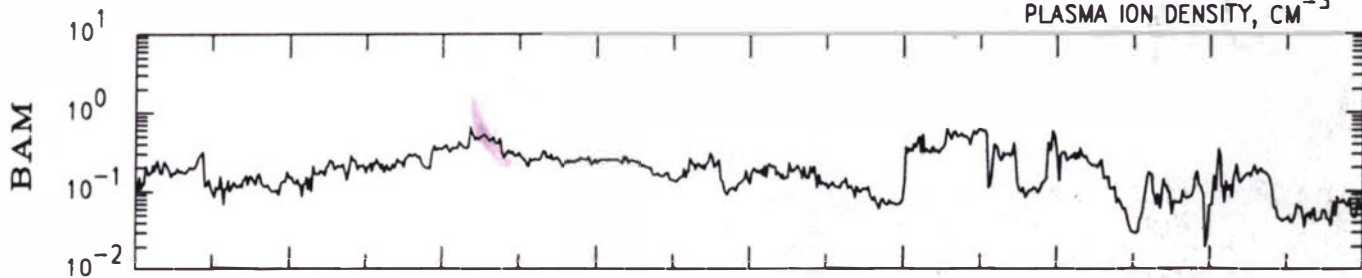


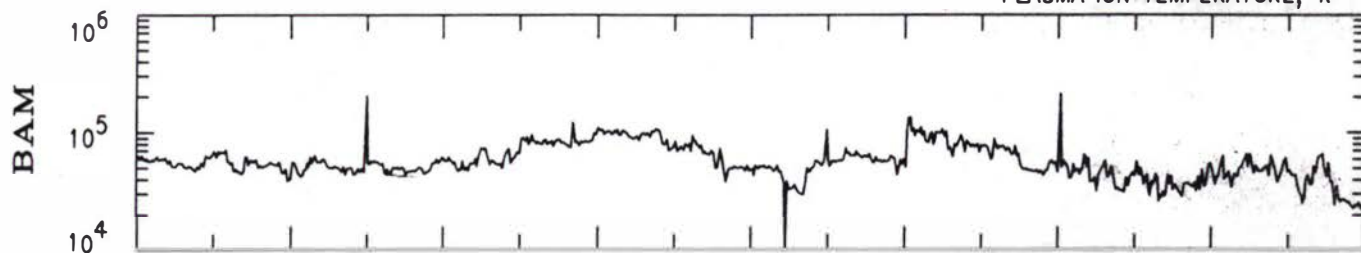
ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 152 JUN 1 00:00:00.000 - 99 168 JUN 17 00:00:00.000

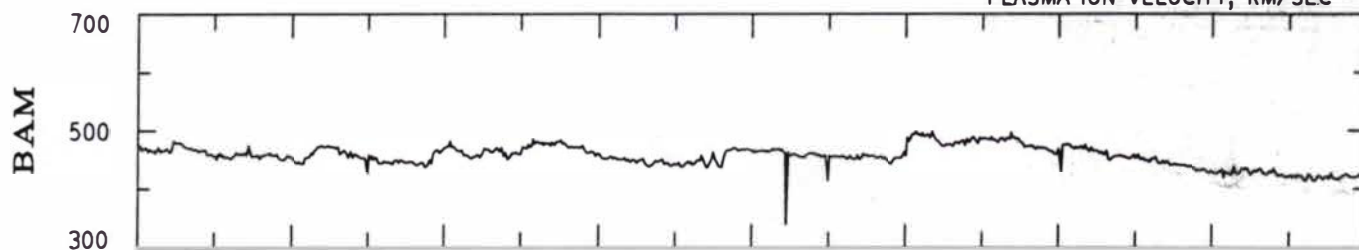
PLASMA ION DENSITY, CM^{-3}



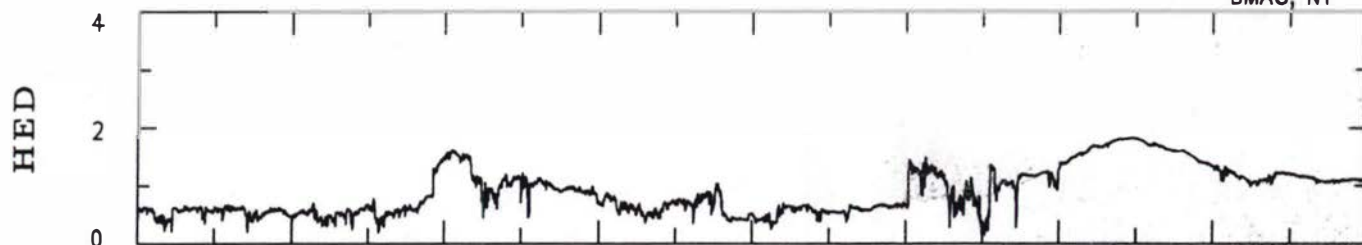
PLASMA ION TEMPERATURE, °K



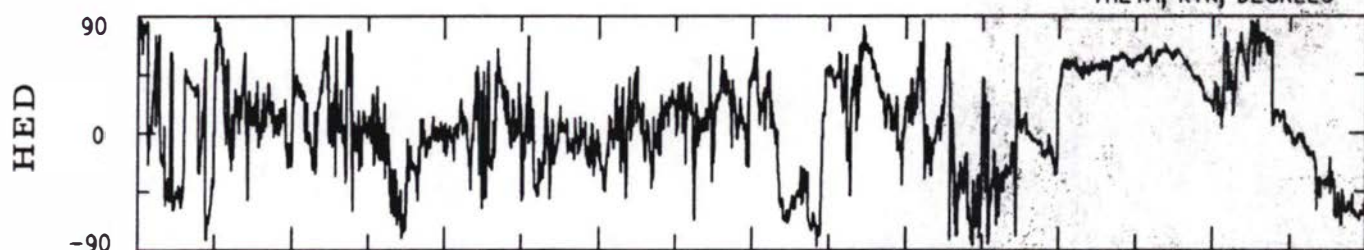
PLASMA ION VELOCITY, KM/SEC



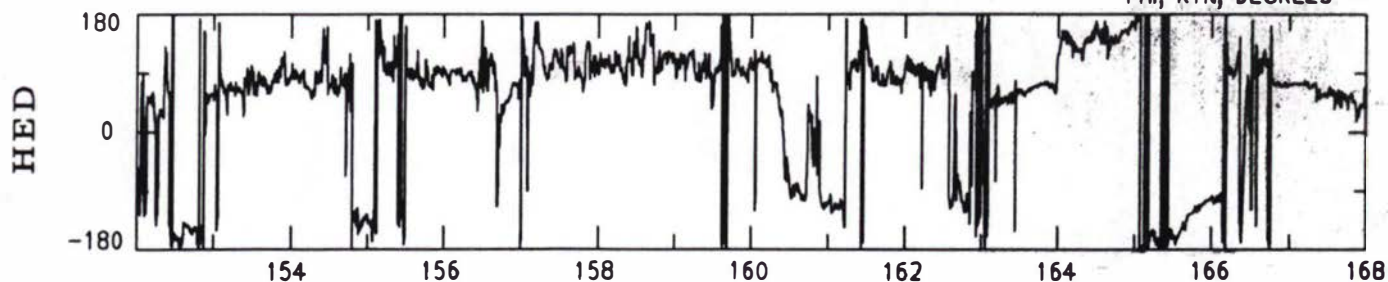
BMAG, NT



THETA, RTN, DEGREES



PHI, RTN, DEGREES



DAY OF YEAR

NOV 3 1944

1000

NOV 3 1944



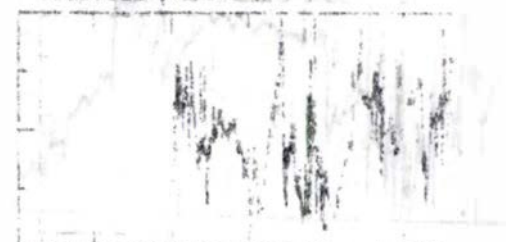
NOV 3 1944



NOV 3 1944



NOV 3 1944

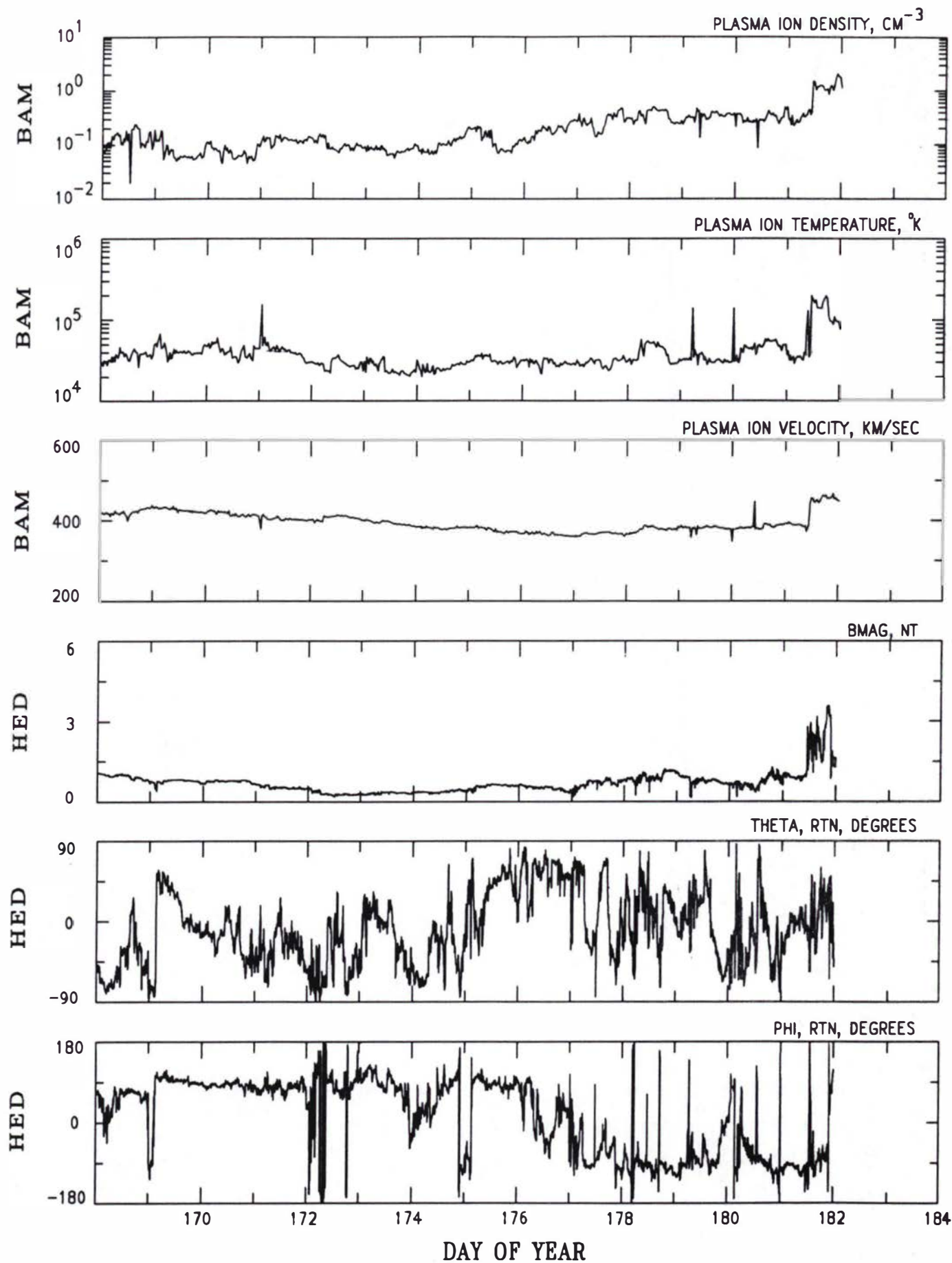


NOV 3 1944



ULYSSES CDR - SOLAR WIND PLASMA AND MAGNETIC FIELD

99 168 JUN 17 00:00:00.000 - 99 184 JUL 3 00:00:00.000



11/30/83 07:00 AM

11/30/83

11/30/83 07:00 AM



11/30/83 07:00 AM



11/30/83 07:00 AM



11/30/83 07:00 AM

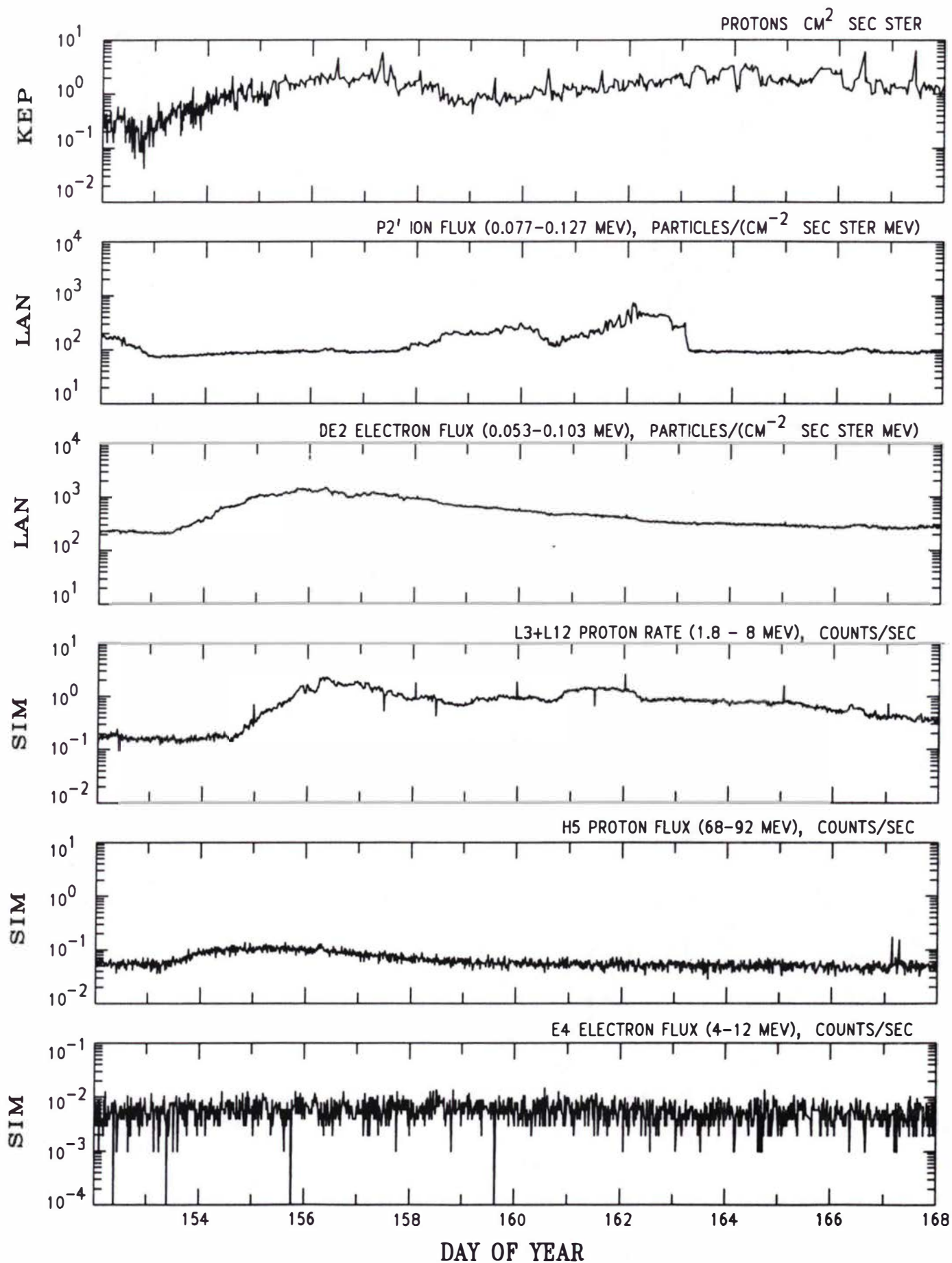


11/30/83 07:00 AM



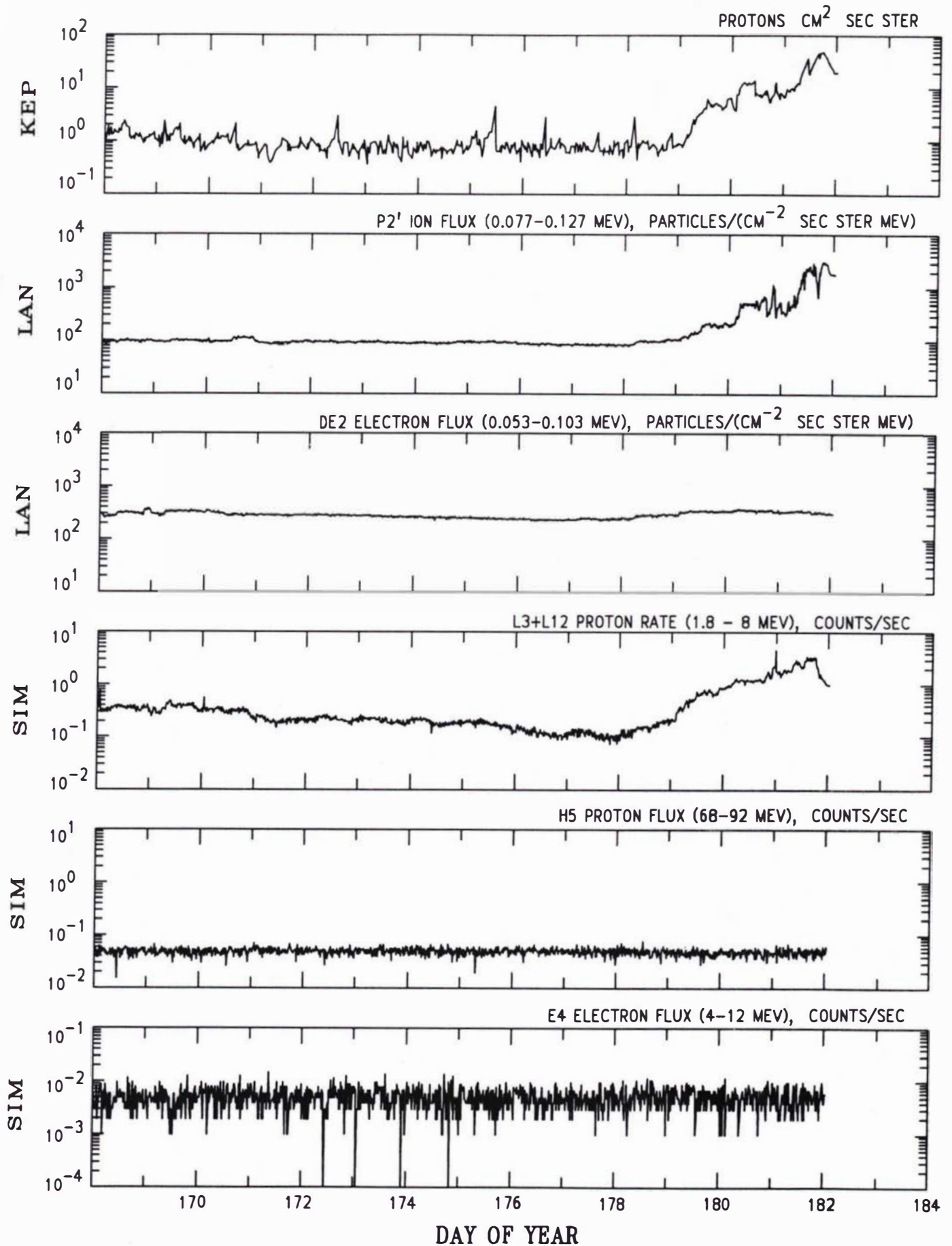
ULYSSES CDR - ENERGETIC PARTICLES, LOW ENERGY IONS AND COSMIC RAY

99 152 JUN 1 00:00:00.000 - 99 168 JUN 17 00:00:00.000



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

99 168 JUN 17 00:00:00.000 - 99 184 JUL 3 00:00:00.000

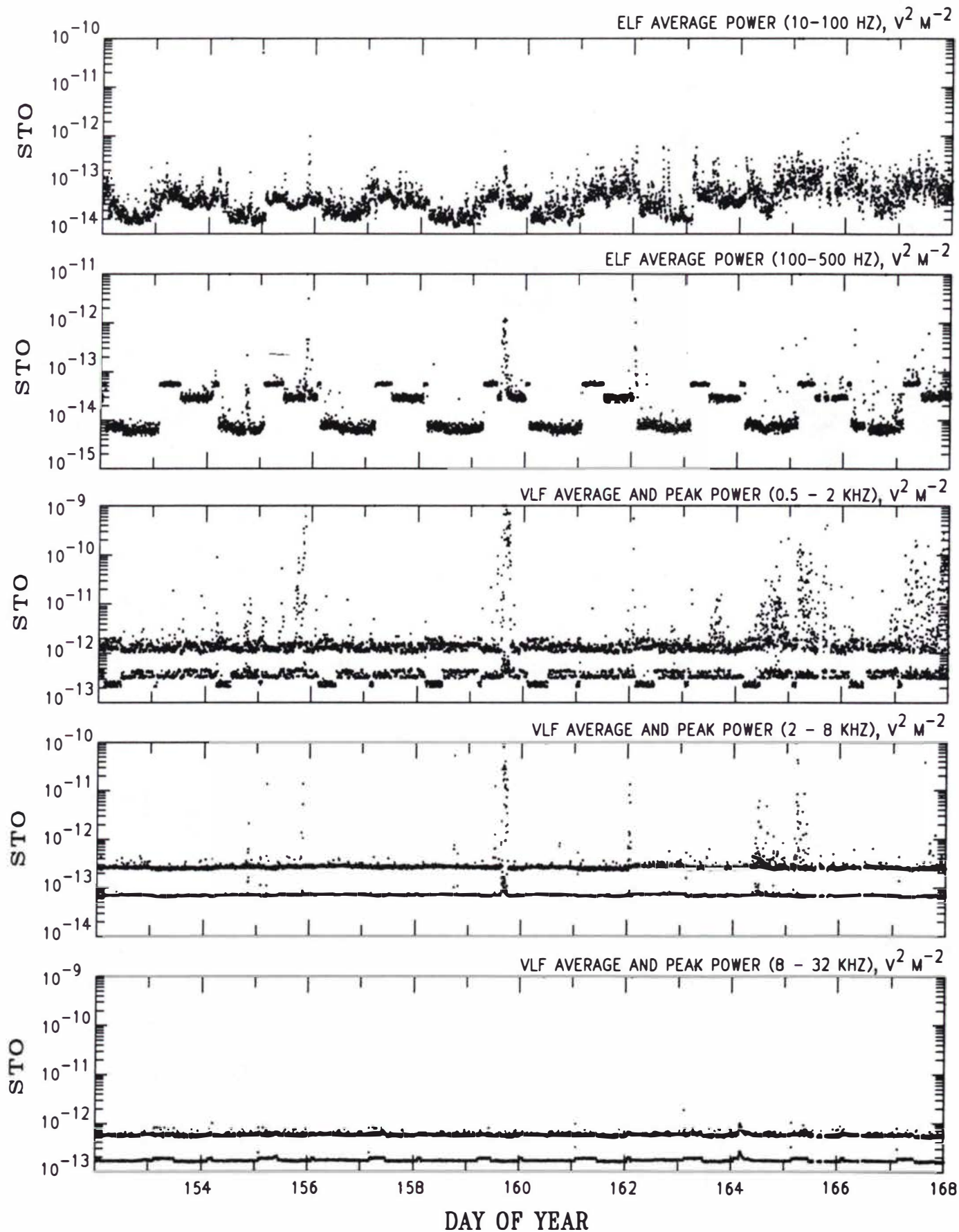


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THE UNIVERSITY OF CHICAGO PRESS

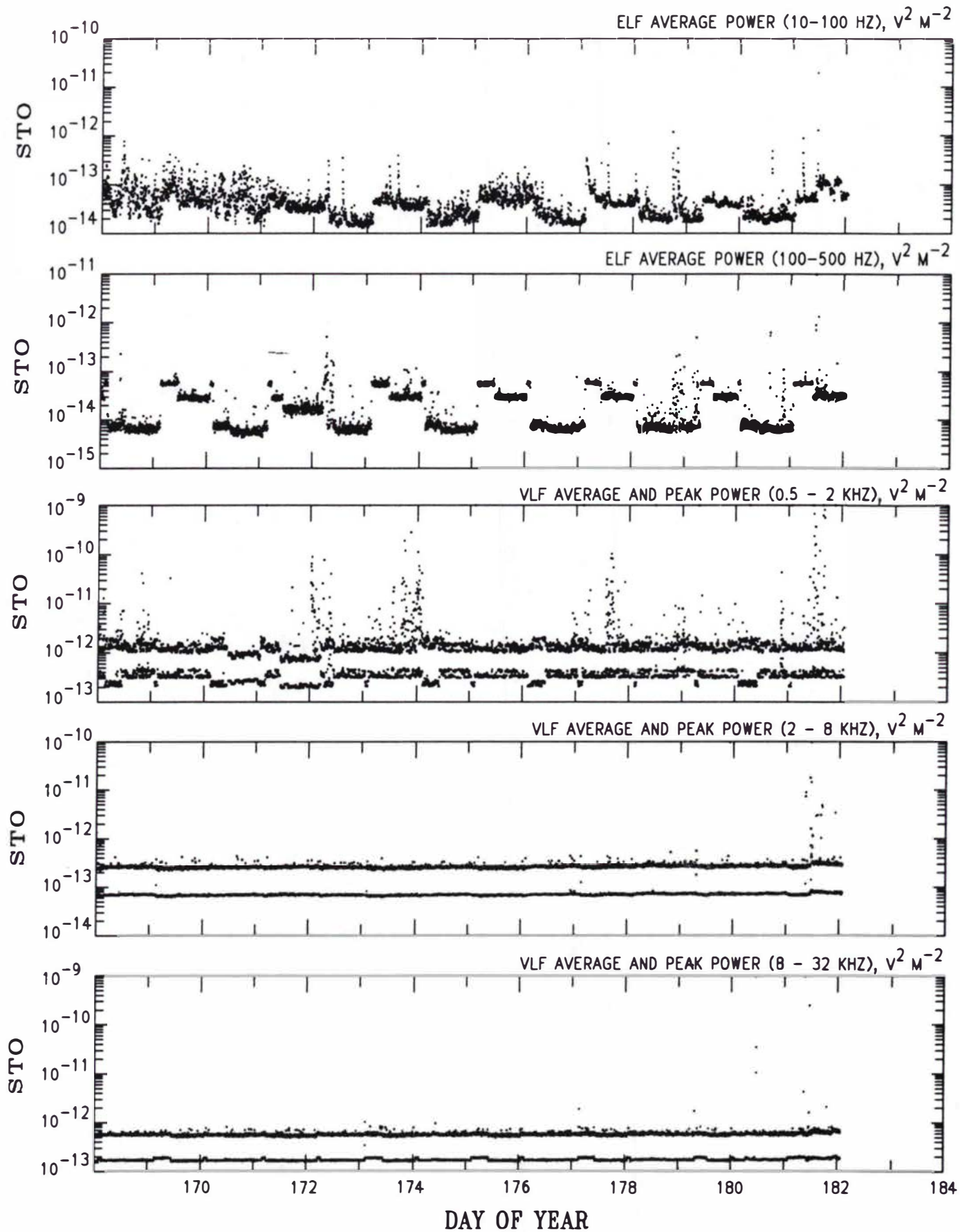
ULYSSES CDR - PLASMA WAVE

99 152 JUN 1 00:00:00.000 - 99 168 JUN 17 00:00:00.000



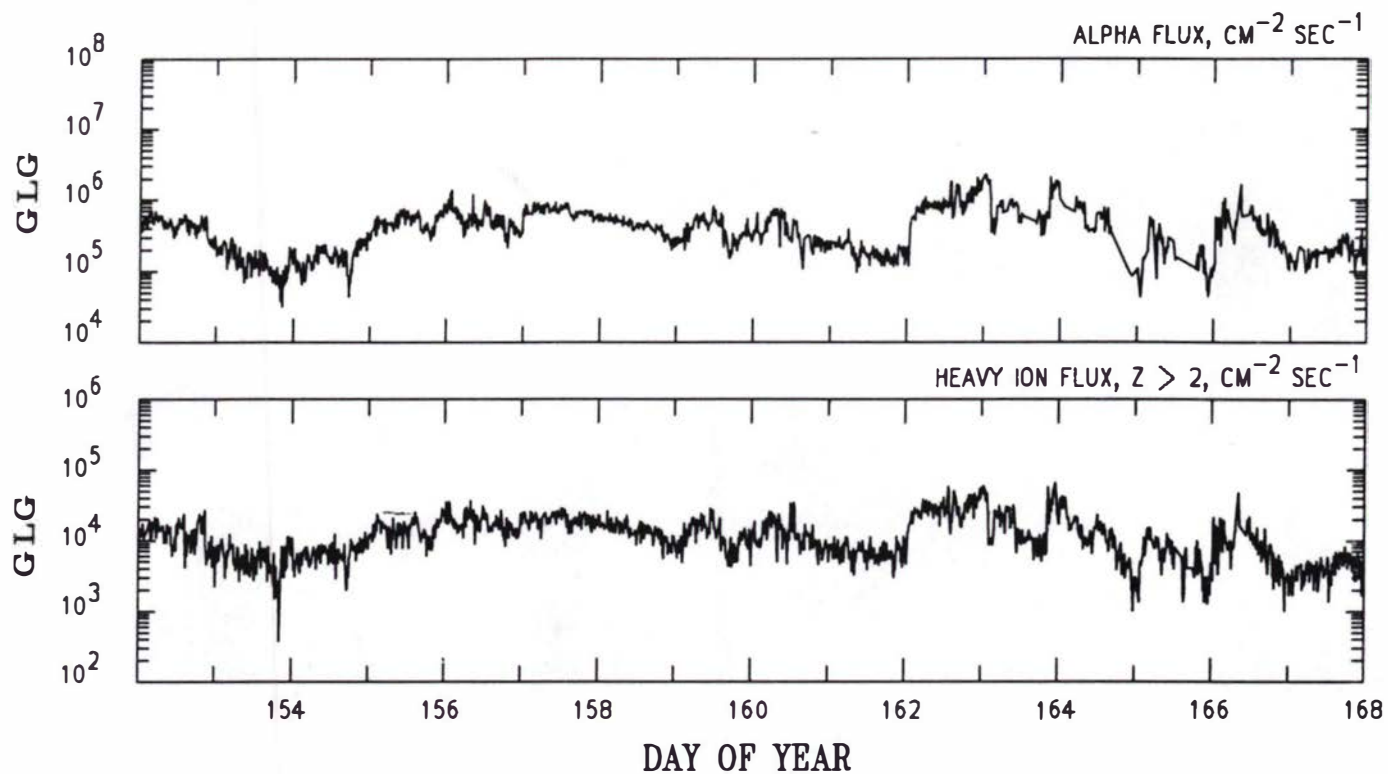
ULYSSES CDR - PLASMA WAVE

99 168 JUN 17 00:00:00.000 - 99 184 JUL 3 00:00:00.000



ULYSSES CDR - SOLAR WIND ION COMPOSITION

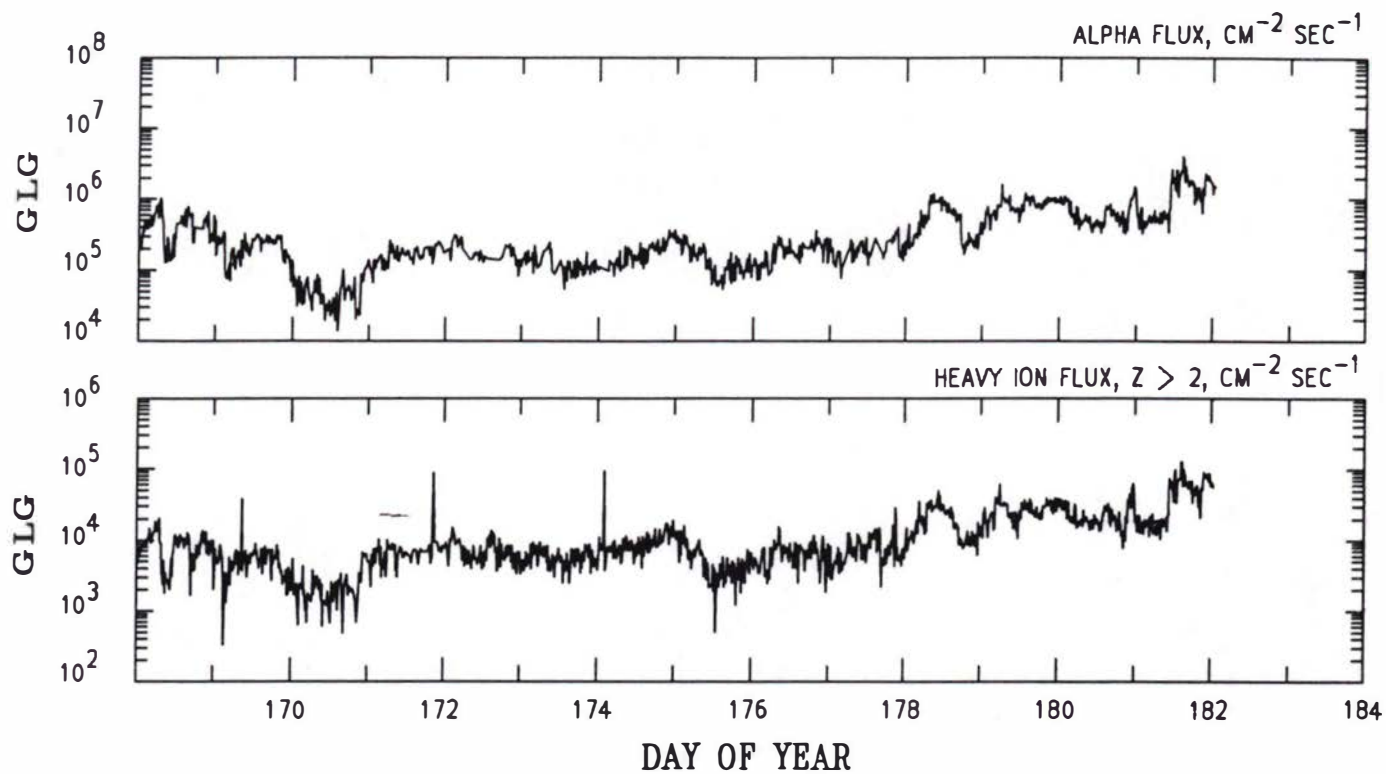
99 152 JUN 1 00:00:00.000 - 99 168 JUN 17 00:00:00.000





ULYSSES CDR - SOLAR WIND ION COMPOSITION

99 168 JUN 17 00:00:00.000 - 99 184 JUL 3 00:00:00.000



N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

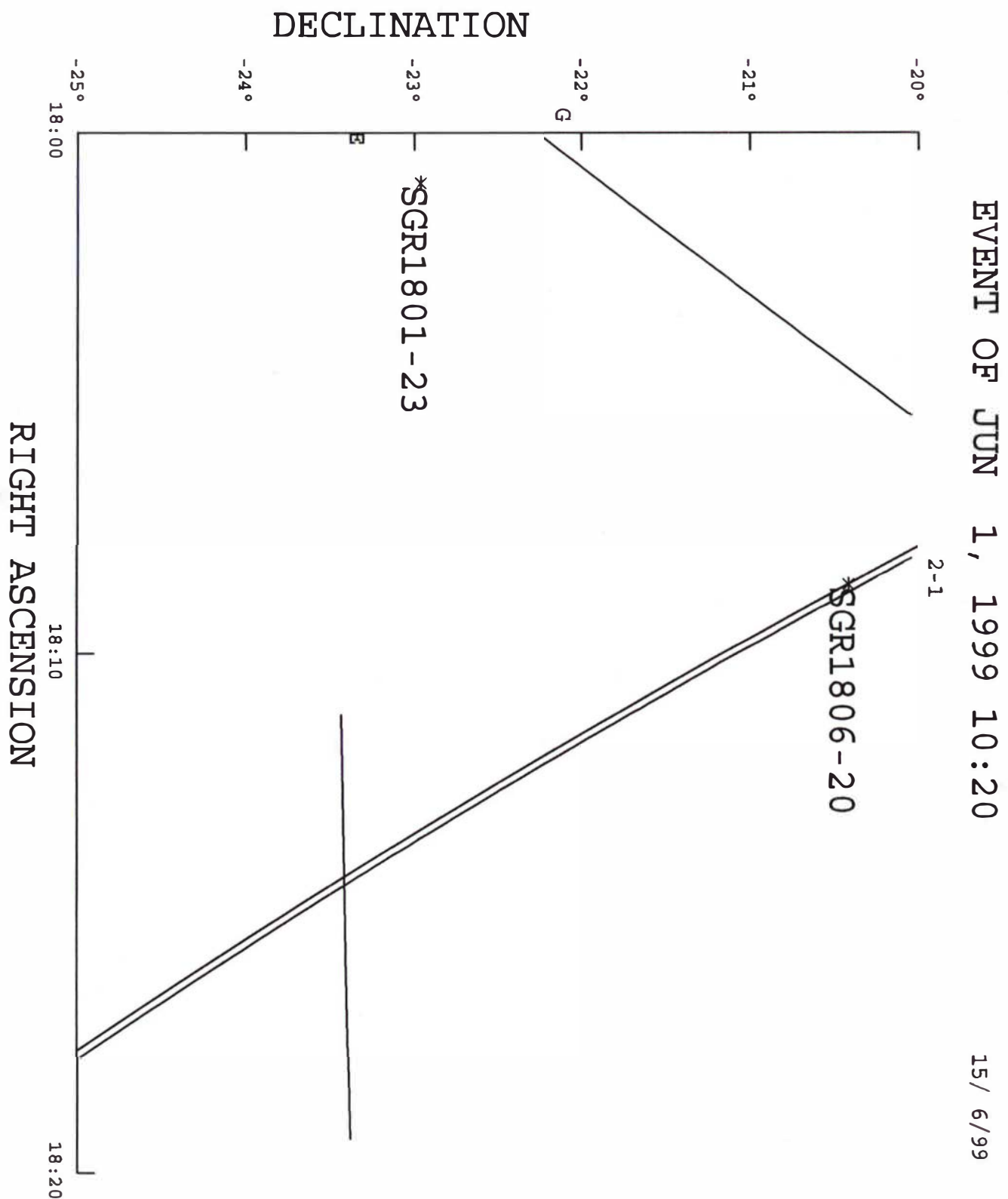
S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS



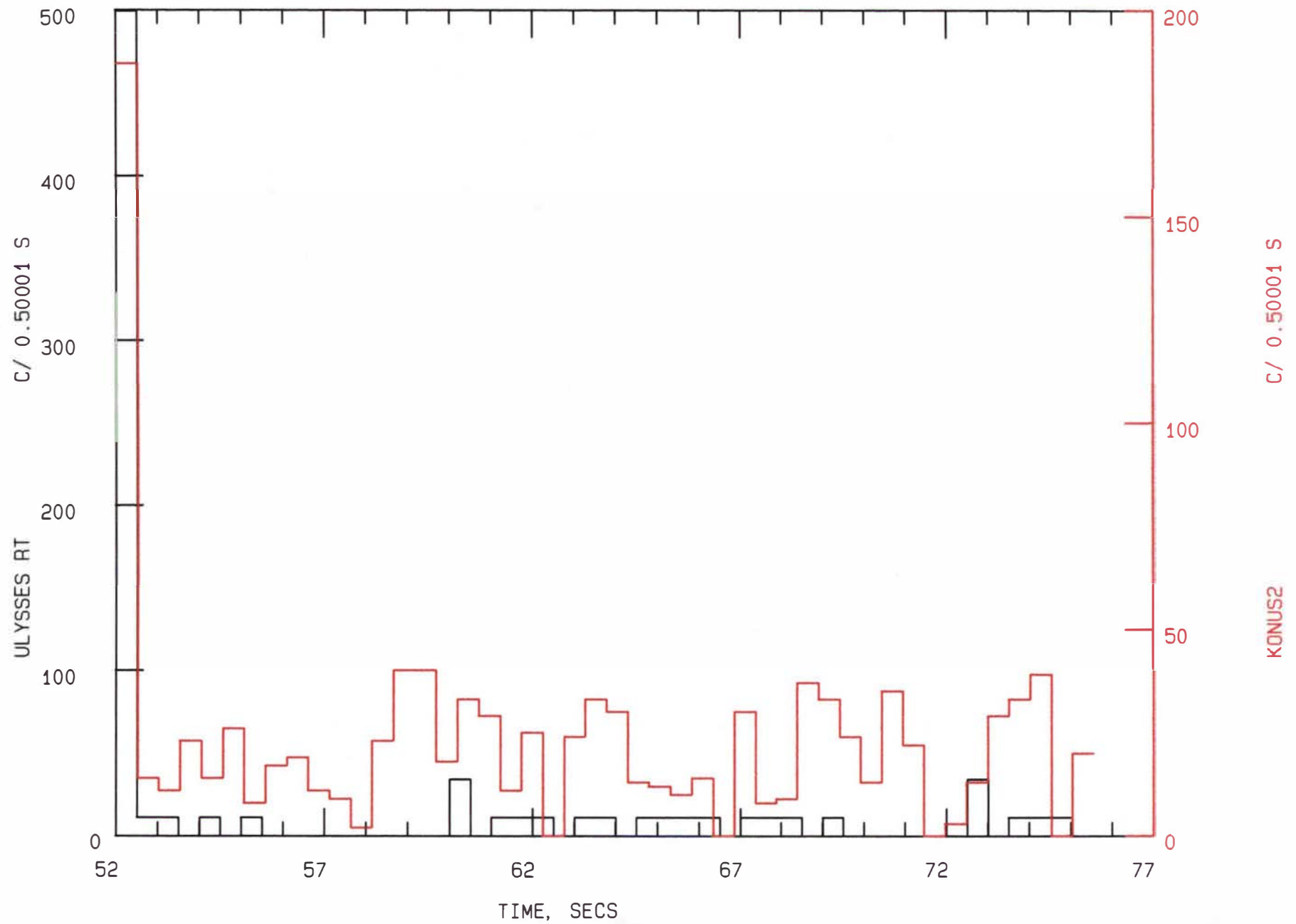
ULYSSES RT-KONUS2

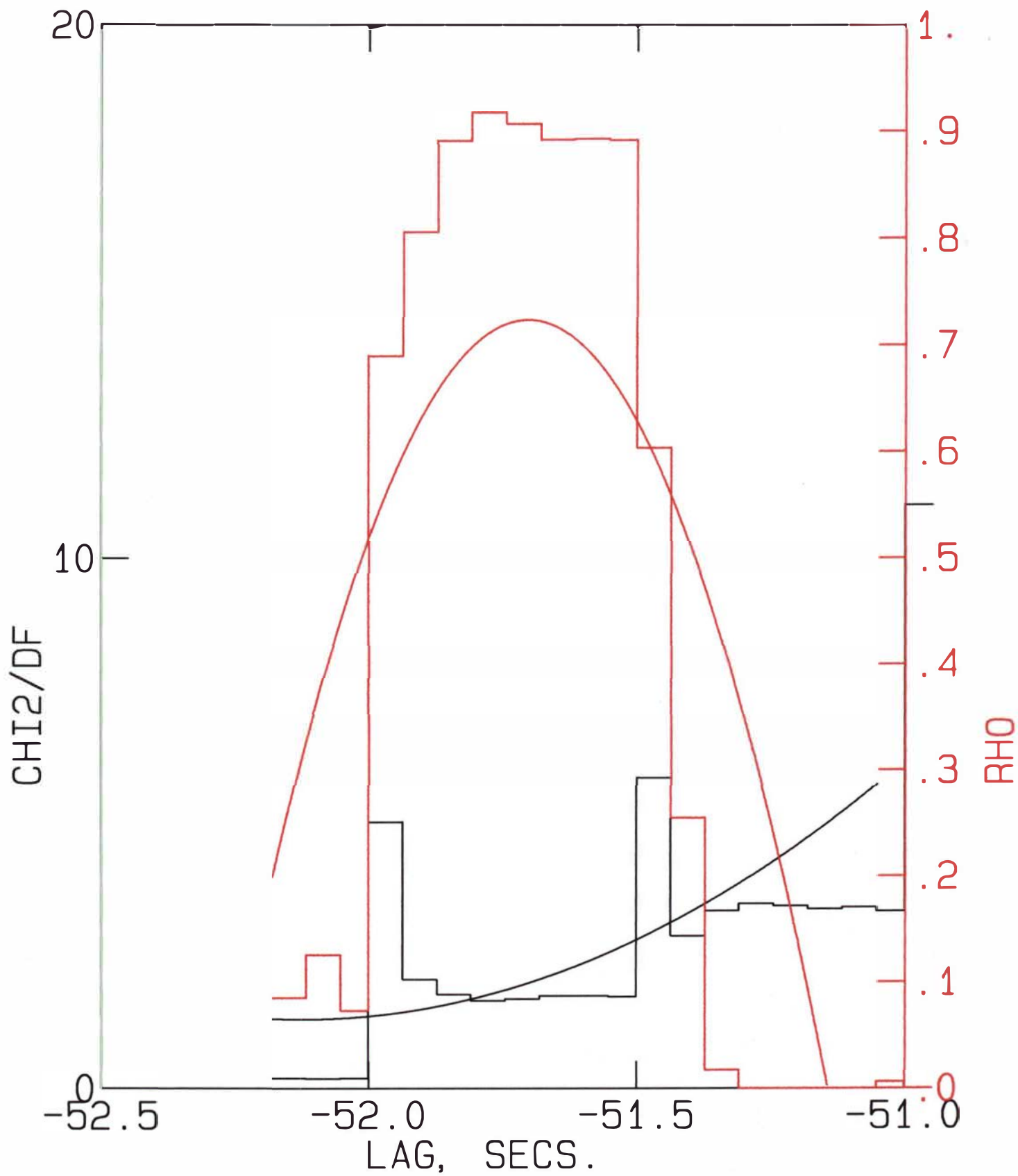
CORRELATION

1/ 6/99

37242.380

15/ 6/99



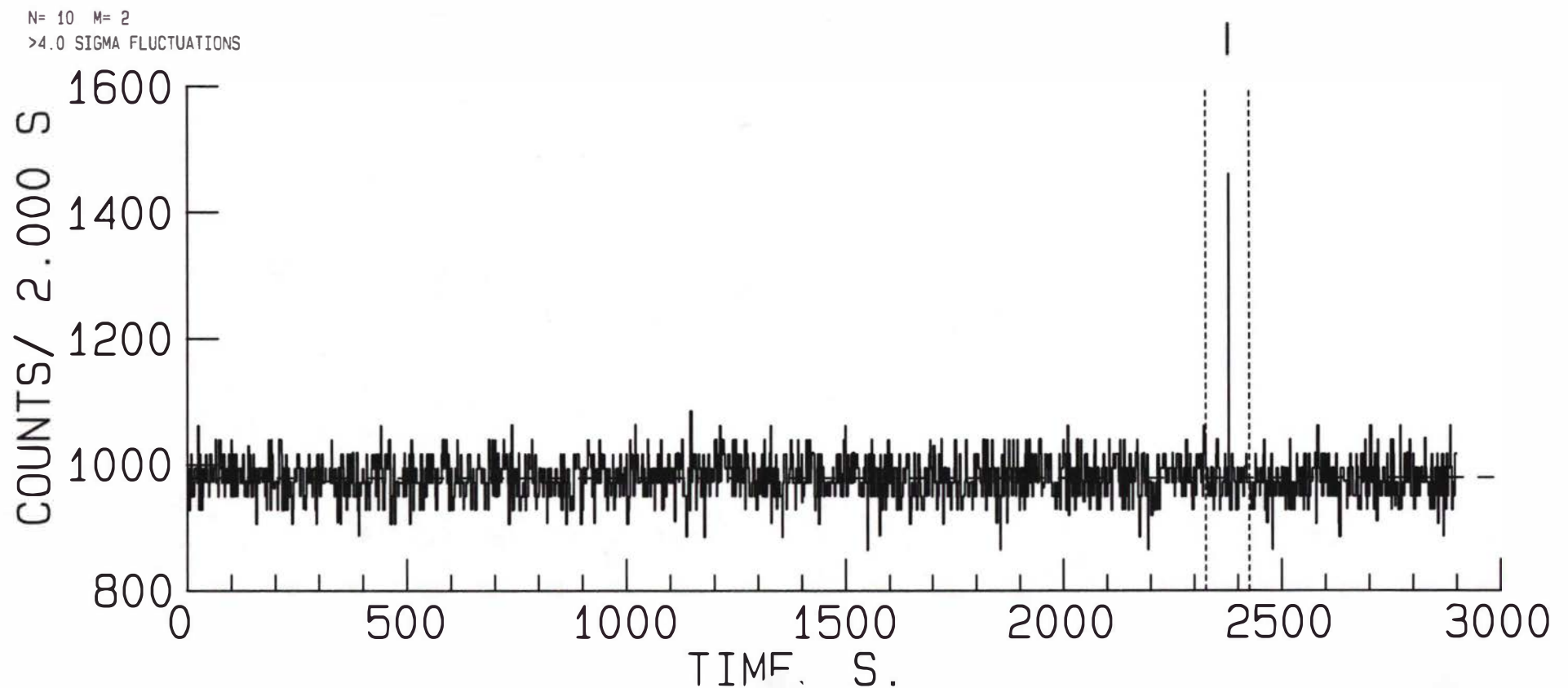


ULYSSES RT

15 / 6 / 99

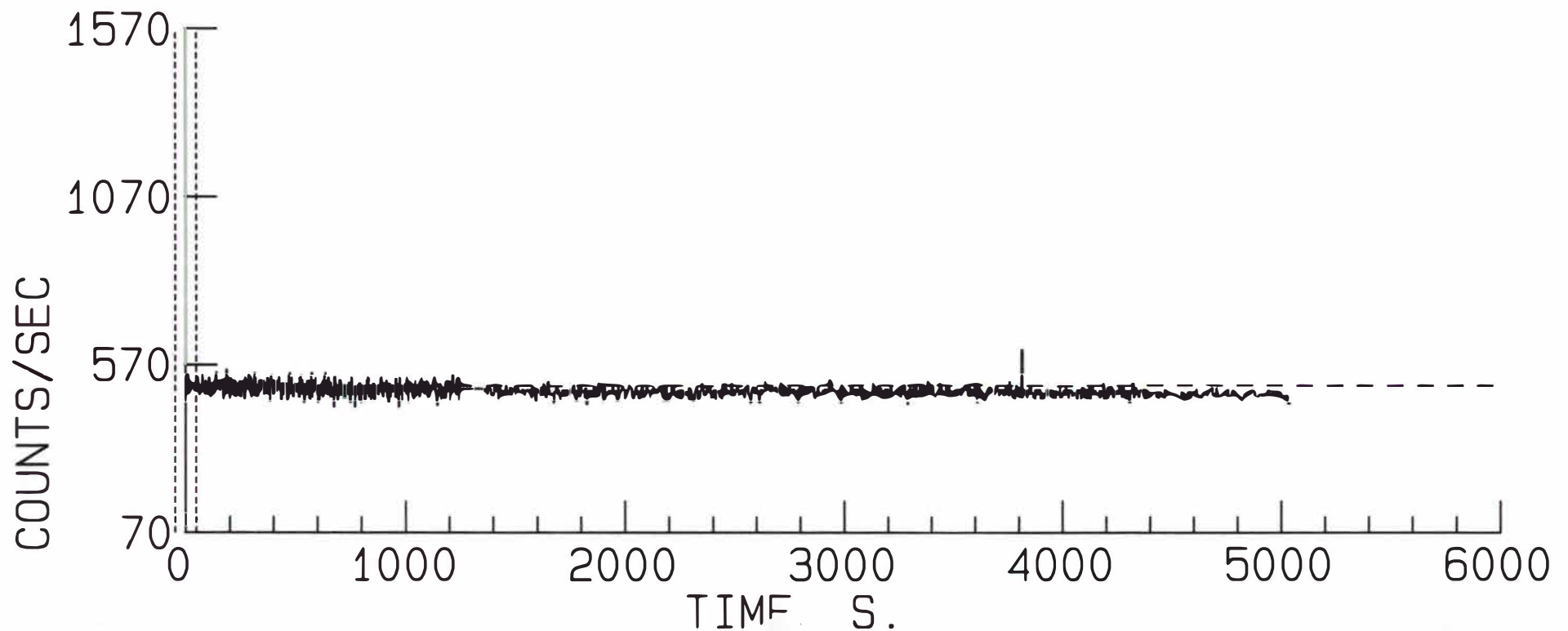
1 / 6 / 99 34916.360 s

0.500 S INTERVALS REGROUPED BY 4
22- 149 keV



ULYSSES RT
1/ 6/99 33480.096 s
INTERVALS REGROUPED BY 8
22- 149 keV

15/ 6/99



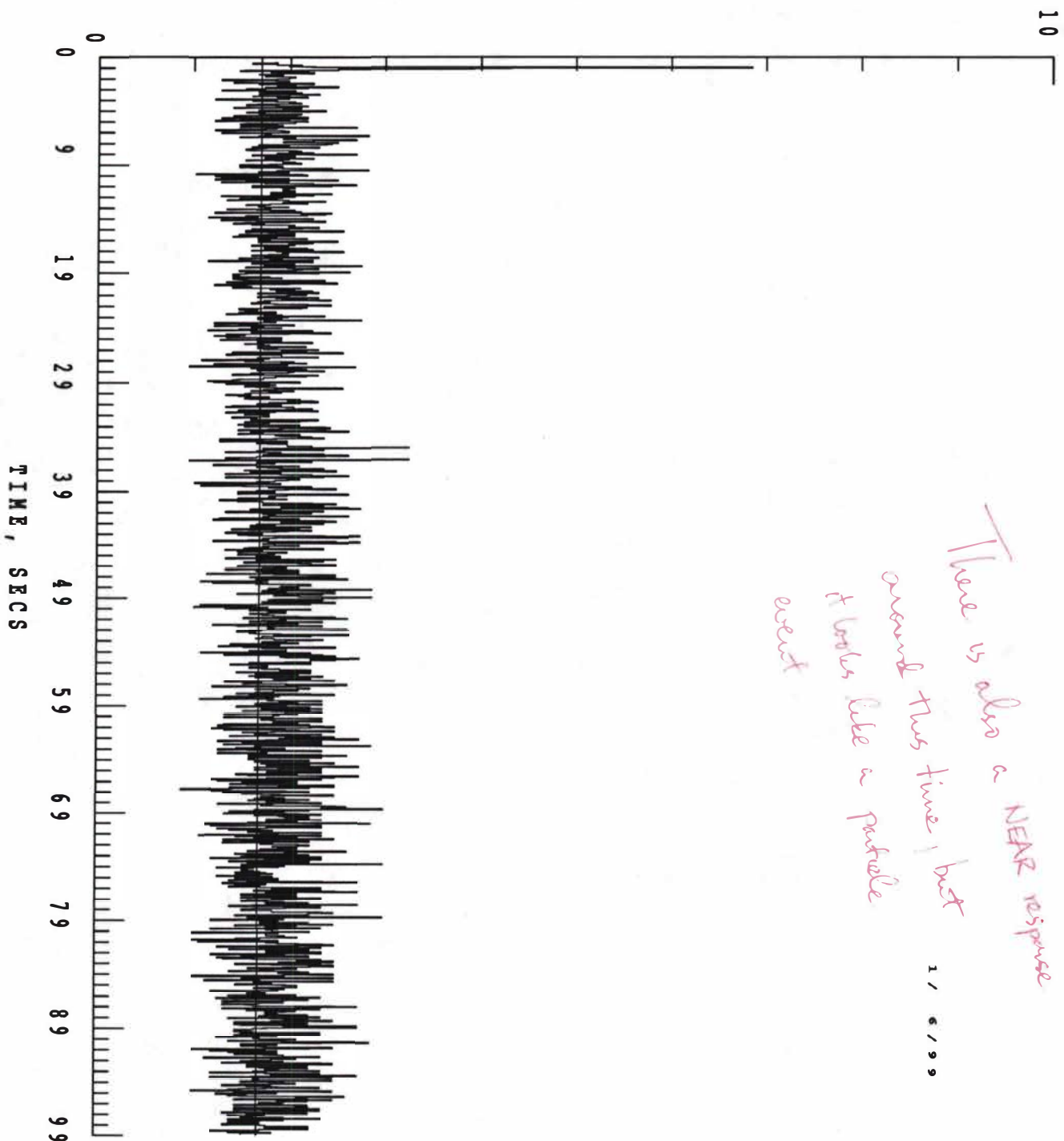
KONUS

01/06/99

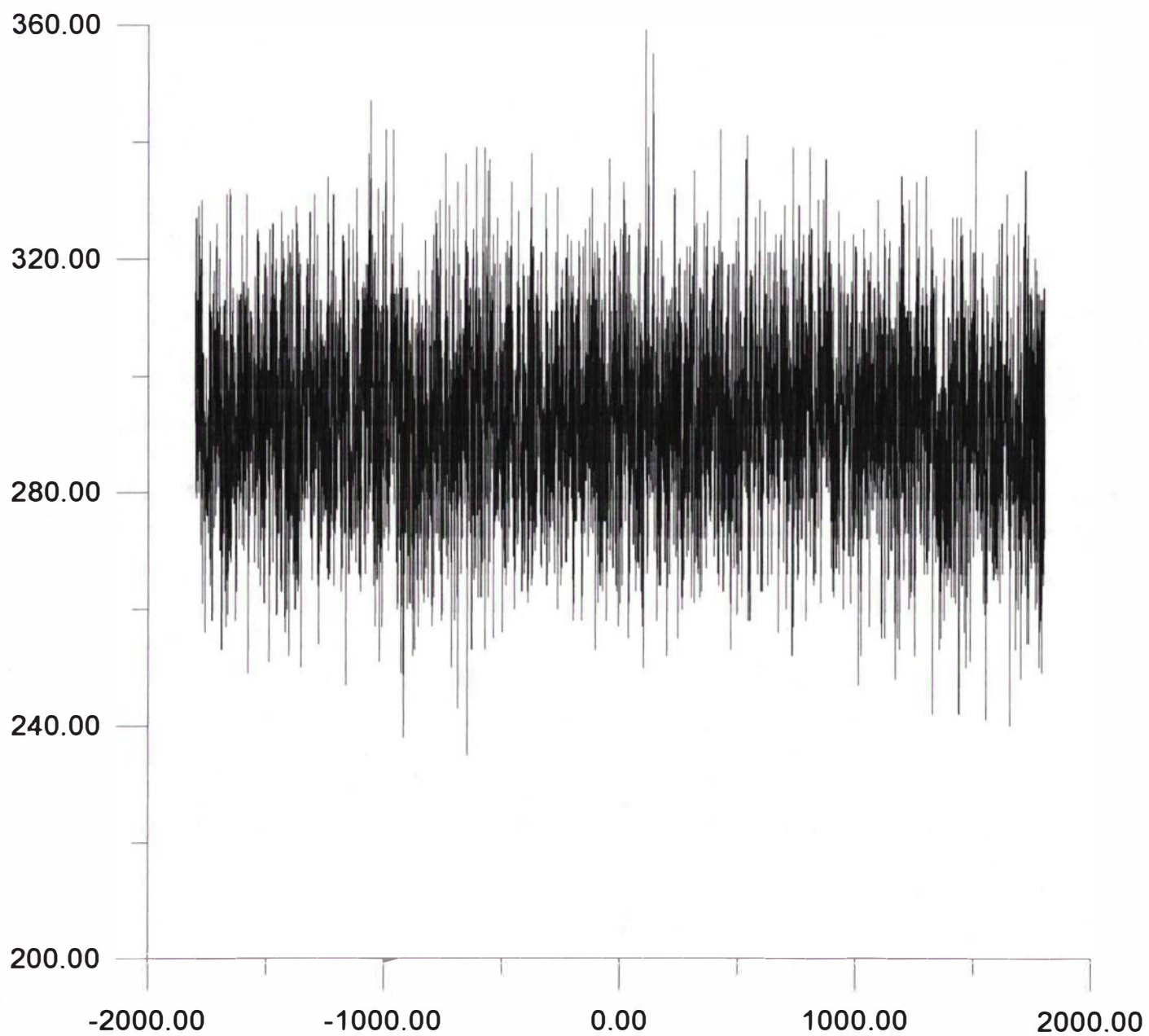
36008.743

50- 200 keV

COUNTS/0.064 S

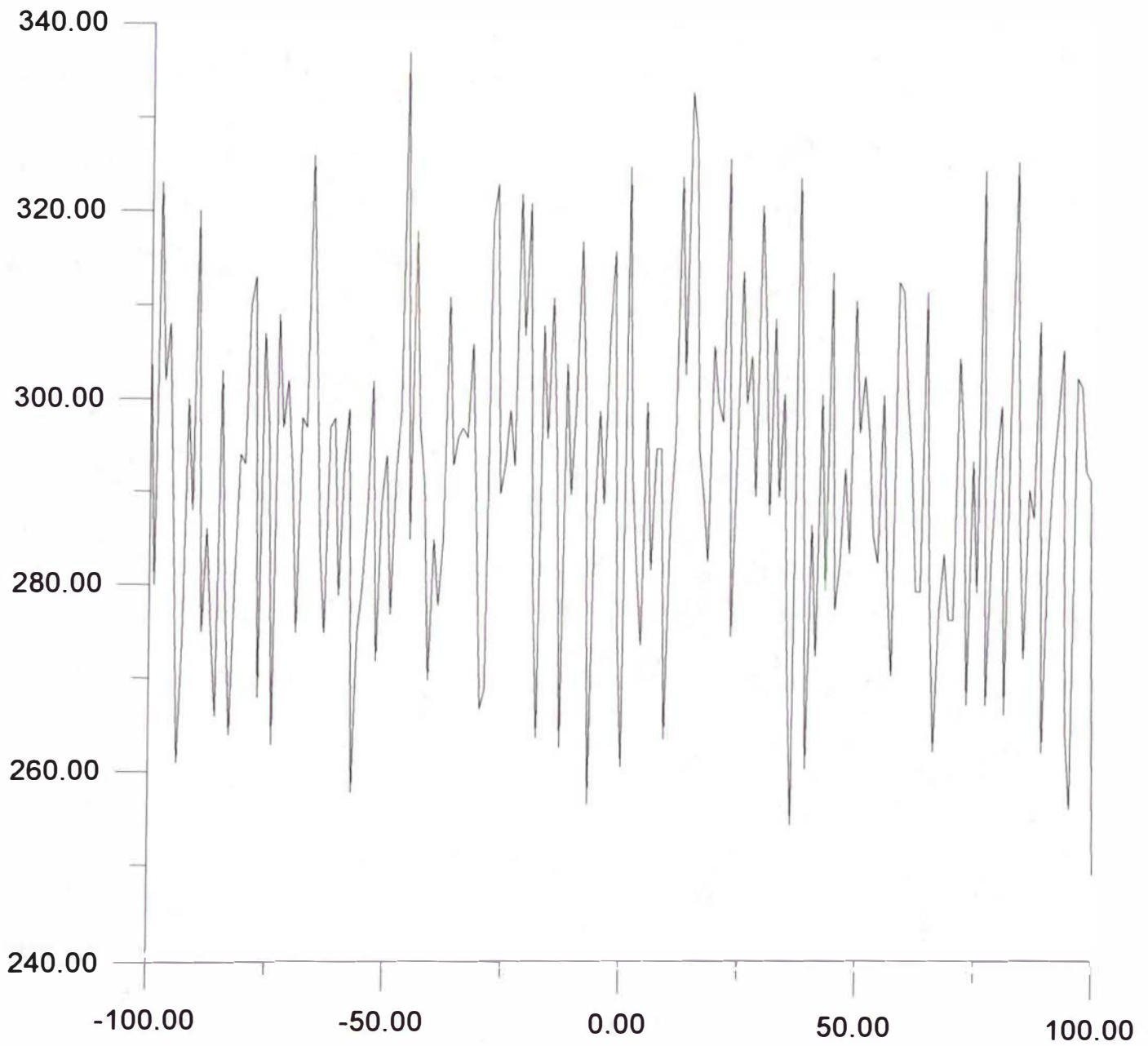


NEAR
June 1 ~36000 s



NEAR

June 1 ~ 36000s



KNEAR GRS 19990601 35999

ULYSSES RT

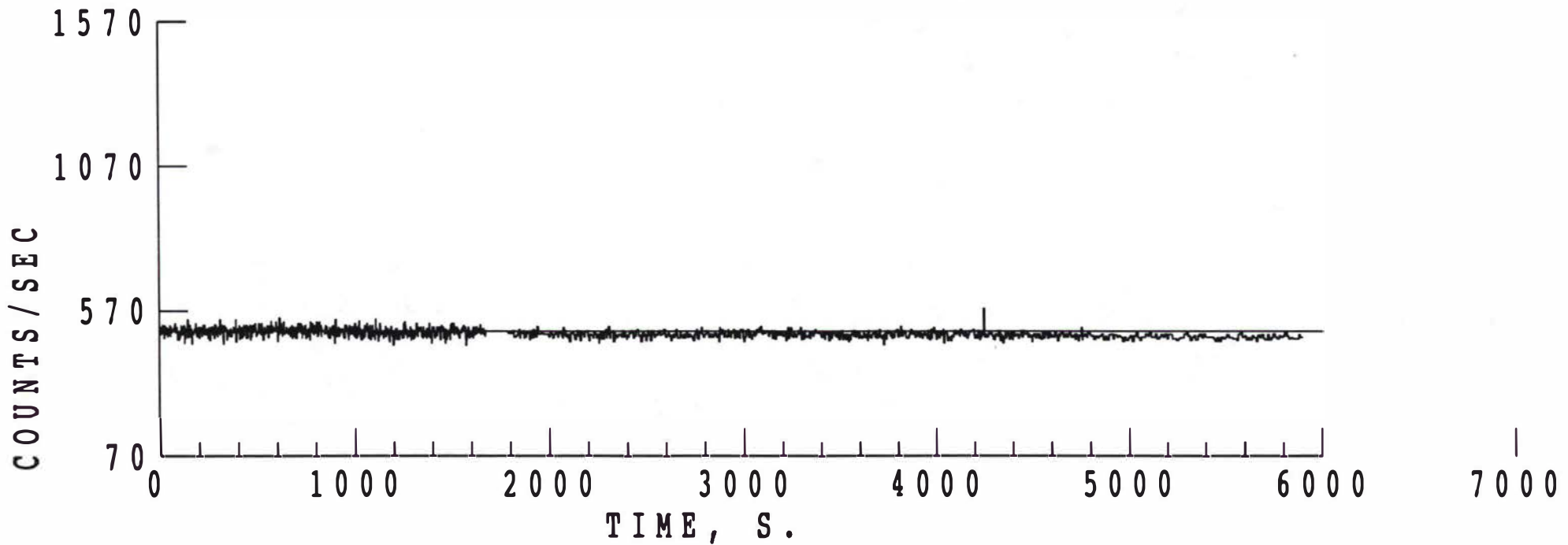
9 / 6 / 99

1 / 6 / 99 33048.094 s

INTERVALS REGROUPED BY 10

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GRBM 19990601 52930

ULYSSES RT

16 / 05 / 07

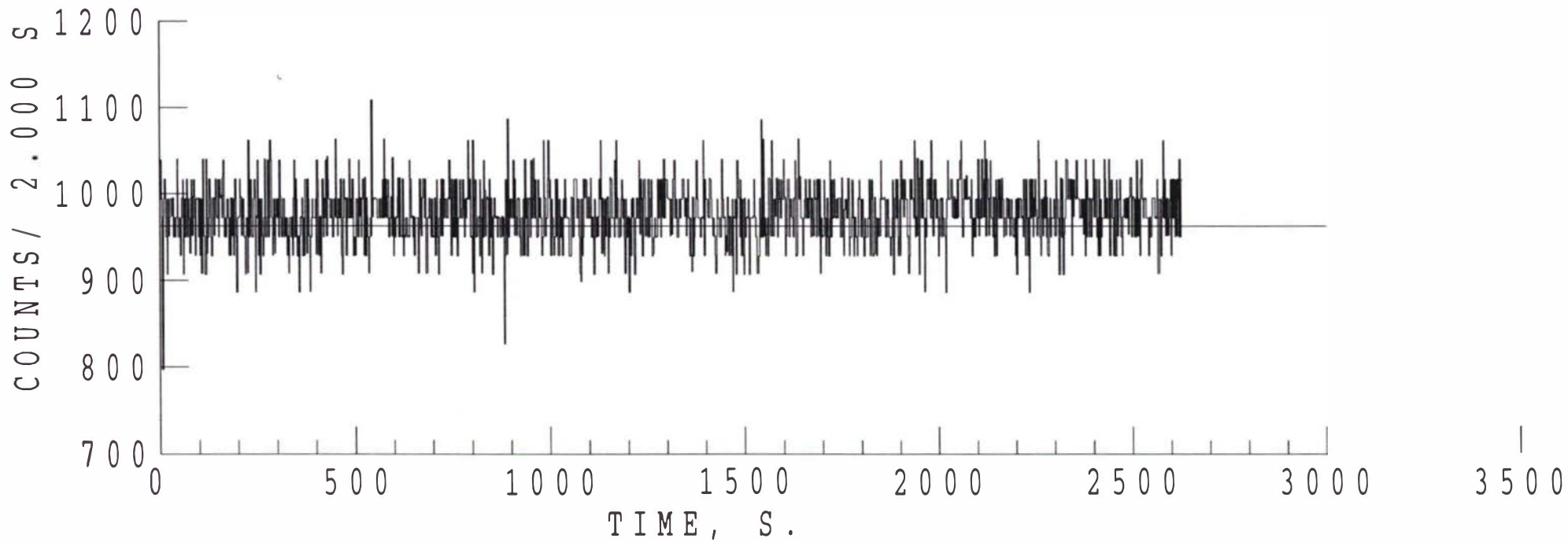
01/06/99 51624.023 s

0.500 S INTERVALS REGROUPED BY 4

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

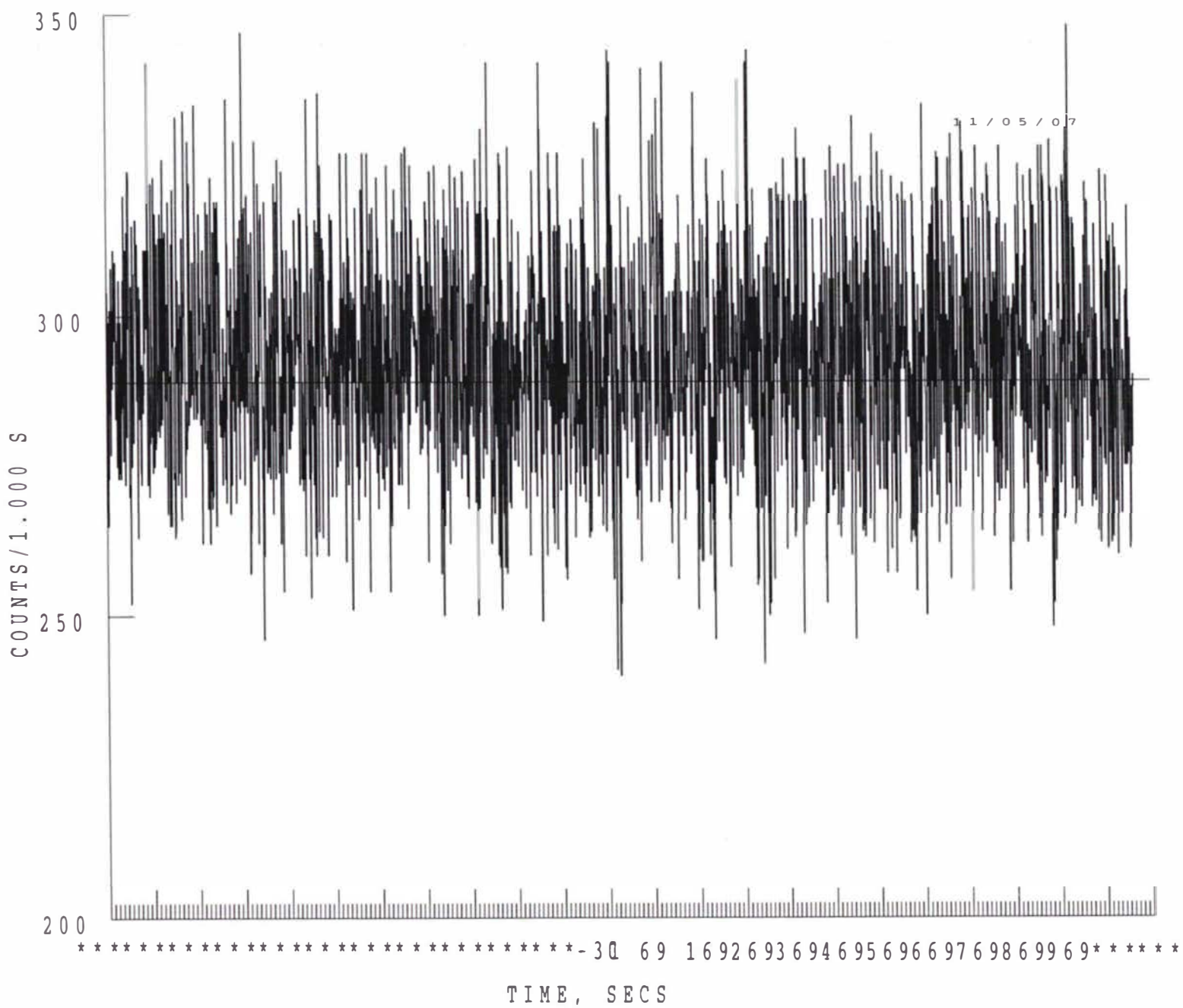
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



NEAR

01/06/99 54092.444

100-1000 keV

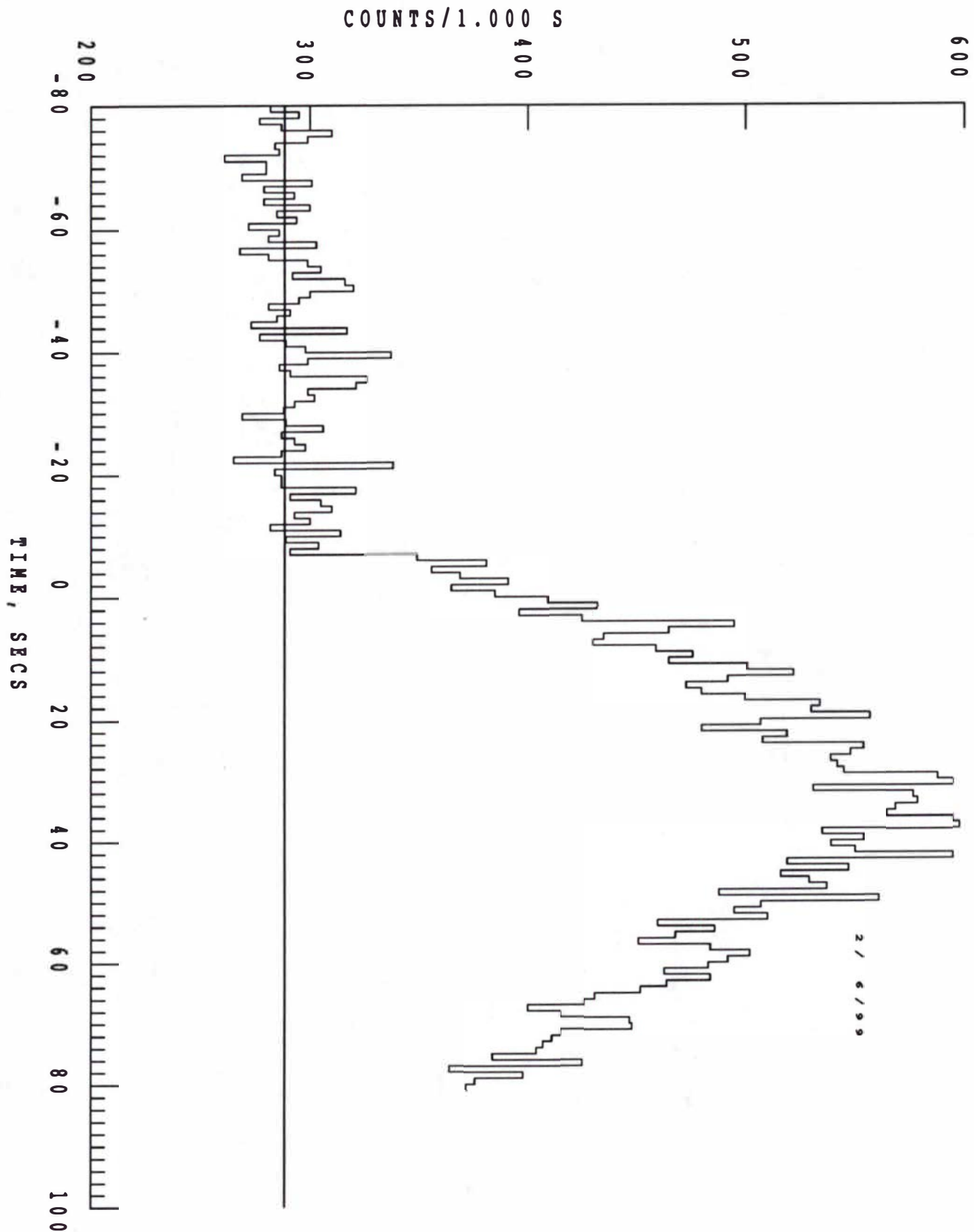


NEAR

01/06/99

67616.440

100-1000 keV



KNEAR GRS 19990601 67616

ULYSSES RT

9 / 6 / 99

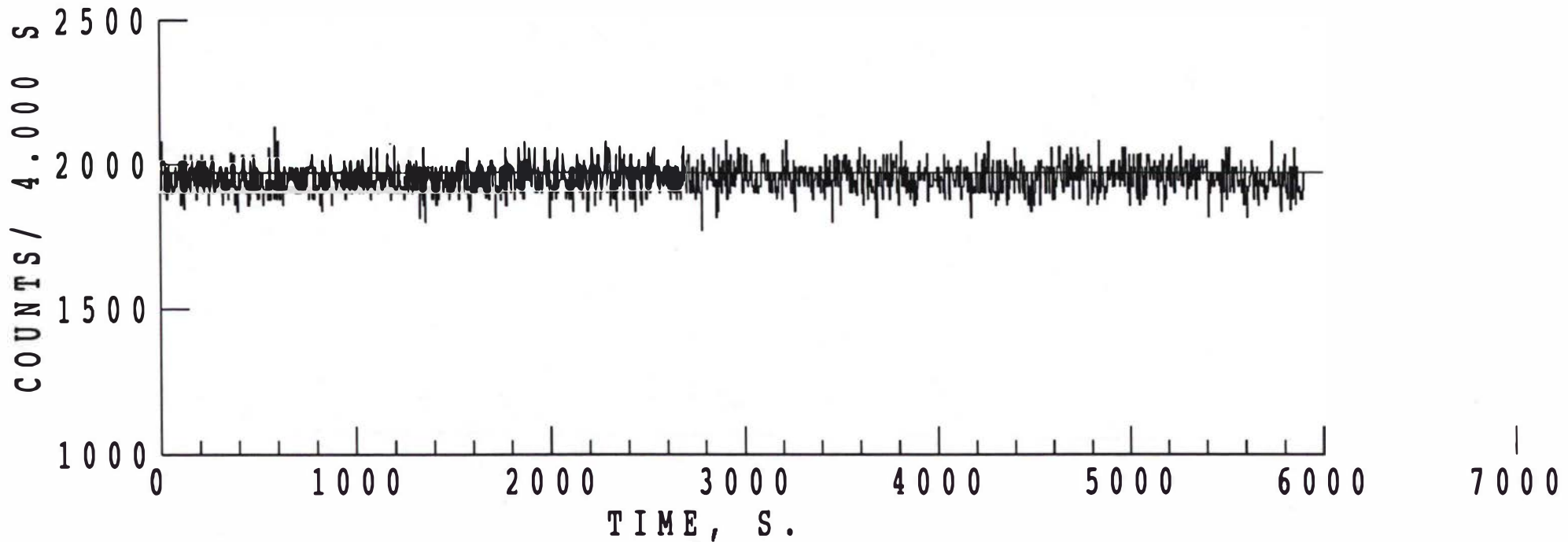
1 / 6 / 99 64656.160 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From PETERSON@fender.msfc.nasa.gov Mon Jun 7 12:17:20 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Mon, 7 Jun 1999 13:52:40 -0500 (CDT)

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, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7593

TIME: TJD=1330 SECONDS=75788

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=159.2 AZIMUTH=329.8 ERROR=0.631 DEGREES

COMMENTS:

GOES C1.2, NO OPTICAL. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 40 S, MAX
AT APPROX. T+7 S. VISIBLE ABOVE 100 KEV.

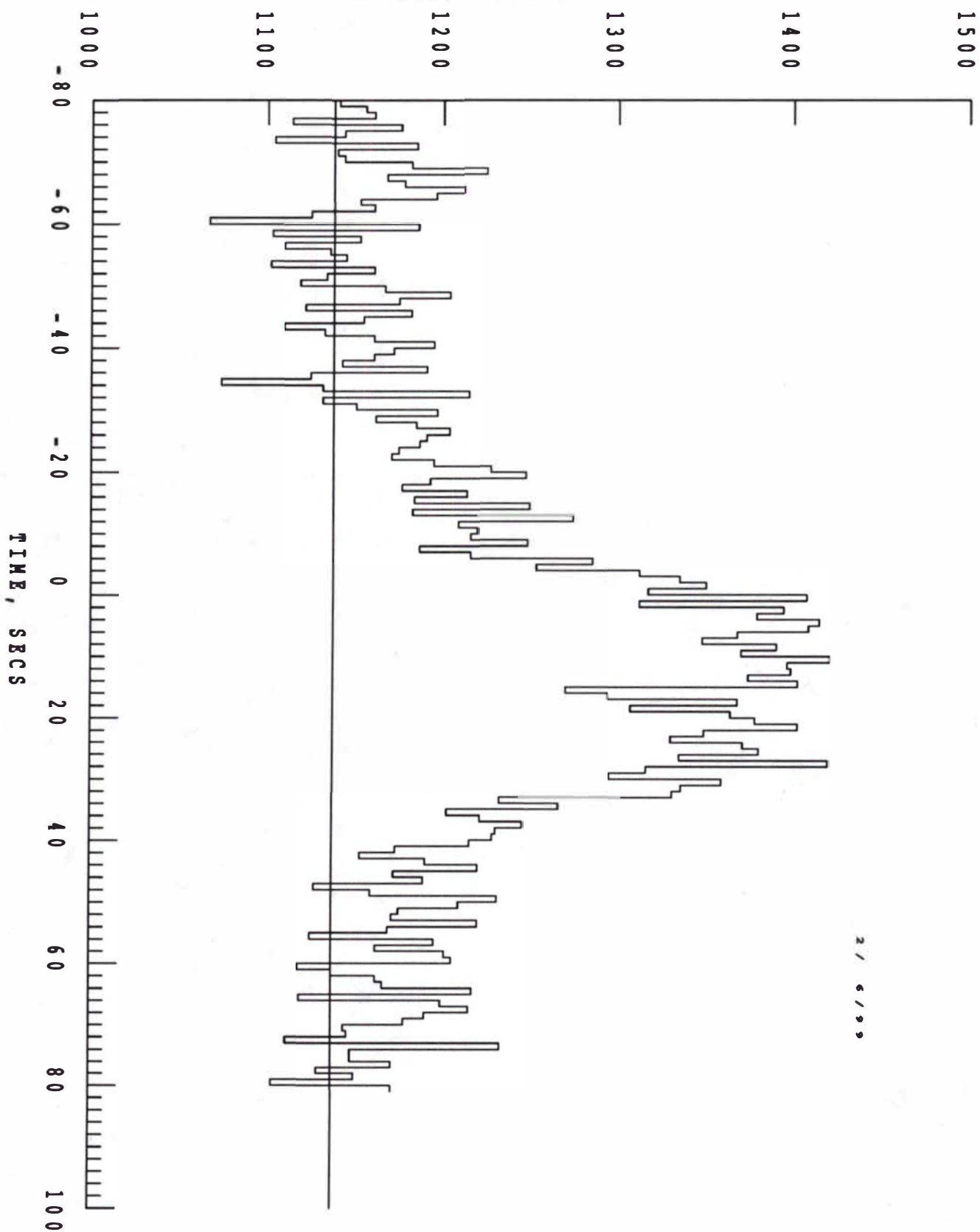
NEAR

01/06/99

79088.437

100-1000 keV

COUNTS/1.000 S



KNEAR GRS 19990601 79088

ULYSSES RT

9 / 6 / 99

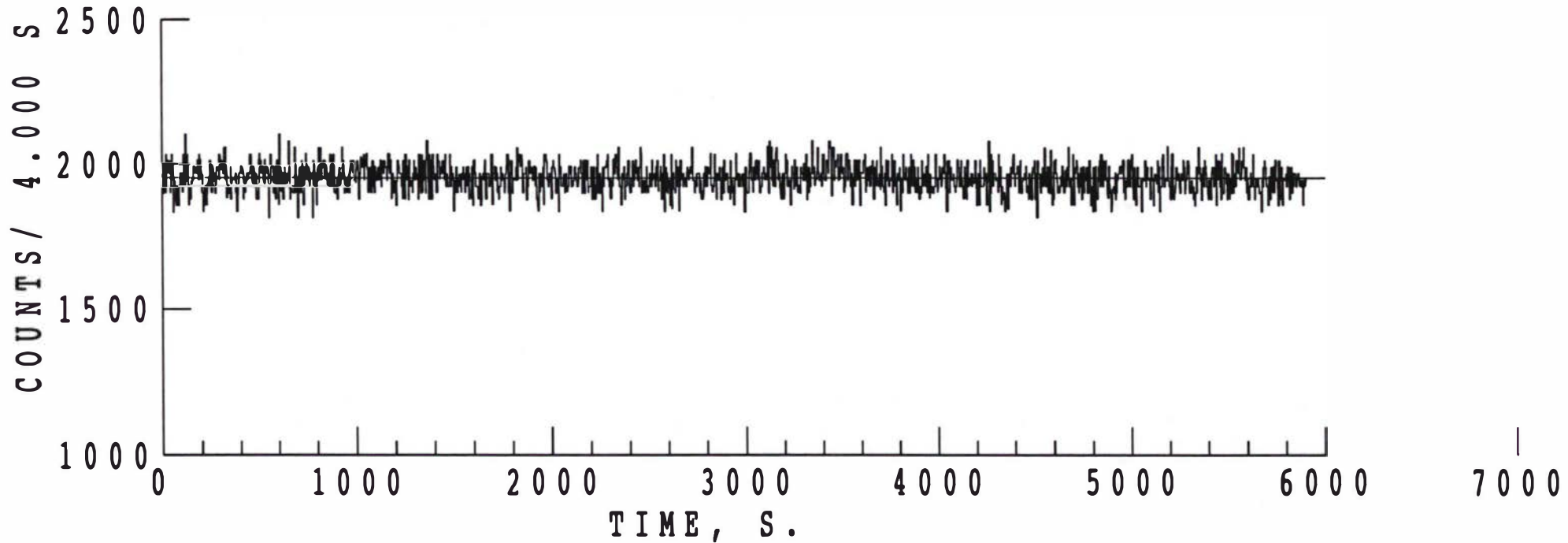
1 / 6 / 99 76140.273 s

0.500 S INTERVALS REGROUPED BY 8

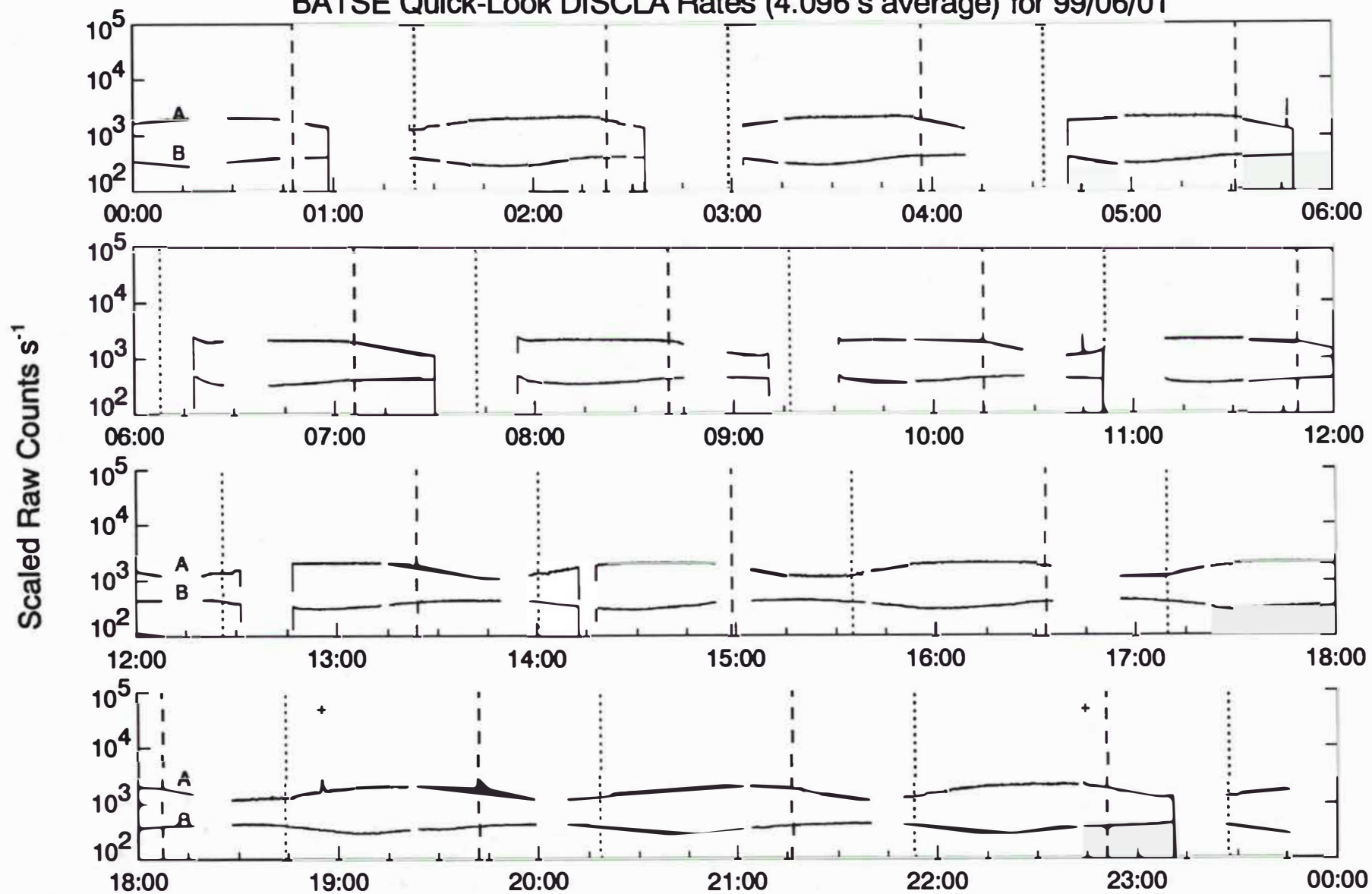
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

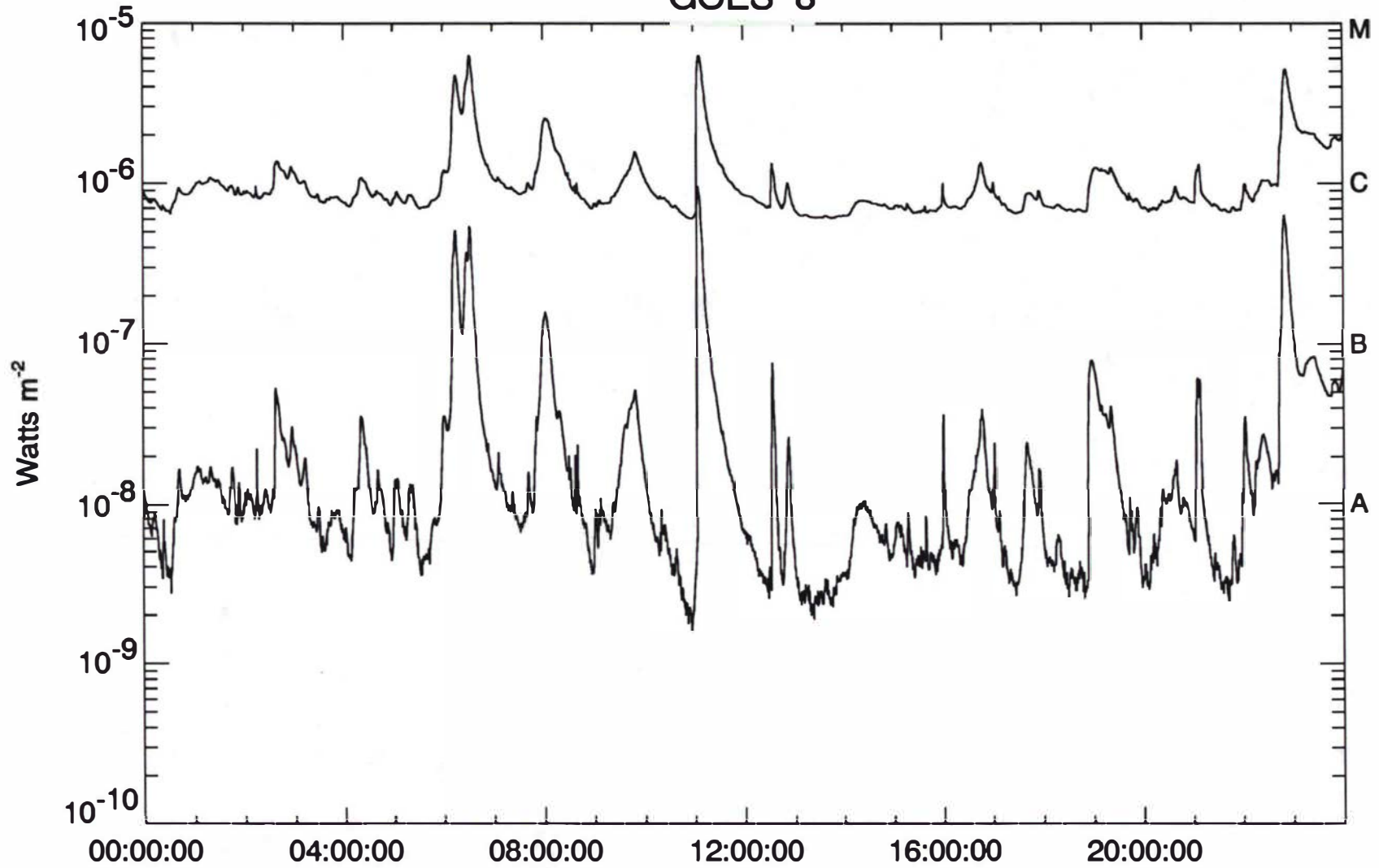
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/01



GOES 8



Data Start: 99/06/01, 0000:00

Plot created: 99/06/05, 1005

Channel

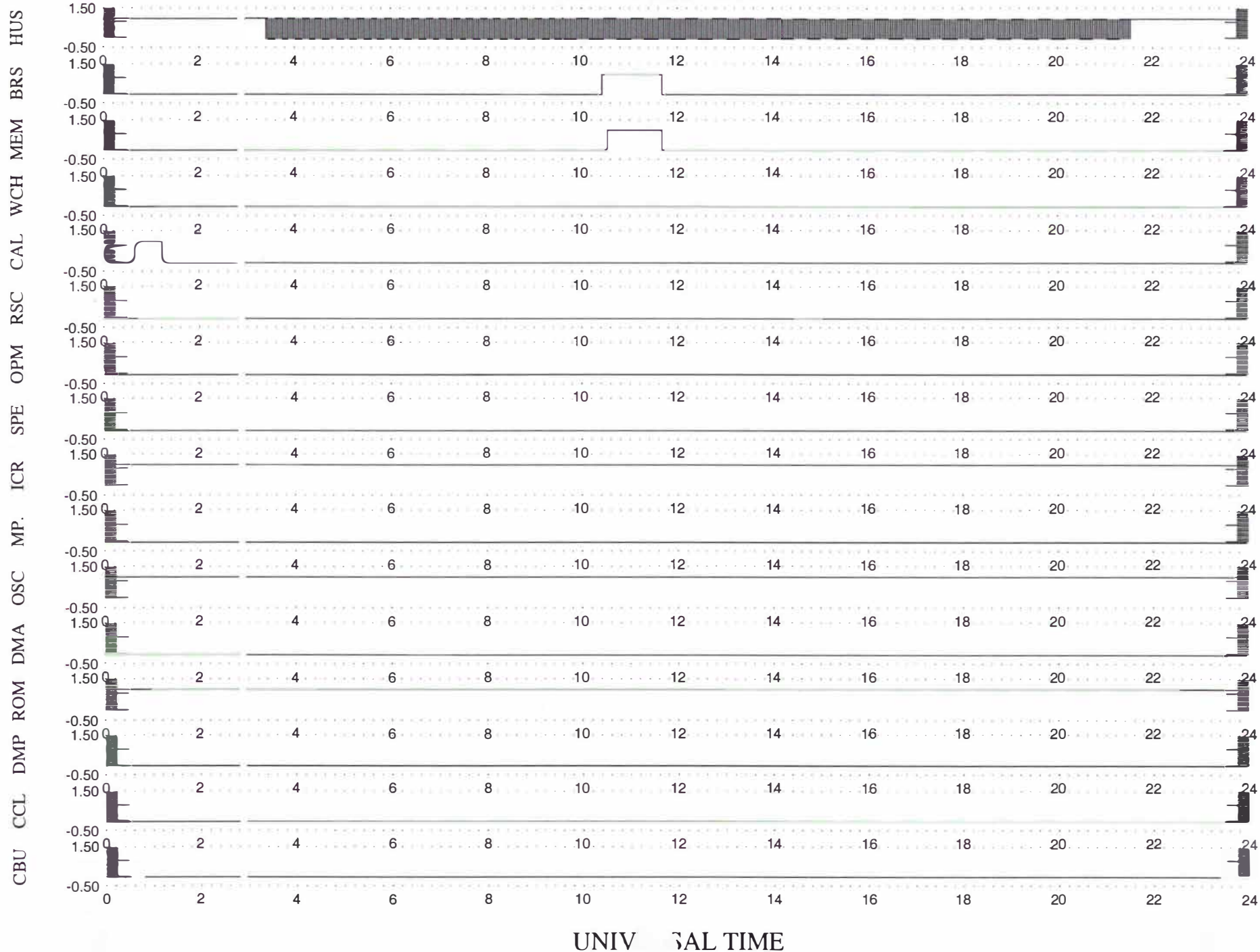
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted

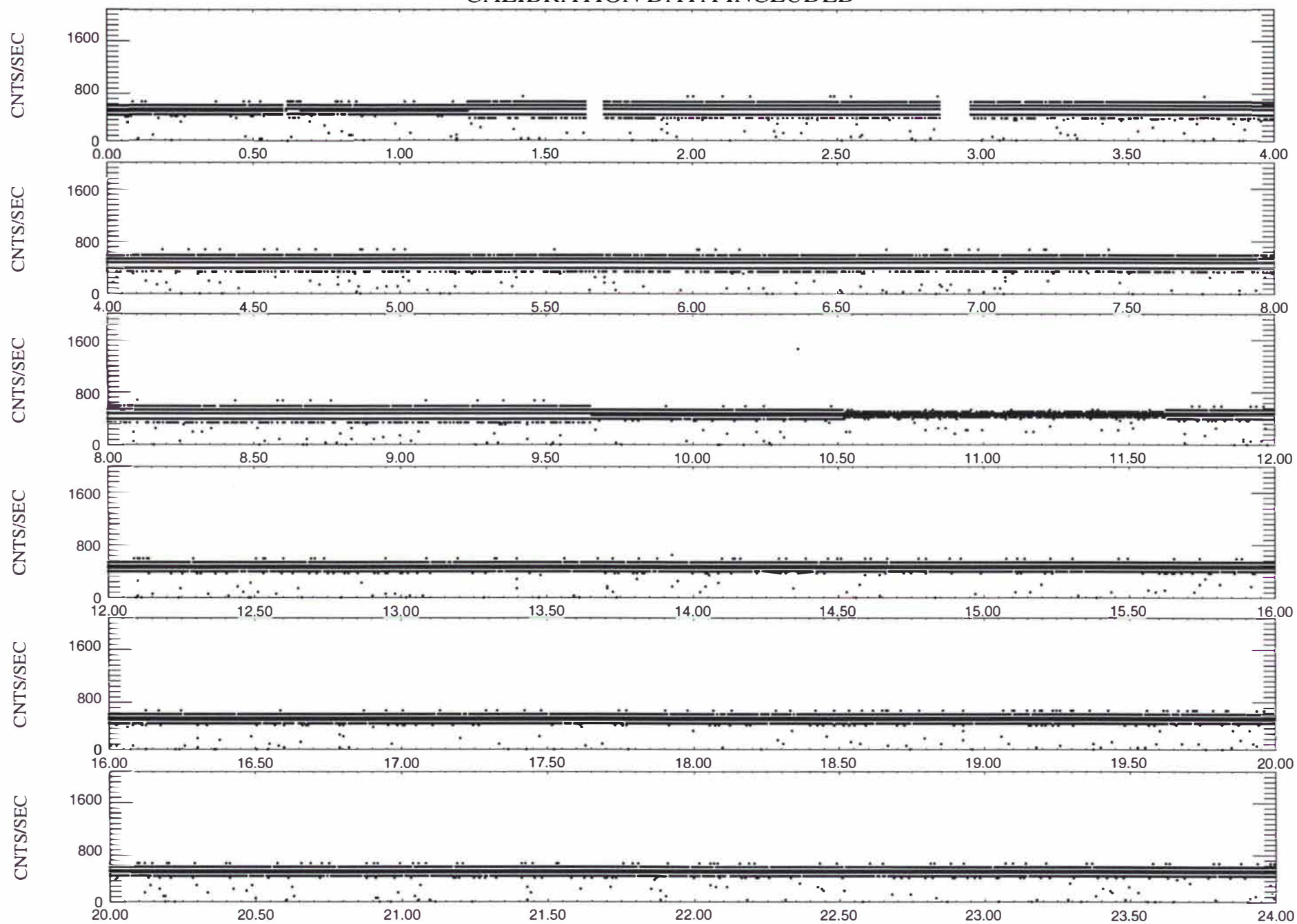
Background not subtracted

Sample average = 10

BURST NUMBER 13

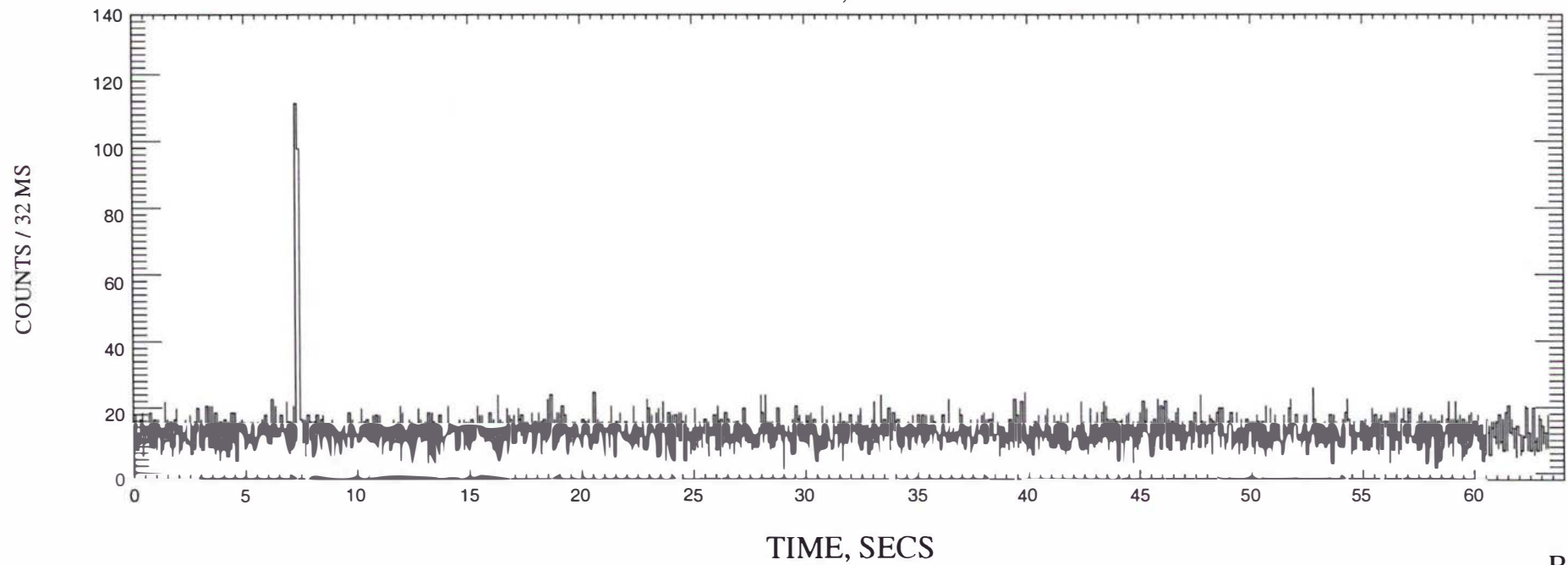
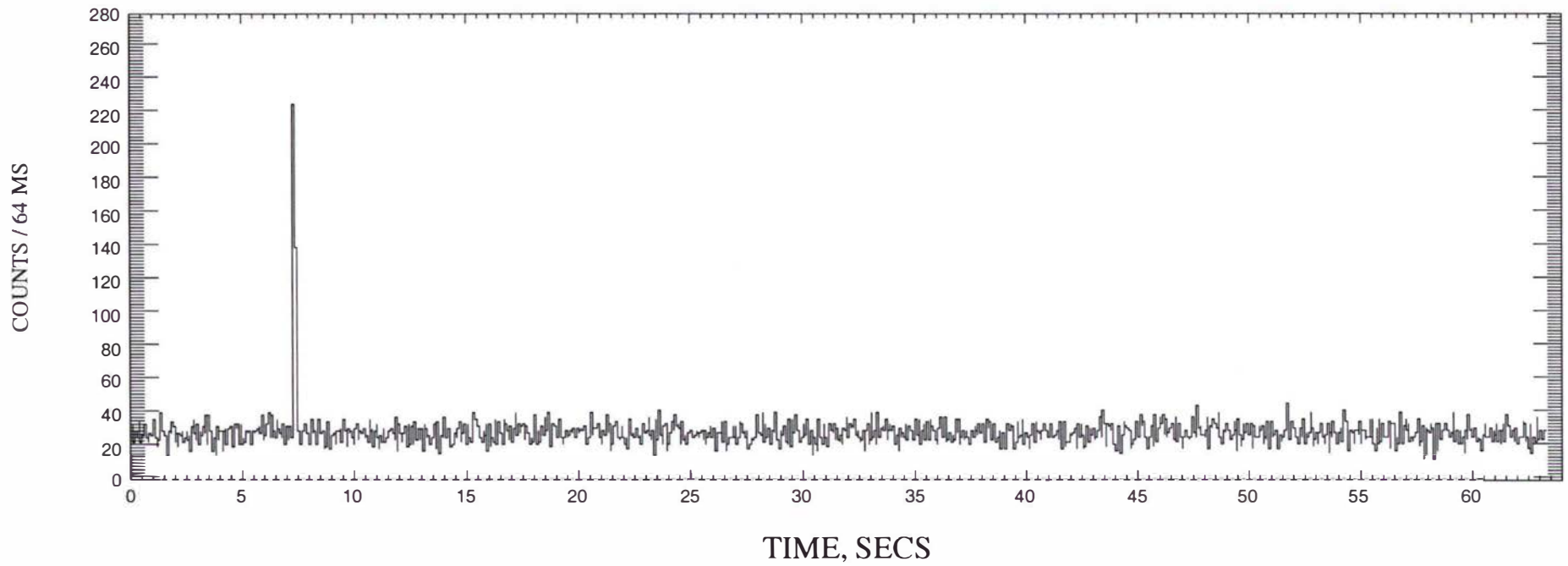


CALIBRATION DATA INCLUDED

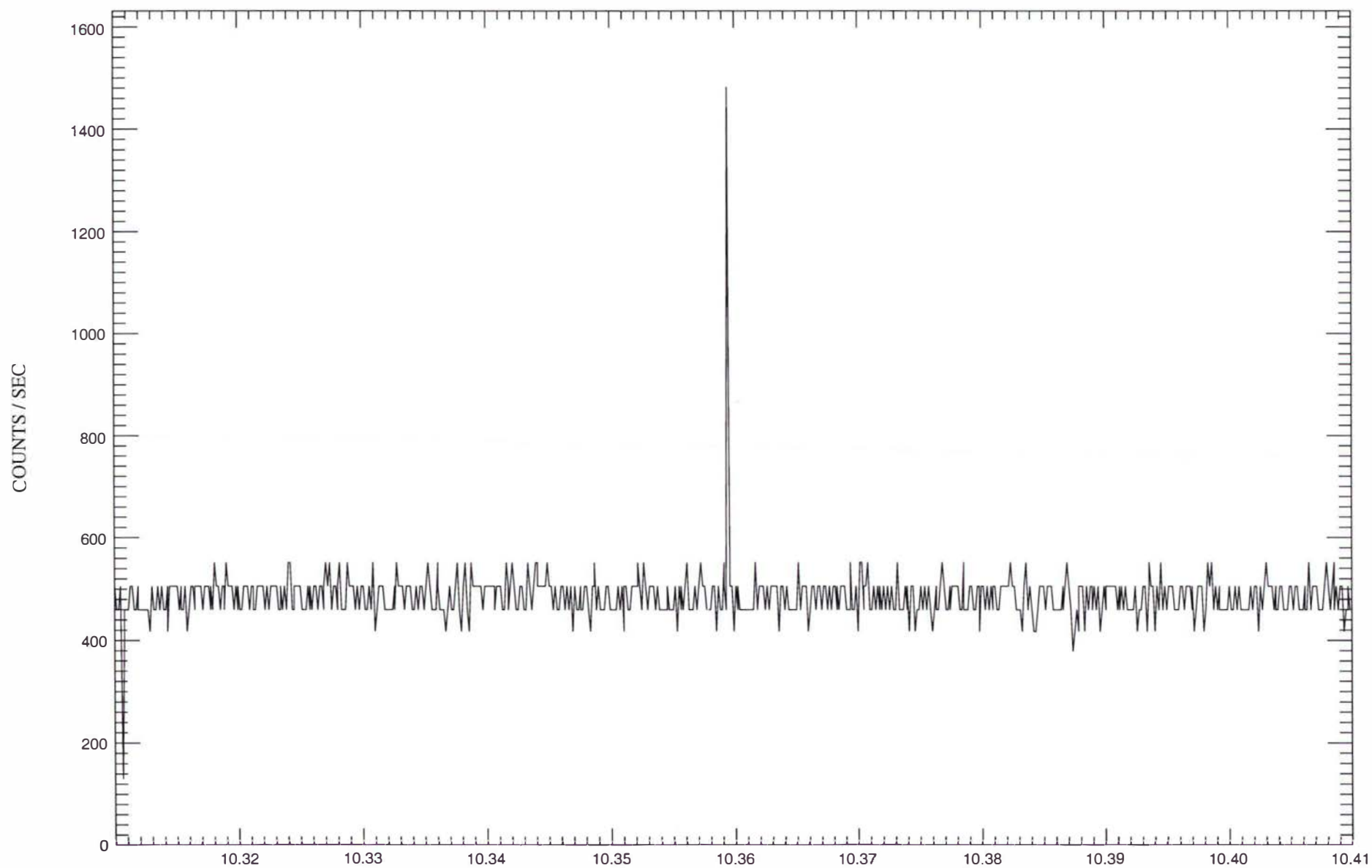


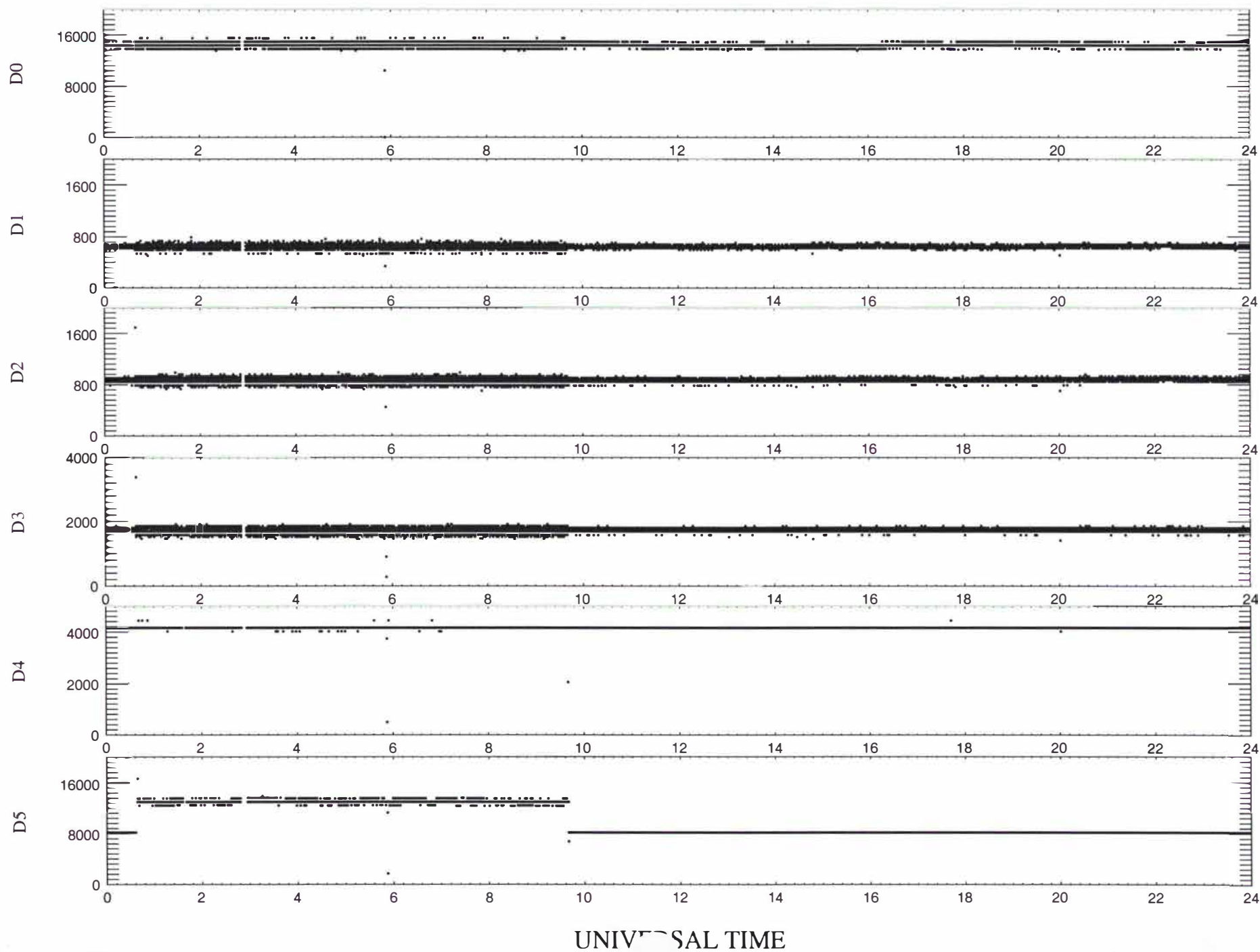
UNIVERSAL TIME

Burst Counter 13 at UT=10.359569558038 h=37294.450 s 10:21:34.450

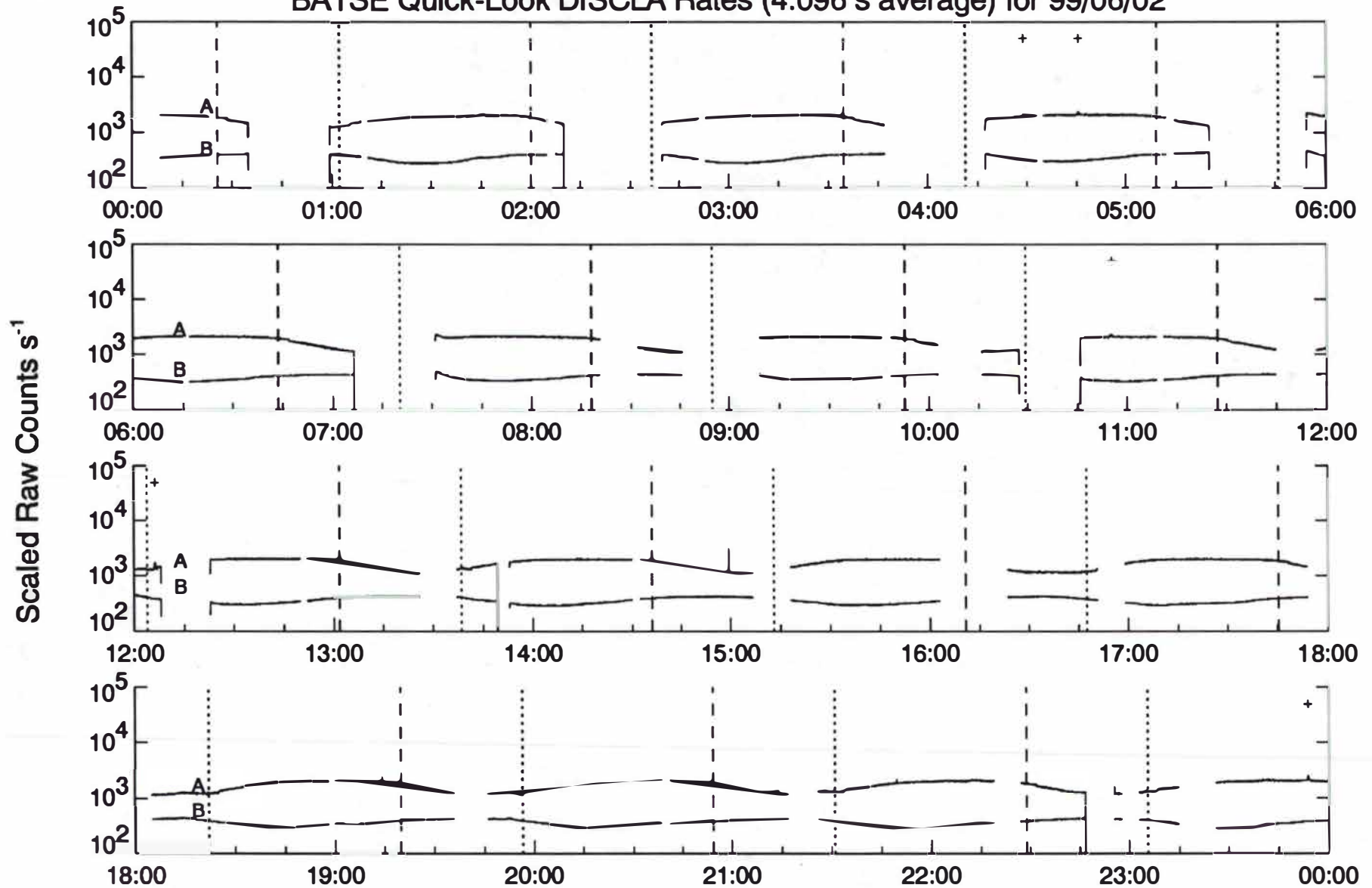


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/02

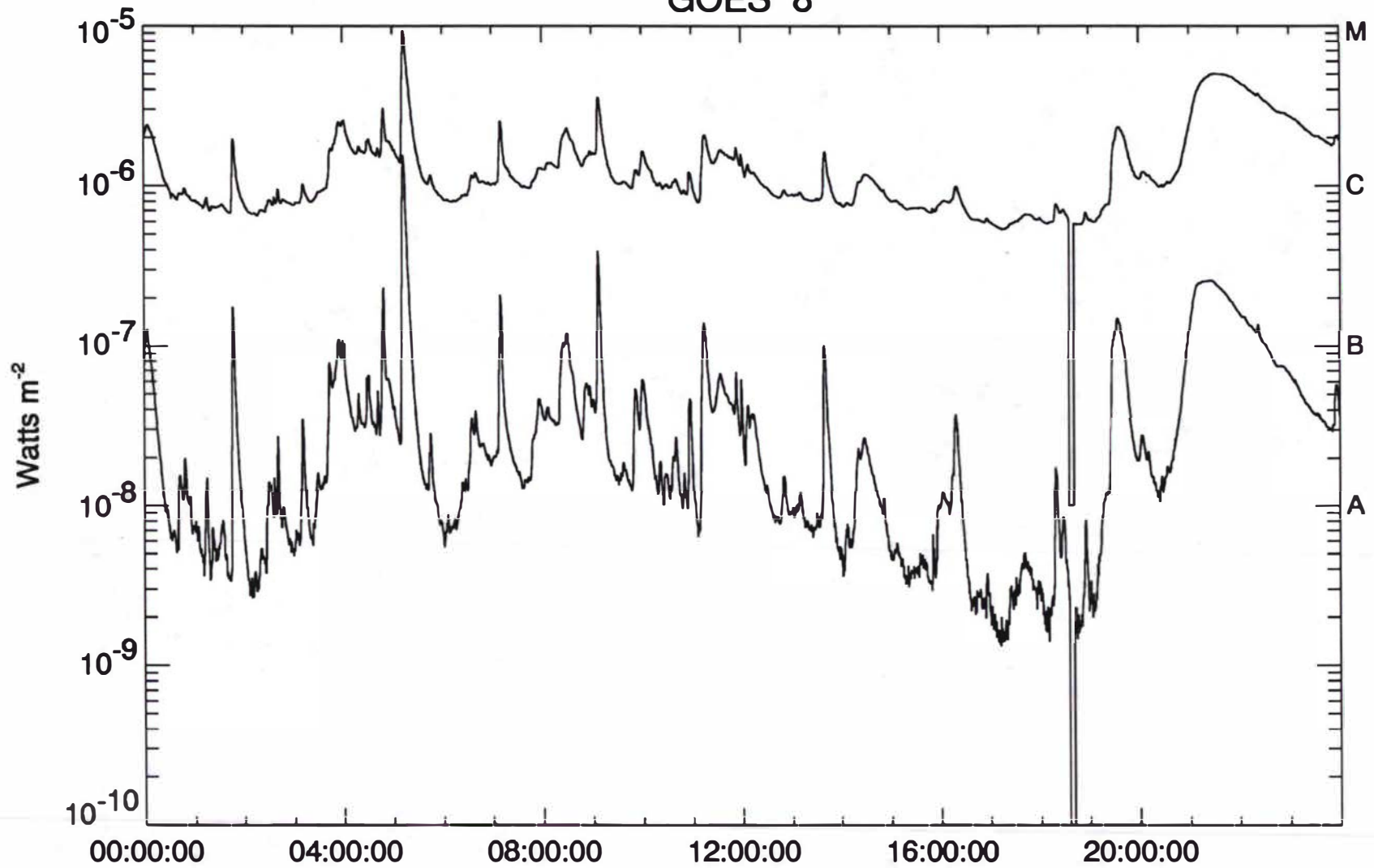


Current Time: 99/06/06, 1007 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/02, 0000:00

Plot created: 99/06/06, 1007

Channel

1 (1.0 - 8.0 Angstroms)

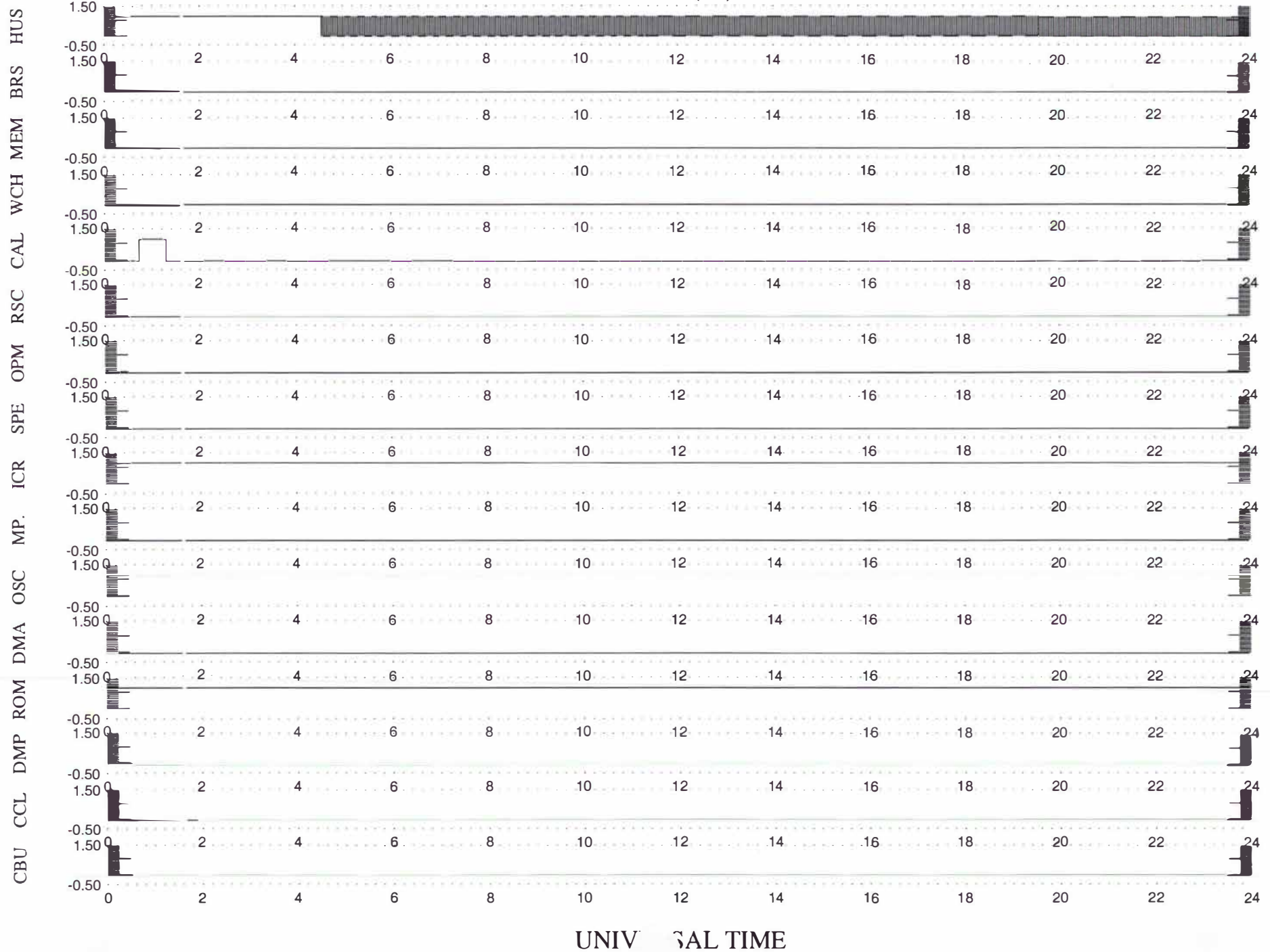
Background not subtracted

2 (0.5 - 4.0 Angstroms)

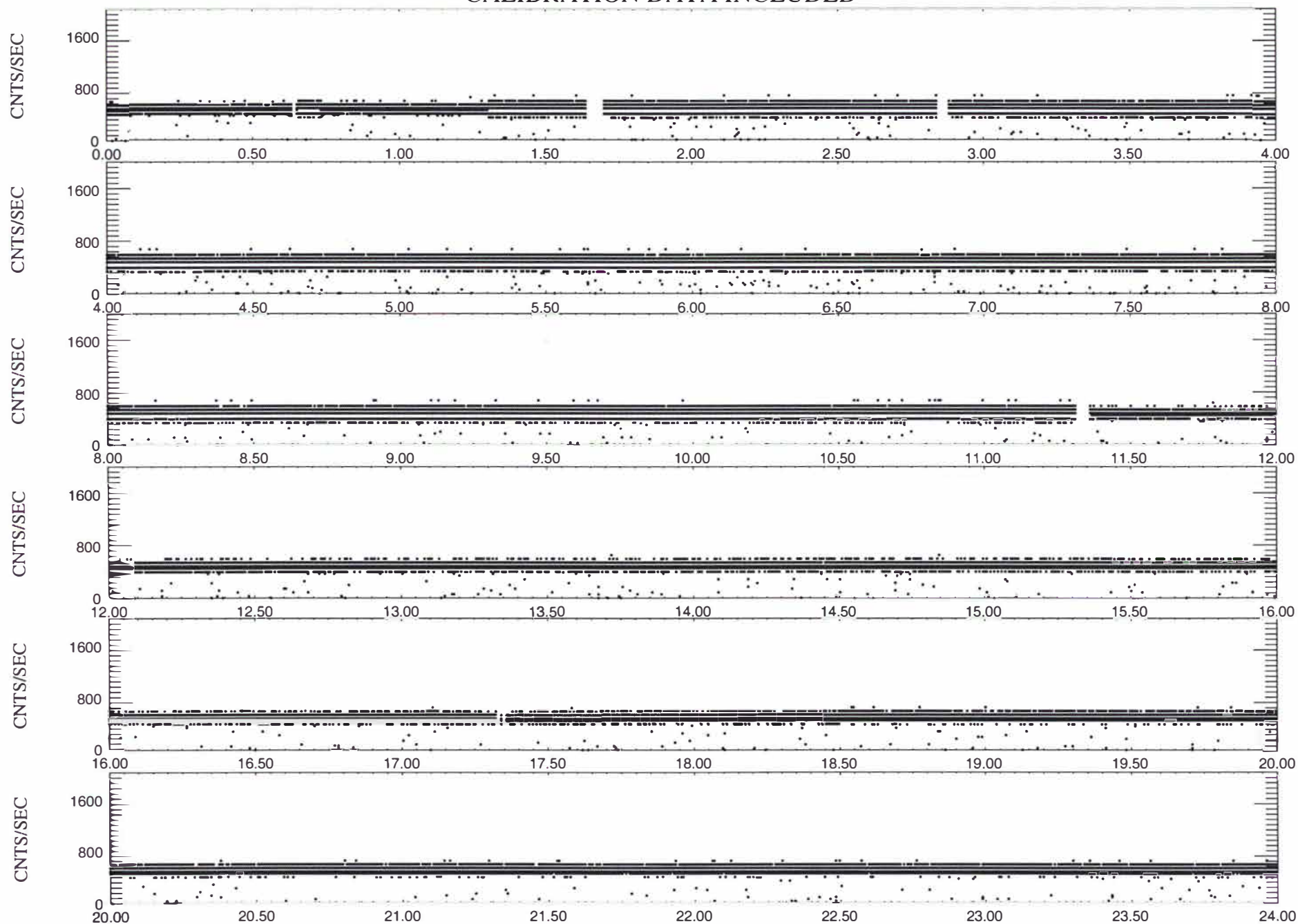
Background not subtracted

Sample average = 10

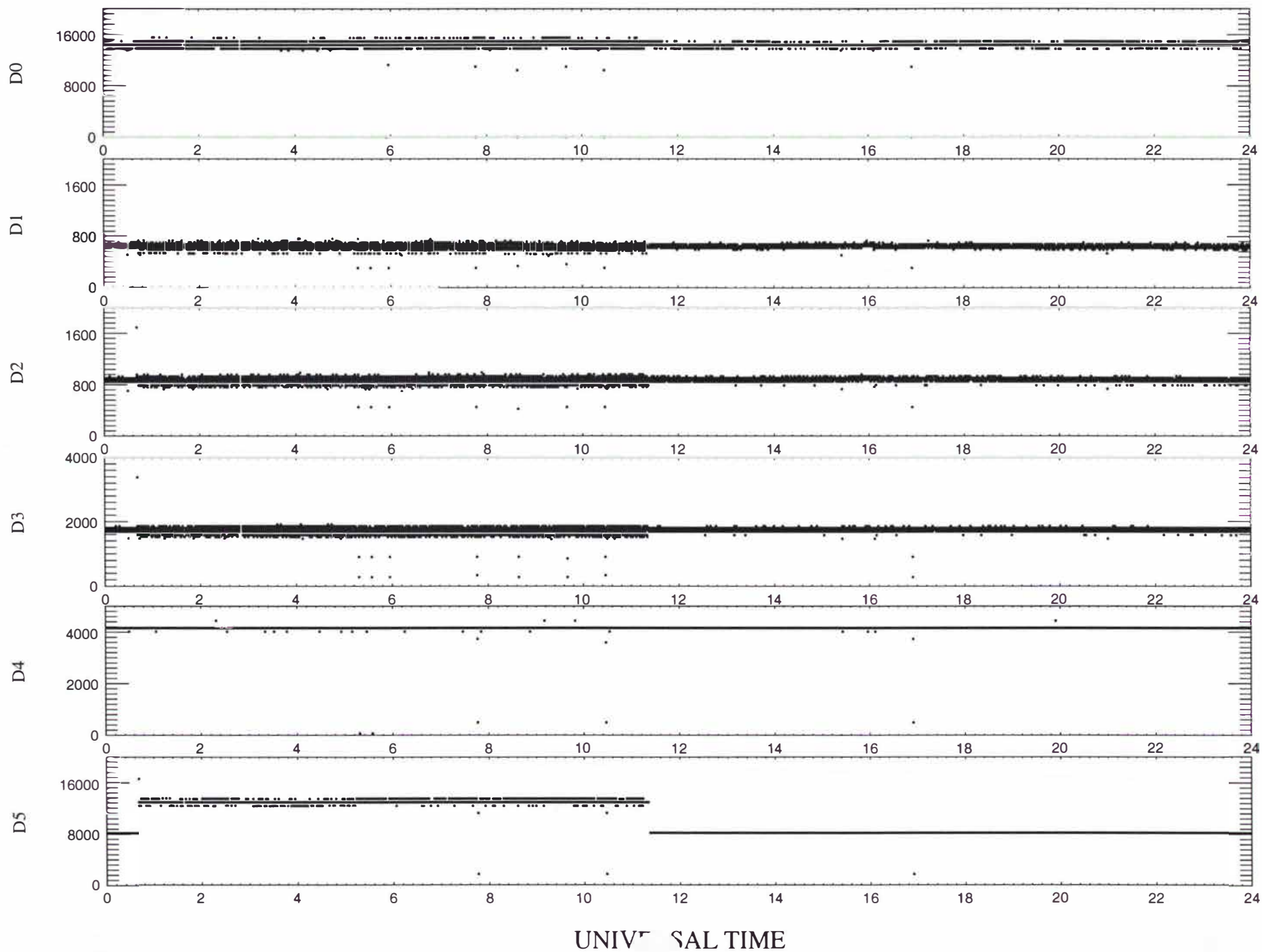
NO BURST (13)



CALIBRATION DATA INCLUDED



UNIVERSAL TIME



GRBM 19990603 47388

ULYSSES RT

16 / 05 / 07

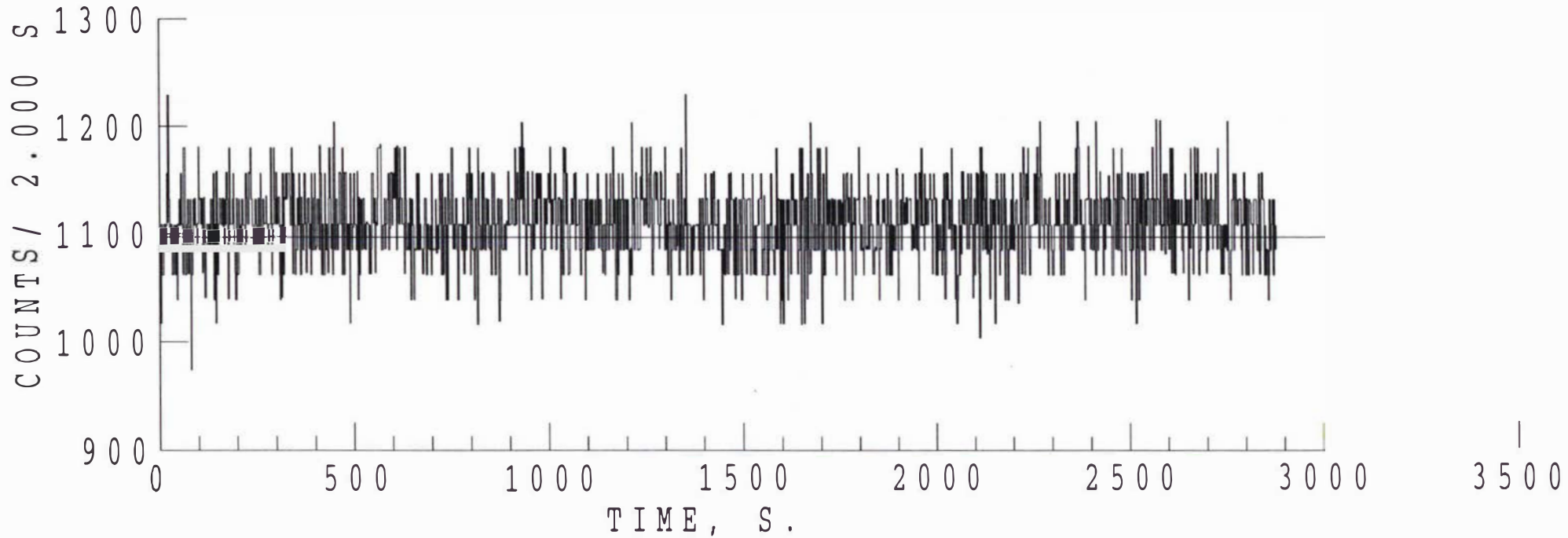
03/06/99 45936.211 s

0.500 S INTERVALS REGROUPED BY 4

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



03/06/99 47926.394

100-1000 keV

COUNTS/1.000 S

11/05/07

1200

1100

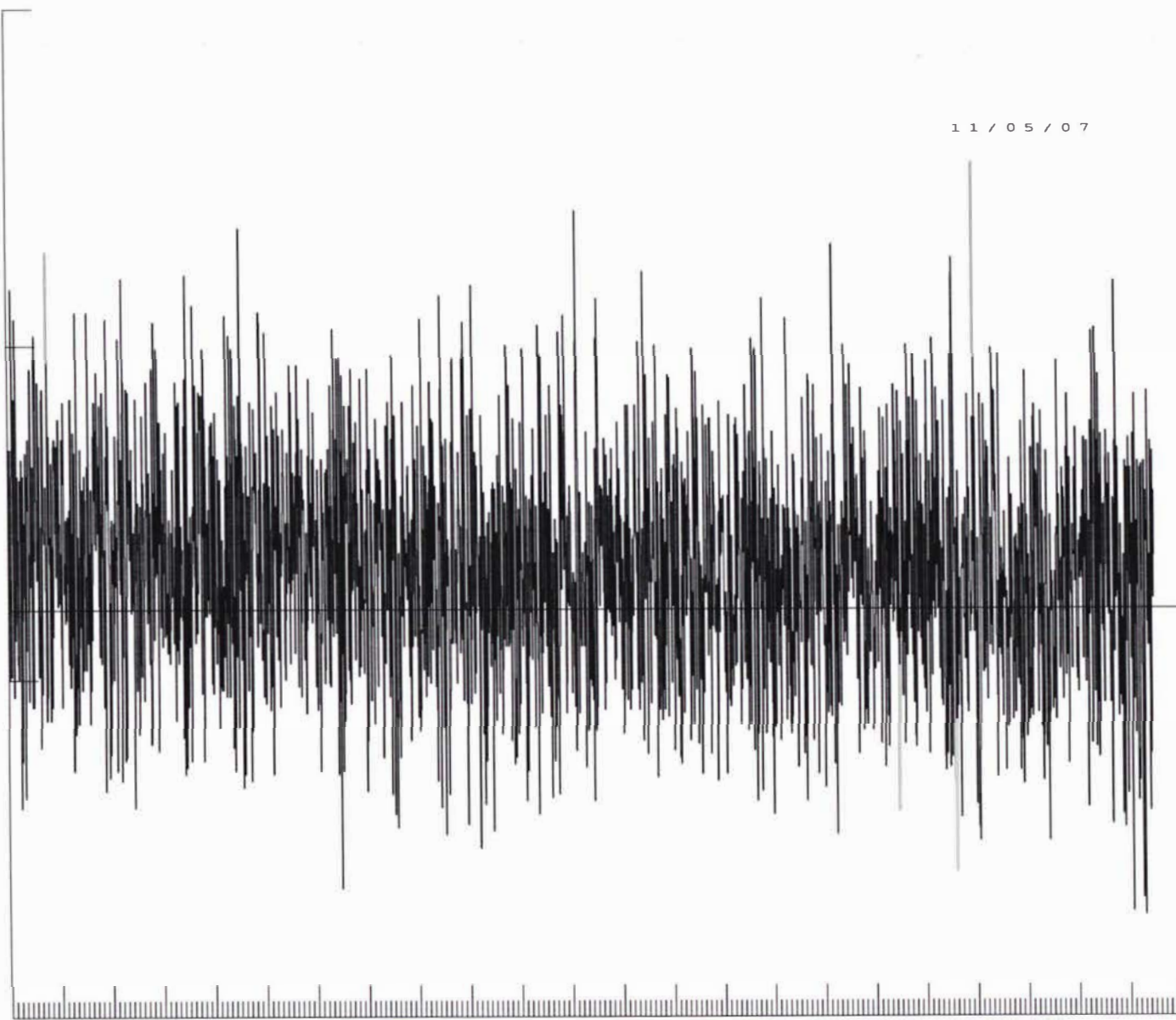
1000

900

*****-26 74 17 42 7 43 7 44 7 45 7 46 7 47 7 48 7 49 7 4*****

TIME, SECS

NEAR

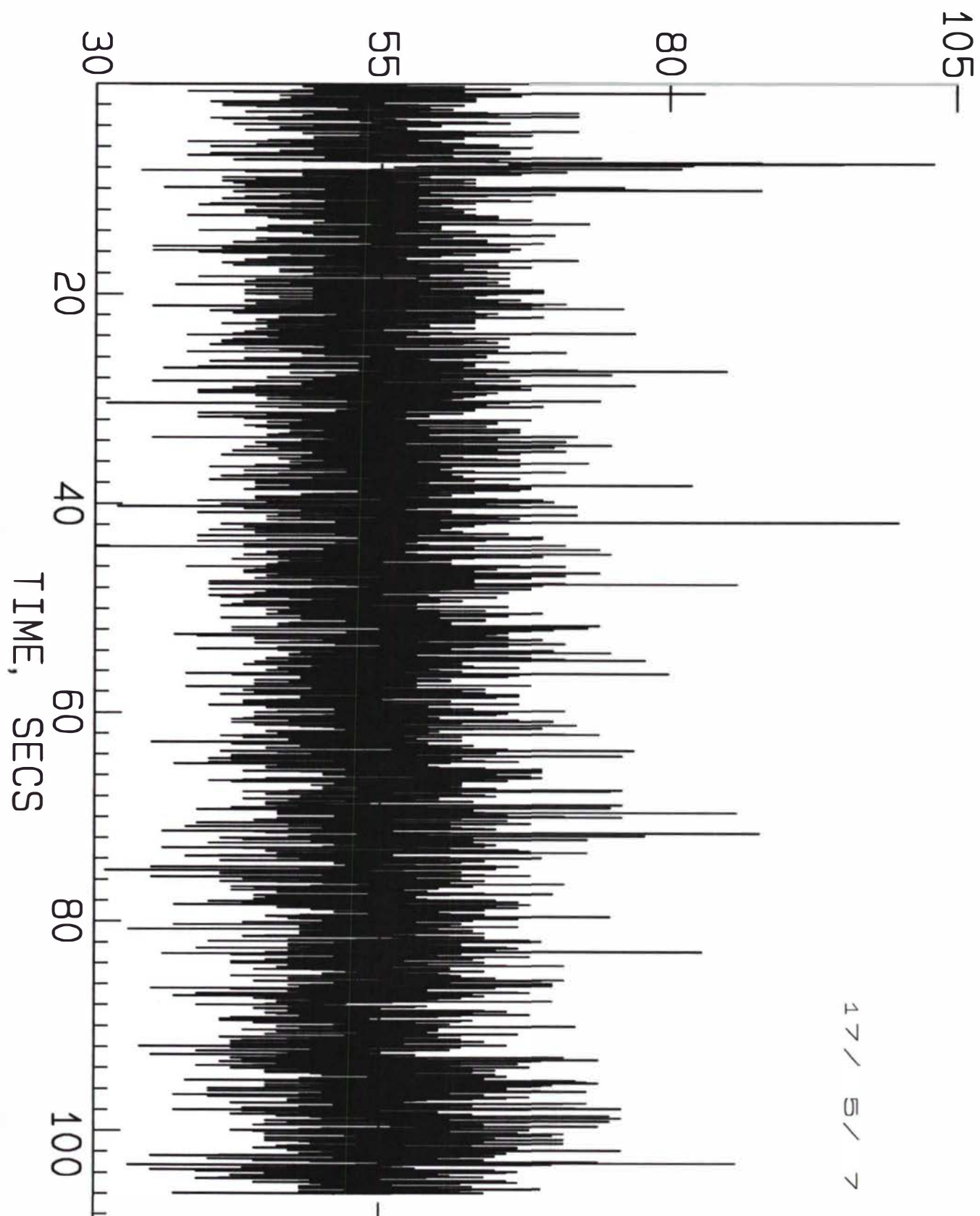


SAX GRBM

03/06/99 66678.008

40- 700 keV

COUNTS/0.031 S



17 / 5 / 7

GRBM 19990603 67866

ULYSSES RT

16 / 05 / 07

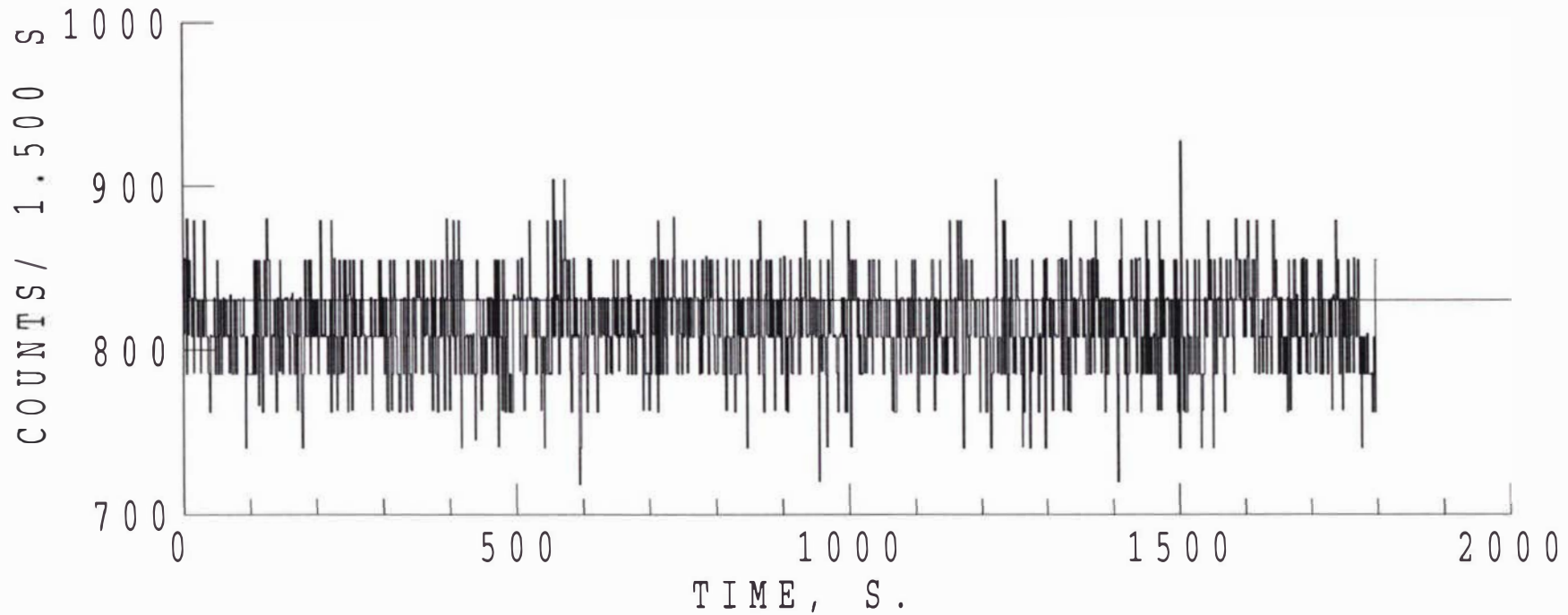
03/06/99 66960.422 s

0.500 S INTERVALS REGROUPED BY 3

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



03/06/99 66685.388

100-1000 keV

COUNTS/1.000 S

11/05/07

1100

1000

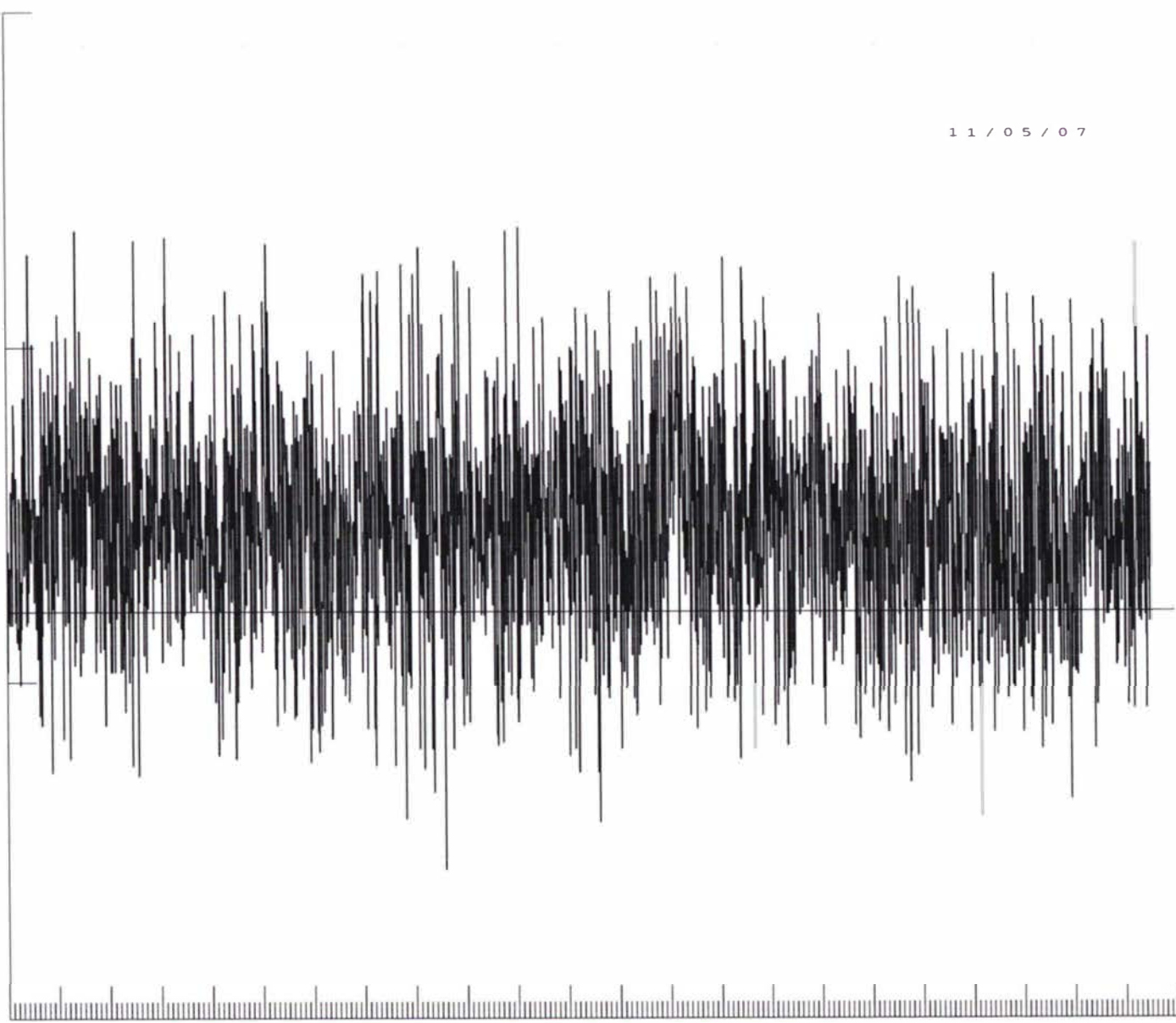
900

800

*****-26 74 174274374474574674774874974*****

TIME, SECS

NEAR



NEAR

03/06/99 67697.388

100-1000 keV

COUNTS/1.000 S

1100

1000

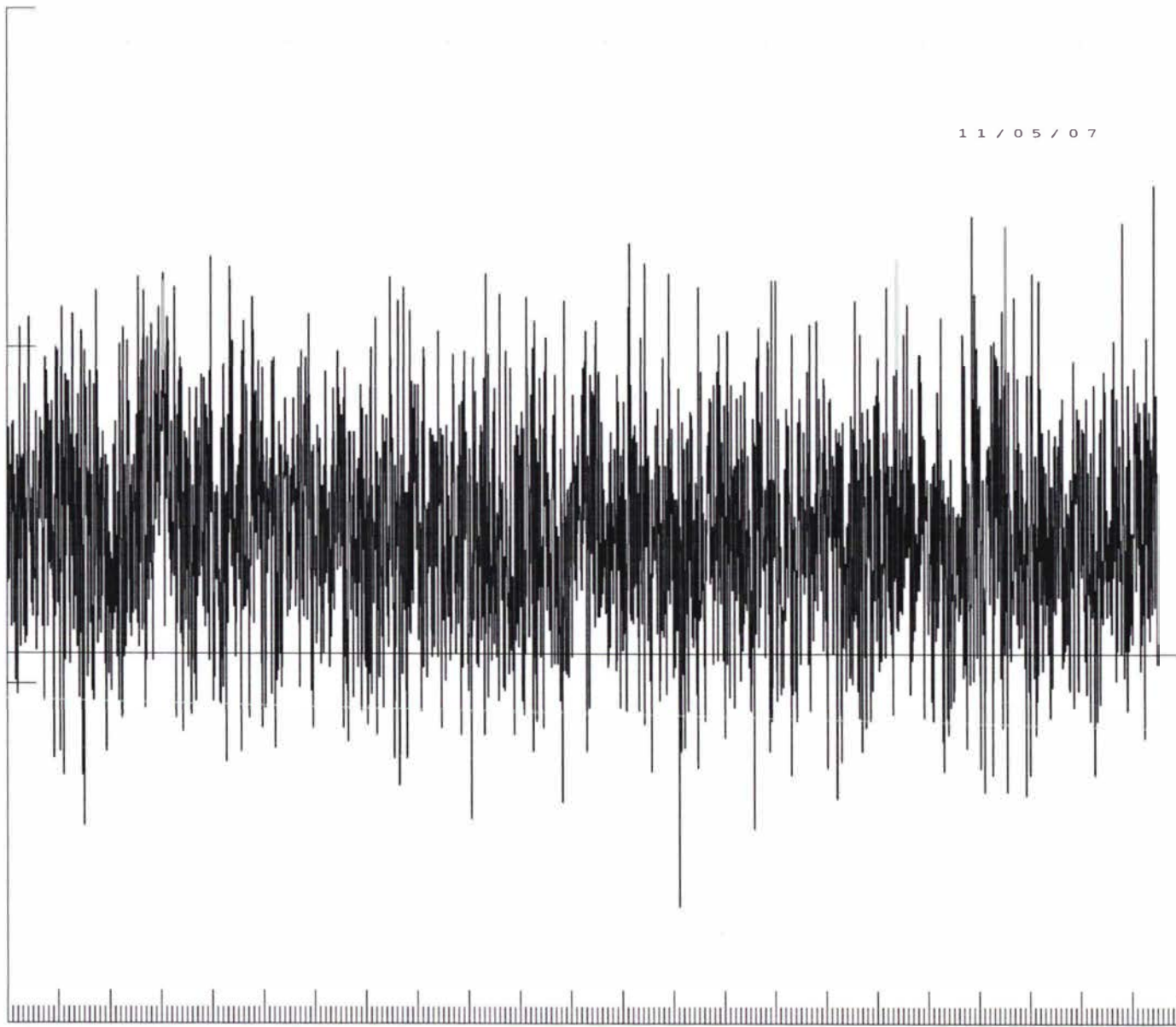
900

800

11/05/07

*****-206 74 174274374474574674774874974*****

TIME, SECS



From GOGUSE@fender.msfc.nasa.gov Wed Jun 9 06:54:03 1999
Return-Path: <GOGUSE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id GAA08541; Wed, 9 Jun 1999 06:54:02 -0700
From: GOGUSE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id GAA18431
for <khurley@sunspot.ssl.berkeley.edu>; Wed, 9 Jun 1999 06:50:35 -0700 (PDT)
Date: Wed, 9 Jun 1999 8:54:41 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990609085441.20814b51@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7594
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7594
EVENT OF 1999 JUN 3 DAY OF YEAR=154
EVENT CROSSING TIME AT BATSE : 69540. S. OR 19:19:00.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 264.000 3.000
BATSE PEAK COUNTING RATE: 1200 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 6/ 99 IS:
RA= 144.384 DEC= -6.869 DIST= 5.005 AU
BATSE-ULYSSES DISTANCE = 748702791. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.25 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1239.27 SECS.
CROSSING TIME AT ULYSSES IS 70779. S. OR 19:39:39 +/- 445.26 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 6/ 99 IS:
RA= 202.546 DEC= -9.755 DIST= 0.663 AU
MARS-BATSE DISTANCE = 99227600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.48 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -152.73 SECS.
CROSSING TIME AT MARS IS 69387. S. OR 19:16:27 +/- 48.66 SECONDS

BATSE BURST TRIGGER

NO.: 7594

TIME: TJD=1332 SECONDS=69540

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 42.6 AZIMUTH=175.0 ERROR= 10.4 DEGREES

COMMENTS:

GRB, SINGLE PEAK, DUR. APPROX. 11 SEC., VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7594	990603	11332	69540	1200	264	+03	11

BATSE BURST# 7594

ULYSSES RT

9 / 6 / 99

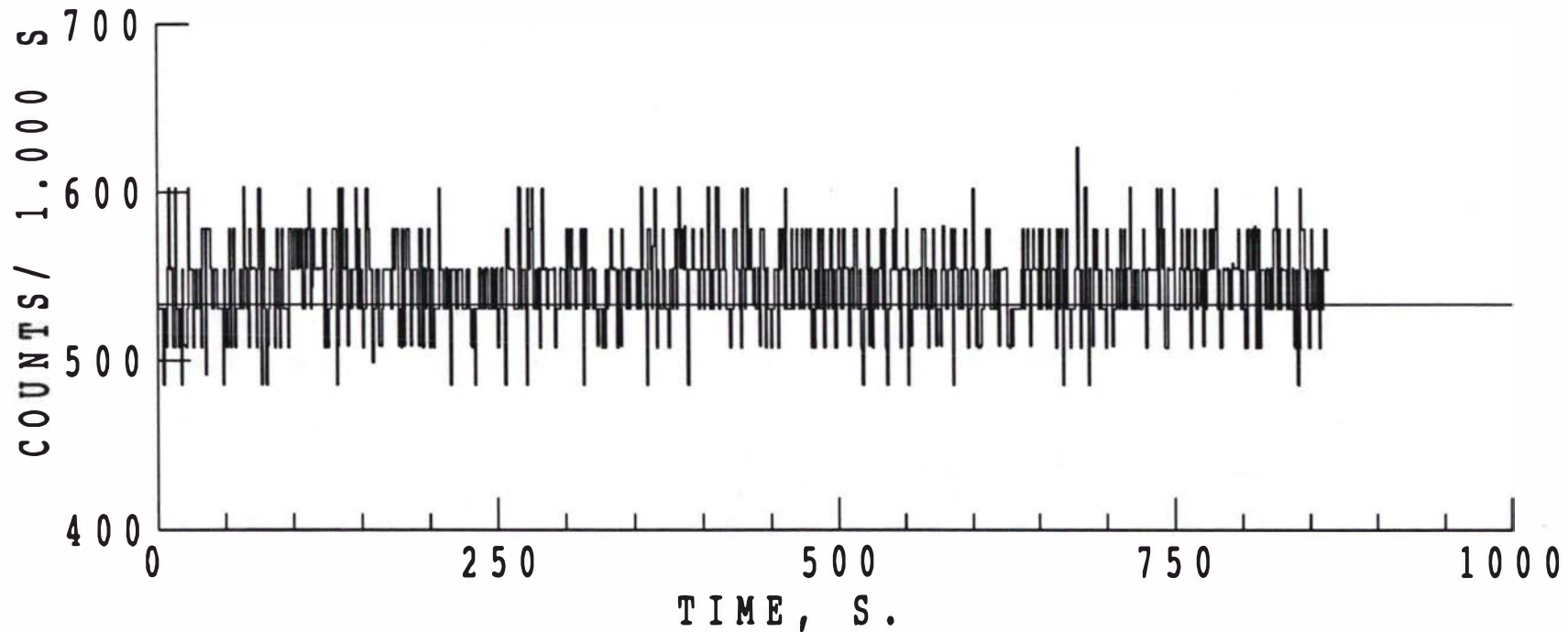
3 / 6 / 99 70344.461 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From GOGUSE@fender.msfc.nasa.gov Wed Jun 9 13:03:14 1999
Return-Path: <GOGUSE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA25000; Wed, 9 Jun 1999 13:03:13 -0700
From: GOGUSE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA24897
for <khurley@sunspot.ssl.berkeley.edu>; Wed, 9 Jun 1999 12:59:46 -0700 (PDT)
Date: Wed, 9 Jun 1999 15:03:52 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990609150352.20814b51@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7595
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7595
EVENT OF 1999 JUN 3 DAY OF YEAR=154
EVENT CROSSING TIME AT BATSE : 83368. S. OR 23:09:28.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 298.000 8.000
BATSE PEAK COUNTING RATE: 4800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 3/ 6/ 99 IS:
RA= 144.391 DEC= -6.871 DIST= 5.007 AU
BATSE-ULYSSES DISTANCE = 749010529. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 26.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2241.94 SECS.
CROSSING TIME AT ULYSSES IS 85610. S. OR 23:46:49 +/- 275.49 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 3/ 6/ 99 IS:
RA= 202.546 DEC= -9.755 DIST= 0.663 AU
MARS-BATSE DISTANCE = 99227600. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 83.32 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 38.51 SECS.
CROSSING TIME AT MARS IS 83407. S. OR 23:10:06 +/- 57.66 SECONDS

BATSE BURST TRIGGER

NO.: 7595

TIME: TJD=1332 SECONDS=83368

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 72.0 AZIMUTH=153.1 ERROR= 8.9 DEGREES

COMMENTS:

GRB, SINGLE PEAK, DUR. APPROX. 0.4 SEC, NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7595	990603	11332	83368	4800	298	+08	.4

BATSE BURST# 7595

ULYSSES RT

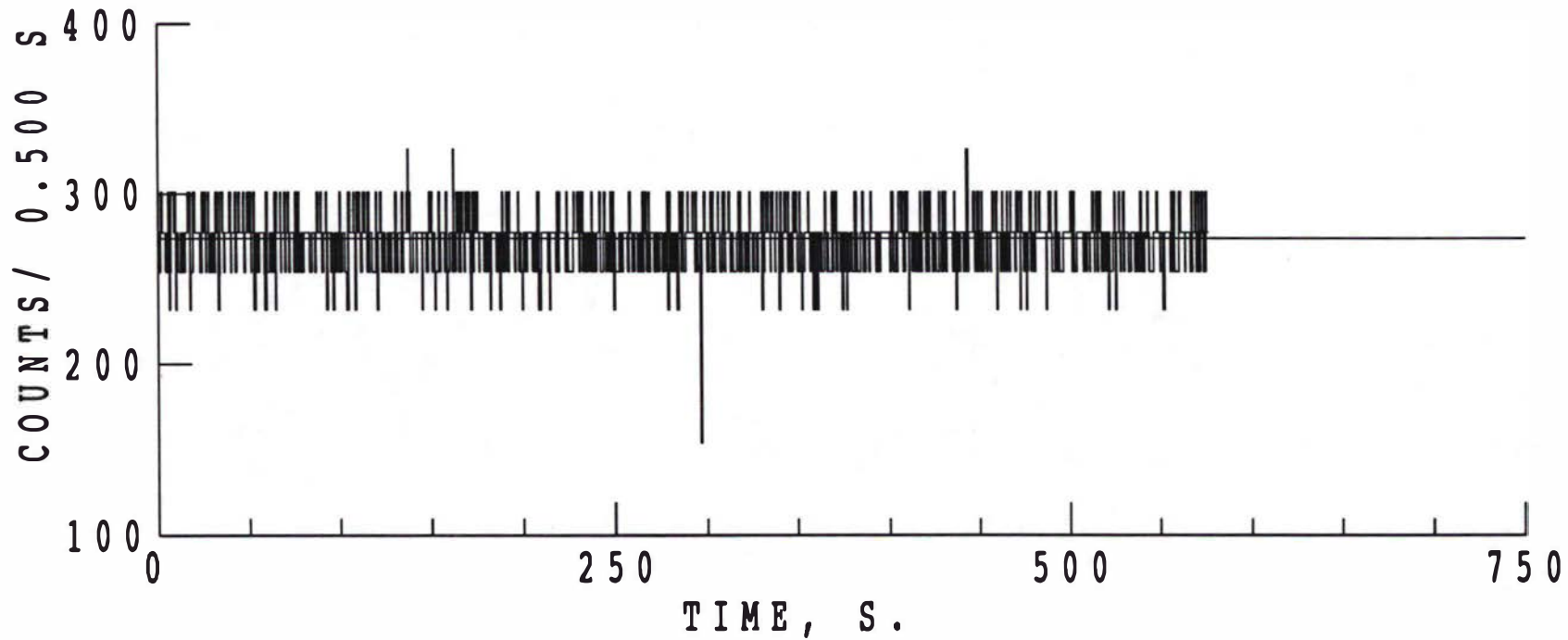
9 / 6 / 99

3 / 6 / 99 85320.109 s

0 - 0 keV

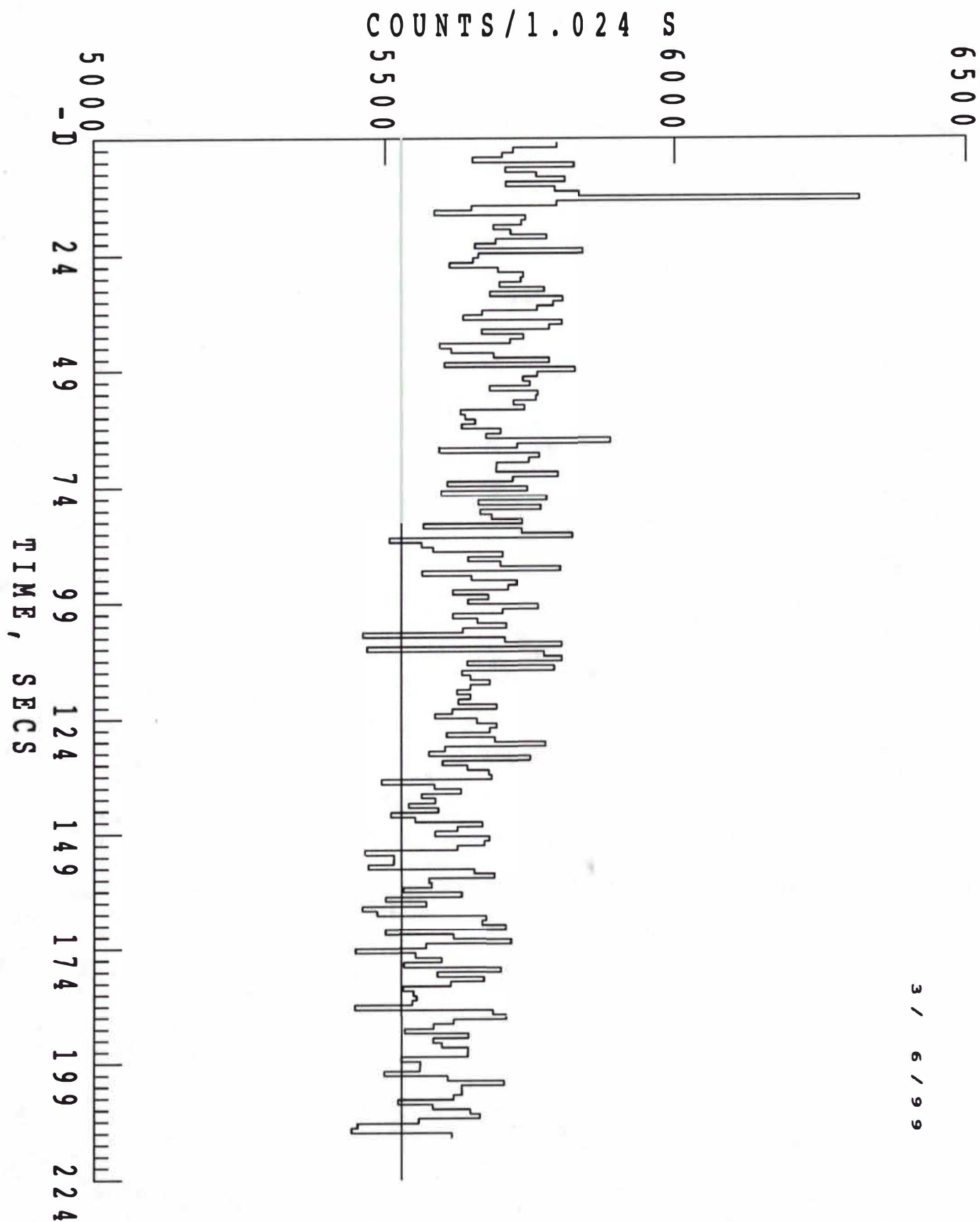
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

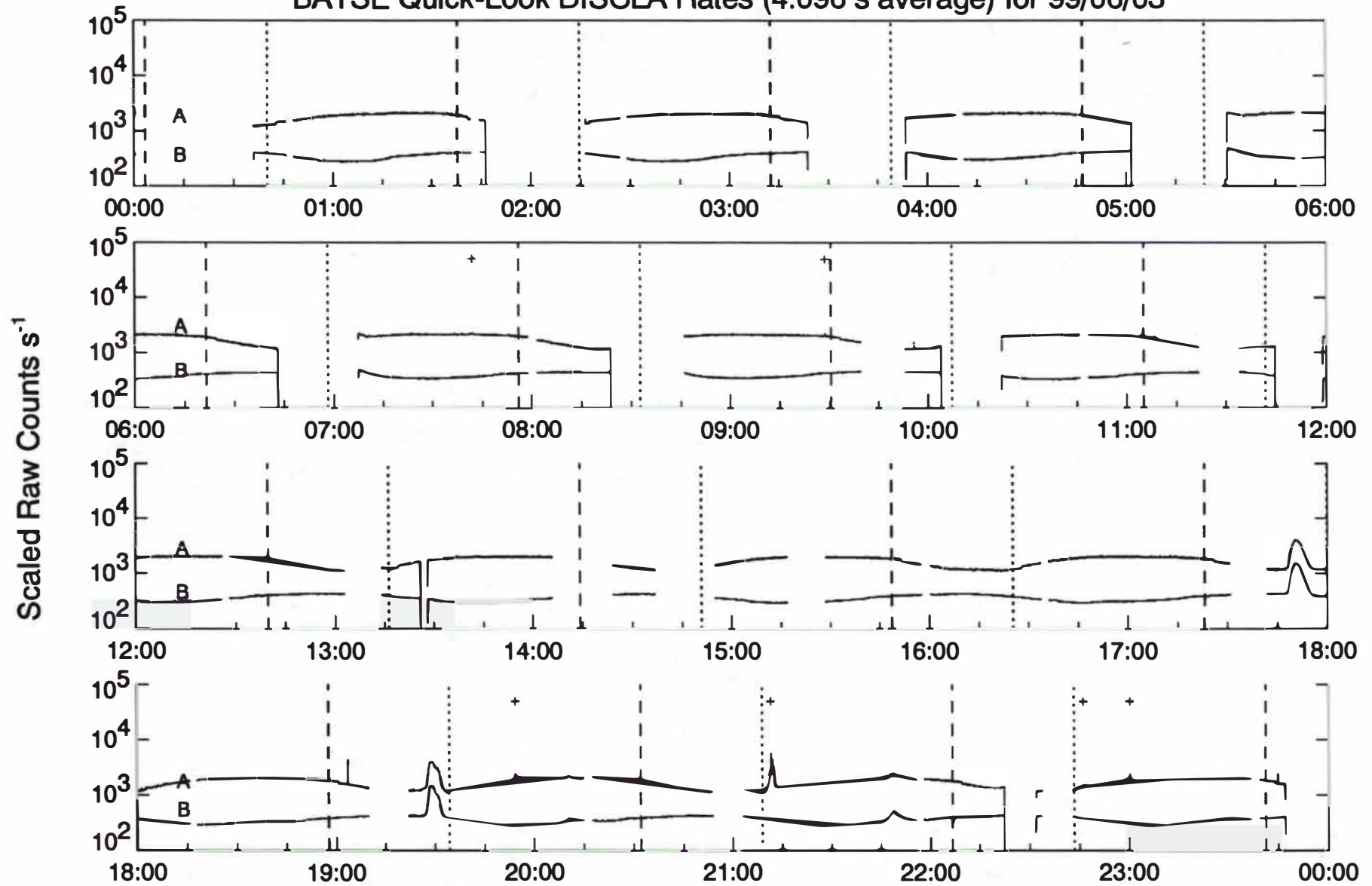


BACODINE 7595 03/06/99 83357.433

25- 100 keV



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/03

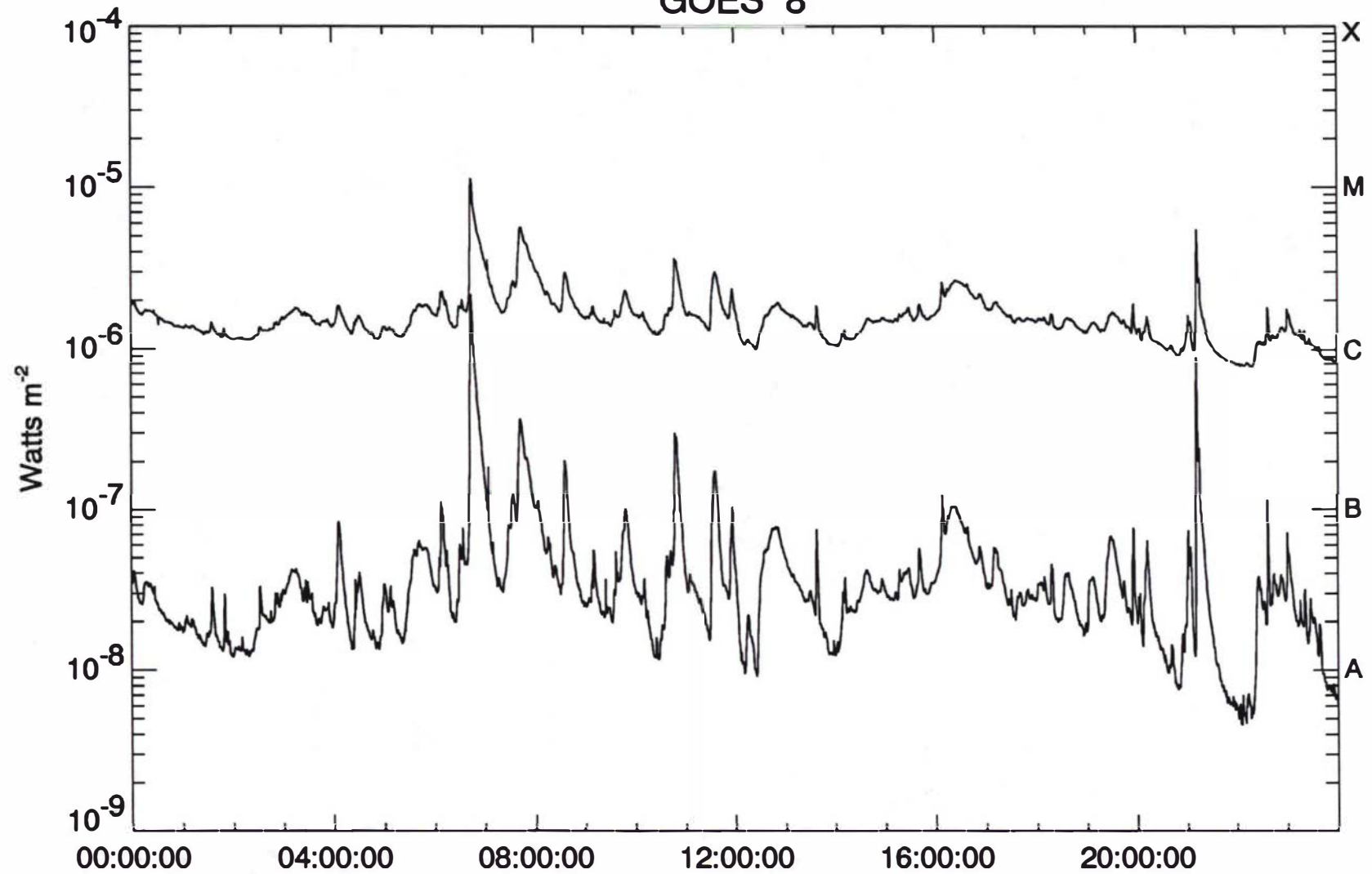


Current Time: 99/06/07, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/03, 0000:00

Plot created: 99/06/07, 1005

Channel

1 (1.0 - 8.0 Angstroms)

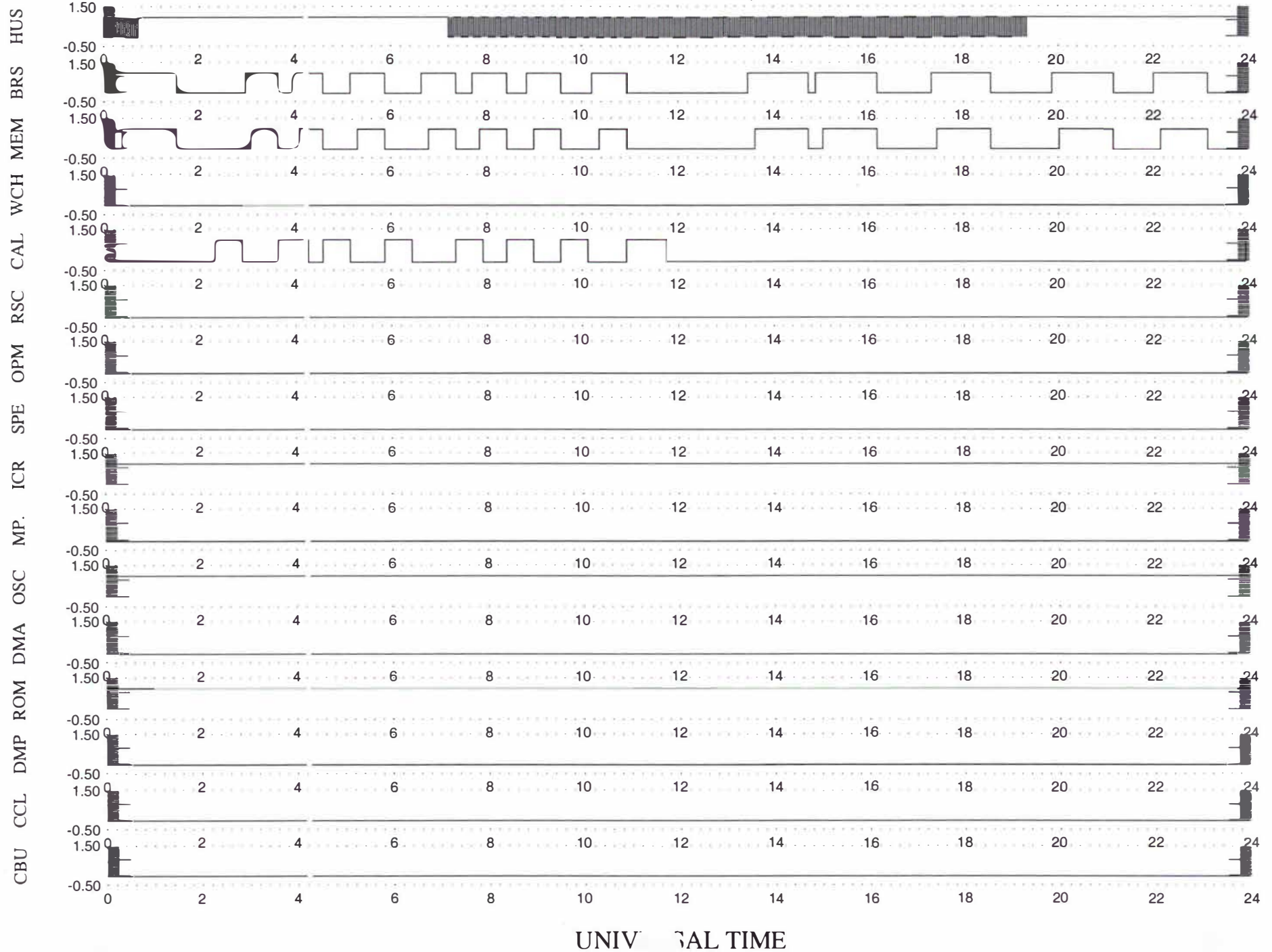
Background not subtracted

2 (0.5 - 4.0 Angstroms)

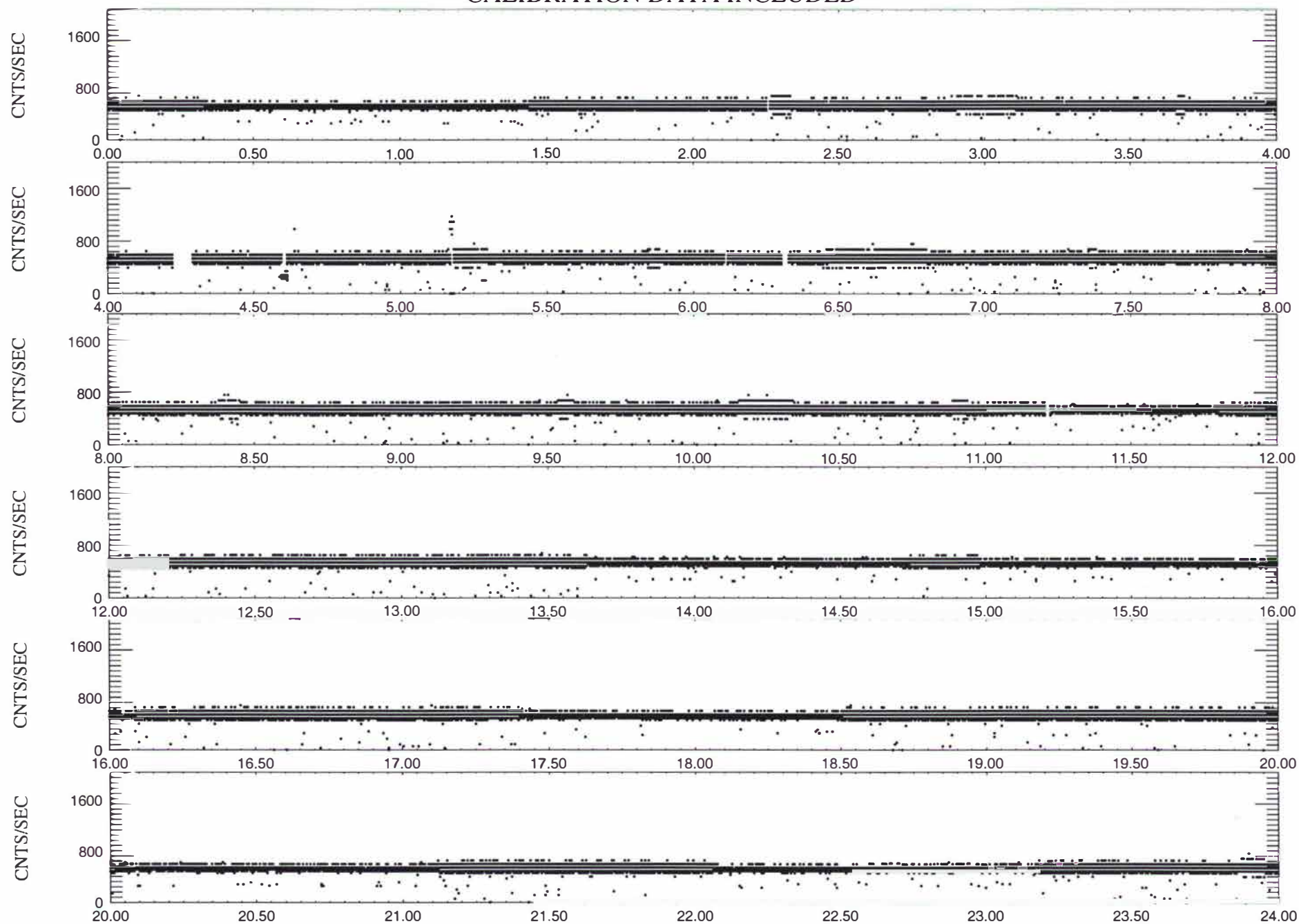
Background not subtracted

Sample average = 10

BURST NUMBER 14 - 15, 0 - 10

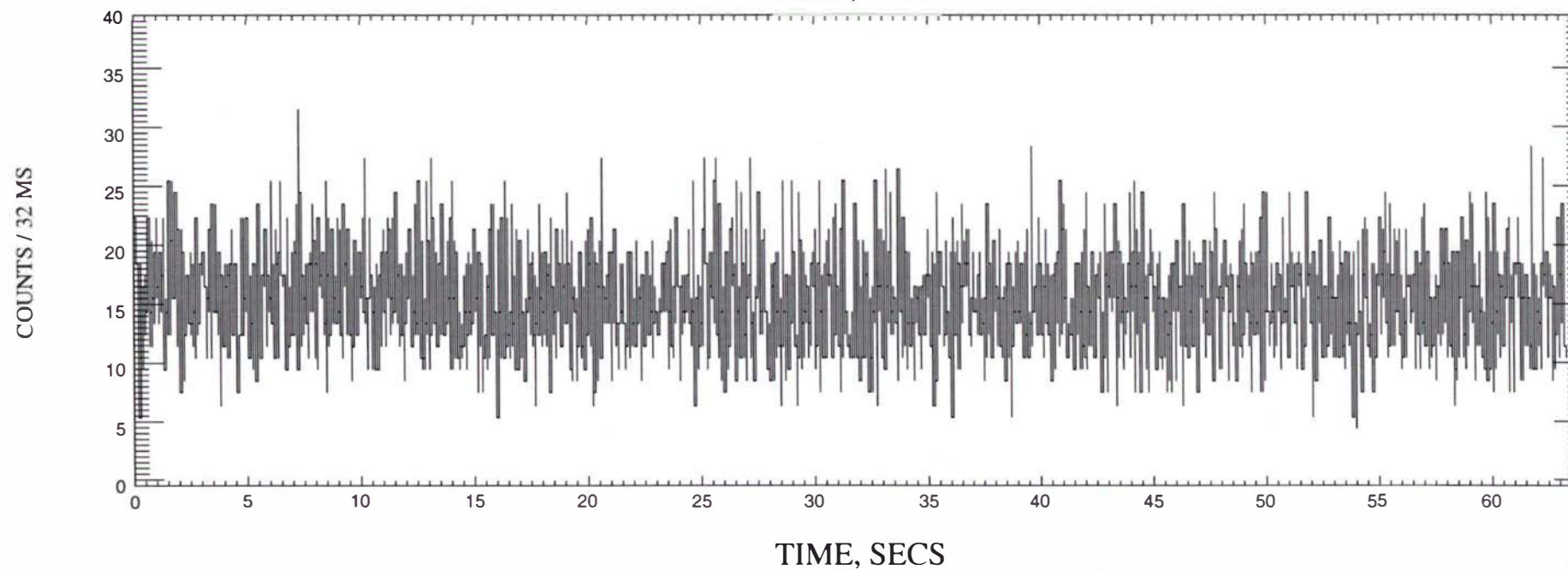
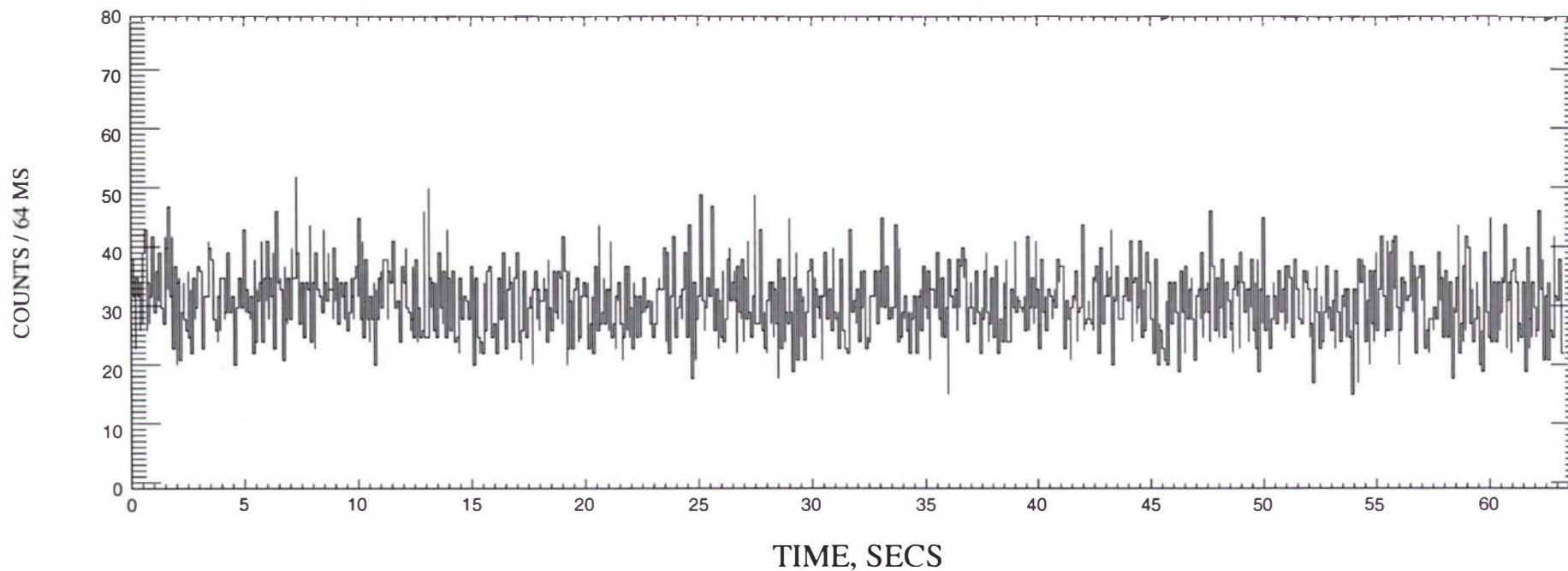


CALIBRATION DATA INCLUDED

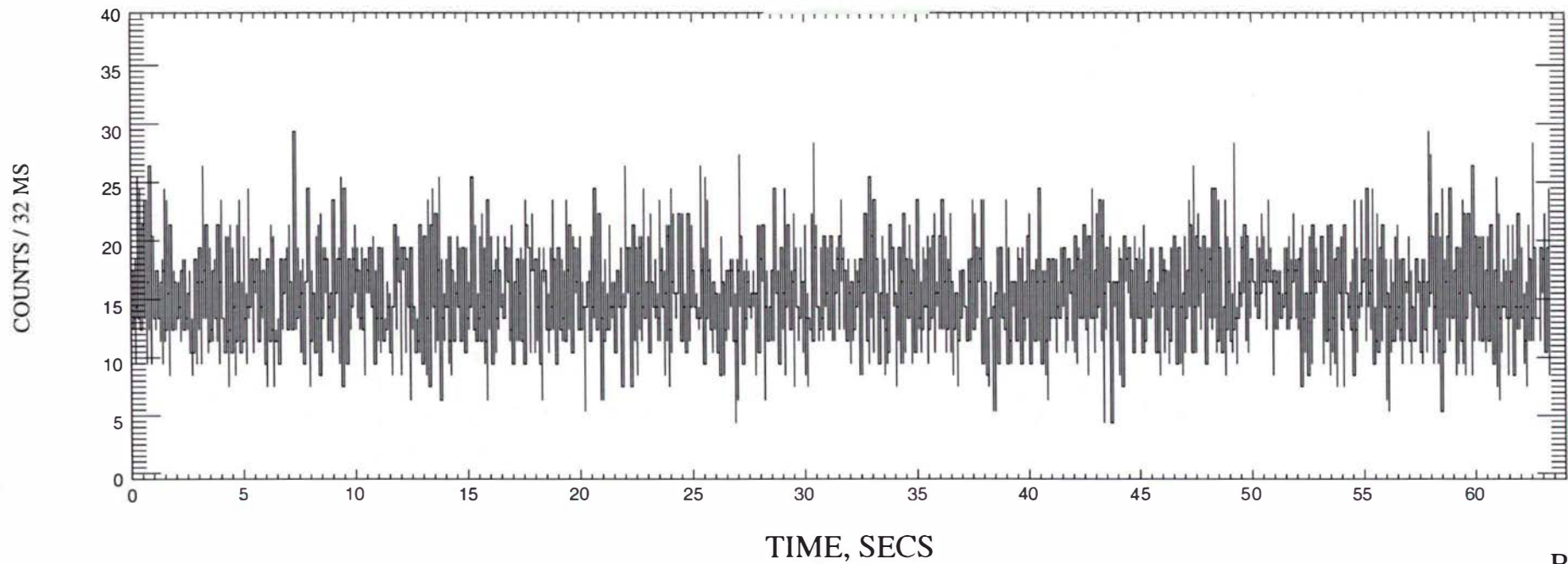
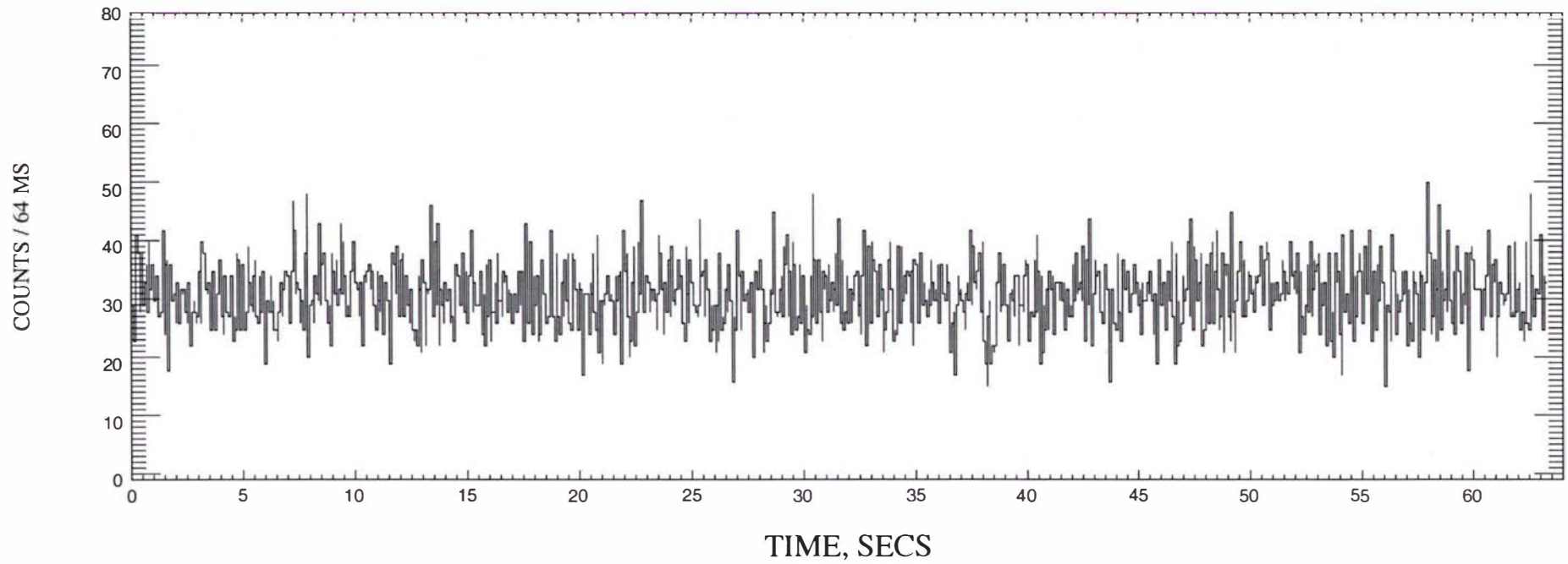


UNIV SAL TIME

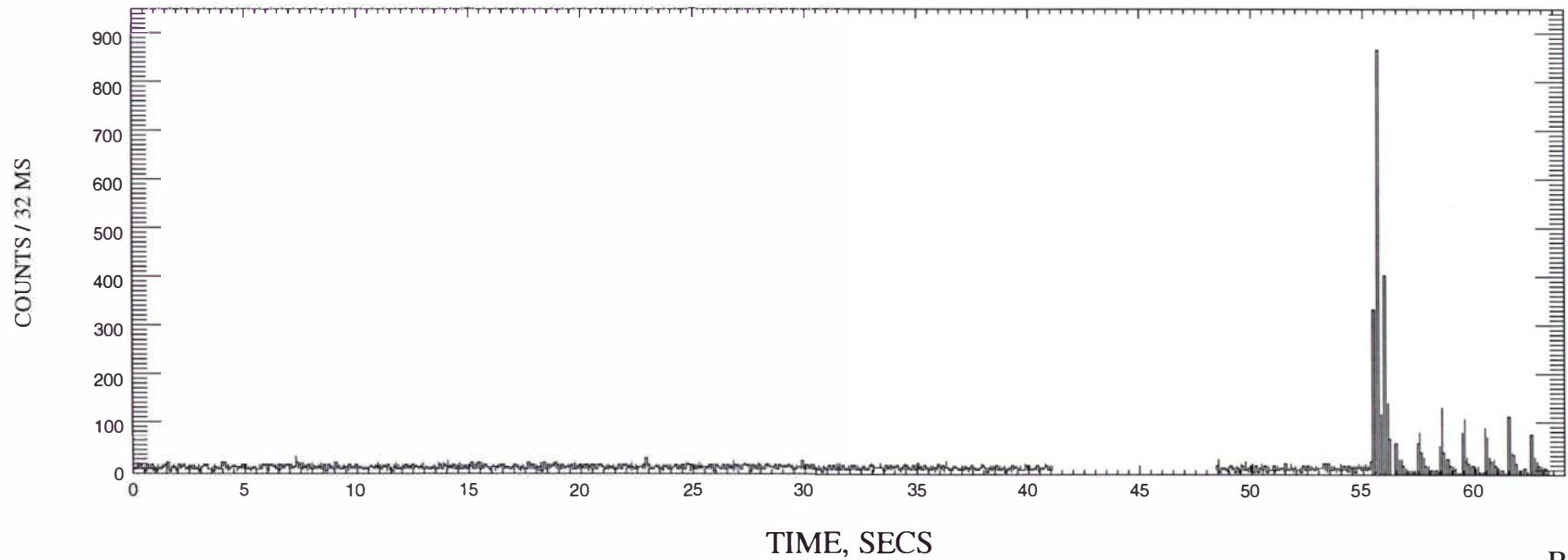
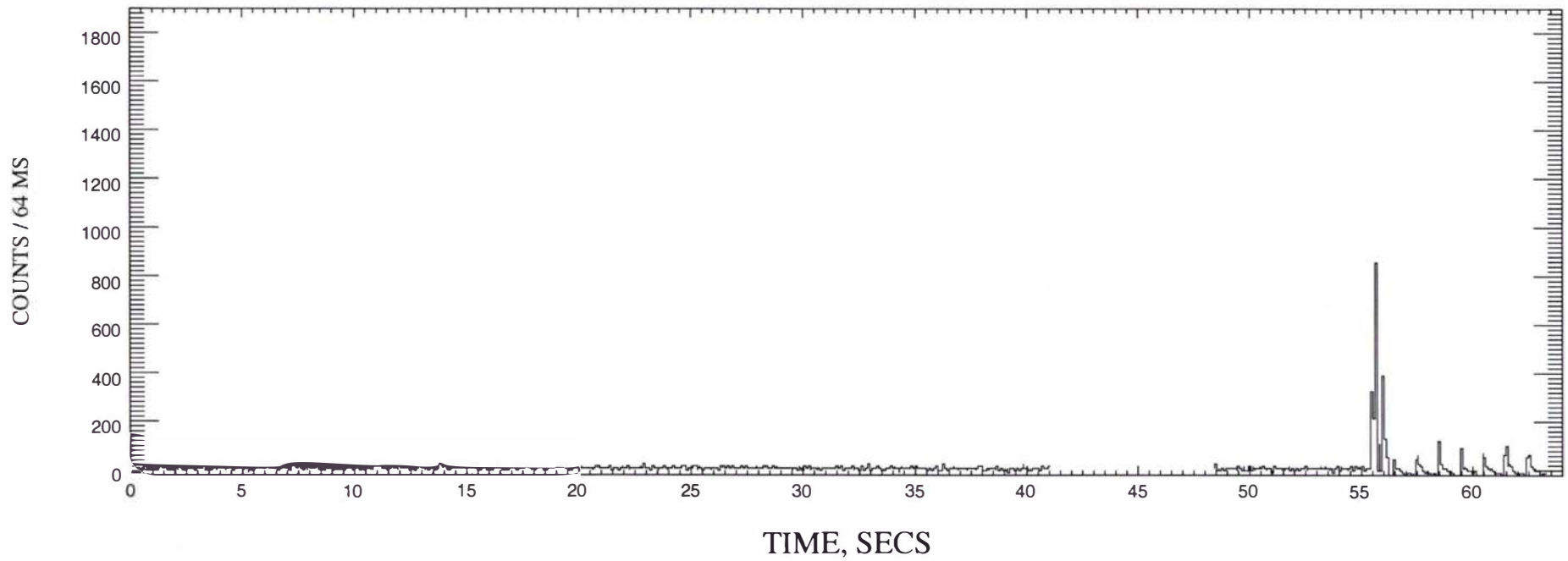
Burst Counter 14 at UT= 0.178262888590 h= 641.746 s 00:10:41.746



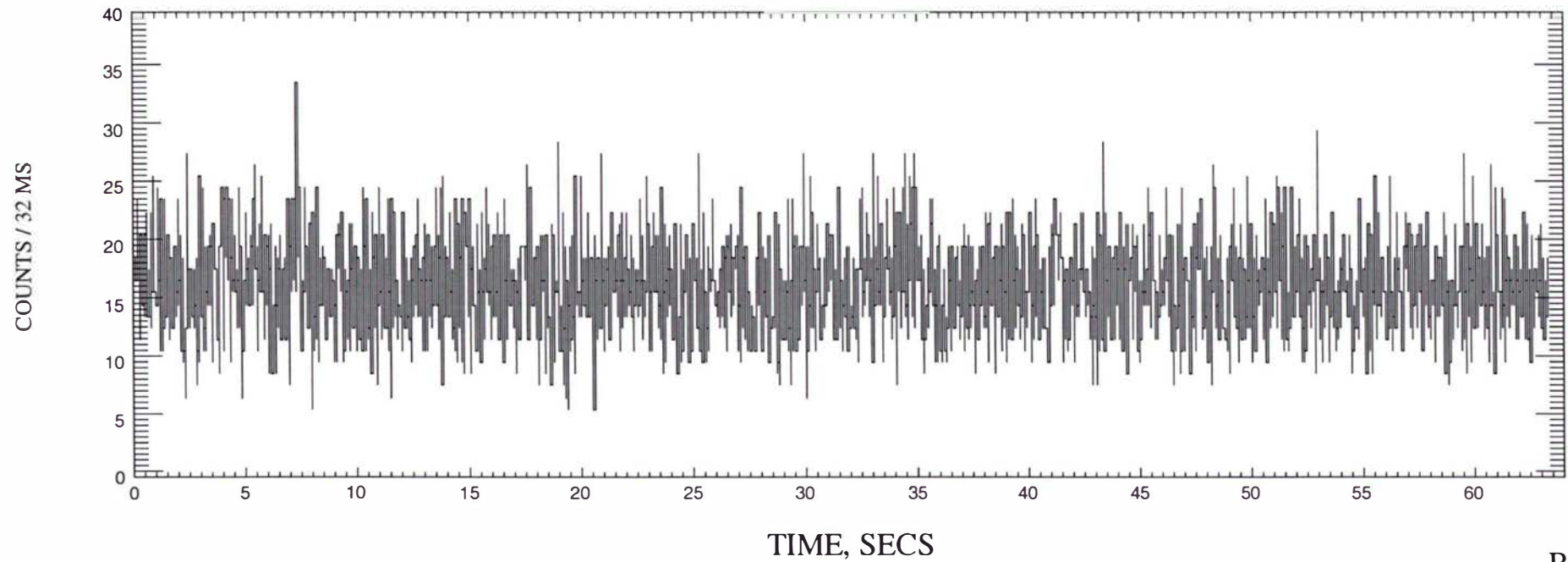
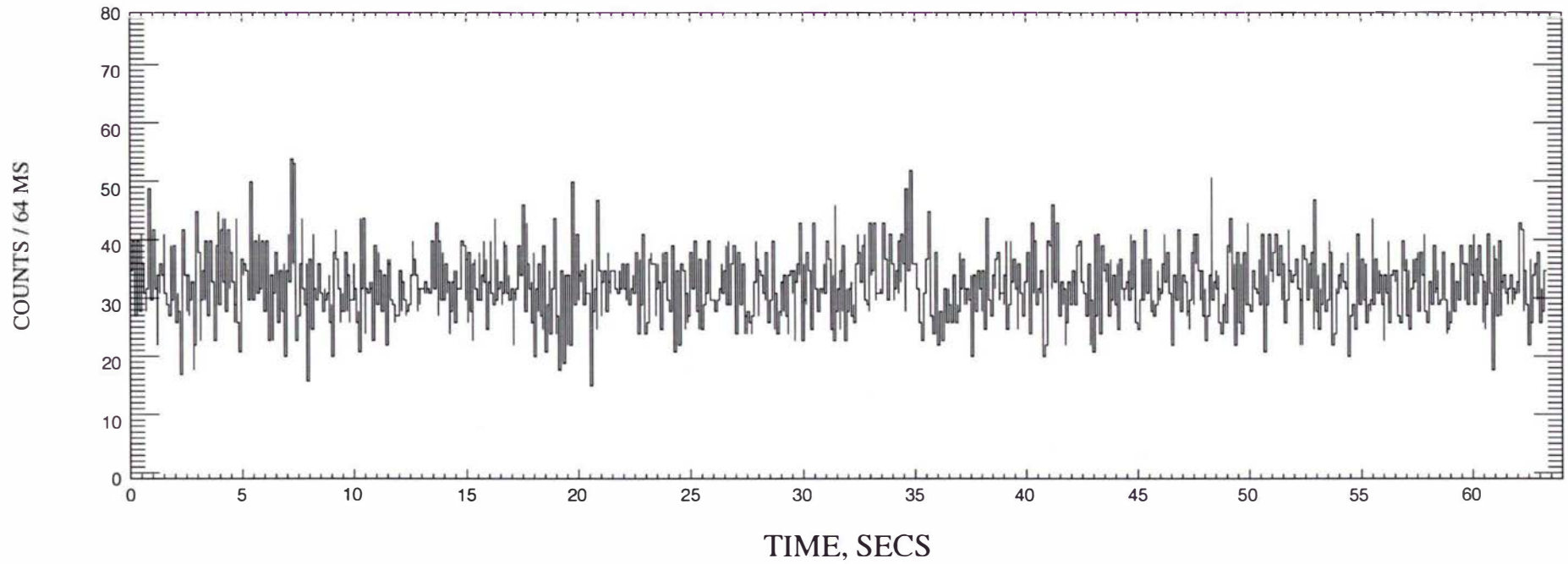
Burst Counter 15 at UT= 2.955479473538 h=10639.726 s 02:57:19.726



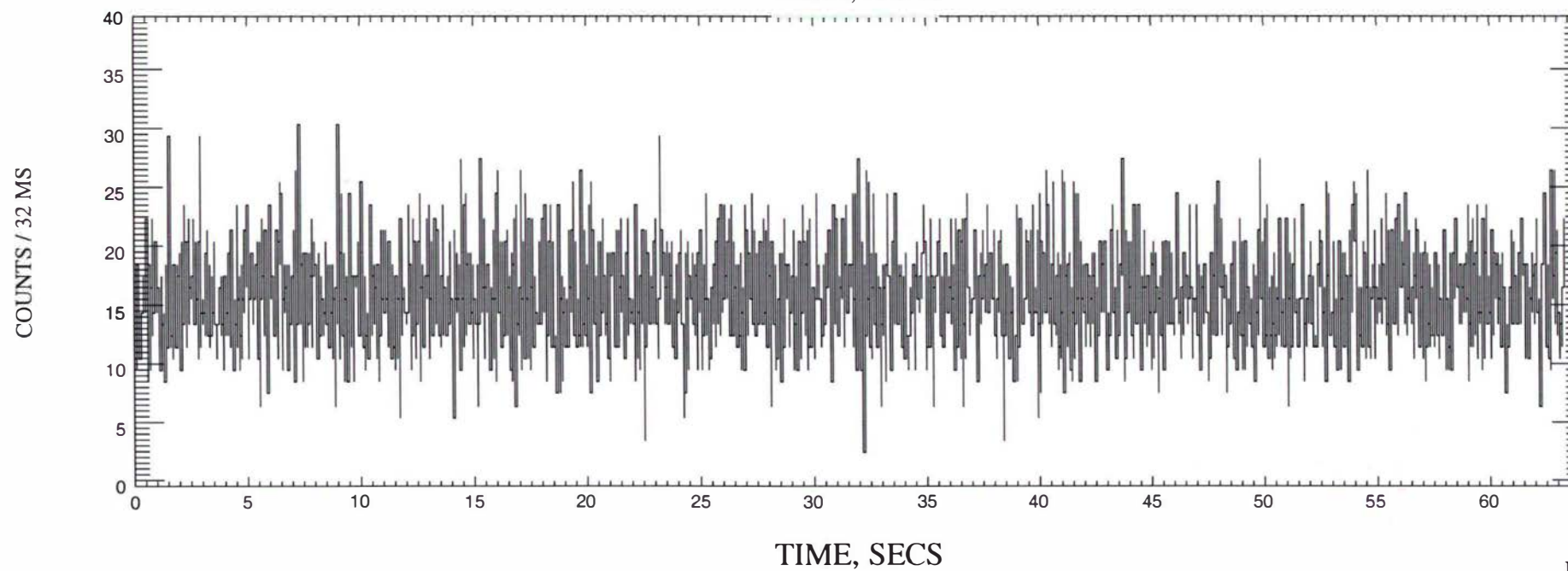
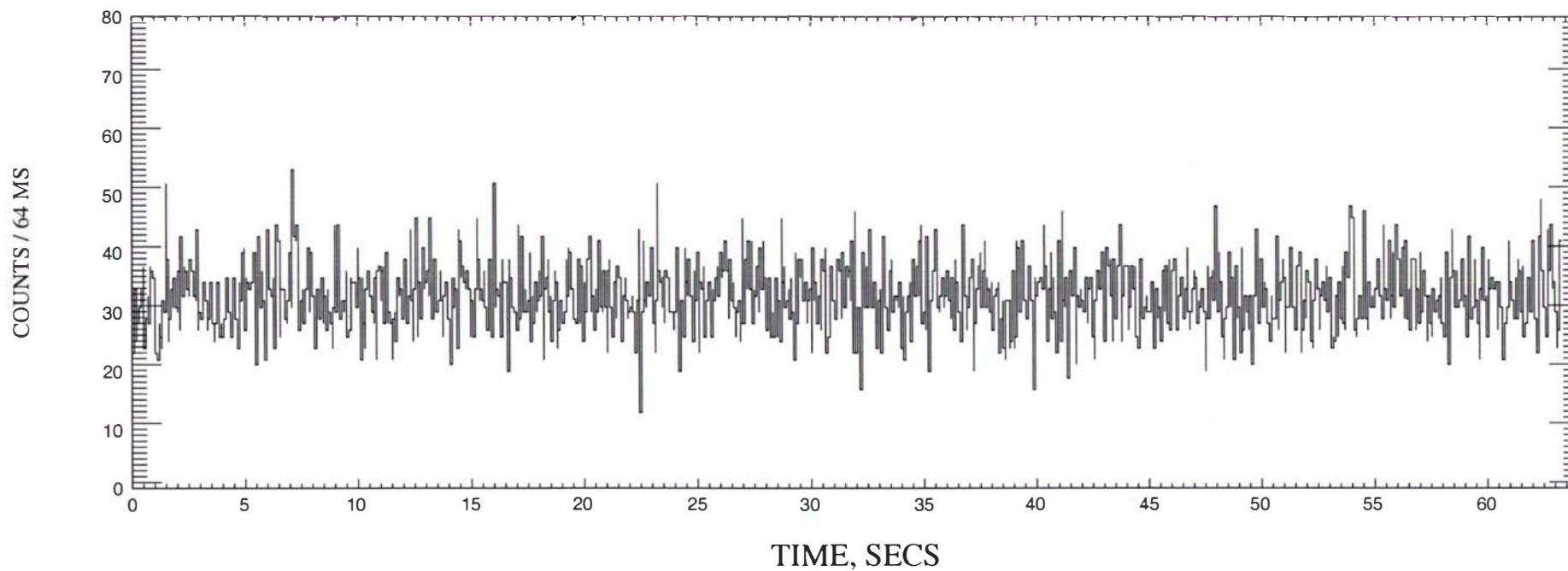
Burst Counter 0 at UT= 3.888785968357 h=13999.629 s 03:53:19.629



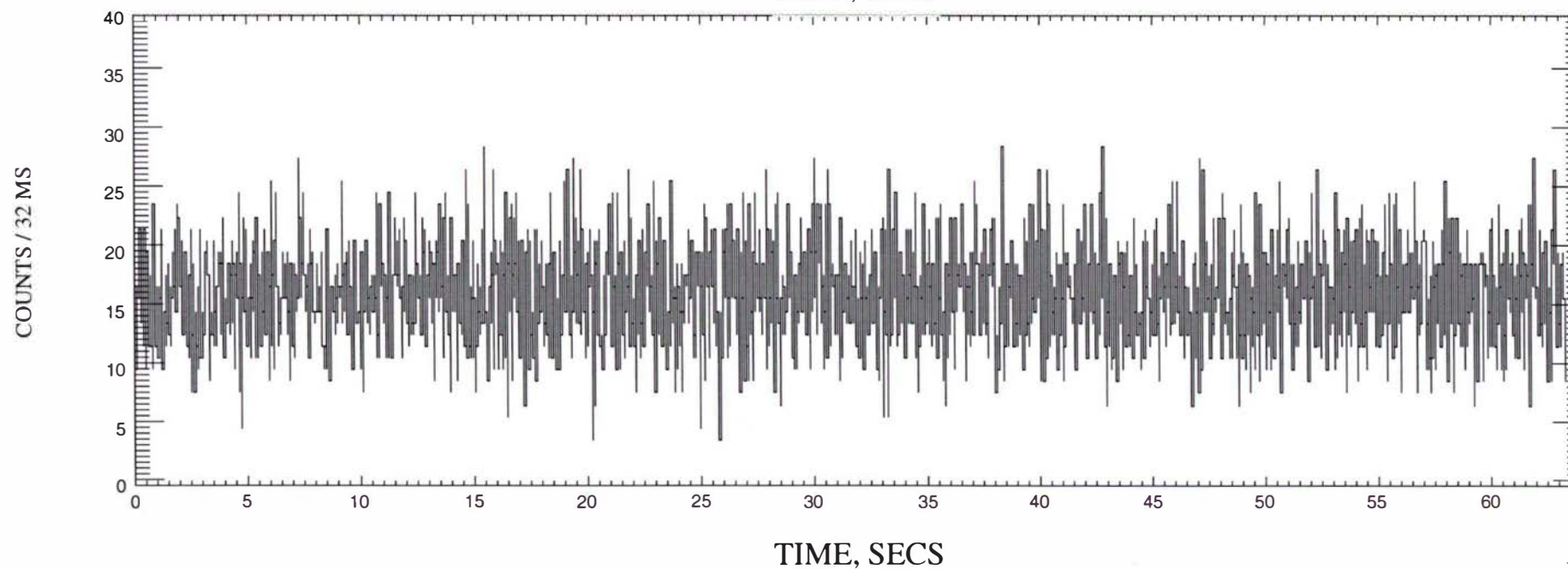
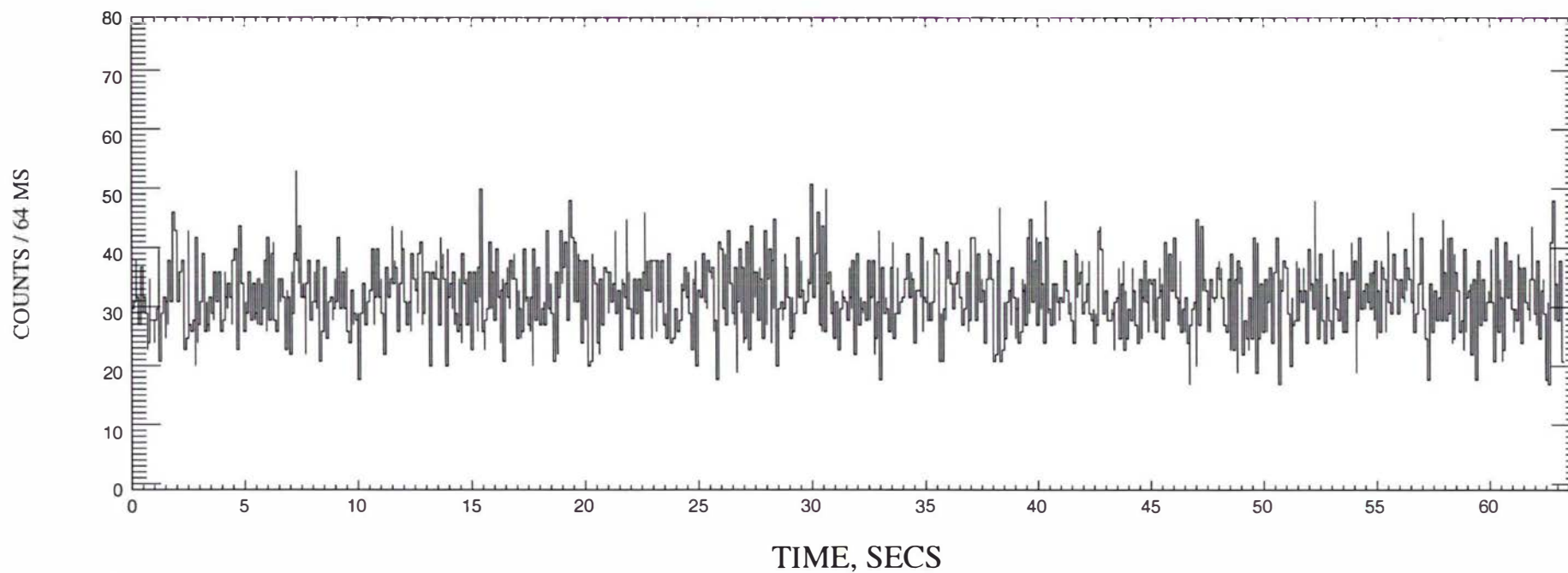
Burst Counter 1 at UT= 5.143244429694 h=18515.680 s 05:08:35.680



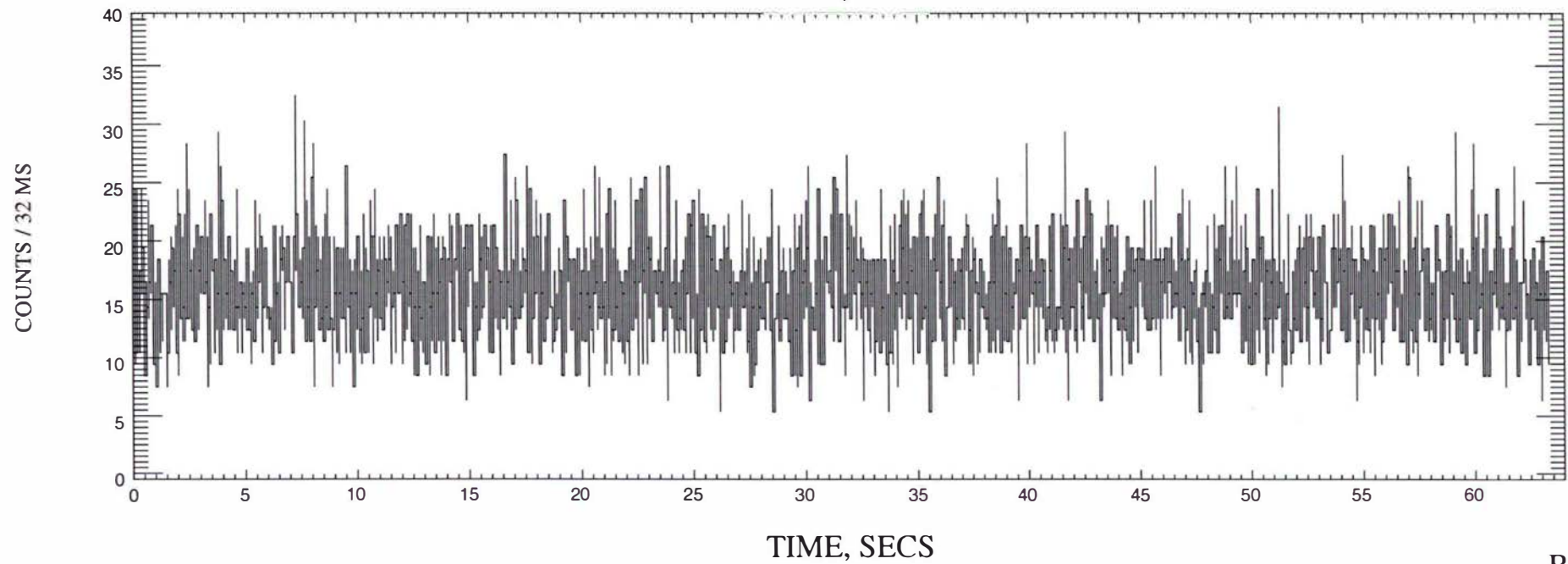
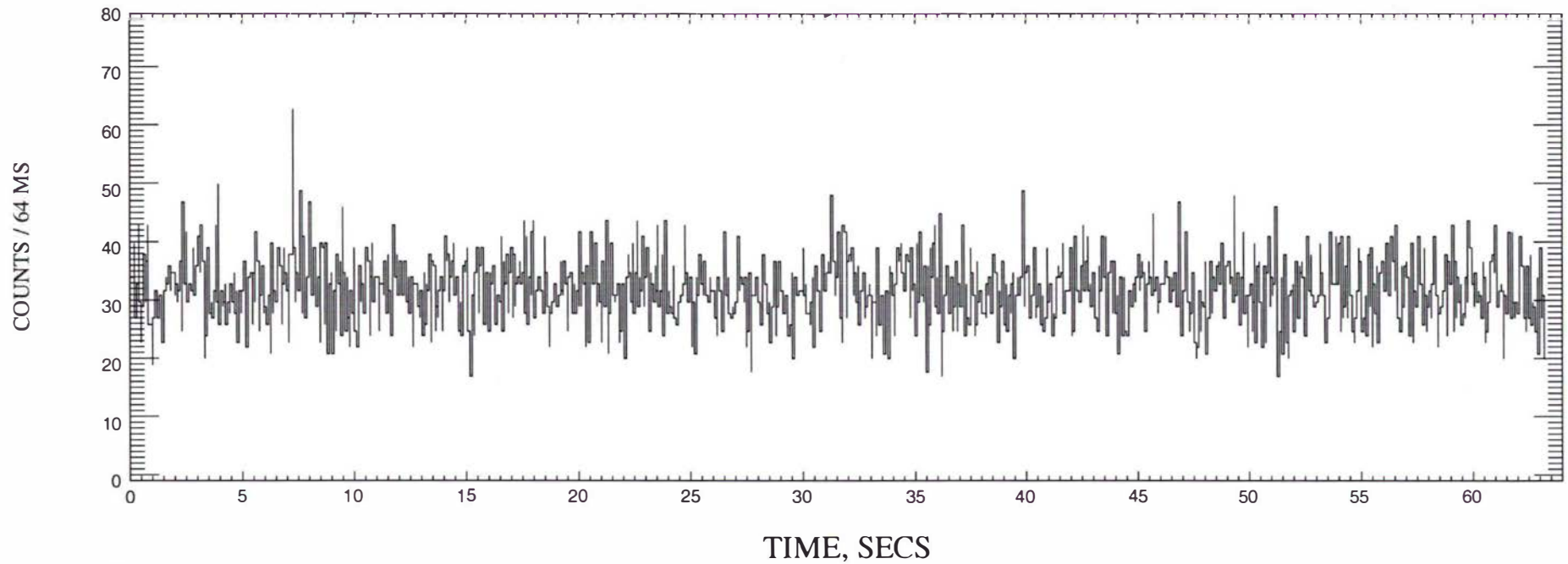
Burst Counter 2 at UT= 6.654197010464 h=23955.109 s 06:39:15.109



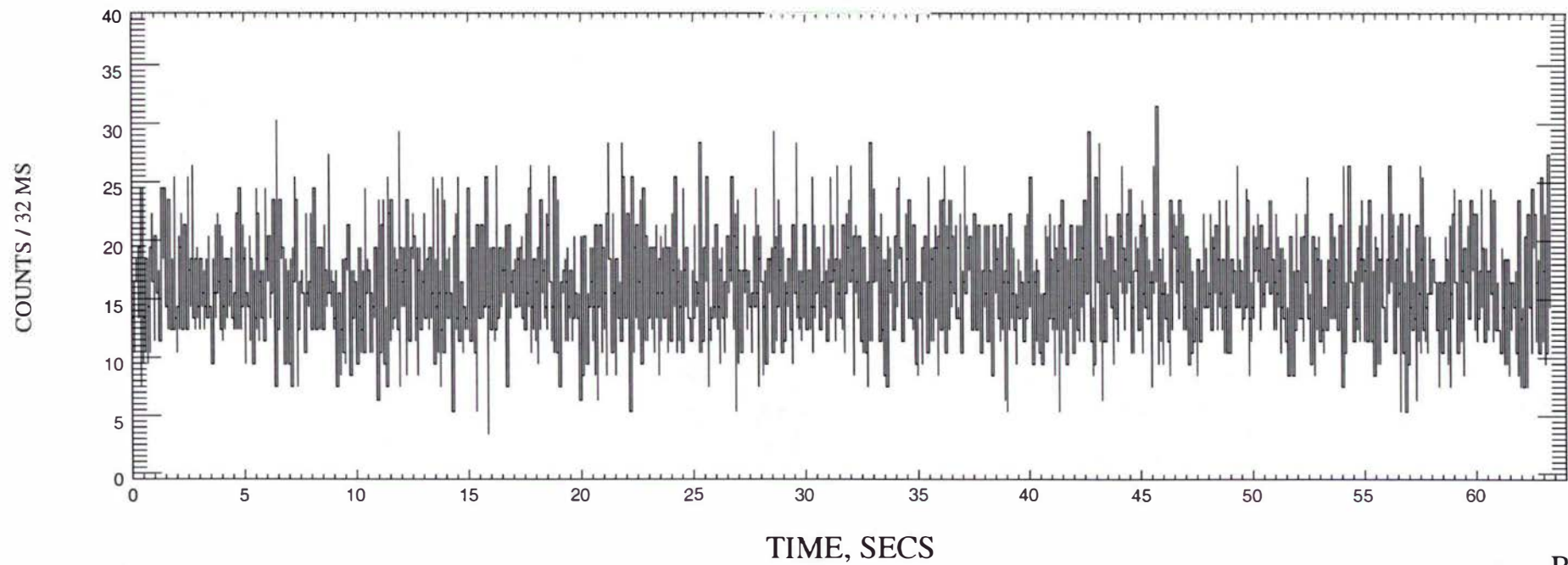
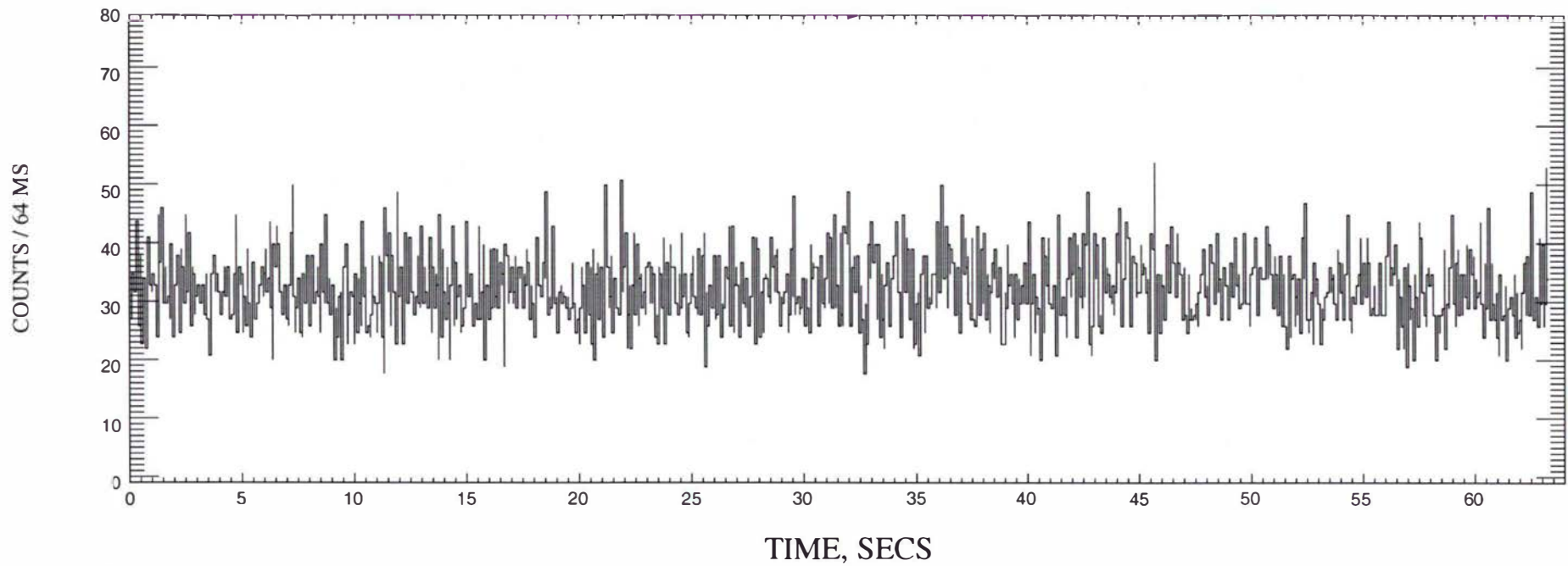
Burst Counter 3 at UT= 7.672436951531 h=27620.773 s 07:40:20.773



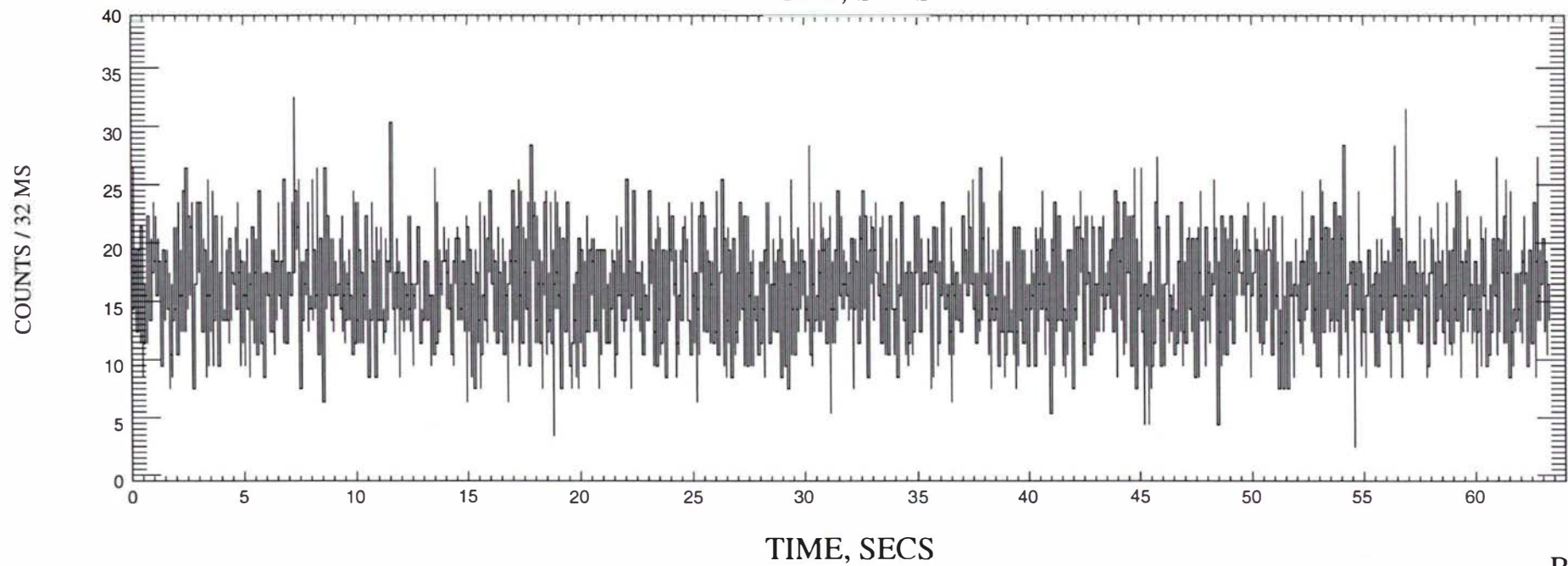
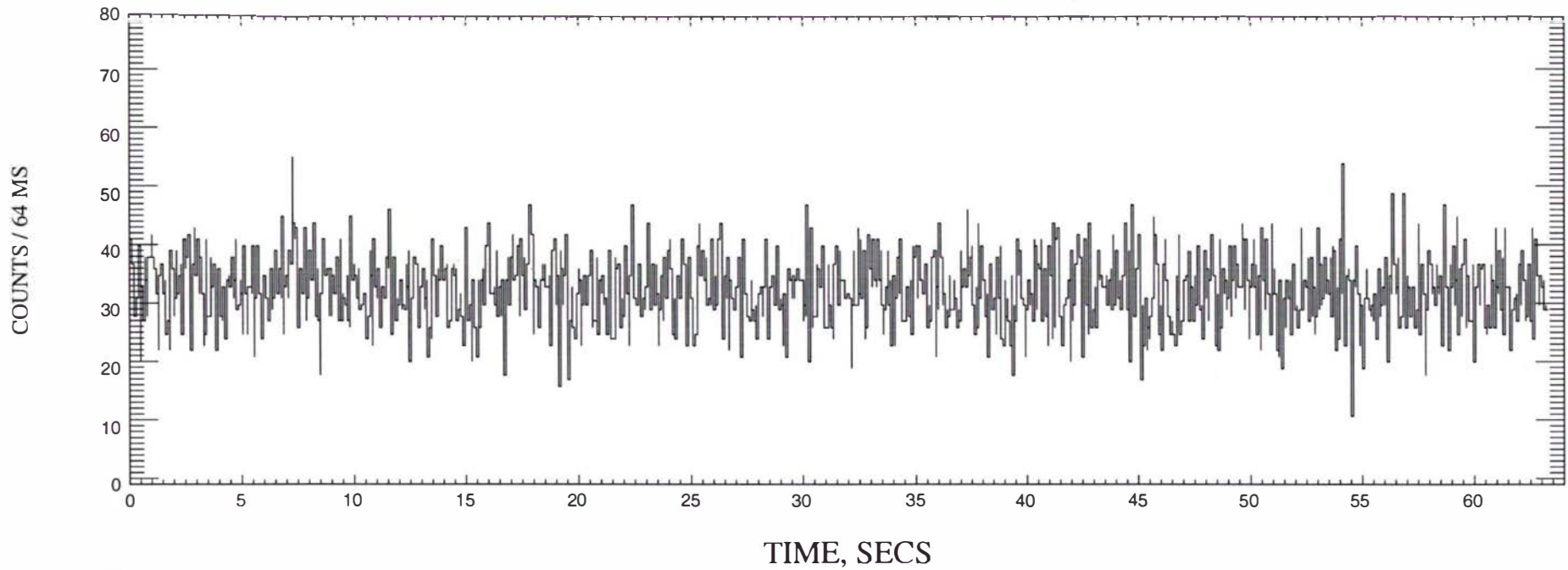
Burst Counter 4 at UT= 8.834184553358 h=31803.064 s 08:50:03.064



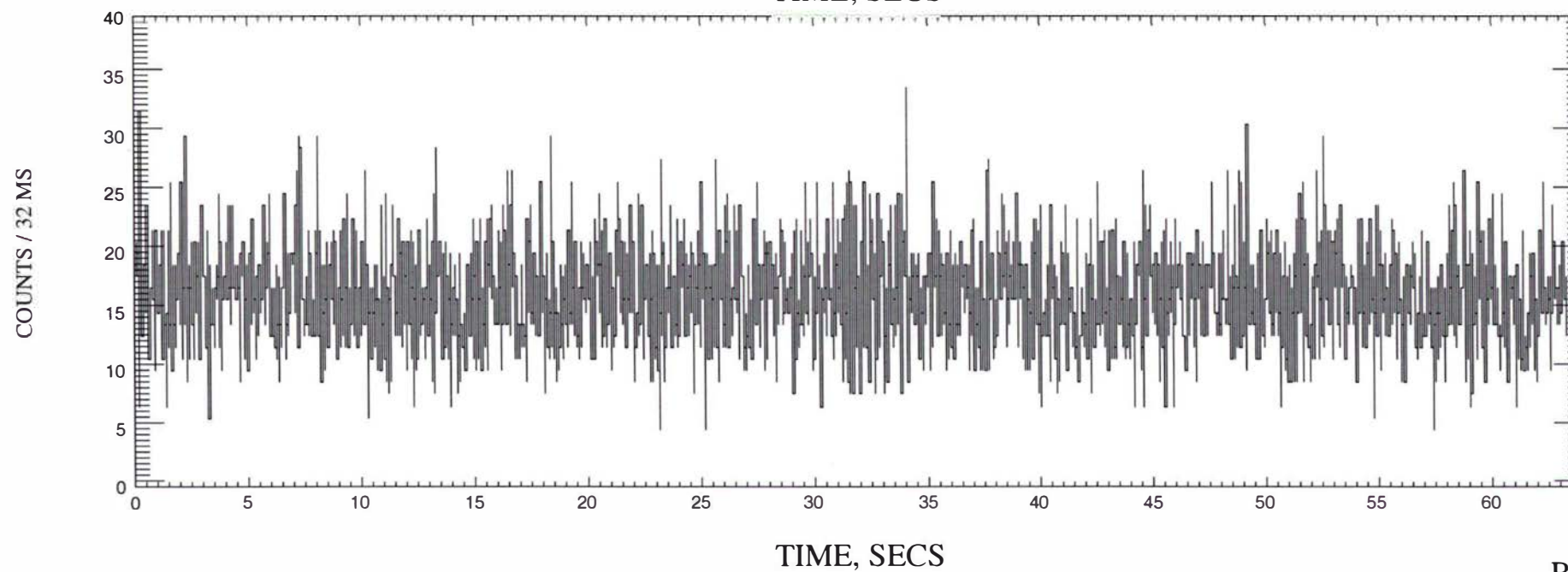
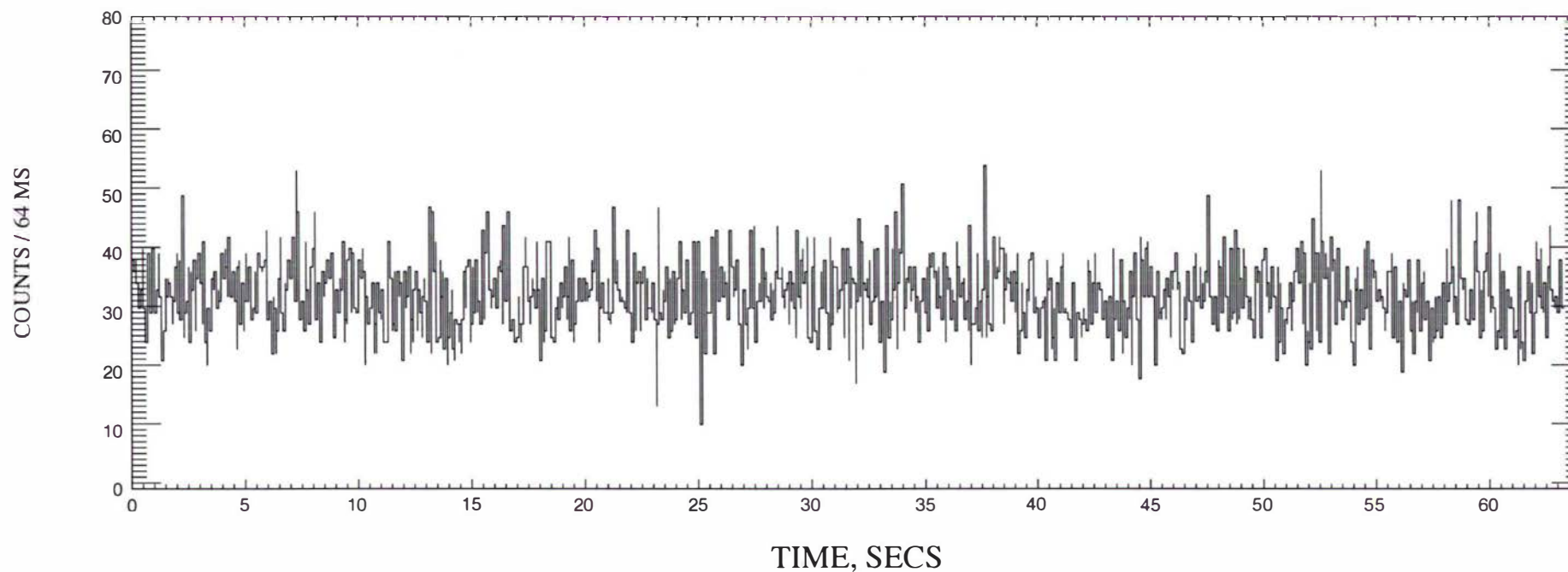
Burst Counter 5 at UT=10.181594030592 h=36653.739 s 10:10:53.739



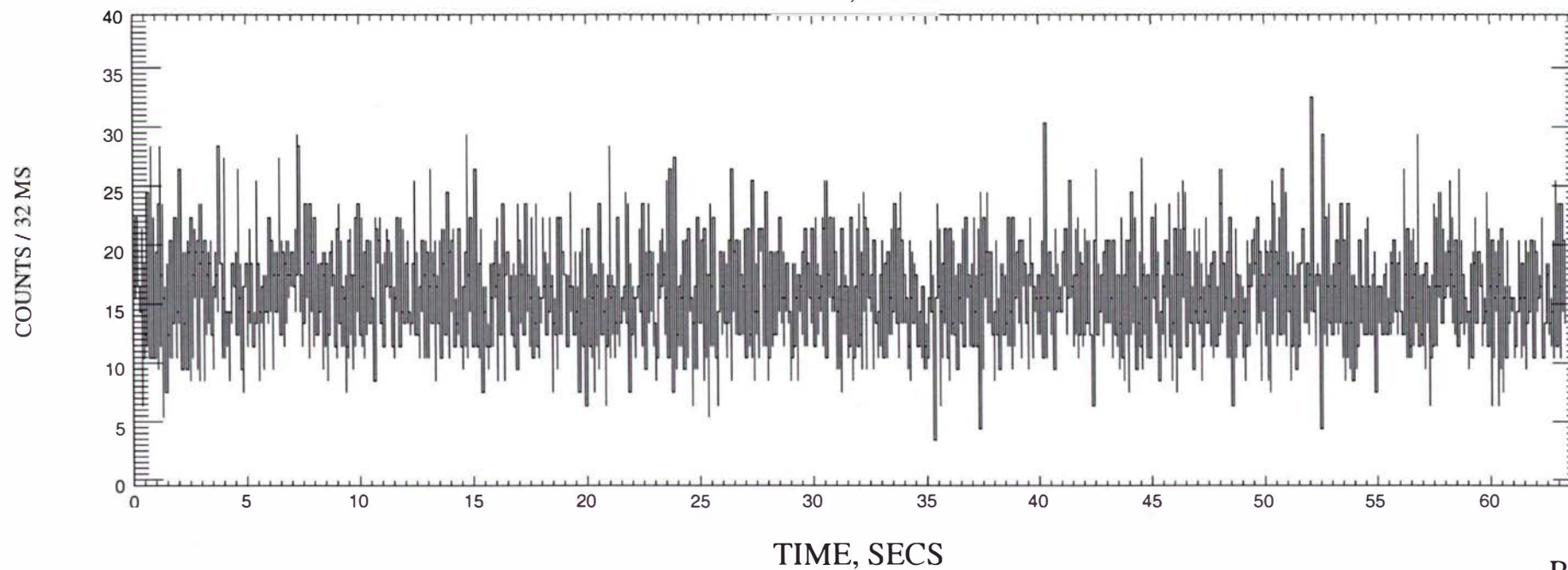
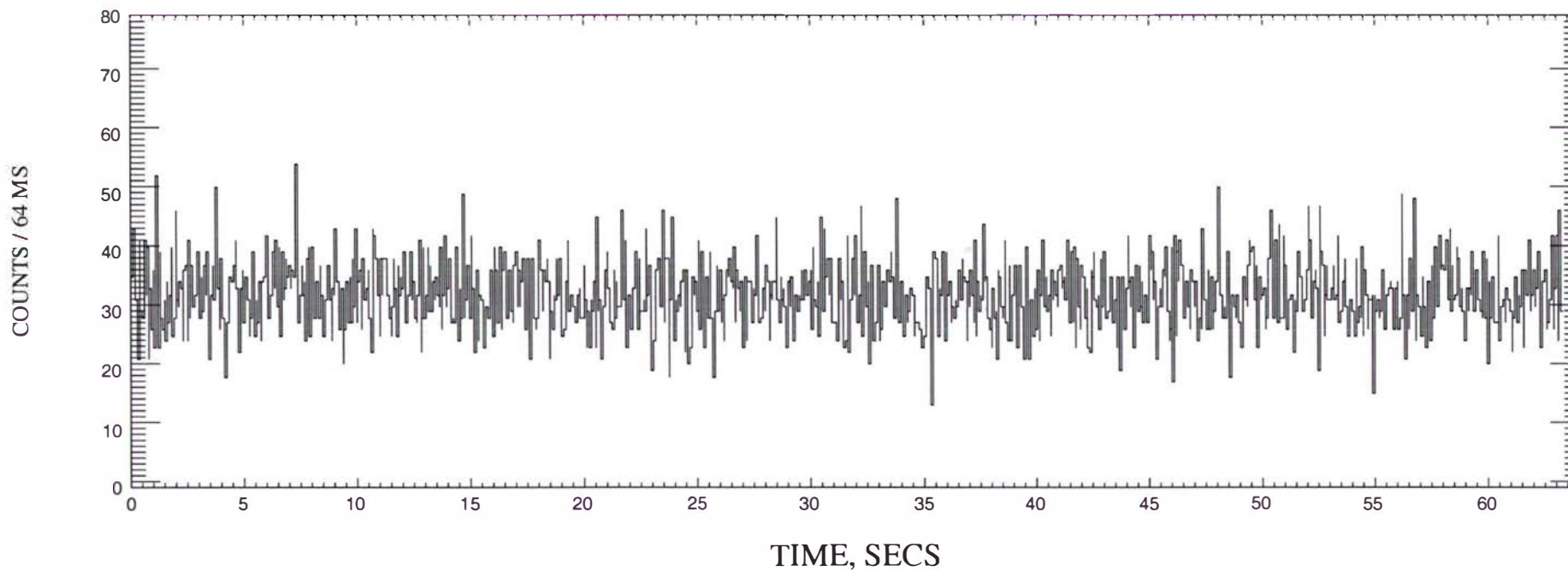
Burst Counter 6 at UT=13.474159257677 h=48506.973 s 13:28:26.973



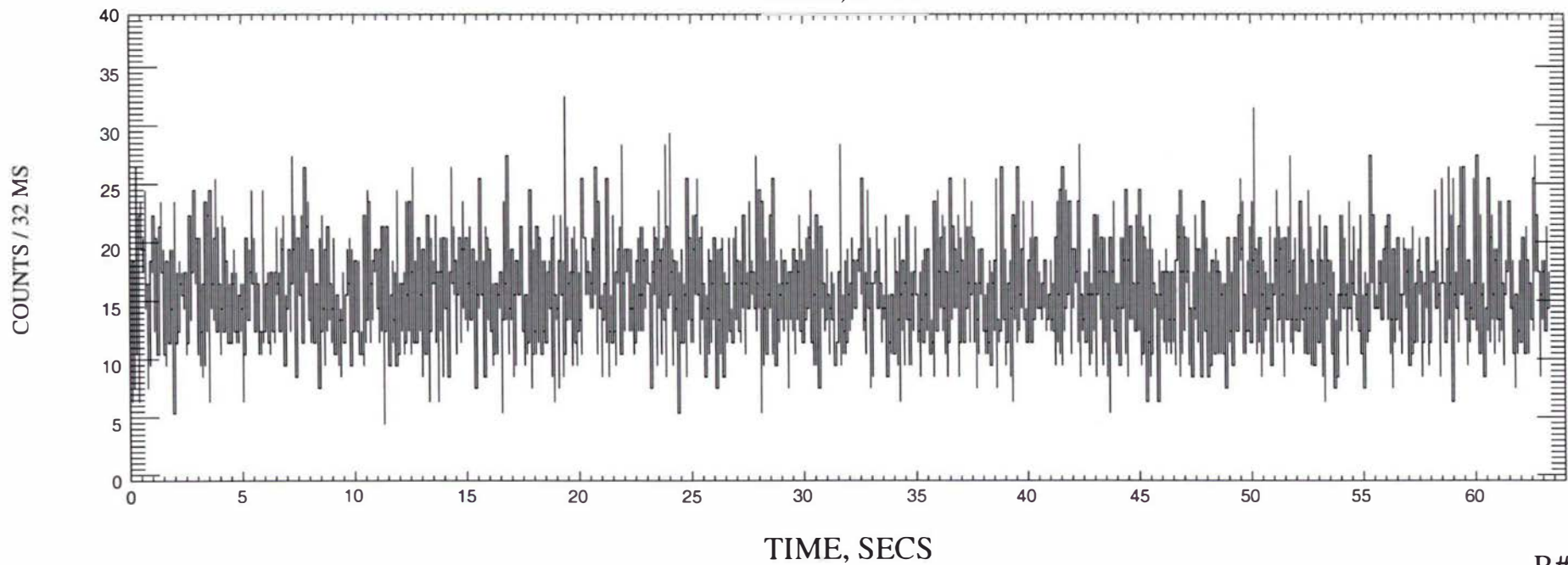
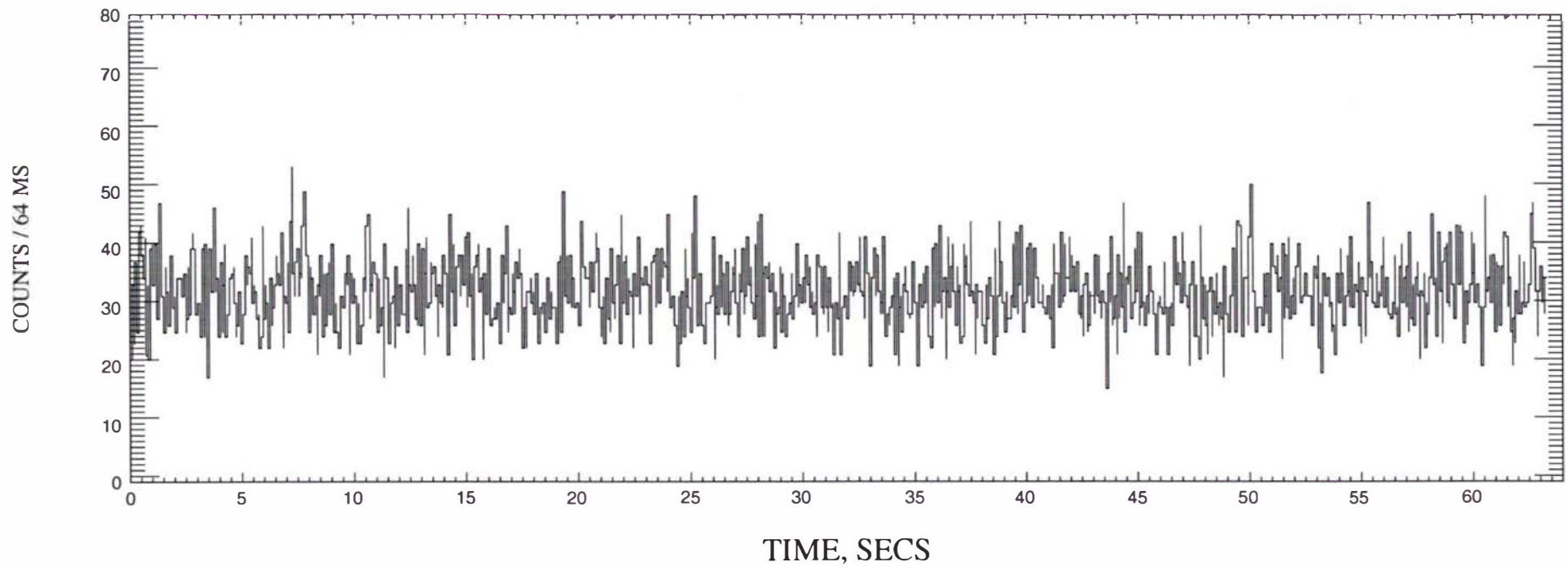
Burst Counter 7 at UT=14.824141070048 h=53366.908 s 14:49:26.908



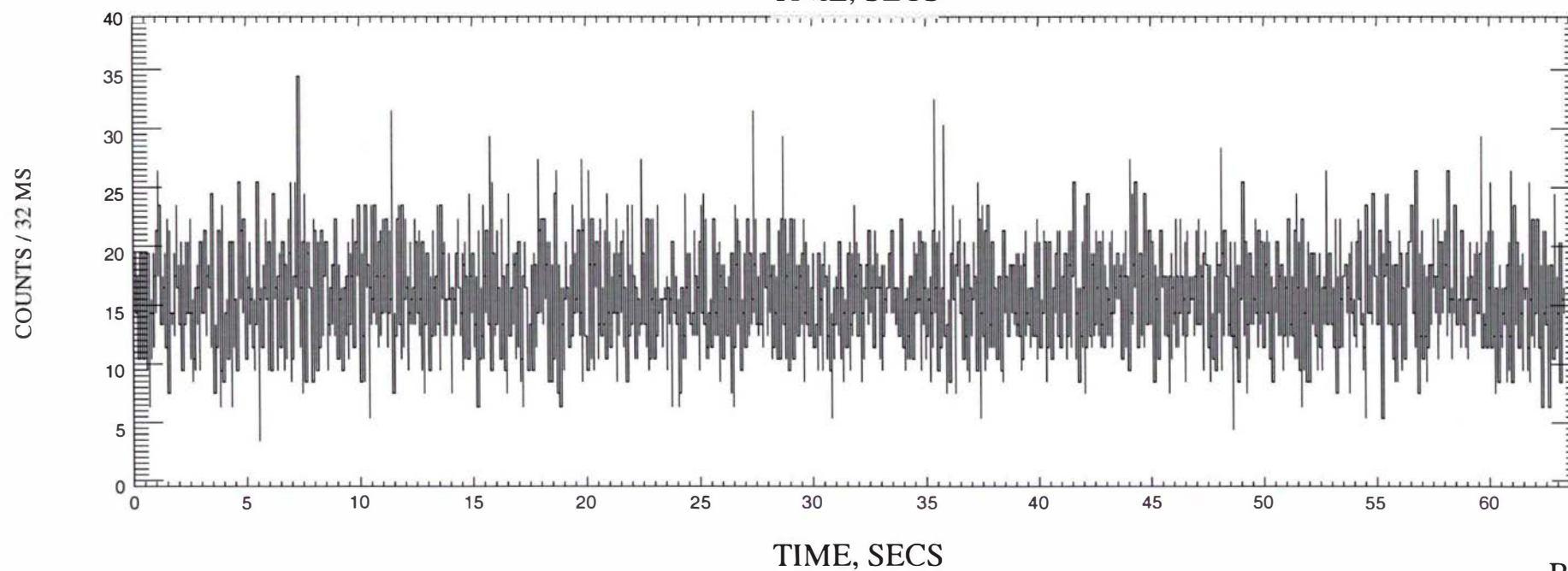
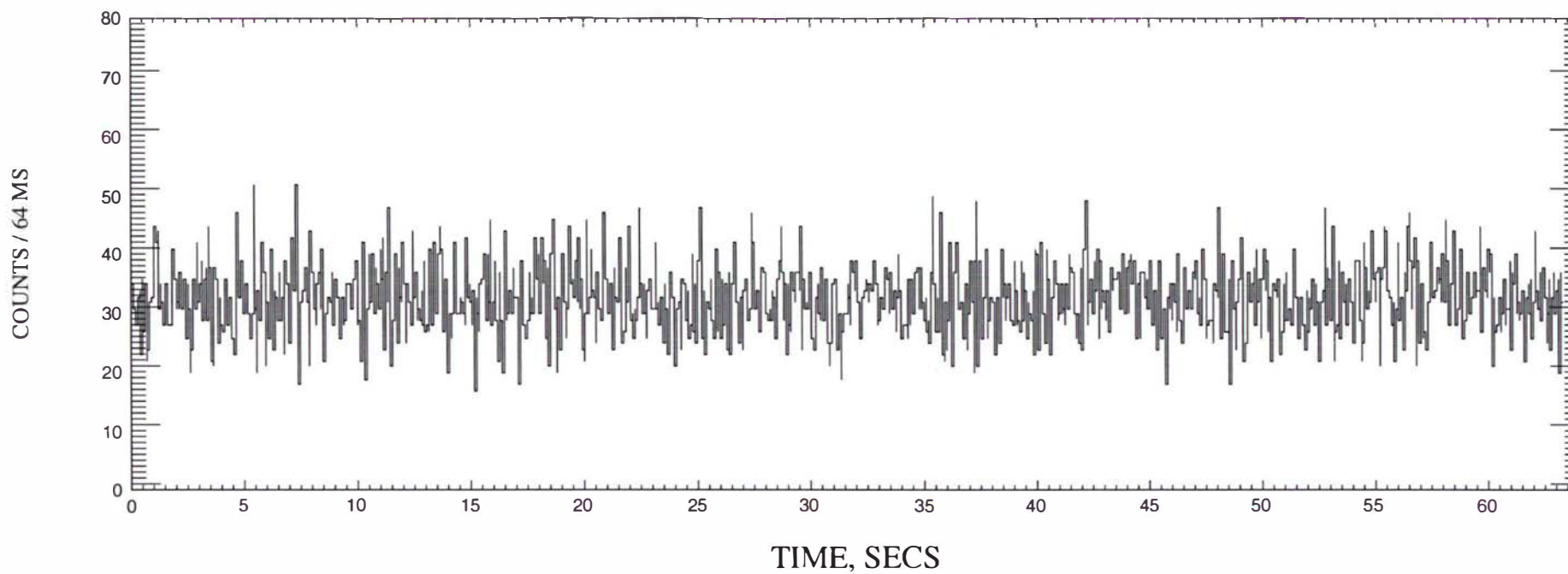
Burst Counter 8 at UT=17.241943266127 h=62070.996 s 17:14:30.996



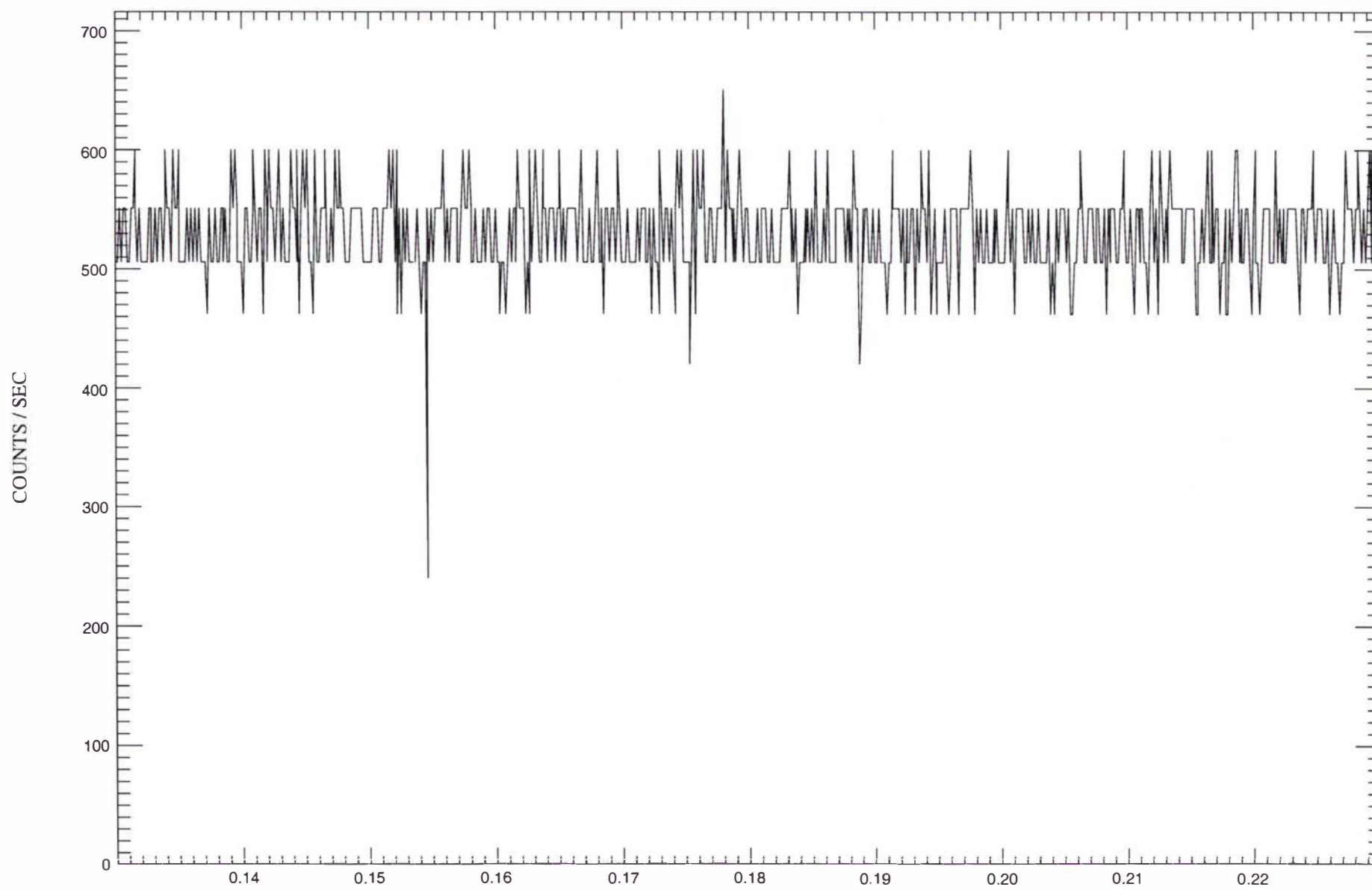
Burst Counter 9 at UT=19.863913561503 h=71510.089 s 19:51:50.089



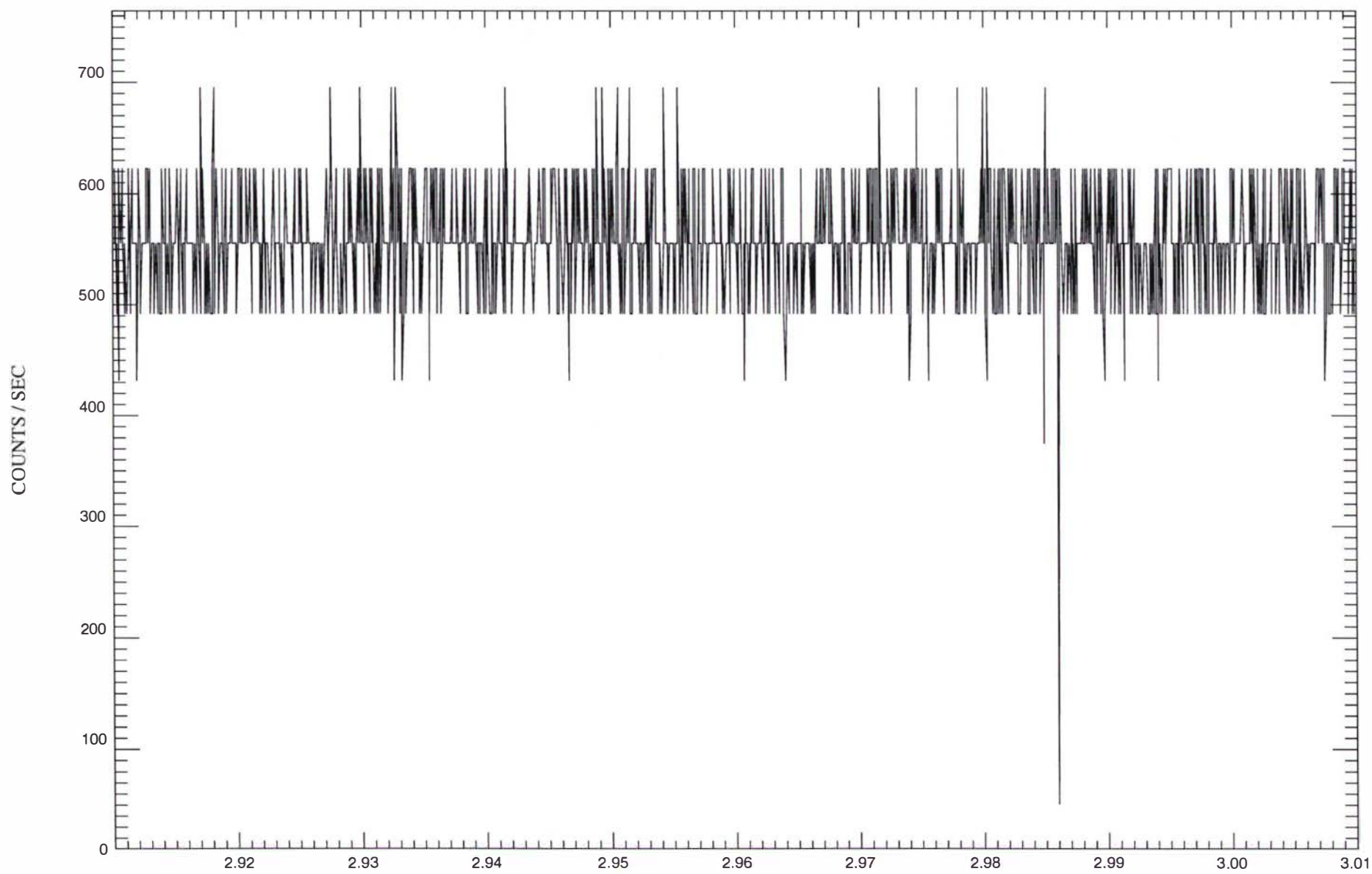
Burst Counter 10 at UT=21.898136494954 h=78833.291 s 21:53:53.291



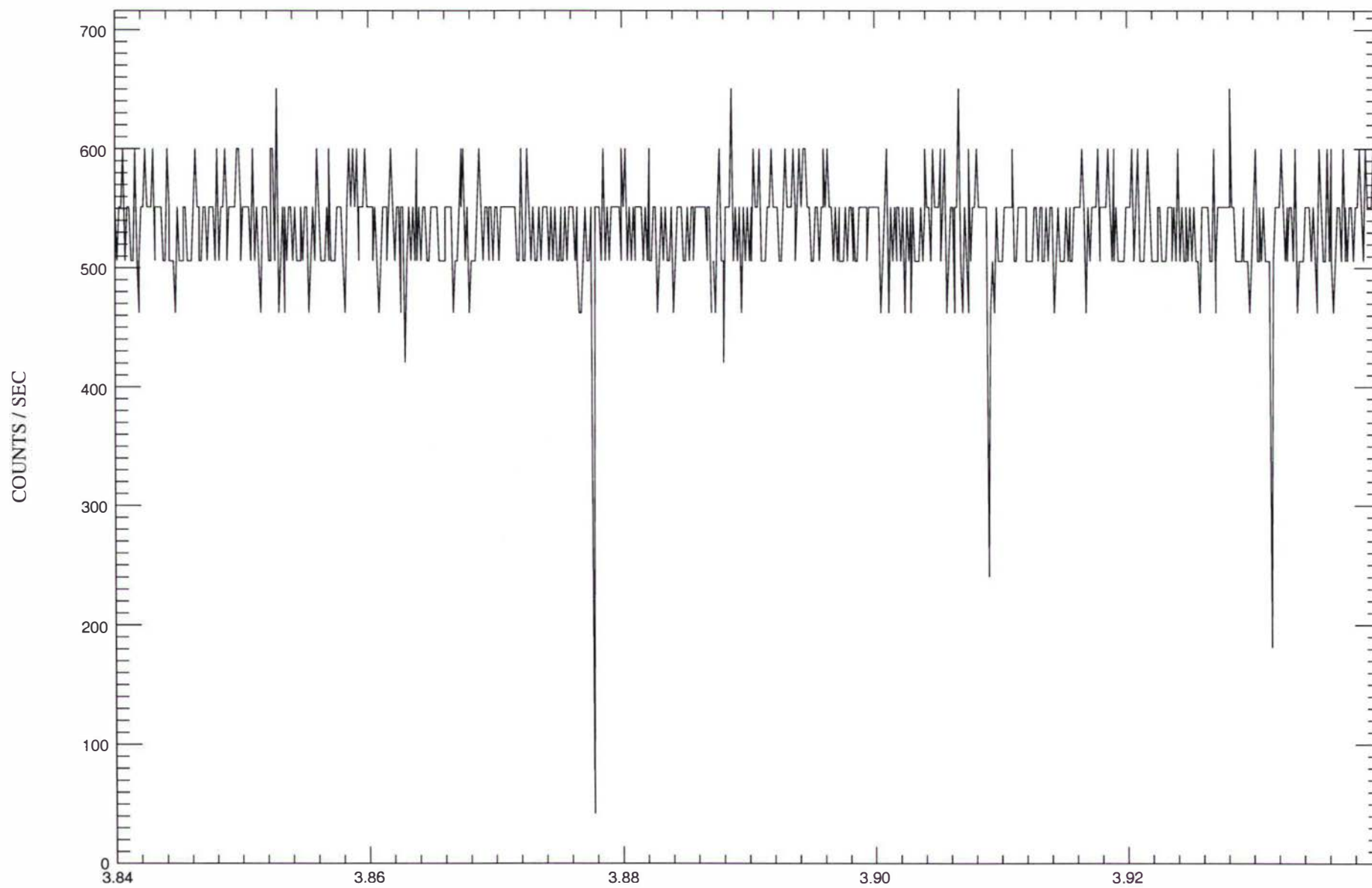
CALIBRATION DATA INCLUDED



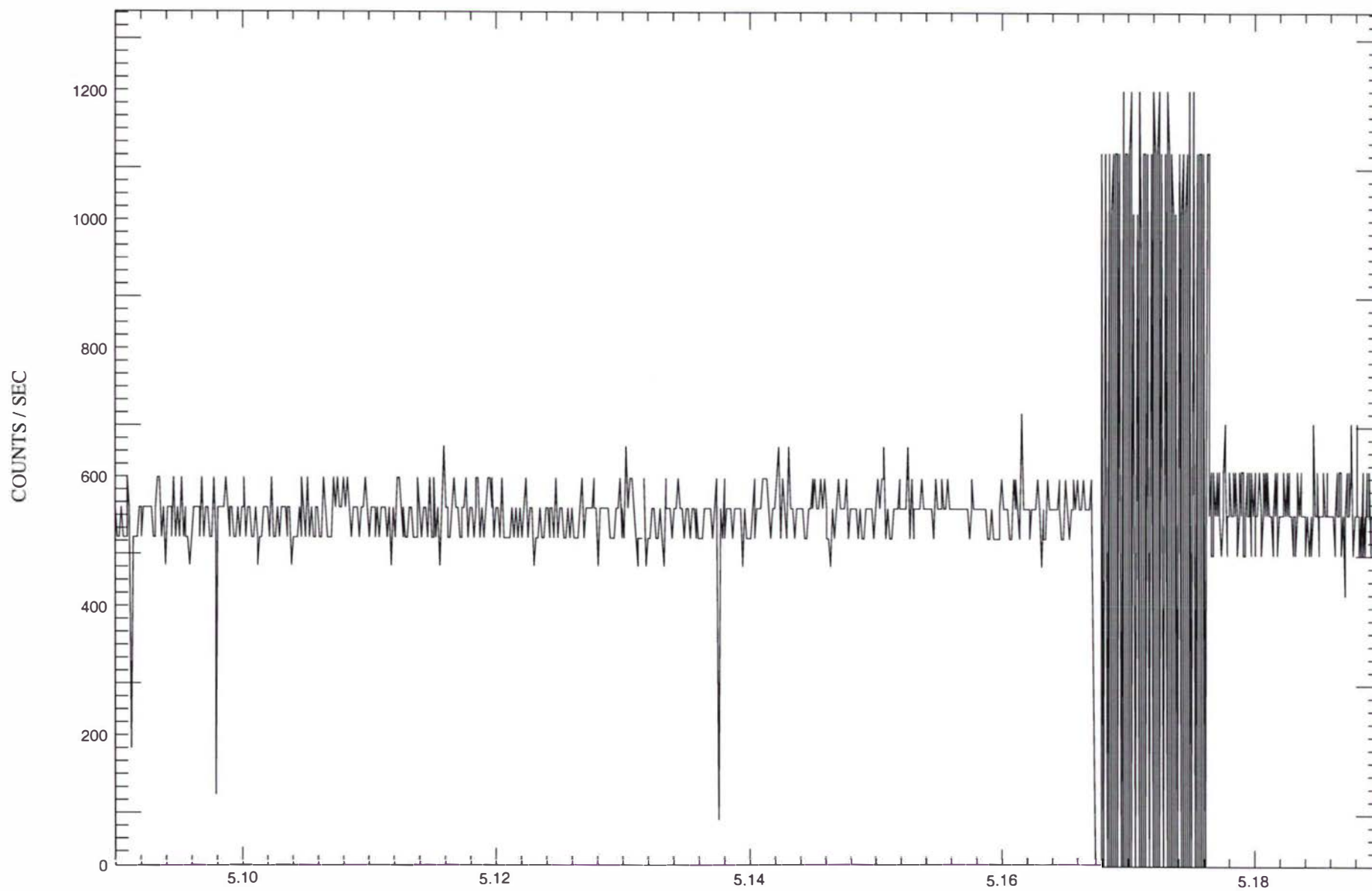
CALIBRATION DATA INCLUDED



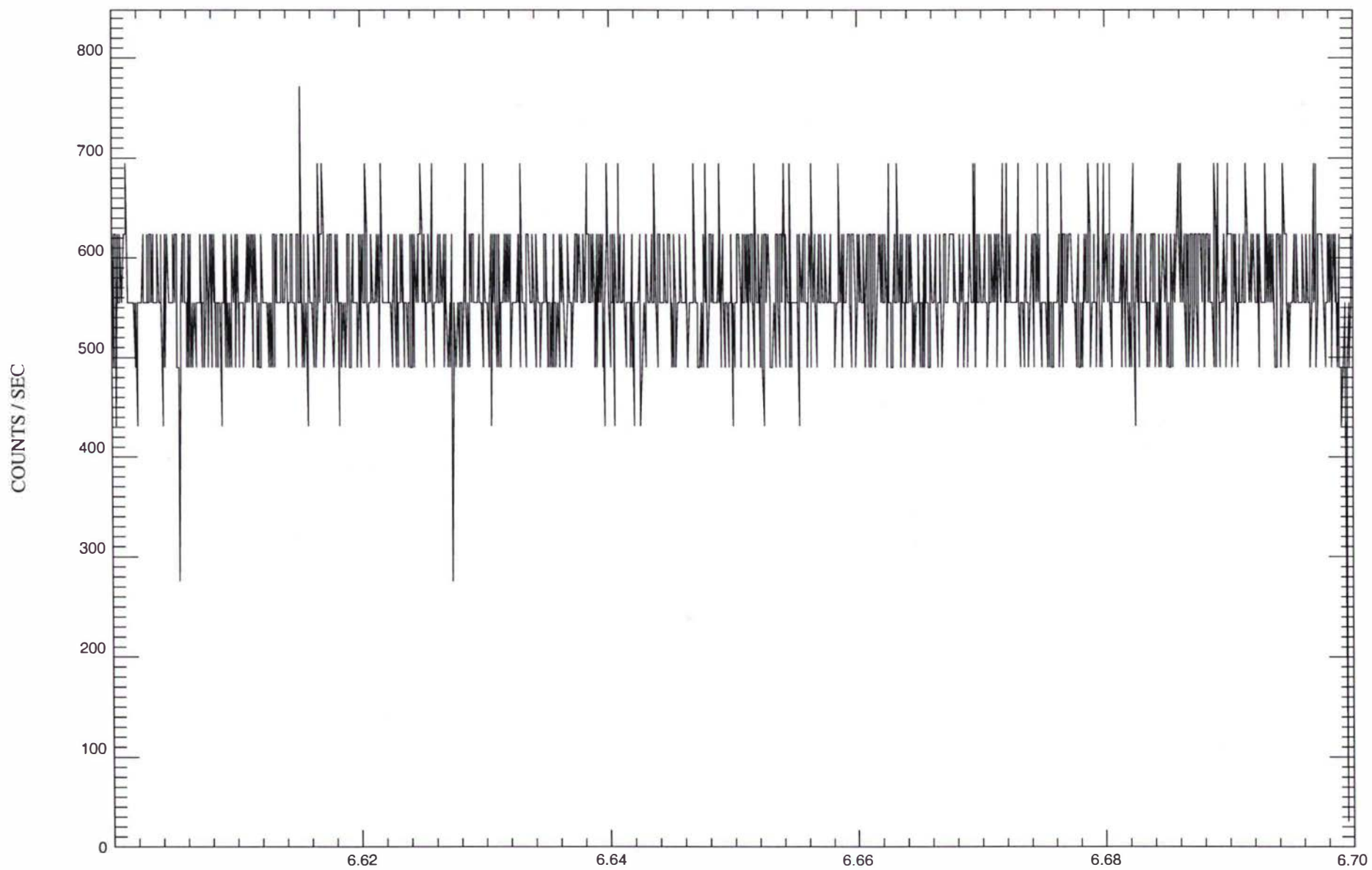
CALIBRATION DATA INCLUDED



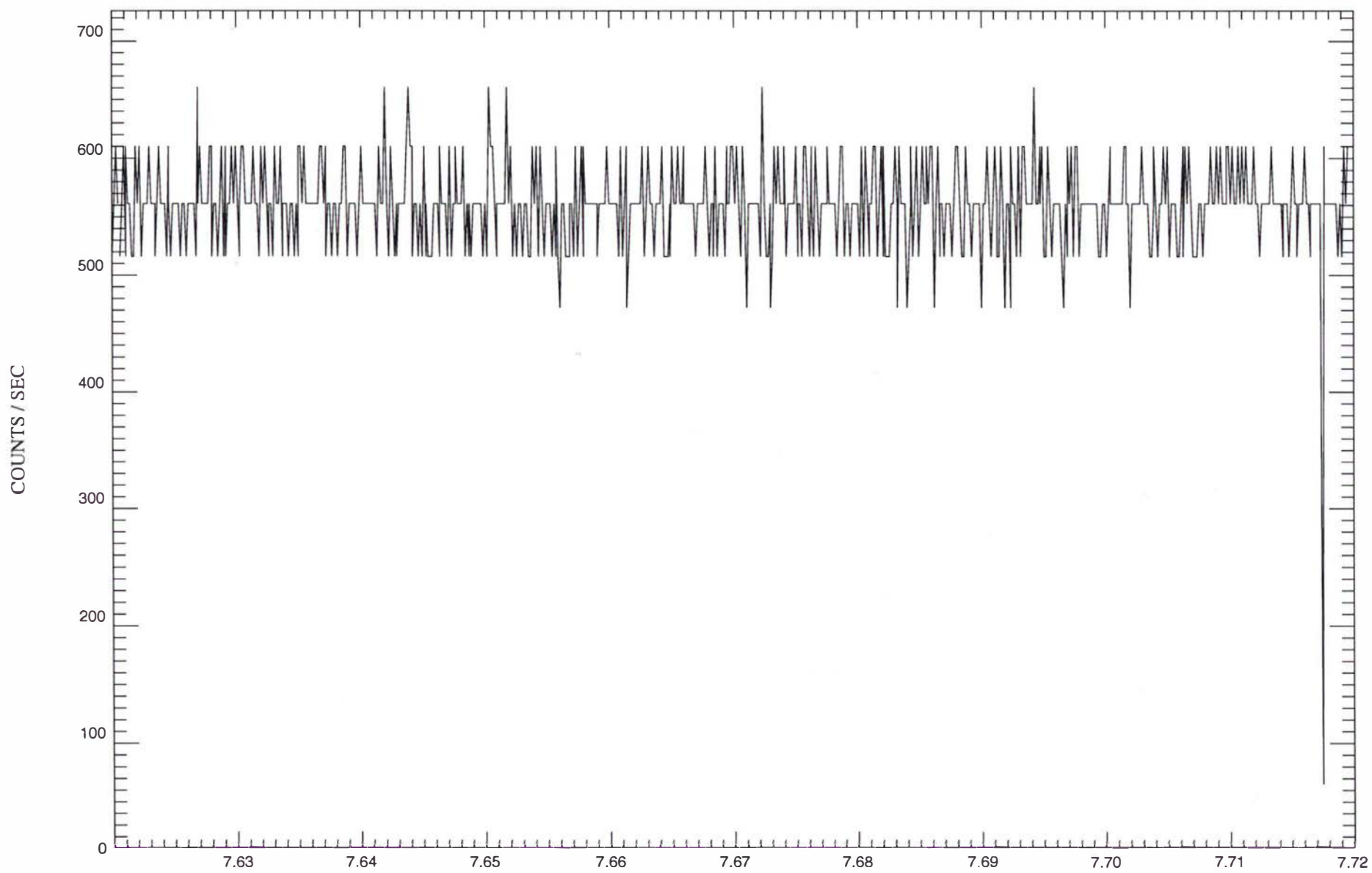
CALIBRATION DATA INCLUDED



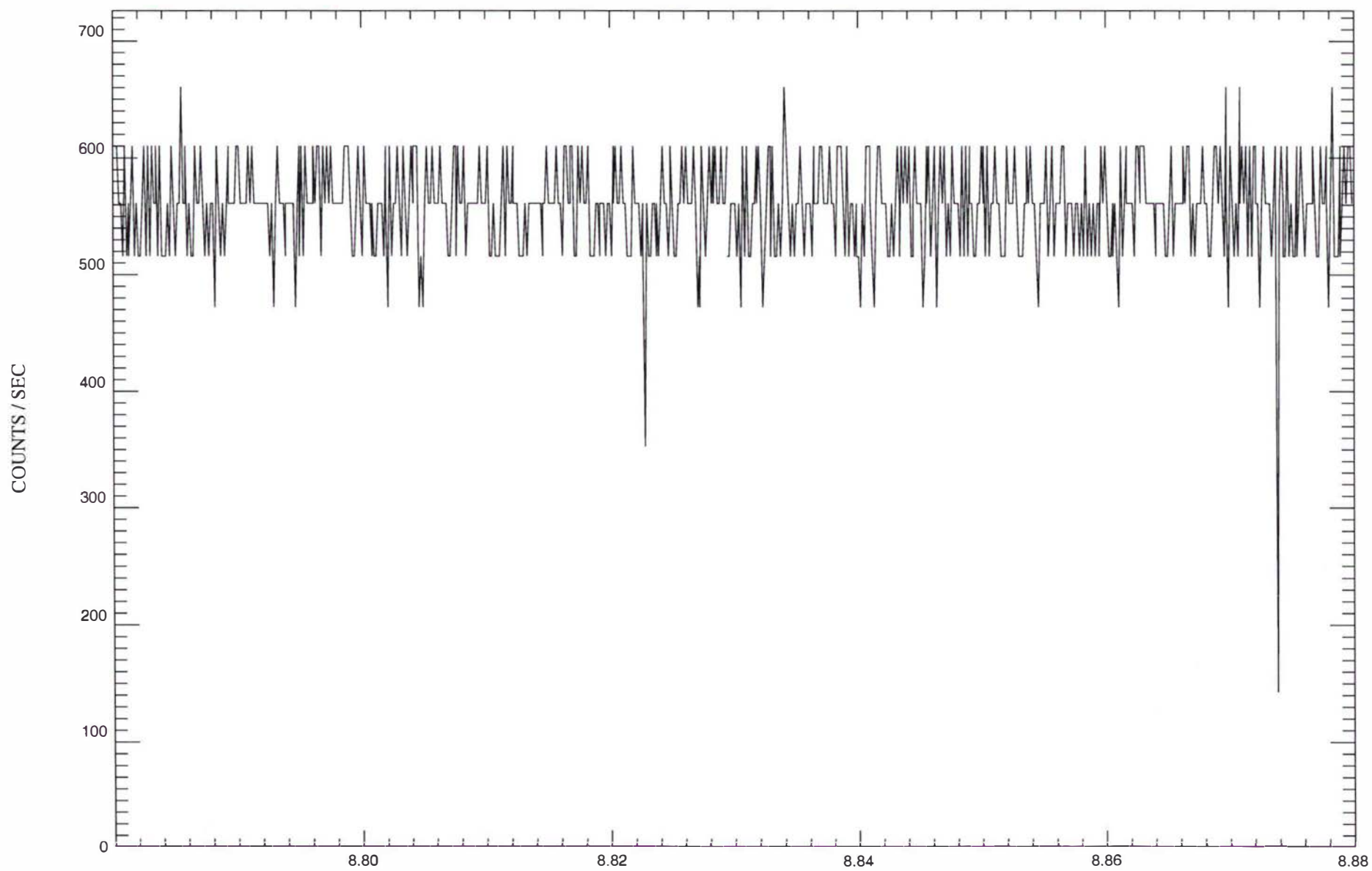
CALIBRATION DATA INCLUDED



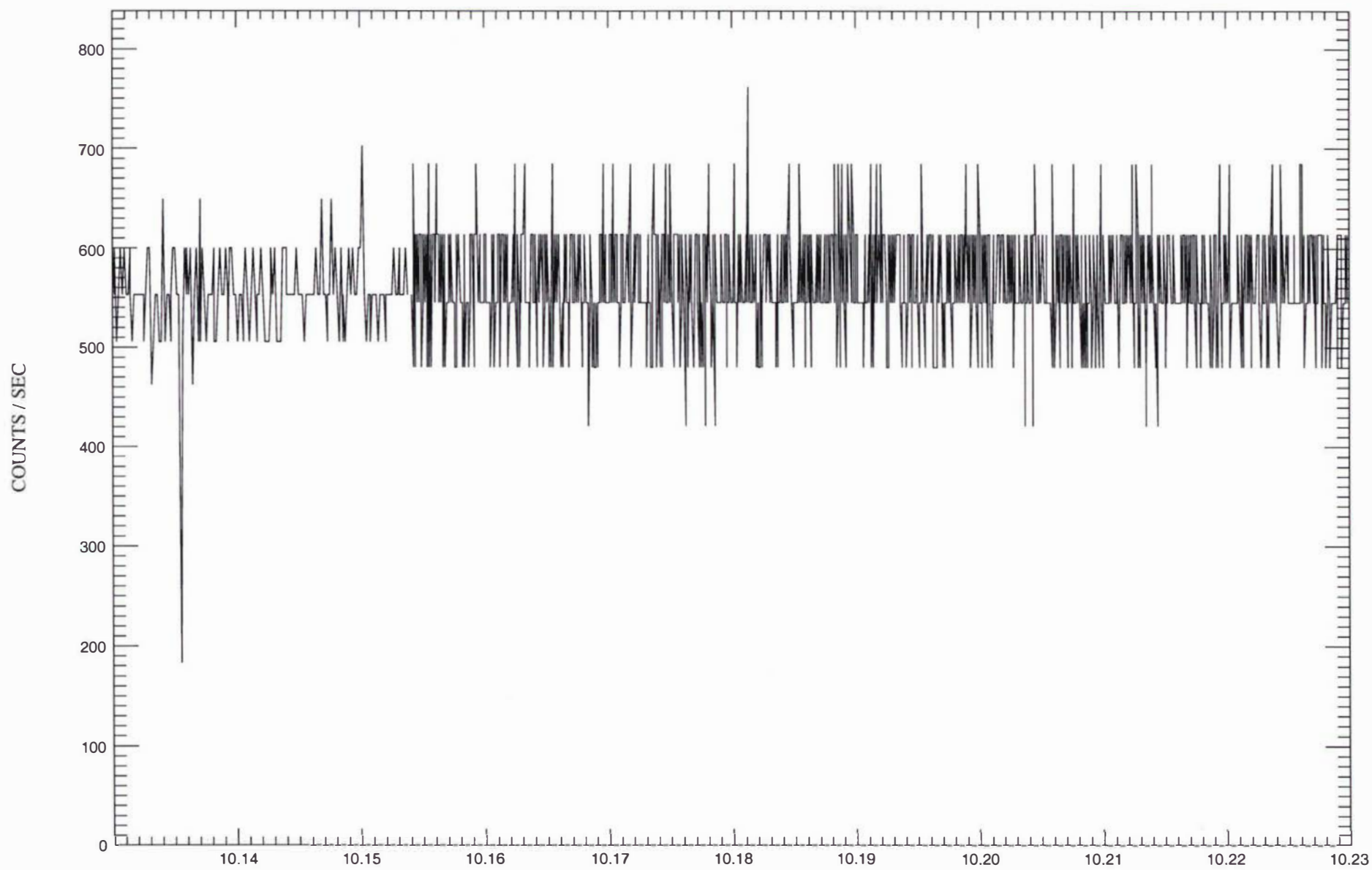
CALIBRATION DATA INCLUDED



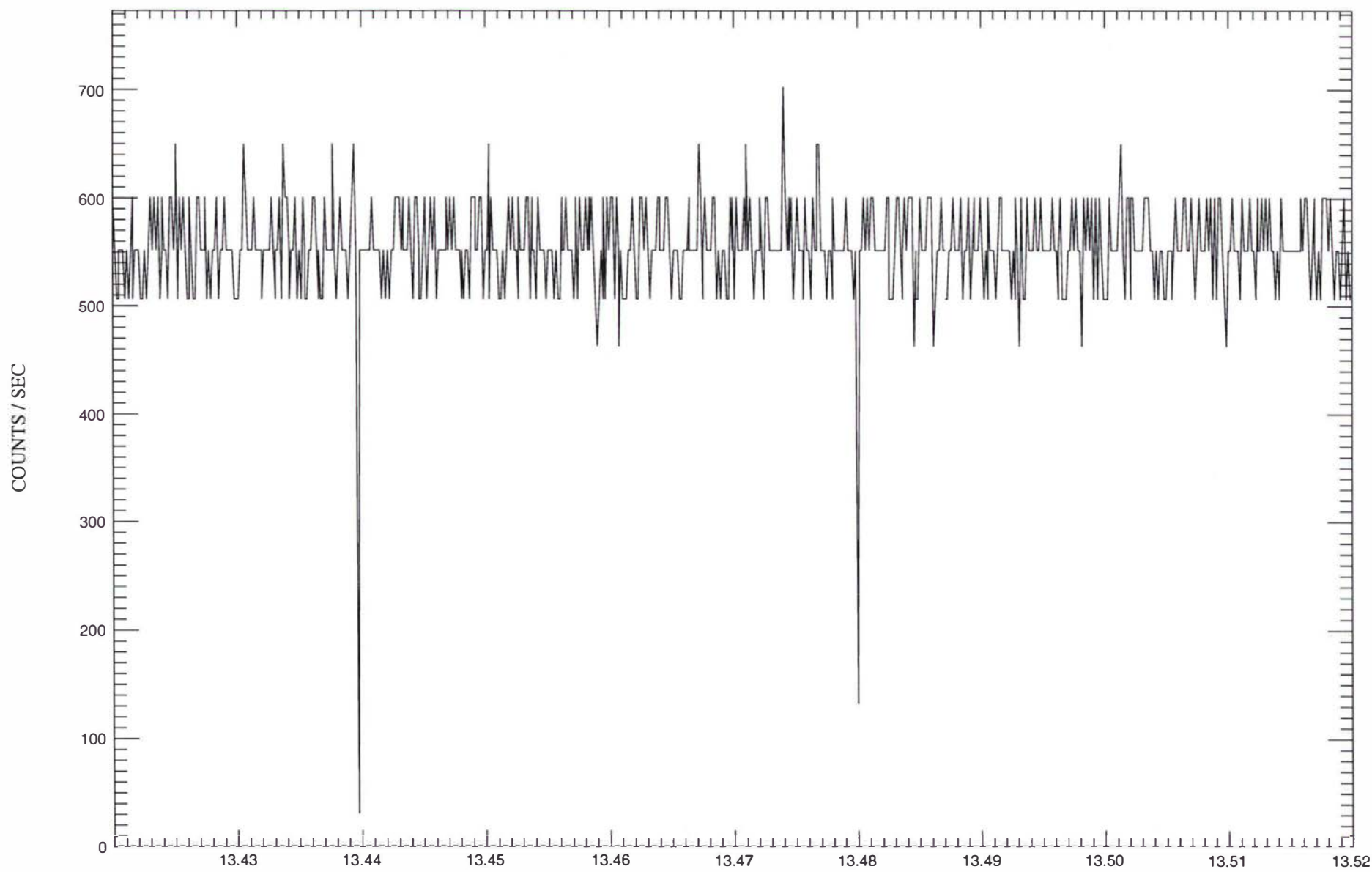
CALIBRATION DATA INCLUDED



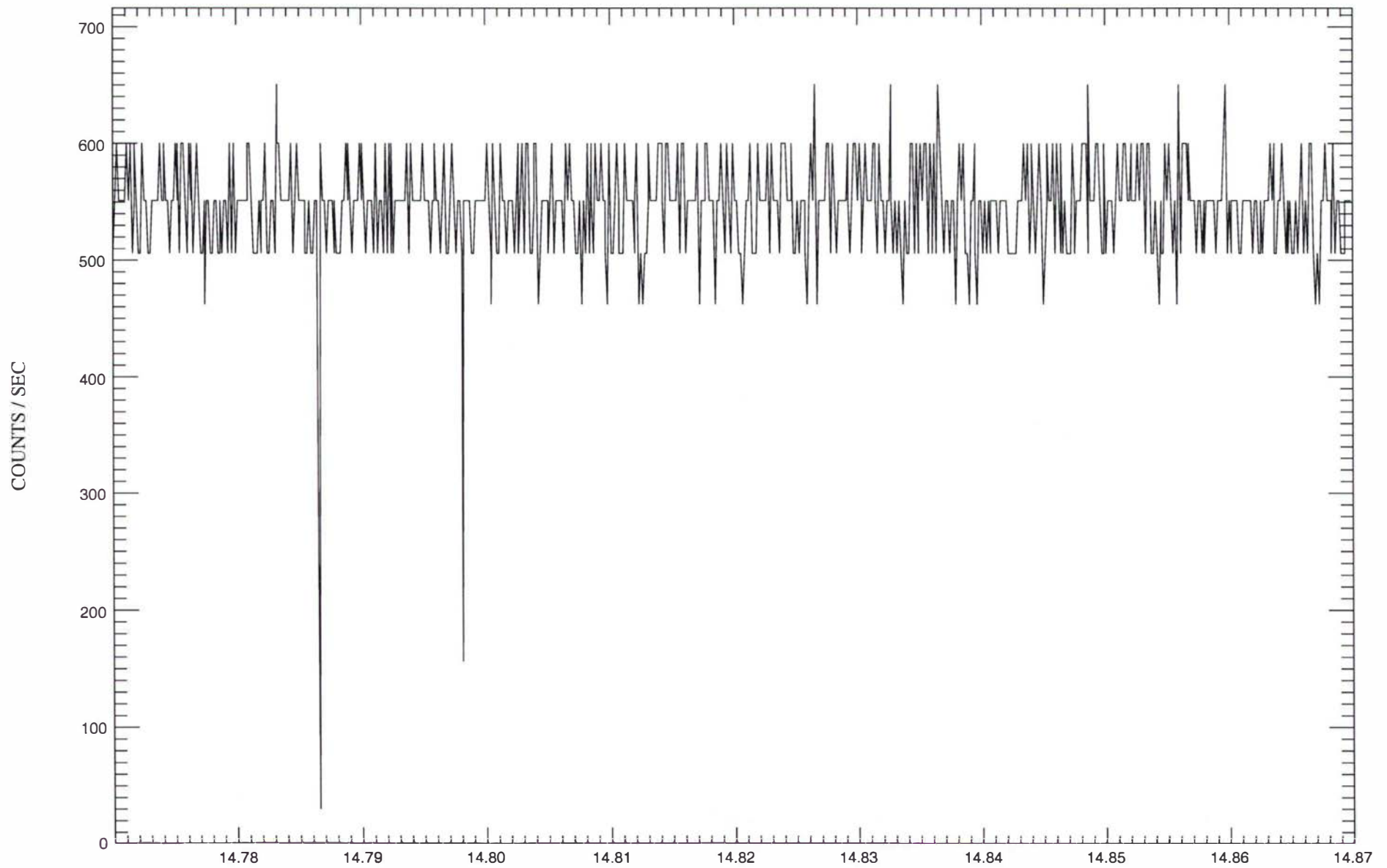
CALIBRATION DATA INCLUDED



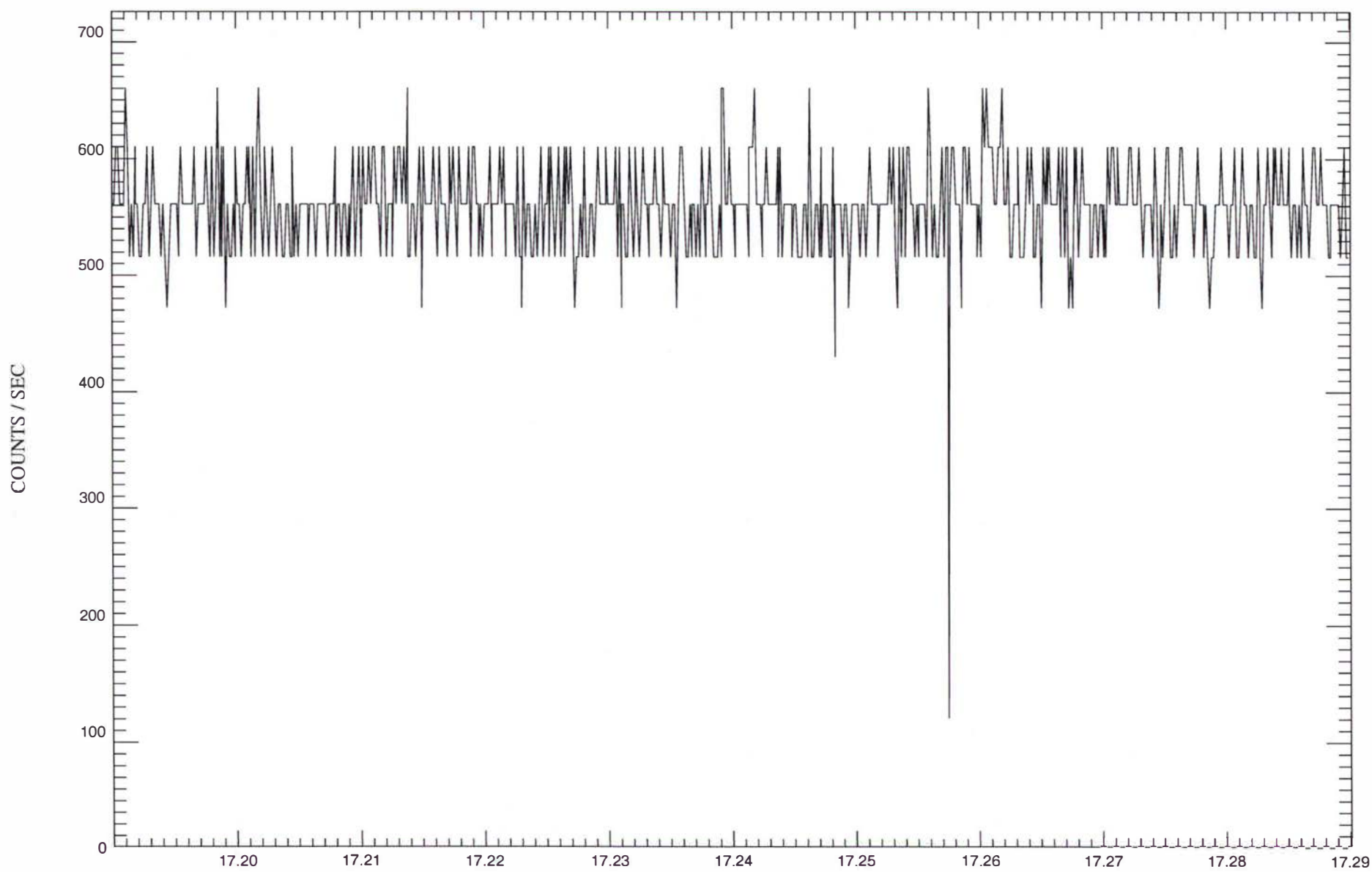
CALIBRATION DATA INCLUDED



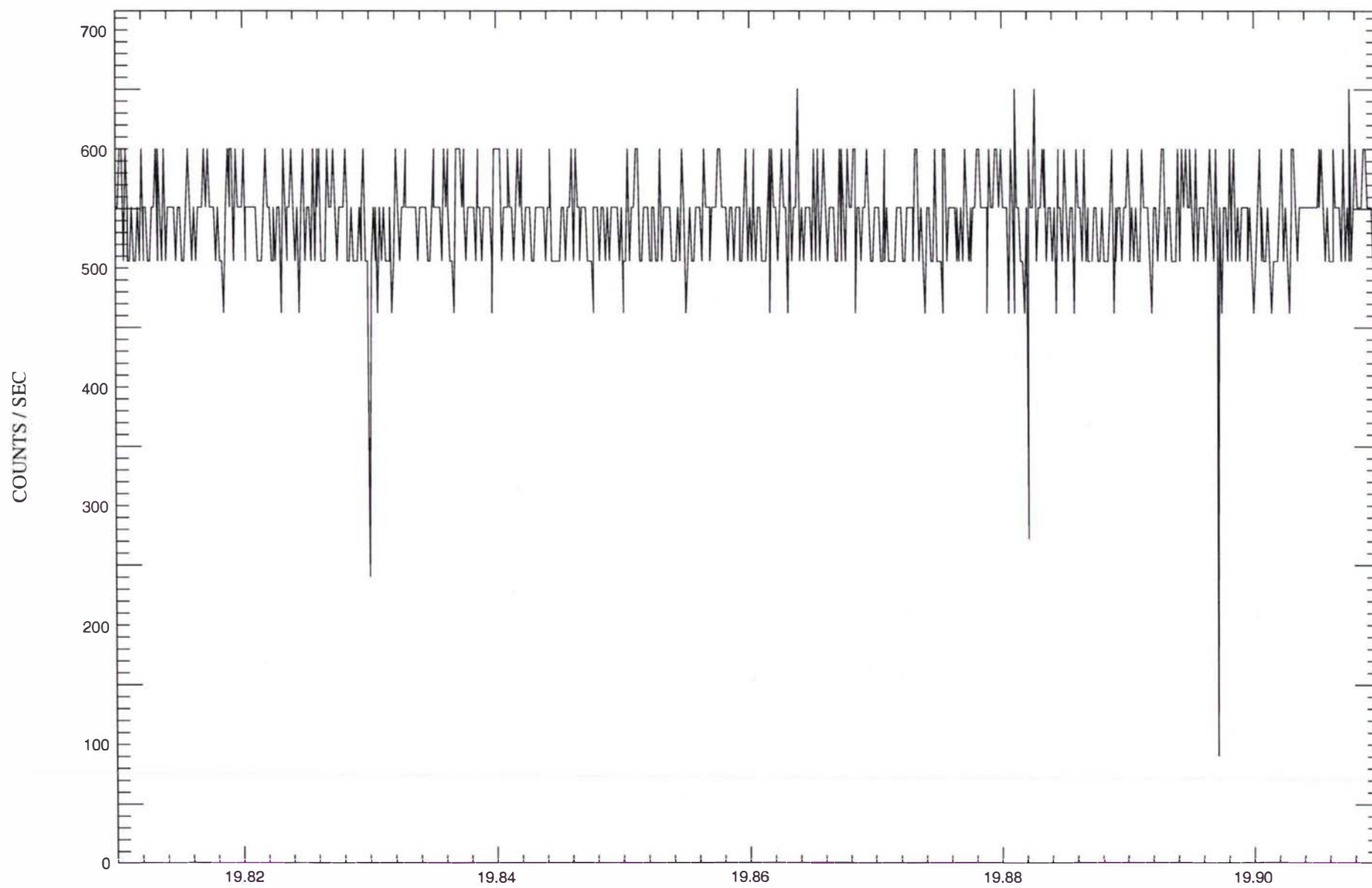
CALIBRATION DATA INCLUDED



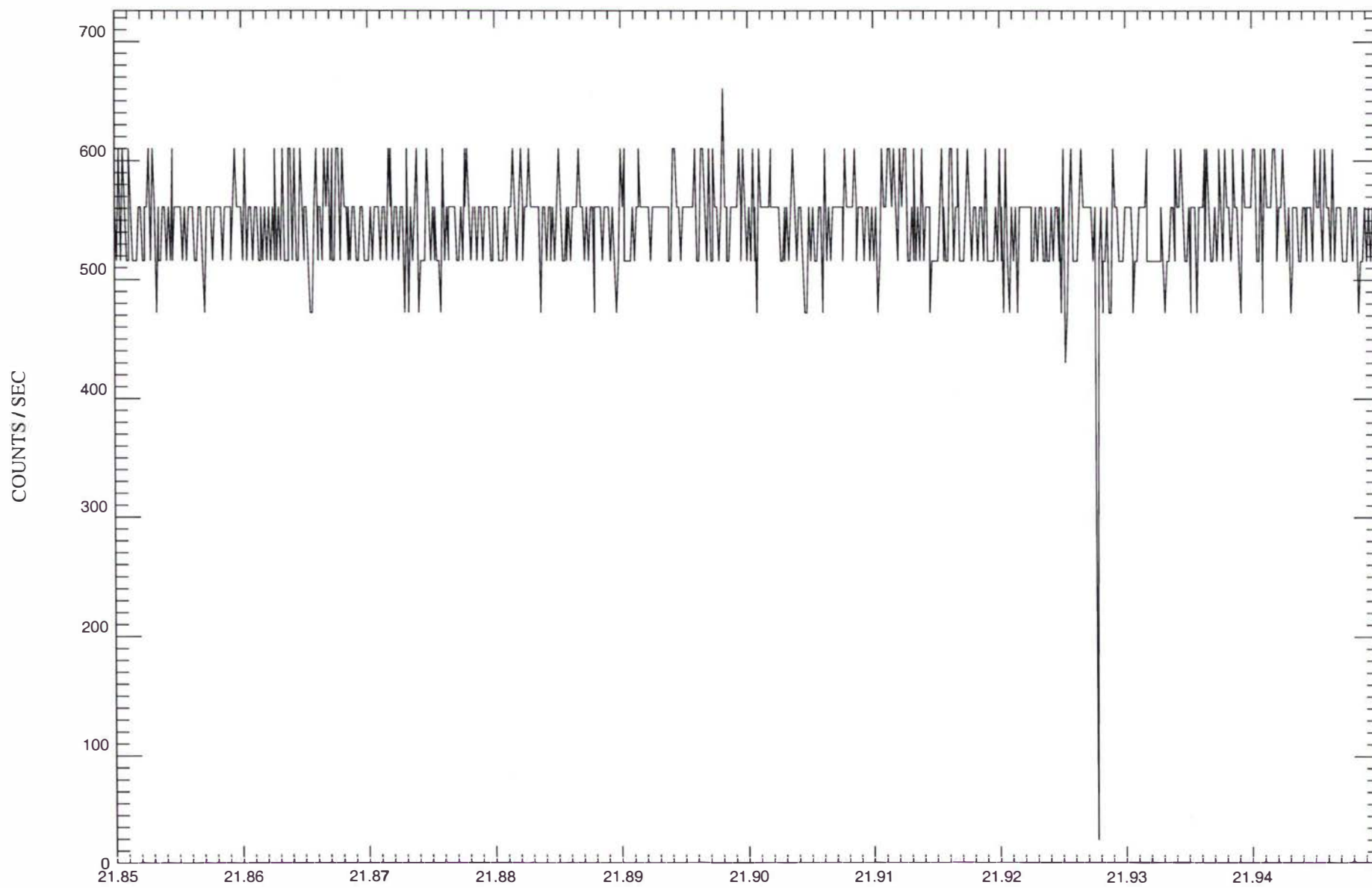
CALIBRATION DATA INCLUDED

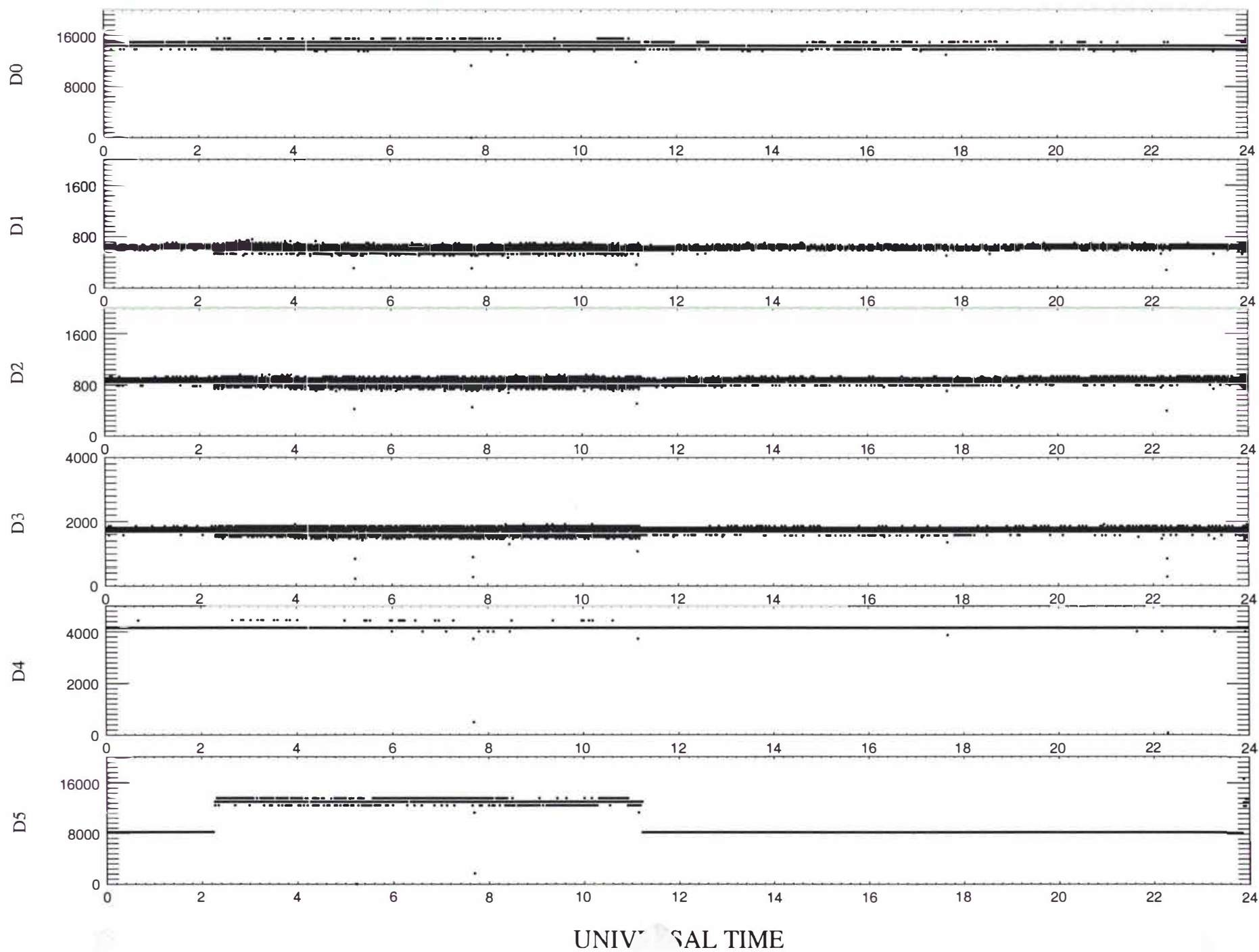


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From SAHI@fender.msfc.nasa.gov Tue Jun 8 10:37:17 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 8 Jun 1999 12:37:28 -0500 (CDT)

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, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hspark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7596

TIME: TJD=1333 SECONDS=25051

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=166.5 AZIMUTH=311.4 ERROR=0.26 DEGREES

COMMENTS:

SOLAR FLARE. GOES M3.9, OPTICAL 2B. INTENSE SINGLE PULSE WITH SUBSTRUCTURE,
DUR. APPROX. 1000 S, STARTS AT T-100 S, MAX. AT T+146 S. VISIBLE ABOVE 300 KEV.

From SAHI@fender.msfc.nasa.gov Tue Jun 8 12:22:59 1999
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA24657; Tue, 8 Jun 1999 12:22:58 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA04487
for <khurley@sunspot.ssl.berkeley.edu>; Tue, 8 Jun 1999 12:19:32 -0700 (PDT)
Date: Tue, 8 Jun 1999 14:23:36 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990608142336.20811981@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7597
Content-Length: 1135
X-Lines: 26
Status: RO
X-Status:

BATSEARCH PROGRAM

BATSE BURST # 7597
EVENT OF 1999 JUN 4 DAY OF YEAR=155
EVENT CROSSING TIME AT BATSE : 60094. S. OR 16:41:34.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 70.000 -64.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 6/ 99 IS:
RA= 144.426 DEC= -6.879 DIST= 5.016 AU
BATSE-ULYSSES DISTANCE = 750389360. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=102.97 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -561.94 SECS.
CROSSING TIME AT ULYSSES IS 59532. S. OR 16:32:12 +/- 464.94 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 6/ 99 IS:
RA= 202.524 DEC= -9.785 DIST= 0.668 AU
MARS-BATSE DISTANCE = 99927896. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 82.00 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 46.41 SECS.
CROSSING TIME AT MARS IS 60140. S. OR 16:42:20 +/- 58.01 SECONDS

BATSE BURST TRIGGER

NO.: 7597

TIME: TJD=1333 SECONDS=60094

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=87.6 AZIMUTH=36.2 ERROR=4.4 DEGREES

COMMENTS:

BURST. SINGLE PULSE, DUR. APPROX. 12 S, STARTS AT T-4 S. NOT VISIBLE ABOVE
300 KEV. POSSIBLE PRECURSOR EMISSION BEGINNING AT T-45 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7597	990604	11333	60094	3000	070	-64	12

BATSE BURST# 7597

ULYSSES RT

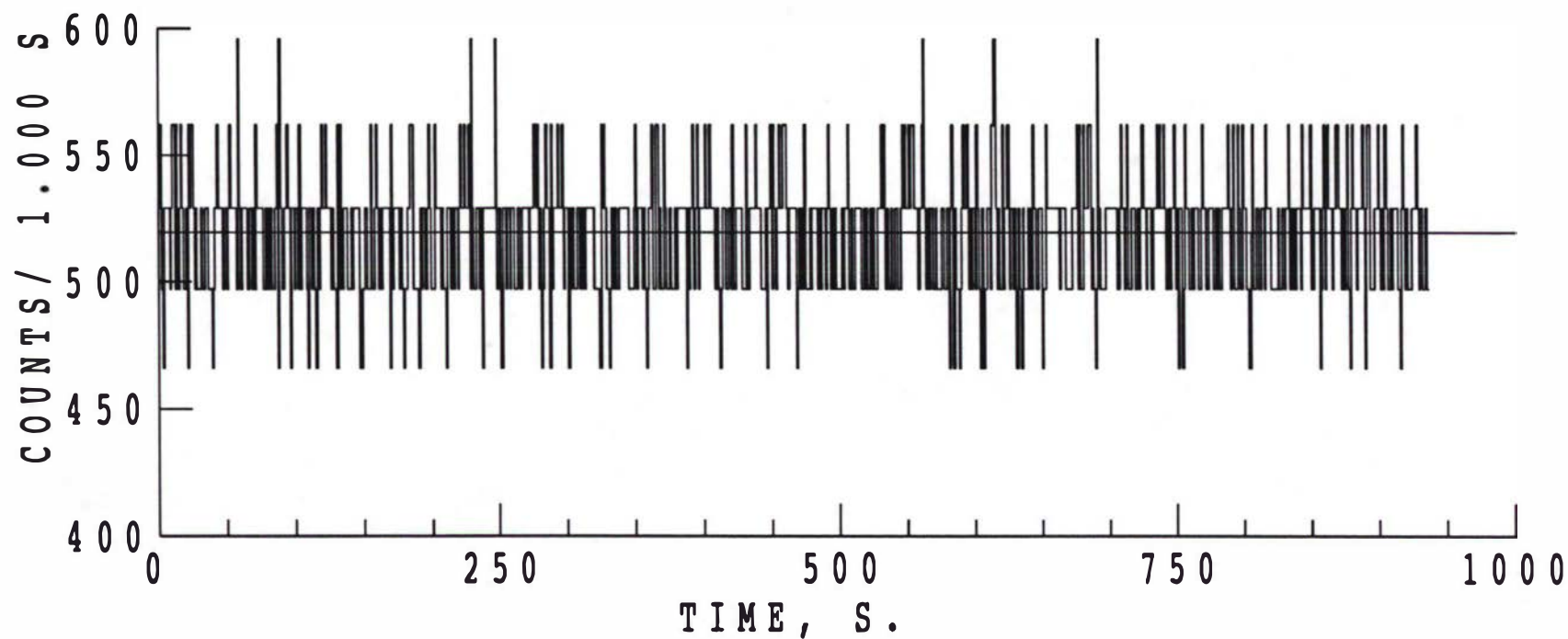
8 / 6 / 99

4 / 6 / 99 59076.719 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

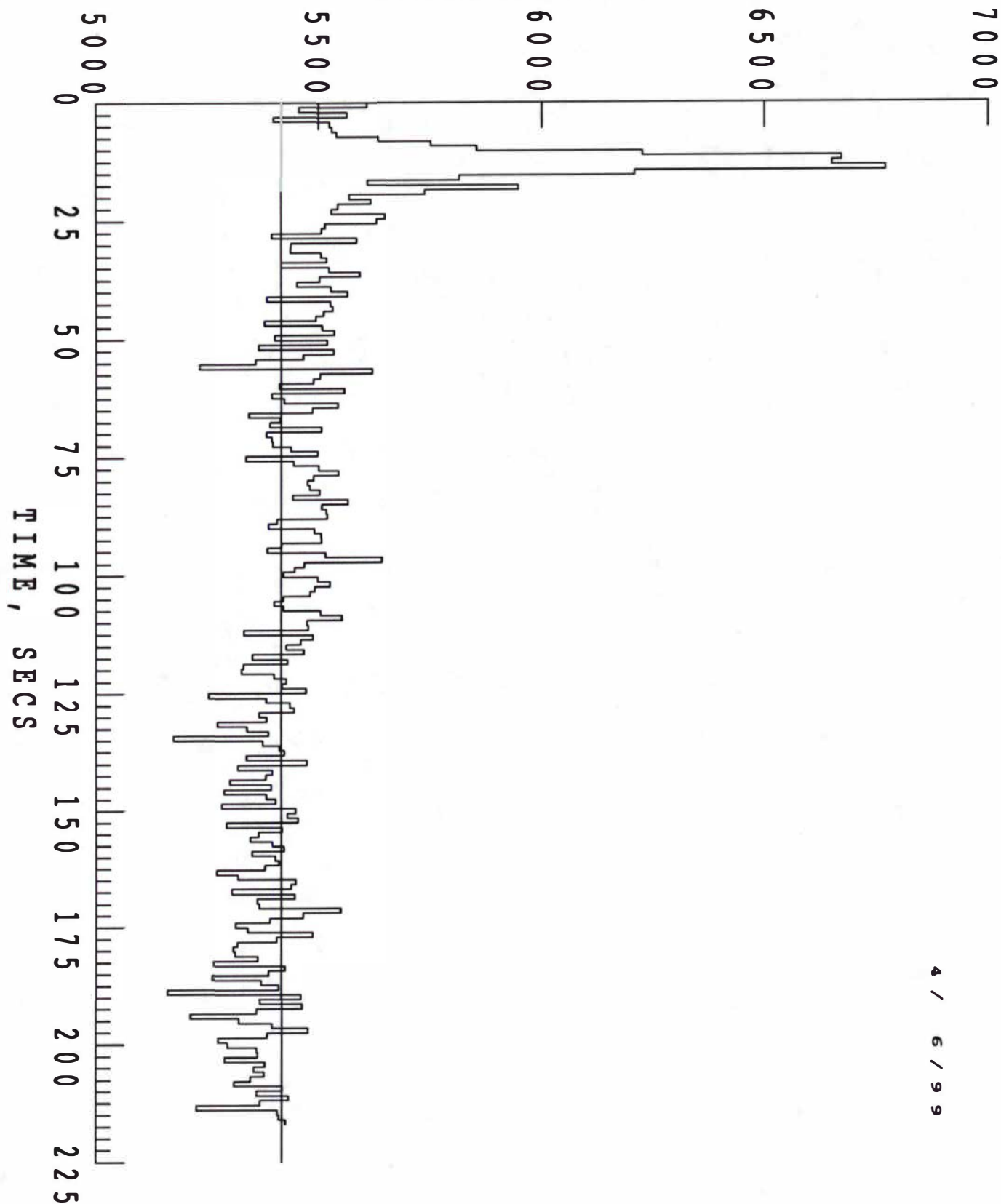
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 7597 04/06/99 60082.937

25- 100 keV

COUNTS/1.024 S



KONUS2 19990604 25079

ULYSSES RT

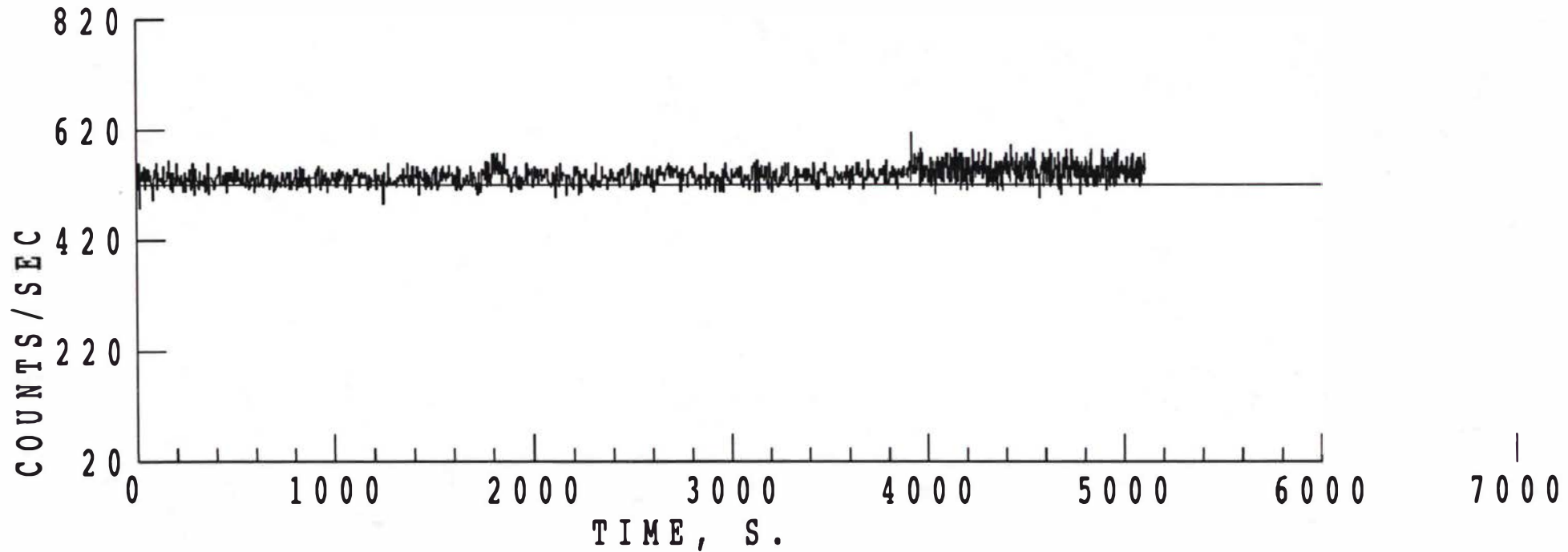
4 / 6 / 99

4 / 6 / 99 22536.352 s

INTERVALS REGROUPED BY 9

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

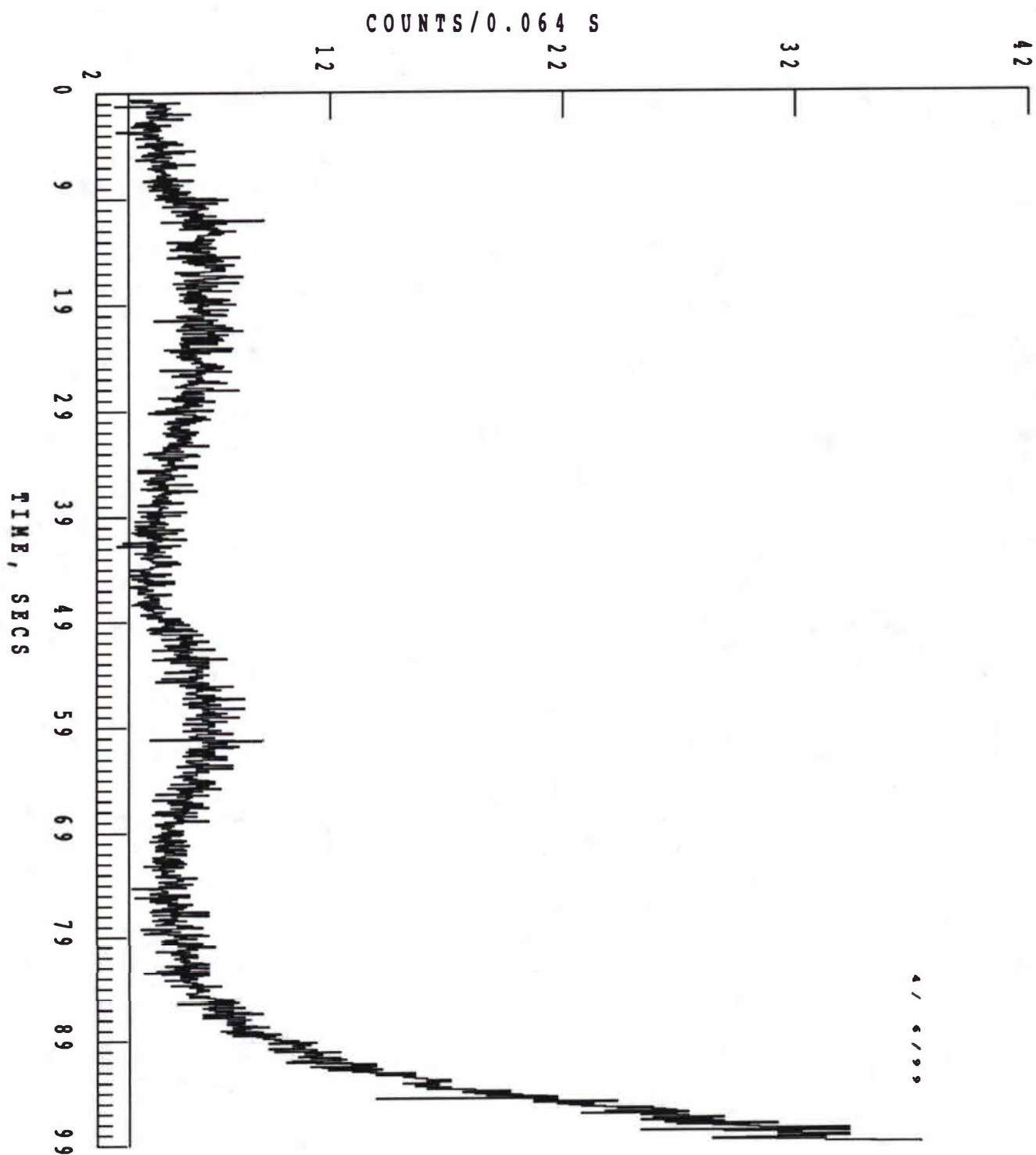


KONUS

04/06/99

25079.925

50 - 200 keV



From SAHI@fender.msfc.nasa.gov Tue Jun 8 12:26:59 1999
Return-Path: <SAHI@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA24707; Tue, 8 Jun 1999 12:26:58 -0700
From: SAHI@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA04578
for <khurley@sunspot.ssl.berkeley.edu>; Tue, 8 Jun 1999 12:23:33 -0700 (PDT)
Date: Tue, 8 Jun 1999 14:27:37 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990608142737.20811981@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7598
Content-Length: 1135
X-Lines: 26
Status: RO
X-Status:

BATSEARCH PROGRAM

BATSE BURST # 7598
EVENT OF 1999 JUN 4 DAY OF YEAR=155
EVENT CROSSING TIME AT BATSE : 71980. S. OR 19:59:40.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 91.000 38.000
BATSE PEAK COUNTING RATE: 10000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 4/ 6/ 99 IS:
RA= 144.432 DEC= -6.881 DIST= 5.018 AU
BATSE-ULYSSES DISTANCE = 750652372. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -982.36 SECS.
CROSSING TIME AT ULYSSES IS 70998. S. OR 19:43:17 +/- 434.95 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 4/ 6/ 99 IS:
RA= 202.524 DEC= -9.785 DIST= 0.668 AU
MARS-BATSE DISTANCE = 99927896. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 129.84 SECS.
CROSSING TIME AT MARS IS 72110. S. OR 20:01:49 +/- 55.27 SECONDS

BATSE BURST TRIGGER

NO.: 7598

TIME: TJD=1333 SECONDS=71980

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=146.9 AZIMUTH=285.7 ERROR=1.2 DEGREES

COMMENTS:

BURST. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 30 S, MAX. AT T+7.5 S,
STARTS AT ~T-4 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7598	990604	11333	71980	10000	091	+38	30

Date: 27/1/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ 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

- ☒ 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 N/A

- ☐ Final, correct time used? (Files postmarked vw@bocc1, or from Teresa Sheets, have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?
- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

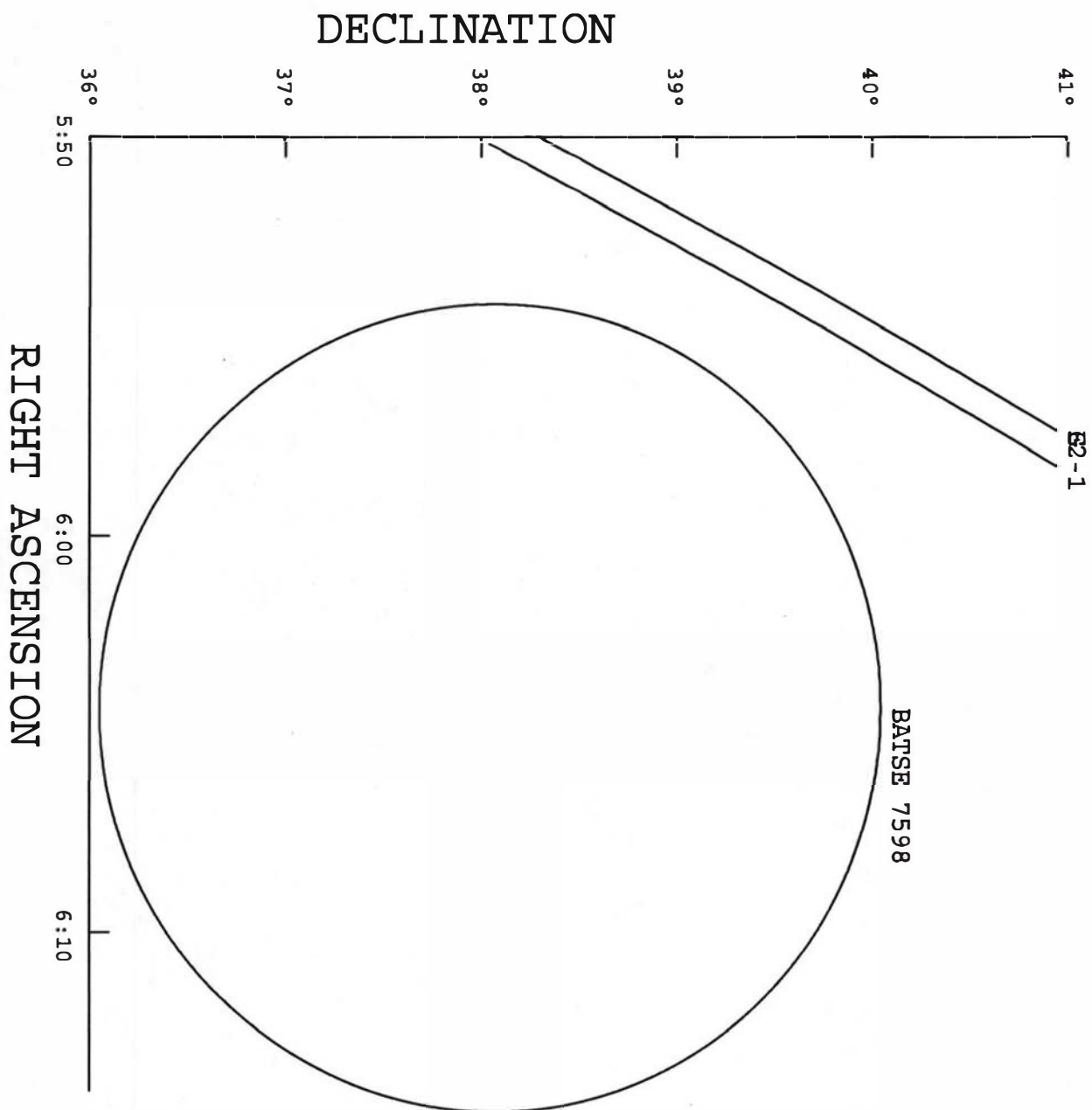
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF JUN 4, 1999 19:59

27 / 1 / 0



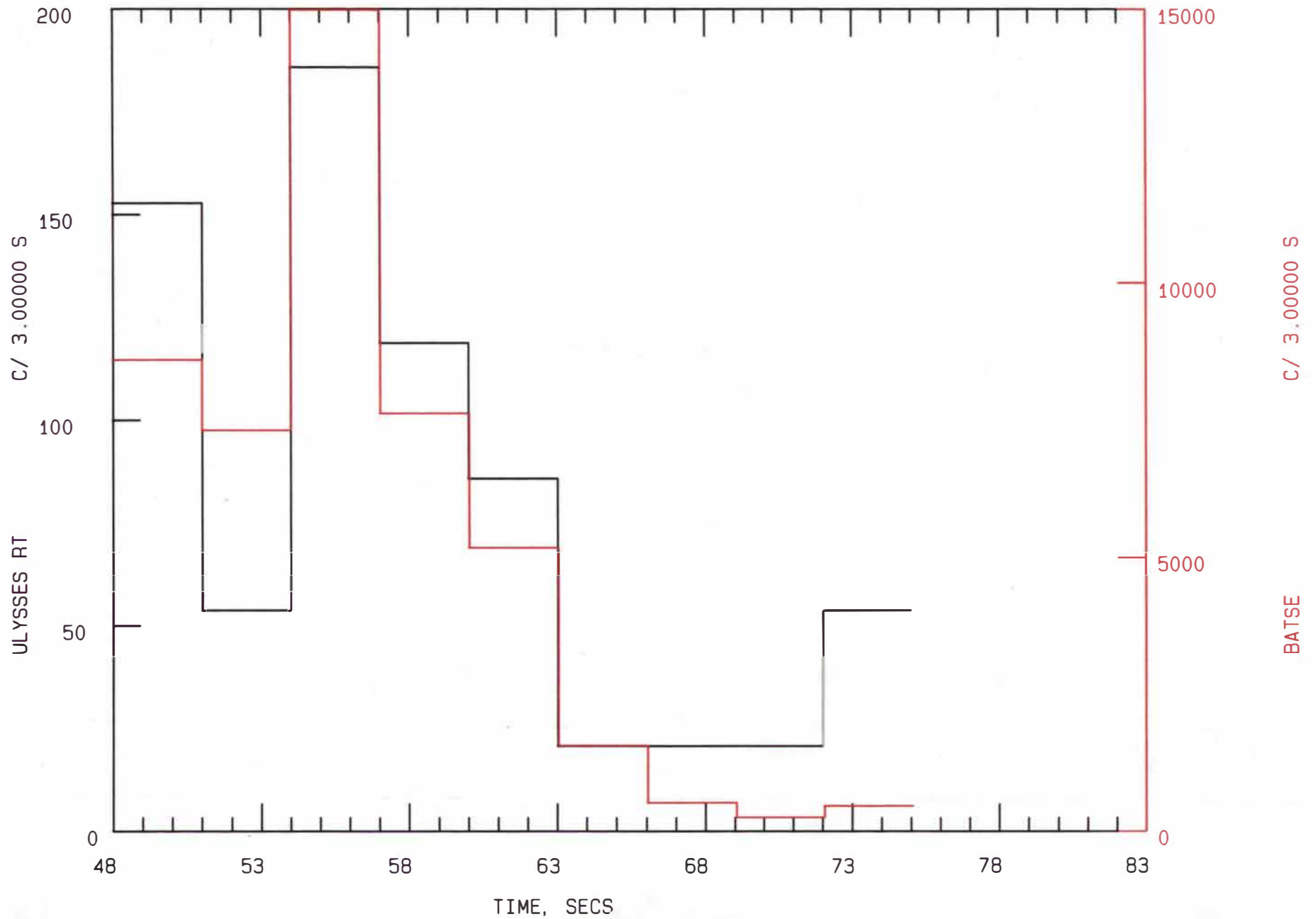
ULYSSES RT-BATSE

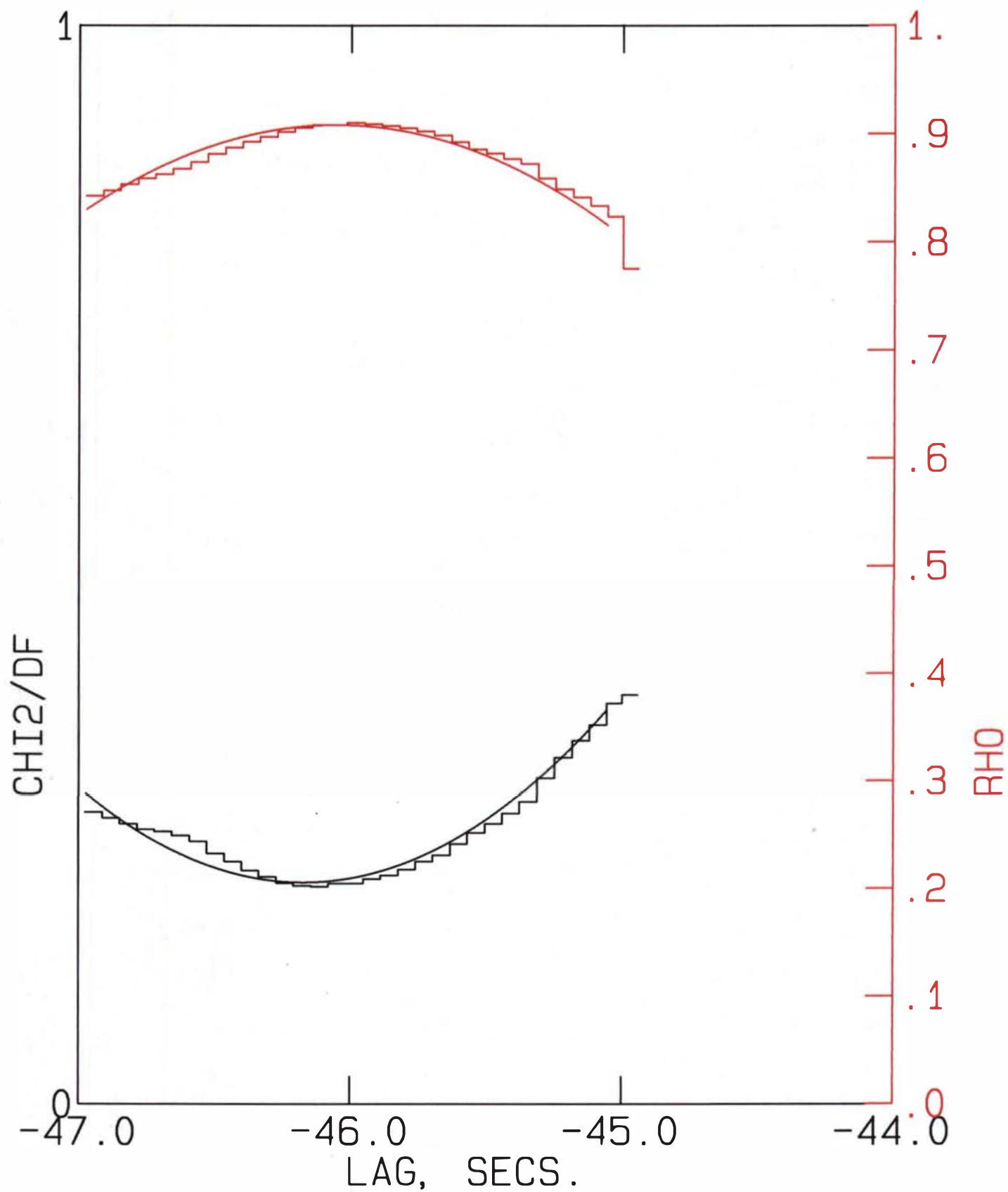
CORRELATION

4/ 6/99

71075.860

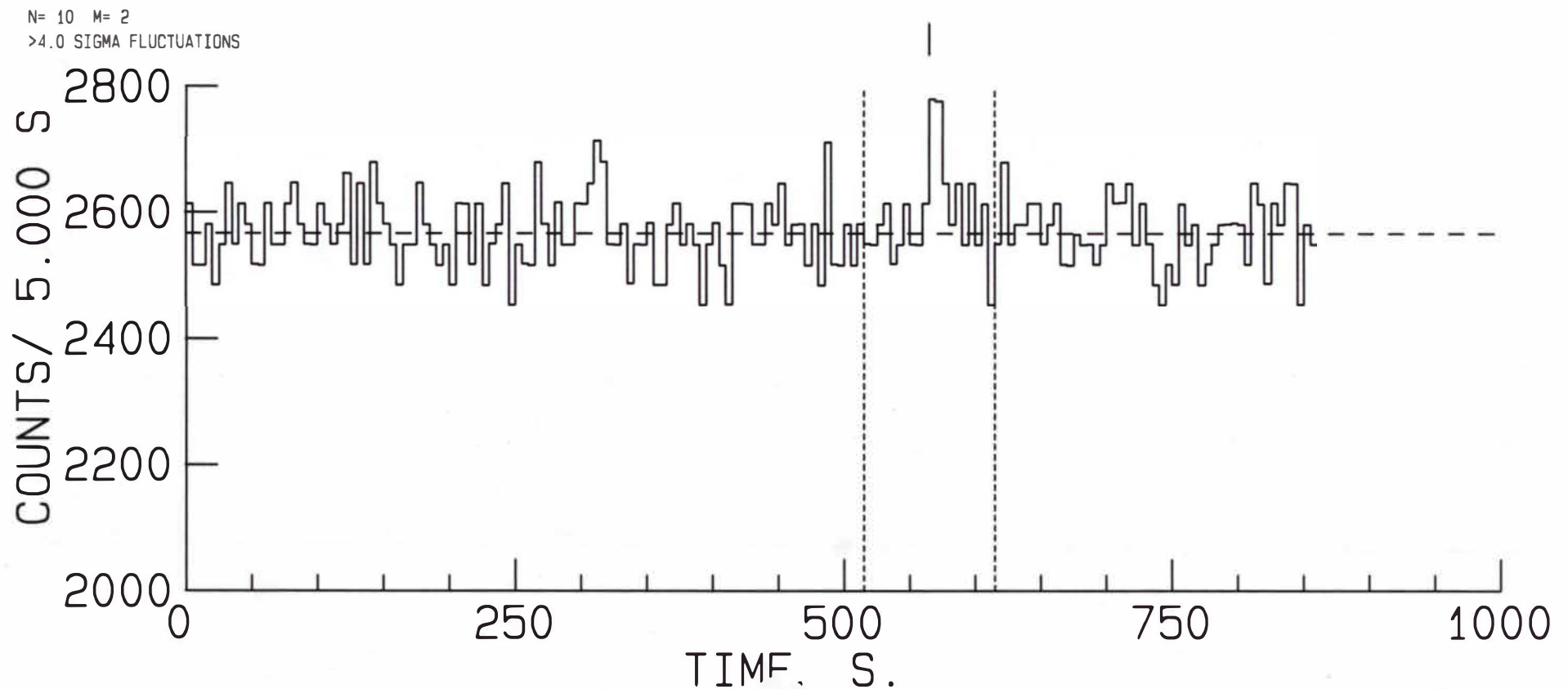
27/ 1/ 0





ULYSSES RT
4/ 6/99 70560.833 s
1.000 S INTERVALS REGROUPED BY 5
22- 150 keV

27 / 1 / 0



BATSE

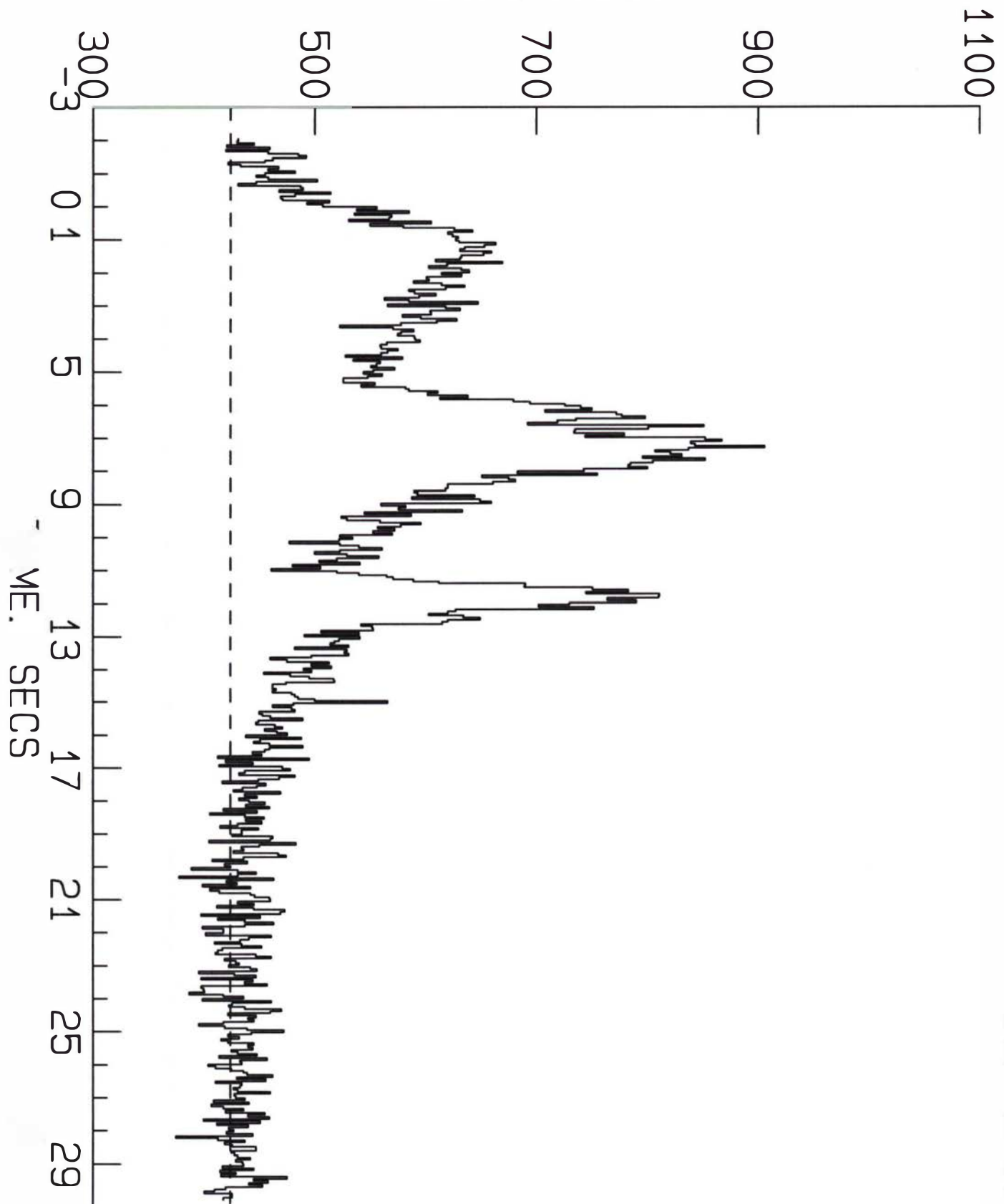
04/06/99

71980.793

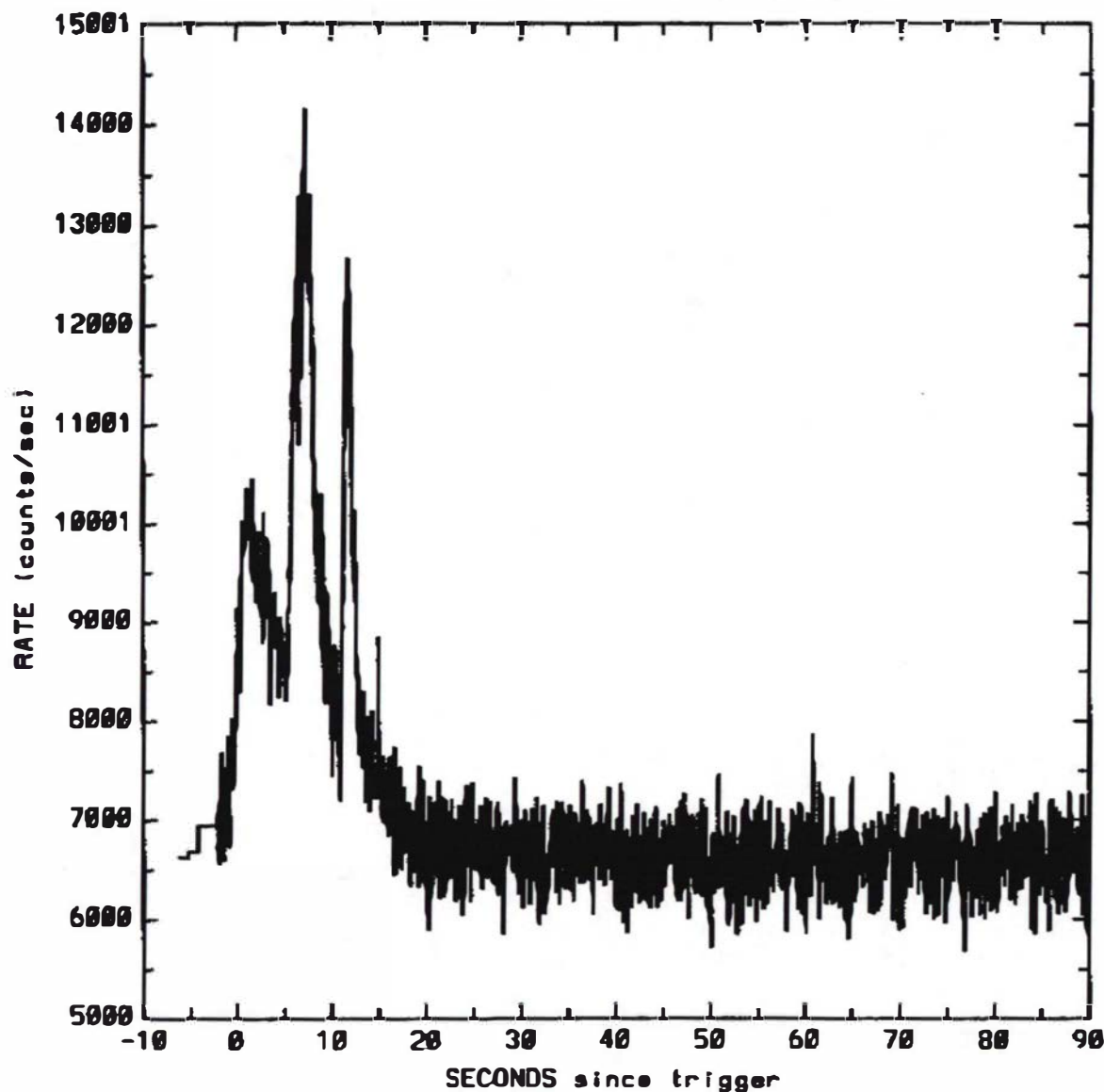
25- 100 keV

COUNTS/0.064 S

16 / 6 / 99



DISCSC Data for K. Hurley, No. 7598



15-JUN-1999 12:44:52

Created by MOPS 80
(Burst Display)
Version t2.2b

Trigger # : 7598

Trigger Time:
11333 / 71988.793

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

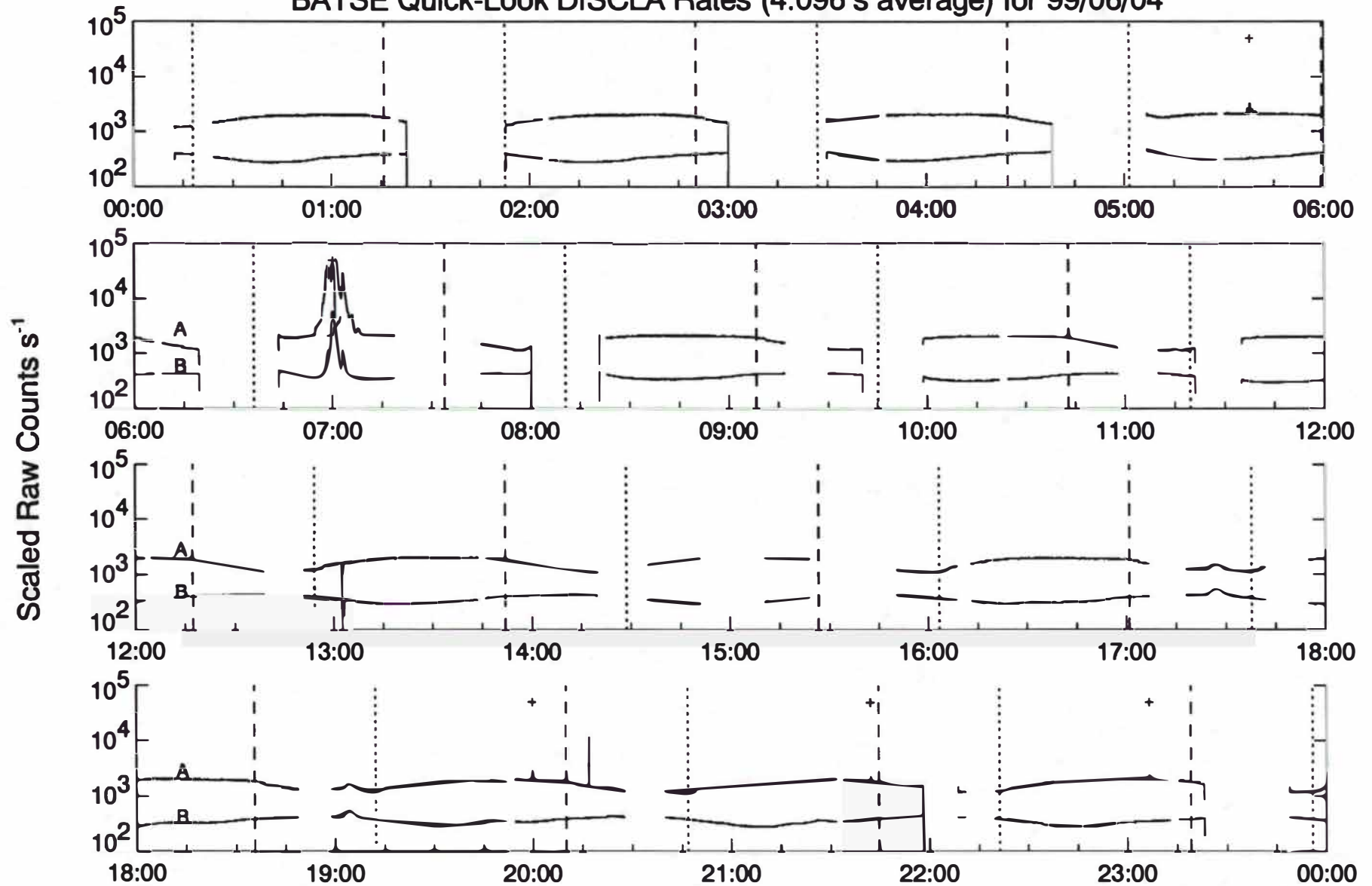
Minimum Integ. Time:
0.064 seconds

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

Discriminators:
[1 : 2]

Quality Mask:
BDISP1

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/04

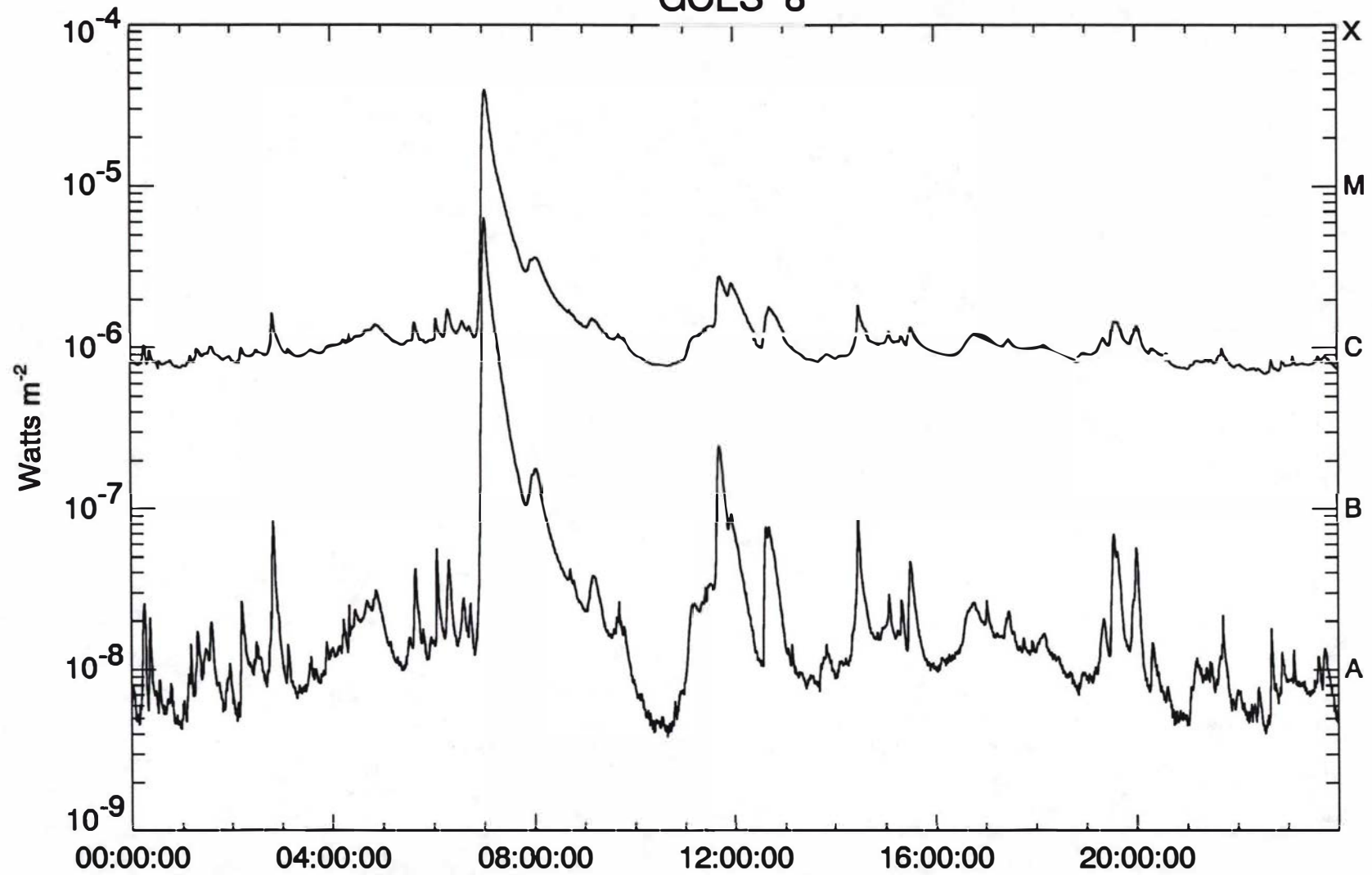


Current Time: 99/06/08, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/04, 0000:00

Plot created: 99/06/08, 1005

Channel

1 (1.0 - 8.0 Angstroms)

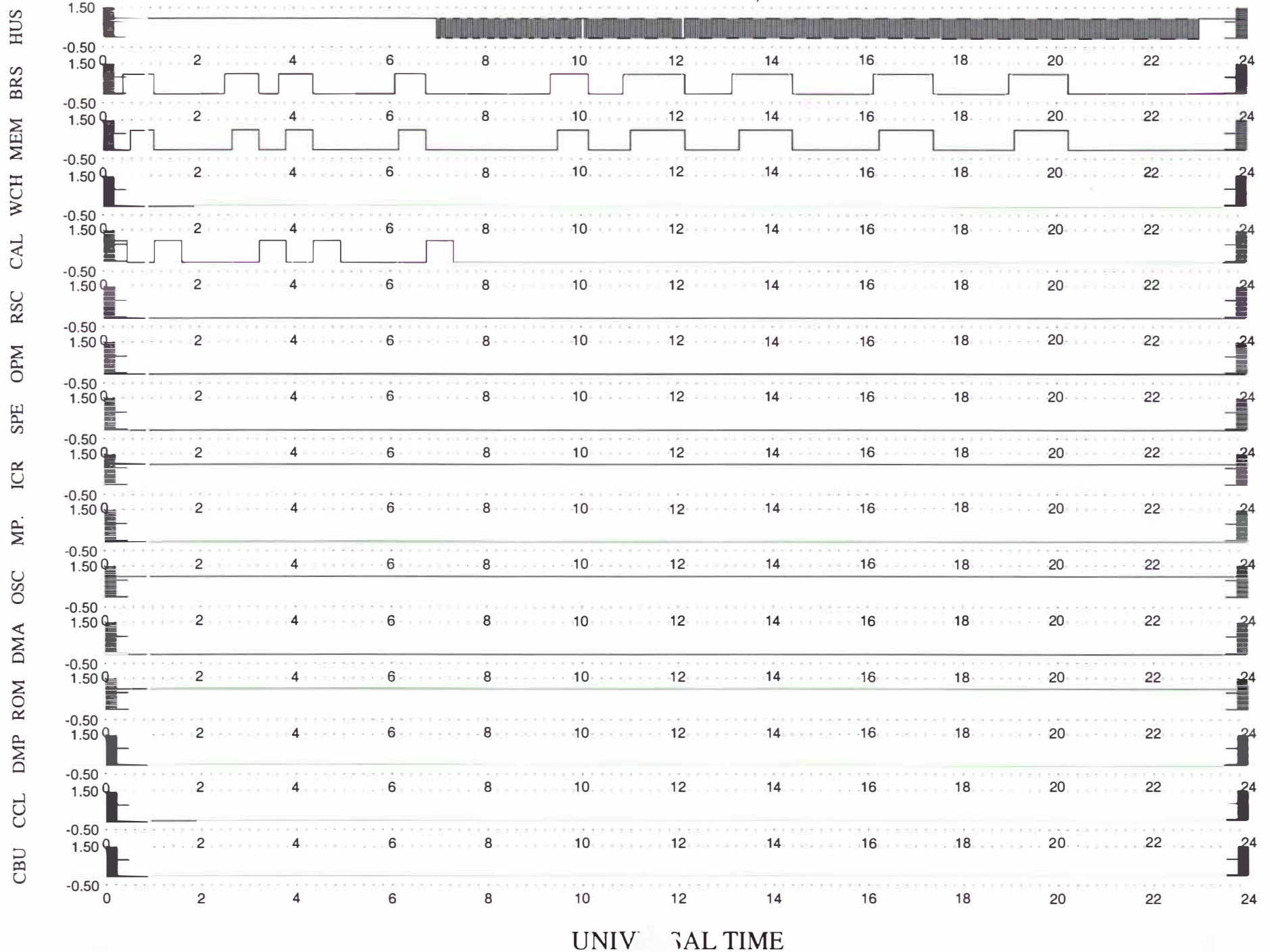
Background not subtracted

2 (0.5 - 4.0 Angstroms)

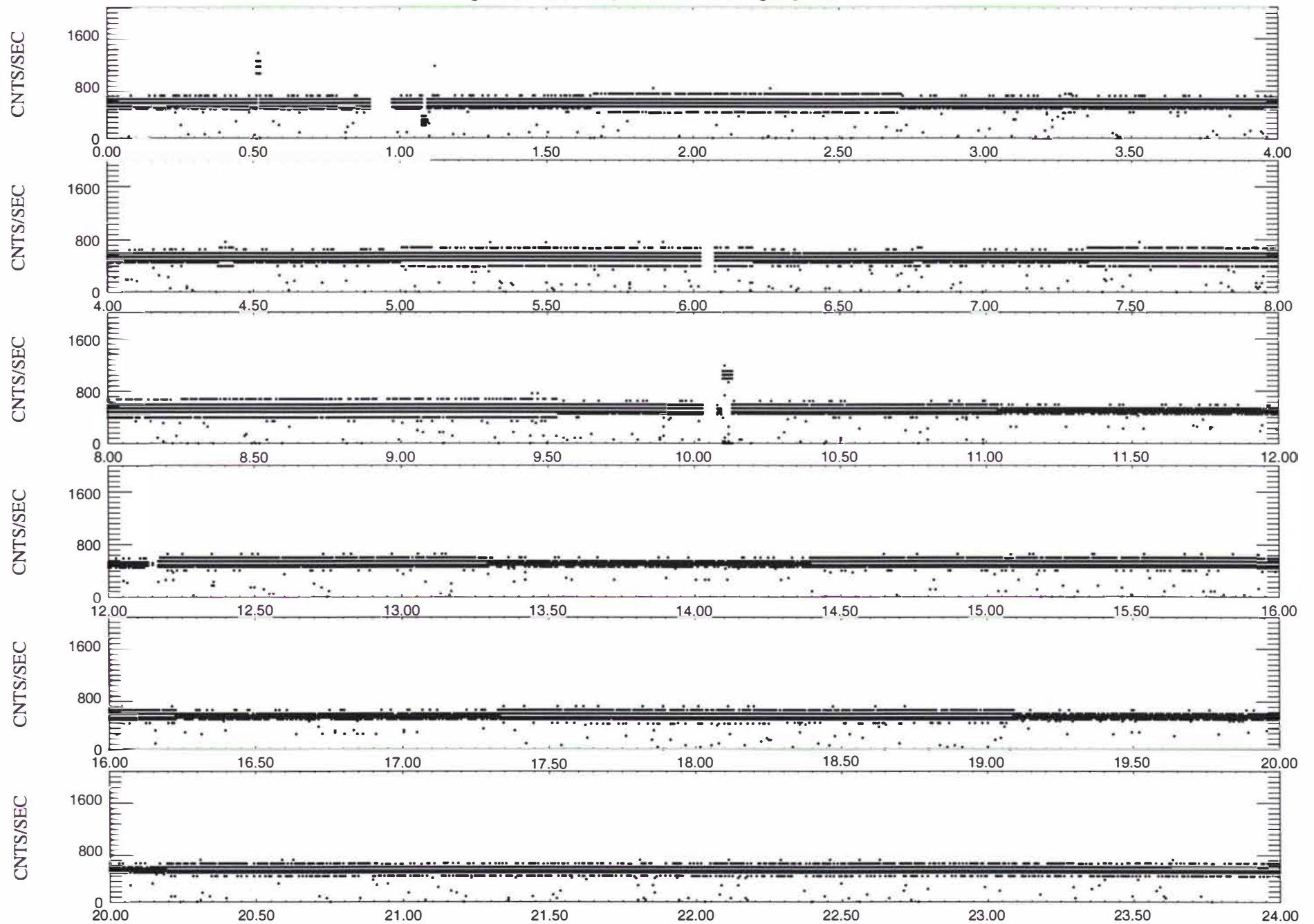
Background not subtracted

Sample average = 10

BURST NUMBER 11 - 15, 0 - 3

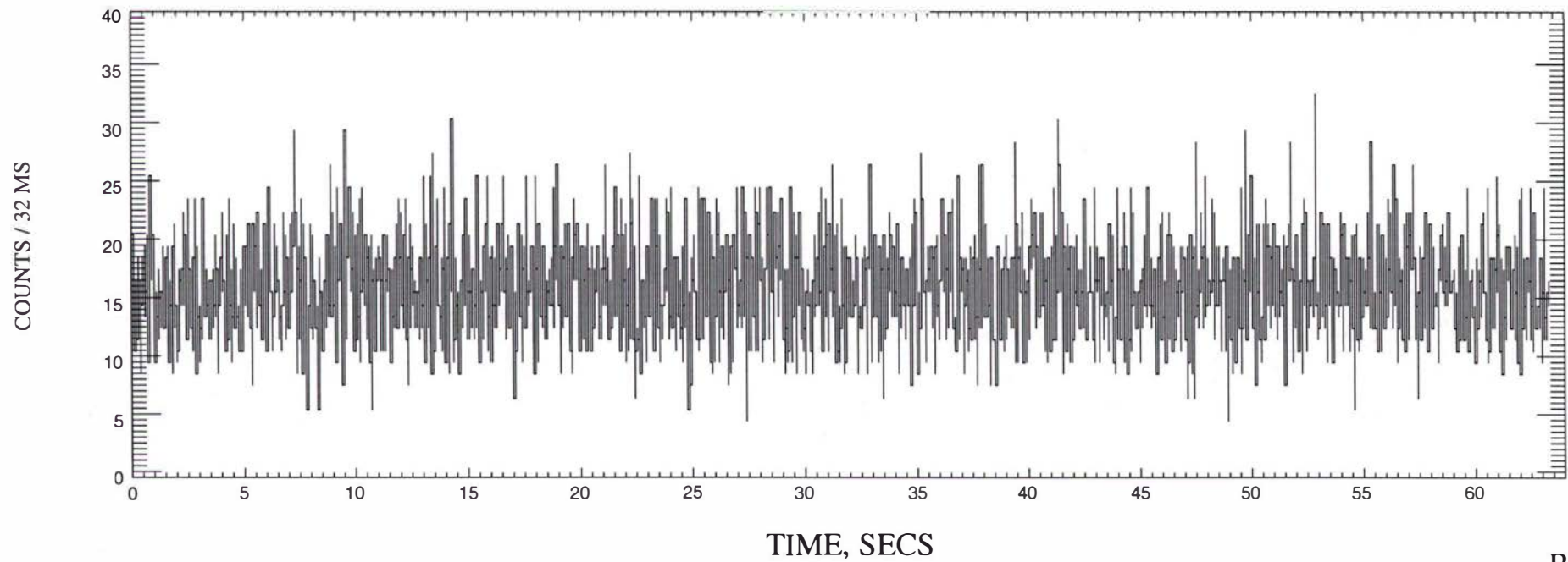
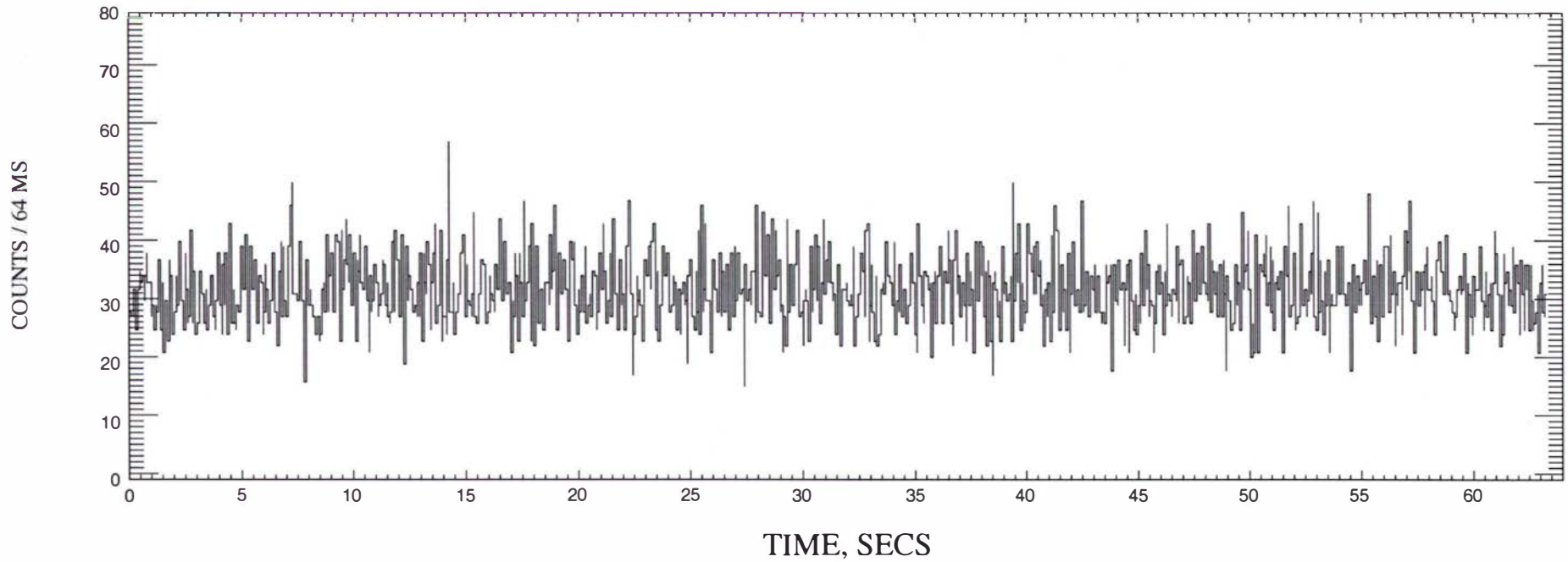


CALIBRATION DATA INCLUDED

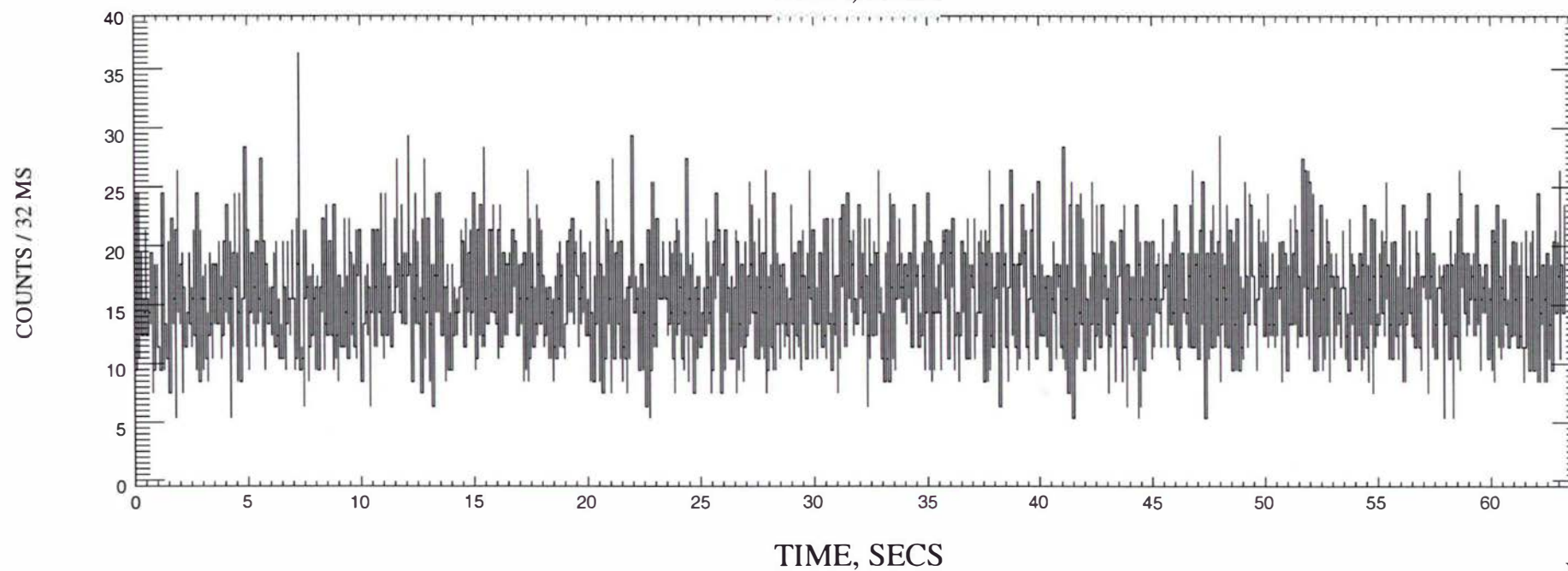
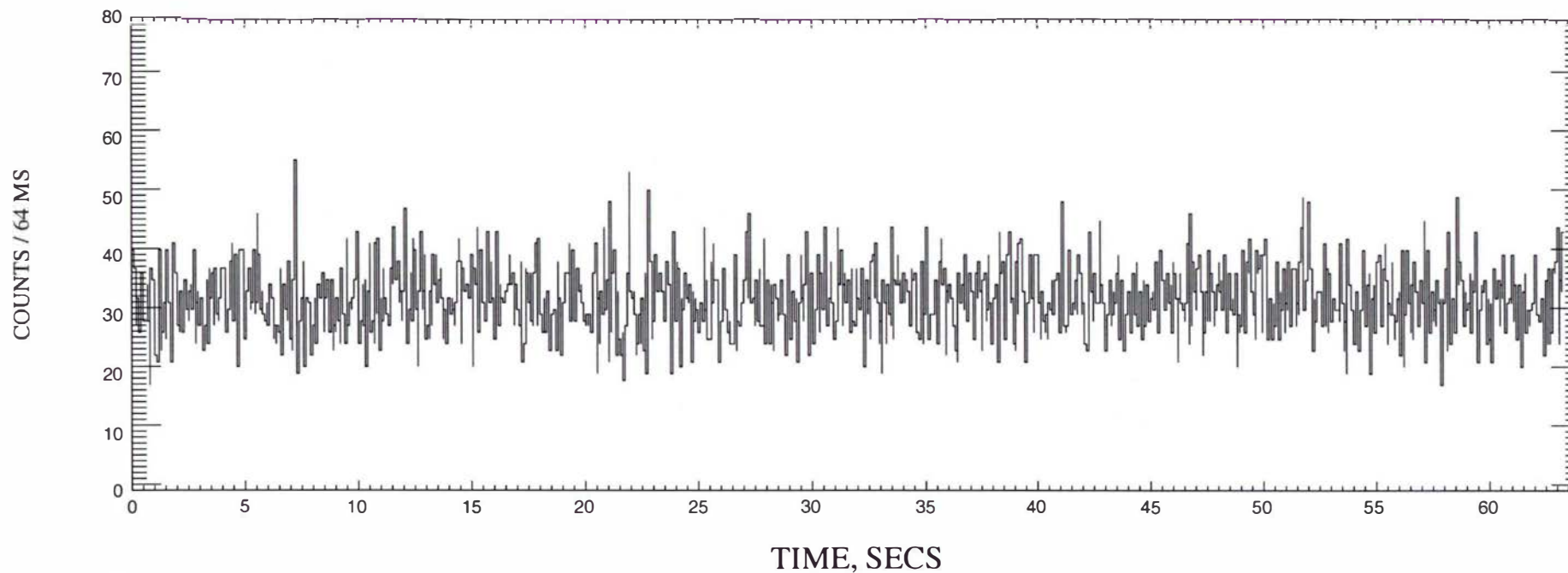


UNIV SAL TIME

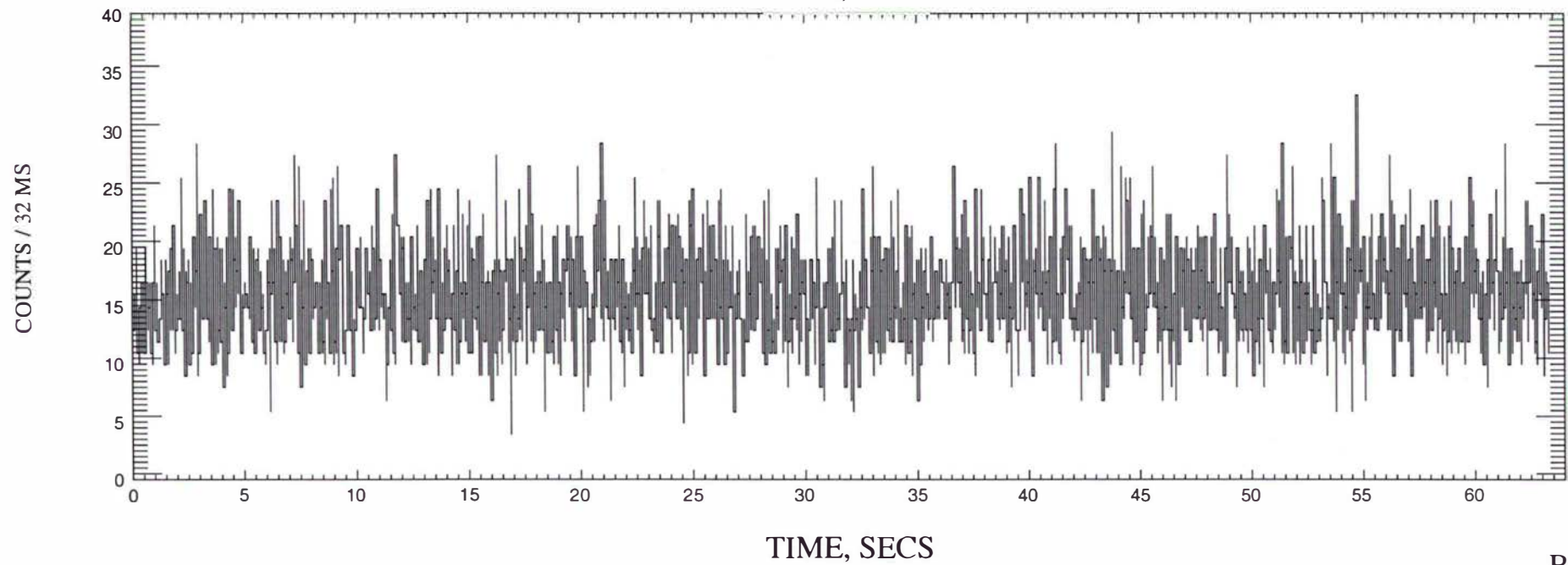
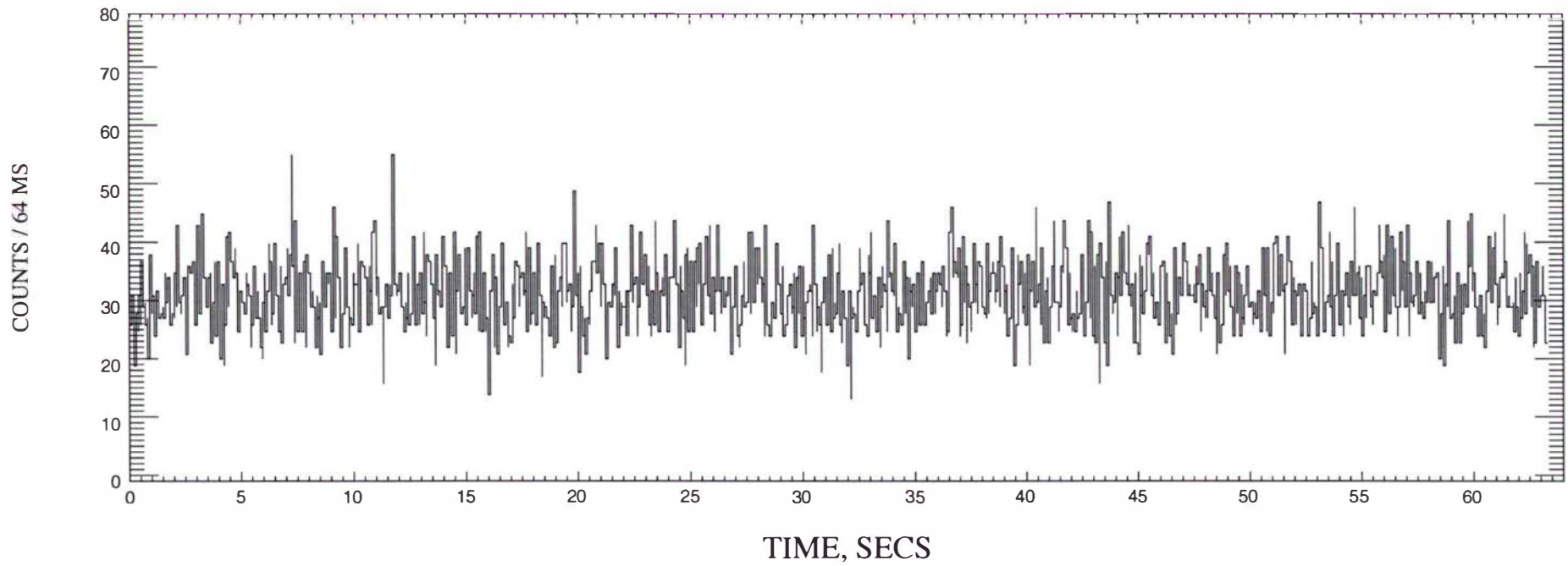
Burst Counter 11 at UT= 0.368994962904 h= 1328.382 s 00:22:08.382



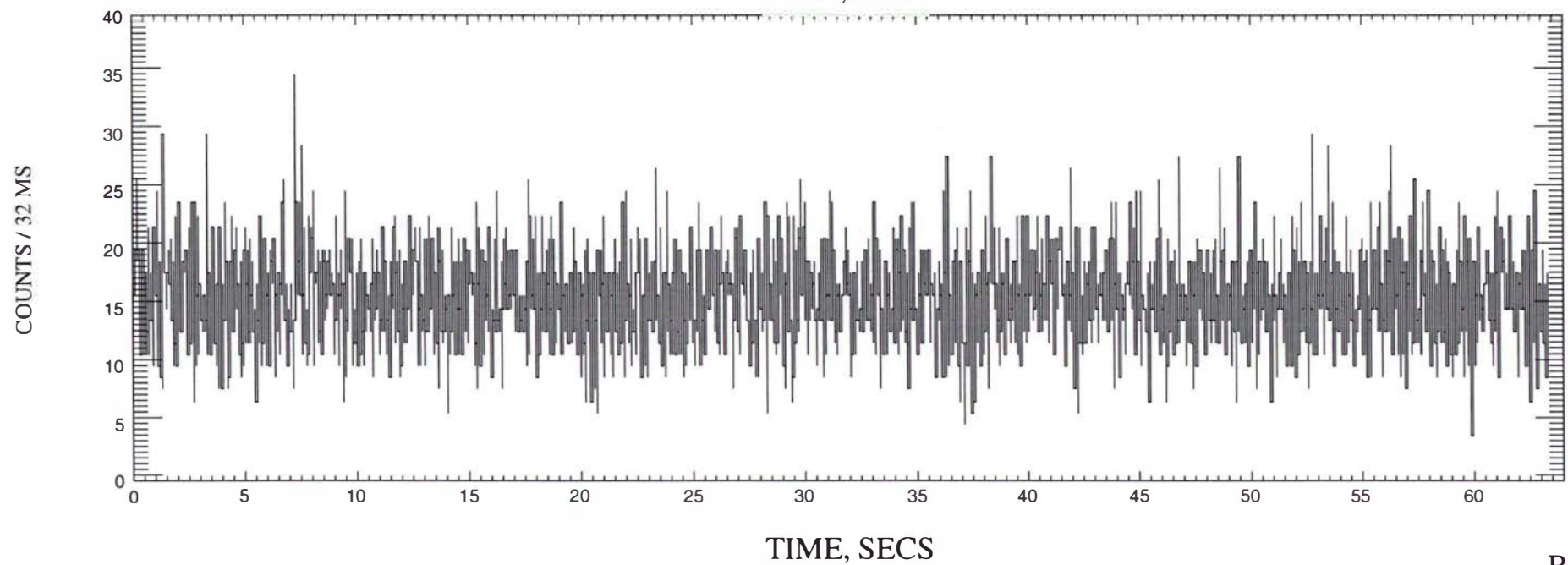
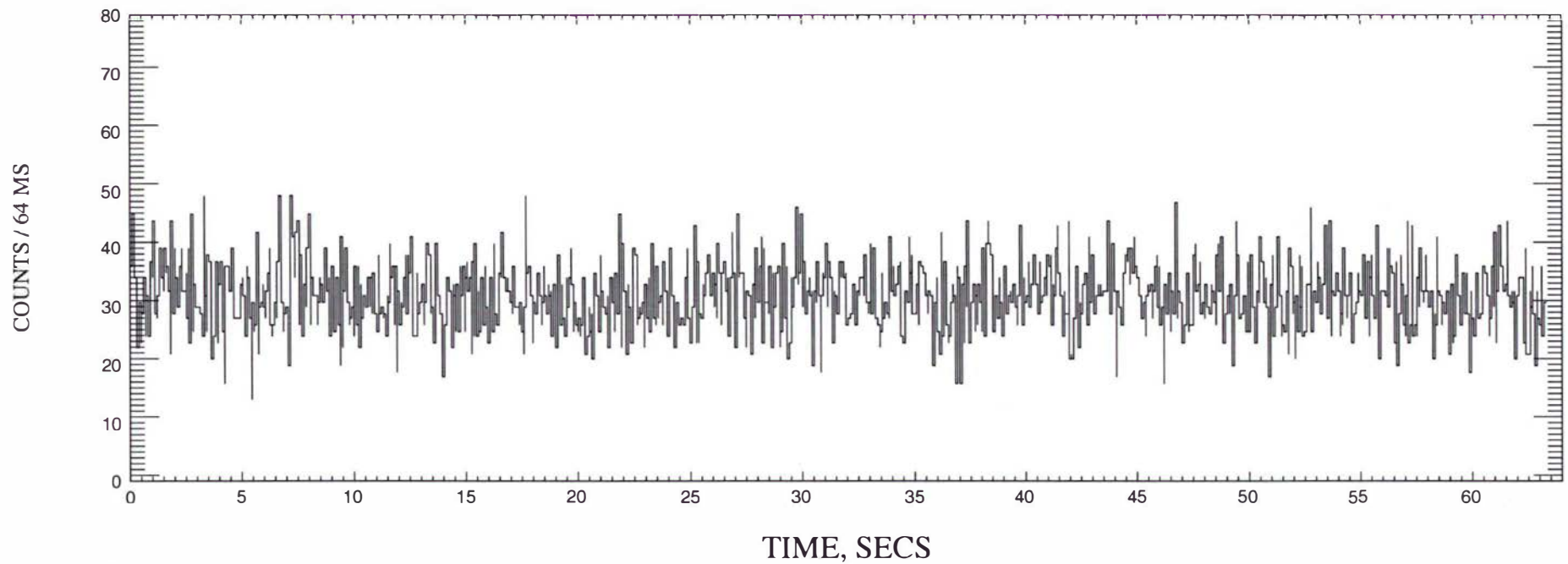
Burst Counter 12 at UT= 2.552312592400 h= 9188.325 s 02:33:08.325



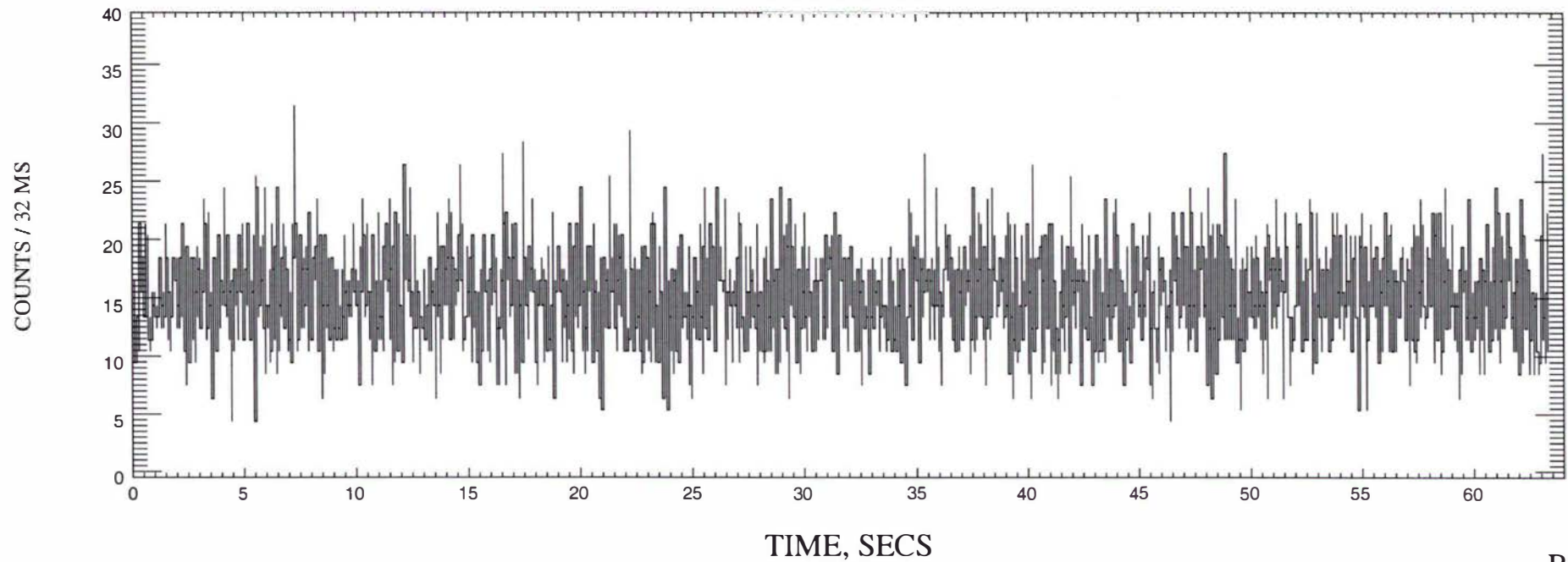
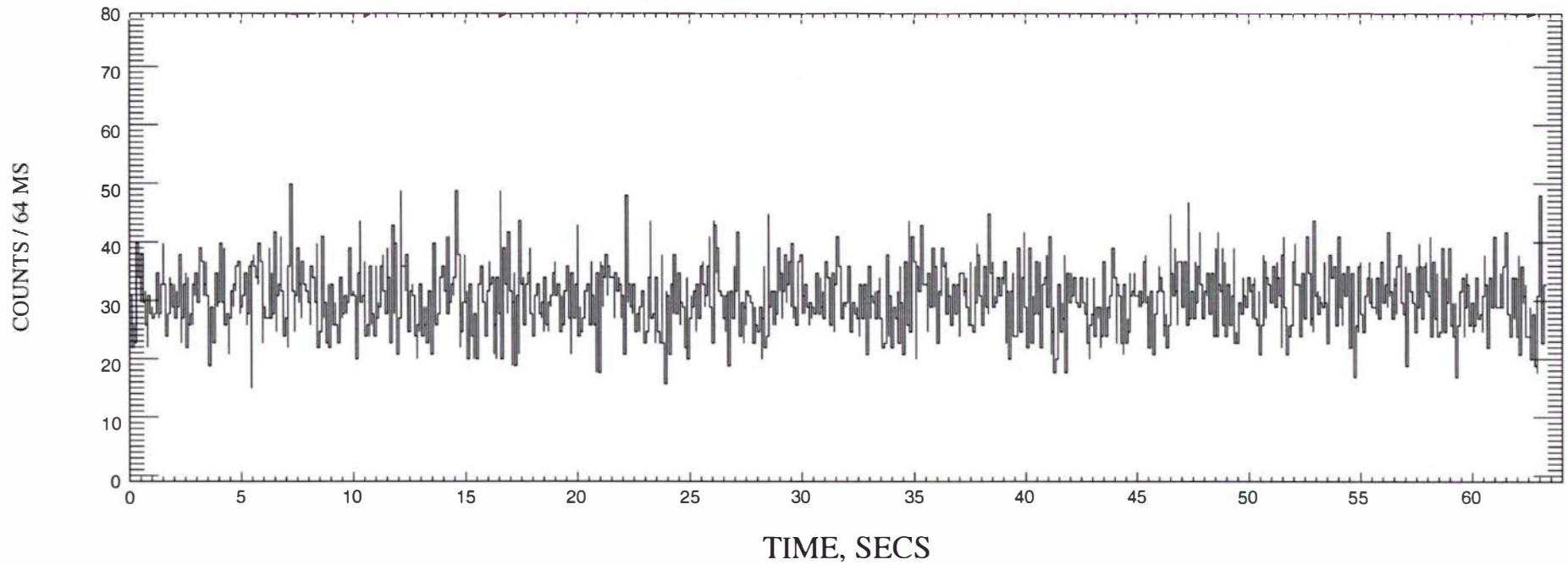
Burst Counter 13 at UT= 3.675381808811 h=13231.375 s 03:40:31.375



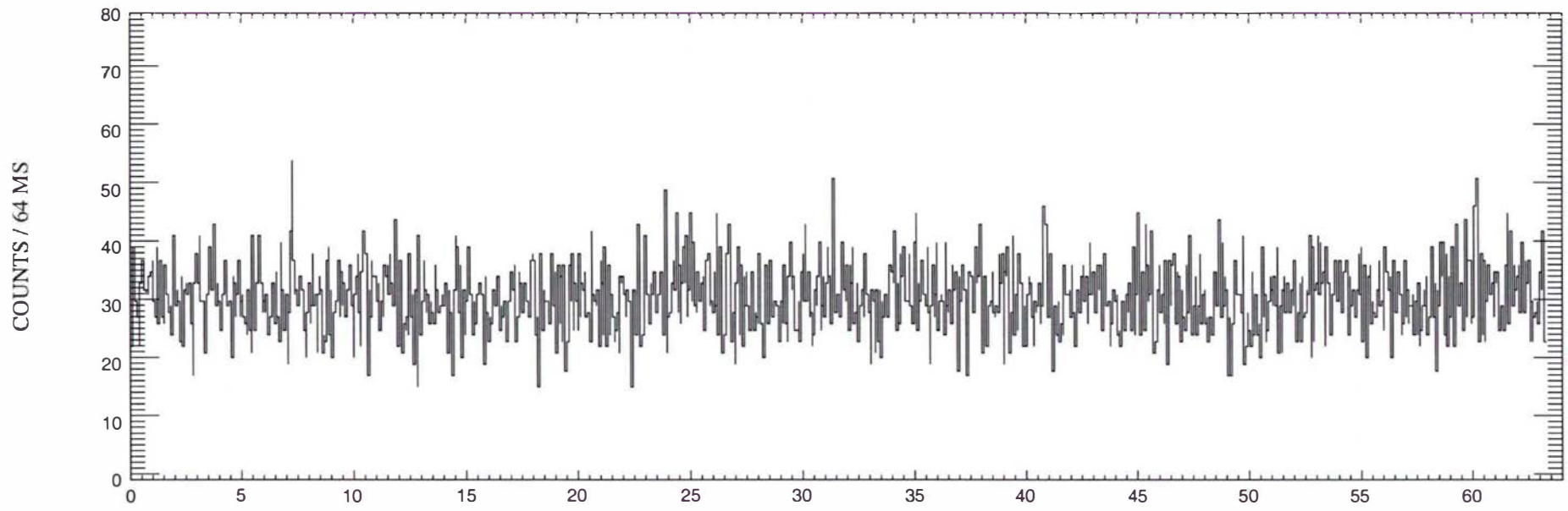
Burst Counter 14 at UT= 6.047419395447 h=21770.710 s 06:02:50.710



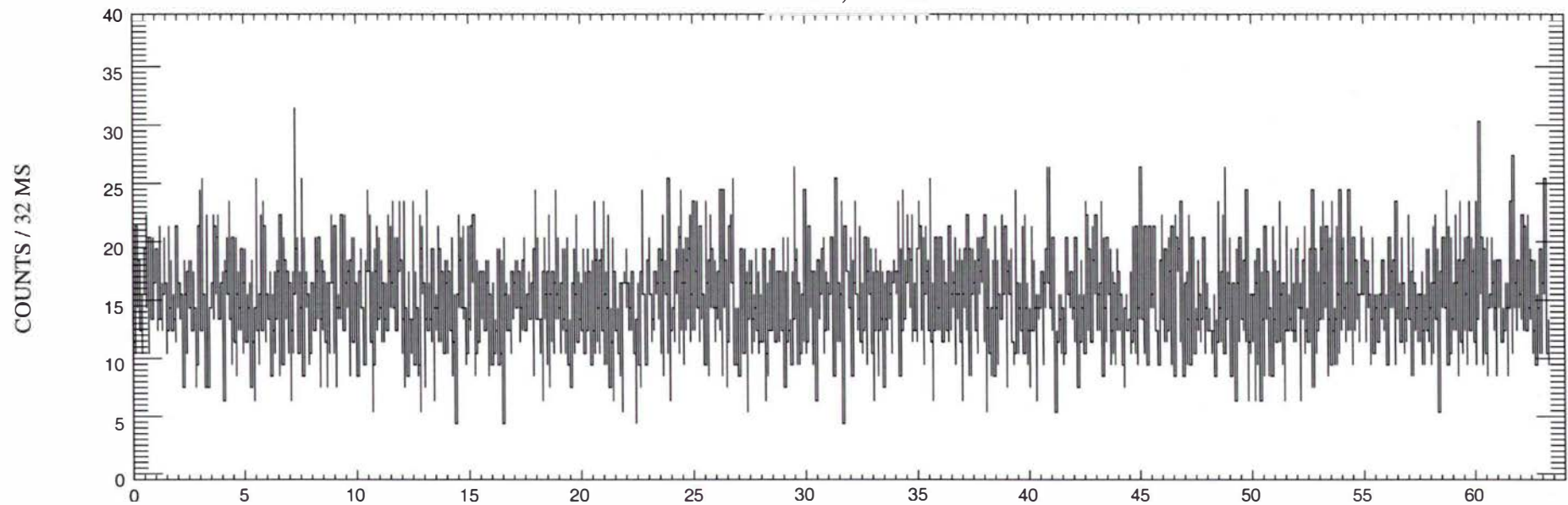
Burst Counter 15 at UT= 9.385855924818 h=33789.081 s 09:23:09.081



Burst Counter 0 at UT=10.878091795180 h=39161.130 s 10:52:41.130

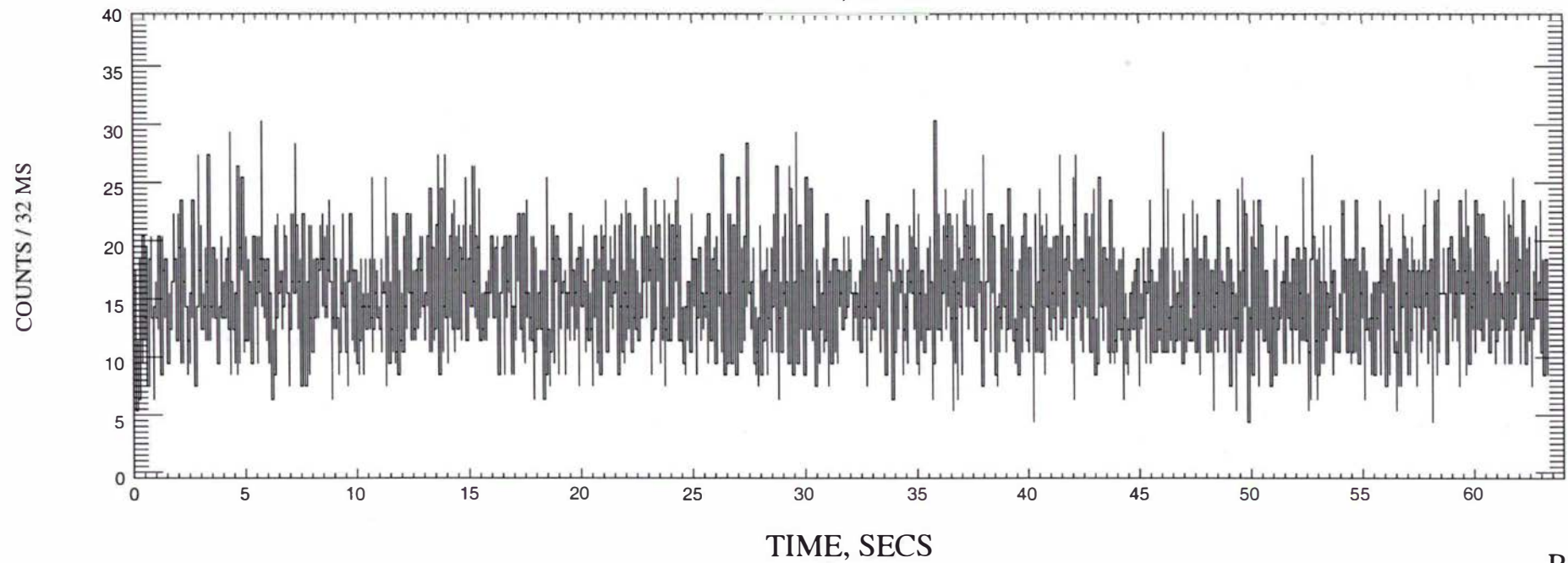
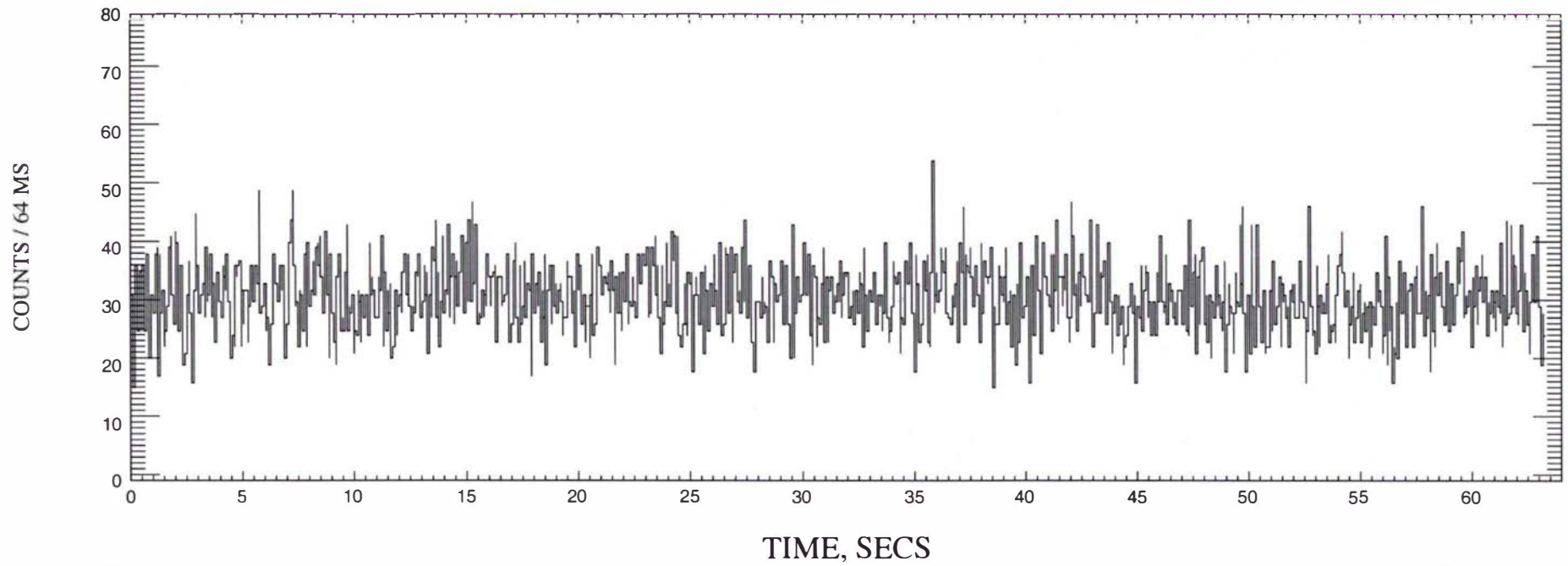


TIME, SECS

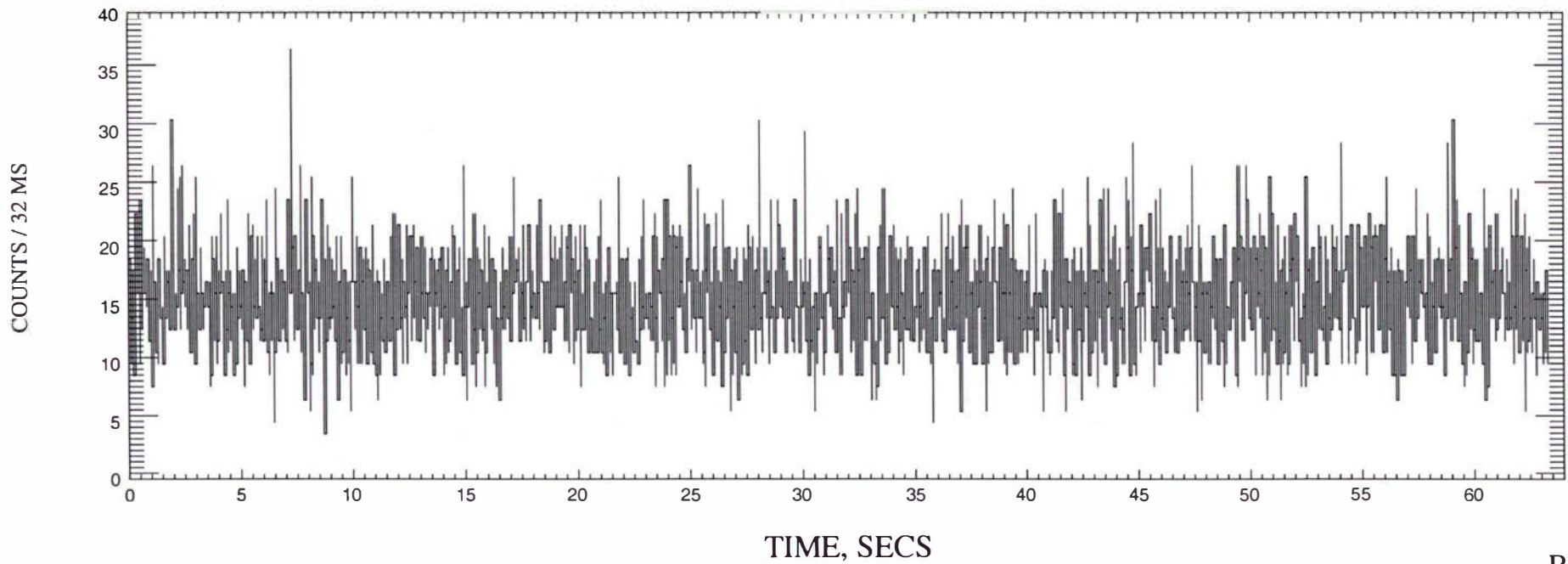
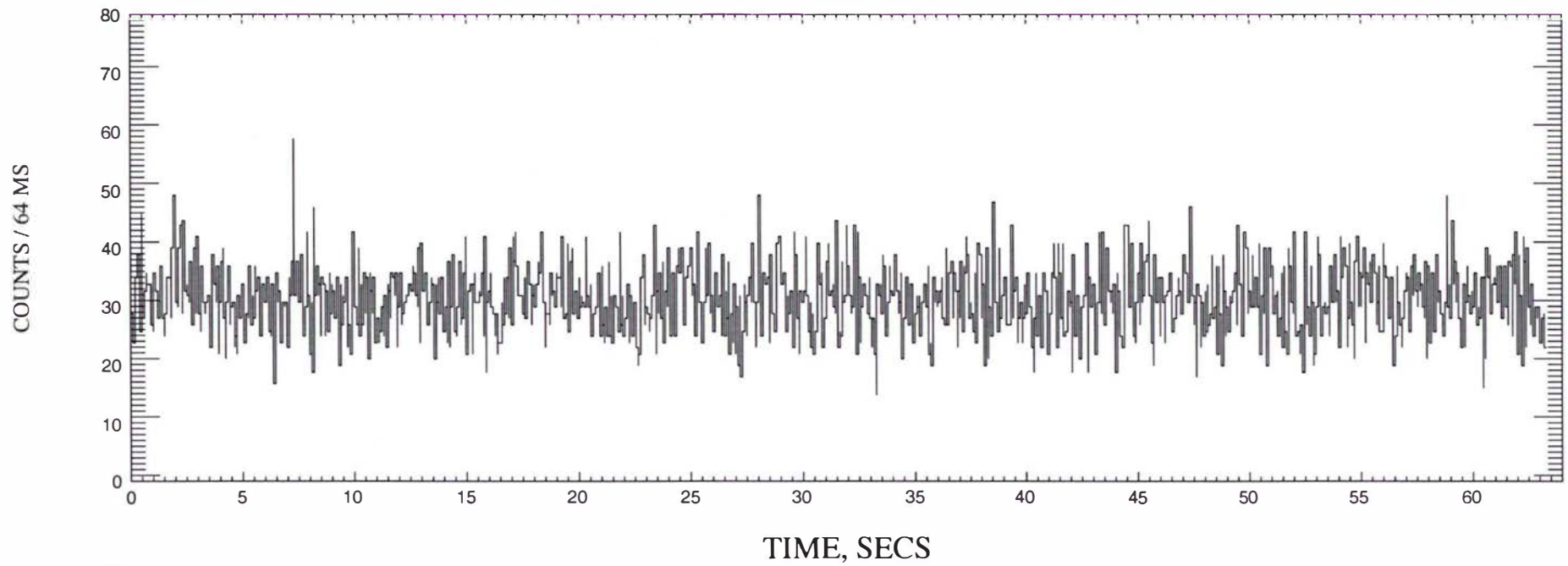


TIME, SECS

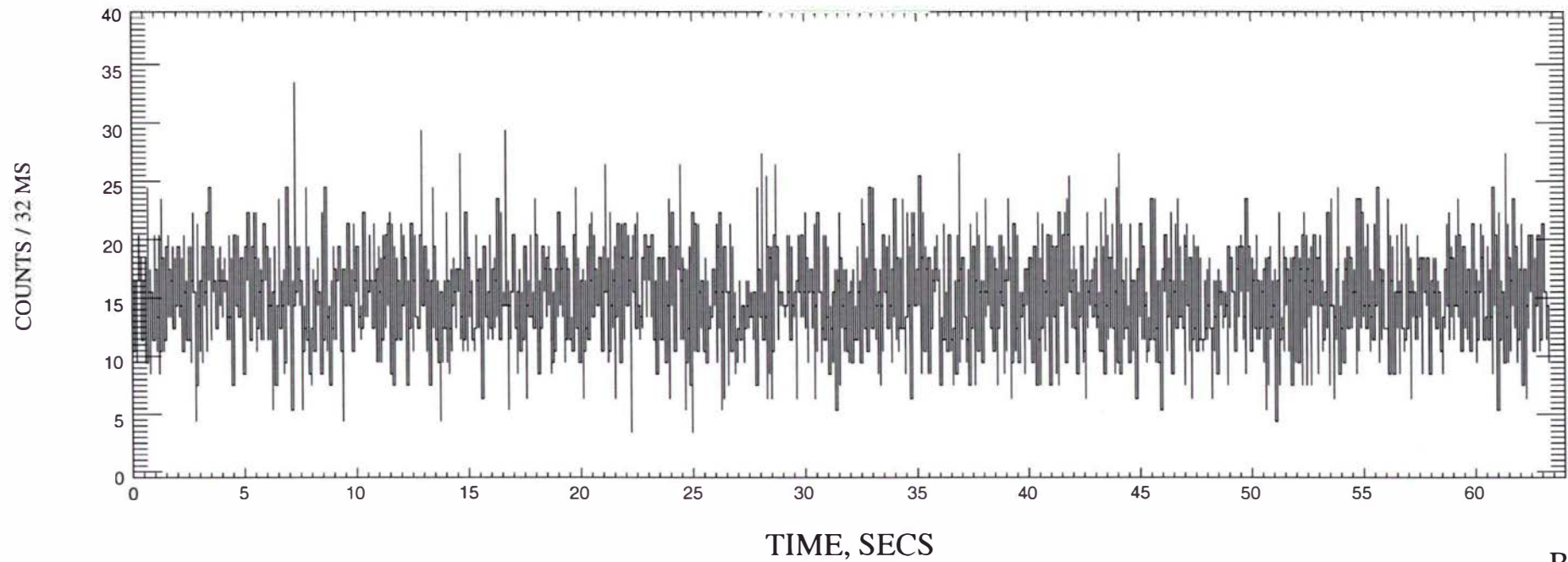
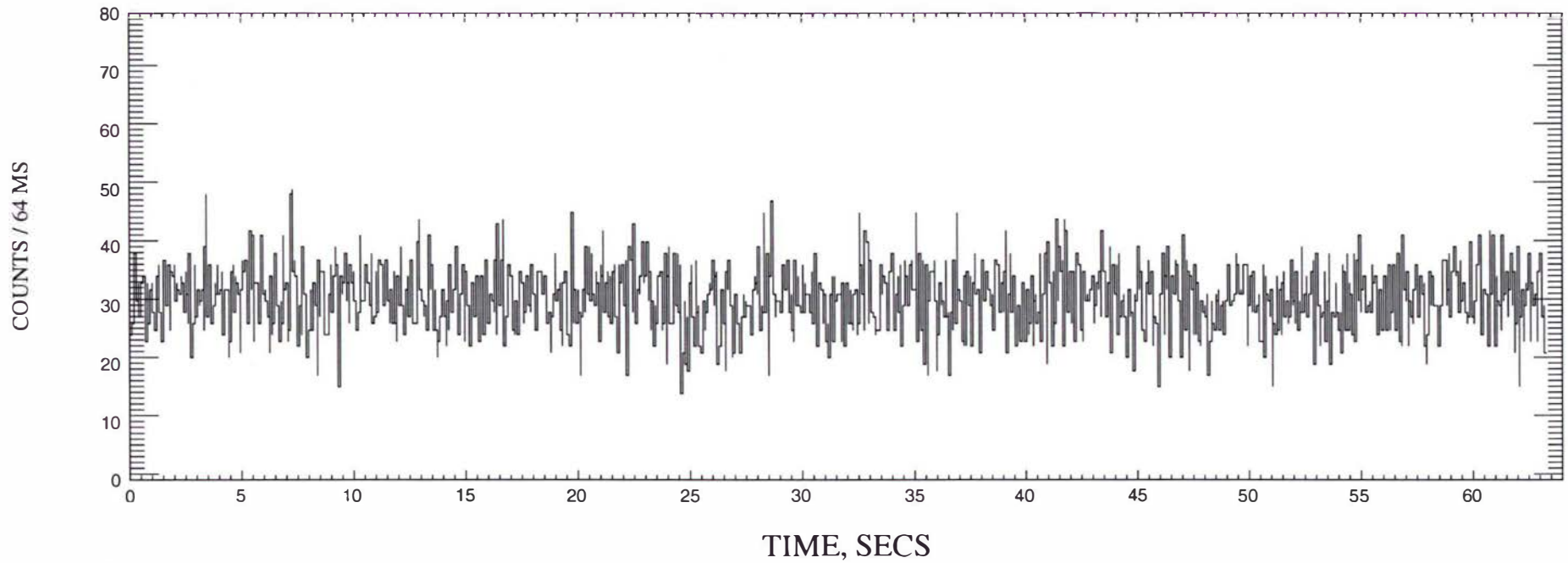
Burst Counter 1 at UT=13.145302272373 h=47323.088 s 13:08:43.088



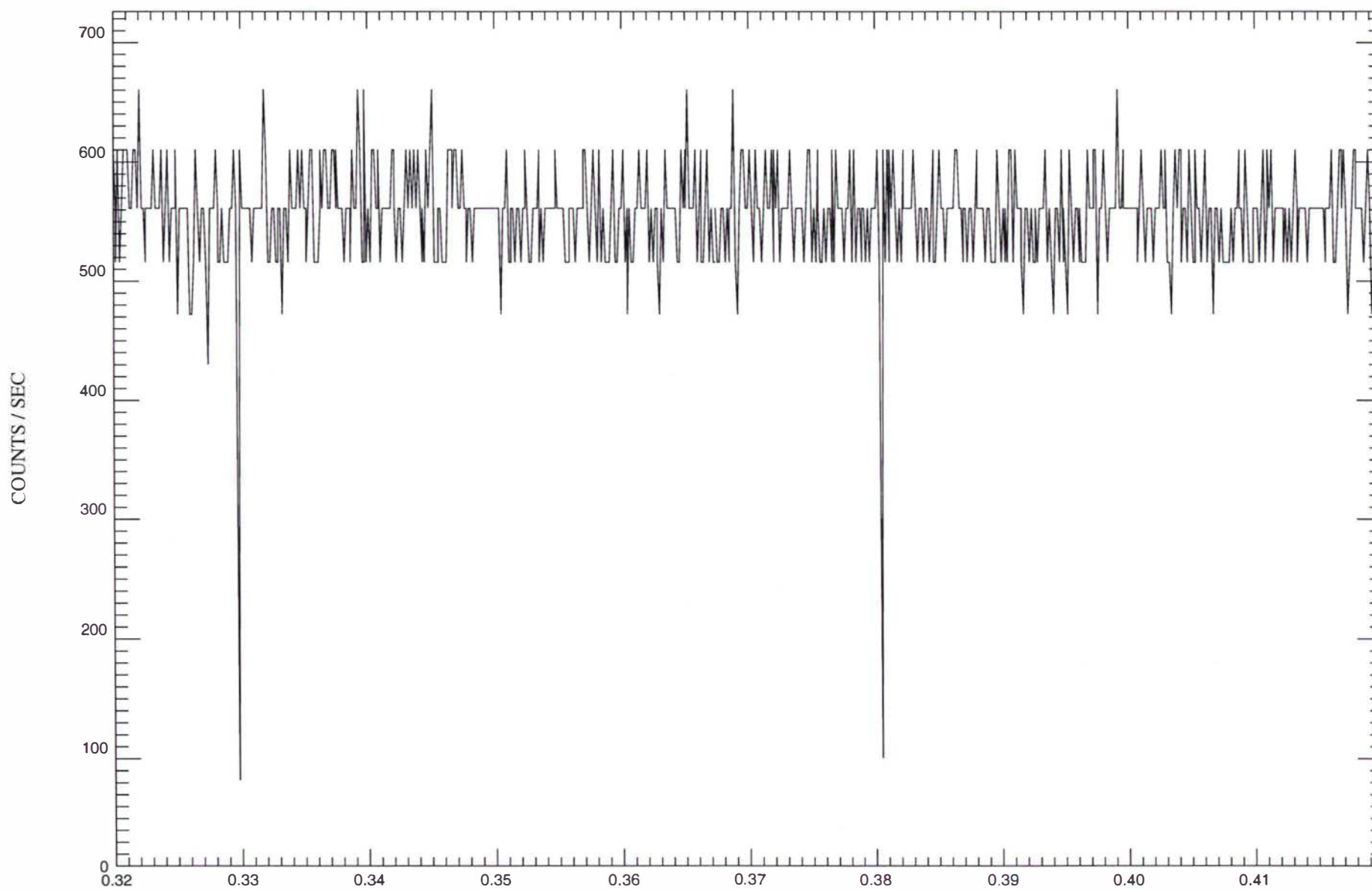
Burst Counter 2 at UT=16.062383219401 h=57824.580 s 16:03:44.580



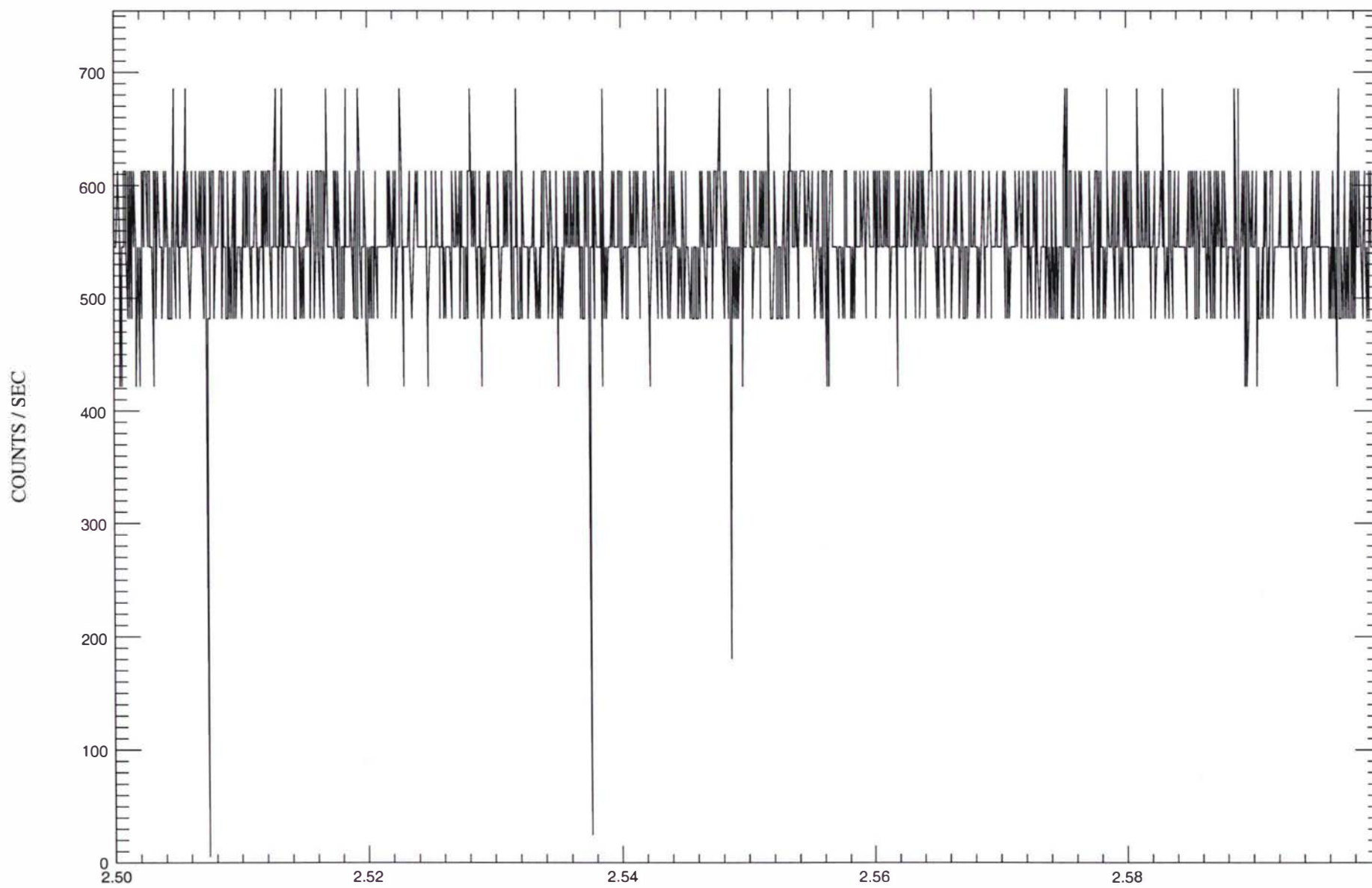
Burst Counter 3 at UT=18.931159773933 h=68152.175 s 18:55:52.175



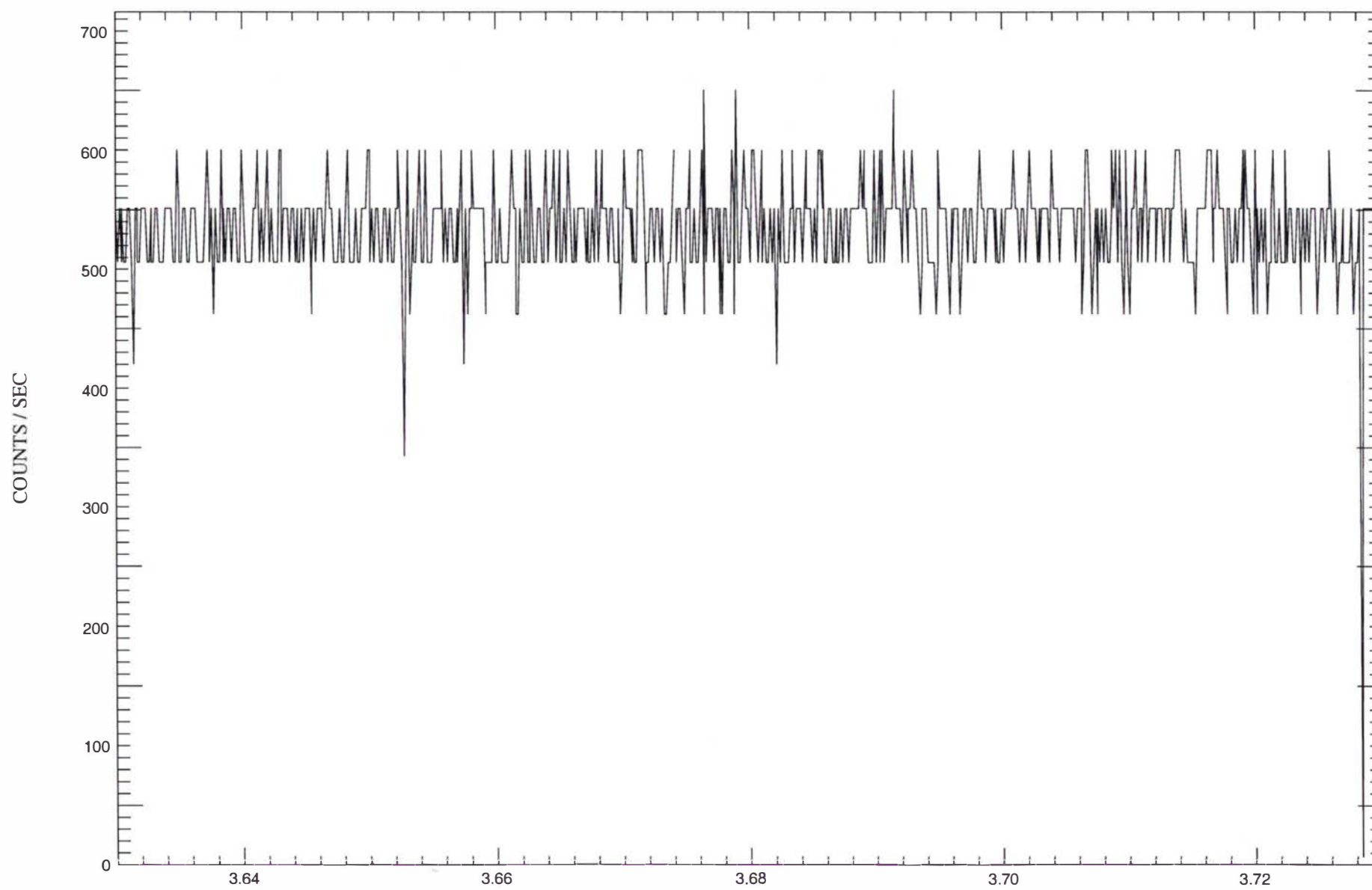
CALIBRATION DATA INCLUDED



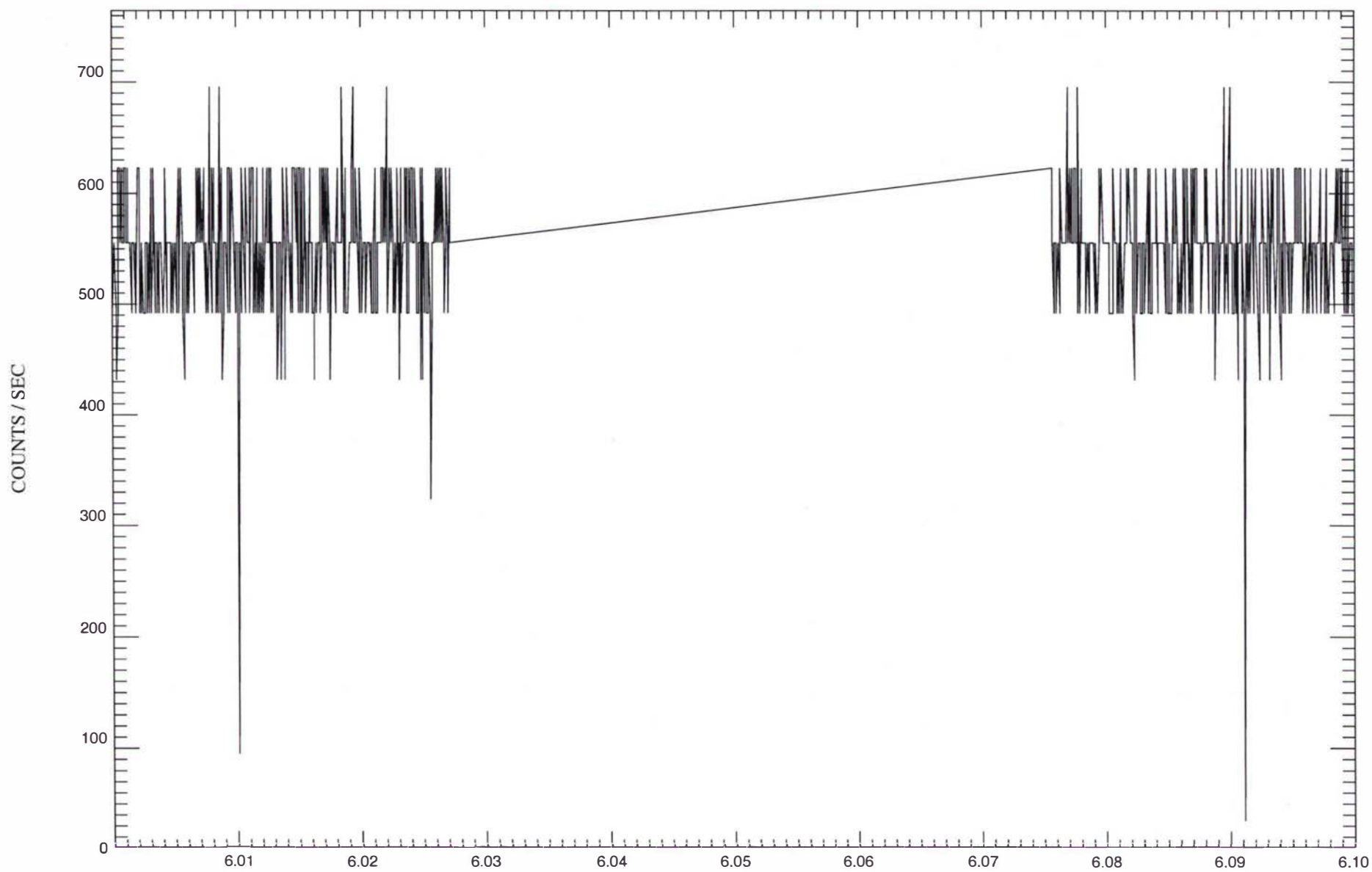
CALIBRATION DATA INCLUDED



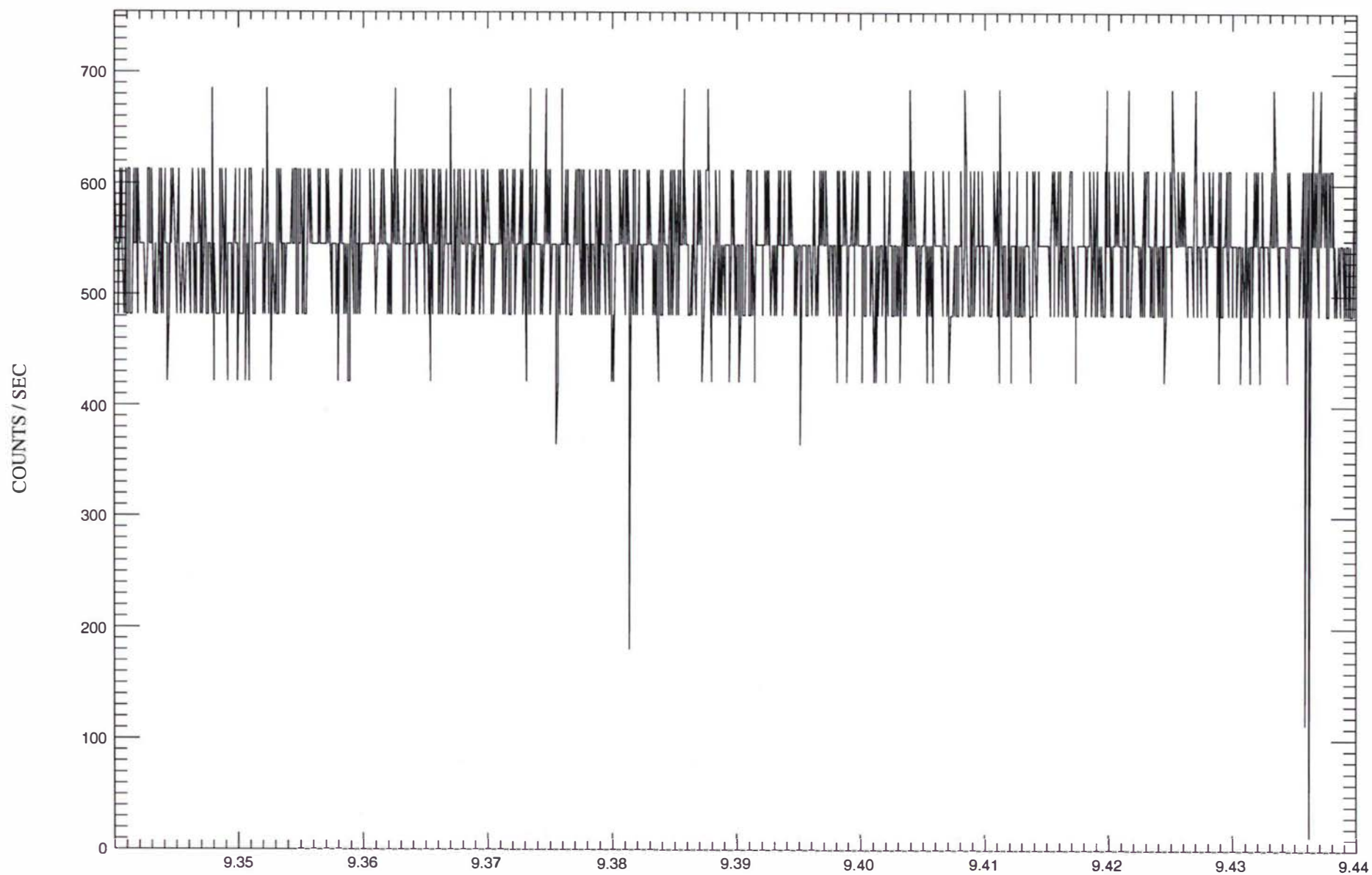
CALIBRATION DATA INCLUDED



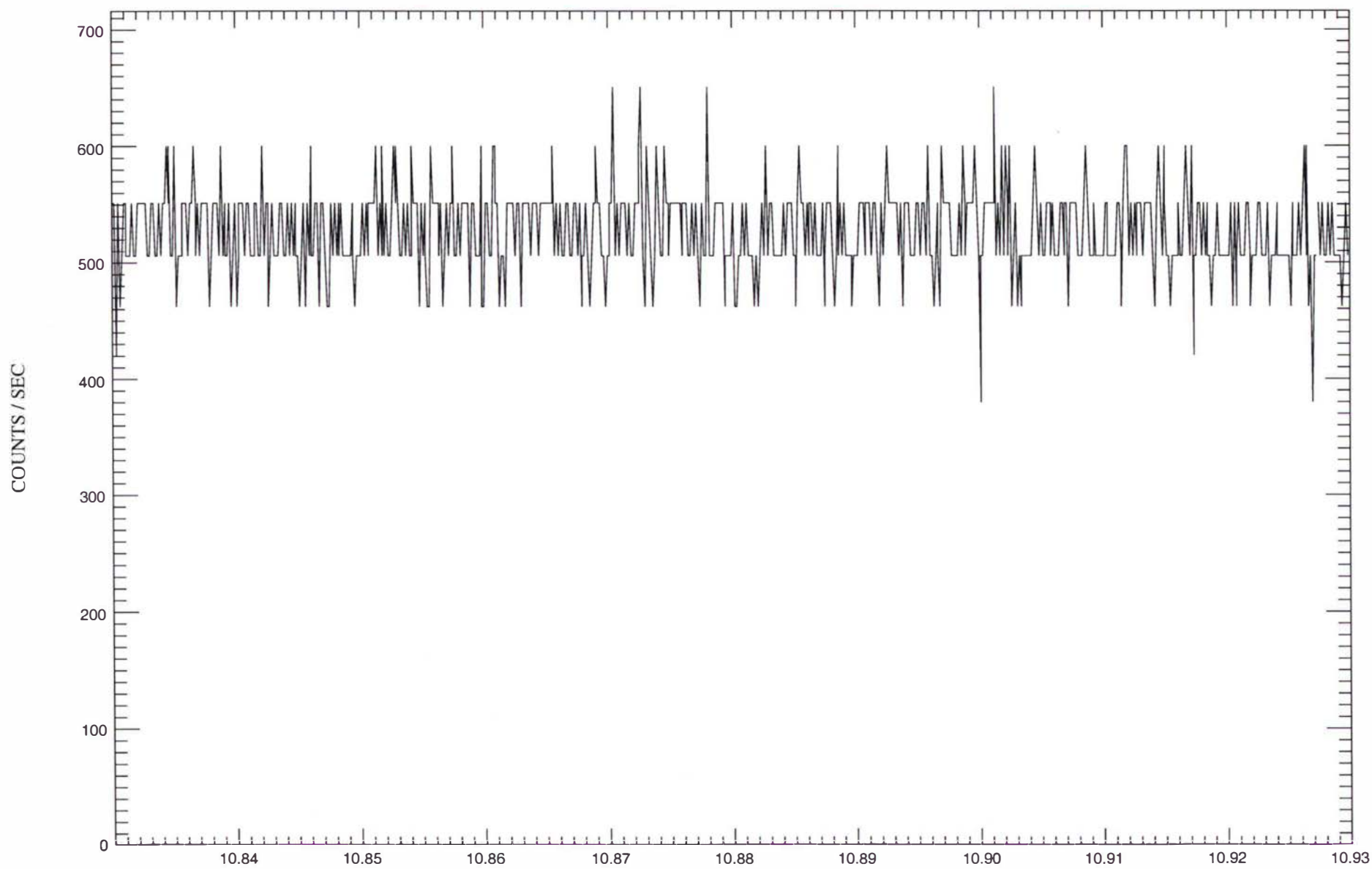
CALIBRATION DATA INCLUDED



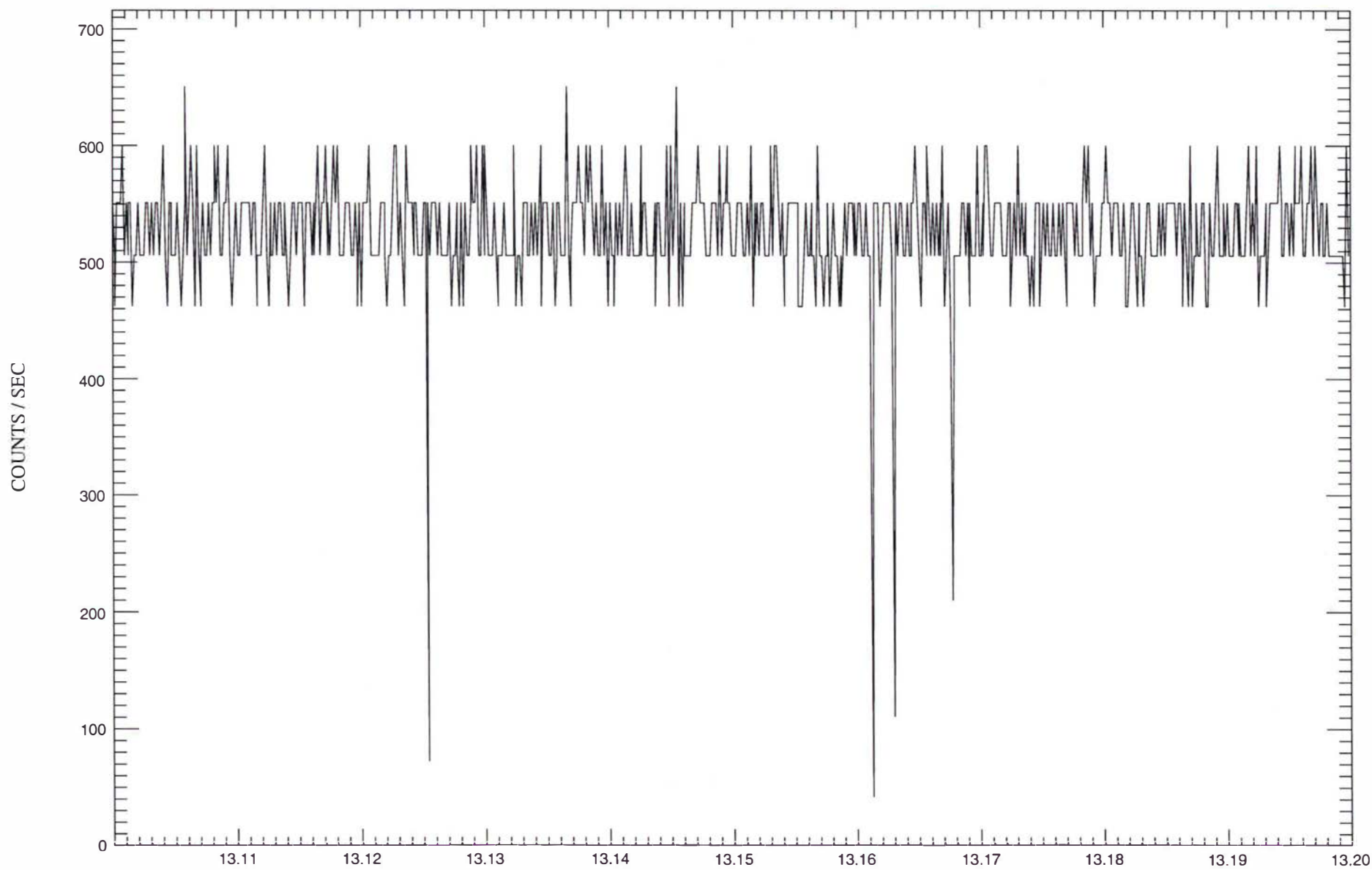
CALIBRATION DATA INCLUDED



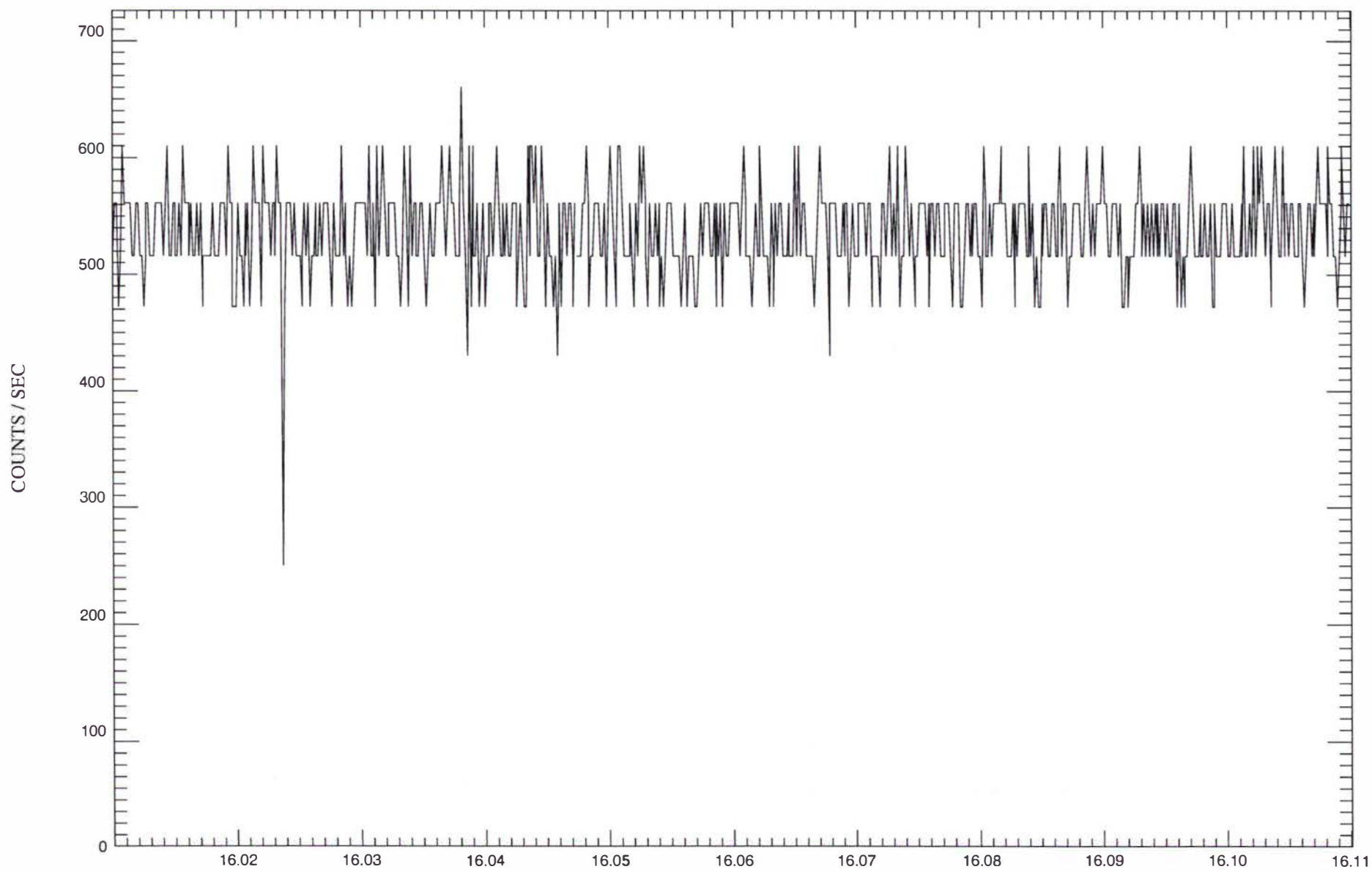
CALIBRATION DATA INCLUDED



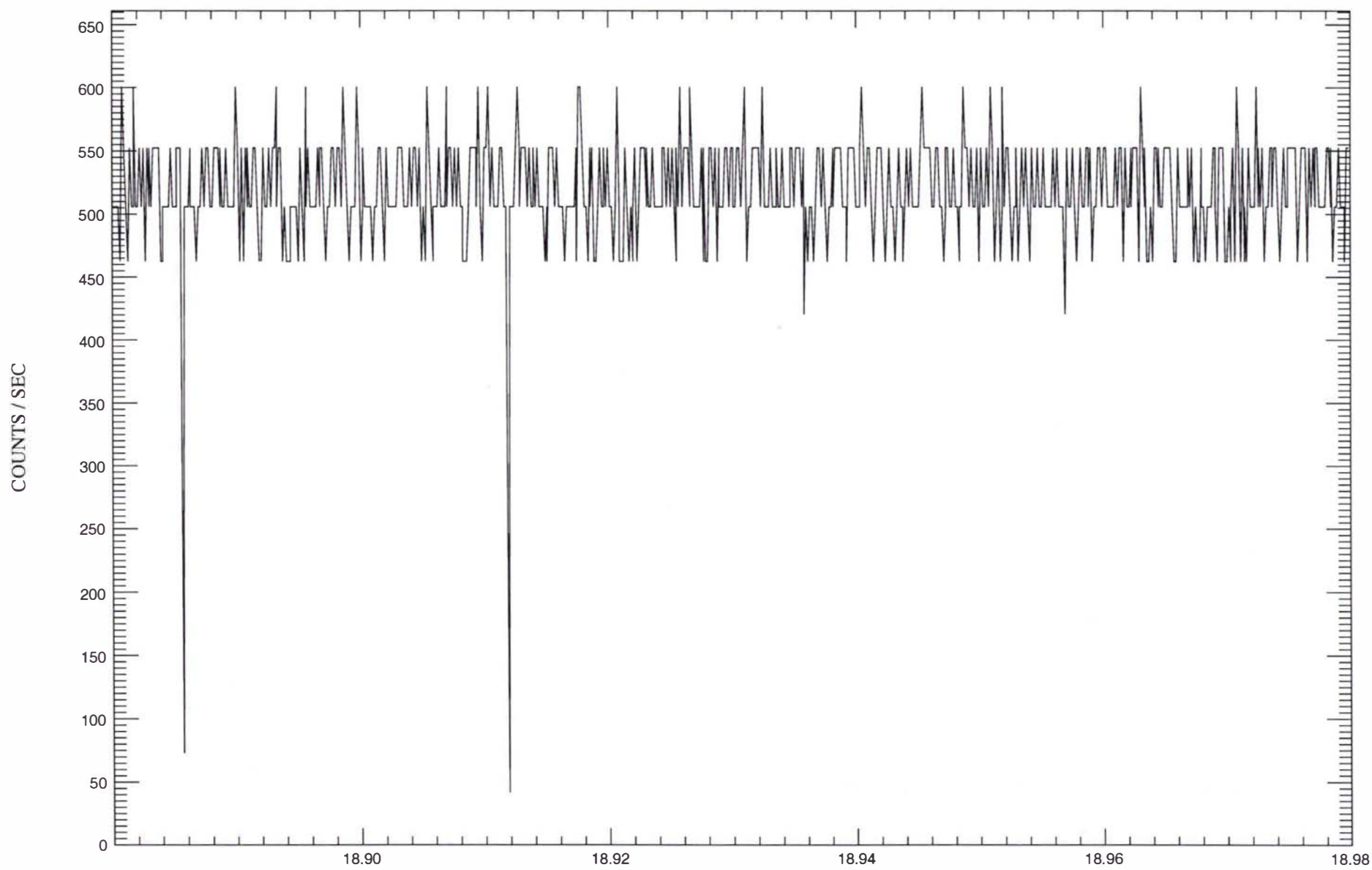
CALIBRATION DATA INCLUDED

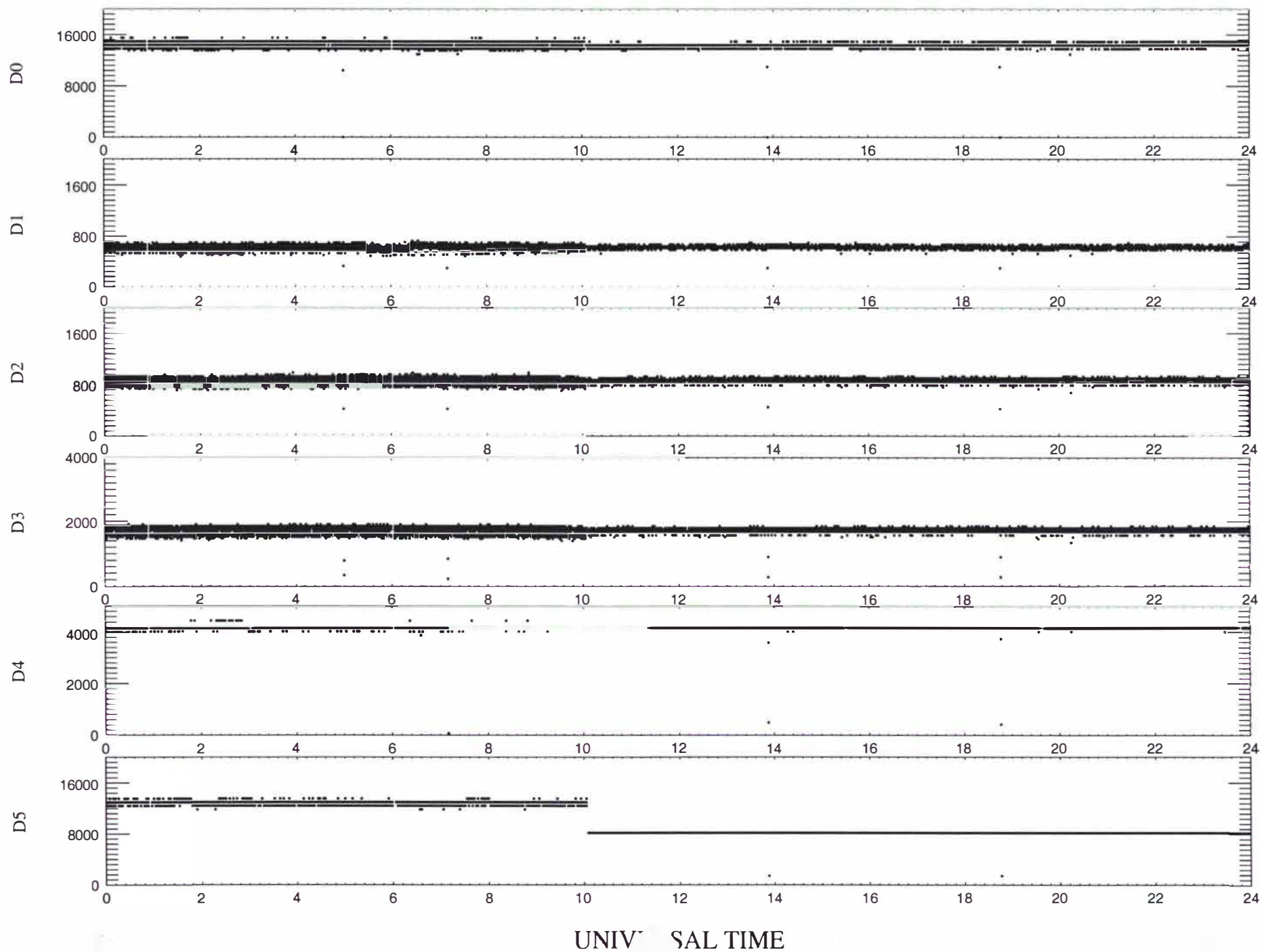


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





From PETERSON@fender.msfc.nasa.gov Mon Jun 7 12:02:58 1999

From: PETERSON@fender.msfc.nasa.gov

Date: Mon, 7 Jun 1999 14:03:22 -0500 (CDT)

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, dband@ucsd.edu, dgruber@ucsd.edu,
jmattes@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7600

TIME: TJD=1334 SECONDS=29683

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=161.9 AZIMUTH=321.7 ERROR=1.668 DEGREES

COMMENTS:

GOES C1.7, OPTICAL SF. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 45 S, STARTS
AT APPROX. T-15 S, MAX AT APPROX. T+3 S. NOT VISIBLE ABOVE 100 KEV.

From PETERSON@fender.msfc.nasa.gov Mon Jun 7 12:12:02 1999
Return-Path: <PETERSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA00867; Mon, 7 Jun 1999 12:12:02 -0700
From: PETERSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA14151
for <khurley@sunspot.ssl.berkeley.edu>; Mon, 7 Jun 1999 12:08:38 -0700 (PDT)
Date: Mon, 7 Jun 1999 14:12:40 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990607141240.20811576@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7599
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7599
EVENT OF 1999 JUN 5 DAY OF YEAR=156
EVENT CROSSING TIME AT BATSE : 1830. S. OR 00:30:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 86.000 35.000
BATSE PEAK COUNTING RATE: 9500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 5/ 6/ 99 IS:
RA= 144.441 DEC= -6.883 DIST= 5.020 AU
BATSE-ULYSSES DISTANCE = 751004695. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=110.91 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -894.04 SECS.
CROSSING TIME AT ULYSSES IS 936. S. OR 00:15:35 +/- 442.70 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 5/ 6/ 99 IS:
RA= 202.513 DEC= -9.818 DIST= 0.673 AU
MARS-BATSE DISTANCE = 100640592. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.73 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 153.79 SECS.
CROSSING TIME AT MARS IS 1984. S. OR 00:33:03 +/- 54.14 SECONDS

BATSE BURST TRIGGER

NO.: 7599

TIME: TJD=1334 SECONDS= 1830

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

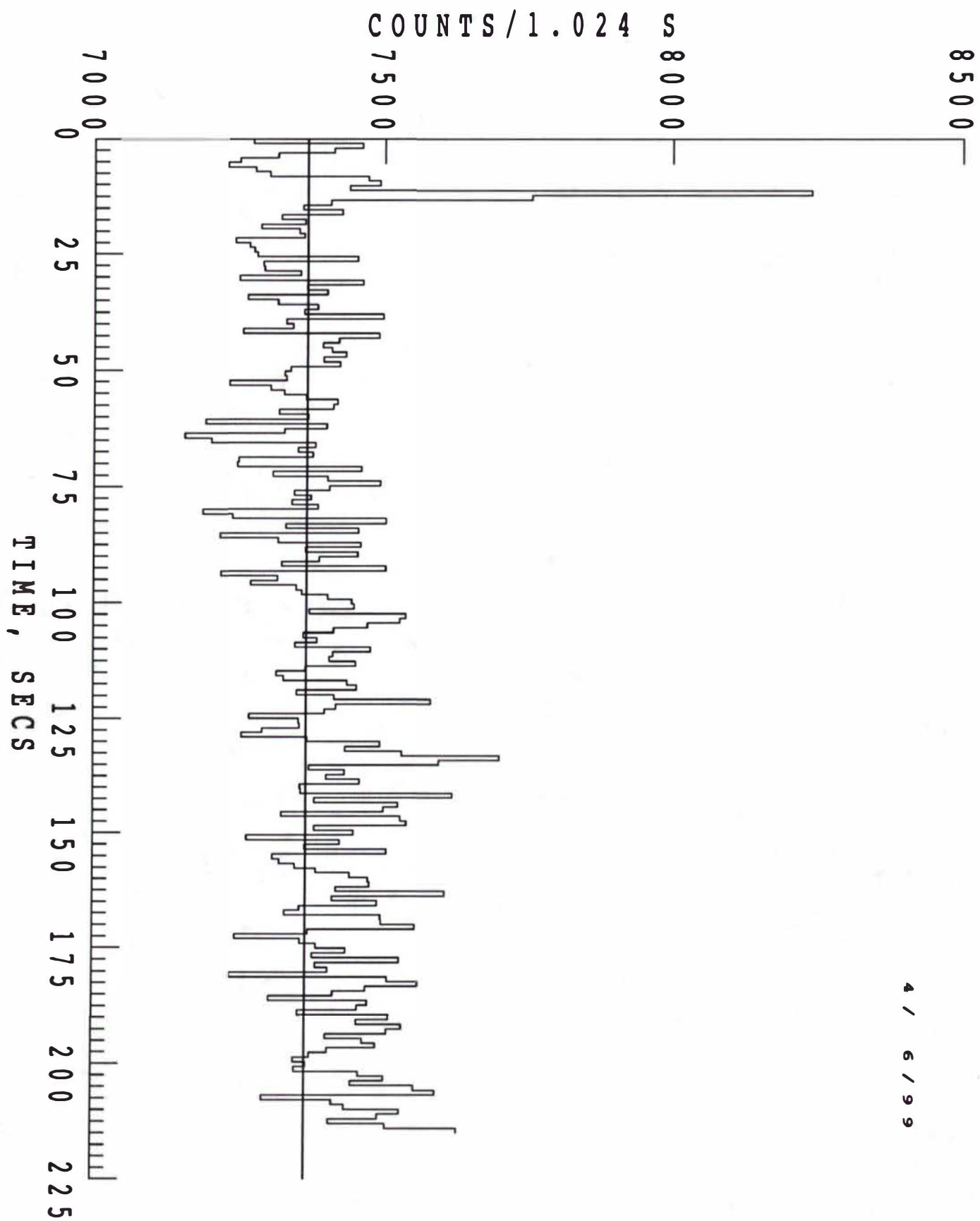
LOCATION: ZENITH=151.0 AZIMUTH=291.3 ERROR=4.6 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR, APPROX. 1.75 S, STARTS AT APPROX.
T-1.1 S, MAX AT APPROX. T+0.1 S. VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7599	990605	11334	01830	9500	086	+35	1.75

BACODINE 7599 05/06/99 1818.361
25 - 100 keV



BATSE BURST# 7599

ULYSSES RT

7 / 6 / 99

5 / 6 / 99 504.499 s

0.500 S INTERVALS REGROUPED BY 2

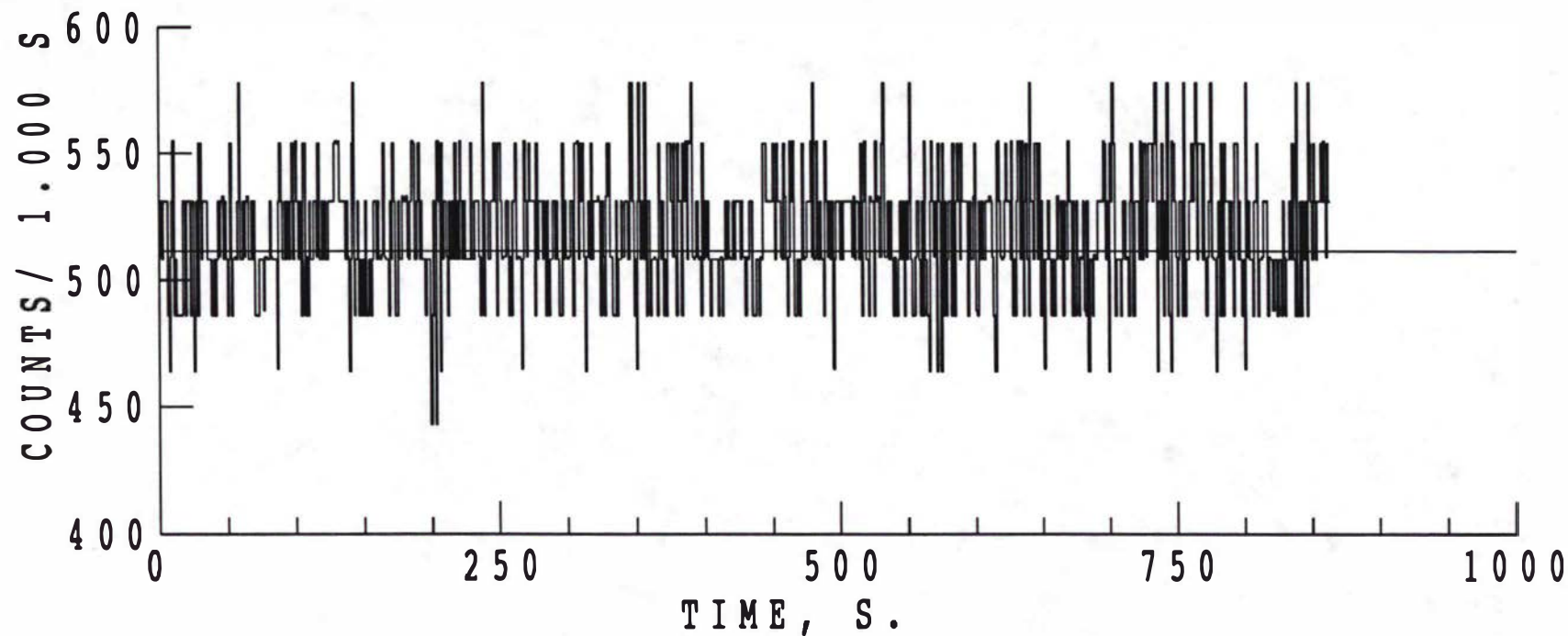
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



SAX GRBM
HUS DATA

ULYSSES RT

19 / 07 / 05

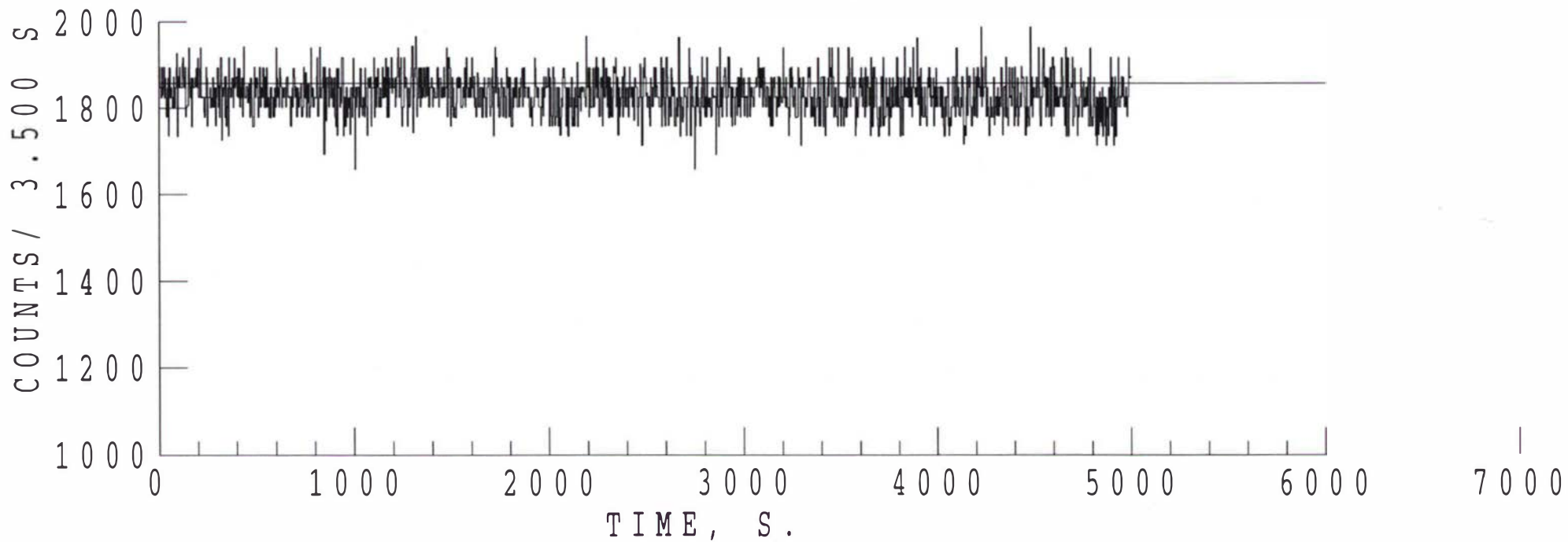
05 / 06 / 99 76608.273 s

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



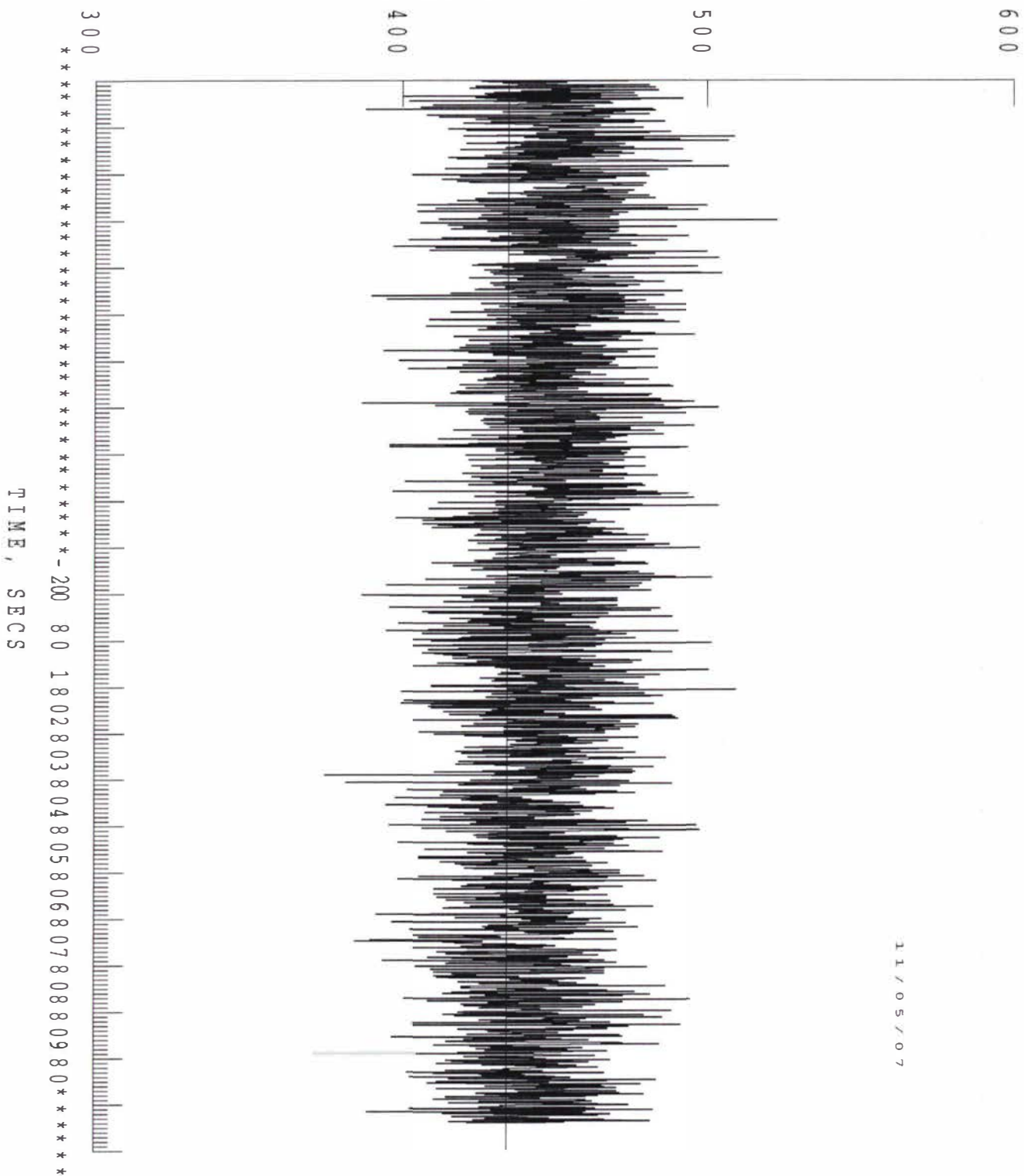
NEAR

05/06/99

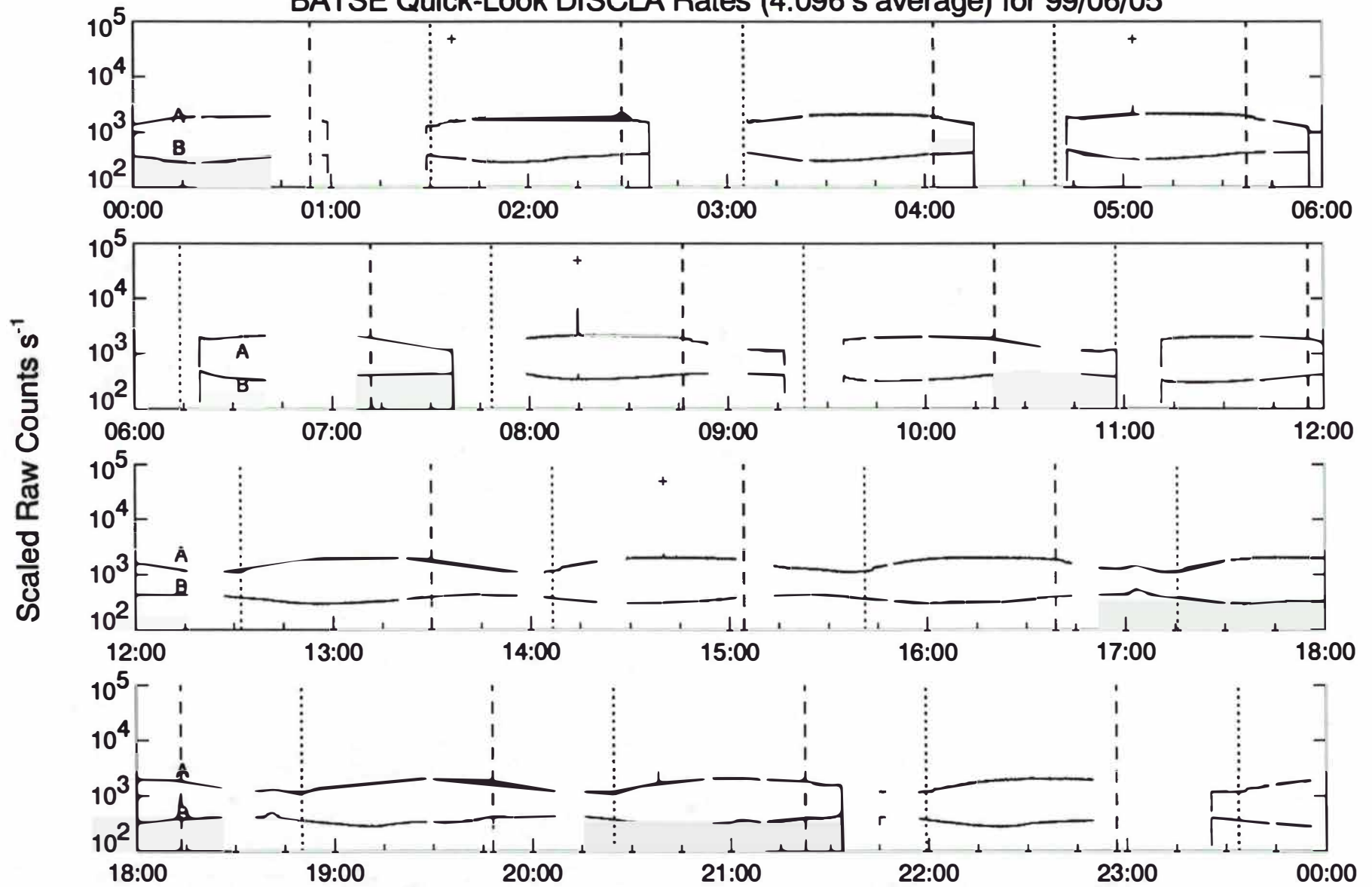
79116.332

100-1000 keV

COUNTS/1.000 S



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/05

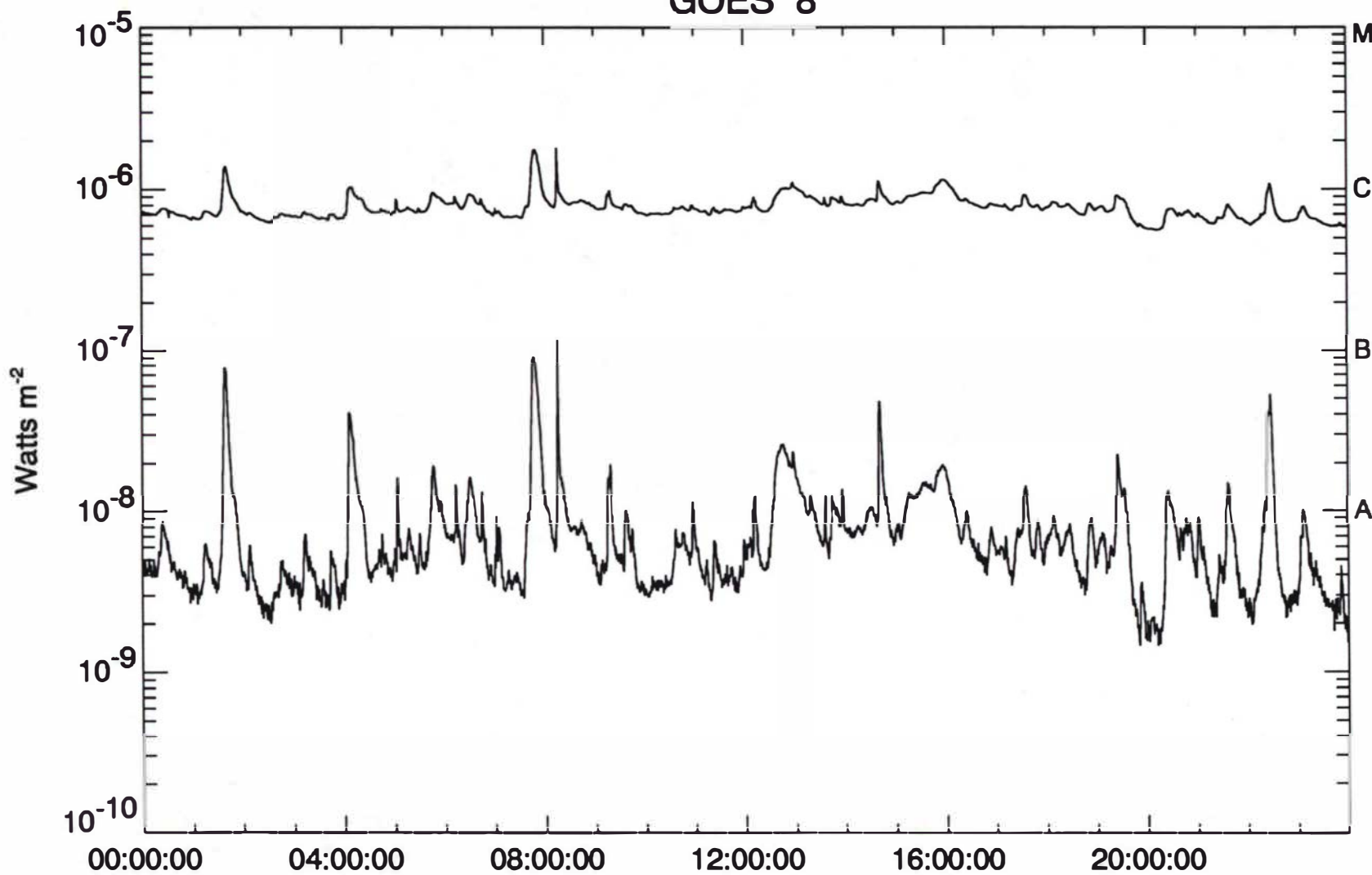


Current Time: 99/06/09, 1006 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8



Data Start: 99/06/05, 0000:00

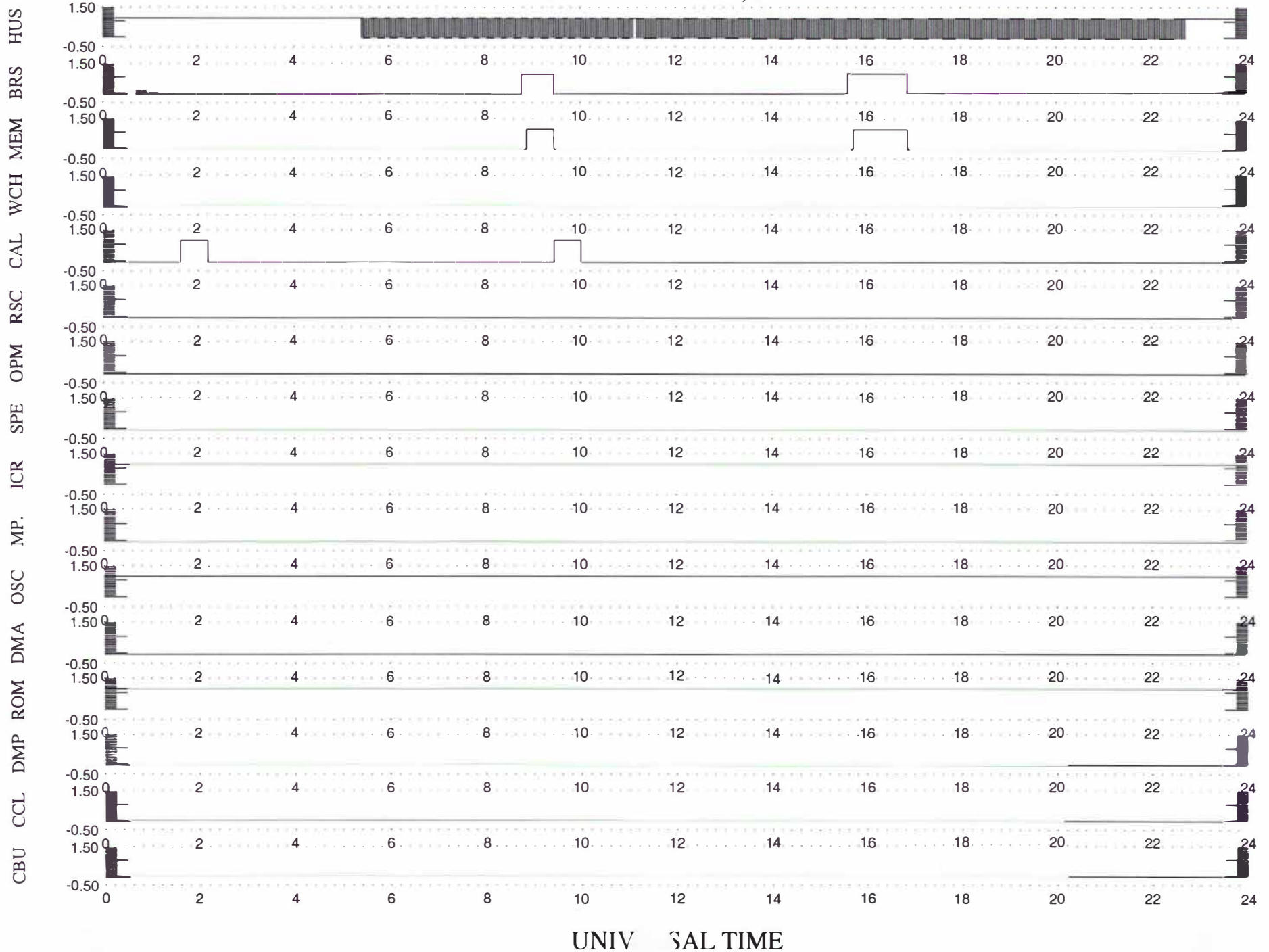
Plot created: 99/06/09, 1005

Channel

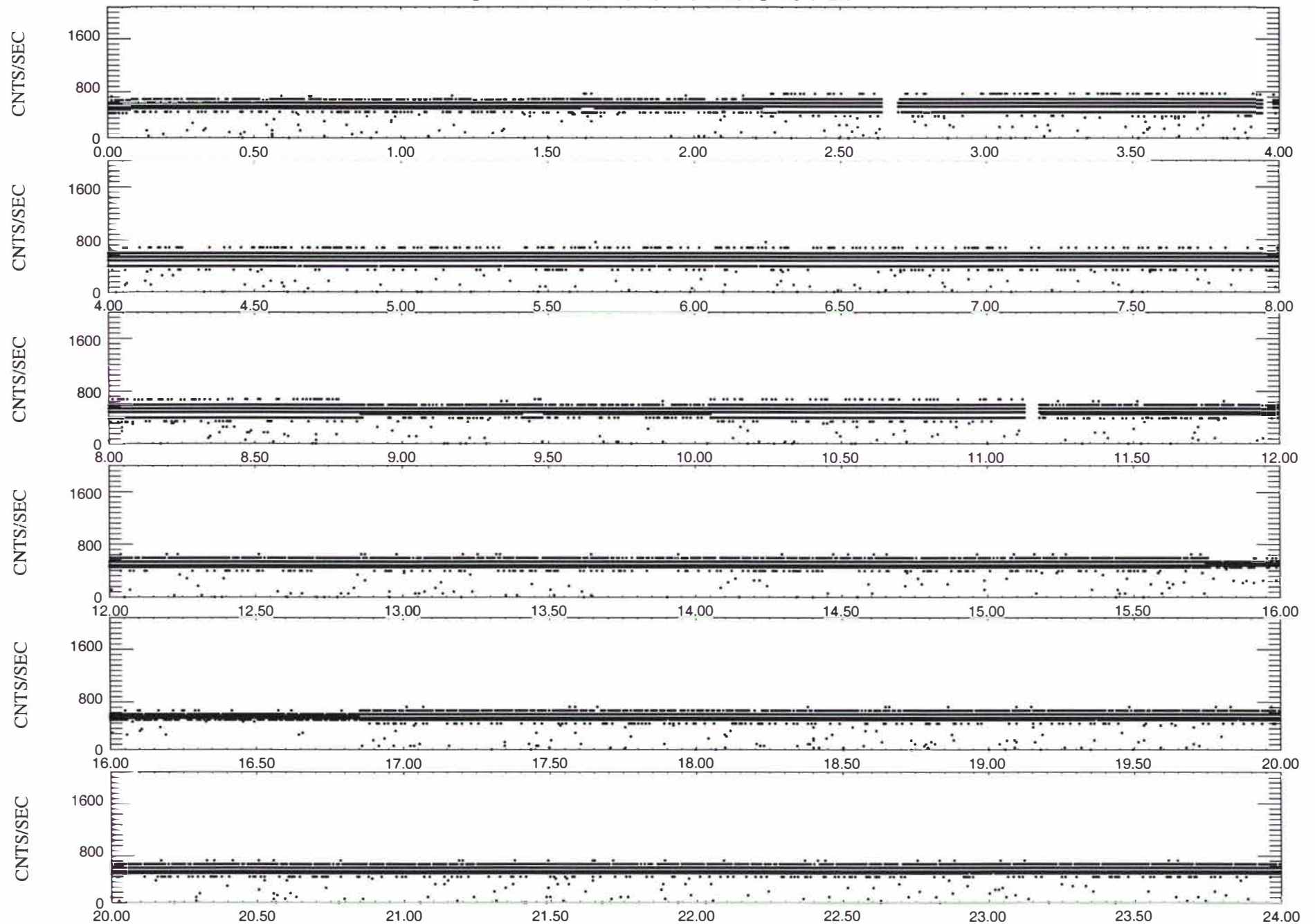
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

BURST NUMBER 4, 5

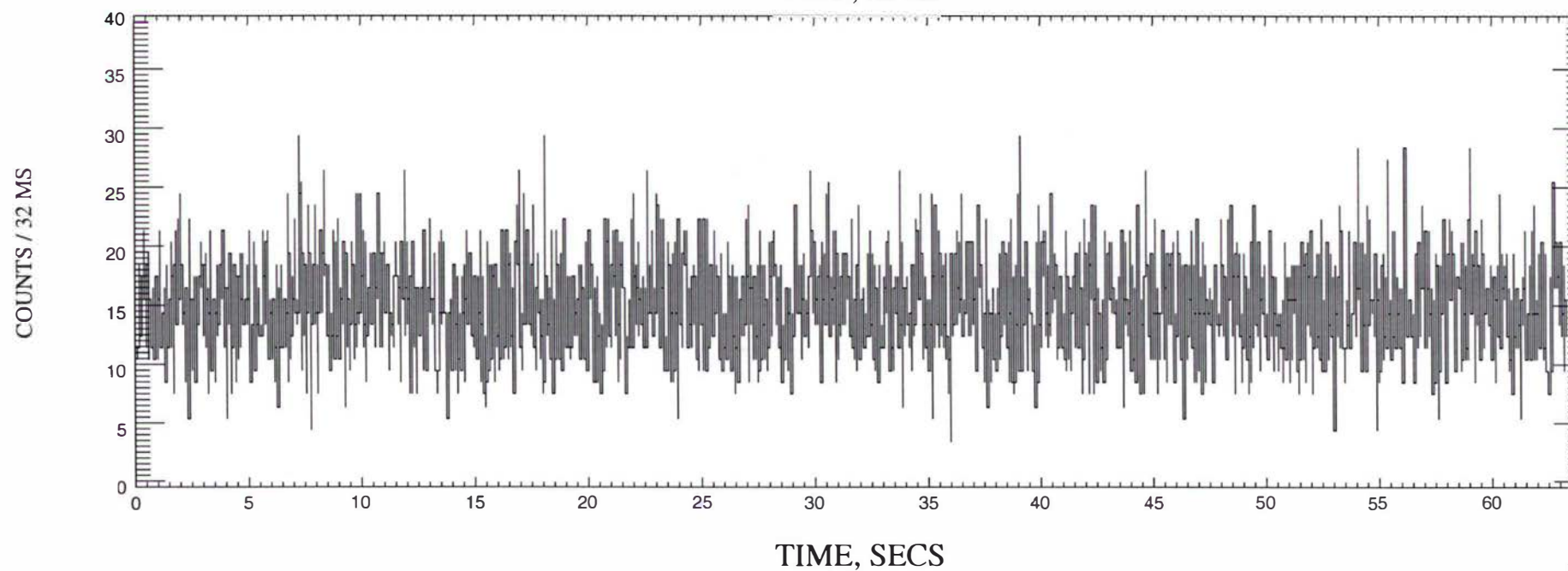
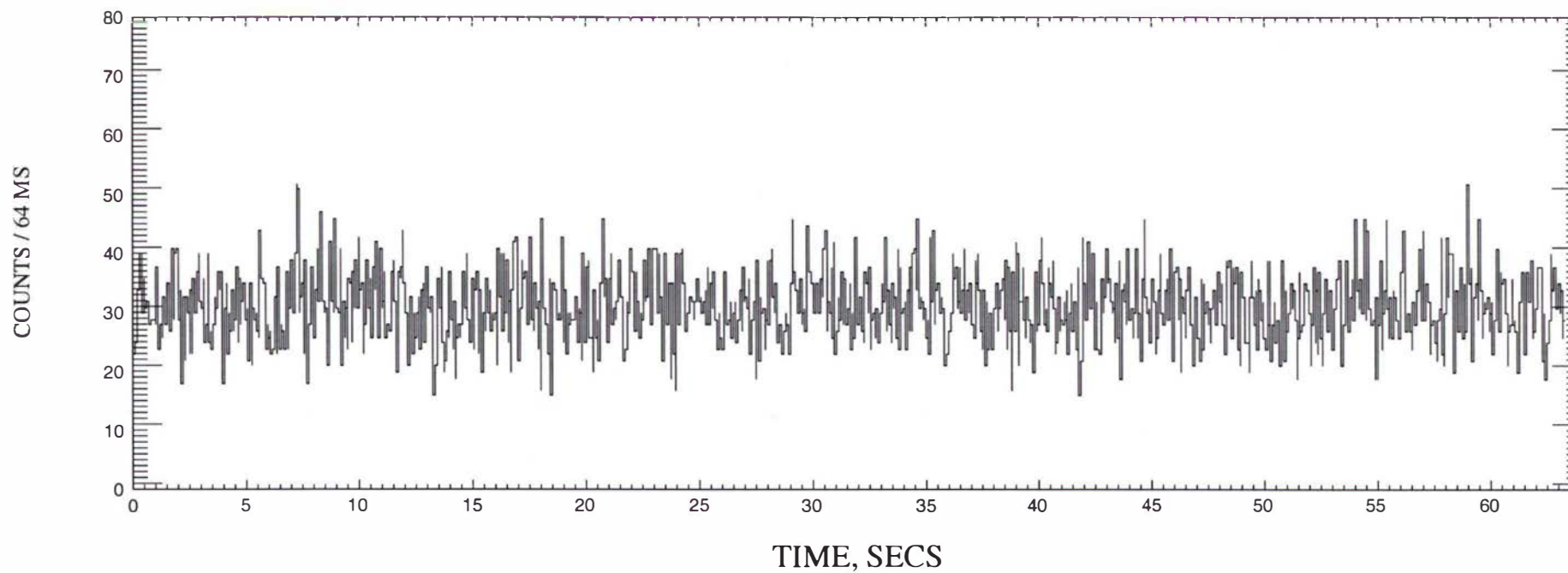


CALIBRATION DATA INCLUDED

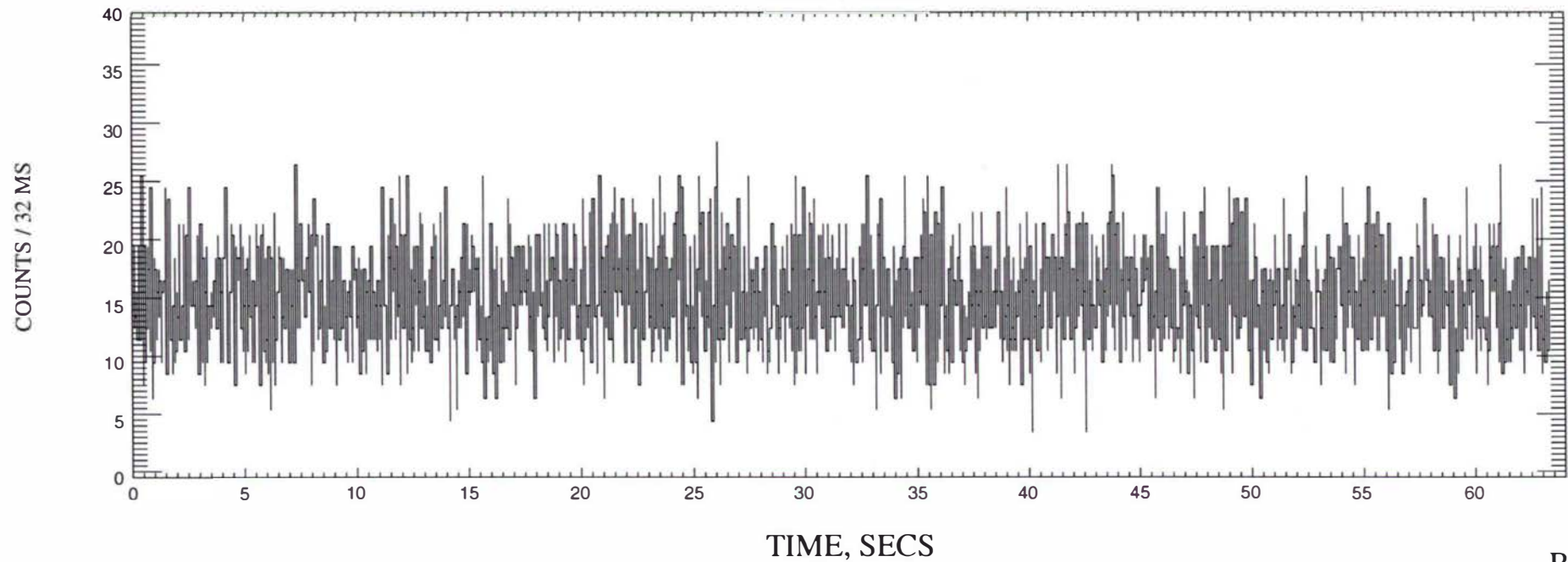
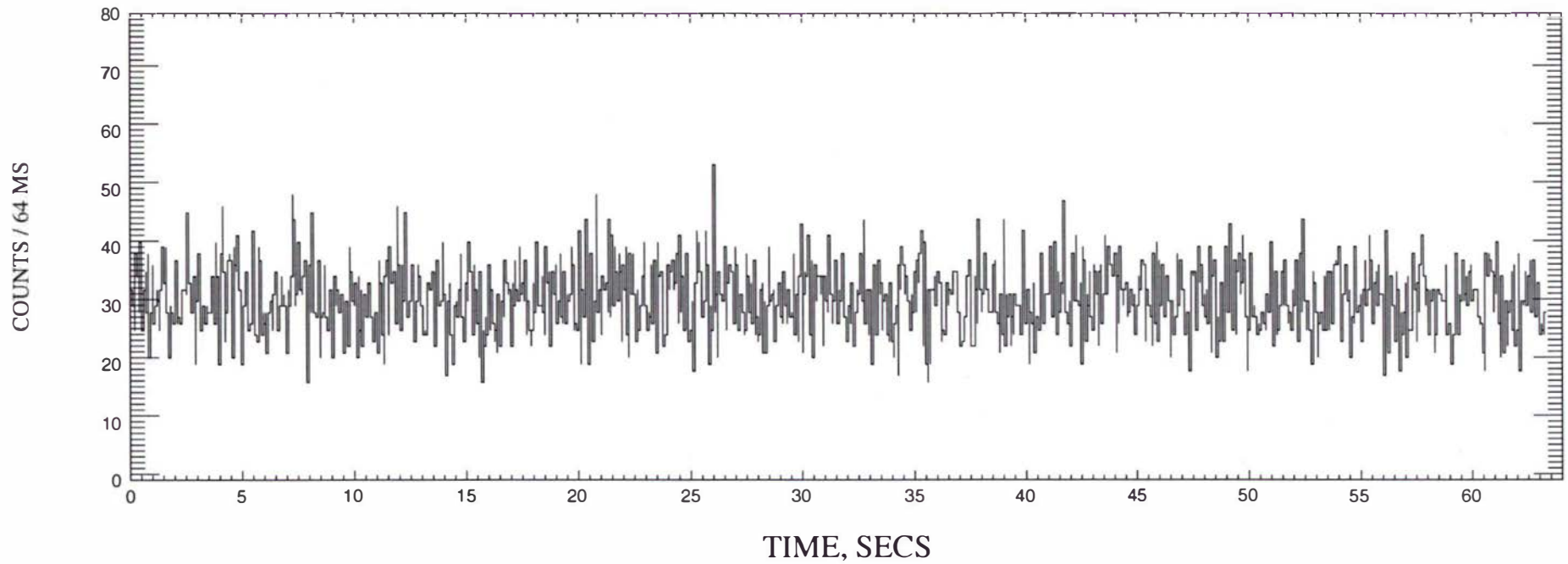


UNIVERSAL TIME

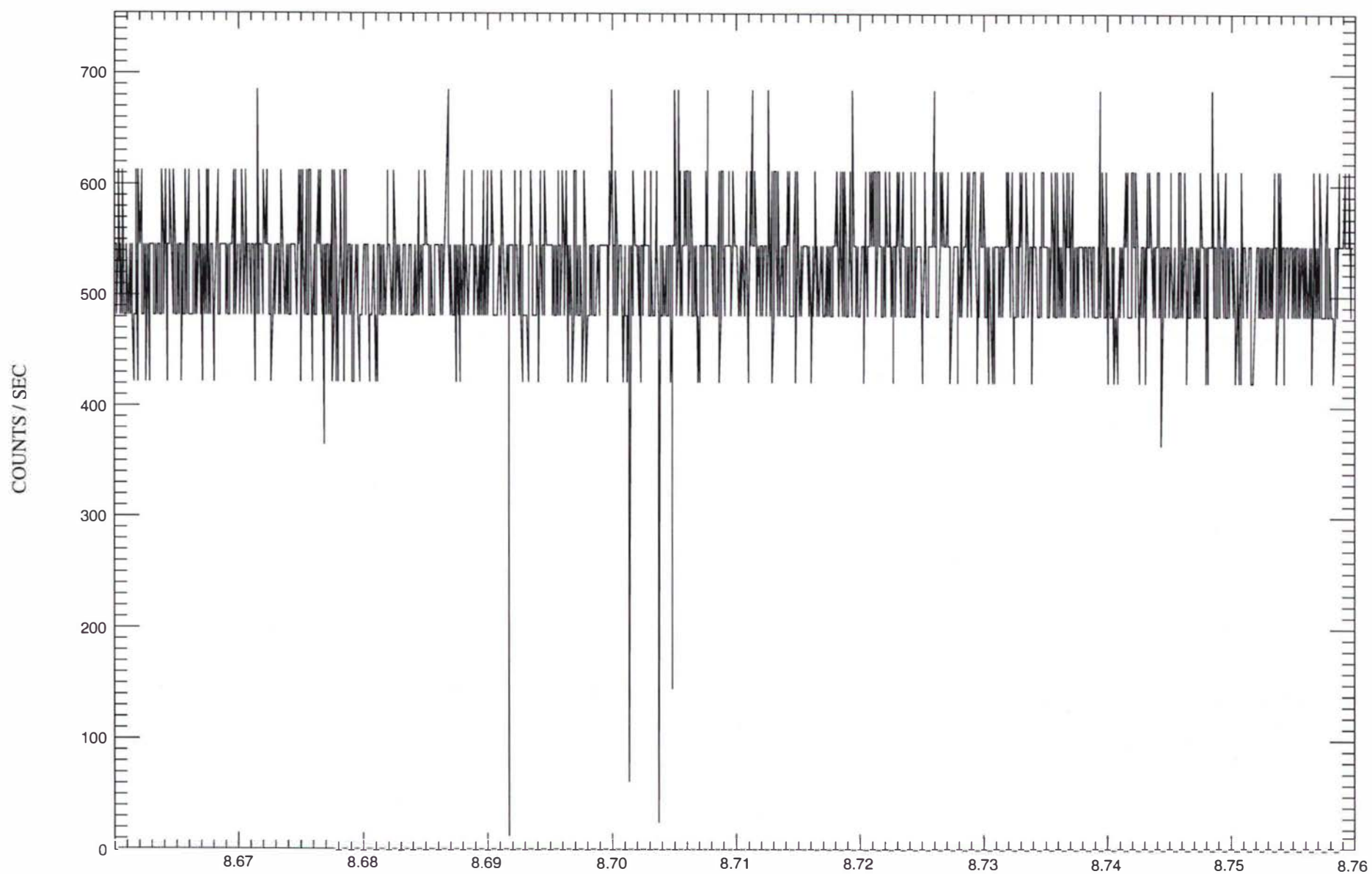
Burst Counter 4 at UT= 8.705189238654 h=31338.681 s 08:42:18.681



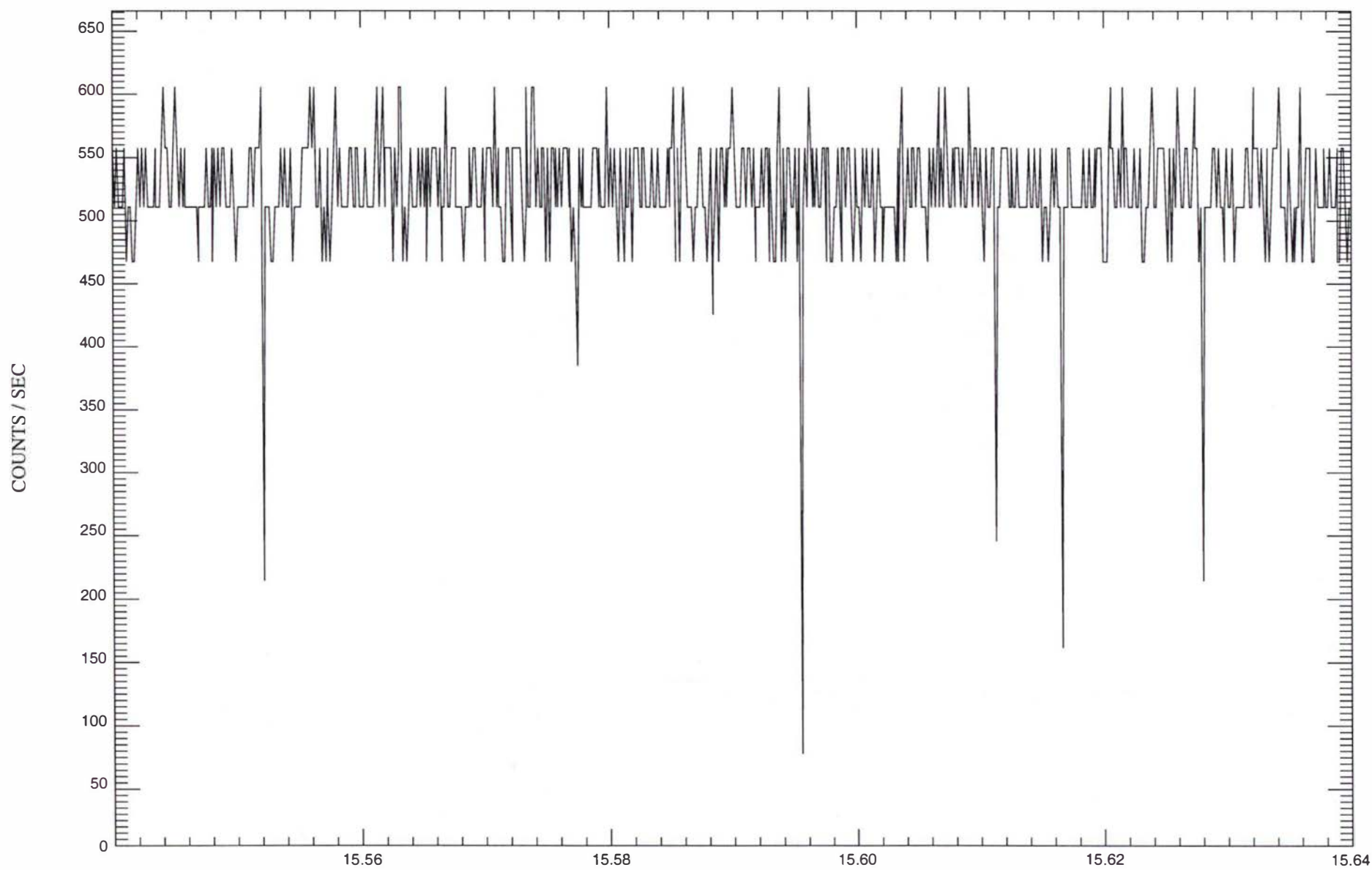
Burst Counter 5 at UT=15.586093148126 h=56109.935 s 15:35:09.935

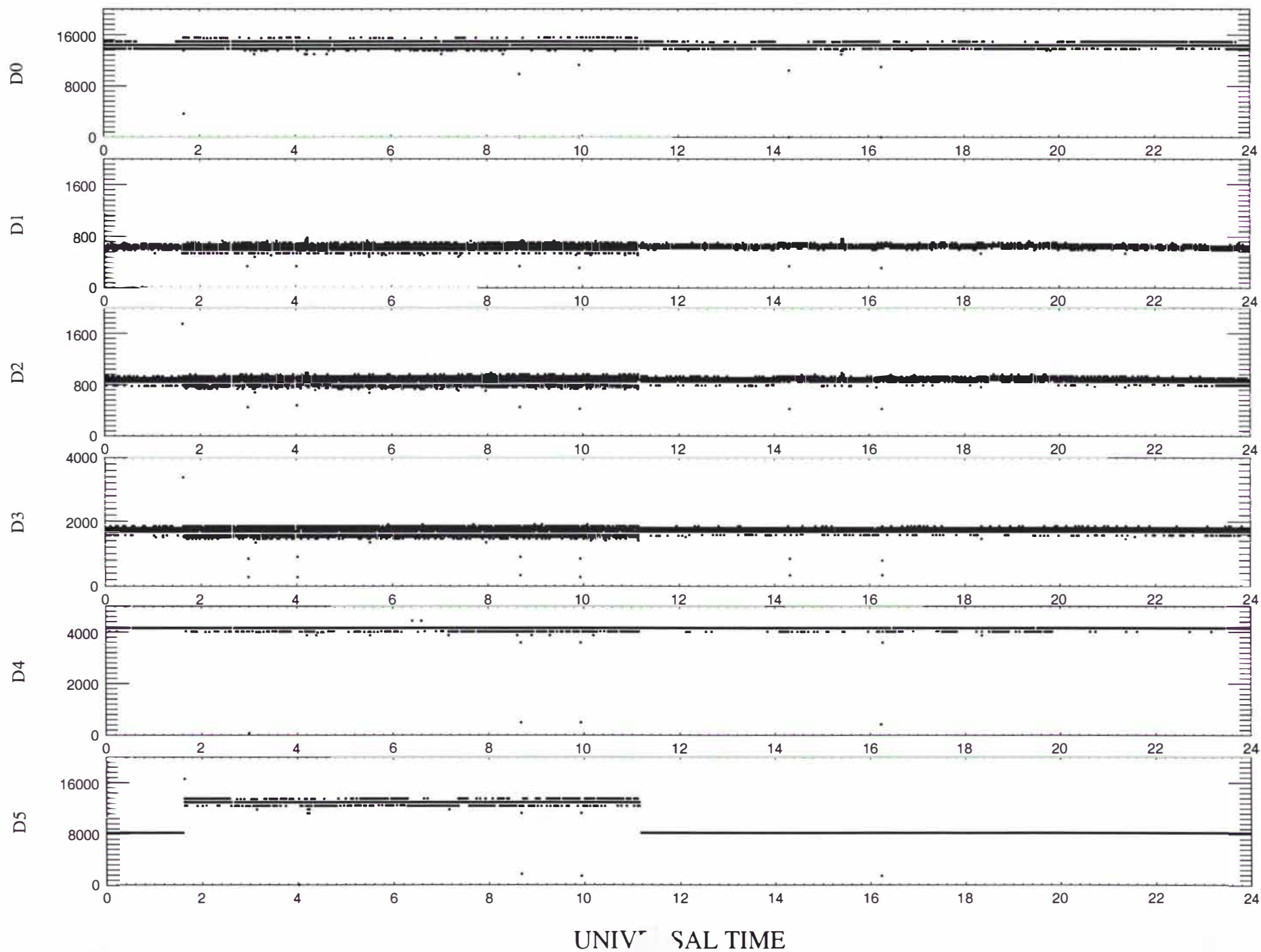


CALIBRATION DATA INCLUDED



CALIBRATION DATA INCLUDED





GRBM 19990606 03282

ULYSSES RT

16 / 05 / 07

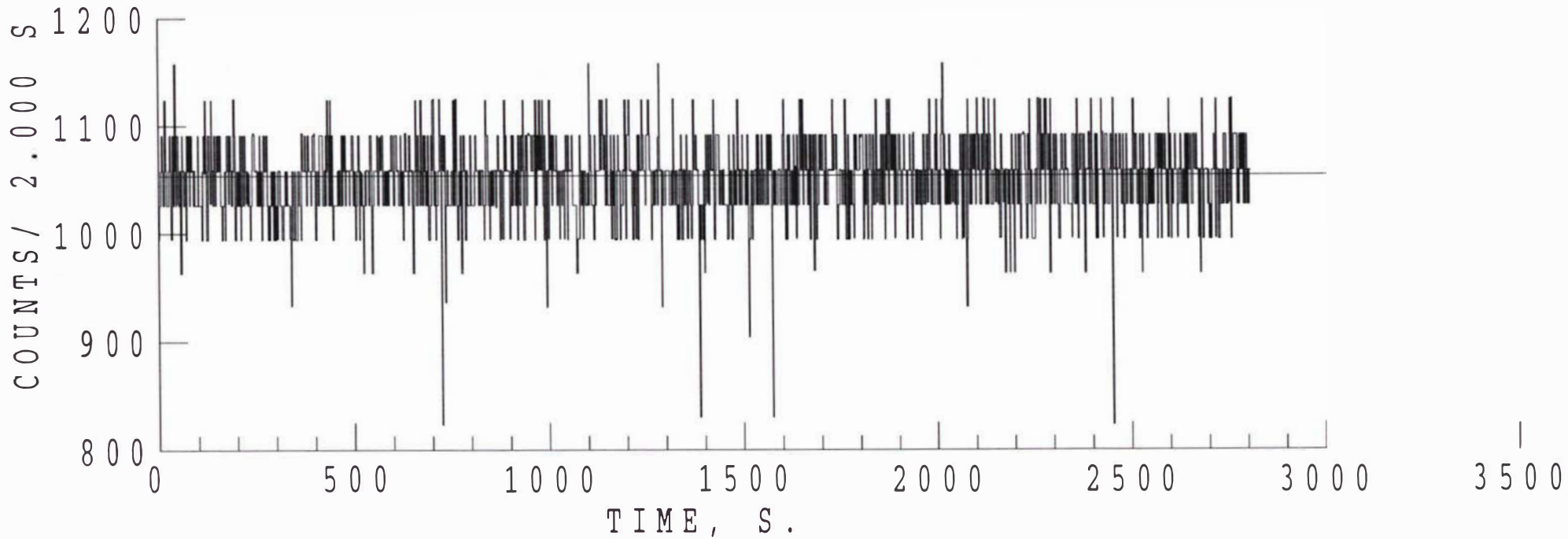
06/06/99 1872.886 s

1.000 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



NEAR

06/06/99 4328.329

100-1000 keV

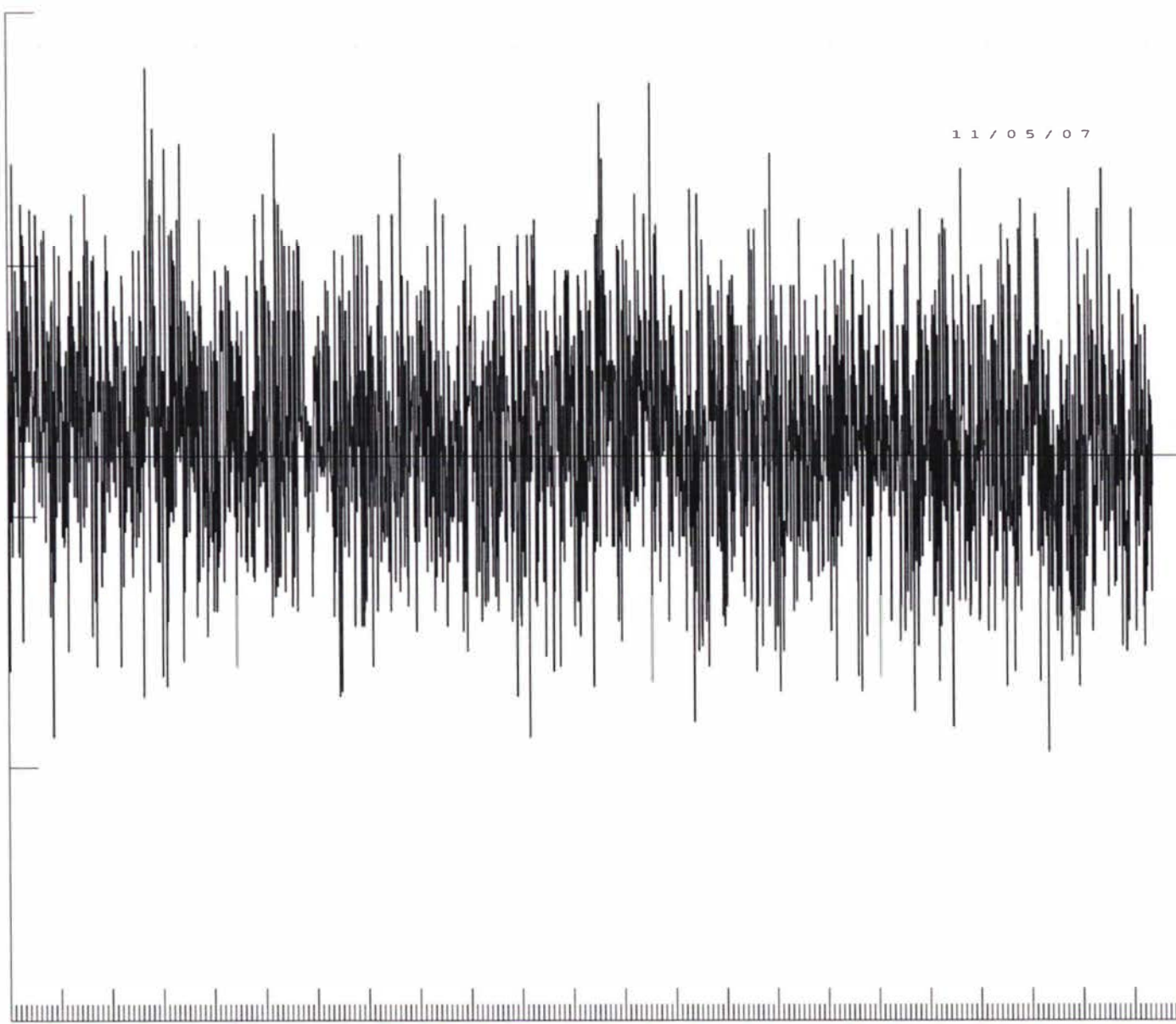
COUNTS/1,000 S

500
450
400
350
300

*****-200 80 180280380480580680780880980*****

TIME, SECS

11/05/07



RXTE ASM

13 / 10 / 00

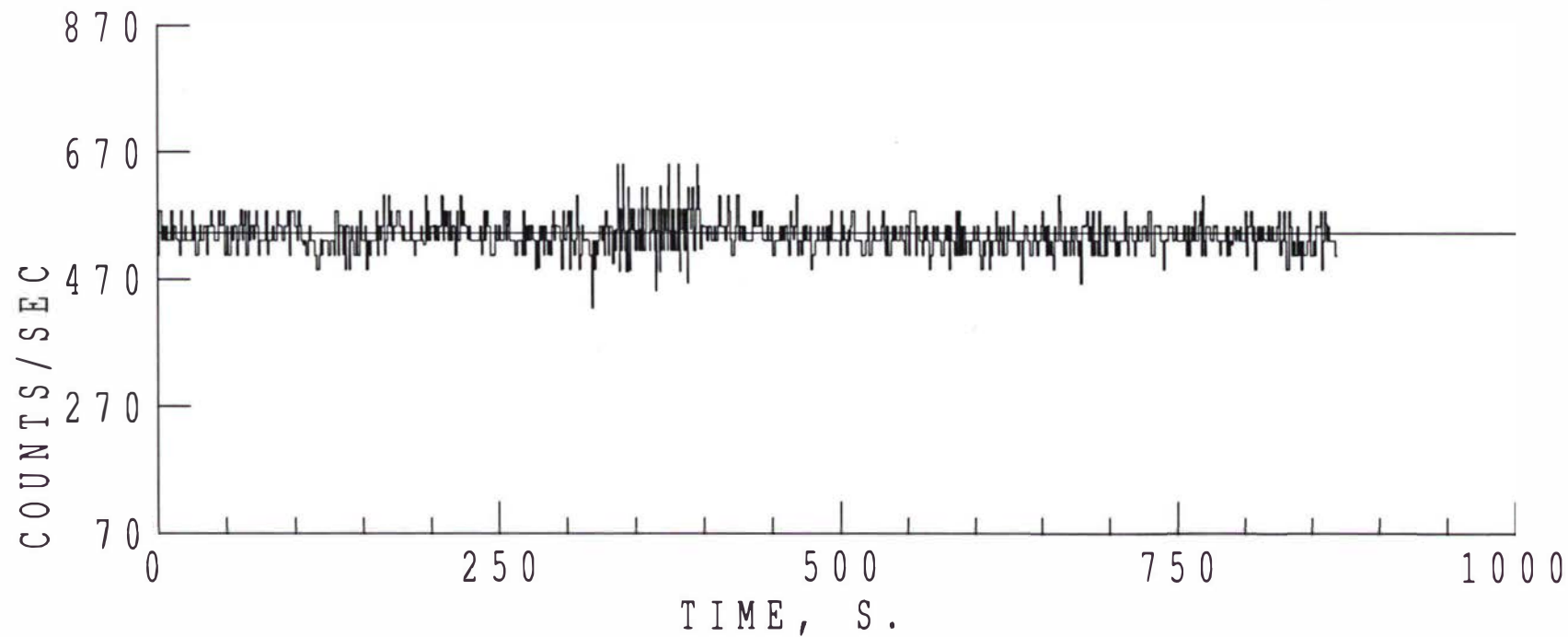
ULYSSES RT

06/06/99 11839.990 s

INTERVALS REGROUPED BY 2

0 - 0 keV

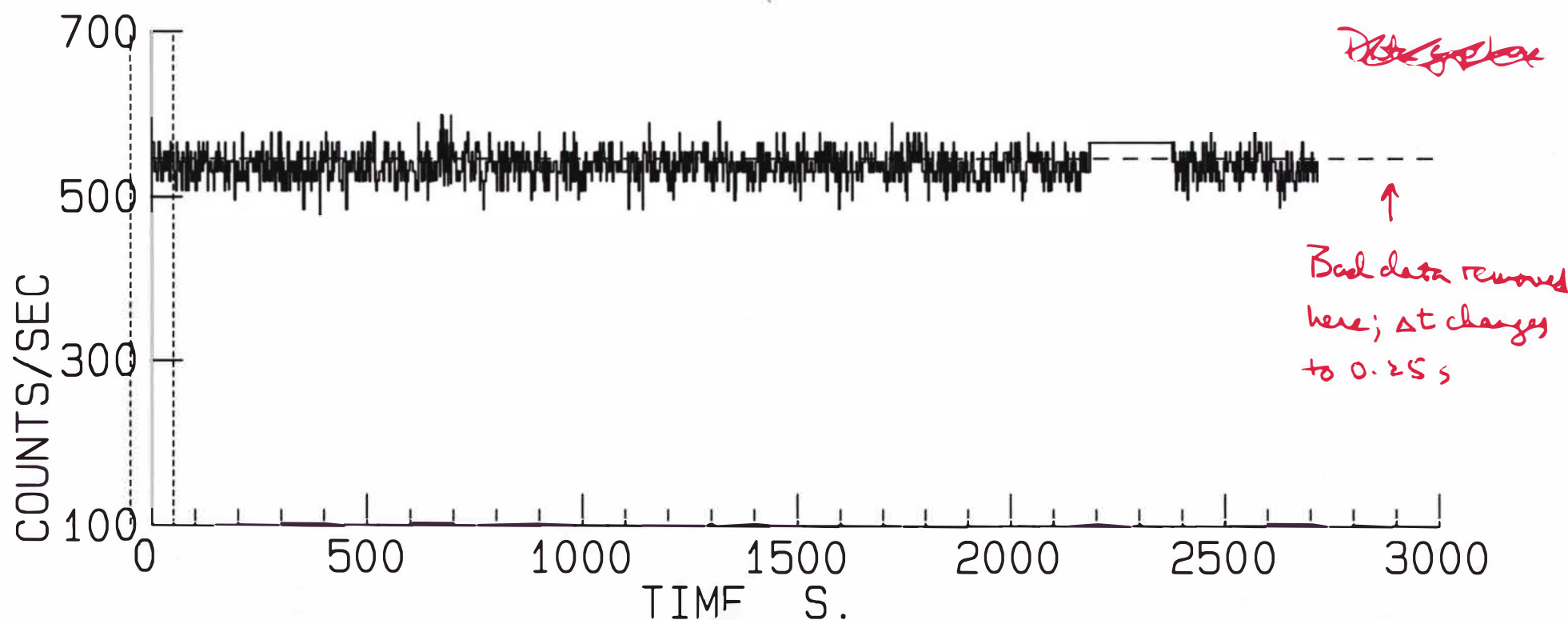
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



ULYSSES RT
6/ 6/99 17424.045 s
INTERVALS REGROUPED BY 4
22- 149 keV

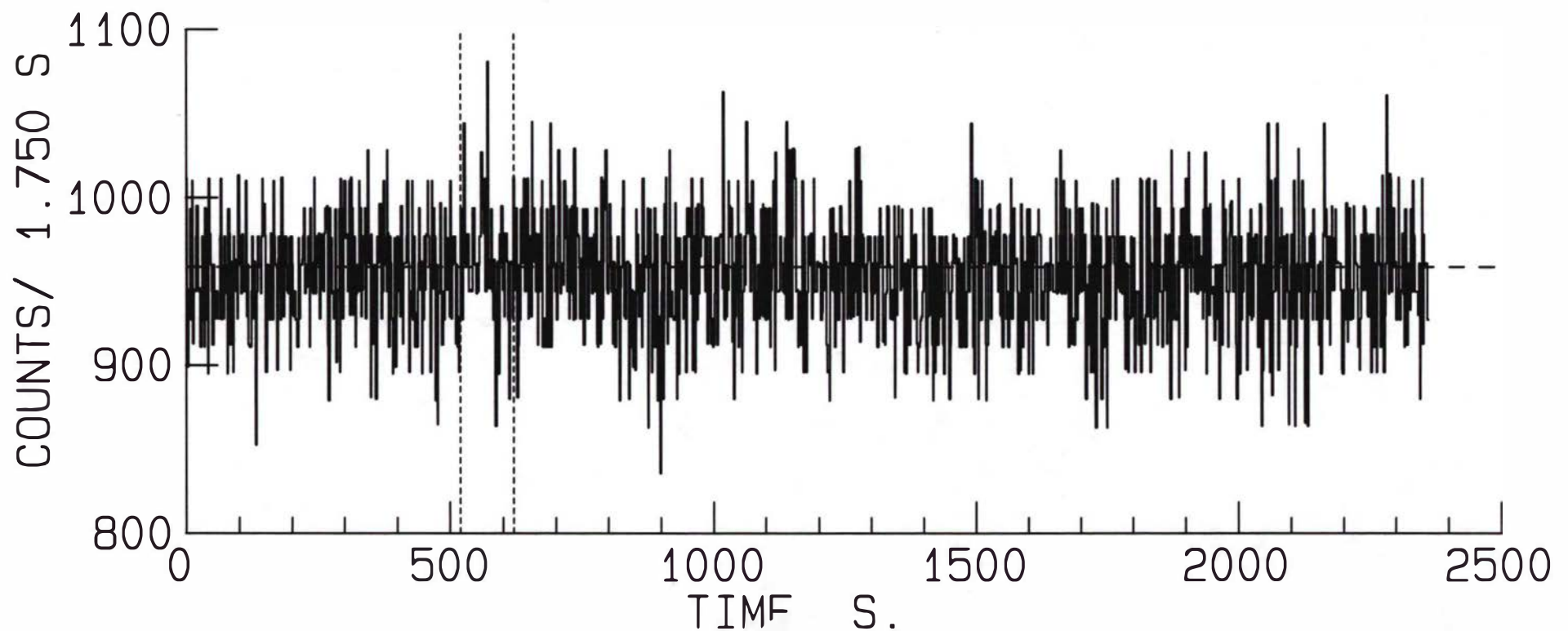
29/11/99

0.15 s long event in Konus

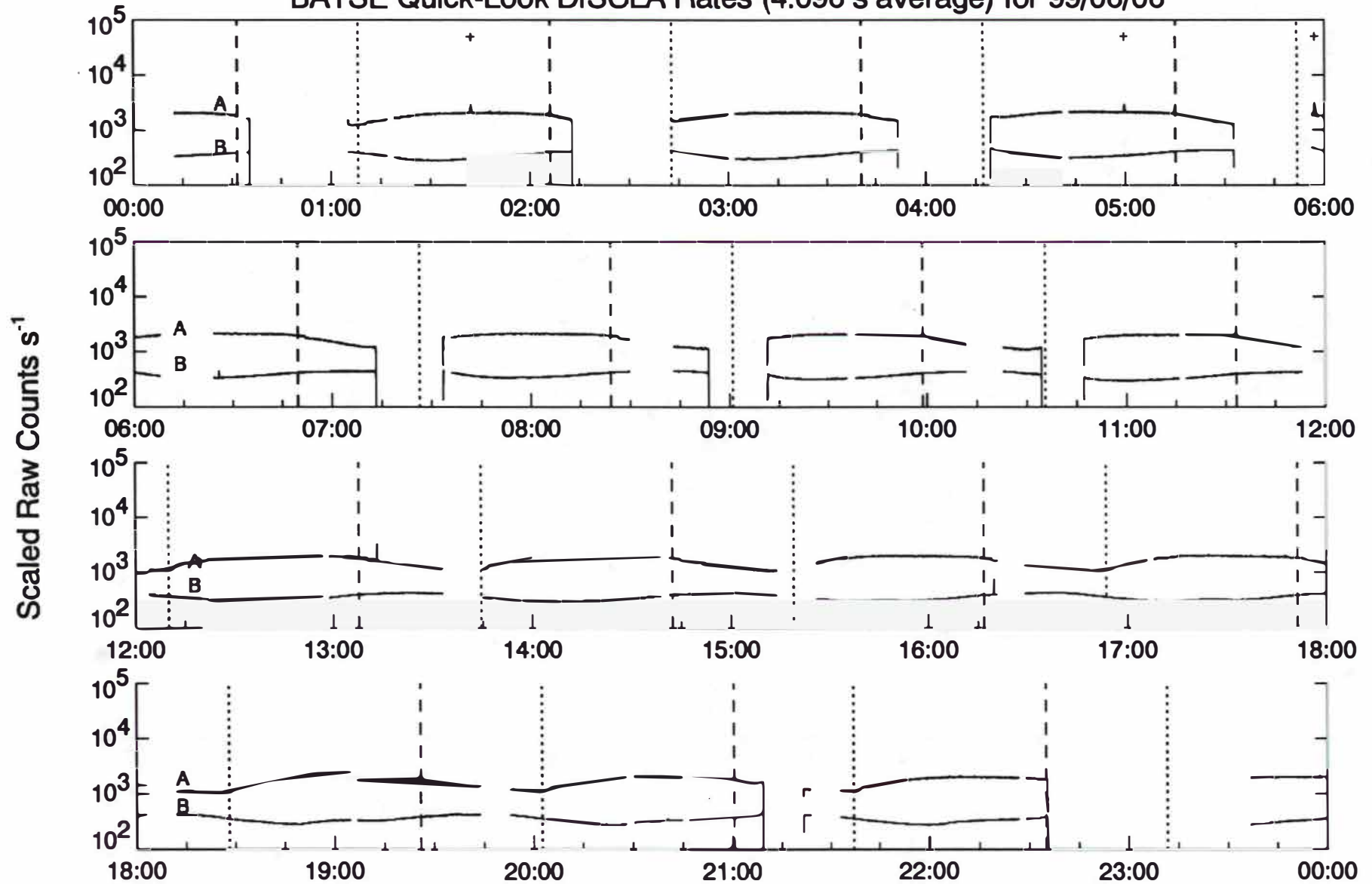


ULYSSES RT
6/ 6/99 20174.073 s
0.250 S INTERVALS REGROUPED BY 7
22- 149 keV

29/11/99



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/06

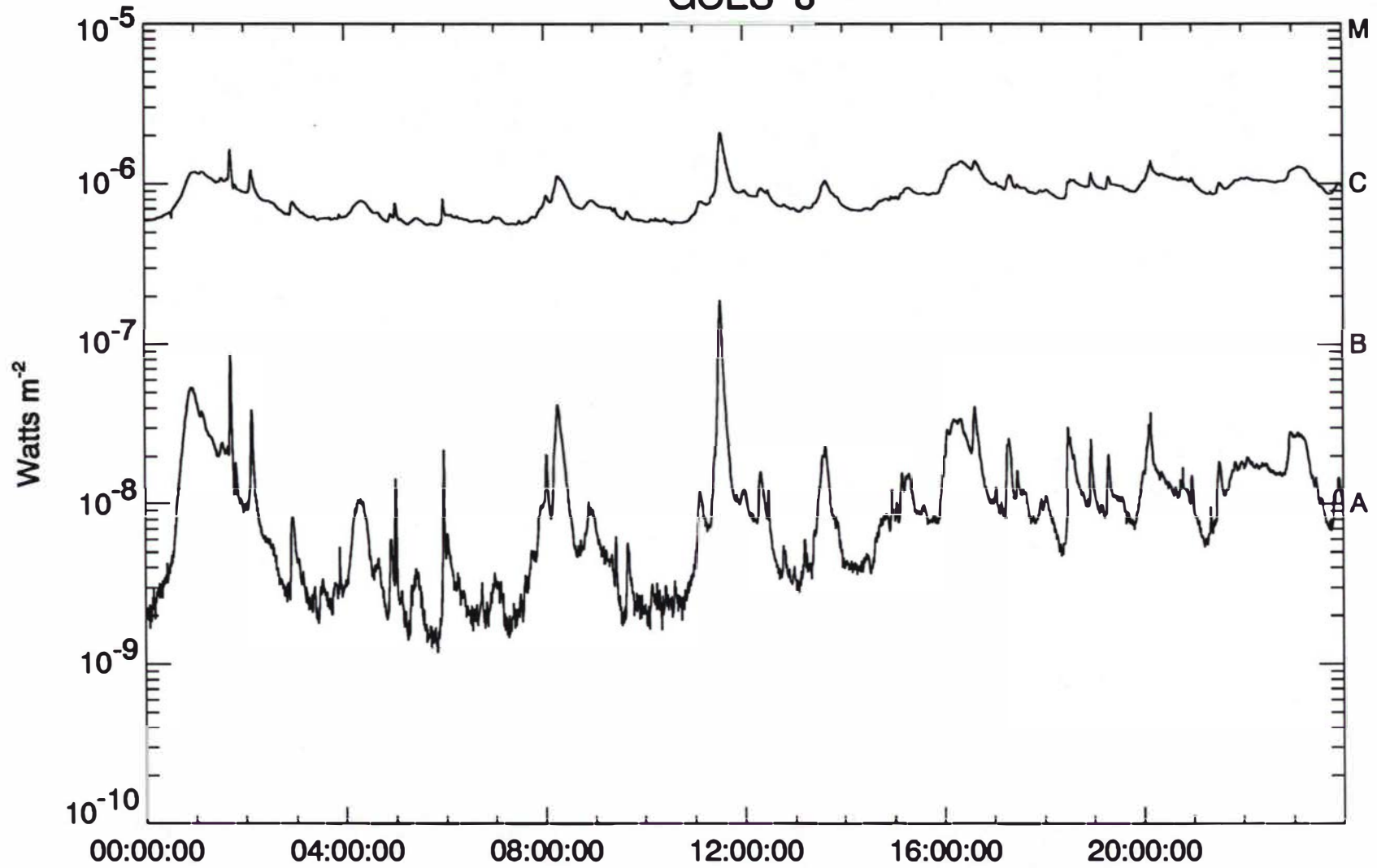


Current Time: 99/06/10, 1006 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/06, 0000:00

Plot created: 99/06/10, 1005

Channel

1 (1.0 - 8.0 Angstroms)

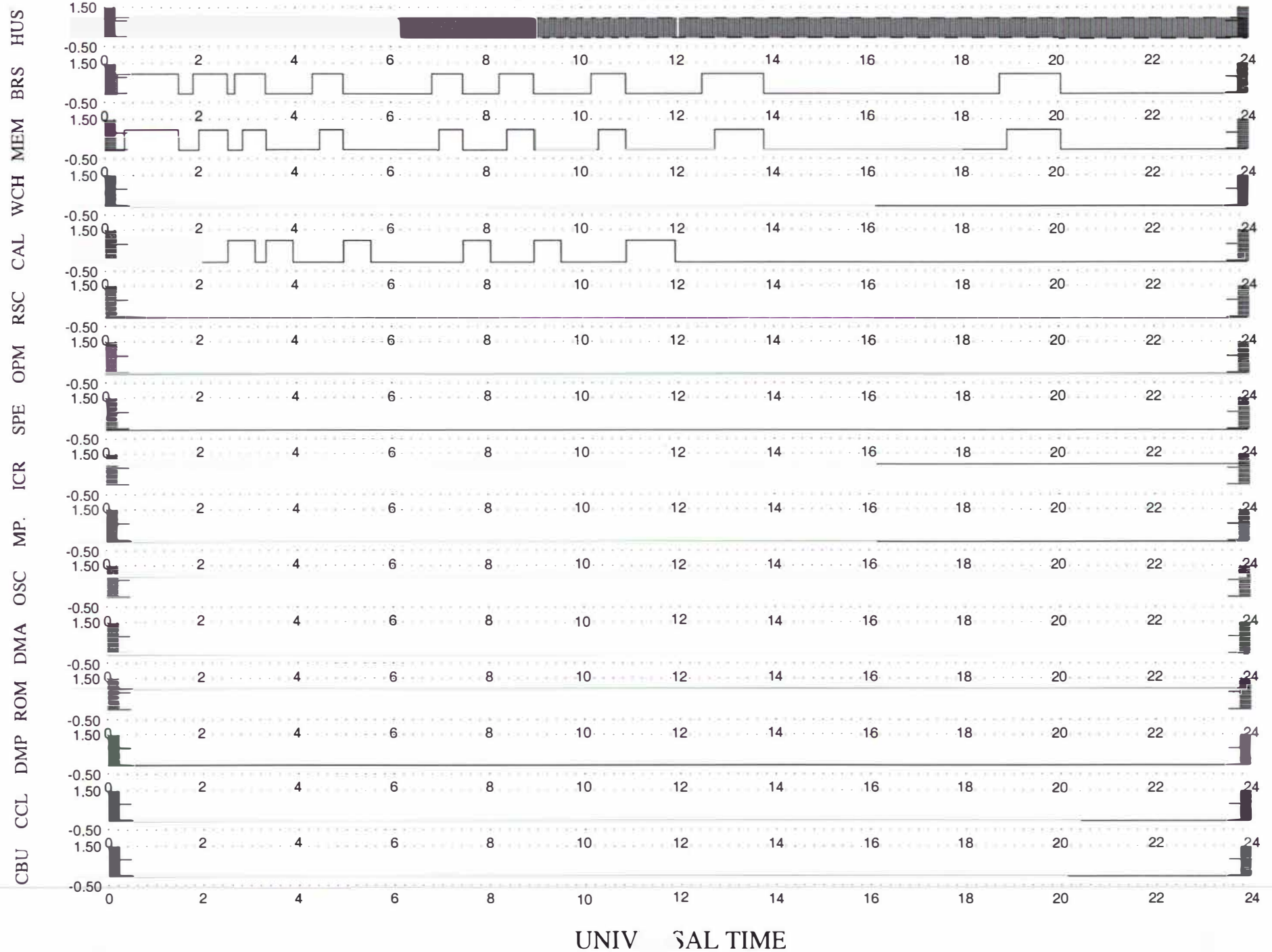
Background not subtracted

2 (0.5 - 4.0 Angstroms)

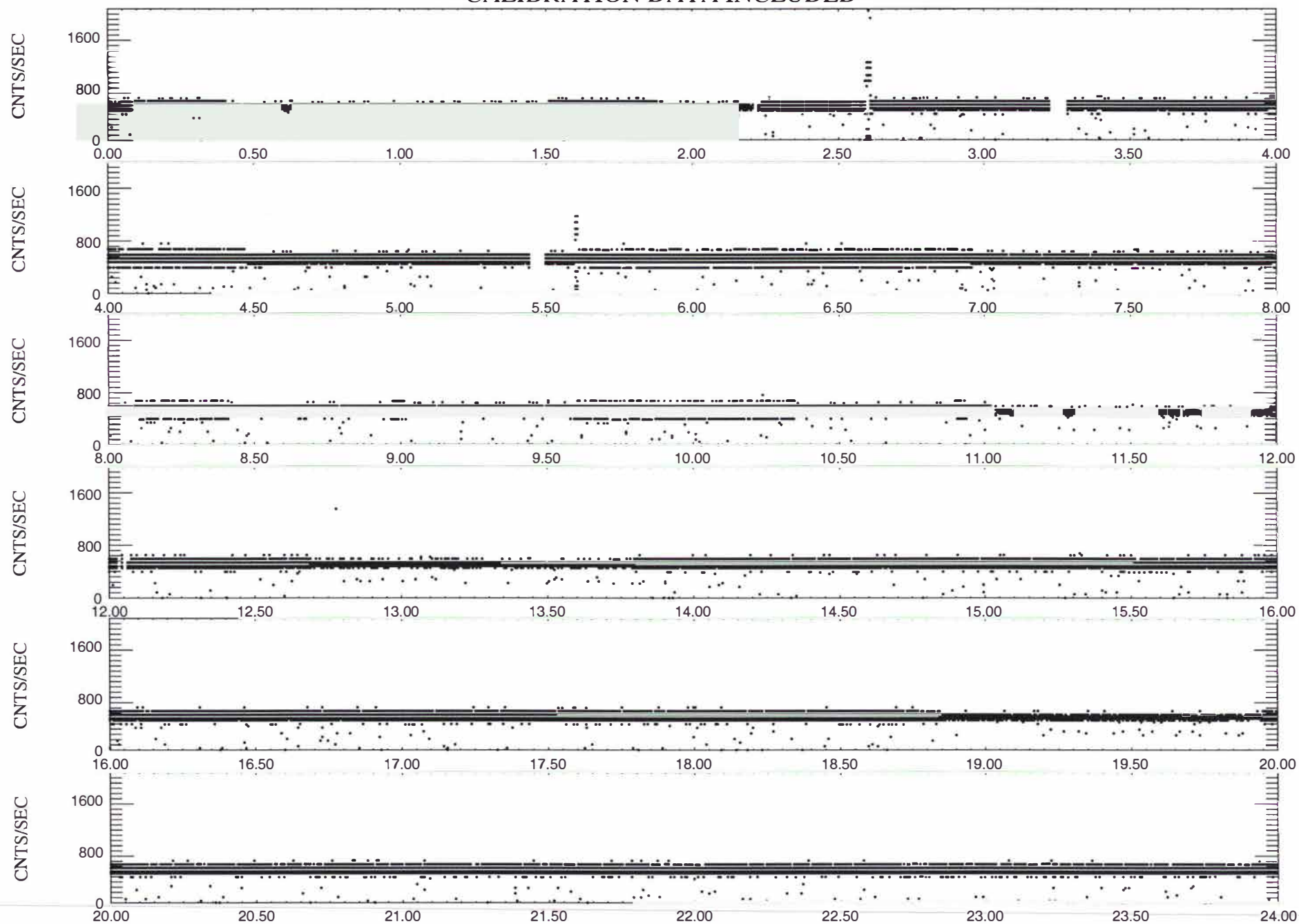
Background not subtracted

Sample average = 10

BURST NUMBER 6 - 14

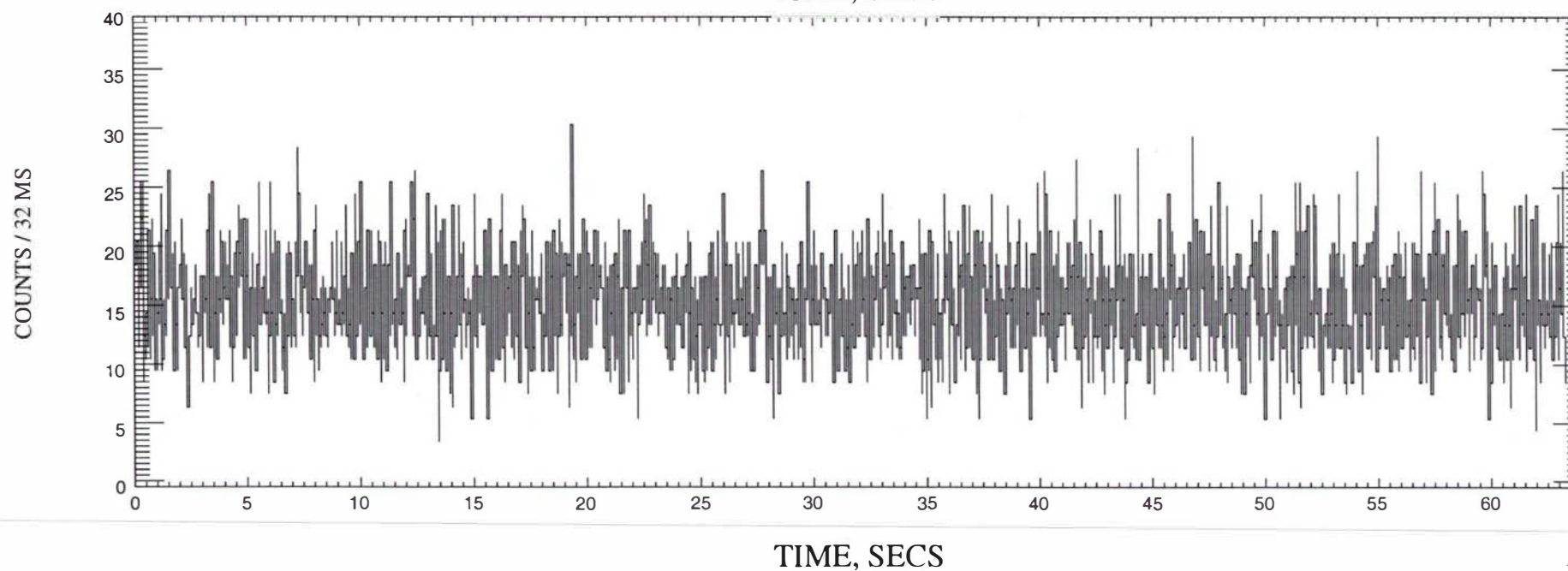
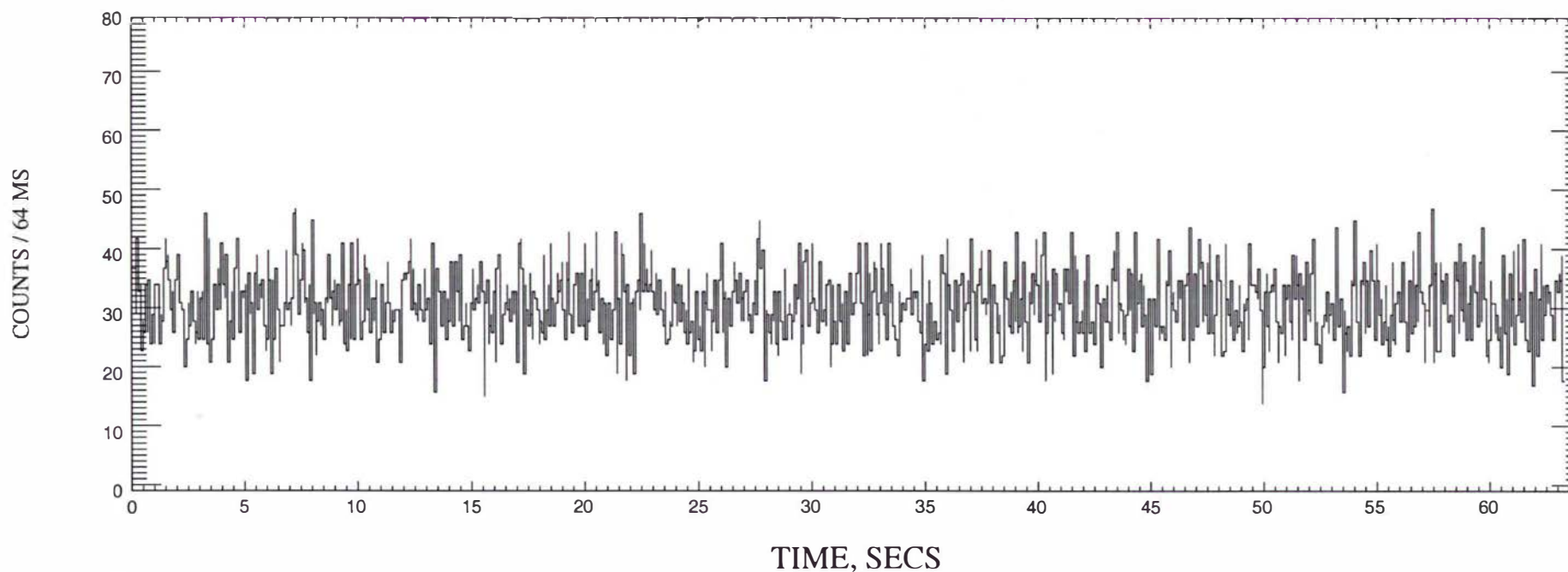


CALIBRATION DATA INCLUDED

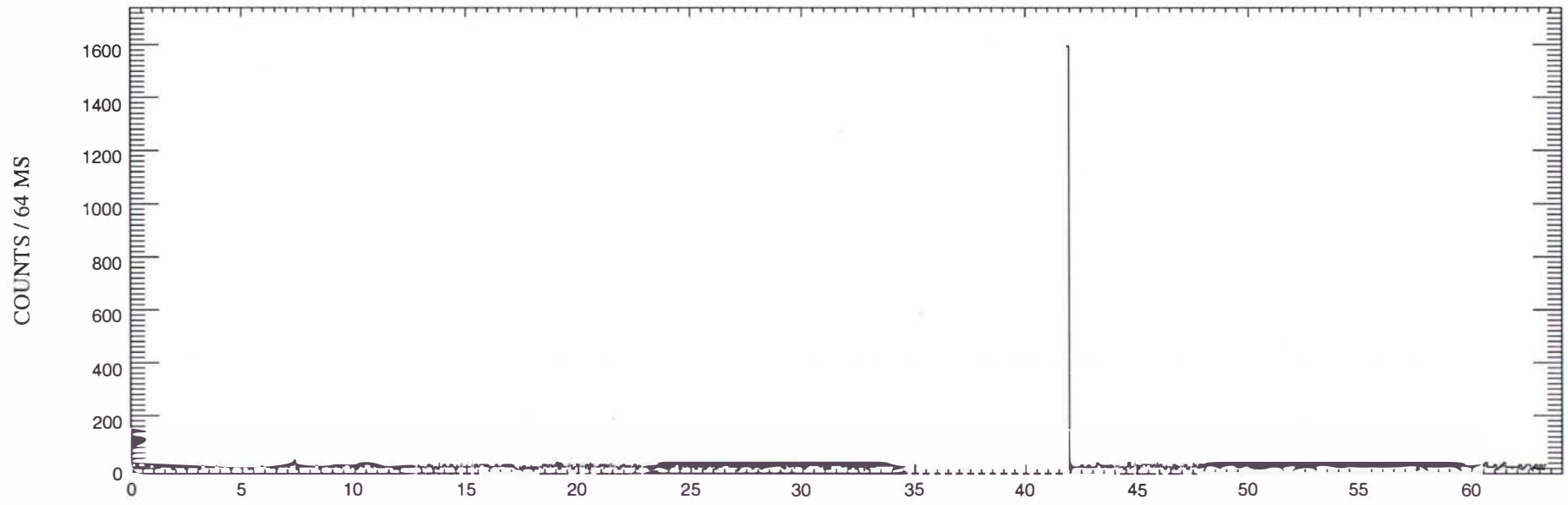


UNIV SAL TIME

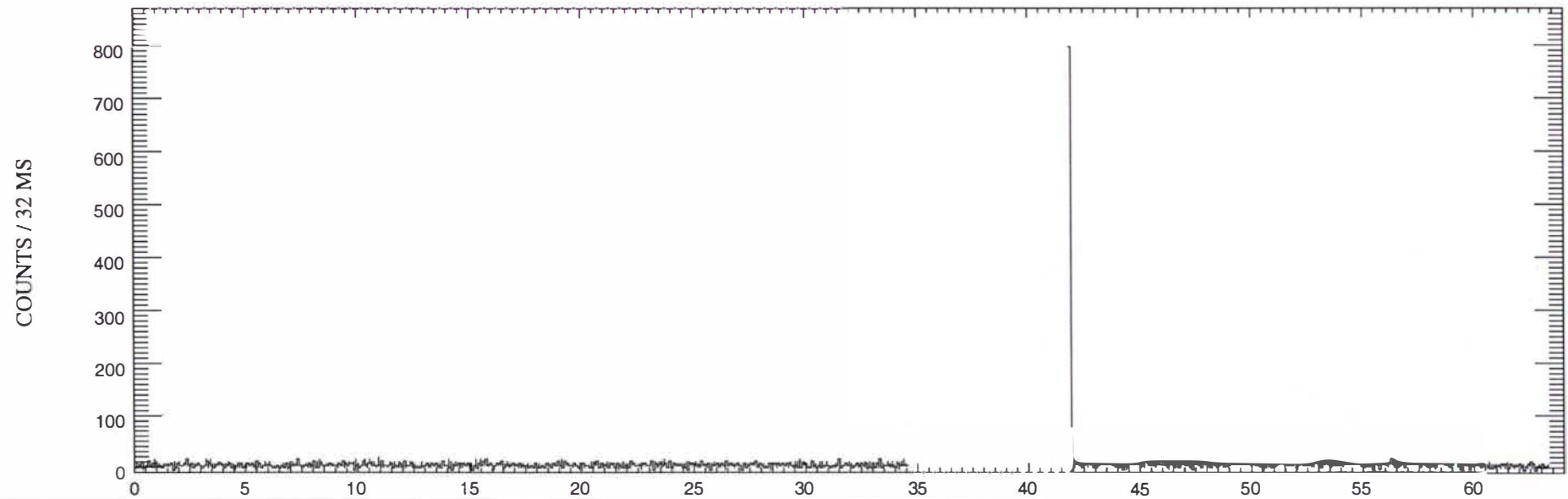
Burst Counter 6 at UT= 0.251977204217 h= 907.118 s 00:15:07.118



Burst Counter 7 at UT= 1.743208279080 h= 6275.550 s 01:44:35.550

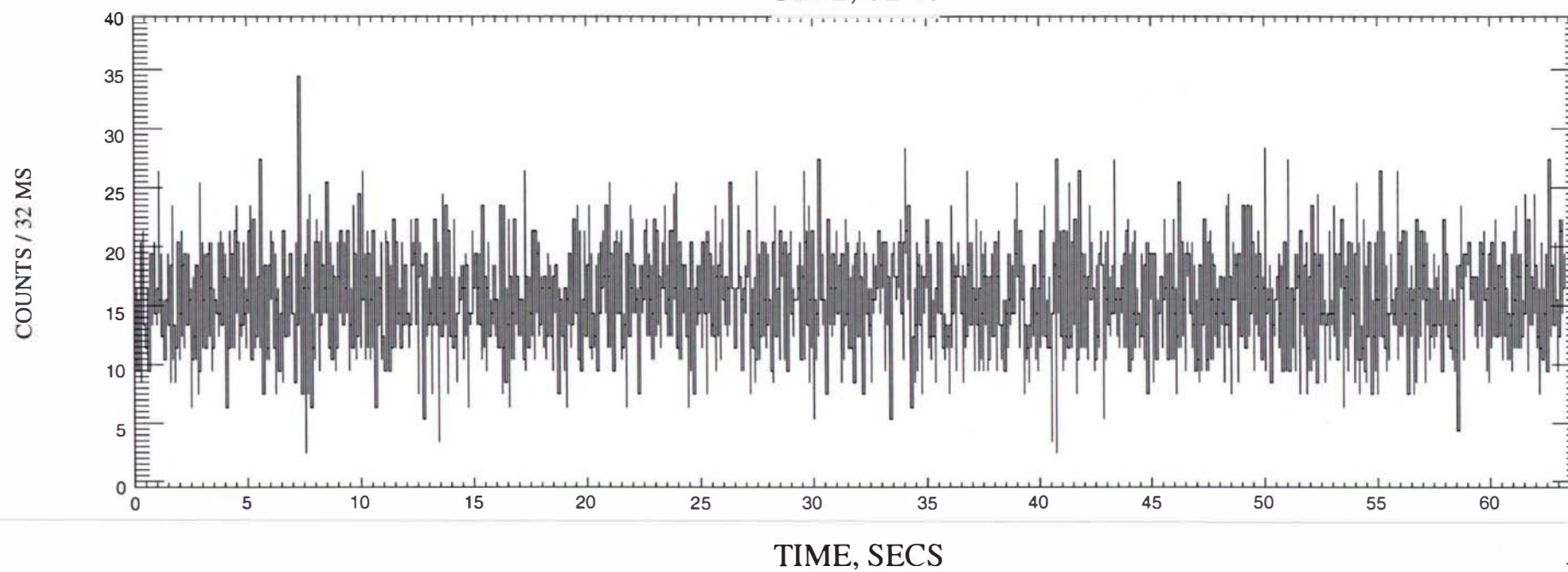
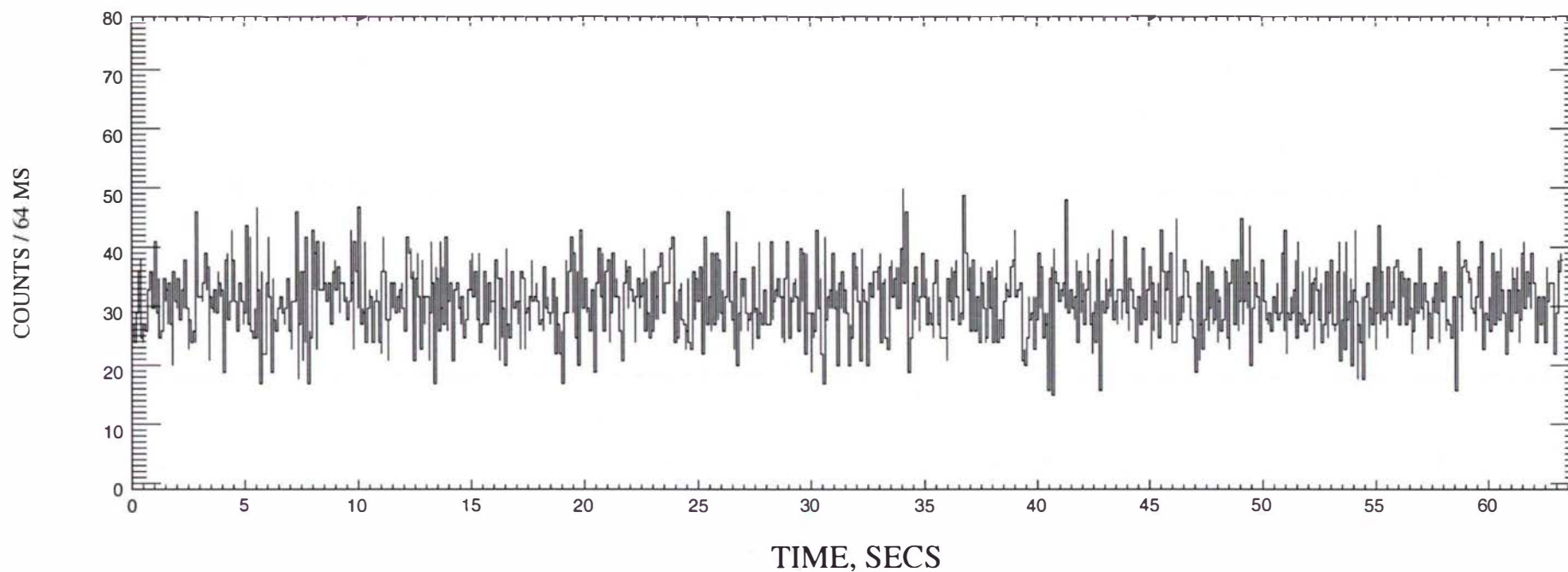


TIME, SECS

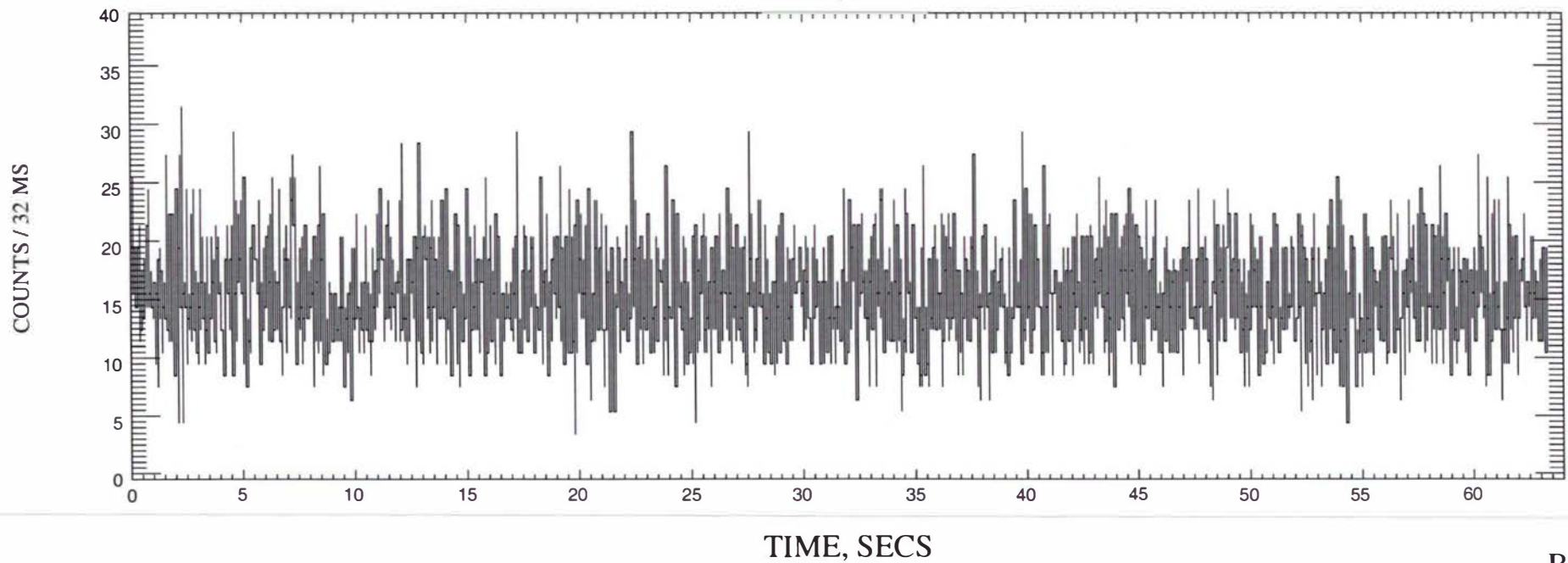
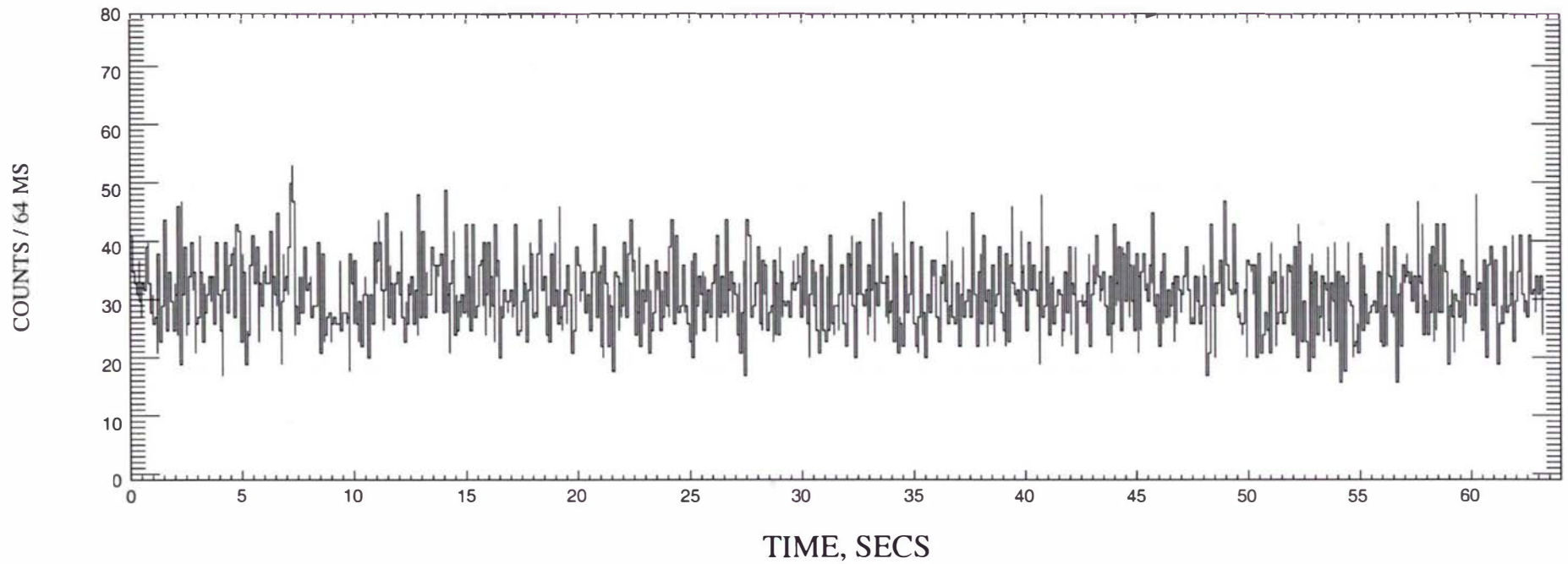


TIME, SECS

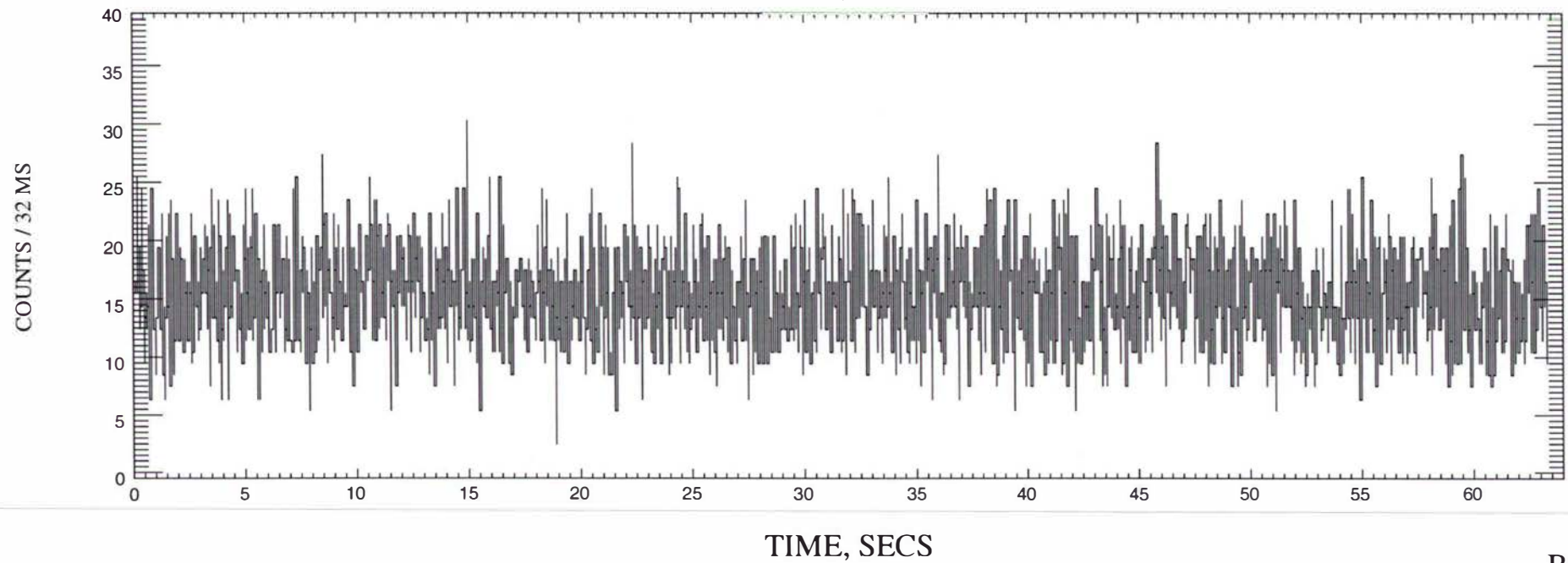
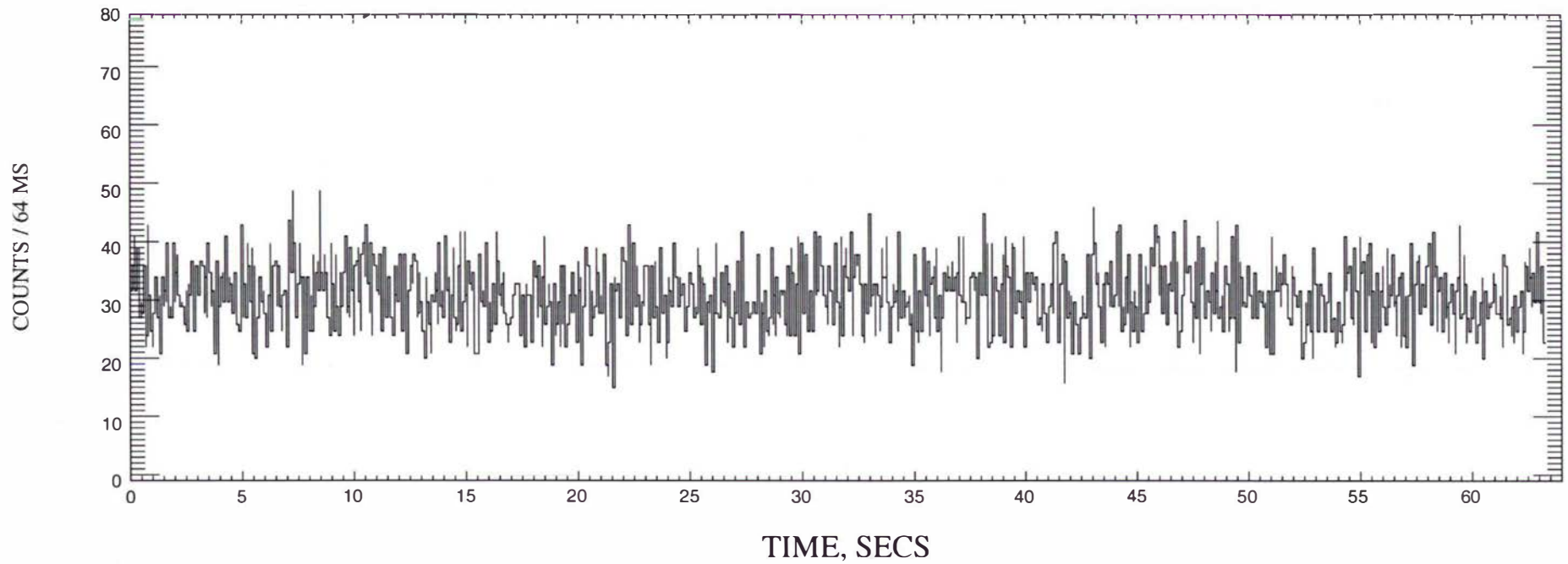
Burst Counter 8 at UT= 2.681516587999 h= 9653.460 s 02:40:53.460



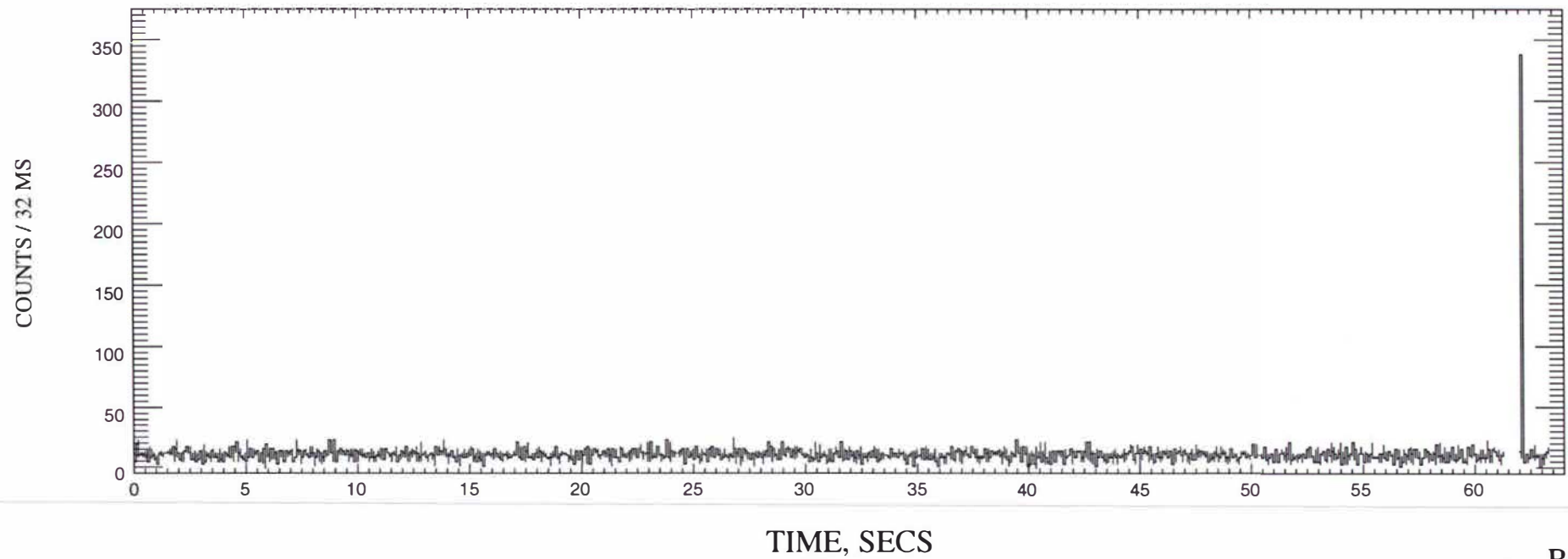
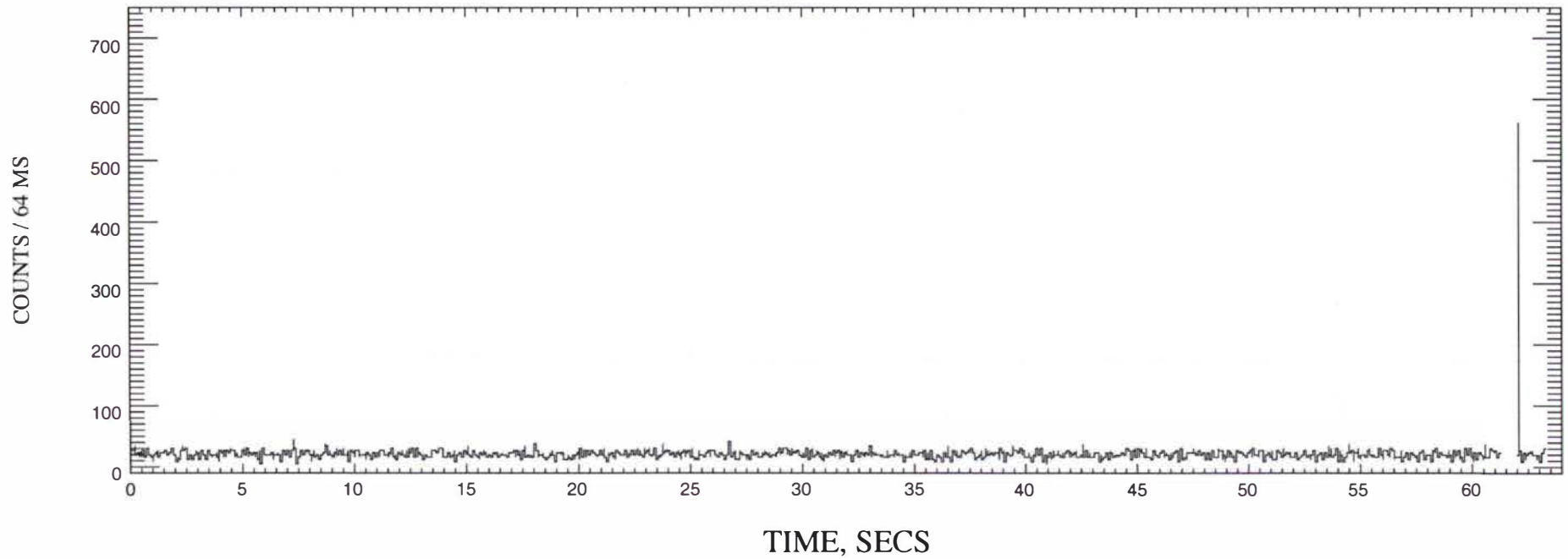
Burst Counter 9 at UT= 4.322748383416 h=15561.894 s 04:19:21.894



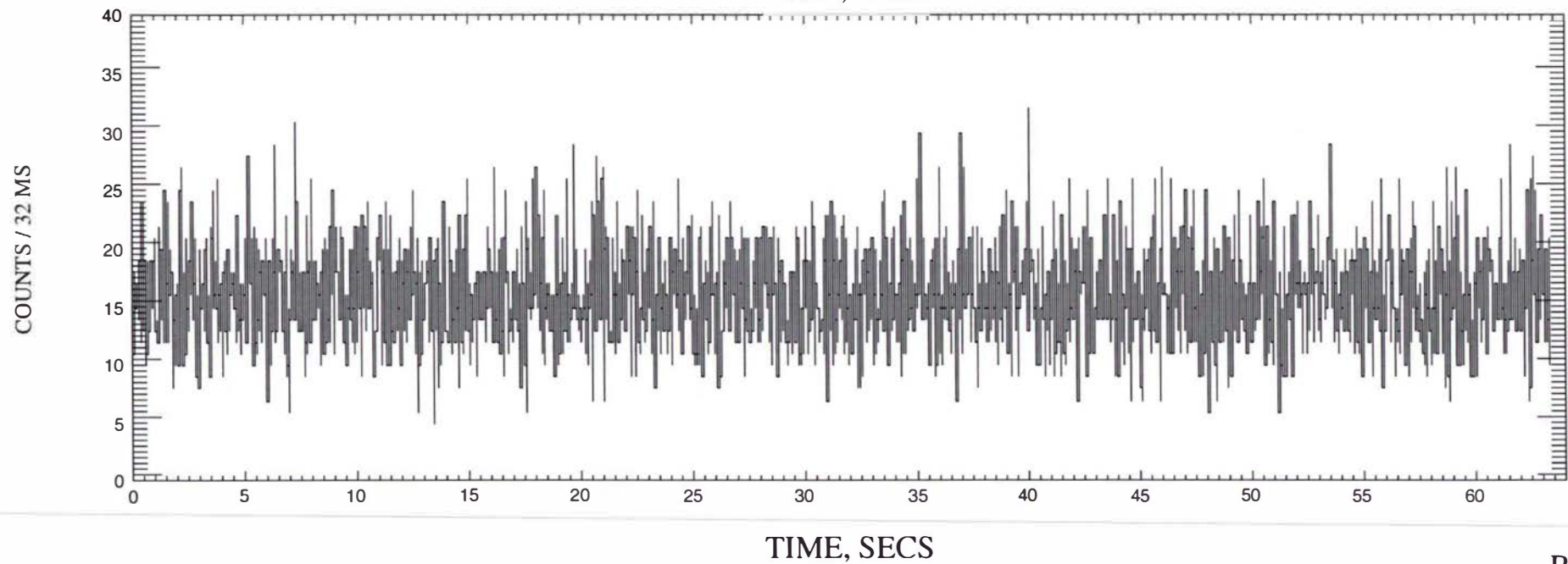
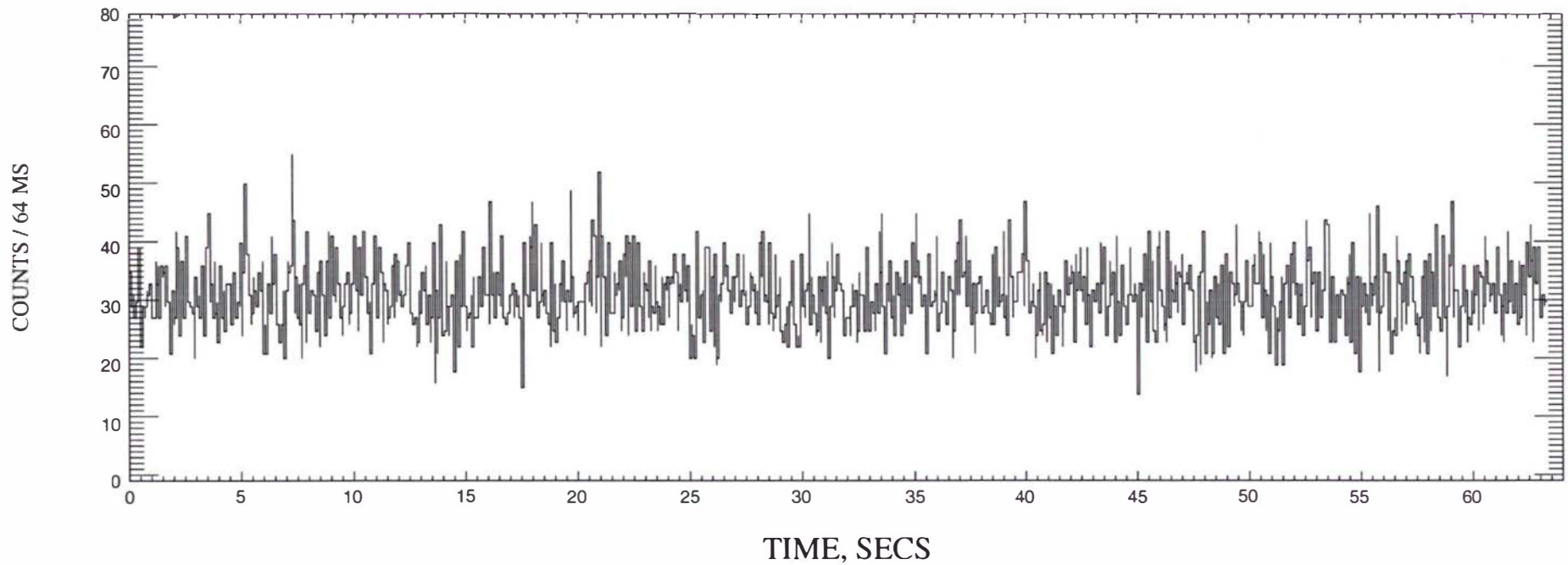
Burst Counter 10 at UT= 6.805551295810 h=24499.985 s 06:48:19.985



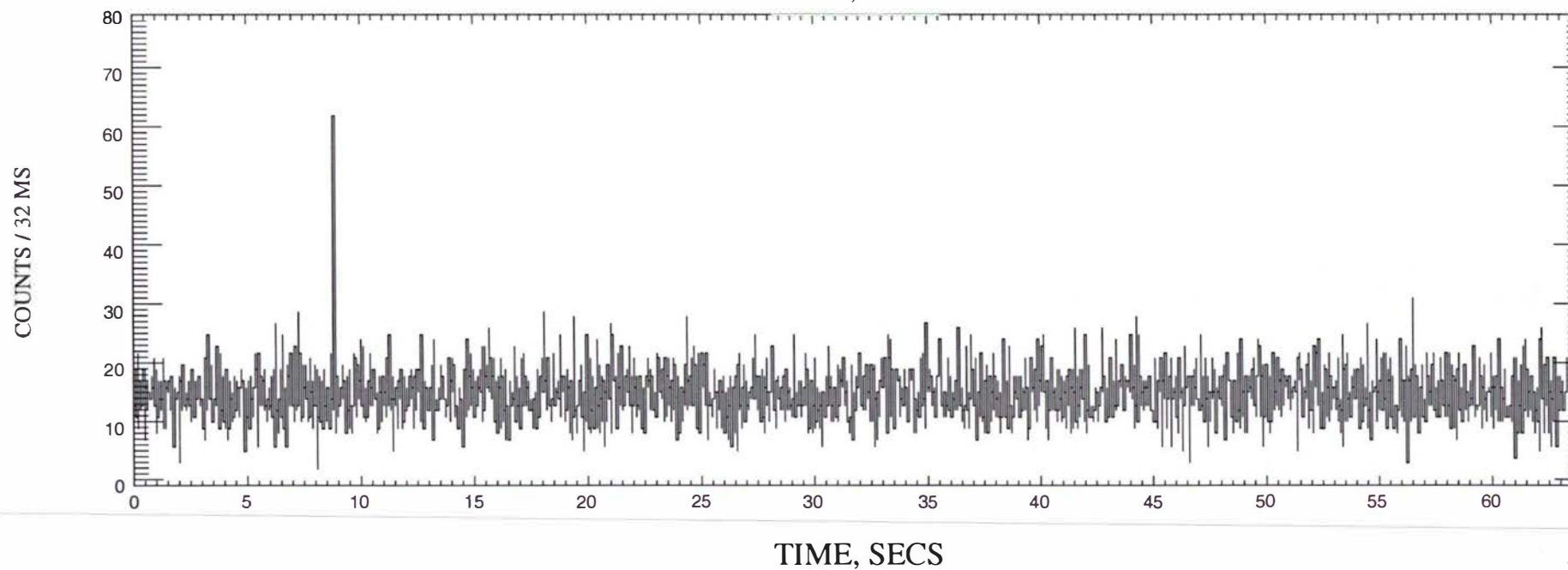
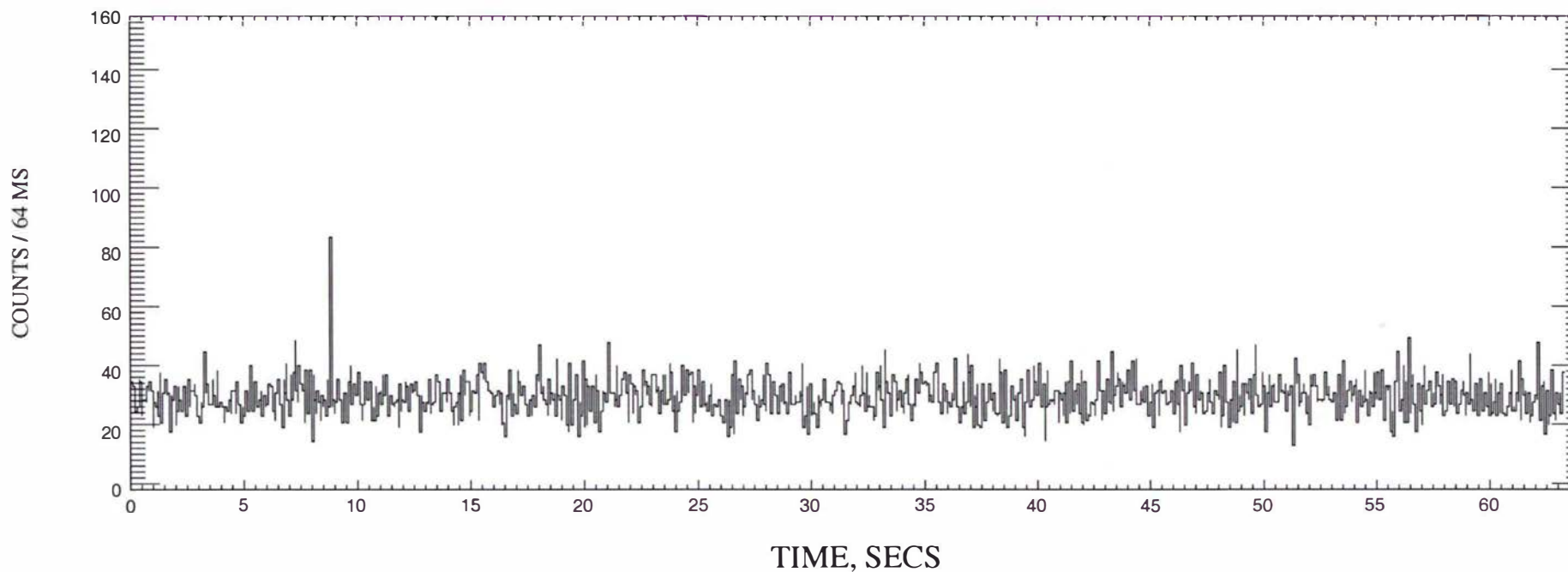
Burst Counter 11 at UT= 8.262892044915 h=29746.411 s 08:15:46.411



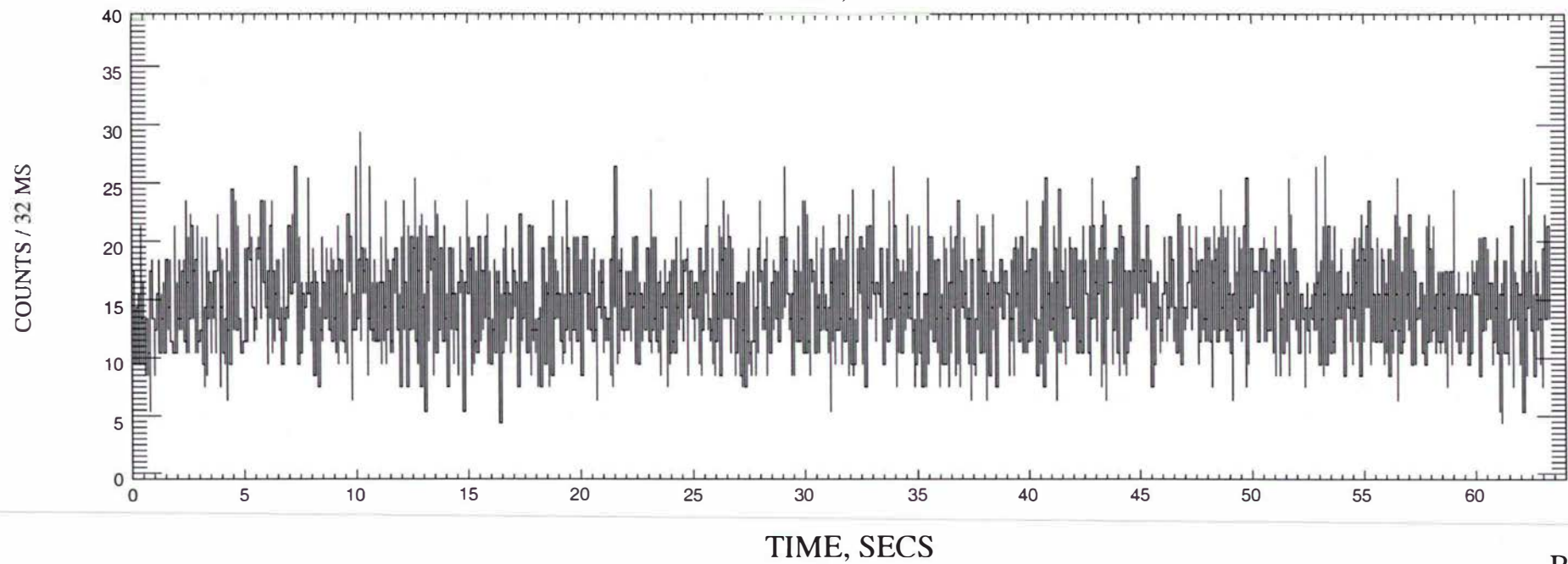
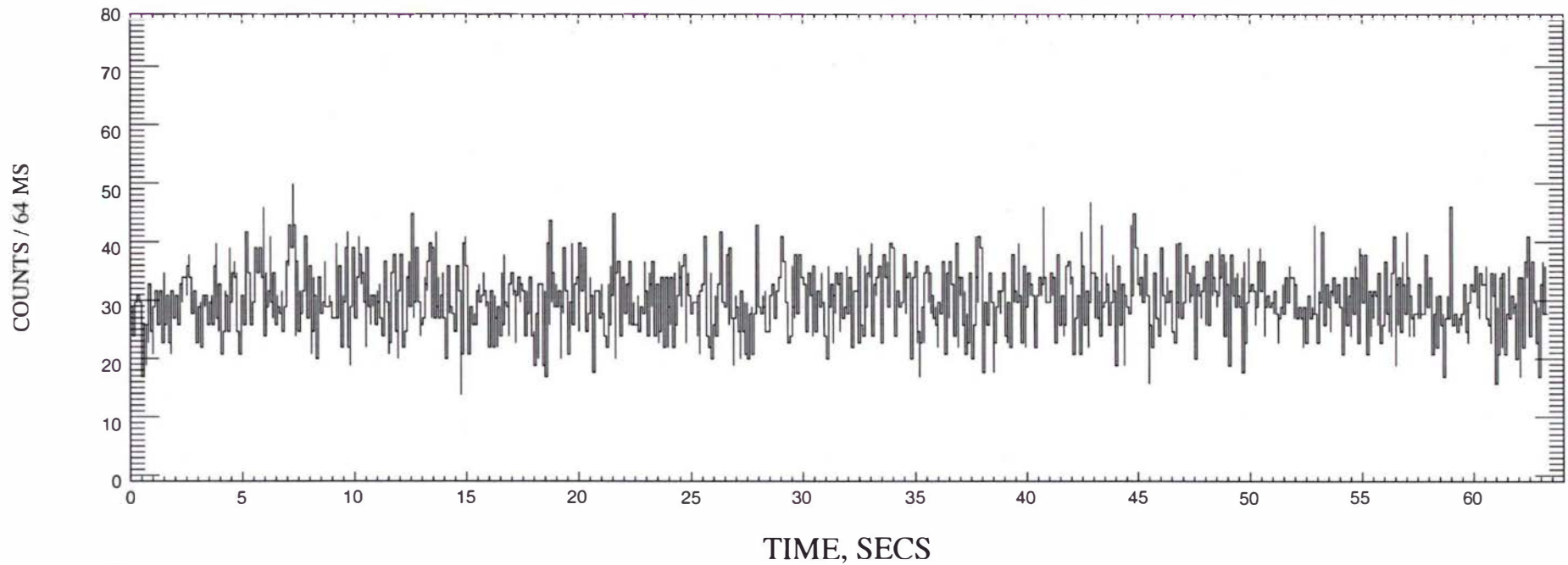
Burst Counter 12 at UT=10.189821158515 h=36683.356 s 10:11:23.356



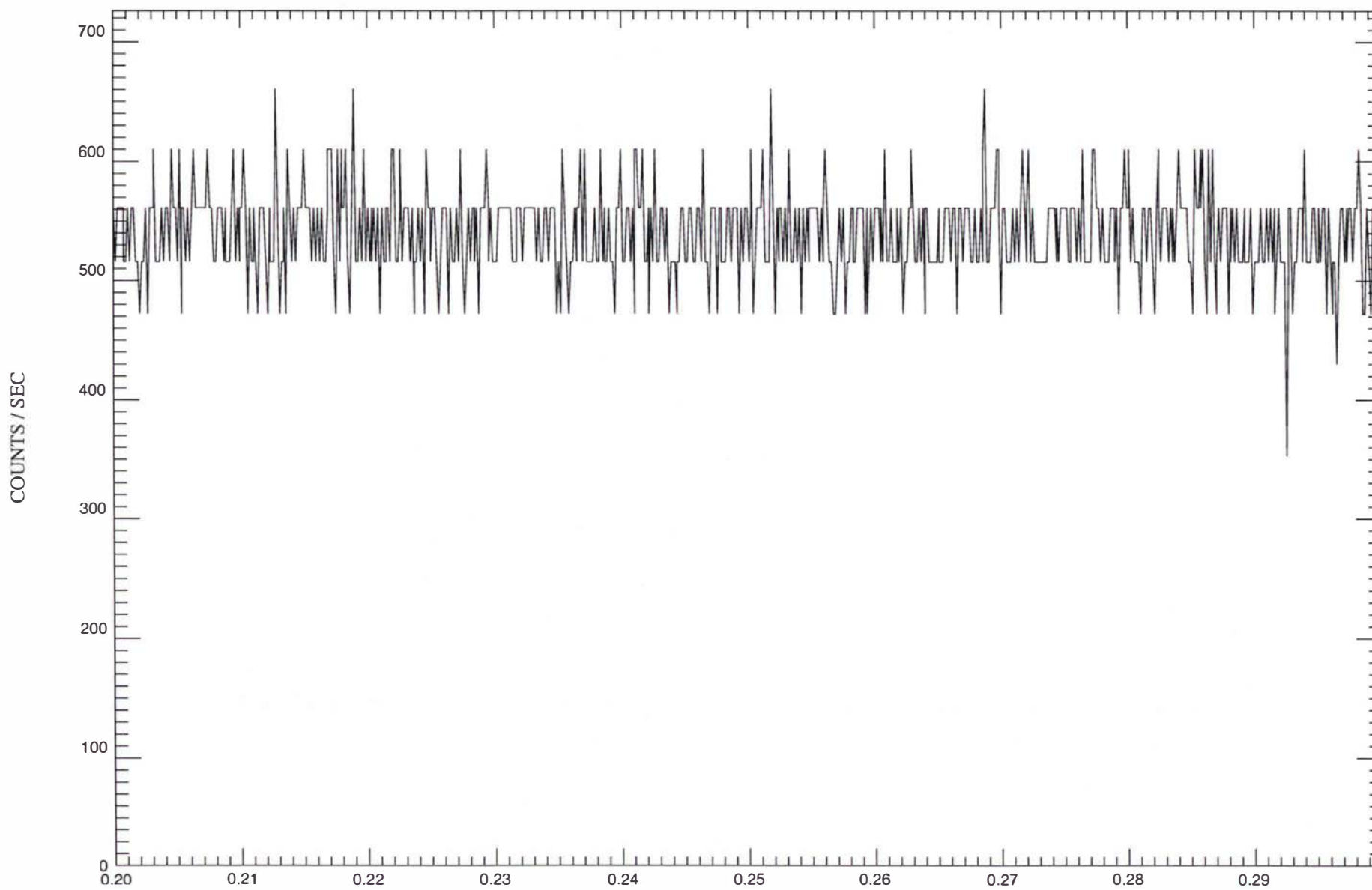
Burst Counter 13 at UT=12.526824760437 h=45096.569 s 12:31:36.569



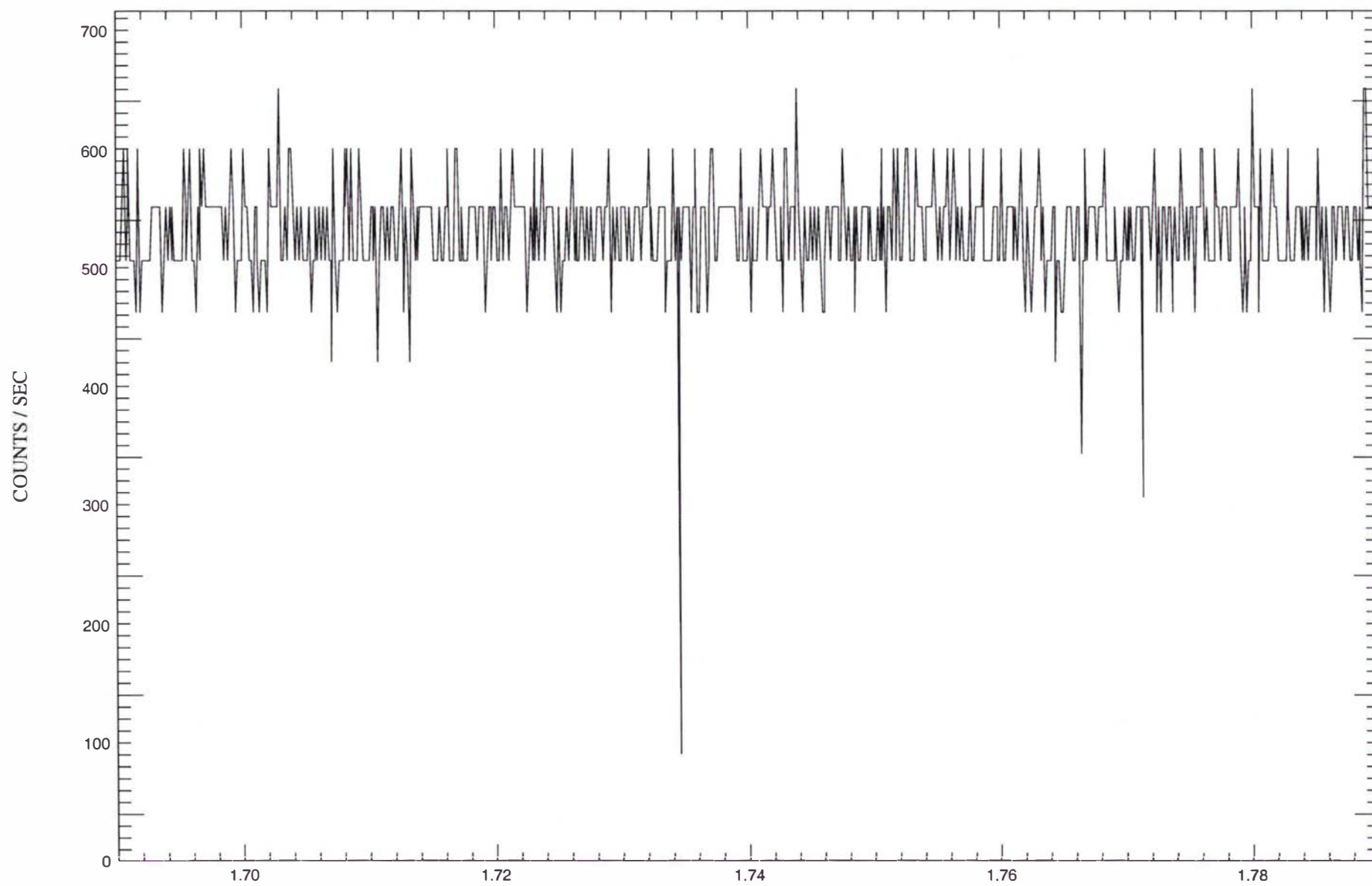
Burst Counter 14 at UT=18.690983009338 h=67287.539 s 18:41:27.539



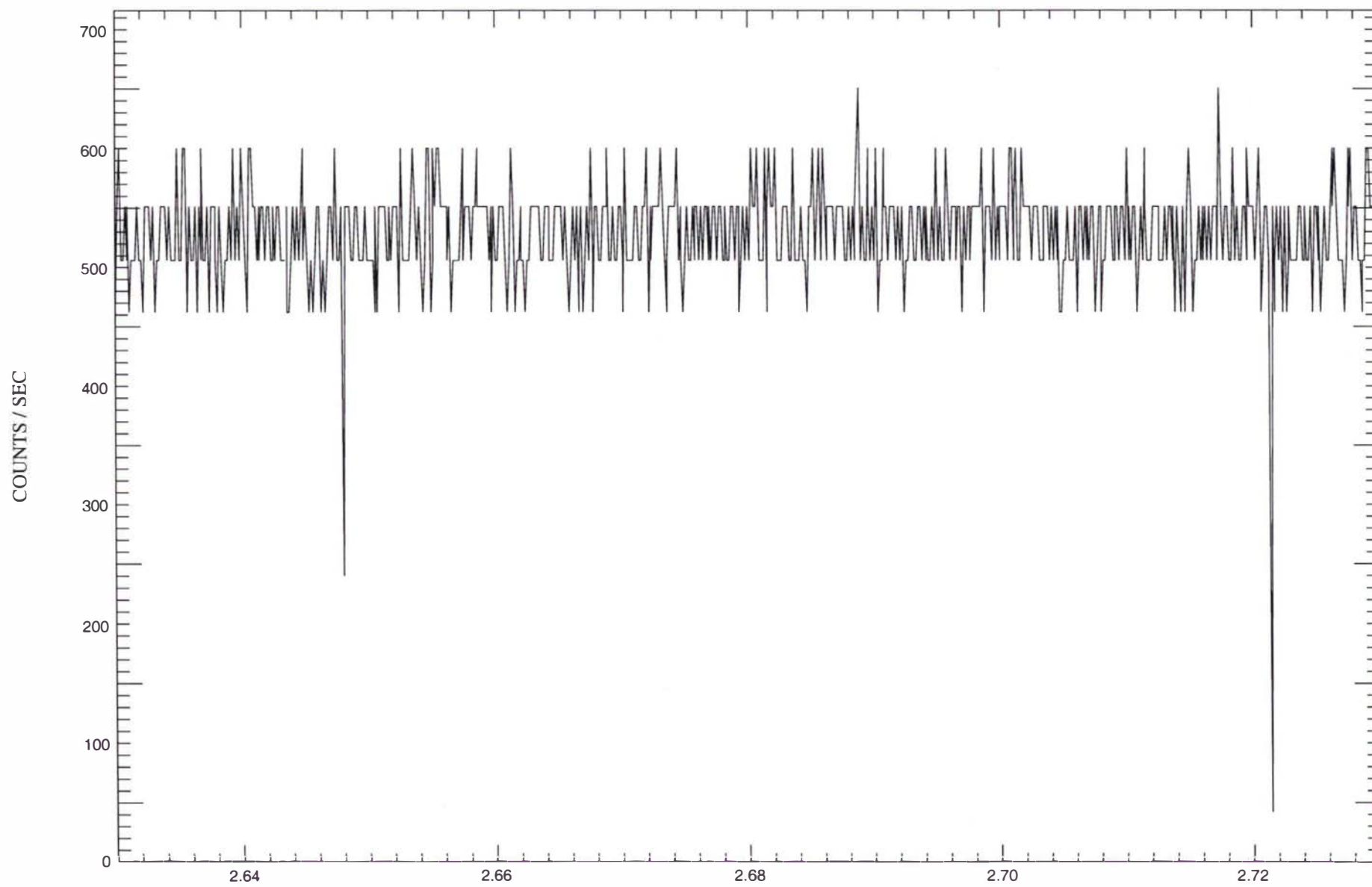
CALIBRATION DATA INCLUDED



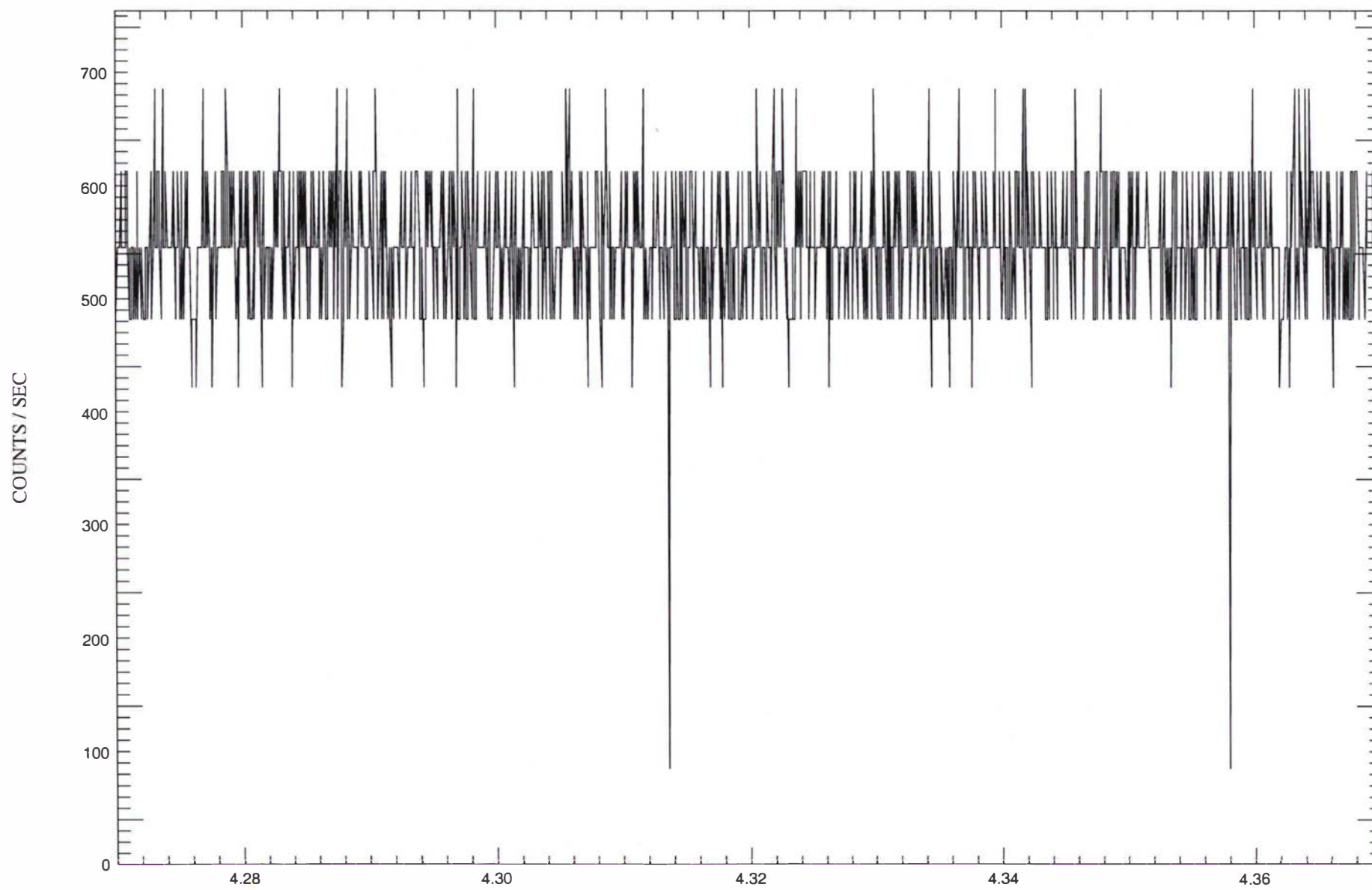
CALIBRATION DATA INCLUDED



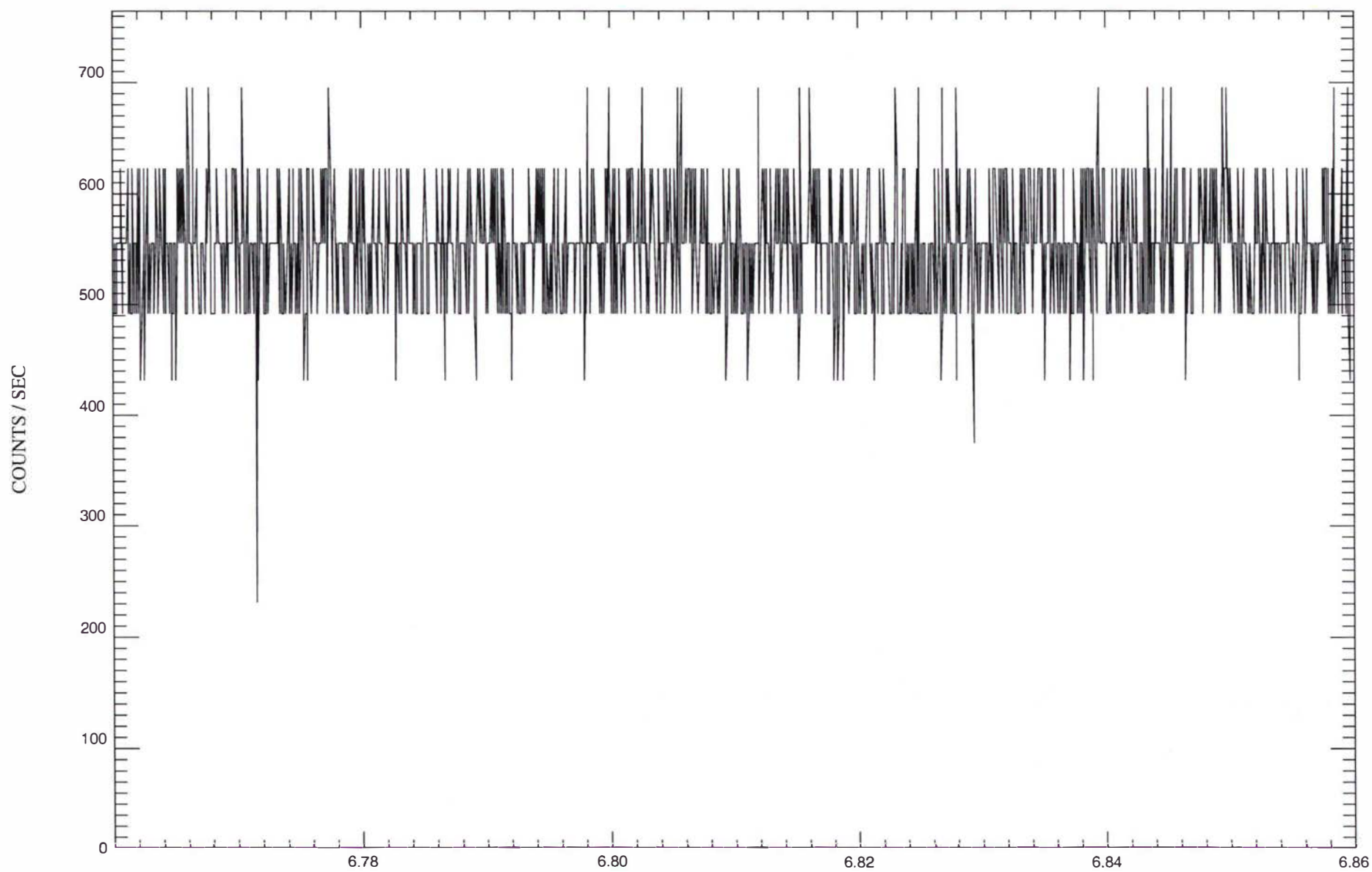
CALIBRATION DATA INCLUDED



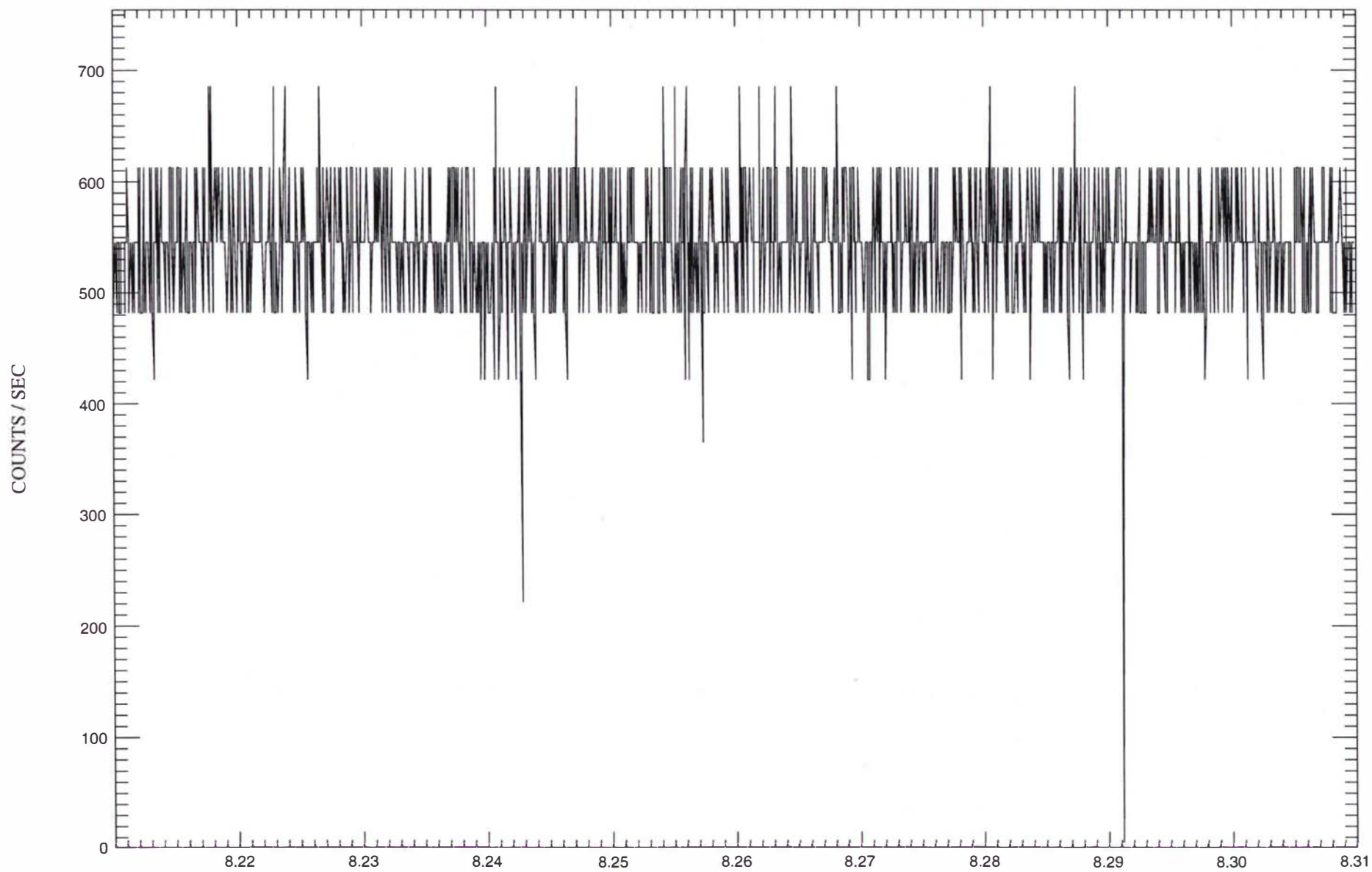
CALIBRATION DATA INCLUDED



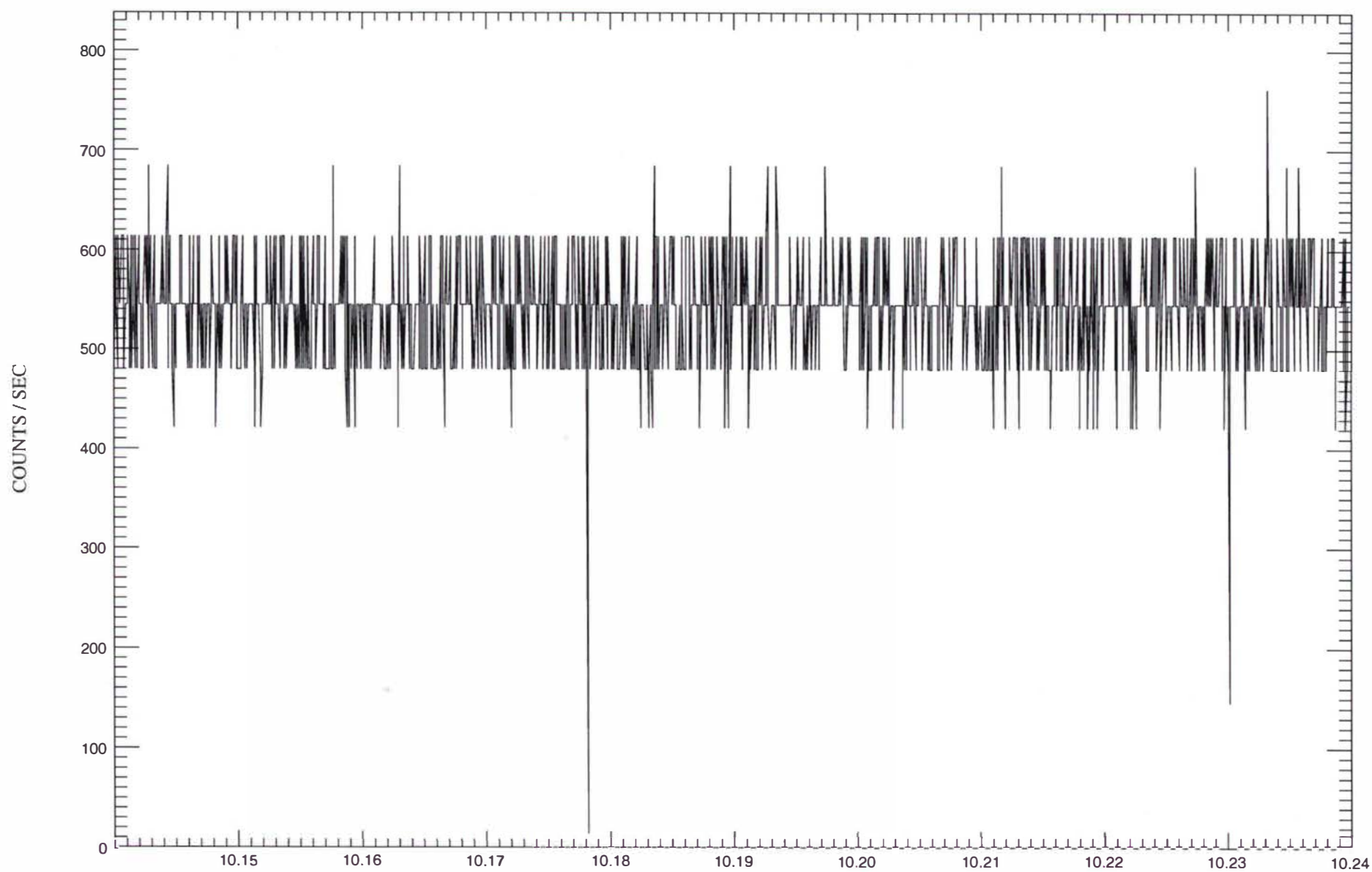
CALIBRATION DATA INCLUDED



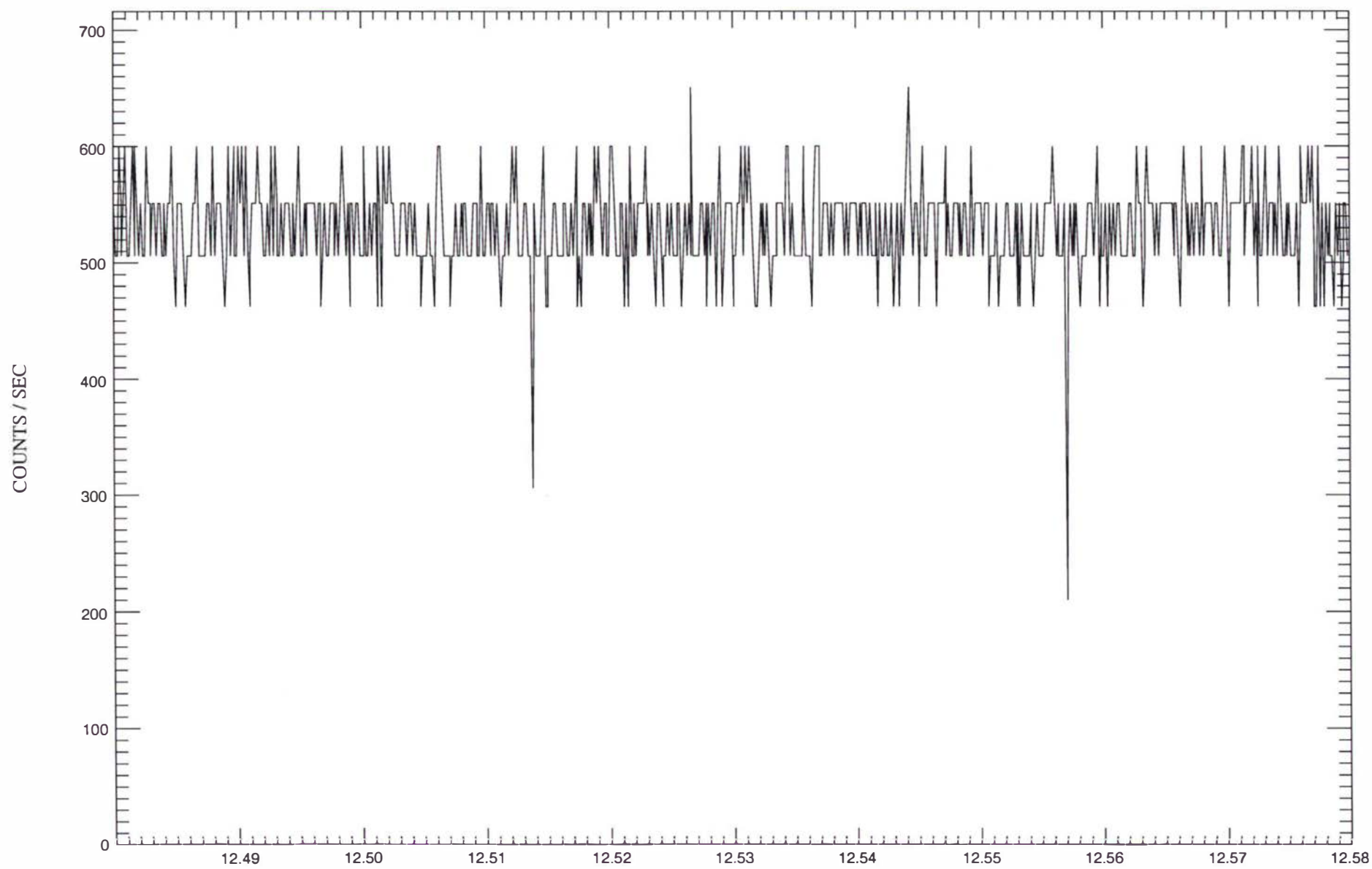
CALIBRATION DATA INCLUDED



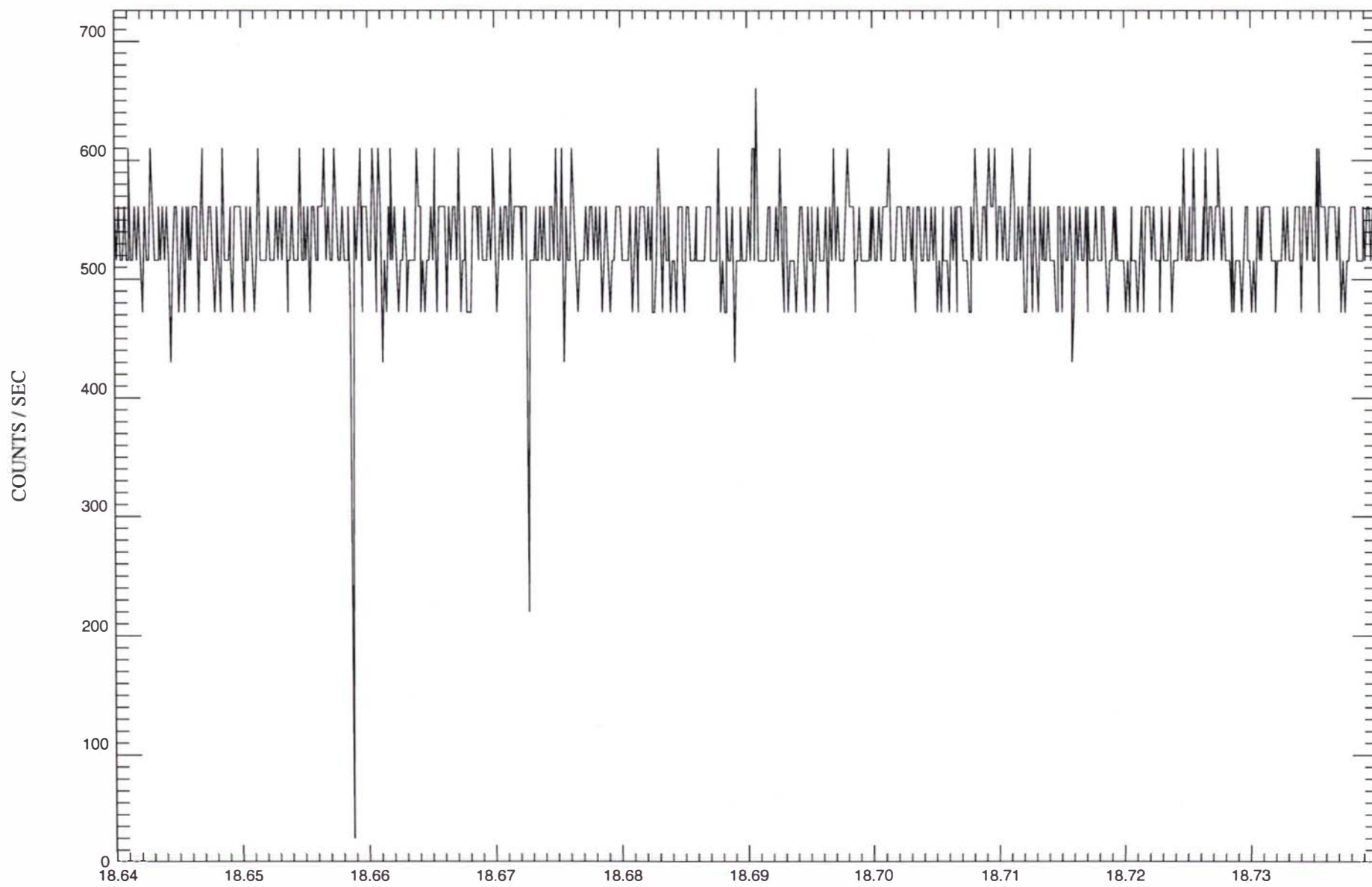
CALIBRATION DATA INCLUDED

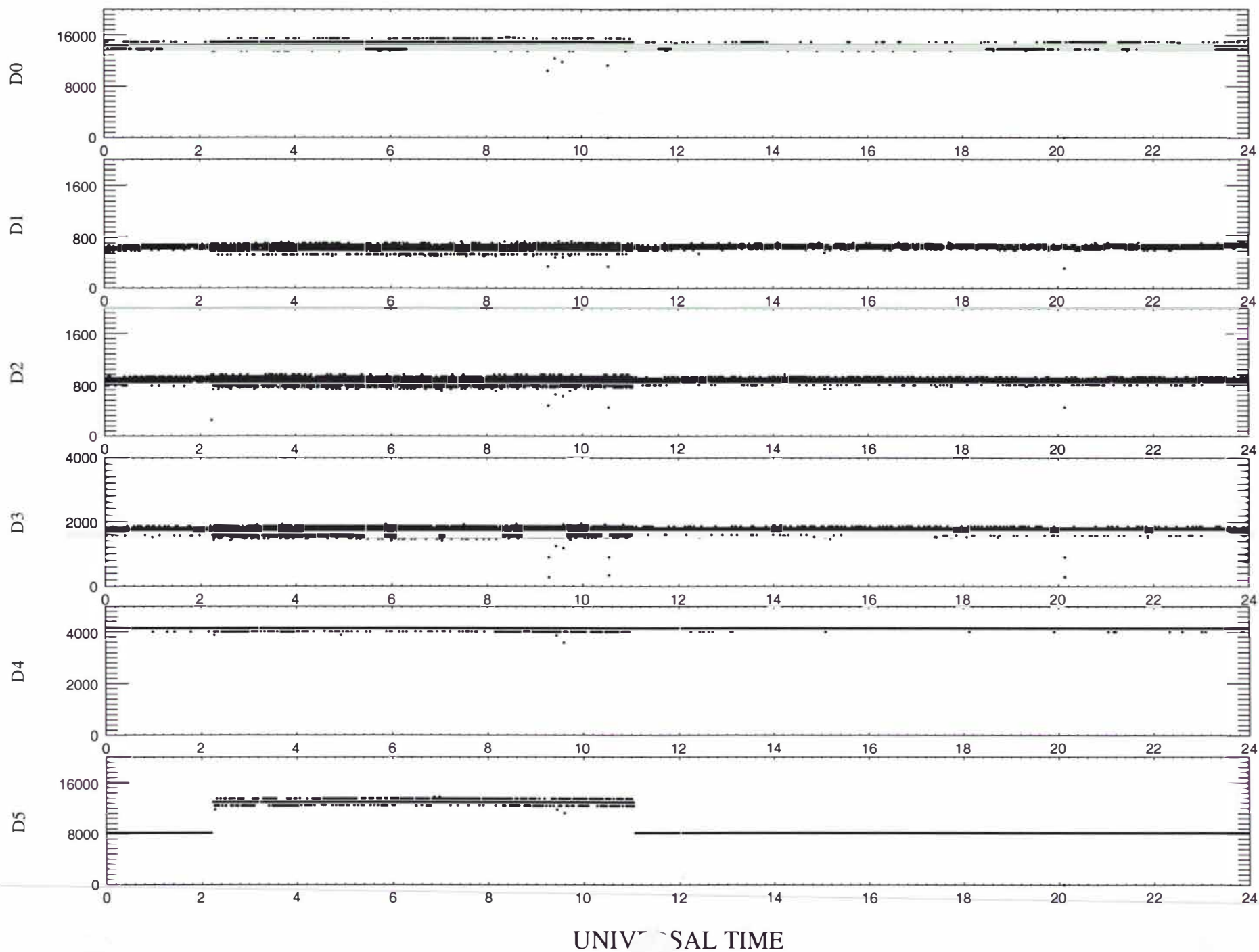


CALIBRATION DATA INCLUDED

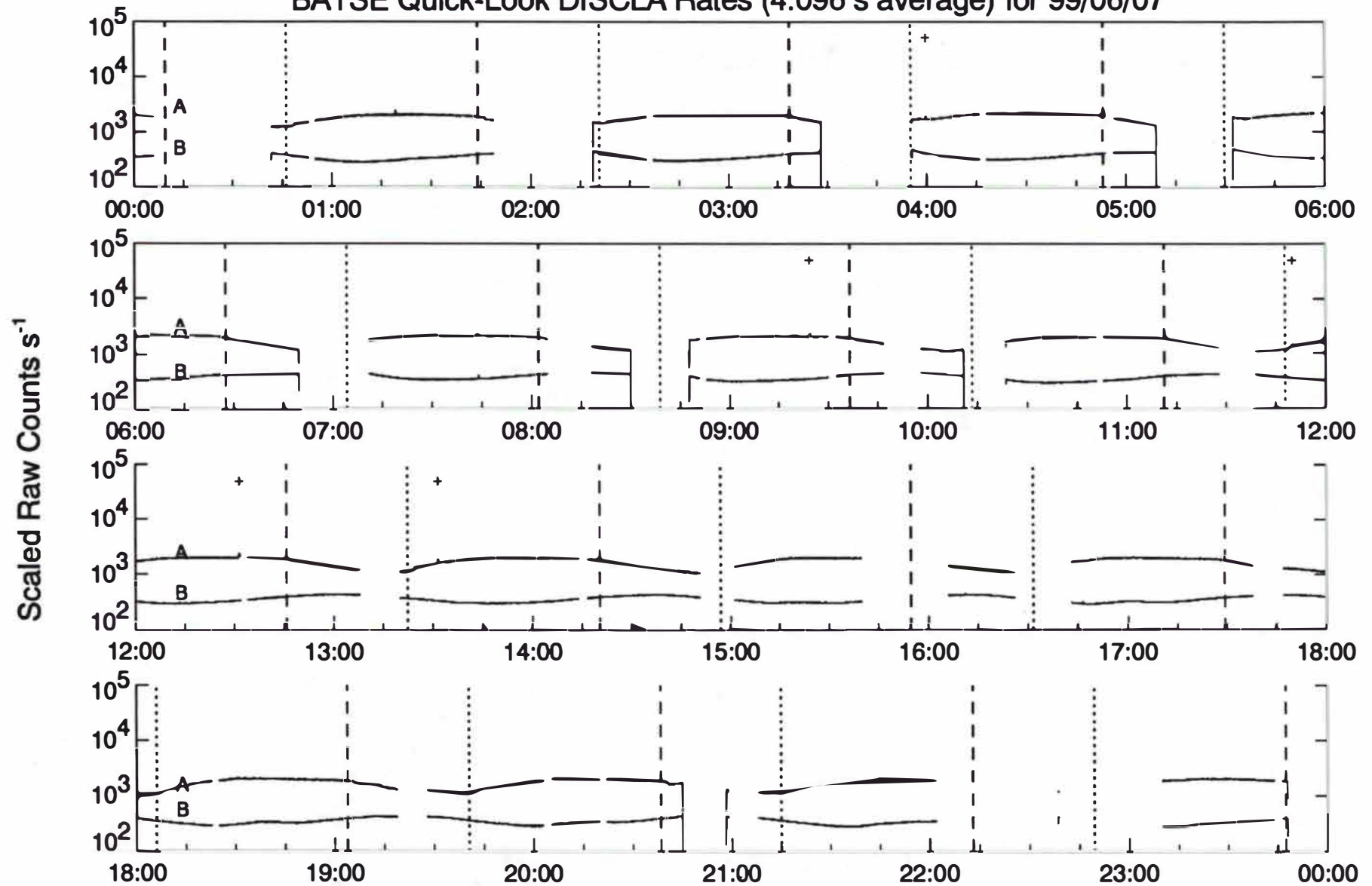


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/07



Current Time: 99/06/11, 1006 EDT

A: Channel 0 Most Sunward LAD

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

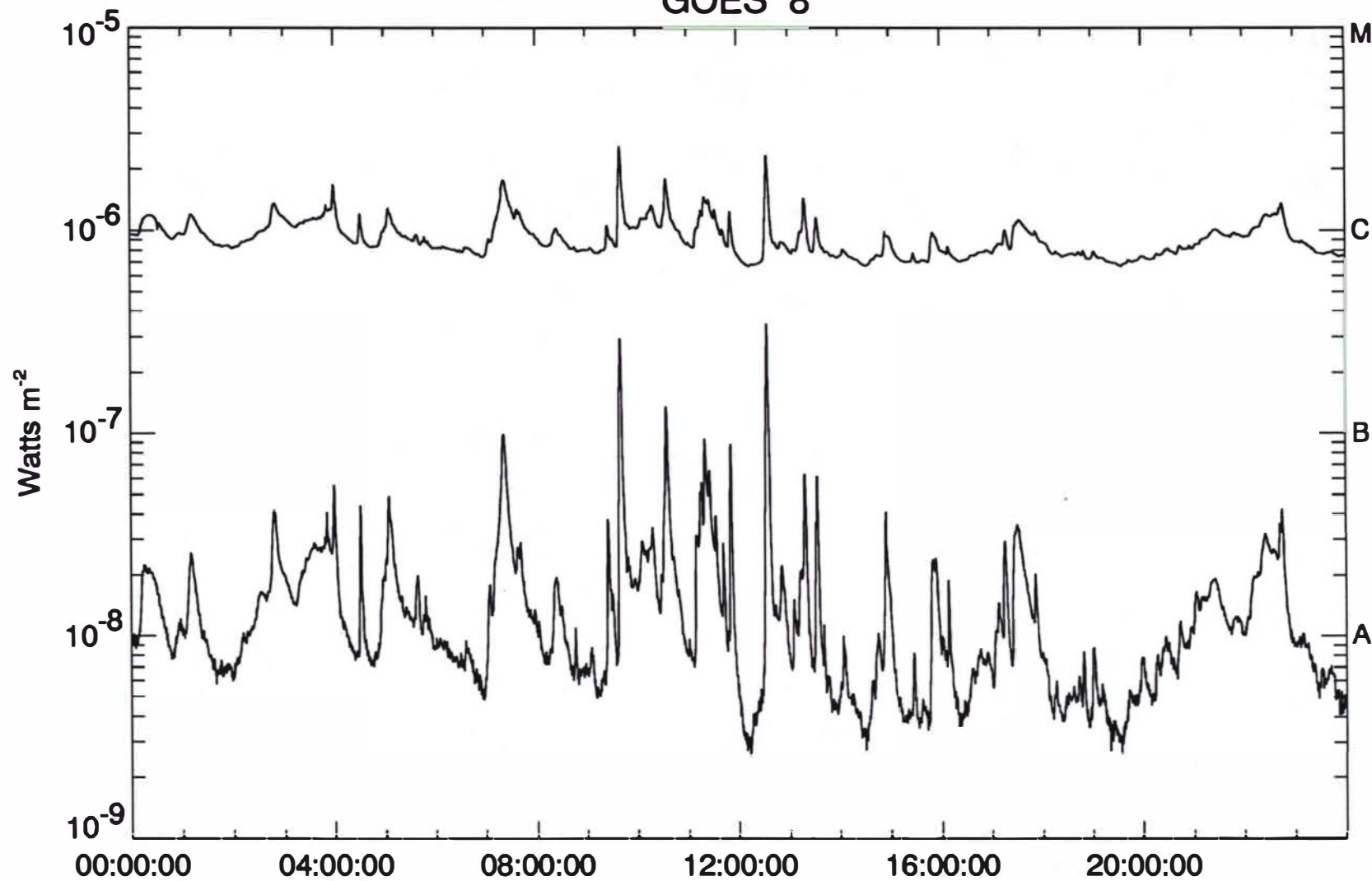
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 99/06/07, 0000:00

Plot created: 99/06/11, 1005

Channel

1 (1.0 - 8.0 Angstroms)

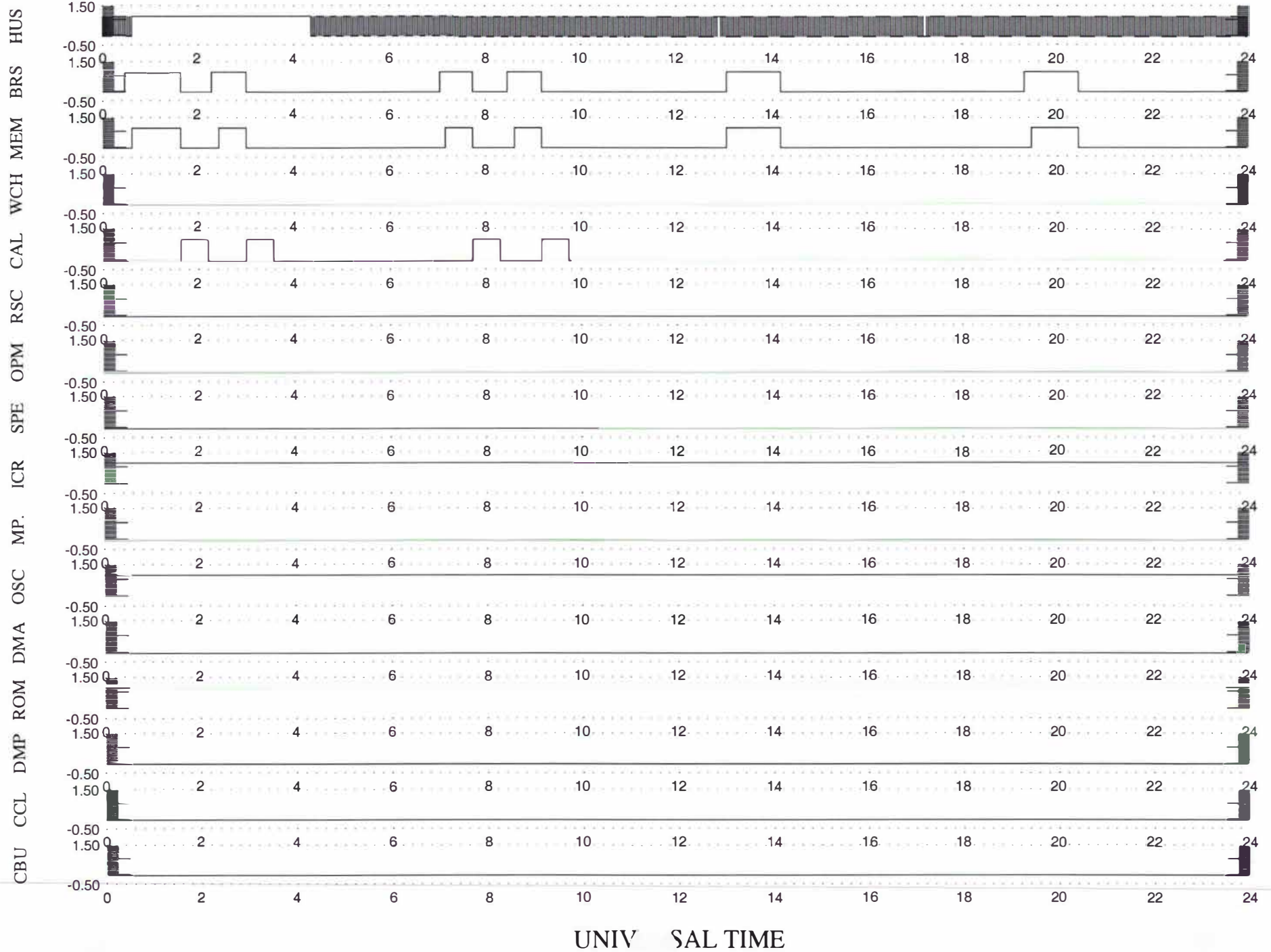
Background not subtracted

2 (0.5 - 4.0 Angstroms)

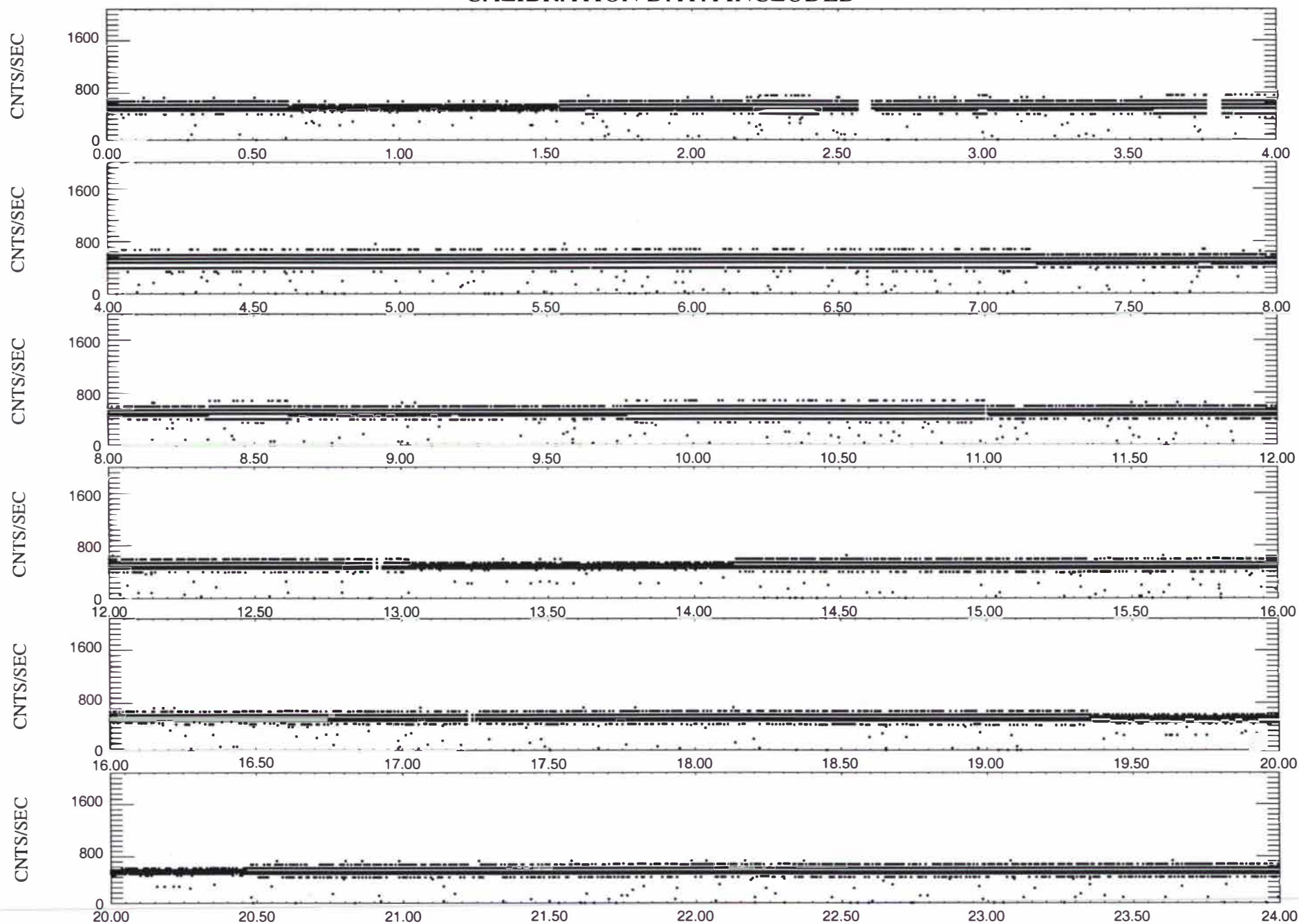
Background not subtracted

Sample average = 10

BURST NUMBER 15, 0 - 4

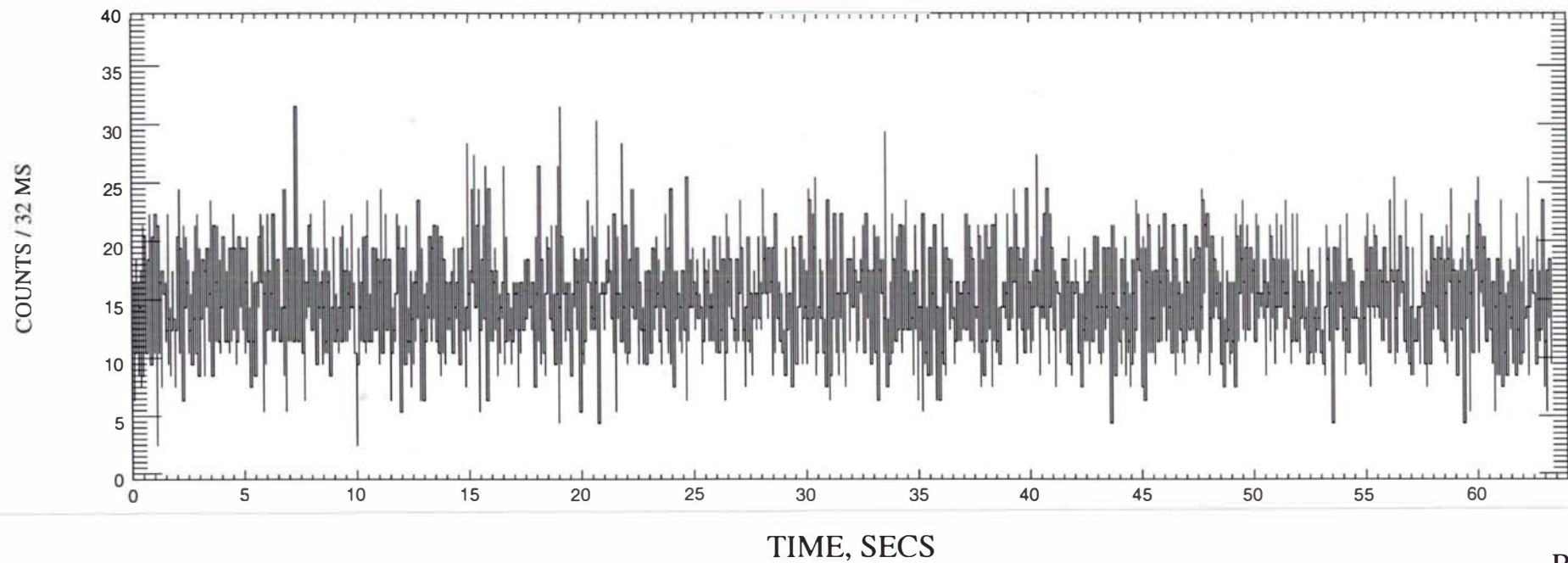
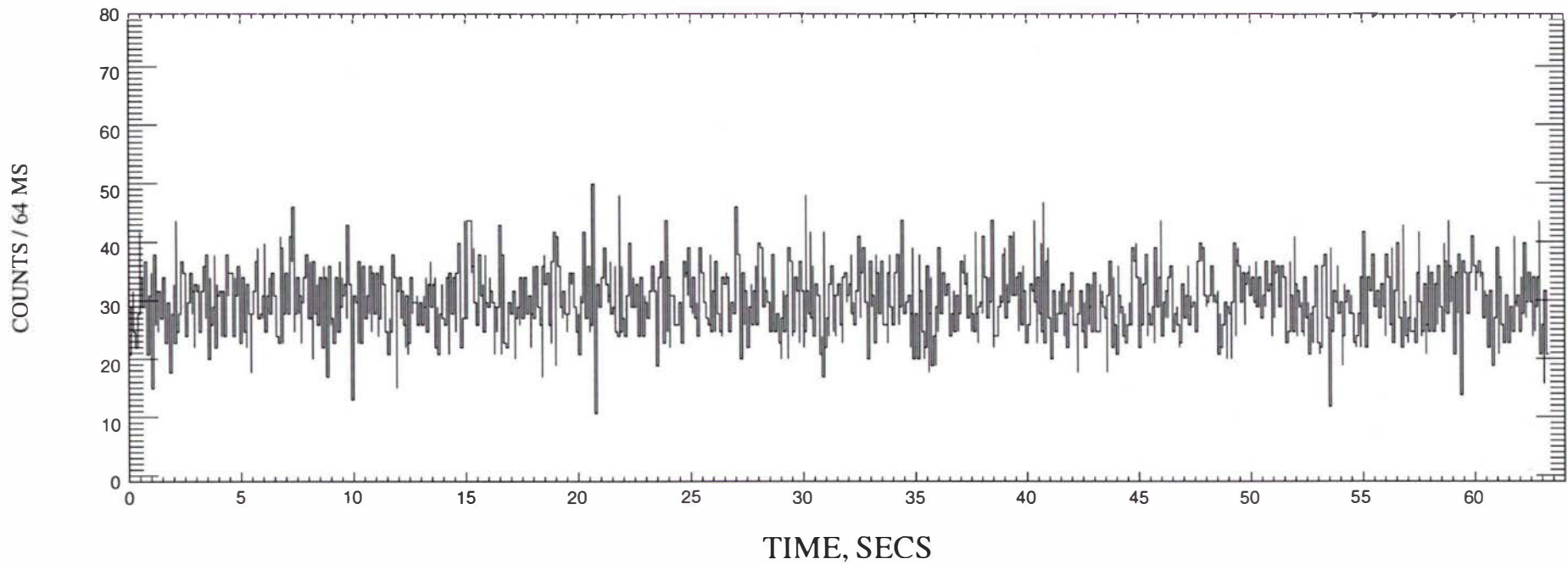


CALIBRATION DATA INCLUDED

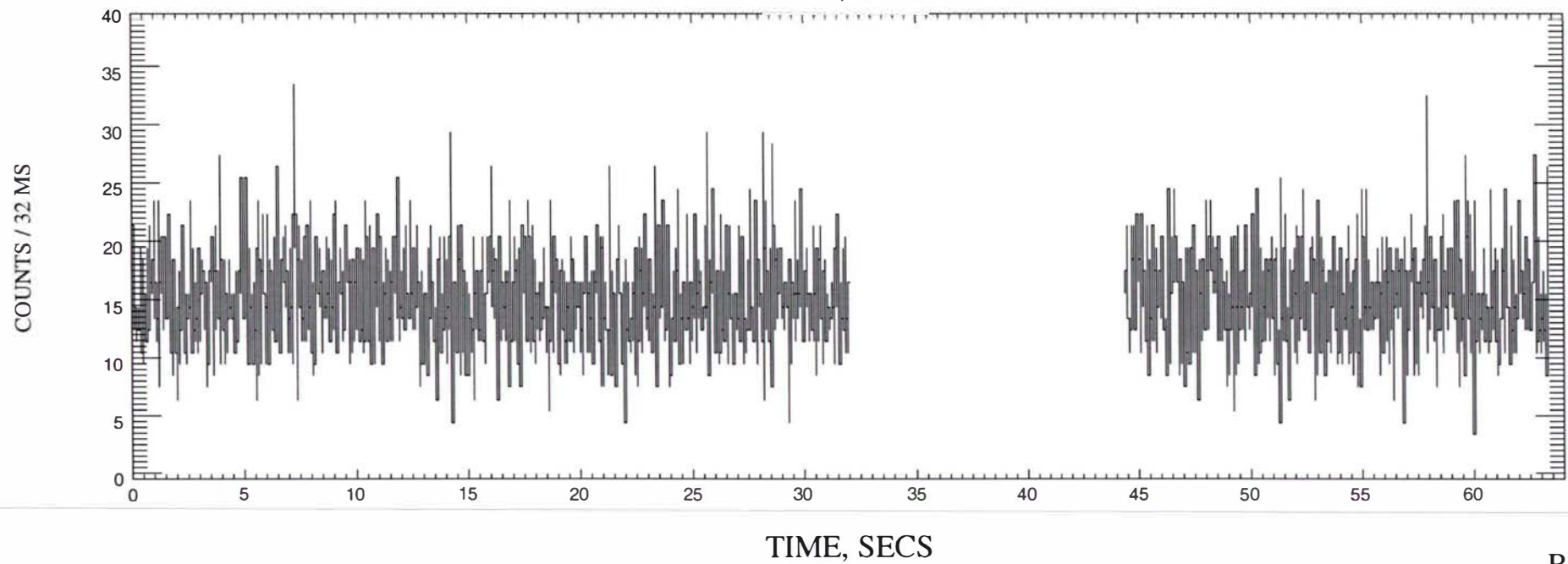
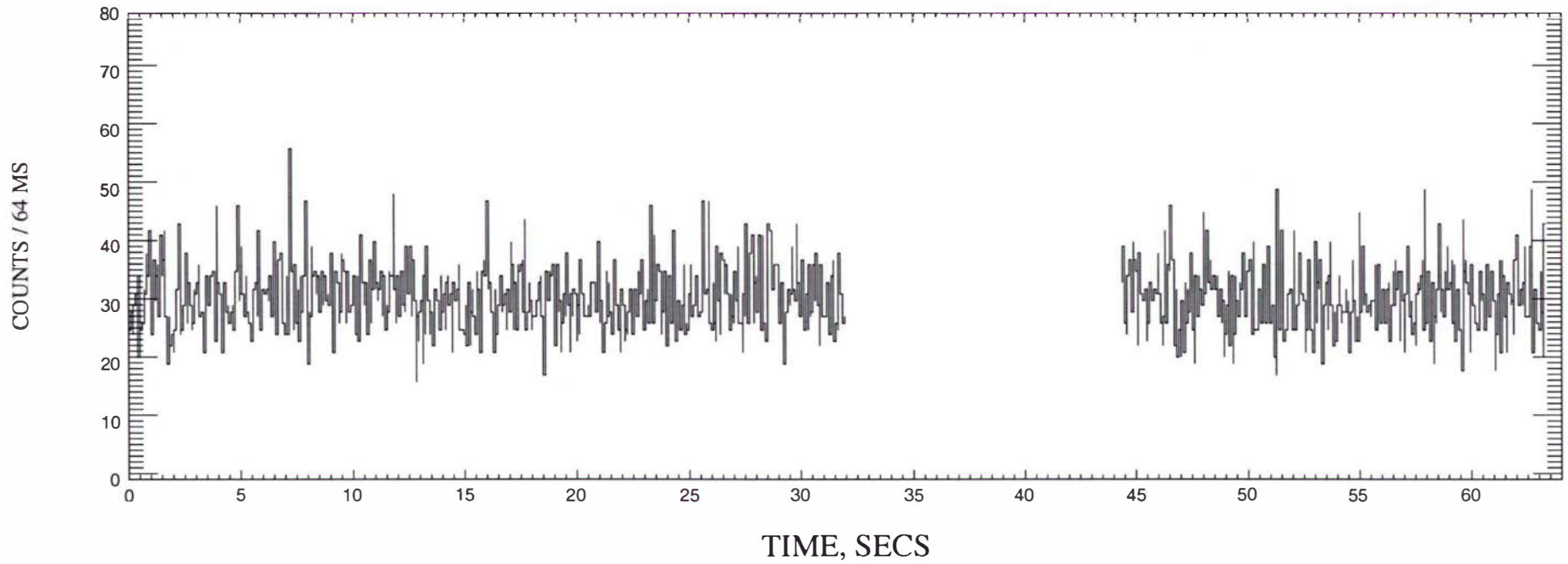


UNIVERSAL TIME

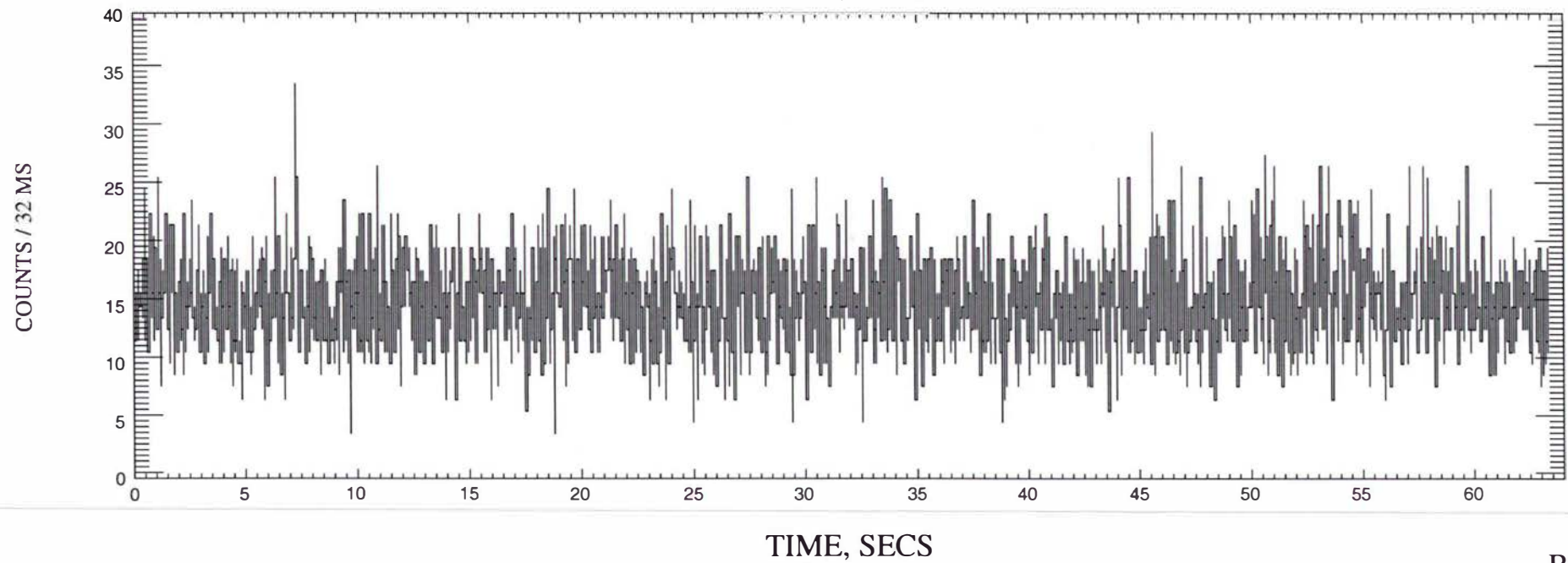
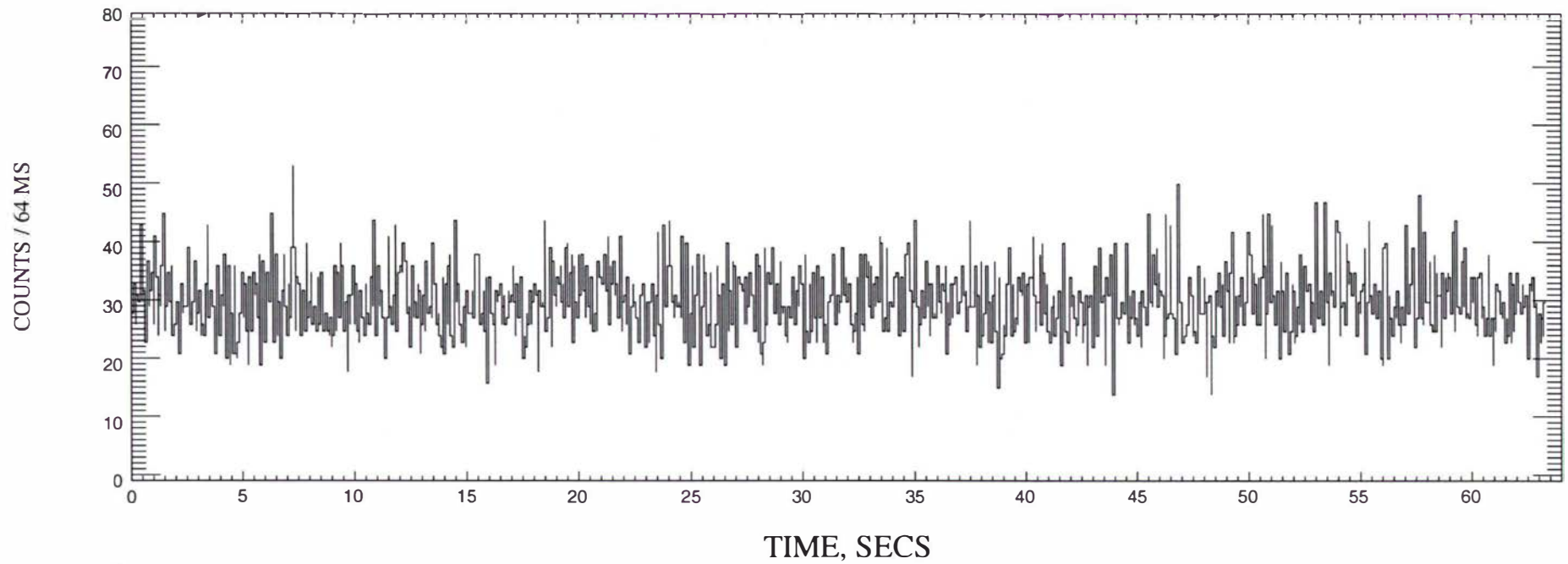
Burst Counter 15 at UT= 0.457568236457 h= 1647.246 s 00:27:27.246



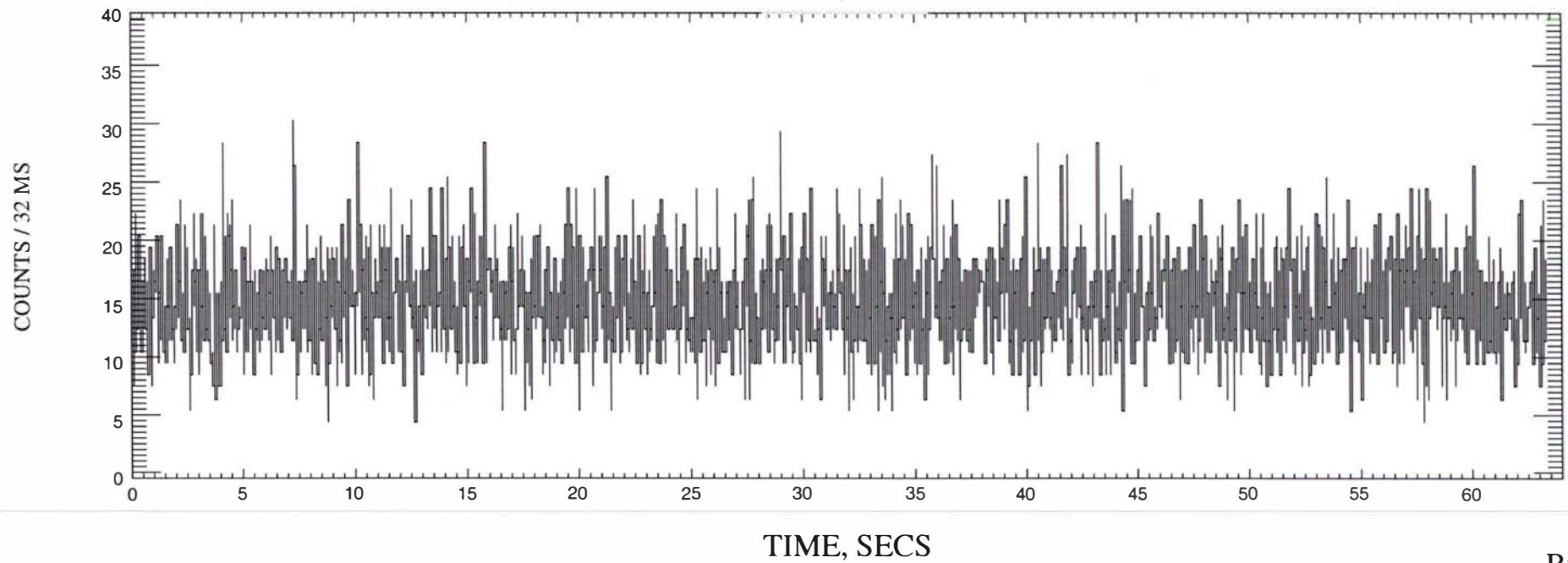
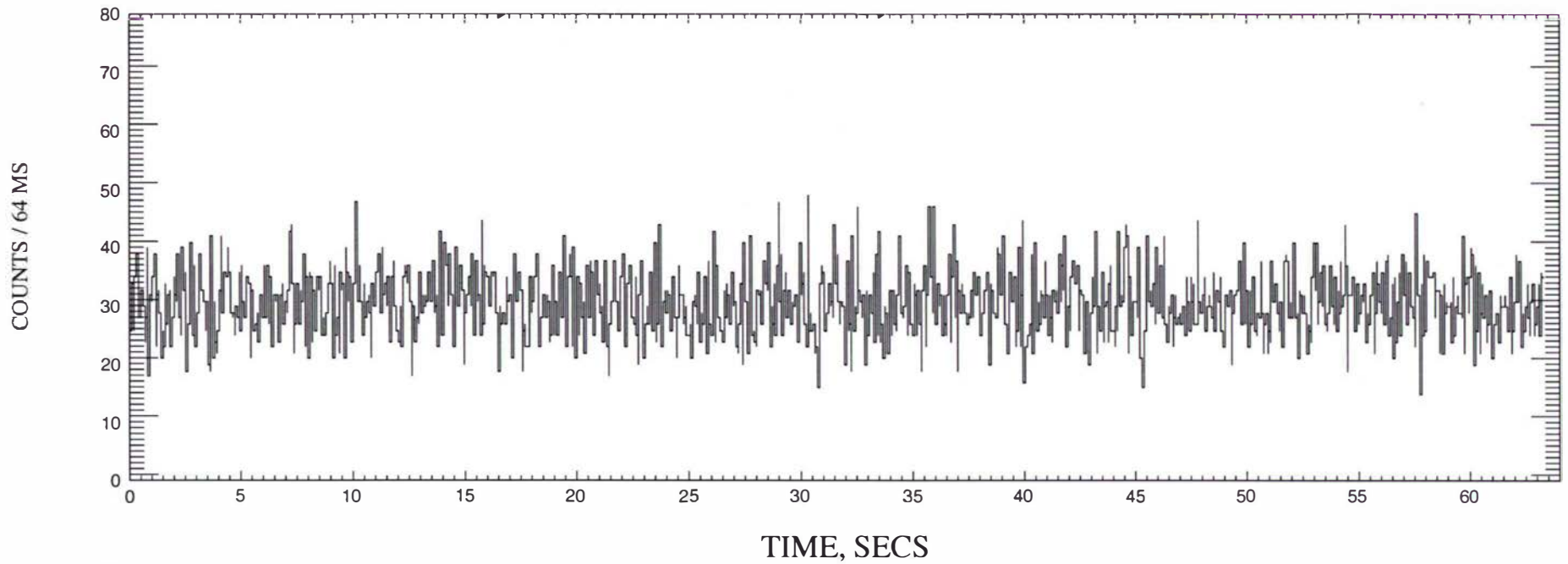
Burst Counter 0 at UT= 2.270502124363 h= 8173.808 s 02:16:13.808



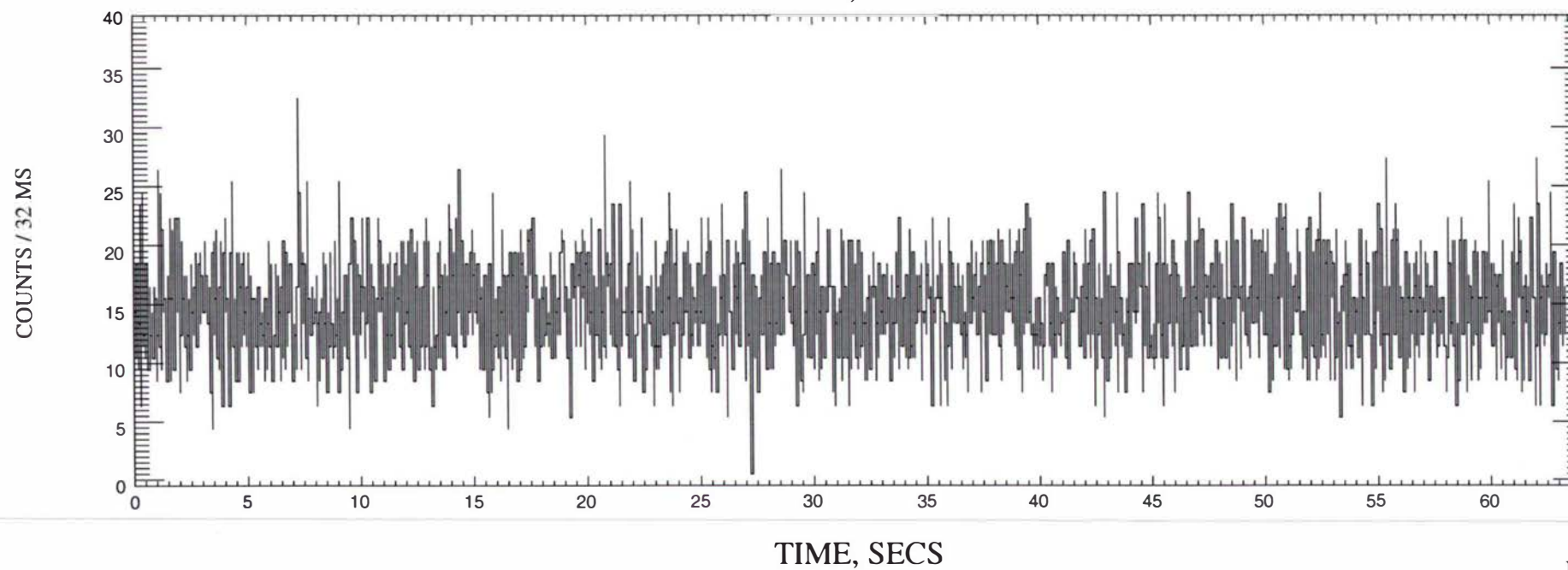
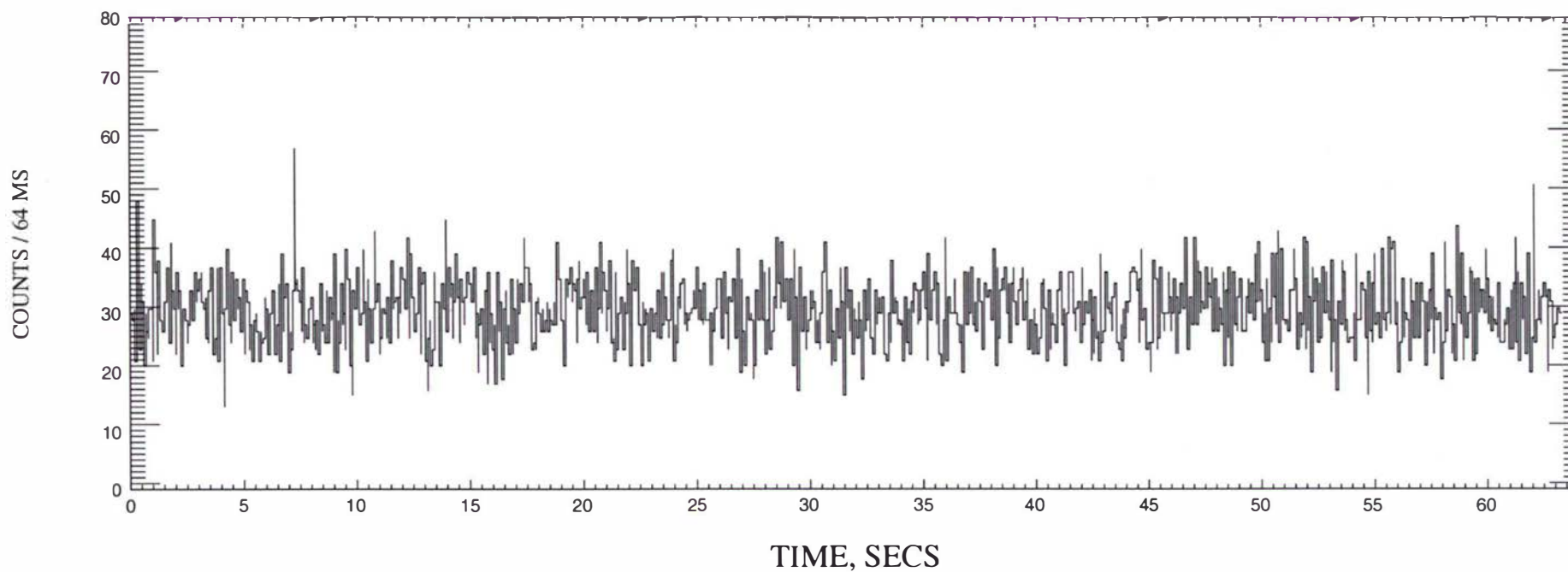
Burst Counter 1 at UT= 7.028017688327 h=25300.864 s 07:01:40.864



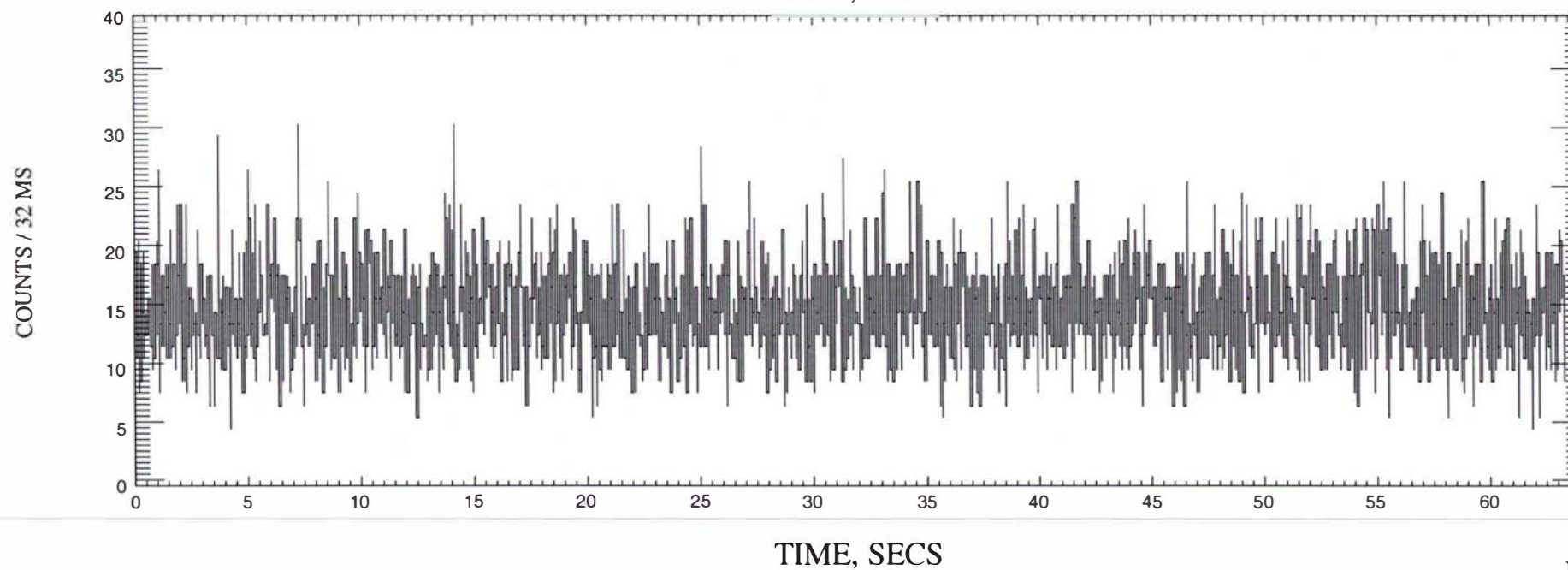
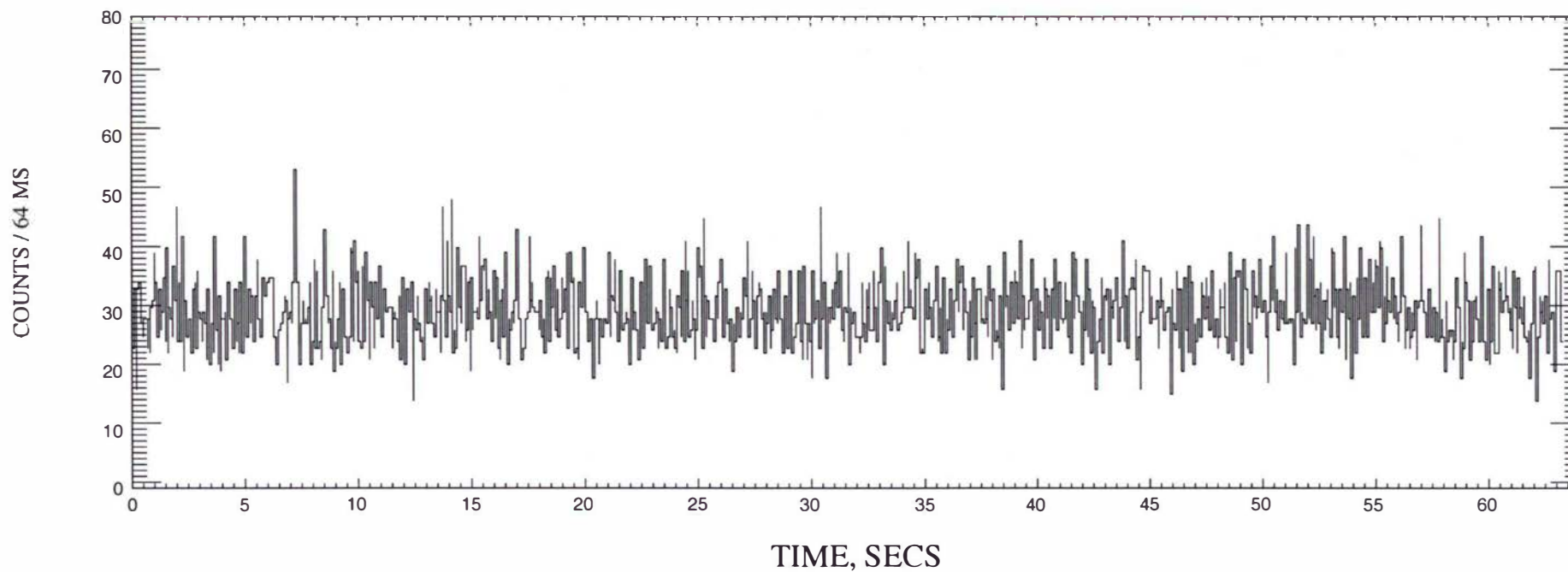
Burst Counter 2 at UT= 8.464004275004 h=30470.415 s 08:27:50.415



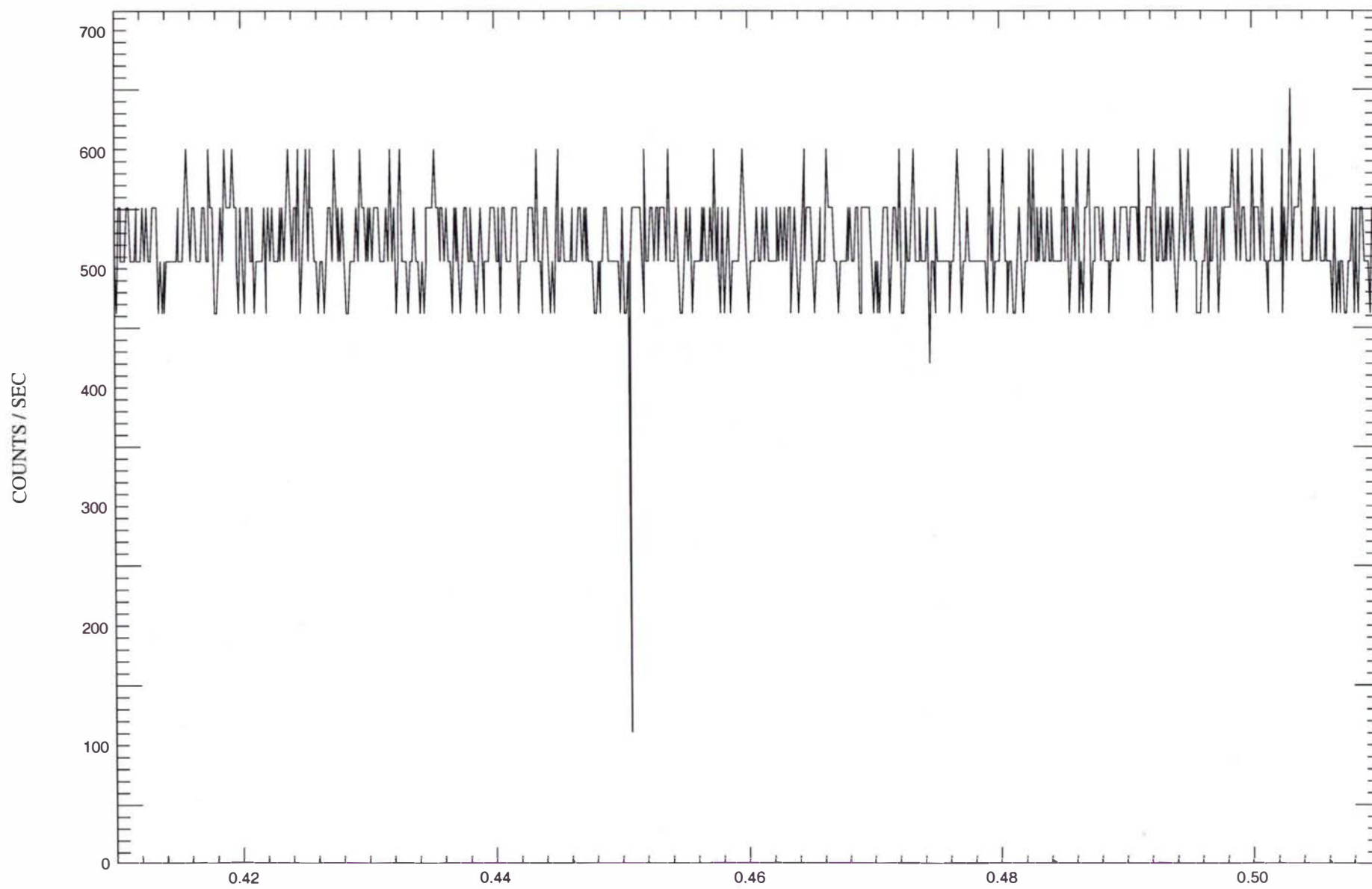
Burst Counter 3 at UT= 9.214150344001 h=33170.941 s 09:12:50.941



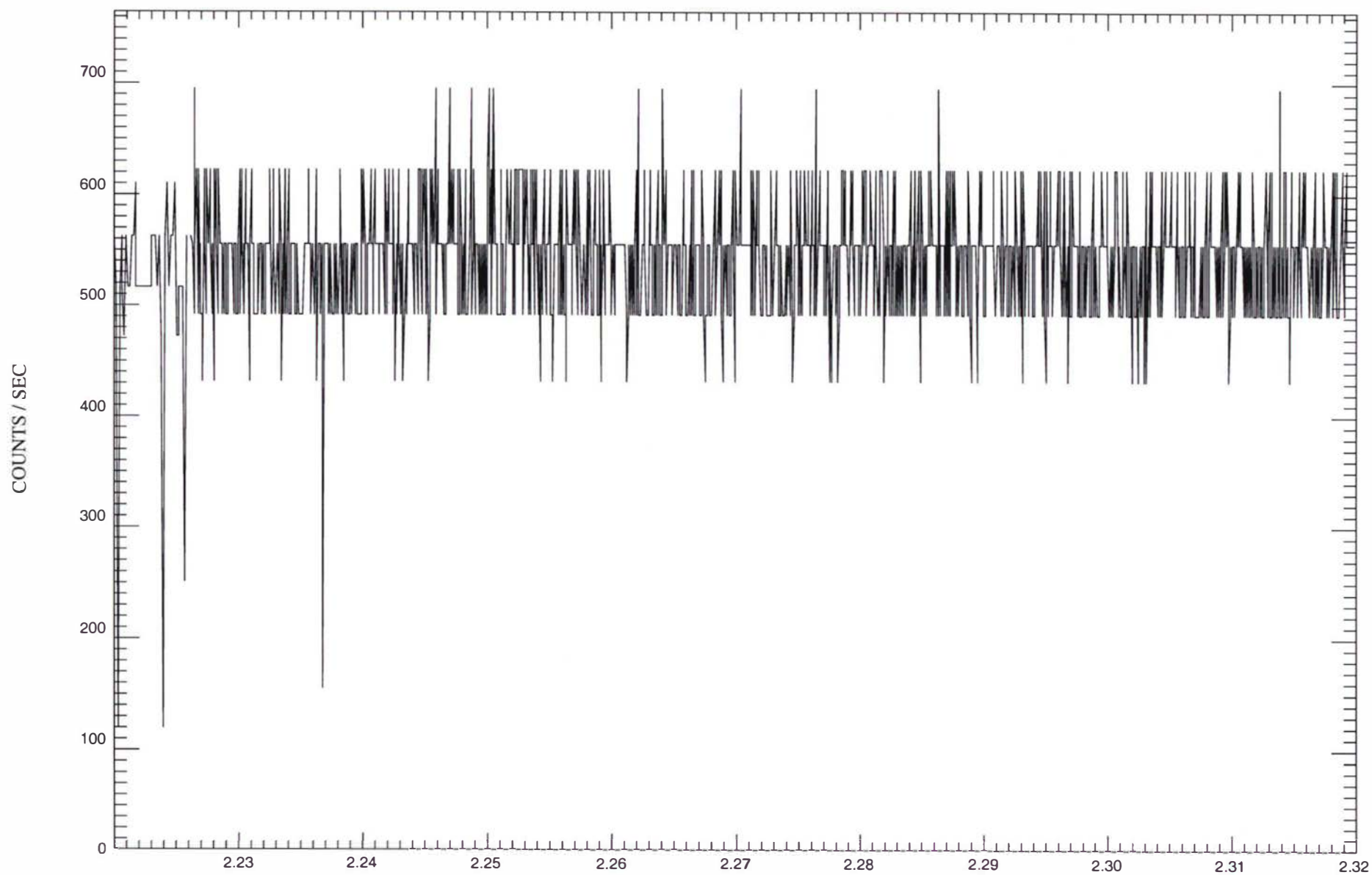
Burst Counter 4 at UT=19.202897436354 h=69130.431 s 19:12:10.431



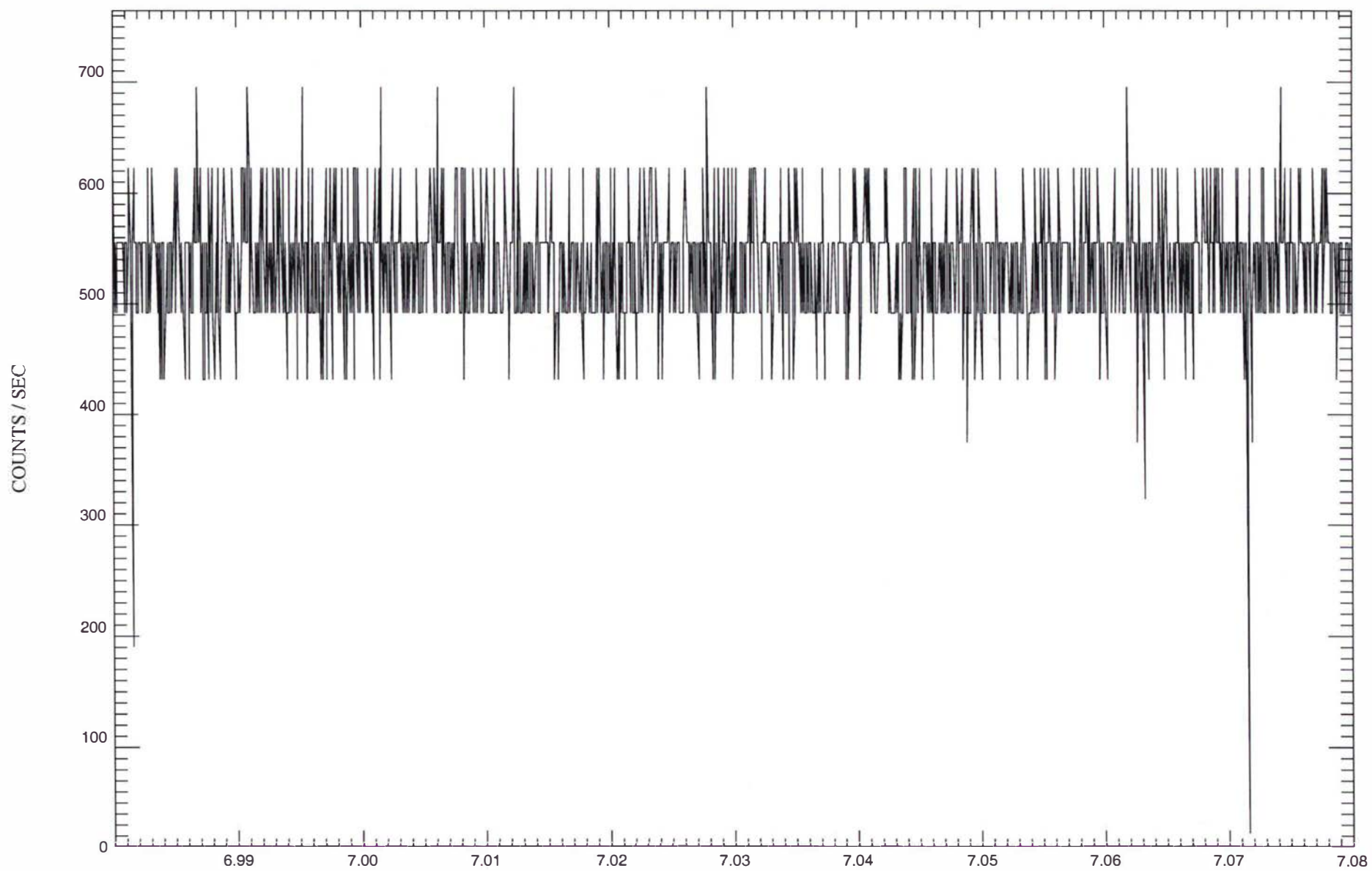
CALIBRATION DATA INCLUDED



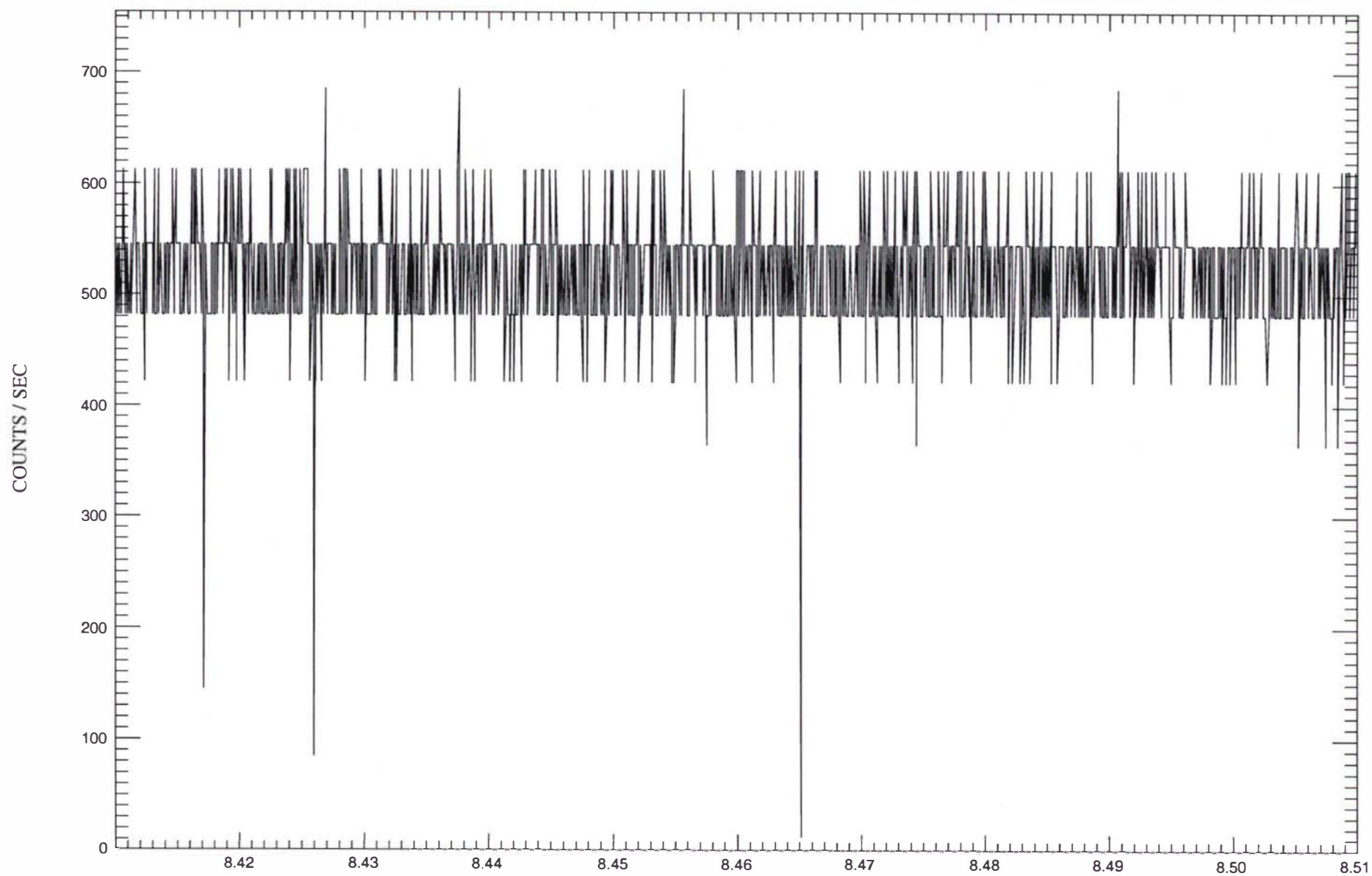
CALIBRATION DATA INCLUDED



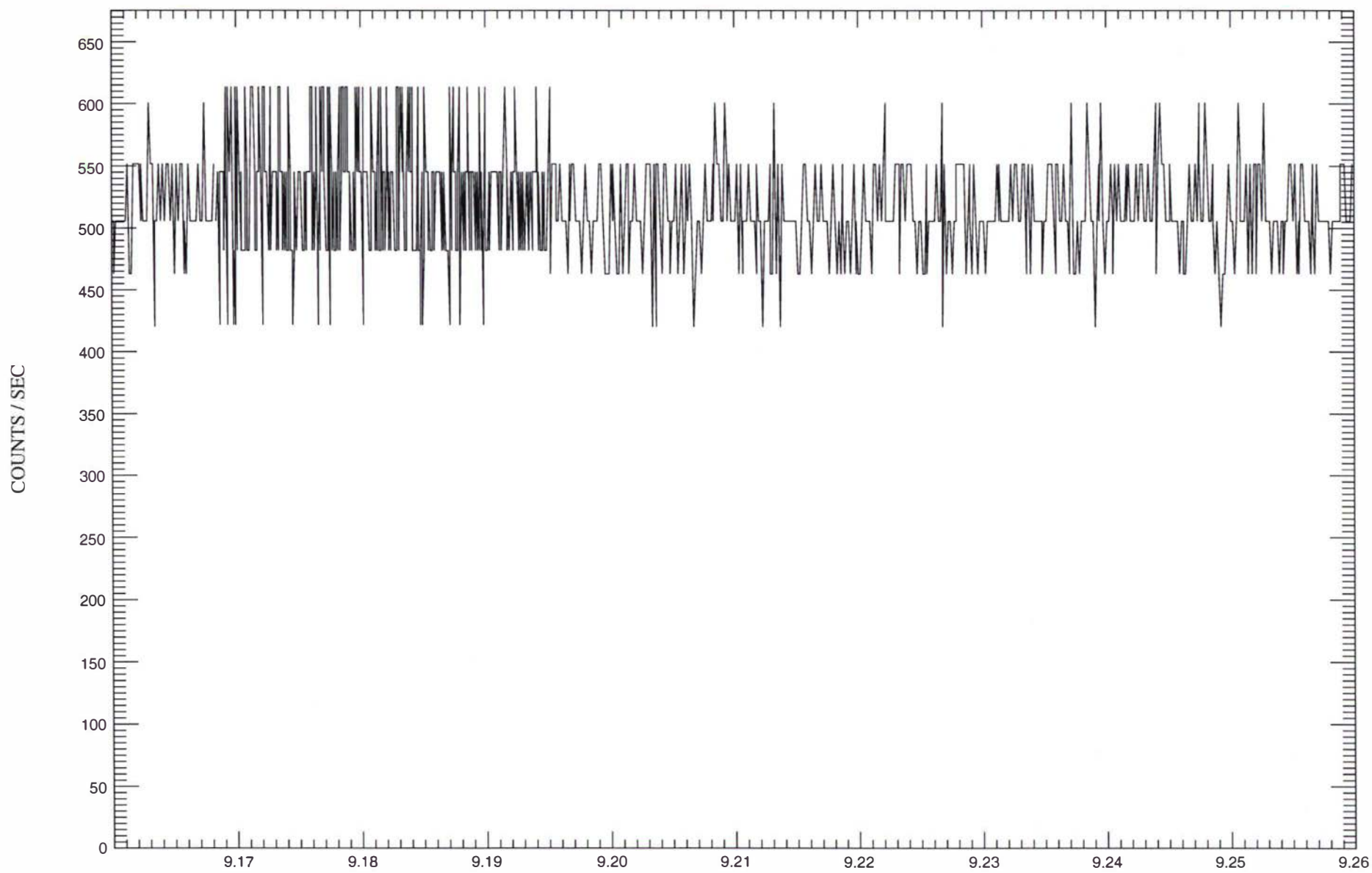
CALIBRATION DATA INCLUDED



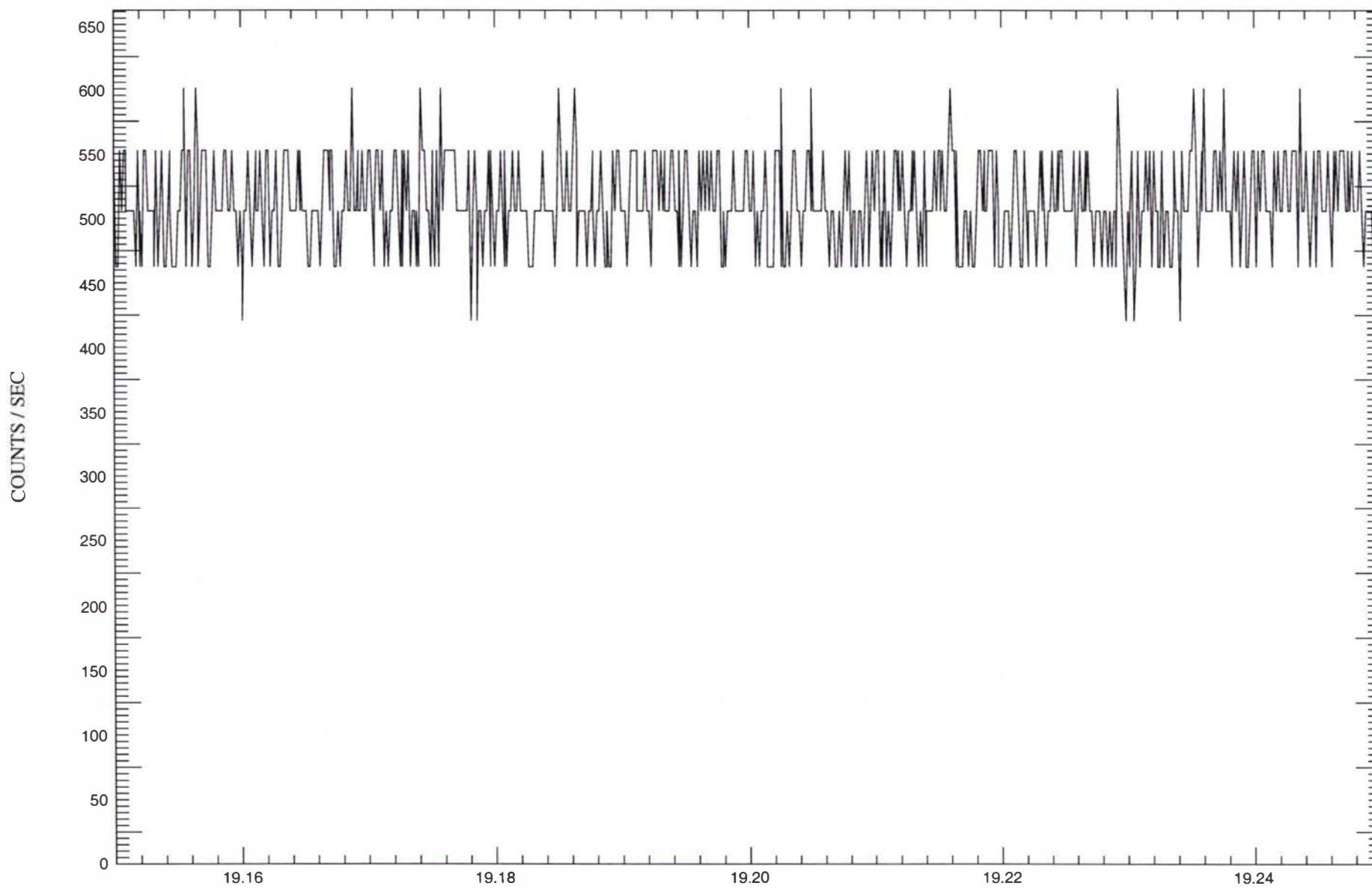
CALIBRATION DATA INCLUDED

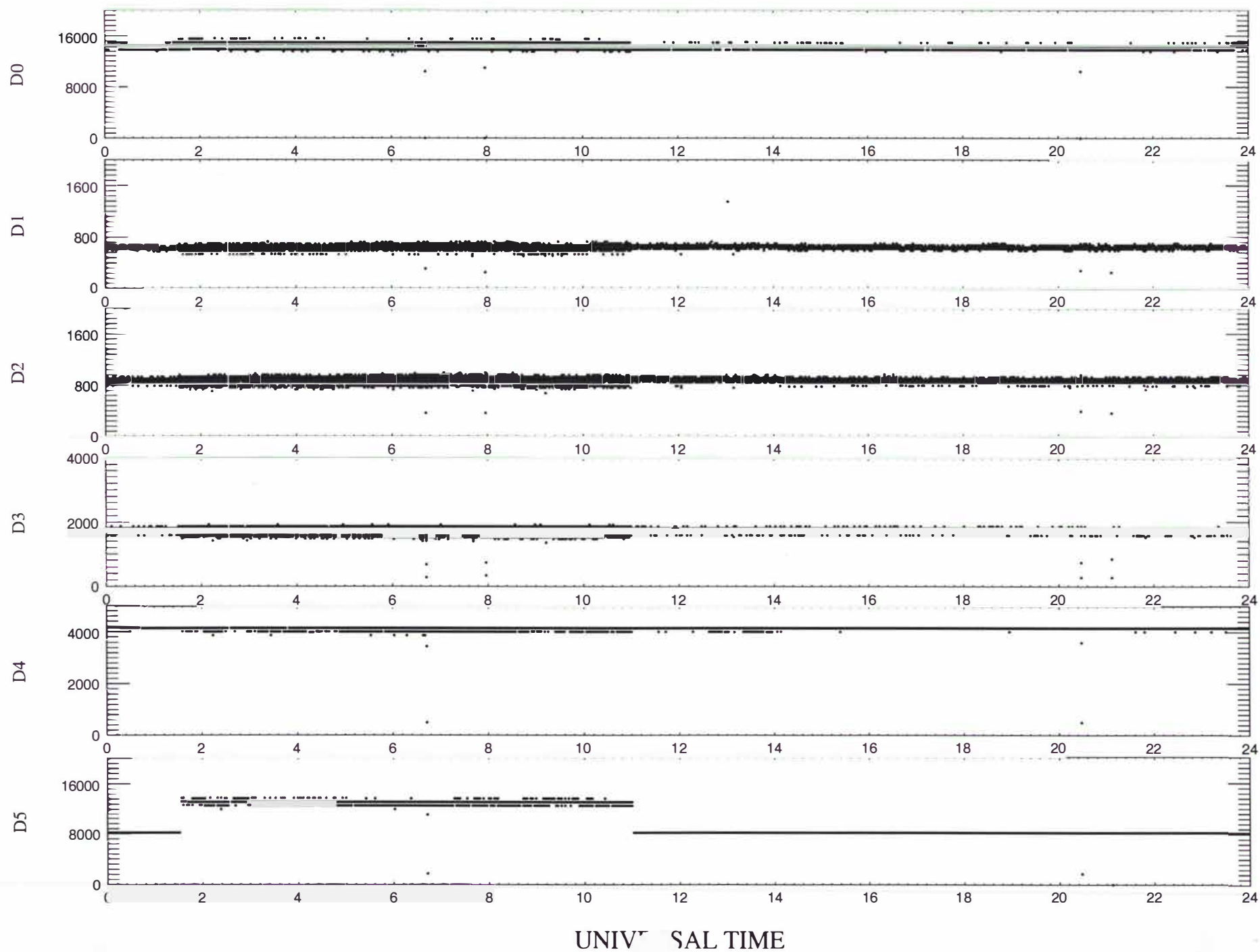


CALIBRATION DATA INCLUDED

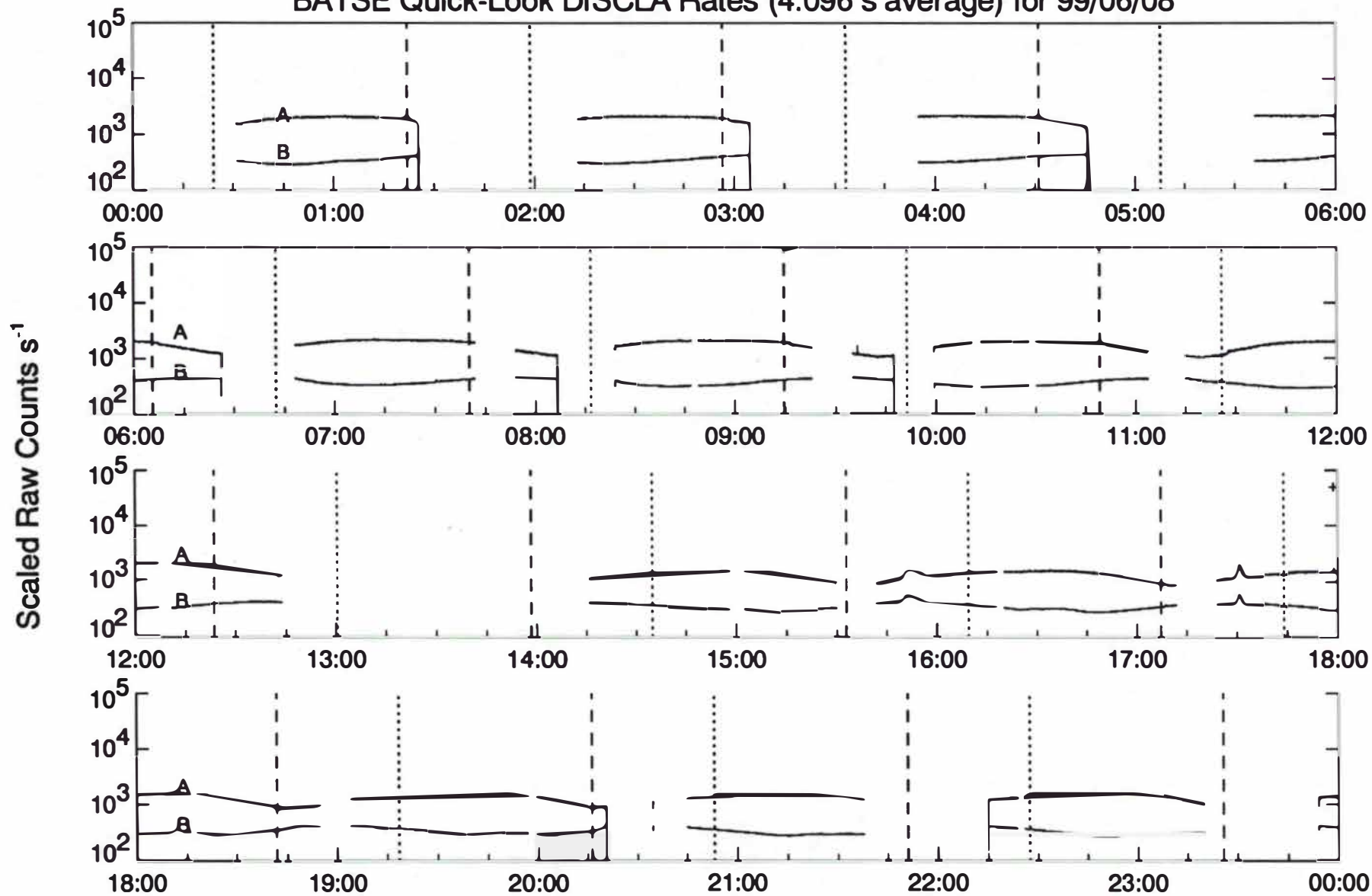


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/08



Current Time: 99/06/12, 1006 EDT

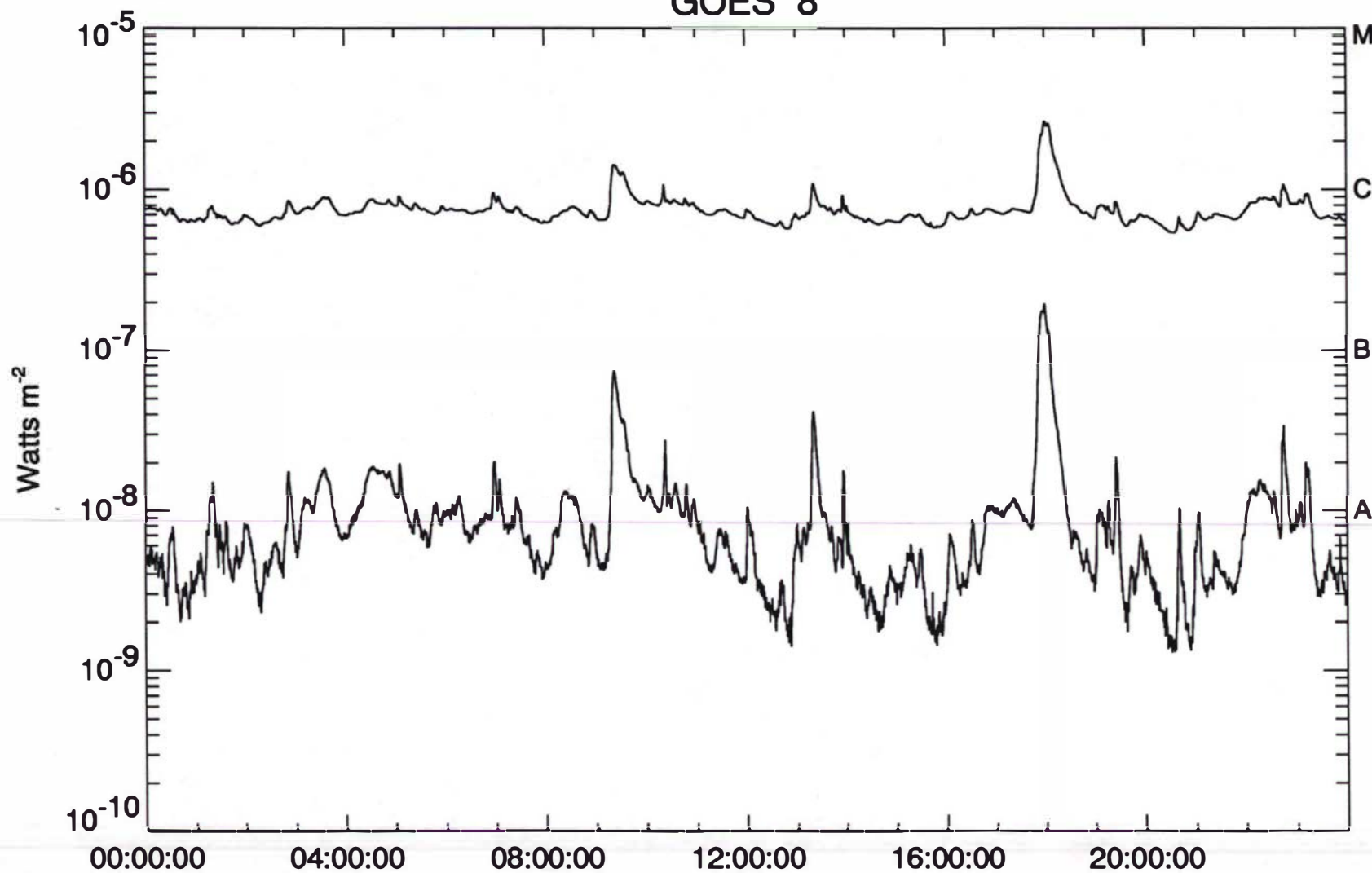
A: Channel 0 Most Sunward LAD

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: 99/06/08, 0000:00

Plot created: 99/06/12, 1005

Channel

1 (1.0 - 8.0 Angstroms)

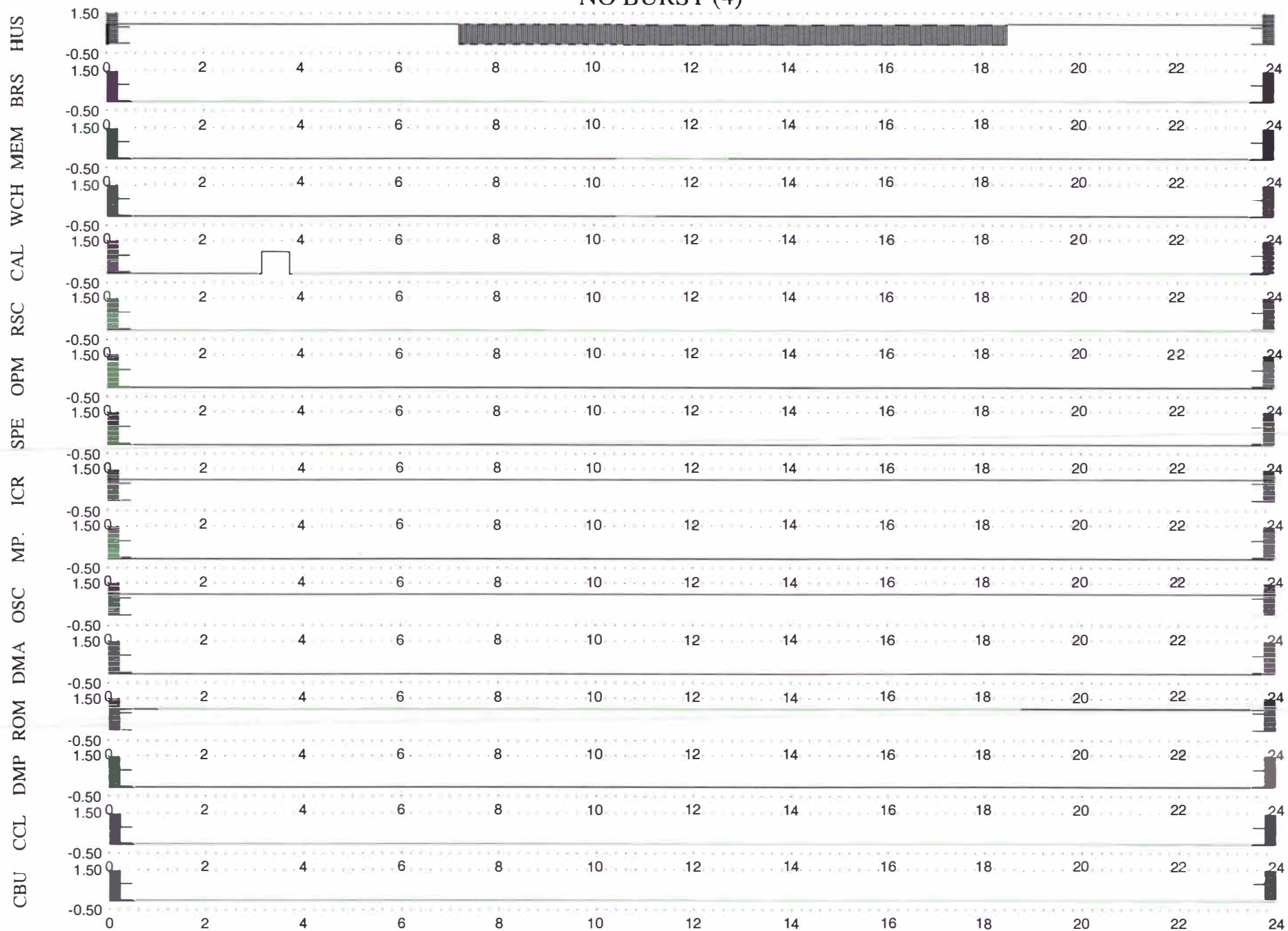
Background not subtracted

2 (0.5 - 4.0 Angstroms)

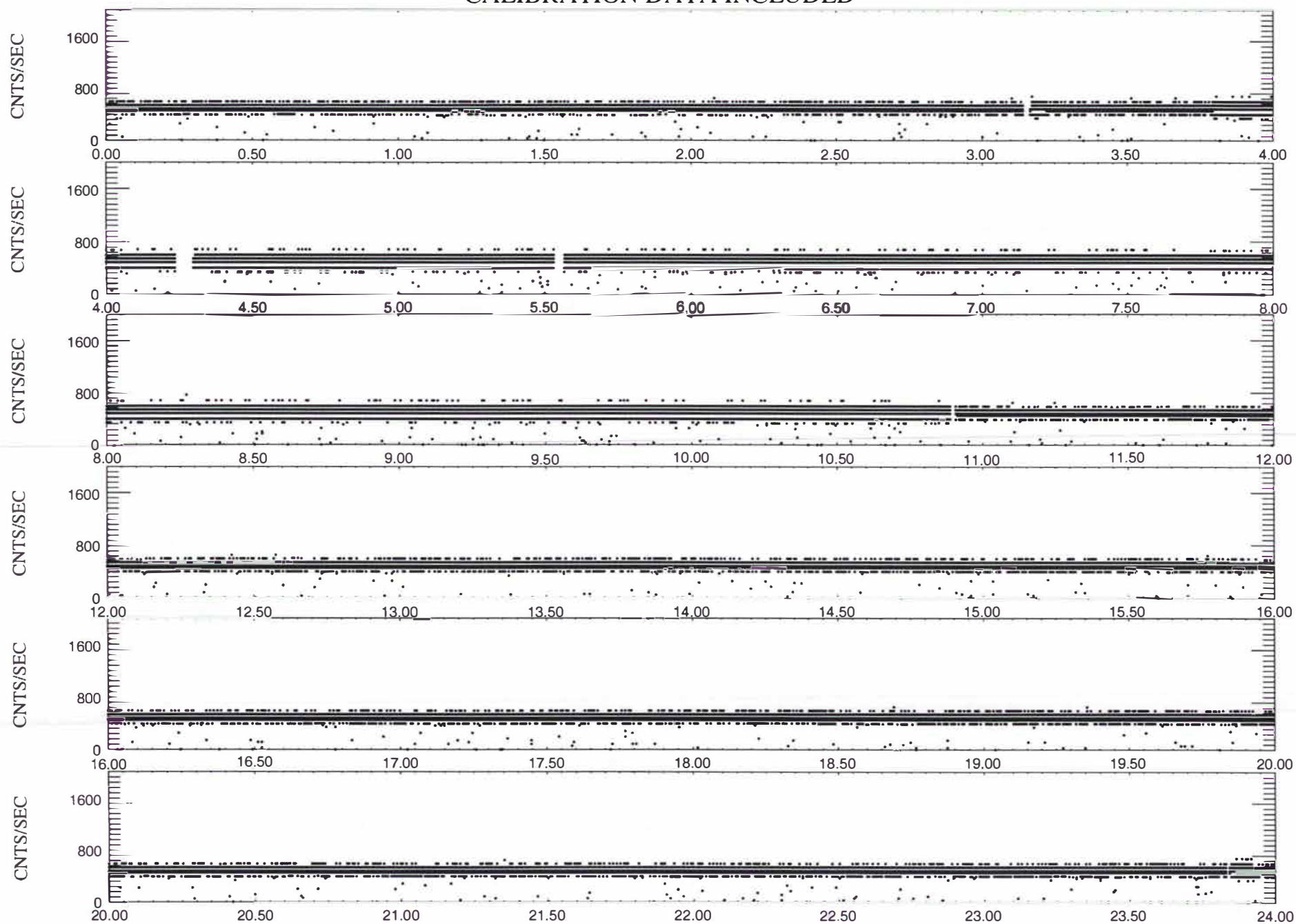
Background not subtracted

Sample average = 10

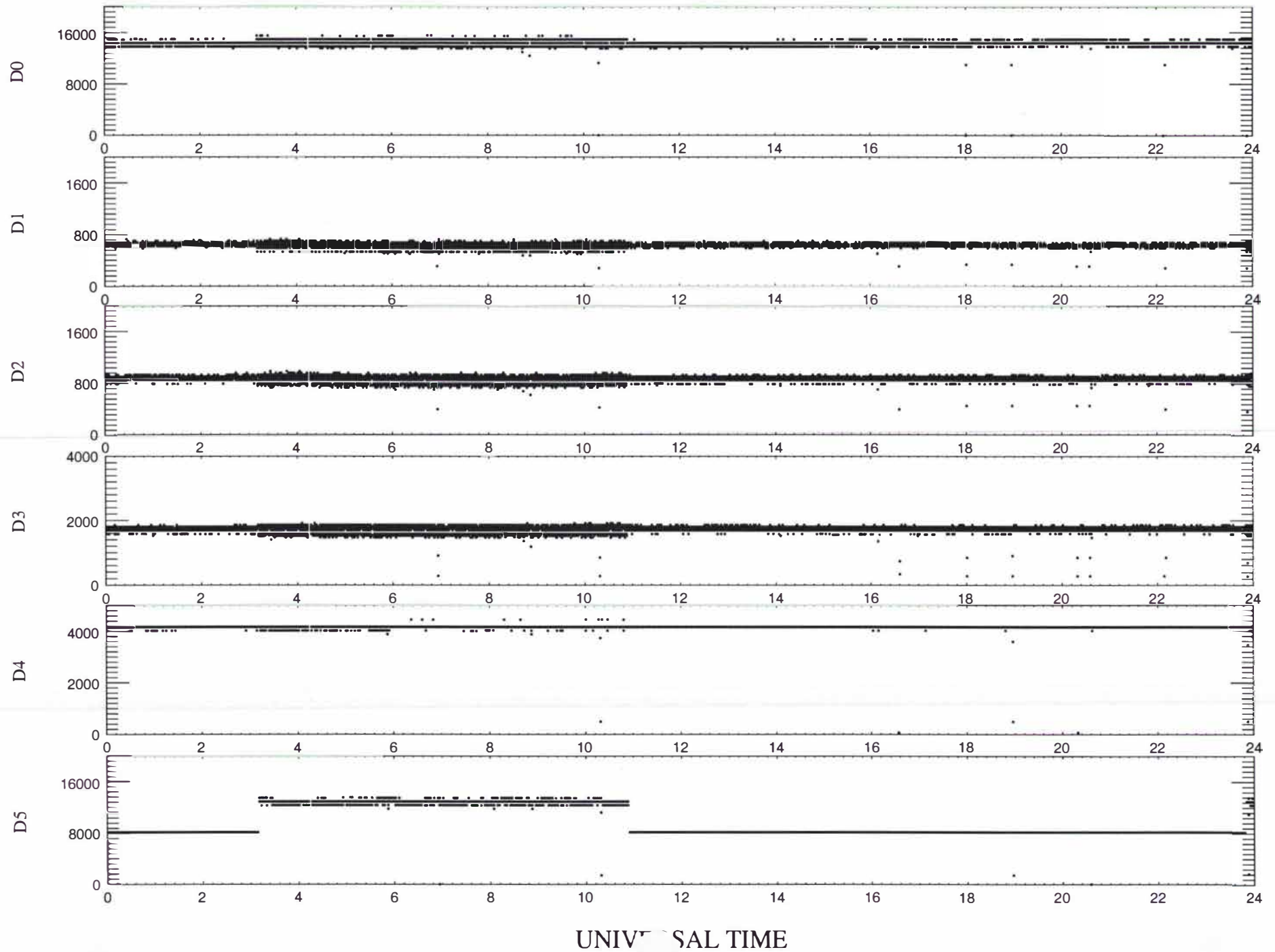
UNIVERSAL TIME



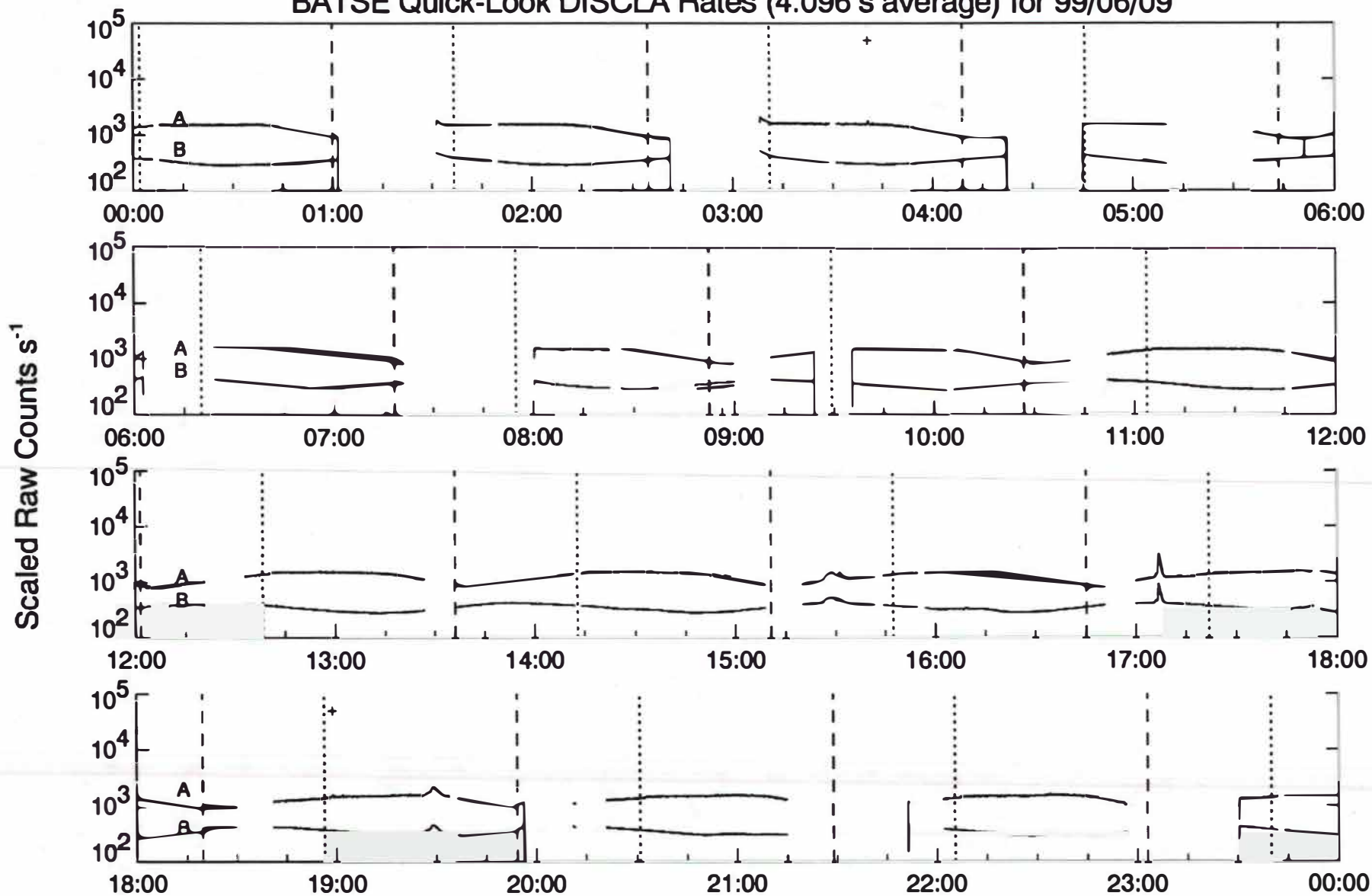
CALIBRATION DATA INCLUDED



UNIVERSAL TIME



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/09

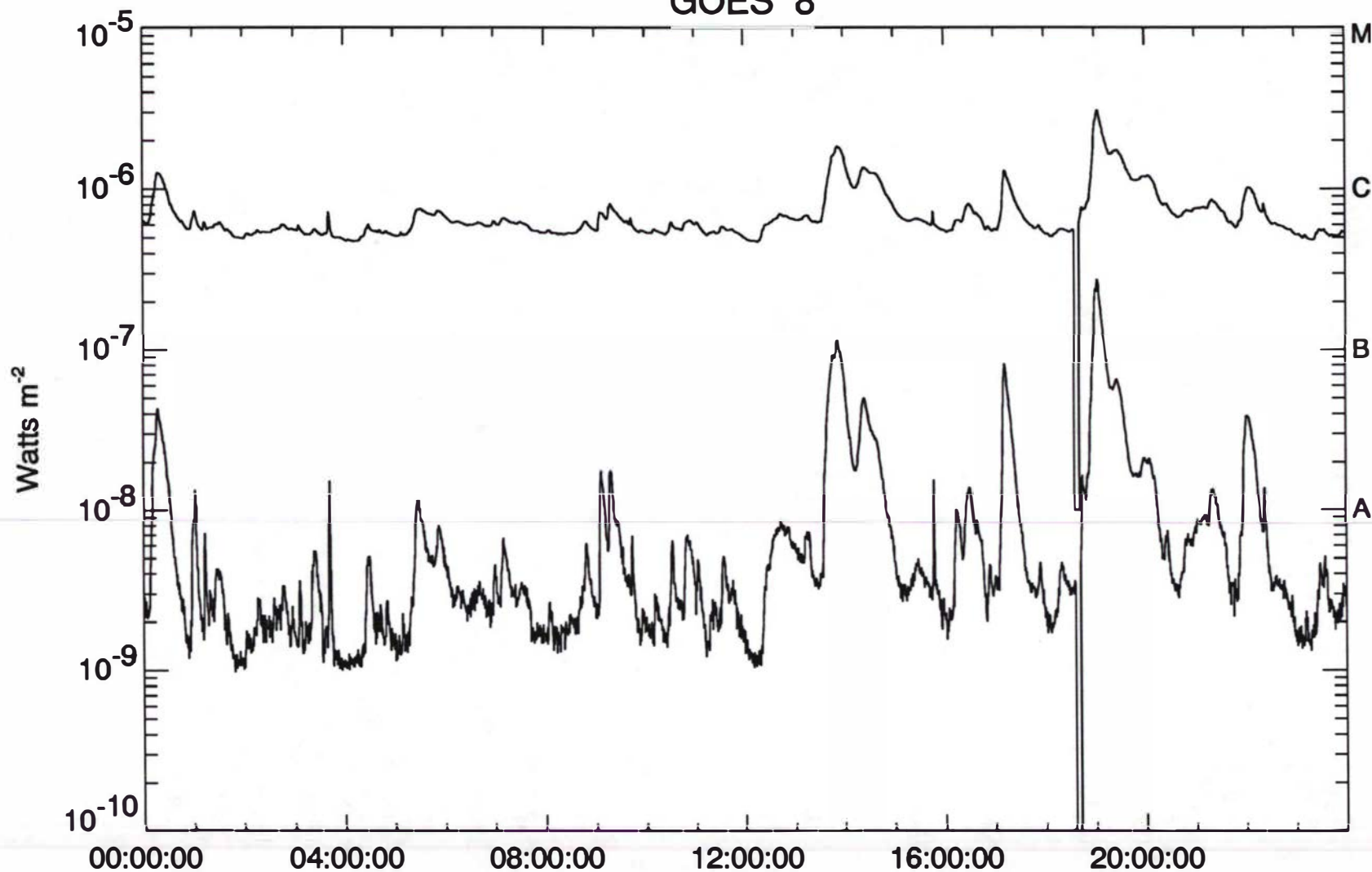


Current Time: 99/06/13, 1013 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/09, 0000:00

Plot created: 99/06/13, 1012

Channel

1 (1.0 - 8.0 Angstroms)

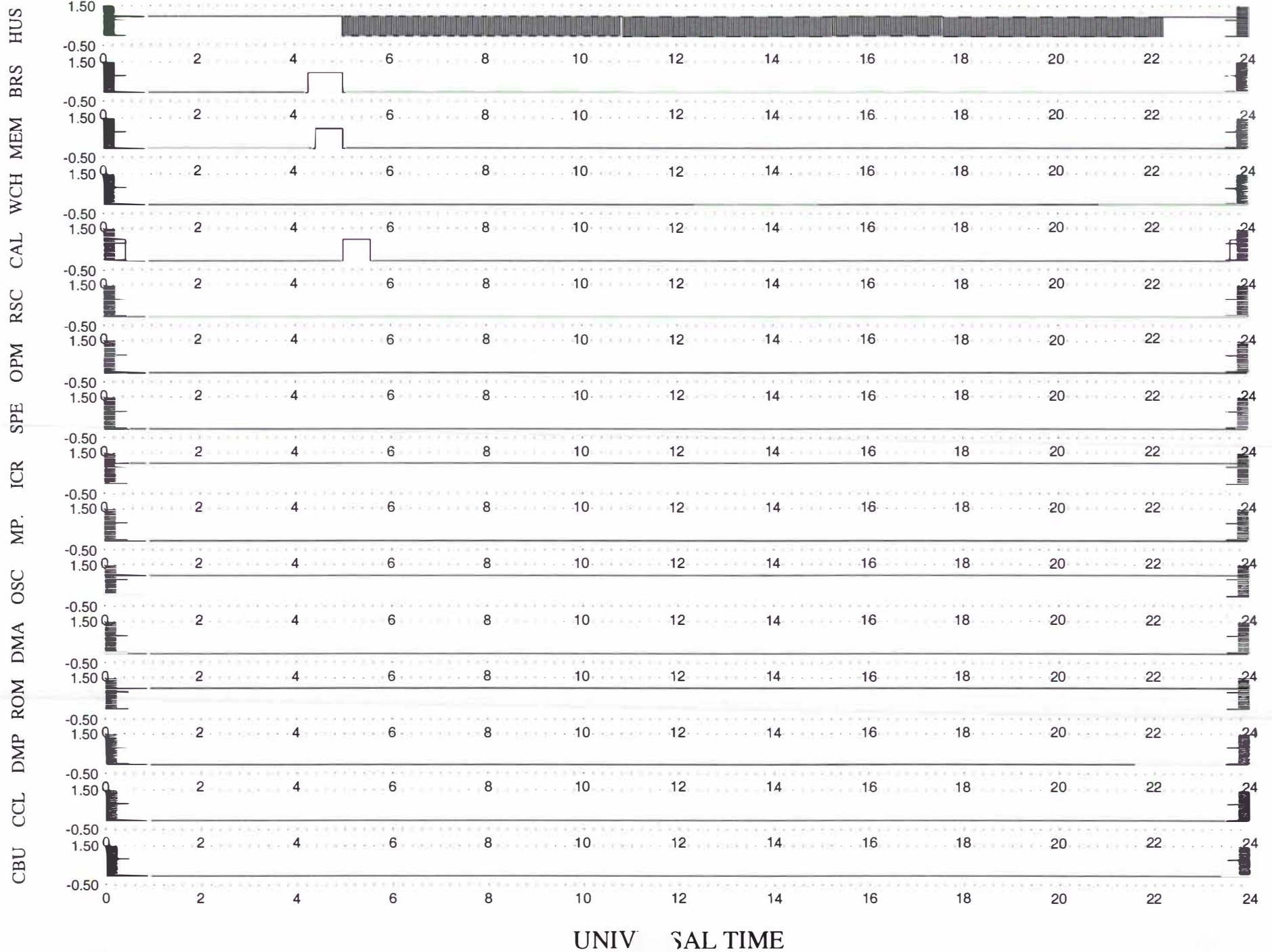
Background not subtracted

2 (0.5 - 4.0 Angstroms)

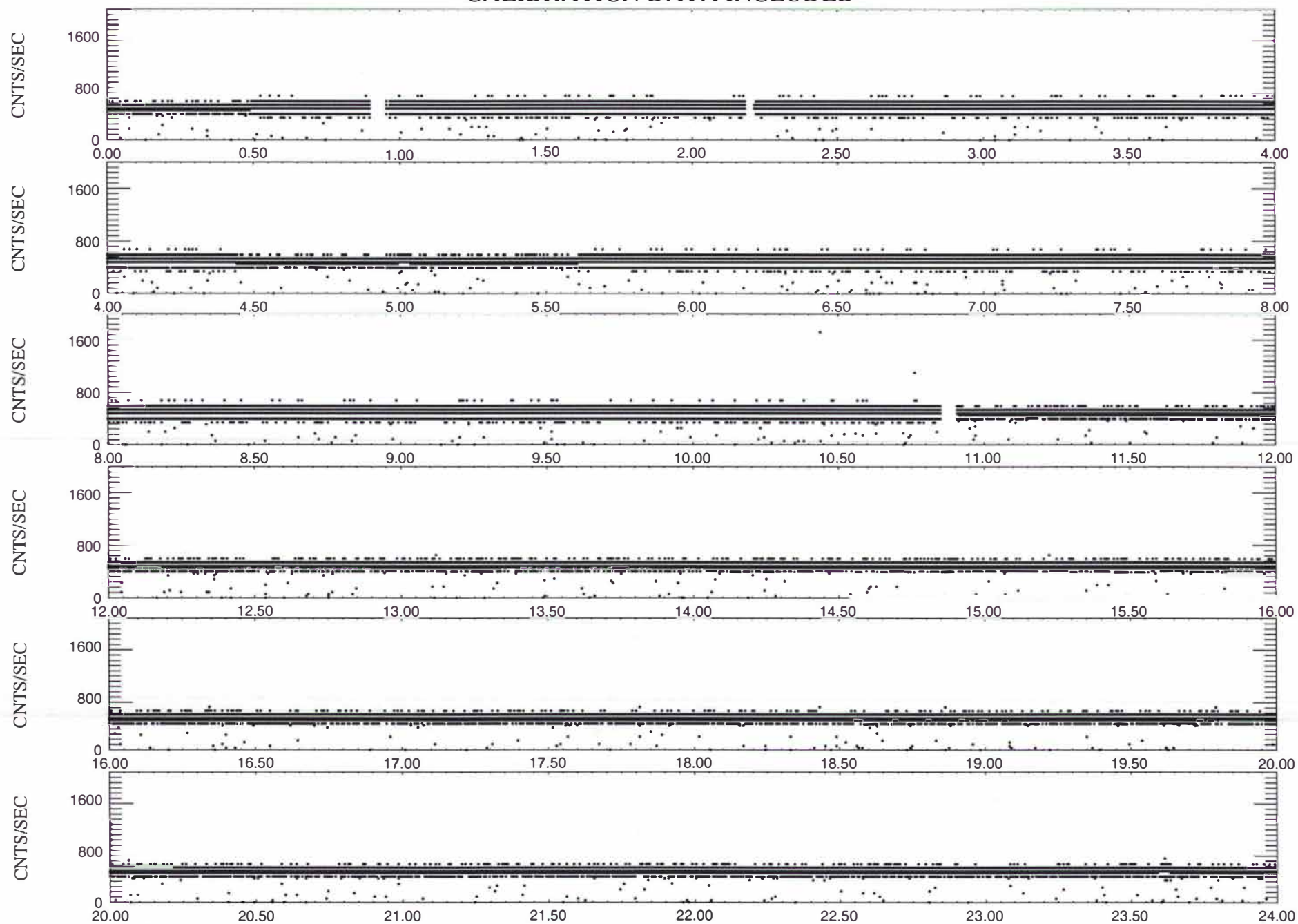
Background not subtracted

Sample average = 10

BURST NUMBER 5

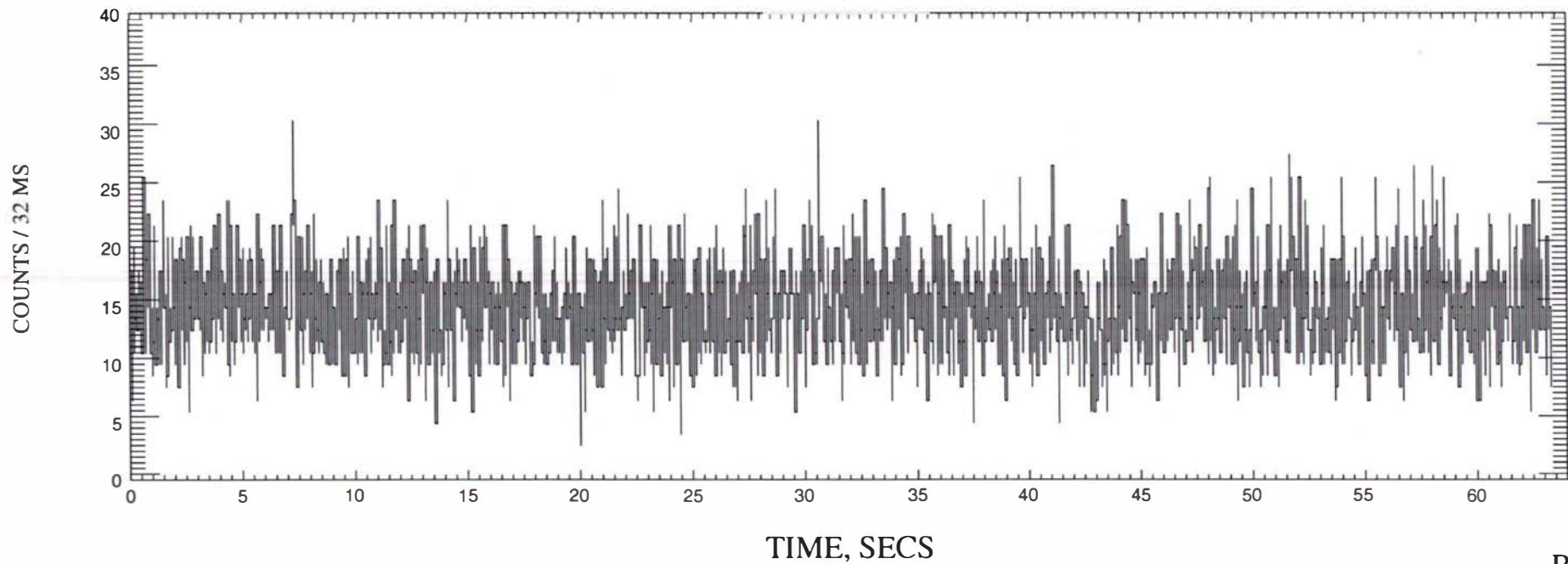
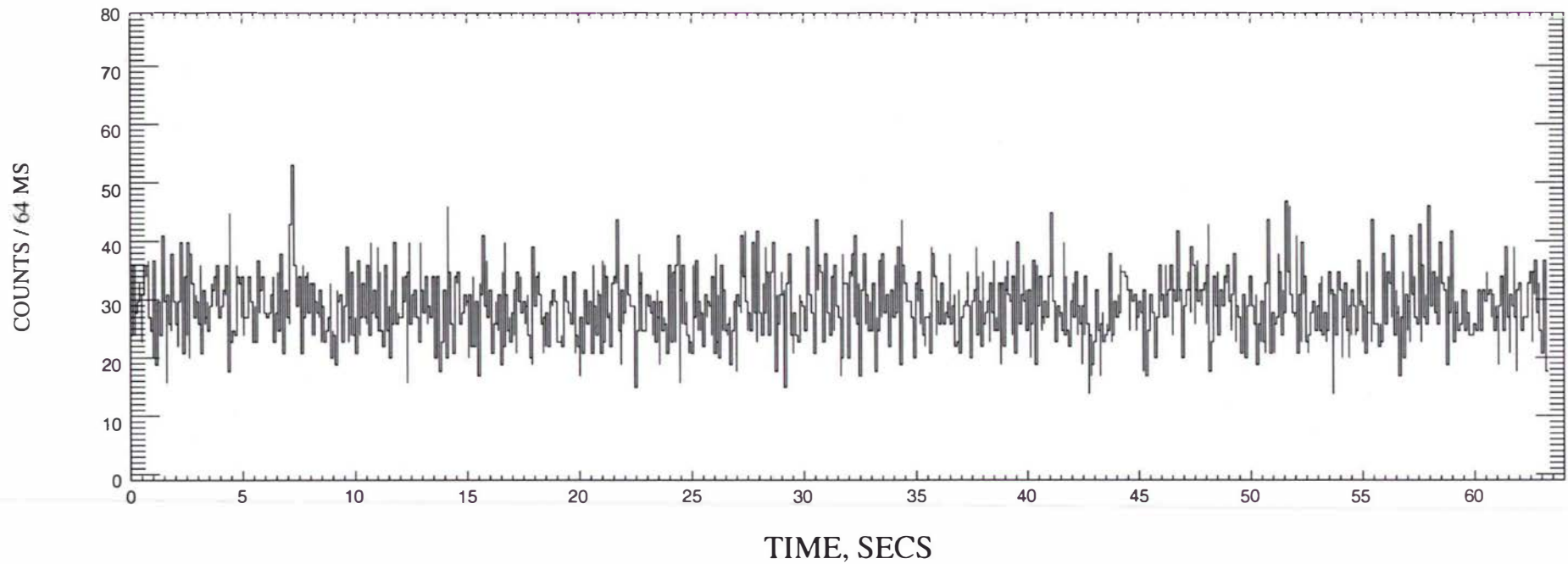


CALIBRATION DATA INCLUDED

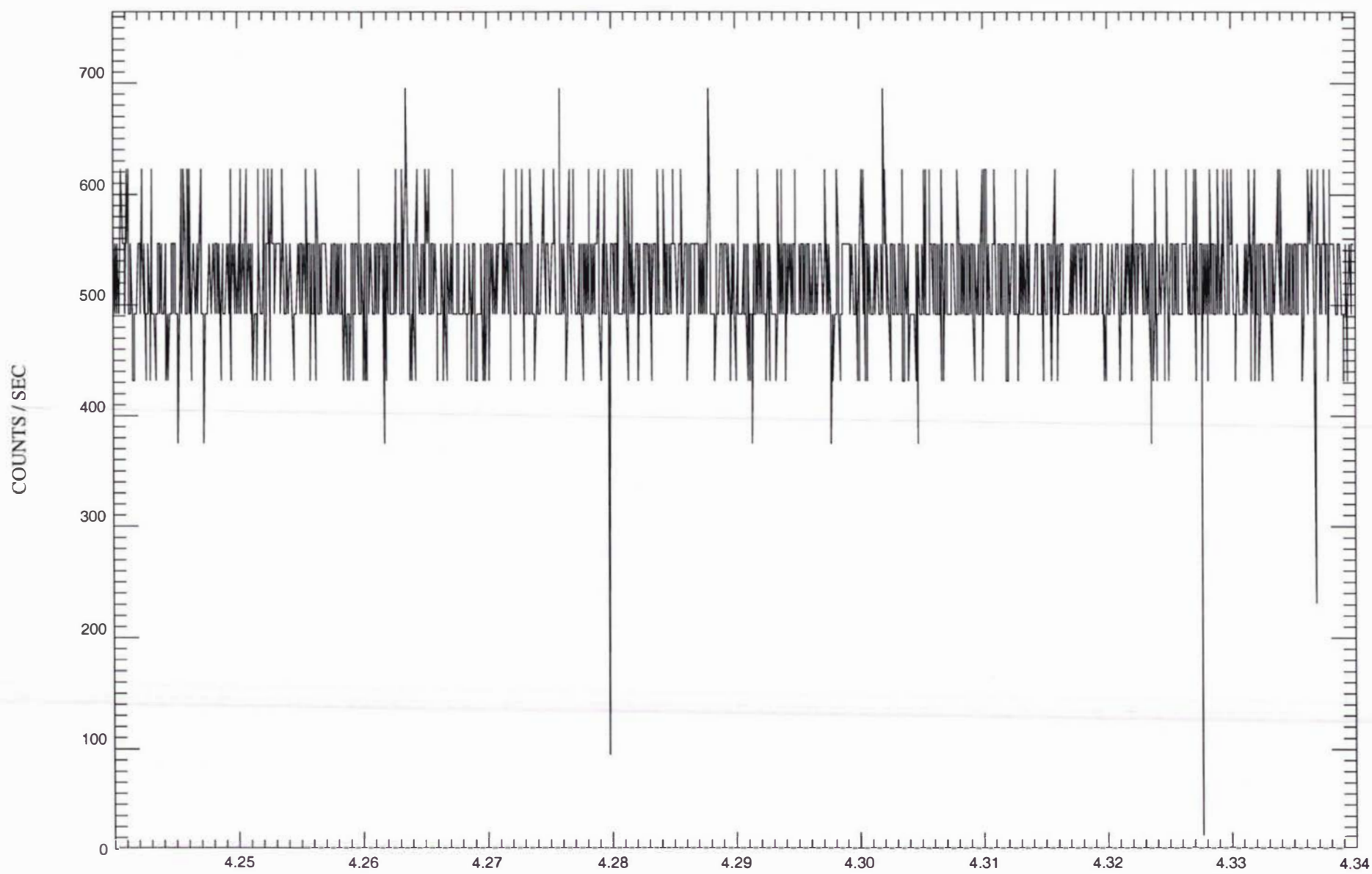


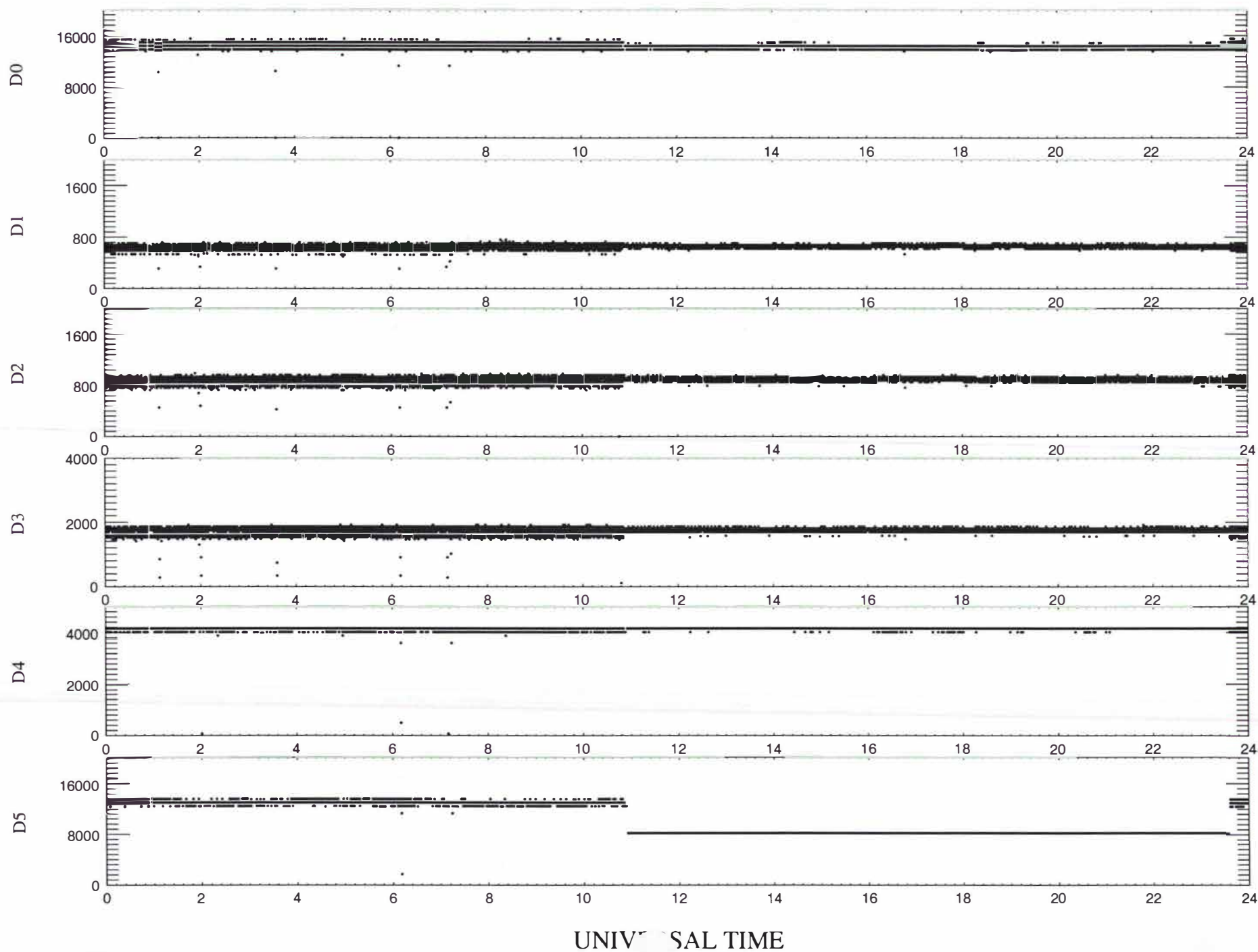
UNIVERSAL TIME

Burst Counter 5 at UT= 4.287991032071 h=15436.768 s 04:17:16.768



CALIBRATION DATA INCLUDED





Date: May 18 2007

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. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

-
- ☒ ACCESS and MBL4 databases updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

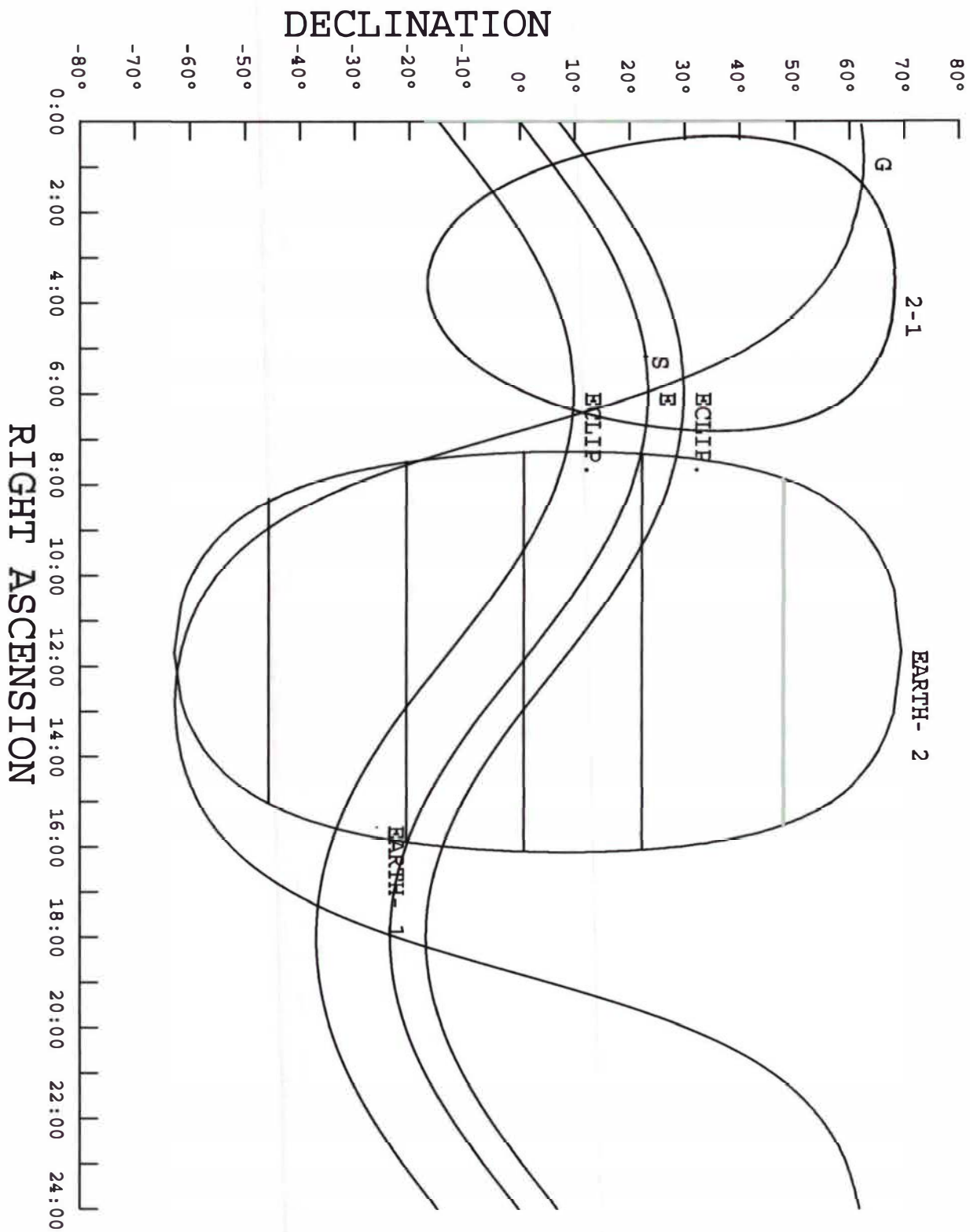
G=GALACTIC EQUATOR

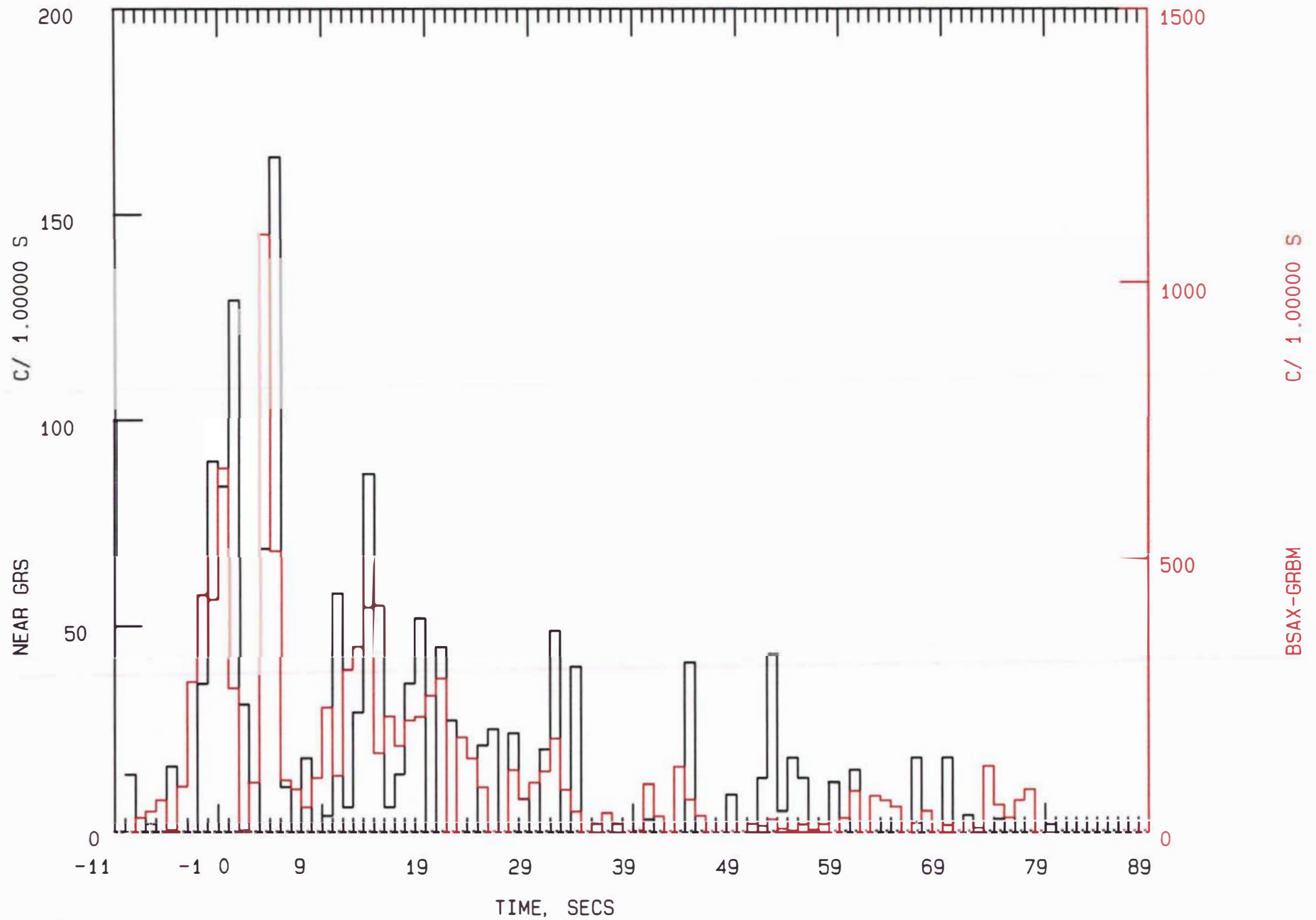
1 NEAR

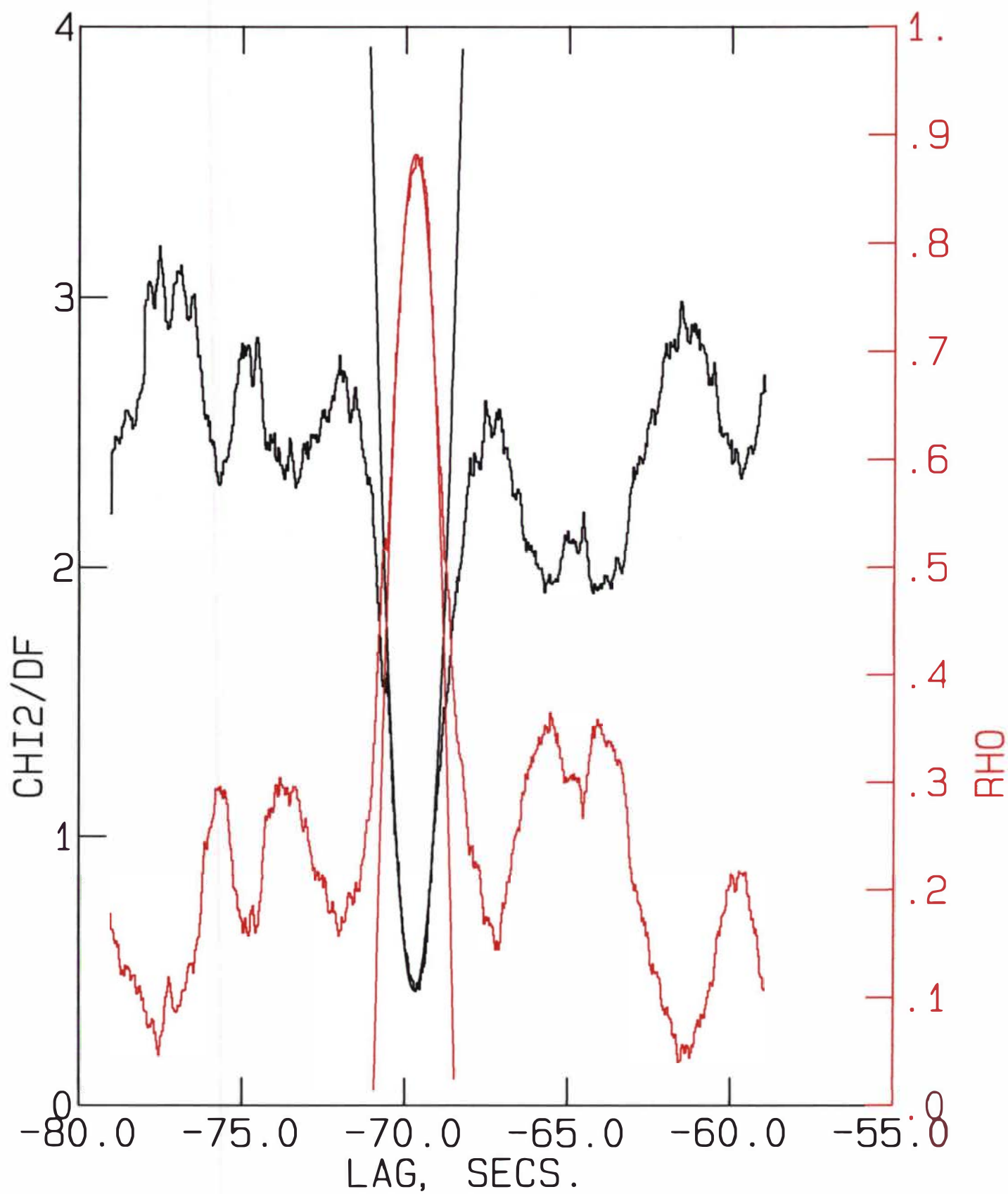
2 SAX

EVENT OF JUN 10, 1999 0:49

18 / 5 / 7







KONUS

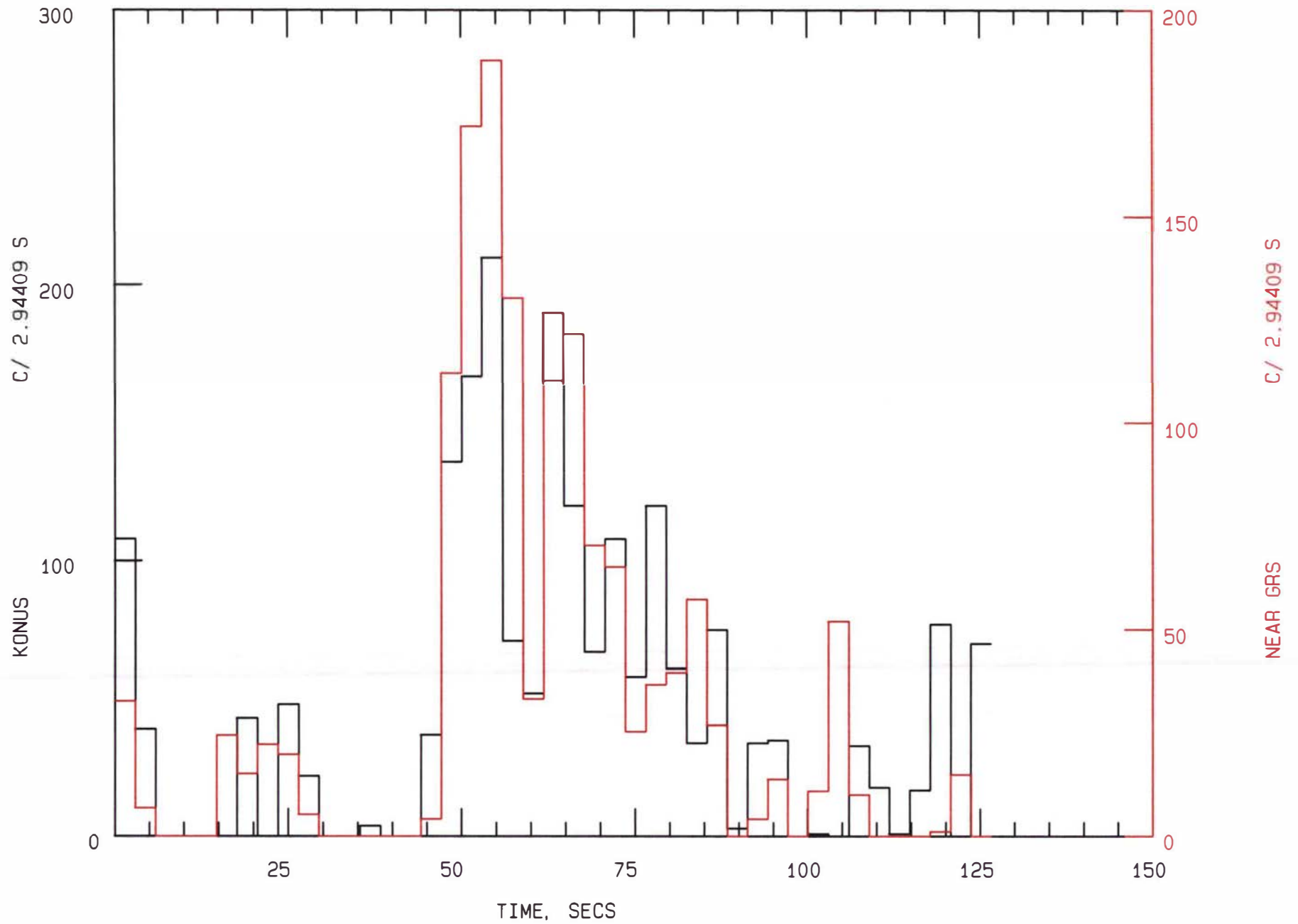
-NEAR GRS

CORRELATION

10/06/99

3734.017

18/ 5/ 7



KONUS

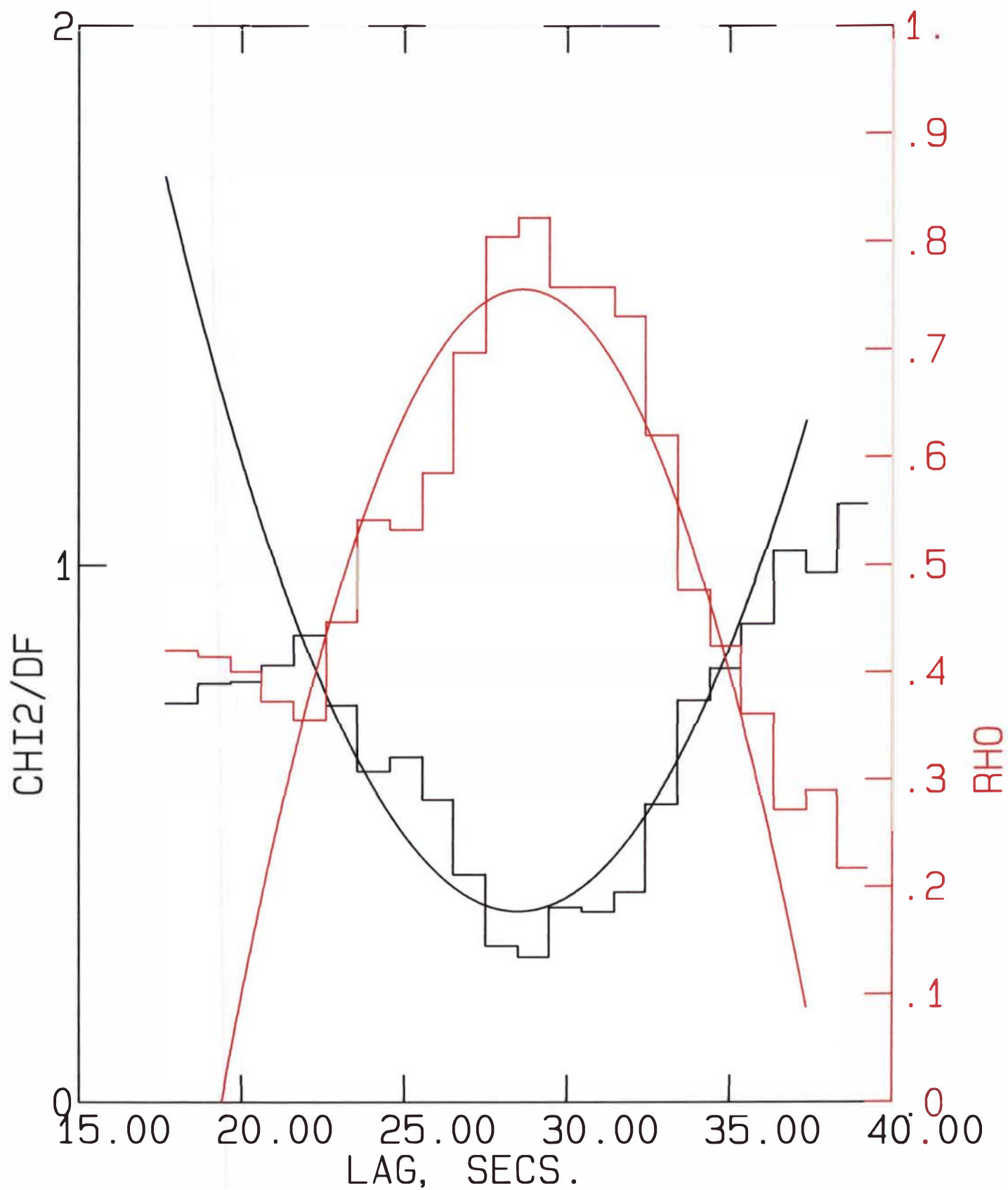
-NEAR GRS

CORRELATION

10/06/99

3734.017

18/ 5/ 7



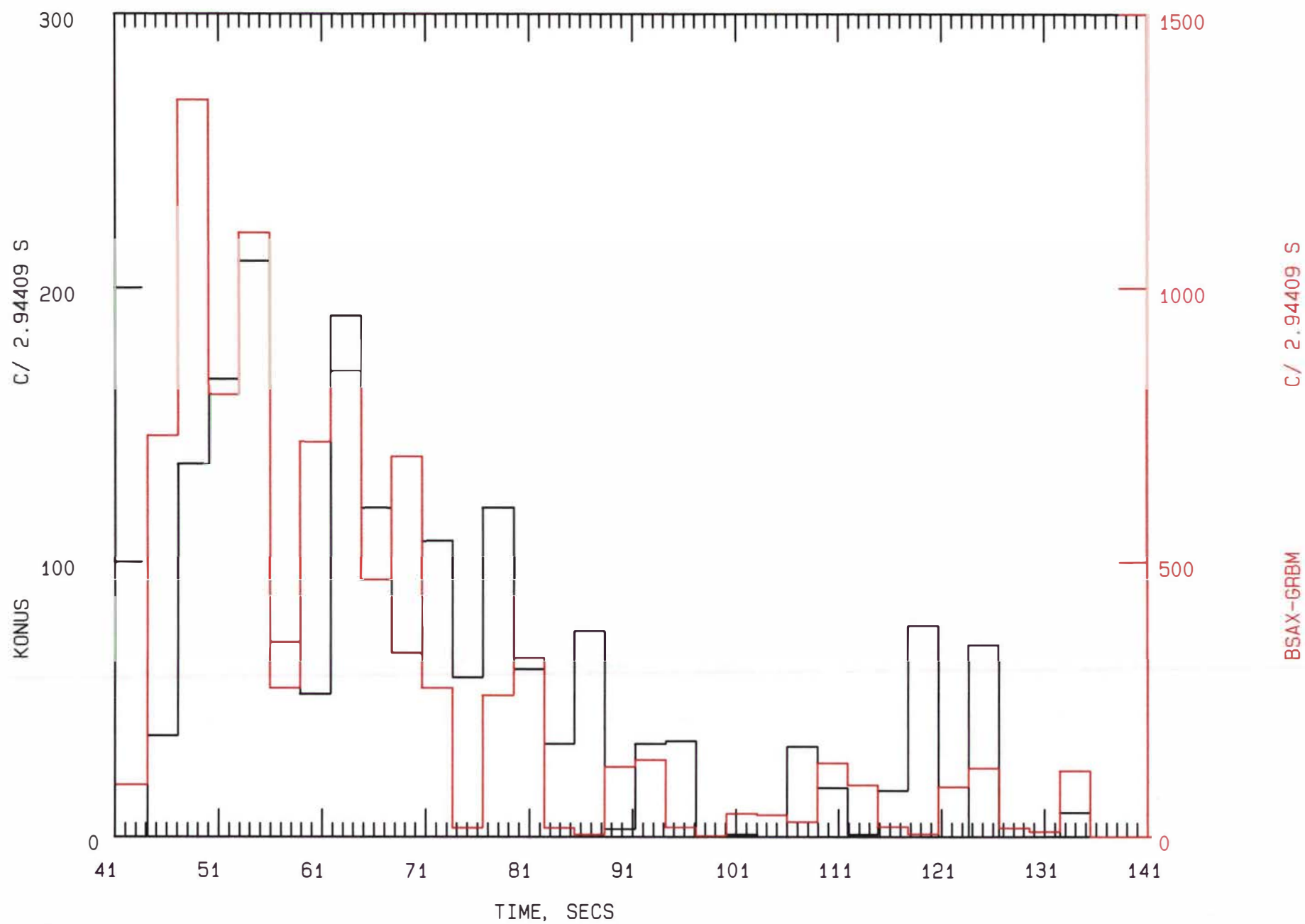
KONUS

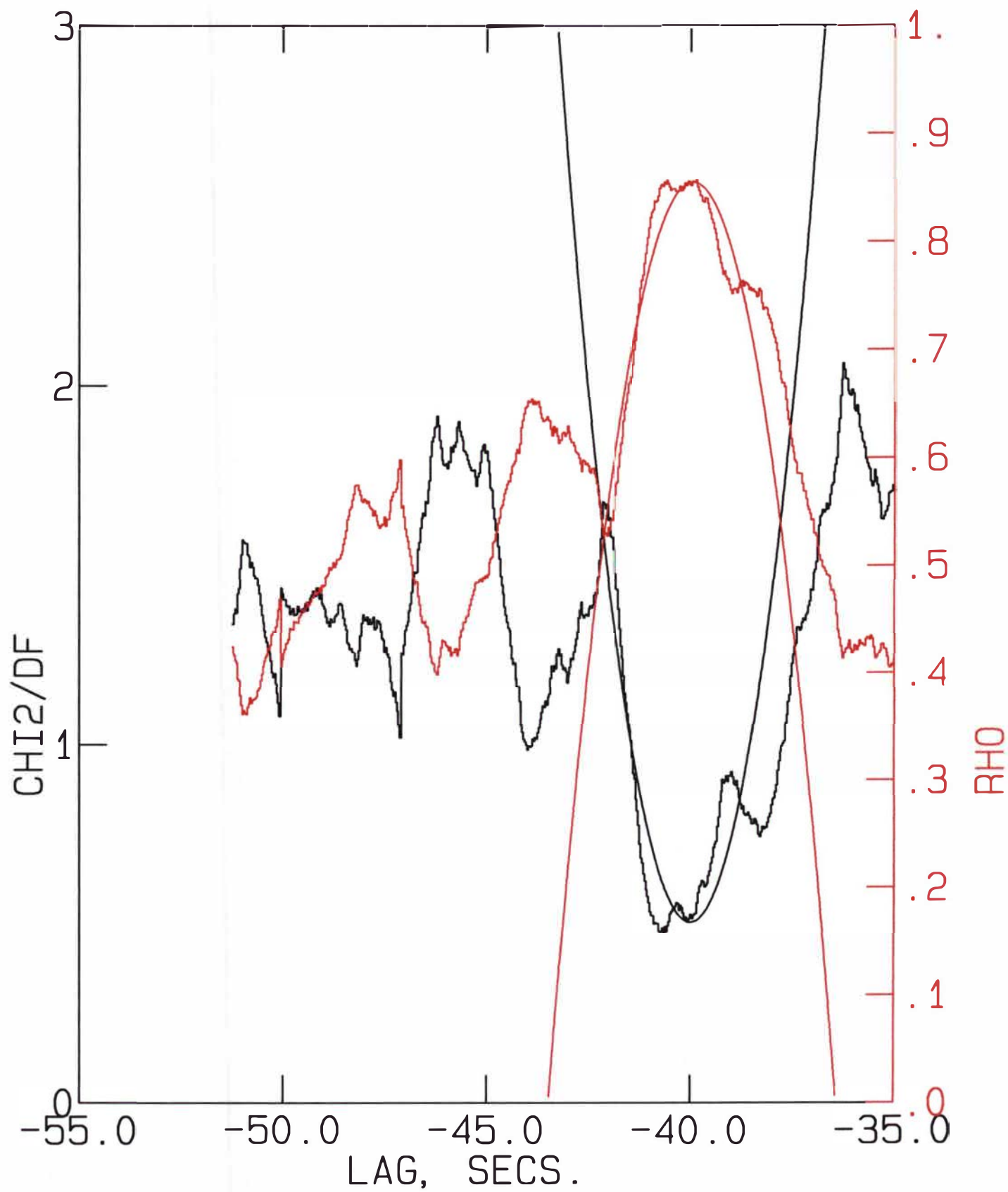
-BSAX-GRBM CORRELATION

10/06/99

3734.017

18/ 5/ 7





From feroci@ias.rm.cnr.it Thu Jun 10 00:47 PDT 1999
Date: Thu, 10 Jun 1999 09:45:34 +0200 (DFT)
From: Marco Feroci <feroci@ias.rm.cnr.it>
To: Kevin Hurley <khurley@sunspot.ssl.berkeley.edu>
Subject: GRB not detected by BATSE
MIME-Version: 1.0

Dear Kevin,
just for info I am sending the time of a GRB detected by GRBM tonight and
apparently not detected by BATSE.
It has a peak of ~700 cts/s and lasts ~30s. It is mainly detected by the
detector facing the Sun, but it does not look like a solar flare.
GRBM trigger time is: 10 Jun 1999 01:03:04:05813
Did Ulysses detect it? 3784s

Ciao,
Marco

Marco Feroci

Phone: +39-06-4993-4099
Fax : +39-06-2066-0188

Istituto di Astrofisica Spaziale
C.N.R. - Area di Ricerca di Roma - Tor Vergata
Via Fosso del Cavaliere, Roma, I-00133 ITALY
E-mail: feroci@saturn.ias.rm.cnr.it

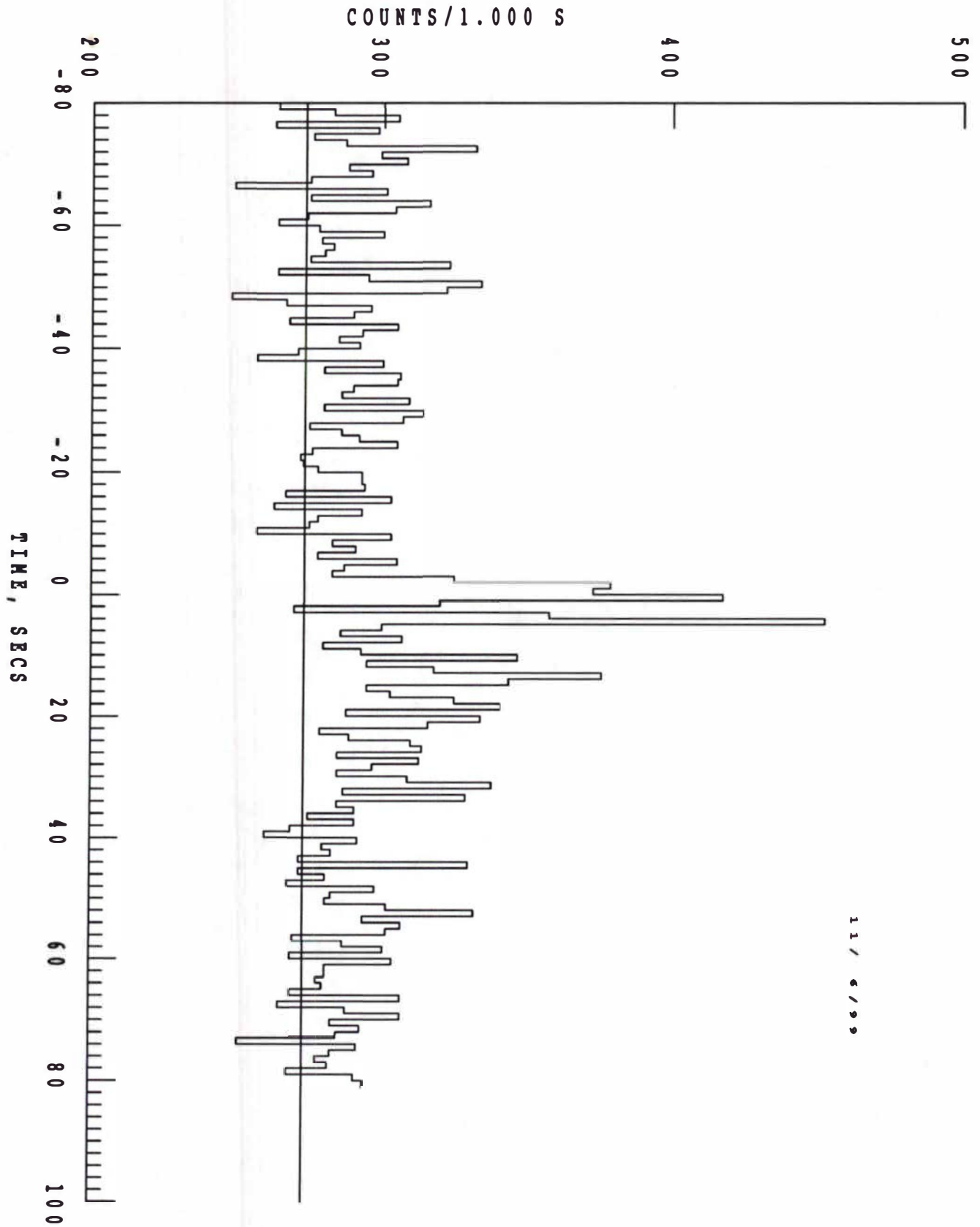
NEAR was ~1000 L-s from Earth

NEAR

10/06/99

2968.218

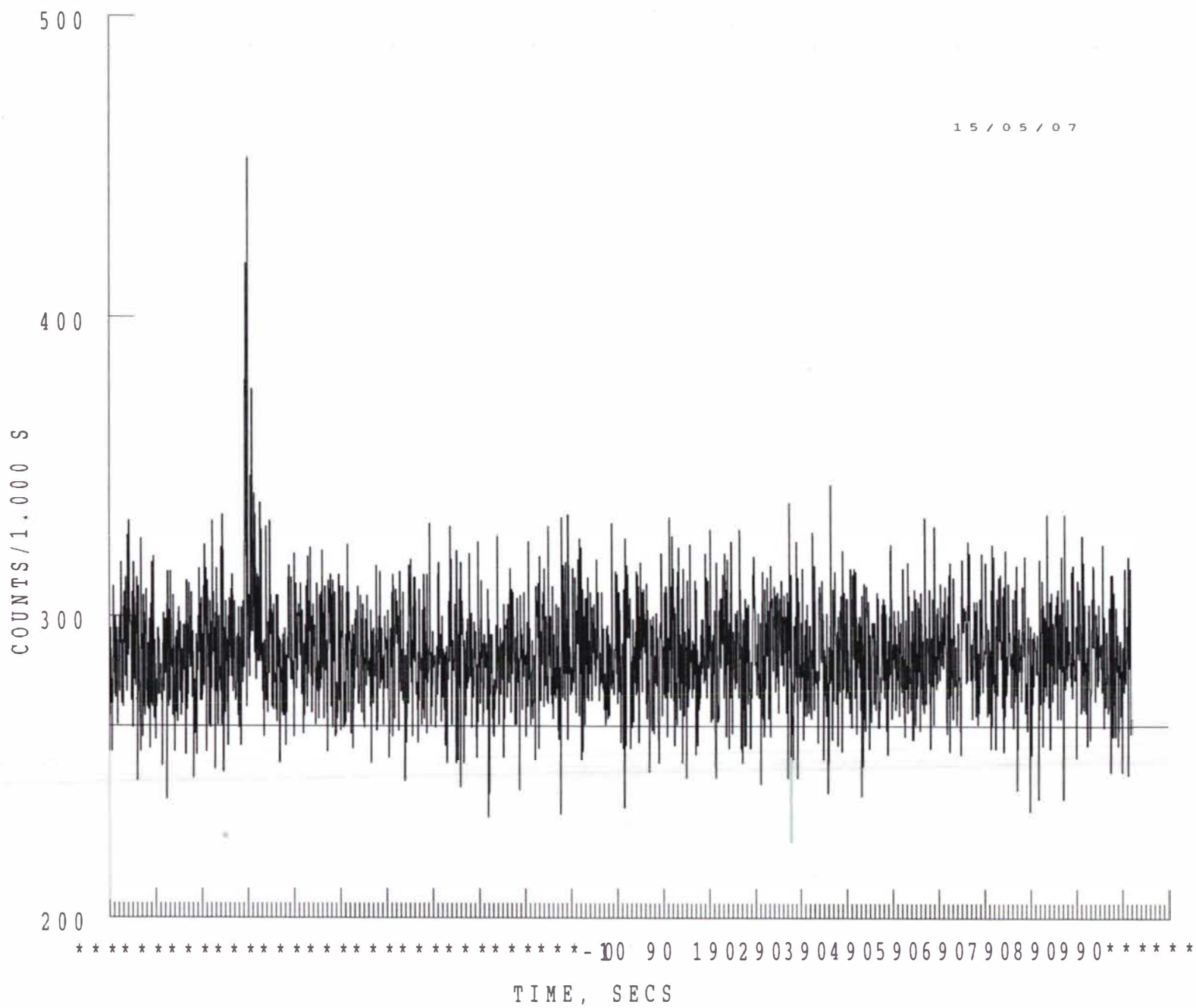
100-1000 keV



10/06/99 3783.218

100-1000 keV

15/05/07

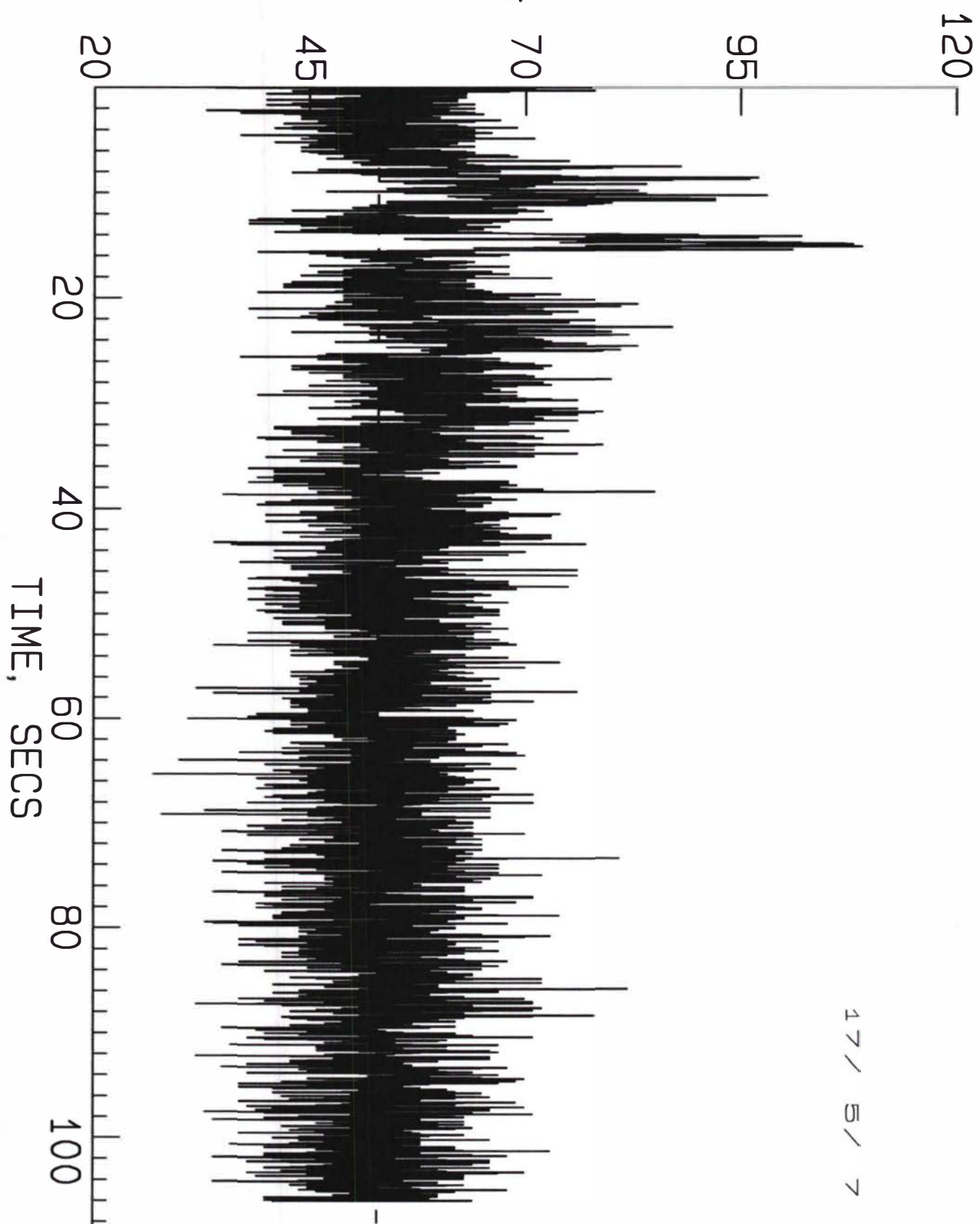


SAX GRBM

10/06/99 3776.060

40- 700 keV

COUNTS/0.031 S



KONUS

10/06/99 3734.017

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

3400

2400

1400

400

20

40

60

80

100

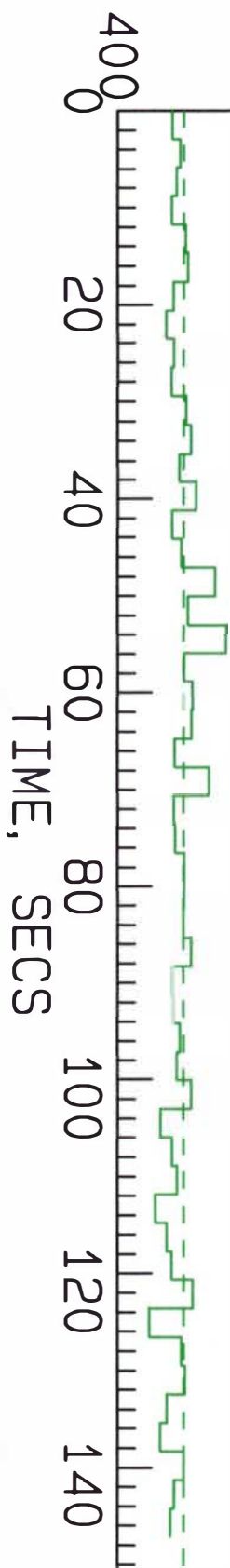
120

140

DETECTOR 1 - S. ECLIPIC

17/05/04

TIME, SECS



KONUS

10/06/99 3734.017

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4300

3300

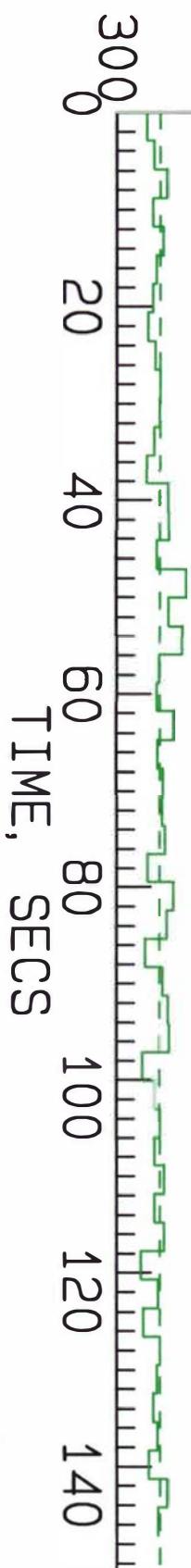
2300

1300

300

DETECTOR 2 - N. ECLIPHTIC

17/05/07



SAX

ULYSSES RT

14 / 6 / 99

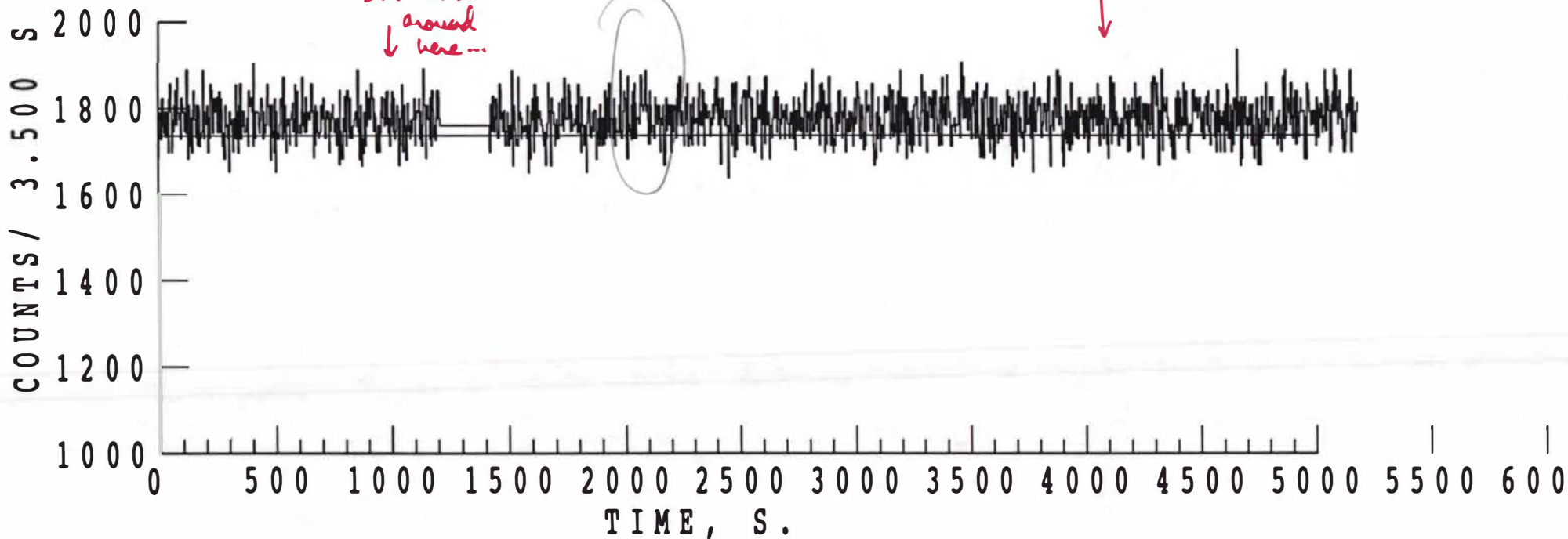
10 / 6 / 99 1188.122 s

0.250 S INTERVALS REGROUPED BY 14

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



JANA TAB1 19990610 20320

ULYSSES RT

05/08/05

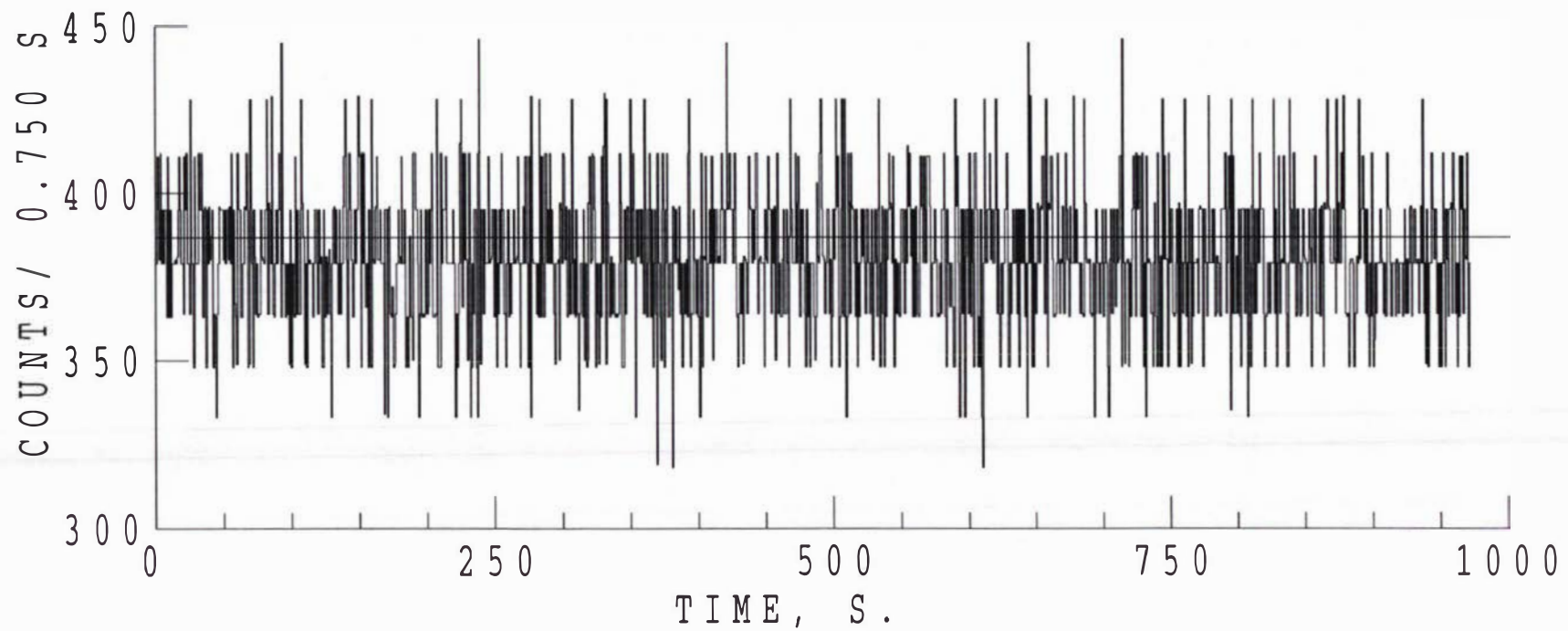
10/06/99 19836.061 s

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 HENZE@fender.msfc.nasa.gov Fri Jun 11 13:04:10 1999
 Return-Path: <HENZE@fender.msfc.nasa.gov>
 Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
 id NAA11605; Fri, 11 Jun 1999 13:04:09 -0700
 From: HENZE@fender.msfc.nasa.gov
 Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
 by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id NAA05229
 for <khurley@sunspot.ssl.berkeley.edu>; Fri, 11 Jun 1999 13:00:39 -0700 (PDT)
 Date: Fri, 11 Jun 1999 15:04:51 -0500 (CDT)
 To: khurley@sunspot.ssl.berkeley.edu
 Message-Id: <990611150451.20818d38@fender.msfc.nasa.gov>
 Subject: Crossing Windows for BATSE Burst 7601
 Content-Length: 1135
 X-Lines: 26
 Status: RO

 BATSEARCH PROGRAM

BATSE BURST # 7601
 EVENT OF 1999 JUN 10 DAY OF YEAR=161
 EVENT CROSSING TIME AT BATSE : 44747. S. OR 12:25:47.0
 COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
 BURST ARRIVAL DIRECTION: 62.000 -41.000
 BATSE PEAK COUNTING RATE: 8000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
 INTERPOLATED POSITION OF ULYSSES ON 10/ 6/ 99 IS:
 RA= 144.751 DEC= -6.968 DIST= 5.088 AU
 BATSE-ULYSSES DISTANCE = 761191666. KM.
 ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=100.03 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= -442.10 SECS.
 CROSSING TIME AT ULYSSES IS 44305. S. OR 12:18:24 +/- 477.37 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
 POSITION OF MARS ON 10/ 6/ 99 IS:
 RA= 202.648 DEC= -10.050 DIST= 0.698 AU
 MARS-BATSE DISTANCE = 104374576. KM.
 ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.60 DEG.
 LIGHT TRAVEL TIME ALONG PROJECTED PATH= 160.21 SECS.
 CROSSING TIME AT MARS IS 44907. S. OR 12:28:27 +/- 56.10 SECONDS

BATSE BURST TRIGGER

NO.: 7601

TIME: TJD=1339 SECONDS=44747

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 64.2 AZIMUTH= 55.9 ERROR= 6.6 DEGREES

COMMENTS:

SINGLE SPIKE, DUR. APPROX. 0.4 S. VISIBLE ABOVE 300 KEV.

Status: RO

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7601	990610	11339	44747	8000	062	-41	.4

BATSE BURST# 7601

ULYSSES RT

11 / 6 / 99

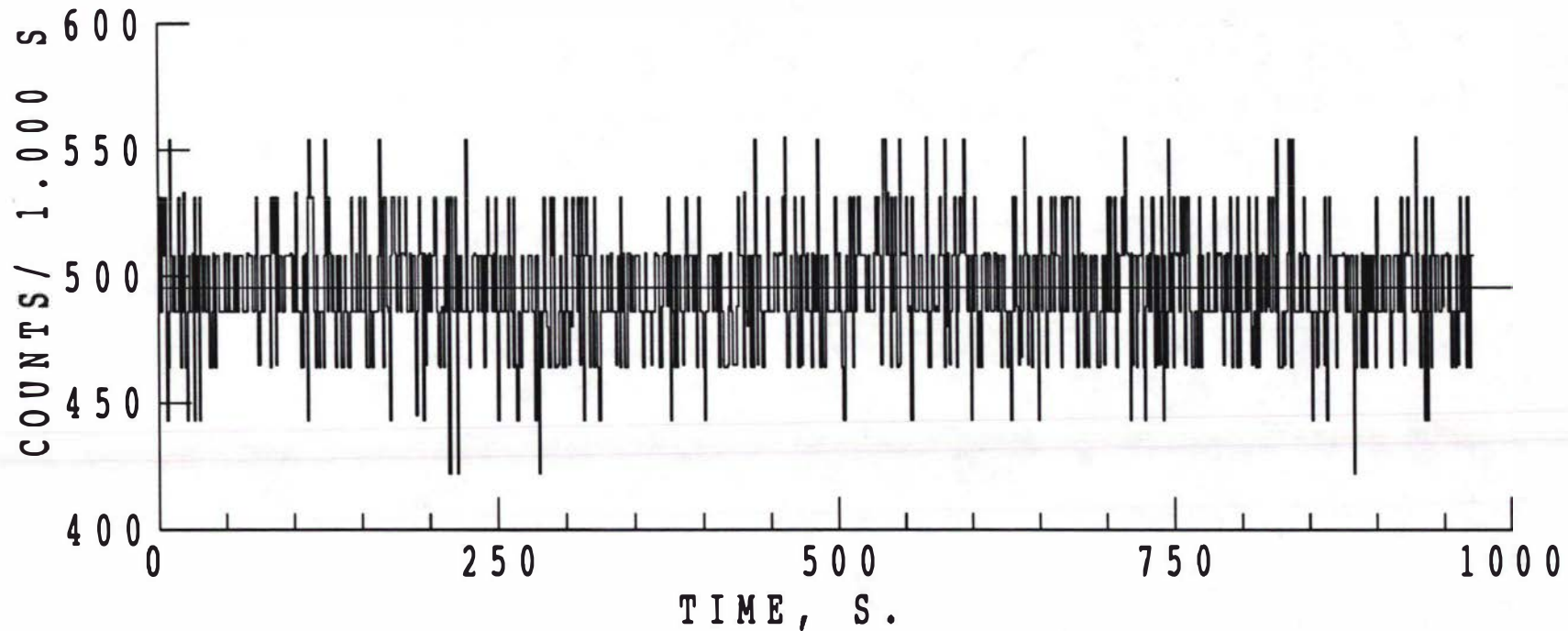
10 / 6 / 99 43812.301 s

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



JANA TAB2 19990610 54744

ULYSSES RT

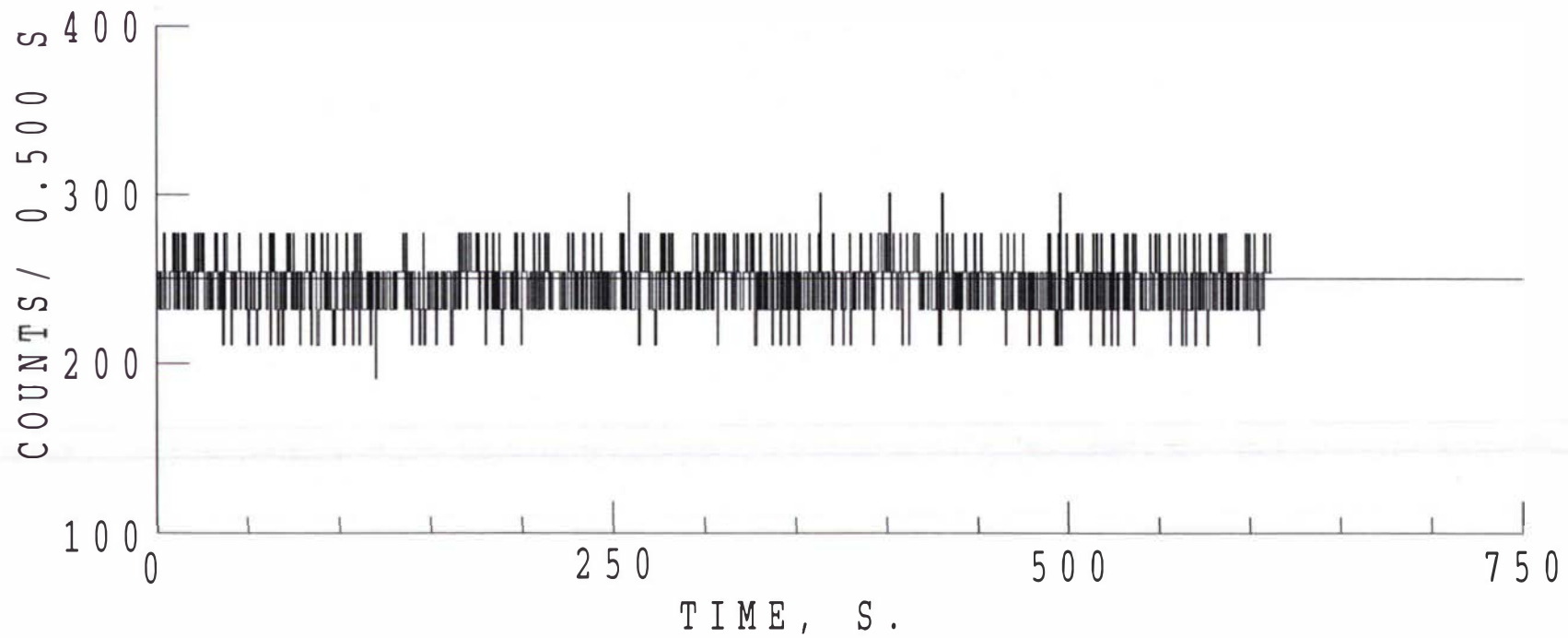
05/08/05

10/06/99 54432.406 s

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 Fri Jun 11 13:05:54 1999
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id NAA11626; Fri, 11 Jun 1999 13:05:54 -0700
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id NAA05279
for <khurley@sunspot.ssl.berkeley.edu>; Fri, 11 Jun 1999 13:02:23 -0700 (PDT)
Date: Fri, 11 Jun 1999 15:06:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990611150635.20818d38@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7602
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7602
EVENT OF 1999 JUN 10 DAY OF YEAR=161
EVENT CROSSING TIME AT BATSE : 79727. S. OR 22:08:47.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 307.000 21.000
BATSE PEAK COUNTING RATE: 10400 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 10/ 6/ 99 IS:
RA= 144.776 DEC= -6.976 DIST= 5.093 AU
BATSE-ULYSSES DISTANCE = 761925203. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 22.19 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 2353.31 SECS.
CROSSING TIME AT ULYSSES IS 82080. S. OR 22:48:00 +/- 252.37 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 10/ 6/ 99 IS:
RA= 202.648 DEC= -10.050 DIST= 0.698 AU
MARS-BATSE DISTANCE = 104374576. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 73.12 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 101.10 SECS.
CROSSING TIME AT MARS IS 79828. S. OR 22:10:28 +/- 59.38 SECONDS

BATSE BURST TRIGGER

NO.: 7602

TIME: TJD=1339 SECONDS=79727

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=136.8 AZIMUTH=167.2 ERROR= 5.7 DEGREES

COMMENTS:

SINGLE SPIKE WITH SUBSTRUCTURE, DUR. APPROX. 0.011 S.
NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7602	990610	11339	79727	10400	307	+21	.011

BATSE BURST# 7602

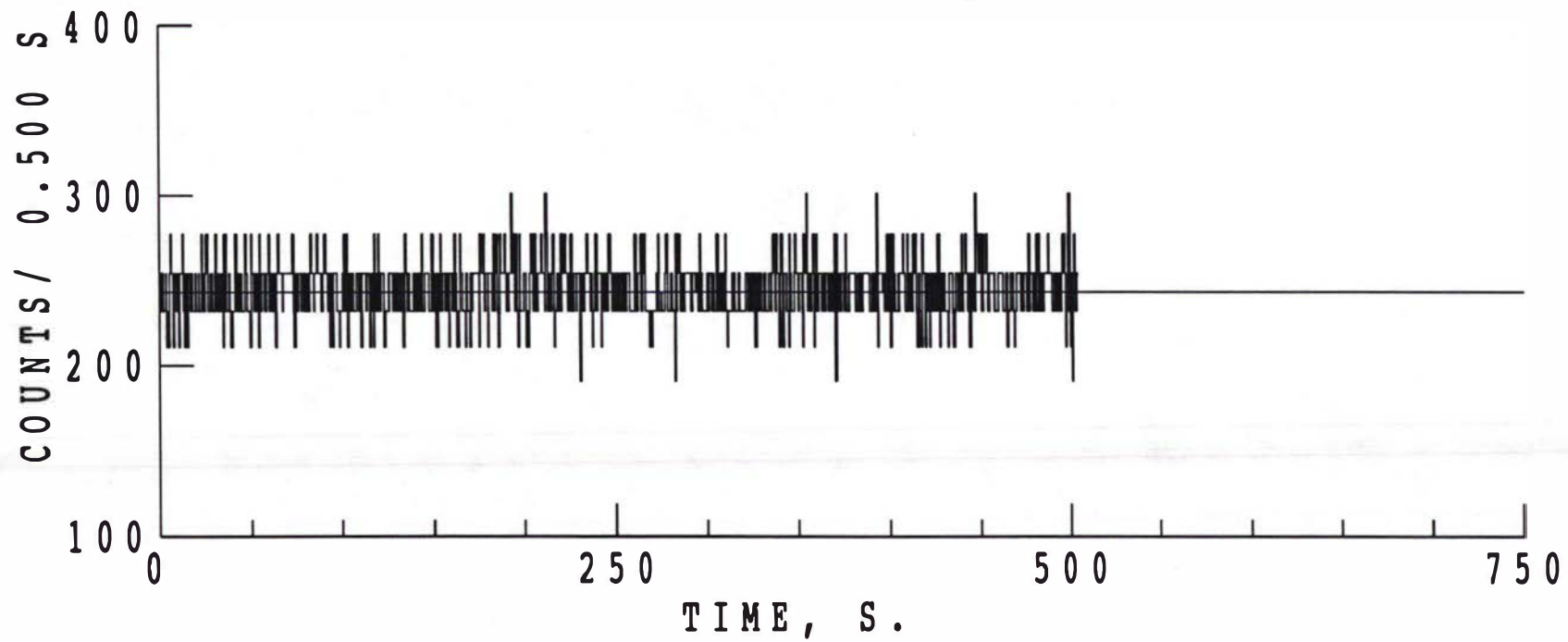
ULYSSES RT

11 / 6 / 99

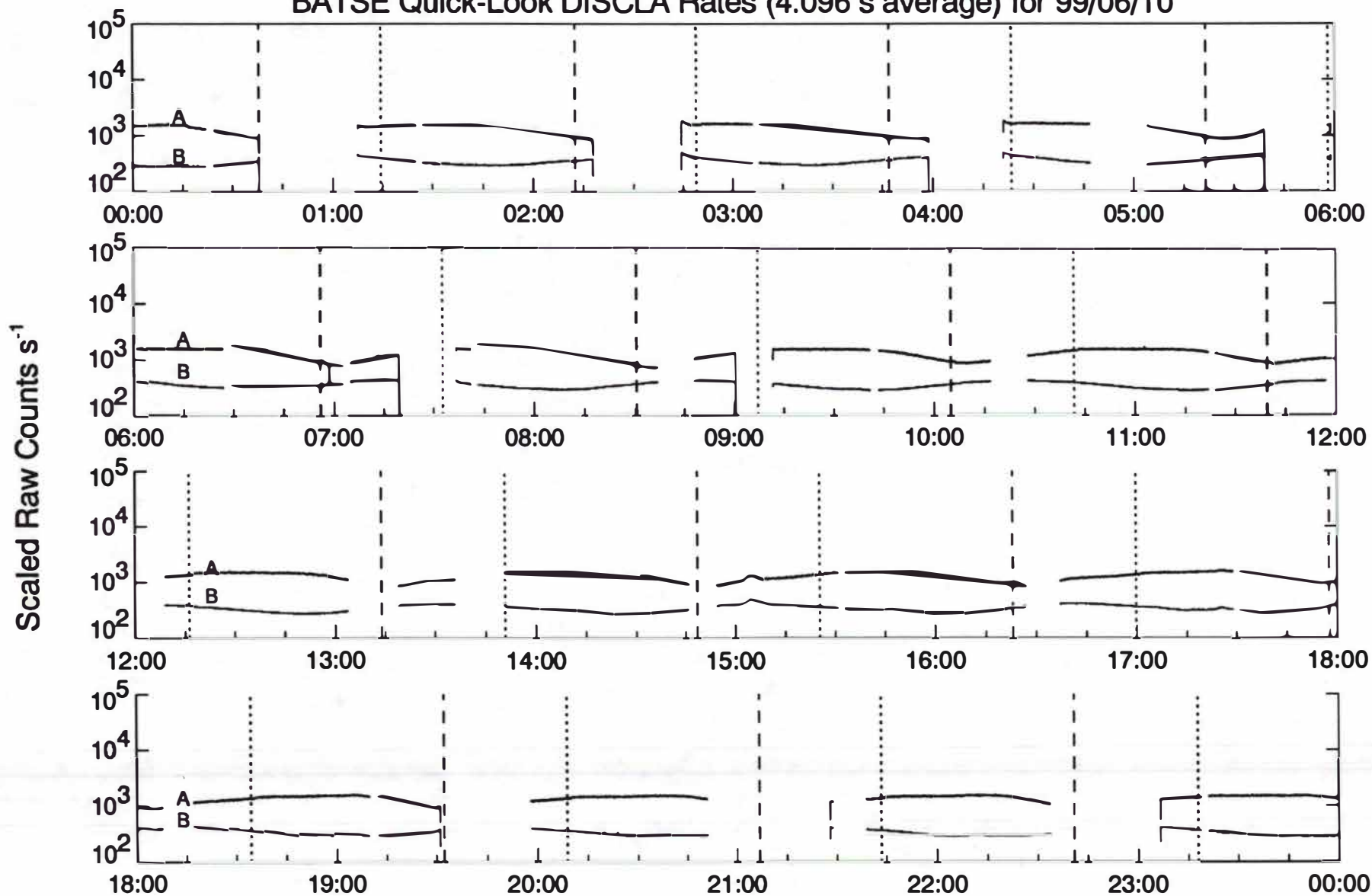
10 / 6 / 99 81828.188 s

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/10

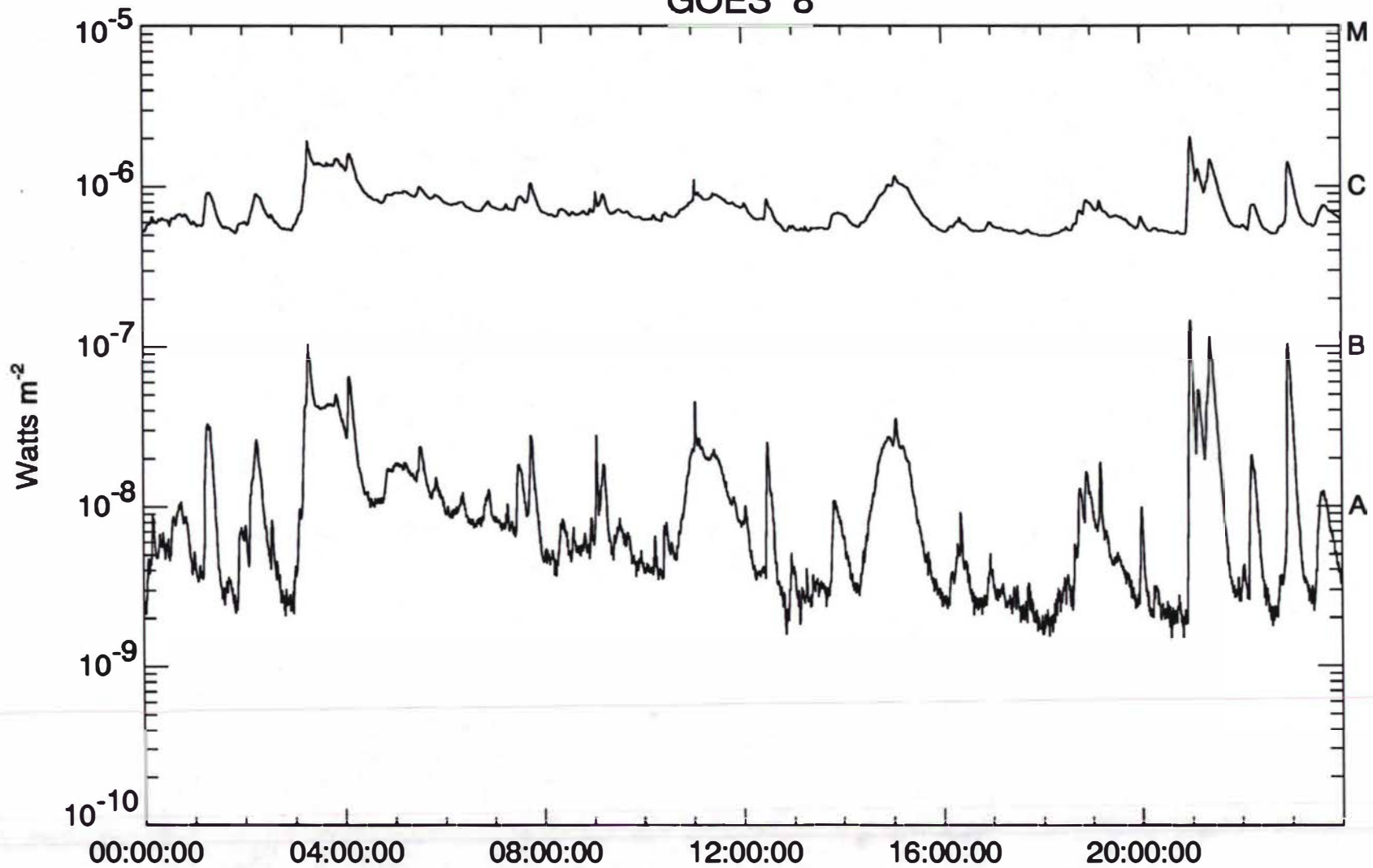


Current Time: 99/06/14, 1013 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/10, 0000:00

Plot created: 99/06/14, 1012

Channel

1 (1.0 - 8.0 Angstroms)

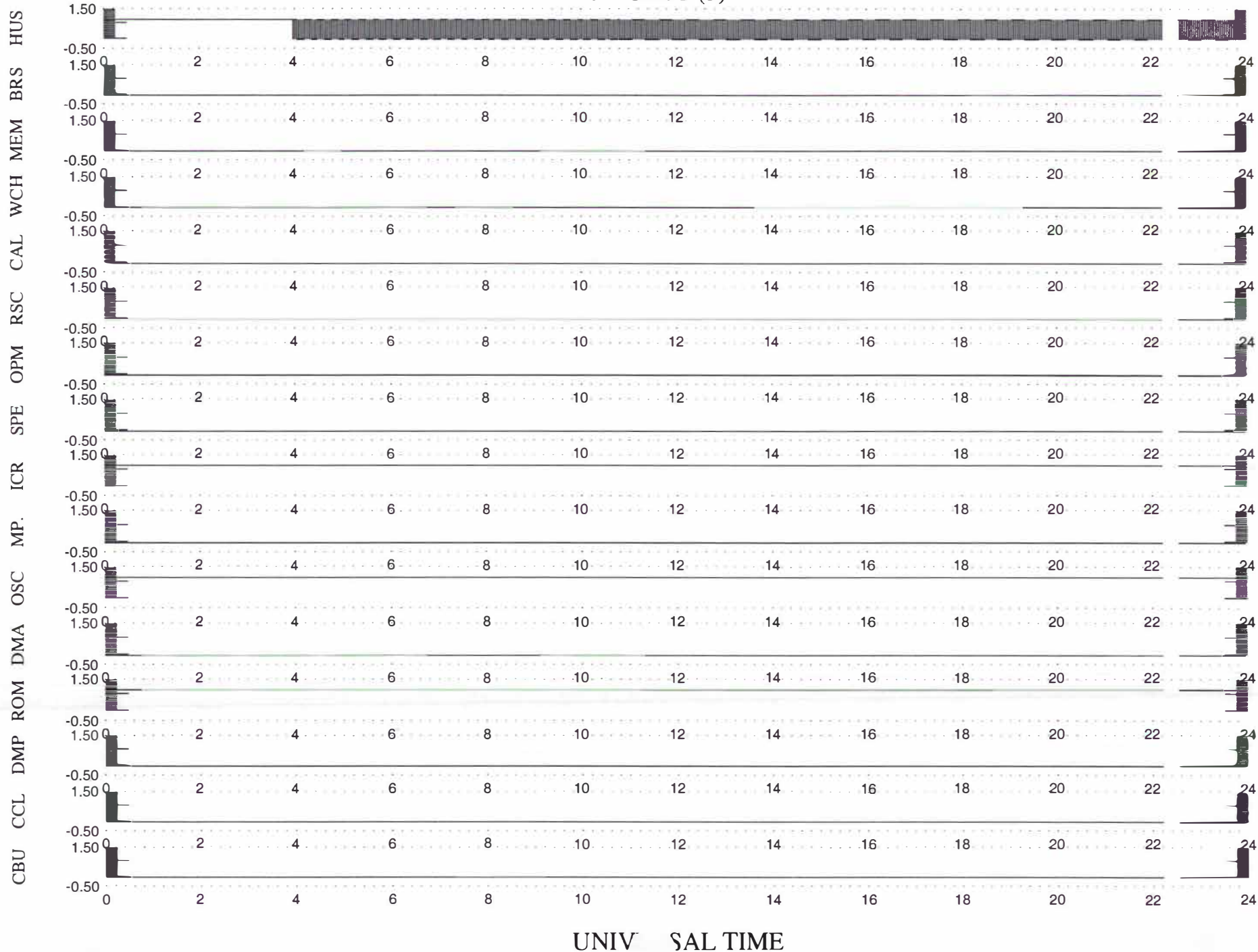
Background not subtracted

2 (0.5 - 4.0 Angstroms)

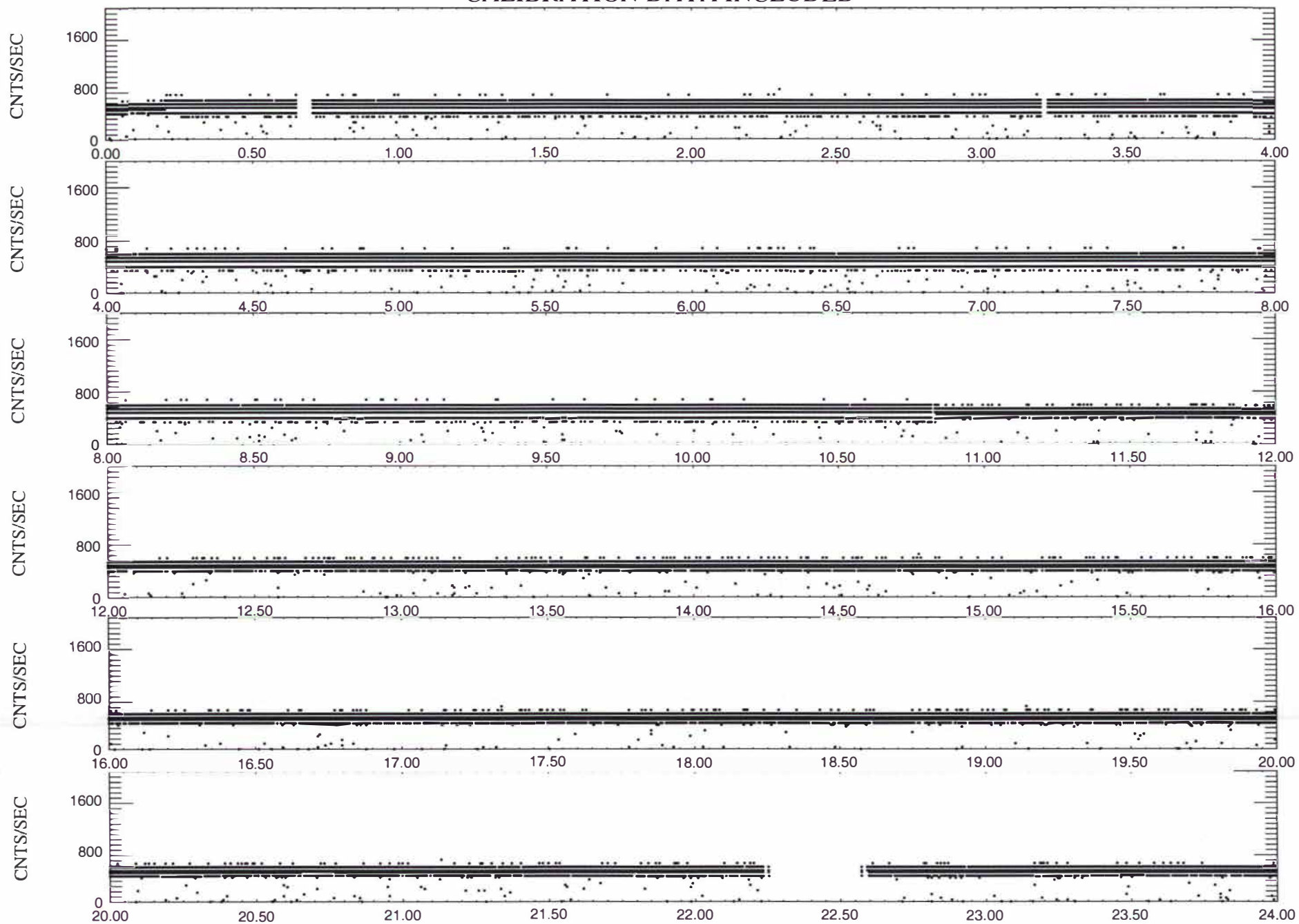
Background not subtracted

Sample average = 10

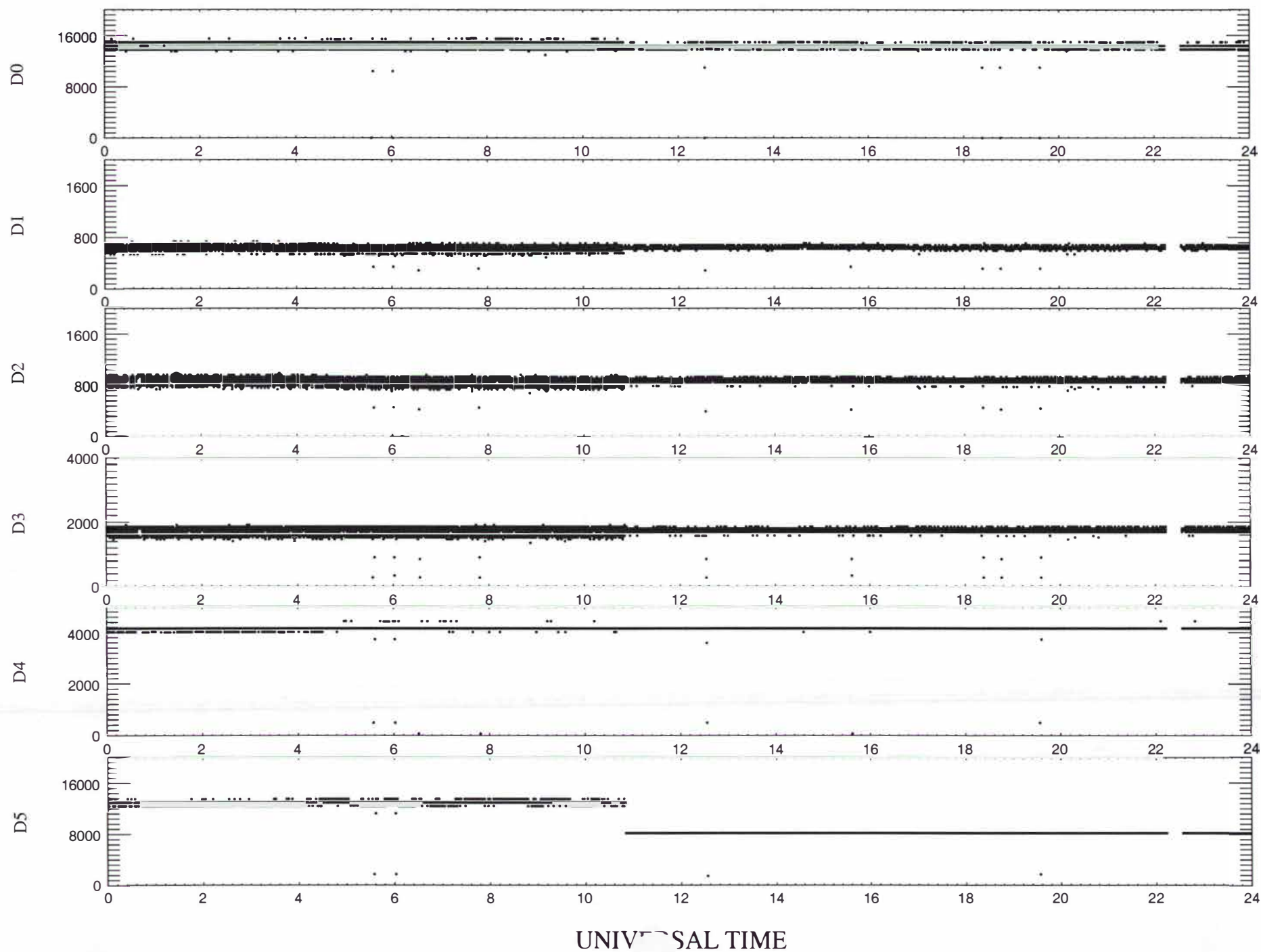
NO BURST (5)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



From PETERSON@fender.msfc.nasa.gov Mon Jun 14 12:51:53 1999
Return-Path: <PETERSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA03912; Mon, 14 Jun 1999 12:51:52 -0700
From: PETERSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA20777
for <khurley@sunspot.ssl.berkeley.edu>; Mon, 14 Jun 1999 12:48:17 -0700 (PDT)
Date: Mon, 14 Jun 1999 14:52:36 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990614145236.2081cl28@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7603
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7603
EVENT OF 1999 JUN 11 DAY OF YEAR=162
EVENT CROSSING TIME AT BATSE : 18426. S. OR 05:07:06.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 282.000 -65.000
BATSE PEAK COUNTING RATE: 3800 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 6/ 99 IS:
RA= 144.795 DEC= -6.981 DIST= 5.097 AU
BATSE-ULYSSES DISTANCE = 762453223. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 78.60 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 502.70 SECS.
CROSSING TIME AT ULYSSES IS 18929. S. OR 05:15:28 +/- 490.47 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 6/ 99 IS:
RA= 202.712 DEC= -10.108 DIST= 0.703 AU
MARS-BATSE DISTANCE = 105152424. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=103.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -82.92 SECS.
CROSSING TIME AT MARS IS 18343. S. OR 05:05:43 +/- 57.91 SECONDS

BATSE BURST TRIGGER

NO.: 7603

TIME: TJD=1340 SECONDS=18426

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=52.3 AZIMUTH=138.4 ERROR=2.64 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 10 S, STARTS AT APPROX. T-1 S,
NOT VISIBLE ABOVE 300 KEV. HV OFF AT APPROX. T+513 S.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7603	990611	11340	18426	3800	282	-65	10

BATSE BURST# 7603

ULYSSES RT

14 / 6 / 99

11 / 6 / 99 18432.170 s

0.250 S INTERVALS REGROUPED BY 3

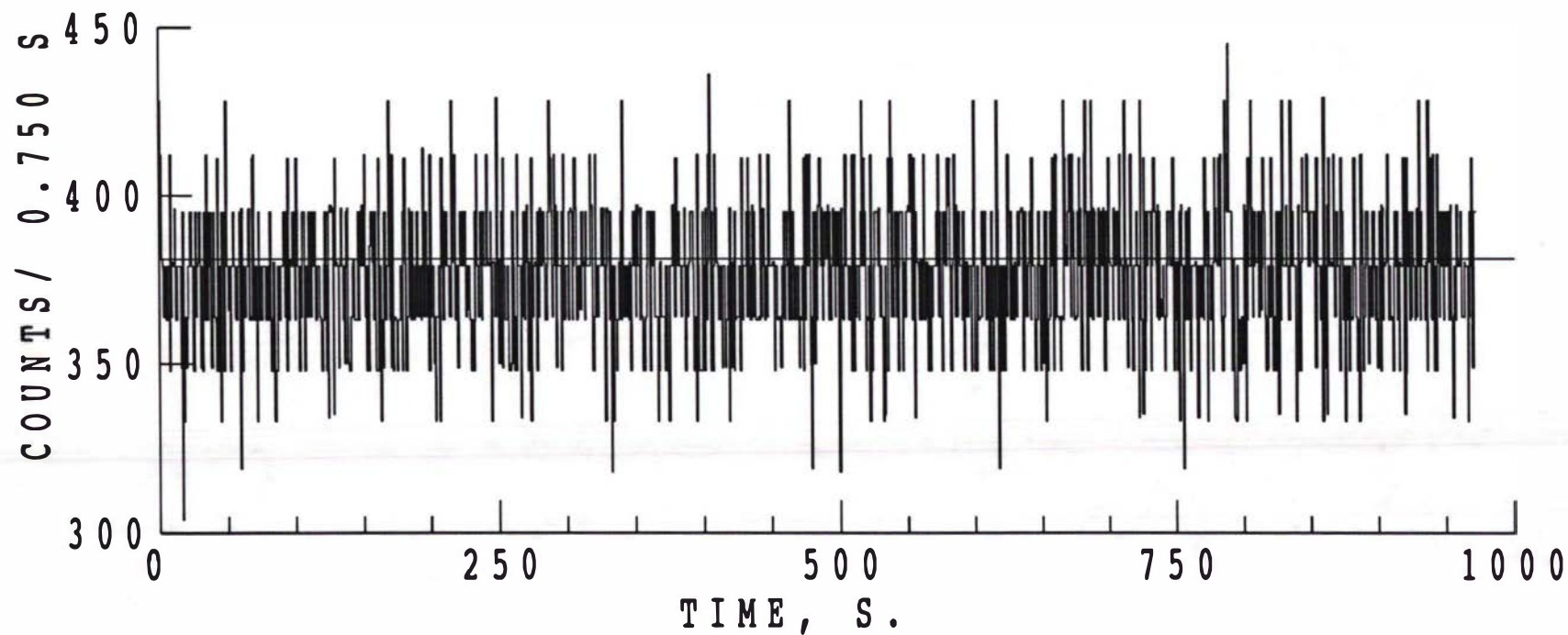
0 - 0 keV

N= 10 M= 10

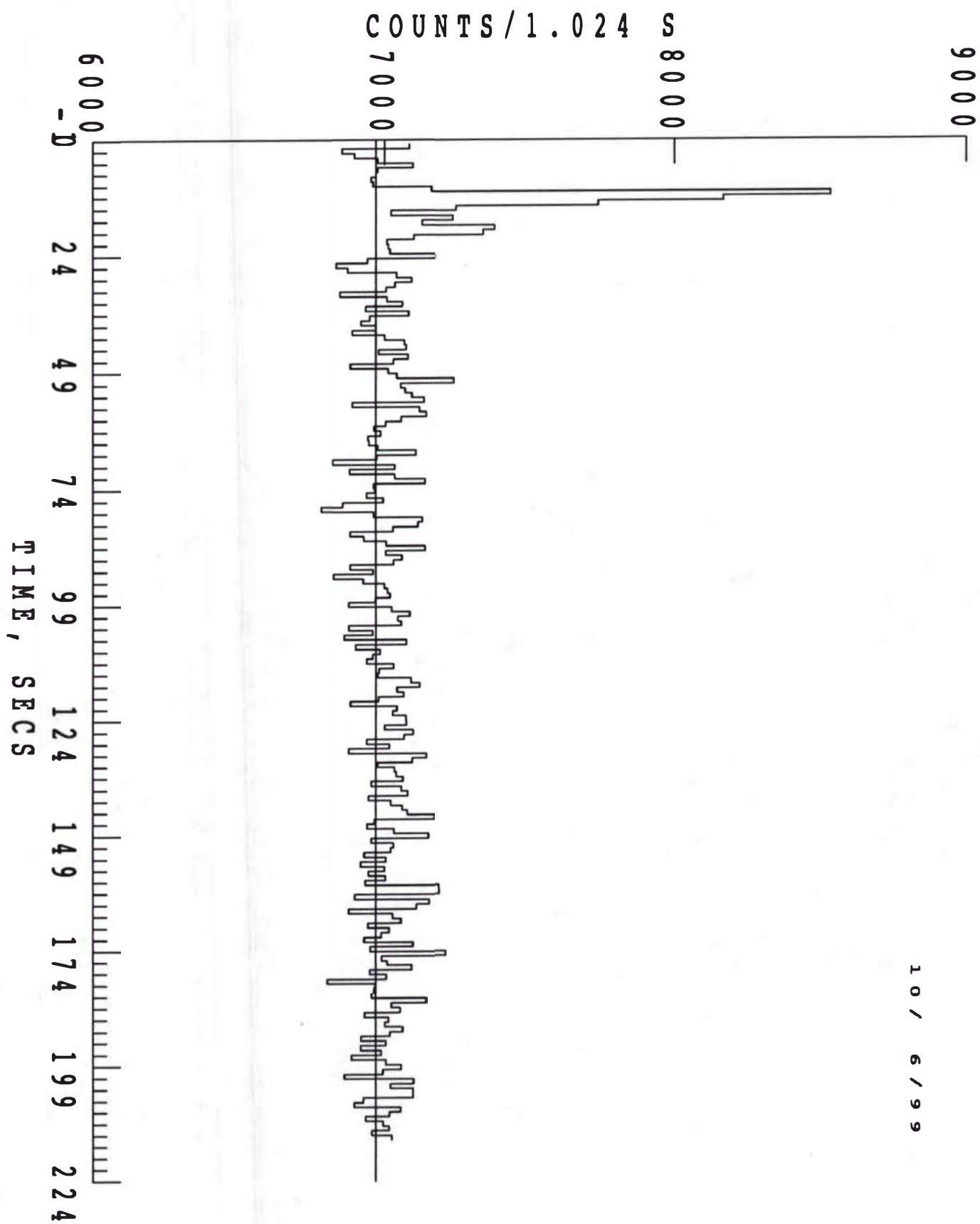
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BACODINE 7603 11/06/99 18415.353
25 - 100 keV



From PETERSON@fender.msfc.nasa.gov Mon Jun 14 12:53:24 1999
Return-Path: <PETERSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA03955; Mon, 14 Jun 1999 12:53:23 -0700
From: PETERSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA20824
for <khurley@sunspot.ssl.berkeley.edu>; Mon, 14 Jun 1999 12:49:48 -0700 (PDT)
Date: Mon, 14 Jun 1999 14:54:06 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990614145406.2081cl28@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7604
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7604
EVENT OF 1999 JUN 11 DAY OF YEAR=162
EVENT CROSSING TIME AT BATSE : 36430. S. OR 10:07:10.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 228.000 48.000
BATSE PEAK COUNTING RATE: 2100 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 6/ 99 IS:
RA= 144.809 DEC= -6.985 DIST= 5.099 AU
BATSE-ULYSSES DISTANCE = 762829514. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 89.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 29.63 SECS.
CROSSING TIME AT ULYSSES IS 36460. S. OR 10:07:39 +/- 492.19 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 6/ 99 IS:
RA= 202.712 DEC= -10.108 DIST= 0.703 AU
MARS-BATSE DISTANCE = 105152424. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -163.16 SECS.
CROSSING TIME AT MARS IS 36267. S. OR 10:04:26 +/- 51.43 SECONDS

BATSE BURST TRIGGER

NO.: 7604

TIME: TJD=1340 SECONDS=36430

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=114.8 AZIMUTH=249.3 ERROR=3.846 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 60 S, STARTS AT APPROX.
T-13 S, MAX AT APPROX. T+7 S. NOT VISIBLE ABOVE 300 KEV. OVERWRITTEN DURING TTS.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7604	990611	11340	36430	2100	228	+48	60

BATSE BURST# 7604

ULYSSES RT

14 / 6 / 99

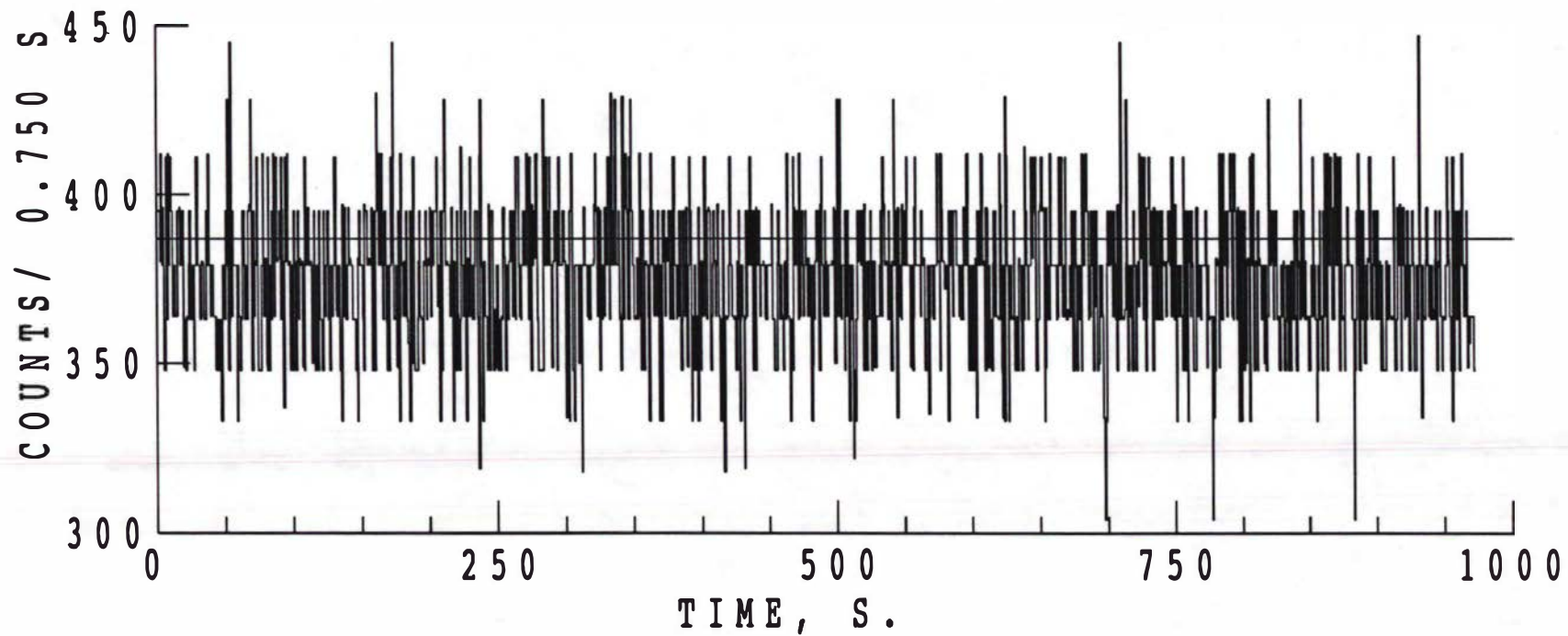
11 / 6 / 99 35964.098 s

0.250 S INTERVALS REGROUPED BY 3

0 - 0 keV

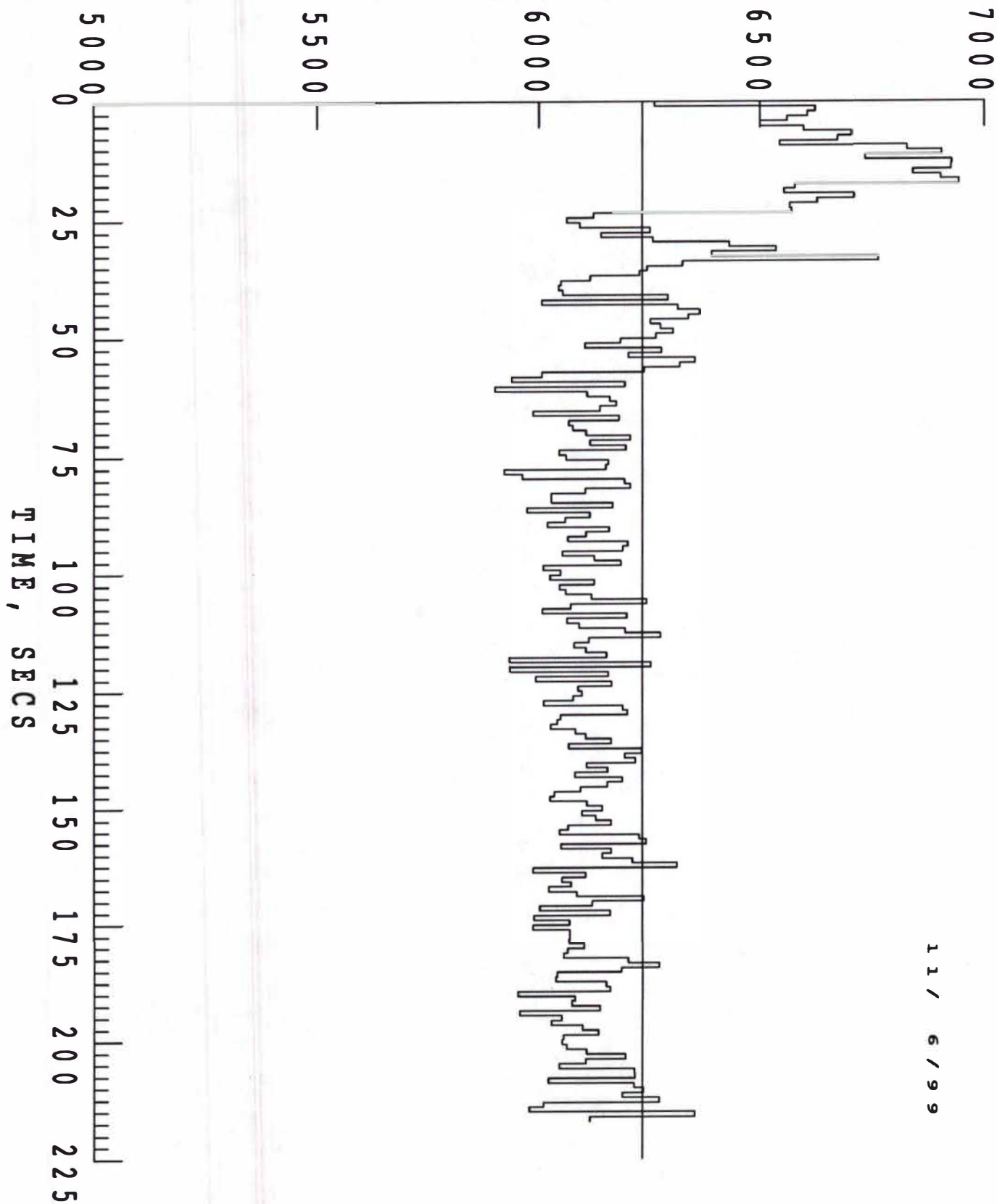
N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BACODINE 7604 11/06/99 36419.321
25- 100 keV

COUNTS/1.024 S



11 / 6 / 99

From PETERSON@fender.msfc.nasa.gov Mon Jun 14 12:54:59 1999
Return-Path: <PETERSON@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id MAA04016; Mon, 14 Jun 1999 12:54:59 -0700
From: PETERSON@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id MAA20868
for <khurley@sunspot.ssl.berkeley.edu>; Mon, 14 Jun 1999 12:51:24 -0700 (PDT)
Date: Mon, 14 Jun 1999 14:55:42 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990614145542.2081c128@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7605
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7605
EVENT OF 1999 JUN 11 DAY OF YEAR=162
EVENT CROSSING TIME AT BATSE : 43021. S. OR 11:57:01.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 343.000 -47.000
BATSE PEAK COUNTING RATE: 12000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 11/ 6/ 99 IS:
RA= 144.813 DEC= -6.987 DIST= 5.100 AU
BATSE-ULYSSES DISTANCE = 762964979. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 56.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1410.31 SECS.
CROSSING TIME AT ULYSSES IS 44431. S. OR 12:20:31 +/- 439.22 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 11/ 6/ 99 IS:
RA= 202.712 DEC= -10.108 DIST= 0.703 AU
MARS-BATSE DISTANCE = 105152424. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 67.16 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 136.14 SECS.
CROSSING TIME AT MARS IS 43157. S. OR 11:59:17 +/- 58.19 SECONDS

BATSE BURST TRIGGER

NO.: 7605

TIME: TJD=1340 SECONDS=43021

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=79.7 AZIMUTH=111.4 ERROR=0.692 DEGREES

COMMENTS:

GRB. COMPLEX, SPIKEY. DUR. APPROX. 30 S, STARTS AT APPROX. T-4 S, MAX AT
APPROX. T+2.8 S. VISIBLE ABOVE 300 KEV. OVERWROTE DURING TTS.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7605	990611	11340	43021	12000	343	-47	30

Date: 27/1/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ 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

- ☒ 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 N/A

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

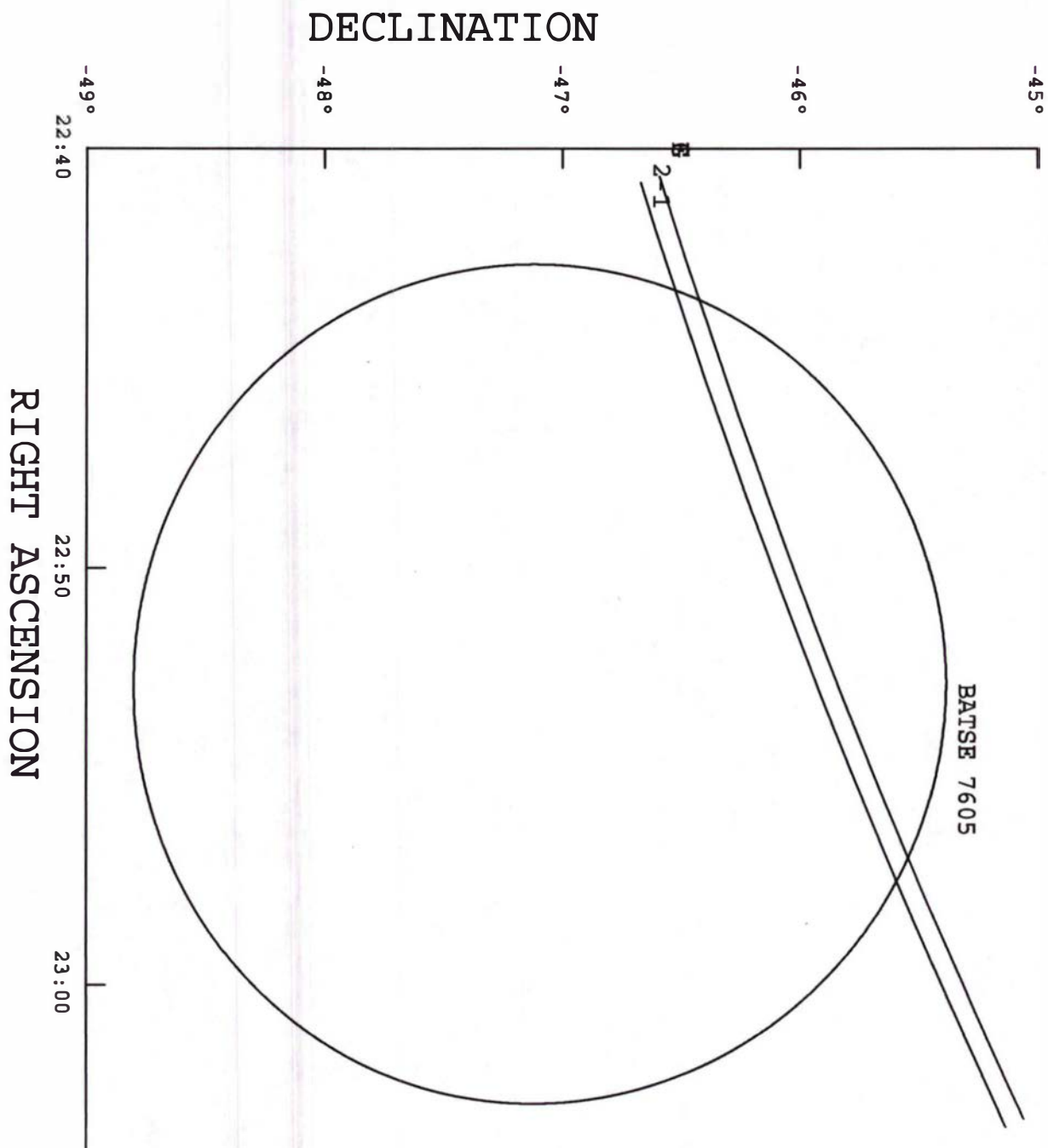
G=GALACTIC EQUATOR

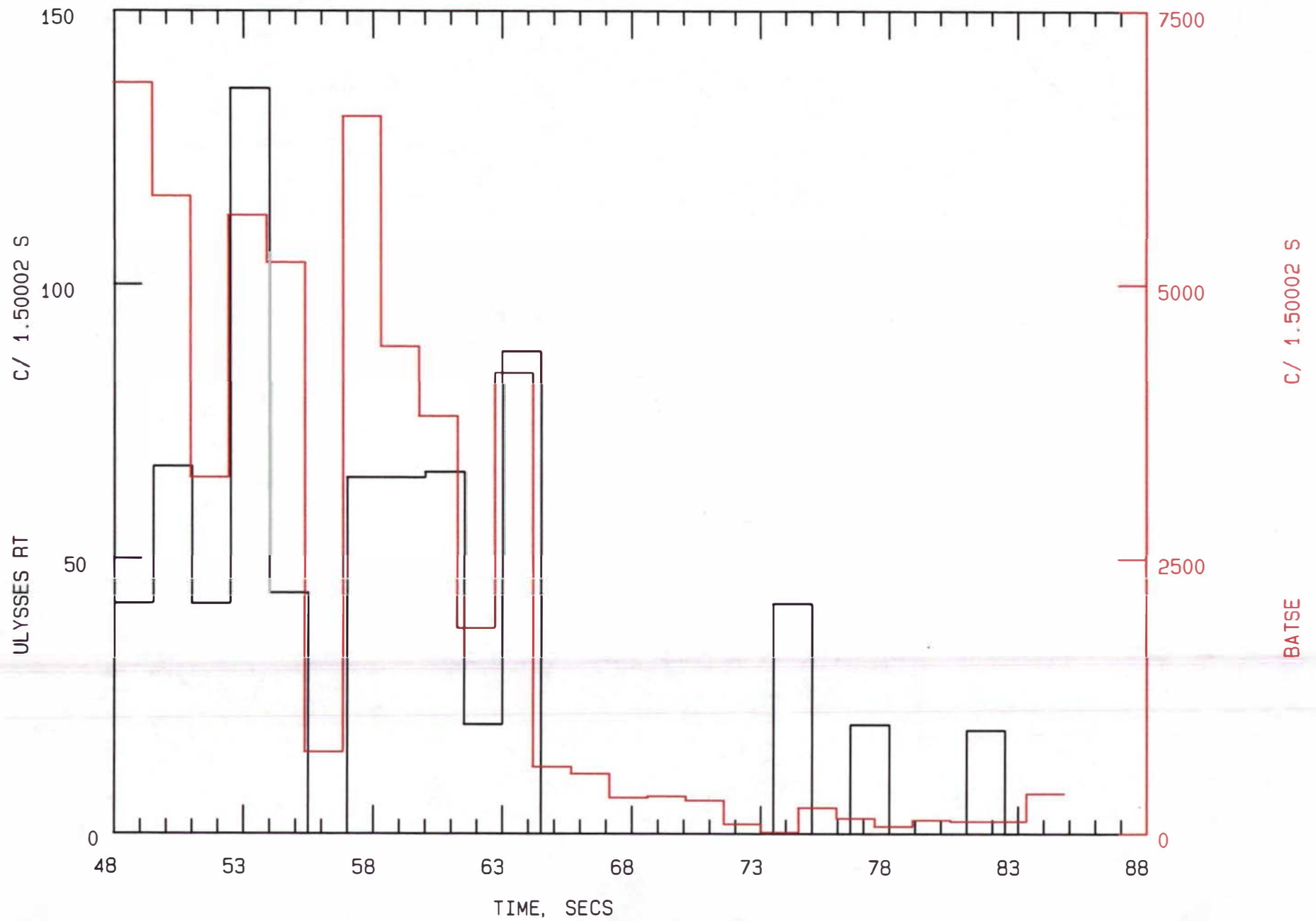
1 BATSE

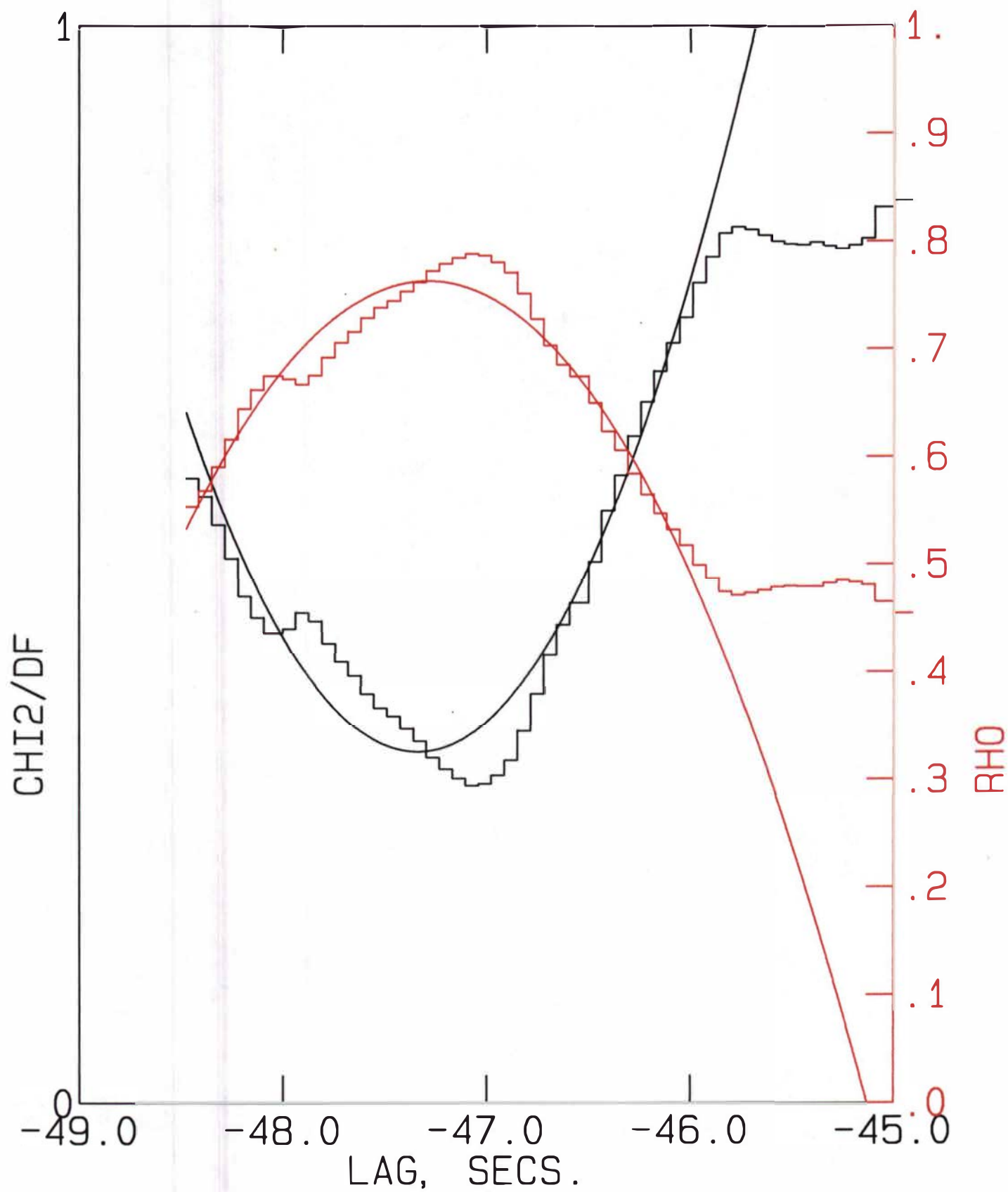
2 ULYSSES

EVENT OF JUN 11, 1999 11:57

27 / 1 / 0

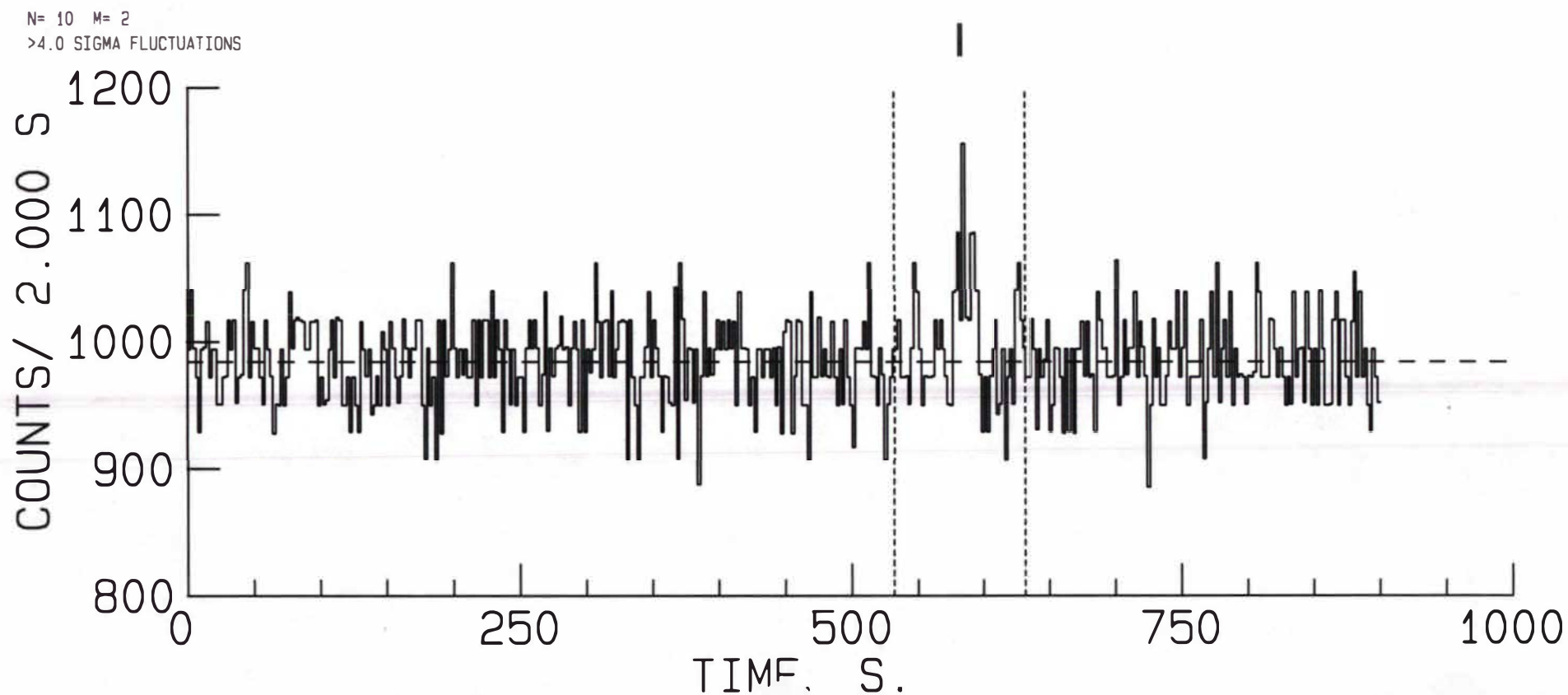






ULYSSES RT
11/ 6/99 43884.176 s
0.500 S INTERVALS REGROUPED BY 4
22- 151 keV

27 / 1 / 0



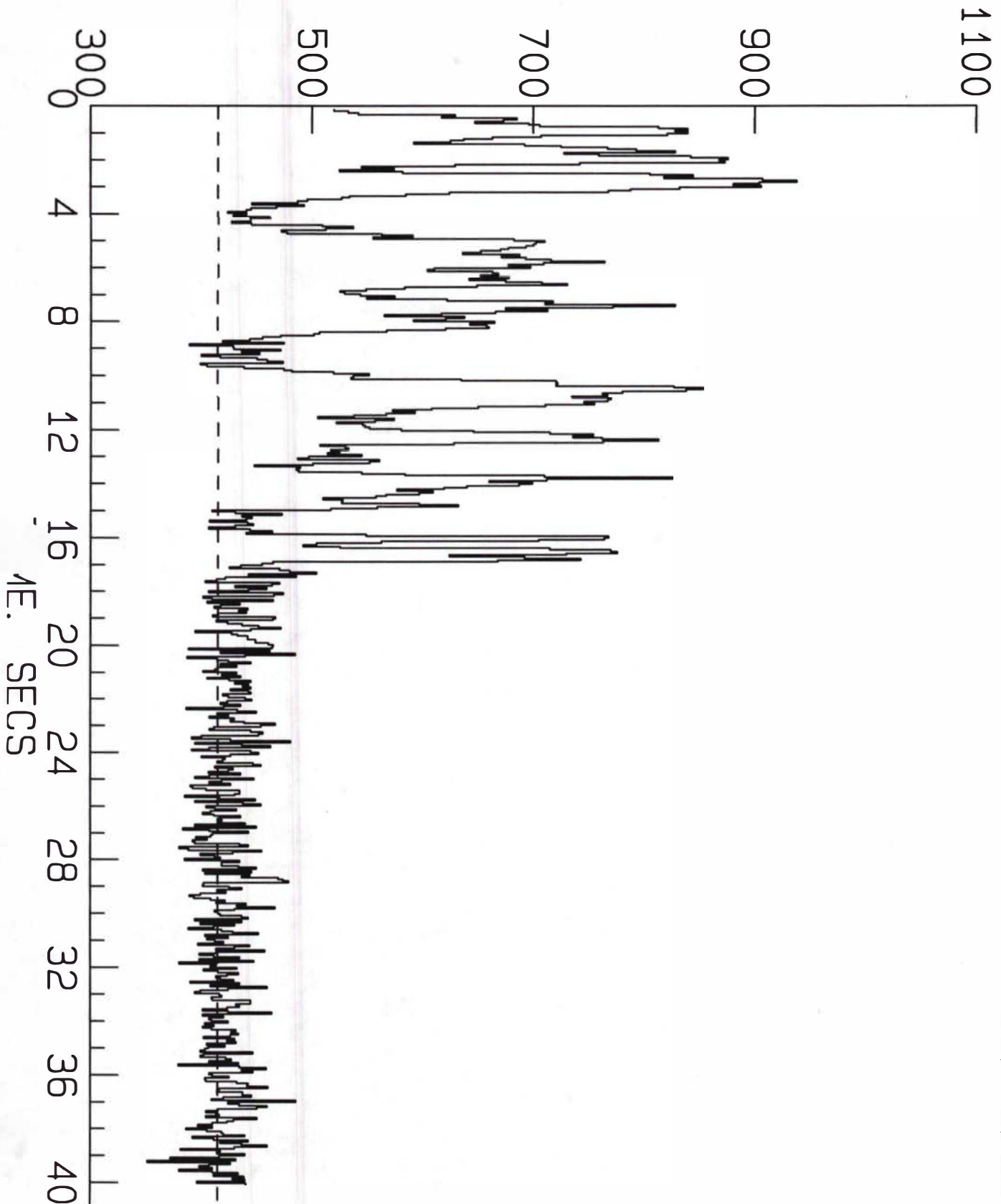
BATSE

11/06/99

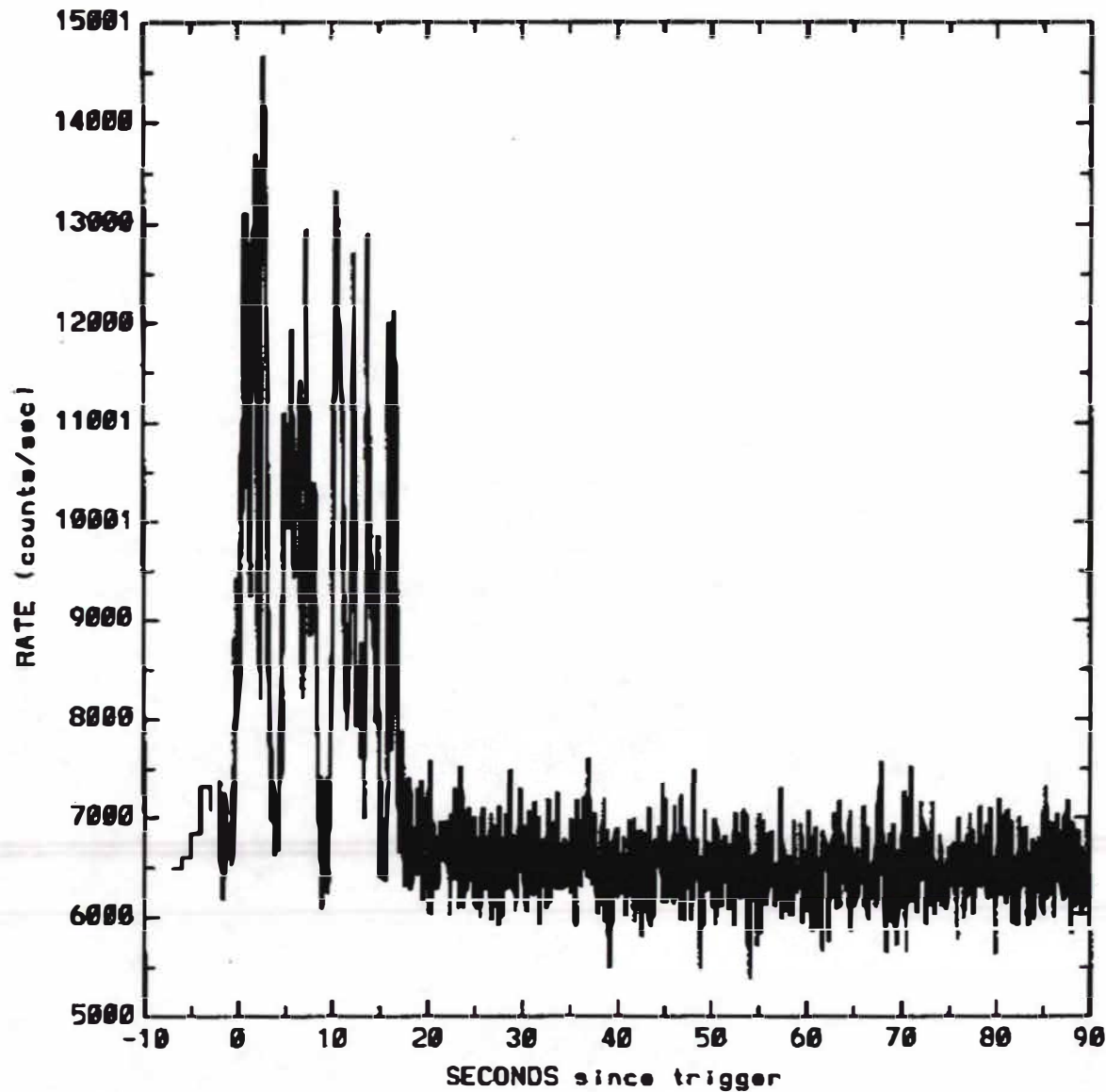
43021.945

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7605



15-JUN-1999 12.46.32

Created by NOPS 80
(Burst Display)
Version t2.2b

Trigger # . 7605

Trigger Time.
11340 / 43821.945

Burst Data Type.
DISCSC

Deadtime
Corrected. N

Background Data
Type. PREB + DISCLA

Minimum Integ. Time.
0.064 seconds

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

Discriminators.
[1 . 2]

Quality Mask.
80ISP1

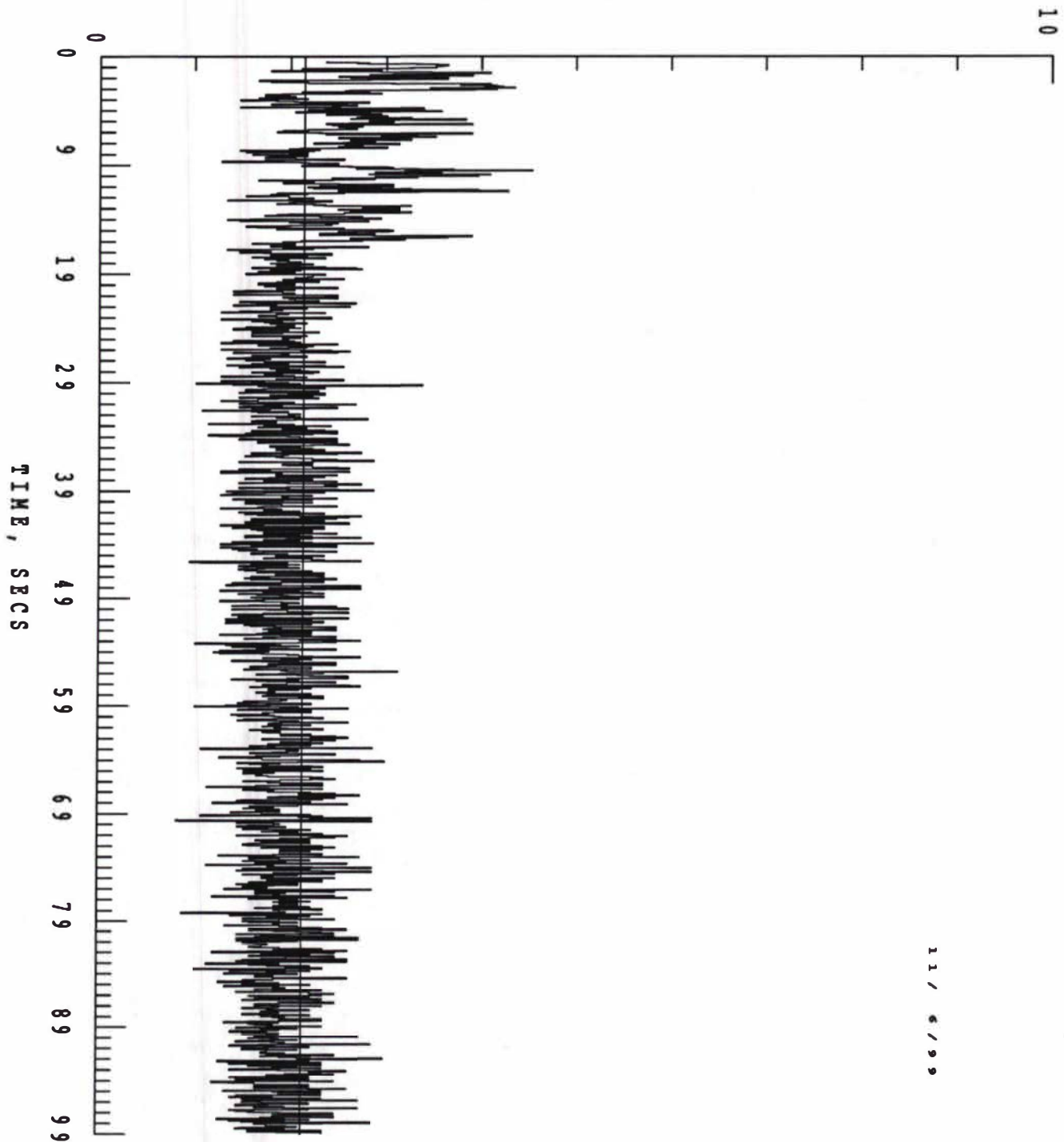
KONUS

11/06/99

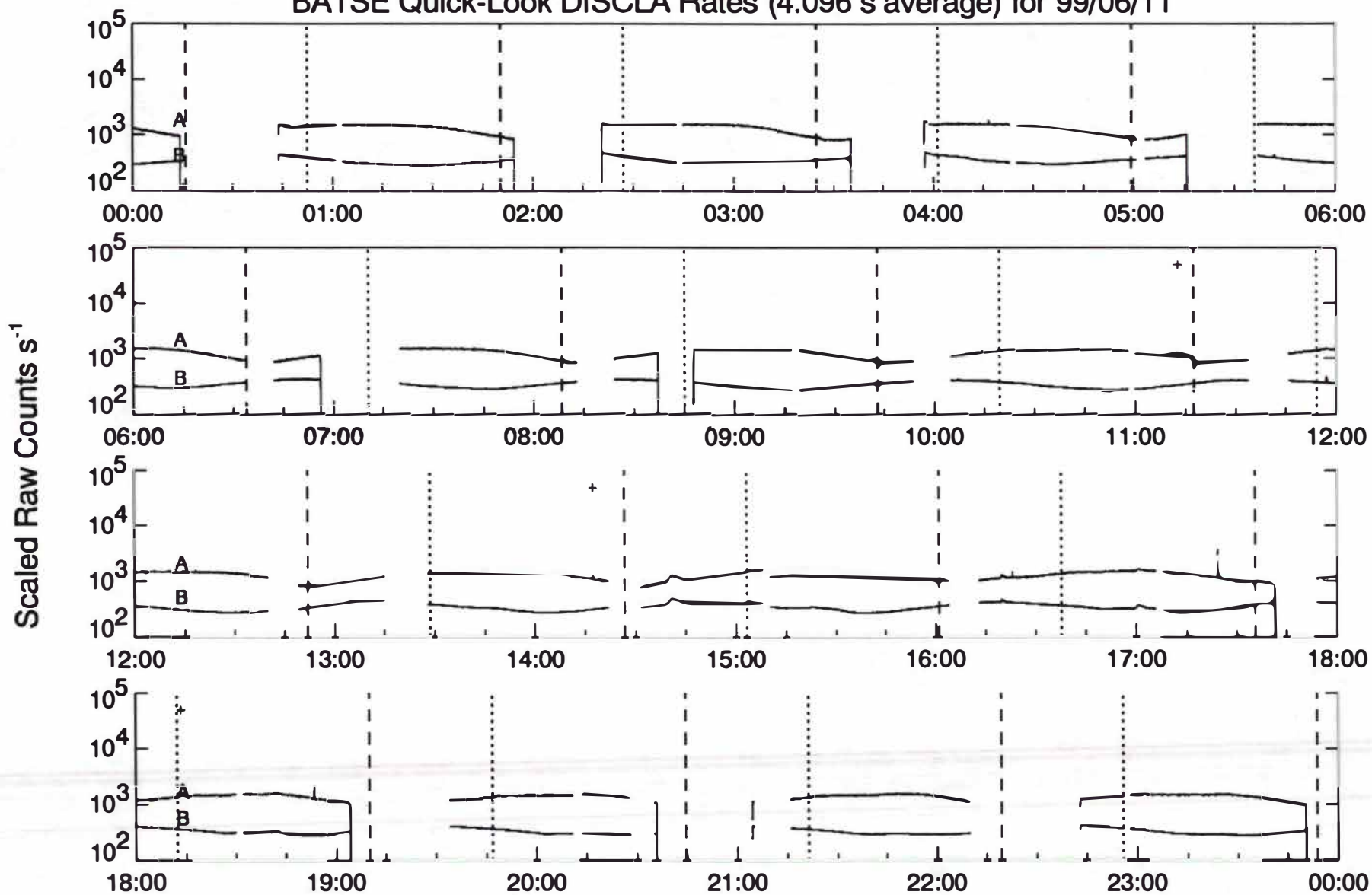
43023.833

50 - 200 keV

COUNTS/0.064 S



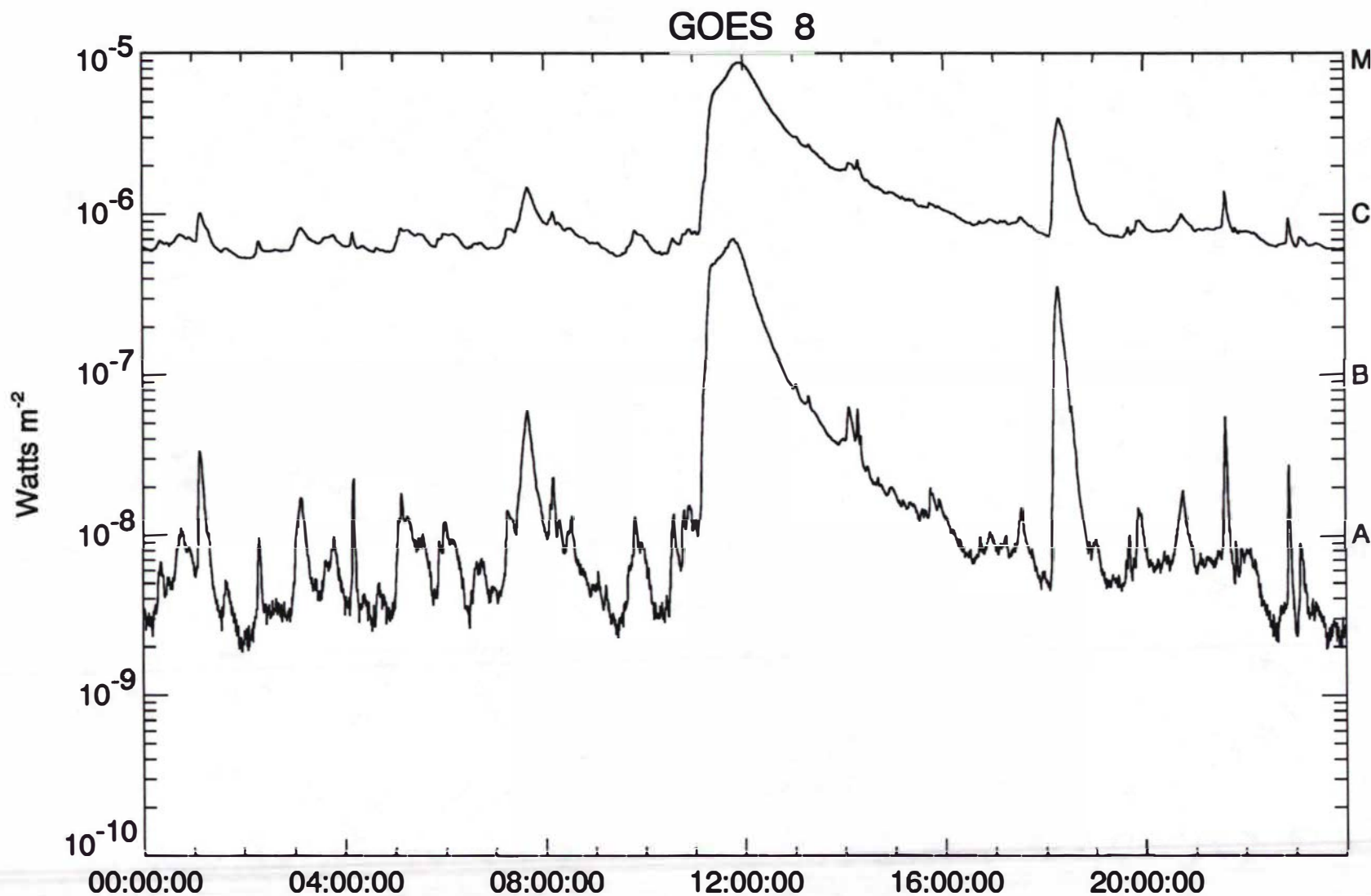
BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/11



Current Time: 99/06/15, 1013 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: 99/06/11, 0000:00

Plot created: 99/06/15, 1012

Channel 1 (1.0 - 8.0 Angstroms)

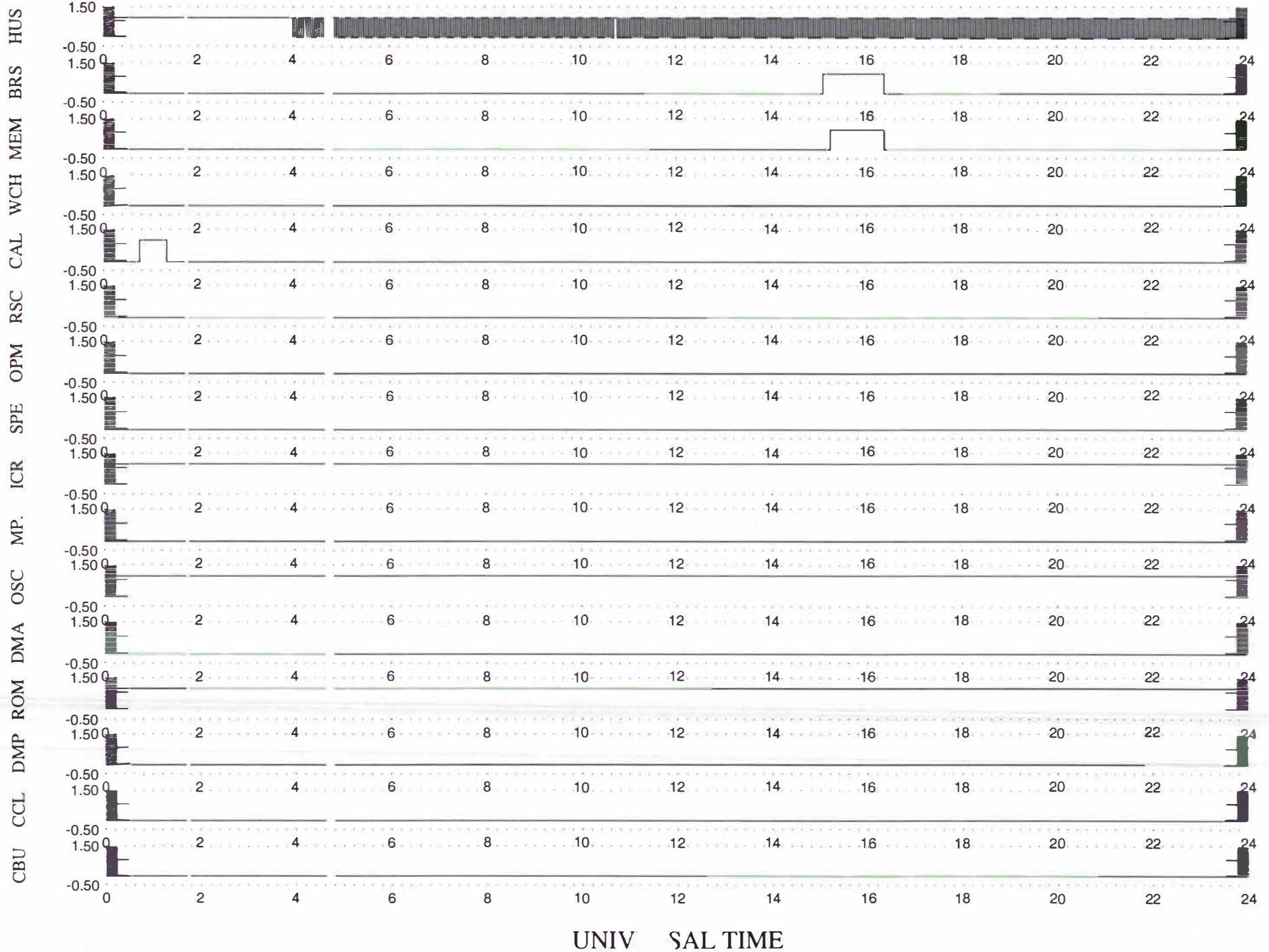
Background not subtracted

2 (0.5 - 4.0 Angstroms)

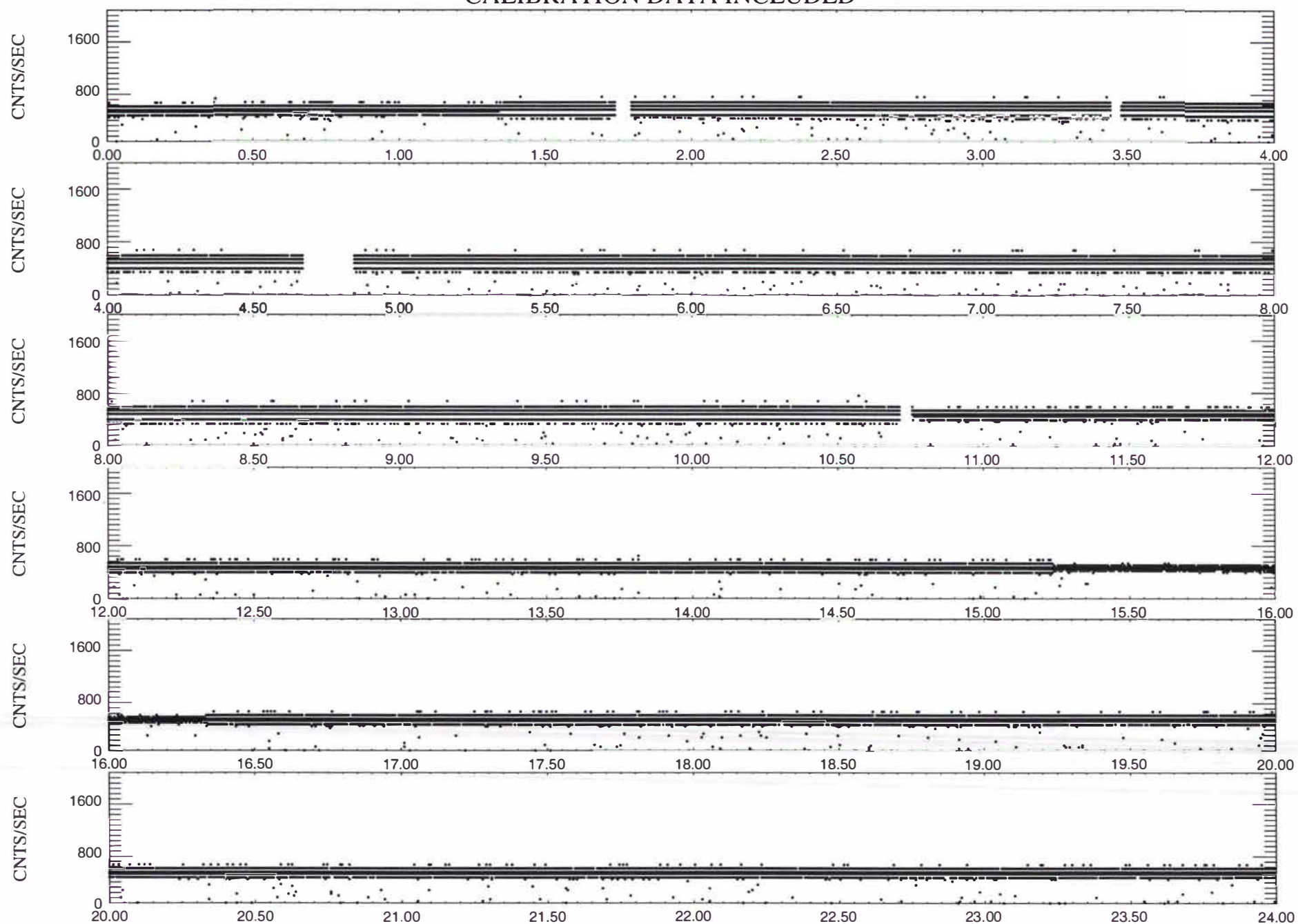
Background not subtracted

Sample average = 10

BURST NUMBER 6

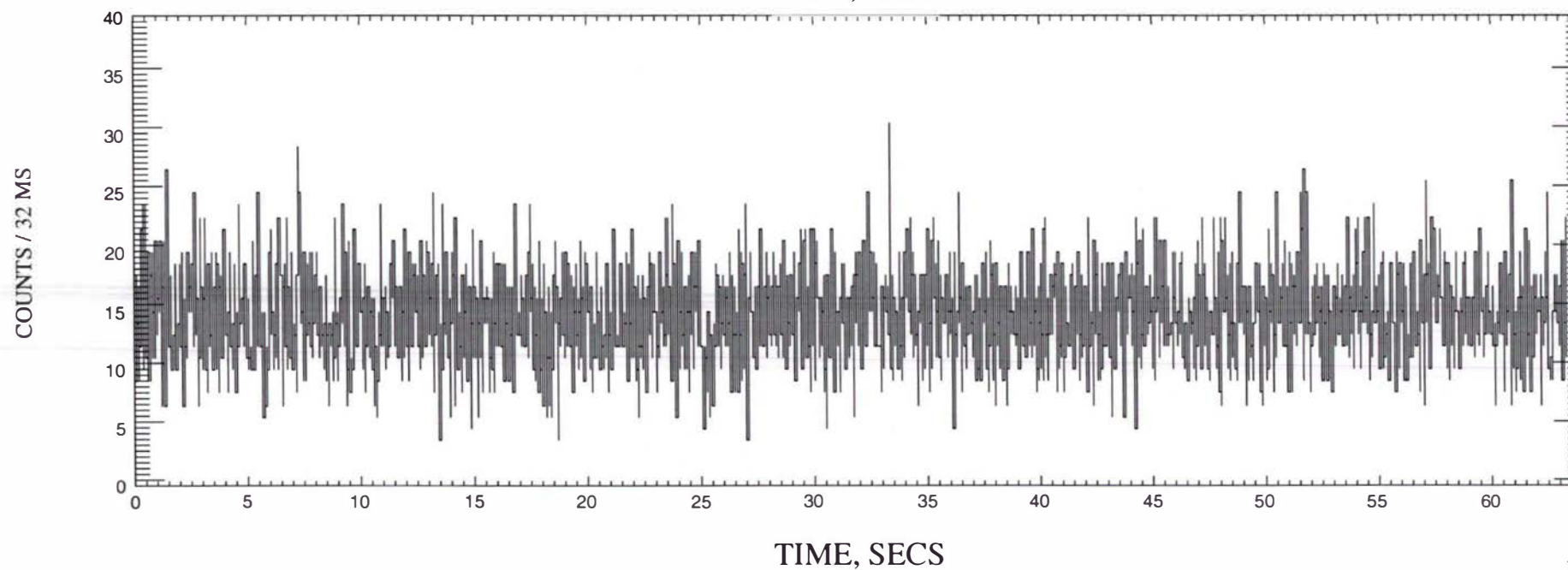
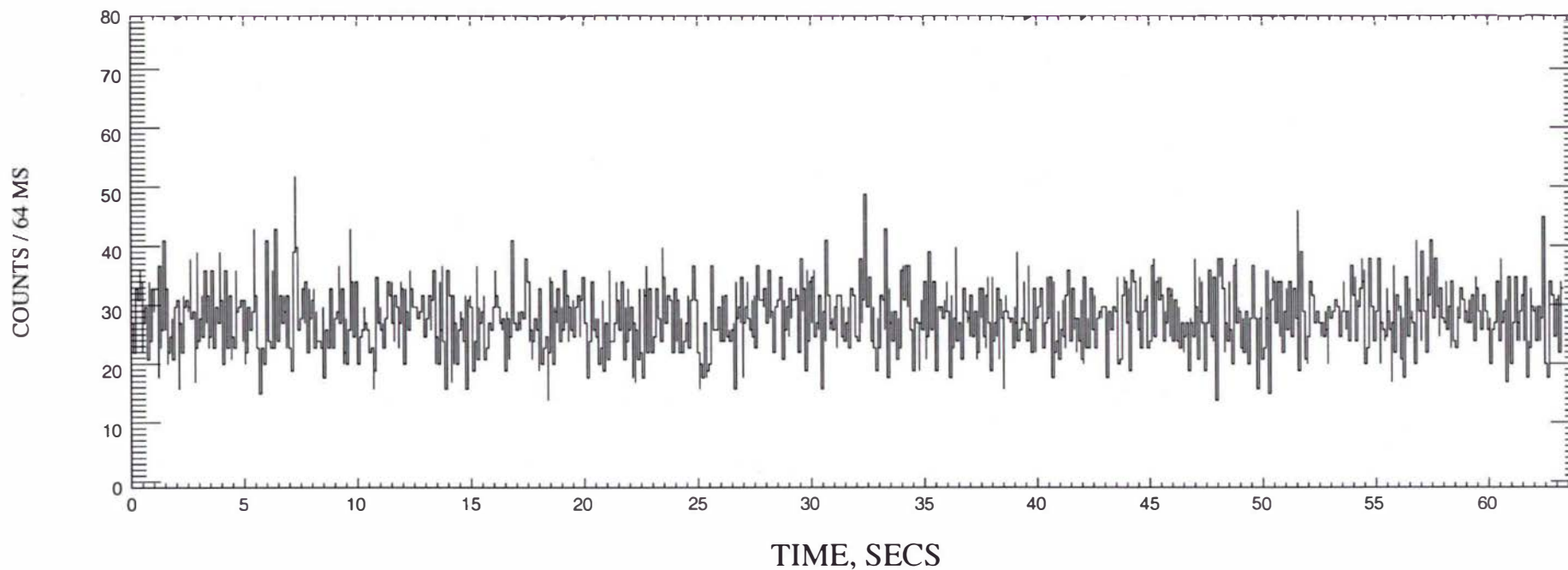


CALIBRATION DATA INCLUDED

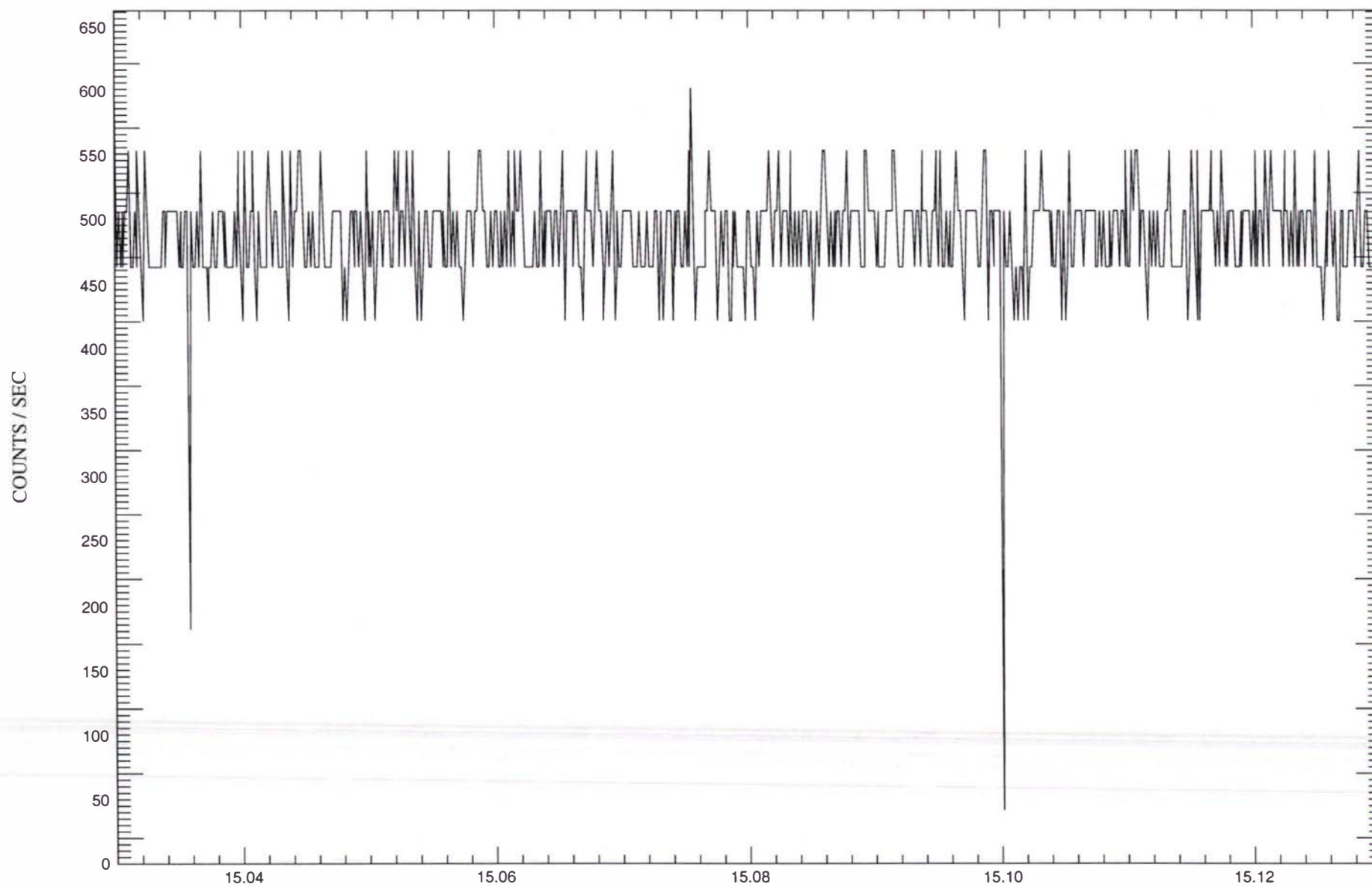


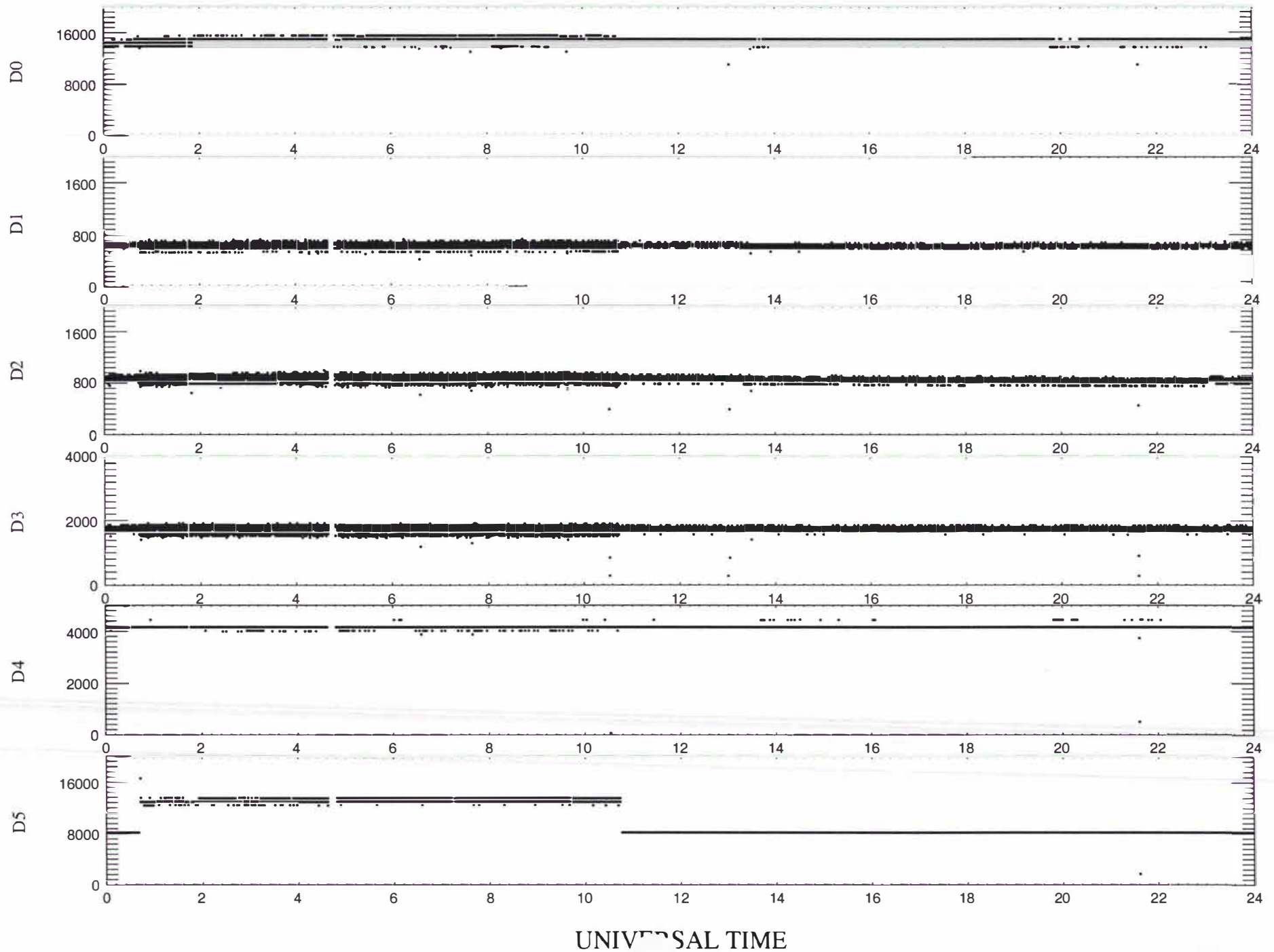
UNIVERSAL TIME

Burst Counter 6 at UT=15.075664490594 h=54272.392 s 15:04:32.392



CALIBRATION DATA INCLUDED





Date: Jan 30 2013

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. 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

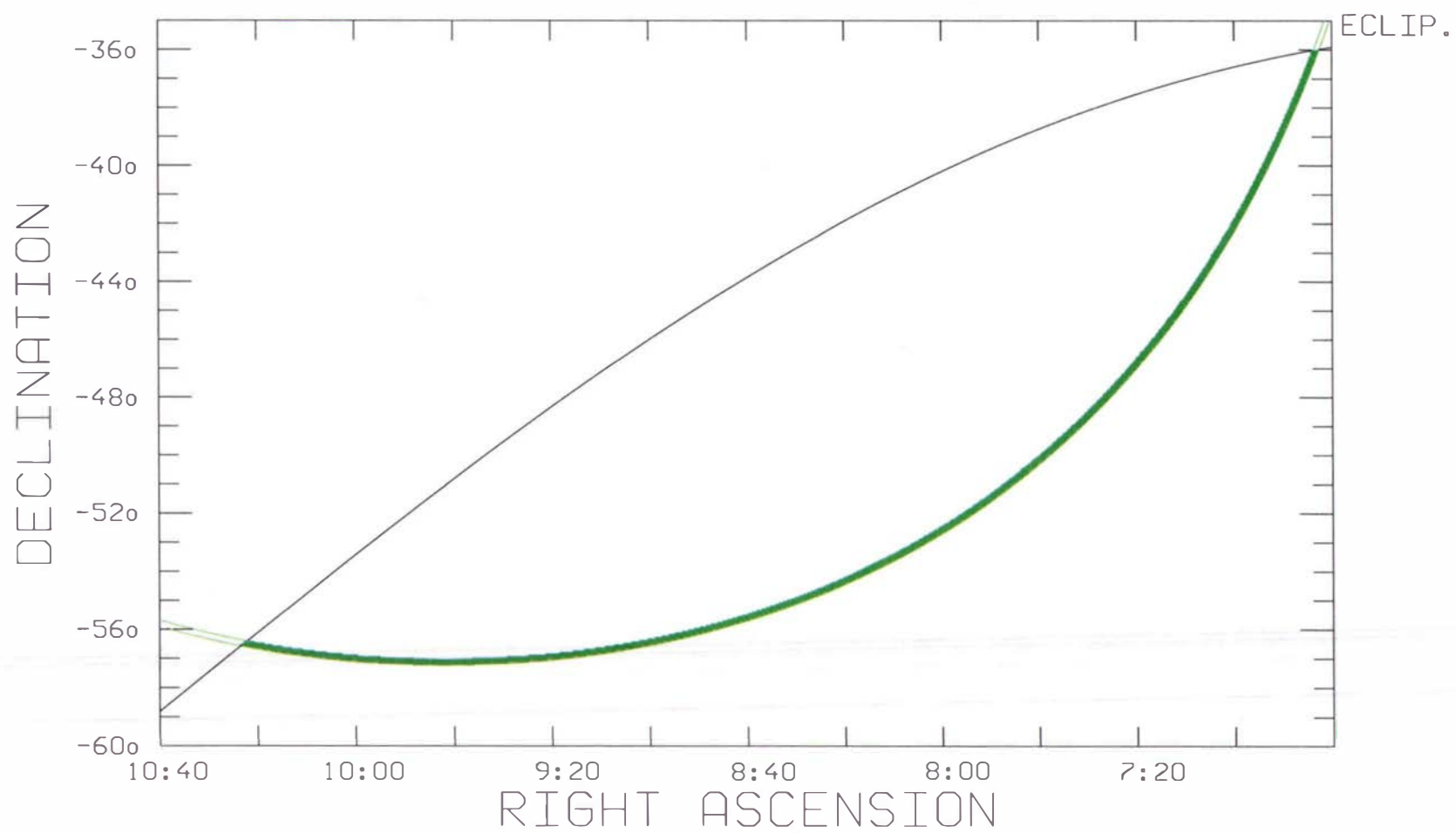
- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

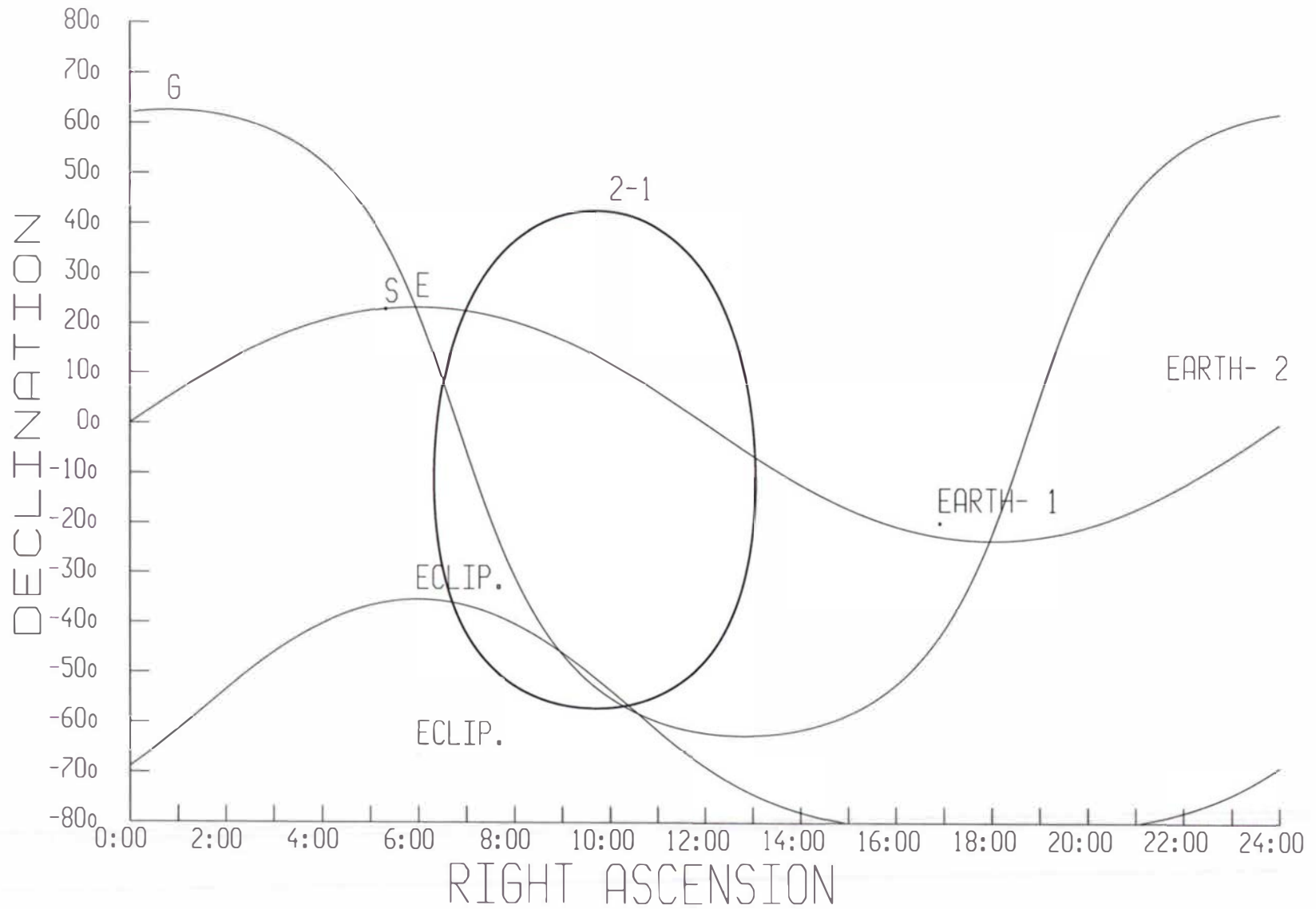
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

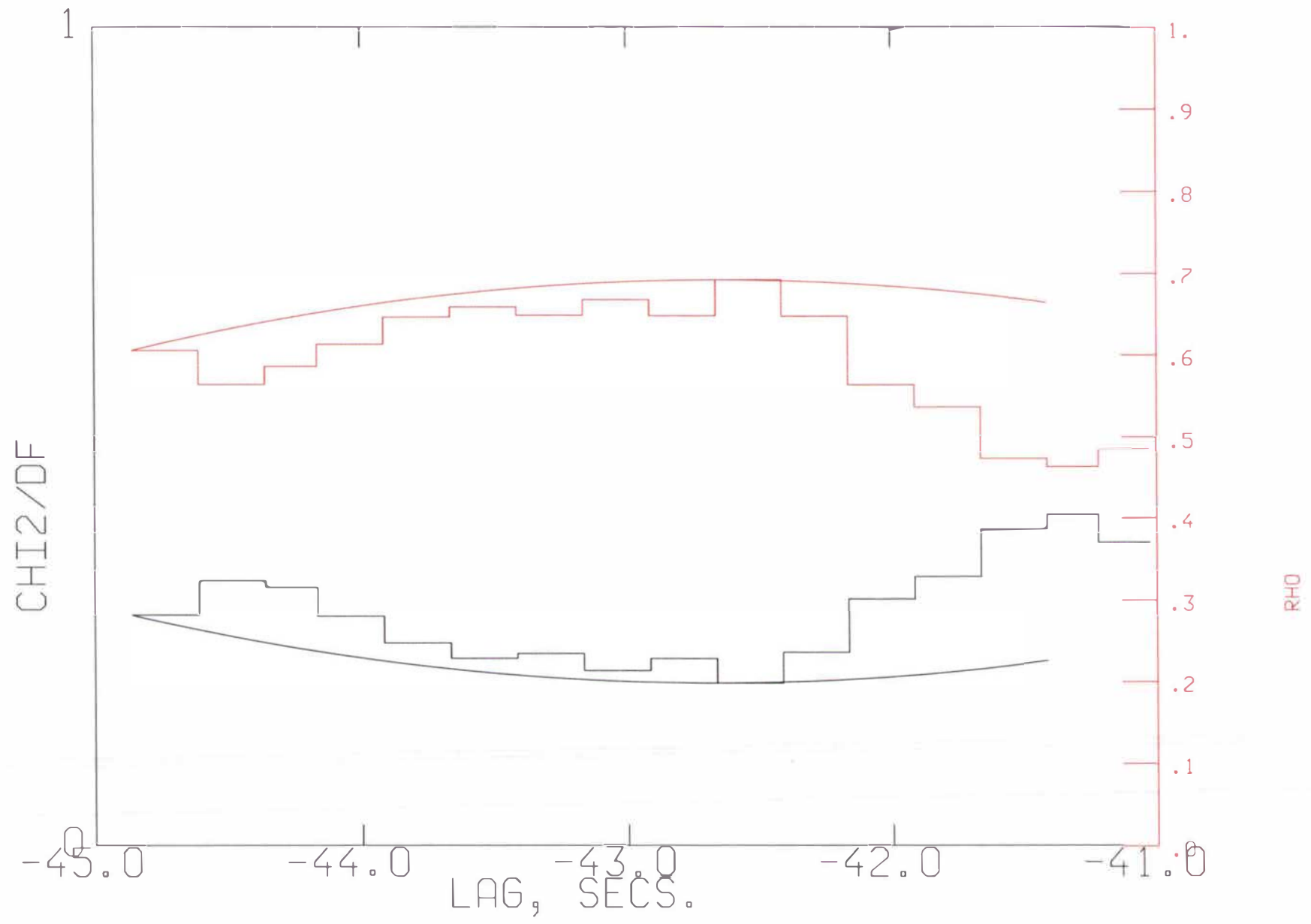


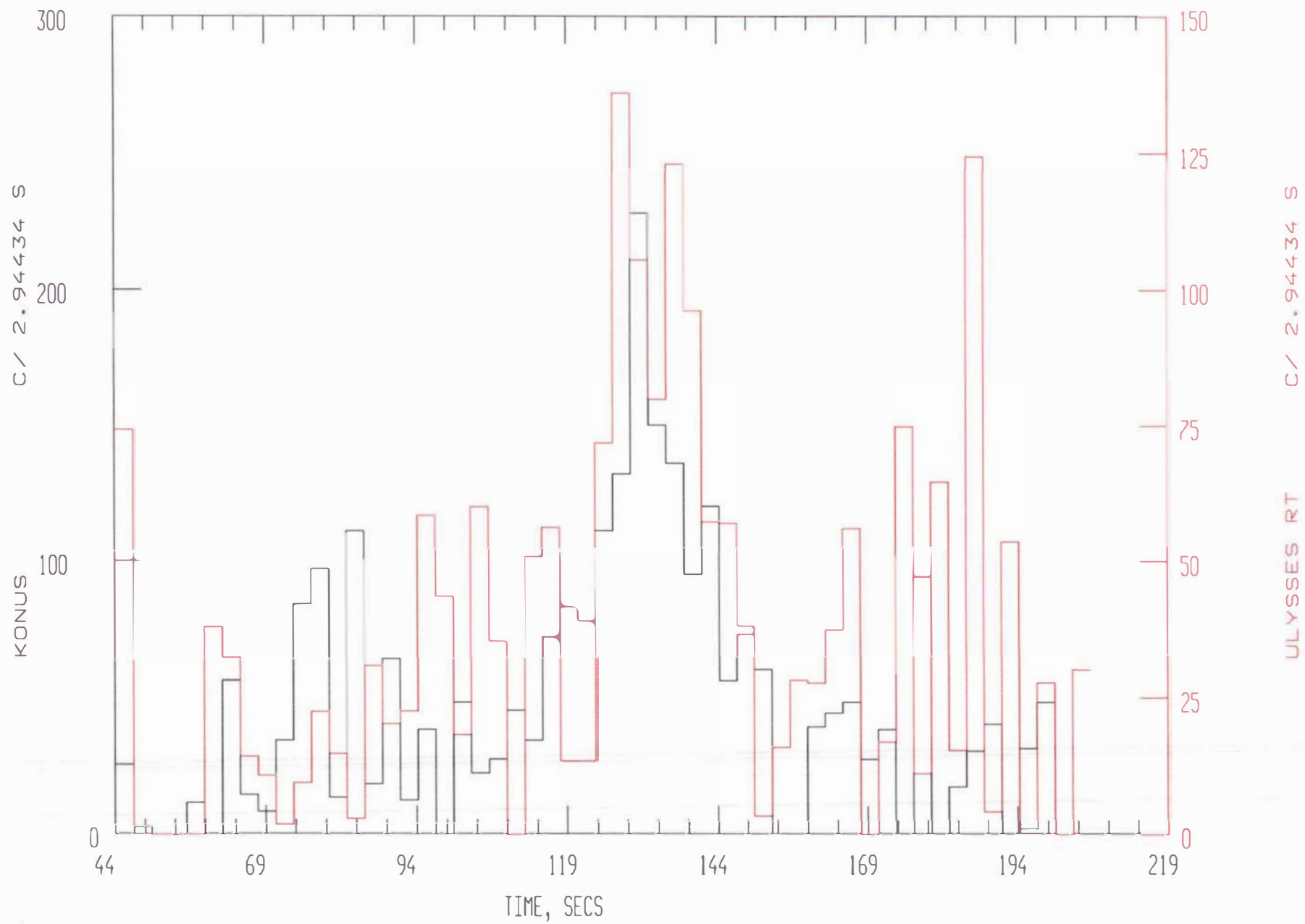
EVENT OF JUN 12, 1999 3:19

30/01/2013

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

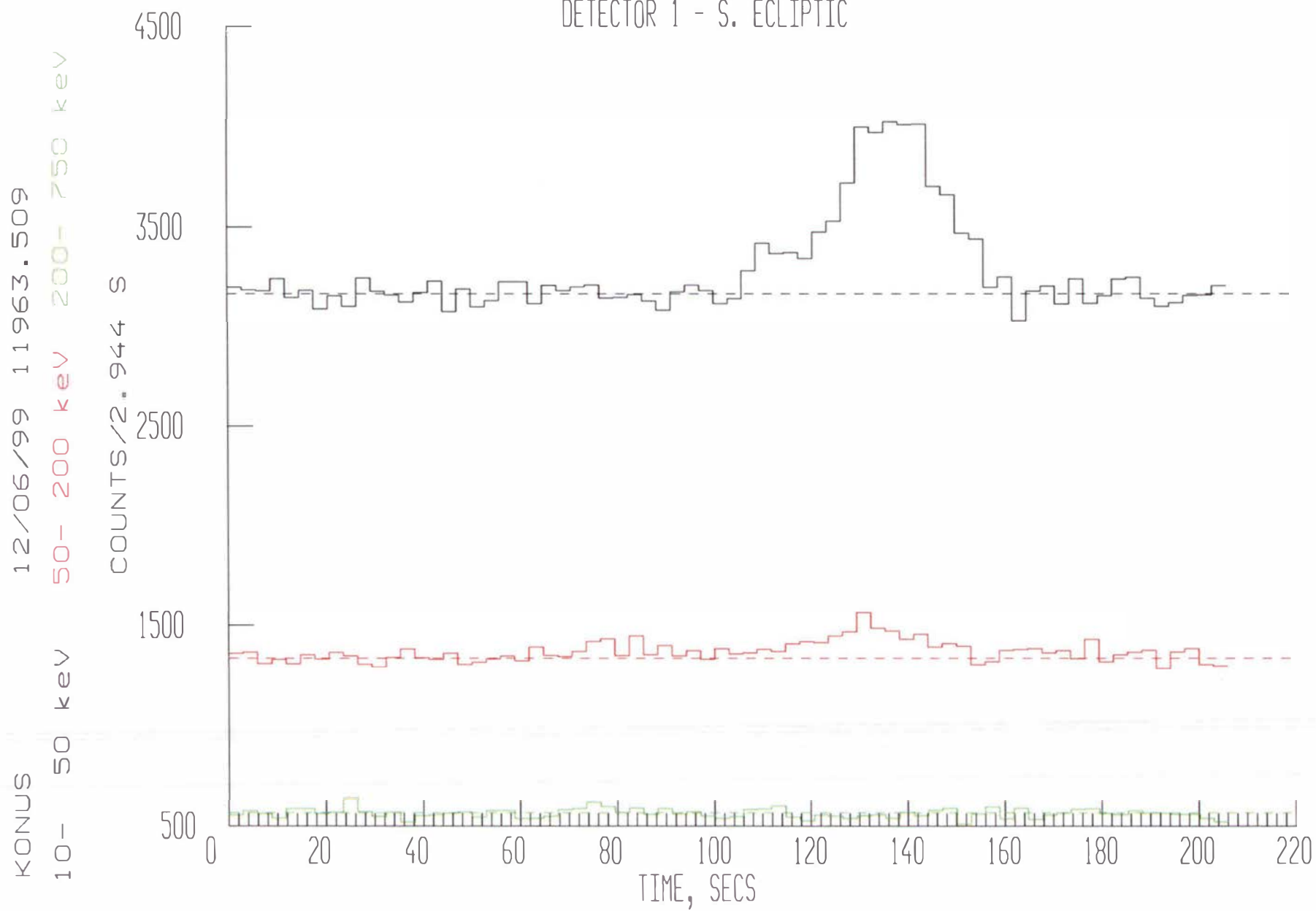




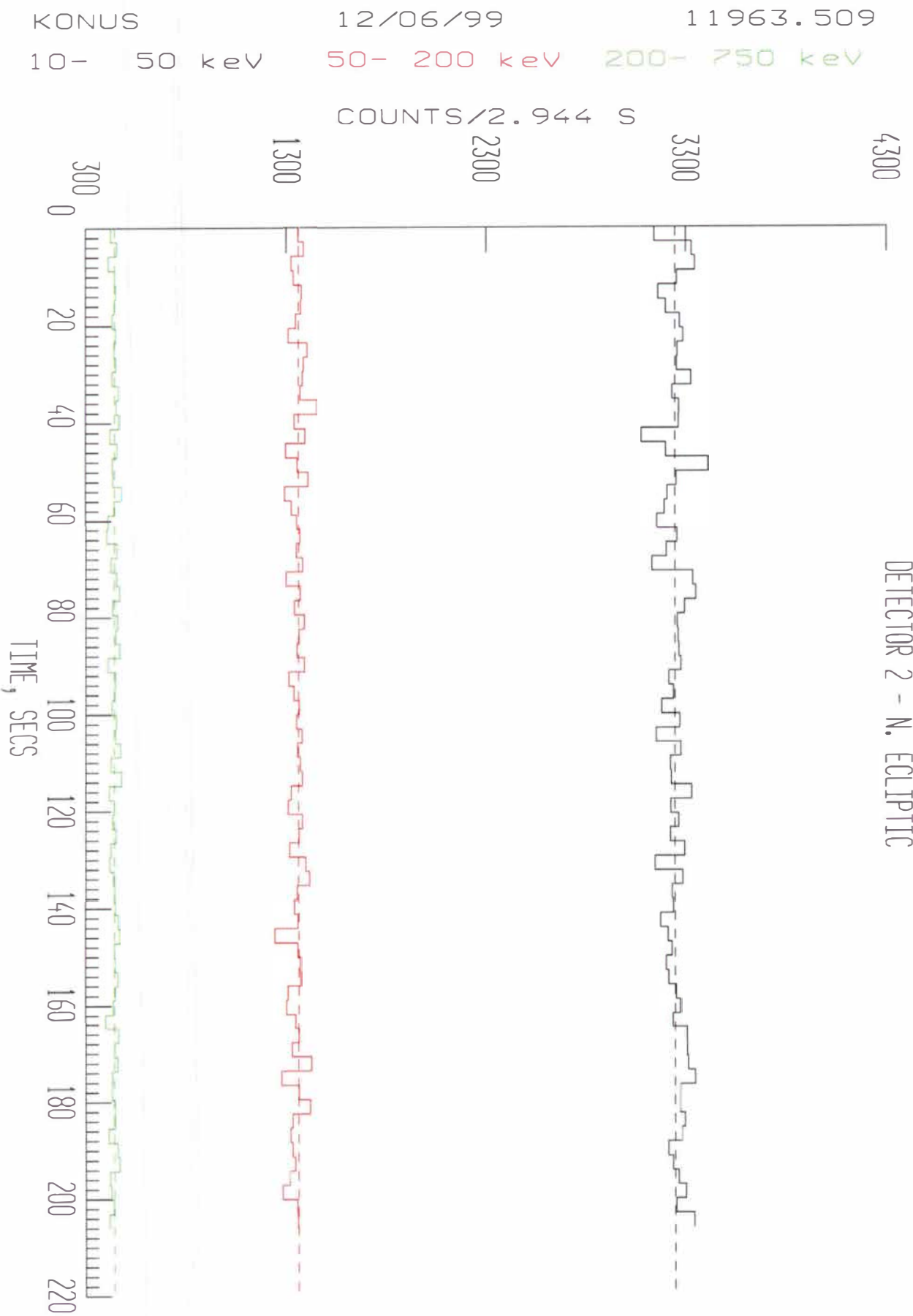


30/01/2013

DETECTOR 1 - S. ECLIPTIC



DETECTOR 2 - N. ECLIPTEIC



KONUS RI

29 / 11 / 99

ULYSSES RT

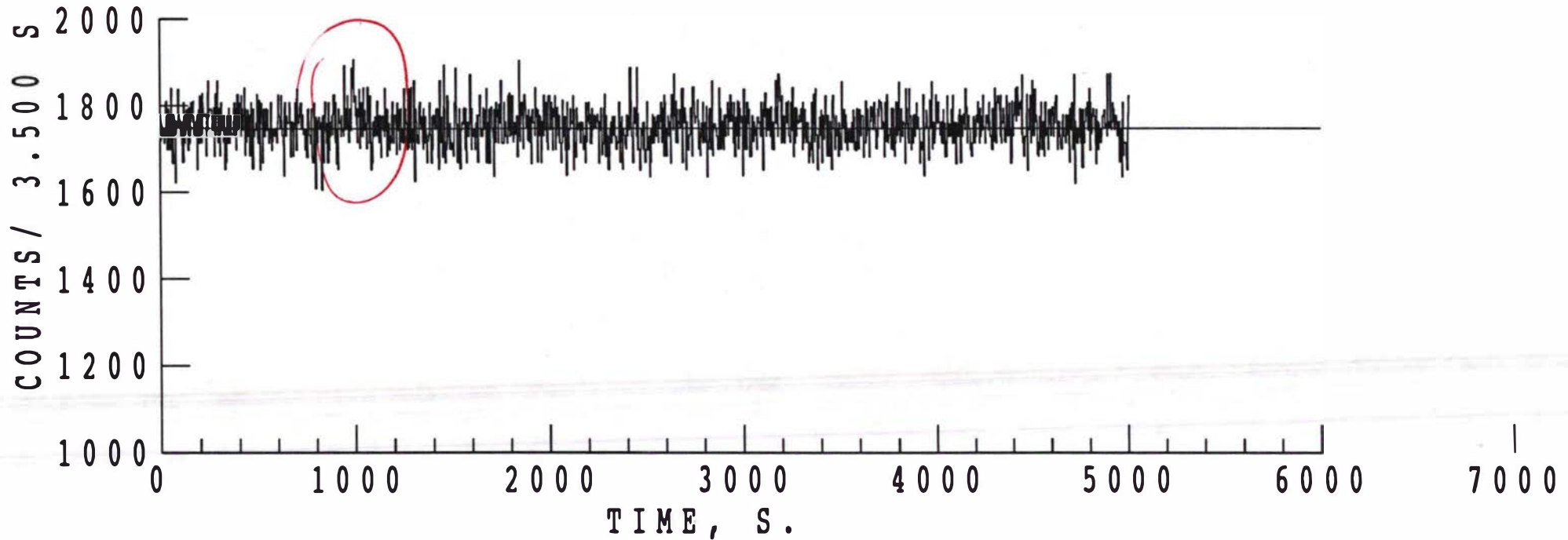
12 / 6 / 99 9468.200 s

0.250 S INTERVALS REGROUPED BY 14

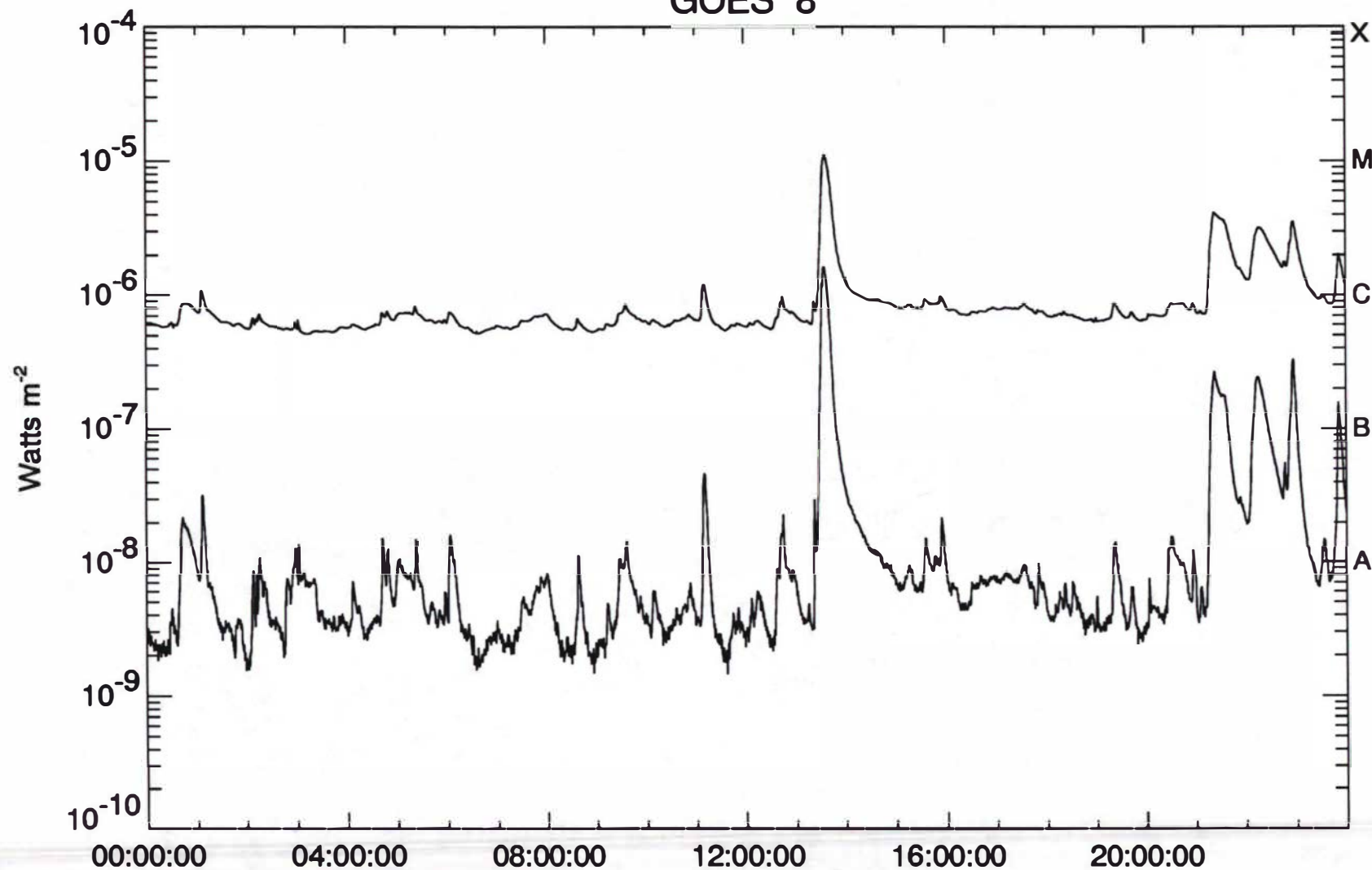
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GOES 8



Data Start: 99/06/12, 0000:00

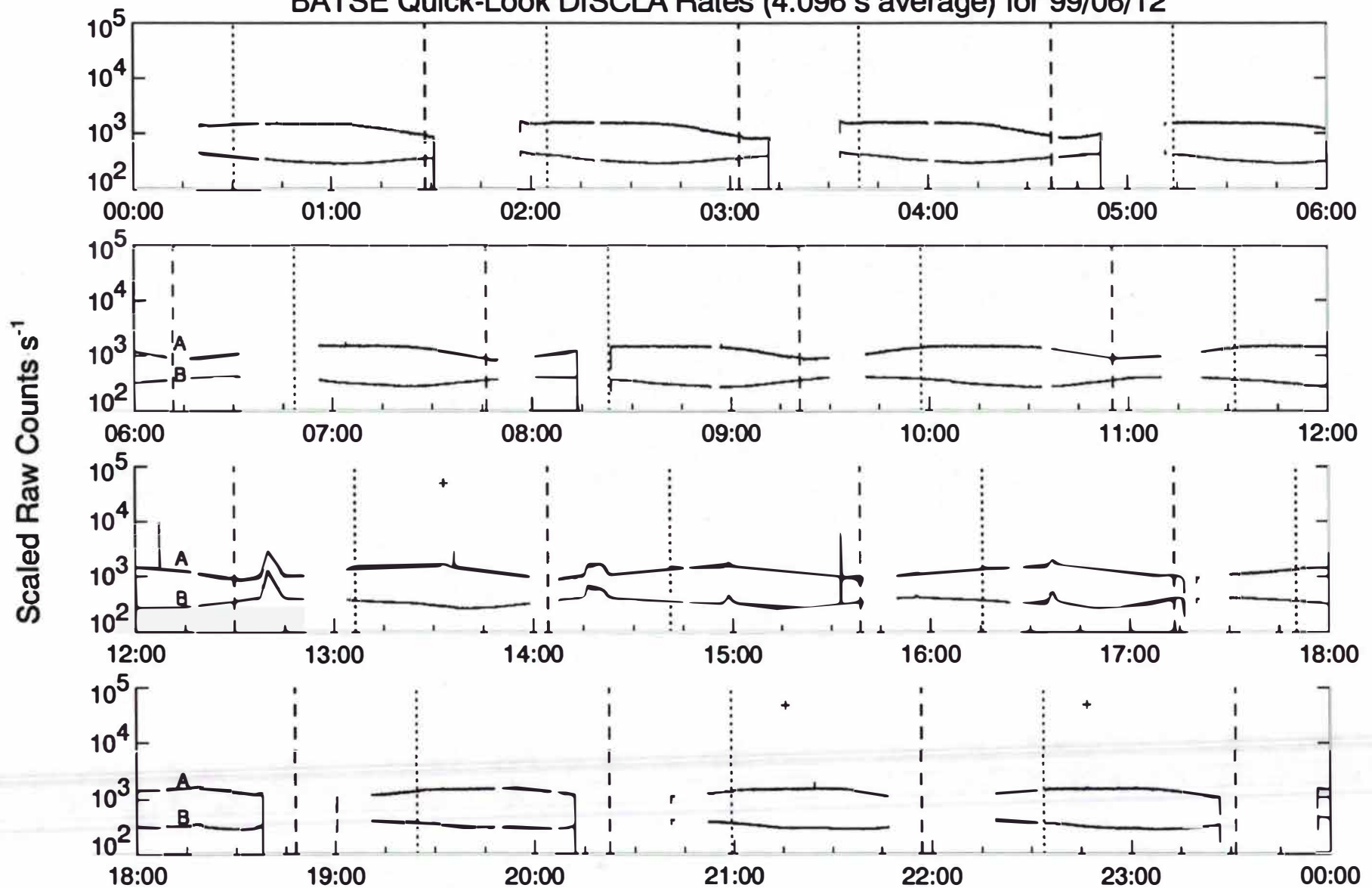
Plot created: 99/06/16, 1012

Channel 1 (1.0 - 8.0 Angstroms) Background not subtracted

Channel 2 (0.5 - 4.0 Angstroms) Background not subtracted

Sample average = 10

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/12

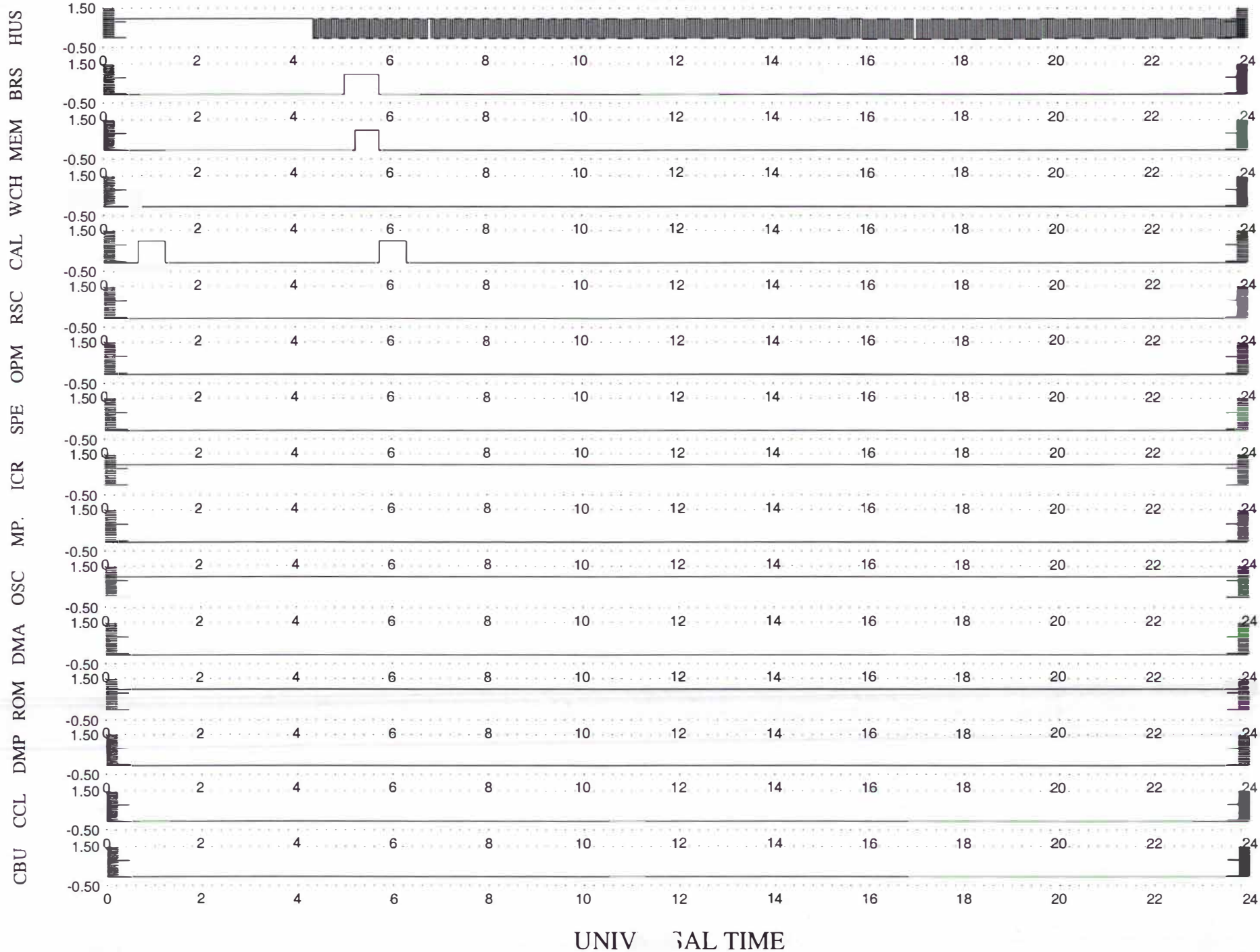


Current Time: 99/06/16, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

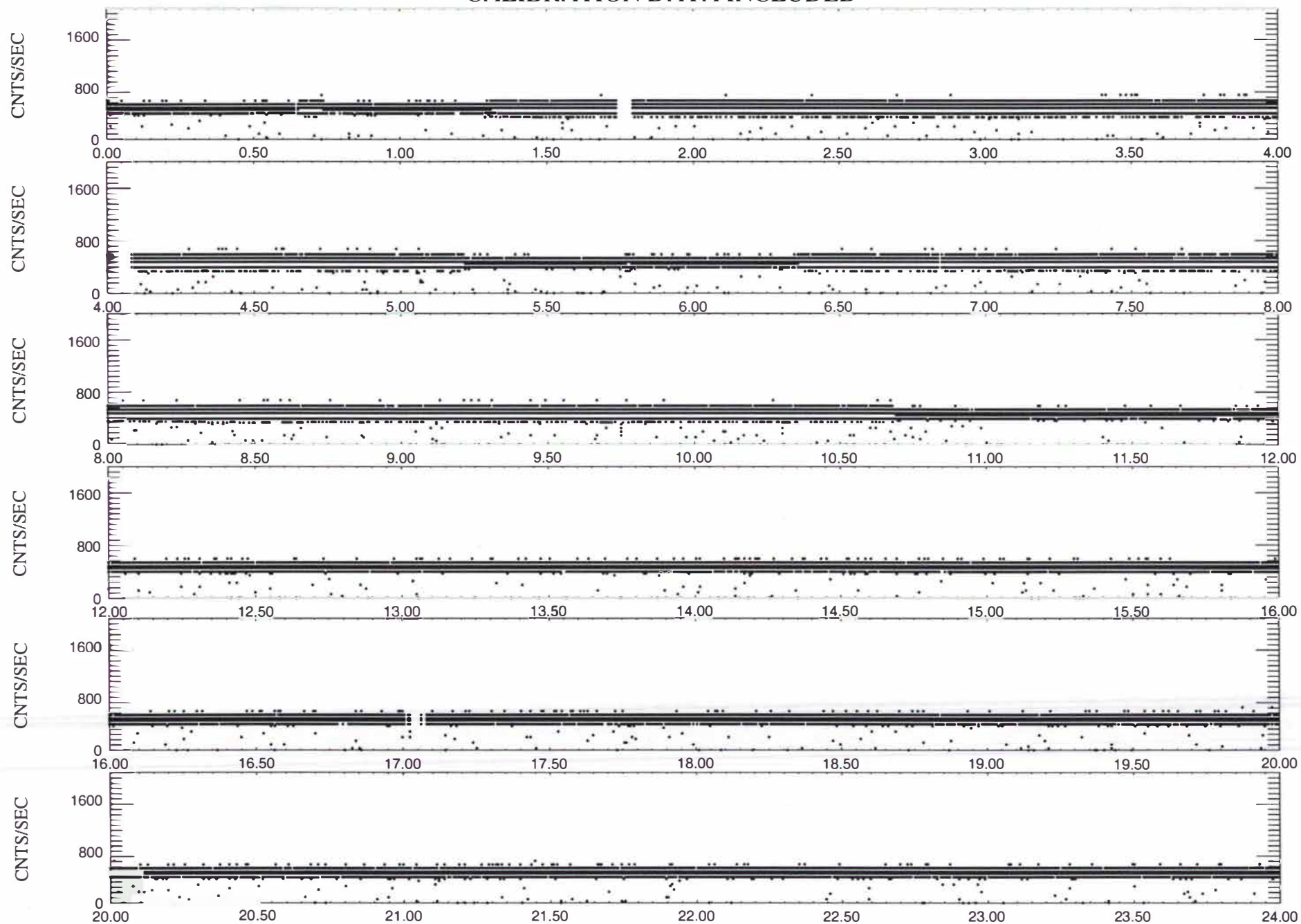
Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

BURST NUMBER 7

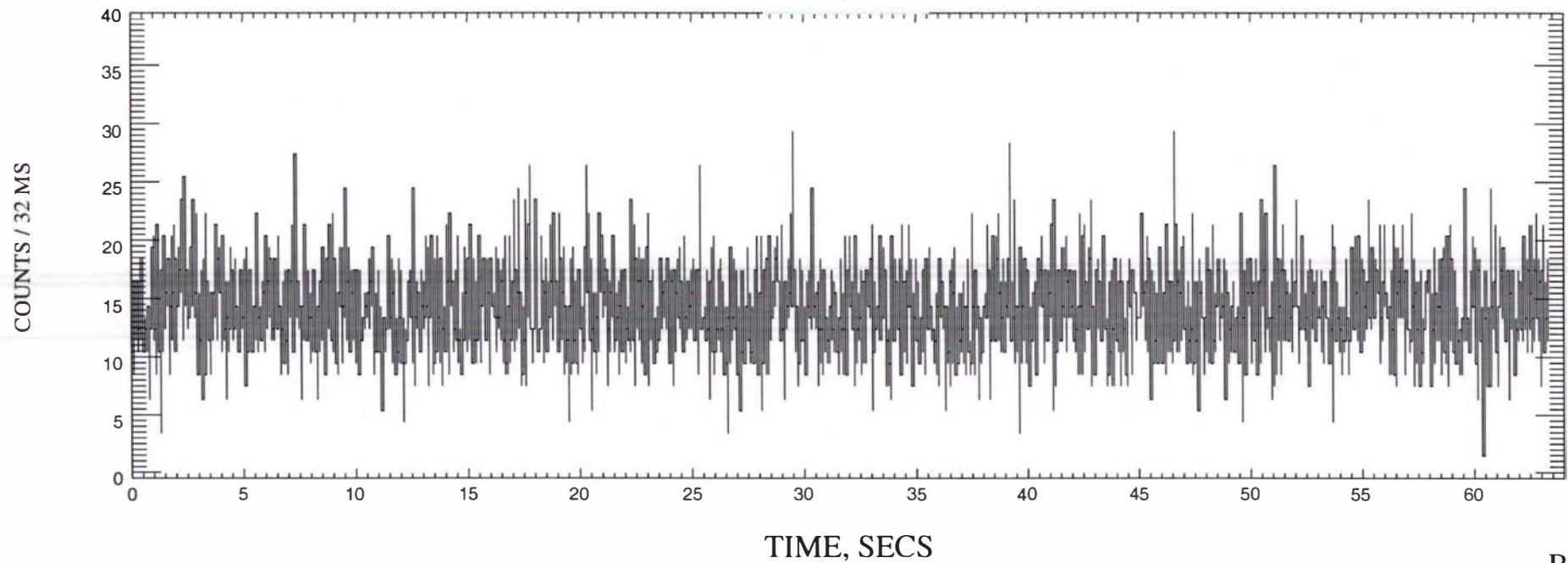
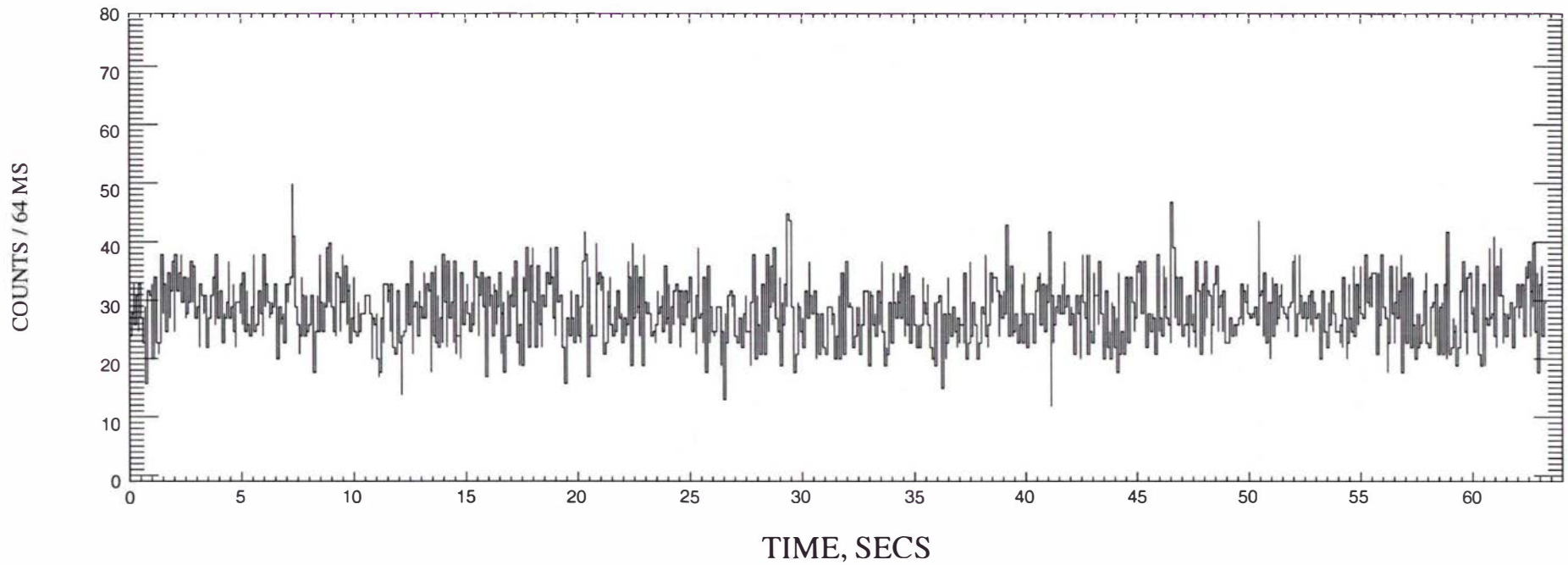


CALIBRATION DATA INCLUDED

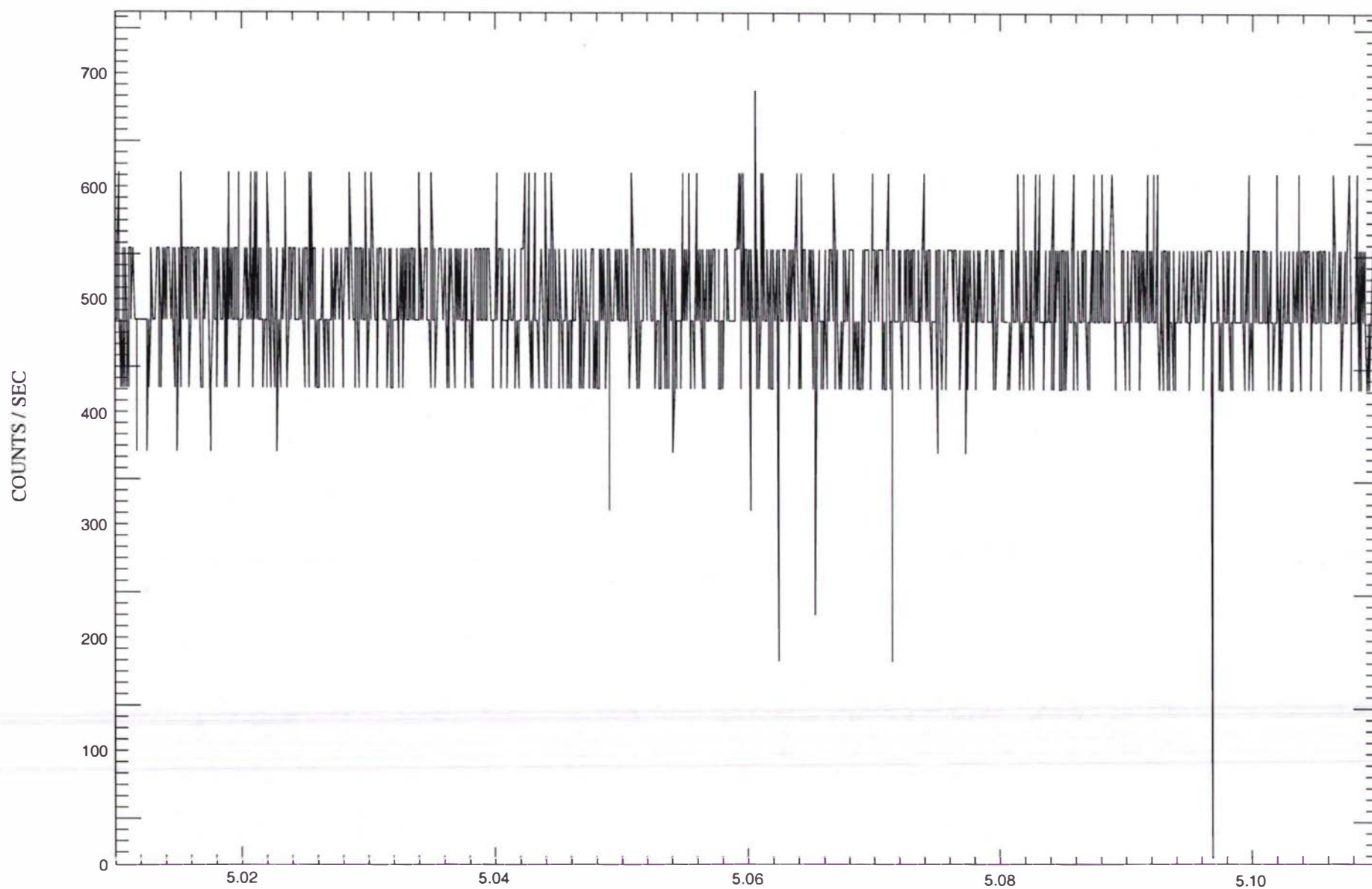


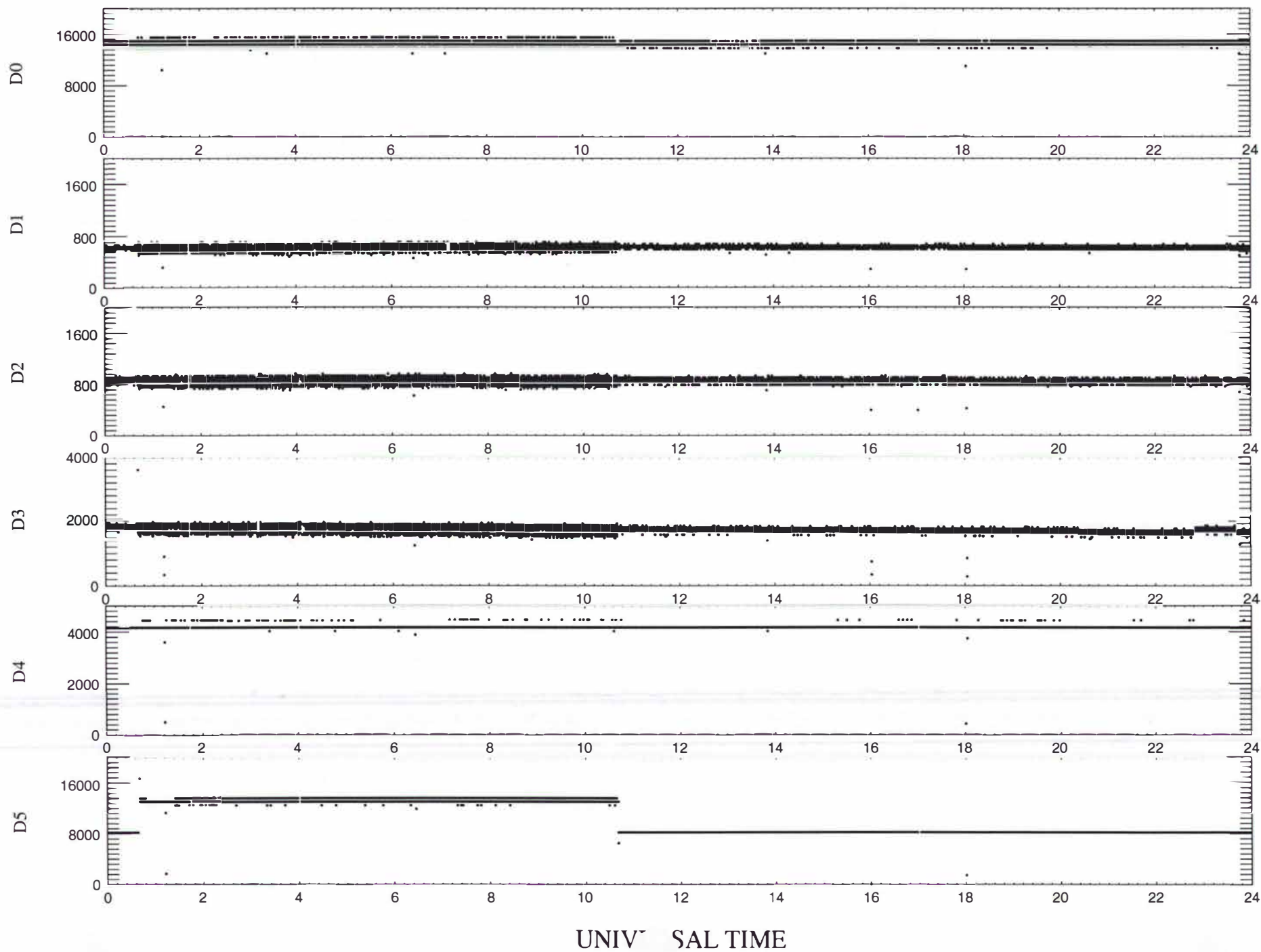
UNIV SAL TIME

Burst Counter 7 at UT= 5.060737058851 h=18218.653 s 05:03:38.653

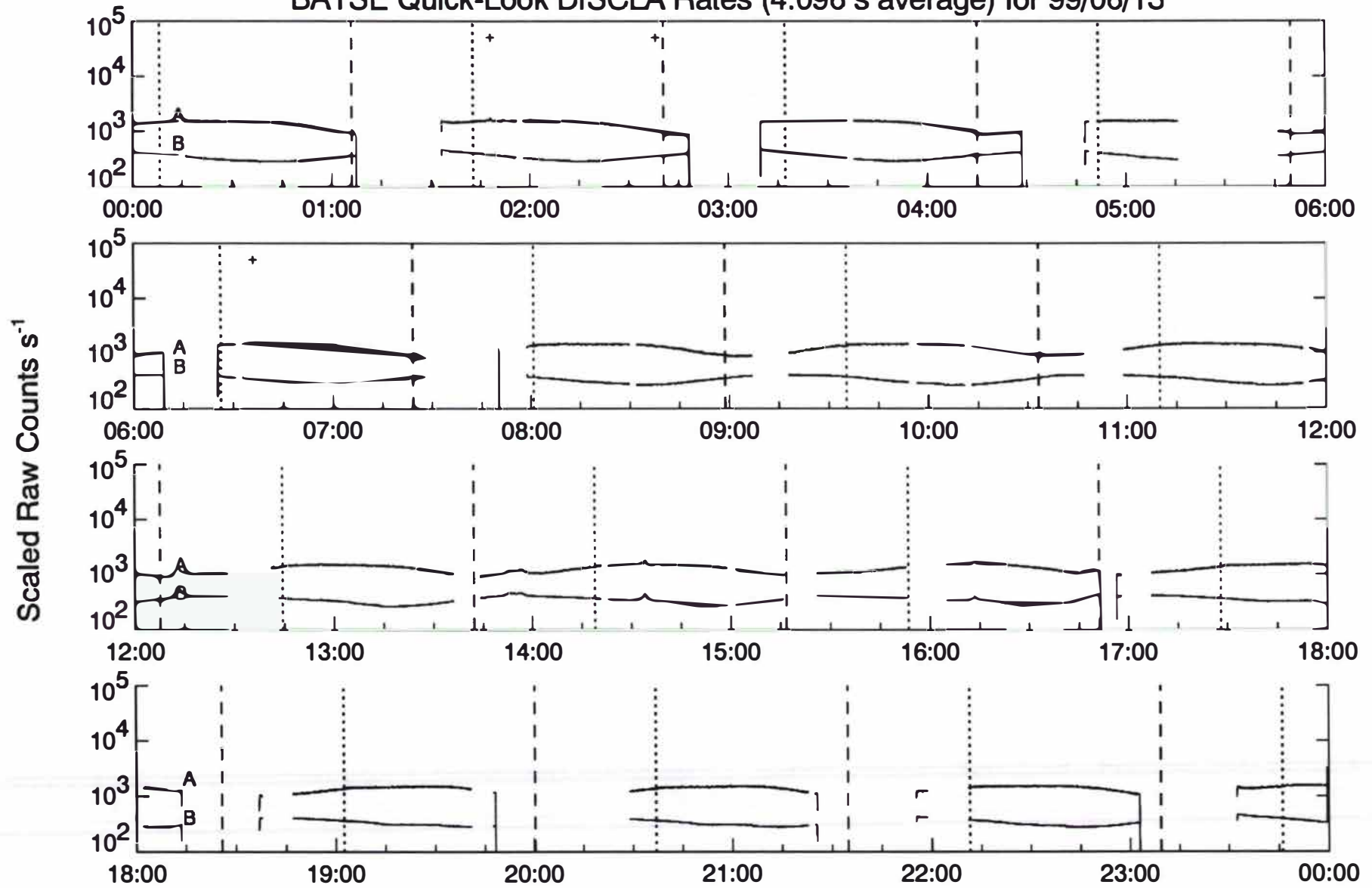


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/13

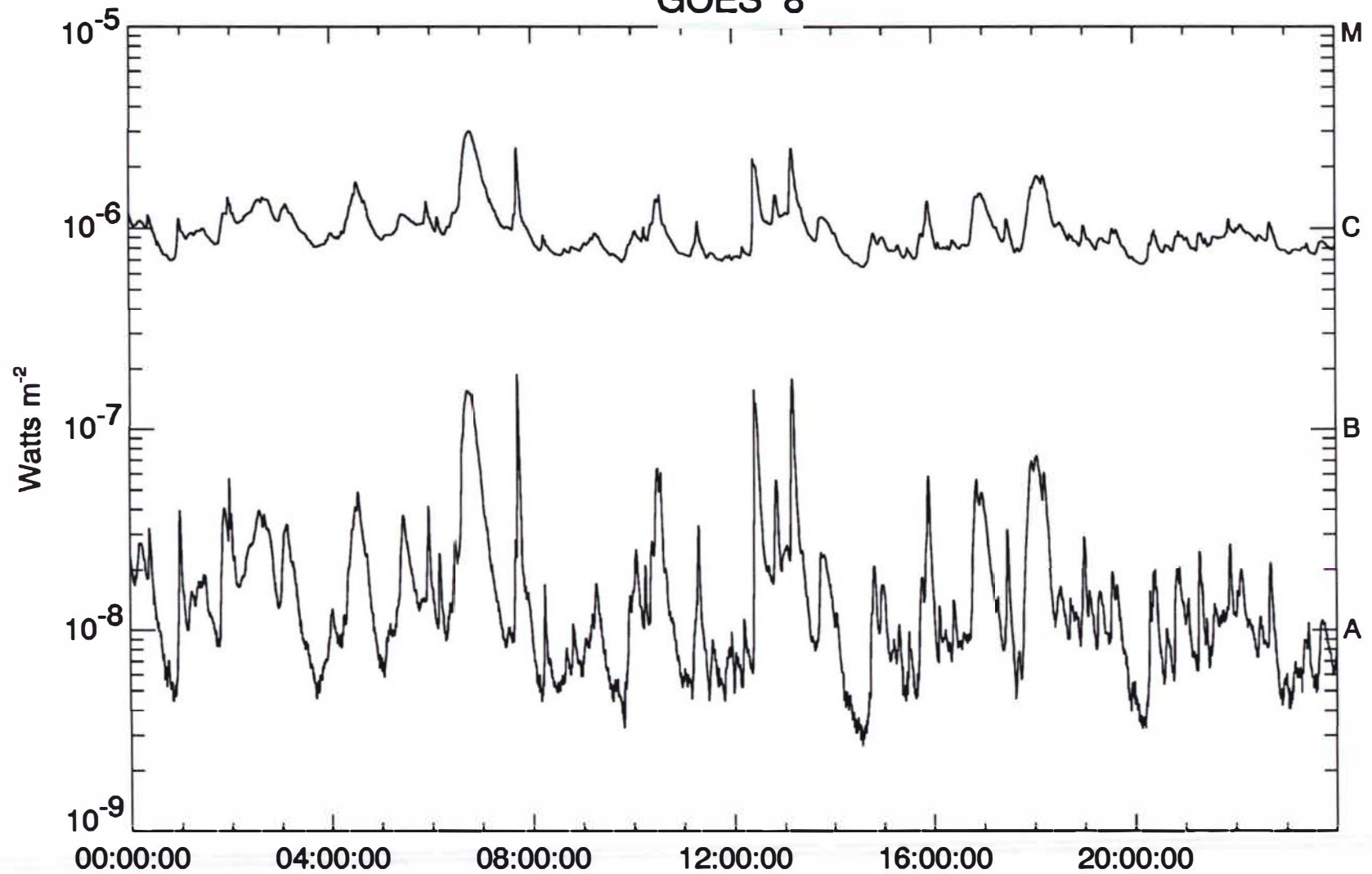


Current Time: 99/06/17, 1013 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/13, 0000:00

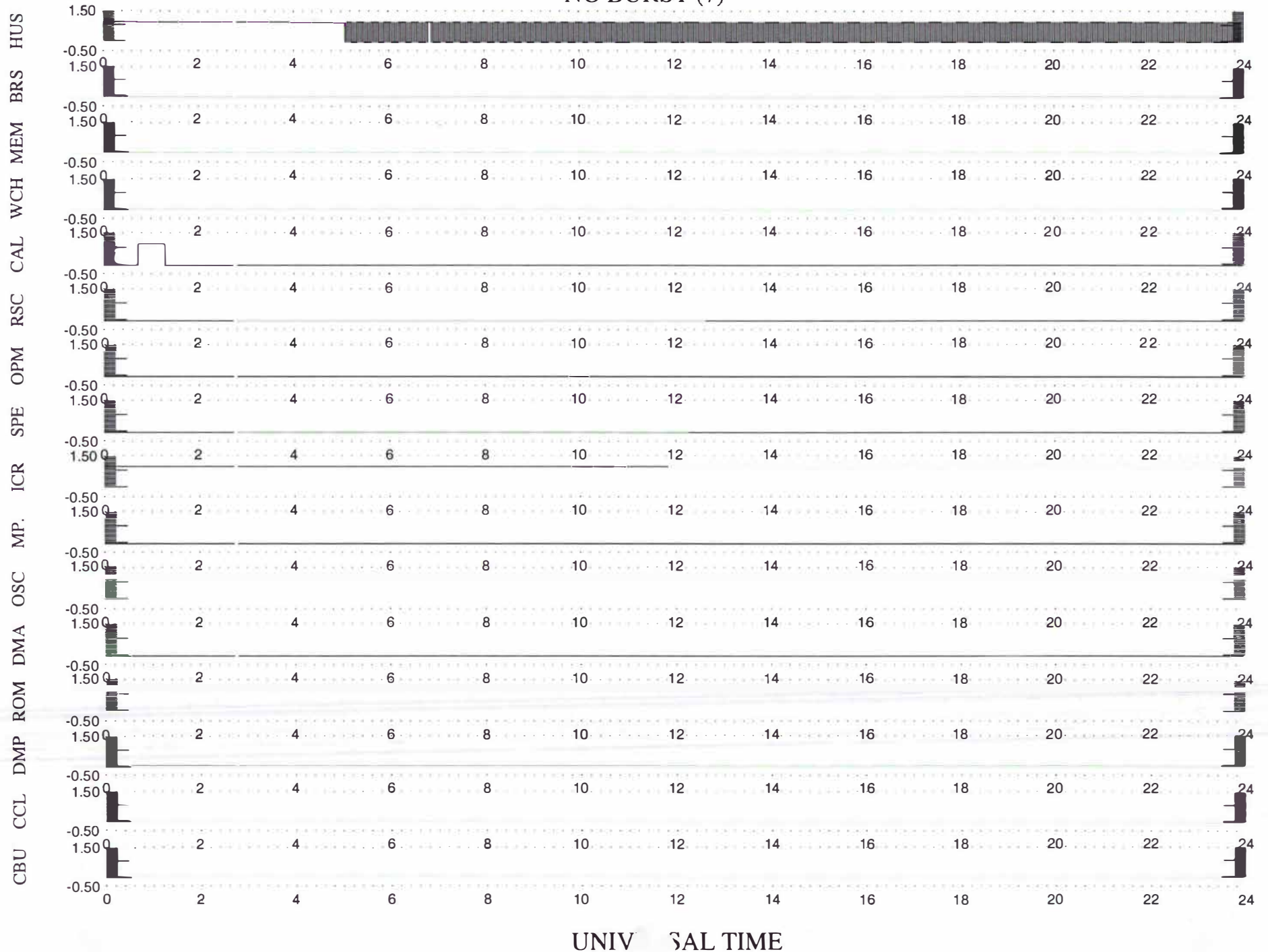
Plot created: 99/06/17, 1012

Channel

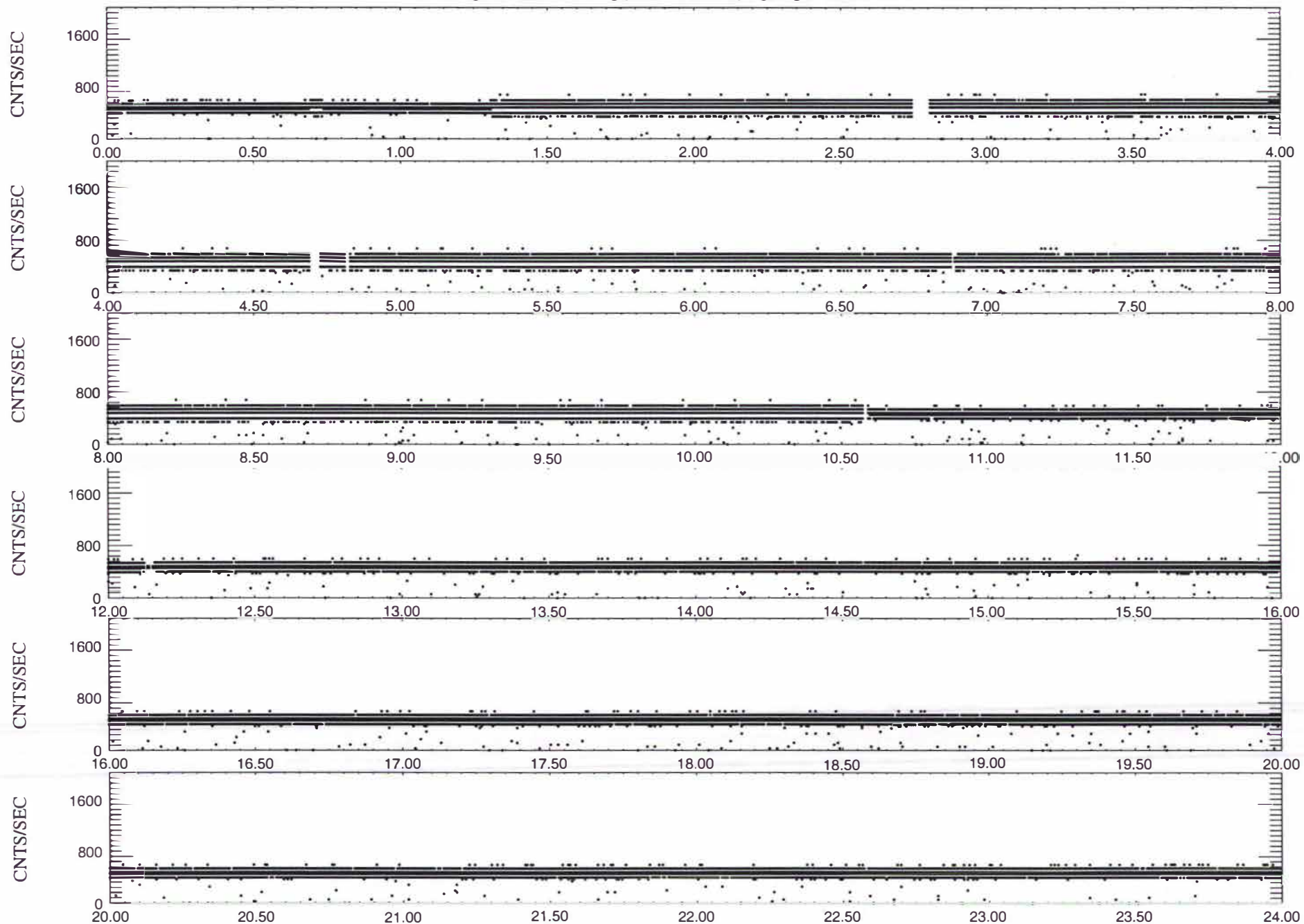
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

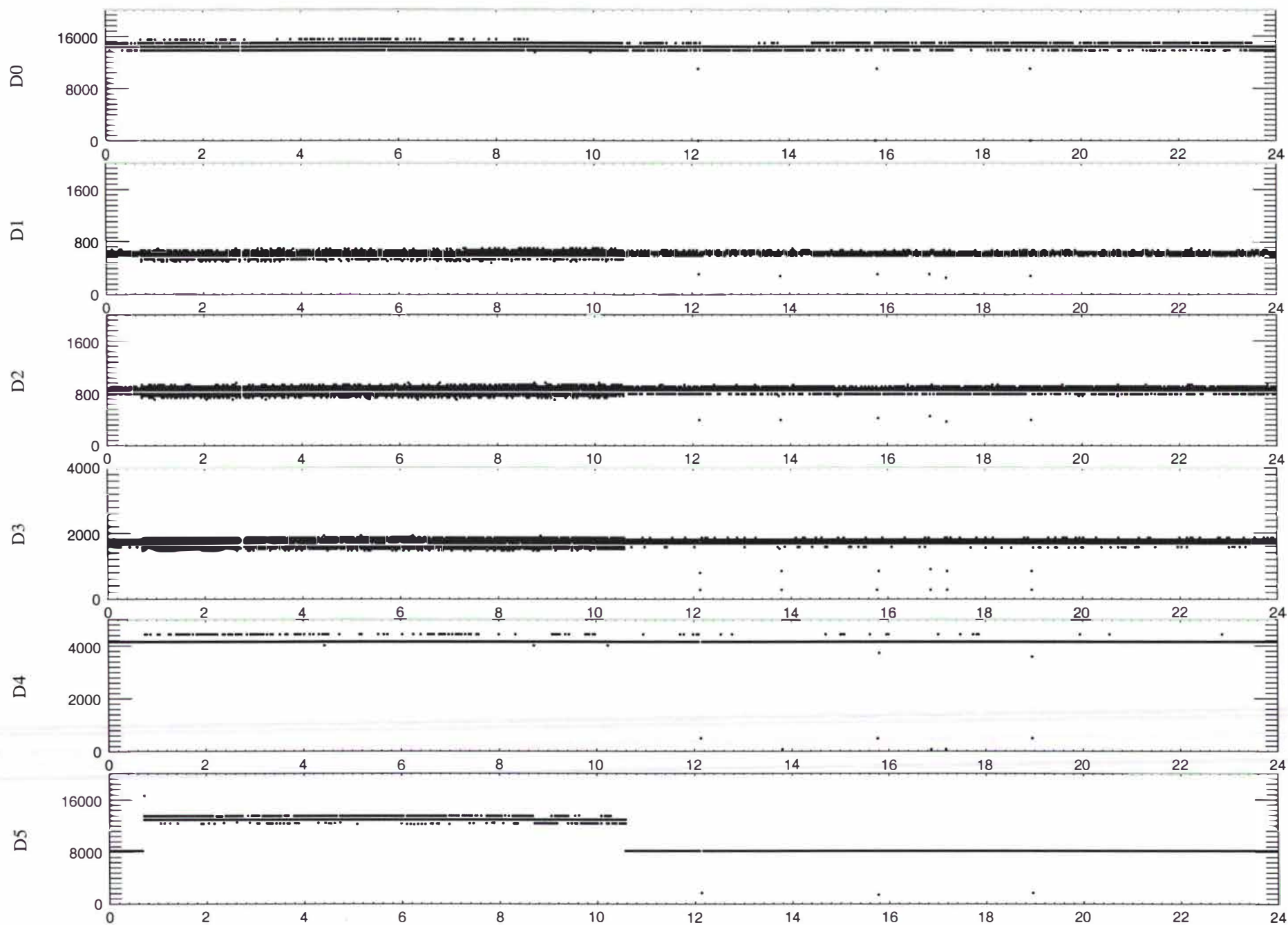
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



UNIVERSAL TIME

From HENZE@fender.msfc.nasa.gov Thu Jun 17 09:25:19 1999
Return-Path: <HENZE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA16351; Thu, 17 Jun 1999 09:25:19 -0700
From: HENZE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id JAA17231
for <khurley@sunspot.ssl.berkeley.edu>; Thu, 17 Jun 1999 09:21:39 -0700 (PDT)
Date: Thu, 17 Jun 1999 11:26:04 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990617112604.2081f504@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7606
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7606
EVENT OF 1999 JUN 14 DAY OF YEAR=165
EVENT CROSSING TIME AT BATSE : 51646. S. OR 14:20:46.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 112.000 -39.000
BATSE PEAK COUNTING RATE: 2300 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 14/ 6/ 99 IS:
RA= 145.027 DEC= -7.056 DIST= 5.137 AU
BATSE-ULYSSES DISTANCE = 768471173. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=136.38 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1855.70 SECS.
CROSSING TIME AT ULYSSES IS 49790. S. OR 13:49:50 +/- 328.83 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 14/ 6/ 99 IS:
RA= 202.973 DEC= -10.308 DIST= 0.719 AU
MARS-BATSE DISTANCE = 107540176. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 95.72 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -35.74 SECS.
CROSSING TIME AT MARS IS 51610. S. OR 14:20:10 +/- 61.43 SECONDS

BATSE BURST TRIGGER

NO.: 7606

TIME: TJD=1343 SECONDS=51646

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

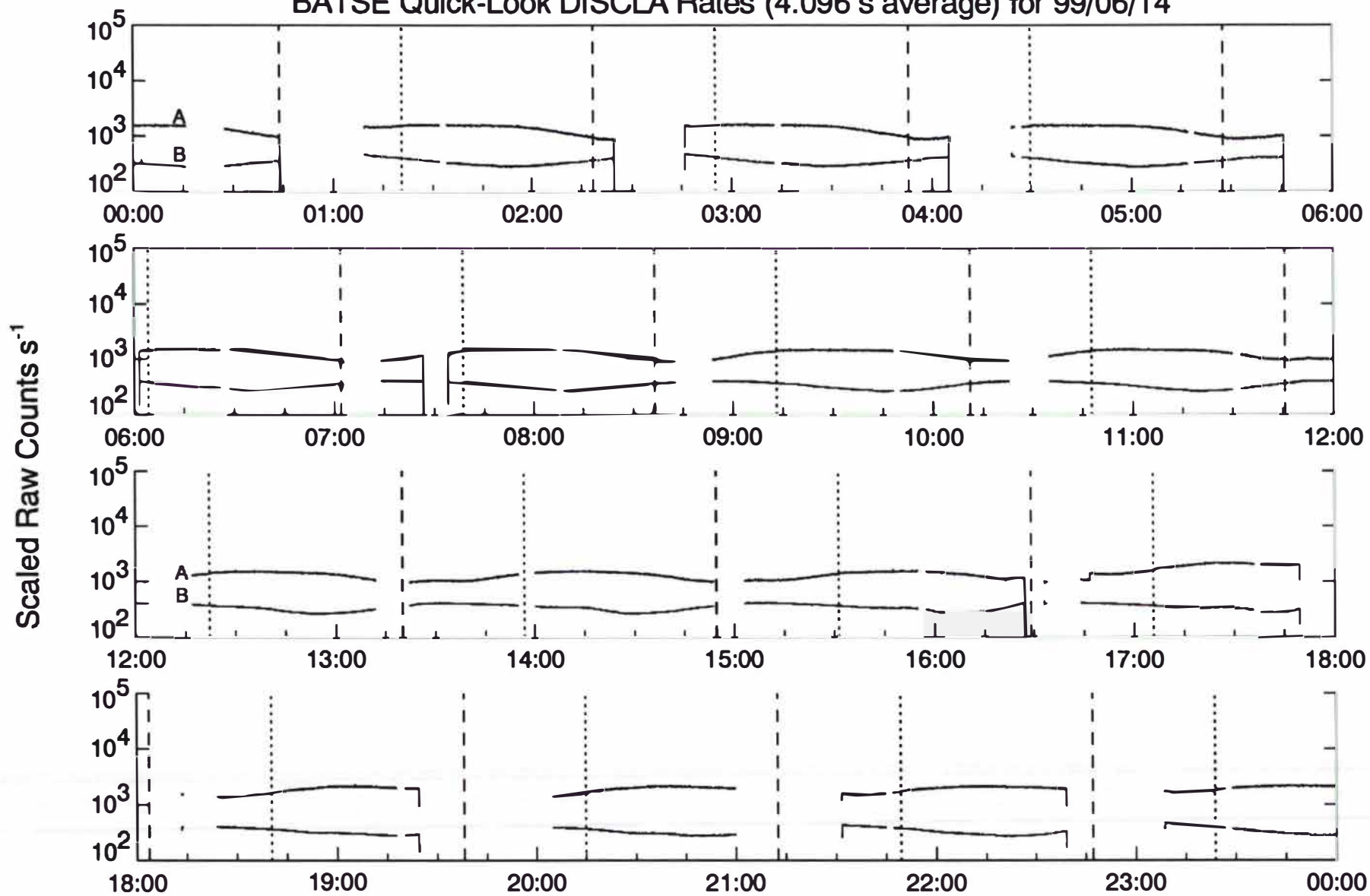
LOCATION: ZENITH= 38.2 AZIMUTH= 20.5 ERROR= 5.5 DEGREES

COMMENTS:

SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 20 S, STARTS AT APPROX. T-10 S,
MAX AT APPROX. T+5 S. NOT VISIBLE ABOVE 300 KEV.

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7606	990614	11343	51646	2300	112	-39	20

BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/14



Current Time: 99/06/18, 1013 EDT

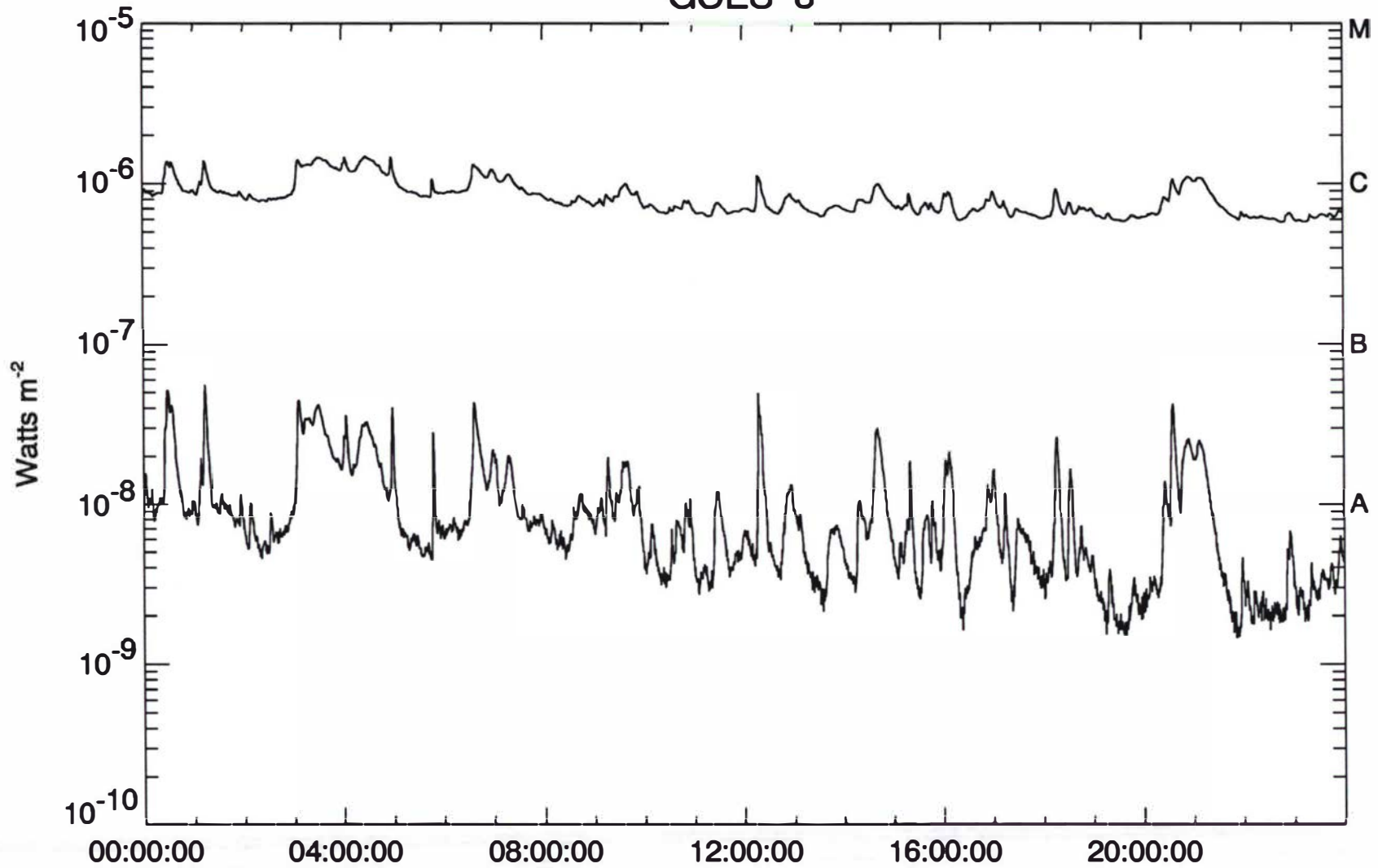
A: Channel 0 Most Sunward LAD

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

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

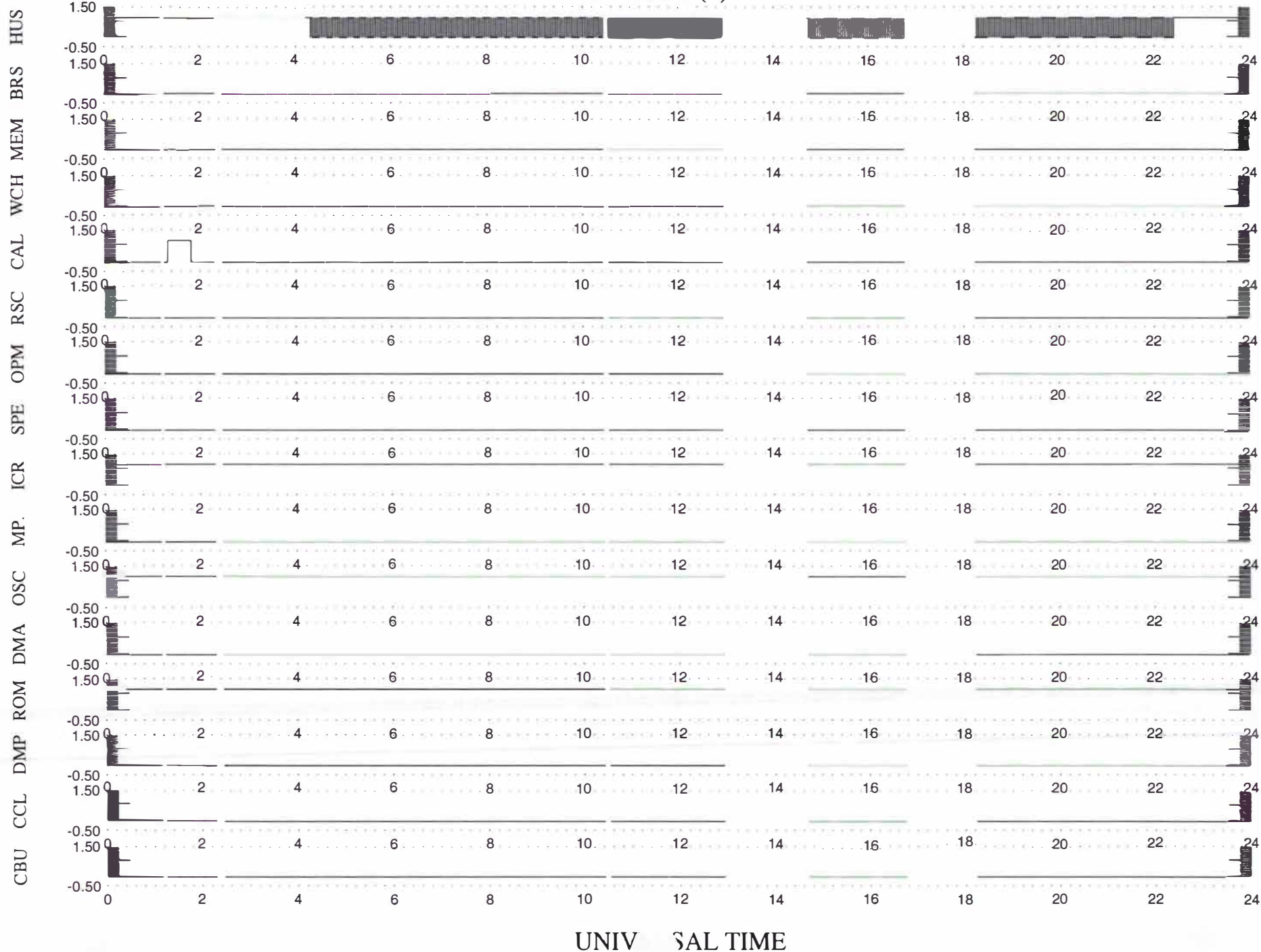


Data Start: 99/06/14, 0000:00

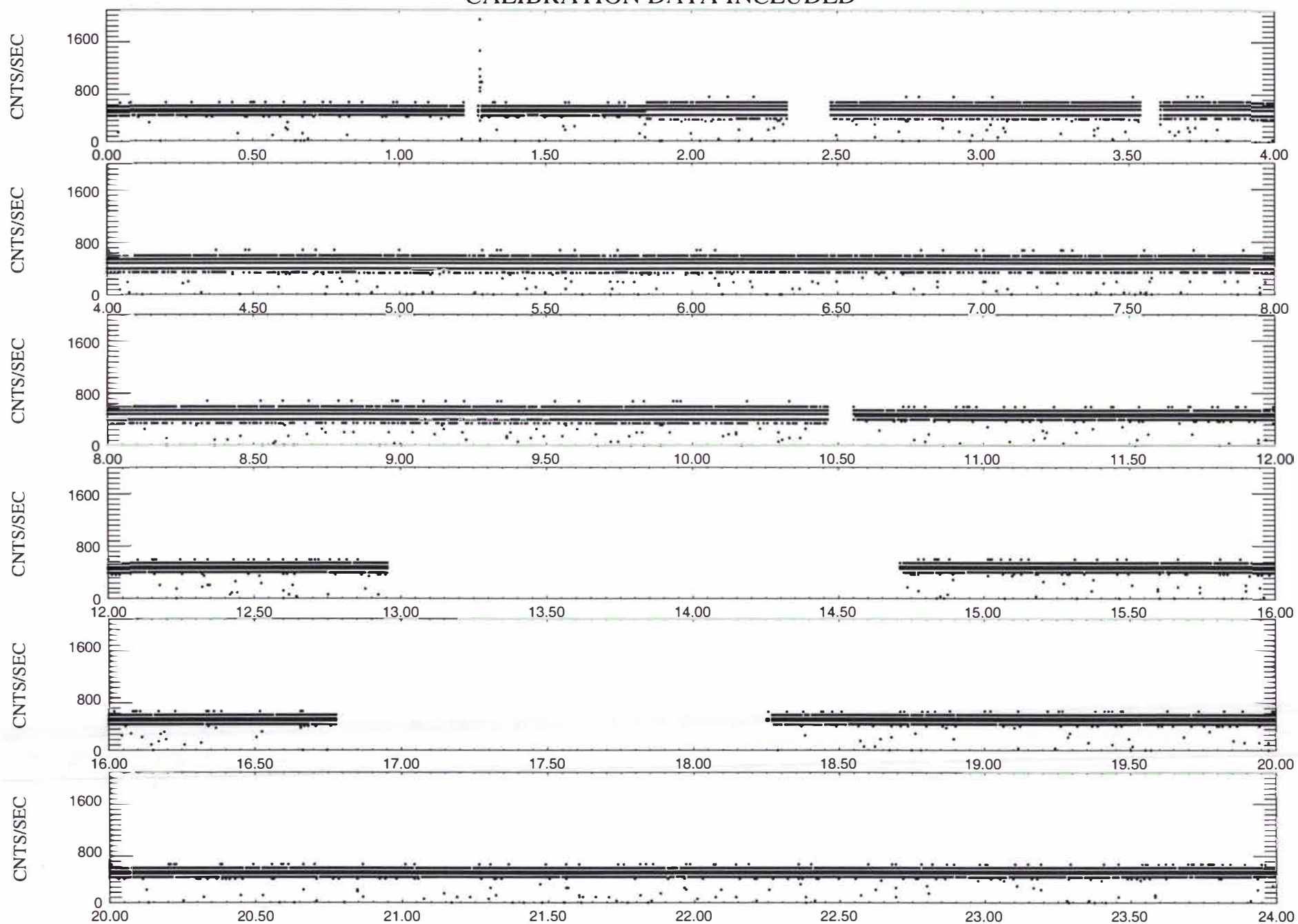
Plot created: 99/06/18, 1012

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

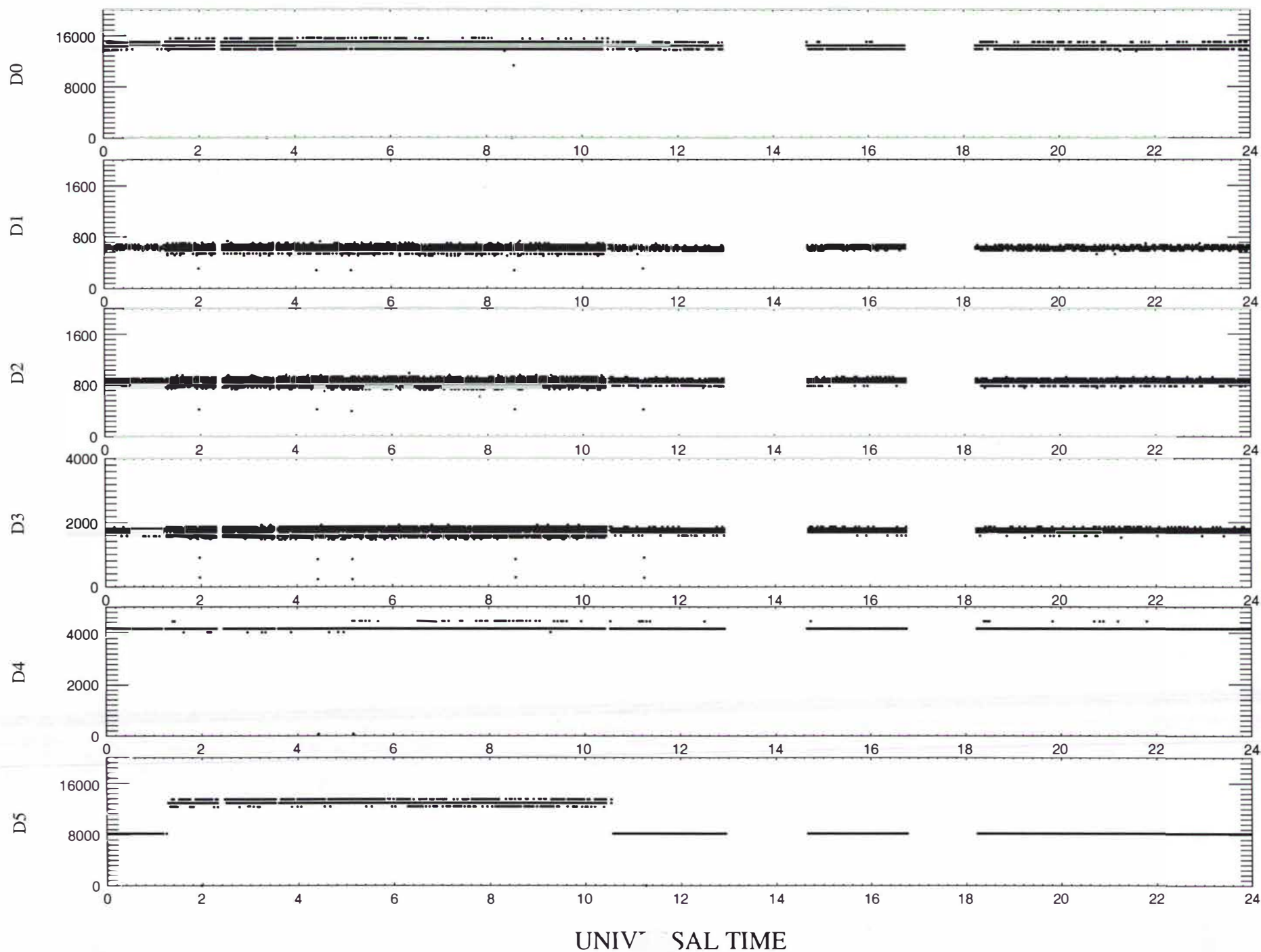
NO BURST (7)



CALIBRATION DATA INCLUDED



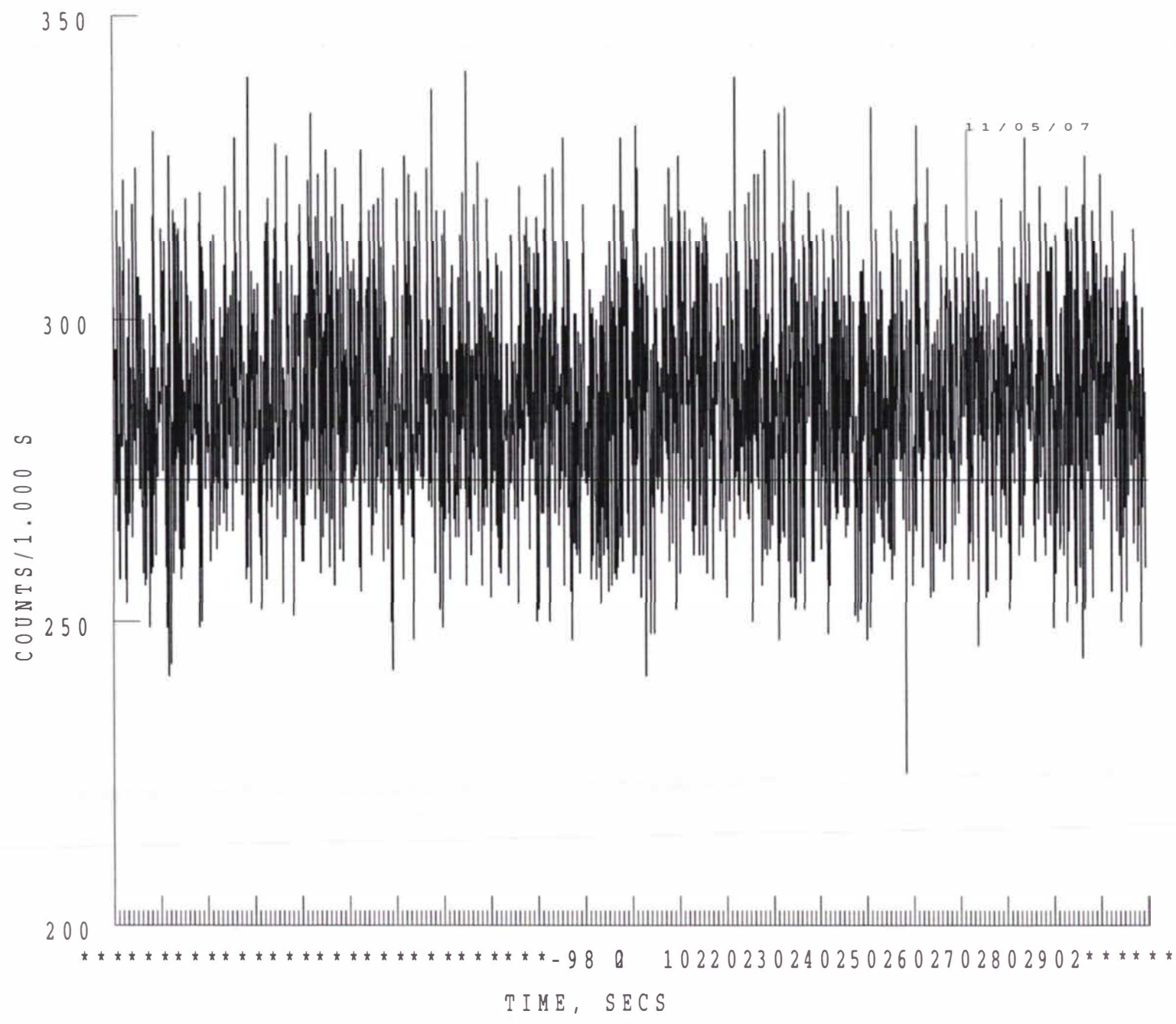
UNIV SAL TIME



15/06/99 17197.080

100-1000 keV

NEAR



GRBM 19990615 19297

ULYSSES RT

16/05/07

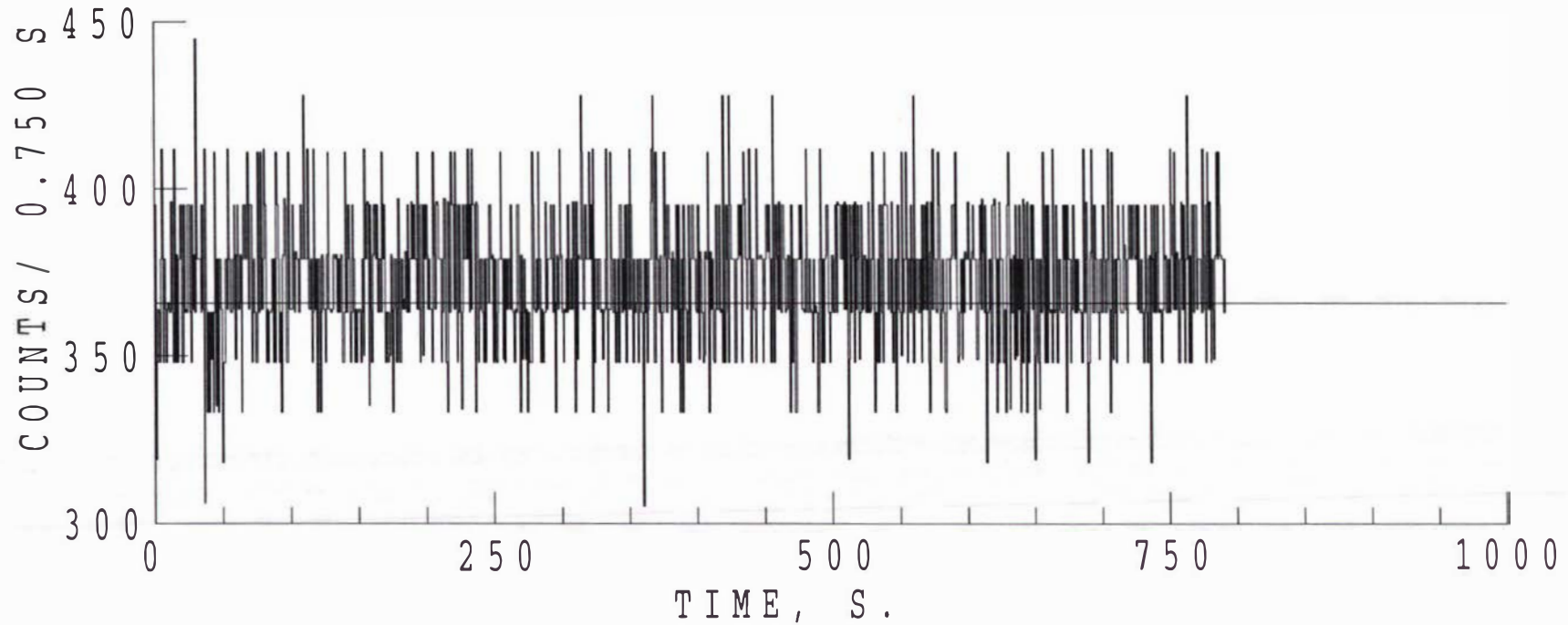
15/06/99 18900.164 s

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 GOGUSE@fender.msfc.nasa.gov Thu Jun 17 09:32:41 1999
Return-Path: <GOGUSE@fender.msfc.nasa.gov>
Received: from sunspot.ssl.Berkeley.edu by apollo.ssl.berkeley.edu (SMI-8.6/SMI-SVR4)
id JAA16511; Thu, 17 Jun 1999 09:32:40 -0700
From: GOGUSE@fender.msfc.nasa.gov
Received: from FENDER.MSFC.NASA.GOV (FENDER.MSFC.NASA.GOV [128.158.132.13])
by sunspot.ssl.Berkeley.edu (8.9.3/8.9.2) with SMTP id JAA17393
for <khurley@sunspot.ssl.berkeley.edu>; Thu, 17 Jun 1999 09:29:00 -0700 (PDT)
Date: Thu, 17 Jun 1999 11:33:26 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Message-Id: <990617113326.2081e672@fender.msfc.nasa.gov>
Subject: Crossing Windows for BATSE Burst 7607
Content-Length: 1135
X-Lines: 26
Status: RO

BATSEARCH PROGRAM

BATSE BURST # 7607
EVENT OF 1999 JUN 15 DAY OF YEAR=166
EVENT CROSSING TIME AT BATSE : 56874. S. OR 15:47:54.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 174.000 56.000
BATSE PEAK COUNTING RATE: 15900 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 15/ 6/ 99 IS:
RA= 145.105 DEC= -7.082 DIST= 5.149 AU
BATSE-ULYSSES DISTANCE = 770318174. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=112.56 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -985.72 SECS.
CROSSING TIME AT ULYSSES IS 55888. S. OR 15:31:28 +/- 447.01 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 15/ 6/ 99 IS:
RA= 203.083 DEC= -10.382 DIST= 0.724 AU
MARS-BATSE DISTANCE = 108352704. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=109.35 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -119.74 SECS.
CROSSING TIME AT MARS IS 56754. S. OR 15:45:54 +/- 57.39 SECONDS

BATSE BURST TRIGGER

NO.: 7607

TIME: TJD=1344 SECONDS=56874

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 6.3 AZIMUTH=169.3 ERROR= 1.5 DEGREES

COMMENTS:

GRB, COMPLEX MULTI STRUCTURED, DUR. APPROX. 95 SEC.,
NOT VISIBLE ABOVE 300 KEV

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7607	990615	11344	56874	15900	174	+56	95

Date: 27/1/00

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☒ 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

- ☒ 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 N/A

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

- ☒ ACCESS database updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

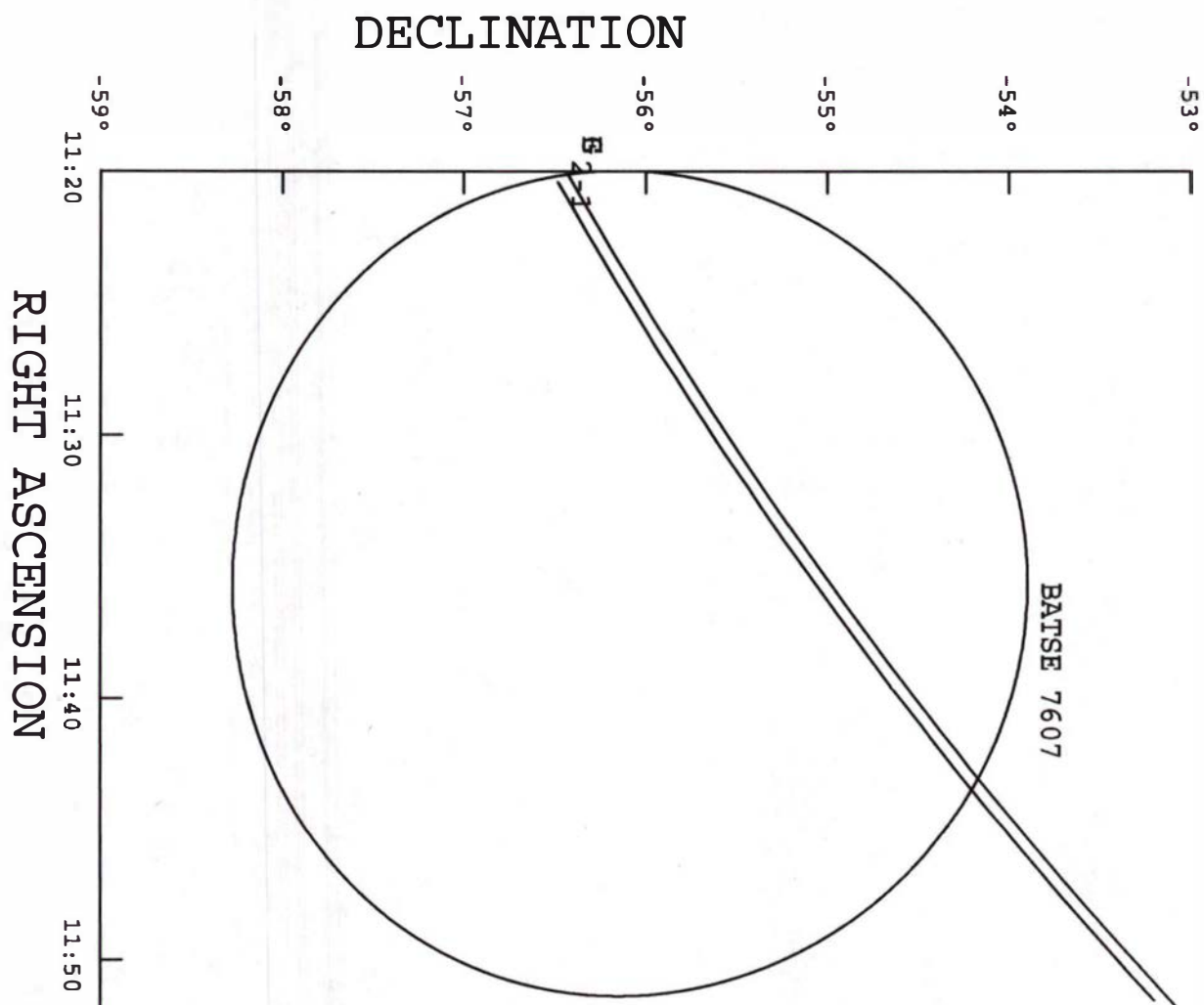
G=GALACTIC EQUATOR

1 BATSE

2 ULYSSES

EVENT OF JUN 15, 1999 15:47

27 / 1 / 0



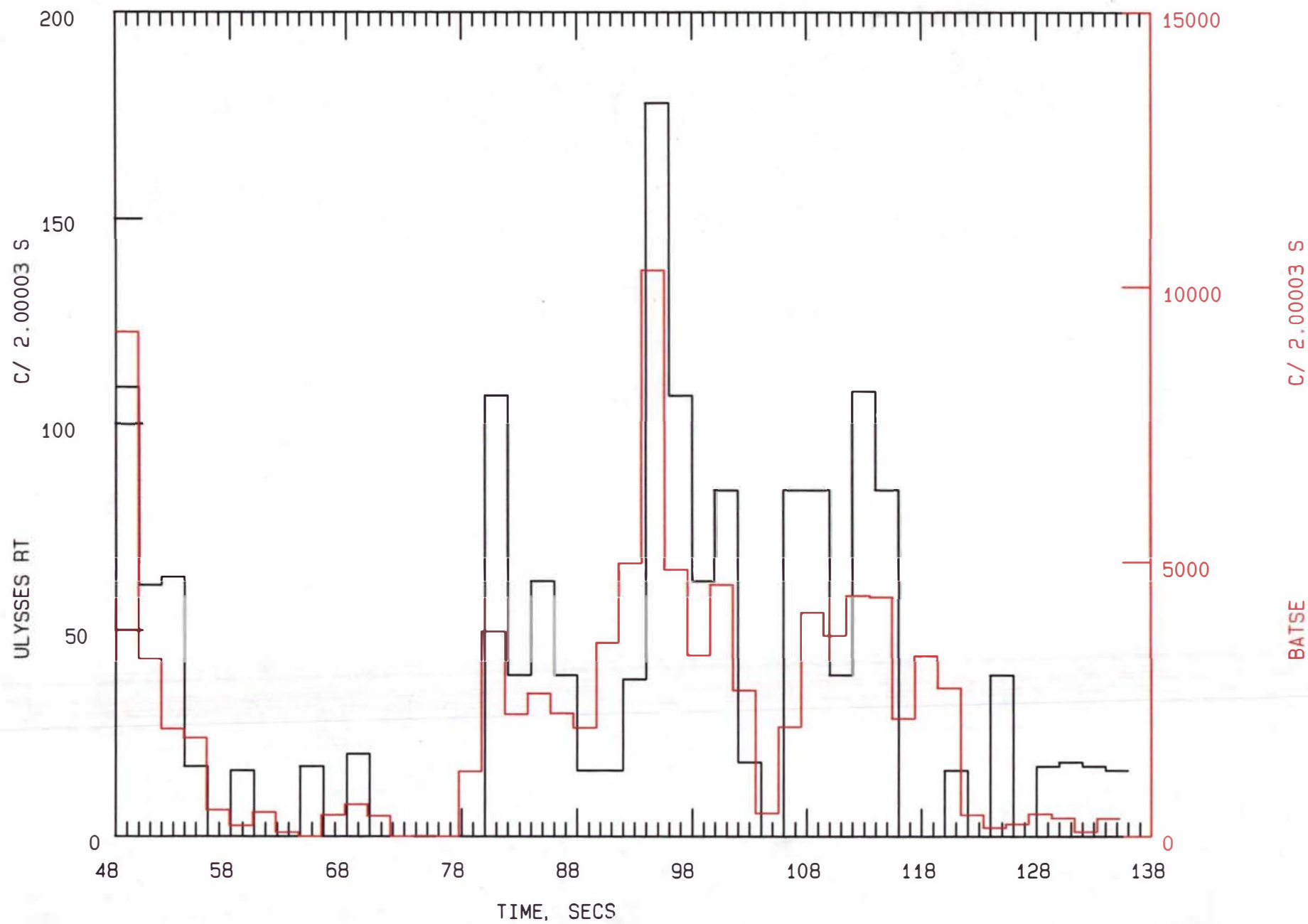
ULYSSES RT-BATSE

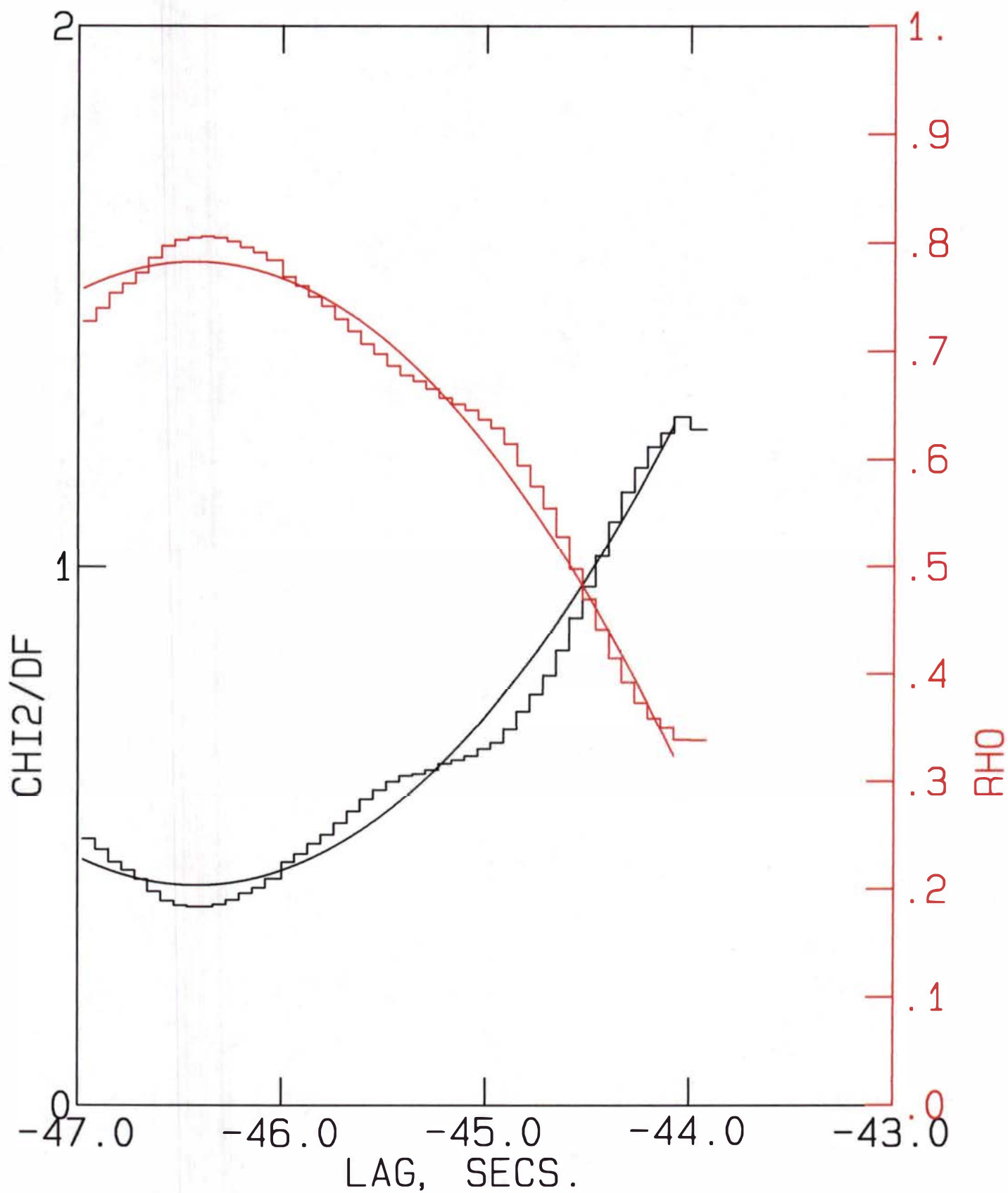
CORRELATION

15/ 6/99

55275.293

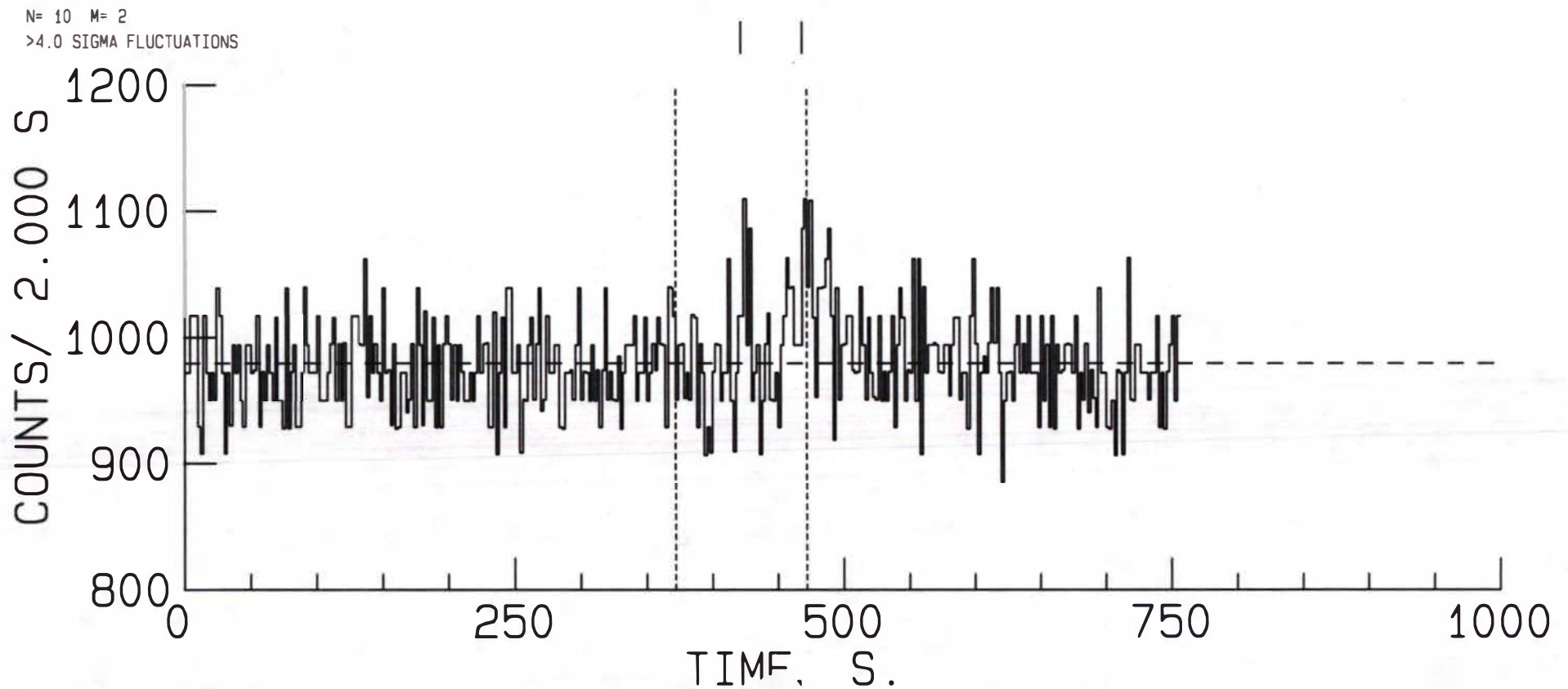
27/ 1/ 0





ULYSSES RT
15/ 6/99 54900.276 s
0.500 S INTERVALS REGROUPED BY 4
22- 151 keV

27 / 1 / 0



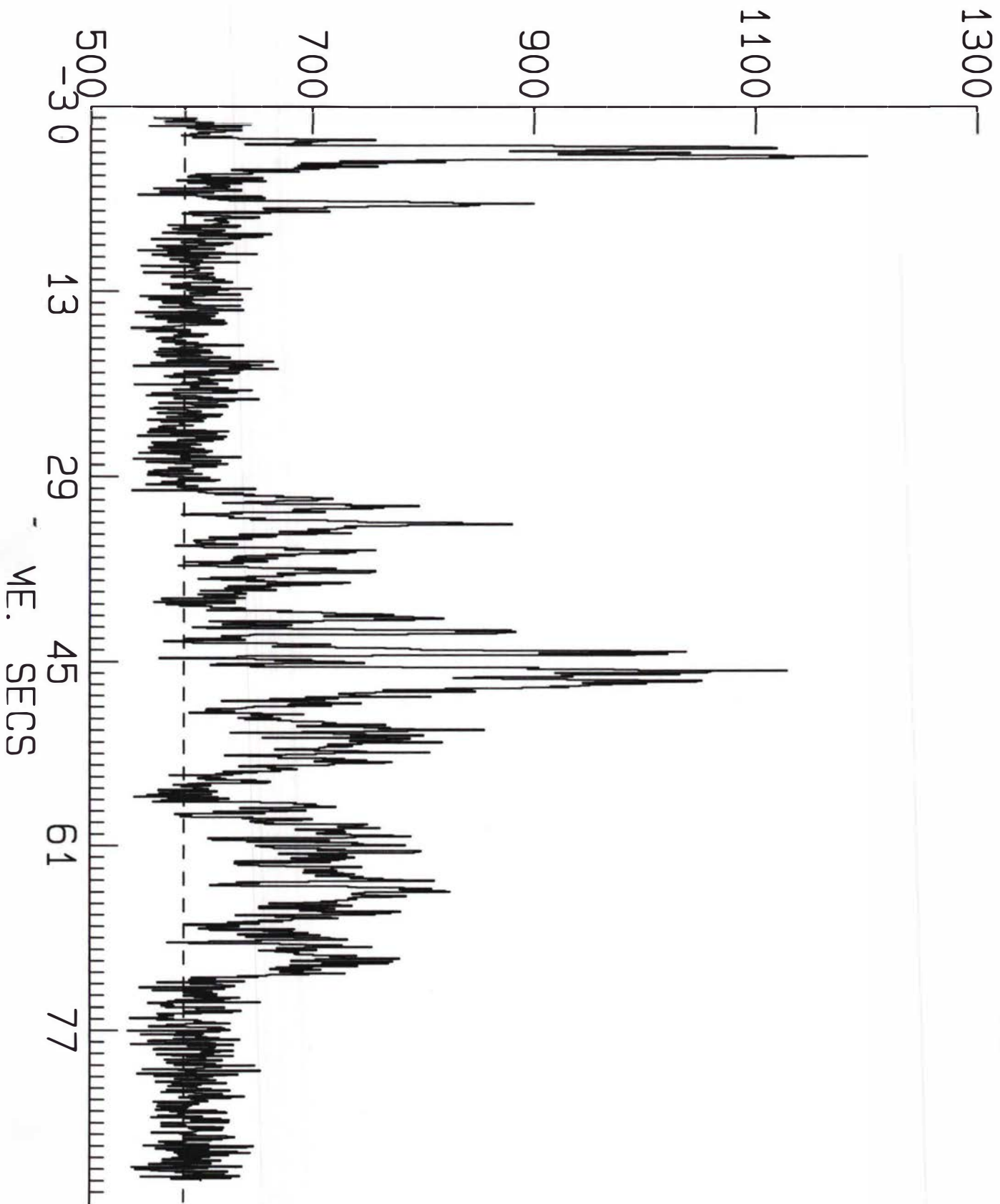
BATSE

15/06/99

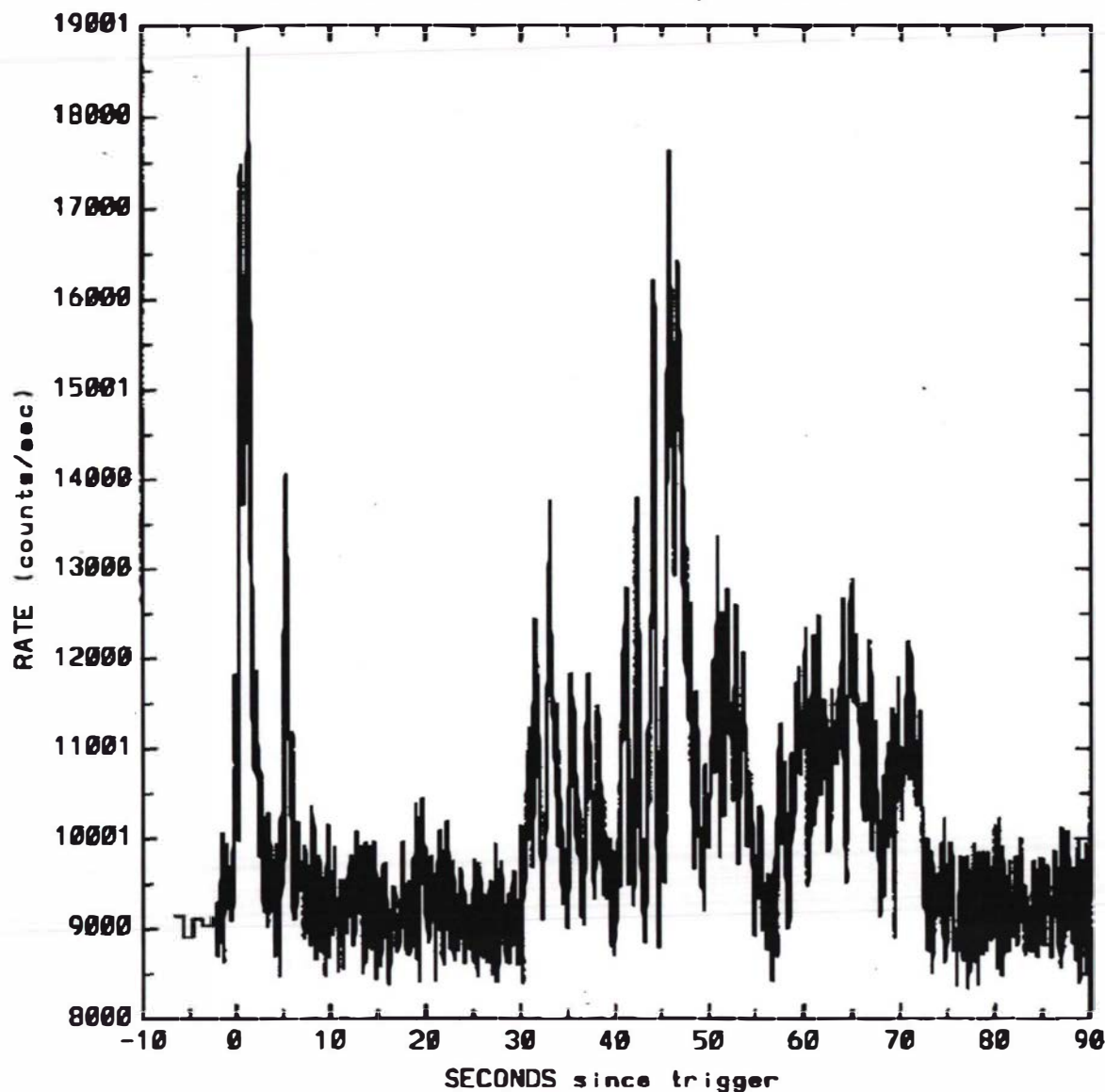
56874.233

25- 100 keV

COUNTS/0.064 S



DISCSC Data for K. Hurley, No. 7607



15-JUL-1999 14:08:49

Created by MOPS 80
(Burst Display)
Version 12.26

Trigger # . 7607

Trigger Time:
11344 / 56874.233

Burst Data Type:
DISCSC

Deadtime
Corrected. N

Background Data
Type. PREB + DISCLA

Minimum Integ. Time:
0.064 second(s)

Detectors [7..8].
-6-4-2-

Discriminators:
[1 . 2]

Quality Mask:
B01SP1

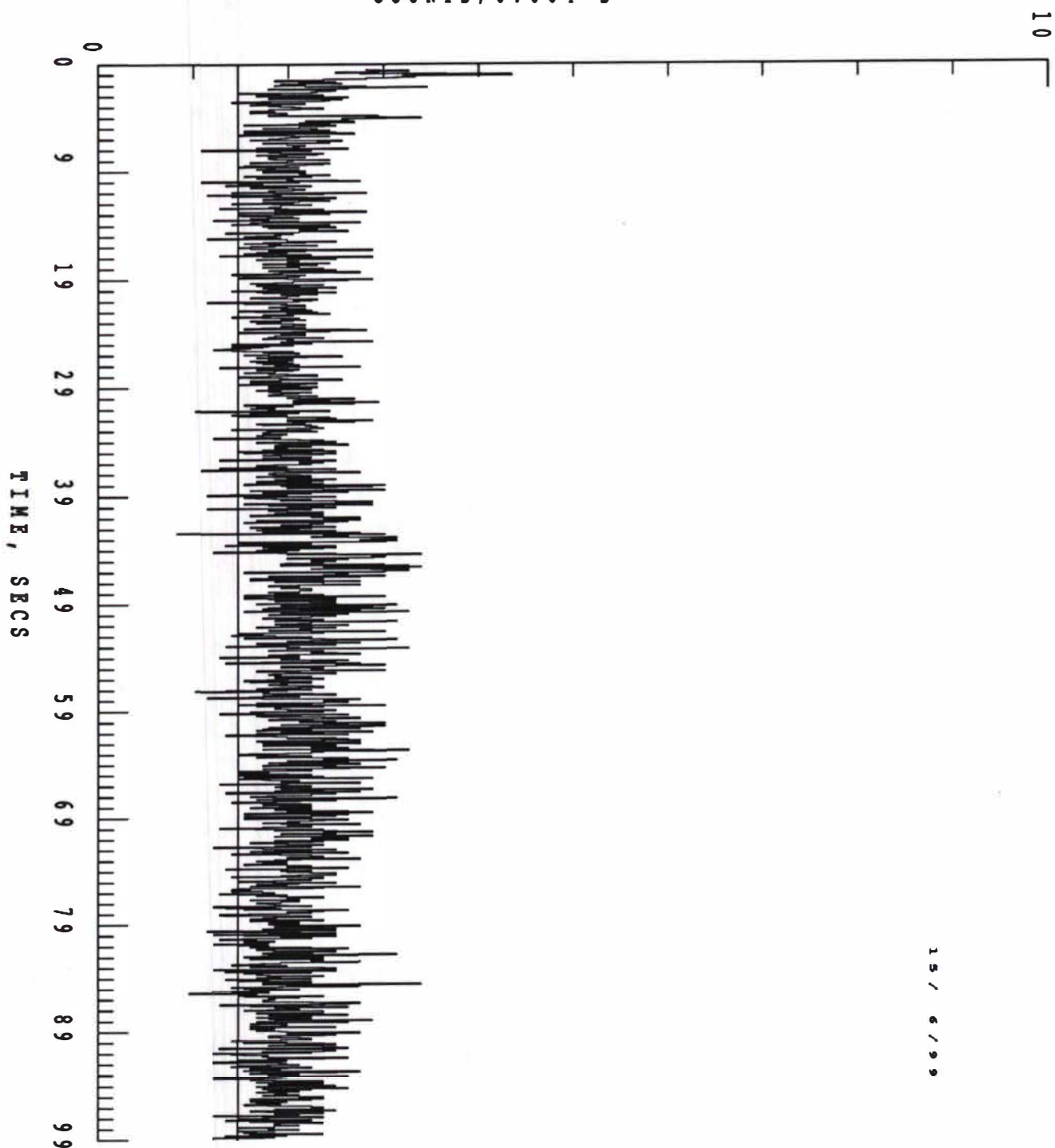
KONUS

15/06/99

56877.051

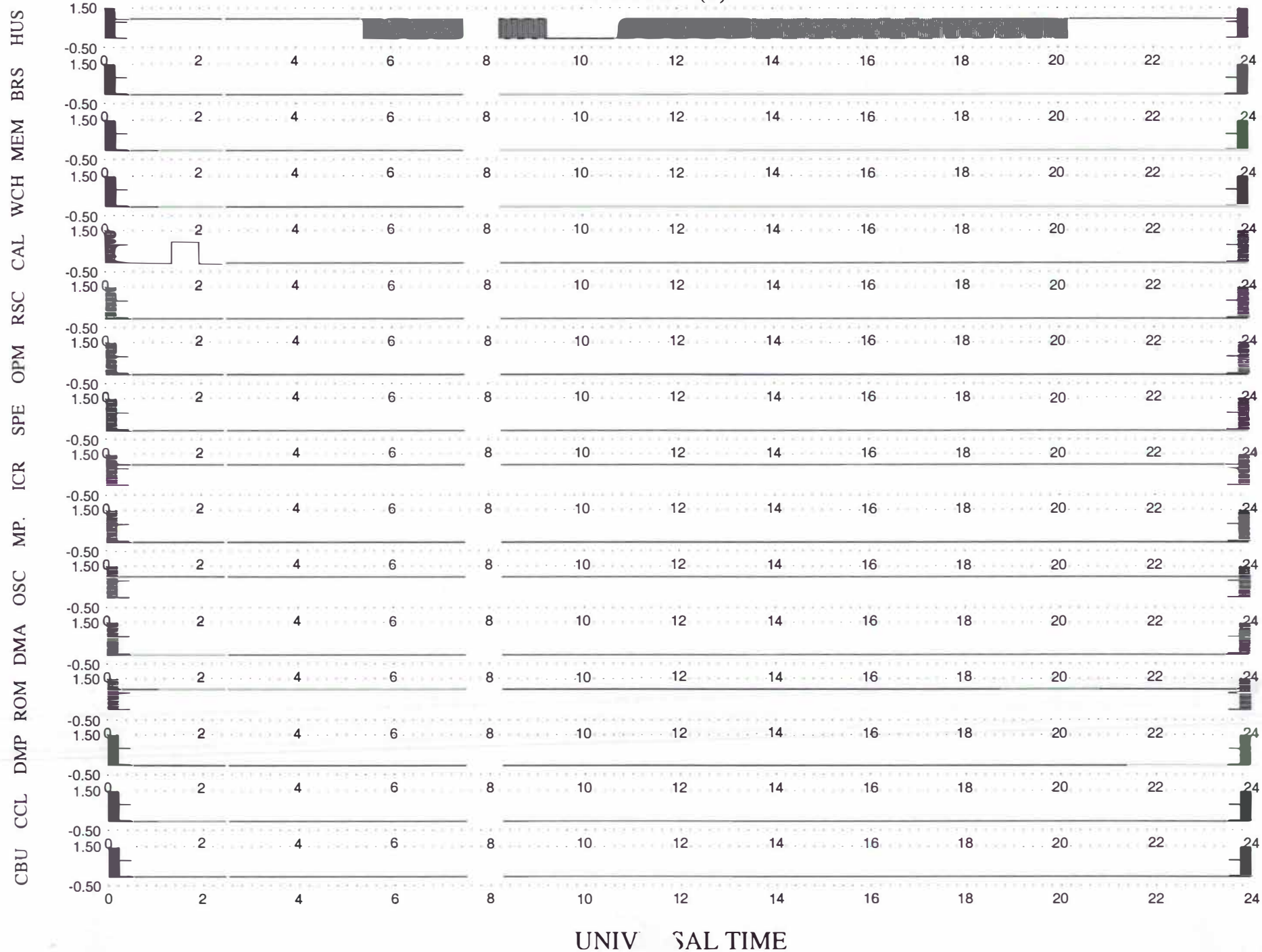
50 - 200 keV

COUNTS/0.064 S

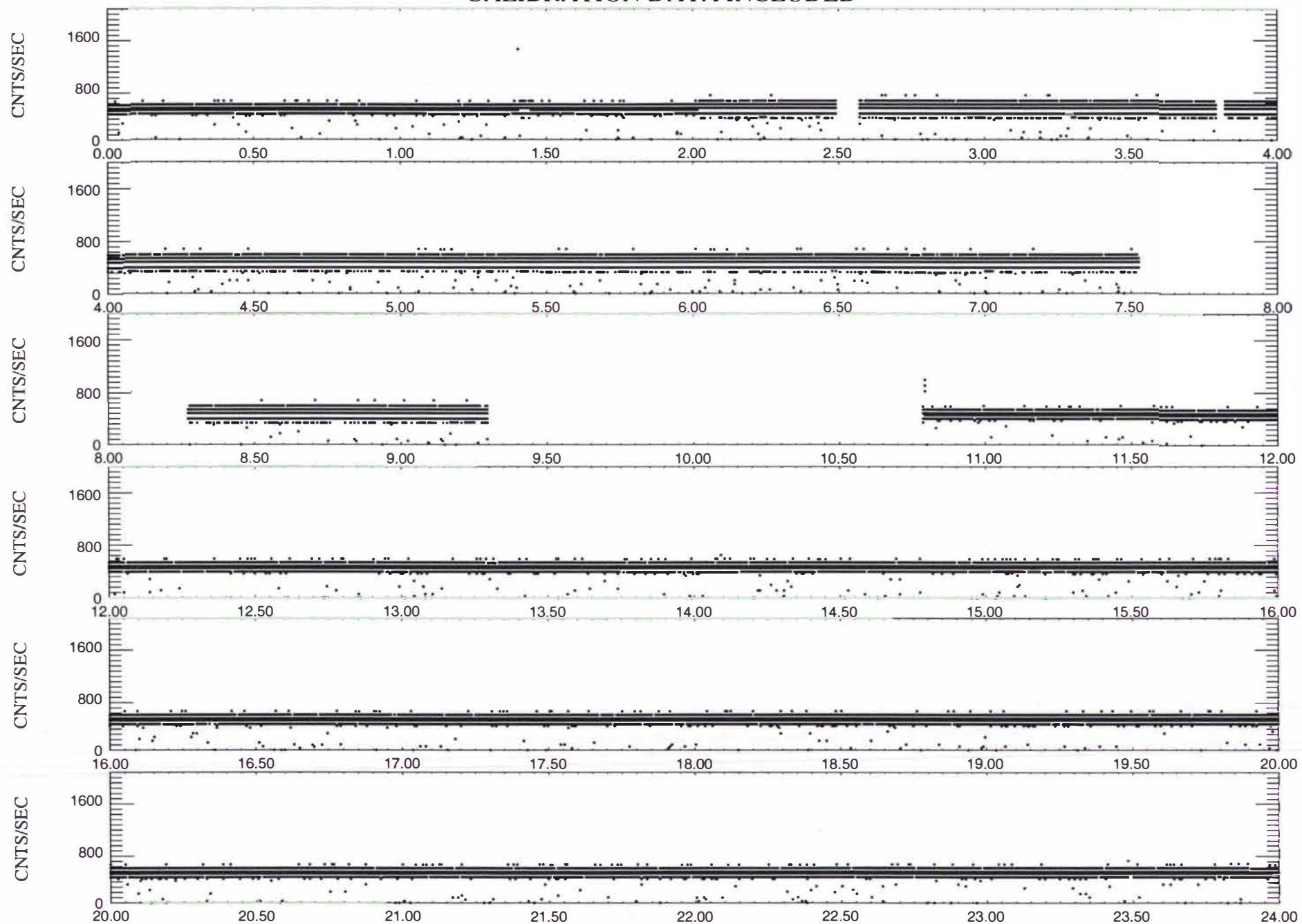


15 / 6 / 99

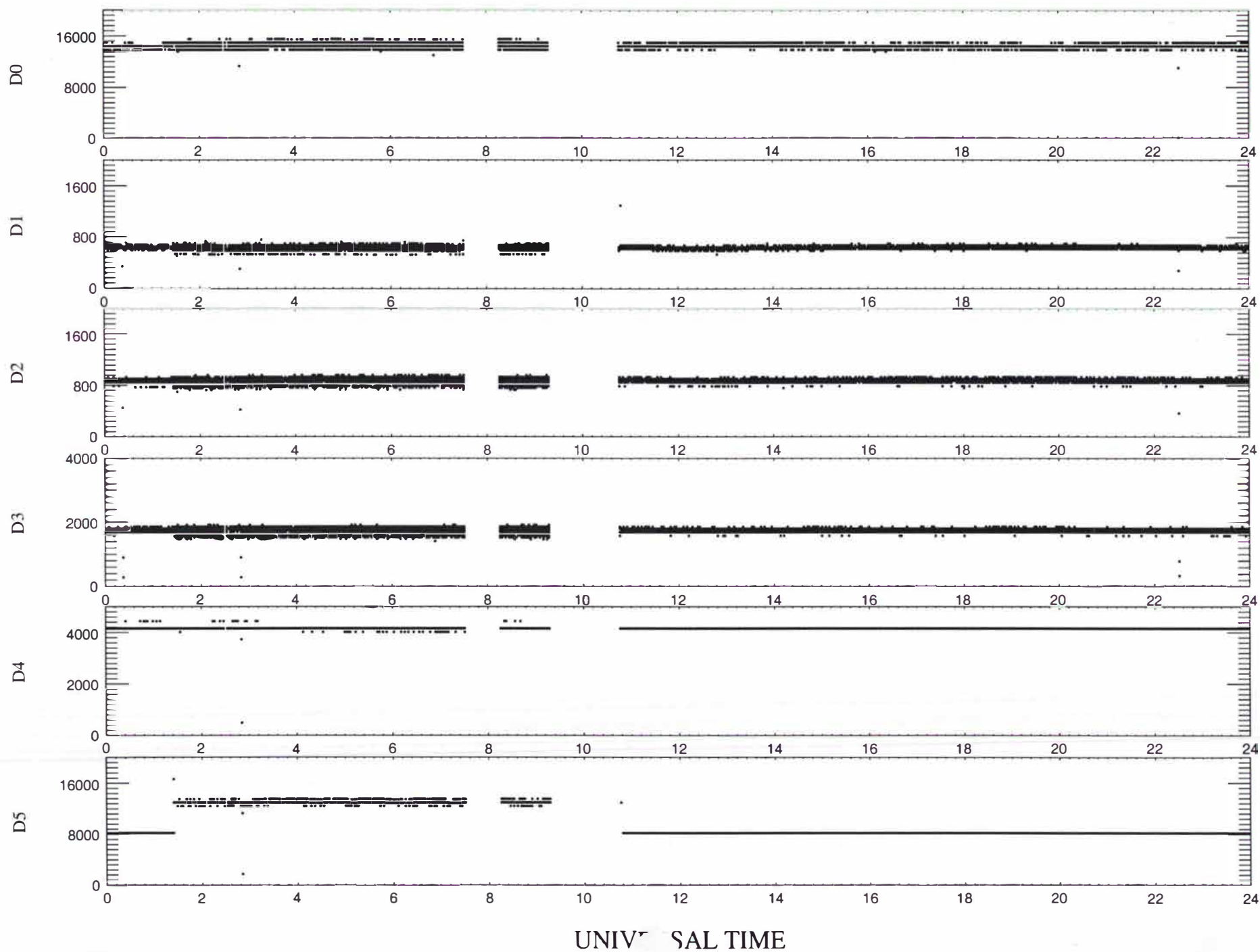
NO BURST (7)



CALIBRATION DATA INCLUDED



UNIV SAL TIME

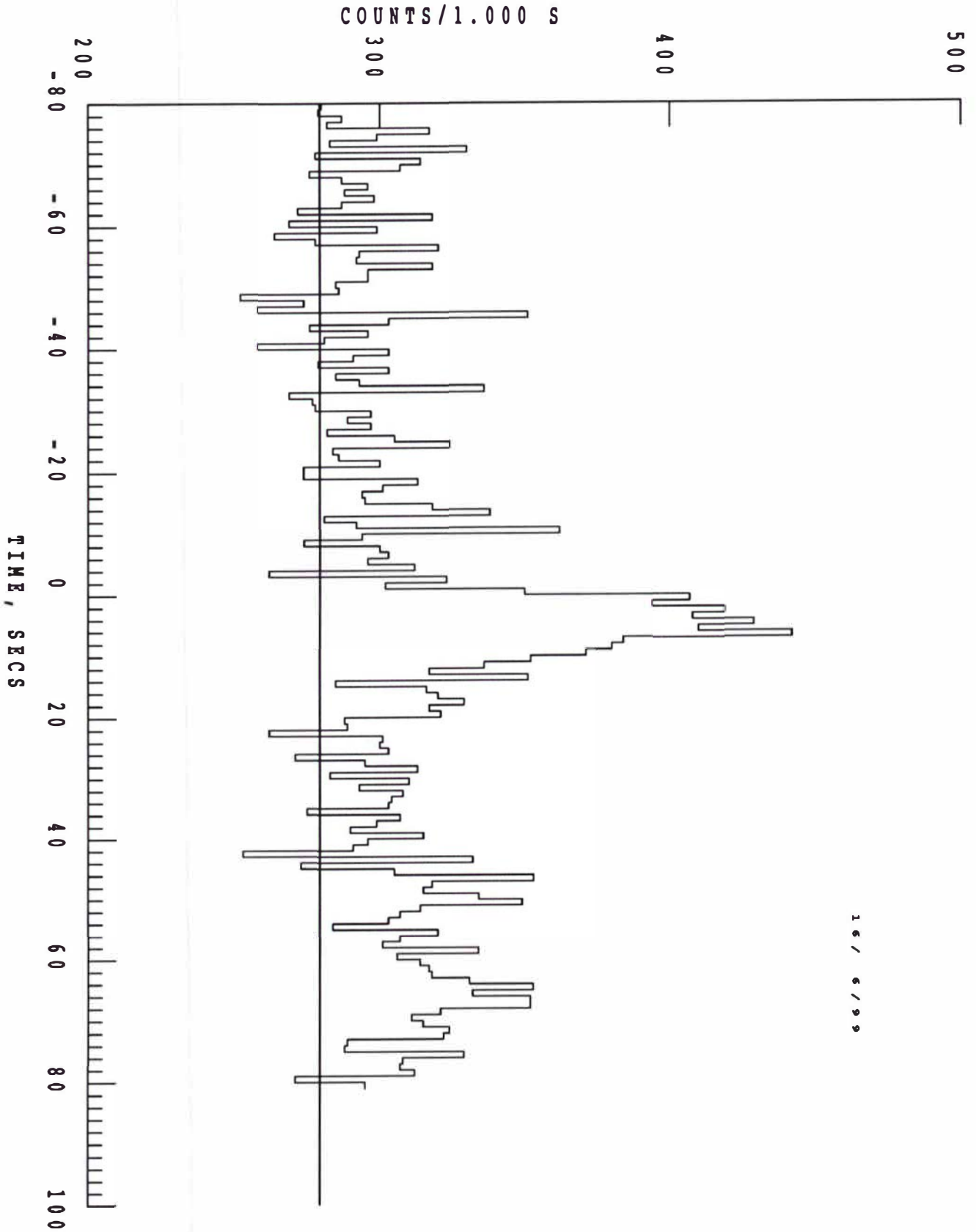


NEAR

16/06/99

12144.054

100-1000 keV



KNEAR GRS 19990616 12144

ULYSSES RT

23 / 9 / 99

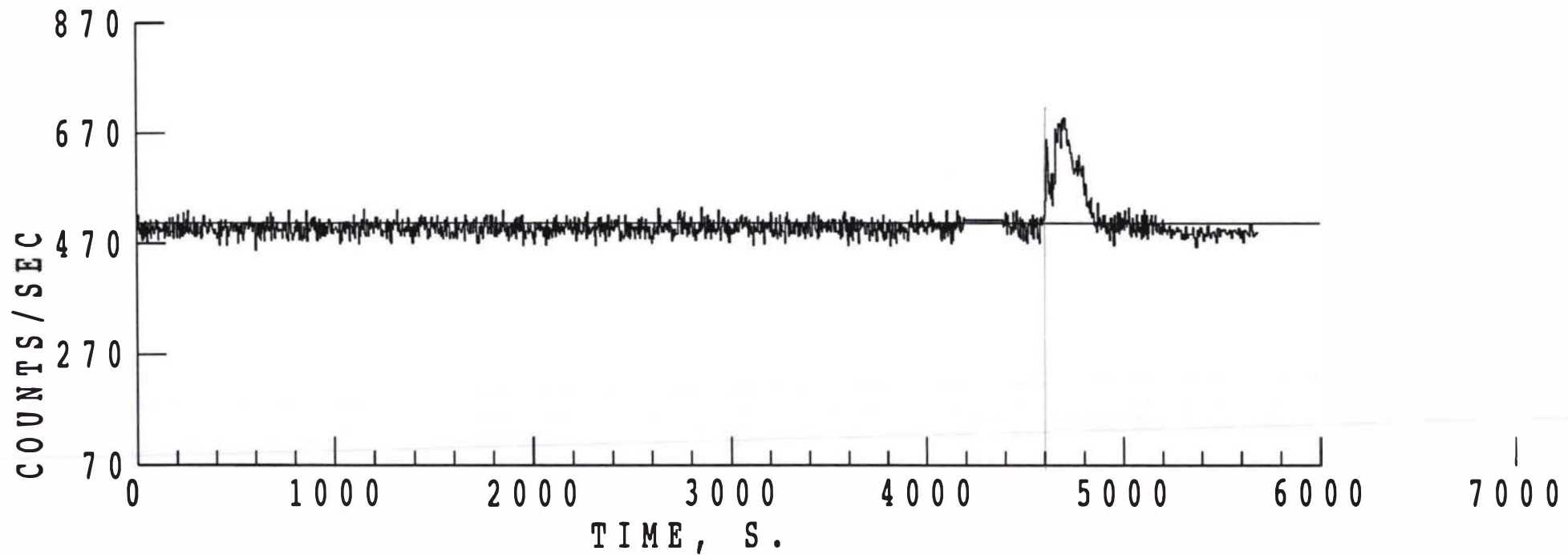
16 / 6 / 99 9288.189 s

INTERVALS REGROUPED BY 15

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 Fri Jun 18 12:29 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Fri, 18 Jun 1999 14:32:35 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7609

BATSEARCH PROGRAM

BATSE BURST # 7608
EVENT OF 1999 JUN 16 DAY OF YEAR=167
EVENT CROSSING TIME AT BATSE : 38450. S. OR 10:40:50.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 84.000 5.000
BATSE PEAK COUNTING RATE: 5000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 16/ 6/ 99 IS:
RA= 145.165 DEC= -7.103 DIST= 5.158 AU
BATSE-ULYSSES DISTANCE = 771674036. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.77 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1199.46 SECS.
CROSSING TIME AT ULYSSES IS 37251. S. OR 10:20:50 +/- 427.19 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 16/ 6/ 99 IS:
RA= 203.204 DEC= -10.460 DIST= 0.730 AU
MARS-BATSE DISTANCE = 109172808. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 60.41 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 179.83 SECS.
CROSSING TIME AT MARS IS 38630. S. OR 10:43:49 +/- 57.71 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7608	990616	11345	38450	5000	084	+05	125

BATSE BURST TRIGGER

NO.: 7608

TIME: TJD=1345 SECONDS=38450

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

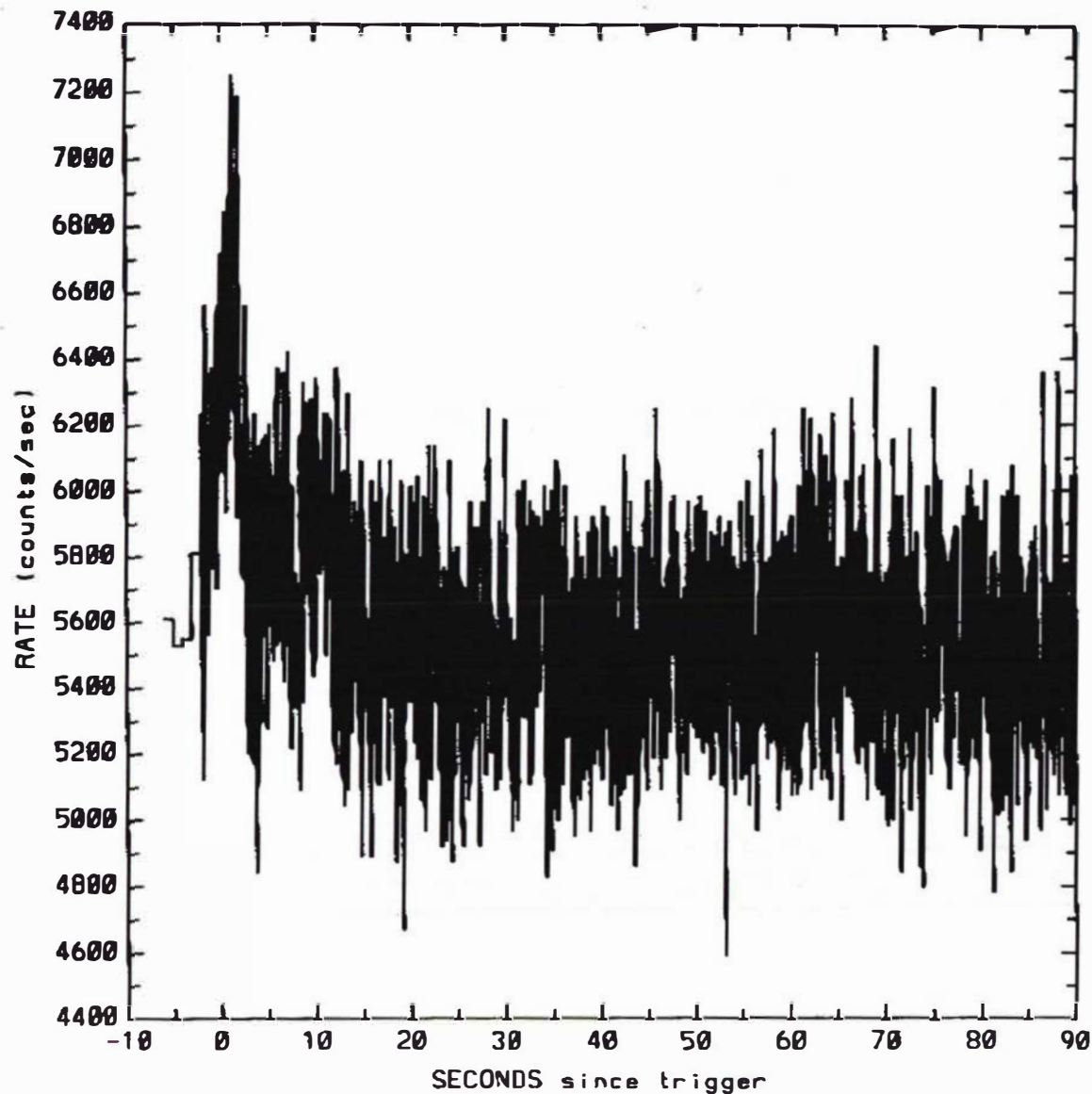
INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 87.9 AZIMUTH= 9.9 ERROR= 1.7 DEGREES

COMMENTS:

COMPLEX, TOTAL DUR. APPROX. 125 S, STARTS AT APPROX. T-105 S.
NOT VISIBLE ABOVE 300 KEV.

DISCSC Data for K. Hurley, No. 7608



8-MAR-2000 12:40:11

Created by NOPS 80
(Burst Display)
Version t2.26

Trigger # . 7608

Trigger Time:
11345 / 38450.937

Burst Data Type:
DISCSC

Deadtime
Corrected: N

Background Data
Type: PREB + DISCLA

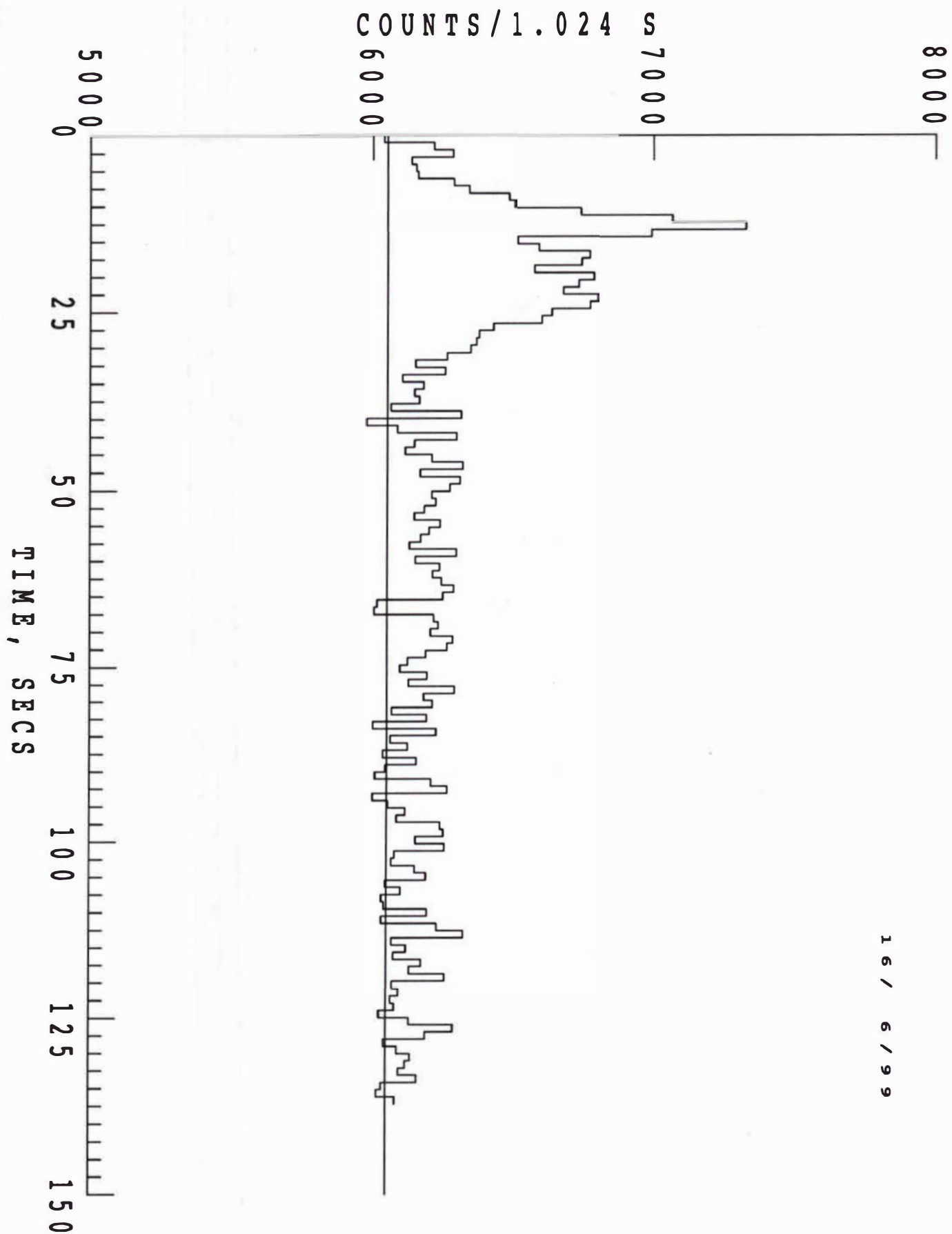
Minimum Integ. Time:
0.064 seconds

Detectors (7..0).
-----210

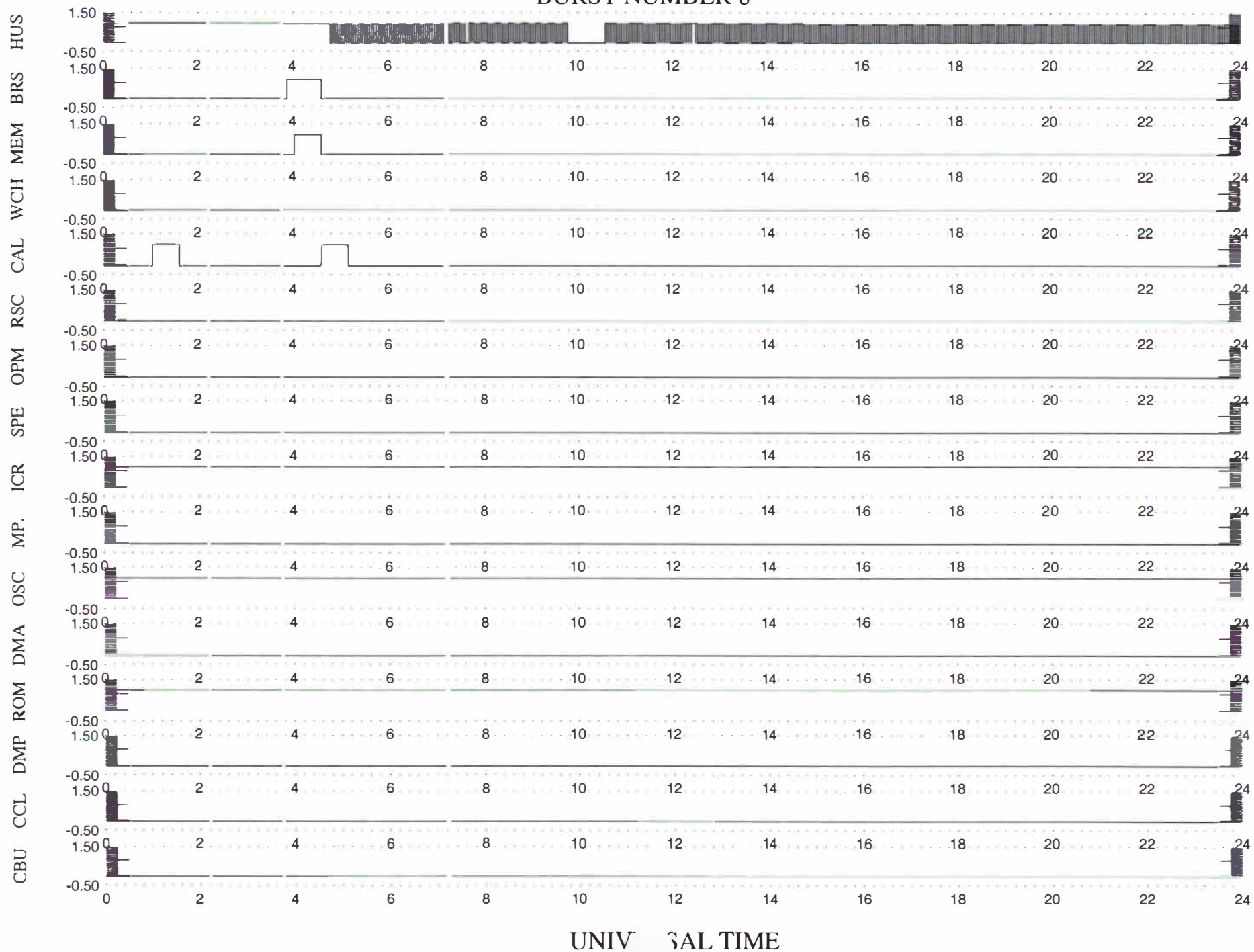
Discriminators:
(3 . 4)

Quality Mask:
80ISP1

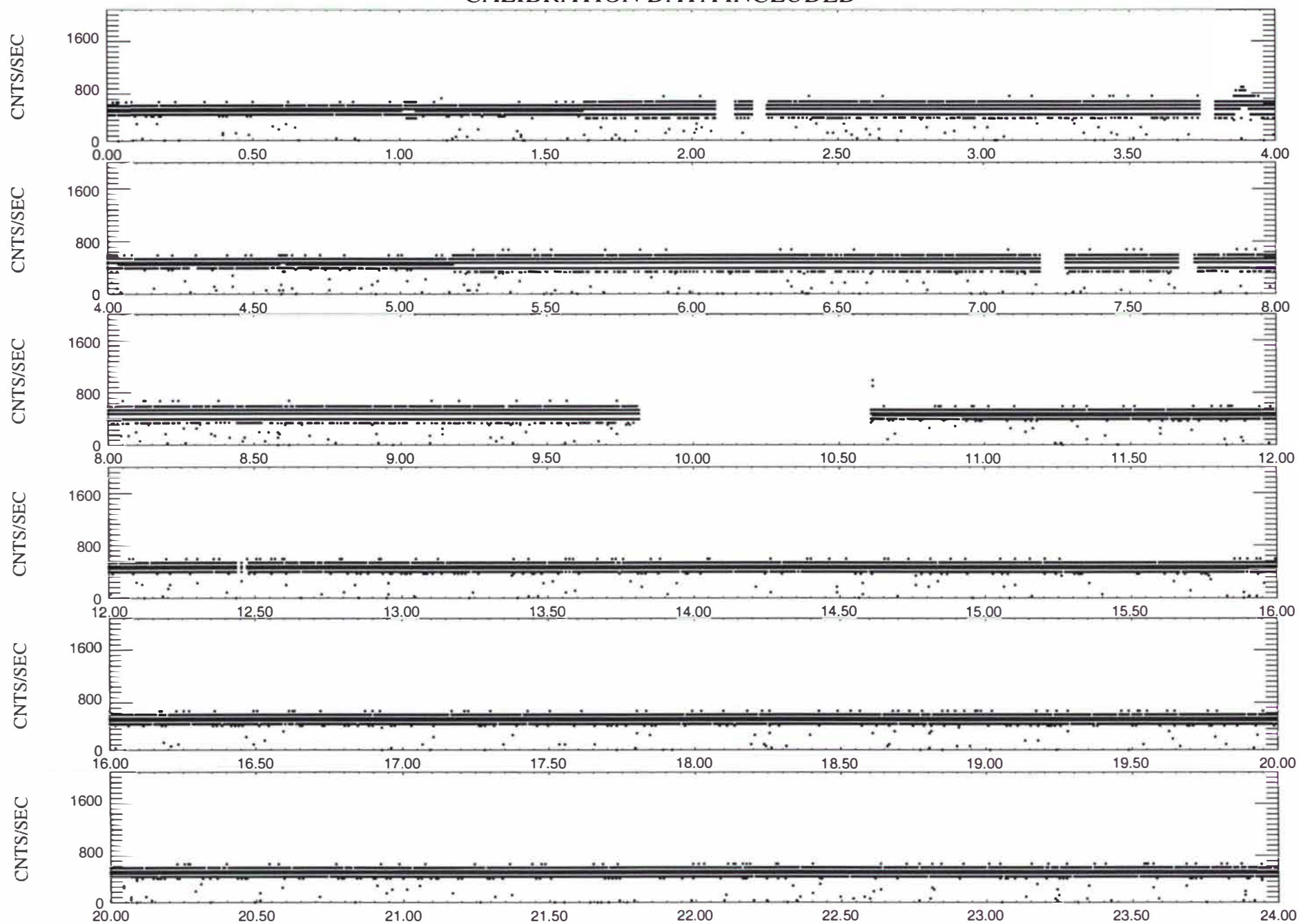
BACODINE 7608 16/06/99 38439.673
25- 100 keV



BURST NUMBER 8

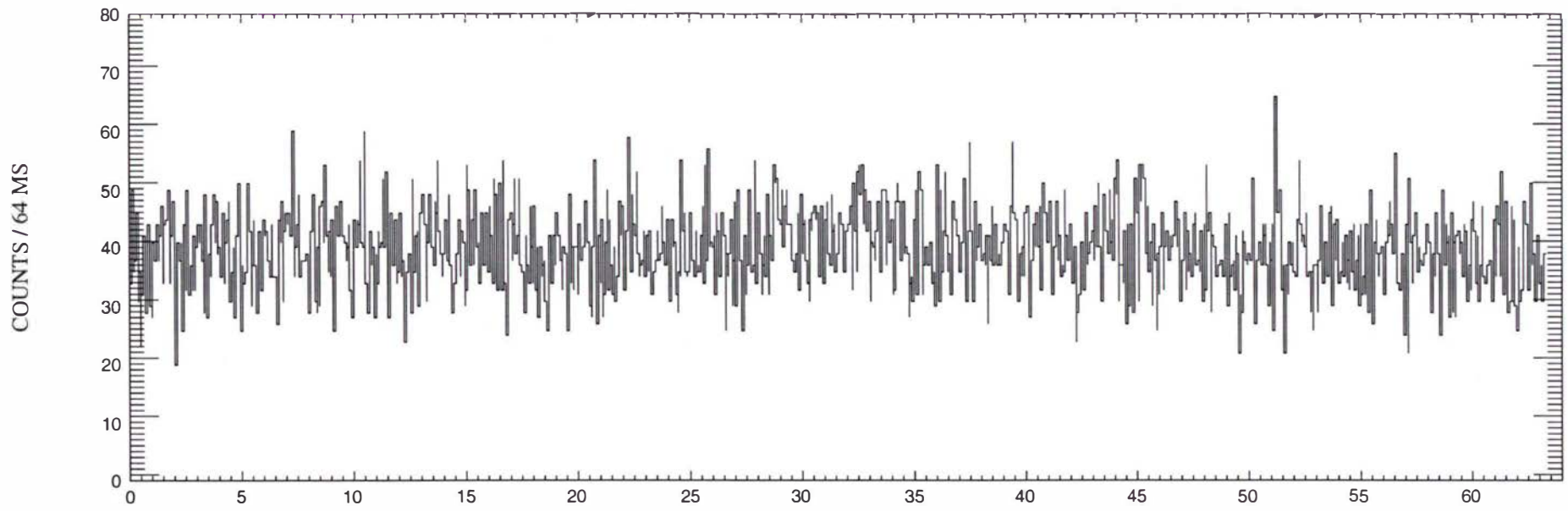


CALIBRATION DATA INCLUDED

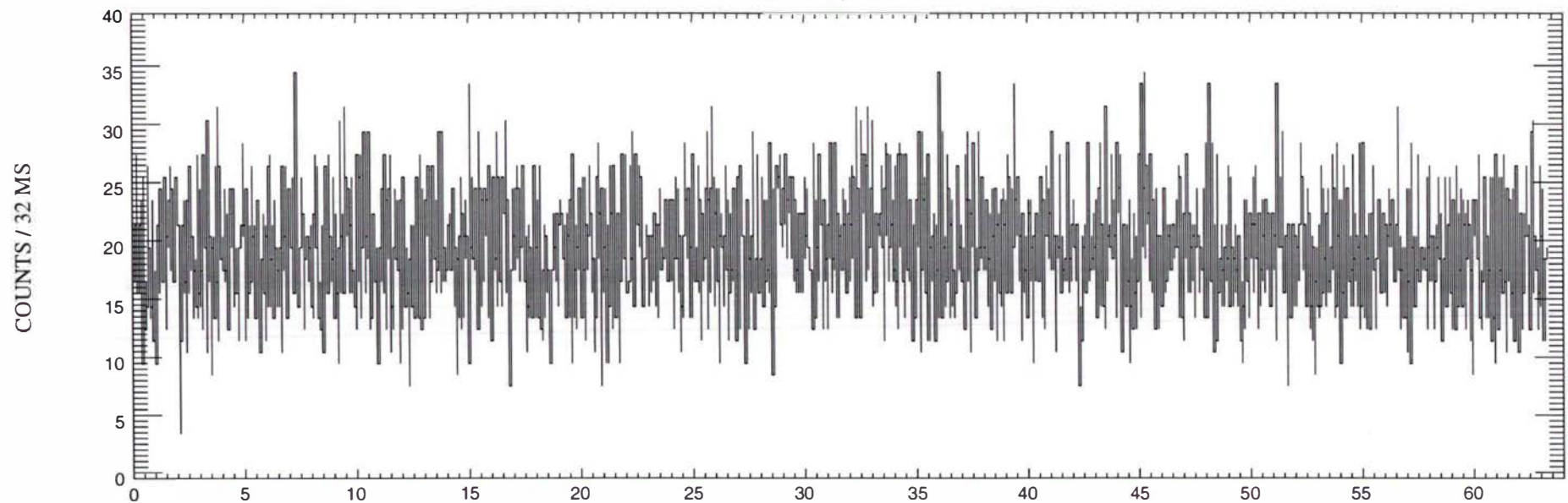


UNIV SAL TIME

Burst Counter 8 at UT= 3.879542278714 h=13966.352 s 03:52:46.352

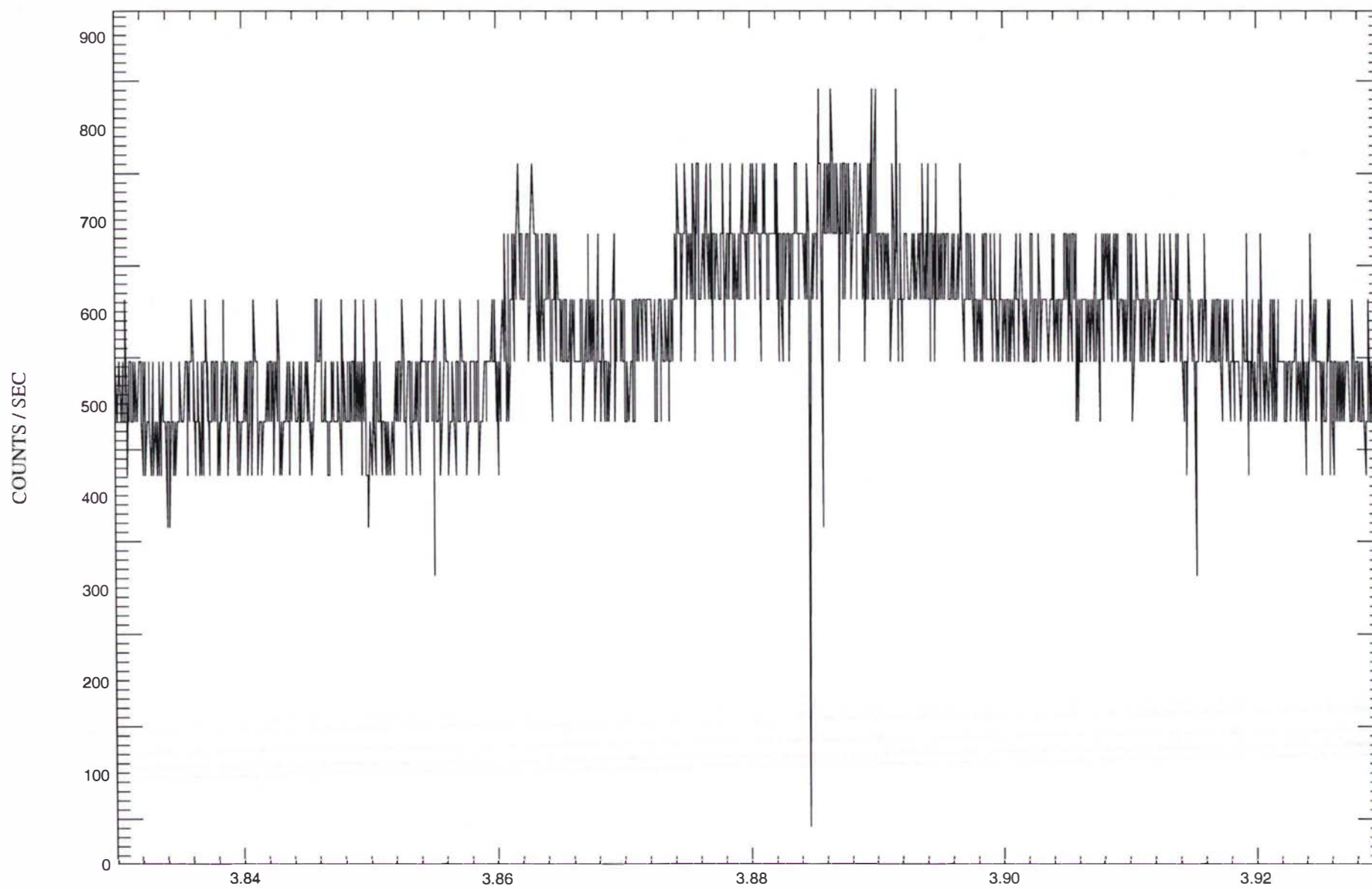


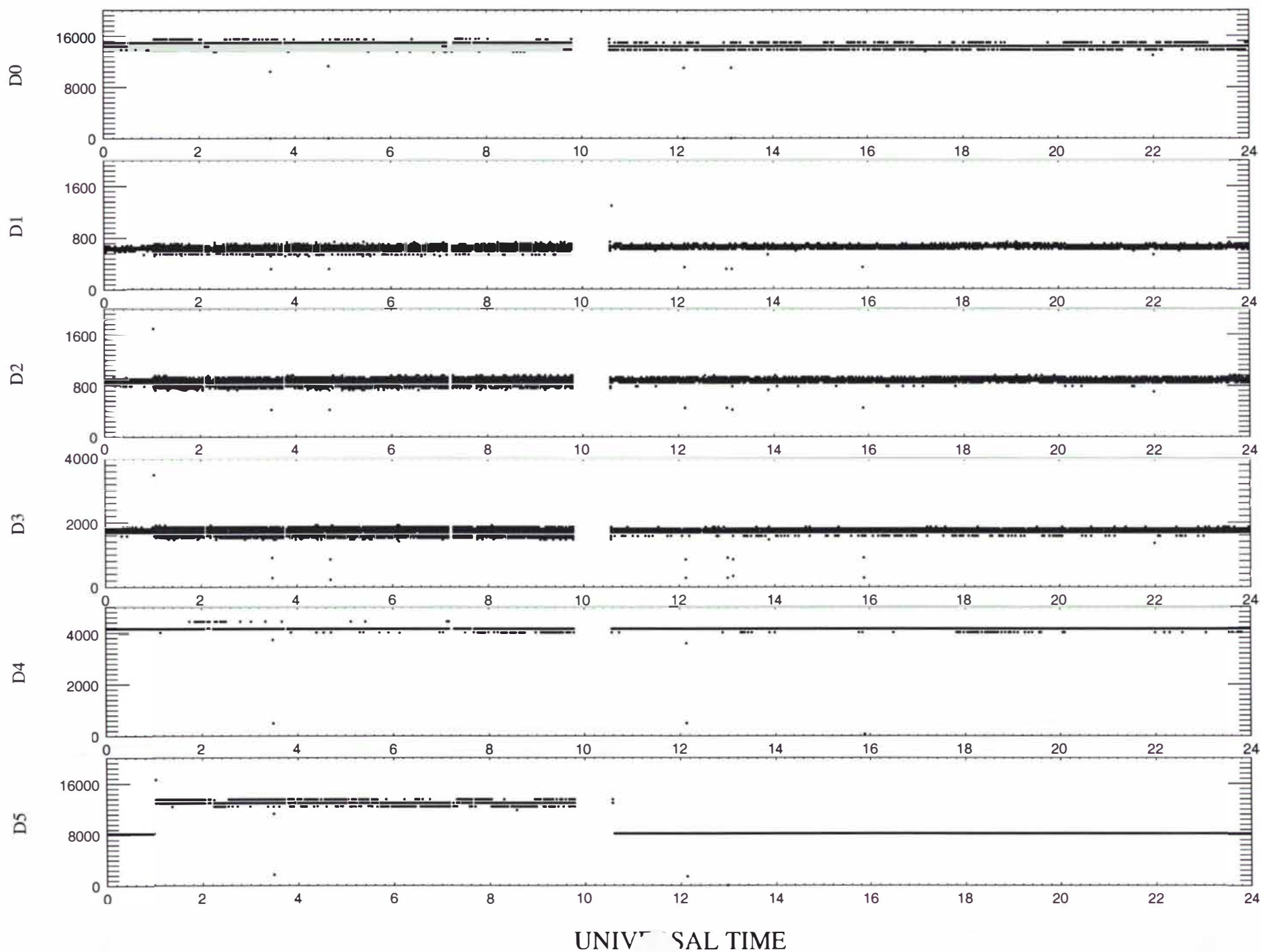
TIME, SECS



TIME, SECS

CALIBRATION DATA INCLUDED





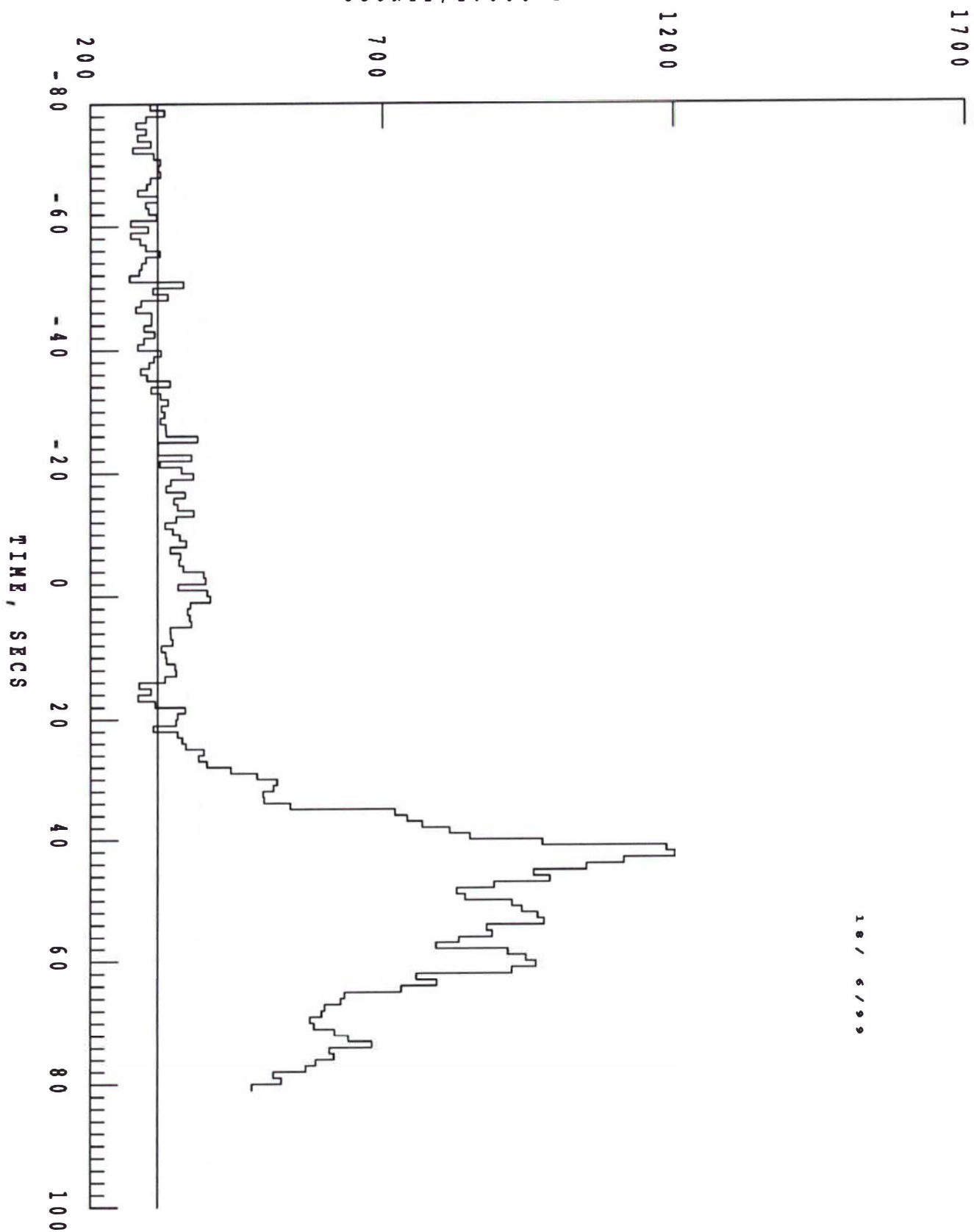
NEAR

17/06/99

4595.036

100-1000 keV

COUNTS/1.000 S



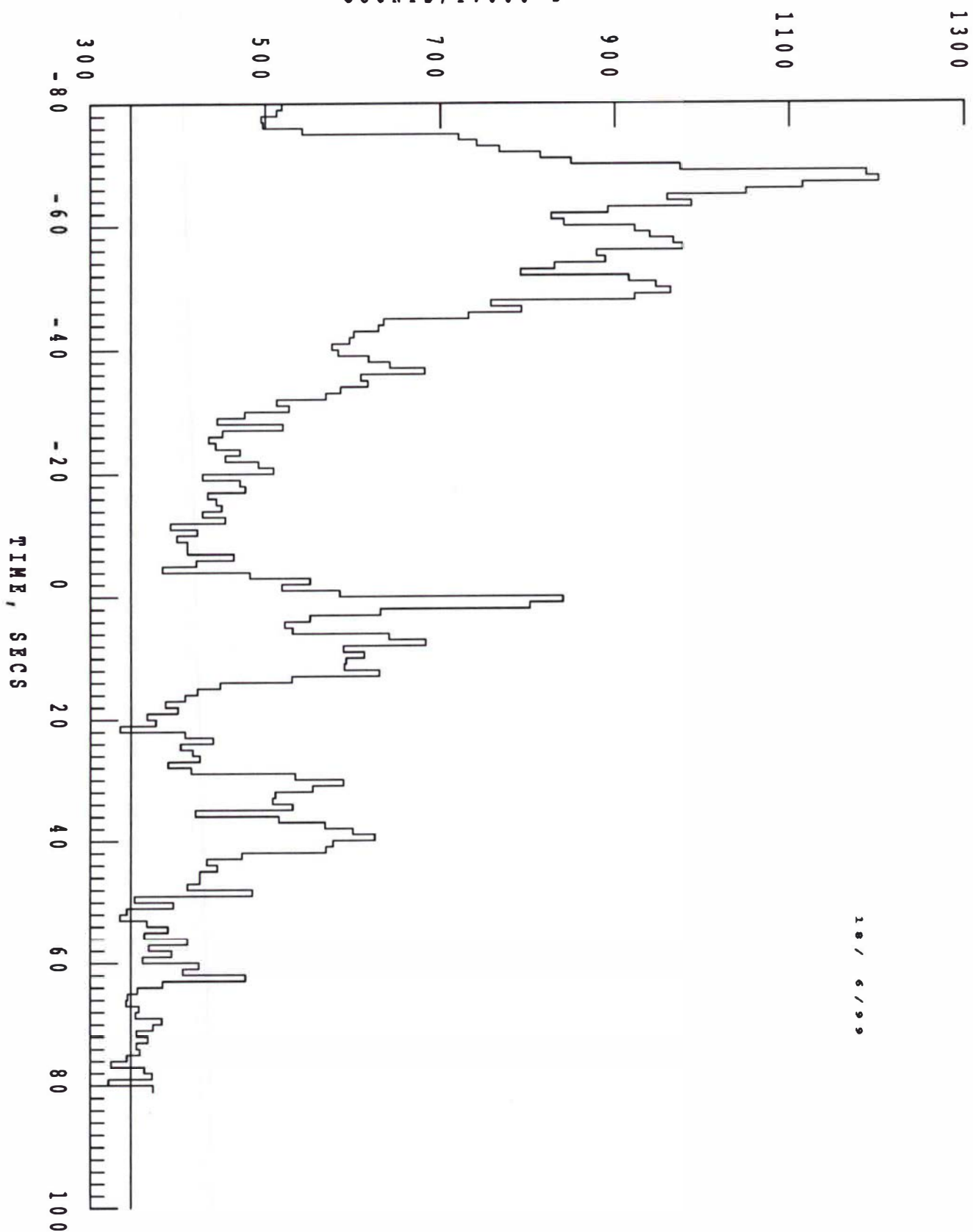
NEAR

17/06/99

4705.036

100-1000 keV

COUNTS/1.000 S

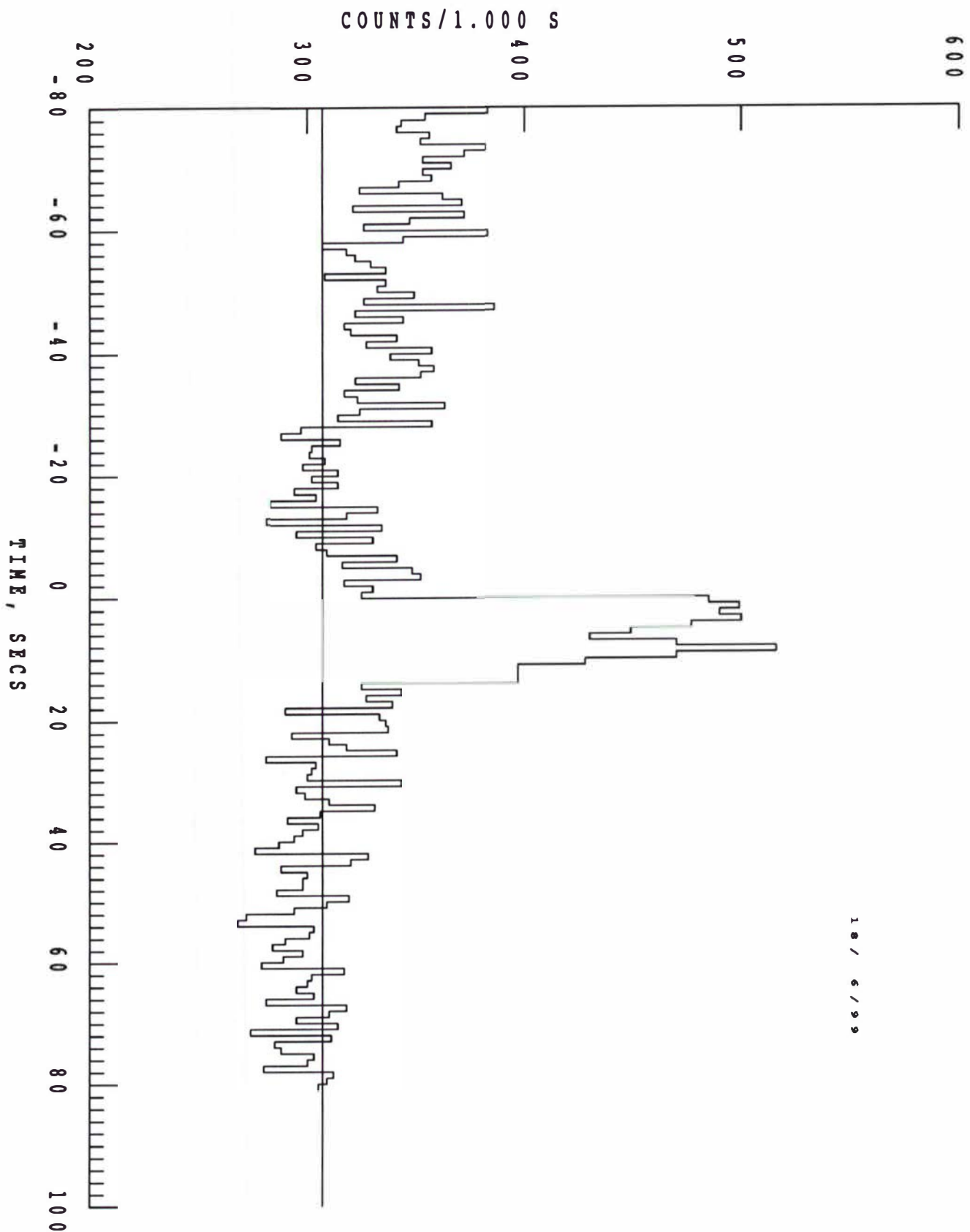


NEAR

17/06/99

4848.036

100-1000 keV



KNEAR GRS 19990617 04705

ULYSSES RT

18 / 6 / 99

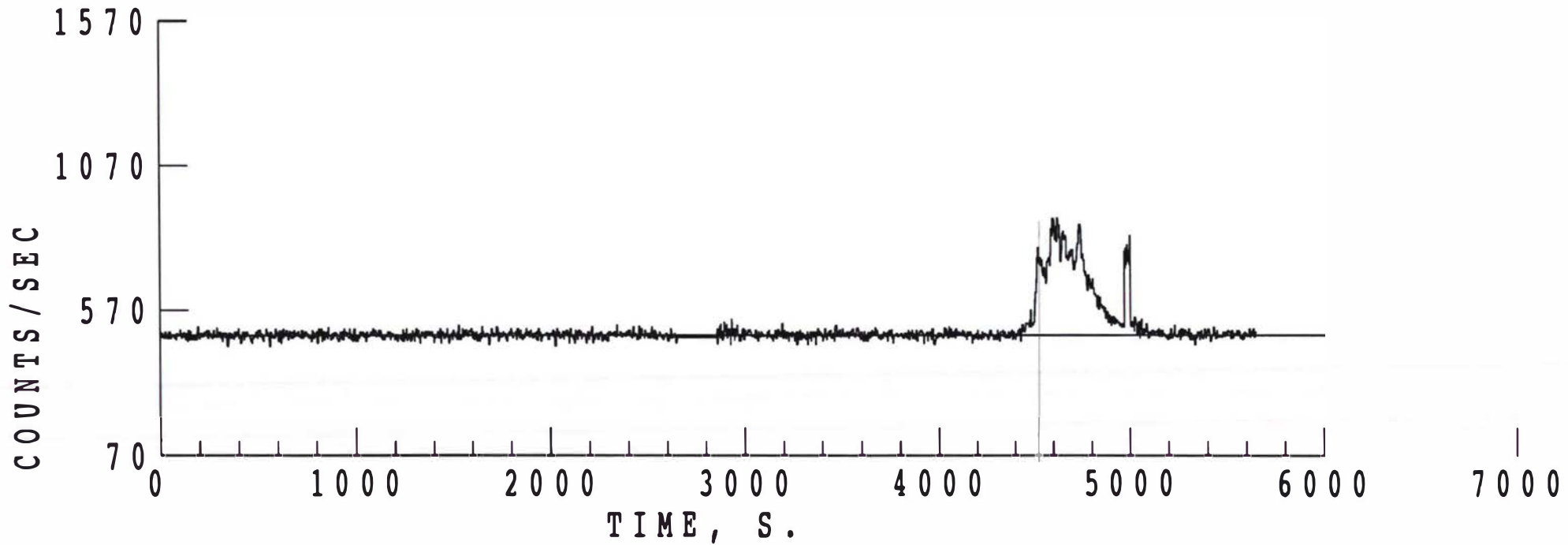
17 / 6 / 99 1872.484 s

INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: 25 Jan 2013

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. 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 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?

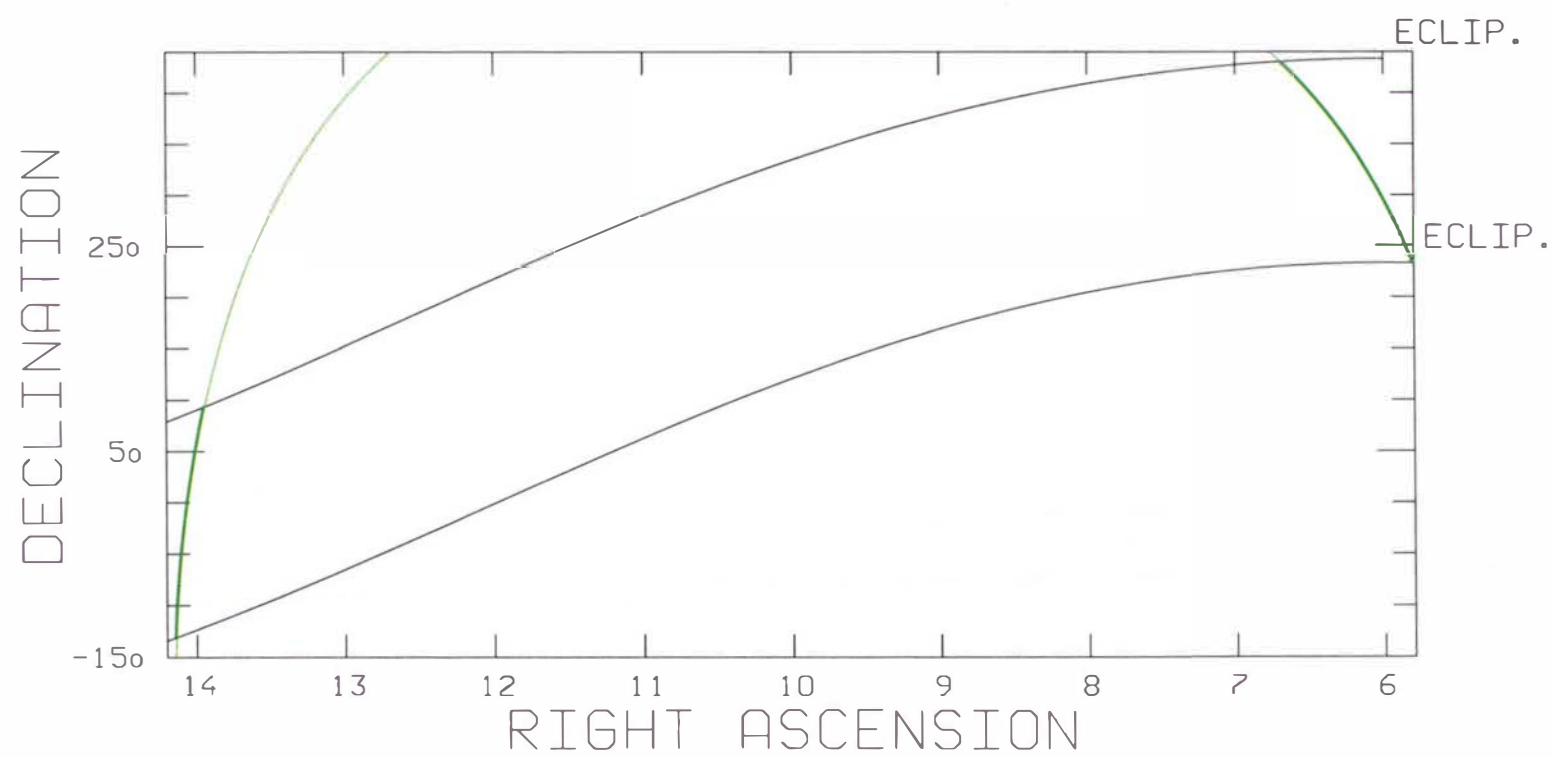
4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

- ☐ $\Sigma 3\Delta t$'s calculated?

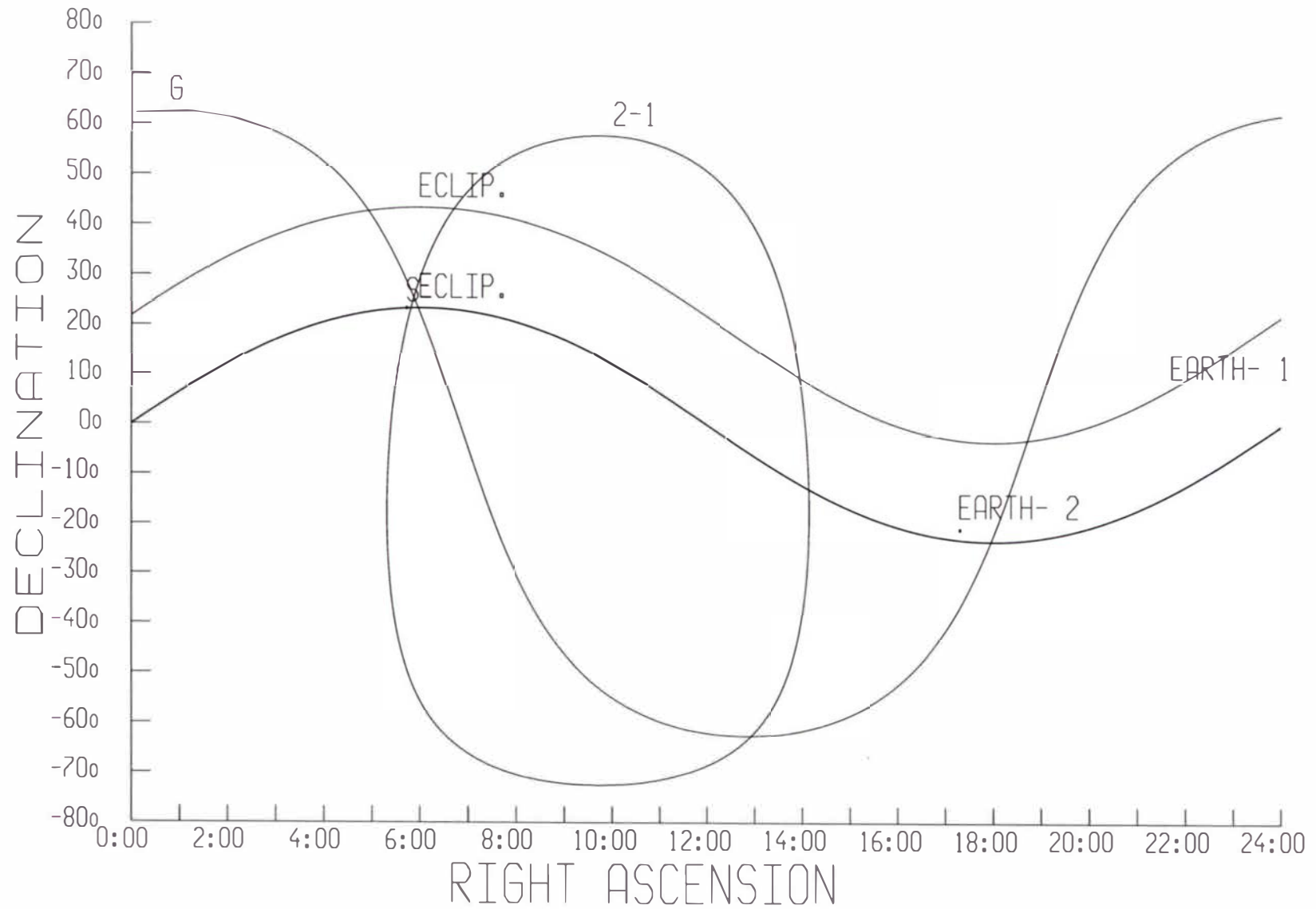
- ☒ ACCESS database updated?



EVENT OF JUN 17, 1999 16:36

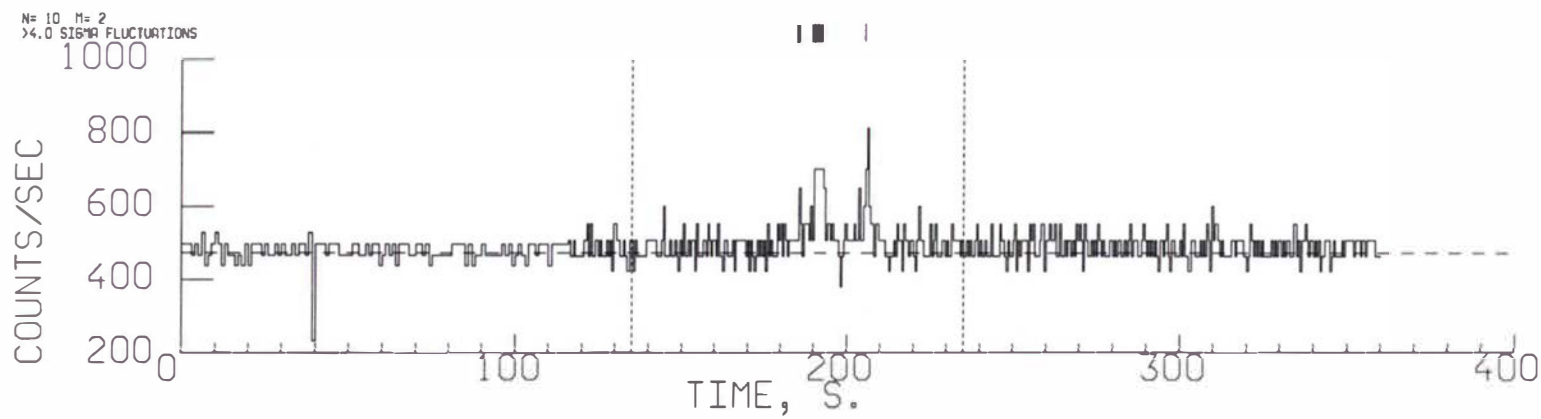
24/01/2013

N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 ULYSSES 2 KONUS2



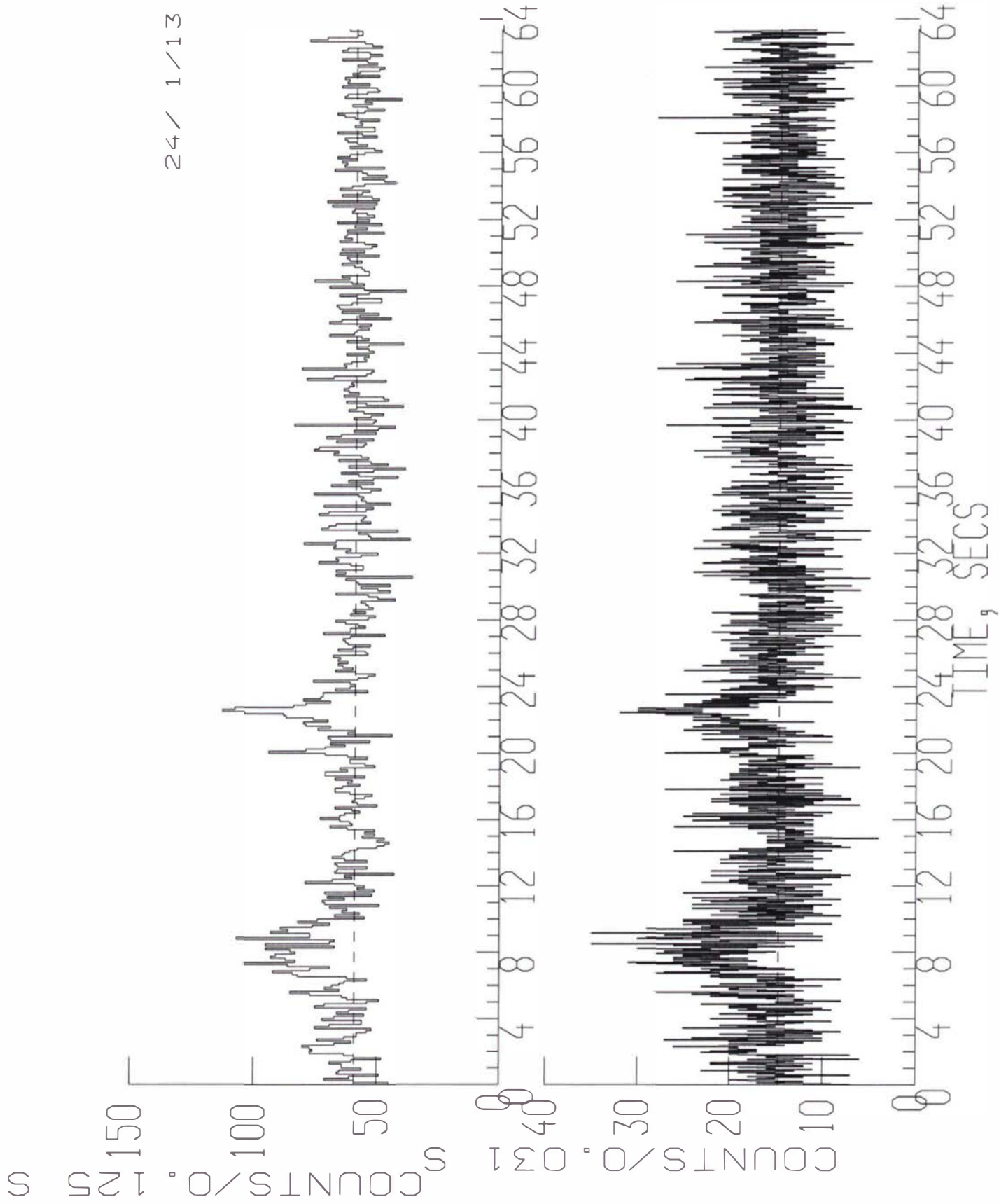
ULYSSES RT
17/ 6/99 59652.066 s
22- 150 keV

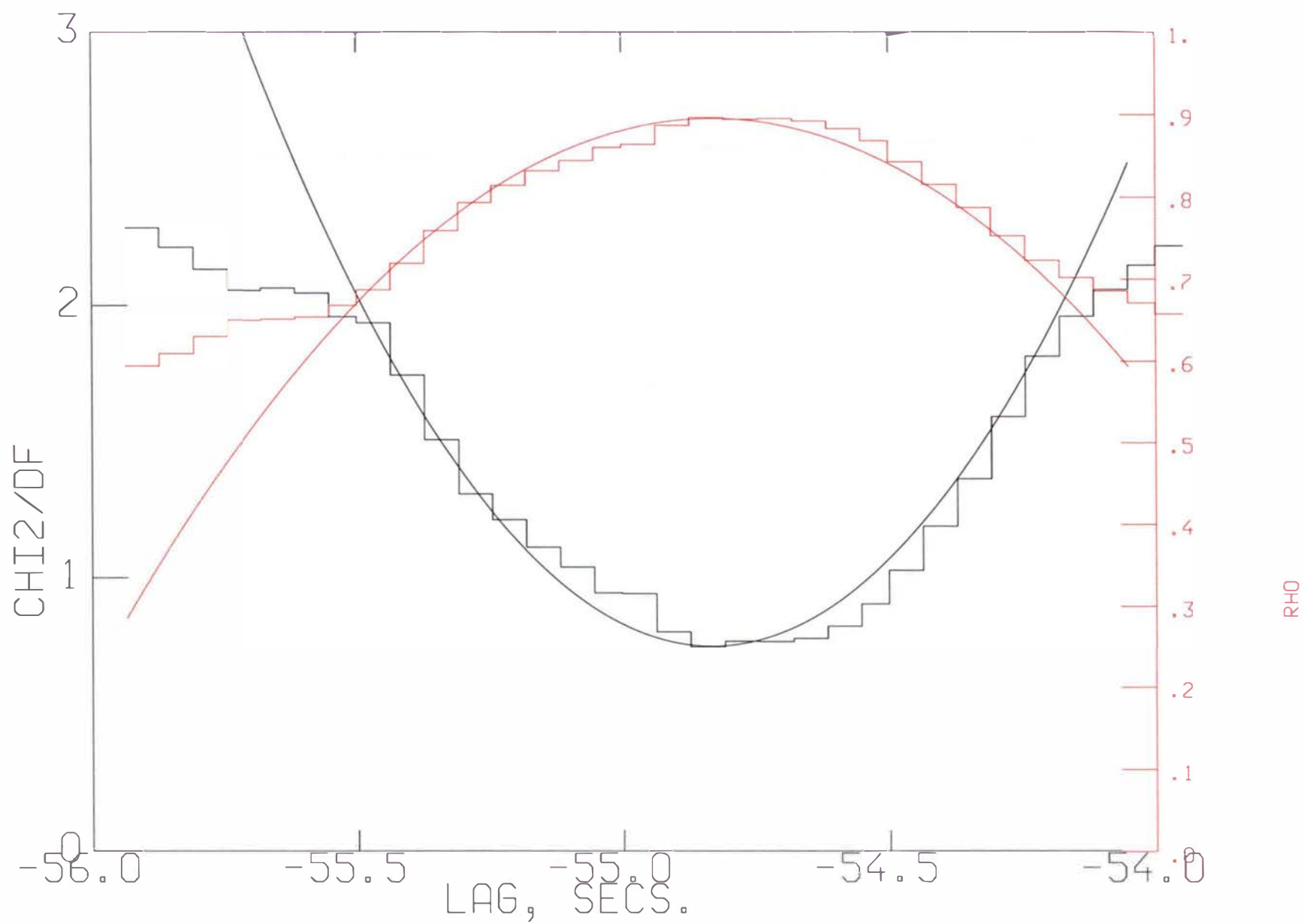
24/ 1/13

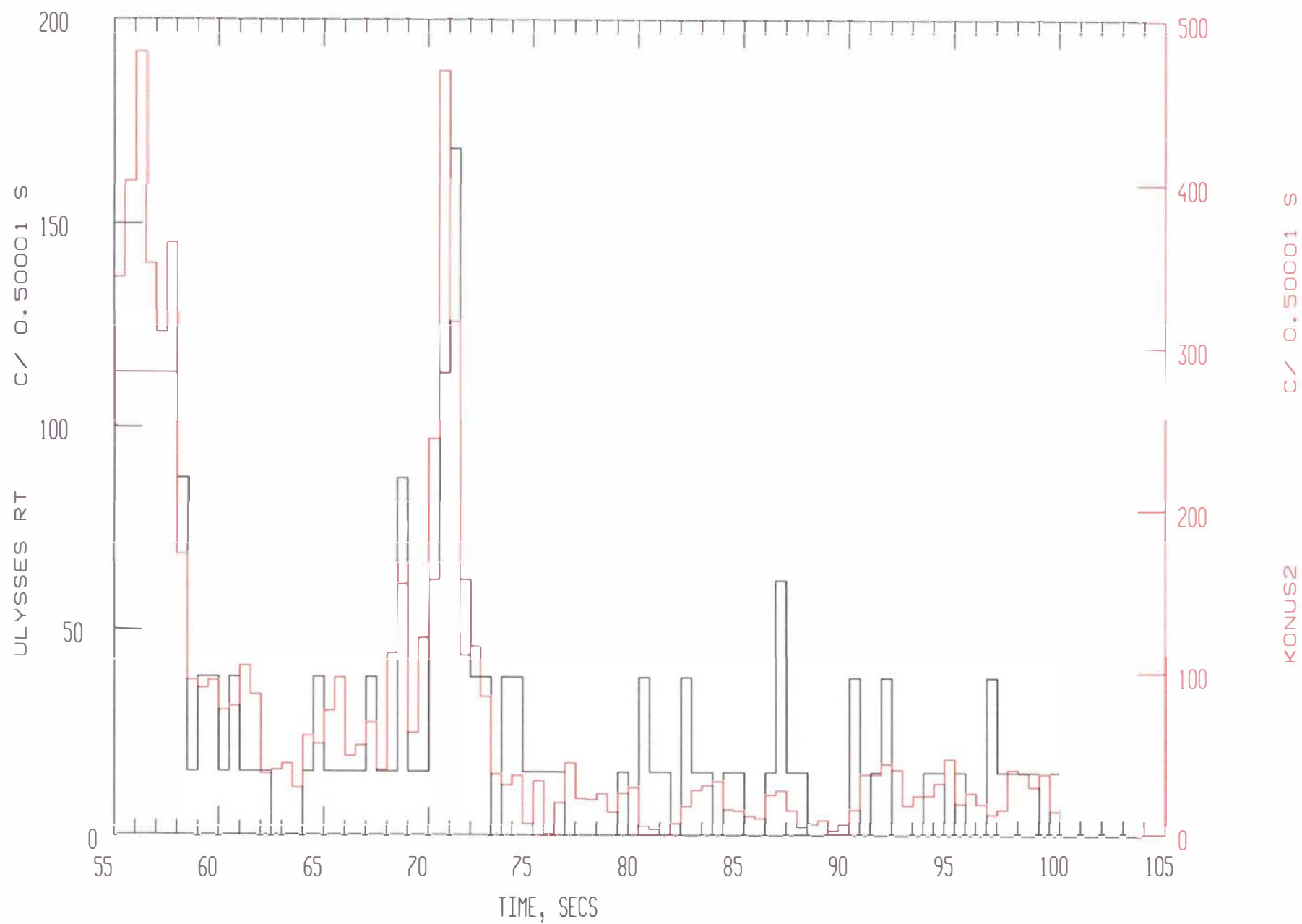


ULYSSES 17/06/99 Ttrig=59331.065

22 - 150 keV







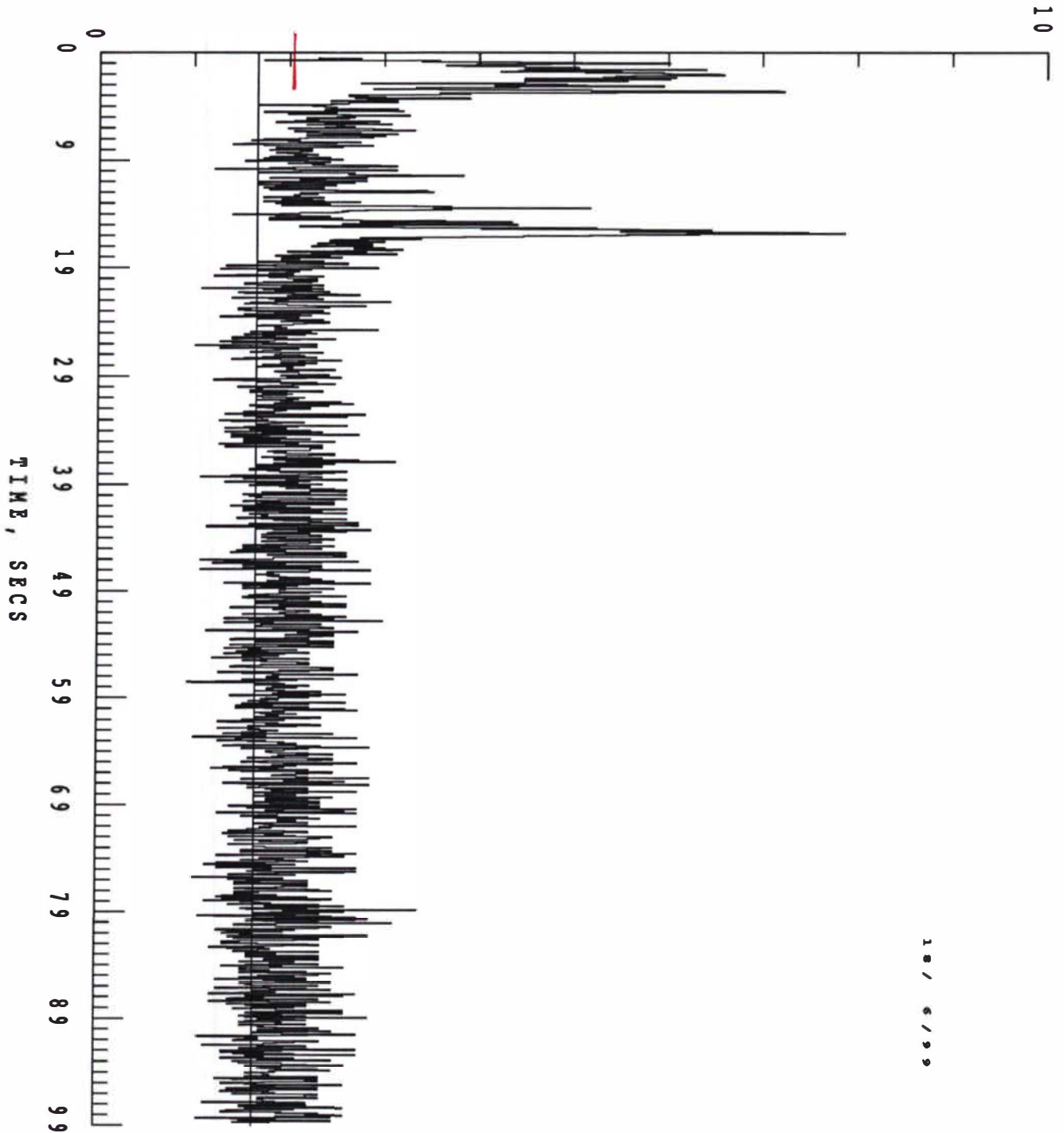
KONUS

17/06/99

60923.492

50 - 200 keV

COUNTS/0.064 S



KONUS2 19990617 60923

ULYSSES RT

18 / 6 / 99

17 / 6 / 99 58284.051 s

INTERVALS REGROUPED BY 4

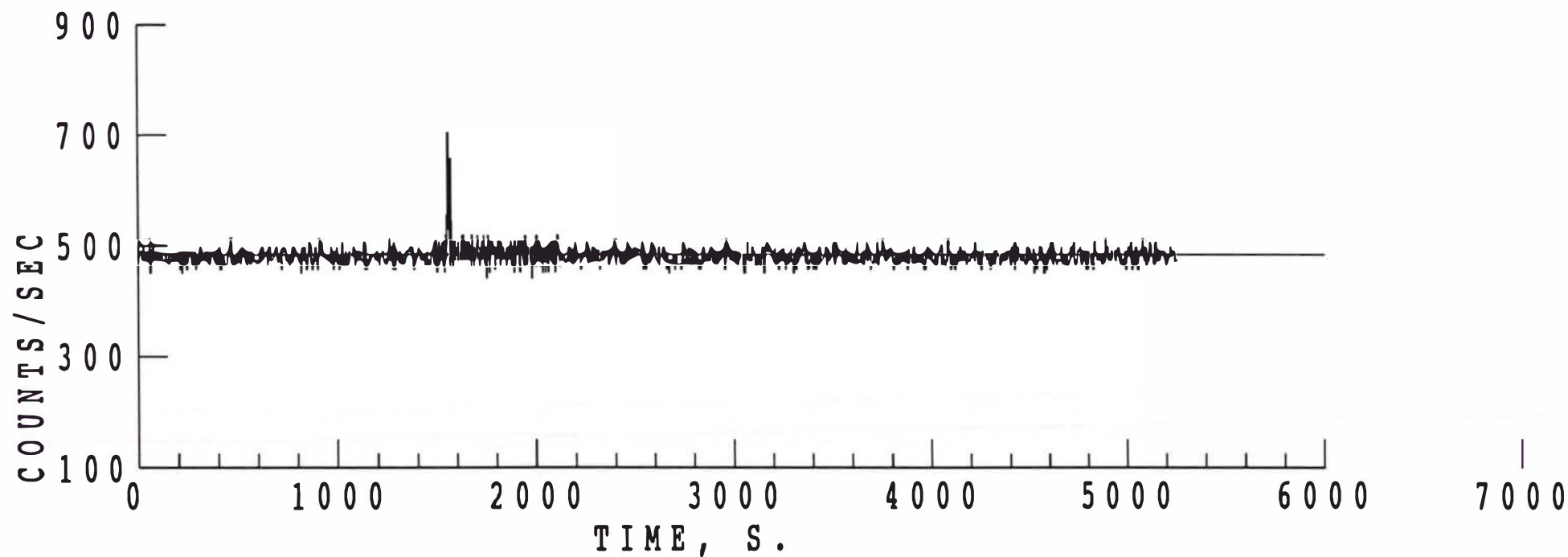
0 - 0 keV

N= 10 M= 10

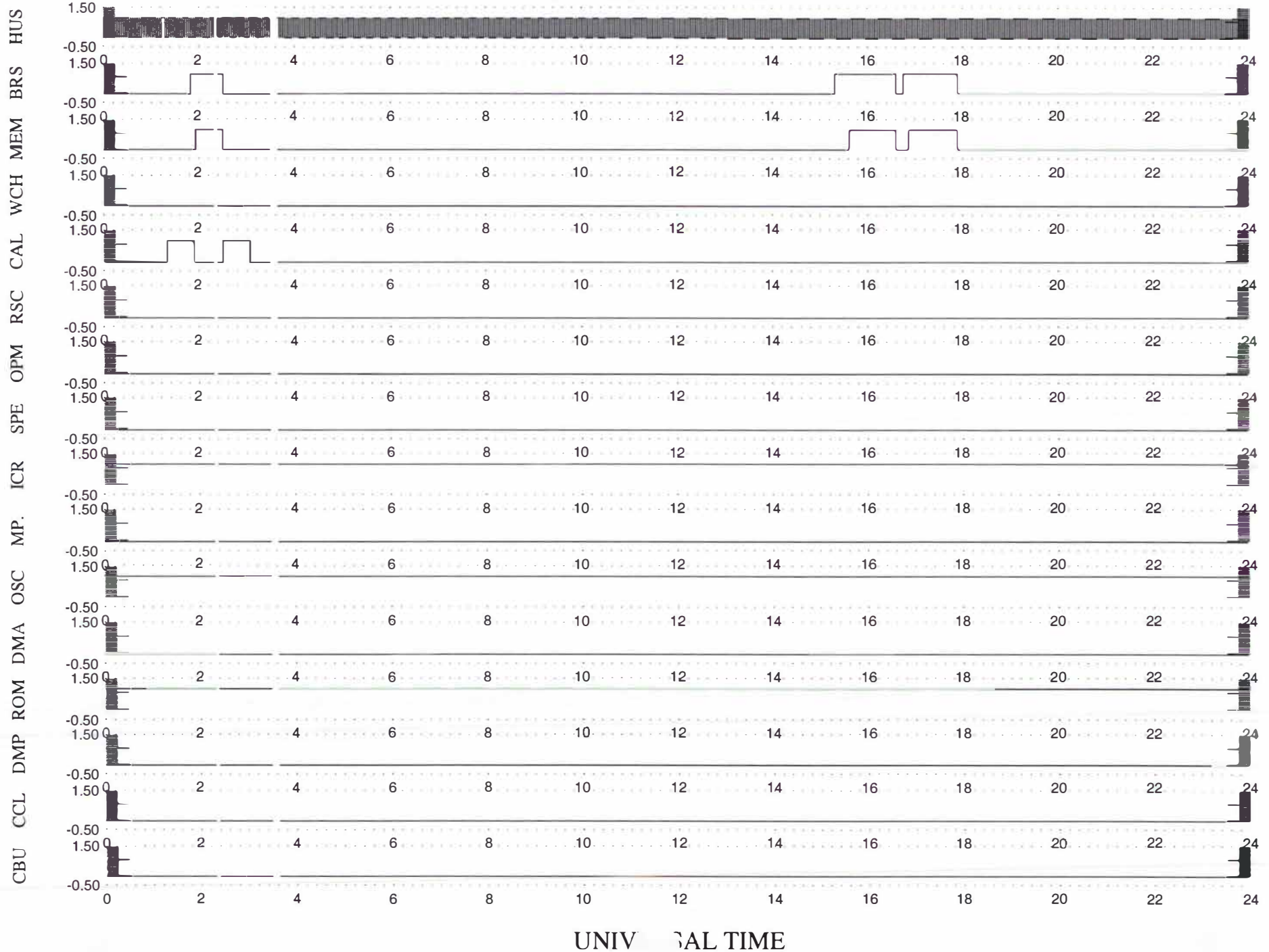
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

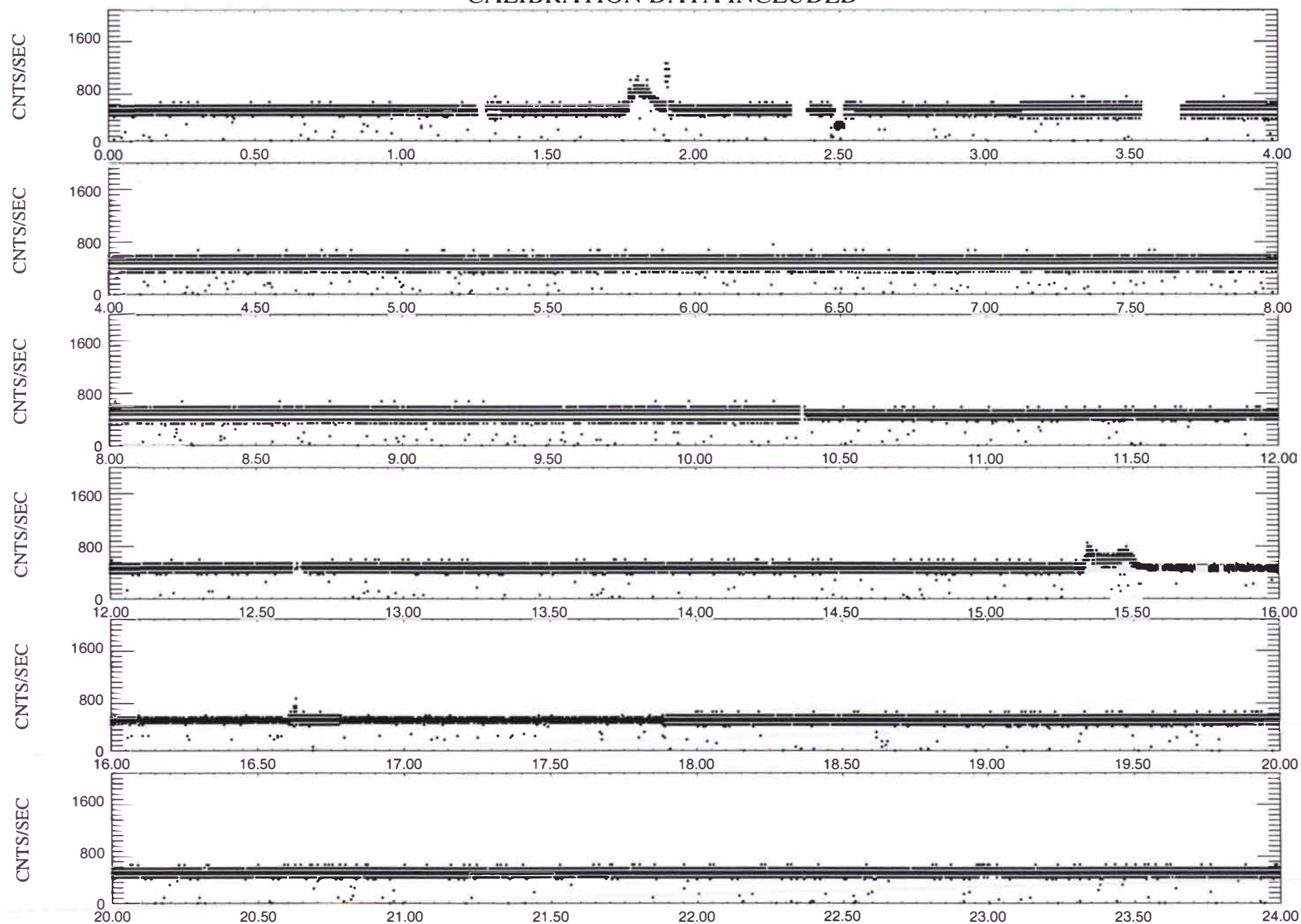
>4.0 SIGMA FLUCTUATIONS



BURST NUMBER 9 - 11

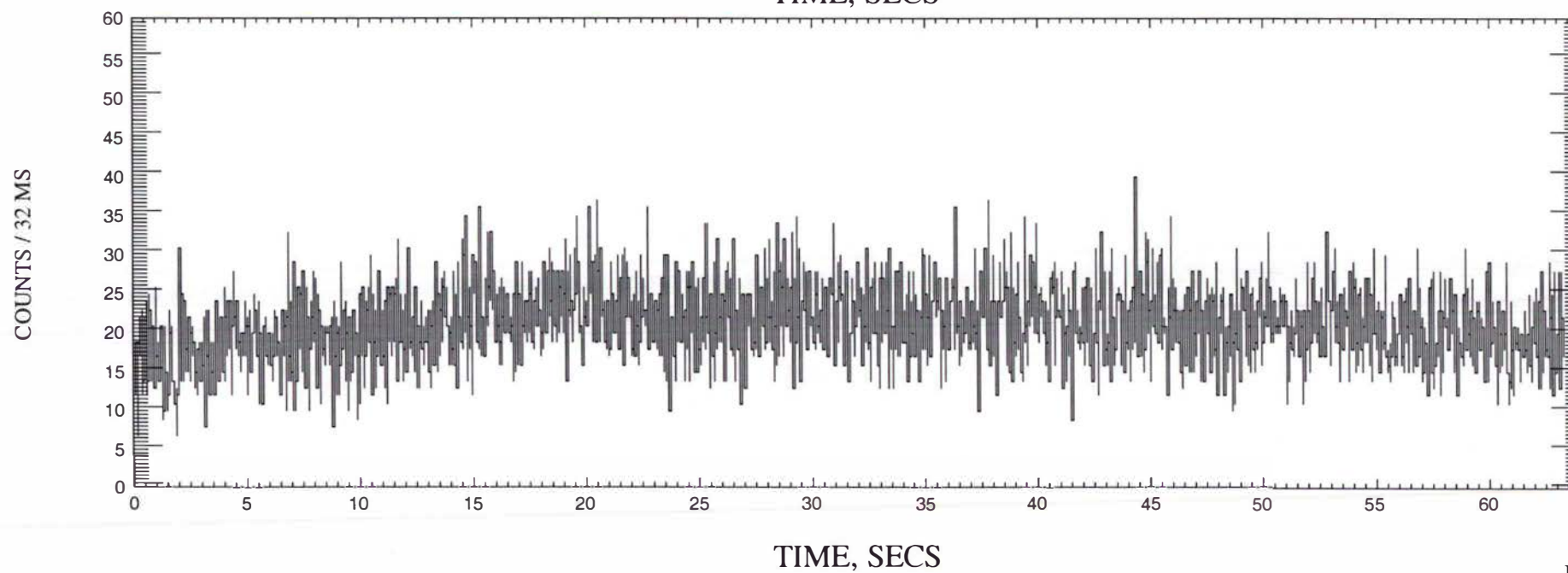
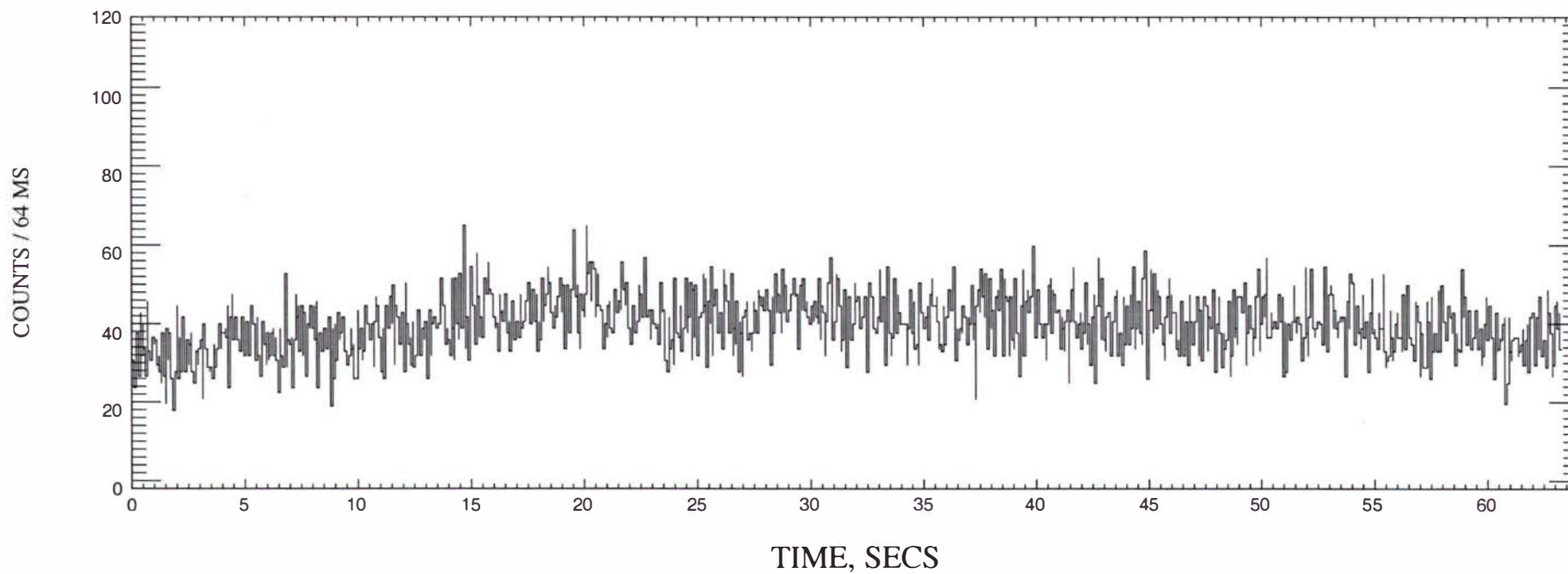


CALIBRATION DATA INCLUDED

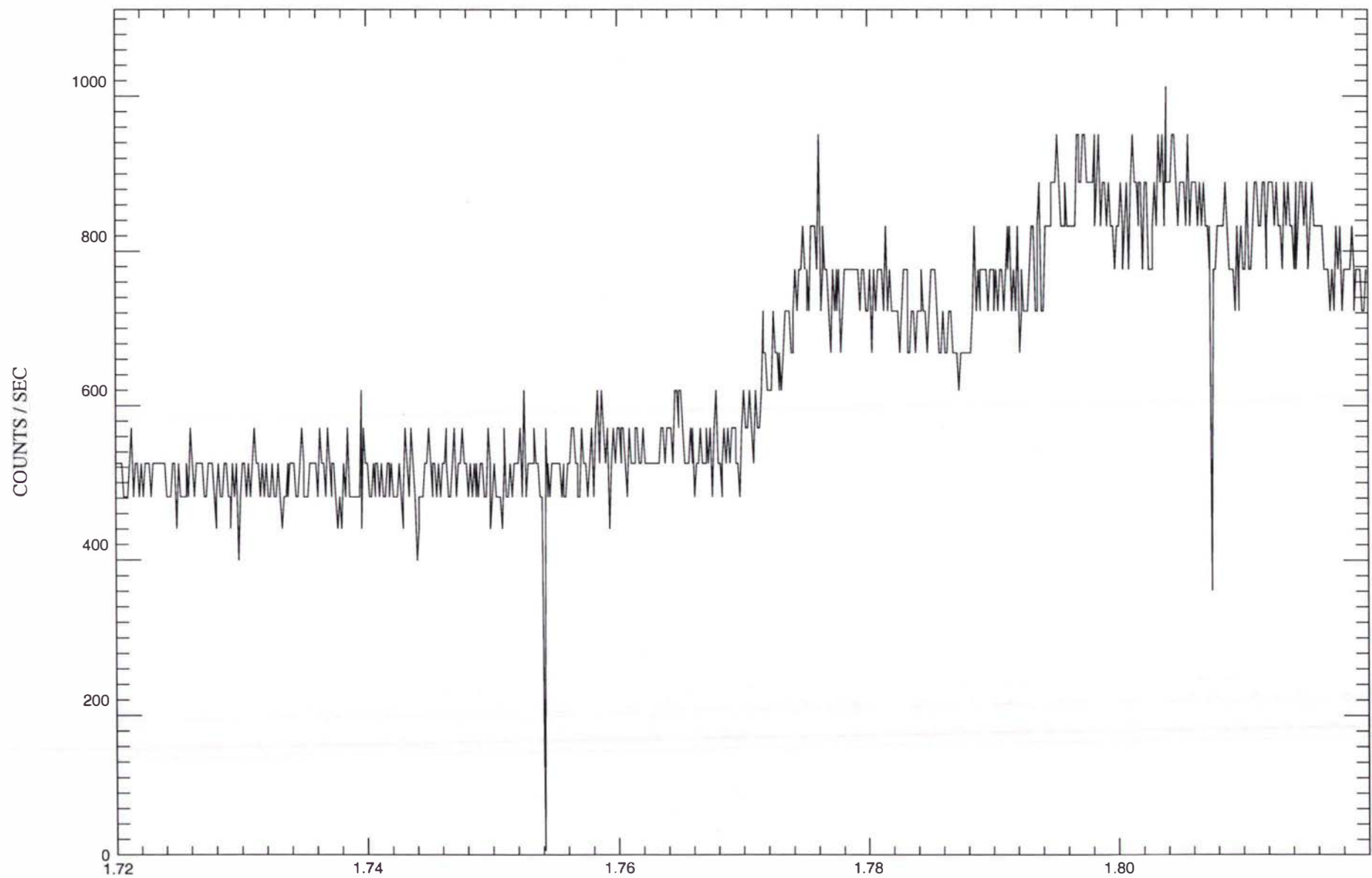


UNIV. TIME

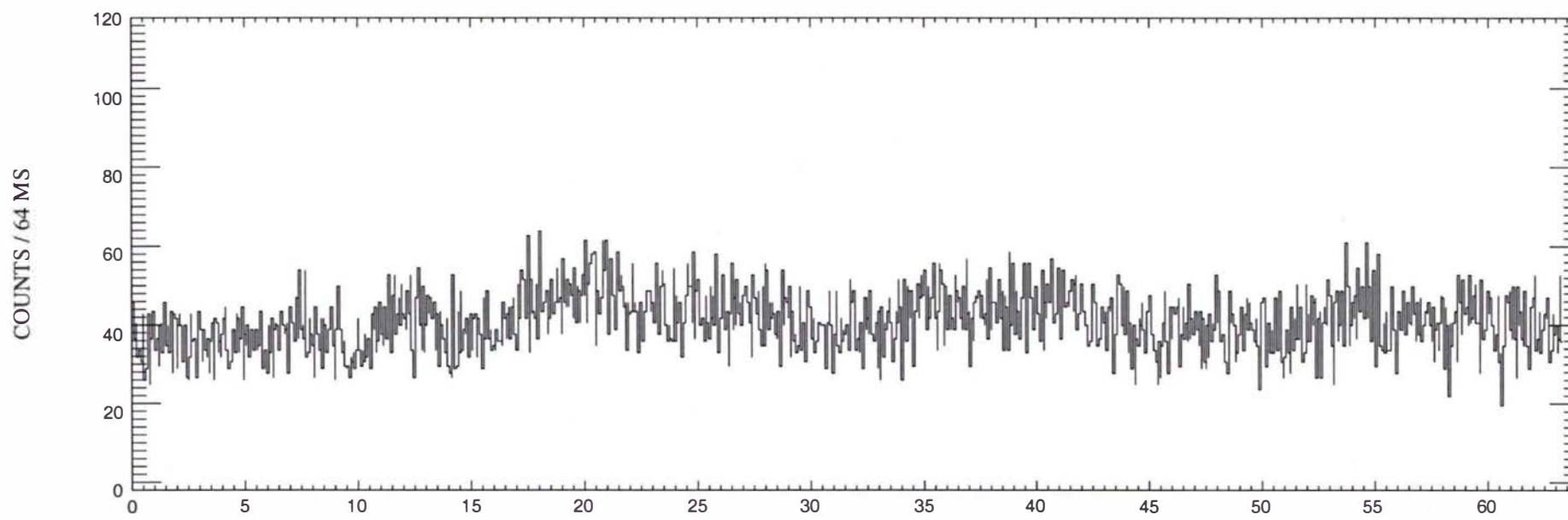
Burst Counter 9 at UT= 1.772575984531 h= 6381.274 s 01:46:21.274



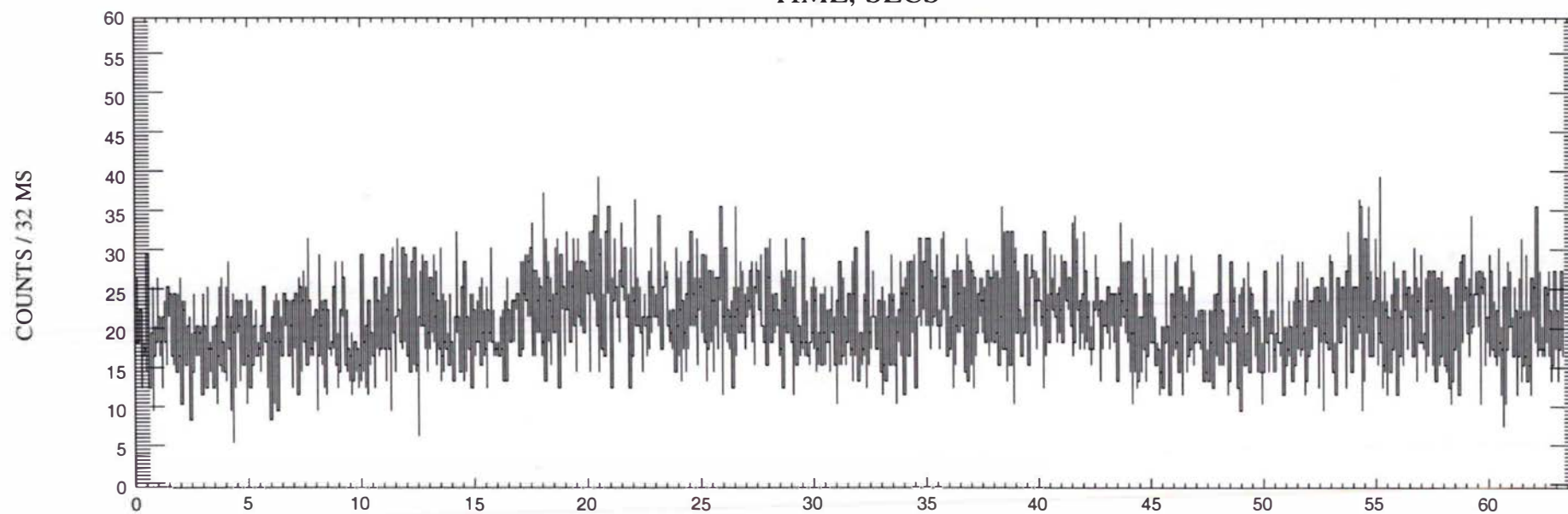
CALIBRATION DATA INCLUDED



Burst Counter 10 at UT=15.338233087328 h=55217.639 s 15:20:17.639

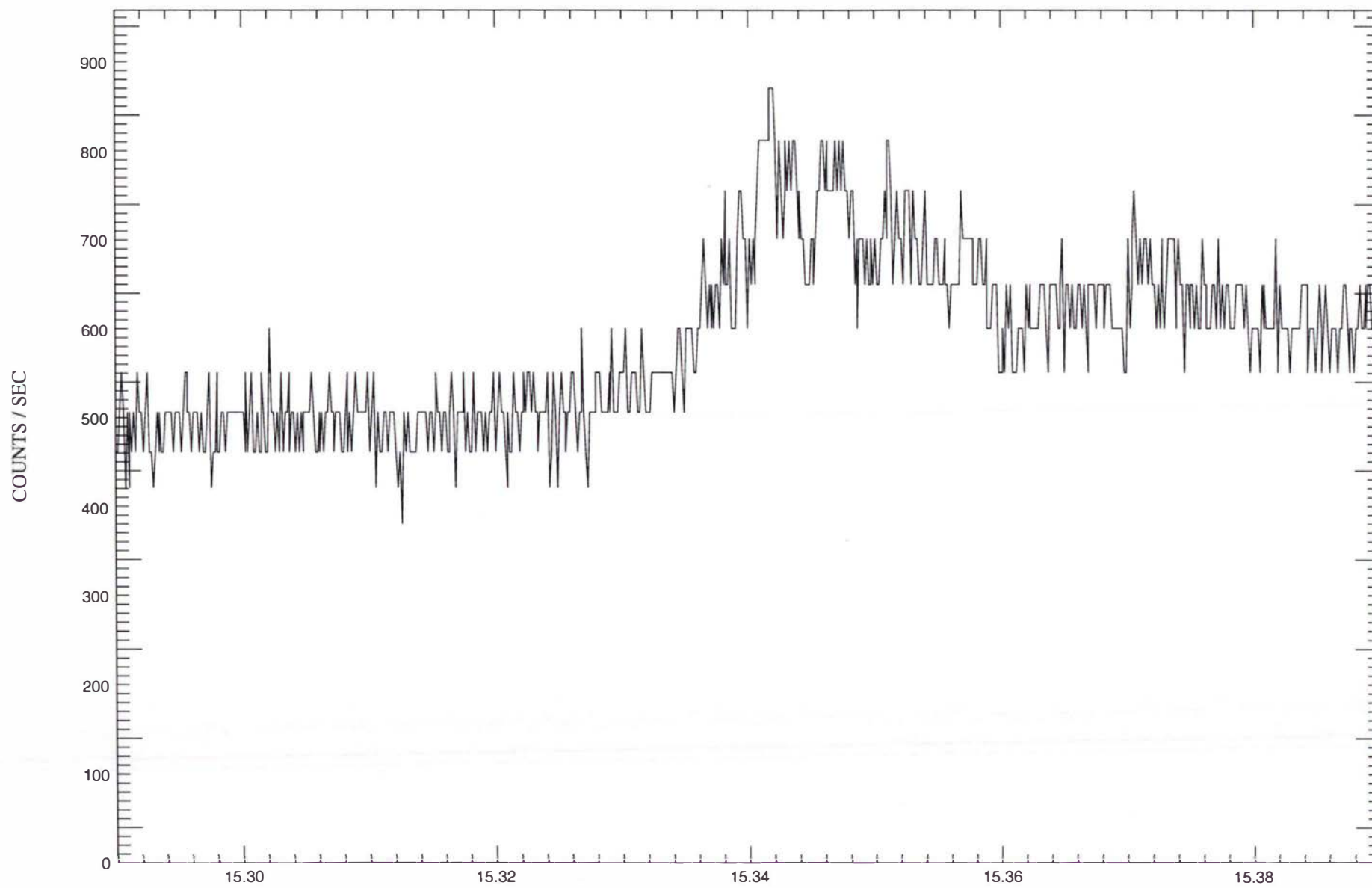


TIME, SECS

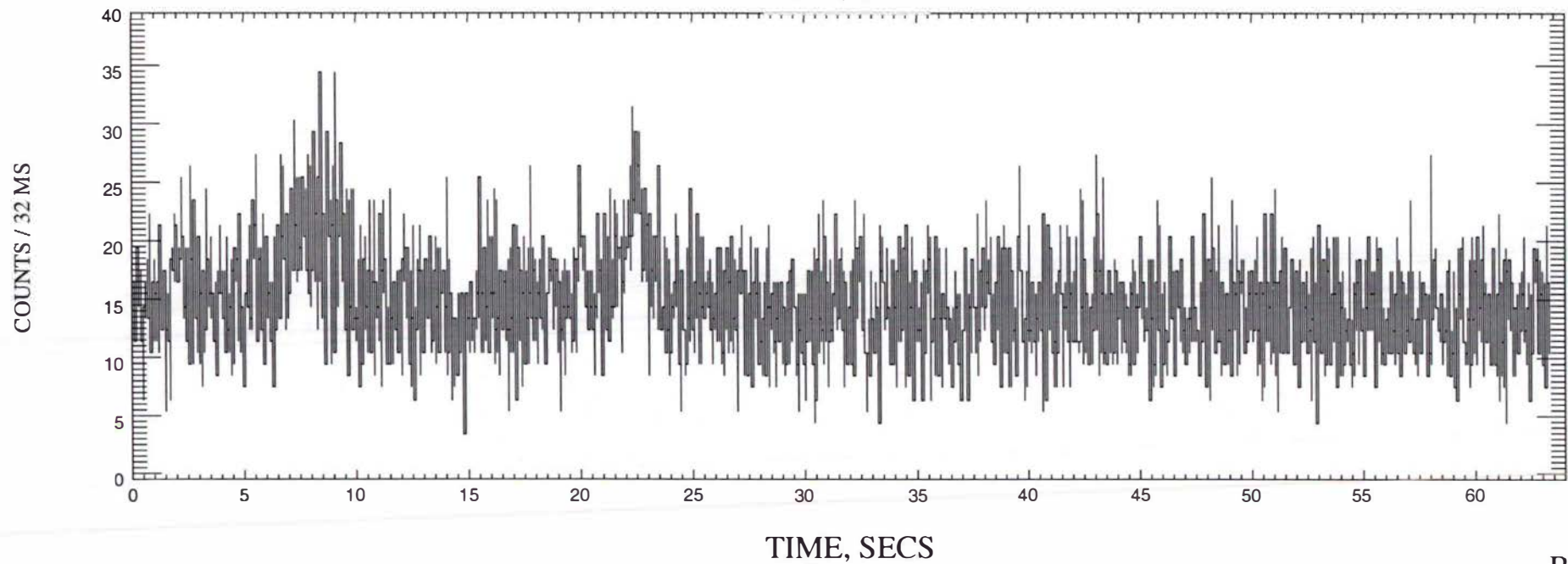
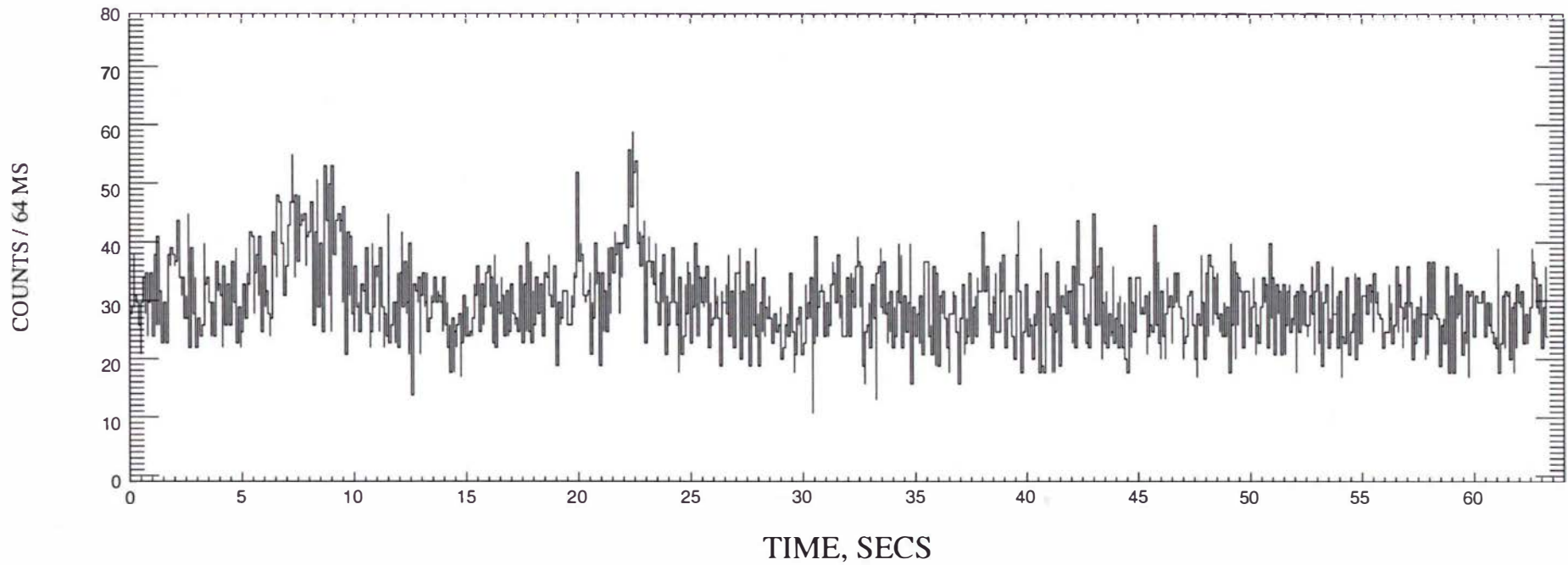


TIME, SECS

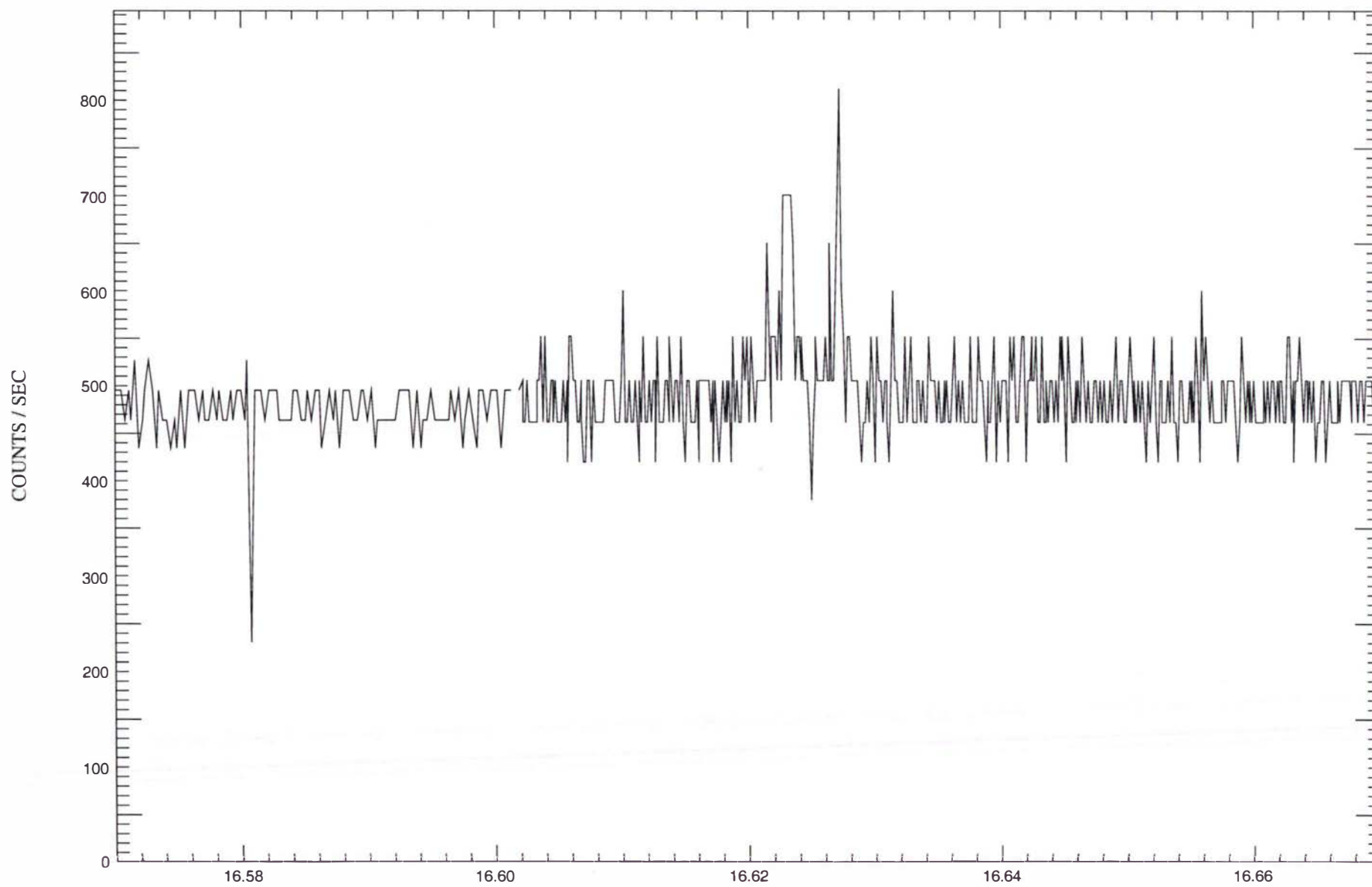
CALIBRATION DATA INCLUDED

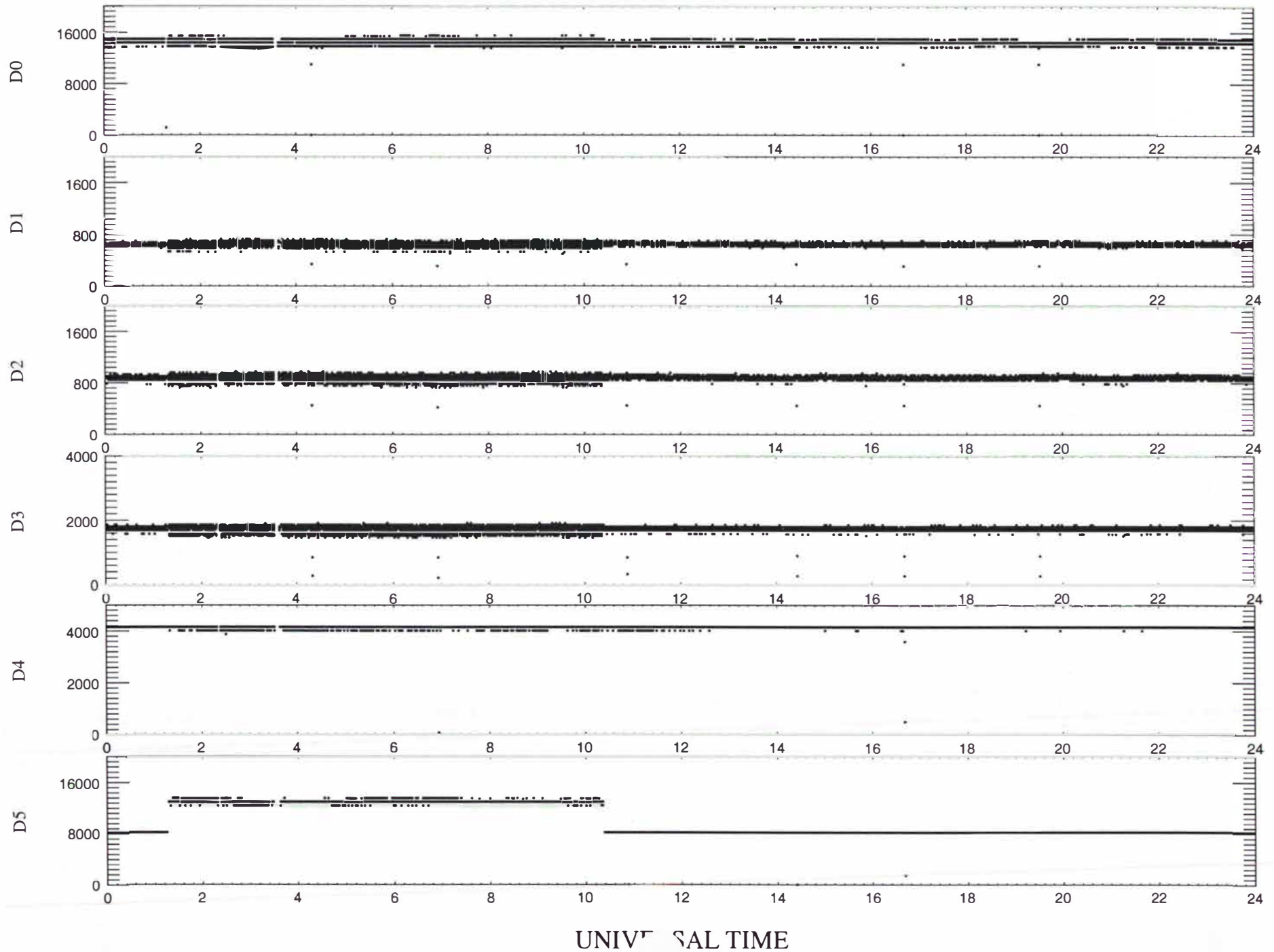


Burst Counter 11 at UT=16.623069500393 h=59843.050 s 16:37:23.050



CALIBRATION DATA INCLUDED





From PETERSON@fender.msfc.nasa.gov Tue Jun 22 14:14 PDT 1999
From: PETERSON@fender.msfc.nasa.gov
Date: Tue, 22 Jun 1999 16:18:23 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7609

BATSEARCH PROGRAM

BATSE BURST # 7609
EVENT OF 1999 JUN 18 DAY OF YEAR=169
EVENT CROSSING TIME AT BATSE : 14036. S. OR 03:53:56.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 215.000 -61.000
BATSE PEAK COUNTING RATE: 3000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 18/ 6/ 99 IS:
RA= 145.300 DEC= -7.151 DIST= 5.178 AU
BATSE-ULYSSES DISTANCE = 774604542. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=106.01 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -712.51 SECS.
CROSSING TIME AT ULYSSES IS 13323. S. OR 03:42:03 +/- 470.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 18/ 6/ 99 IS:
RA= 203.481 DEC= -10.627 DIST= 0.741 AU
MARS-BATSE DISTANCE = 110834072. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=128.92 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -232.24 SECS.
CROSSING TIME AT MARS IS 13804. S. OR 03:50:03 +/- 46.41 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7609	990618	11347	14036	3000	215	-61	65

BATSE BURST TRIGGER

NO.: 7609

TIME: TJD=1347 SECONDS=14036

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=27.7 AZIMUTH=163.5 ERROR=1.706 DEGREES

COMMENTS:

GRB. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 65 S, STARTS AT APPROX. T-5 S,
MAX AT APPROX. T+25 S. NOT VISIBLE ABOVE 300 KEV. CRAB SET AT APPROX. T+250 S.

BATSE BURST# 7609

ULYSSES RT

11 / 11 / 99

18 / 6 / 99 13088.724 s

0.250 S INTERVALS REGROUPED BY 2

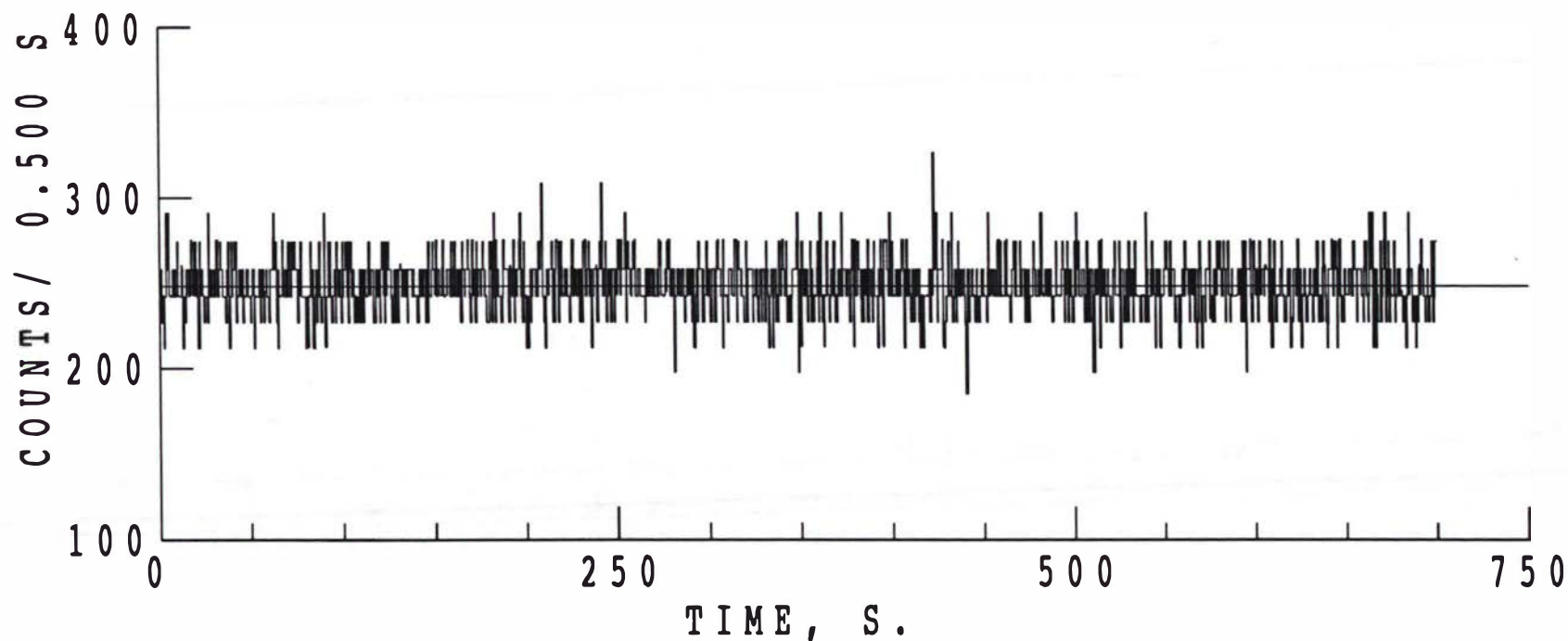
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

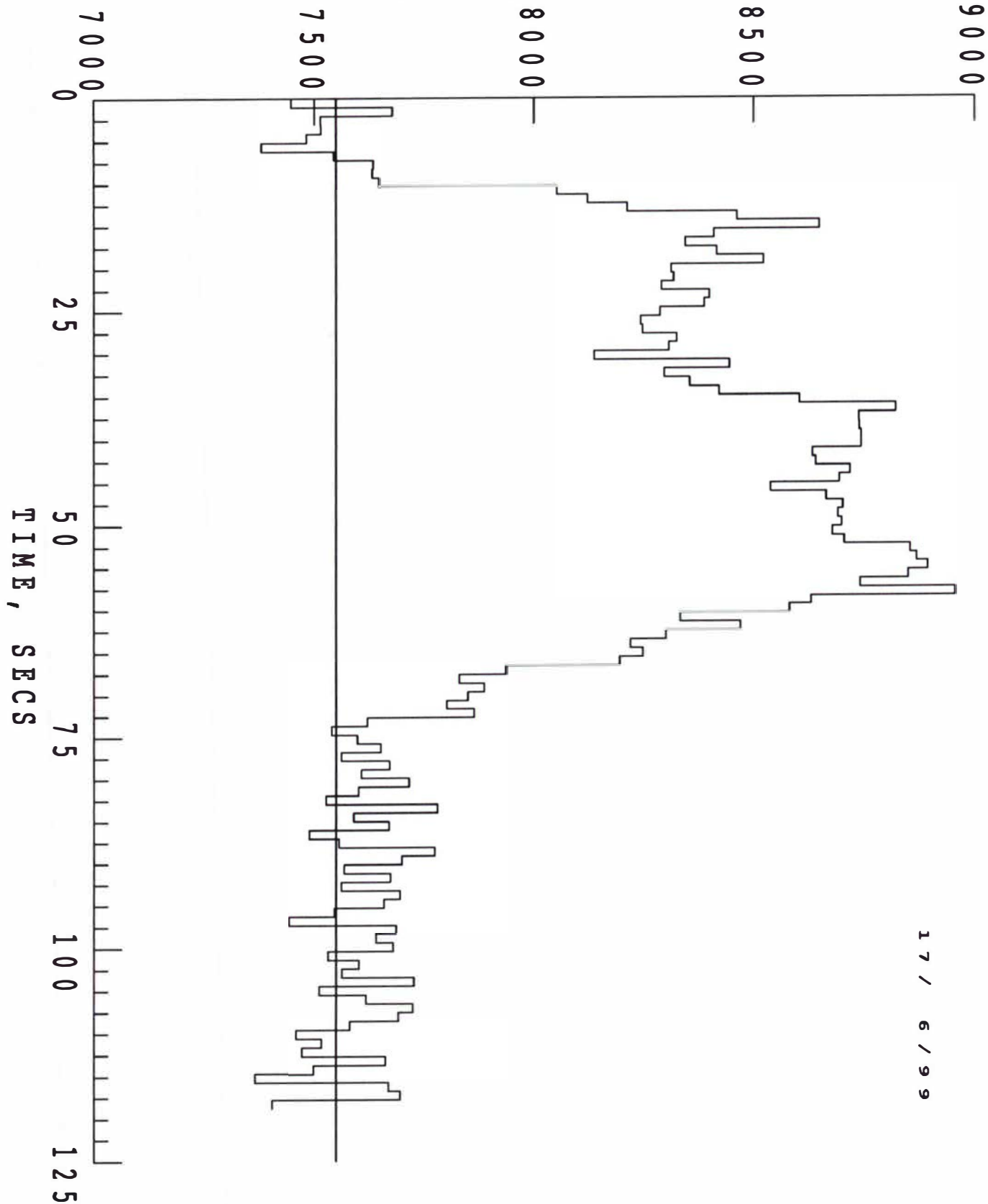
>4.0 SIGMA FLUCTUATIONS



BACODINE 7609 18/06/99 14025.465

25- 100 keV

COUNTS/1.024 S



17 / 6 / 99

KONUS RI

29 / 11 / 99

ULYSSES RT

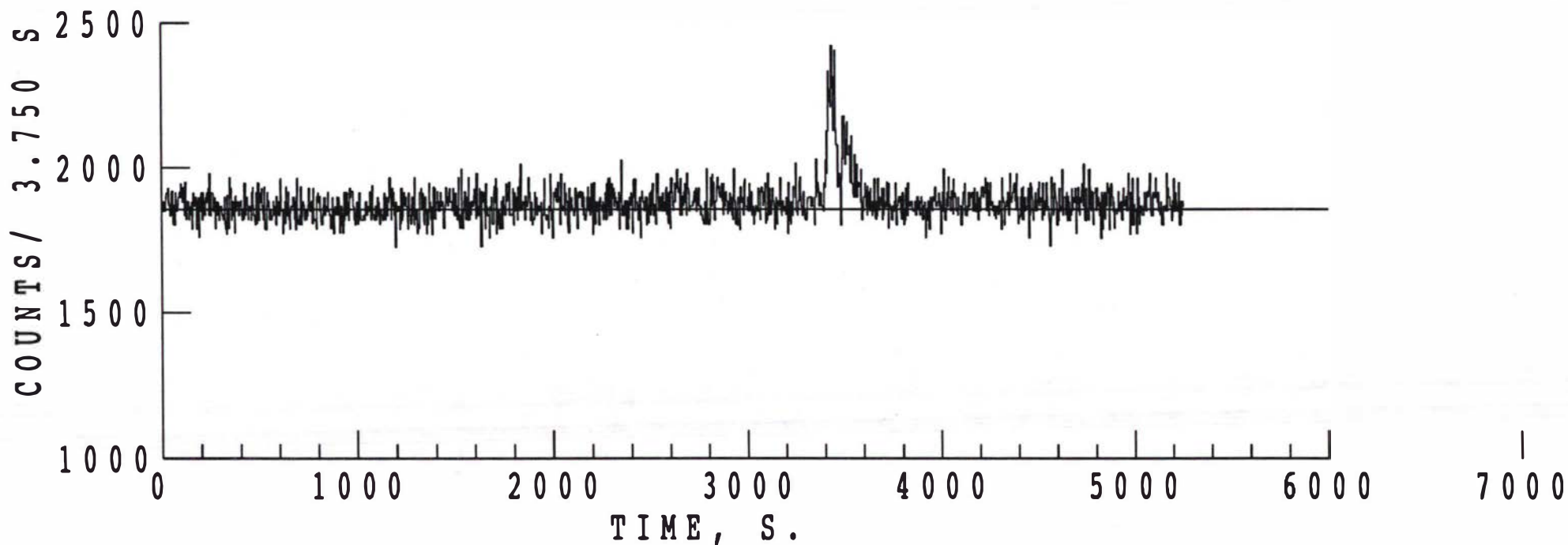
18 / 6 / 99 27432.117 s

0.250 S INTERVALS REGROUPED BY 15

0 - 0 keV

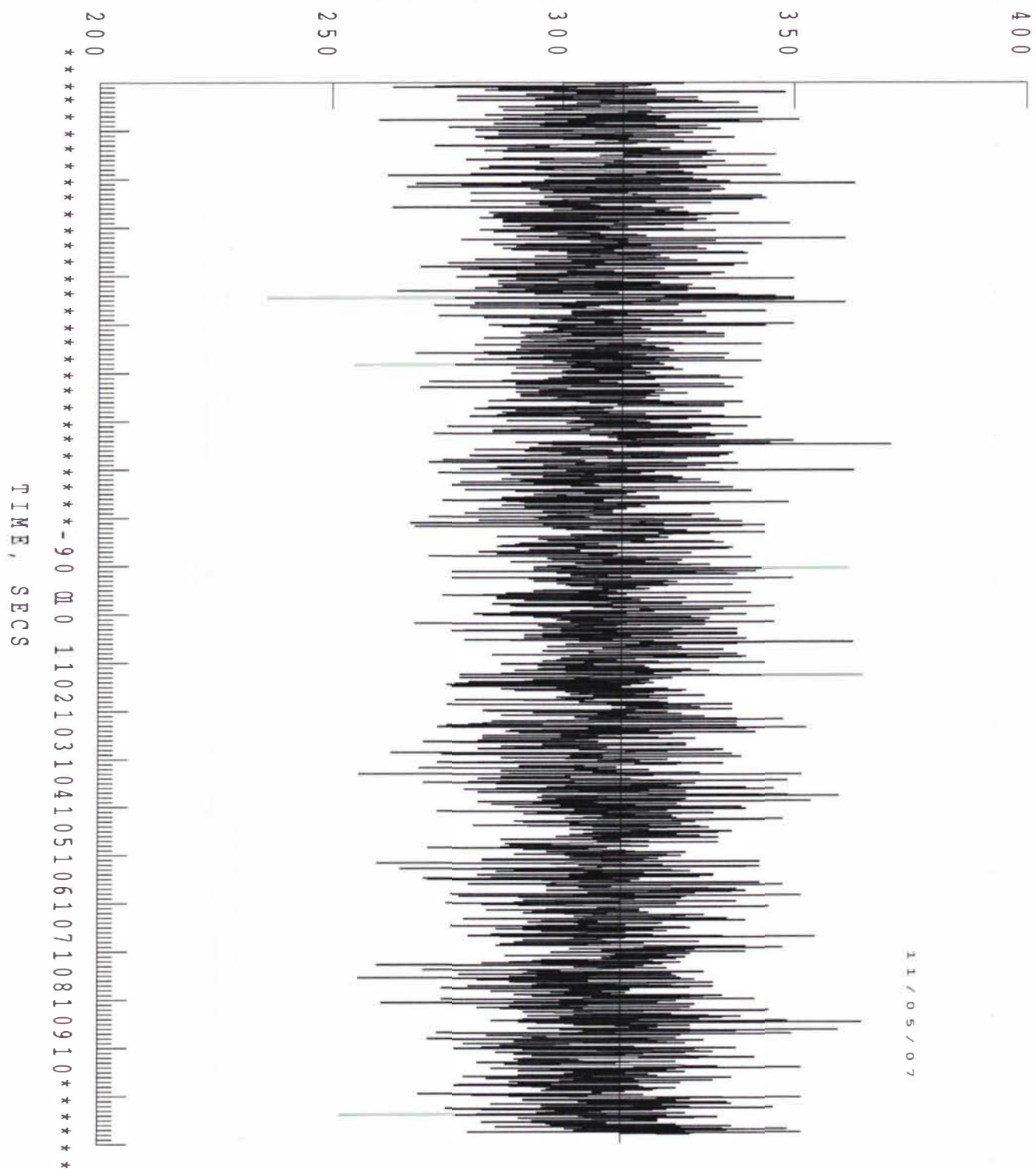
*0.25 s long event
in KONUS.*

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



3 7 6 5 2 . 0 0 0

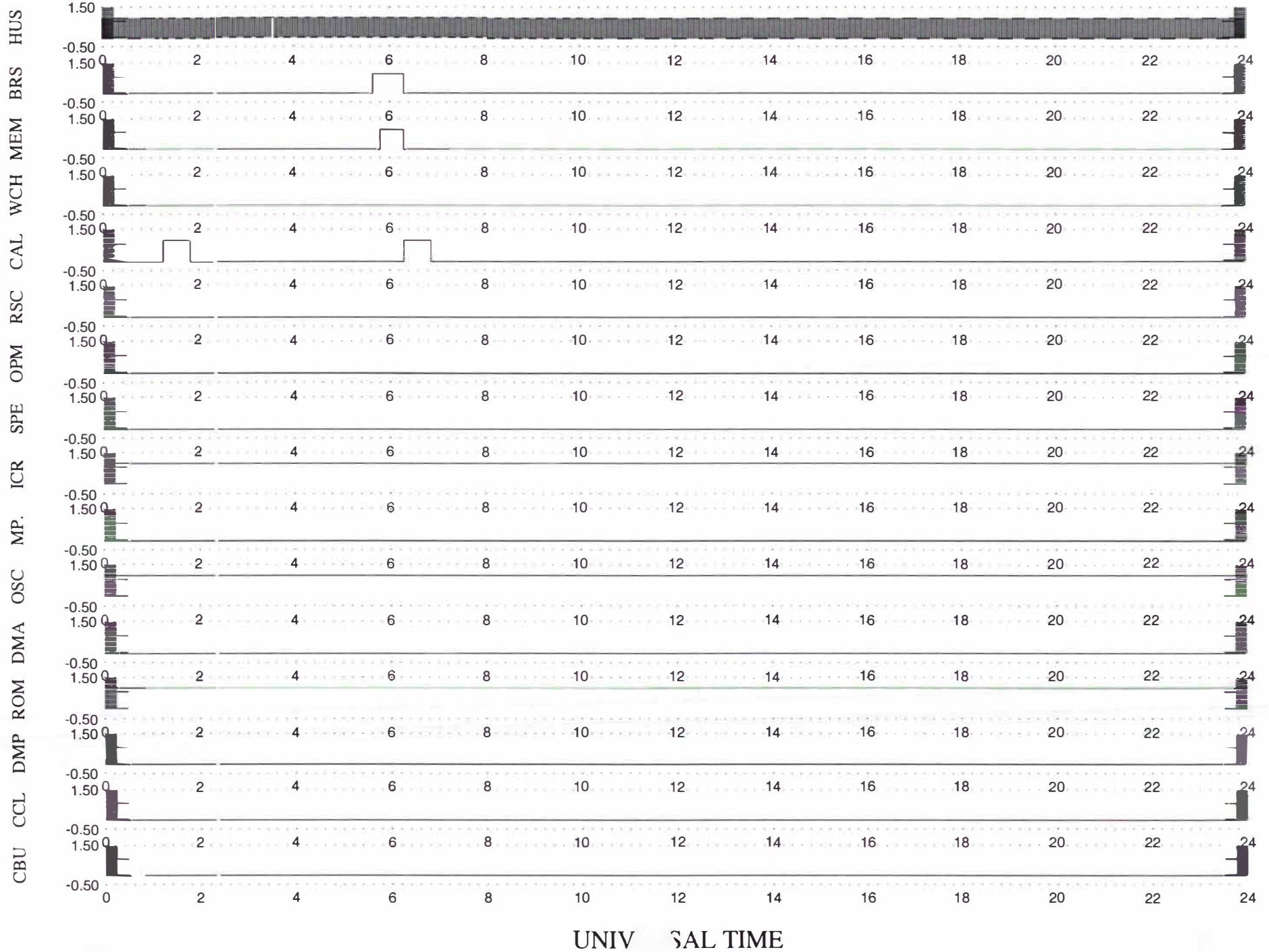
COUNTS / 1.000 S



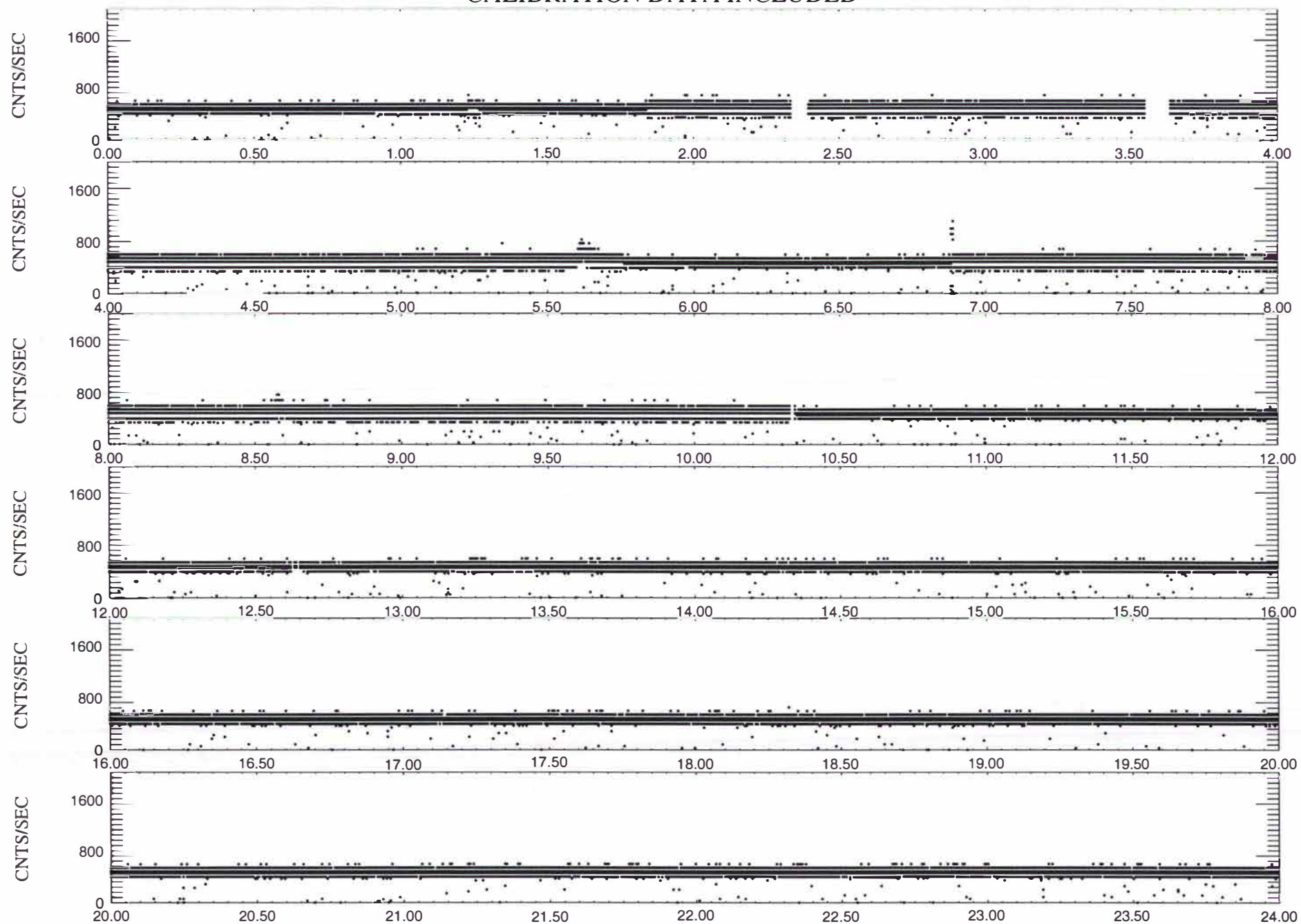
ГРБМ

11 / 05 / 07

BURST NUMBER 12

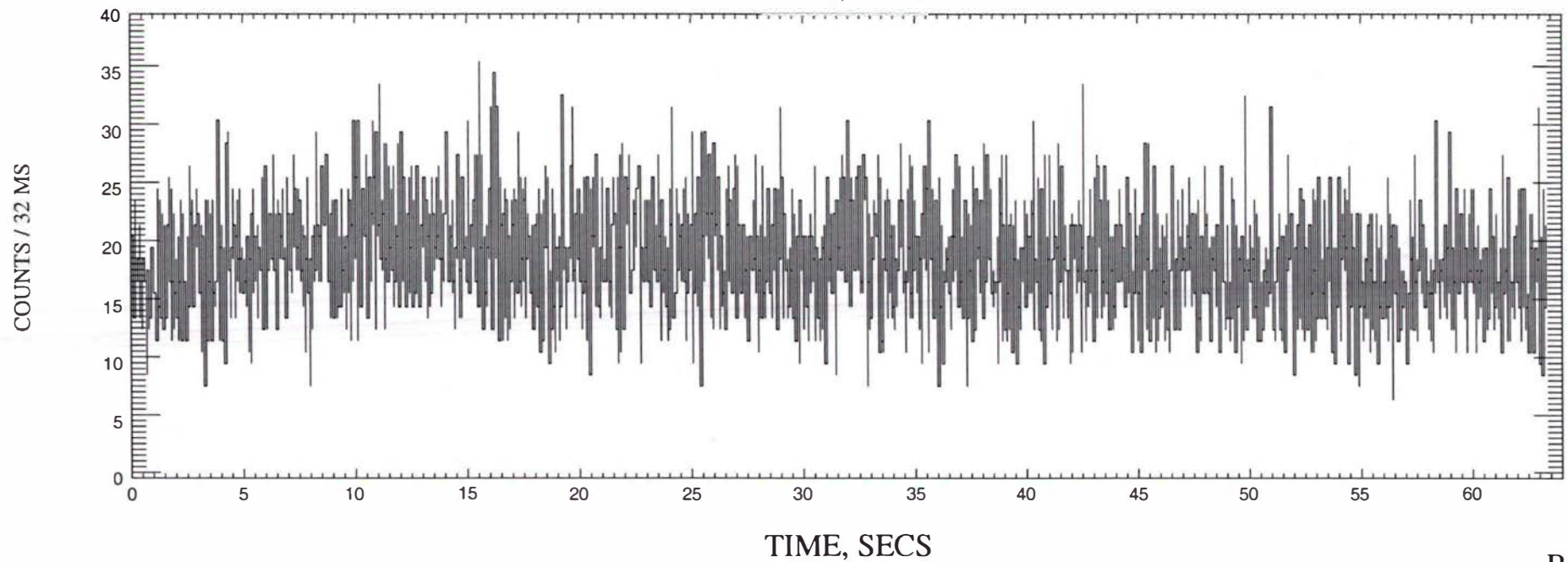
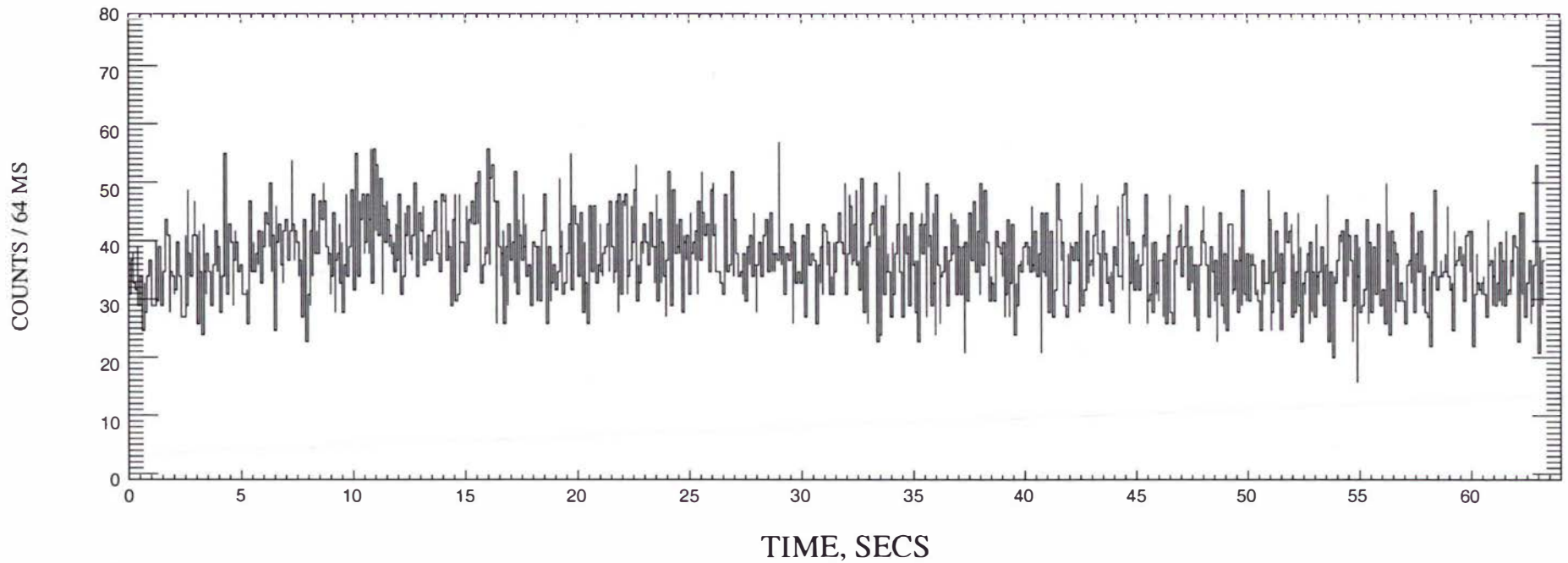


CALIBRATION DATA INCLUDED

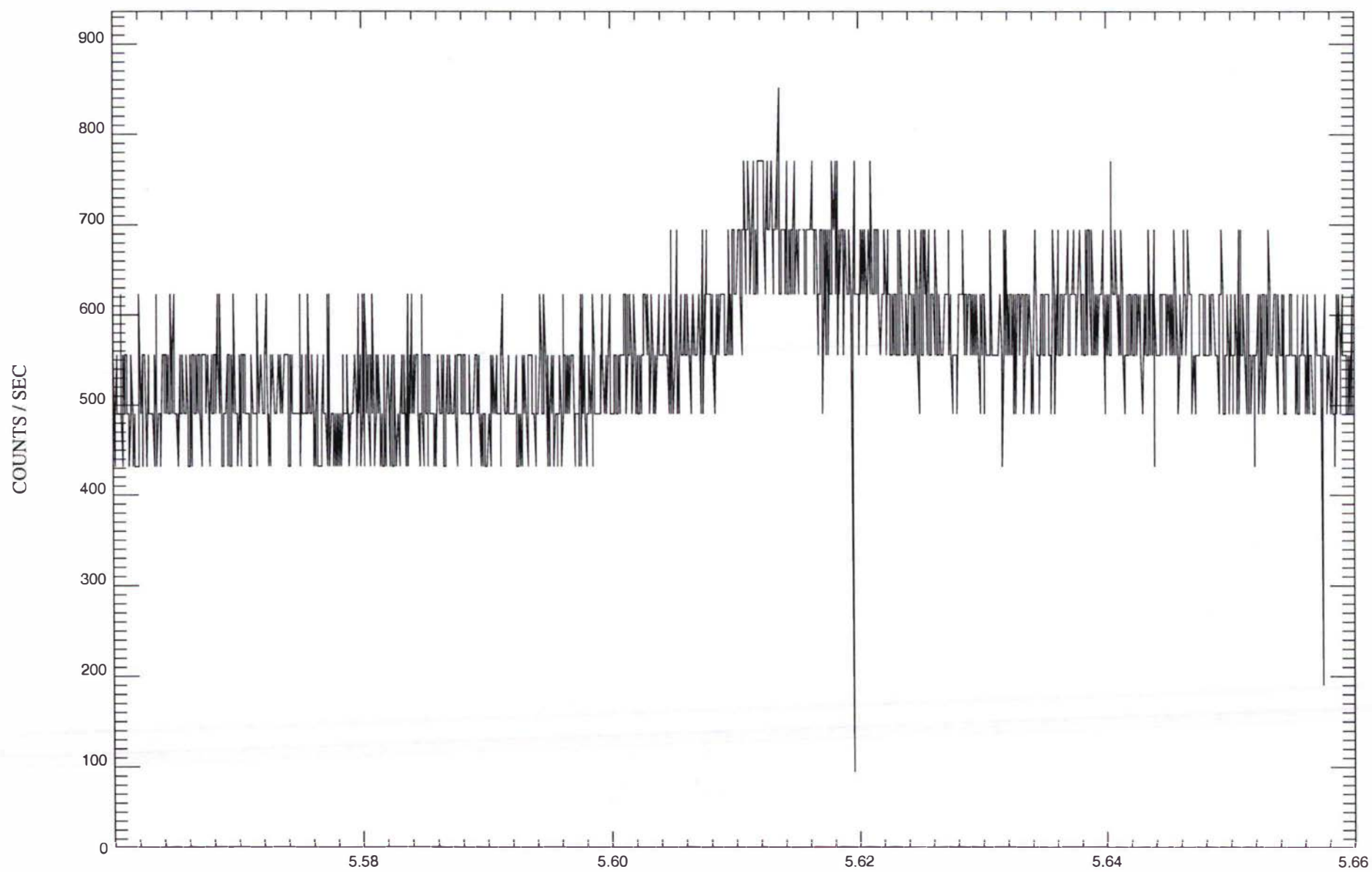


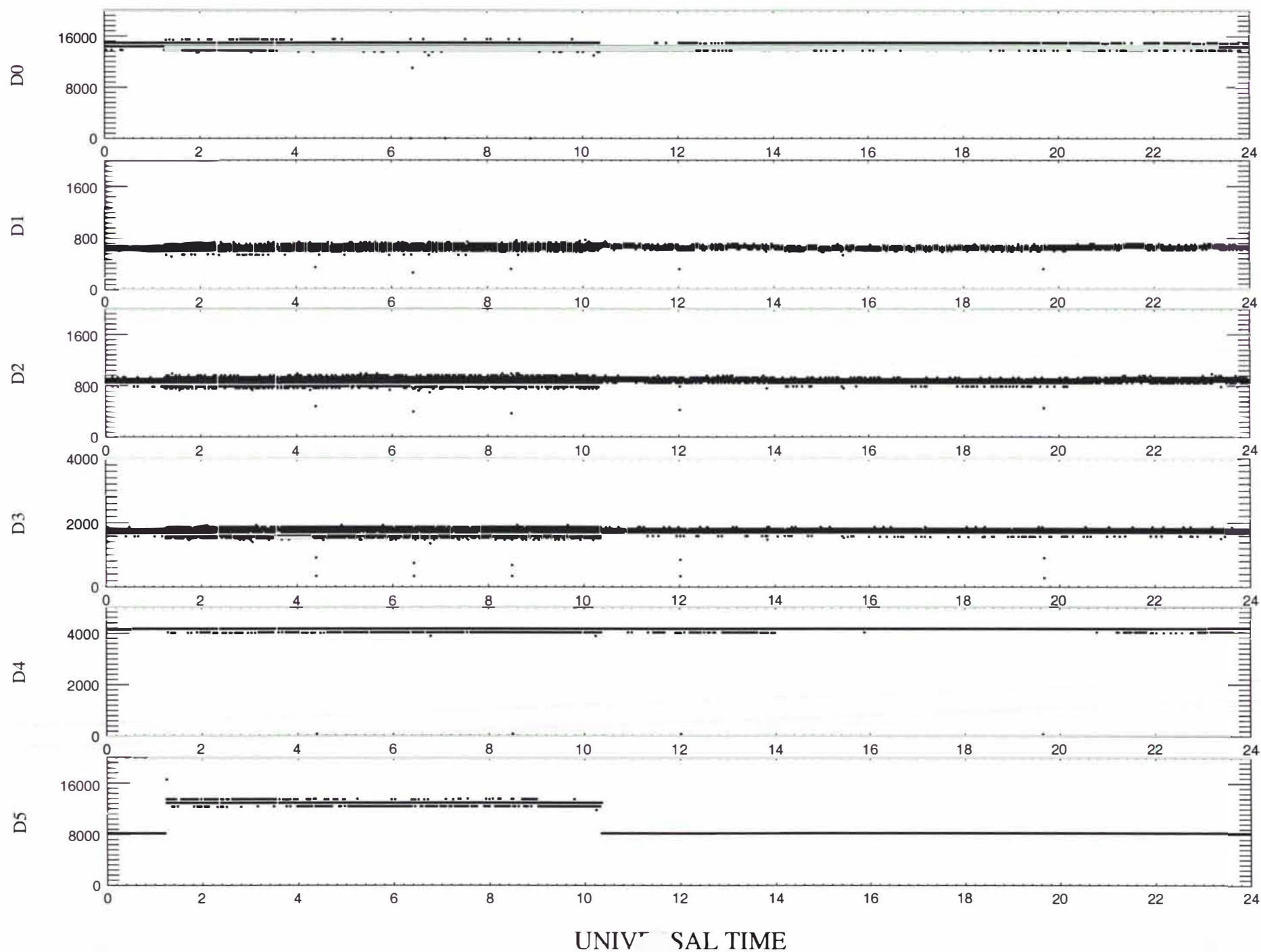
UNIV SAL TIME

Burst Counter 12 at UT= 5.611190473768 h=20200.286 s 05:36:40.286



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Tue Jun 22 13:31 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Tue, 22 Jun 1999 15:32:24 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7610

BATSEARCH PROGRAM

BATSE BURST # 7610
EVENT OF 1999 JUN 19 DAY OF YEAR=170
EVENT CROSSING TIME AT BATSE : 46922. S. OR 13:02:02.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 223.000 -42.000
BATSE PEAK COUNTING RATE: 30000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 19/ 6/ 99 IS:
RA= 145.414 DEC= -7.191 DIST= 5.193 AU
BATSE-ULYSSES DISTANCE = 776919215. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=104.02 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -627.81 SECS.
CROSSING TIME AT ULYSSES IS 46294. S. OR 12:51:34 +/- 476.99 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 19/ 6/ 99 IS:
RA= 203.636 DEC= -10.715 DIST= 0.746 AU
MARS-BATSE DISTANCE = 111674416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=144.42 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -302.96 SECS.
CROSSING TIME AT MARS IS 46619. S. OR 12:56:59 +/- 33.03 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7610	990619	11348	46922	30000	223	-42	12

BATSE BURST TRIGGER

NO.: 7610

TIME: TJD=1348 SECONDS=46922

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 40.1 AZIMUTH=192.2 ERROR= 1.3 DEGREES

COMMENTS:

COMPLEX, DUR. APPROX. 12 S, STARTS AT APPROX. T-2 S, MAX AT APPROX. T+4.8 S.
VISIBLE ABOVE 300 KEV.

BATSE BURST# 7610

ULYSSES RT

11 / 11 / 99

19 / 6 / 99 45828.668 s

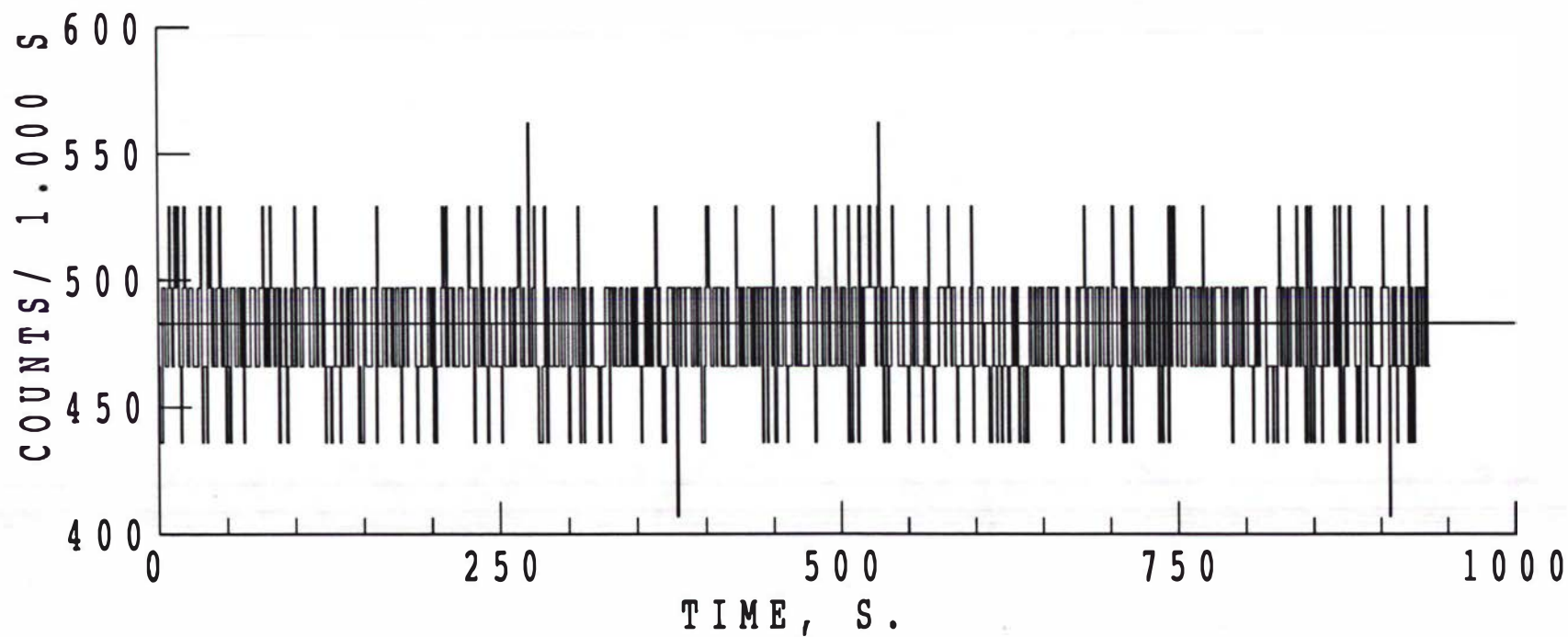
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



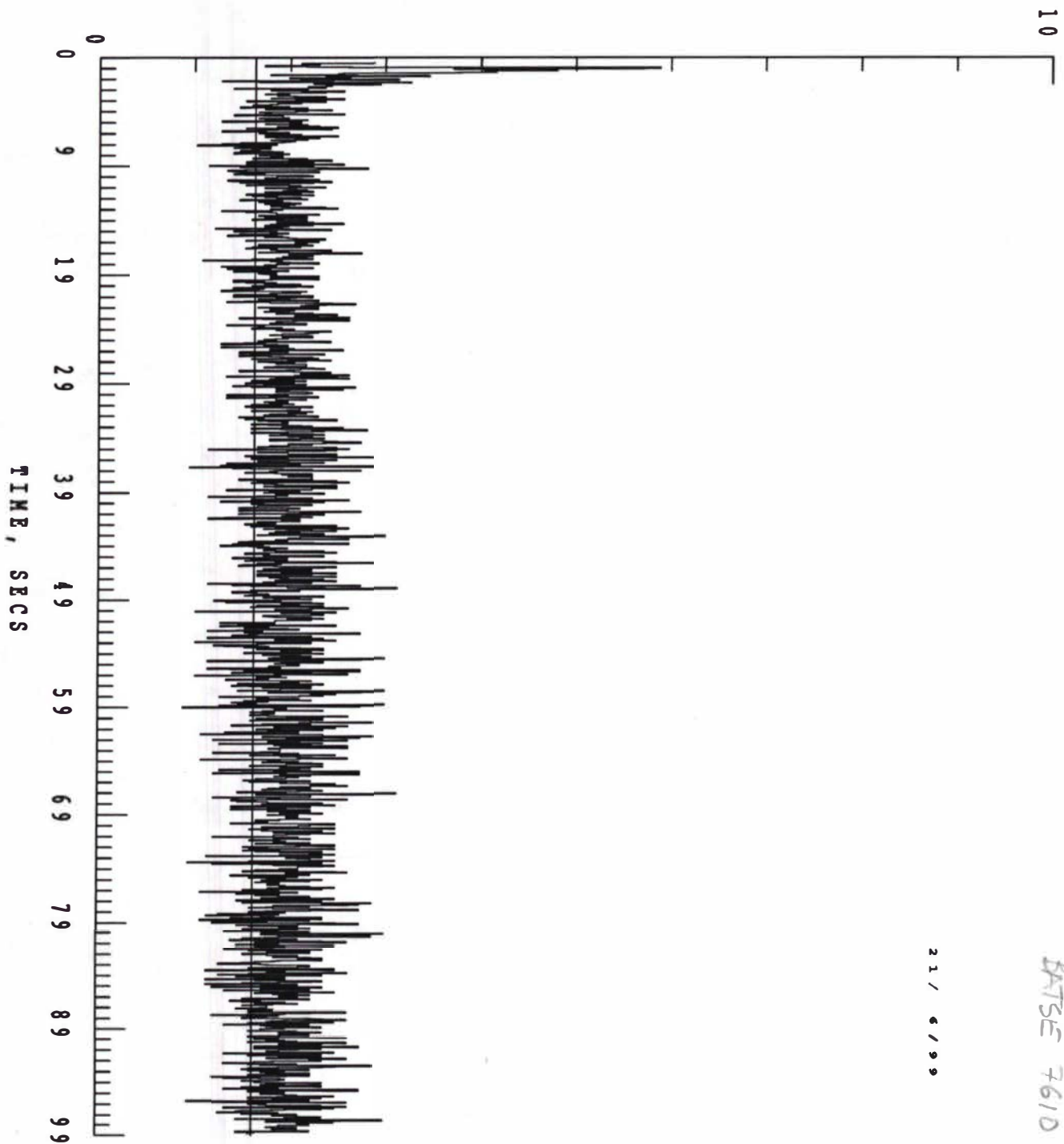
KONUS

19/06/99

46930.367

50 - 200 keV

COUNTS/0.064 S



BATSE 7610

21 / 6 / 99

Date: Sep 7 '05

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; when there is no data in the database, the ephemeris is for the time requested.)
- ☐ Was Mars-blocking used?
- ☐ For cruise phase data (April – October 2001), was the updated data used? (Old data has timing errors)

2. For 3 Spacecraft events

- ☐ $\Sigma 3\Delta t$'s calculated?

3. For INTEGRAL events

- ☐ 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?

*Triggered data corrupted
Sergei thinks it could be solar, but it
arrives at U 1850, before K*

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

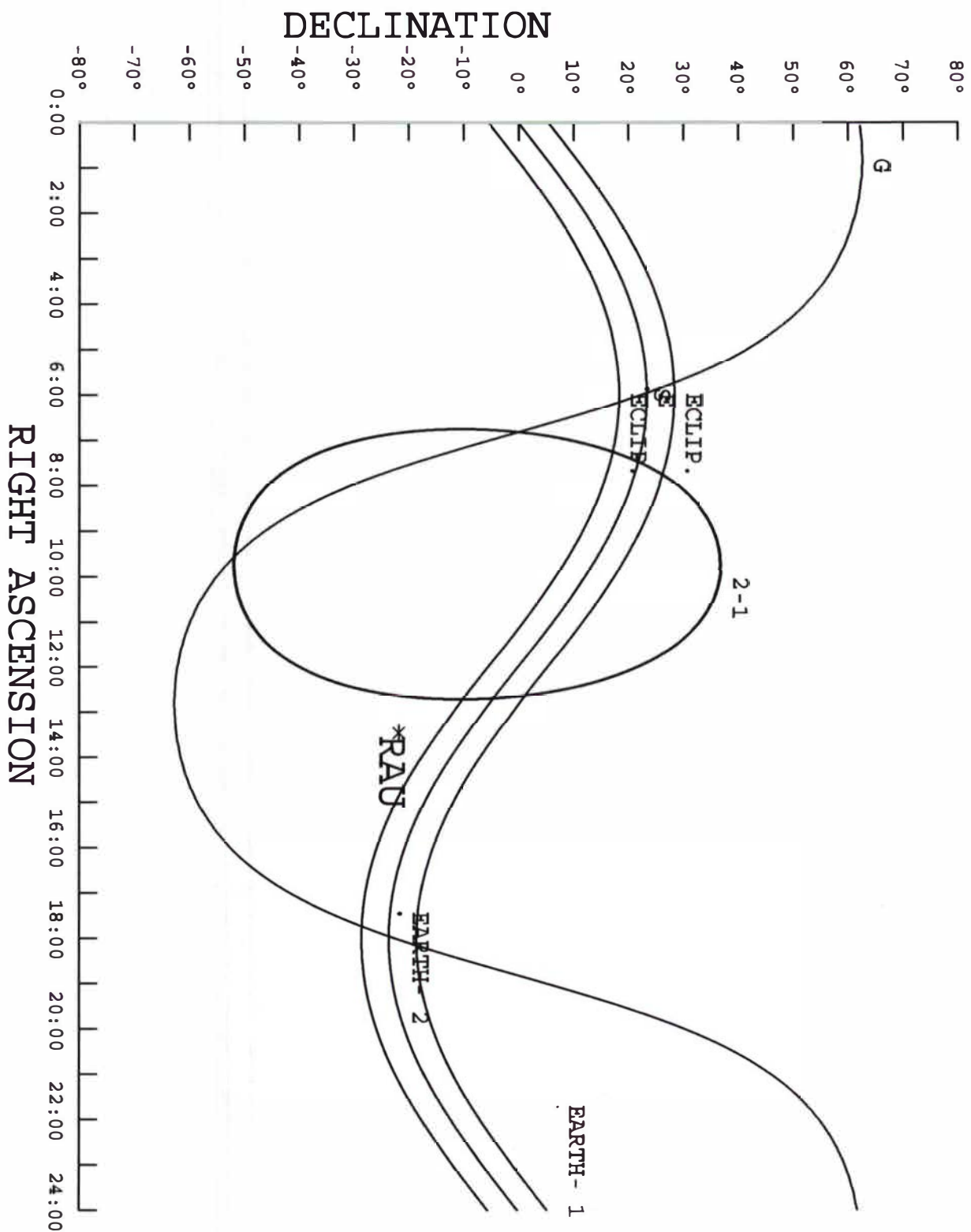
G=GALACTIC EQUATOR

1 ULYSSES

2 KONUS2

EVENT OF JUN 19, 1999 22:22

7 / 9 / 5



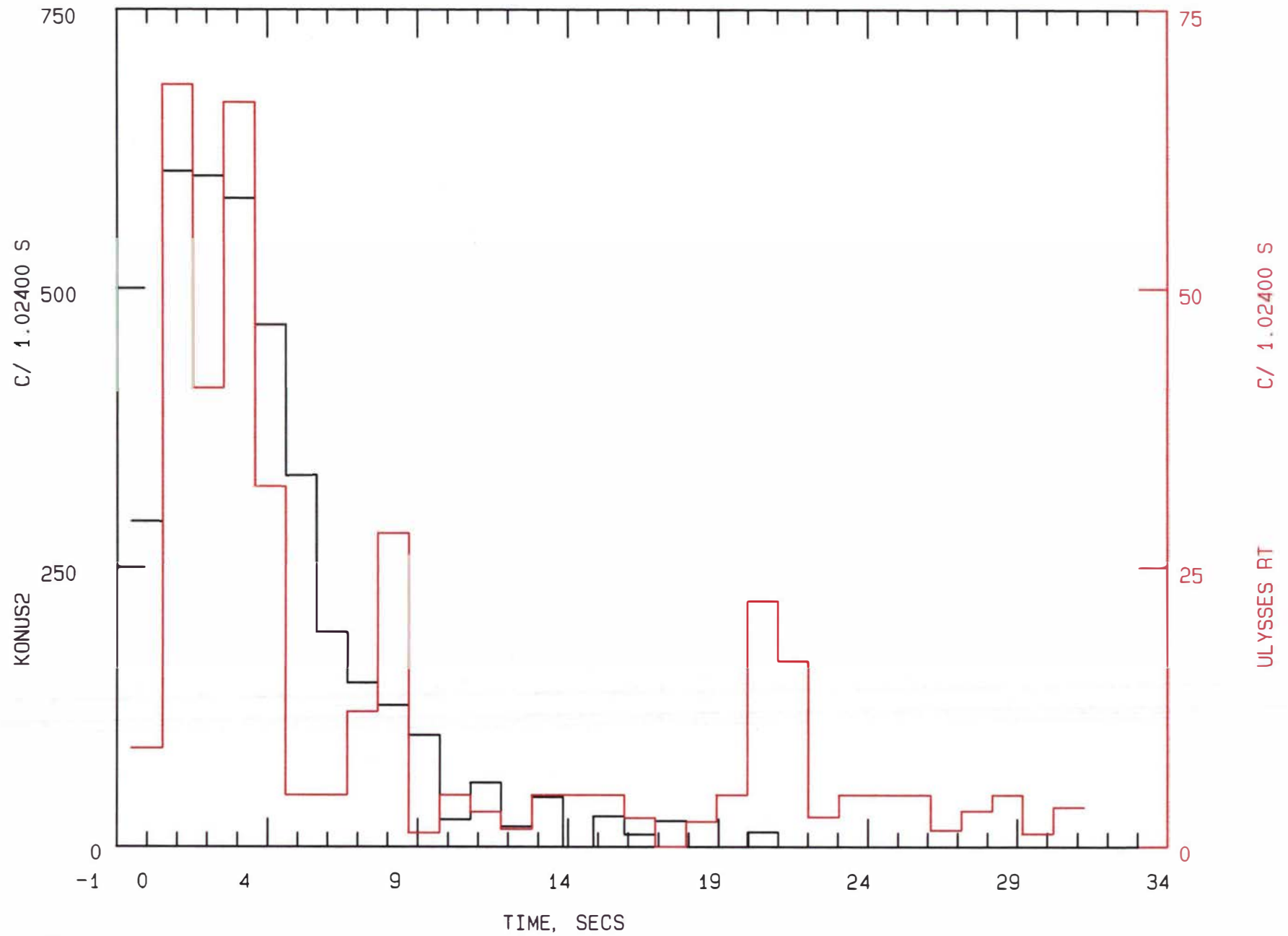
KONUS2

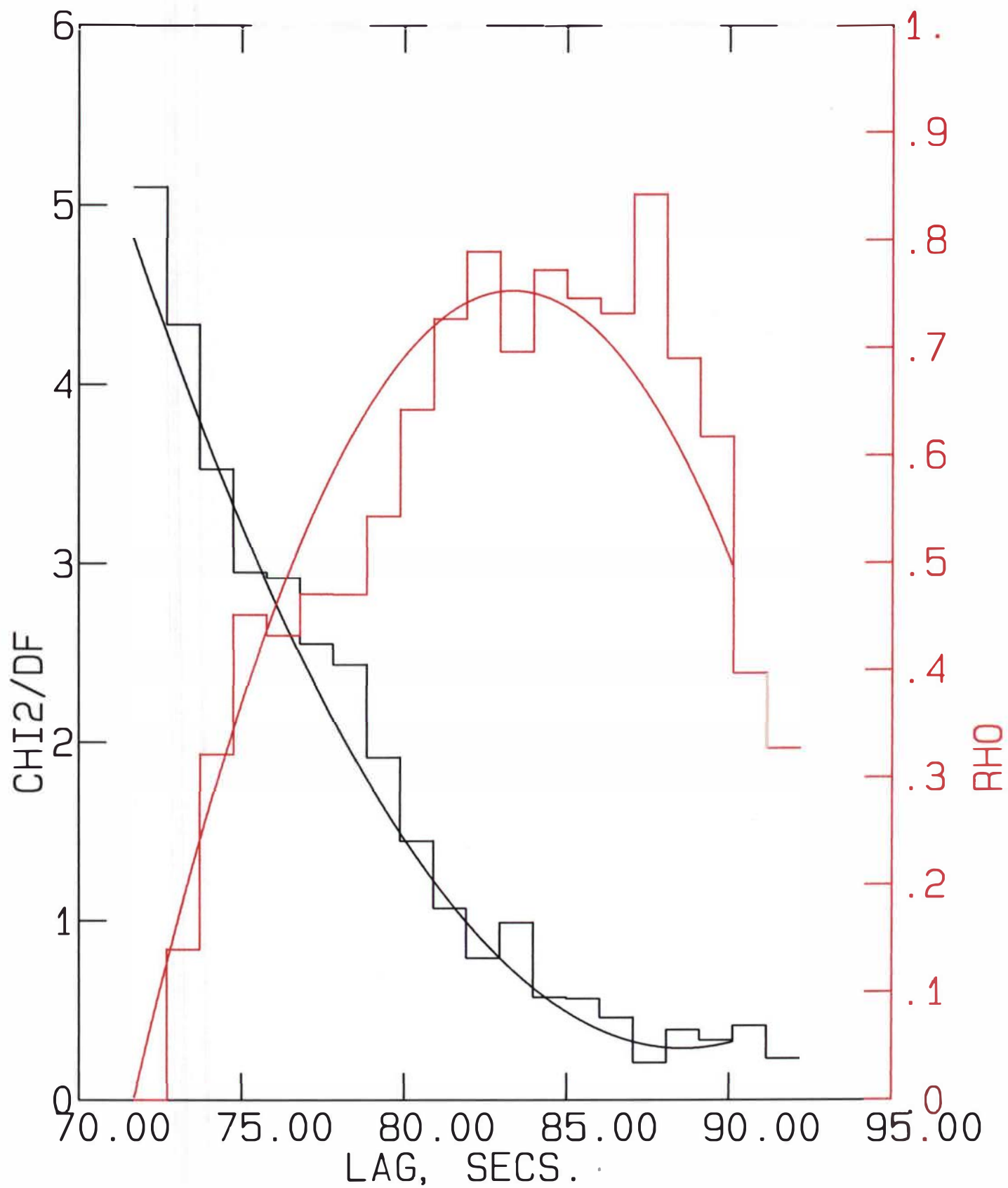
-ULYSSES RT CORRELATION

19/06/99

82485.359

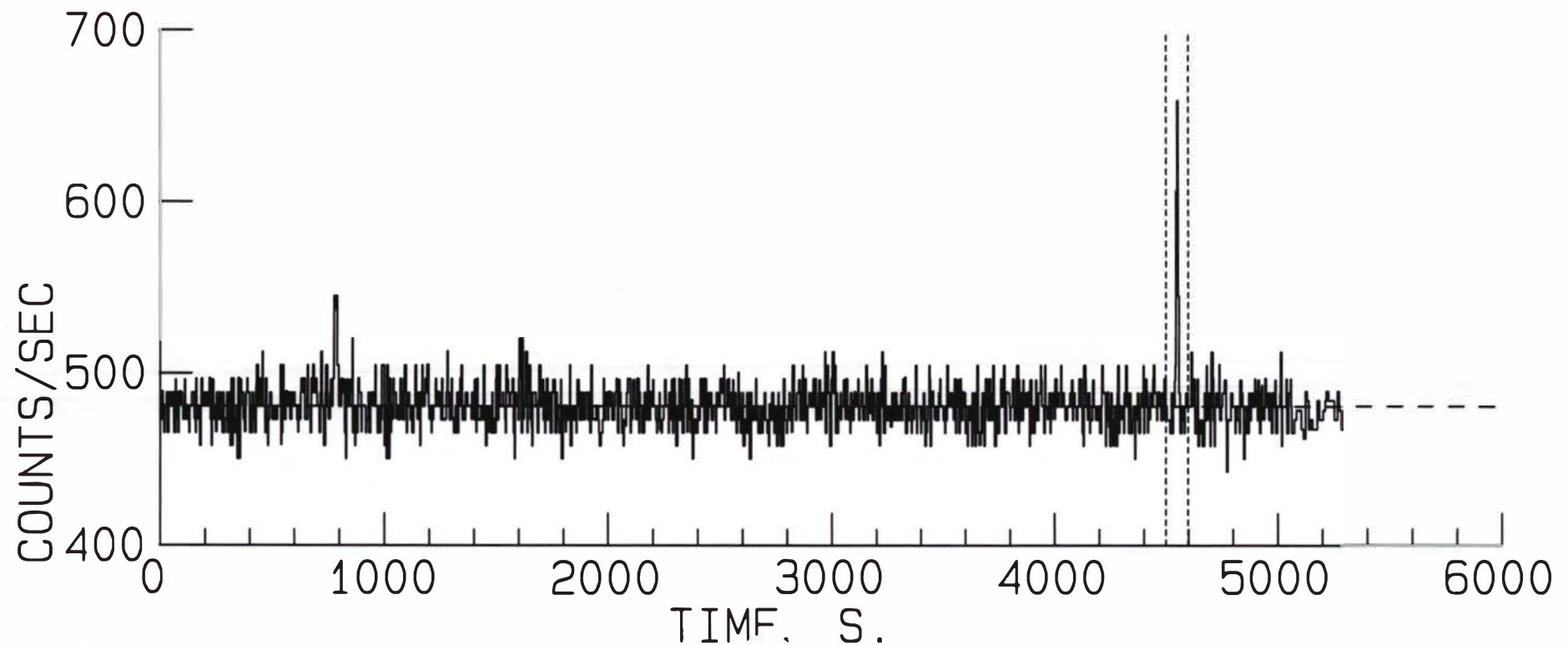
6/ 9/ 5





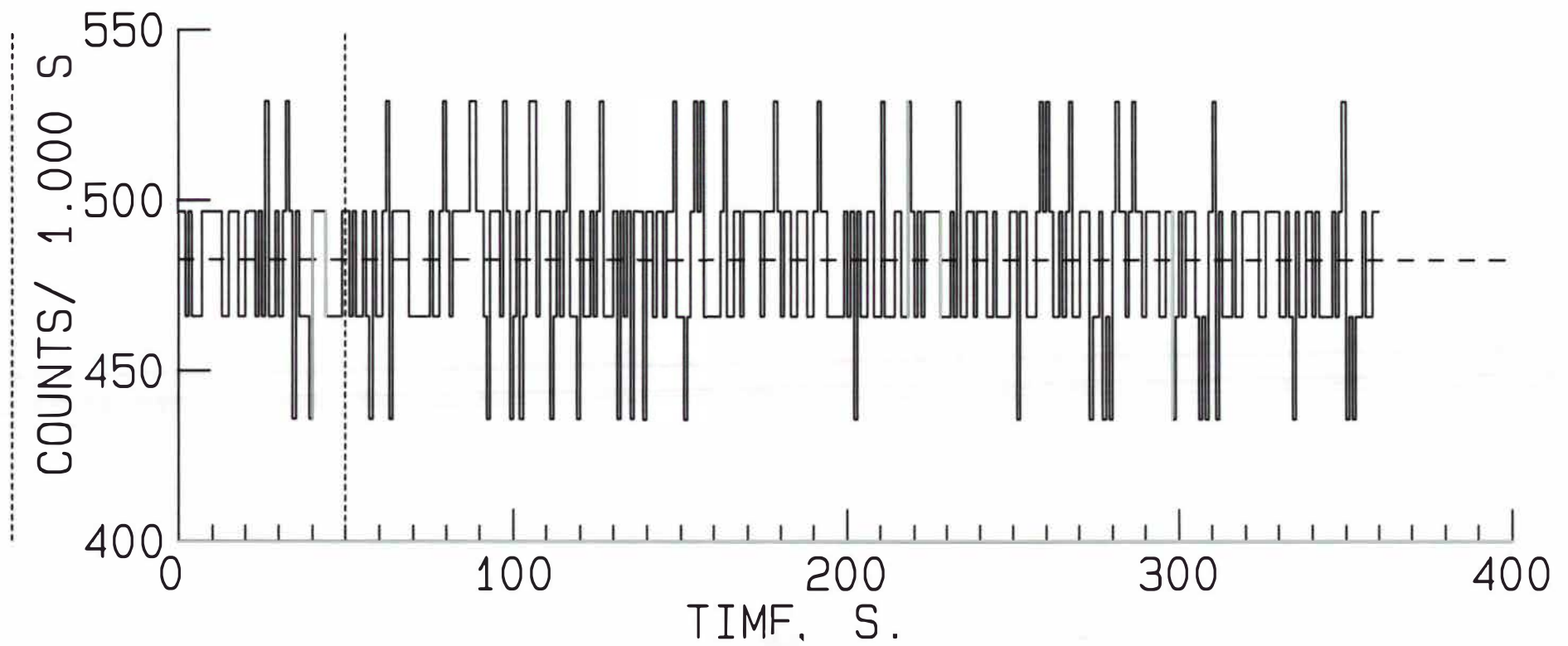
ULYSSES RT
19/ 6/99 79848.016 s
INTERVALS REGROUPED BY 4
22- 151 keV

6 / 9 / 5



ULYSSES RT
19/ 6/99 83700.047 s
22- 151 keV

6 / 9 / 5



KONUS

19/06/99

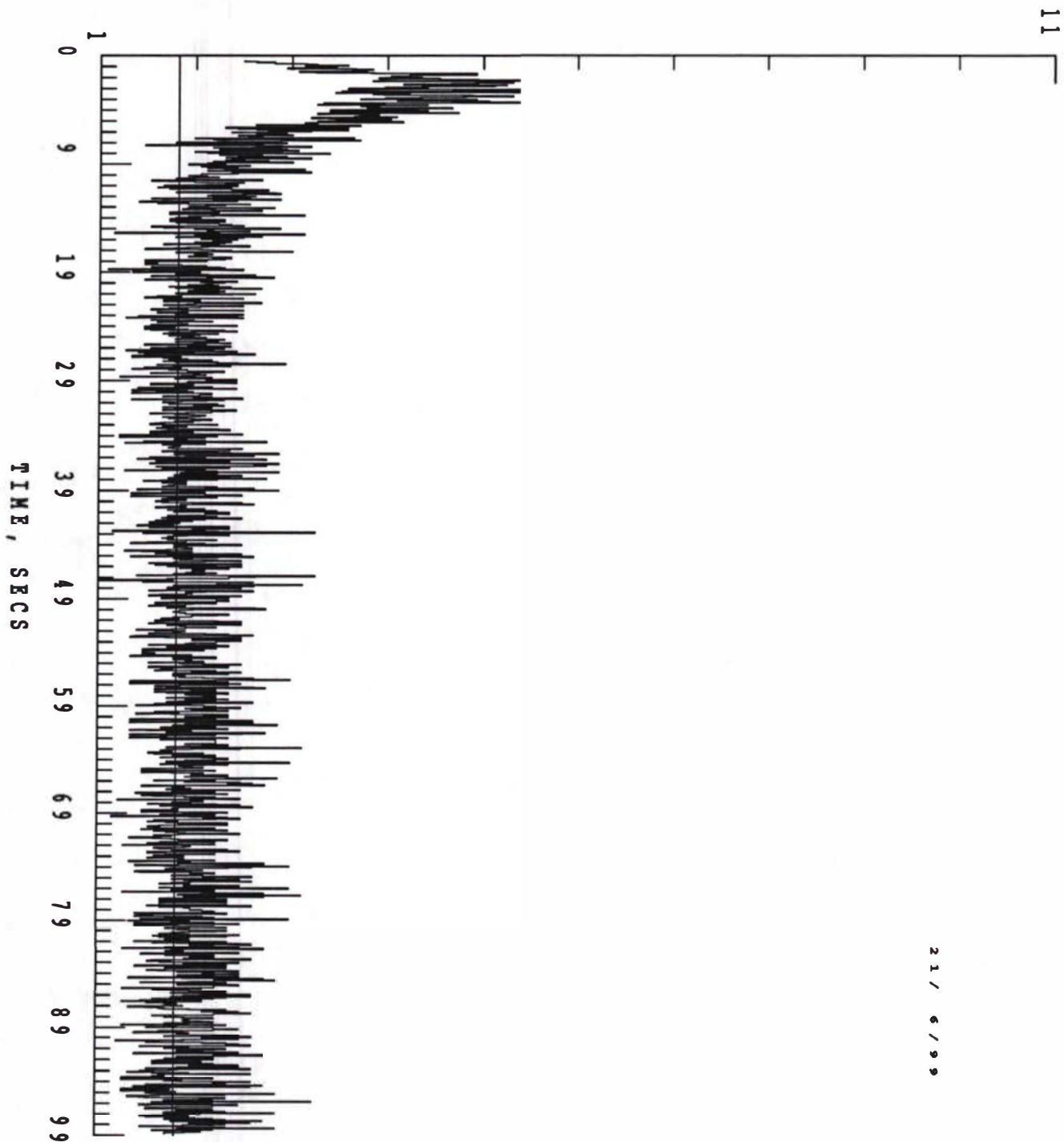
82485.359

50 - 200 keV

22:54:45

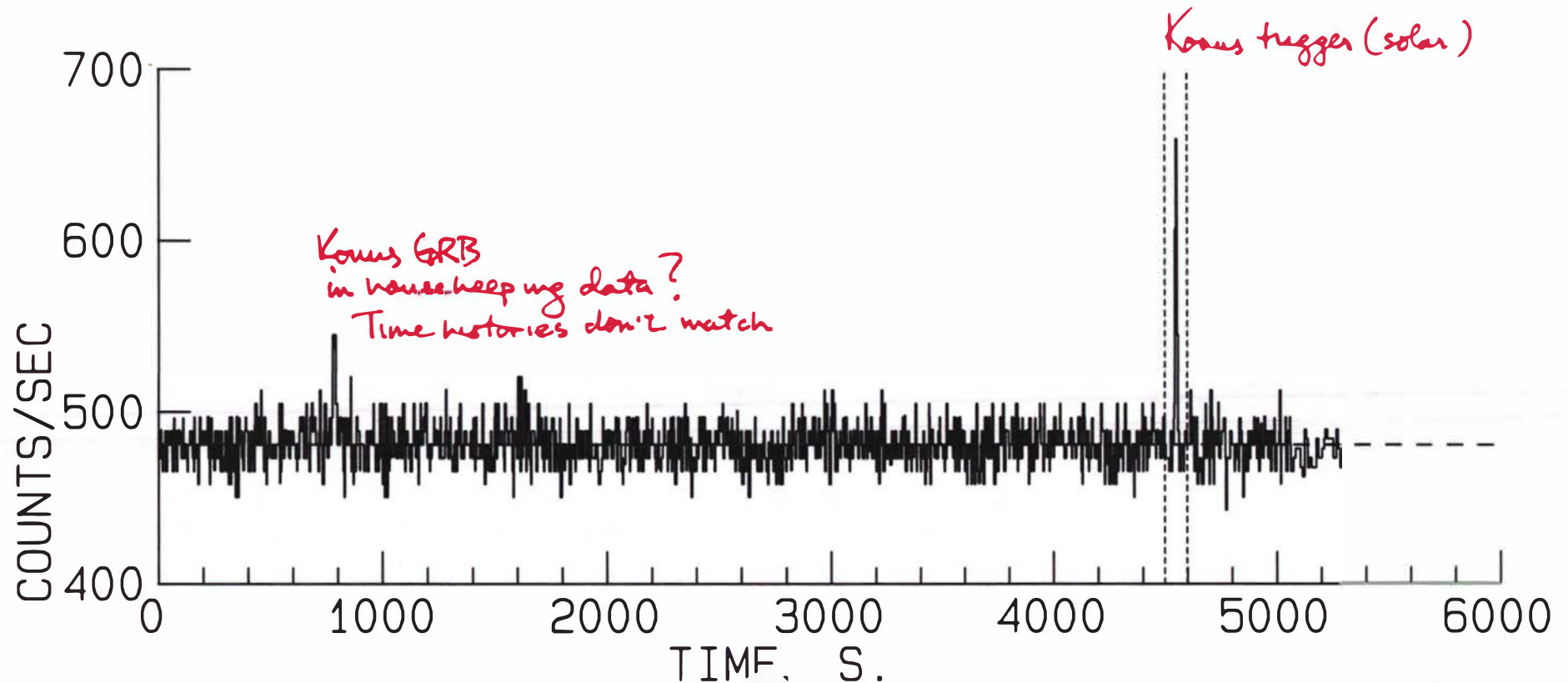
SOLAR

COUNTS/0.064 S



ULYSSES RT
19/ 6/99 79848.016 s
INTERVALS REGROUPED BY 4
22- 151 keV

27 / 9 / 5



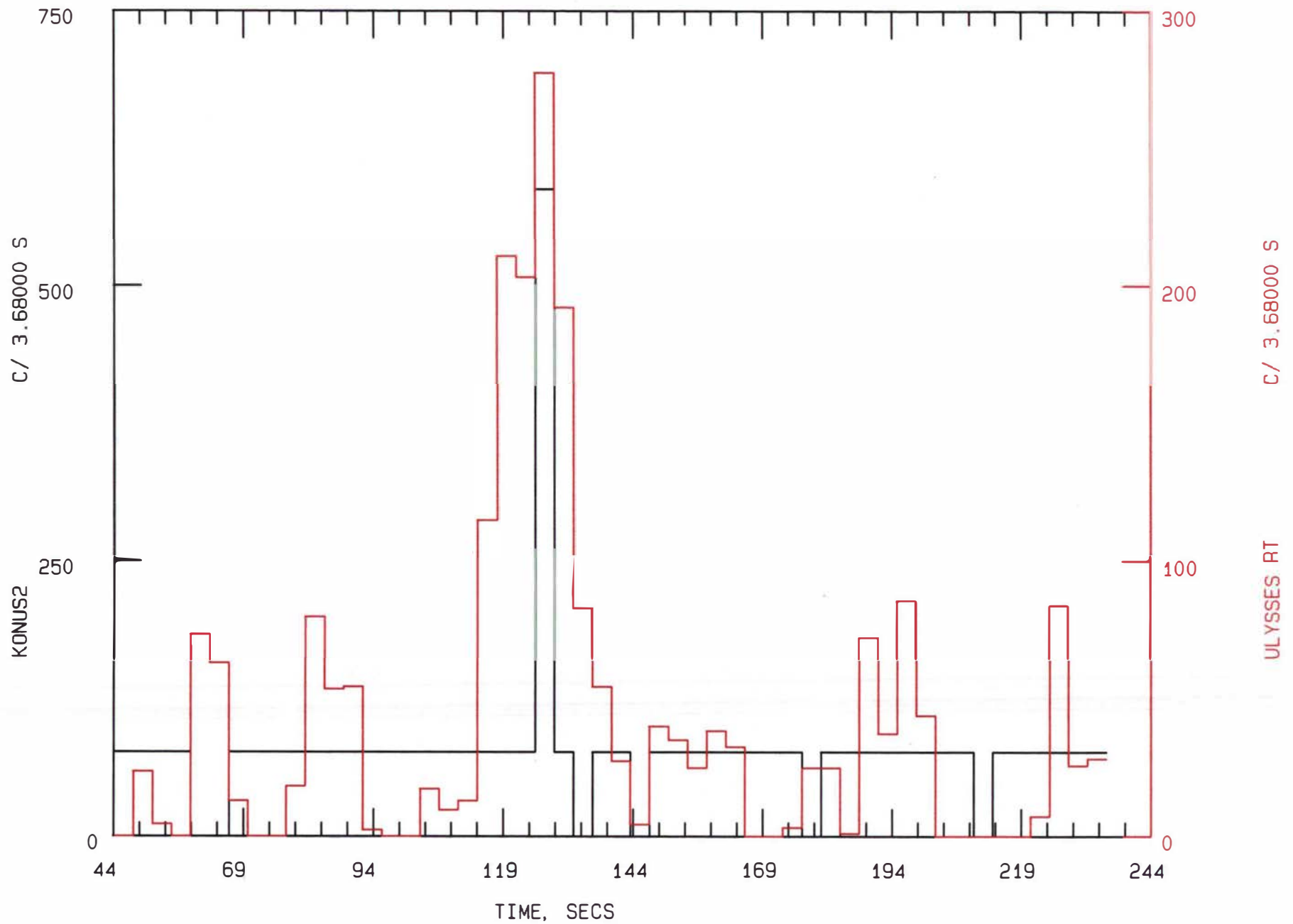
KONUS2

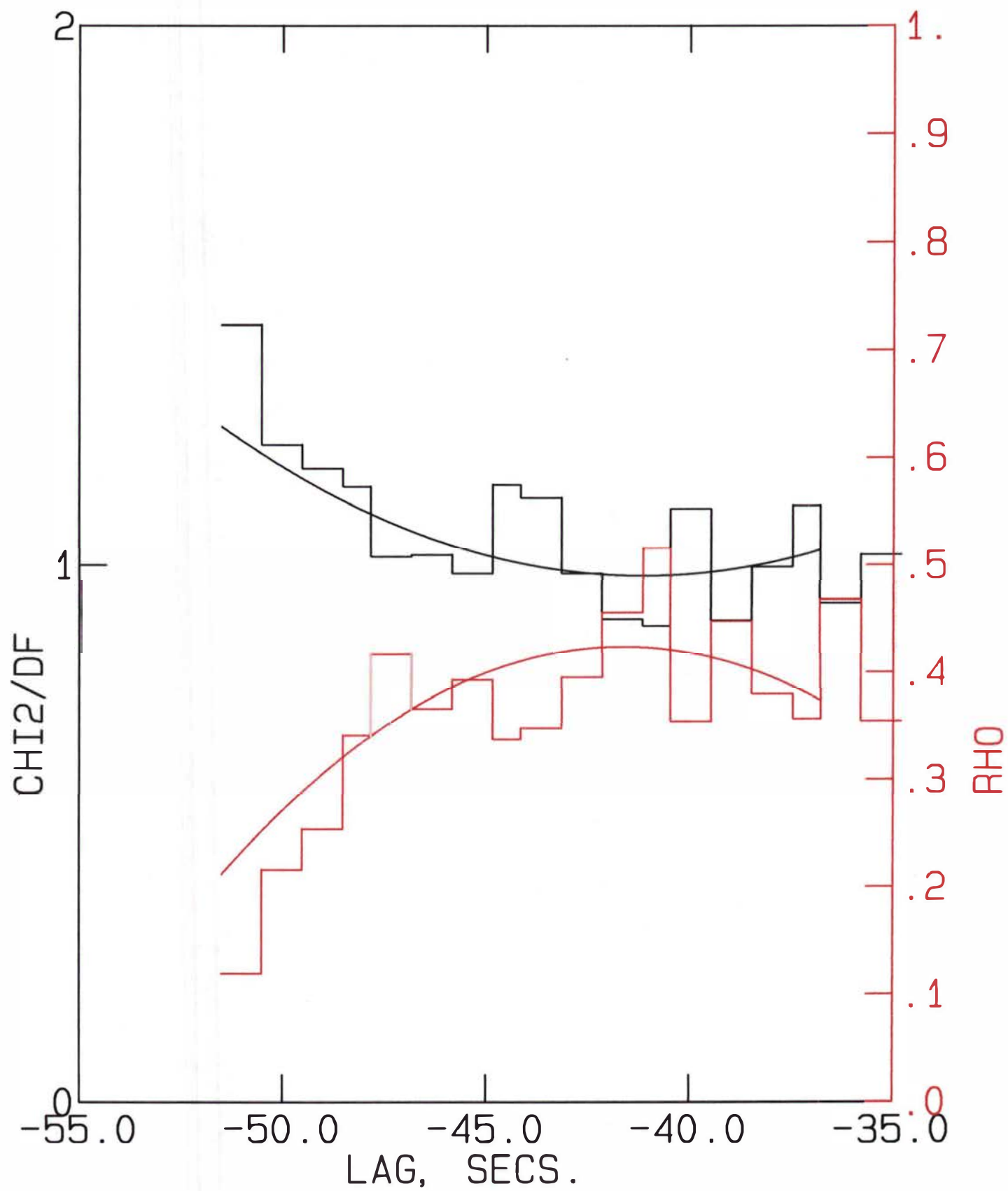
-ULYSSES RT CORRELATION

19/06/99

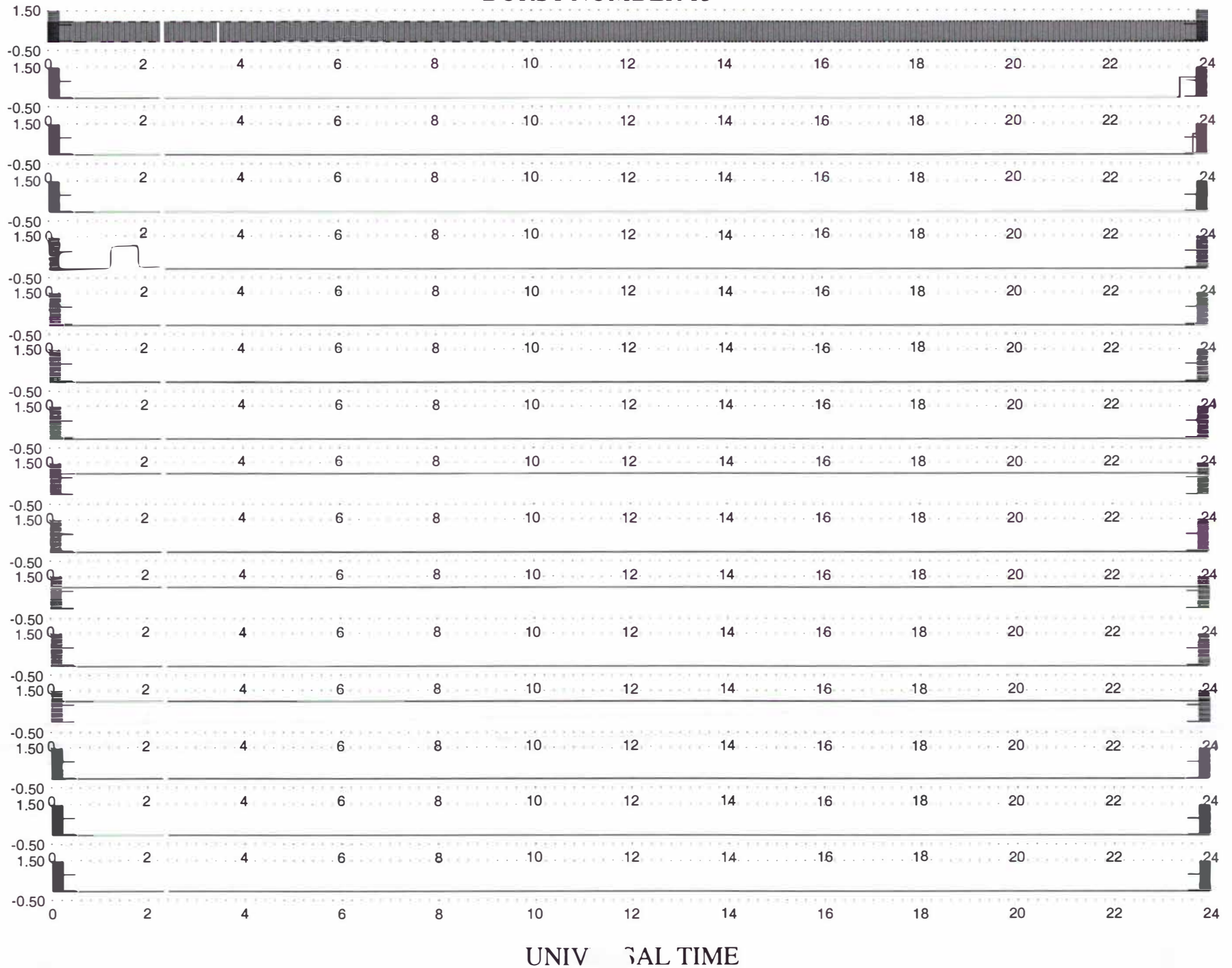
46803.770

27/ 9/ 5

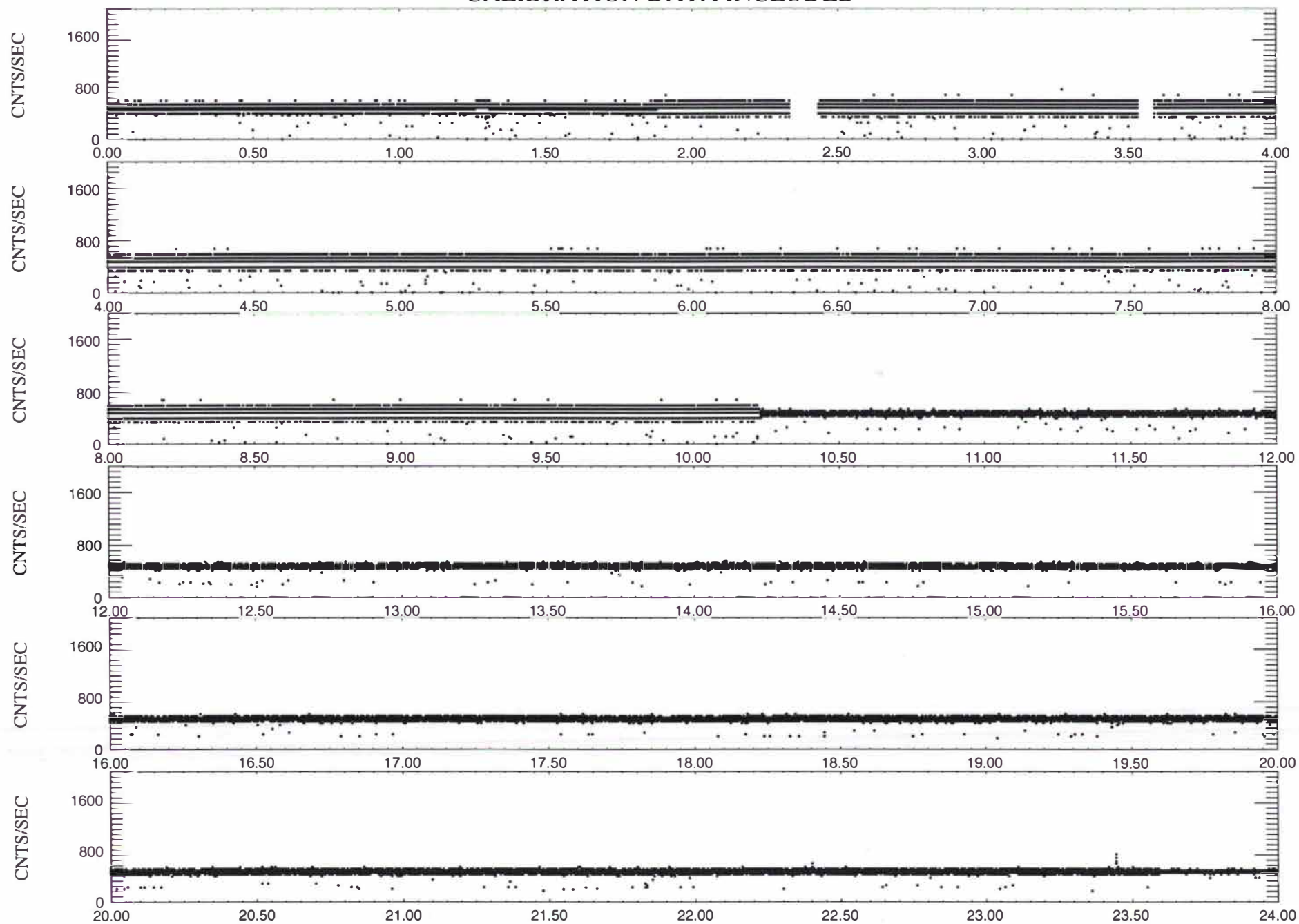




CBU	CCL	DMP	ROM	DMA	OSC	MP.	ICR	SPE	OPM	RSC	CAL	WCH	MEM	BRS	HUS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

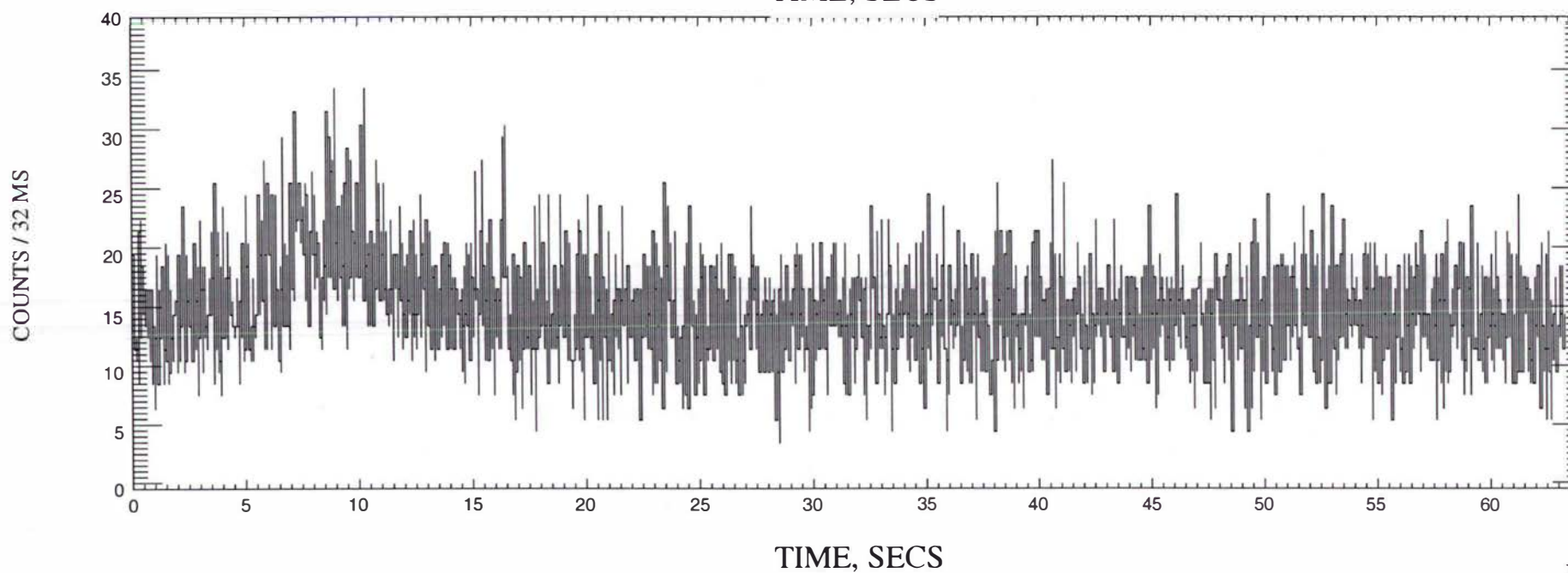
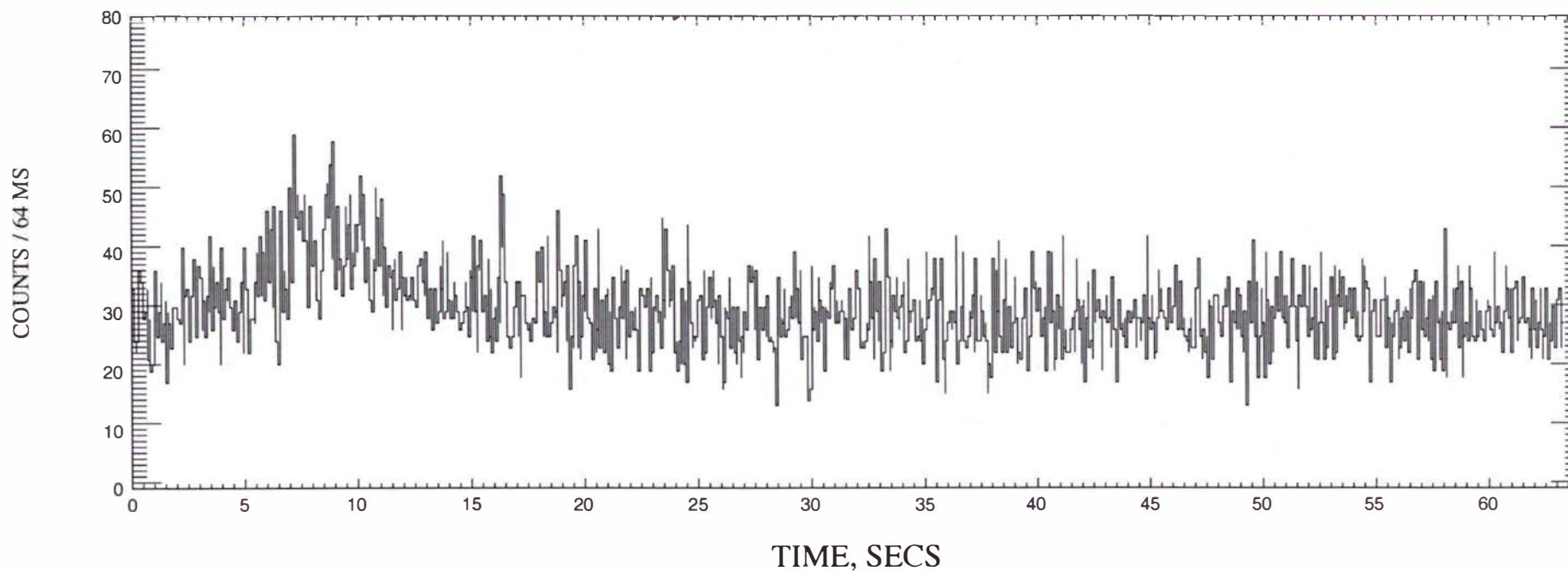


CALIBRATION DATA INCLUDED

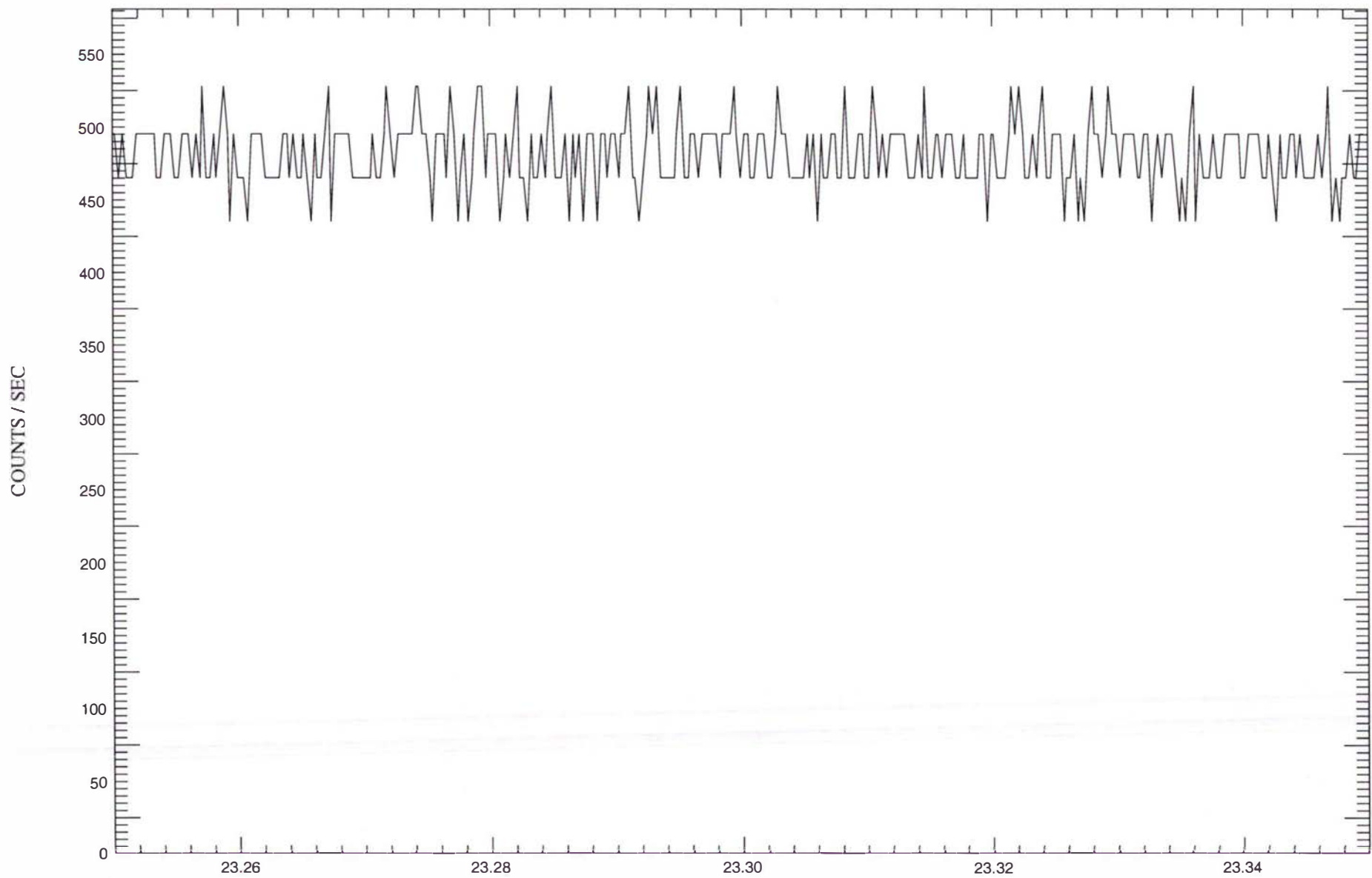


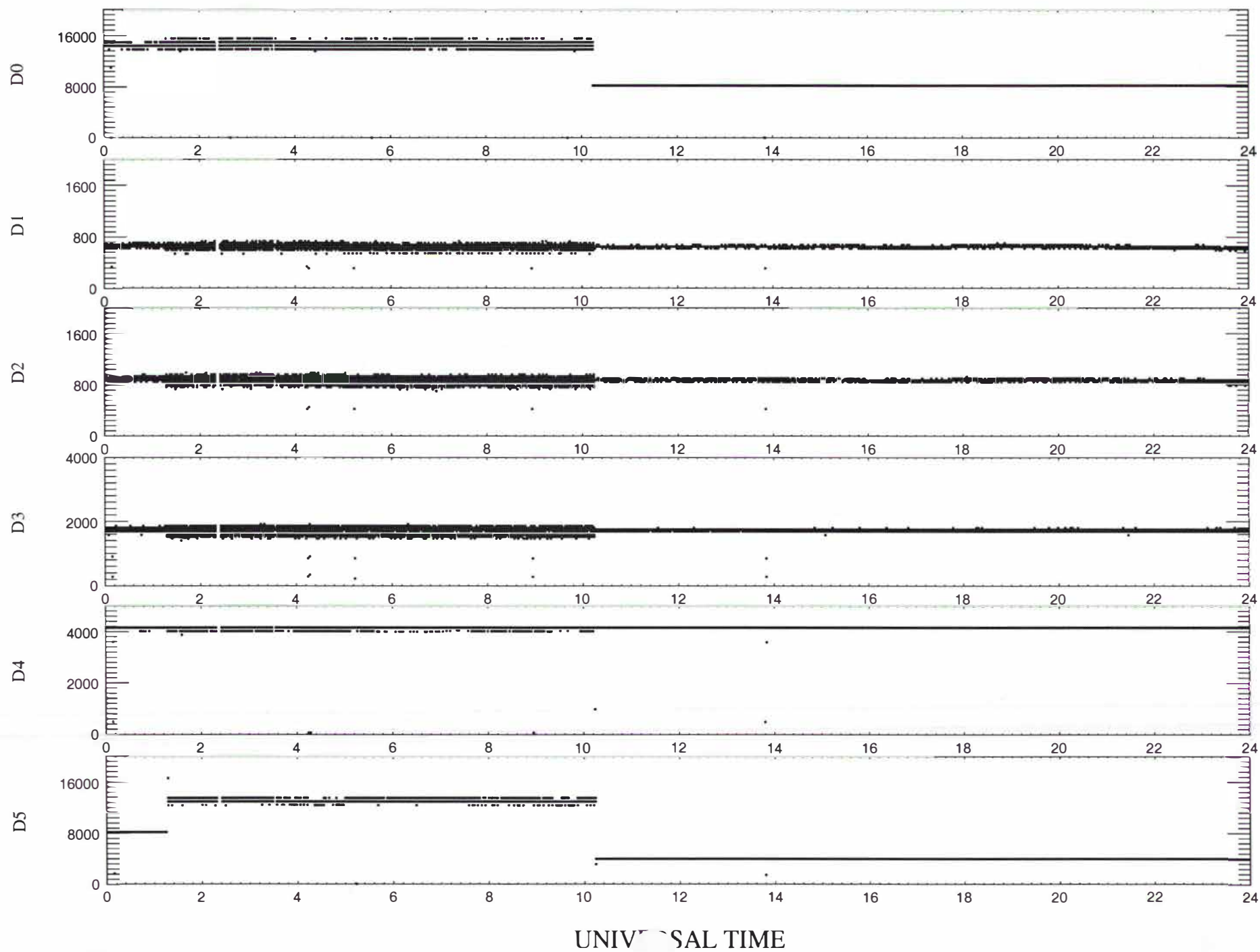
UNIV SAL TIME

Burst Counter 13 at UT=23.300776002672 h=83882.794 s 23:18:02.794



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Tue Jun 22 13:21 PDT 1999
Date: Tue, 22 Jun 1999 14:54:33 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.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, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7611 *Jun 20*

TIME: TJD=1349 SECONDS= 3526

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=104.3 AZIMUTH=351.3 ERROR= 1.7 DEGREES

COMMENTS:

GOES C1.9 SOLAR FLARE, NO OPTICAL IDENT. SINGLE EPISODE, DUR. GREATER THAN
25 S. NOT VISIBLE ABOVE 100 KEV. SPARSE DATA.

From SAHI@fender.msfc.nasa.gov Tue Jun 22 11:08 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Tue, 22 Jun 1999 13:05:28 -0500 (CDT)
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, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7612

TIME: TJD=1349 SECONDS=16539

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.5 AZIMUTH=351.7 ERROR=0.3 DEGREES

COMMENTS:

SOLAR FLARE. GOES. C1.4, NO OPTICAL ID. SINGLE PULSE WITH SUBSTRUCTURE,
DUR. APPROX. 60 S, STARTS AT T-10 S, MAX. AT T+2 S. NOT VISIBLE ABOVE 100 KEV.

Date: 24 Jan 2013

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. 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

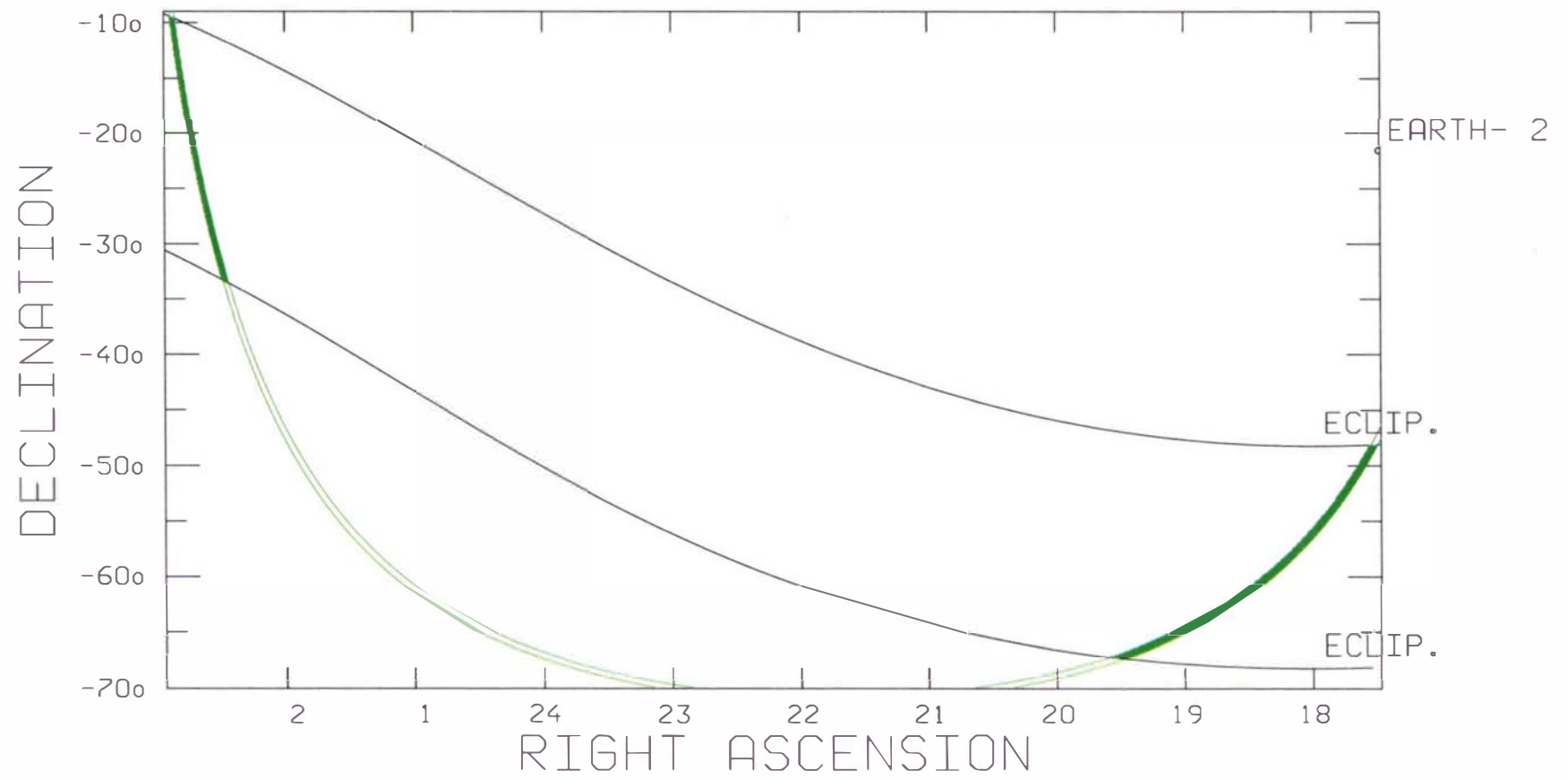
- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

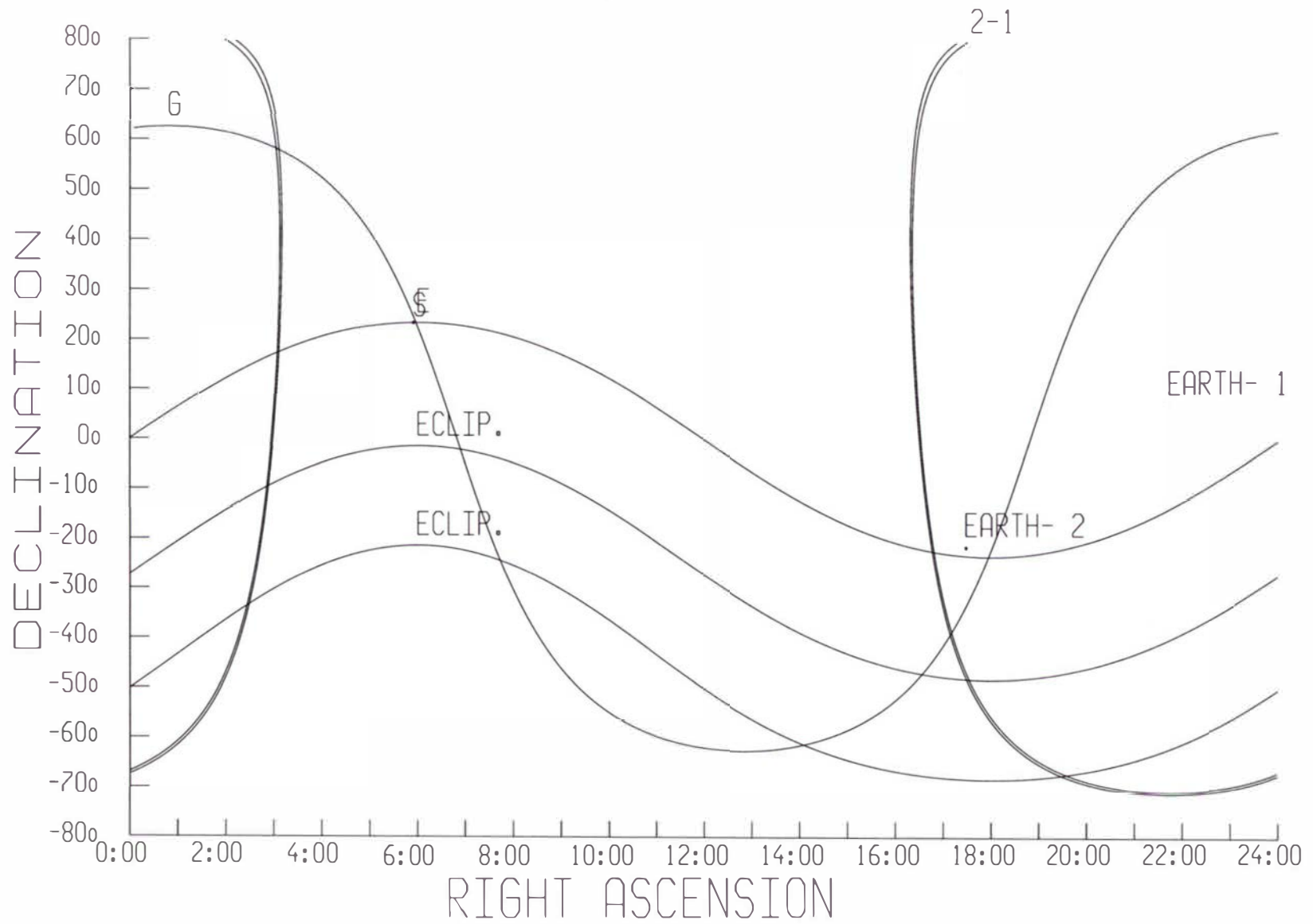
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?

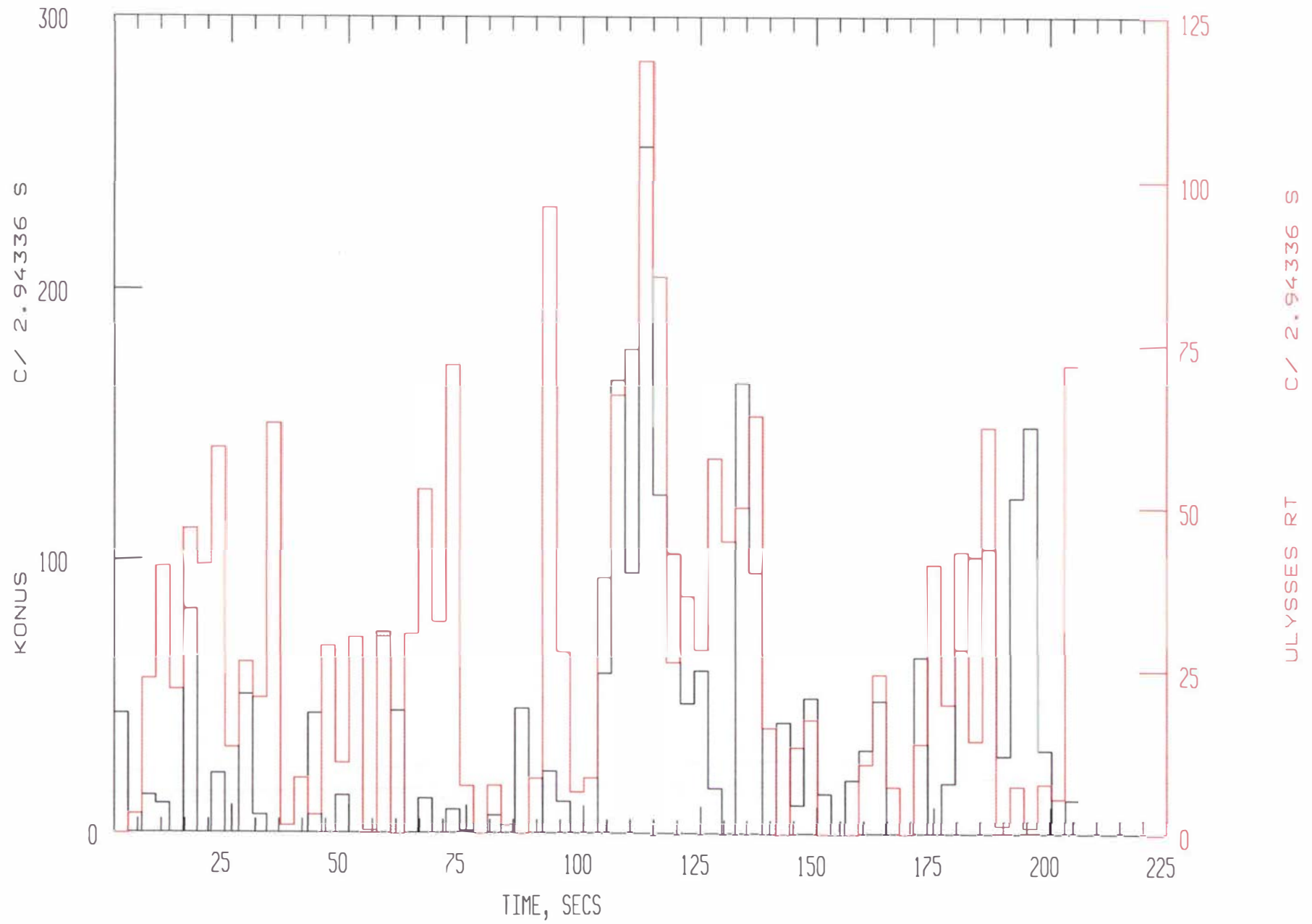


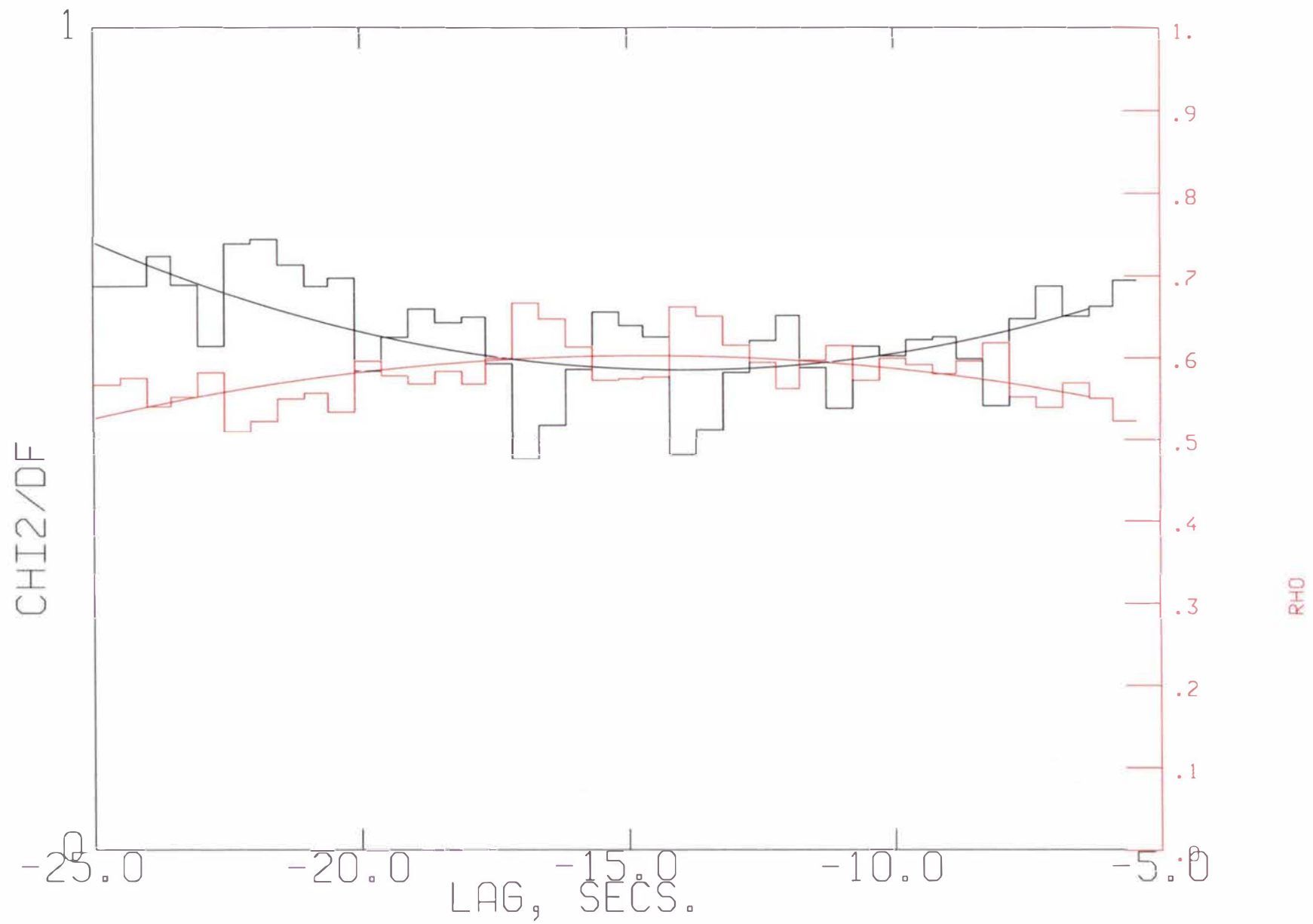
EVENT OF JUN 20, 1999 9:06

24/01/2013

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

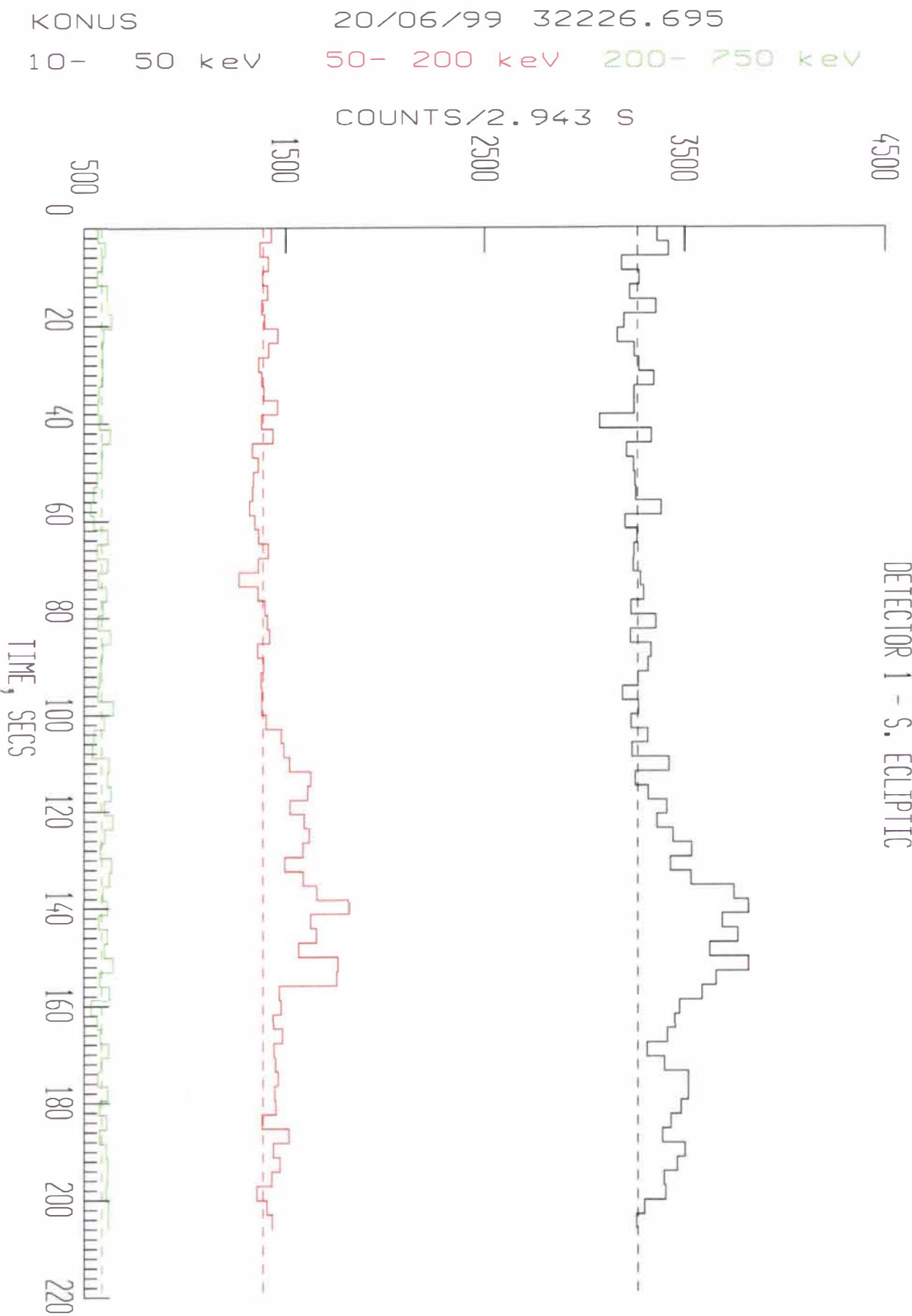




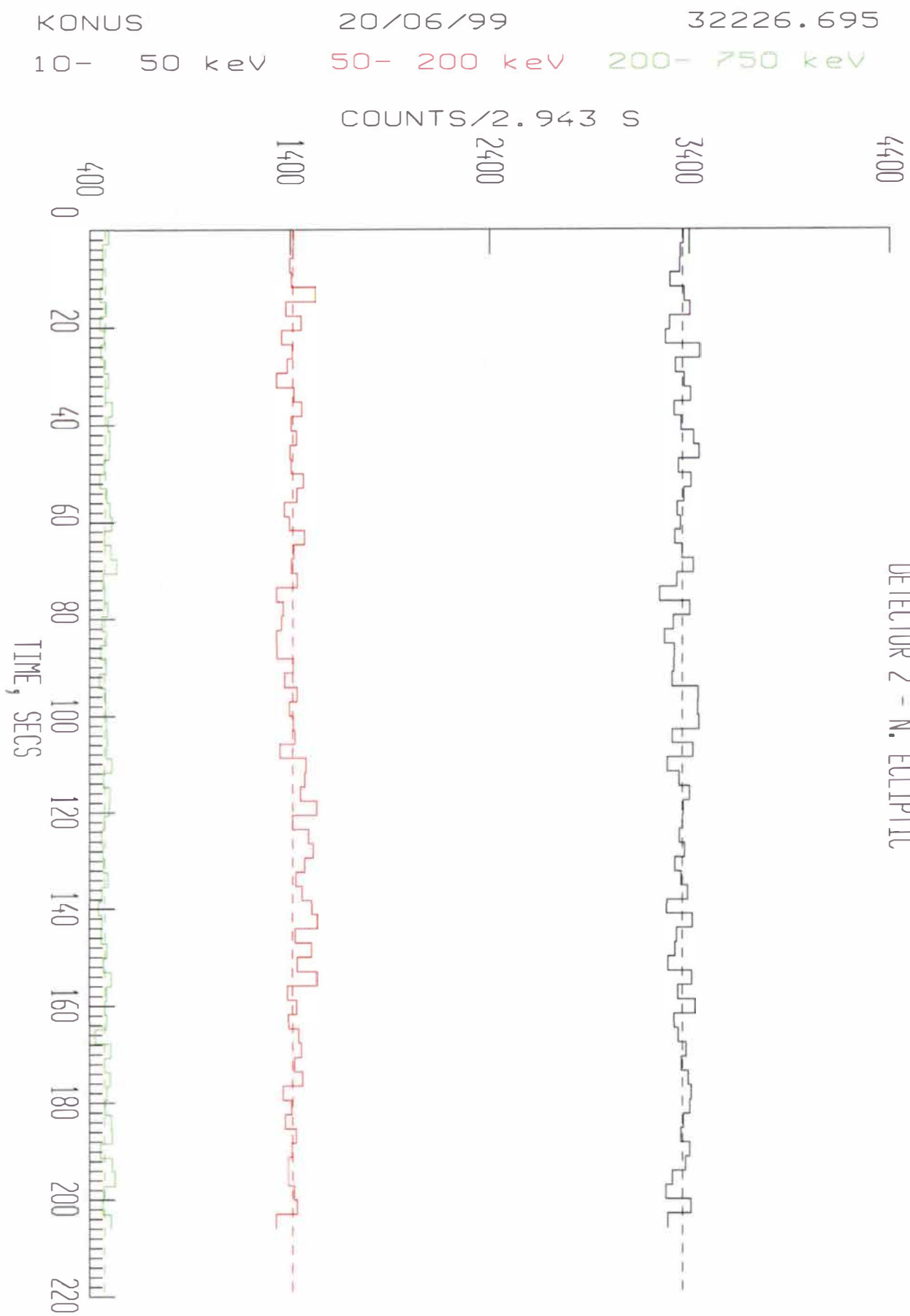


24/01/2013

DETECTOR 1 - S. ECLIPSE



DETECTOR 2 - N. ECLIPIC



KONUS RI

29 / 11 / 99

ULYSSES RT

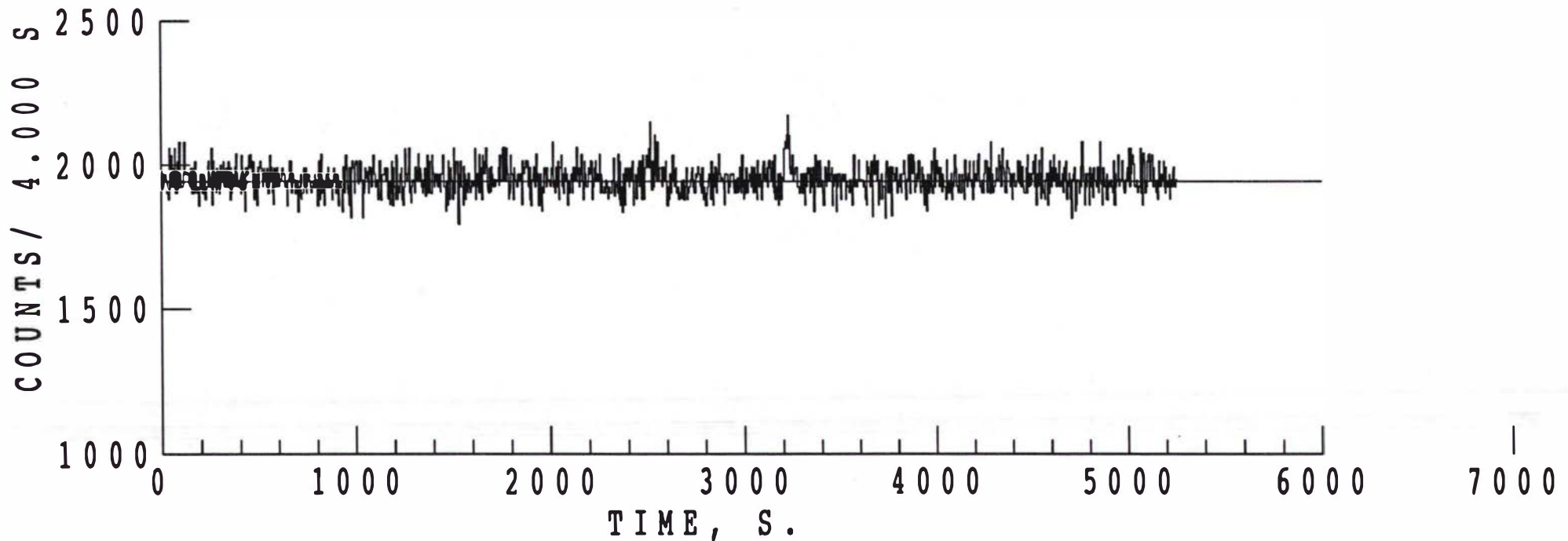
20 / 6 / 99 29664.383 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

*3.5 s long event
in KONUS*

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Tue Jun 22 11:16 PDT 1999

From: SAHI@fender.msfc.nasa.gov

Date: Tue, 22 Jun 1999 13:09:58 -0500 (CDT)

To: burst@comptel.sr.unh.edu, grobad@estsa2.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, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov

Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7613

TIME: TJD=1349 SECONDS=30978

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:Y

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=100.7 AZIMUTH=351.8 ERROR=0.2 DEGREES

COMMENTS:

SOLAR FLARE. GOES. C5.5, NO OPTICAL ID. SINGLE PULSE, DUR. APPROX. 90 S, MAX. AT
T+9 S. NOT VISIBLE ABOVE 100 KEV.

KONUS RI

29 / 11 / 99

ULYSSES RT

20 / 6 / 99 38376.469 s

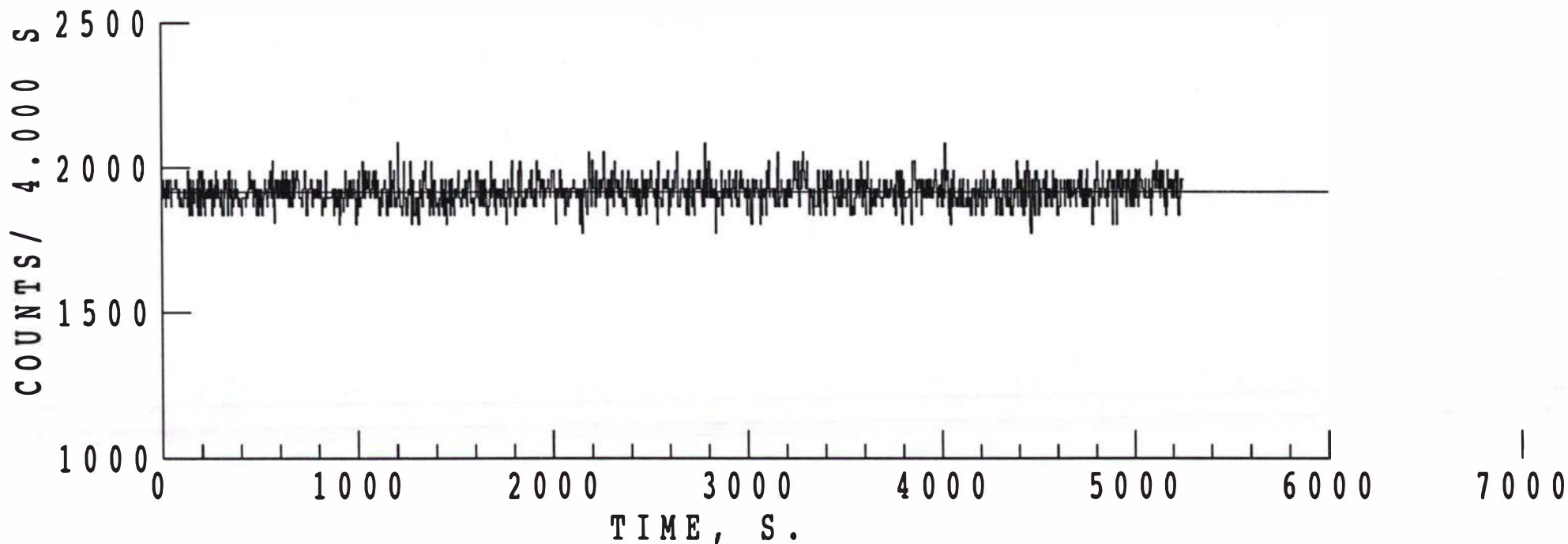
1.000 S INTERVALS REGROUPED BY 4

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

*0.6 s long
event in Konus*



From GOGUSE@fender.msfc.nasa.gov Tue Jun 22 13:14 PDT 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Tue, 22 Jun 1999 15:10:54 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7615

BATSEARCH PROGRAM

BATSE BURST # 7615
EVENT OF 1999 JUN 20 DAY OF YEAR=171
EVENT CROSSING TIME AT BATSE : 49027. S. OR 13:37:07.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 6.000 14.000
BATSE PEAK COUNTING RATE: 2000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 6/ 99 IS:
RA= 145.500 DEC= -7.223 DIST= 5.205 AU
BATSE-ULYSSES DISTANCE = 778613417. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 40.33 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1980.05 SECS.
CROSSING TIME AT ULYSSES IS 51007. S. OR 14:10:07 +/- 371.86 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 6/ 99 IS:
RA= 203.801 DEC= -10.808 DIST= 0.752 AU
MARS-BATSE DISTANCE = 112520720. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 17.67 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 357.62 SECS.
CROSSING TIME AT MARS IS 49385. S. OR 13:43:04 +/- 25.21 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7615	990620	11349	49027	2000	006	+14	28

BATSE BURST TRIGGER

NO.: 7615

TIME: TJD=1349 SECONDS=49027

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

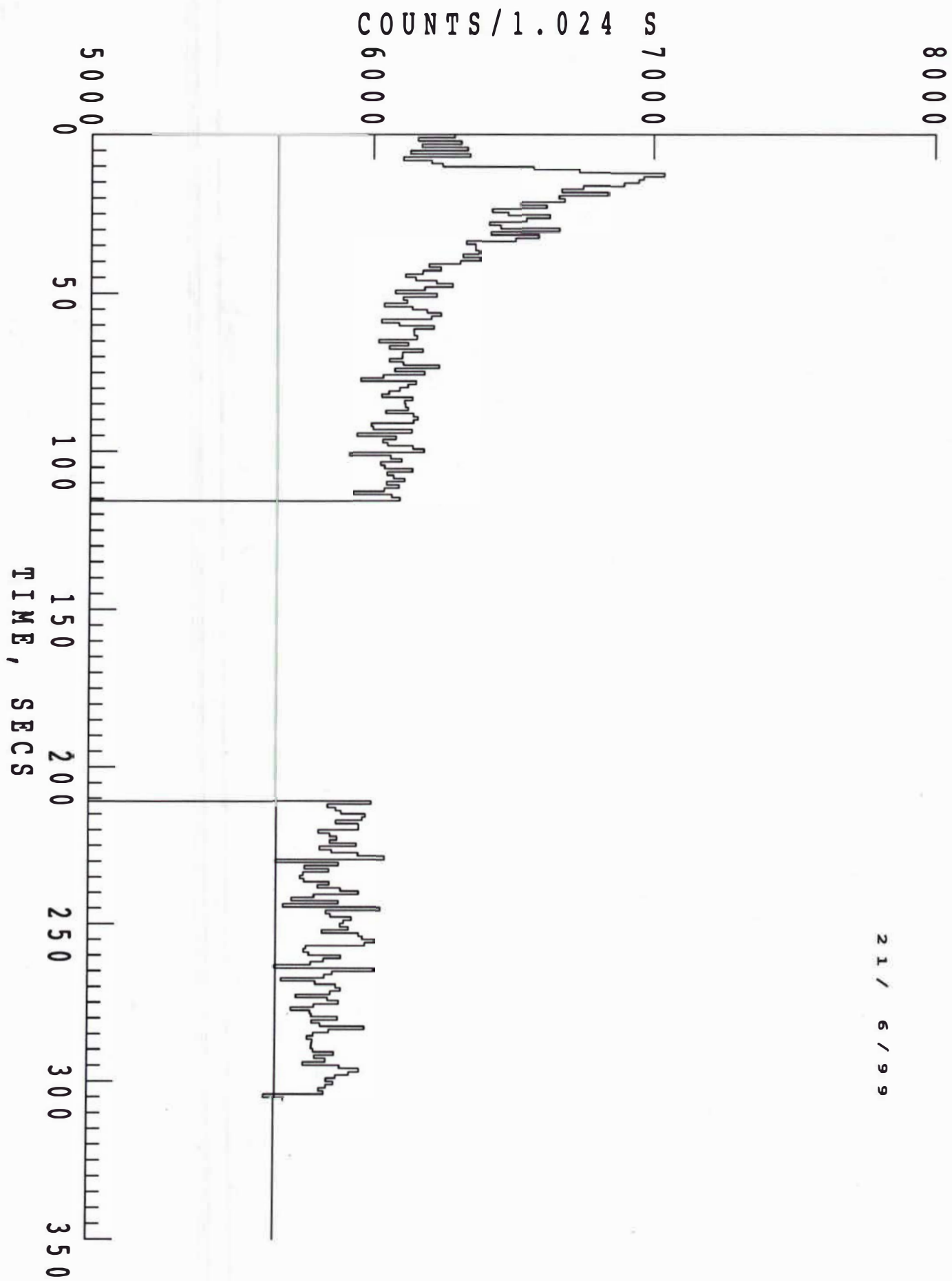
INTENSITY: COUNTS/CM2

LOCATION: ZENITH=137.5 AZIMUTH= 78.5 ERROR= 5.3 DEGREES

COMMENTS:

GRB, DECAYS SLOWER THAN RISE, DUR. APP. 28 SEC., NOT VISIBLE ABOVE 300 KEV

BACODINE 7615 20/06/99 49015.545
25- 100 keV



BATSE BURST# 7615

ULYSSES RT

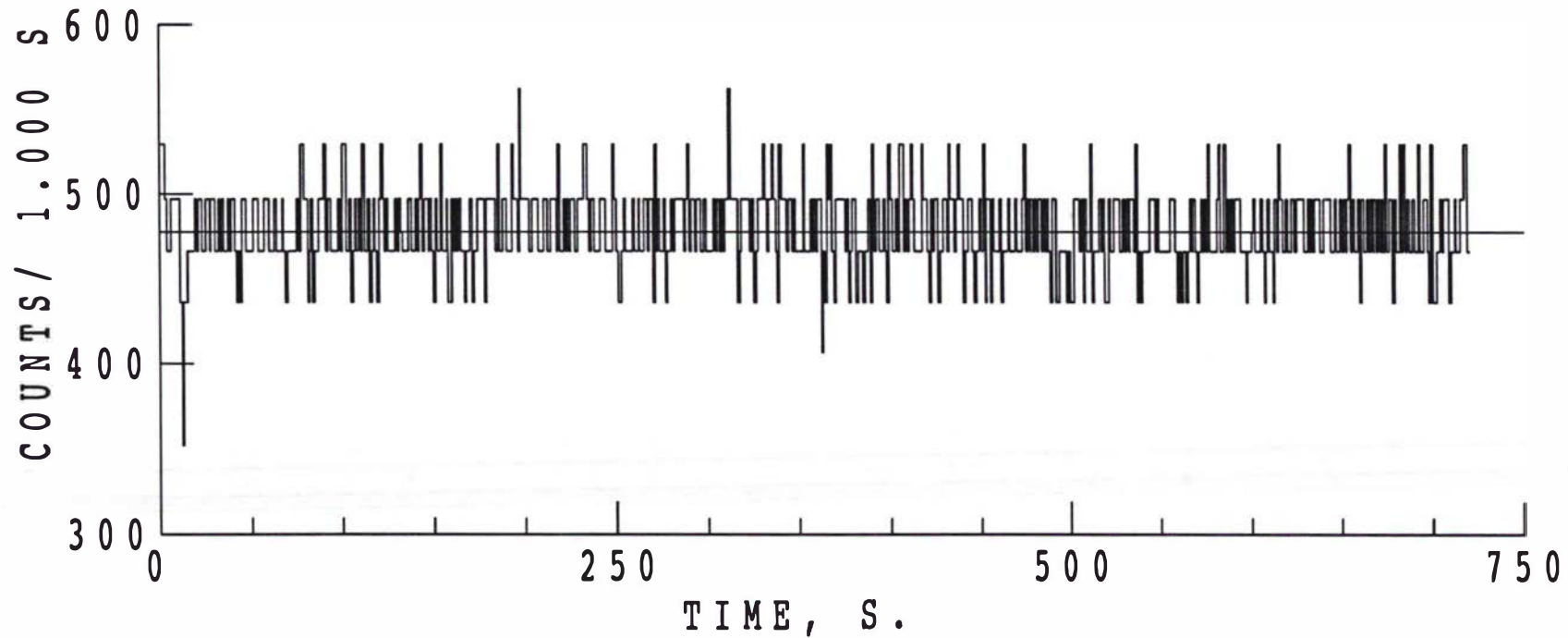
23 / 9 / 99

20 / 6 / 99 50652.594 s

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: May 24 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

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

2. For Konus events *N/A*

- ☐ 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?

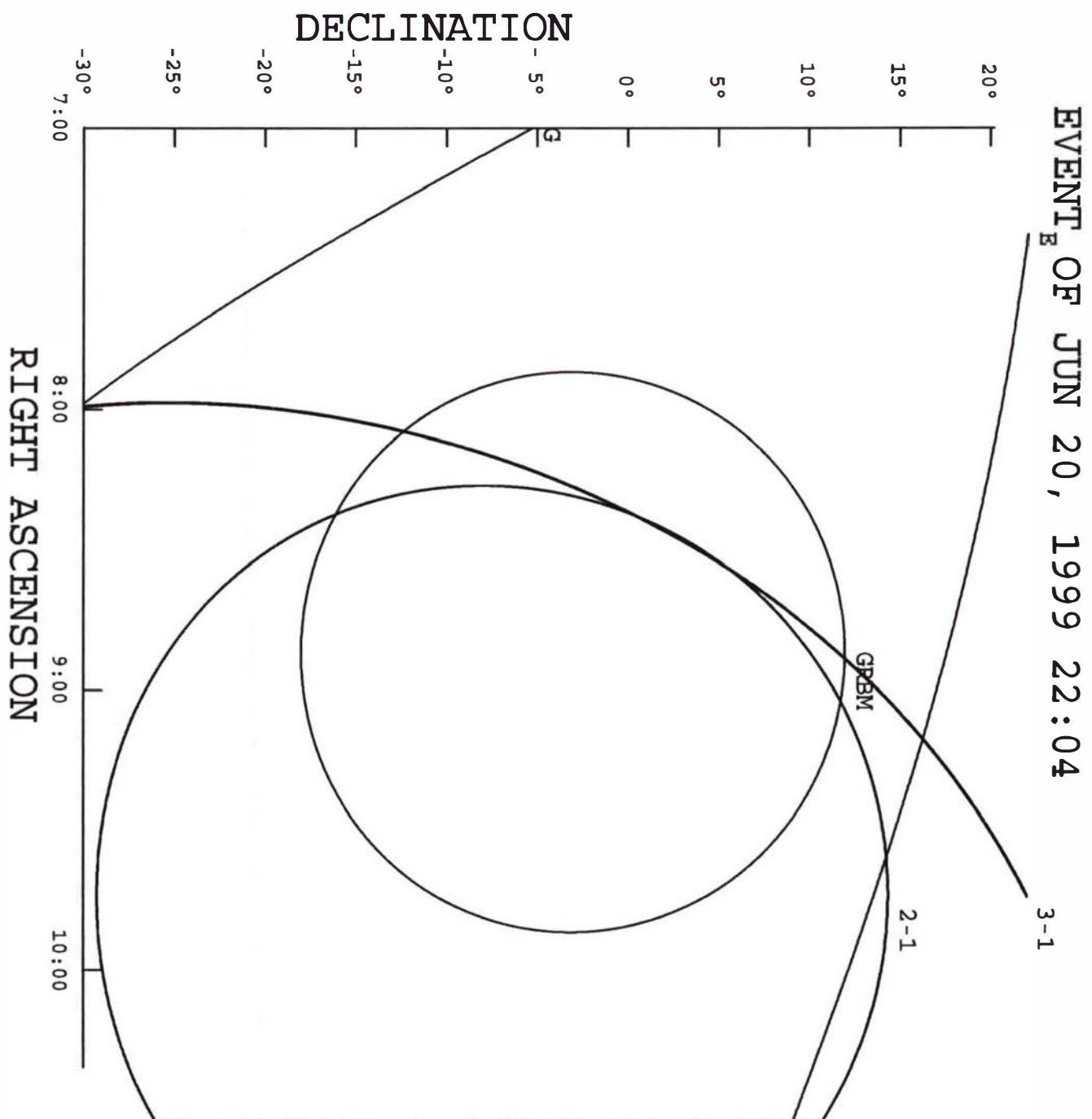
3. For INTEGRAL events

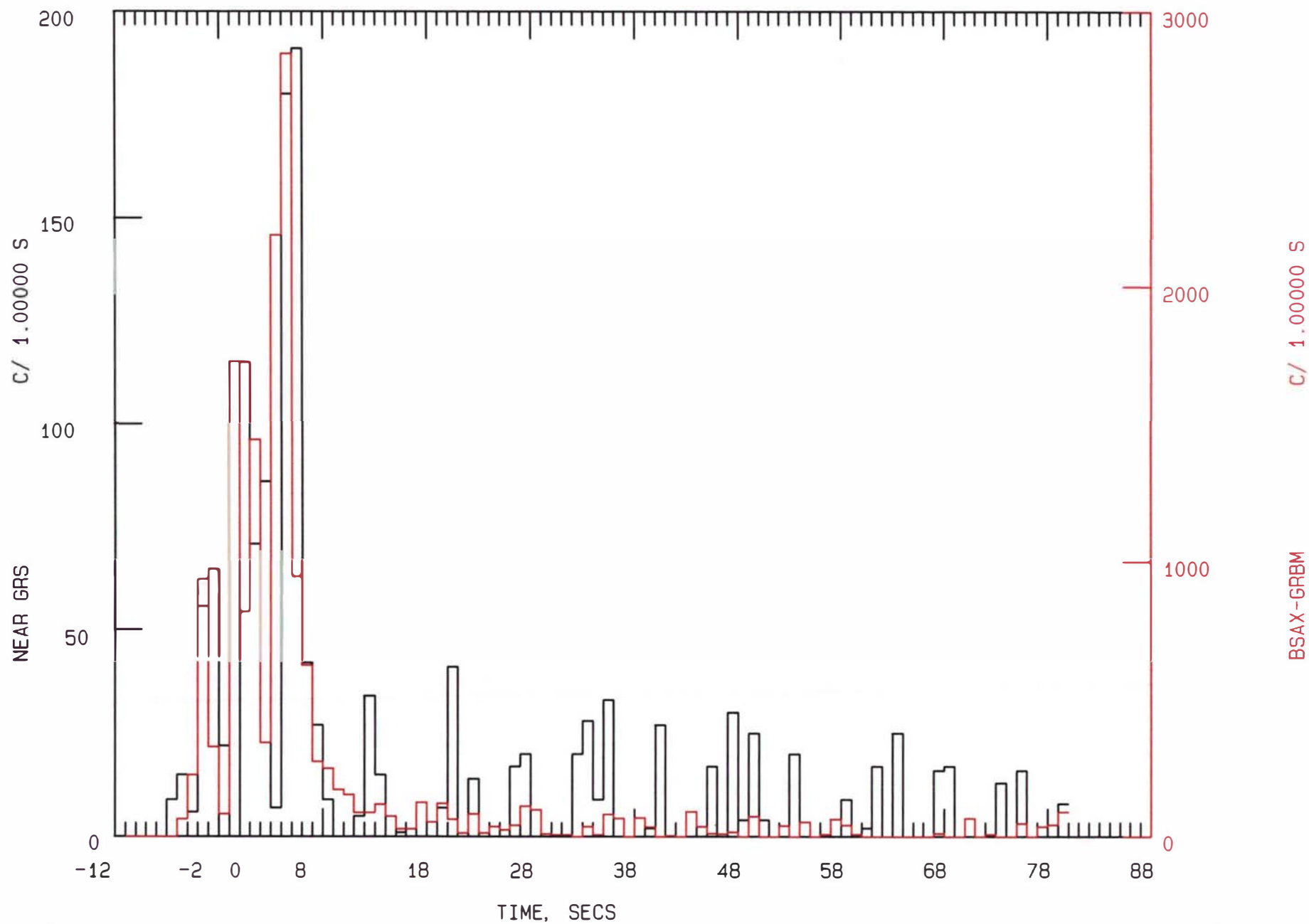
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

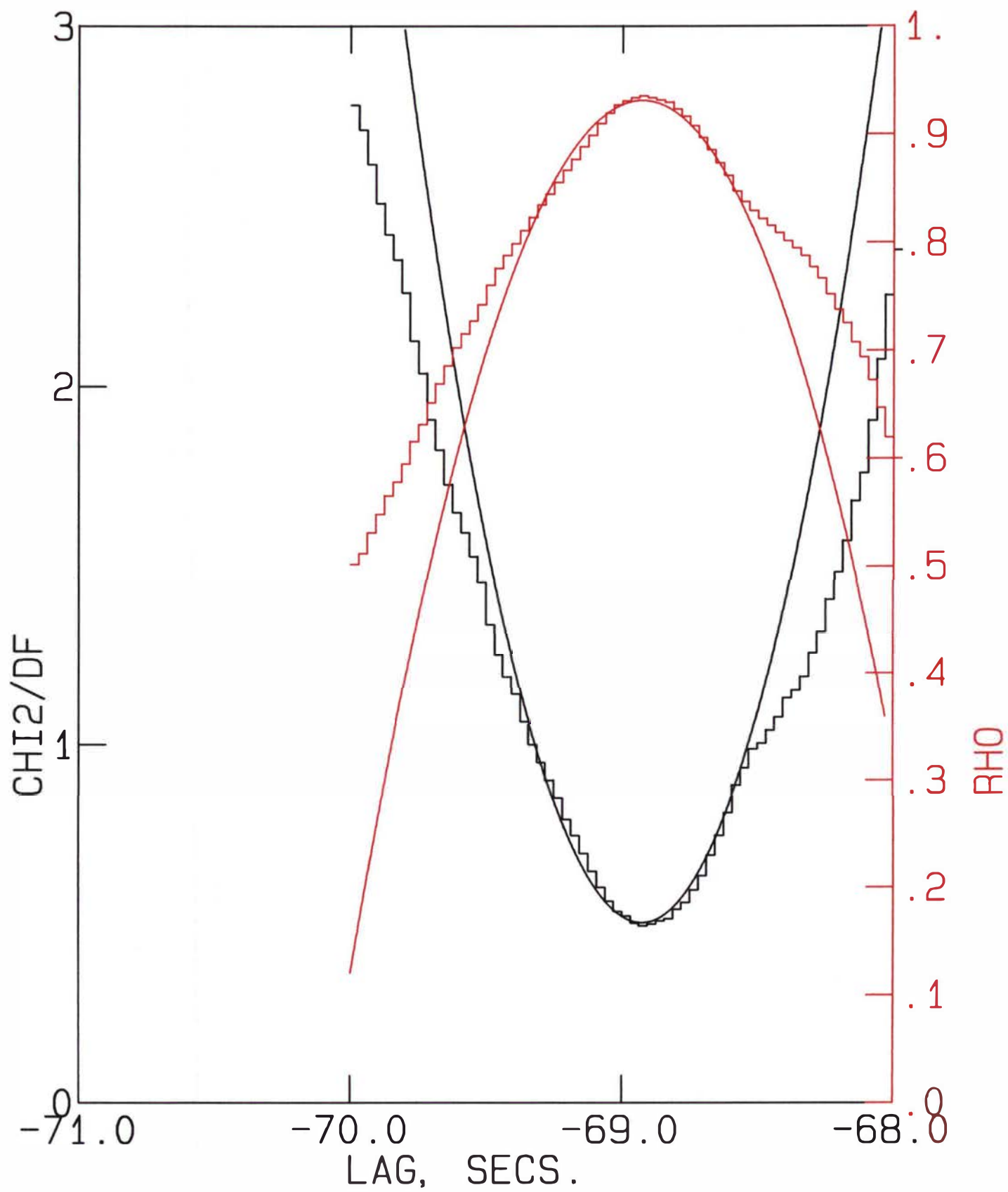
-
- ☒ ACCESS and MBL4 databases updated?

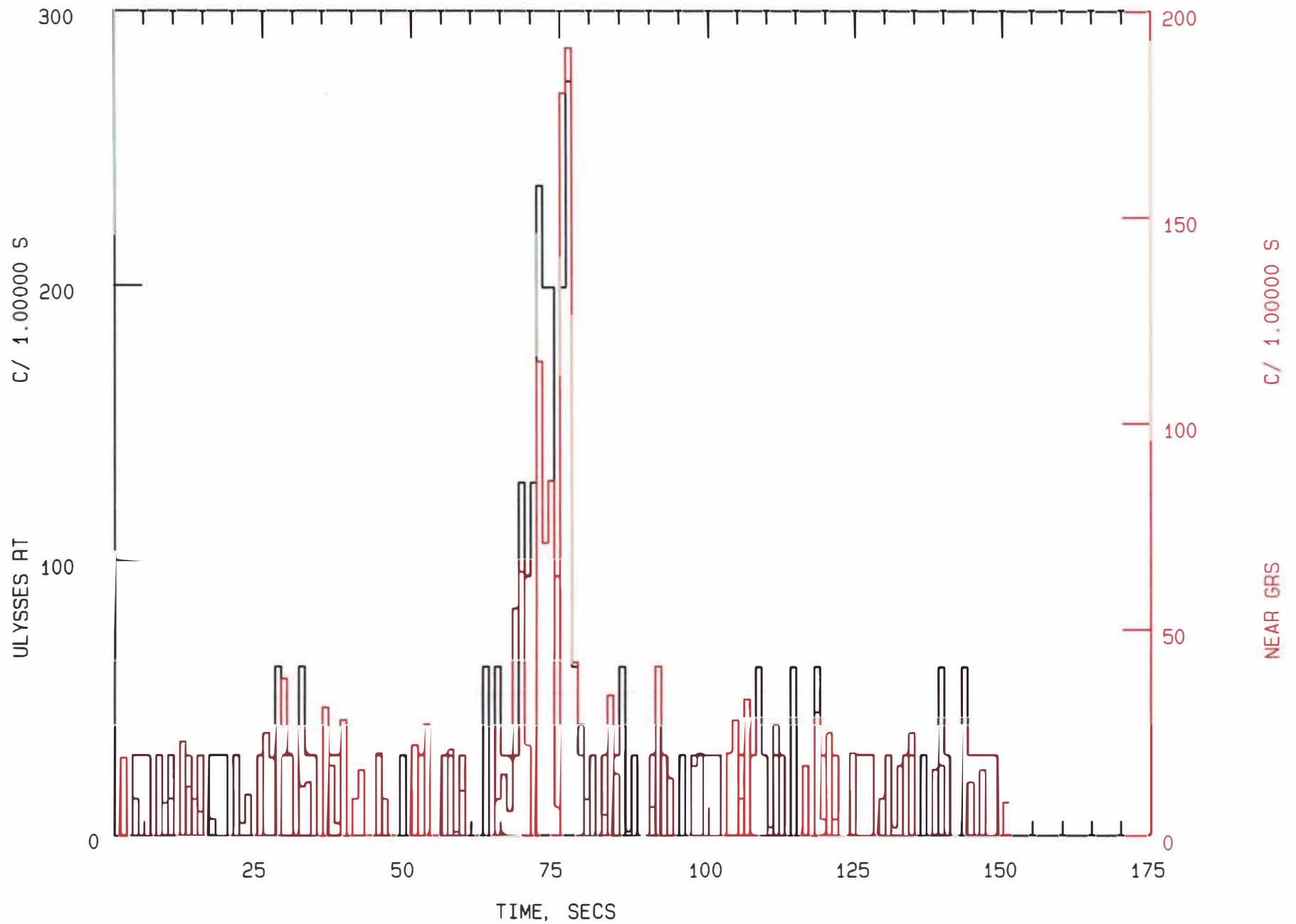
G=GALACTIC EQUATOR

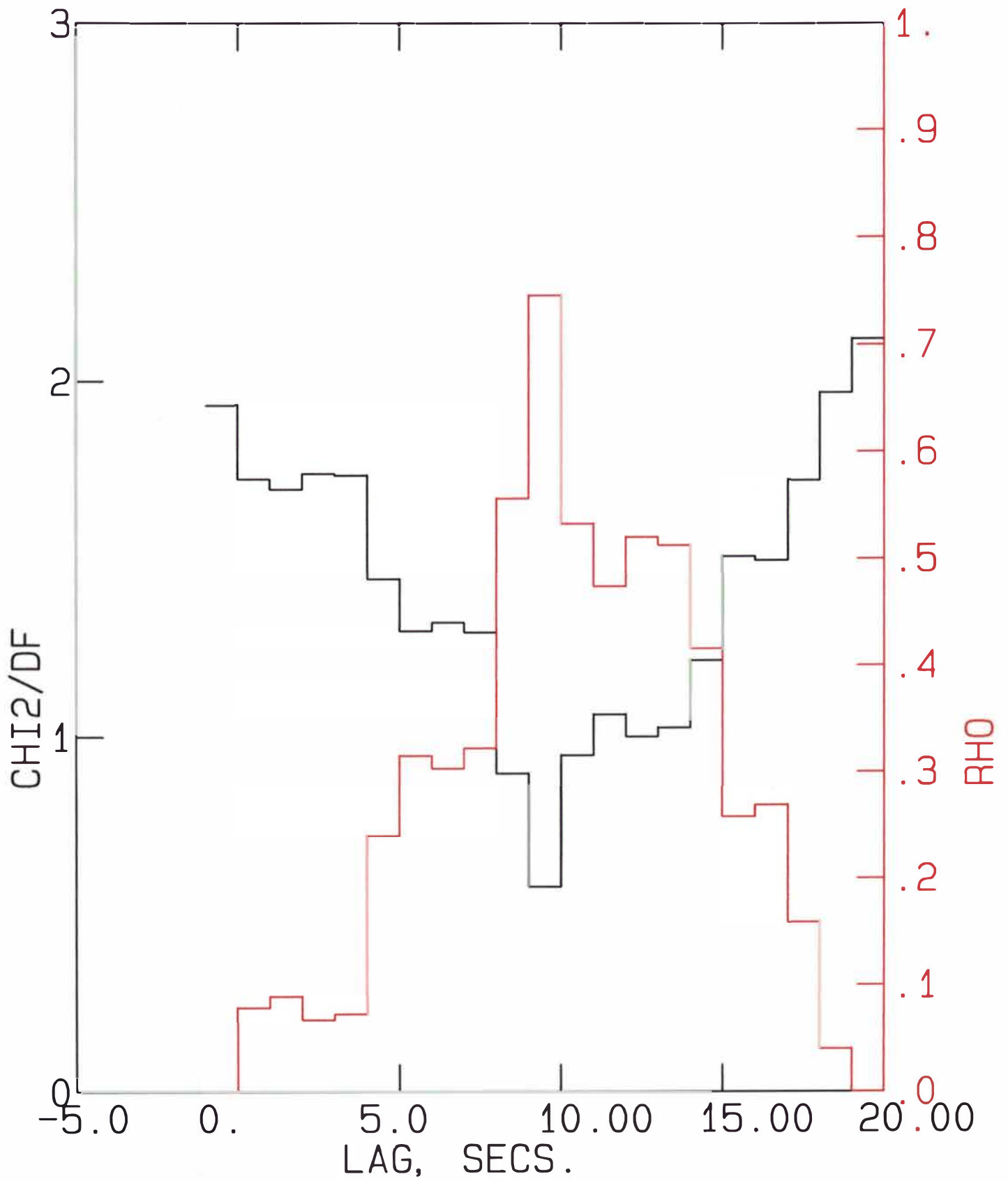
3 NEAR

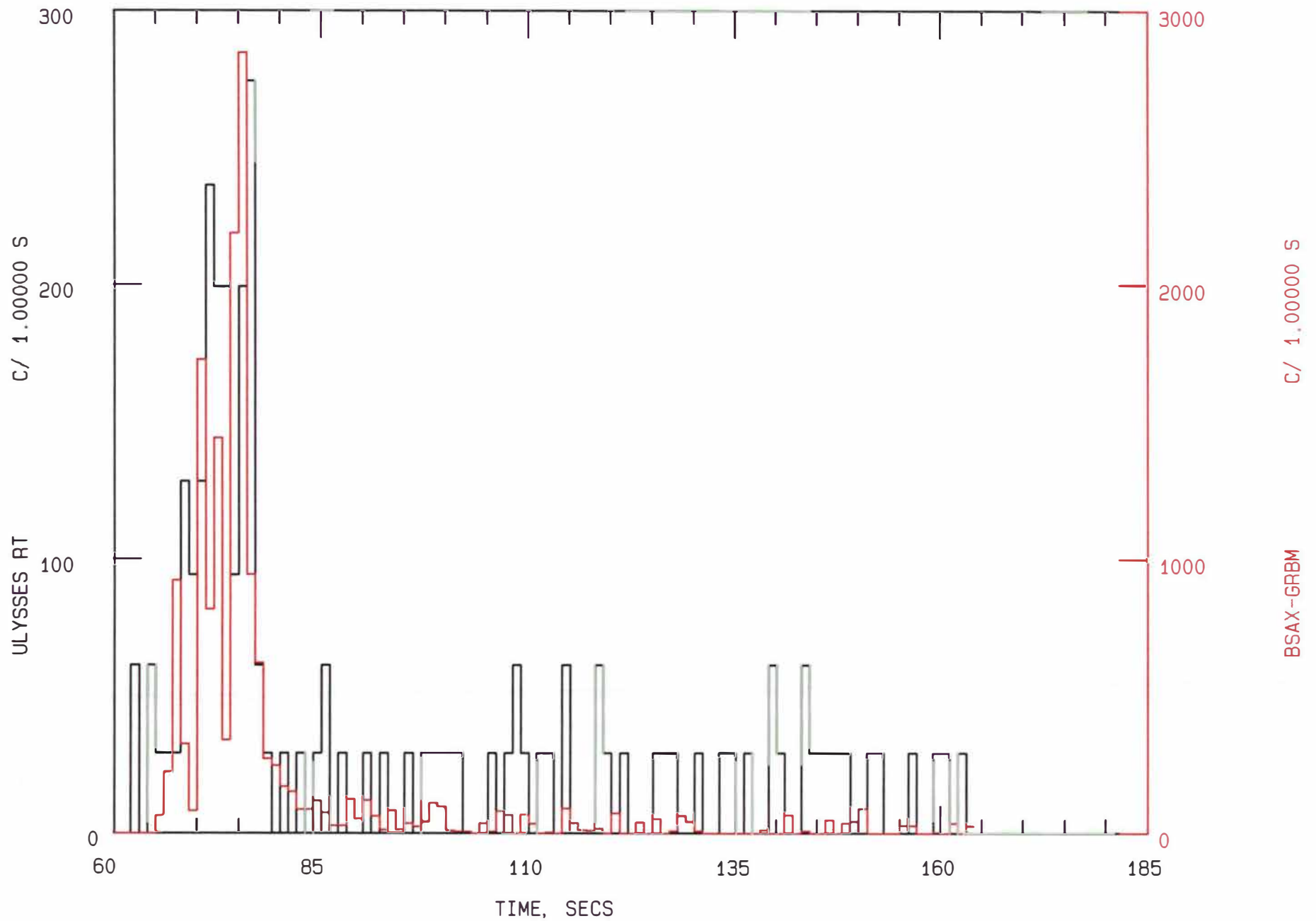


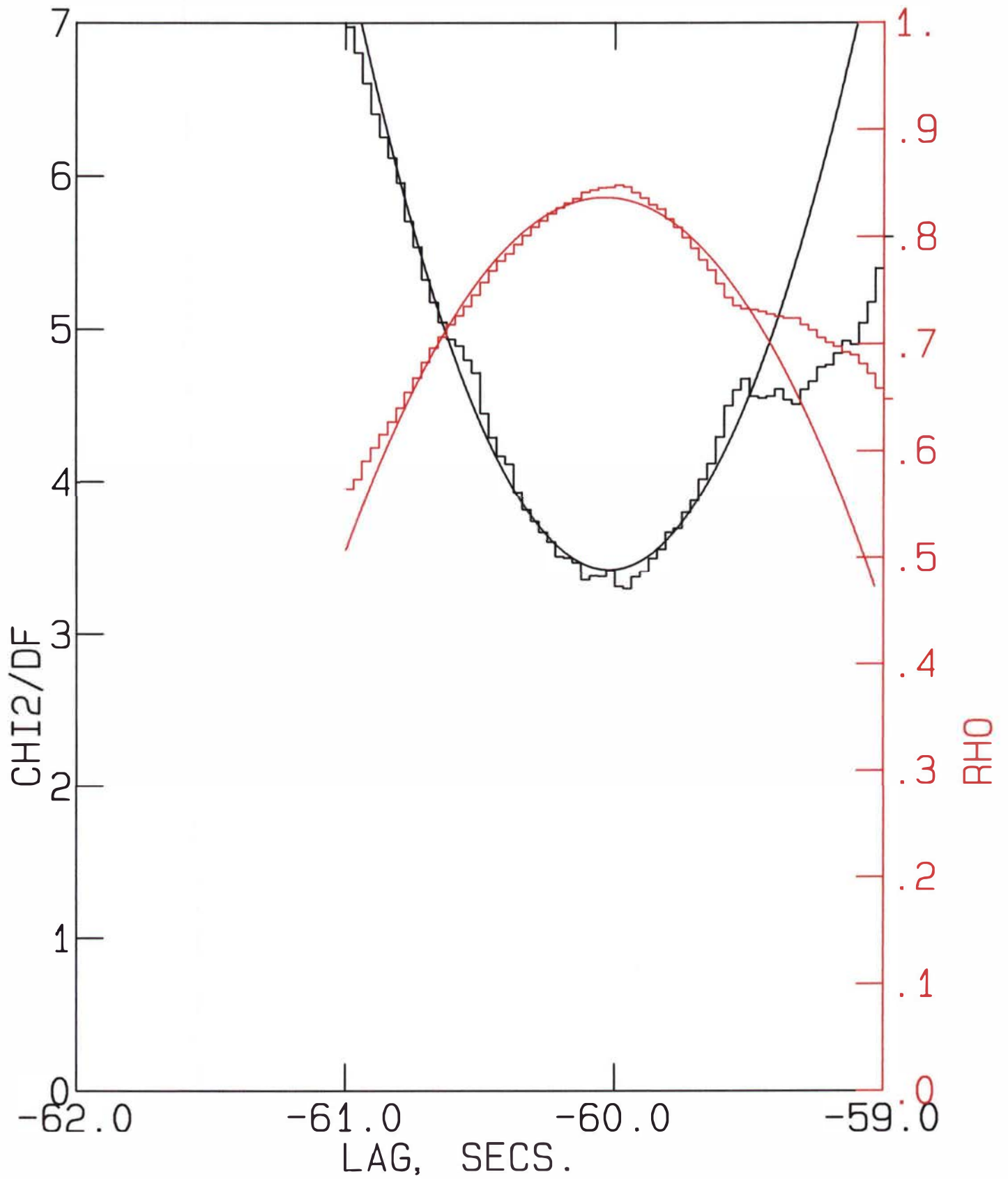








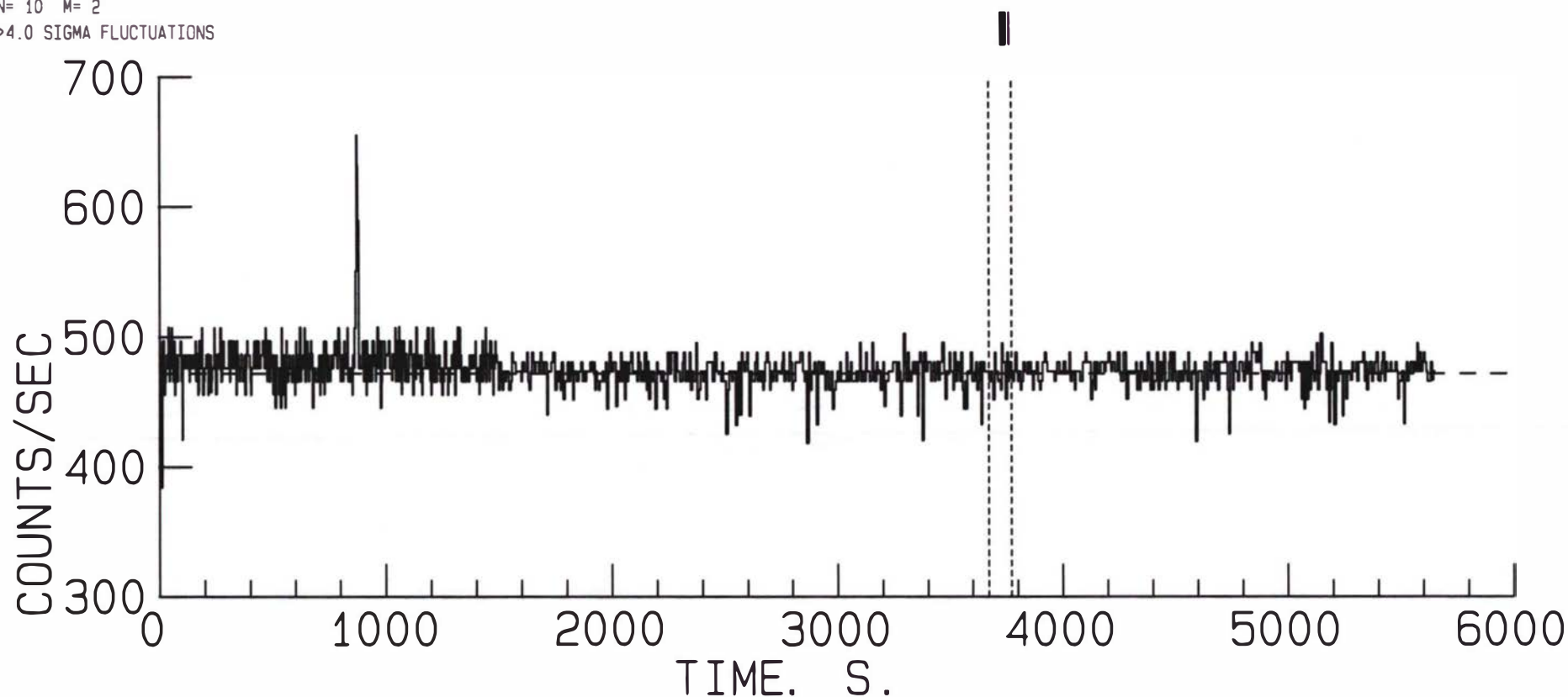




ULYSSES RT
20/ 6/99 78696.883 s
INTERVALS REGROUPED BY 3
22- 151 keV

23/ 5/ 7

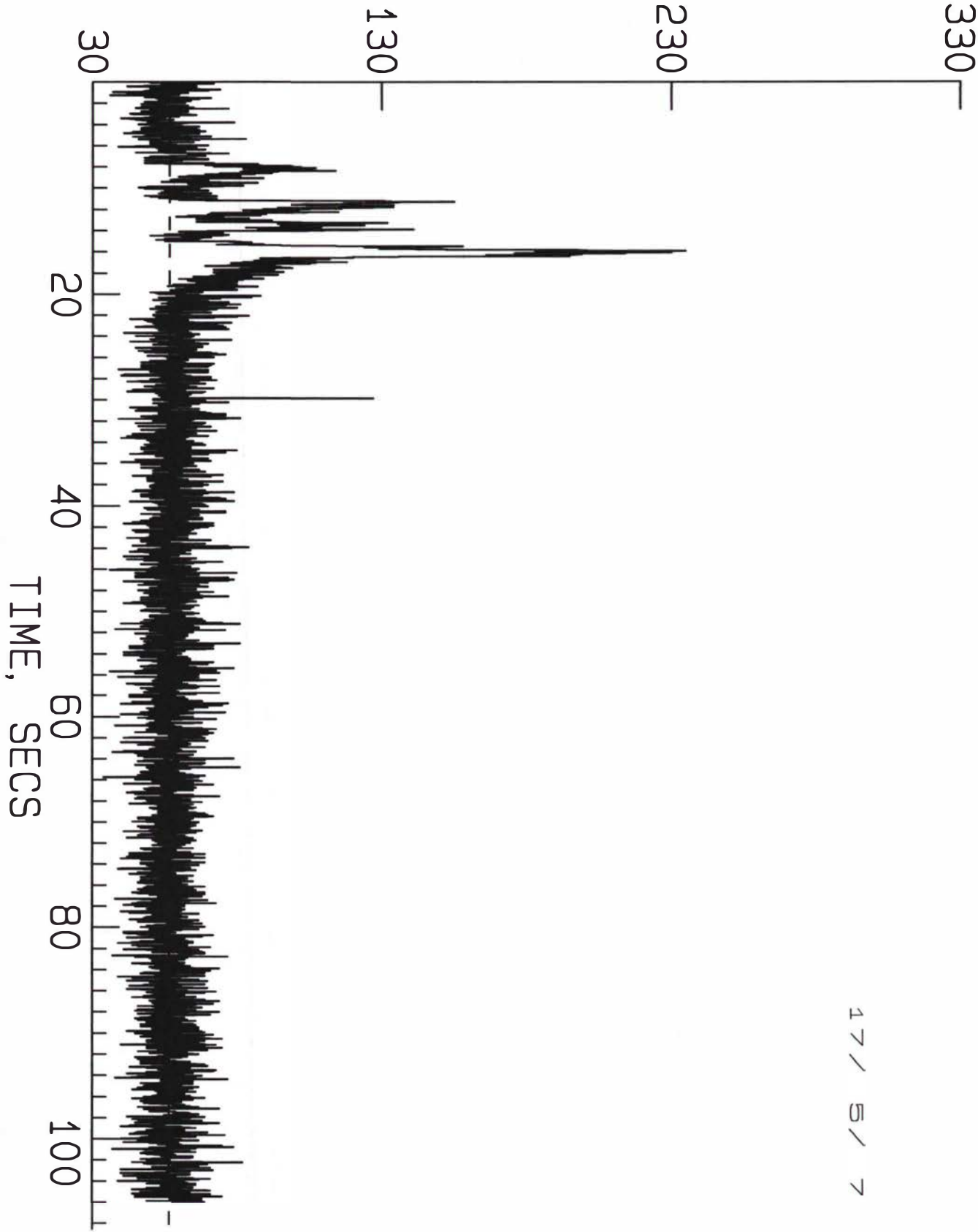
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



SAX GRBM

20/06/99 81964.692
40- 700 keV

COUNTS/0.031 S

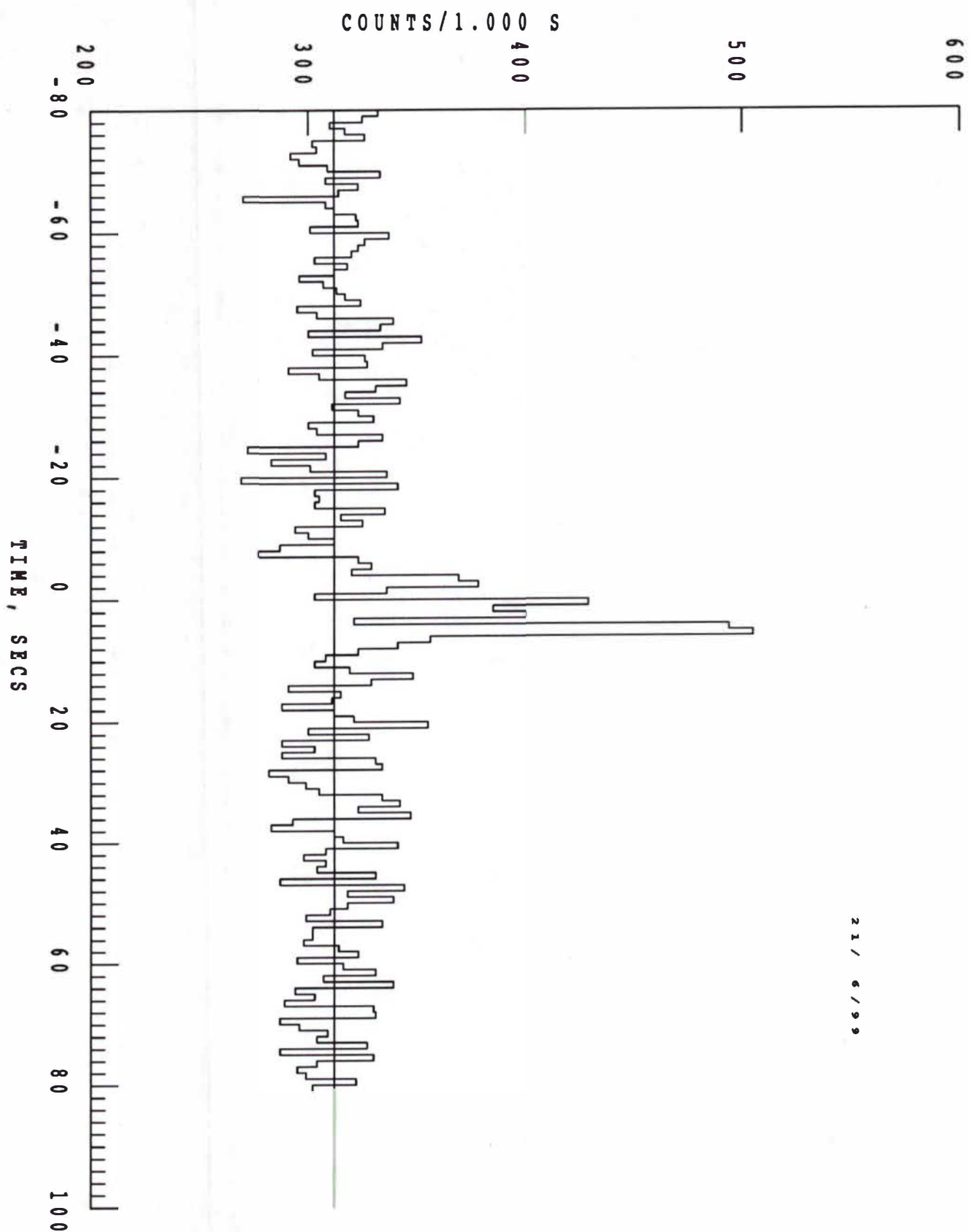


NEAR

20/06/99

81525.935

100-1000 keV

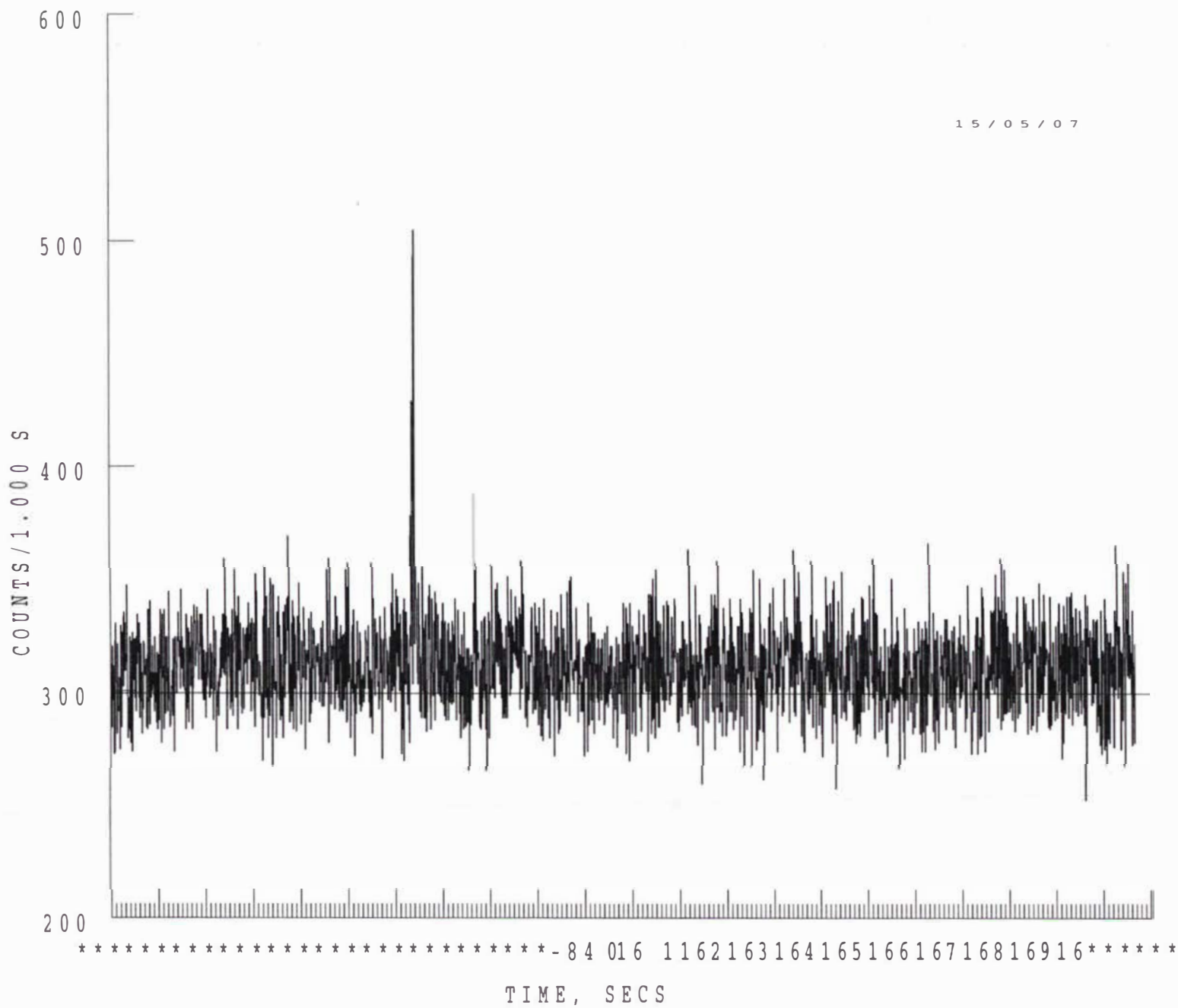


20/06/99 81971.934

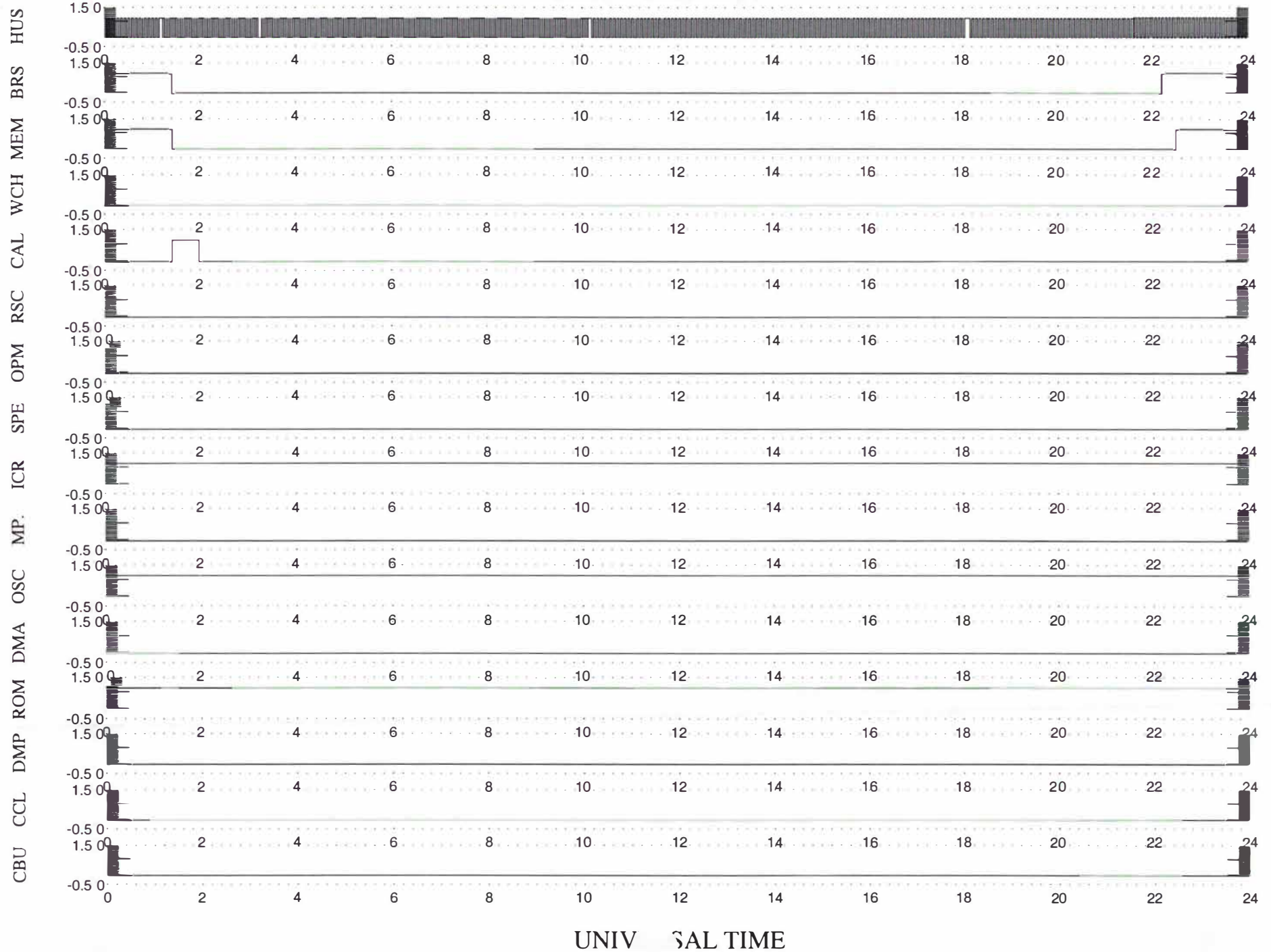
100-1000 keV

NEAR

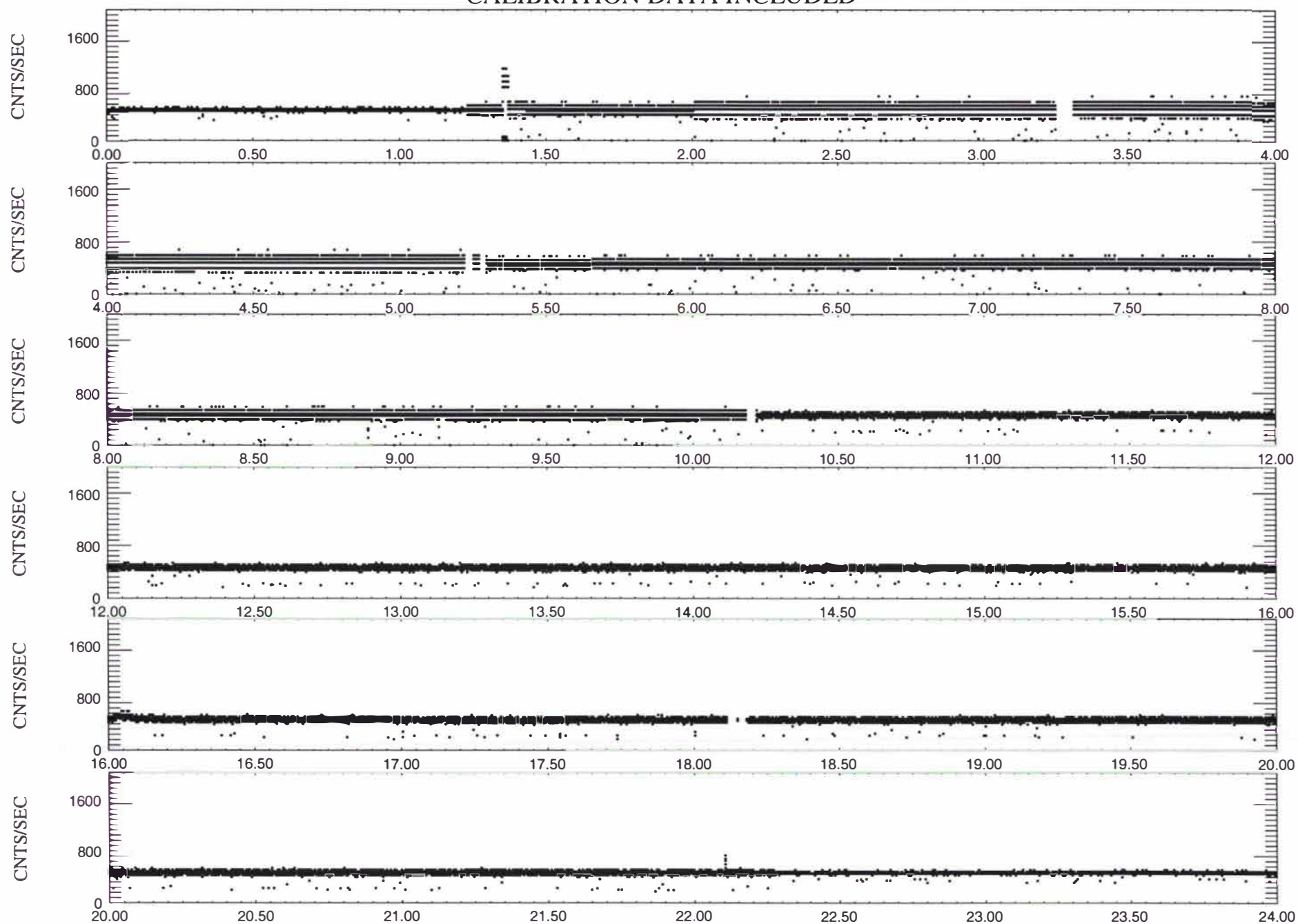
15/05/07



BURST NUMBER 14

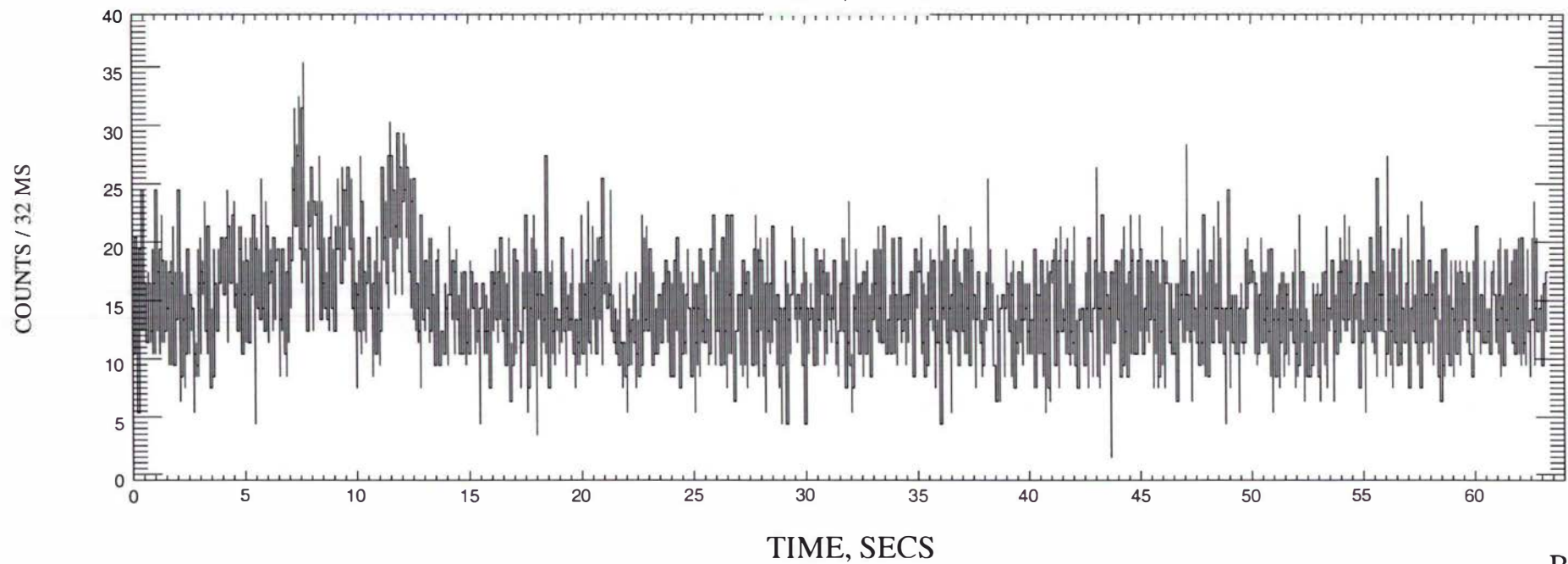
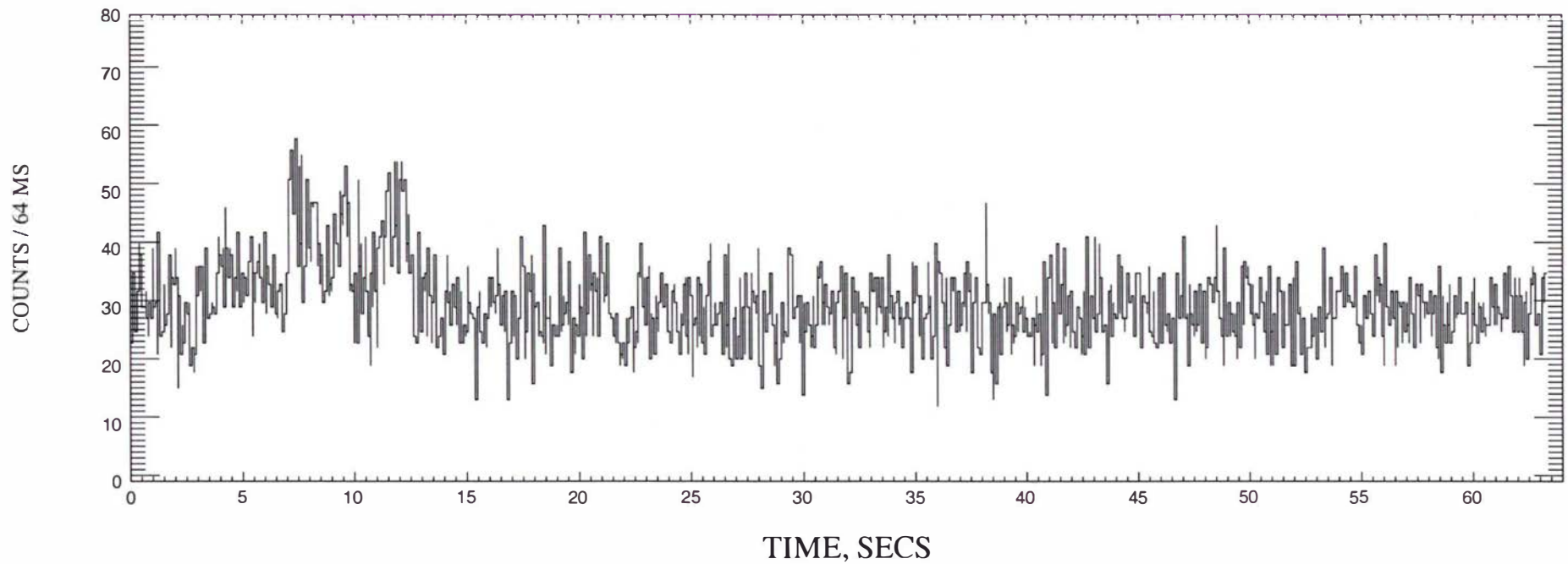


CALIBRATION DATA INCLUDED

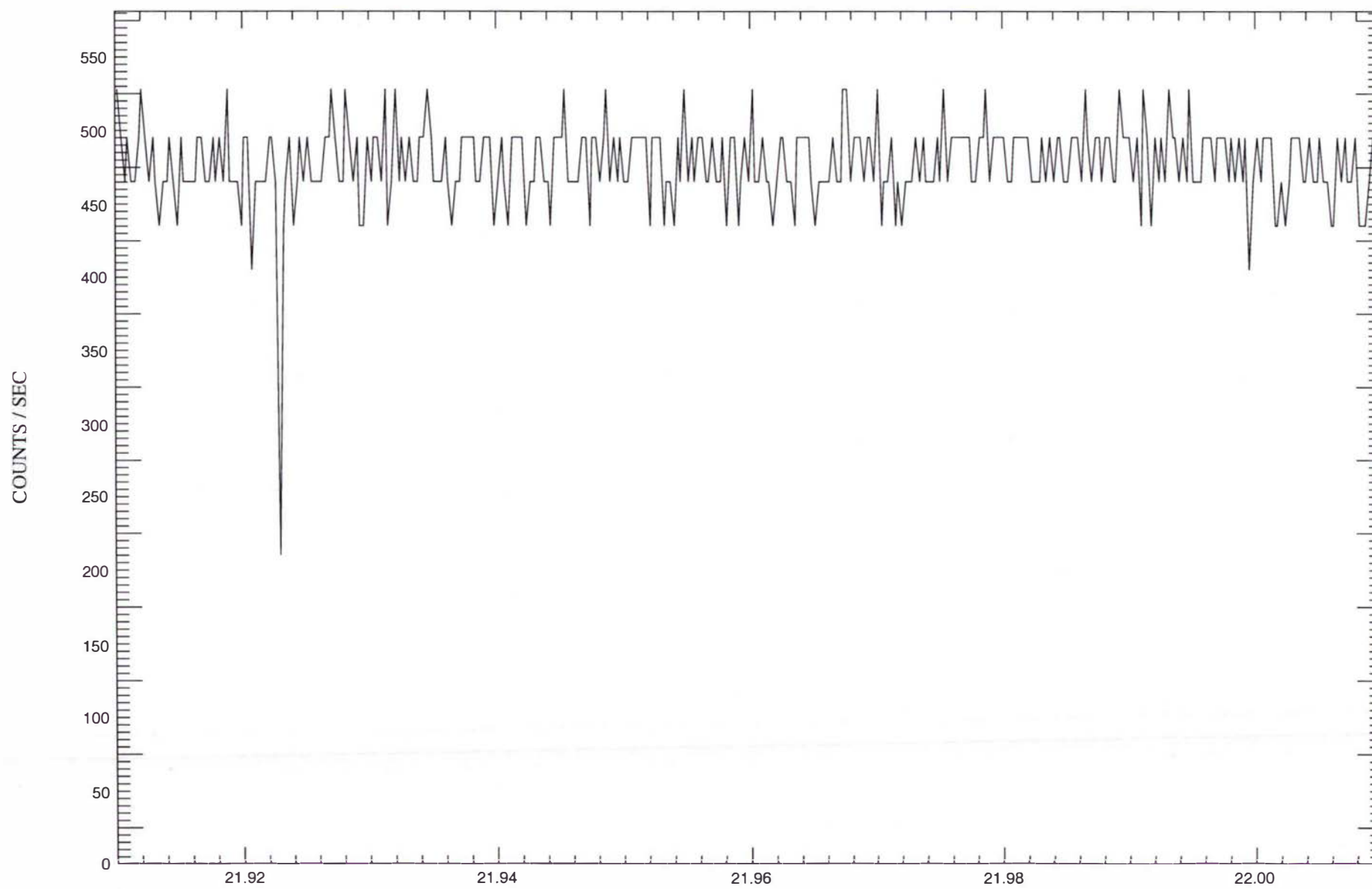


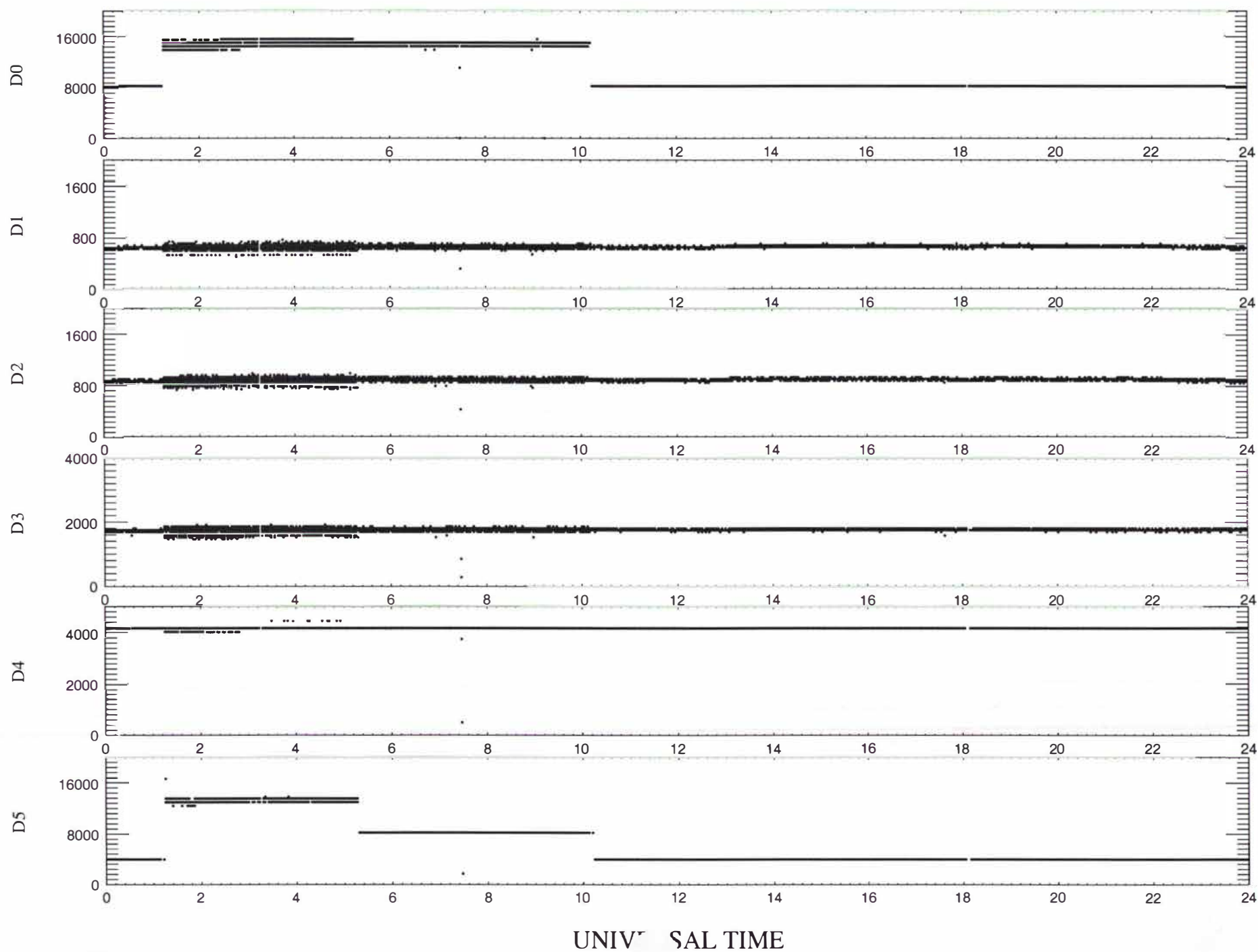
UNIV SAL TIME

Burst Counter 14 at UT=21.960134133233 h=79056.483 s 21:57:36.483



CALIBRATION DATA INCLUDED





Date: Jan 30 2013

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. 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

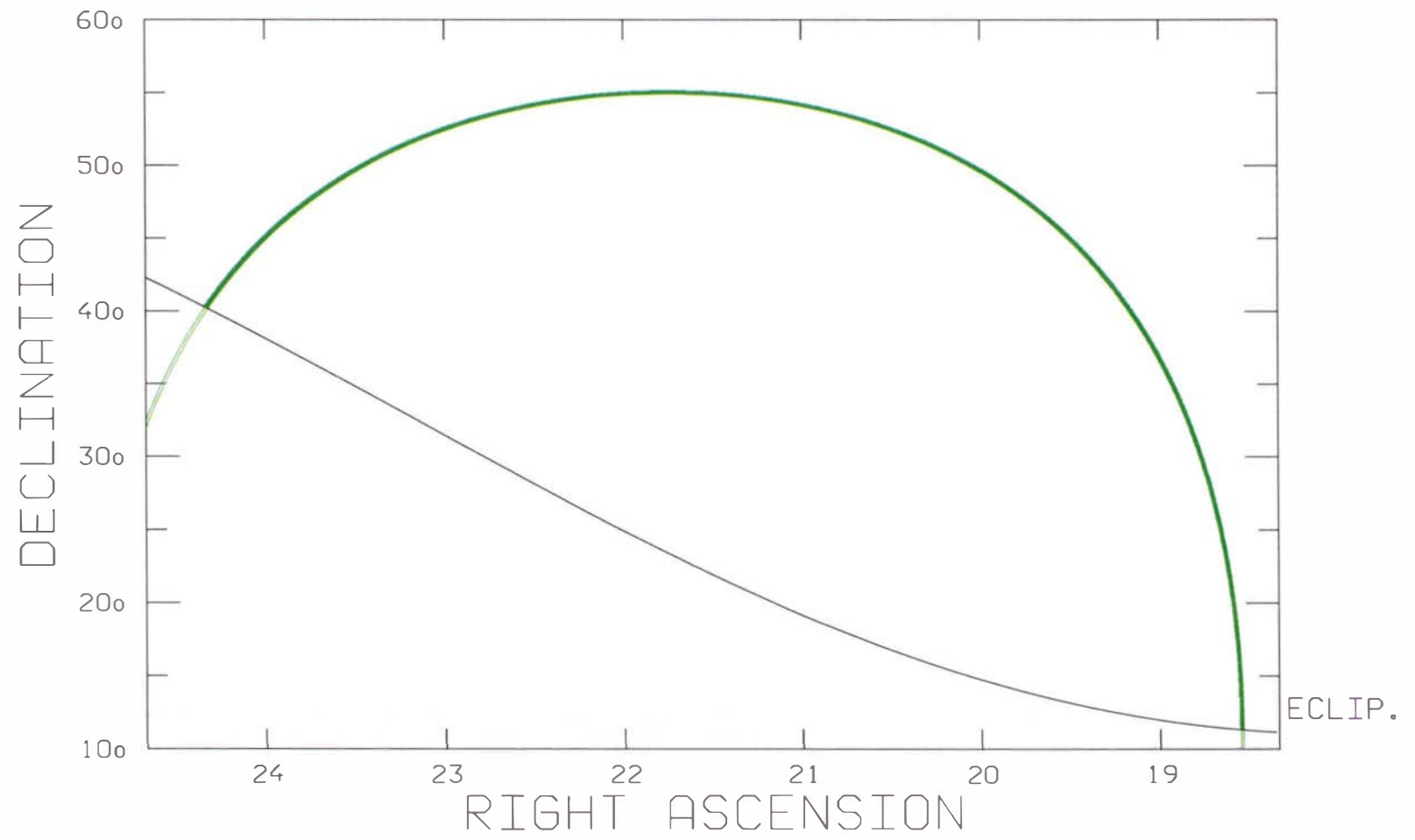
- ☐ Final, correct time used? (Files postmarked vw@boccl, from from Teresa Sheets, postmarked May 2 1999 or later have the correct time; files on website have incorrect times)
- ☐ BATSE >100 keV data used for NEAR correlation?

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For 3 Spacecraft events

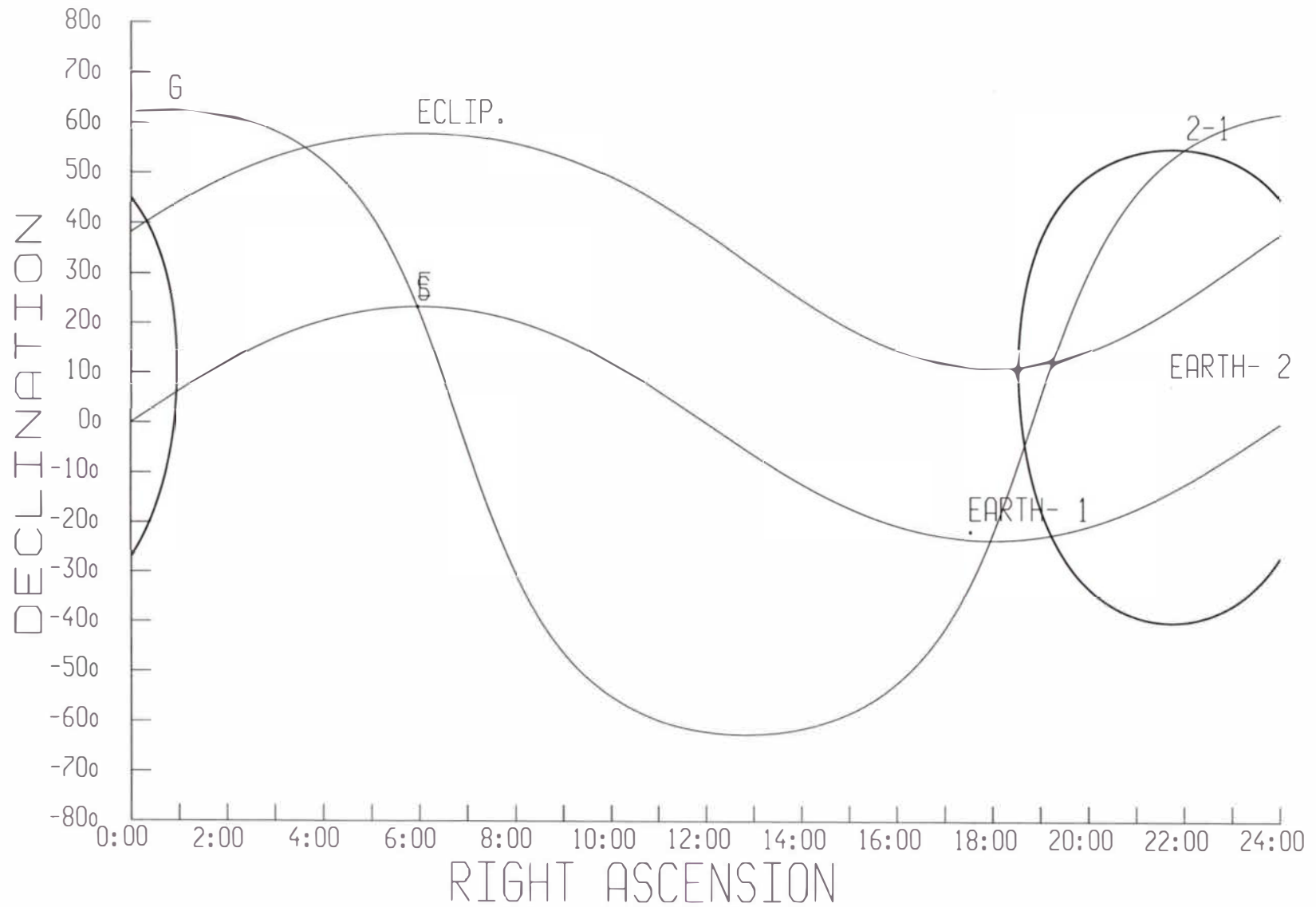
- ☐ $\Sigma 3\Delta t$'s calculated?
- ☒ ACCESS database updated?



EVENT OF JUN 21, 1999 4:26

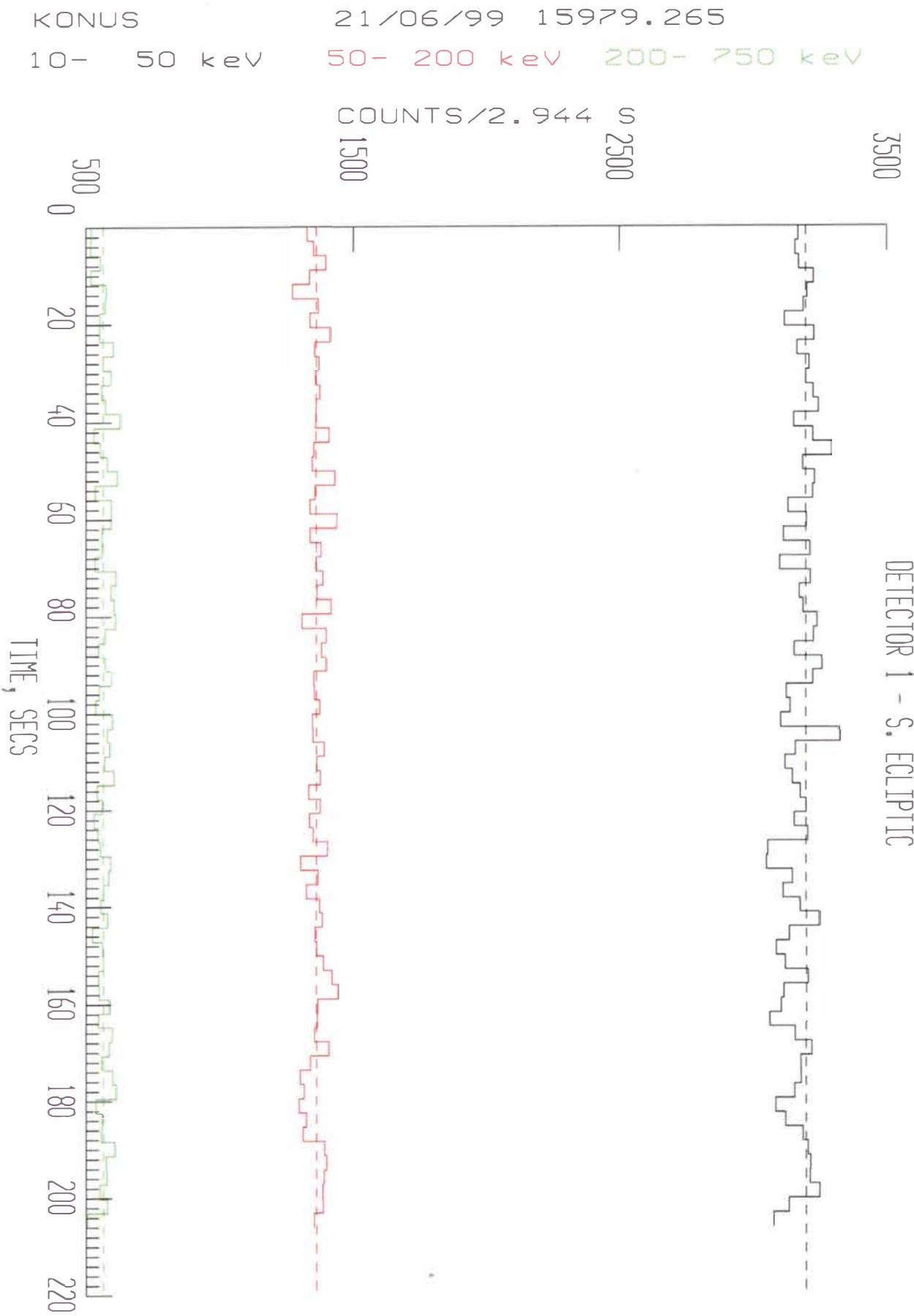
30/01/2013

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

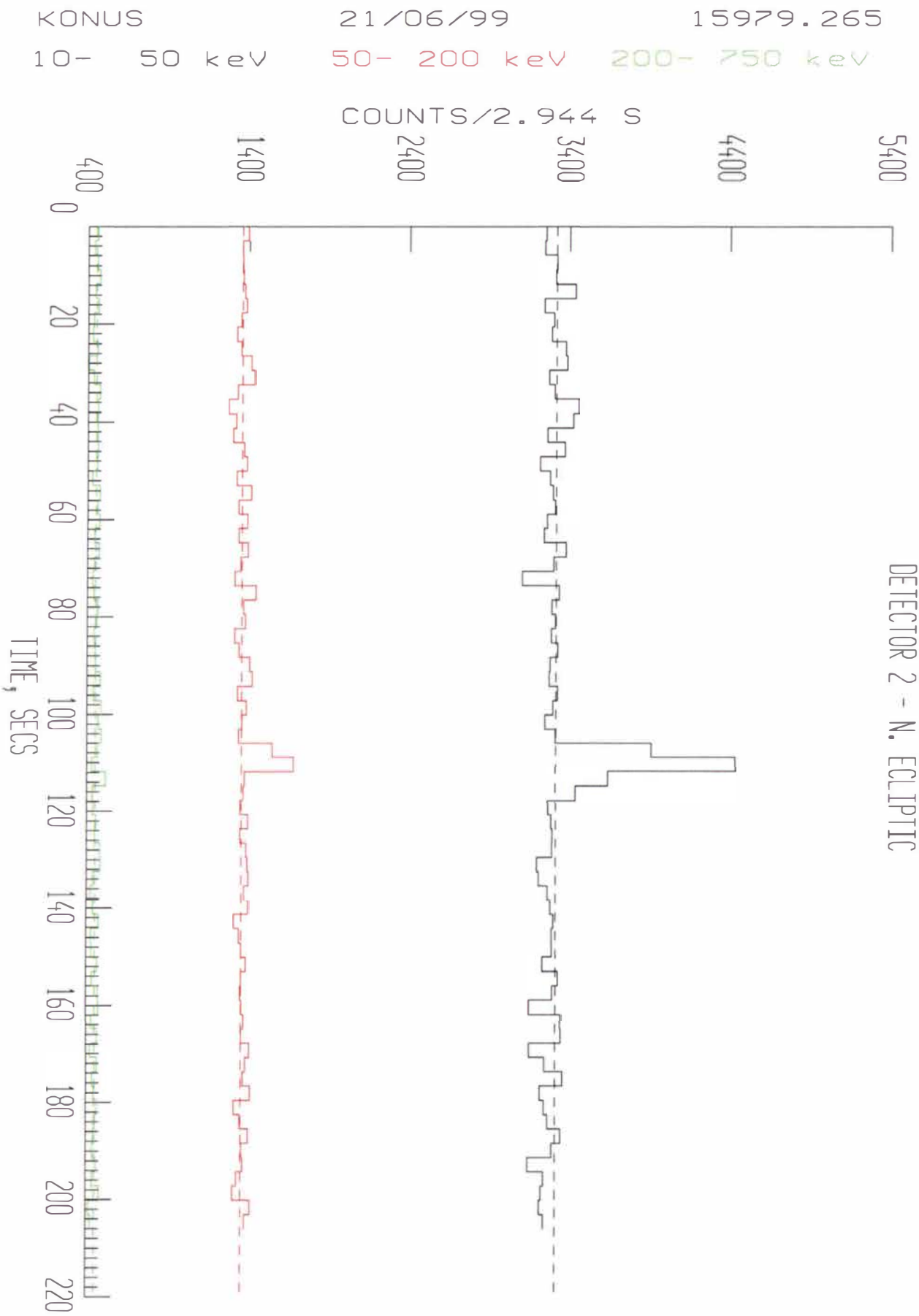


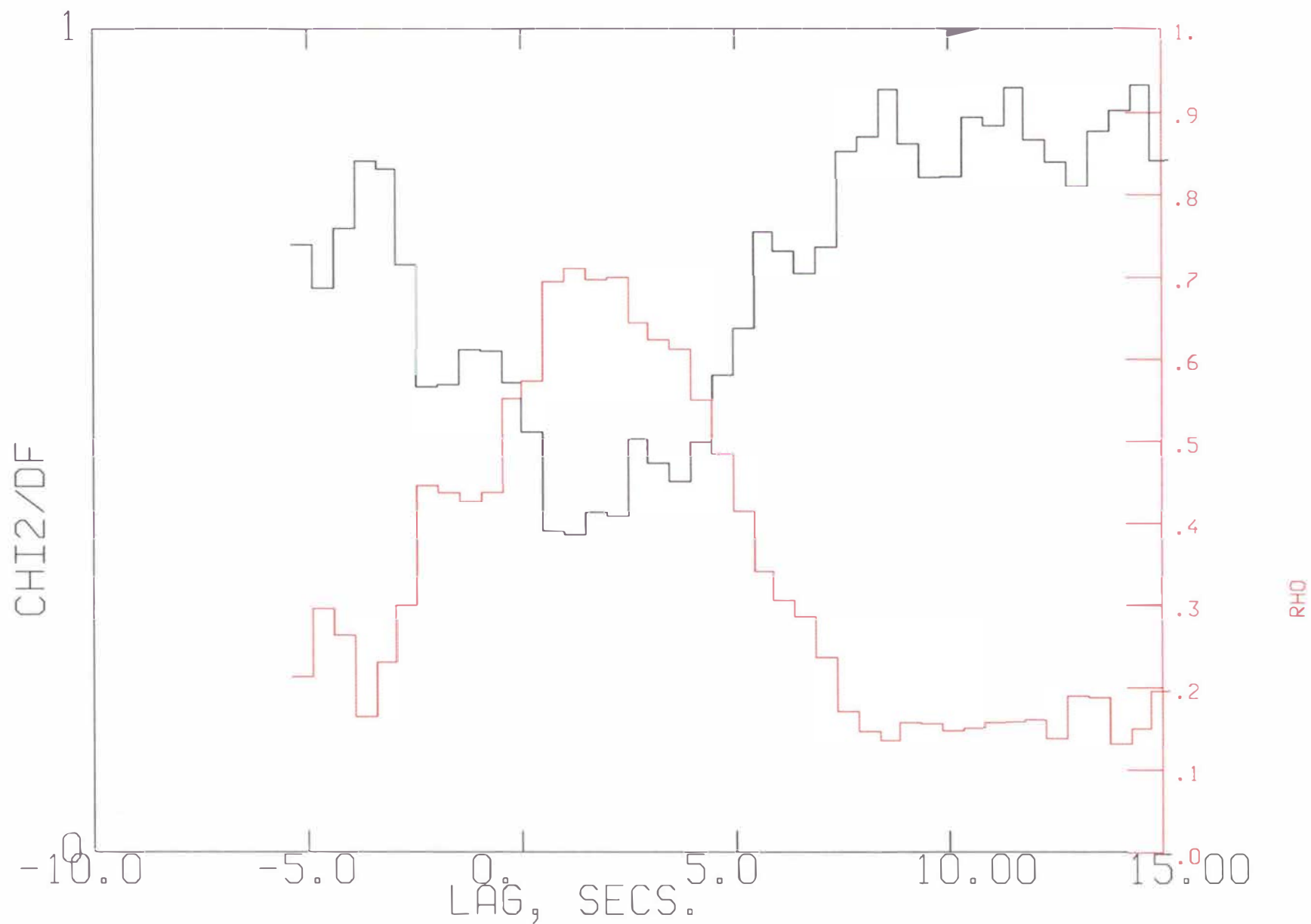
30/01/2013

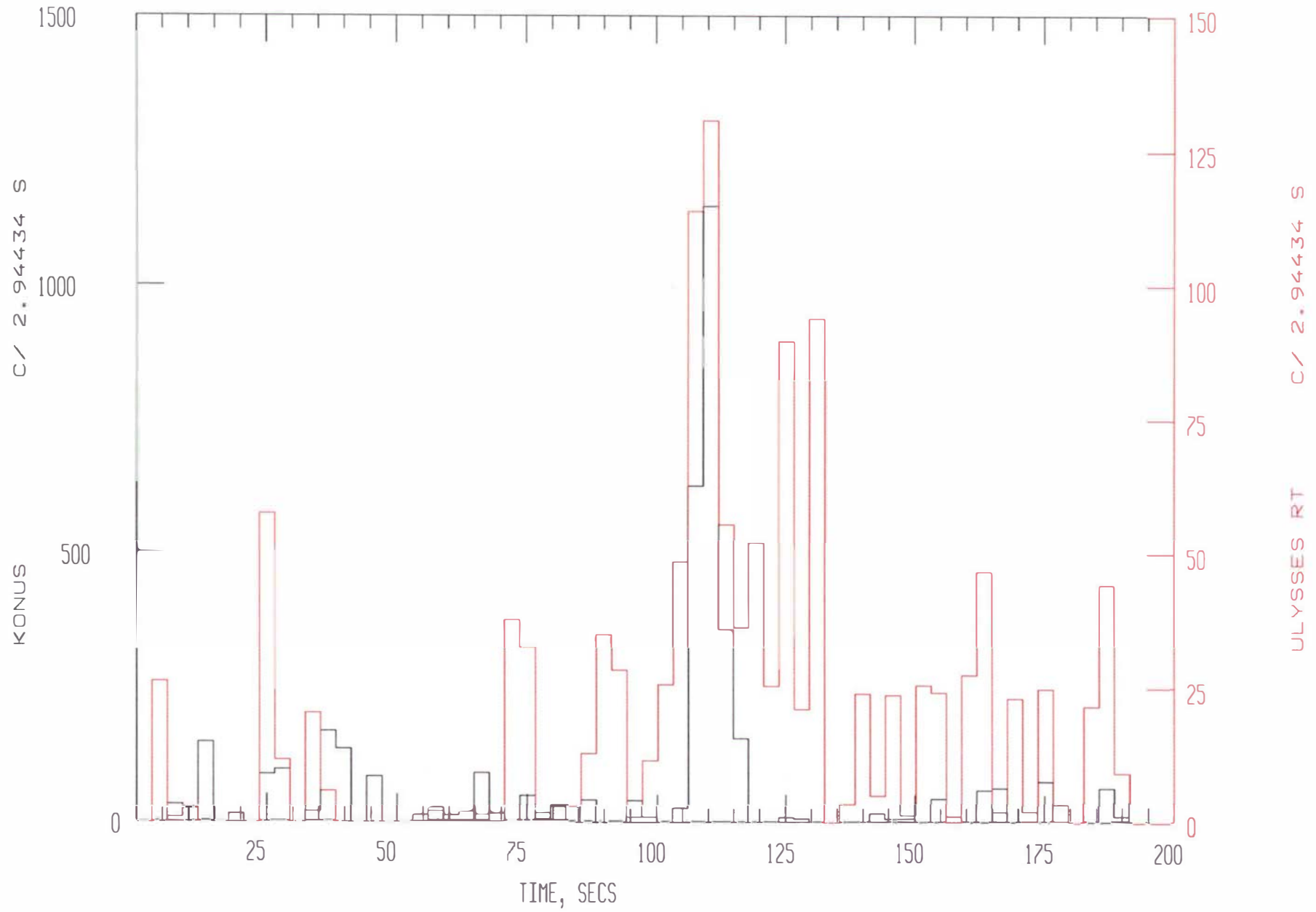
DETECTOR 1 - S. ECLIPSE



DETECTOR 2 - N. ECLIPIC







ULYSSES RT

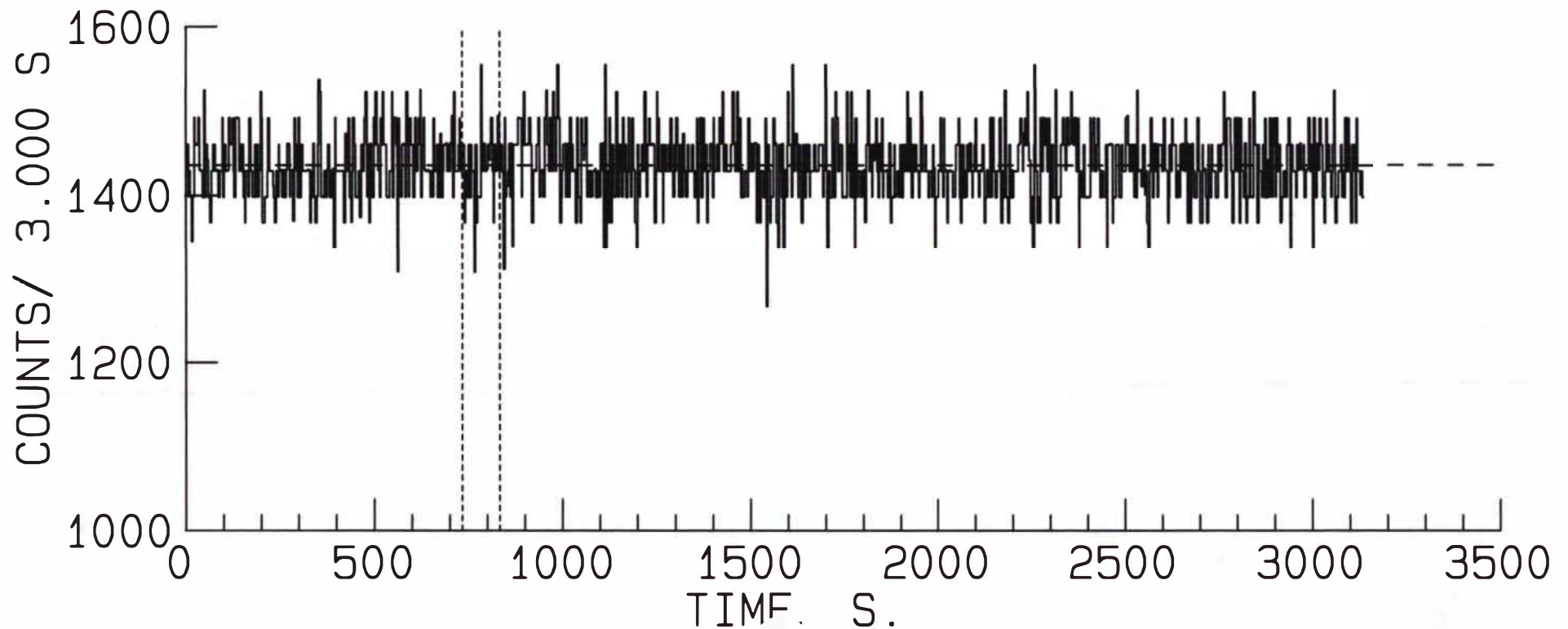
29/11/99

21/ 6/99 13428.088 s

1.000 S INTERVALS REGROUPED BY 3

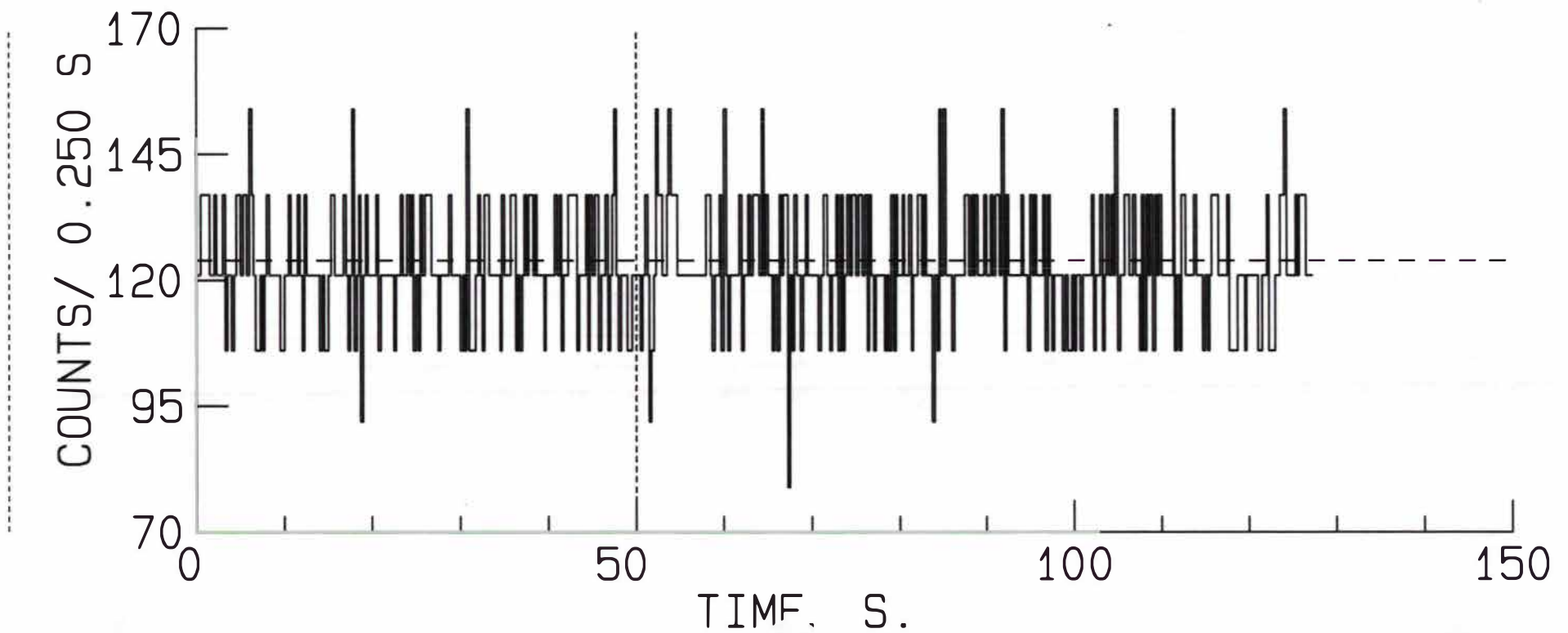
22- 150 keV

*~ 0.12 s long event
in KONUS*



ULYSSES RT
21/ 6/99 16604.377 s
22- 150 keV

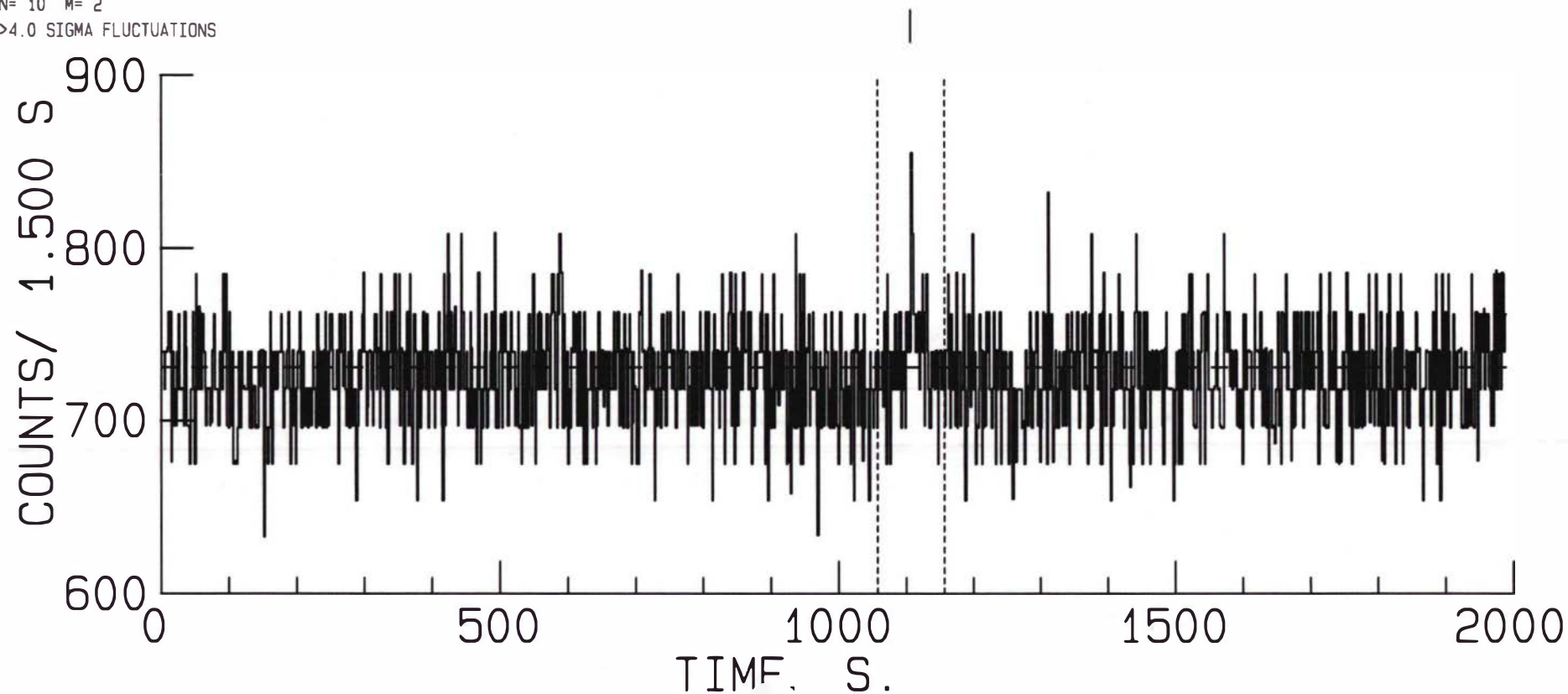
29/11/99



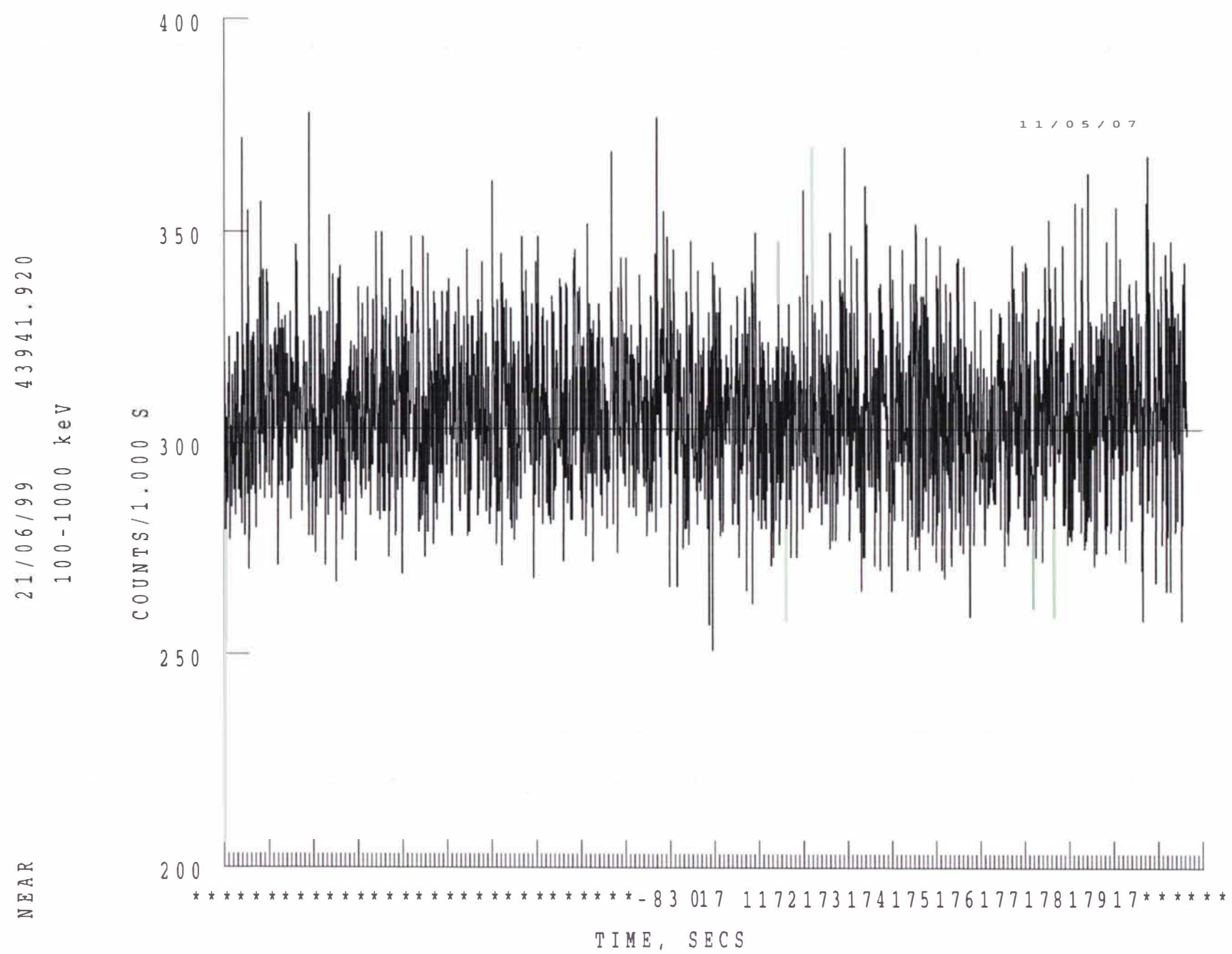
ULYSSES RT
21/ 6/99 16731.127 s
0.500 S INTERVALS REGROUPED BY 3
22- 150 keV

29/11/99

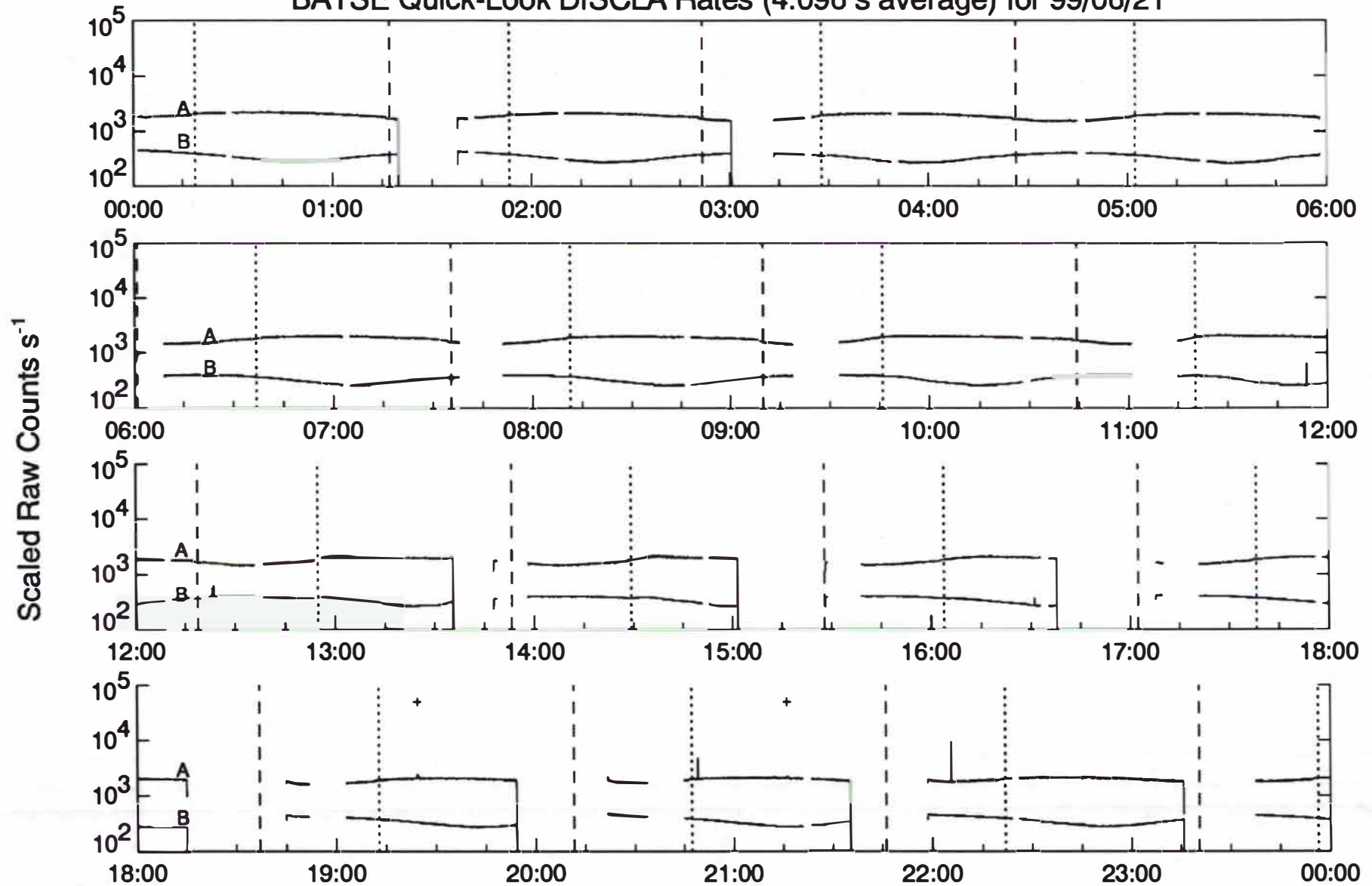
N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GRBM, Stem



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/21

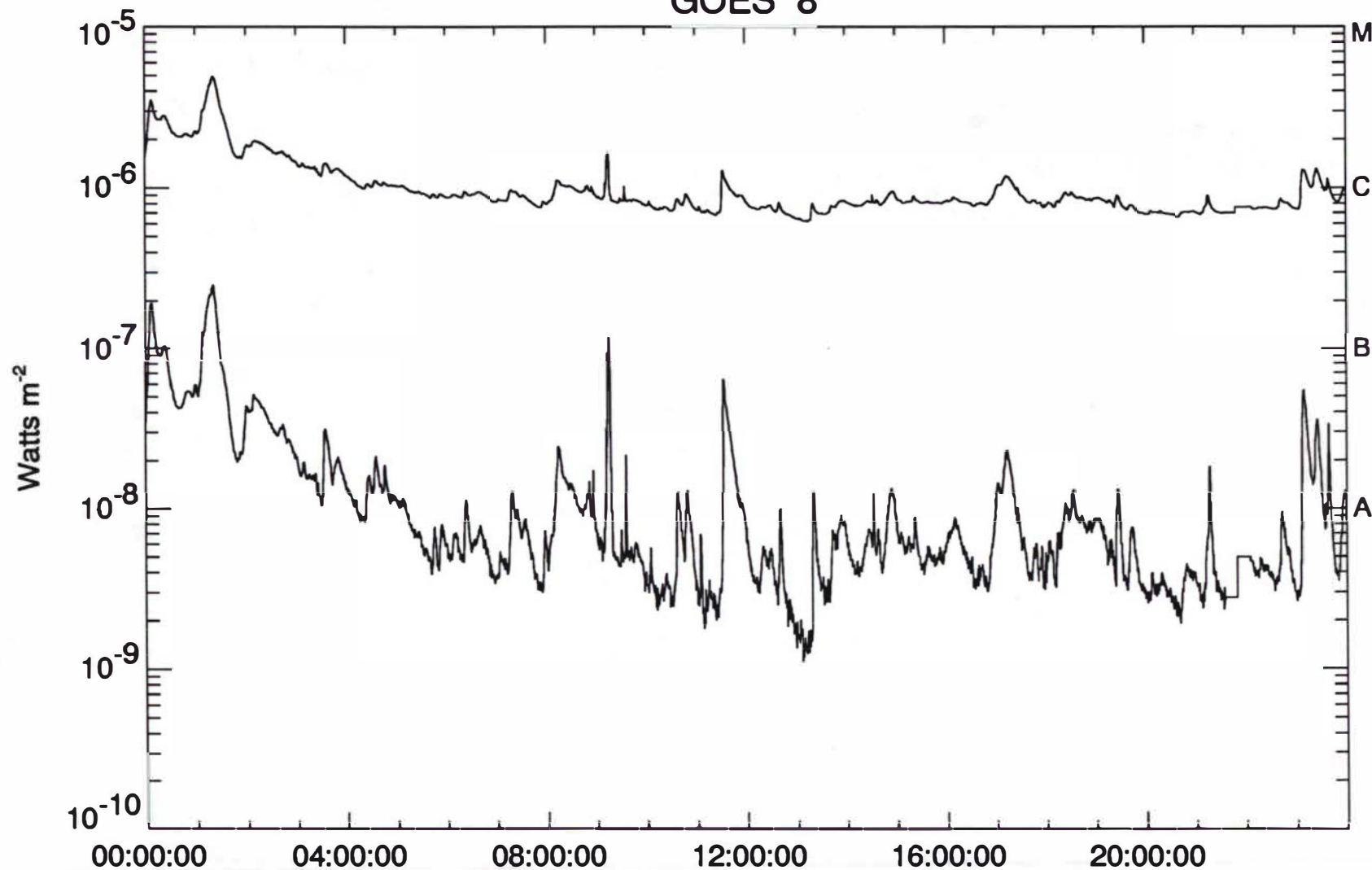


Current Time: 99/06/25, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/21, 0000:00

Plot created: 99/06/25, 1012

Channel

1 (1.0 - 8.0 Angstroms)

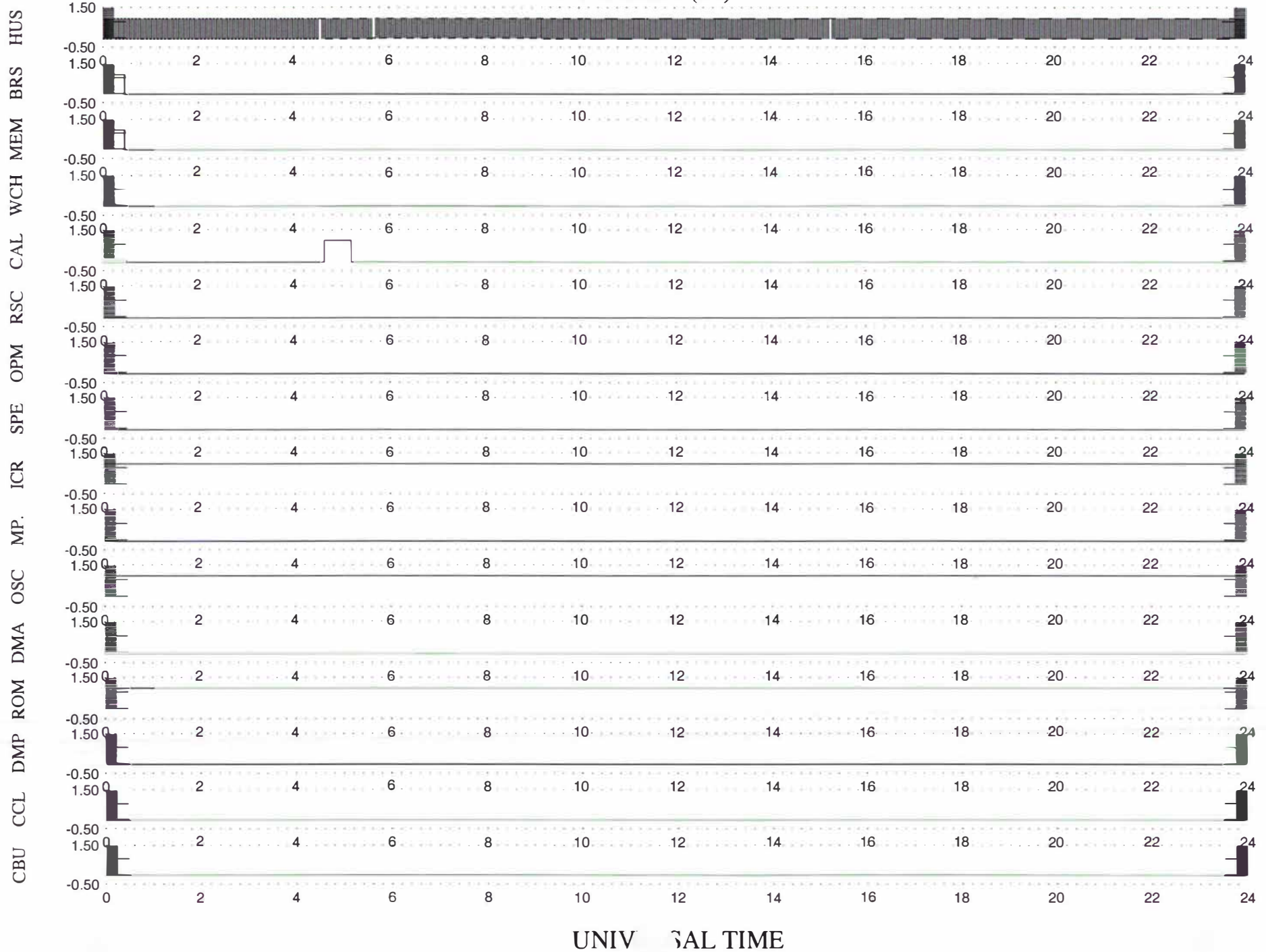
Background not subtracted

2 (0.5 - 4.0 Angstroms)

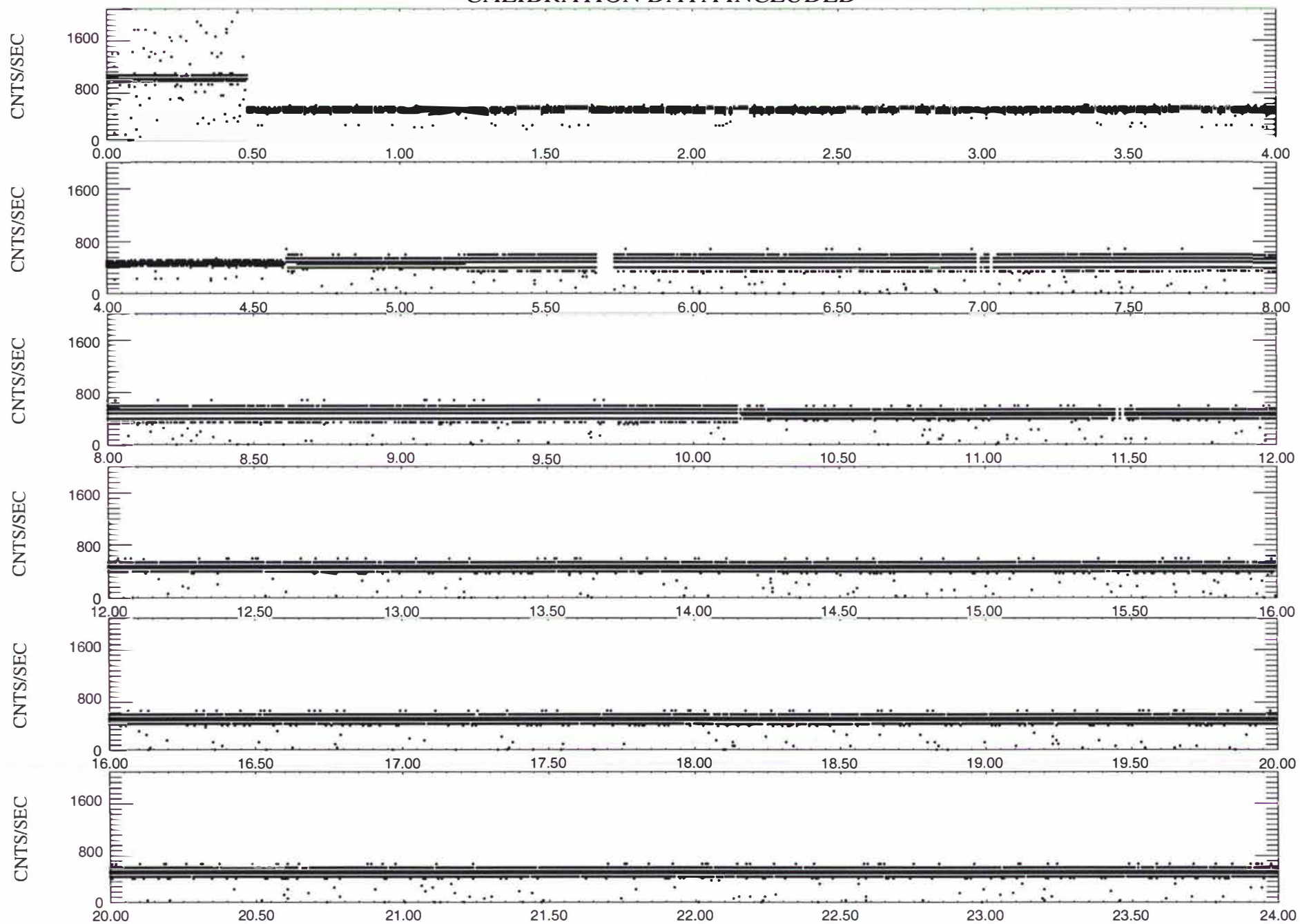
Background not subtracted

Sample average = 10

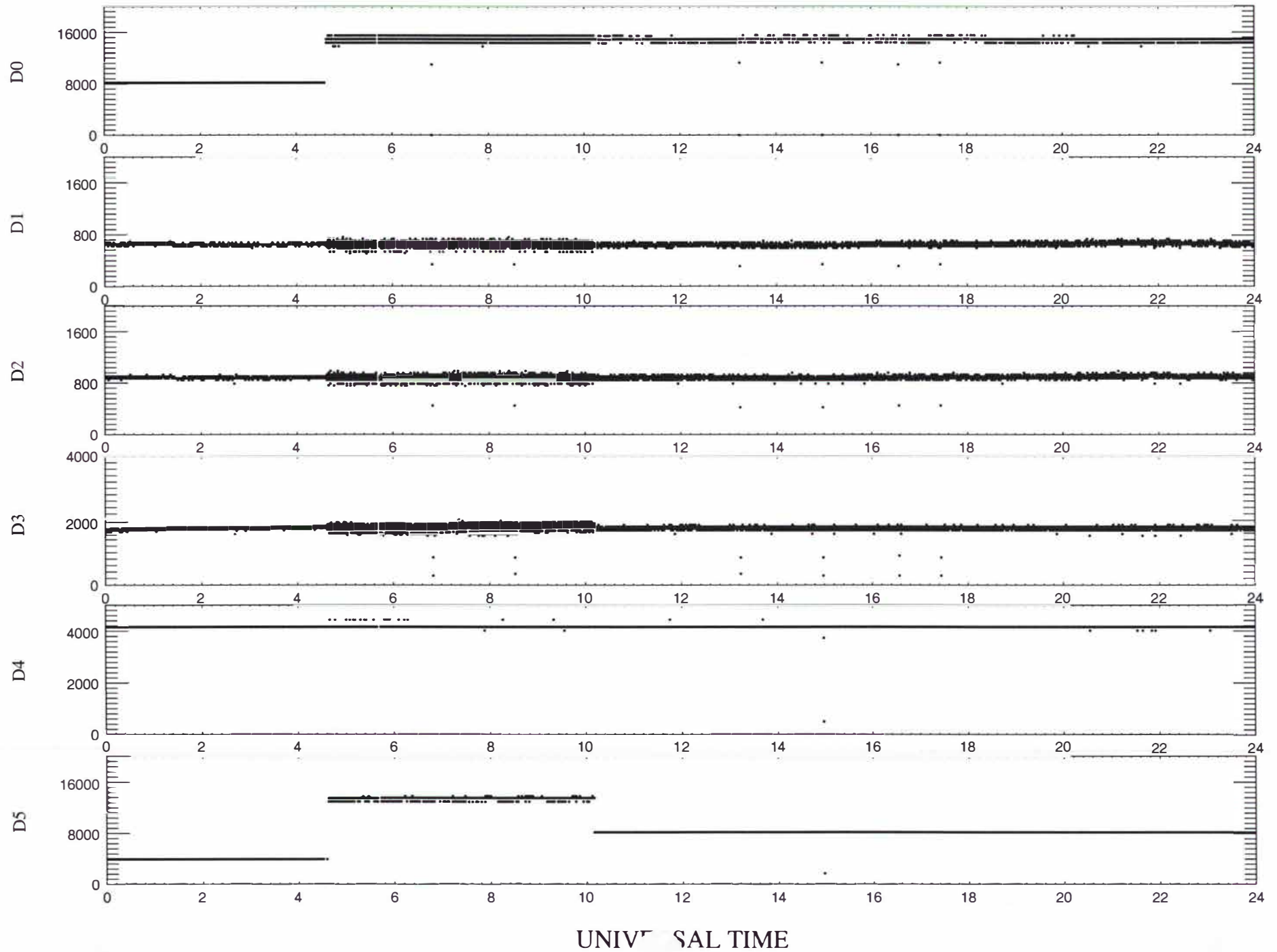
NO BURST (14)



CALIBRATION DATA INCLUDED



UNIV SAL TIME

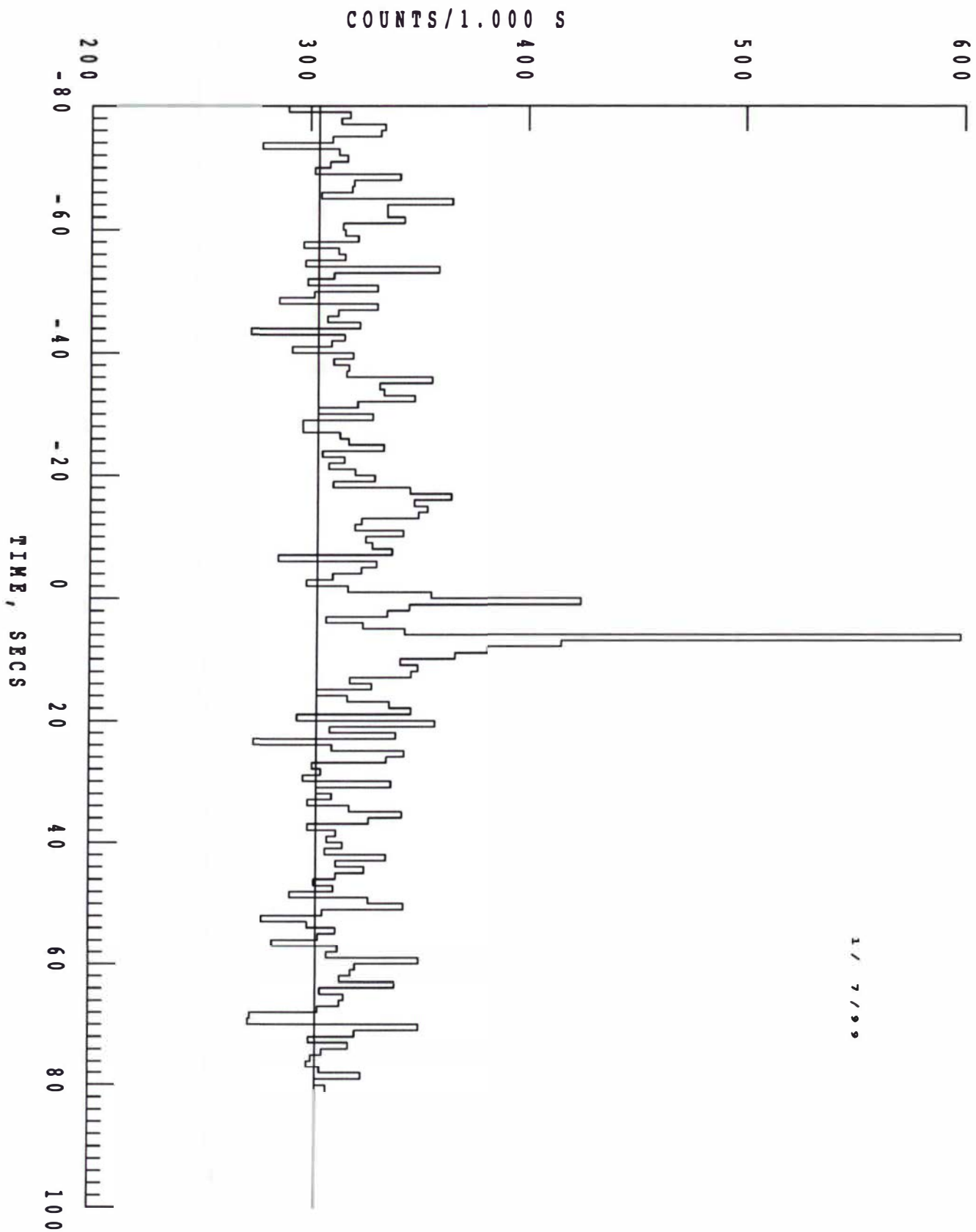


NEAR

22/06/99

28769.898

100-1000 keV



1 / 7 / 99

KNEAR GRS 19990622 28769

ULYSSES RT

1 / 7 / 99

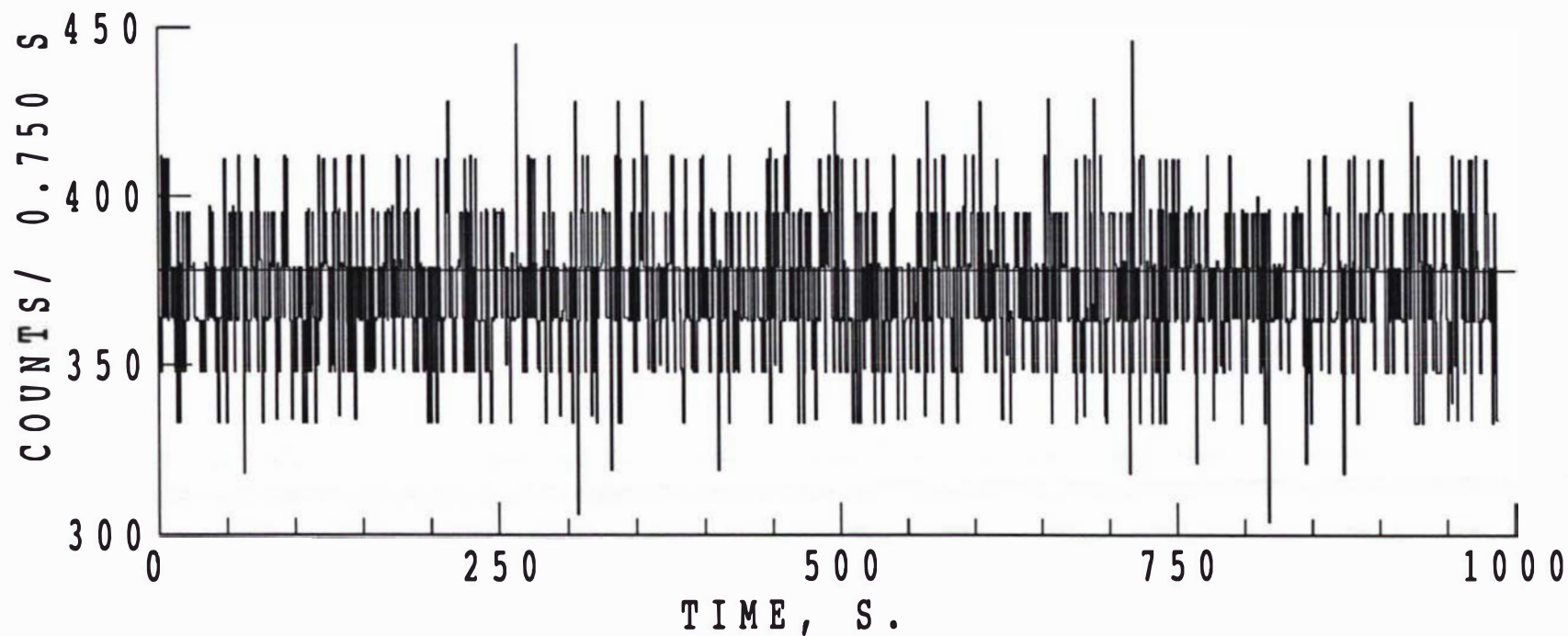
22 / 6 / 99 25956.092 s

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



Date: May 24 2007

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. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

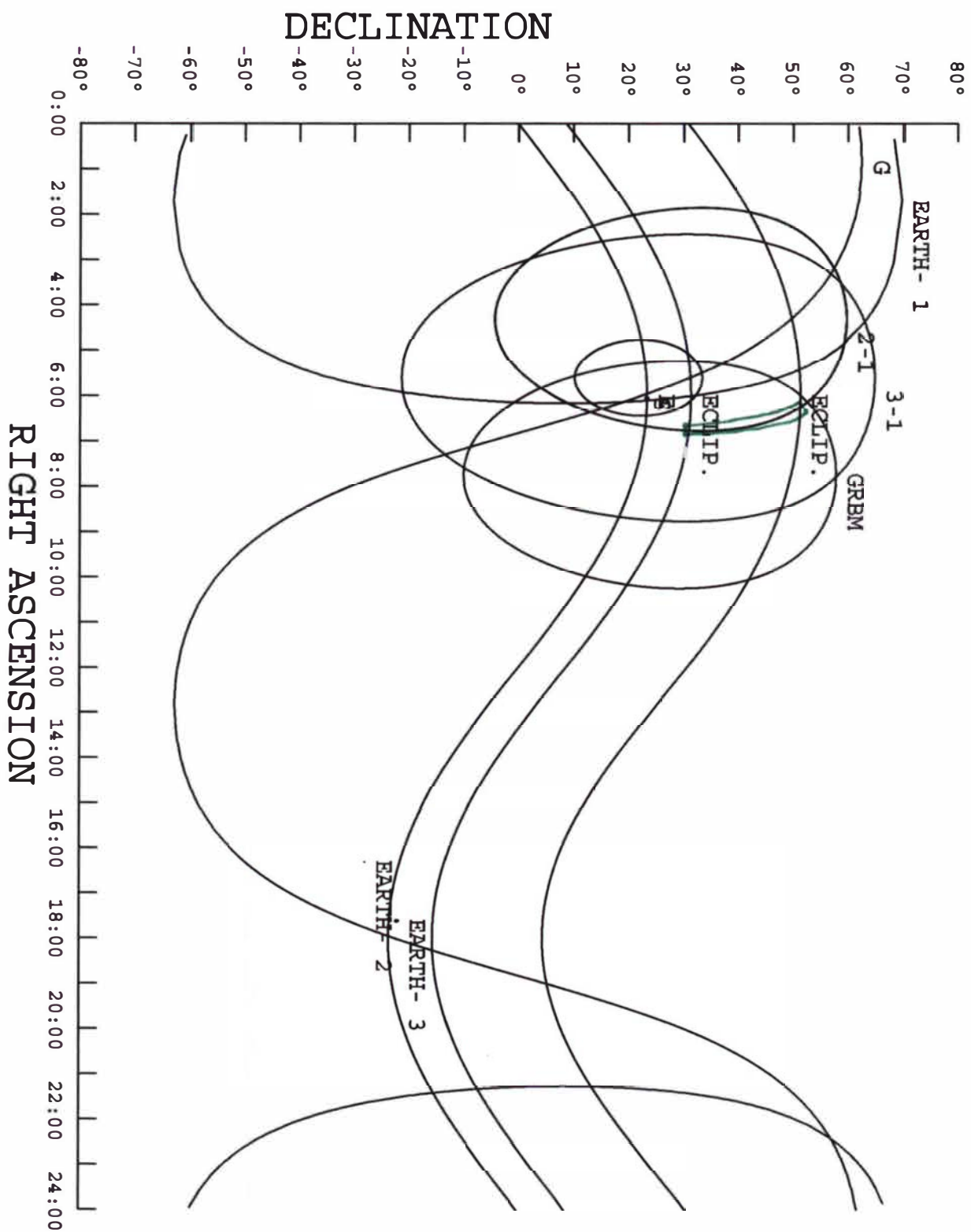
- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?

-
- ☒ ACCESS and MBL4 databases updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M
 EARTH-N = EARTH AS SEEN FROM SATELLITE N
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 SAX 2 NEAR 3 KONUS2

EVENT OF JUN 22, 1999 10:30

24 / 5 / 7



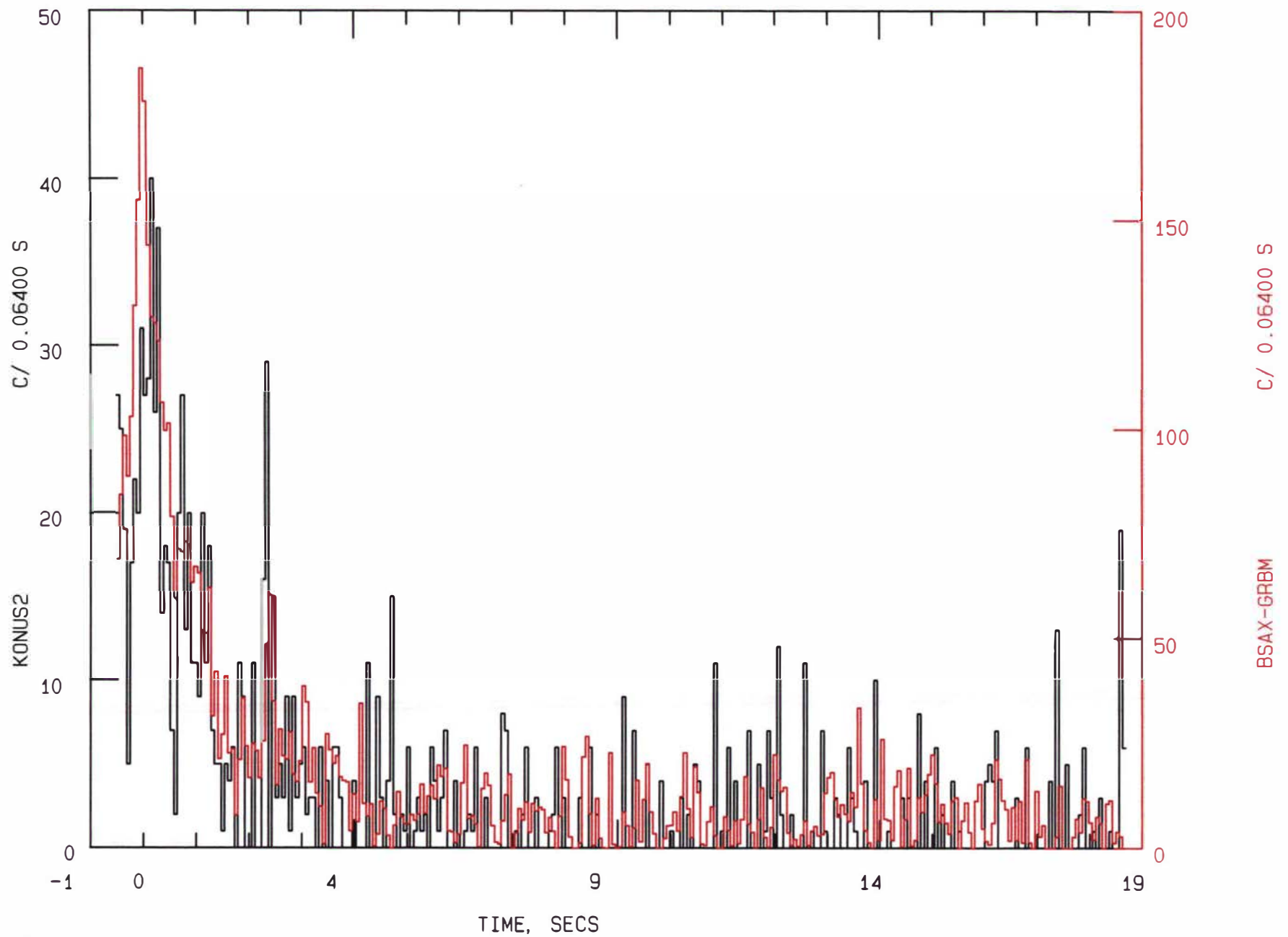
KONUS2

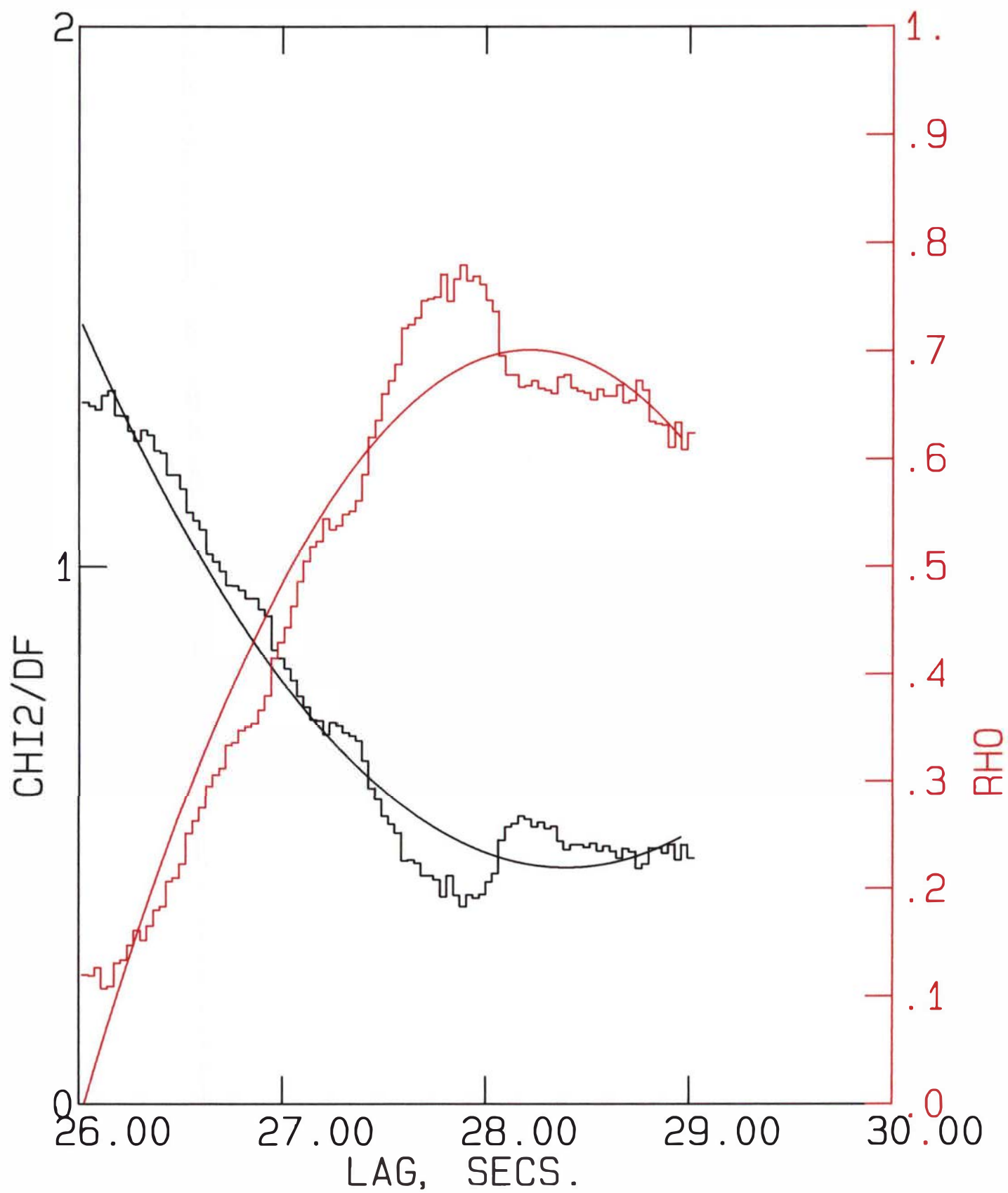
-BSAX-GRBM CORRELATION

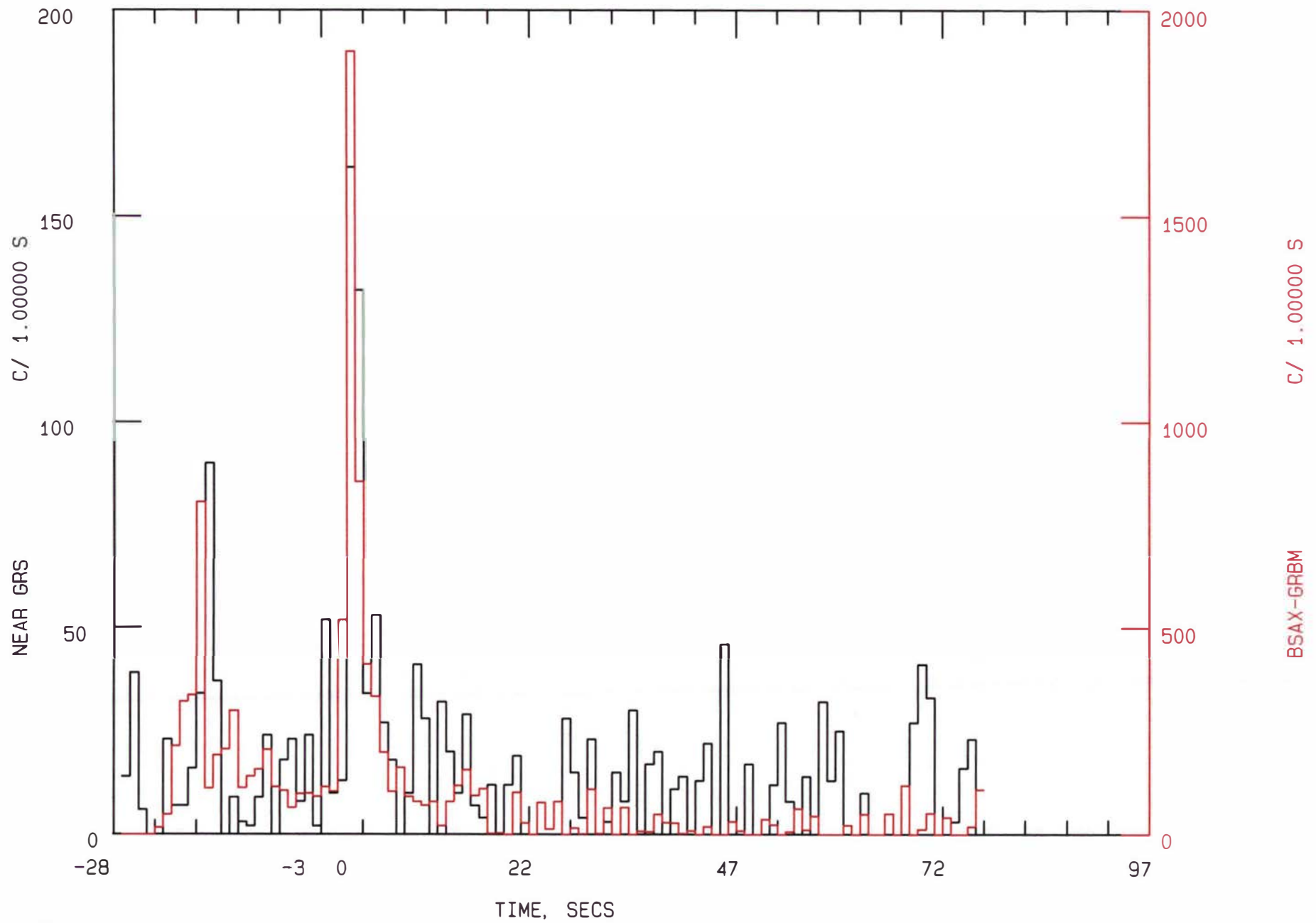
22/06/99

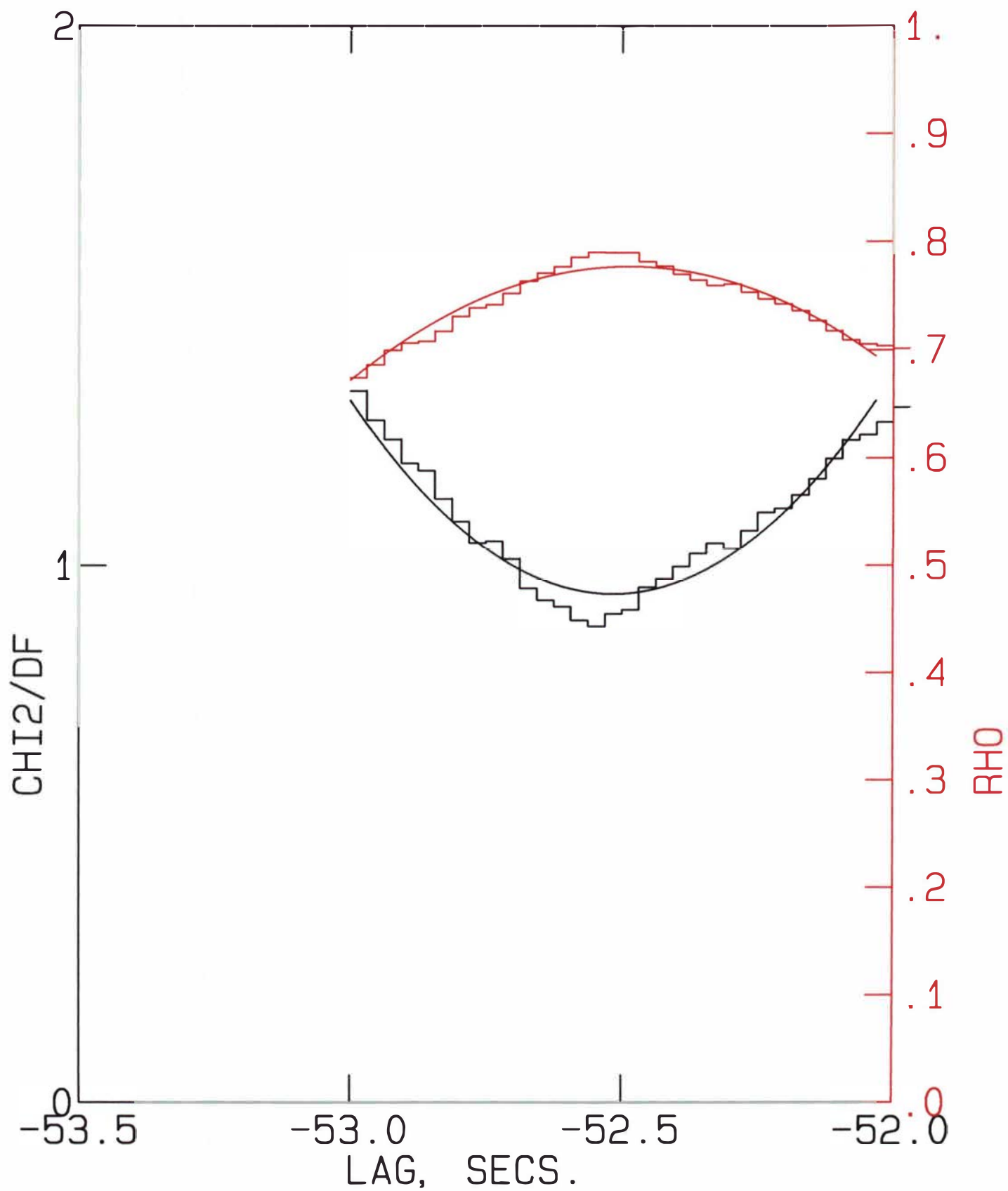
37844.652

24/ 5/ 7









KONUS2

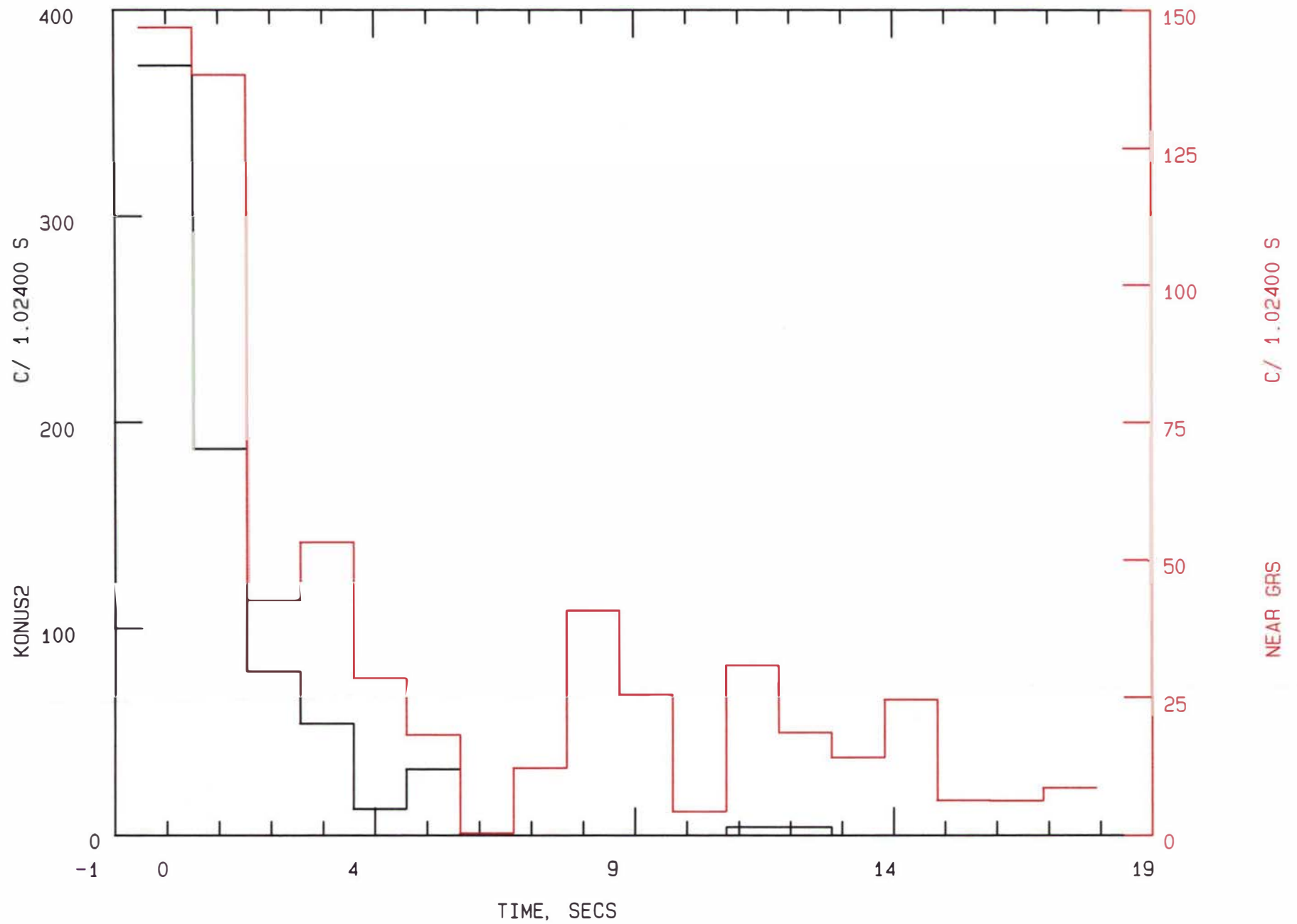
-NEAR GRS

CORRELATION

22/06/99

37844.652

24/ 5/ 7



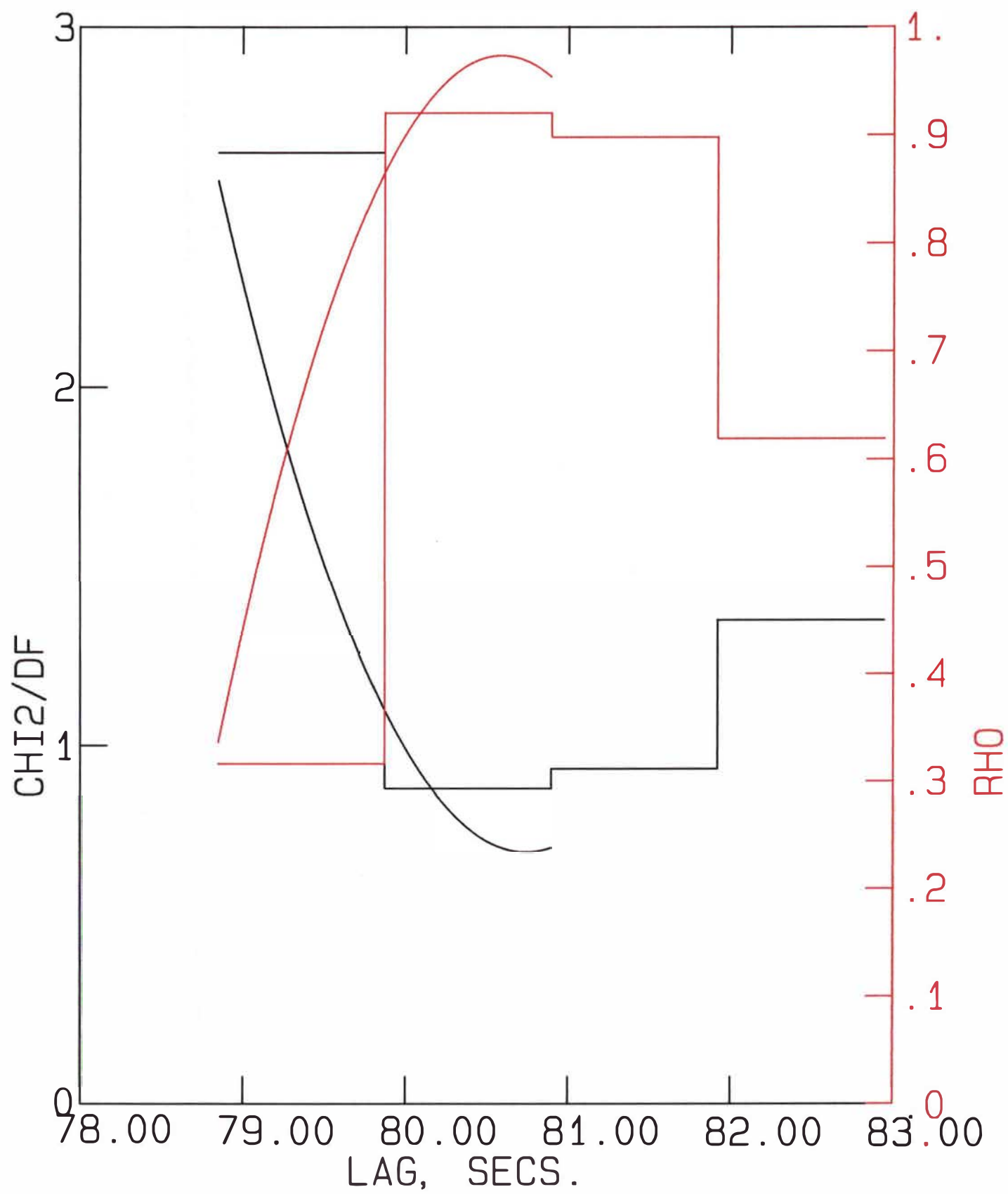
KONUS2

-NEAR GRS

CORRELATION

22/06/99

37844.652

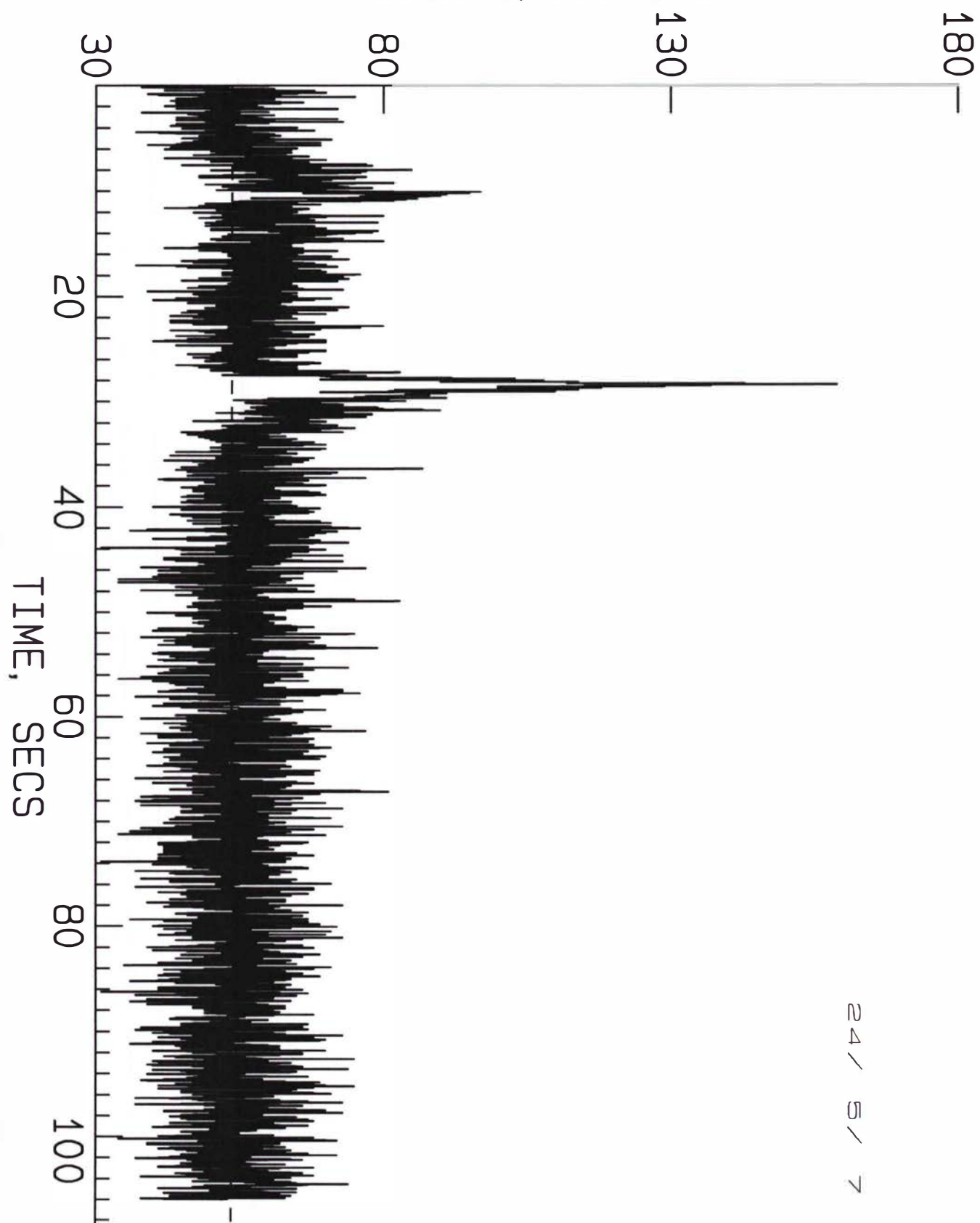


SAX GRBM

22/06/99 37820.251

40- 700 keV

COUNTS/0.031 S

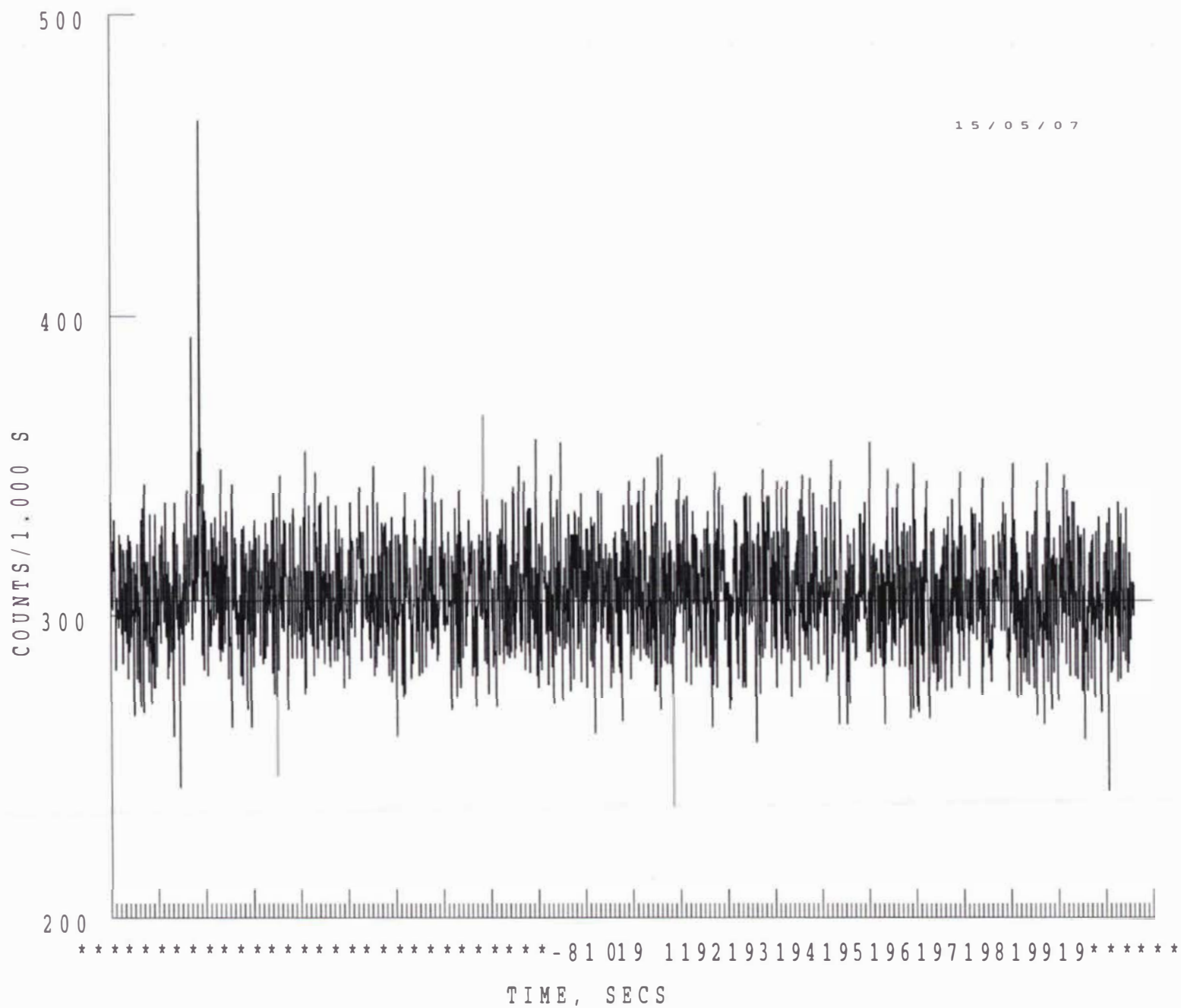


22/06/99 37826.896

100-1000 keV

NEAR

15 / 05 / 07



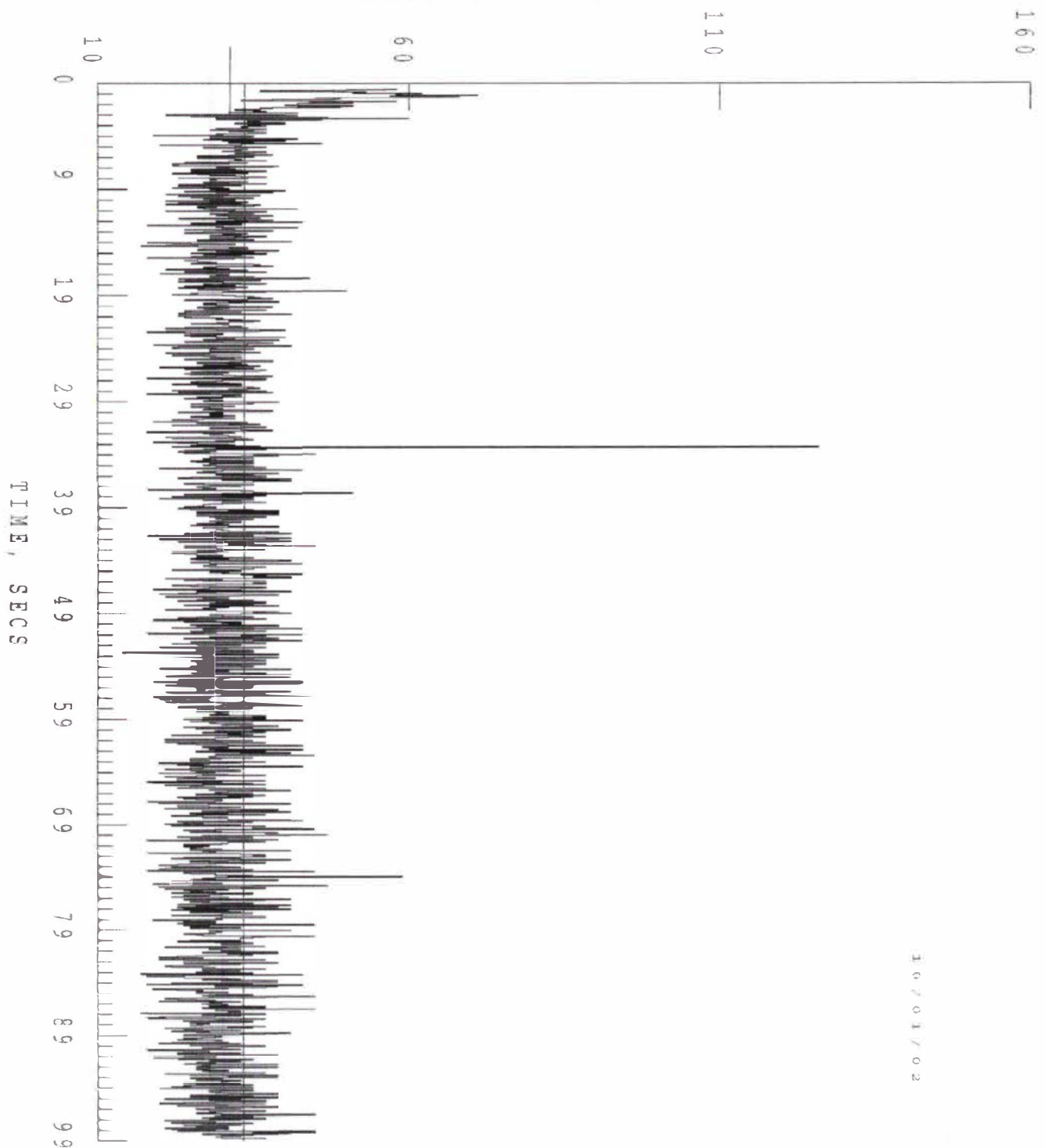
KONUS2

22/06/99

37844.652

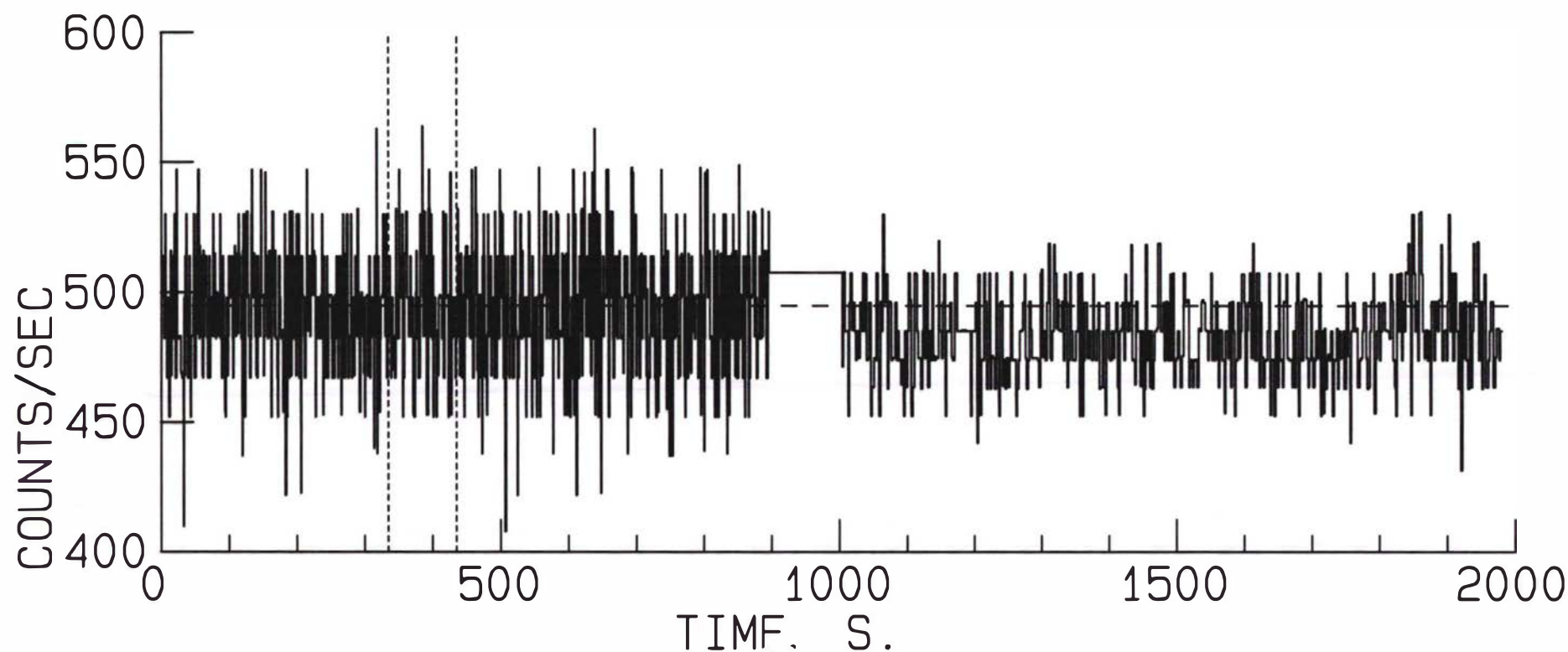
50 - 200 keV

COUNTS/0.064 S



ULYSSES RT
22/ 6/99 35244.184 s
INTERVALS REGROUPED BY 4
22- 150 keV

17 / 5 / 7

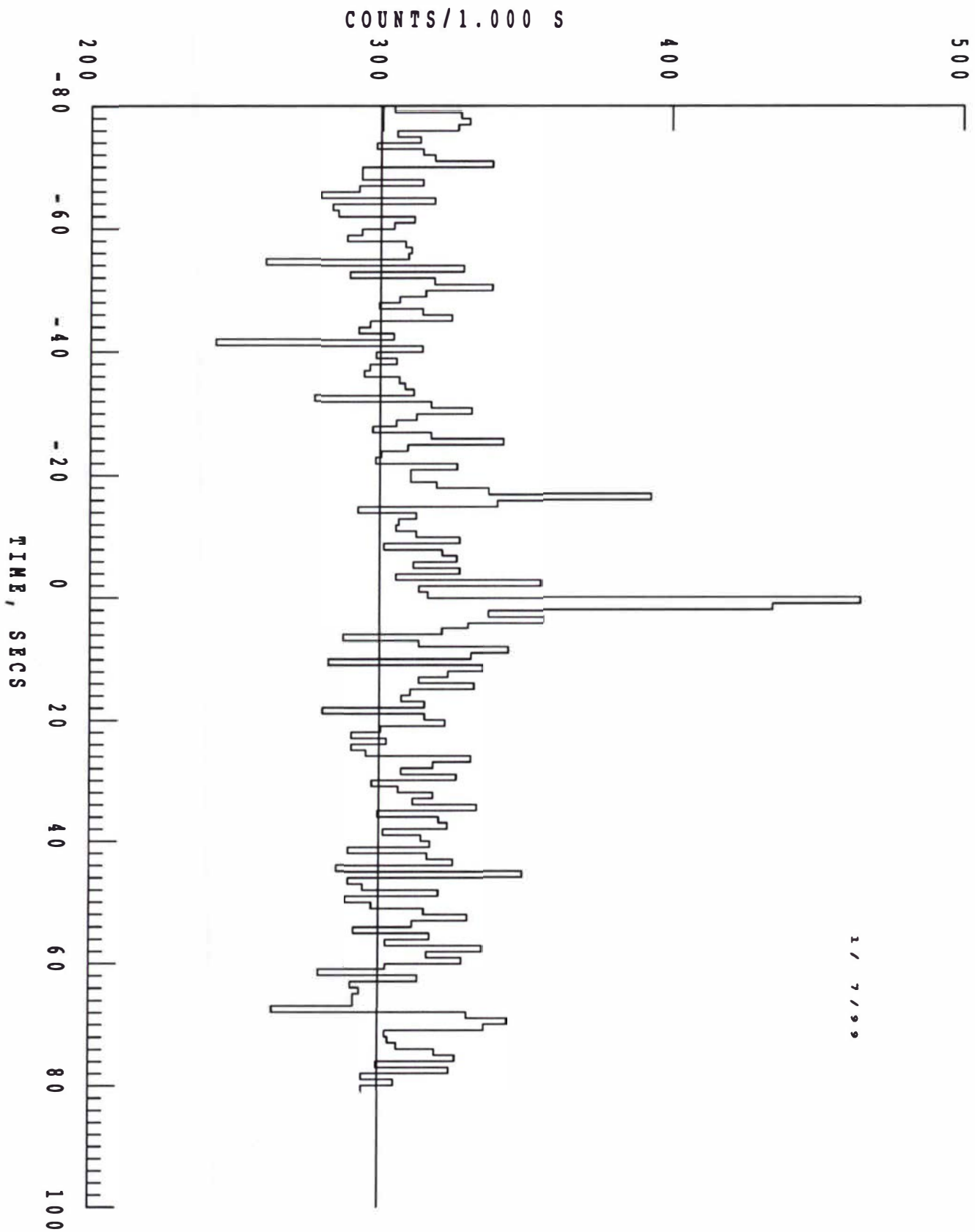


NEAR

22/06/99

36931.896

100-1000 keV



From GOGUSE@fender.msfc.nasa.gov Tue Jun 22 13:06 PDT 1999
From: GOGUSE@fender.msfc.nasa.gov
Date: Tue, 22 Jun 1999 15:07:51 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7514

BATSEARCH PROGRAM

BATSE BURST # 7514
EVENT OF 1999 JUN 20 DAY OF YEAR=171
EVENT CROSSING TIME AT BATSE : 41003. S. OR 11:23:23.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 268.000 -18.000
BATSE PEAK COUNTING RATE: 4700 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 20/ 6/ 99 IS:
RA= 145.492 DEC= -7.220 DIST= 5.204 AU
BATSE-ULYSSES DISTANCE = 778457693. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 62.08 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1215.81 SECS.
CROSSING TIME AT ULYSSES IS 42219. S. OR 11:43:38 +/- 466.81 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 20/ 6/ 99 IS:
RA= 203.801 DEC= -10.808 DIST= 0.752 AU
MARS-BATSE DISTANCE = 112520720. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION=117.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -174.36 SECS.
CROSSING TIME AT MARS IS 40829. S. OR 11:20:28 +/- 55.06 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7514	990620	11349	41003	4700	268	-18	27

BATSE BURST TRIGGER

NO.: 7614

TIME: TJD=1349 SECONDS=41003

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 83.7 AZIMUTH=178.6 ERROR= 1.5 DEGREES

COMMENTS:

GRB, FRED, DUR. APP. 27 SEC., MARGINALLY VISIBLE ABOVE 300 KEV

BATSE BURST# 7514

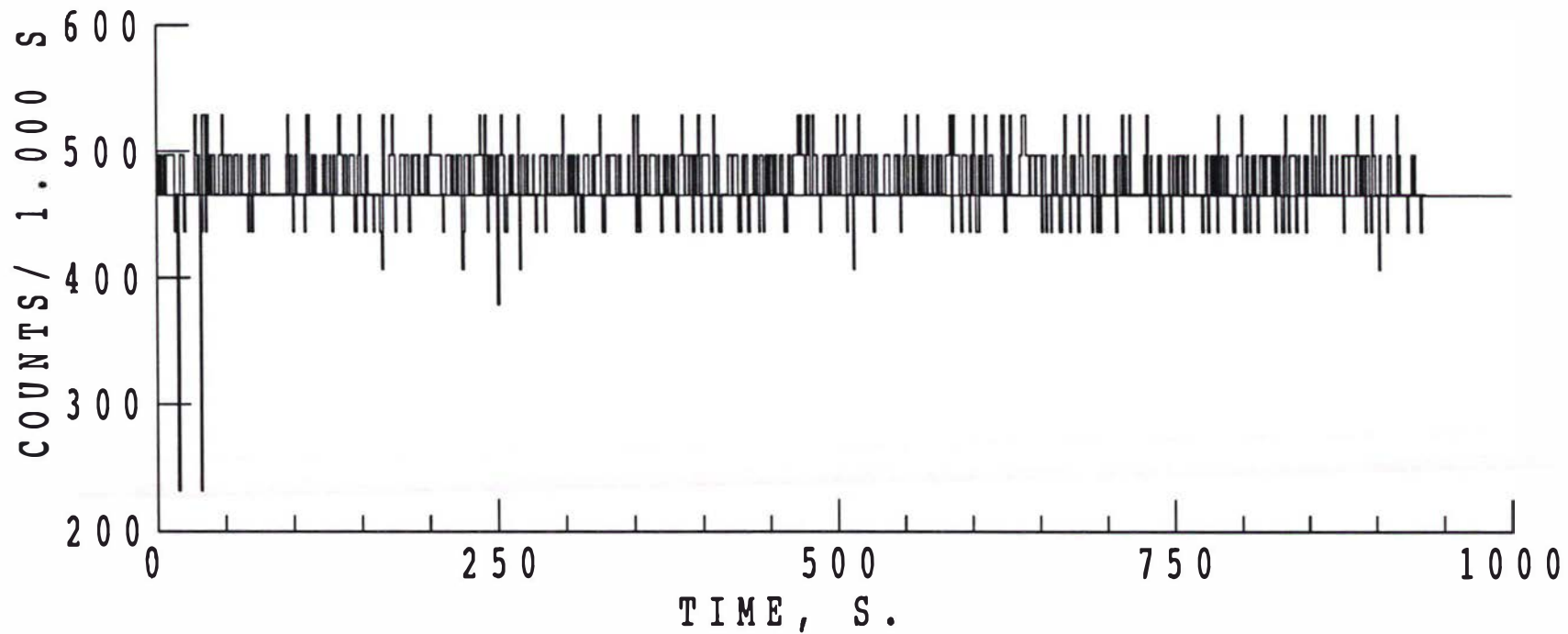
ULYSSES RT

23 / 9 / 99

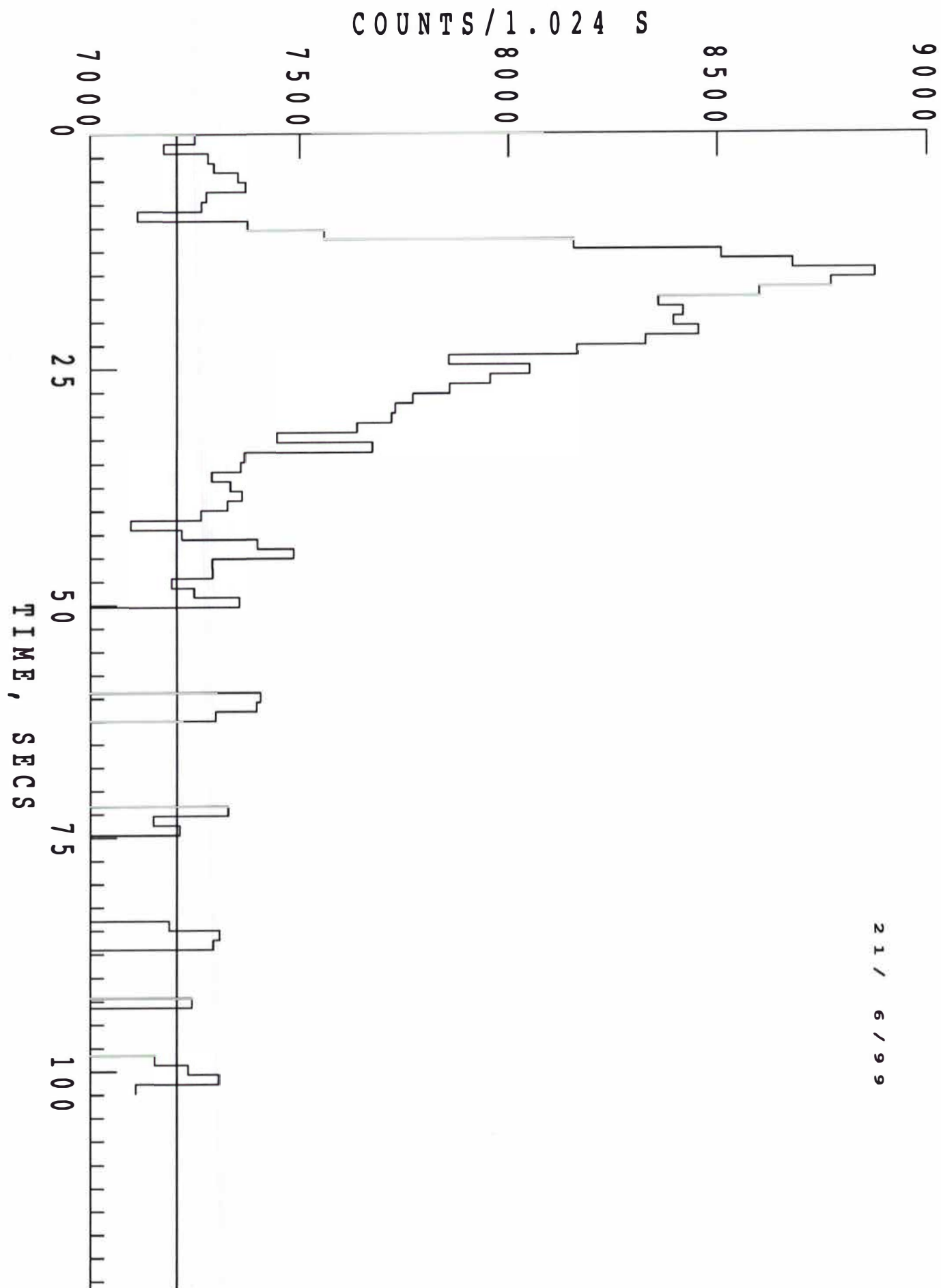
20 / 6 / 99 41760.496 s

0 - 0 keV

N=10 M=2
>4.0 SIGMA FLUCTUATIONS



BACODINE 7614 20/06/99 40991.481
25- 100 keV



From SAHI@fender.msfc.nasa.gov Fri Jun 25 07:26 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 25 Jun 1999 9:30:04 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7616

BATSEARCH PROGRAM

BATSE BURST # 7616
EVENT OF 1999 JUN 22 DAY OF YEAR=173
EVENT CROSSING TIME AT BATSE : 57909. S. OR 16:05:09.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 50.000 -42.000
BATSE PEAK COUNTING RATE: 4000 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 6/ 99 IS:
RA= 145.685 DEC= -7.293 DIST= 5.227 AU
BATSE-ULYSSES DISTANCE = 782024507. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 90.68 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= -31.12 SECS.
CROSSING TIME AT ULYSSES IS 57878. S. OR 16:04:37 +/- 502.38 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 6/ 99 IS:
RA= 204.163 DEC= -11.002 DIST= 0.764 AU
MARS-BATSE DISTANCE = 114229744. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 58.07 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 201.51 SECS.
CROSSING TIME AT MARS IS 58111. S. OR 16:08:30 +/- 59.20 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7616	990622	11351	57909	4000	050	-42	.3

BATSE BURST TRIGGER

NO.: 7616

TIME: TJD=1351 SECONDS=57909

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=87.5 AZIMUTH=46.7 ERROR=18 DEGREES

COMMENTS:

GRB. SINGLE SPIKE, DUR. APPROX 0.3 S, STARTS AT T-0.2 S. NOT VISIBLE ABOVE 300 KEV. CYGX-1 SET AT T+80 S.

BATSE BURST# 7616

ULYSSES RT

11 / 11 / 99

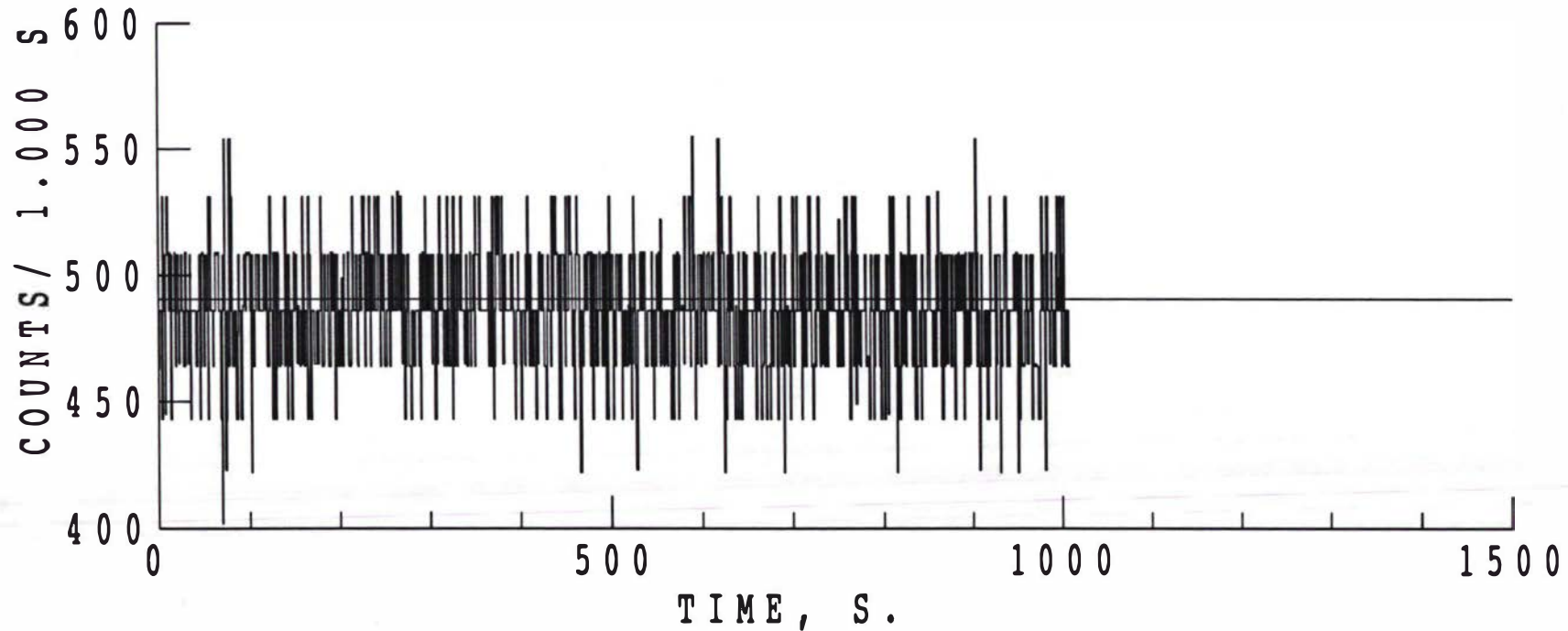
22 / 6 / 99 57384.406 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



From SAHI@fender.msfc.nasa.gov Fri Jun 25 07:28 PDT 1999
From: SAHI@fender.msfc.nasa.gov
Date: Fri, 25 Jun 1999 9:32:40 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7617

BATSEARCH PROGRAM

BATSE BURST # 7617
EVENT OF 1999 JUN 22 DAY OF YEAR=173
EVENT CROSSING TIME AT BATSE : 74850. S. OR 20:47:30.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 79.000 -30.000
BATSE PEAK COUNTING RATE: 4500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 22/ 6/ 99 IS:
RA= 145.702 DEC= -7.300 DIST= 5.230 AU
BATSE-ULYSSES DISTANCE = 782337167. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION=113.78 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH=-1052.40 SECS.
CROSSING TIME AT ULYSSES IS 73798. S. OR 20:29:57 +/- 448.61 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 22/ 6/ 99 IS:
RA= 204.163 DEC= -11.002 DIST= 0.764 AU
MARS-BATSE DISTANCE = 114229744. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 66.79 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 150.19 SECS.
CROSSING TIME AT MARS IS 75000. S. OR 20:50:00 +/- 63.08 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7617	990622	11351	74850	4500	079	-30	70

BATSE BURST TRIGGER

NO.: 7617

TIME: TJD=1351 SECONDS=74850

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=63.6 AZIMUTH=34.9 ERROR=1.2 DEGREES

COMMENTS:

GRB. DOUBLE PULSE, TOTAL DUR. 70 S, STARTS AT T-40 S, MAX. OF FIRST PULSE AT T-25 S, MAX. OF SECOND PULSE AT T. VISIBLE ABOVE 300 KEV. CYGX-1 SET AT T+150 S.

BATSE BURST# 7617

ULYSSES RT

11 / 11 / 99

22 / 6 / 99 73332.070 s

0.500 S INTERVALS REGROUPED BY 2

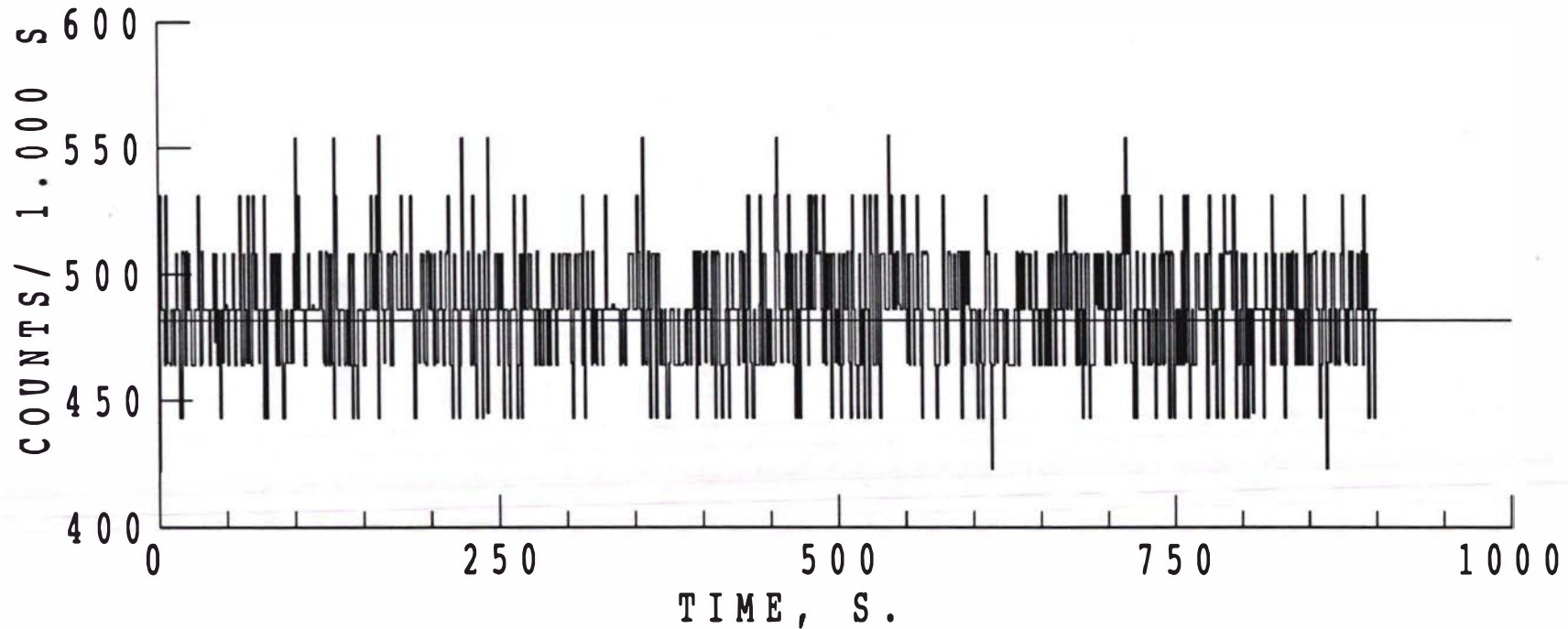
0 - 0 keV

N= 10 M= 10

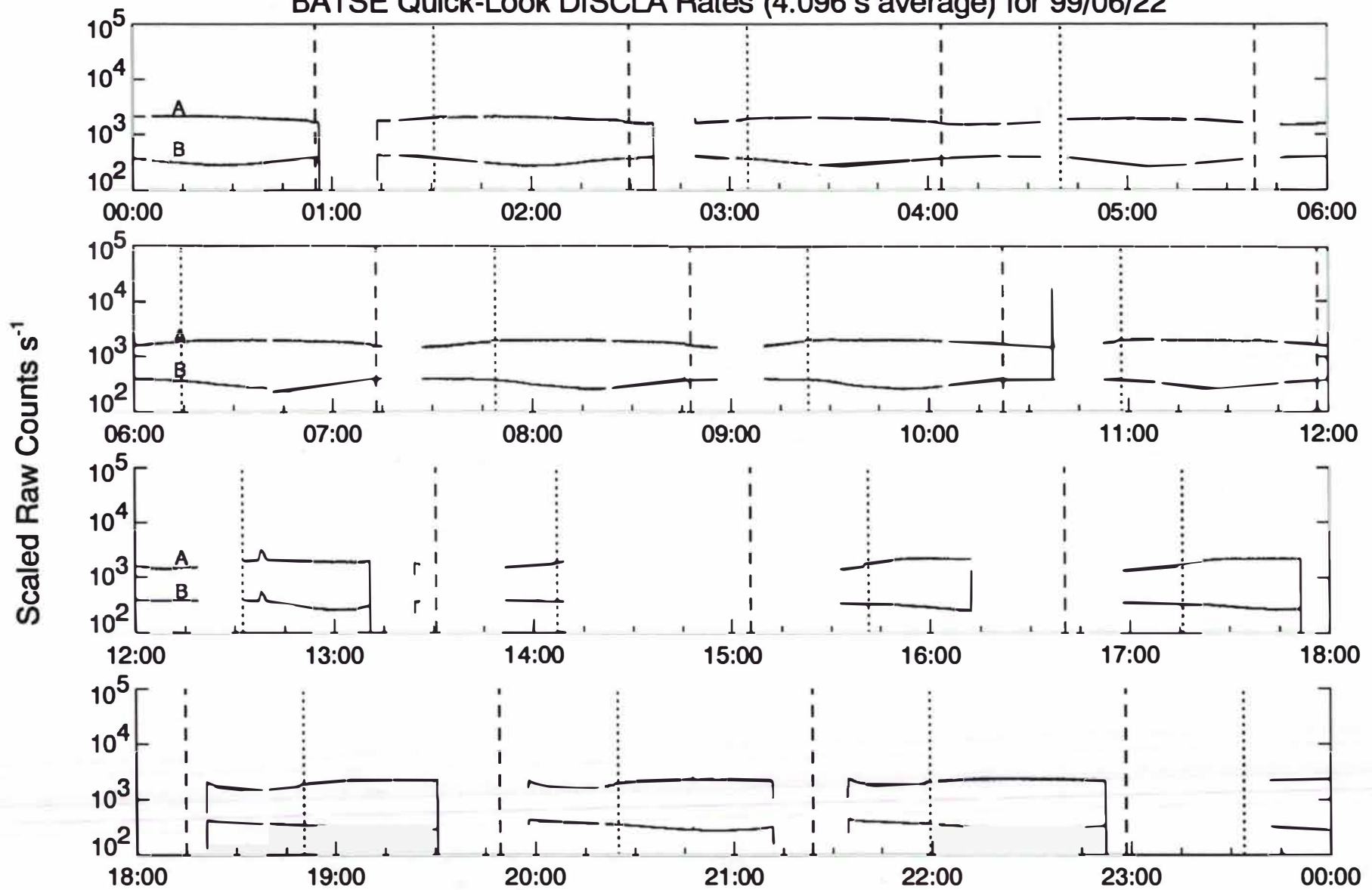
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/22

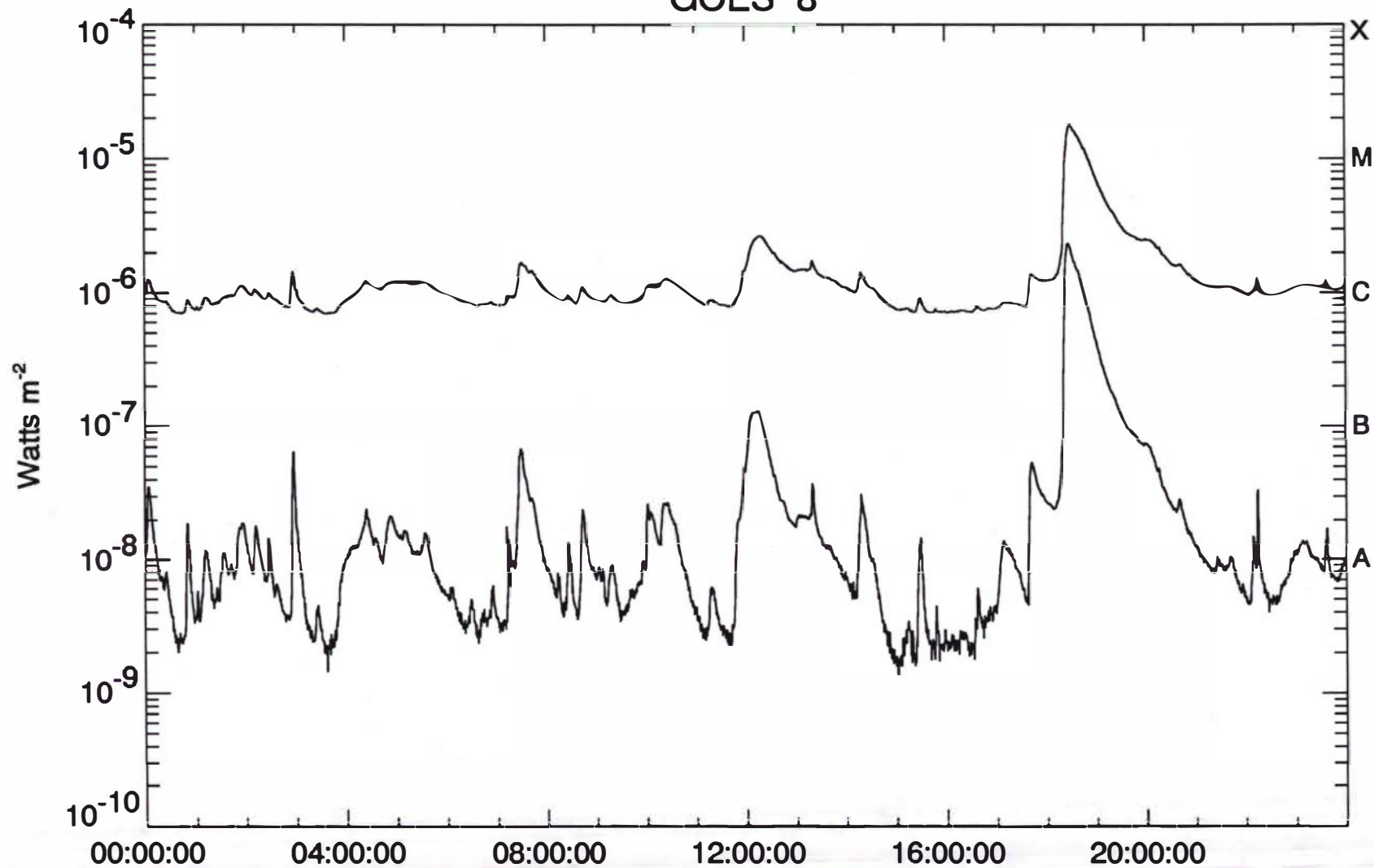


Current Time: 99/06/26, 1012 EDT
A: Channel 0 Most Sunward LAD
B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
Dashed line: Night entry

* Solar Burst Trigger
+ Solar Flare

GOES 8

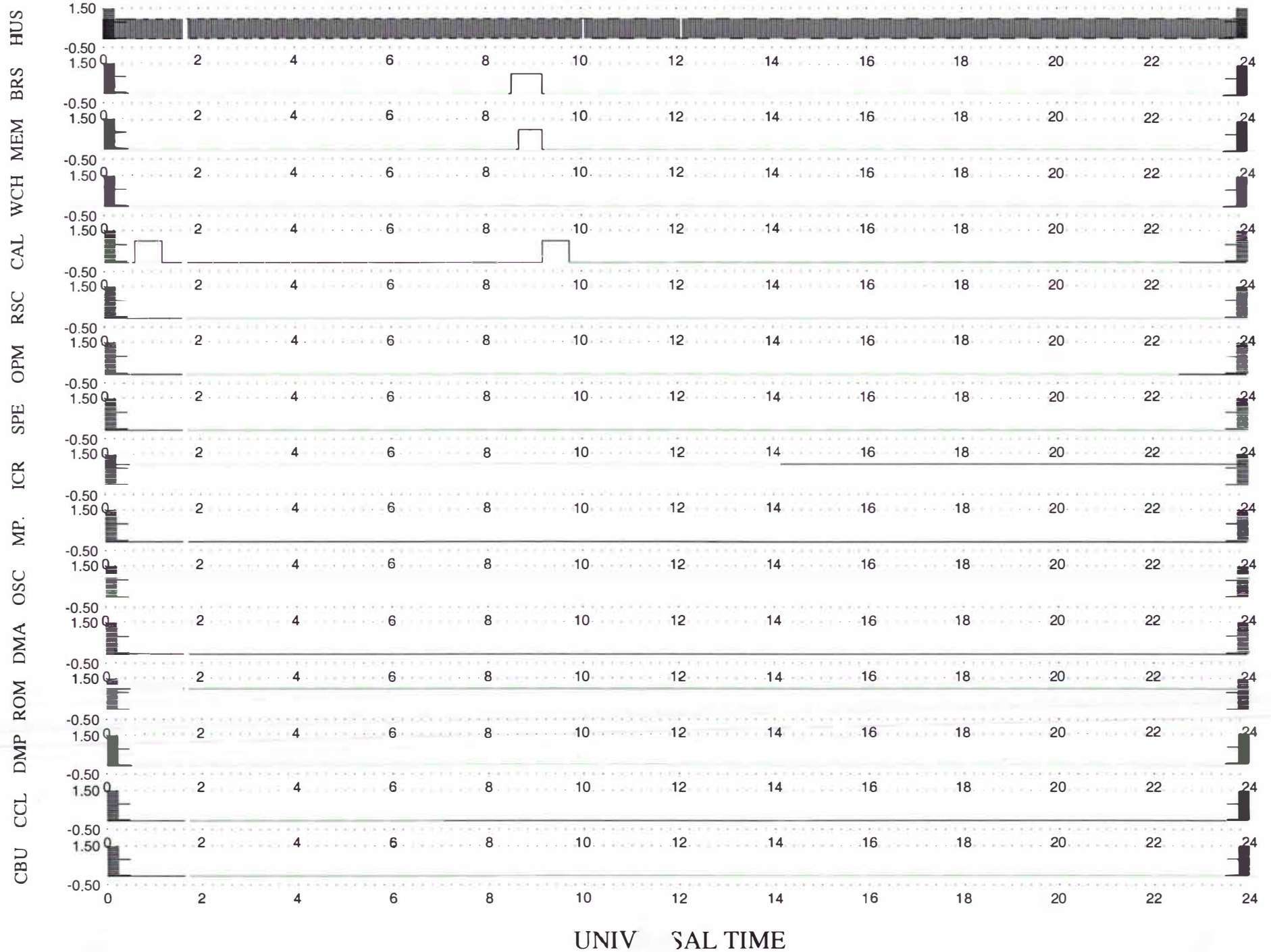


Data Start: 99/06/22, 0000:00

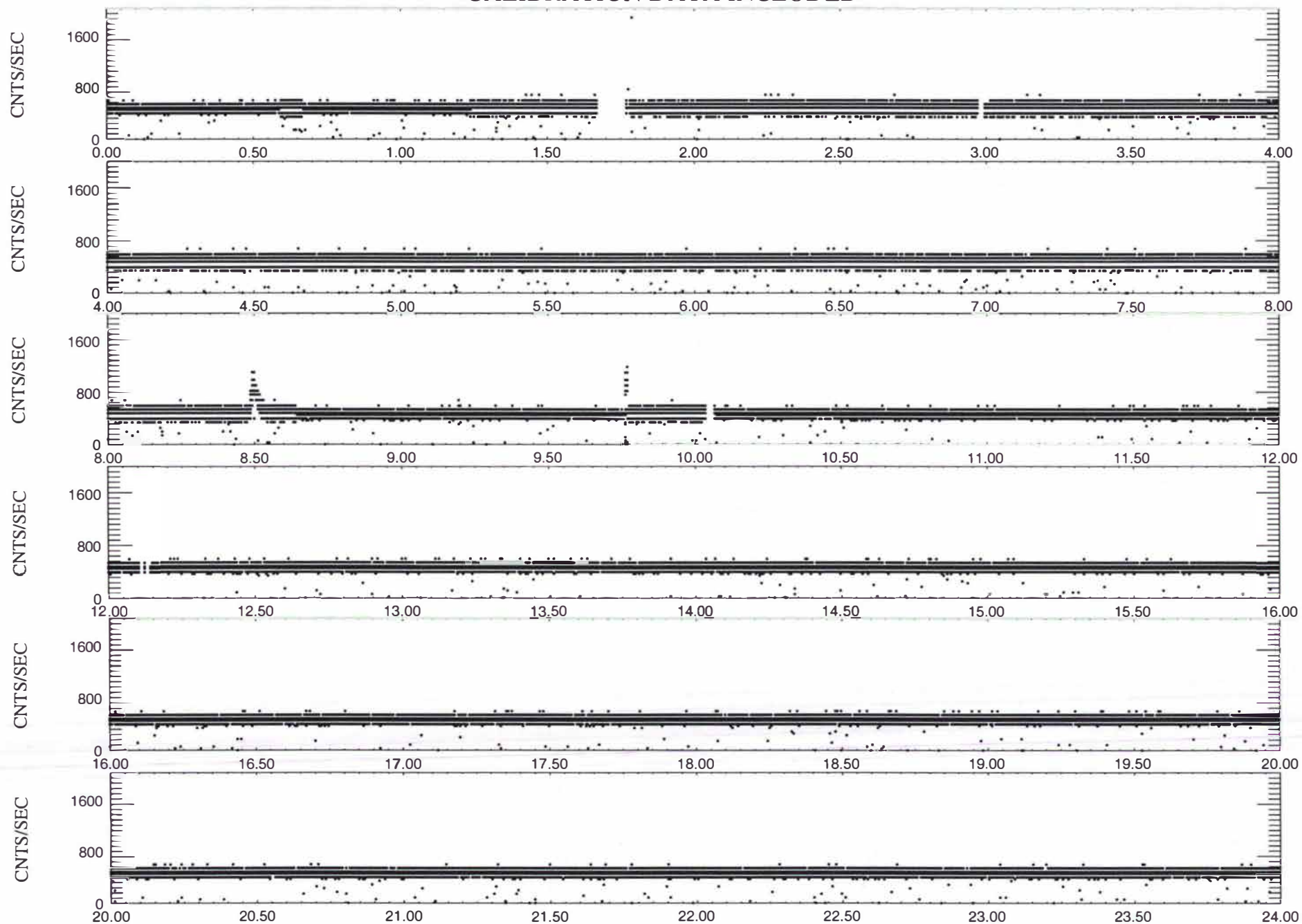
Plot created: 99/06/26, 1012

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 15

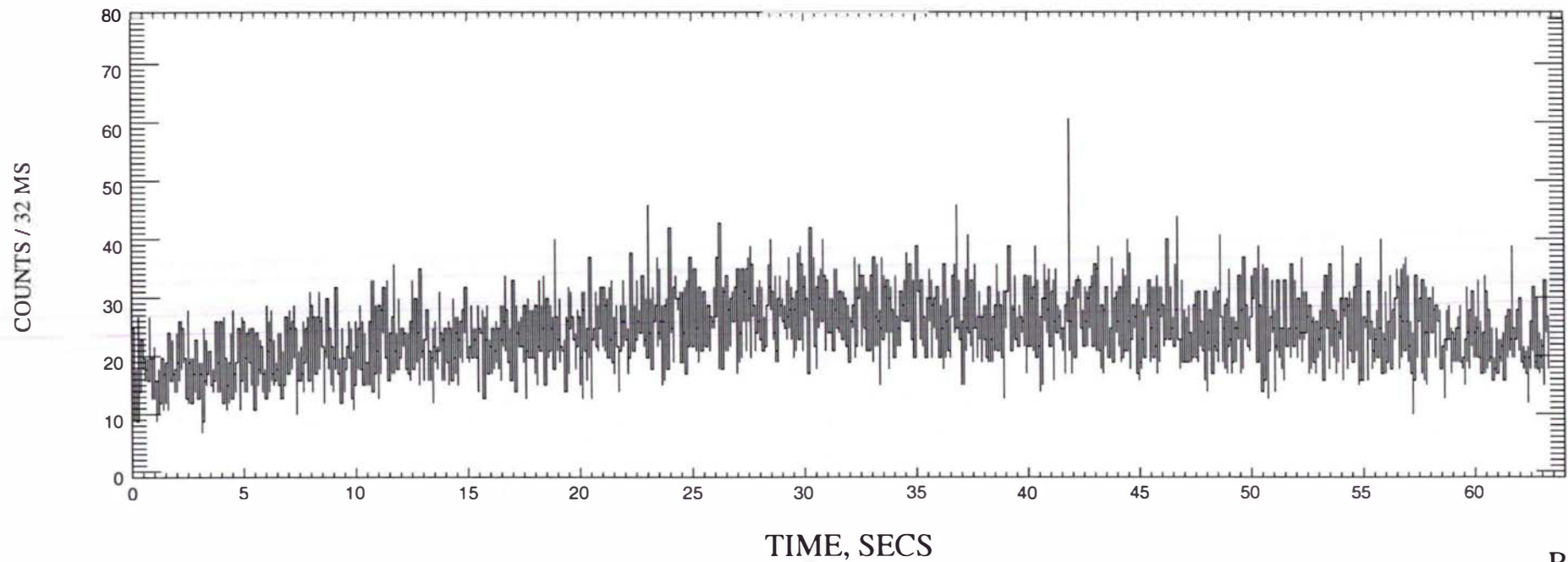
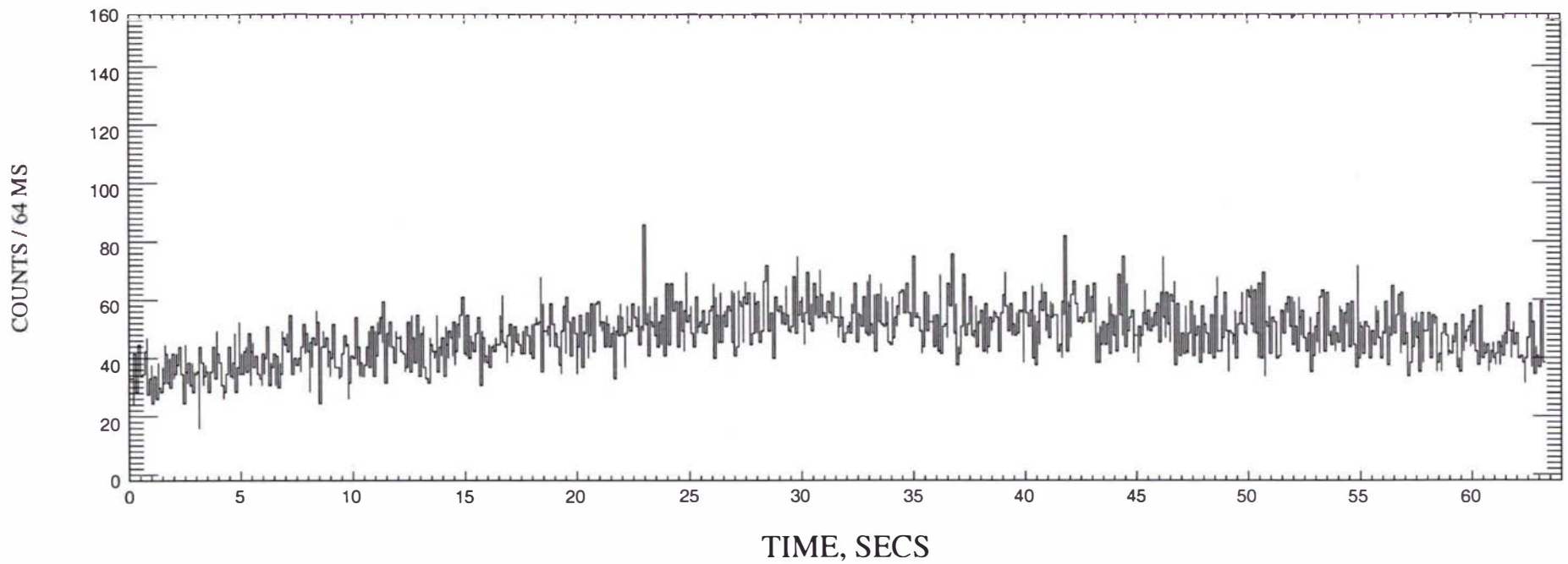


CALIBRATION DATA INCLUDED

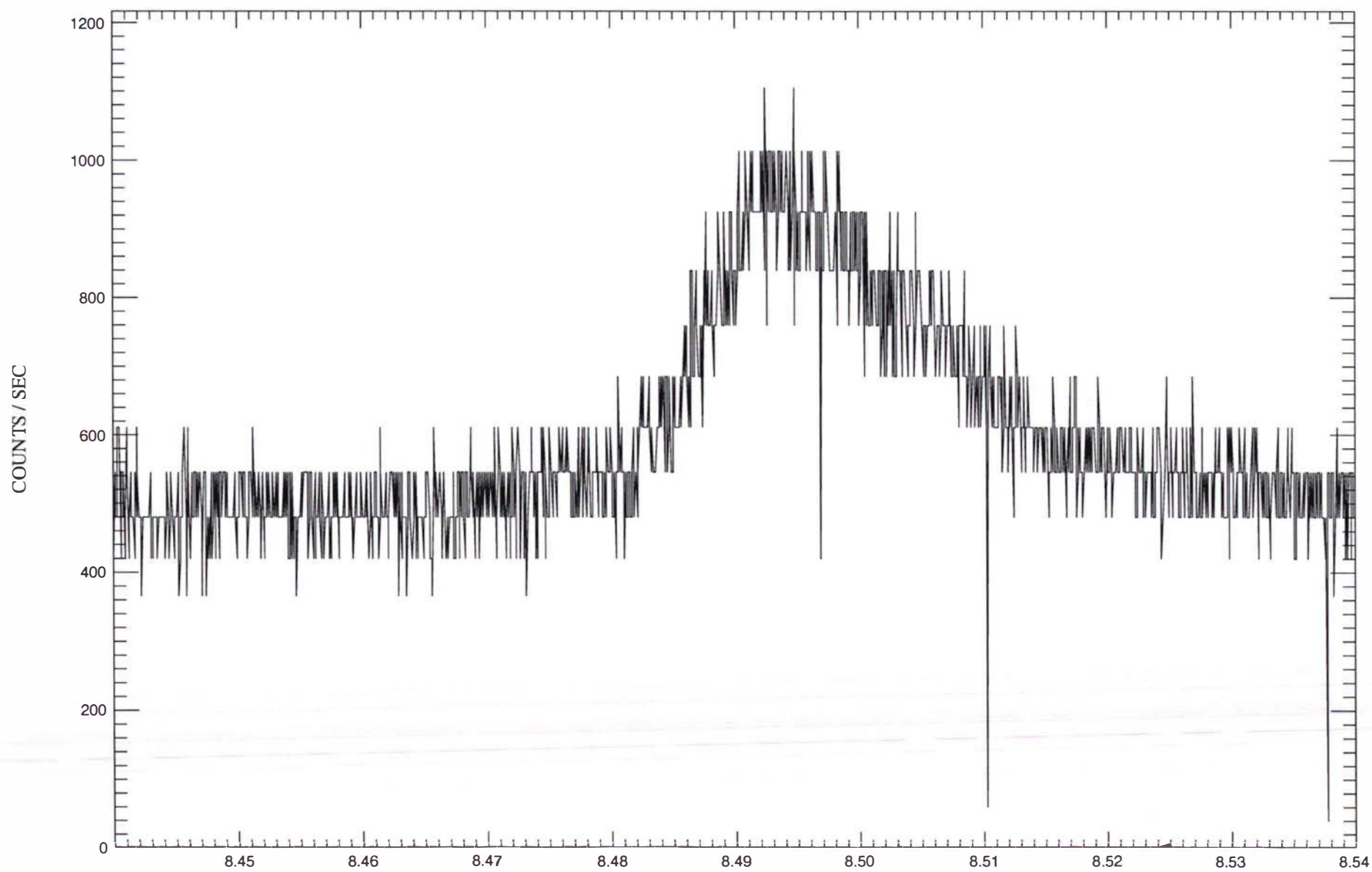


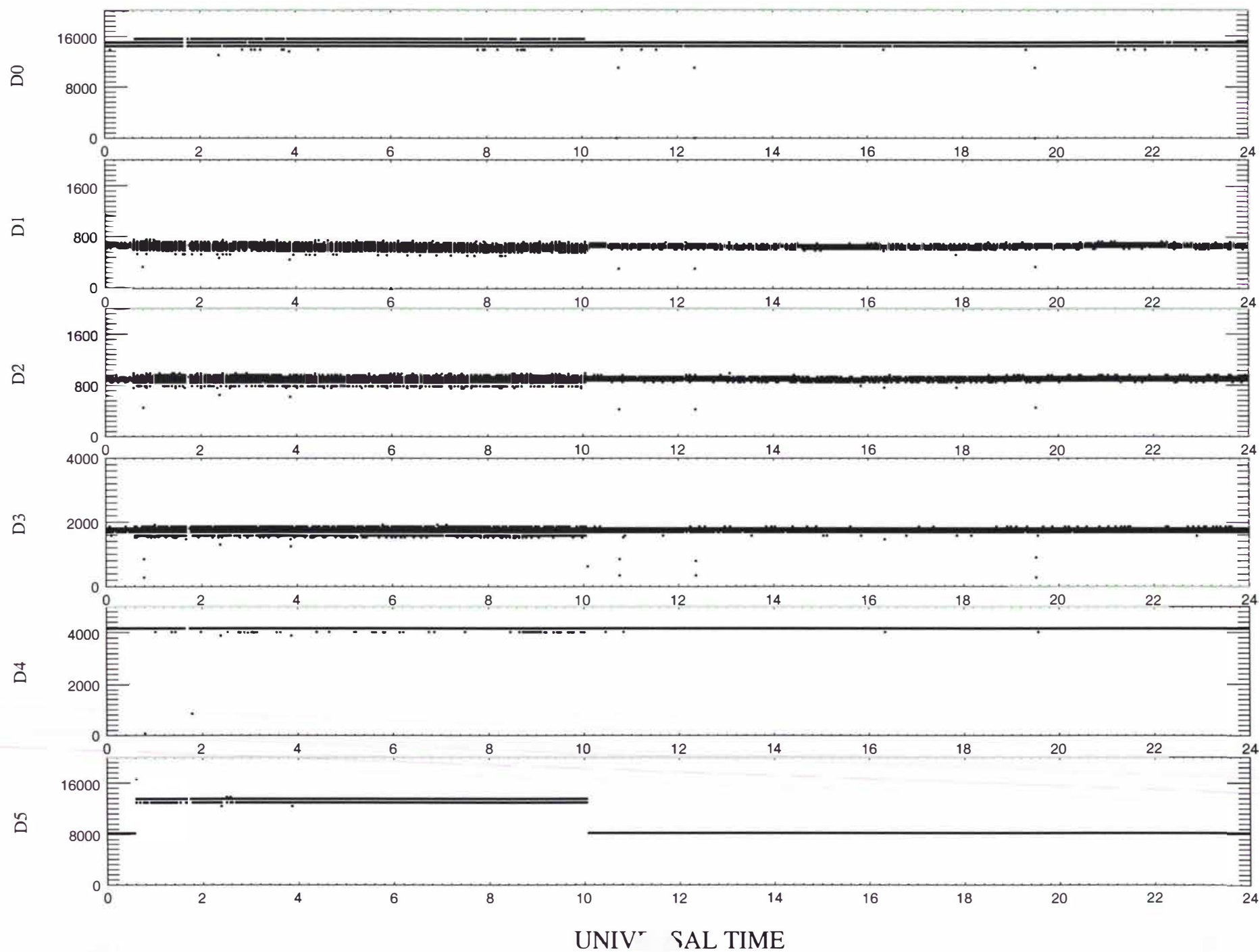
UNIV SAL TIME

Burst Counter 15 at UT= 8.486703130934 h=30552.131 s 08:29:12.131

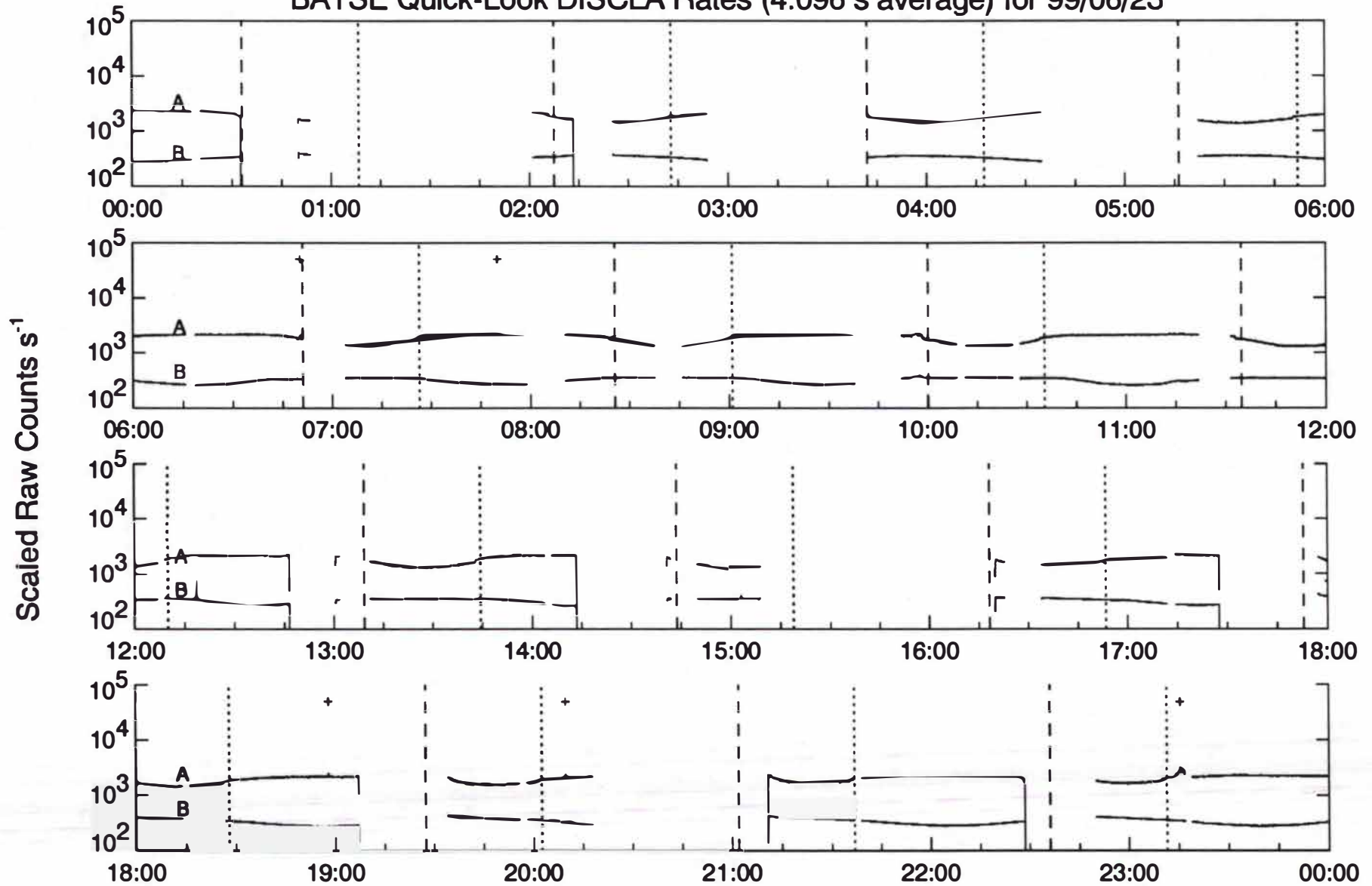


CALIBRATION DATA INCLUDED





BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/23



Current Time: 99/06/27, 1012 EDT

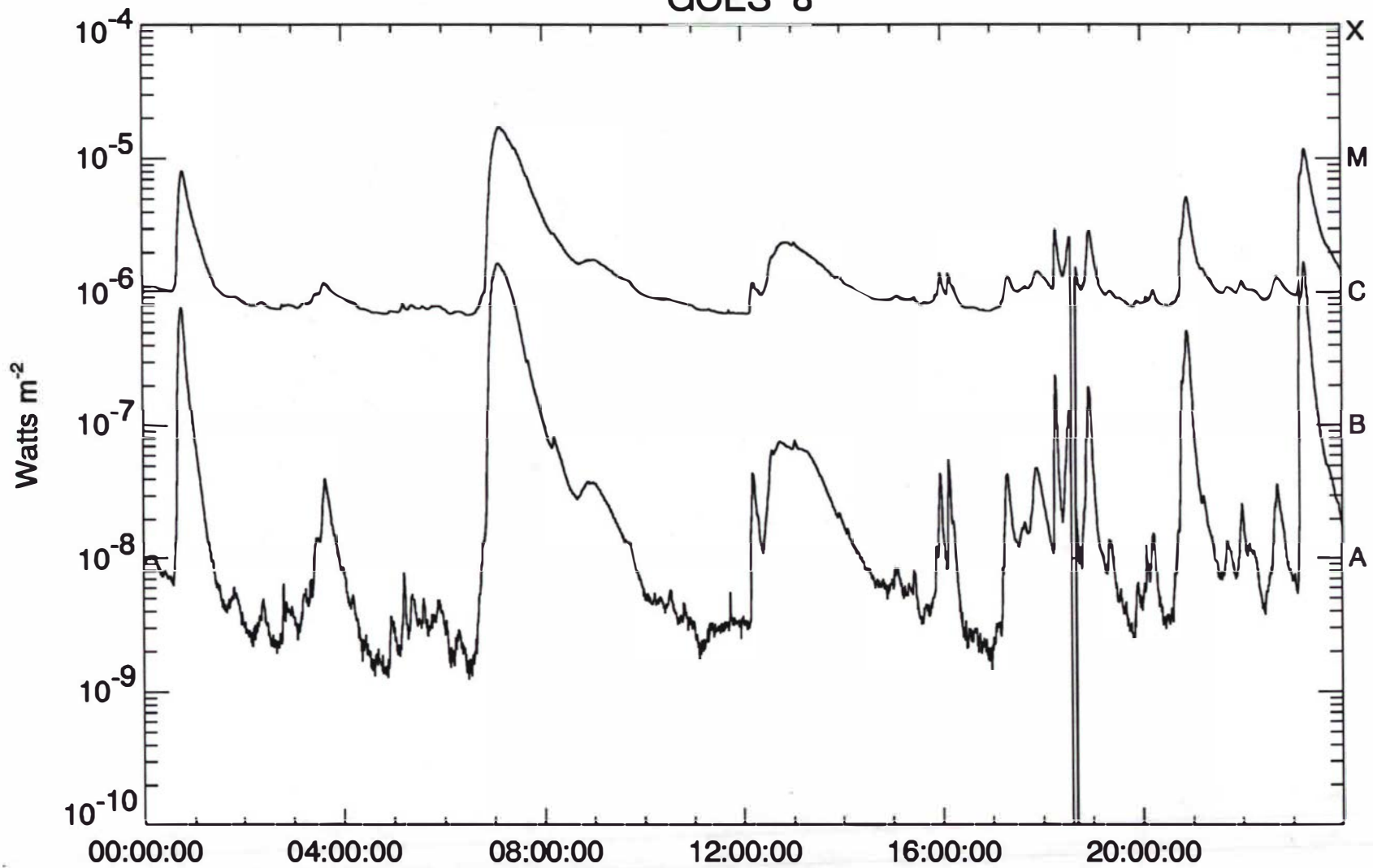
A: Channel 0 Most Sunward LAD

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: 99/06/23, 0000:00

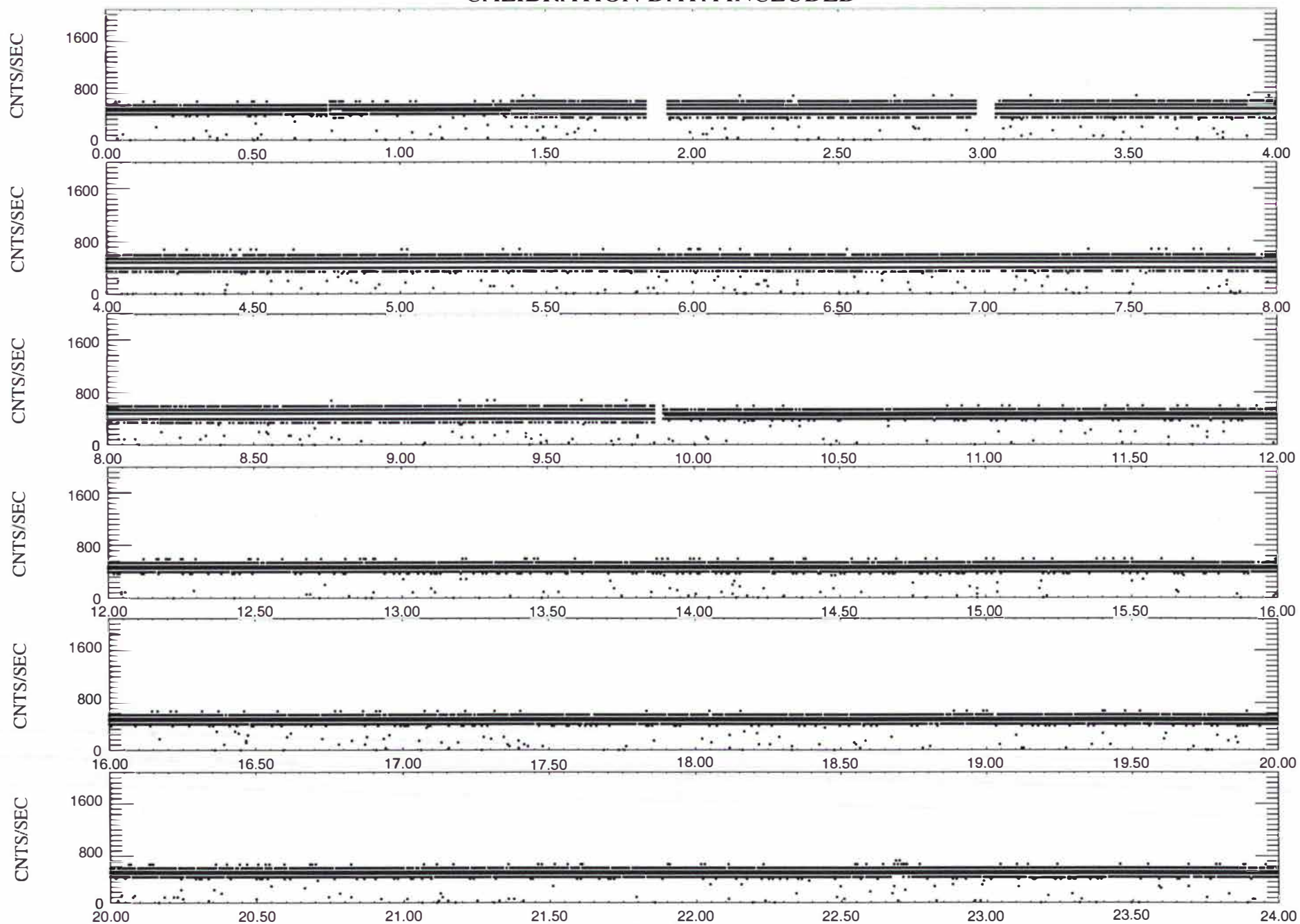
Plot created: 99/06/27, 1012

Channel

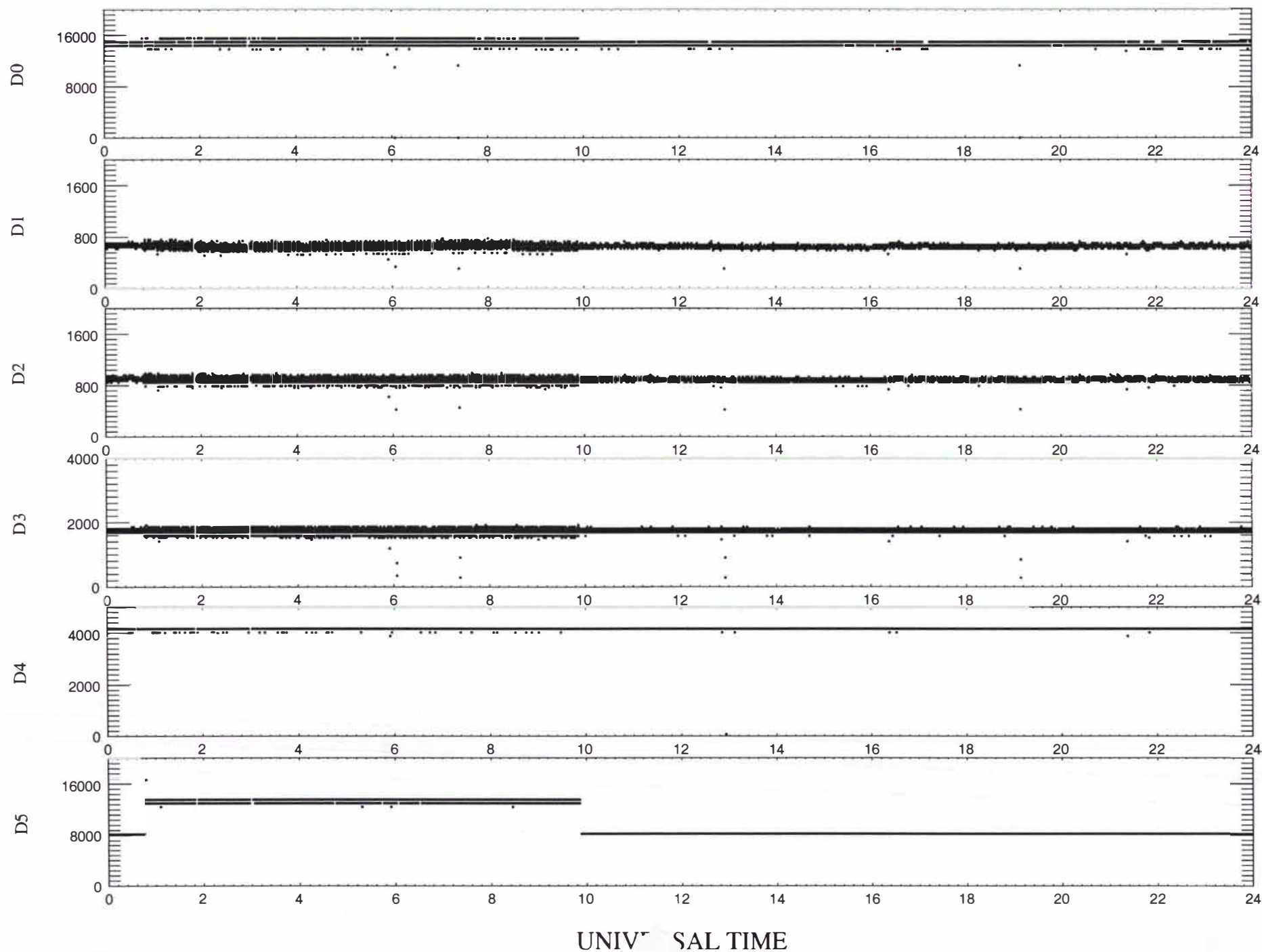
1 (1.0 - 8.0 Angstroms)
2 (0.5 - 4.0 Angstroms)

Background not subtracted
Background not subtracted
Sample average = 10

CALIBRATION DATA INCLUDED



UNIV SAL TIME



From HENZE@fender.msfc.nasa.gov Fri Jun 25 14:57 PDT 1999
Date: Fri, 25 Jun 1999 17:01:18 -0500 (CDT)
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@lhea-www.gsfc.nasa.gov, scott@circe.gsfc.nasa.gov,
butterworth@lheavx.gsfc.nasa.gov, dband@ucsd.edu, dgruber@ucsd.edu,
jmatteson@ucsd.edu, PACIESAS@fender.msfc.nasa.gov,
HORACK@fender.msfc.nasa.gov, khurley@sunspot.ssl.berkeley.edu,
hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7618

TIME: TJD=1353 SECONDS=72145

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 57.2 AZIMUTH=328.1 ERROR= 0.3 DEGREES

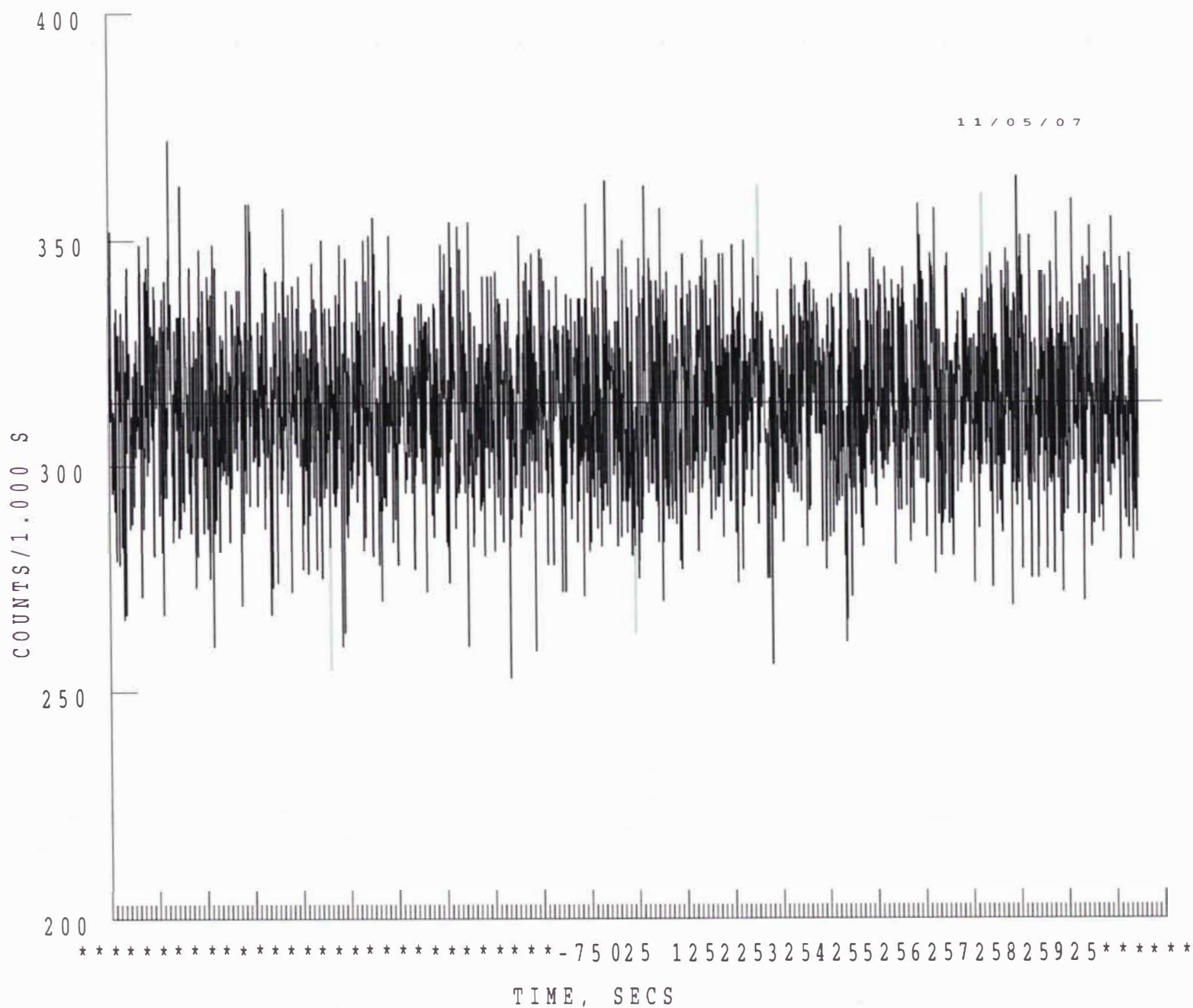
COMMENTS:

GOES C3.3, OPTICAL SF SOLAR FLARE. SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 100 S, STARTS AT APPROX. T-20 S, MAX AT APPROX. T+4 S. NOT VISIBLE ABOVE 300 KEV. PROBABLE WEAK SUCCESSOR AT APPROX. T+93 S.

24/06/99 76415.838

100-1000 keV

NEAR



GRBM 19990624 75435

ULYSSES RT

16 / 05 / 07

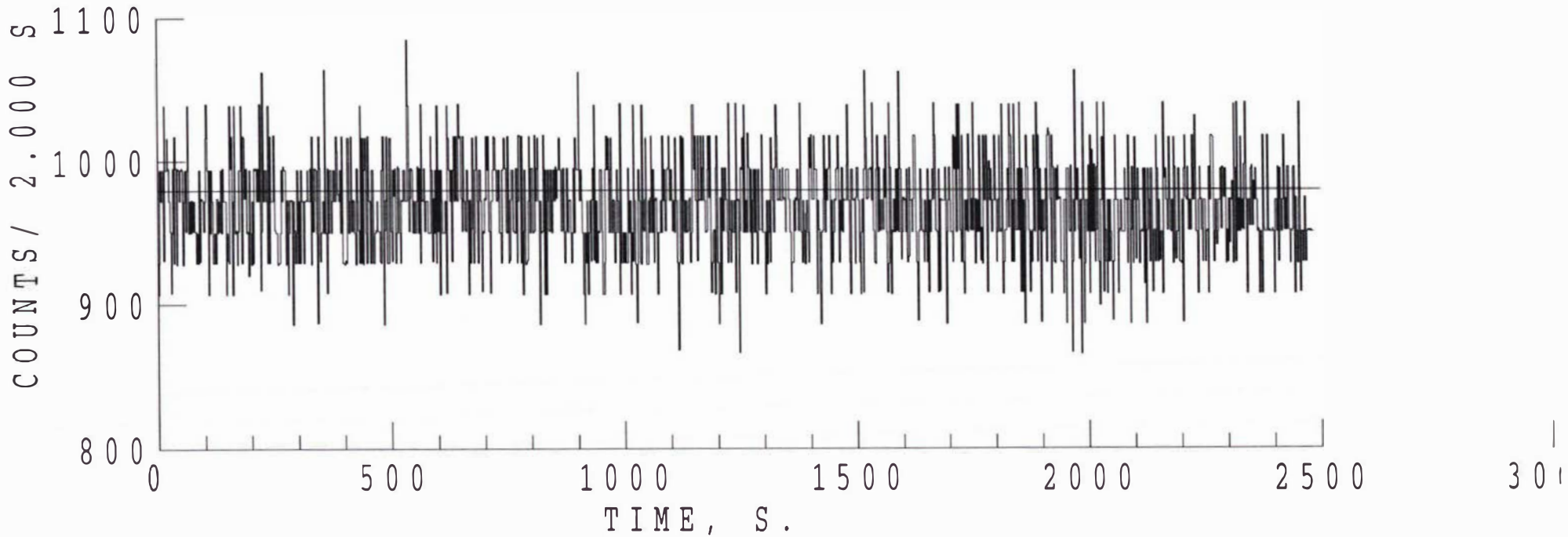
24/06/99 74196.320 s

0.500 S INTERVALS REGROUPED BY 4

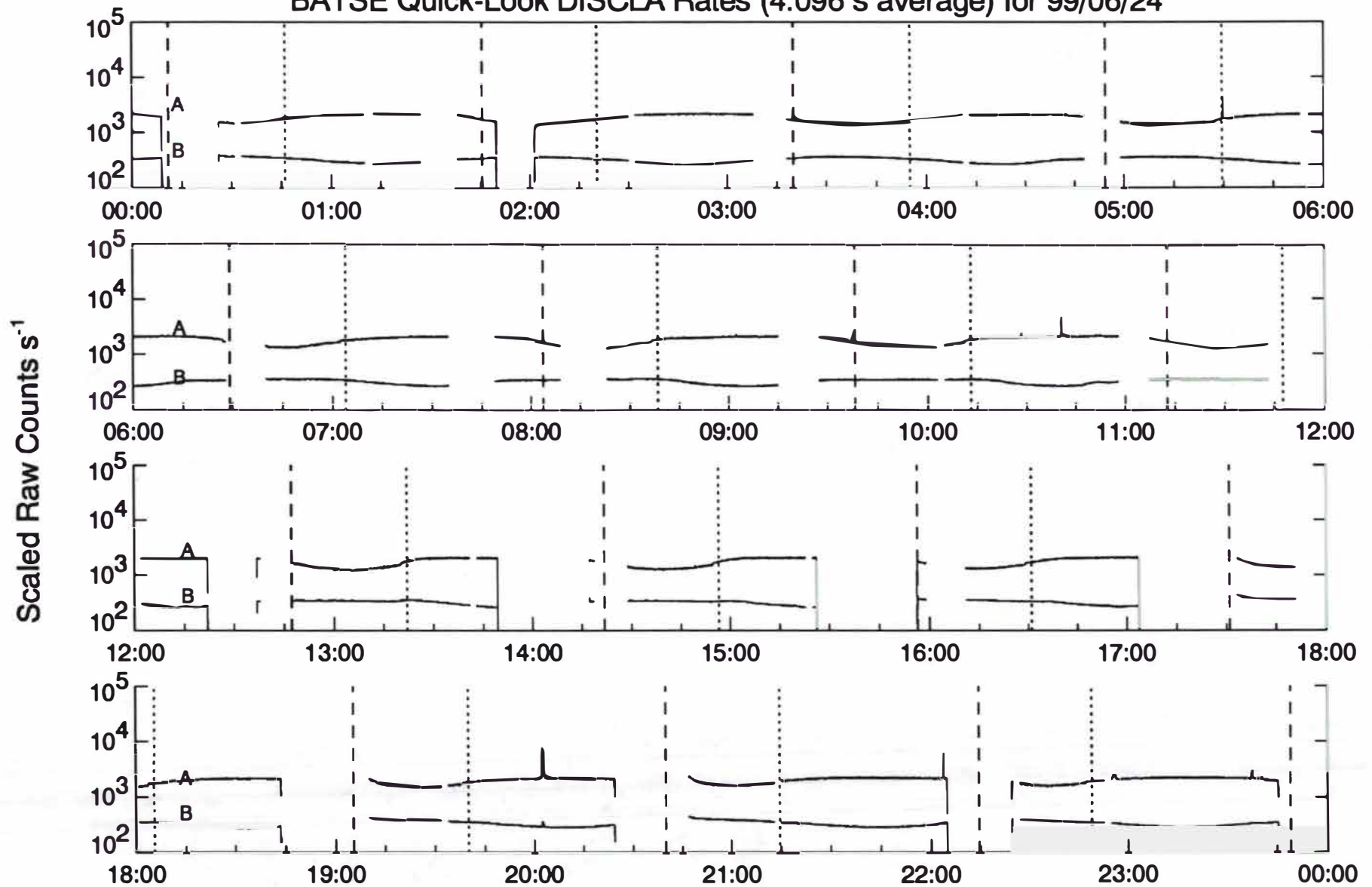
0 - 0 keV

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 99/06/24

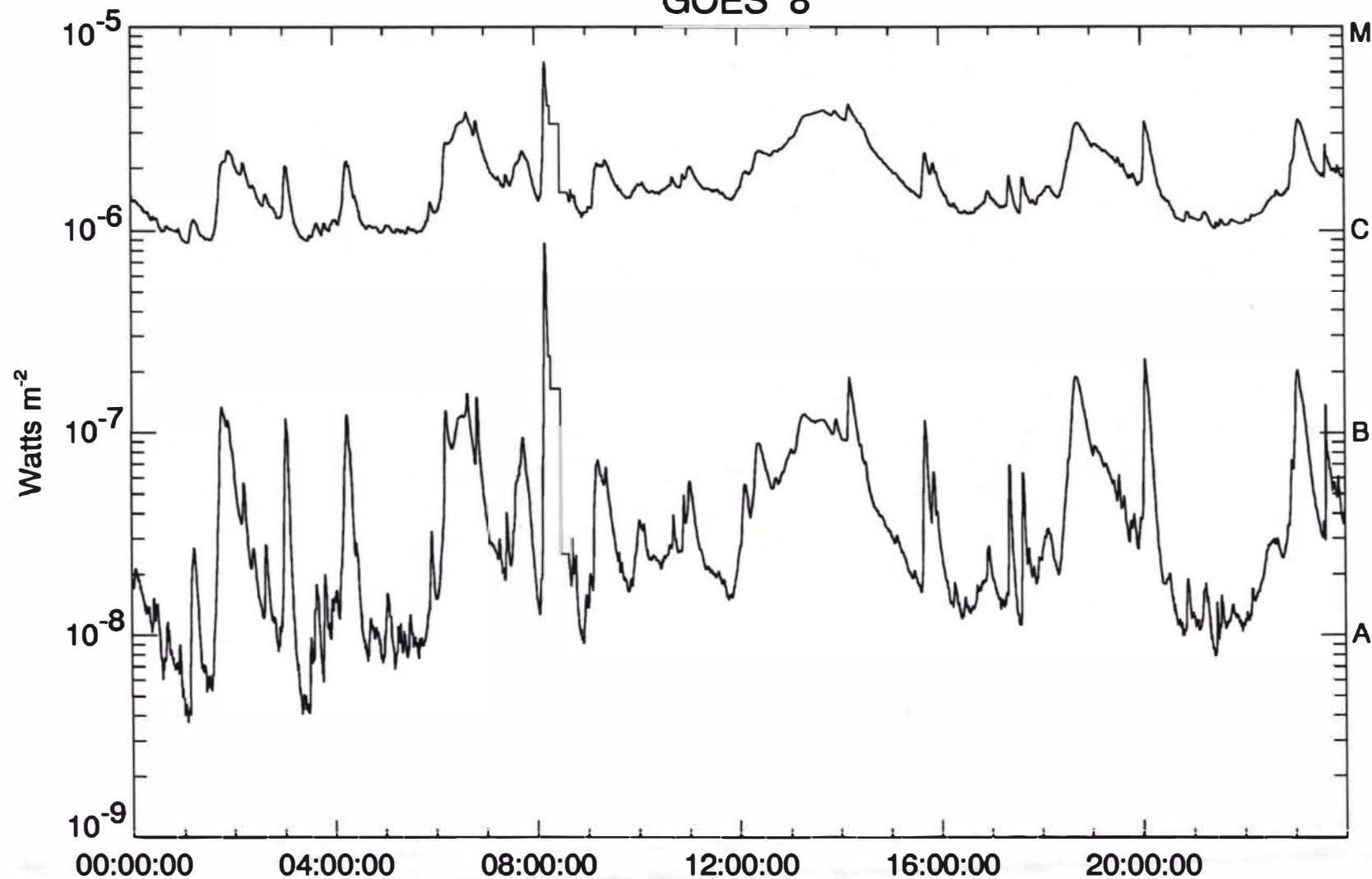


Current Time: 99/06/28, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/24, 0000:00

Plot created: 99/06/28, 1012

Channel

1 (1.0 - 8.0 Angstroms)

Background not subtracted

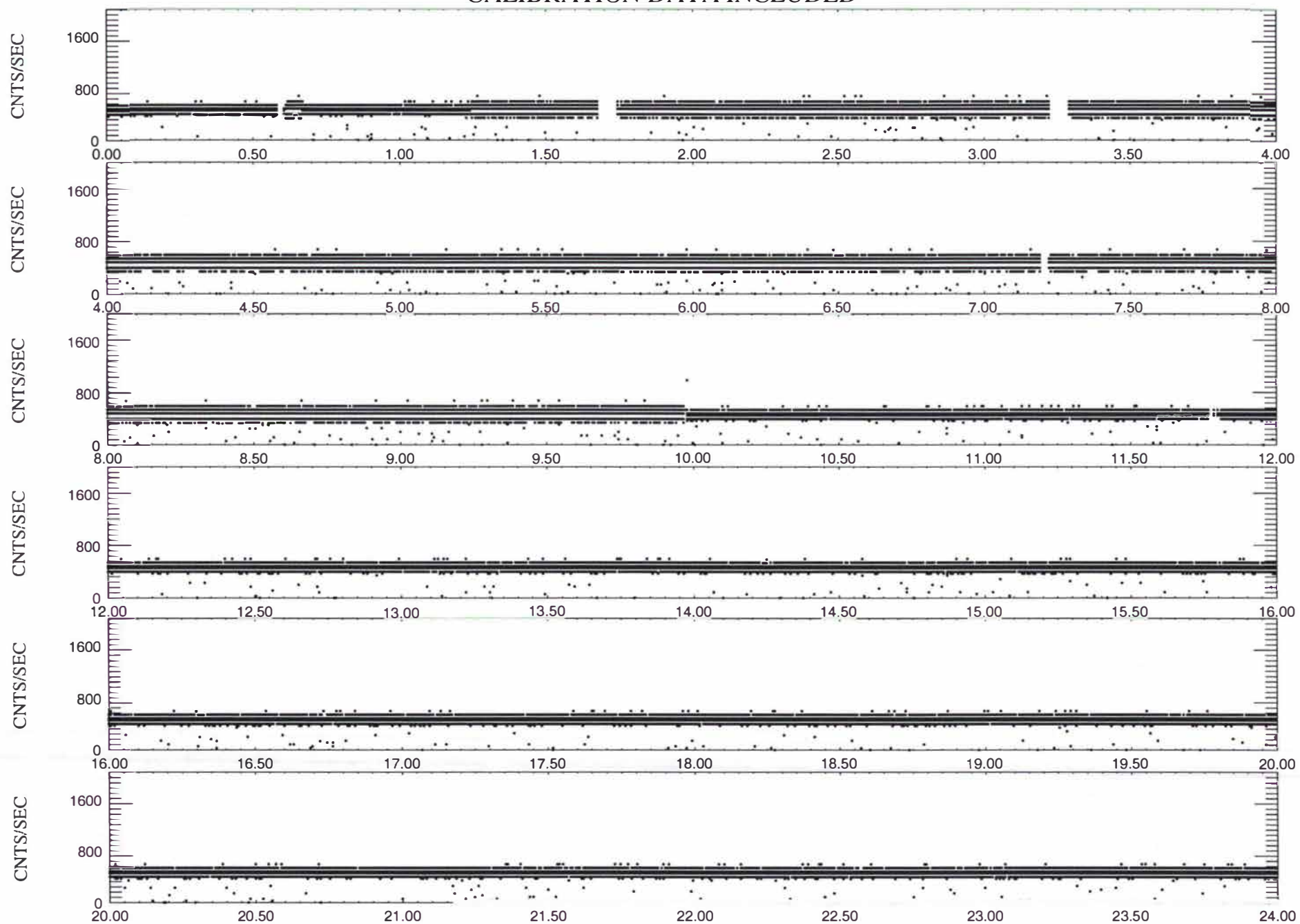
2 (0.5 - 4.0 Angstroms)

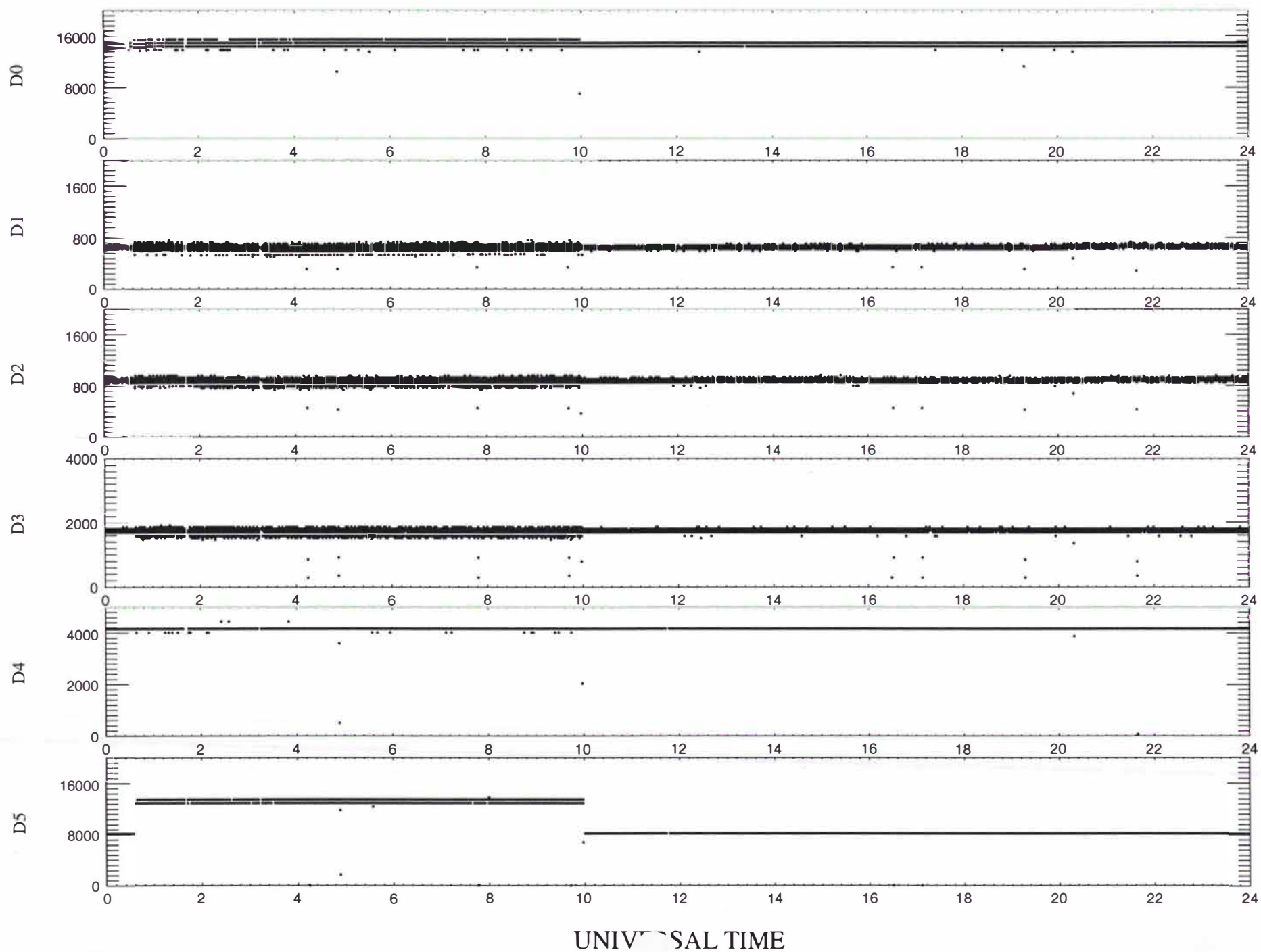
Background not subtracted

Sample average = 10

[illegible]

CALIBRATION DATA INCLUDED

UNIV⁺ SAL TIME



From HENZE@fender.msfc.nasa.gov Mon Jun 28 11:22 PDT 1999
From: HENZE@fender.msfc.nasa.gov
Date: Mon, 28 Jun 1999 13:25:55 -0500 (CDT)
To: khurley@sunspot.ssl.berkeley.edu
Subject: Crossing Windows for BATSE Burst 7619

BATSEARCH PROGRAM

BATSE BURST # 7619
EVENT OF 1999 JUN 25 DAY OF YEAR=176
EVENT CROSSING TIME AT BATSE : 1473. S. OR 00:24:33.0
COORDINATES ARE 0.000 0.000 6800. (RA, DEC, DIST.)
BURST ARRIVAL DIRECTION: 6.000 -30.000
BATSE PEAK COUNTING RATE: 2500 C/S

EVENT CROSSING TIME AT ULYSSES WILL BE FOUND
INTERPOLATED POSITION OF ULYSSES ON 25/ 6/ 99 IS:
RA= 145.901 DEC= -7.379 DIST= 5.252 AU
BATSE-ULYSSES DISTANCE = 785726428. KM.
ANGLE WHICH BATSE-ULYSSES VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 53.65 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 1553.54 SECS.
CROSSING TIME AT ULYSSES IS 3027. S. OR 00:50:26 +/- 440.07 SECONDS

EVENT CROSSING TIME AT MARS WILL BE FOUND
POSITION OF MARS ON 25/ 6/ 99 IS:
RA= 204.781 DEC= -11.317 DIST= 0.781 AU
MARS-BATSE DISTANCE = 116829416. KM.
ANGLE WHICH BATSE-MARS VECTOR MAKES WITH GRB ARRIVAL DIRECTION= 45.10 DEG.
LIGHT TRAVEL TIME ALONG PROJECTED PATH= 275.07 SECS.
CROSSING TIME AT MARS IS 1748. S. OR 00:29:08 +/- 52.10 SECONDS

BATSE #	Date	TJD	SoD	Max ct/s	RA	Dec	Dur (s)
7619	990625	11354	01473	2500	006	-30	30

BATSE BURST TRIGGER

NO.: 7619

TIME: TJD=1354 SECONDS= 1473

TYPE: BURST SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH=124.6 AZIMUTH= 47.8 ERROR= 2.9 DEGREES

COMMENTS:

SINGLE PULSE WITH SUBSTRUCTURE, DUR. APPROX. 30 S, STARTS AT APPROX. T-5 S.
NOT VISIBLE ABOVE 300 KEV.

From piro@ias.rm.cnr.it Thu Jun 24 21:32 PDT 1999
Date: Fri, 25 Jun 1999 05:26:32 +0000 (GMT)
From: Luigi Piro - BeppoSAX Mission Scientist <piro@ias.rm.cnr.it>
Subject: BEPPOSAX GRB ALERT LIST_1;;;
Subject: BeppoSAX MAIL n. 99/9: GRB990625
mime-Version: 1.0

BeppoSAX MAIL n. 99/9: GRB990625

(Date: 25/06/99, 4:30 UT)

On June 25, 00:24:33 U.T. a GRB (GRB990625) was simultaneously detected by the GRBM and WFC aboard BeppoSAX (also BATSE trigger 7619).

Unfortunately the attitude configuration at the time of the GRB does not allow to reconstruct the GRB position to better than about 1 degree radius.

The estimated position is (Equinox 2000):

R.A.=6.64

Decl.=-31.2

Due to the large error box, BeppoSAX is not going to observe this location with the NFI

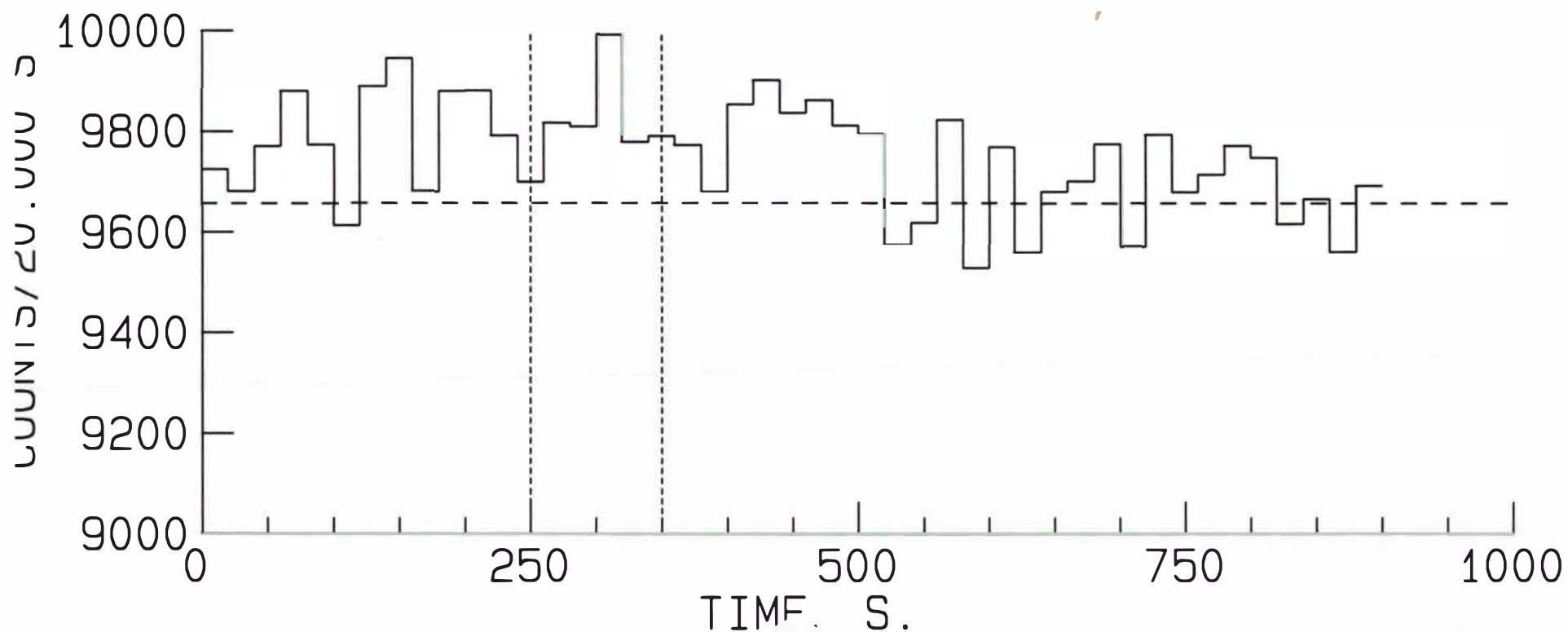
Luigi Piro

BeppoSAX Mission Scientist

#-----#	#-----#
Luigi Piro	E-mail:
Istituto Astrofisica Spaziale	piro@alpha1.ias.rm.cnr.it
C.N.R.	SAX program: saxsci@alpha1.ias.rm.cnr.it
Via Fosso del Cavaliere	phone: -39-06-4993-4007
I-00133 Roma	phone BeppoSAX center: -39-06-4079-6393
Italy	fax (CNR) : -39-06-20660188
#-----#	#-----#

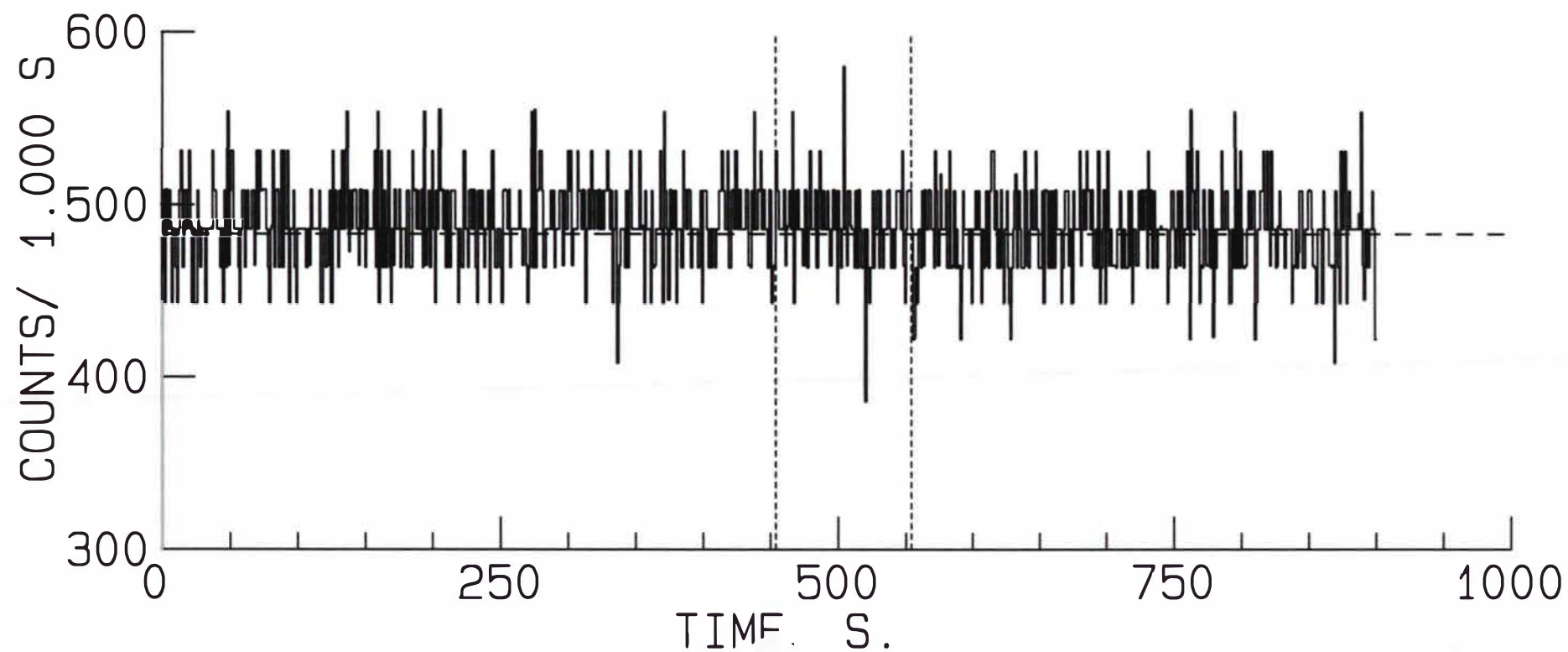
ULYSSES RT
25/ 6/99 2520.474 s
0.500 S INTERVALS REGROUPED BY 40
22- 149 keV

1 / 7 / 99



ULYSSES RT
25/ 6/99 2520.474 s
0.500 S INTERVALS REGROUPED BY 2
22- 149 keV

1 / 7 / 99



NEAR

25/06/99 1472.834

100-1000 keV

COUNTS/1,000 S

400

350

300

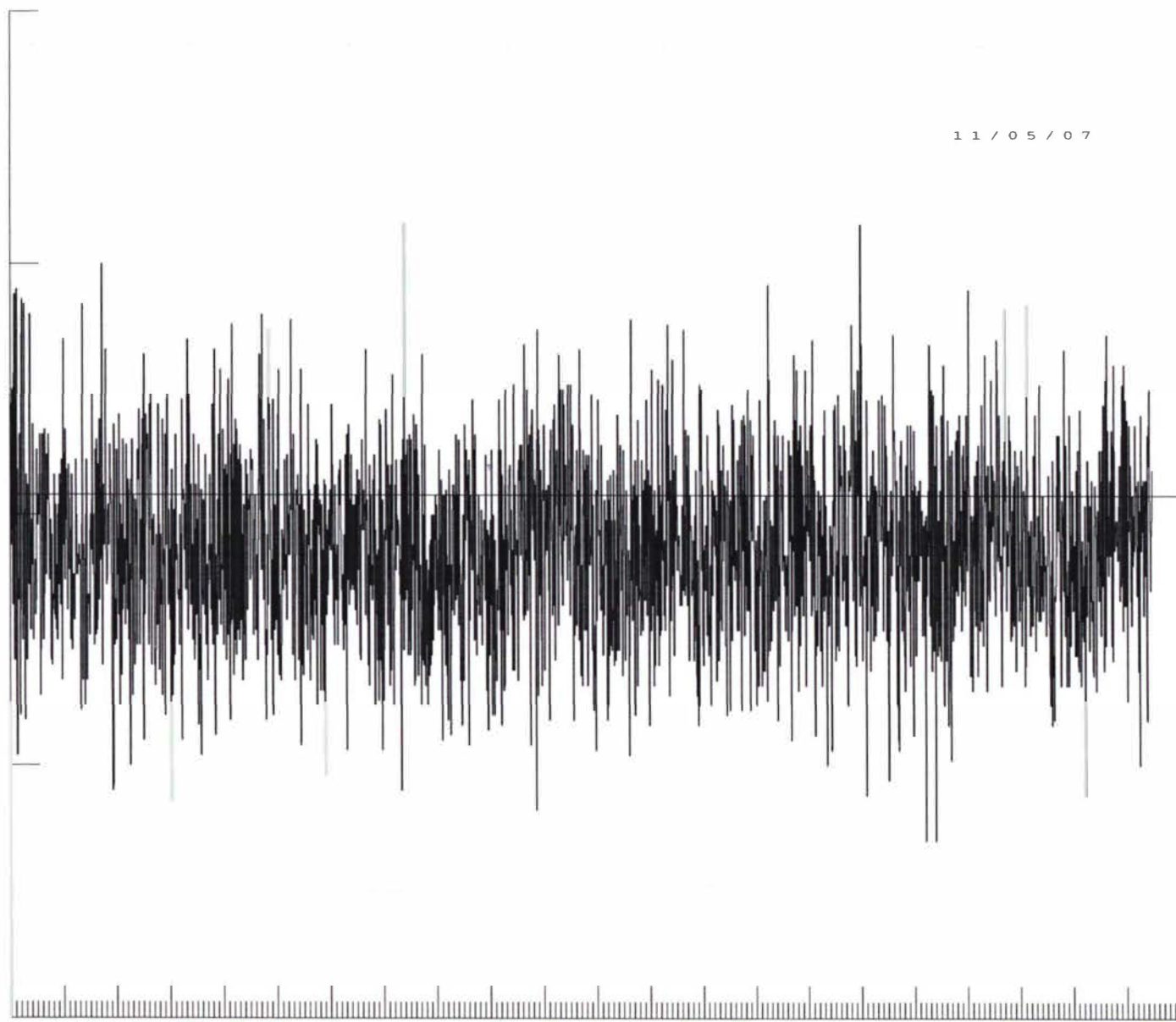
250

200

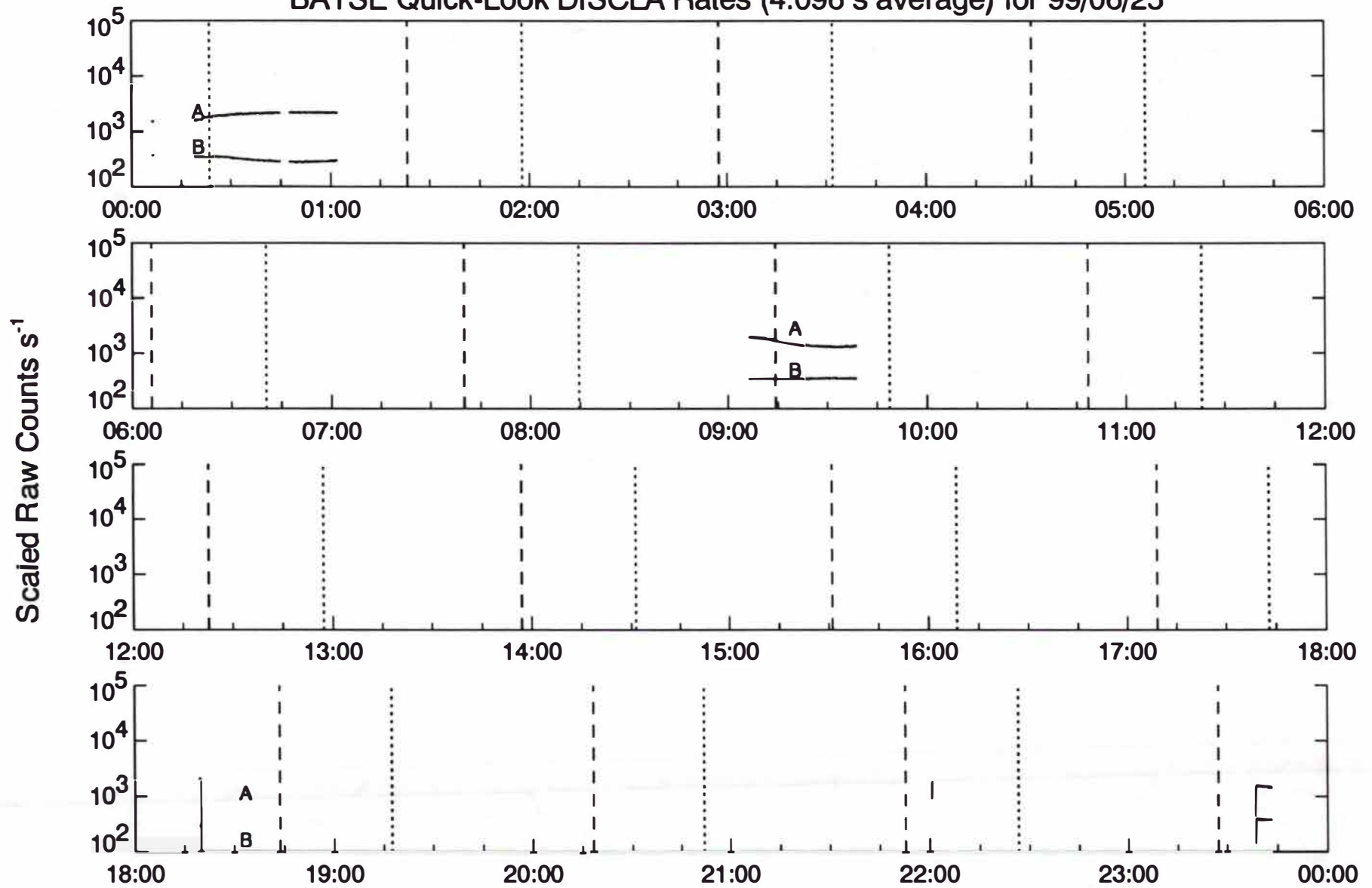
11/05/07

*****-75 025 125225325425525625725825925*****

TIME, SECS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/25



Current Time: 99/06/29, 1012 EDT

A: Channel 0 Most Sunward LAD

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

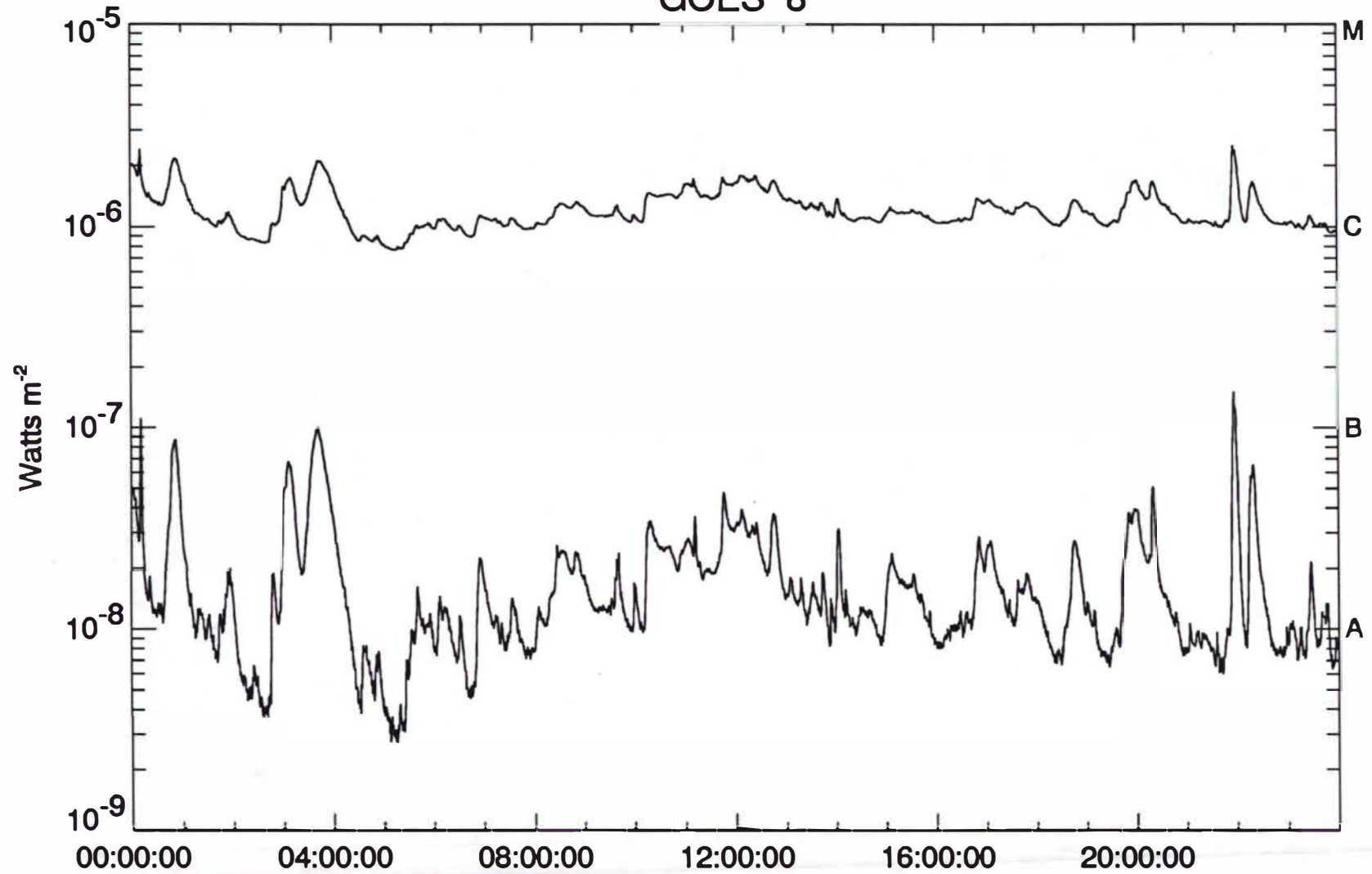
Dotted line: Day entry

Dashed line: Night entry

* Solar Burst Trigger

+ Solar Flare

GOES 8



Data Start: 99/06/25, 0000:00

Plot created: 99/06/29, 1012

Channel

1 (1.0 - 8.0 Angstroms)

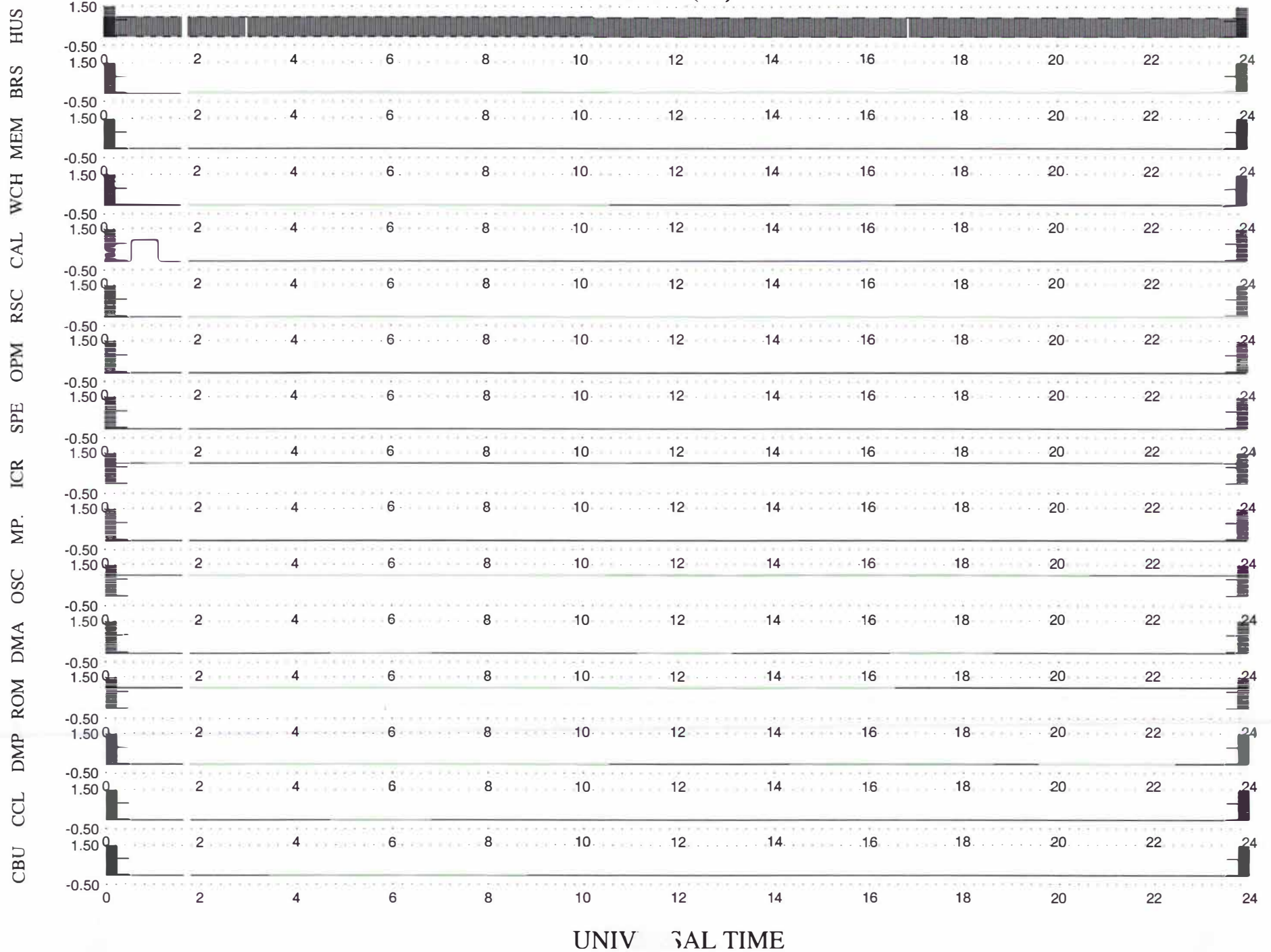
Background not subtracted

2 (0.5 - 4.0 Angstroms)

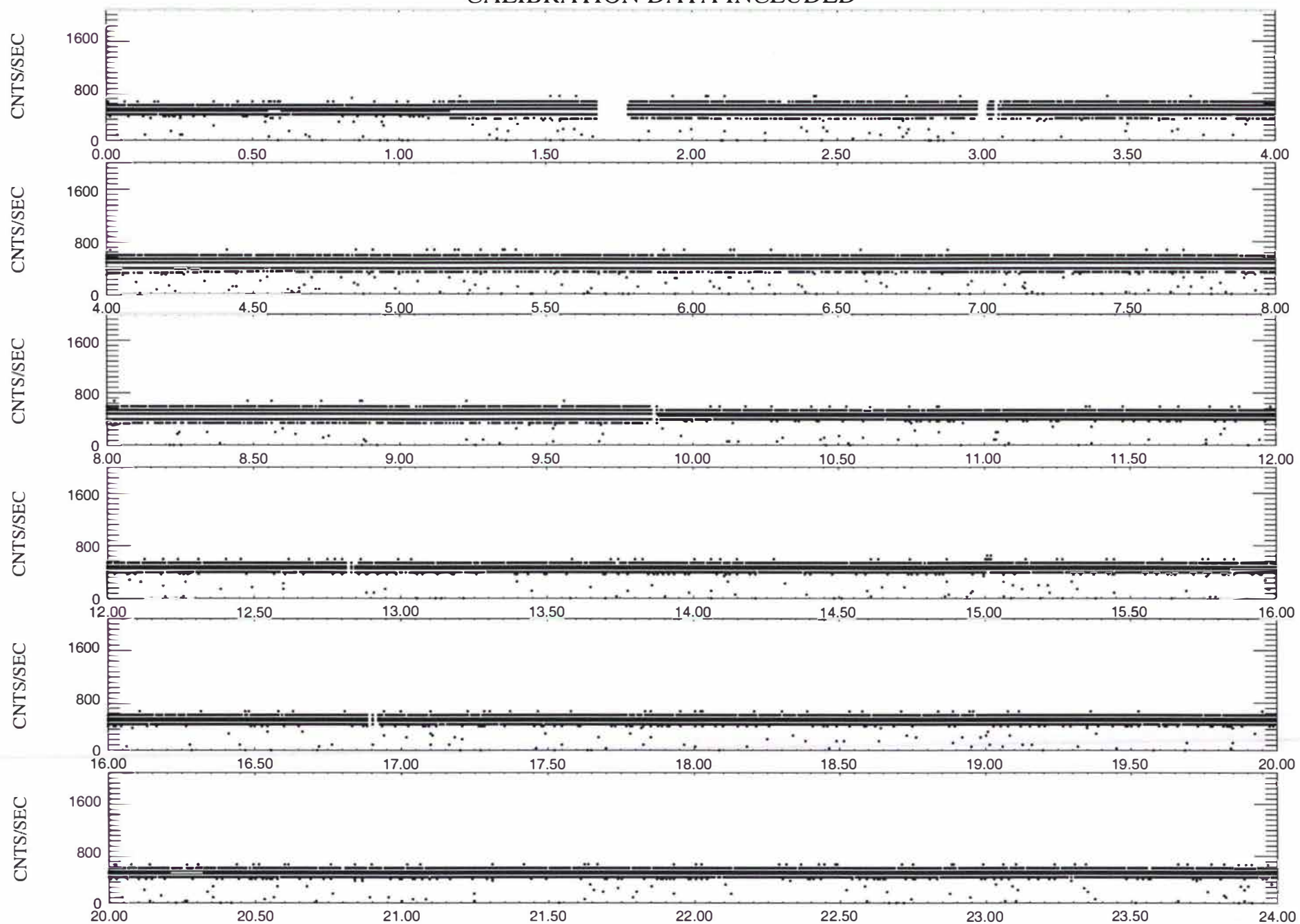
Background not subtracted

Sample average = 10

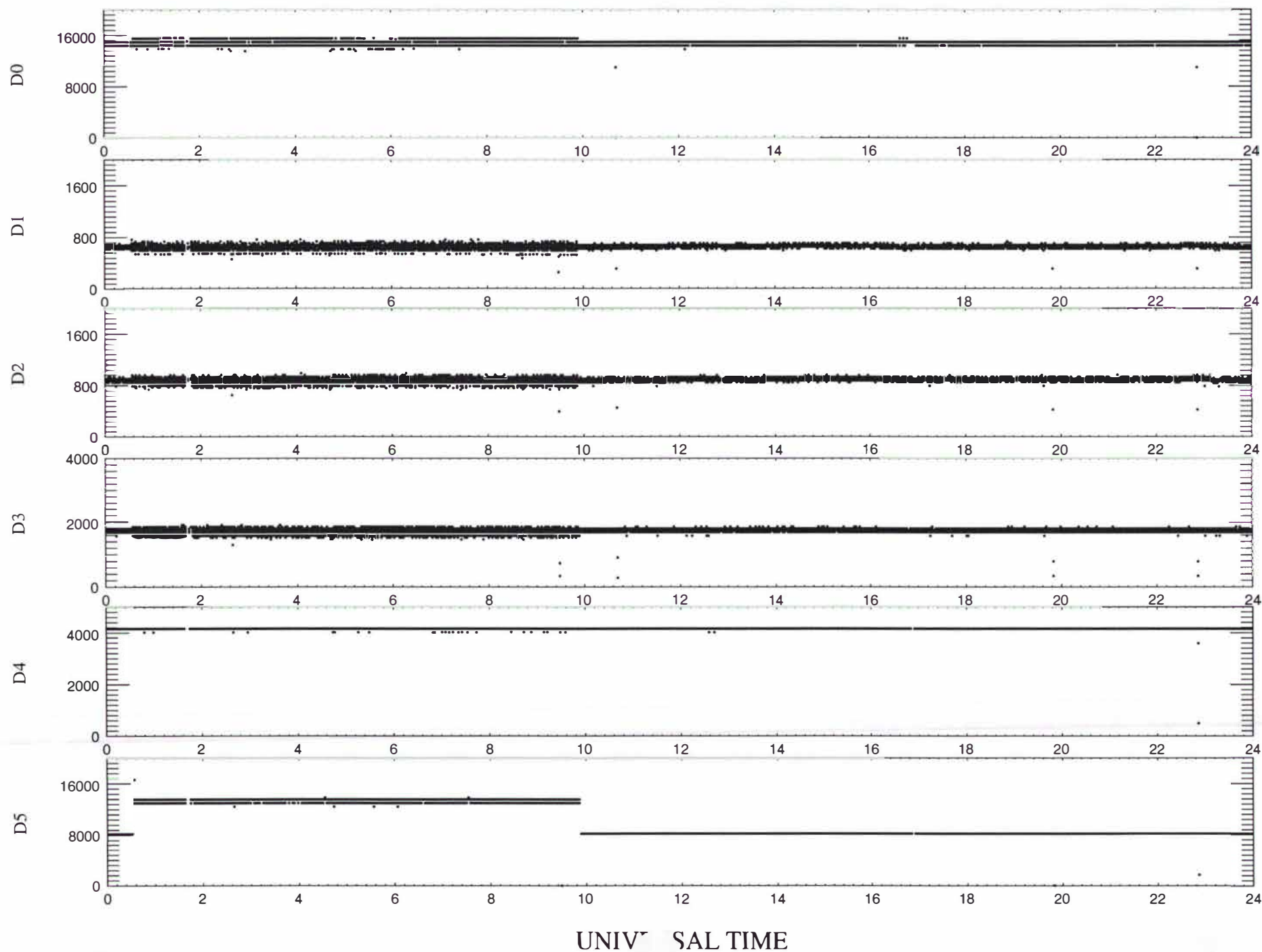
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



KONUS

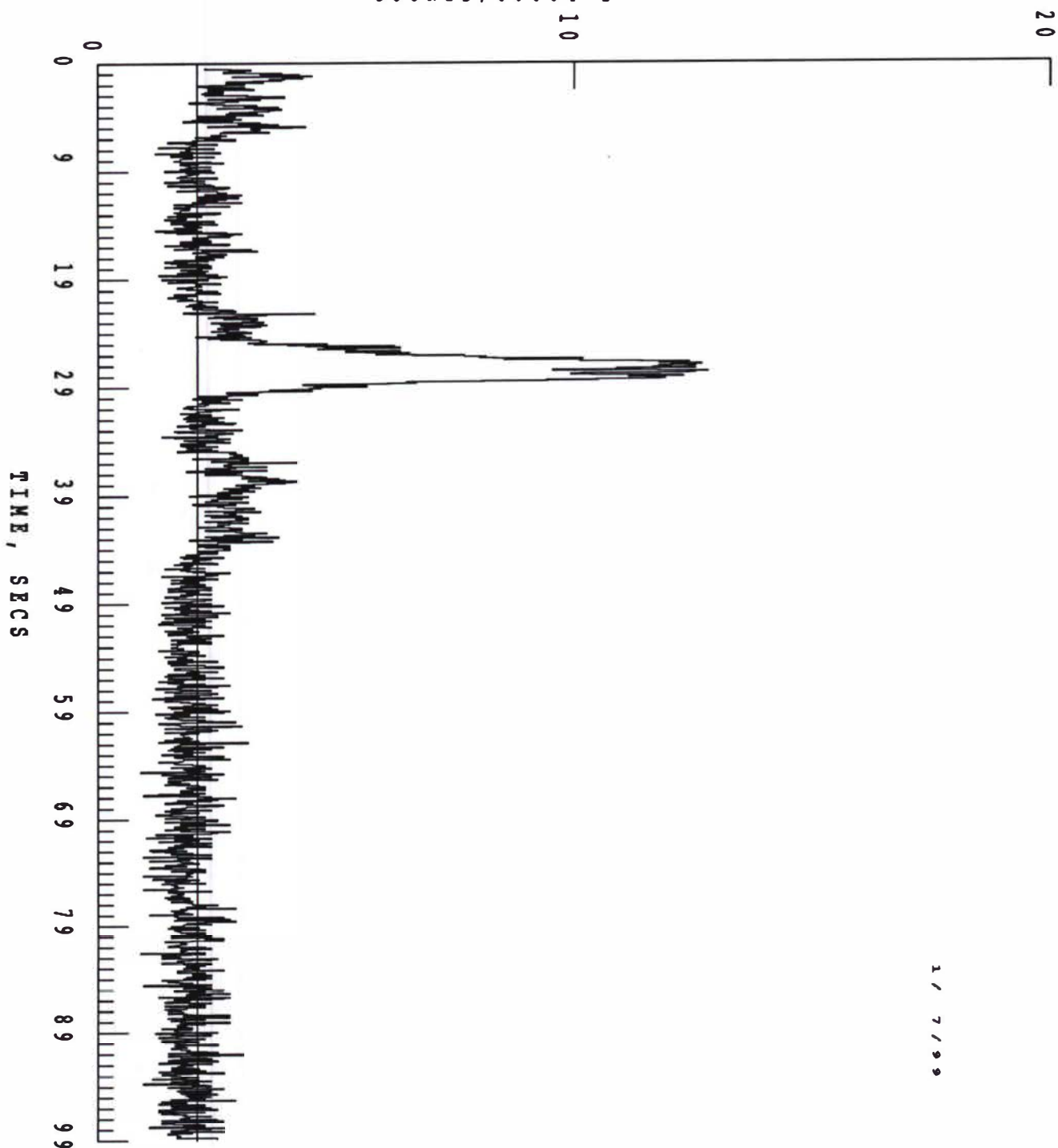
26/06/99

18670.257

50 - 200 keV

SOLAR

COUNTS/0.064 S



1 / 7 / 99

KONUS2 19990626 18670

ULYSSES RT

1 / 7 / 99

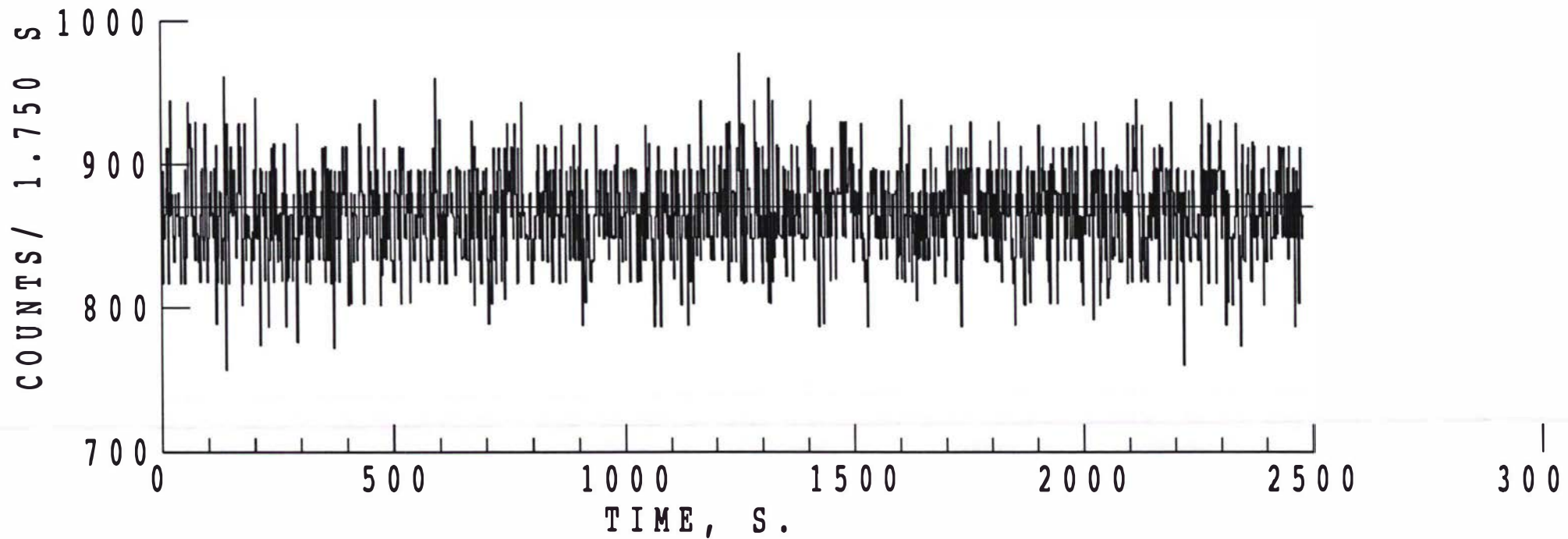
26 / 6 / 99 15984.030 s

0.250 S INTERVALS REGROUPED BY 7

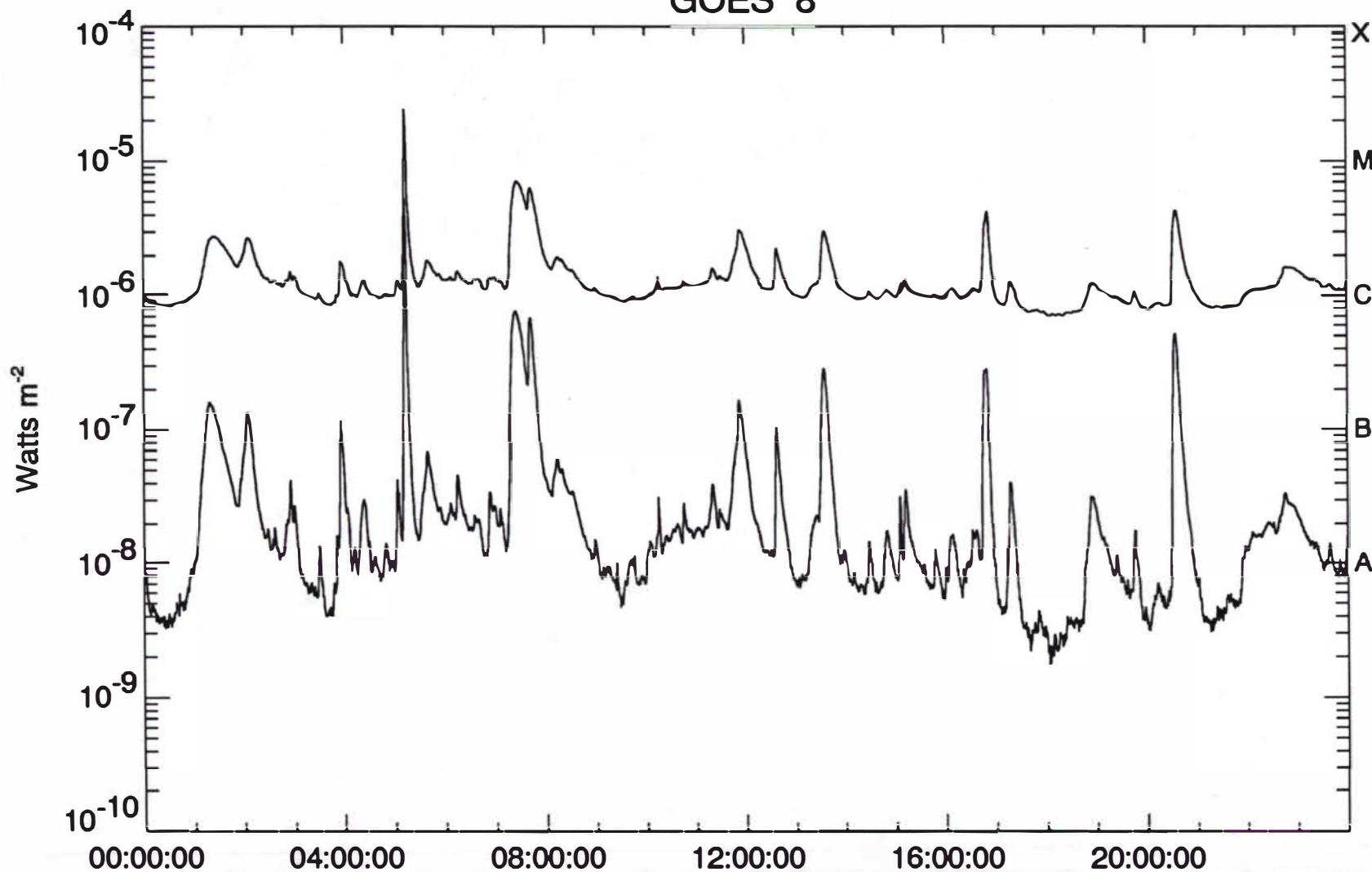
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



GOES 8



Data Start: 99/06/26, 0000:00

Plot created: 99/06/30, 1012

Channel

1 (1.0 - 8.0 Angstroms)

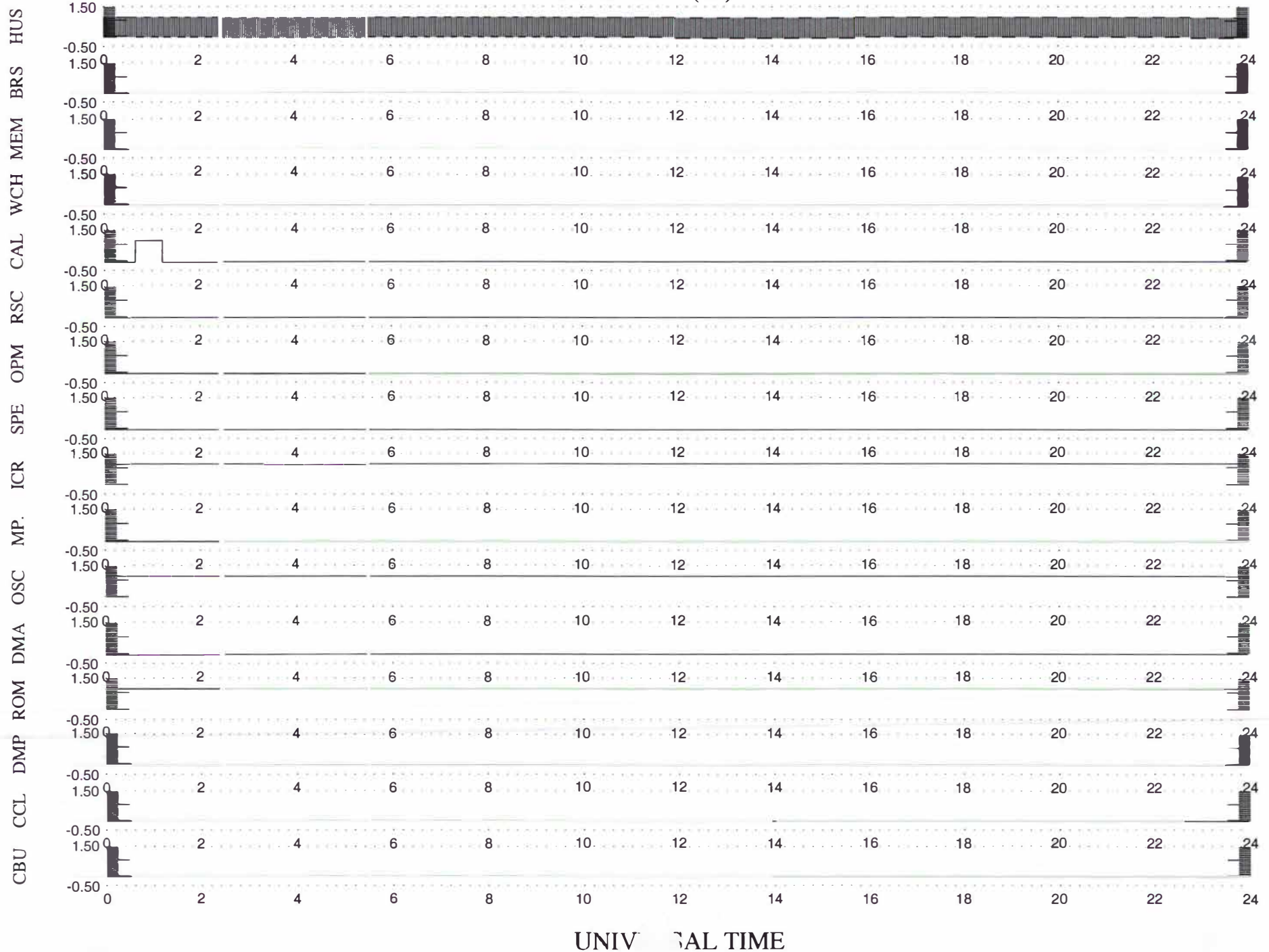
Background not subtracted

2 (0.5 - 4.0 Angstroms)

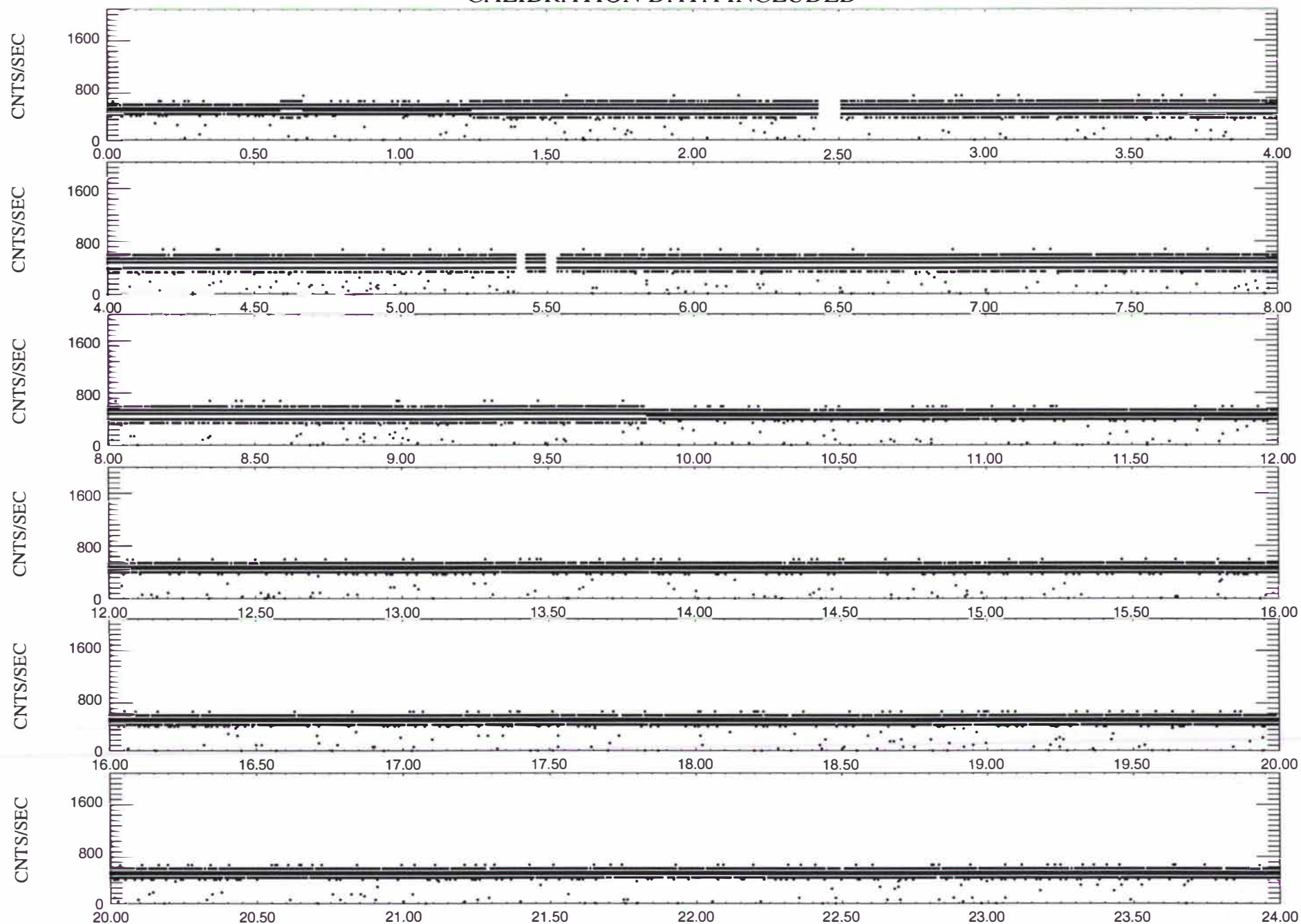
Background not subtracted

Sample average = 10

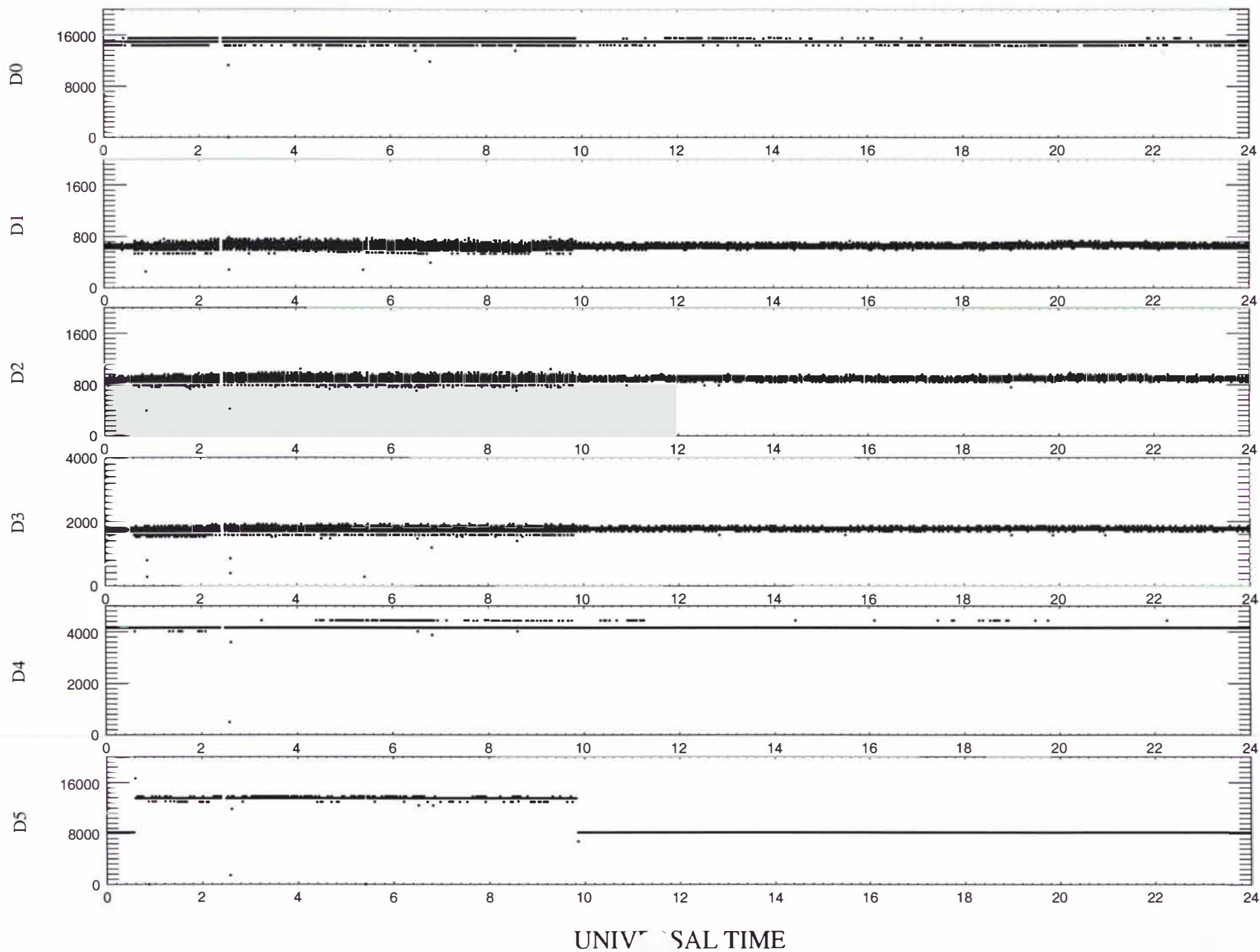
NO BURST (15)



CALIBRATION DATA INCLUDED



UNIV SAL TIME



NEAR arrival time was 27th

KNEAR GRS 19990627 00001

ULYSSES RT

28 / 6 / 99

26 / 6 / 99 83664.219 s

INTERVALS REGROUPED BY 8

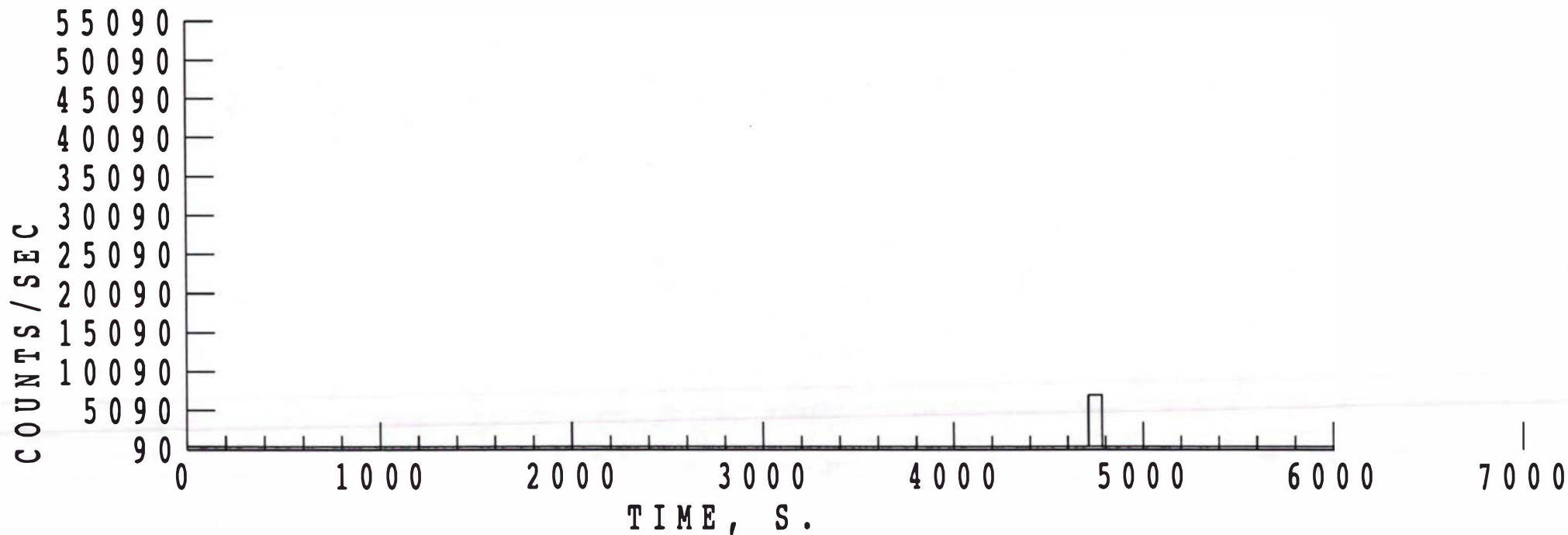
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



KNEAR GRS 19990627 00001

ULYSSES RT

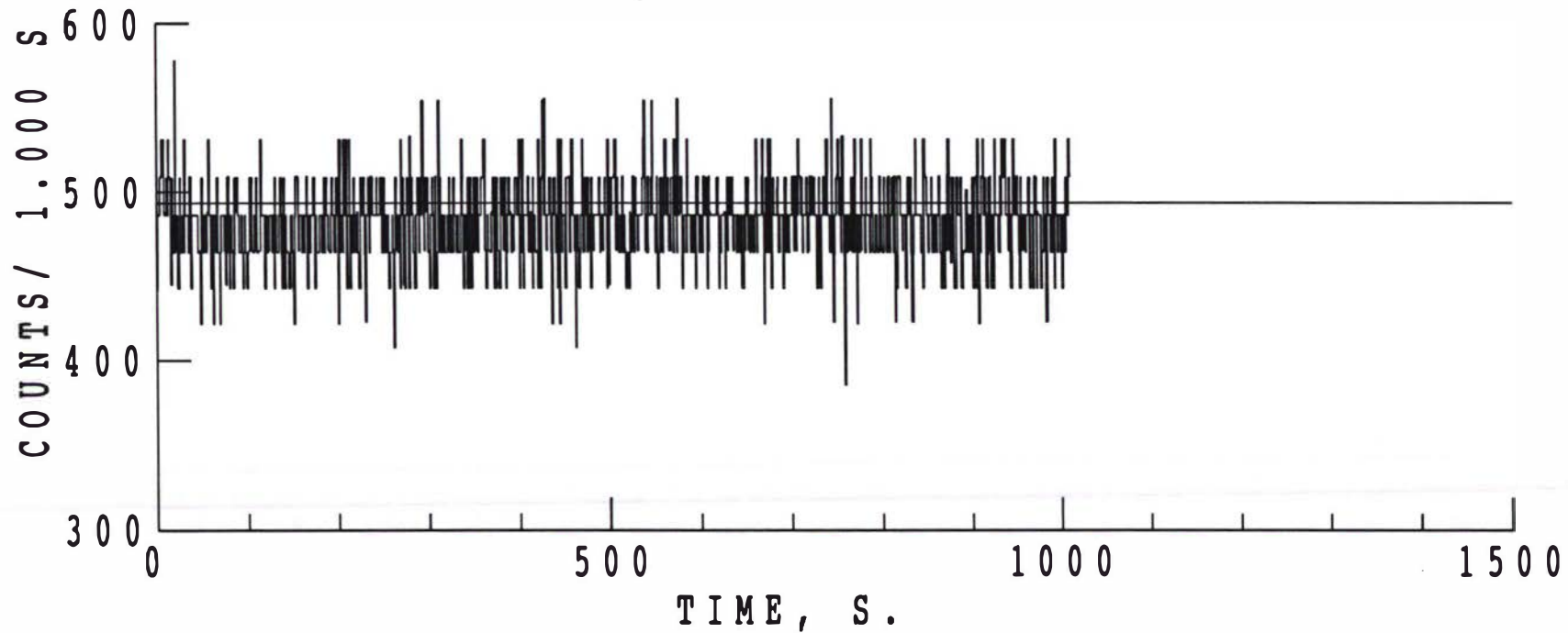
1 / 7 / 99

26 / 6 / 99 83664.219 s

0.500 S INTERVALS REGROUPED BY 2

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

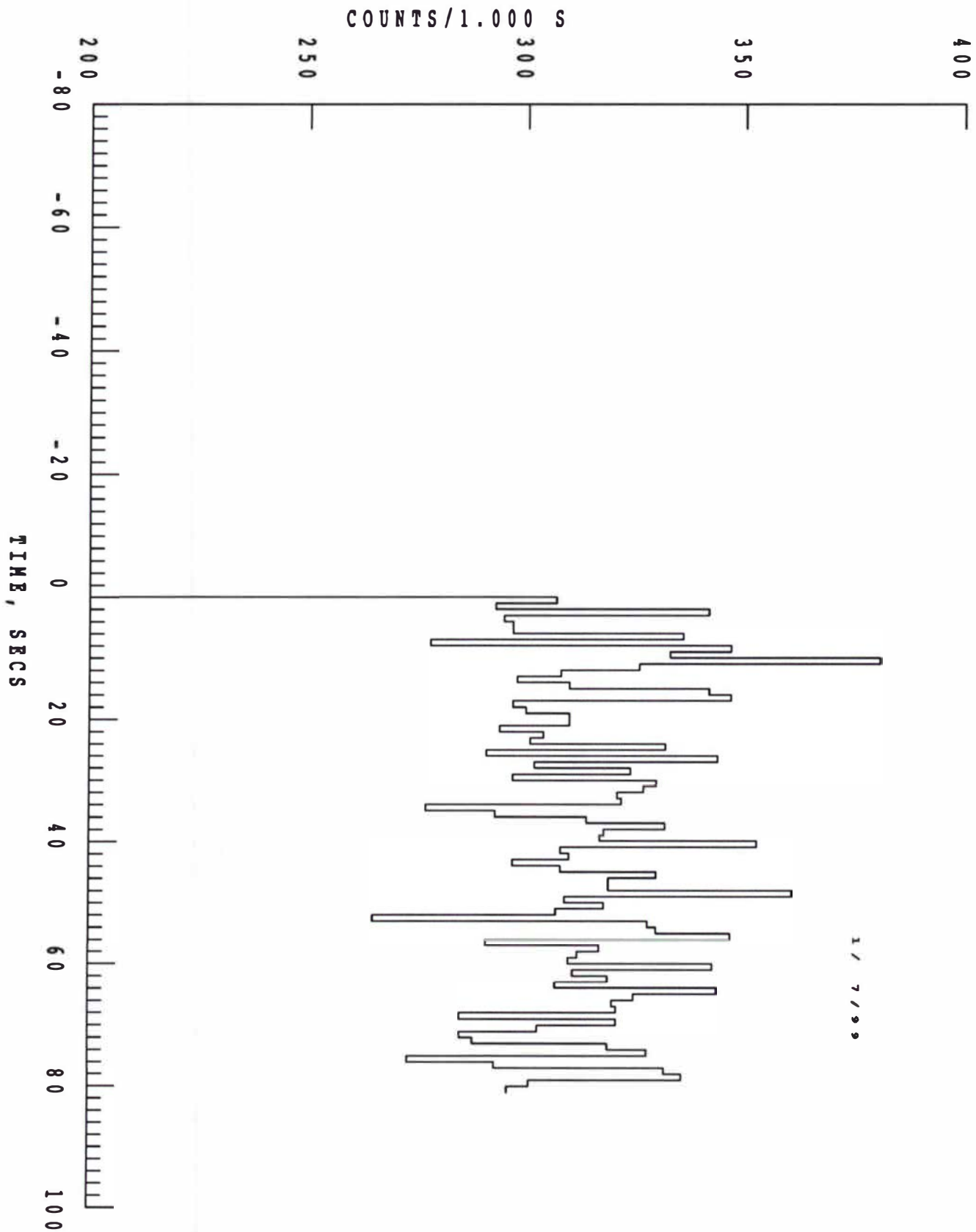


NEAR

27/06/99

1.784

100-1000 keV



NEAR arrival time was 27th

KNEAR GRS 19990627 00083

ULYSSES RT

28 / 6 / 99

26 / 6 / 99 83736.219 s

INTERVALS REGROUPED BY 8

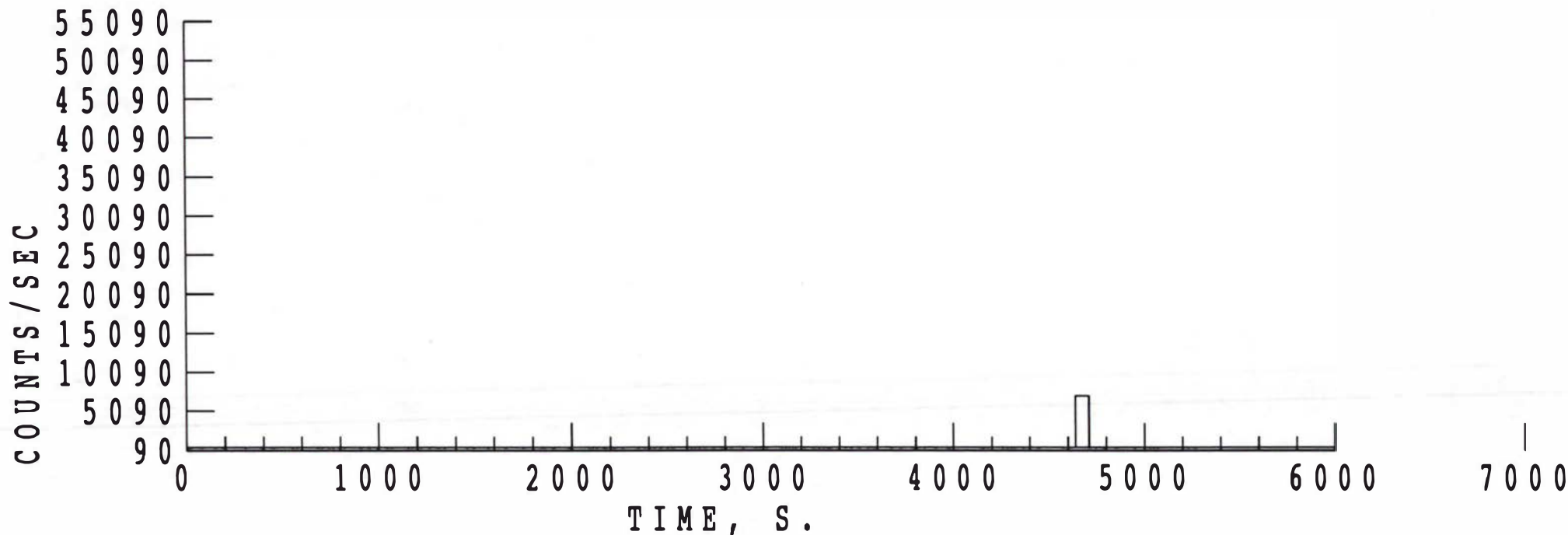
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



GRBM 19990627 14597

ULYSSES RT

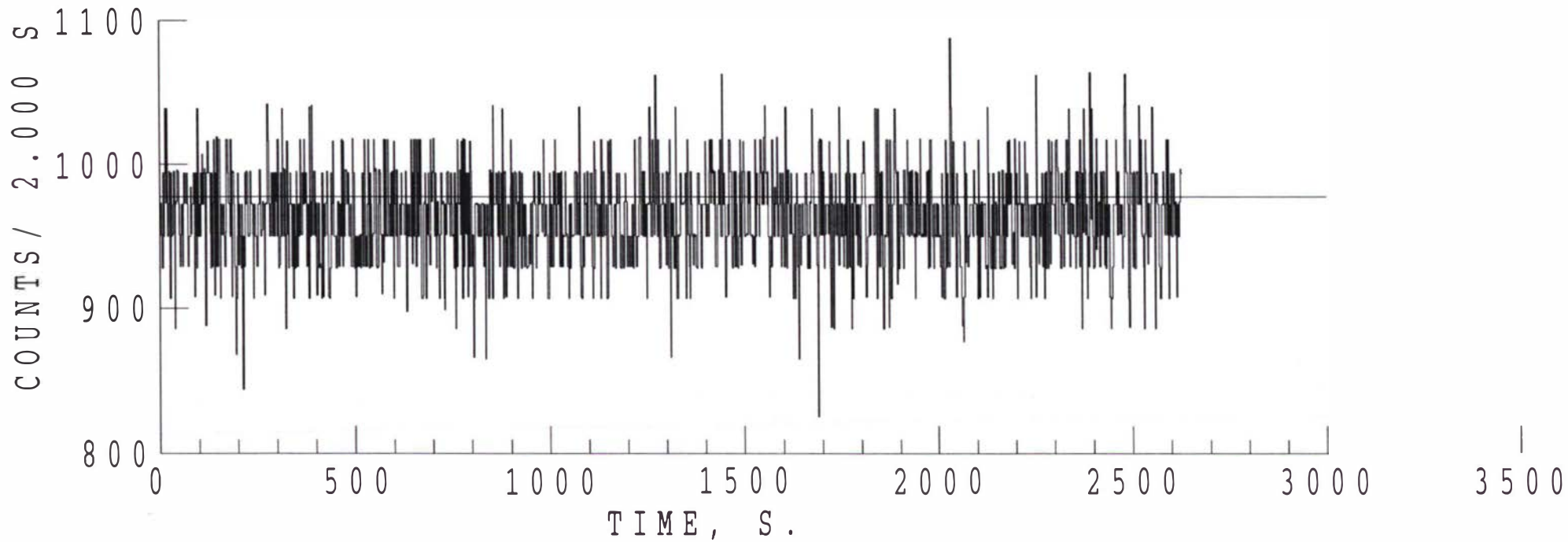
16/05/07

27/06/99 13284.377 s

0.500 S INTERVALS REGROUPED BY 4

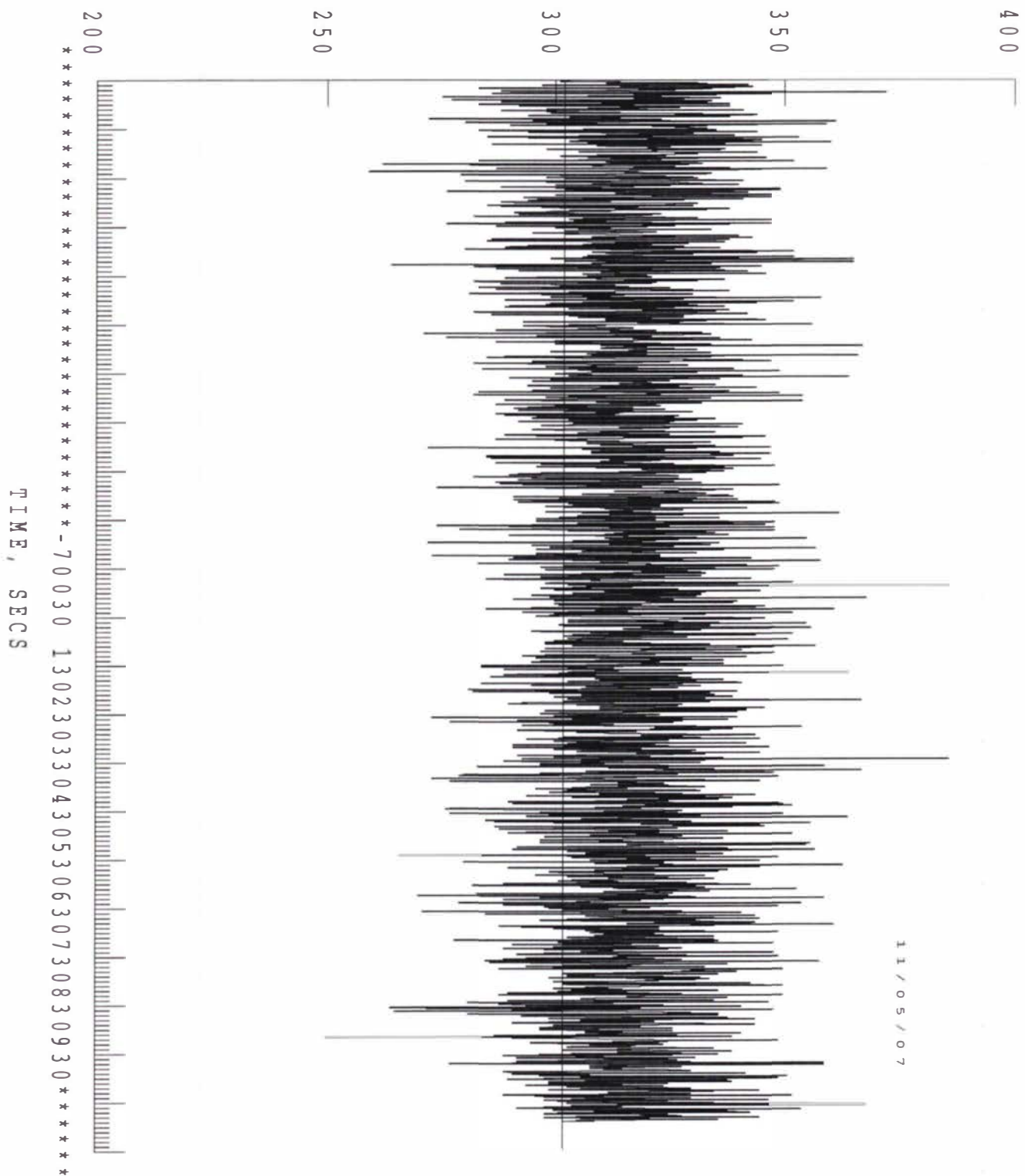
0 - 0 keV

N= 10 N= 2
>4.0 SIGMA FLUCTUATIONS



14424.780

COUNTS / 1.000 S



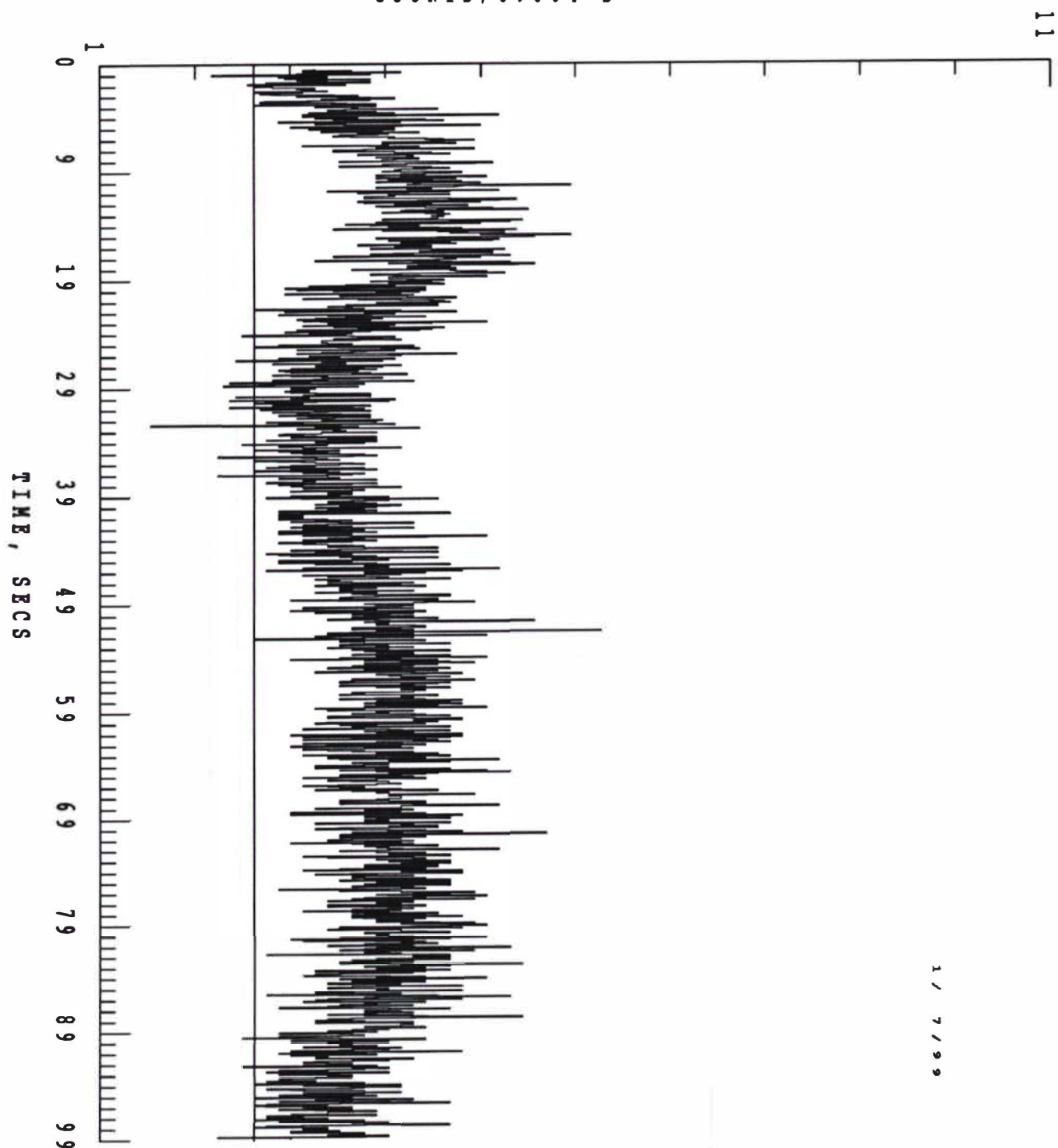
KONUS

27/06/99

31090.516

50 - 200 keV

COUNTS/0.064 S



From piro@ias.rm.cnr.it Sun Jun 27 01:59 PDT 1999
Date: Sun, 27 Jun 1999 09:53:19 +0000 (GMT)
From: Luigi Piro - BeppoSAX Mission Scientist <piro@ias.rm.cnr.it>
To: BEPPOSAX GRB ALERT LIST_1;;
Subject: BeppoSAX MAIL n. 99/10: GRB990627
mime-Version: 1.0

On Jun.27, 5:00:51 UT a GRB (GRB990627) was detected
simultaneously by the GRBM and WFC of BeppoSAX.

Preliminary coordinates from WFC are:

R.A.(2000)= 26.895

DEC(2000)= -77.092

with an error radius of about 5'

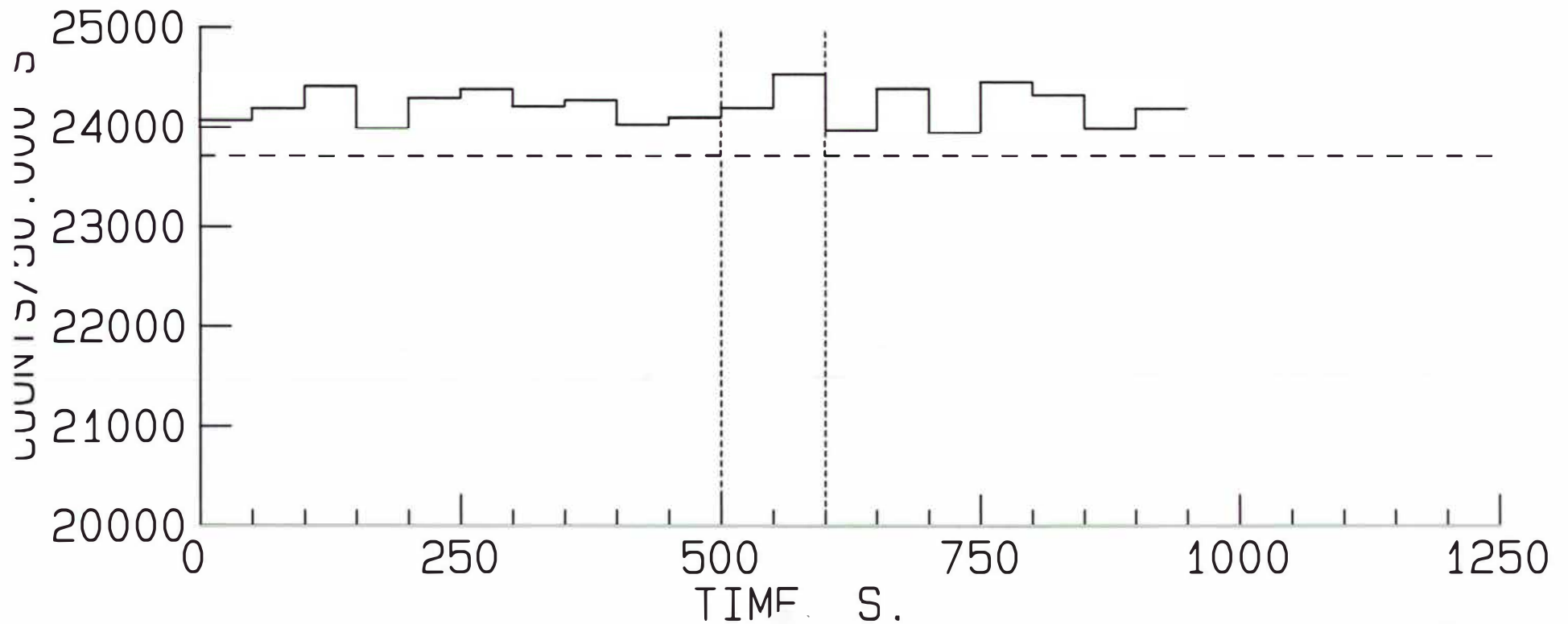
A follow-on with NFI is being planned

Giorgio Gandolfi on behalf of
Luigi Piro - BeppoSAX Mission Scientist

#-----#	#-----#
Luigi Piro	E-mail:
Istituto Astrofisica Spaziale	piro@alpha1.ias.rm.cnr.it
C.N.R.	SAX program: saxsci@alpha1.ias.rm.cnr.it
Via Fosso del Cavaliere	phone: -39-06-4993-4007
I-00133 Roma	phone BeppoSAX center: -39-06-4079-6393
Italy	fax(CNR) : -39-06-20660188
#	#

ULYSSES RT
27/ 6/99 17496.418 s
0.500 S INTERVALS REGROUPED BY 100
22- 149 keV

2 / 7 / 99



KONUS2 19990627 31090

ULYSSES RT

28 / 6 / 99

27 / 6 / 99 28404.031 s

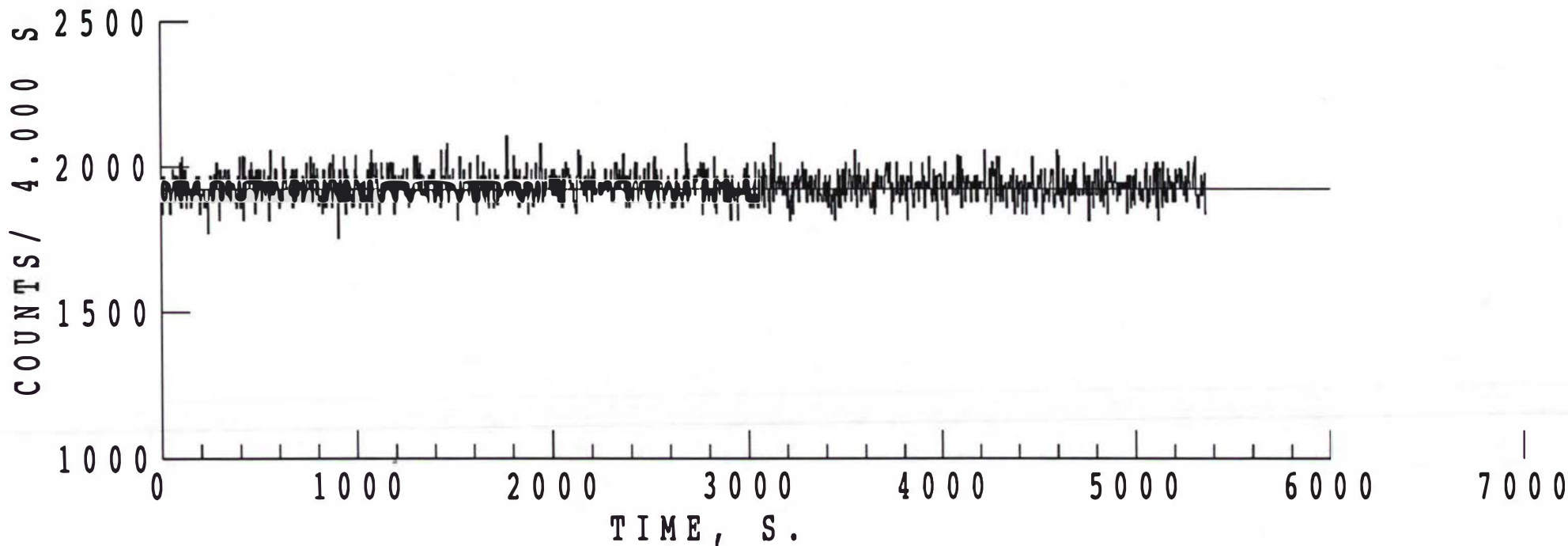
0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

SAX event

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



100-1000 keV

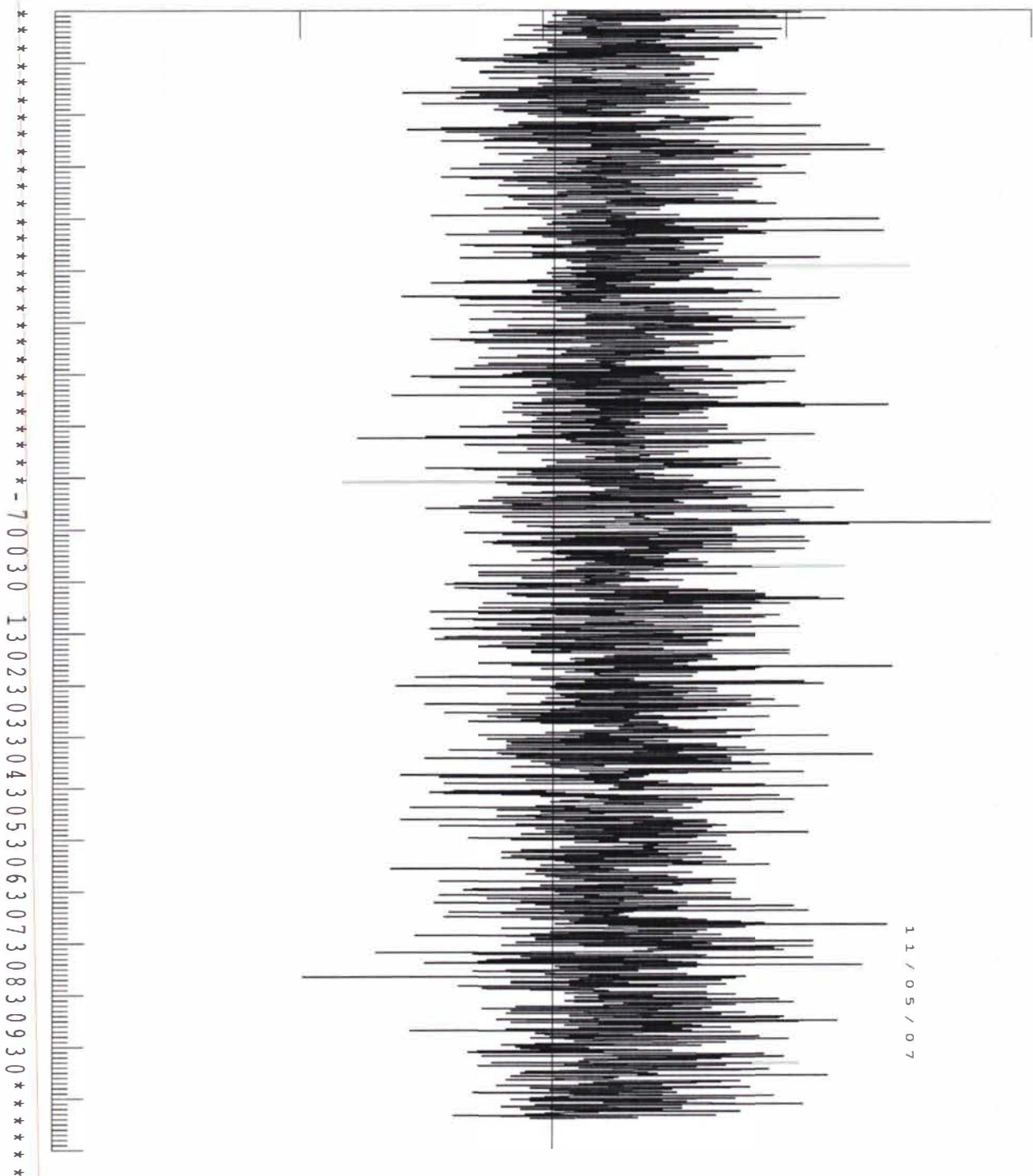
400

350

300

250

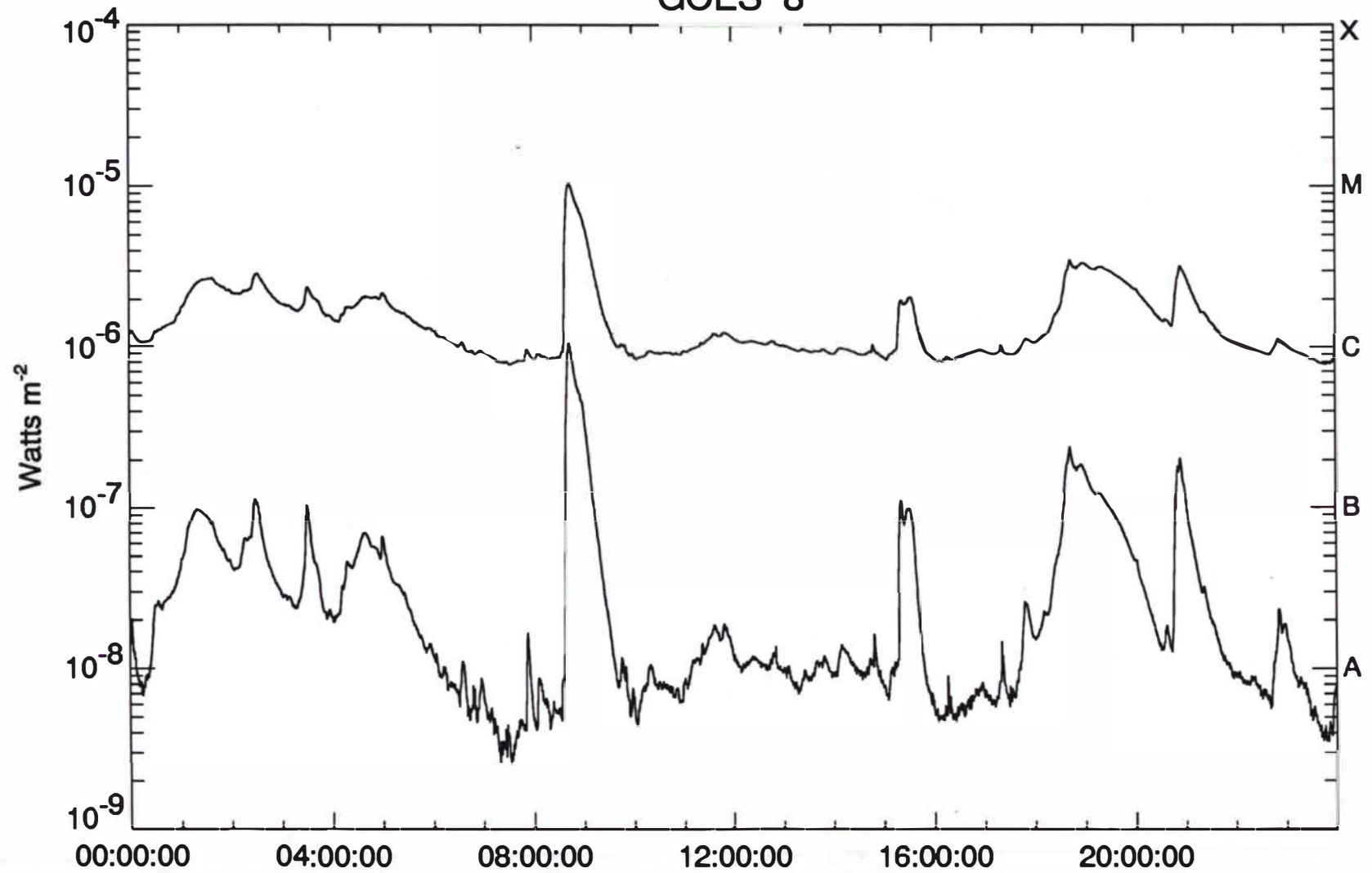
200



11 / 05 / 07

TIME, SECS

GOES 8



Data Start: 99/06/27, 0000:00

Plot created: 99/07/01, 1012

Channel

1 (1.0 - 8.0 Angstroms)

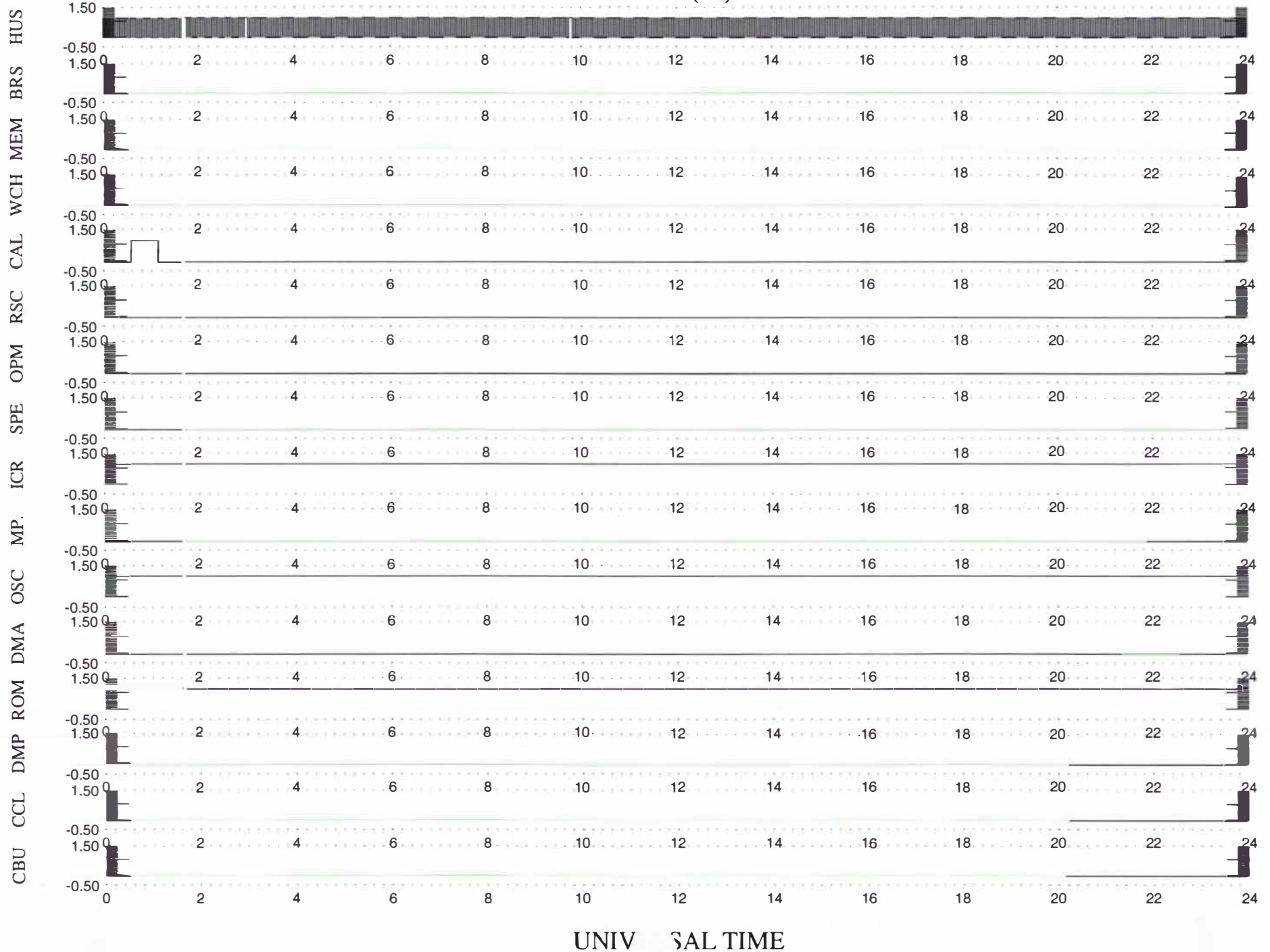
Background not subtracted

2 (0.5 - 4.0 Angstroms)

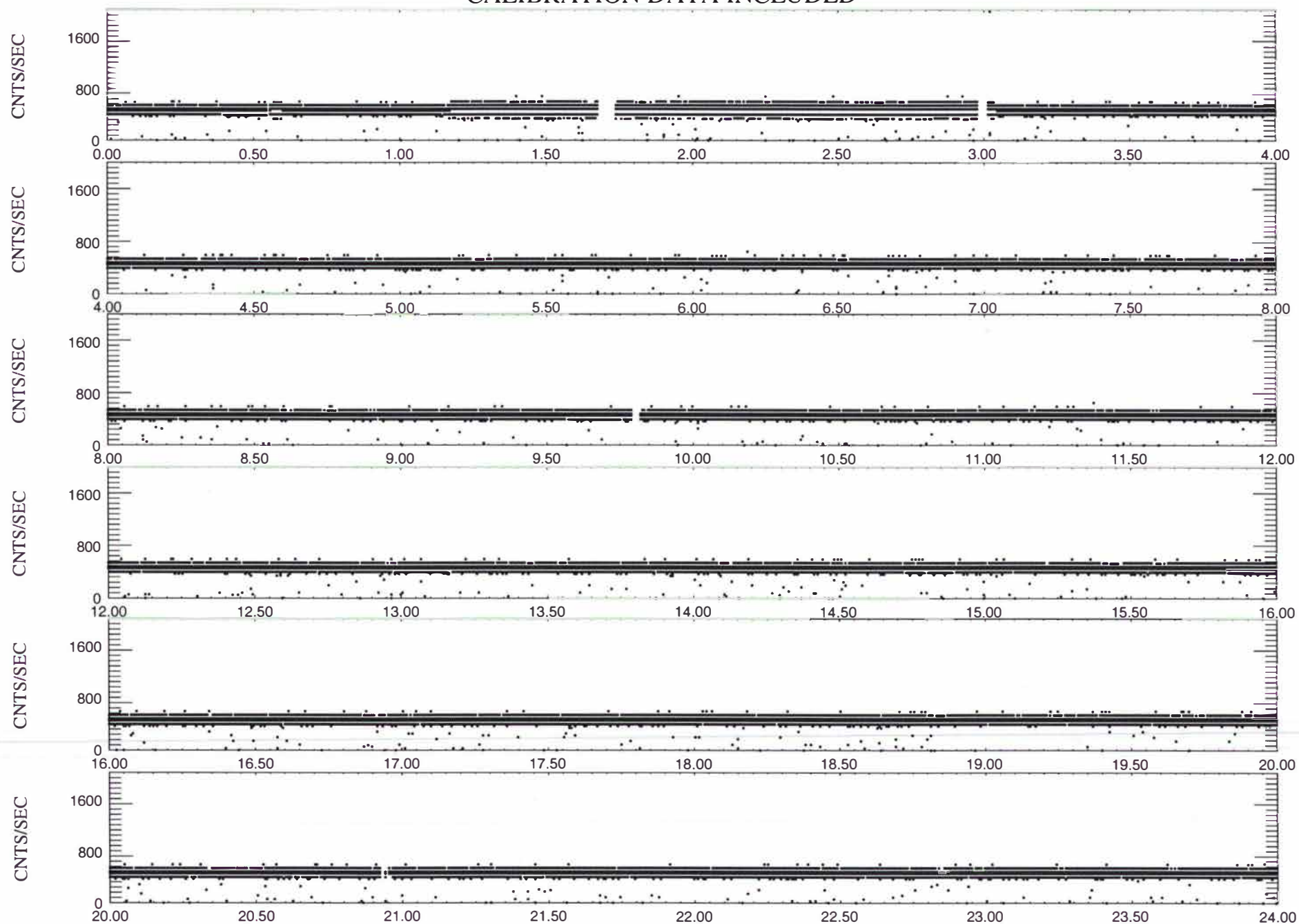
Background not subtracted

Sample average = 10

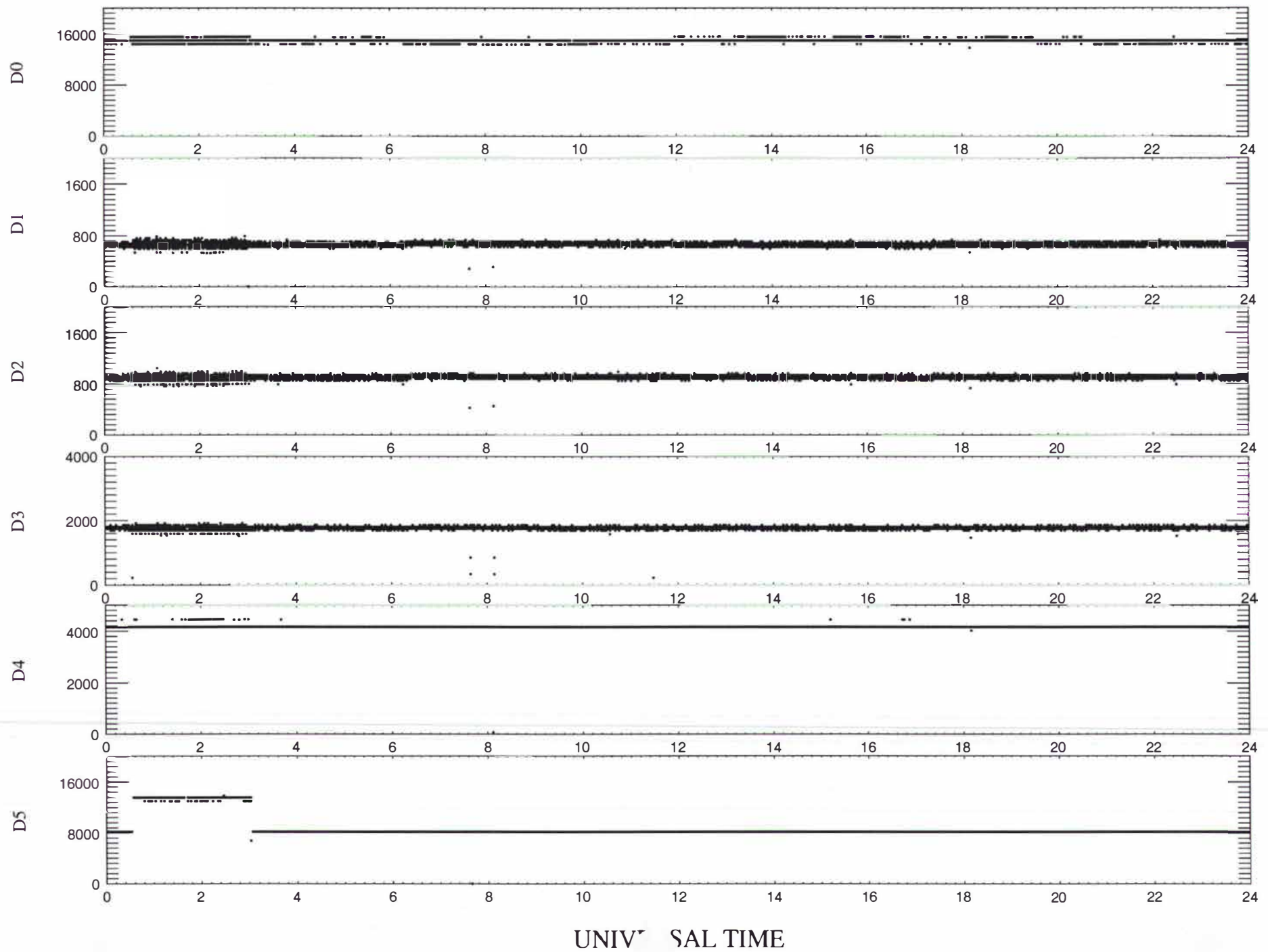
NO BURST (15)



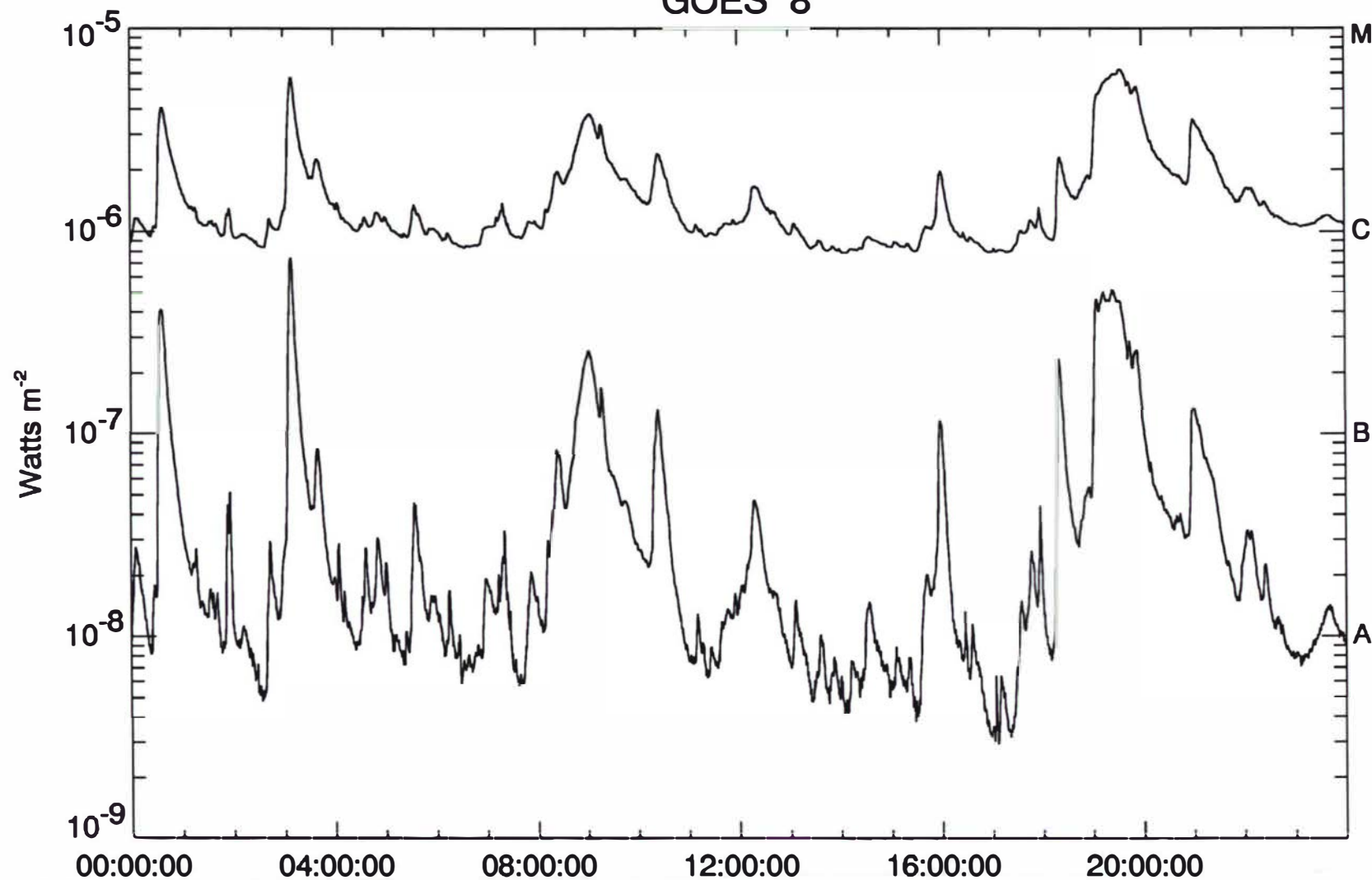
CALIBRATION DATA INCLUDED



UNIV SAL TIME



GOES 8



Data Start: 99/06/28, 0000:00

Plot created: 99/07/02, 1012

Channel

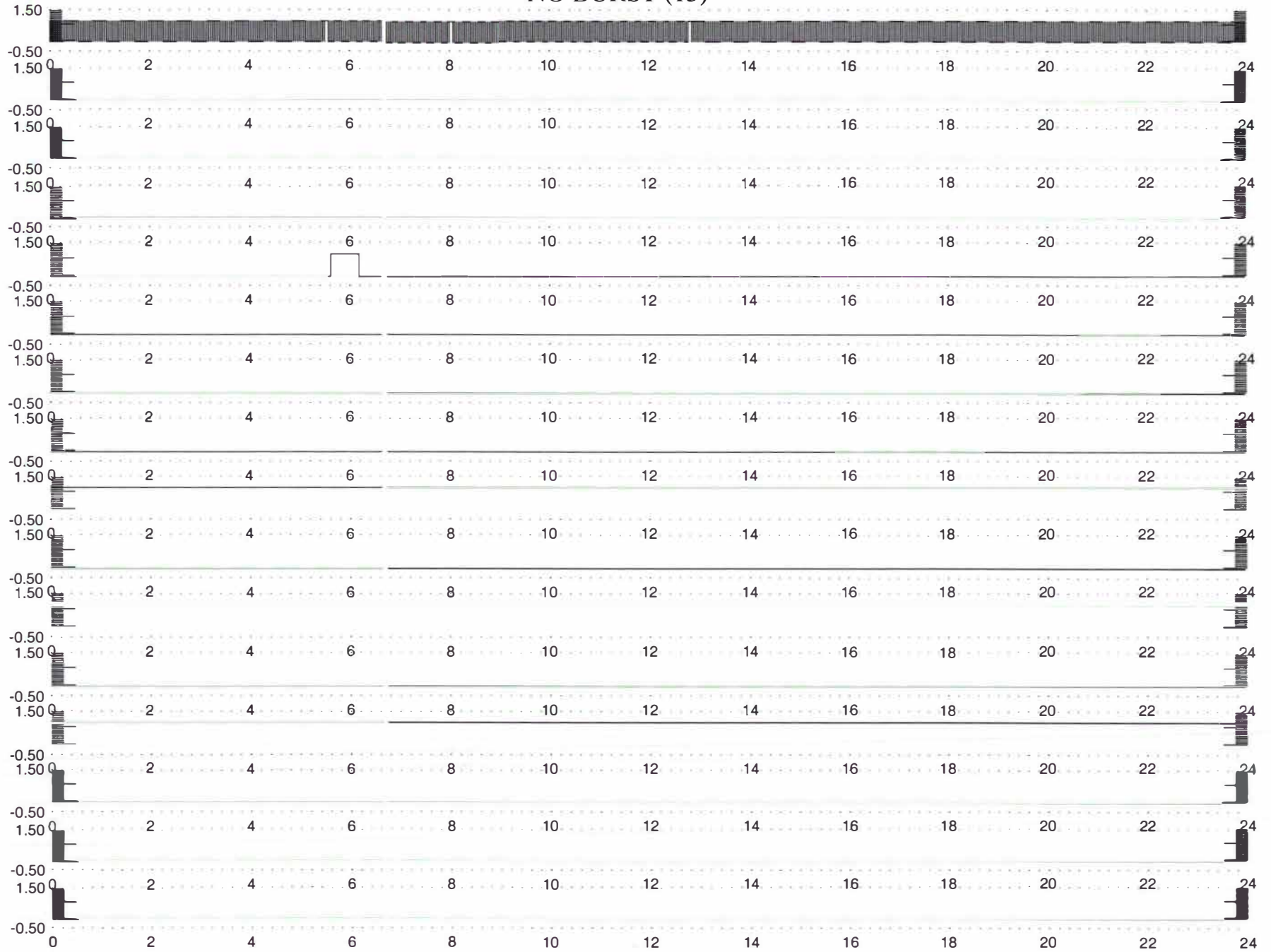
1 (1.0 - 8.0 Angstroms)

Background not subtracted

2 (0.5 - 4.0 Angstroms)

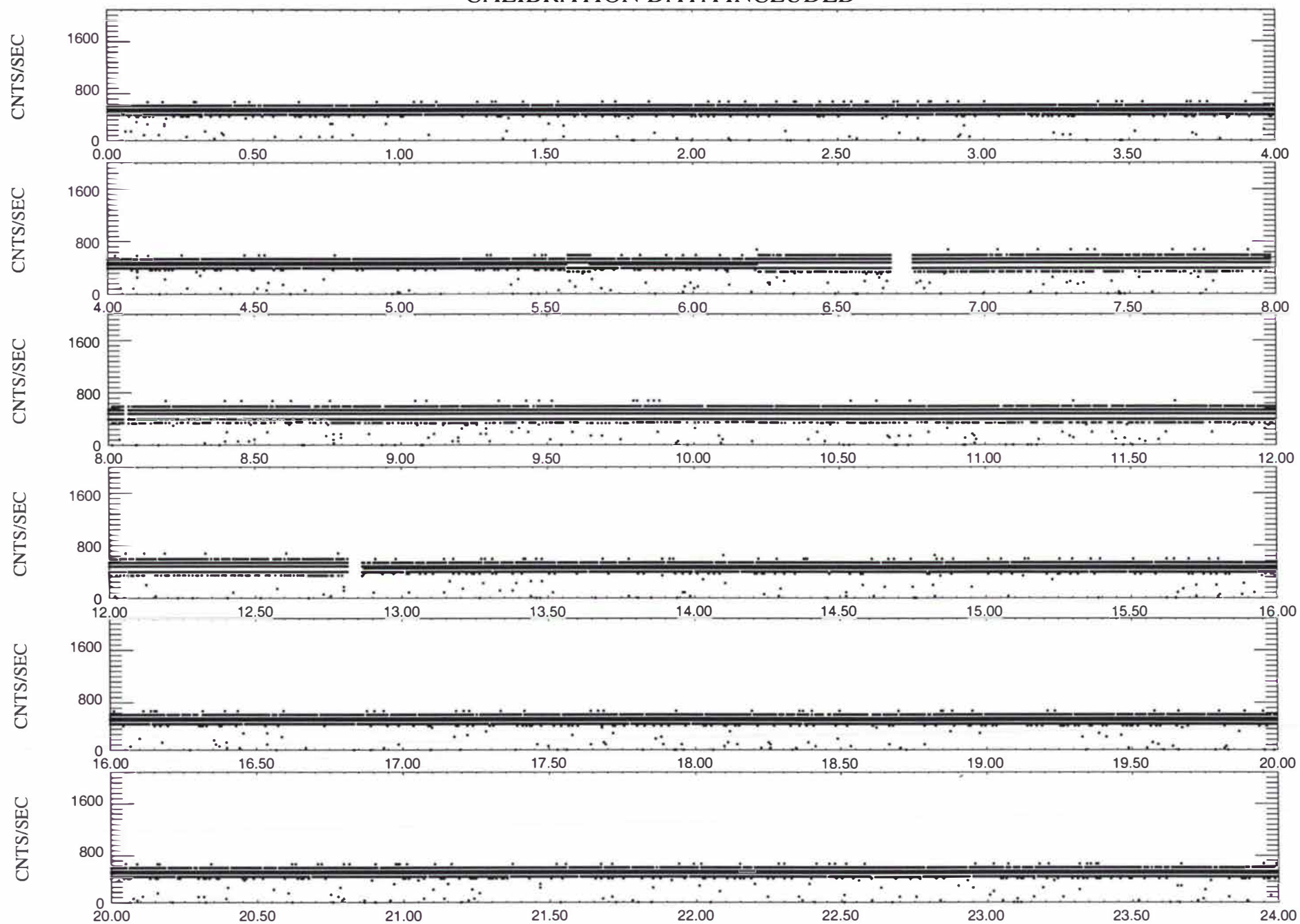
Background not subtracted

Sample average = 10

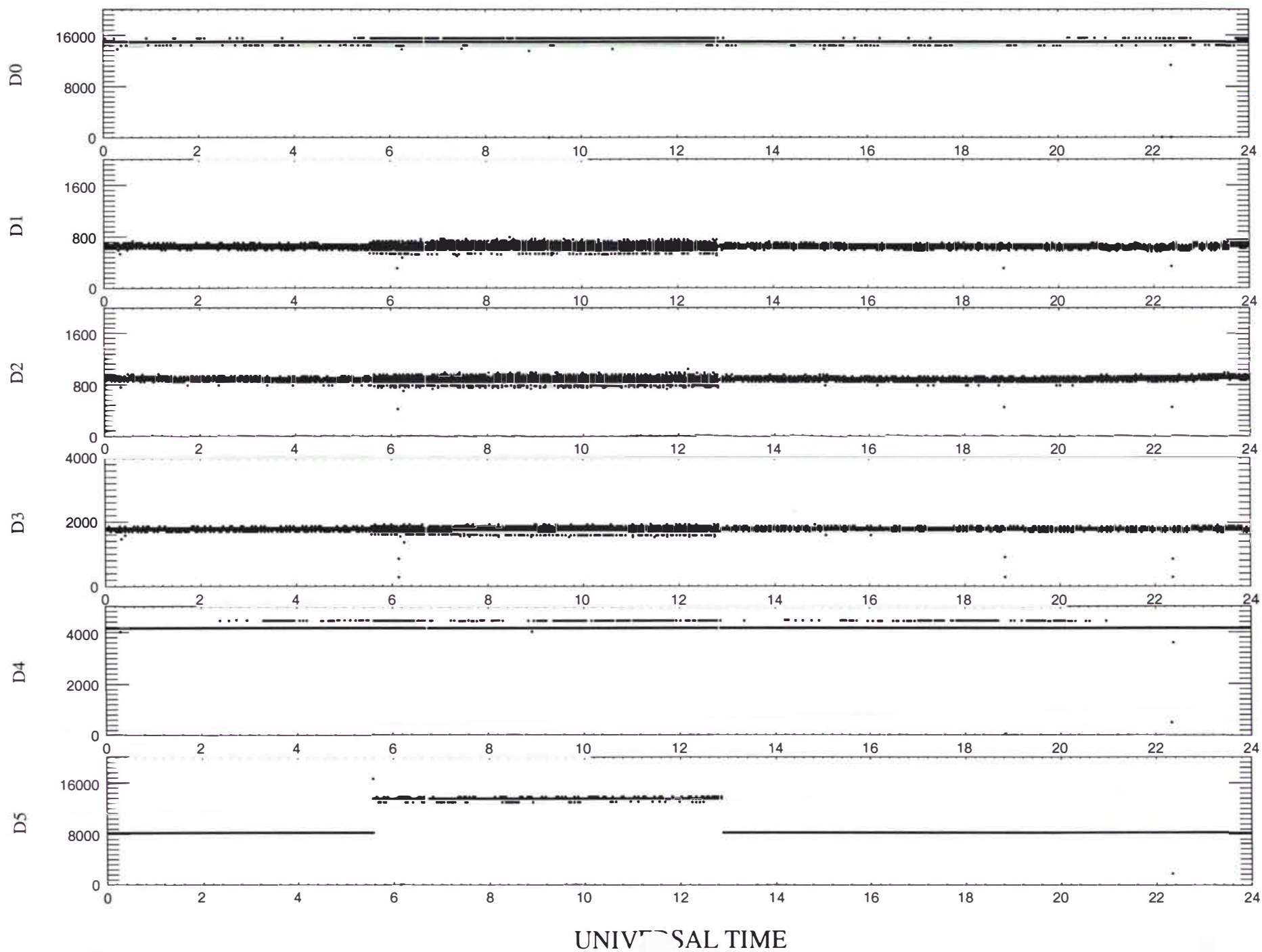
[illegible]

UNIV. 'AL TIME

CALIBRATION DATA INCLUDED



UNIVSAL TIME



KNEAR GRS 19990629 32148

ULYSSES RT

30 / 6 / 99

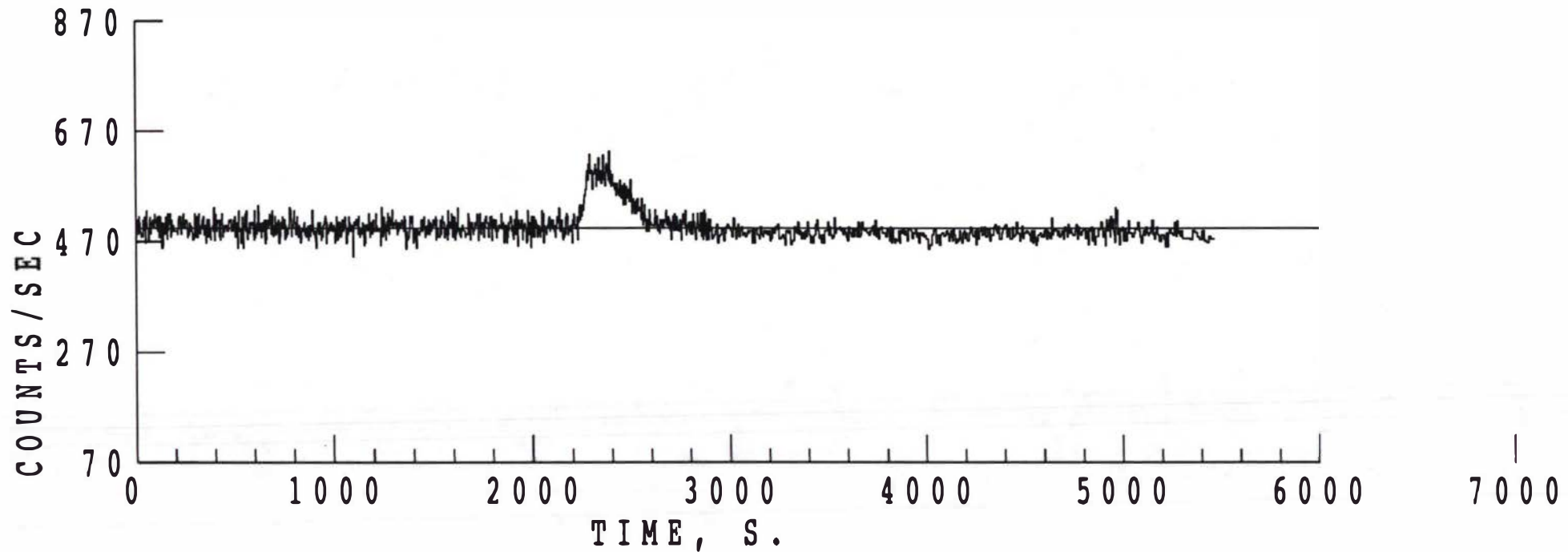
29 / 6 / 99 29412.045 s

INTERVALS REGROUPED BY 12

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS

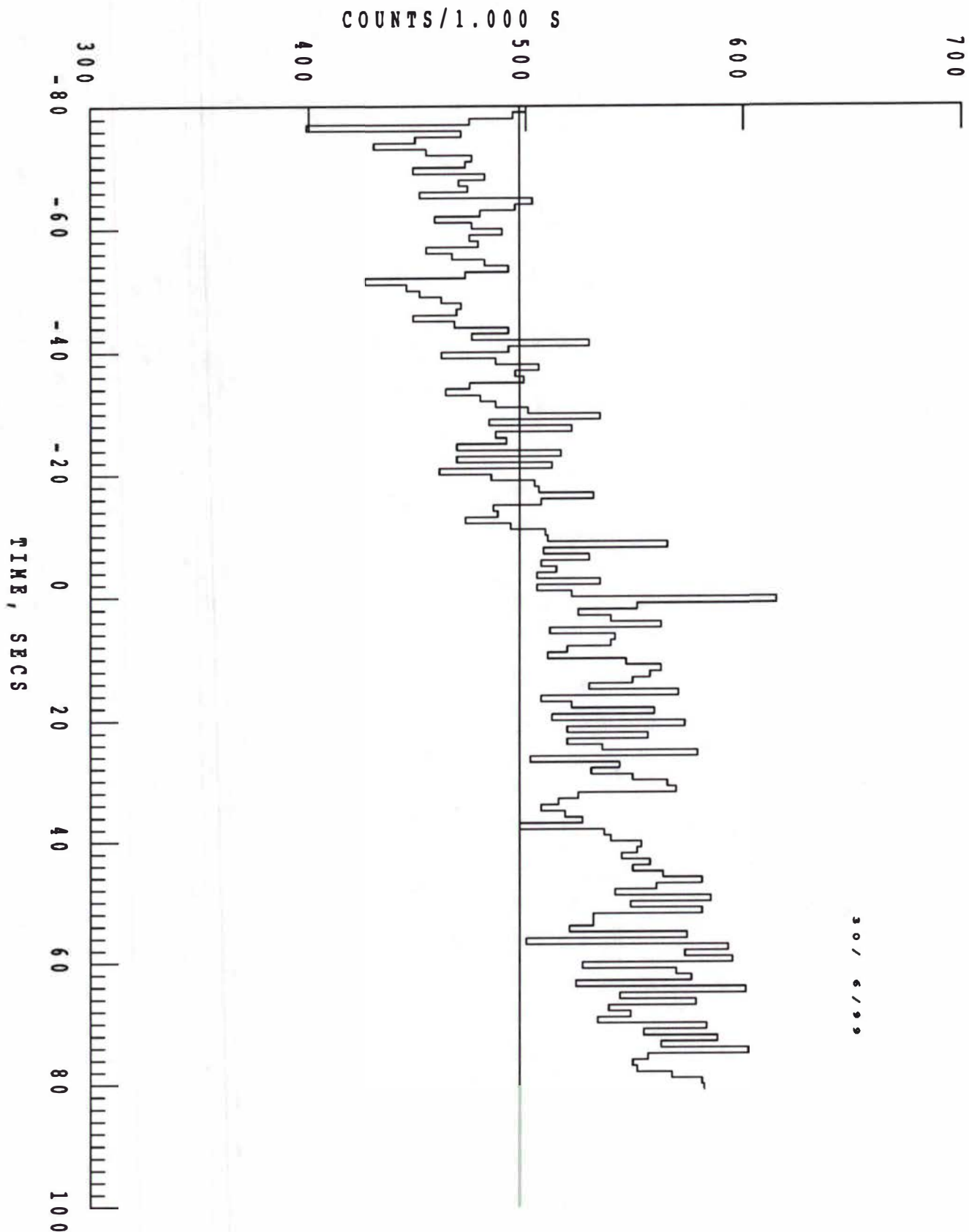


NEAR

29/06/99

32148.724

100-1000 keV



KONUS1 19990629 69079

ULYSSES RT

30 / 6 / 99

29 / 6 / 99 66384.172 s

0.500 S INTERVALS REGROUPED BY 8

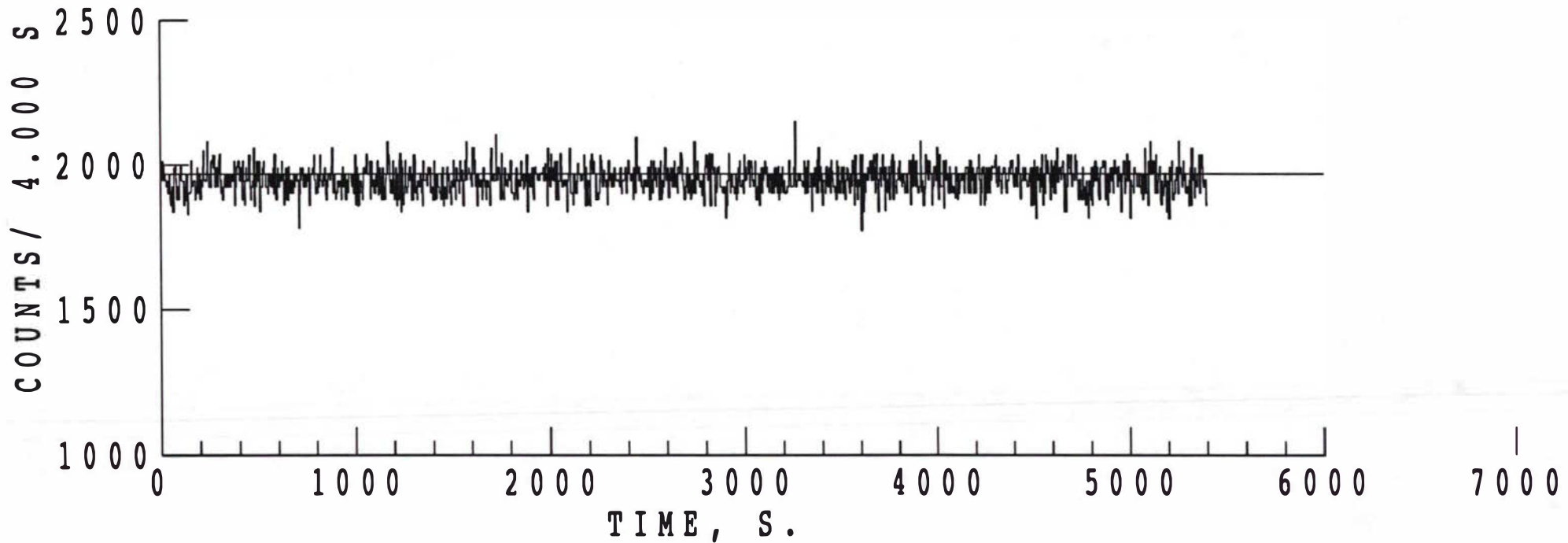
0 - 0 keV

N= 10 M= 10

>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2

>4.0 SIGMA FLUCTUATIONS



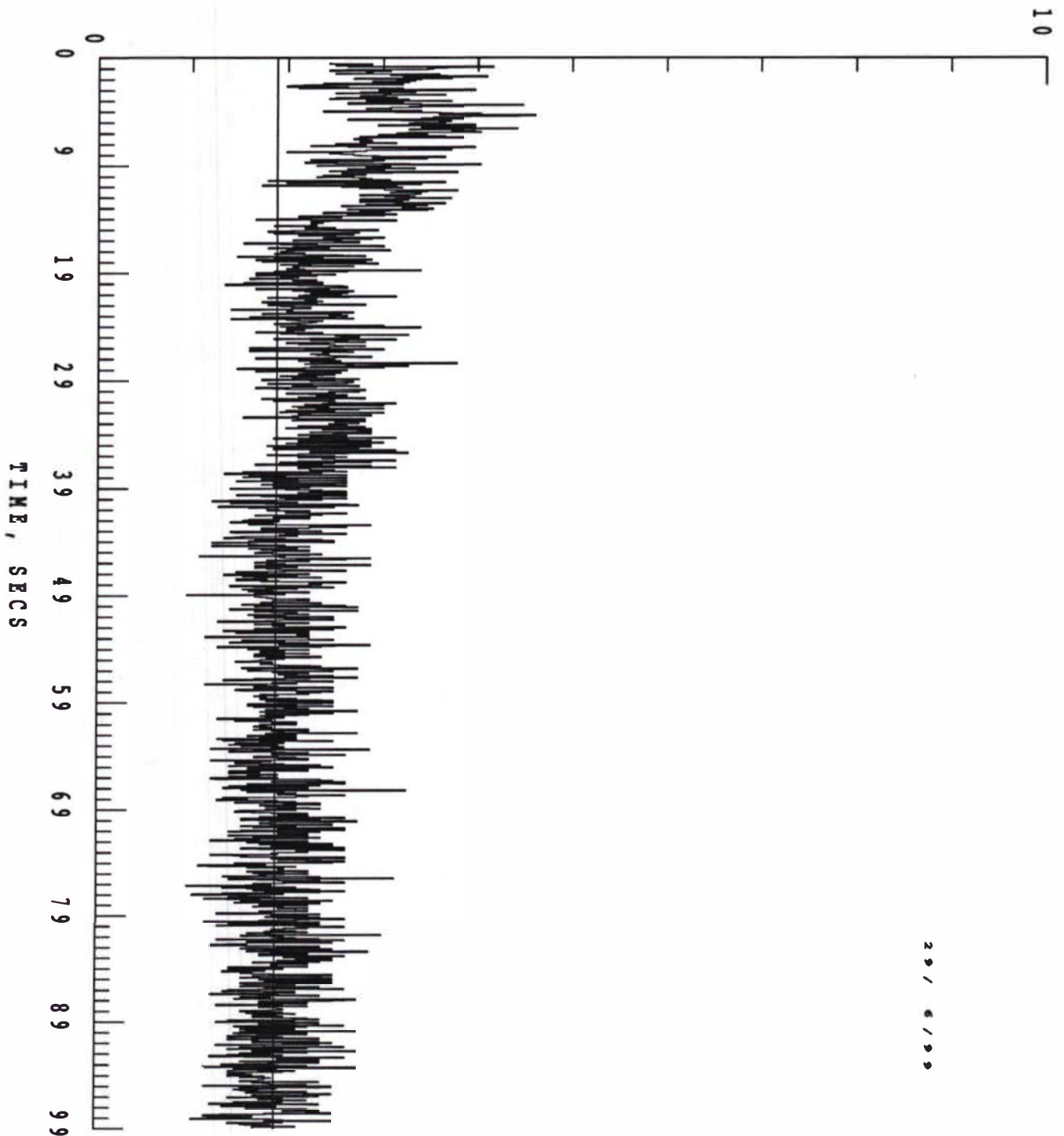
KONUS

29/06/99

69079.946

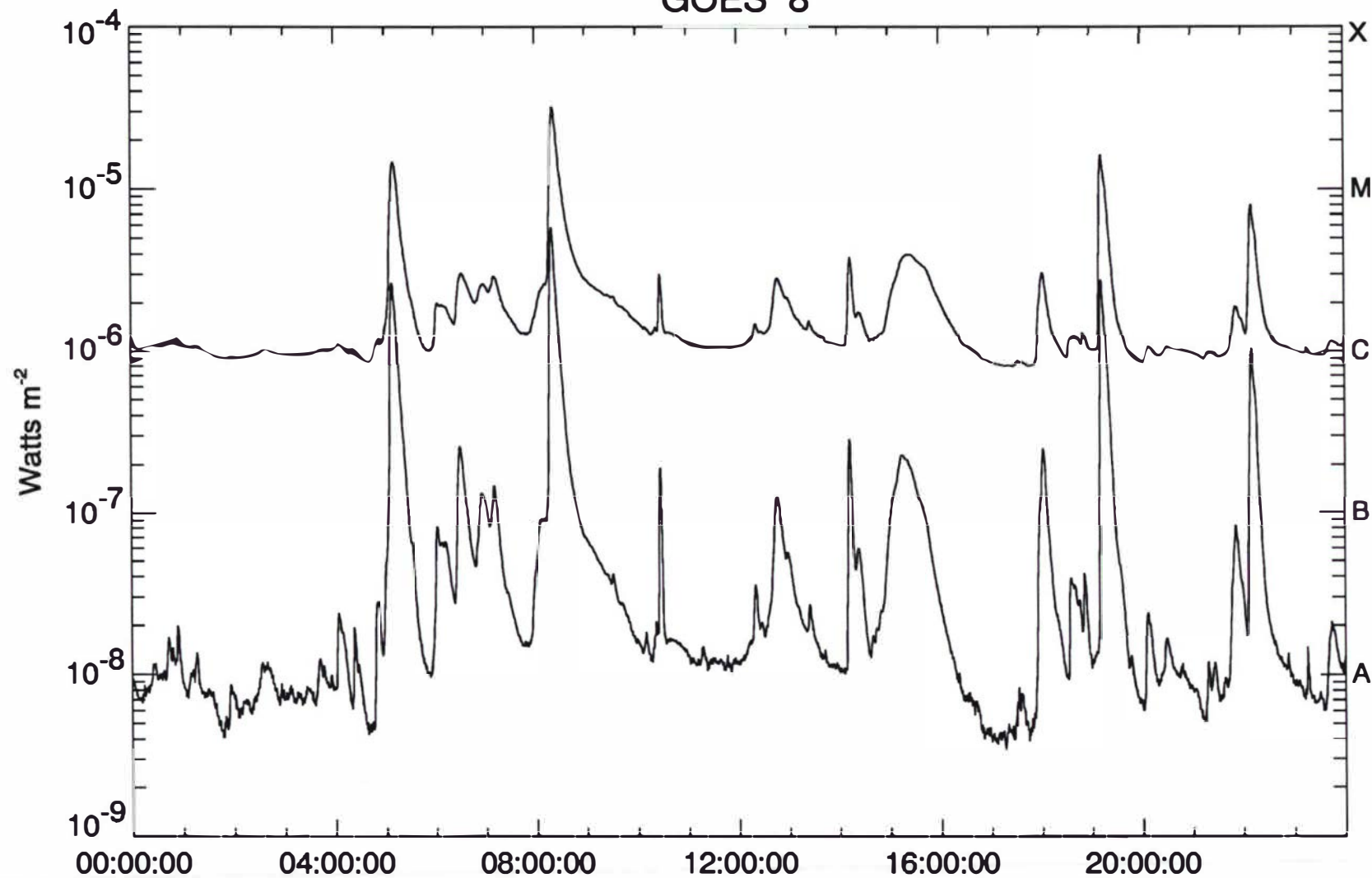
50 - 200 keV

COUNTS/0.064 S



29 / 6 / 99

GOES 8



Data Start: 99/06/29, 0000:00

Plot created: 99/07/03, 1012

Channel

1 (1.0 - 8.0 Angstroms)

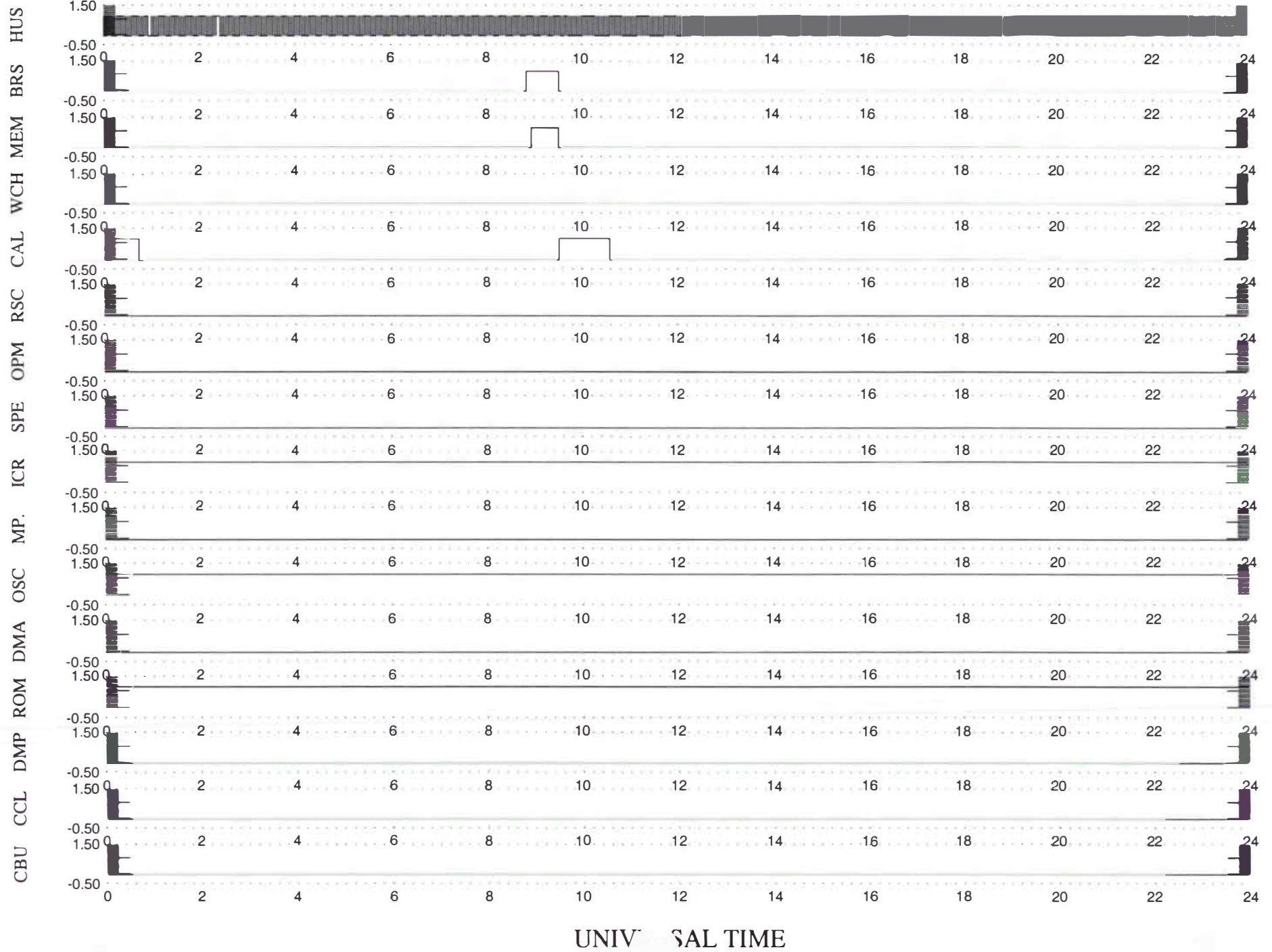
Background not subtracted

2 (0.5 - 4.0 Angstroms)

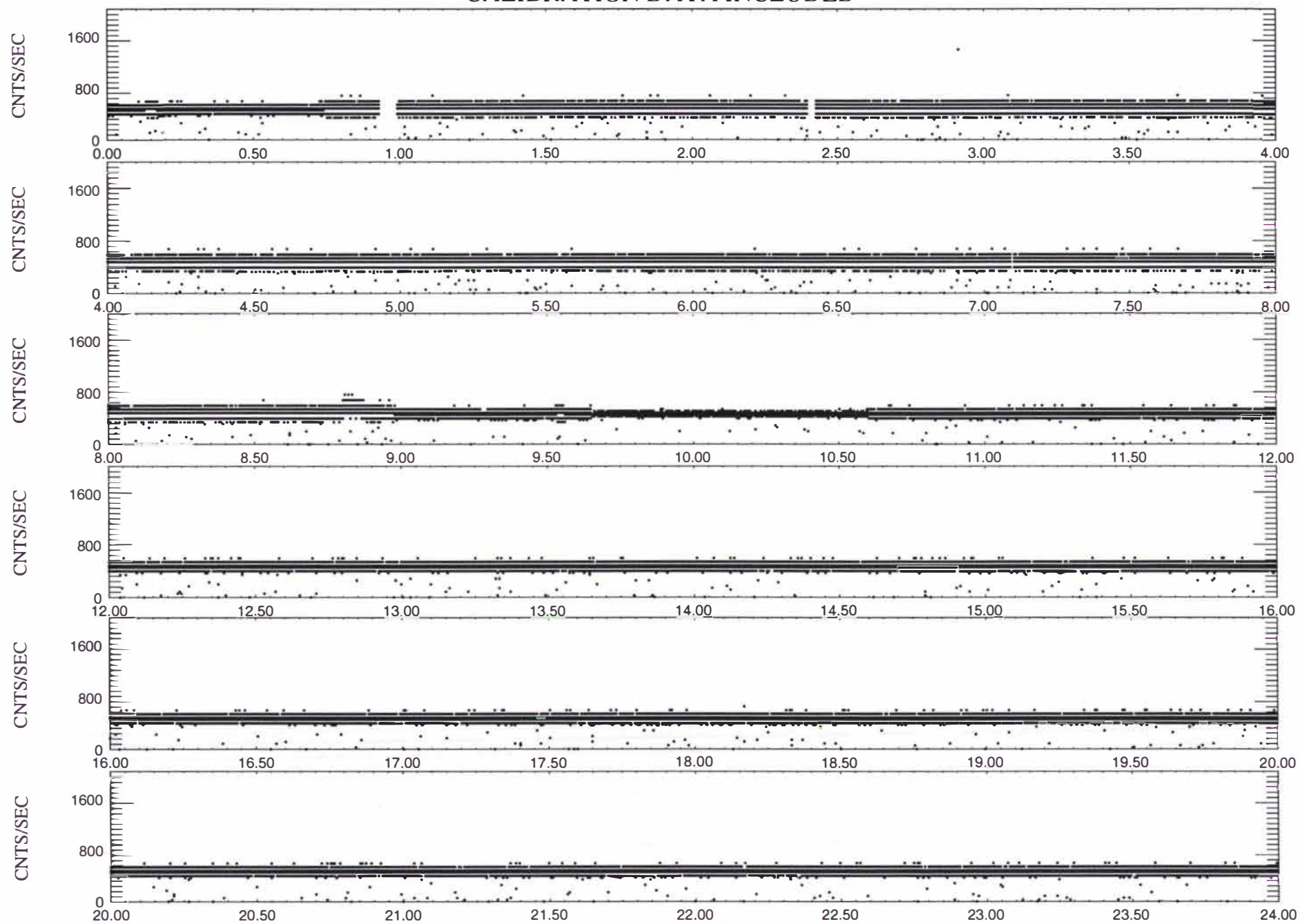
Background not subtracted

Sample average = 10

BURST NUMBER 0

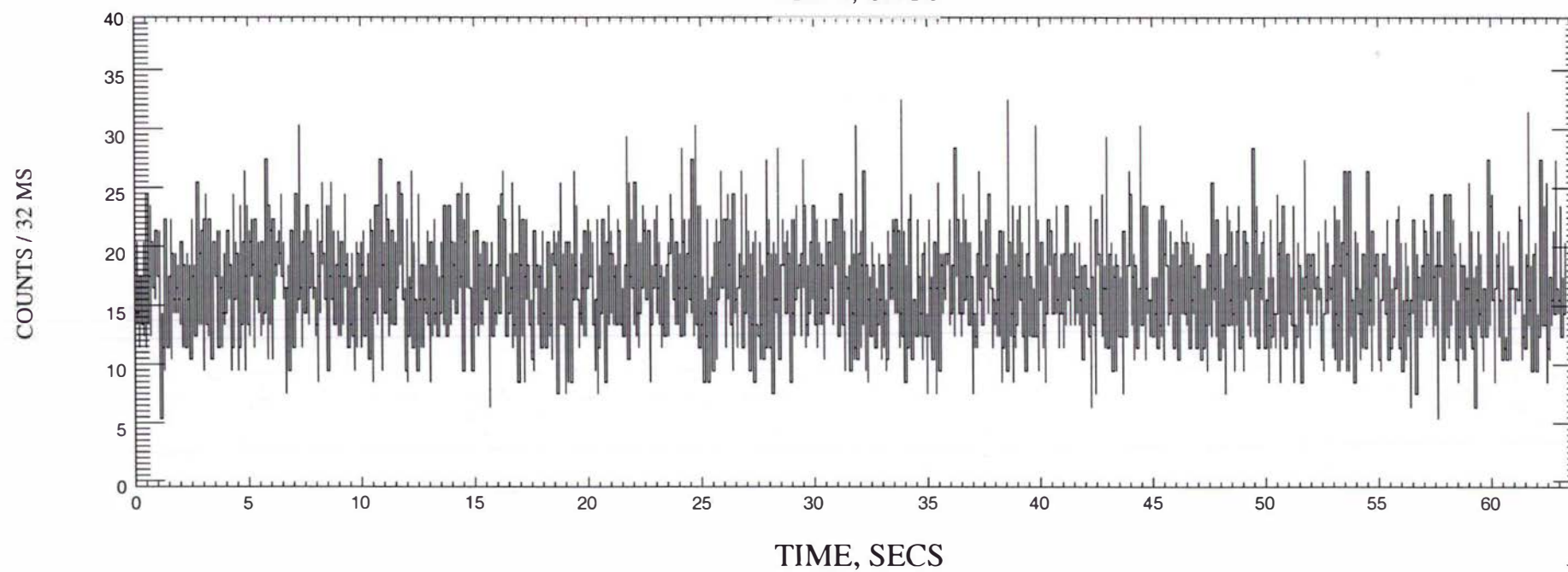
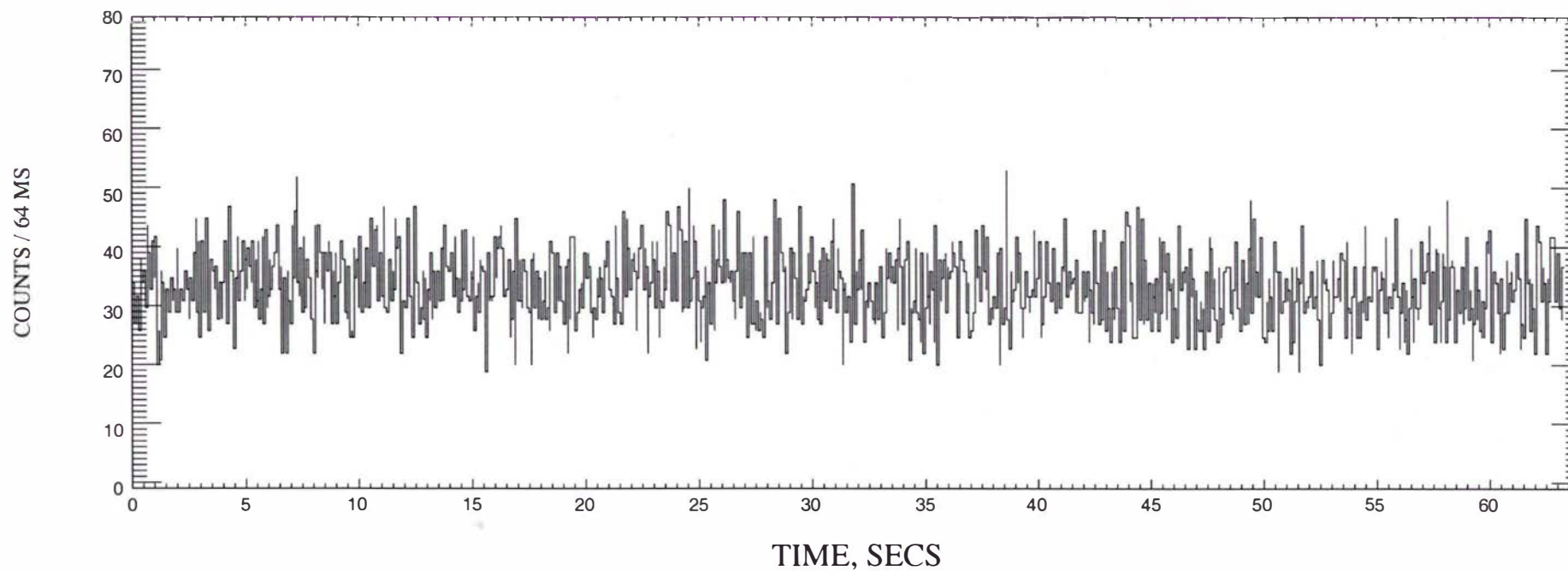


CALIBRATION DATA INCLUDED

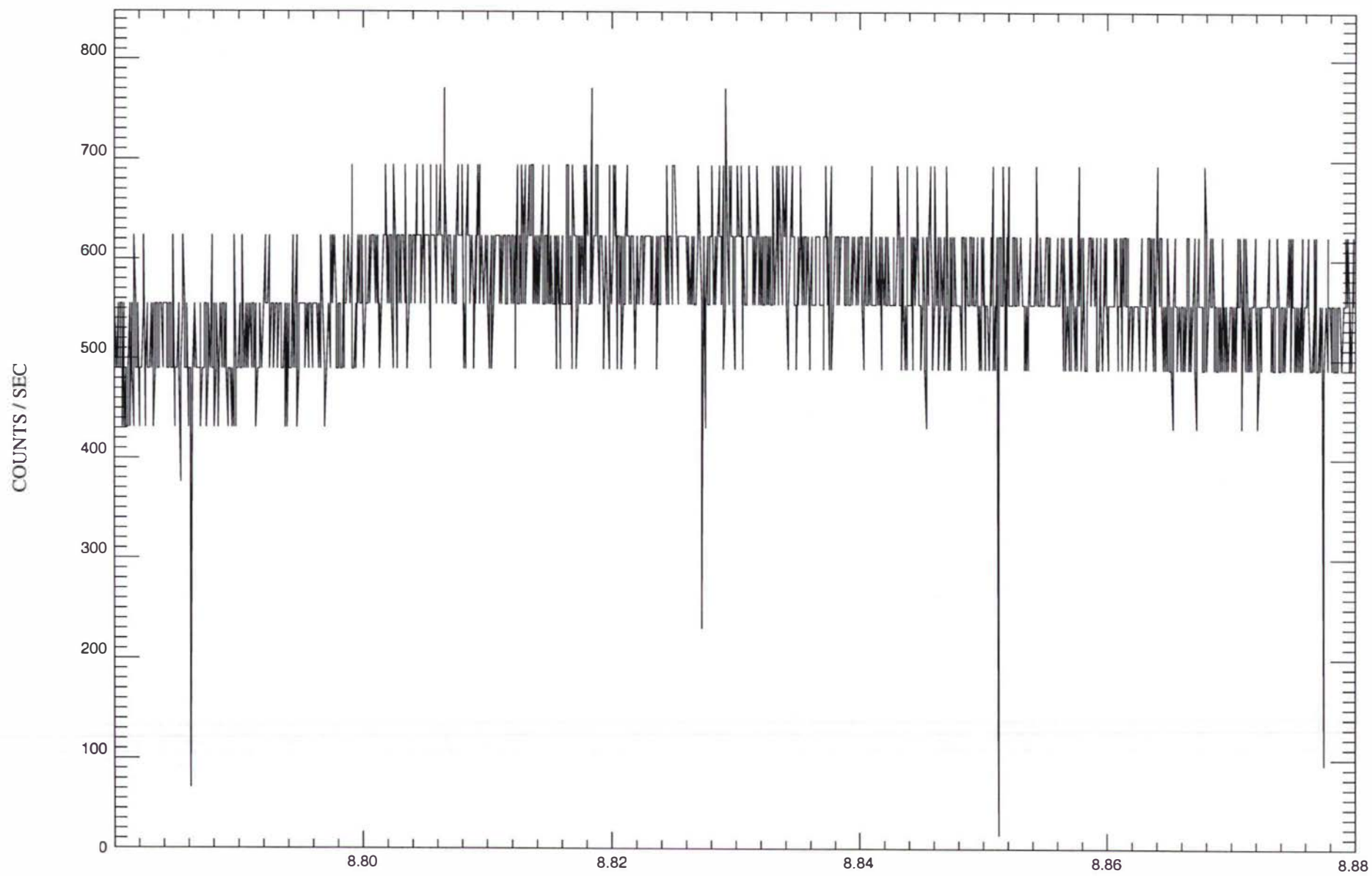


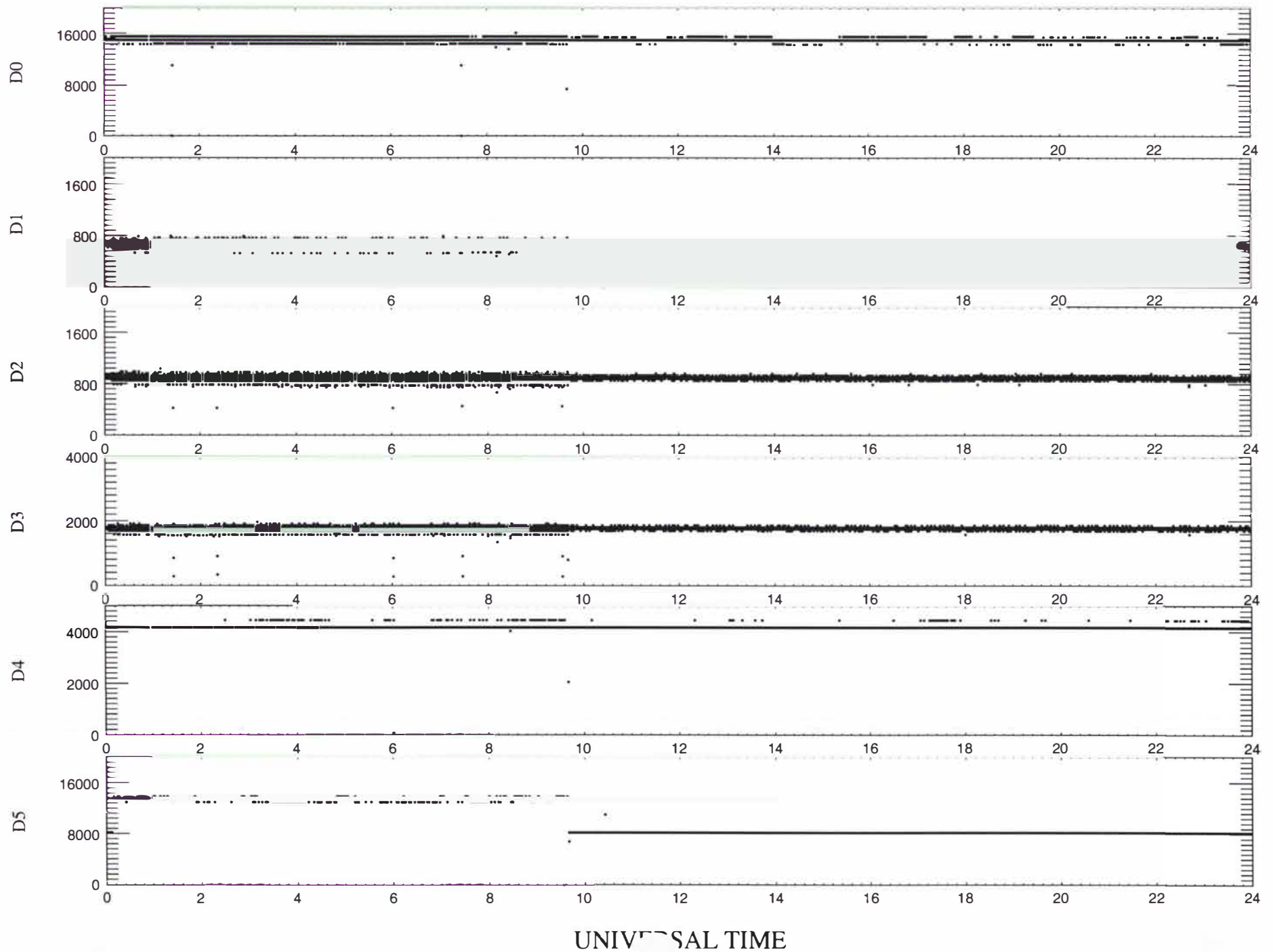
UNIVERSAL TIME

Burst Counter 0 at UT= 8.829322276645 h=31785.560 s 08:49:45.560



CALIBRATION DATA INCLUDED





From HENZE@fender.msfc.nasa.gov Fri Jul 2 09:57 PDT 1999
Date: Fri, 2 Jul 1999 12:02:02 -0500 (CDT)
From: Bill Henze (256-544-7616) <HENZE@fender.msfc.nasa.gov>
To: burst@comptel.sr.unh.edu, grobad@ests2.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, dgruber@ucsd.edu, jmatteson@ucsd.edu,
PACIESAS@fender.msfc.nasa.gov, HORACK@fender.msfc.nasa.gov,
khurley@sunspot.ssl.berkeley.edu, hpark@llnl.gov
Subject: Burst Trigger Message

BATSE BURST TRIGGER

NO.: 7624

TIME: TJD=1359 SECONDS=41140

TYPE: FLARE SOLAR FLARE TRIGGER SIGNAL:N

SIGNIFICANCE: SIGMA

INTENSITY: COUNTS/CM2

LOCATION: ZENITH= 53.0 AZIMUTH=327.9 ERROR= 0.3 DEGREES

COMMENTS:

GOES M1.9, OPTICAL 1B SOLAR FLARE. TRIGGER OCCURRED DURING DATA GAP CAUSED BY
HIGH-GAIN ANTENNA PROBLEM. SPARSE DATA. DURATION, SPECTRAL RANGE UNKNOWN.
HV OFF (SAA) AT APPROX. T+4.1 S.

Vreeswijk P. M., Galama T.J., Rol E., et al. 1999a, GCN Circ.

310

Vreeswijk P. M., Galama T.J., Rol E., et al. 1999b, GCN Circ.

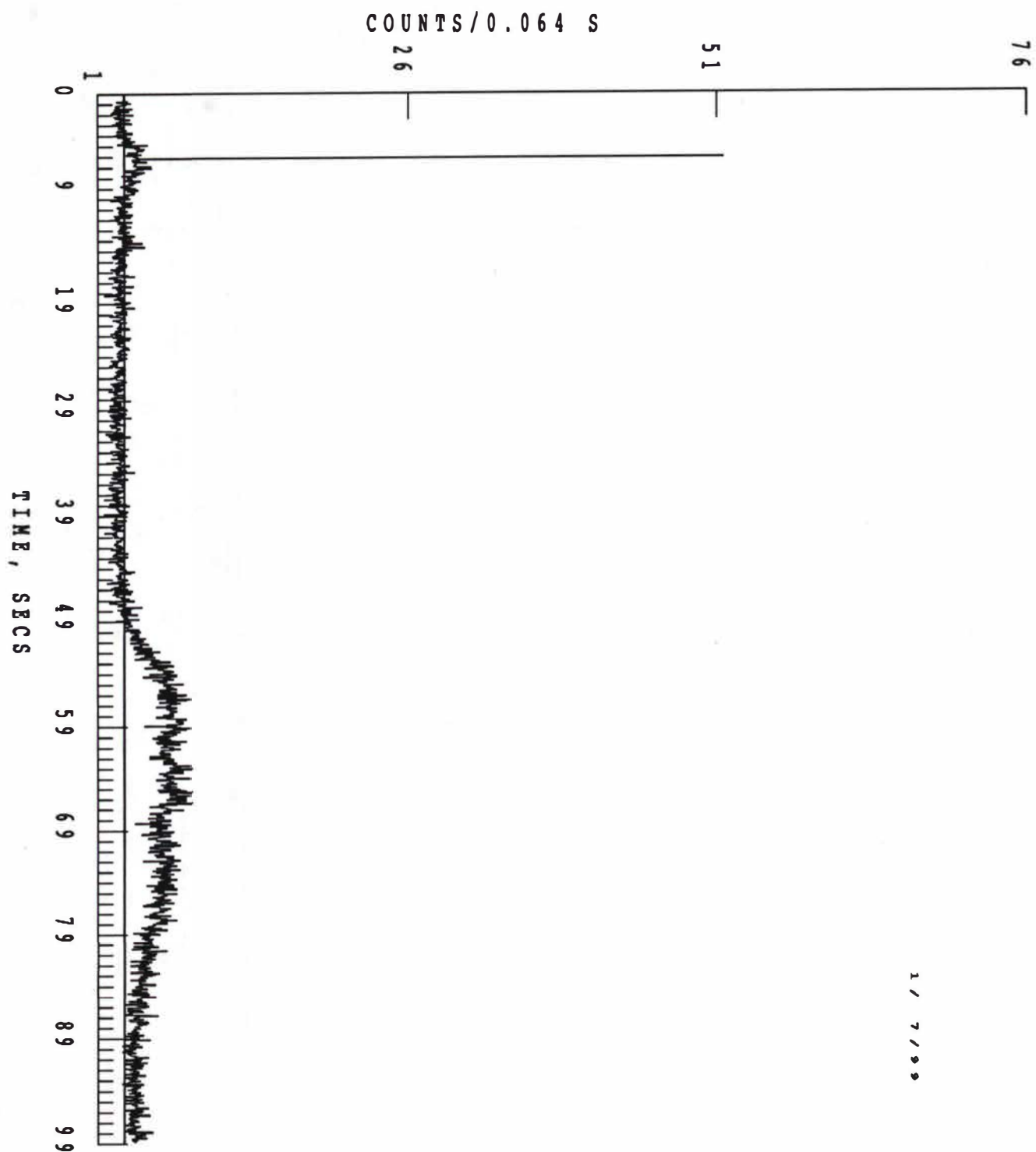
324

KONUS

30/06/99

41137.211

50 - 200 keV



KONUS2 19990630 41137

ULYSSES RT

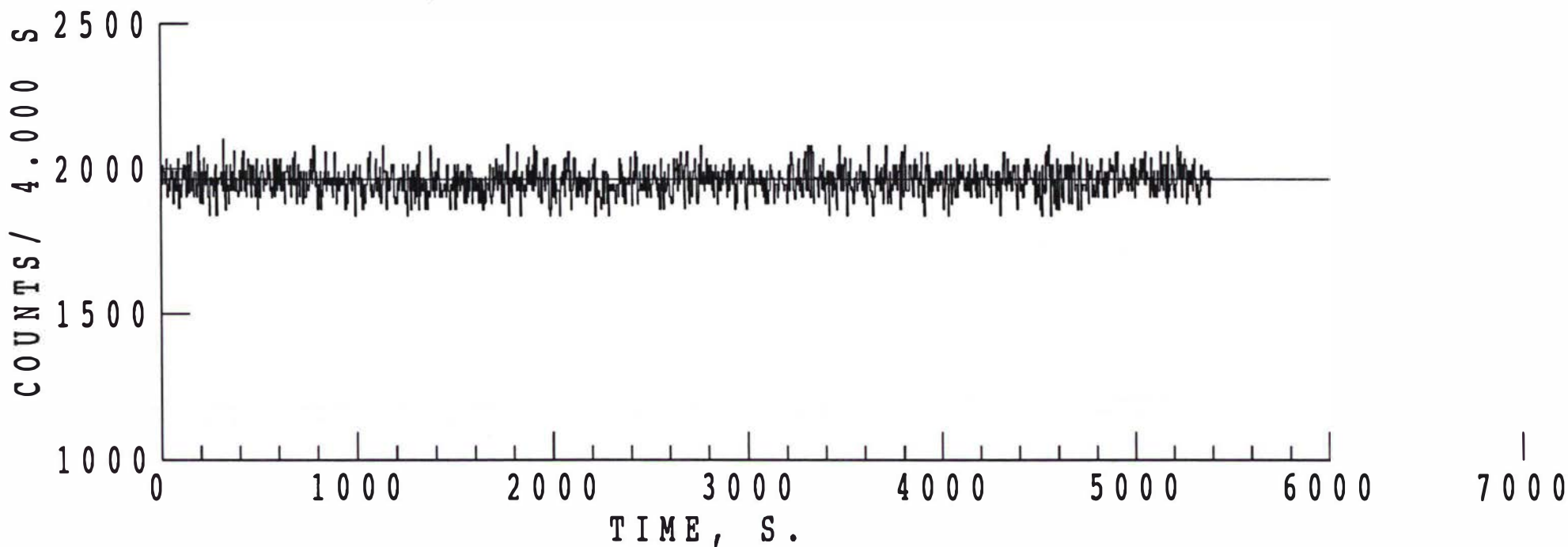
23 / 9 / 99

30 / 6 / 99 38448.266 s

0.500 S INTERVALS REGROUPED BY 8

0 - 0 keV

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



Date: May 24 2007

BURST TRIANGULATION CHECKLIST

1. Ulysses Data

- ☒ Jim Schmidling's stat file correction applied?
- ☒ Final ephemeris used?
- ☒ Final, CDROM data used?
- ☐ Is the order of the data in CORREL such that a vernier is done on the data with the best time resolution? **No**

2. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

2. For Odyssey events

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

2. For 3 or More Spacecraft events

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

3. For INTEGRAL events

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

-
- ☒ ACCESS and MBL4 databases updated?

N-M = CORRELATION BETWEEN SATELLITES N AND M

EARTH-N = EARTH AS SEEN FROM SATELLITE N

S=SUN

E=ECLIPTIC

G=GALACTIC EQUATOR

1 ULYSSES

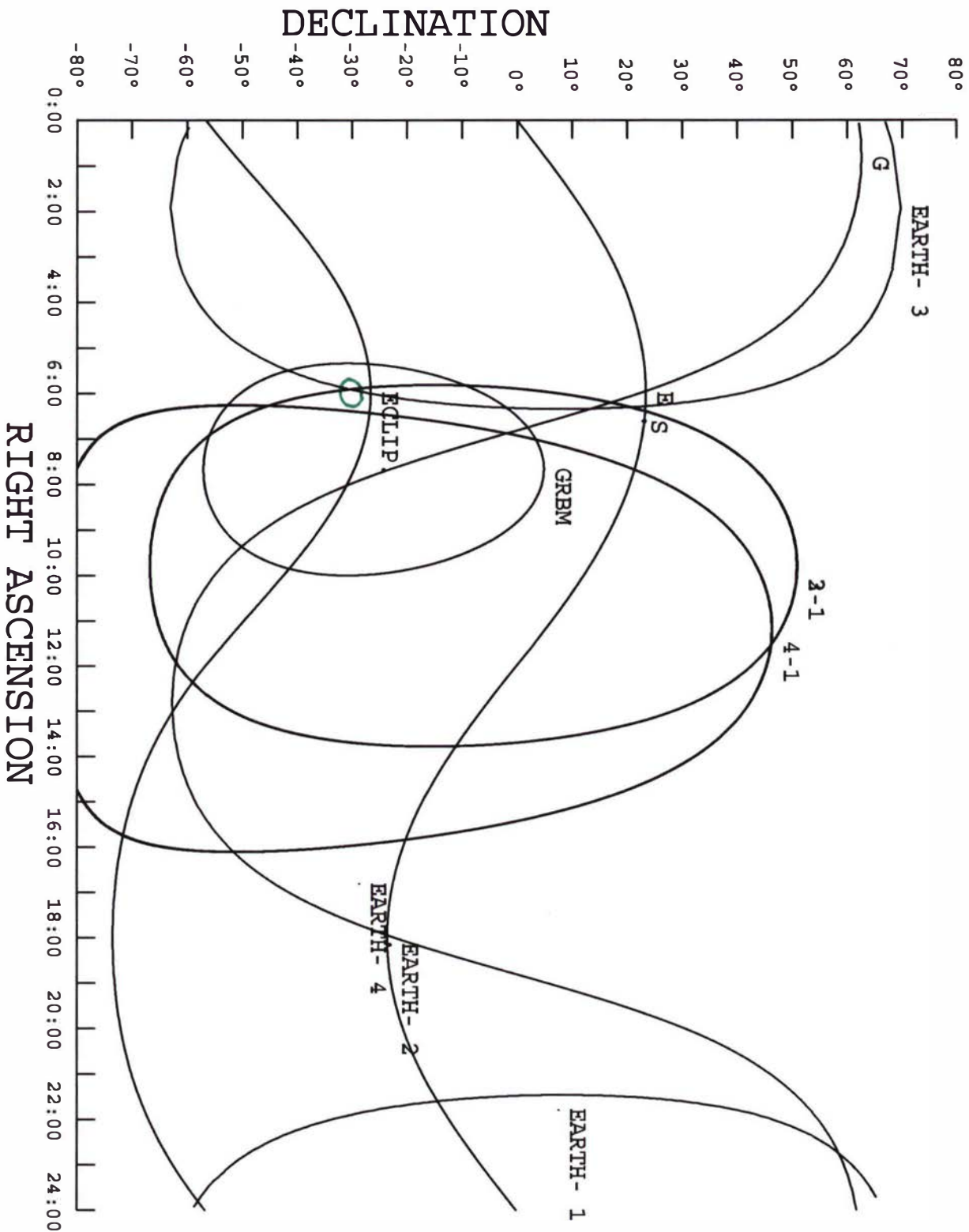
2 KONUS1

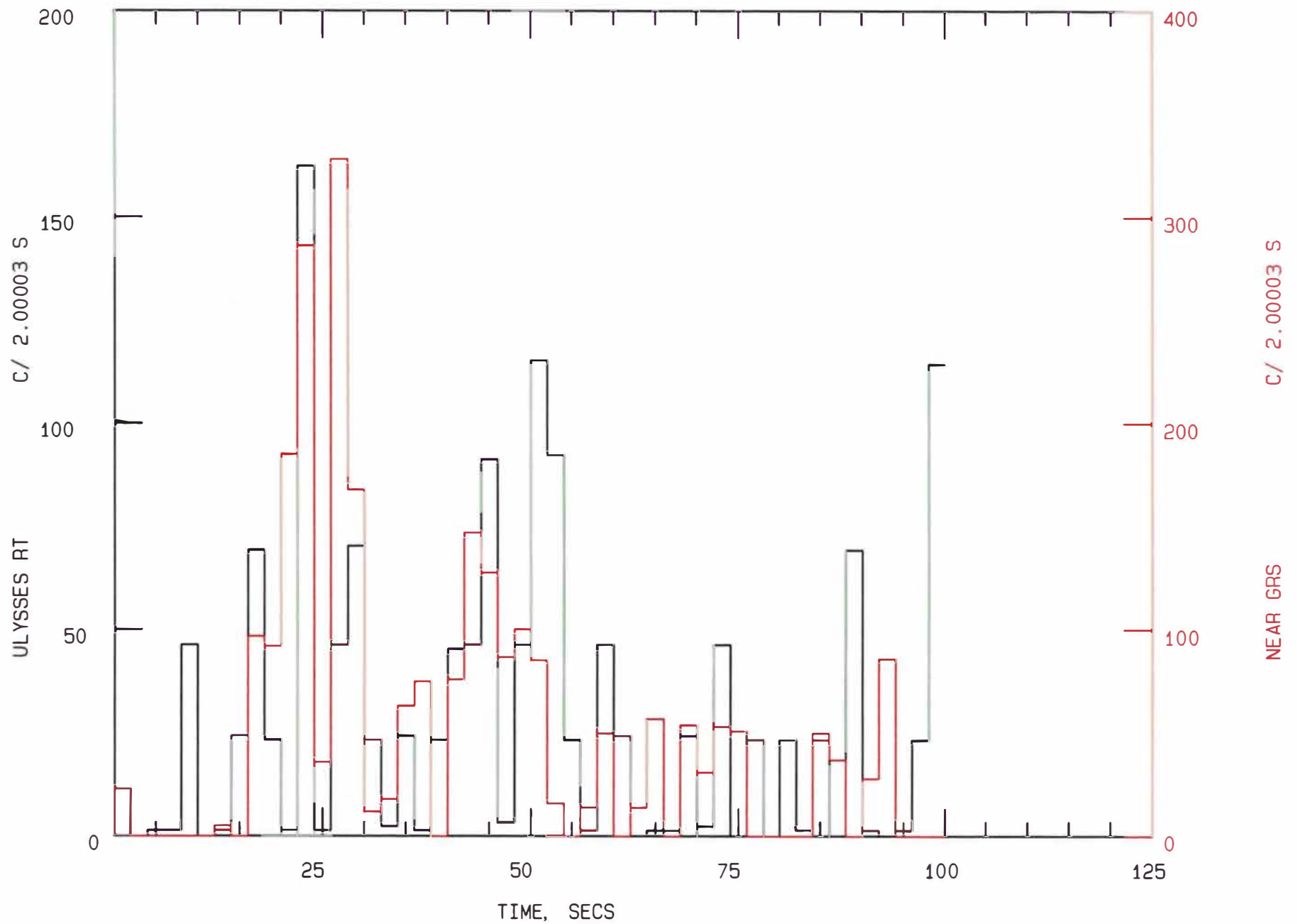
3 SAX

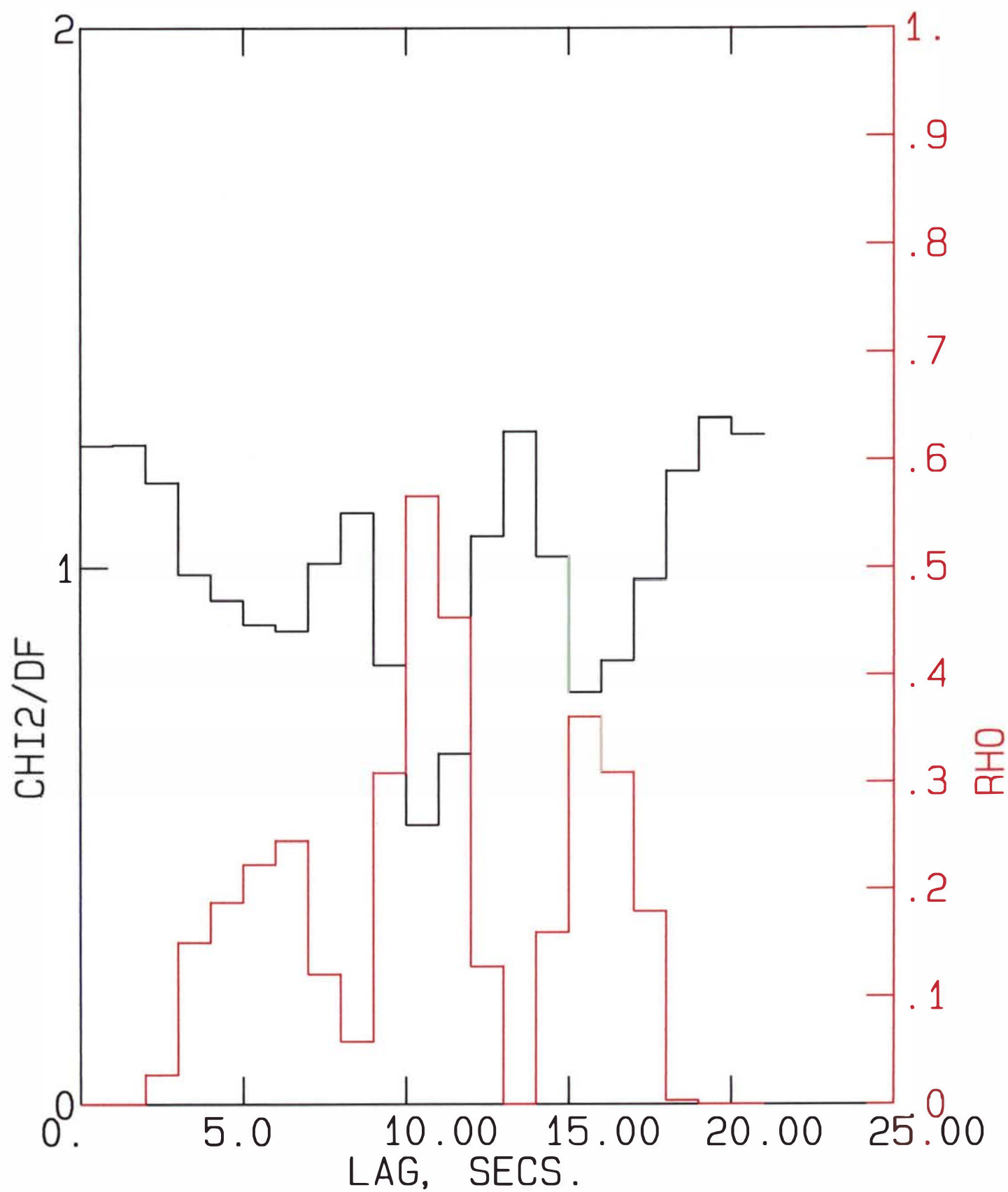
4 NEAR

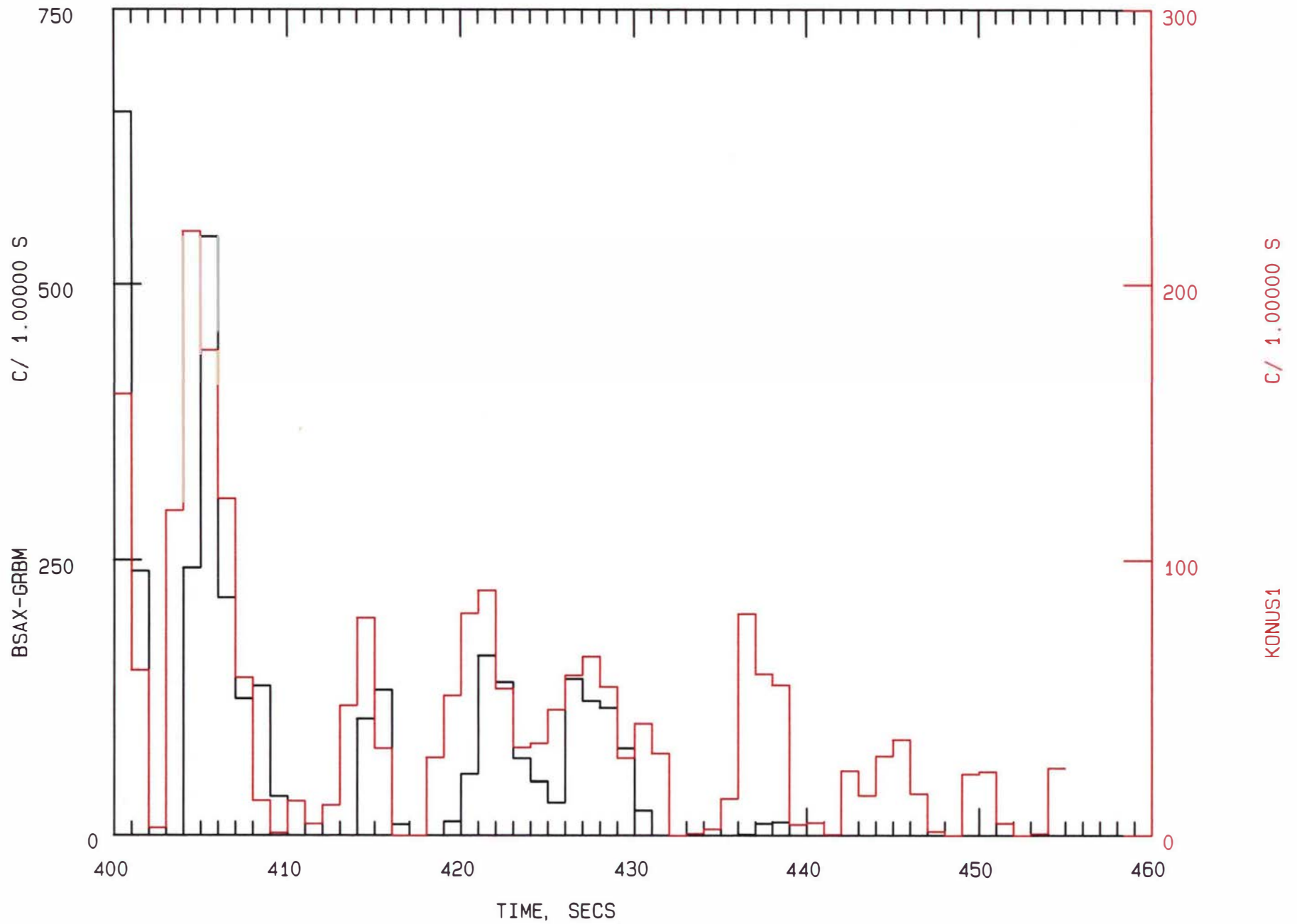
EVENT OF JUN 30, 1999 15:16

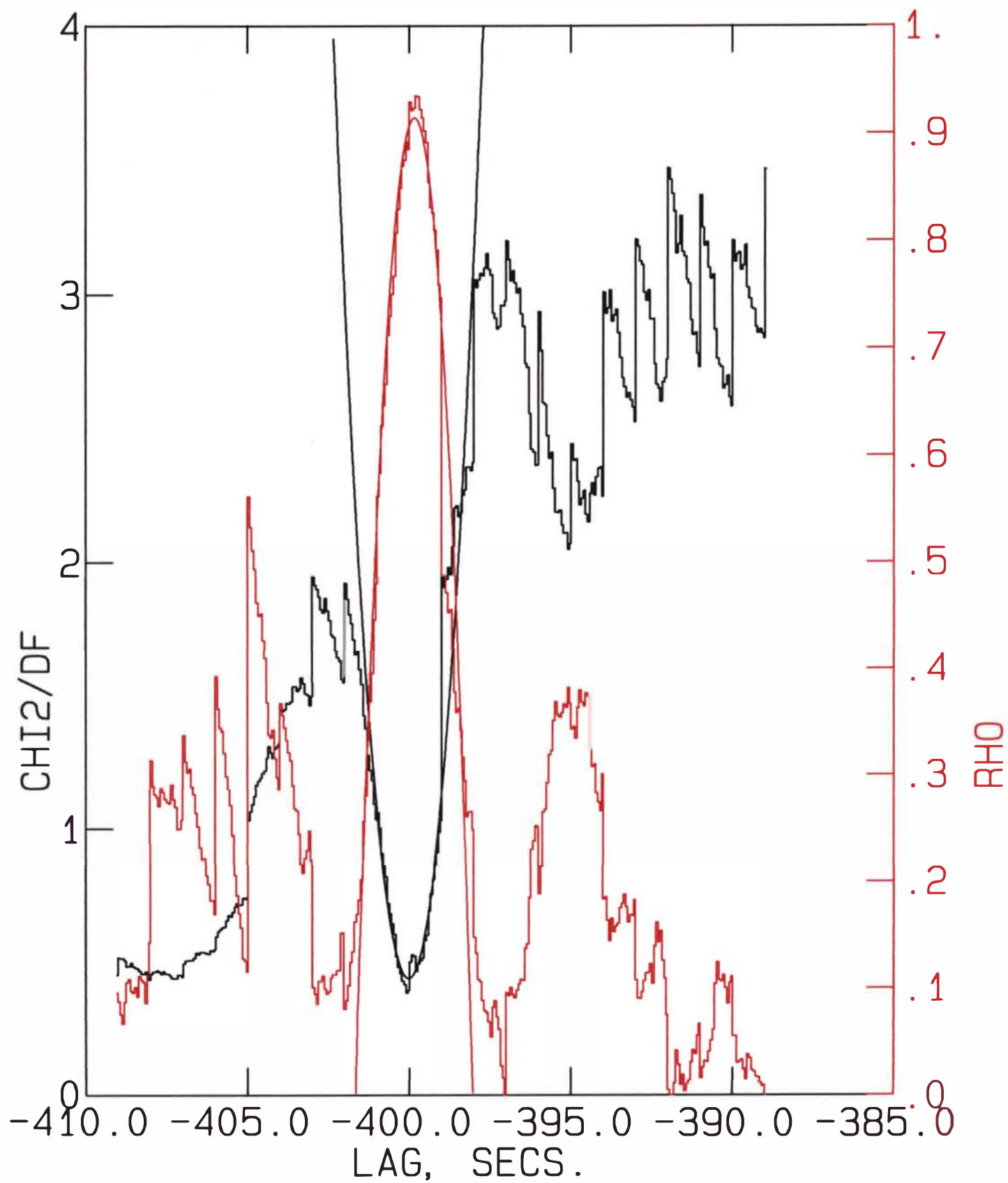
17/ 8/ 9

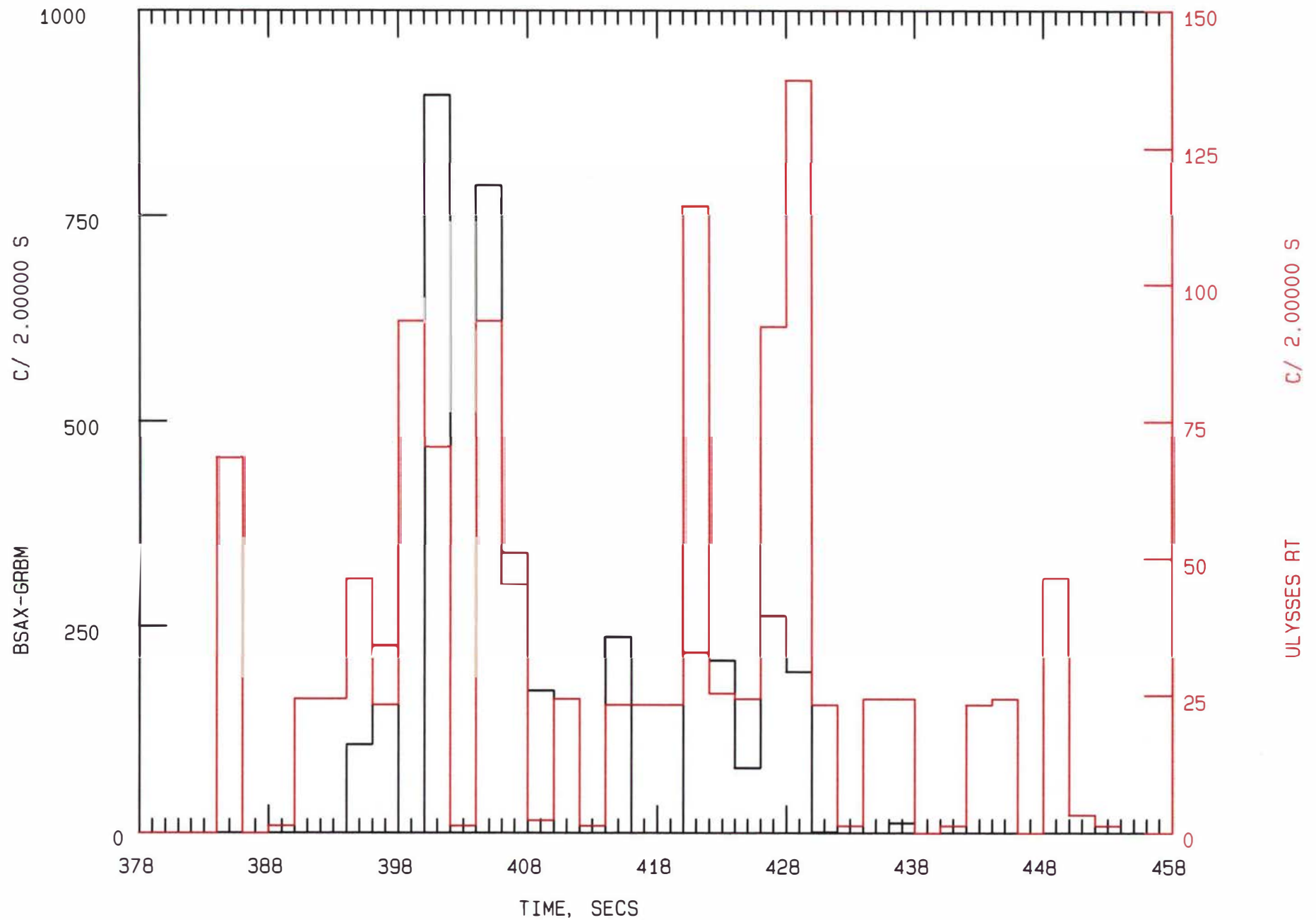


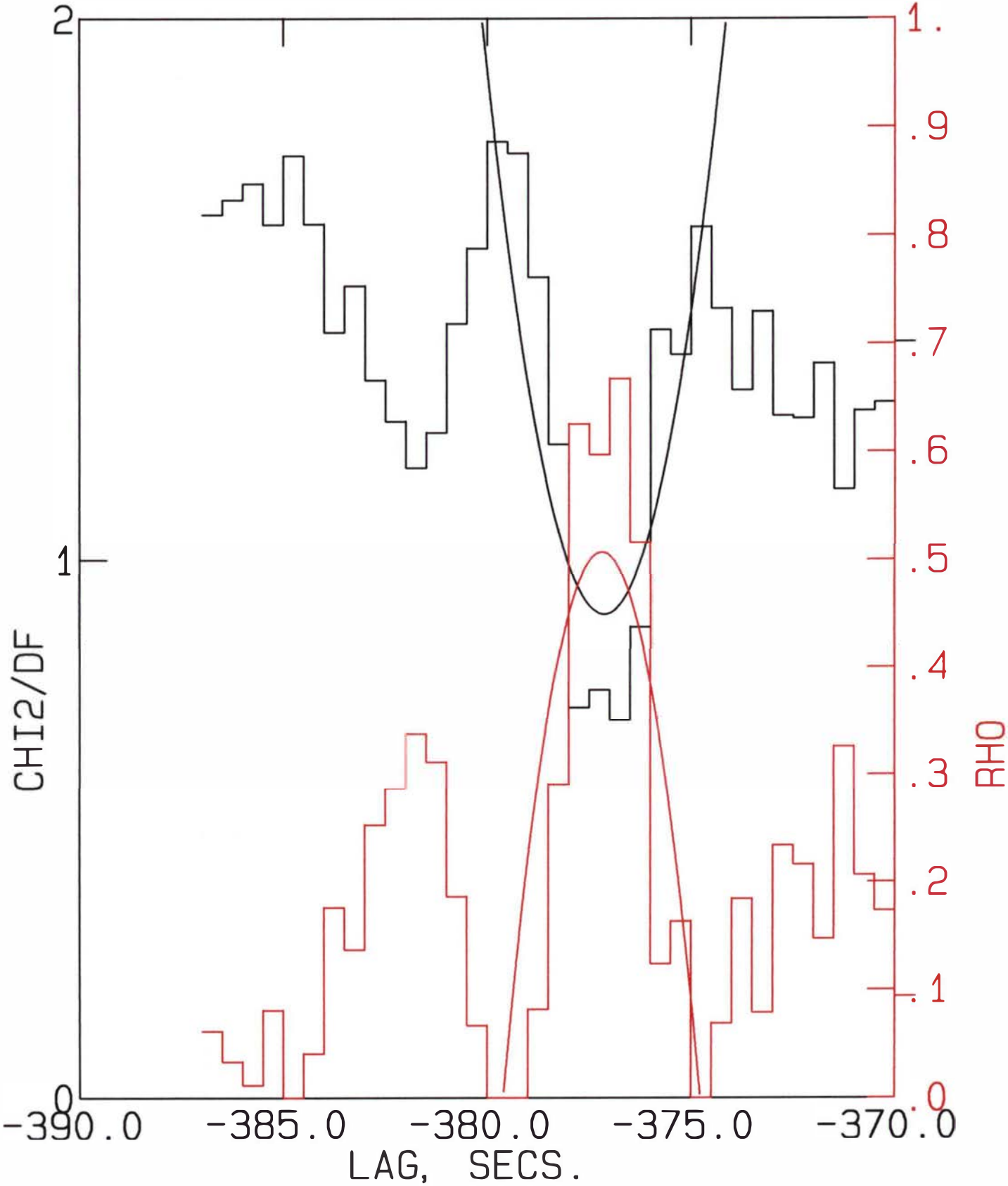


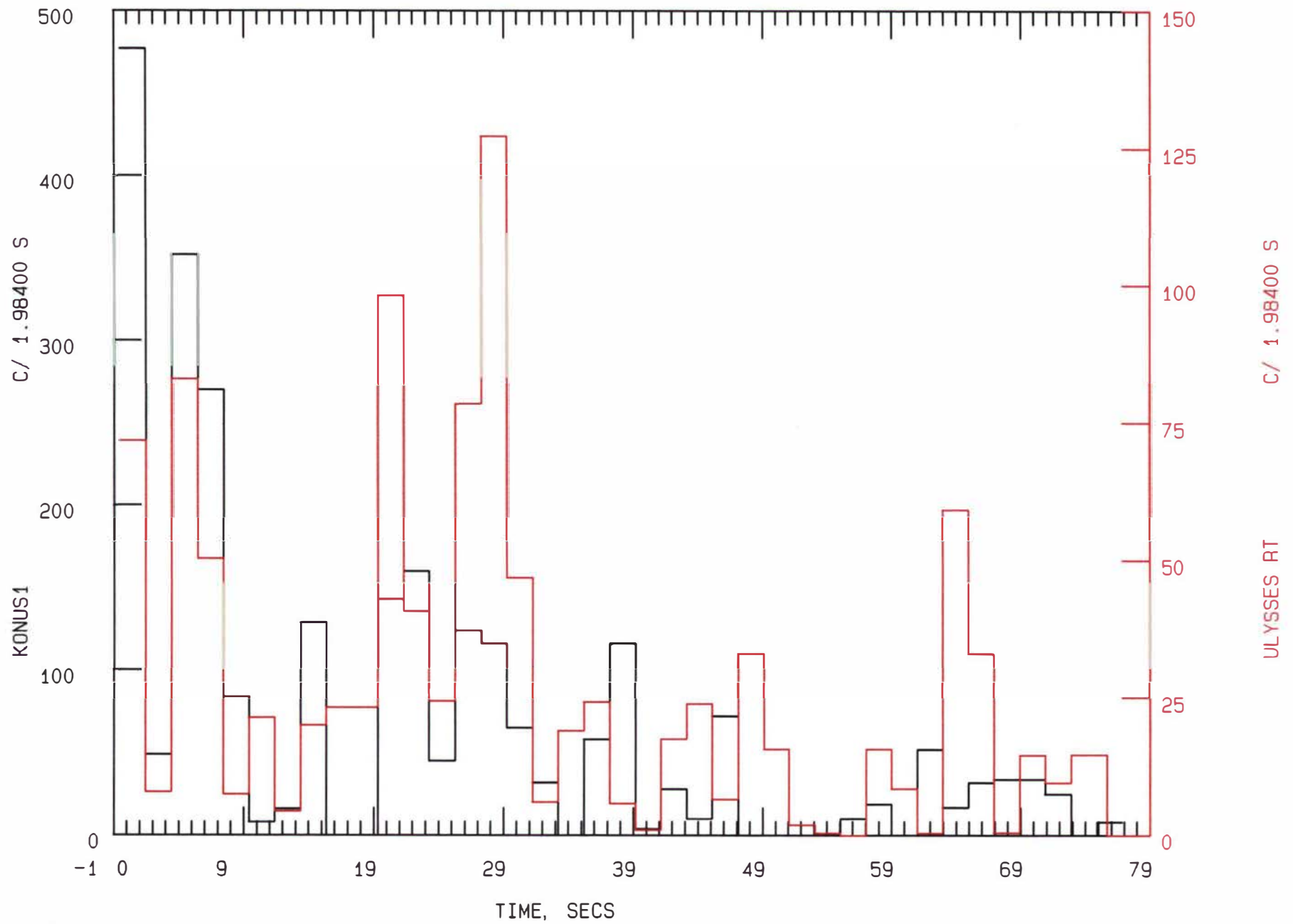










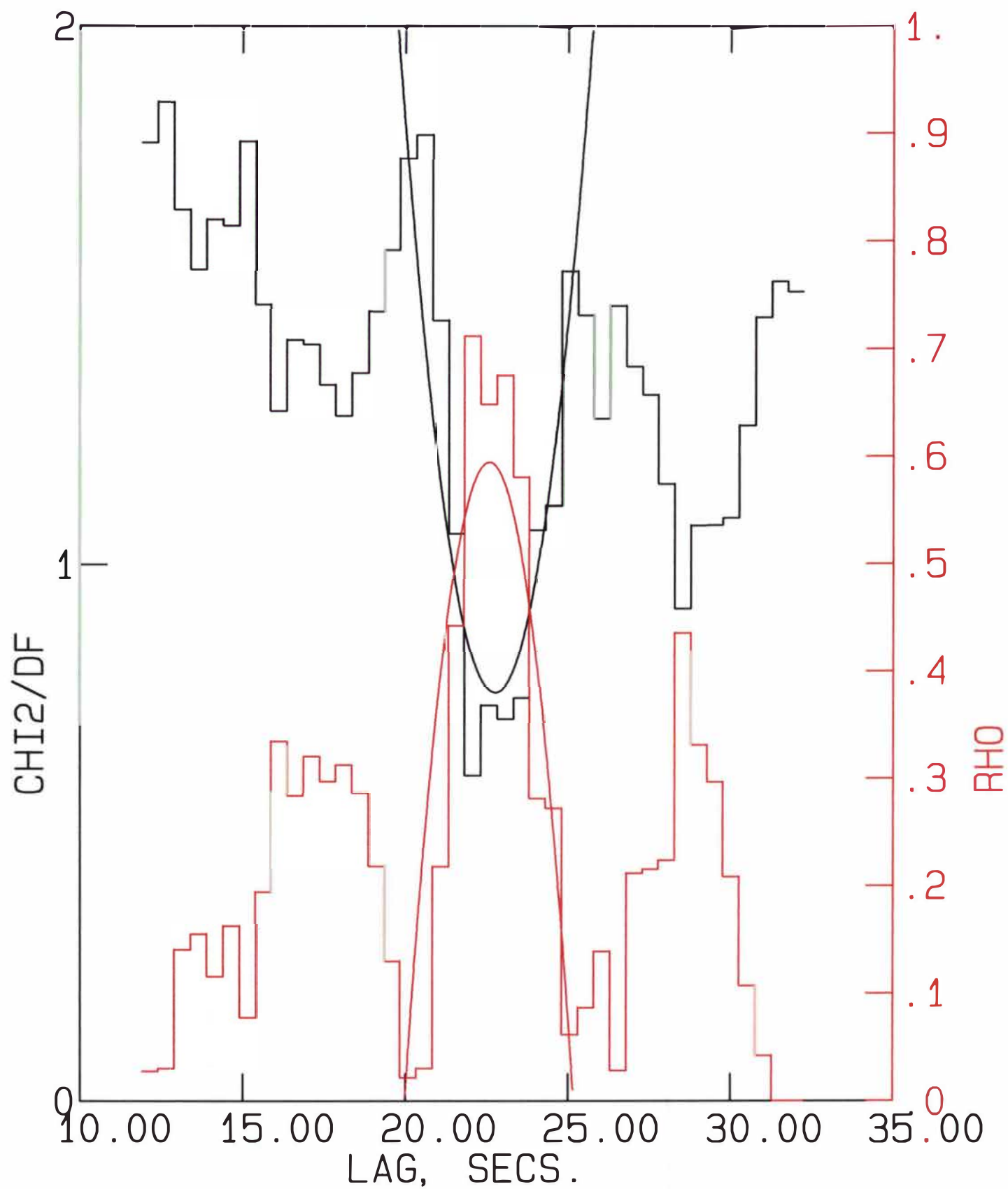


KONUS1

-ULYSSES RT CORRELATION

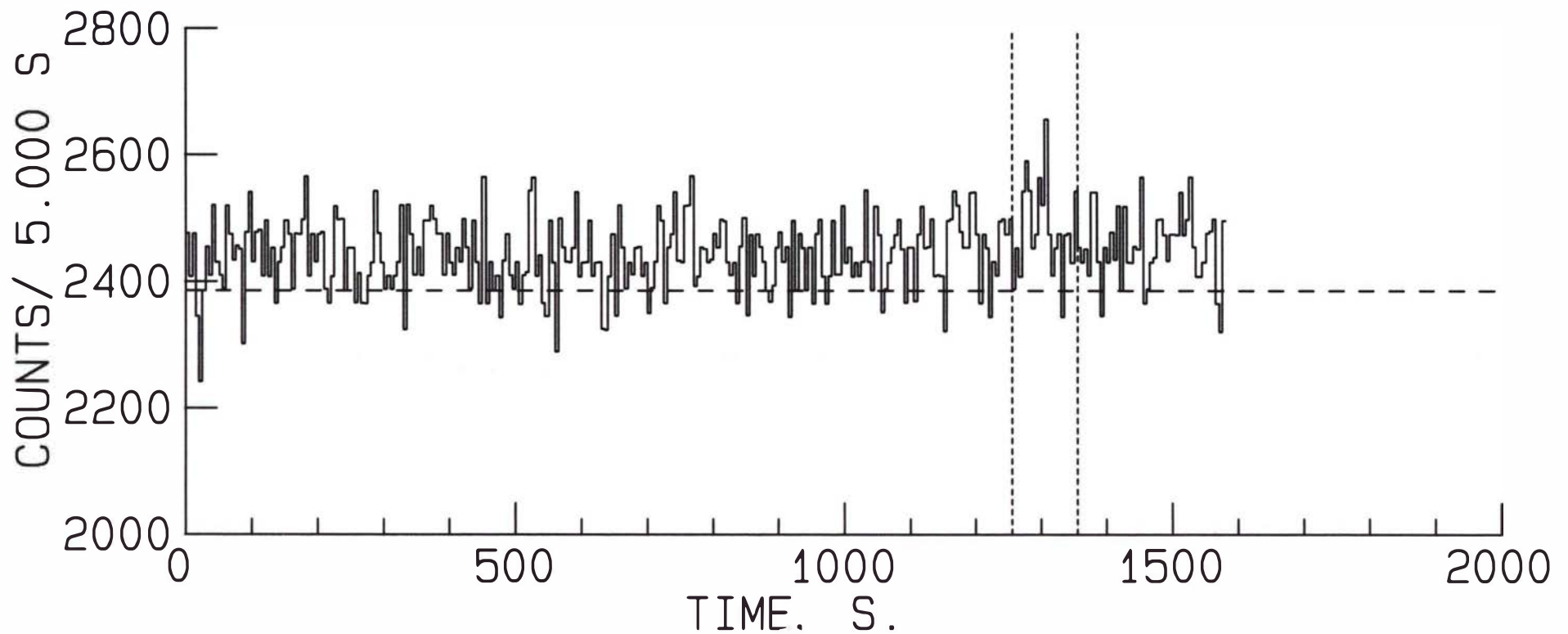
30/06/99

56355.722



ULYSSES RT
30/ 6/99 53712.422 s
0.500 S INTERVALS REGROUPED BY 10
22- 150 keV

24/ 5/ 7

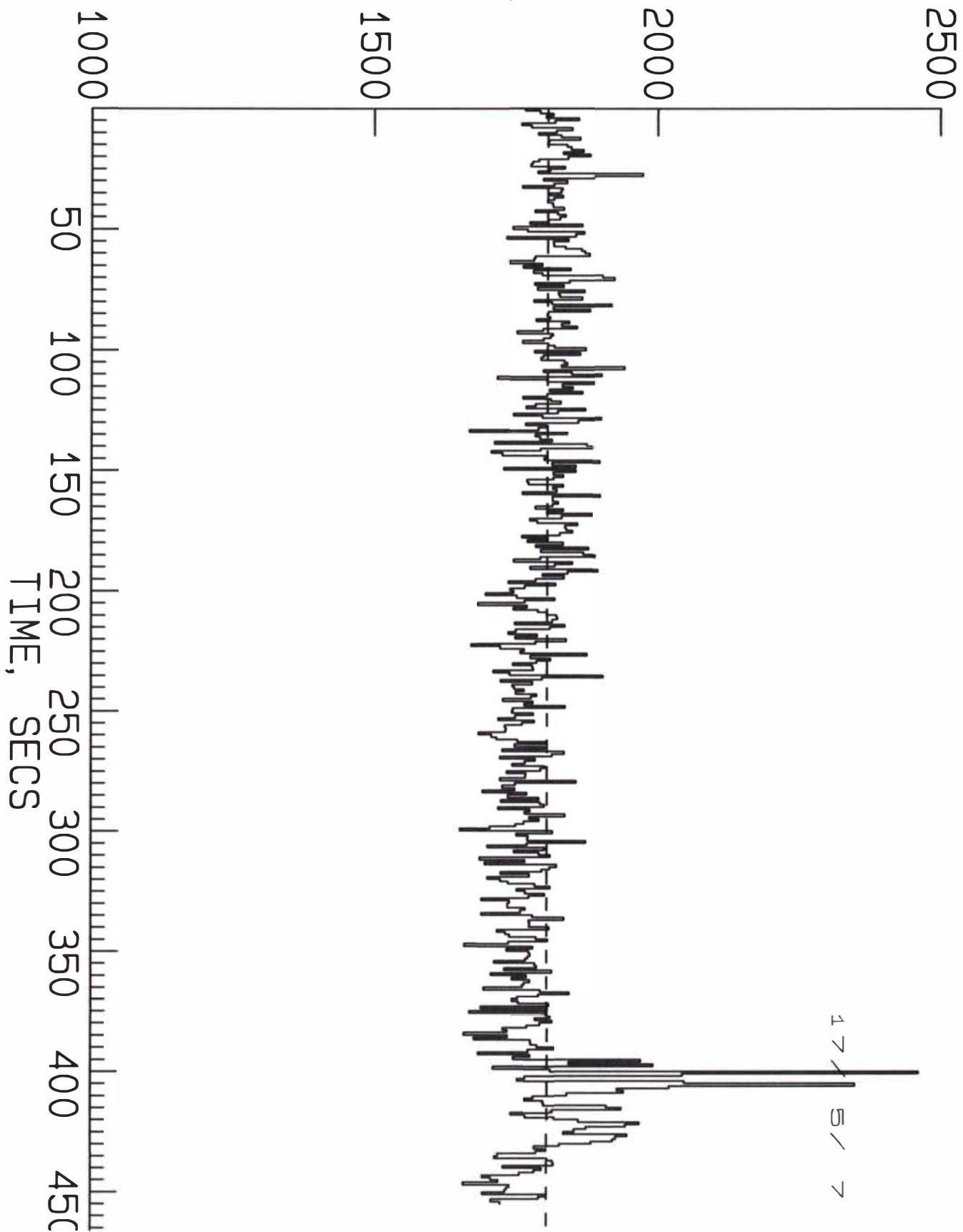


SAX GRBM

30/06/99 55957.020

40- 700 keV

COUNTS/1.000 S



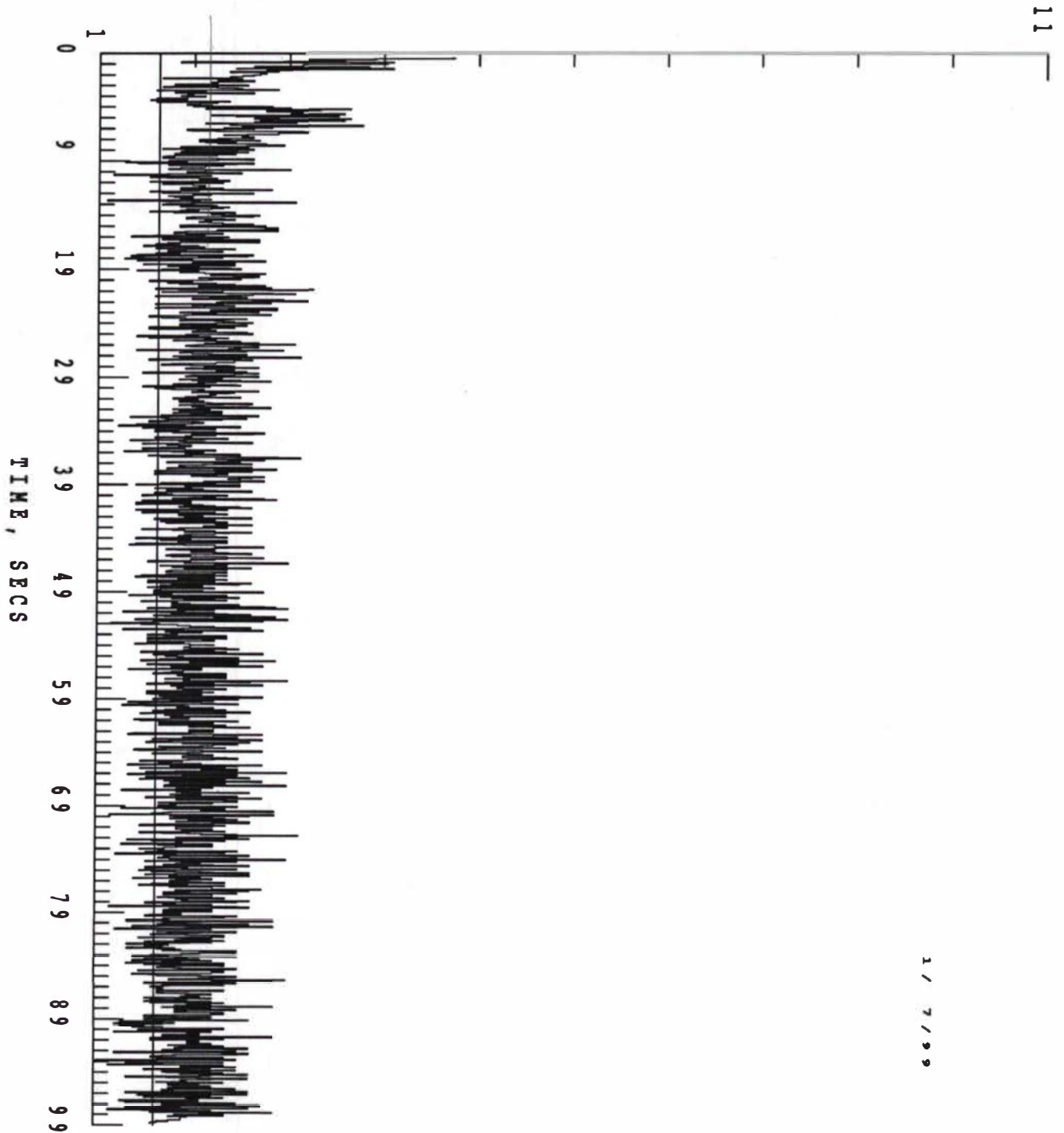
KONUS

30/06/99

56355.722

50 - 200 keV

COUNTS/0.064 S



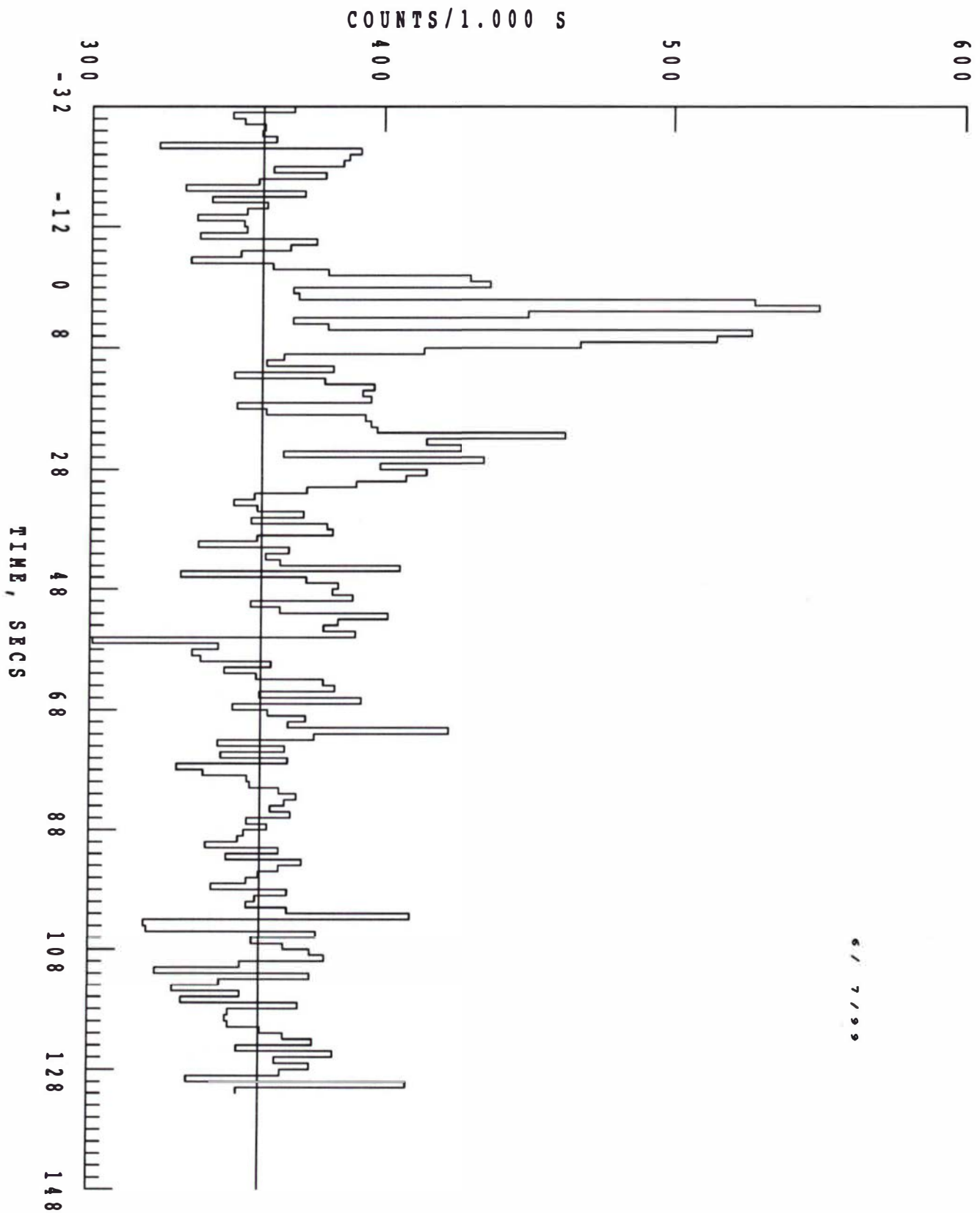
NEAR

30/06/99

56106.686

100-1000 keV

15:35:06



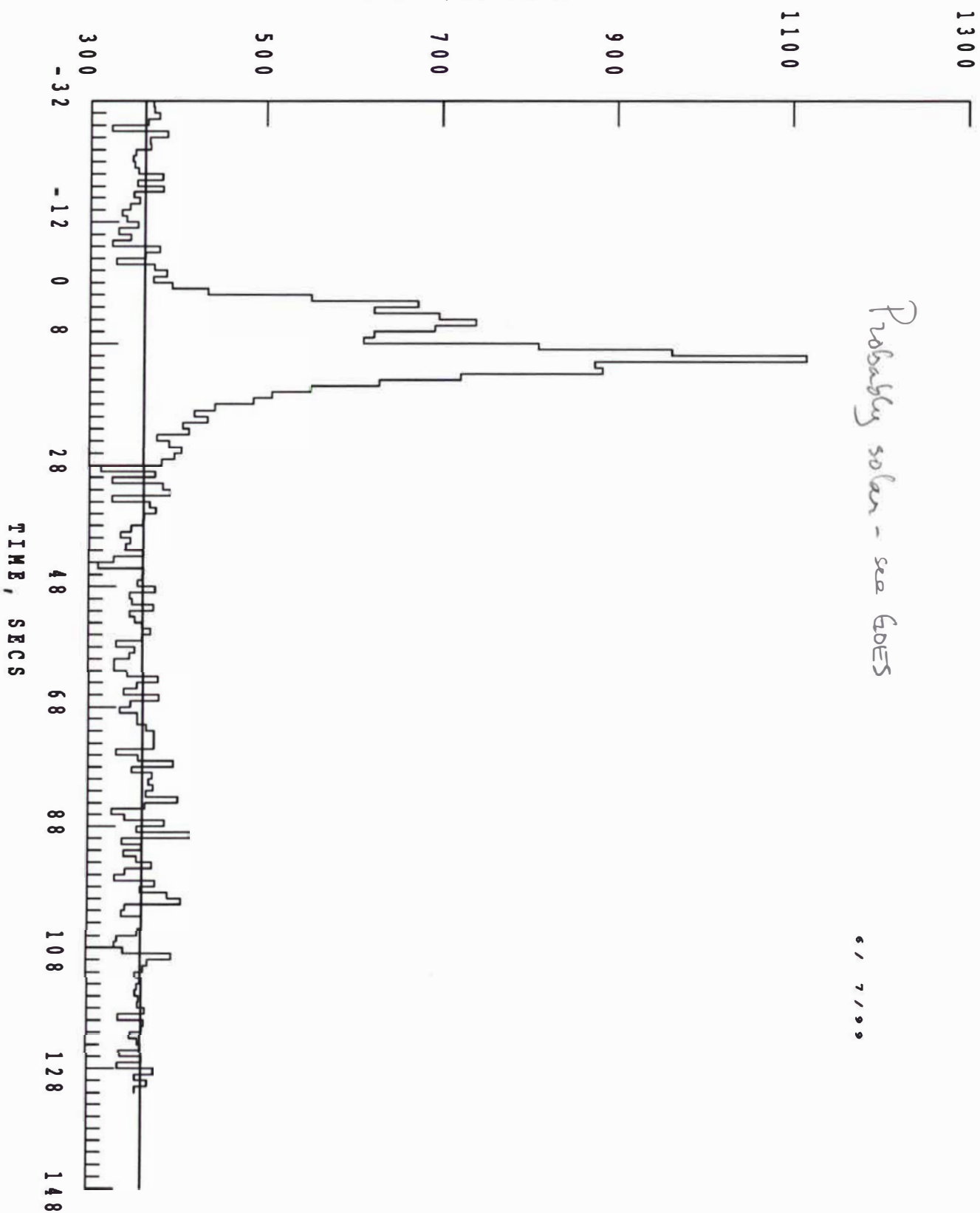
NEAR

30/06/99

72742.681

100-1000 keV 20:12:22

COUNTS/1.000 S

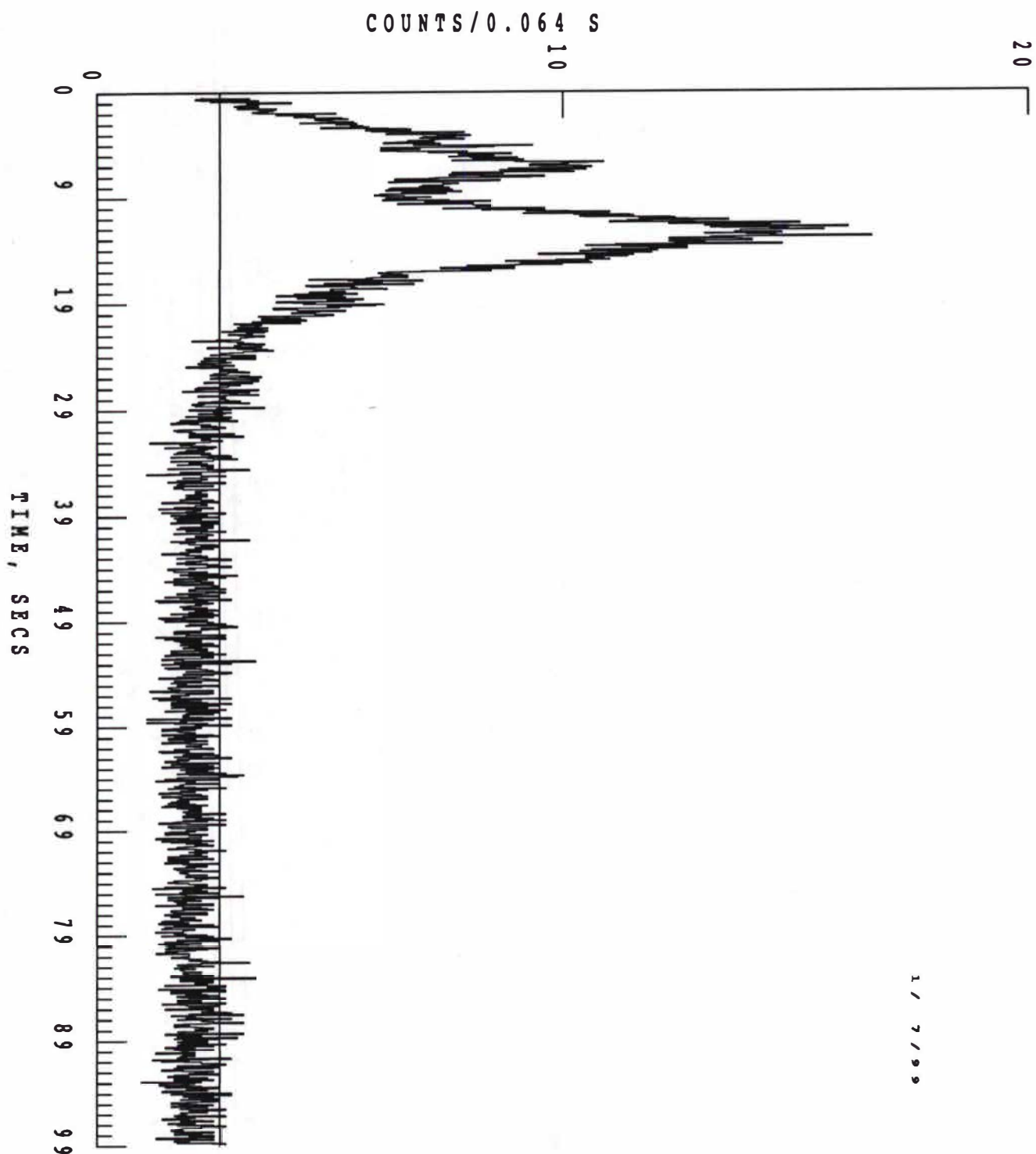


KONUS

30/06/99

72605.479

50 - 200 keV



KNEAR GRS 19990630 72742

ULYSSES RT

6 / 7 / 99

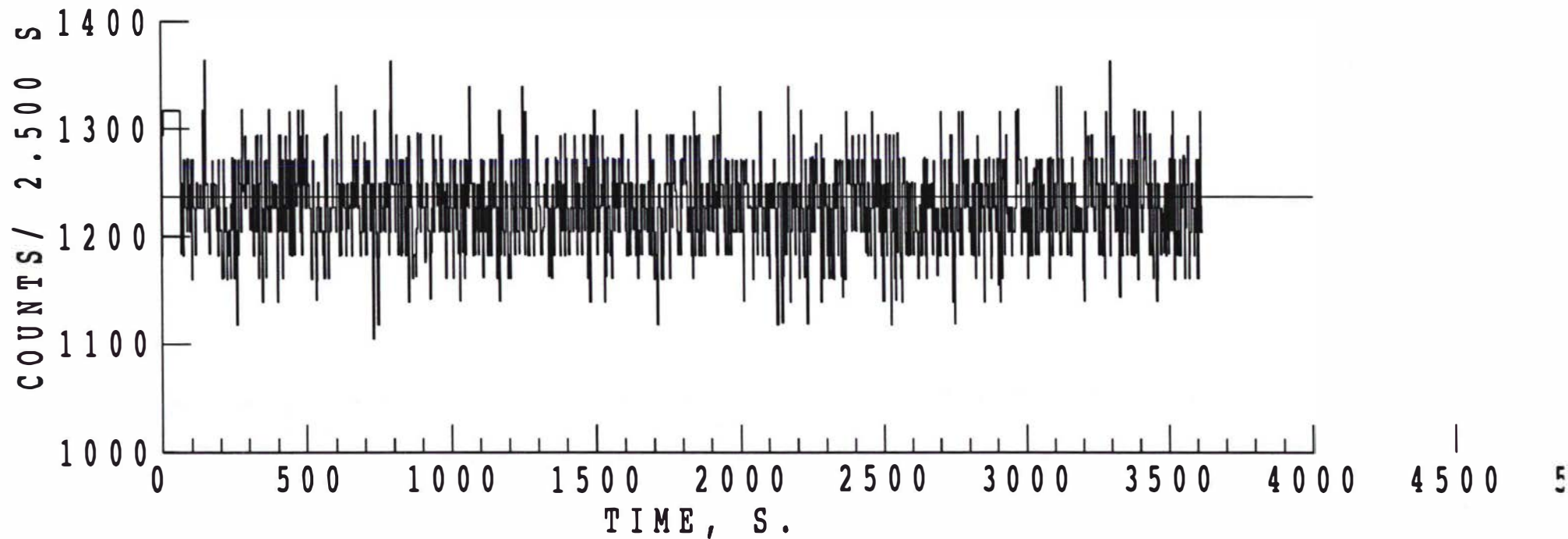
30 / 6 / 99 71874.102 s

0.500 S INTERVALS REGROUPED BY 5

0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



KONUS RI

29 / 11 / 99

ULYSSES RT

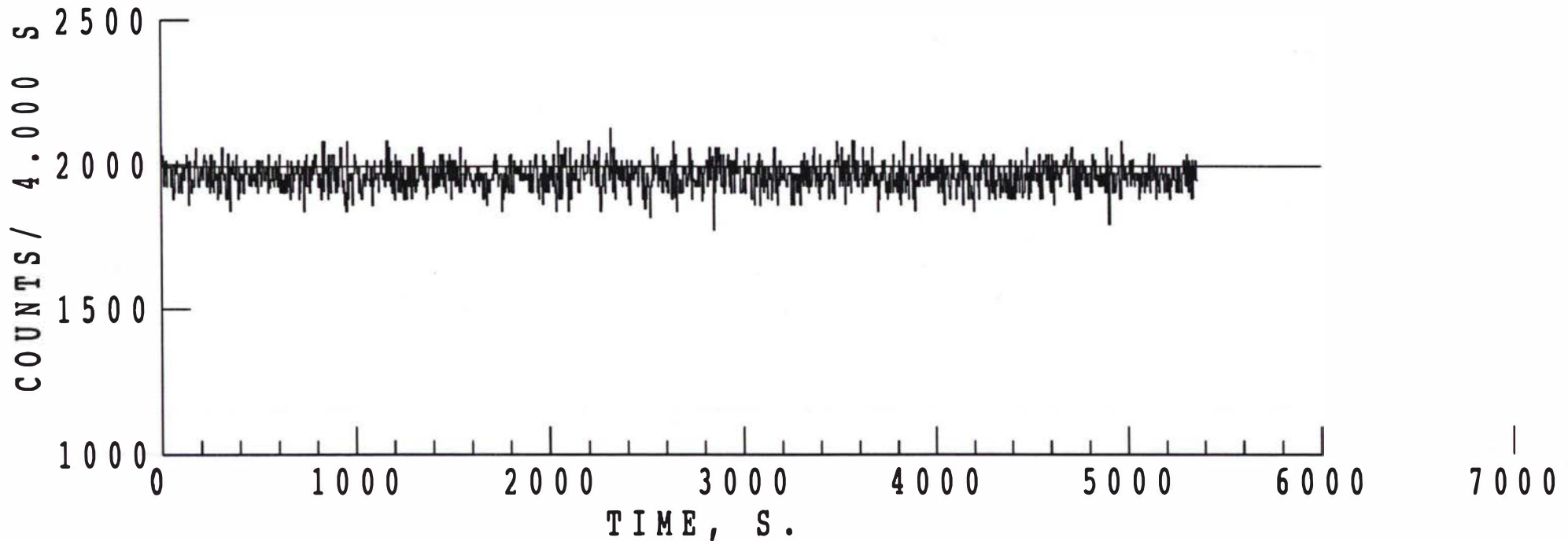
30 / 6 / 99 77940.156 s

0.500 S INTERVALS REGROUPED BY 8

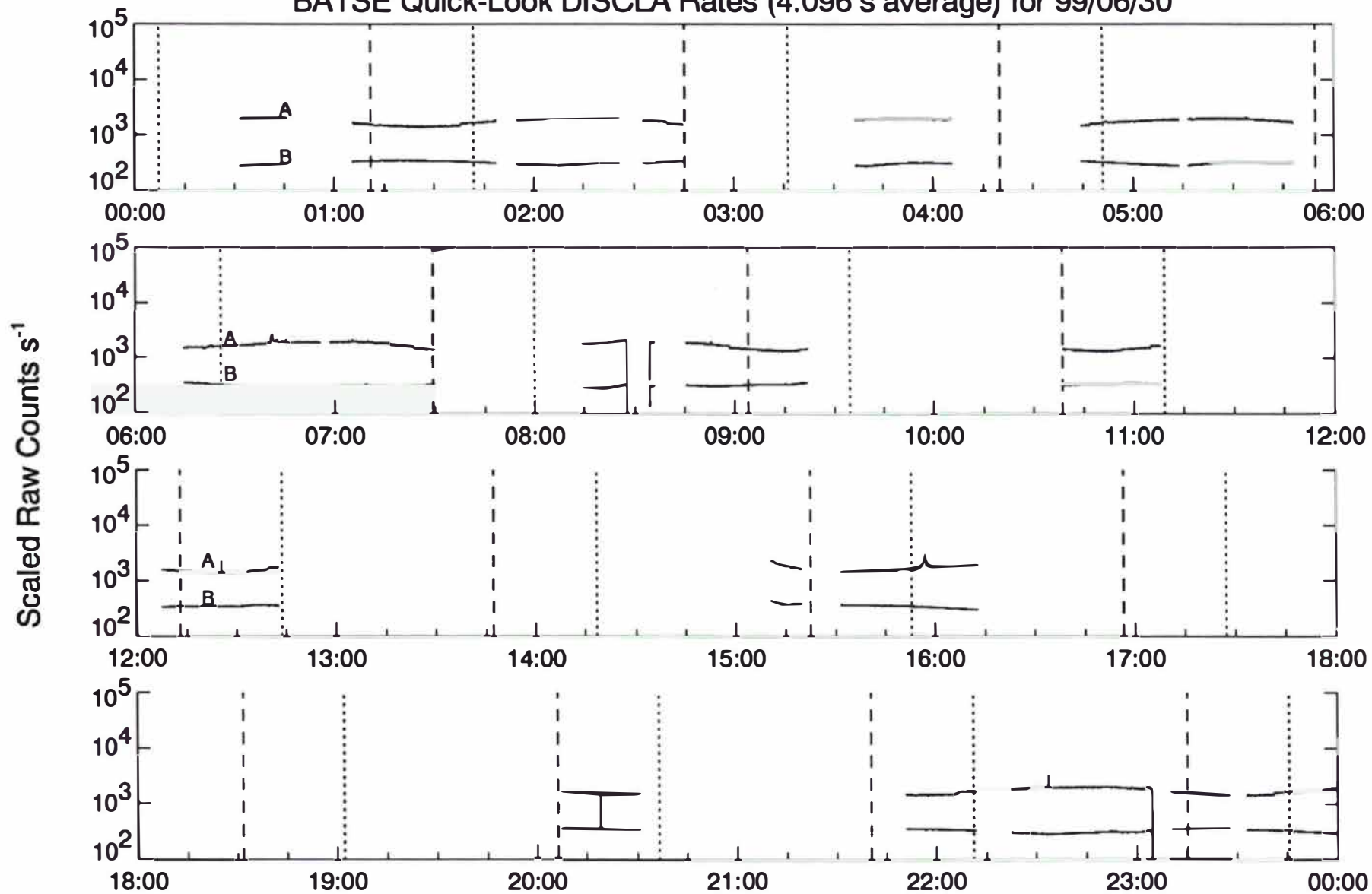
0 - 0 keV

N= 10 M= 10
>4.0 SIGMA FLUCTUATIONS

N= 10 M= 2
>4.0 SIGMA FLUCTUATIONS



BATSE Quick-Look DISCLA Rates (4.096 s average) for 99/06/30

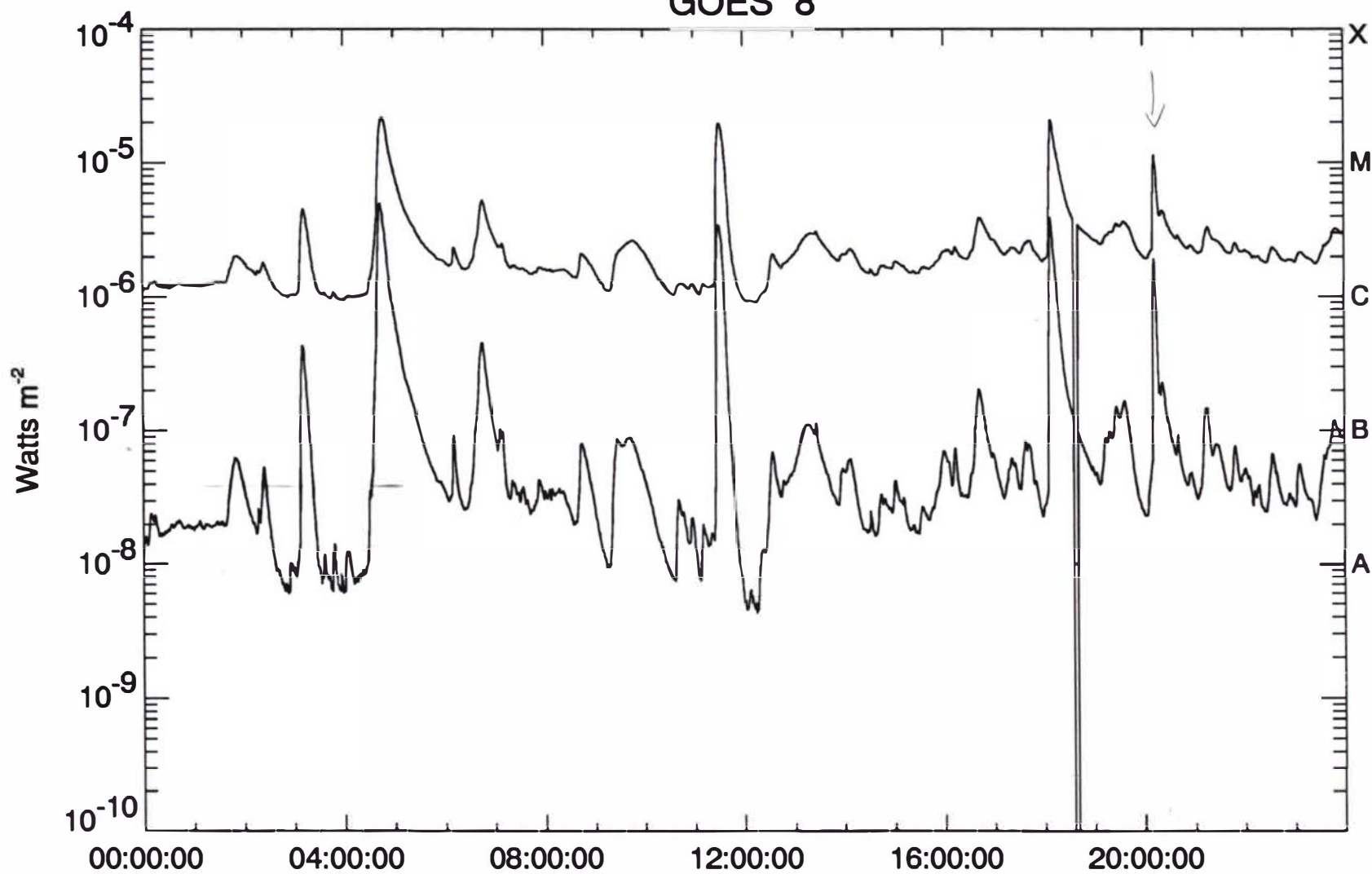


Current Time: 99/07/04, 1012 EDT
 A: Channel 0 Most Sunward LAD
 B: Sum Channel 0 Anti-Sunward LADs X .05

Dotted line: Day entry
 Dashed line: Night entry

* Solar Burst Trigger
 + Solar Flare

GOES 8



Data Start: 99/06/30, 0000:00

Plot created: 99/07/04, 1012

Channel

1 (1.0 - 8.0 Angstroms)

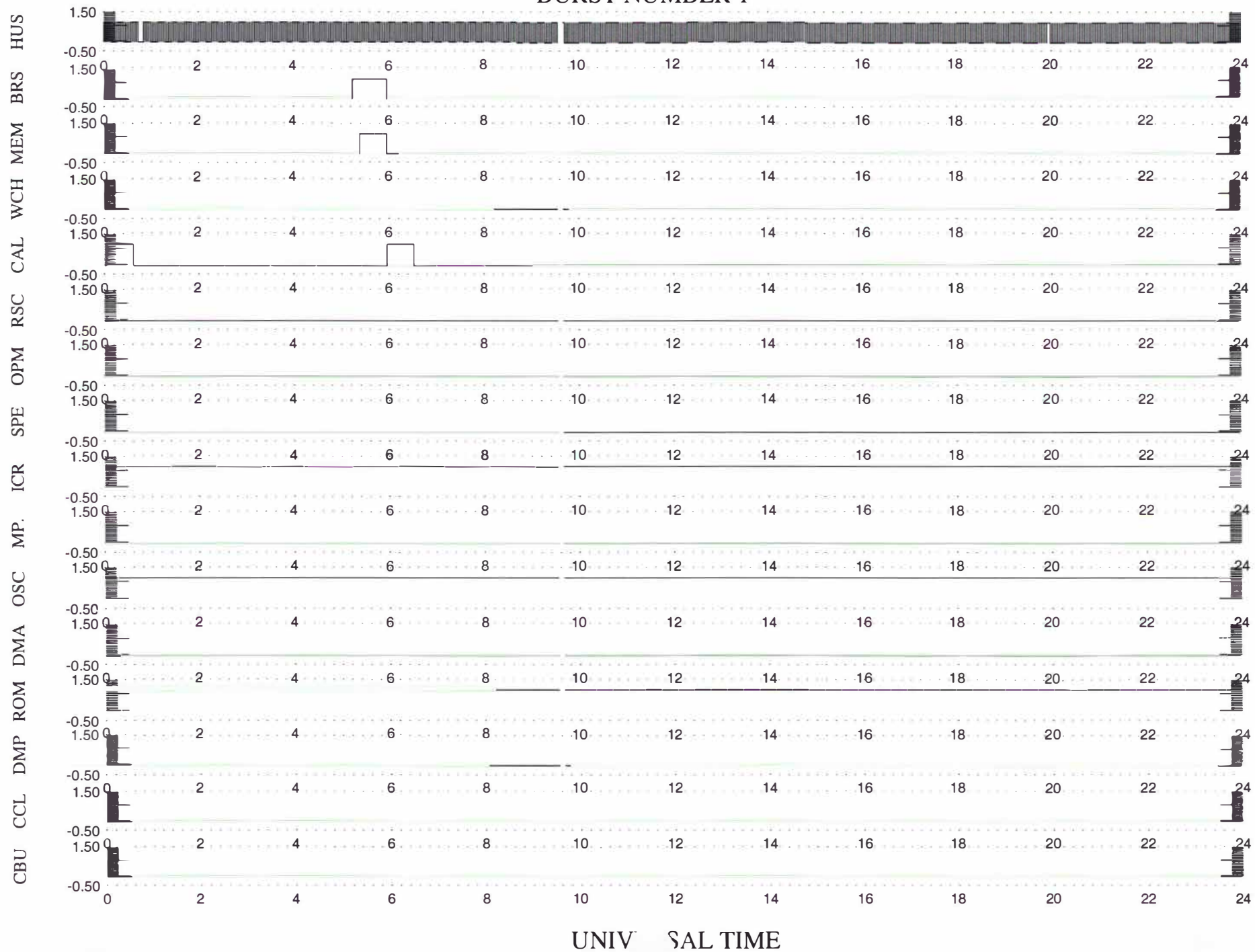
Background not subtracted

2 (0.5 - 4.0 Angstroms)

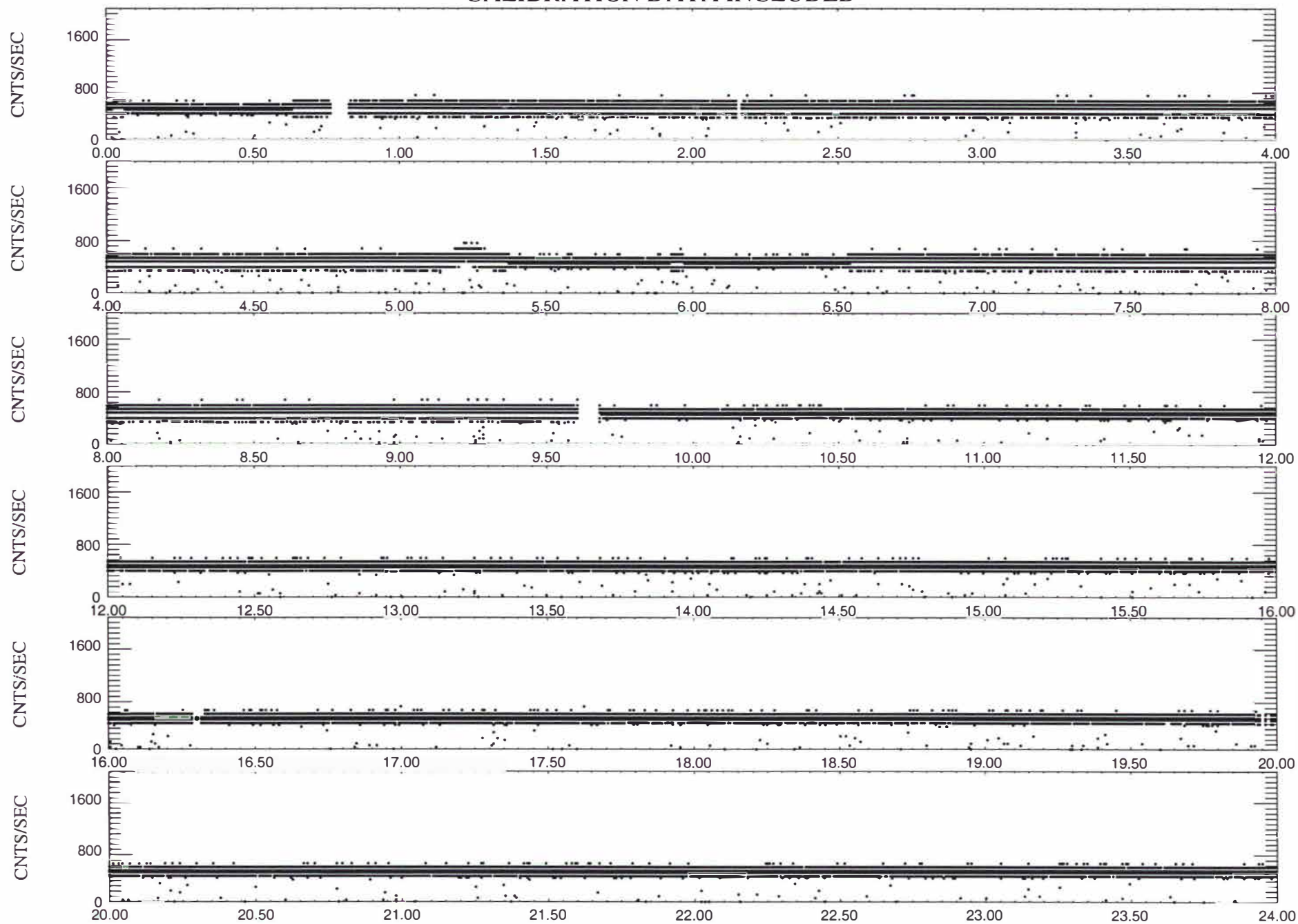
Background not subtracted

Sample average = 10

BURST NUMBER 1

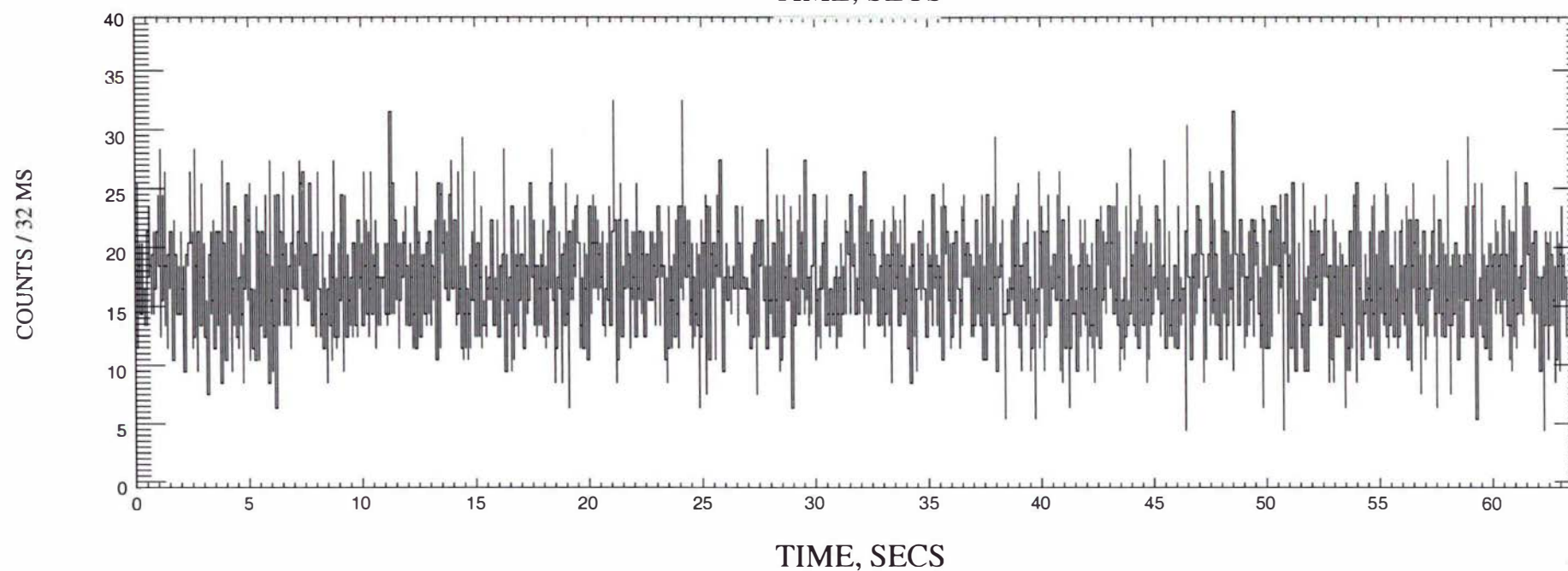
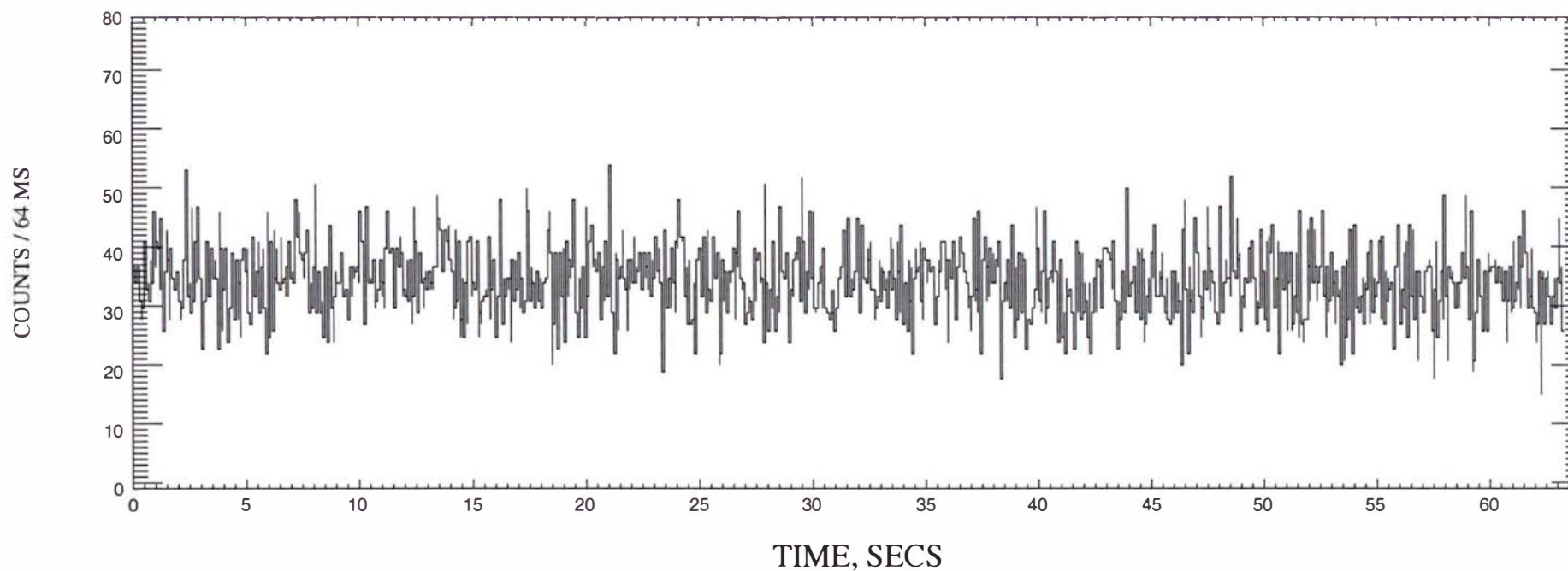


CALIBRATION DATA INCLUDED



UNIVRSAL TIME

Burst Counter 1 at UT= 5.220607884725 h=18794.188 s 05:13:14.188



Butterfield, 1994; 1995; 1996; 1997; 1998; 1999; 2000; 2001; 2002; 2003; 2004; 2005; 2006; 2007; 2008; 2009; 2010; 2011; 2012; 2013; 2014; 2015; 2016; 2017; 2018; 2019; 2020; 2021; 2022; 2023; 2024; 2025; 2026; 2027; 2028; 2029; 2030; 2031; 2032; 2033; 2034; 2035; 2036; 2037; 2038; 2039; 2040; 2041; 2042; 2043; 2044; 2045; 2046; 2047; 2048; 2049; 2050; 2051; 2052; 2053; 2054; 2055; 2056; 2057; 2058; 2059; 2060; 2061; 2062; 2063; 2064; 2065; 2066; 2067; 2068; 2069; 2070; 2071; 2072; 2073; 2074; 2075; 2076; 2077; 2078; 2079; 2080; 2081; 2082; 2083; 2084; 2085; 2086; 2087; 2088; 2089; 2090; 2091; 2092; 2093; 2094; 2095; 2096; 2097; 2098; 2099; 2100; 2101; 2102; 2103; 2104; 2105; 2106; 2107; 2108; 2109; 2110; 2111; 2112; 2113; 2114; 2115; 2116; 2117; 2118; 2119; 2120; 2121; 2122; 2123; 2124; 2125; 2126; 2127; 2128; 2129; 2130; 2131; 2132; 2133; 2134; 2135; 2136; 2137; 2138; 2139; 2140; 2141; 2142; 2143; 2144; 2145; 2146; 2147; 2148; 2149; 2150; 2151; 2152; 2153; 2154; 2155; 2156; 2157; 2158; 2159; 2160; 2161; 2162; 2163; 2164; 2165; 2166; 2167; 2168; 2169; 2170; 2171; 2172; 2173; 2174; 2175; 2176; 2177; 2178; 2179; 2180; 2181; 2182; 2183; 2184; 2185; 2186; 2187; 2188; 2189; 2190; 2191; 2192; 2193; 2194; 2195; 2196; 2197; 2198; 2199; 2200; 2201; 2202; 2203; 2204; 2205; 2206; 2207; 2208; 2209; 2210; 2211; 2212; 2213; 2214; 2215; 2216; 2217; 2218; 2219; 2220; 2221; 2222; 2223; 2224; 2225; 2226; 2227; 2228; 2229; 2230; 2231; 2232; 2233; 2234; 2235; 2236; 2237; 2238; 2239; 2240; 2241; 2242; 2243; 2244; 2245; 2246; 2247; 2248; 2249; 2250; 2251; 2252; 2253; 2254; 2255; 2256; 2257; 2258; 2259; 2260; 2261; 2262; 2263; 2264; 2265; 2266; 2267; 2268; 2269; 2270; 2271; 2272; 2273; 2274; 2275; 2276; 2277; 2278; 2279; 2280; 2281; 2282; 2283; 2284; 2285; 2286; 2287; 2288; 2289; 2290; 2291; 2292; 2293; 2294; 2295; 2296; 2297; 2298; 2299; 2300; 2301; 2302; 2303; 2304; 2305; 2306; 2307; 2308; 2309; 2310; 2311; 2312; 2313; 2314; 2315; 2316; 2317; 2318; 2319; 2320; 2321; 2322; 2323; 2324; 2325; 2326; 2327; 2328; 2329; 2330; 2331; 2332; 2333; 2334; 2335; 2336; 2337; 2338; 2339; 2340; 2341; 2342; 2343; 2344; 2345; 2346; 2347; 2348; 2349; 2350; 2351; 2352; 2353; 2354; 2355; 2356; 2357; 2358; 2359; 2360; 2361; 2362; 2363; 2364; 2365; 2366; 2367; 2368; 2369; 2370; 2371; 2372; 2373; 2374; 2375; 2376; 2377; 2378; 2379; 2380; 2381; 2382; 2383; 2384; 2385; 2386; 2387; 2388; 2389; 2390; 2391; 2392; 2393; 2394; 2395; 2396; 2397; 2398; 2399; 2400; 2401; 2402; 2403; 2404; 2405; 2406; 2407; 2408; 2409; 2410; 2411; 2412; 2413; 2414; 2415; 2416; 2417; 2418; 2419; 2420; 2421; 2422; 2423; 2424; 2425; 2426; 2427; 2428; 2429; 2430; 2431; 2432; 2433; 2434; 2435; 2436; 2437; 2438; 2439; 2440; 2441; 2442; 2443; 2444; 2445; 2446; 2447; 2448; 2449; 2450; 2451; 2452; 2453; 2454; 2455; 2456; 2457; 2458; 2459; 2460; 2461; 2462; 2463; 2464; 2465; 2466; 2467; 2468; 2469; 2470; 2471; 2472; 2473; 2474; 2475; 2476; 2477; 2478; 2479; 2480; 2481; 2482; 2483; 2484; 2485; 2486; 2487; 2488; 2489; 2490; 2491; 2492; 2493; 2494; 2495; 2496; 2497; 2498; 2499; 2500; 2501; 2502; 2503; 2504; 2505; 2506; 2507; 2508; 2509; 2510; 2511; 2512; 2513; 2514; 2515; 2516; 2517; 2518; 2519; 2520; 2521; 2522; 2523; 2524; 2525; 2526; 2527; 2528; 2529; 2530; 2531; 2532; 2533; 2534; 2535; 2536; 2537; 2538; 2539; 2540; 2541; 2542; 2543; 2544; 2545; 2546; 2547; 2548; 2549; 2550; 2551; 2552; 2553; 2554; 2555; 2556; 2557; 2558; 2559; 2560; 2561; 2562; 2563; 2564; 2565; 2566; 2567; 2568; 2569; 2570; 2571; 2572; 2573; 2574; 2575; 2576; 2577; 2578; 2579; 2580; 2581; 2582; 2583; 2584; 2585; 2586; 2587; 2588; 2589; 2590; 2591; 2592; 2593; 2594; 2595; 2596; 2597; 2598; 2599; 2600; 2601; 2602; 2603; 2604; 2605; 2606; 2607; 2608; 2609; 2610; 2611; 2612; 2613; 2614; 2615; 2616; 2617; 2618; 2619; 2620; 2621; 2622; 2623; 2624; 2625; 2626; 2627; 2628; 2629; 2630; 2631; 2632; 2633; 2634; 2635; 2636; 2637; 2638; 2639; 2640; 2641; 2642; 2643; 2644; 2645; 2646; 2647; 2648; 2649; 2650; 2651; 2652; 2653; 2654; 2655; 2656; 2657; 2658; 2659; 2660; 2661; 2662; 2663; 2664; 2665; 2666; 2667; 2668; 2669; 2670; 2671; 2672; 2673; 2674; 267

Figure 1. The structure of the proposed system. The system is designed to be a self-contained unit that can be used in a variety of environments. It consists of a main control unit, a power supply unit, and a data storage unit. The main control unit is responsible for controlling the system's operation and monitoring the data. The power supply unit provides the necessary power for the system's operation. The data storage unit stores the data collected by the system. The system is designed to be modular, allowing for easy expansion and modification.

FIG. 2. WITH LOG₁₀ X

35

200

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1

0524

CALIBRATION DATA INCLUDED

