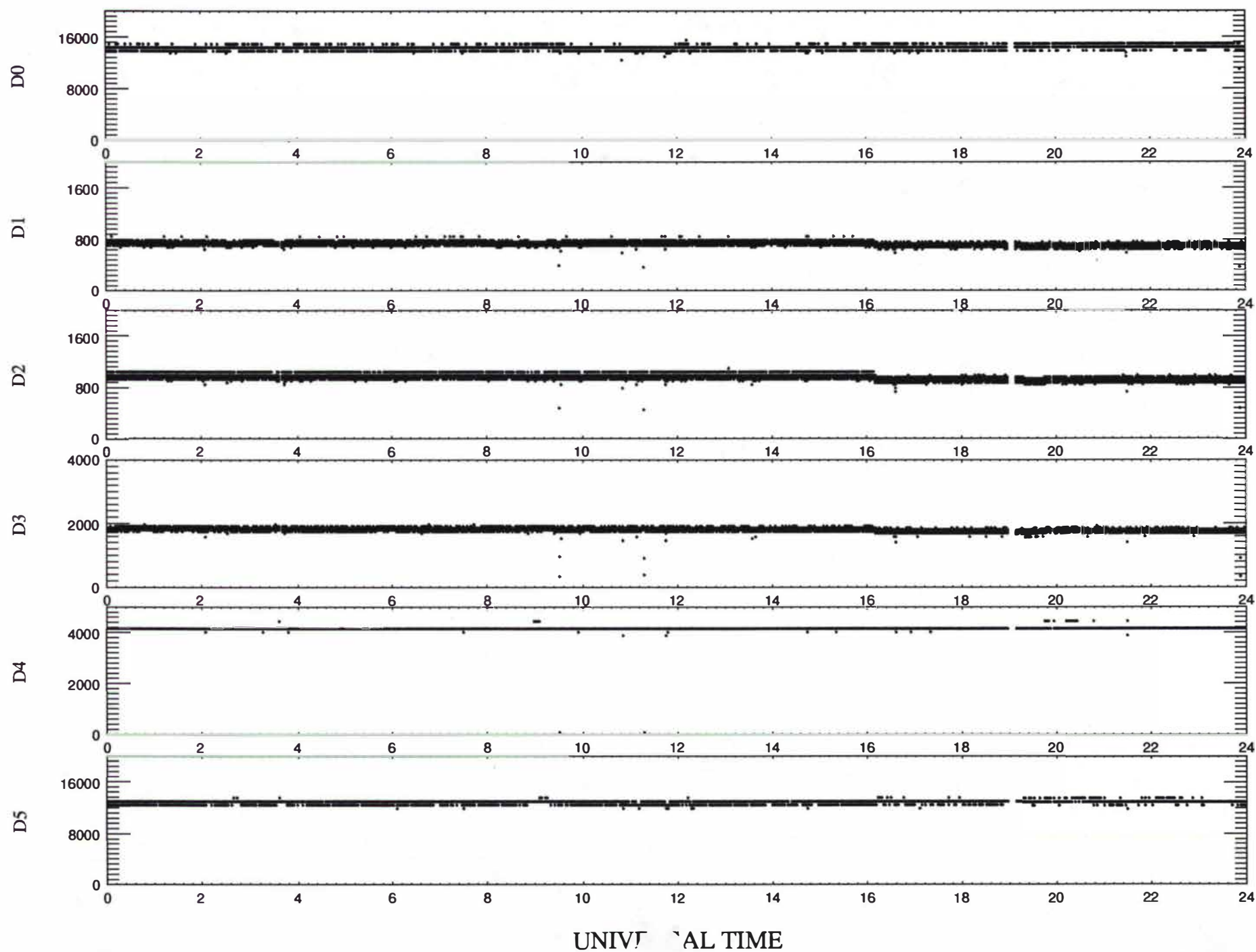
UNIVERSAL TIME



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



Date: Mar 6 2012

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

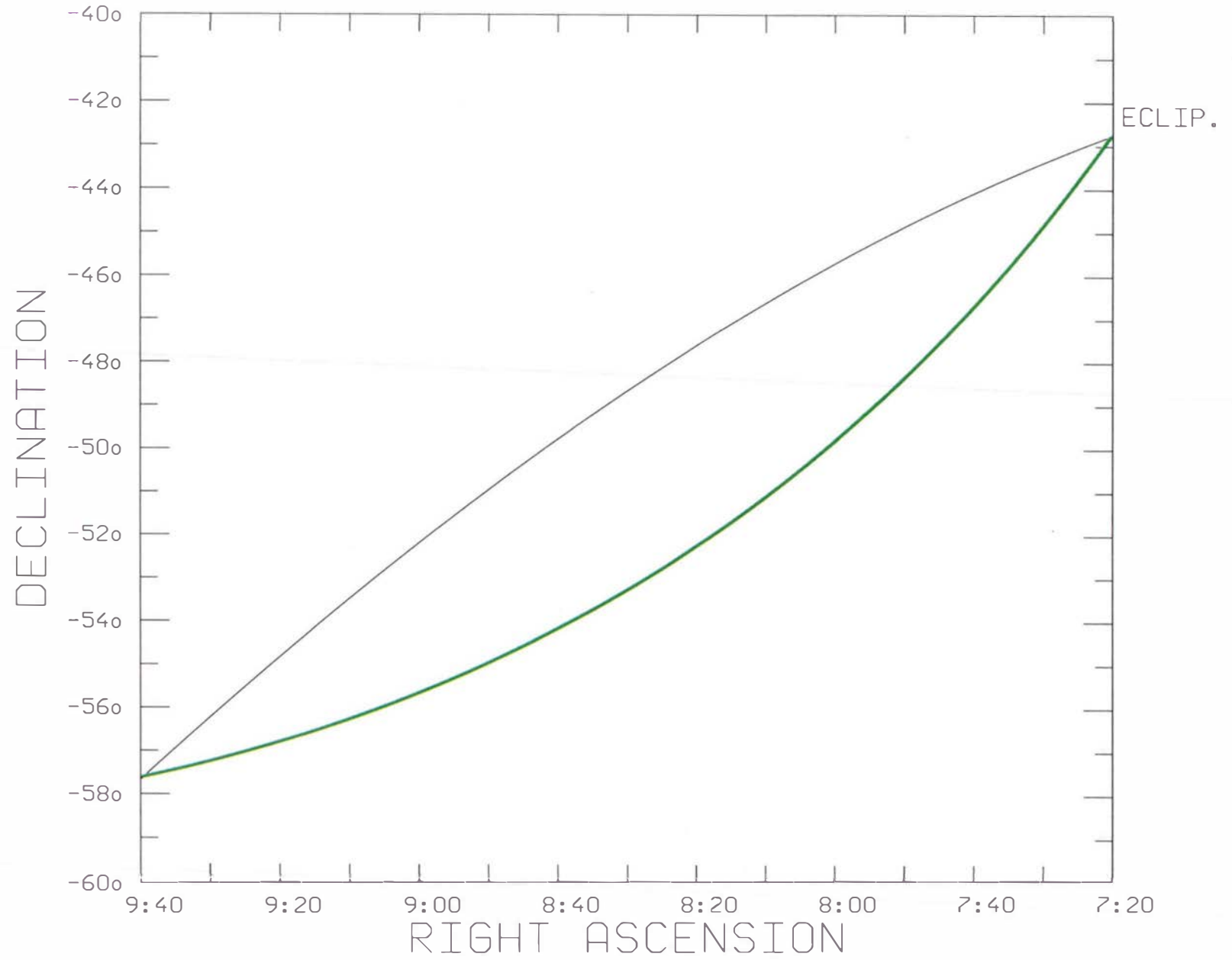
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

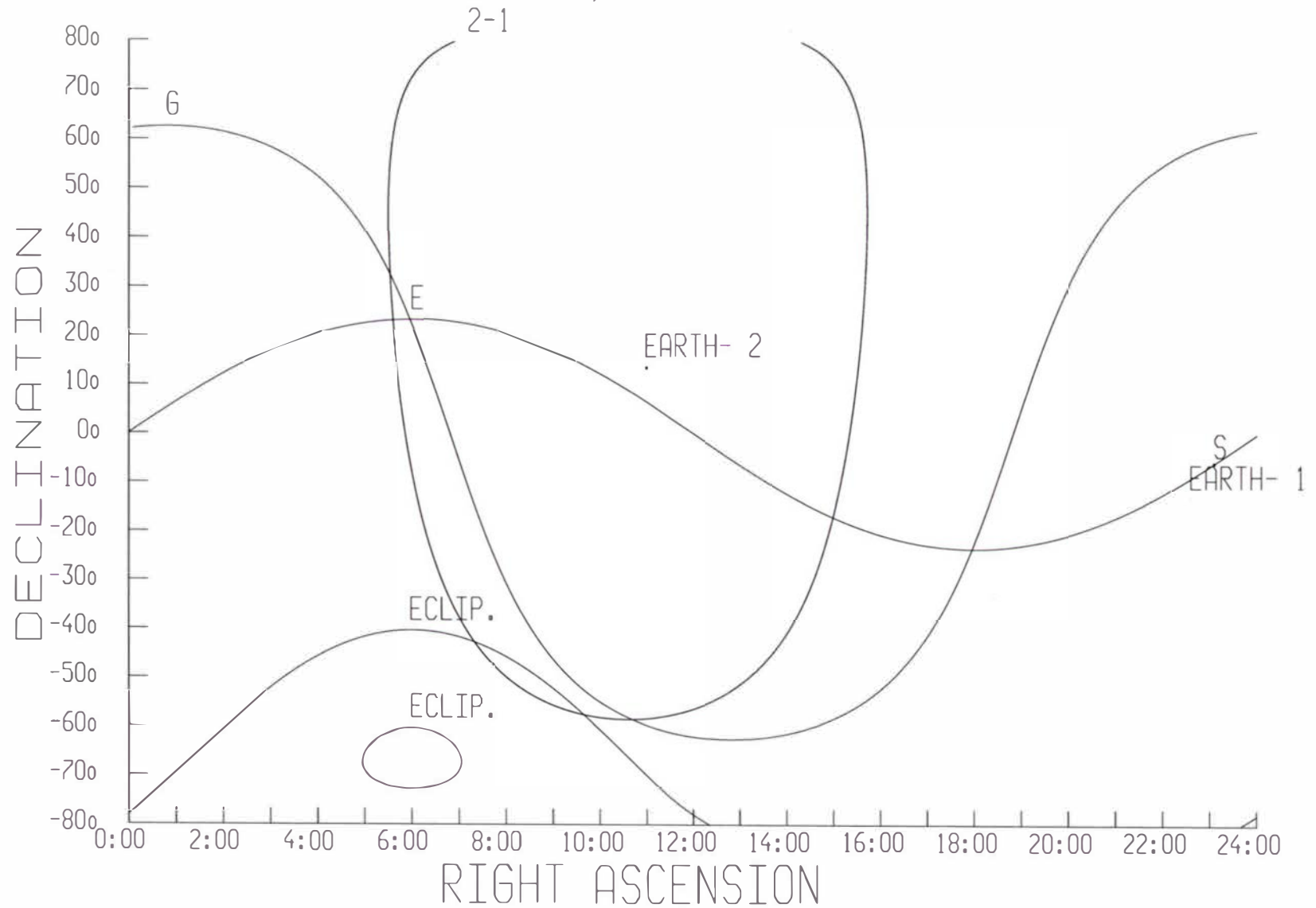
-
- ☒ ACCESS and MBL4 databases updated with identical times?

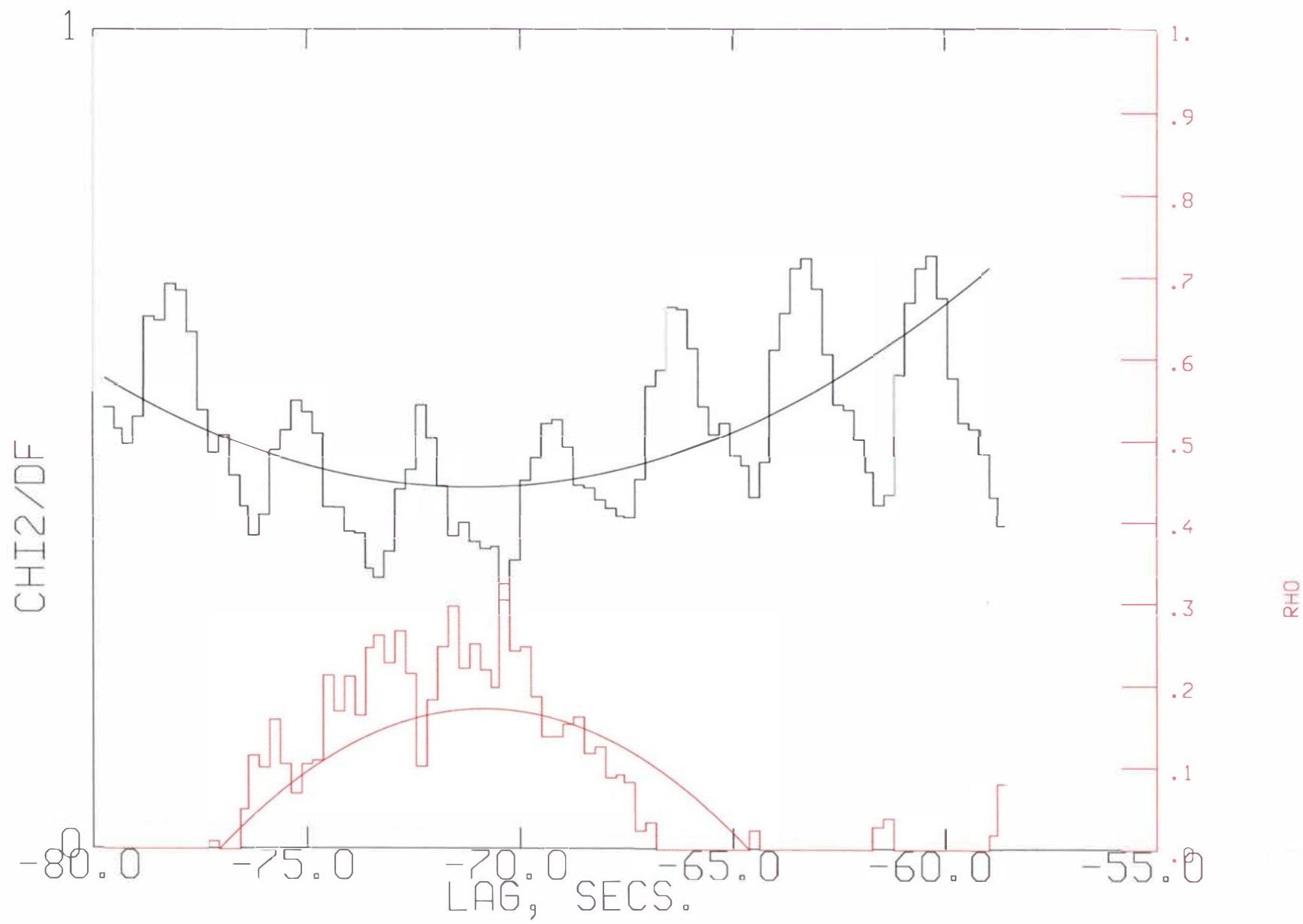


EVENT OF MAR 6, 1998 1:16

06/03/2012

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





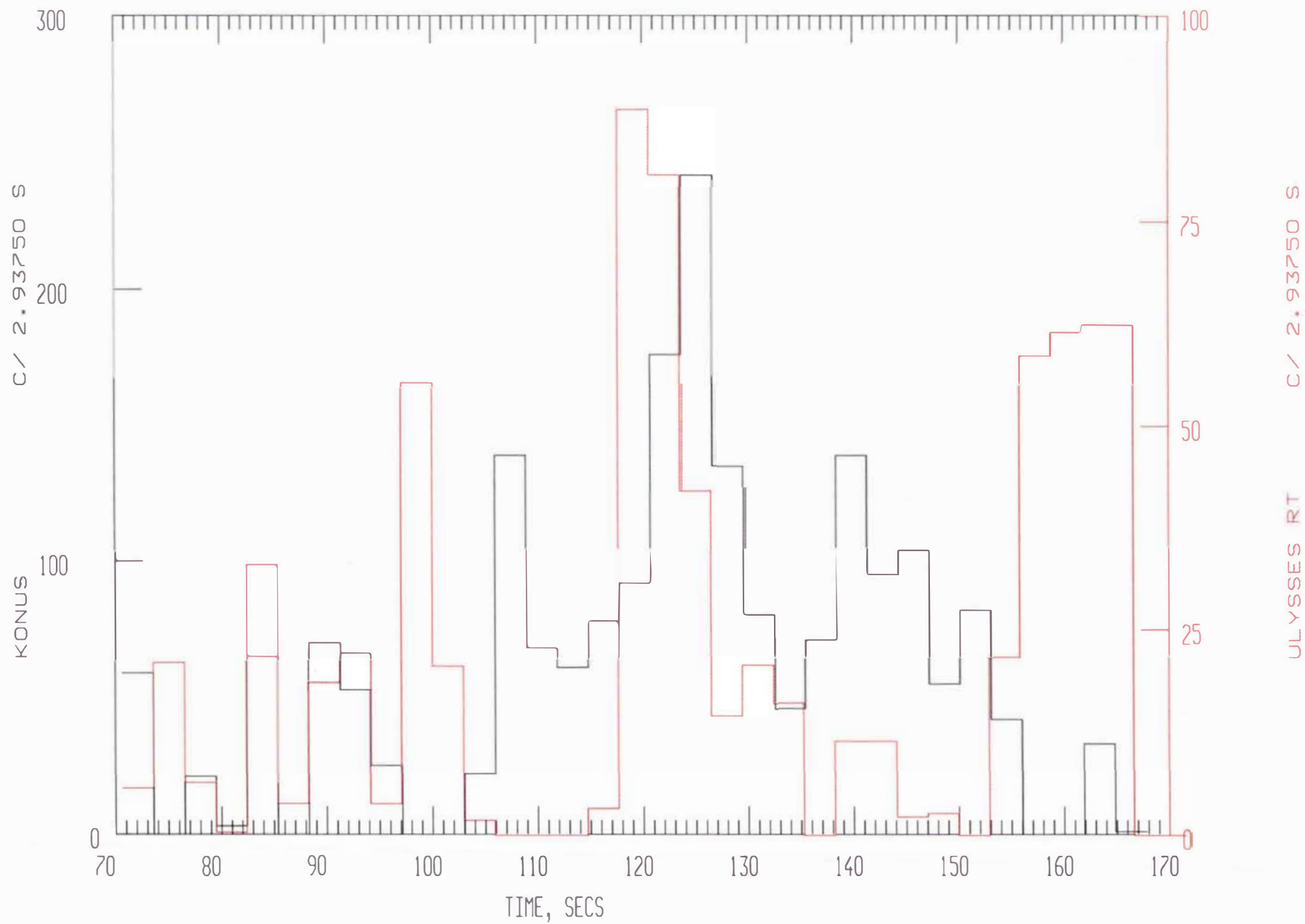
KONUS

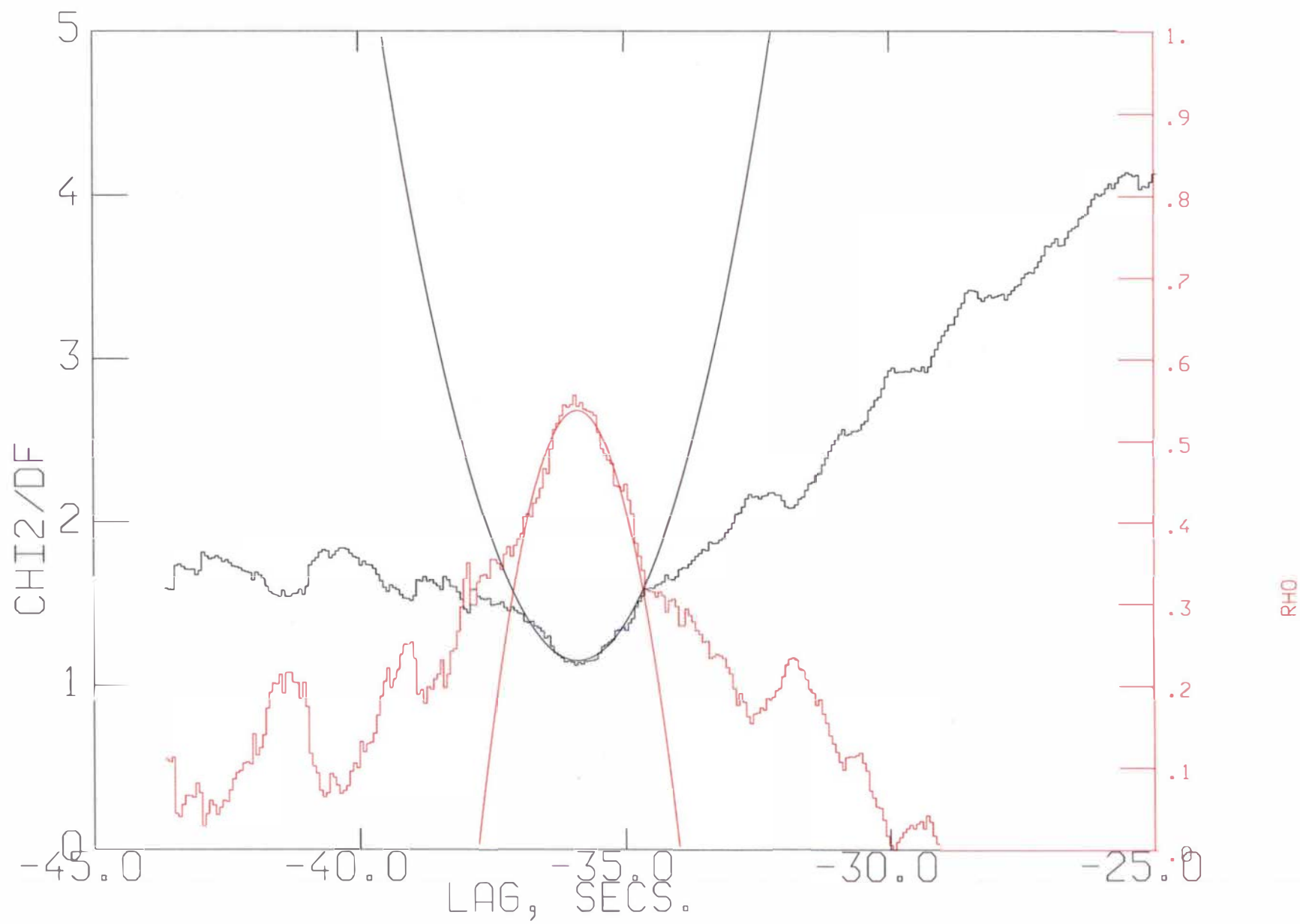
-ULYSSES RT CORRELATION

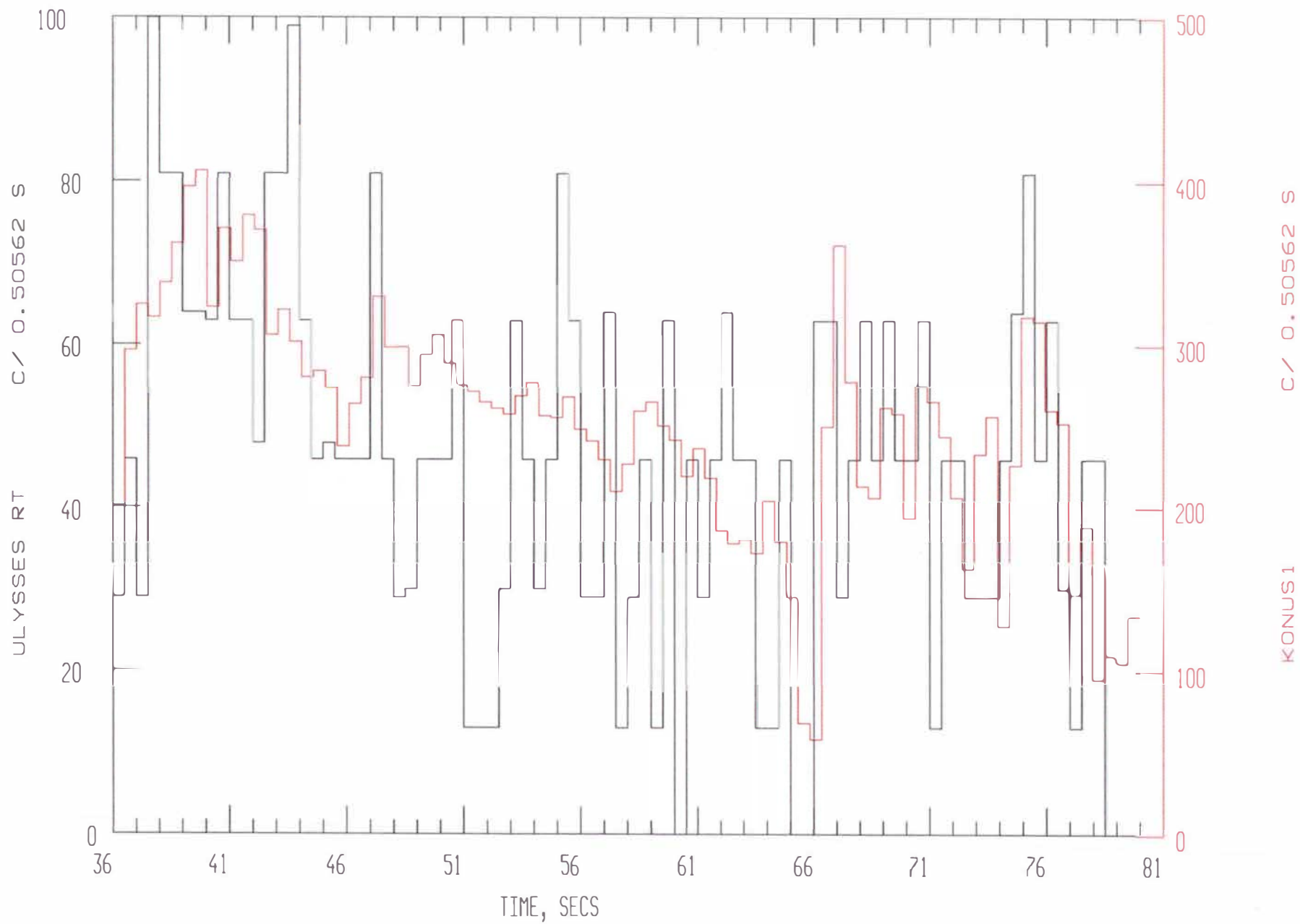
02/03/98

69673.656

6/ 3/12







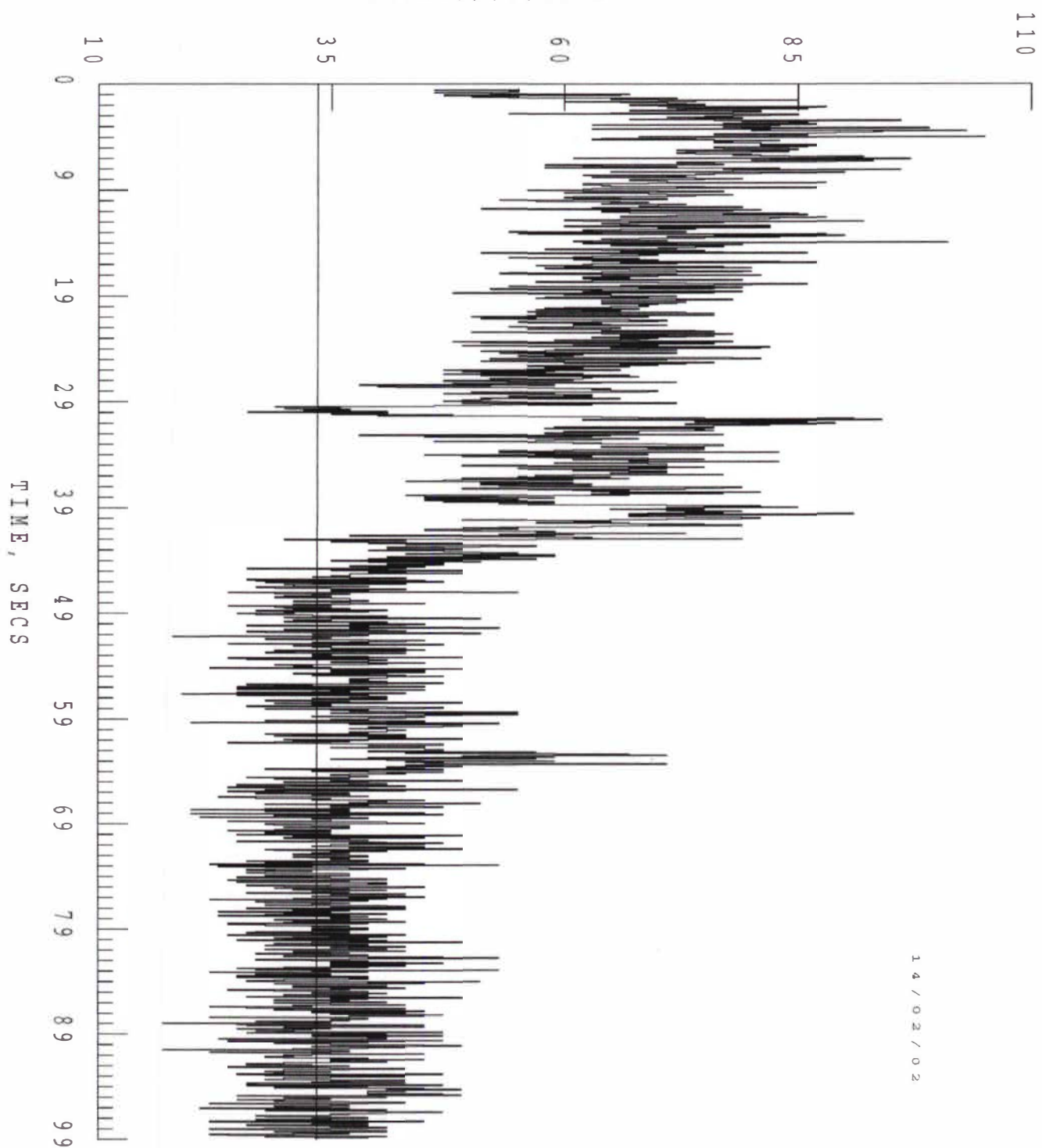
KONUS1

06/03/98

5303.475

50 - 200 keV

COUNTS/0.064 S



14 / 02 / 02

KONUS 19980306 04560

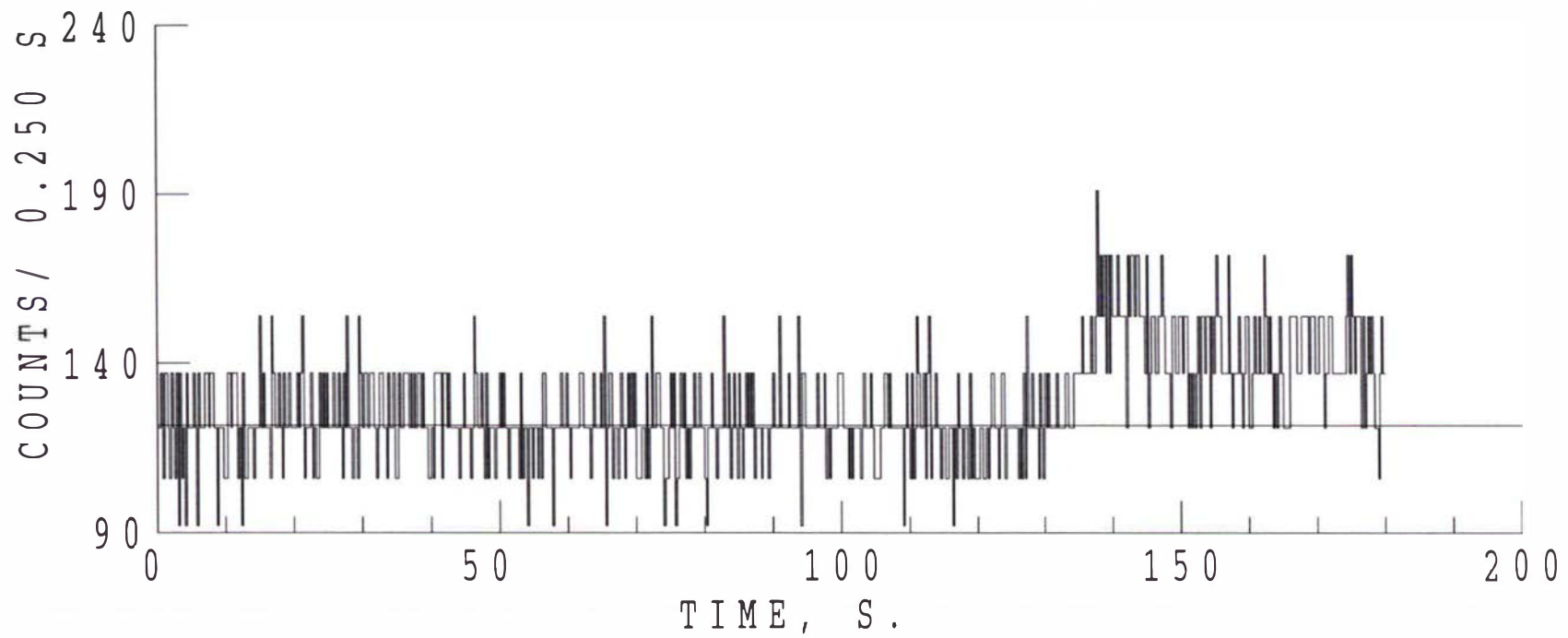
ULYSSES RT

01 / 02 / 12

06 / 03 / 98 4464.168 s

0 - 0 keV

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX
HUS DATA

19 / 07 / 05

ULYSSES RT

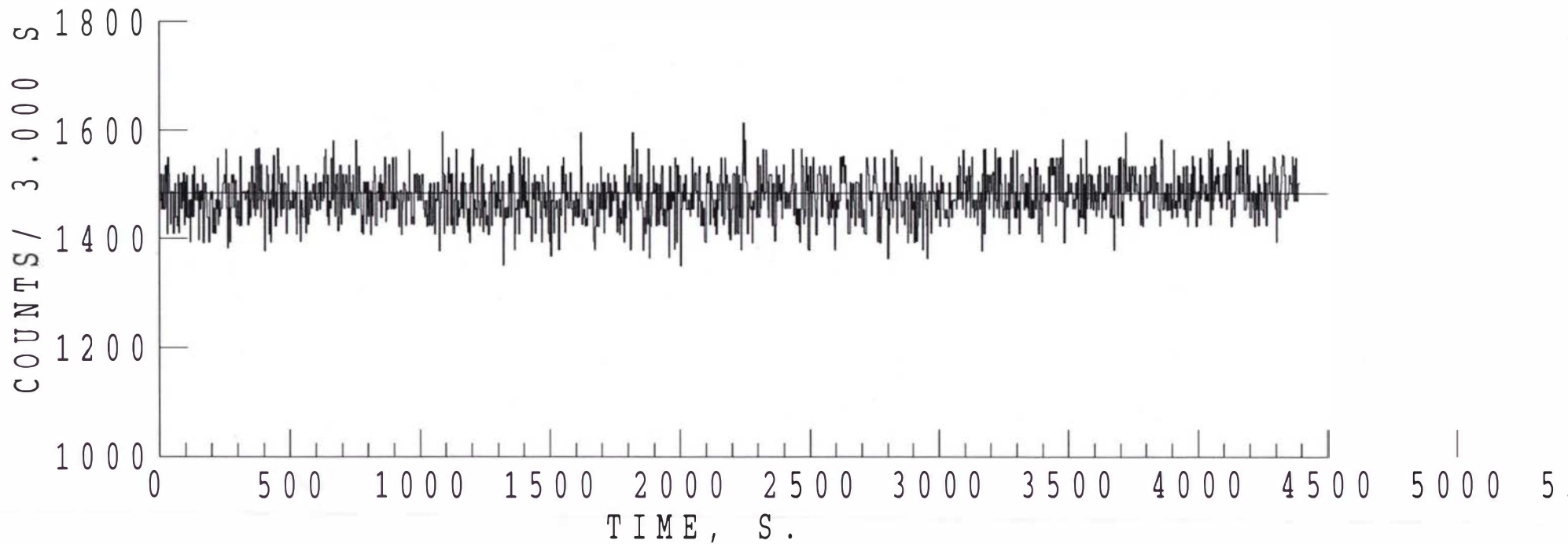
06 / 03 / 98 14688.031 s

0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Mon Mar 9 10:07:15 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA26830; Mon, 9 Mar 1998 10:07:14 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA22275; Mon, 9 Mar 1998 10:07:14 -0800
Date: Mon, 9 Mar 1998 12:07:14 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980309120714.224b3084@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6629
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6629
EVENT OF 1998 MAR 6 DAY OF YEAR= 65
EVENT CROSSING TIME AT BATSE : 34382. S. OR 09:33:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 7.000 -46.000
BATSE PEAK COUNTING RATE: 31000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 3/ 98 IS:
RA= 158.091 DEC= 13.191 DIST= 4.427 AU
BATSE-ULYSSES DISTANCE = 662331067. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1670.68 SECS.
CROSSING TIME AT ULYSSES IS 36053. S. OR 10:00:52 +/- 326.35 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 3/ 98 IS:
RA= 1.213 DEC= -0.212 DIST= 2.332 AU
MARS-BATSE DISTANCE = 348932800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -807.49 SECS.
CROSSING TIME AT MARS IS 33575. S. OR 09:19:34 +/- 133.27 SECONDS

BATSE BURST TRIGGER

NO.: 6629

TIME: TJD=0878 SECONDS=34382

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=82.5 AZIMUTH=6.8 ERROR=0.3 DEGREES

COMMENTS:

GRB MULTIPLE PULSES WITH STRUCTURE. FIRST PULSE AT T WITH DUR. APPROX. = 40SEC.
SECOND PULSE AT APPROX. T+180 WITH DUR. APPROX. = 10SEC. THIRD PULSE AT APPROX.
T+208 WITH DUR. APPROX. = 80 SEC. TOTAL DUR. APPROX. = 300SEC. VISIBLE ABOVE
300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6629	980306	10878	34382	31000	007	-46	300

Helio corr removed 21/2/00

Date: _____

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

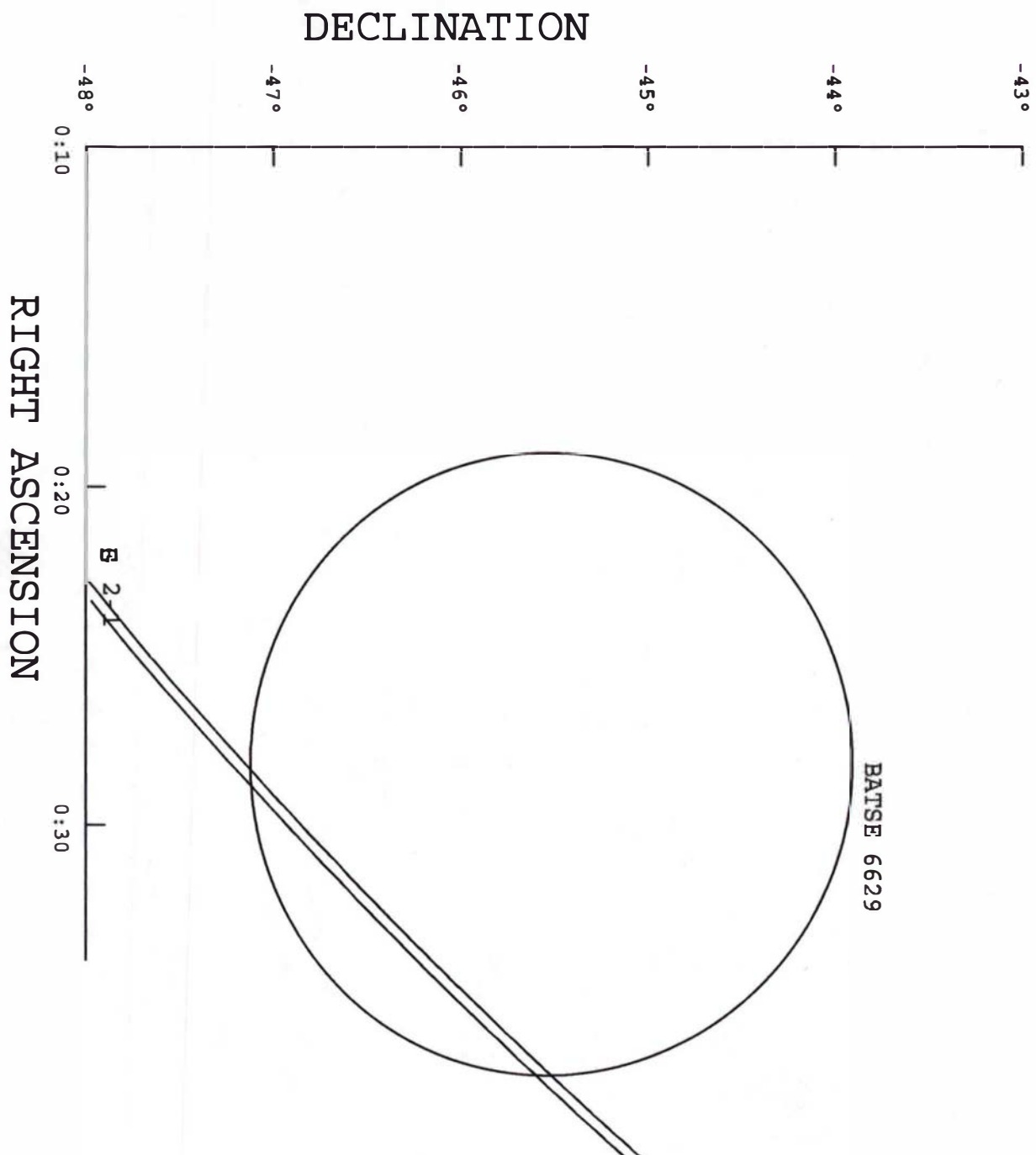
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAR 6, 1998 10:03

21 / 2 / 0



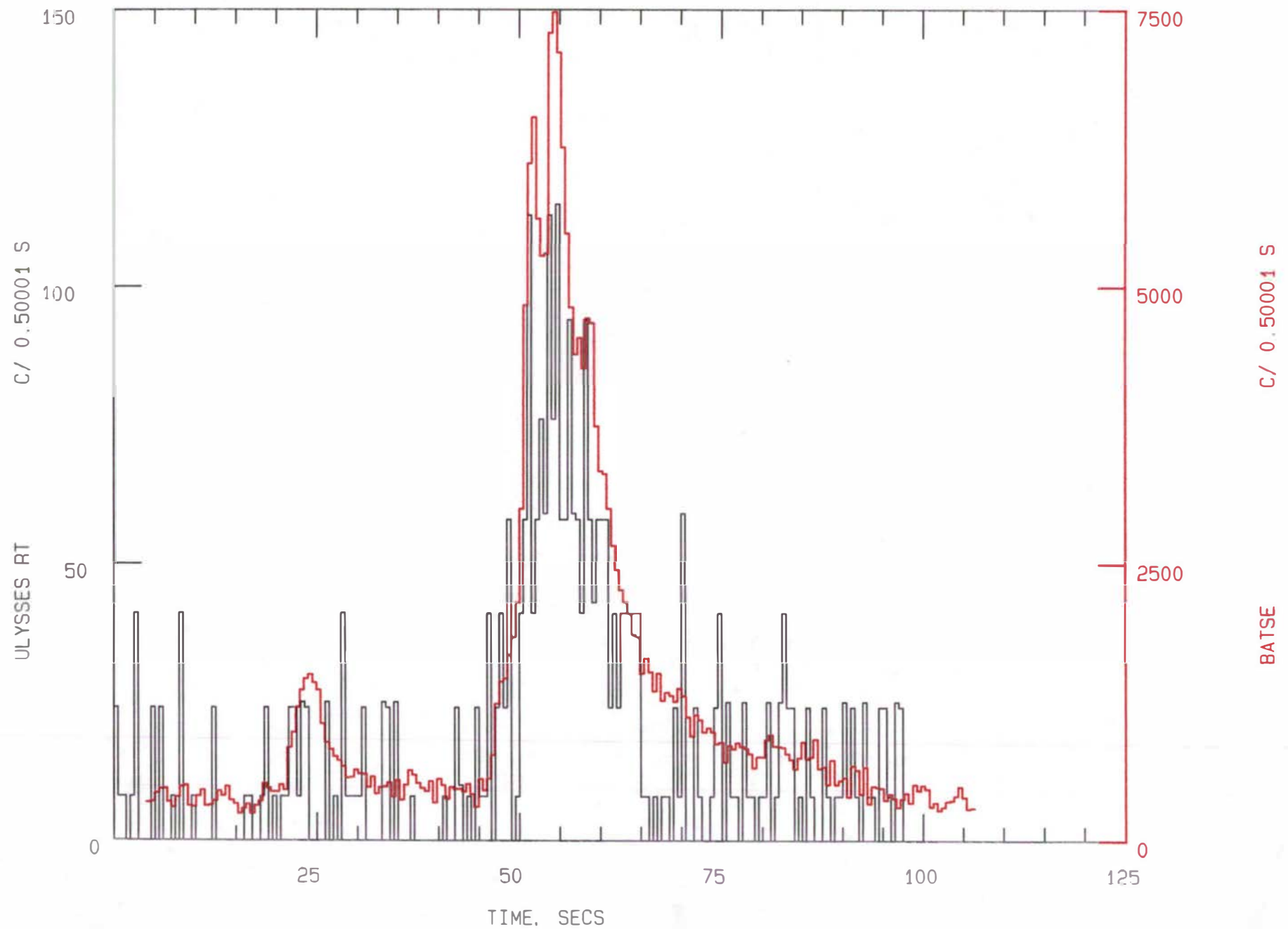
ULYSSES RT-BATSE

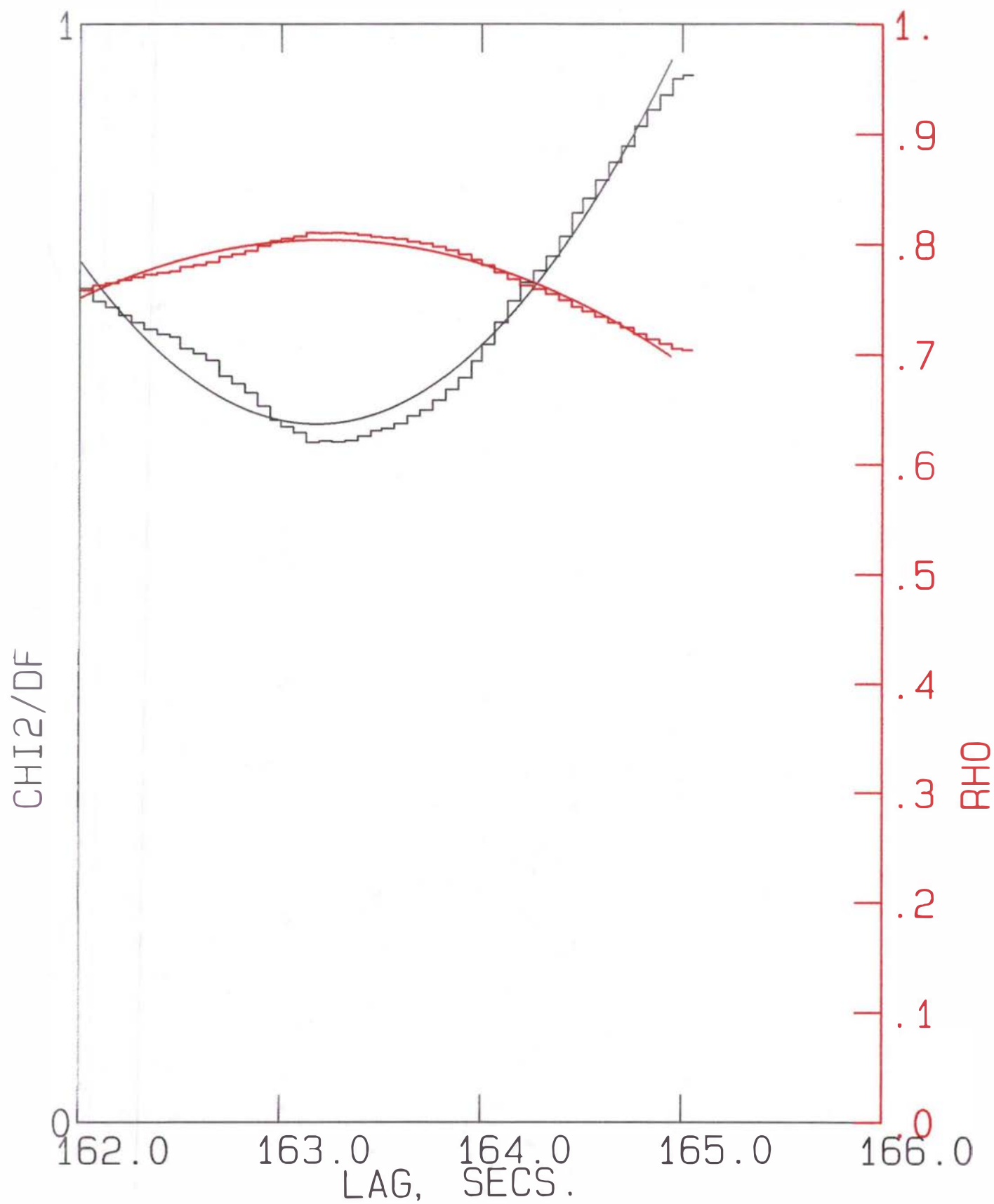
CORRELATION

6/ 3/98

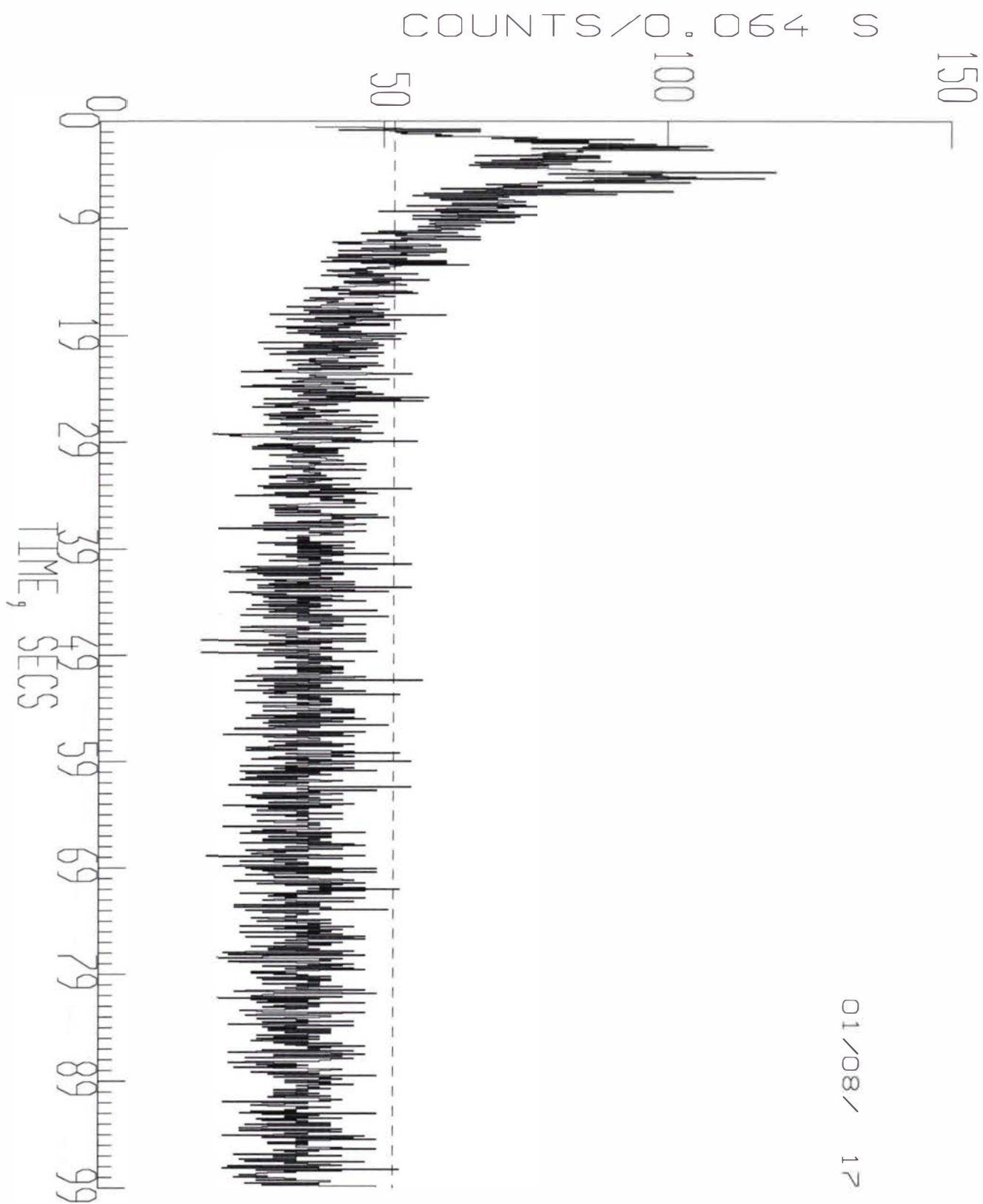
36195.947

4/ 8/98





KONUS 06/03/98 34589.880
50- 200 keV



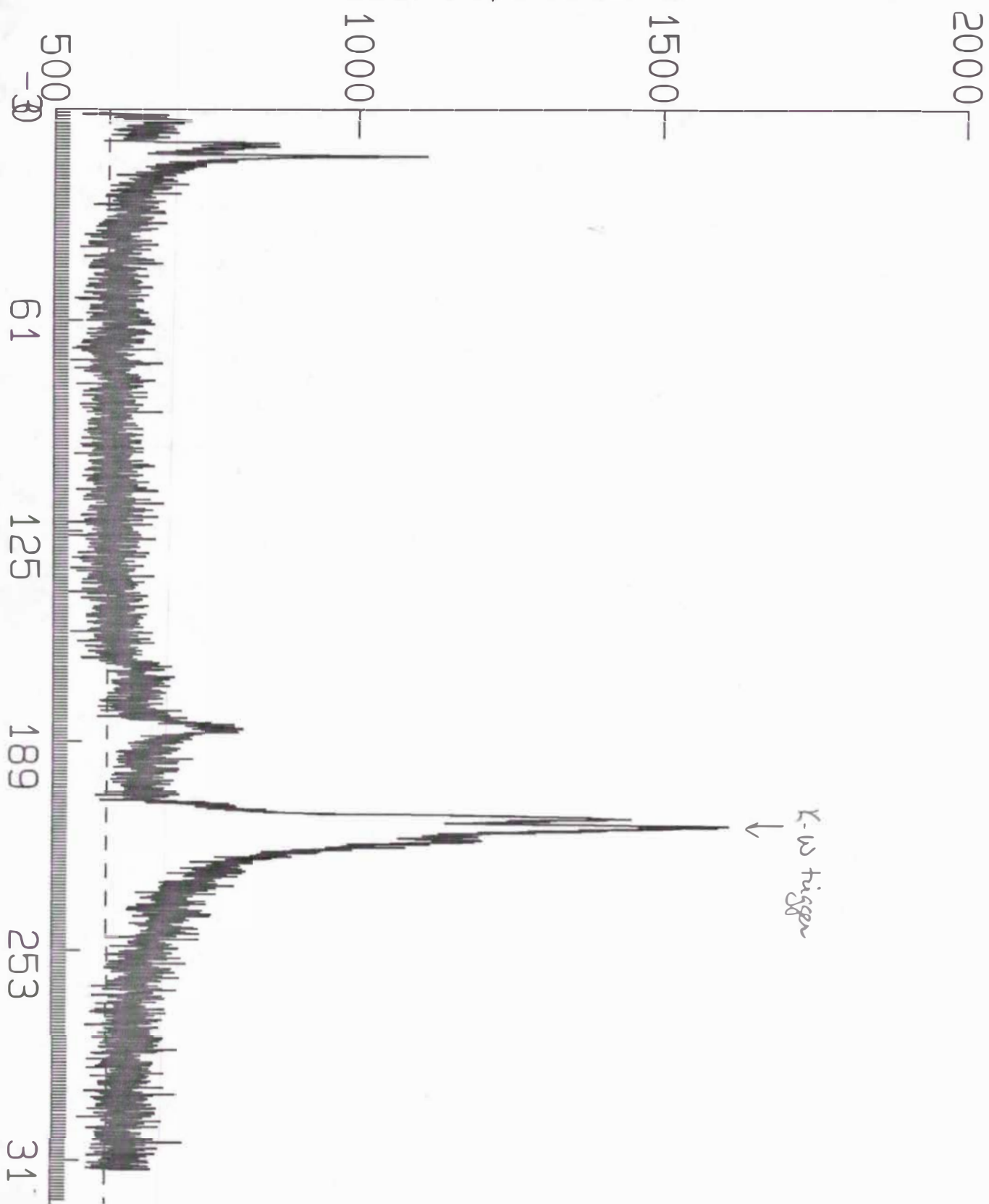
BATSE

06/03/98

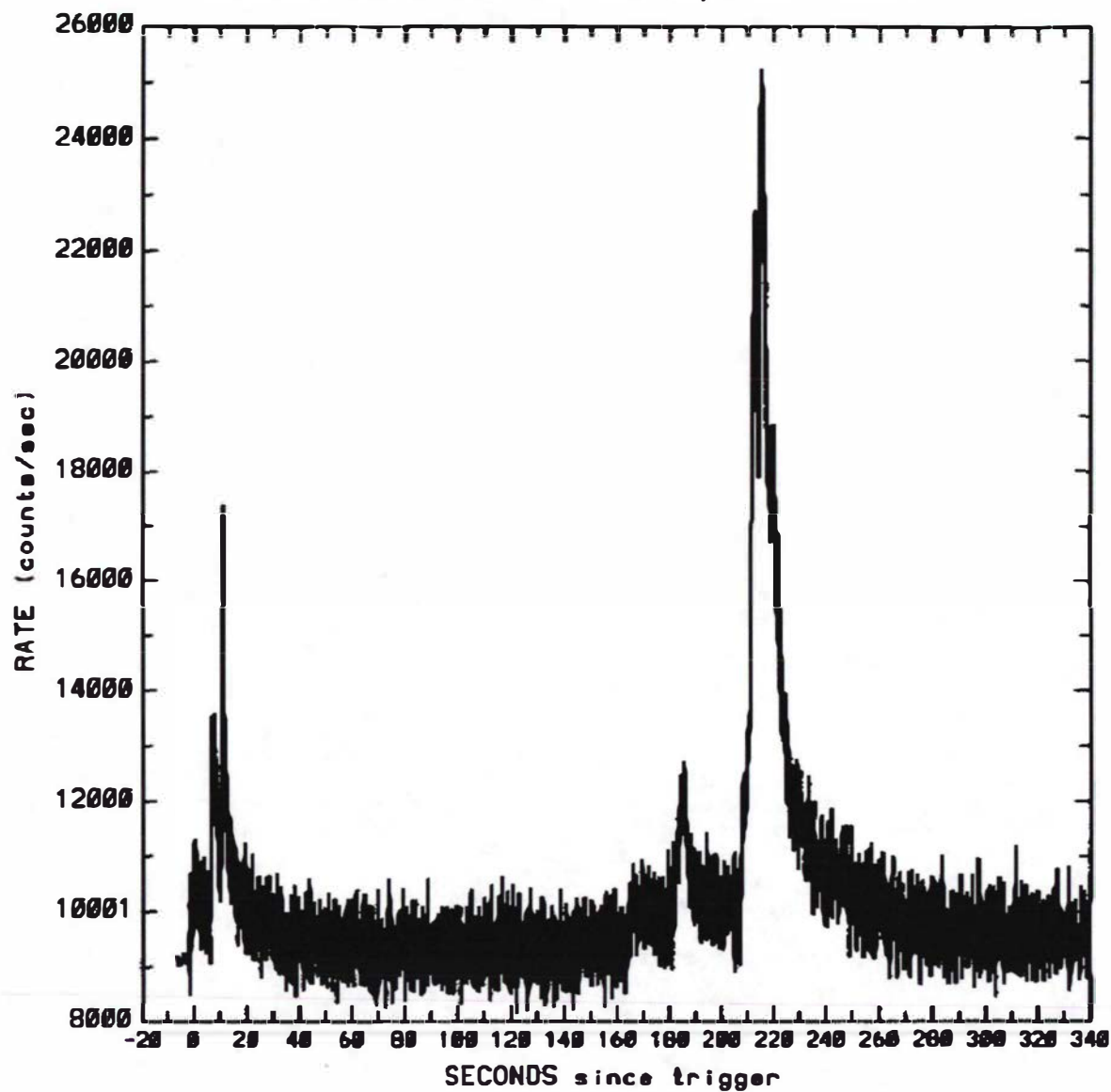
34382.562

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6629



3-AUG-1998 09:56.09

Created by NOPS 80
(Burst Display)
Version 12.25

Trigger = 6629

Trigger Time:
18878 / 34382.561Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..0):
-----218Discriminators:
(1 , 2)Quality Mask:
B0ISP1

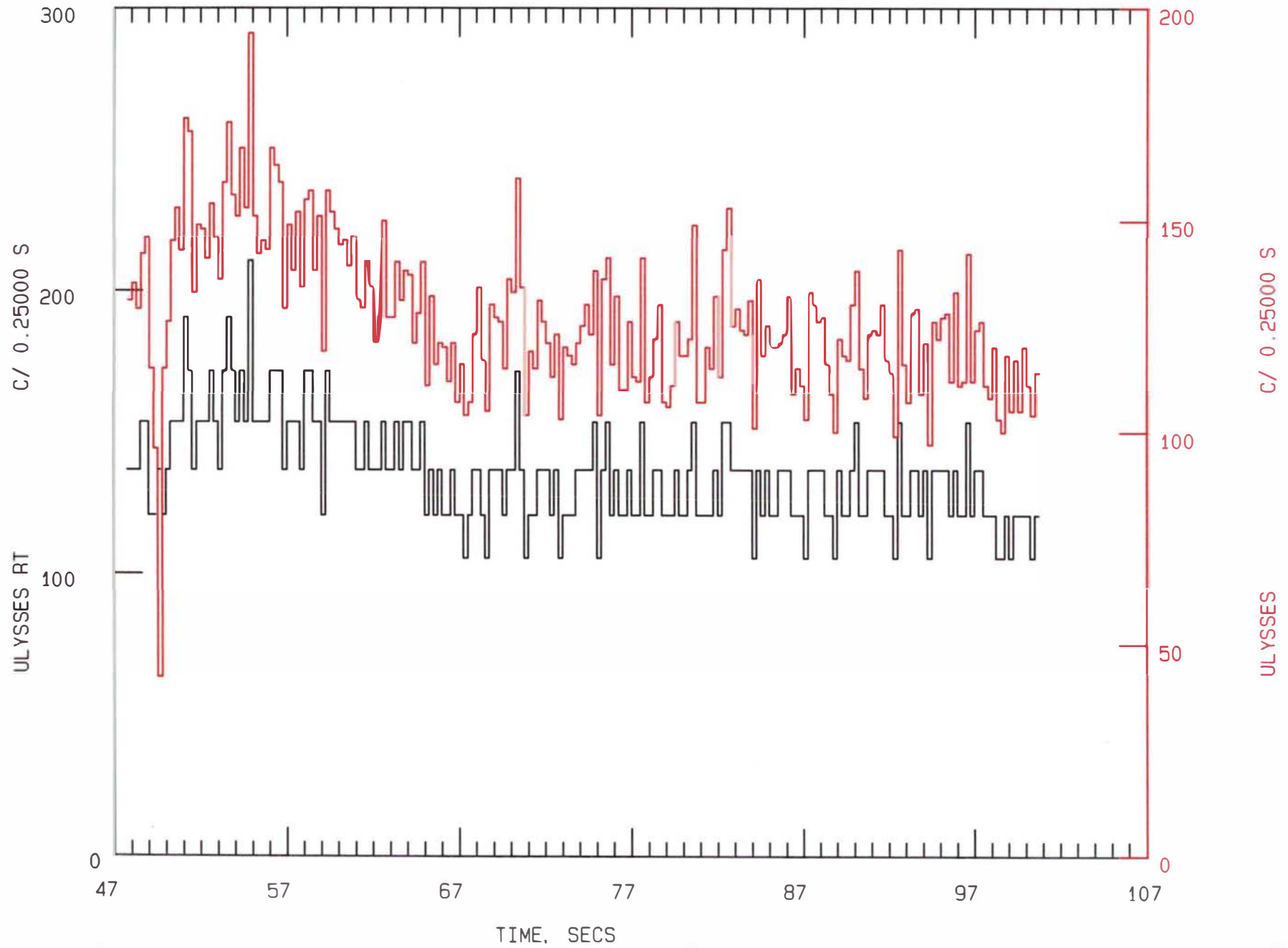
ULYSSES RT-ULYSSES

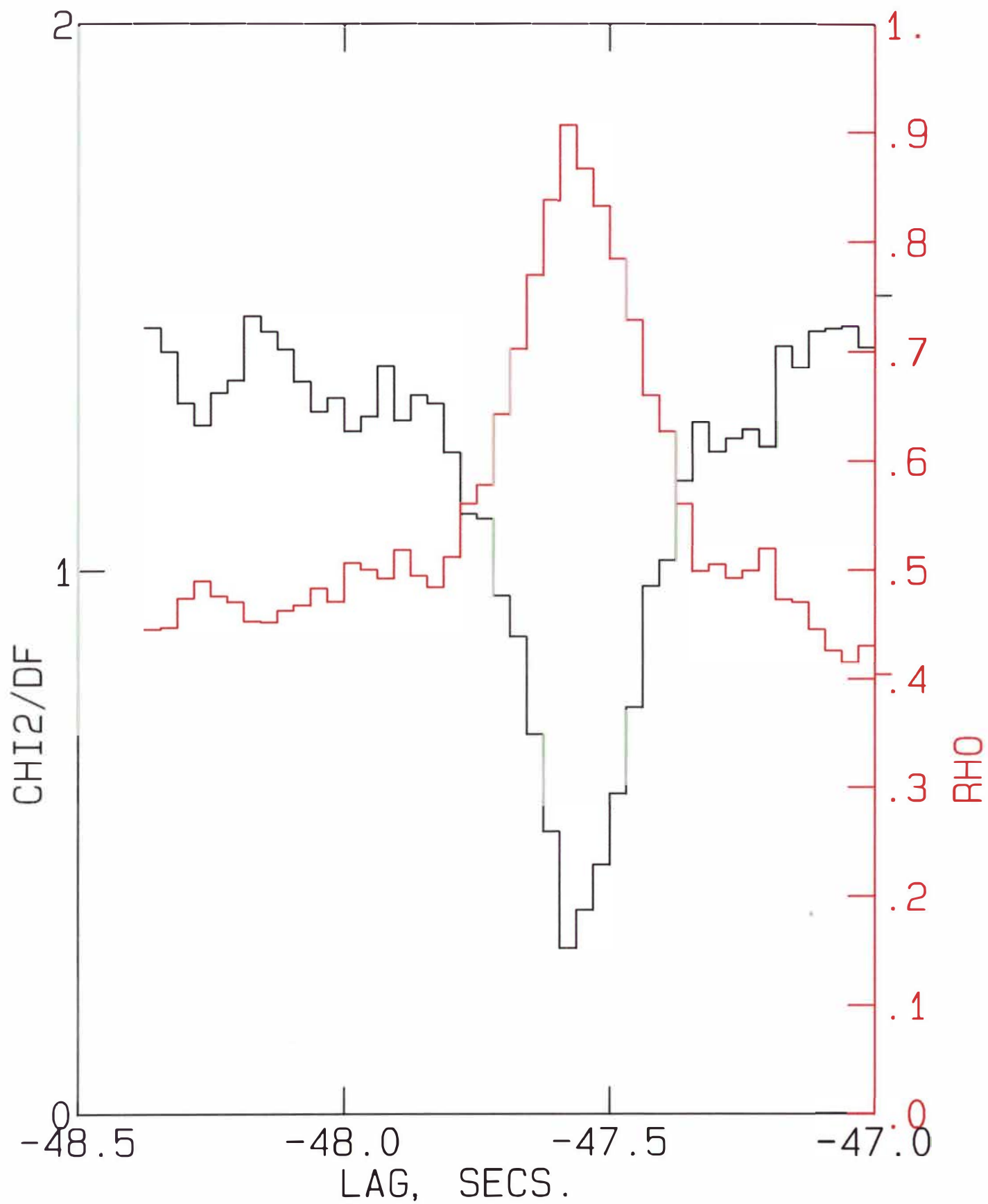
CORRELATION

6/ 3/98

36195.947

28/ 7/98

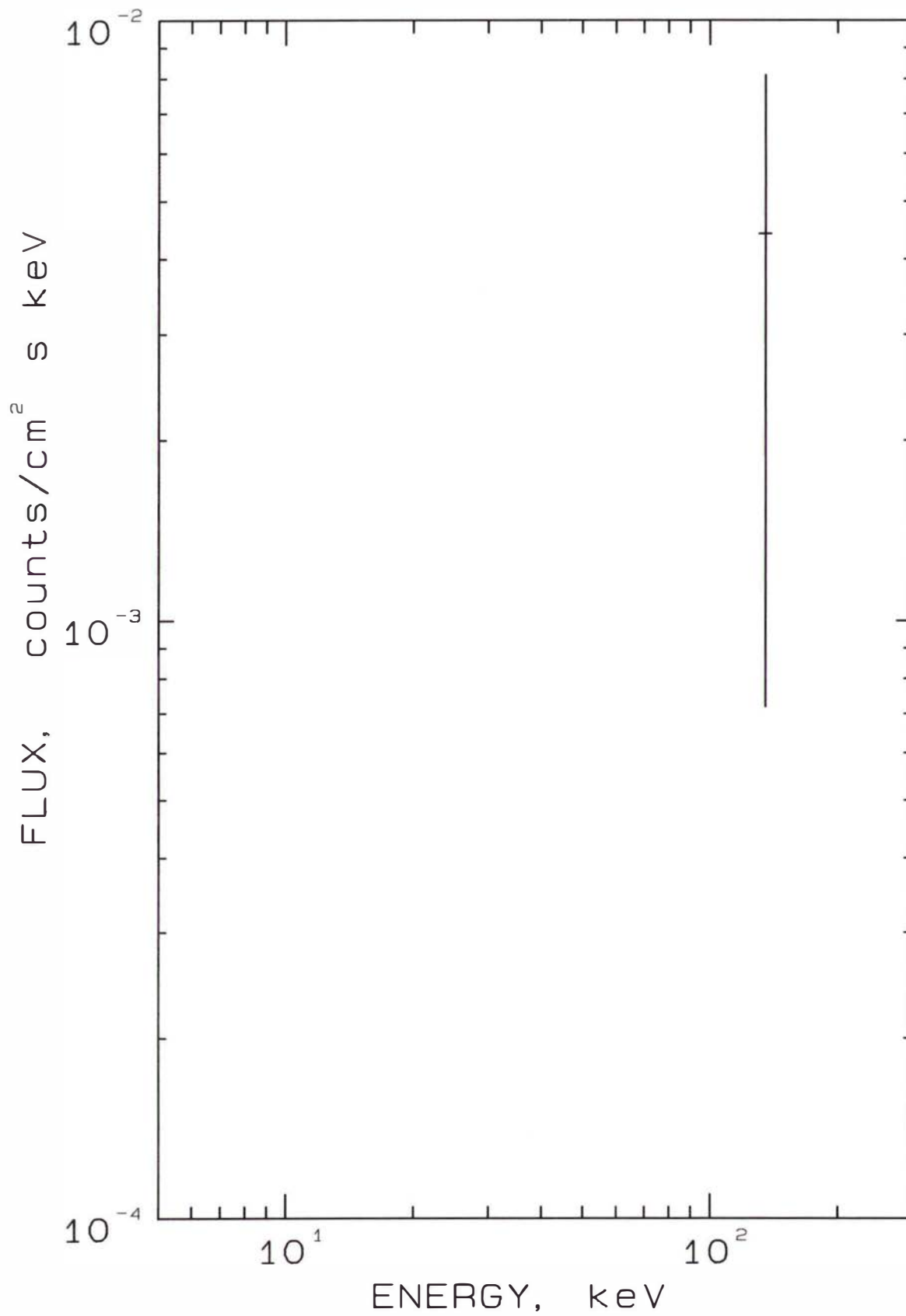




ULYSSES 06/03/98 36251.010

28/ 7/98

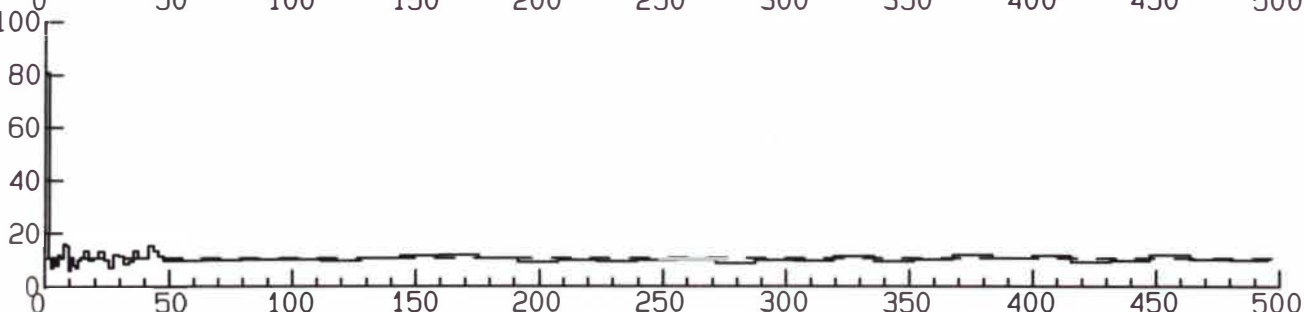
SPECTRUM INTEGRATED OVER 31.5 SECONDS, INTERVALS 2 TO 25



ULYSSES 06/03/98 36251.010 BURST SPECTRAL COUNT RATES

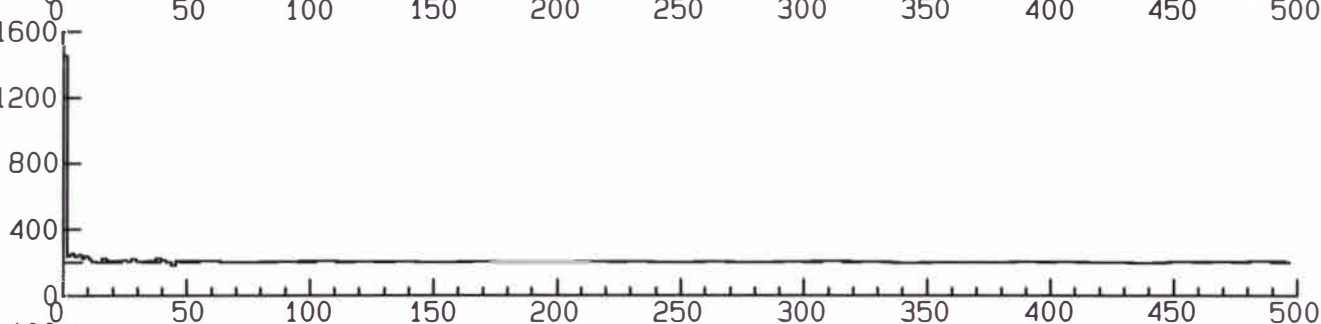
4- 18 keV

COUNTS/S



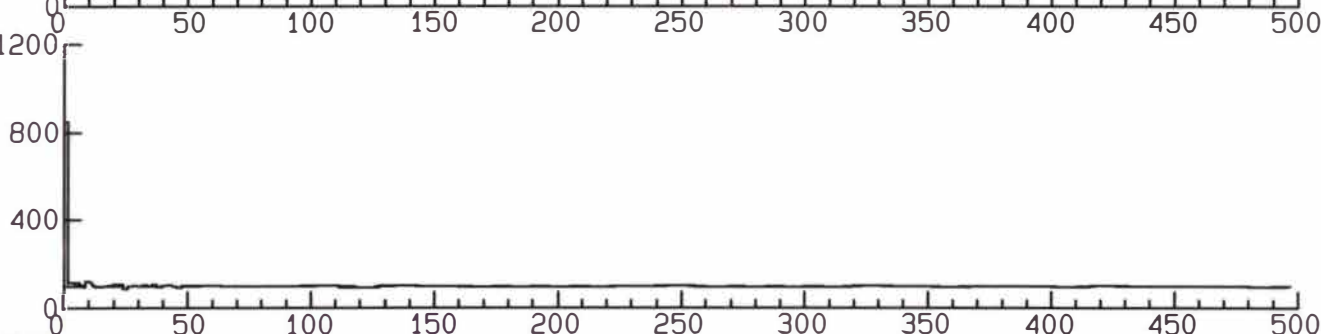
18- 46 keV

COUNTS/S



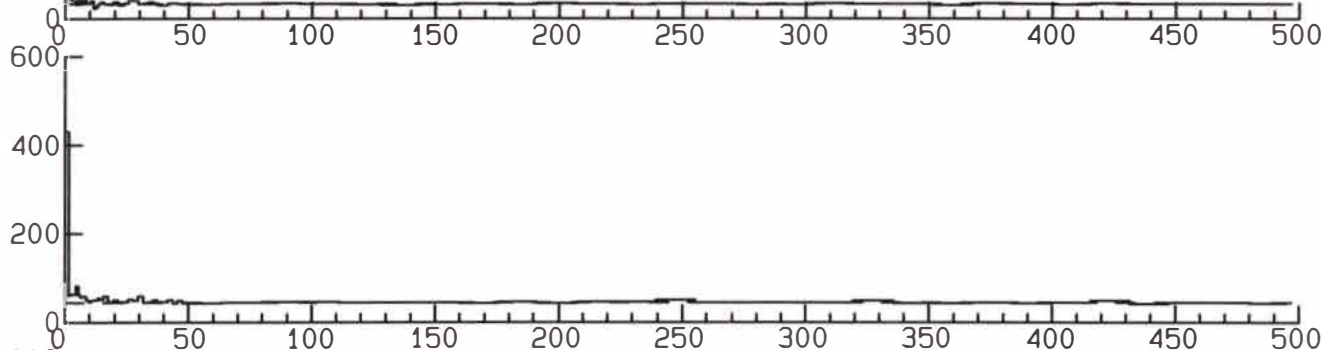
46- 74 keV

COUNTS/S



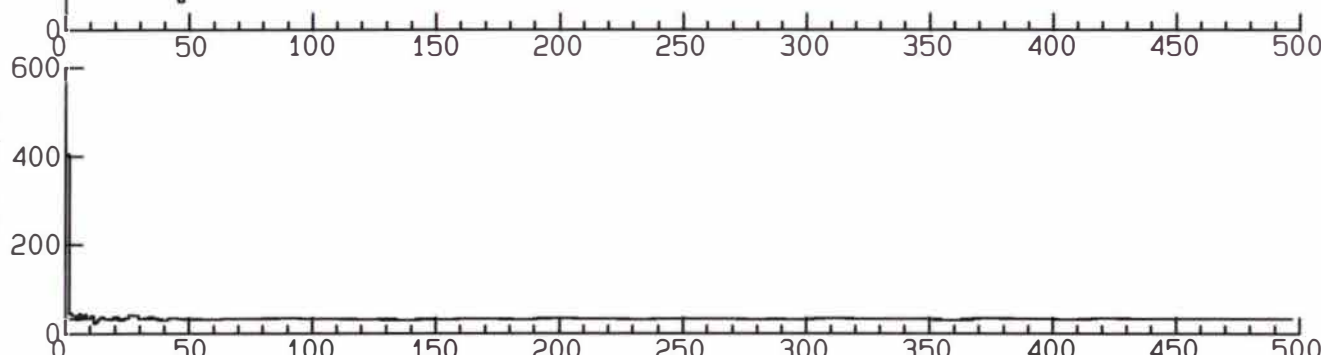
74-102 keV

COUNTS/S



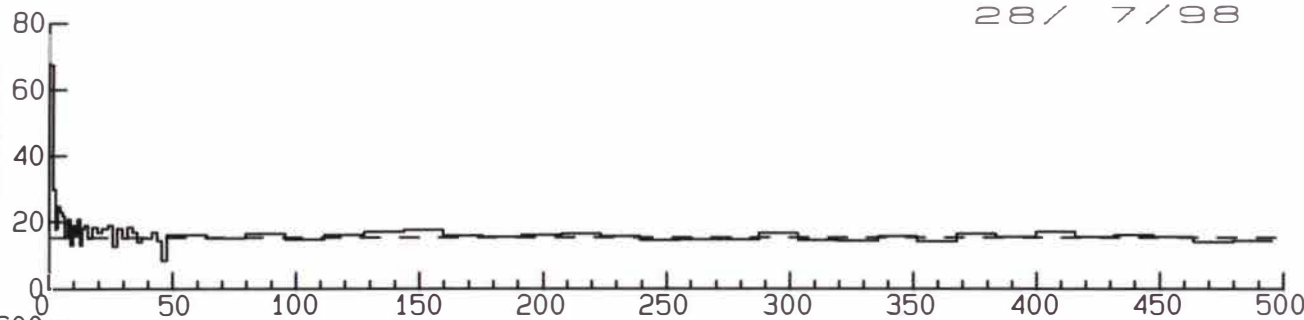
102-130 keV

COUNTS/S



130-148 keV

COUNTS/S



28 / 7 / 98

TIME, SECS

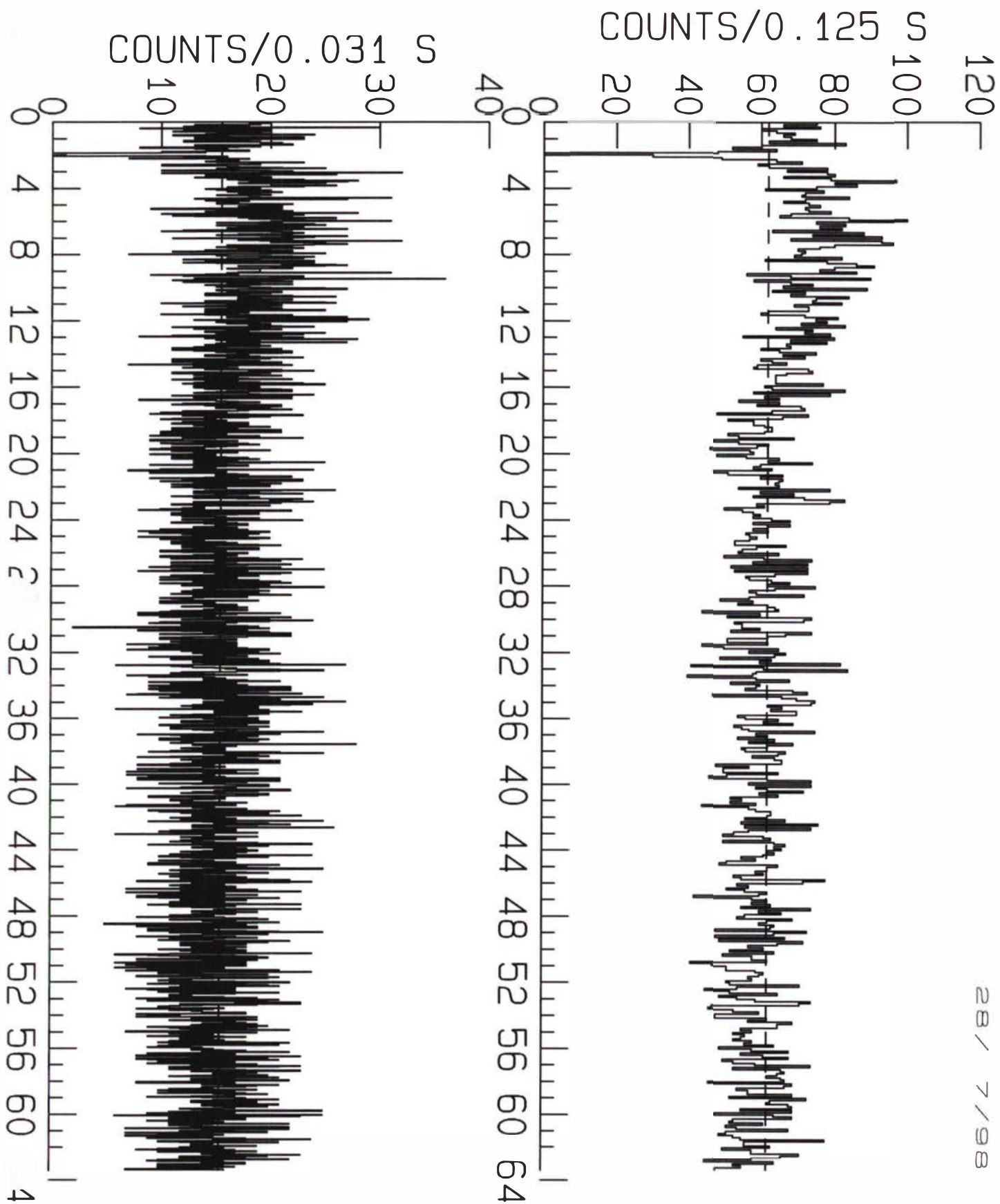
ULYSSES

06/03/98

Ttrig=36250.942

22- 149 keV

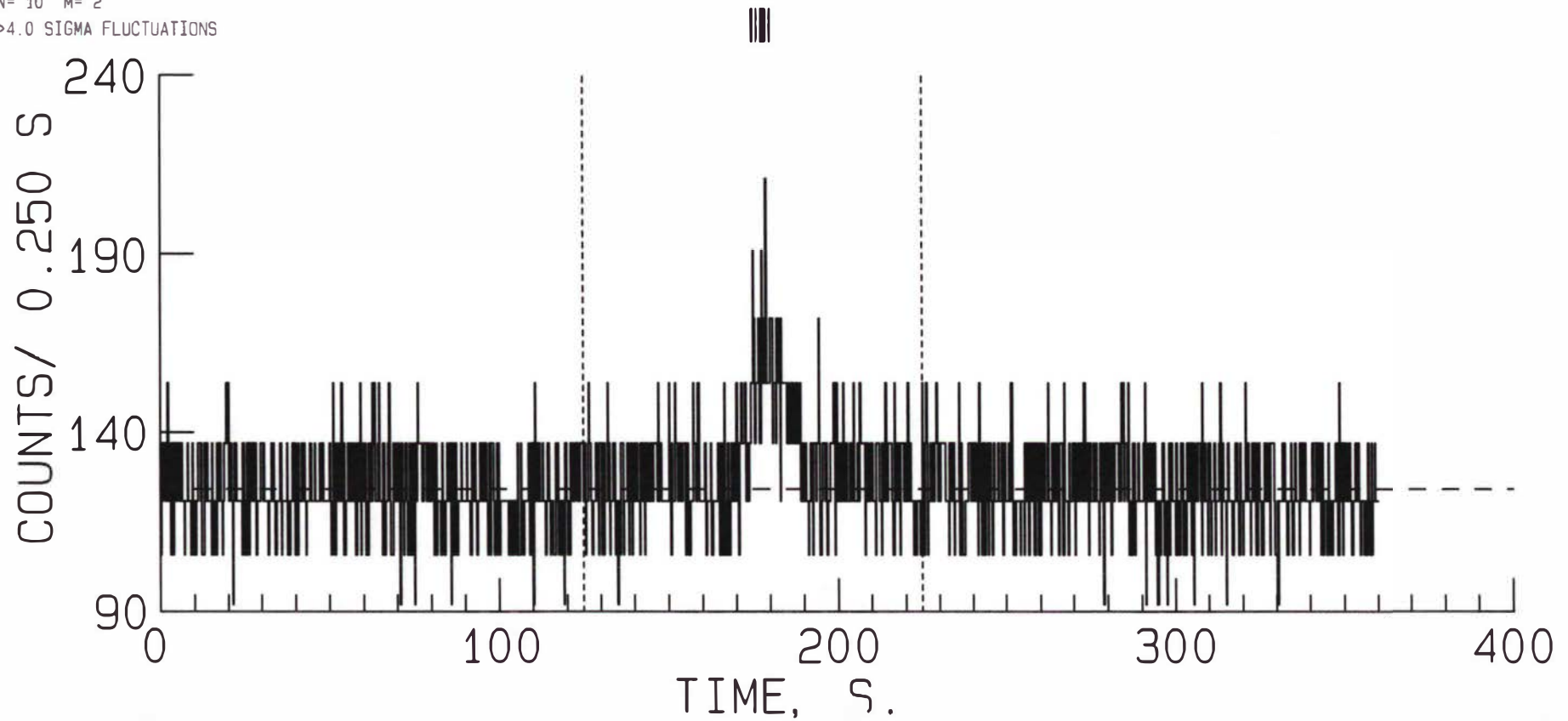
28 / 7/98



ULYSSES RT
6/ 3/98 36072.017 s
22- 149 keV

28/ 7/98

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Tue Mar 10 11:32:47 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA10598; Tue, 10 Mar 1998 11:32:46 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA00788; Tue, 10 Mar 1998 11:32:43 -0800
Date: Tue, 10 Mar 1998 13:32:42 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980310133242.242011bb@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6630
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6630
EVENT OF 1998 MAR 6 DAY OF YEAR= 65
EVENT CROSSING TIME AT BATSE : 63251. S. OR 17:34:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 342.000 -57.000
BATSE PEAK COUNTING RATE: 57000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 6/ 3/ 98 IS:
RA= 158.017 DEC= 13.198 DIST= 4.428 AU
BATSE-ULYSSES DISTANCE = 662493711. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 43.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1592.09 SECS.
CROSSING TIME AT ULYSSES IS 64843. S. OR 18:00:43 +/- 340.25 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 6/ 3/ 98 IS:
RA= 1.213 DEC= -0.212 DIST= 2.332 AU
MARS-BATSE DISTANCE = 348932800. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=121.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -602.21 SECS.
CROSSING TIME AT MARS IS 62649. S. OR 17:24:08 +/- 163.78 SECONDS

BATSE BURST TRIGGER

NO.: 6630

TIME: TJD=0878 SECONDS=63251

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=94.1 AZIMUTH=351.3 ERROR=0.6 DEGREES

COMMENTS:

GRB SINGLE PULSE WITH EXTENDED EMISSION. MAIN PULSE DURATION APPROX. =
10SEC. TOTAL DURATION APPROX. = 30 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6630	980306	10878	63251	57000	342	-57	30

Helio corr removed 21/2/00

Date: Aug 7 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

The RT data are off by 3 s due to a data presence indicator flag

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

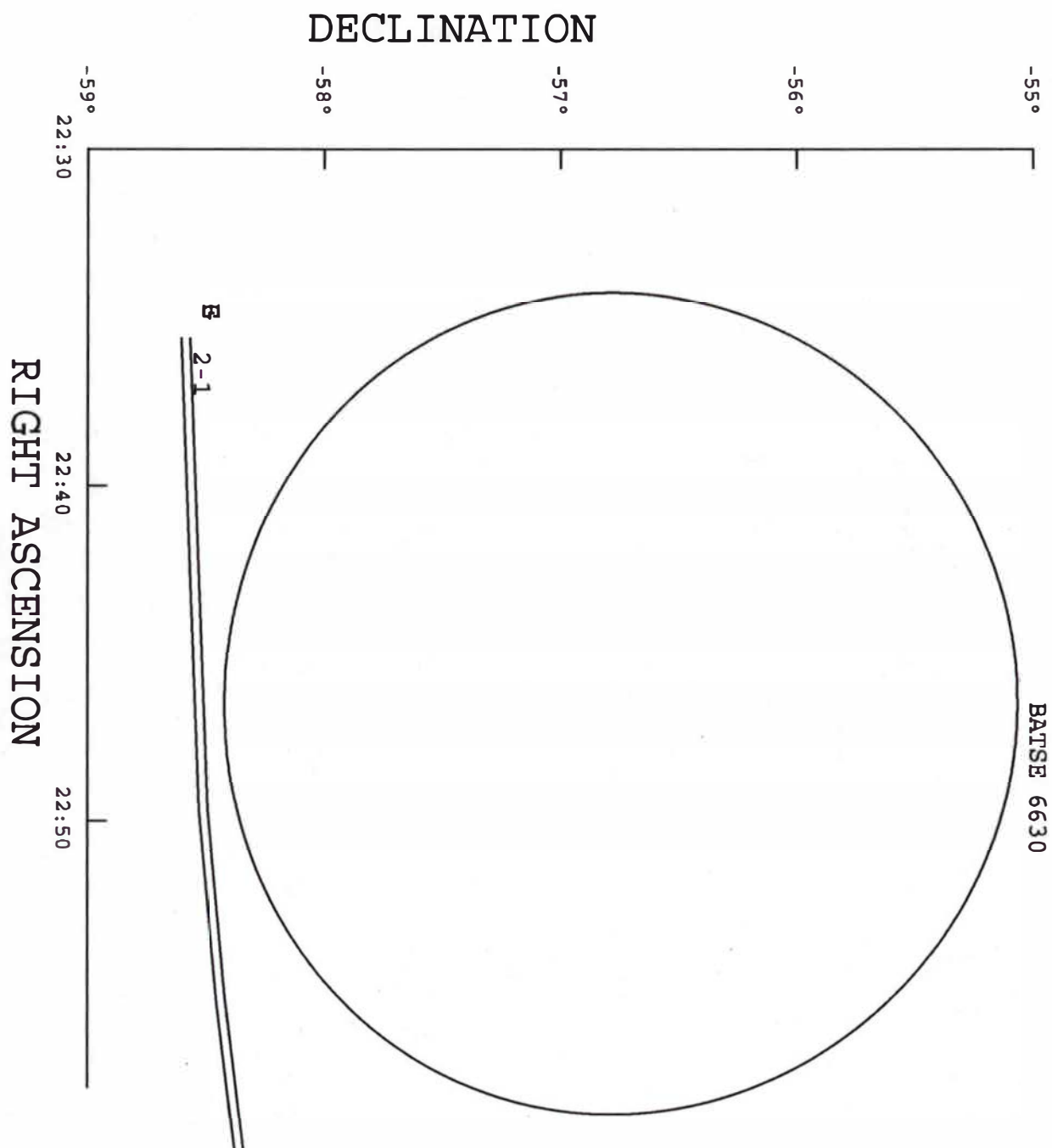
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?

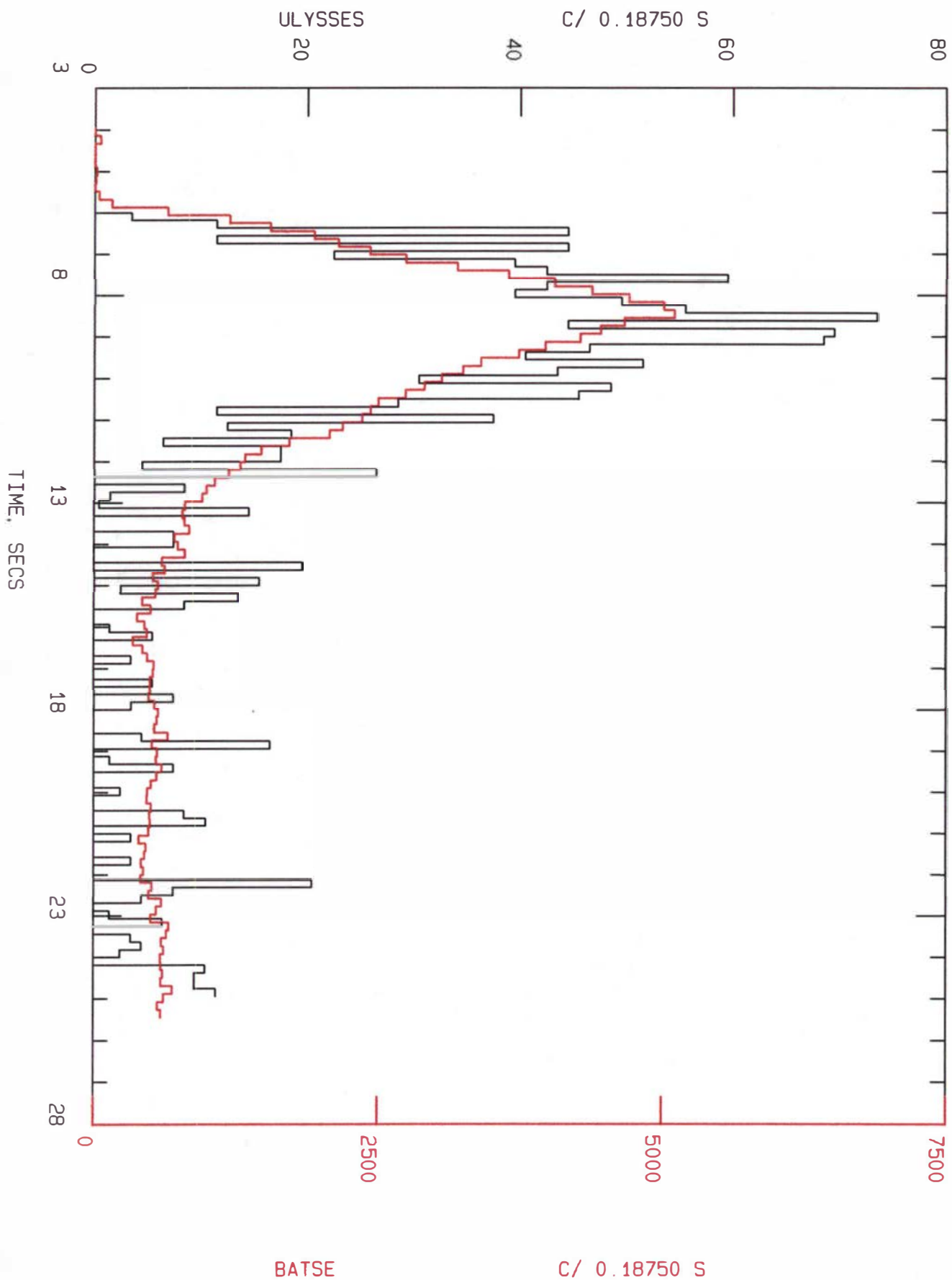
- ☒ ACCESS database updated?

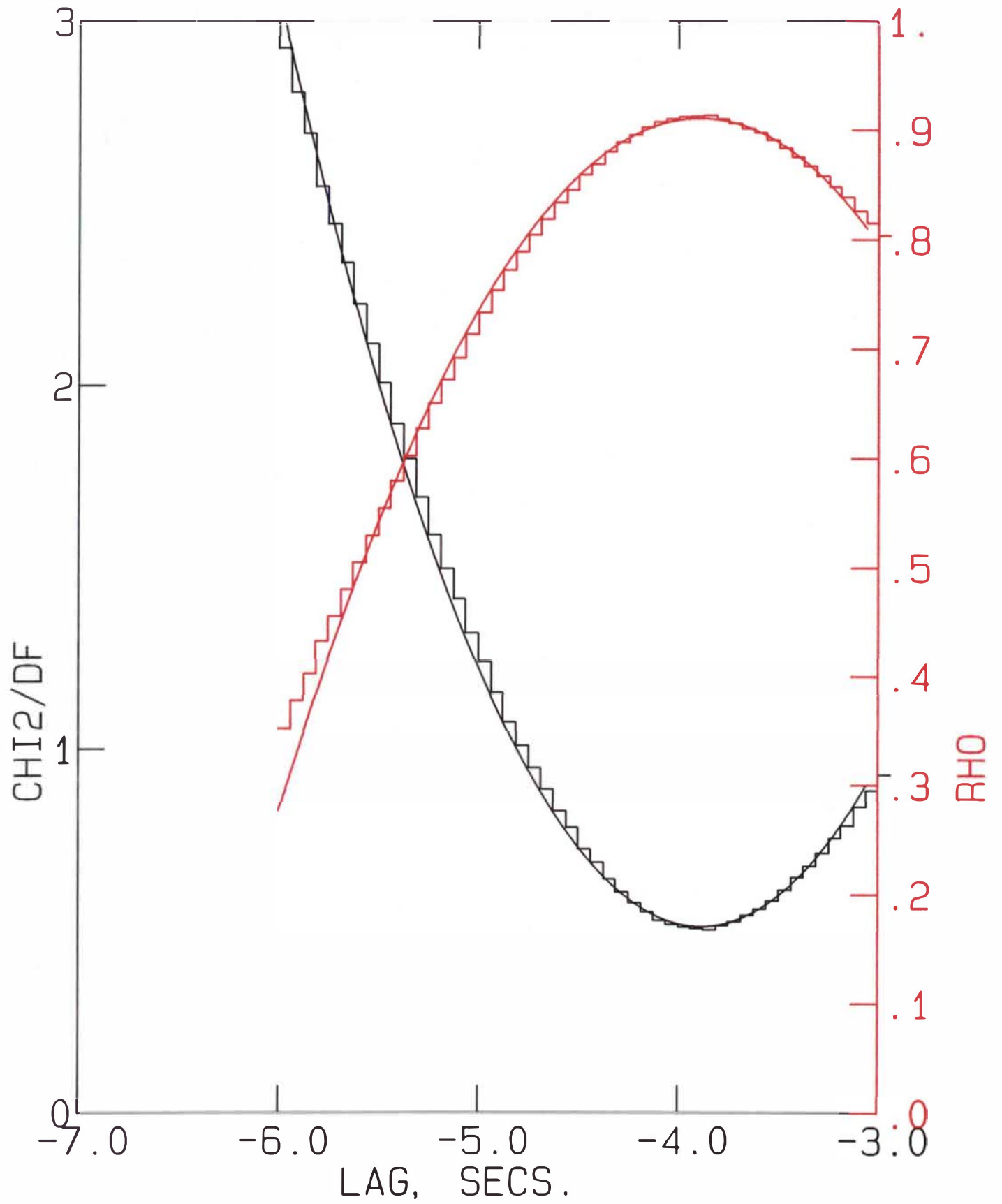
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 BATSE

EVENT OF MAR 6, 1998 17:59

21 / 2 / 0







3 s timing difference
between RT + triggered
data - RT is wrong
triggered is right

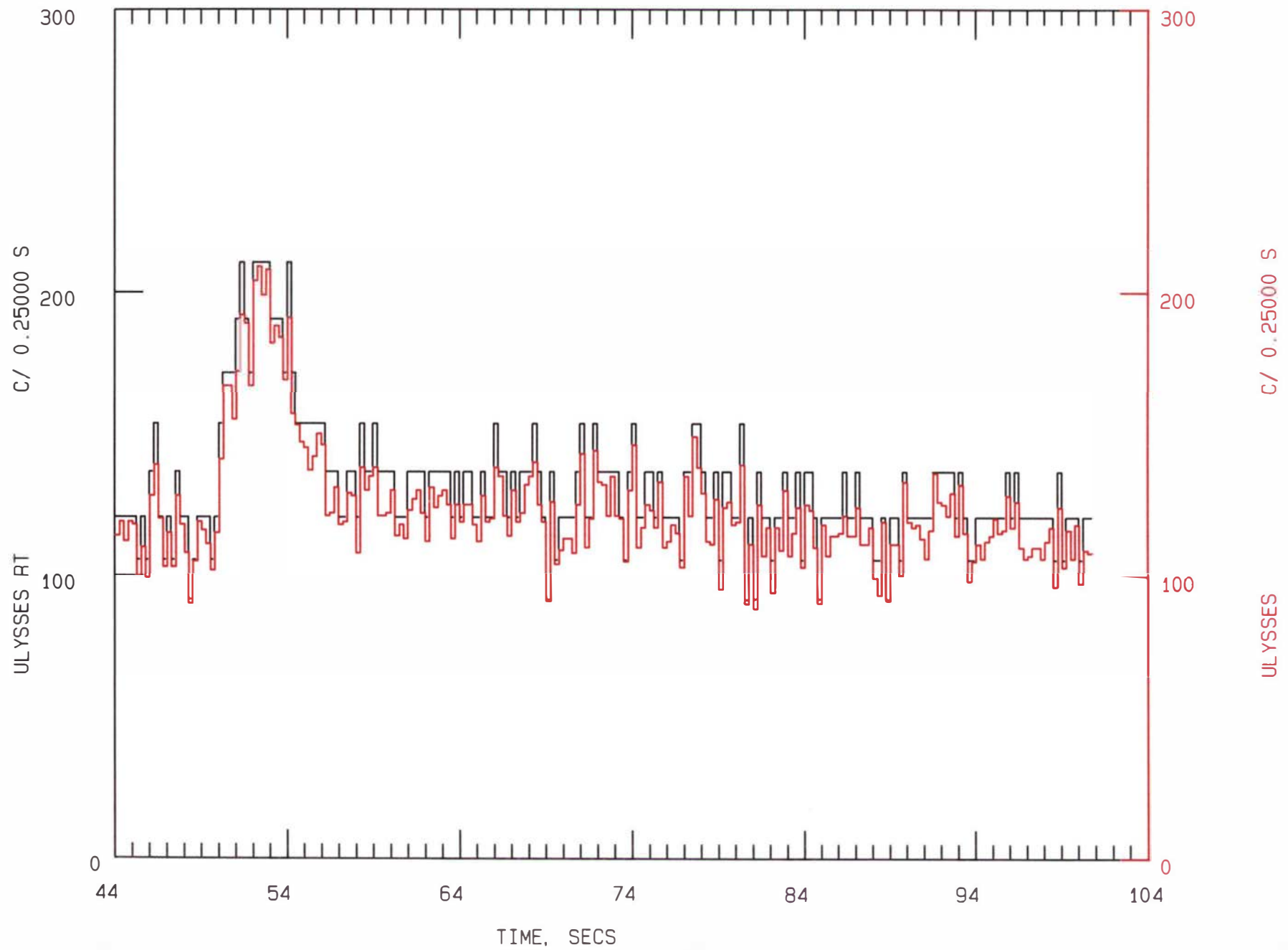
ULYSSES RT-ULYSSES

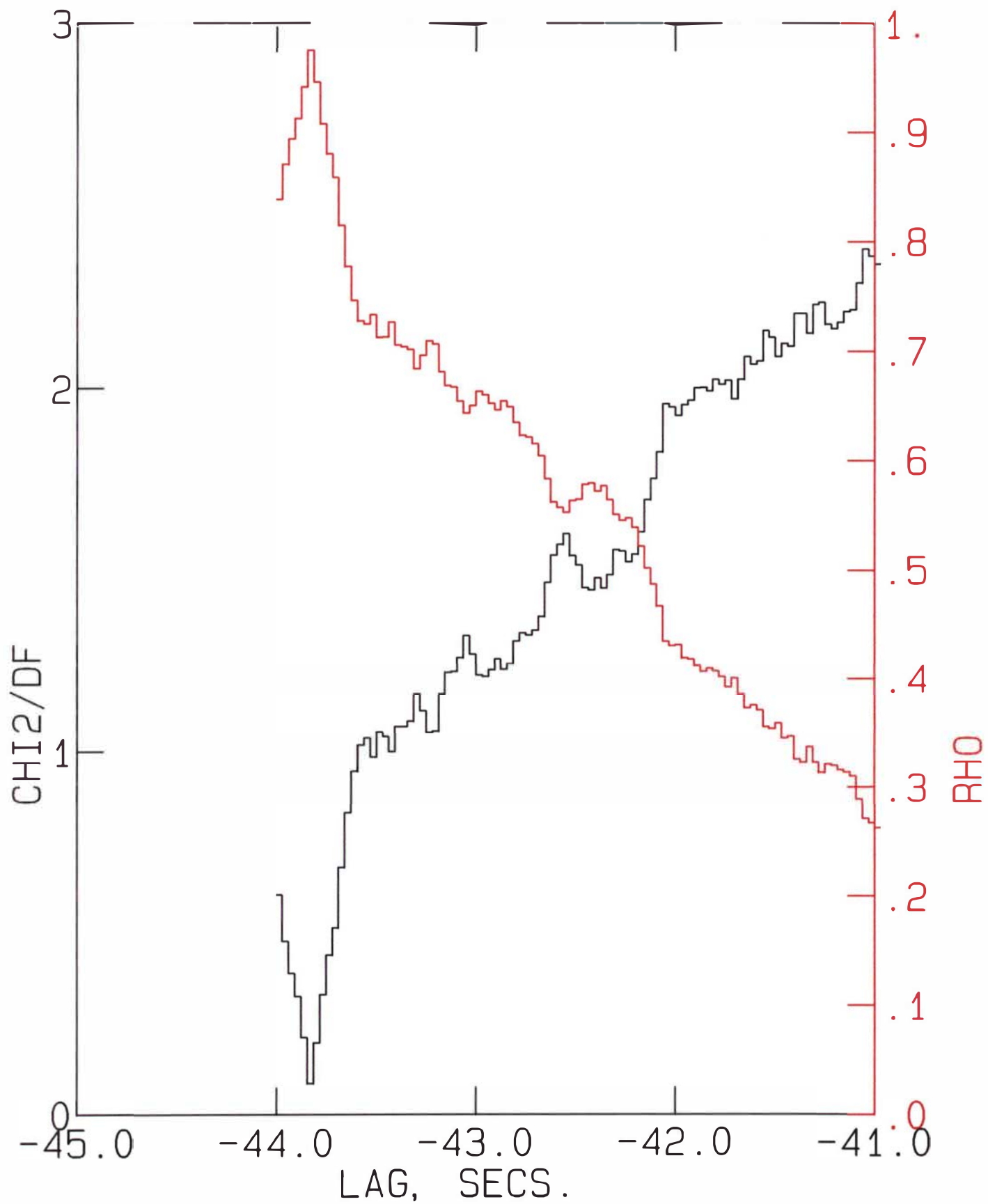
CORRELATION

6/ 3/98

64742.006

28/ 7/98

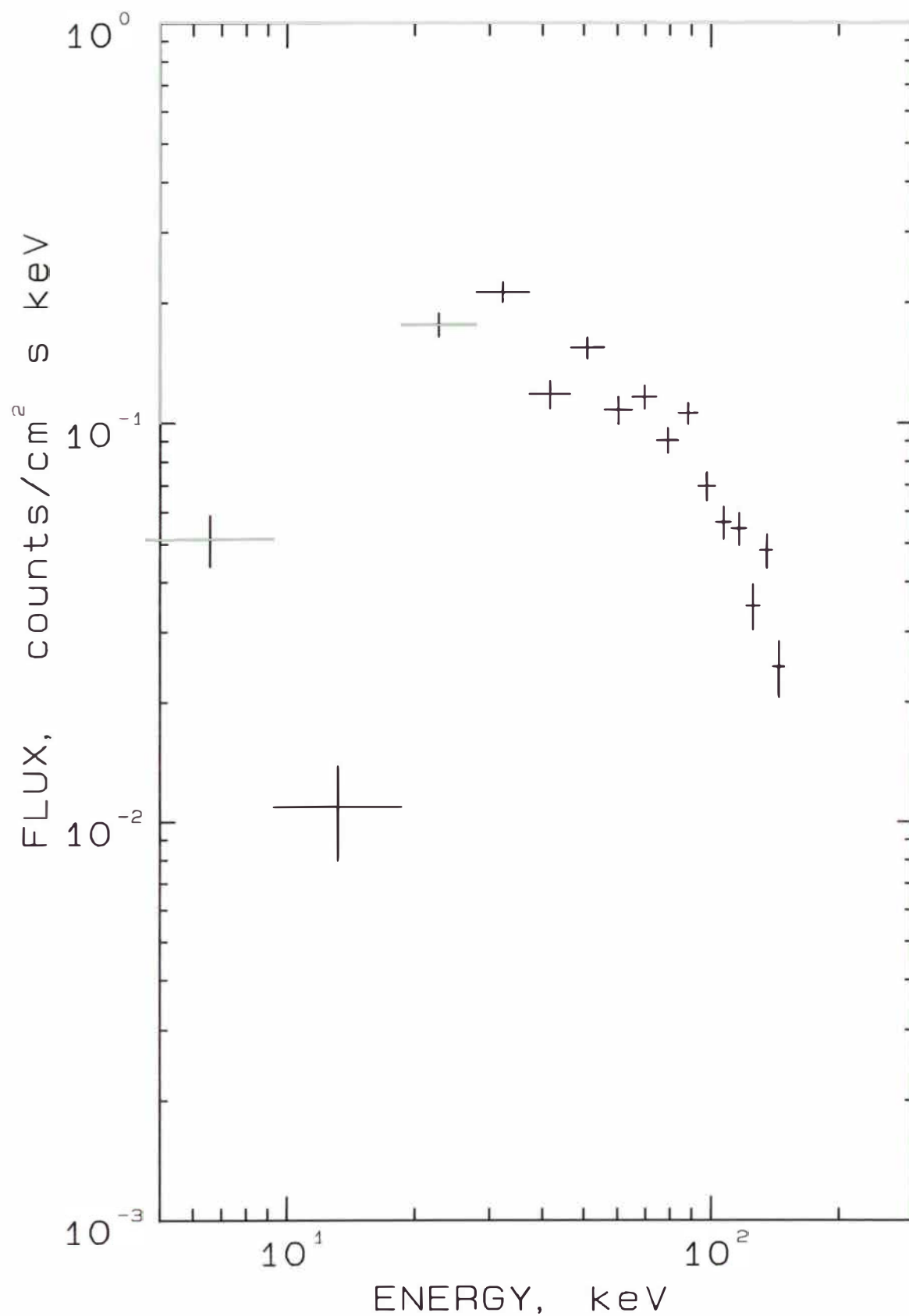




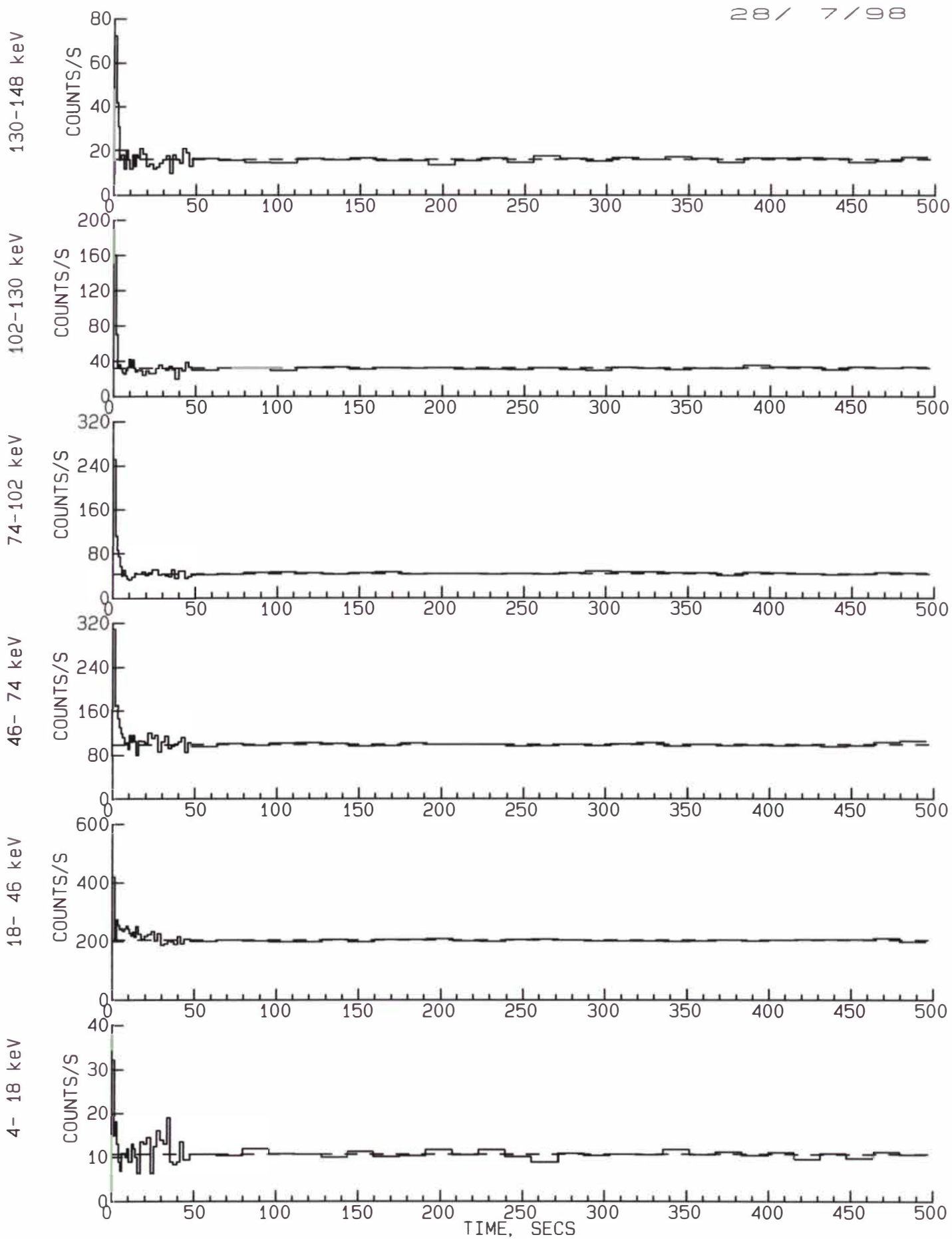
ULYSSES 06/03/98 64796.322

28/ 7/98

SPECTRUM INTEGRATED OVER 31.5 SECONDS, INTERVALS 2 TO 25

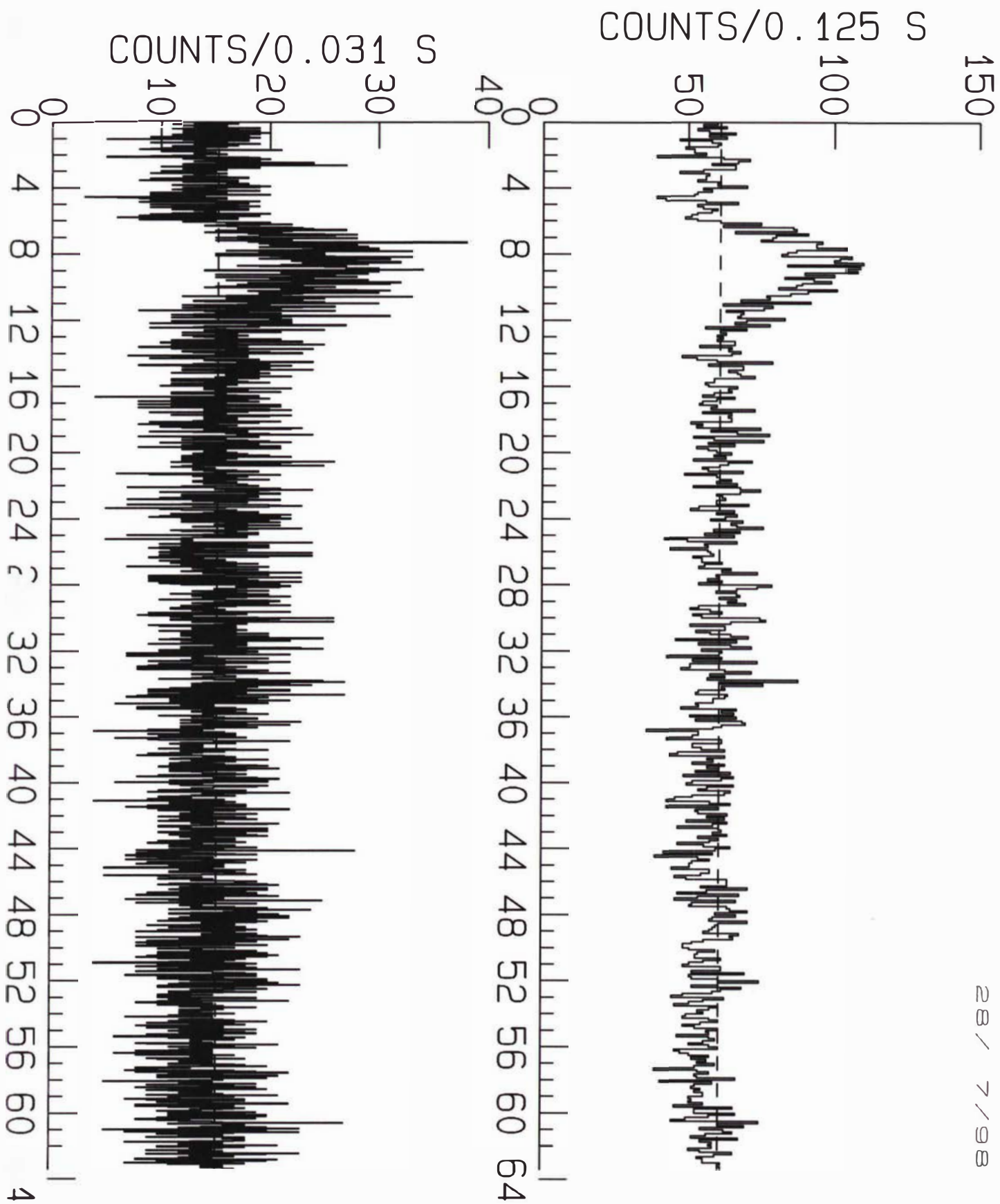


ULYSSES 06/03/98 64796.322 BURST SPECTRAL COUNT RATES



22- 149 keV

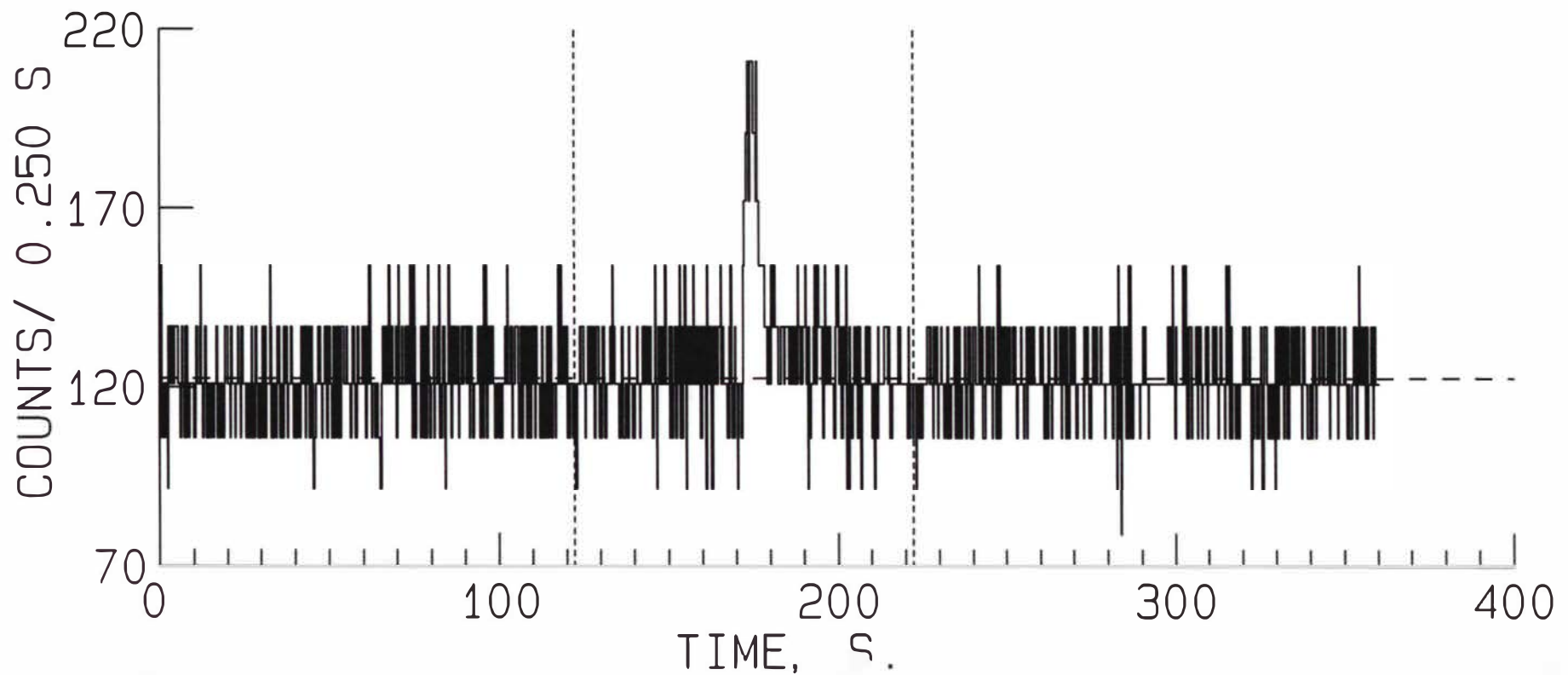
28 / 7 / 98



ULYSSES RT
6/ 3/98 64620.079 s
22- 149 keV

28 / 7 / 98

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



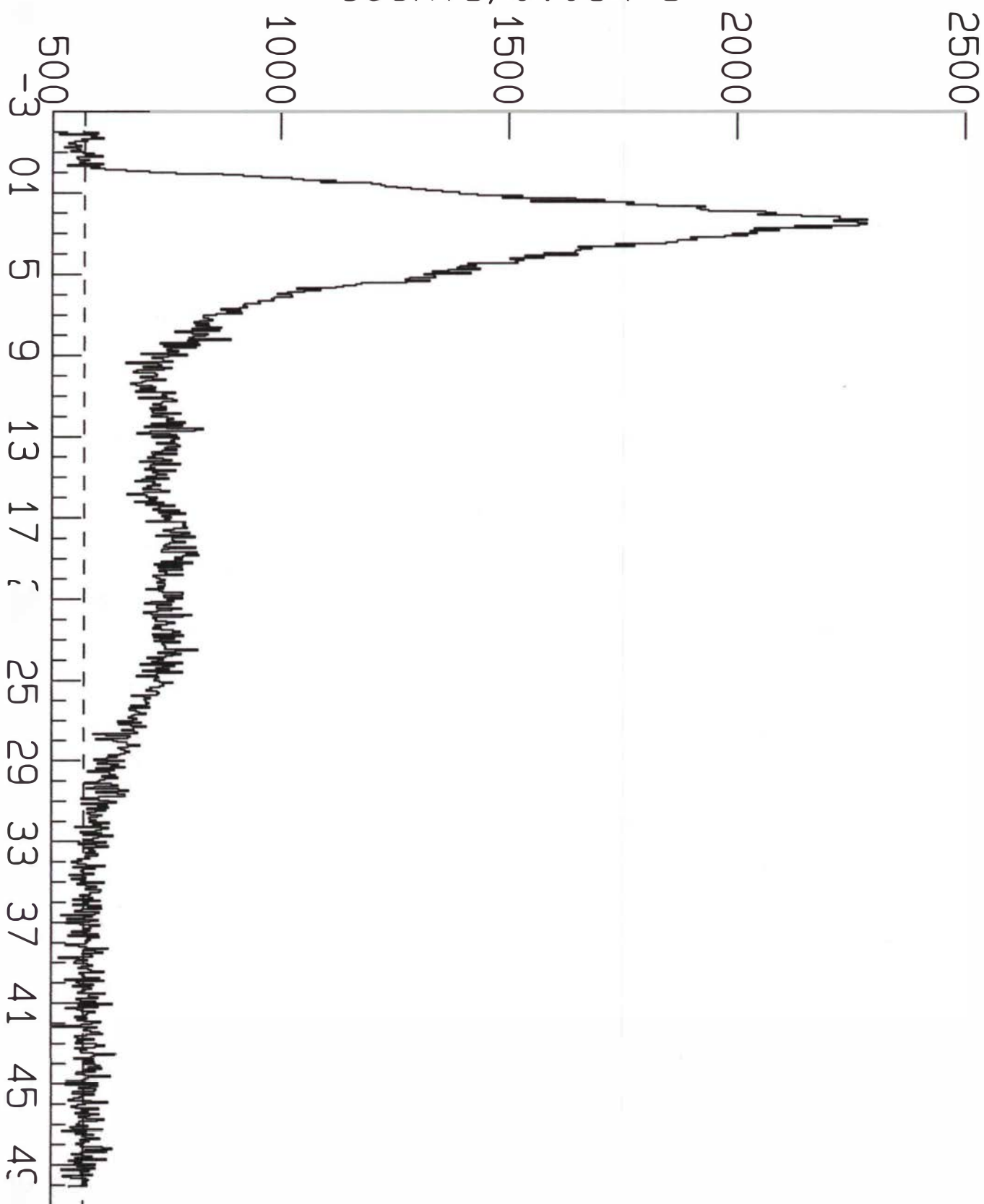
BATSE

06/03/98

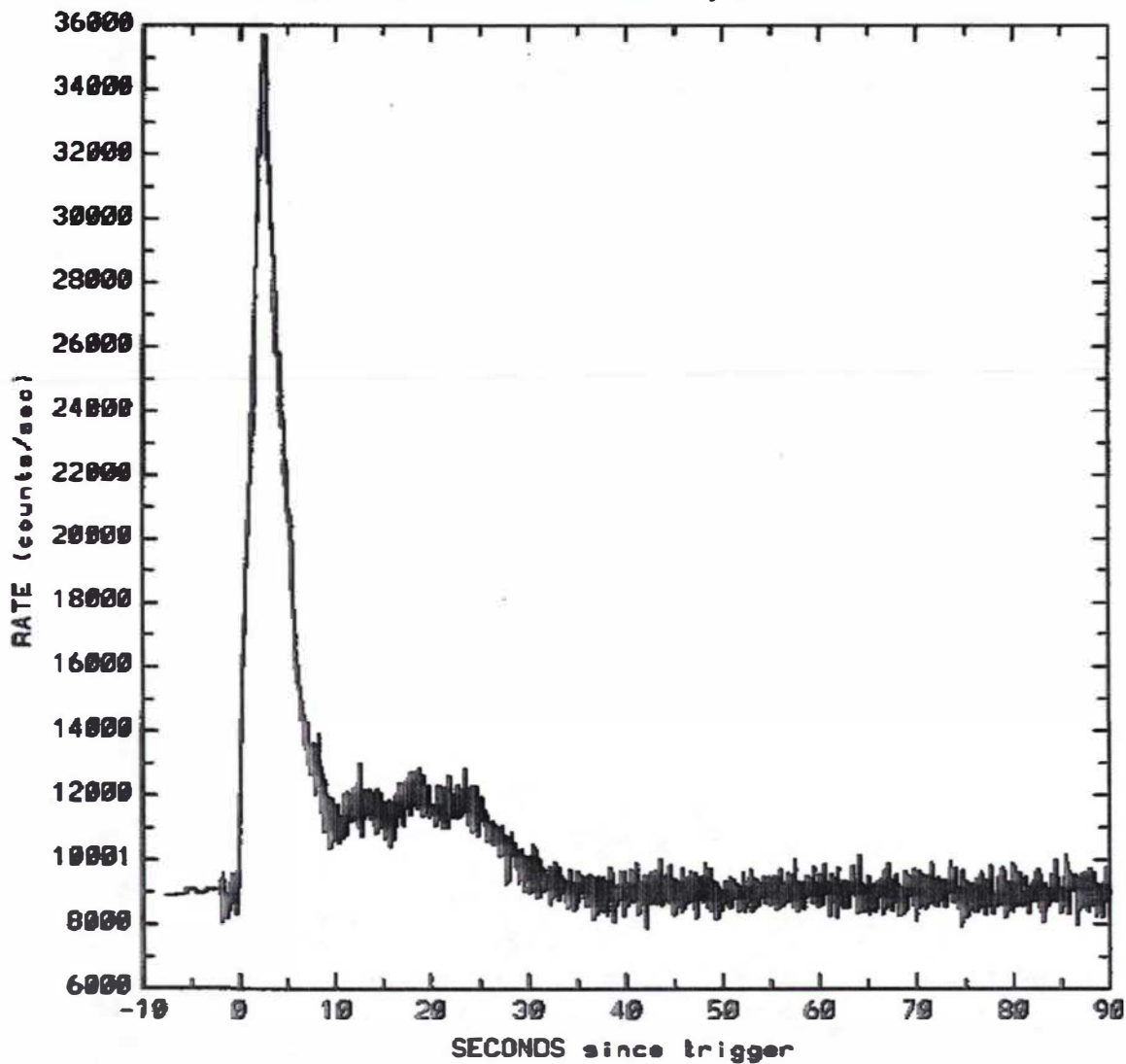
63251.618

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6630



16-MAR-1998 18:58.13

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

Trigger # : 6630

Trigger Time:
18878 / 63251.617Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.004 secondsDetectors [7..8],
----321-Discriminators:
[1 . 2]Quality Mask:
80ISP1

From marshall@khamseen.gsfc.nasa.gov Fri Mar 6 20:23 PST 1998
From: Frank Marshall <marshall@khamseen.gsfc.nasa.gov>
Subject: Re: Heads up
To: fiona@srl.caltech.edu (Fiona Harrison)
Date: Fri, 6 Mar 1998 23:22:20 -0500 (EST)
Cc: srk@astro.nasa.gov, dfrail@nrao.edu, scott@rosserv.gsfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, george@oracle.gsfc.nasa.gov
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Folks,

After a series of misadventures, I managed to make an update plan which has been sent to the satellite. XTE should start scanning from (349.136, -58.035) to (330.262, -58.228) and back and forth at 04:42 UT. The scans will last about an hour. Hopefully no typos this time (well, there is one, but it's minor).

Frank

From fiona@aegir.srl.caltech.edu Fri Mar 6 16:36 PST 1998
From: Fiona Harrison <fiona@srl.caltech.edu>
Date: Fri, 6 Mar 1998 16:35:57 -0800 (PST)
To: srk@astro, marshall@khamseen.gsfc.nasa.gov, dfrail@nrao.edu,
scott@rosserv.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
george@oracle
Subject: Heads up

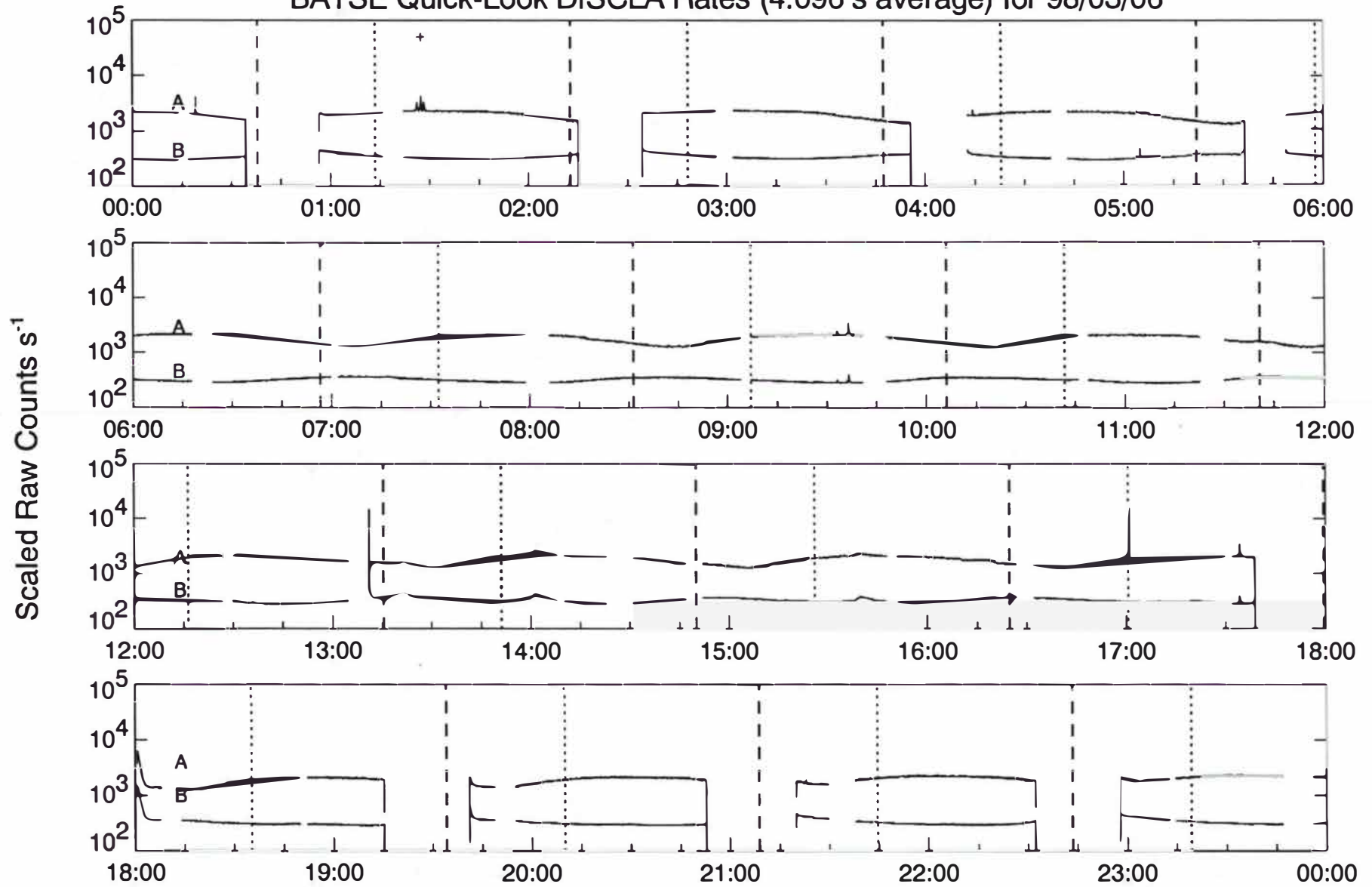
XTE'ers,

Kevin has just derived an IPN position for BATSE trigger
6630, a bright burst from today. This burst meets
the criteria to trigger our proposal.

Frank is contacting Jean Swank to see if we can call
a TOO.

Fiona

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/06

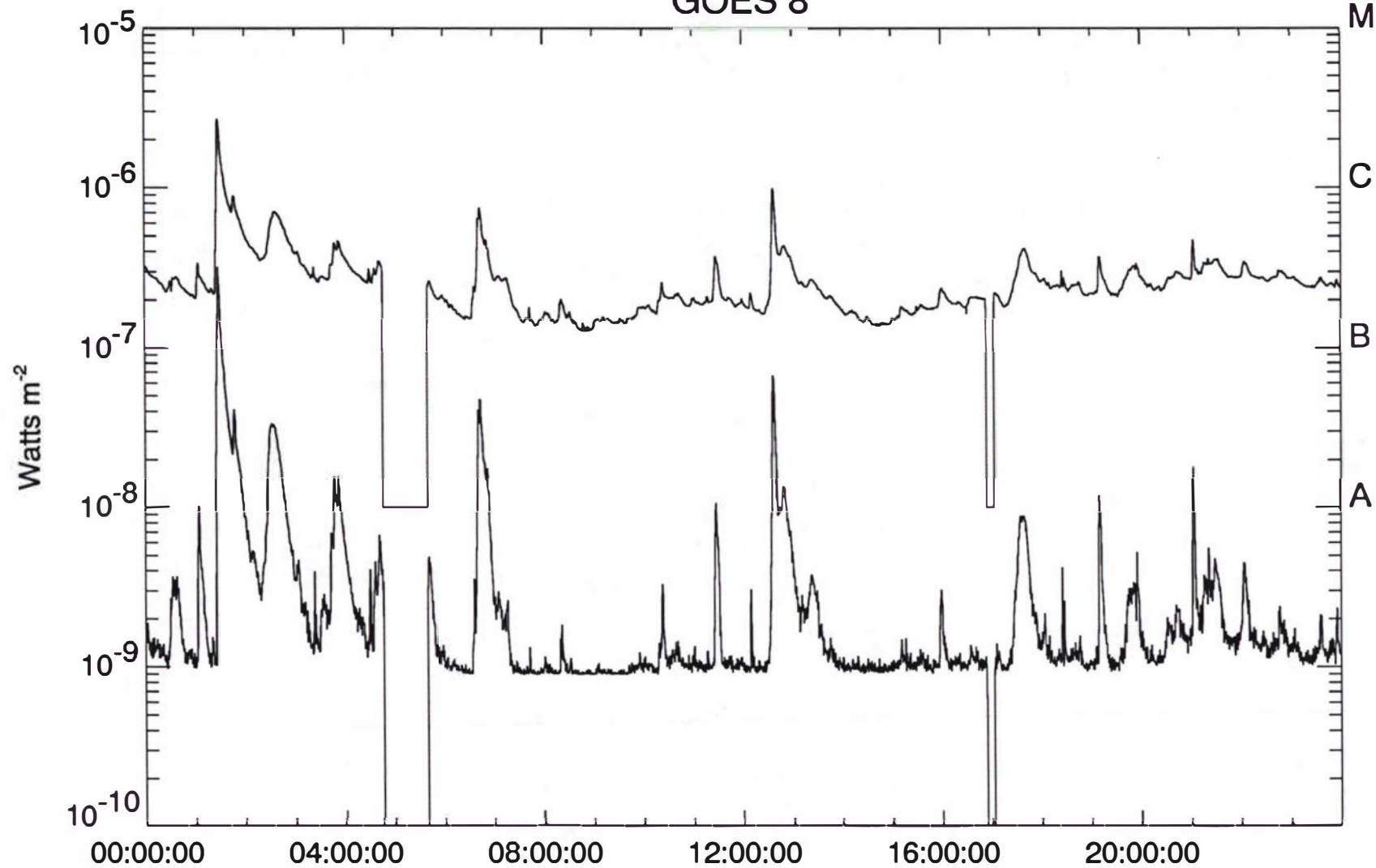


Current Time: 98/03/10, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

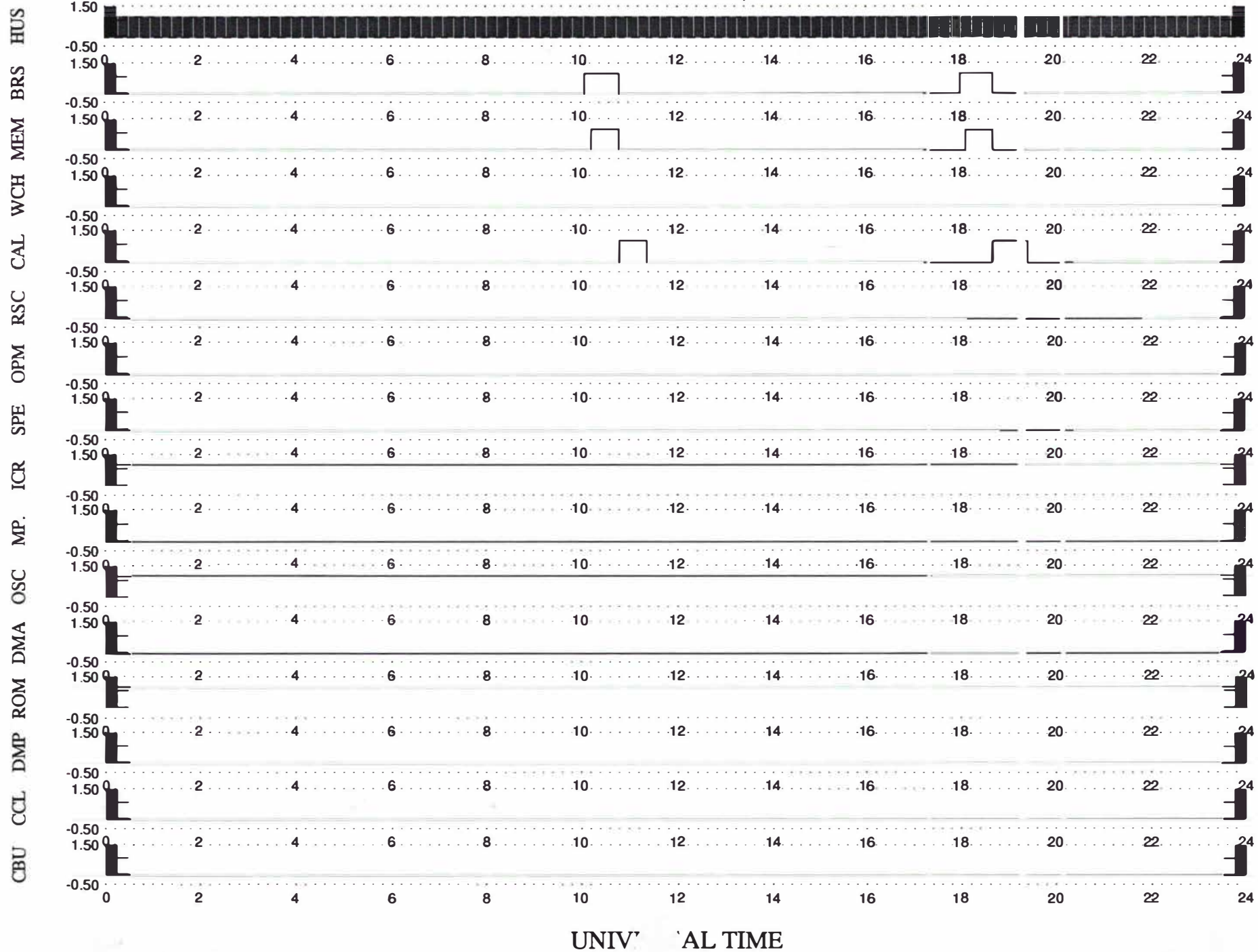


Data Start: 98/03/06, 0000:00

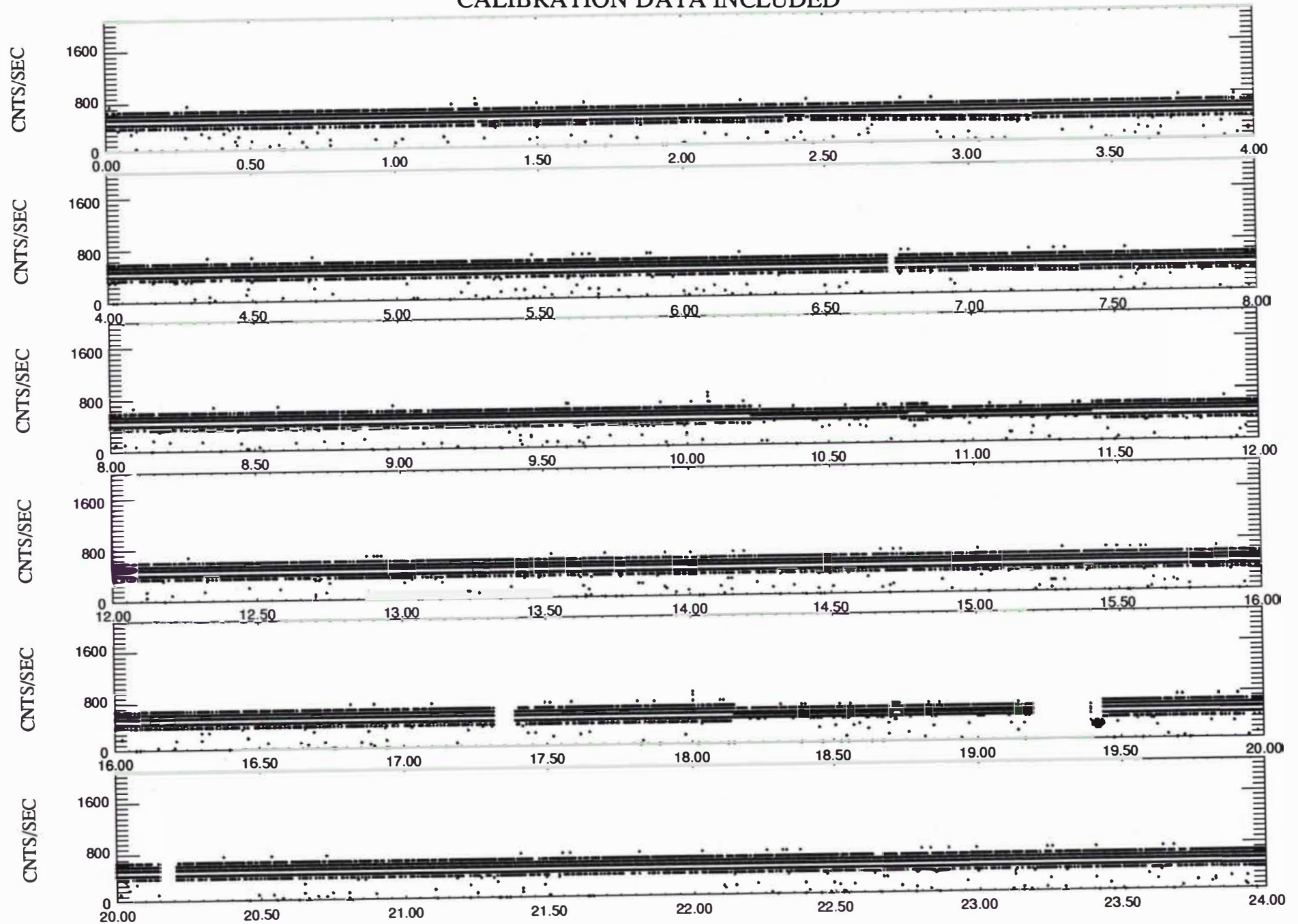
Plot created: 98/03/10, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted
 Sample average = 10

BURST NUMBER 14, 15

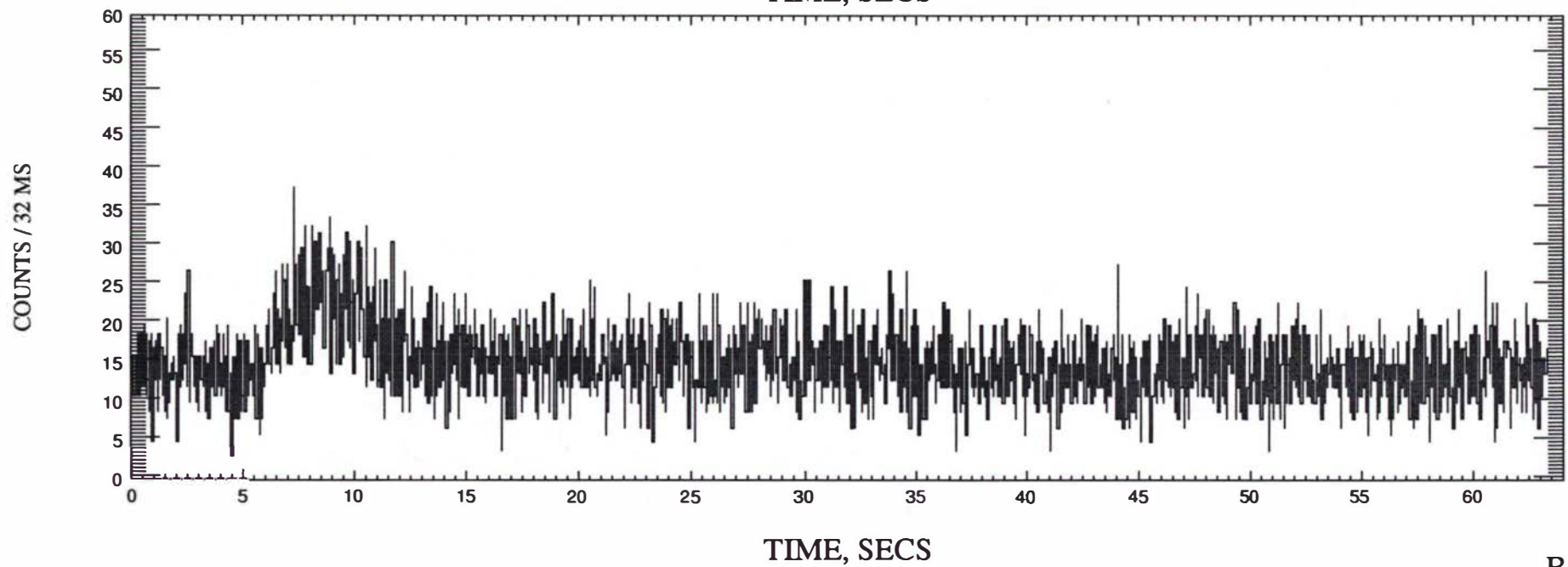
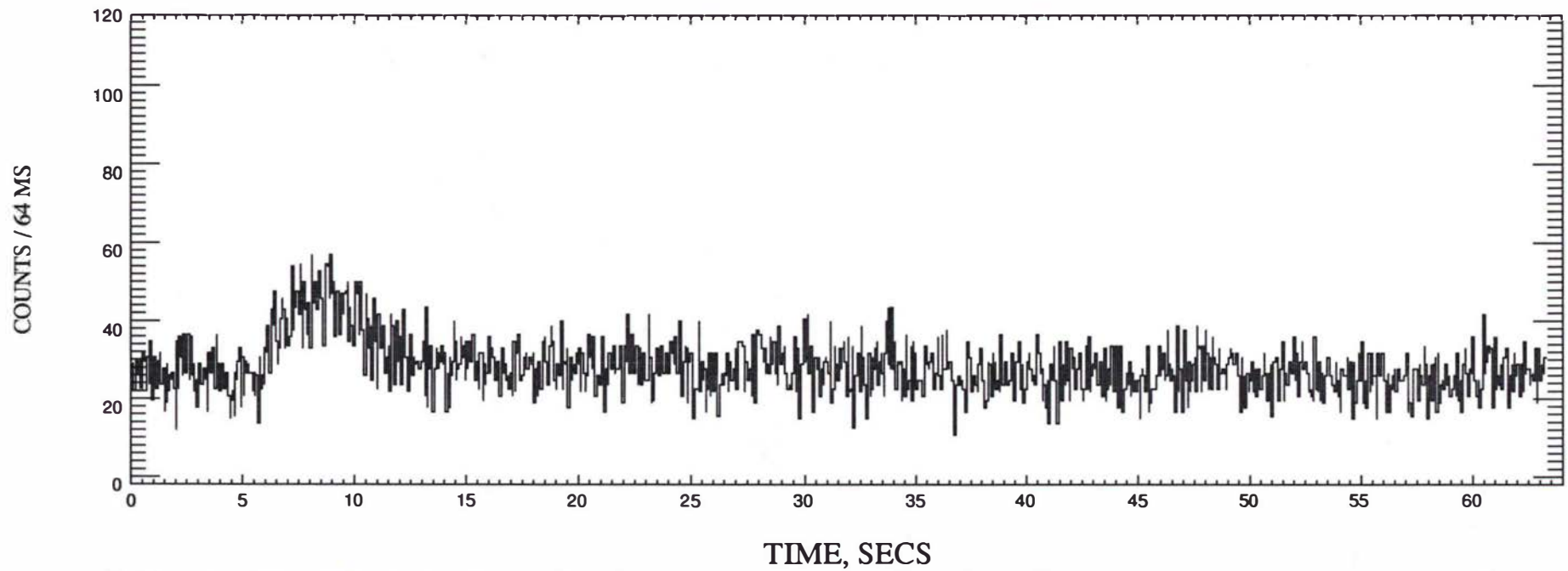


CALIBRATION DATA INCLUDED

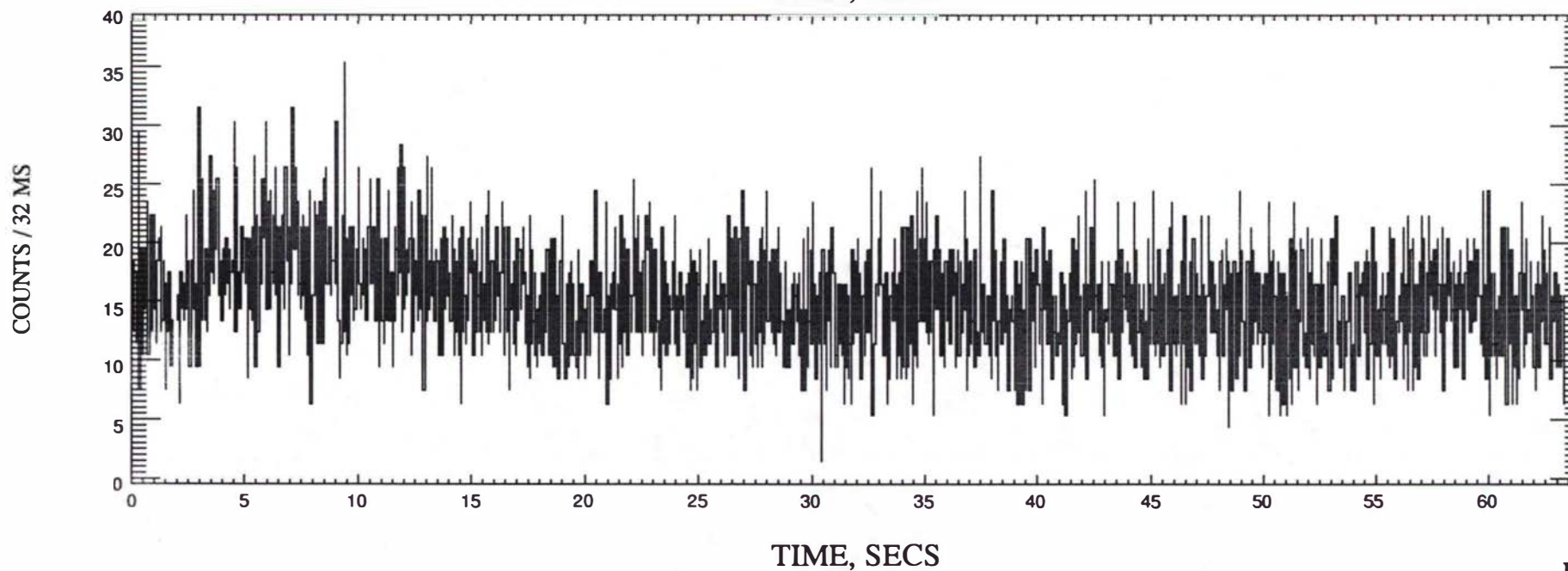
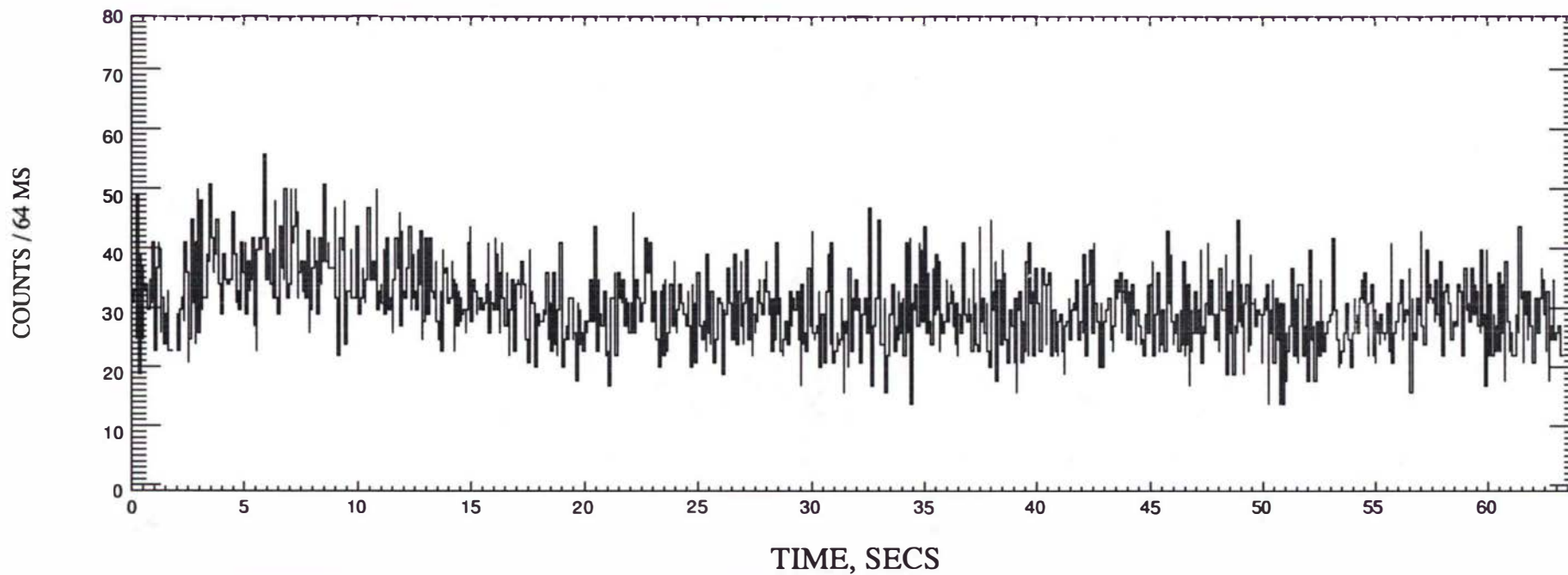


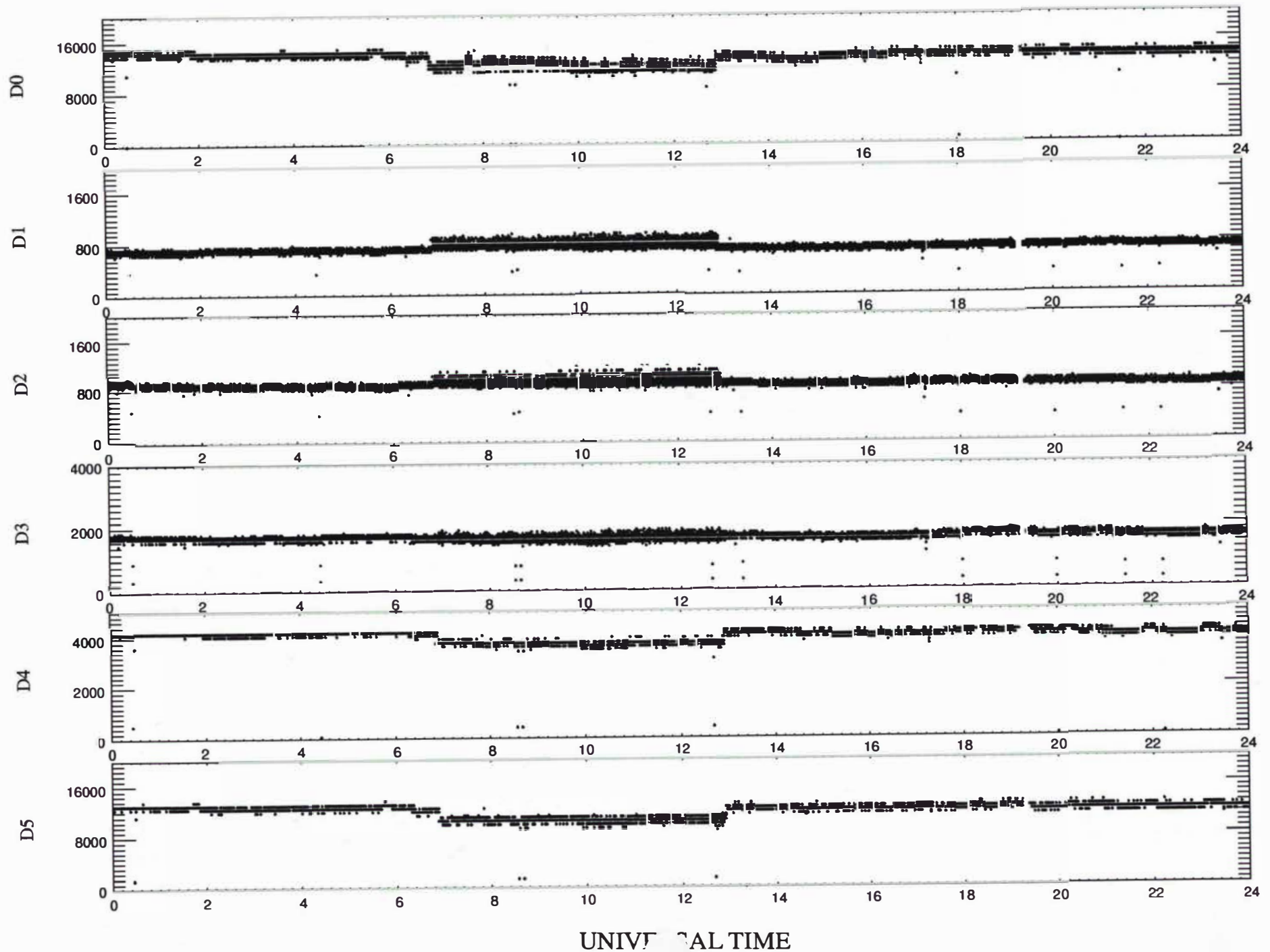
UNIV. TIME

Burst Counter 15 at UT=17.998978229099 h=64796.322 s 17:59:56.322

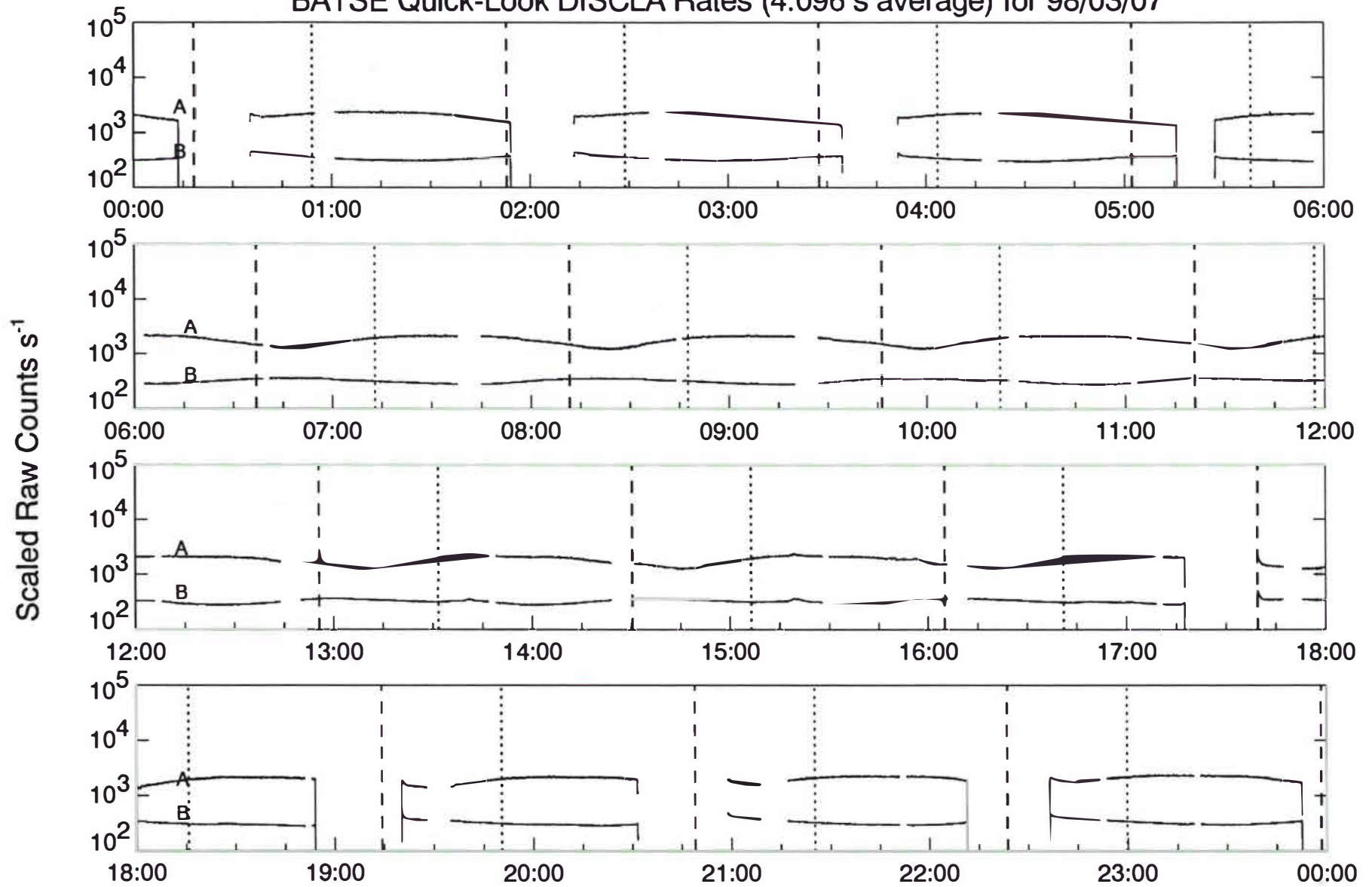


Burst Counter 14 at UT=10.069724951850 h=36251.010 s 10:04:11.010





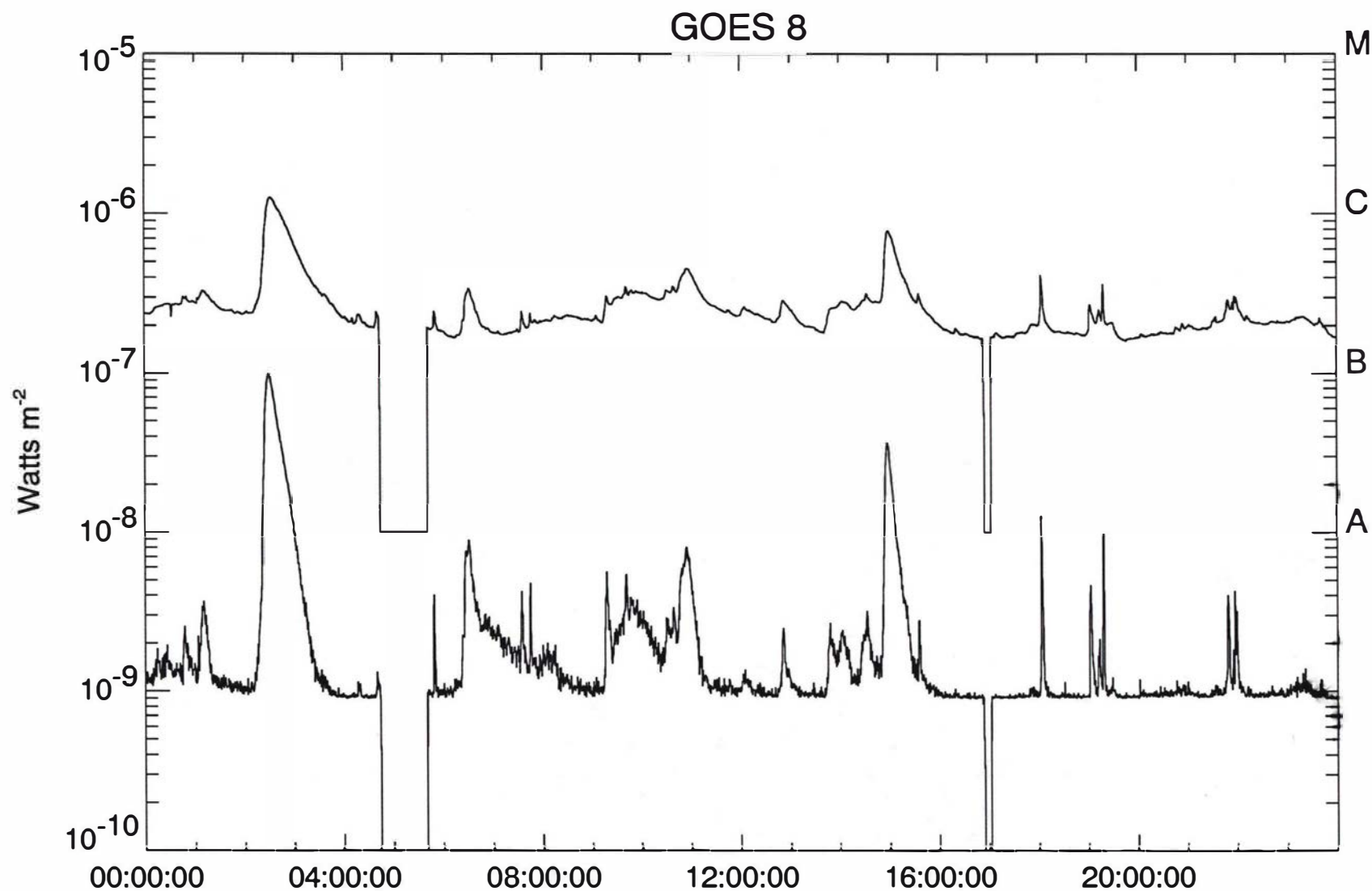
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/07



Current Time: 98/03/11, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/07, 0000:00

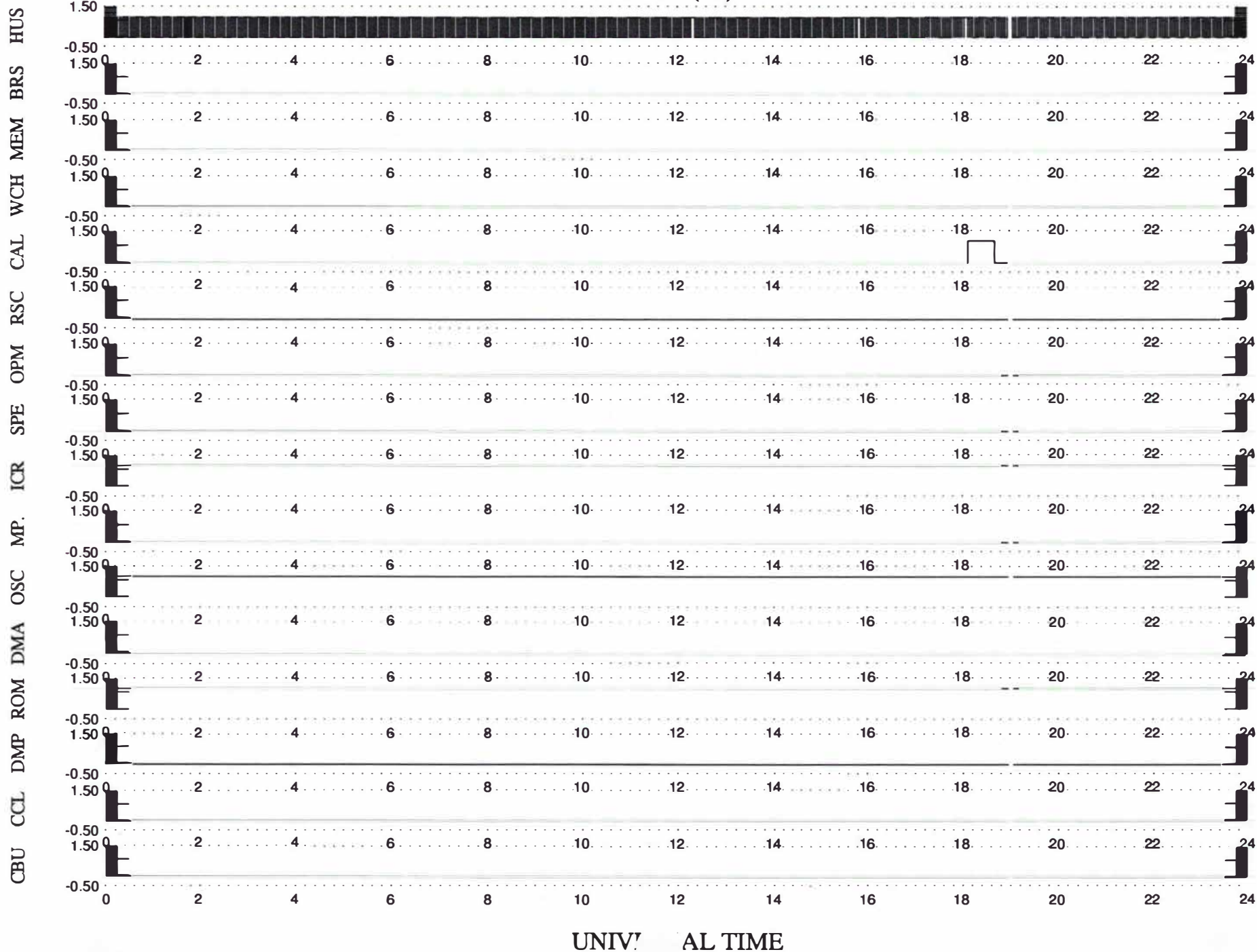
Plot created: 98/03/11, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

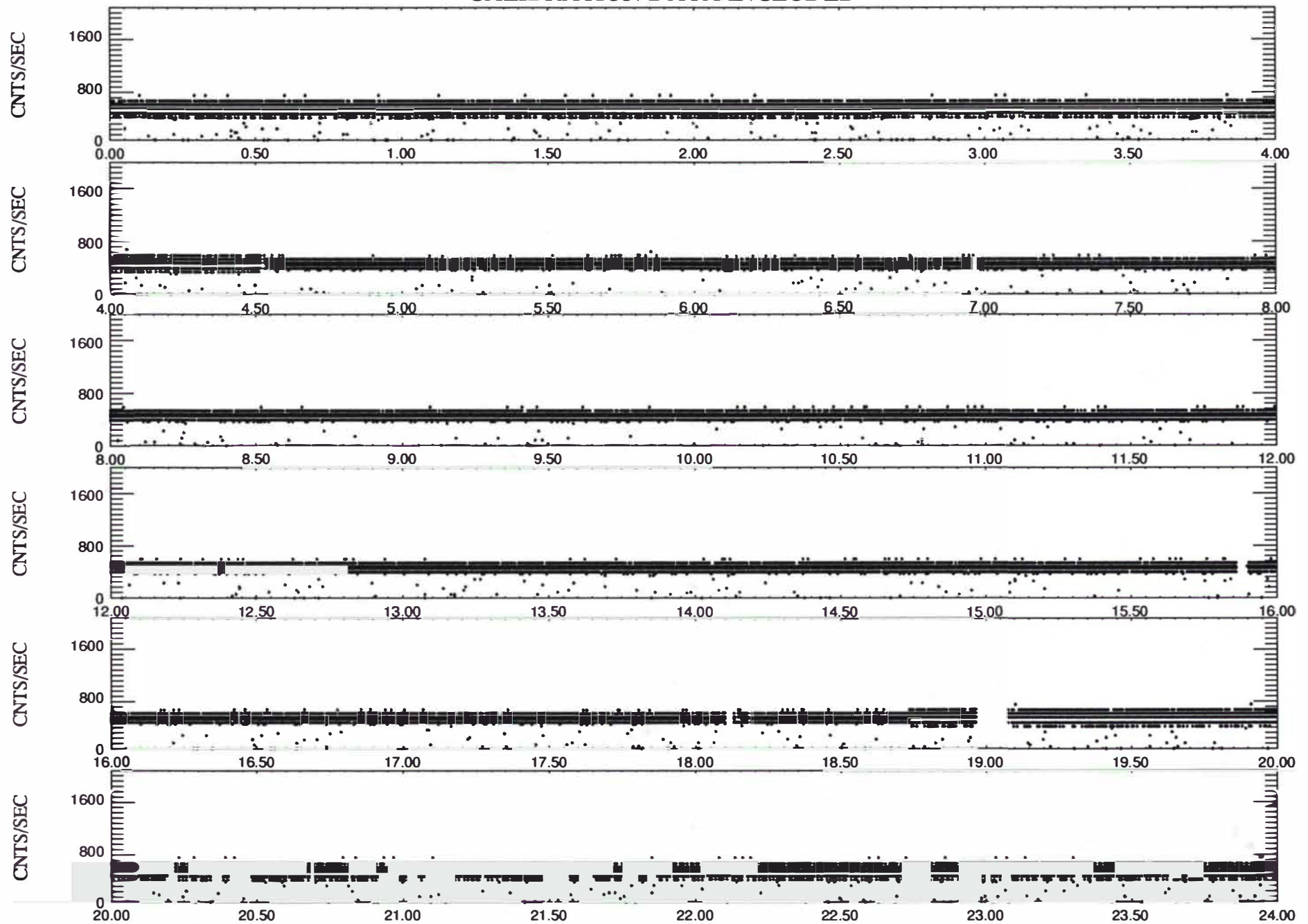
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

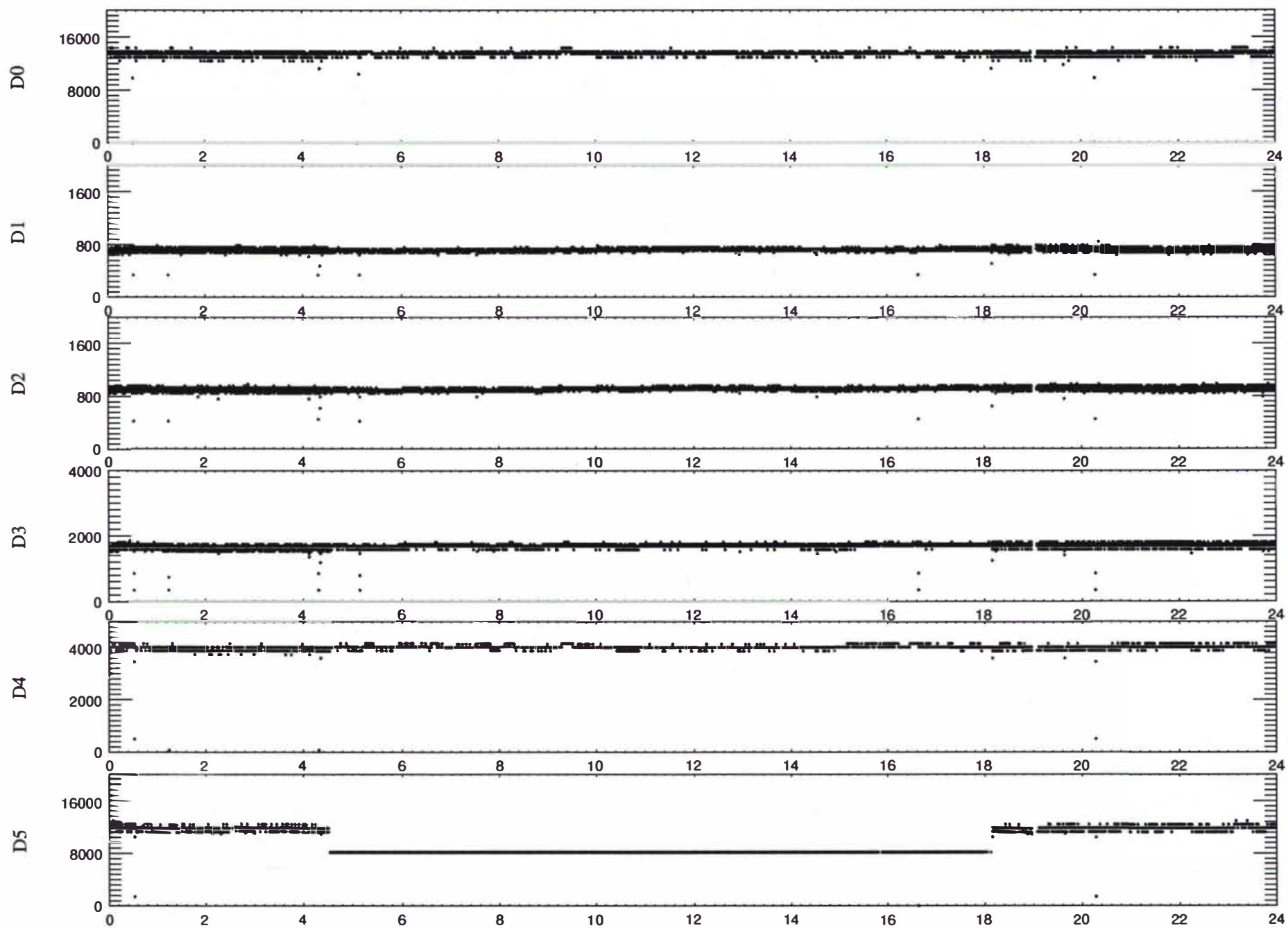
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



UNIVERSAL TIME

KONUS

ULYSSES RT

08 / 02 / 00

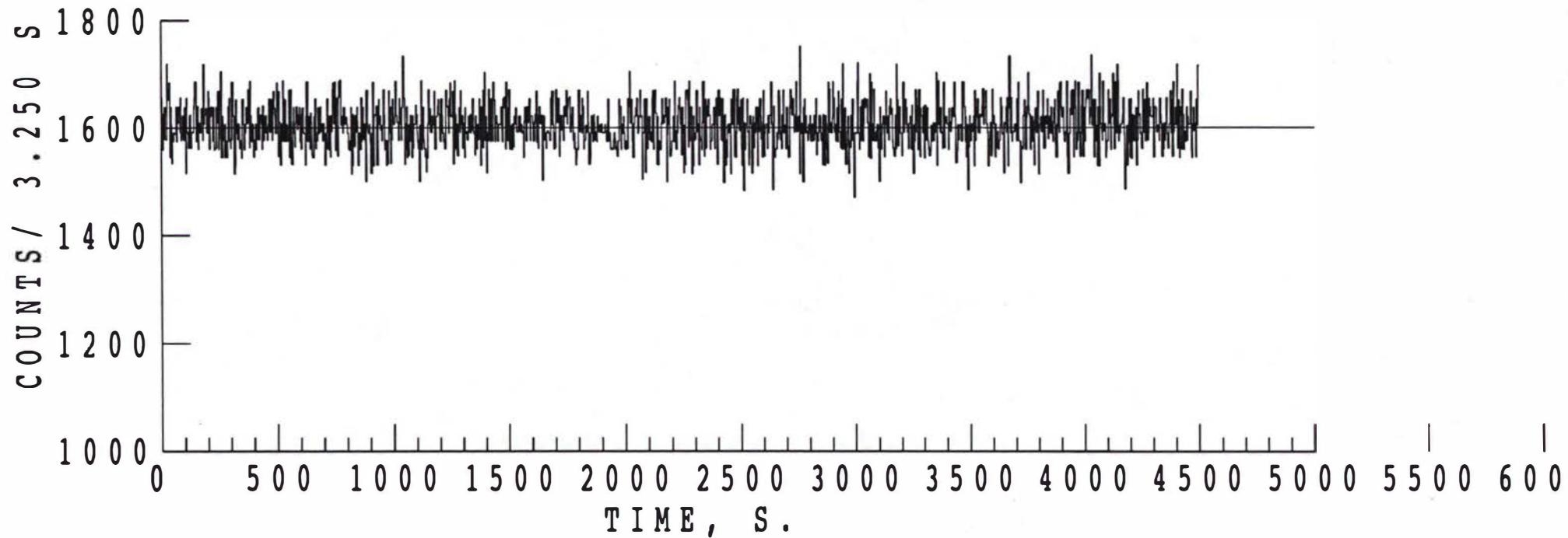
08/03/98 6156.040 s

0.250 S INTERVALS REGROUPED BY 13

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

08 / 02 / 00

08 / 03 / 98 49608.008 s

0.500 S INTERVALS REGROUPED BY 7

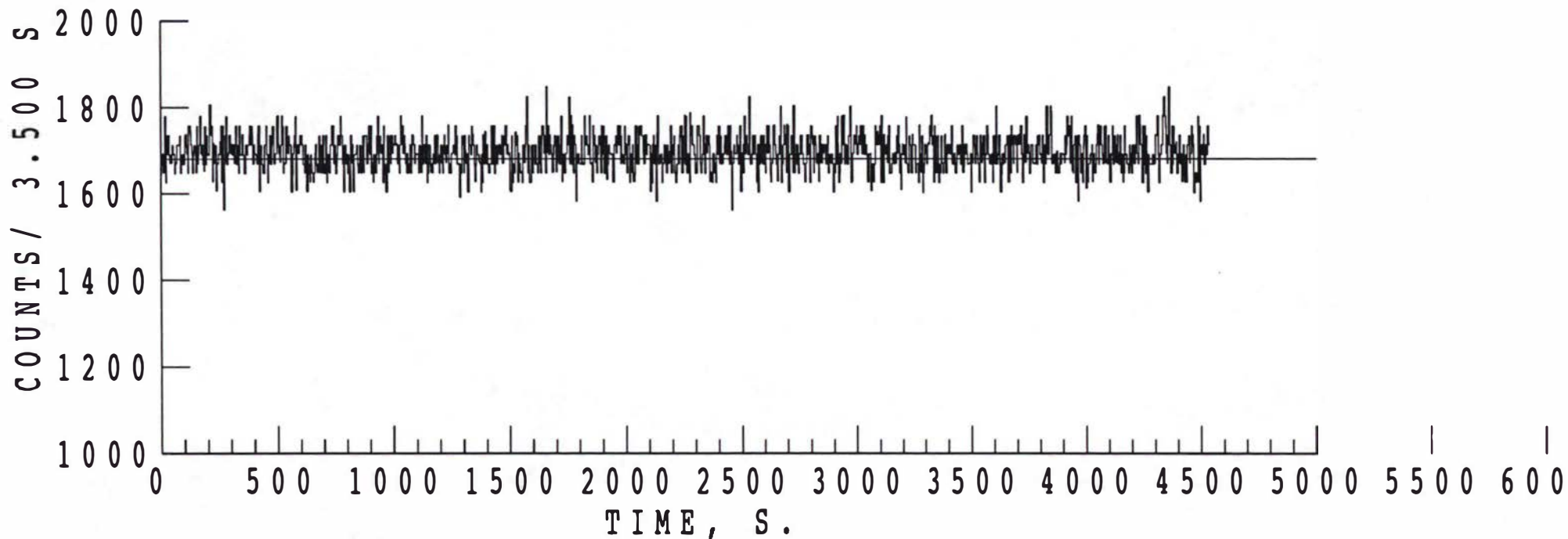
0 - 0 keV

N= 10 M= 10

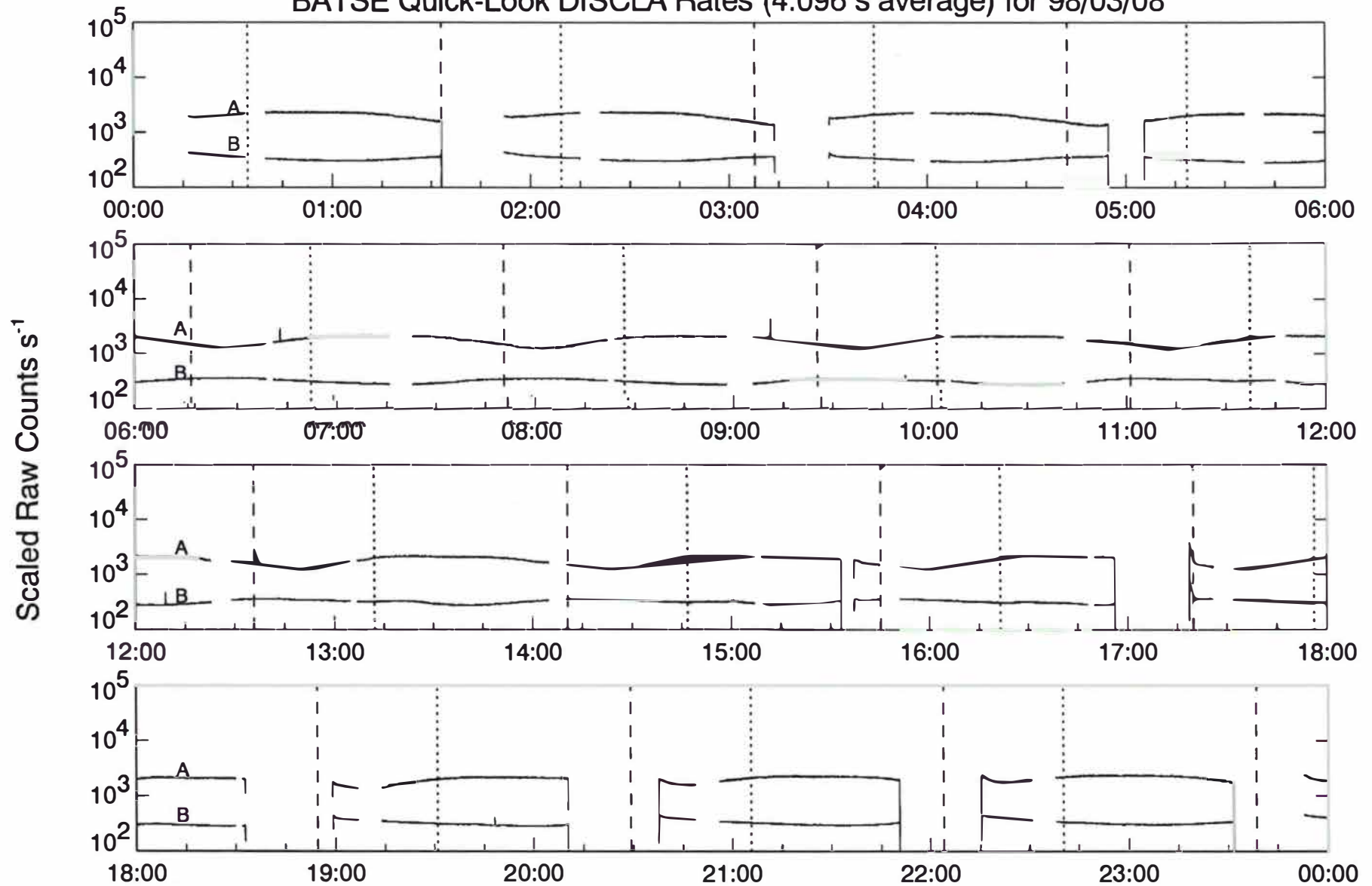
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



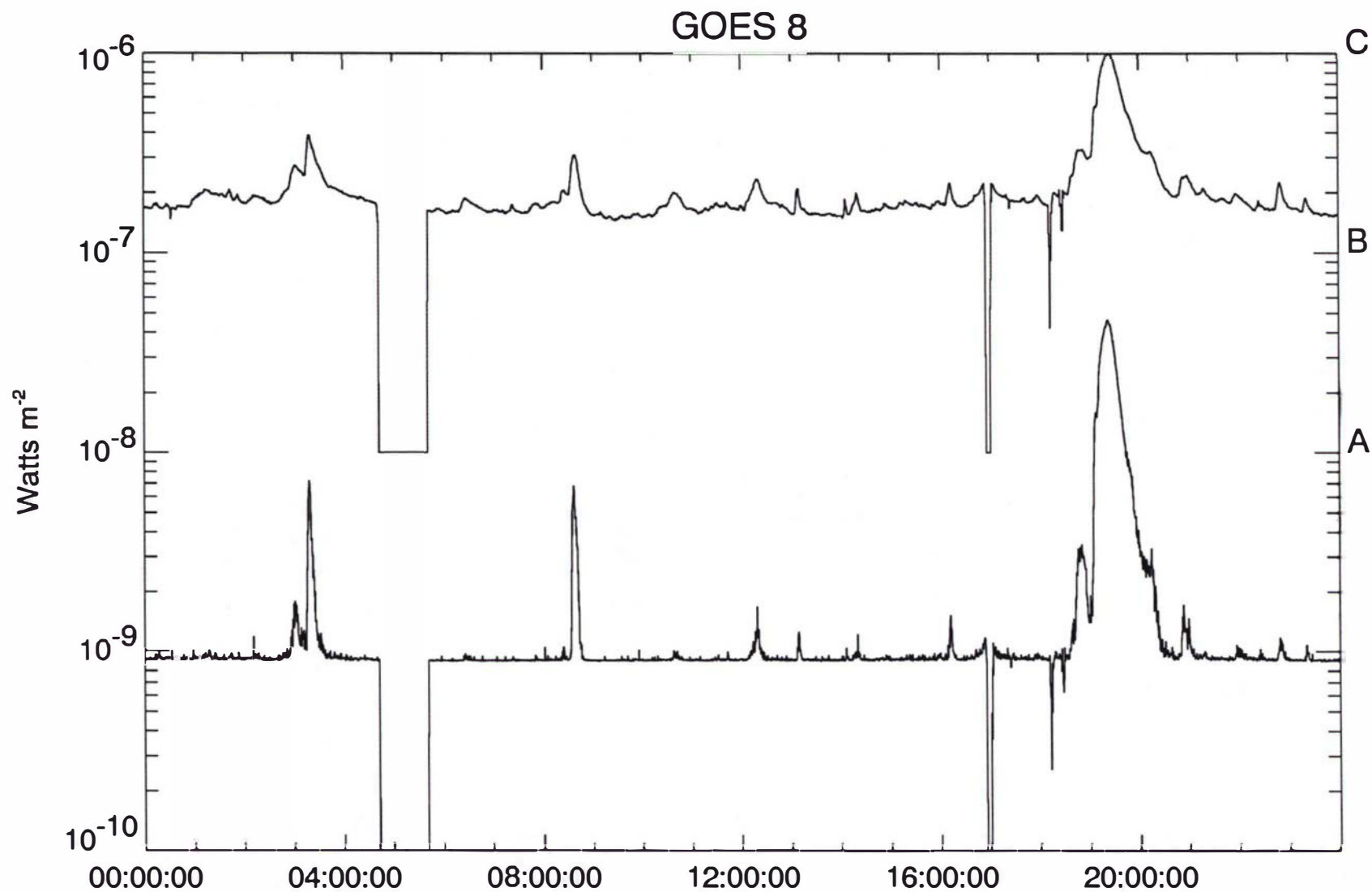
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/08



Current Time: 98/03/12, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/08, 0000:00

Plot created: 98/03/12, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

From SURASAK@SSLMOR.msfc.nasa.gov Mon Mar 9 11:18:41 1998
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA27955; Mon, 9 Mar 1998 11:18:41 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA22855; Mon, 9 Mar 1998 11:18:37 -0800
Date: Mon, 9 Mar 1998 13:18:38 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980309131838.21e29b3e@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6631
Content-Length: 1135
X-Lines: 26
Status: RO

No

BATSEARCH PROGRAM

BATSE BURST # 6631
EVENT OF 1998 MAR 8 DAY OF YEAR= 67
EVENT CROSSING TIME AT BATSE : 19239. S. OR 05:20:39.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 273.000 35.000
BATSE PEAK COUNTING RATE: 3220 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 8/ 3/ 98 IS:
RA= 157.686 DEC= 13.226 DIST= 4.434 AU
BATSE-ULYSSES DISTANCE = 663301649. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.89 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 464.05 SECS.
CROSSING TIME AT ULYSSES IS 19703. S. OR 05:28:23 +/- 432.63 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 8/ 3/ 98 IS:
RA= 2.625 DEC= 0.422 DIST= 2.338 AU
MARS-BATSE DISTANCE = 349775008. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.55 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -11.17 SECS.
CROSSING TIME AT MARS IS 19228. S. OR 05:20:27 +/- 202.38 SECONDS

BATSE BURST TRIGGER

NO.: 6631

TIME: TJD=0880 SECONDS=19239

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=65.3 AZIMUTH=242.7 ERROR=4.935 DEGREES

COMMENTS:

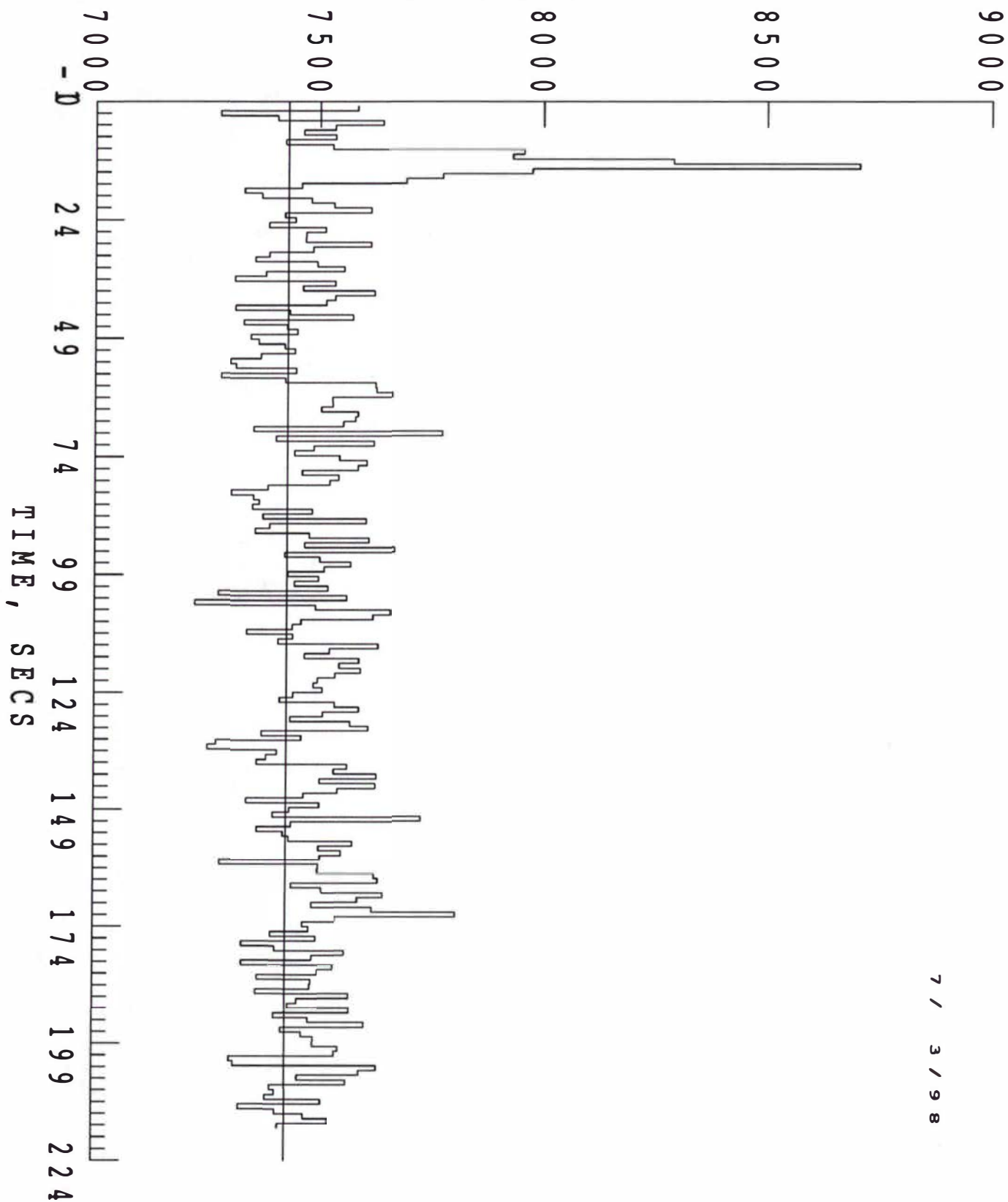
GRB. SINGLE PULSE WITH SUBSTRUCTURE. START AT ABOUT T-4S. DURATION ABOUT 9S.
PEAK AT ABOUT 0.03S. NOT VISIBLE ABOVE 300 KEV.

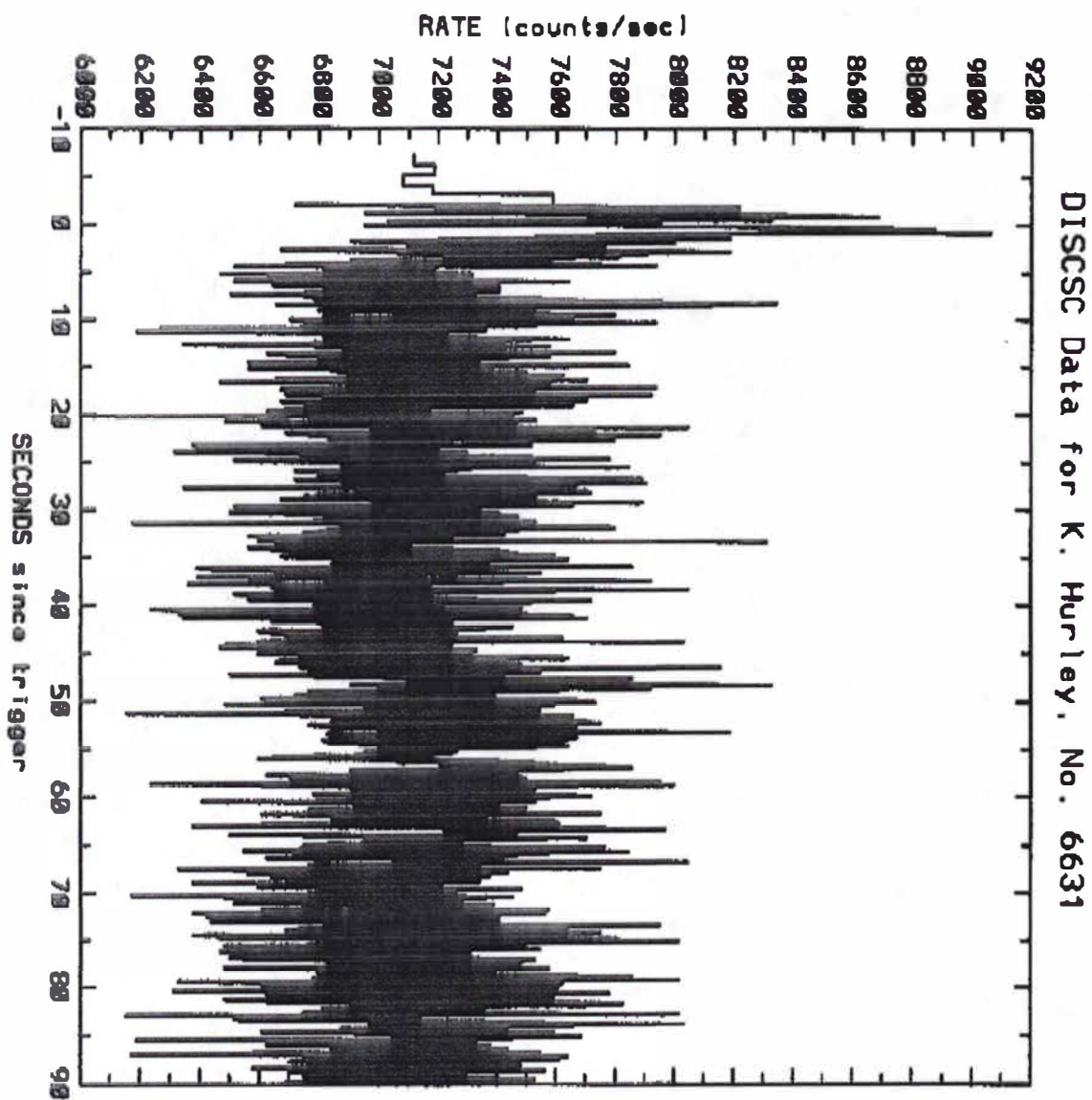
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6631	980308	10880	19239	3220	273	+35	9

BACODINE 6631 08/03/98 19227.361

25- 100 keV

COUNTS/1.024 S





10-MAR-1998 11:06:31
 Created by NPS BD
 (Burst Display)
 Version 12.25

Trigger = 6631
 Trigger Time:
 10000 / 19239.649
 Burst Data Type:
 DISCSC

Deadtime
 Corrected, N
 Background Data
 Type: PHEB + DISCSC
 Minimum Integ. Time:
 0.004 seconds
 Detectors (7.31)
 76-----
 Discriminators:
 (1, 2)
 Quality Mask:
 D01SP1

ULYSSES RT

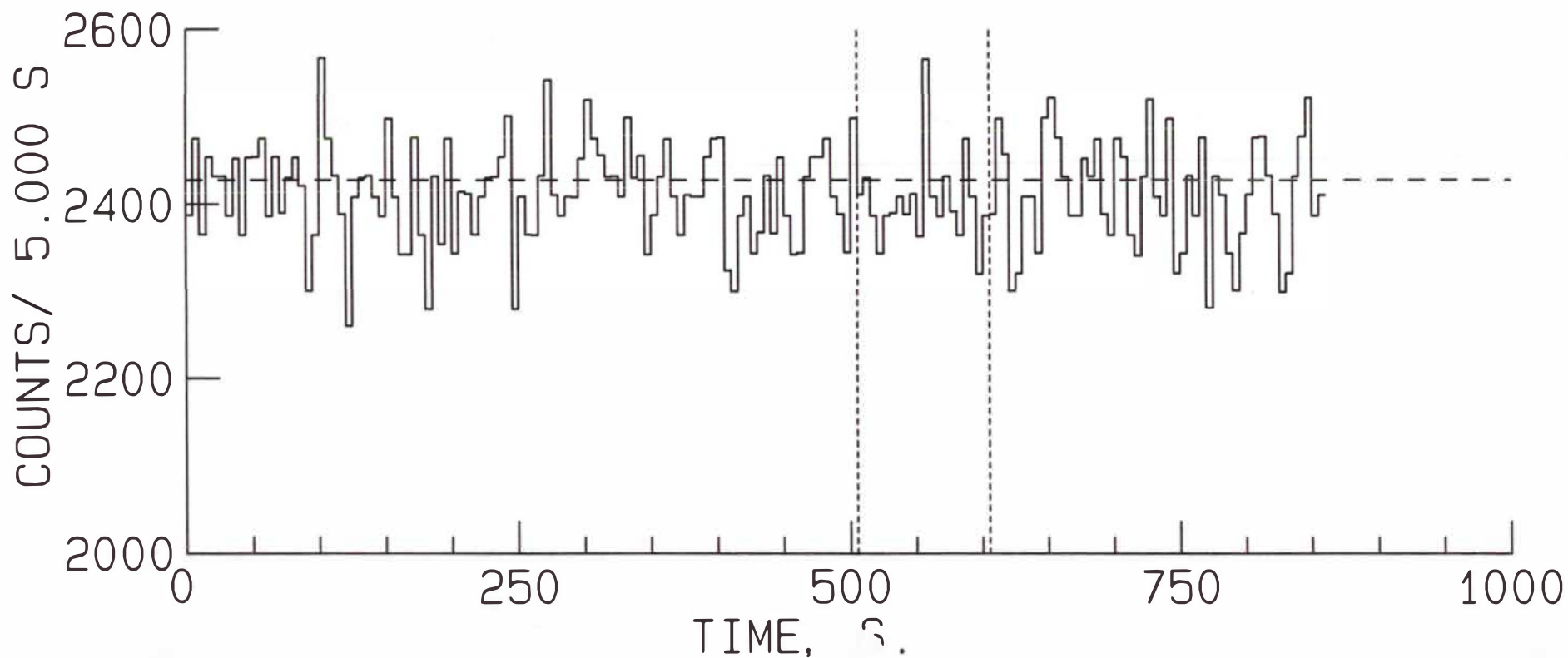
19 / 3 / 98

8 / 3 / 98 19260.180 s

0.500 S INTERVALS REGROUPED BY 10

22- 148 keV

N= 10 M= 1
>3.0 SIGMA FLUCTUATIONS



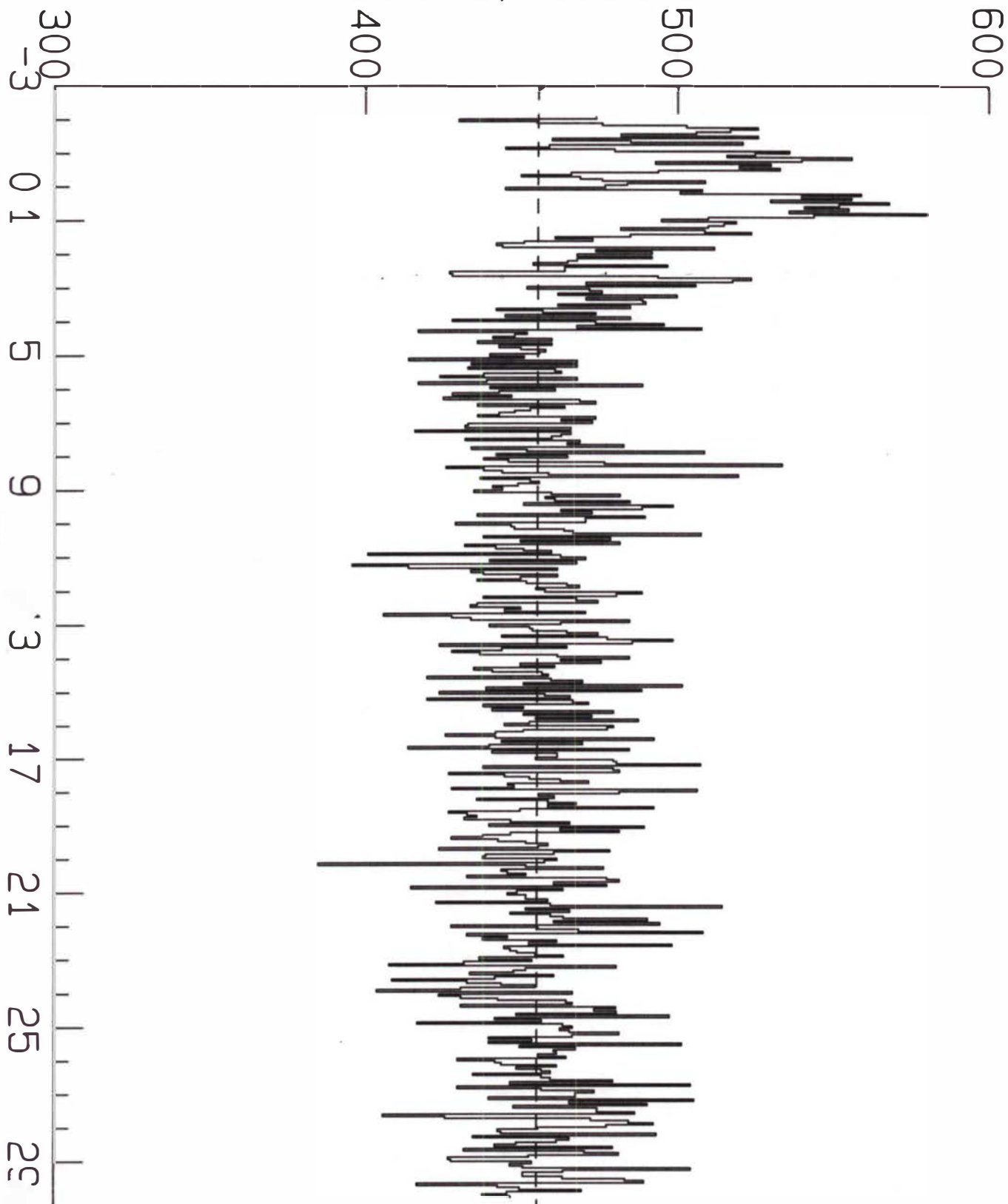
BATSE

08/03/98

19239.649

25- 100 keV

COUNTS/0.064 S



19 / 3 / 98

BATSE BURST# 6631

ULYSSES RT

13 / 3 / 98

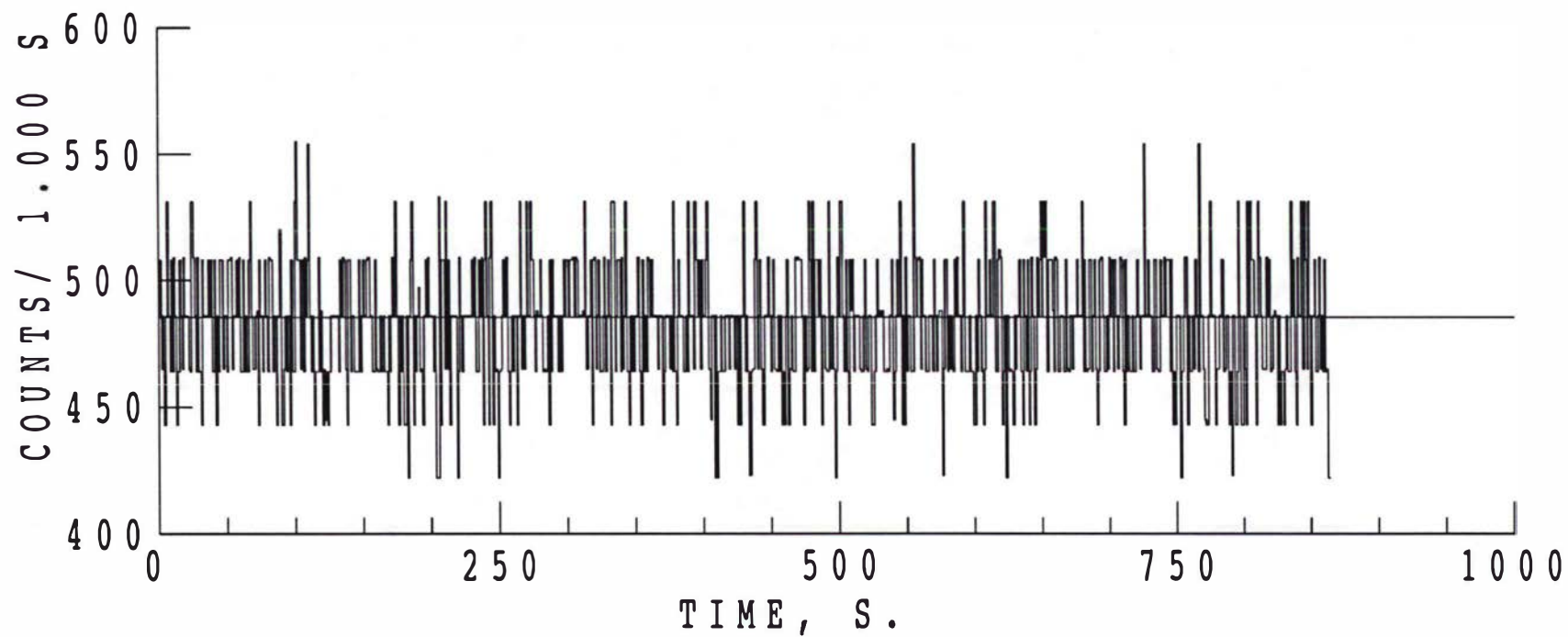
8 / 3 / 98 19260.180 s

0.500 S INTERVALS REGROUPED BY 2

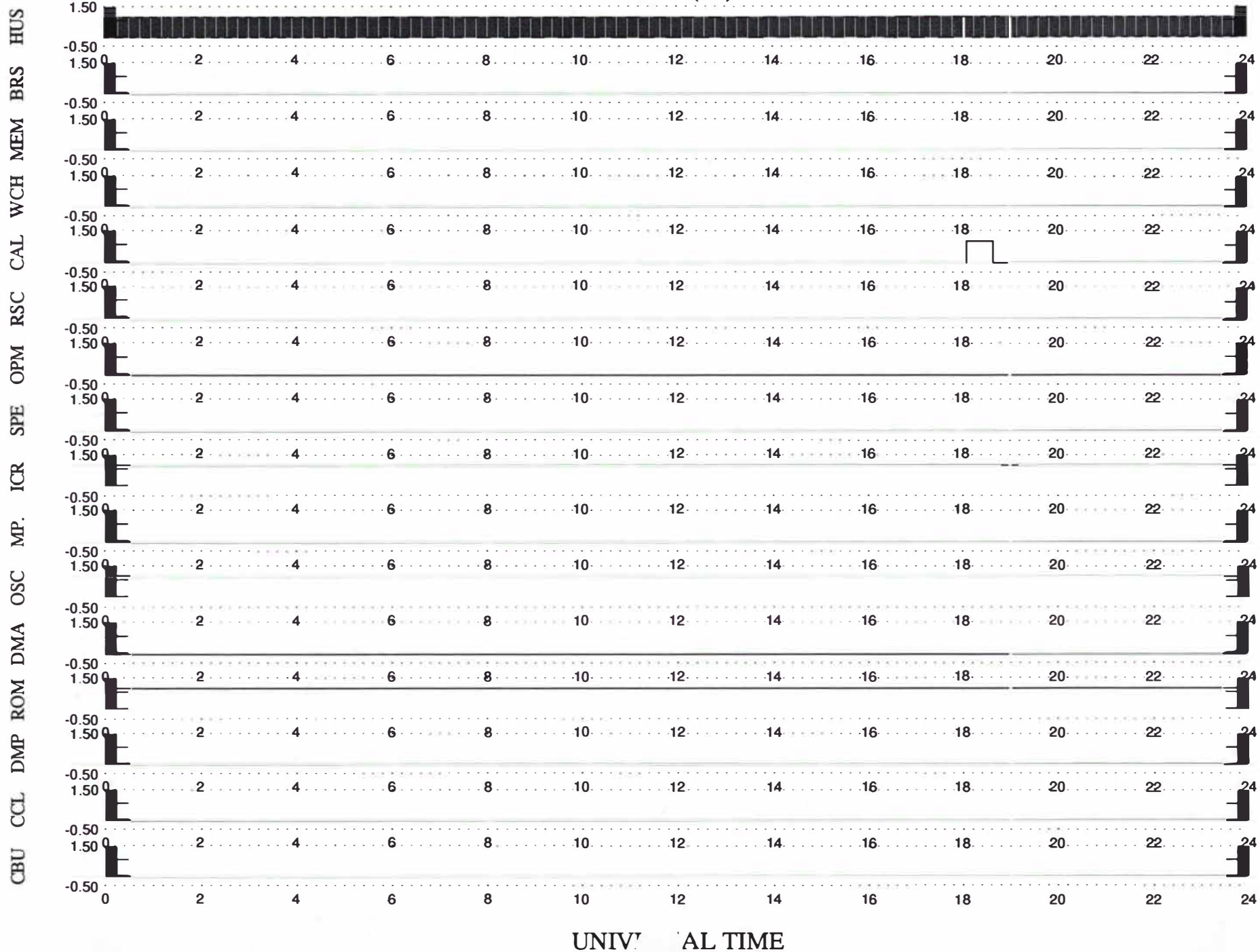
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

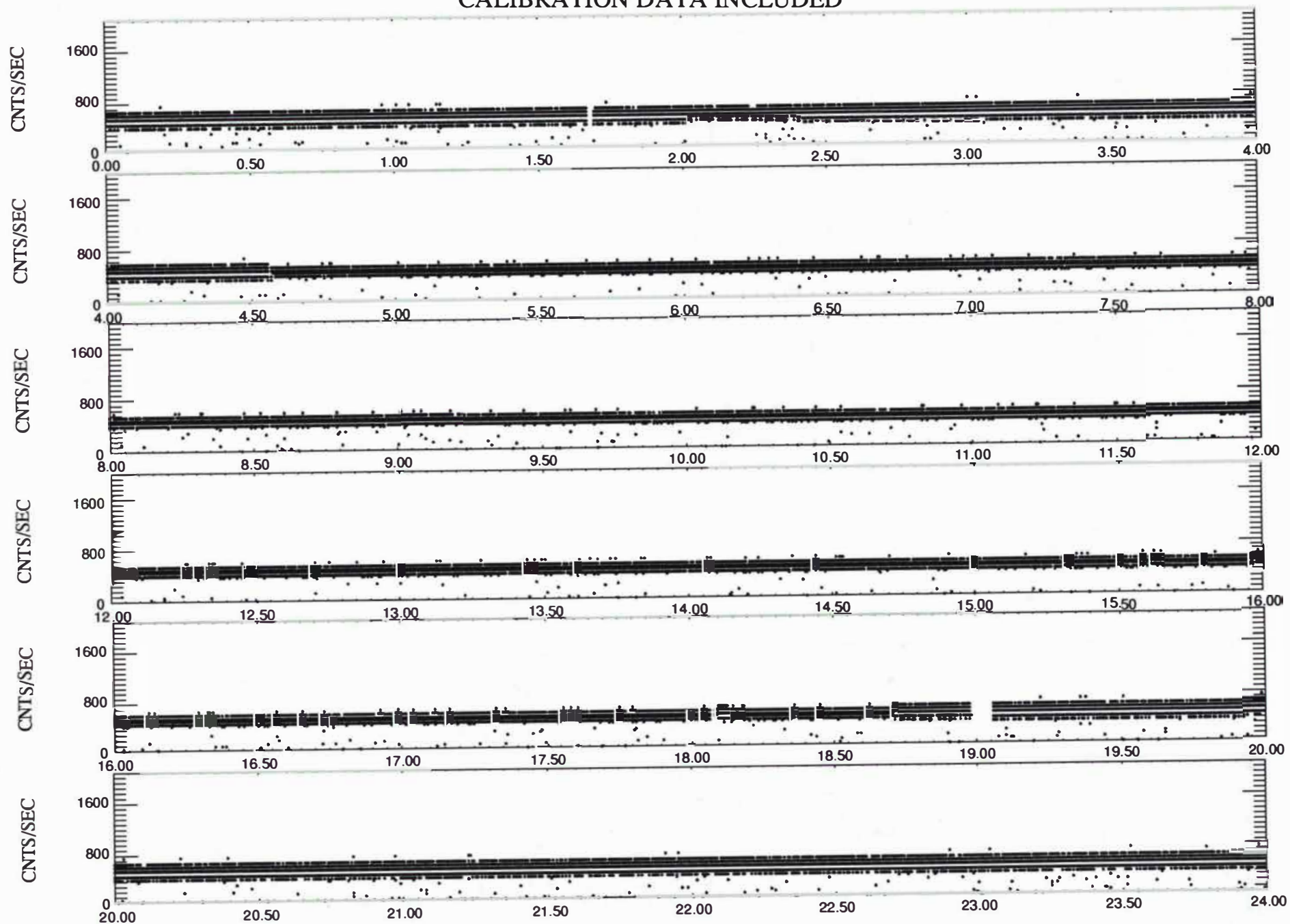
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



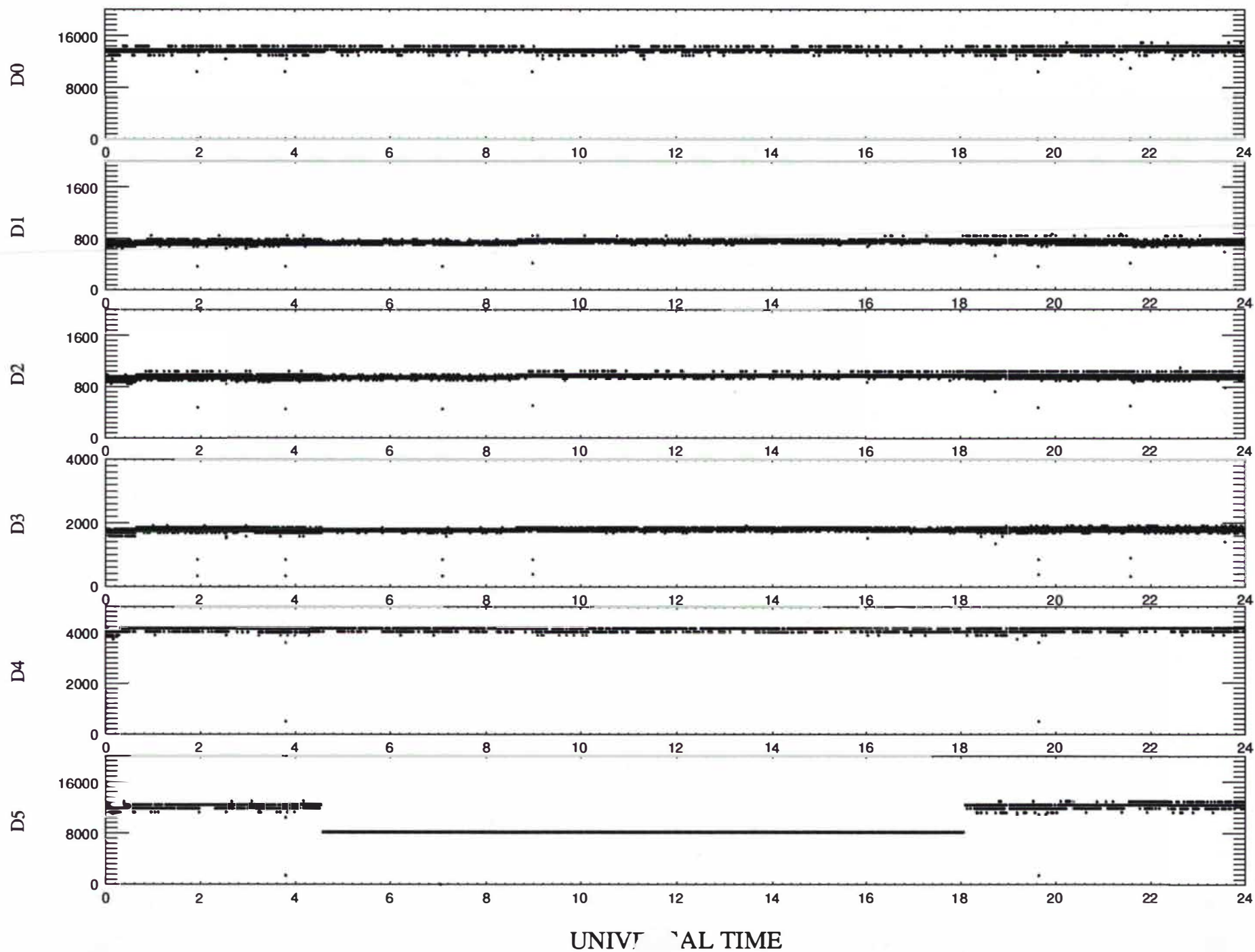
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Wed Mar 11 11:52:38 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA26652; Wed, 11 Mar 1998 11:52:38 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA07955; Wed, 11 Mar 1998 11:52:34 -0800
Date: Wed, 11 Mar 1998 13:52:32 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980311135232.24200b57@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6632
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6632
EVENT OF 1998 MAR 9 DAY OF YEAR= 68
EVENT CROSSING TIME AT BATSE : 431. S. OR 00:07:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 310.000 -48.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 3/ 98 IS:
RA= 157.513 DEC= 13.240 DIST= 4.437 AU
BATSE-ULYSSES DISTANCE = 663766824. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 41.59 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1655.89 SECS.
CROSSING TIME AT ULYSSES IS 2087. S. OR 00:34:46 +/- 330.32 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 3/ 98 IS:
RA= 3.331 DEC= 0.738 DIST= 2.341 AU
MARS-BATSE DISTANCE = 350193792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.95 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -455.55 SECS.
CROSSING TIME AT MARS IS 86375. S. OR 23:59:35 +/- 179.83 SECONDS

BATSE BURST TRIGGER

NO.: 6632

TIME: TJD=0881 SECONDS=431

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=94.2 AZIMUTH= 330.5 ERROR=7.7 DEGREES

COMMENTS:

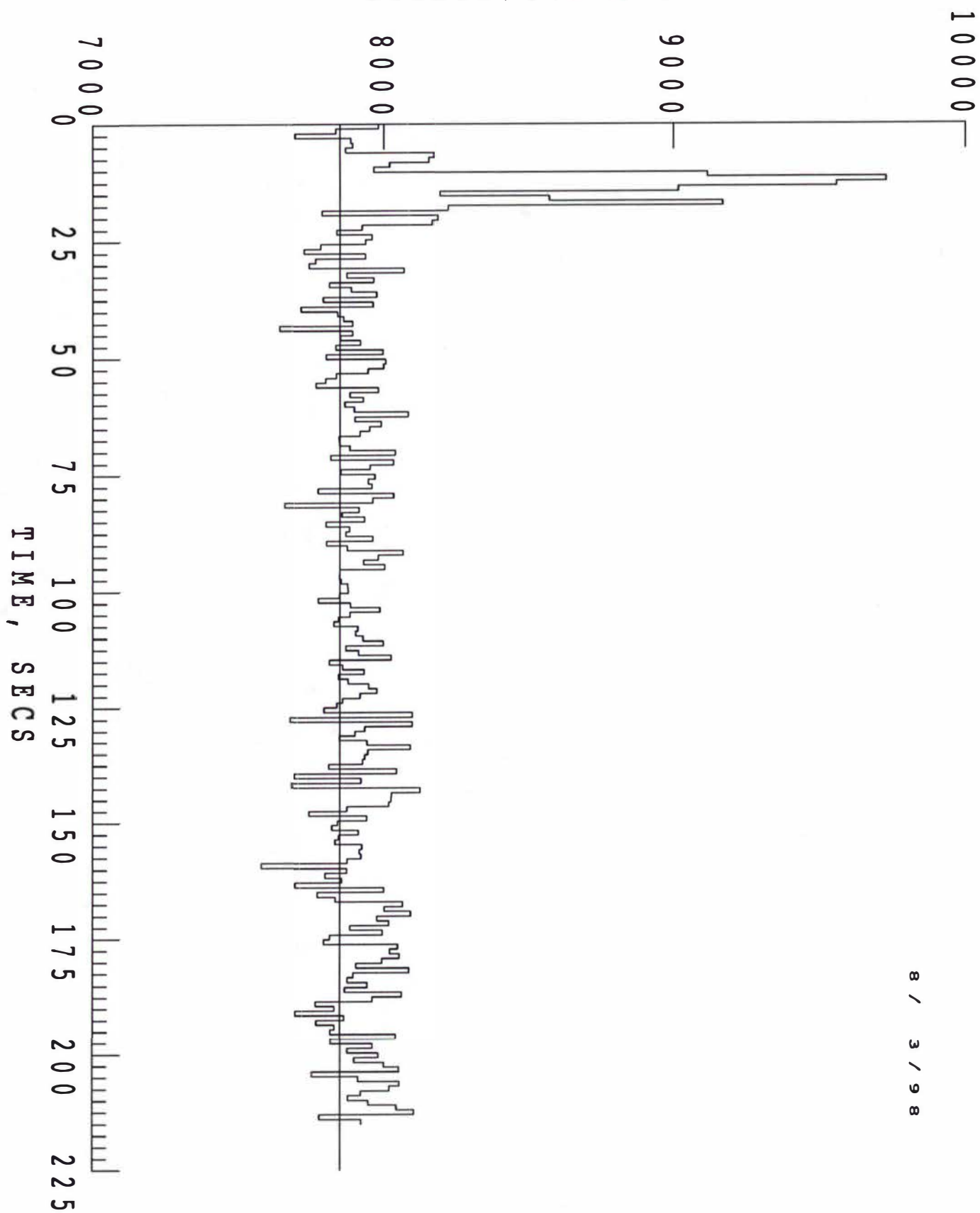
BURST, DOUBLE PULSE, DUR. APPROX. 8 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6632	980309	10881	00431	3000	310	-48	8

BACODINE 6632 09/03/98 419.553

25 - 100 keV

COUNTS/1.024 S



BATSE BURST# 6632

ULYSSES RT

13 / 3 / 98

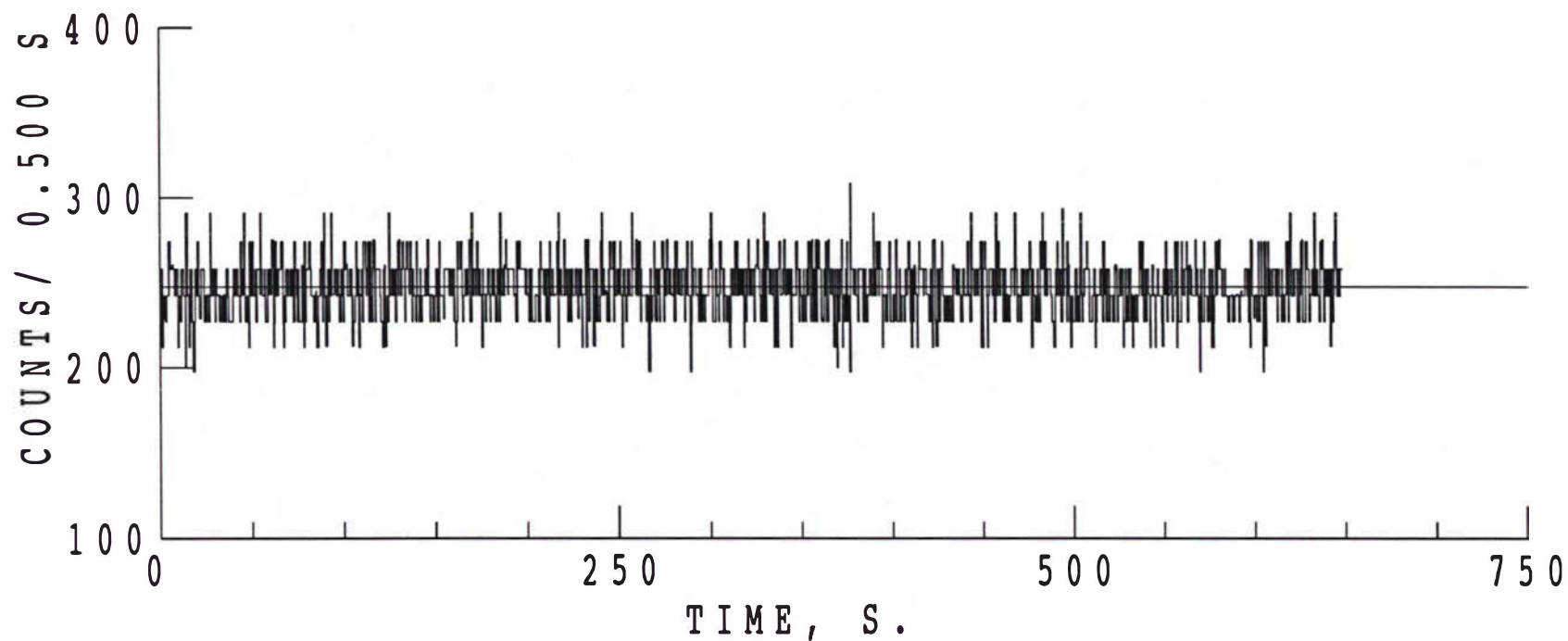
9 / 3 / 98 1764.183 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Wed Mar 11 12:02:45 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA26873; Wed, 11 Mar 1998 12:02:44 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA08245; Wed, 11 Mar 1998 12:02:40 -0800
Date: Wed, 11 Mar 1998 14:02:39 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980311140239.24200b57@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6633
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6633
EVENT OF 1998 MAR 9 DAY OF YEAR= 68
EVENT CROSSING TIME AT BATSE : 61740. S. OR 17:09:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 224.000 -14.000
BATSE PEAK COUNTING RATE: 1200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 9/ 3/ 98 IS:
RA= 157.357 DEC= 13.253 DIST= 4.440 AU
BATSE-ULYSSES DISTANCE = 664225863. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=108.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -706.71 SECS.
CROSSING TIME AT ULYSSES IS 61033. S. OR 16:57:13 +/- 403.84 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 9/ 3/ 98 IS:
RA= 3.331 DEC= 0.738 DIST= 2.341 AU
MARS-BATSE DISTANCE = 350193792. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 42.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 863.26 SECS.
CROSSING TIME AT MARS IS 62603. S. OR 17:23:23 +/- 149.74 SECONDS

BATSE BURST TRIGGER

NO.: 6633

TIME: TJD=0881 SECONDS=61740

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=132.8 AZIMUTH=254.2 ERROR=6.6 DEGREES

COMMENTS:

BURST. SINGLE PULSE, RISE IS FASTER THAN FALL, DUR. APPROX. 30 SECS. NOT
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6633	980309	10881	61740	1200	224	-14	30

BATSE BURST# 6633

ULYSSES RT

13 / 3 / 98

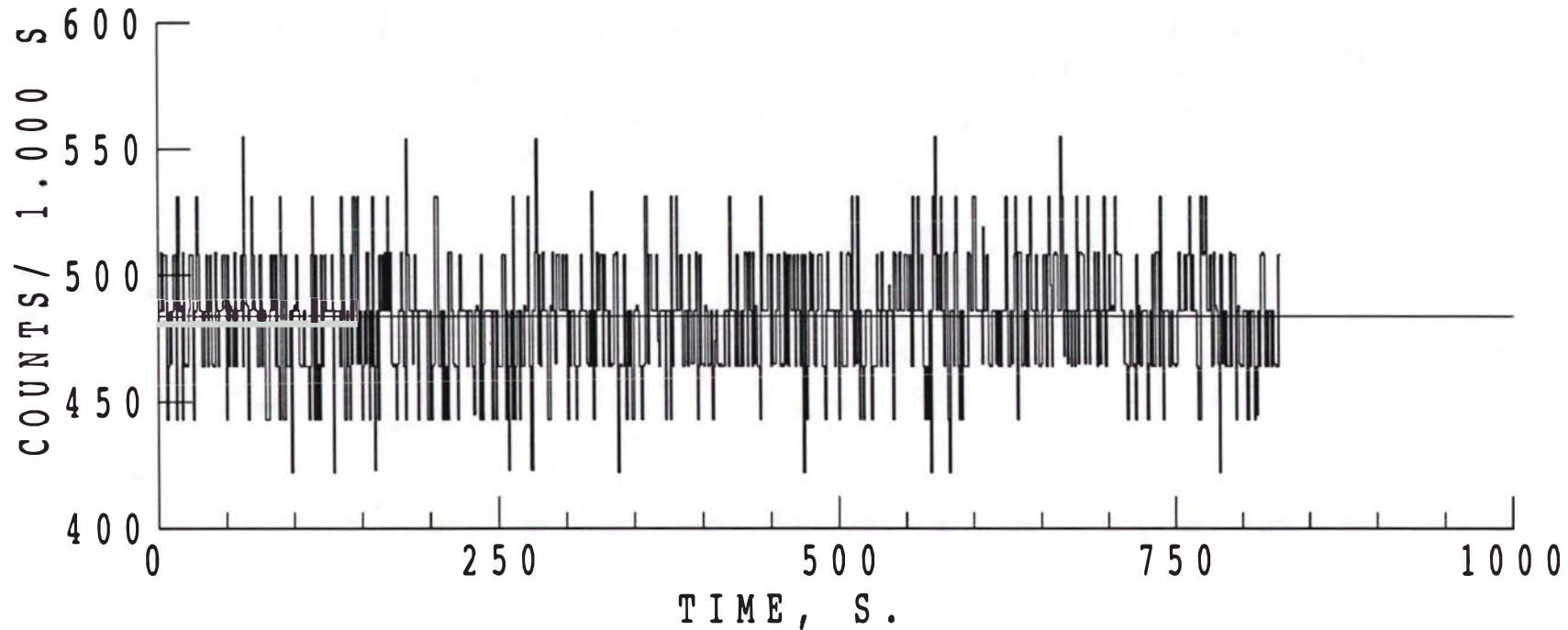
9 / 3 / 98 60624.070 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: Mar 6 2012

BURST TRIANGULATION CHECKLIST

1. Suzaku Data

- ☐ 1 second timing error corrected? (Jan 1 – Apr 24 2009)

2. AGILE Data

- ☐ 1 second timing error corrected?

3. MESSENGER Data

- ☐ Coarse or Precision oscillator (C or P bronte.jhuapl.edu/spice/kernels/sclk/timekeeping/OPS_TIME_ENGR.txt)?
- ☐ Timing checked after ~ 1 week?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration? Not at all

5. For Odyssey events

- ☐ Was CHECKMO run to eliminate data gaps?
- ☐ Did the Odyssey ephemeris correspond to the event time? (When there is data in the database, the ephemeris is for the start of record, usually ~1320 s prior to the request time; when there is no data in the database, the ephemeris is for the request time in the e-mail, so the request time in mosearch should be equal to the GRB time. Note that the time in the return e-mail will be ~1320 s prior to the time requested, in the line “no HEND data...”)
- ☐ Was Mars-blocking used?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors). For later data, was timing checked after ~1 week?
- ☐ GRS database searched for triggered data? Database data between August 2005 and January 2006 should be re-extracted, due to timing errors. (E-mailed data should be OK).
- ☐ GRS and HEND data cross-correlated to check timing?

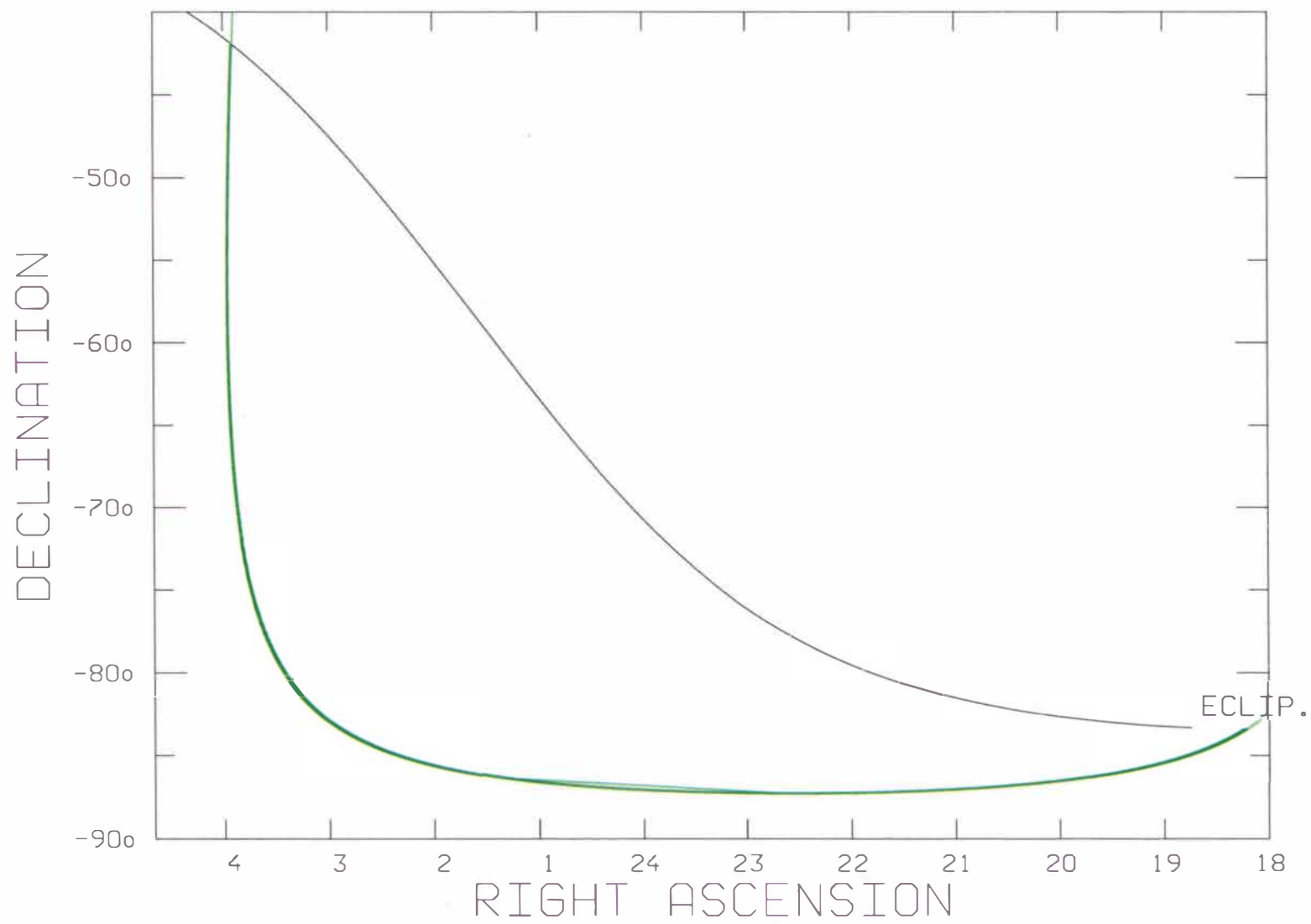
6. For 3 or More Spacecraft events

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

7. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?
- ☐ Hand-extracted data used (record starts at -30.000 s)?

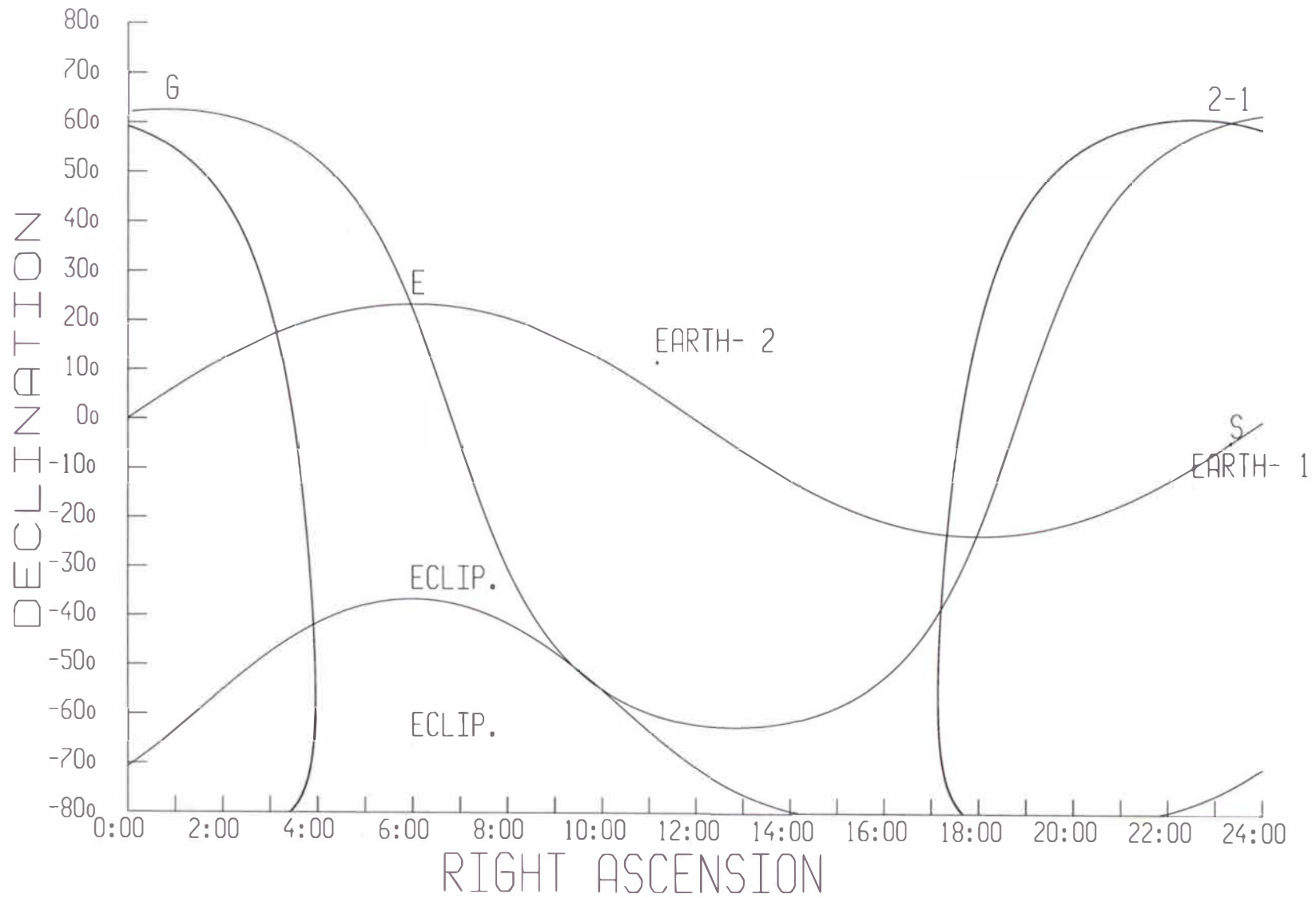
☒ ACCESS and MBL4 databases updated, with identical times?



EVENT OF MAR 9, 1998 20:50

07/03/2012

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

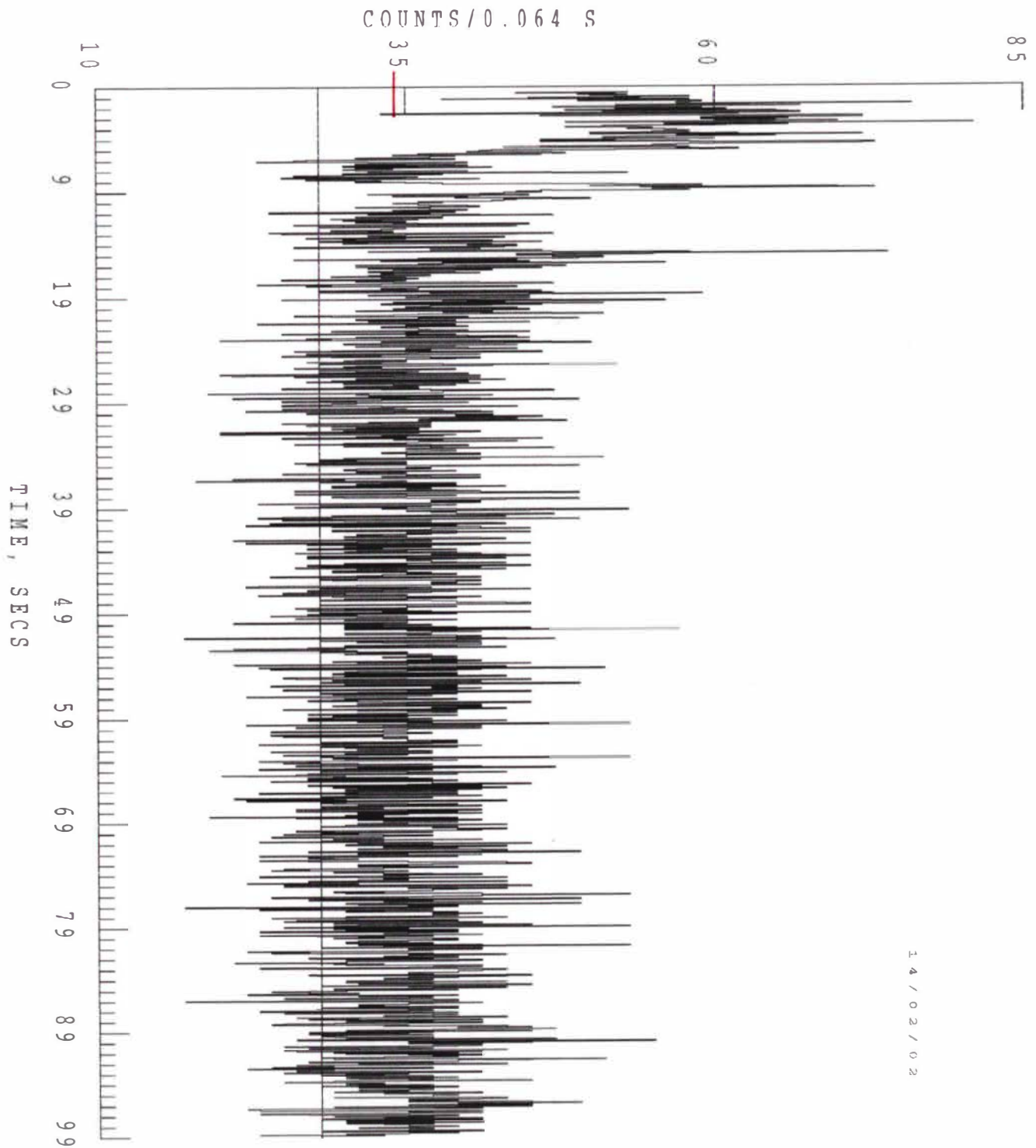


KONUS1

09/03/98

74502.849

50 - 200 keV



KONUS 19980309 75102

ULYSSES RT

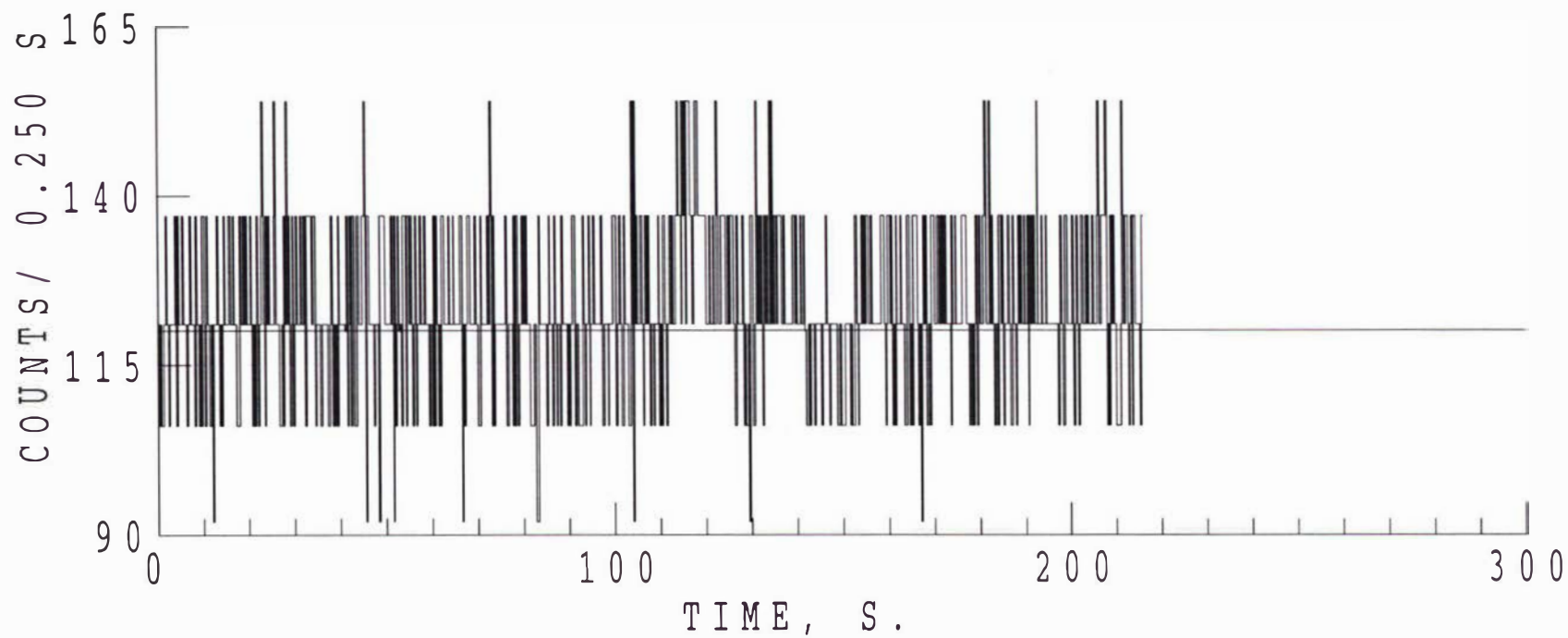
01 / 02 / 12

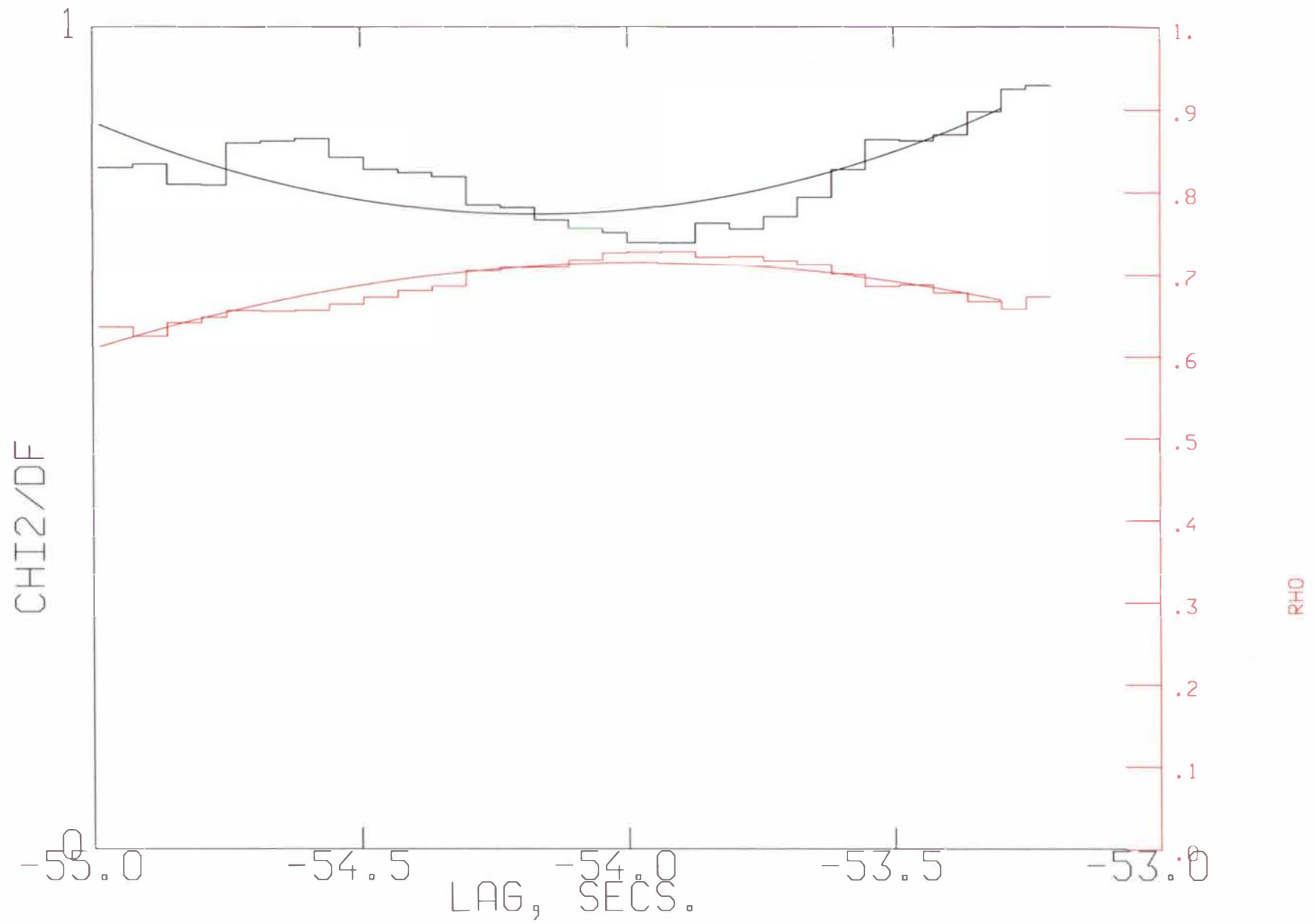
09/03/98 74988.234 s

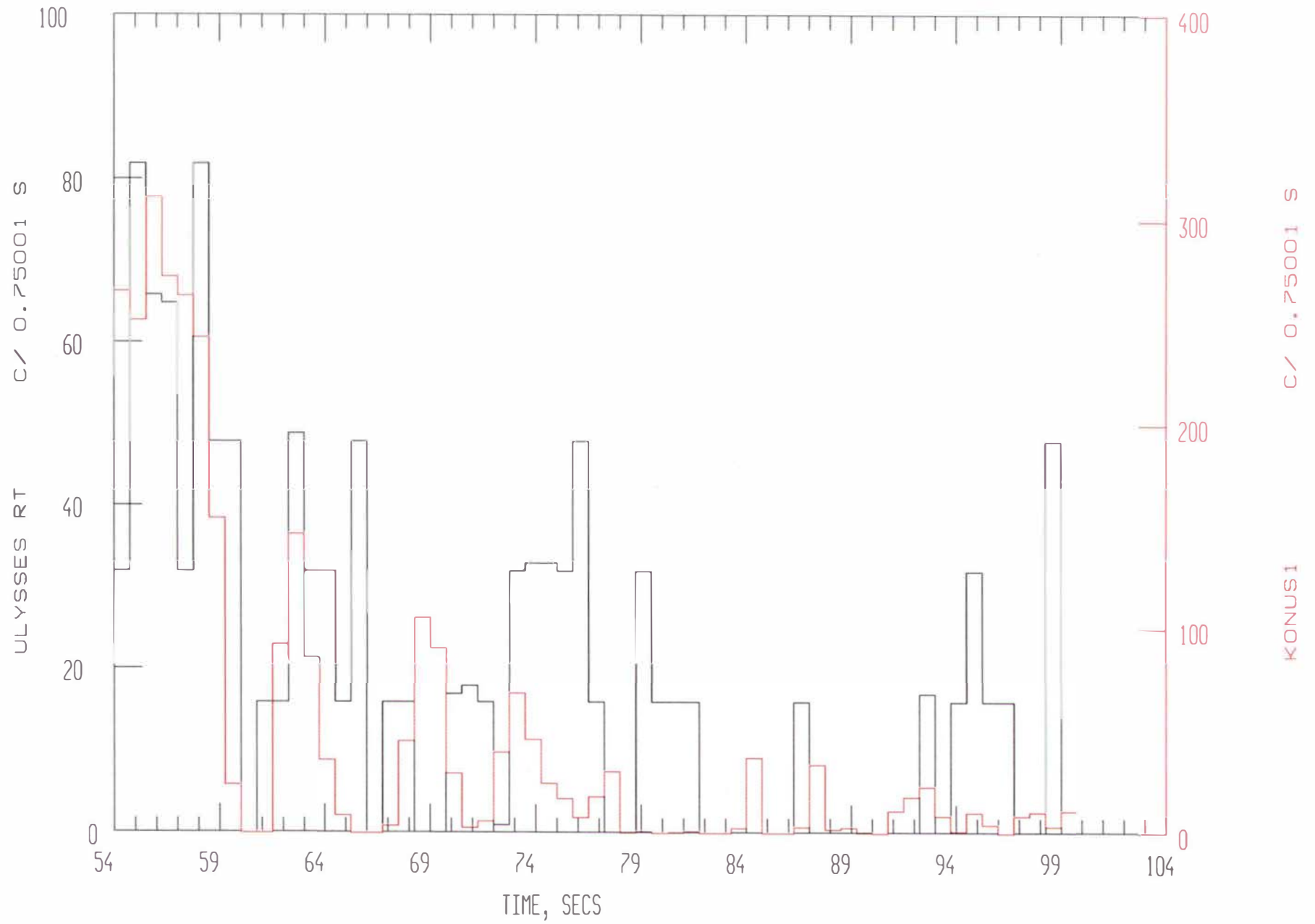
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

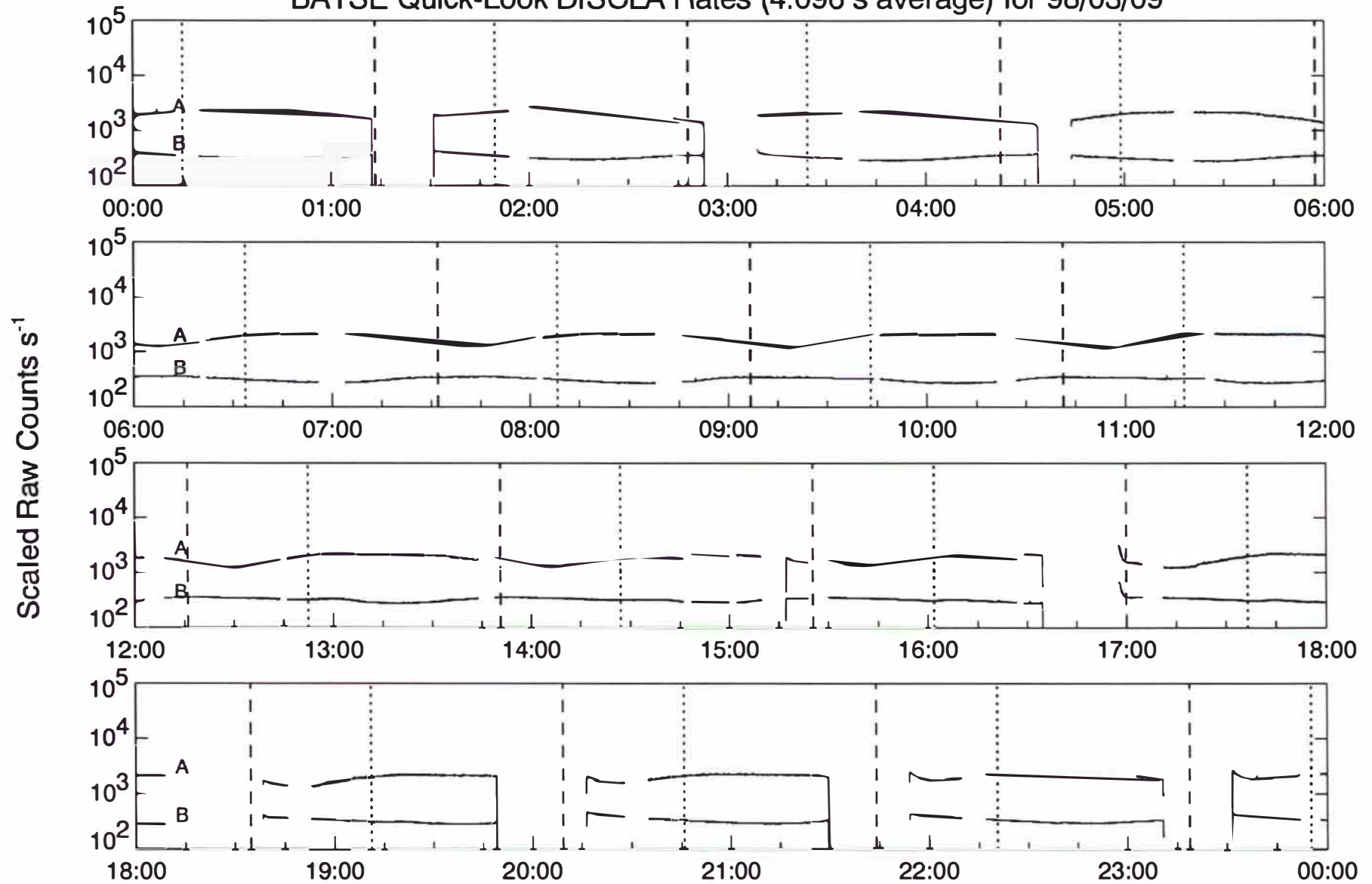
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS







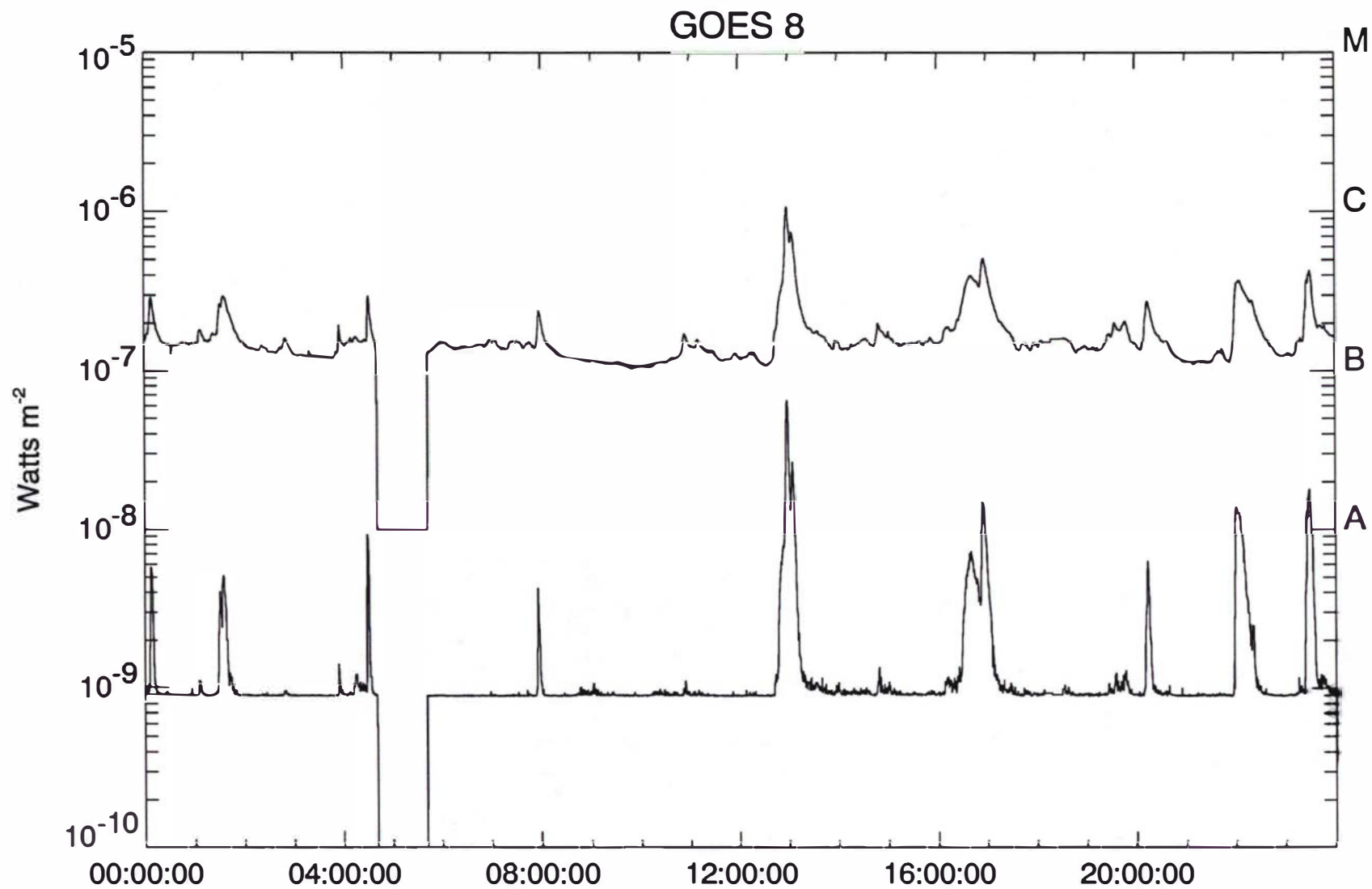
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/09



Current Time: 98/03/13, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/09, 0000:00

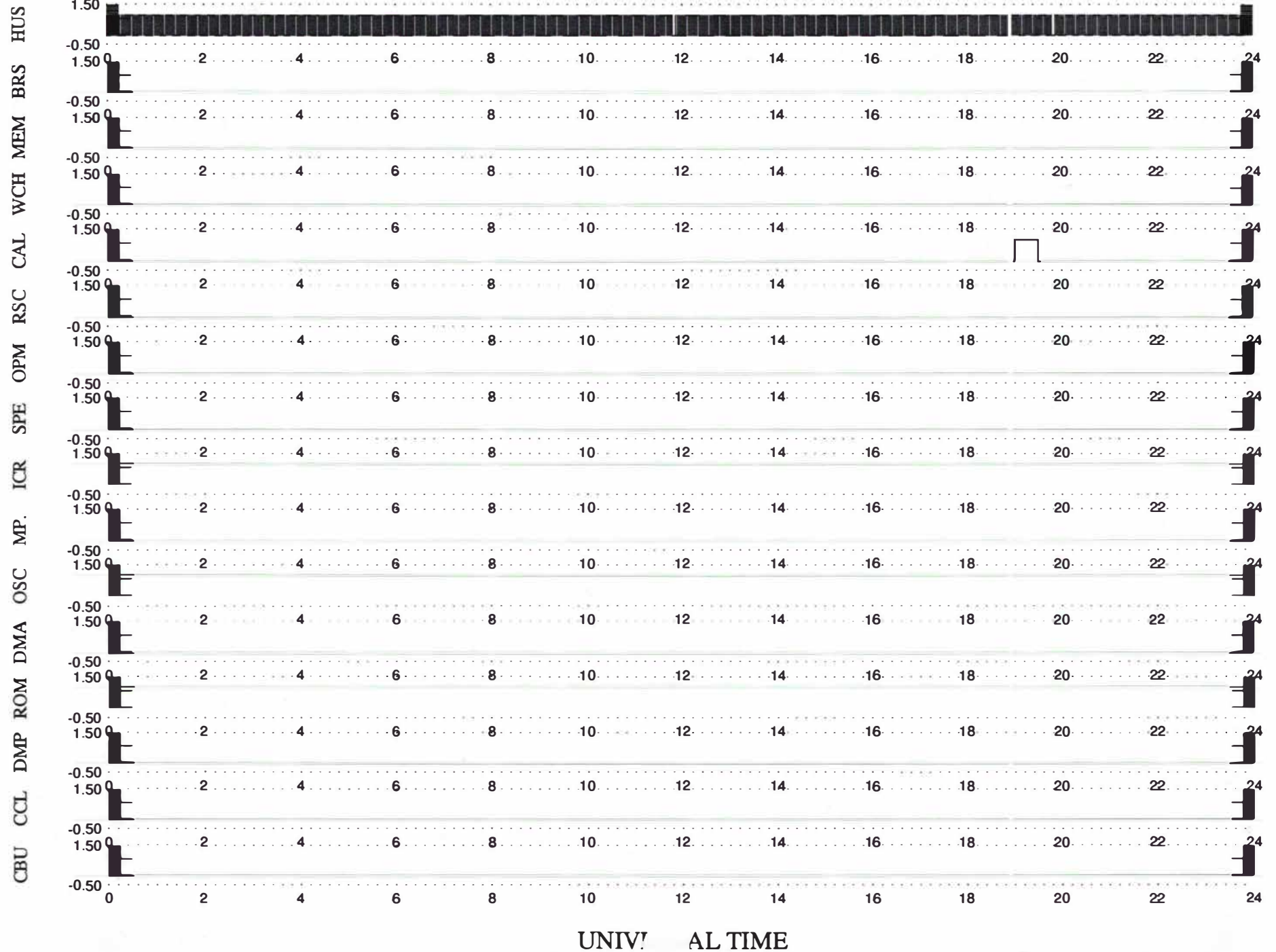
Plot created: 98/03/13, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

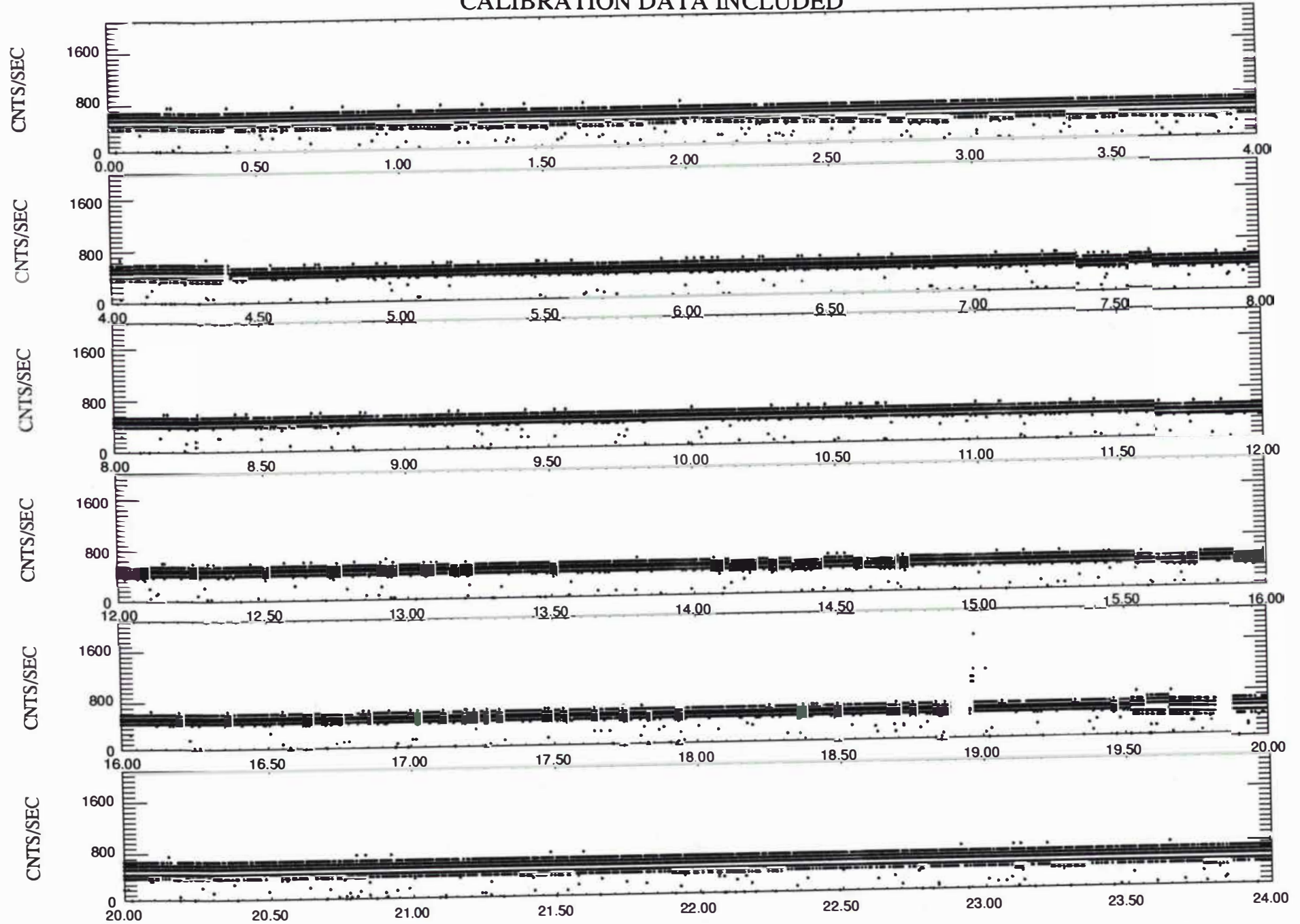
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

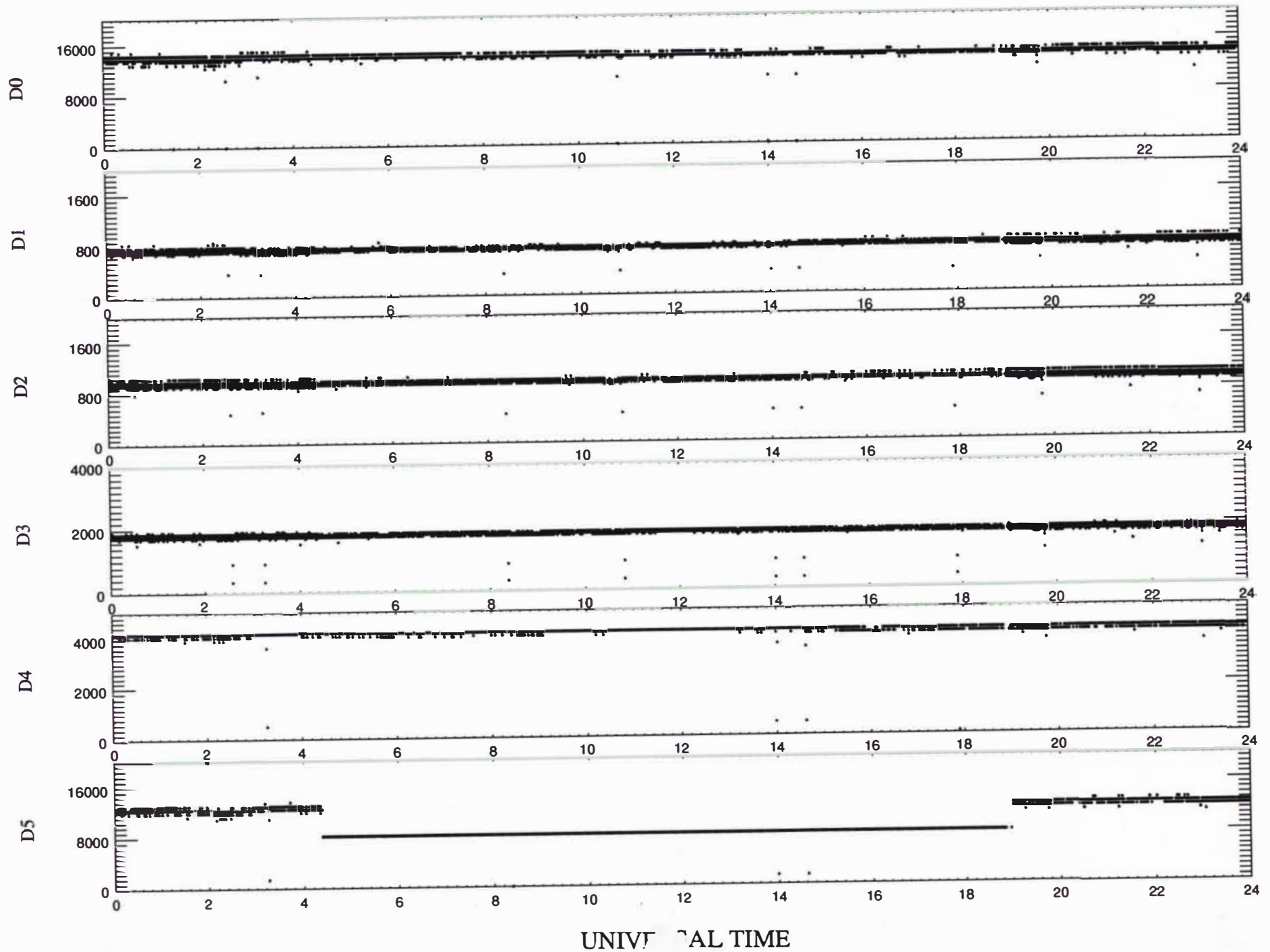
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIV TIME



From RICHARDSON@fender.msfc.nasa.gov Fri Mar 13 11:38:51 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA24370; Fri, 13 Mar 1998 11:38:50 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA23910; Fri, 13 Mar 1998 11:38:47 -0800
Date: Fri, 13 Mar 1998 13:38:40 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980313133840.2420812d@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6634
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6634
EVENT OF 1998 MAR 10 DAY OF YEAR= 69
EVENT CROSSING TIME AT BATSE : 2189. S. OR 00:36:29.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 75.000 -61.000
BATSE PEAK COUNTING RATE: 12500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 3/ 98 IS:
RA= 157.289 DEC= 13.258 DIST= 4.441 AU
BATSE-ULYSSES DISTANCE = 664426885. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.11 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 304.23 SECS.
CROSSING TIME AT ULYSSES IS 2493. S. OR 00:41:33 +/- 435.76 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 3/ 98 IS:
RA= 4.036 DEC= 1.054 DIST= 2.344 AU
MARS-BATSE DISTANCE = 350611008. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -166.08 SECS.
CROSSING TIME AT MARS IS 2023. S. OR 00:33:42 +/- 198.47 SECONDS

BATSE BURST TRIGGER

NO.: 6634

TIME: TJD=0882 SECONDS=2189

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.0 AZIMUTH=31.9 ERROR=8.8 DEGREES

COMMENTS:

GRB SINGLE PULSE FOLLOWED BY A VERY SHORT SPIKE. PULSE DUR. APPROX. = 0.2 SEC
SPIKE @ APPROX. T+0.454 SEC. WITH DUR. APPROX. = 1.5MSEC.
VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6634	980310	10882	02189	12500	075	-61	.5

From RICHARDSON@fender.msfc.nasa.gov Wed Mar 18 10:25:23 1998
From: RICHARDSON@fender.msfc.nasa.gov
Date: Wed, 18 Mar 1998 12:23:37 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kابل.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6634

TIME: TJD=0882 SECONDS=2189

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=116.0 AZIMUTH=31.9 ERROR=8.8 DEGREES

COMMENTS:

GRB SINGLE PULSE FOLLOWED BY A VERY SHORT, UNRELATED SINGLE DETECTOR EVENT.
PULSE DUR. APPROX. = 0.2 SEC. VISIBLE ABOVE 300KEV. UNRELATED EVENT AT
APPROX. T+0.454 SEC.

Kevin,
This is a
revision of BATSE
#6634 that I
gave you. Kantly

Helio corr removed 21/2/00

Date: ³¹ ~~July 31~~ 1998

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

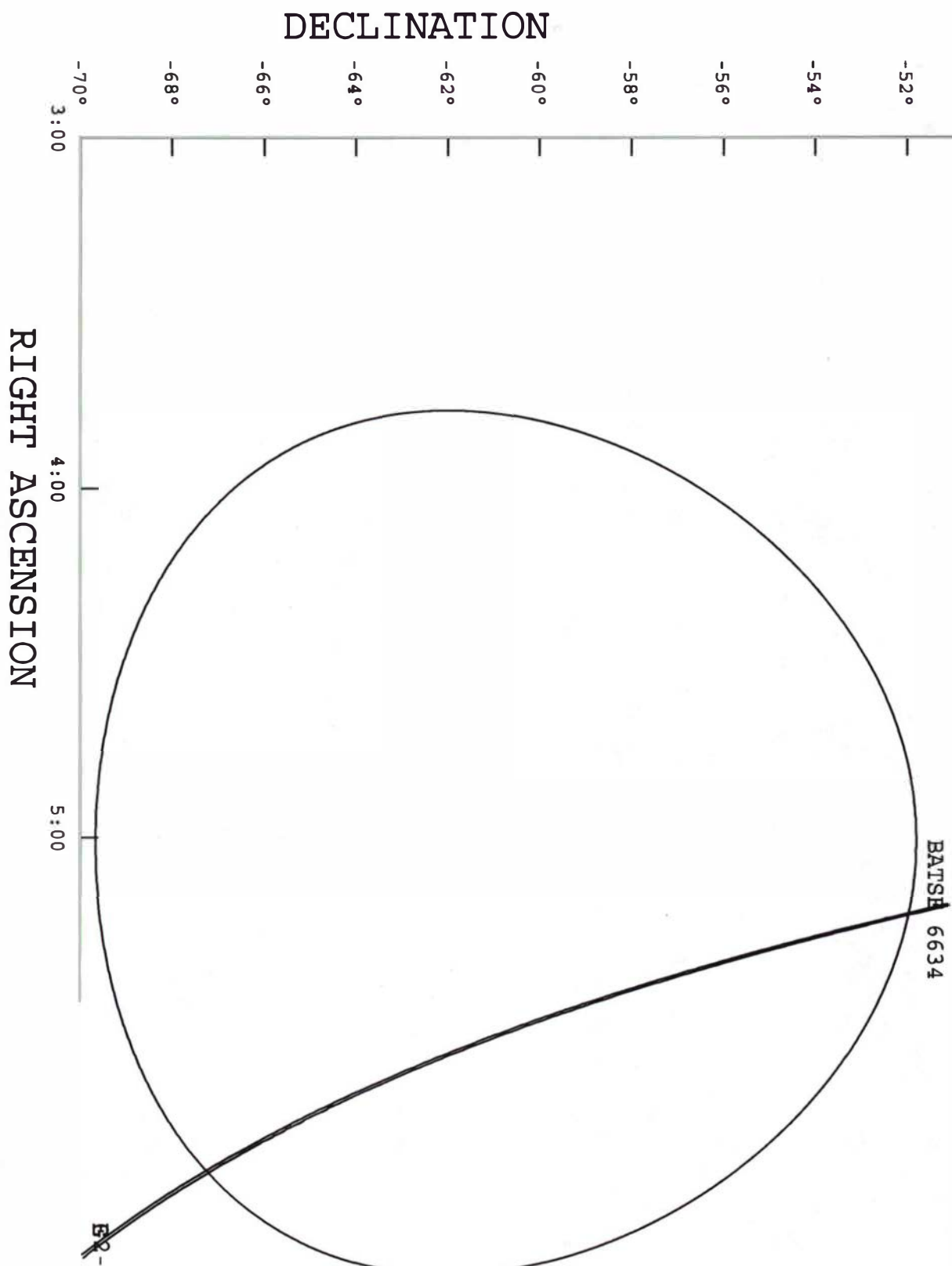
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAR 10, 1998 0:38

21/ 2/ 0



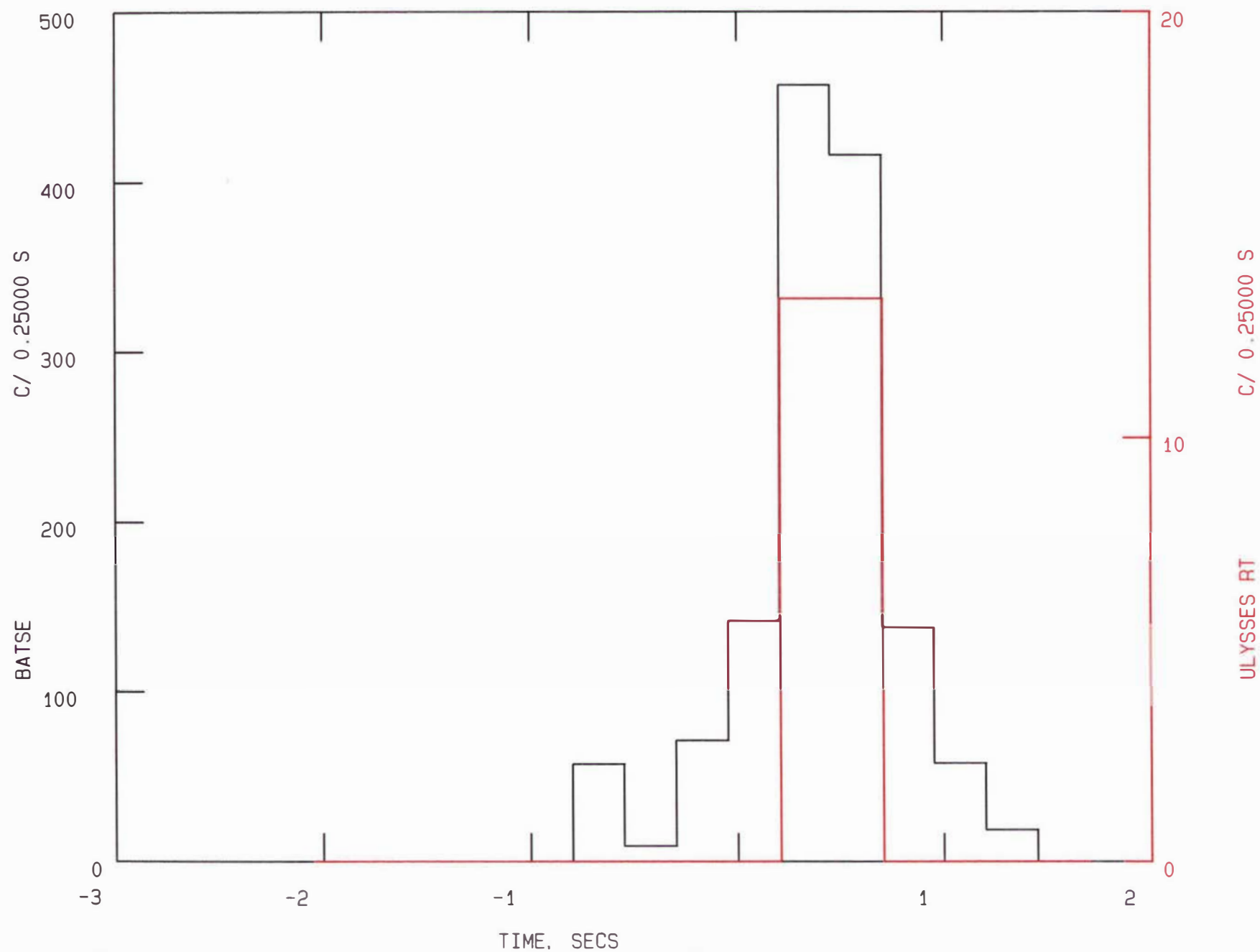
BATSE

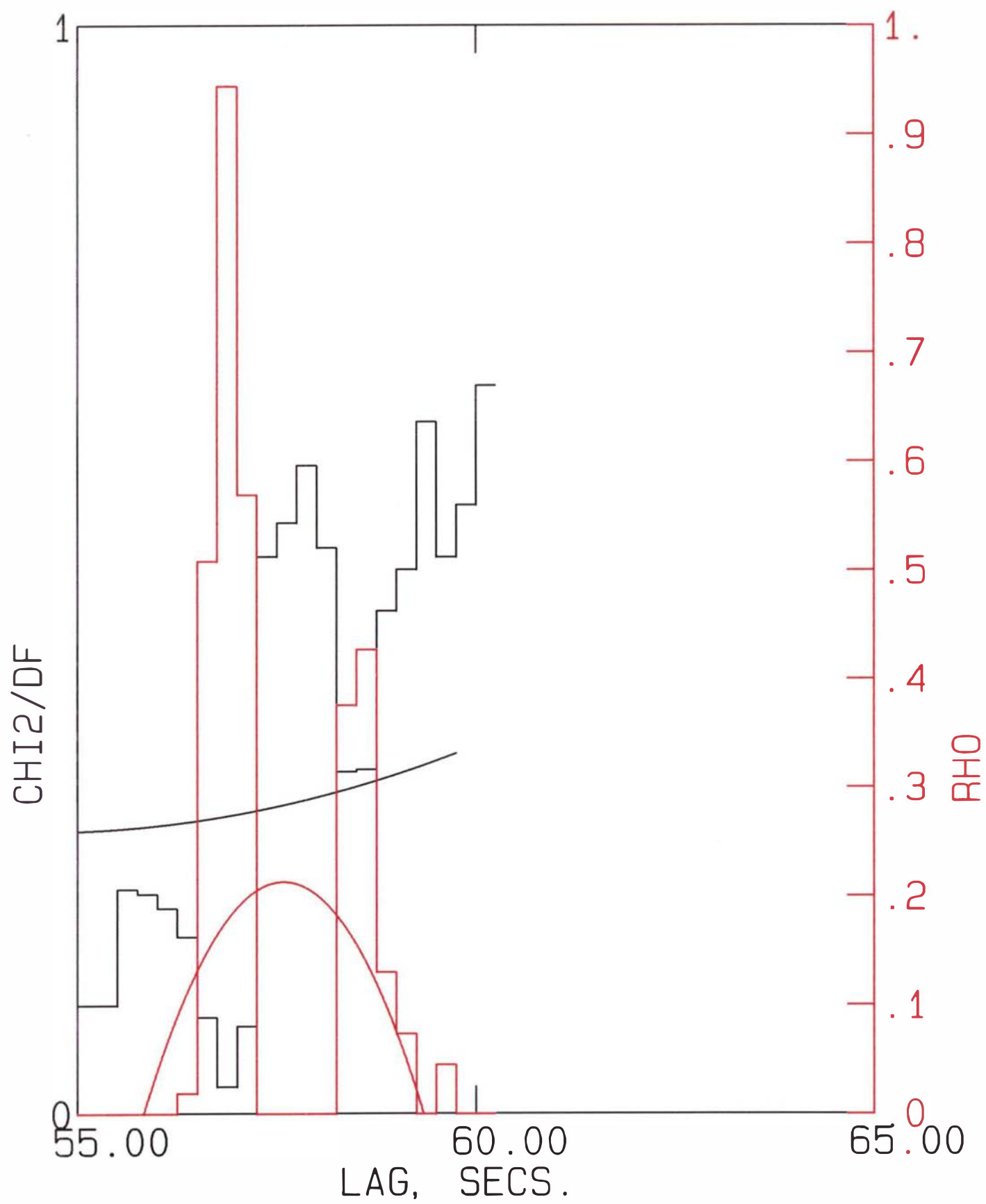
-ULYSSES RT CORRELATION

10/ 3/98

2189.410

31/ 7/98





ULYSSES RT

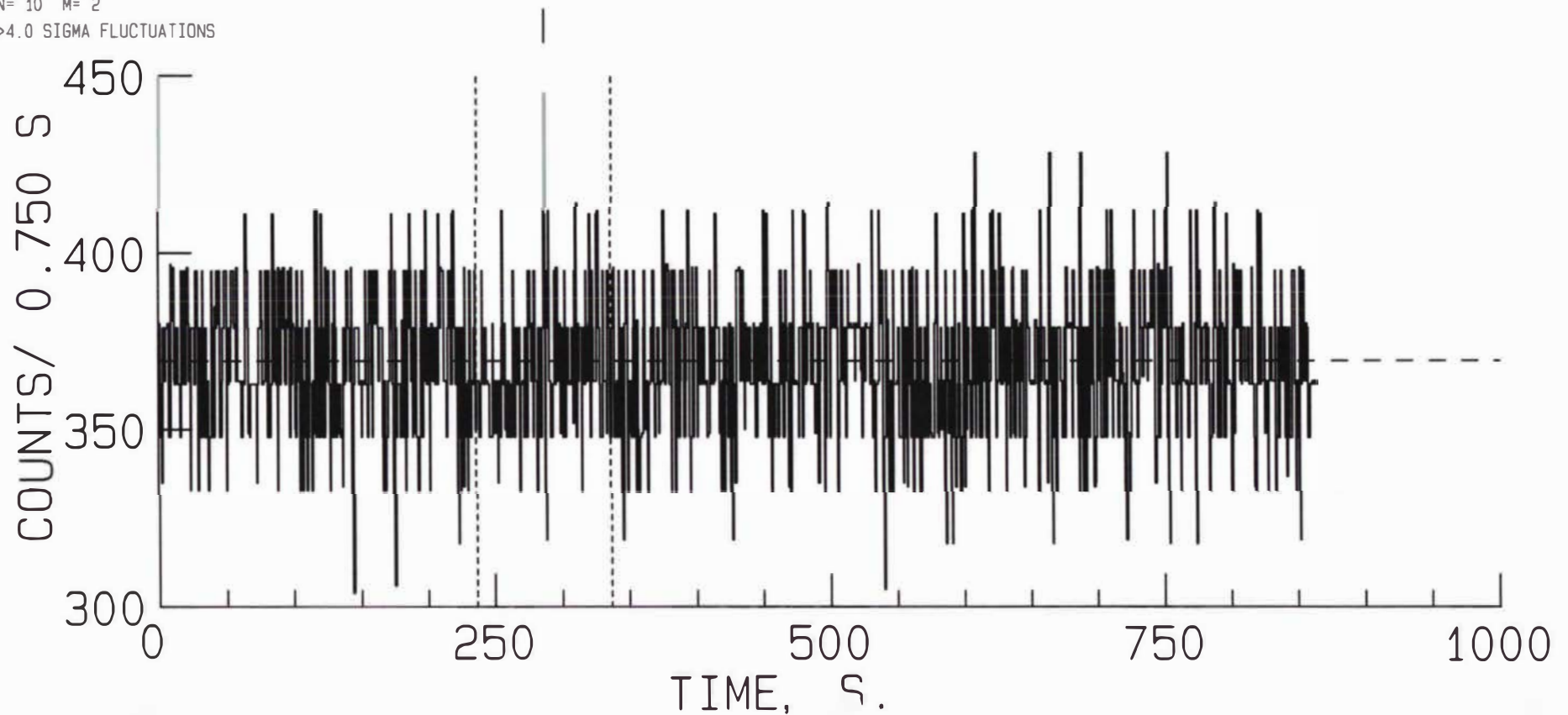
31 / 7 / 98

10 / 3 / 98 2052.127 s

0.250 S INTERVALS REGROUPED BY 3

22- 149 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



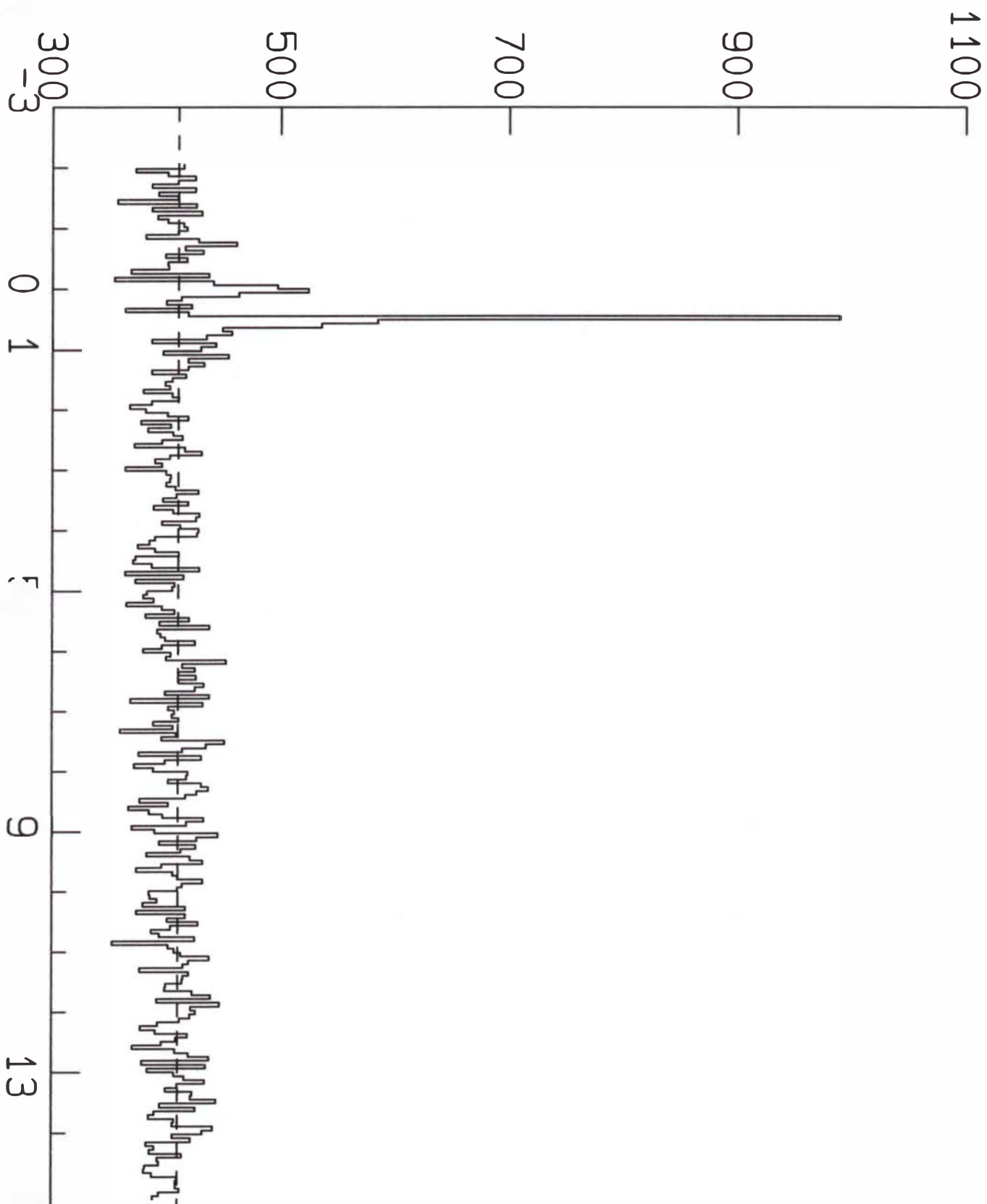
BATSE

10/03/98

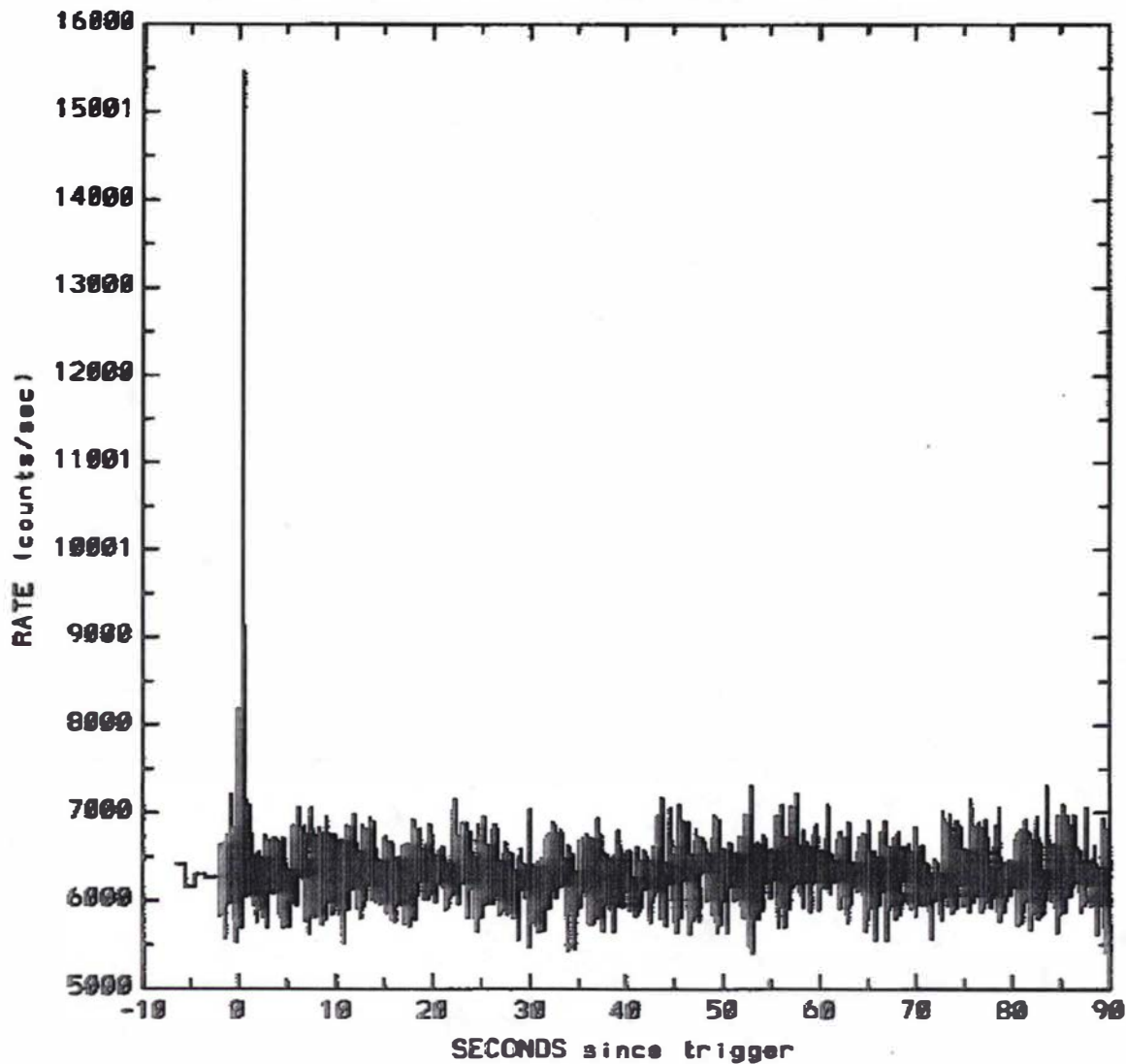
2189.410

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6634



16-MAR-1998 11:09:07

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

Trigger # . 6634

Trigger Time:
 10002 / 2109.409

Burst Data Type:
 DISCSC

Deadtime
 Corrected: N

Background Data
 Type: PREB + DISCLA

Minimum Integ. Time:
 0.064 second(s)

Detectors (7..0):
 ---3-1-

Discriminators:
 [1 , 2]

Quality Mask:
 BDISP1

SAX 19990310 30888

ULYSSES RT

19/08/09

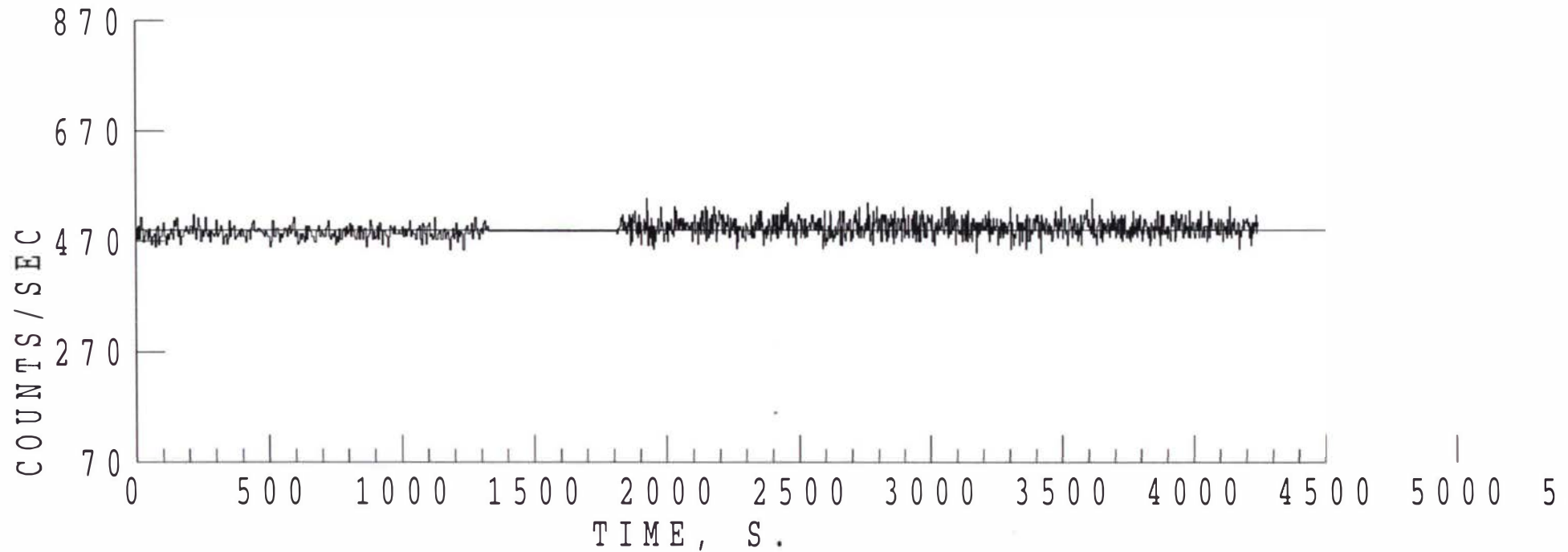
10/03/99 28764.236 s

INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS

ULYSSES RT

08 / 02 / 00

10 / 03 / 98 47988.375 s

INTERVALS REGROUPED BY 6

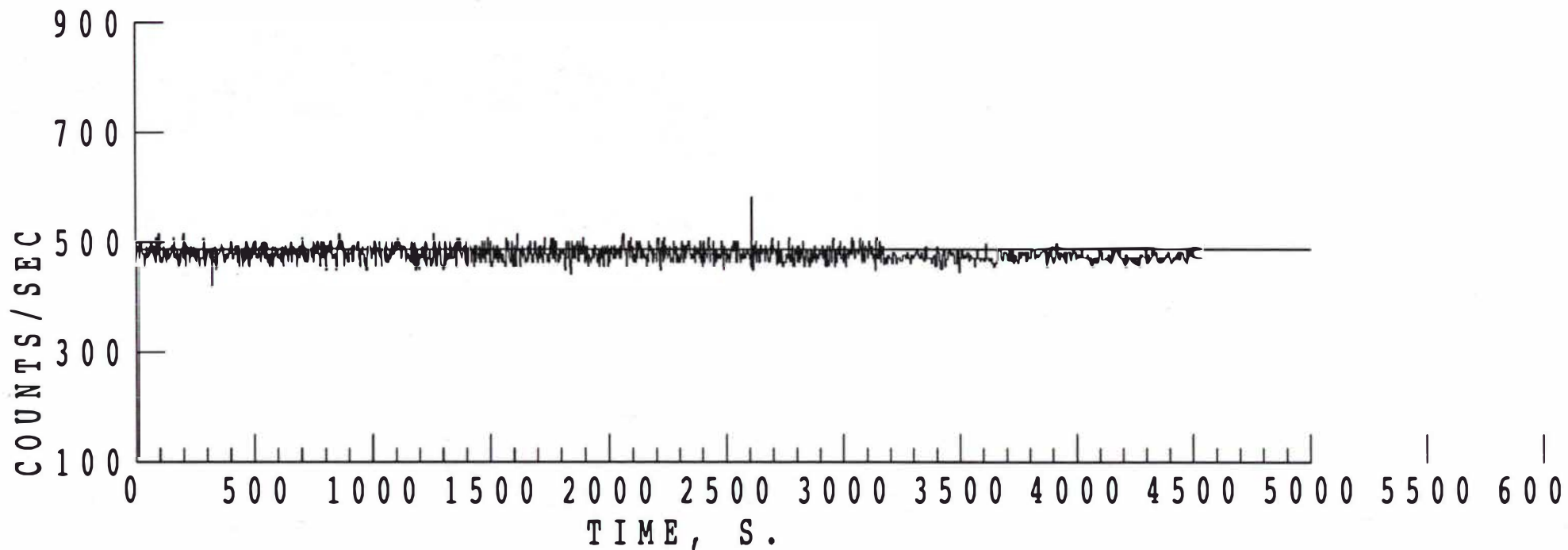
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Thu Mar 12 14:54:15 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA11165; Thu, 12 Mar 1998 14:54:14 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA18558; Thu, 12 Mar 1998 14:54:12 -0800
Date: Thu, 12 Mar 1998 16:54:13 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980312165413.24204e62@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6635
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6635
EVENT OF 1998 MAR 10 DAY OF YEAR= 69
EVENT CROSSING TIME AT BATSE : 50261. S. OR 13:57:41.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 242.000 -61.000
BATSE PEAK COUNTING RATE: 58000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 3/ 98 IS:
RA= 157.167 DEC= 13.267 DIST= 4.444 AU
BATSE-ULYSSES DISTANCE = 664814447. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 80.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 350.88 SECS.
CROSSING TIME AT ULYSSES IS 50612. S. OR 14:03:31 +/- 435.49 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 3/ 98 IS:
RA= 4.036 DEC= 1.054 DIST= 2.344 AU
MARS-BATSE DISTANCE = 350611008. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 74.14 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 319.53 SECS.
CROSSING TIME AT MARS IS 50581. S. OR 14:03:00 +/- 200.17 SECONDS

BATSE BURST TRIGGER

NO.: 6635

TIME: TJD=0882 SECONDS=50261

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=132.9 AZIMUTH=321.8 ERROR=1.2 DEGREES

COMMENTS:

GRB. TWO SPIKES. DURATION APPROX. = 1.3 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6635	980310	10882	50261	58000	242	-61	1.3

Helio corr removed 21/2/00

Date: July 31 1998

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

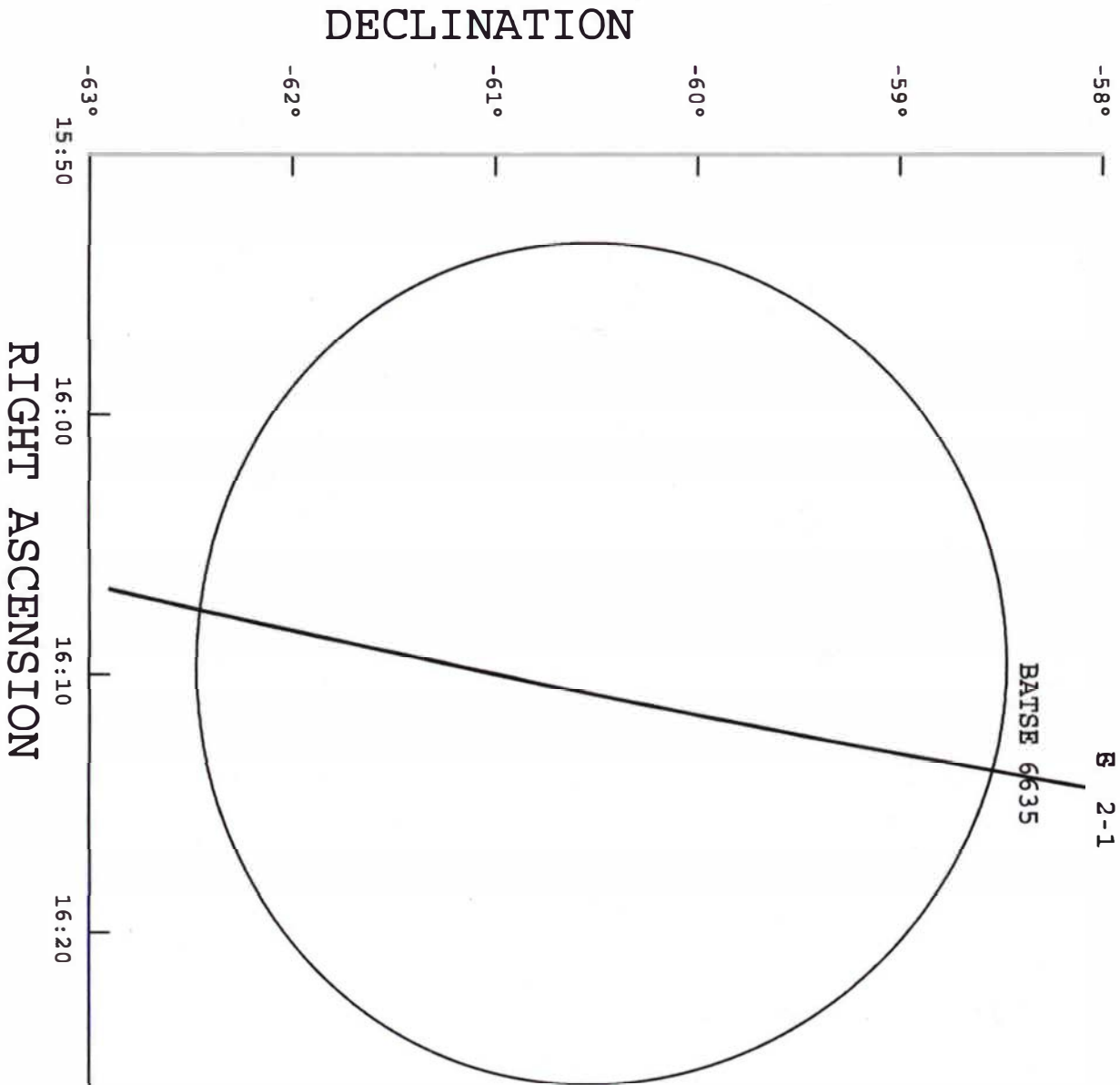
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?

- ☒ 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 MAR 10, 1998 14:03

21 / 2 / 0



BATSE

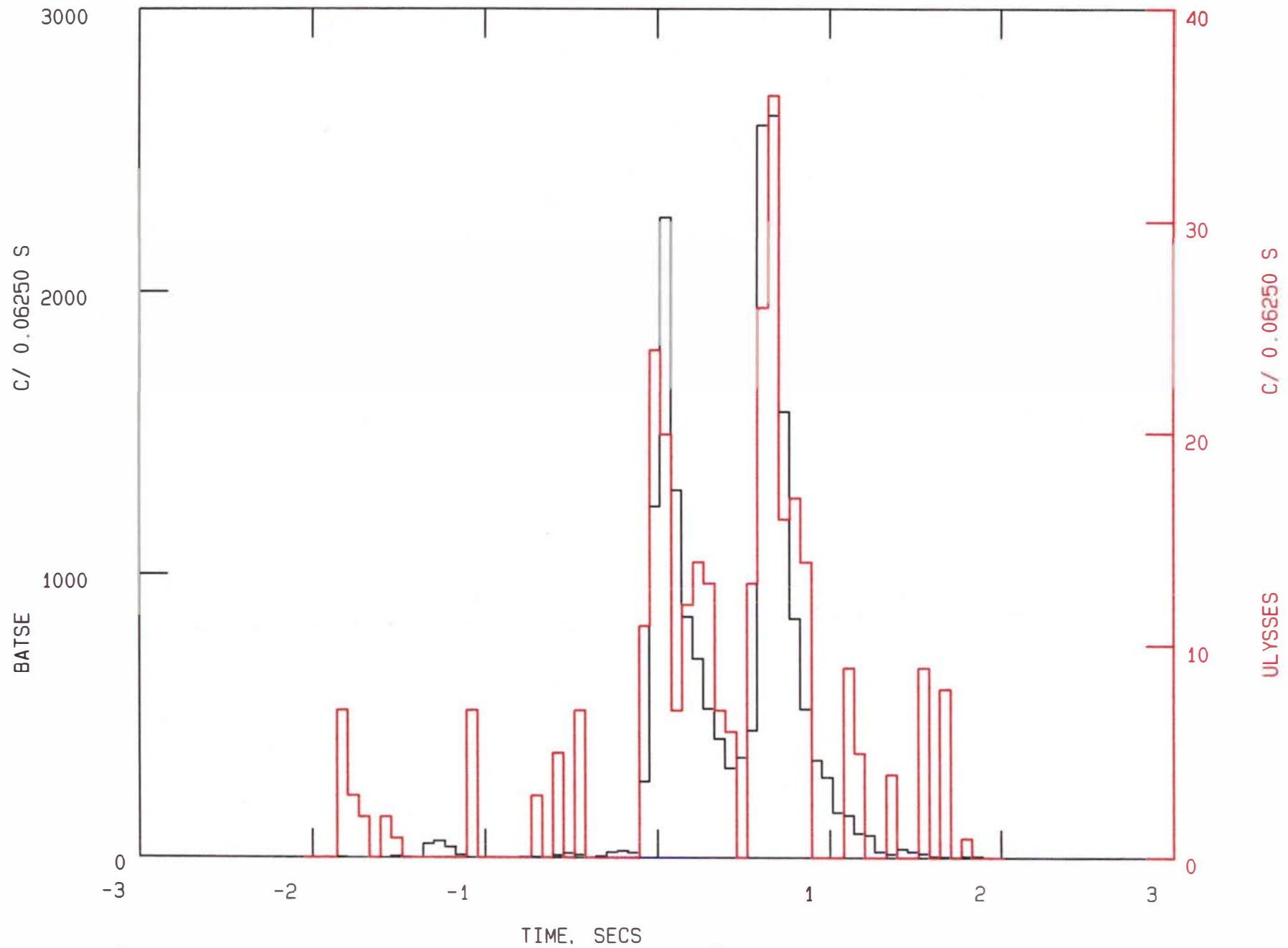
-ULYSSES

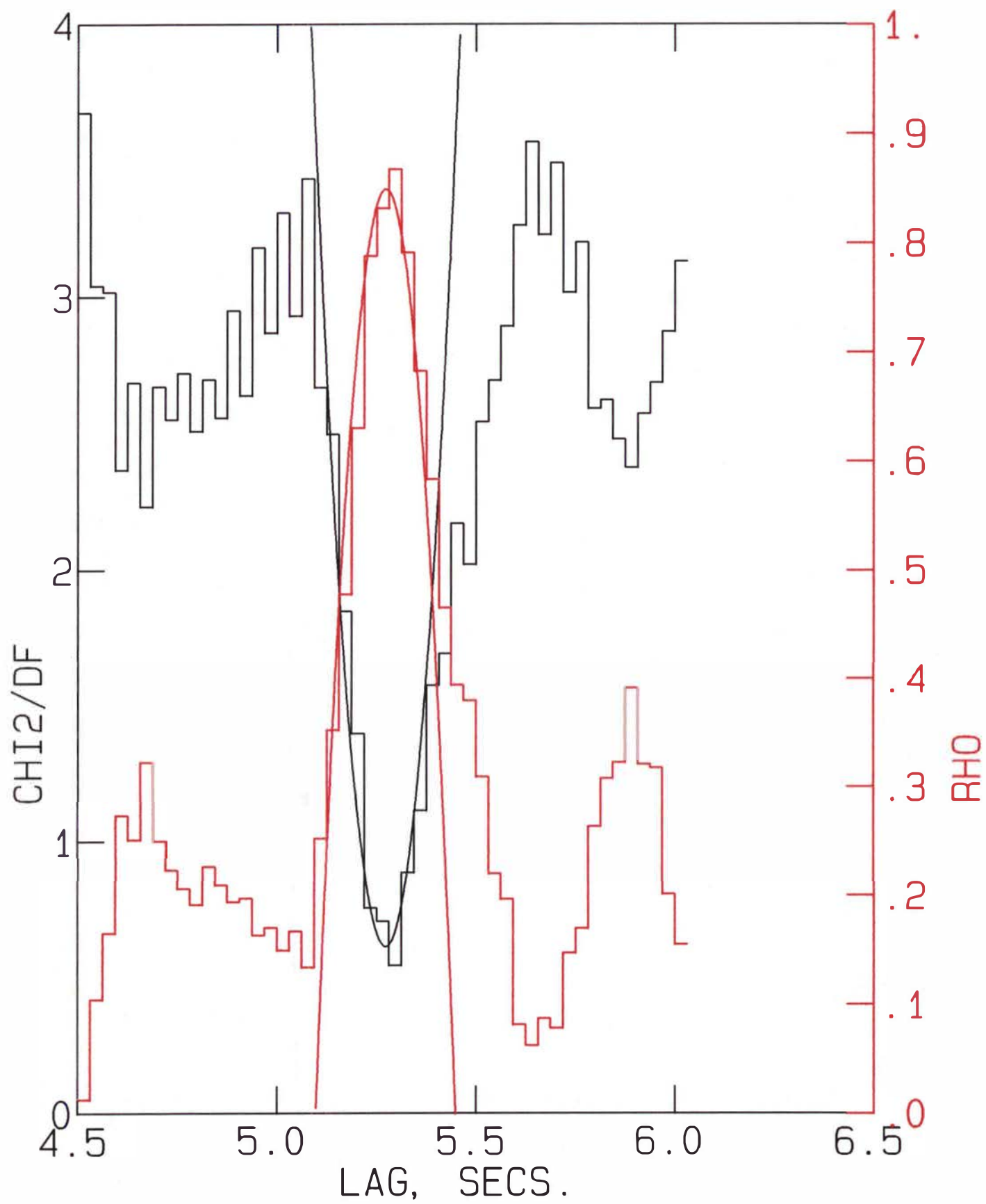
CORRELATION

10/ 3/98

50261.281

31/ 7/98





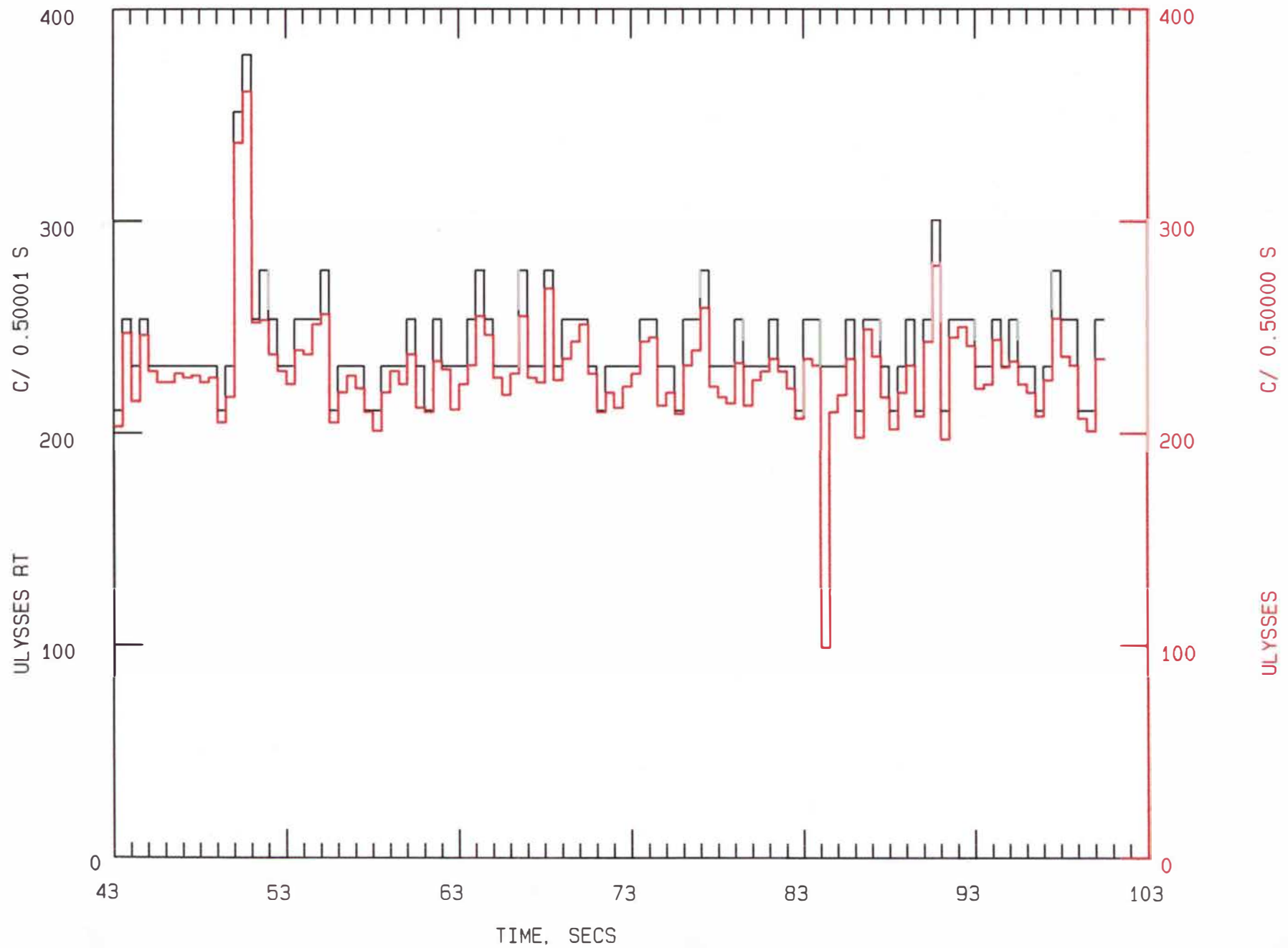
ULYSSES RT-ULYSSES

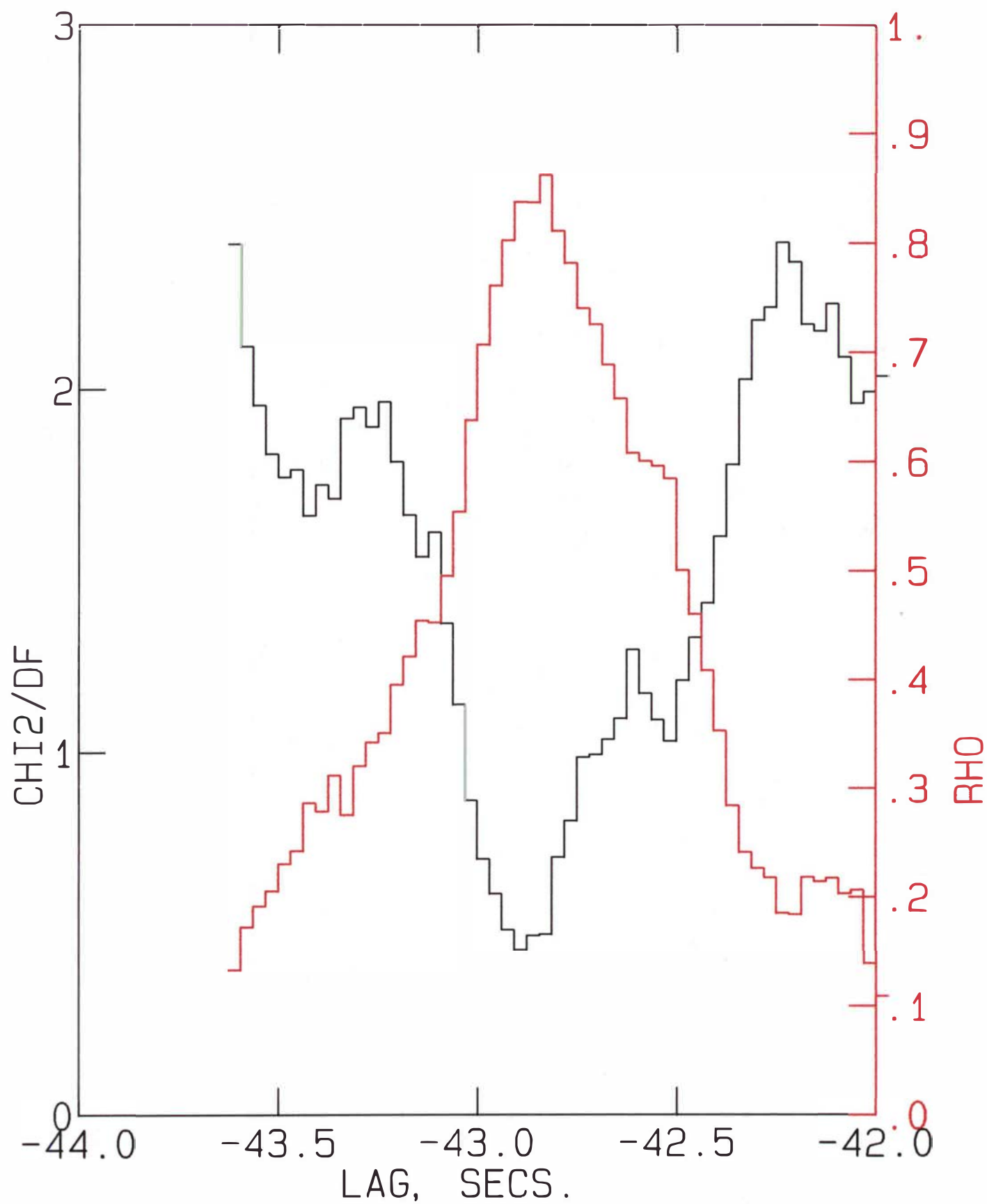
CORRELATION

10/ 3/98

50545.325

31/ 7/98

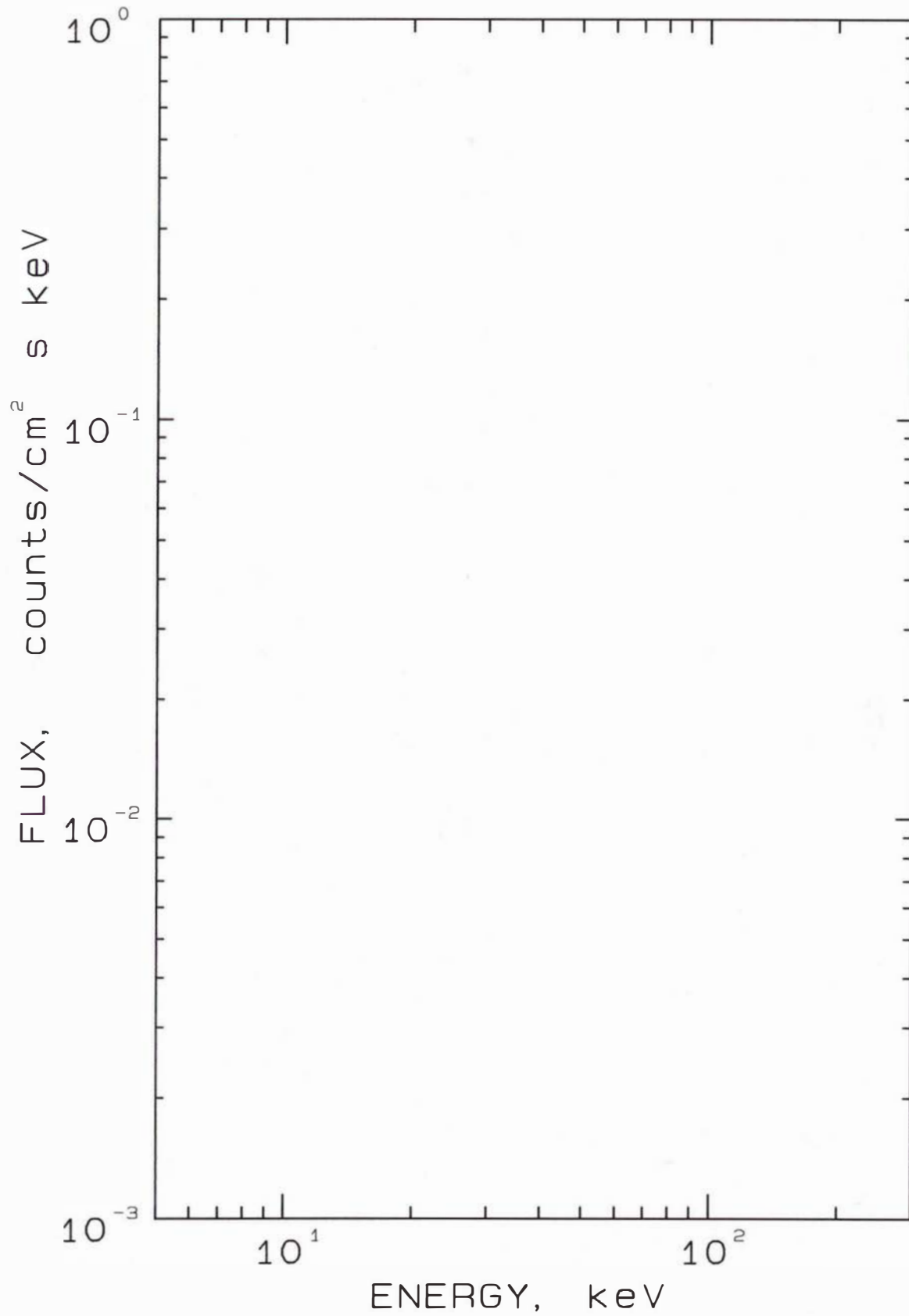




ULYSSES 10/03/98 50595.647

31/ 7/98

SPECTRUM INTEGRATED OVER 10.8 SECONDS, INTERVALS 2 TO 13

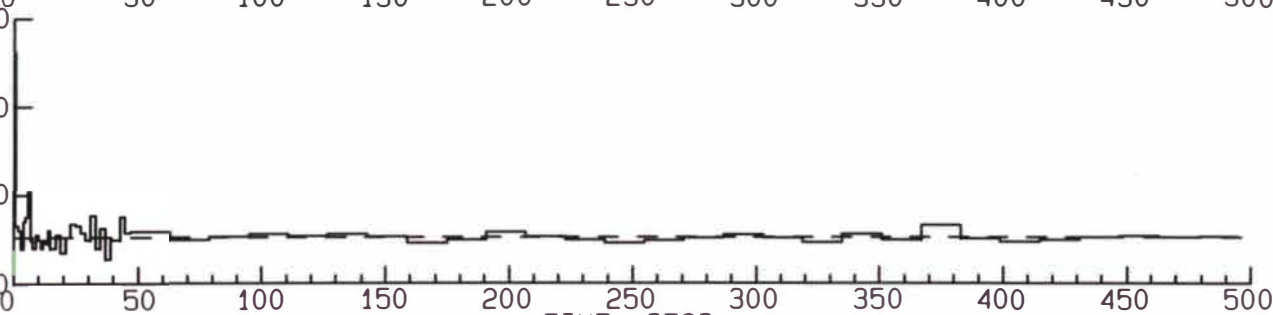


ULYSSES 10/03/98 50595.647 BURST SPECTRAL COUNT RATES

4- 18 keV

COUNTS/S

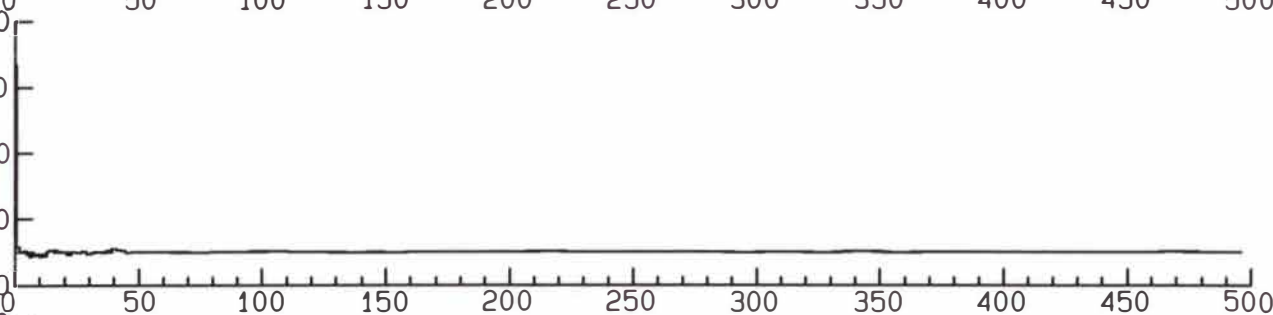
60
40
20
0



18- 46 keV

COUNTS/S

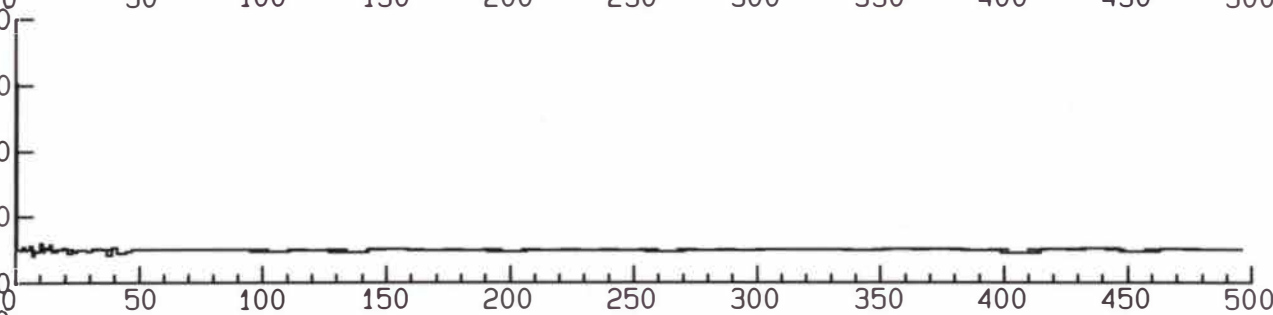
1600
1200
800
400
0



46- 74 keV

COUNTS/S

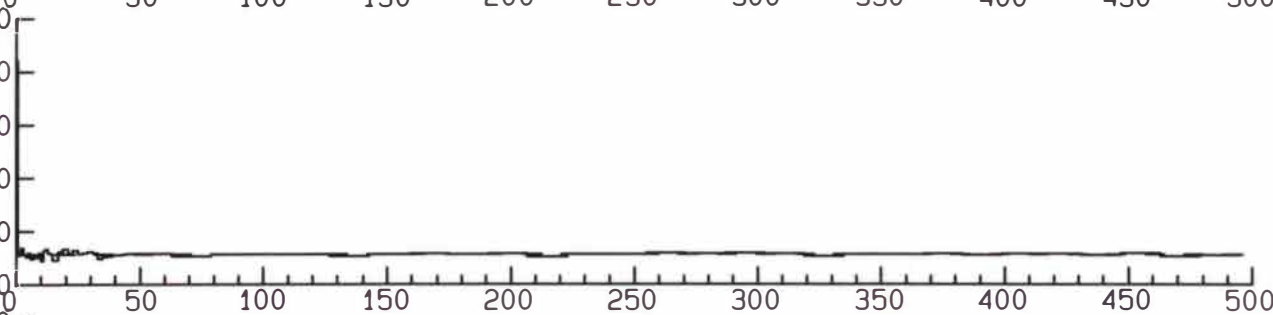
800
600
400
200
0



74-102 keV

COUNTS/S

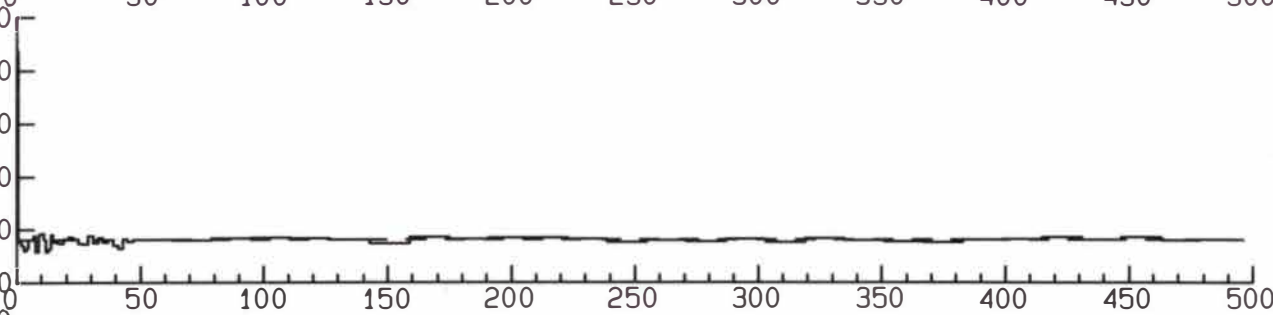
400
320
240
160
80
0



102-129 keV

COUNTS/S

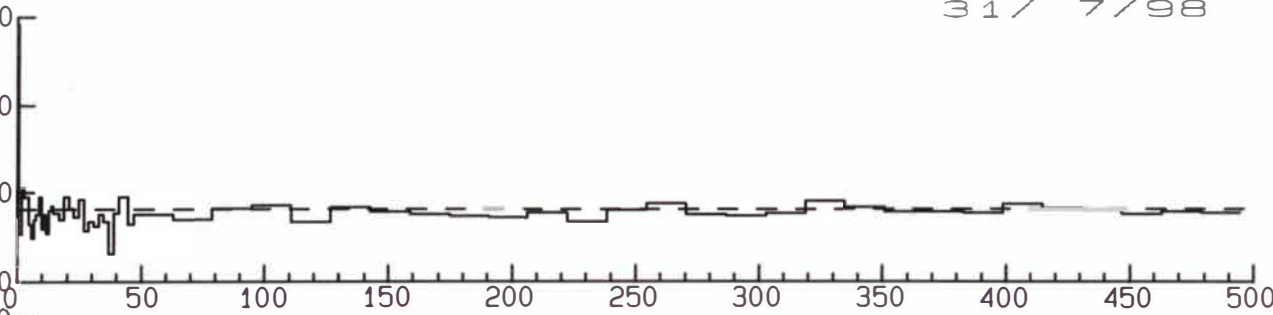
200
160
120
80
40
0



129-148 keV

COUNTS/S

60
40
20
0



31 / 7 / 98

TIME, SECS

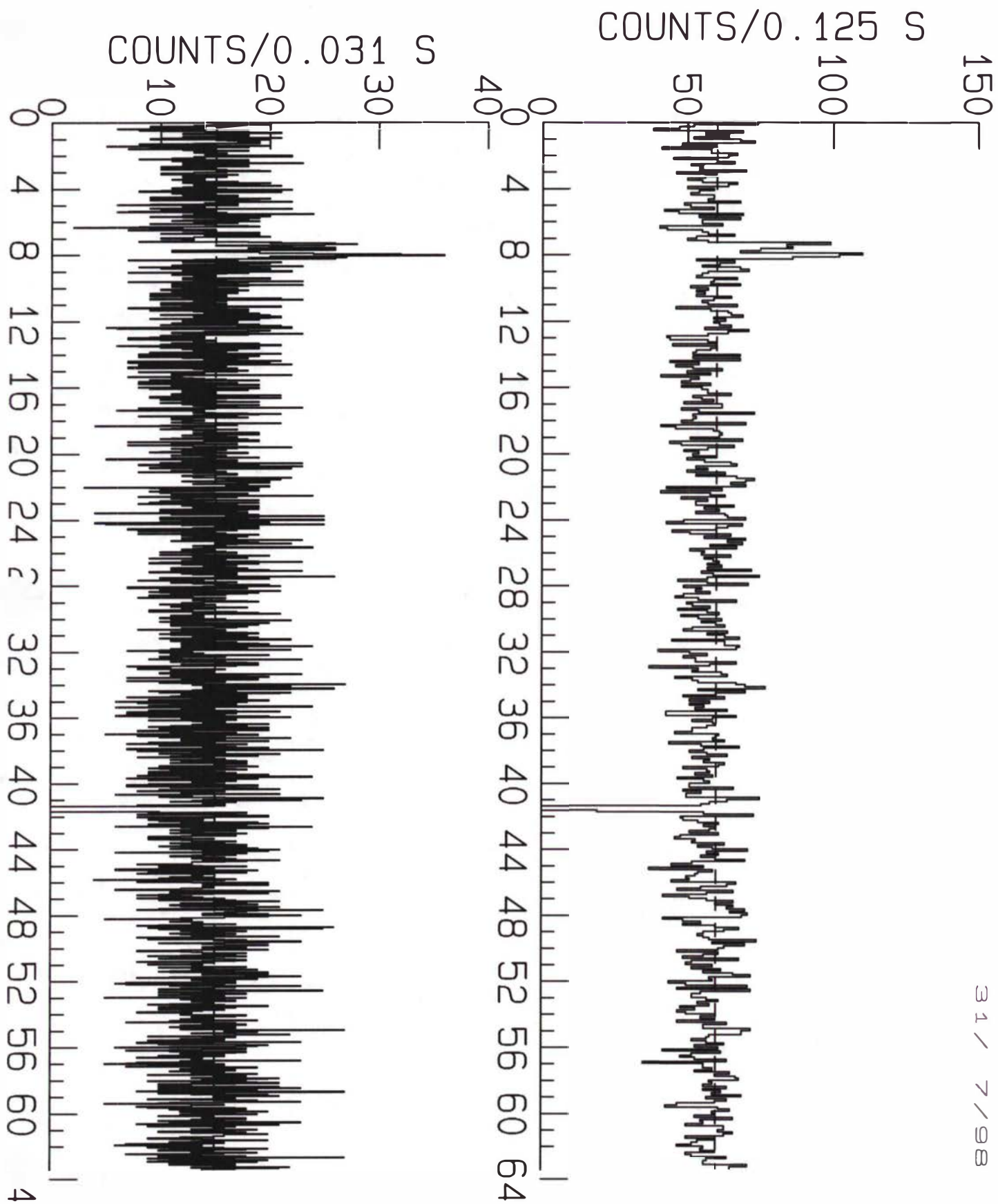
ULYSSES

10/03/98

Ttrig=50595.574

22- 149 keV

31 / 7/98



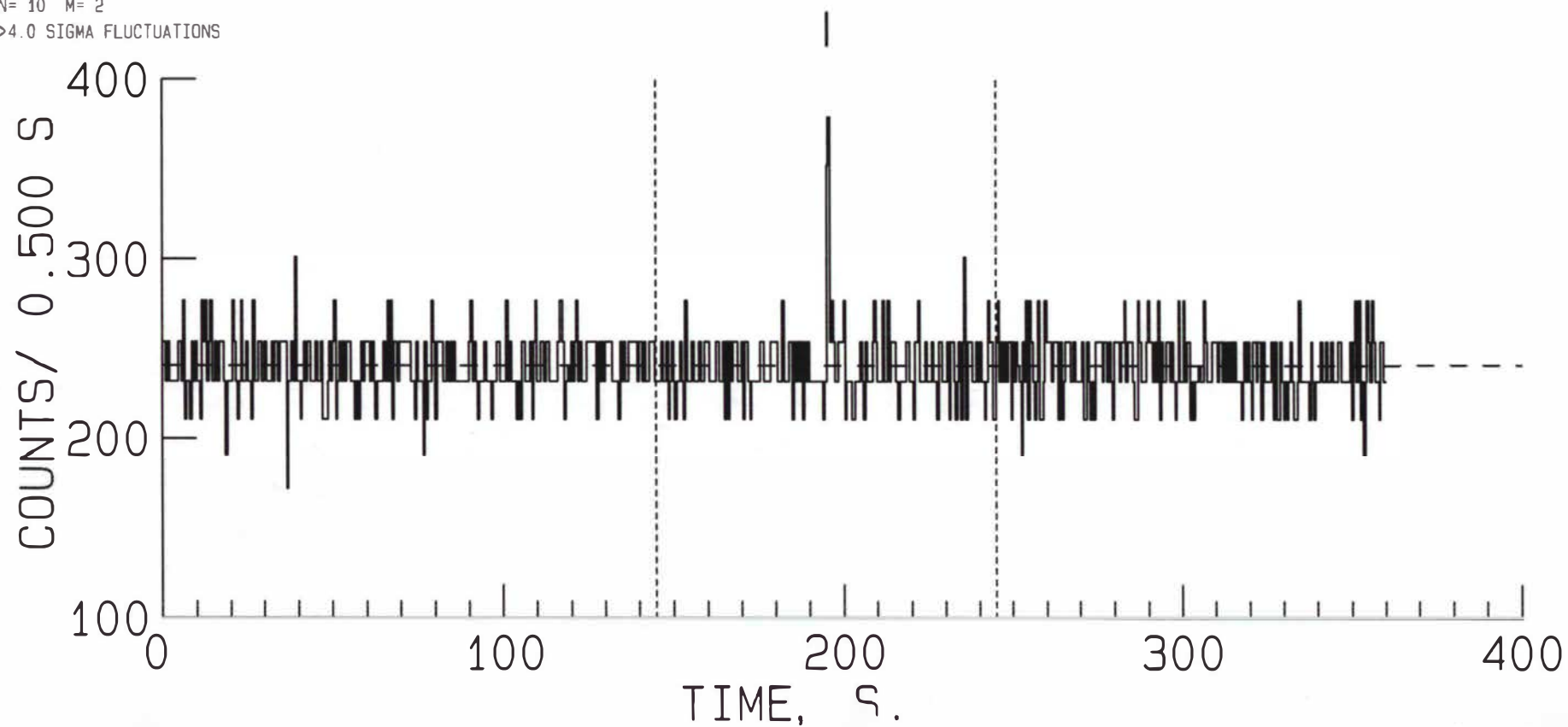
ULYSSES RT

31 / 7 / 98

10/ 3/98 50400.404 s

22- 149 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



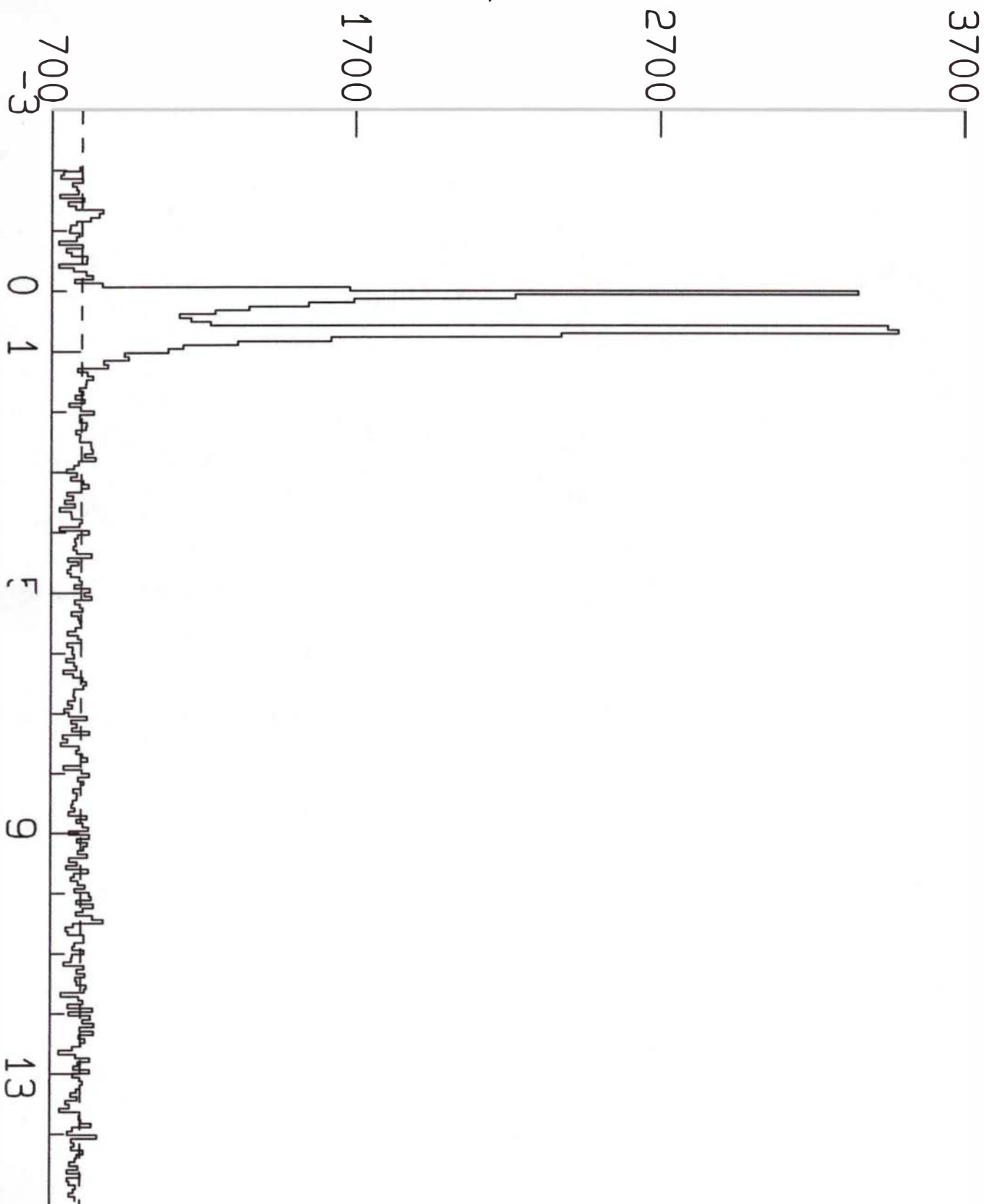
BATSE

10/03/98

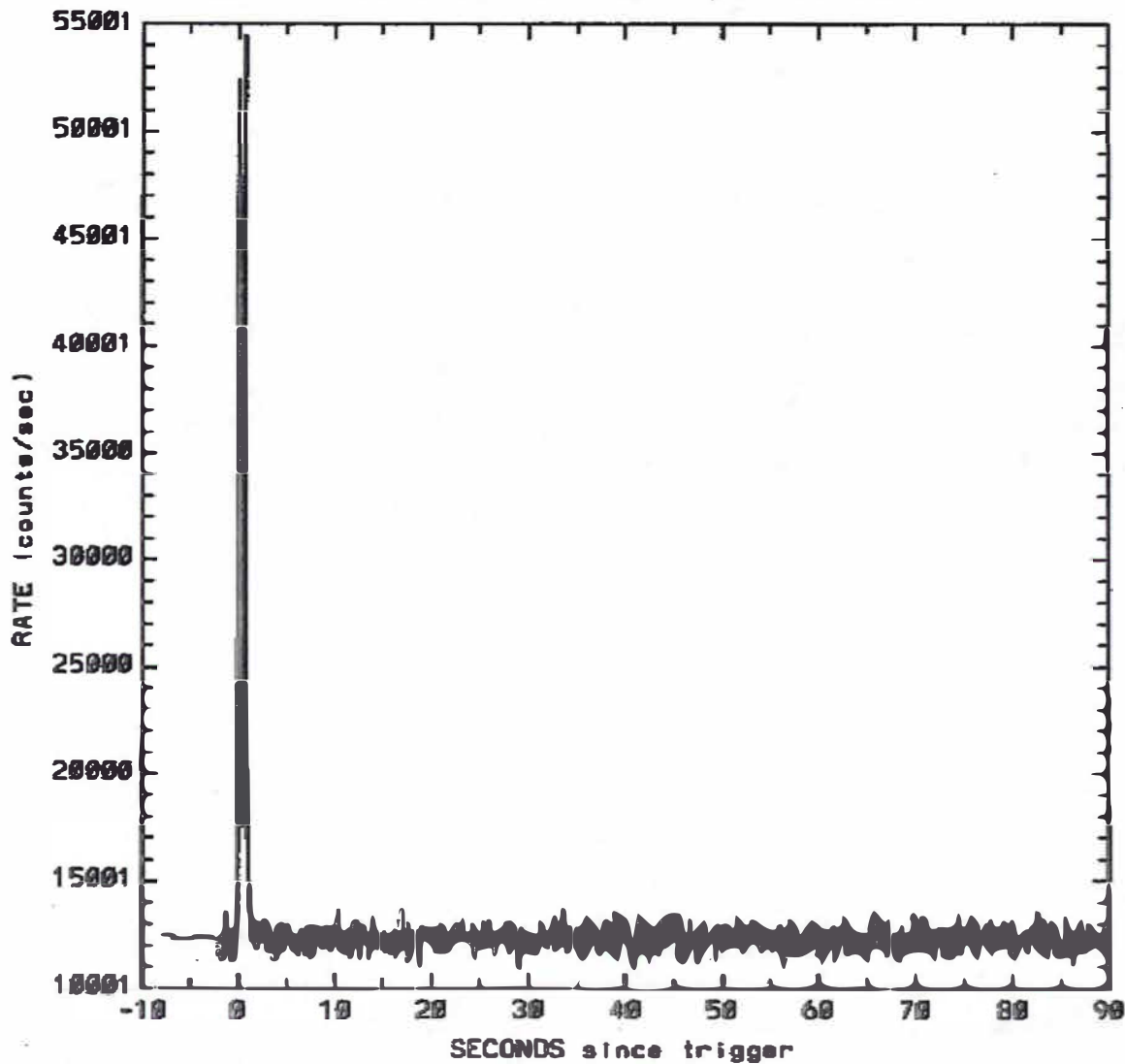
50261.281

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 6635



16-MAR-1998 11:18:43

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

Trigger #: 6635

Trigger Time:
16862 / 50261.281Burst Data Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors {7..8},
7---321-Discriminators:
{1..2}Quality Mask:
80ISP1

Date: Feb 10 2010

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data

- ☐ 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. NEAR Data

- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

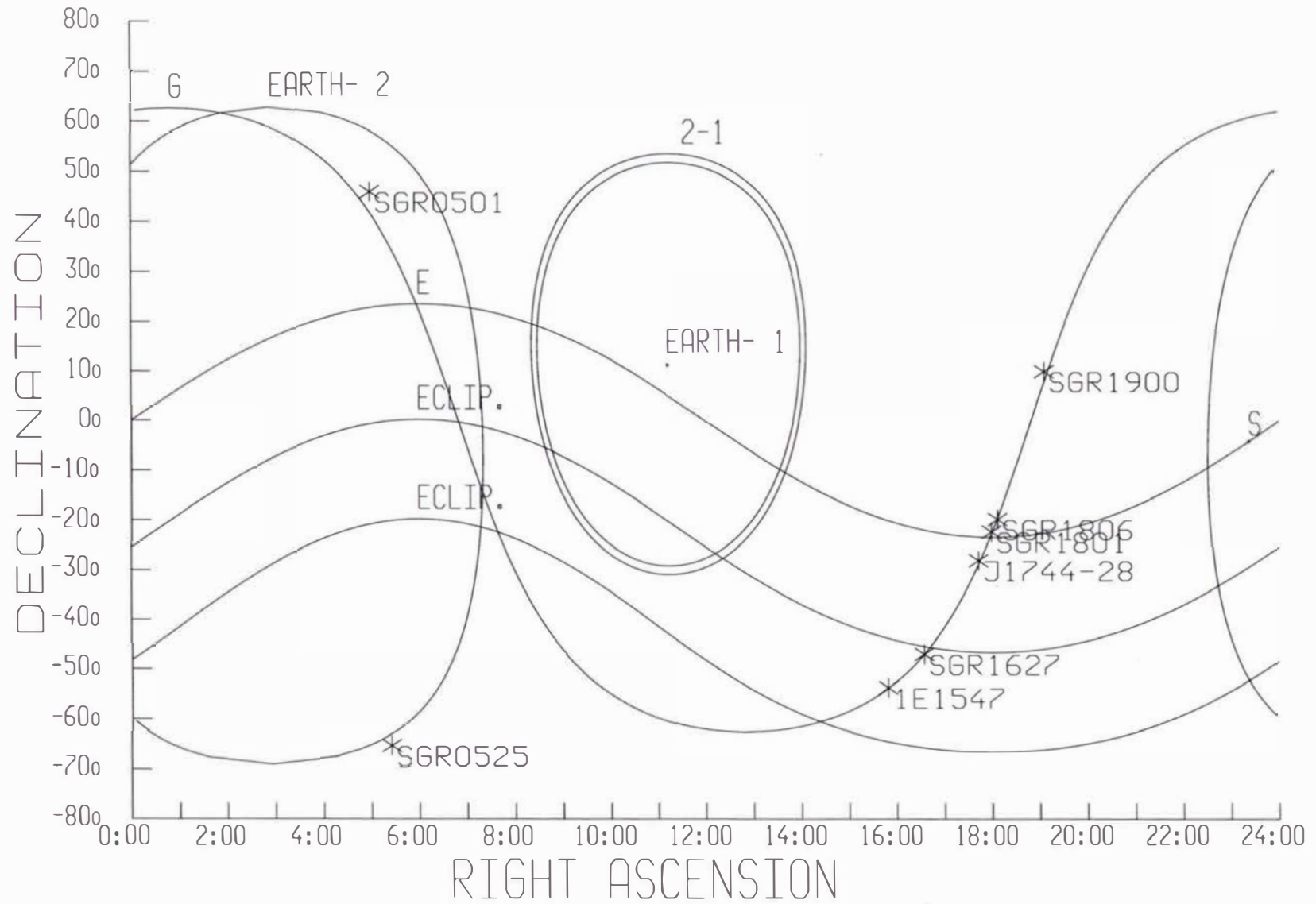
- ☐ $\Sigma 3\Delta t$'s calculated?

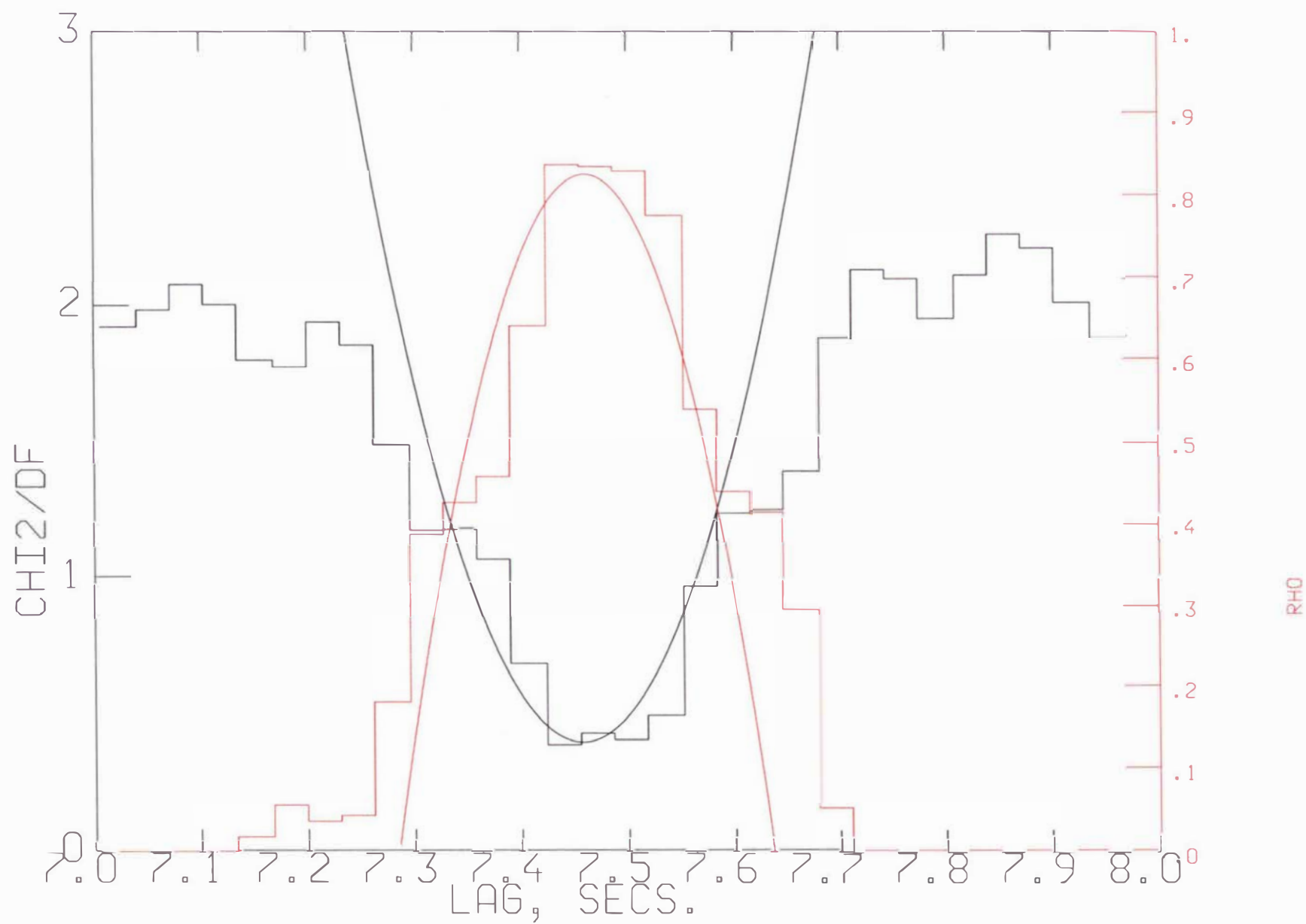
- ☒ ACCESS database updated?

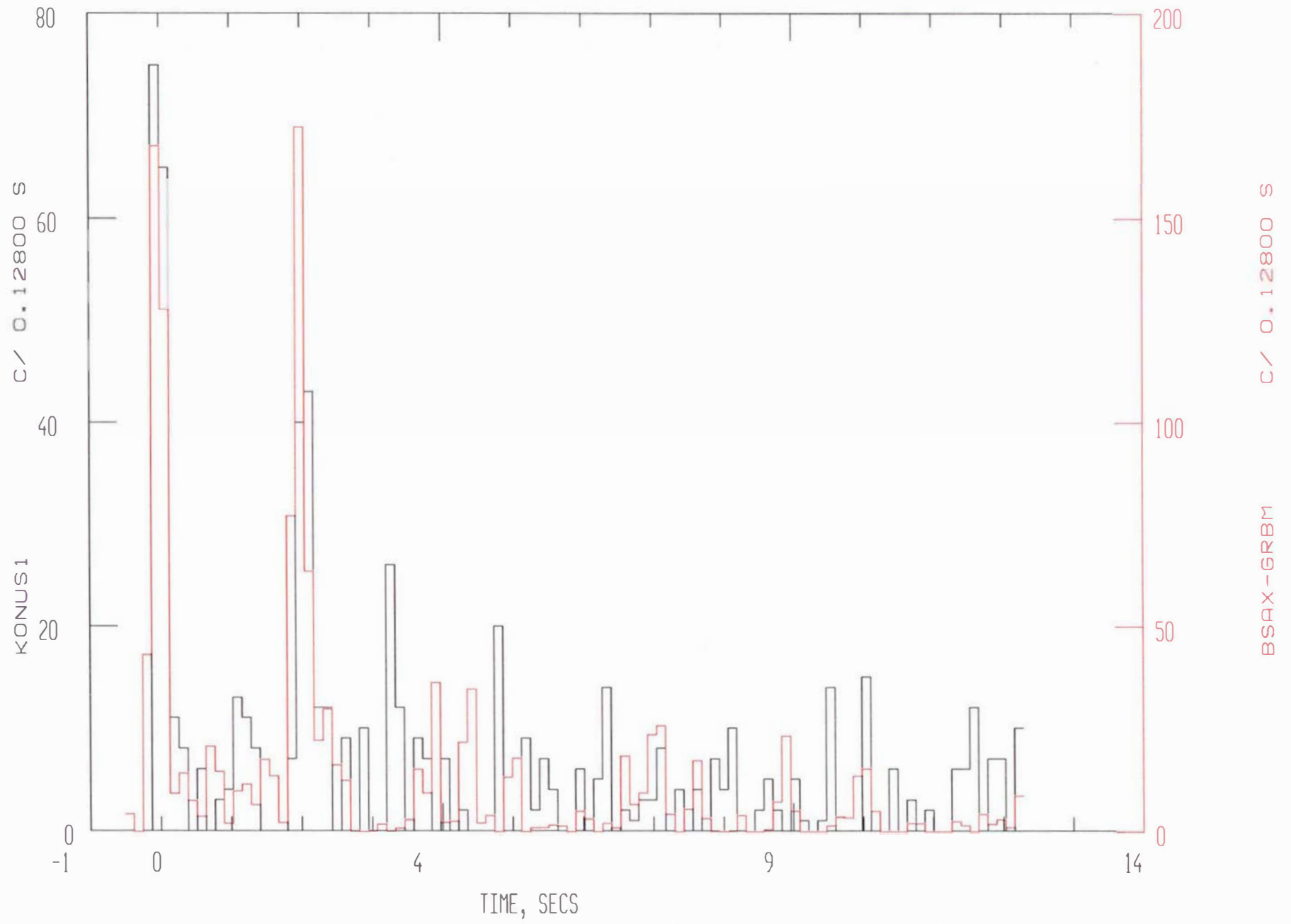
EVENT OF MAR 10, 1998 15:50

10/02/2010

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





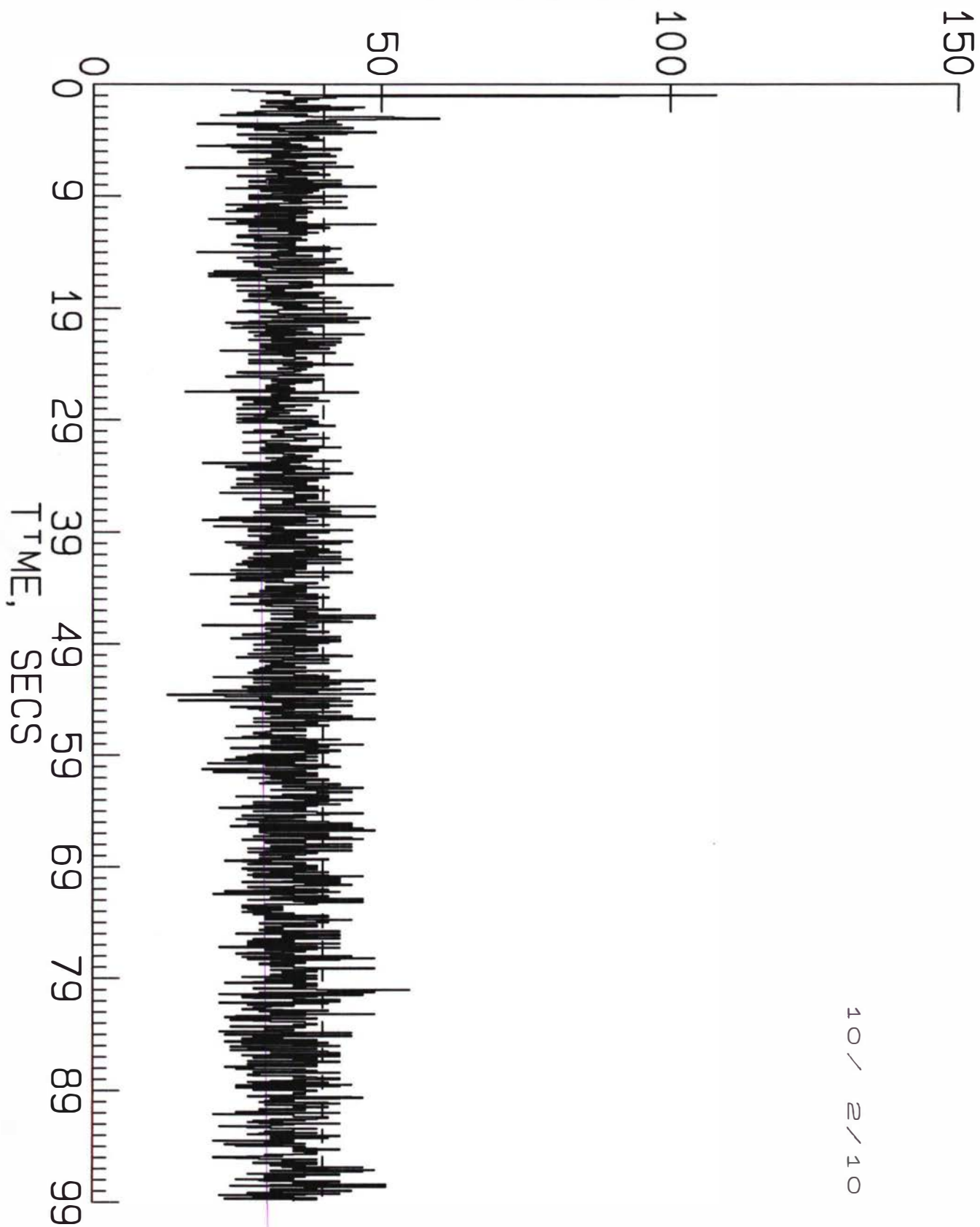


KONUS

10/03/98 57051.060

50- 200 keV

COUNTS/0.064 S

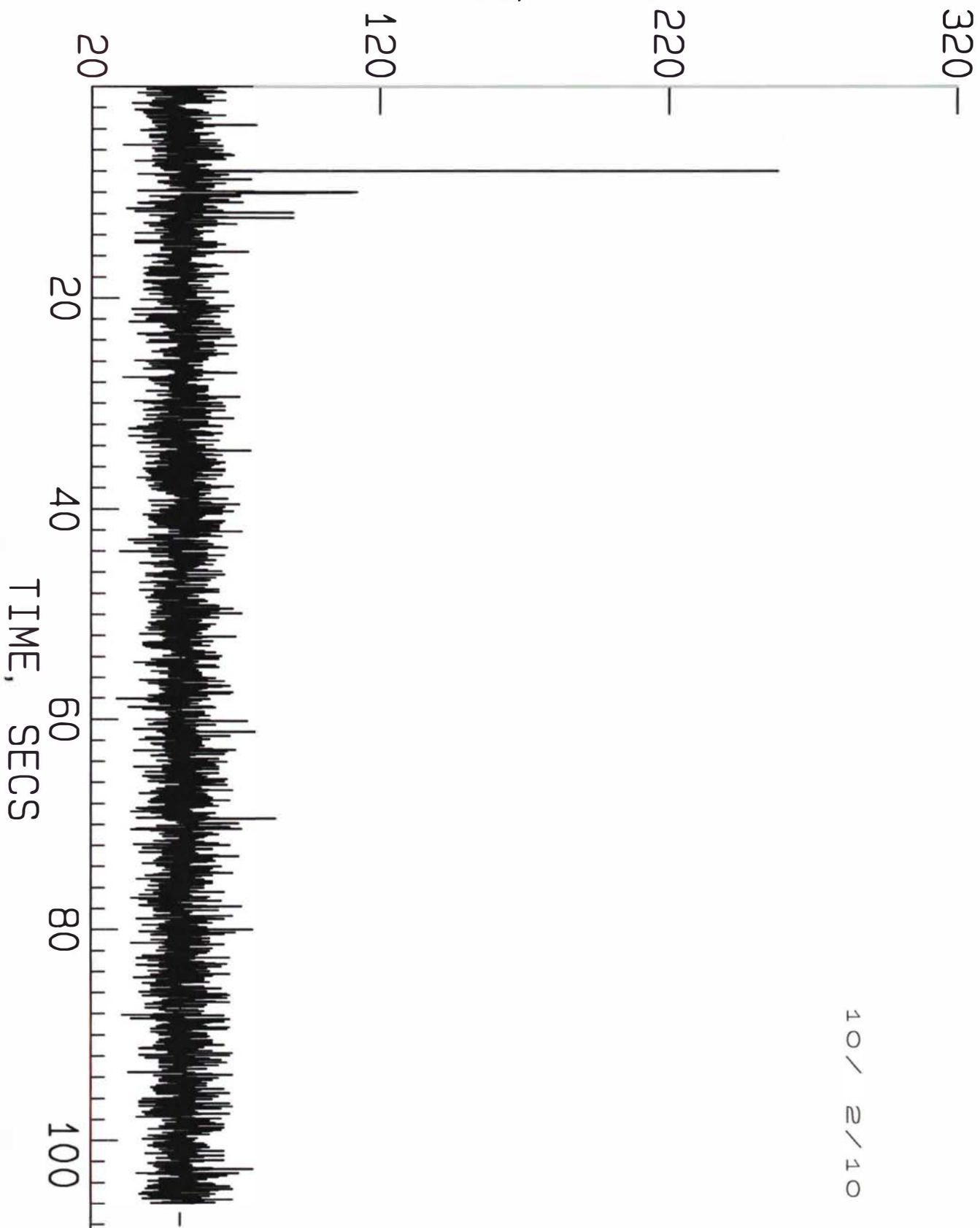


SAX GRBM

10/03/98 57039.366

40- 700 keV

COUNTS/0.031 S



KONUS

08 / 02 / 00

ULYSSES RT

10 / 03 / 98 54792.449 s

INTERVALS REGROUPED BY 6

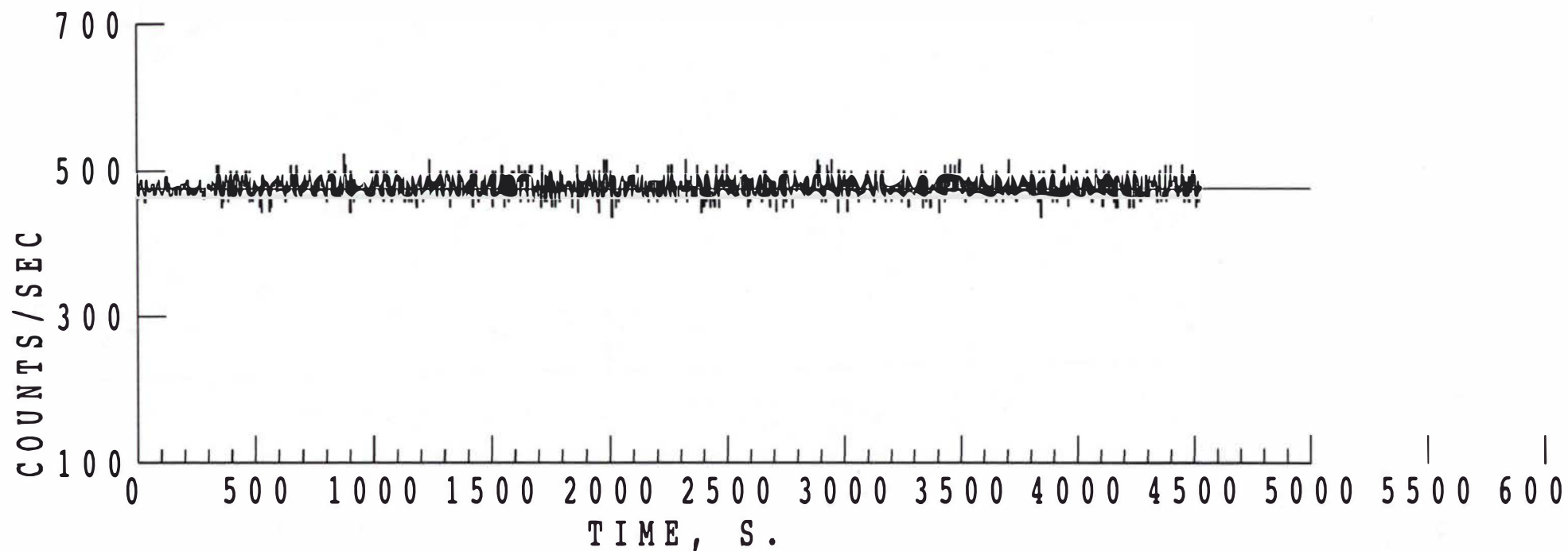
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Thu Mar 12 14:52:21 1998
From: RICHARDSON@fender.msfc.nasa.gov
Date: Thu, 12 Mar 1998 16:51:58 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevax.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6636

TIME: TJD=0882 SECONDS=71734

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

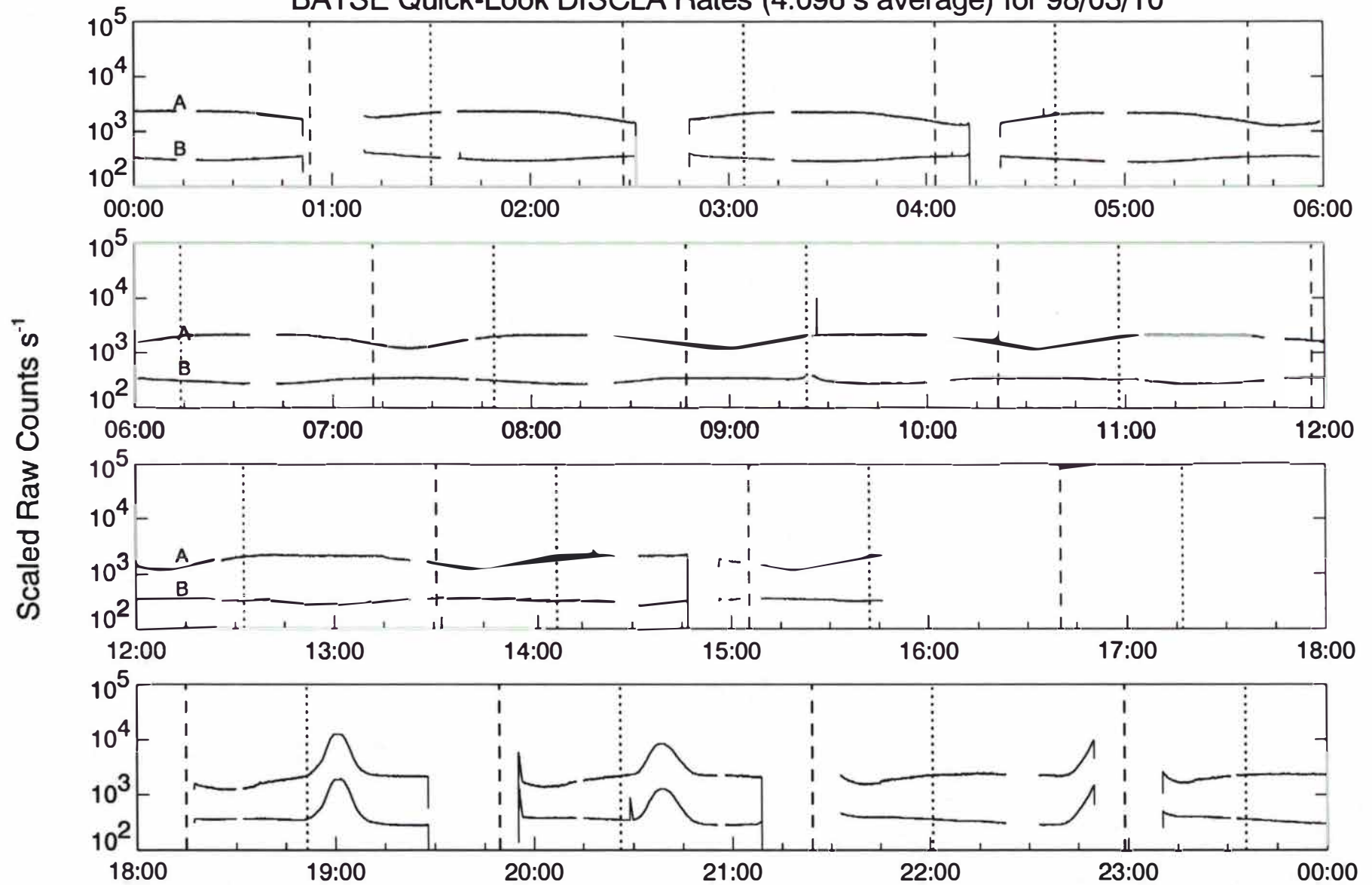
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SAA EXIT

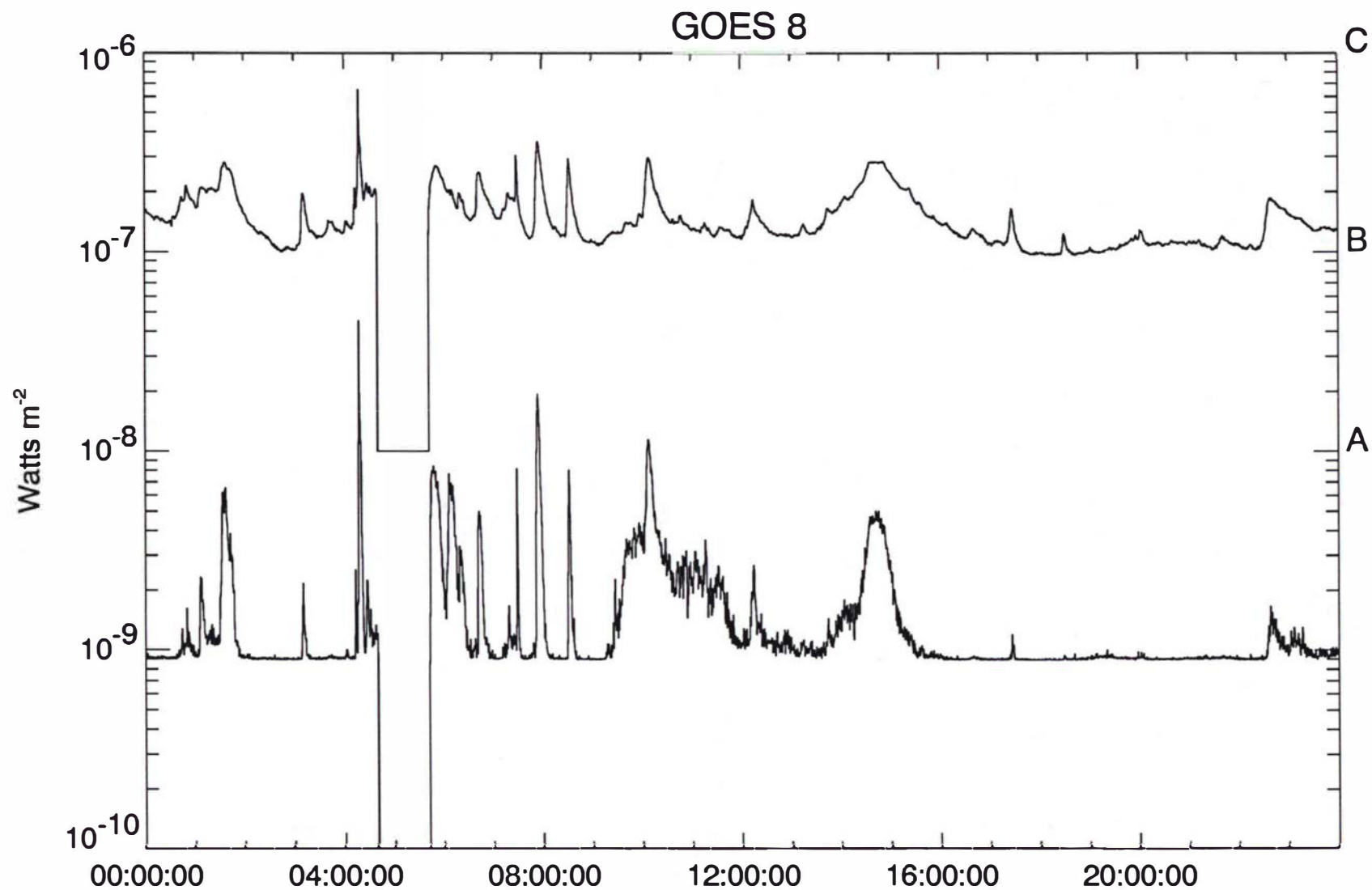
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/10



Current Time: 98/03/14, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/03/10, 0000:00

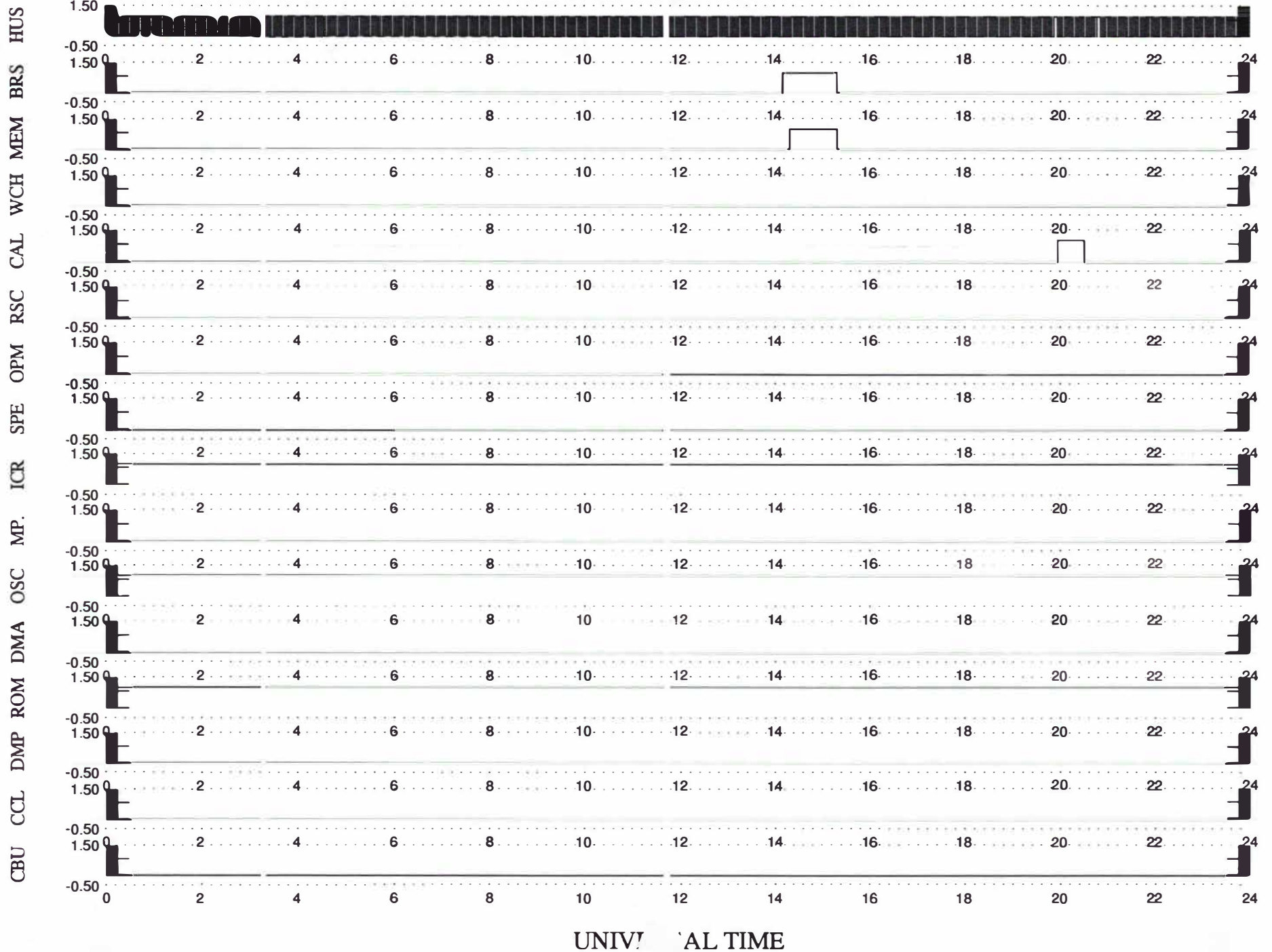
Plot created: 98/03/14, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

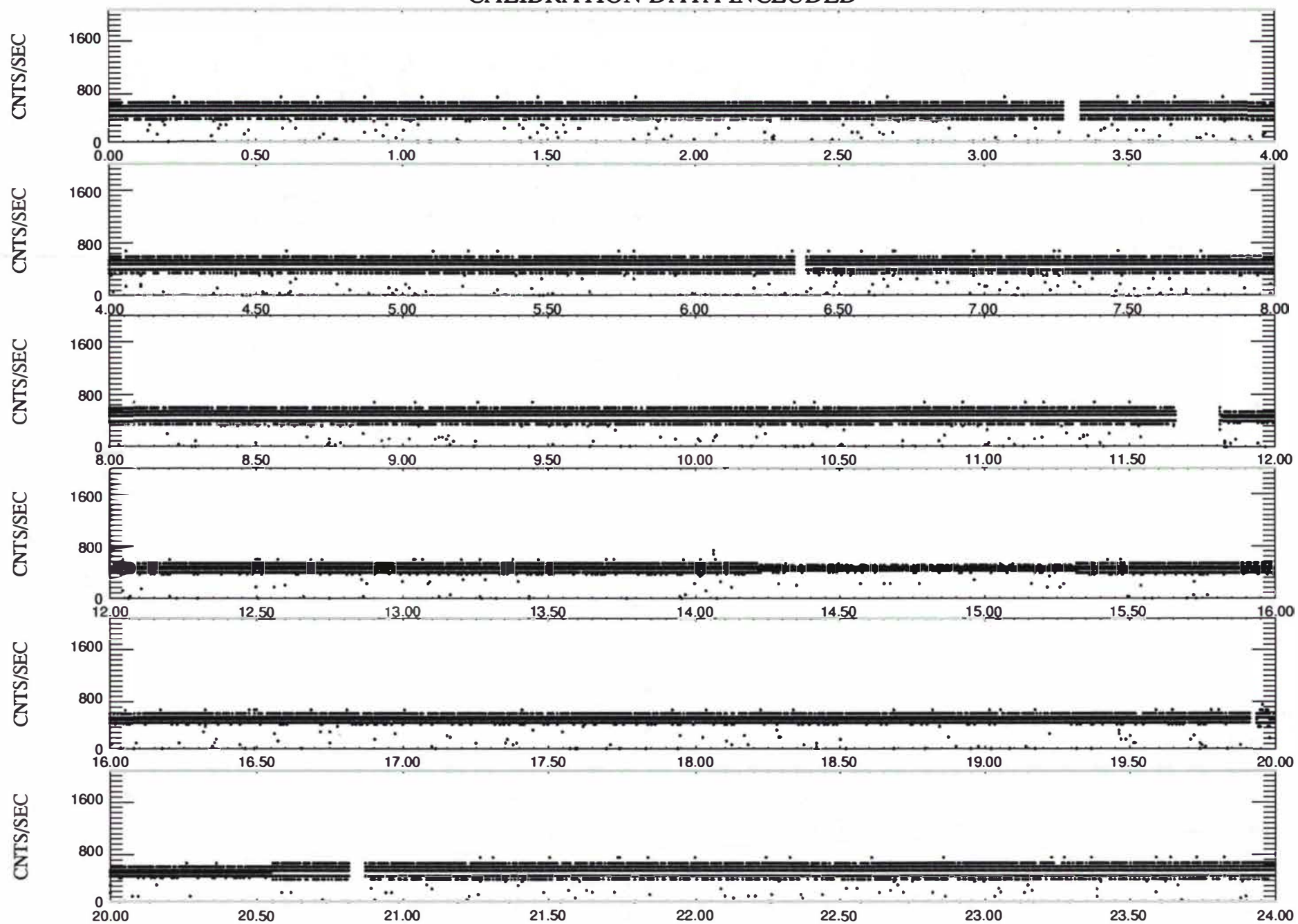
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 0

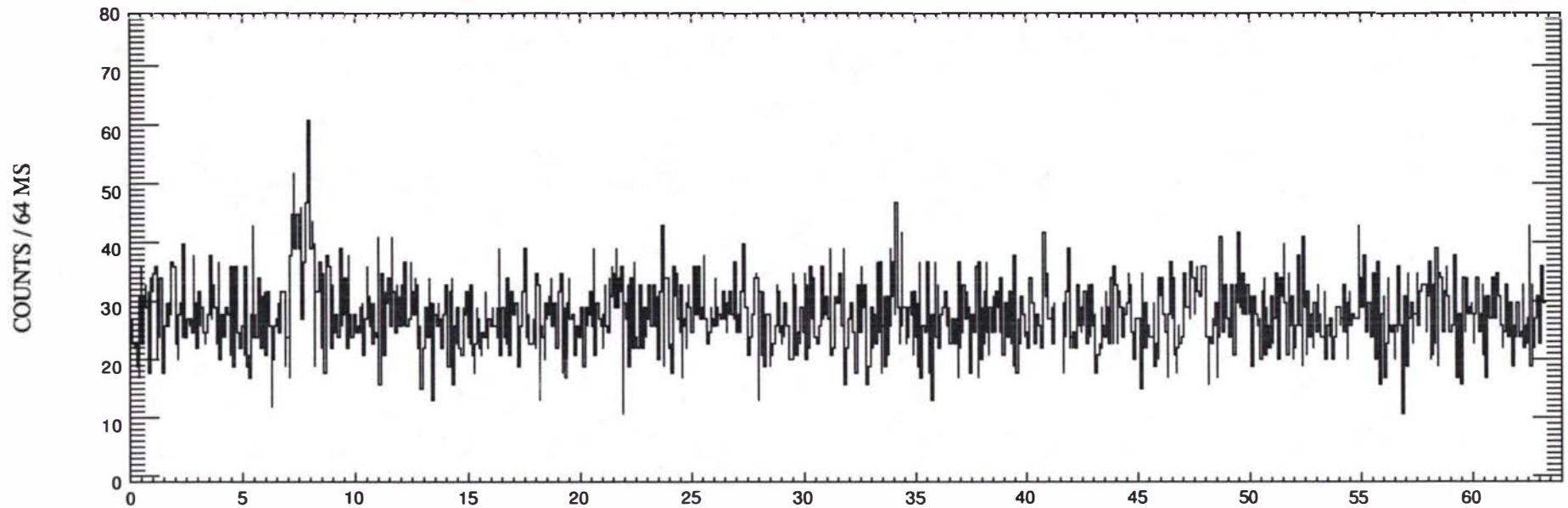


CALIBRATION DATA INCLUDED

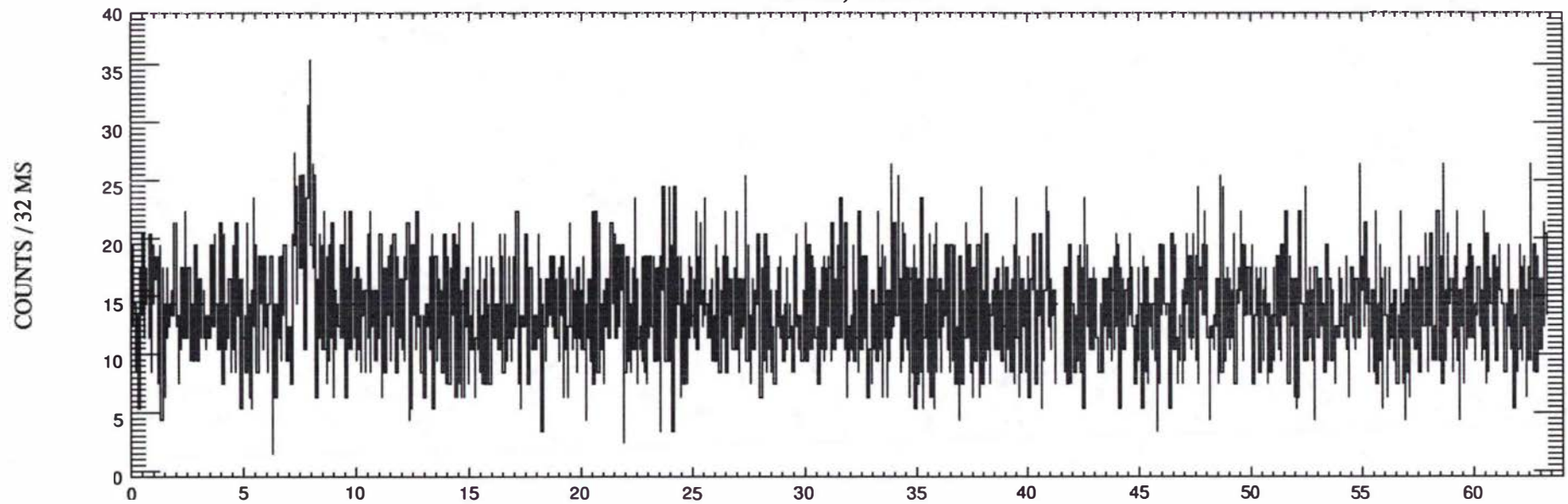


UNIVERSAL TIME

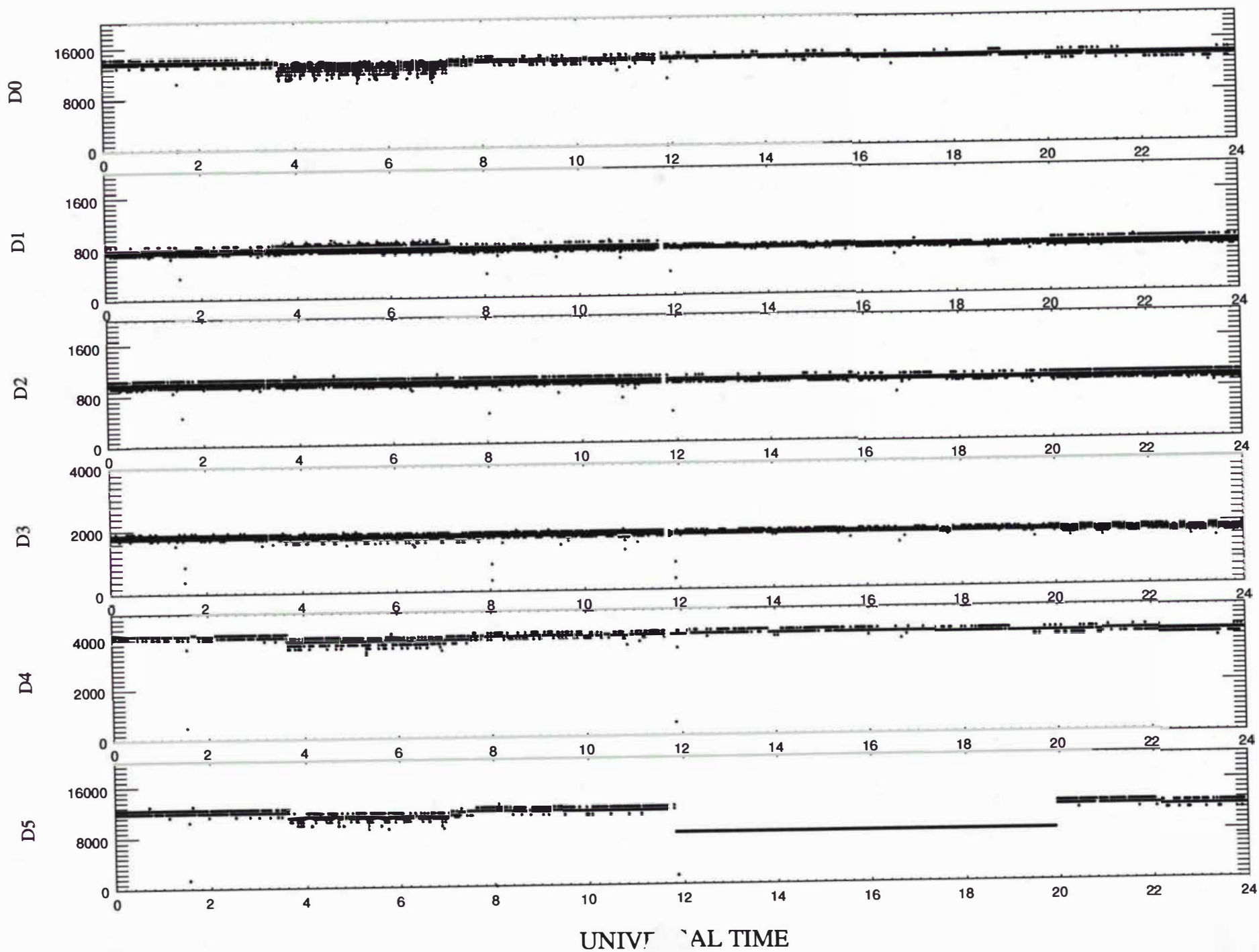
Burst Counter 0 at UT=14.054346364339 h=50595.647 s 14:03:15.647



TIME, SECS



TIME, SECS



SAX 19990311 68220

ULYSSES RT

19/08/09

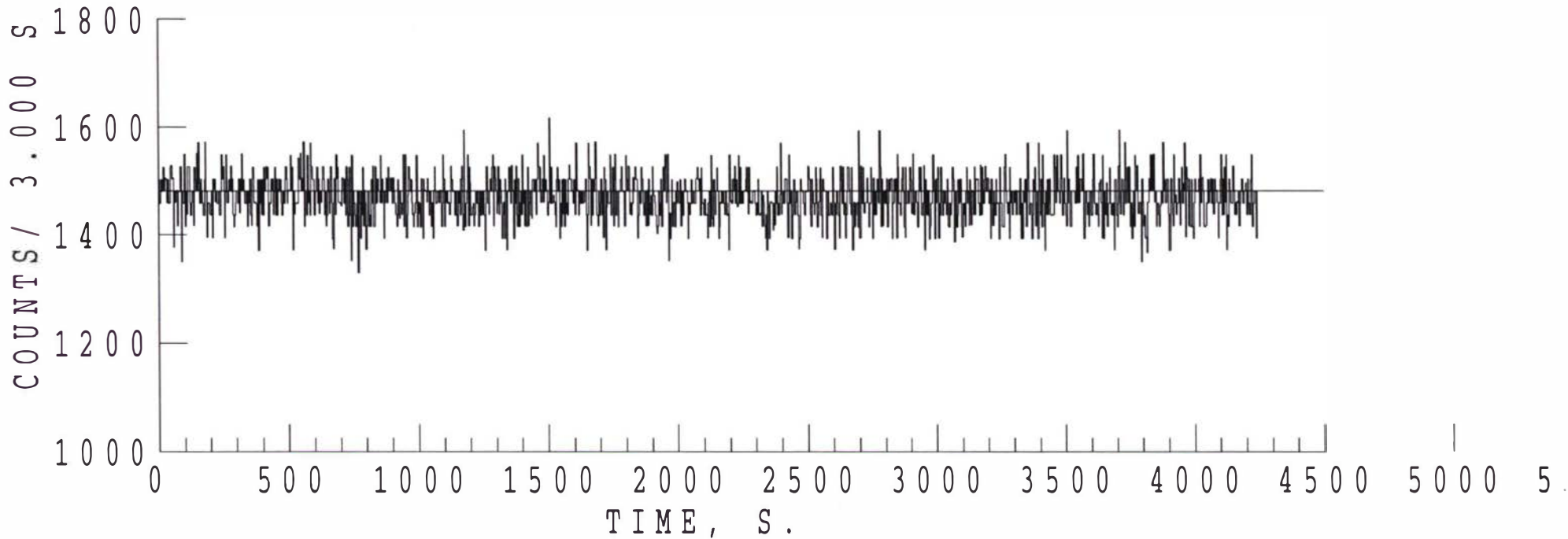
11/03/99 66096.492 s

0.500 S INTERVALS REGROUPED BY 6

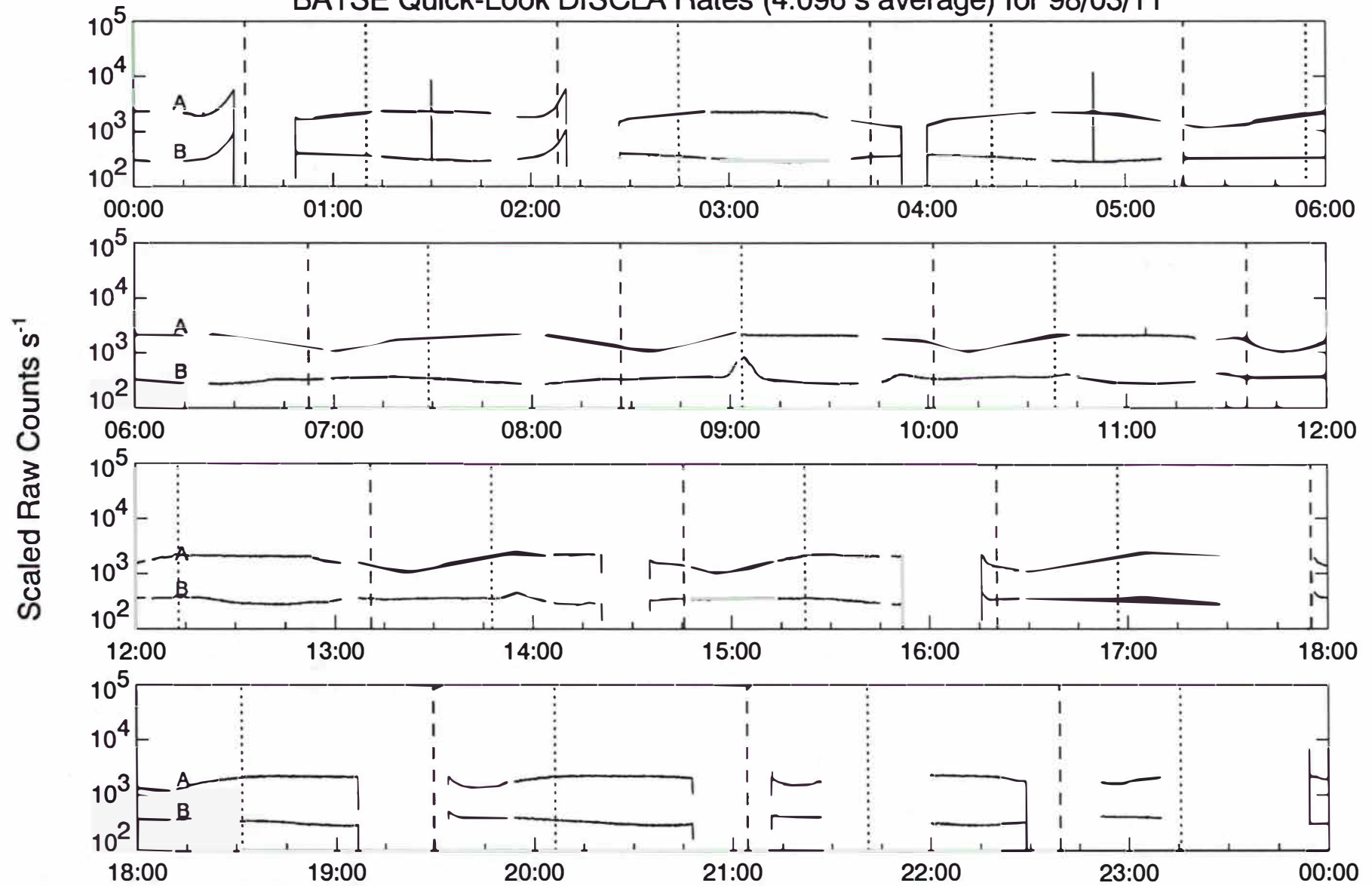
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/11

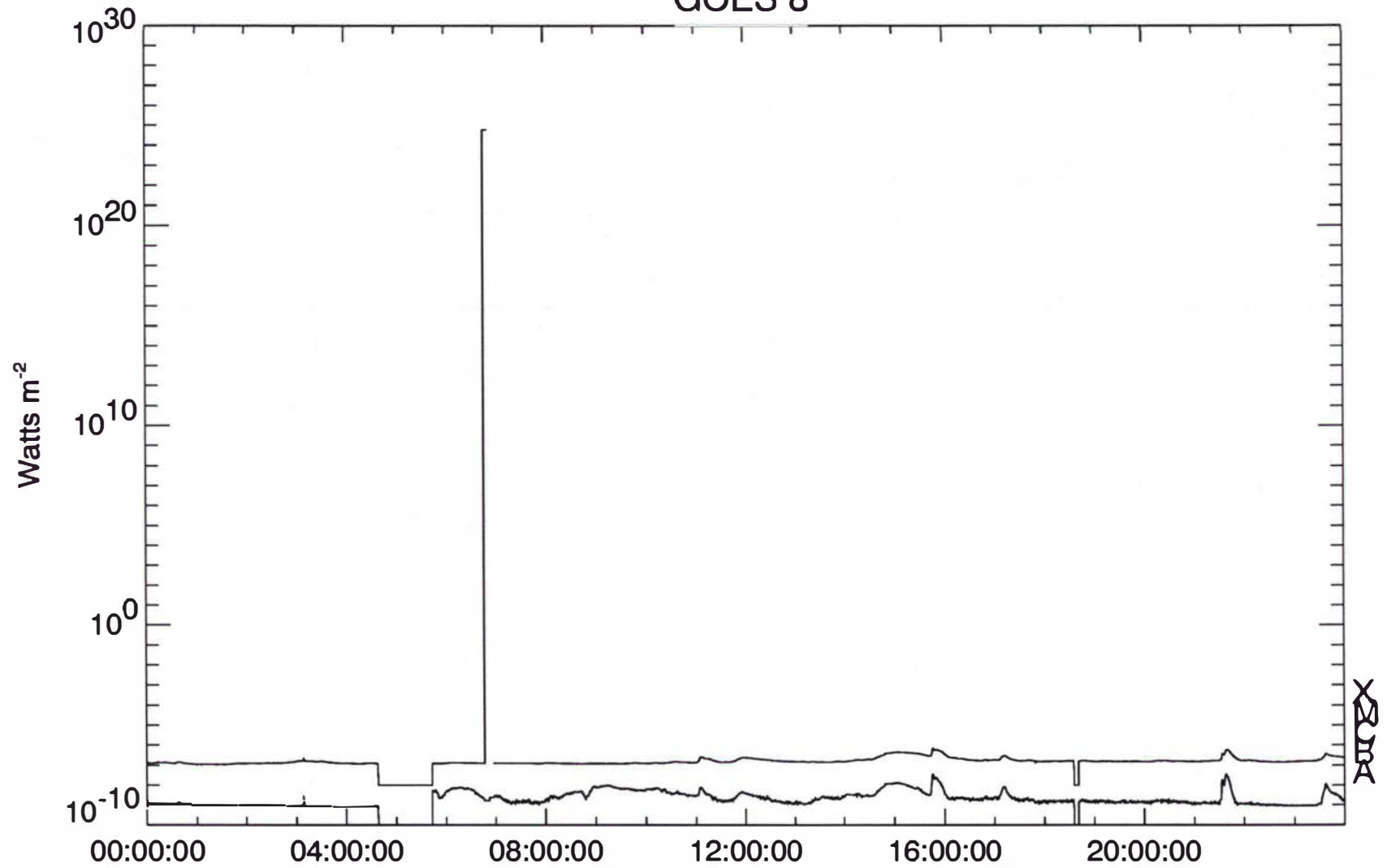


Current Time: 98/03/15, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 98/03/11, 0000:00

Plot created: 98/03/15, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

From WOODSP@SSLMOR.msfc.nasa.gov Fri Mar 13 13:25:57 1998
Date: Fri, 13 Mar 1998 15:25:25 -0600 (CST)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6637

TIME: TJD=0883 SECONDS=32414

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

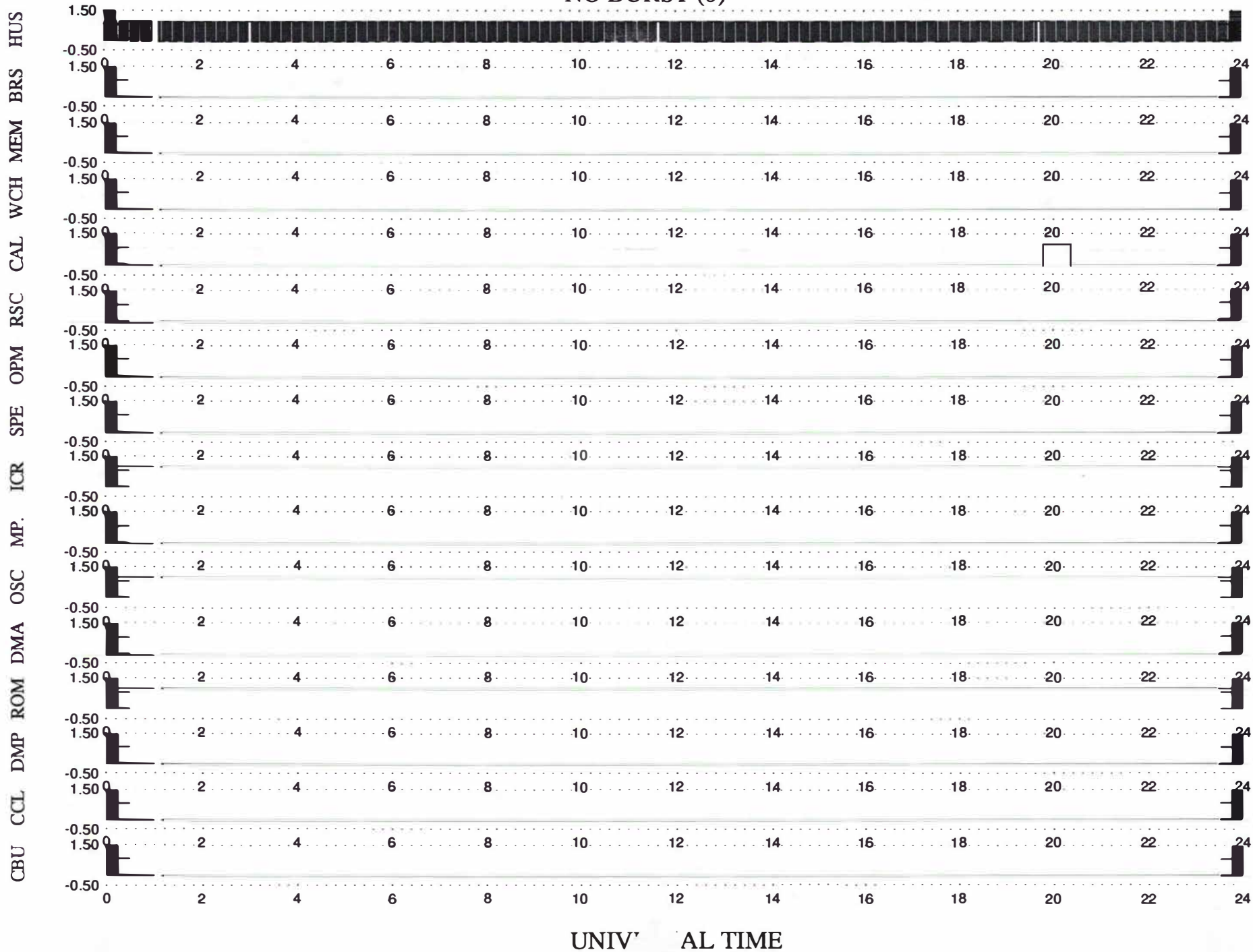
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

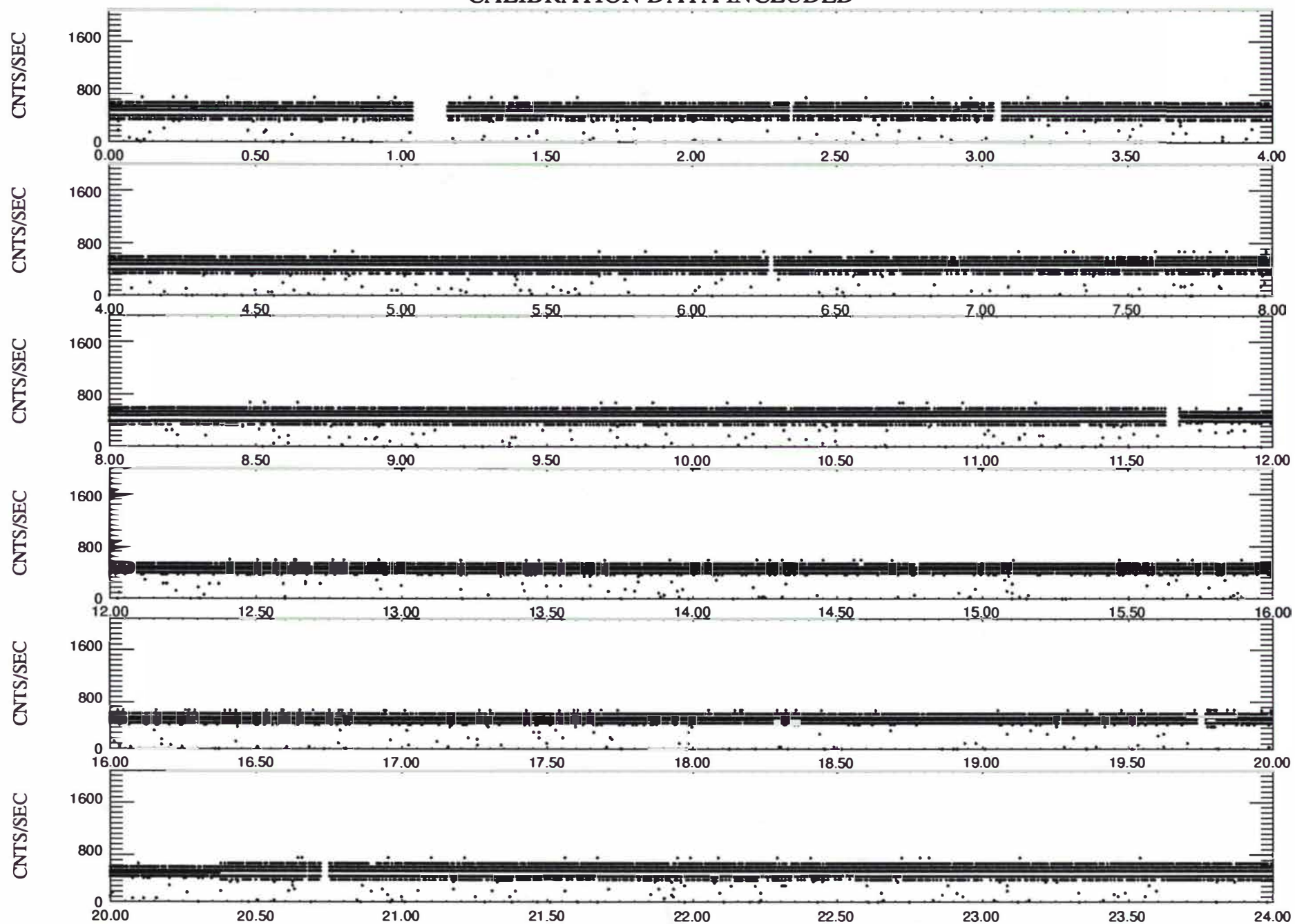
LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

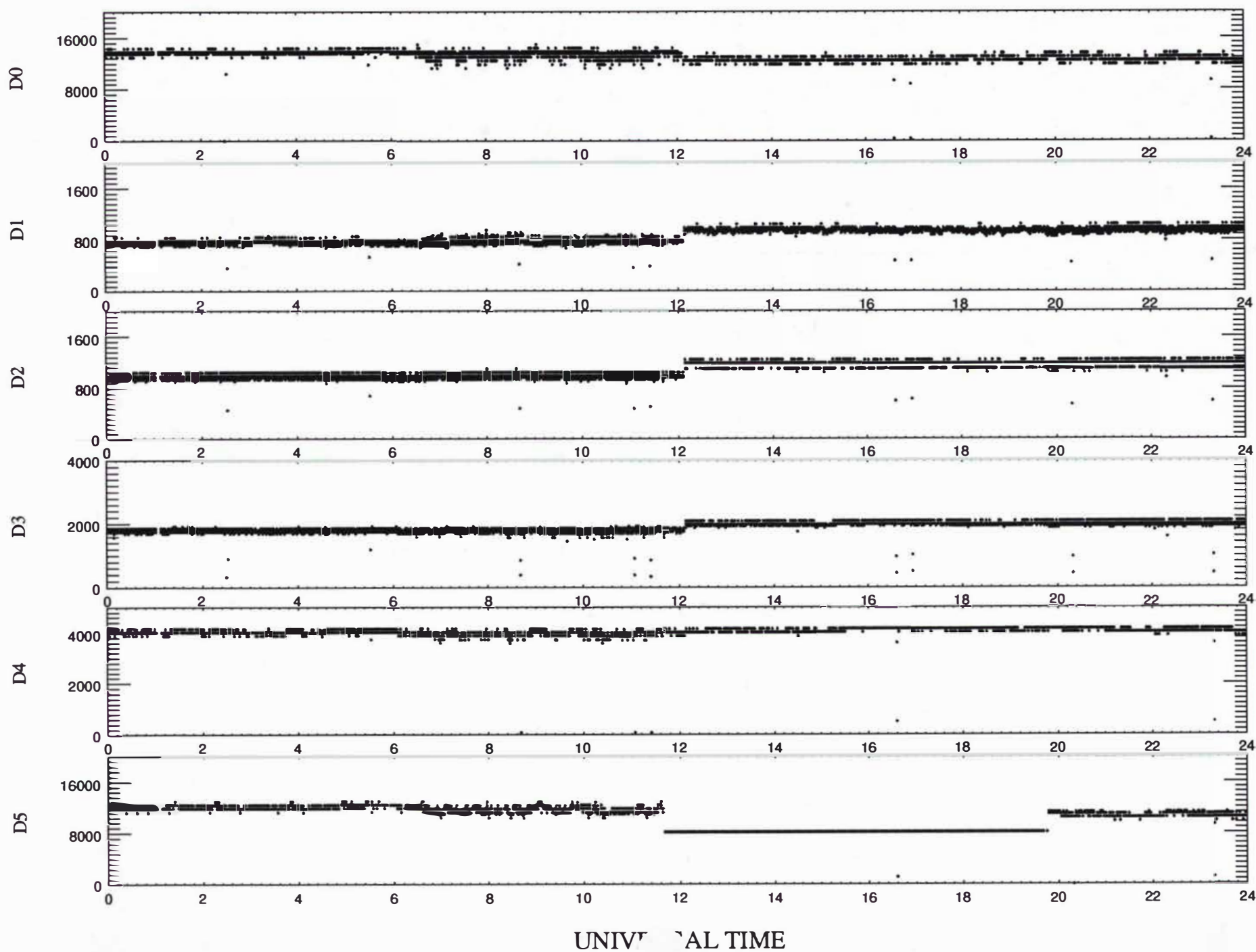
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV. TIME



SAX 19990312 17539

ULYSSES RT

19/08/09

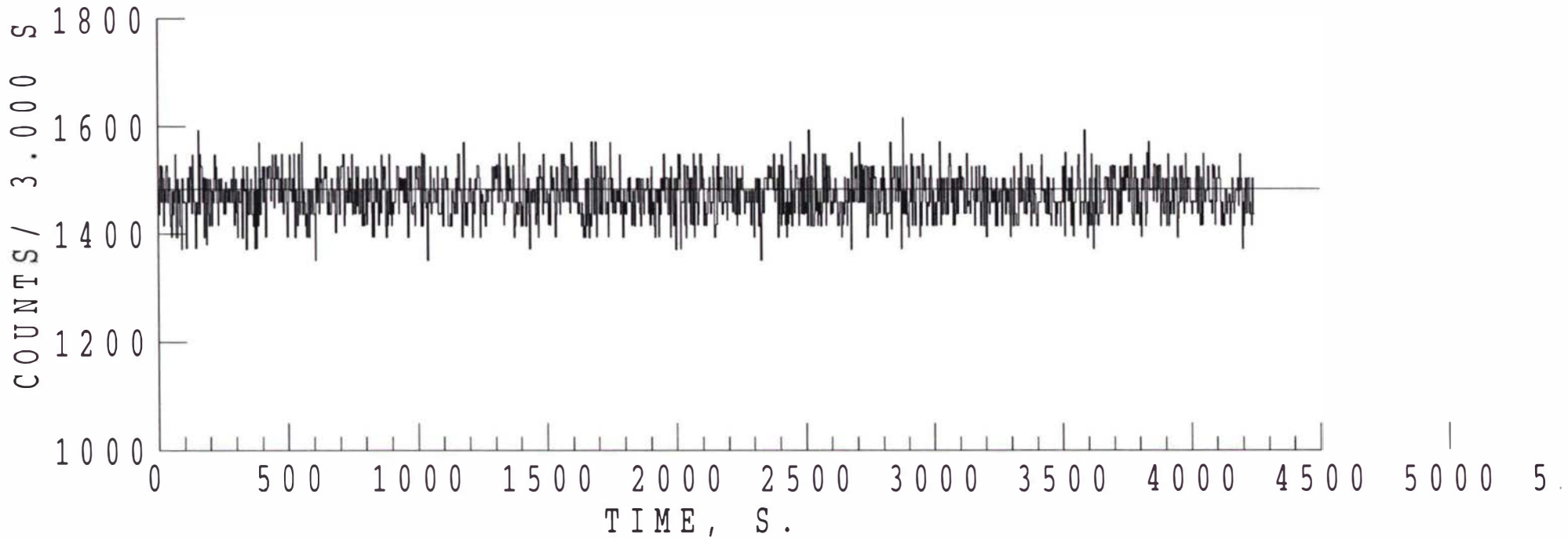
12/03/99 15408.363 s

0.500 S INTERVALS REGROUPED BY 6

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SURASAK@SSLMOR.msfc.nasa.gov Sun Mar 15 13:33:53 1998
Return-Path: <SURASAK@SSLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA12770; Sun, 15 Mar 1998 13:33:52 -0800
Received: from SSLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA01555; Sun, 15 Mar 1998 13:33:51 -0800
Date: Sun, 15 Mar 1998 15:33:52 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980315153352.21e2b2d4@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6638
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6638
EVENT OF 1998 MAR 12 DAY OF YEAR= 71
EVENT CROSSING TIME AT BATSE : 82172. S. OR 22:49:32.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 143.000 -48.000
BATSE PEAK COUNTING RATE: 8300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 12/ 3/ 98 IS:
RA= 156.654 DEC= 13.304 DIST= 4.456 AU
BATSE-ULYSSES DISTANCE = 666609874. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.50 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1026.74 SECS.
CROSSING TIME AT ULYSSES IS 81145. S. OR 22:32:25 +/- 376.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 12/ 3/ 98 IS:
RA= 5.445 DEC= 1.684 DIST= 2.349 AU
MARS-BATSE DISTANCE = 351440832. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.98 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 604.20 SECS.
CROSSING TIME AT MARS IS 82776. S. OR 22:59:36 +/- 183.59 SECONDS

BATSE BURST TRIGGER

NO.: 6638

TIME: TJD=0884 SECONDS=82172

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=102.9 AZIMUTH=120.7 ERROR=2.206 DEGREES

COMMENTS:

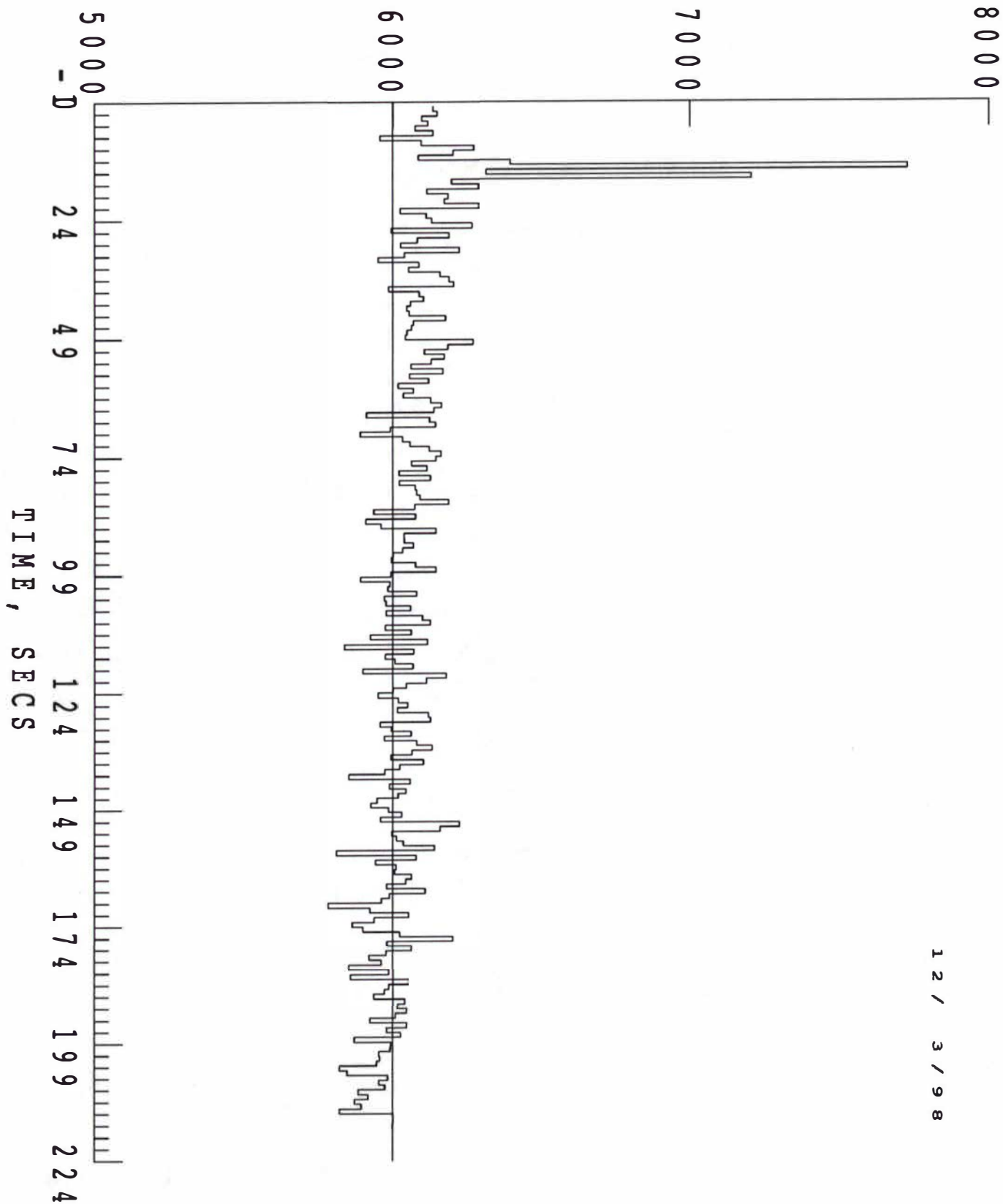
GRB. DOUBLE PULSE. FIRST PULSE STARTS AT ABOUT T-0.5 SEC. DURATION ABOUT 1.5 SEC
SECOND PULSE STARTS AT ABOUT T+2.3 SEC. DURATION ABOUT 1 SEC. FIRST PULSE IS
STRONGER THAN THE SECOND ONE. TOTAL DURATION ABOUT 3.8 SEC. ONLY THE FIRST
PULSE IS VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6638	980312	10884	82172	8300	143	-48	3.8

BACODINE 6638 12/03/98 82160.353

25 - 100 keV

COUNTS/1.024 S



12 / 3 / 98

BATSE BURST# 6638

ULYSSES RT

15 / 3 / 98

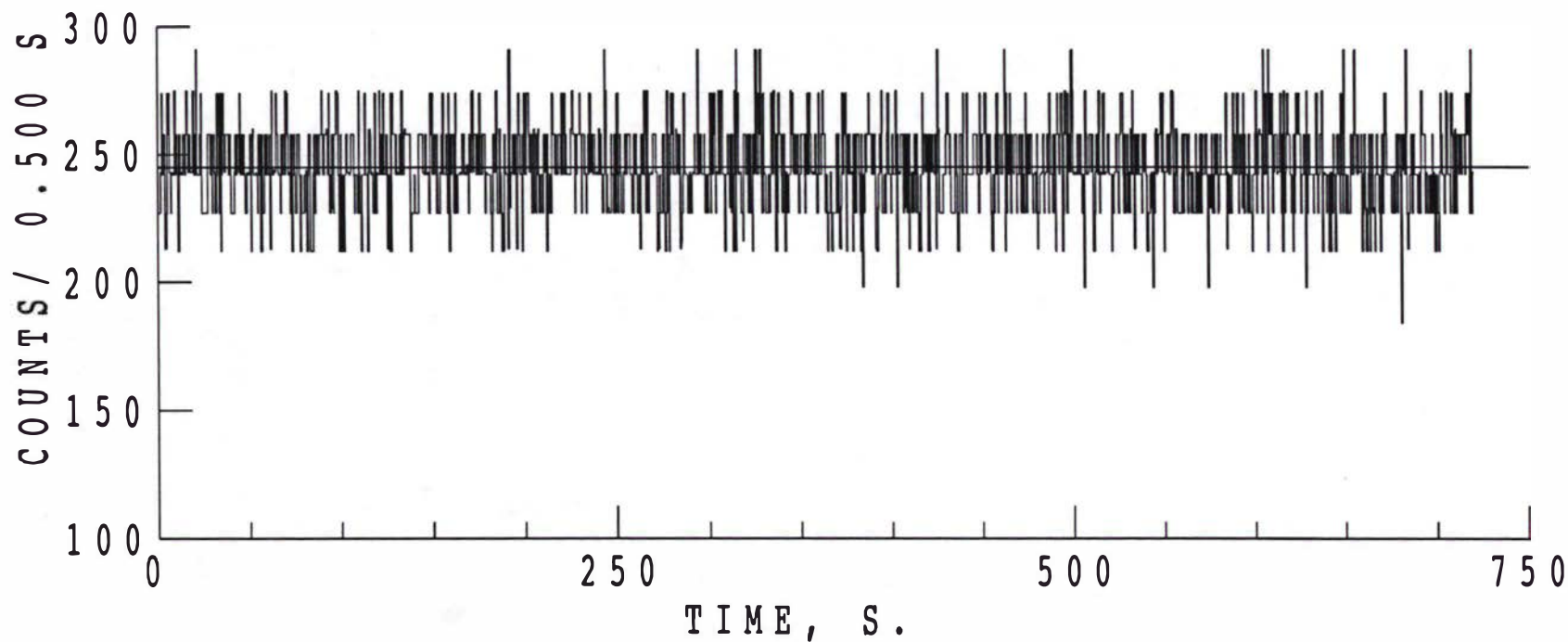
12 / 3 / 98 80784.062 s

0.250 S INTERVALS REGROUPED BY 2

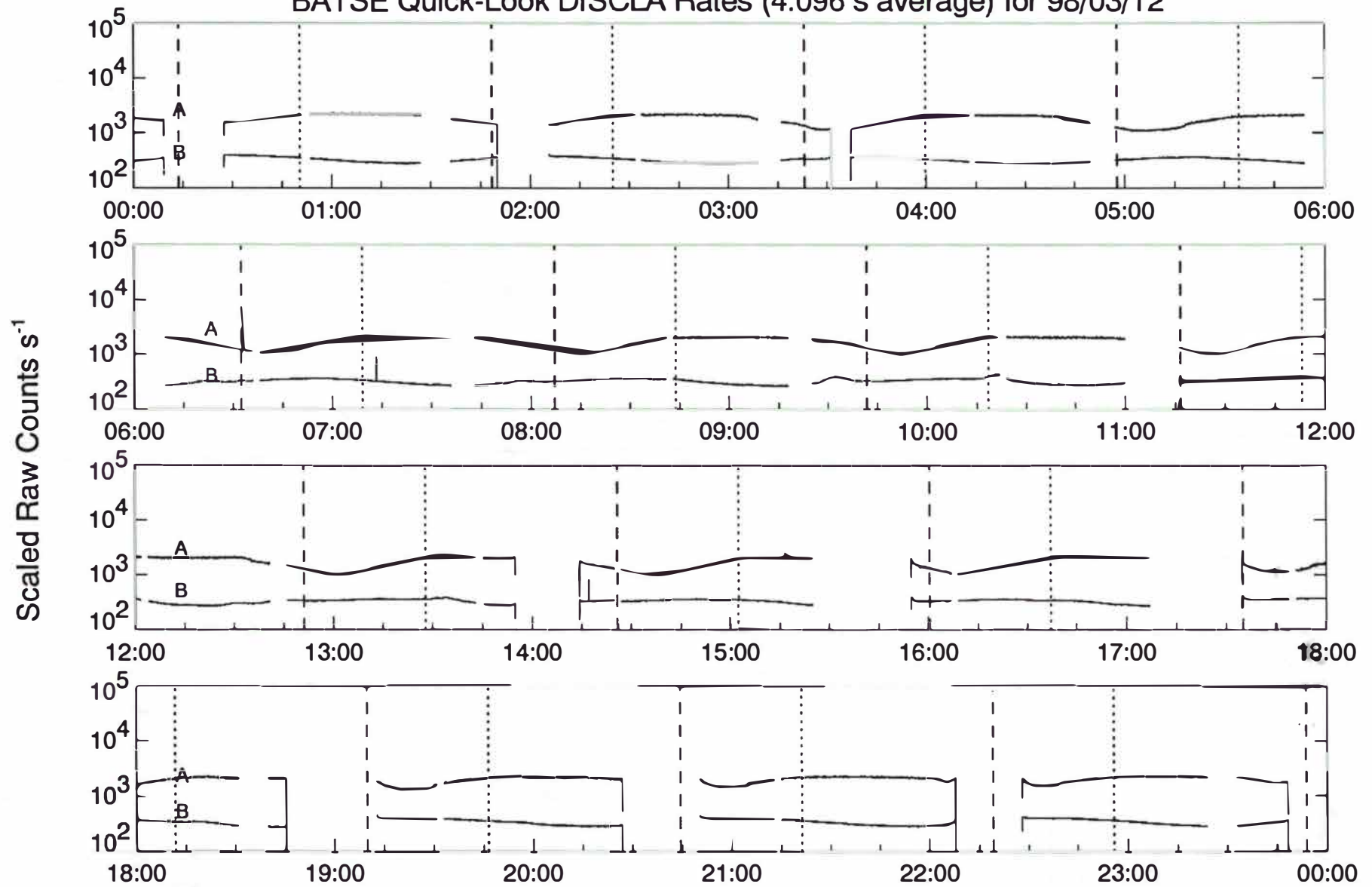
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



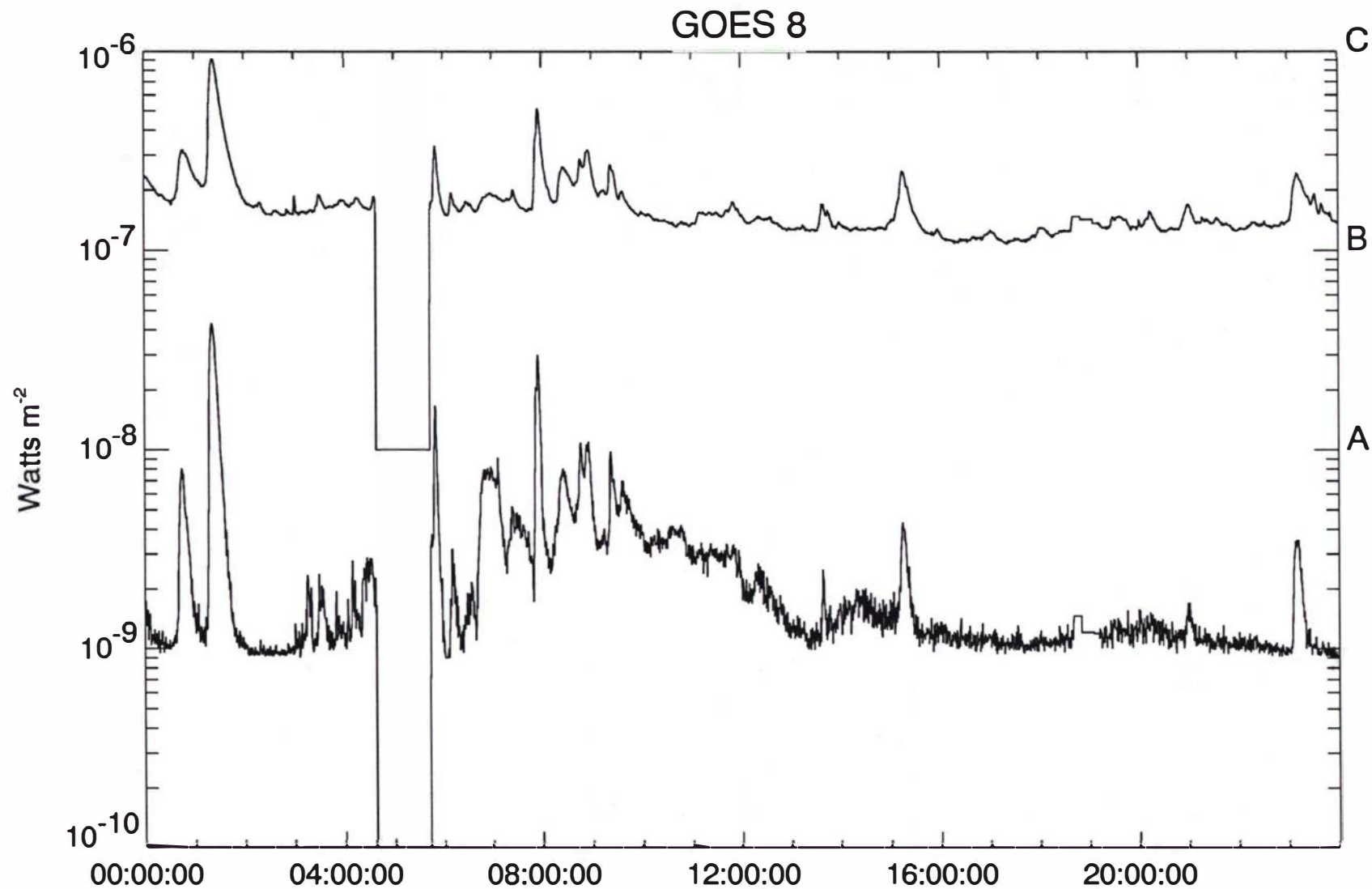
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/12



Current Time: 98/03/16, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/12, 0000:00

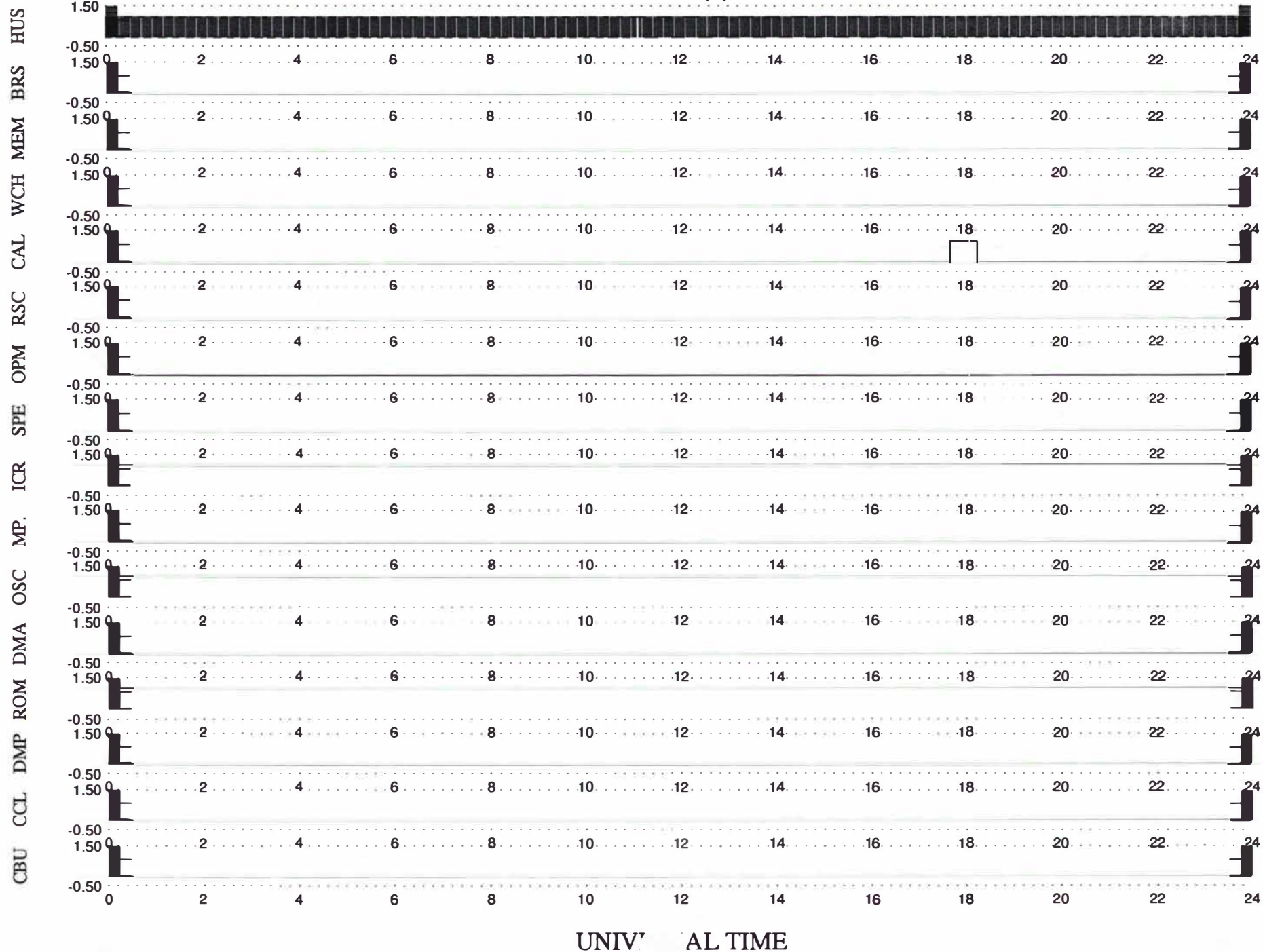
Plot created: 98/03/16, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

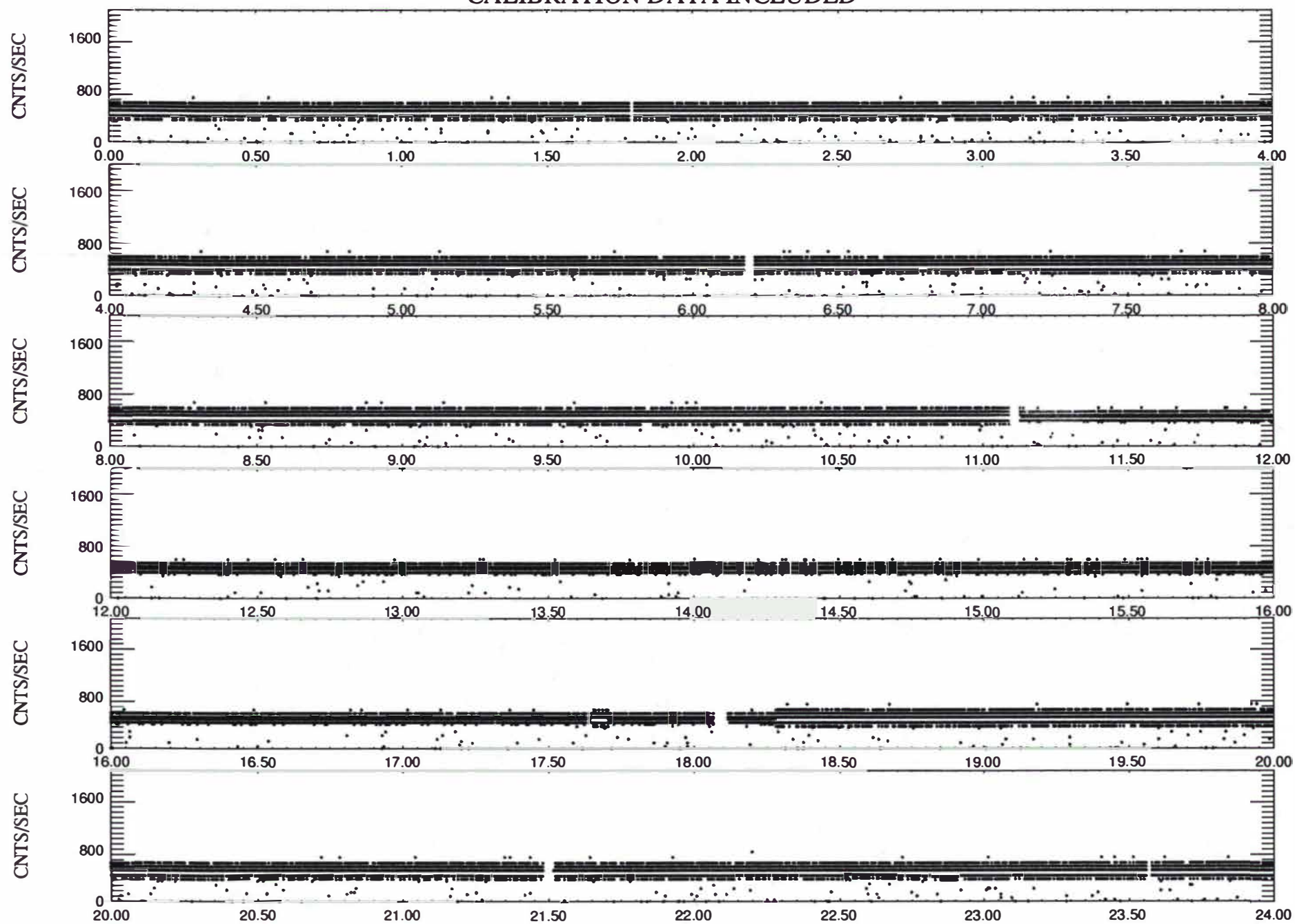
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

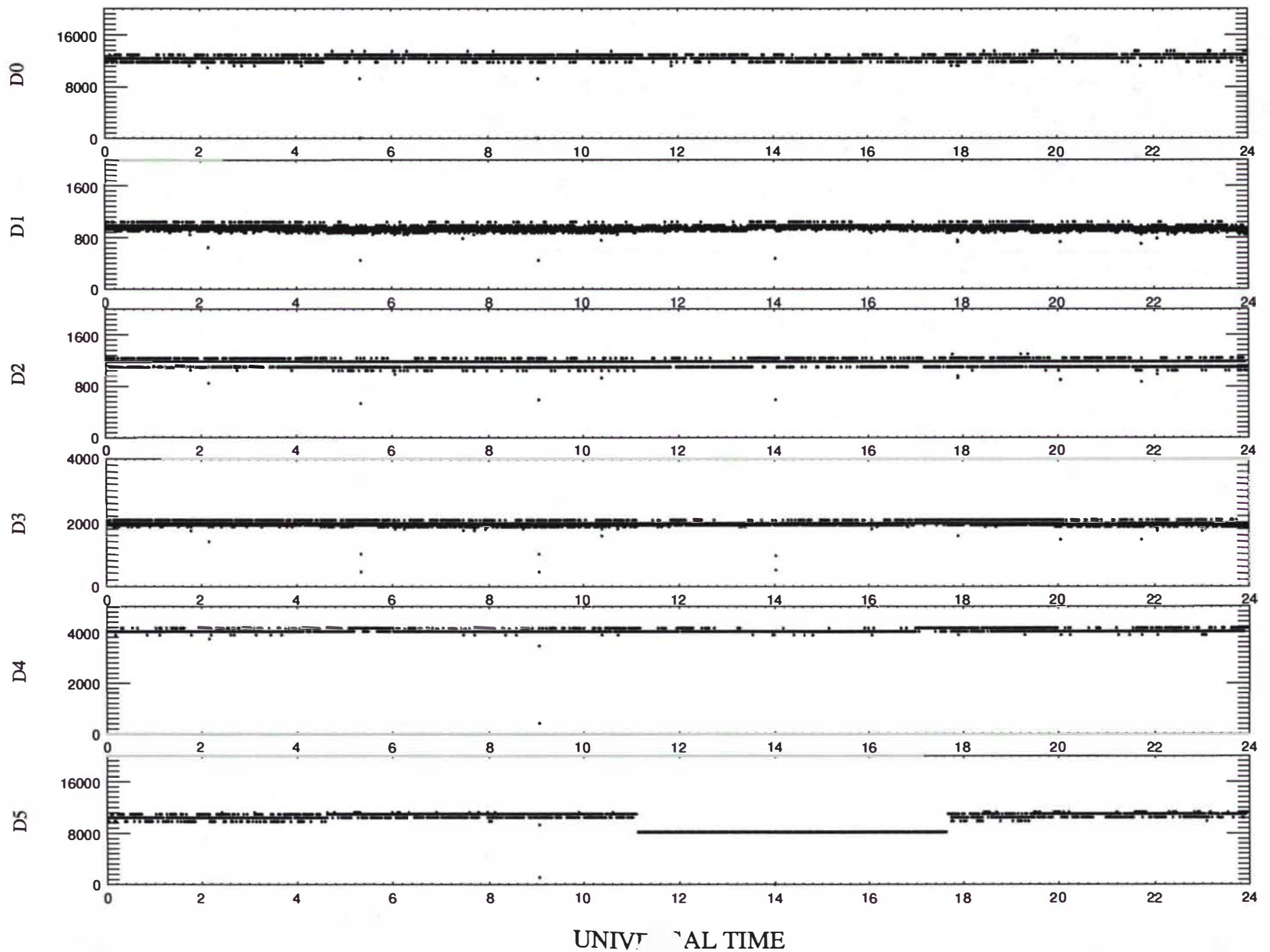
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIV. TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Mar 16 12:32:20 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA20684; Mon, 16 Mar 1998 12:32:19 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA06334; Mon, 16 Mar 1998 12:32:18 -0800
Date: Mon, 16 Mar 1998 14:32:19 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980316143219.2420b46a@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6639
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6639
EVENT OF 1998 MAR 13 DAY OF YEAR= 72
EVENT CROSSING TIME AT BATSE : 4274. S. OR 01:11:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 286.000 -38.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 3/ 98 IS:
RA= 156.633 DEC= 13.306 DIST= 4.456 AU
BATSE-ULYSSES DISTANCE = 666689911. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 51.09 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1396.79 SECS.
CROSSING TIME AT ULYSSES IS 5671. S. OR 01:34:30 +/- 371.65 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 3/ 98 IS:
RA= 6.149 DEC= 1.999 DIST= 2.352 AU
MARS-BATSE DISTANCE = 351853440. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 96.50 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -132.94 SECS.
CROSSING TIME AT MARS IS 4141. S. OR 01:09:01 +/- 200.44 SECONDS

BATSE BURST TRIGGER

NO.: 6639

TIME: TJD=0885 SECONDS=4274

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=58.5 AZIMUTH=41.6 ERROR=7.0 DEGREES

COMMENTS:

GRB. WEAK SINGLE SPIKE. DUR. APPROX. = 0.3 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6639	980313	10885	04274	6000	286	-38	.3

BATSE BURST# 6639

ULYSSES RT

16 / 3 / 98

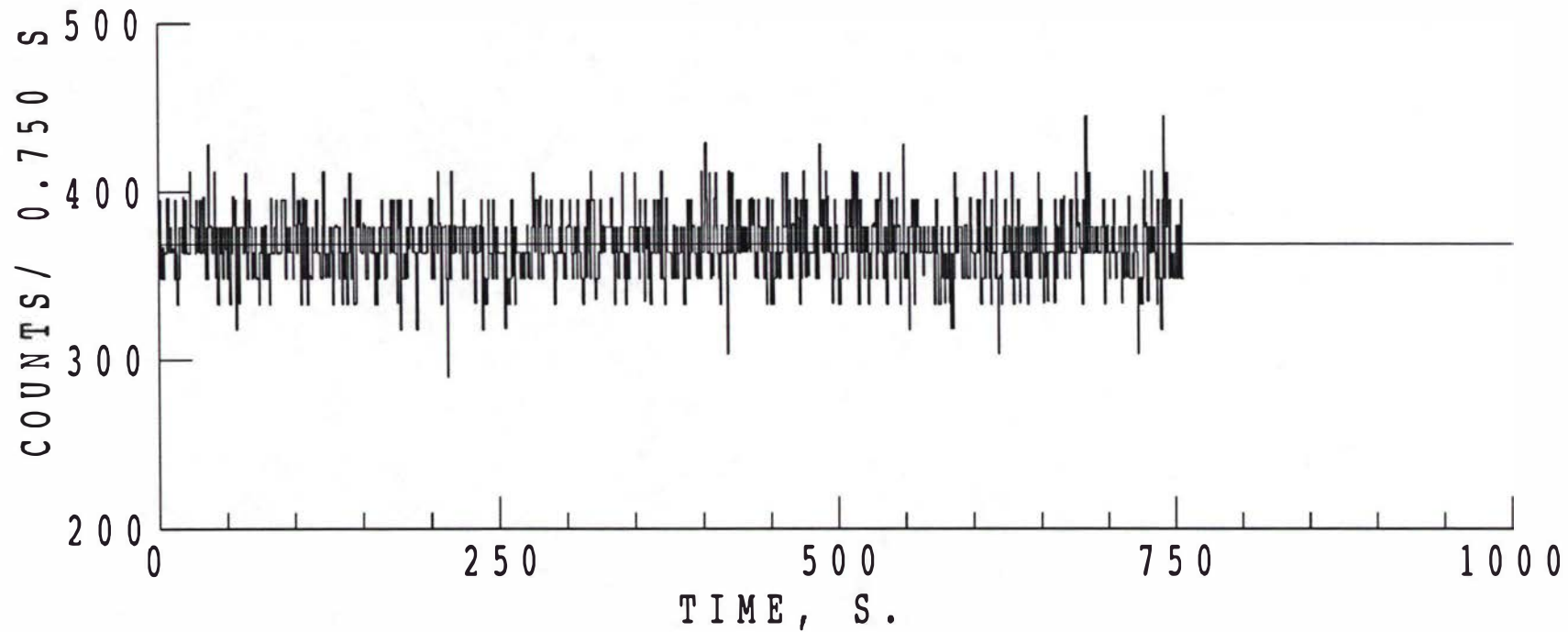
13 / 3 / 98 5292.187 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From RICHARDSON@fender.msfc.nasa.gov Mon Mar 16 12:36:57 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA20799; Mon, 16 Mar 1998 12:36:53 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA06373; Mon, 16 Mar 1998 12:36:49 -0800
Date: Mon, 16 Mar 1998 14:35:17 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980316143517.2420b46a@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6640
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6640
EVENT OF 1998 MAR 13 DAY OF YEAR= 72
EVENT CROSSING TIME AT BATSE : 32662. S. OR 09:04:22.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 32.000 42.000
BATSE PEAK COUNTING RATE: 46000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 13/ 3/ 98 IS:
RA= 156.563 DEC= 13.310 DIST= 4.458 AU
BATSE-ULYSSES DISTANCE = 666967760. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 75.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 570.03 SECS.
CROSSING TIME AT ULYSSES IS 33232. S. OR 09:13:52 +/- 432.02 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 13/ 3/ 98 IS:
RA= 6.149 DEC= 1.999 DIST= 2.352 AU
MARS-BATSE DISTANCE = 351853440. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=133.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -811.82 SECS.
CROSSING TIME AT MARS IS 31850. S. OR 08:50:50 +/- 134.83 SECONDS

BATSE BURST TRIGGER

NO.: 6640

TIME: TJD=0885 SECONDS=32662

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=74.9 AZIMUTH=251.9 ERROR=3.2 DEGREES

COMMENTS:

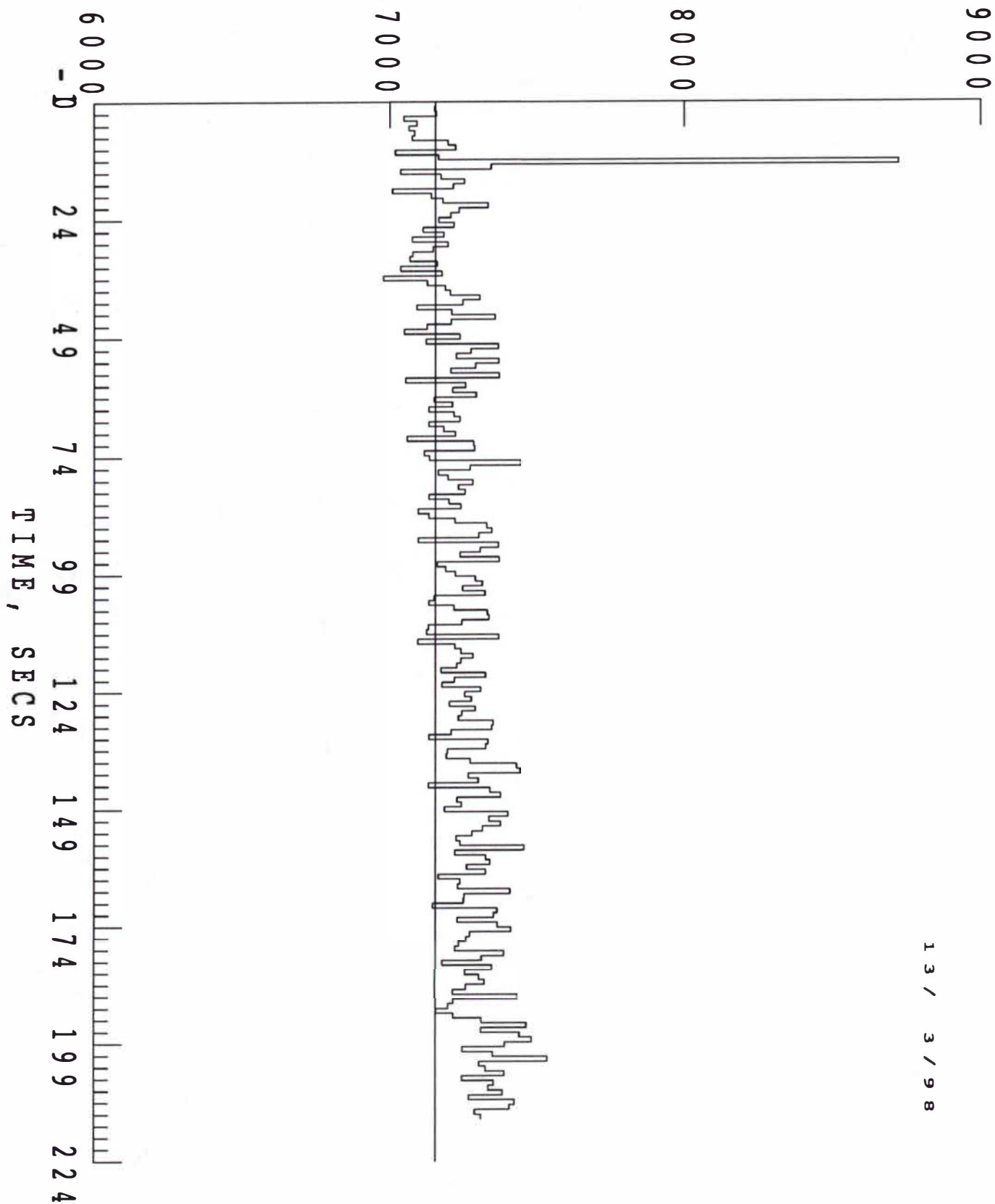
GRB. SINGLE SPIKE. DUR. APPROX. = 0.3 SEC. VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6640	980313	10885	32662	46000	032	+42	.3

BACODINE 6640 13/03/98 32650.977

25- 100 keV

COUNTS/1.024 S



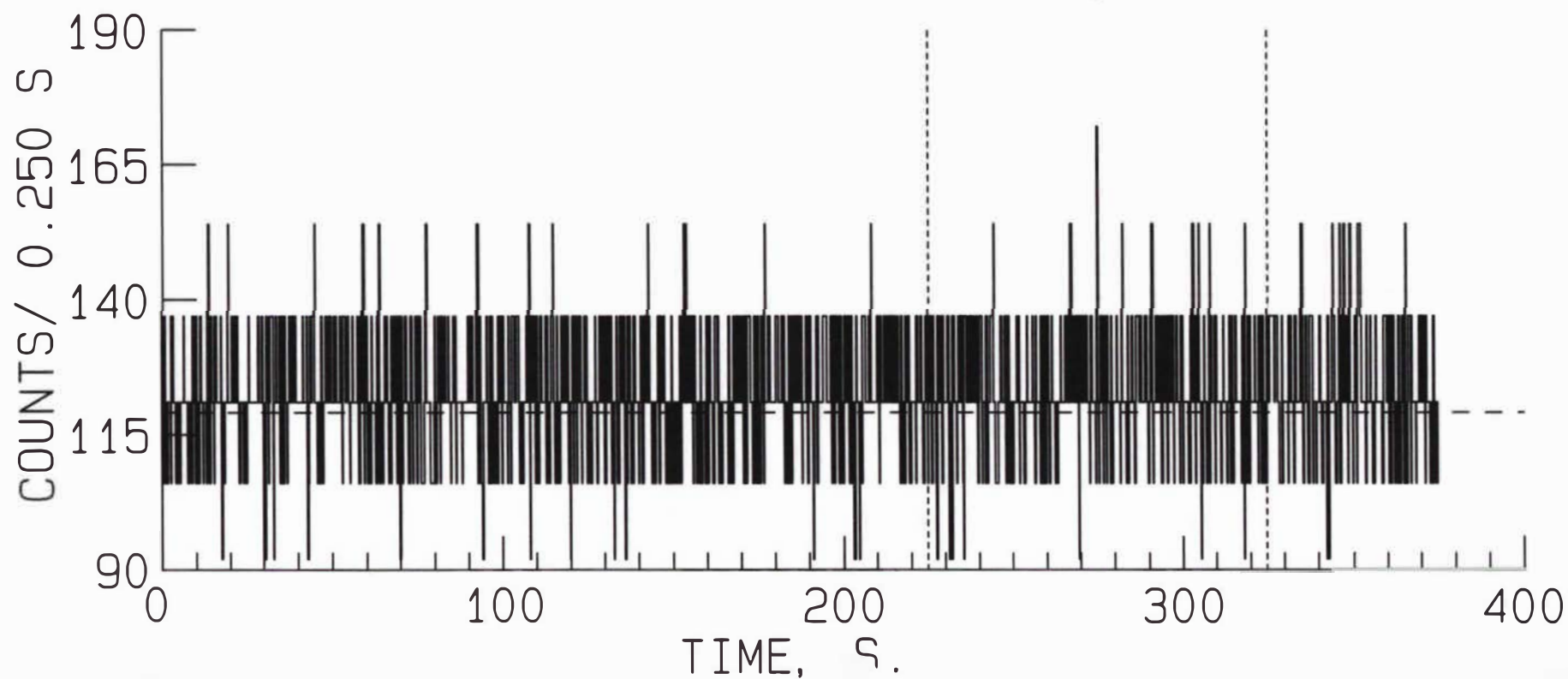
ULYSSES RT

24 / 7 / 98

13 / 3 / 98 32796.234 s

22- 148 keV

N= 10 M= 1
>3.5 SIGMA FLUCTUATIONS

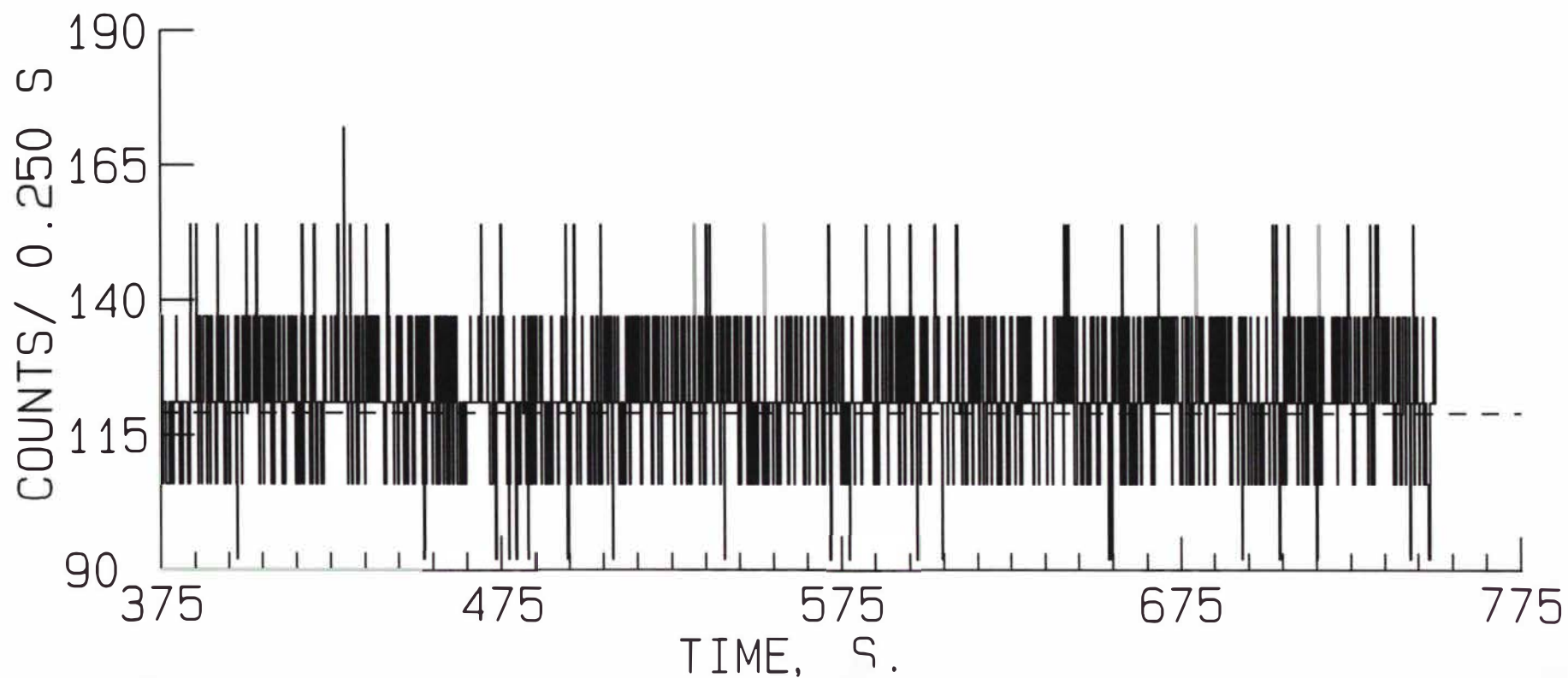


ULYSSES RT

24 / 7 / 98

13 / 3 / 98 32796.234 s

22 - 148 keV

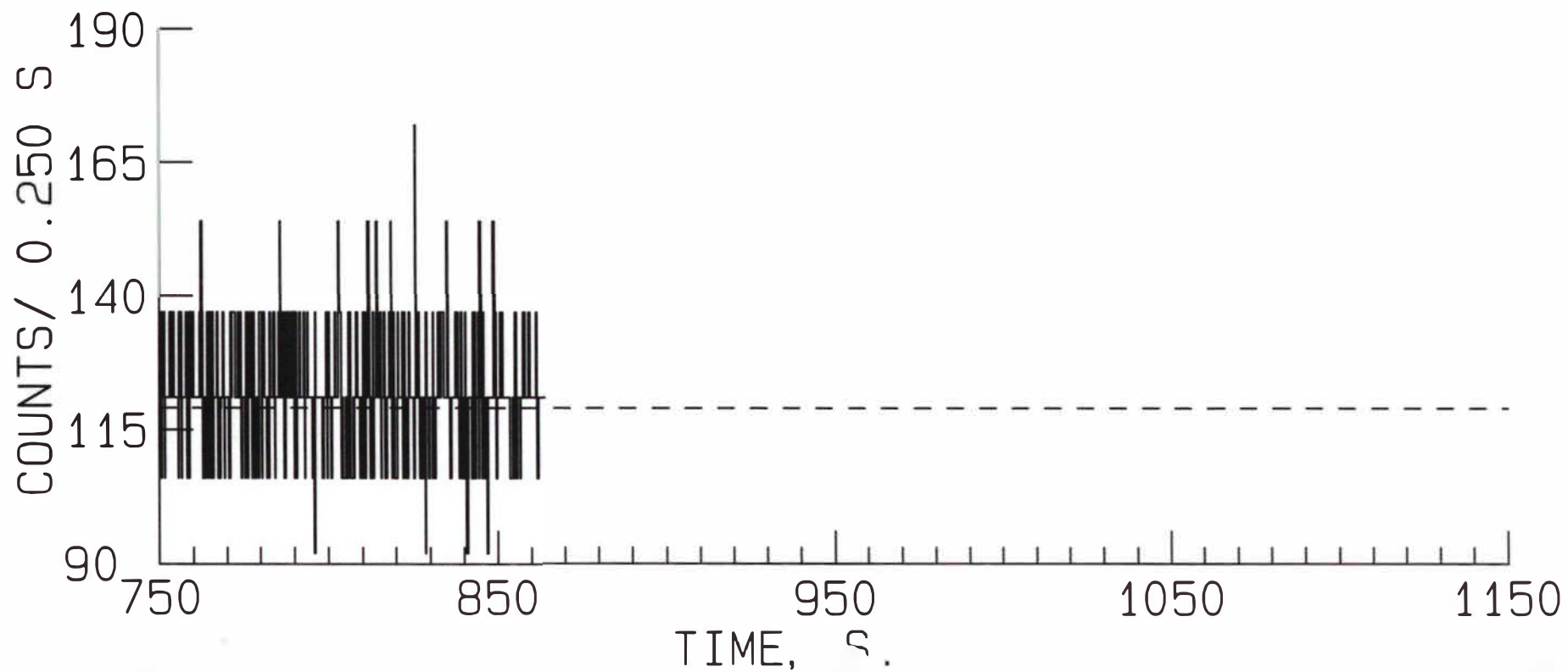


ULYSSES RT

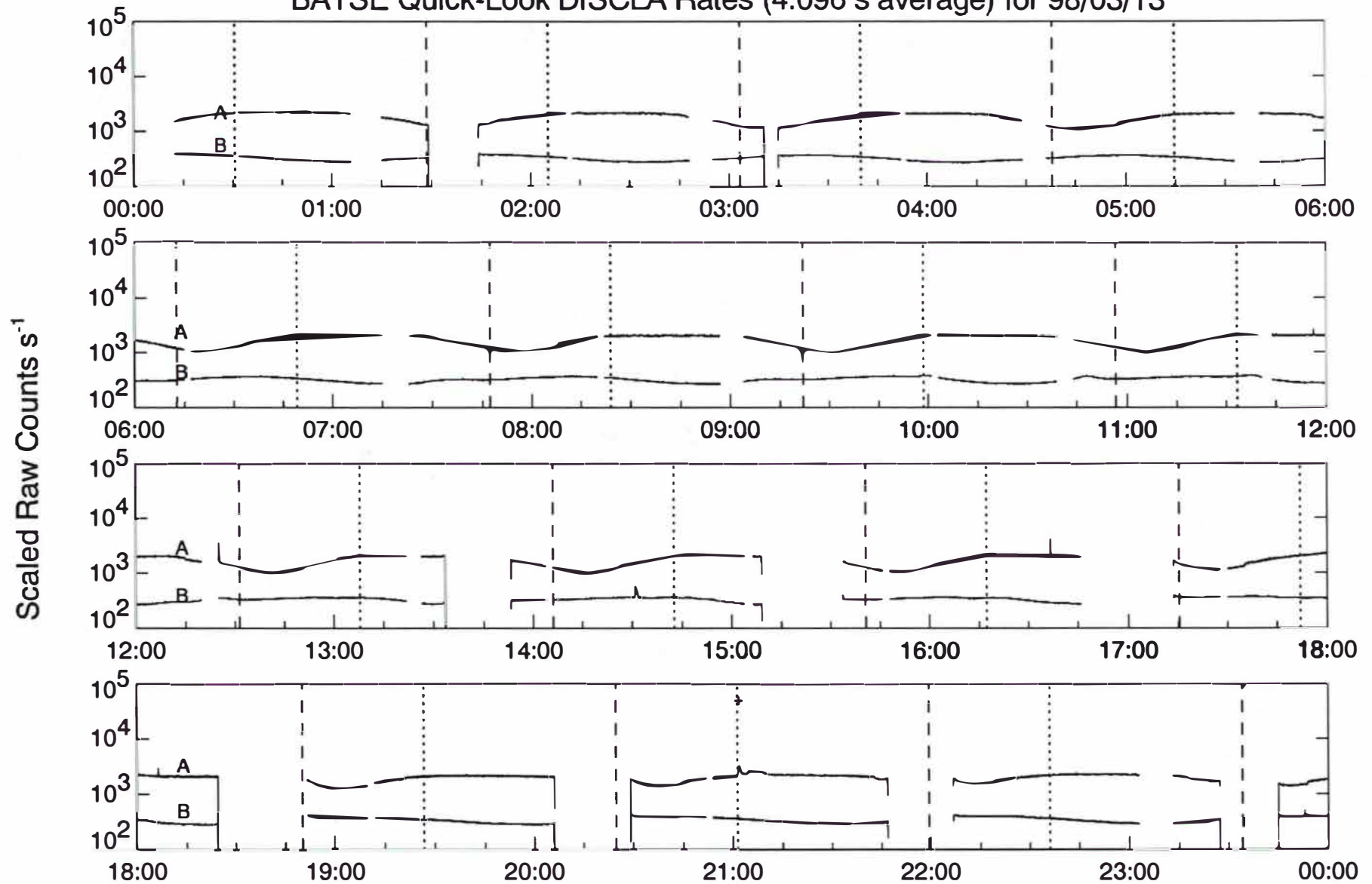
24 / 7 / 98

13 / 3 / 98 32796.234 s

22 - 148 keV



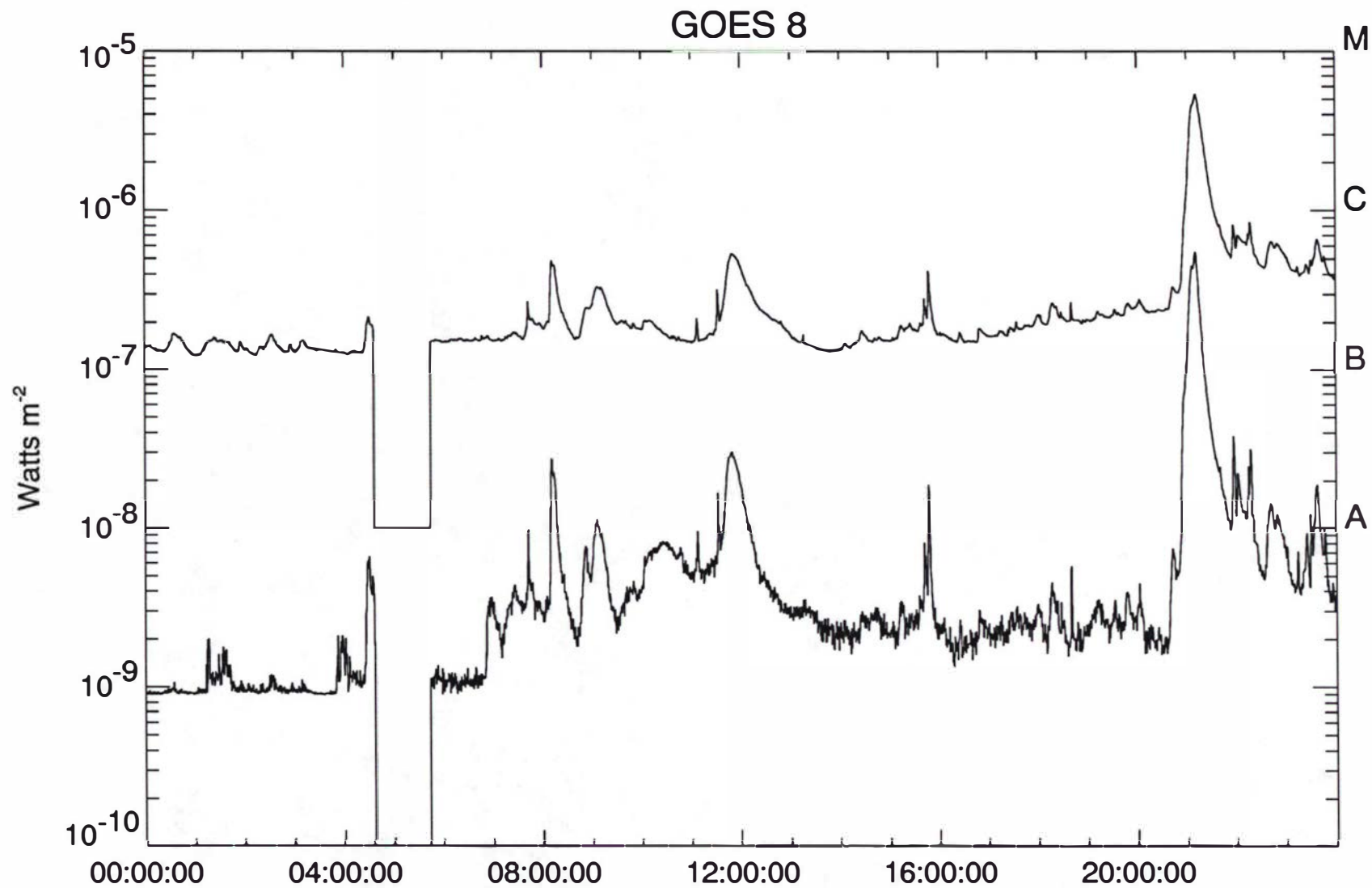
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/13



Current Time: 98/03/17, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare



Data Start: 98/03/13, 0000:00

Plot created: 98/03/17, 1007

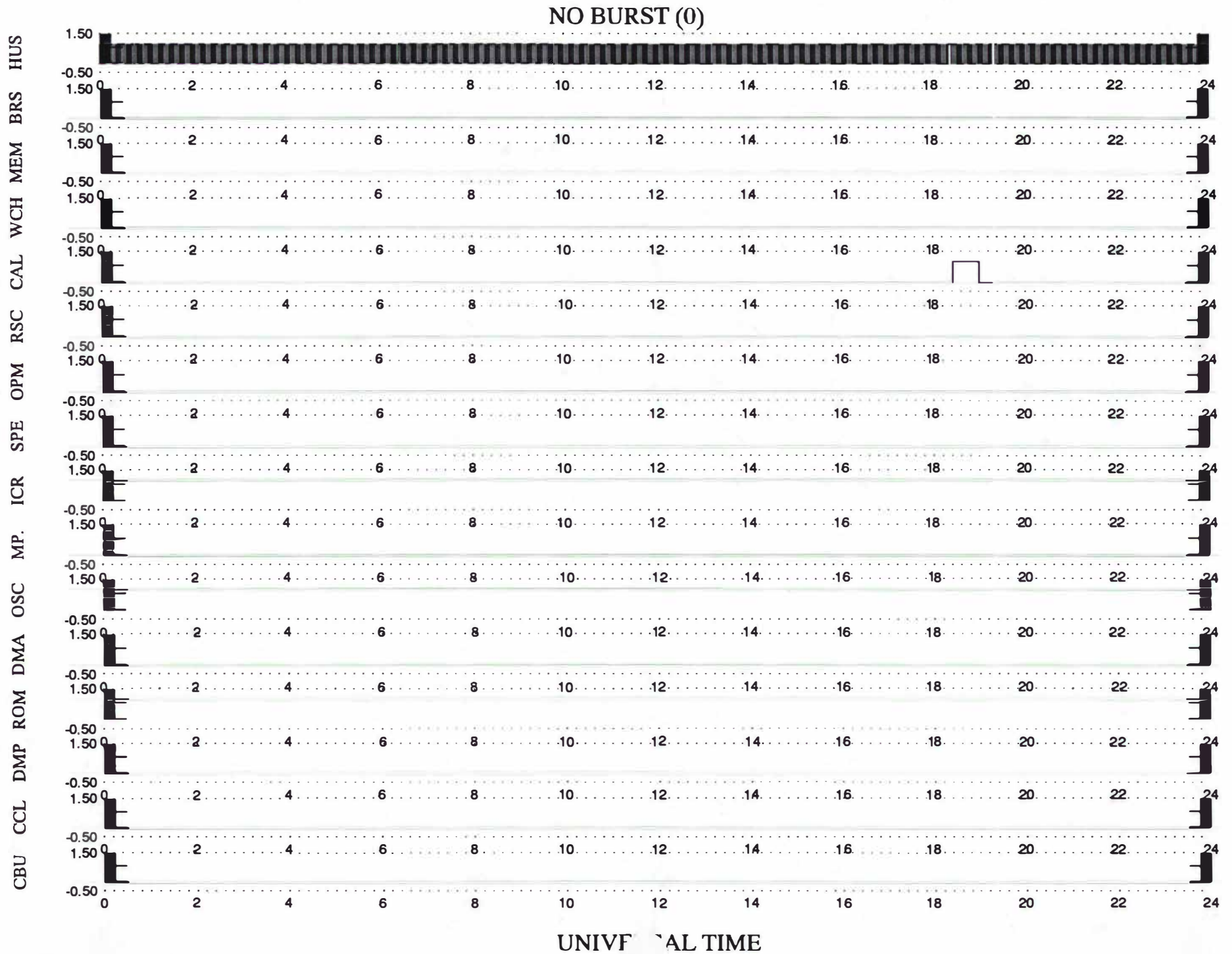
Channel 1 (1.0 - 8.0 Angstroms)

Background not subtracted

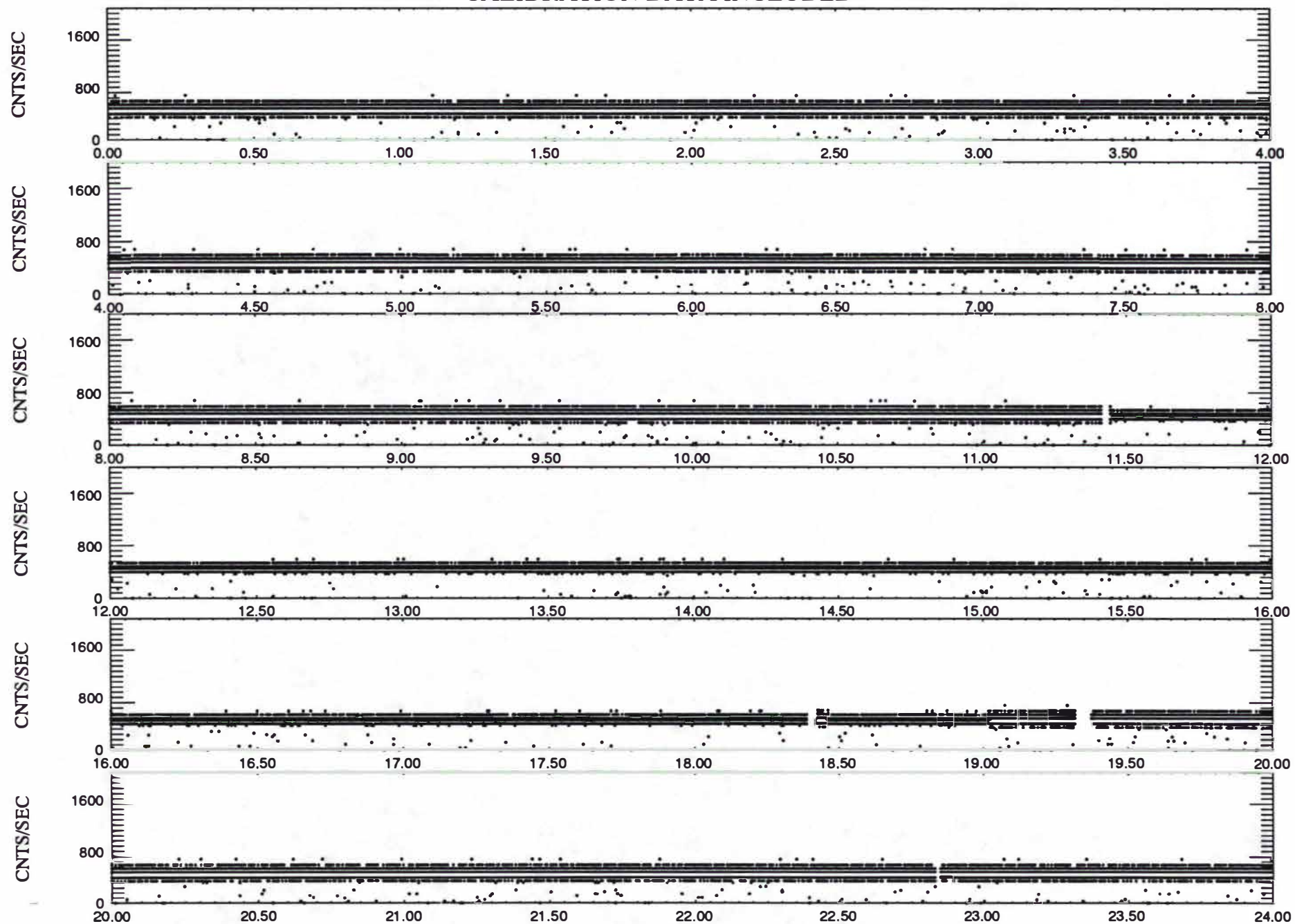
Channel 2 (0.5 - 4.0 Angstroms)

Background not subtracted

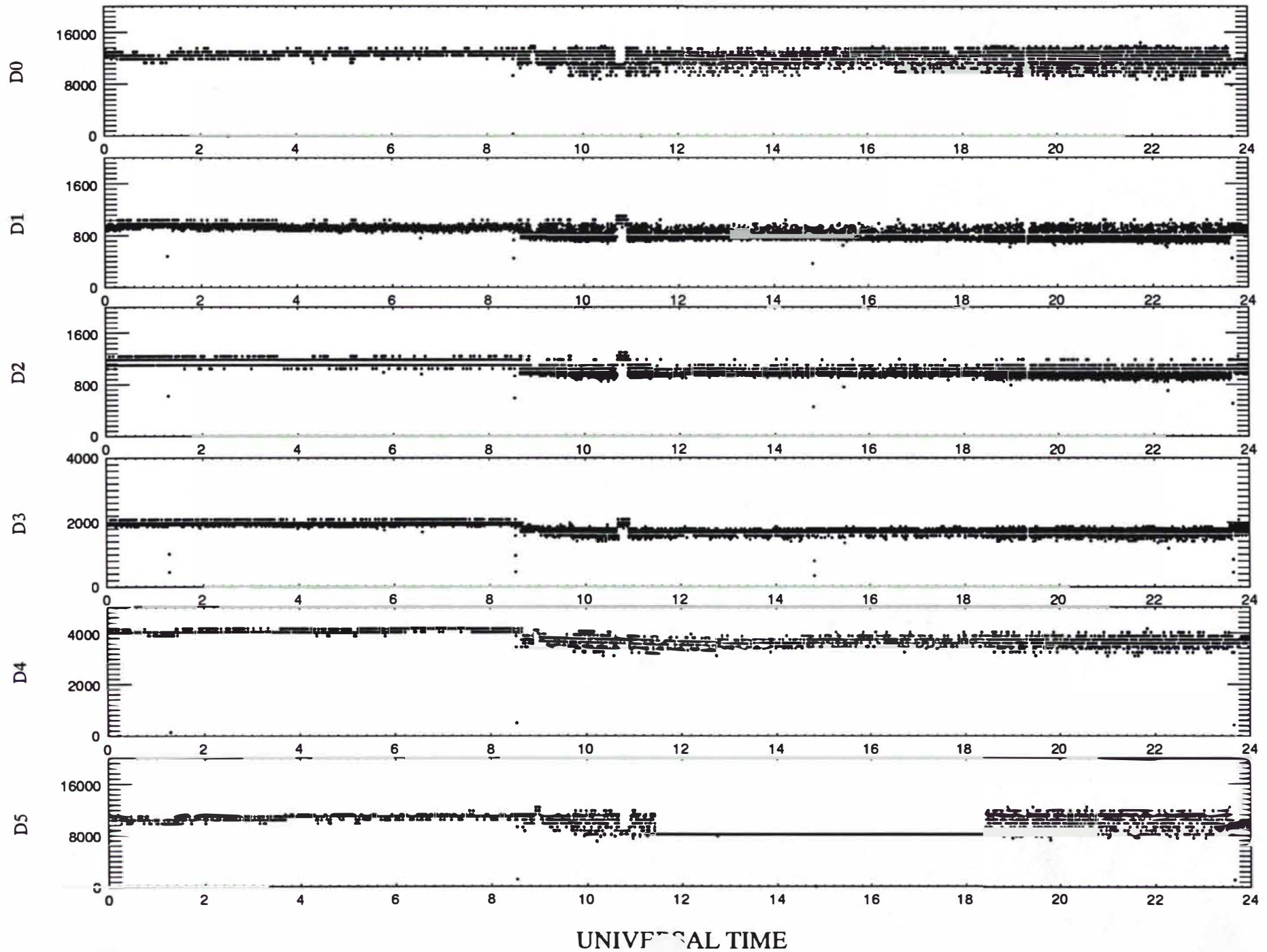
Sample average = 10



CALIBRATION DATA INCLUDED



UNIFORM TIME



Date: Mar 6 2012

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

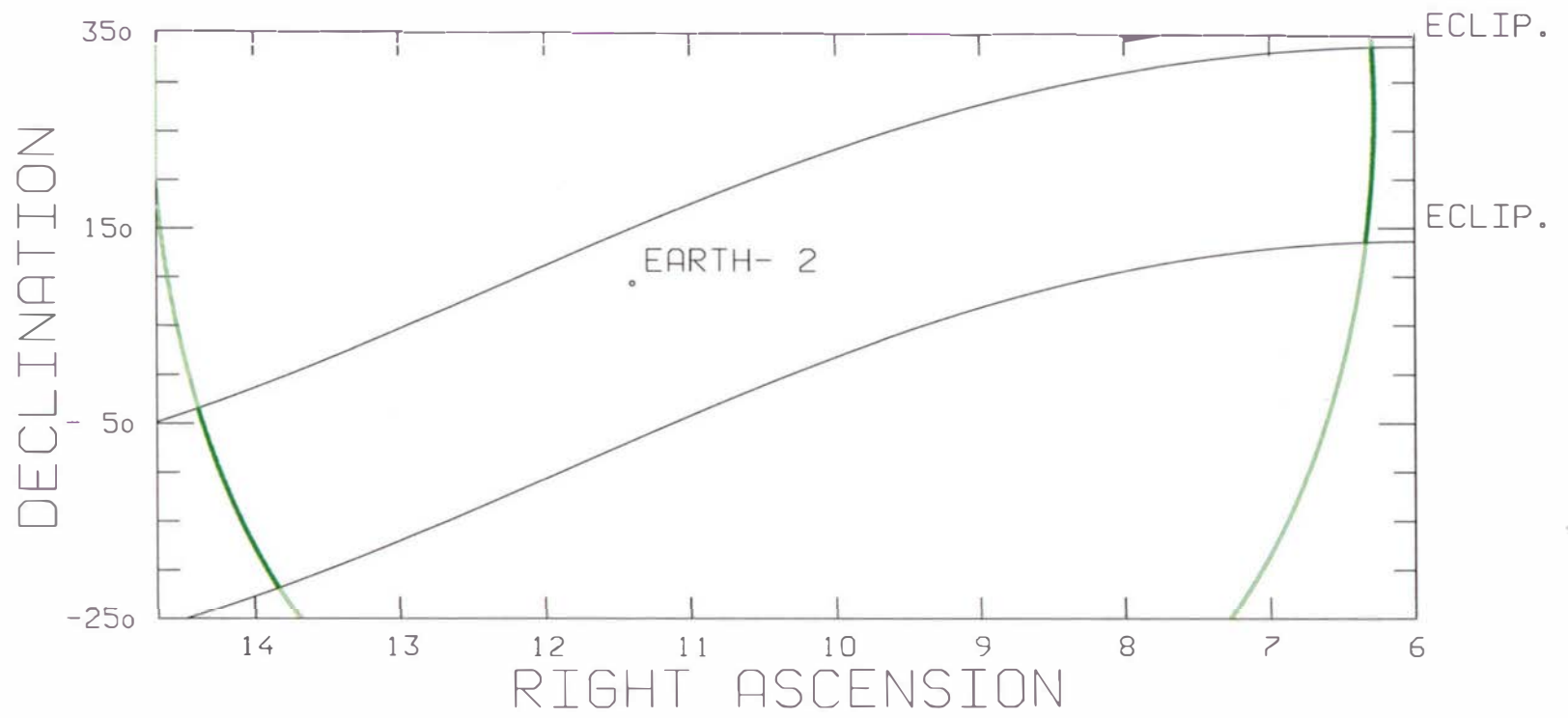
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

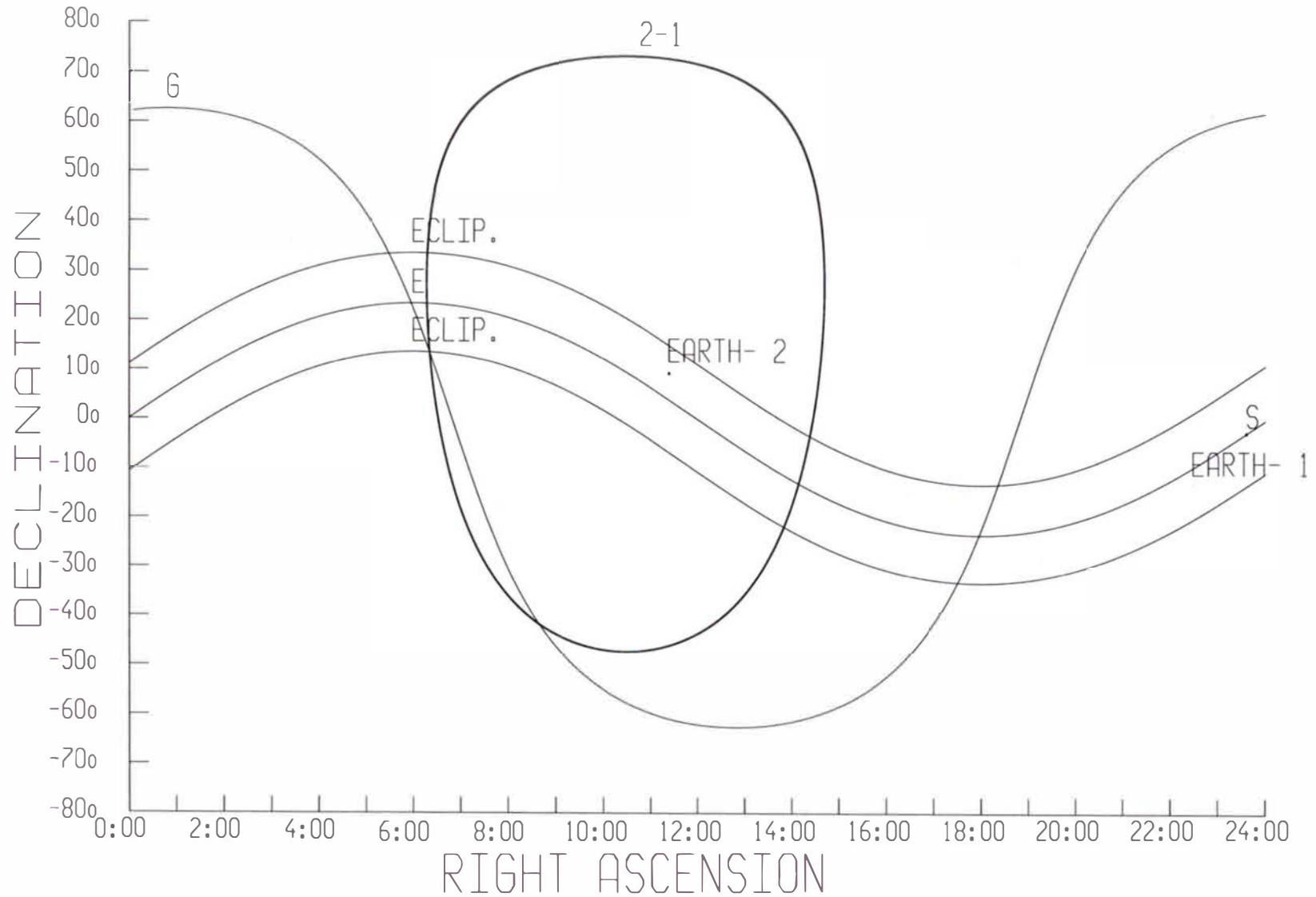
-
- ☒ ACCESS and MBL4 databases updated with identical times?

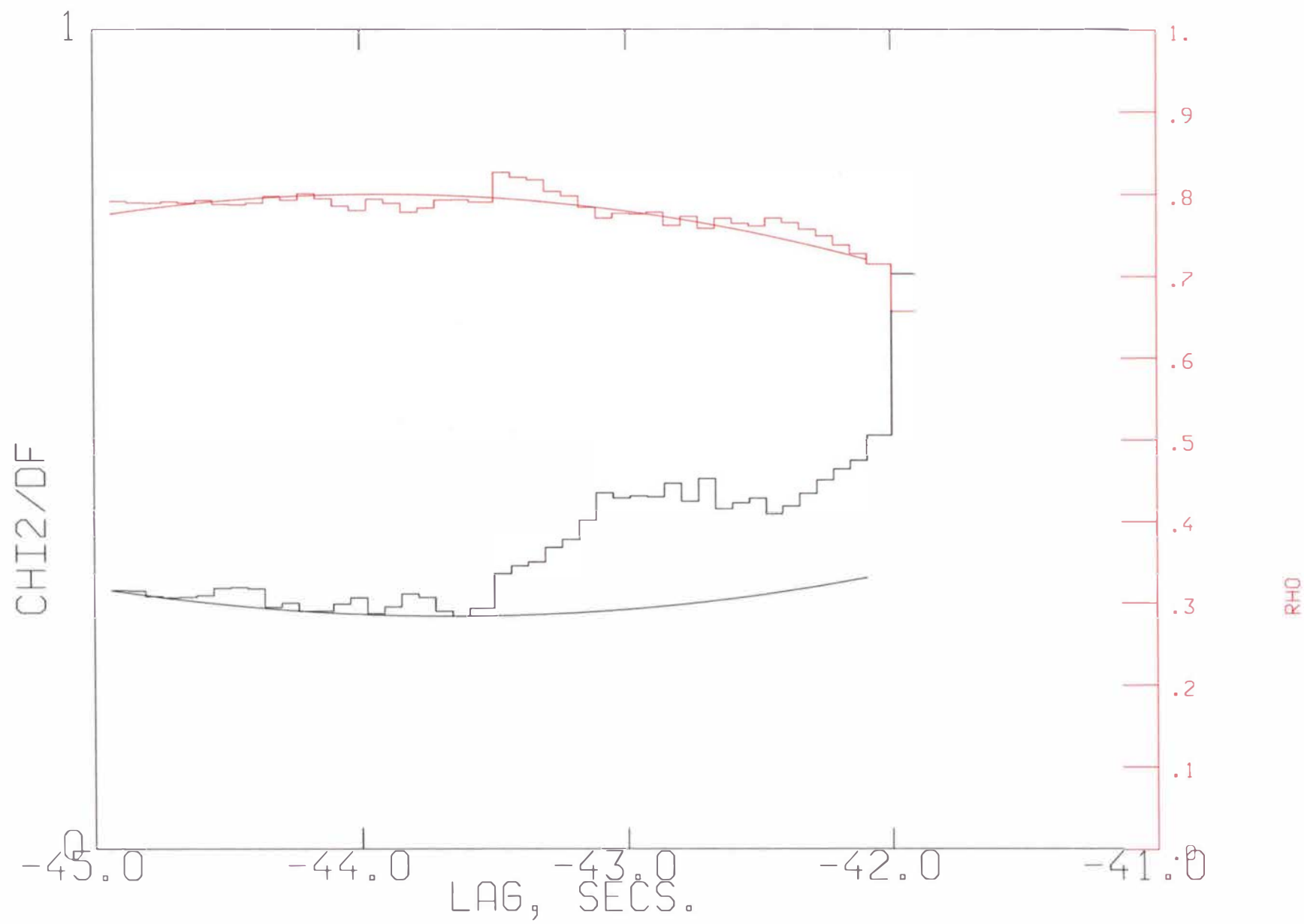


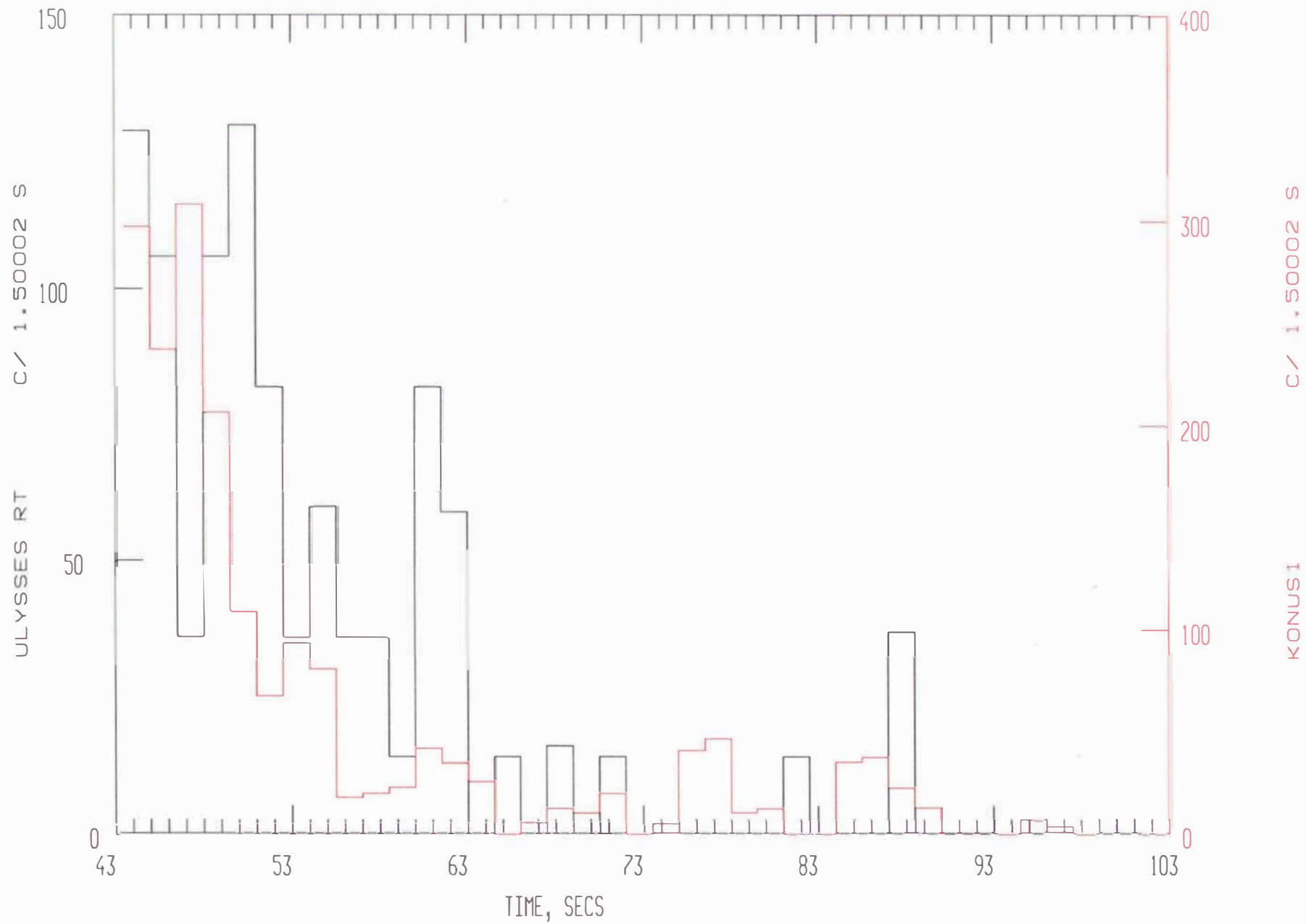
EVENT OF MAR 14, 1998 8:08

06/03/2012

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







KONUS 19980314 29338

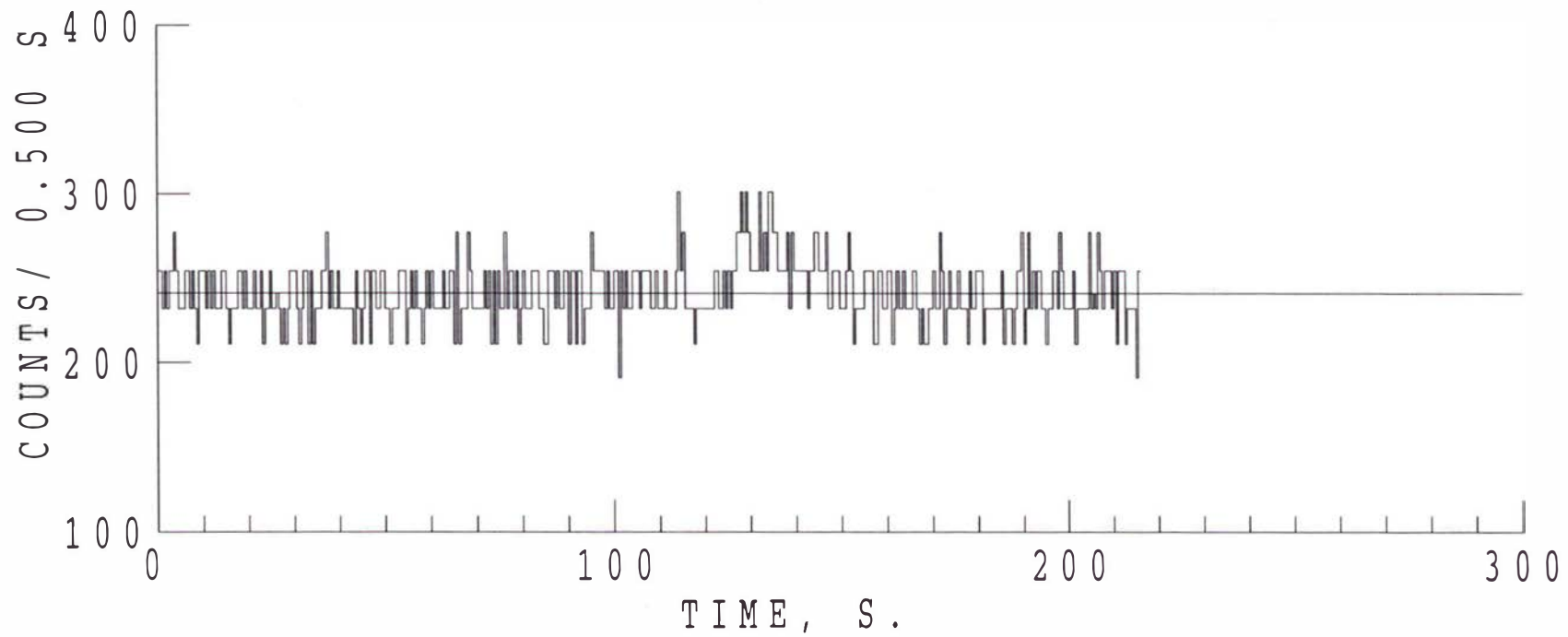
ULYSSES RT

01 / 02 / 12

14 / 03 / 98 29232.373 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

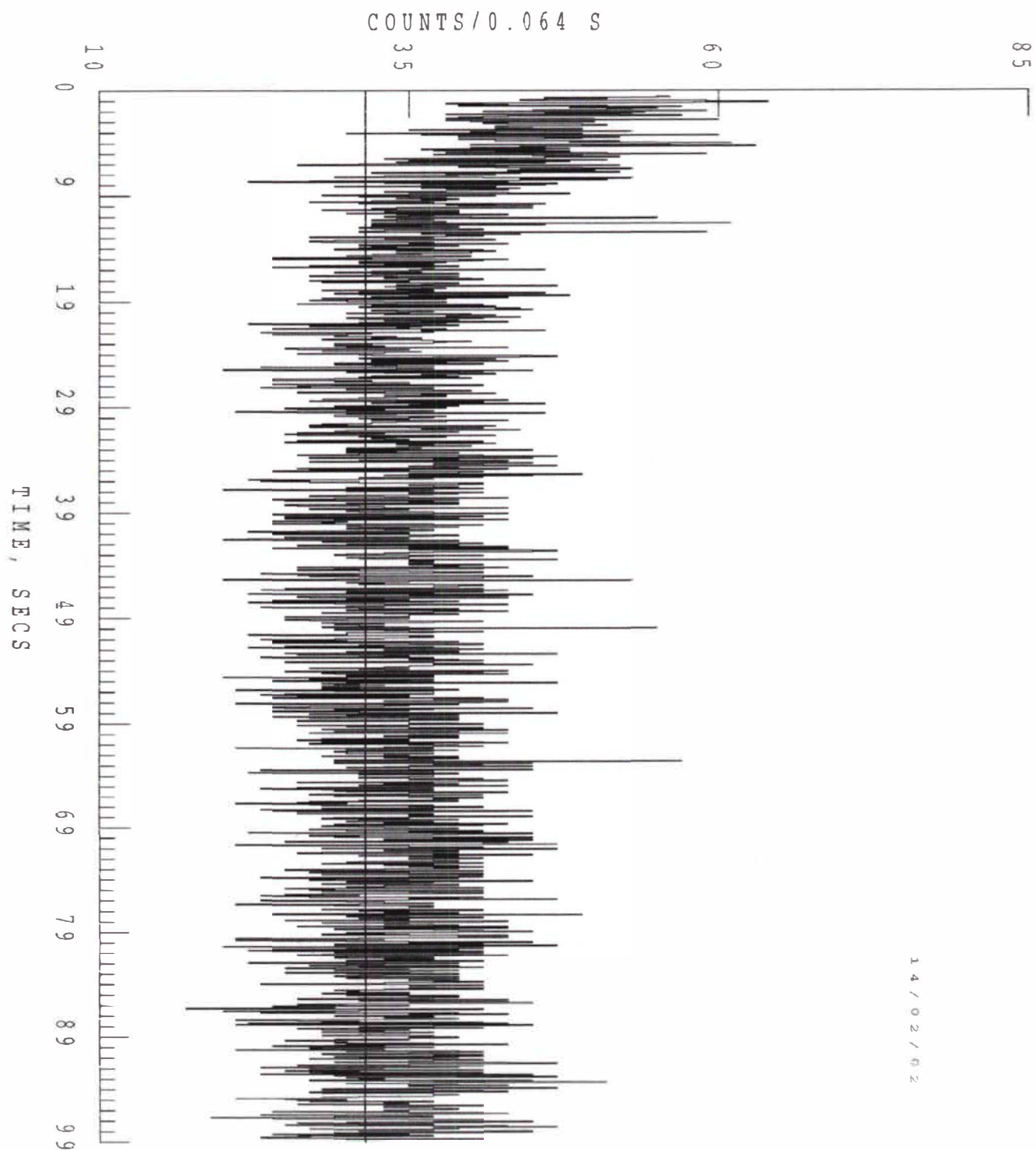


KONUS1

14/03/98

30464.301

50 - 200 keV



14/02/02

From BUTTERWORTH@lheavx.gsfc.nasa.gov Wed Mar 18 10:09 PST 1998
From: BUTTERWORTH@lheavx.gsfc.nasa.gov
Date: Wed, 18 Mar 1998 12:25:37 -0500 (EST)
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov
CC: BUTTERWORTH@lheavx.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Ulysses events on 980314 were not detected by Konus

Hi Everyone,

These events were not seen by Konus.

Paul.

Date: Wed, 18 Mar 1998 08:25:19 -0800
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199803181625.IAA29294@scylla.>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lheavx.gsfc.nasa.gov, cline@lheavx.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov
Subject: CORRECTION: March 14, not March 15
Content-Charset: US-ASCII

ULYSSES GAMMA-RAY BURSTS NOT REPORTED BY BATSE:

Ulysses observed the following bursts:

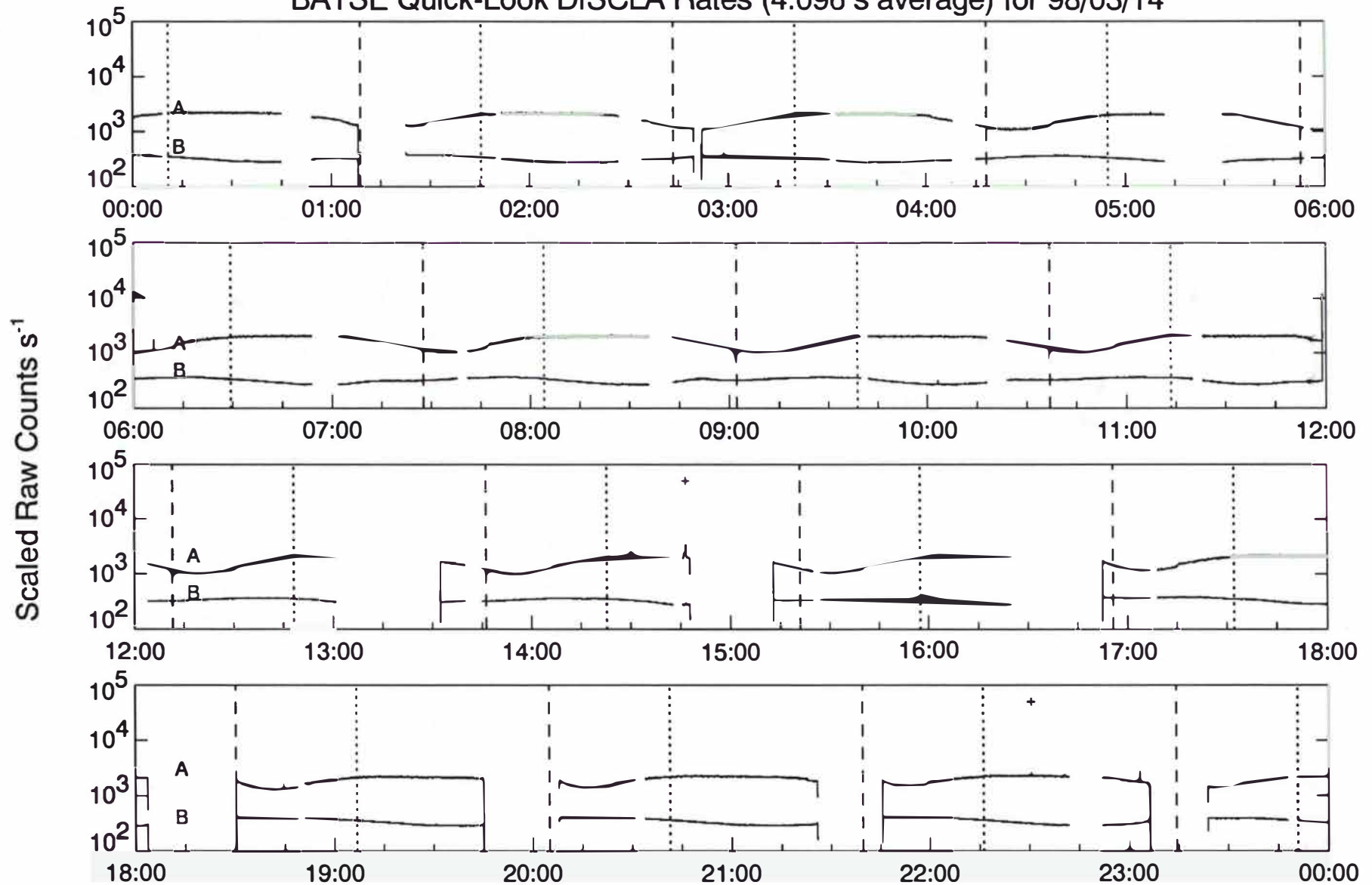
March 14 1998 06:30 Ulysses time; weak burst, 64 ms long

March 14 1998 23:32 Ulysses time; weak burst, 32 ms long

The spacecraft was about 2220 light-seconds from Earth.
Were these events detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, kouveliotou, kurczynski, marar, teegarden, terrell,

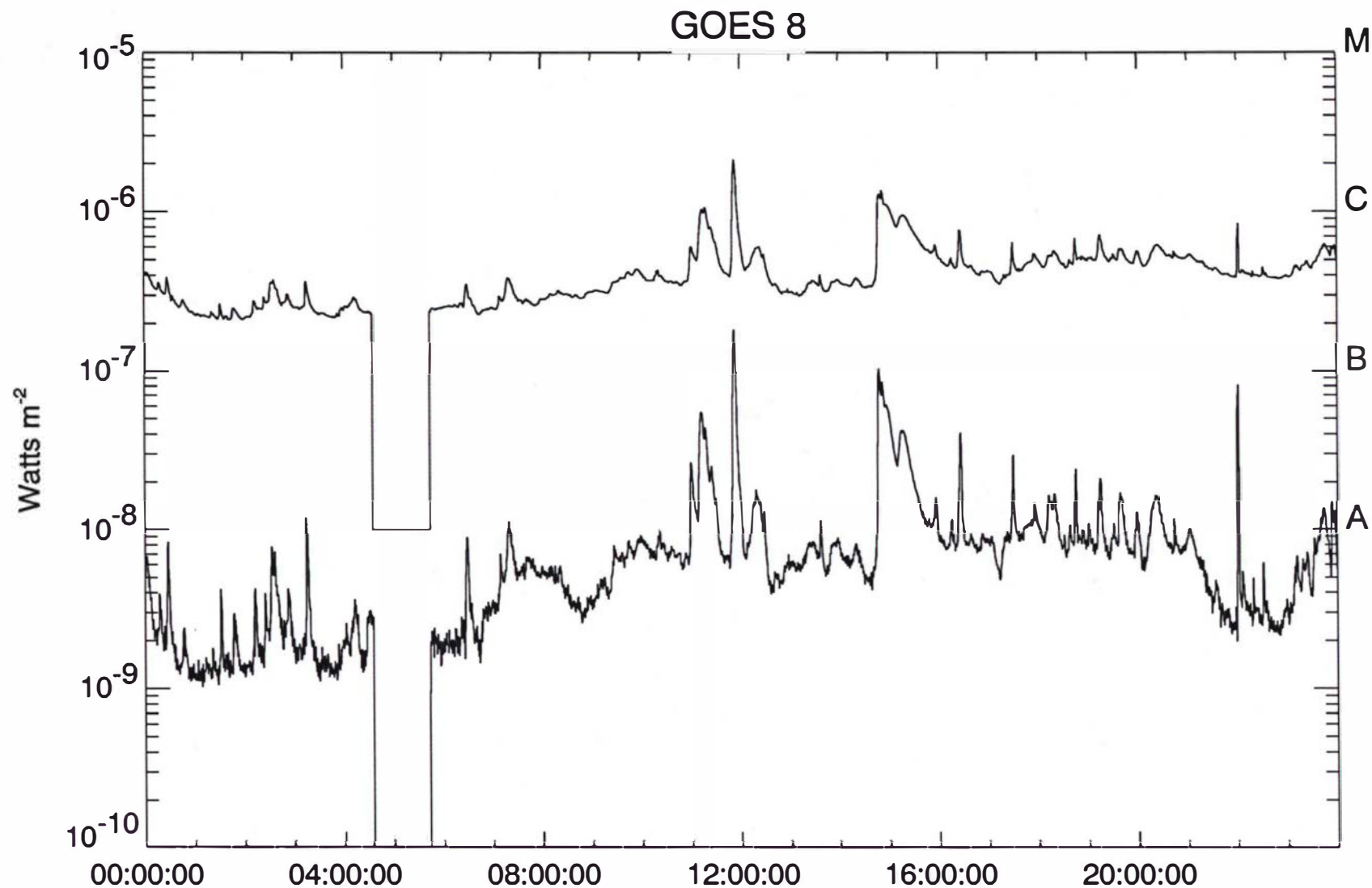
BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/14



Current Time: 98/03/18, 1008 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare



Data Start: 98/03/14, 0000:00

Plot created: 98/03/18, 1007

Channel

1 (1.0 - 8.0 Angstroms)

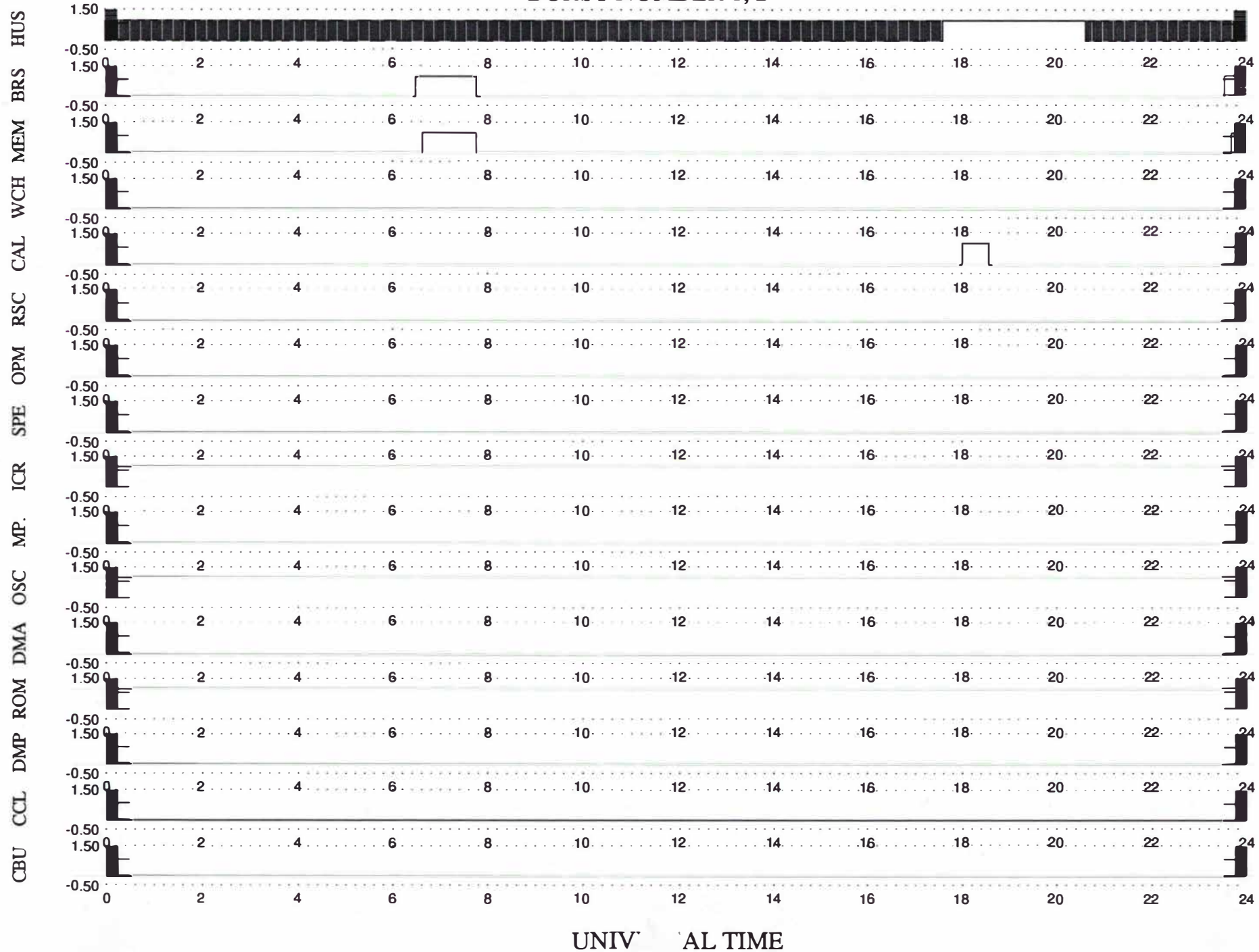
Background not subtracted

2 (0.5 - 4.0 Angstroms)

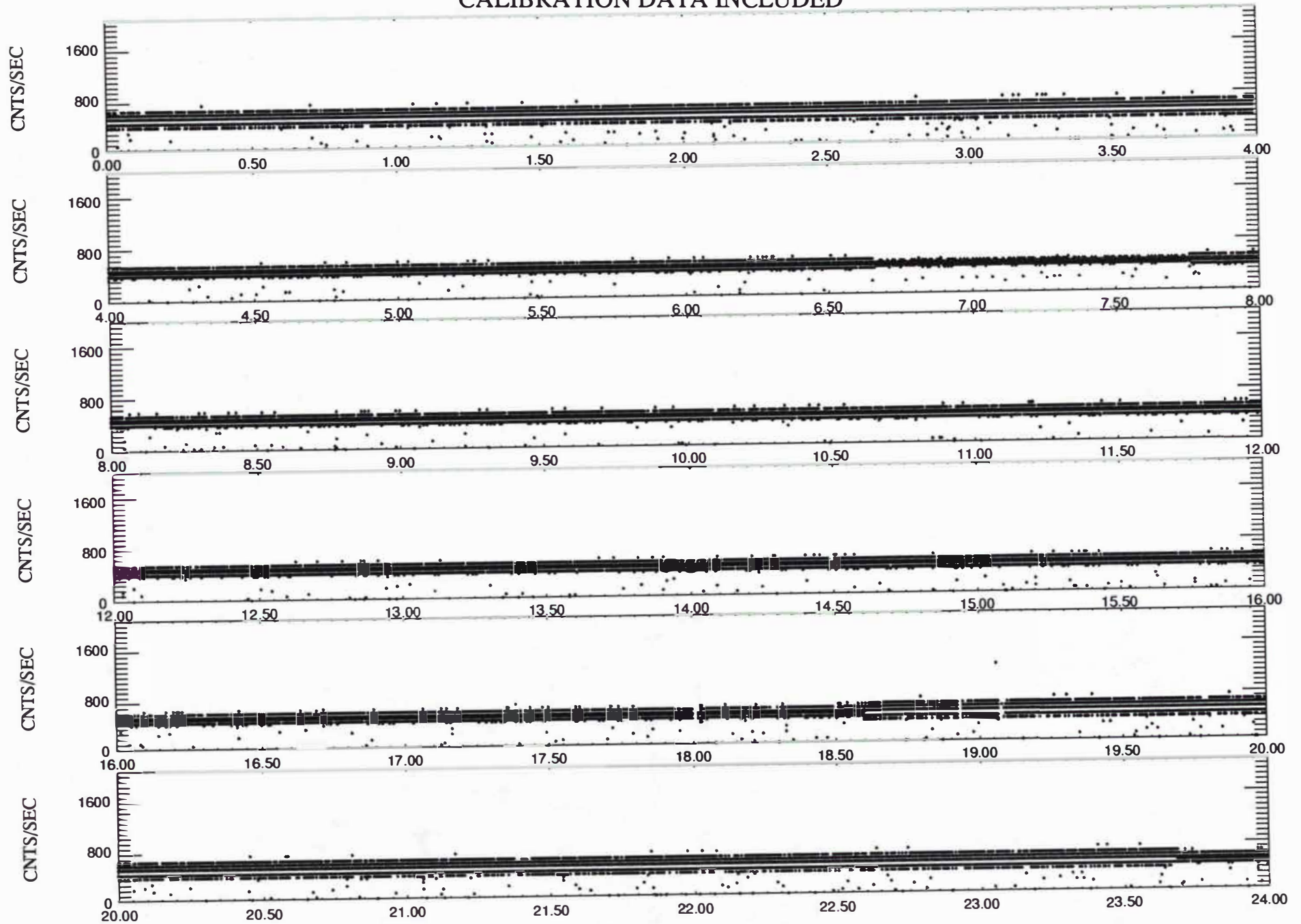
Background not subtracted

Sample average = 10

BURST NUMBER 1, 2

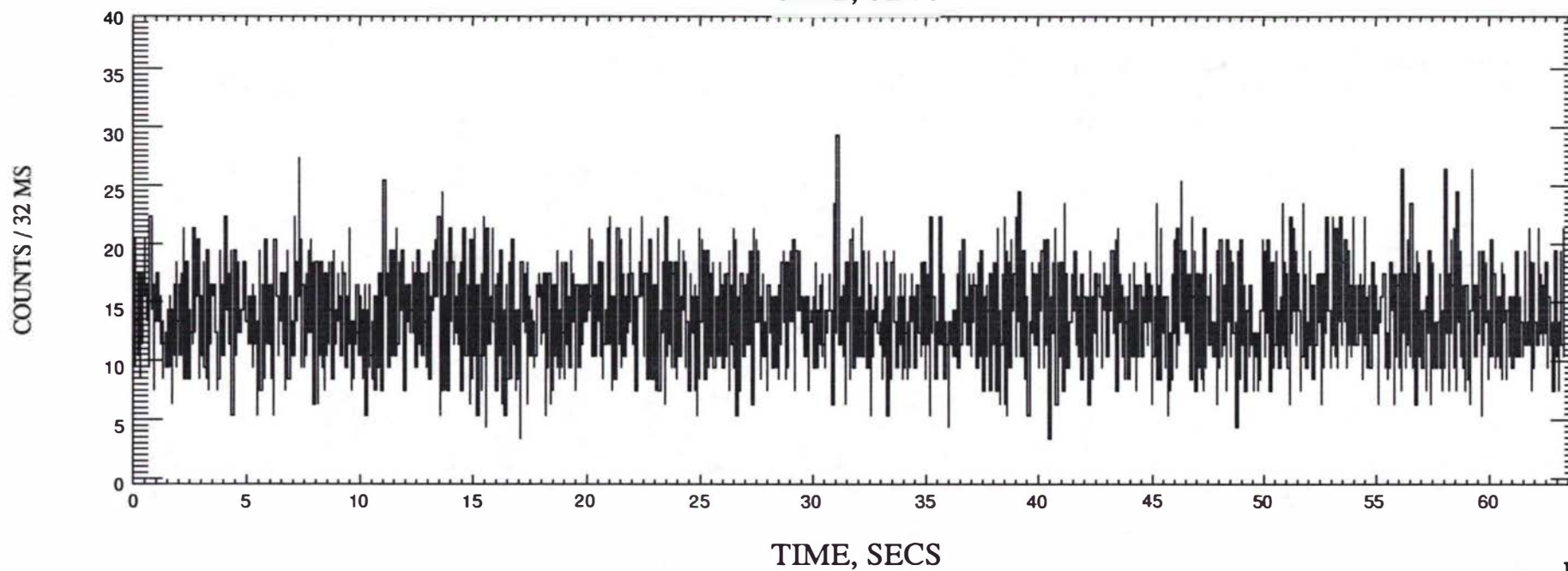
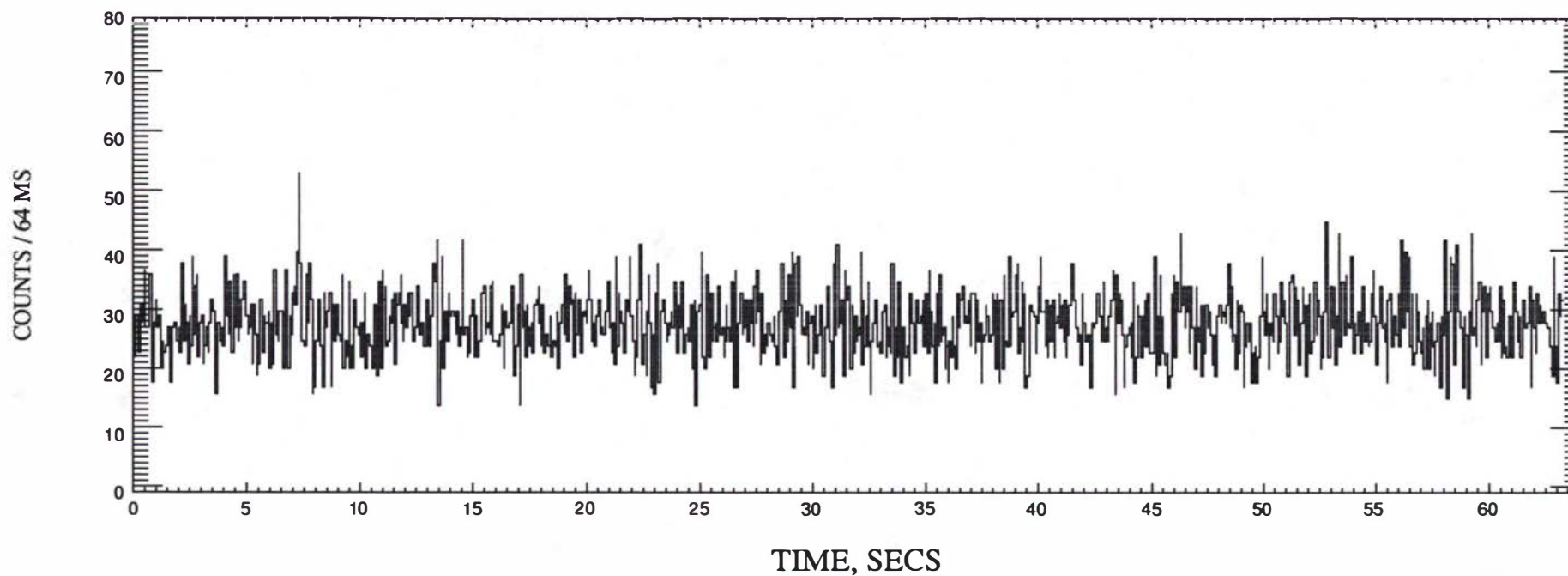


CALIBRATION DATA INCLUDED

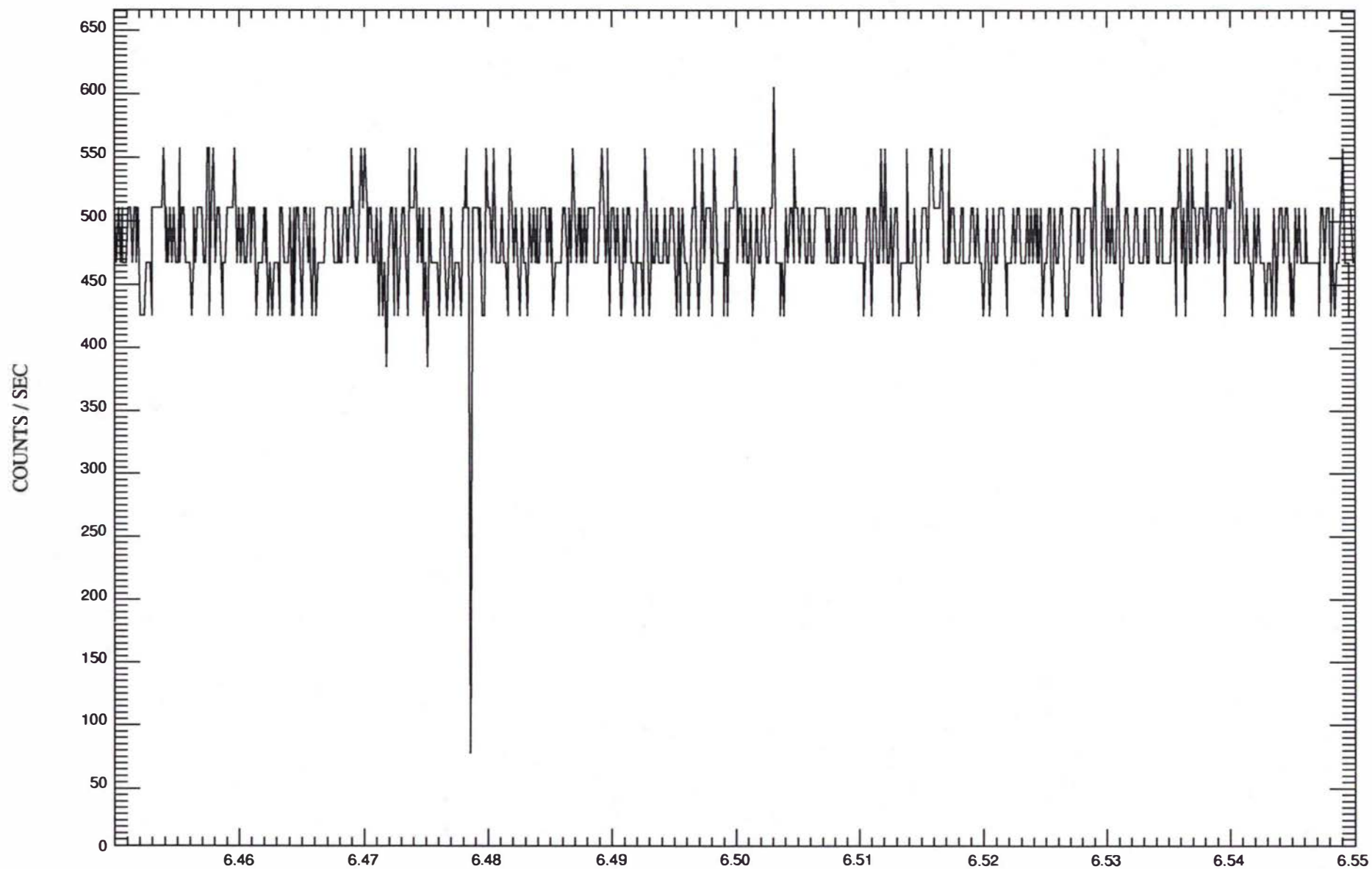


UNIV. TIME

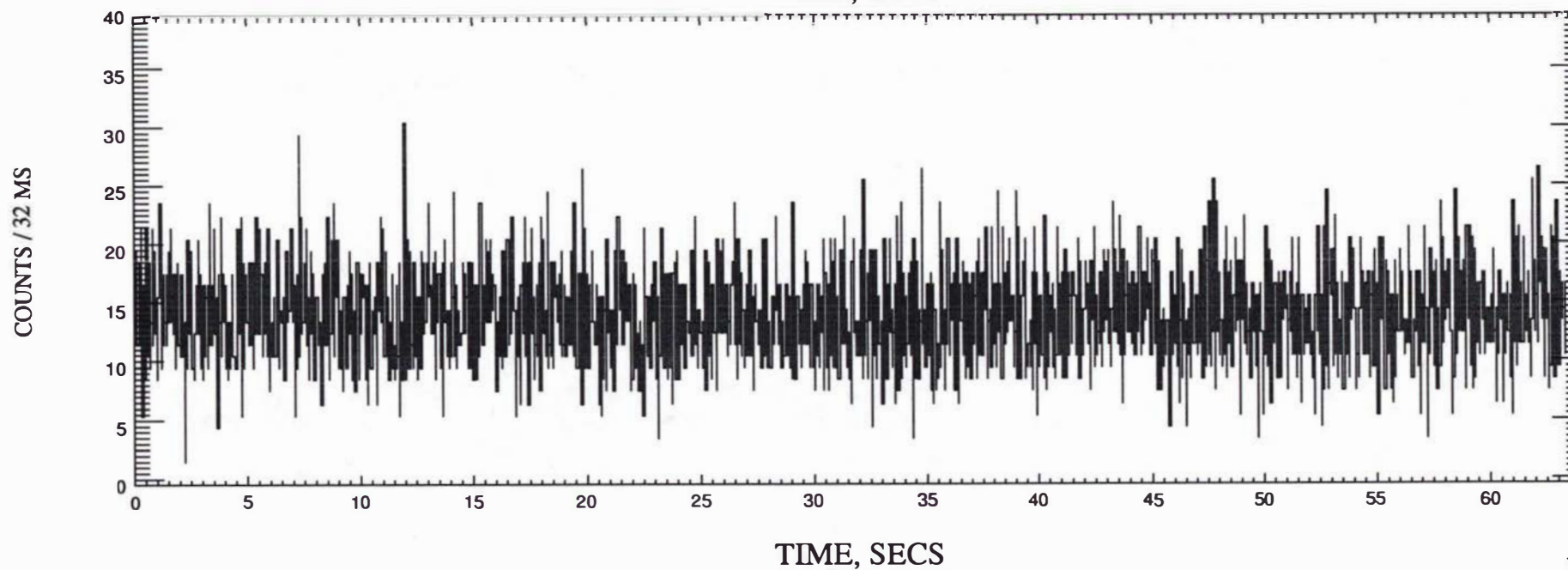
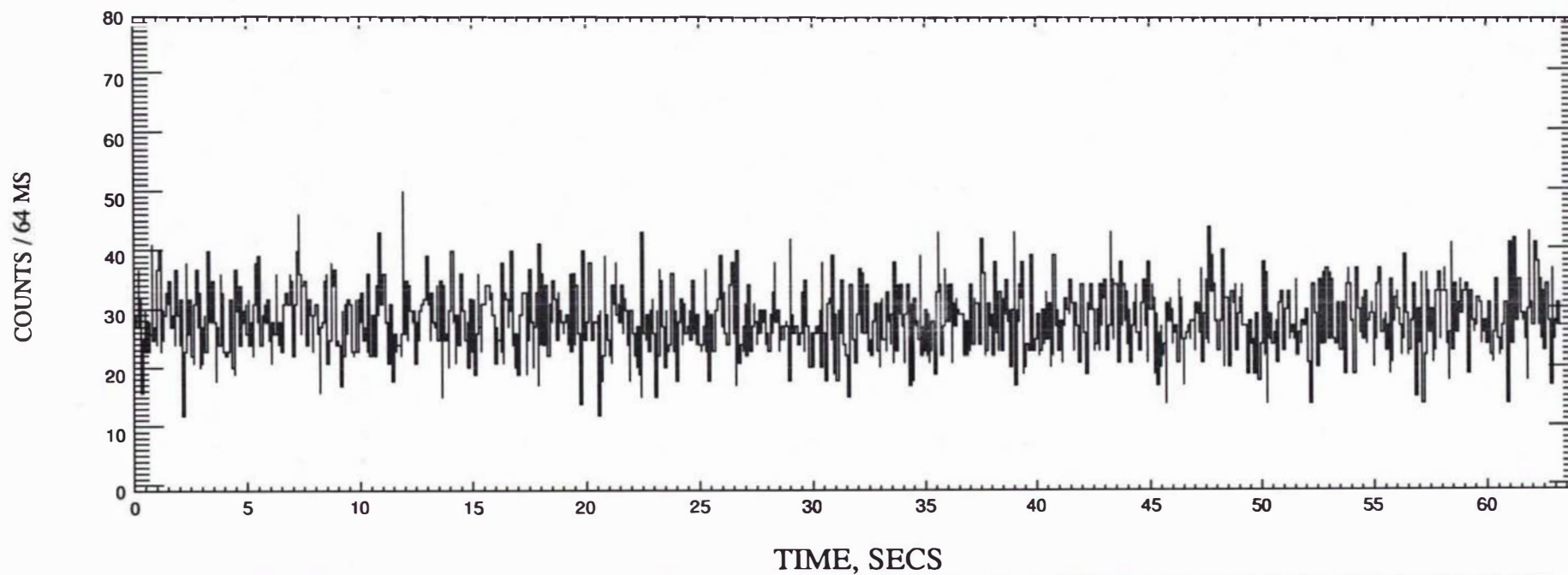
Burst Counter 1 at UT= 6.503172217475 h=23411.420 s 06:30:11.420



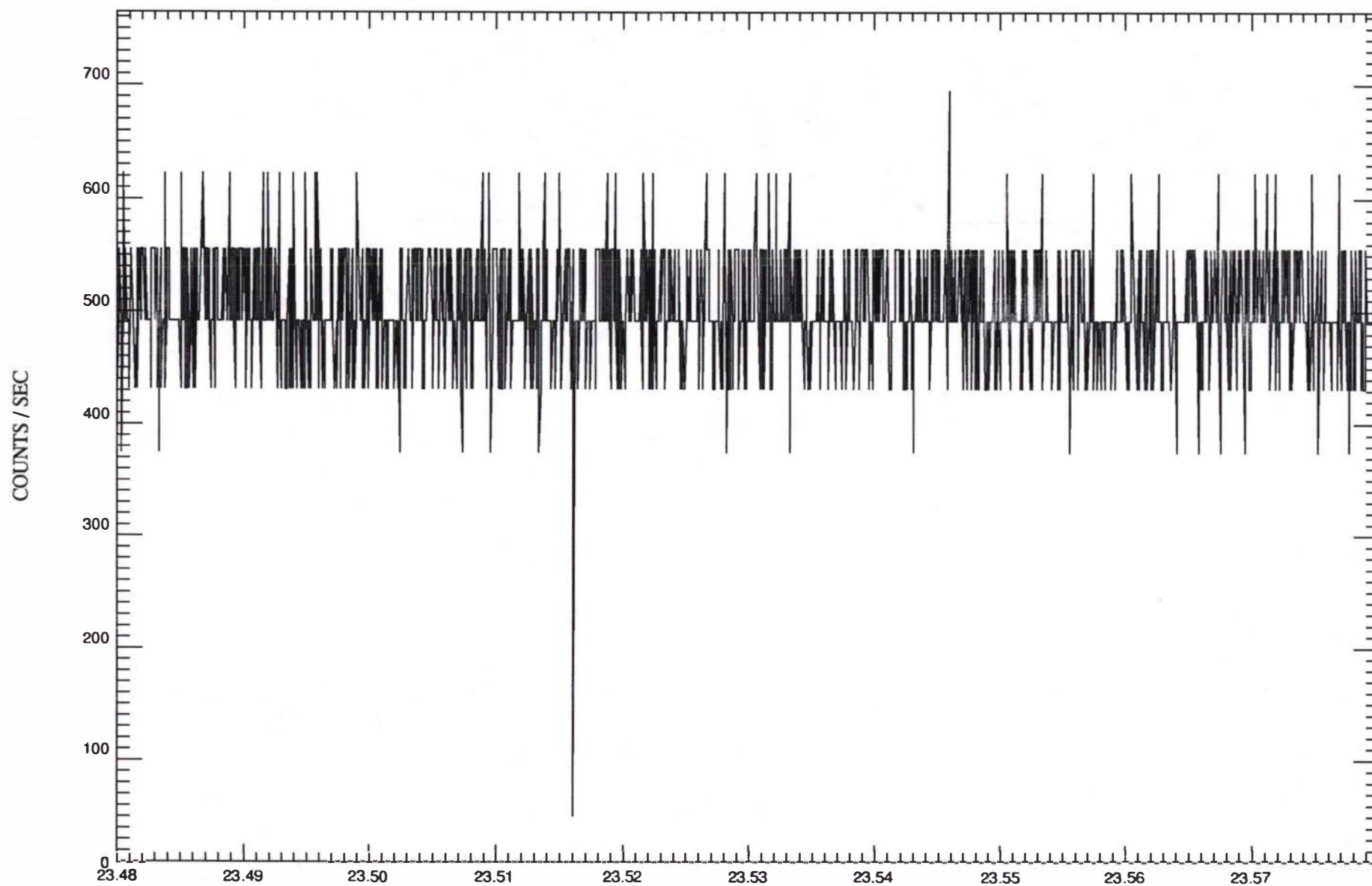
CALIBRATION DATA INCLUDED

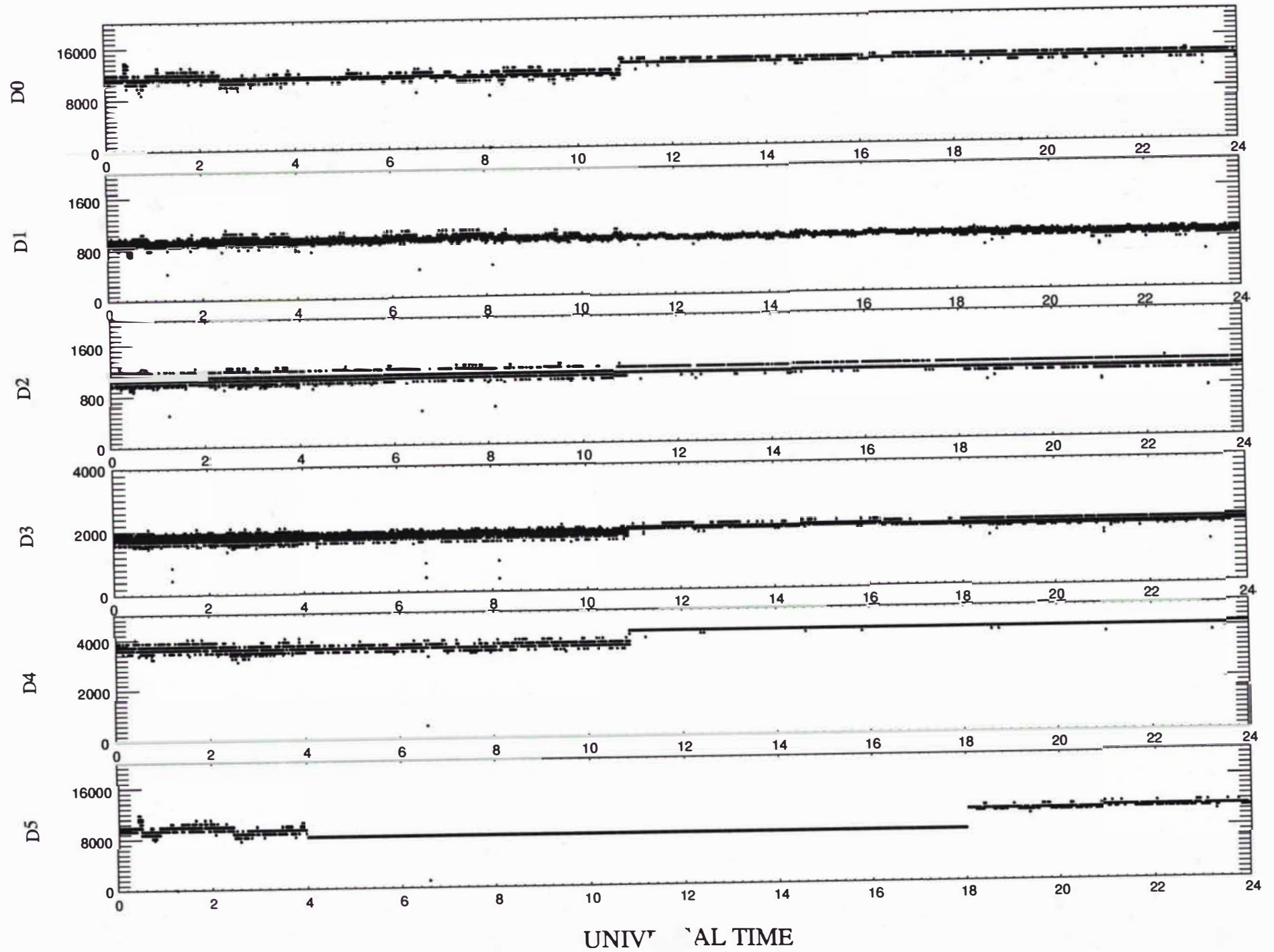


Burst Counter 2 at UT=23.530685895284 h=84710.469 s 23:31:50.469

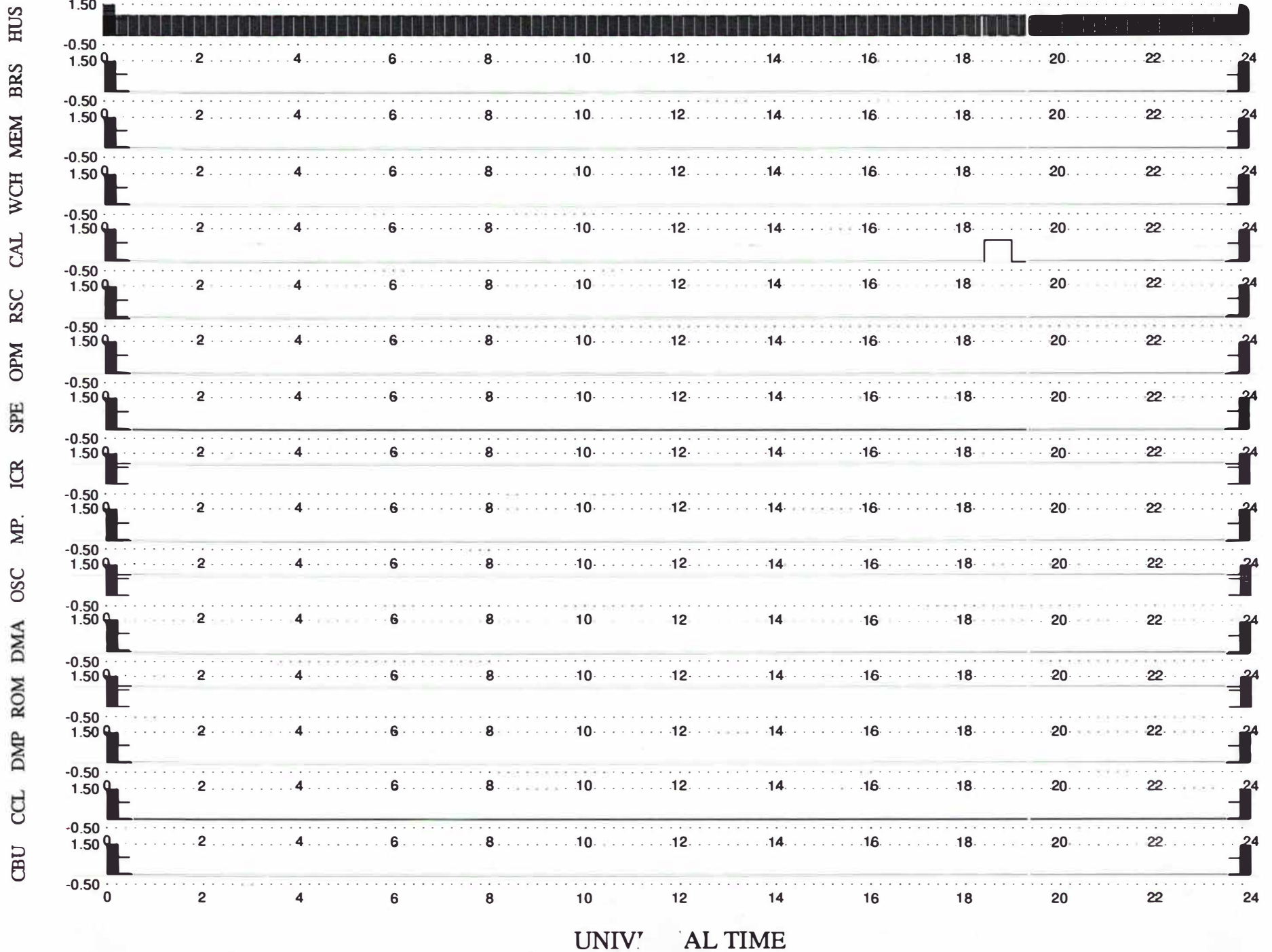


CALIBRATION DATA INCLUDED

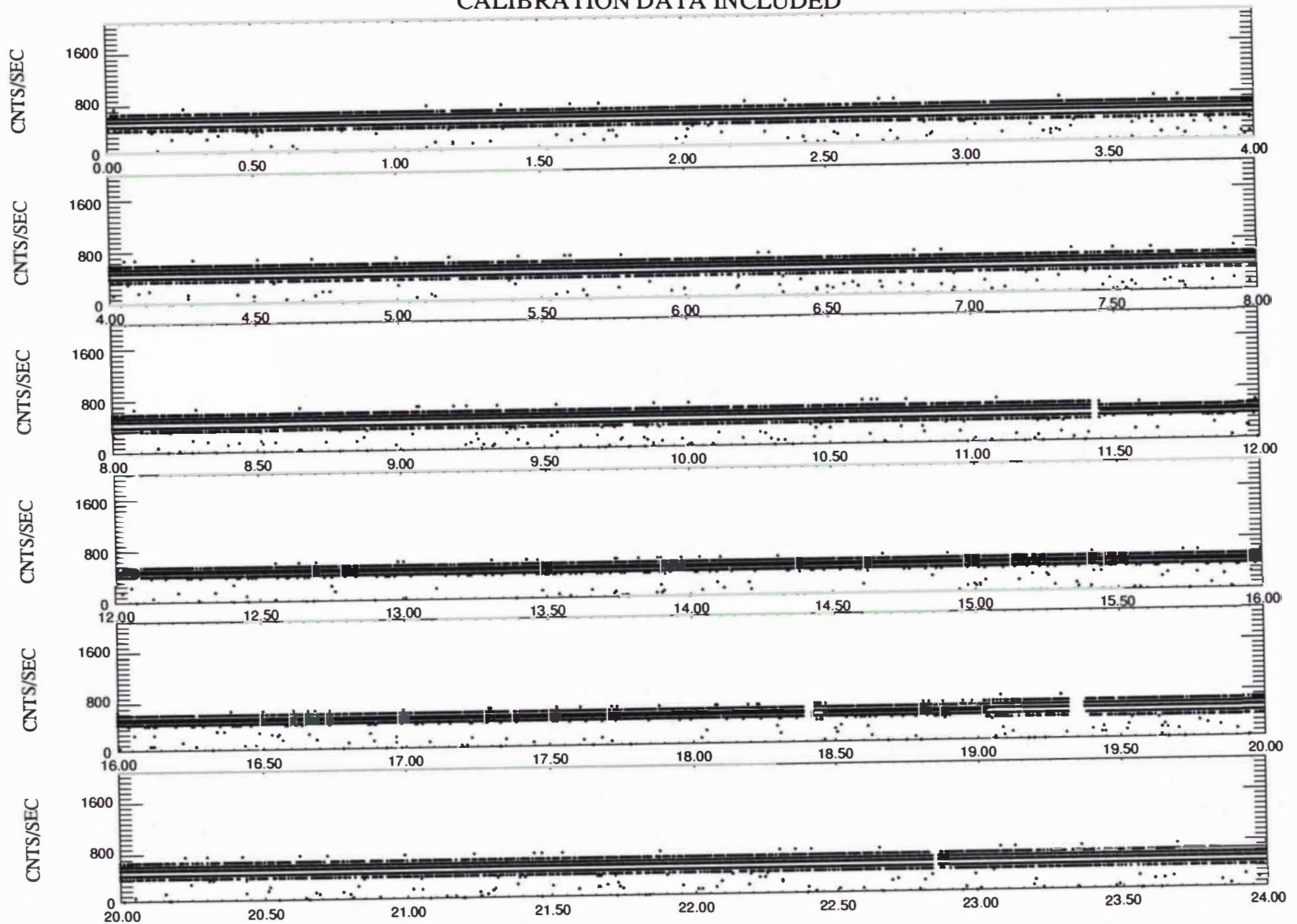




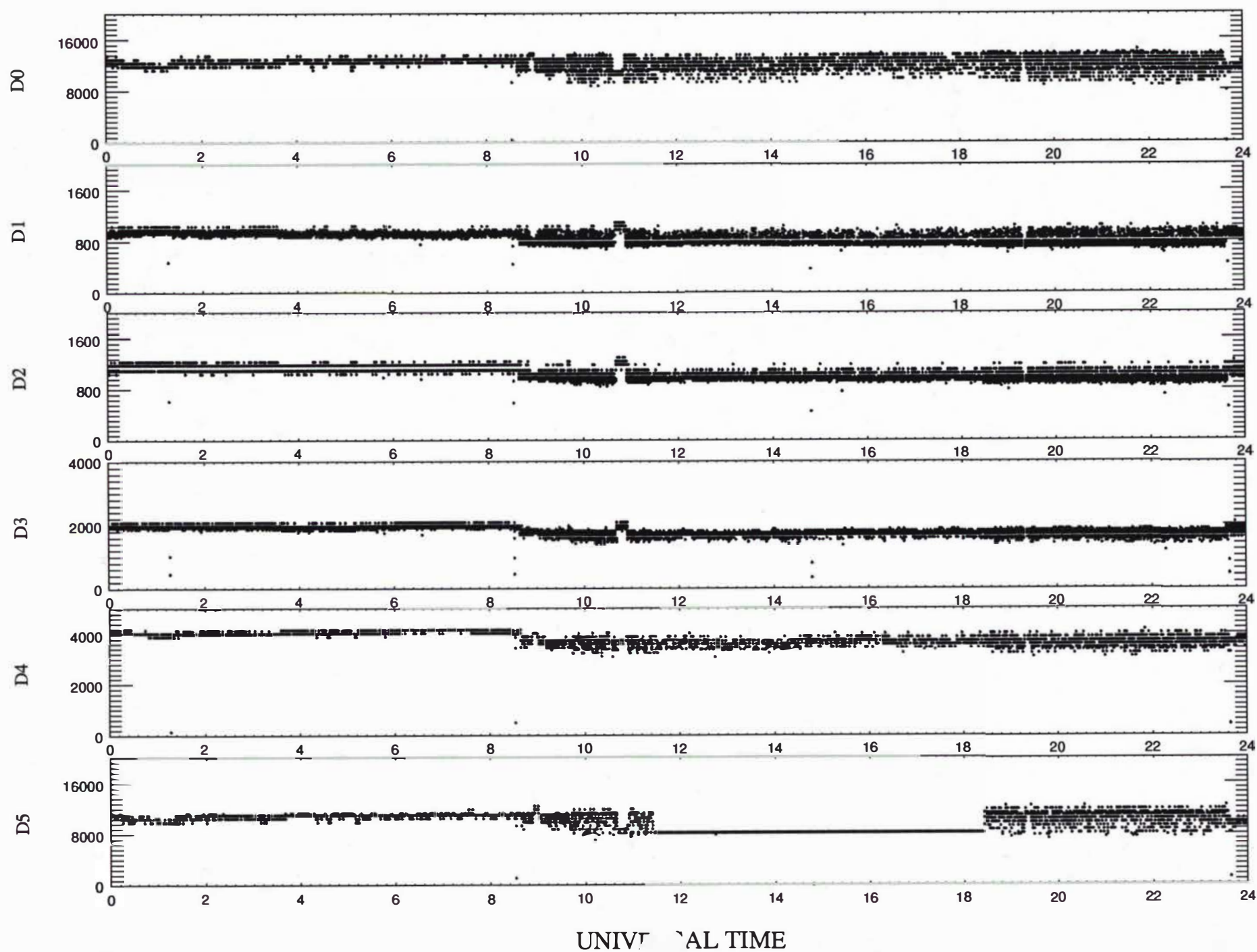
NO BURST (0)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Thu Mar 19 07:30:47 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA02283; Thu, 19 Mar 1998 07:30:46 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA24921; Thu, 19 Mar 1998 07:30:46 -0800
Date: Thu, 19 Mar 1998 9:24:18 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980319092418.20e01465@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6641
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6641
EVENT OF 1998 MAR 15 DAY OF YEAR= 74
EVENT CROSSING TIME AT BATSE : 10197. S. OR 02:49:57.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 76.000 20.000
BATSE PEAK COUNTING RATE: 9500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 3/ 98 IS:
RA= 156.193 DEC= 13.334 DIST= 4.469 AU
BATSE-ULYSSES DISTANCE = 668497821. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.57 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -523.16 SECS.
CROSSING TIME AT ULYSSES IS 9674. S. OR 02:41:13 +/- 418.39 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 3/ 98 IS:
RA= 7.555 DEC= 2.625 DIST= 2.357 AU
MARS-BATSE DISTANCE = 352673952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=111.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -424.14 SECS.
CROSSING TIME AT MARS IS 9773. S. OR 02:42:52 +/- 184.06 SECONDS

BATSE BURST TRIGGER

NO.: 6641

TIME: TJD=0887 SECONDS=10197

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=91.4 AZIMUTH=211.9 ERROR=3.6 DEGREES

COMMENTS:

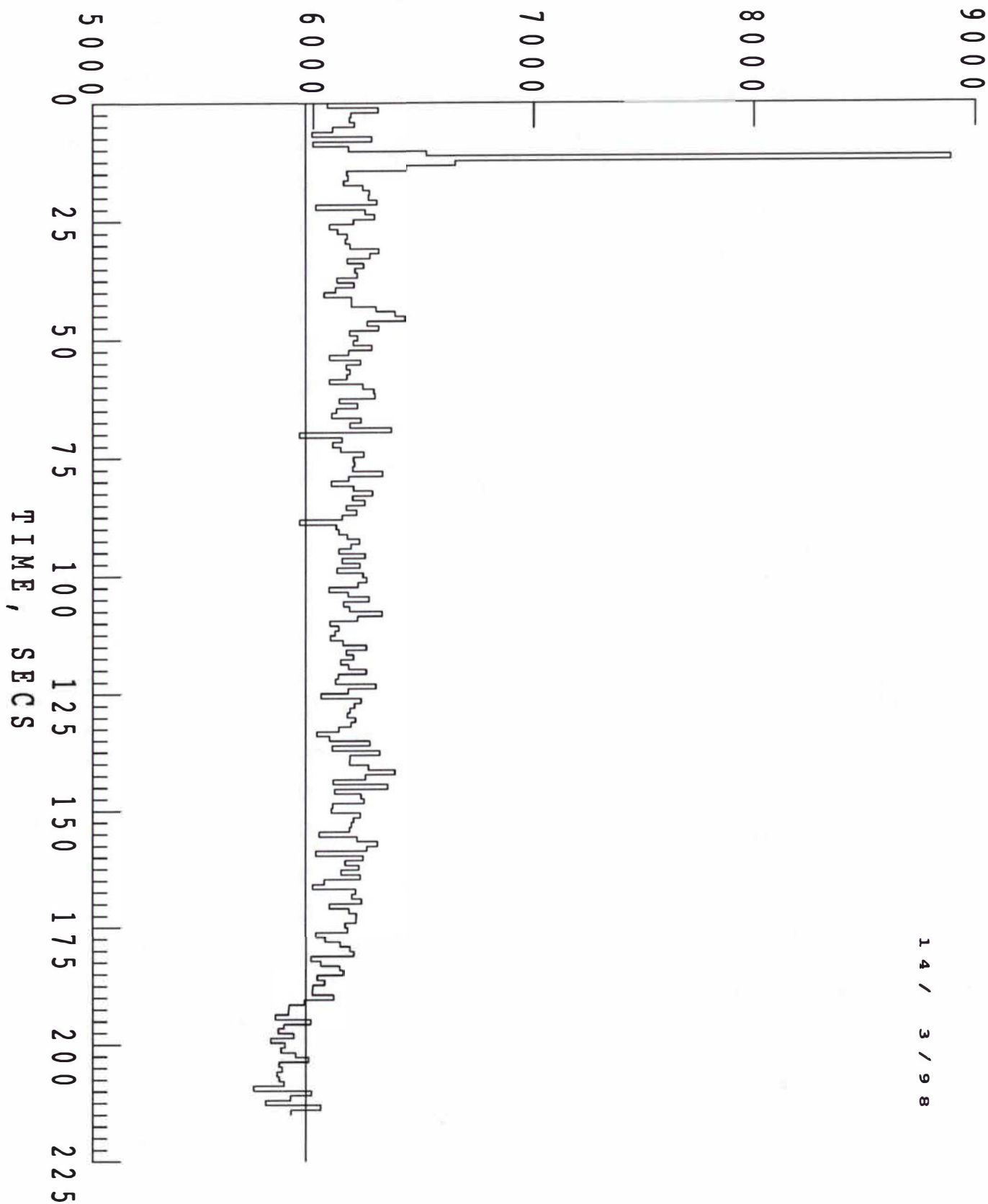
BURST, SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 0.25 SECS. NOT VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6641	980315	10887	10197	9500	076	+20	.25

BACODINE 6641 15/03/98 10186.465

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6641

ULYSSES RT

19 / 3 / 98

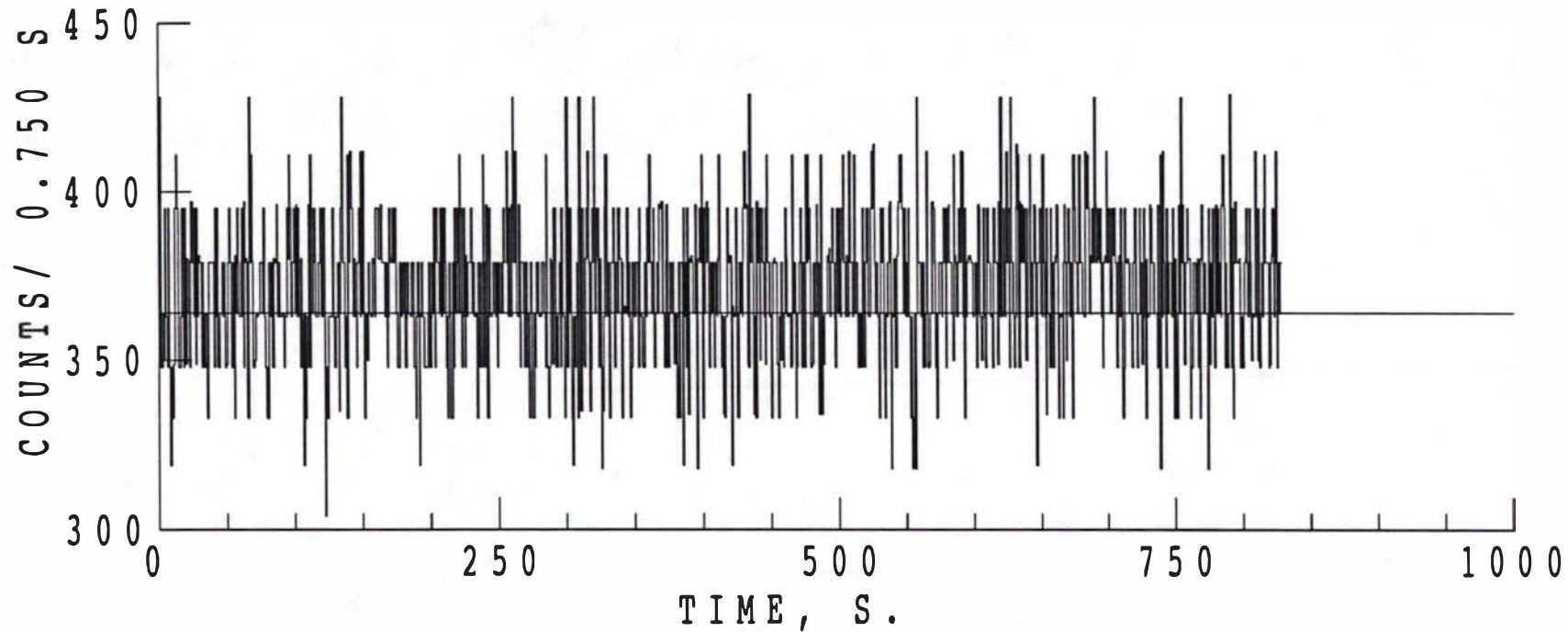
15 / 3 / 98 9252.087 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Thu Mar 19 07:31:18 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA02305; Thu, 19 Mar 1998 07:31:17 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA24942; Thu, 19 Mar 1998 07:31:16 -0800
Date: Thu, 19 Mar 1998 9:26:56 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980319092656.20e01465@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6642
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6642
EVENT OF 1998 MAR 15 DAY OF YEAR= 74
EVENT CROSSING TIME AT BATSE : 26640. S. OR 07:24:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 75.000 32.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 3/ 98 IS:
RA= 156.153 DEC= 13.336 DIST= 4.470 AU
BATSE-ULYSSES DISTANCE = 668676658. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.43 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -555.69 SECS.
CROSSING TIME AT ULYSSES IS 26084. S. OR 07:14:44 +/- 416.59 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 3/ 98 IS:
RA= 7.555 DEC= 2.625 DIST= 2.357 AU
MARS-BATSE DISTANCE = 352673952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=110.44 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -410.82 SECS.
CROSSING TIME AT MARS IS 26229. S. OR 07:17:09 +/- 185.14 SECONDS

BATSE BURST TRIGGER

NO.: 6642

TIME: TJD=0887 SECONDS=26640

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=95.2 AZIMUTH=222.5 ERROR=1.5 DEGREES

COMMENTS:

BURST, COMPLEX, DUR. APPROX. 130 SECS, MAX. AT APPROX. T+78 SECS. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6642	980315	10887	26640	6000	075	+32	130

Helio corr removed 21/2/00

Date: July 31 98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. BATSE Data

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

3. PVO Data

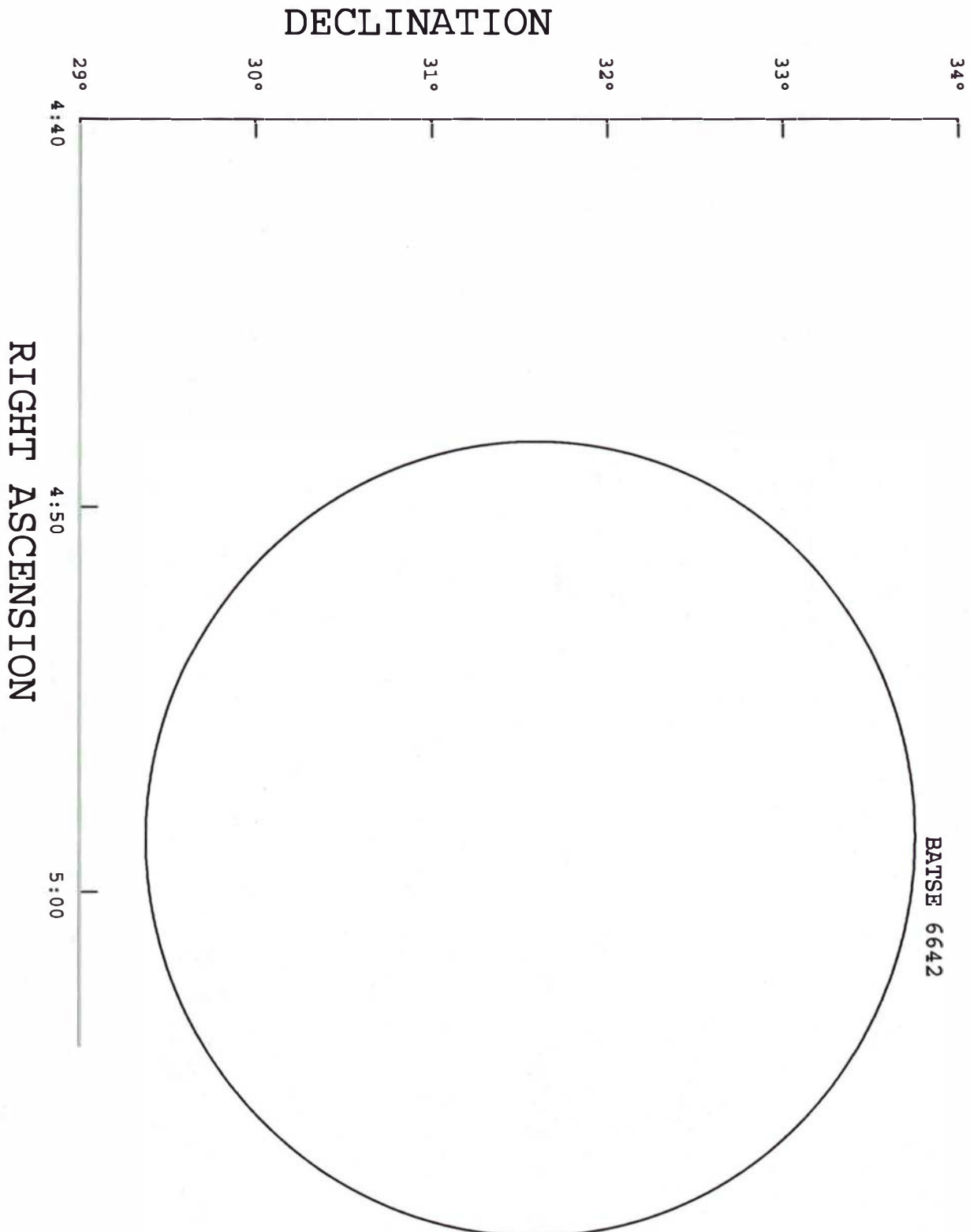
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?

☒ ACCESS database updated?

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 MAR 15, 1998 7:12

21 / 2 / 0



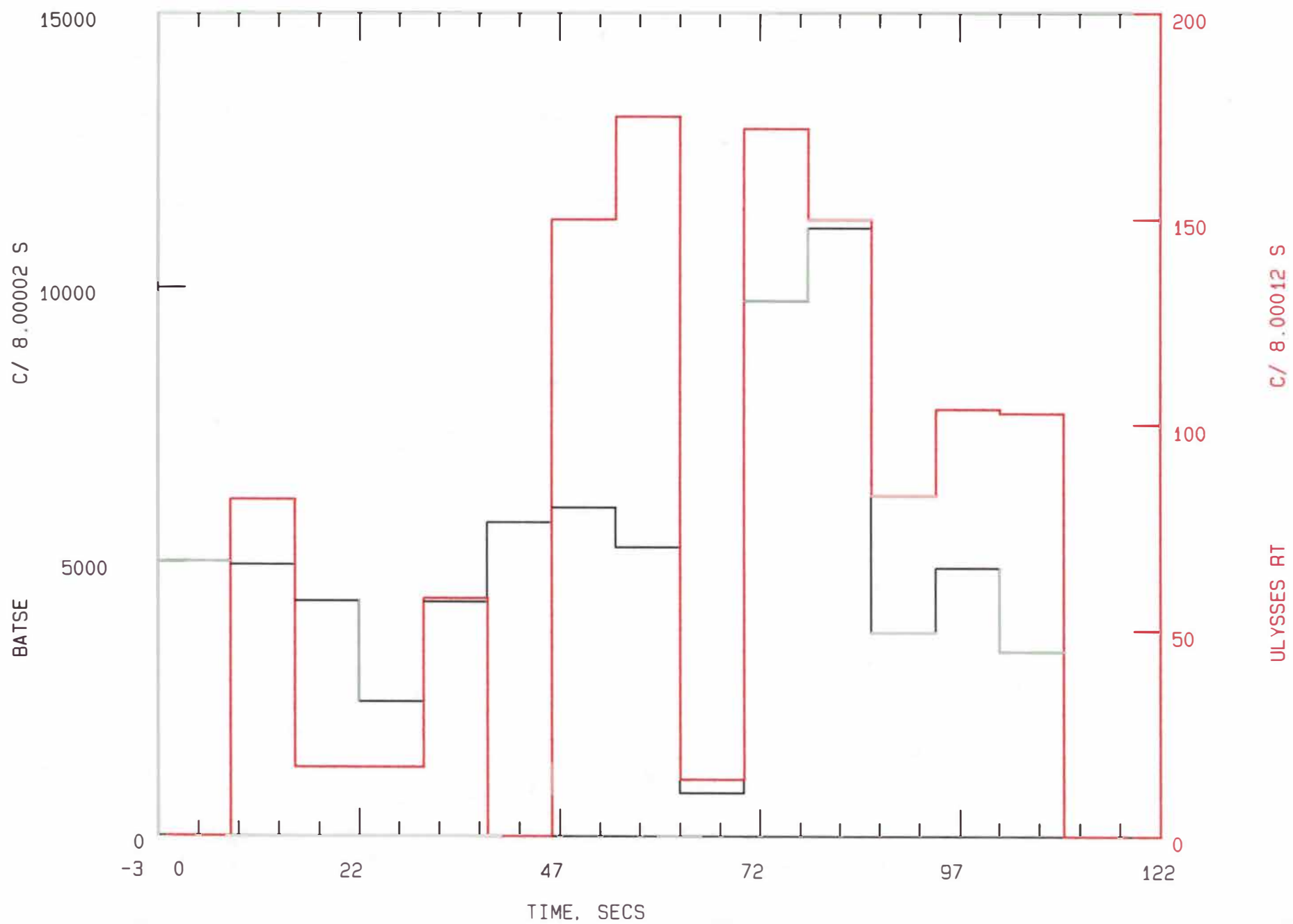
BATSE

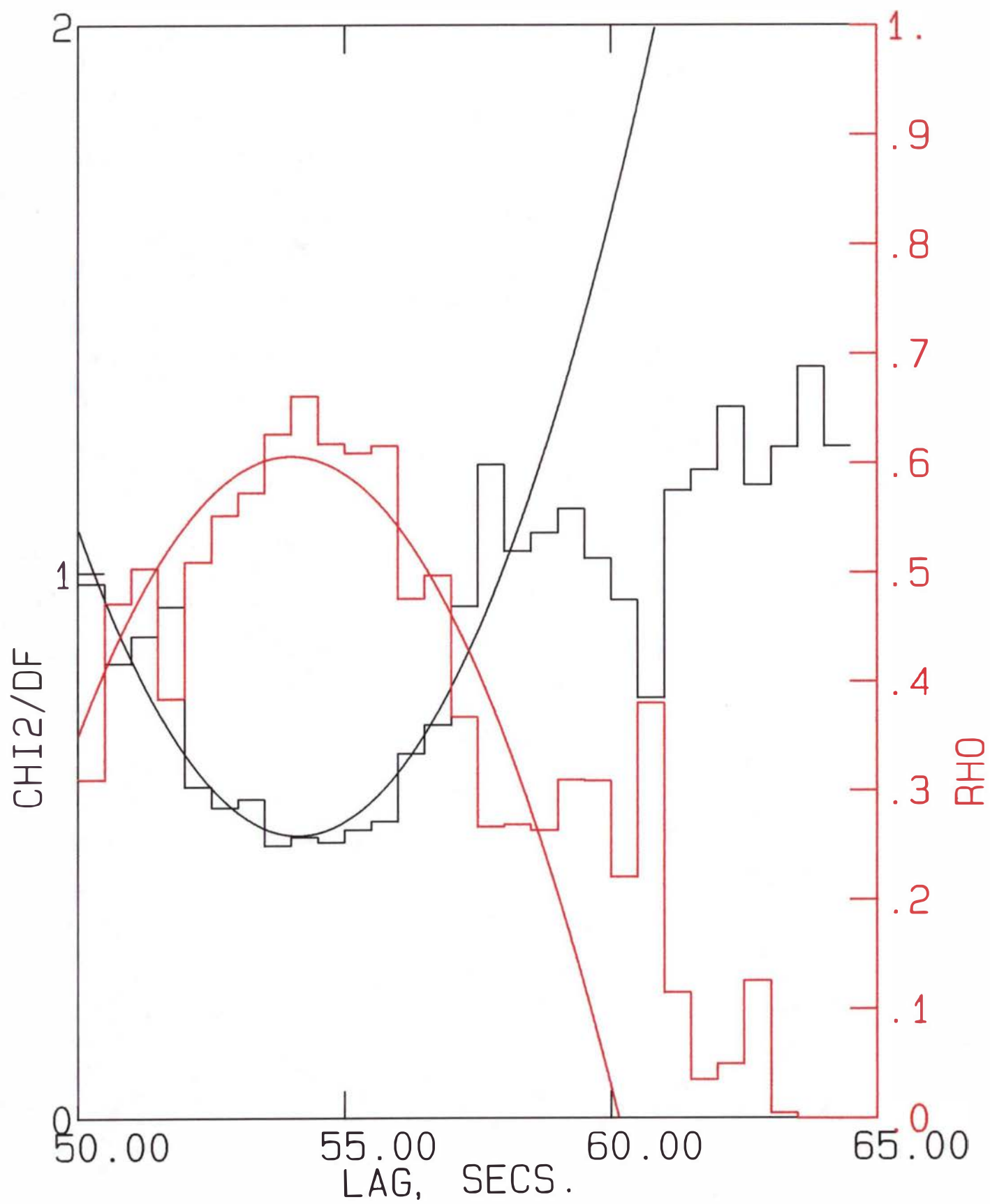
-ULYSSES RT CORRELATION

15/ 3/98

26640.097

31/ 7/98





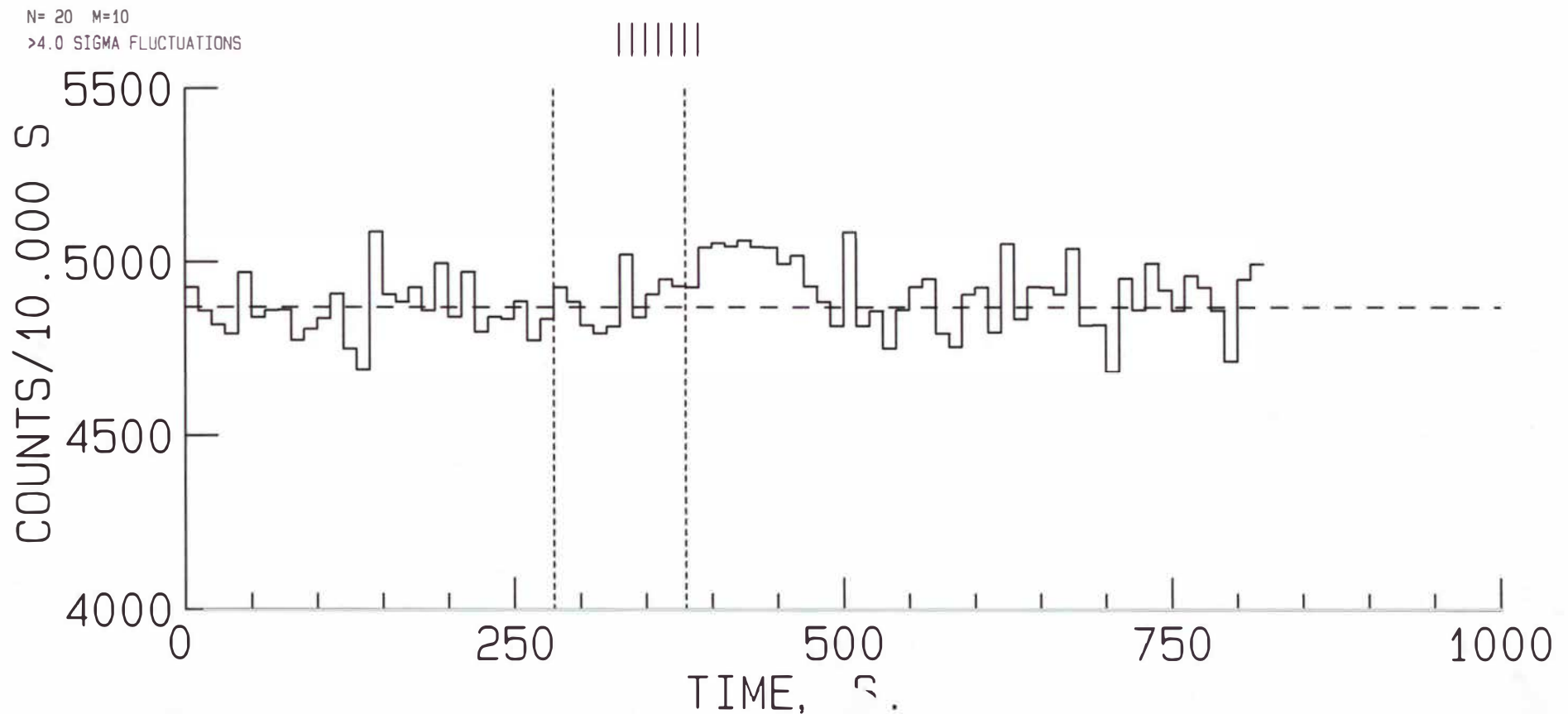
ULYSSES RT

31 / 7 / 98

15 / 3 / 98 25668.260 s

0.500 S INTERVALS REGROUPED BY 20

22- 149 keV



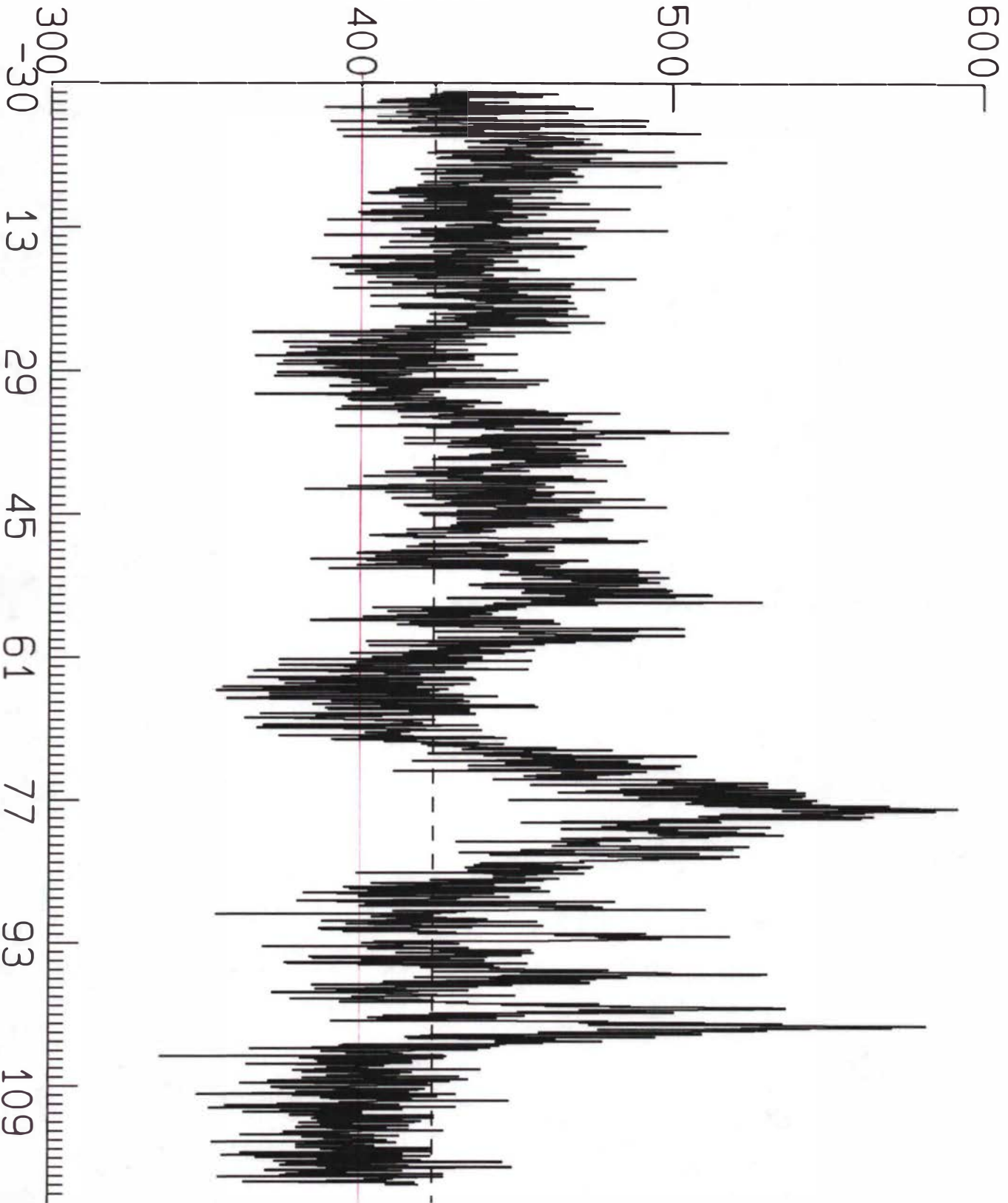
BATSE

15/03/98

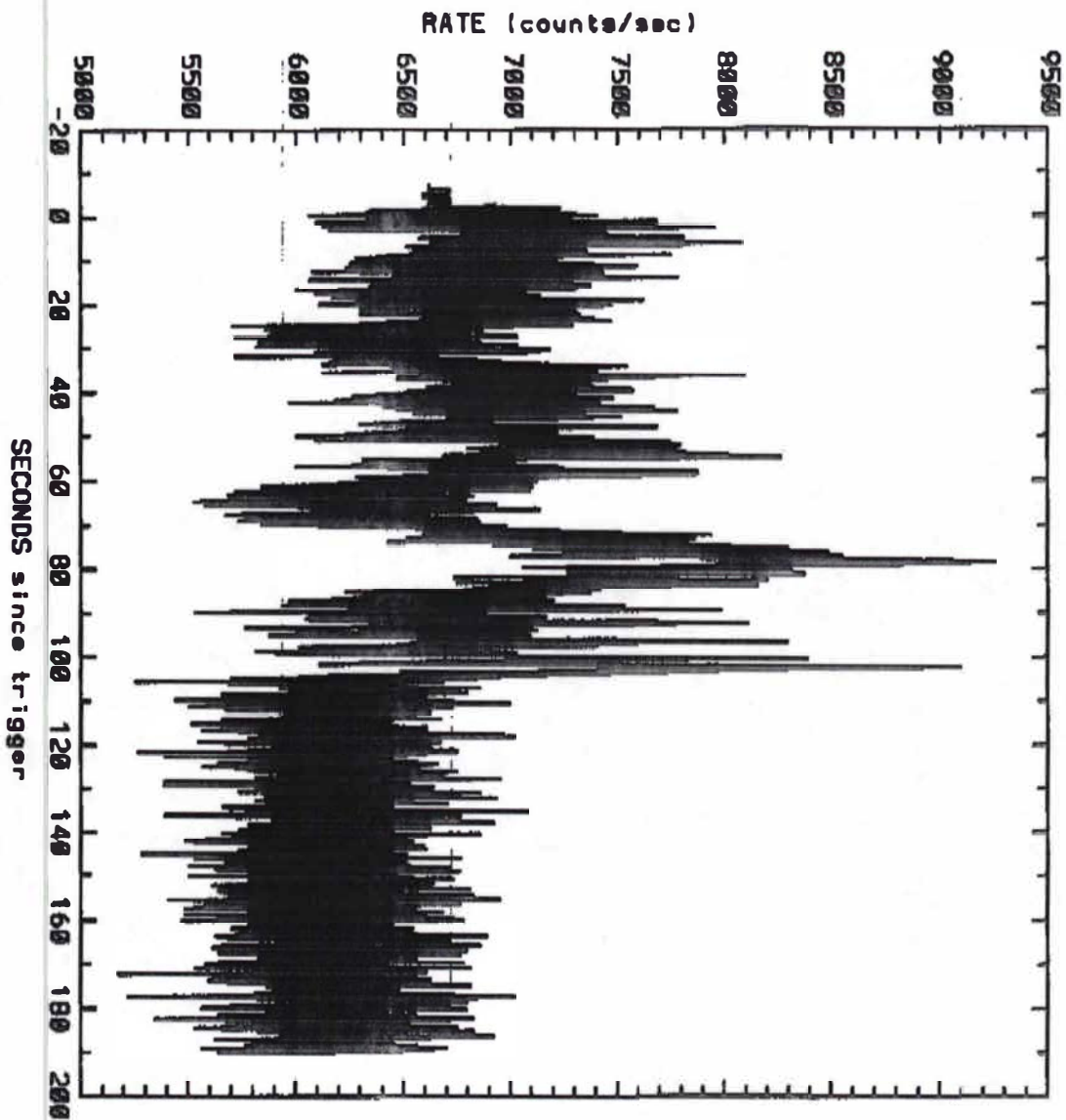
26640.097

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 6642



3-APR-1998 07:39:43

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger # : 6642

Trigger Time:
16087 / 26640.007Burst Date Type:
DISCSCDeadtime
Corrected: NBackground Data
Type: FREE + DISCLAMinimum Integ. Time:
0.004 secondsDetectors [7..0].
70-----Discriminators:
[1 . 2]Quality Mask:
BDSP1

From SAHI@fender.msfc.nasa.gov Thu Mar 19 07:31:51 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA02310; Thu, 19 Mar 1998 07:31:51 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id HAA24959; Thu, 19 Mar 1998 07:31:50 -0800
Date: Thu, 19 Mar 1998 9:28:35 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980319092835.20e01465@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6643
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6643
EVENT OF 1998 MAR 15 DAY OF YEAR= 74
EVENT CROSSING TIME AT BATSE : 44653. S. OR 12:24:13.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 180.000 75.000
BATSE PEAK COUNTING RATE: 9000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 3/ 98 IS:
RA= 156.109 DEC= 13.339 DIST= 4.471 AU
BATSE-ULYSSES DISTANCE = 668873827. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=116.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1010.93 SECS.
CROSSING TIME AT ULYSSES IS 43642. S. OR 12:07:22 +/- 379.96 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 3/ 98 IS:
RA= 7.555 DEC= 2.625 DIST= 2.357 AU
MARS-BATSE DISTANCE = 352673952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 77.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 249.47 SECS.
CROSSING TIME AT MARS IS 44902. S. OR 12:28:22 +/- 203.38 SECONDS

BATSE BURST TRIGGER

NO.: 6643

TIME: TJD=0887 SECONDS=44653

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=129.0 AZIMUTH=282.6 ERROR=9.4 DEGREES

COMMENTS:

BURST, SINGLE SPIKE, DUR. APPROX. 0.3 SECS. RISE IS FASTER THAN FALL. NOT
VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6643	980315	10887	44653	9000	180	+75	.3

BATSE BURST# 6643

ULYSSES RT

19 / 3 / 98

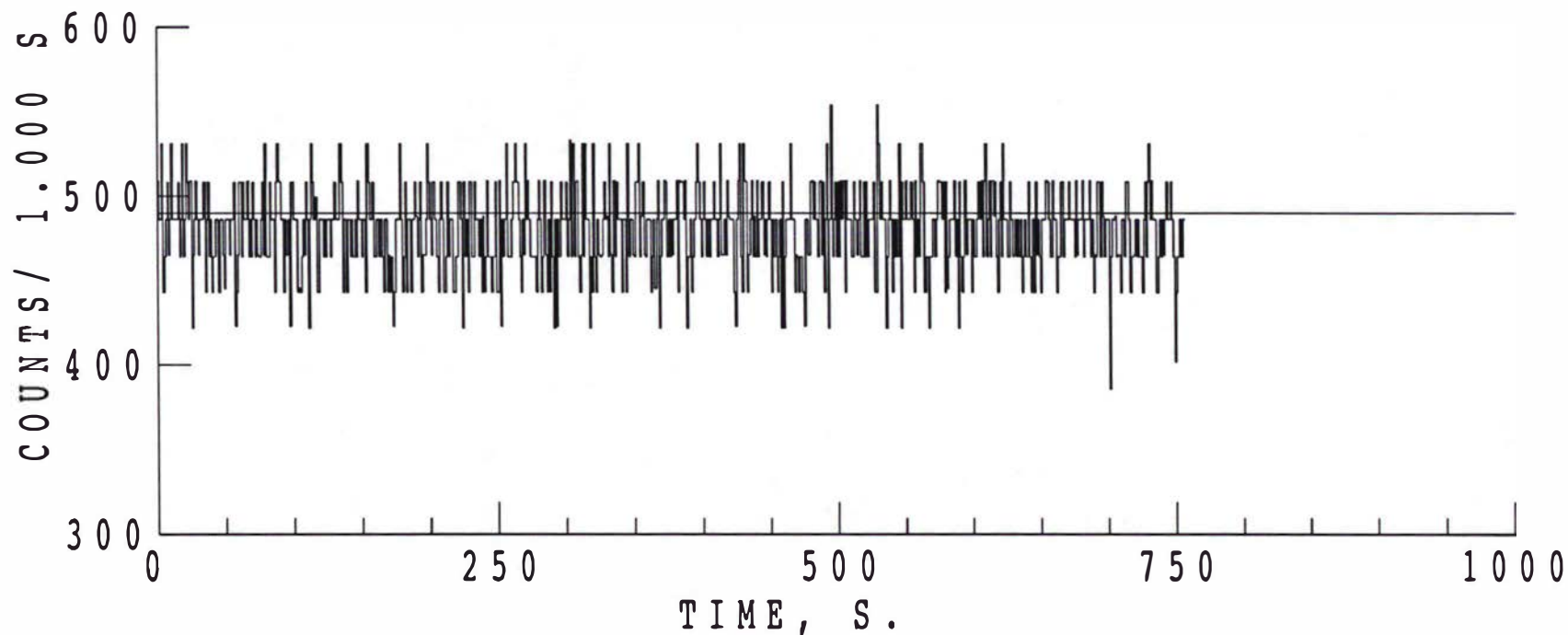
15 / 3 / 98 43272.453 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

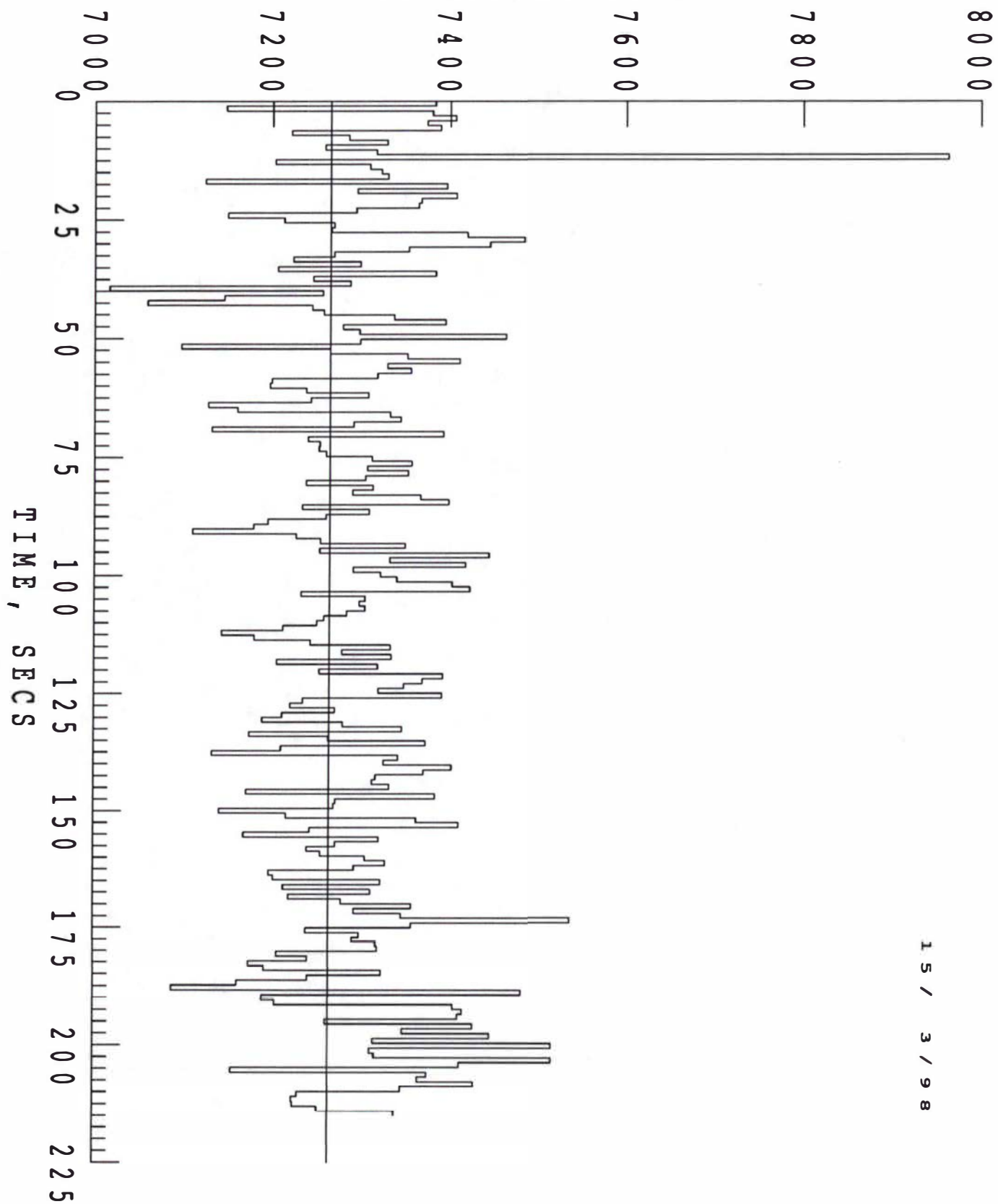
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6643 15/03/98 44642.017

25- 100 keV

COUNTS/1.024 S



15 / 3 / 98

From HENZE@fender.msfc.nasa.gov Tue Mar 17 12:54:11 1998
Date: Tue, 17 Mar 1998 14:53:32 -0600 (CST)
From: Bill Henze (205-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6644

TIME: TJD=0887 SECONDS=69502

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 23.7 AZIMUTH=279.2 ERROR= 0.4 DEGREES

COMMENTS:

GOES M1.8, OPTICAL 1B FLARE. COMPLEX, DUR. APPROX. 500 S, STARTS AT APPROX.
T-300 S. MARGINALLY VISIBLE ABOVE 100 KEV.

From HENZE@fender.msfc.nasa.gov Tue Mar 17 16:31:27 1998
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA06702; Tue, 17 Mar 1998 16:31:27 -0800
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA14986; Tue, 17 Mar 1998 16:31:21 -0800
Date: Tue, 17 Mar 1998 18:31:17 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980317183117.2420ae20@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6645
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6645
EVENT OF 1998 MAR 15 DAY OF YEAR= 74
EVENT CROSSING TIME AT BATSE : 74284. S. OR 20:38:04.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 0.000 -40.000
BATSE PEAK COUNTING RATE: 11000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 3/ 98 IS:
RA= 156.037 DEC= 13.343 DIST= 4.473 AU
BATSE-ULYSSES DISTANCE = 669197260. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 33.96 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1851.53 SECS.
CROSSING TIME AT ULYSSES IS 76136. S. OR 21:08:55 +/- 294.58 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 3/ 98 IS:
RA= 7.555 DEC= 2.625 DIST= 2.357 AU
MARS-BATSE DISTANCE = 352673952. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=136.82 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -857.77 SECS.
CROSSING TIME AT MARS IS 73426. S. OR 20:23:46 +/- 126.75 SECONDS

BATSE BURST TRIGGER

NO.: 6645

TIME: TJD=0887 SECONDS=74284

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 17.5 AZIMUTH=117.9 ERROR= 4.9 DEGREES

COMMENTS:

SINGLE PULSE, DUR. APPROX. 0.06 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6645	980315	10887	74284	11000	000	-40	.06

BATSE BURST# 6645

ULYSSES RT

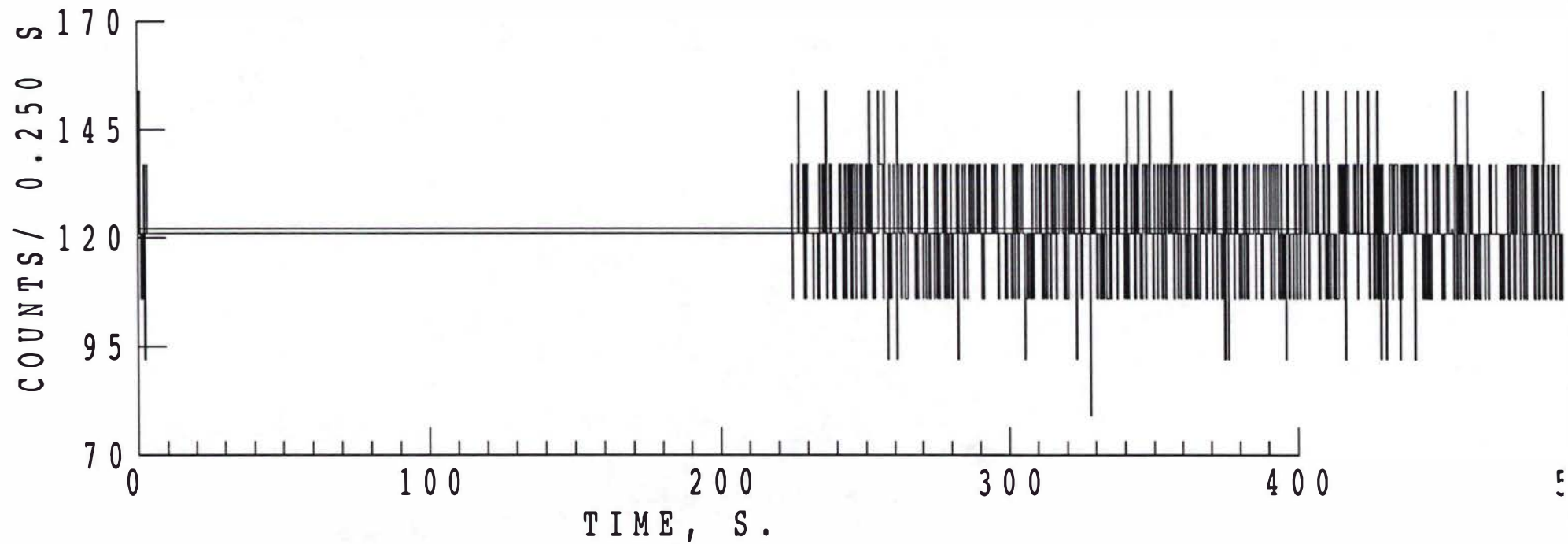
17 / 3 / 98

15 / 3 / 98 75852.047 s

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

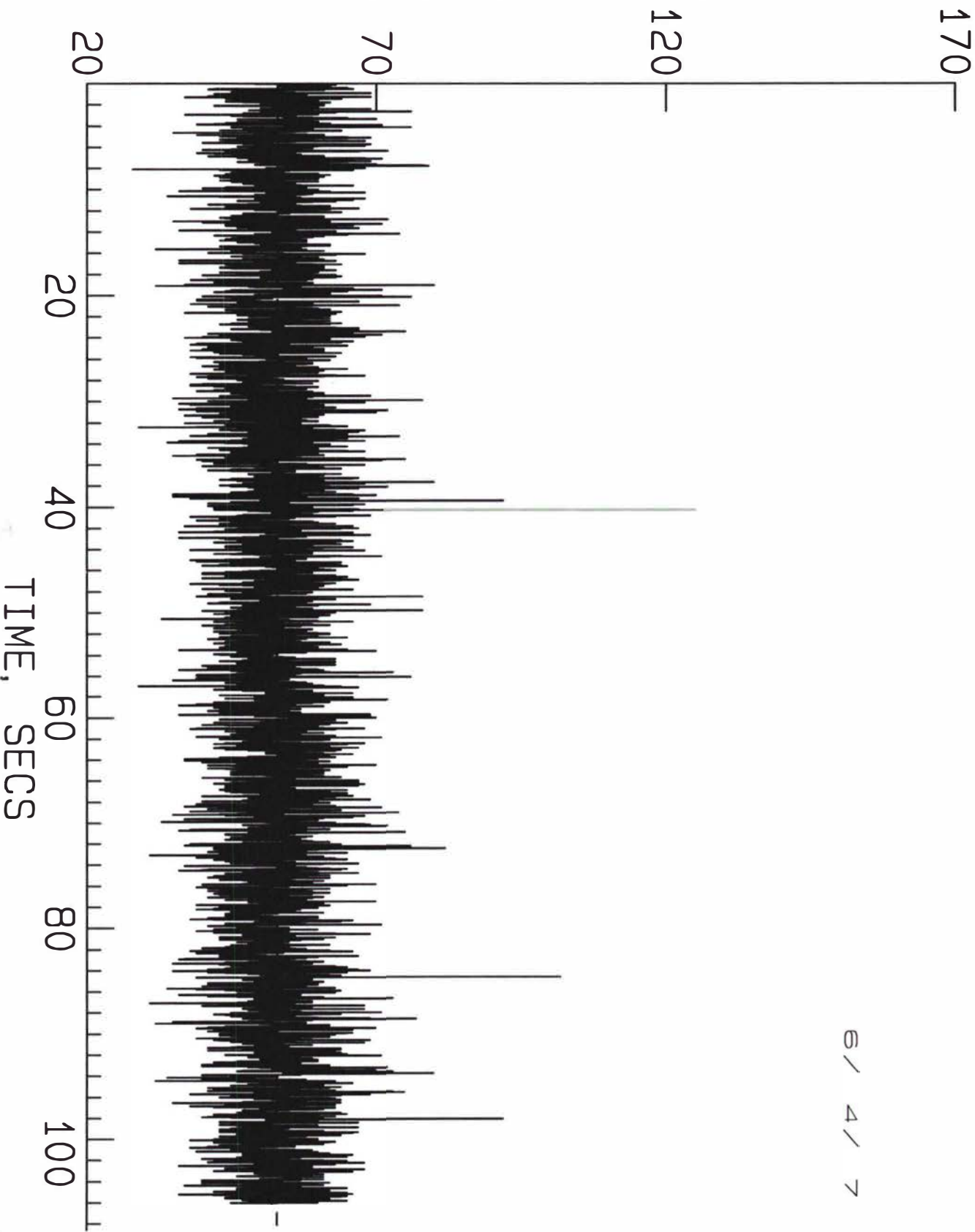
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX GRBM

15/03/98 81748.615
40- 700 keV

COUNTS/0.031 S



SAX

HUS DATA

19 / 07 / 05

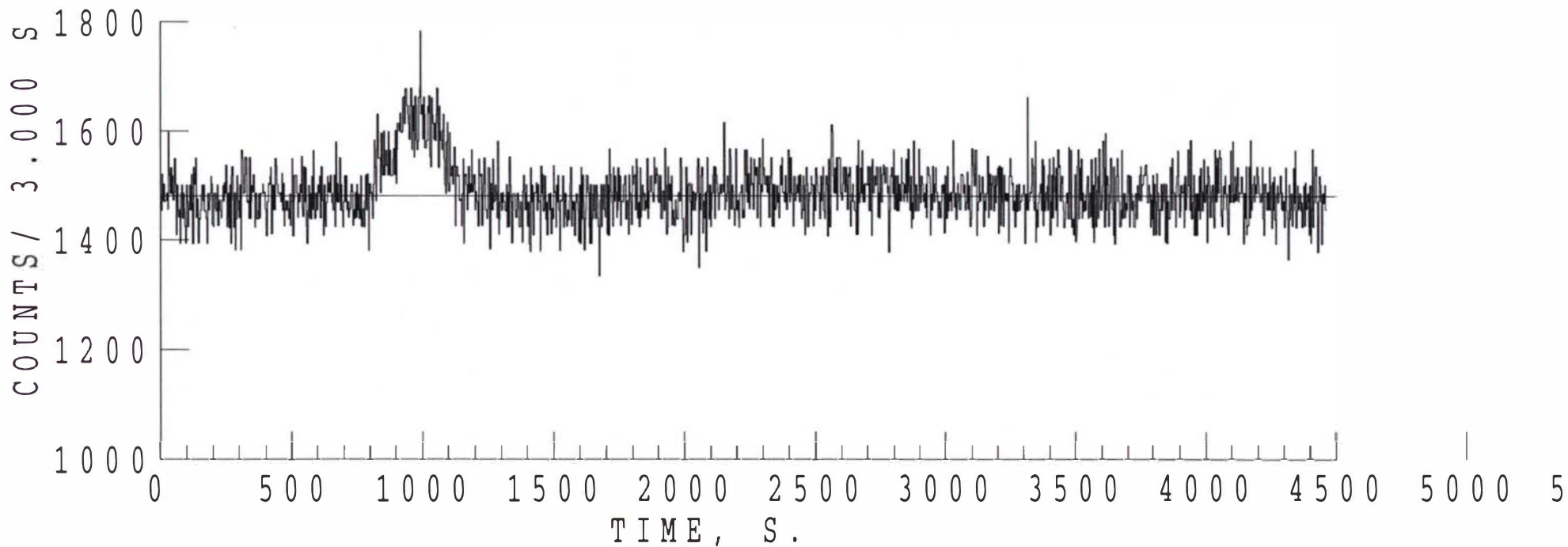
ULYSSES RT

15 / 03 / 98 79524.086 s

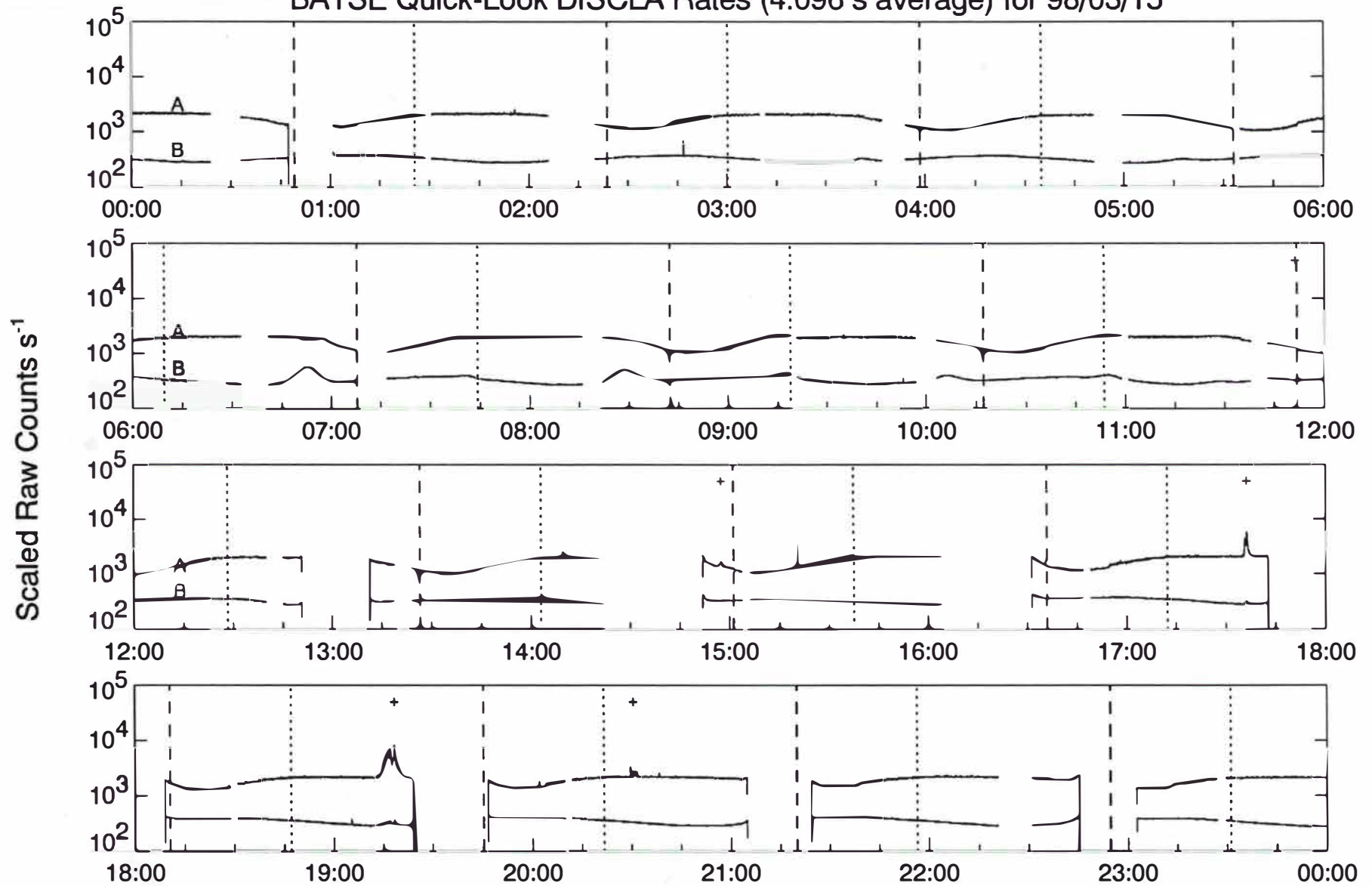
0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/15

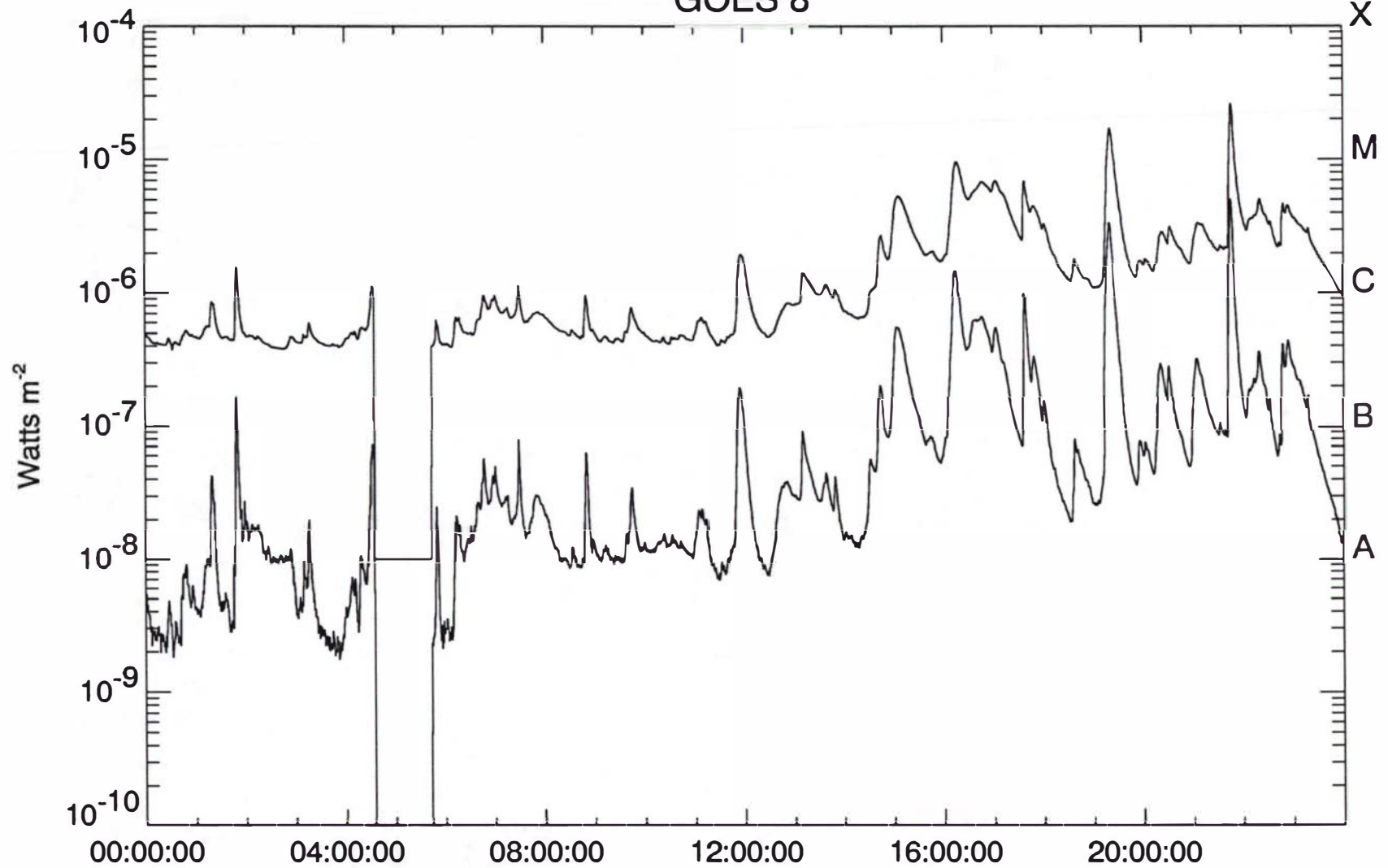


Current Time: 98/03/19, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 98/03/15, 0000:00

Plot created: 98/03/19, 1007

Channel 1 (1.0 - 8.0 Angstroms)

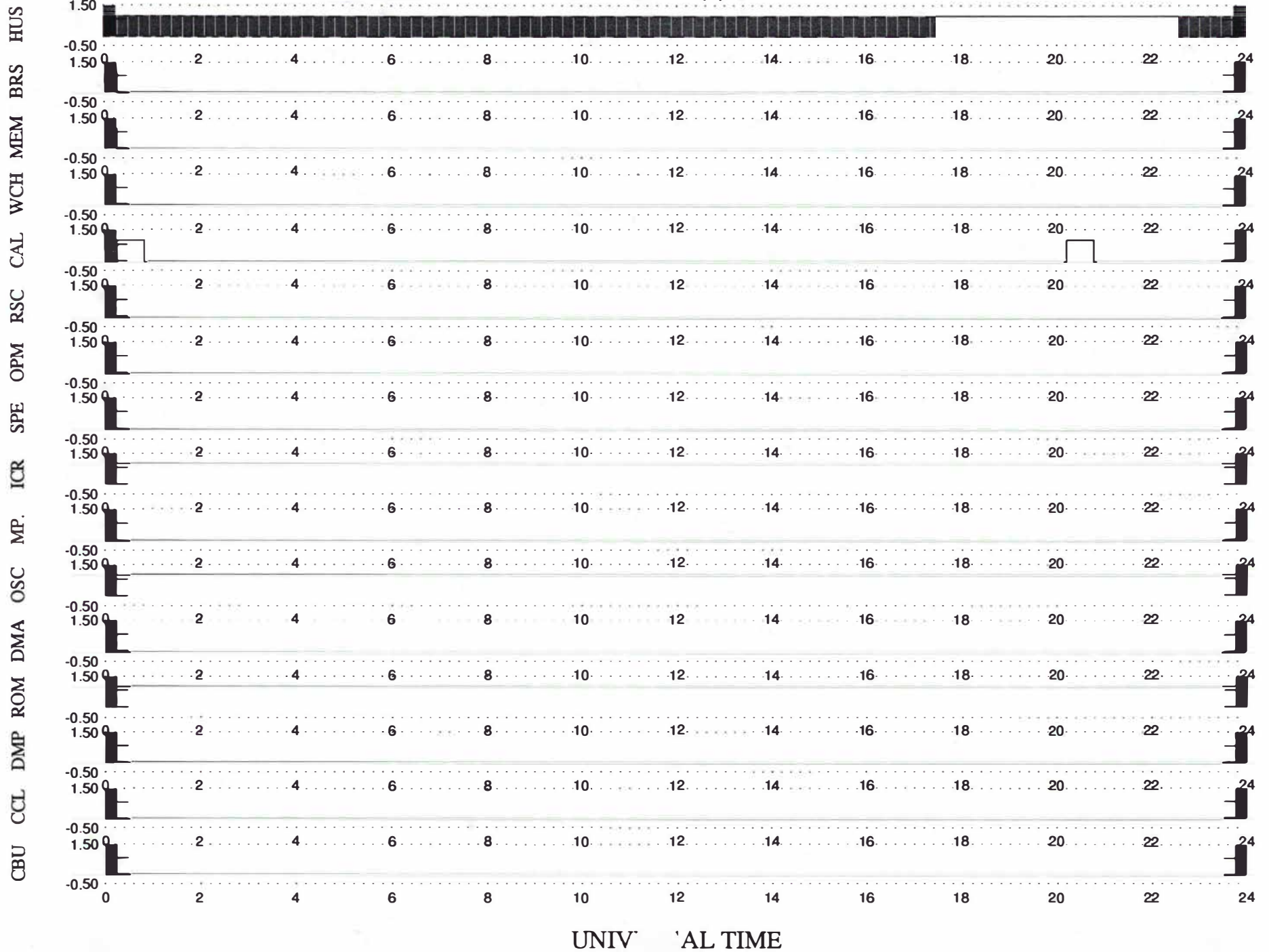
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

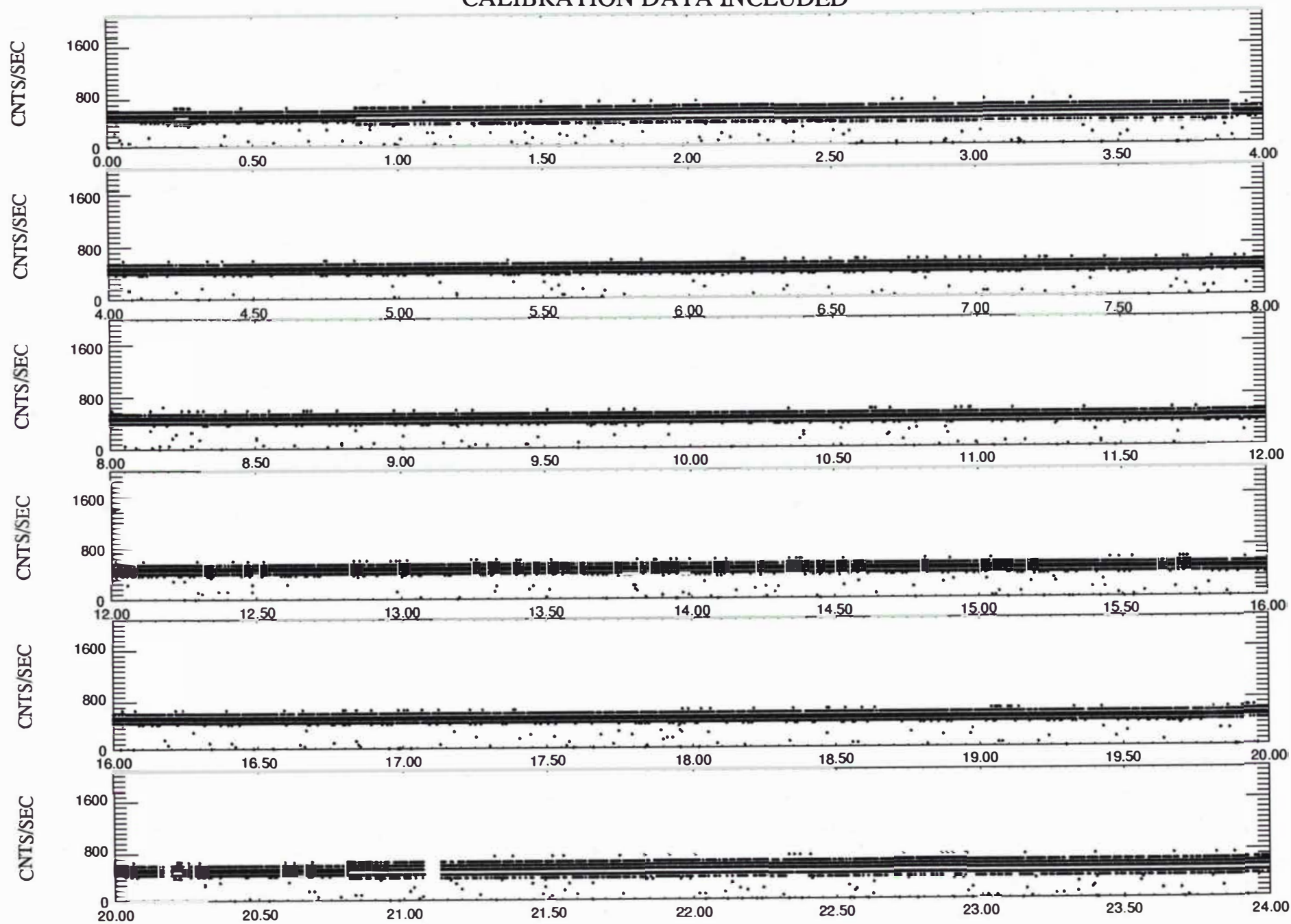
Background not subtracted

Sample average = 10

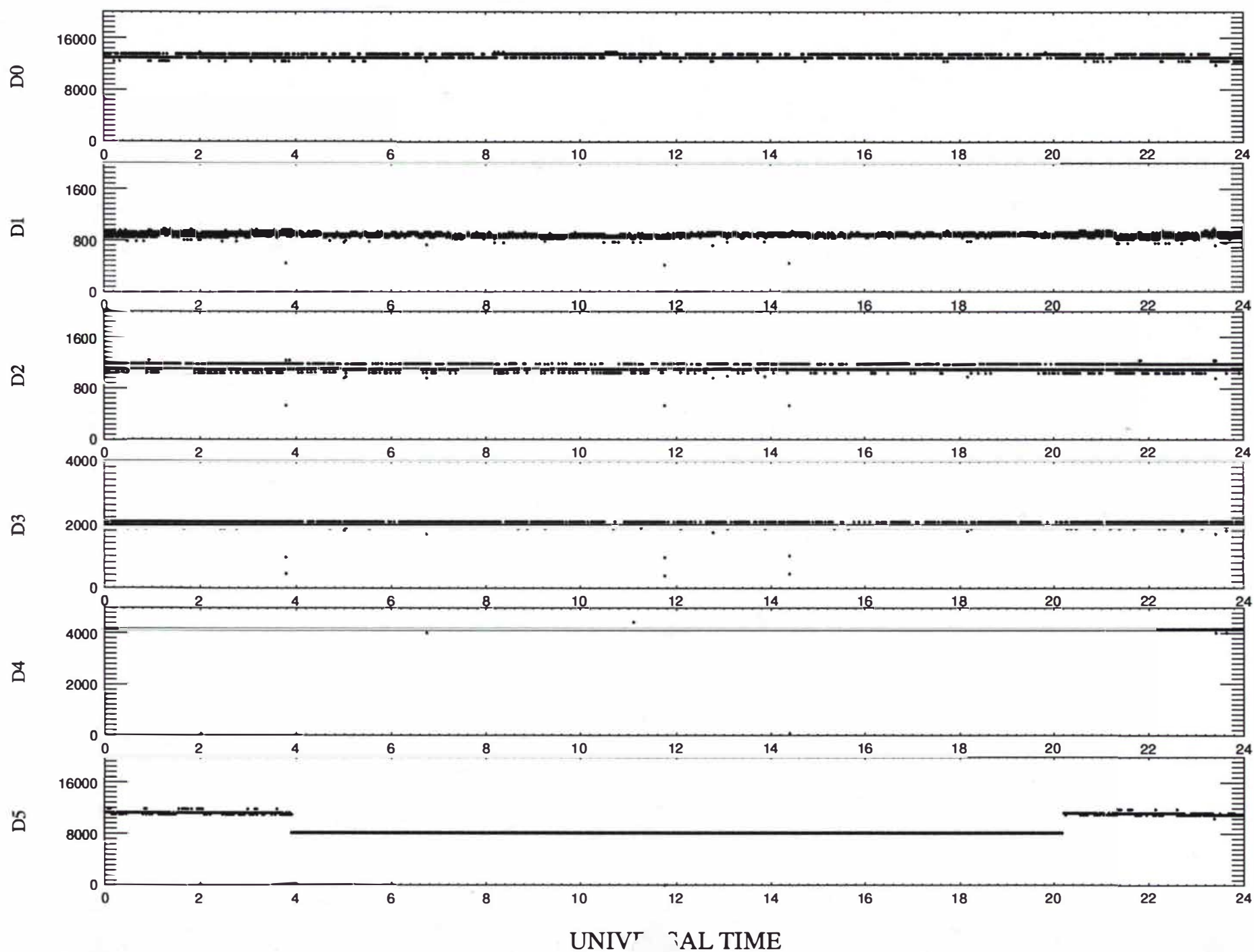
NO BURST (2)



CALIBRATION DATA INCLUDED



UNIV. TIME



From SURASAK@SSLMOR.msfc.nasa.gov Wed Mar 18 12:01:37 1998
From: SURASAK@SSLMOR.msfc.nasa.gov
Date: Wed, 18 Mar 1998 13:58:40 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6646

TIME: TJD=0888 SECONDS=66857

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

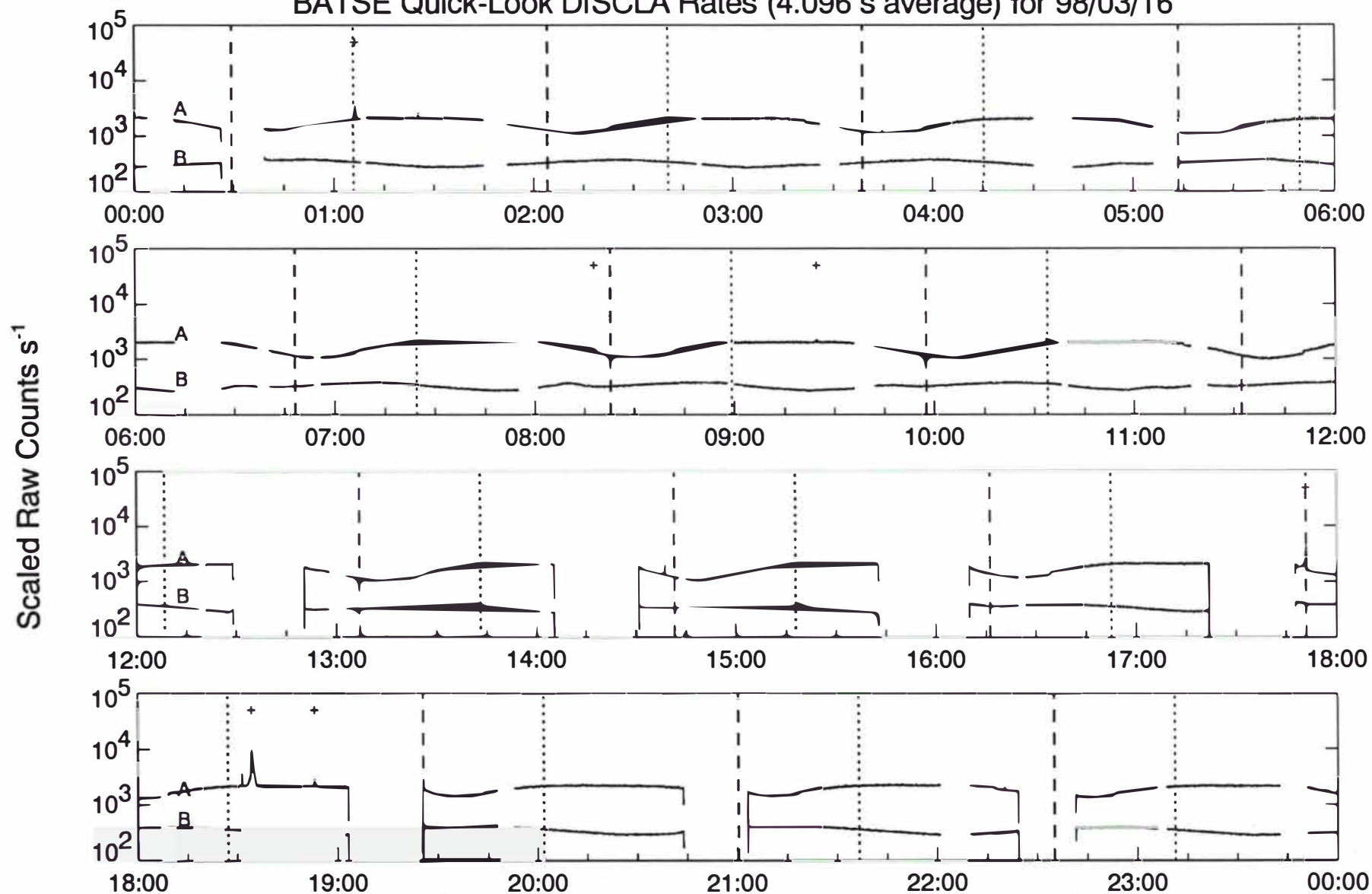
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=26.2 AZIMUTH=277.7 ERROR=0.564 DEGREES

COMMENTS:

GOES C5.9, OPTICAL SF FLARE. SOLAR FLARE. SINGLE PULSE WITH SUBSTRUCTURE.
DURATION ABOUT 200 SEC. START AT ABOUT T-100 SEC. PEAK AT ABOUT T+5 SEC.
NOT VISIBLE ABOVE 100 KEV.

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/16

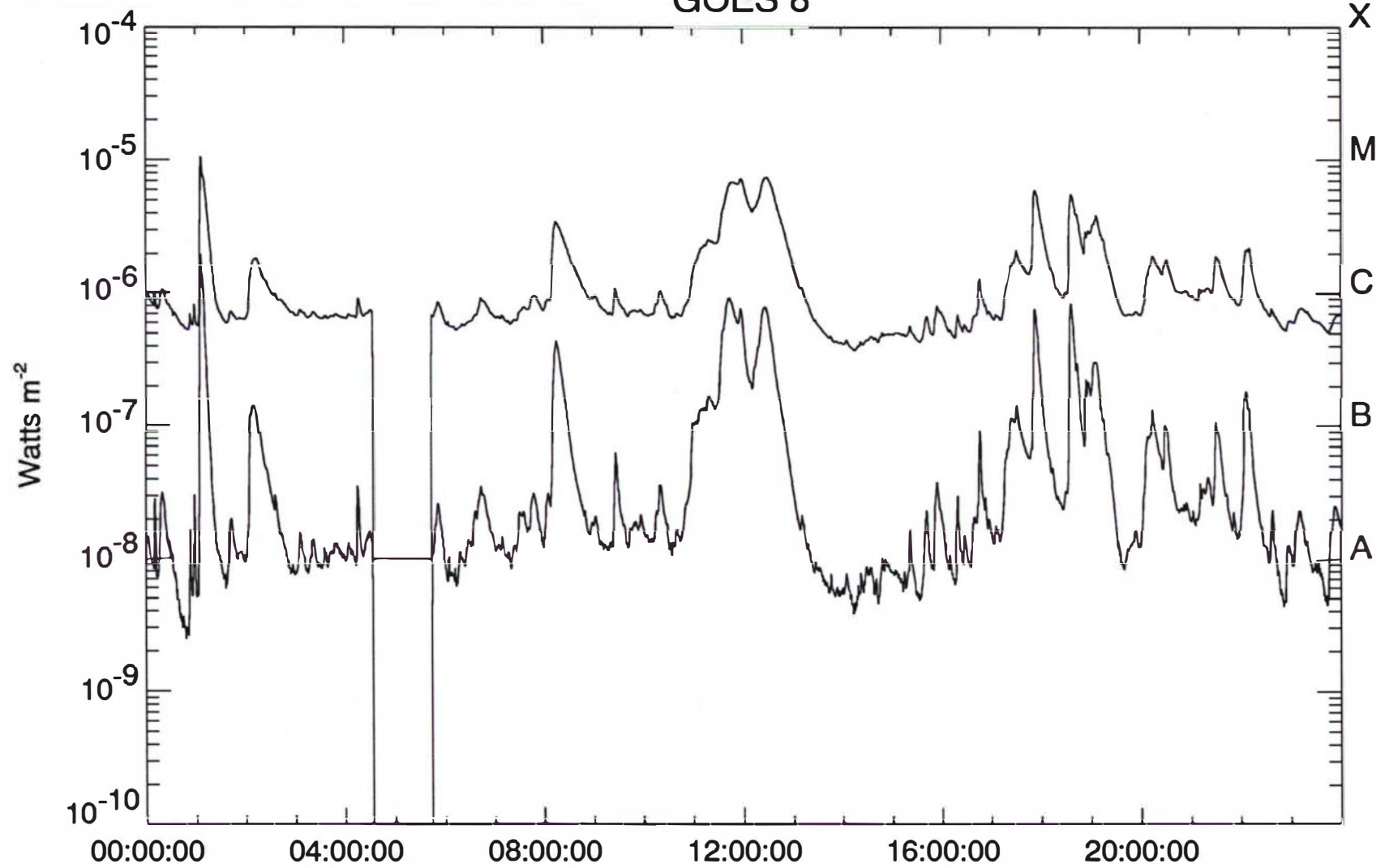


Current Time: 98/03/20, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



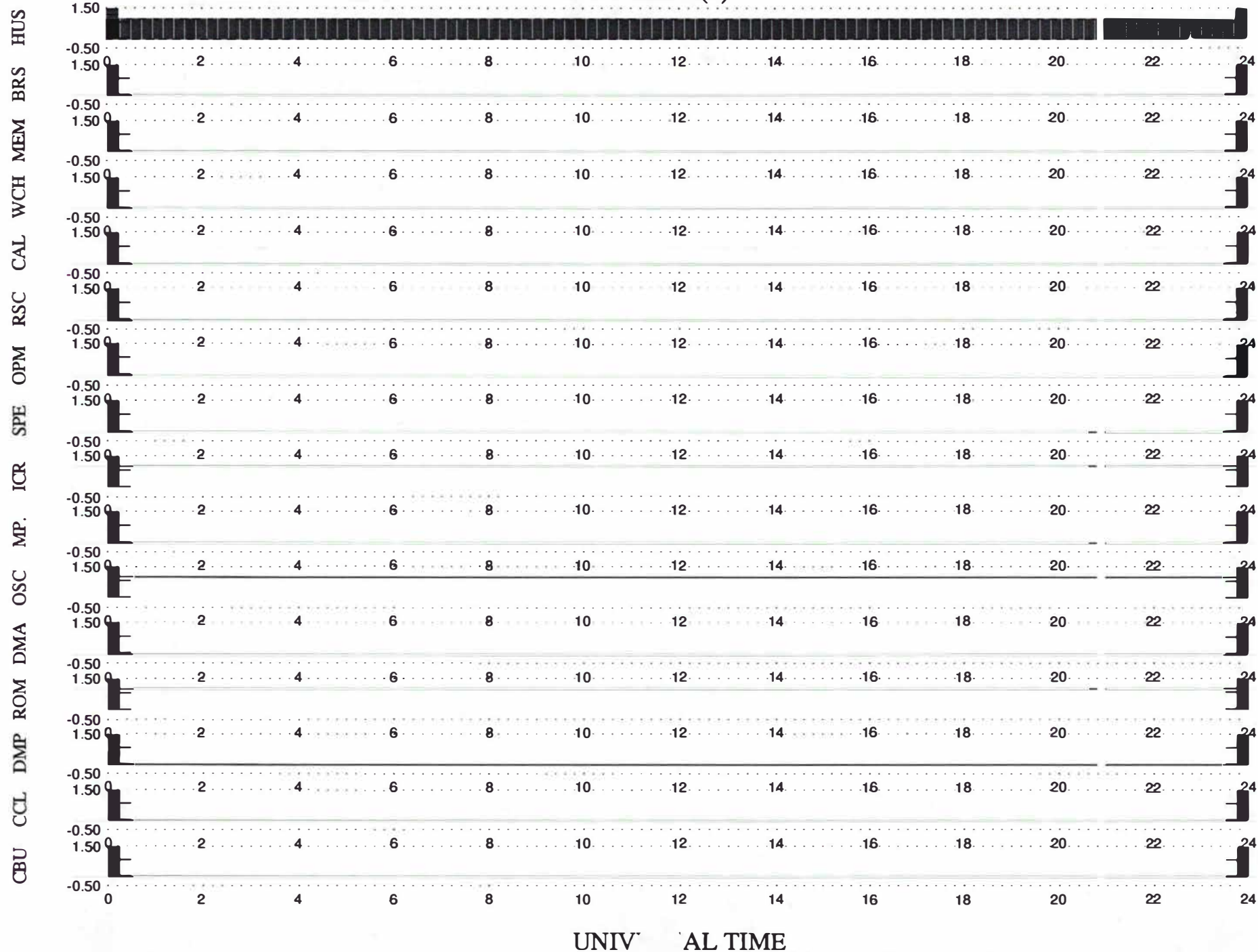
Data Start: 98/03/16, 0000:00

Plot created: 98/03/20, 1007

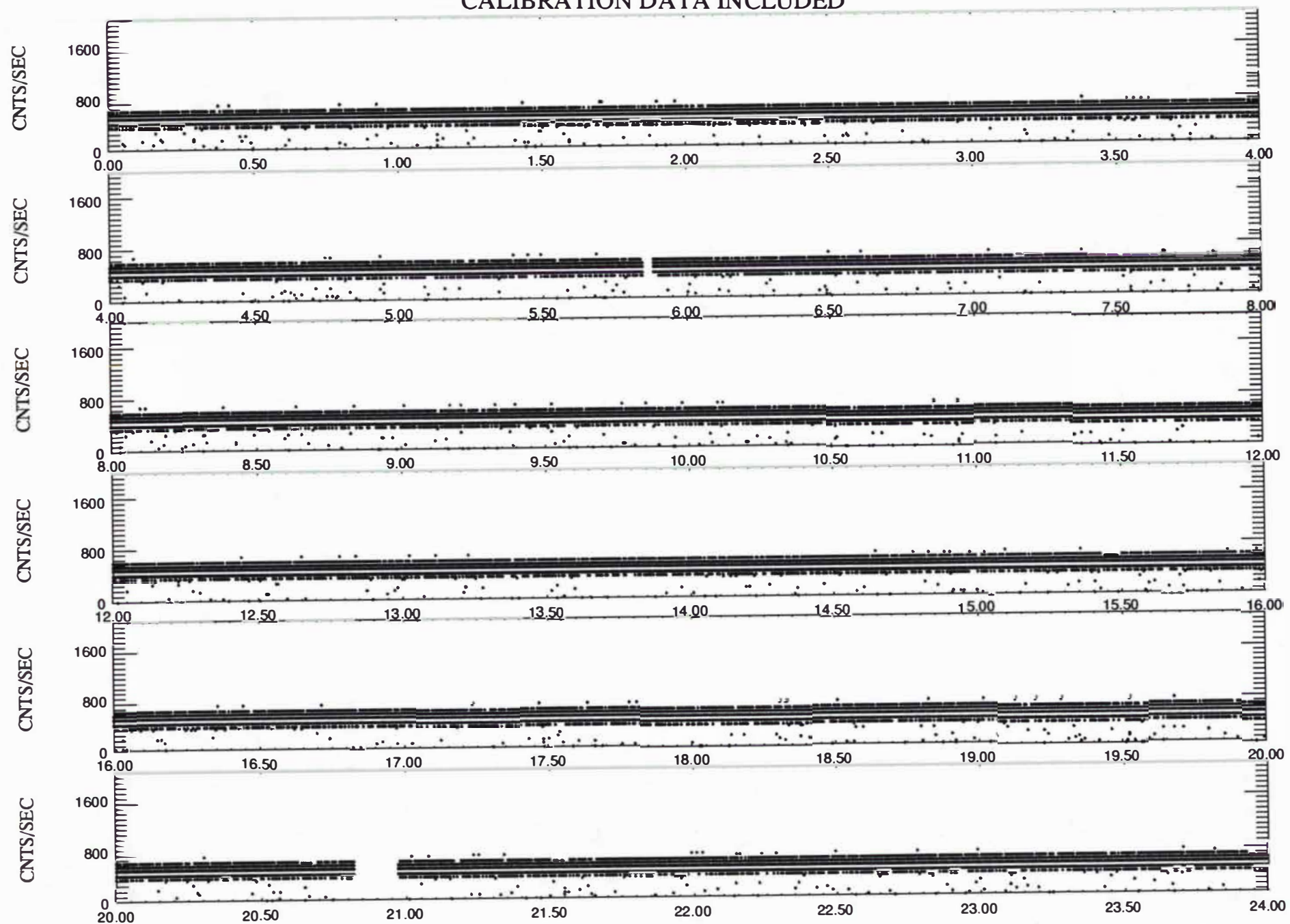
Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

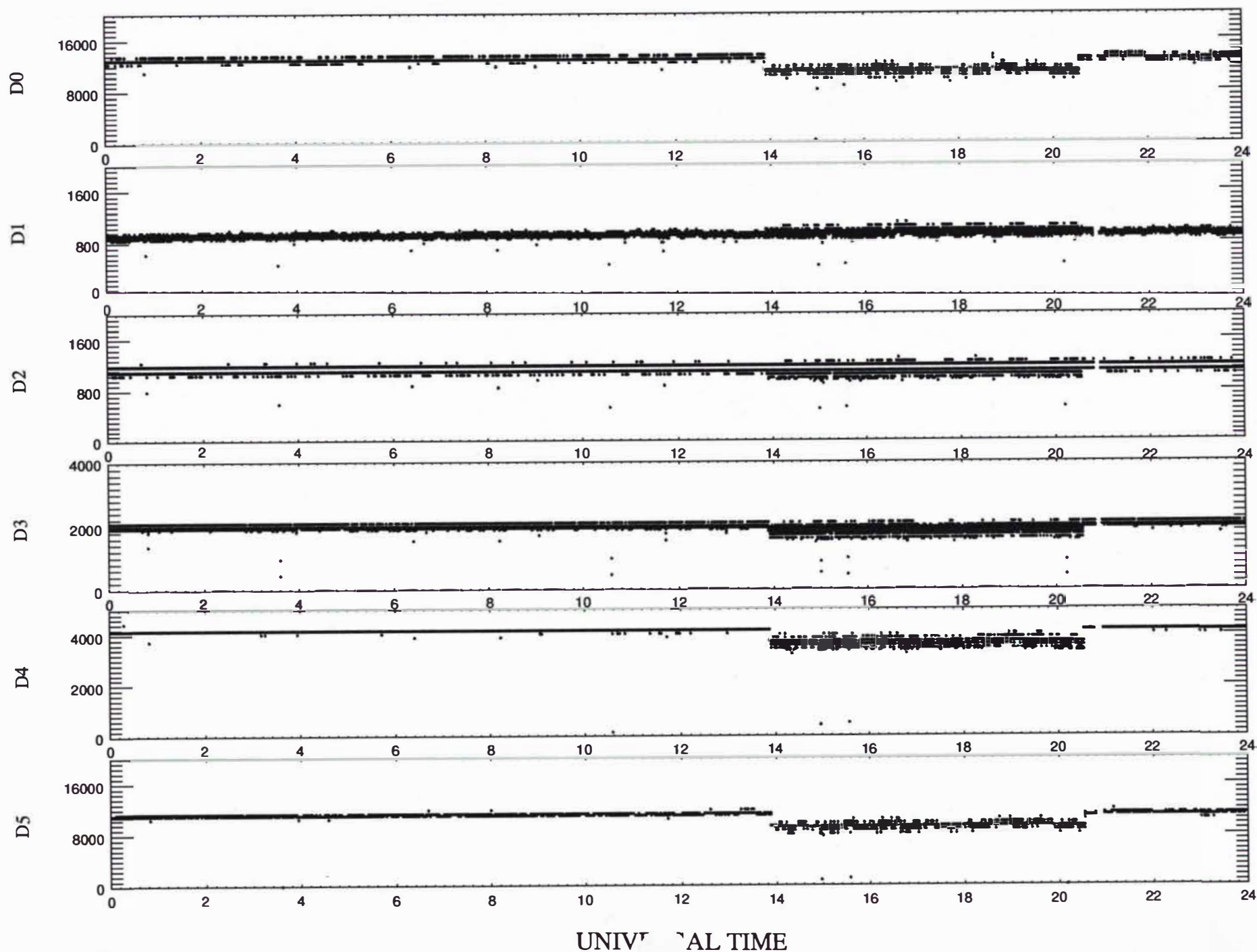
Sample average = 10



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Mar 23 10:30:04 1998
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 23 Mar 1998 12:28:09 -0600 (CST)
To: burst@compel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhev.gsfc.nasa.gov, barthelmy@lhev.gsfc.nasa.gov,
bacodine@lhev.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhev.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6647

TIME: TJD=0891 SECONDS=21936

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

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.9 AZIMUTH=333.0 ERROR=26.1 DEGREES

COMMENTS:

CYG X-1 FLUCTUATION APPROX. 10 SEC. AFTER CYG X-1 RISE.

From BUTTERWORTH@tgrs2.gsfc.nasa.gov Mon Mar 23 11:23 PST 1998
Date: Mon, 23 Mar 1998 14:20:04 -0500 (EST)
From: BUTTERWORTH@tgrs3.gsfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: Ulysses event of 980317 was not detected by Konus

Hi Everyone,

Konus did not detect this event. (From 02:18 to 03:27 data quality is very poor, with more than half our waiting-mode measurements lost in telemetry drops. I'll check the data again if we get a better record of the telemetry).

Paul.

Date: Fri, 20 Mar 1998 08:07:58 -0800
From: khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
Message-Id: <199803201607.IAA03026@scylla.>
To: scott@lheamail.gsfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
butterworth@lhevax.gsfc.nasa.gov, cline@lhevax.gsfc.nasa.gov,
kmarar@isac.ernet.in, vnp@isac.ernet.in,
bonnard@lheamail.gsfc.nasa.gov, jterrell@lanl.gov,
yosimori@rikkyo.ac.jp, filippo@botes1.tesre.bo.cnr.it,
henze@fender.msfc.nasa.gov, kraken@rosserv.gsfc.nasa.gov
Subject: GRB980317
X-Sun-Charset: US-ASCII

ULYSSES GAMMA-RAY BURST NOT REPORTED BY BATSE:

Ulysses observed the following burst:

March 17 1998 03:05 Ulysses time; weak burst, 64 ms long

The spacecraft was about 2235 light-seconds from Earth.
Was this event detected by anyone else?

CC: ulyssesbursts alias list
(barthelmy, butterworth, cline, frontera, henze, kouveliotou, kurczynski, marar, teegarden, t

Date: Mar 6 2012

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

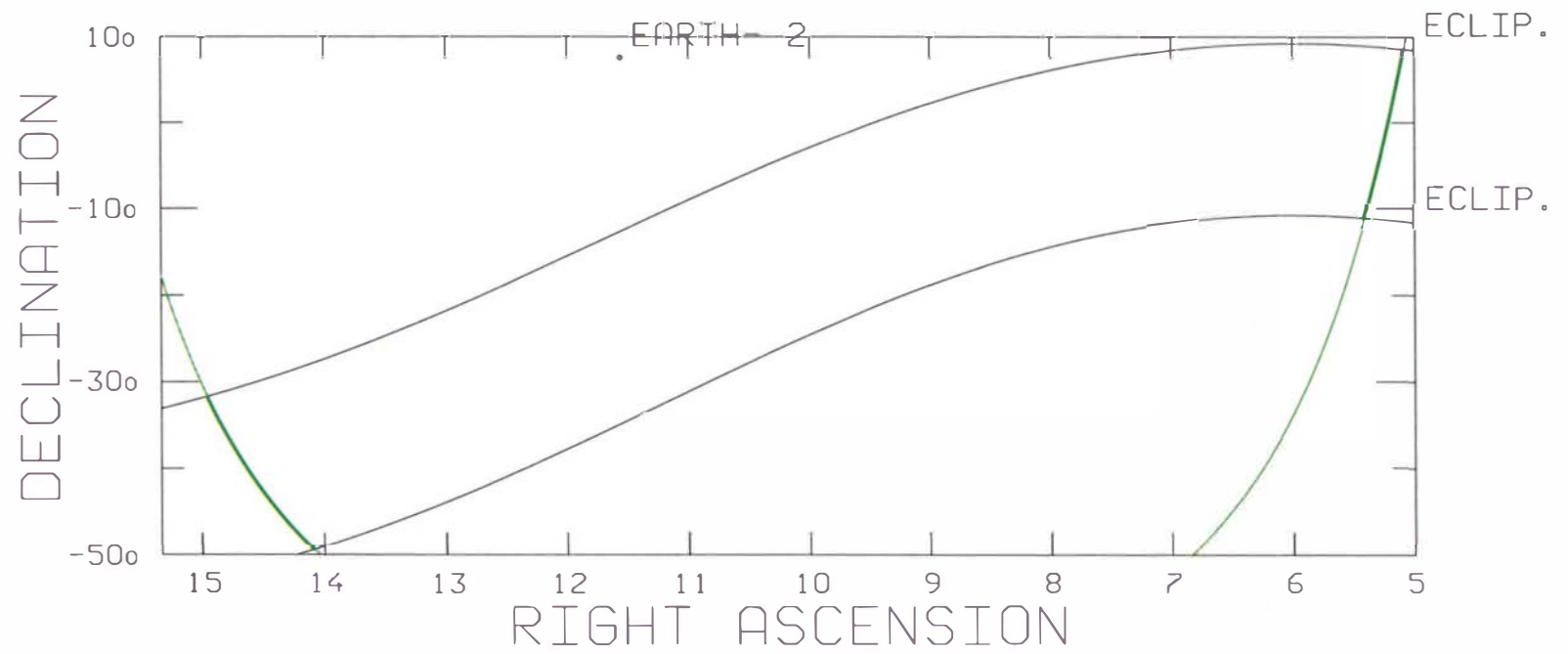
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

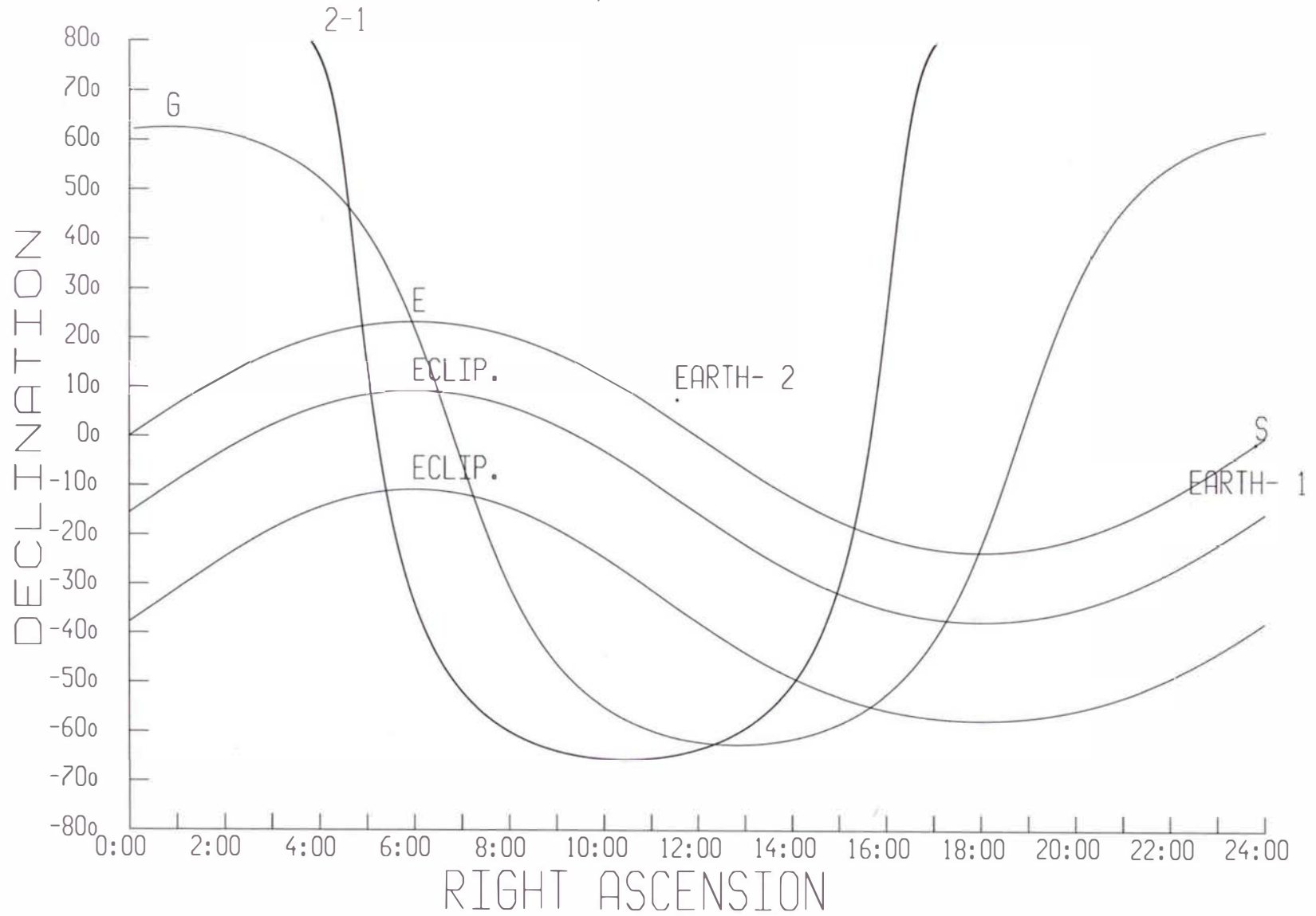
-
- ☒ ACCESS and MBL4 databases updated with identical times?

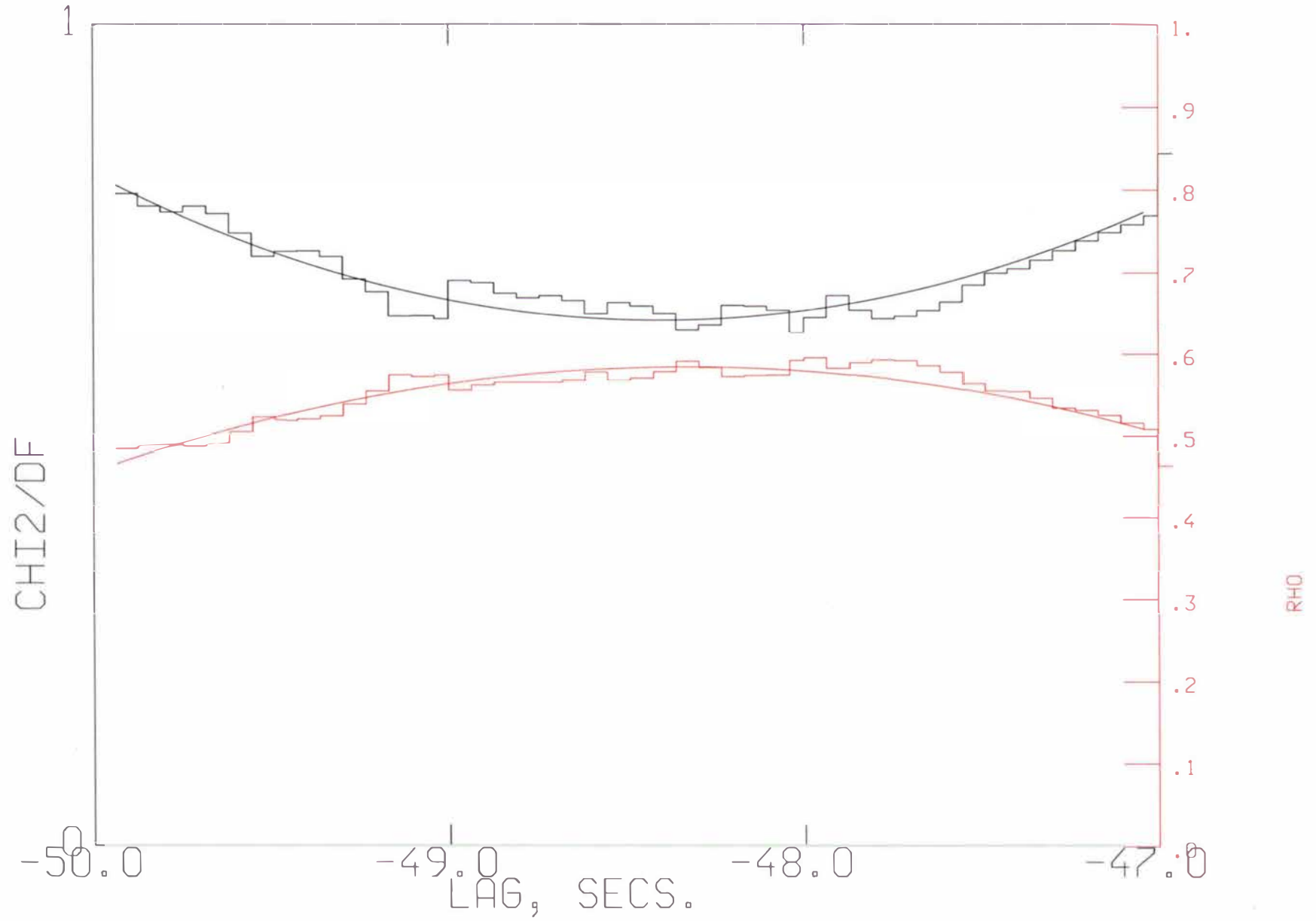


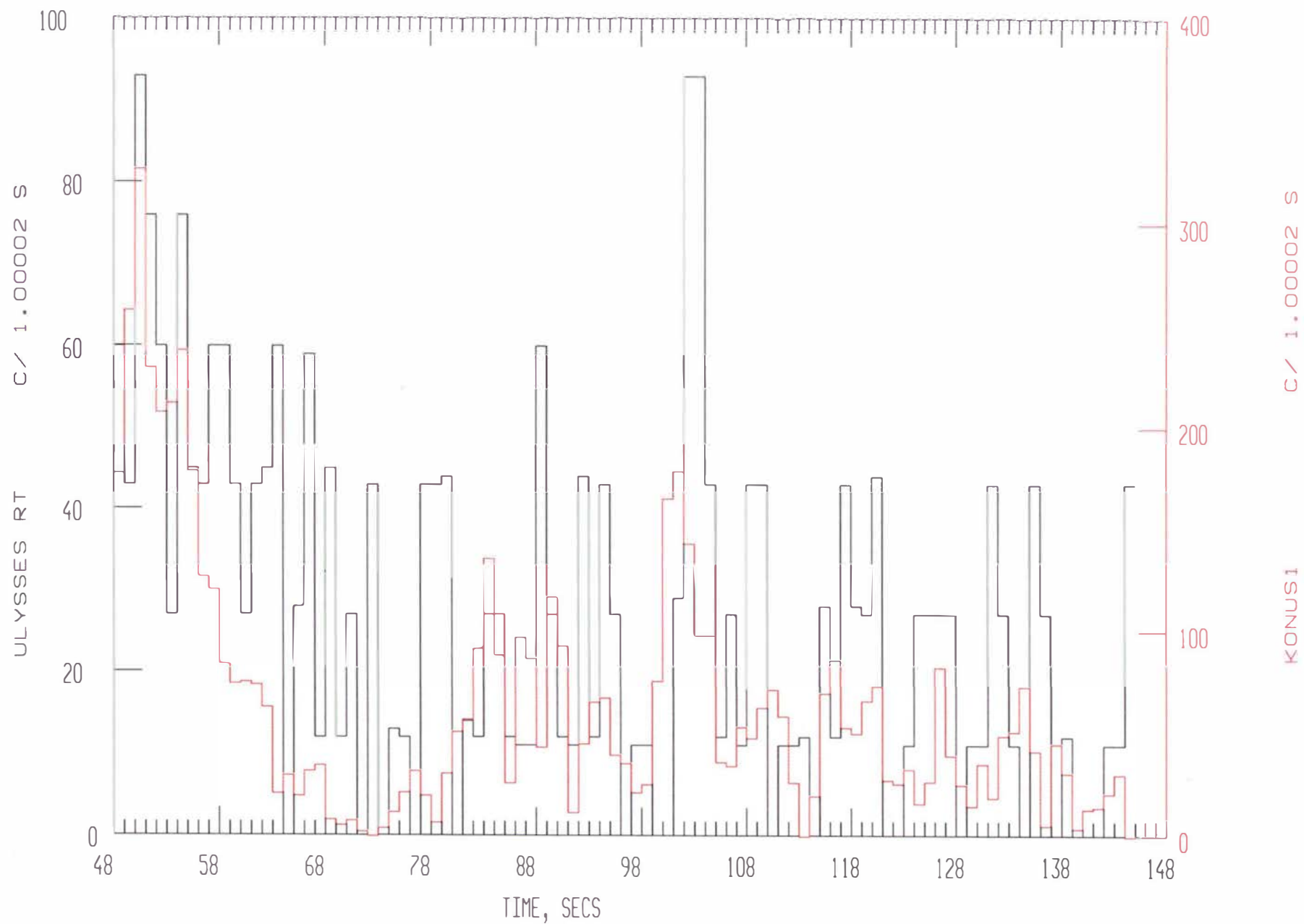
EVENT OF MAR 17, 1998 13:50

06/03/2012

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







KONUS 19980317 49899

ULYSSES RT

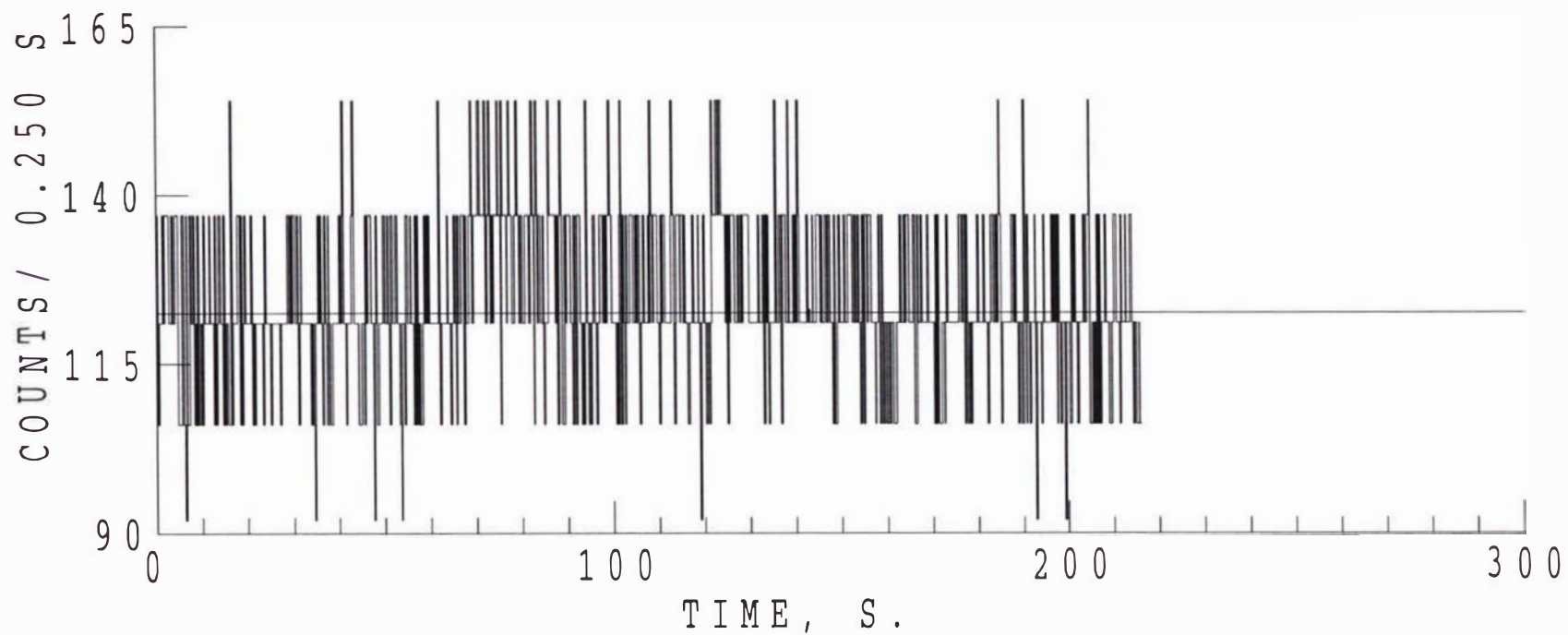
01 / 02 / 12

17/03/98 49788.129 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

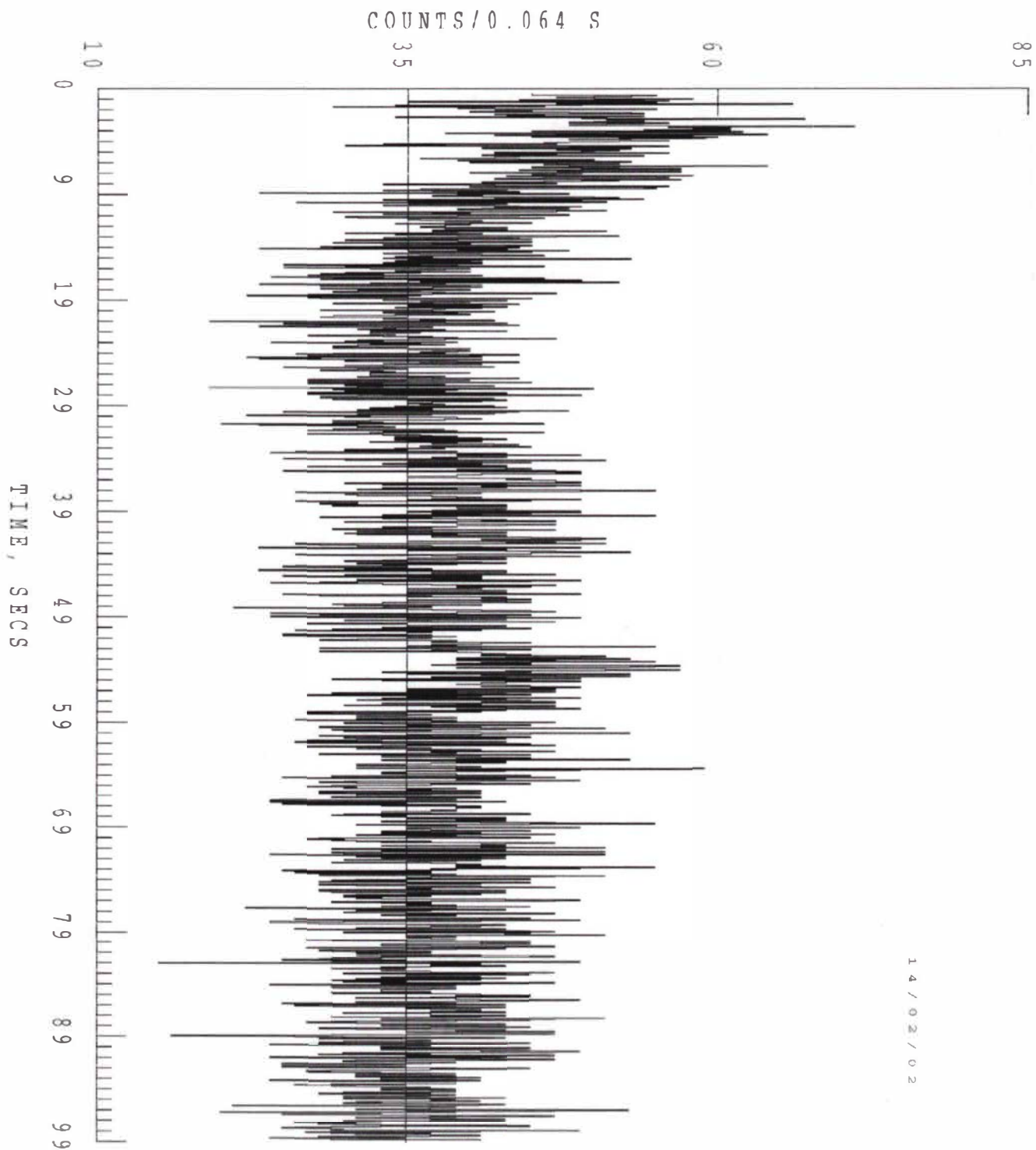


KONUS1

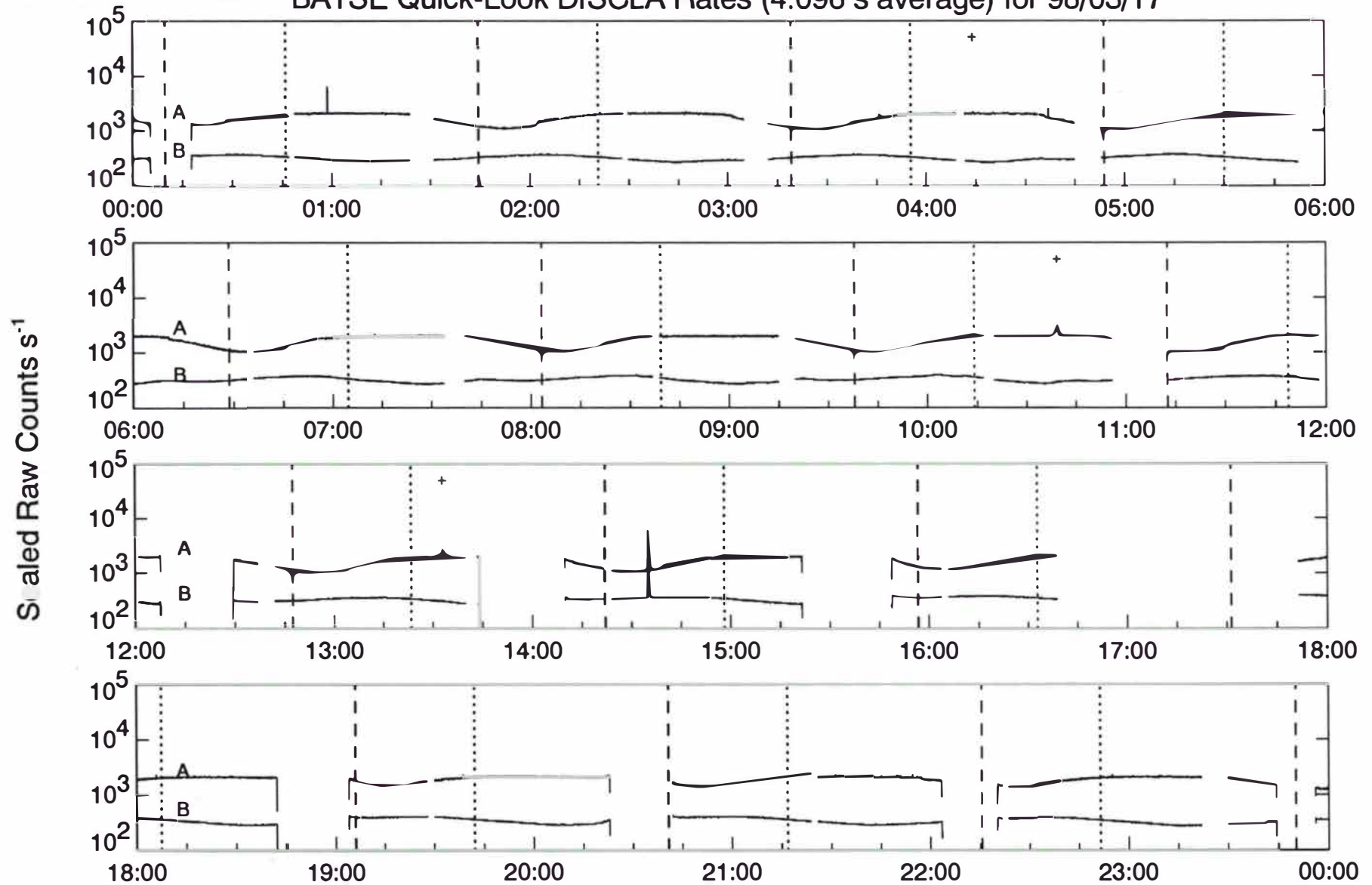
17/03/98

50294.064

50 - 200 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/17

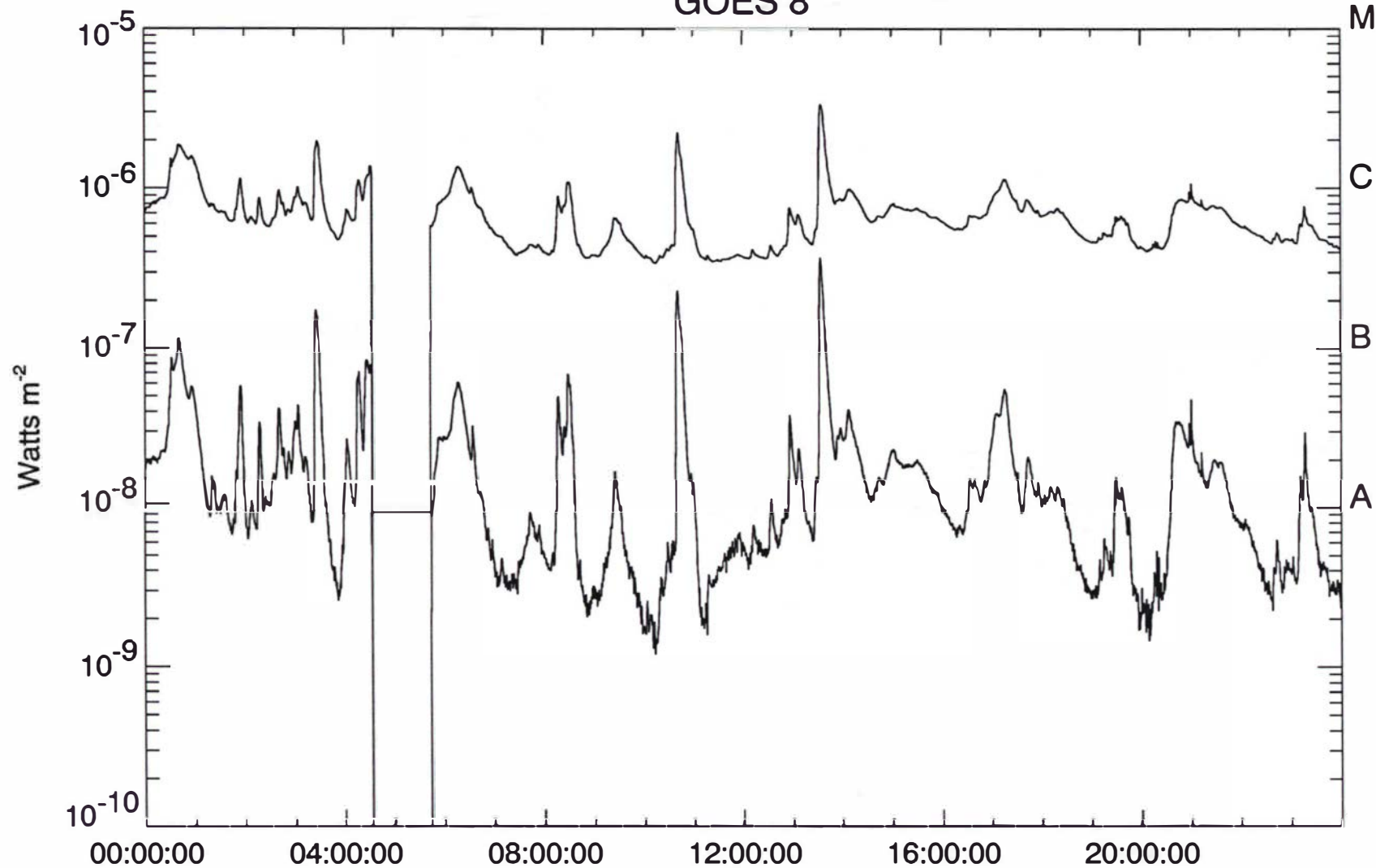


Current Time: 98/03/21, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 98/03/17, 0000:00

Plot created: 98/03/21, 1007

Channel

1 (1.0 - 8.0 Angstroms)

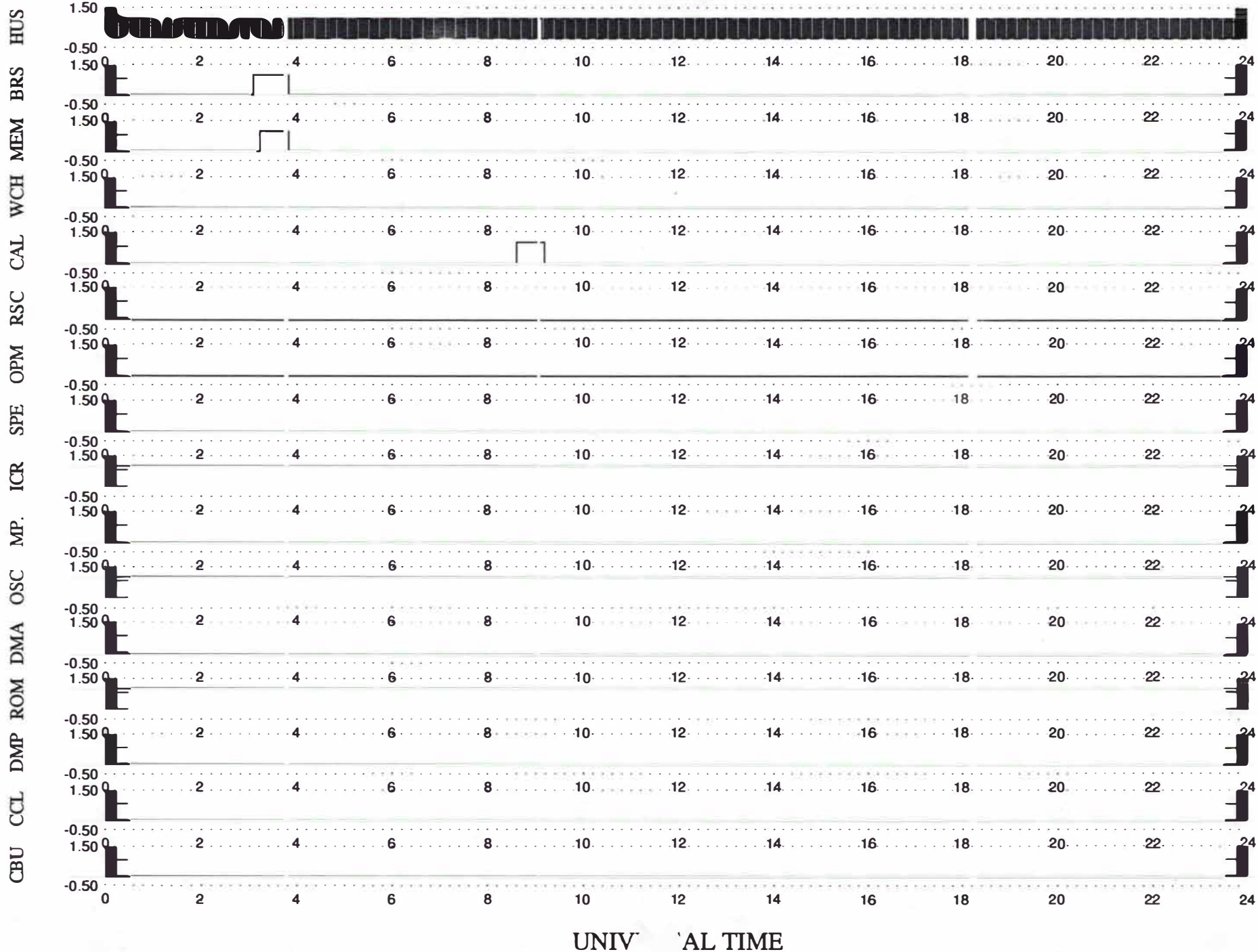
Background not subtracted

2 (0.5 - 4.0 Angstroms)

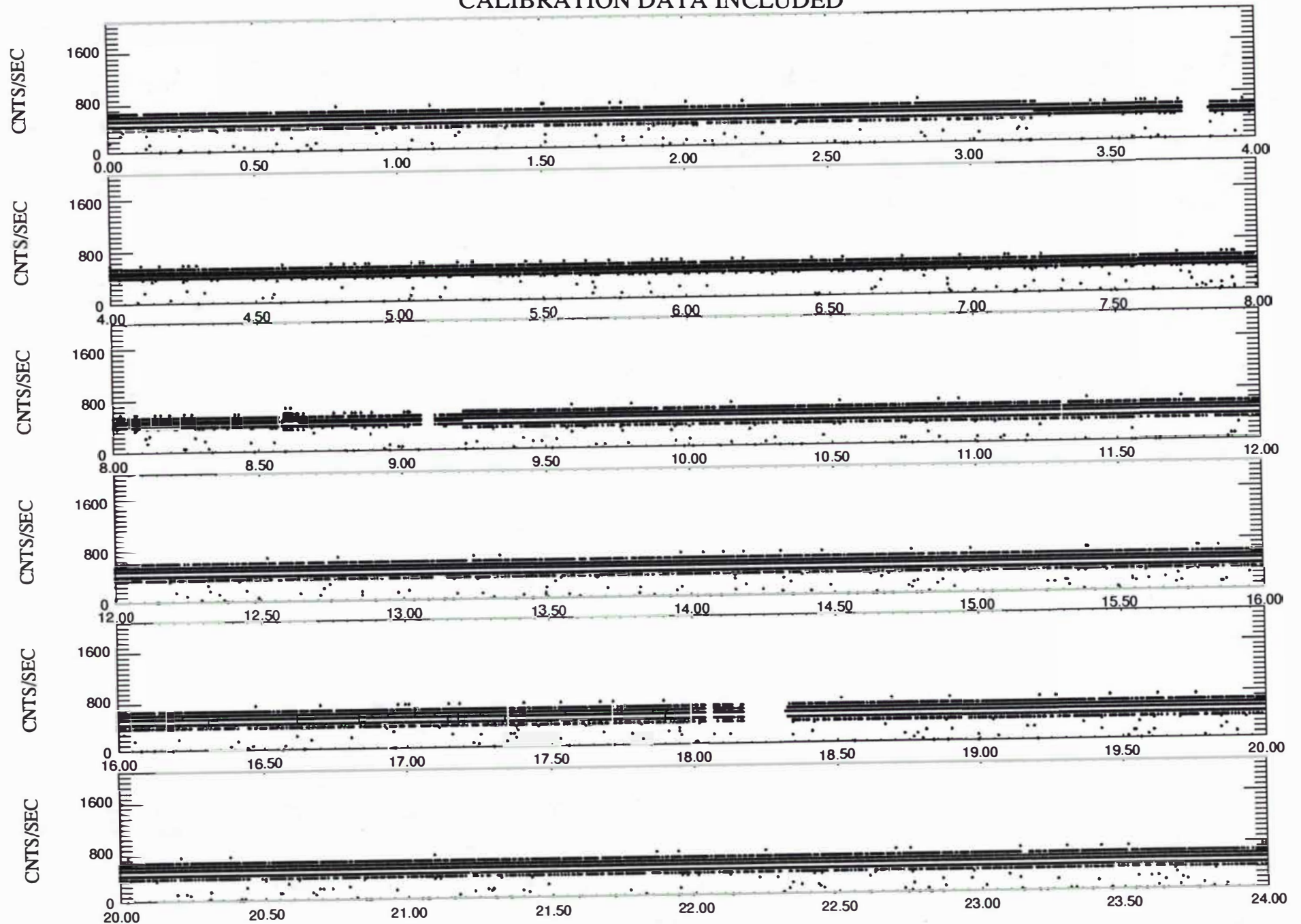
Background not subtracted

Sample average = 10

BURST NUMBER 3

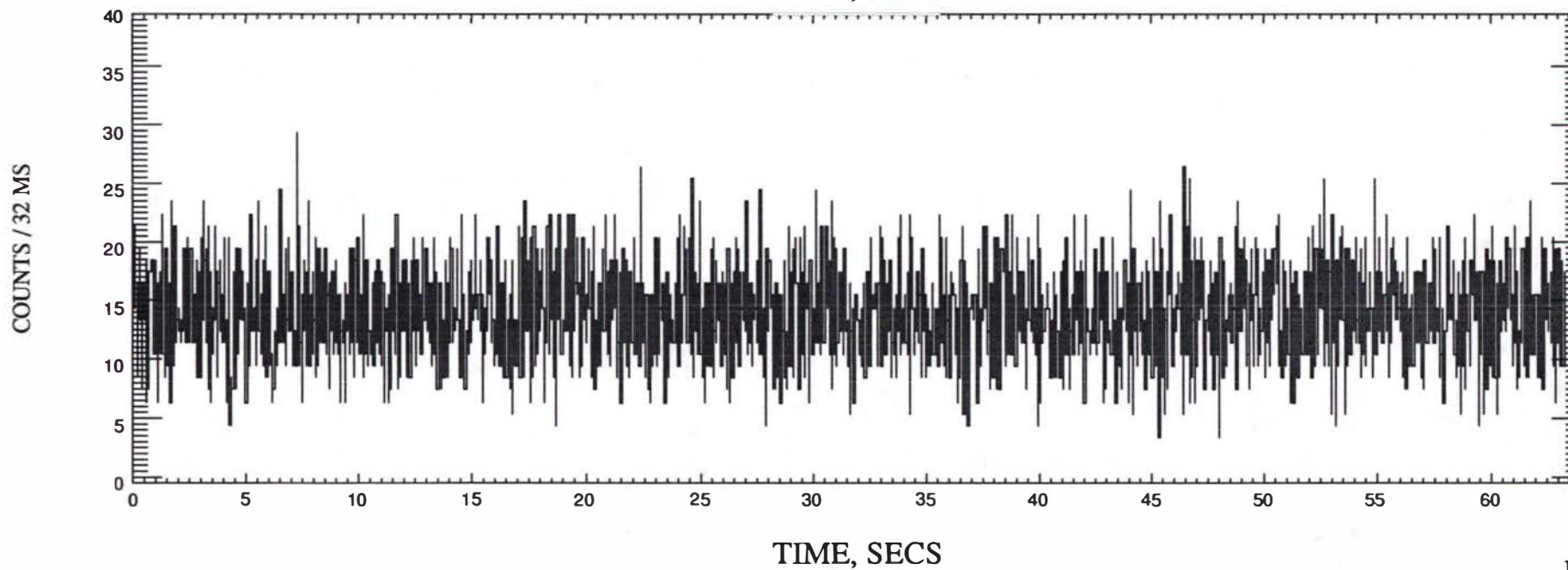
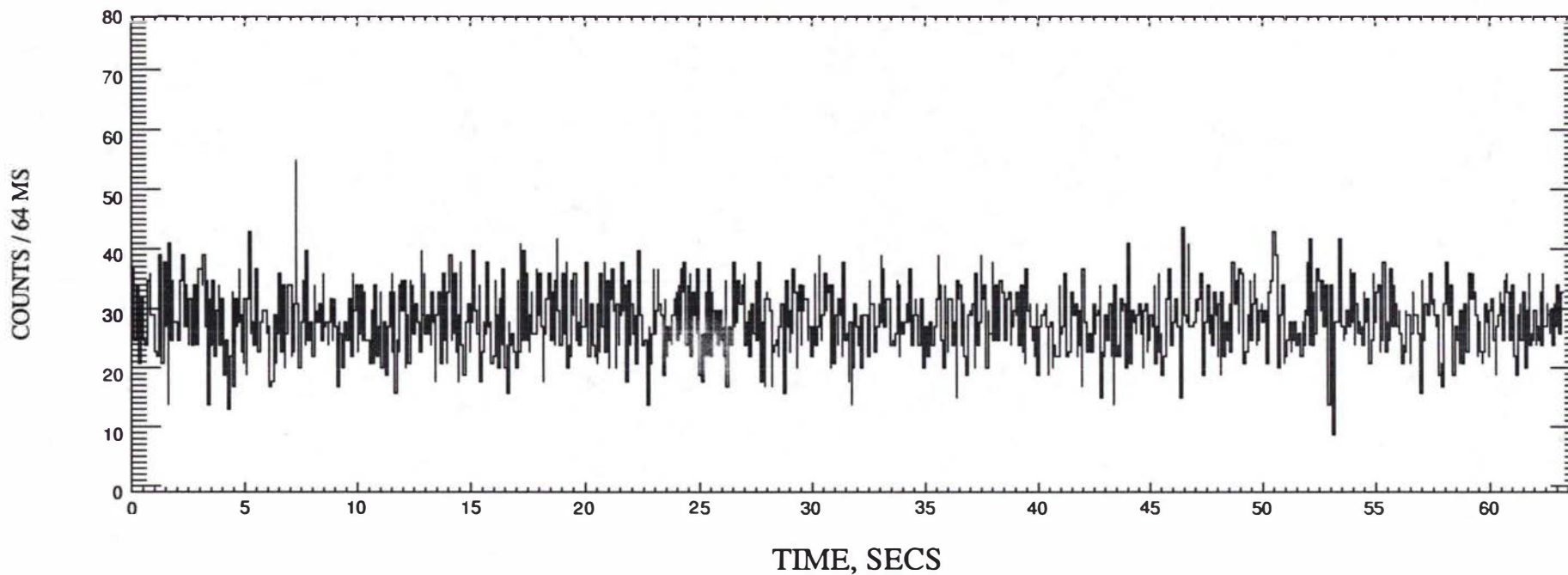


CALIBRATION DATA INCLUDED

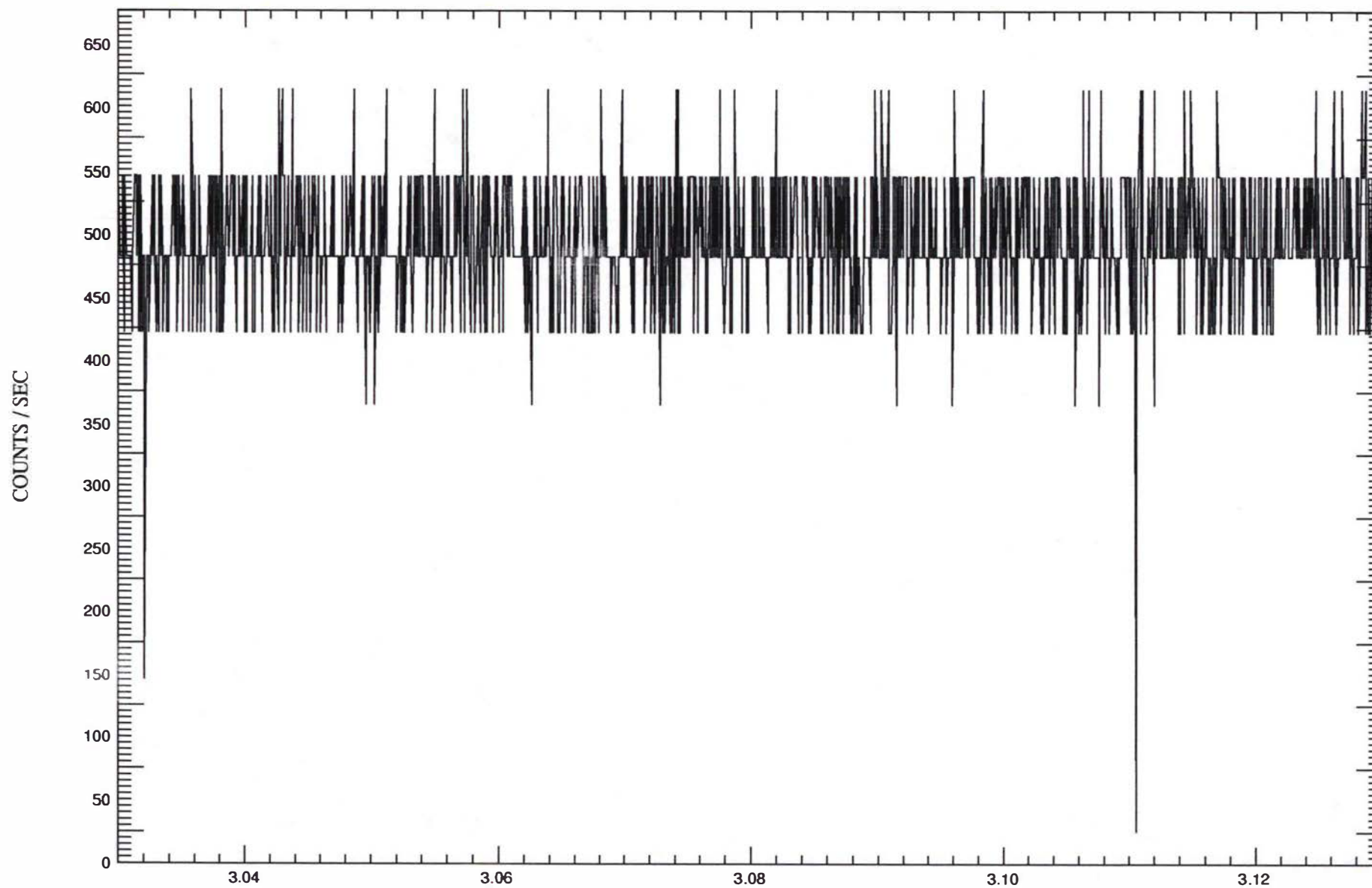


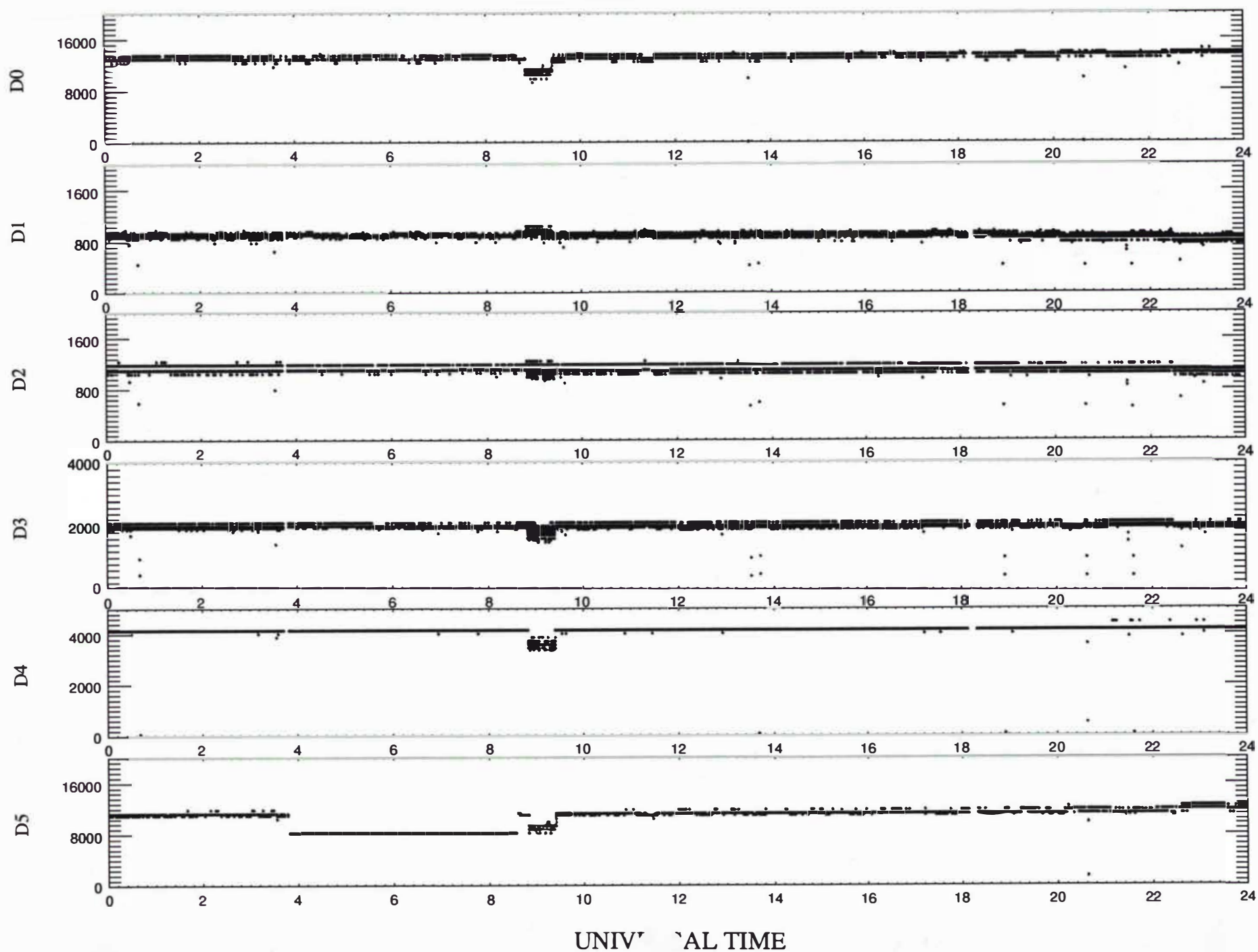
UNIV. TIME

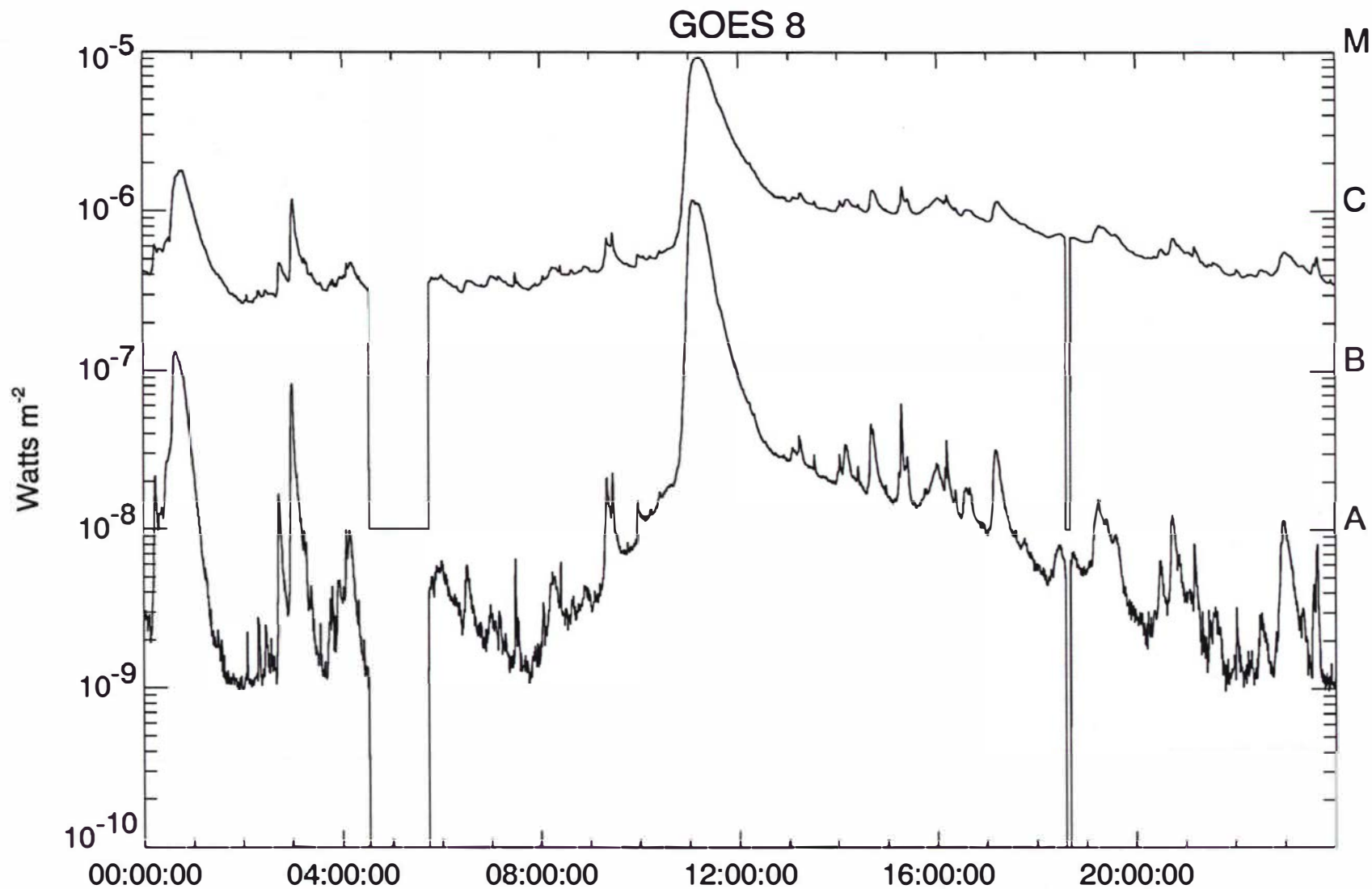
Burst Counter 3 at UT= 3.078841527303 h=11083.829 s 03:04:43.829



CALIBRATION DATA INCLUDED







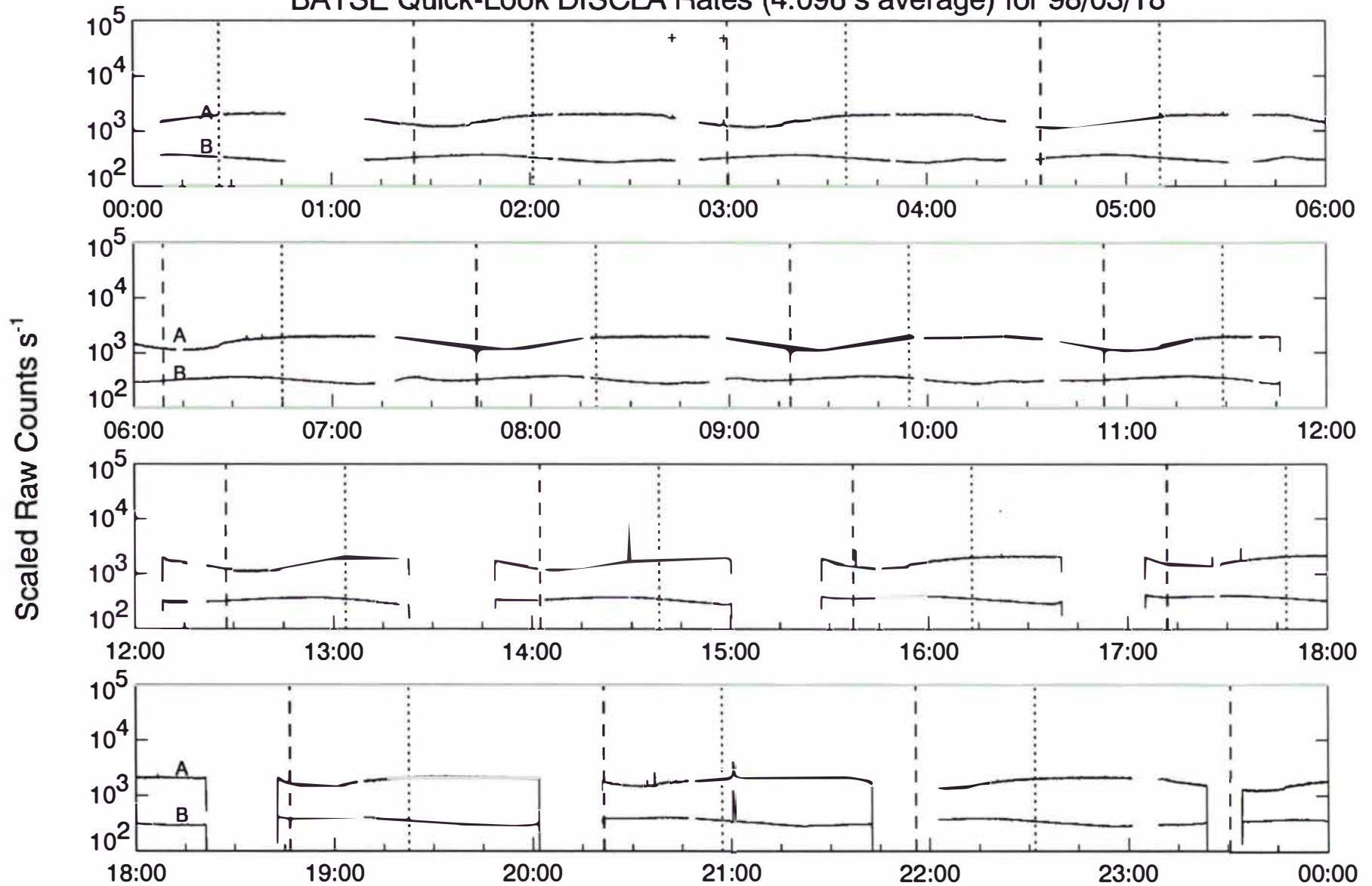
Data Start: 98/03/18, 0000:00

Plot created: 98/03/22, 1007

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

Background not subtracted
Background not subtracted
Sample average = 10

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/18

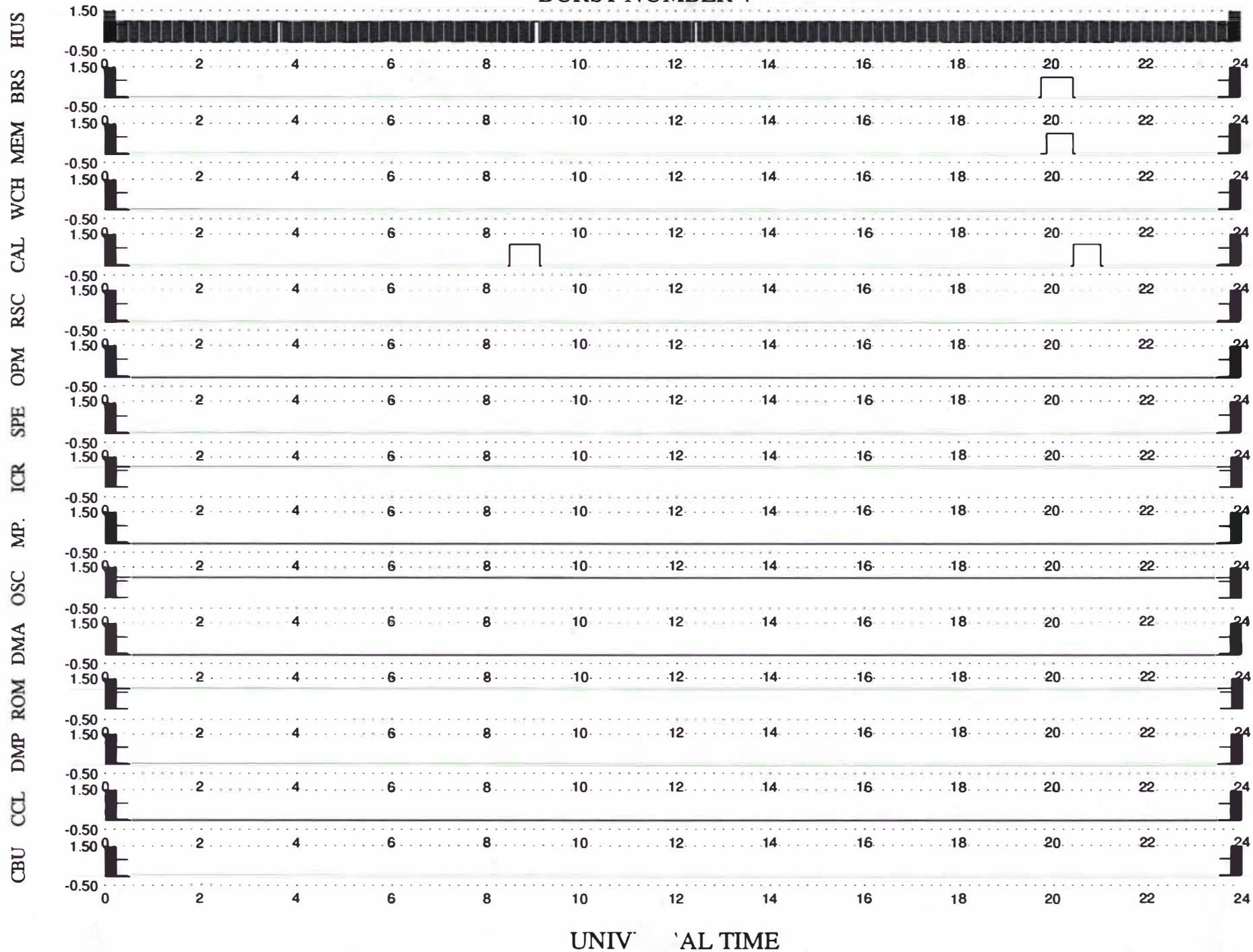


Current Time: 98/03/22, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

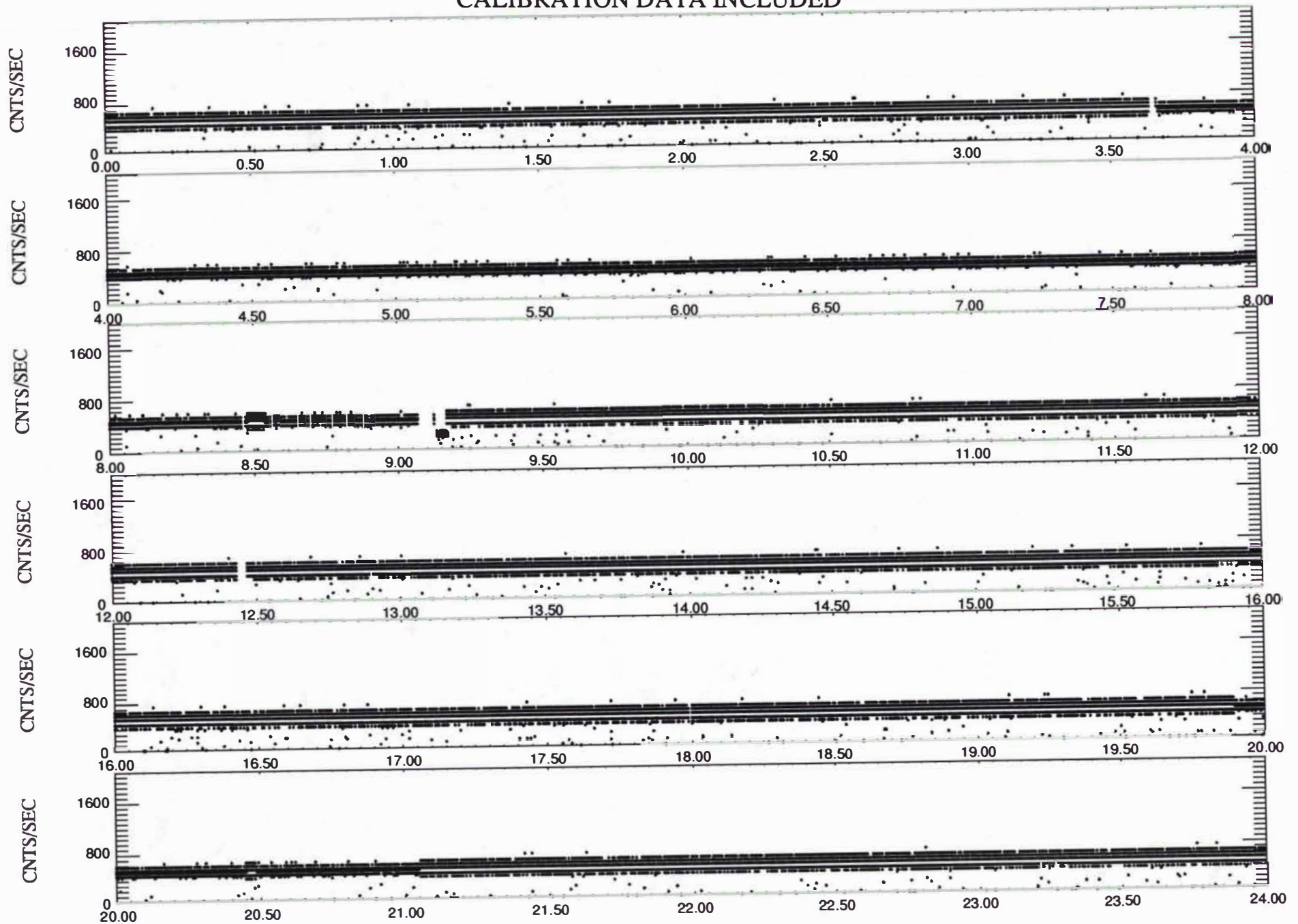
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

BURST NUMBER 4

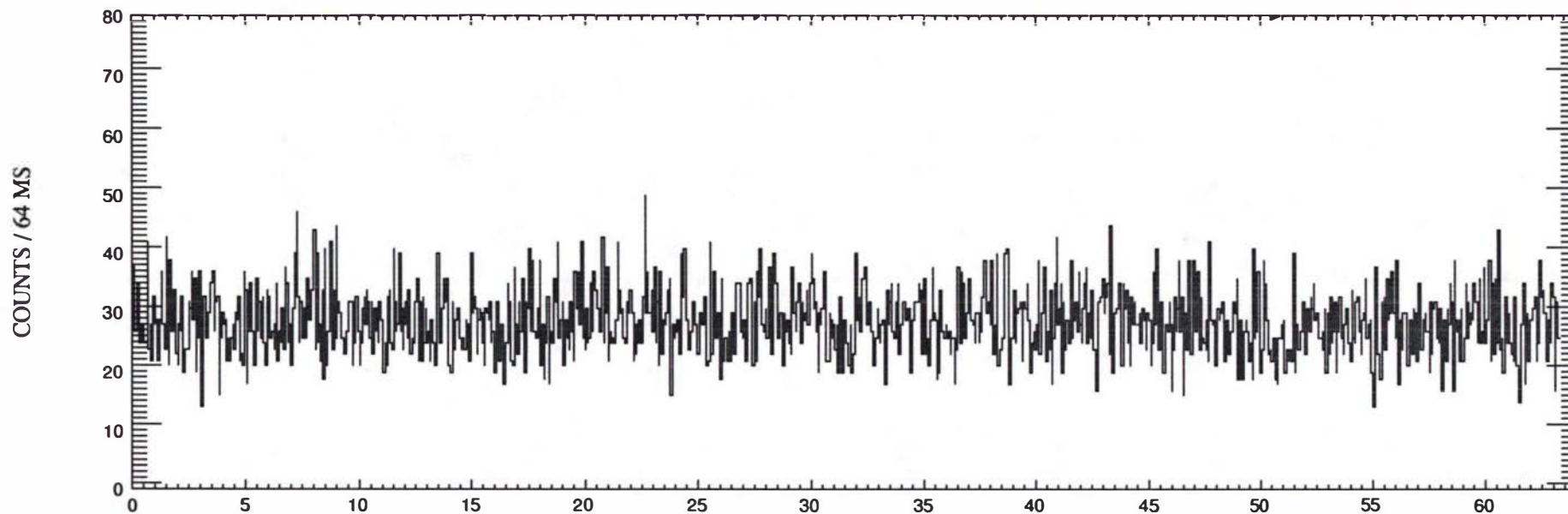


CALIBRATION DATA INCLUDED

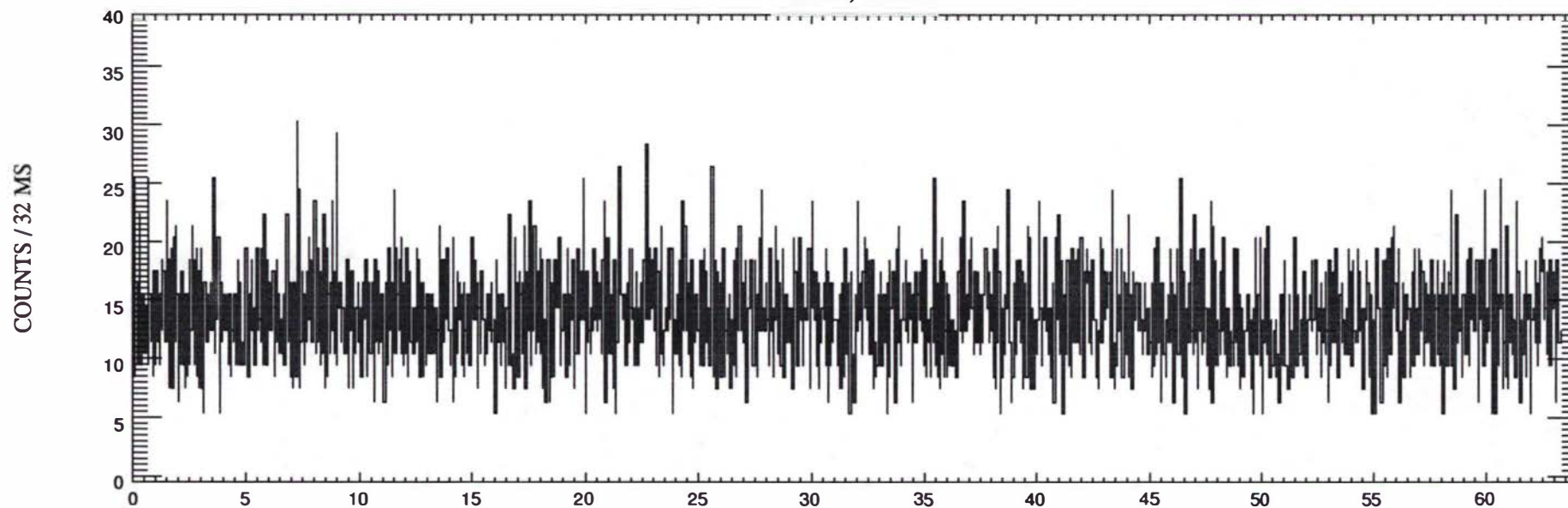


UNIV AL TIME

Burst Counter 4 at UT=19.742923884922 h=71074.526 s 19:44:34.526

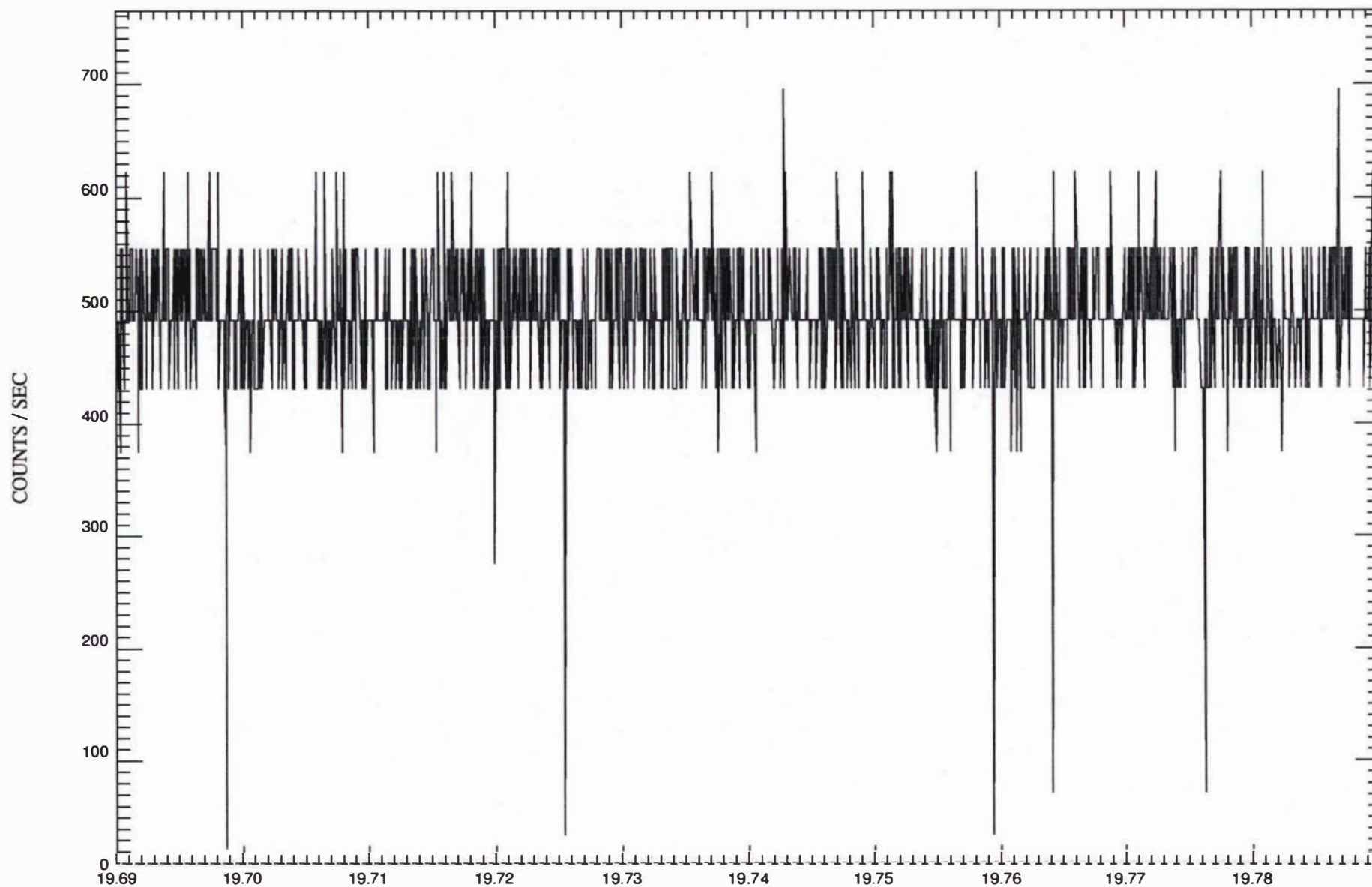


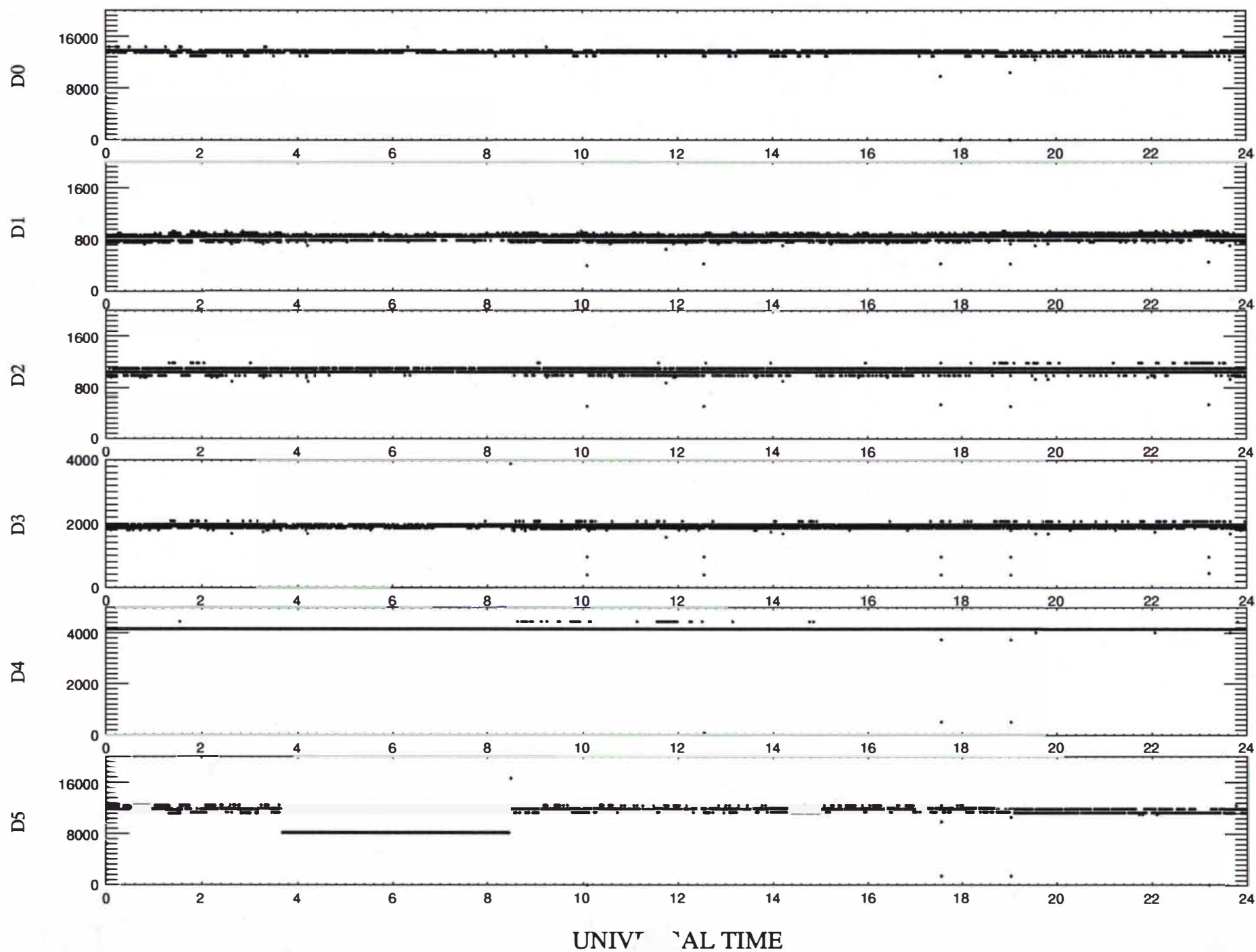
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





From RICHARDSON@fender.msfc.nasa.gov Mon Mar 23 10:35:44 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA20473; Mon, 23 Mar 1998 10:35:43 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA13833; Mon, 23 Mar 1998 10:35:40 -0800
Date: Mon, 23 Mar 1998 12:32:44 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980323123244.20e06ef2@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6648
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6648
EVENT OF 1998 MAR 19 DAY OF YEAR= 78
EVENT CROSSING TIME AT BATSE : 32280. S. OR 08:58:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 10.000 -27.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 3/ 98 IS:
RA= 155.313 DEC= 13.379 DIST= 4.498 AU
BATSE-ULYSSES DISTANCE = 672870219. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 35.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1835.55 SECS.
CROSSING TIME AT ULYSSES IS 34116. S. OR 09:28:35 +/- 302.12 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 3/ 98 IS:
RA= 10.367 DEC= 3.870 DIST= 2.368 AU
MARS-BATSE DISTANCE = 354294944. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=149.13 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1014.36 SECS.
CROSSING TIME AT MARS IS 31266. S. OR 08:41:05 +/- 89.88 SECONDS

BATSE BURST TRIGGER

NO.: 6648

TIME: TJD=0891 SECONDS=32280

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=14.2 AZIMUTH=164.2 ERROR=2.5 DEGREES

COMMENTS:

GRB SINGLE PULSE. RISE FASTER THAN DECAY. DUR. APPROX. = 70SEC.
NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6648	980319	10891	32280	2000	010	-27	70

BATSE BURST# 6648

ULYSSES RT

23 / 3 / 98

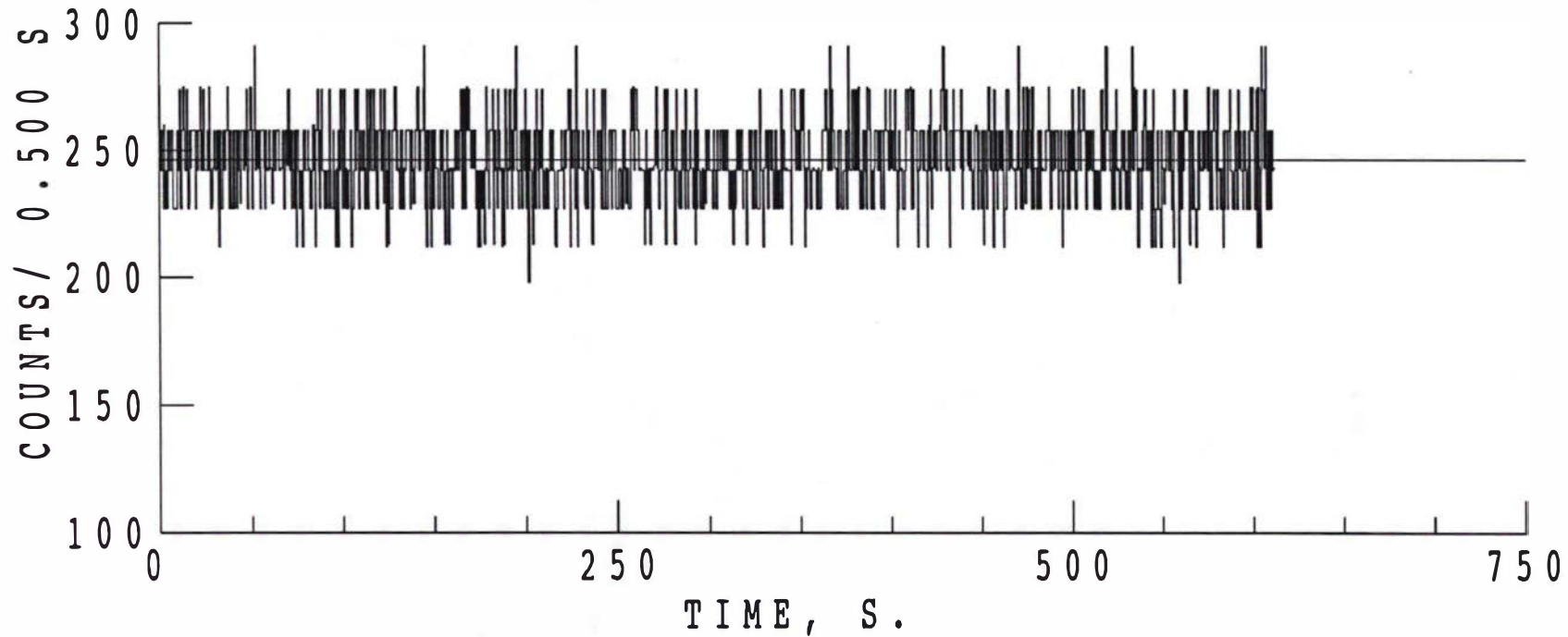
19 / 3 / 98 33804.062 s

0.250 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX 19990319 45756

ULYSSES RT

19 / 08 / 09

19/03/99 43632.066 s

0.250 S INTERVALS REGROUPED BY 11

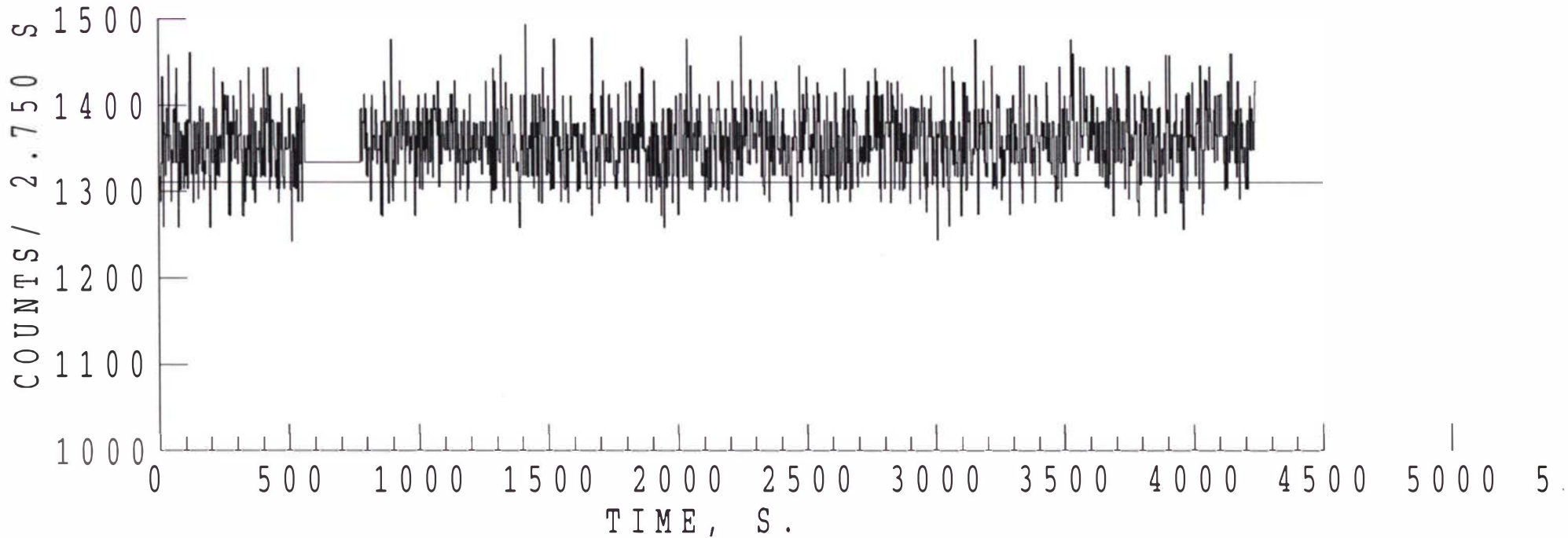
0 - 0 keV

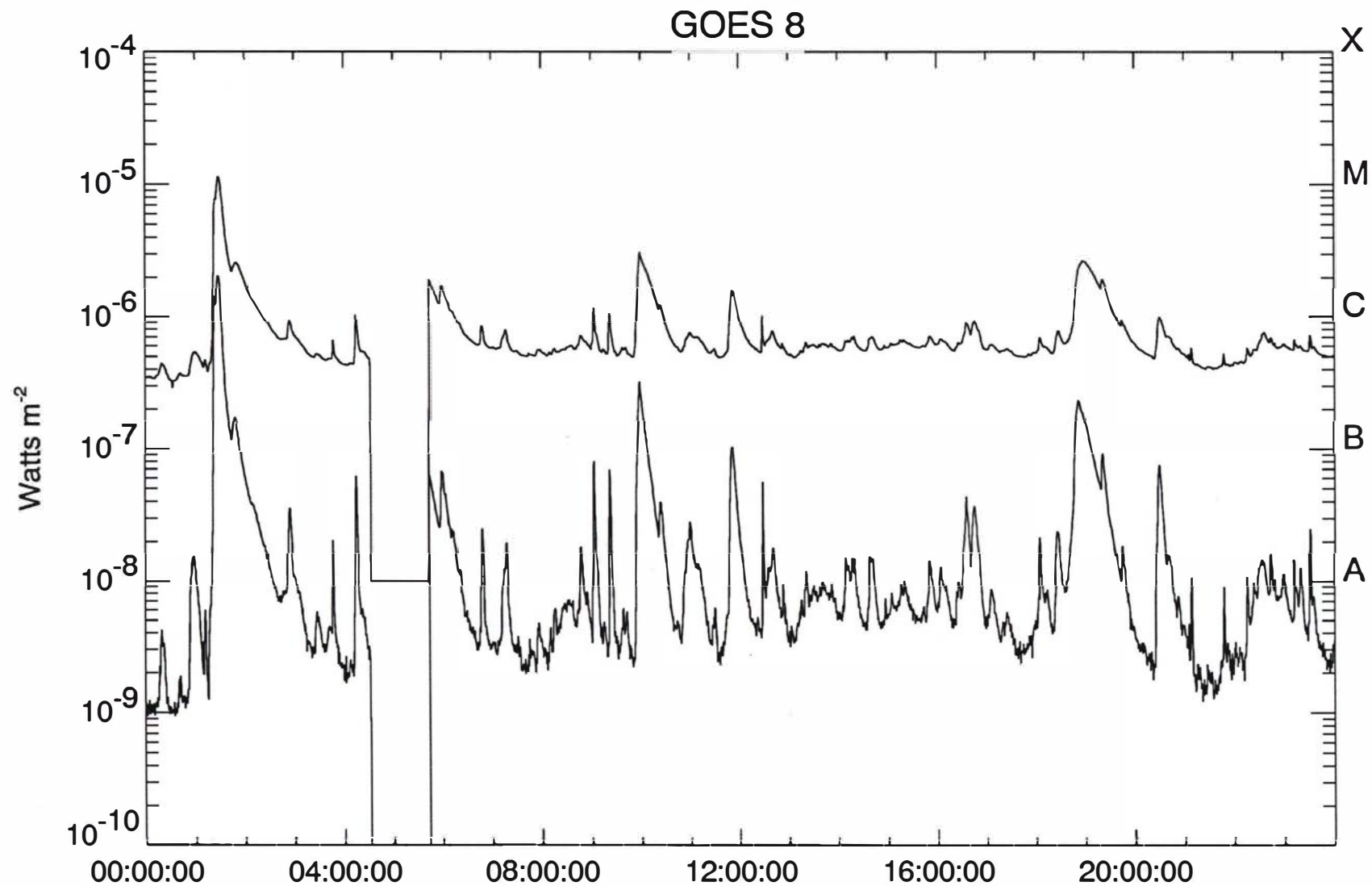
N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS





Data Start: 98/03/19, 0000:00

Plot created: 98/03/23, 1007

Channel

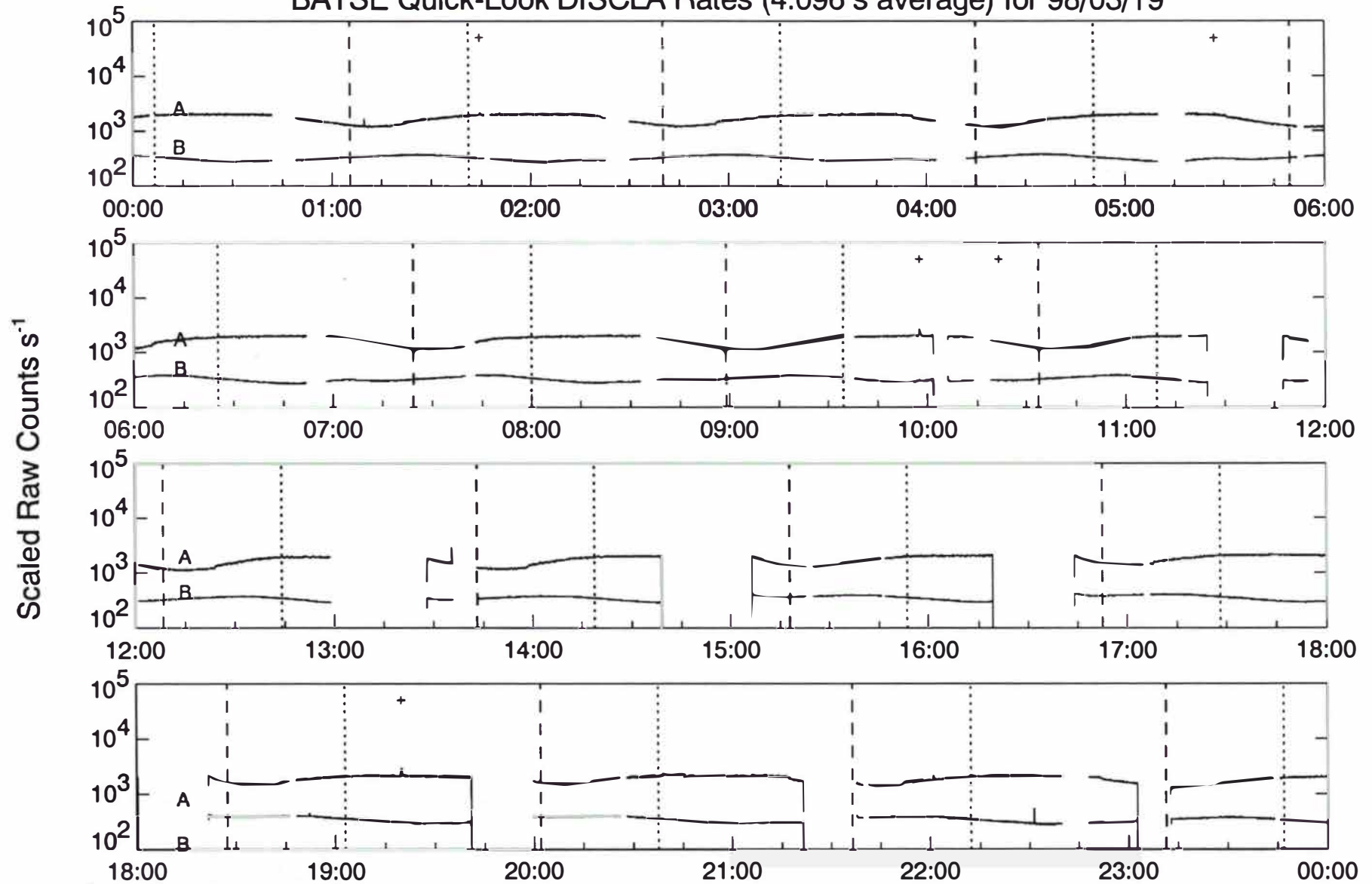
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted

Background not subtracted

Sample average = 10

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/19

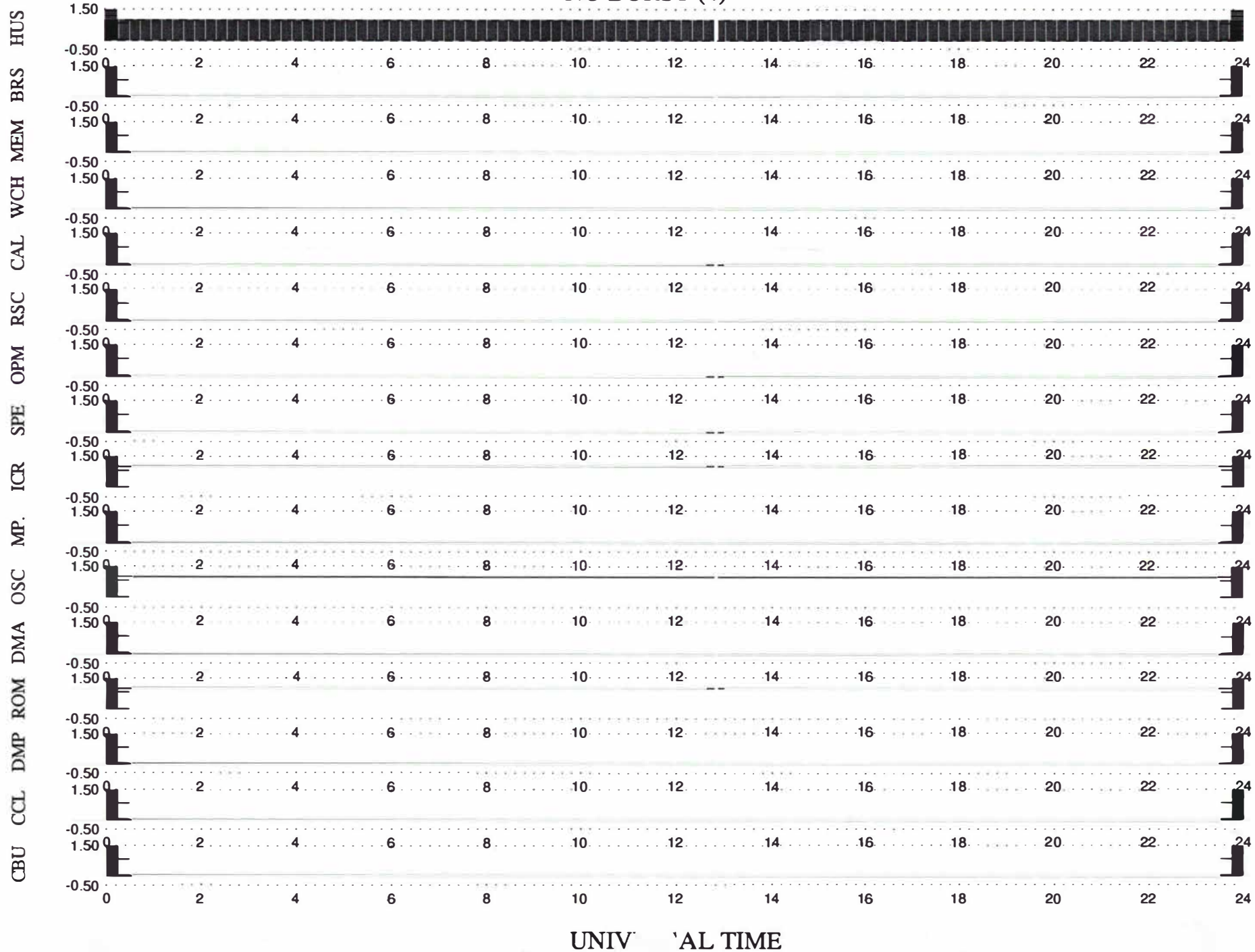


Current Time: 98/03/23, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

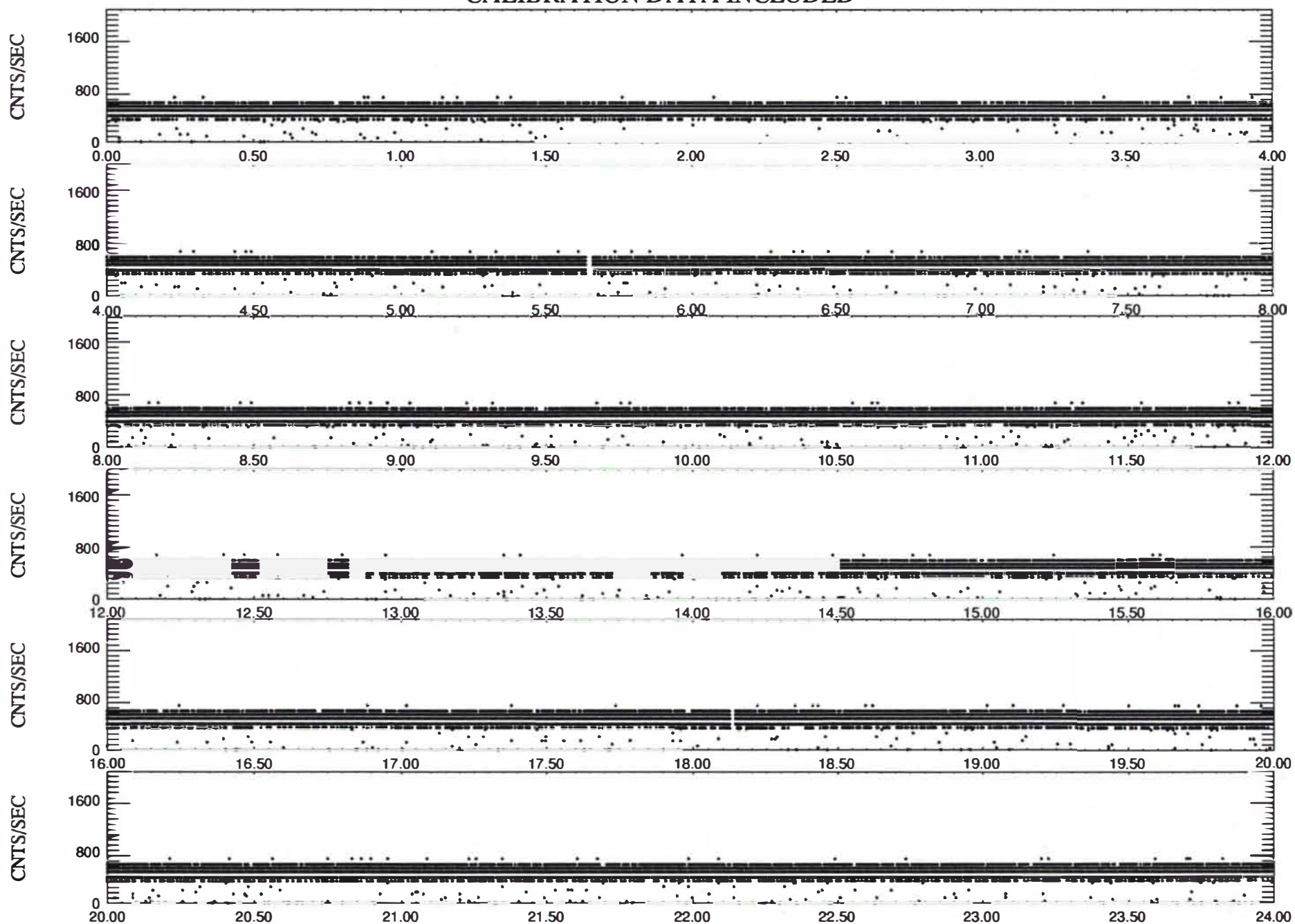
Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

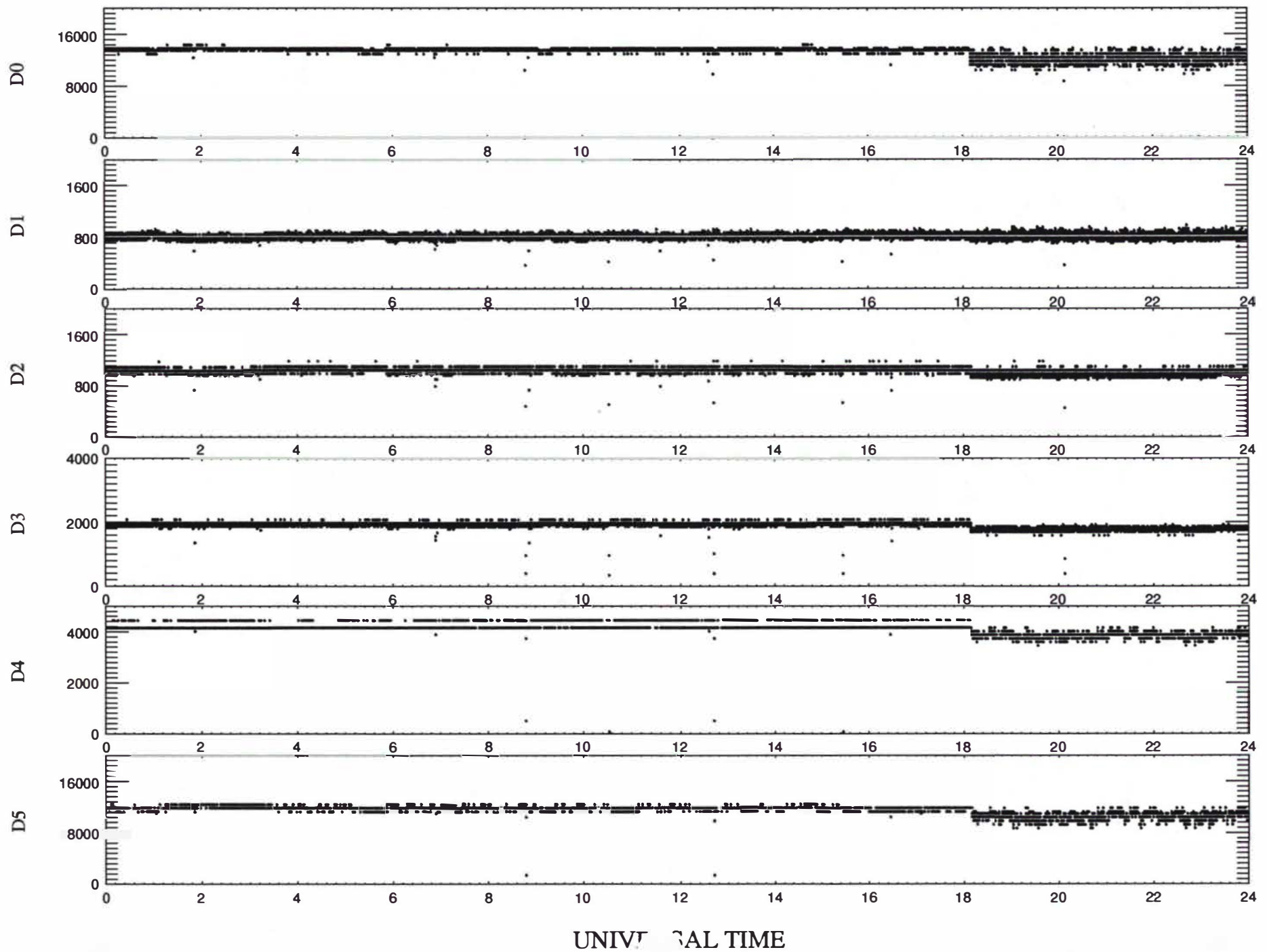
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



From SAHI@fender.msfc.nasa.gov Wed Mar 25 11:58:51 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA15323; Wed, 25 Mar 1998 11:58:50 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA27689; Wed, 25 Mar 1998 11:58:47 -0800
Date: Wed, 25 Mar 1998 13:57:32 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980325135732.20e08157@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6649
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6649
EVENT OF 1998 MAR 20 DAY OF YEAR= 79
EVENT CROSSING TIME AT BATSE : 1111. S. OR 00:18:31.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 226.000 -39.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 3/ 98 IS:
RA= 155.183 DEC= 13.385 DIST= 4.503 AU
BATSE-ULYSSES DISTANCE = 673596408. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.90 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -230.84 SECS.
CROSSING TIME AT ULYSSES IS 880. S. OR 00:14:40 +/- 434.52 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 3/ 98 IS:
RA= 11.070 DEC= 4.178 DIST= 2.371 AU
MARS-BATSE DISTANCE = 354695648. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 47.05 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 806.08 SECS.
CROSSING TIME AT MARS IS 1917. S. OR 00:31:57 +/- 162.60 SECONDS

BATSE BURST TRIGGER

NO.: 6649

TIME: TJD=0892 SECONDS=1111

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=105.6 AZIMUTH=70.3 ERROR=4.6 DEGREES

COMMENTS:

BURST, SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 6 SECS. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6649	980320	10892	01111	4500	226	-39	6

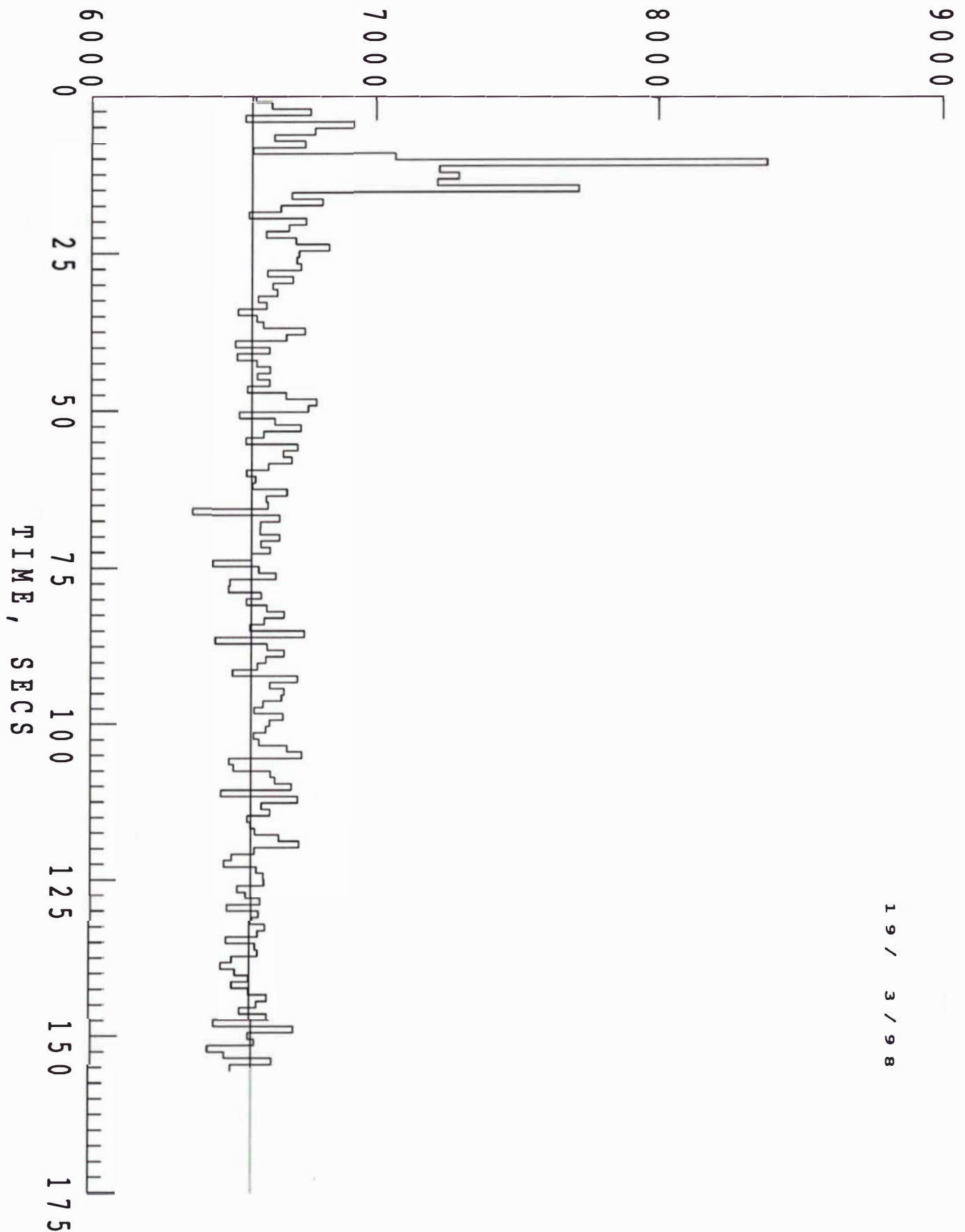
BACODINE 6649

20/03/98

1100.513

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6649

ULYSSES RT

4 / 6 / 98

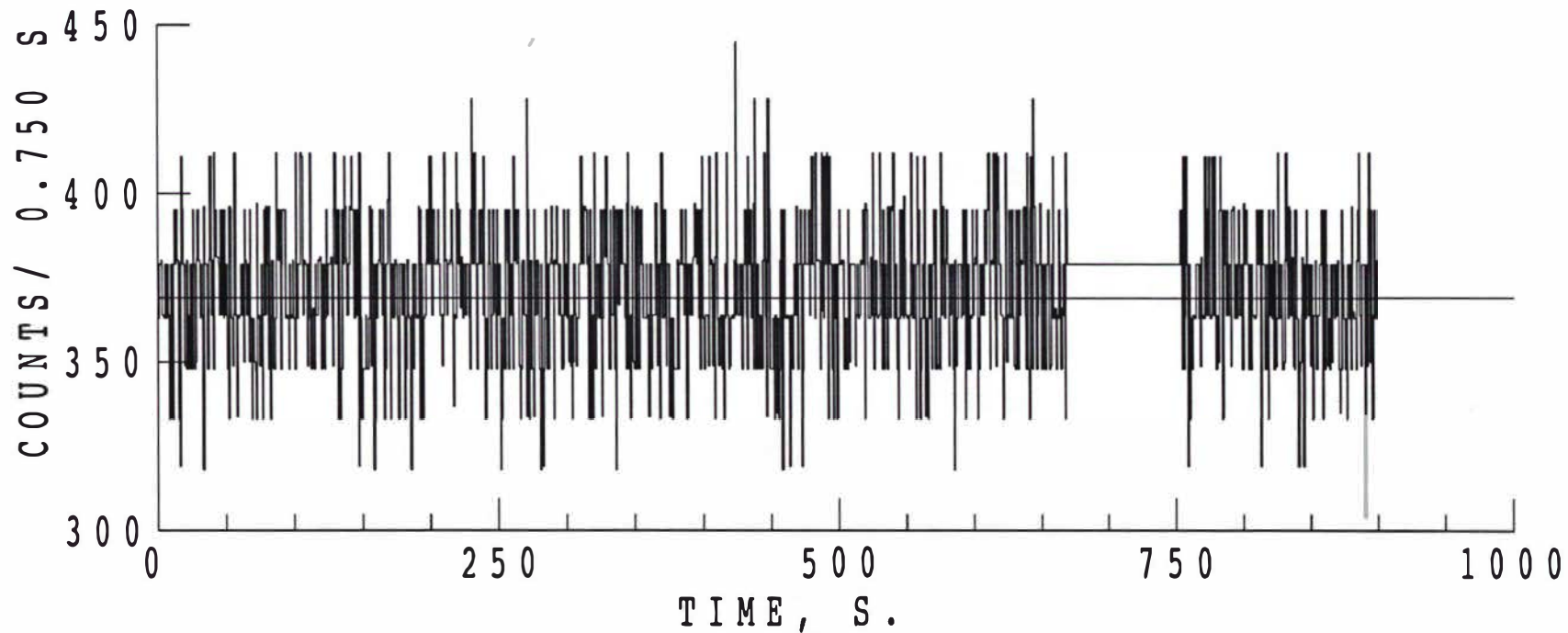
20 / 3 / 98 432.170 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



~~SAX~~
HUS DATA

19 / 07 / 05

ULYSSES RT

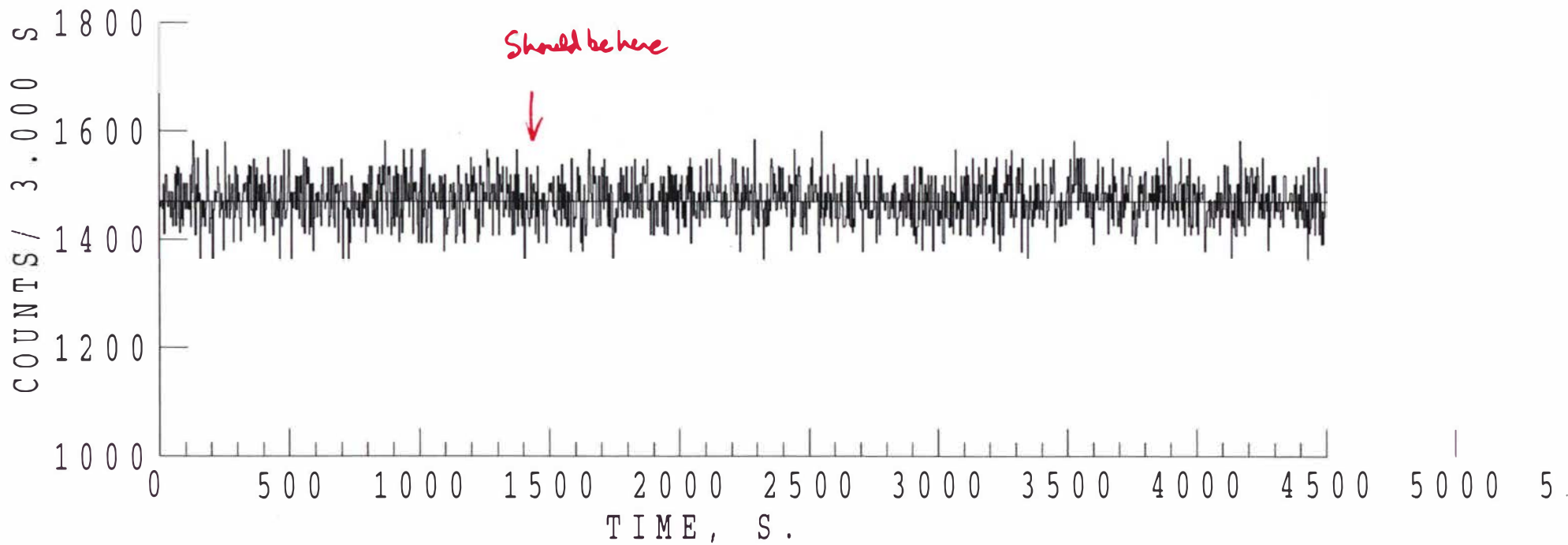
20 / 03 / 98 56700.031 s

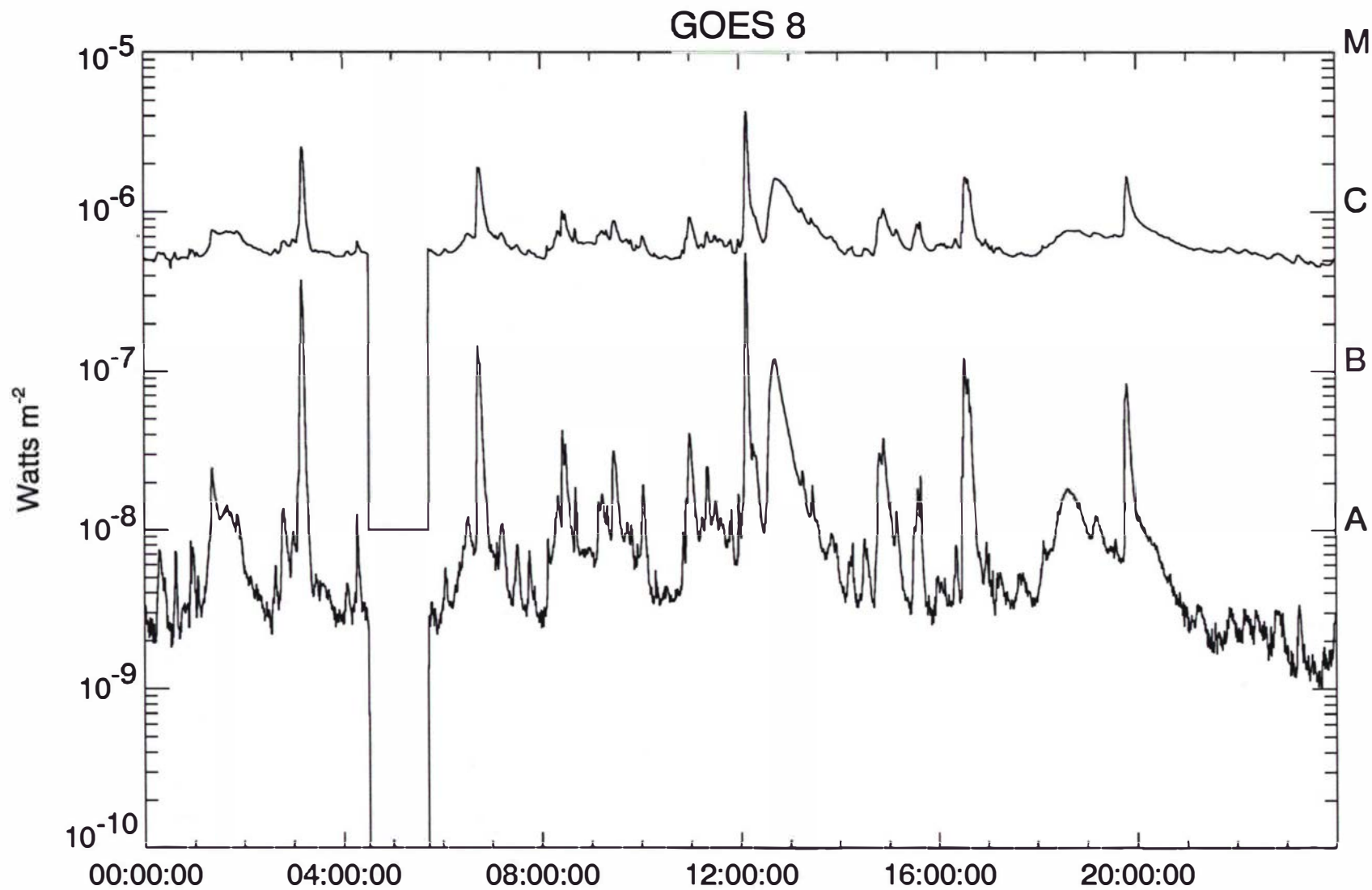
0.250 S INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





Data Start: 98/03/20, 0000:00

Plot created: 98/03/24, 1007

Channel

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

Background not subtracted
Background not subtracted
Sample average = 10

From SAHI@fender.msfc.nasa.gov Wed Mar 25 11:52:06 1998
From: SAHI@fender.msfc.nasa.gov
Date: Wed, 25 Mar 1998 13:51:38 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@ests2a2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevaww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevax.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6650

TIME: TJD=0892 SECONDS=17079

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

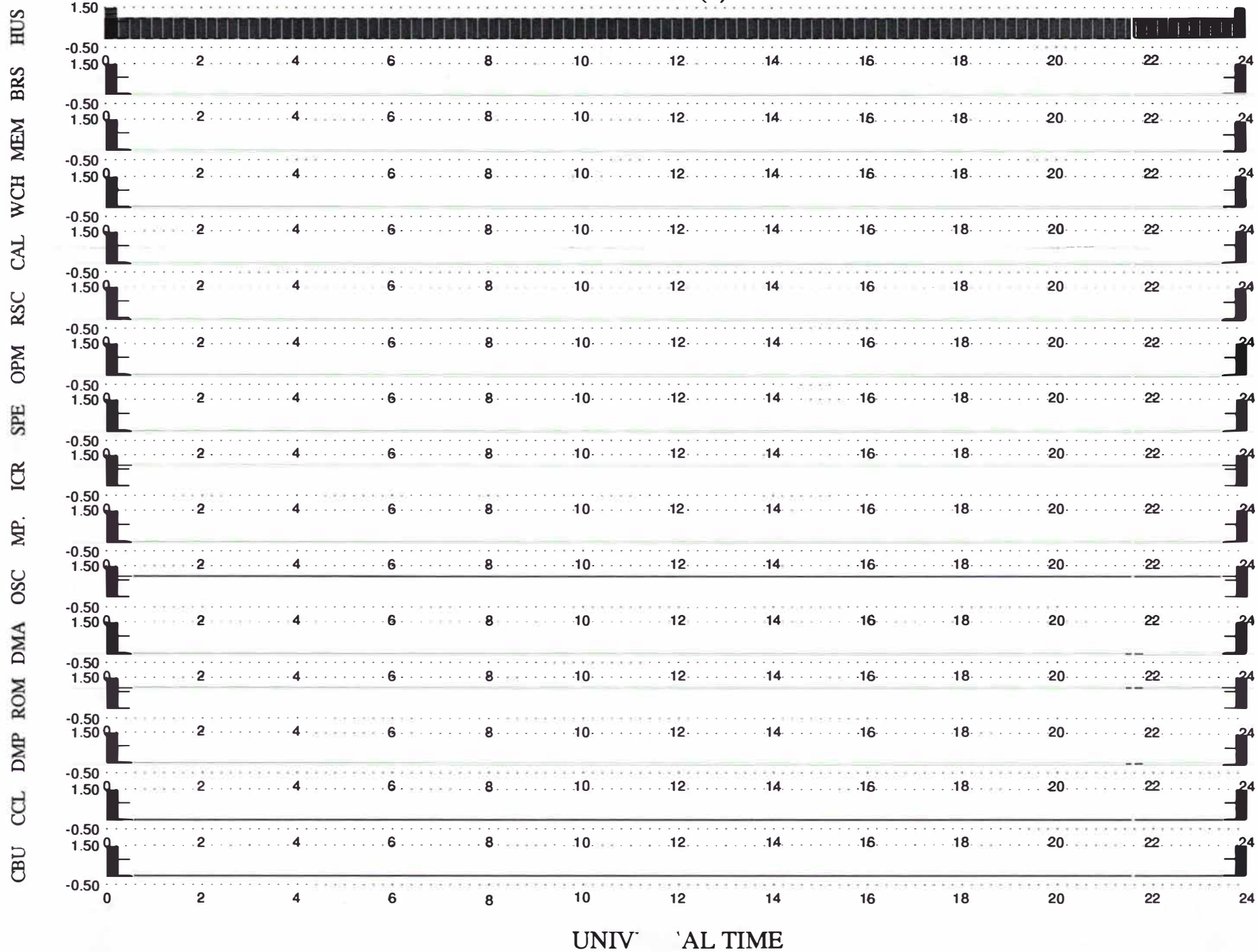
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=19.6 AZIMUTH=285.6 ERROR=0.02 DEGREES

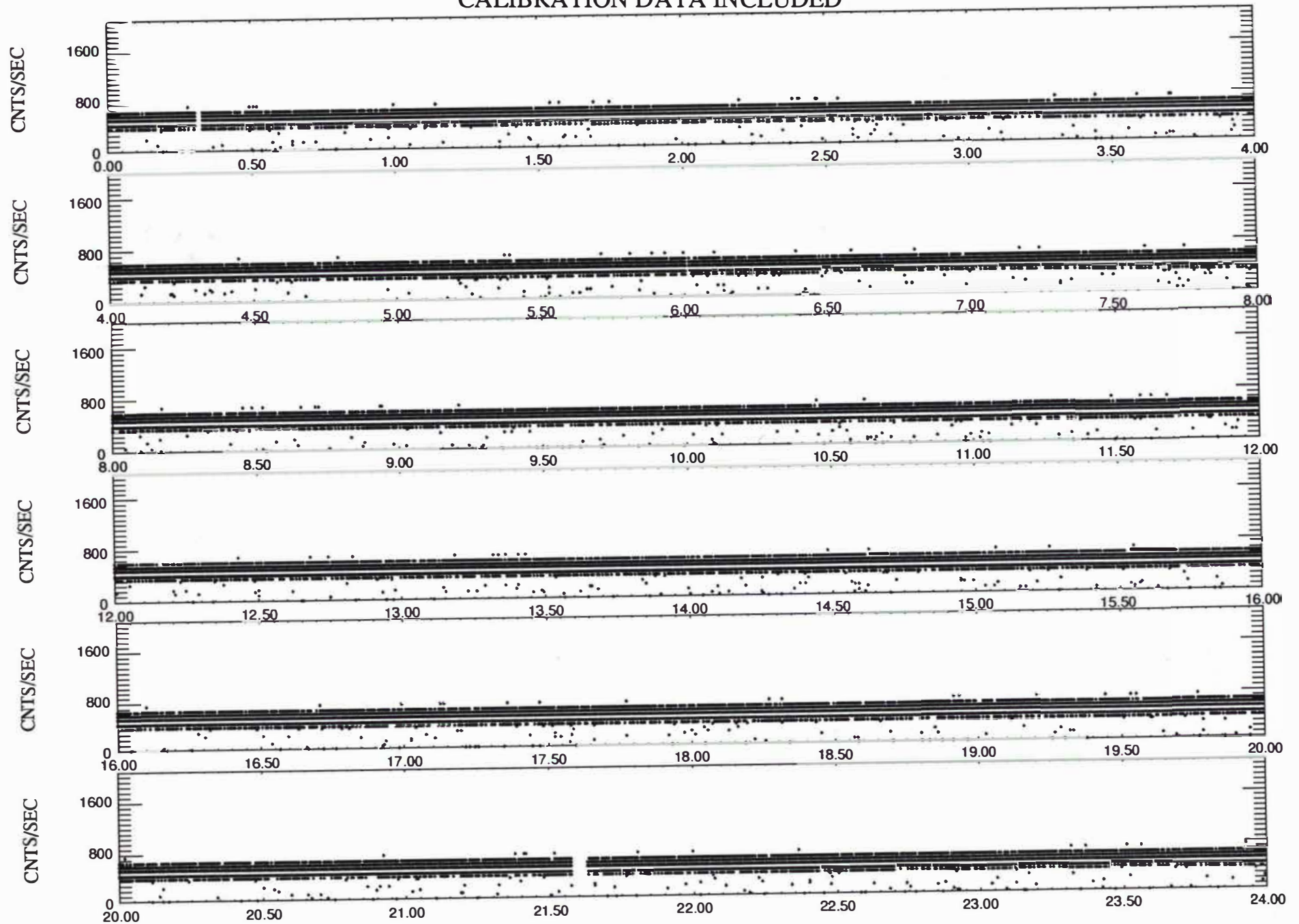
COMMENTS:

GOES. C3.8, NO OPTICAL ID. DOUBLE PULSE DUR. APPROX. 130 SECS, MAX. AT APPROX
T+12 SECS. NOT VISIBLE ABOVE 300 KEV.

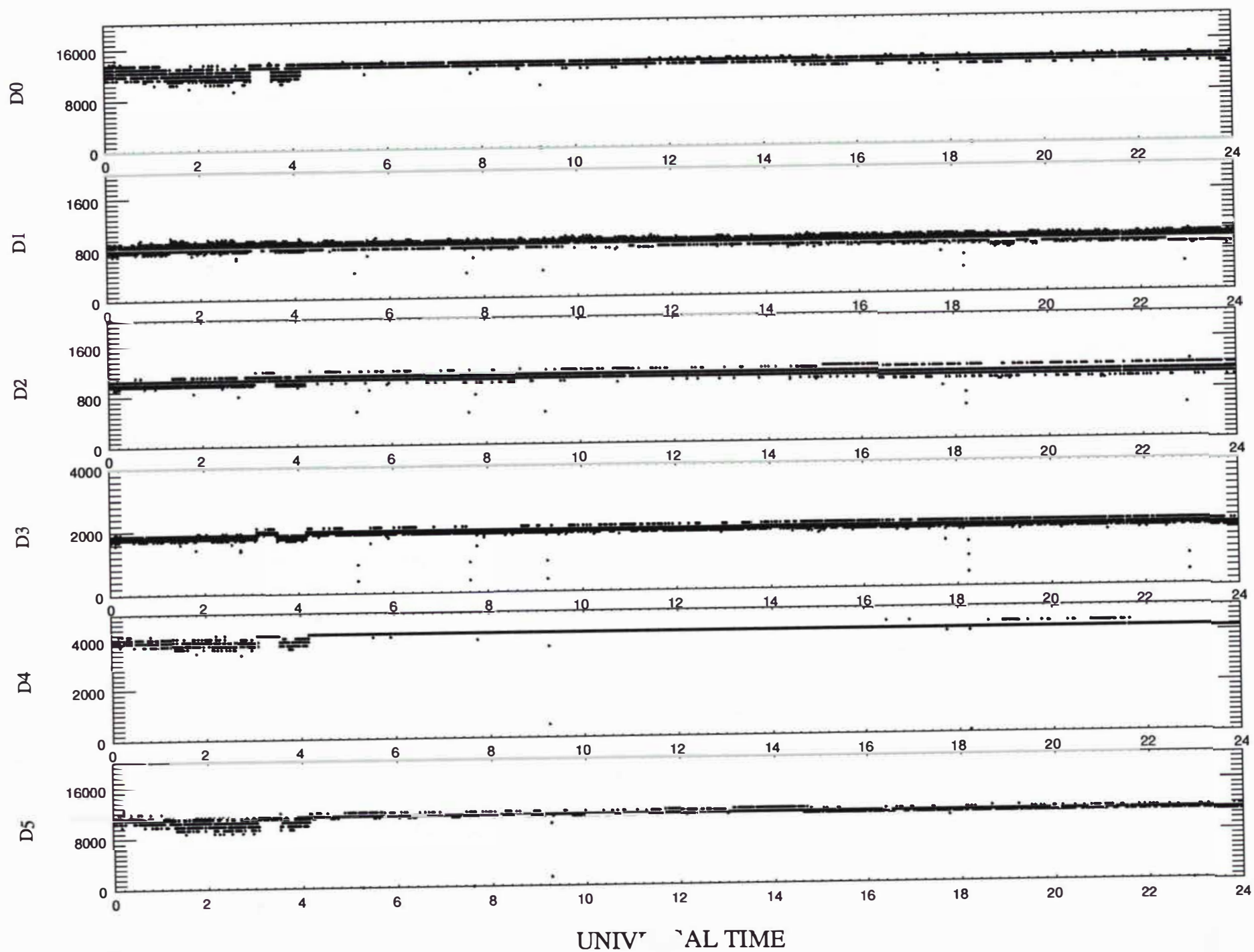
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIV. TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Mar 30 10:36:38 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA25984; Mon, 30 Mar 1998 10:36:37 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id KAA19867; Mon, 30 Mar 1998 10:36:36 -0800
Date: Mon, 30 Mar 1998 12:28:20 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980330122820.20e08c39@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6651
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6651
EVENT OF 1998 MAR 21 DAY OF YEAR= 80
EVENT CROSSING TIME AT BATSE : 21971. S. OR 06:06:11.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 42.000 8.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 21/ 3/ 98 IS:
RA= 154.936 DEC= 13.394 DIST= 4.512 AU
BATSE-ULYSSES DISTANCE = 675068973. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.93 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 772.75 SECS.
CROSSING TIME AT ULYSSES IS 22744. S. OR 06:19:03 +/- 428.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 21/ 3/ 98 IS:
RA= 11.772 DEC= 4.487 DIST= 2.374 AU
MARS-BATSE DISTANCE = 355094400. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=149.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1023.24 SECS.
CROSSING TIME AT MARS IS 20948. S. OR 05:49:07 +/- 88.04 SECONDS

BATSE BURST TRIGGER

NO.: 6651

TIME: TJD=0893 SECONDS=21971

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.1 AZIMUTH=59.3 ERROR=4.0 DEGREES

COMMENTS:

GRB. RISE FASTER THAN DECAY. DURATION AT LEAST 50 SEC., BUT THERE IS A DATA GAP IMMEDIATELY FOLLOWING THE EVENT. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6651	980321	10893	21971	3000	042	+08	50

Helio corr removed 21/2/00

Date: Aug 3 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Were data checked by Joe Springer for 0.5 s errors? *N/A*
- ☒ If a 2 spacecraft triangulation, was Ulysses time corrected for aberration?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? *Not Yes - BATSE 1s 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

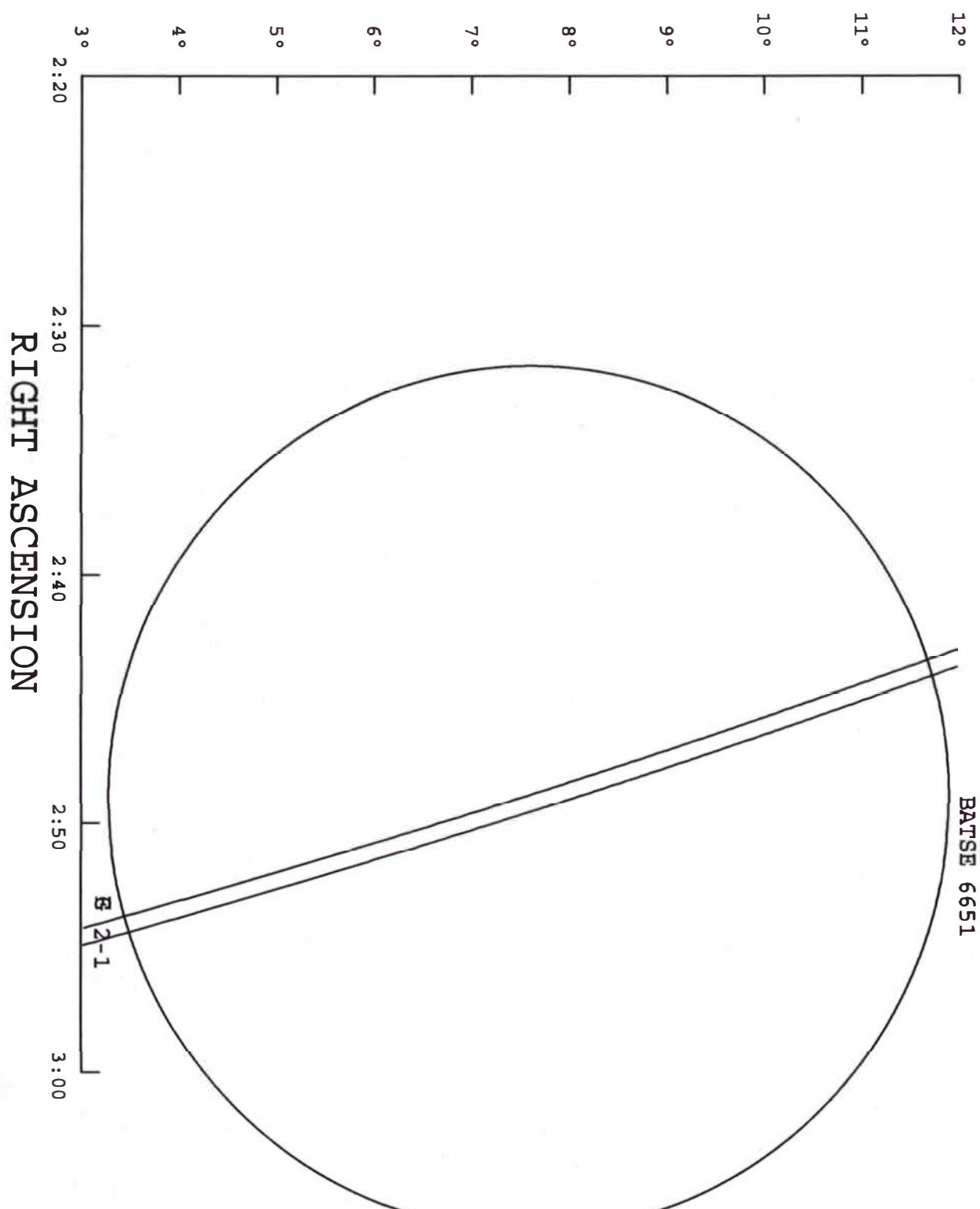
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

DECLINATION



EVENT OF MAR 21, 1998 6:18

21 / 2 / 0

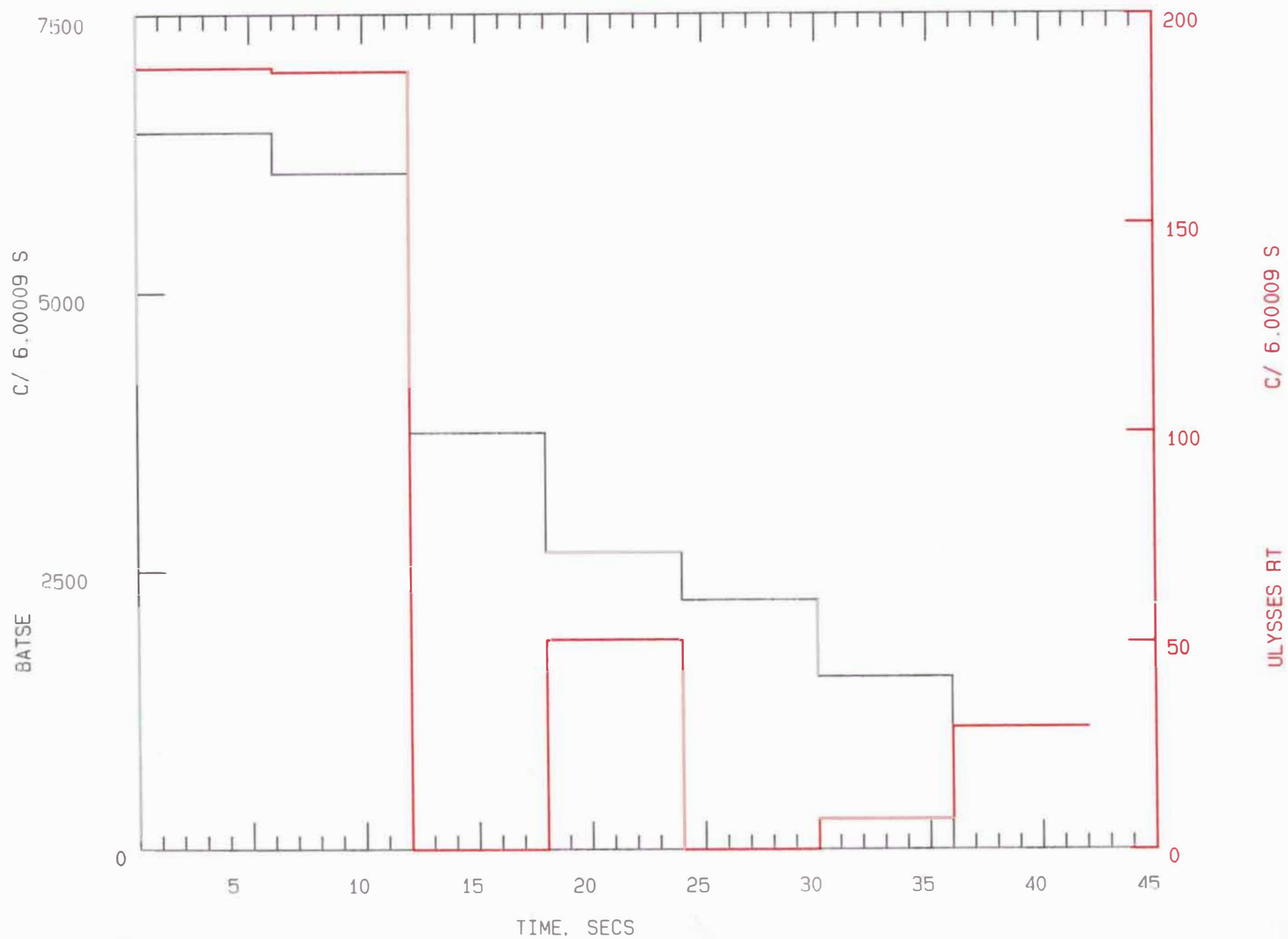
BATSE

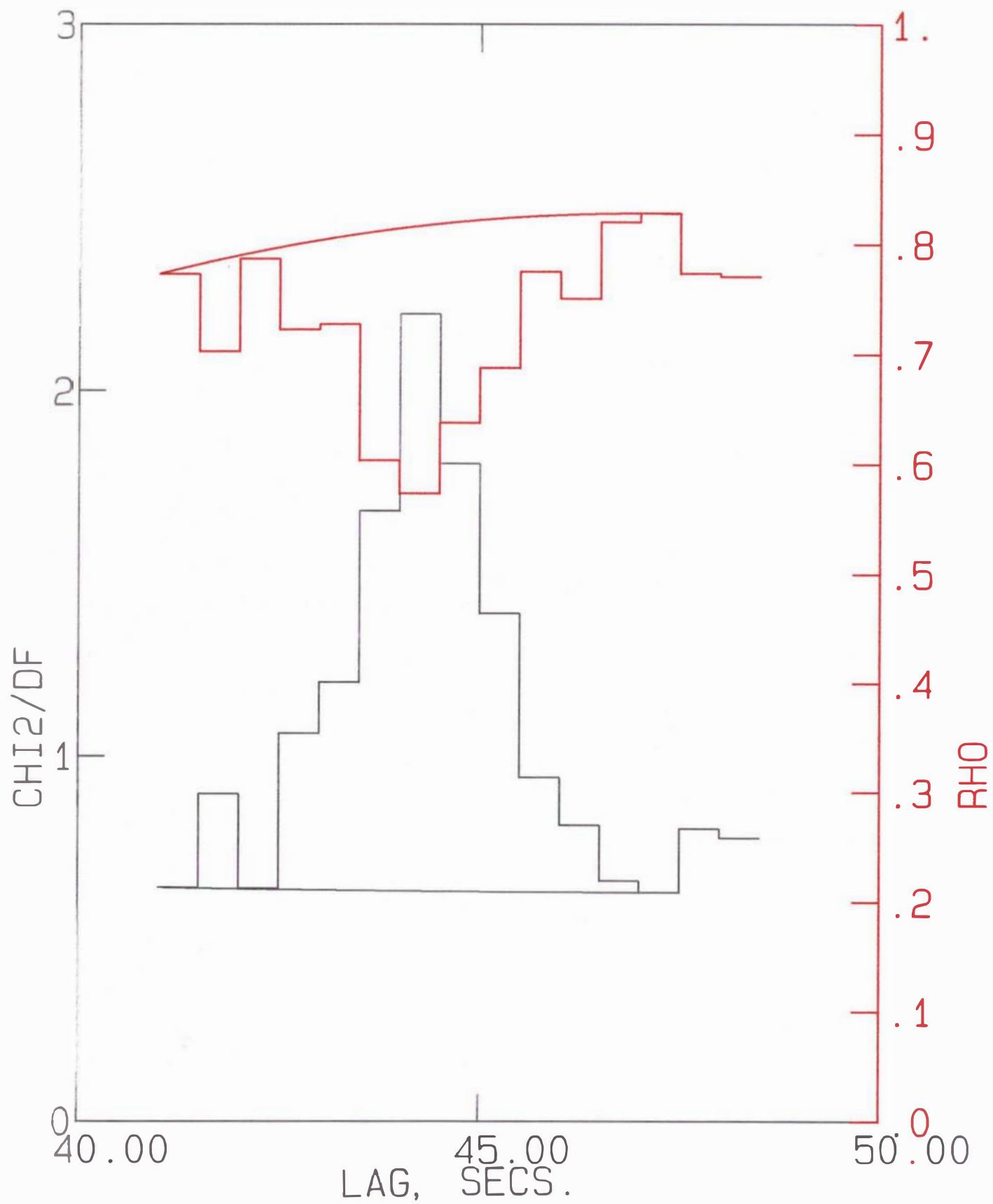
-ULYSSES RT CORRELATION

21/ 3/98

21971.681

3/ 8/98





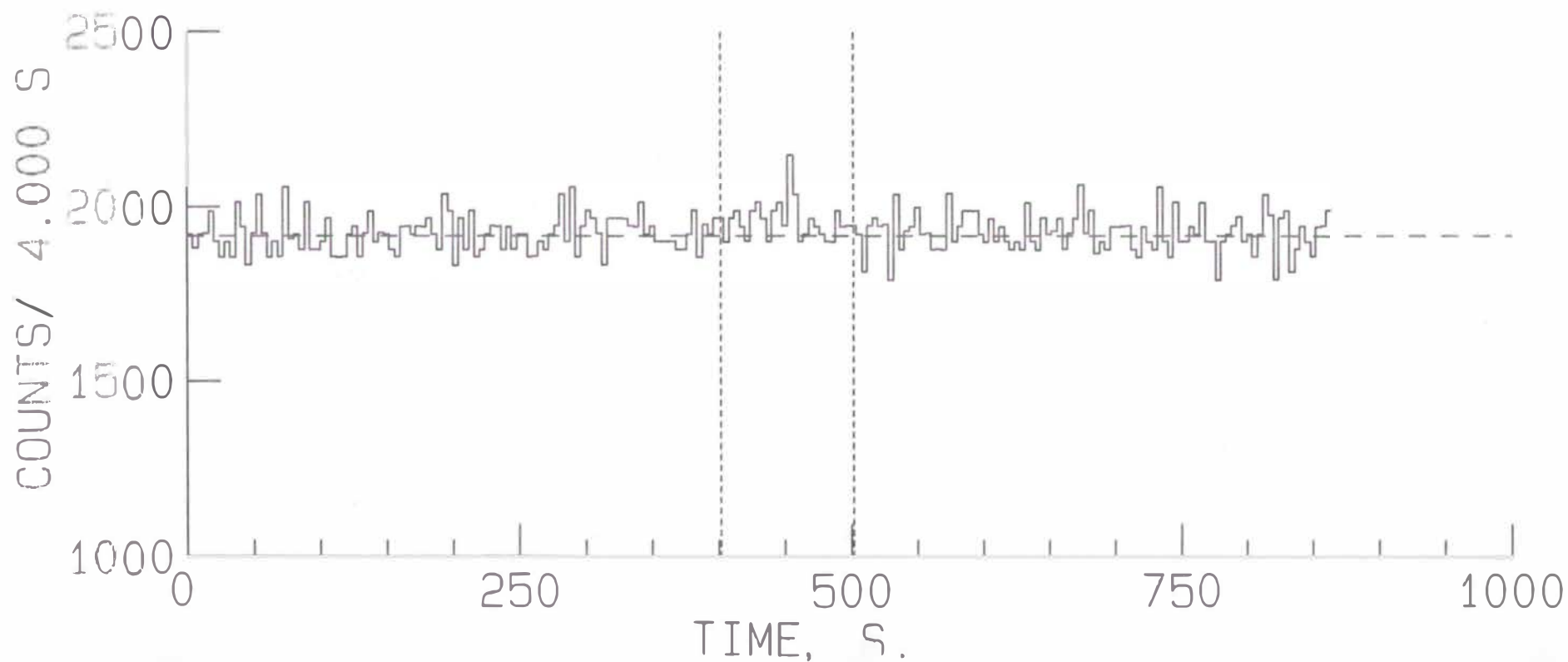
ULYSSES RT

3 / 8 / 98

21 / 3 / 98 22320.349 s

0.500 S INTERVALS REGROUPED BY 8

22- 148 keV



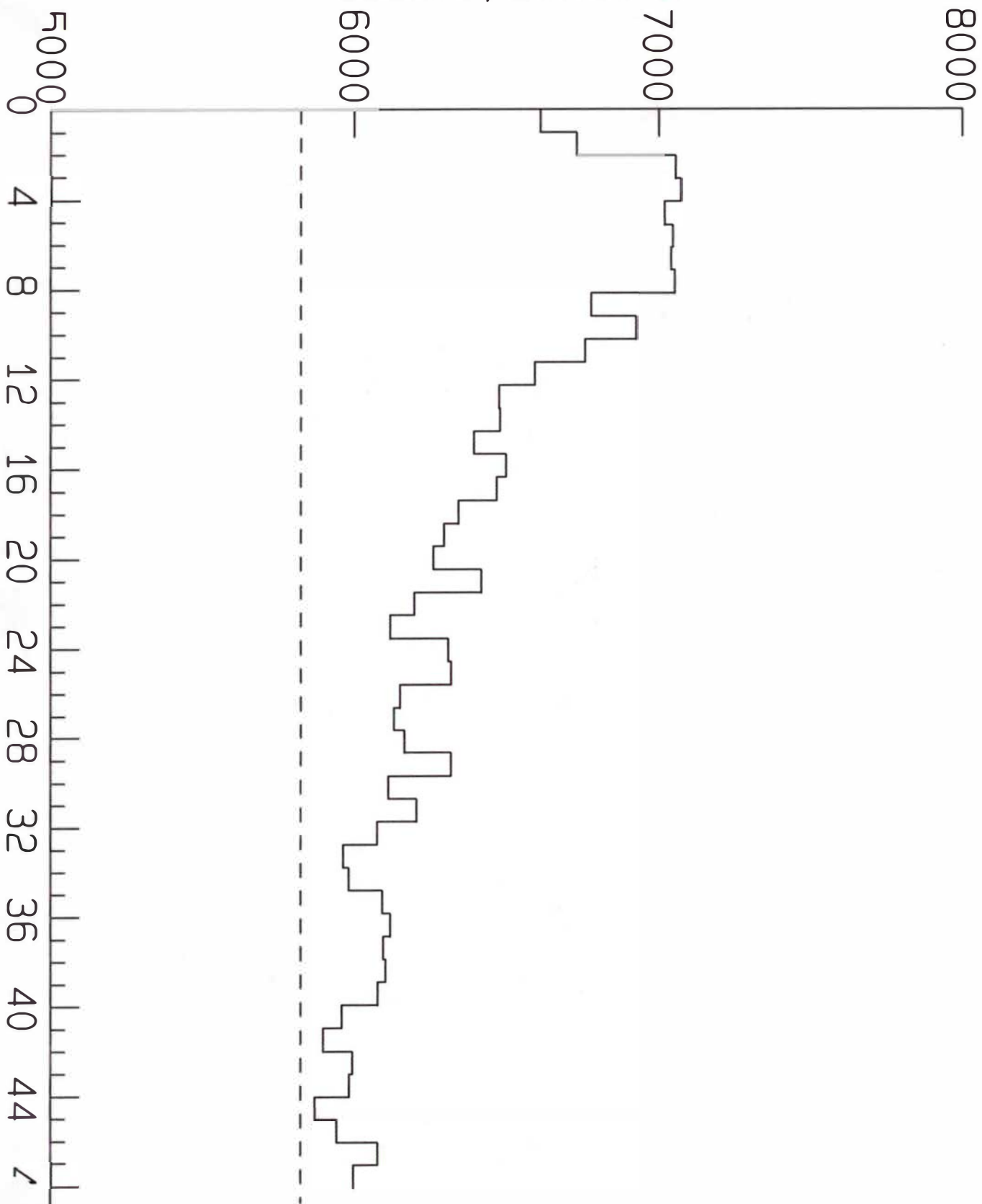
BATSE

21/03/98

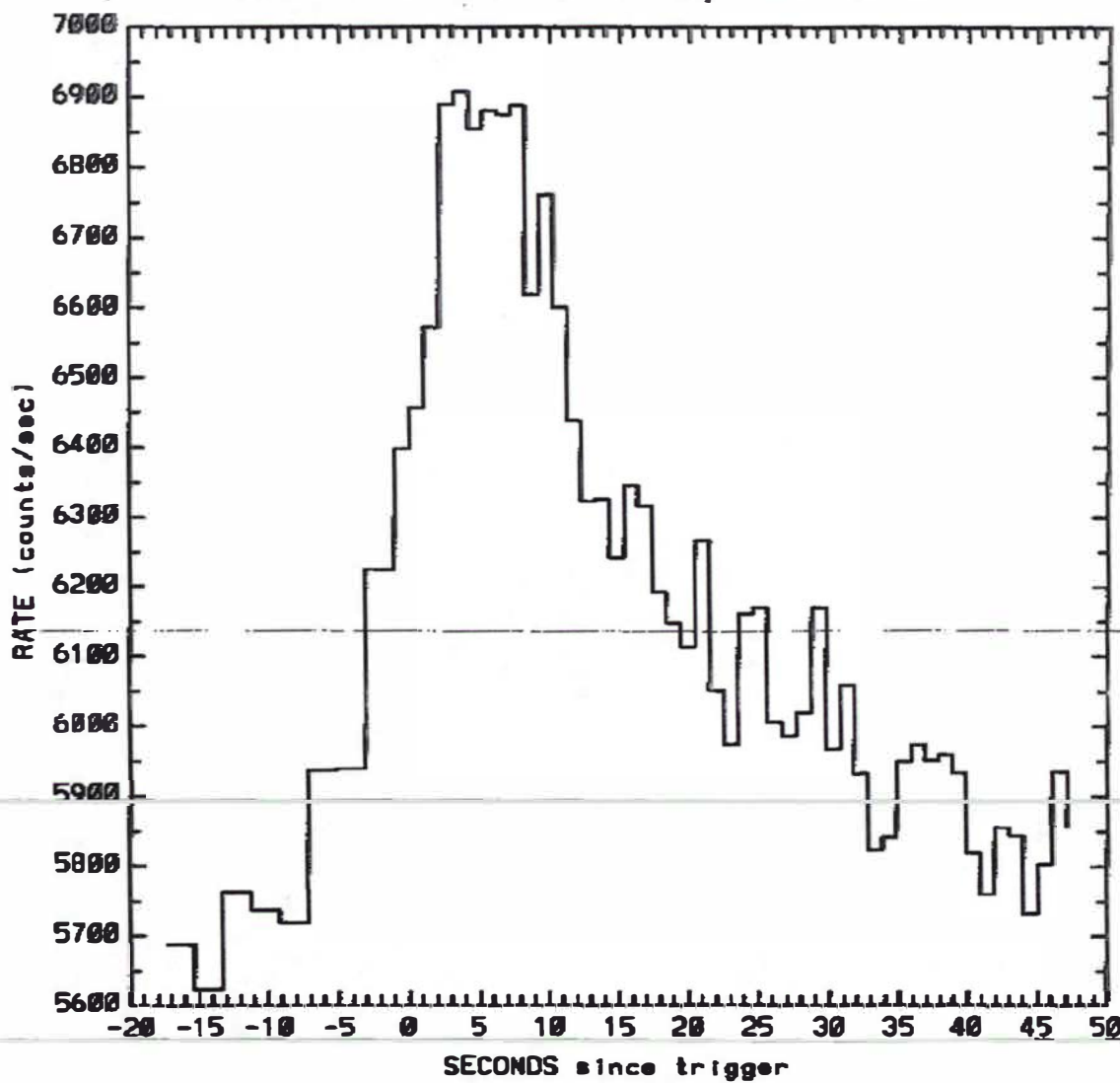
21971.681

25- 100 keV

COUNTS/1.024 S



DISCLB Data for K. Hurley, No. 6651



9-APR-1998 08:38:03

Created by MOPS 80
(Burst Display)
Version 12.25

Trigger # : 6651

Trigger Time:
18093 / 21971.681Burst Data Type:
DISCLBDeadtime
Corrected: NBackground Data
Type: NoneMinimum Integ. Time:
1.020 secondsDetectors [7..0]:
--5--1-Discriminators:
(1, 2)Quality Mask:
BDISP1

From HENZE@fender.msfc.nasa.gov Mon Mar 30 09:28:50 1998
Date: Mon, 30 Mar 1998 11:23:21 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheavx.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6652

TIME: TJD=0893 SECONDS=25171

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

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

CYG X-1 RISE OR FLUCTUATION AFTER RISE.

KONUS

ULYSSES RT

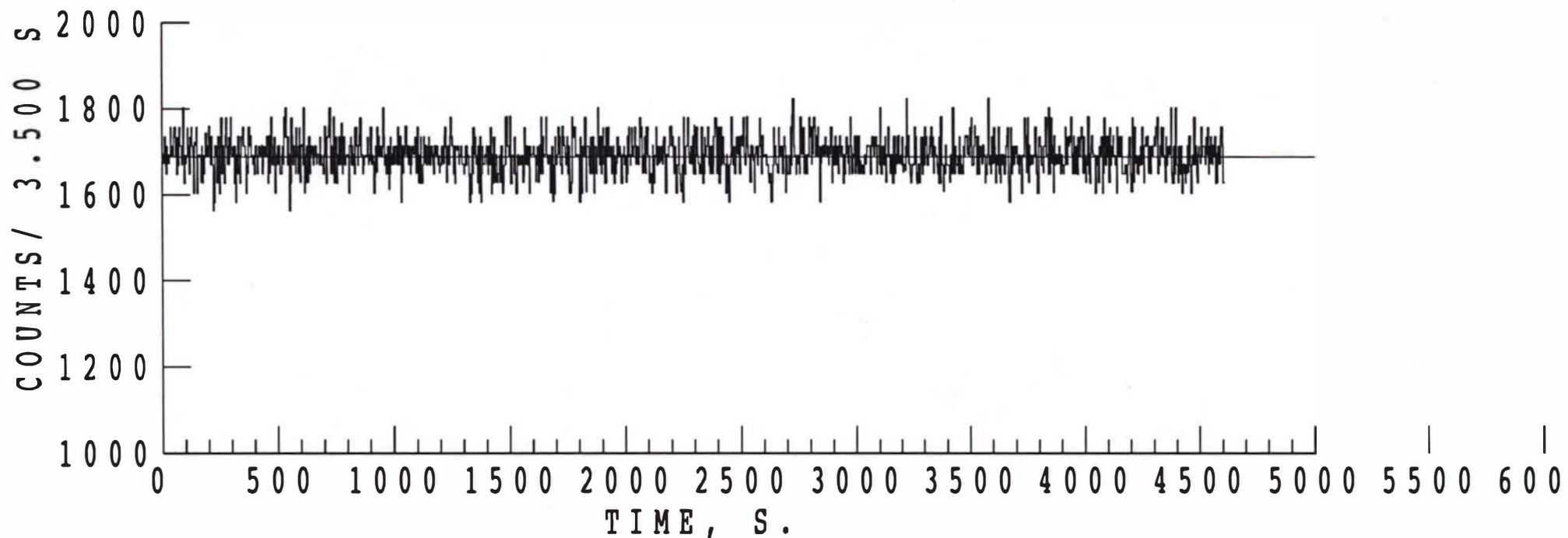
08 / 02 / 00

21/03/98 49464.145 s

0.500 S INTERVALS REGROUPED BY 7

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From HENZE@fender.msfc.nasa.gov Mon Mar 30 09:33:07 1998
Date: Mon, 30 Mar 1998 11:25:58 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@compTEL.sr.unh.edu, grobad@estsA2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6653

TIME: TJD=0893 SECONDS=59239

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

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

CYG X-1 RISE OR FLUCTUATION AFTER RISE.

From HENZE@fender.msfc.nasa.gov Mon Mar 30 09:37:21 1998
Date: Mon, 30 Mar 1998 11:28:06 -0600 (CST)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6654

TIME: TJD=0893 SECONDS=81956

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

SIGNIFICANCE: SIGMA

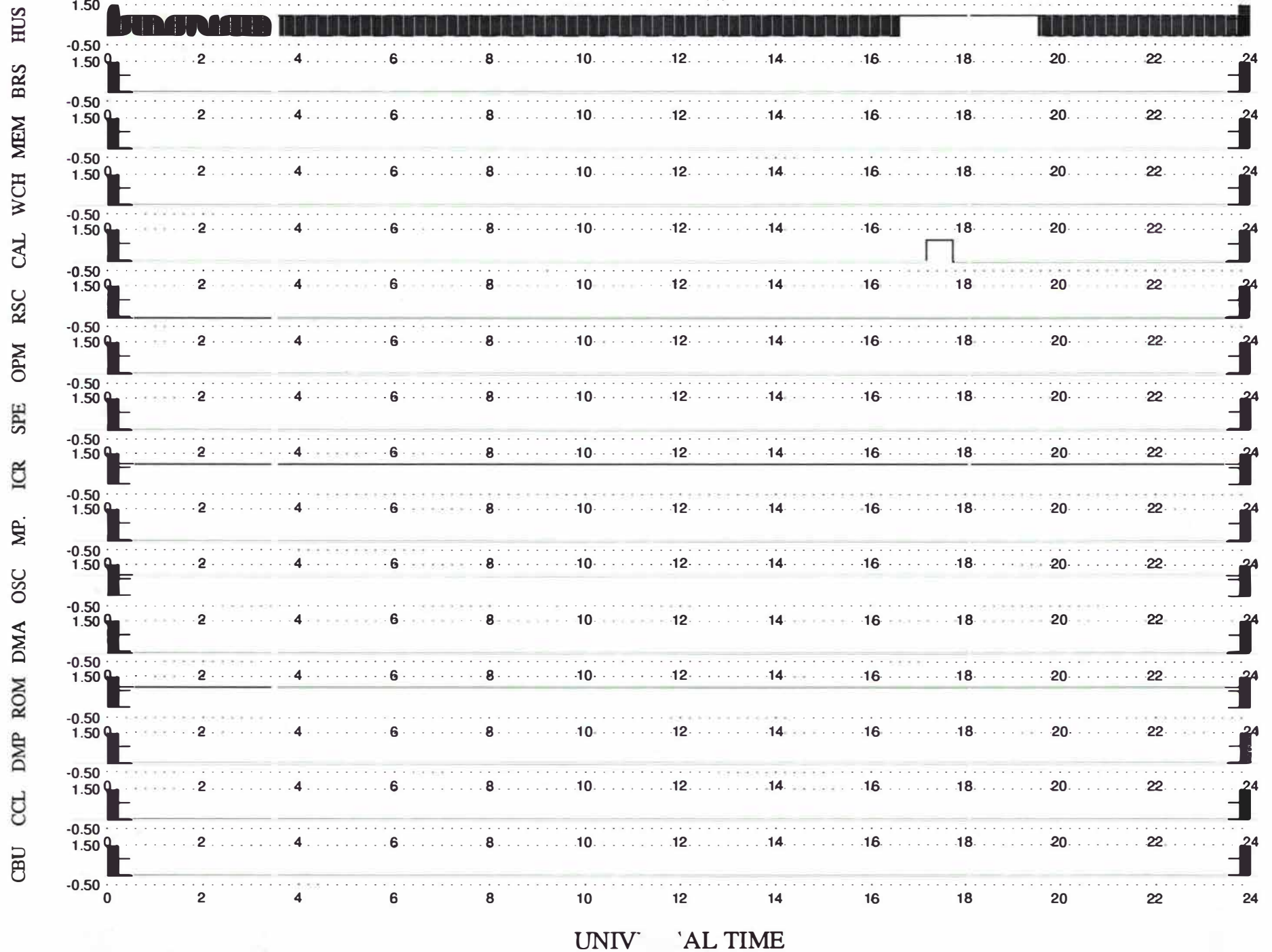
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

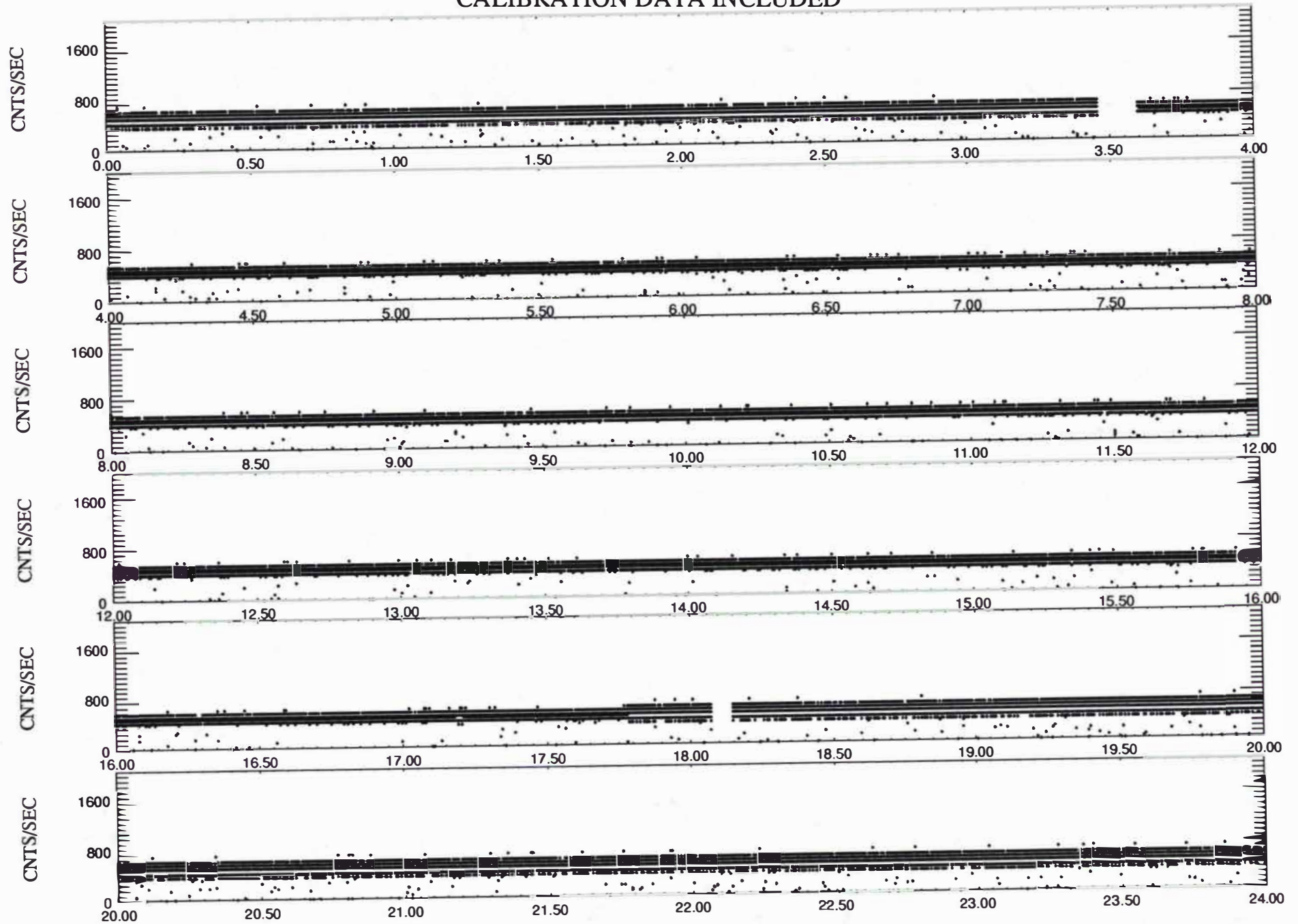
COMMENTS:

CYG X-1 RISE OR FLUCTUATION AFTER RISE.

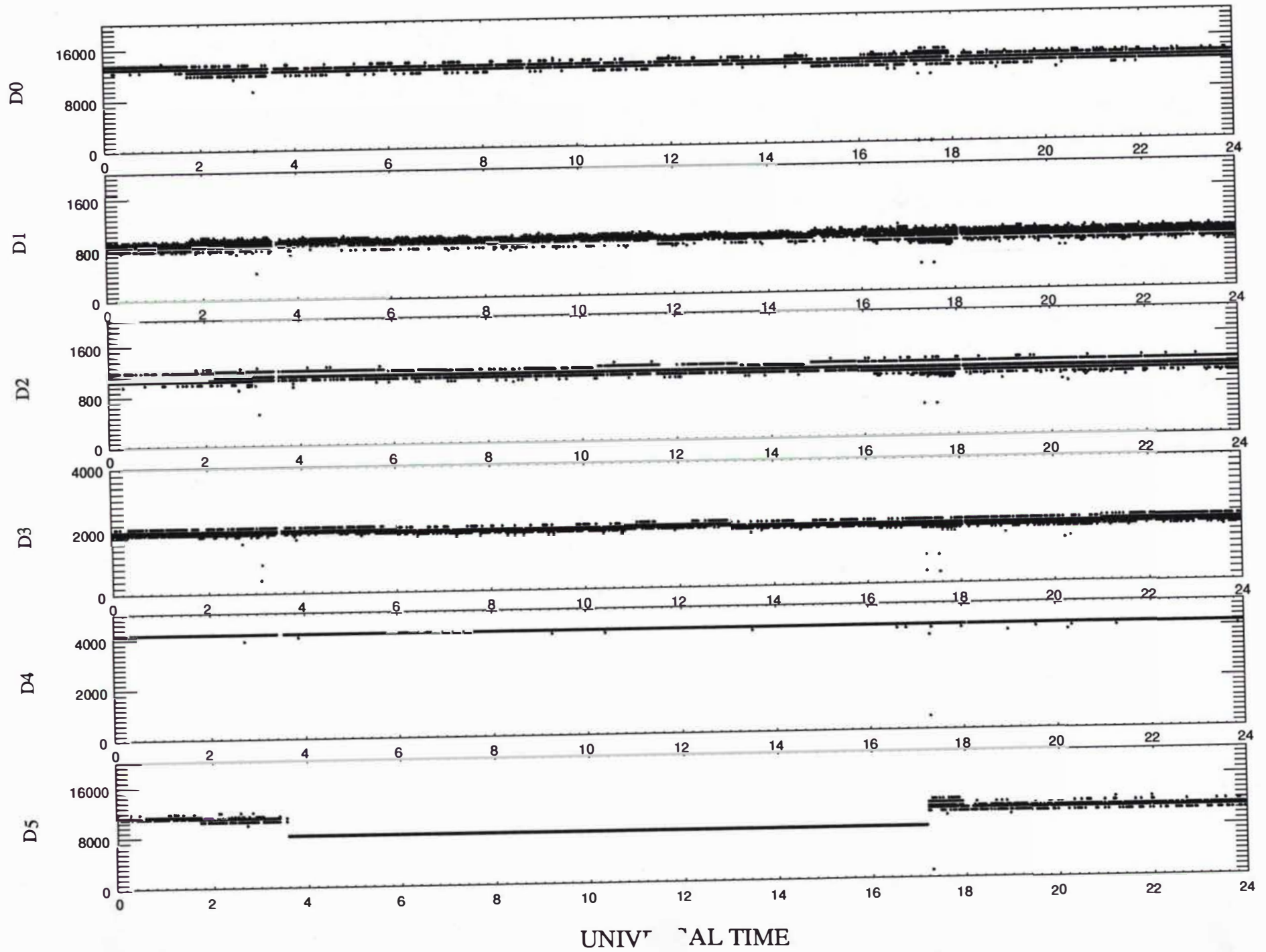
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIV' 'AL TIME



From WOODSP@SSLMOR.msfc.nasa.gov Thu Apr 2 16:14:15 1998
Return-Path: <WOODSP@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA15926; Thu, 2 Apr 1998 16:14:14 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id QAA22061; Thu, 2 Apr 1998 16:14:13 -0800
Date: Thu, 2 Apr 1998 18:14:05 -0600 (CST)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980402181405.204022b3@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6655
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6655
EVENT OF 1998 MAR 22 DAY OF YEAR= 81
EVENT CROSSING TIME AT BATSE : 8834. S. OR 02:27:14.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 34.000 62.000
BATSE PEAK COUNTING RATE: 2600 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 3/ 98 IS:
RA= 154.768 DEC= 13.400 DIST= 4.519 AU
BATSE-ULYSSES DISTANCE = 676113315. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 88.34 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 65.43 SECS.
CROSSING TIME AT ULYSSES IS 8899. S. OR 02:28:19 +/- 442.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 3/ 98 IS:
RA= 12.475 DEC= 4.794 DIST= 2.376 AU
MARS-BATSE DISTANCE = 355491136. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=120.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -603.55 SECS.
CROSSING TIME AT MARS IS 8230. S. OR 02:17:10 +/- 168.04 SECONDS

BATSE BURST TRIGGER

NO.: 6655

TIME: TJD=0894 SECONDS=8834

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=83.1 AZIMUTH=21.4 ERROR=2.2 DEGREES

COMMENTS:

GRB LASTING ABOUT 80 SEC. SINGLE BROAD TRIANGULAR PULSE.
MARGINALLY VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6655	980322	10894	08834	2600	034	+62	80

BATSE BURST# 6655

ULYSSES RT

2 / 4 / 98

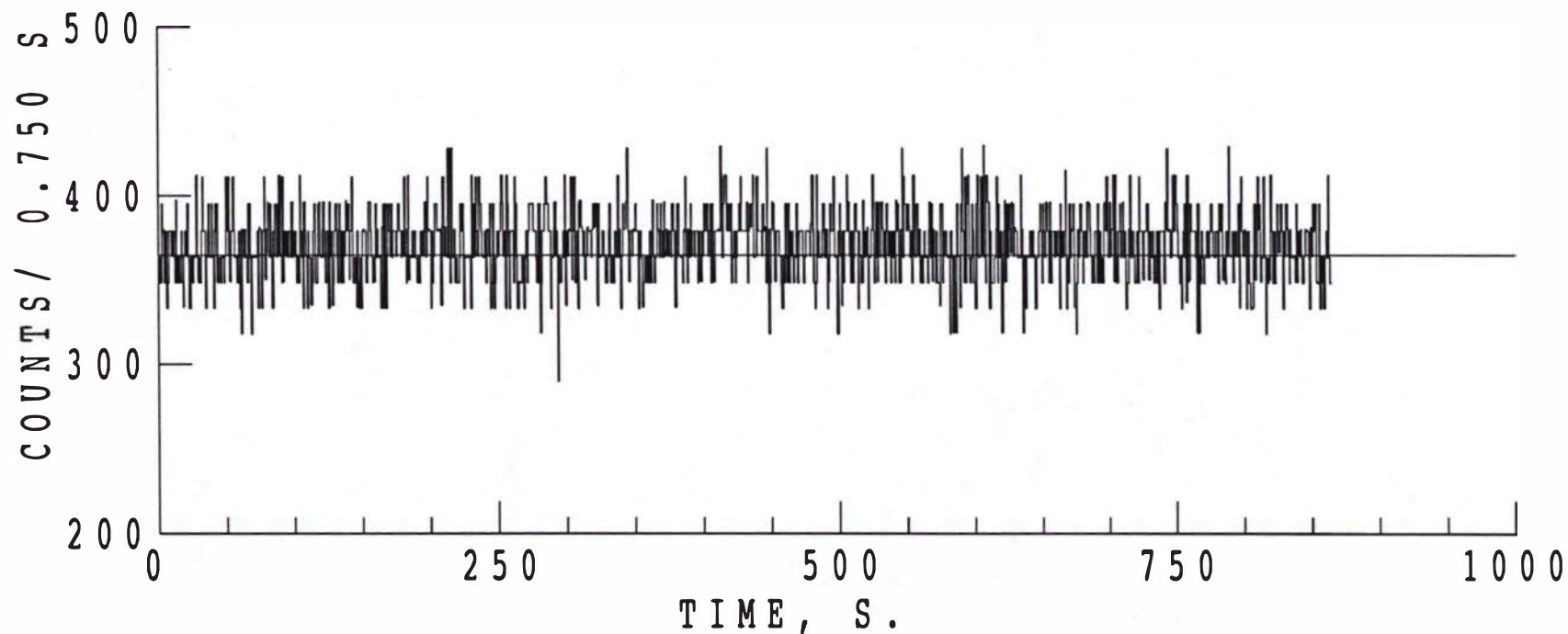
22 / 3 / 98 8460.143 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From WOODSP@SSLMOR.msfc.nasa.gov Thu Apr 2 16:12:51 1998
Date: Thu, 2 Apr 1998 18:11:10 -0600 (CST)
From: WOODSP@SSLMOR.msfc.nasa.gov
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6656

TIME: TJD=0894 SECONDS=39857

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

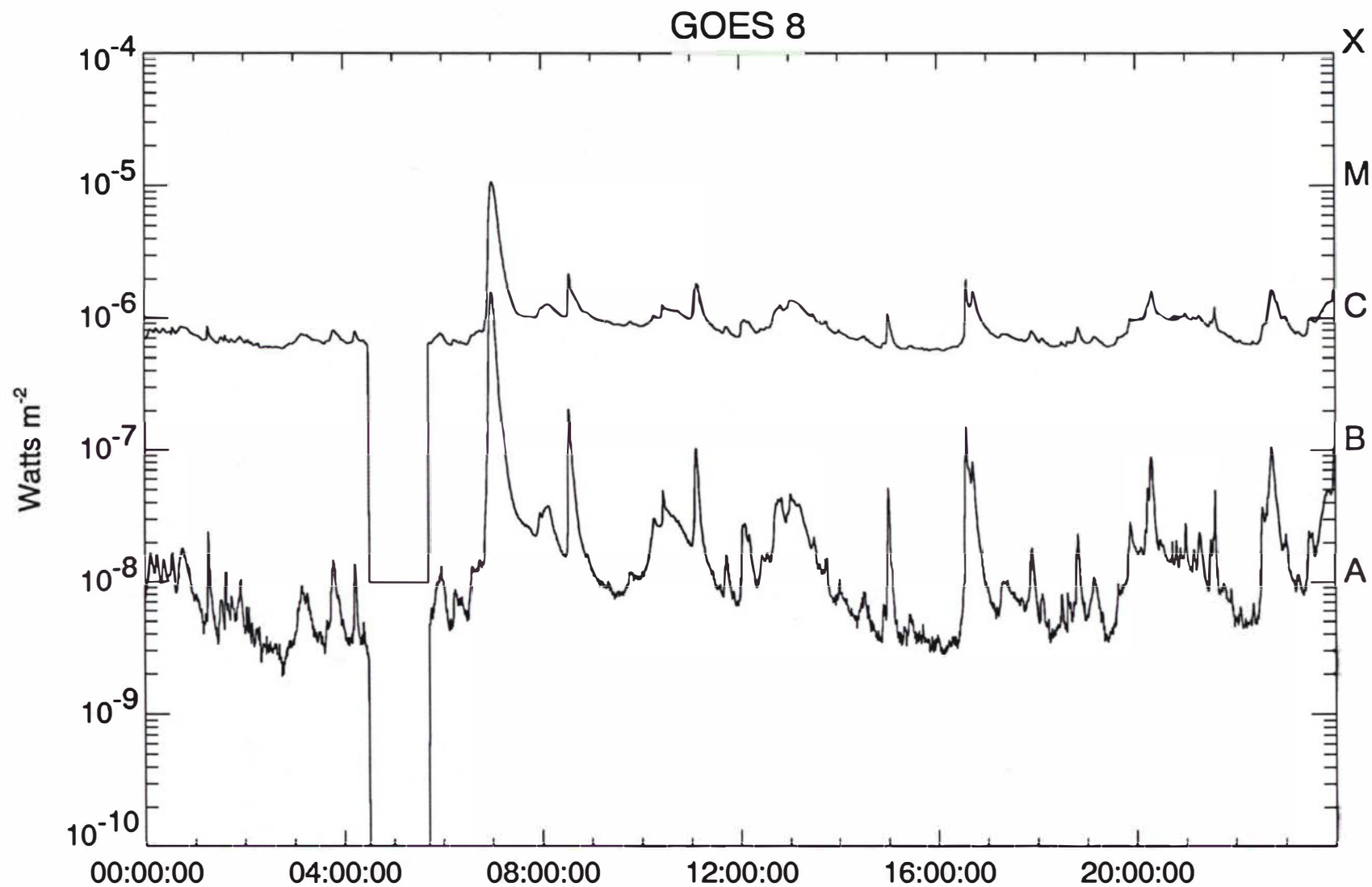
SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

SOLAR FLARE. GOES9 C2 FLARE. OPTICAL SF. NOT VISIBLE ABOVE
100 KEV.



Data Start: 98/03/22, 0000:00

Plot created: 98/03/26, 1007

Channel 1 (1.0 - 8.0 Angstroms)

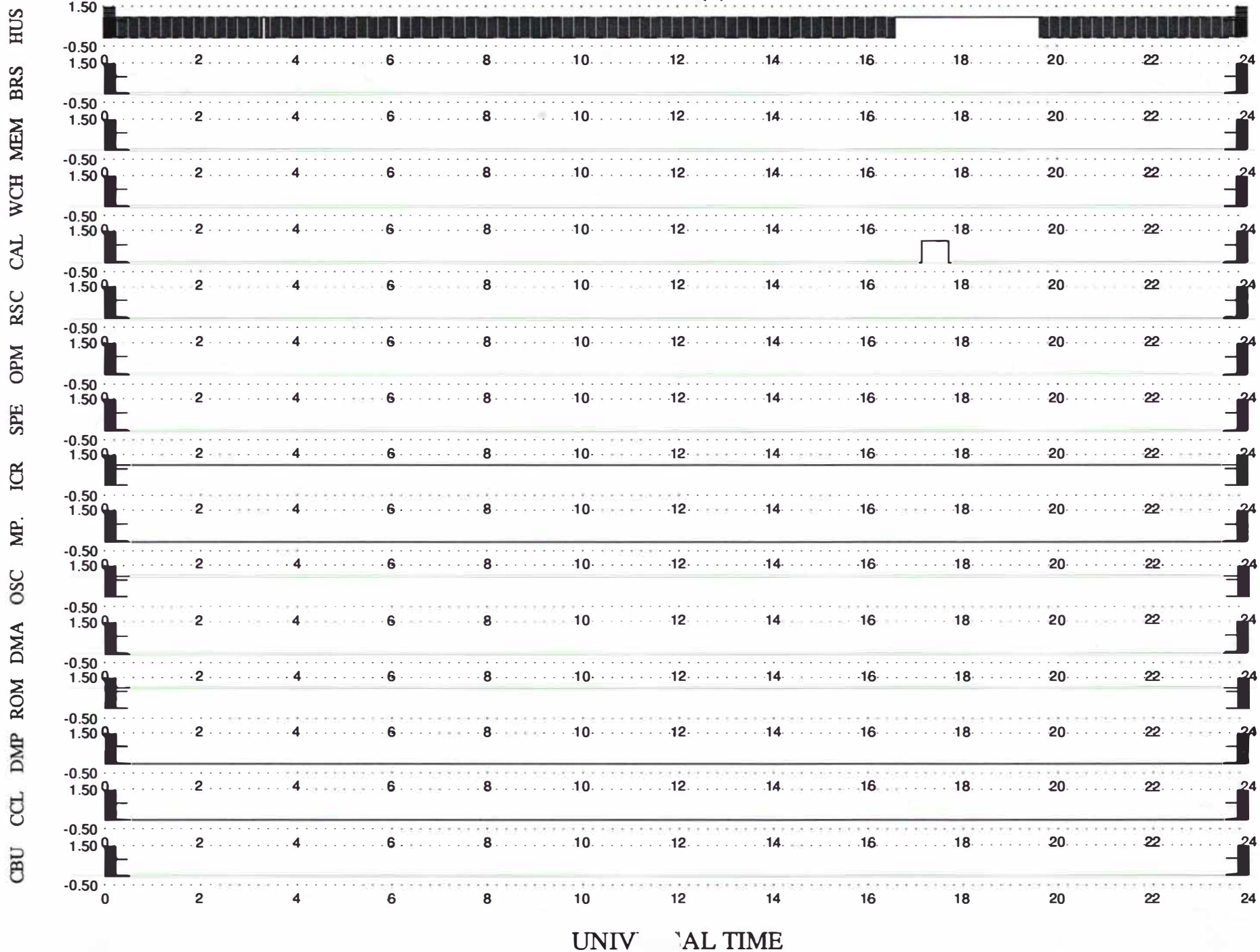
Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms)

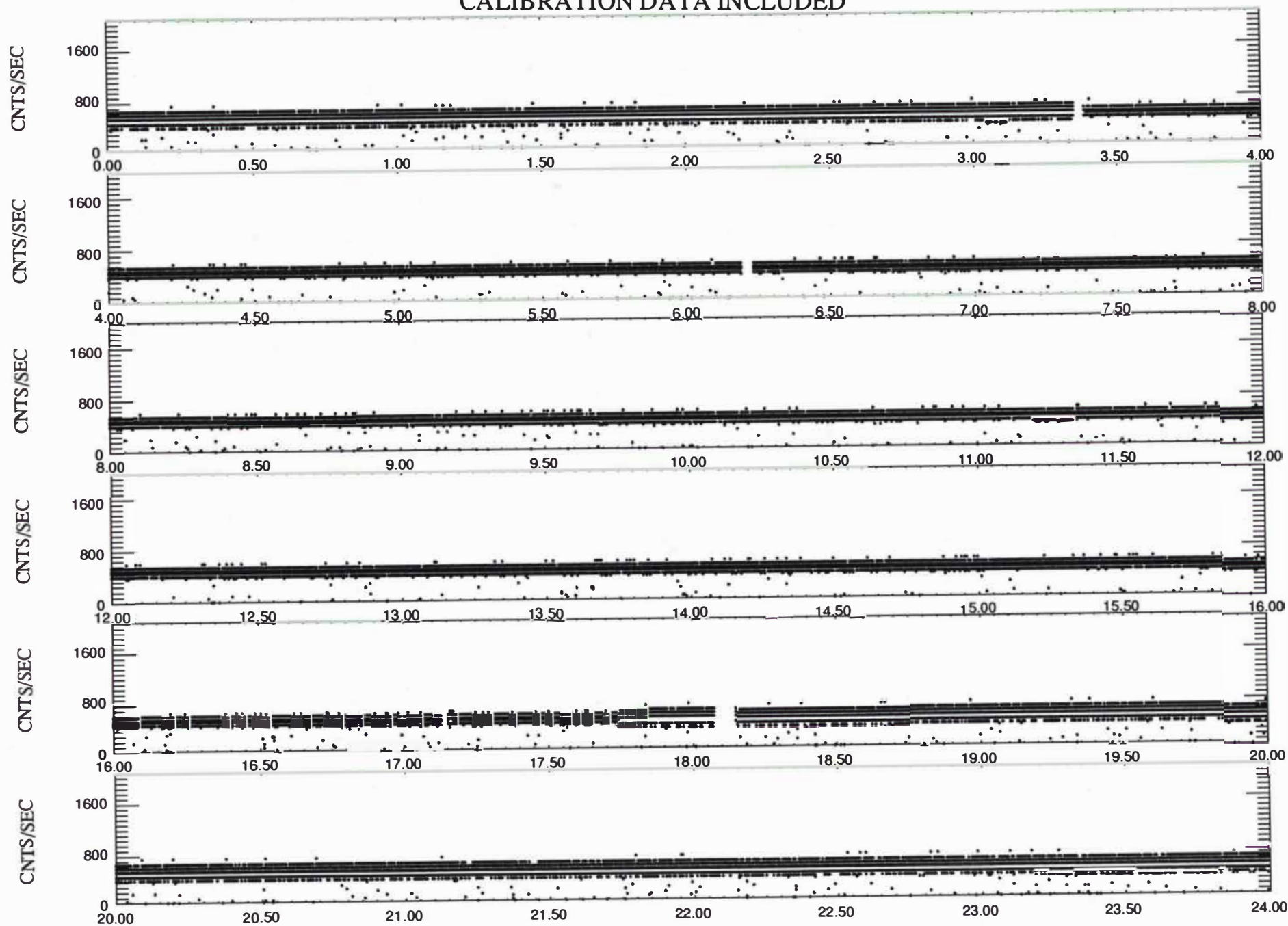
Background not subtracted

Sample average = 10

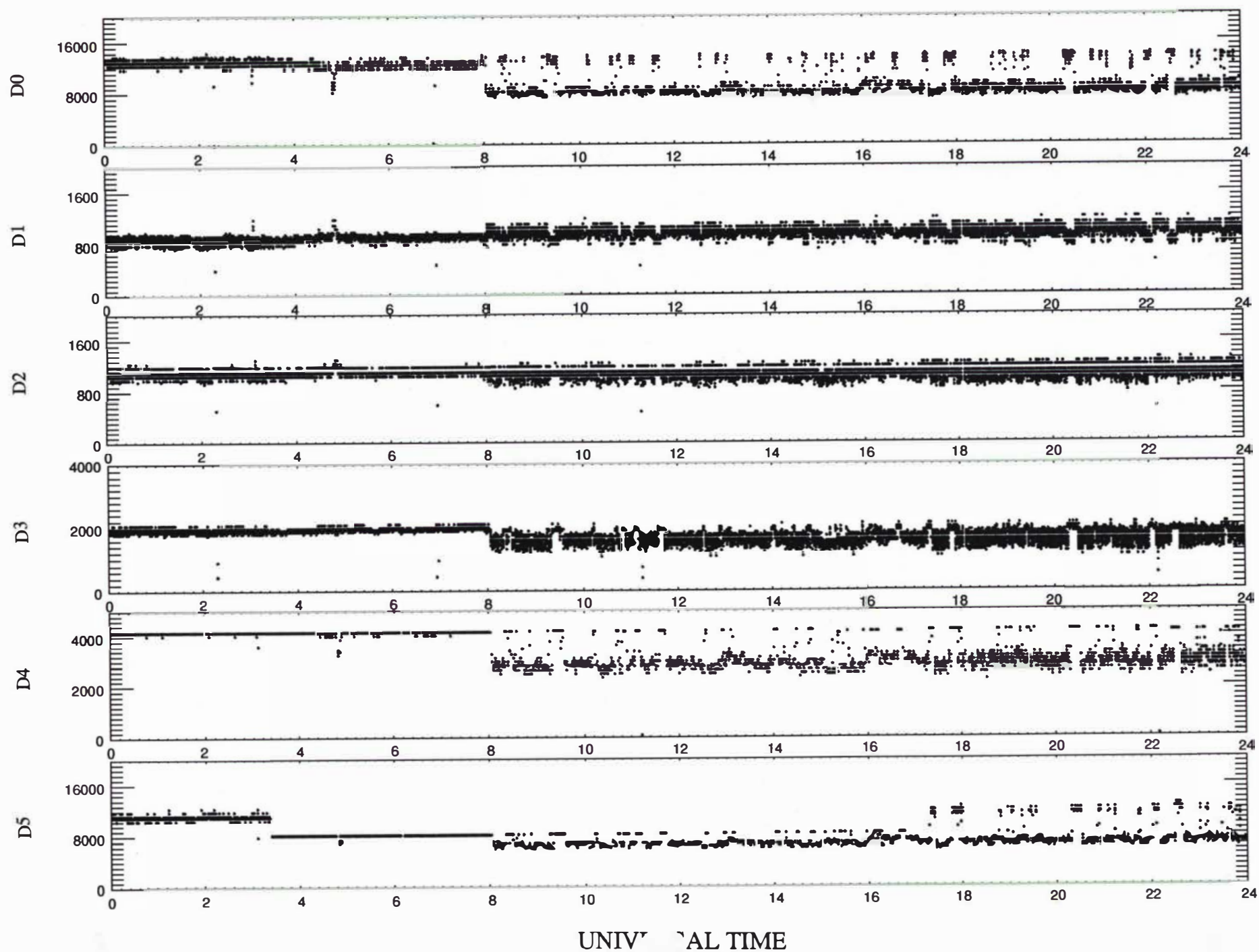
NO BURST (4)

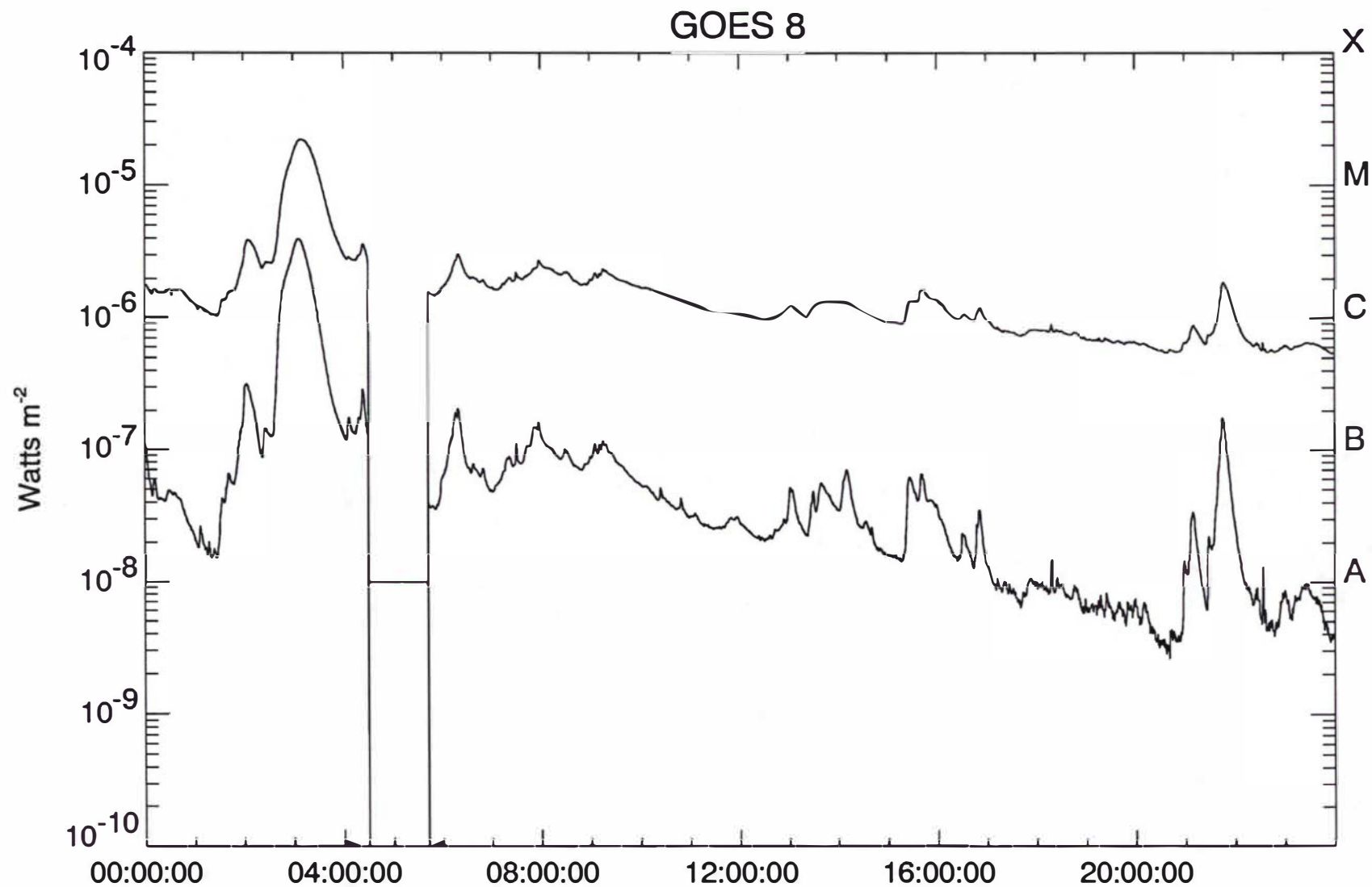


CALIBRATION DATA INCLUDED



UNIV AL TIME





Data Start: 98/03/23, 0000:00

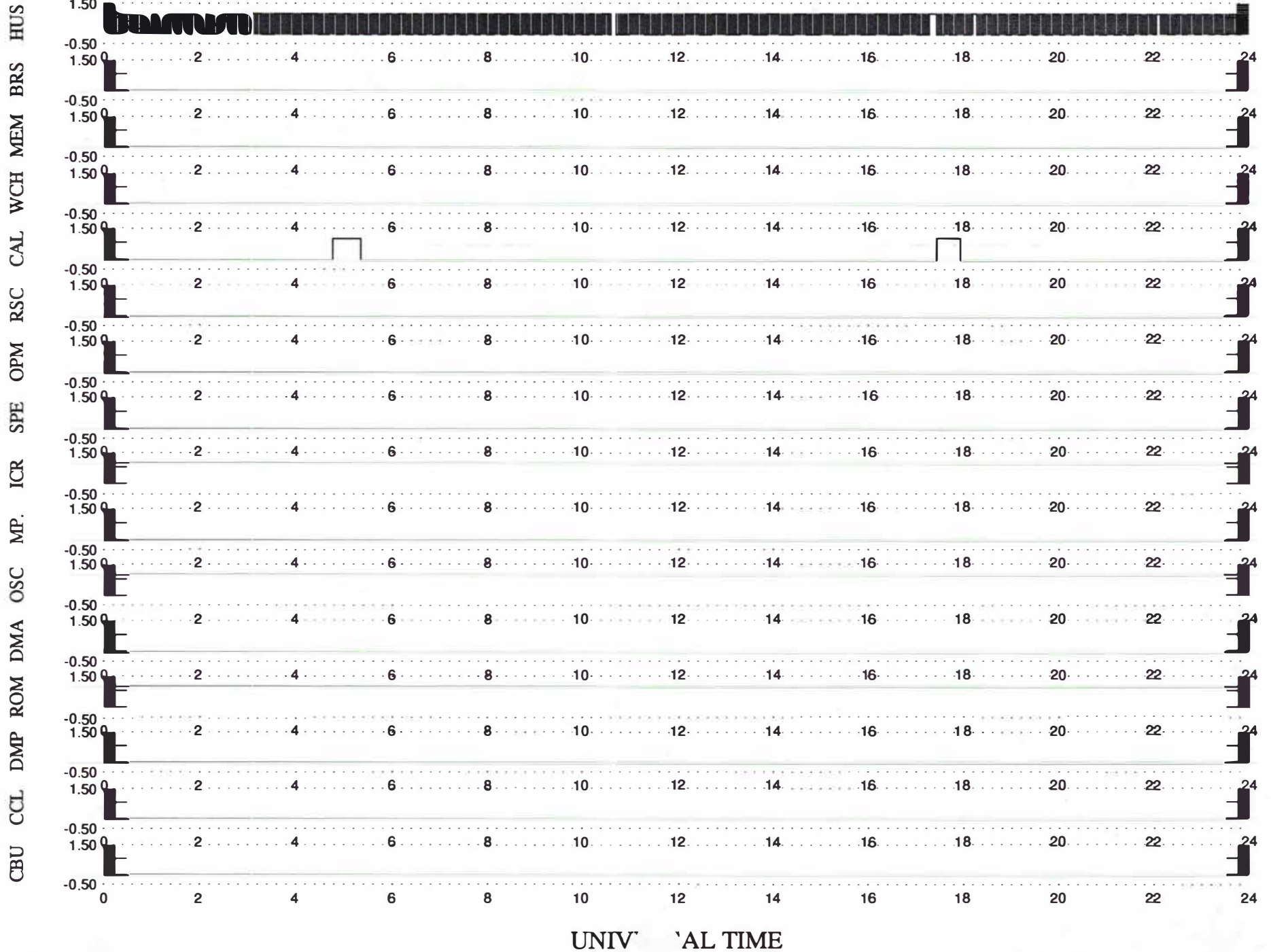
Plot created: 98/03/27, 1007

Channel

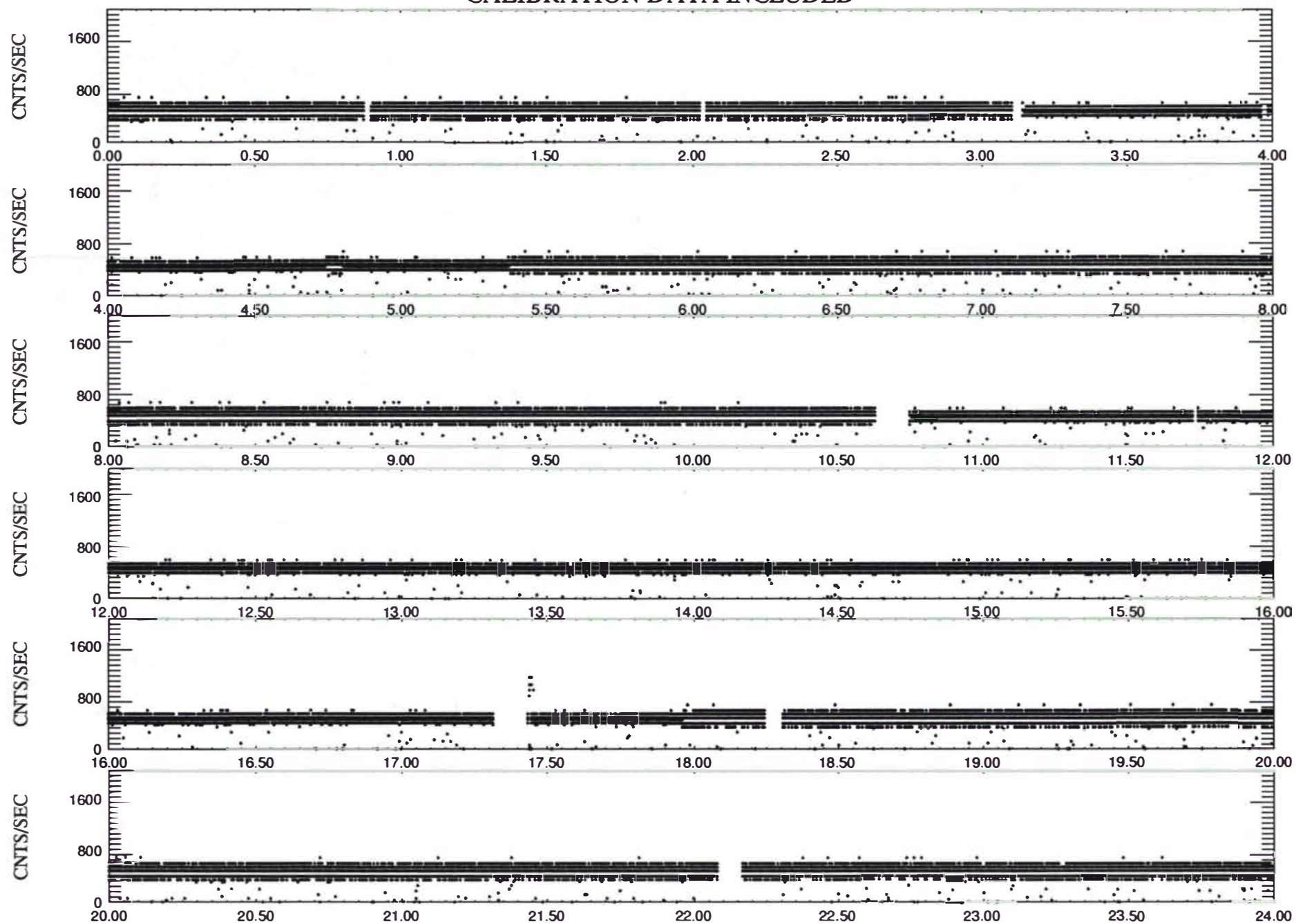
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

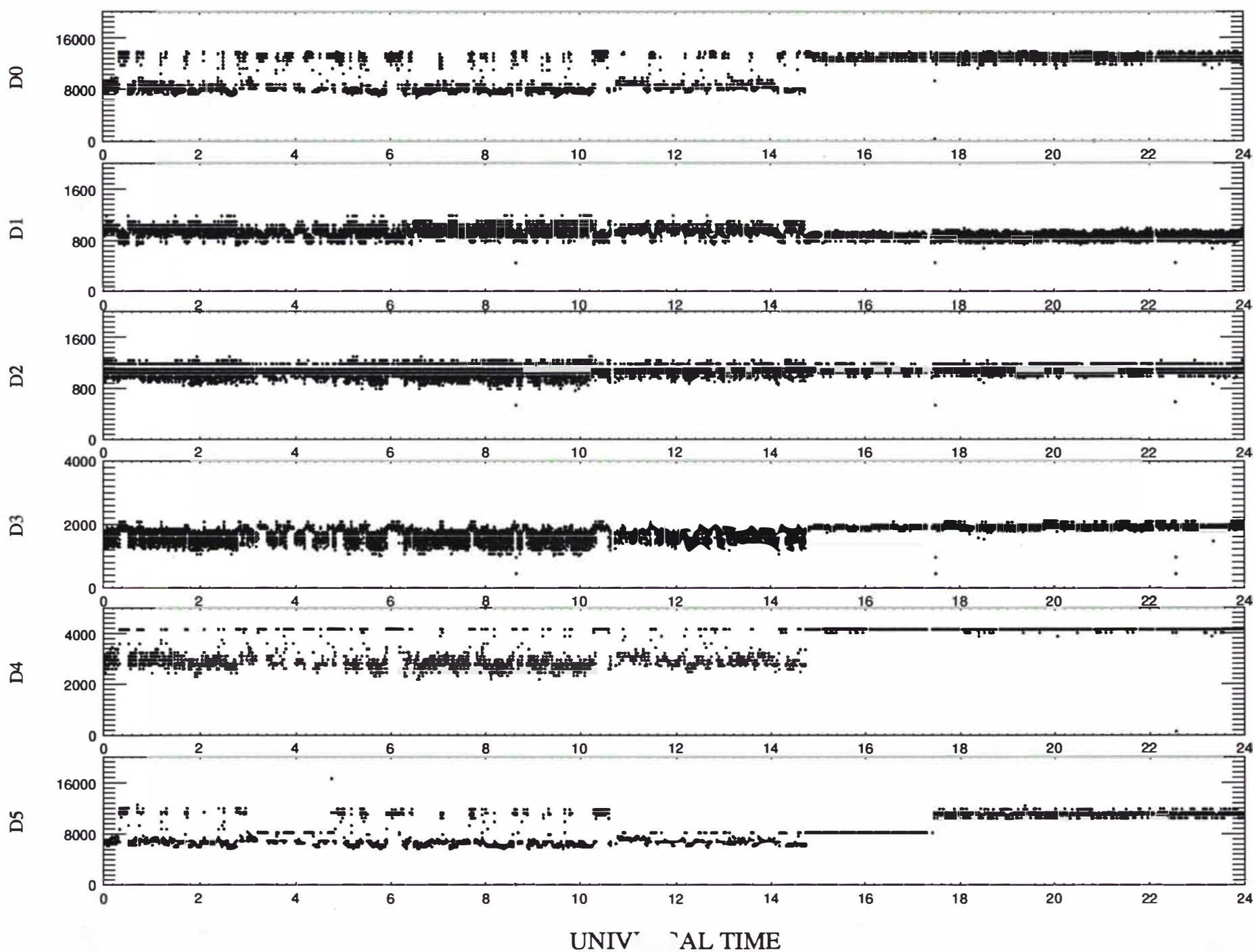
NO BURST (4)



CALIBRATION DATA INCLUDED



UNIV. TIME



From BUTTERWORTH@tgrs2.gsfc.nasa.gov Thu Apr 23 11:14 PDT 1998
Date: Thu, 23 Apr 1998 14:13:42 -0400 (EDT)
From: BUTTERWORTH@tgrs3.gsfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu, kmarar@isac.ernet.in, vnp@isac.ernet.in,
jterrell@lanl.gov, yosimori@rikkyo.ac.jp,
filippo@botes1.tesre.bo.cnr.it, henze@fender.msfc.nasa.gov,
kraken@rosserv.gsfc.nasa.gov, cline@apache.gsfc.nasa.gov
CC: BUTTERWORTH@tgrs3.gsfc.nasa.gov
X-Vmsmail-To: @ULYSSES
X-Vmsmail-Cc: BUTTERWORTH
Subject: KONUS REPORT FOR RECENT ULYSSES GAMMA-RAY EVENTS NOT REPORTED BY BATSE

Hi Everyone,

Here is the Konus report for those events recently seen by Ulysses, but not reported by BATSE.

Paul.

Ulysses event - March 14 1998 06:30 Ulysses time; weak burst, 64 ms long
Ulysses event - March 14 1998 23:32 Ulysses time; weak burst, 32 ms long
Ulysses event - March 24 1998 15:35 Ulysses time; weak burst, 64 ms long
Ulysses event - April 4 1998 09:06 Ulysses time; weak burst, 64 ms long
Ulysses event - April 5 1998 14:48 Ulysses time; weak burst, 64 ms long
Ulysses event - April 6 1998 07:45 Ulysses time; weak burst, 64 ms long
Ulysses event - April 7 1998 15:44 Ulysses time; weak burst, 64 ms long
Ulysses event - April 8 1998 02:51 Ulysses time; weak burst, 64 ms long
Ulysses event - April 9 1998 07:03 Ulysses time; weak burst, 64 ms long
Ulysses event - April 9 1998 19:19 Ulysses time; weak burst, 32 ms long
Ulysses event - April 15 1998 12:23 Ulysses time; weak burst, 32 ms long

None of these events were detected by Konus. We have no data between 18:20 and 19:18 on April 9 because we were reading out the data from a trigger.

From kraken@rosserv.gsfc.nasa.gov Wed Apr 8 13:48 PDT 1998
X-Sender: kraken@kangaroo.gsfc.nasa.gov
Mime-Version: 1.0
Date: Wed, 8 Apr 1998 16:54:29 -0500
khurley@sunspot.ssl.berkeley.edu (Kevin Hurley)
From: Peter Kurczynski <kraken@rosserv.gsfc.nasa.gov>
Subject: Ulysses bursts not seen by TGRS
Cc: TEEGARDEN@tgrs2.gsfc.nasa.gov

Hi Kevin,

The following Ulysses bursts were not seen by TGRS:

April 4 1998 09:06 Ulysses time; weak burst, 64 ms long
March 24 1998 15:35 Ulysses time; weak burst, 64 ms long

TGRS data from April 5 is not yet available. I'll let you know...

Pete

~~SAX~~
HUS DATA

ULYSSES RT

19 / 07 / 05

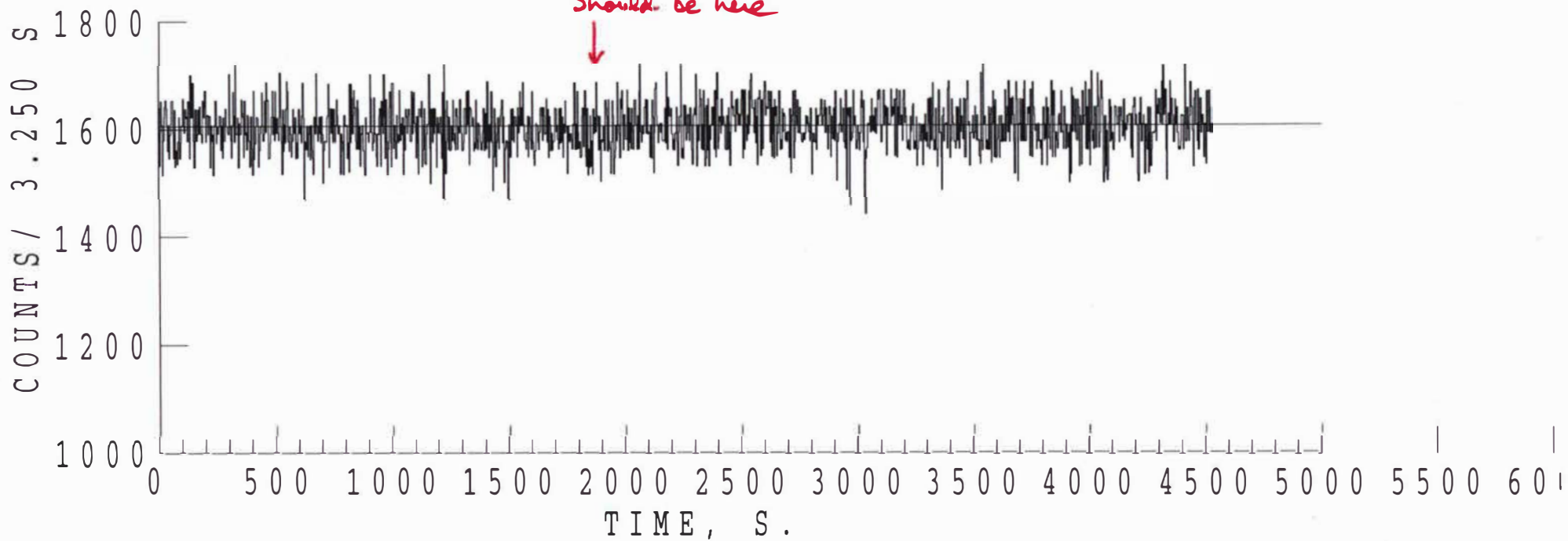
24 / 03 / 98 38808.039 s

0.250 S INTERVALS REGROUPED BY 13

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX
HUS DATA

ULYSSES RT

19 / 07 / 05

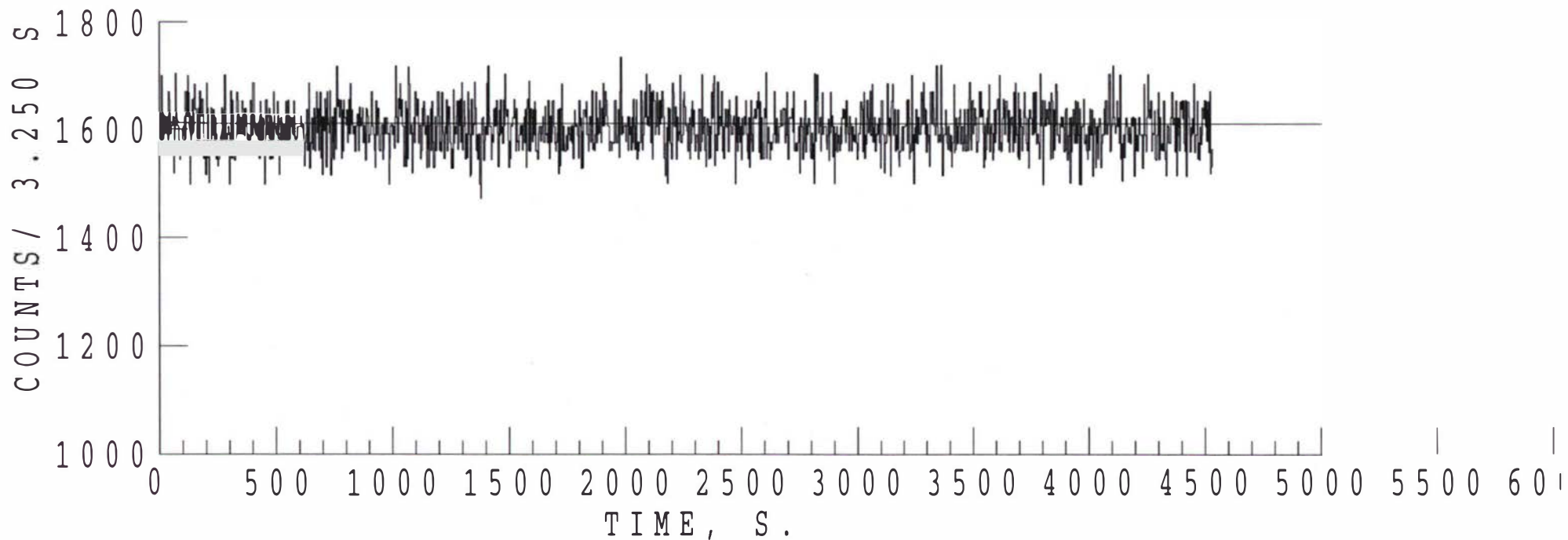
24 / 03 / 98 47340.133 s

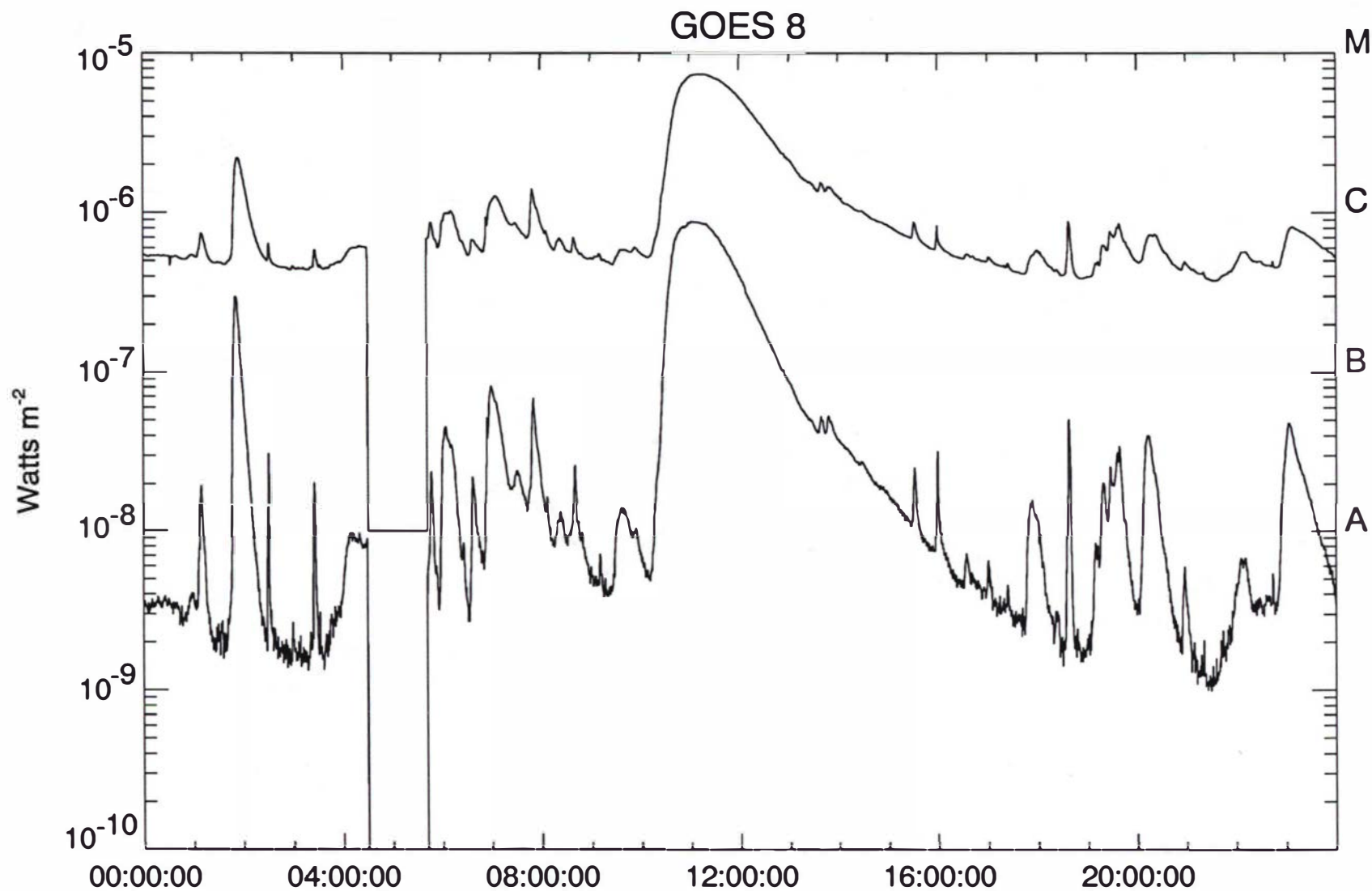
0.250 S INTERVALS REGROUPED BY 13

0 - 0 keV

W= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

W= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





Data Start: 98/03/24, 0000:00

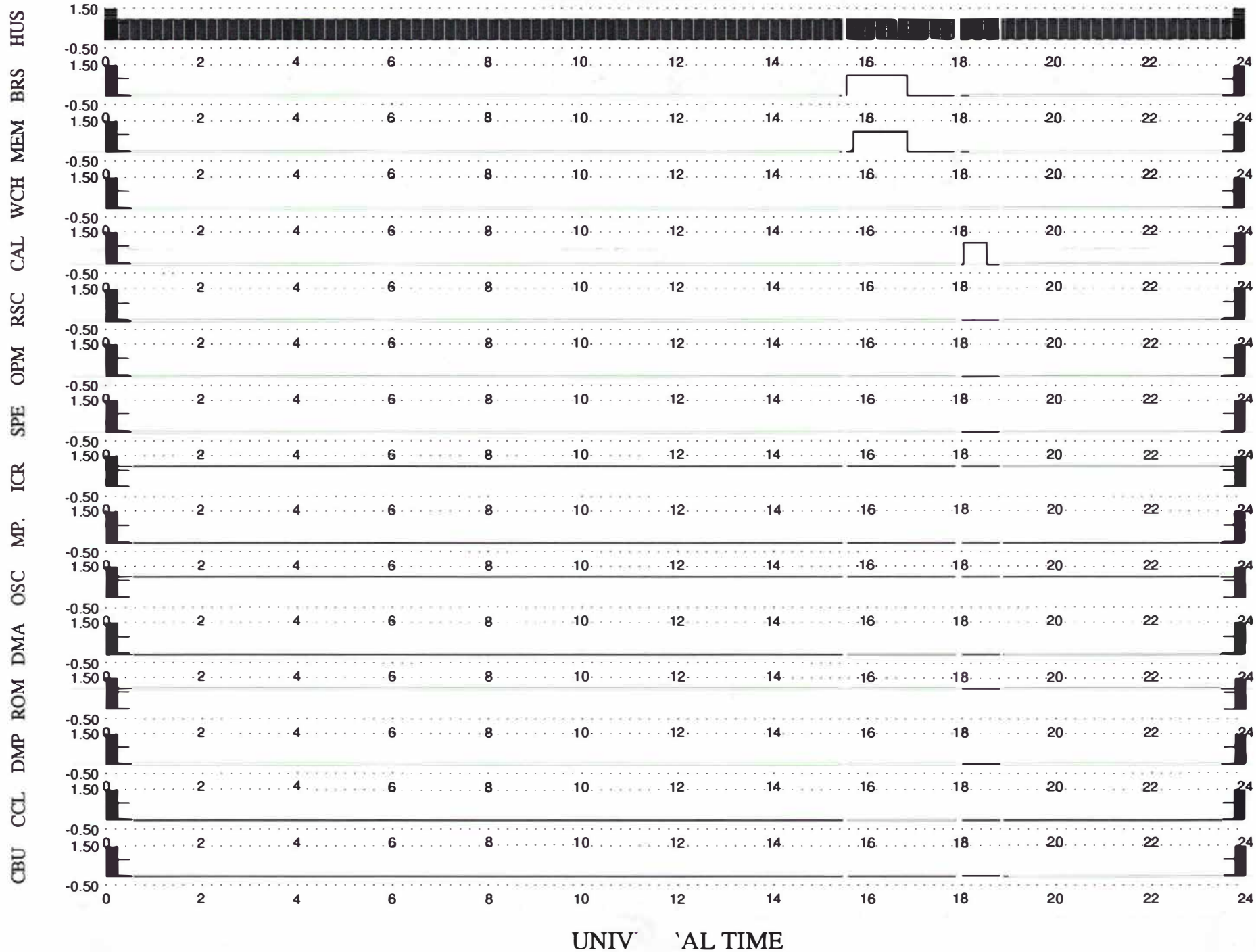
Plot created: 98/03/28, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

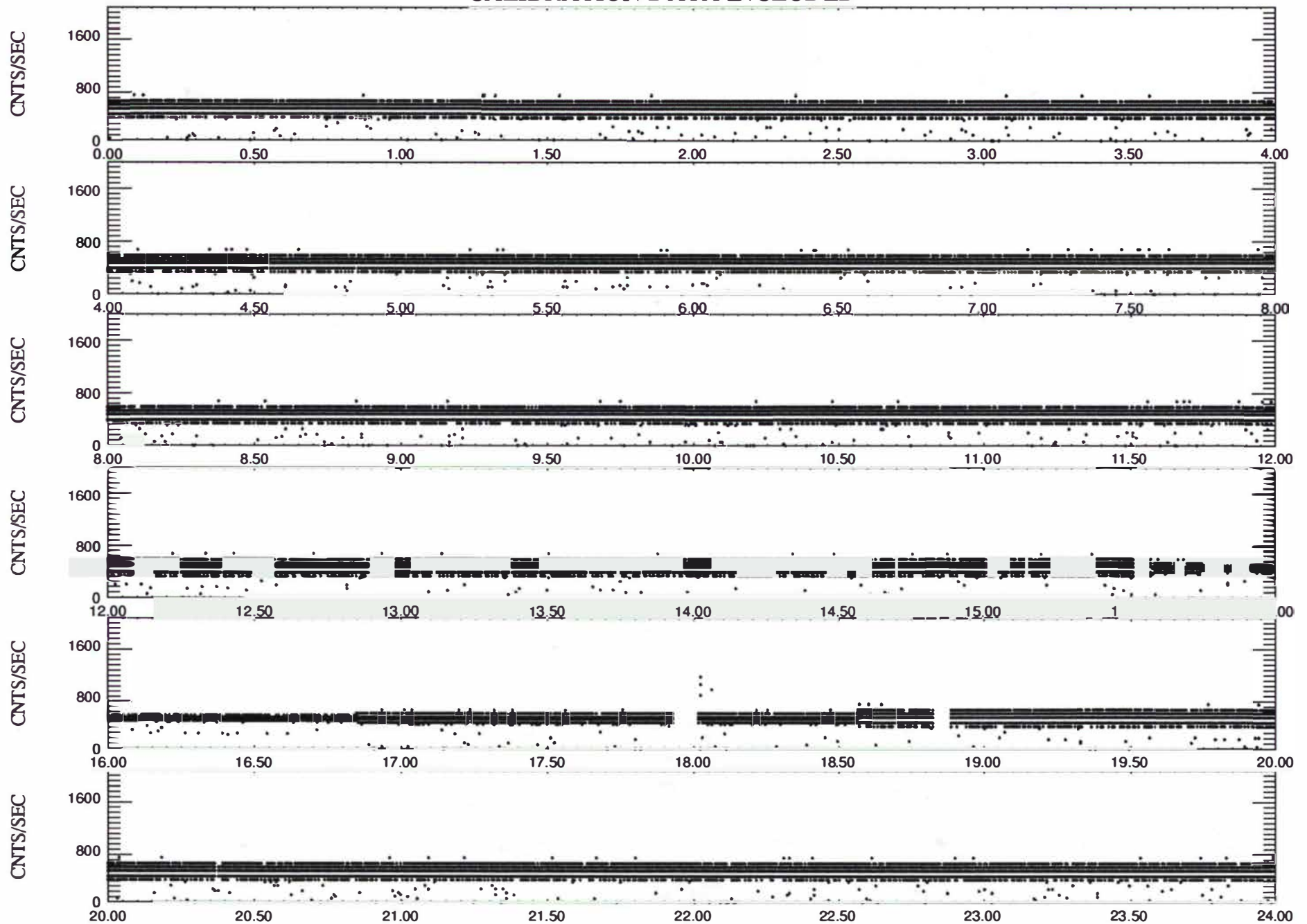
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 5

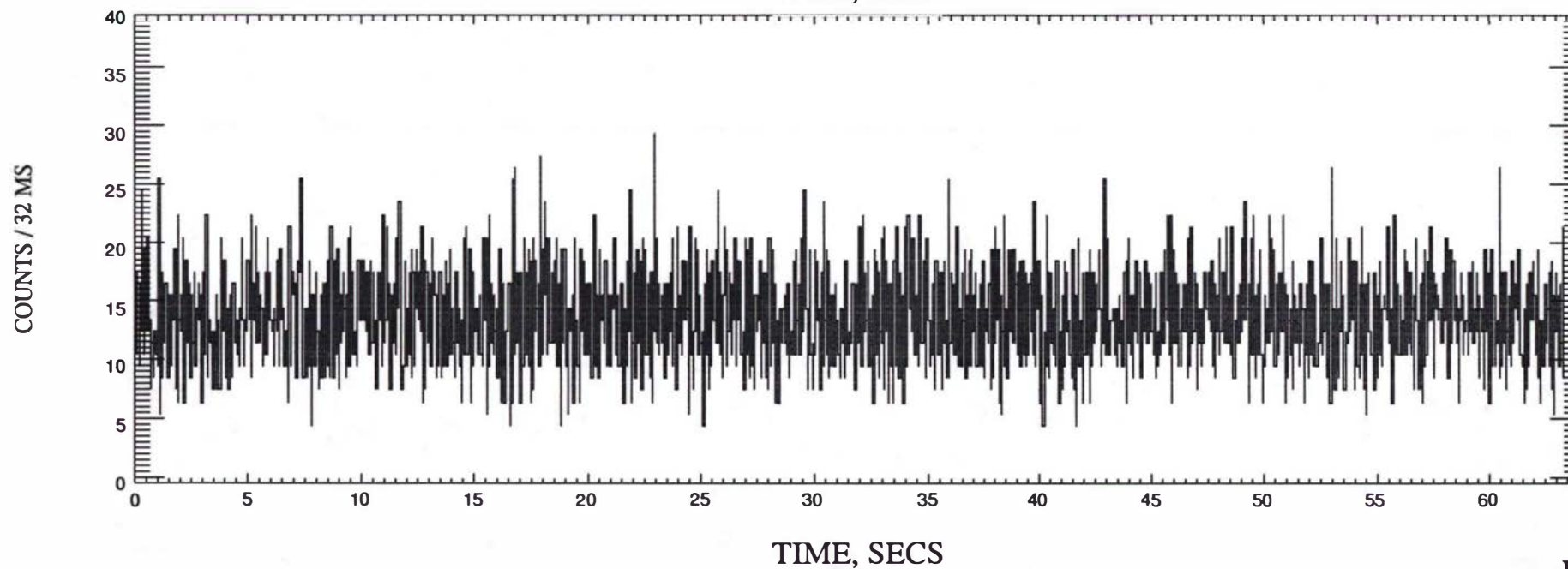
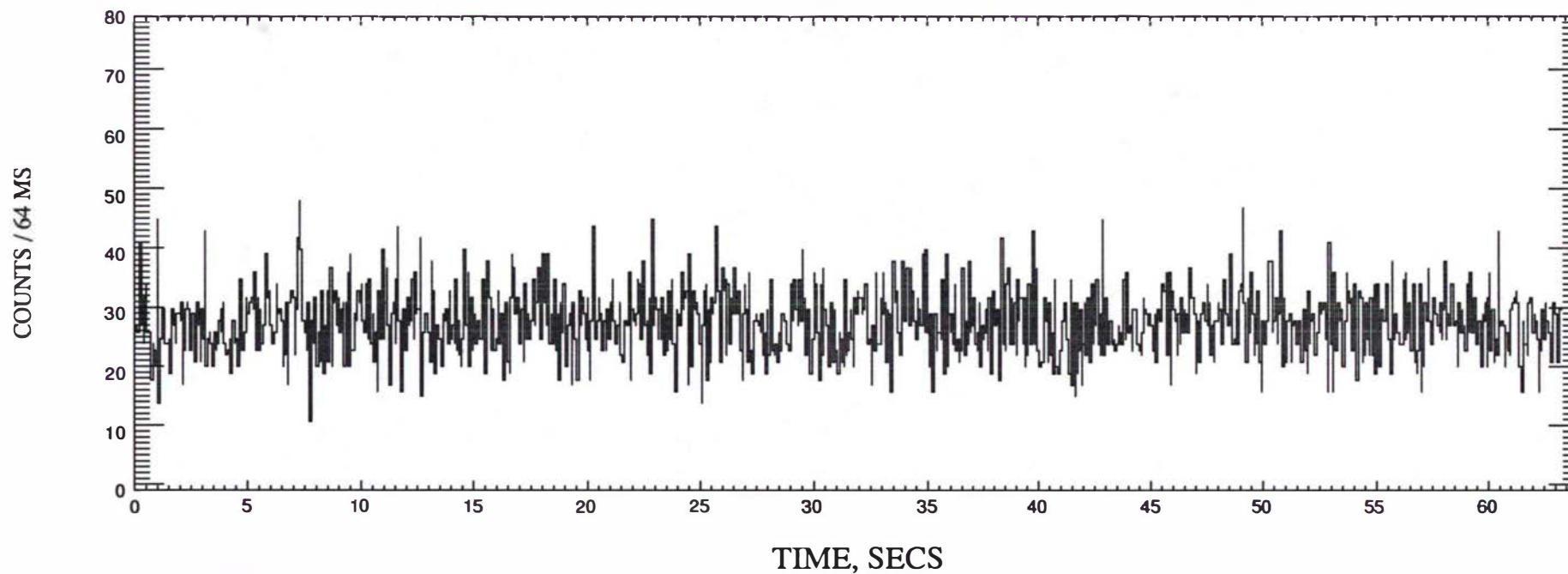


CALIBRATION DATA INCLUDED

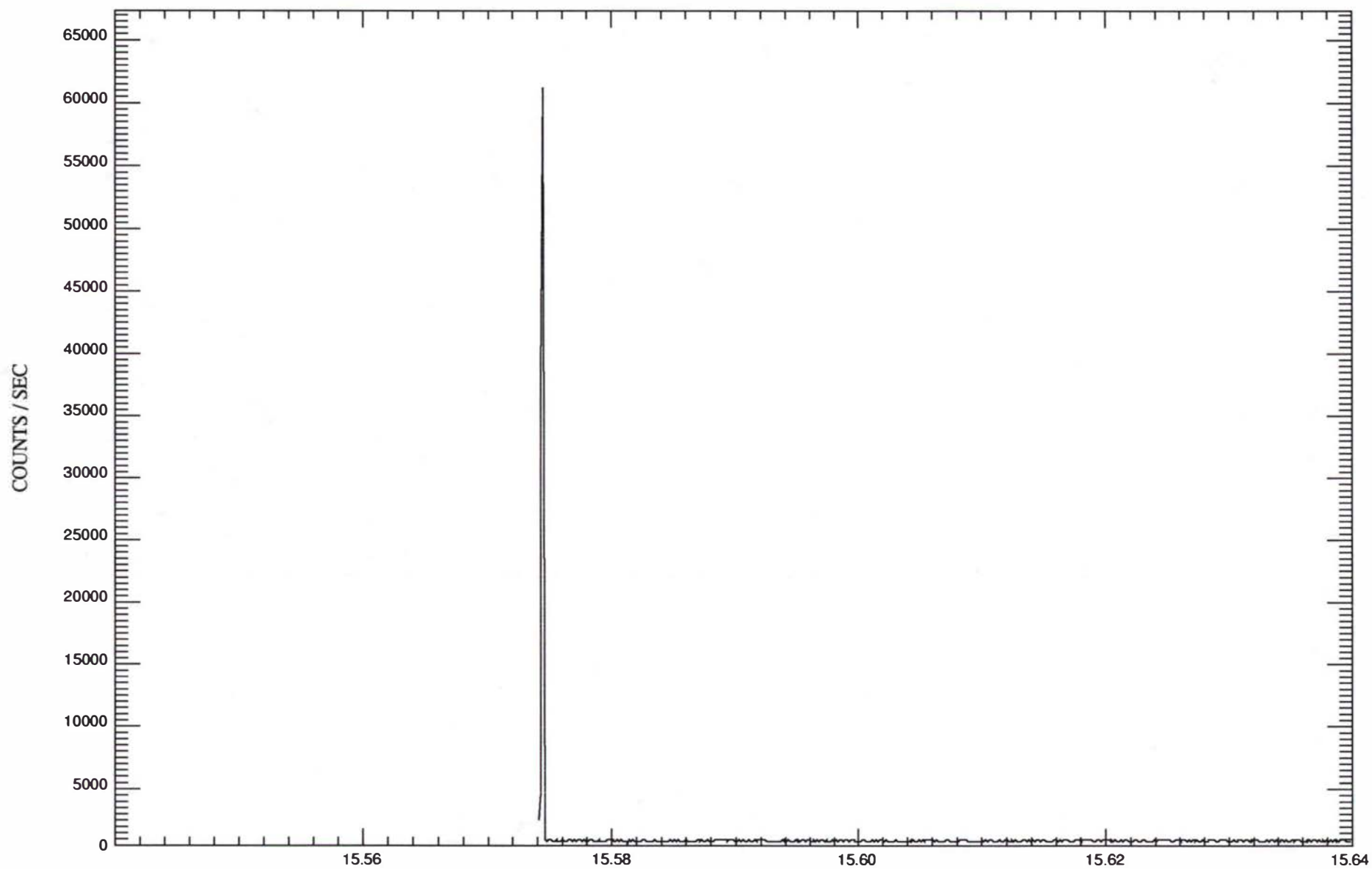


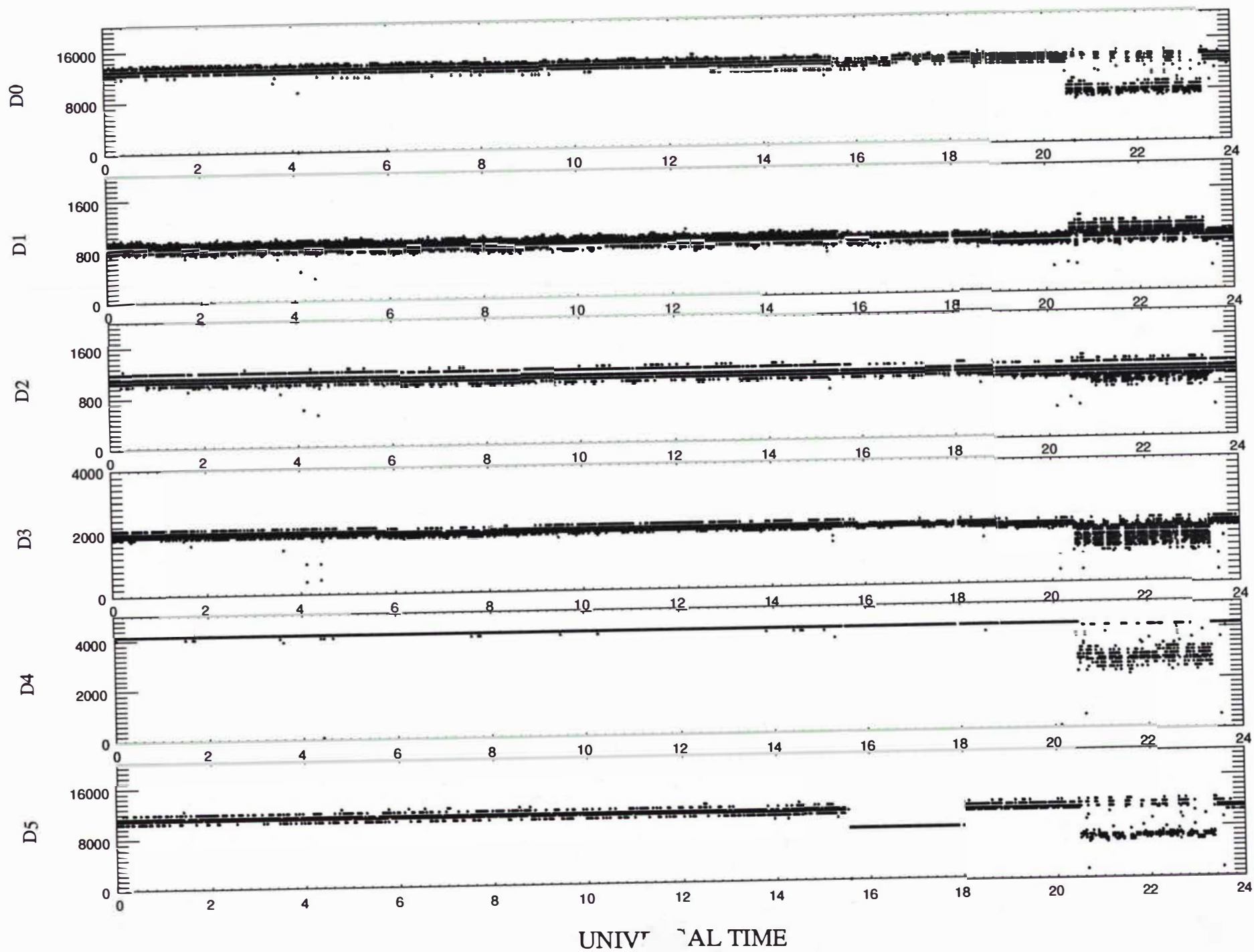
UNIV' 'AL TIME

Burst Counter 5 at UT=15.594437183804 h=56139.974 s 15:35:39.974



CALIBRATION DATA INCLUDED





From SURASAK@SSLMOR.msfc.nasa.gov Fri Apr 3 11:42:57 1998
Return-Path: <SURASAK@SSLLES.MSFC.NASA.GOV>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA00449; Fri, 3 Apr 1998 11:42:56 -0800
Received: from SSLLES.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA26606; Fri, 3 Apr 1998 11:42:52 -0800
Date: Fri, 3 Apr 1998 13:39:59 -0600 (CST)
From: SURASAK@SSLMOR.msfc.nasa.gov
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980403133959.20402604@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6657
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6657
EVENT OF 1998 MAR 25 DAY OF YEAR= 84
EVENT CROSSING TIME AT BATSE : 12888. S. OR 03:34:48.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 209.000 -54.000
BATSE PEAK COUNTING RATE: 4100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 3/ 98 IS:
RA= 154.182 DEC= 13.413 DIST= 4.546 AU
BATSE-ULYSSES DISTANCE = 680128254. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.15 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -321.60 SECS.
CROSSING TIME AT ULYSSES IS 12566. S. OR 03:29:26 +/- 435.01 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 3/ 98 IS:
RA= 14.583 DEC= 5.708 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356668128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 49.69 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 769.65 SECS.
CROSSING TIME AT MARS IS 13658. S. OR 03:47:37 +/- 169.20 SECONDS

BATSE BURST TRIGGER

NO.: 6657

TIME: TJD=0897 SECONDS=12888

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=88.4 AZIMUTH=202.4 ERROR=1.432 DEGREES

COMMENTS:

GRB. SINGLE PULSE. FRED. DUR ABOUT 75 S. PEAK AT ABOUT T+4 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6657	980325	10897	12888	4100	209	-54	75

BATSE BURST# 6657

ULYSSES RT

3 / 4 / 98

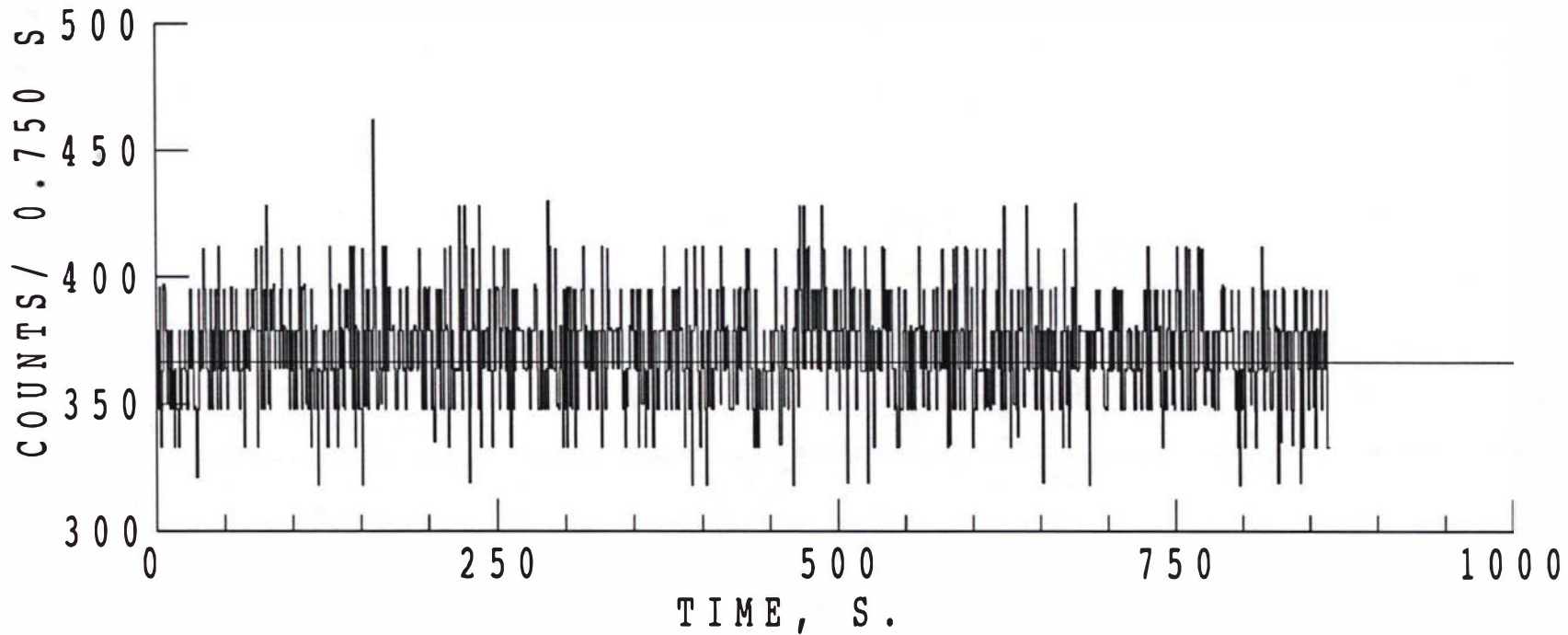
25 / 3 / 98 12132.183 s

0.250 S INTERVALS REGROUPED BY 3

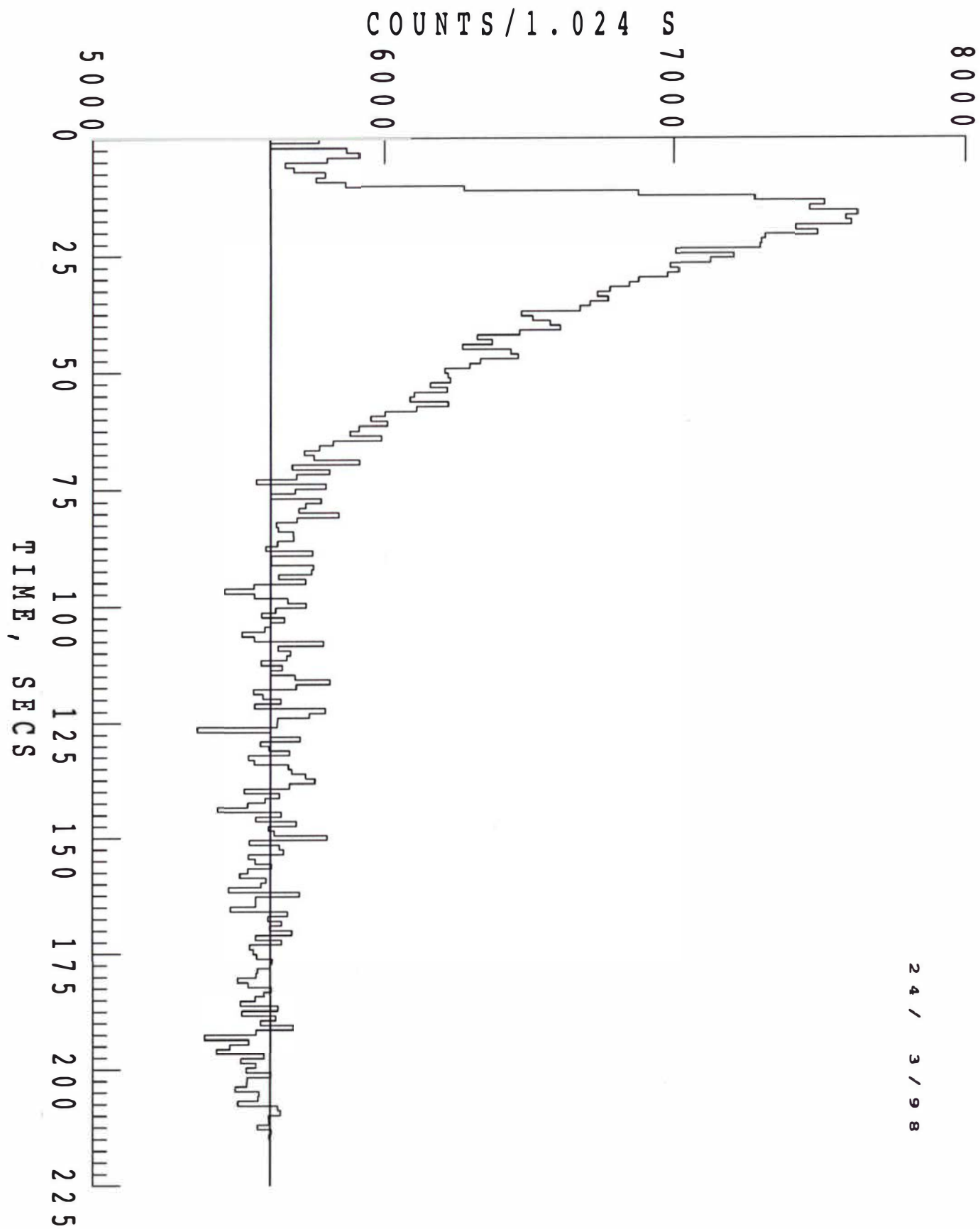
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6657 25/03/98 12877.537
25 - 100 keV



From SURASAK@SSLMOR.msfc.nasa.gov Fri Apr 3 13:58:37 1998
Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA02217; Fri, 3 Apr 1998 13:58:37 -0800
From: SURASAK@SSLMOR.msfc.nasa.gov
Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA27444; Fri, 3 Apr 1998 13:58:34 -0800
Date: Fri, 3 Apr 1998 15:58:36 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980403155836.2040276b@ssl.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6658
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6658
EVENT OF 1998 MAR 25 DAY OF YEAR= 84
EVENT CROSSING TIME AT BATSE : 53175. S. OR 14:46:15.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 61.000 53.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 3/ 98 IS:
RA= 154.095 DEC= 13.415 DIST= 4.551 AU
BATSE-ULYSSES DISTANCE = 680783535. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 98.84 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -348.98 SECS.
CROSSING TIME AT ULYSSES IS 52826. S. OR 14:40:26 +/- 434.27 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 3/ 98 IS:
RA= 14.583 DEC= 5.708 DIST= 2.384 AU
MARS-BATSE DISTANCE = 356668128. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=119.49 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -585.66 SECS.
CROSSING TIME AT MARS IS 52589. S. OR 14:36:29 +/- 170.90 SECONDS

BATSE BURST TRIGGER

NO.: 6658

TIME: TJD=0897 SECONDS=53175

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=80.3 AZIMUTH=38.1 ERROR=7.64 DEGREES

COMMENTS:

GRB. DOUBLE PULSE. FIRST PULSE DUR ABOUT 1.3 S. AT ABOUT T+4 S LATER SHOWS
THE SECOND PULSE NOT AS BRIGHT AS THE FIRST. DUR ABOUT 5 S. TOTAL DUR
ABOUT 9 S. NOT VISIBLE ABOVE 300 KEV.
CORRECTED MESSAGE (EARLIER HAD TRIGGER NO.: 6659).

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6658	980325	10897	53175	6000	061	+53	9

BATSE BURST# 6658

ULYSSES RT

3 / 4 / 98

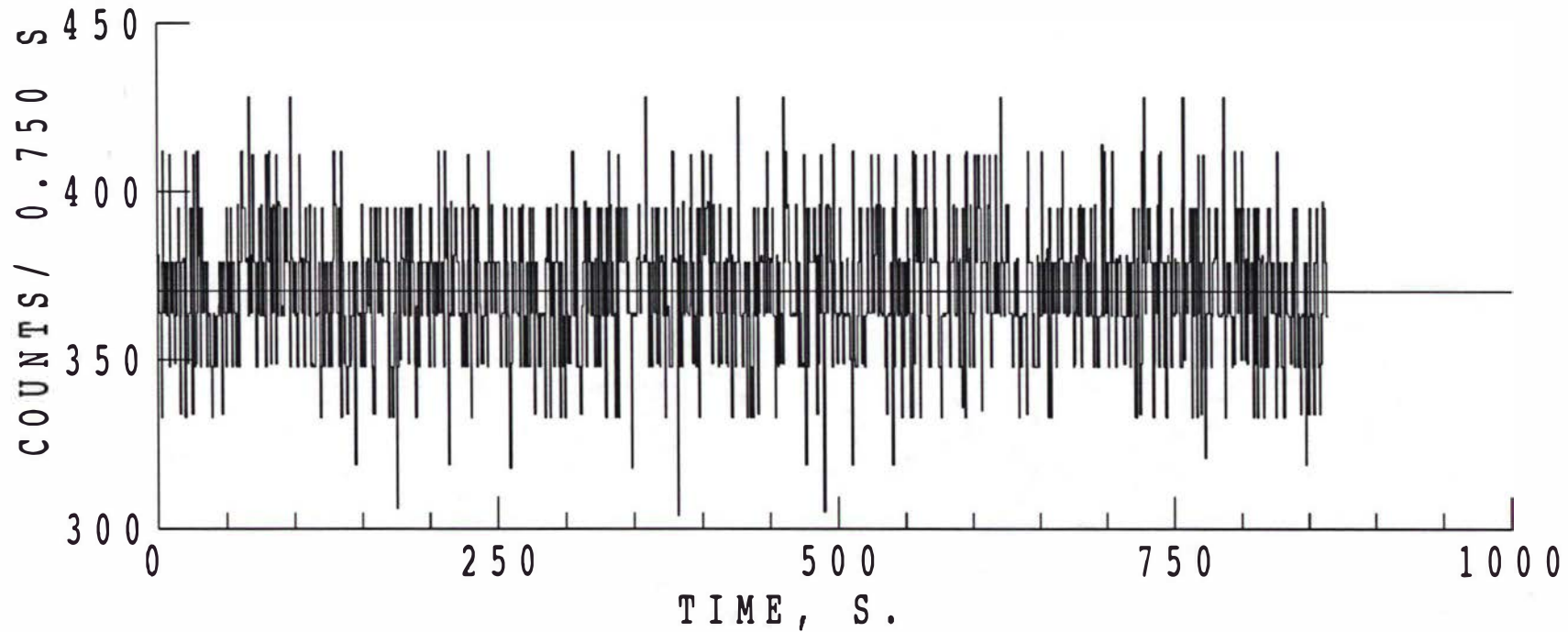
25 / 3 / 98 52380.117 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

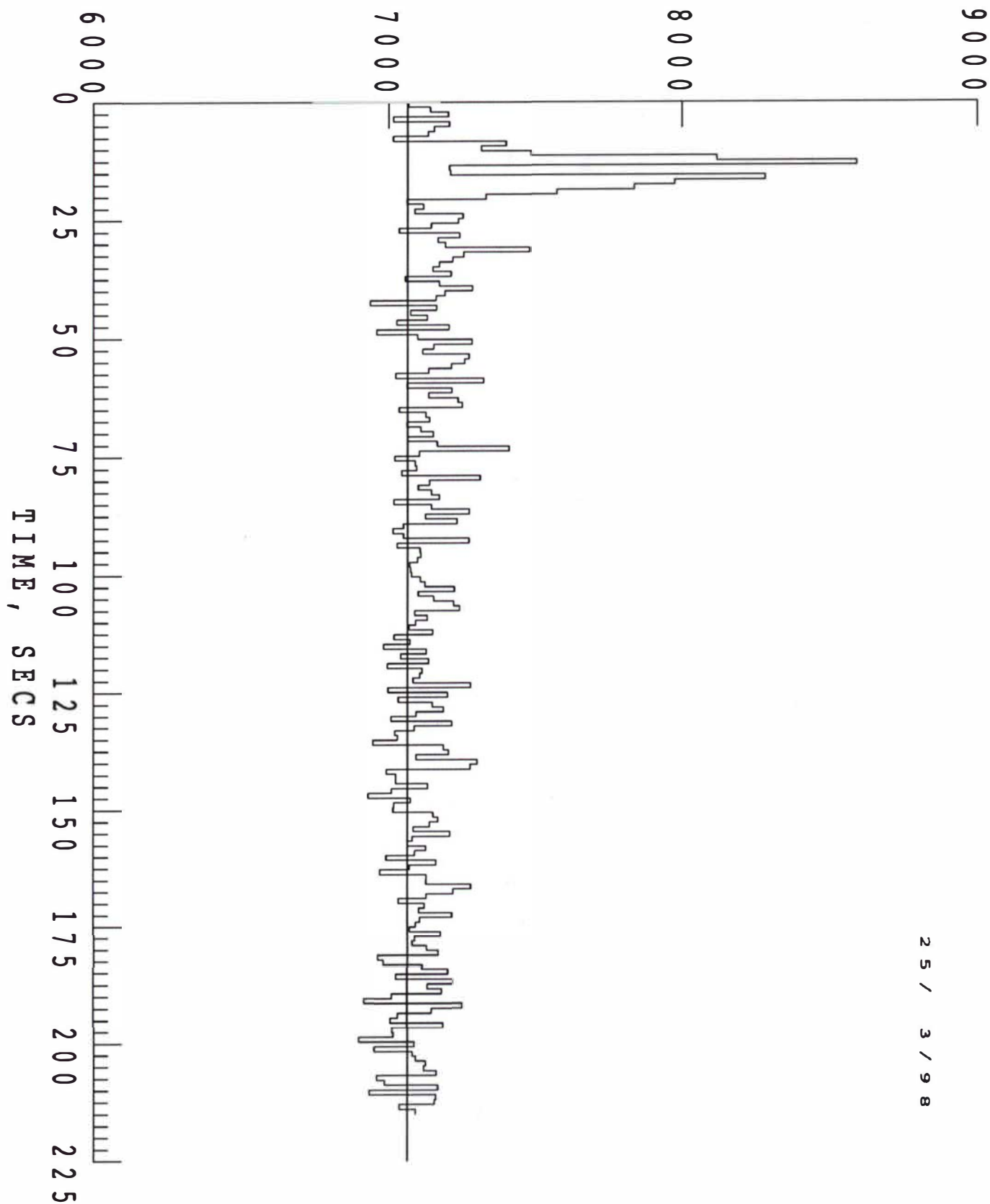
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6658 25/03/98 53163.745

25 - 100 keV

COUNTS/1.024 S



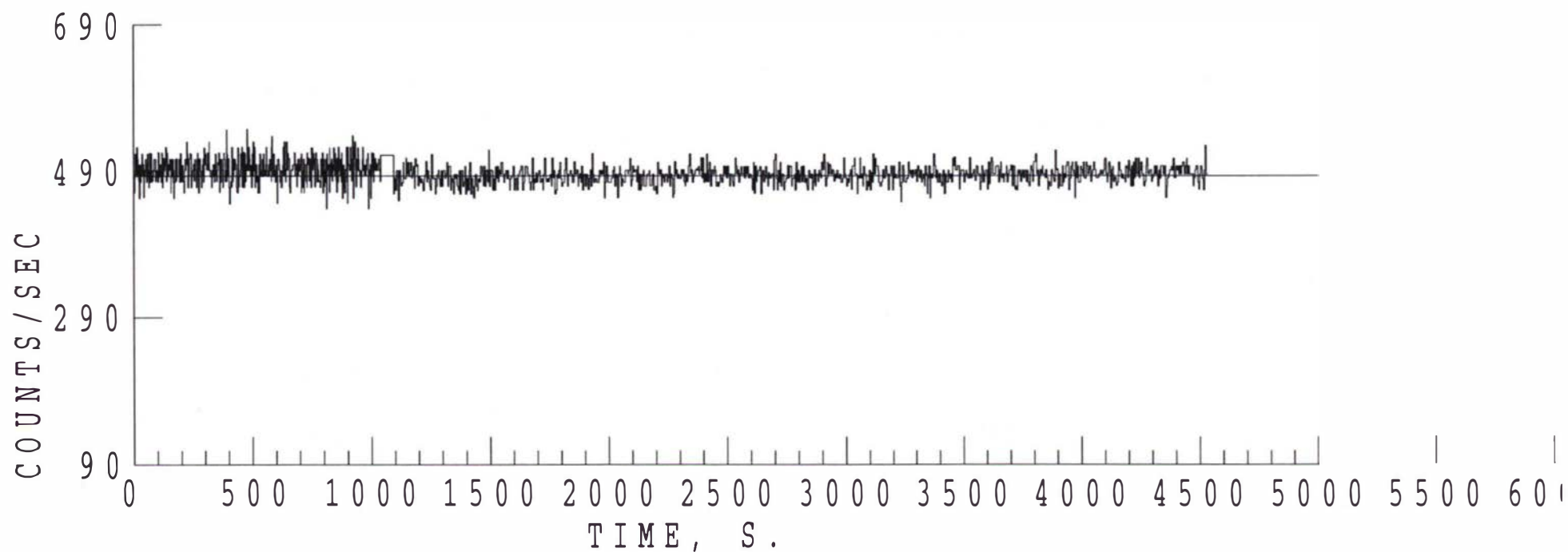
25 / 3 / 98

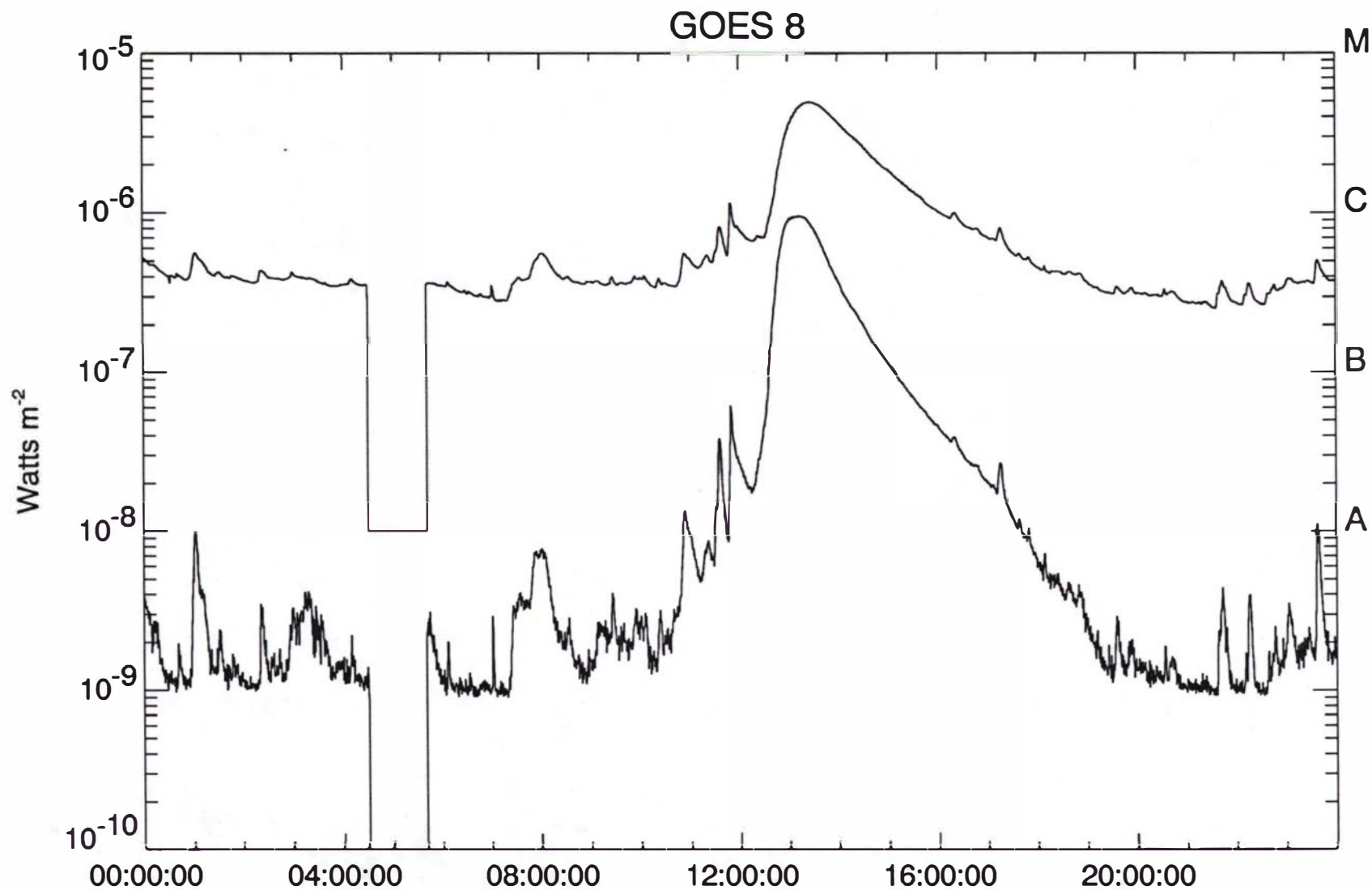
SAX
HUS DATA
19 / 07 / 05

ULYSSES RT
25 / 03 / 98 55188.145 s
INTERVALS REGROUPED BY 8
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





Data Start: 98/03/25, 0000:00

Plot created: 98/03/29, 1007

Channel

1 (1.0 - 8.0 Angstroms)

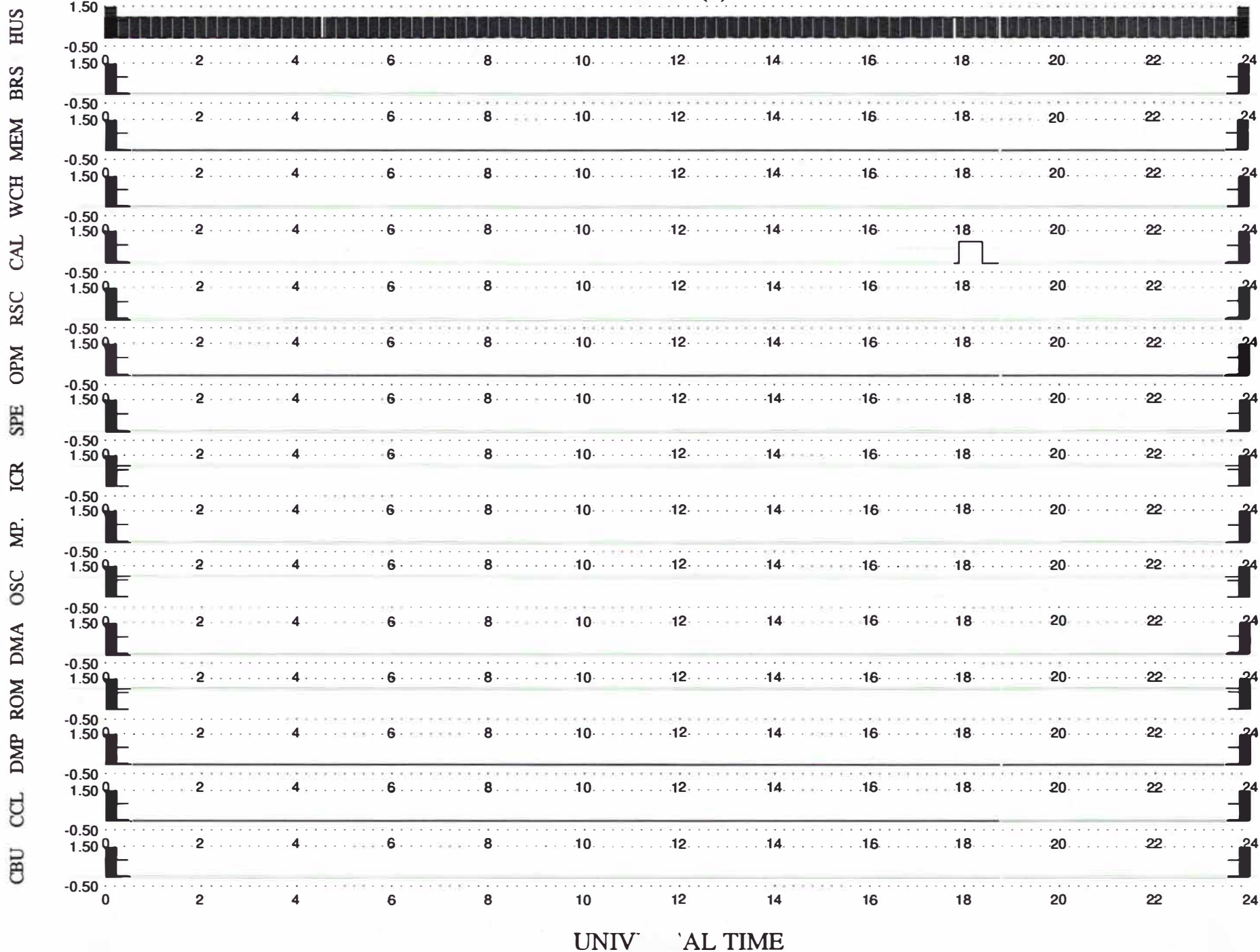
Background not subtracted

2 (0.5 - 4.0 Angstroms)

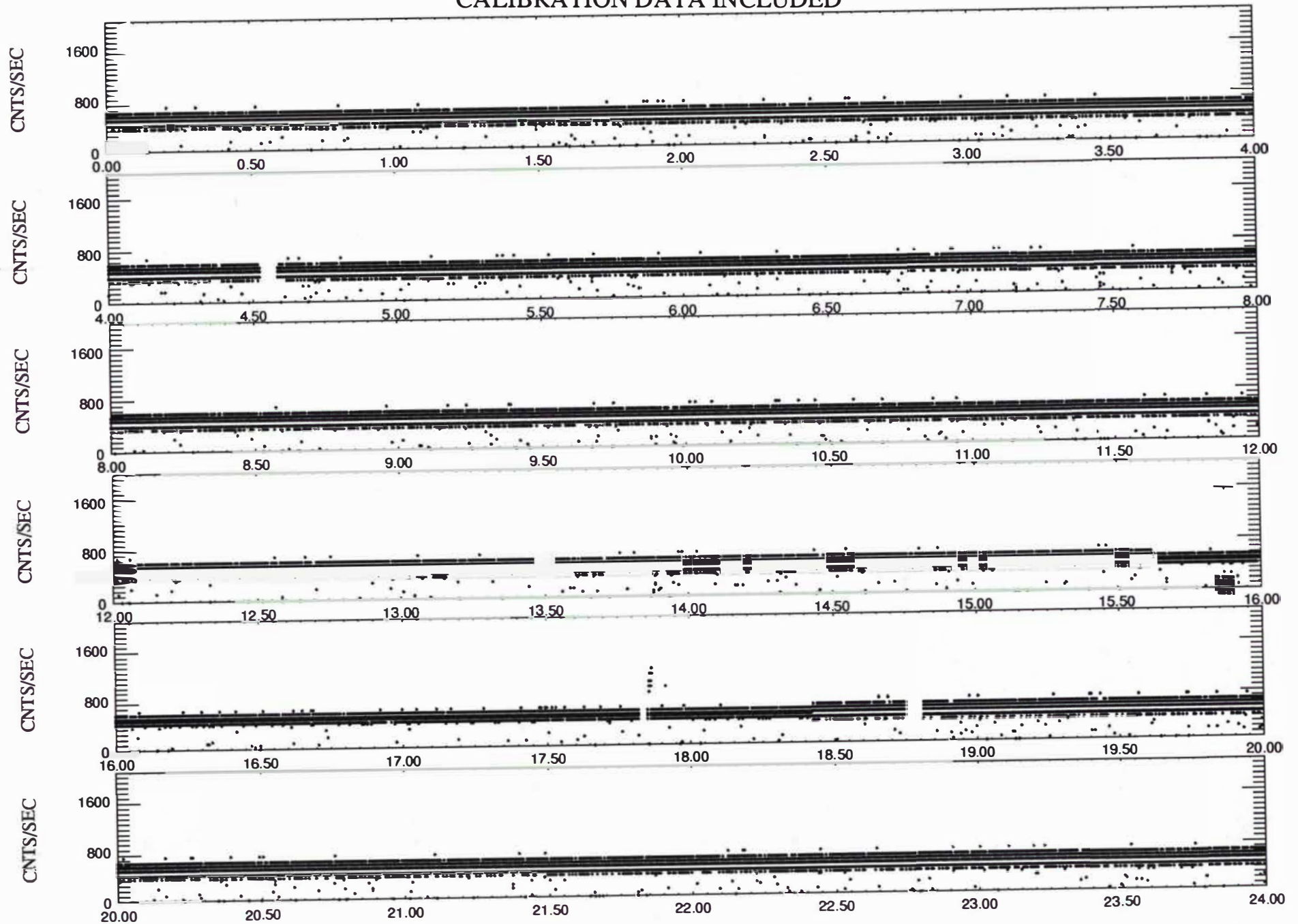
Background not subtracted

Sample average = 10

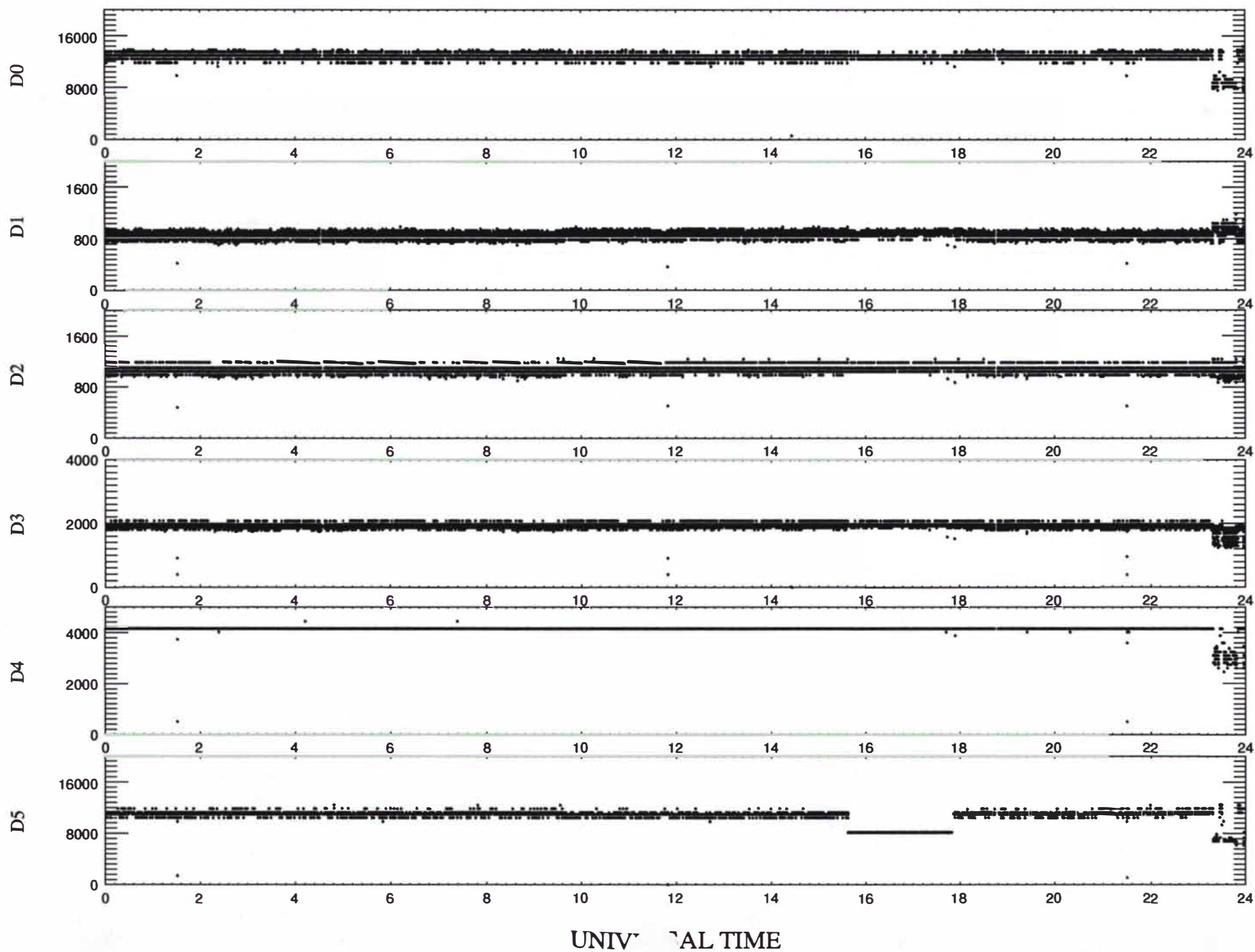
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV. TIME



From RICHARDSON@fender.msfc.nasa.gov Tue Mar 31 11:33:39 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA12064; Tue, 31 Mar 1998 11:33:39 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA03956; Tue, 31 Mar 1998 11:33:37 -0800
Date: Tue, 31 Mar 1998 13:23:52 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980331132352.20e08c39@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6659
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6659
EVENT OF 1998 MAR 26 DAY OF YEAR= 85
EVENT CROSSING TIME AT BATSE : 16004. S. OR 04:26:44.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 266.000 -21.000
BATSE PEAK COUNTING RATE: 16000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 3/ 98 IS:
RA= 153.989 DEC= 13.416 DIST= 4.556 AU
BATSE-ULYSSES DISTANCE = 681586908. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 64.94 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 962.83 SECS.
CROSSING TIME AT ULYSSES IS 16967. S. OR 04:42:46 +/- 422.20 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 3/ 98 IS:
RA= 15.286 DEC= 6.011 DIST= 2.387 AU
MARS-BATSE DISTANCE = 357055808. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 69.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 409.92 SECS.
CROSSING TIME AT MARS IS 16414. S. OR 04:33:33 +/- 200.37 SECONDS

BATSE BURST TRIGGER

NO.: 6659

TIME: TJD=0898 SECONDS=16004

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=97.8 AZIMUTH=255.7 ERROR=3.1 DEGREES

COMMENTS:

GRB. SINGLE SPIKE WITH STRUCTURE. DURATION APPROX. = 0.5 SEC. VISIBLE ABOVE
300KEV. PRECEDED BY PROBABLE CYG X-1 FLUCTUATION AT T-2 SEC.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6659	980326	10898	16004	16000	266	-21	.5

BATSE BURST# 6659

ULYSSES RT

4 / 6 / 98

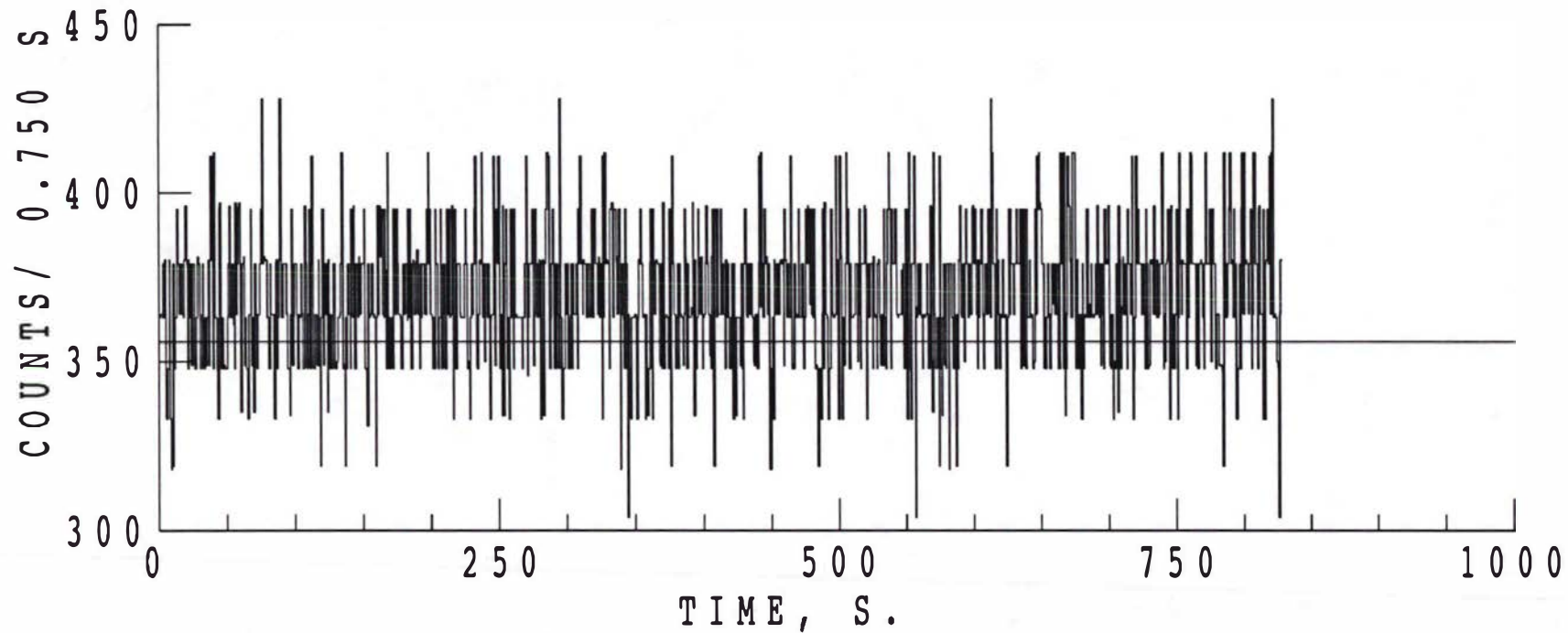
26 / 3 / 98 16560.156 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

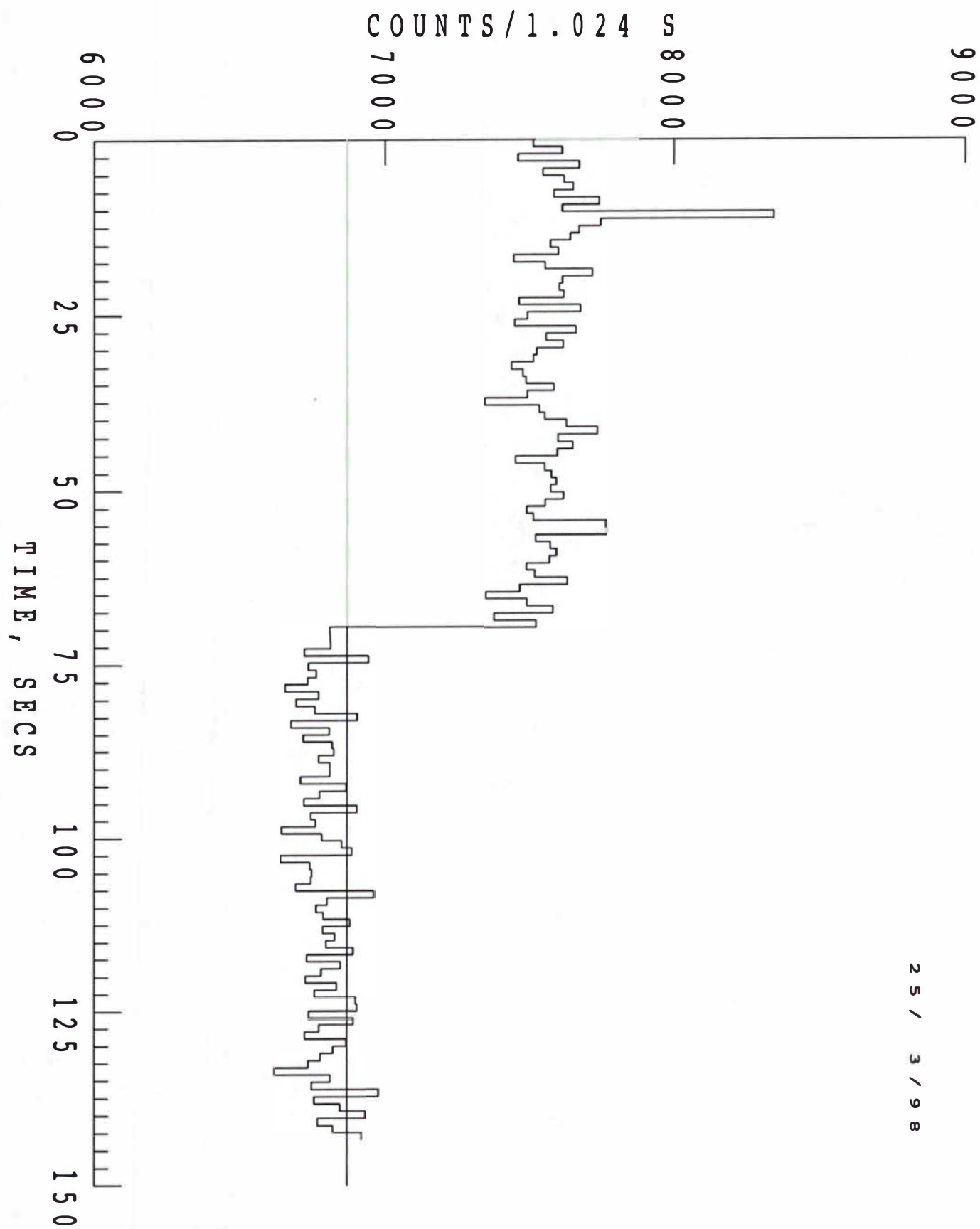
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 6659 26/03/98 15993.569

25 - 100 keV



From RICHARDSON@fender.msfc.nasa.gov Tue Mar 31 11:34:12 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA12072; Tue, 31 Mar 1998 11:34:12 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA03968; Tue, 31 Mar 1998 11:34:07 -0800
Date: Tue, 31 Mar 1998 13:26:58 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980331132658.20e08c39@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6660
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6660
EVENT OF 1998 MAR 26 DAY OF YEAR= 85
EVENT CROSSING TIME AT BATSE : 76733. S. OR 21:18:53.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 133.000 -19.000
BATSE PEAK COUNTING RATE: 7500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 26/ 3/ 98 IS:
RA= 153.859 DEC= 13.417 DIST= 4.563 AU
BATSE-ULYSSES DISTANCE = 682603216. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=141.62 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1784.86 SECS.
CROSSING TIME AT ULYSSES IS 74948. S. OR 20:49:08 +/- 268.34 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 26/ 3/ 98 IS:
RA= 15.286 DEC= 6.011 DIST= 2.387 AU
MARS-BATSE DISTANCE = 357055808. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 61.87 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 561.44 SECS.
CROSSING TIME AT MARS IS 77294. S. OR 21:28:14 +/- 190.89 SECONDS

BATSE BURST TRIGGER

NO.: 6660

TIME: TJD=0898 SECONDS=76733

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=67.1 AZIMUTH=137.3 ERROR=2.1 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH STRUCTURE. DURATION APPROX. = 3 SEC.
NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6660	980326	10898	76733	7500	133	-19	3

Helio corr removed 21/2/00

Date: Aug 3 '98

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

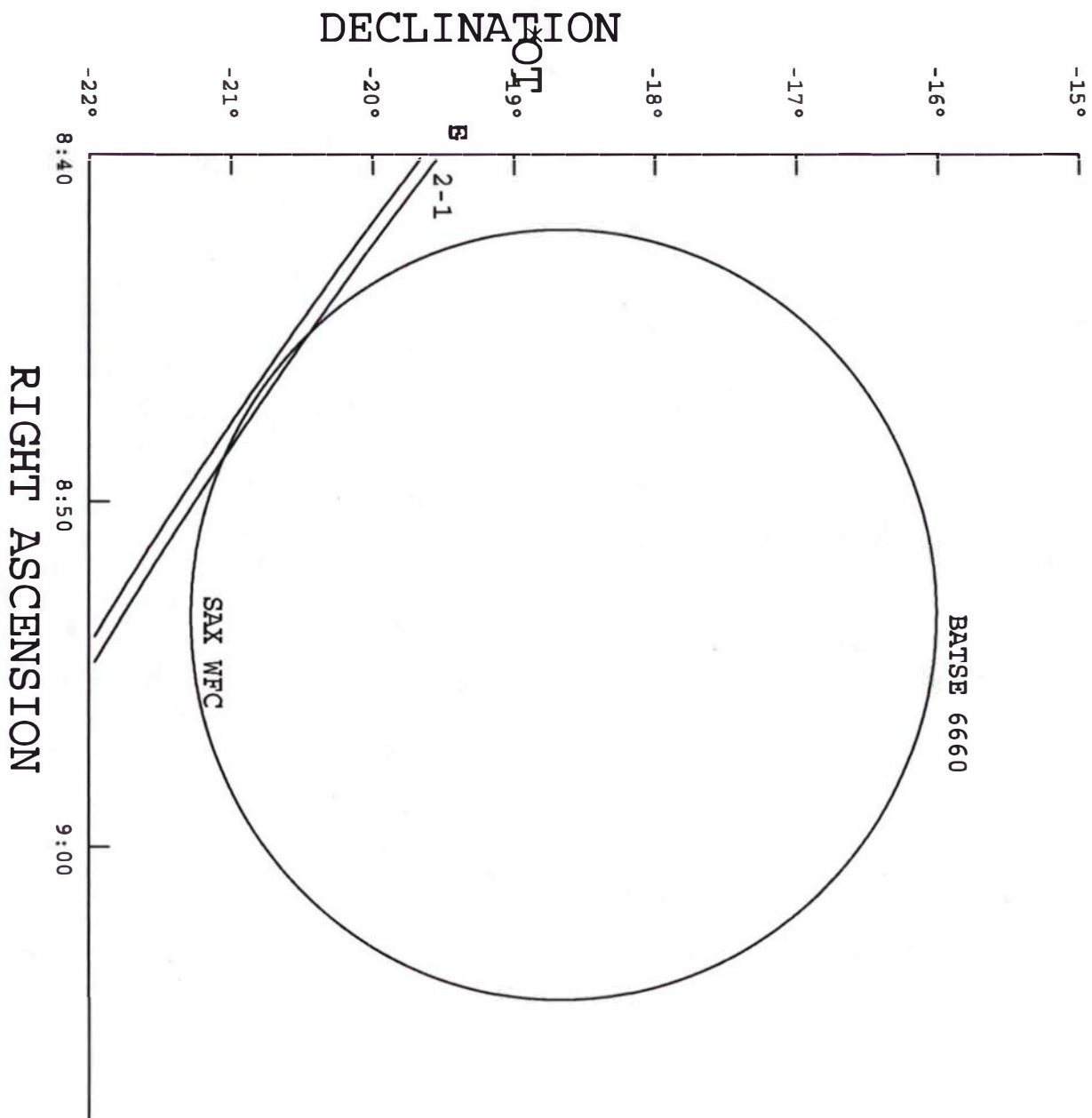
3. PVO Data

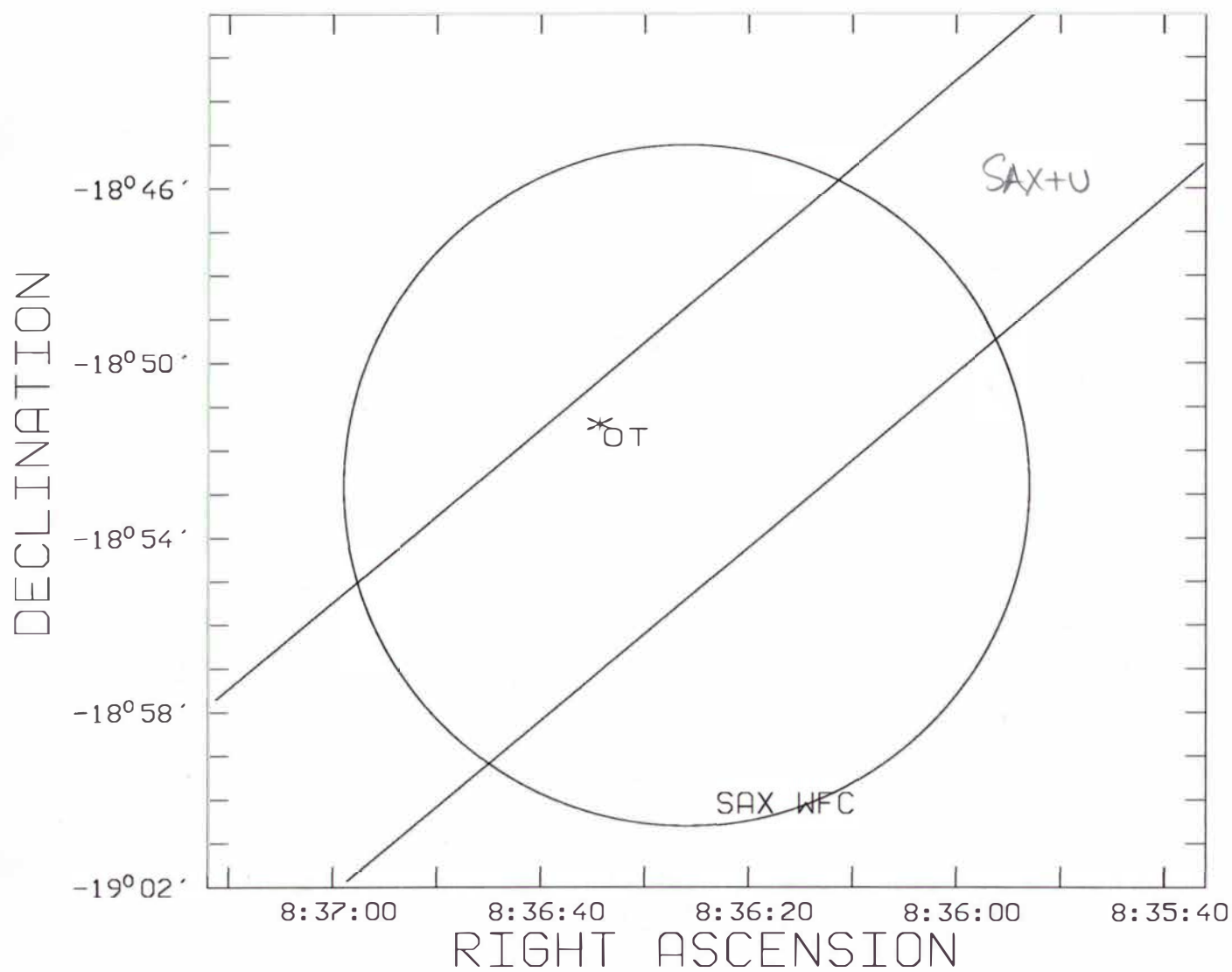
- ☐ Ephemeris of PVO used (not Venus)?
- ☐ 2000 coordinates used?
- ☐ Geocentric time used?
- ☒ ACCESS database updated?

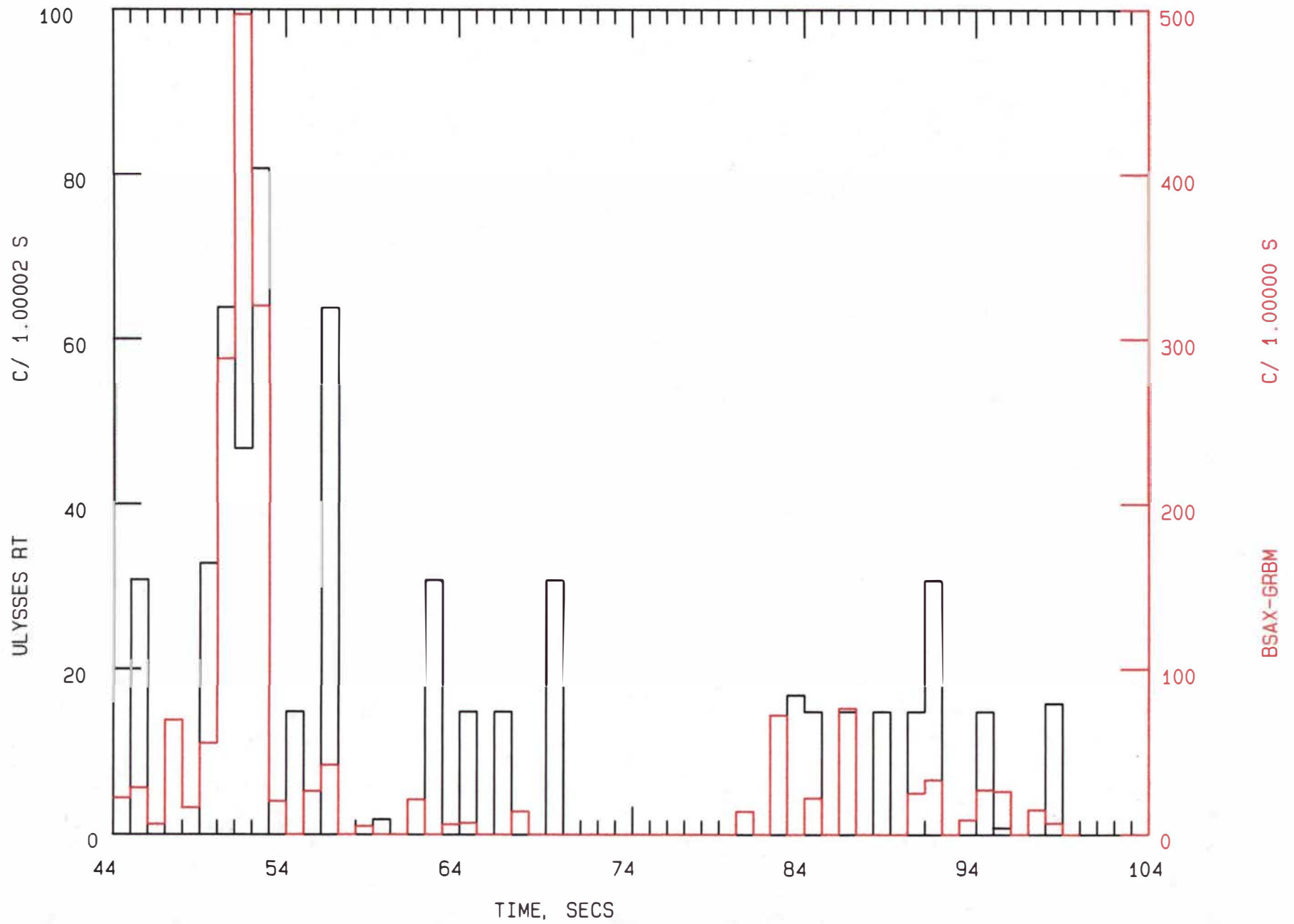
N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 BATSE

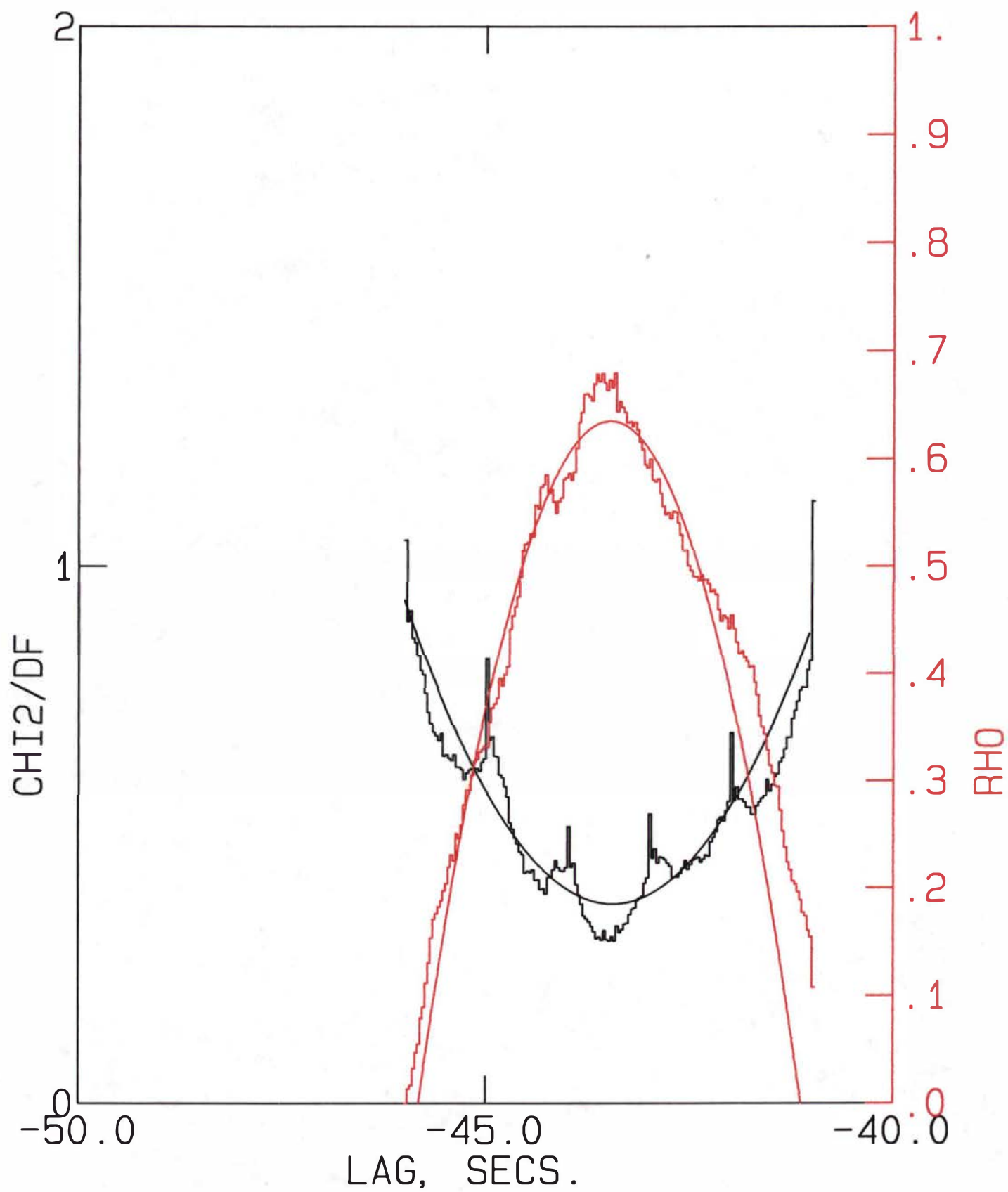
EVENT OF MAR 26, 1998 20:49

21/ 2/ 0



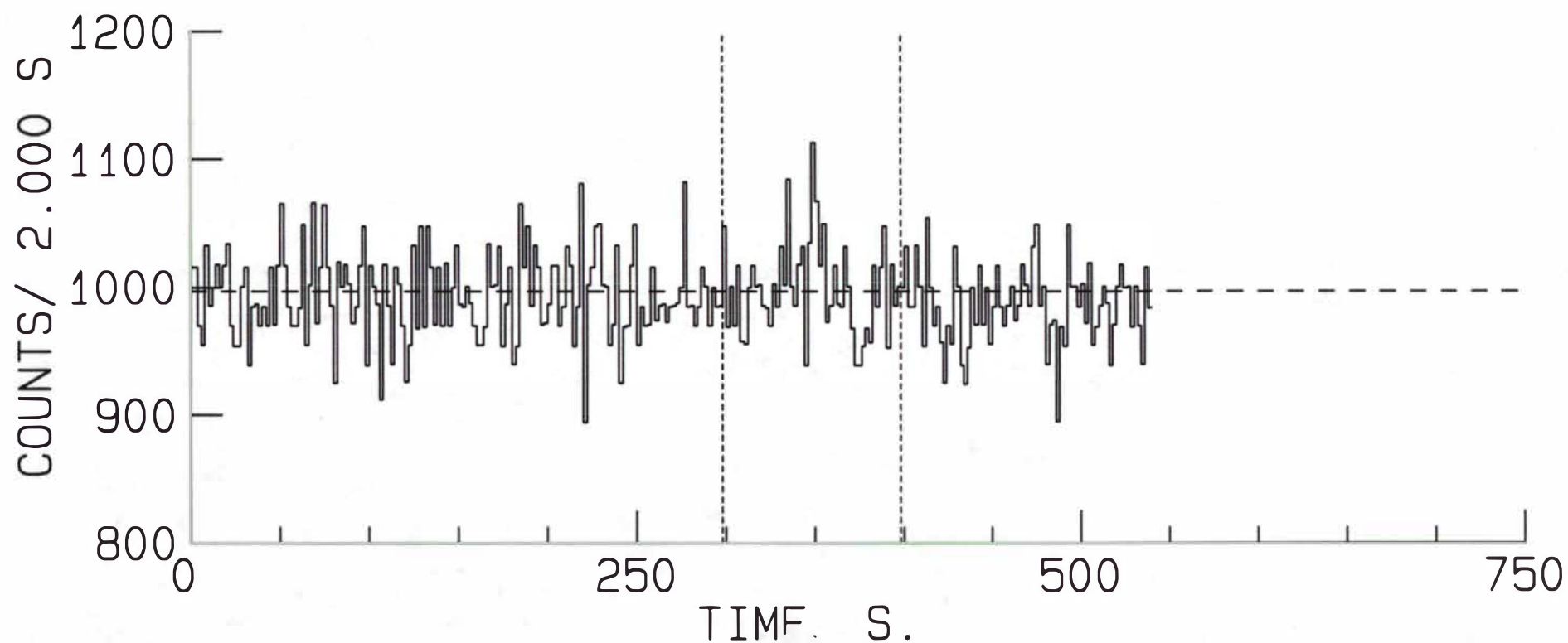






ULYSSES RT
26/ 3/98 74664.032 s
0.250 S INTERVALS REGROUPED BY 8
22- 149 keV

14 / 5 / 99



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

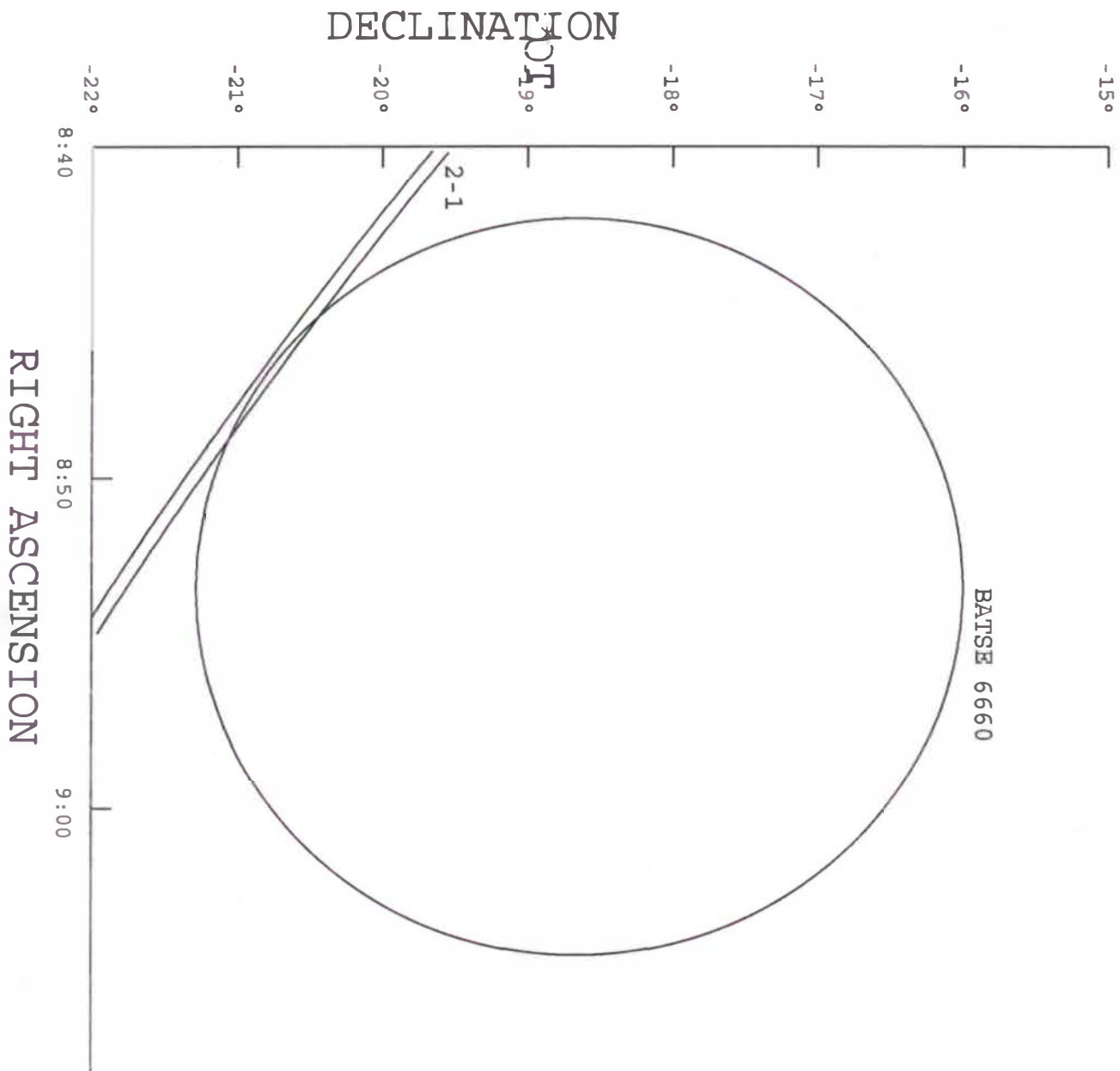
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

EVENT OF MAR 26, 1998 20:49

3 / 8/98



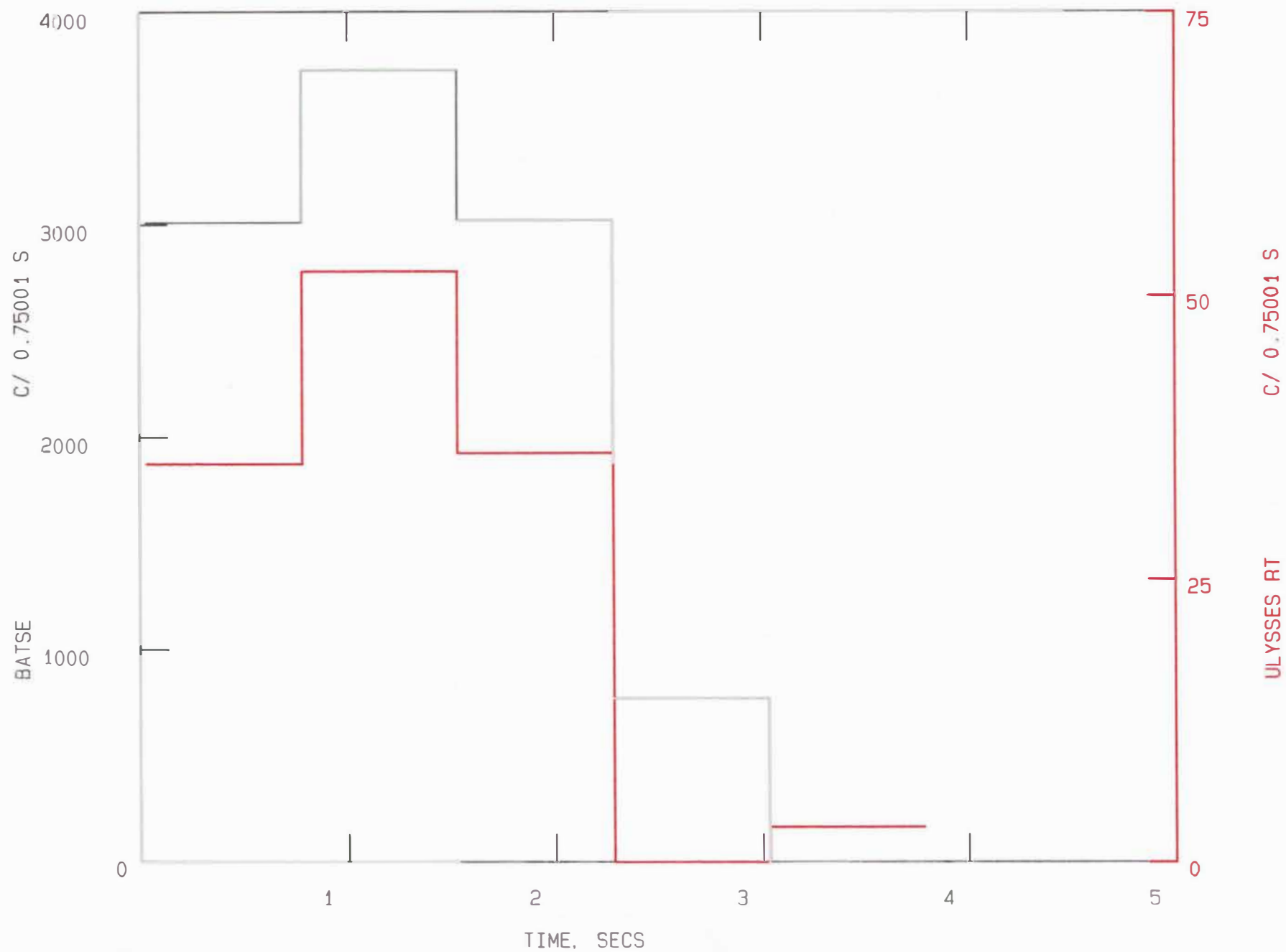
BATSE

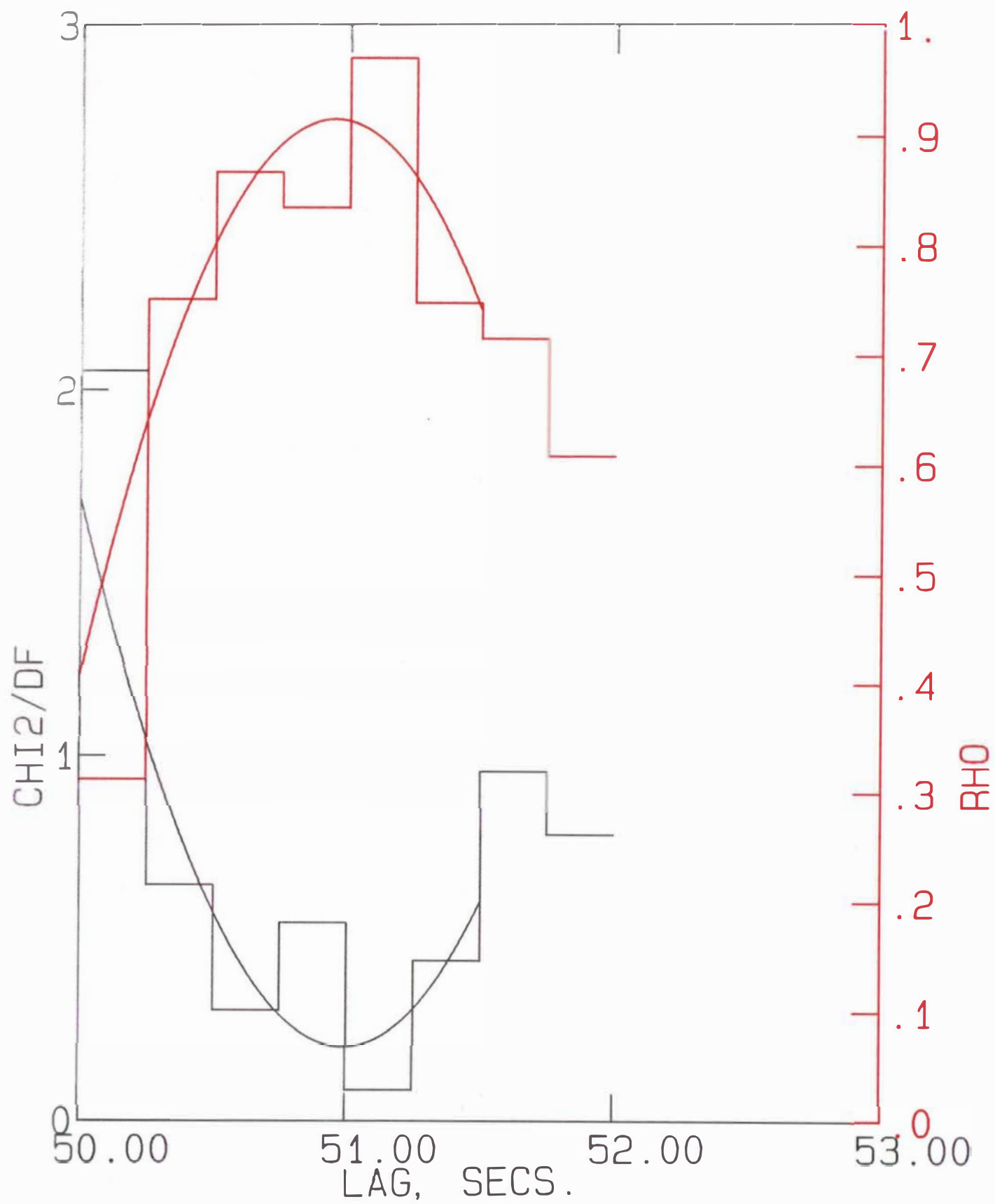
-ULYSSES RT CORRELATION

26/ 3/98

76733.153

3/ 8/98





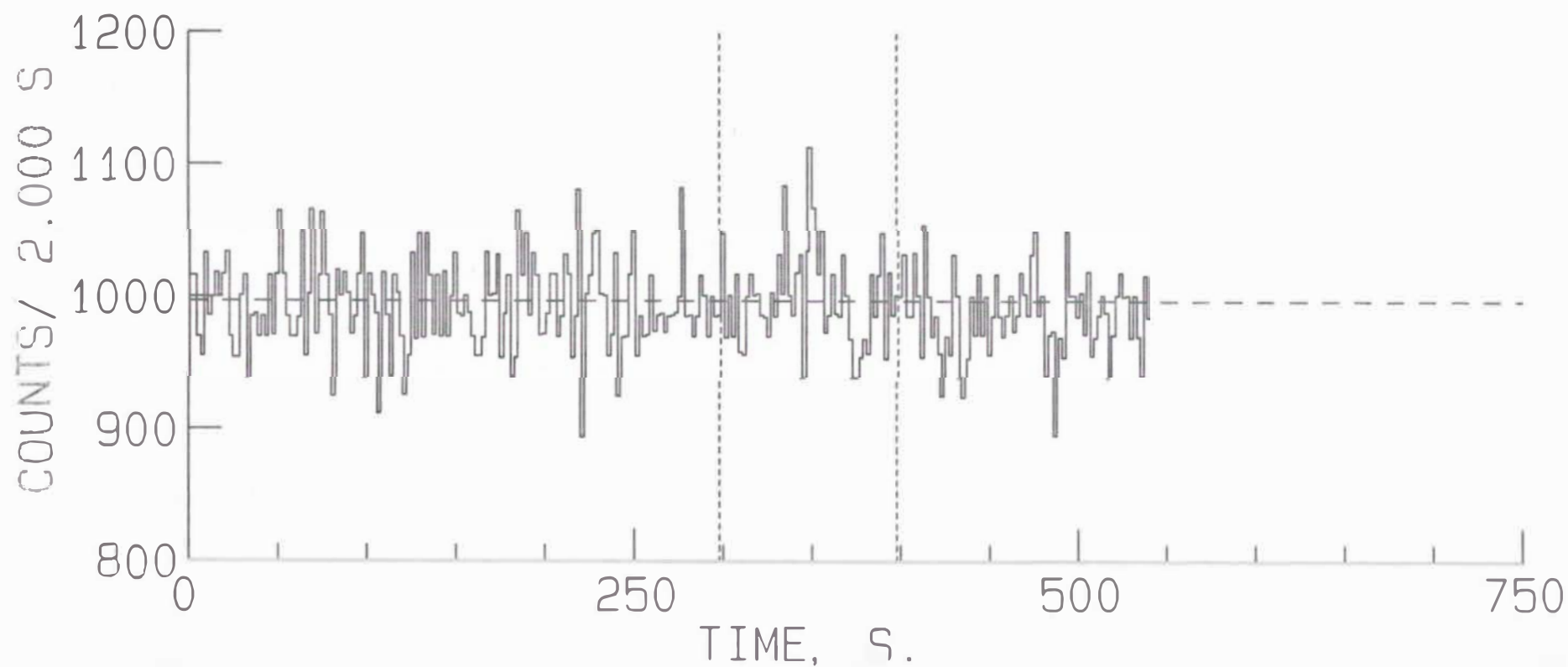
ULYSSES RT

3 / 8 / 98

26 / 3 / 98 74664.032 s

0.250 S INTERVALS REGROUPED BY 8

22- 149 keV



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

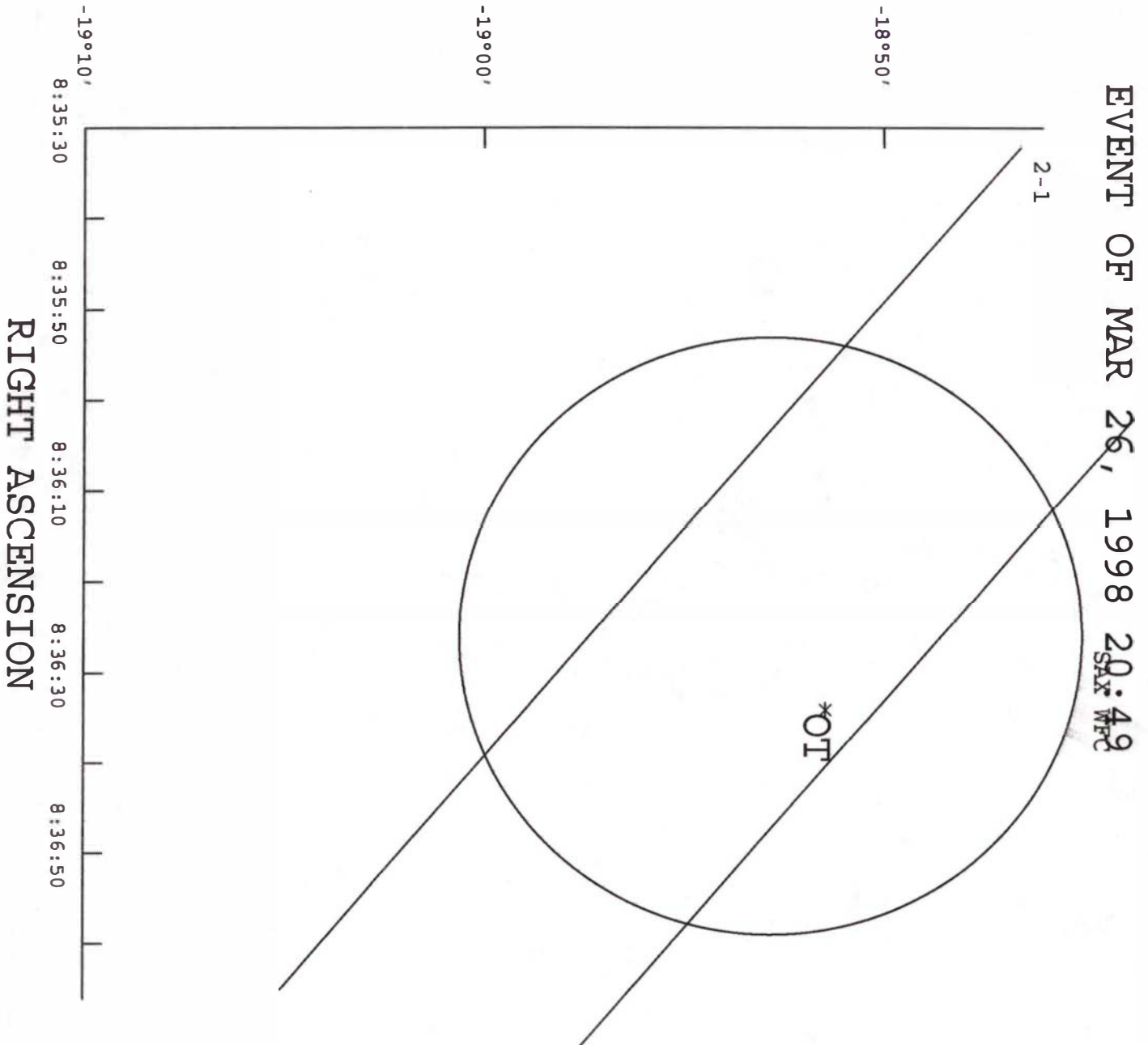
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

DECLINATION



DECLINATION

-18°46'

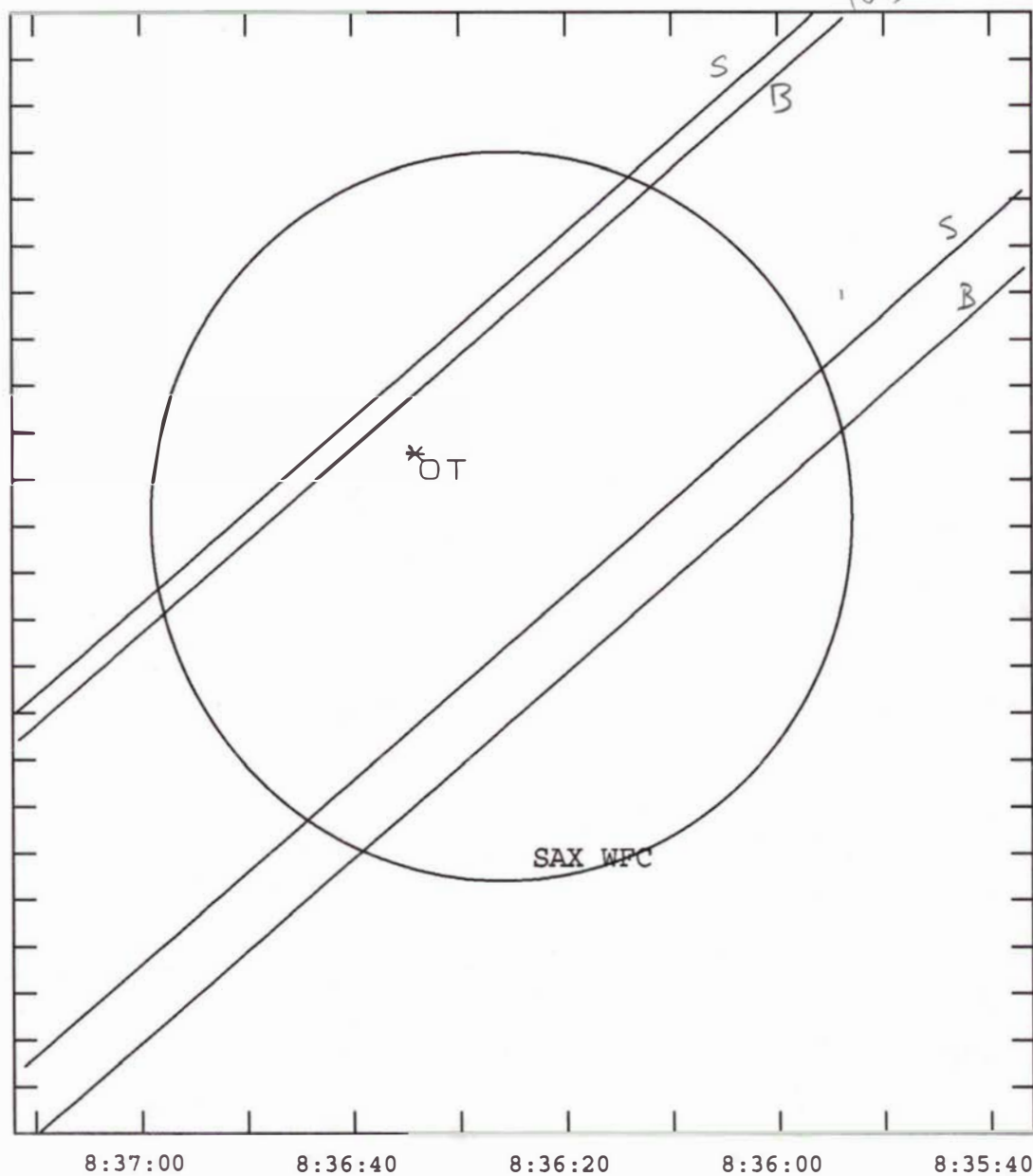
-18°50'

-18°54'

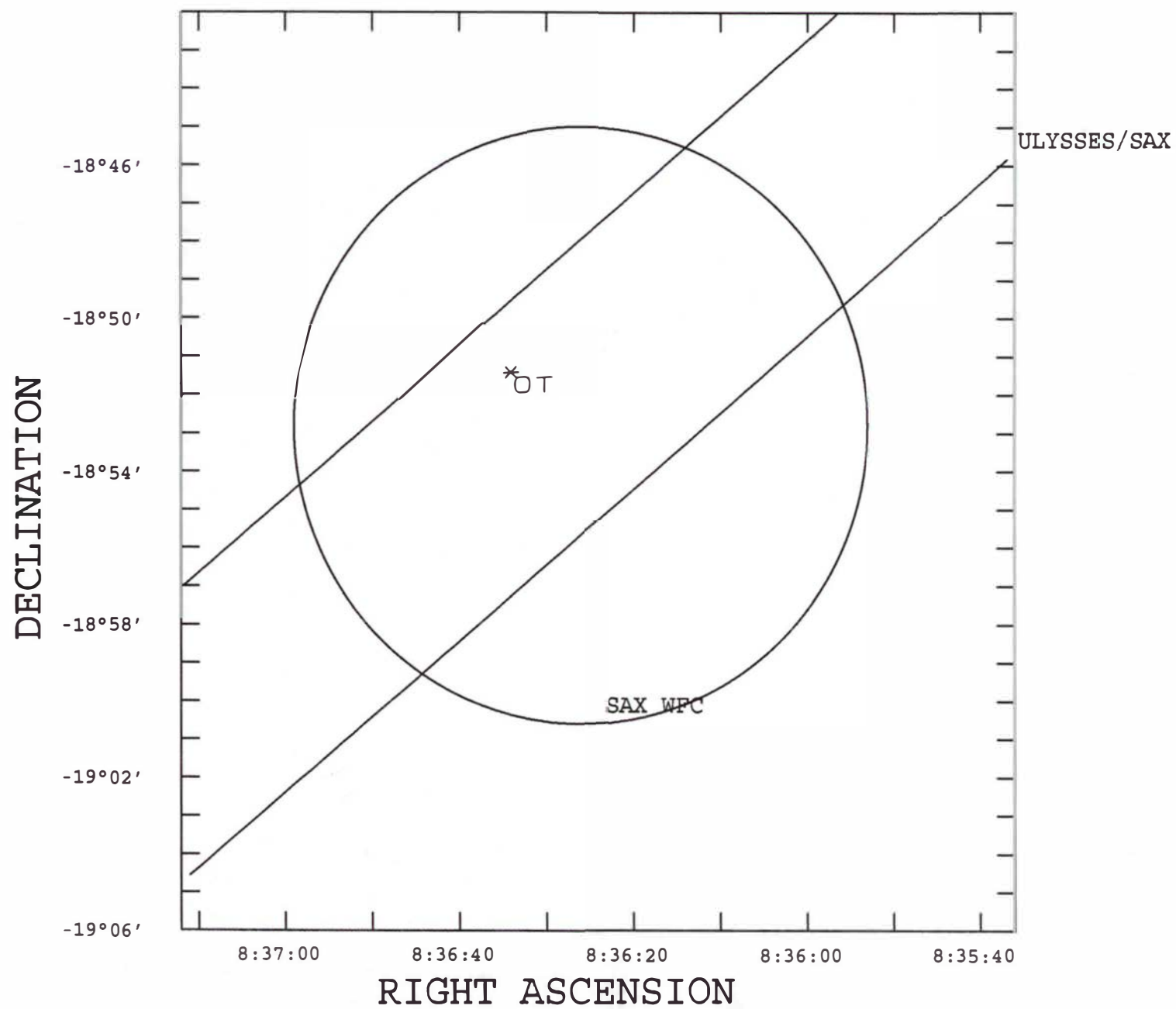
-18°58'

-19°02'

-19°06'



RIGHT ASCENSION



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

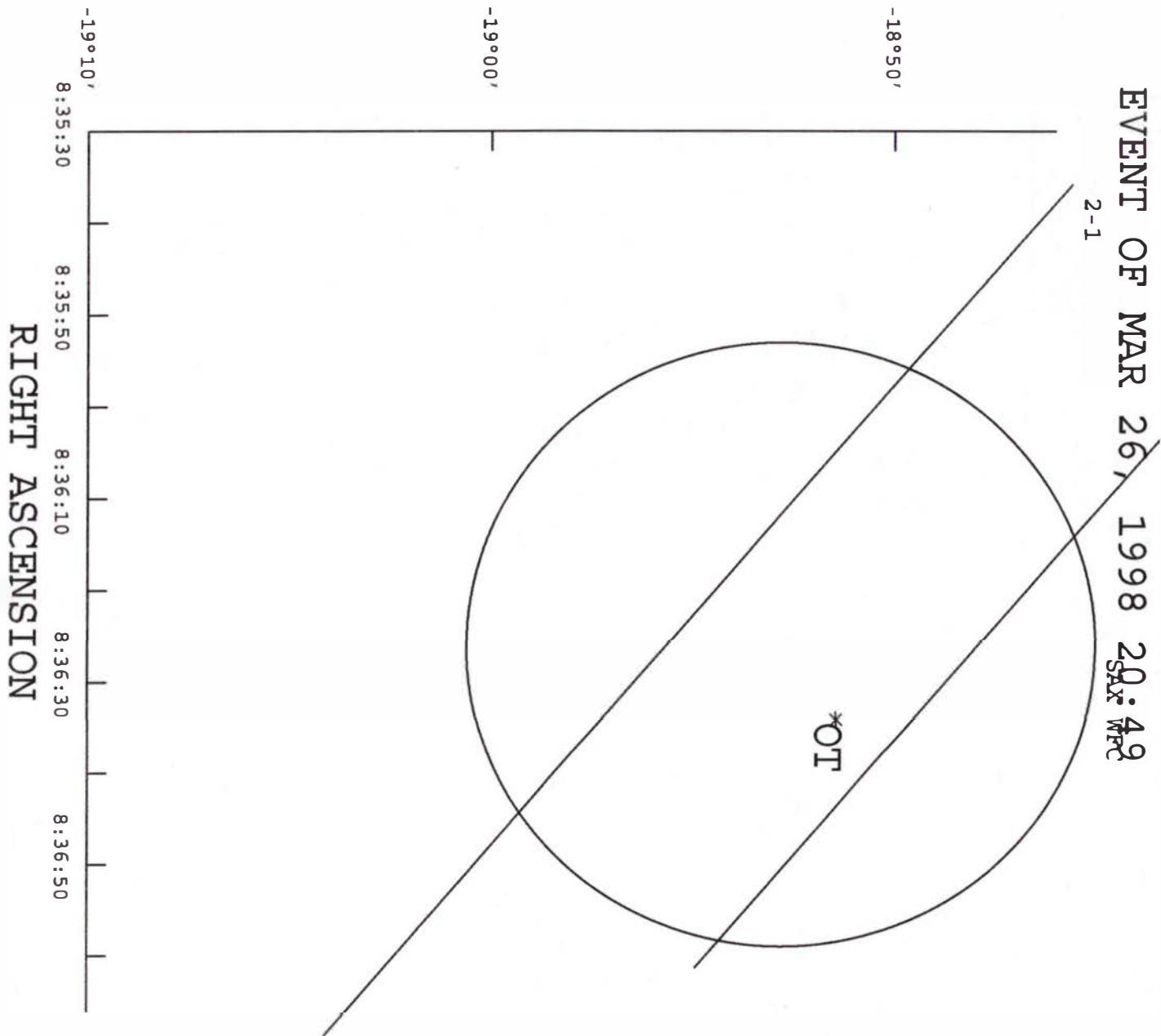
E=ECLIPTIC

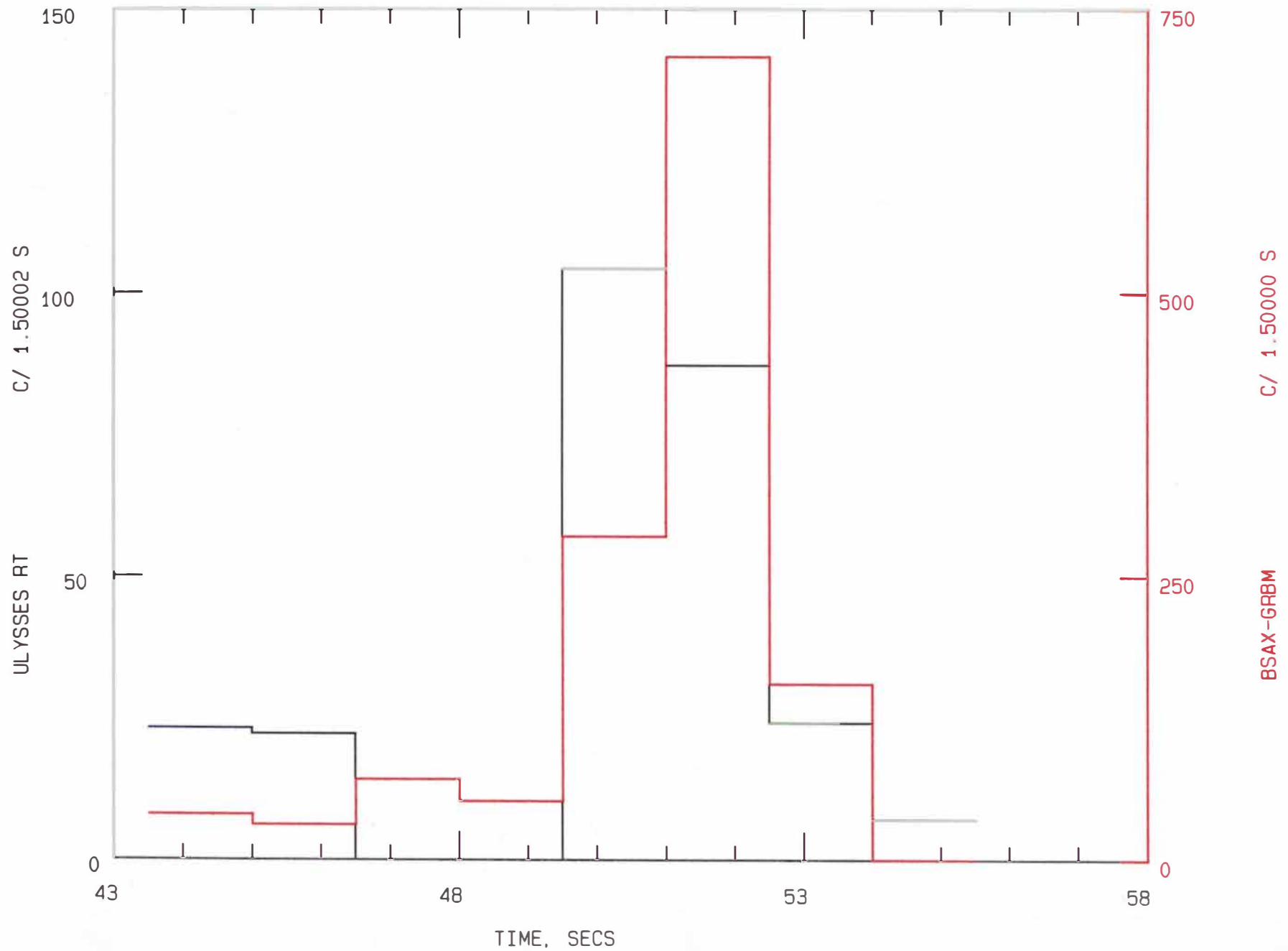
G=GALACTIC EQUATOR

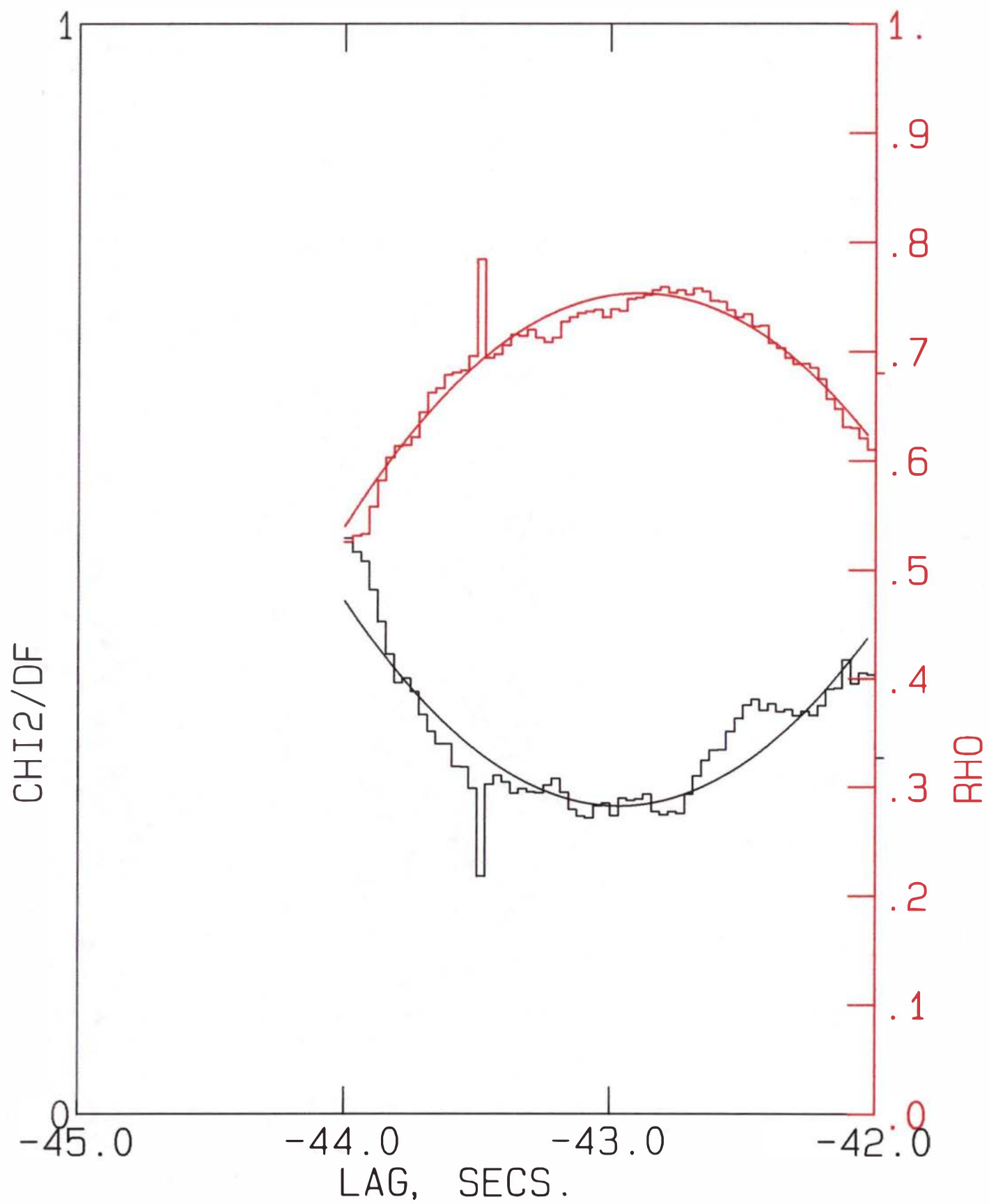
1 ULYSSES

2 SAX

DECLINATION





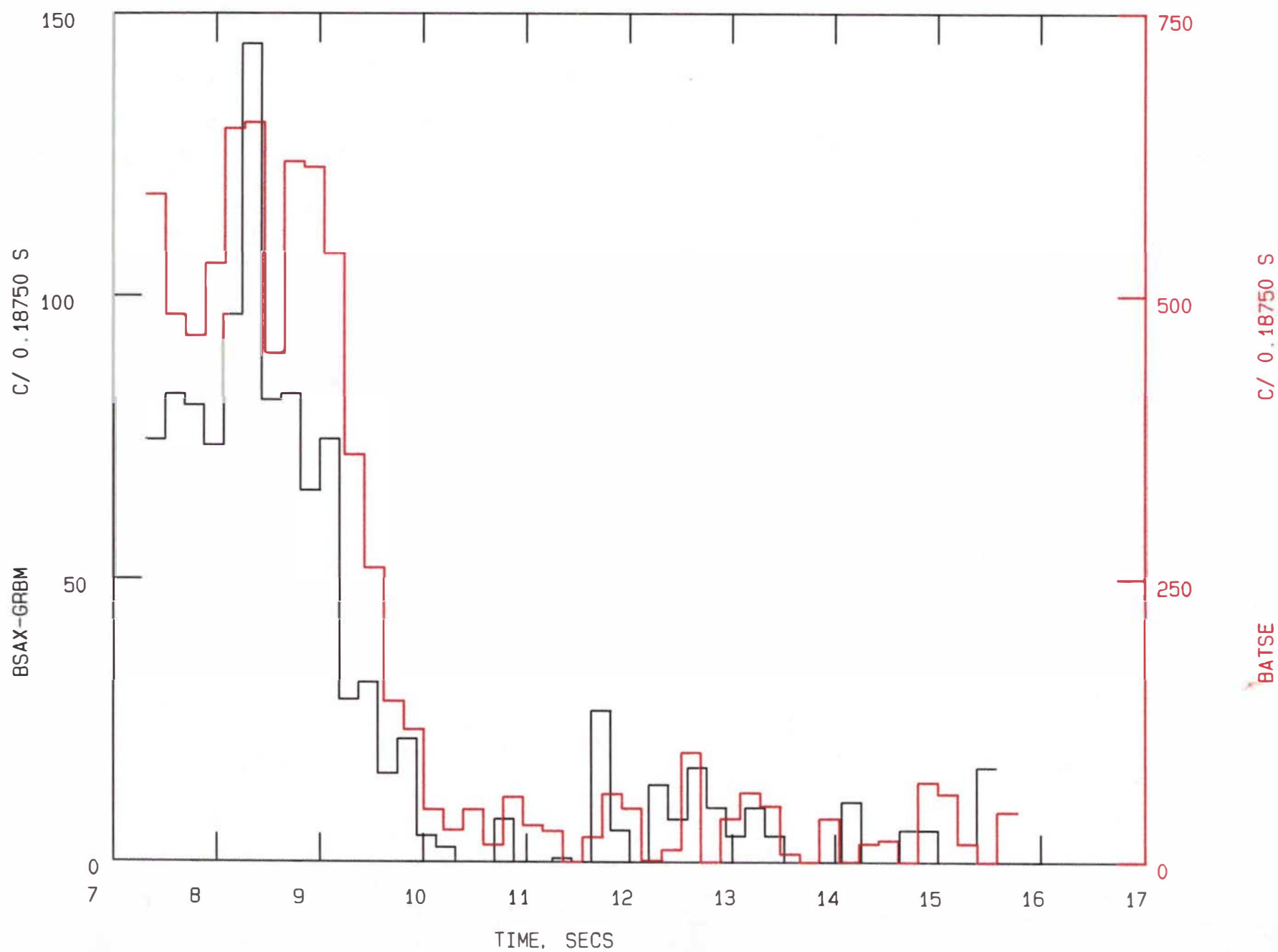


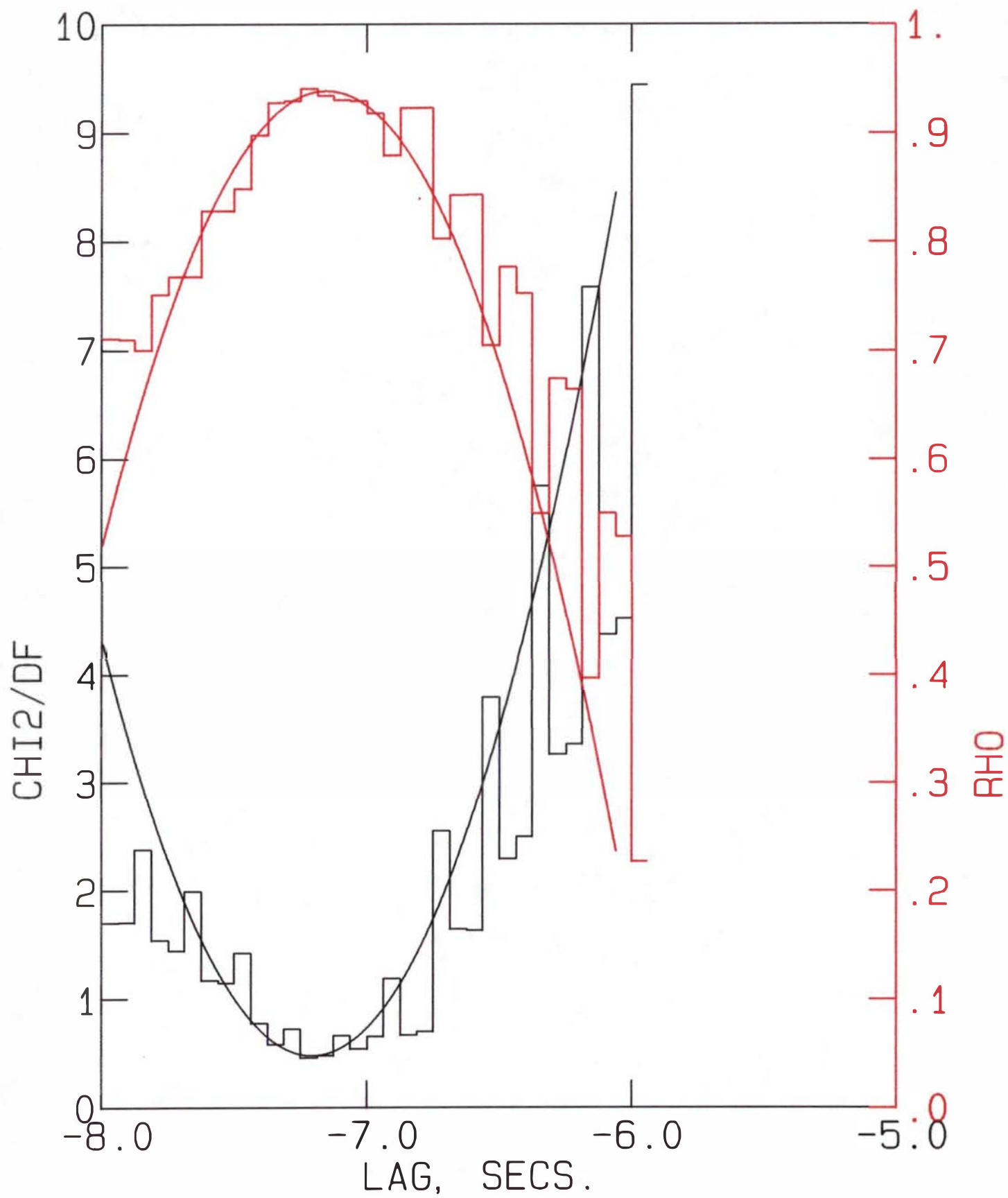
BSAX-GRBM -BATSE 2+3 CORRELATION

26/03/98

76726.066

21/ 4/98





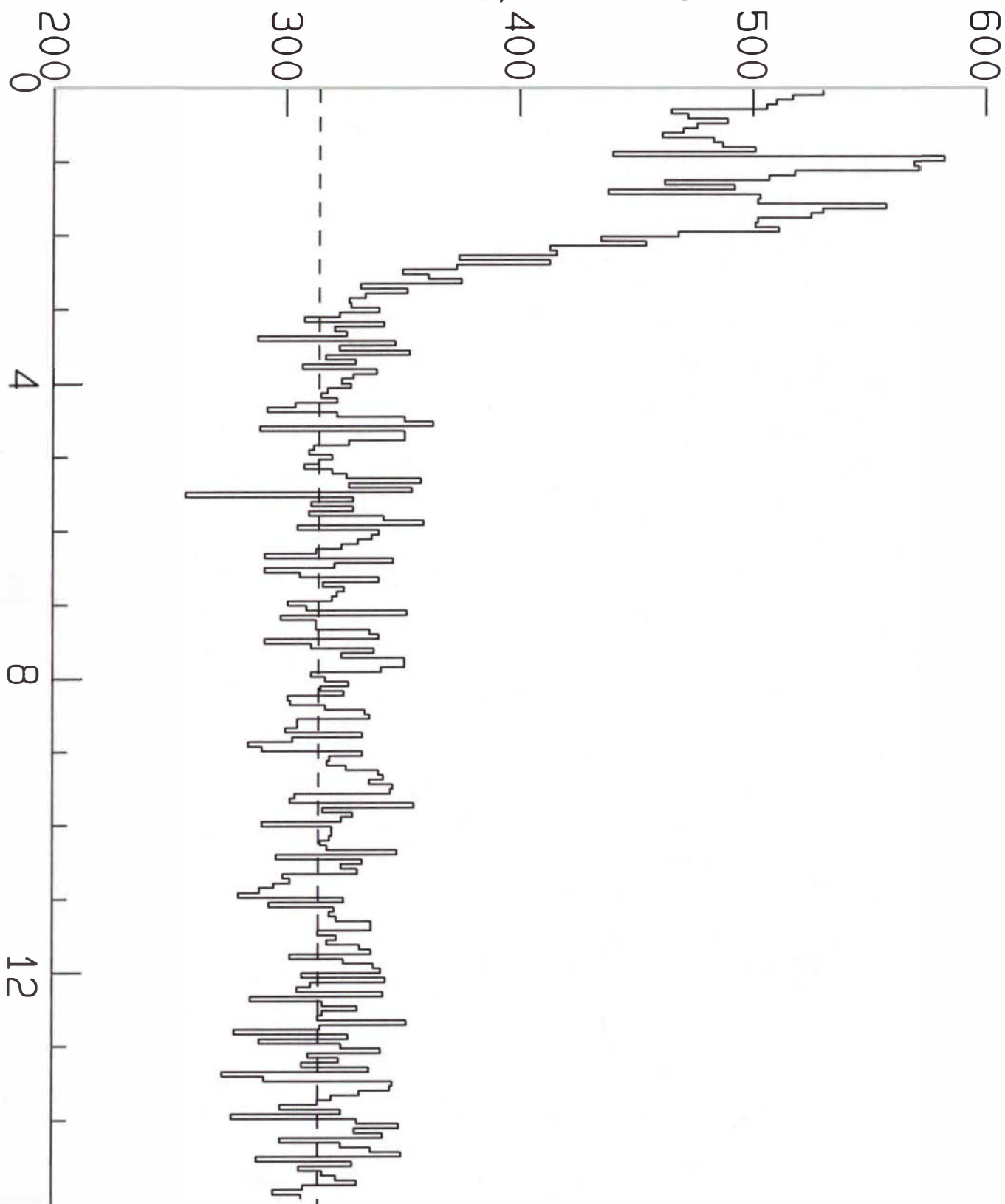
BATSE

26/03/98

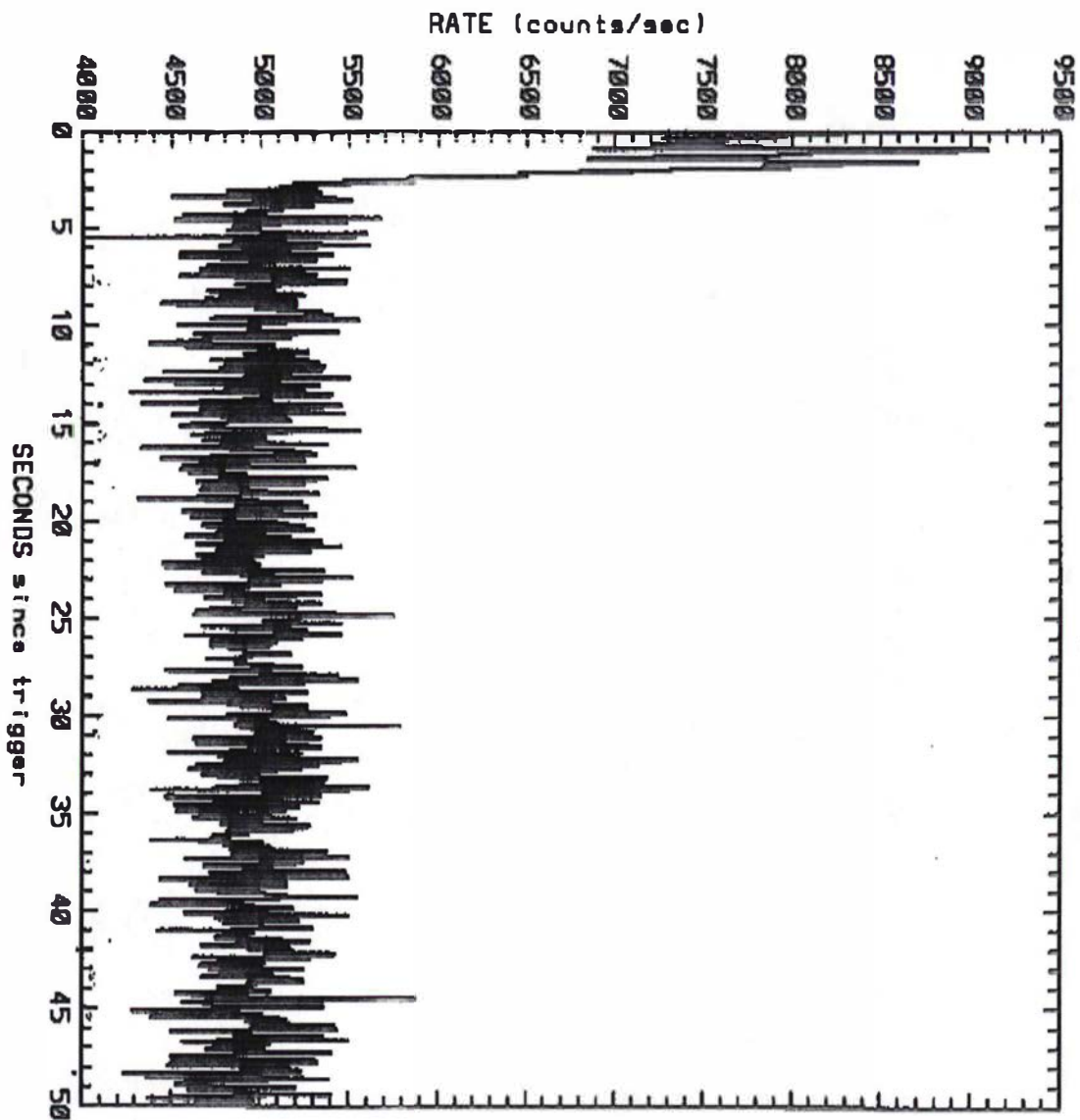
76733.153

25- 100 keV

COUNTS/0.064 S



MER Data for K. Hurley. No. 6660



17-APR-1998 14:51:20

Created by NPS 80
(Burst Display)
Version 12.25

Trigger # 6666

Trigger Time:
18898 / 76733.153Burst Data Type:
MERDeadtime
Corrected: NBackground Data
Type: COUNTMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
--56----Channels:
1 4 9 1Quality Mask:
BDISP1

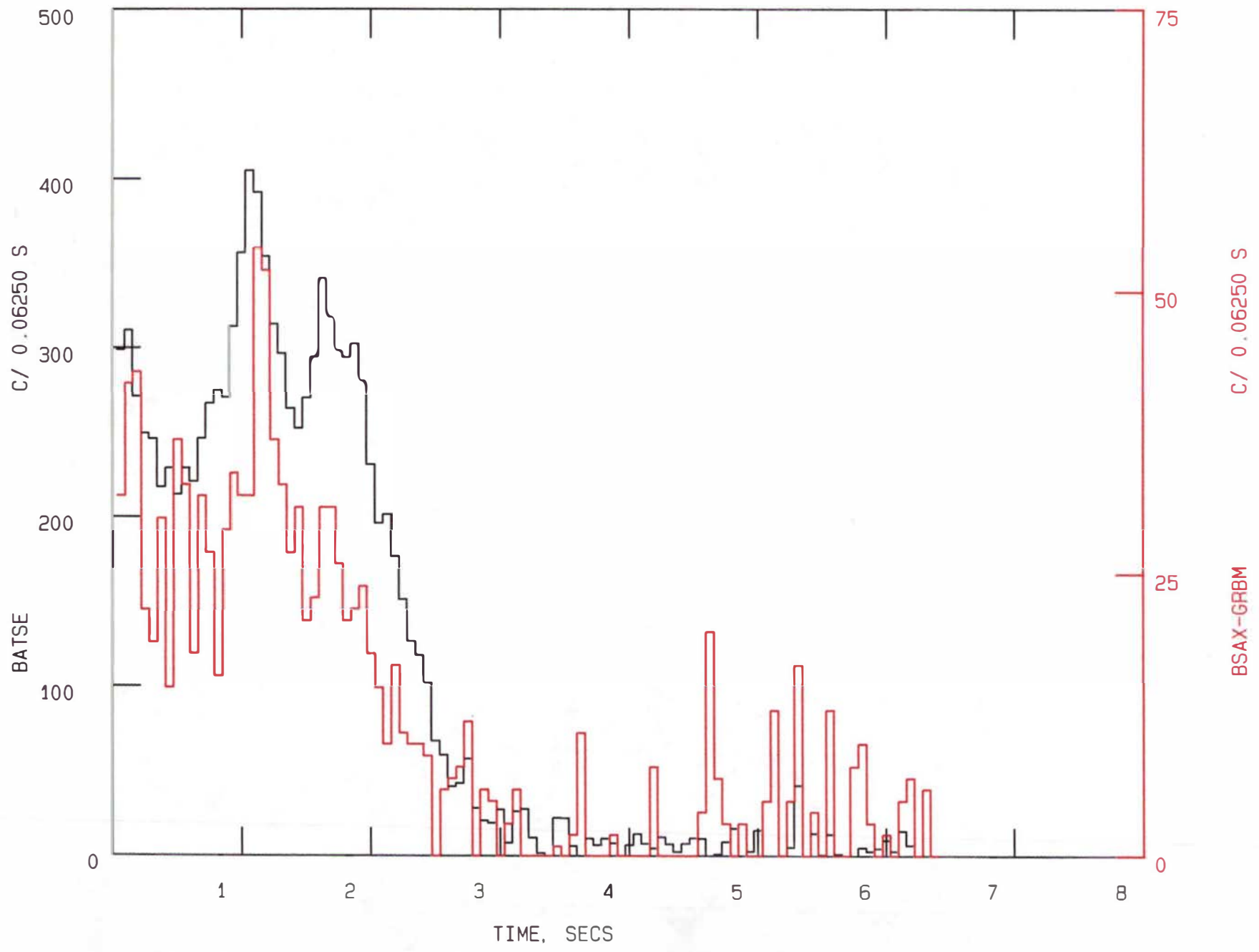
BATSE ¹⁺²

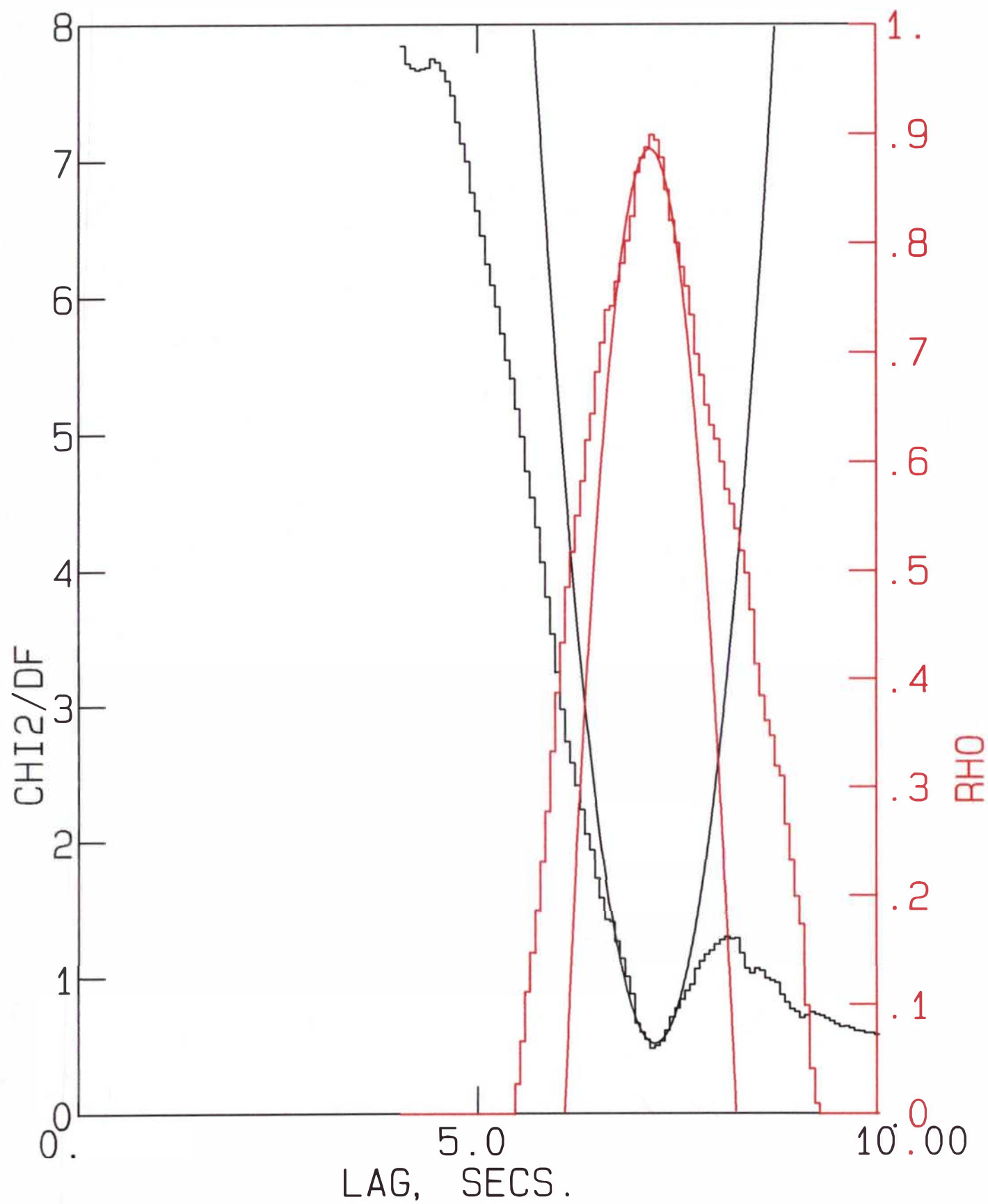
-BSAX-GRBM CORRELATION

26/ 3/98

76733.153

9/ 4/98





N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

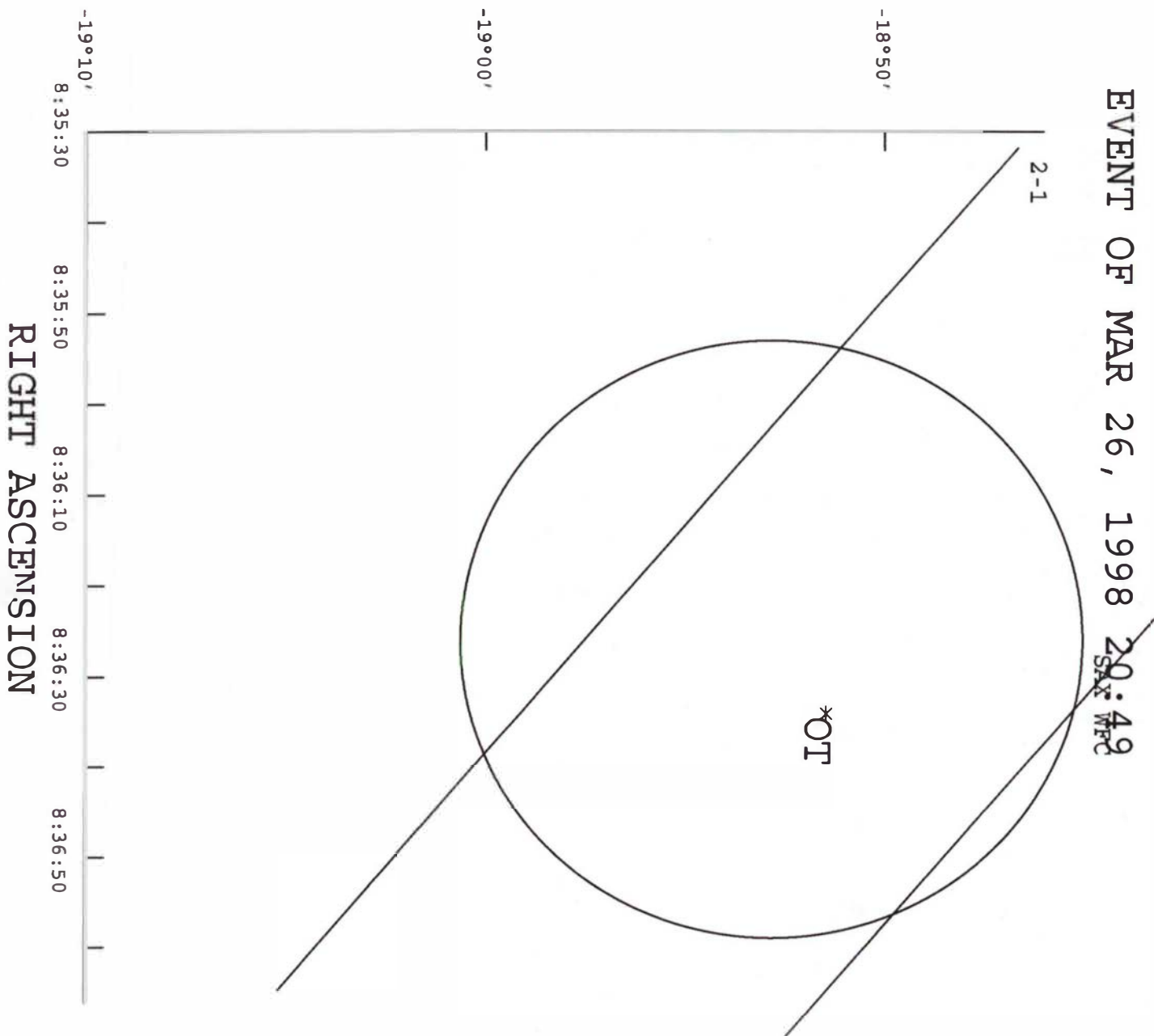
E=ECLIPTIC

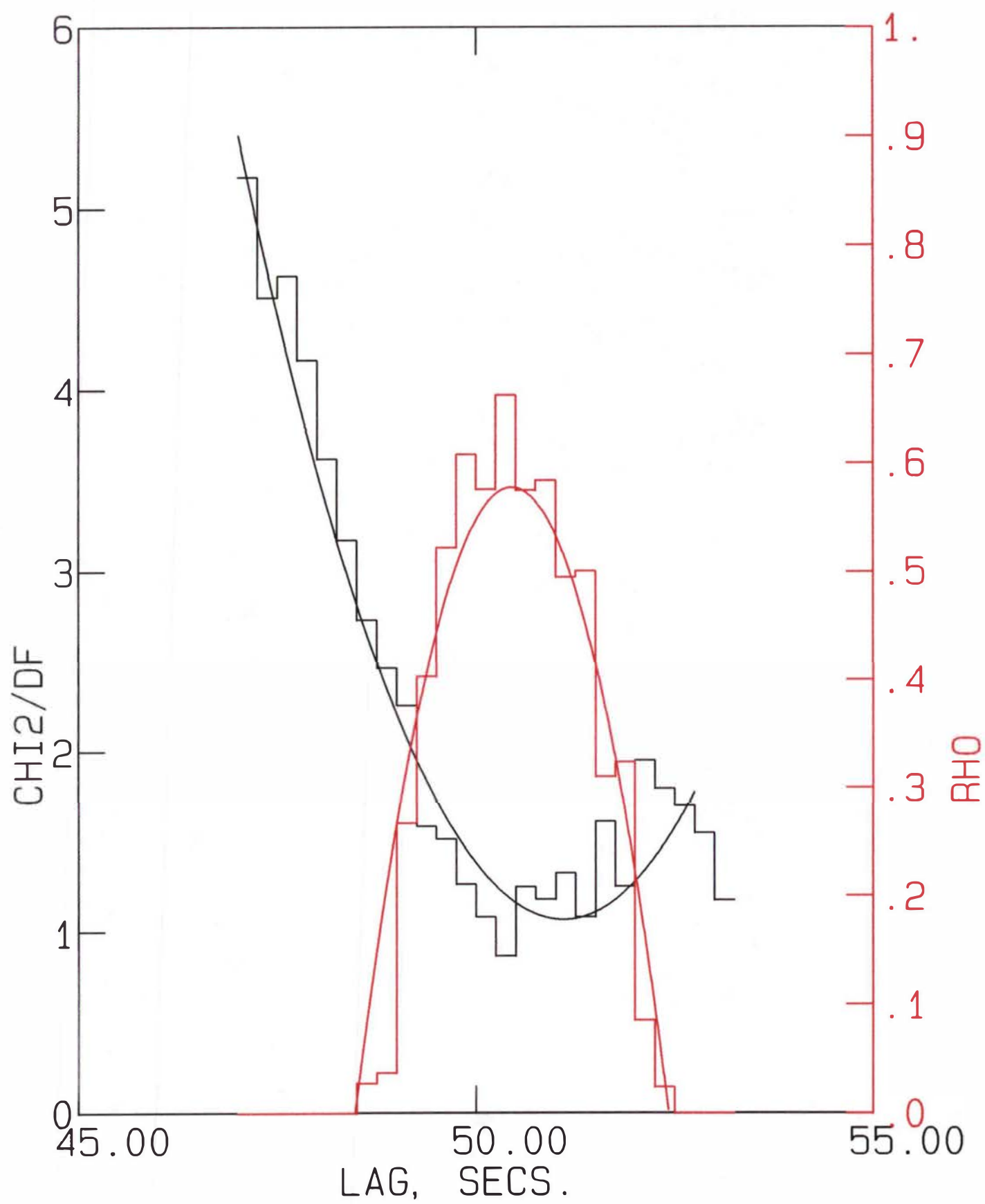
G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

DECLINATION





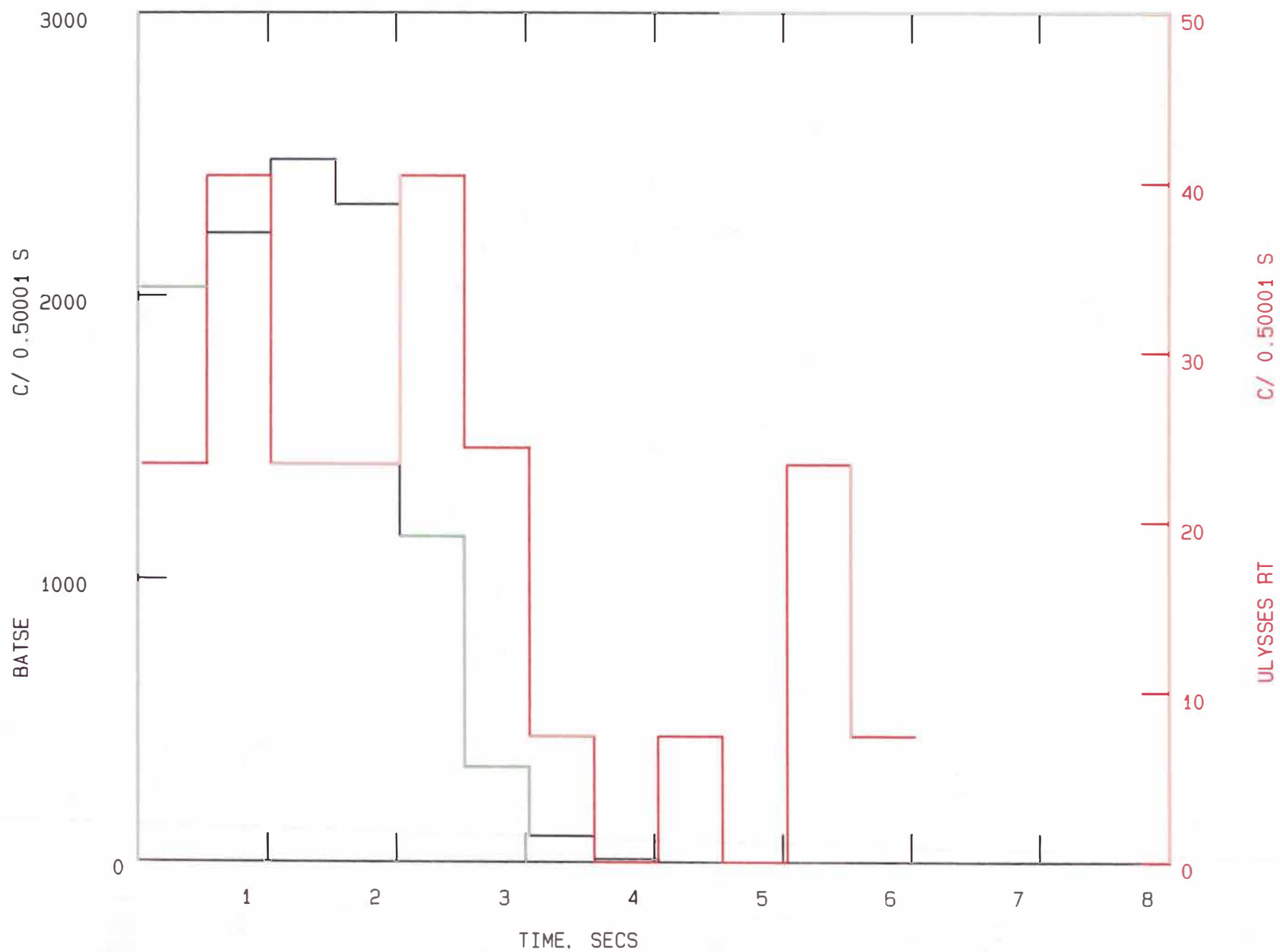
BATSE

-ULYSSES RT CORRELATION

26/ 3/98

76733.153

9/ 4/98



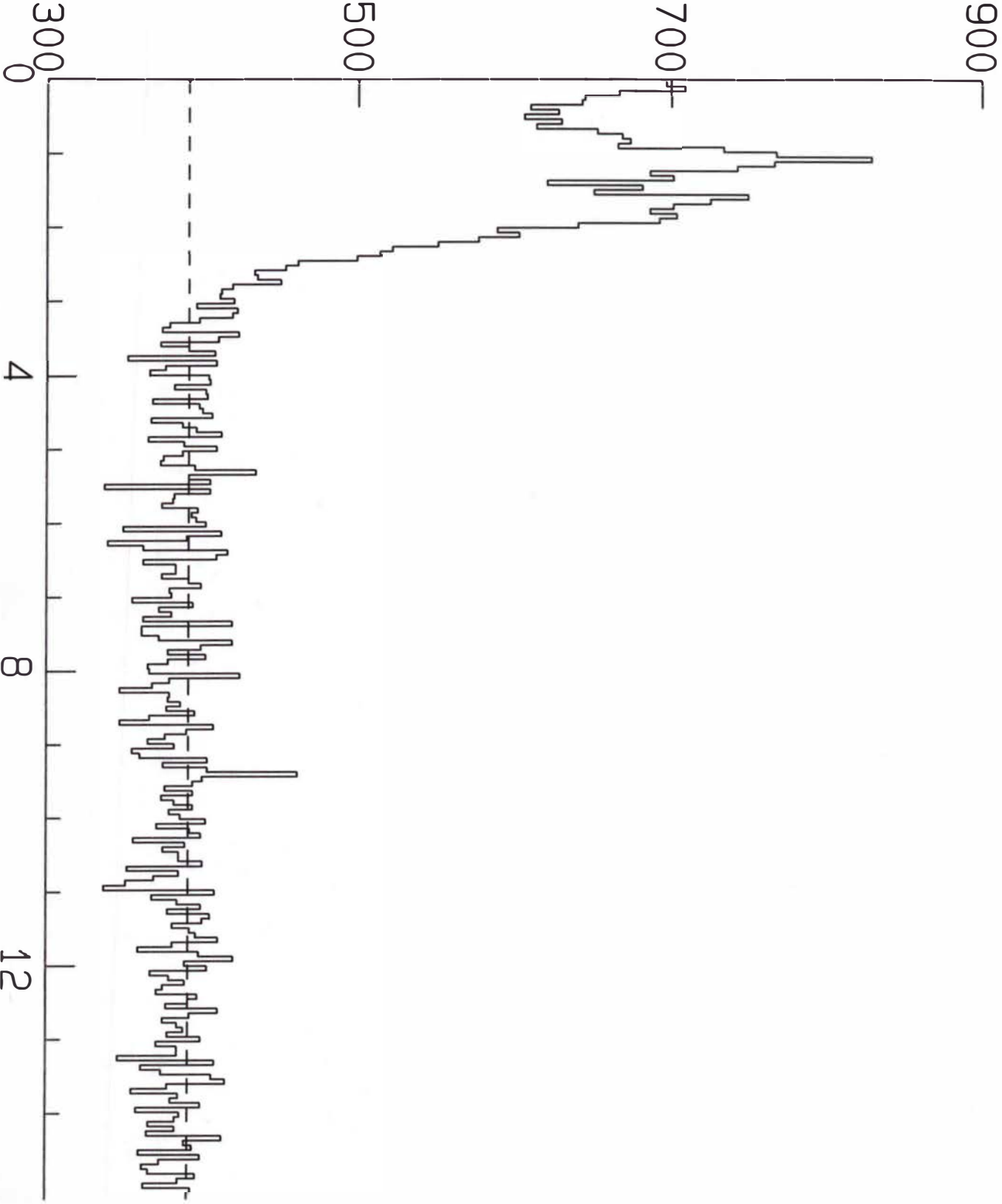
BATSE

26/03/98

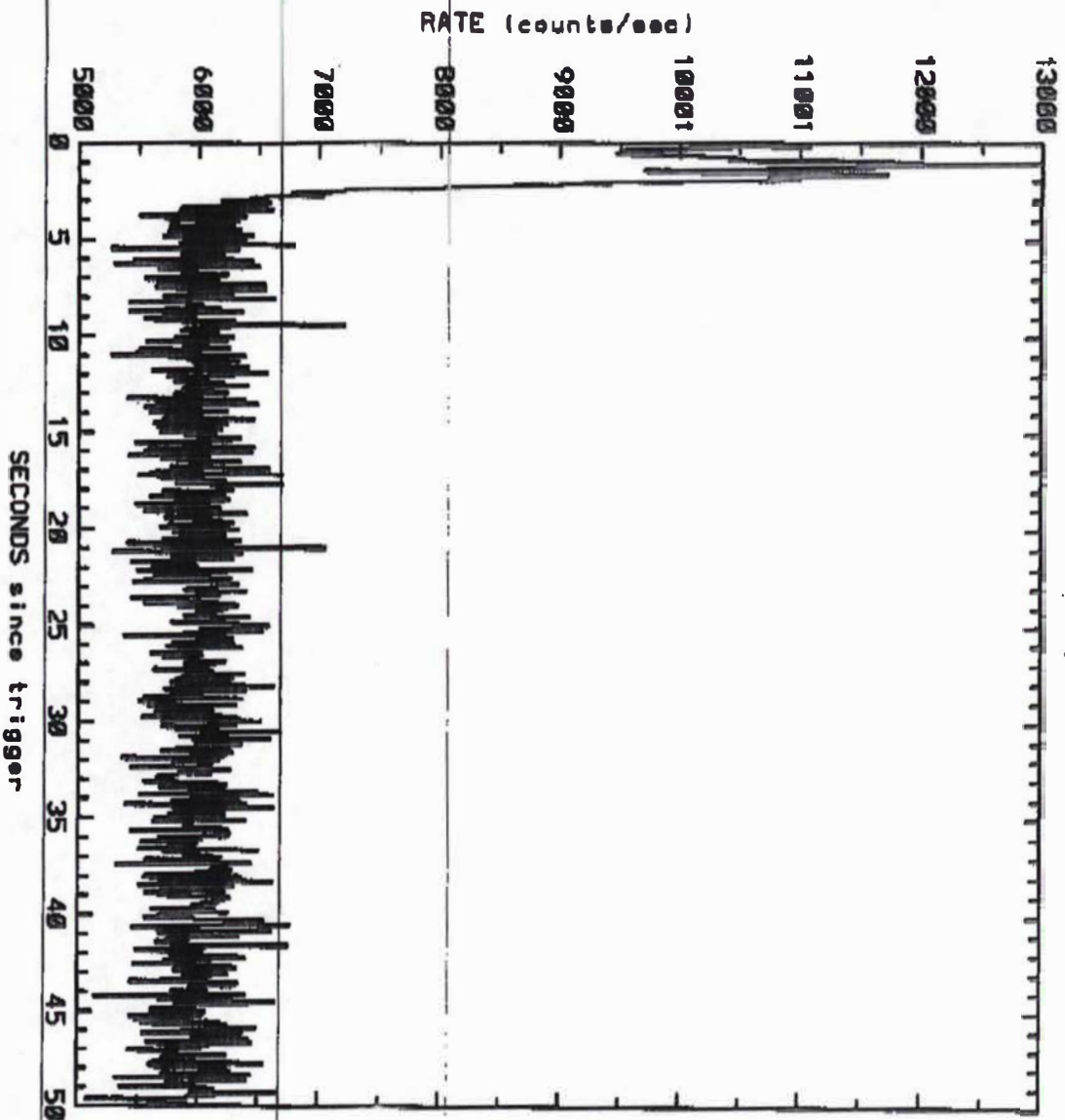
76733.153

25- 100 keV

COUNTS/0.064 S



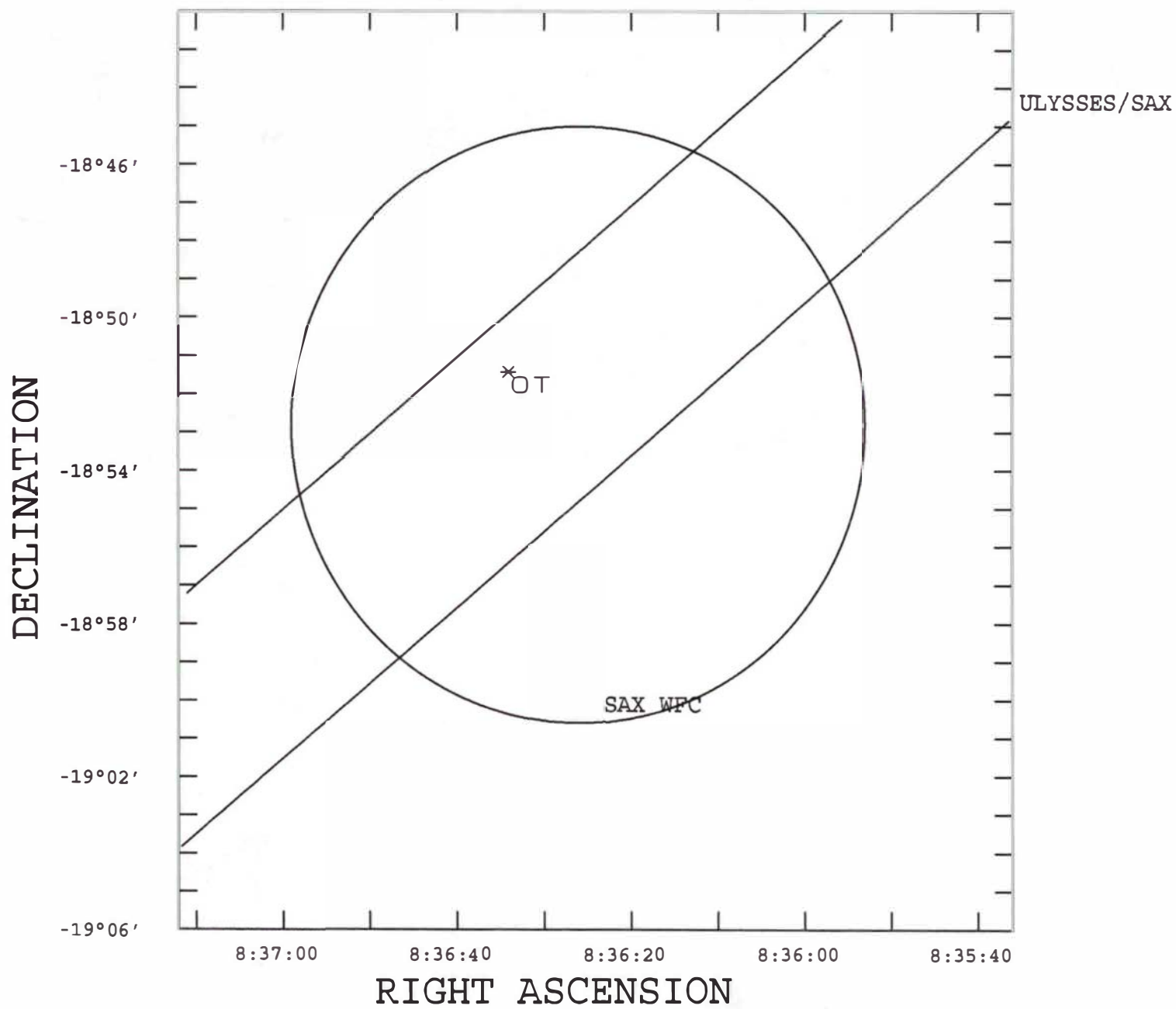
MER Data for K. Hurley, No. 6660



9-APR-1998 11:11:52
 Created by MOPS 80
 (Burst Display)
 Version 12.25

Trigger # : 6660
 Trigger Time:
 18000 / 76700.153
 Burst Data Type:
 MER

Deadtime
 Corrected: N
 Background Data
 Type: COUNT
 Minimum Integ. Time:
 0.064 seconds
 Detectors (7.8):
 --34--
 Channels:
 (8 : 6)
 Quality Mask:
 801SP1



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

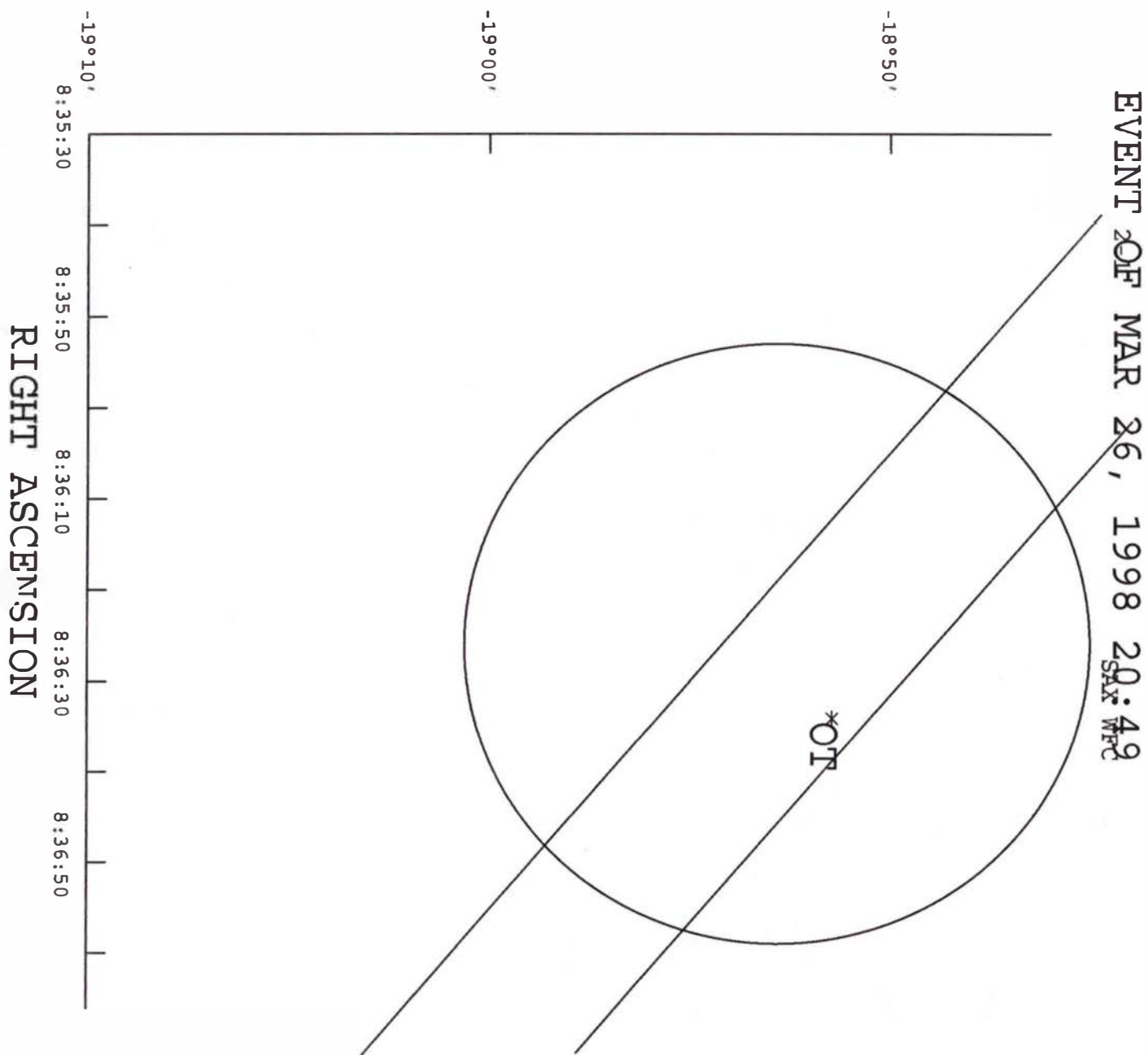
E=ECLIPTIC

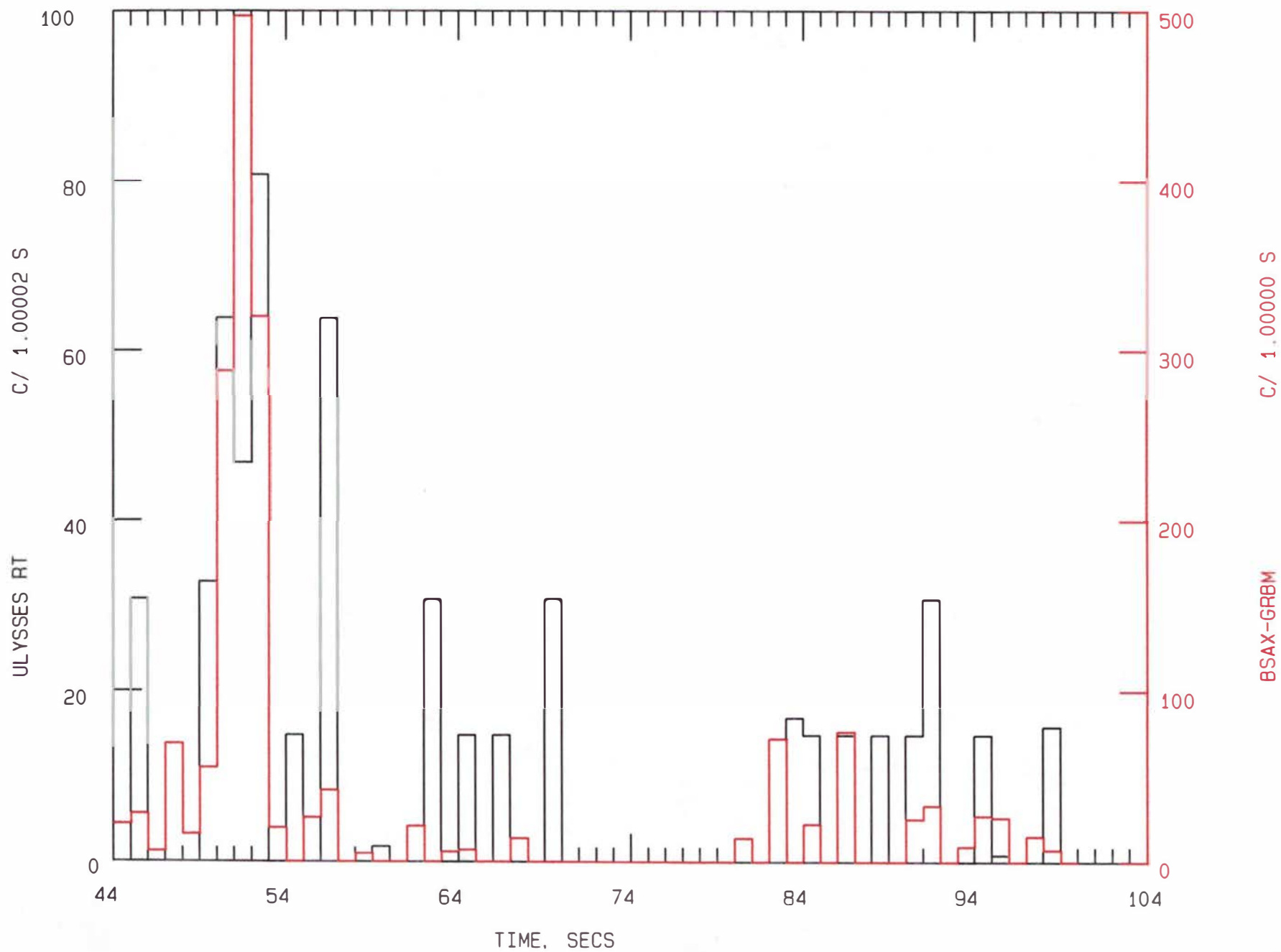
G=GALACTIC EQUATOR

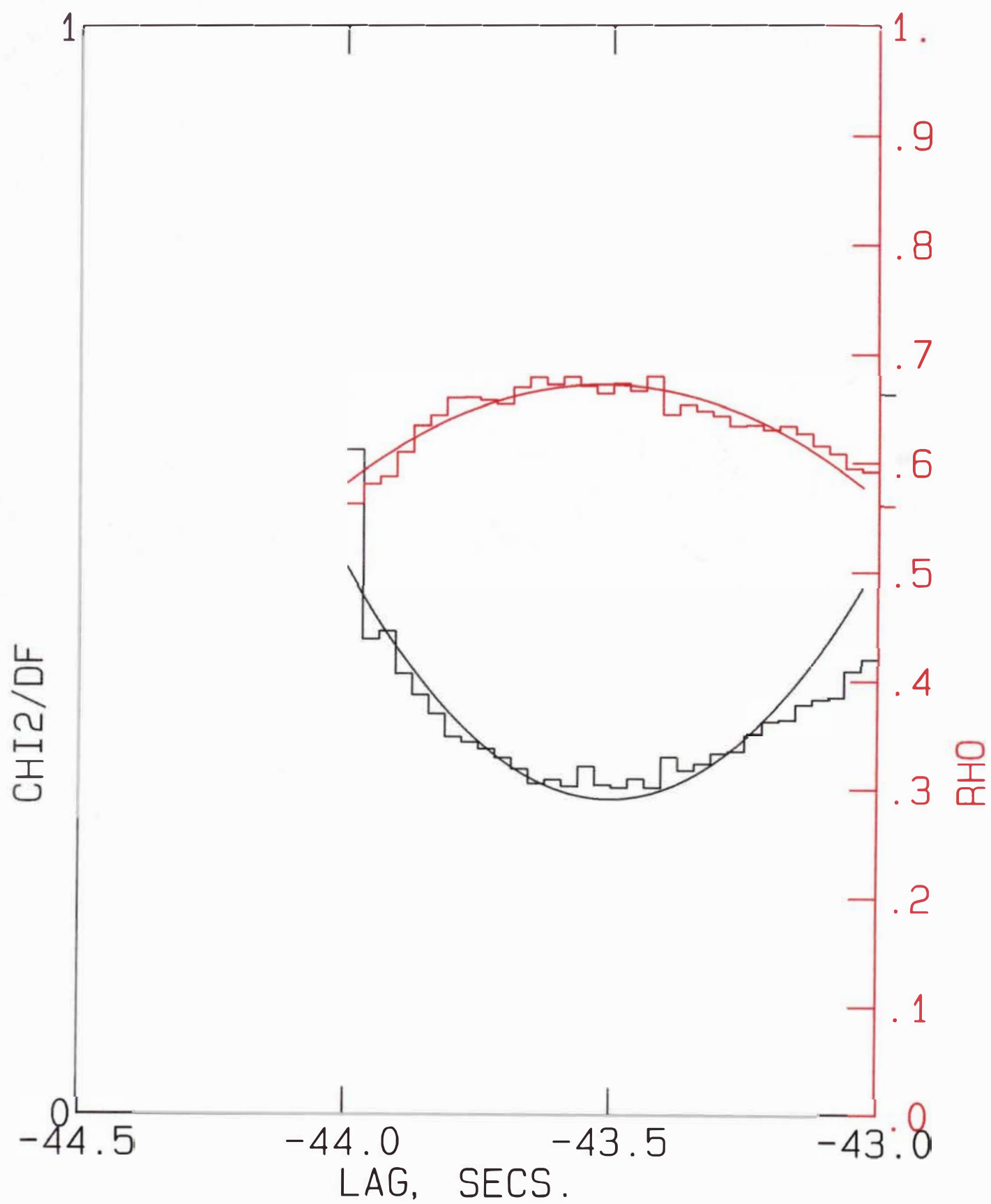
1 ULYSSES

2 SAX

DECLINATION







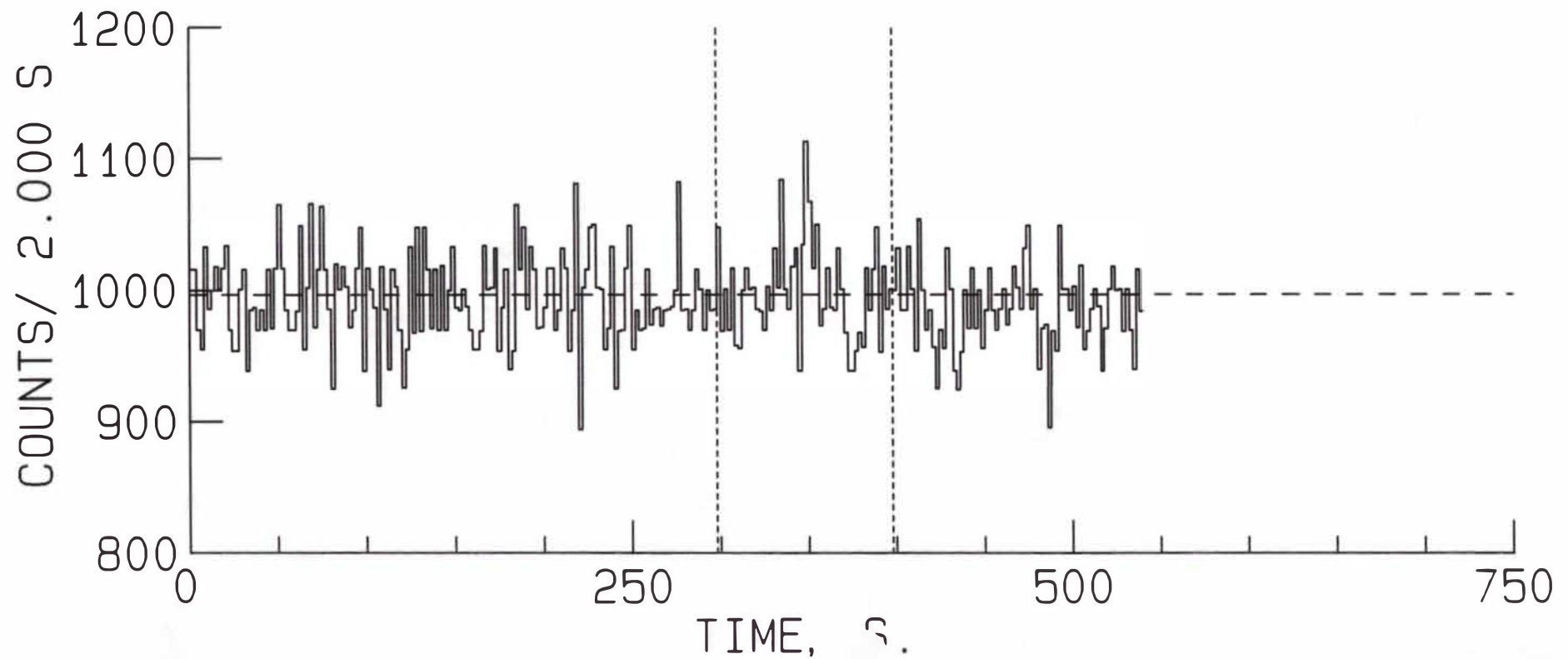
ULYSSES RT

8 / 4 / 98

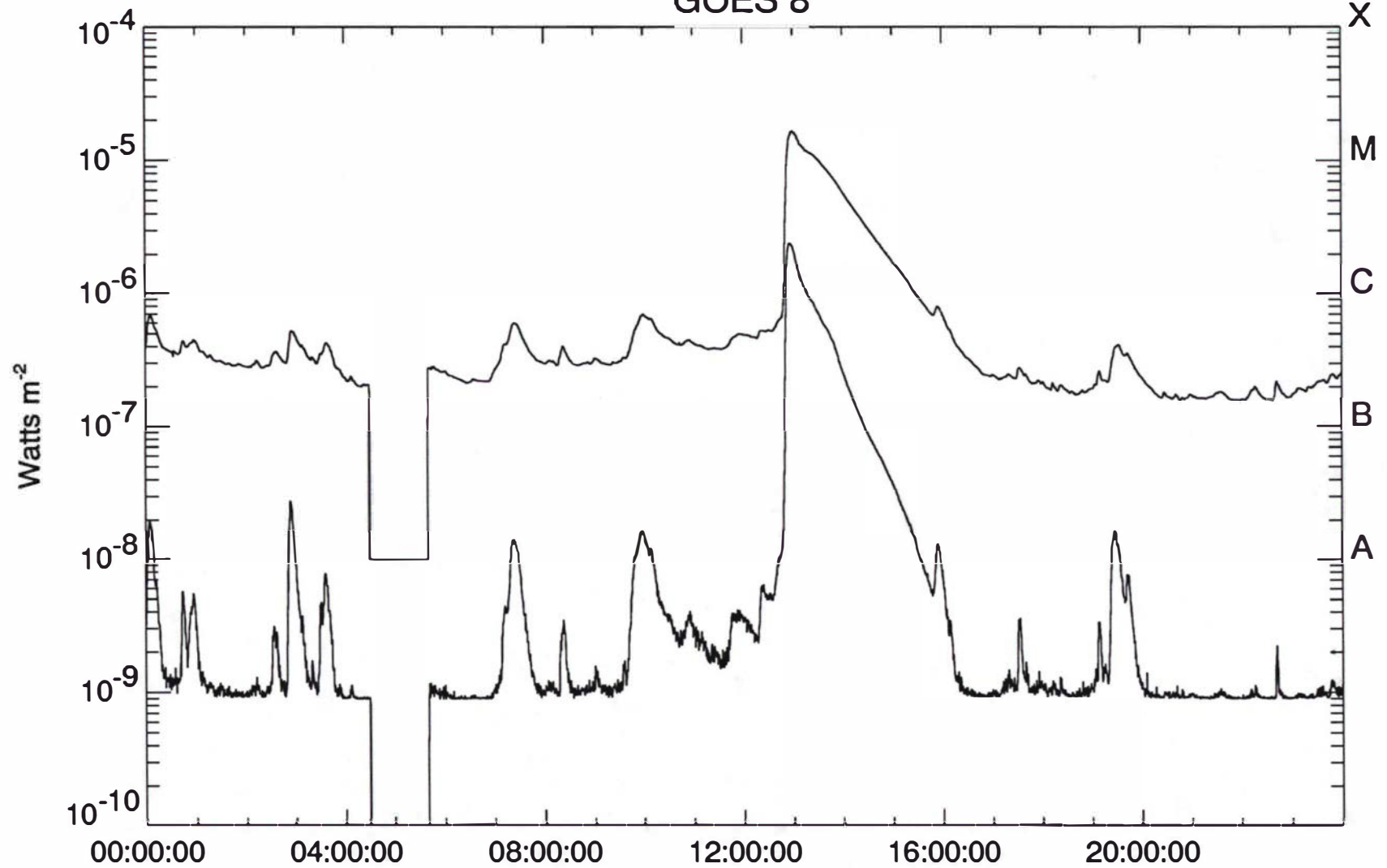
26 / 3 / 98 74664.032 s

0.250 S INTERVALS REGROUPED BY 8

22- 148 keV



GOES 8

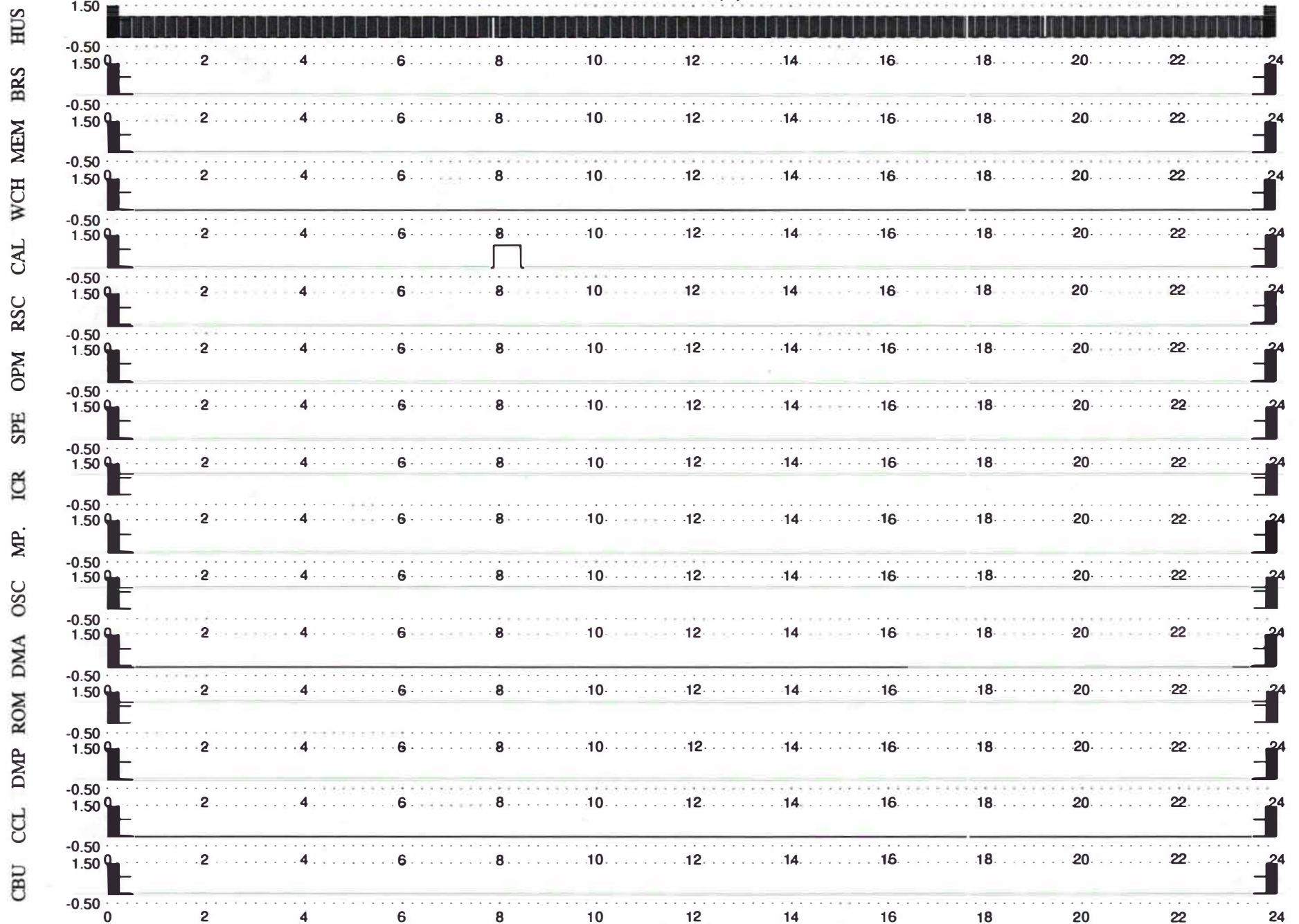


Data Start: 98/03/26, 0000:00

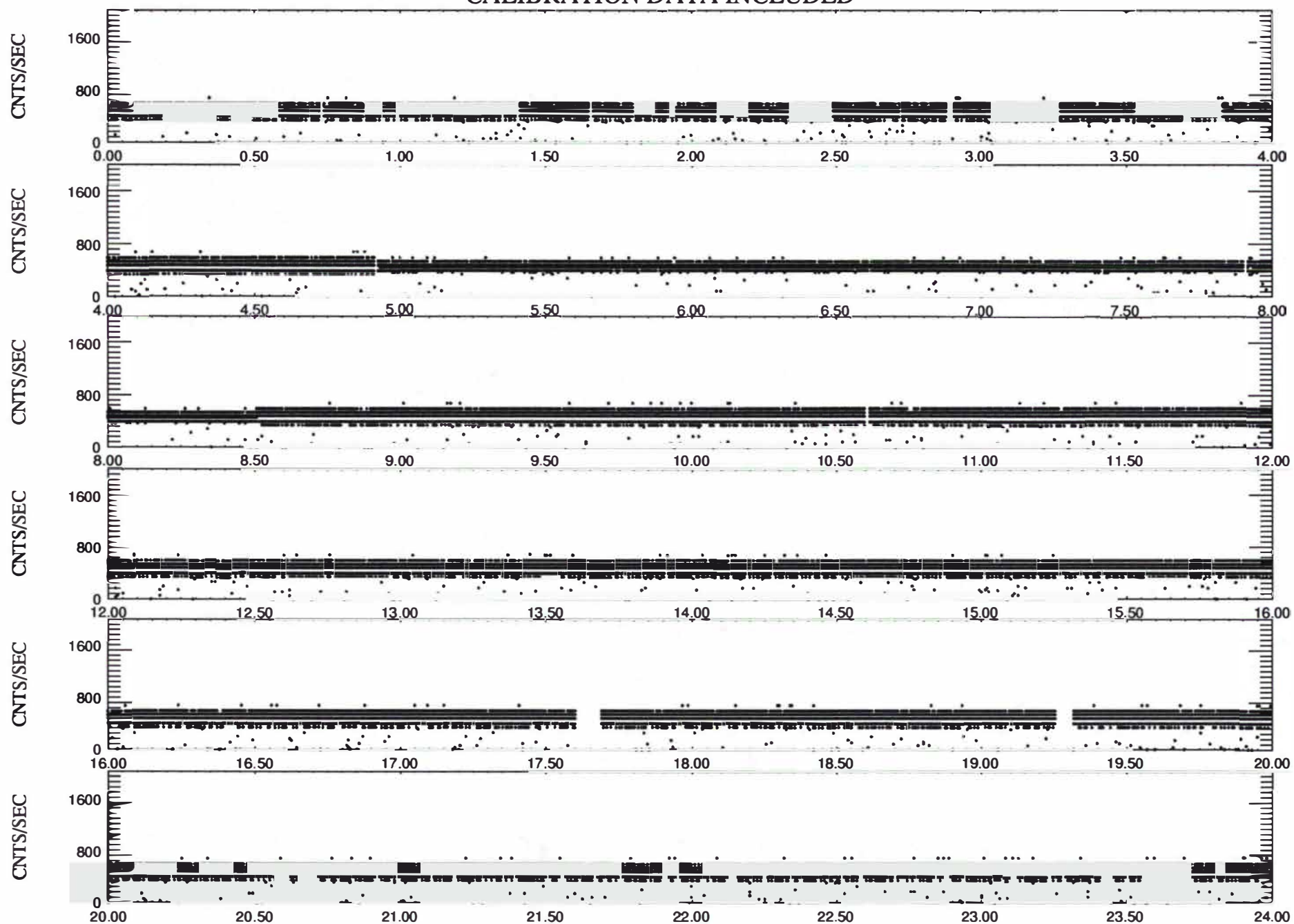
Plot created: 98/03/30, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
 Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted
 Sample average = 10

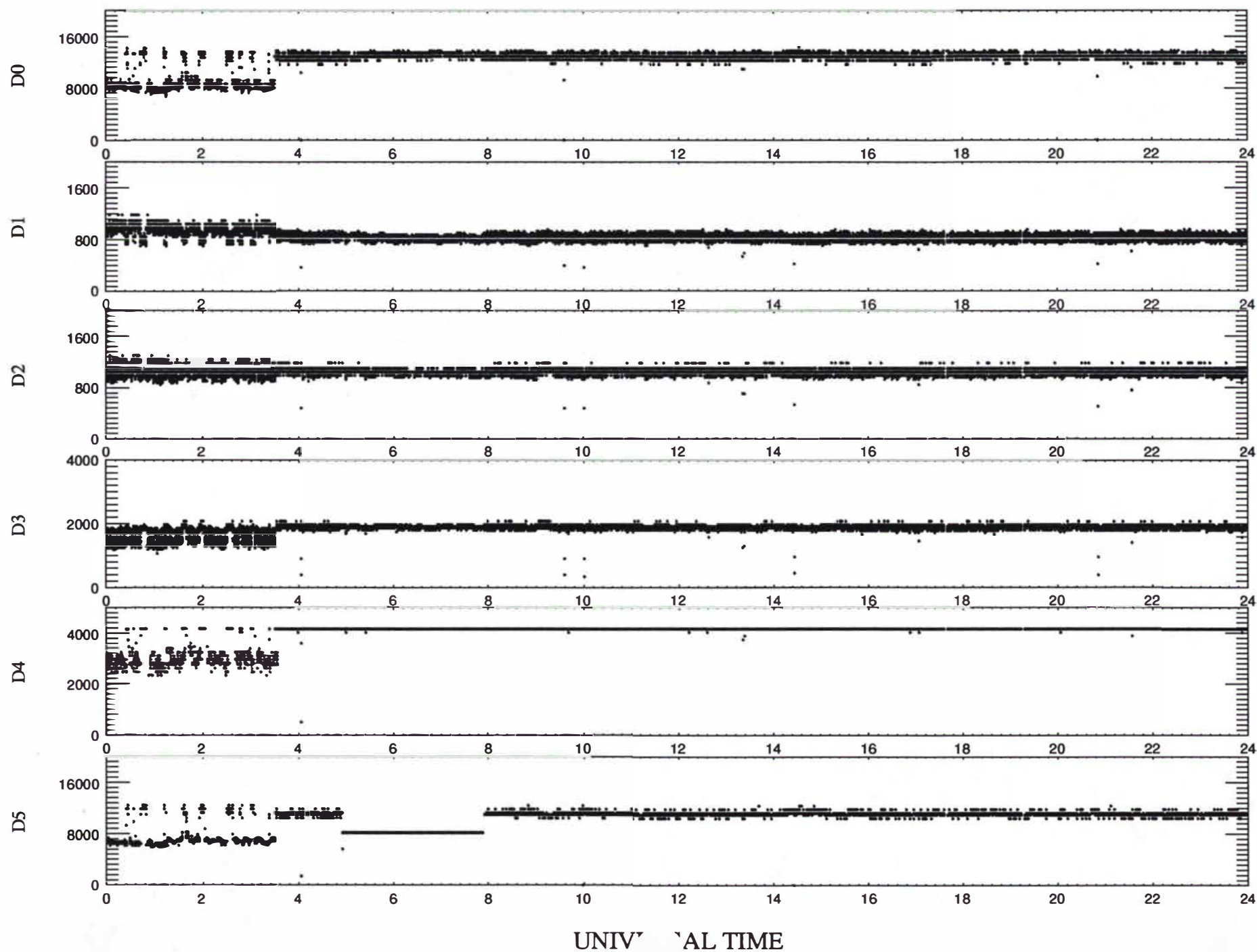
UNIV AL TIME



CALIBRATION DATA INCLUDED



UNIV'AL TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Apr 6 14:04:23 1998
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 6 Apr 1998 16:03:49 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lhevax.gsfc.nasa.gov, barthelmy@lhevax.gsfc.nasa.gov,
bacodine@lhevaww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevax.gsfc.nasa.gov, dband@ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6661

TIME: TJD=0899 SECONDS=33064

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

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=89.4 AZIMUTH=308.2 ERROR=9.3 DEGREES

COMMENTS:
CYG X-1 FLUCTUATION

From RICHARDSON@fender.msfc.nasa.gov Mon Apr 6 14:21:51 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA24946; Mon, 6 Apr 1998 14:21:50 -0700
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id OAA10522; Mon, 6 Apr 1998 14:21:44 -0700
Date: Mon, 6 Apr 1998 16:21:44 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980406162144.20ela9ed@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6662
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6662
EVENT OF 1998 MAR 27 DAY OF YEAR= 86
EVENT CROSSING TIME AT BATSE : 80597. S. OR 22:23:17.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 104.000 23.000
BATSE PEAK COUNTING RATE: 2750 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 27/ 3/ 98 IS:
RA= 153.669 DEC= 13.418 DIST= 4.573 AU
BATSE-ULYSSES DISTANCE = 684147401. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=132.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1529.35 SECS.
CROSSING TIME AT ULYSSES IS 79068. S. OR 21:57:47 +/- 320.84 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 27/ 3/ 98 IS:
RA= 15.989 DEC= 6.312 DIST= 2.389 AU
MARS-BATSE DISTANCE = 357441024. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 94.28 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -89.07 SECS.
CROSSING TIME AT MARS IS 80508. S. OR 22:21:47 +/- 205.07 SECONDS

BATSE BURST TRIGGER

NO.: 6662

TIME: TJD=0899 SECONDS=80597

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=52.2 AZIMUTH=45.9 ERROR=5.5 DEGREES

COMMENTS:

GRB. SINGLE PULSE. DURATION APPROX. = 2 SEC. NOT VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6662	980327	10899	80597	2750	104	+23	2

BATSE BURST# 6662

ULYSSES RT

29 / 5 / 98

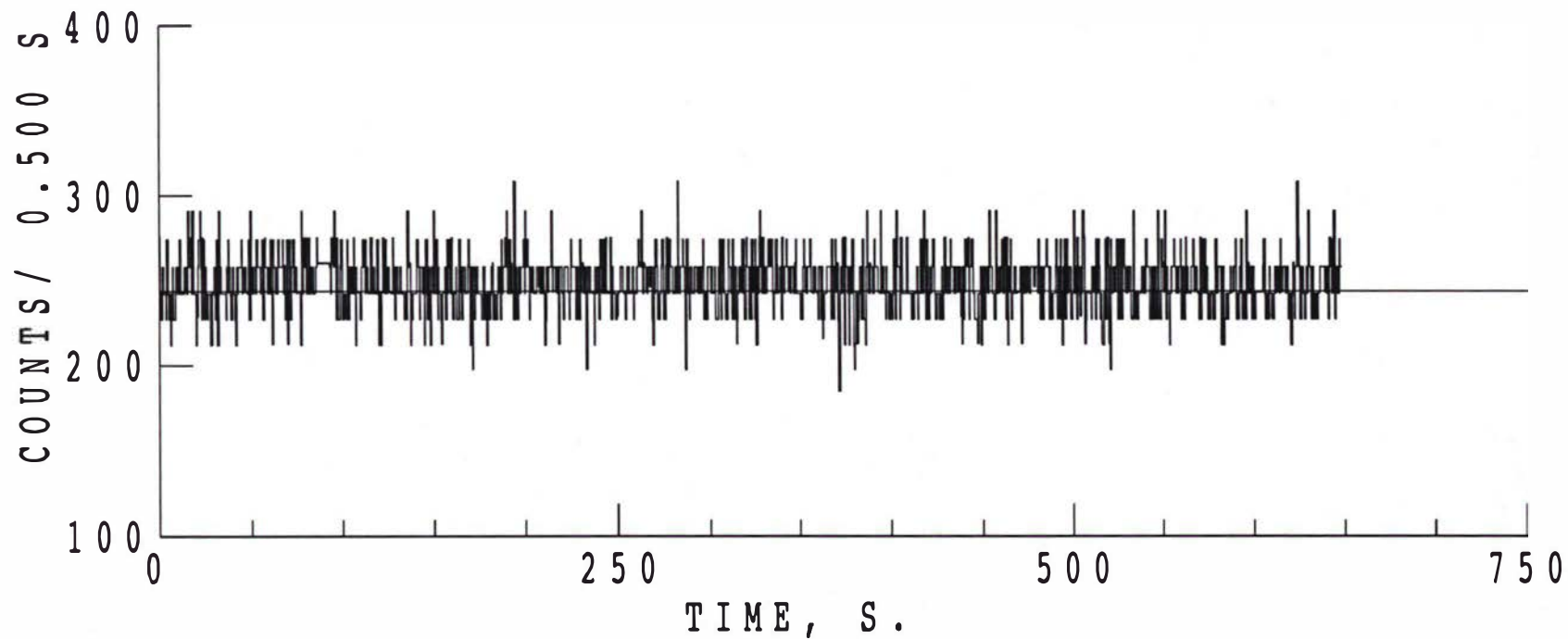
27 / 3 / 98 78732.000 s

0.250 S INTERVALS REGROUPED BY 2

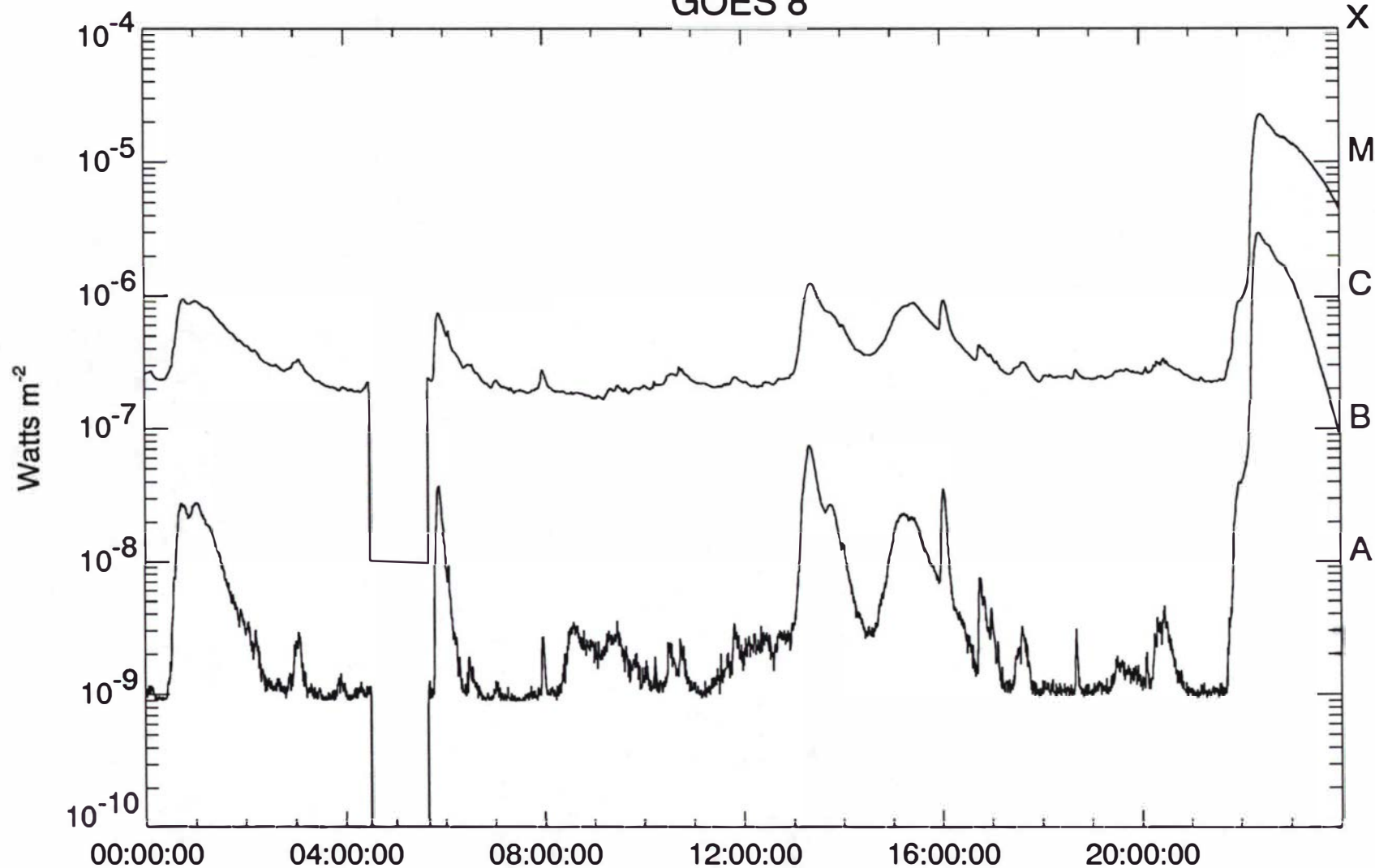
0 - 0 keV

N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GOES 8



Data Start: 98/03/27, 0000:00

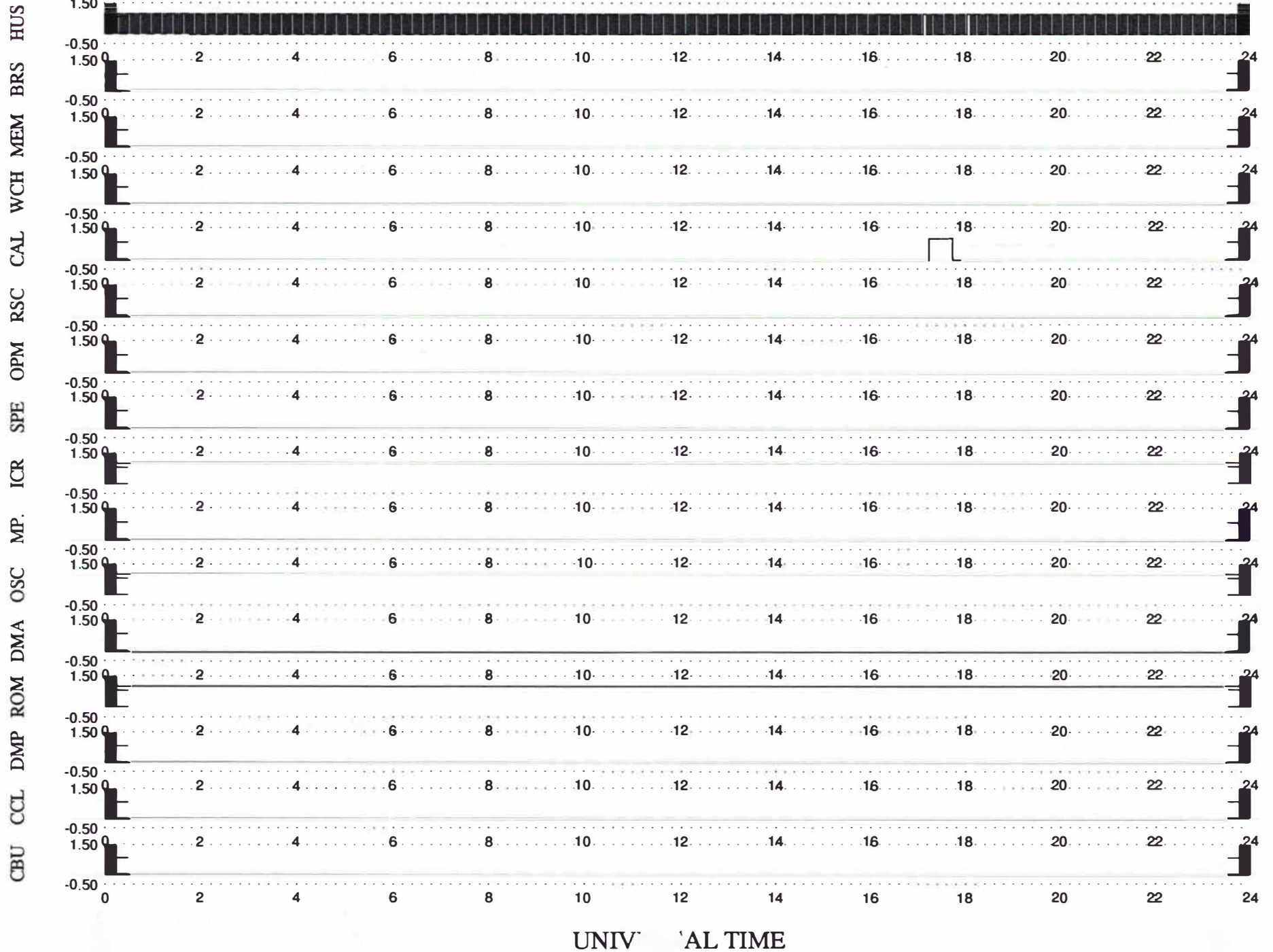
Plot created: 98/03/31, 1007

Channel

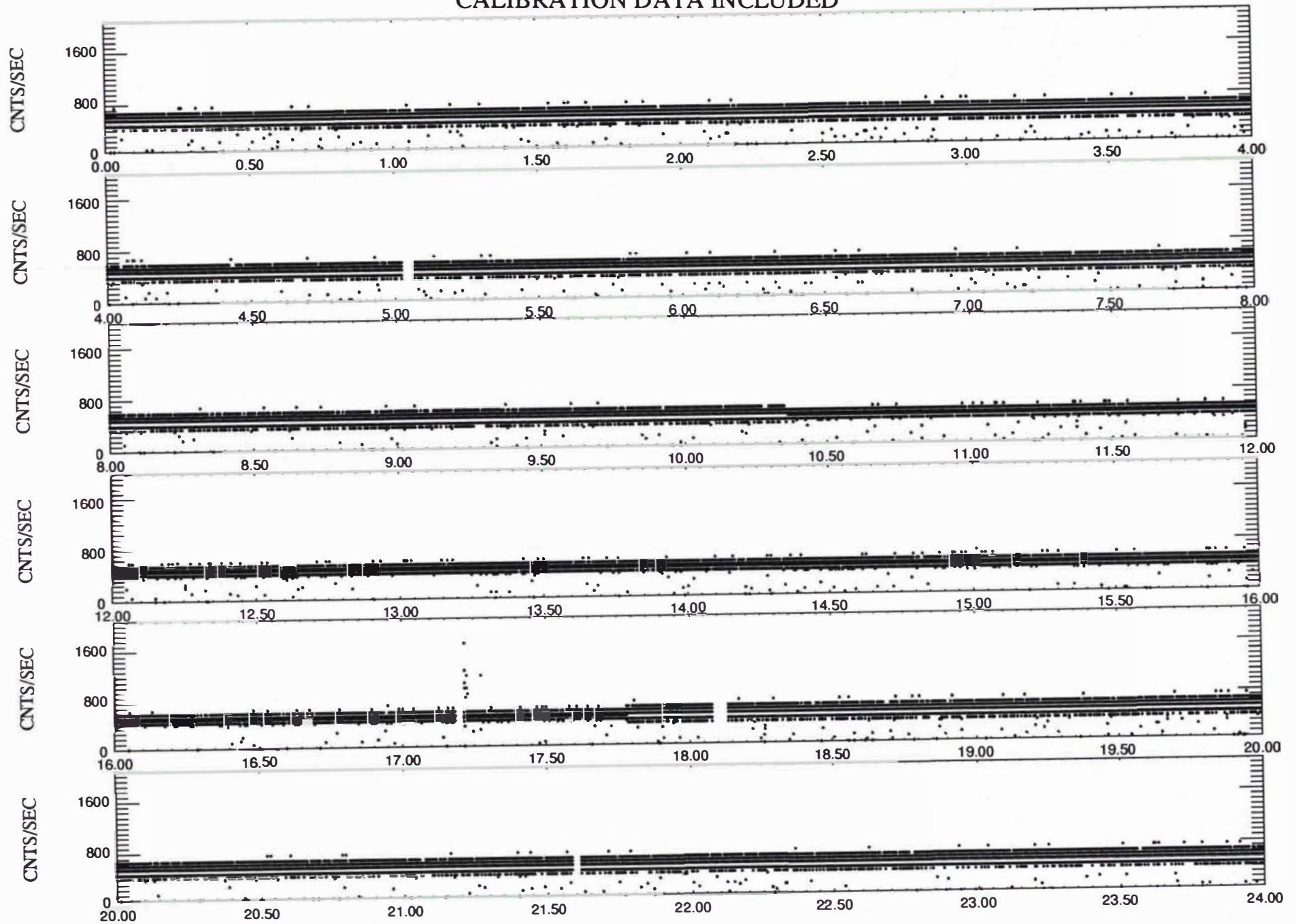
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

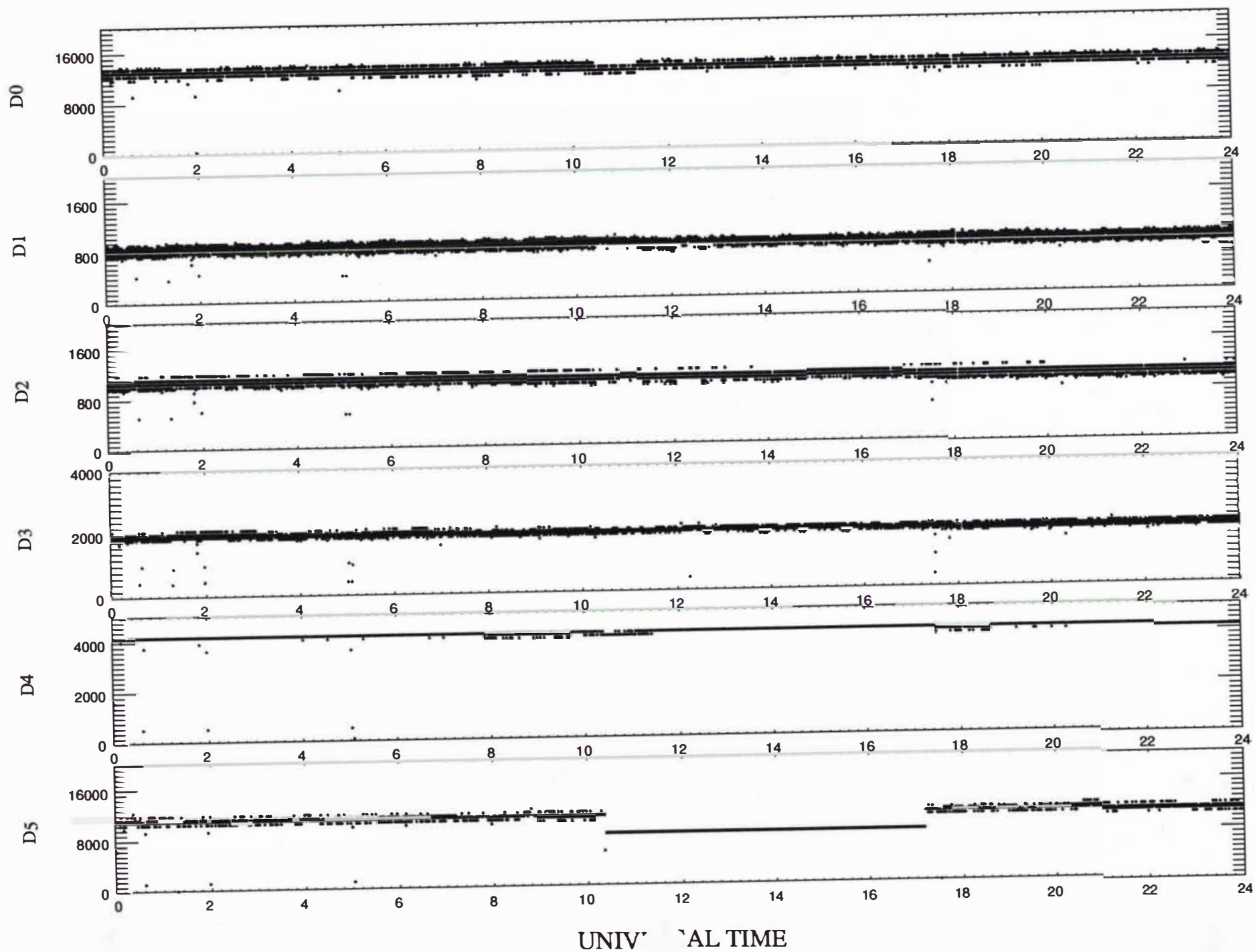
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV AL TIME



From RICHARDSON@fender.msfc.nasa.gov Mon Apr 6 14:17:31 1998
From: RICHARDSON@fender.msfc.nasa.gov
Date: Mon, 6 Apr 1998 16:16:47 -0500 (CDT)
To: burst@compTEL.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lhevX.gsfc.nasa.gov, barthelmy@lhevX.gsfc.nasa.gov,
bacodine@lhevwww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lhevX.gsfc.nasa.gov, dband@ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6663

TIME: TJD=0900 SECONDS=7835

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

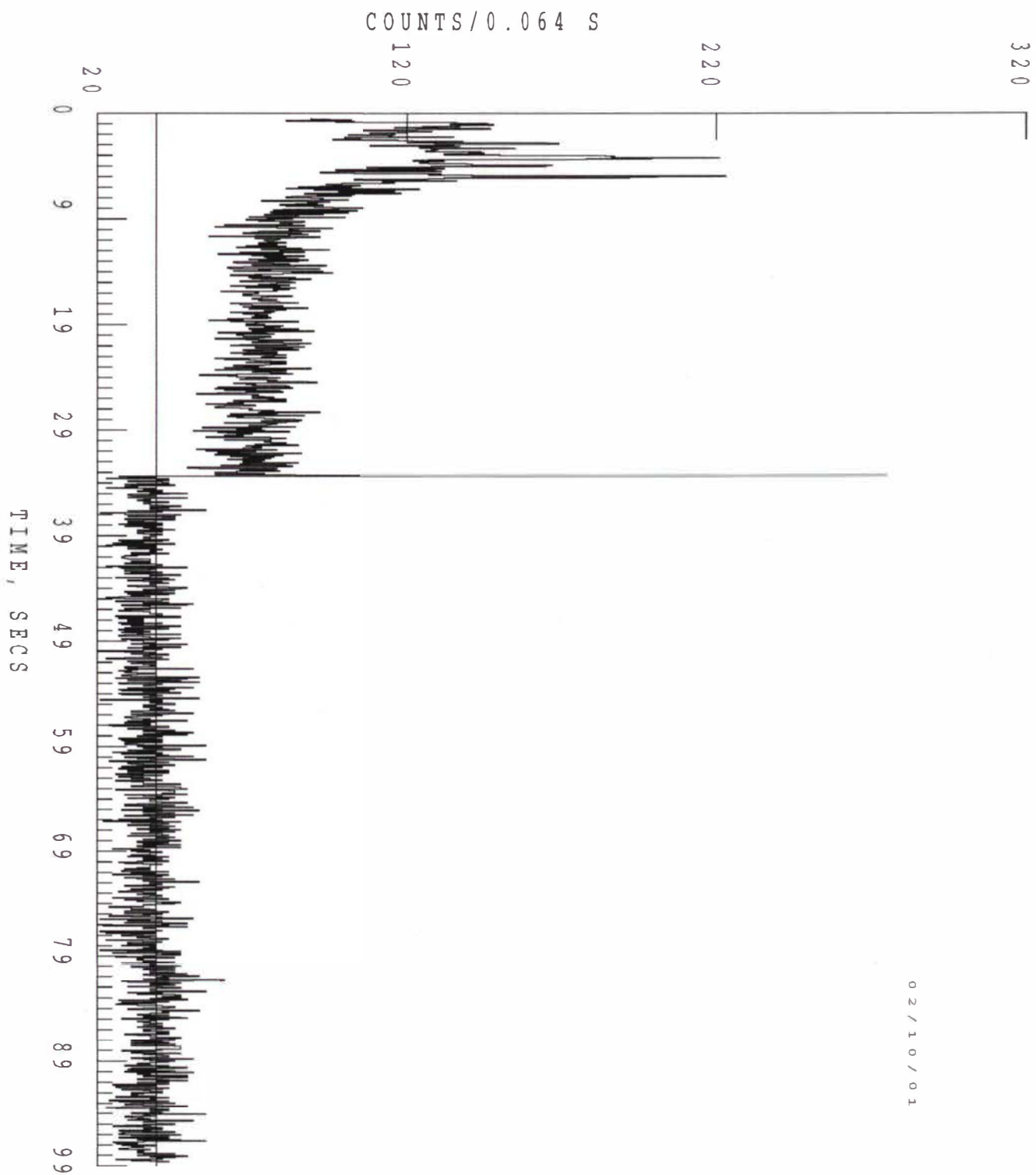
COMMENTS:
PARTICLE EVENT

KONUS1

28/04/98

72606.888

50 - 200 keV



KONUS1 19980428 72606

ULYSSES RT

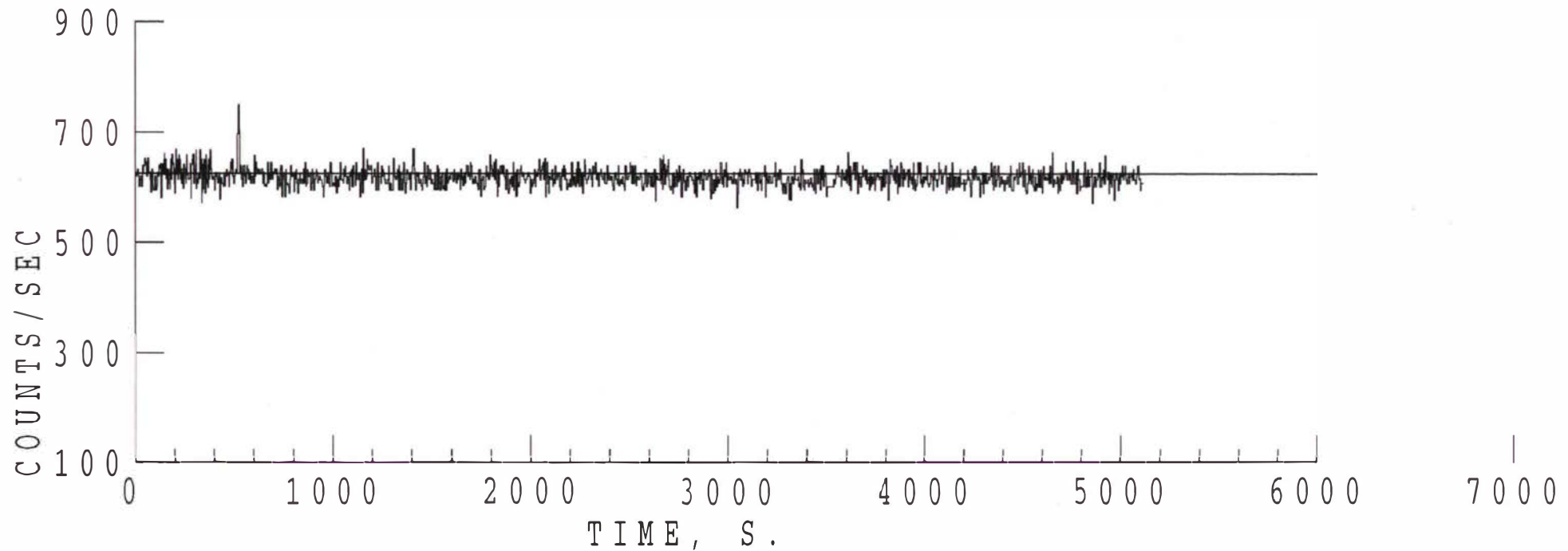
02 / 10 / 01

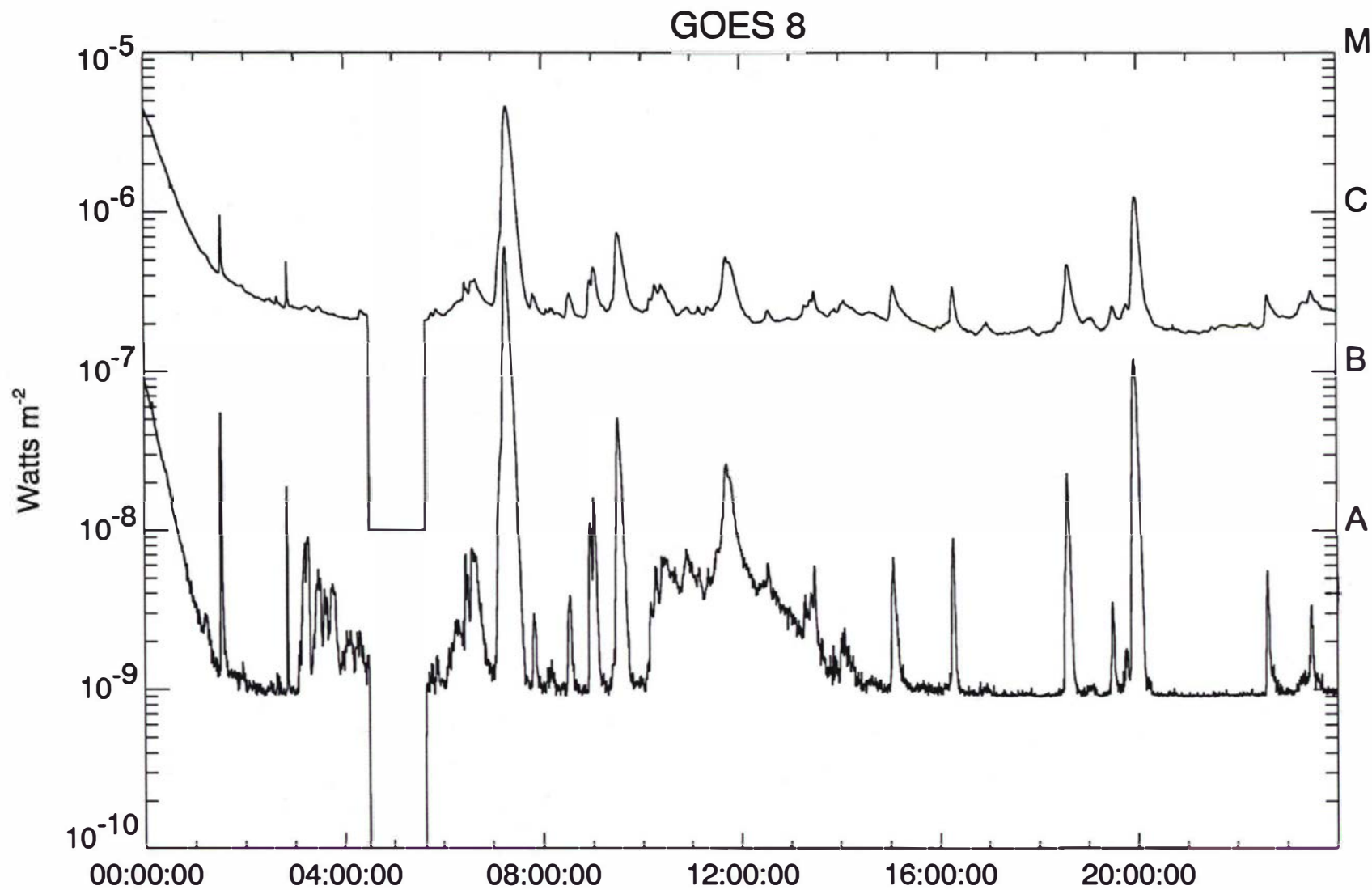
28 / 04 / 98 70056.055 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS





Data Start: 98/03/28, 0000:00

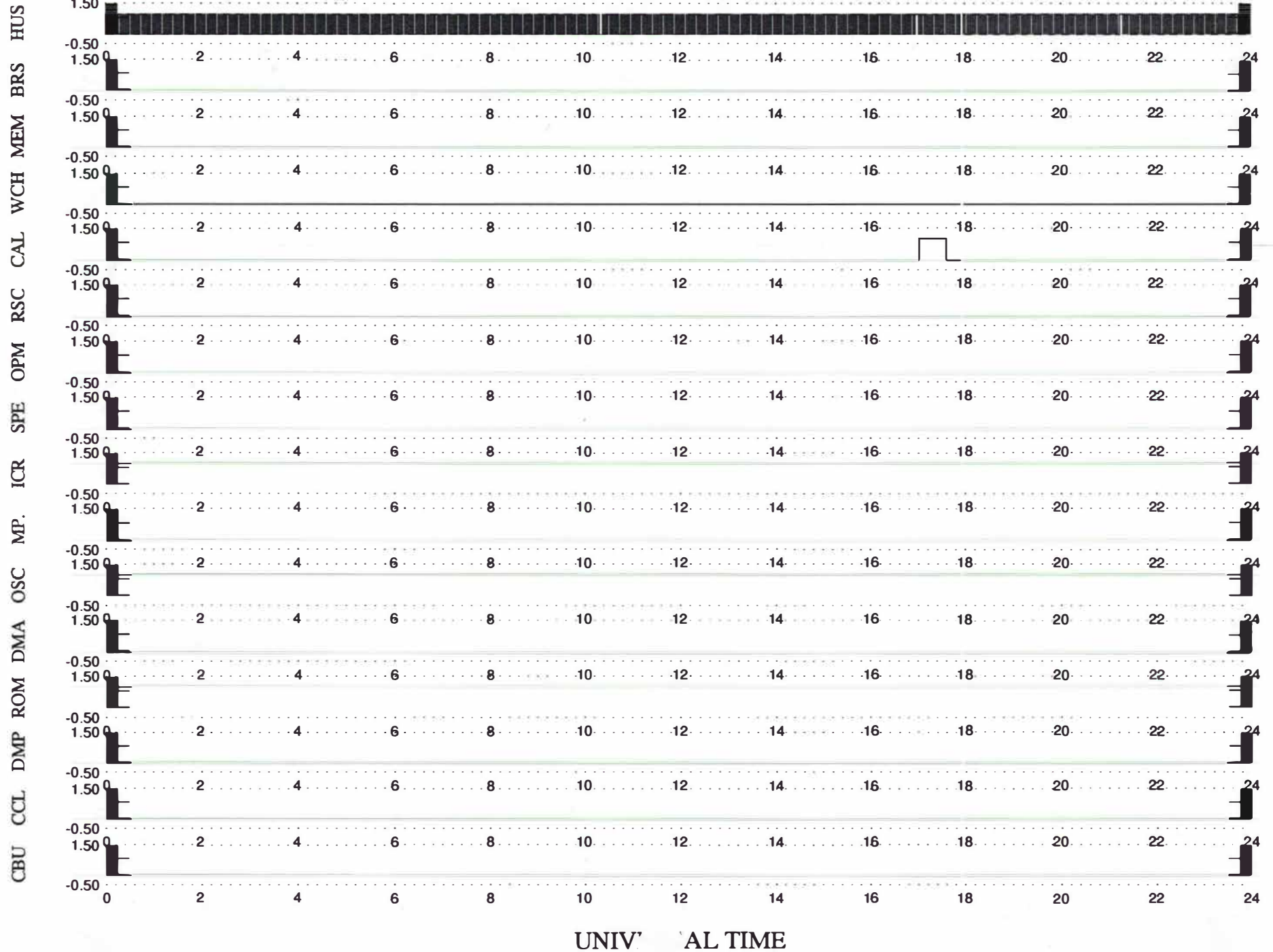
Plot created: 98/04/01, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

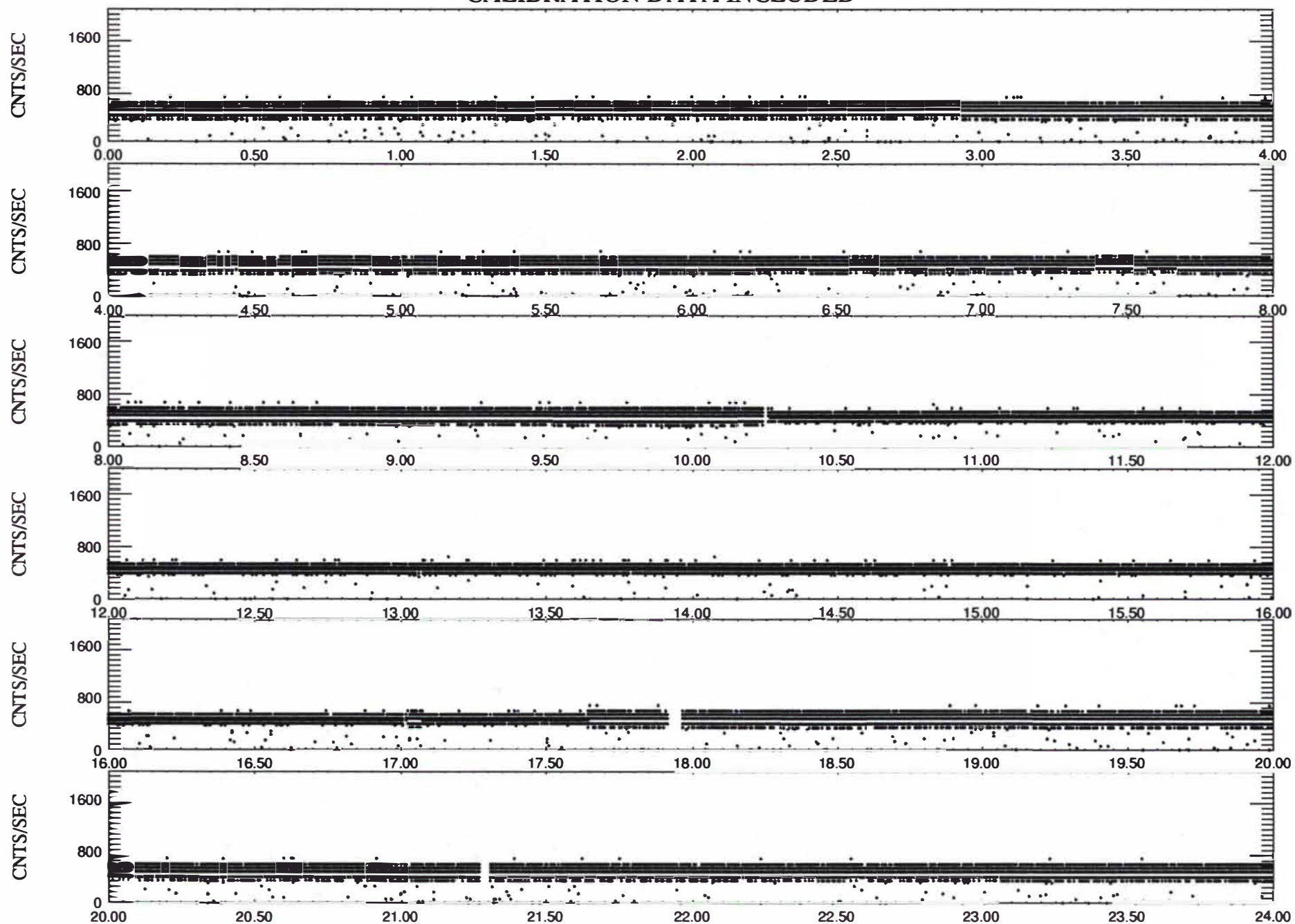
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

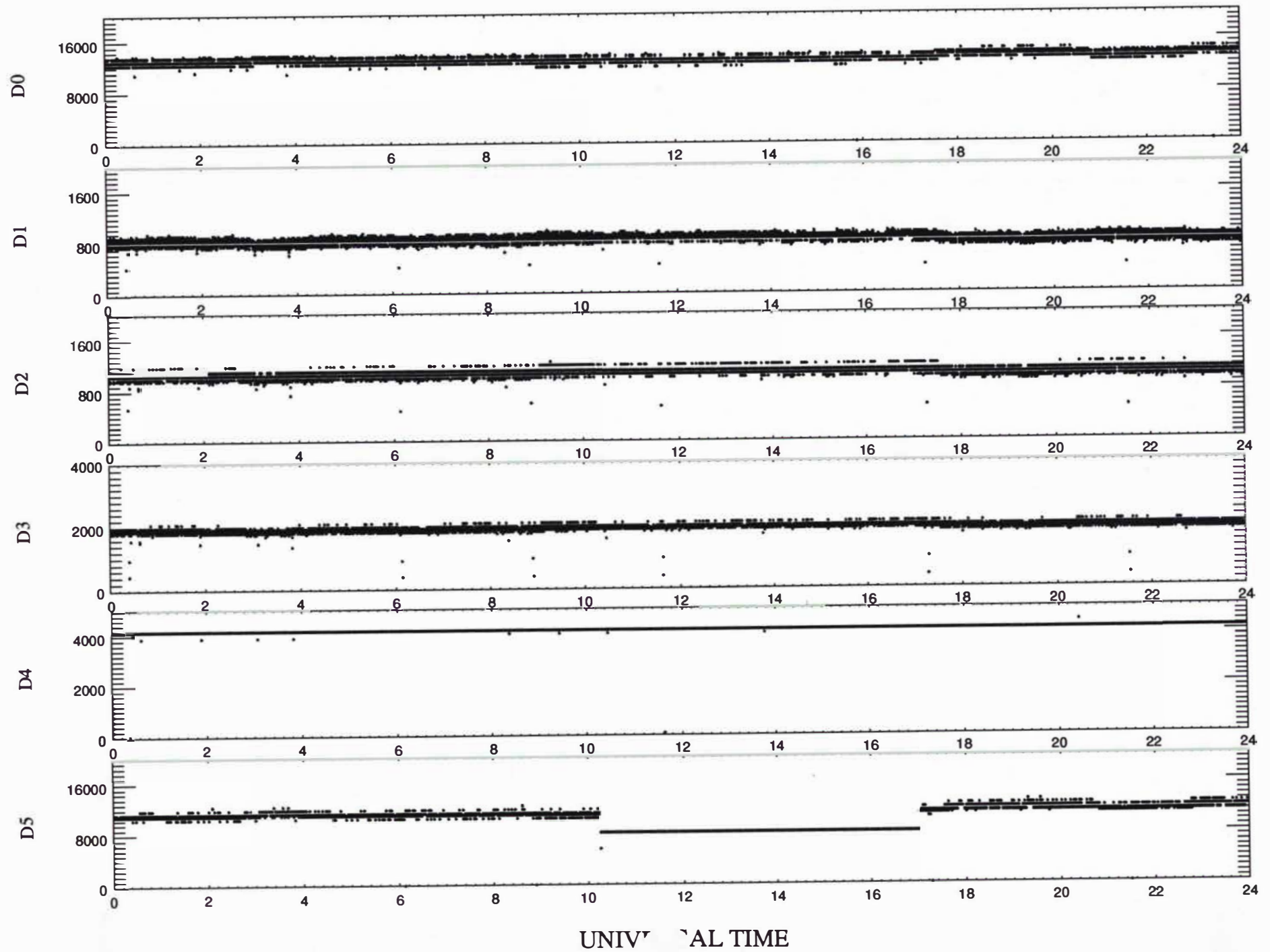
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV TIME



From RICHARDSON@fender.msfc.nasa.gov Tue Mar 31 11:24:29 1998

From: RICHARDSON@fender.msfc.nasa.gov

Date: Tue, 31 Mar 1998 13:16:18 -0600 (CST)

To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6664

TIME: TJD=0901 SECONDS=6483

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:

PARTICLE EVENT

From RICHARDSON@fender.msfc.nasa.gov Tue Mar 31 11:34:46 1998
 Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
 Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id LAA12078; Tue, 31 Mar 1998 11:34:45 -0800
 From: RICHARDSON@fender.msfc.nasa.gov
 Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id LAA03984; Tue, 31 Mar 1998 11:34:41 -0800
 Date: Tue, 31 Mar 1998 13:28:35 -0600 (CST)
 To: khurley@sunspot.ssl.berkeley.edu
 Message-Id: <980331132835.20e08c39@fender.msfc.nasa.gov>
 Subject: Crossing Windows for BATSE Burst 6665
 Content-Length: 1135
 X-Lines: 26
 Status: RO

 BATSEARCH PROGRAM

BATSE BURST # 6665
 EVENT OF 1998 MAR 29 DAY OF YEAR= 88
 EVENT CROSSING TIME AT BATSE : 13478. S. OR 03:44:38.0
 COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 106.000 39.000
 BATSE PEAK COUNTING RATE: 45000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 29/ 3/ 98 IS:
 RA= 153.451 DEC= 13.418 DIST= 4.586 AU
 BATSE-ULYSSES DISTANCE = 686015018. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=131.09 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1503.90 SECS.
 CROSSING TIME AT ULYSSES IS 11974. S. OR 03:19:34 +/- 326.60 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
 POSITION OF MARS ON 29/ 3/ 98 IS:
 RA= 17.395 DEC= 6.911 DIST= 2.394 AU
 MARS-BATSE DISTANCE = 358203840. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.42 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -112.92 SECS.
 CROSSING TIME AT MARS IS 13365. S. OR 03:42:45 +/- 204.80 SECONDS

BATSE BURST TRIGGER

NO.: 6665

TIME: TJD=0901 SECONDS=13478

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=43.0 AZIMUTH=26.6 ERROR=0.8 DEGREES

COMMENTS:

GRB STRONG PULSE WITH LOTS OF STRUCTURE. WEAK EMISSION AT APPROX. T-25 SEC.
 WITH MAIN PULSE AT APPROX. T-2 SEC. TOTAL DURATION APPROX. = 55 SEC.
 VISIBLE ABOVE 300KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6665	980329	10901	13478	45000	106	+39	55

DECLINATION

38° 53' 40"

38° 53' 00"

38° 52' 20"

38° 51' 40"

38° 51' 00"

38° 50' 20"

38° 49' 40"

38° 49' 00"

38° 48' 20"

38° 47' 40"

38° 47' 00"

7:02:55

7:02:45

7:02:35

7:02:25

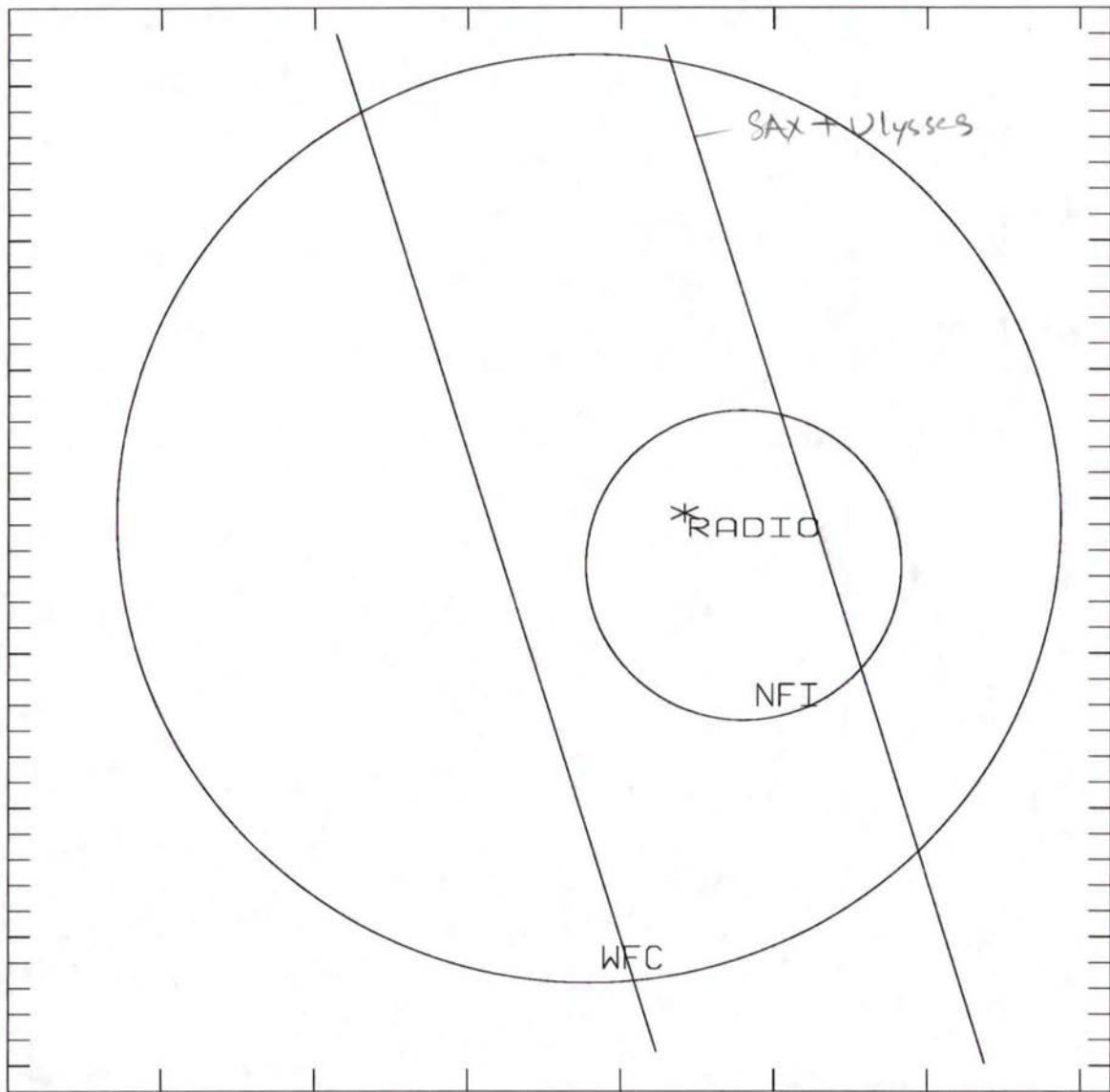
RIGHT ASCENSION

SAX + Ulysses

*RADIO

NFI

WFC



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

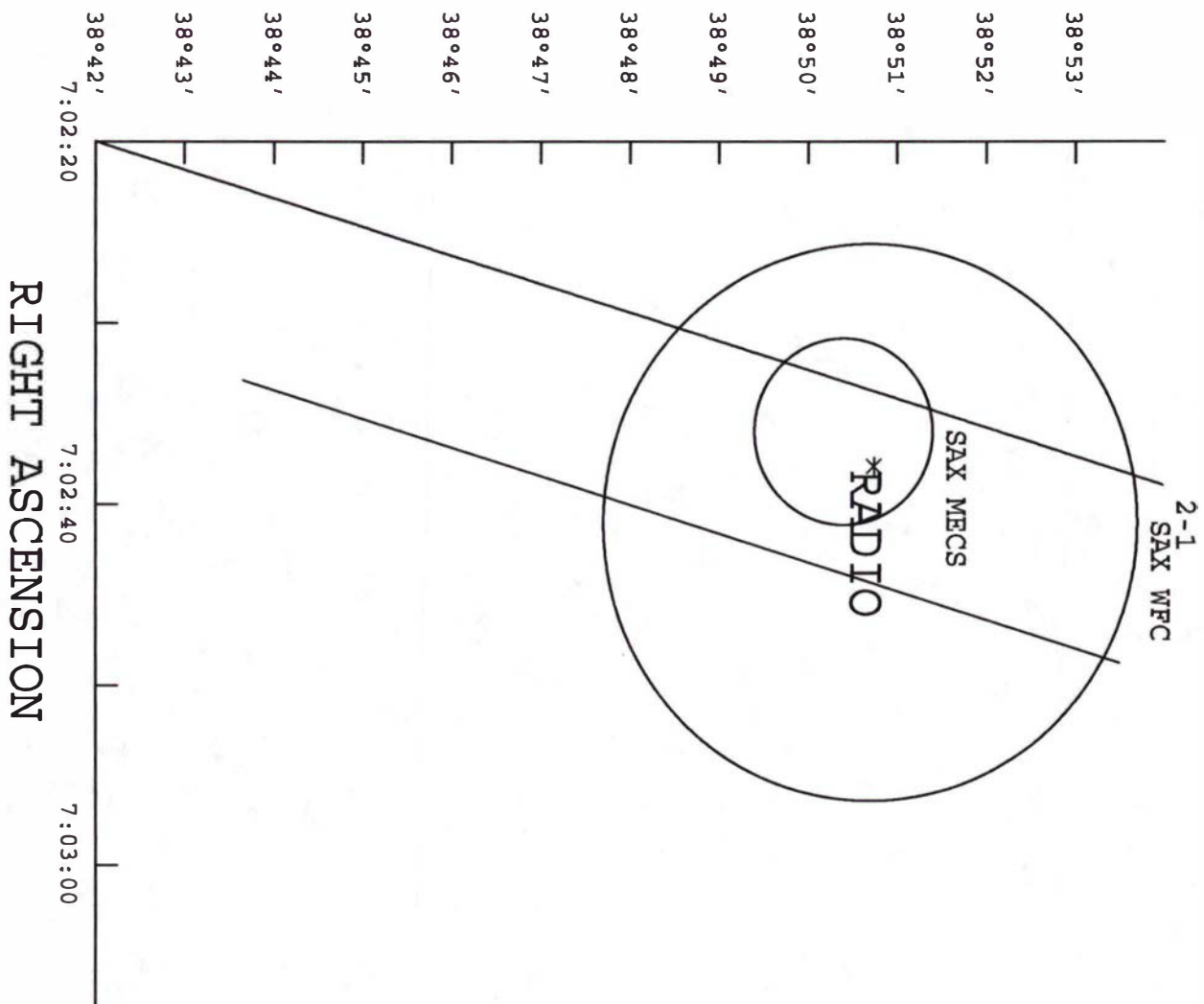
1 ULYSSES

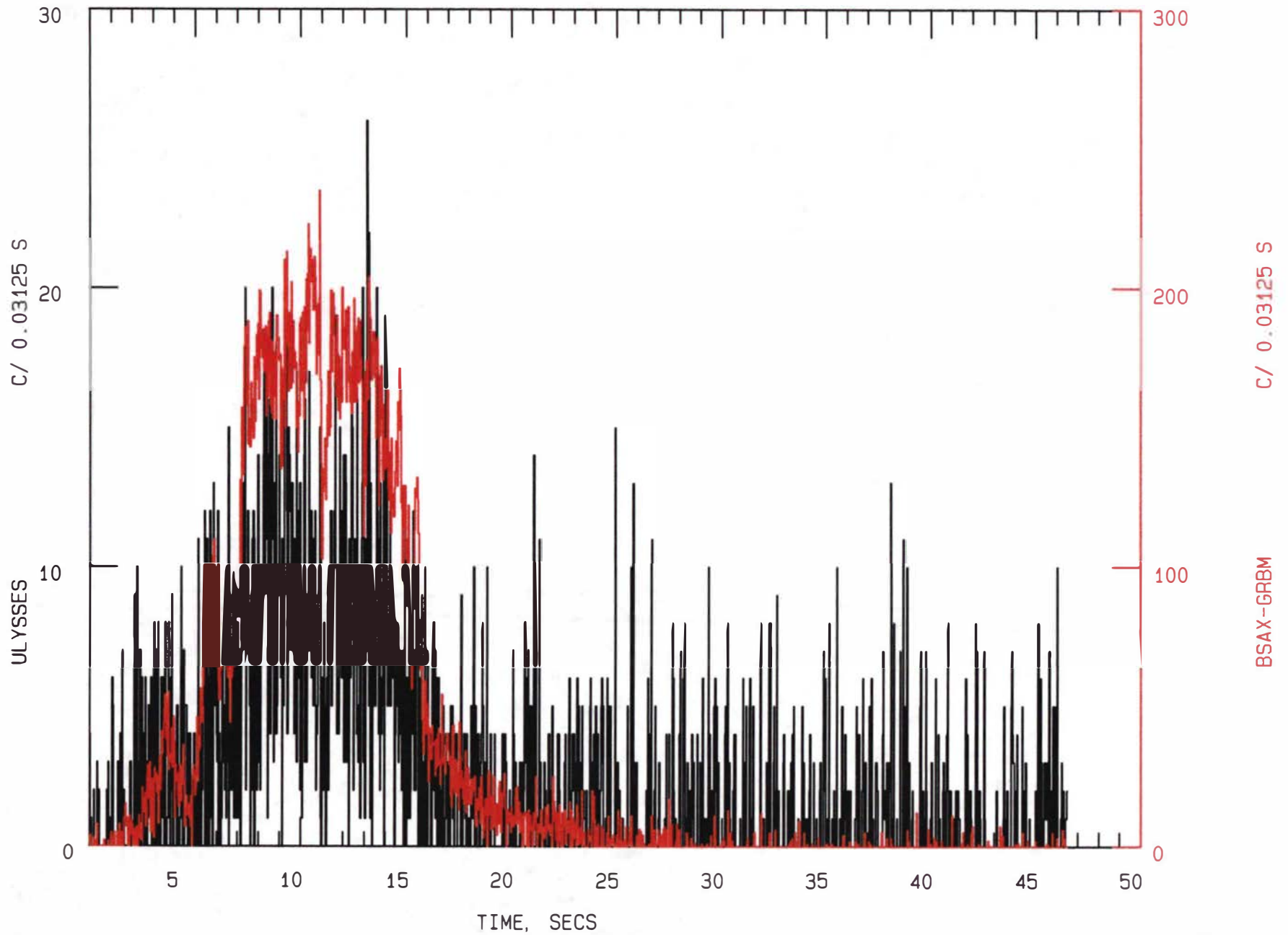
2 SAX

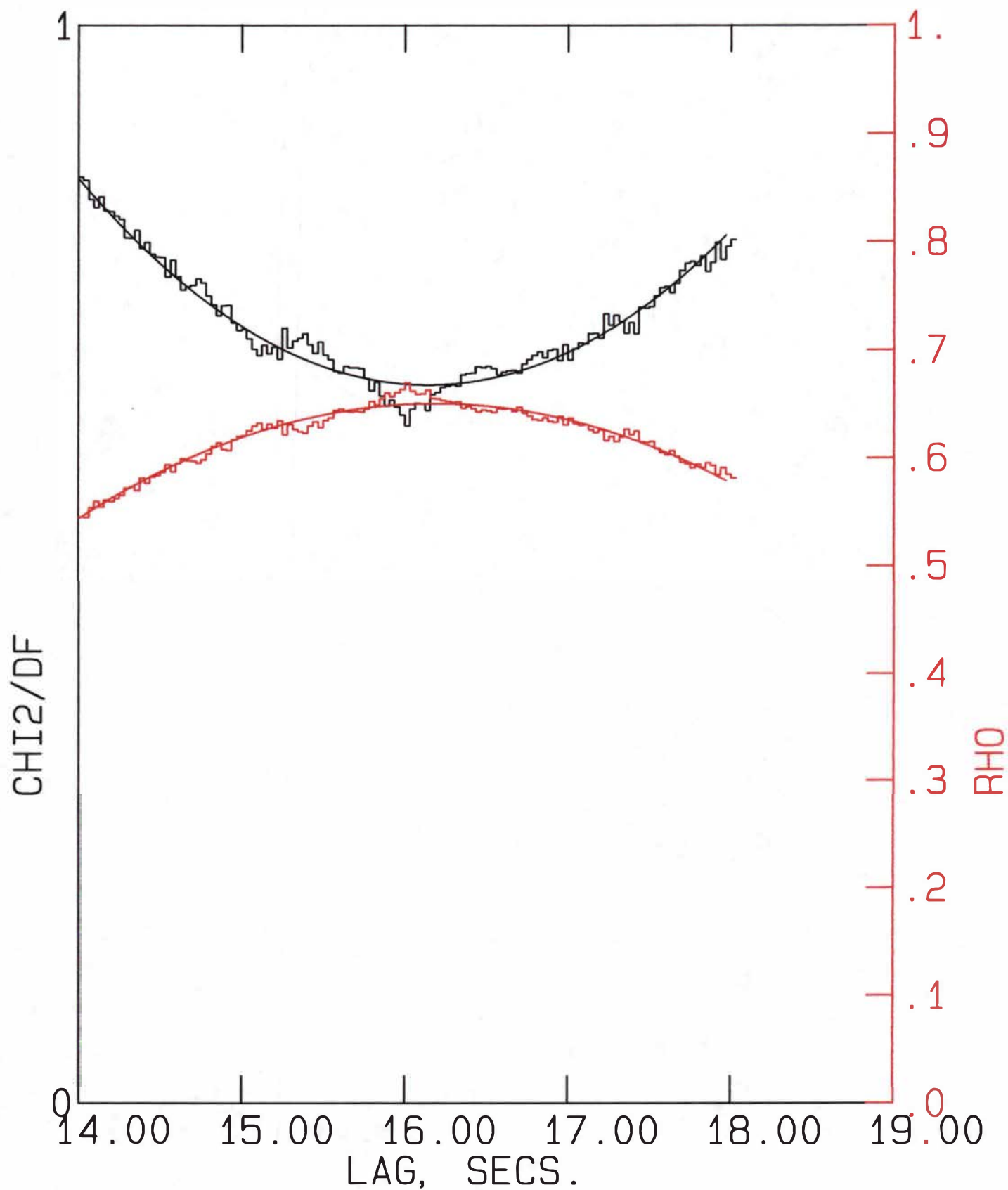
DECLINATION

EVENT OF MAR 29, 1998 3:20

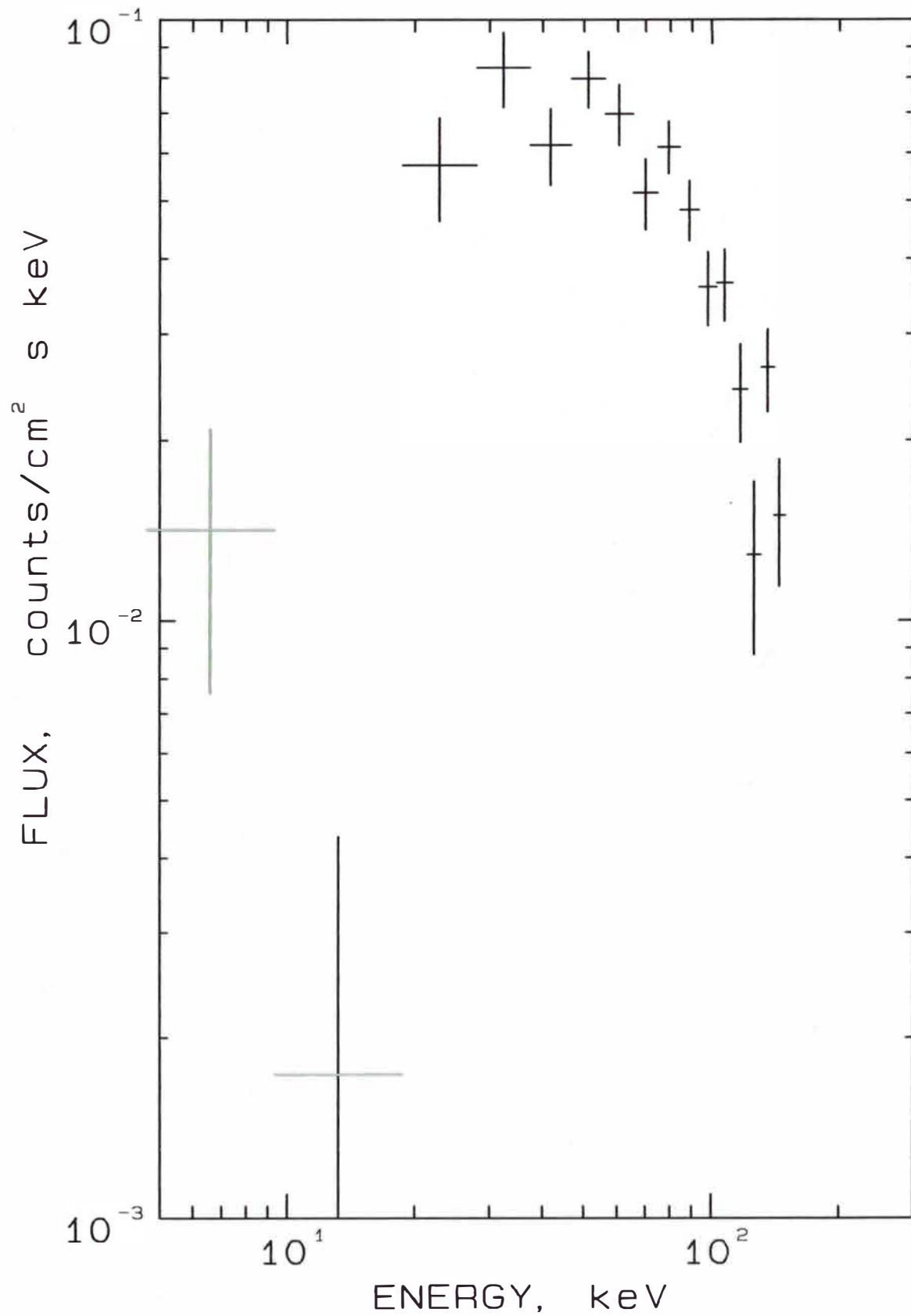
15 / 5/99





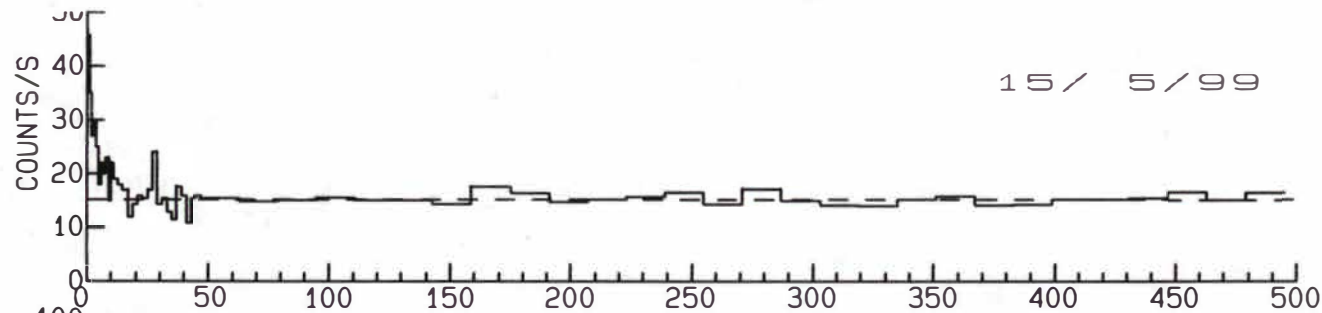


SPECTRUM INTEGRATED OVER 30.8 SECONDS, INTERVALS 2 TO 25

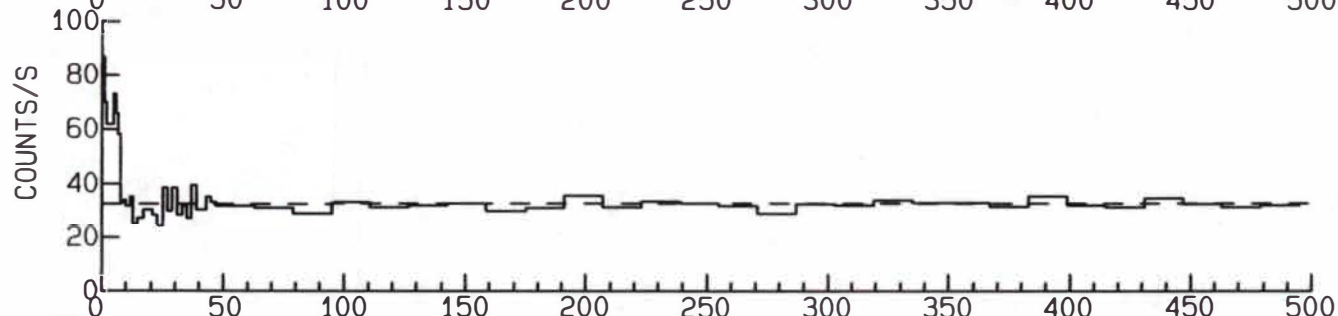


ULYSSES 29/03/98 12011.861 BURST SPECTRAL COUNT RATES

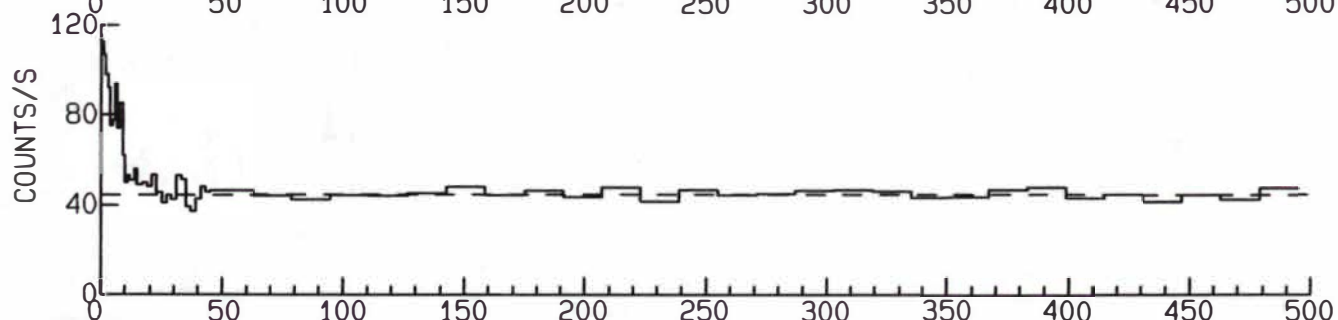
130-149 keV



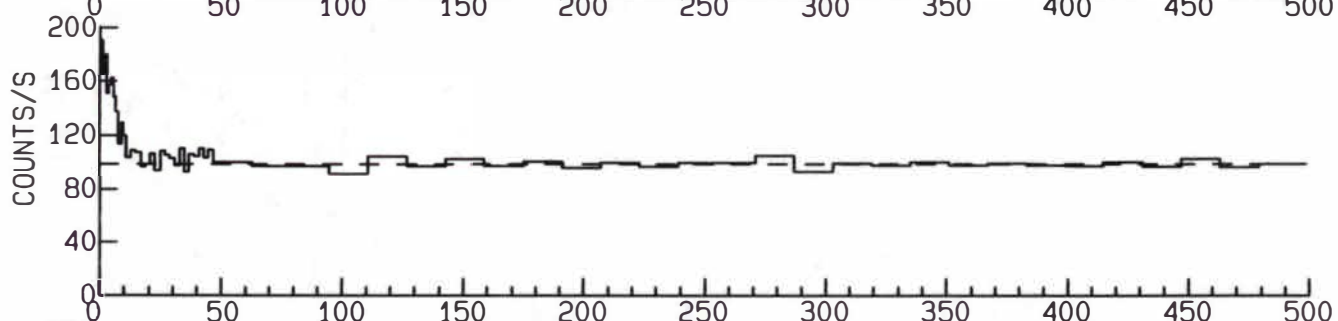
102-130 keV



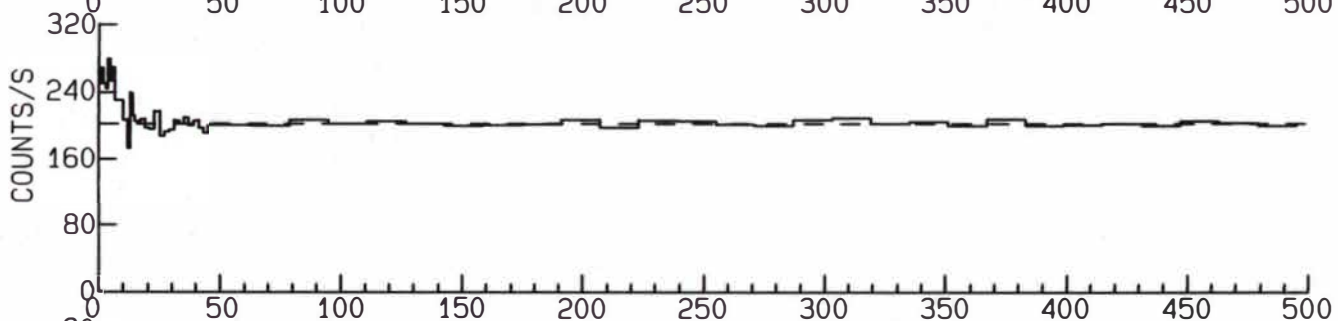
74-102 keV



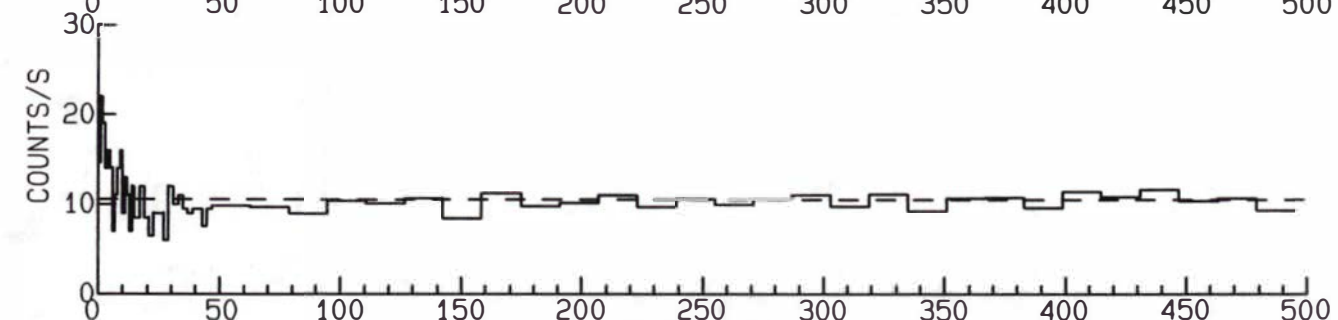
46-74 keV



18-46 keV



4-18 keV



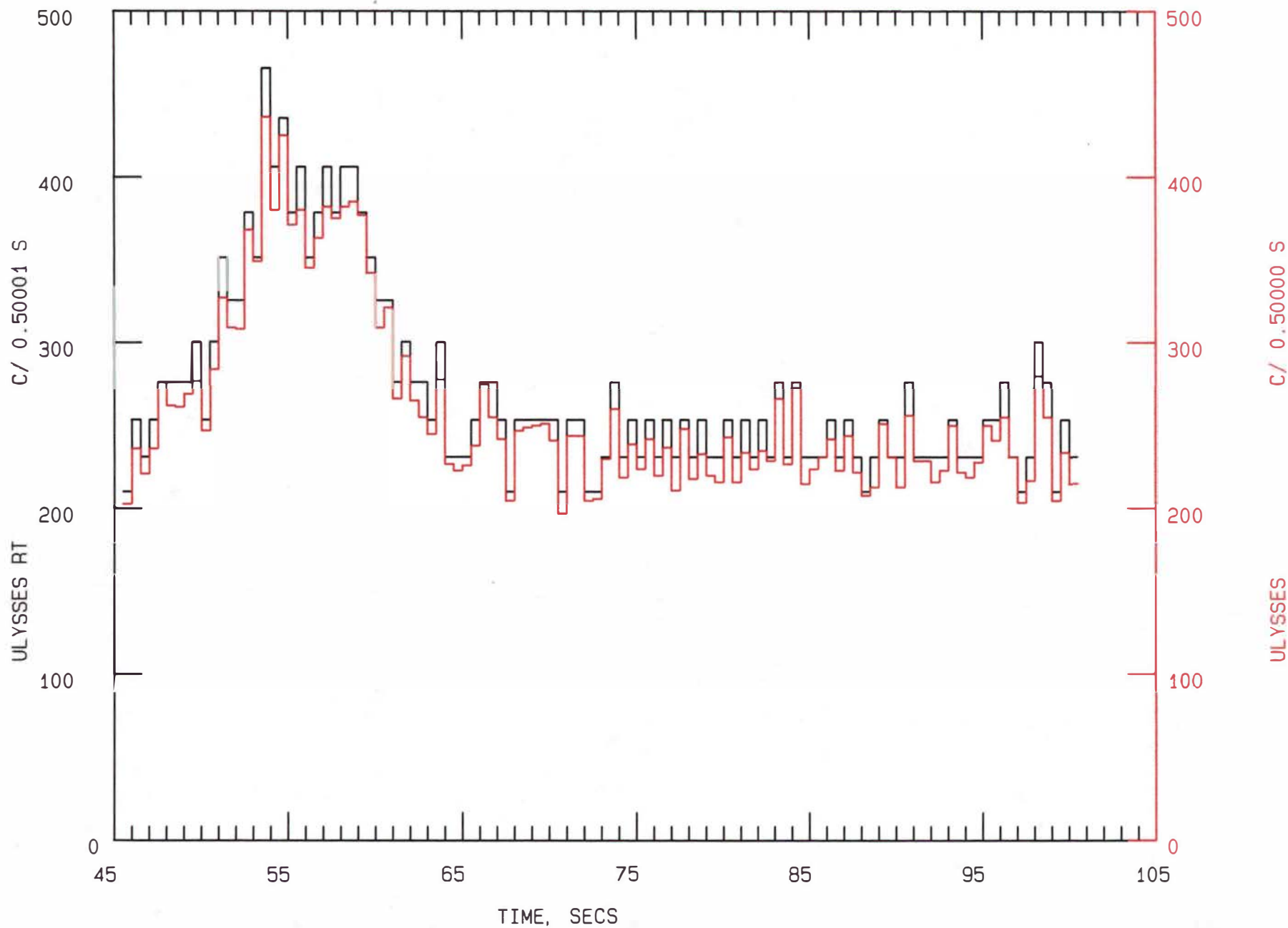
ULYSSES RT-ULYSSES

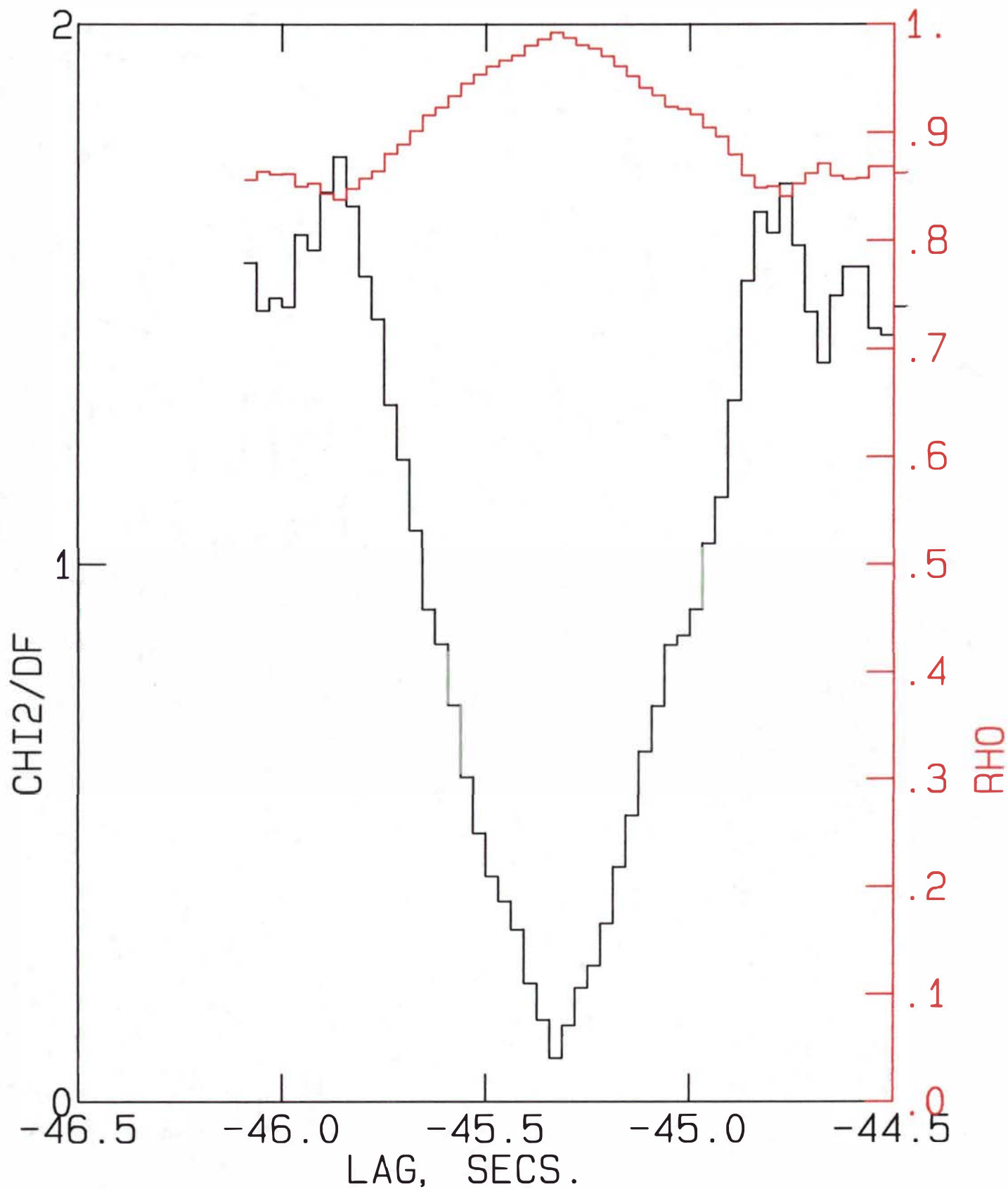
CORRELATION

29/ 3/98

11959.175

15/ 5/99



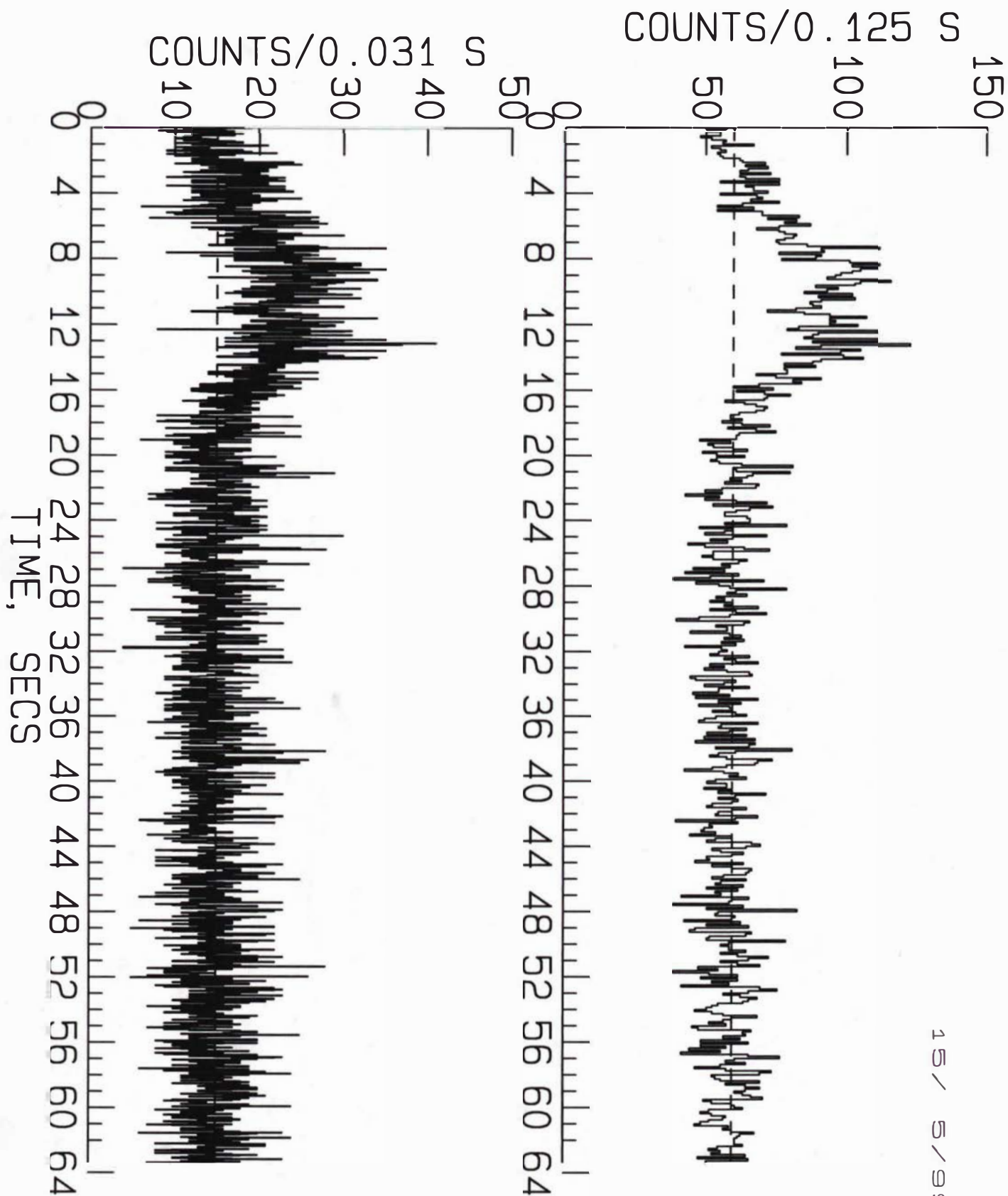


ULYSSES

29/03/98

Ttrig=12011.906

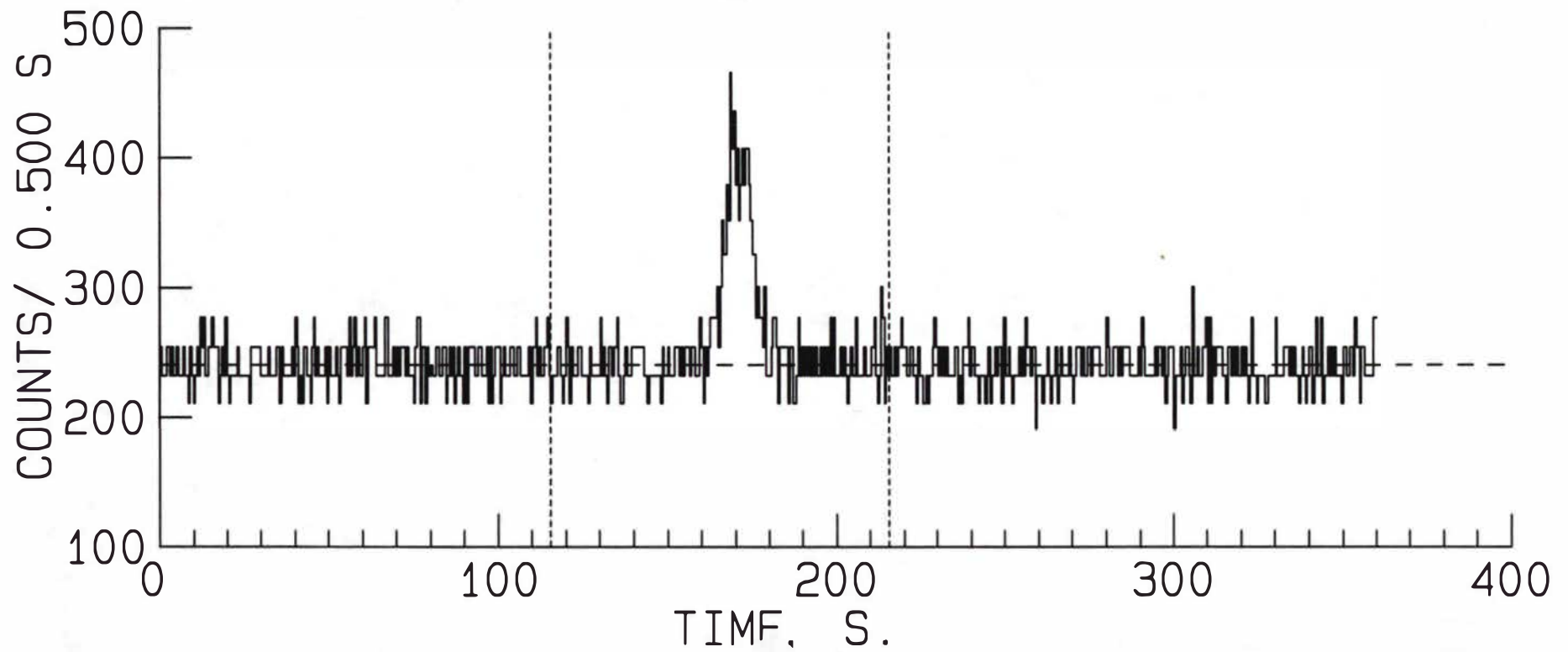
22- 149 keV



ULYSSES RT
29/ 3/98 11844.134 s
22- 149 keV

15/ 5/99

N= 10 M= 2
• >4.0 SIGMA FLUCTUATIONS



Helio corr removed from B-U Δ
21/2/00

Date: Aug 19 1998

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

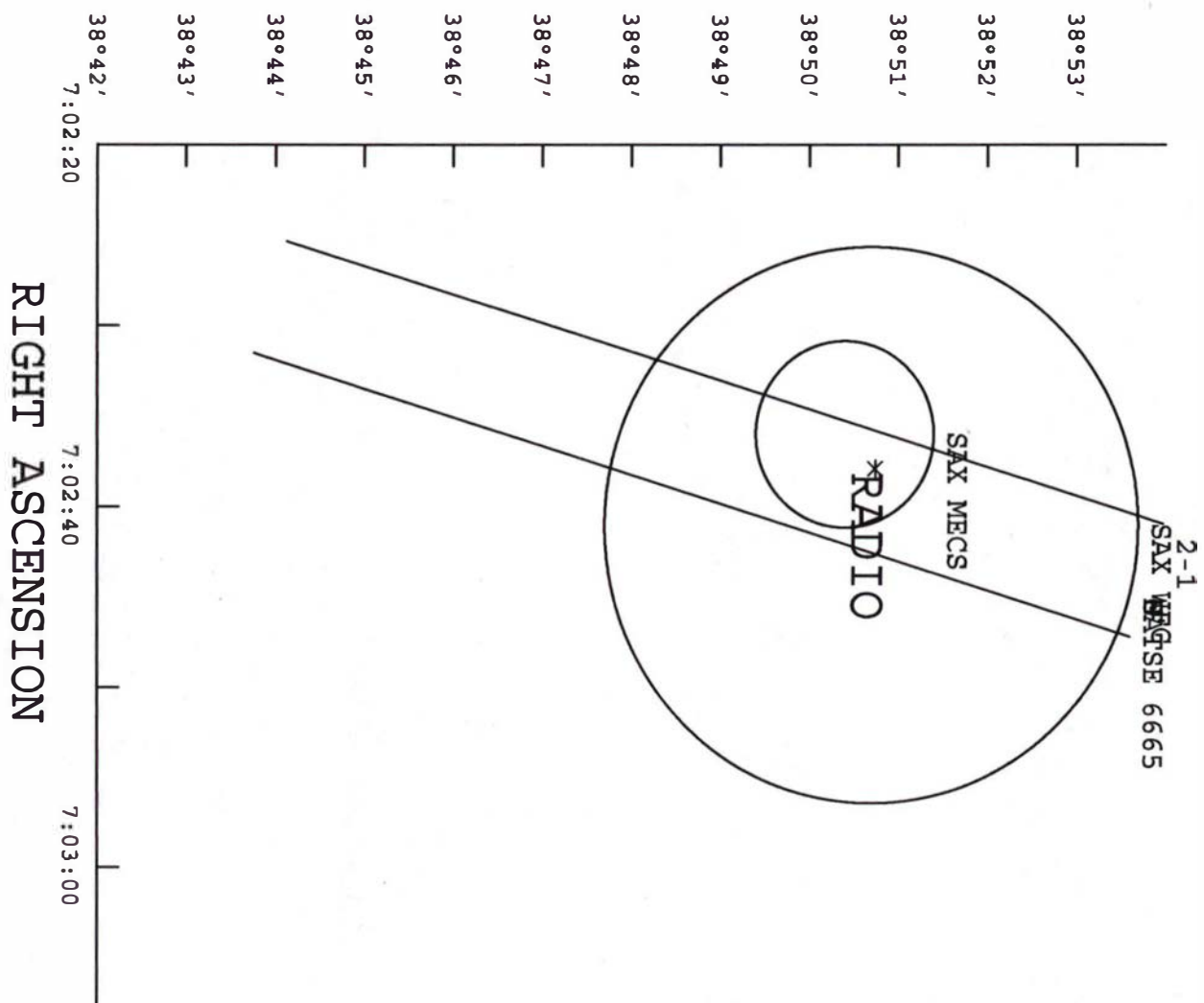
1 ULYSSES

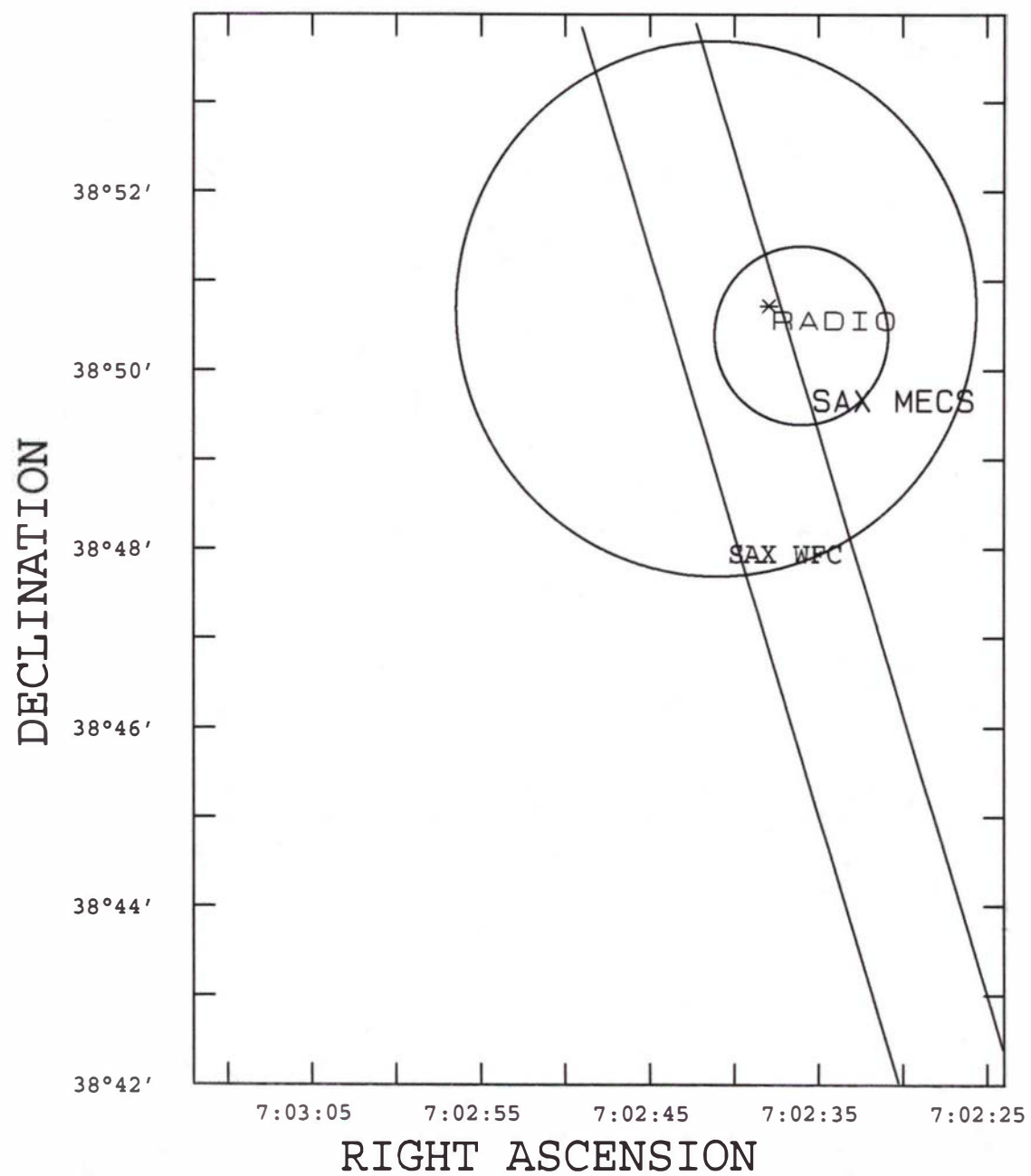
2 BATSE

DECLINATION

EVENT OF MAR 29, 1998 3:20

21/ 2/ 0

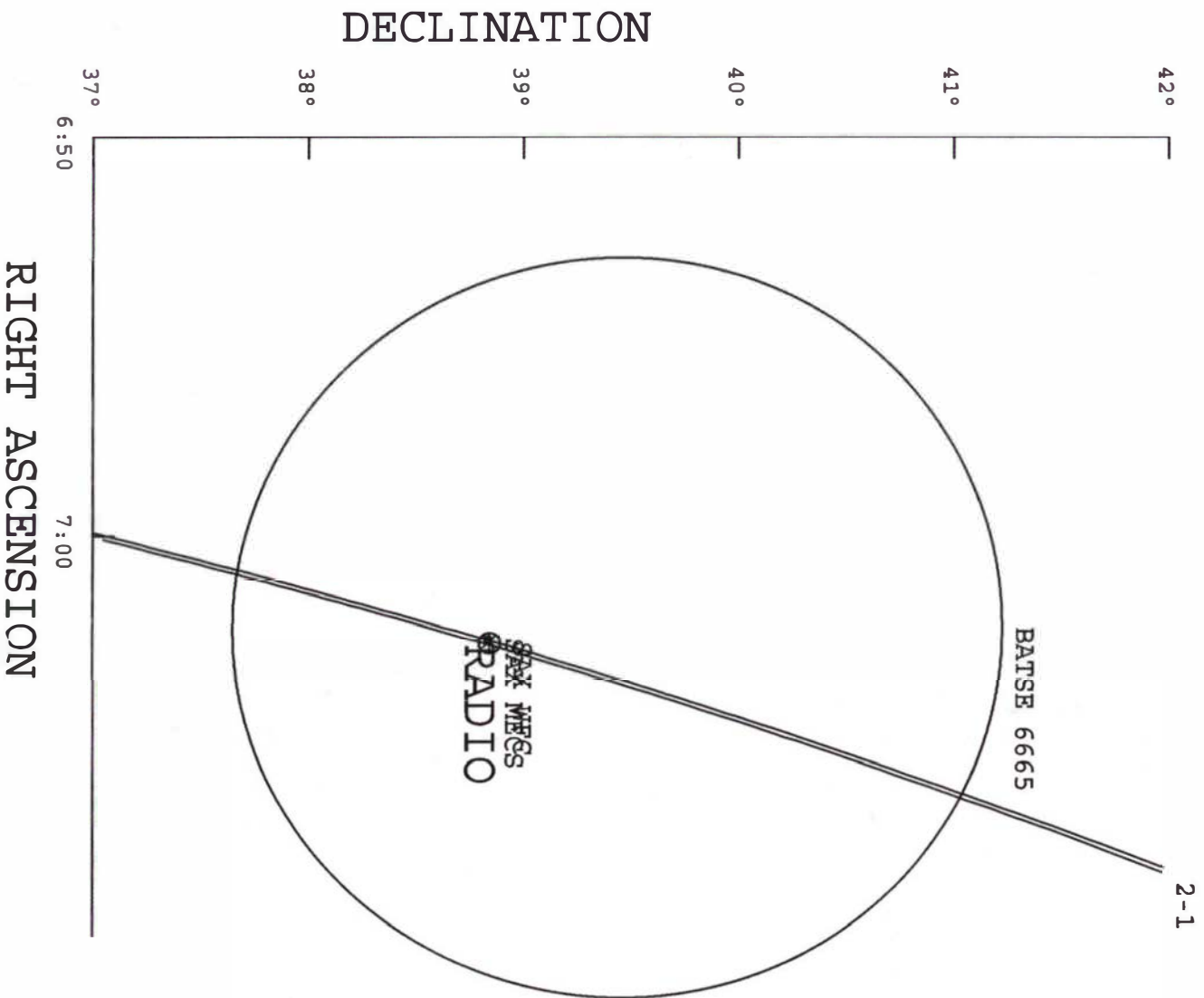




N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 ULYSSES 2 BATSE

EVENT OF MAR 29, 1998 3:20

19/ 8/98



ULYSSES

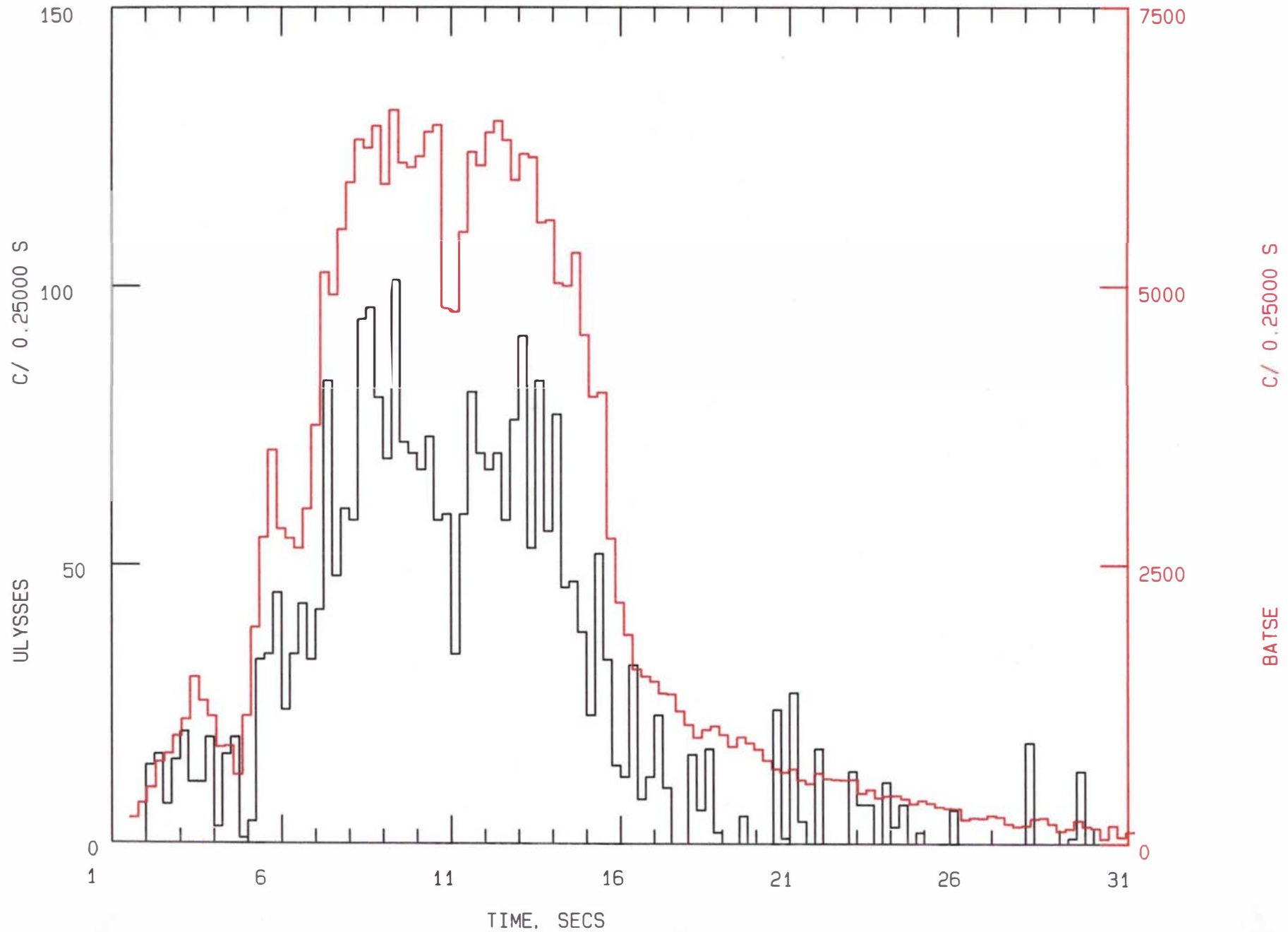
-BATSE

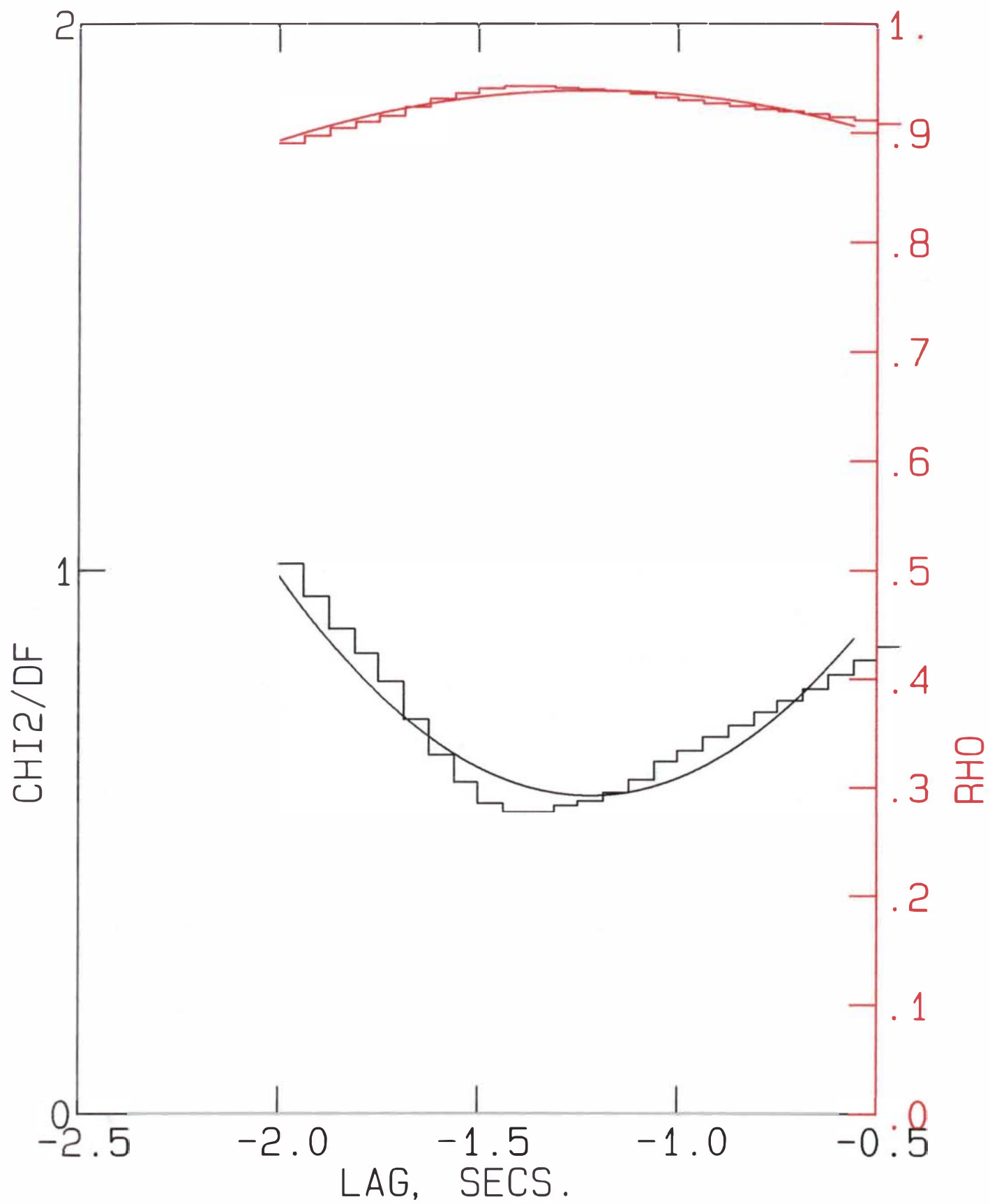
CORRELATION

29/03/98

12011.770

19/ 8/98





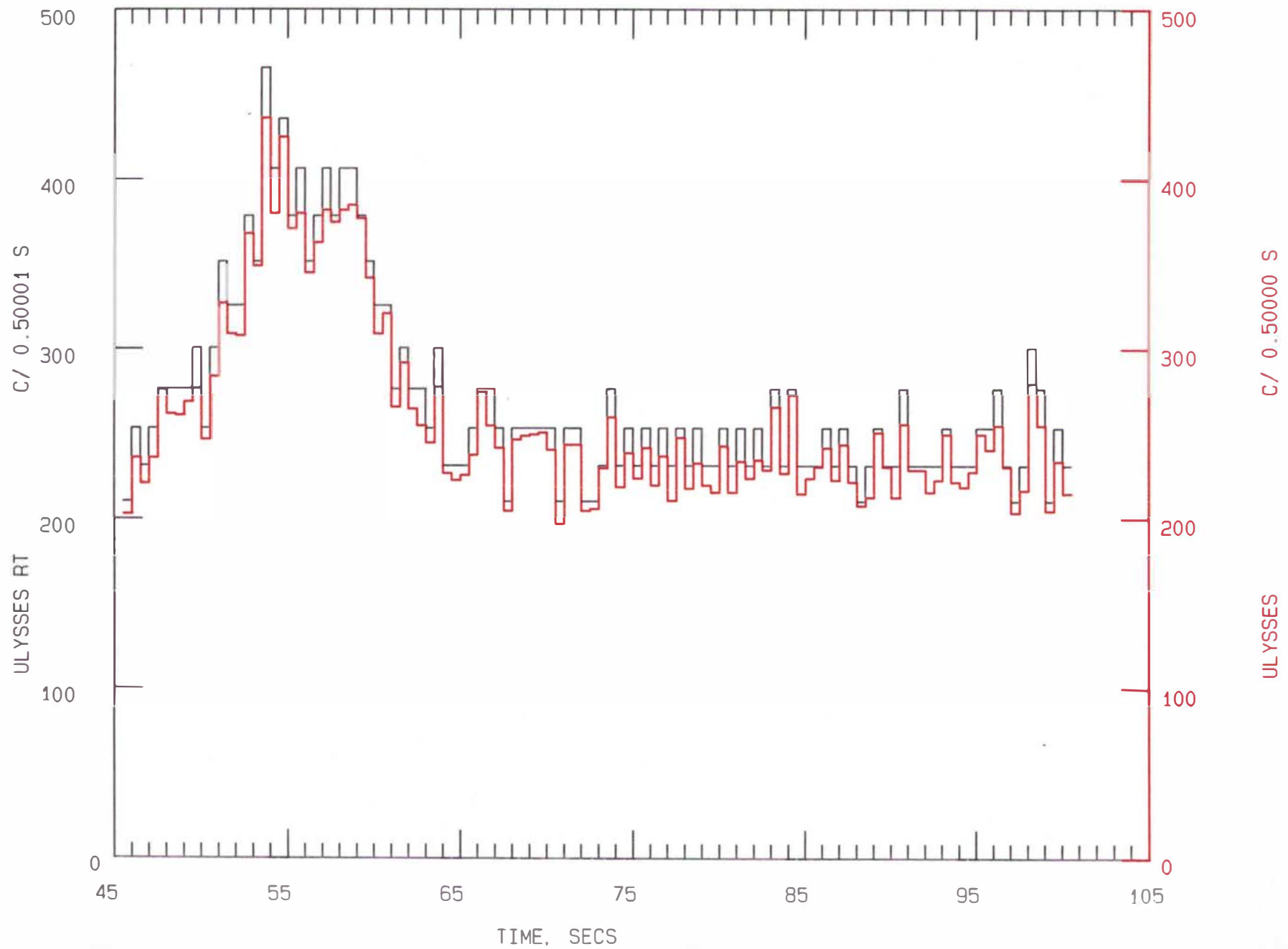
ULYSSES RT-ULYSSES

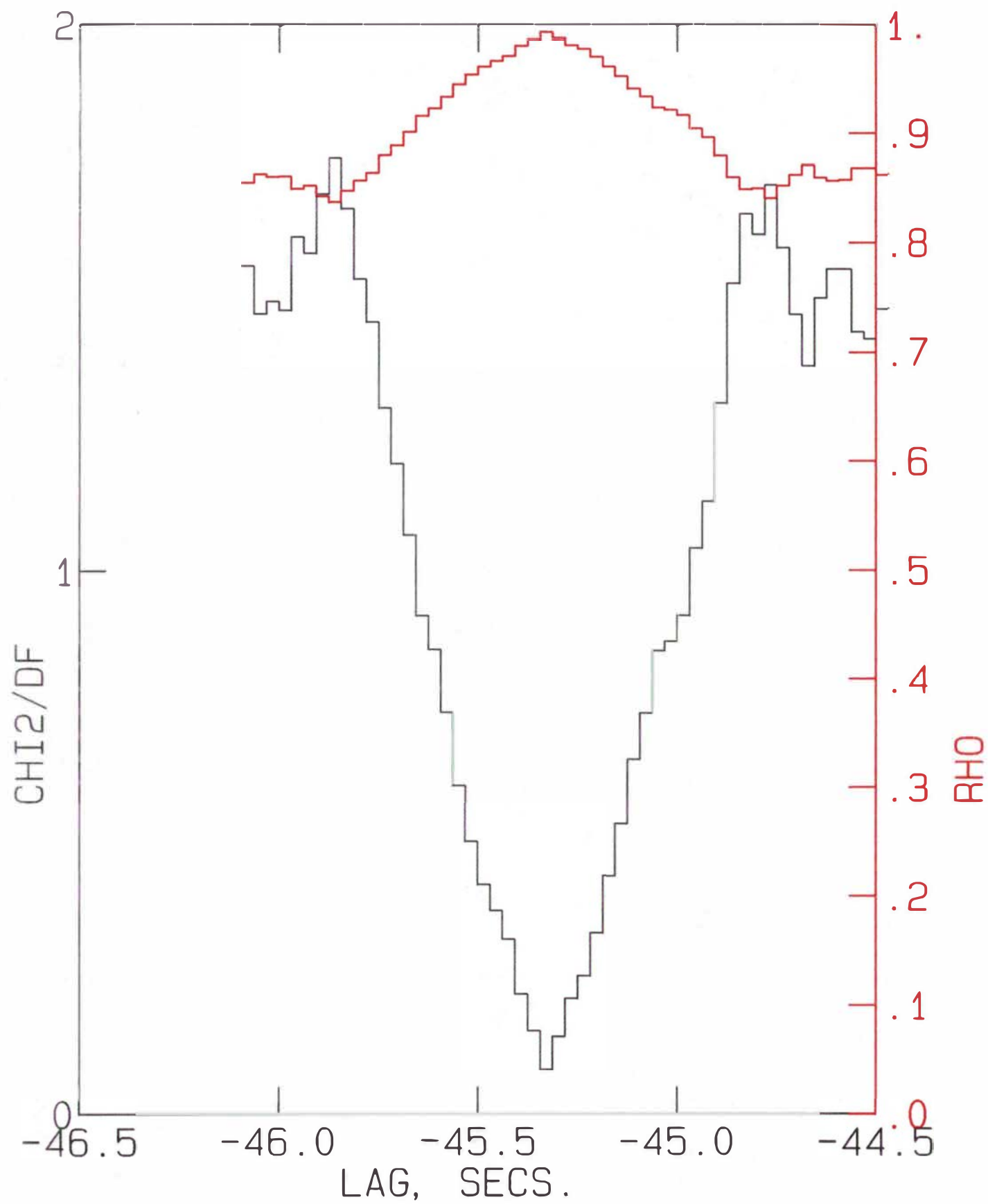
CORRELATION

29/ 3/98

11959.039

3/ 8/98

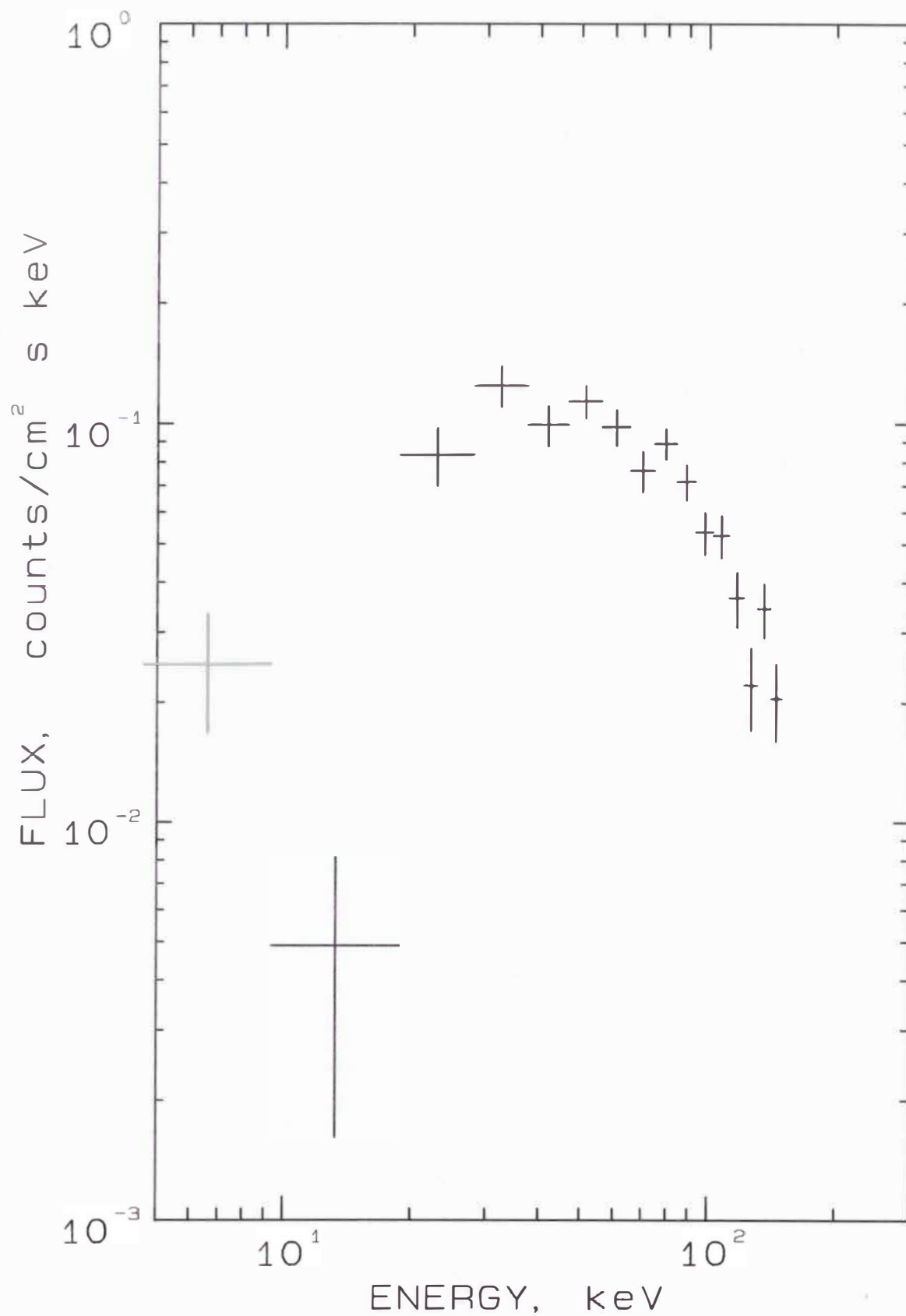




ULYSSES 29/03/98 12011.861

3/ 8/98

SPECTRUM INTEGRATED OVER 20.8 SECONDS, INTERVALS 2 TO 20



ULYSSES 29/03/98 12011.861 BURST SPECTRAL COUNT RATES

4- 18 keV

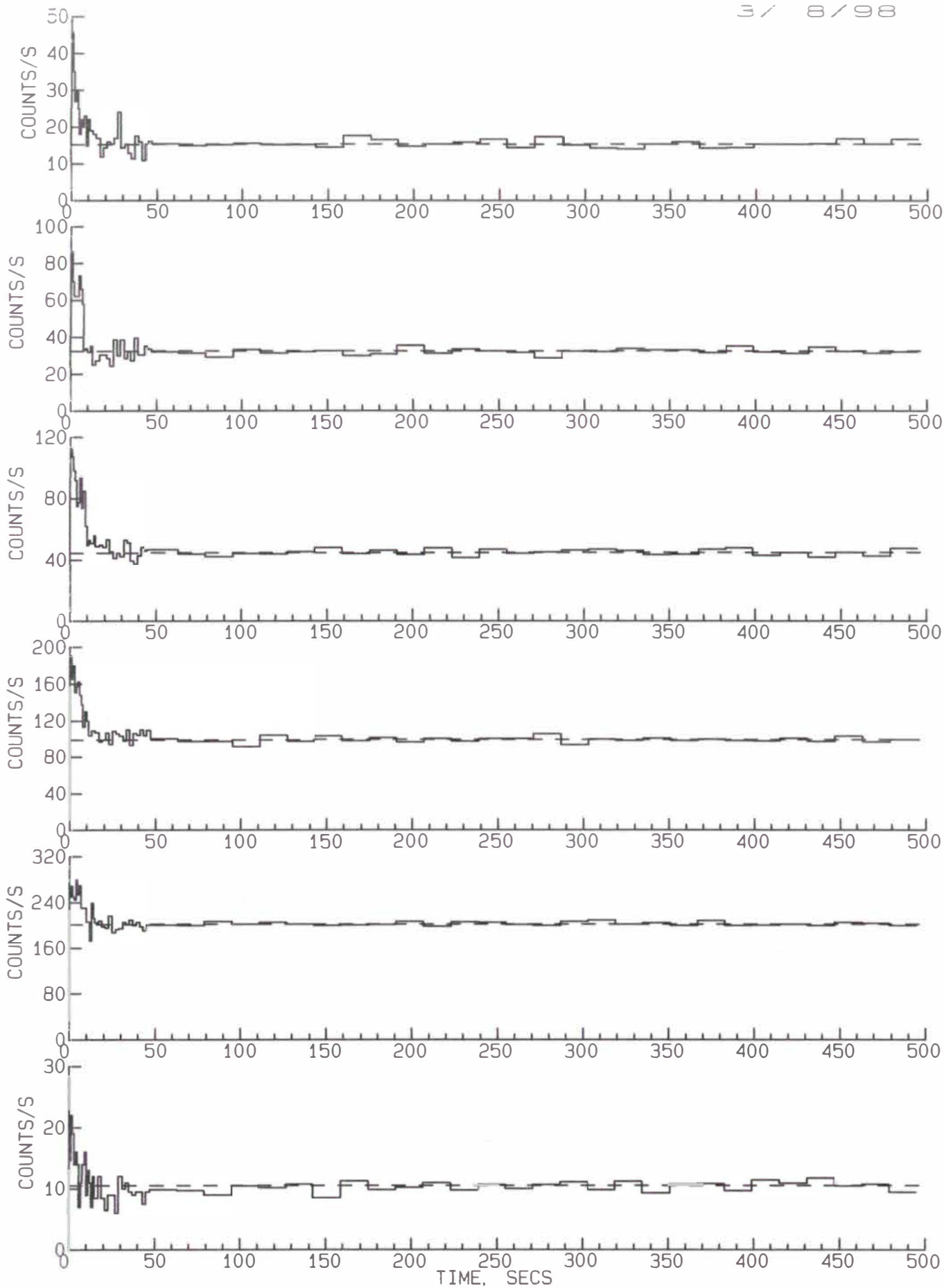
18- 46 keV

46- 74 keV

74-102 keV

102-130 keV

130-149 keV



3 / 8 / 98

ULYSSES

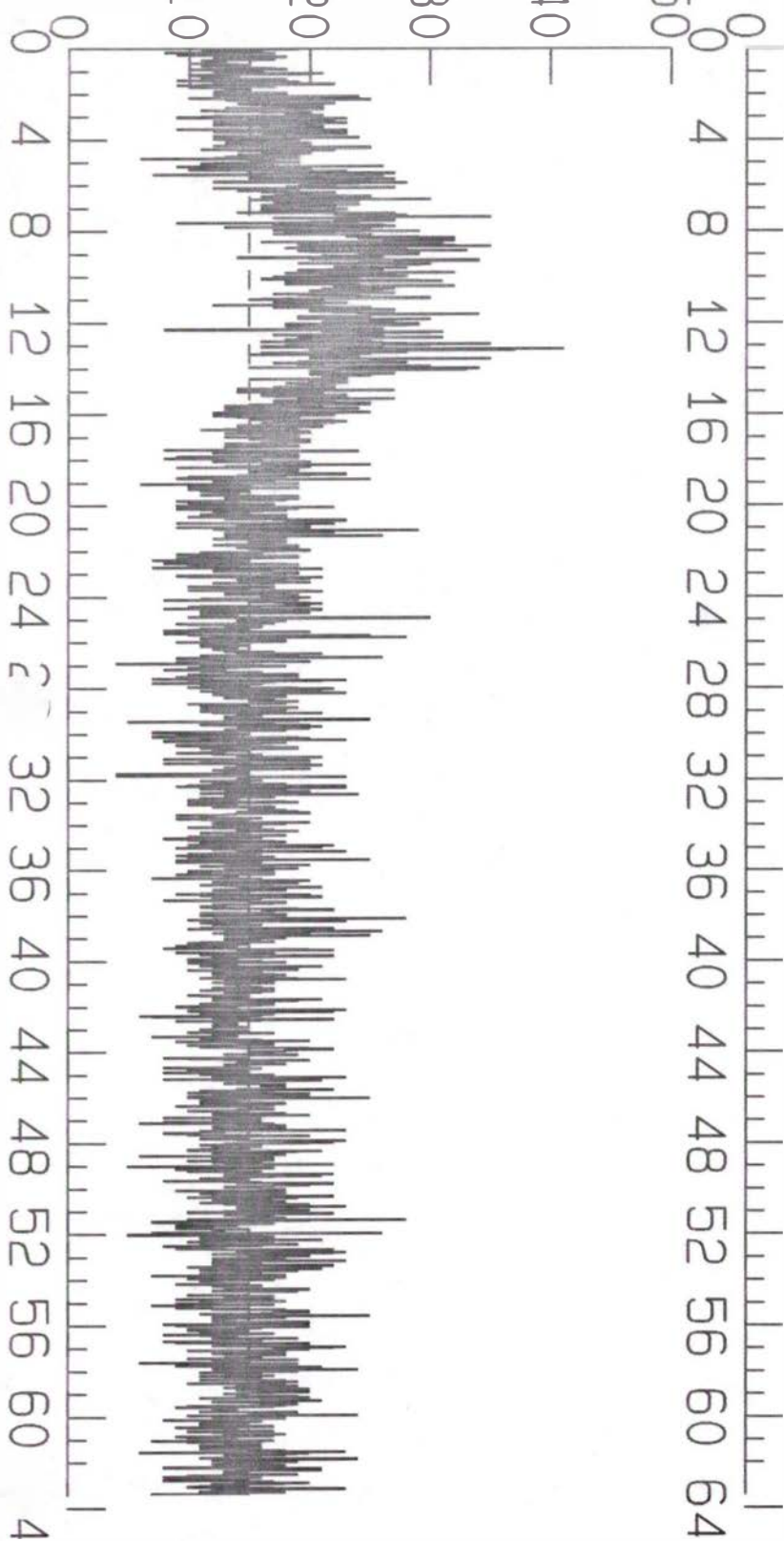
29/03/98

Ttriq=12011.770

22- 149 keV

COUNTS/0.031 S

COUNTS/0.125 S



ULYSSES RT

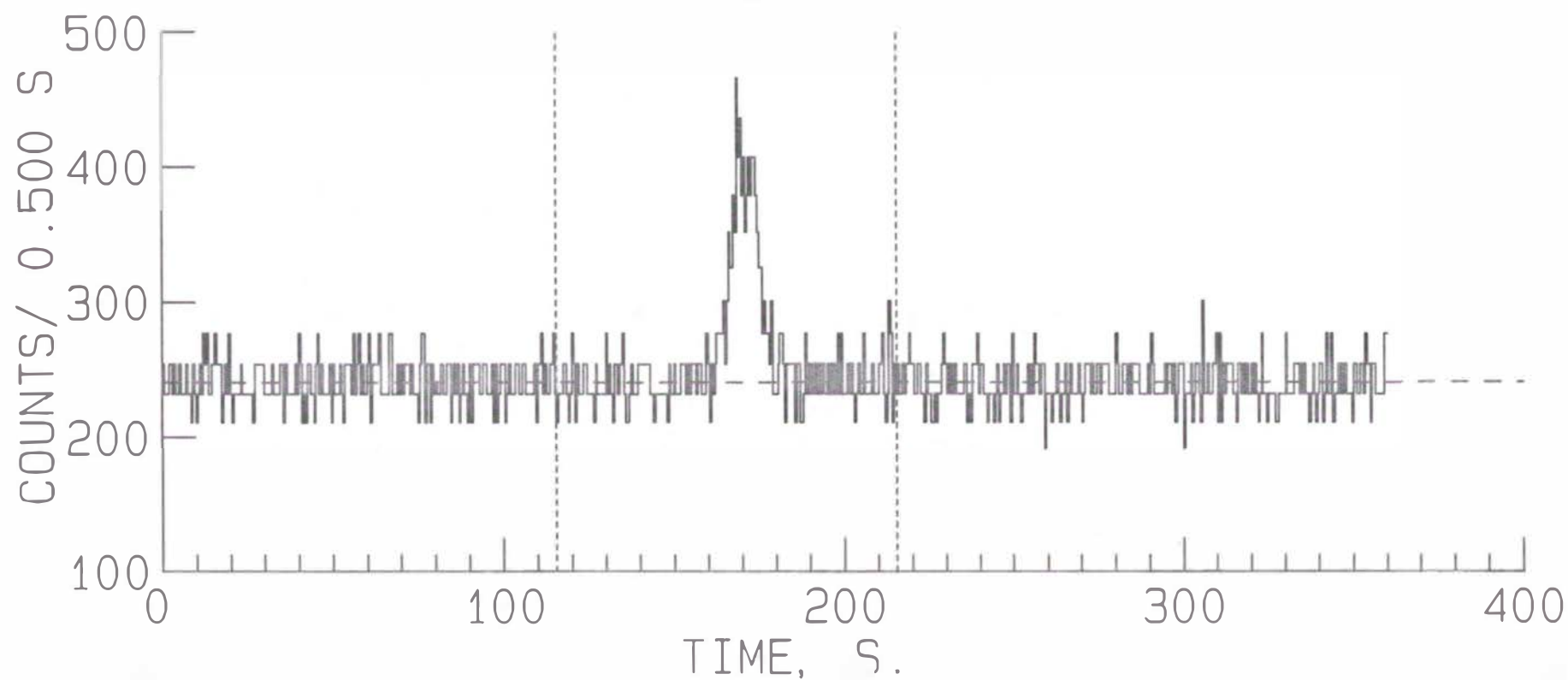
3 / 8 / 98

29 / 3 / 98 11844.134 s

22 - 149 keV

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



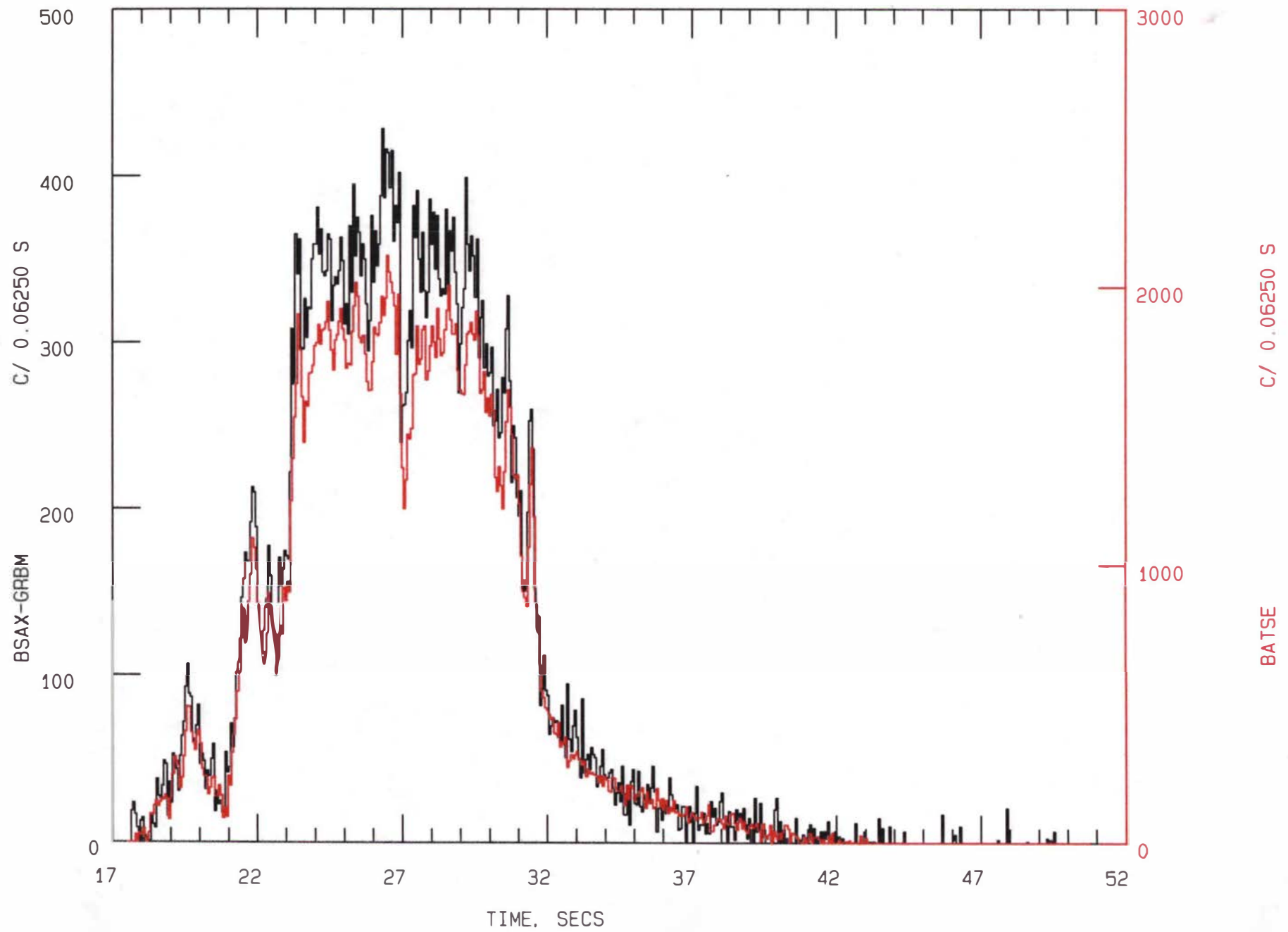
BSAX-GRBM -BATSE²⁺³

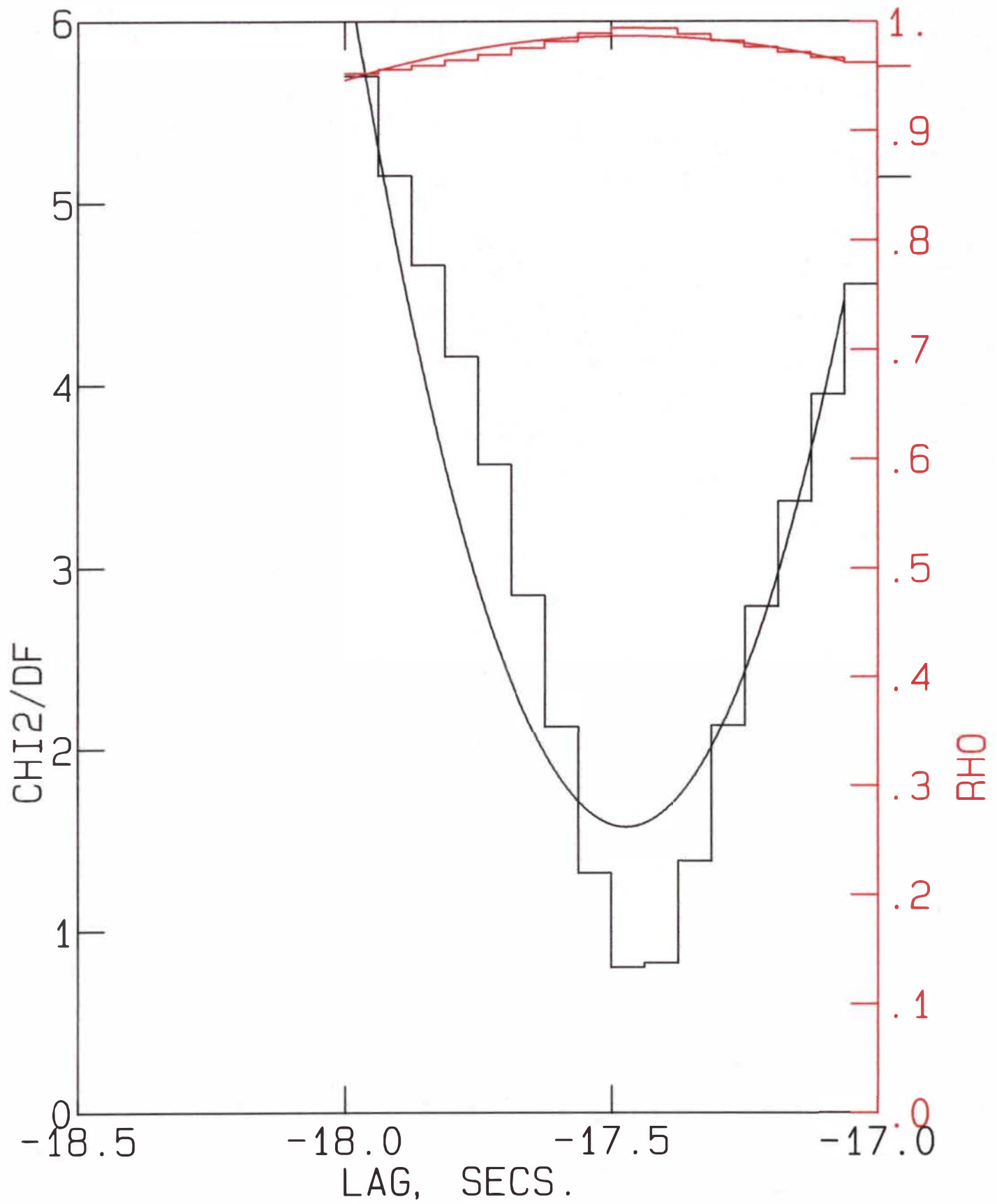
CORRELATION

29/03/98

13459.070

22/ 4/98





BATSE

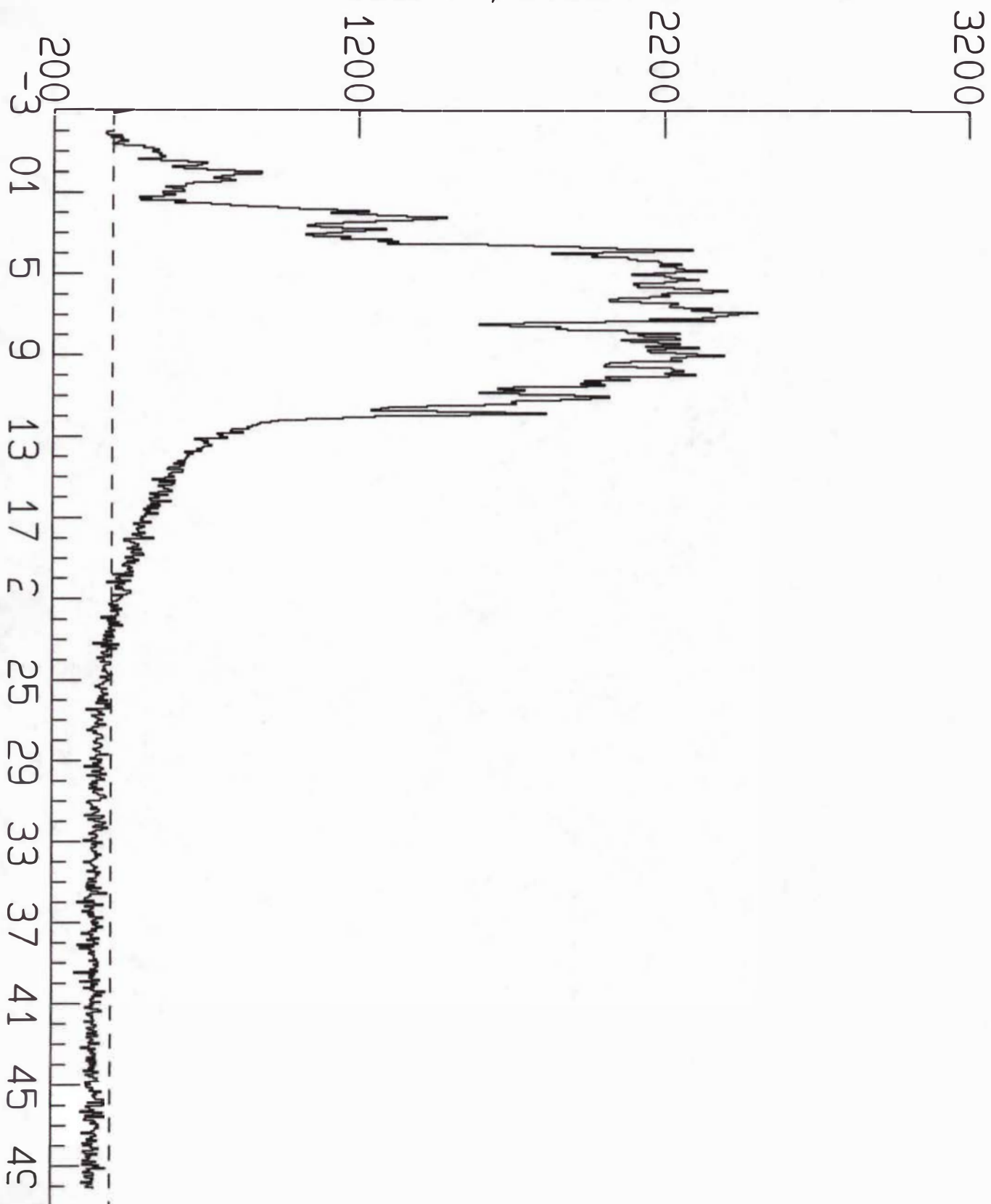
29/03/98

13478.497

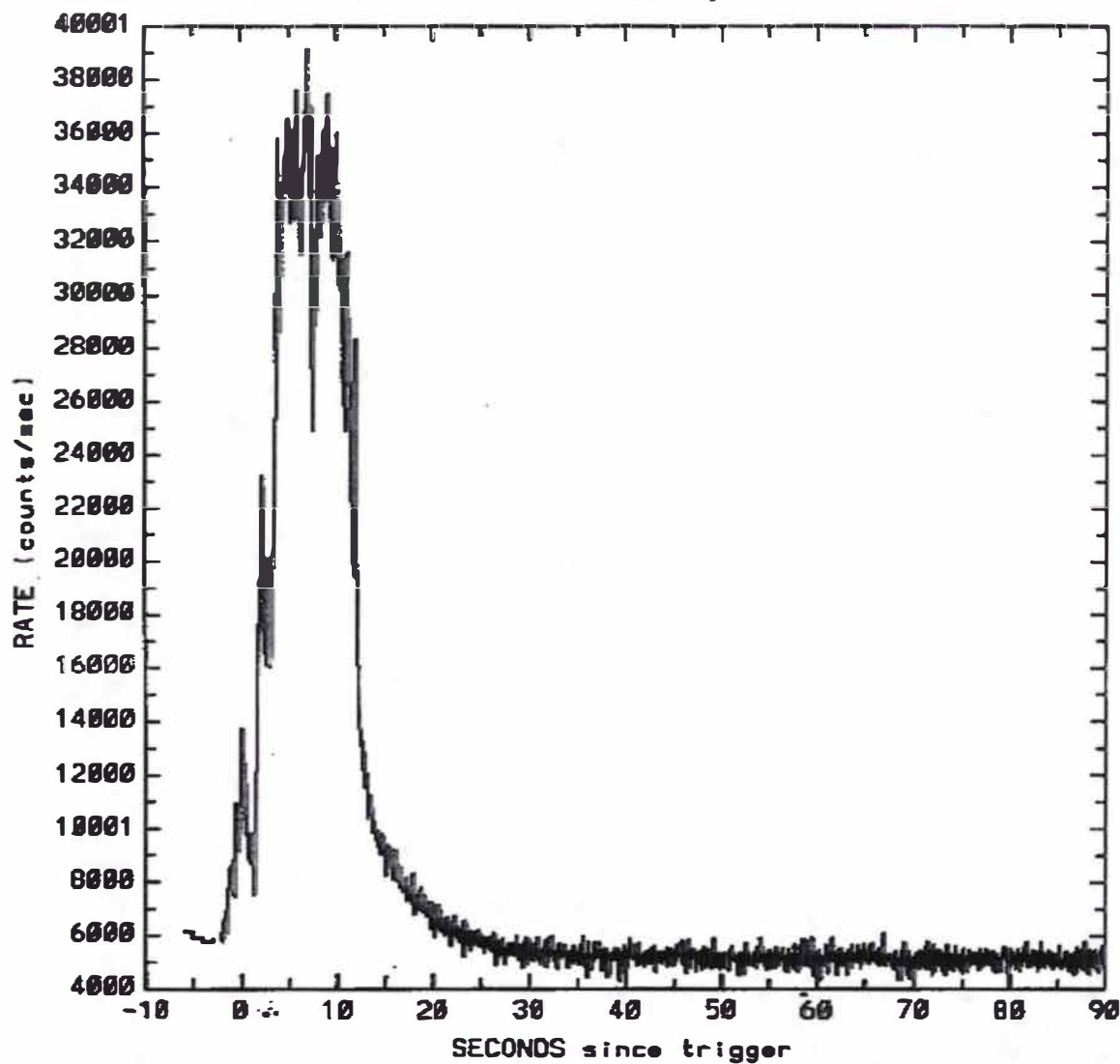
~~25 - 100~~ keV

~~50 - 300~~

COUNTS/0.064 S



DISCSC Data for K. Hurley. No. 6665



17-APR-1998 14:55:18

Created by MOPS BD
(Burst Display)
Version 12.25

Trigger #: 6665

Trigger Time:
18901 / 13478.497Burst Data Type:
DISCSCDeadtime:
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors [7..8]:
-----2-8Discriminators:
(2 : 3)Quality Mask:
-S0ISP1

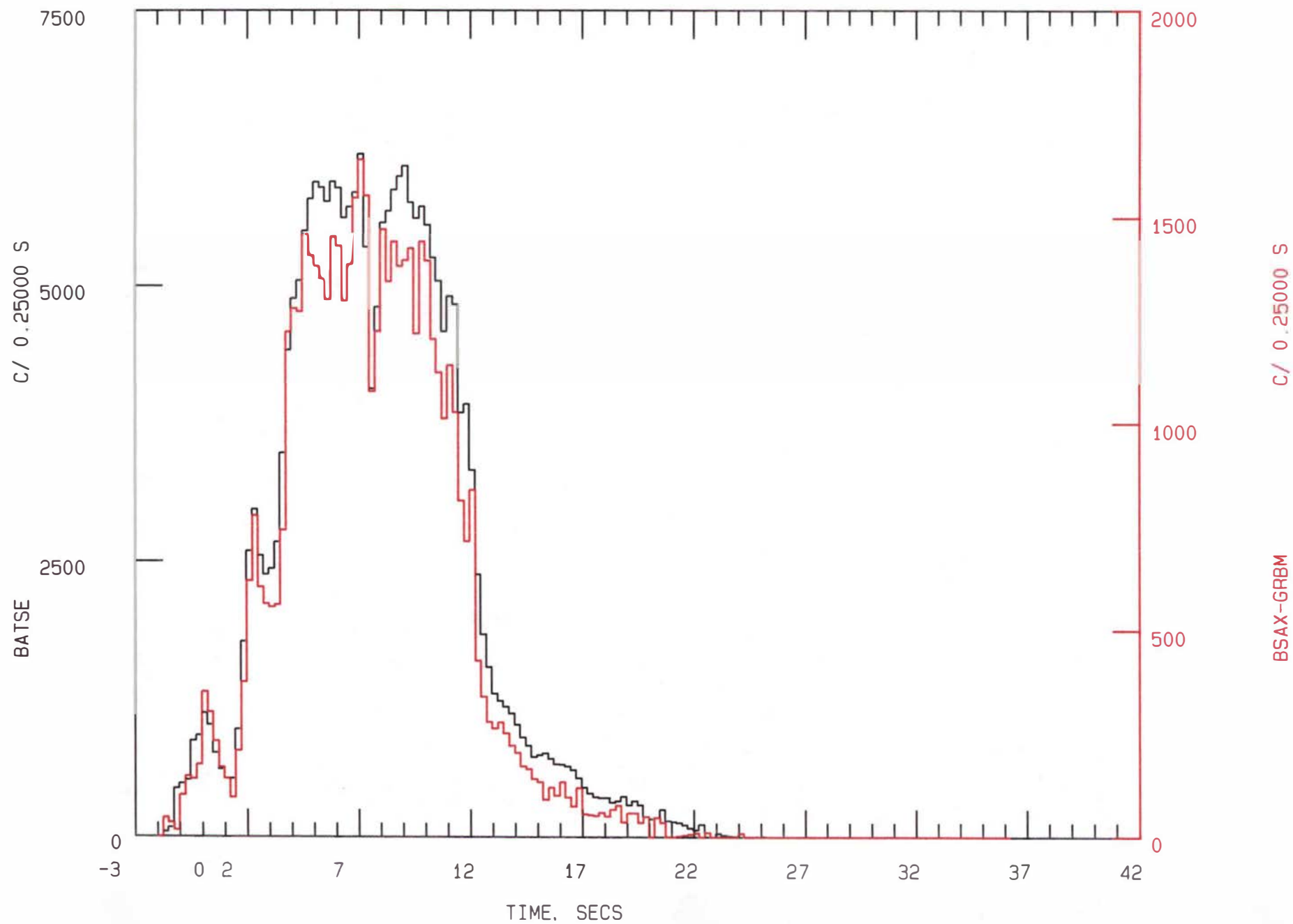
BATSE

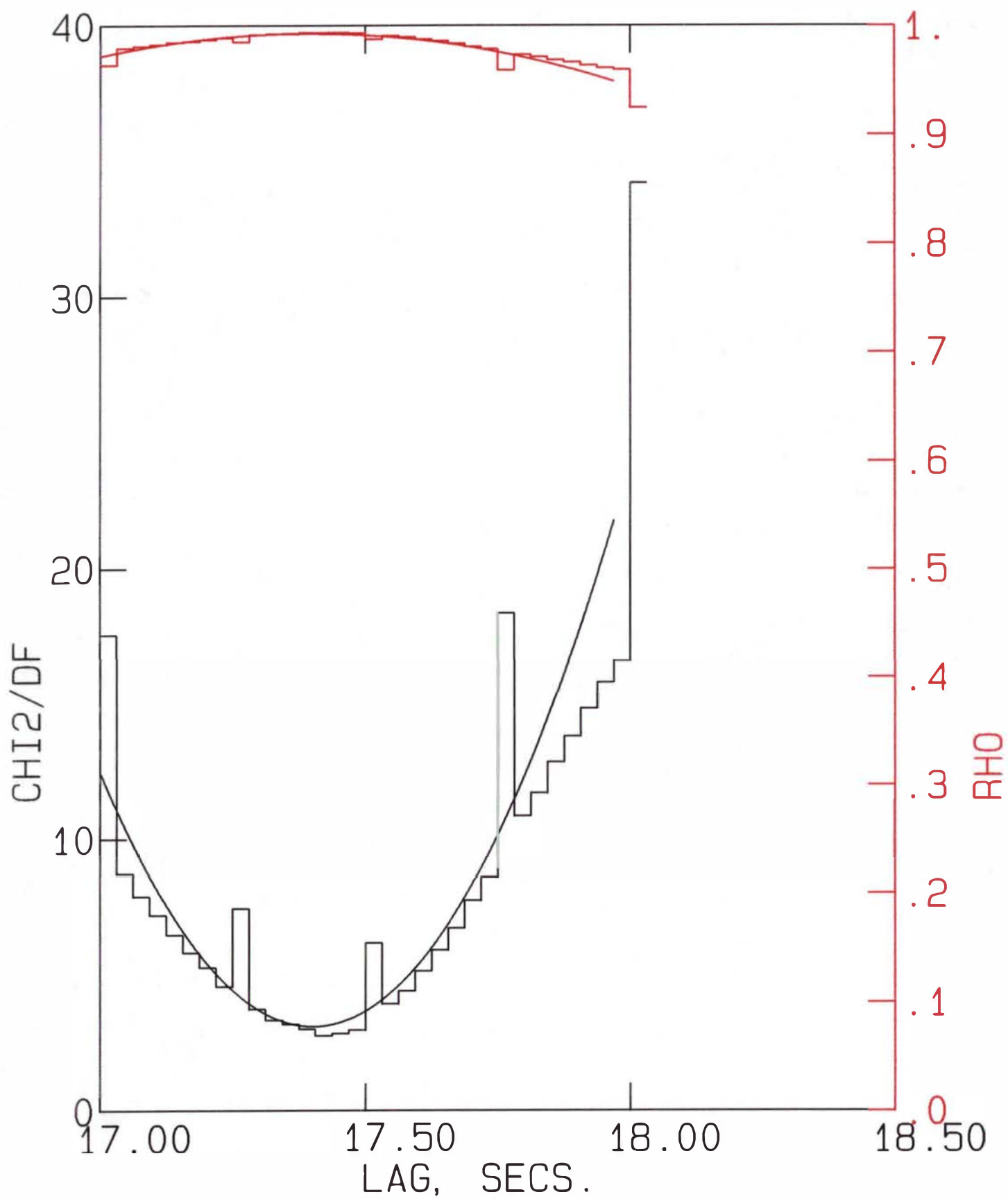
-BSAX-GRBM CORRELATION

29/ 3/98

13478.497

9/ 4/98





N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

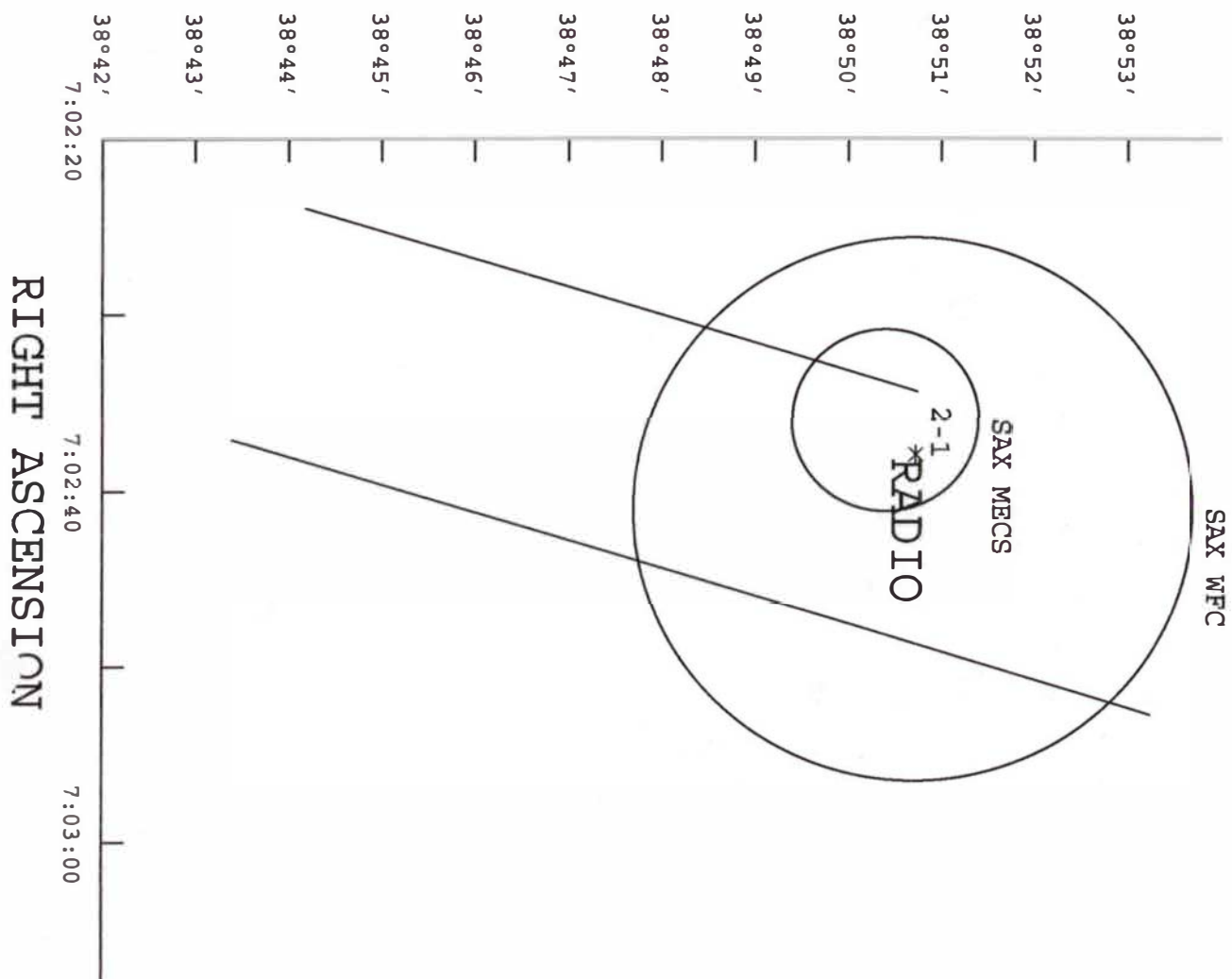
1 ULYSSES

2 BATSE

EVENT OF MAR 29, 1998 3:20

9 / 4 / 98

DECLINATION



ULYSSES

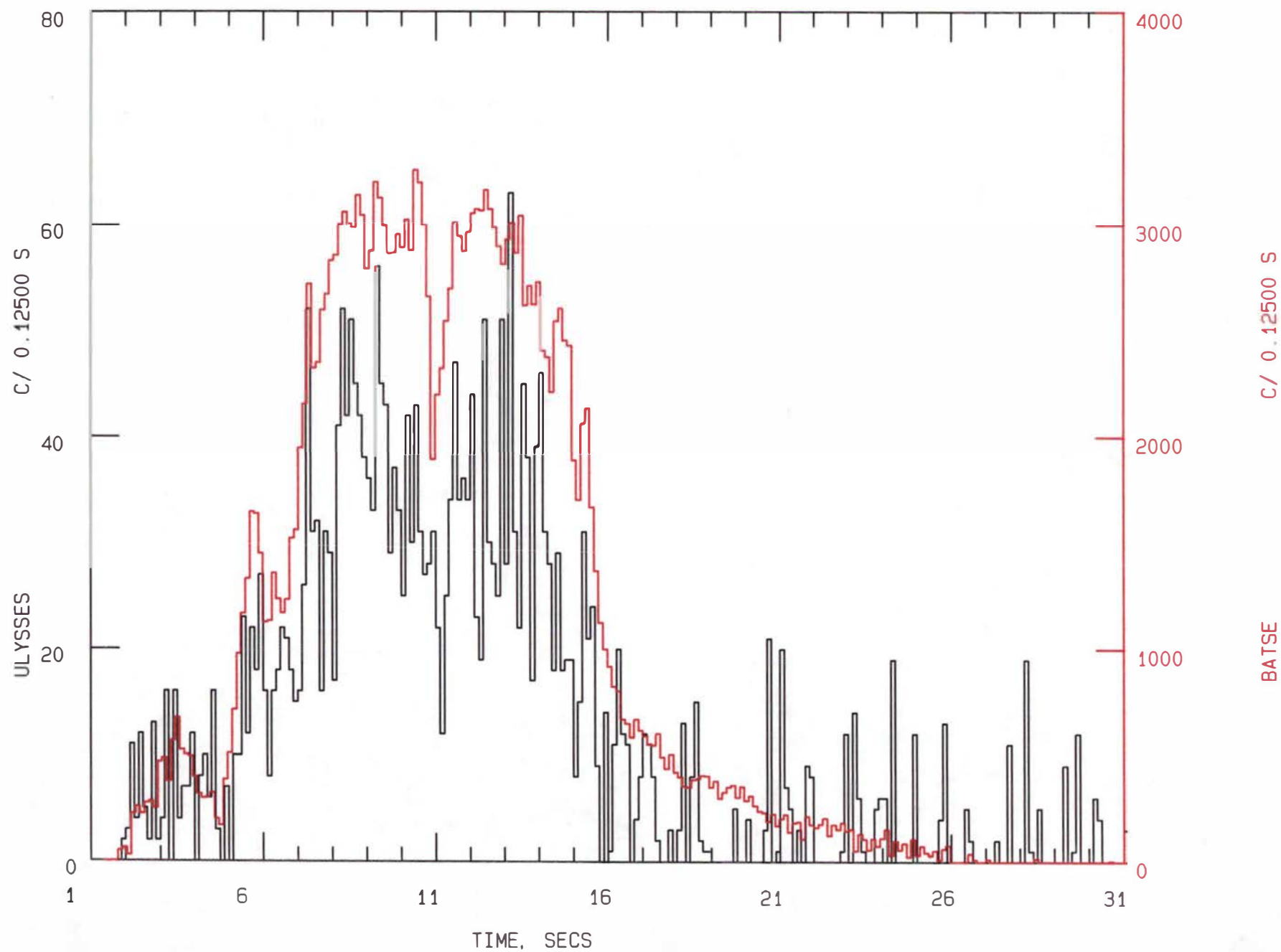
-BATSE

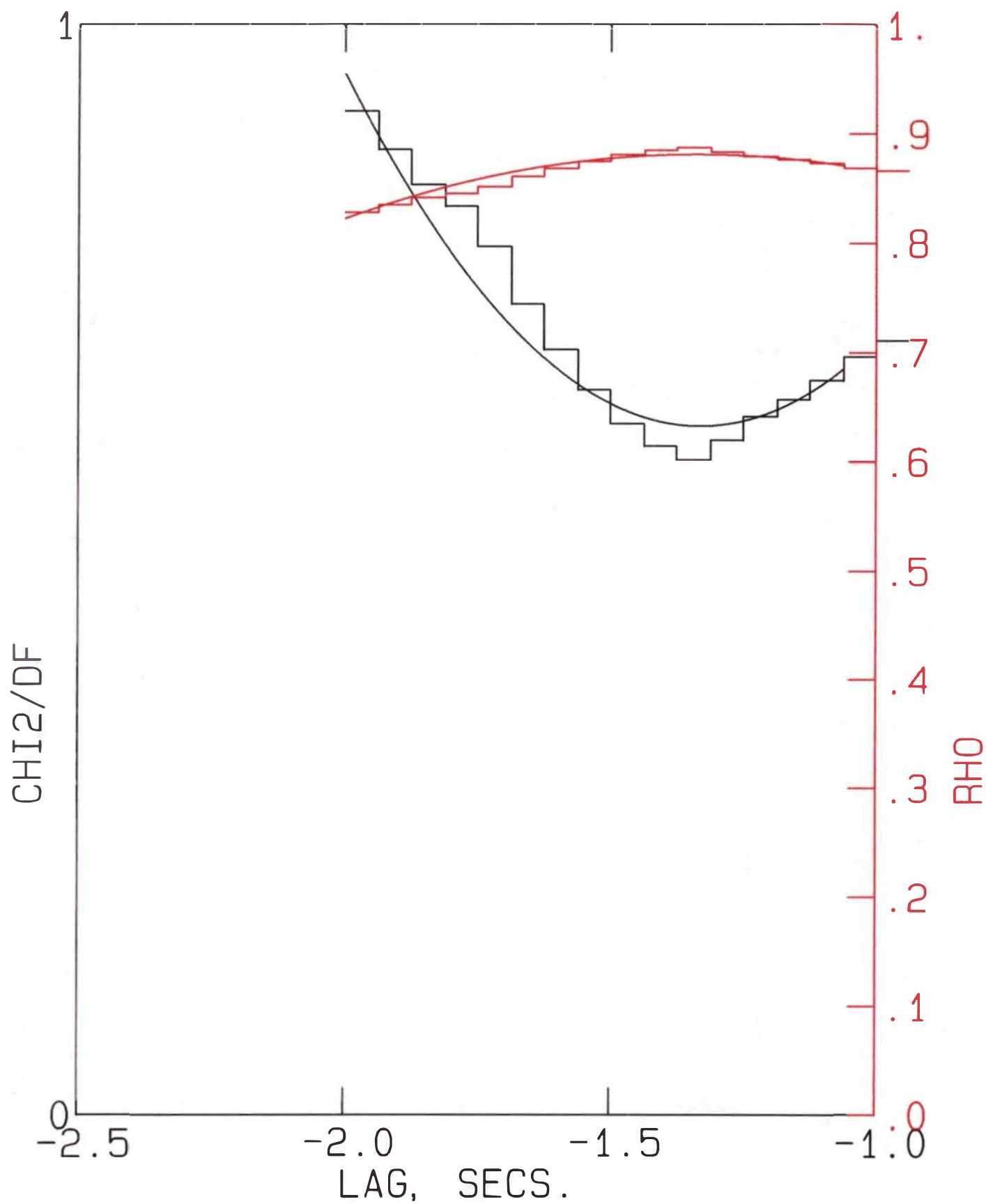
CORRELATION

29/03/98

12011.735

9/ 4/98





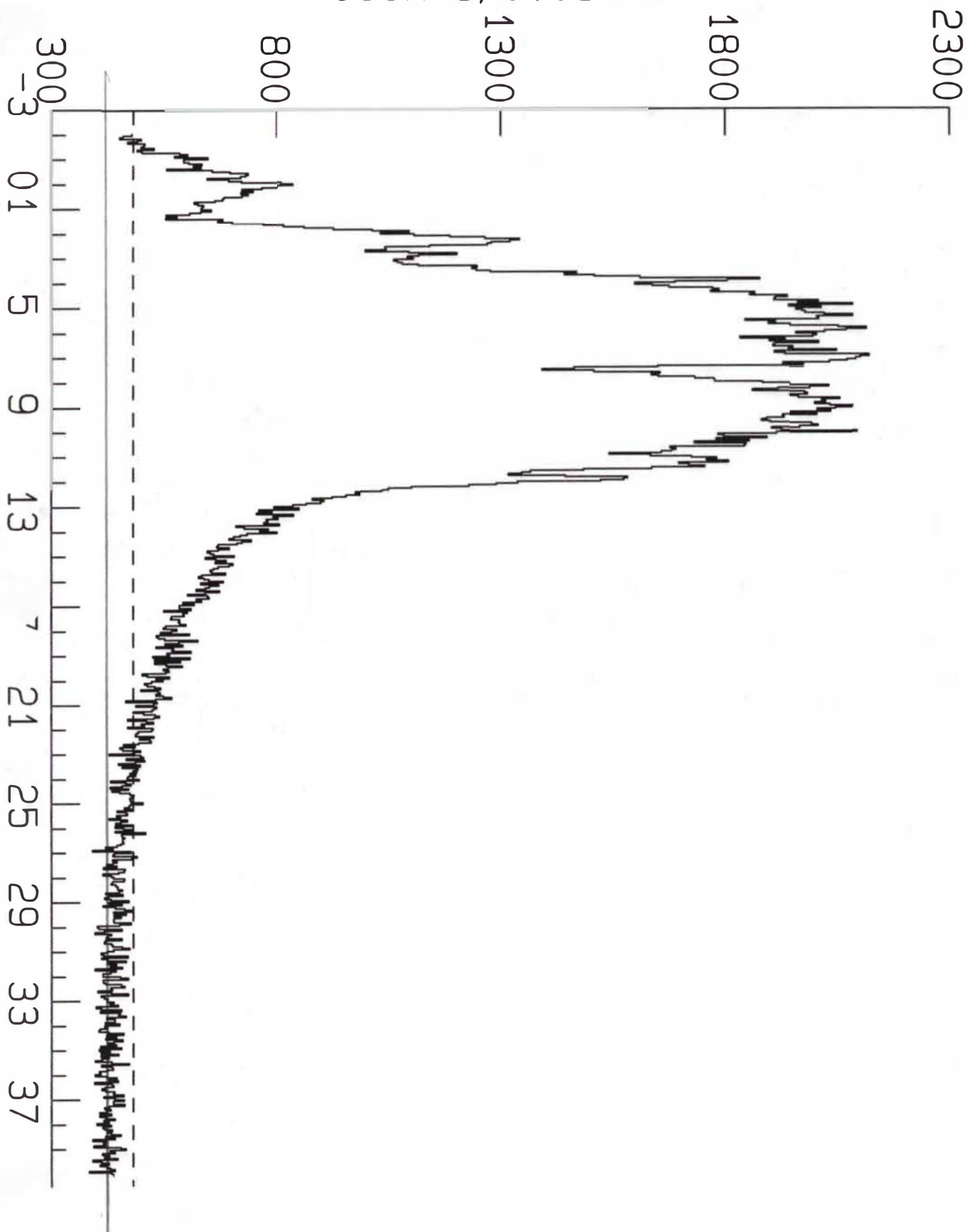
BATSE

29/03/98

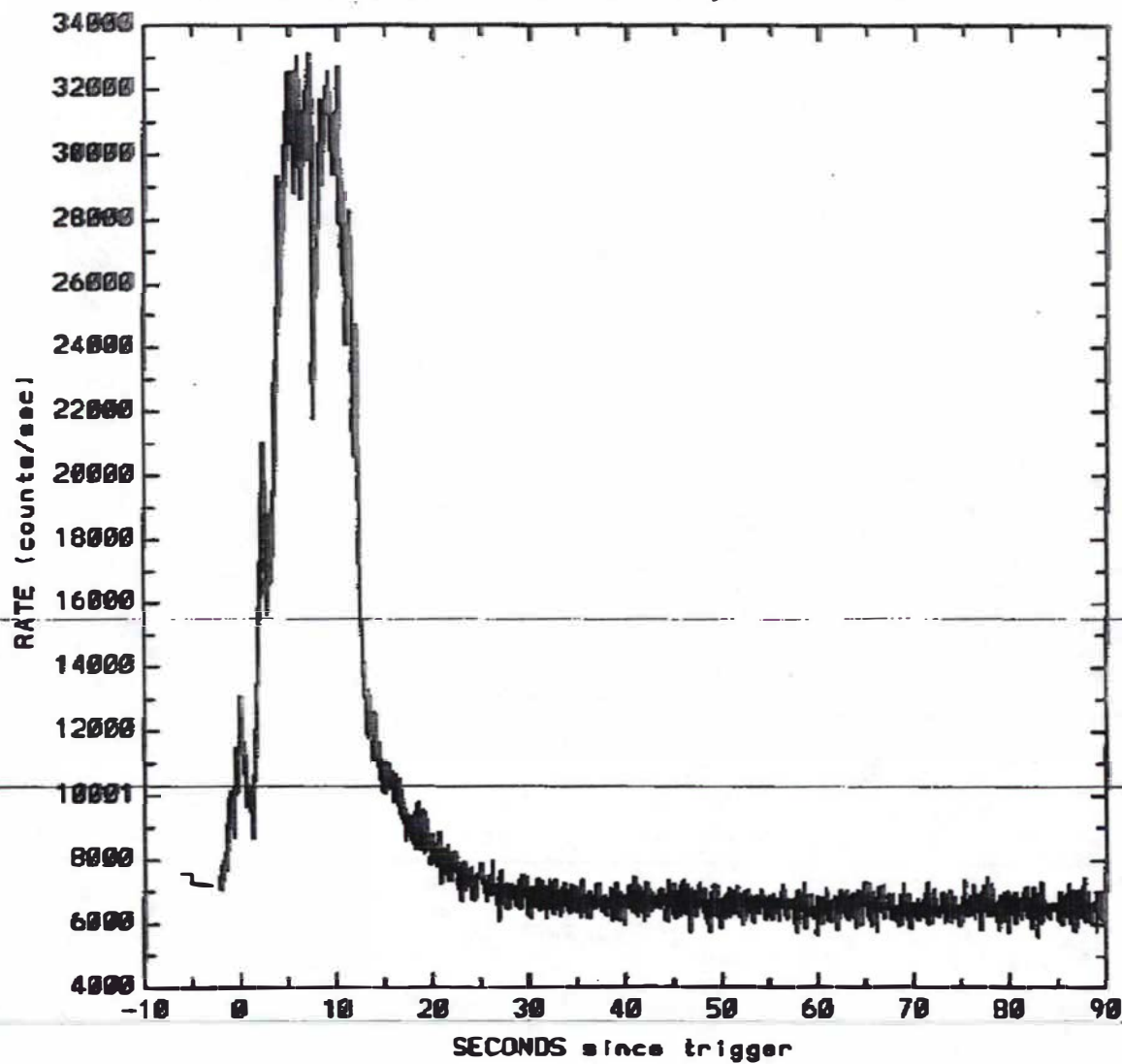
13478.497

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 6665

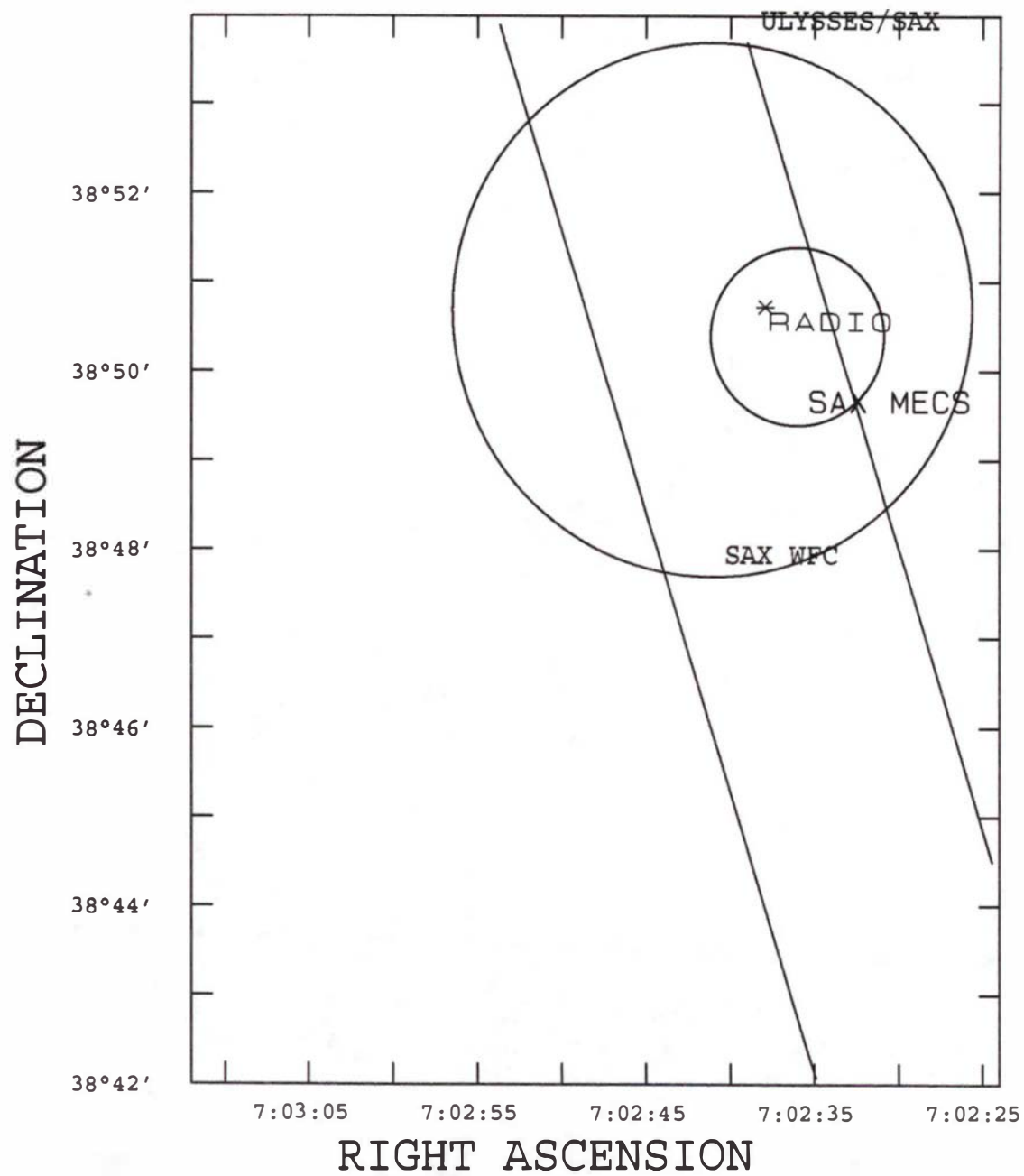


9-APR-1998 11:14:48

Created by NDPS 80
(Burst Display)
Version 62.25

Trigger # : 6665

Trigger Time:
18981 / 13478.497Burst Data Type:
DISCSCDeadTime
Corrected: NBackground Data
Type: PREB + DISCLAMinimum Integ. Time:
0.064 secondsDetectors (7..8):
----2-8Discriminators:
(1..2)Quality Mask:
80ISP1



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

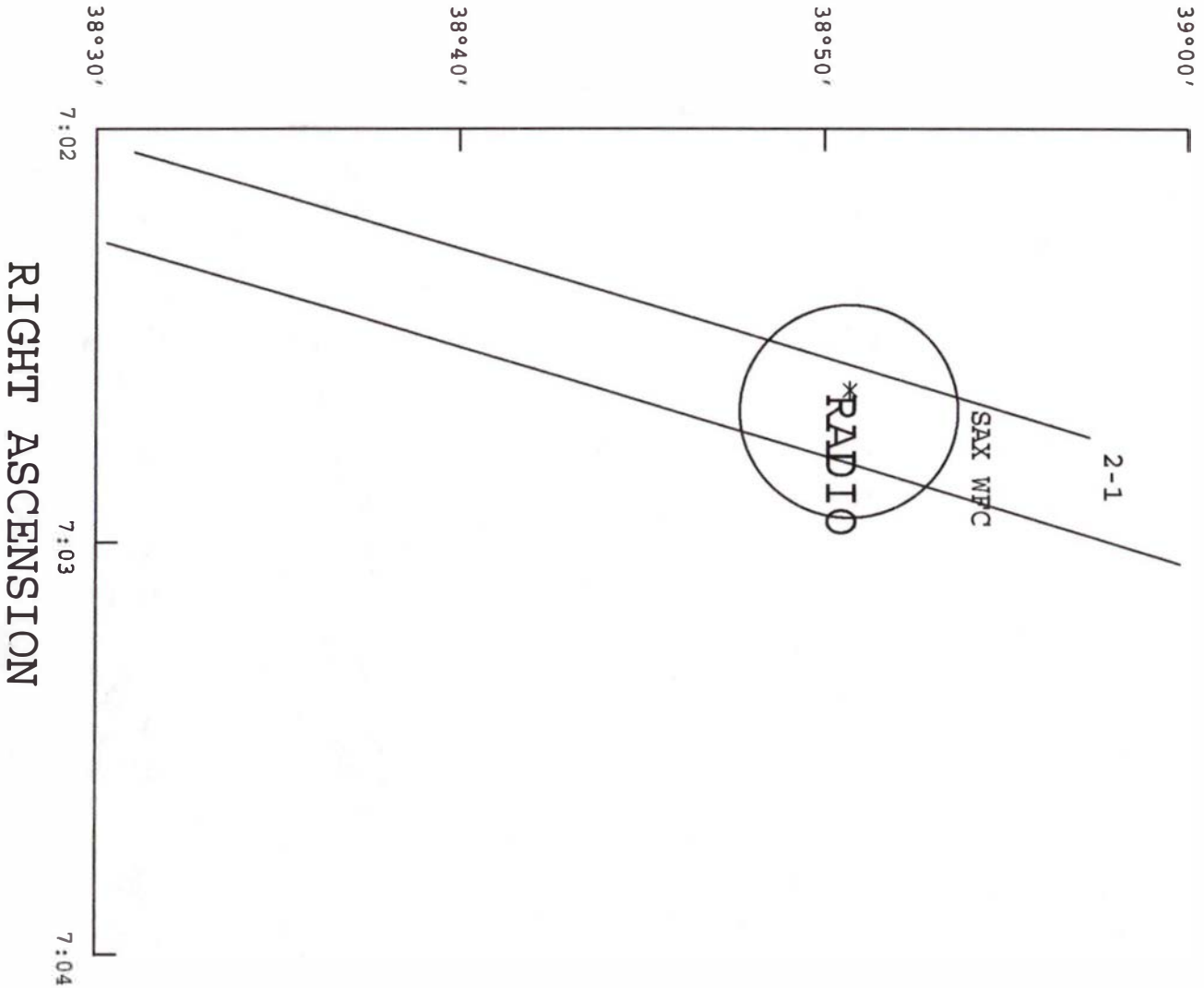
1 ULYSSES

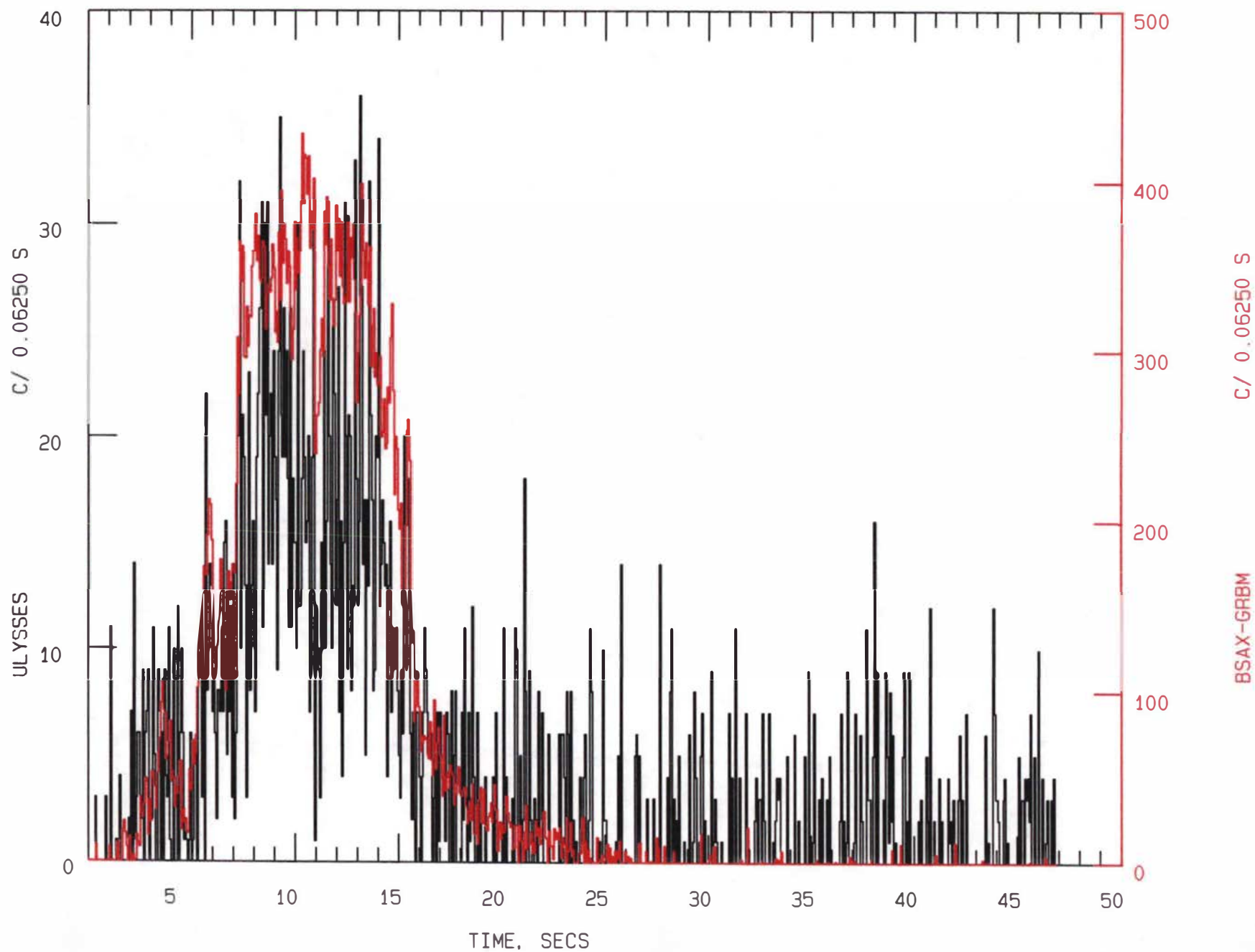
2 SAX

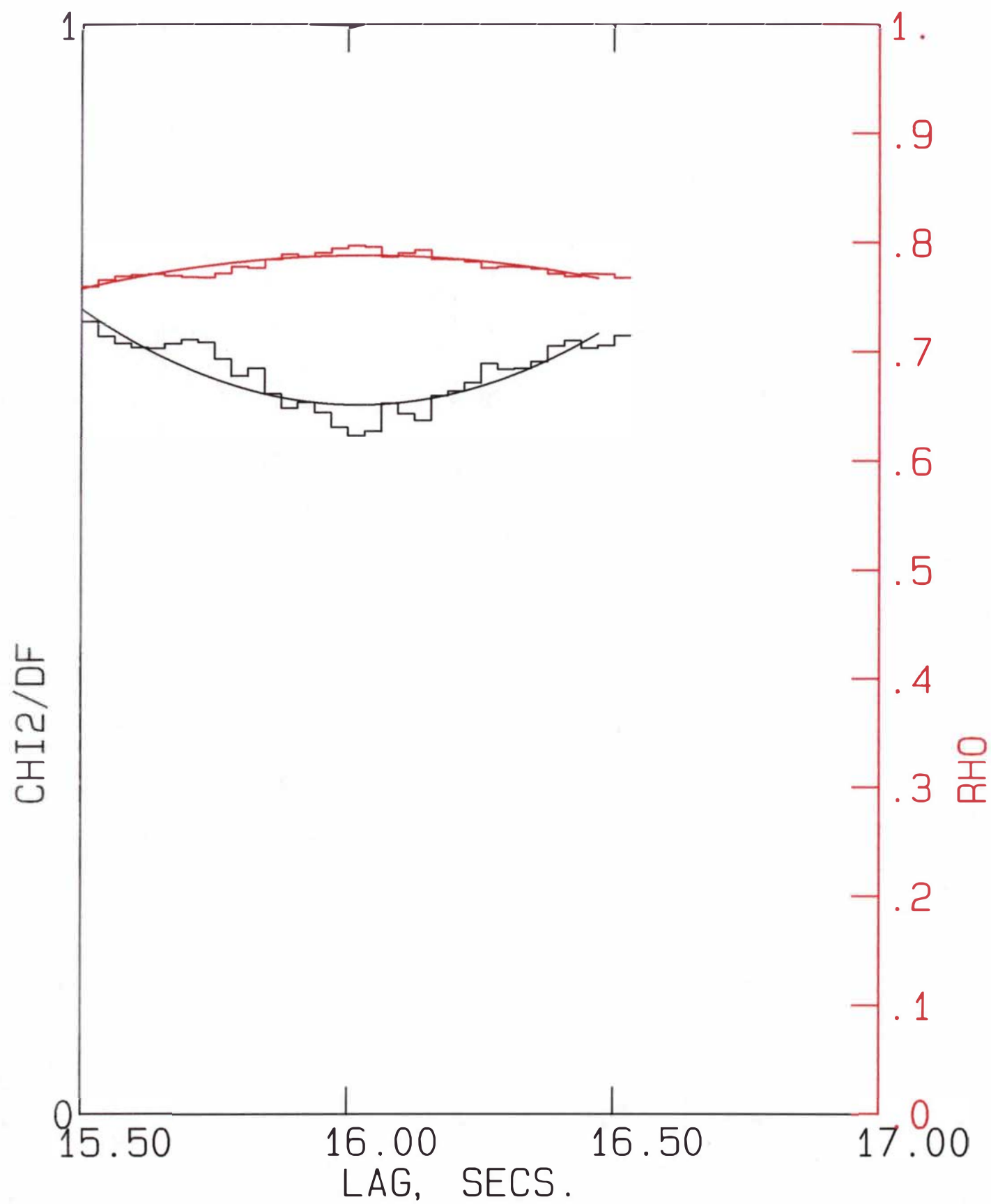
EVENT OF MAR 29, 1998 3:20

3 / 4 / 98

DECLINATION







N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

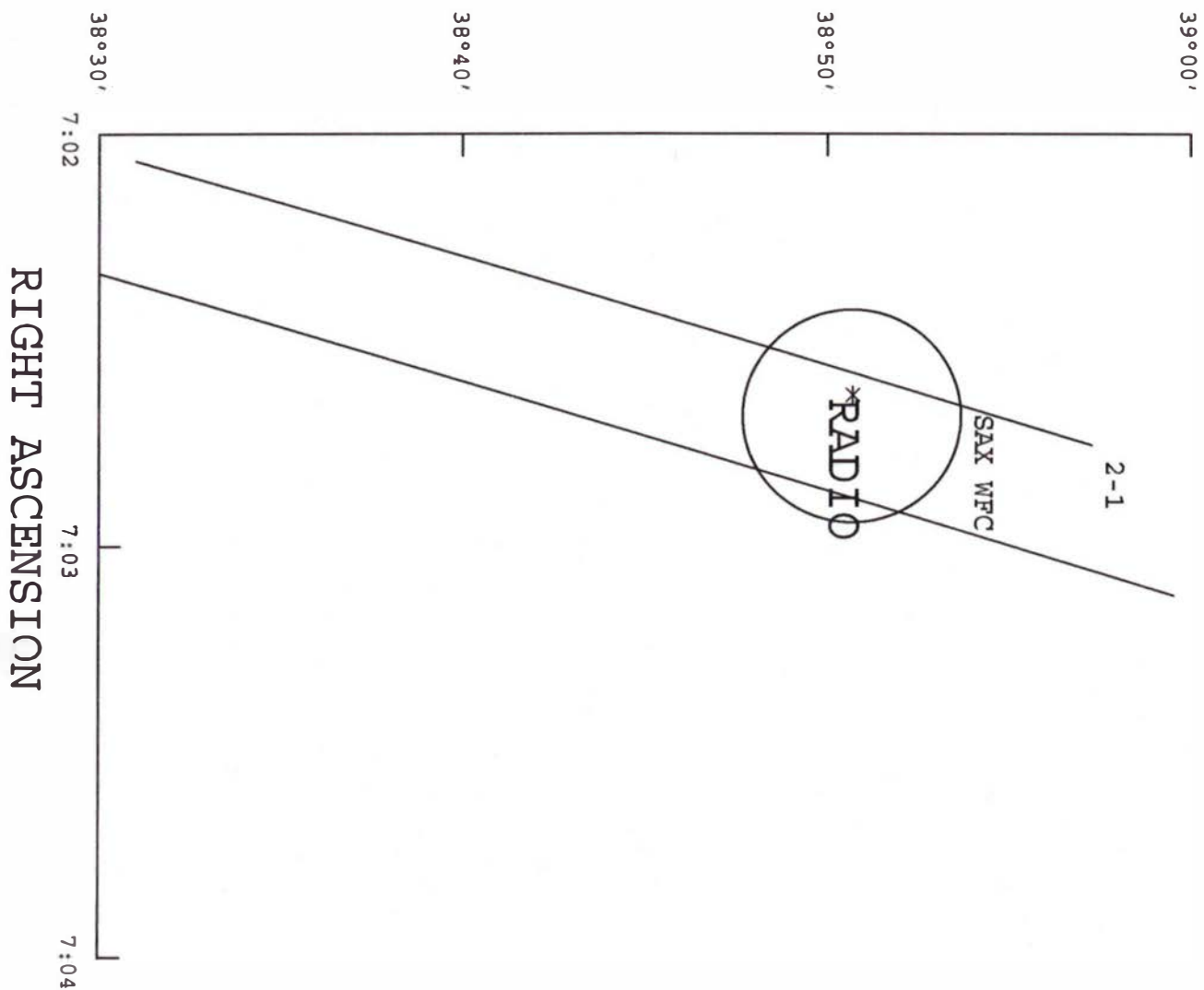
E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 BATSE

DECLINATION



EVENT OF MAR 29, 1998 3:20

3 / 4 / 98

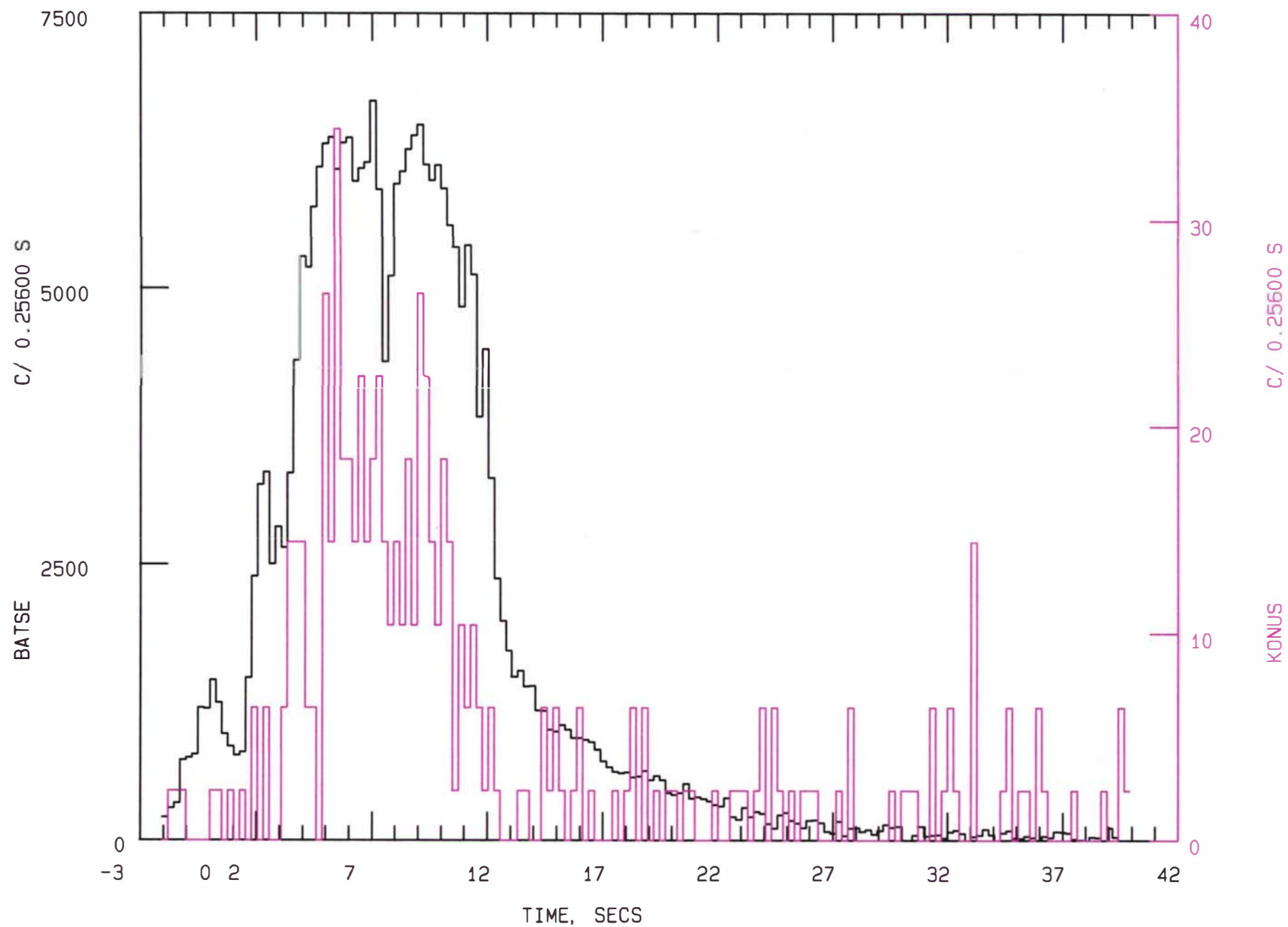
BATSE ^{Sr205}
~~KONUS~~

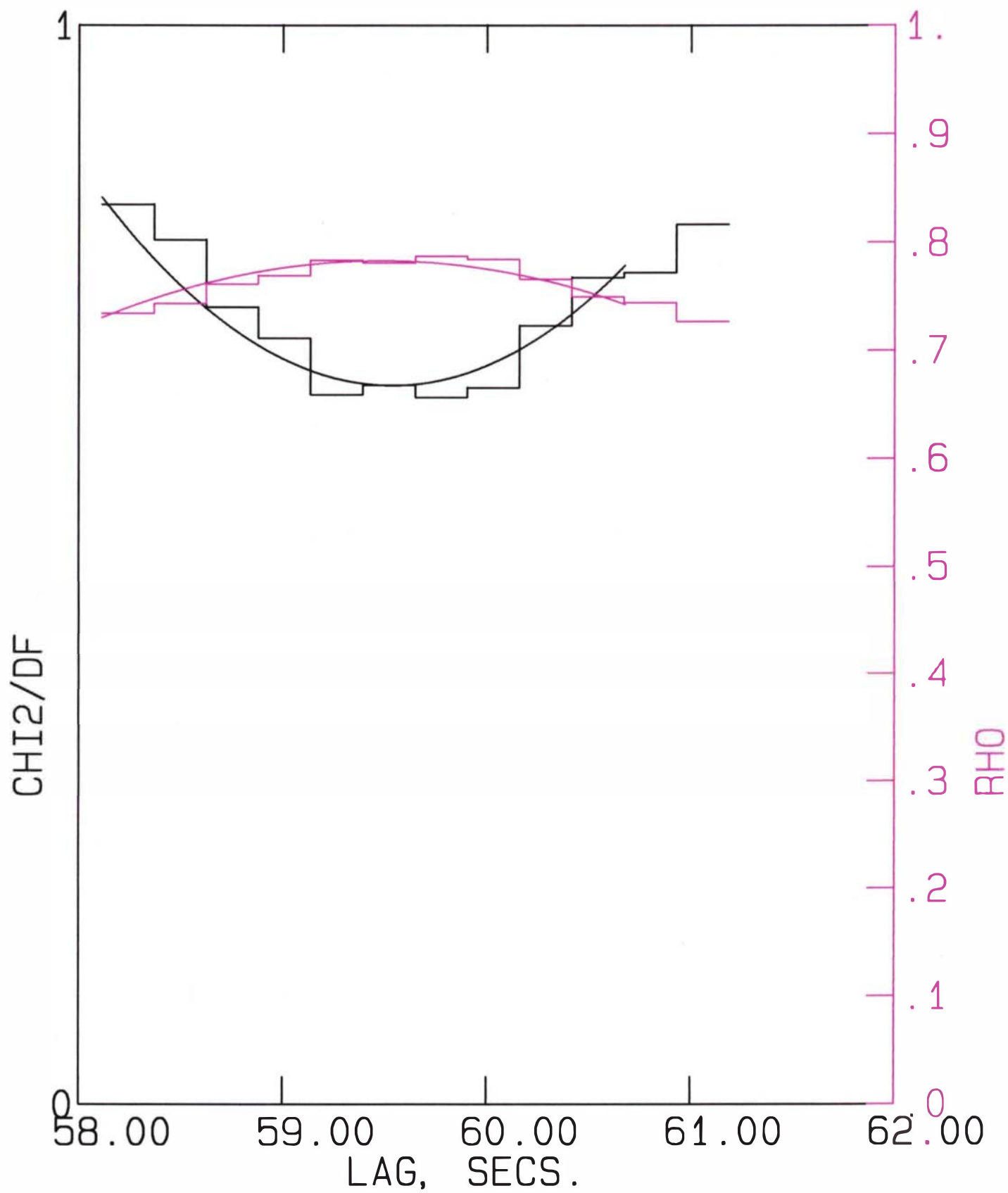
CORRELATION

29/ 3/98

13478.497

4/ 5/ 1



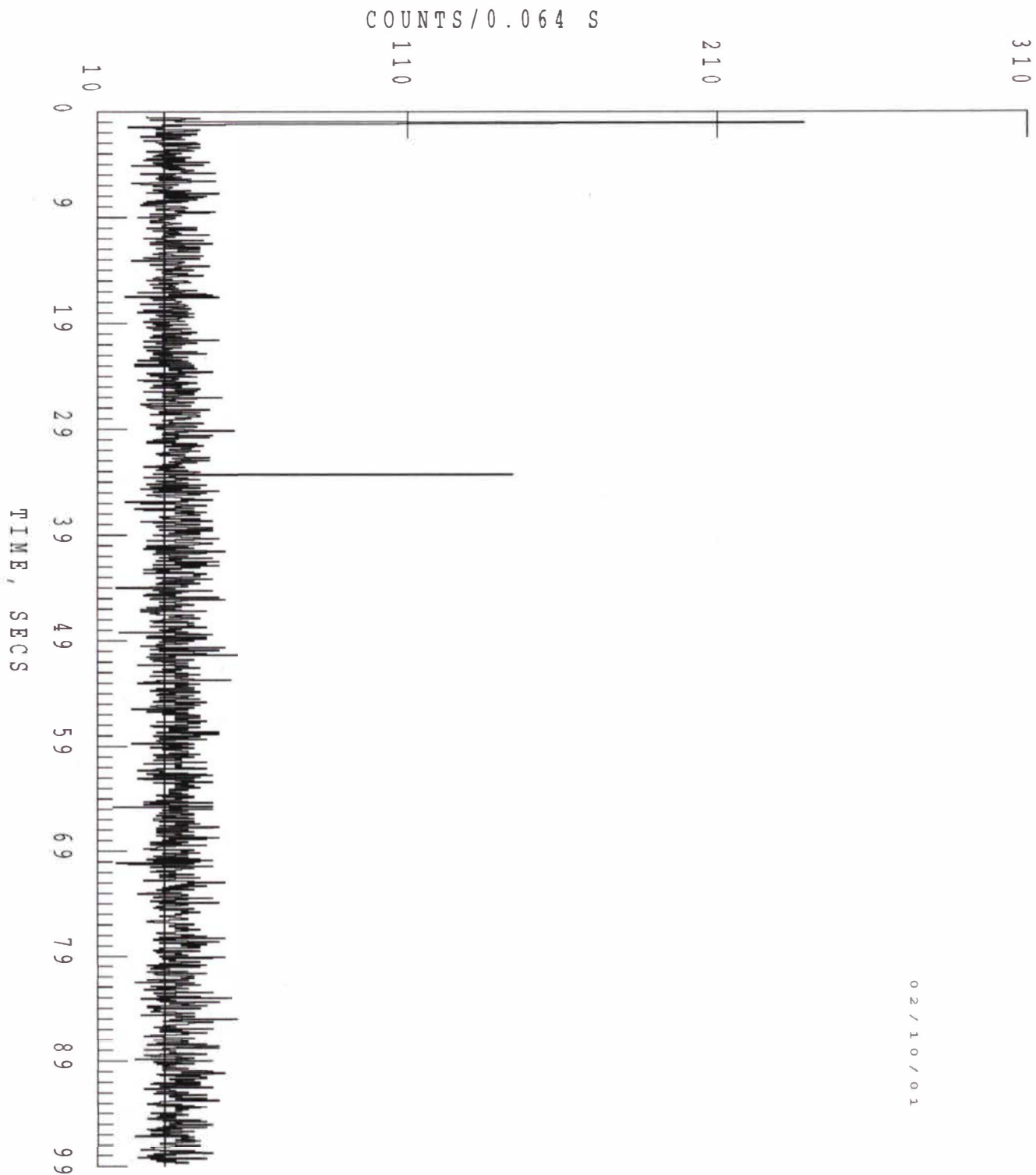


KONUS2

29/04/98

20492.079

50 - 200 keV



02/10/01

From RICHARDSON@fender.msfc.nasa.gov Tue Mar 31 11:35:13 1998
Return-Path: <RICHARDSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA12086; Tue, 31 Mar 1998 11:35:12 -0800
From: RICHARDSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id LAA04002; Tue, 31 Mar 1998 11:35:08 -0800
Date: Tue, 31 Mar 1998 13:29:57 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980331132957.20e08c39@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6666
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6666
EVENT OF 1998 MAR 29 DAY OF YEAR= 88
EVENT CROSSING TIME AT BATSE : 37860. S. OR 10:31:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 274.000 59.000
BATSE PEAK COUNTING RATE: 6000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 29/ 3/ 98 IS:
RA= 153.401 DEC= 13.417 DIST= 4.589 AU
BATSE-ULYSSES DISTANCE = 686455226. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 86.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 128.50 SECS.
CROSSING TIME AT ULYSSES IS 37988. S. OR 10:33:08 +/- 448.86 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 29/ 3/ 98 IS:
RA= 17.395 DEC= 6.911 DIST= 2.394 AU
MARS-BATSE DISTANCE = 358203840. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 89.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 18.30 SECS.
CROSSING TIME AT MARS IS 37878. S. OR 10:31:18 +/- 207.70 SECONDS

BATSE BURST TRIGGER

NO.: 6666

TIME: TJD=0901 SECONDS=37860

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=65.2 AZIMUTH=282.7 ERROR=4.1 DEGREES

COMMENTS:

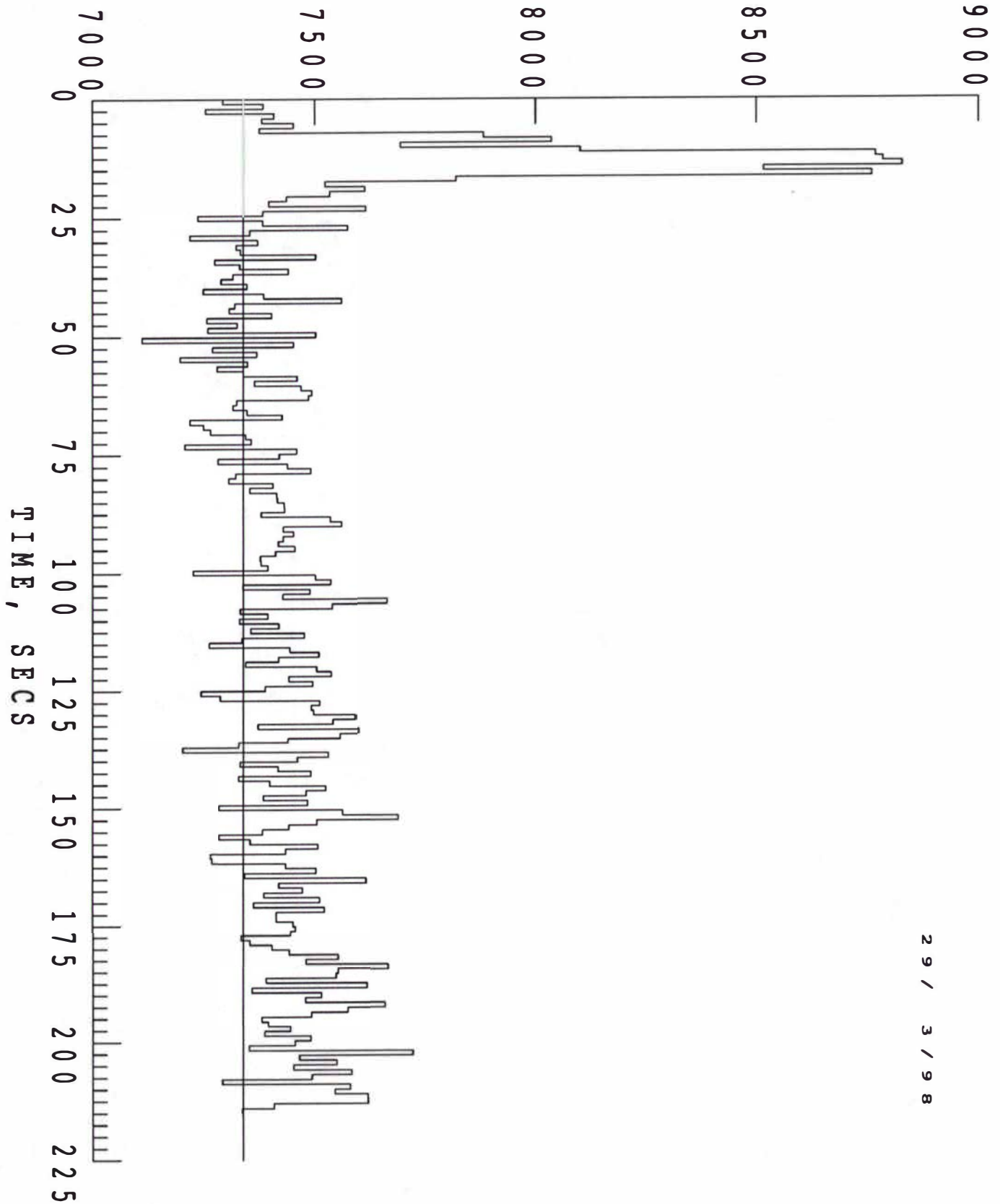
GRB. LOTS OF STRUCTURE. DURATION APPROX. = 8 SEC. NOT VISIBLE ABOVE 300KEV.
UNRELATED UNTRIGGERED BURST AT APPROX. T+245 SEC. WITH DURATION APPROX. = 30SEC.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6666	980329	10901	37860	6000	274	+59	8

BACODINE 6666 29/03/98 37848.801

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6666

ULYSSES RT

31 / 3 / 98

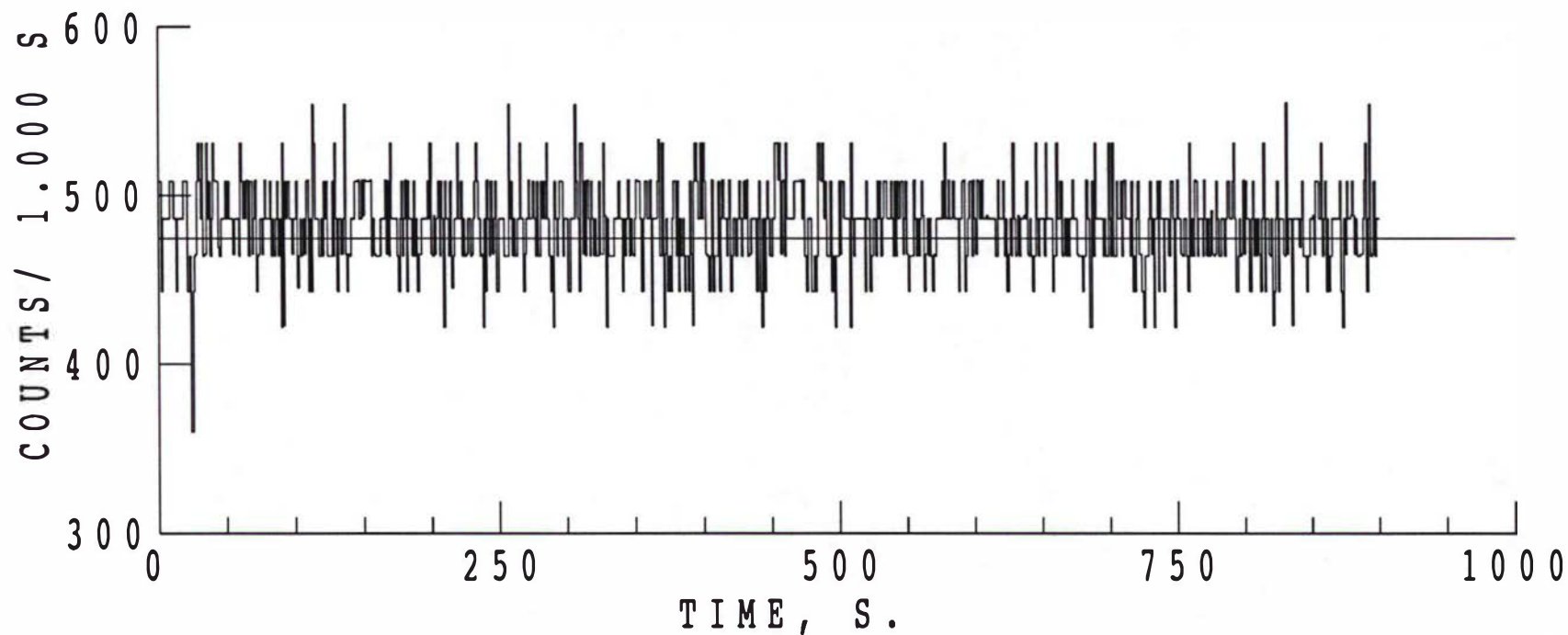
29 / 3 / 98 37548.414 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

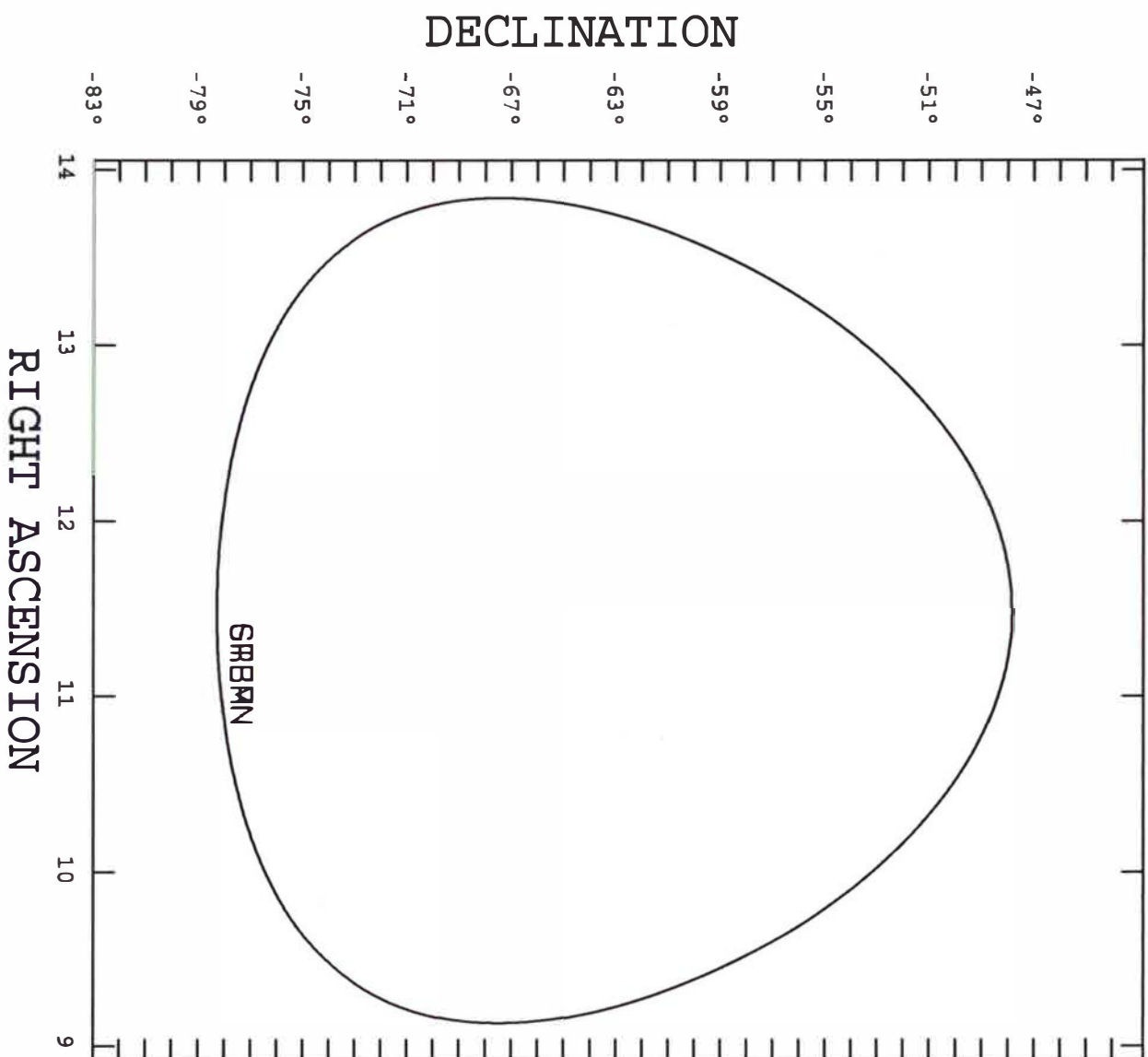
N= 10 M=10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SS847s

7



From RICHARDSON@fender.msfc.nasa.gov Tue Mar 31 11:42:57 1998
From: RICHARDSON@fender.msfc.nasa.gov
Date: Tue, 31 Mar 1998 13:22:18 -0600 (CST)
To: burst@comptel.sr.unh.edu, grobad@estsa2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu,
gruber@cass09.ucsd.edu, matteson@cass09.ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, park@kabul.llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6667

TIME: TJD=0901 SECONDS=80295

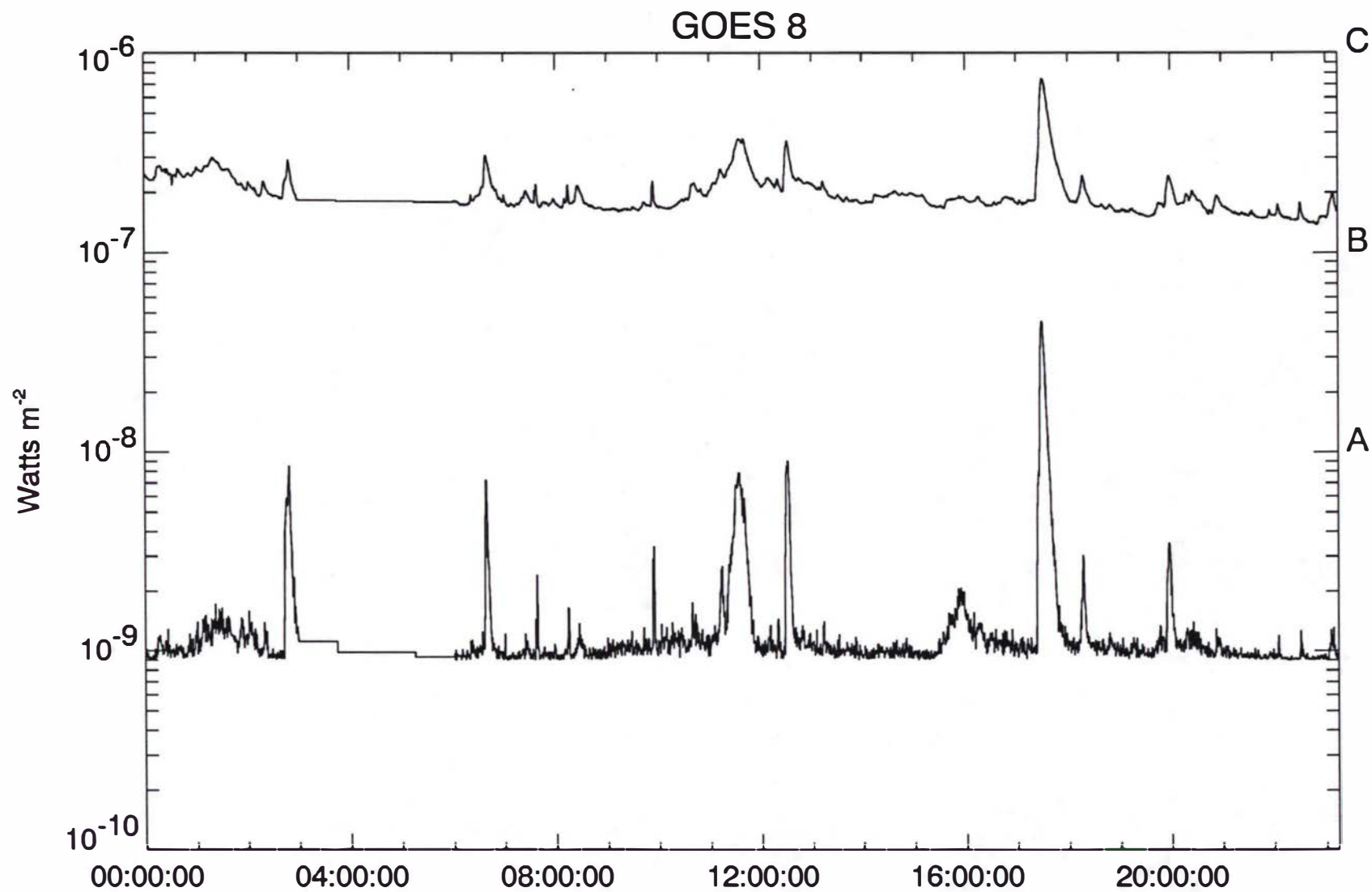
TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT



Data Start: 98/03/29, 0000:00

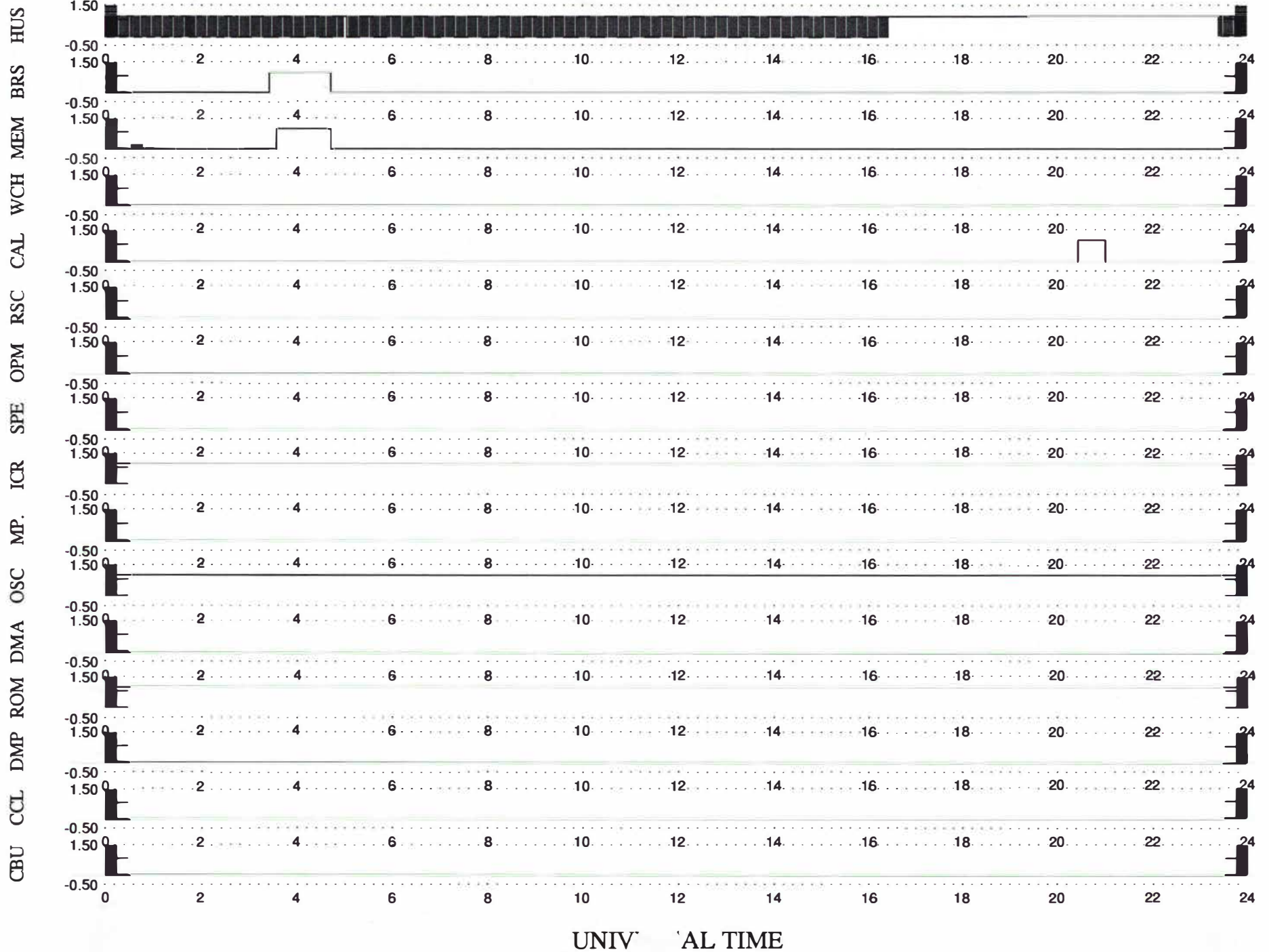
Plot created: 98/04/02, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

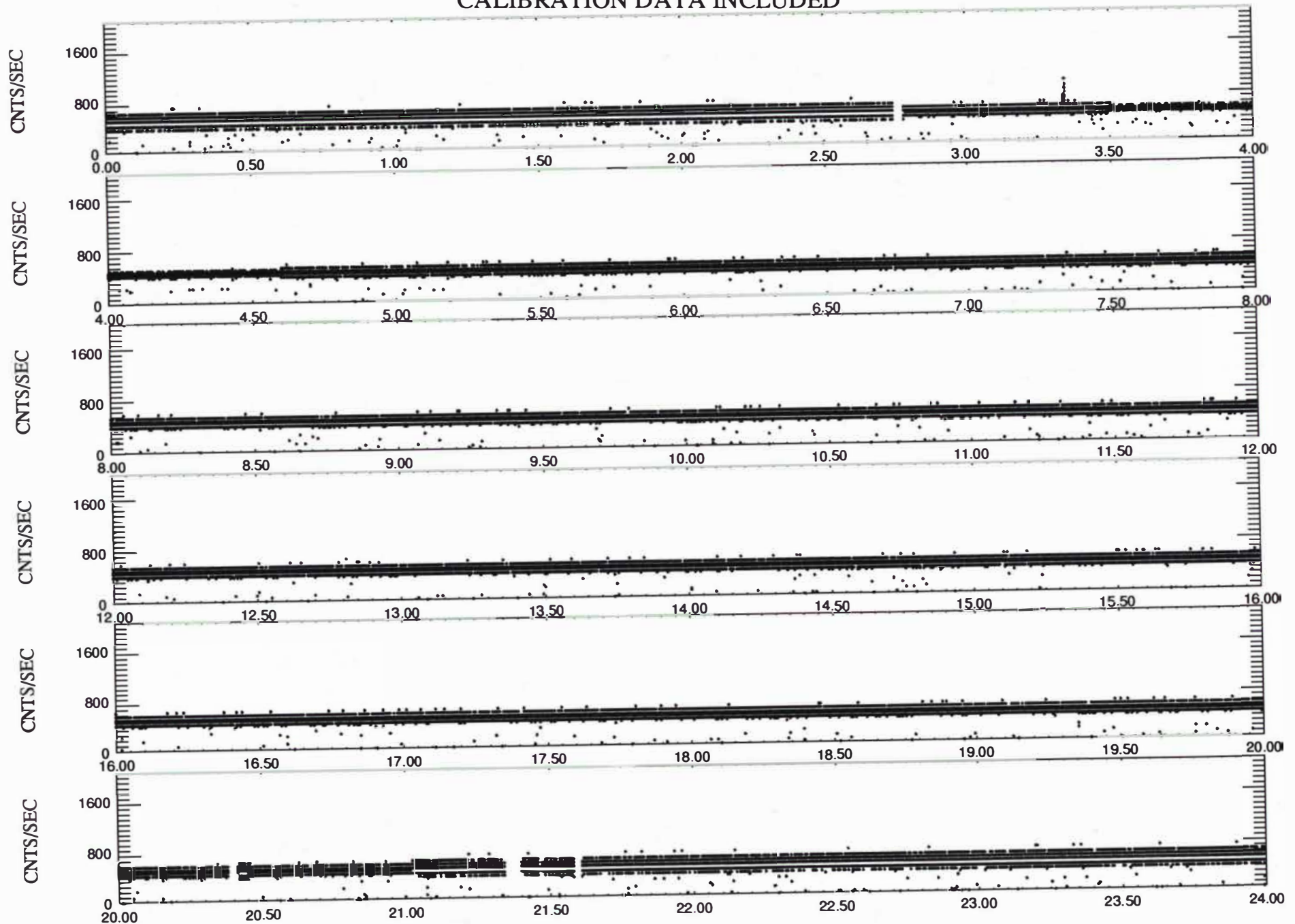
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BURST NUMBER 6

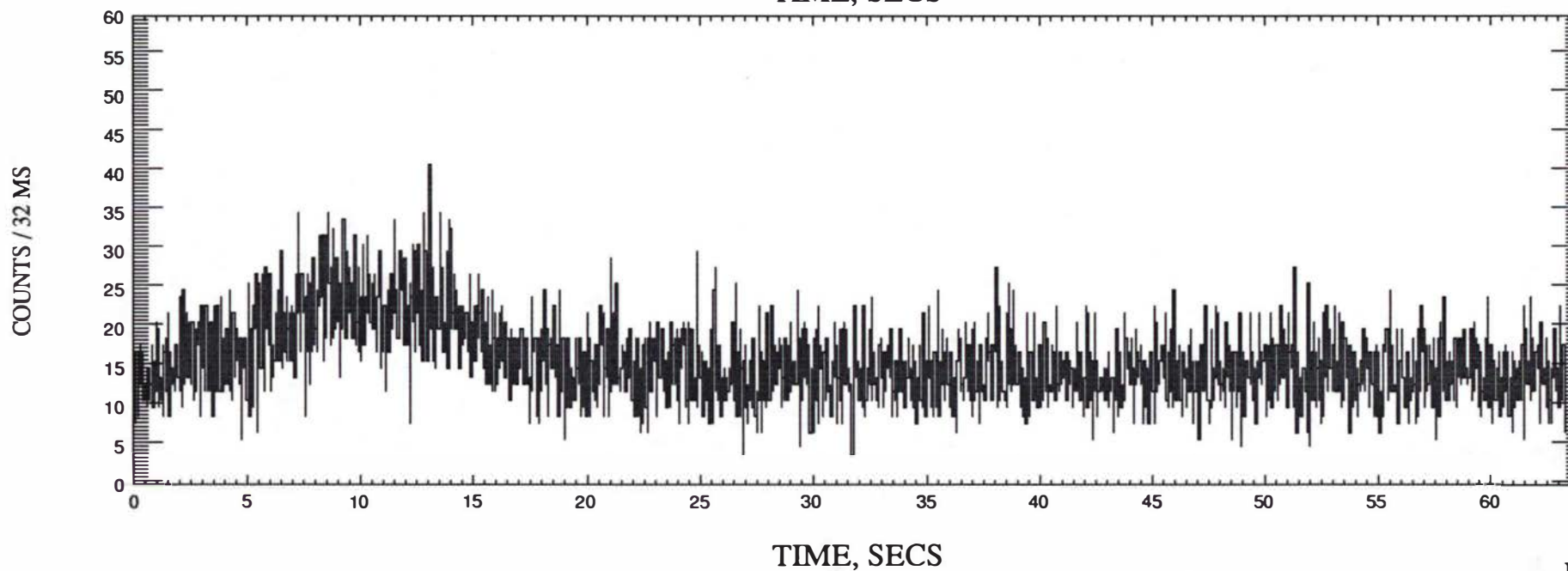
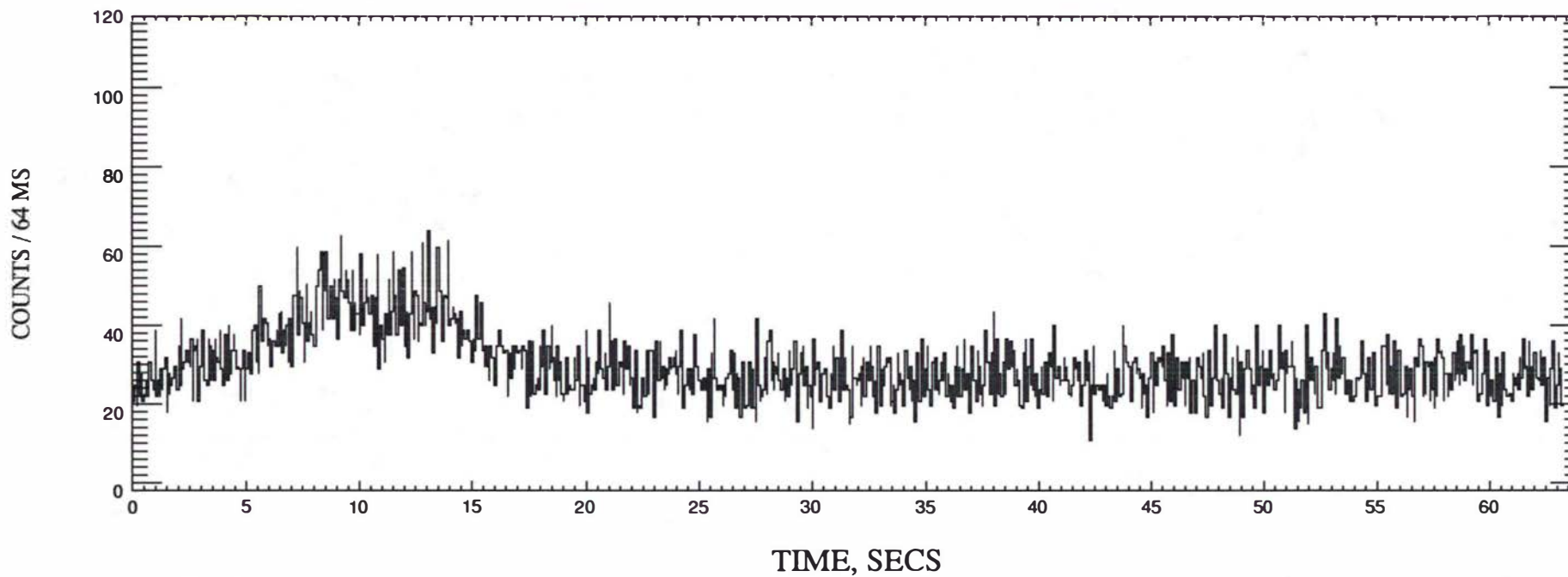


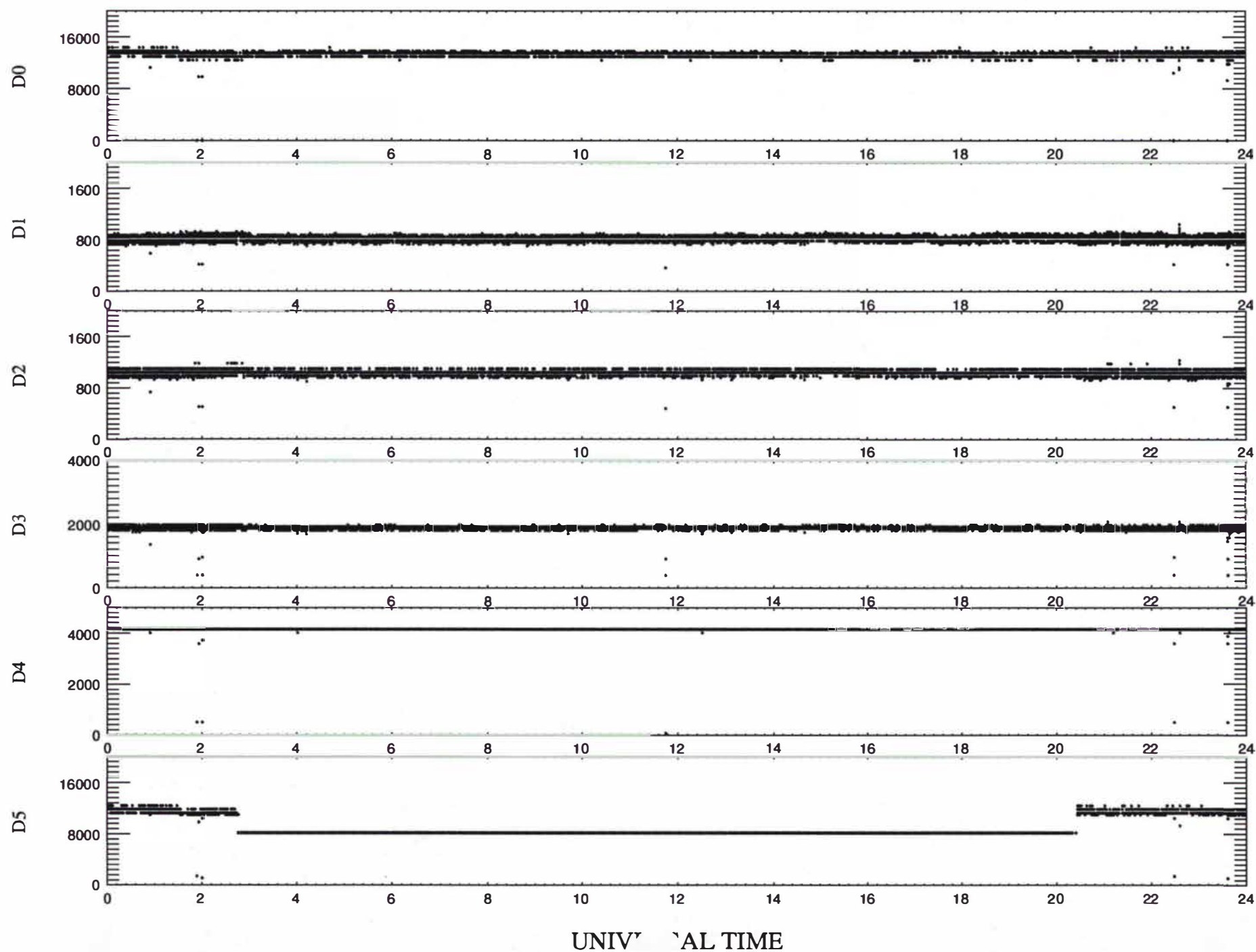
CALIBRATION DATA INCLUDED



UNIV UNIV TIME

Burst Counter 6 at UT= 3.336628159417 h=12011.861 s 03:20:11.861





Date: Feb 10 2010

BURST TRIANGULATION CHECKLIST

1. Ulysses Data *N/A*

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

2. BATSE Data

- ☐ 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. NEAR Data

- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

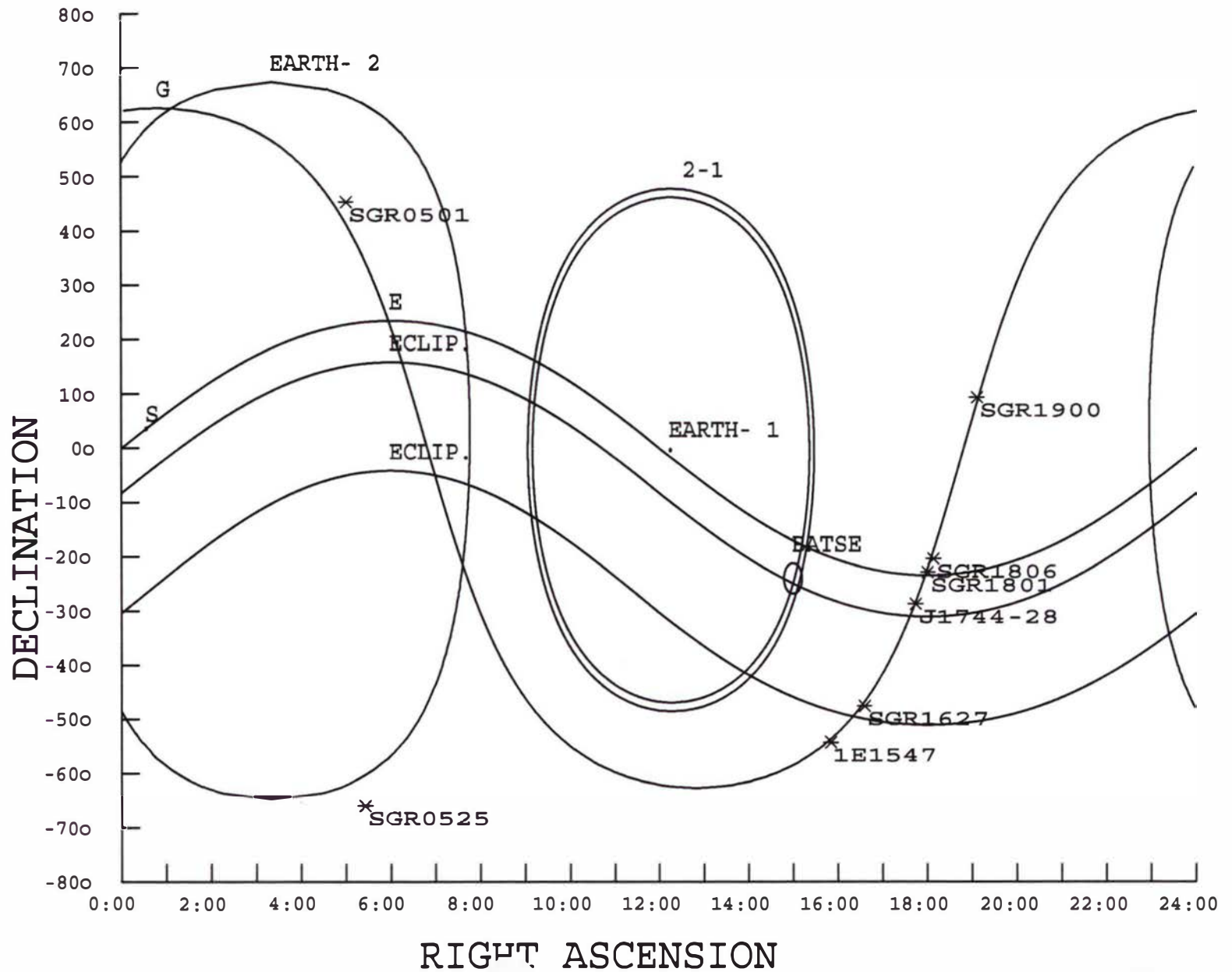
- ☐ $\Sigma 3\Delta t$'s calculated?

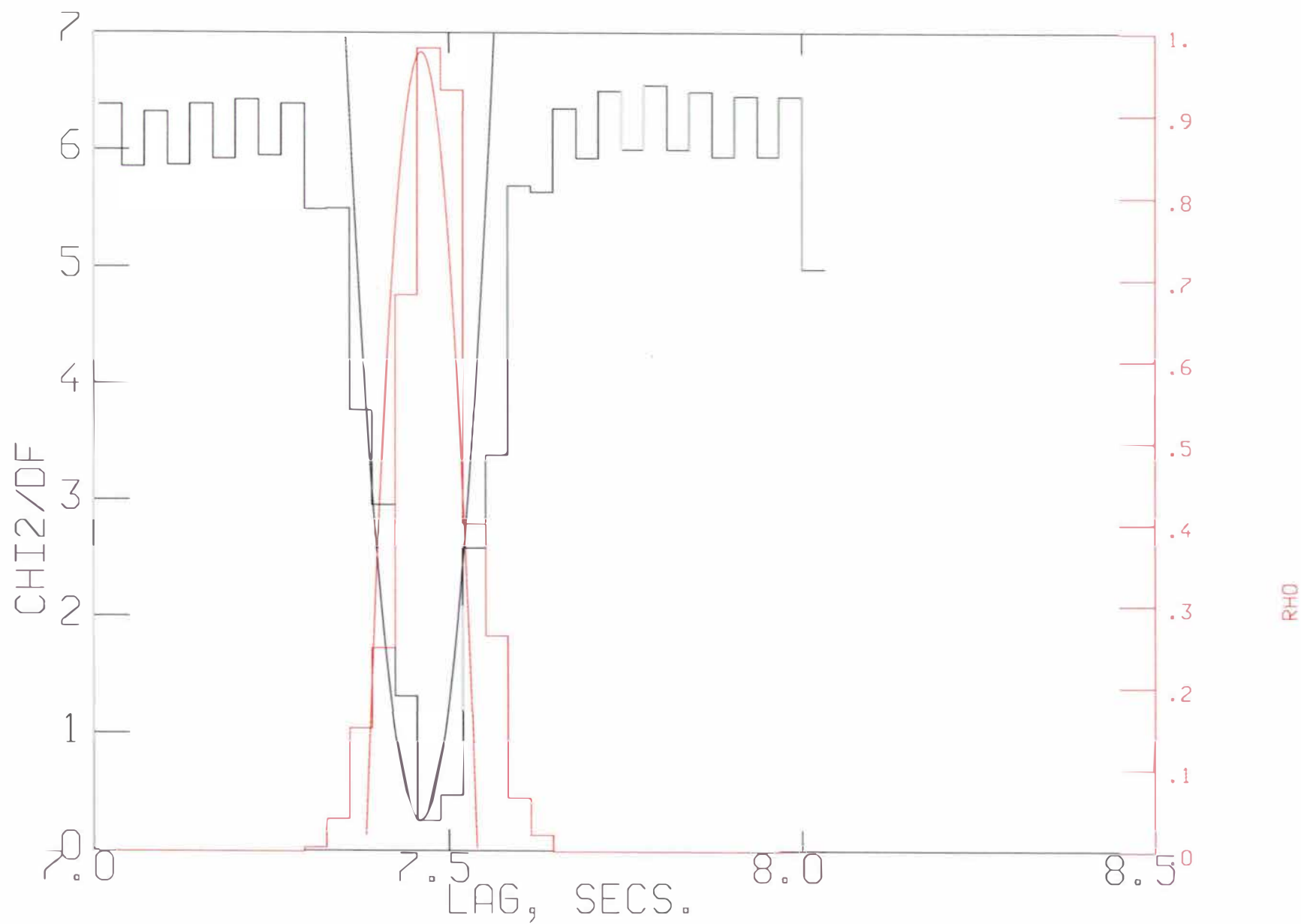
- ☒ ACCESS database updated?

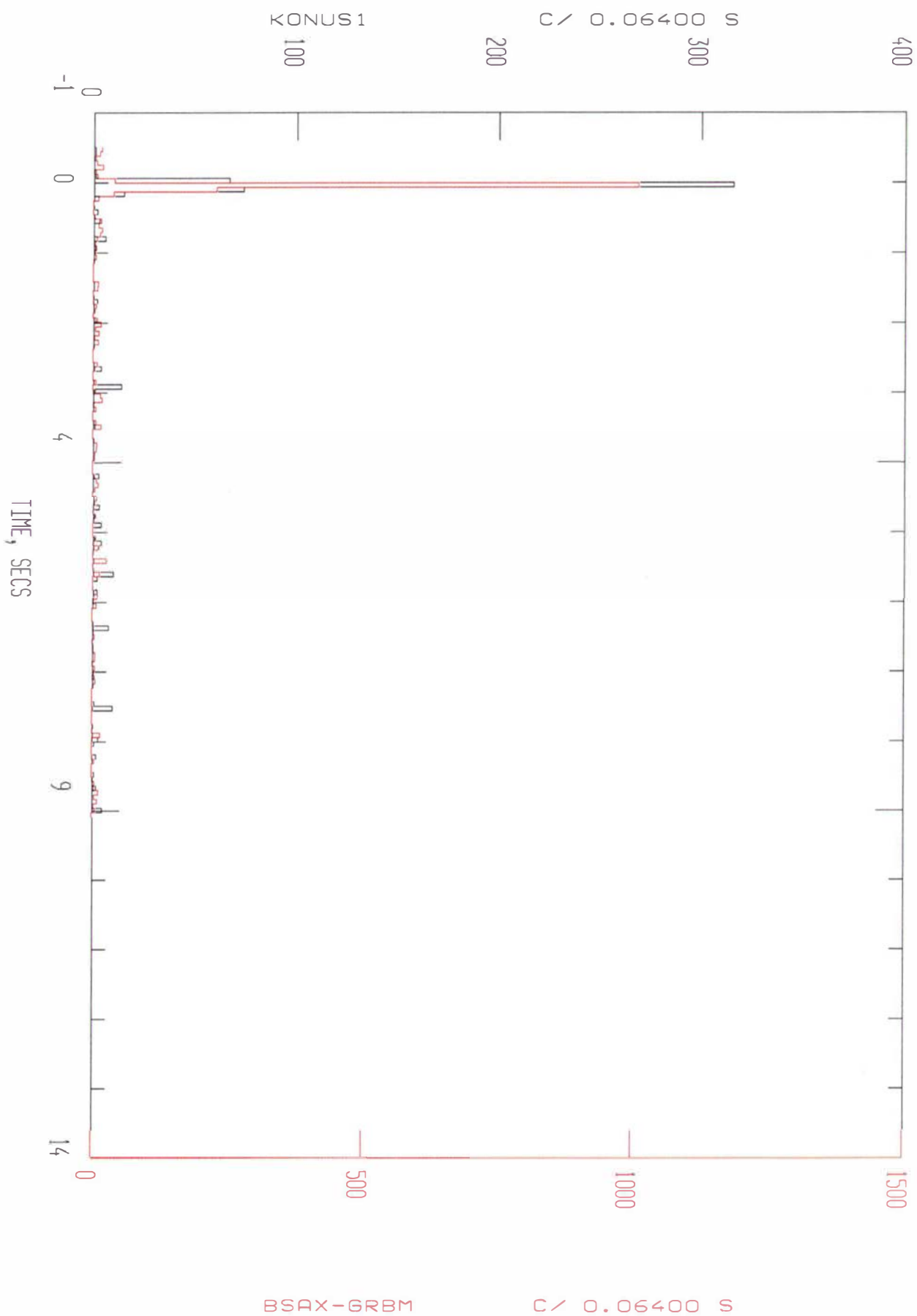
EVENT OF MAR 30, 1998 0:01

10/02/2010

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







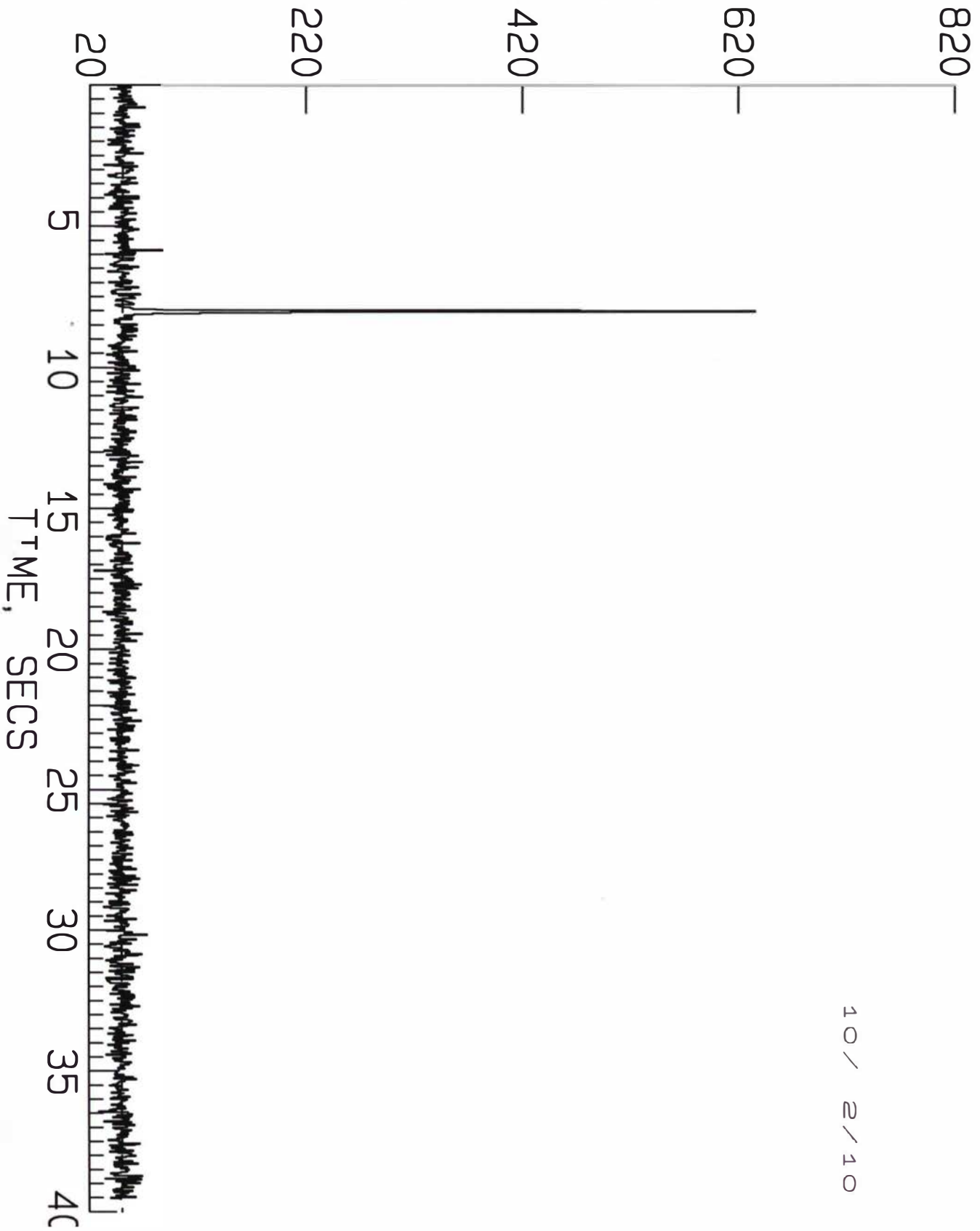
SAX GRBM

30/03/98

85.416

40- 700 keV

COUNTS/0.031 S

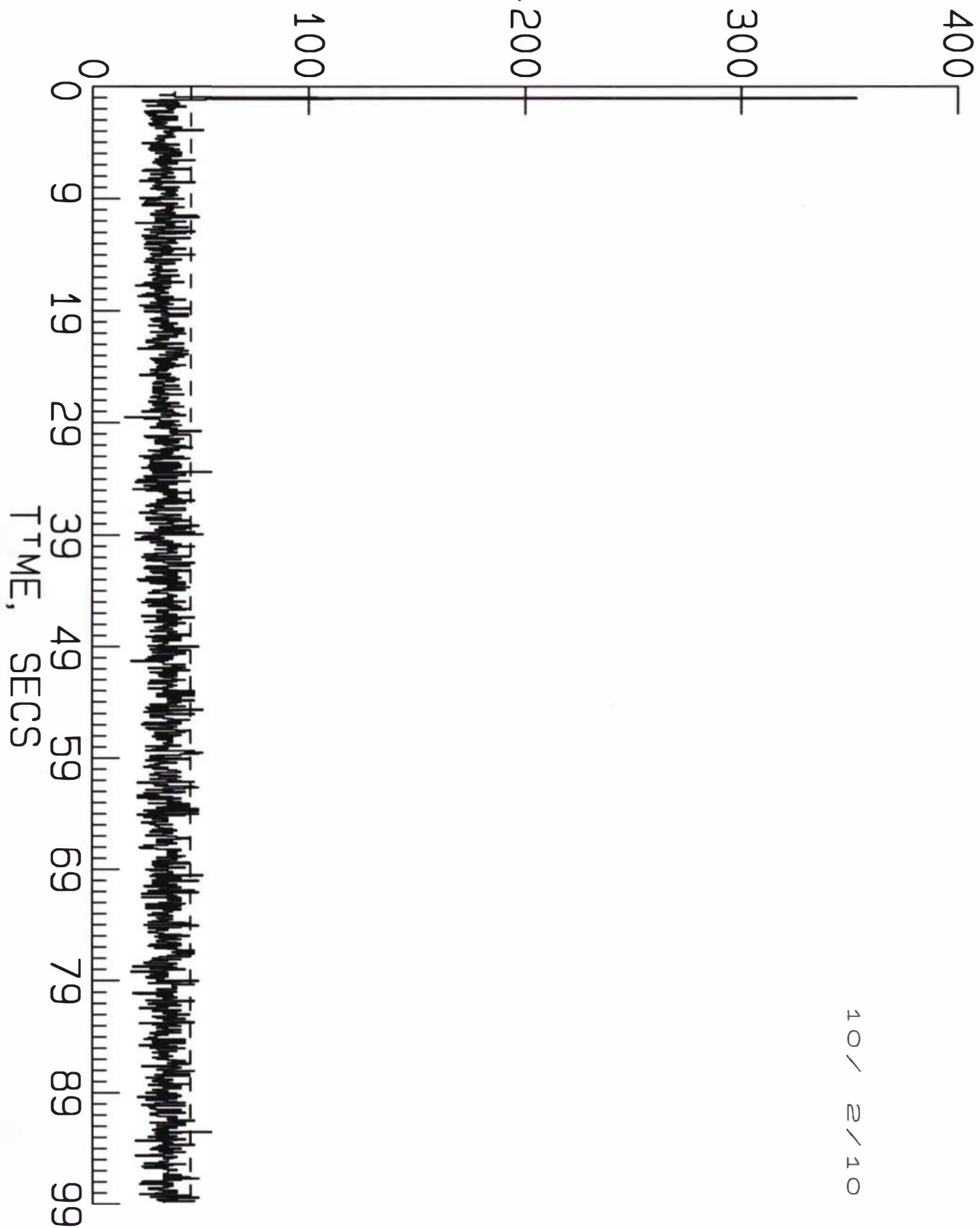


KONUS

30/03/98 96.710

50- 200 keV

COUNTS/0.064 S



From SURASAK@SSLMOR.msfc.nasa.gov Tue Apr 7 09:29:23 1998
 Return-Path: <SURASAK@SSLMOR.msfc.nasa.gov>
 Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id JAA05463; Tue, 7 Apr 1998 09:29:22 -0700
 From: SURASAK@SSLMOR.msfc.nasa.gov
 Received: from SSLMOR.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id JAA14922; Tue, 7 Apr 1998 09:29:23 -0700
 Date: Tue, 7 Apr 1998 11:29:21 -0500 (CDT)
 To: khurley@sunspot.ssl.berkeley.edu
 Message-Id: <980407112921.20402e4c@ssl.msfc.nasa.gov>
 Subject: Crossing Windows for BATSE Burst 6668
 Content-Length: 1122
 X-Lines: 26
 Status: RO

 BATSEARCH PROGRAM

BATSE BURST # 6668
 EVENT OF 1998 MAR 30 DAY OF YEAR= 89
 EVENT CROSSING TIME AT BATSE : 93. S. OR 00:01:33.0
 COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 225.000 -24.000
 BATSE PEAK COUNTING RATE: 181000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
 POSITION OF ULYSSES ON 30/ 3/ 98 IS:
 RA= 153.302 DEC= 13.416 DIST= 4.594 AU
 BATSE-ULYSSES DISTANCE = 687335704. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.64 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -423.41 SECS.
 CROSSING TIME AT ULYSSES IS 86070. S. OR 23:54:29 +/- 434.77 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
 POSITION OF MARS ON 30/ 3/ 98 IS:
 RA= 18.099 DEC= 7.208 DIST= 2.397 AU
 MARS-BATSE DISTANCE = 358581344. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 30.76 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1027.80 SECS.
 CROSSING TIME AT MARS IS 1121. S. OR 00:18:40 +/- 121.83 SECONDS

BATSE BURST TRIGGER

NO.: 6668

TIME: TJD=0902 SECONDS=93

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=86.6 AZIMUTH=188.5 ERROR=2.3 DEGREES

COMMENTS:

GRB. INTENSE SINGLE PULSE. DURATION ABOUT 0.18 S. VISIBLE ABOVE 300 KEV.

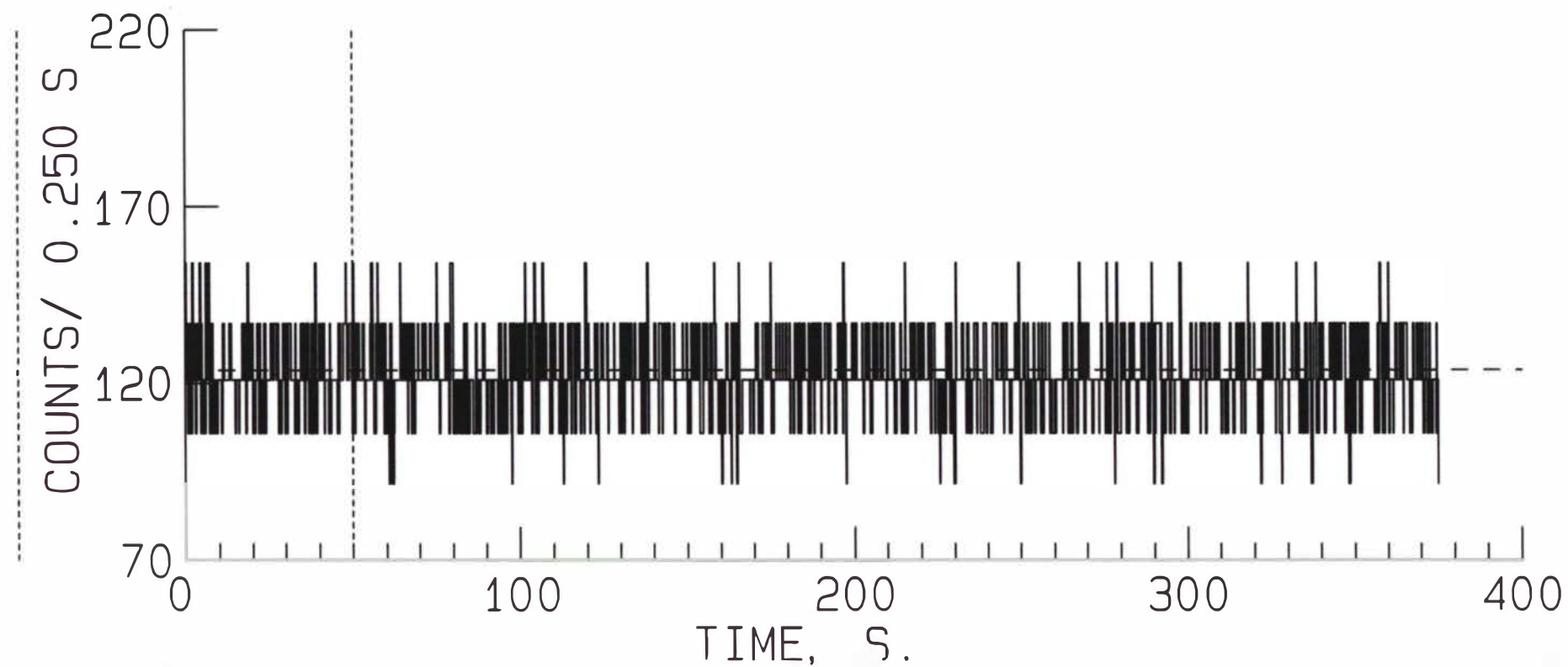
BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6668	980330	10902	00093	181000	225	-24	.18

ULYSSES RT

27 / 7 / 98

29 / 3 / 98 85608.179 s

22 - 148 keV

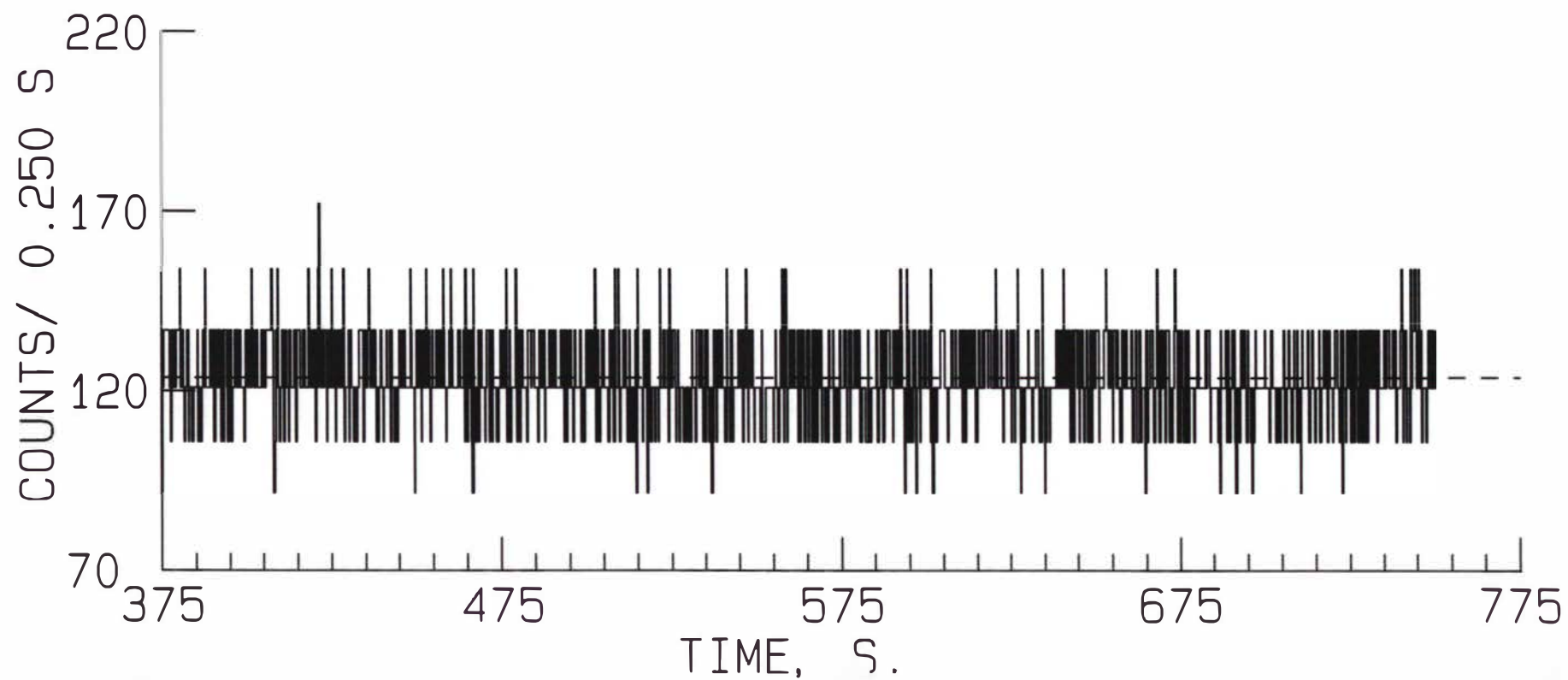


ULYSSES RT

27 / 7 / 98

29 / 3 / 98 85608.179 s

22- 148 keV

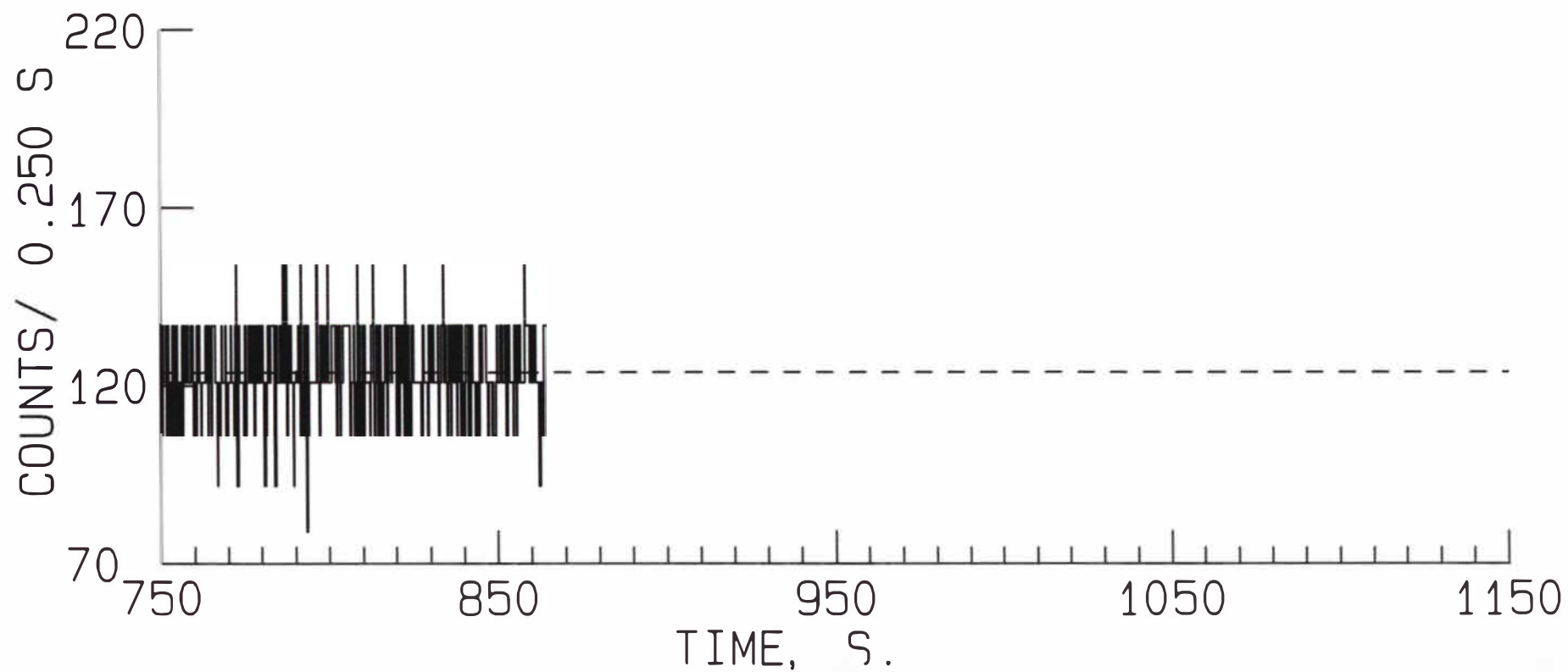


ULYSSES RT

27 / 7 / 98

29 / 3 / 98 85608.179 s

22- 148 keV



From SURASAK@SSLMOR.msfc.nasa.gov Mon Apr 6 10:23:42 1998
From: SURASAK@SSLMOR.msfc.nasa.gov
Date: Mon, 6 Apr 1998 12:23:06 -0500 (CDT)
To: burst@comptel.sr.unh.edu, grobad@ests2.estec.esa.nl,
cline@lheavx.gsfc.nasa.gov, barthelmy@lheavx.gsfc.nasa.gov,
bacodine@lheawww.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, band@cass09.ucsd.edu
X-Vmsmail-To: @mops\$send_msg:BURST_SPAN.DIS
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 6669

TIME: TJD=0902 SECONDS=16599

TYPE: PARTICL SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= AZIMUTH= ERROR= DEGREES

COMMENTS:
PARTICLE EVENT.

Date: Mar 6 2012

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

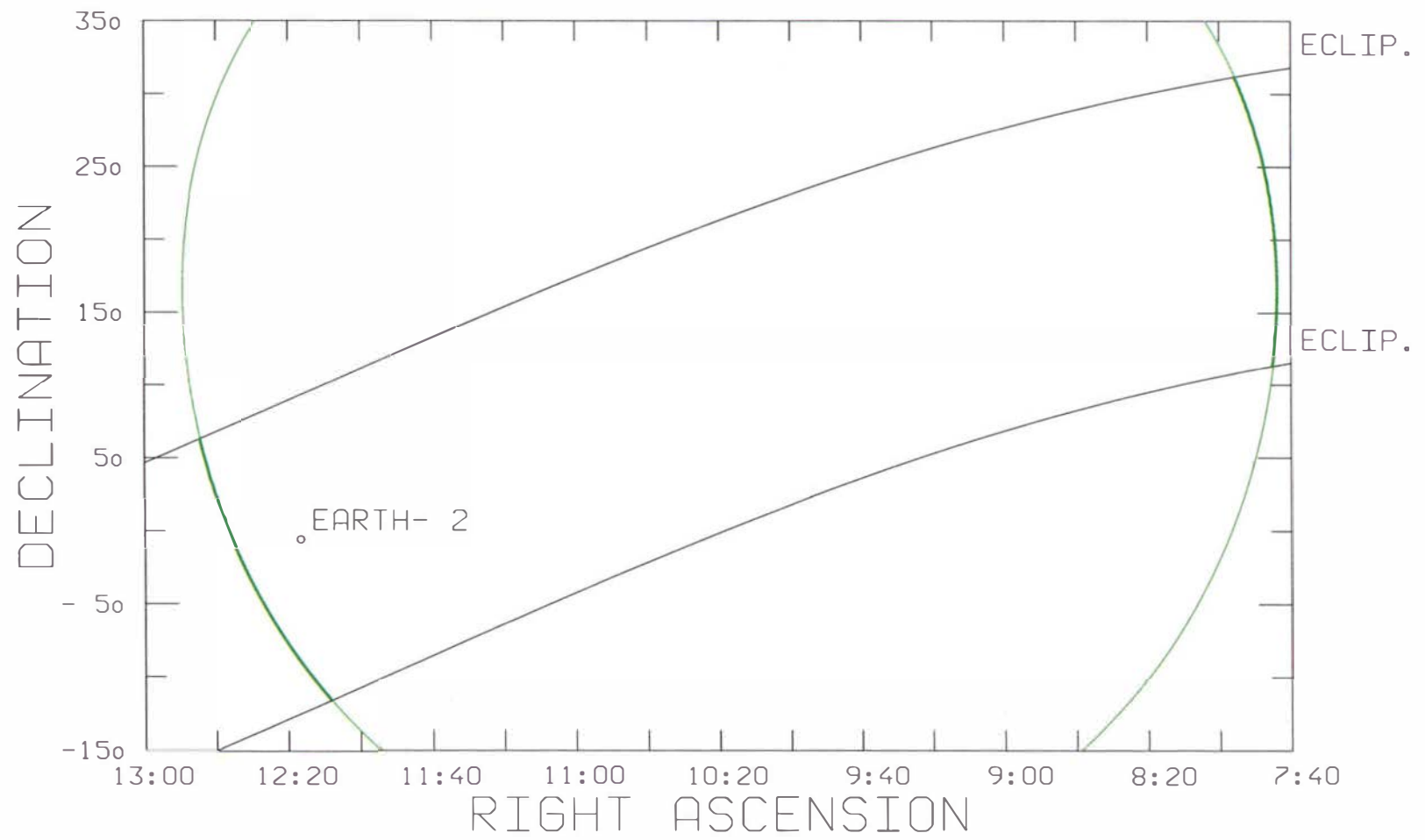
2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

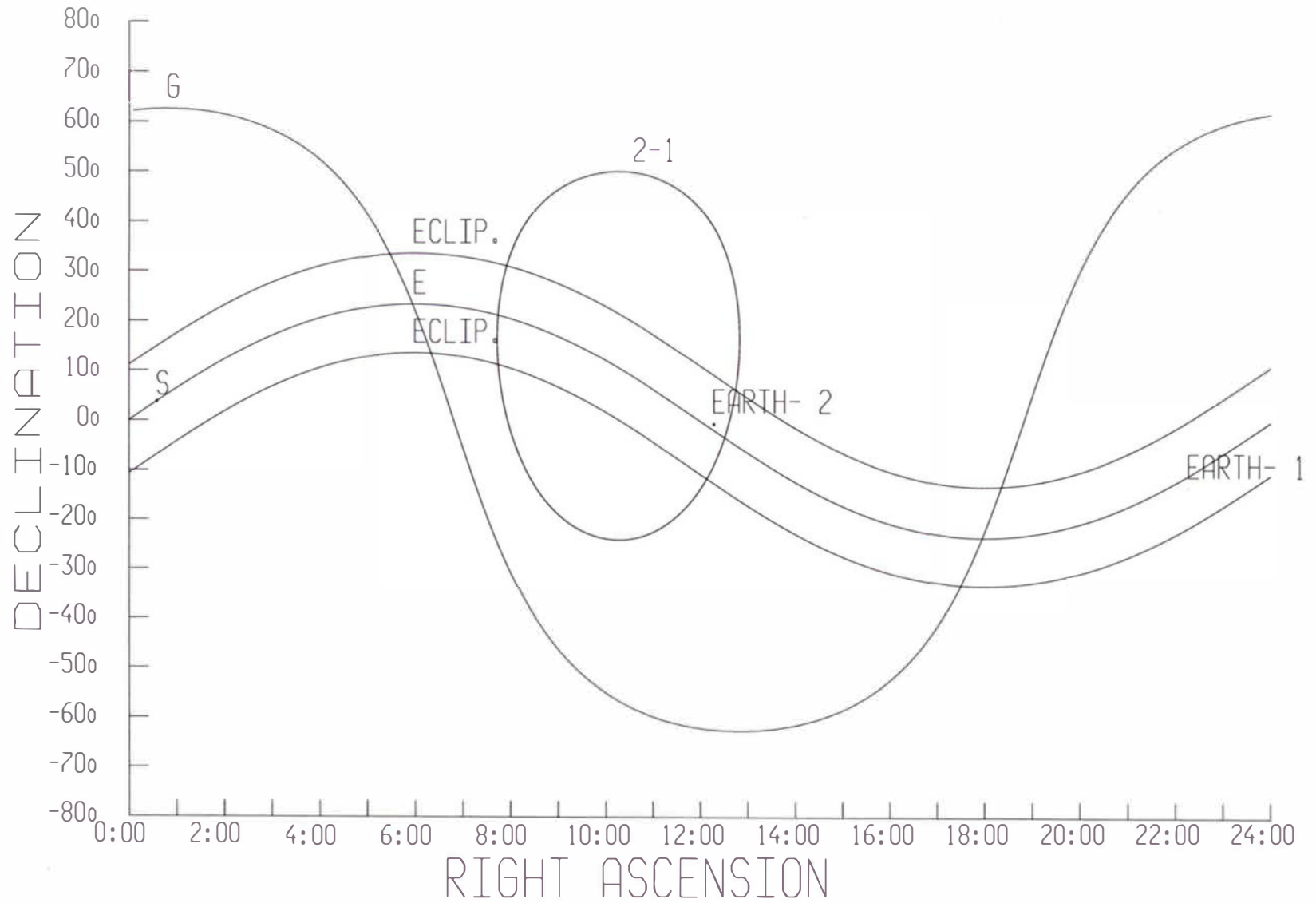
-
- ☒ ACCESS and MBL4 databases updated with identical times?

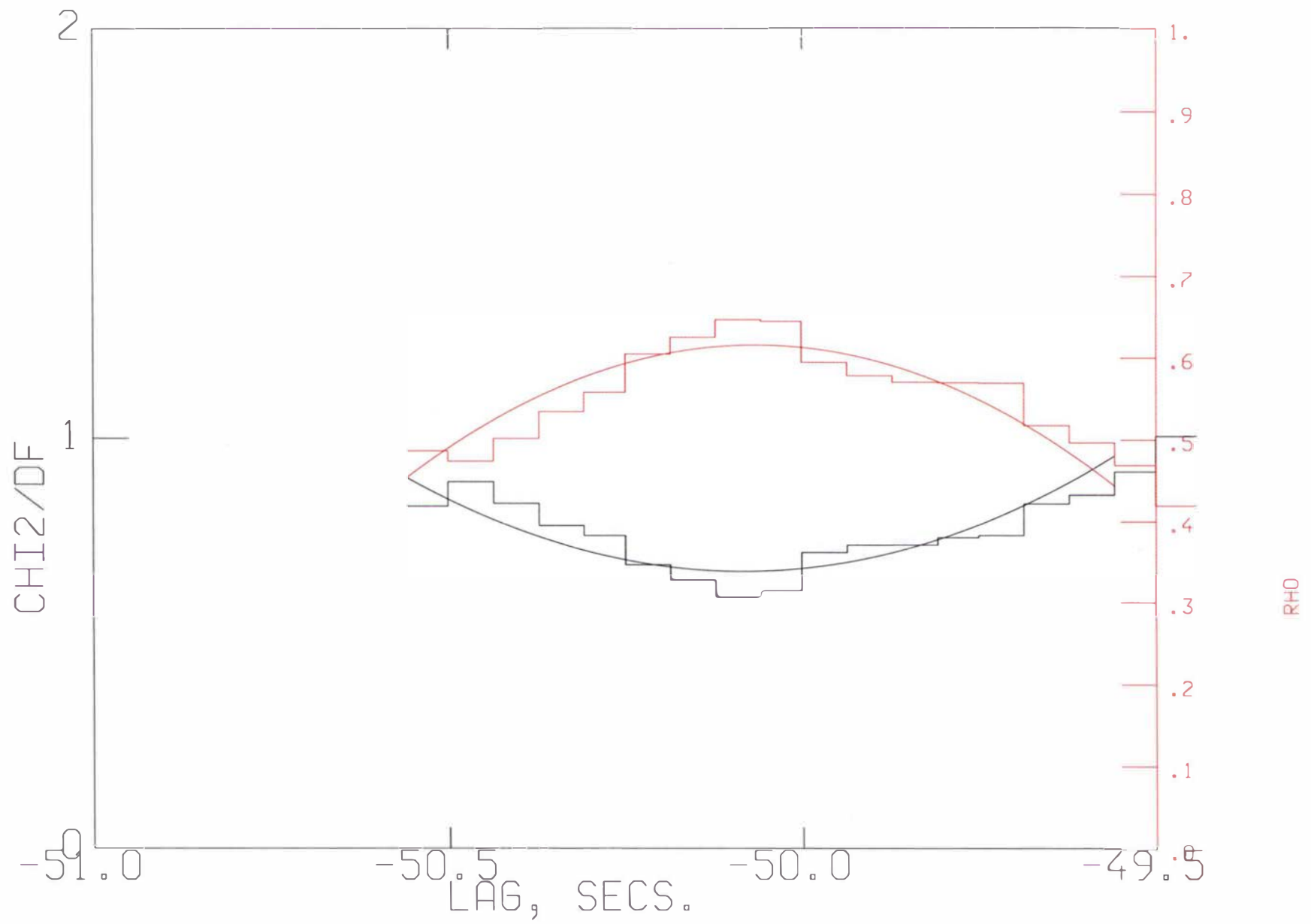


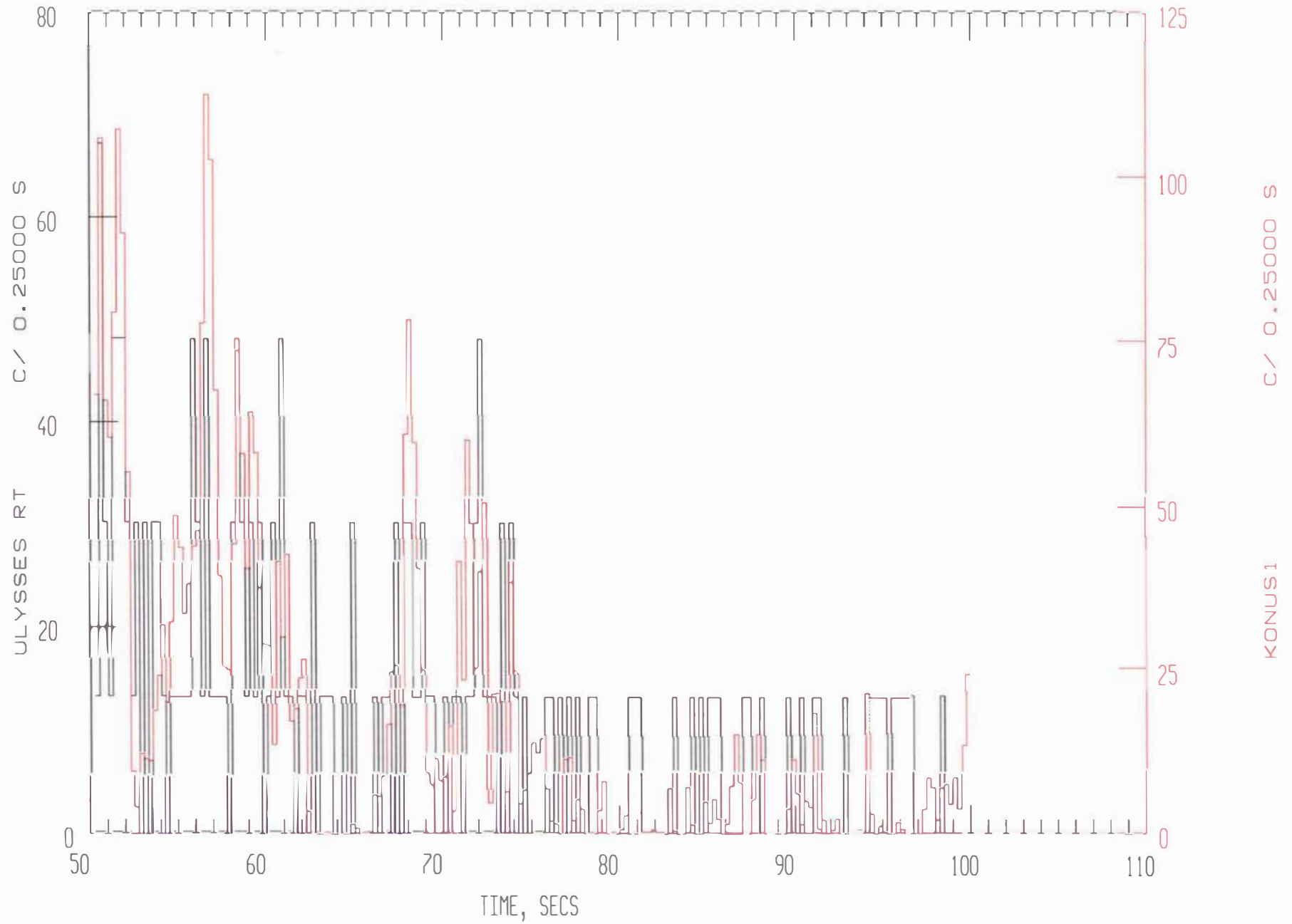
EVENT OF MAR 30, 1998 8:49

06/03/2012

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







KONUS 19980330 31784

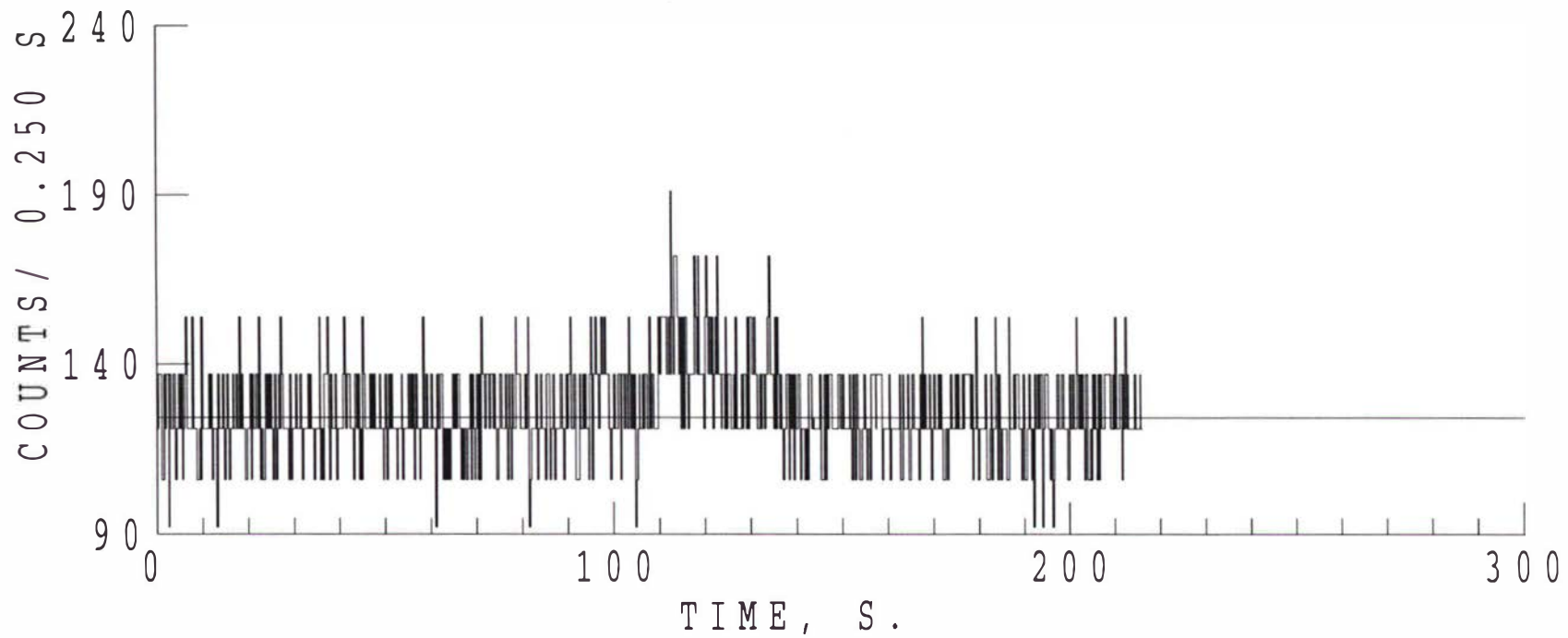
ULYSSES RT

01 / 02 / 12

30/03/98 31680.027 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



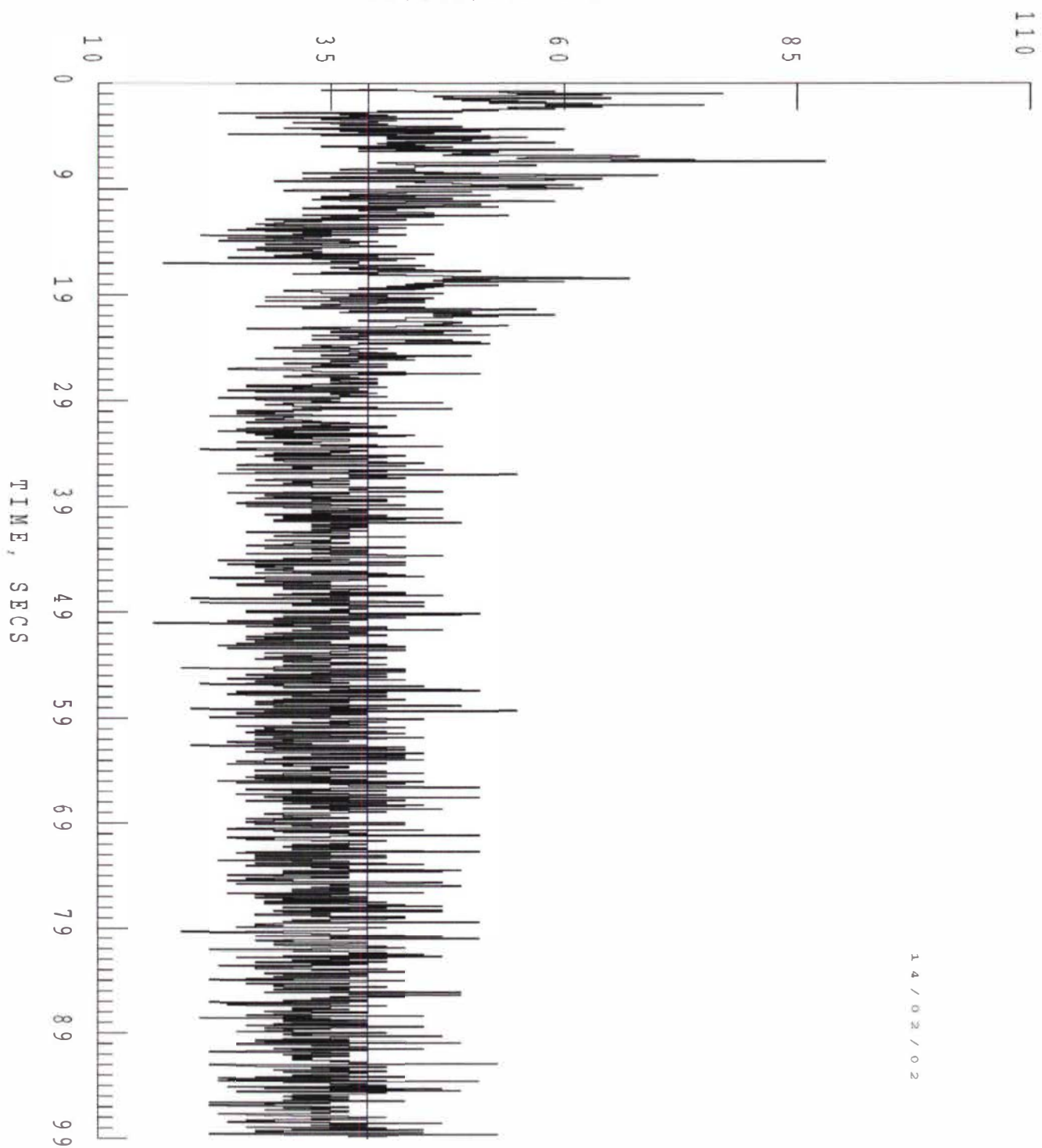
KONUS1

30/03/98

33623.057

50 - 200 keV

COUNTS/0.064 S



14/02/02

KONUS1 19980330 33623

ULYSSES RT

14 / 02 / 02

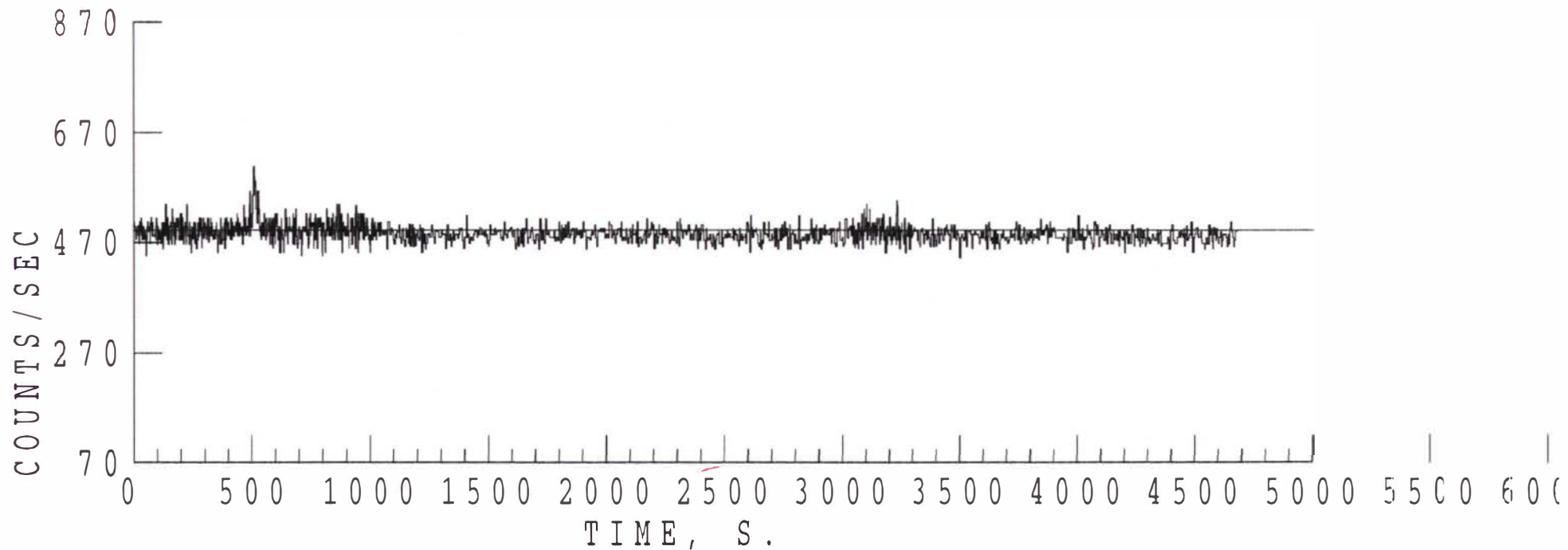
30 / 03 / 98 31284.021 s

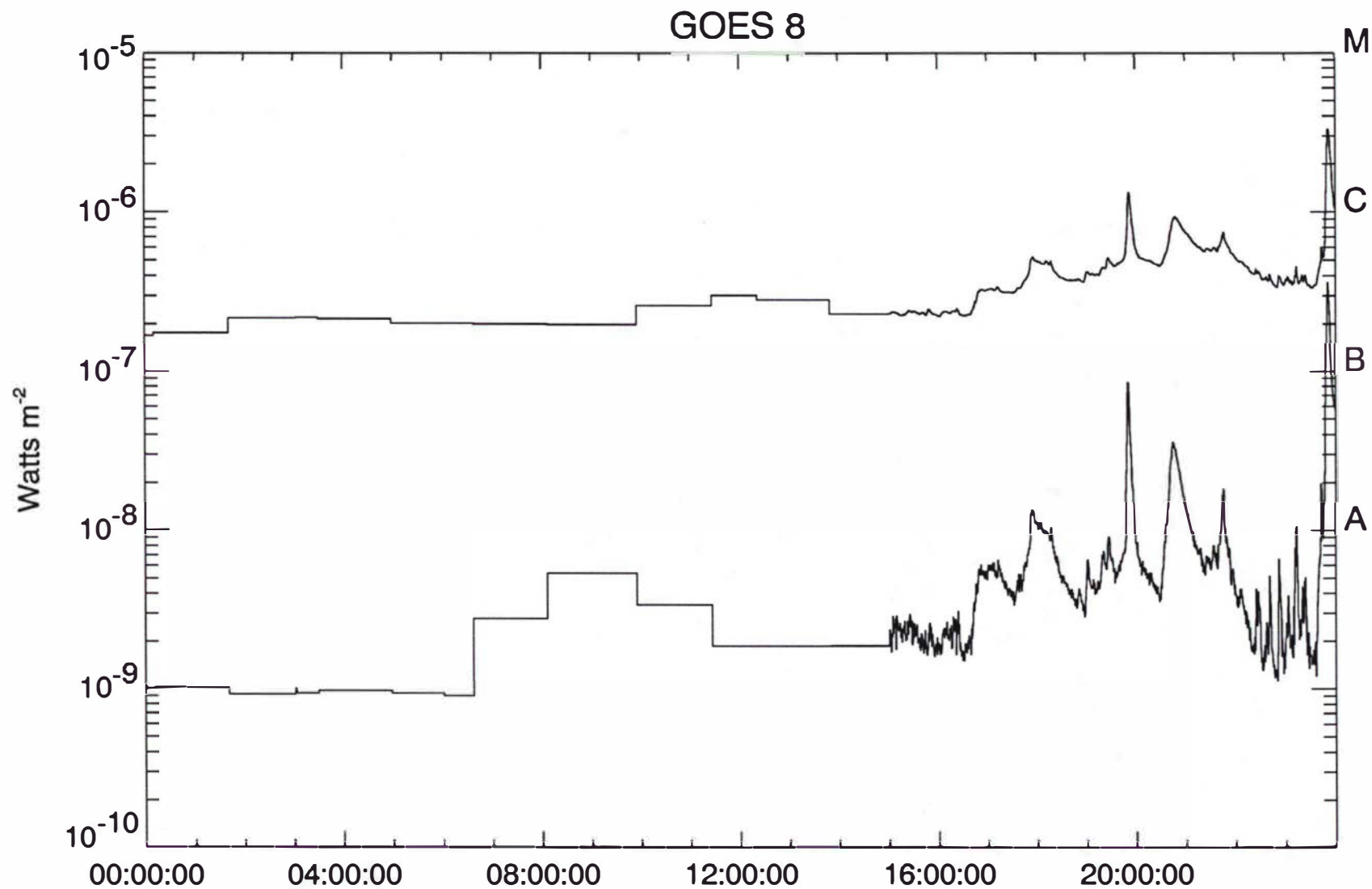
INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



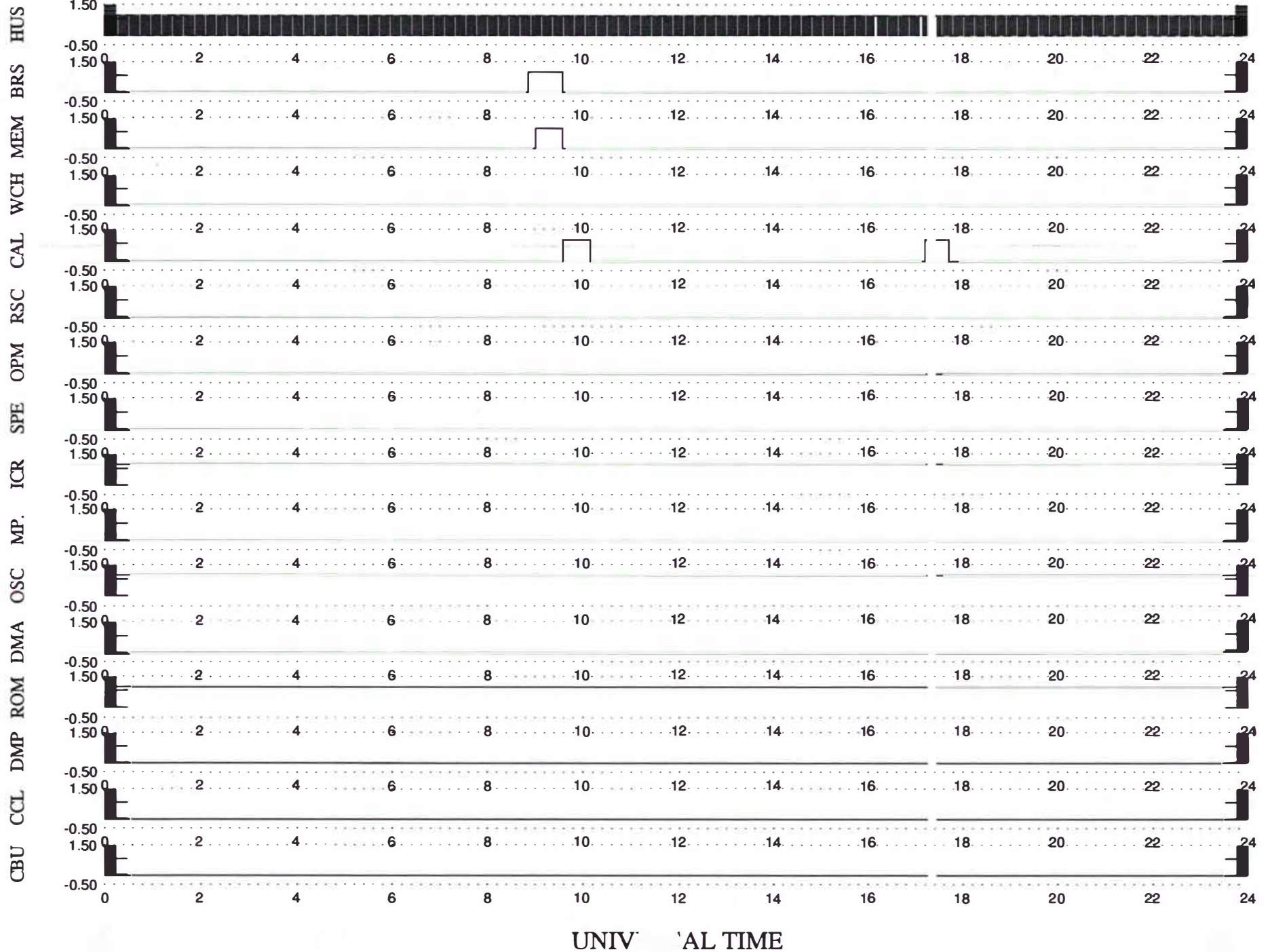


Data Start: 98/03/30, 0000:00

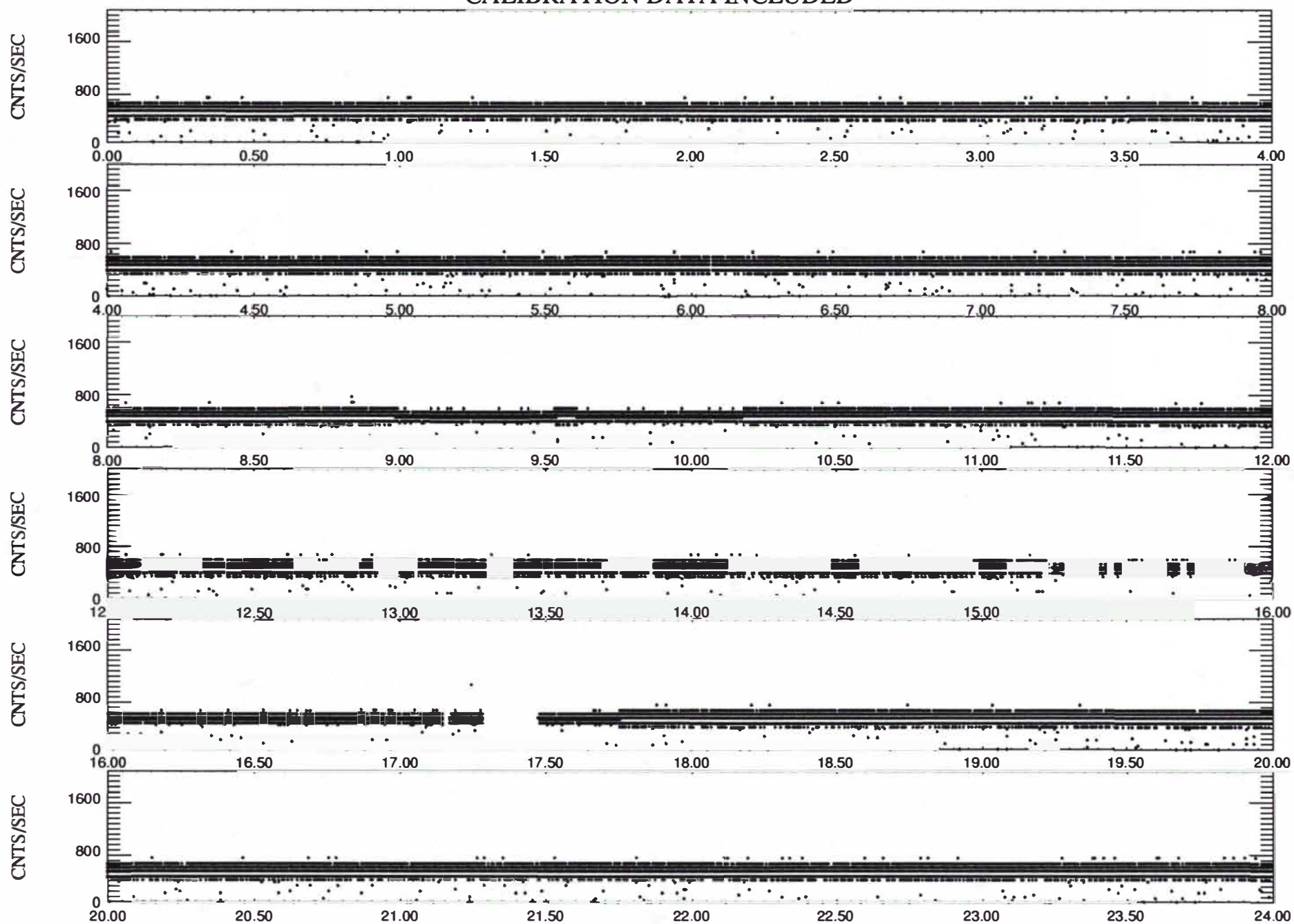
Plot created: 98/04/03, 1007

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted
Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted
Sample average = 10

BURST NUMBER 7

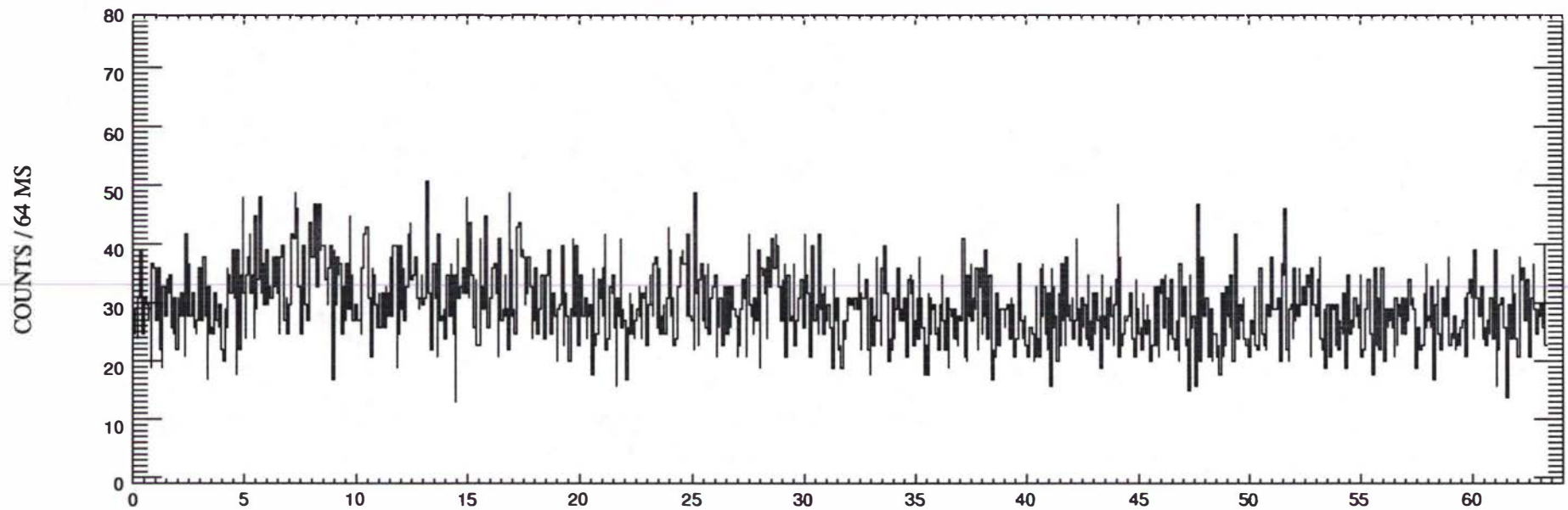


CALIBRATION DATA INCLUDED

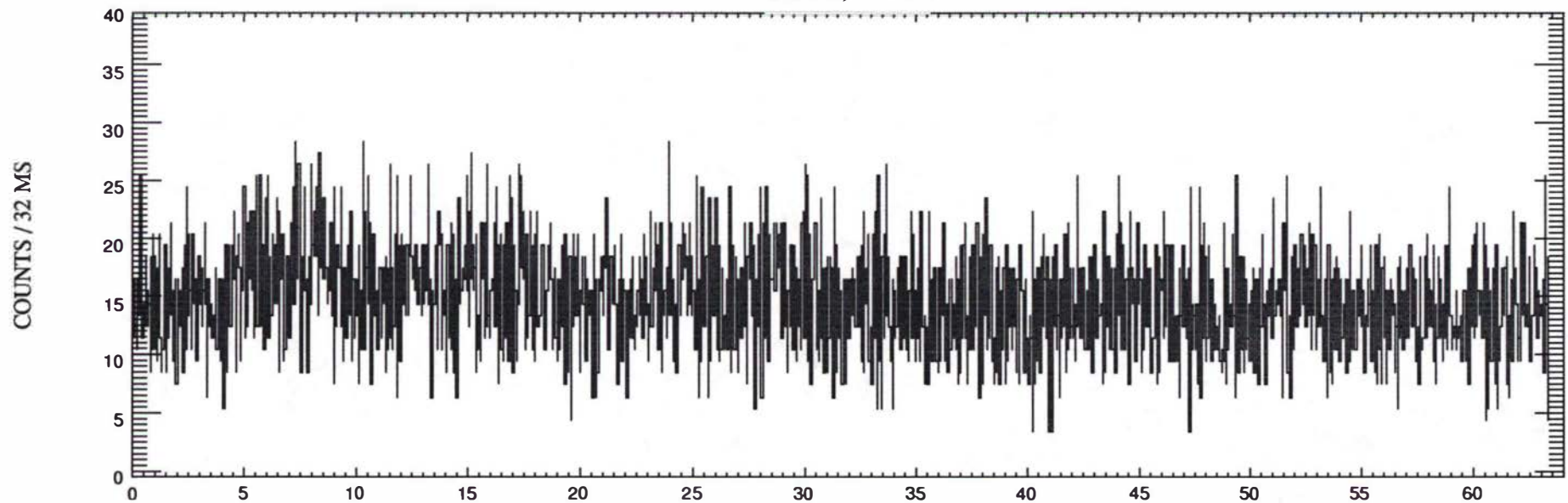


UNIV AL TIME

Burst Counter 7 at UT= 8.831325060527 h=31792.770 s 08:49:52.770

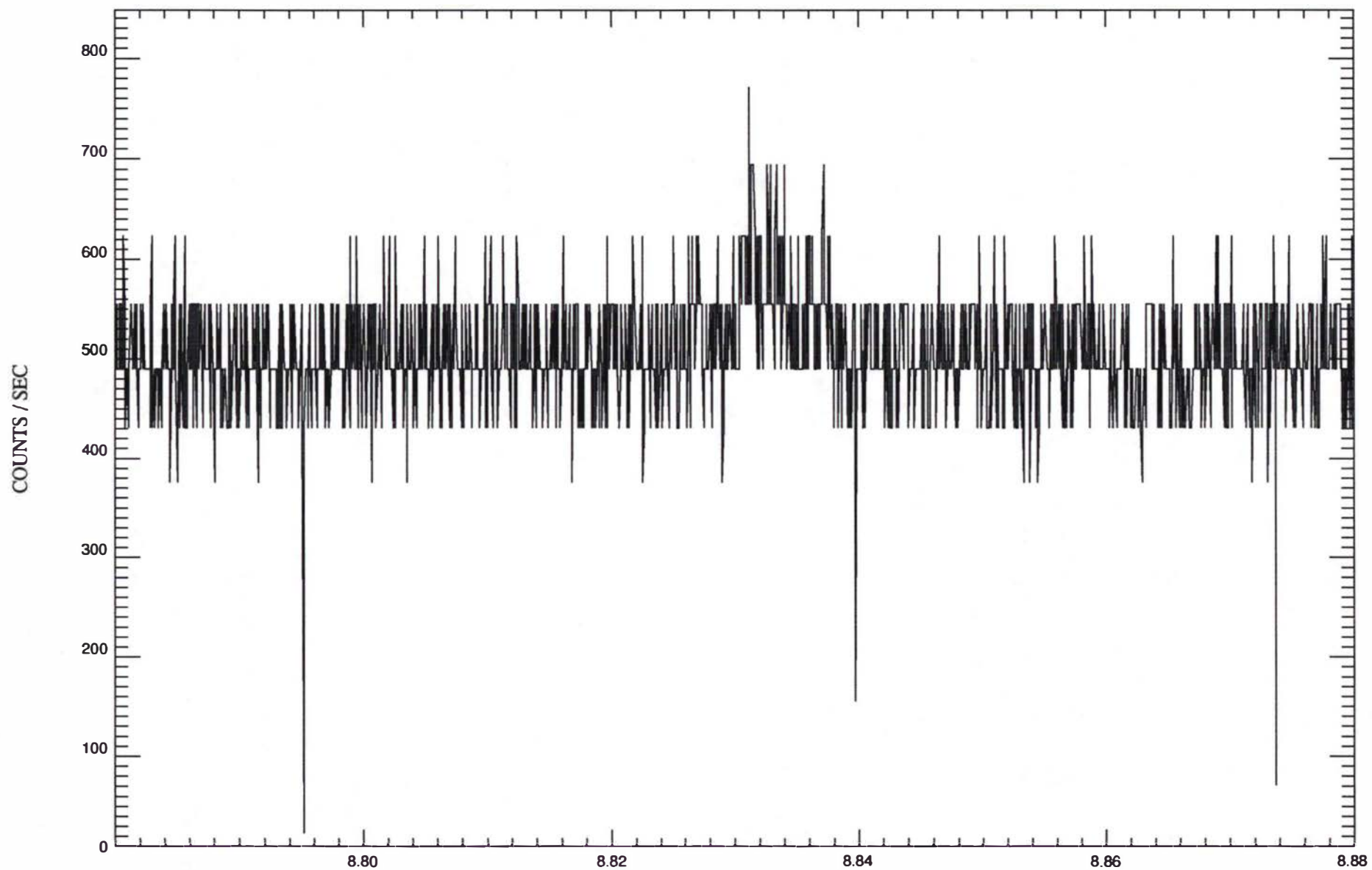


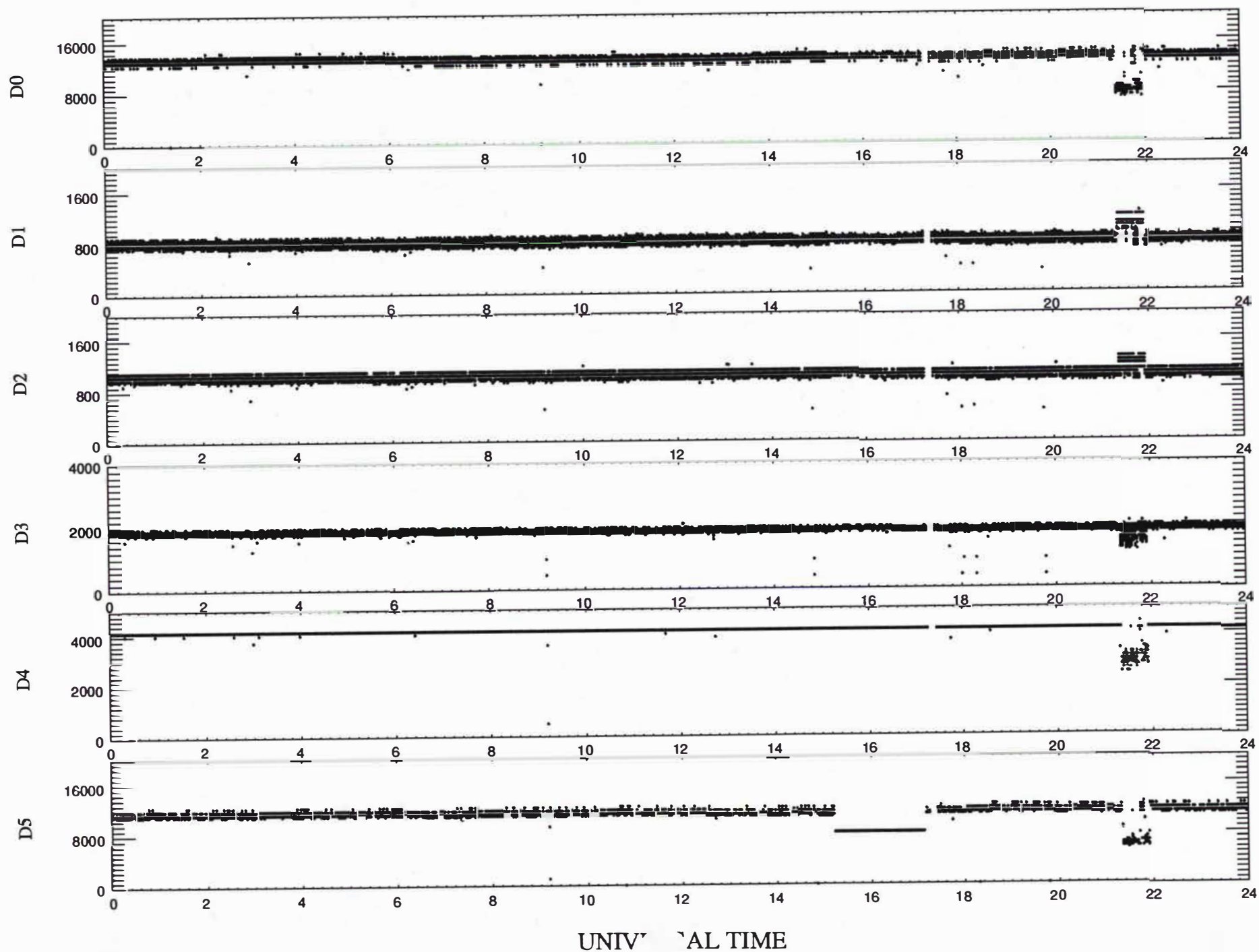
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Thu Apr 2 13:28:32 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA11641; Thu, 2 Apr 1998 13:28:31 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA20555; Thu, 2 Apr 1998 13:28:29 -0800
Date: Thu, 2 Apr 1998 15:26:18 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980402152618.20e125a1@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6670
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6670
EVENT OF 1998 MAR 31 DAY OF YEAR= 90
EVENT CROSSING TIME AT BATSE : 24125. S. OR 06:42:05.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 131.000 -25.000
BATSE PEAK COUNTING RATE: 3500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 3/ 98 IS:
RA= 153.016 DEC= 13.411 DIST= 4.613 AU
BATSE-ULYSSES DISTANCE = 690031955. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=136.00 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1655.58 SECS.
CROSSING TIME AT ULYSSES IS 22469. S. OR 06:14:29 +/- 302.47 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 3/ 98 IS:
RA= 18.803 DEC= 7.504 DIST= 2.399 AU
MARS-BATSE DISTANCE = 358956224. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.76 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 472.55 SECS.
CROSSING TIME AT MARS IS 24598. S. OR 06:49:57 +/- 198.18 SECONDS

BATSE BURST TRIGGER

NO.: 6670

TIME: TJD=0903 SECONDS=24125

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=71.5 AZIMUTH=104.6 ERROR=2.83 DEGREES

COMMENTS:

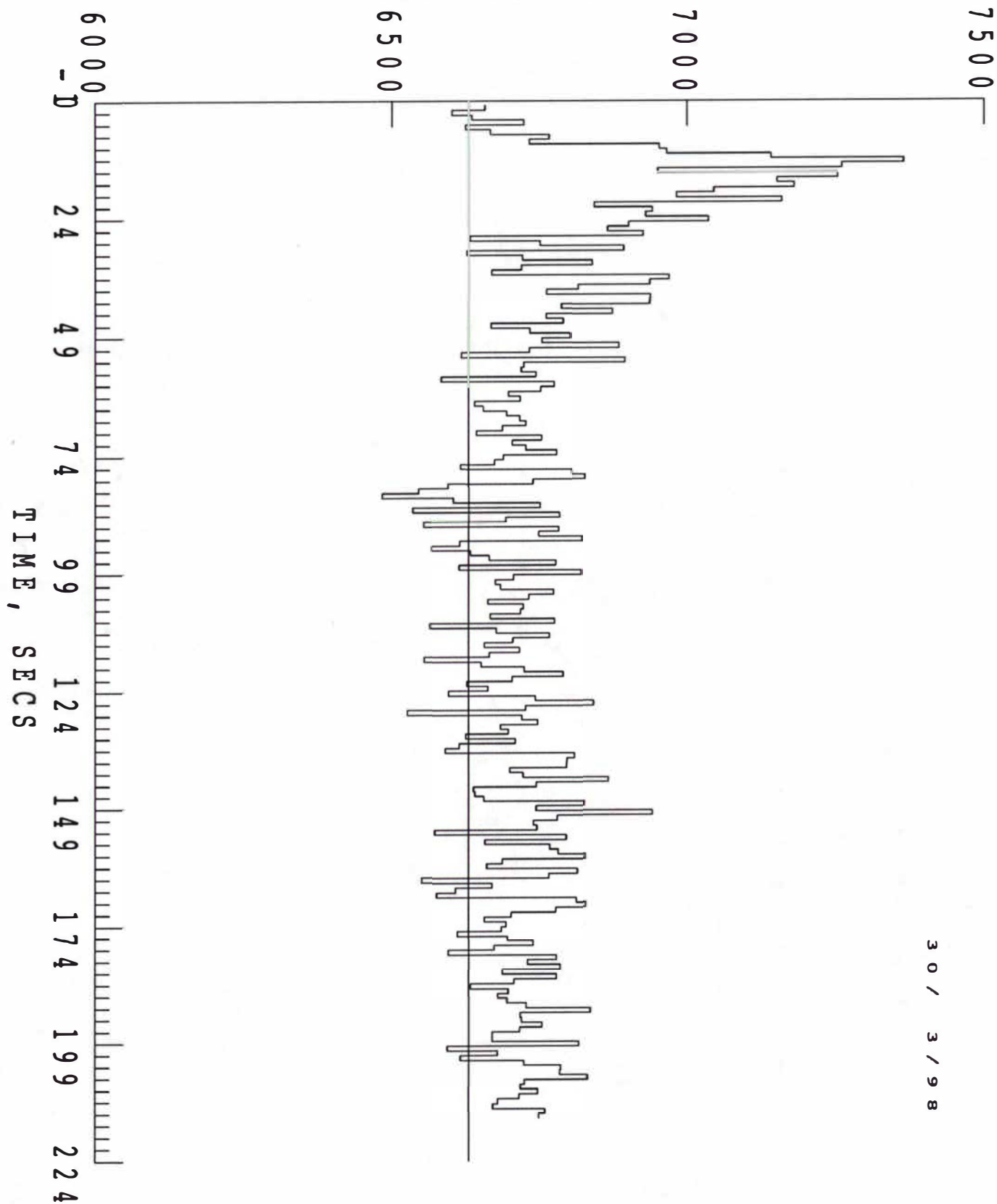
BURST. SINGLE PULSE, DUR. APPROX. 50 SECS, MAX. APPROX. T+1 SECS. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6670	980331	10903	24125	3500	131	-25	50

BACODINE 6670 31/03/98 24114.913

25- 100 keV

COUNTS/1.024 S



BATSE BURST# 6670

ULYSSES RT

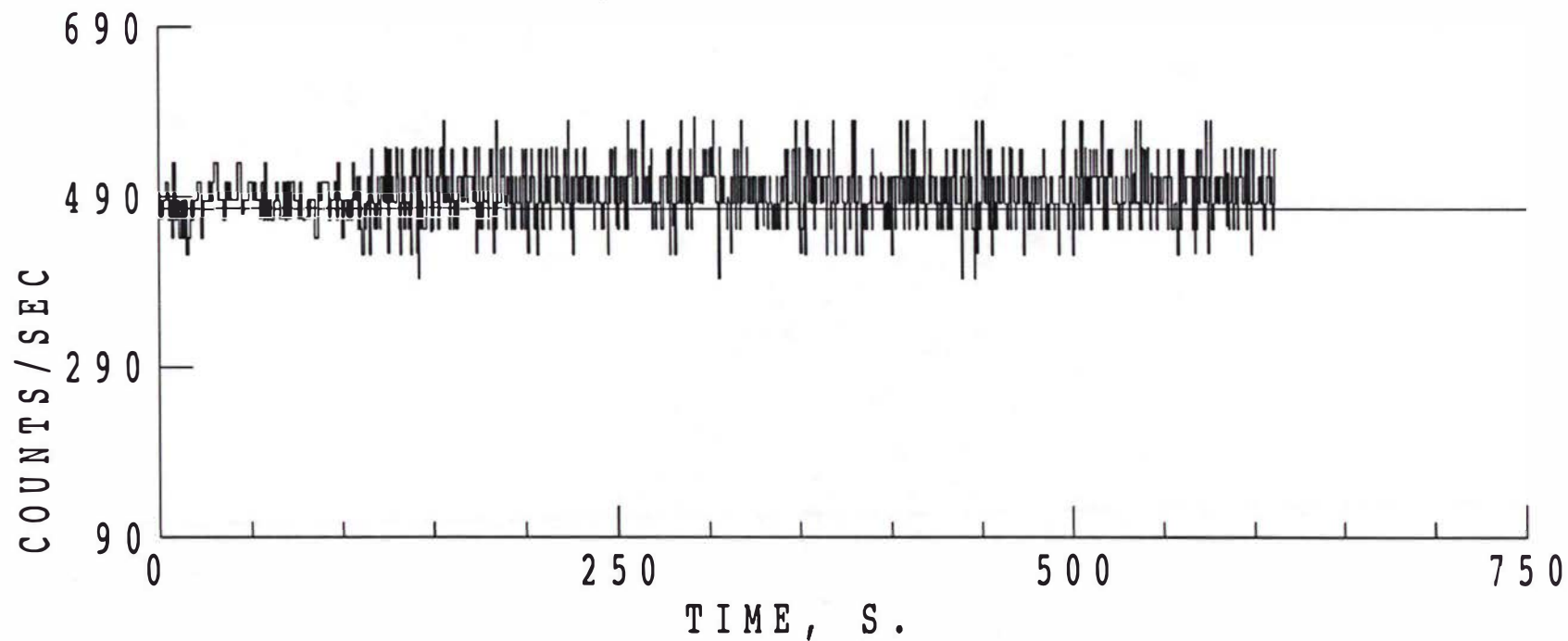
2 / 4 / 98

31 / 3 / 98 22176.100 s

INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Thu Apr 2 13:31:24 1998
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA11661; Thu, 2 Apr 1998 13:31:23 -0800
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV by sunspot.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA20592; Thu, 2 Apr 1998 13:31:20 -0800
Date: Thu, 2 Apr 1998 15:30:20 -0600 (CST)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <980402153020.20e125a1@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 6671
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 6671
EVENT OF 1998 MAR 31 DAY OF YEAR= 90
EVENT CROSSING TIME AT BATSE : 61075. S. OR 16:57:55.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 191.000 -45.000
BATSE PEAK COUNTING RATE: 28000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 31/ 3/ 98 IS:
RA= 152.911 DEC= 13.409 DIST= 4.619 AU
BATSE-ULYSSES DISTANCE = 691065739. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.17 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -869.92 SECS.
CROSSING TIME AT ULYSSES IS 60205. S. OR 16:43:25 +/- 407.41 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 31/ 3/ 98 IS:
RA= 18.803 DEC= 7.504 DIST= 2.399 AU
MARS-BATSE DISTANCE = 358956224. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 38.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 942.21 SECS.
CROSSING TIME AT MARS IS 62017. S. OR 17:13:37 +/- 142.58 SECONDS

BATSE BURST TRIGGER

NO.: 6671

TIME: TJD=0903 SECONDS=61075

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=89.3 AZIMUTH=154.3 ERROR=5.05 DEGREES

COMMENTS:

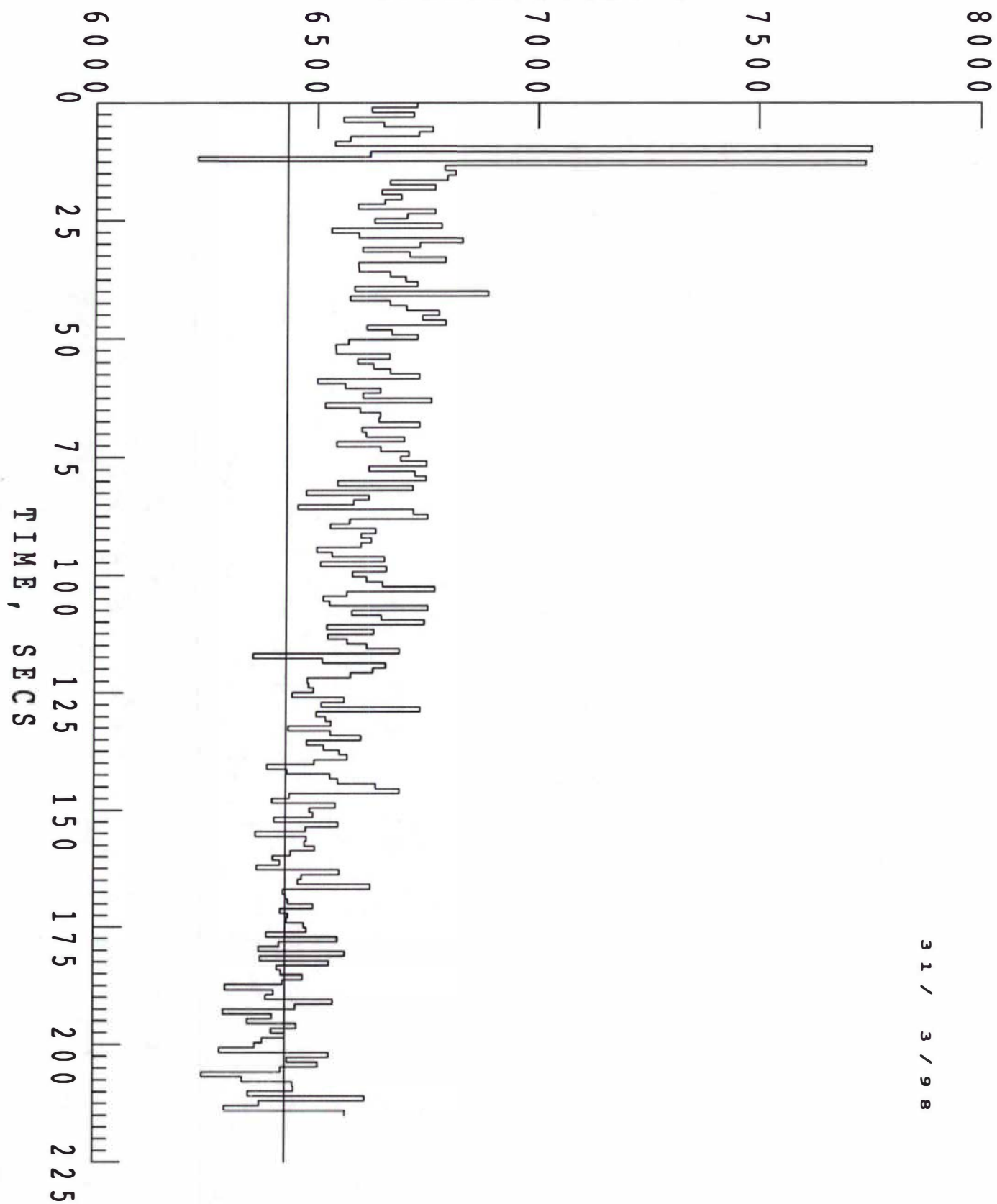
BURST. SINGLE SPIKE WITH SUBSTRUCTURE, DUR. APPROX. 0.25 SECS. VISIBLE
ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
6671	980331	10903	61075	28000	191	-45	.25

BACODINE 6671 31/03/98 61062.881

25- 100 keV

COUNTS/1.024 S



31 / 3 / 98

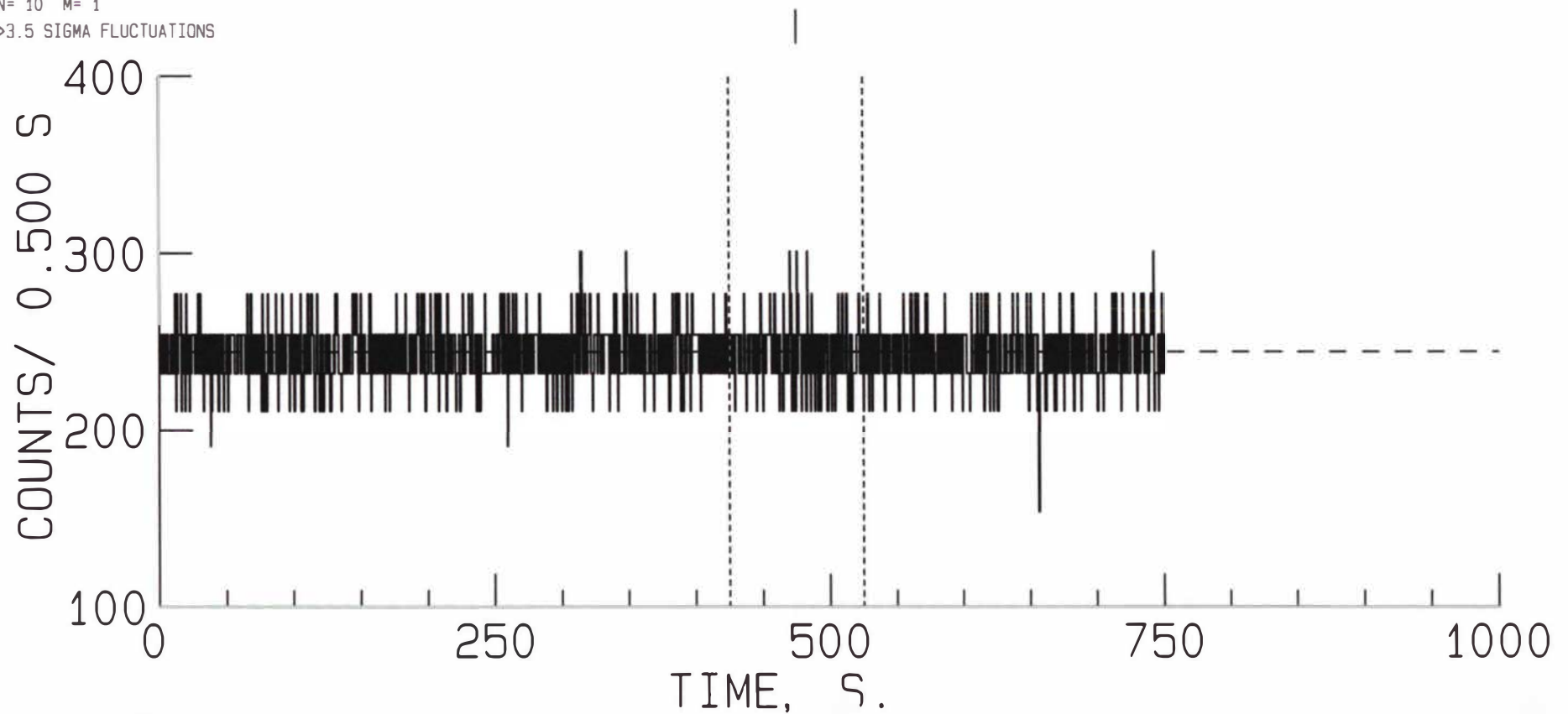
ULYSSES RT

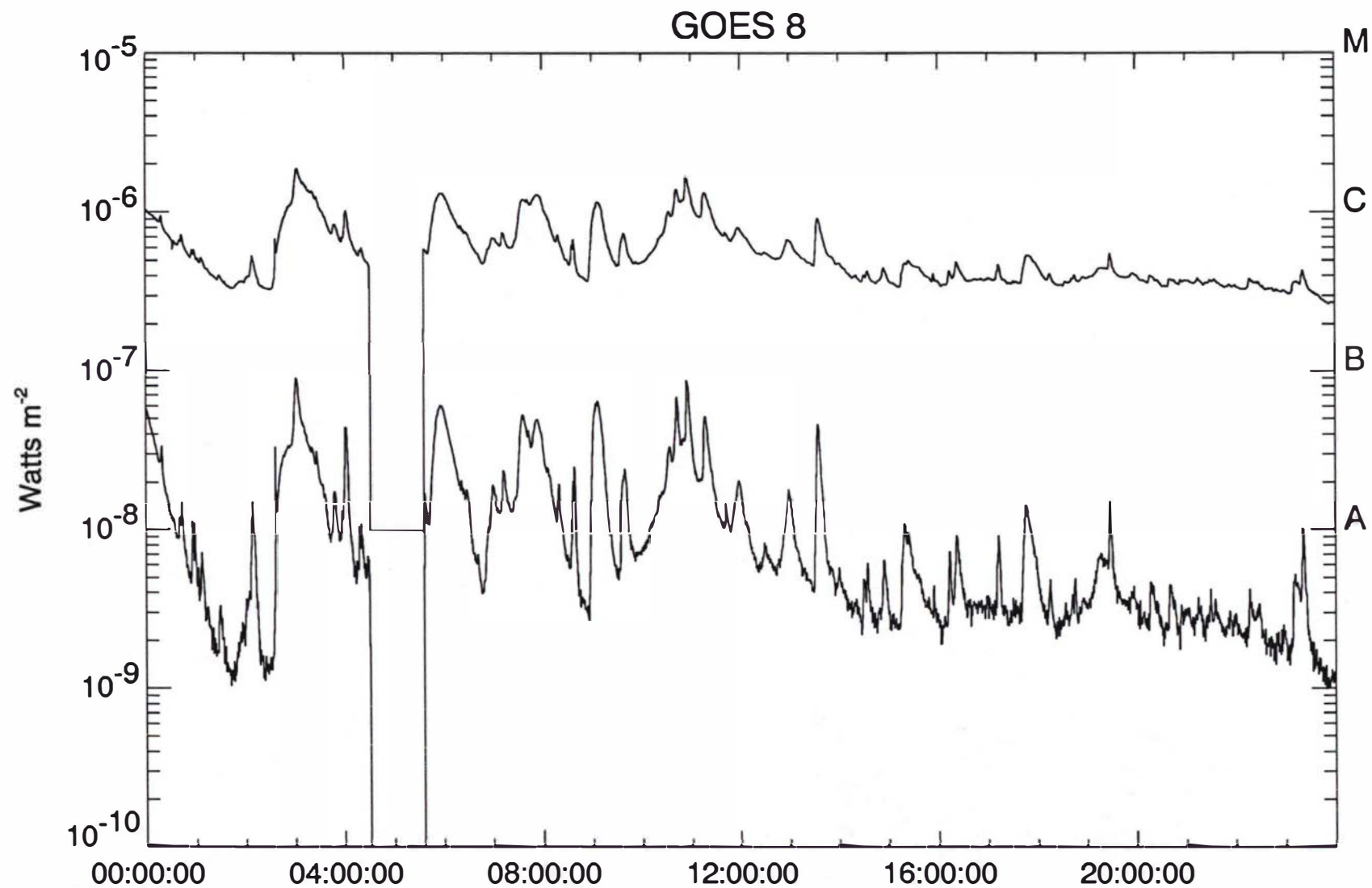
27 / 7 / 98

31 / 3 / 98 59796.002 s

22 - 148 keV

N = 10 M = 1
>3.5 SIGMA FLUCTUATIONS





Data Start: 98/03/31, 0000:00

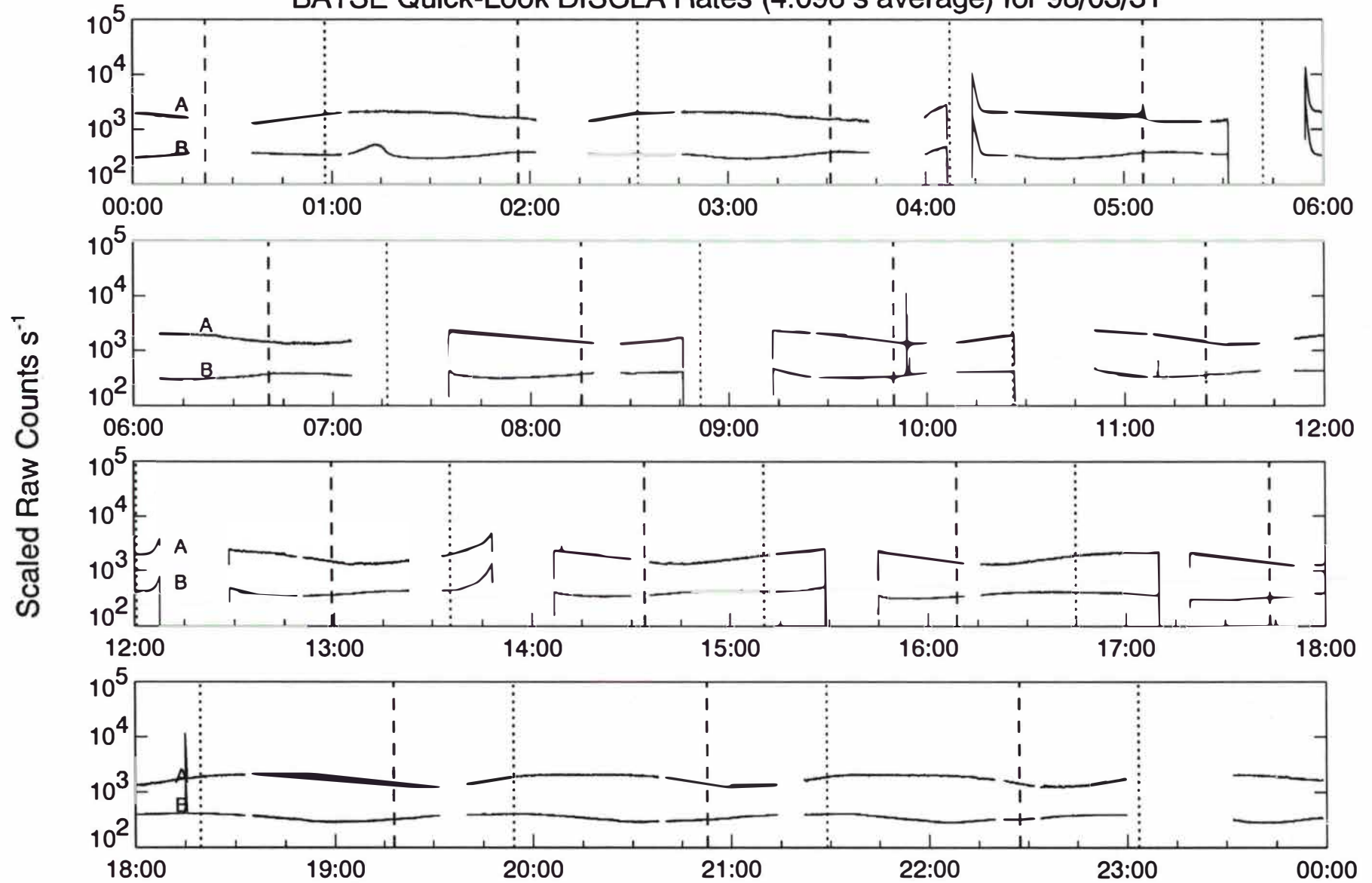
Plot created: 98/04/05, 1007

Channel

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

Background not subtracted
Background not subtracted
Sample average = 10

BATSE Quick-Look DISCLA Rates (4.096 s average) for 98/03/31

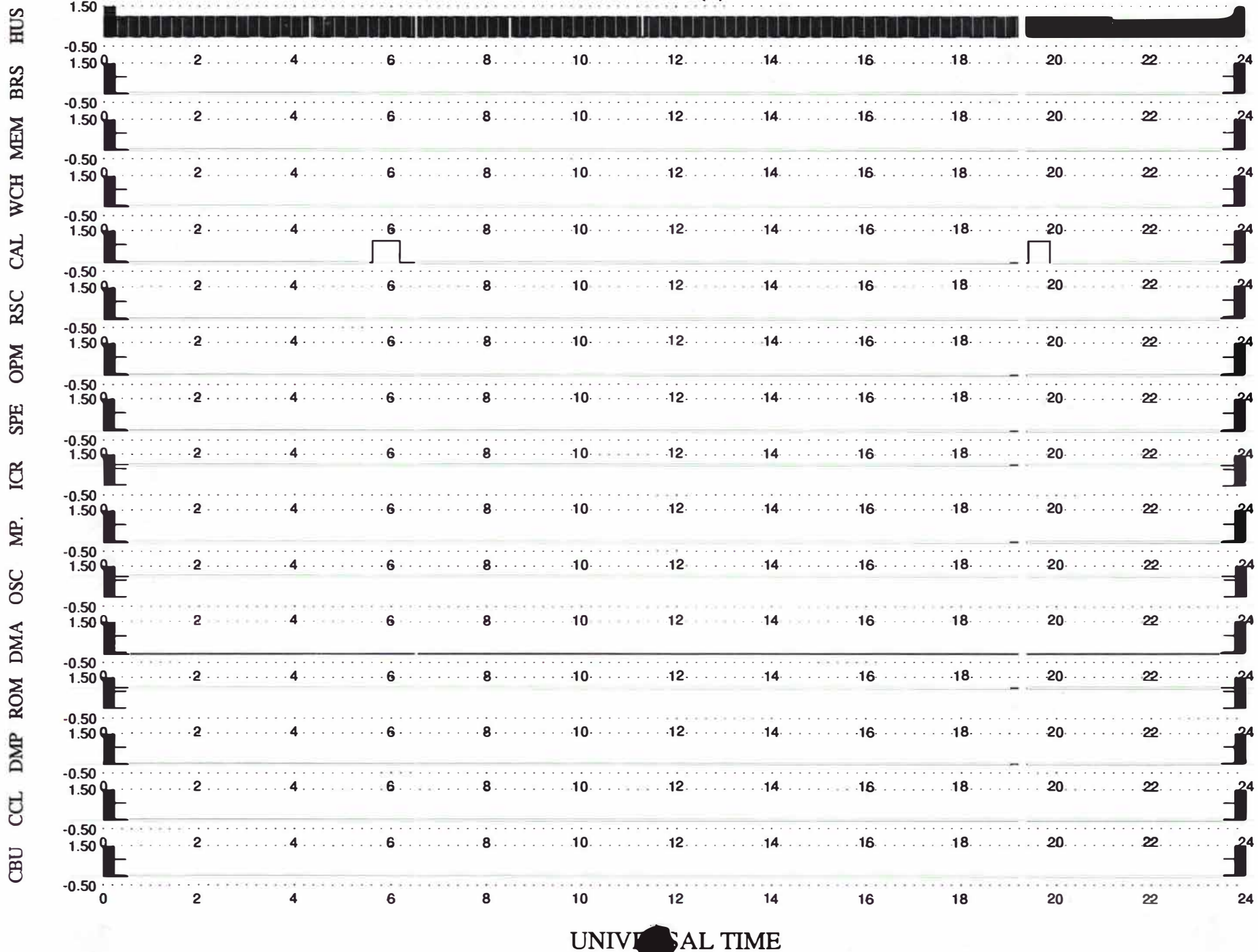


Current Time: 98/04/05, 1008 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

NO BURST (7)



55

53

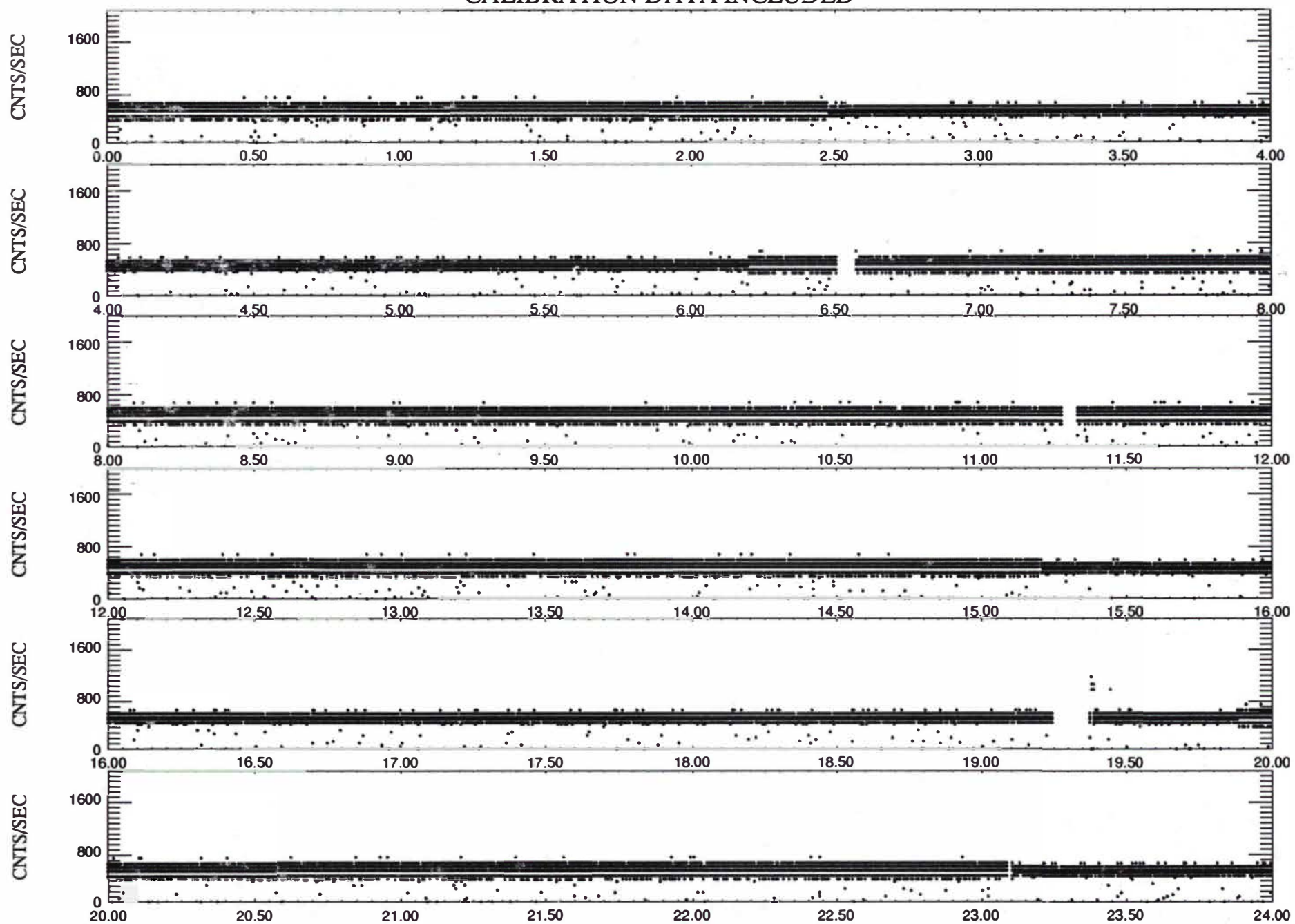
2

DEBATE

450

23.1)

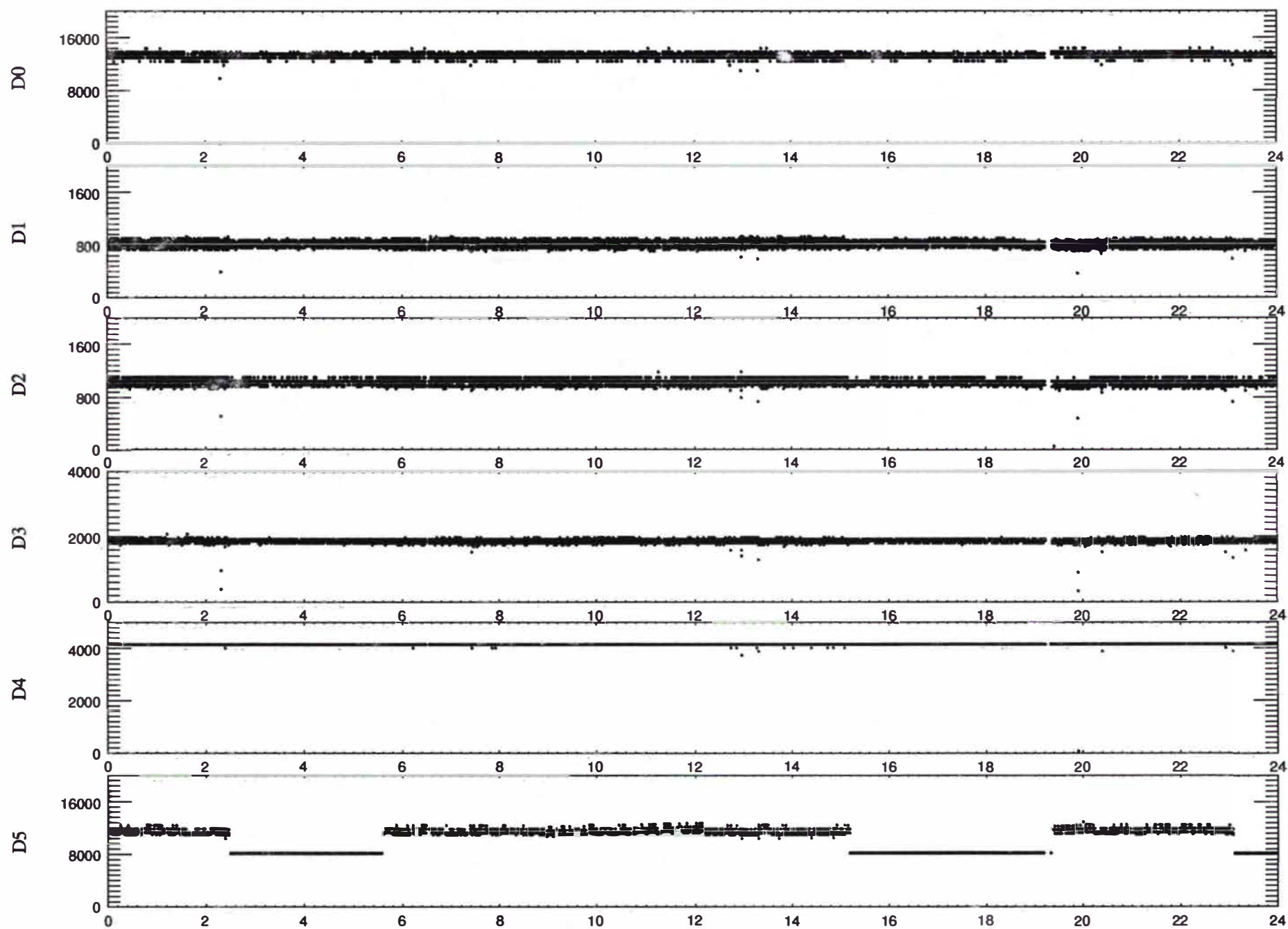
CALIBRATION DATA INCLUDED



UNIV. TIME

THE UNIVERSITY OF CHICAGO LIBRARY

8917



UNIV'AL TIME