

KONUS

01/06/2019

65.281

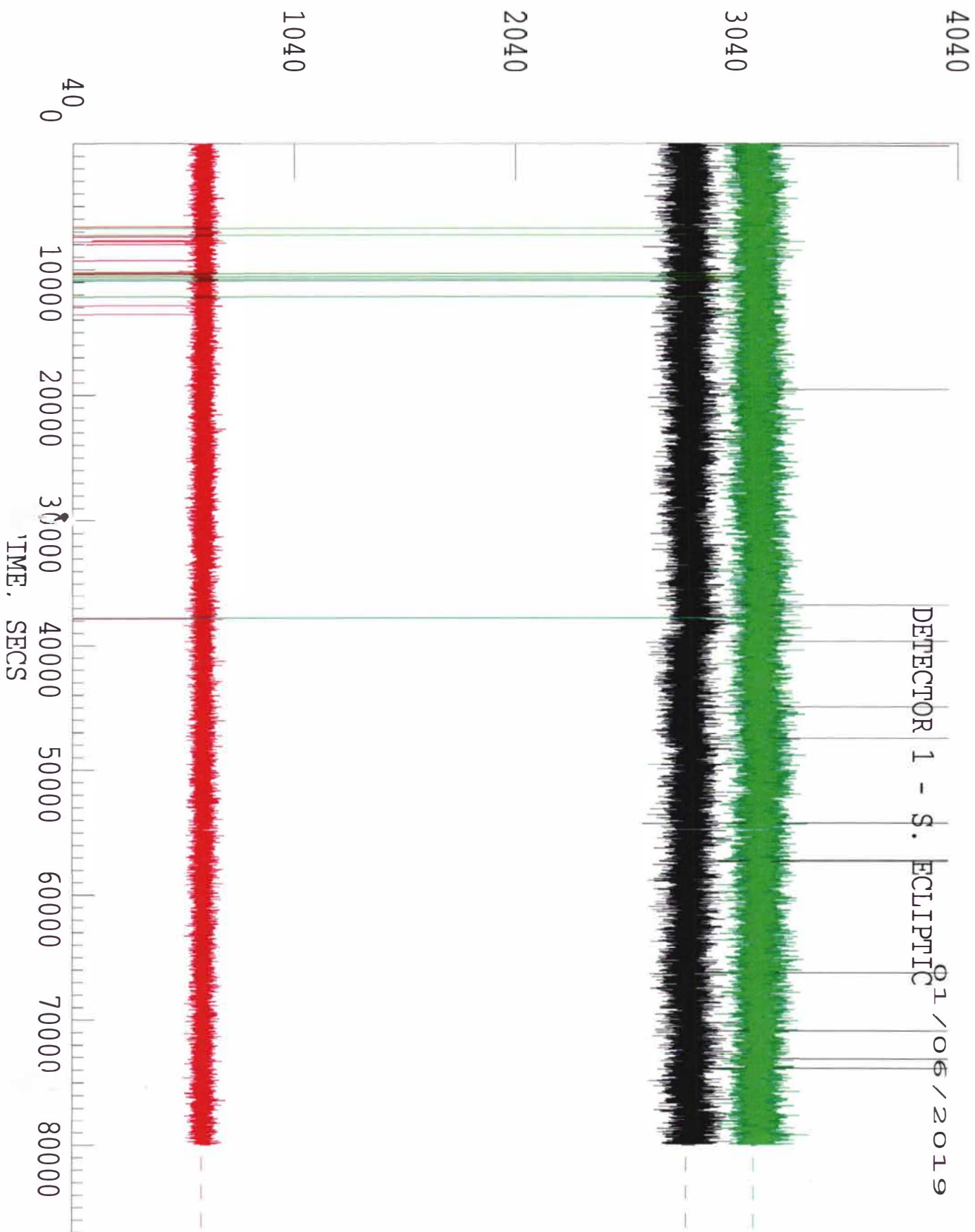
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

01/06/2019

65.281

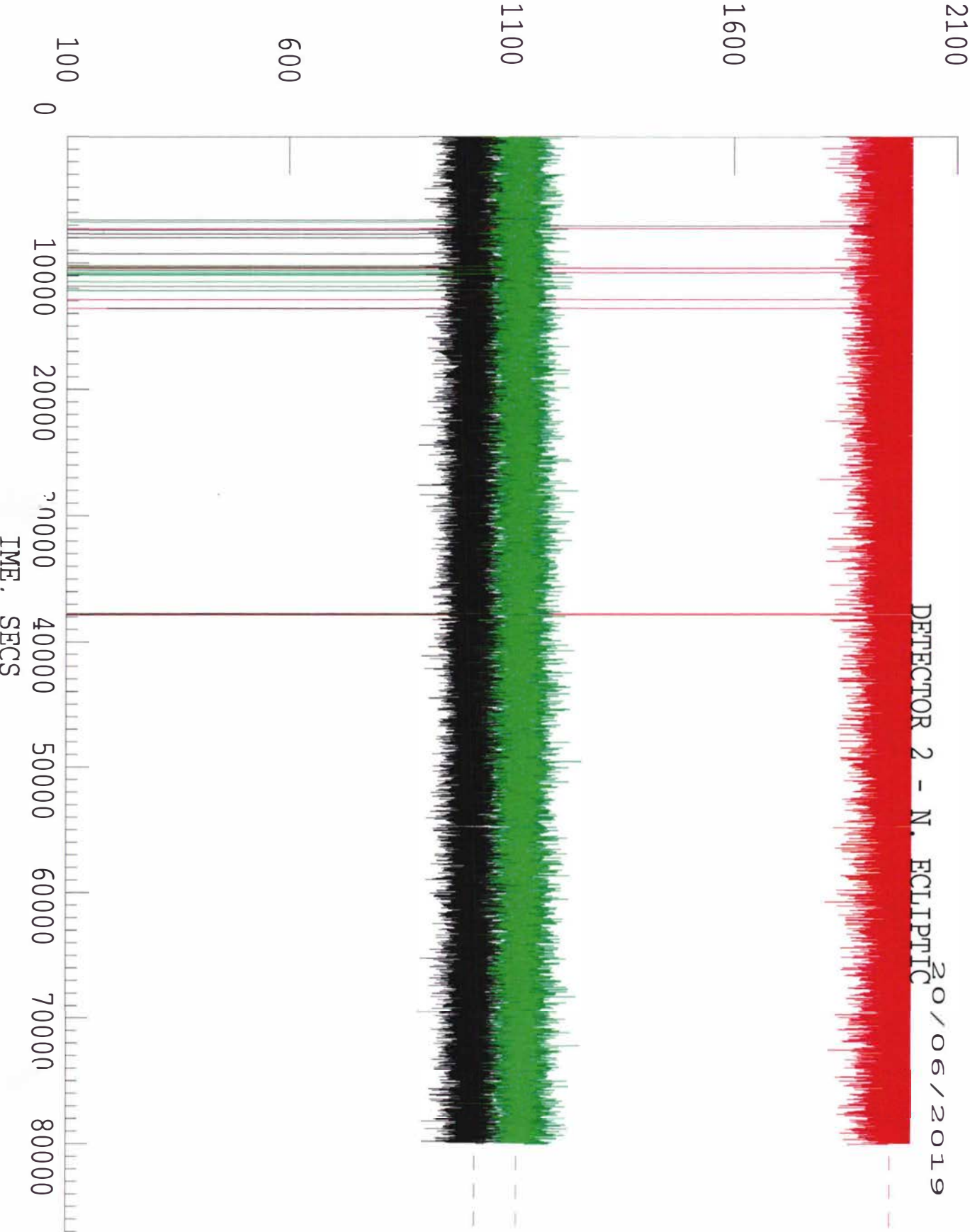
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



FERMI

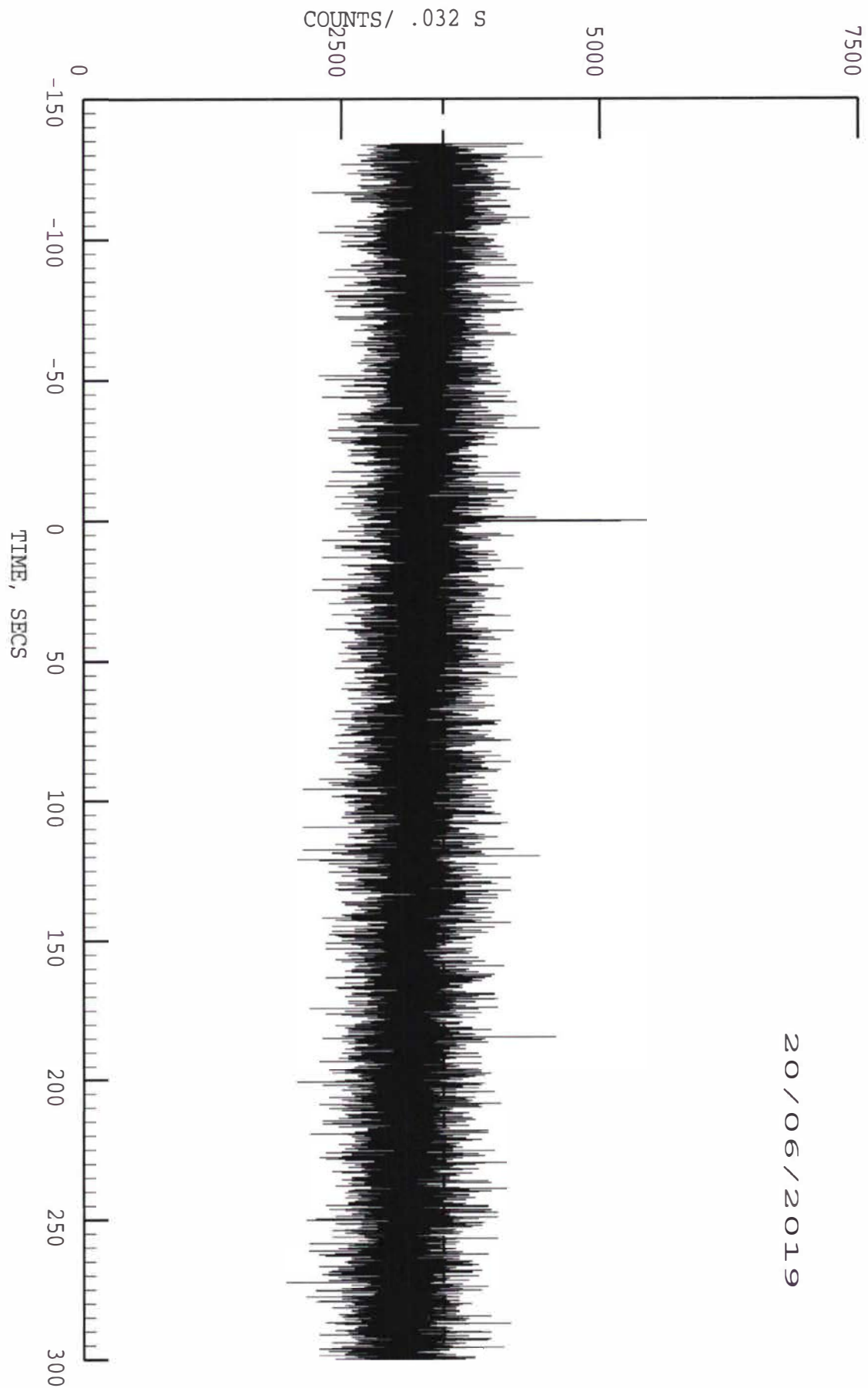
01/06/19

28044.176

07:47:24.176

26- 293 keV

163 54.6 8.3

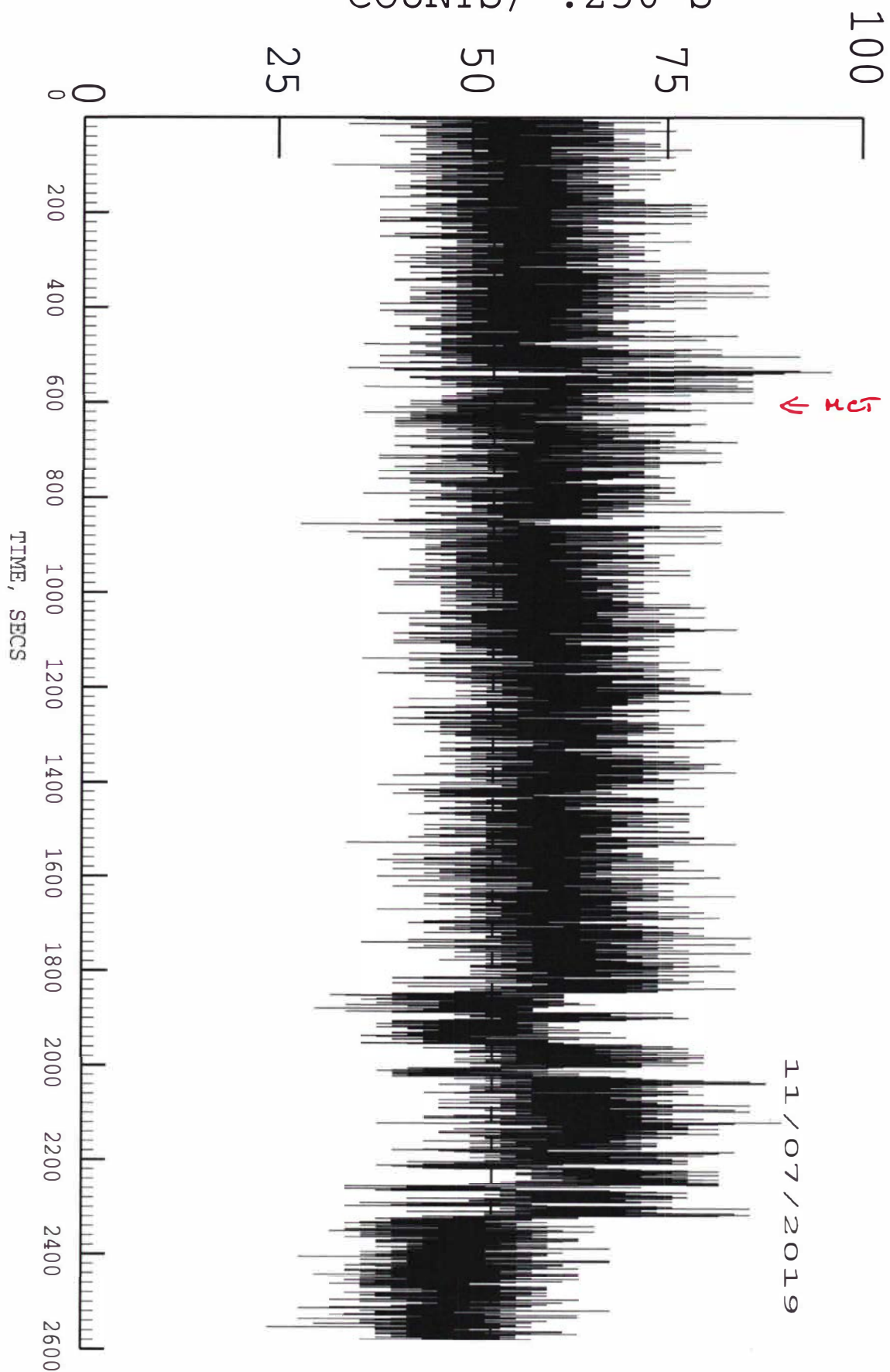


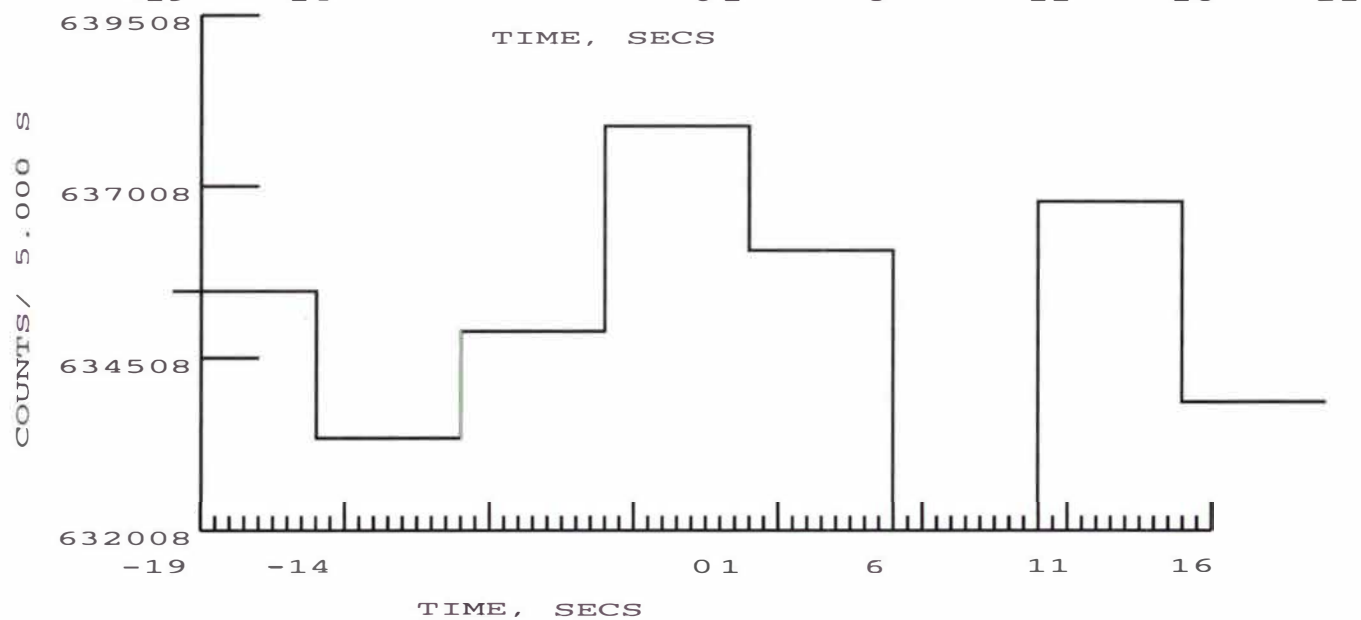
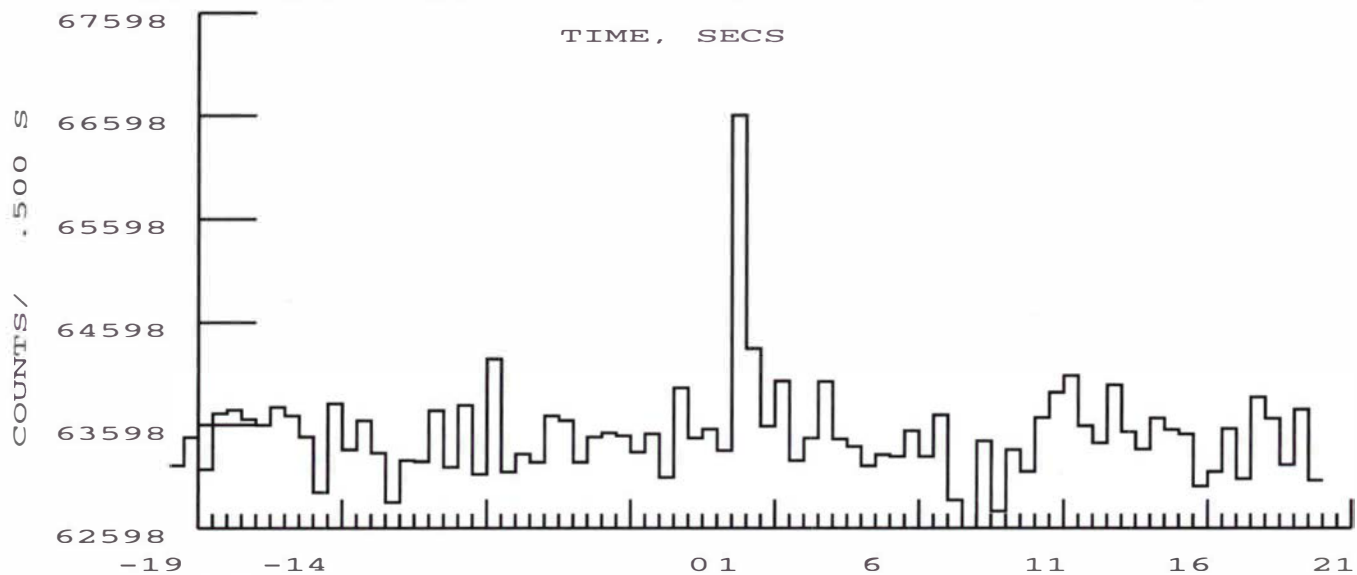
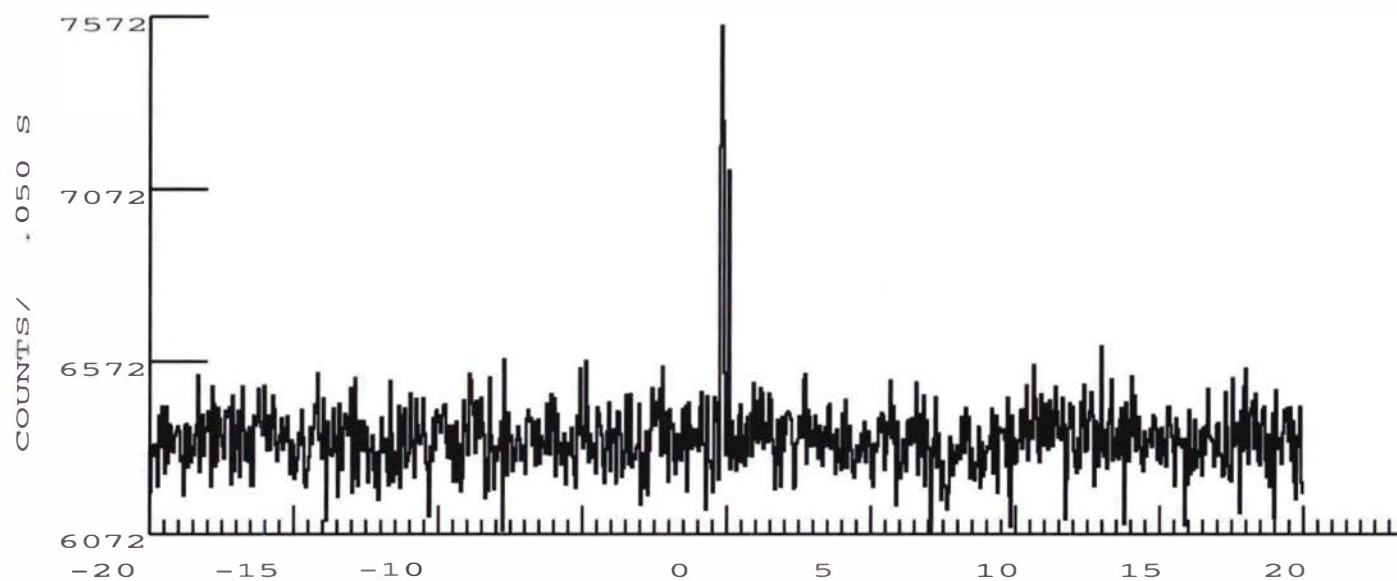
20/06/2019

ODYSSEY 01/06/19 26732.657 07:25:32.657

50-3000 keV

COUNTS/ .250 S





BAT lightcurve for trigger at 190601_0747

Subject: BAT lightcurve for trigger at 190601_0747

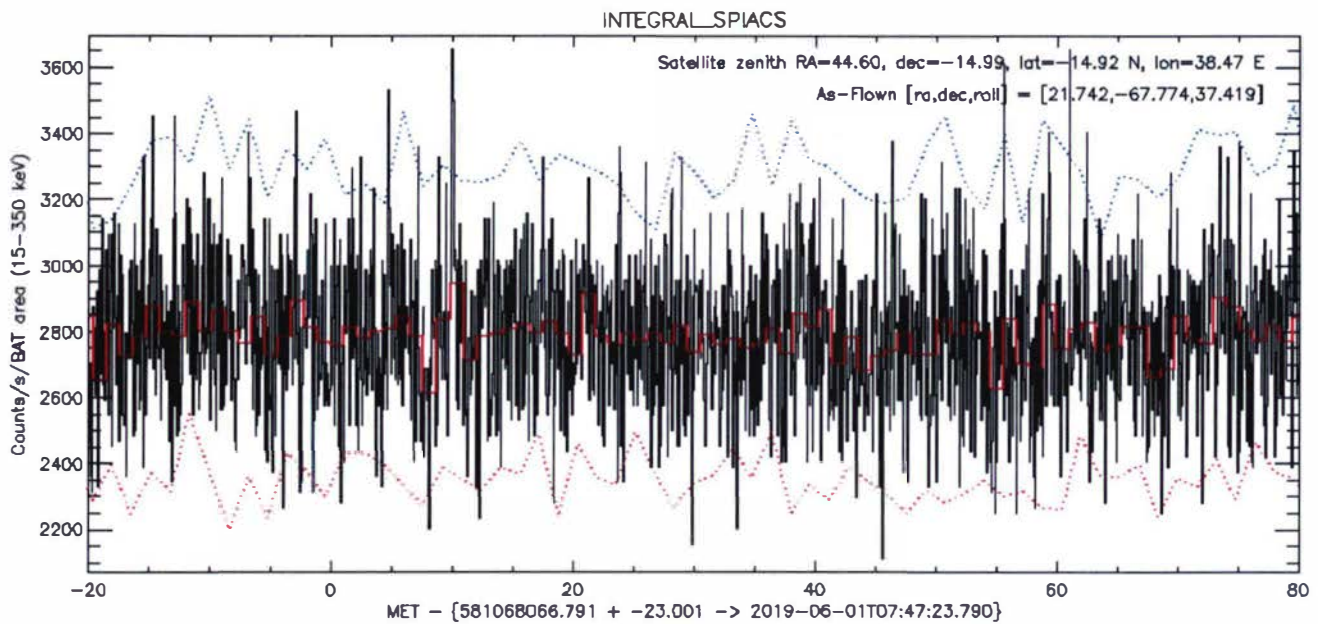
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/1/2019, 3:04 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

— /tmp/swift/190601_0747.png —



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581068066.791
Swift Zenith(RA,dec):      44.60, -14.99
Swift Location(lon,lat,alt): 38.47 E, -14.92 N, 548 km
Time(MET + UTCF -> UT):   581068066.791 + -23.001 -> 2019-06-01T07:47:23.790
YYMMDD_SOD:               190601_28043.790      DOY=152
Obs Sequence Number:      03109995001
Obs Target Name:          4FGL J0126.3-6746
Obs Date and Times:       2019-06-01  07:41:38 - 07:53:33
Obs Pointing(ra,dec,roll): 21.742, -67.774, 37.42
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

— Attachments: —

/tmp/swift/190601_0747_bat64ms_ipn	87.0 KB
/tmp/swift/190601_0747.png	18.5 KB

Subject: IPN triangulation of short GRB 20190601_T28044 (=Fermi/GBM trigger 581068049) - GBM-INTEGRAL annulus
From: Anna Kozlova <ann_kozlova@mail.ioffe.ru>
Date: 6/1/2019, 1:55 PM
To: IPN <ipn@ssl.berkeley.edu>

Dear colleagues,

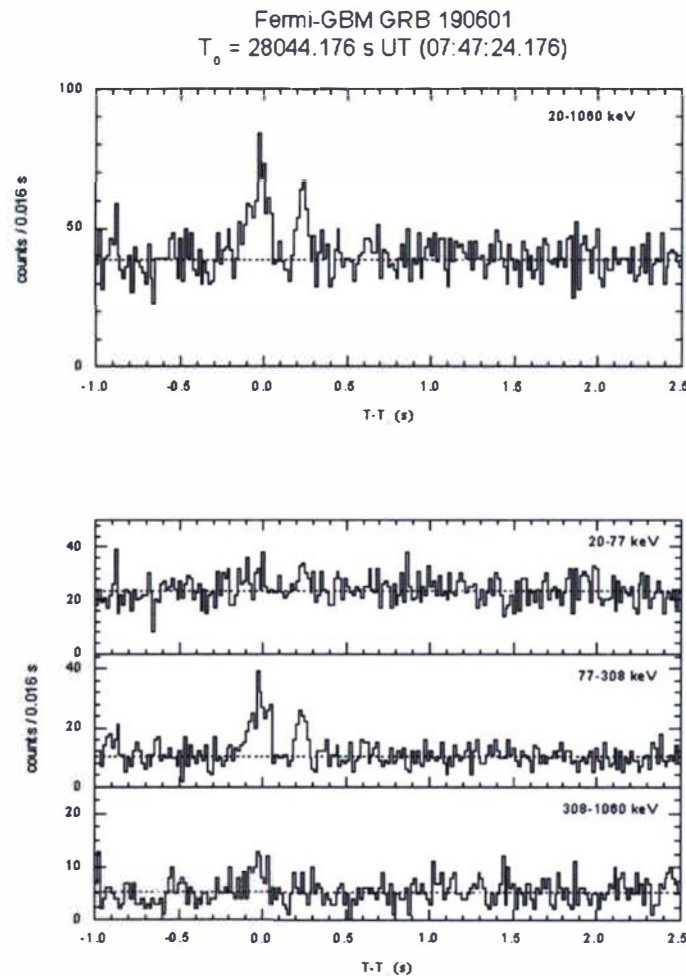
A short-duration, weak GRB 20190601_T28044 has been detected by Fermi (GBM trigger 581068049), INTEGRAL (SPI-ACS), so far, at about 28044 s UT (07:47:24) - see the attached GBM figure.

We have triangulated this GRB to a GBM-INTEGRAL annulus centered at RA(2000)=234.895 deg (15h 39m 35s) Dec(2000)=+49.803 deg (+49d 48' 09"), whose radius is 44.826 +/- 3.356 deg (3 sigma), see the attached figure.

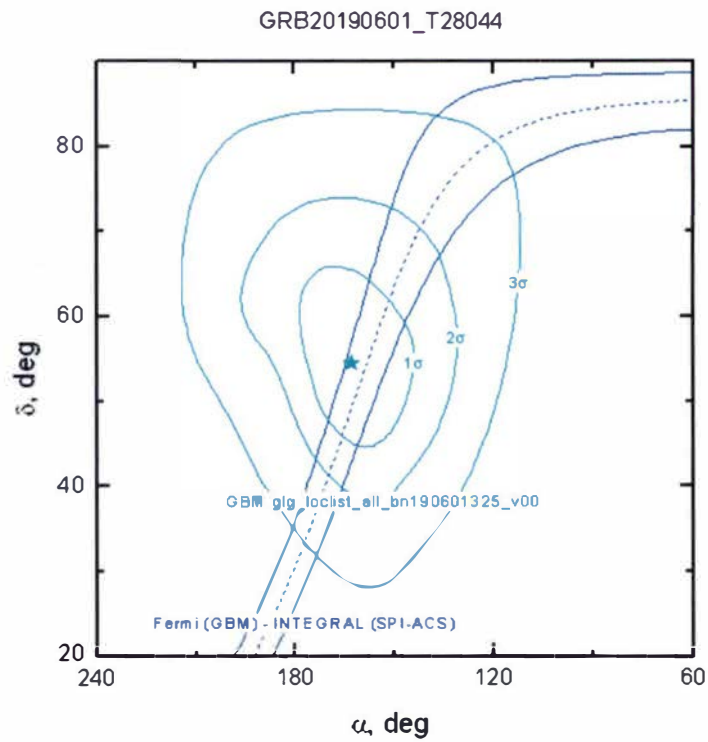
Best regards,

Anna

— GRB20190601_T28044_GBM_16ms.png —



— GRB20190601_T28044_IPN_map.png —



Attachments:

GRB20190601_T28044_GBM_16ms.png

8.8 KB

GRB20190601_T28044_IPN_map.png

6.7 KB

BAT lightcurve for trigger at 190601_2049

Subject: BAT lightcurve for trigger at 190601_2049

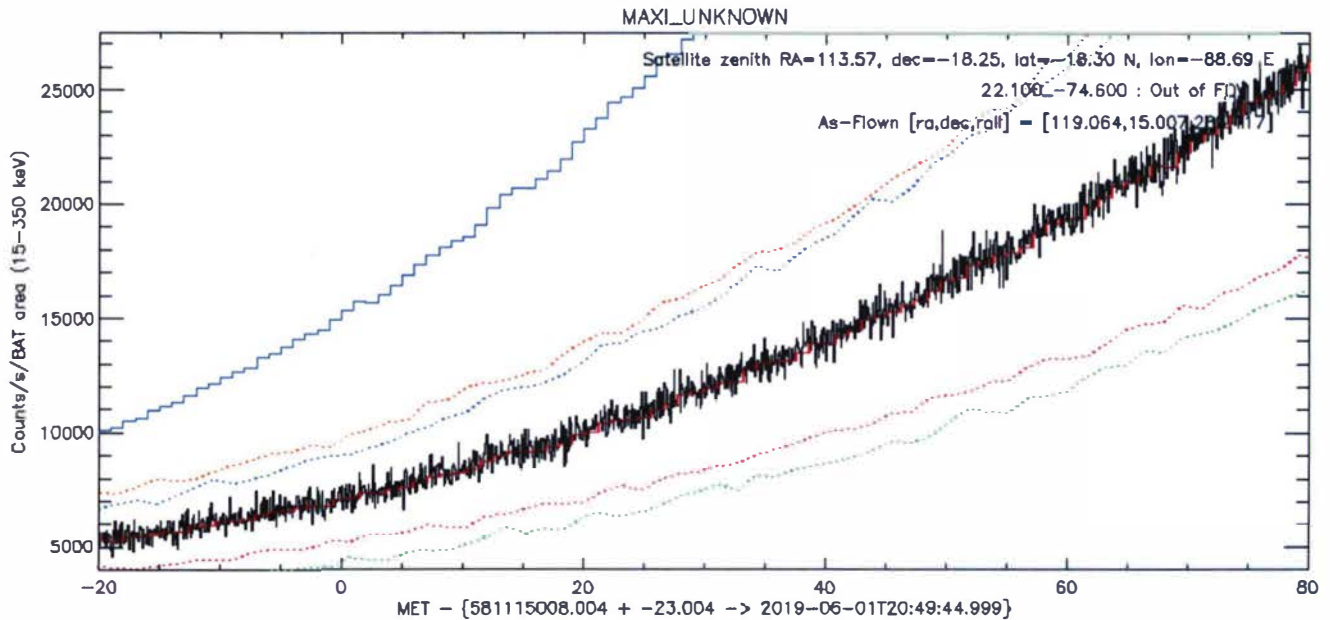
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/3/2019, 3:44 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190601_2049.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2019-06-01T20:49:45 -s 22.100_-74.600
Swift Zenith(RA,dec):      113.57, -18.25
Swift Location(lon,lat,alt): -88.69 E, -18.30 N, 548 km
Time(MET + UTCF -> UT):    581115008.004 + -23.004 -> 2019-06-01T20:49:44.999
YYMMDD_SOD:               190601_74984.999 DOY=152
Obs Sequence Number:       00075993004
Obs Target Name:           saa-cold-152-07
Obs Date and Times:        2019-06-01 20:48:38 - 21:07:32
Obs Pointing(ra,dec,roll): 119.064, 15.007, 286.12
22.100_-74.600_imageloc (boresight_dist, angle): (106, 180)
22.100_-74.600_exposure (cm2 cos adjusted): 0
22.100_-74.600_altitude: 40 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190601_2049_bat64ms_ipn

87.1 KB

/tmp/swift/190601_2049.png

18.7 KB

v01

51.064

02/06/2019

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

10000

20000

30000

40000

50000

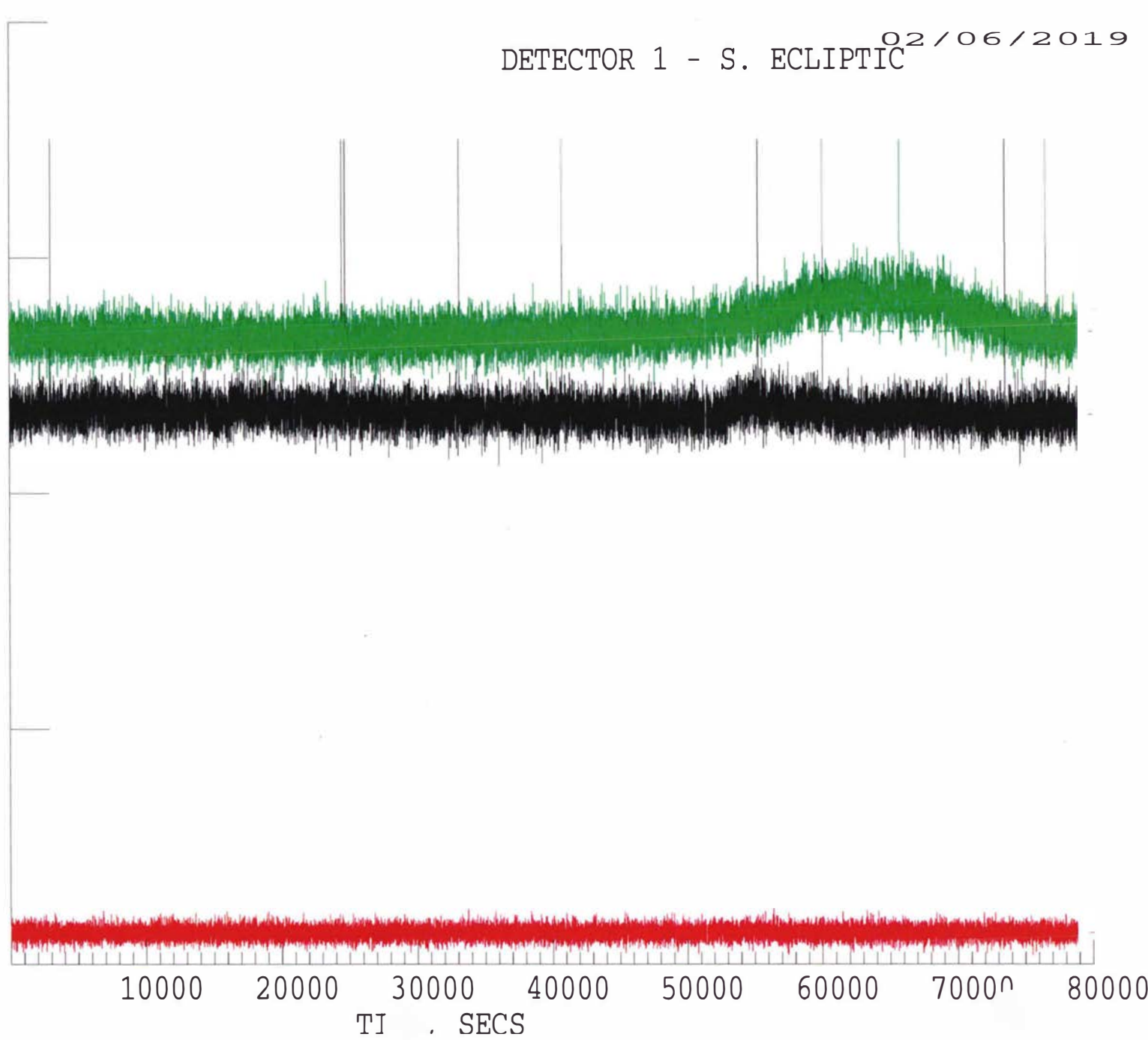
60000

70000

80000

TI , SECS

DETECTOR 1 - S. ECLIPTIC 02/06/2019



KONUS

02/06/2019

51.064

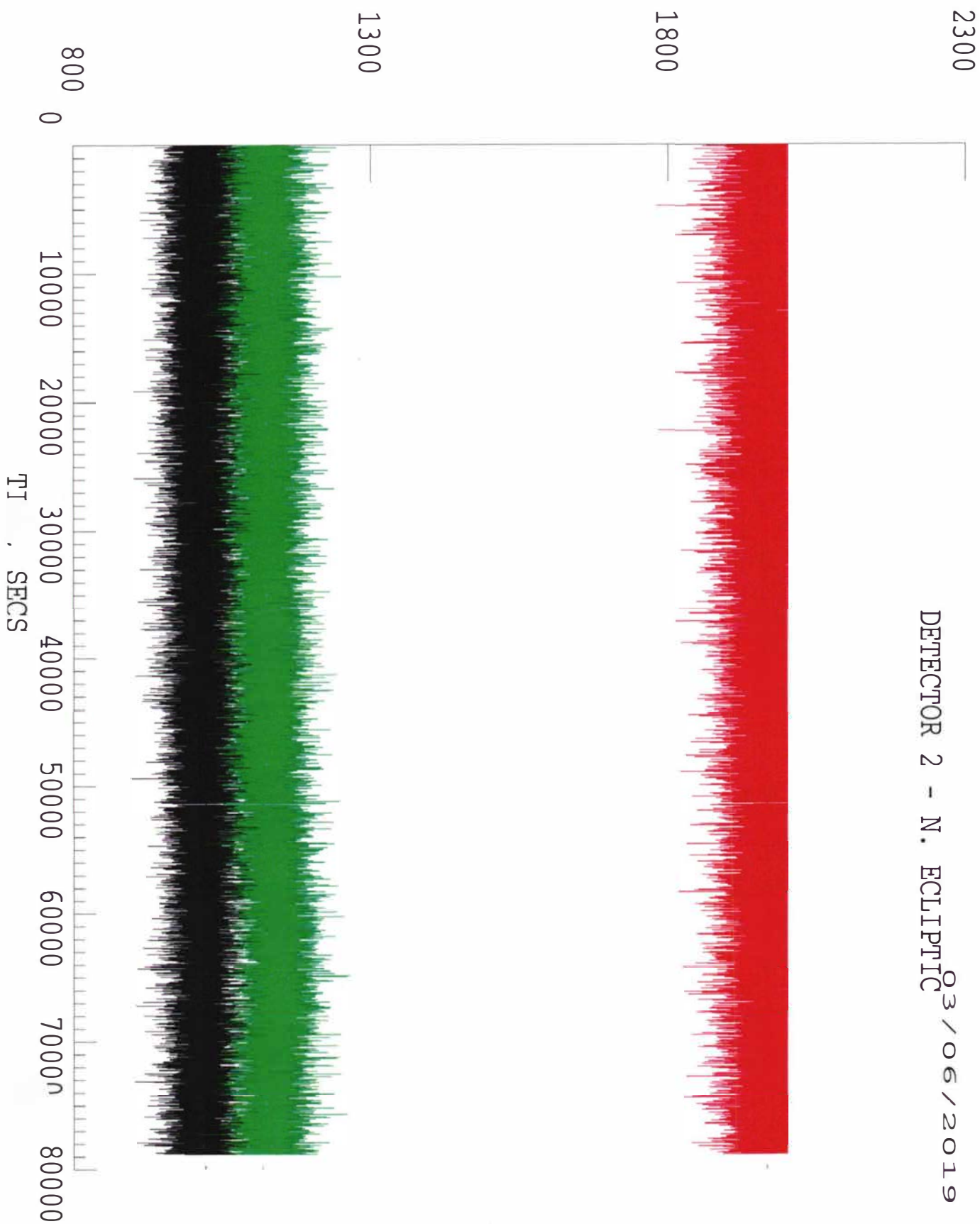
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: LIGO/Virgo S190602aq: Identification of a GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/2/2019, 11:37 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24717
SUBJECT: LIGO/Virgo S190602aq: Identification of a GW compact binary merger candidate
DATE: 19/06/02 18:36:06 GMT
FROM: Peter Shawhan at U of Maryland/LSC <pshawhan@umd.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

We identified the compact binary merger candidate S190602aq during real-time processing of data from LIGO Hanford Observatory (H1), LIGO Livingston Observatory (L1), and Virgo Observatory (V1) at 2019-06-02 17:59:27.089 UTC (GPS time: 1243533585.089). The candidate was found by the PyCBC Live [1], CWB [2], SPIIR [3], GstLAL [4], and MBTAOnline [5] analysis pipelines.

S190602aq is an event of interest because its false alarm rate, as estimated by the online analysis, is $1.9\text{e-}09$ Hz, or about one in 16 years. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S190602aq>

The classification of the GW signal, in order of descending probability, is BBH (>99%), Terrestrial (<1%), BNS (<1%), NSBH (<1%), or MassGap (<1%).

Assuming the candidate is astrophysical in origin, there is strong evidence against the lighter compact object having a mass < 3 solar masses (HasNS: <1%). Using the masses and spins inferred from the signal, there is strong evidence against matter outside the final compact object (HasRemnant: <1%).

One skymap is available at this time and can be retrieved from the GraceDB event page:

* bayestar.fits.gz, an updated localization generated by BAYESTAR [6], distributed via GCN notice about 6 minutes after the candidate

For the bayestar.fits.gz skymap, the 90% credible region is 1172 deg². Marginalized over the whole sky, the a posteriori luminosity distance estimate is 797 ± 238 Mpc (a posteriori mean $\pm$ standard deviation).

For further information about analysis methodology and the contents of this alert, refer to the LIGO/Virgo Public Alerts User Guide <<https://emfollow.docs.ligo.org/userguide/>>.

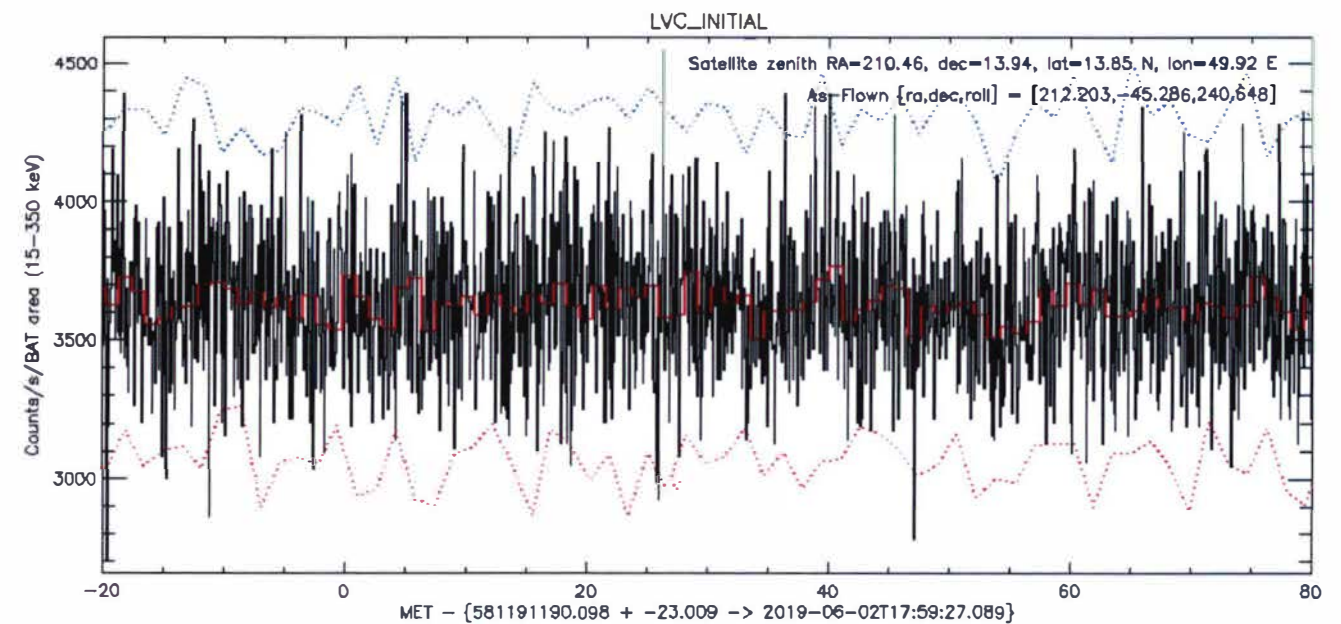
- [1] Nitz et al. PRD 98, 024050 (2018)
- [2] Klimenko et al. PRD 93, 042004 (2016)
- [3] Qi Chu, PhD Thesis, The University of Western Australia (2017)
- [4] Messick et al. PRD 95, 042001 (2017)
- [5] Adams et al. CQG 33, 175012 (2016)
- [6] Singer & Price PRD 93, 024013 (2016)

BAT lightcurve for trigger at 190602_1759

Subject: BAT lightcurve for trigger at 190602_1759
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 6/2/2019, 4:41 PM
To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190602_1759.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581191190.098
Swift Zenith(RA,dec):      210.46, 13.94
Swift Location(lon,lat,alt): 49.92 E, 13.85 N, 554 km
Time(MET + UTCF -> UT):   581191190.098 + -23.009 -> 2019-06-02T17:59:27.089
YYMMDD_SOD:              190602_64767.089      DOY=153
Obs Sequence Number:      00088874001
Obs Target Name:          V834_Cen
Obs Date and Times:       2019-06-02 17:42:37 - 18:00:34
Obs Pointing(ra,dec,roll): 212.203, -45.286, 240.65
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190602_1759.png	17.5 KB
/tmp/swift/190602_1759_bat64ms_ipn	87.1 KB

KONUS

03/06/2019

39.791

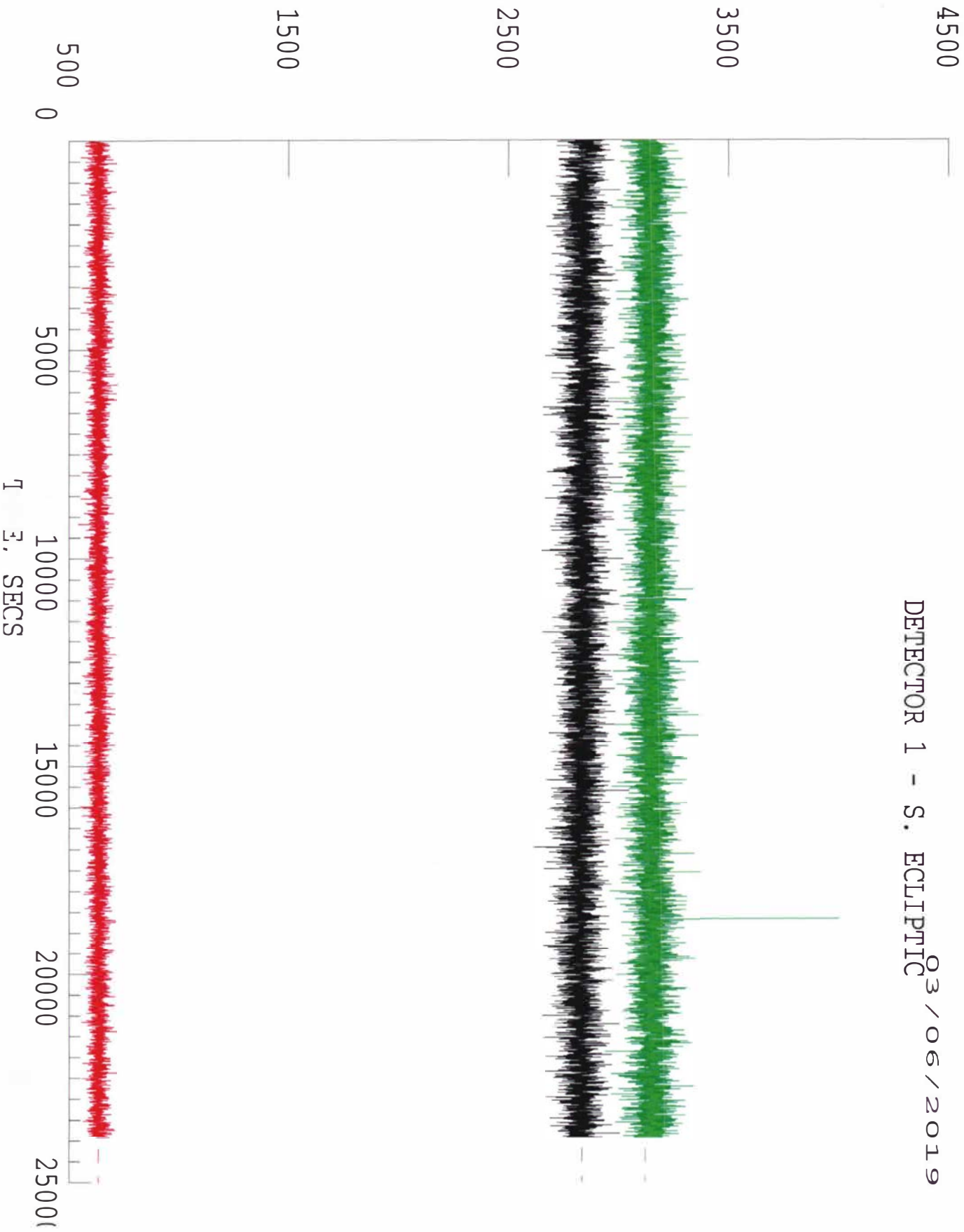
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

03/06/2019

39.791

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

5000

10000

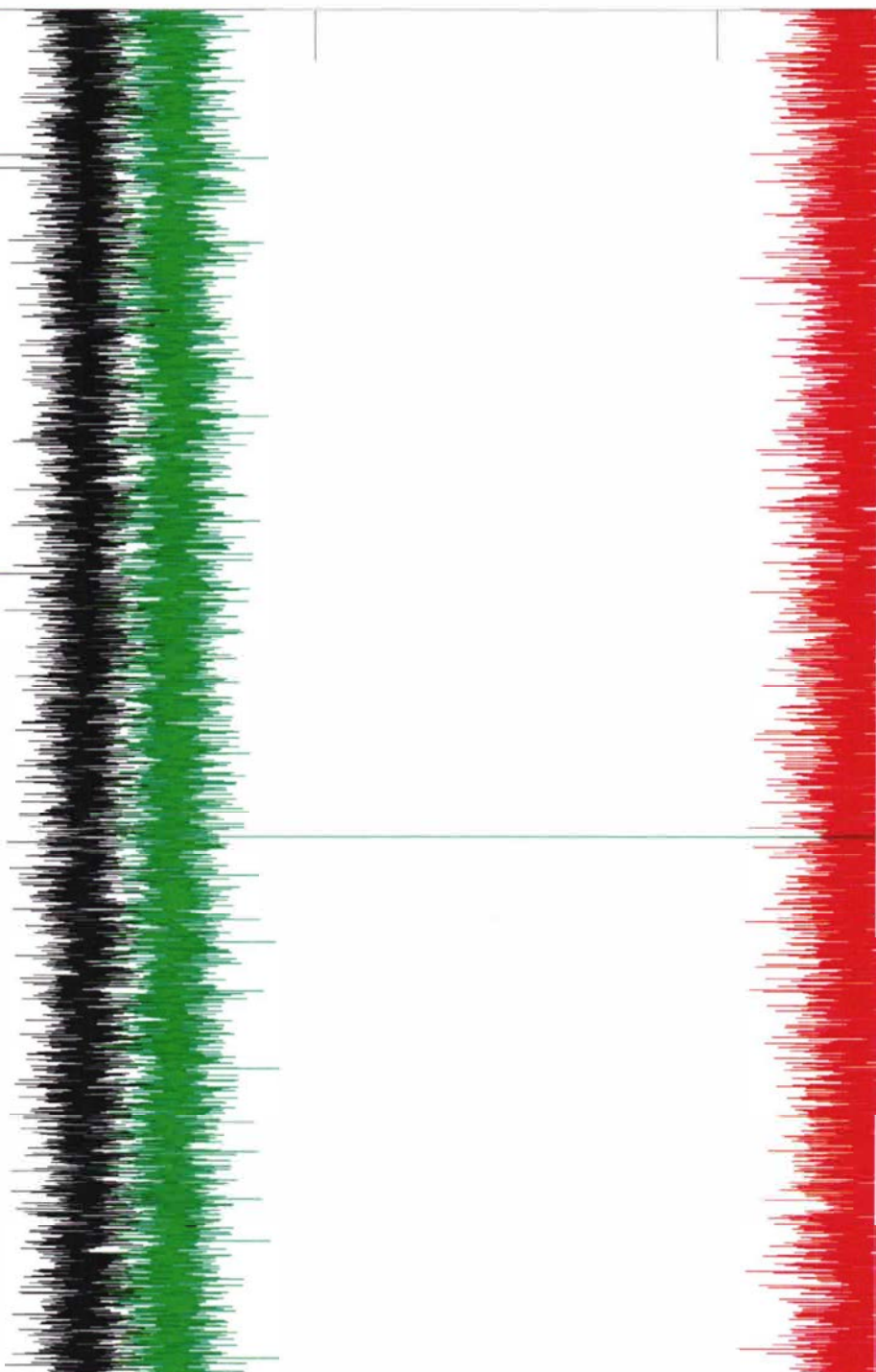
15000

20000

25000

T. E. SECS

DETECTOR 2 - N. ECLIP^{05/06/2019}TIC



FERMI

03/06/19

68665.984

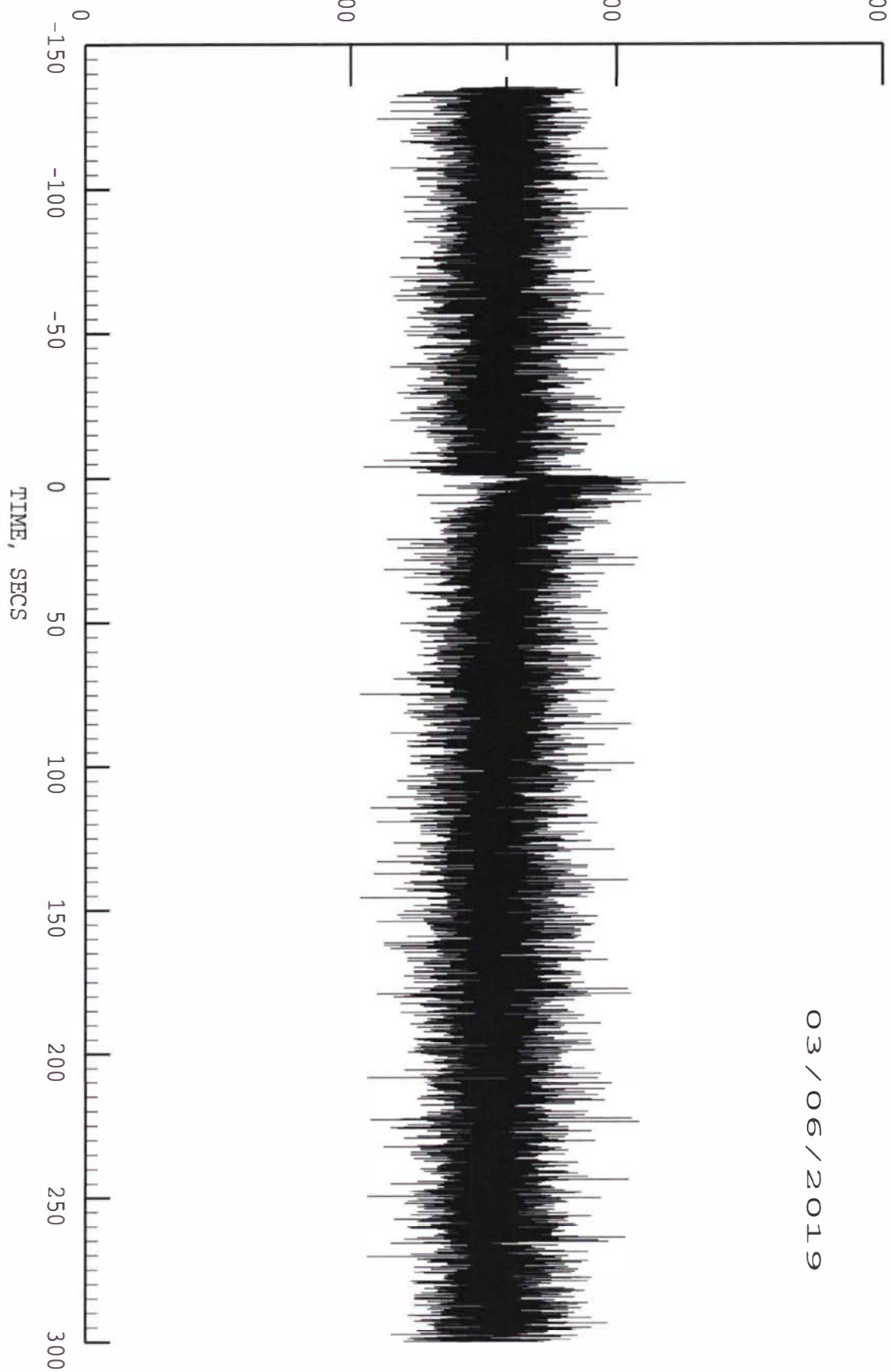
19:04:25.984

26- 293 keV

20.1 40.9 5.9

COUNTS/ .032 S

SPI NO

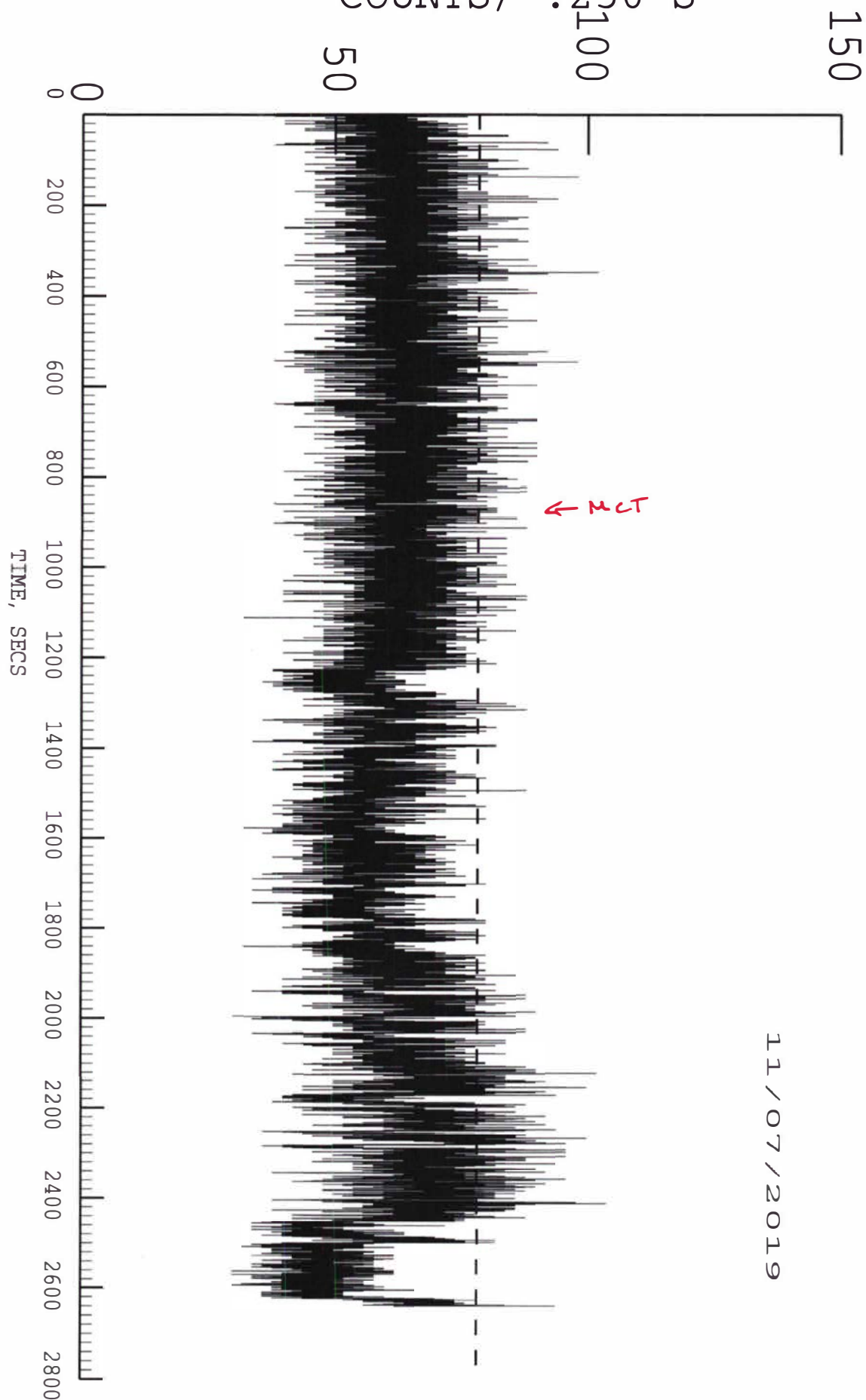


03 / 06 / 2019

ODYSSEY 03/06/19 67348.850 18:42:28.850

50-3000 keV

COUNTS/ .250 S



BAT lightcurve for trigger at 190603_1904

Subject: BAT lightcurve for trigger at 190603_1904

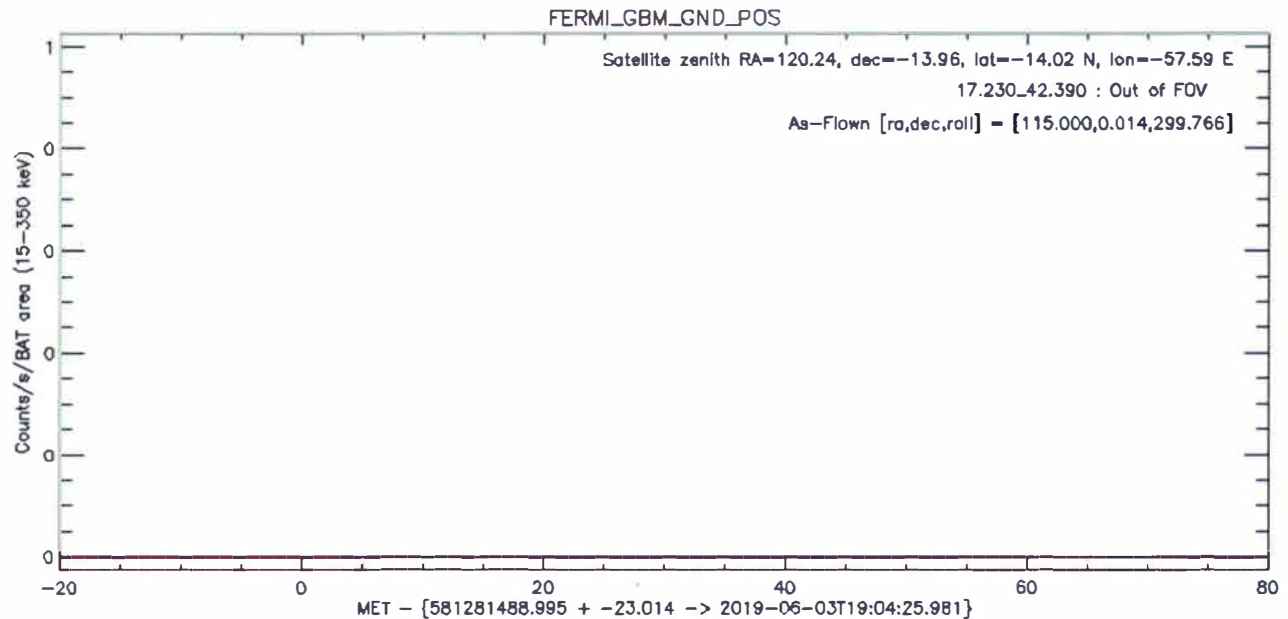
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/3/2019, 6:12 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190603_1904.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581281488.995 -s 17.230_42.390
Swift Zenith(RA,dec):      120.24, -13.96
Swift Location(lon,lat,alt): -57.59 E, -14.02 N, 547 km
Time(MET + UTCF -> UT):    581281488.995 + -23.014 -> 2019-06-03T19:04:25.981
YYMMDD_SOD:               190603_68665.981      DOY=154
Obs Sequence Number:       00074956021
Obs Target Name:           saa-cold-154-06
Obs Date and Times:        2019-06-03  18:54:38 - 19:15:38
Obs Pointing(ra,dec,roll): 115.000, 0.014, 299.77
17.230_42.390_imageloc (boresight_dist, angle): (96, -77)
17.230_42.390_exposure (cm2 cos adjusted): 0
17.230_42.390_altitude: 4 (depressed but unattenuated)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

--Attachments:—

/tmp/swift/190603_1904_bat64ms_ipn	87.0 KB
/tmp/swift/190603_1904.png	7.9 KB

KONUS

04/06/2019 22650.211

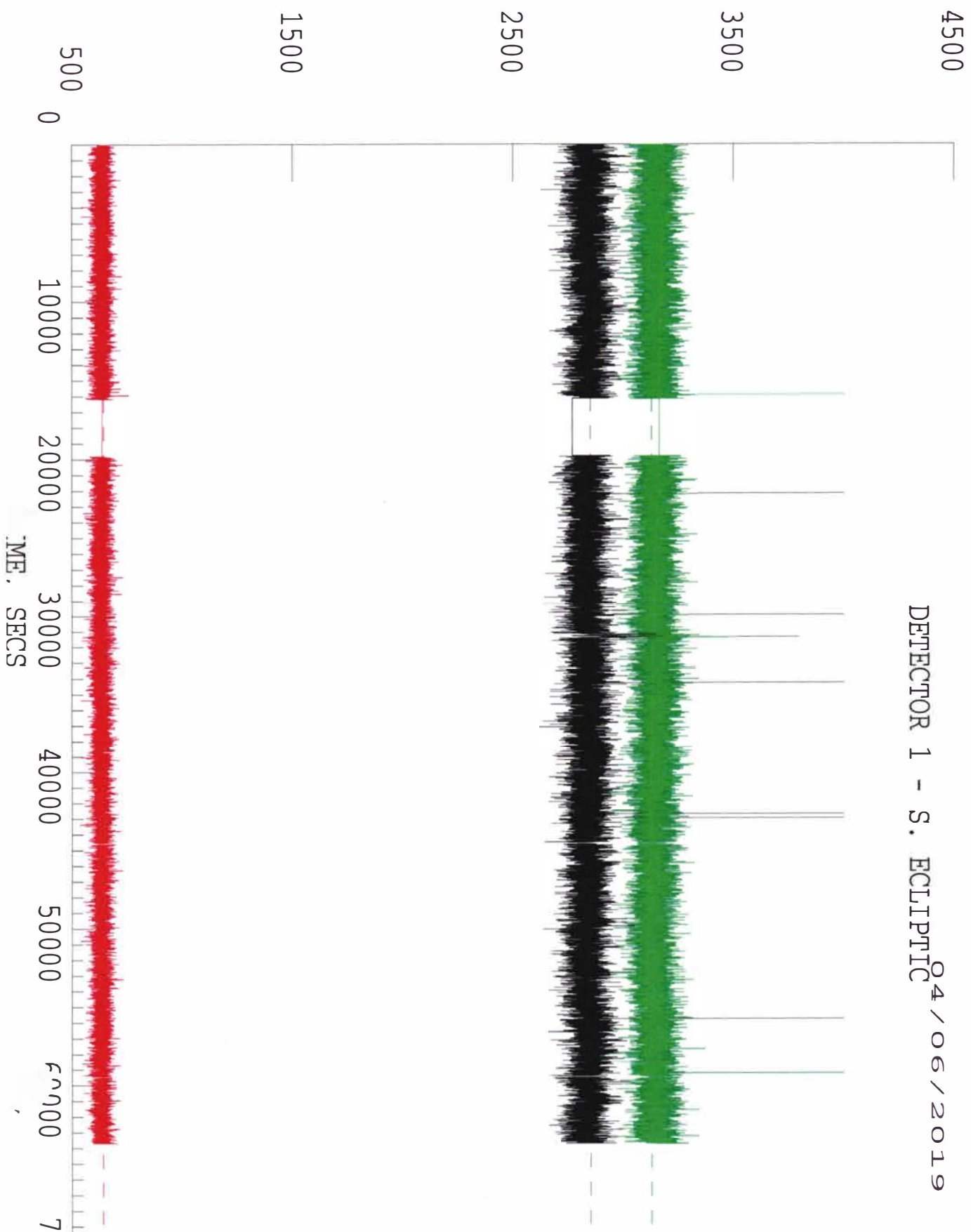
v01

10- 50 keV

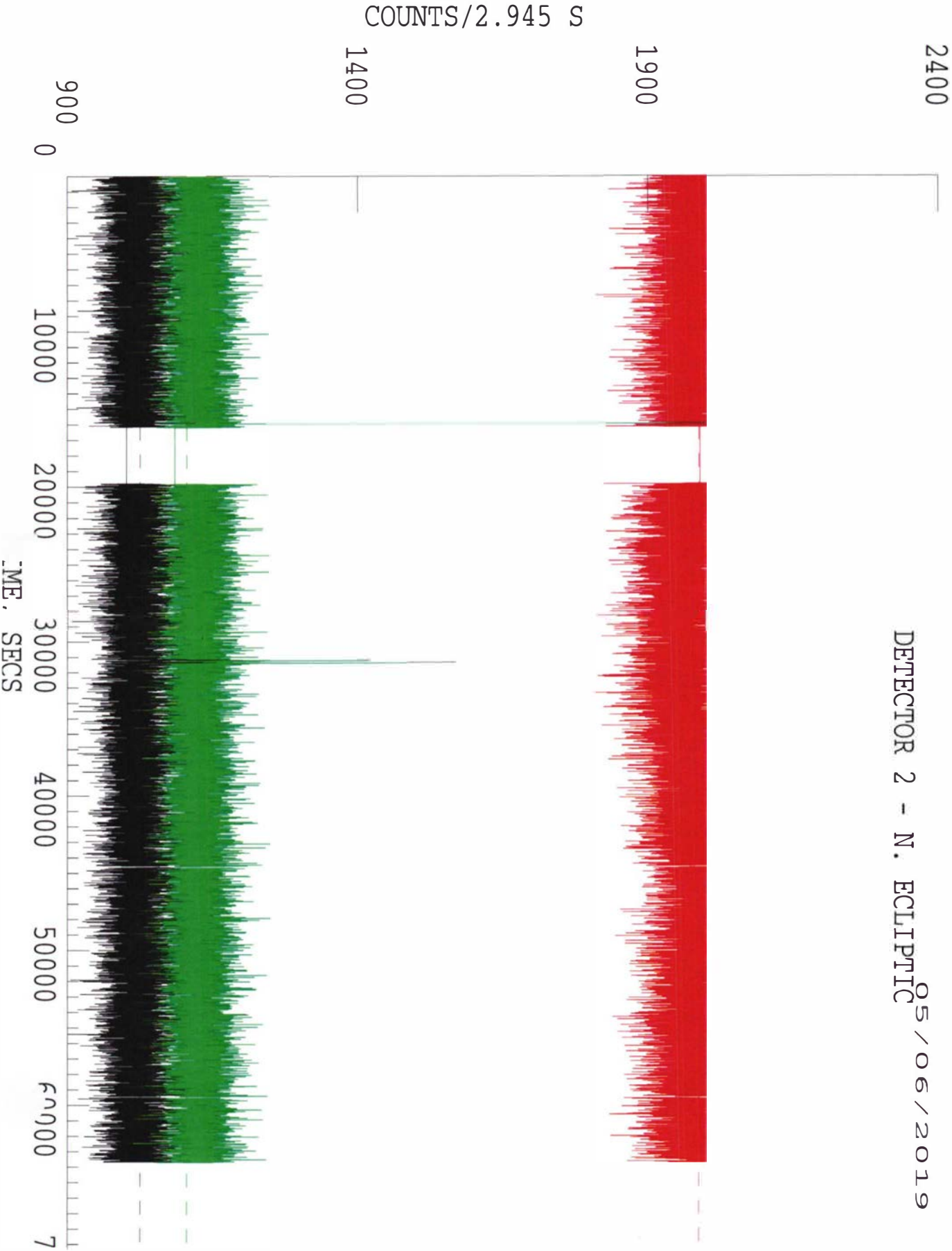
50- 200 keV

200- 750 keV

COUNTS/2.945 S



10- 50 keV50- 200 keV200- 750 keV



FERMI

04/06/19

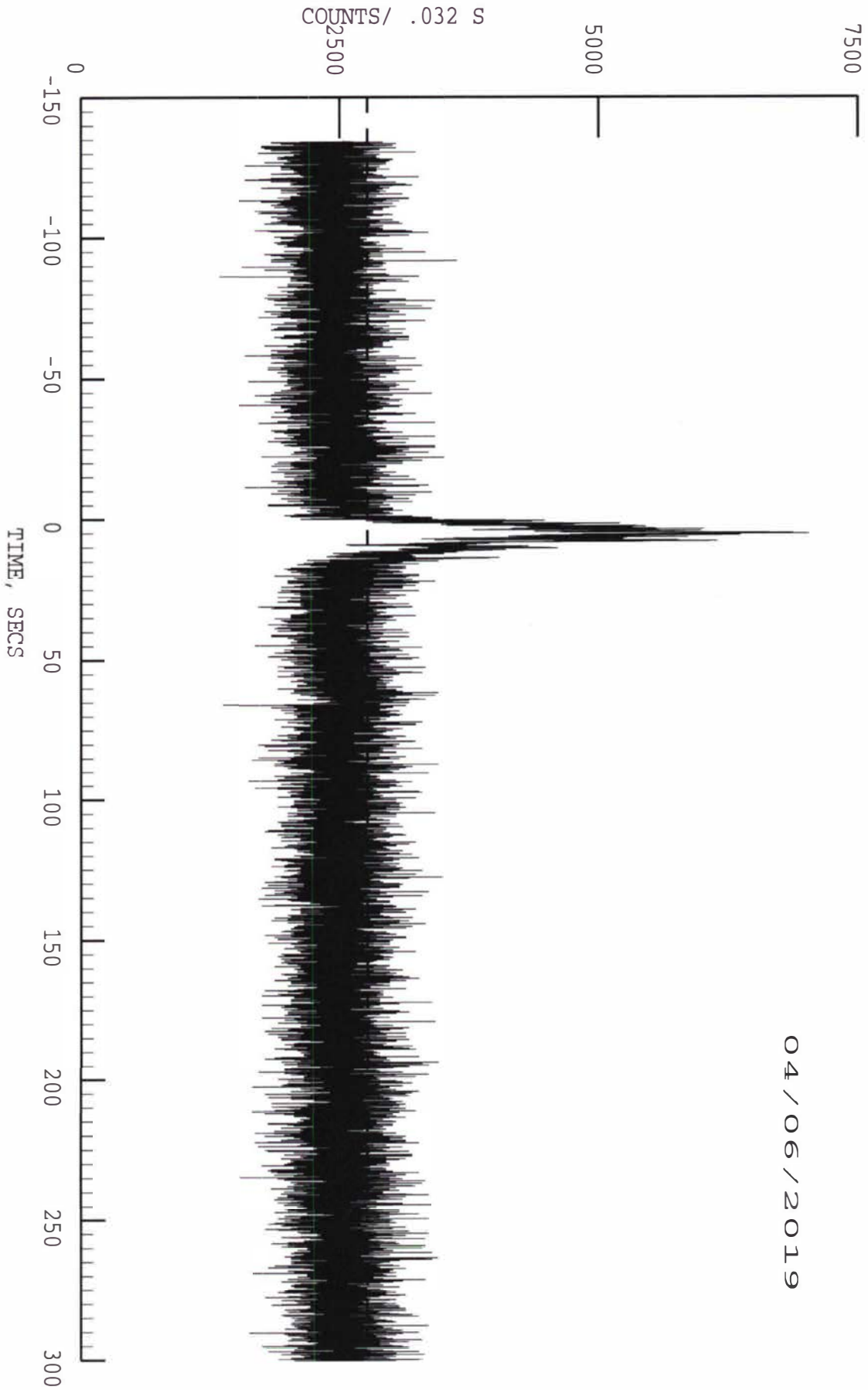
38557.054

10:42:37.054

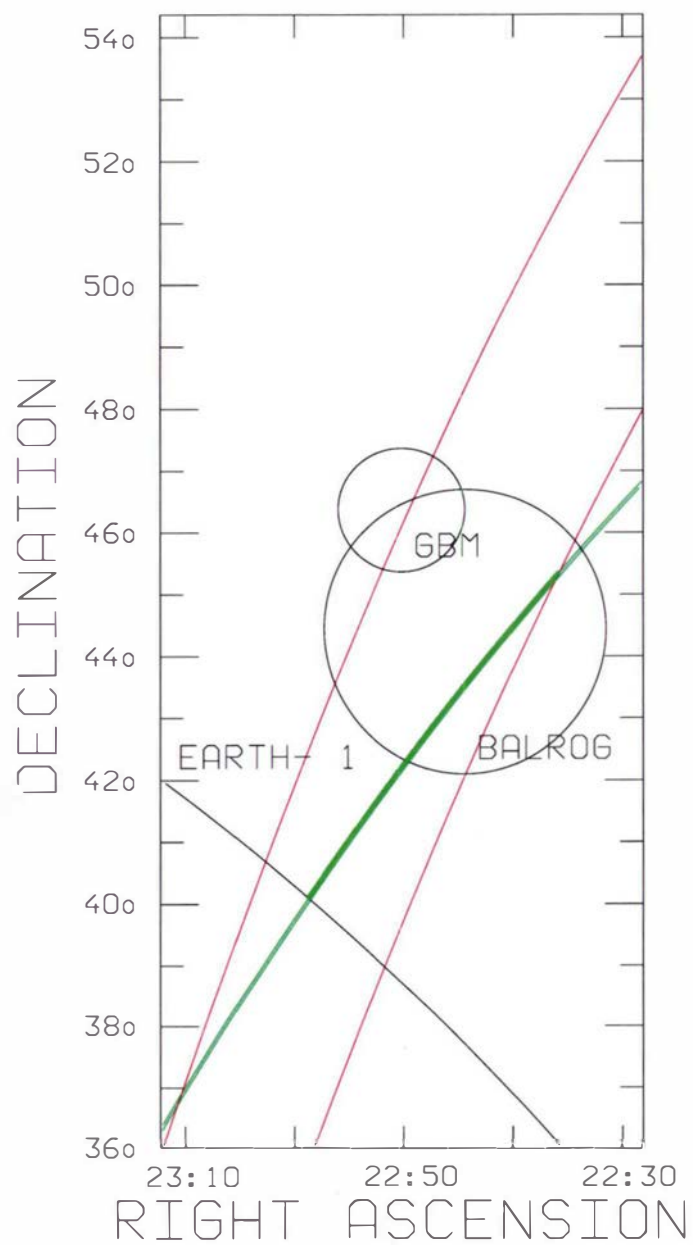
A

26- 293 keV

342.5 46.4 1.0



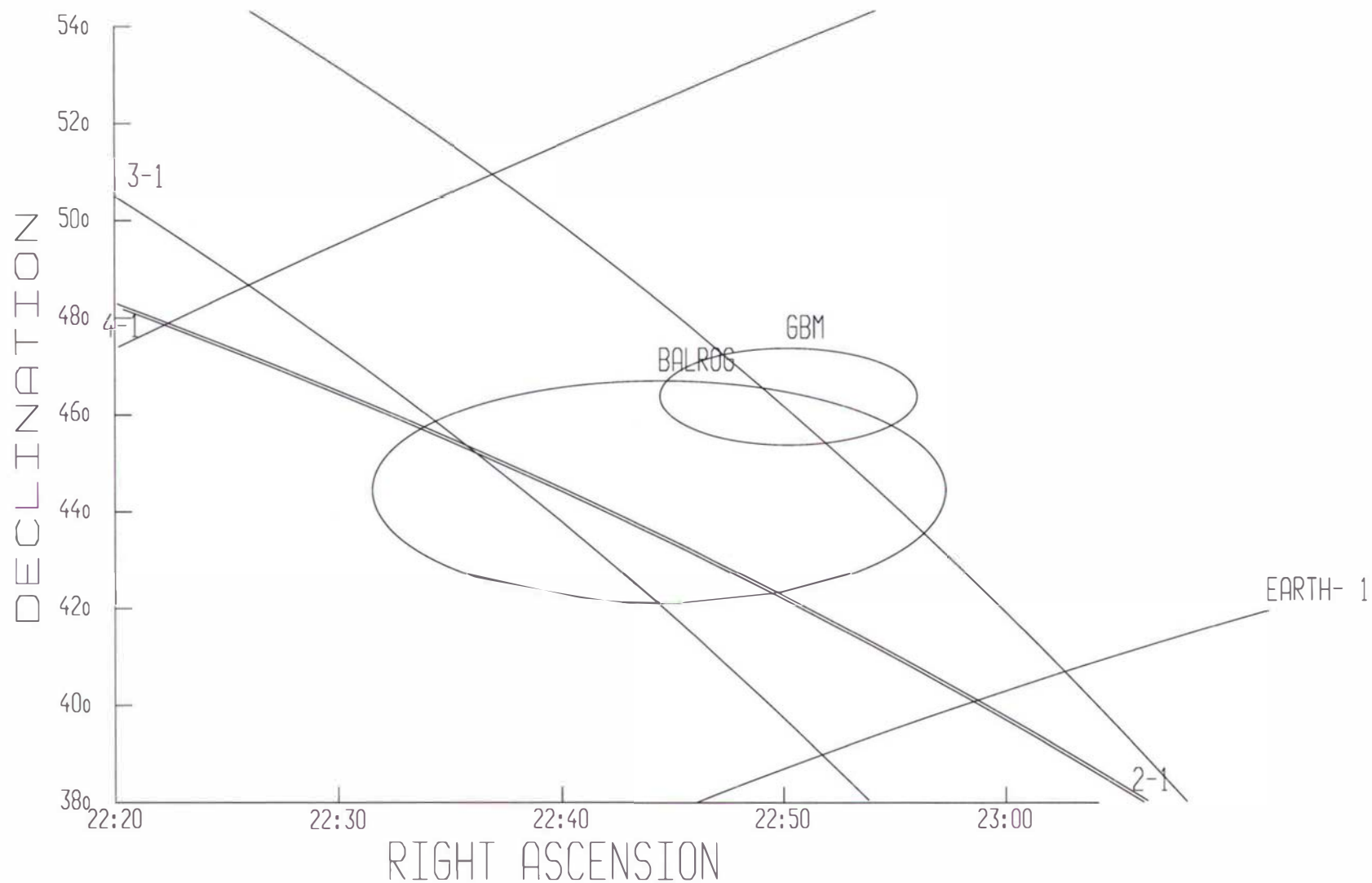
04/06/2019

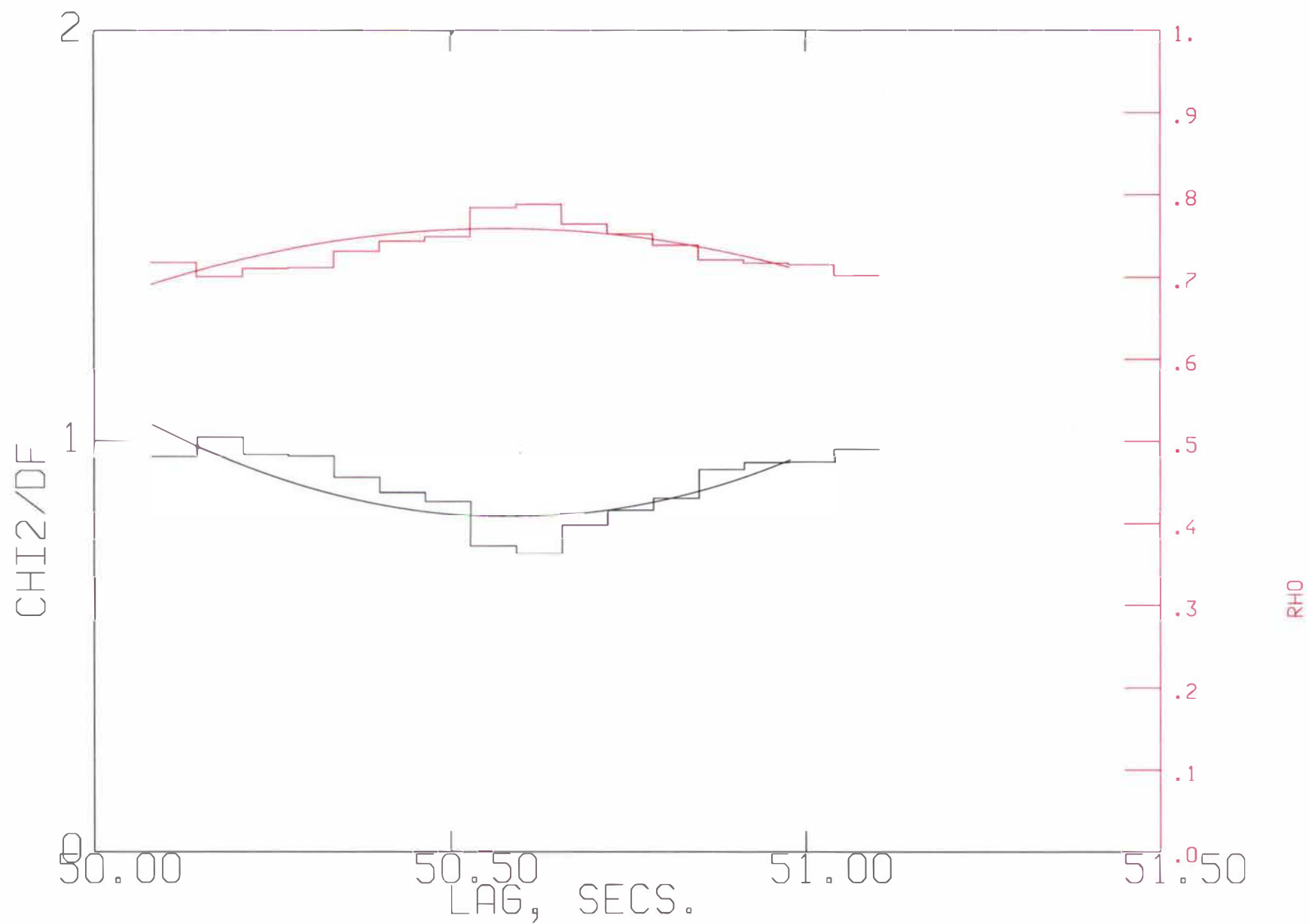


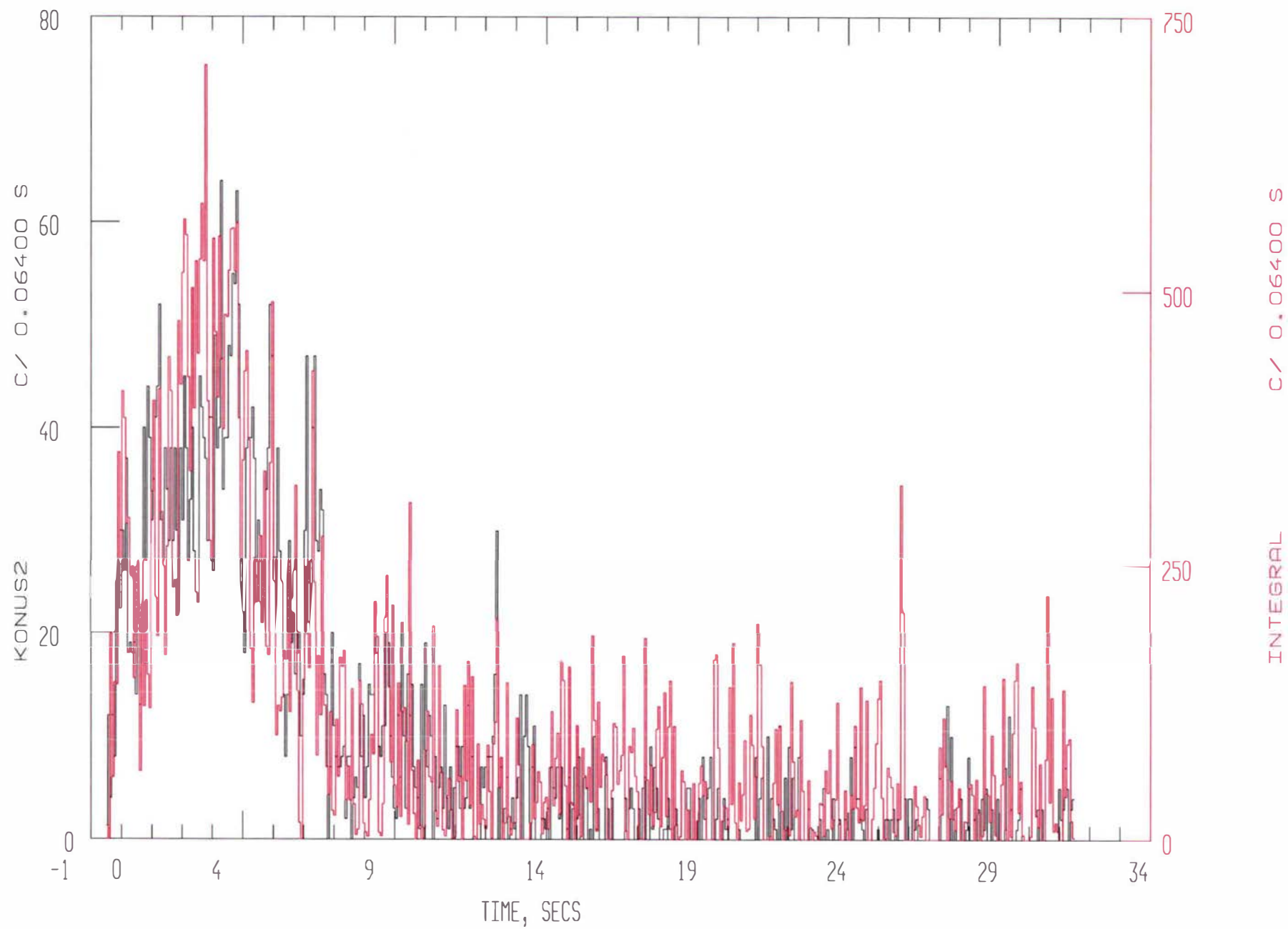
EVENT OF JUN 4, 2019 10:42

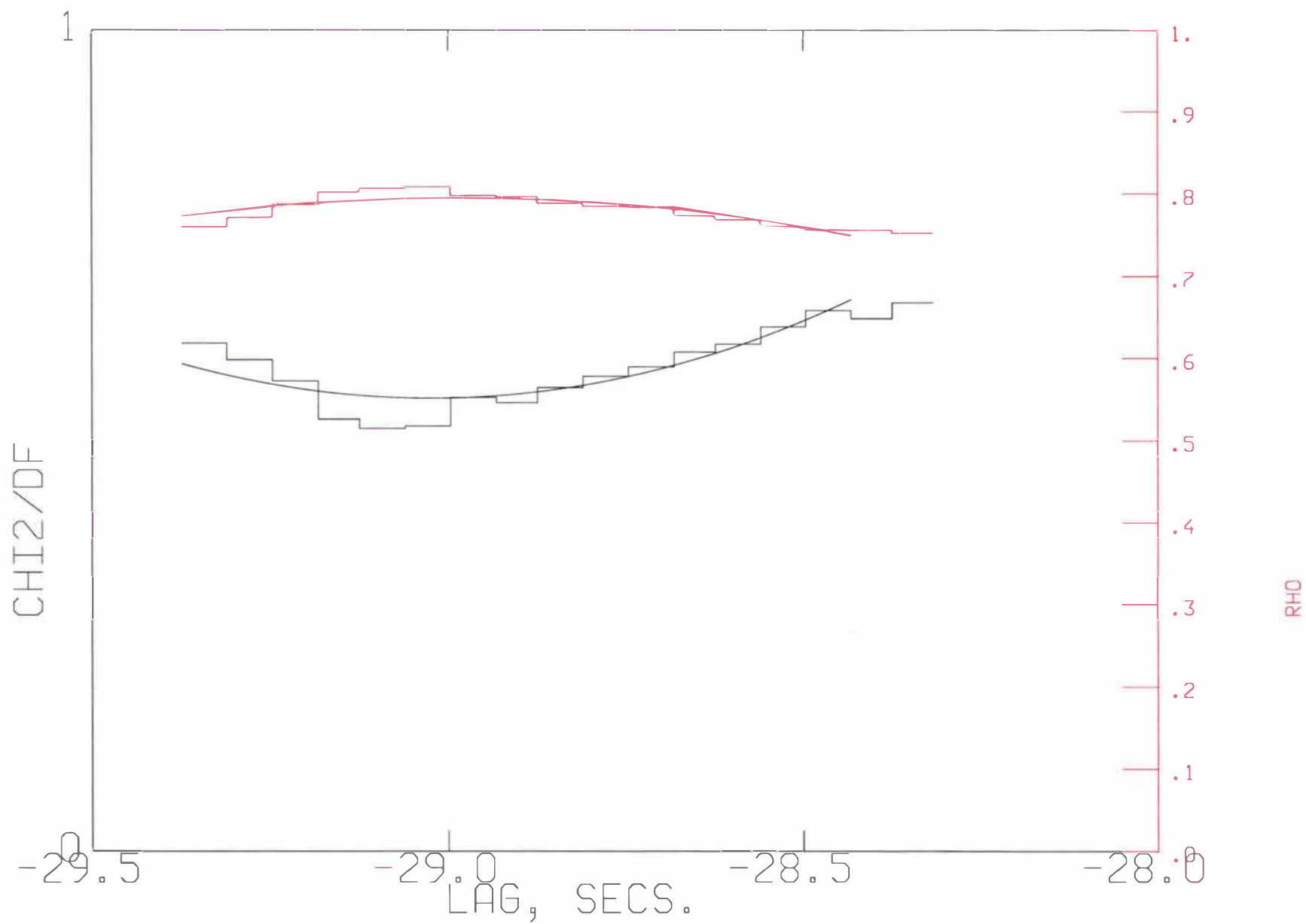
29/04/2020

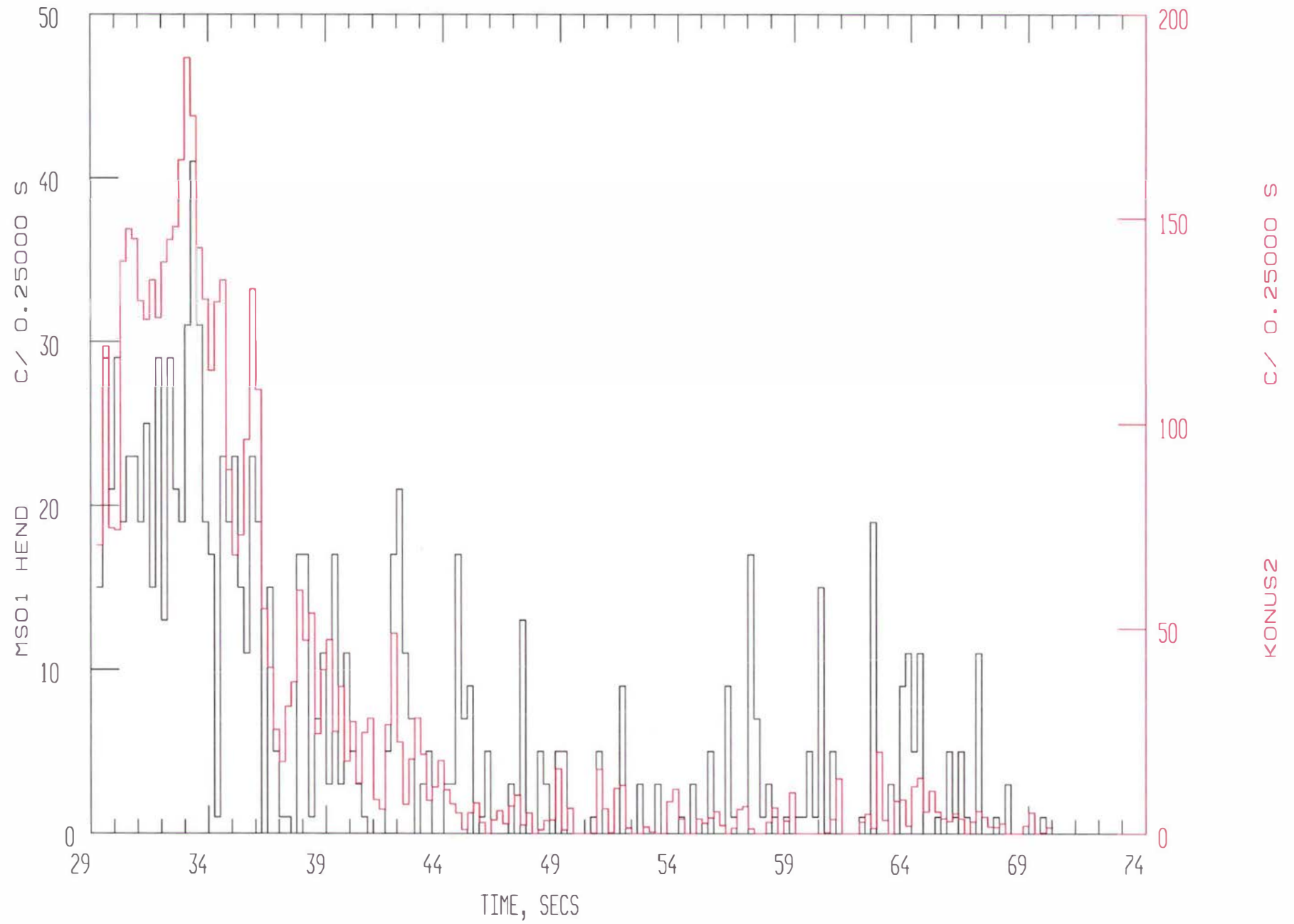
N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 FERMI 2 MO 3 KONUS2 4 INTEGRAL

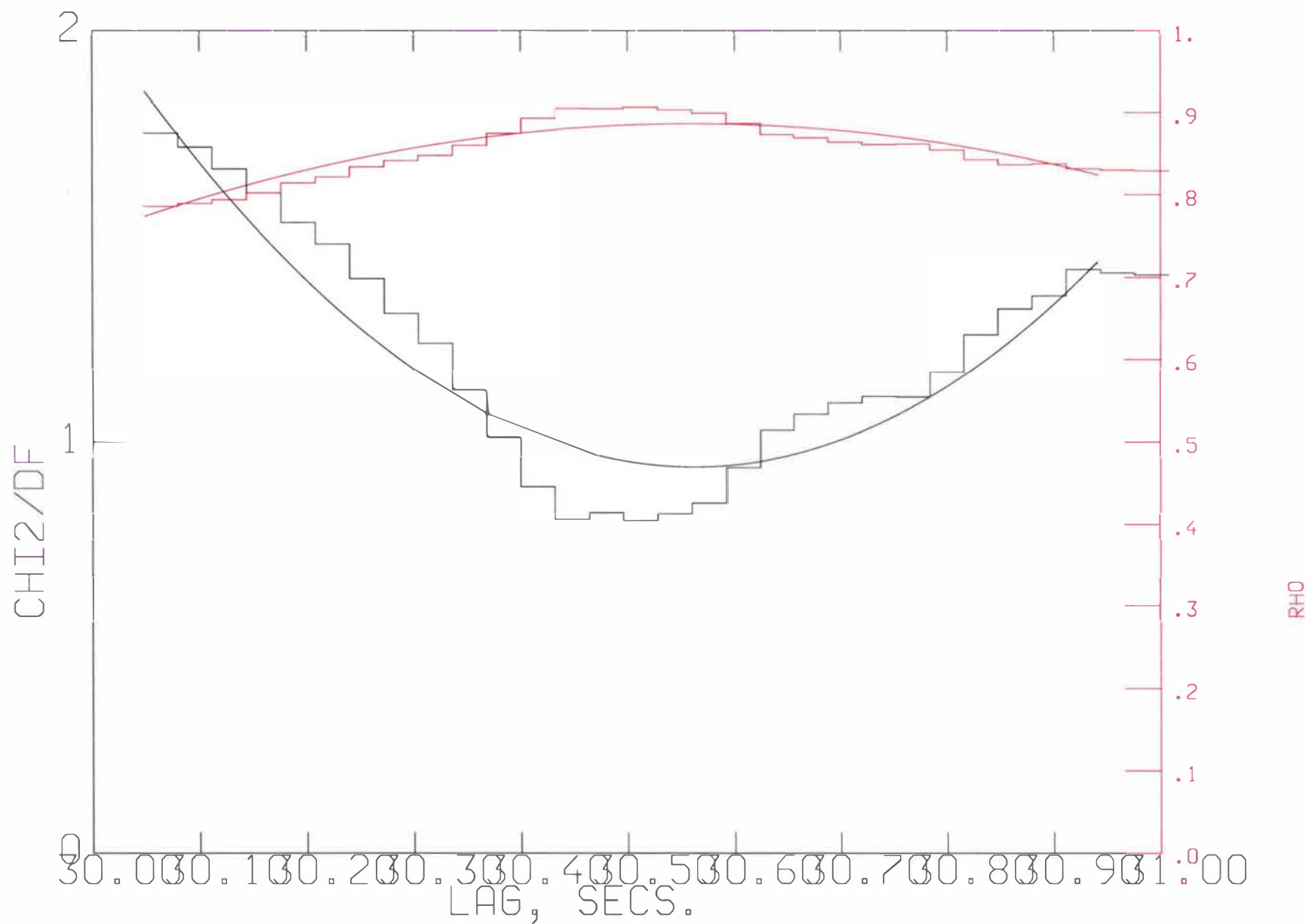










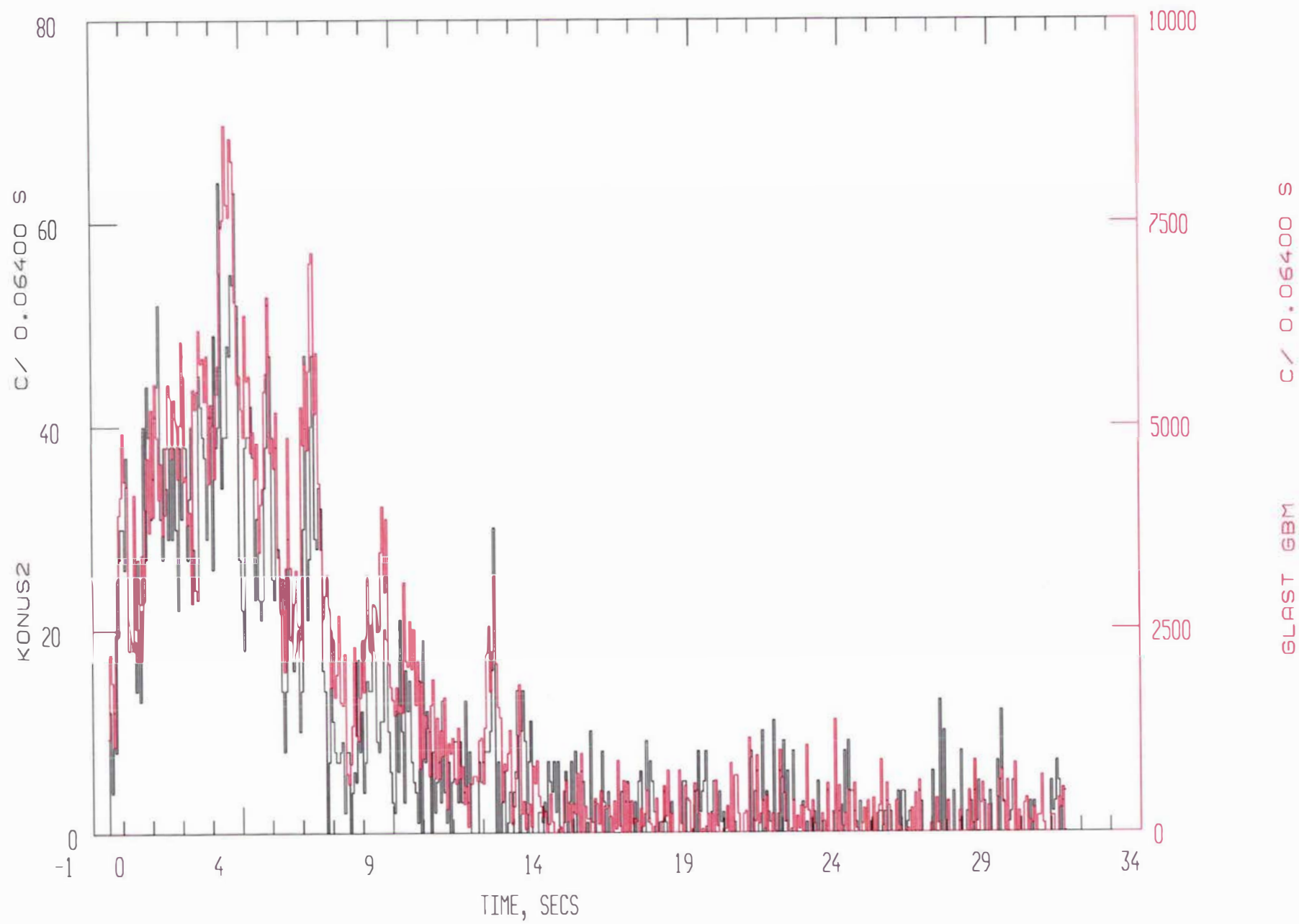


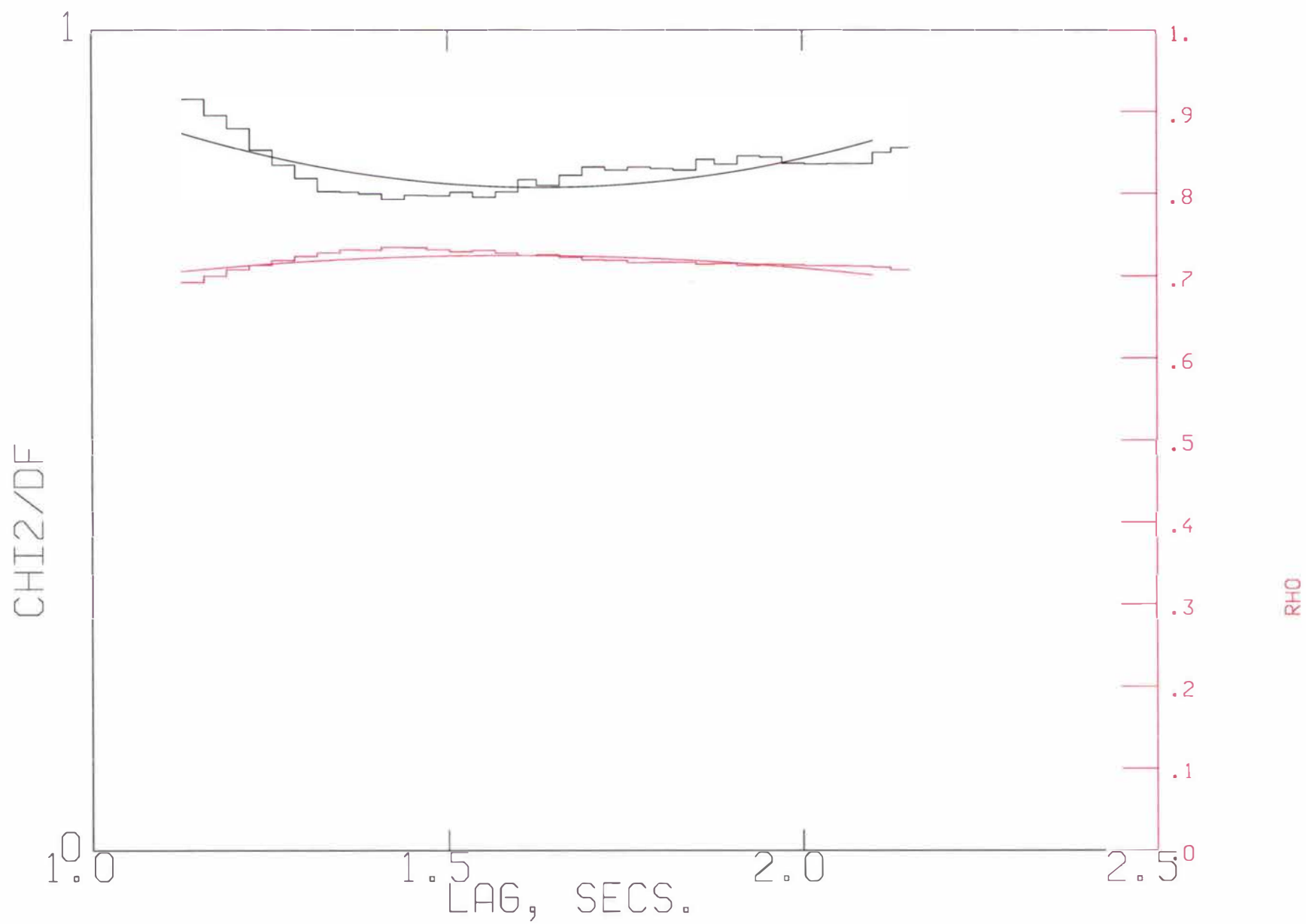
KONUS2

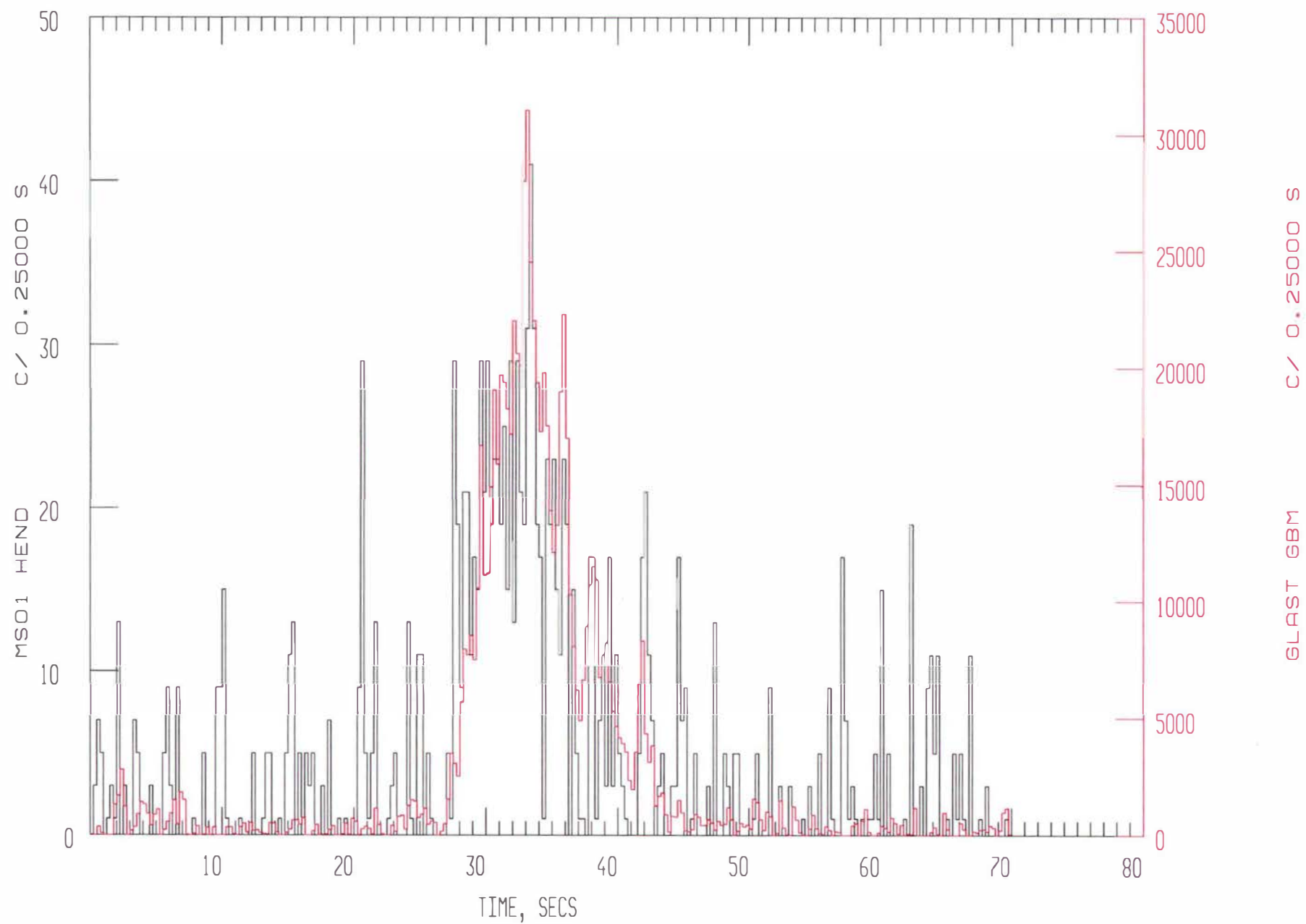
-GLAST GBM CORRELATION

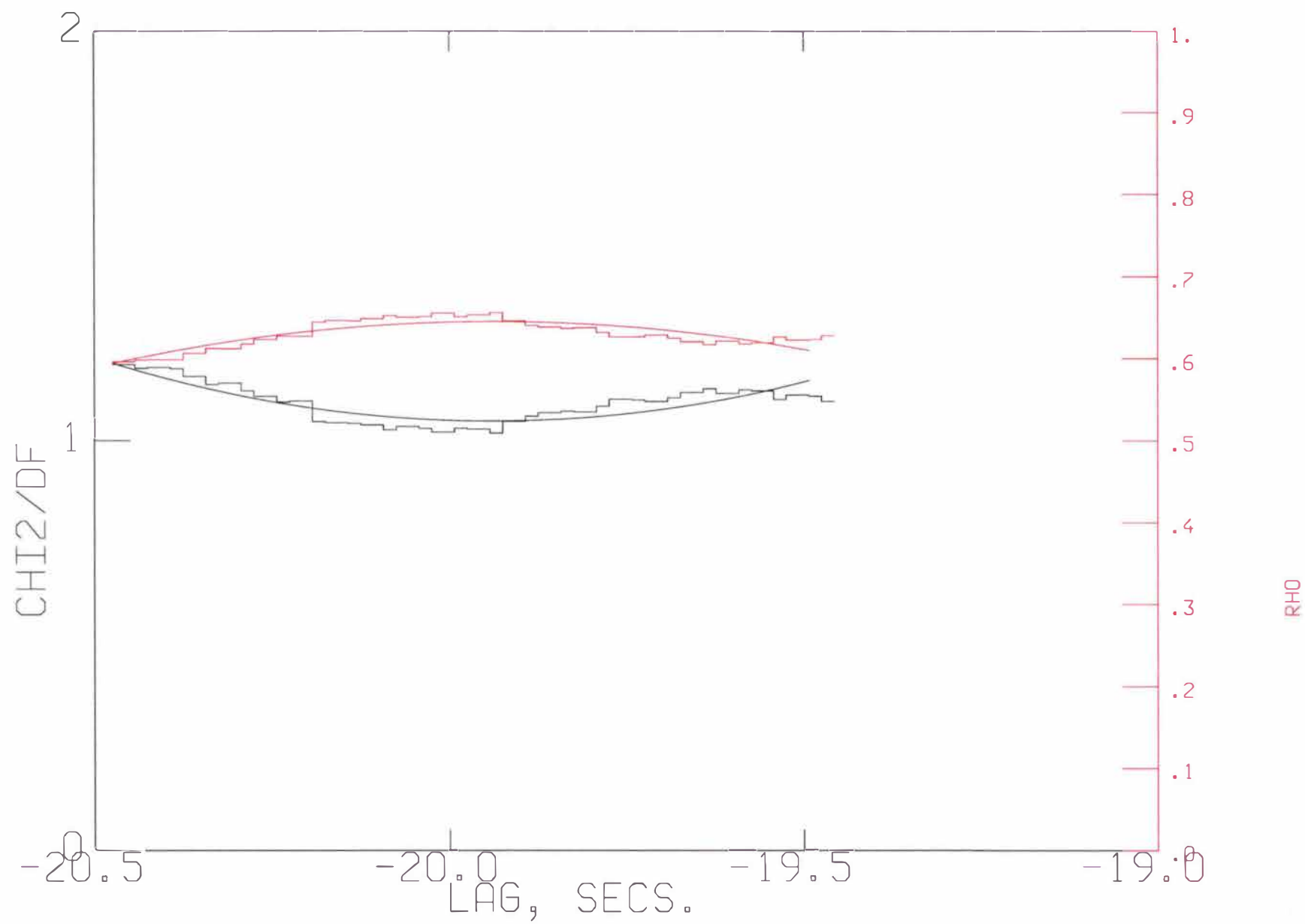
04/06/19 38557.924

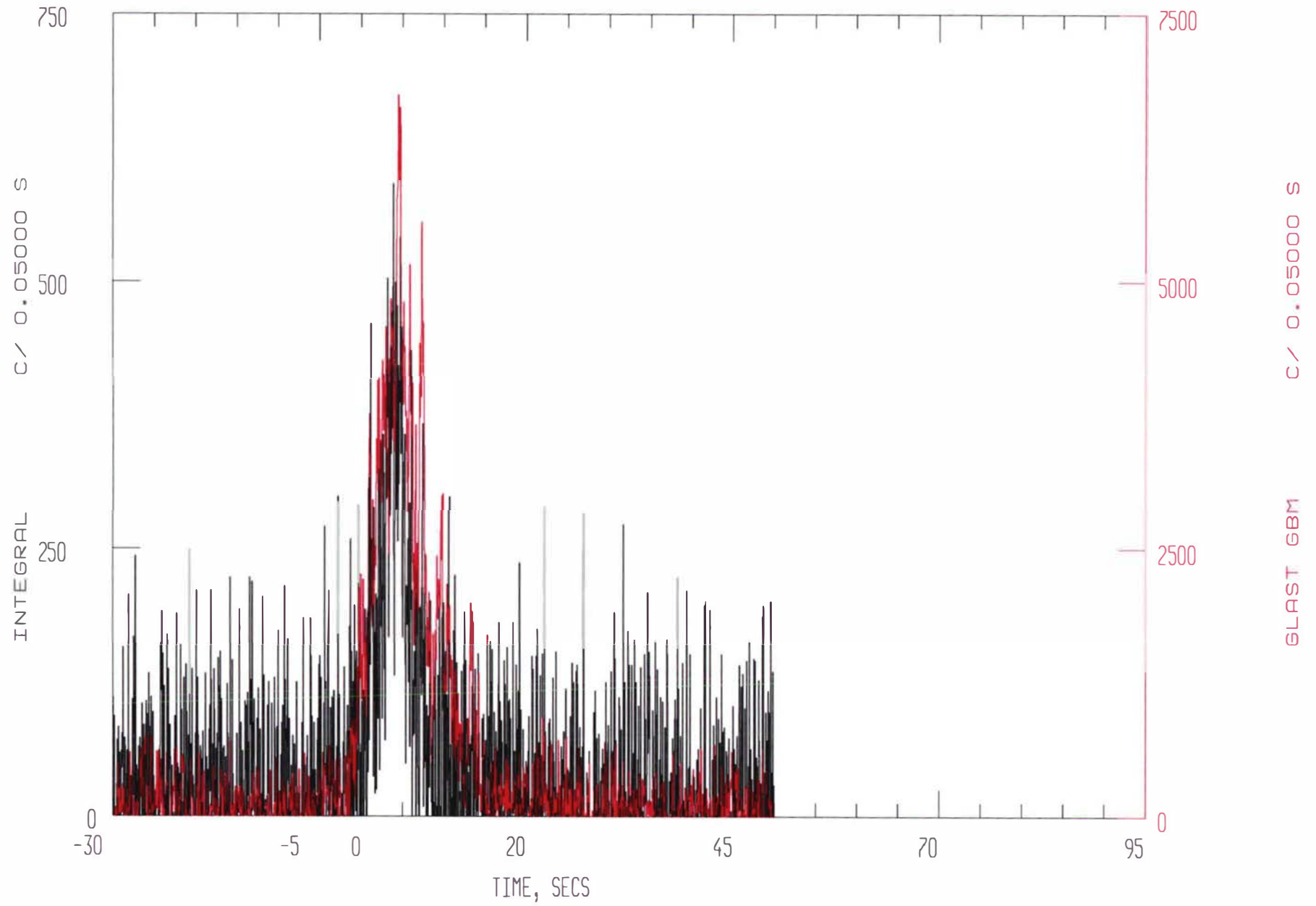
29/ 4/20











MS01 HEND

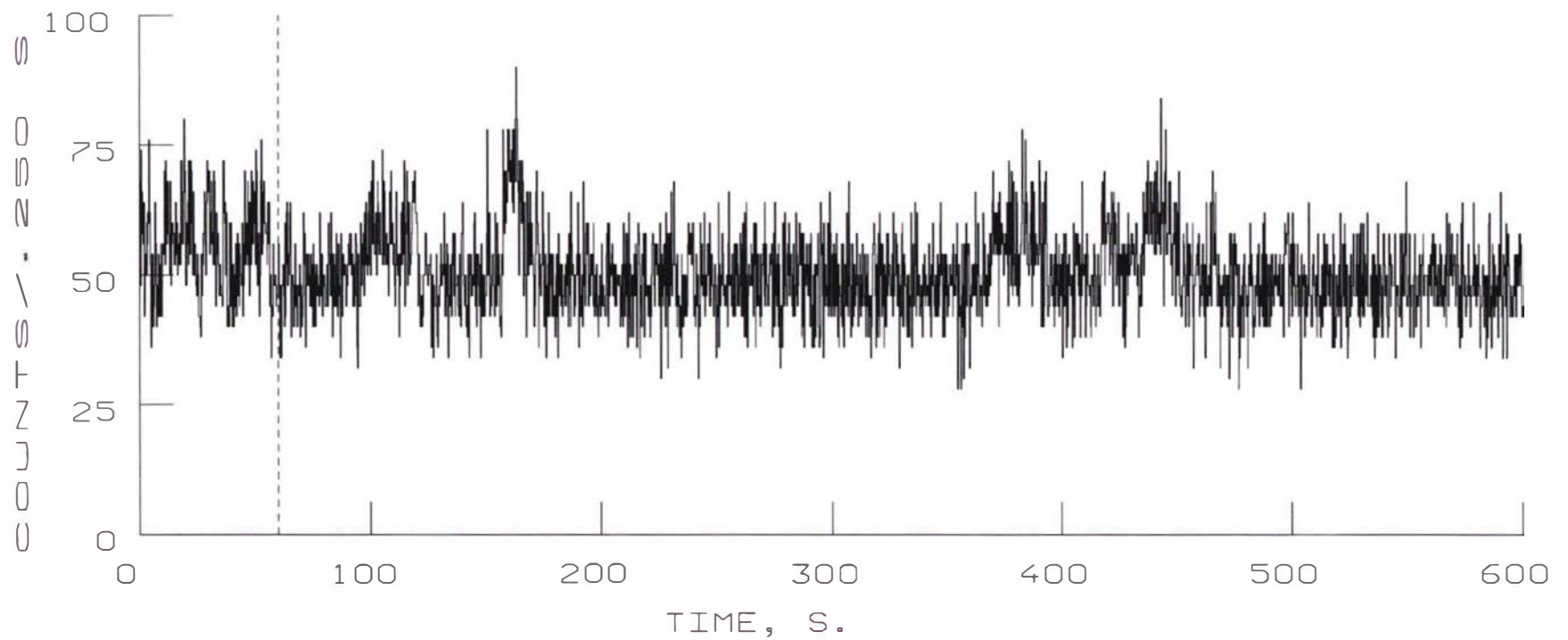
29/04/2020

04/06/2019 38487.816 s

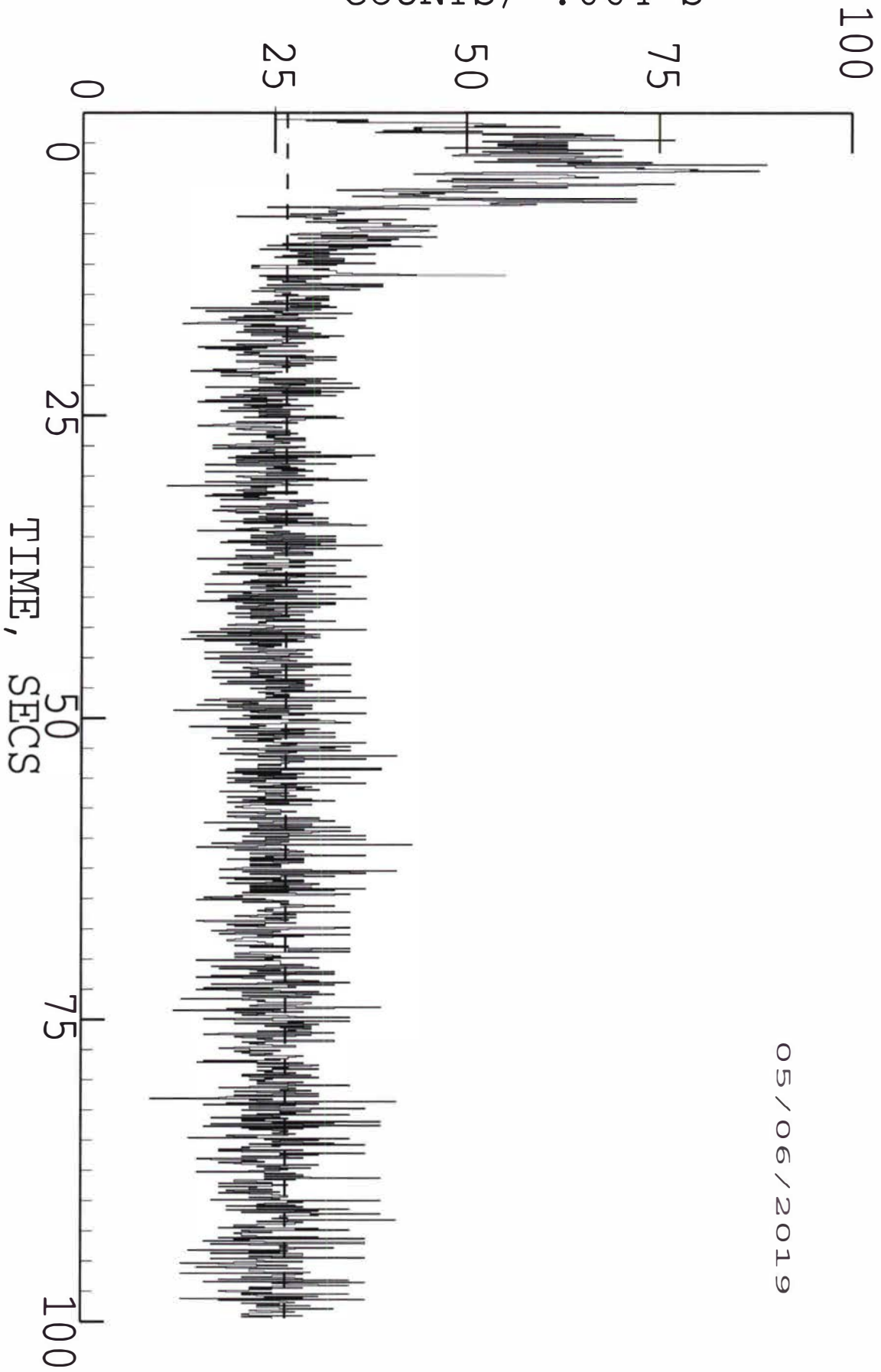
50-3000 keV

N= 10 M=80

>4.0 SIGMA FLUCTUATIONS |



KONUS 04/06/19 38557.924 10:42:37.924^A
50- 200 keV
COUNTS/ .064 S



05/06/2019

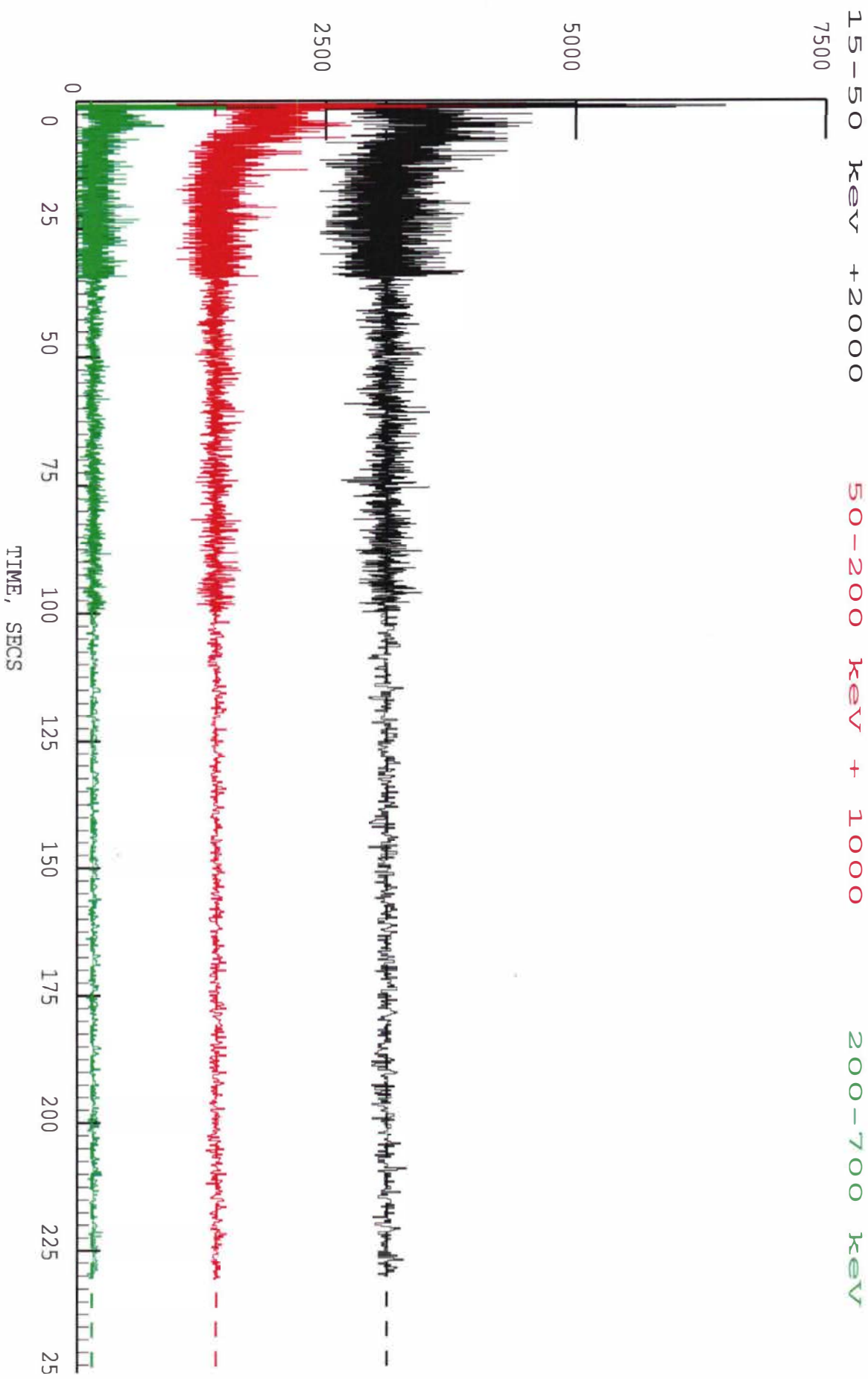
KONUS

04/06/19

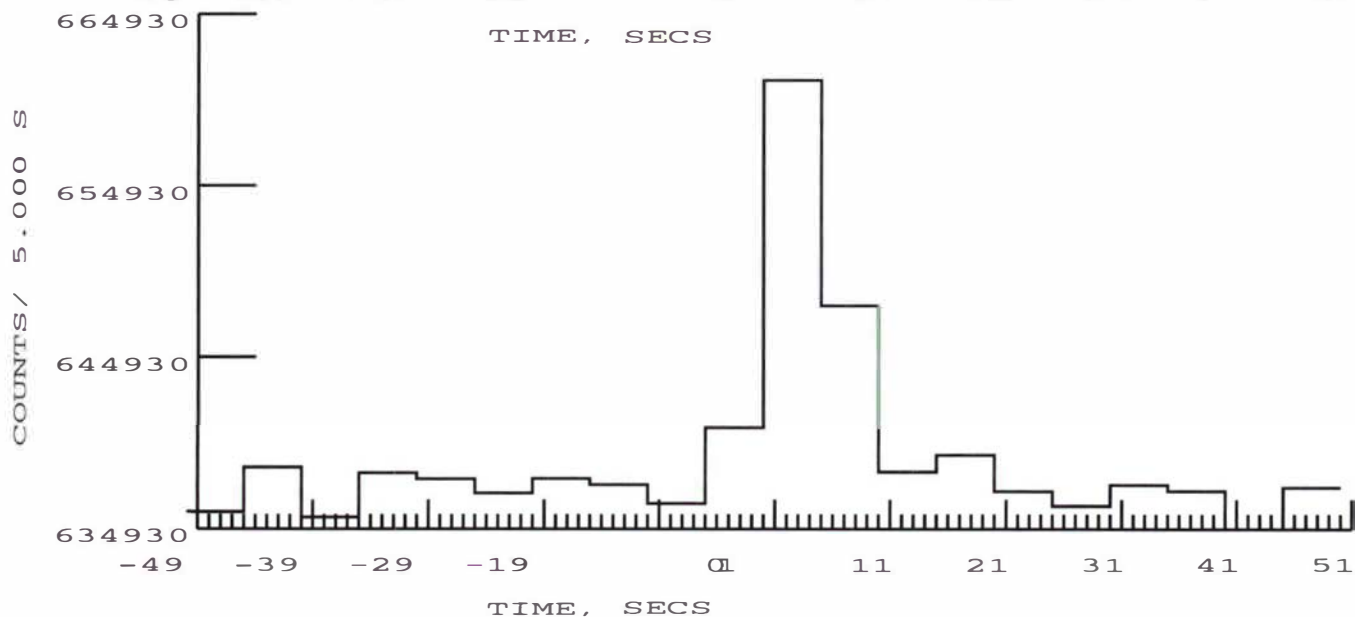
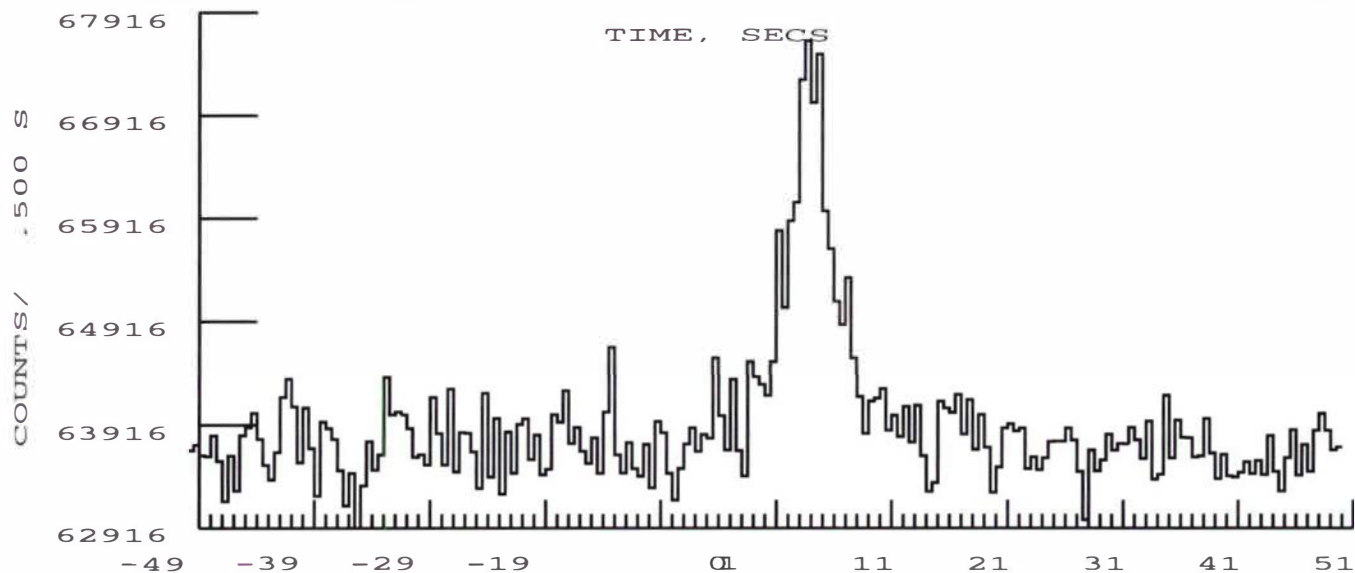
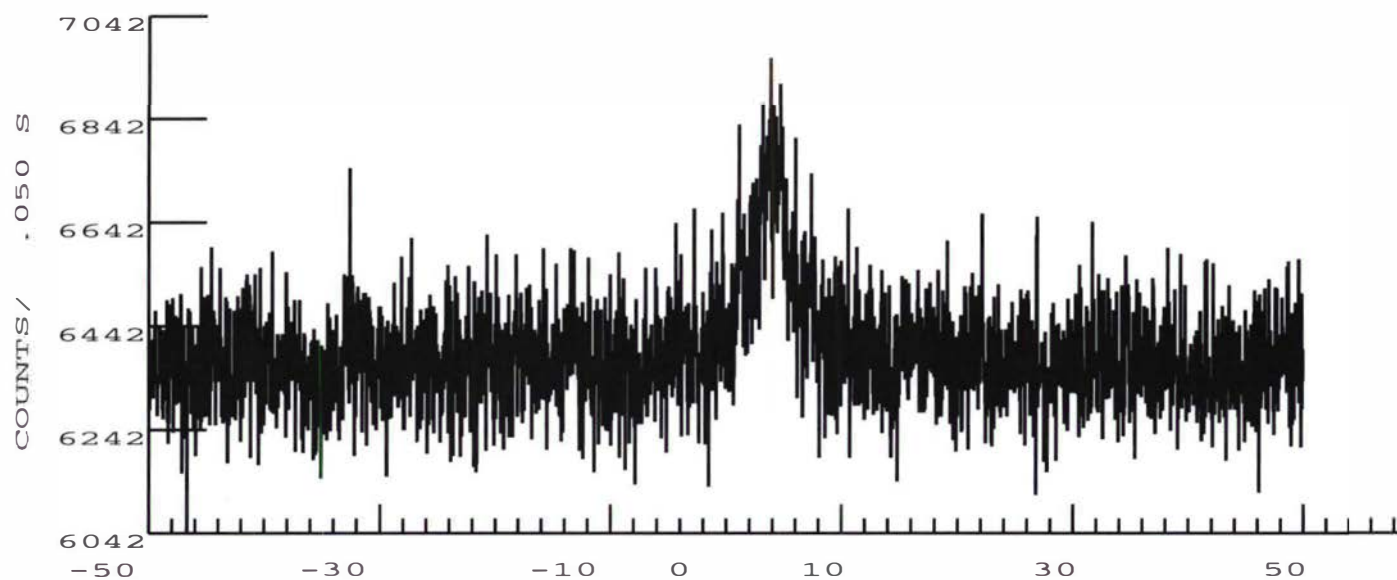
38557.000

10:42:37.000

COUNTS/SEC



05/06/2019



Subject: BAT lightcurve for trigger at 190604_1042

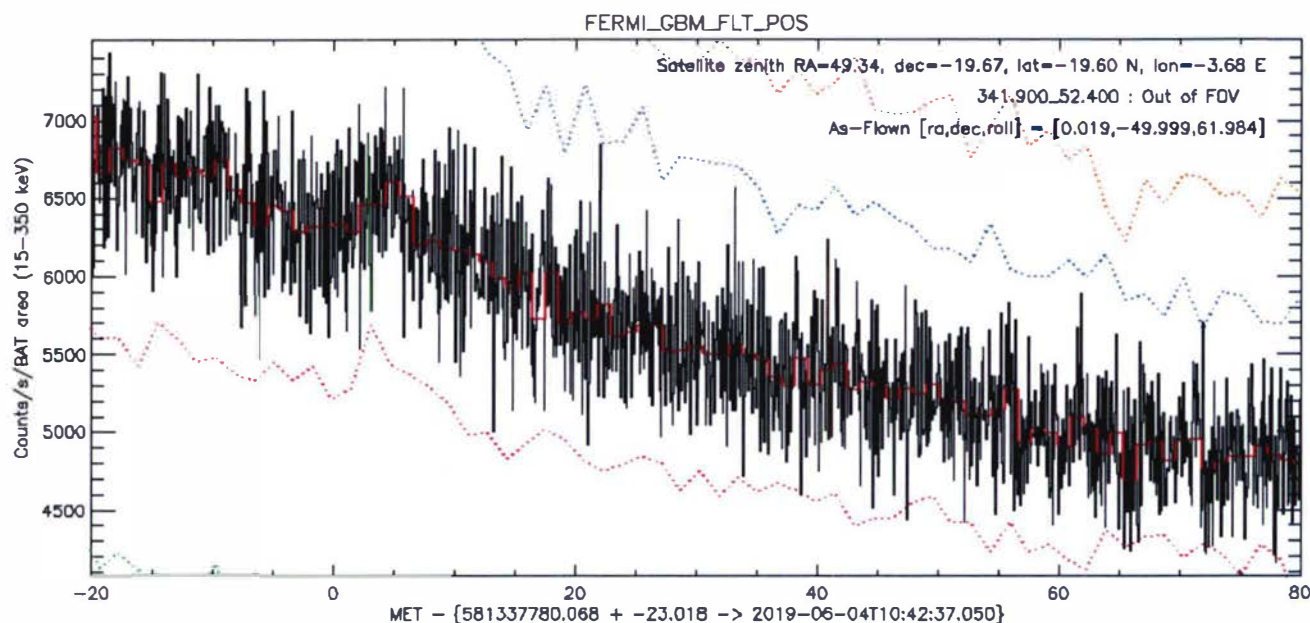
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/4/2019, 7:32 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190604_1042.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581337780.068 -s 341.900_52.400
Swift Zenith(RA,dec):      49.34, -19.67
Swift Location(lon,lat,alt): -3.68 E, -19.60 N, 550 km
Time(MET + UTCF -> UT):   581337780.068 + -23.018 -> 2019-06-04T10:42:37.050
YYMMDD_SOD:               190604_38557.050      DOY=155
Obs Sequence Number:      00074631030
Obs Target Name:          saa-cold-71-03
Obs Date and Times:       2019-06-04 10:23:38 - 10:49:35
Obs Pointing(ra,dec,roll): 0.019, -49.999, 61.98
341.900_52.400_imageloc (boresight_dist, angle): (104, -163)
341.900_52.400_exposure (cm2 cos adjusted): 0
341.900_52.400_altitude: 20 (depressed but unattenuated)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190604_1042.png	19.1 KB
/tmp/swift/190604_1042_bat64ms_ipn	87.0 KB

Subject: GRB 190604A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/6/2019, 3:15 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24758
SUBJECT: GRB 190604A: Insight-HXMT/HE detection
DATE: 19/06/06 10:14:36 GMT
FROM: QiBin Yi at IHEP, HXMT <yiqb@ihep.ac.cn>

Q. B. Yi, S. Xiao, Q. Luo, C. Cai, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

At 2019-06-04T10:42:38.00 (T0), Insight-HXMT/HE detected
GRB 190604A (trigger ID: HEB190604446) in a routine search of the data,
which was also triggered by Fermi/GBM (GCN #24739).

The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 6.37 s measured from T0+0.34 s.
The 1-ms peak rate, measured from T0+2.82 s, is 1963 cnts/sec.
The total counts from this burst is 6908 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB190604446_lc.jpg

All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).
More information about it could be found at:
<http://www.hxmt.org>.

Subject: GRB 190604A: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/5/2019, 9:00 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24753
SUBJECT: GRB 190604A: AstroSat CZTI detection
DATE: 19/06/05 15:59:32 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

P. Ghumatkar, V. Sharma, D. Bhattacharya, T. Khanam and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190604A, which was also detected by Fermi GBM (GCN #24739), BALROG localization (Biltzinger B. et al., GCN #24740) and Global MASTER-Net (Lipunov V. et al., GCN #24741).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 10:42:41.5 UT. The measured peak count rate associated with the burst is 874 cts/s above the background in the combined data of four quadrants, with a total of 5755 cts. The local mean background count rate was 508 cts/s. Using cumulative rates, we measure a T90 of 13.55 s. In preliminary analysis, we find that 460 Compton events are associated with this event.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

Subject: GCN/SWIFT_BAT_LIGHTCURVE**From:** Bacodine <vxw@capella2.gsfc.nasa.gov>**Date:** 6/4/2019, 8:02 AM**To:** khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
NOTICE_DATE: Tue 04 Jun 19 15:01:40 UT
NOTICE_TYPE: Swift-BAT GRB Lightcurve
TRIGGER_NUM: 906654, Seg_Num: 0
GRB_RA: 297.587d {+19h 50m 21s} (J2000),
 297.897d {+19h 51m 35s} (current),
 296.785d {+19h 47m 08s} (1950)
GRB_DEC: -32.932d {-32d 55' 56"} (J2000),
 -32.882d {-32d 52' 55"} (current),
 -33.060d {-33d 03' 34"} (1950)
GRB_DATE: 18638 TJD; 155 DOY; 19/06/04
GRB_TIME: 53835.79 SOD {14:57:15.79} UT
TRIGGER_INDEX: 146
GRB_PHI: 176.14 [deg]
GRB_THETA: 33.47 [deg]
DELTA_TIME: 39.00 [sec]
TRIGGER_DUR: 1.024 [sec]
SOLN_STATUS: 0x3
RATE_SIGNIF: 15.00 [sigma]
IMAGE_SIGNIF: 9.22 [sigma]
LC_URL: sw00906654000msb.lc
SUN_POSTN: 72.35d {+04h 49m 23s} +22.44d {+22d 26' 39"}
SUN_DIST: 138.66 [deg] Sun_angle= 9.0 [hr] (West of Sun)
MOON_POSTN: 89.28d {+05h 57m 07s} +21.70d {+21d 41' 55"}
MOON_DIST: 152.34 [deg]
MOON_ILLUM: 2 [%]
GAL_COORDS: 7.47,-25.96 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 293.39,-11.71 [deg] ecliptic lon,lat of the burst (or transient)
COMMENTS: SWIFT-BAT GRB Lightcurve.
COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 174.48,14.68 [deg].

220 s

 $1.77 \times 10^{-5} \text{ erg cm}^{-2}$ $7.3 \text{ phot/cm}^2 \text{ s}$

B

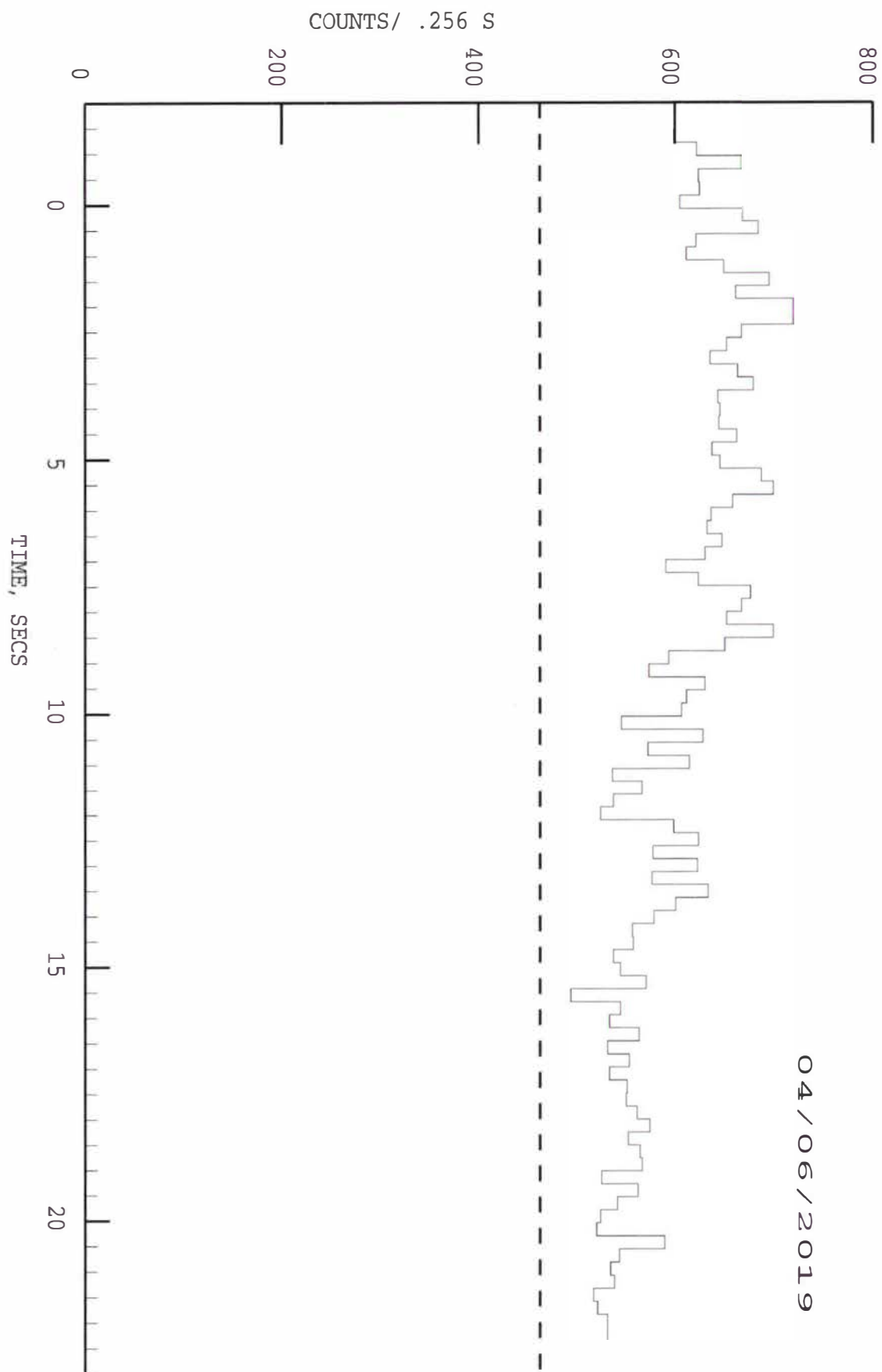
BAT

04/06/19

53835.797

14:57:15.797

25- 100 keV



Subject: BAT lightcurve for trigger at 190604_1457

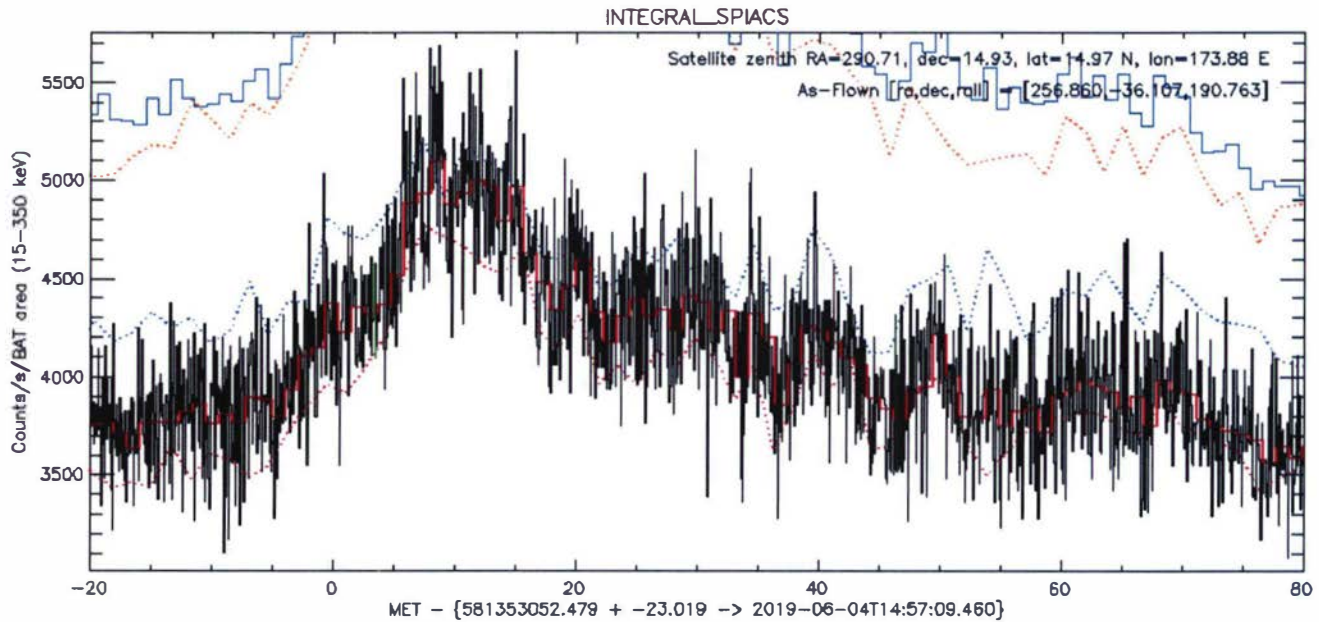
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/4/2019, 10:16 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190604_1457.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581353052.479
Swift Zenith(RA,dec):      290.71, 14.93
Swift Location(lon,lat,alt): 173.88 E, 14.97 N, 558 km
Time(MET + UTCF -> UT):    581353052.479 + -23.019 -> 2019-06-04T14:57:09.460
YYMMDD_SOD:               190604_53829.460      DOY=155
Obs Sequence Number:      00011416003
Obs Target Name:          ASASSN-19mo
Obs Date and Times:       2019-06-04 14:43:38 - 14:57:32
Obs Pointing(ra,dec,roll): 256.860, -36.107, 190.76
```

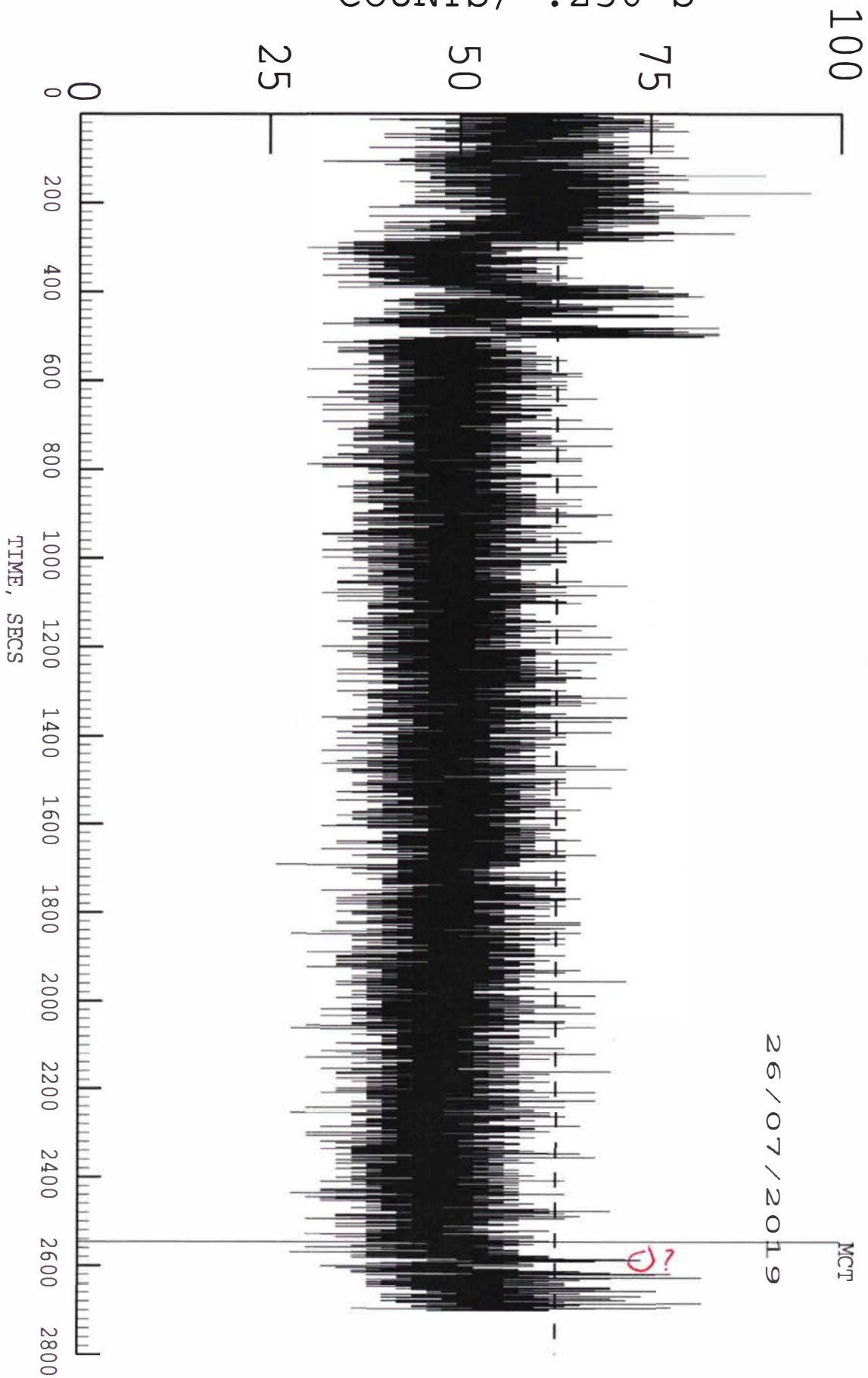
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

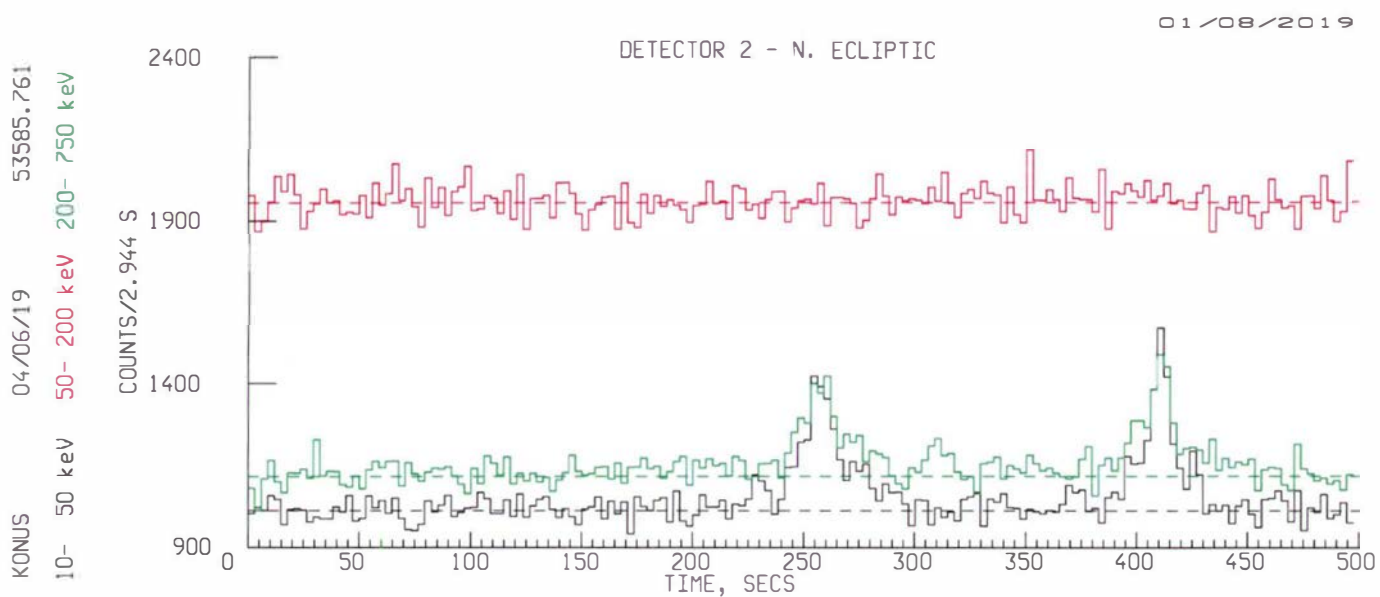
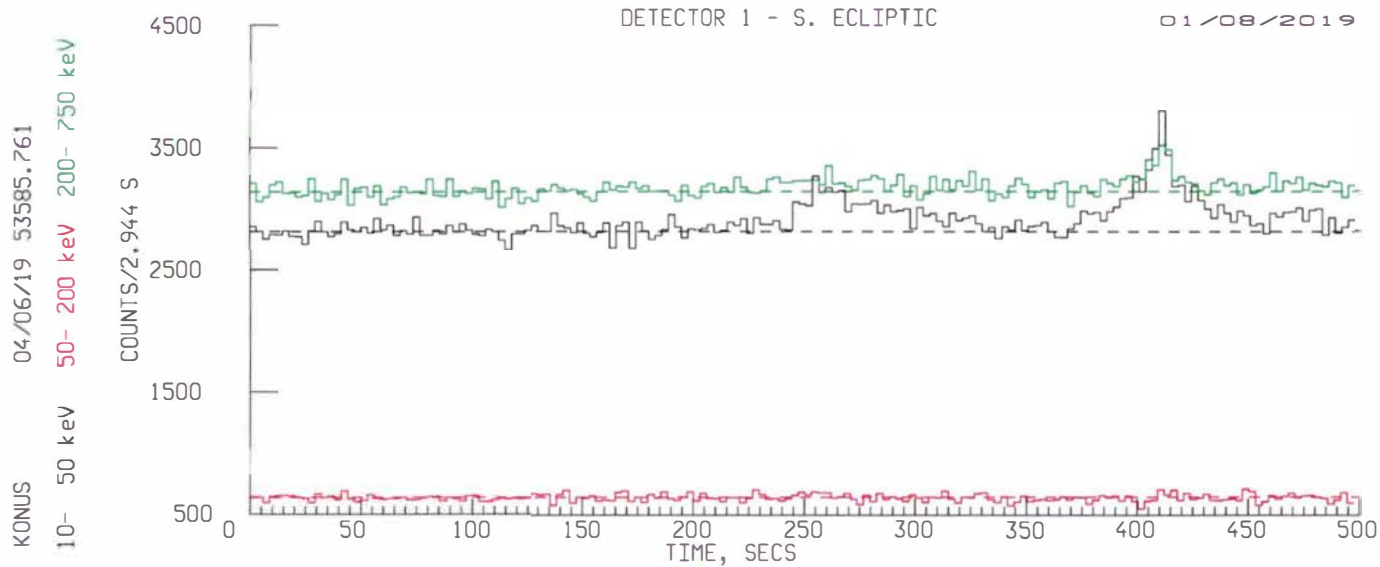
—Attachments:—

/tmp/swift/190604_1457_bat64ms_ipn	87.0 KB
/tmp/swift/190604_1457.png	21.0 KB

ODYSSEY 04/06/19 52467.577 14:34:27.577^B
50-3000 keV

COUNTS/ .250 S





B

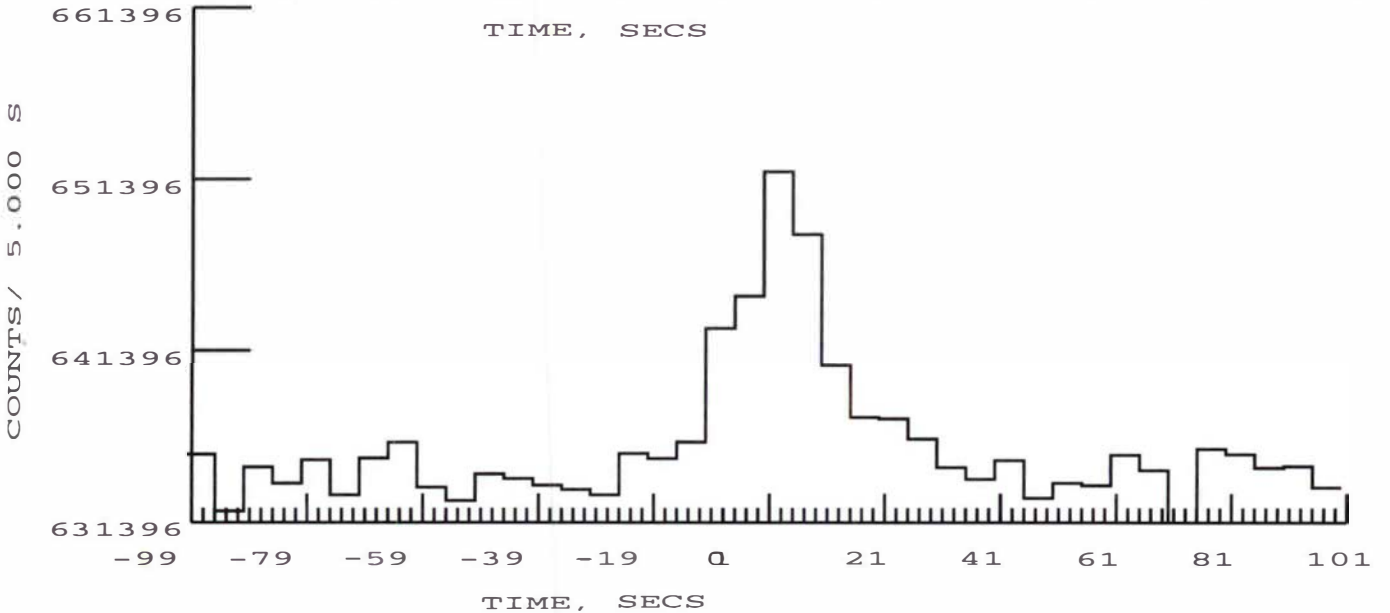
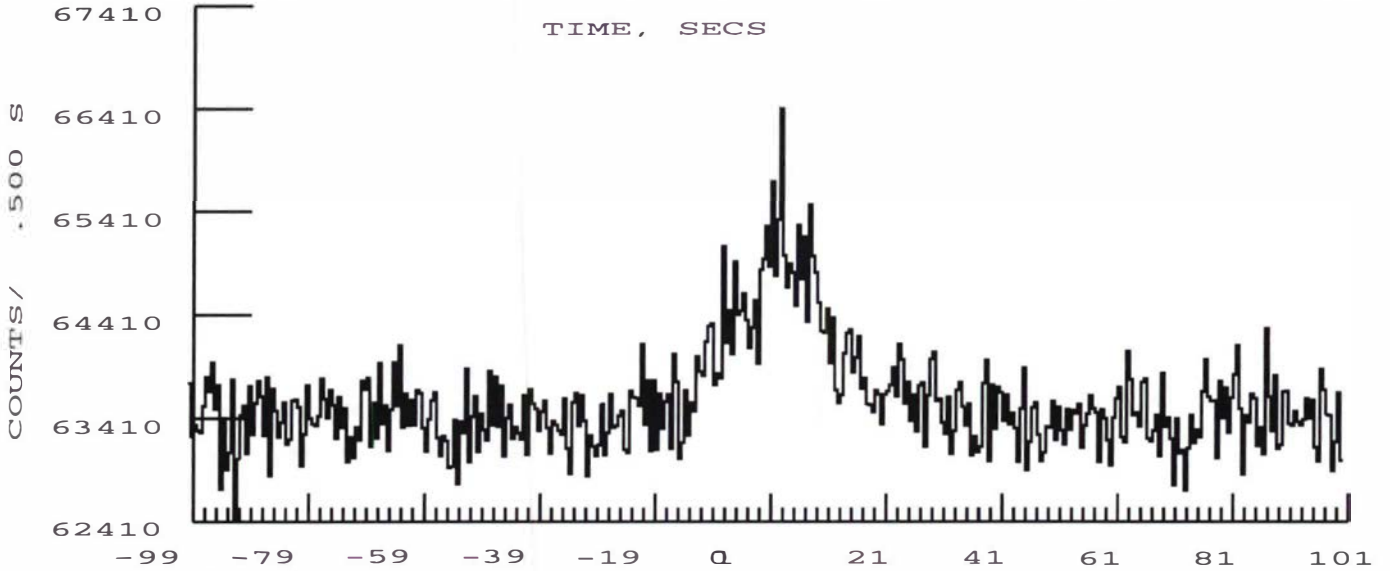
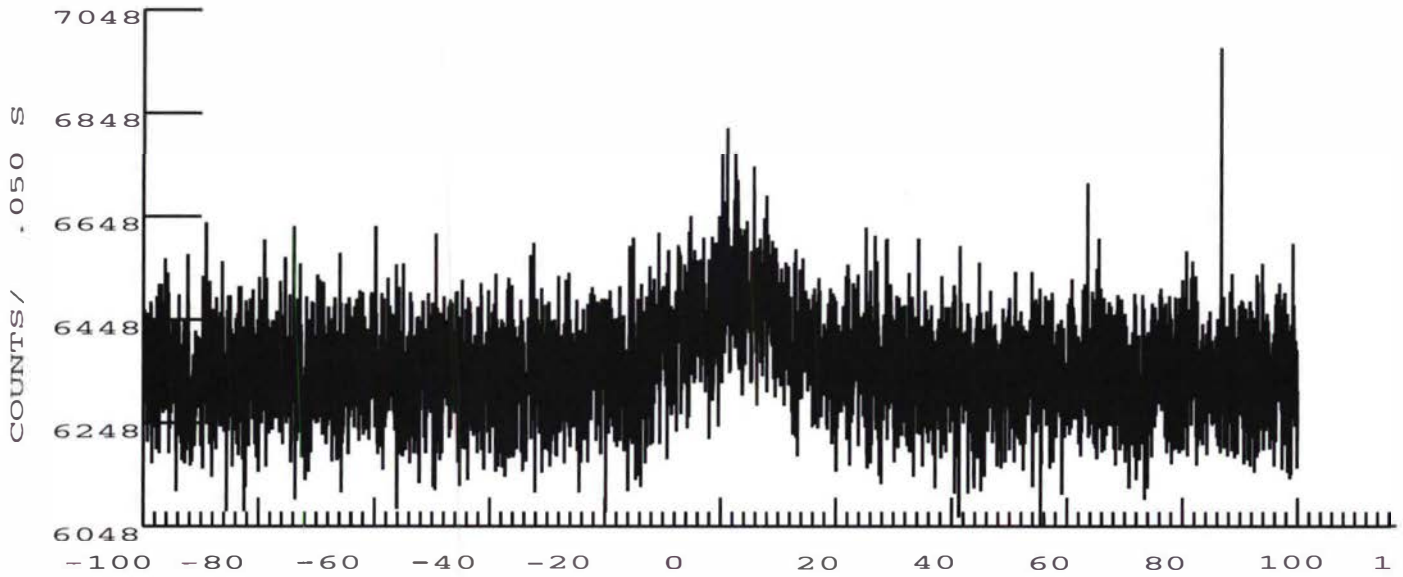
INTEGRAL

04/06/19

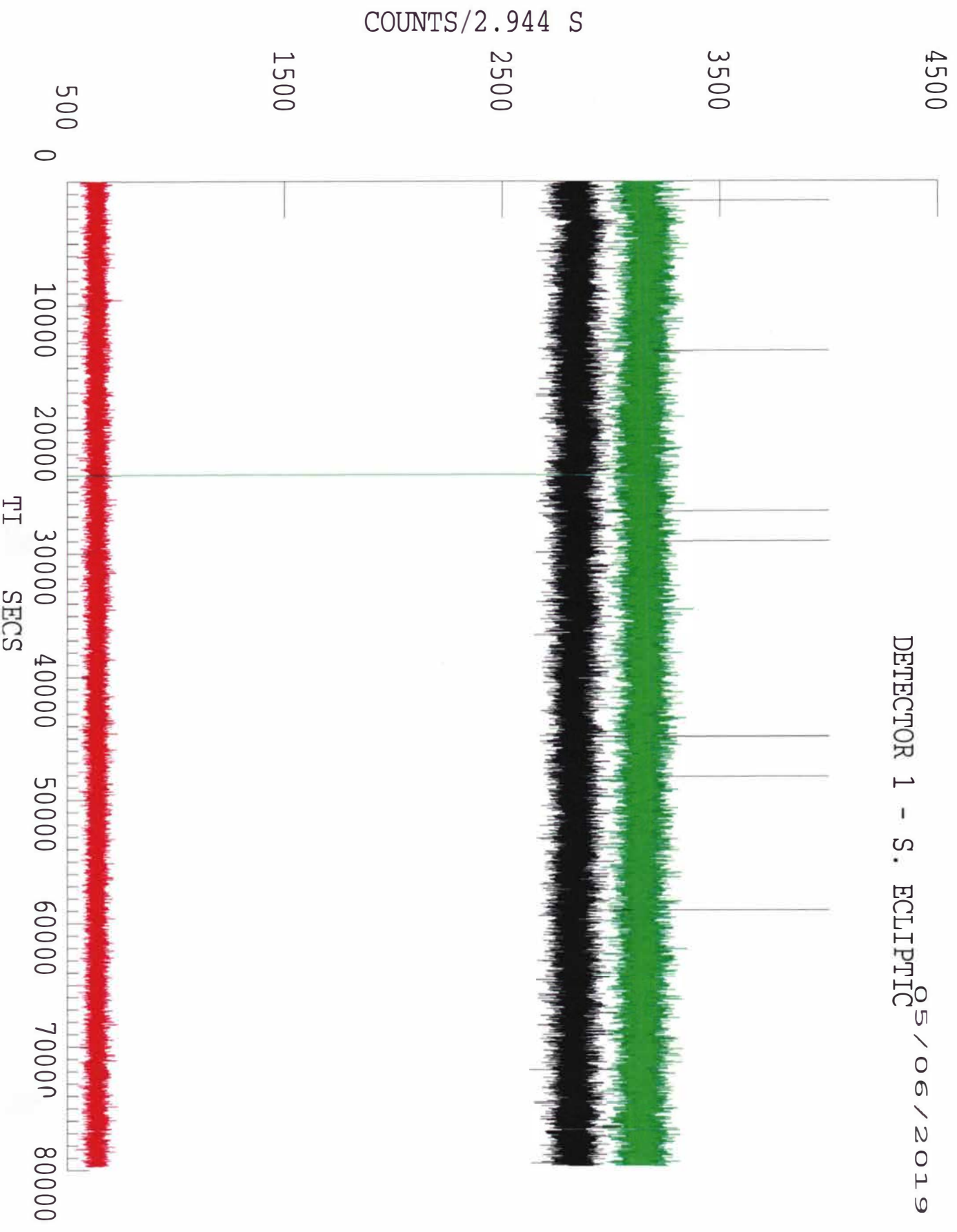
53835.000

14:57:15.0

11/07/19



10- 50 keV 50- 200 keV 200- 750 keV



v01

17.246

05/06/2019

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2400

1900

1400

900

0

10000

20000

30000

40000

50000

60000

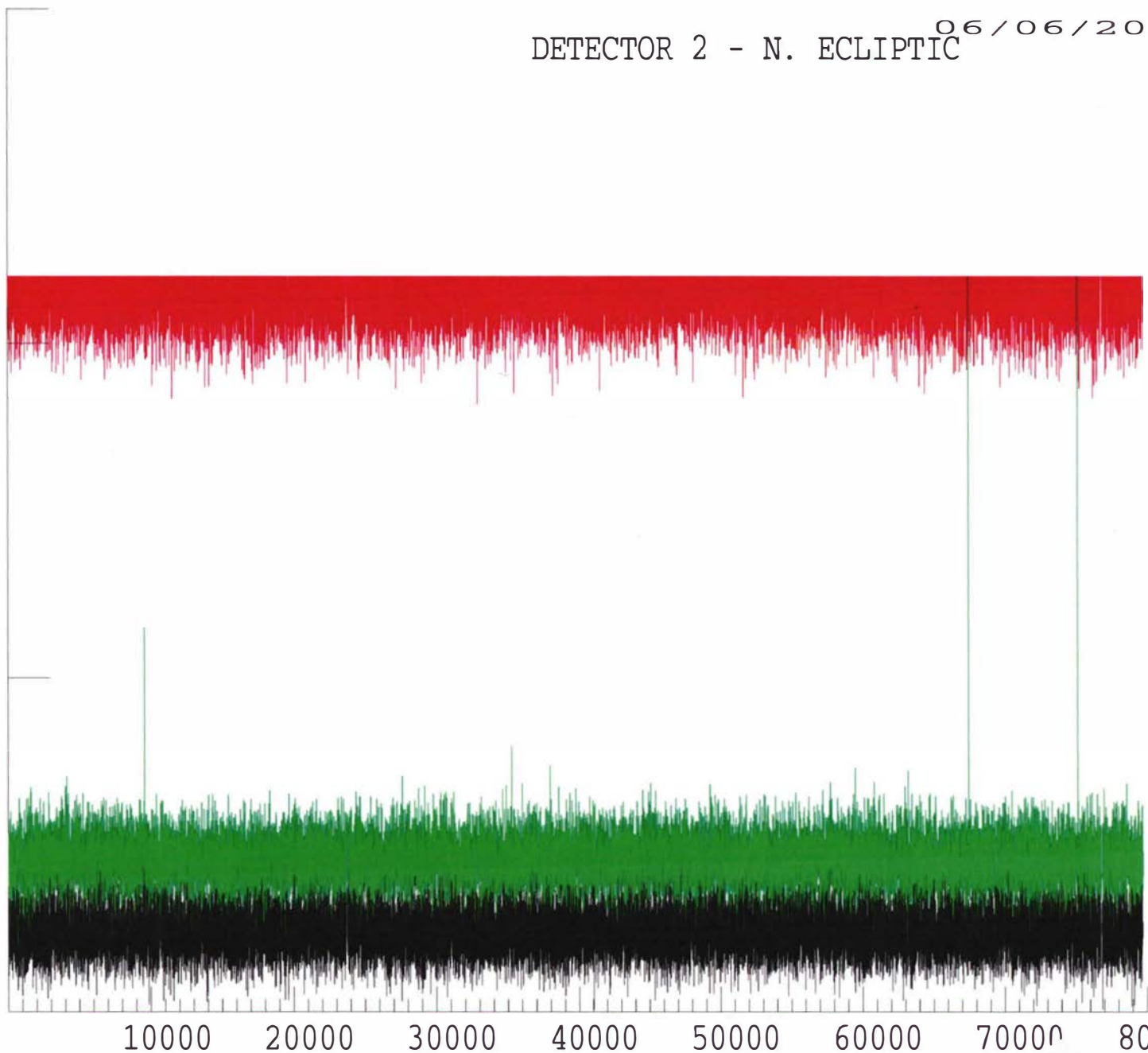
70000

80000

TI , SECS

DETECTOR 2 - N. ECLIPTIC

06/06/2019



Subject: GRB 190605B: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/6/2019, 3:24 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24760
SUBJECT: GRB 190605B: Insight-HXMT/HE detection
DATE: 19/06/06 10:22:20 GMT
FROM: QiBin Yi at IHEP, HXMT <yiqb@ihep.ac.cn>

Q. B. Yi, S. Xiao, Q. Luo, C. Cai, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

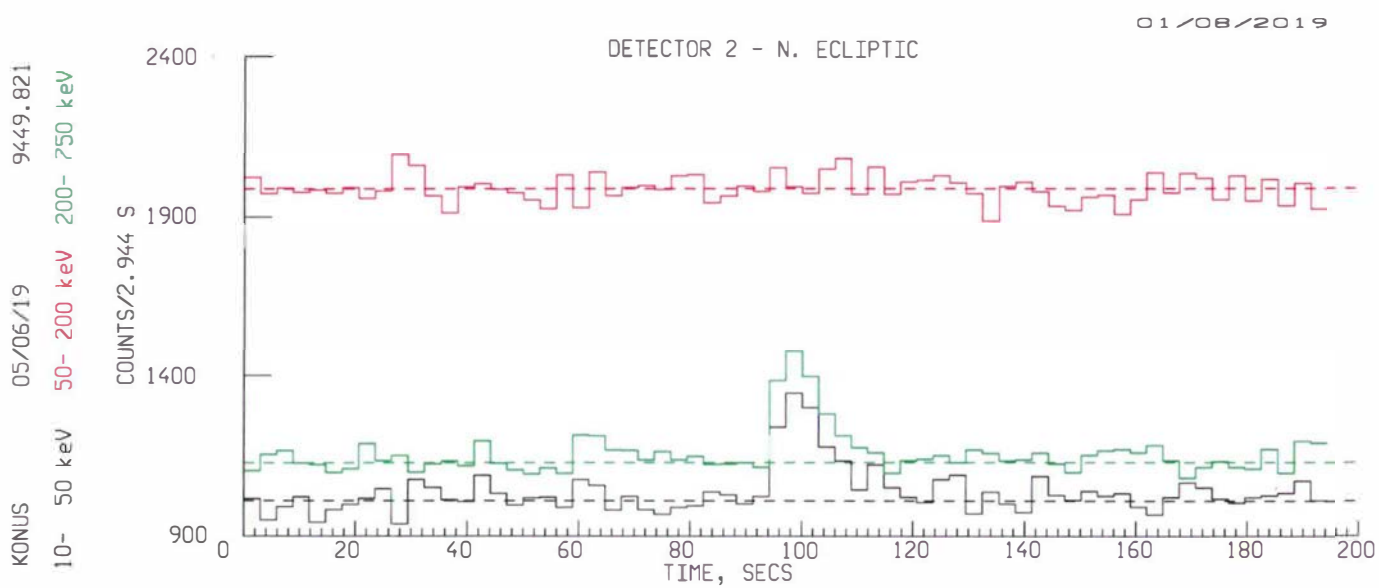
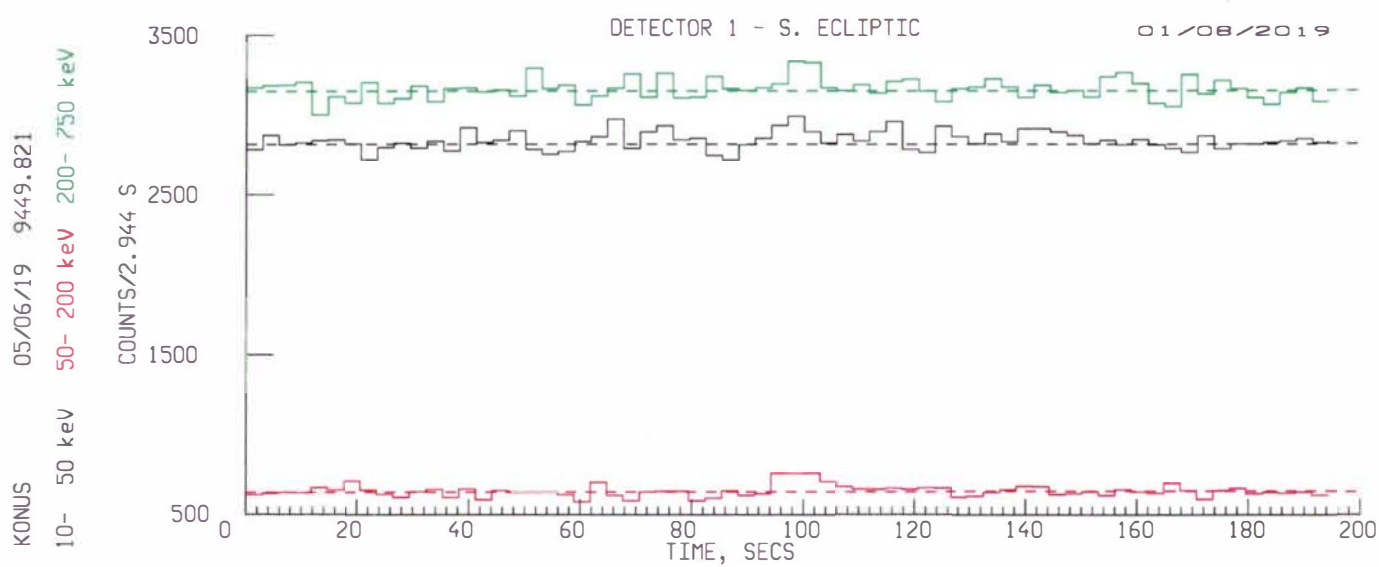
At 2019-06-05T02:39:08.00 (T0), Insight-HXMT/HE detected
GRB 190605B (trigger ID: HEB190605110) in a routine search of the data,
which was also triggered by INTEGRAL/SPI-ACS.

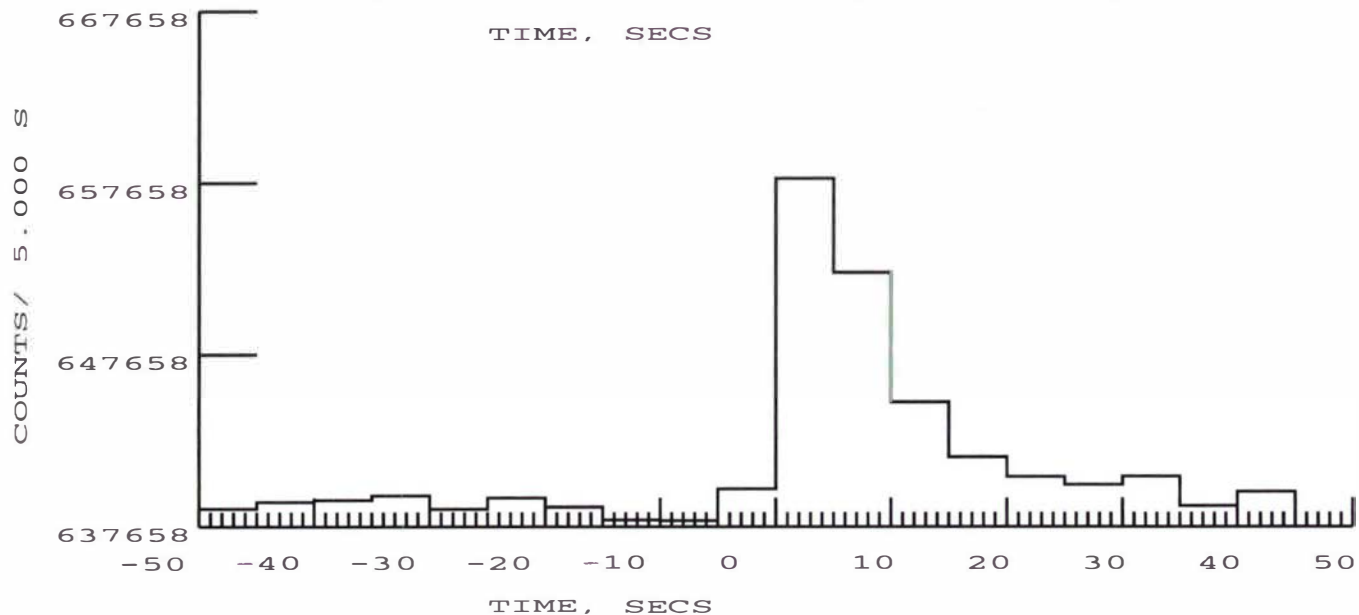
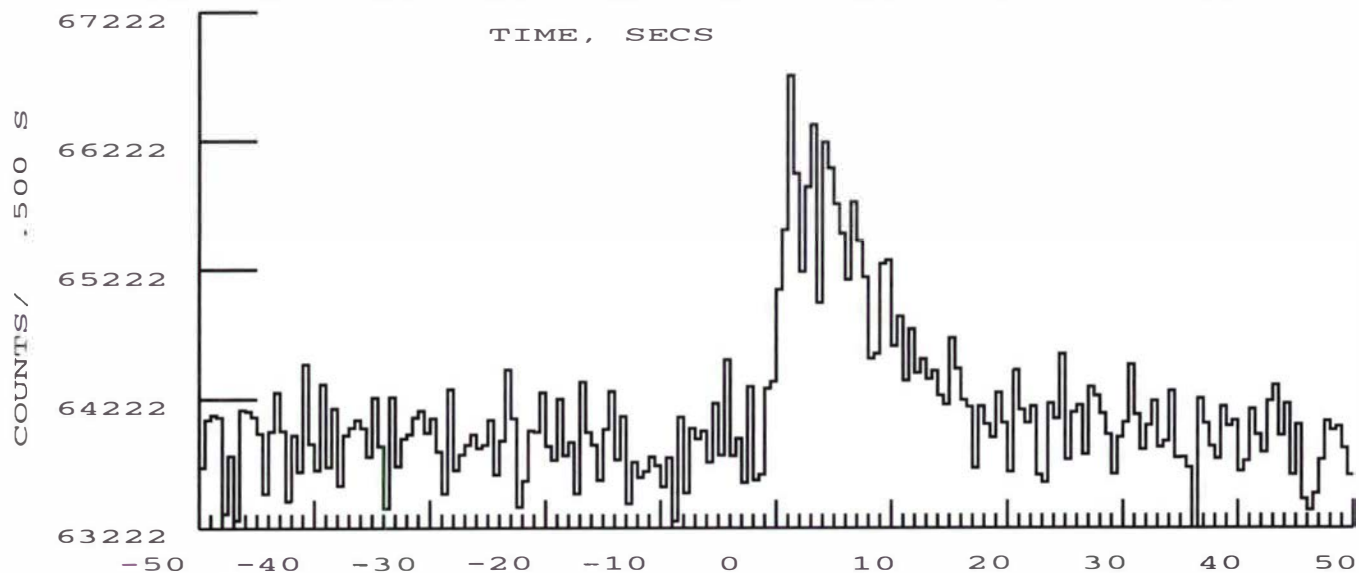
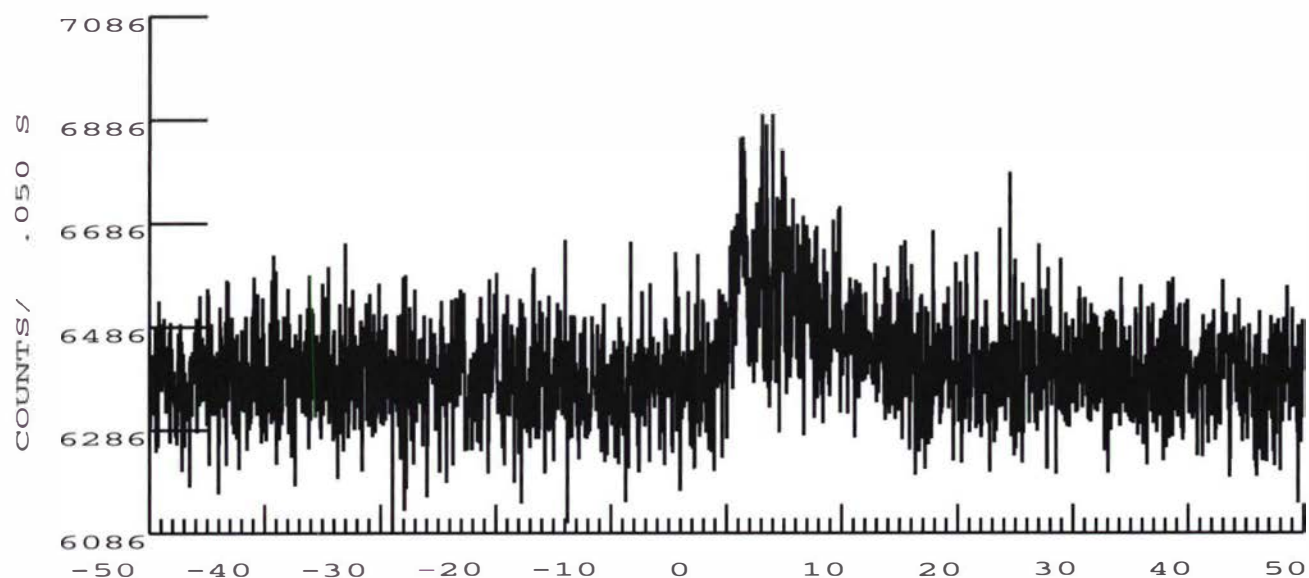
The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 14.69 s measured from T0+0.78 s.
The 1-ms peak rate, measured from T0+2.57 s, is 2204 cnts/sec.
The total counts from this burst is 12835 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB190605110_lc.jpg

All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).
More information about it could be found at:
<http://www.hxmt.org>.

A





Subject: BAT lightcurve for trigger at 190605_0239

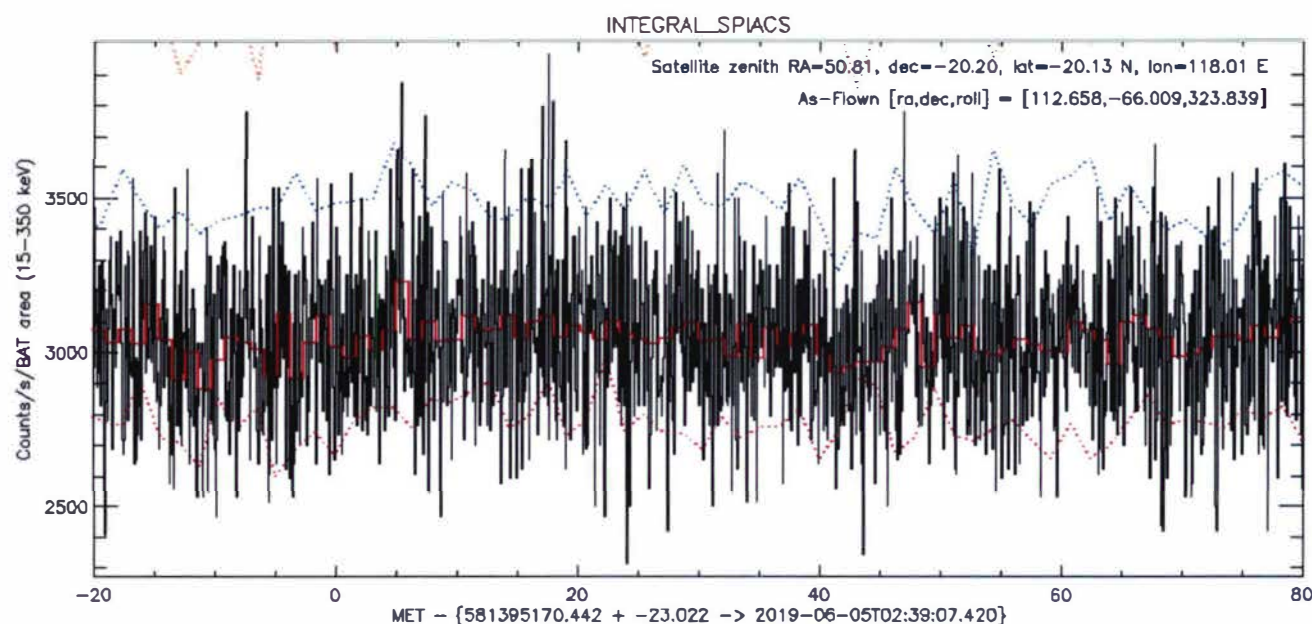
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/4/2019, 10:18 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190605_0239.png

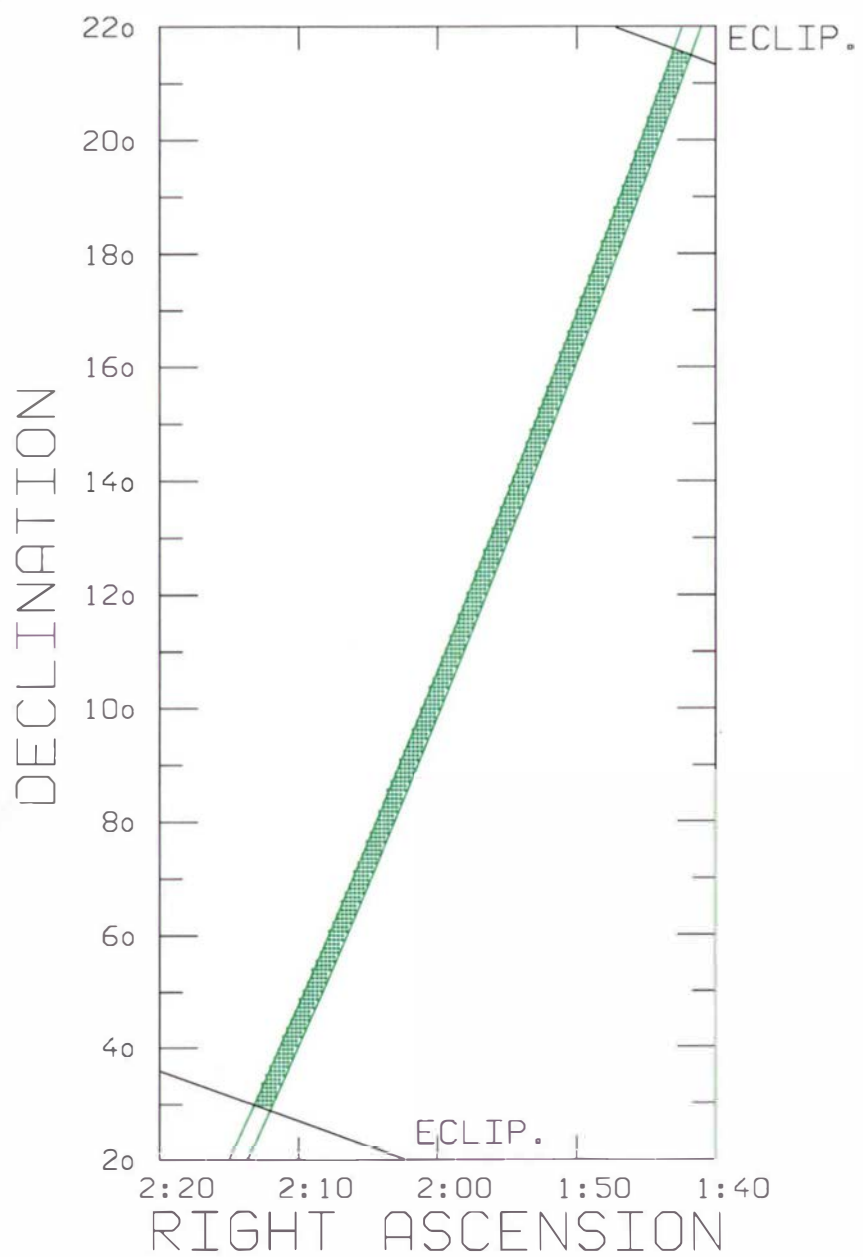


```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581395170.442
Swift Zenith(RA,dec):      50.81, -20.20
Swift Location(lon,lat,alt): 118.01 E, -20.13 N, 551 km
Time(MET + UTC -> UT):    581395170.442 + -23.022 -> 2019-06-05T02:39:07.420
YYMMDD_SOD:               190605_09547.420 DOY=156
Obs Sequence Number:      00010874057
Obs Target Name:          3FGL J0730.5-6606
Obs Date and Times:       2019-06-05 02:35:38 - 02:43:35
Obs Pointing(ra,dec,roll): 112.658, -66.009, 323.84
```

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David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190605_0239.png	17.8 KB
/tmp/swift/190605_0239_bat64ms_ipn	87.1 KB

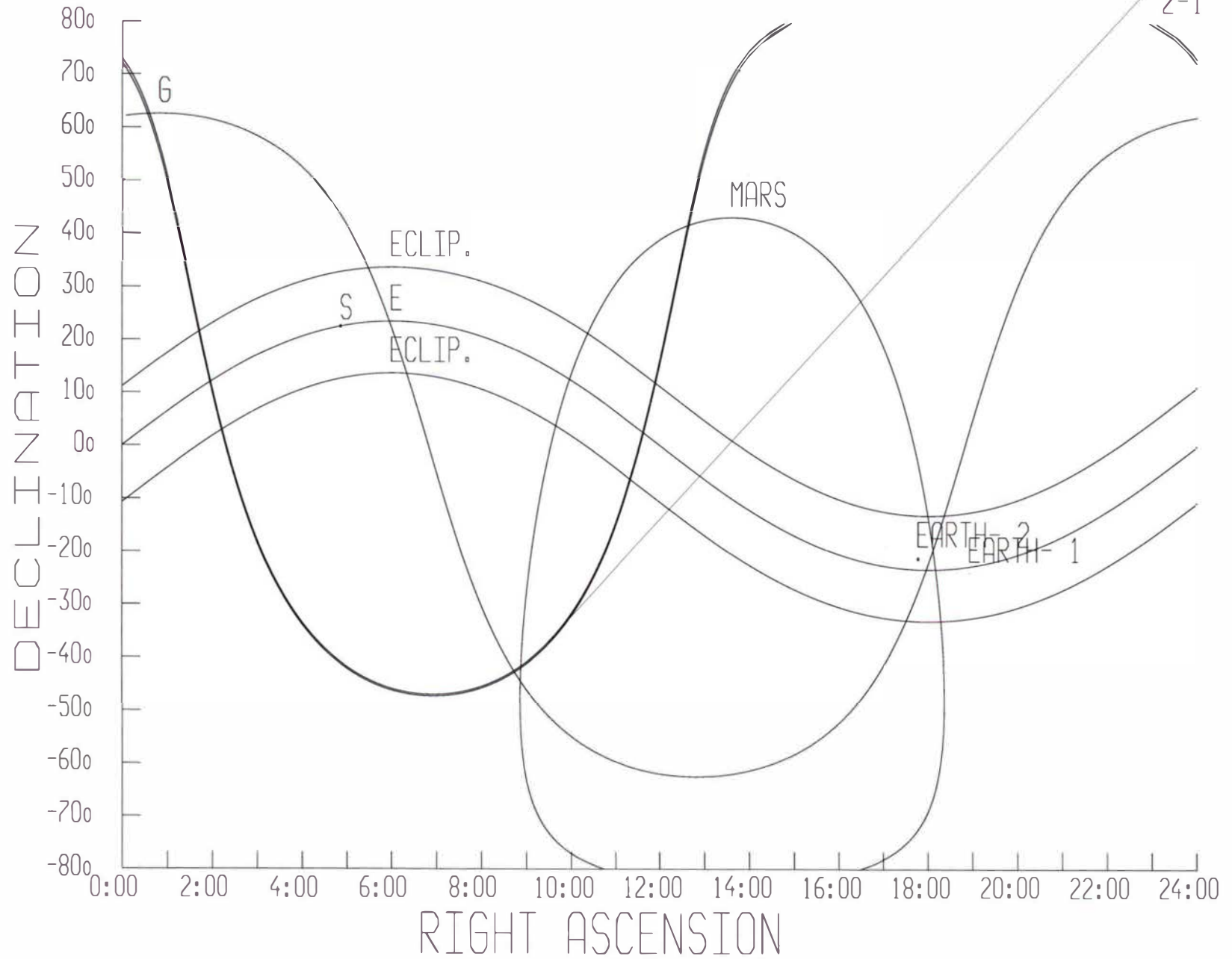


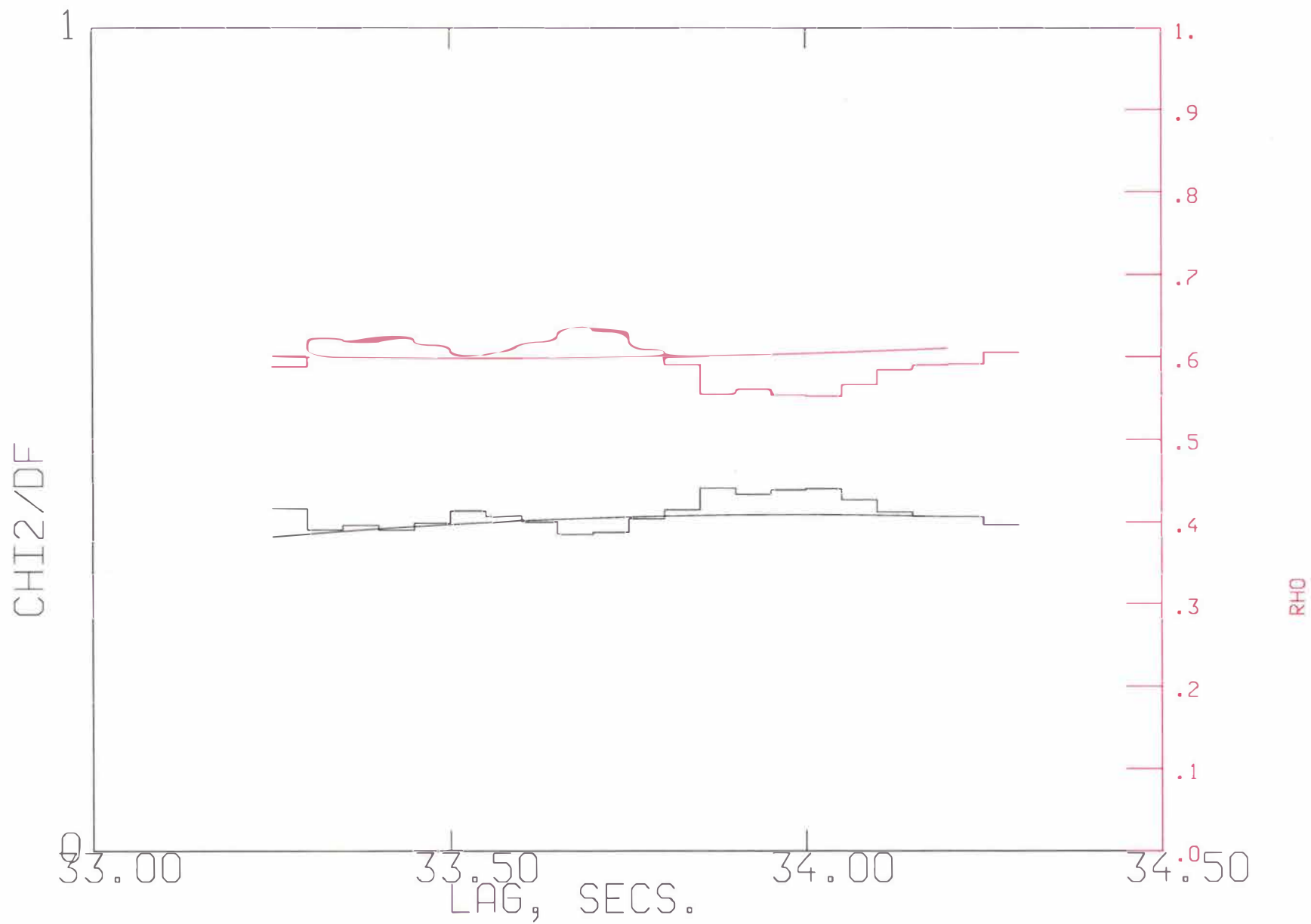
EVENT OF JUN 5, 2019 2:31

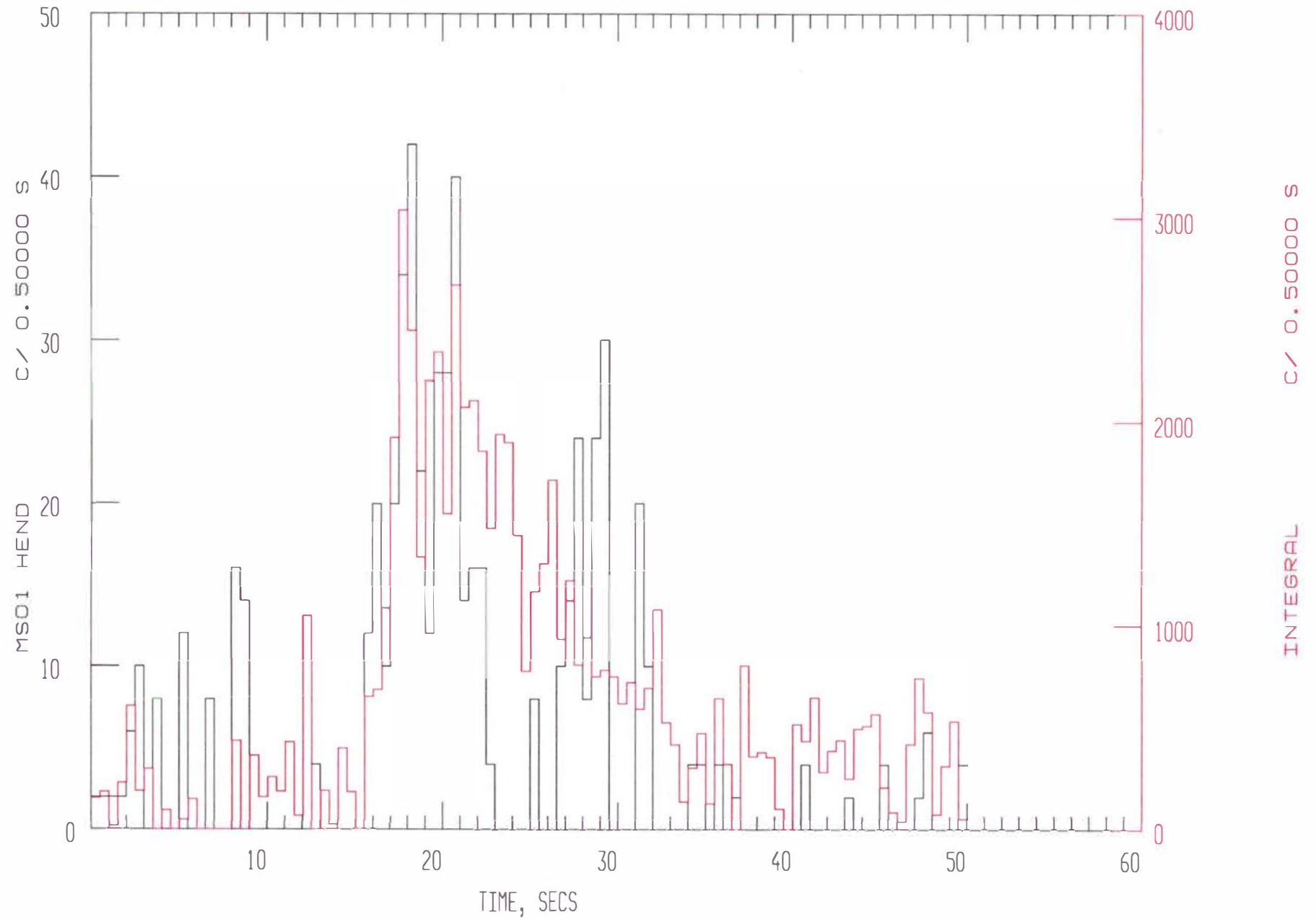
30/04/2020

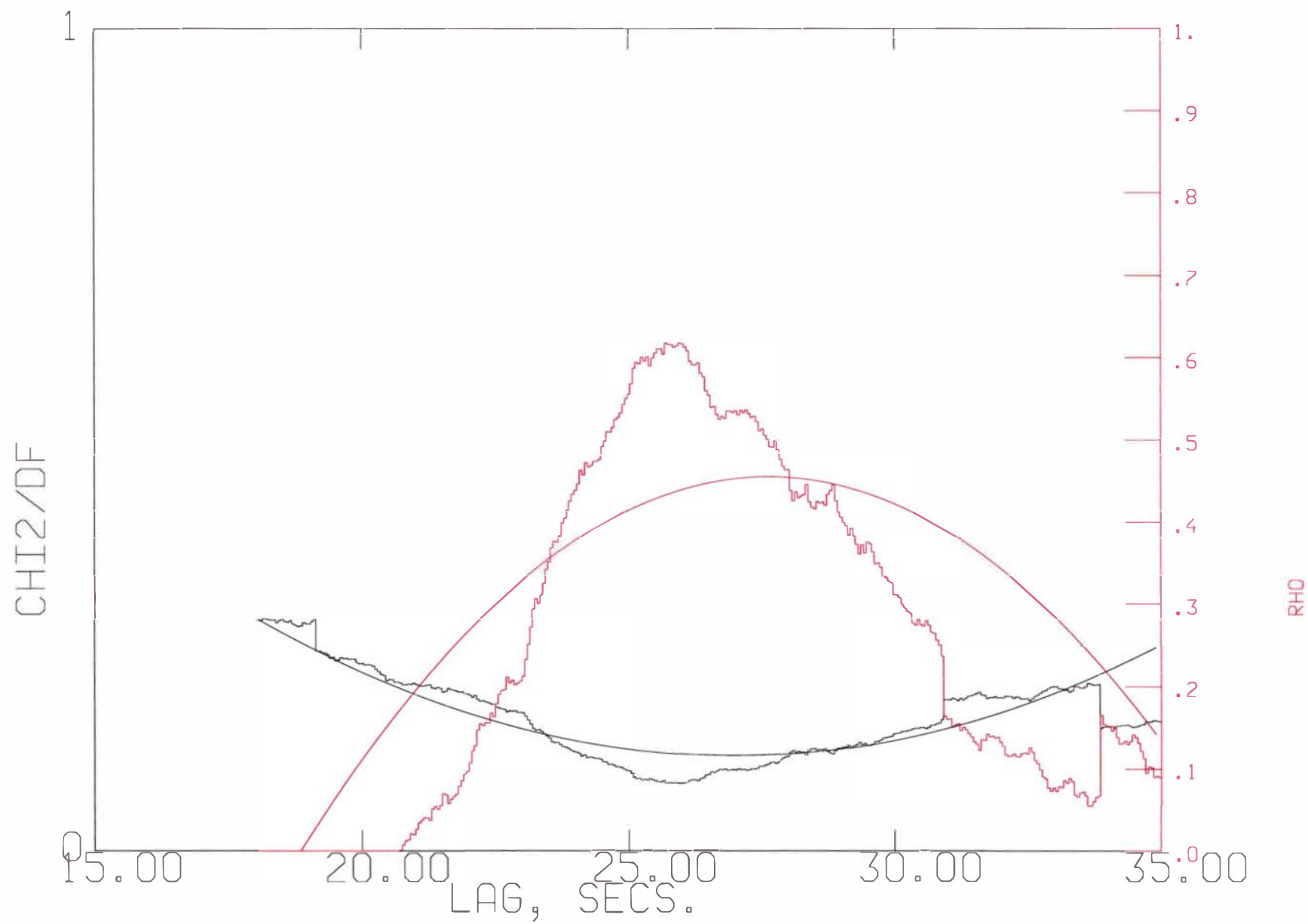
2-1

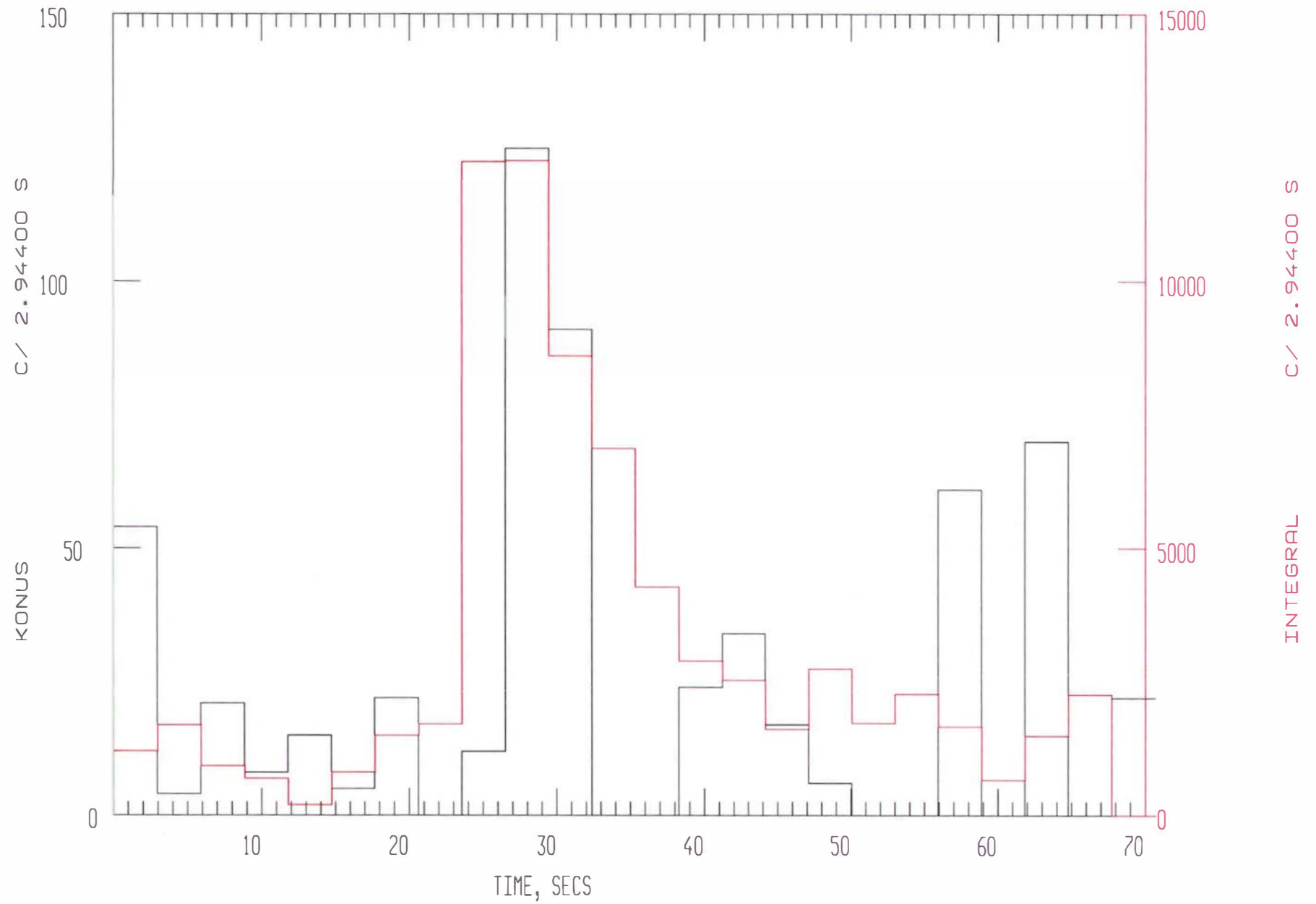
1-2 = CORRELATION BETWEEN SATELLITES 2 AND 1
 EARTH-2 = EARTH AS SEEN FROM SATELLITE 2
 S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
 1 MO 2 KONUS

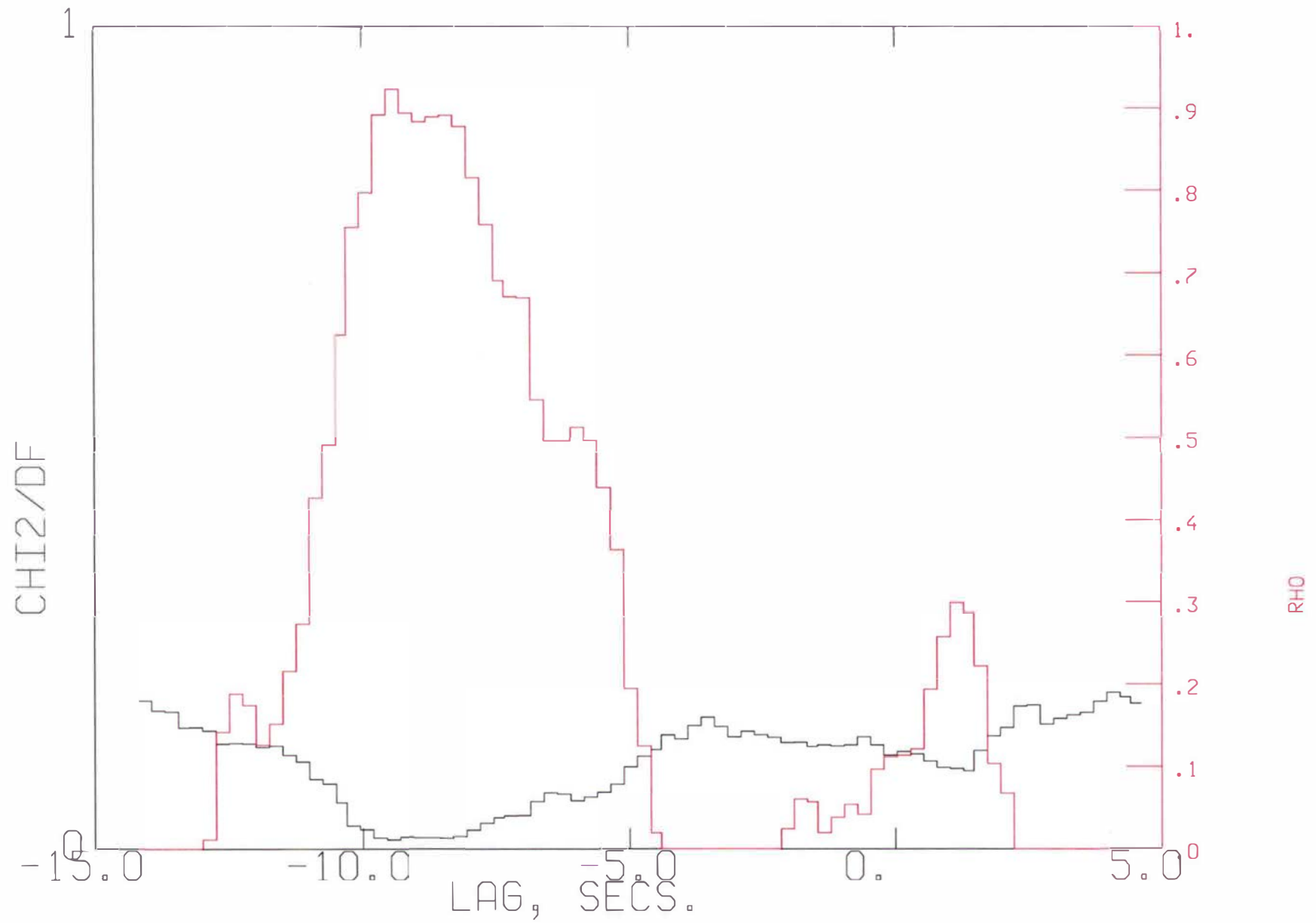


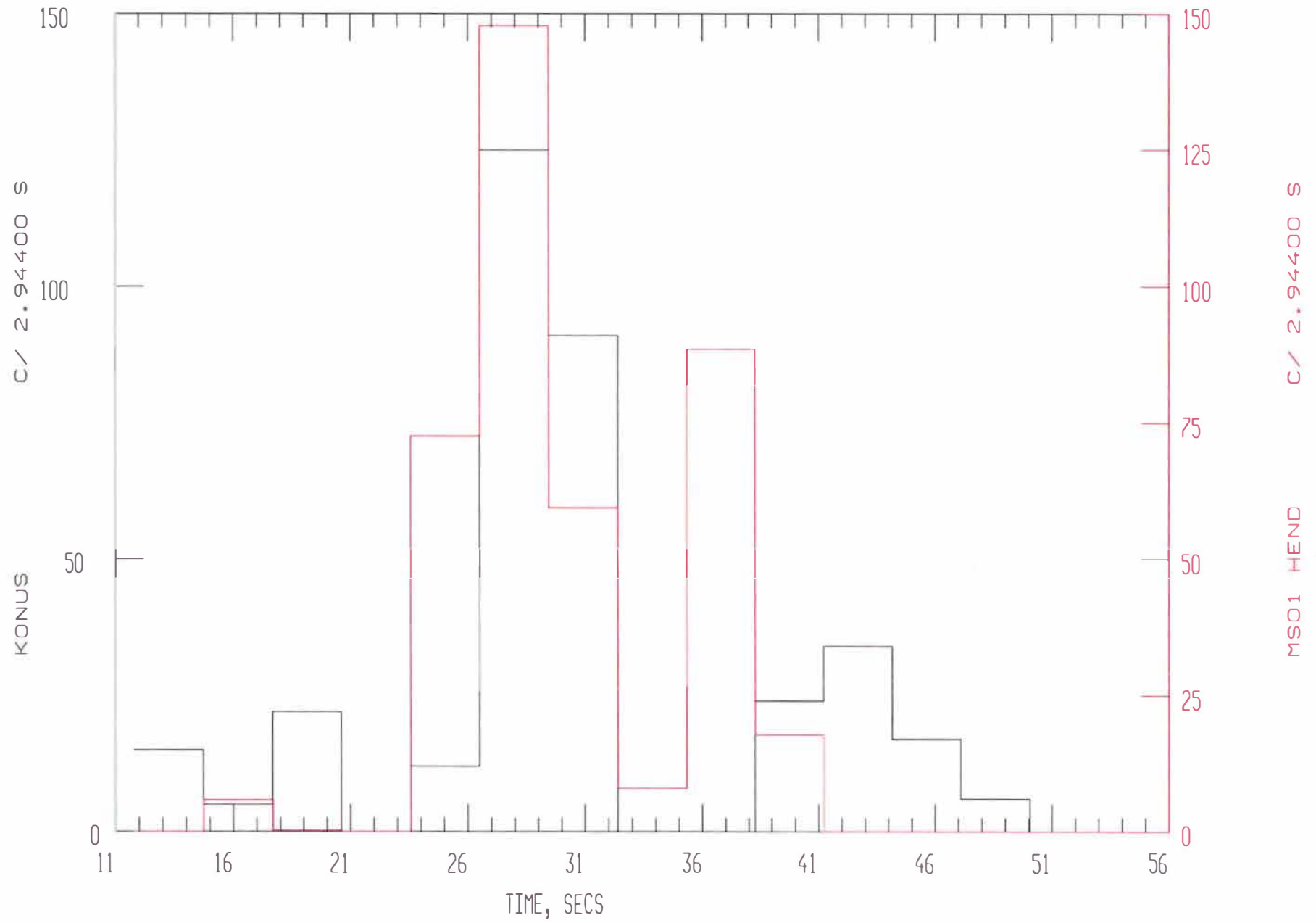












MS01 HEND

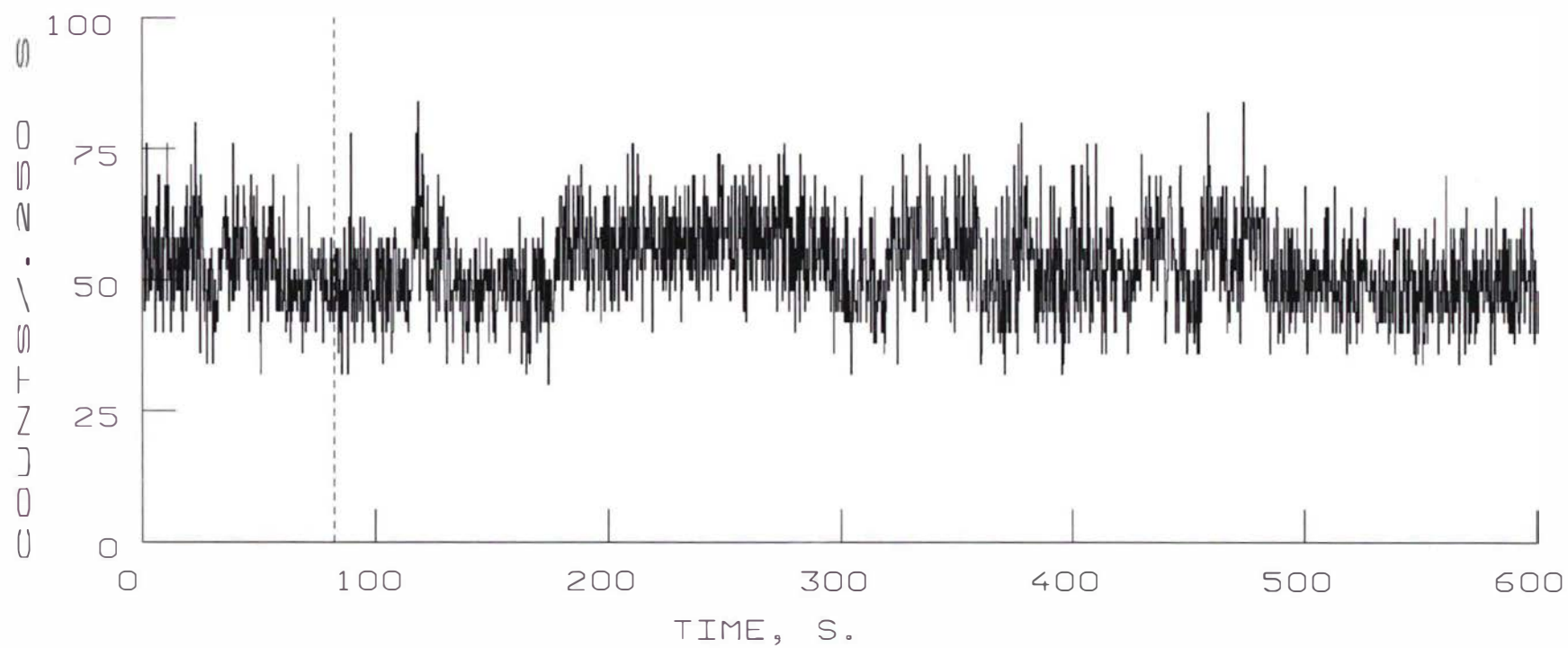
30/04/2020

05/06/2019 8966.803 s

50-3000 keV

N= 10 M=40

>4.0 SIGMA FLUCTUATIONS



3500

DETECTOR 1 - S. ECLIPITIC

30/04/2020

COUNTS/2.944 S



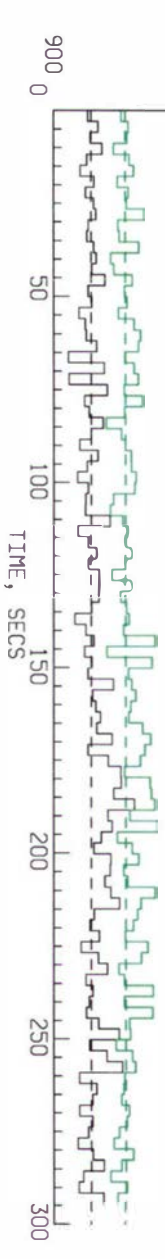
KONUS 05/06/19 30843.867
10- 50 keV 50- 200 keV 200- 750 keV

2400

DETECTOR 2 - N. ECLIPITIC

30/04/2020

COUNTS/2.944 S



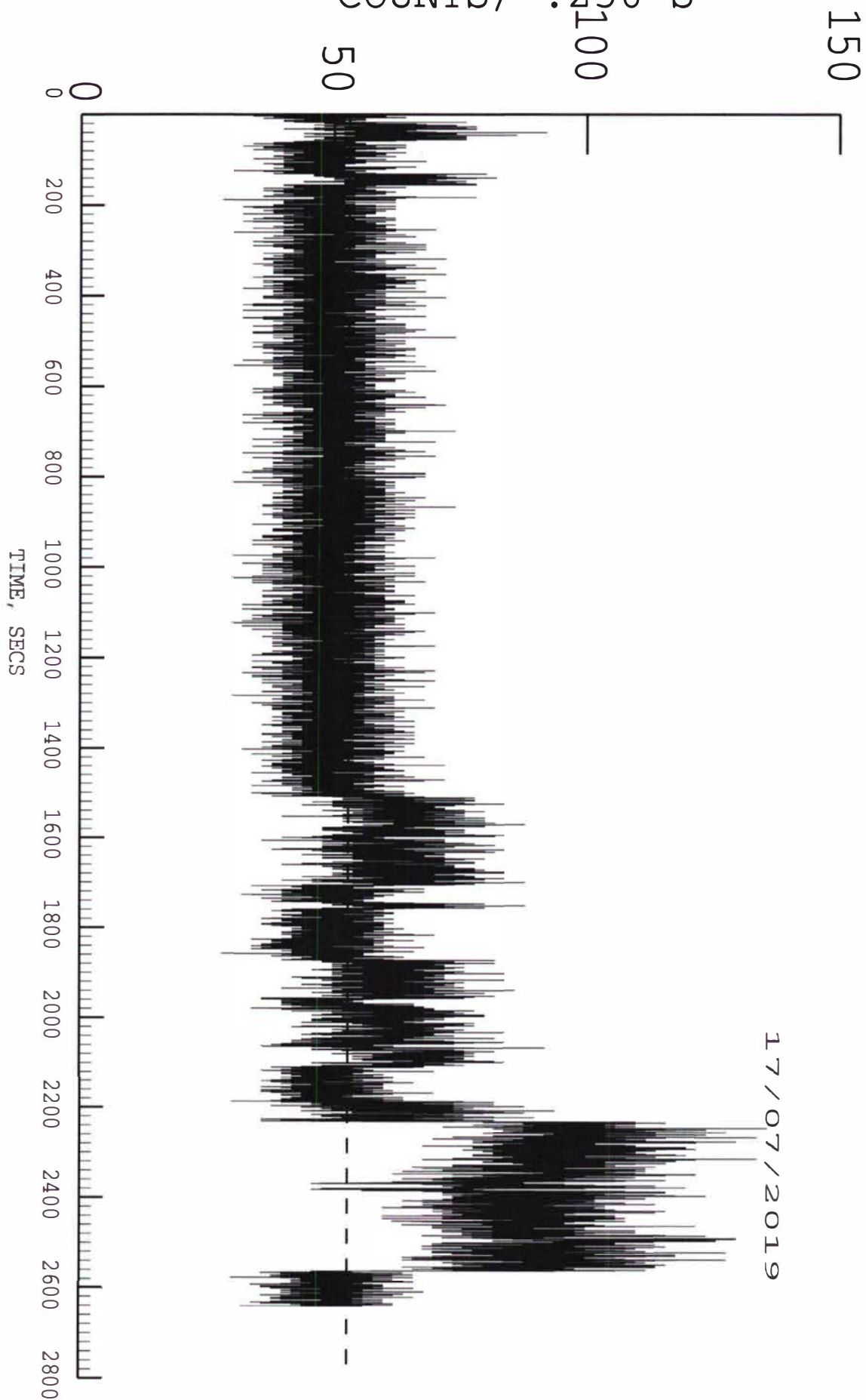
KONUS 05/06/19 30843.867
10- 50 keV 50- 200 keV 200- 750 keV

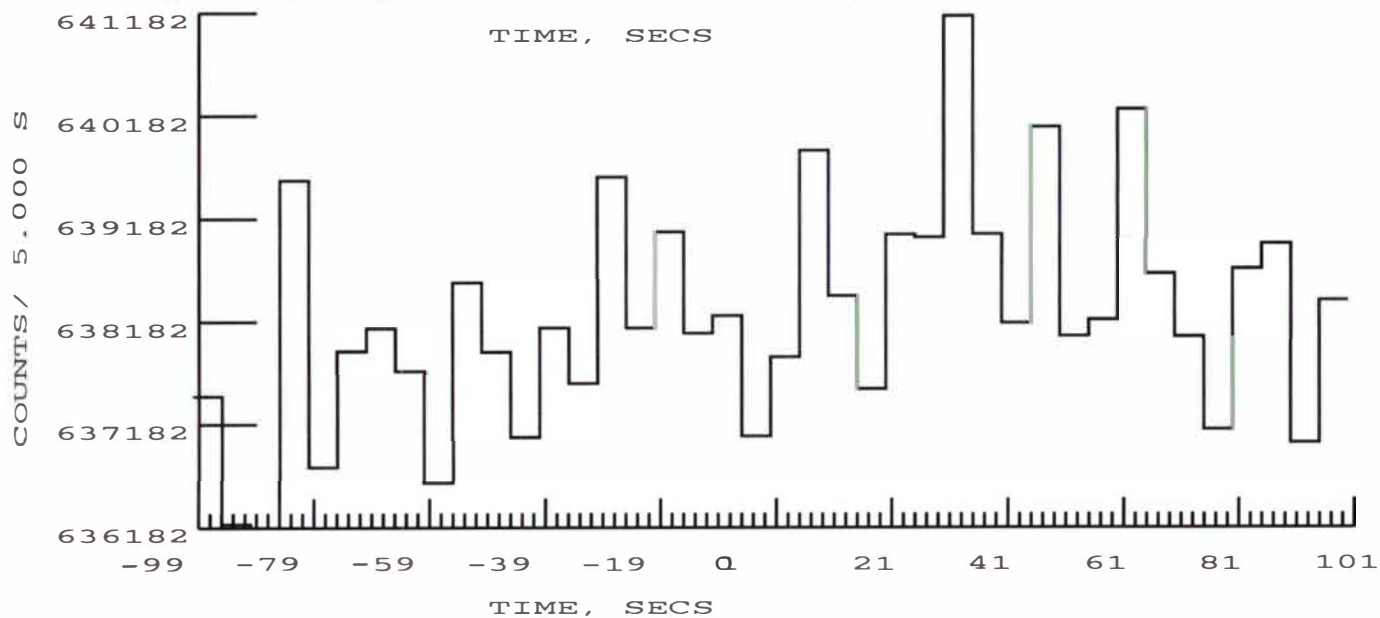
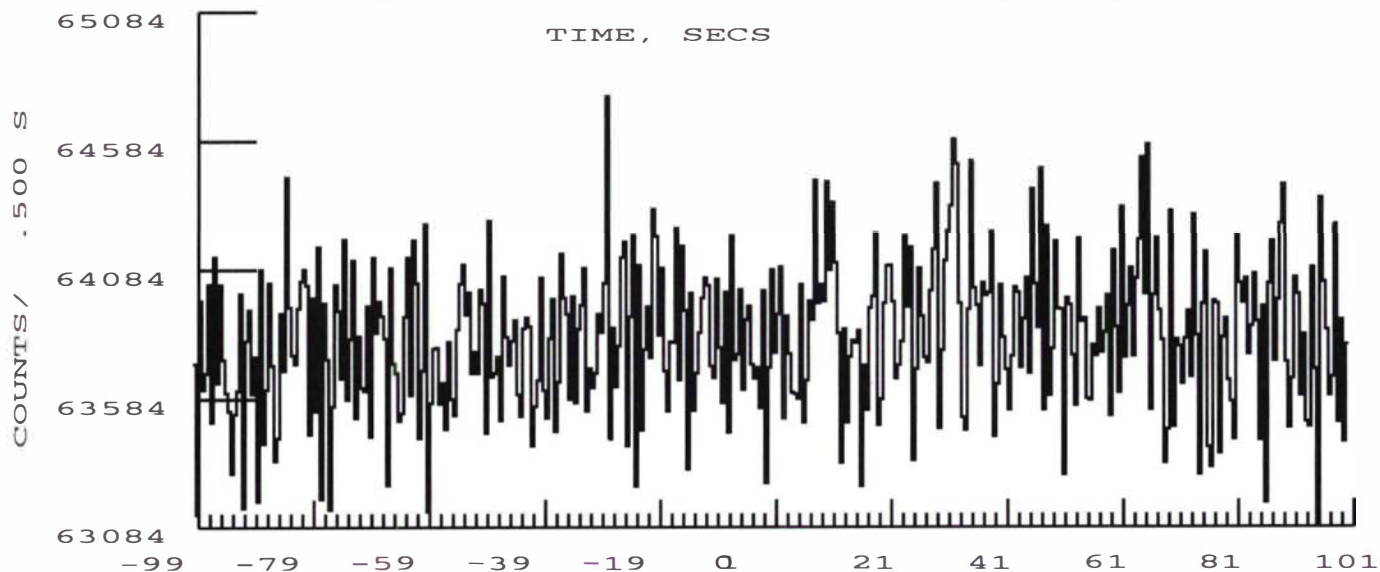
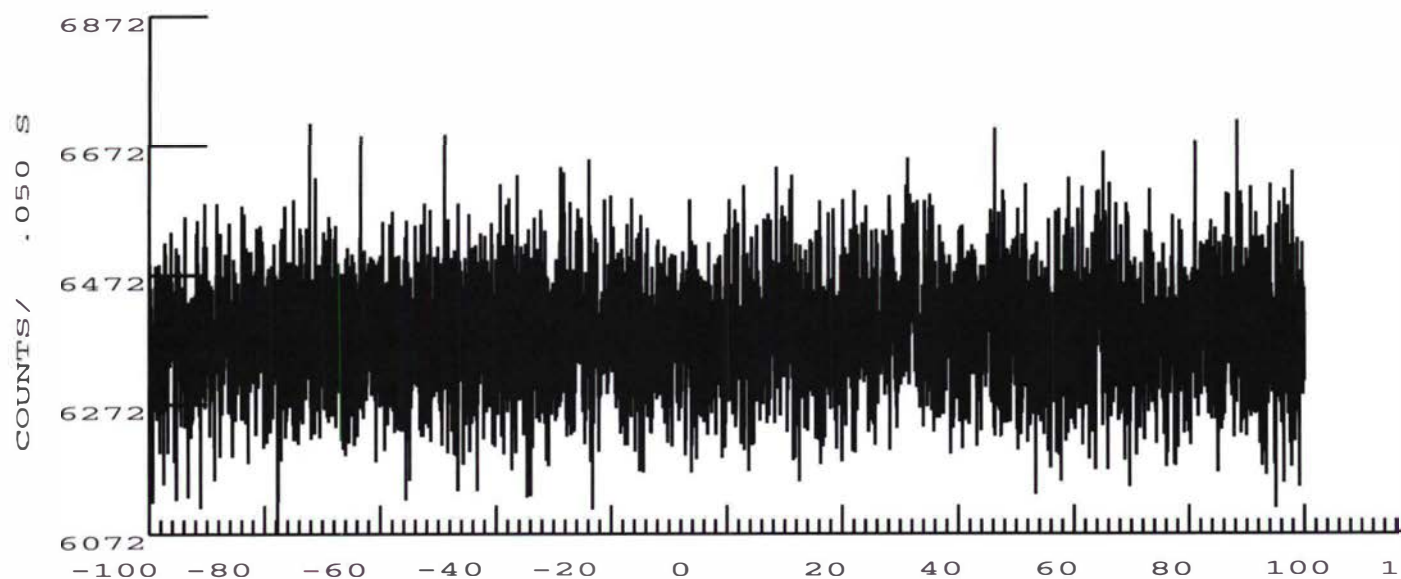
ODYSSEY 05/06/19 29666.434 08:14:26.434

50-3000 keV

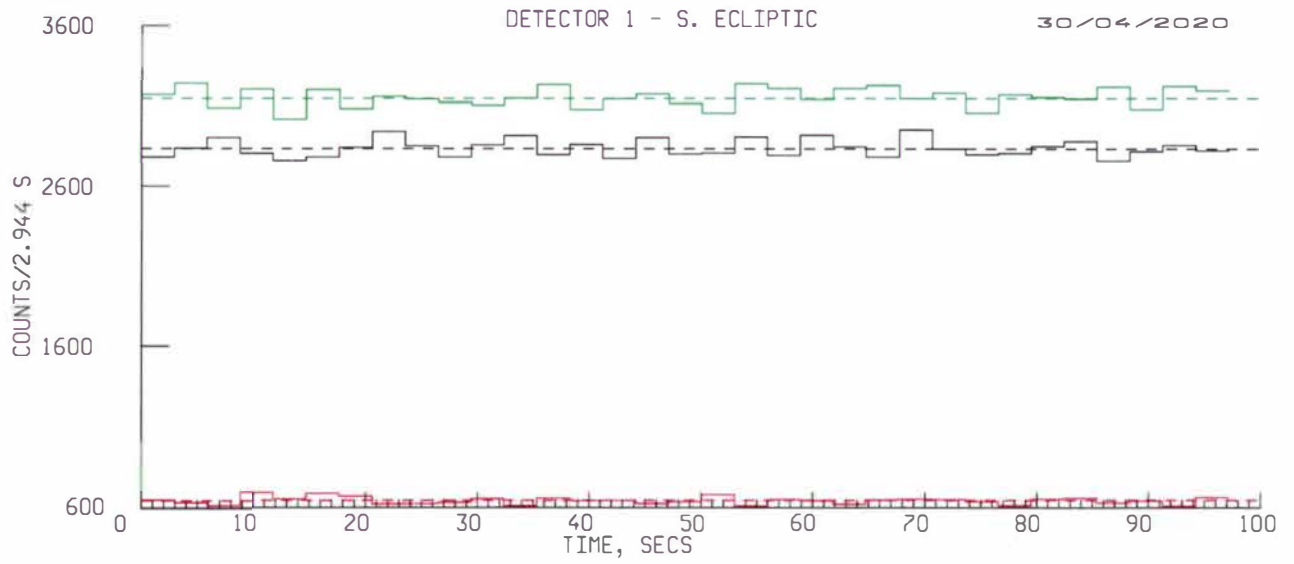
COUNTS/ .250 S

K_α RT

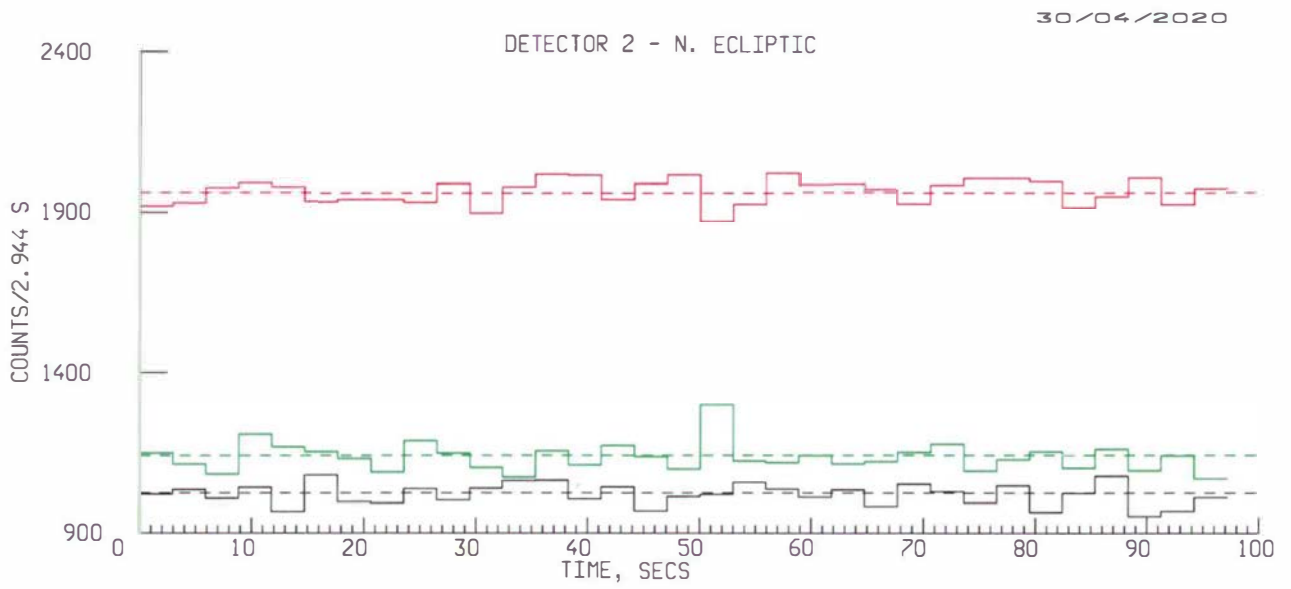




KONUS 05/06/19 35192.155
10- 50 keV 50- 200 keV 200- 750 keV



KONUS 05/06/19 35192.155
10- 50 keV 50- 200 keV 200- 750 keV

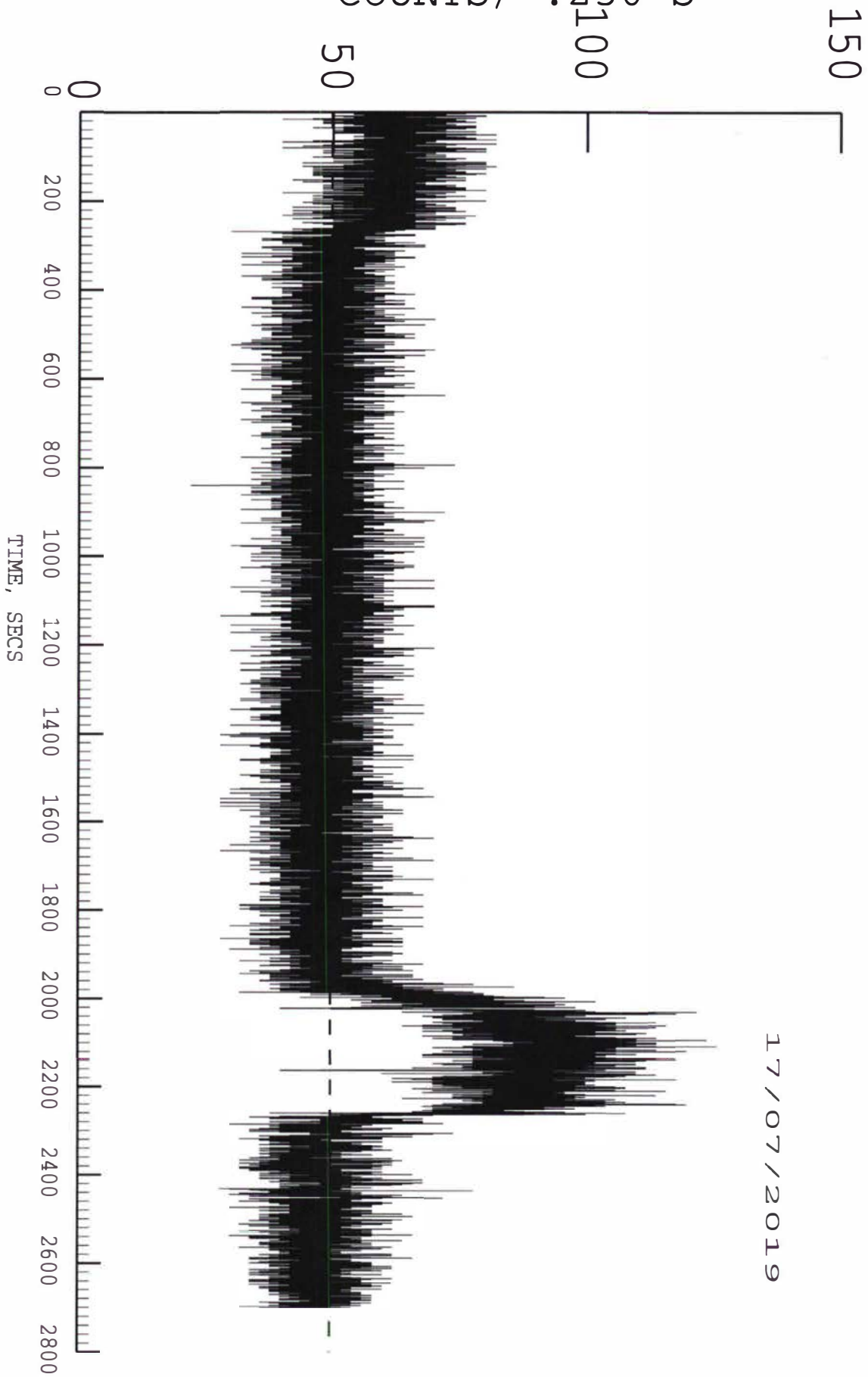


ODYSSEY 05/06/19 33866.352 09:24:26.352

50-3000 keV

Konus RT

COUNTS/ .250 S



B

FERMI

05/06/19

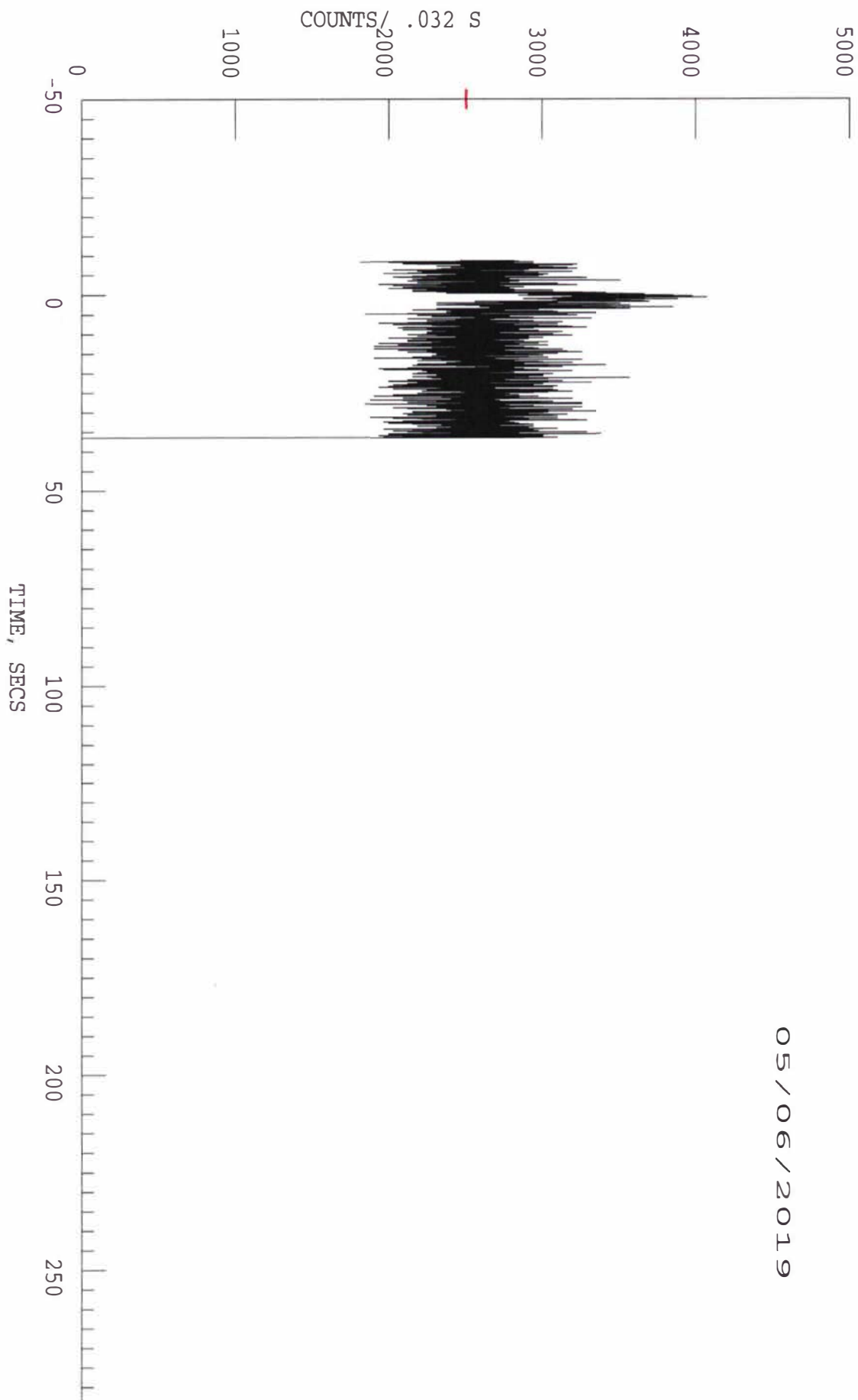
84147.118

23:22:27.118

26- 293 keV

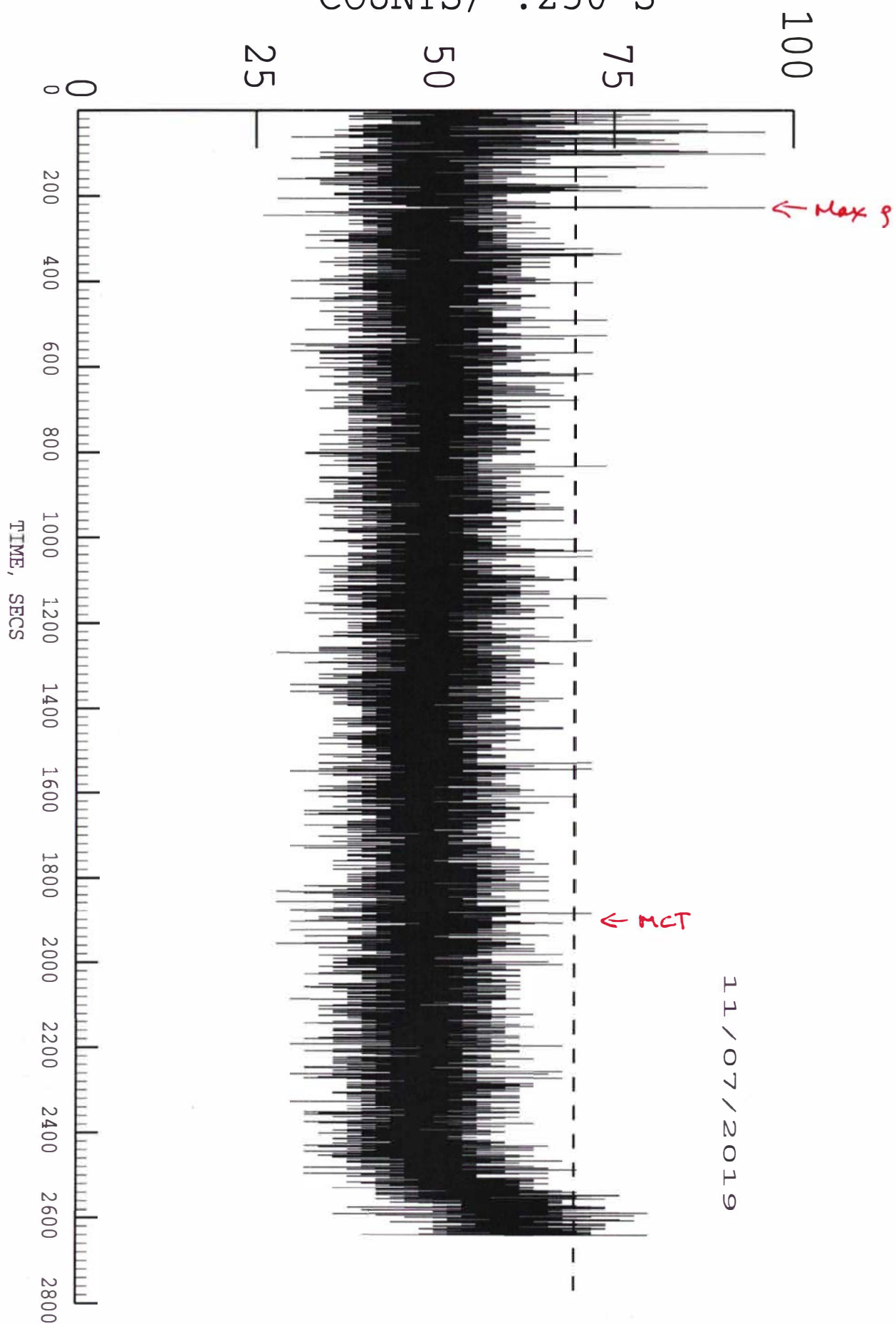
337.2 4.8 6.8

SPI %



05/06/2019

ODYSSEY 05/06/19 82825.481 23:00:25.481^B
50-3000 keV
COUNTS/ .250 S



Subject: BAT lightcurve for trigger at 190605_2322

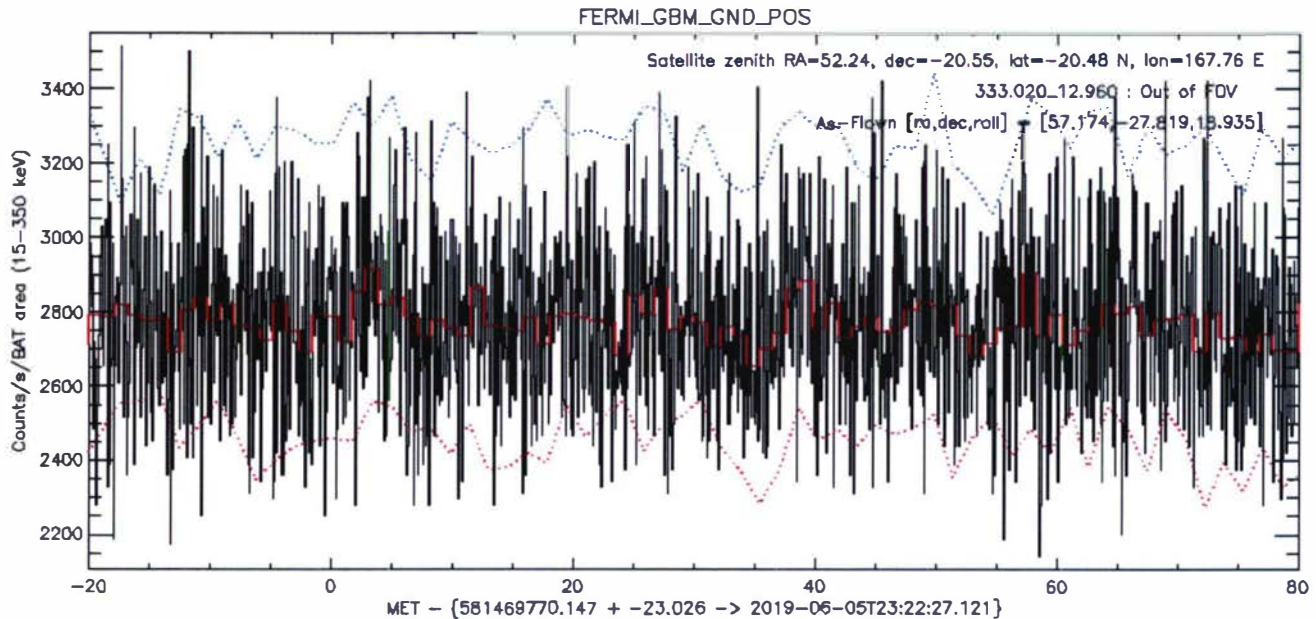
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/5/2019, 7:02 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

--/tmp/swift/190605_2322.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581469770.147 -s 333.020_12.960
Swift Zenith(RA,dec):      52.24, -20.55
Swift Location(lon,lat,alt): 167.76 E, -20.48 N, 551 km
Time(MET + UTCF -> UT):    581469770.147 + -23.026 -> 2019-06-05T23:22:27.121
YYMMDD_SOD:               190605_84147.121      DOY=156
Obs Sequence Number:       00038373028
Obs Target Name:           PK5 0346-27
Obs Date and Times:        2019-06-05 23:08:38 - 23:30:34
Obs Pointing(ra,dec,roll): 57.174, -27.819, 18.93
333.020_12.960_imageloc (boresight_dist, angle): (91, 175)
333.020_12.960_exposure (cm² cos adjusted): 0
333.020_12.960_altitude: 28 (up)
```

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David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

--Attachments:

/tmp/swift/190605_2322.png	18.7 KB
/tmp/swift/190605_2322_bat64ms_ipn	87.0 KB

Subject: GRB 190605A: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/7/2019, 11:20 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24771
SUBJECT: GRB 190605A: AstroSat CZTI detection
DATE: 19/06/08 06:19:35 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

P. Ghumatkar, V. Sharma, D. Bhattacharya, T. Khanam and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed a weak detection of a likely long GRB 190605A, which was also detected by Fermi GBM (GCN #24755) and Global MASTER-Net (Lipunov V., GCN #24756)

The source was detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 23:22:28.5 UT. The measured peak count rate associated with the burst is 189 cts/s above the background in the combined data of four quadrants, with a total of 482 cts. The local mean background count rate was 508 cts/s. Using cumulative rates, we measure a T₉₀ of 4.46s.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

KONUS

06/06/2019

3.030

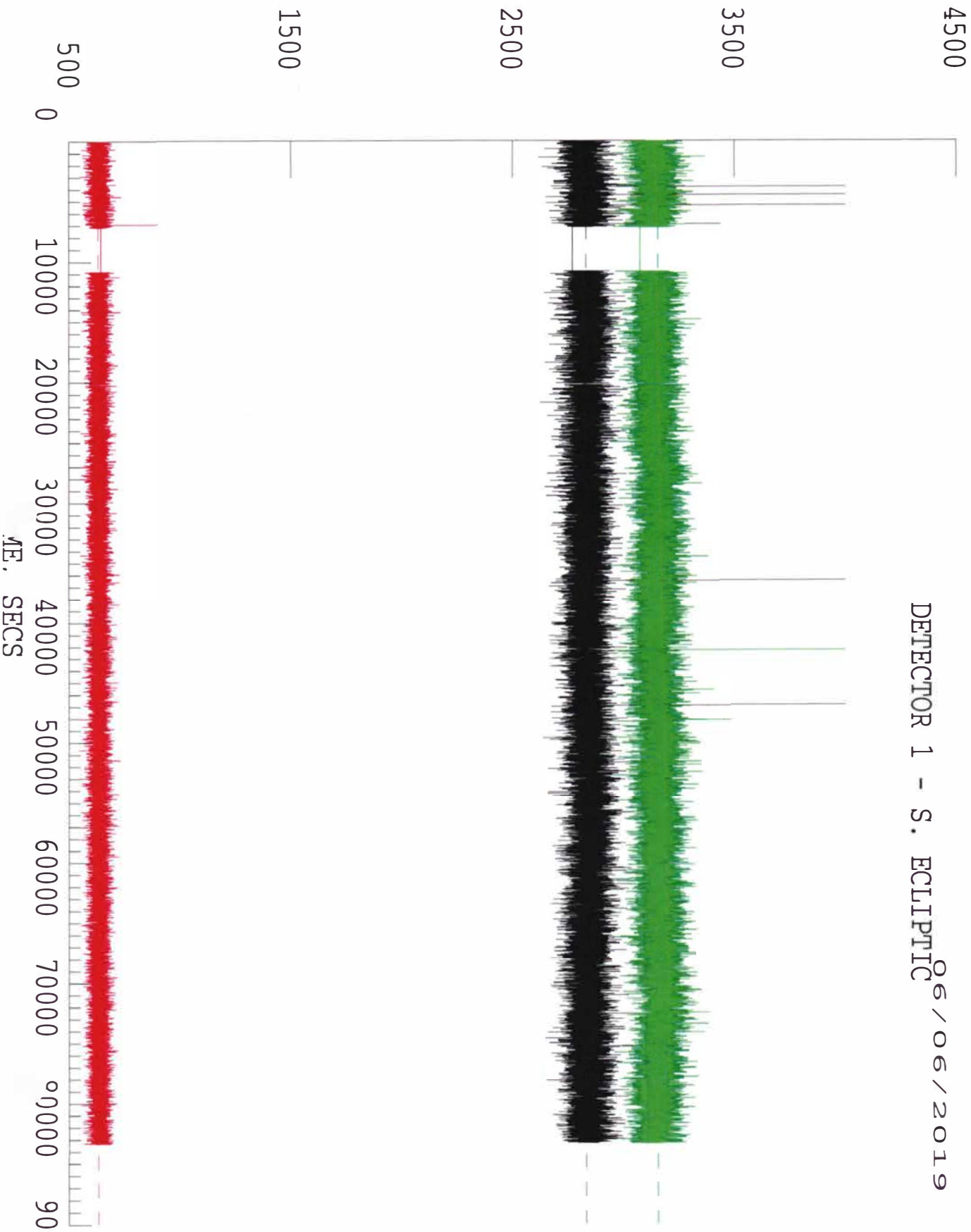
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

06/06/2019

3.030

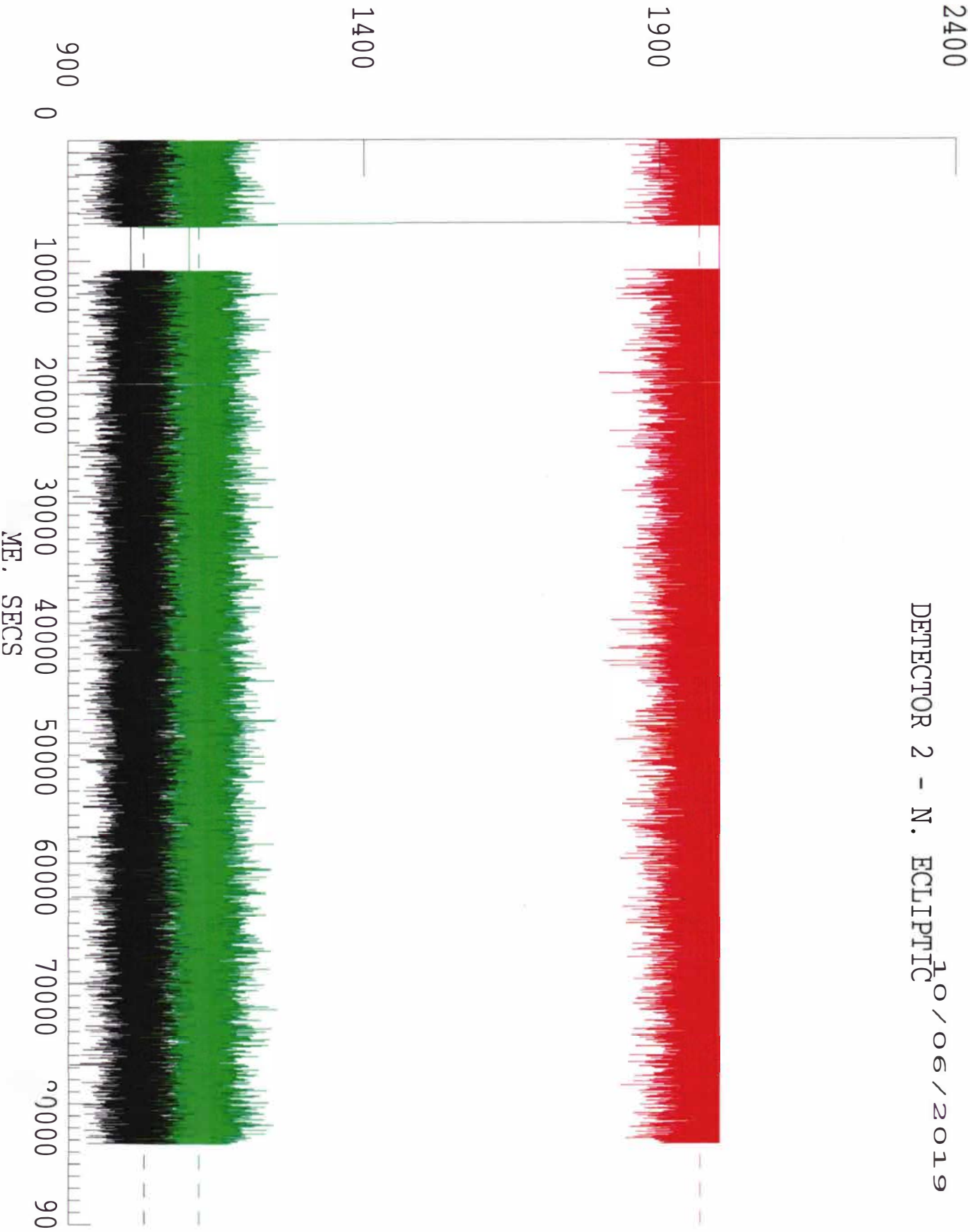
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



FERMI

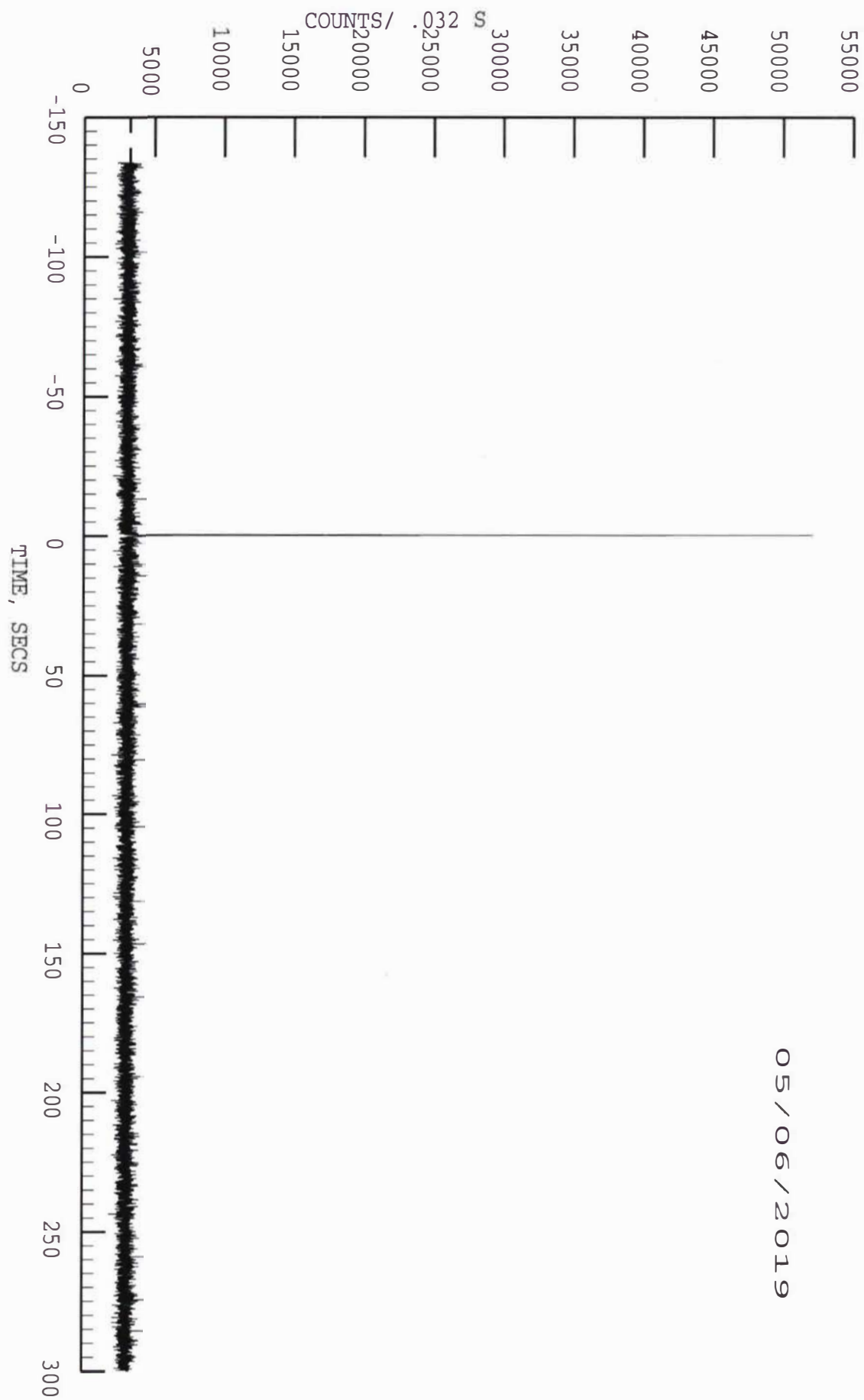
06/06/19

6907.776

01:55:07.776

26- 293 keV

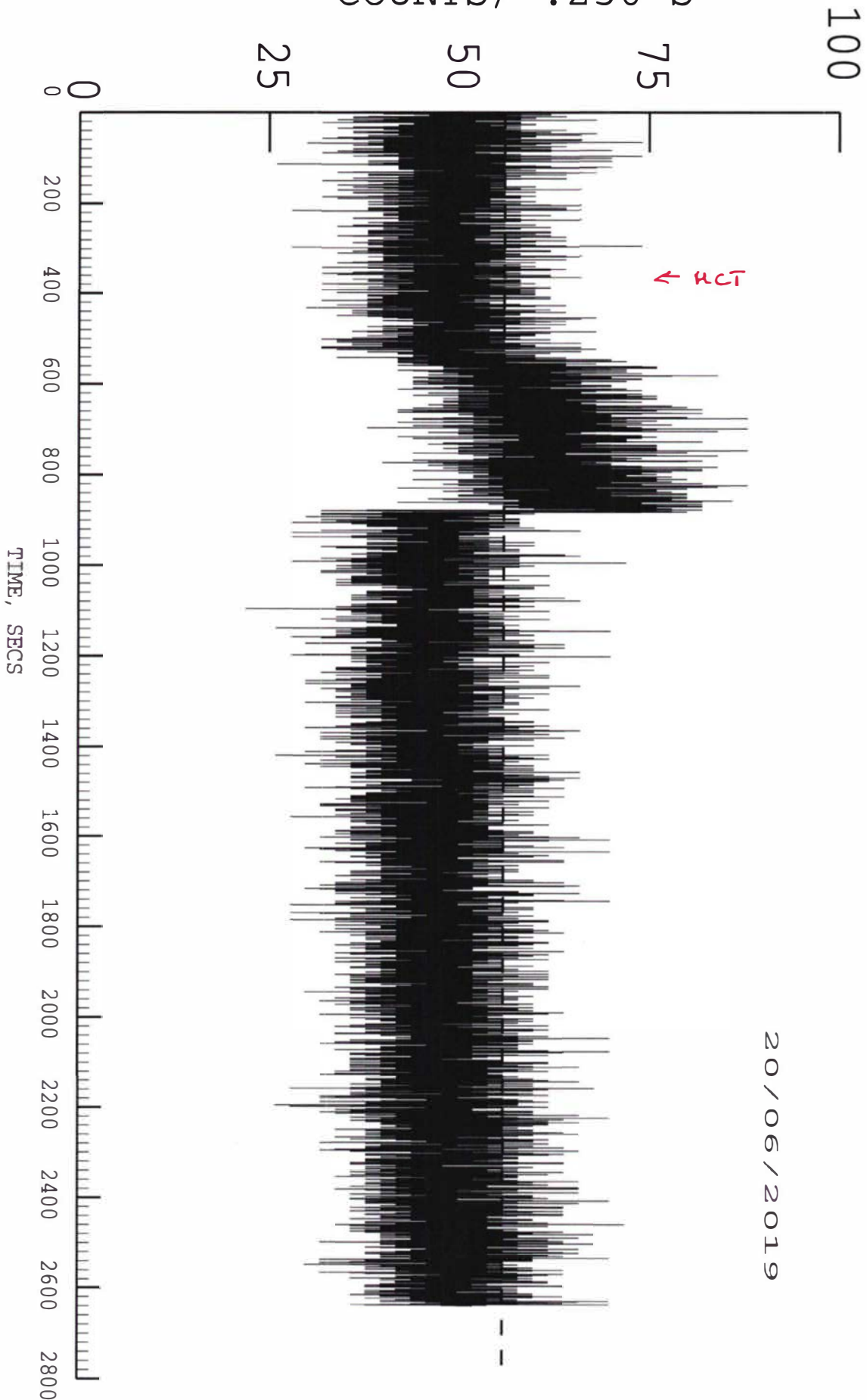
76.5 0.7 3.0



ODYSSEY 06/06/19 5545.314 01:32:25.314
50-3000 keV

COUNTS/ .250 S

Occulted

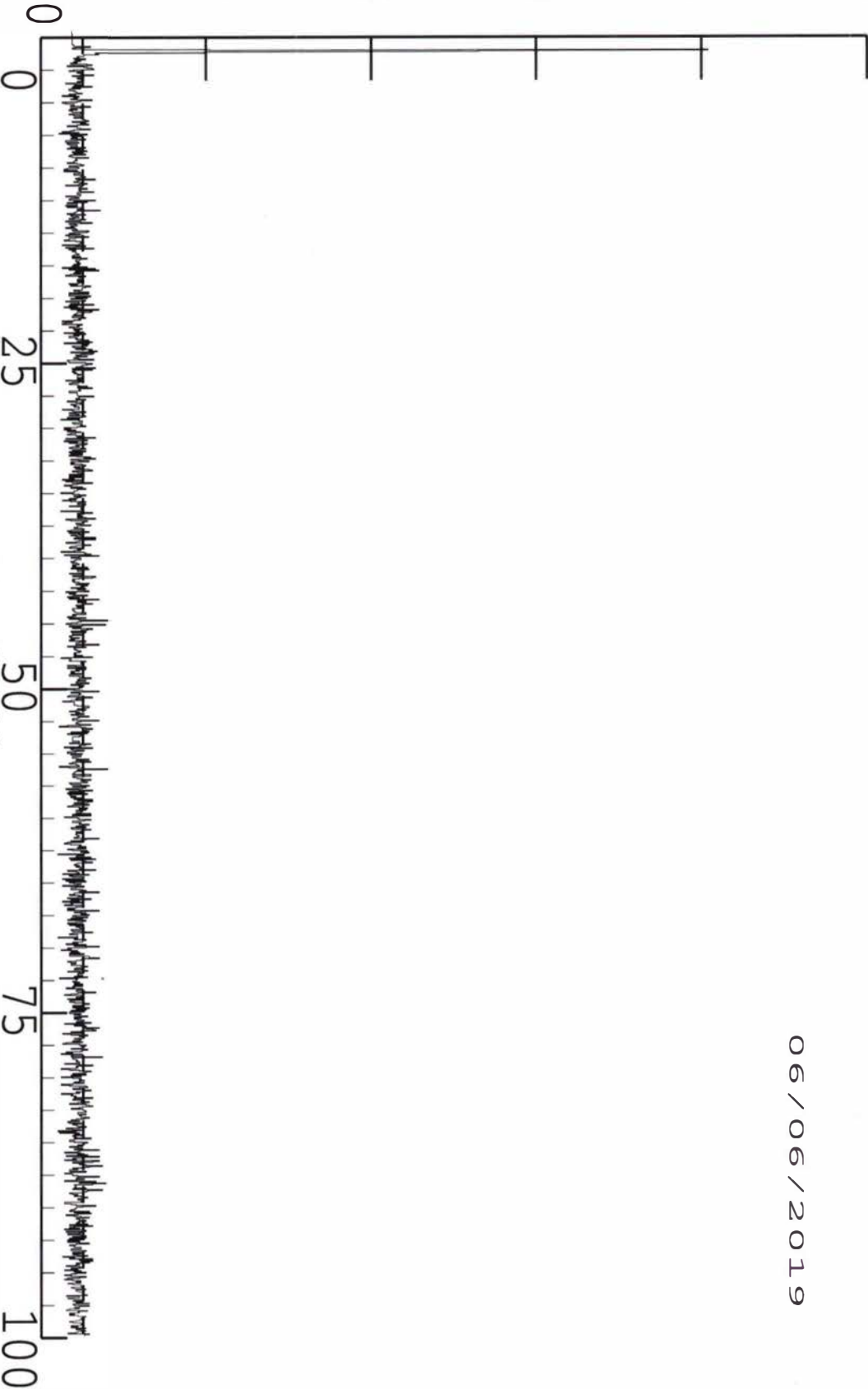


KONUS 06/06/19 6903.800 01:55:03.800

50- 200 keV

COUNTS/ 064 s

500
400
300
200
100
0



TIME, SECS

06/06/2019

KONUS

06/06/19

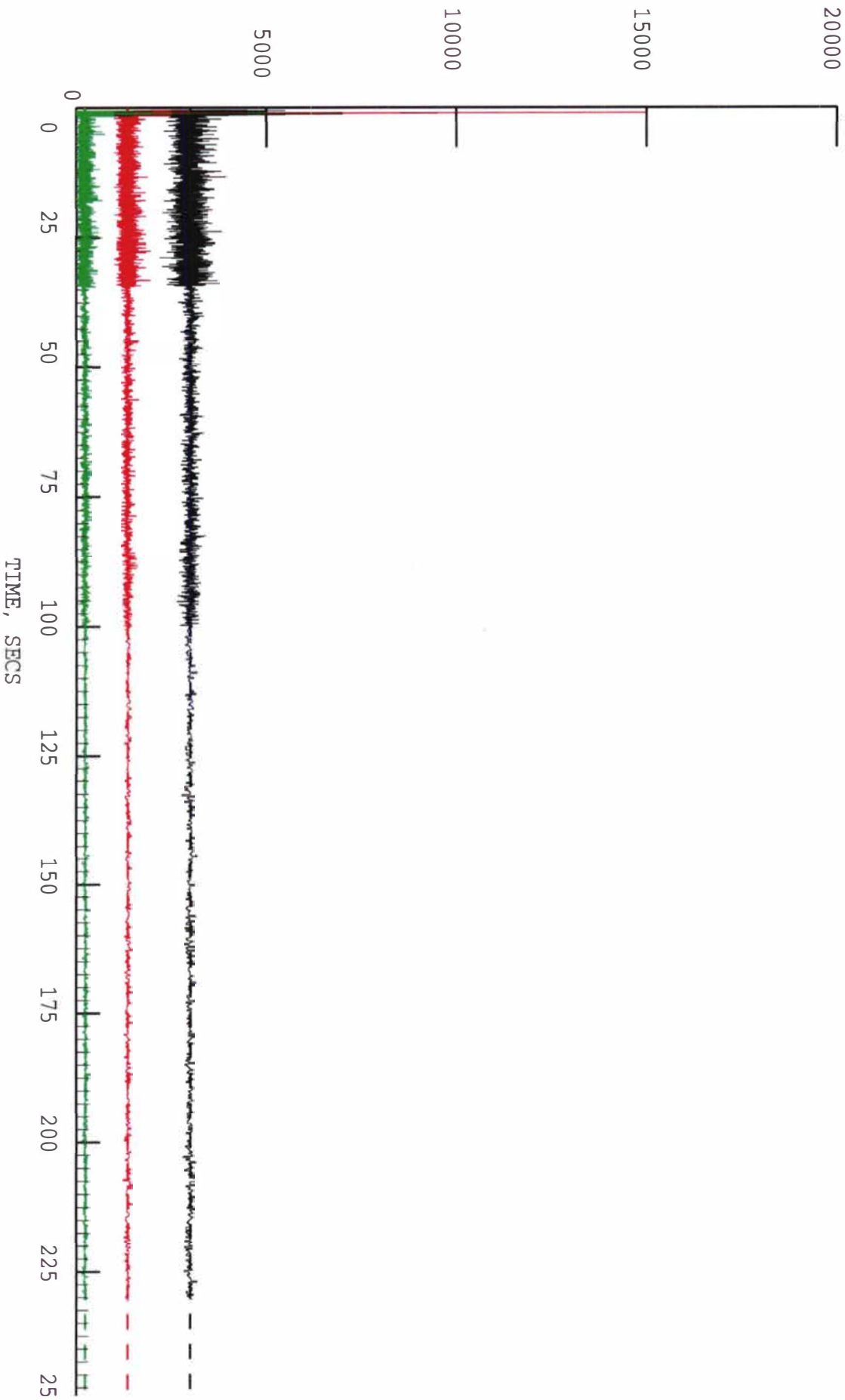
COUNTS/SEC

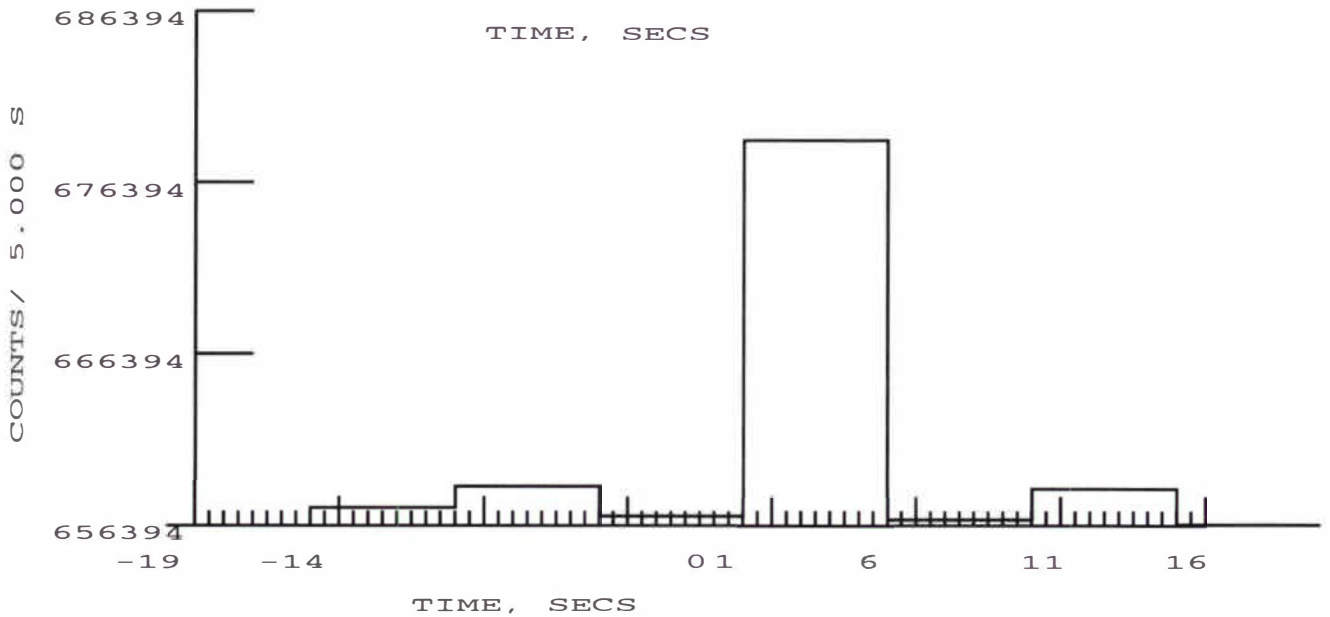
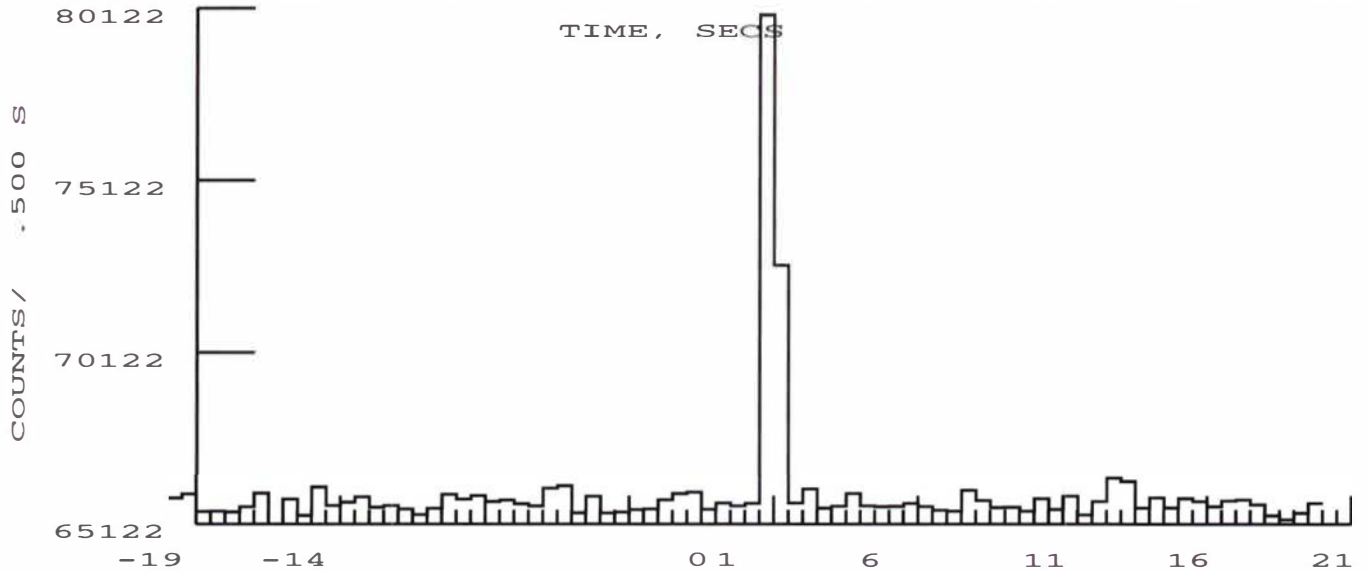
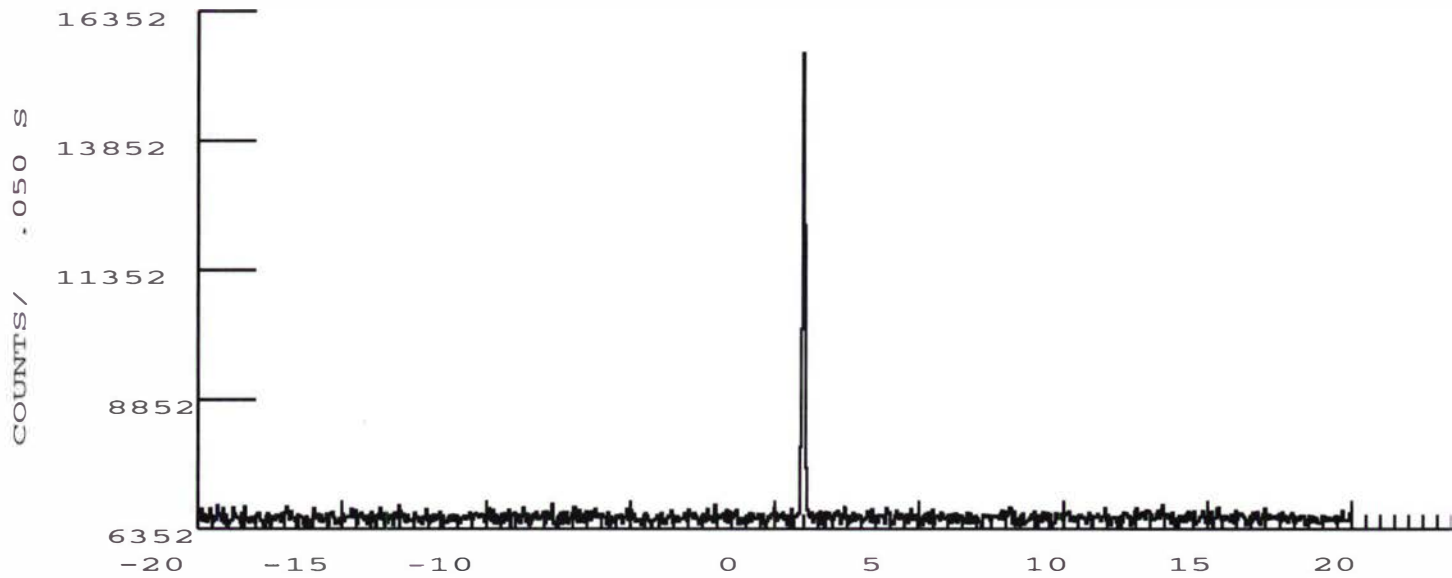
6903.000

01:55:03.000

07/06/2019

15-50 keV +2000 50-200 keV +1000 200-700 keV





BAT lightcurve for trigger at 190606_0155

Subject: BAT lightcurve for trigger at 190606_0155

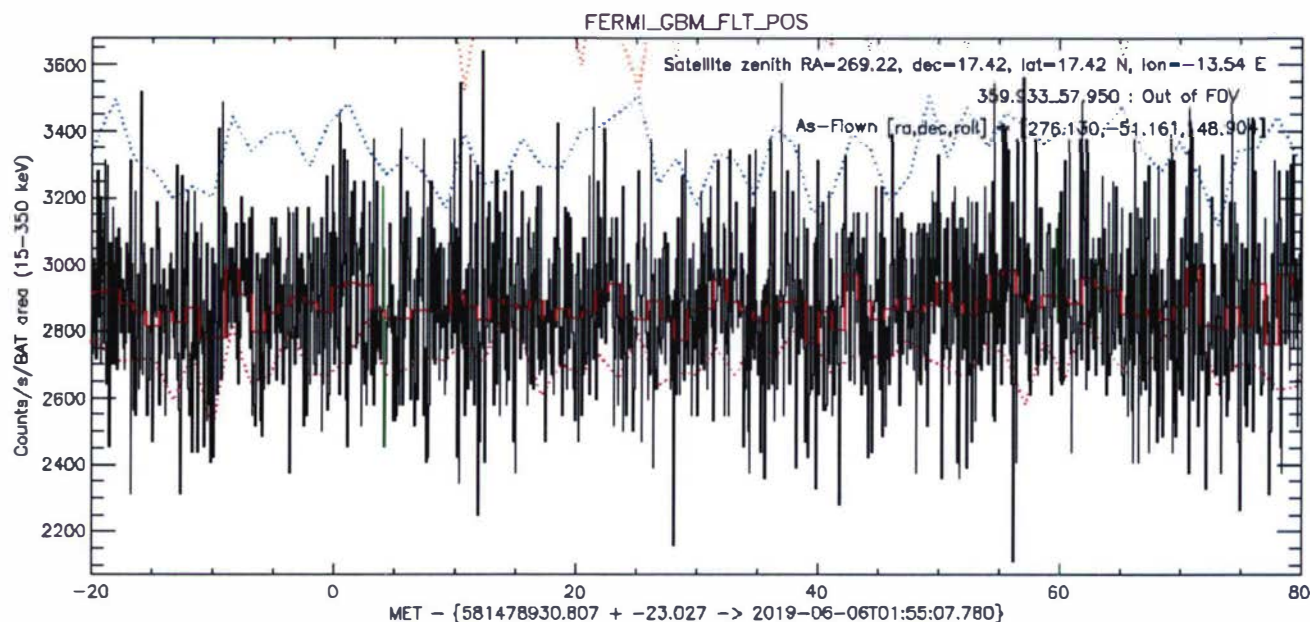
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/5/2019, 10:08 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190606_0155.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581478930.807 -s 359.933_57.950
Swift Zenith(RA,dec):      269.22, 17.42
Swift Location(lon,lat,alt): -13.54 E, 17.42 N, 558 km
Time(MET + UTCf -> UT):   581478930.807 + -23.027 -> 2019-06-06T01:55:07.780
YYMMDD_SOD:               190606_06907.780      DOY=157
Obs Sequence Number:      03109592004
Obs Target Name:          PBCJ1824.5-5112
Obs Date and Times:       2019-06-06 01:53:38 - 02:08:37
Obs Pointing(ra,dec,roll): 276.130, -51.161, 148.90
359.933_57.950_imageloc (boresight_dist, angle): (129, 164)
359.933_57.950_exposure (cm2 cos adjusted): 0
359.933_57.950_altitude: 37 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190606_0155.png	19.3 KB
/tmp/swift/190606_0155_bat64ms_ipn	87.0 KB

Subject: GRB 190606A: Fermi-LAT detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/6/2019, 8:07 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24761
SUBJECT: GRB 190606A: Fermi-LAT detection
DATE: 19/06/06 15:06:23 GMT
FROM: Elisabetta Bissaldi at INFN,Bari <elisabetta.bissaldi@ba.infn.it>

E. Bissaldi (Politecnico & INFN Bari), M. Axelsson (KTH & Stockholm Univ.),
M. Arimoto (Kanazawa Univ.) and F. Longo (Univ & INFN Trieste)
report on behalf of the Fermi-LAT team:

"On June 6, 2019, Fermi-LAT detected high-energy emission
from GRB 190606A, which was also detected by Fermi-GBM
(trigger 581478912 / 190606080) and AGILE-MCAL
(Ursi et al., GCN #24759).

Due to the large angle with respect to the LAT boresight,
the positional error for this GRB is uncertain.
The best LAT on-ground location is found to be:

RA, Dec 76.54, -0.68 (degrees, J2000)

with an error radius of 3.0 deg (90% containment,
statistical error only).
This was 72 deg from the LAT boresight
at the time of the GBM trigger:
T0 = 01:55:07.78 UT.

The data from the Fermi-LAT show a significant increase
in the event rate after the GBM trigger that is spatially
correlated with the GBM emission with high significance.

The photon flux above 100 MeV in the time interval
T0 - T0+250 s after the GBM trigger is $(4.3 \pm 1.9)E-05$ ph/cm²/s.
The highest-energy photon in this interval is a 1.6 GeV event
observed at T0+154 s.
The estimated photon index above 100 MeV is 2.5 ± 0.5 .

The Fermi-LAT point of contact for this burst is
Elisabetta Bissaldi (elisabetta.bissaldi@ba.infn.it).

The Fermi-LAT is a pair conversion telescope designed
to cover the energy band from 20 MeV to greater than 300 GeV.
It is the product of an international collaboration between
NASA and DOE in the U.S. and many scientific
institutions across France, Italy, Japan and Sweden."

Subject: Fermi trigger No 581478912 / GRB 190606A: AGILE/MCAL observations
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/6/2019, 3:17 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24759
SUBJECT: Fermi trigger No 581478912 / GRB 190606A: AGILE/MCAL observations
DATE: 19/06/06 10:15:56 GMT
FROM: Alessandro Ursi at INAF/IAPS <alessandro.ursi@gmail.com>

A. Ursi (INAF/IAPS), F. Verrecchia (SSDC, and INAF/OAR), N. Parmiggiani (INAF/OAS-Bologna), M. Tavani (INAF/IAPS, and Univ. Roma Tor Vergata), A. Argan, M. Cardillo, C. Casentini, Y. Evangelista, G. Piano (INAF/IAPS), F. Lucarelli, C. Pittori (SSDC, and INAF/OAR), A. Bulgarelli, V. Fioretti, F. Fuschino (INAF/OAS-Bologna), M. Marisaldi (INAF/OAS-Bologna, and Bergen University), M. Pilia, A. Trois (INAF/OA-Cagliari), I. Donnarumma (ASI), F. Longo (Univ. Trieste and INFN Trieste), A. Giuliani (INAF/IASF-Mi), report on behalf of the AGILE Team:

The AGILE Mini-CALorimeter (MCAL) detected the short burst GRB190606.08 (Fermi trigger No 581478912) at $T_0 = 2019-06-06\ 01:55:07.80 \pm 0.01$ s (UTC).

The event lasted about 0.22 s and released a total number of ~660 counts in the detector (in the 0.4-100 MeV energy range), above an average background rate of 660 counts / s.

The light curve shows a single sharp peak and can be found at http://www.agilescienceapp.it/notices/GRB_062876_486870907.795776.png.

The time-integrated spectrum of the burst in 0.22 s can be fitted in the energy range [0.4-100 MeV] with a single power law with $\text{ph.ind} = 2.32_{-0.12/+0.14}$, resulting in a reduced chi-square of 1.62 (86 d.o.f.). The burst fluence in the same energy range and time interval is $1.71e-6$ erg/cm² (90% confidence level).

The AGILE-MCAL detector is a CsI detector with a 4 pi FoV, sensitive in the energy range 0.4-100 MeV. Additional analysis of AGILE data is in progress.

Subject: GRB 190606A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/7/2019, 4:05 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24768
SUBJECT: GRB 190606A: Insight-HXMT/HE detection
DATE: 19/06/07 11:05:14 GMT
FROM: QiBin Yi at IHEP, HXMT <yiqb@ihep.ac.cn>

Q. B. Yi, S. Xiao, Q. Luo, C. Cai, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

At 2019-06-06T01:55:07.00 (T0), Insight-HXMT/HE detected
GRB 190606A (trigger ID: HEB190606079) in a routine search of the data,
which was also triggered by Fermi/GBM (trigger #581478912) and
AGILE/MCAL (GCN #24759).

The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 0.12 s measured from T0+0.84 s.
The 1-ms peak rate, measured from T0+0.89 s, is 49197 cnts/sec.
The total counts from this burst is 2833 counts.
Some part of the Insight-HXMT/HE light curve suffers data saturation
due to the extreme brightness of this burst.
URL_LC: http://www.hxmt.org/images/GRB/HEB190606079_lc.jpg

All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

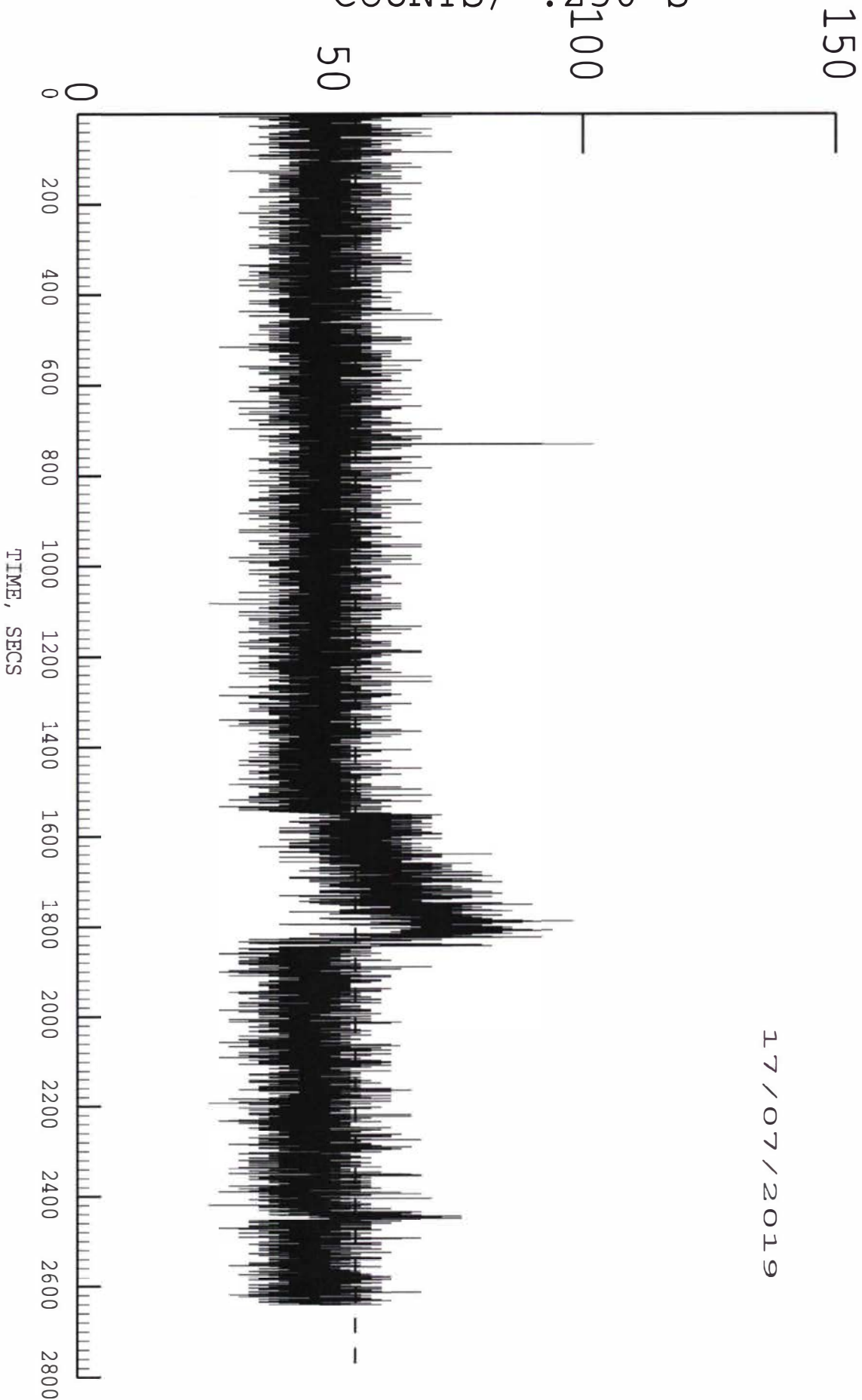
Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).
More information about it could be found at:
<http://www.hxmt.org>.

ODYSSEY 06/06/19 33084.818 09:11:24.818

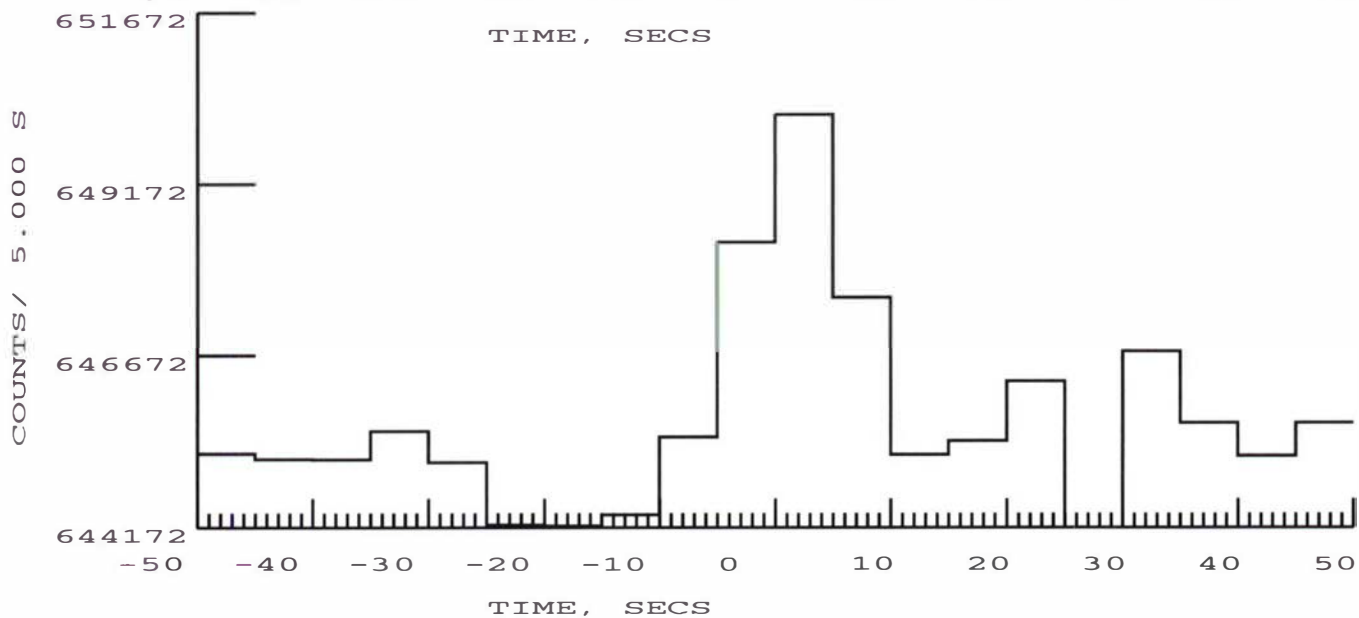
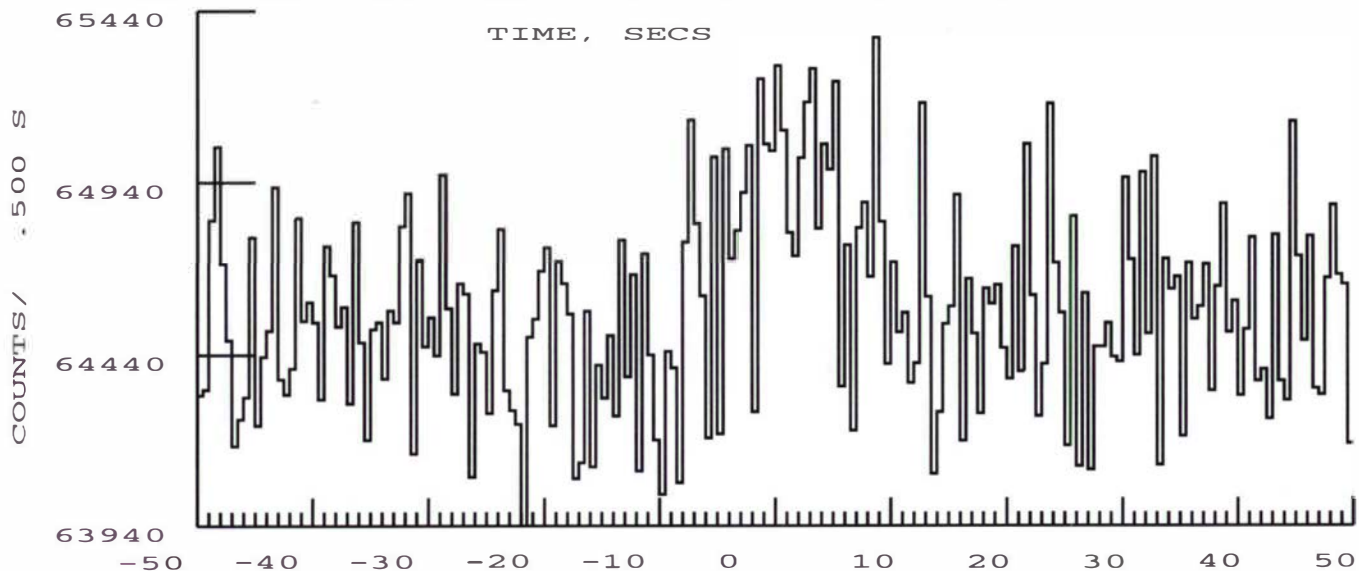
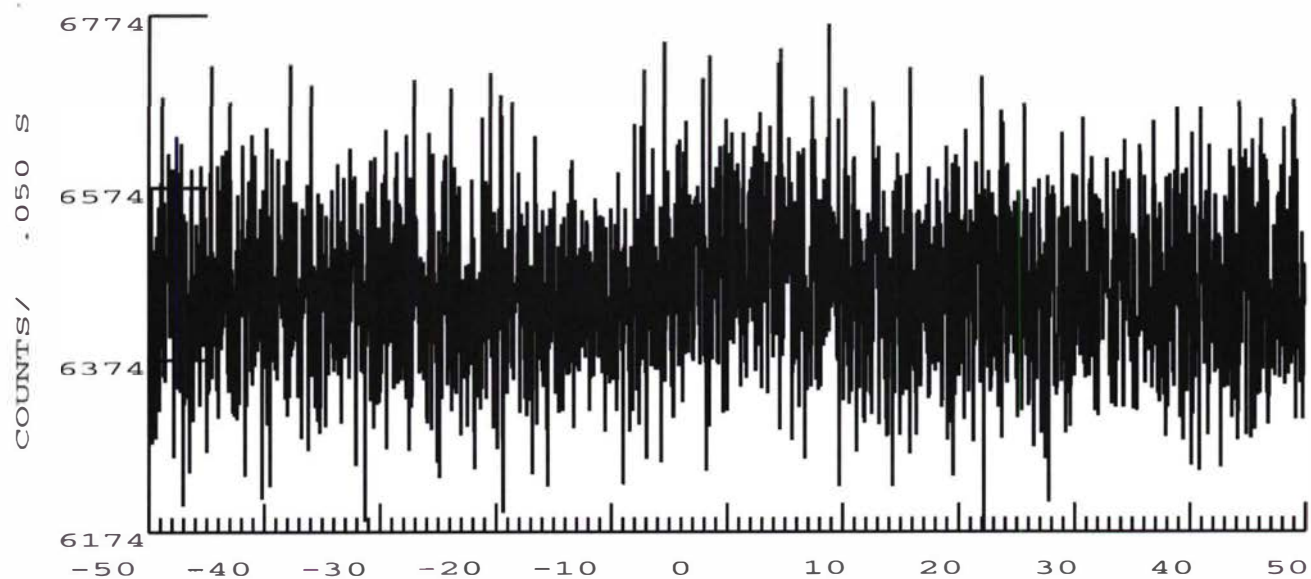
50-3000 keV

Konus RT

COUNTS/ .250 S



17/07/2019

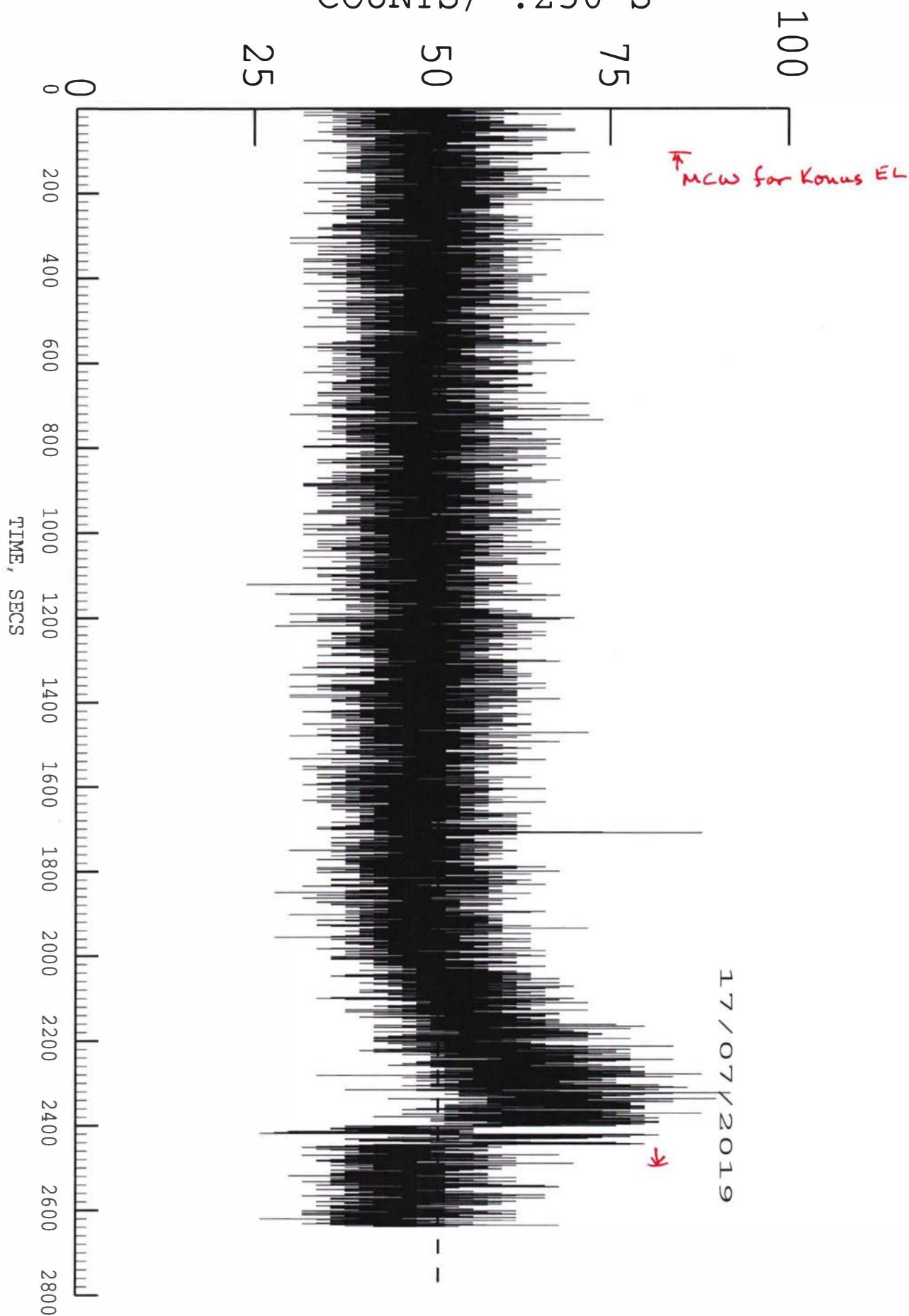


ODYSSEY 06/06/19 46764.578 12:59:24.578

50-3000 keV

Konus RT

COUNTS/ .250 S



KONUS

07/06/2019

83.021

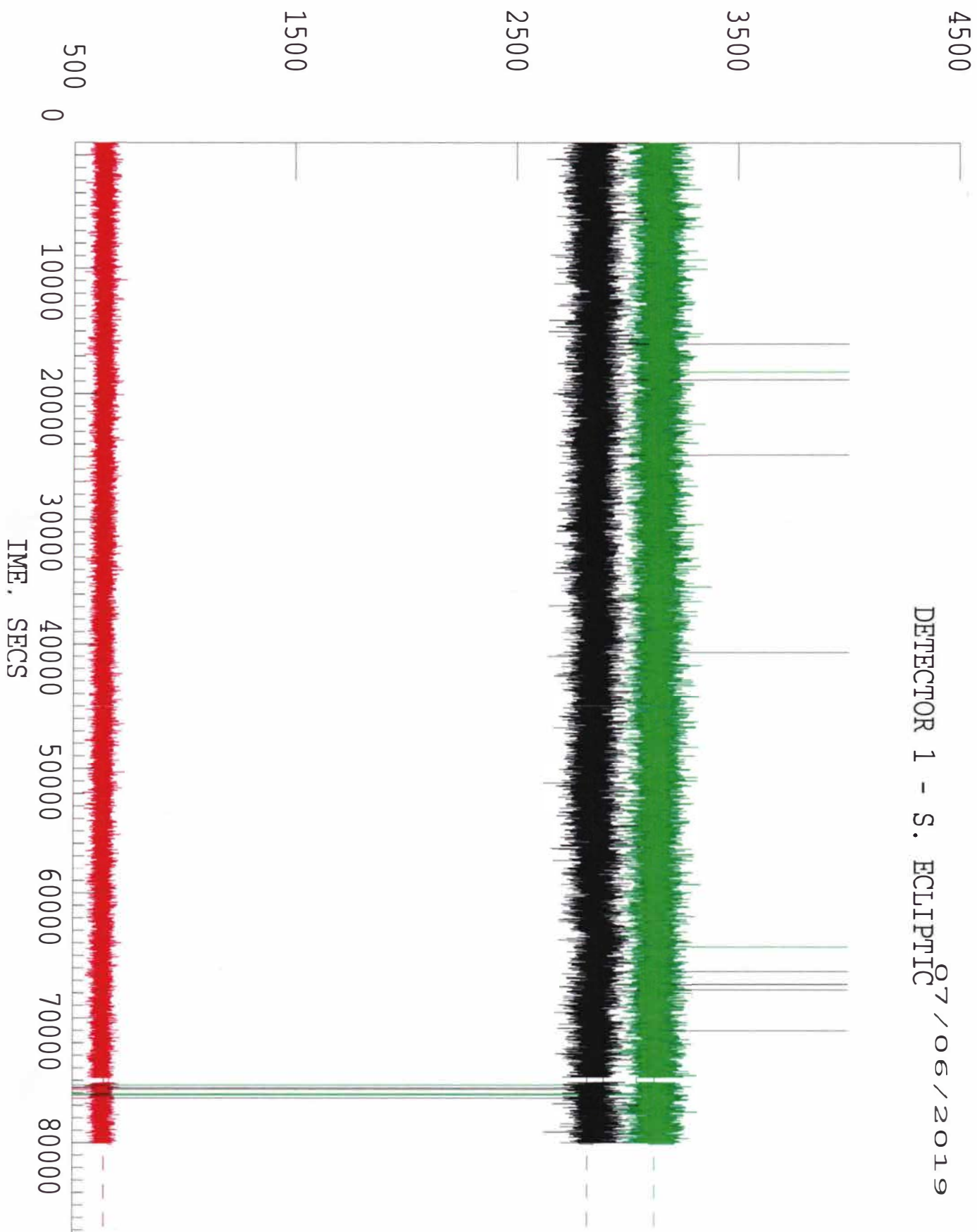
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

07/06/2019

83.021

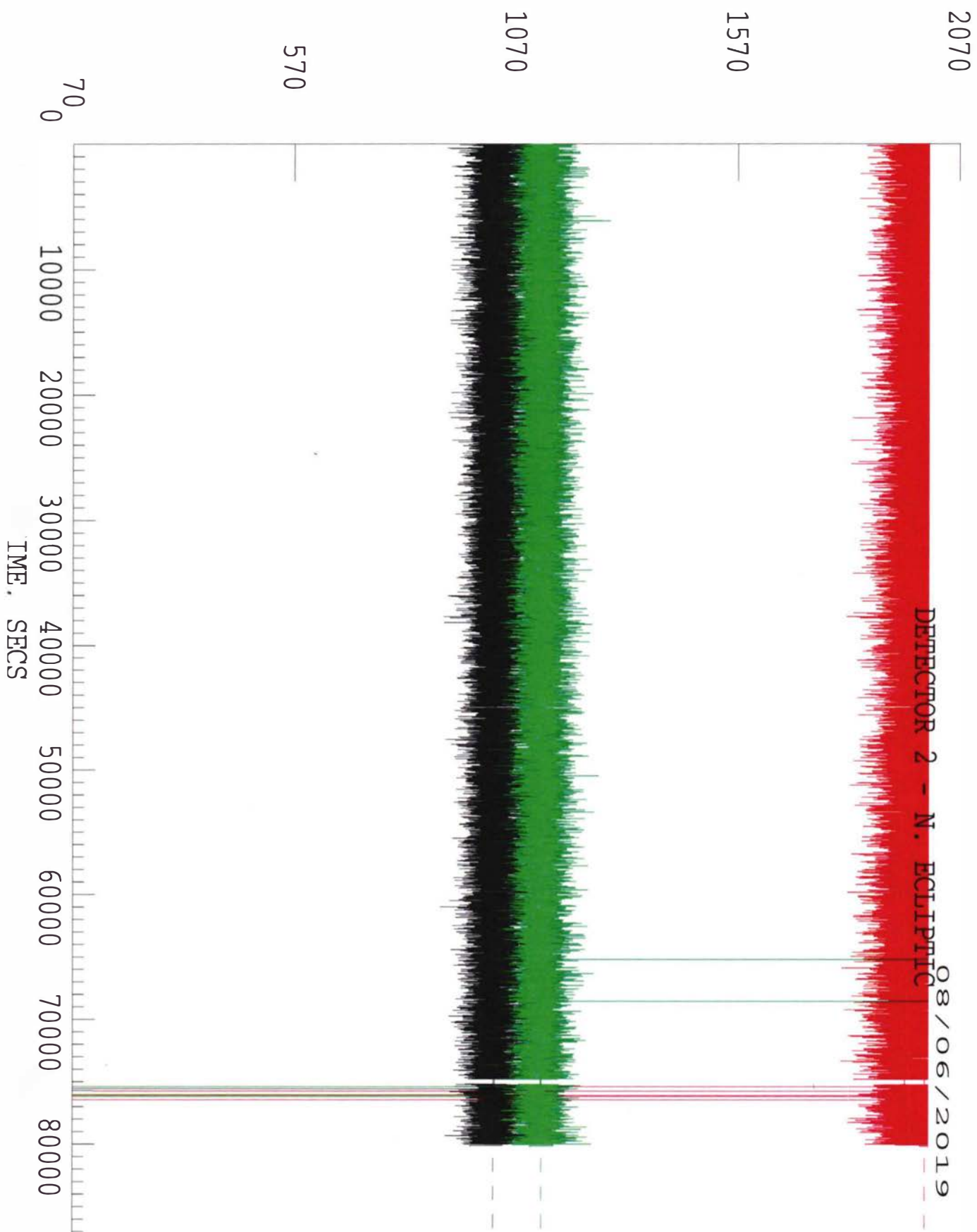
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



FERMI

07/06/19

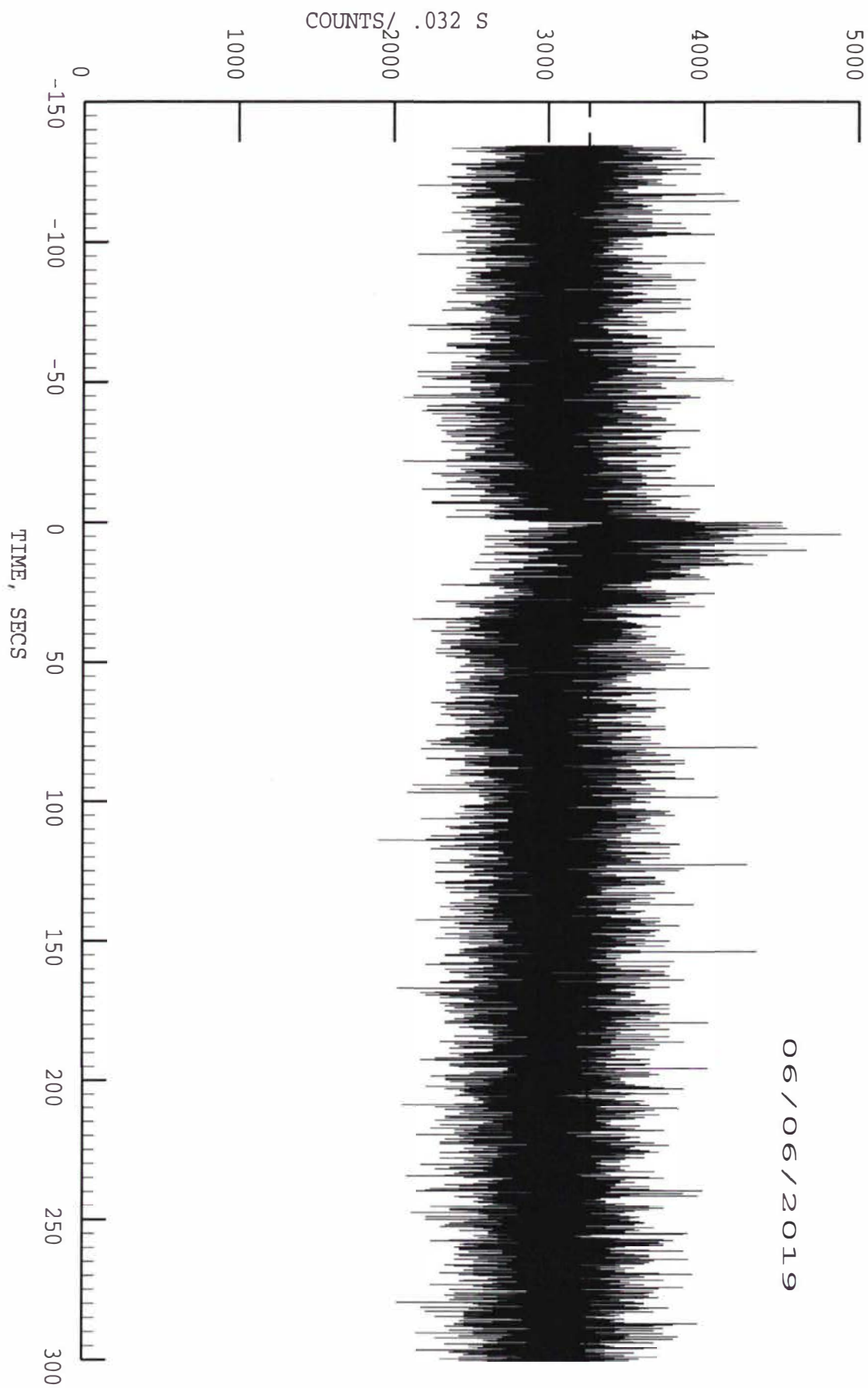
6164.289

01:42:44.289

26- 293 keV

271.8 -45.6 4.2

EL = -22.2

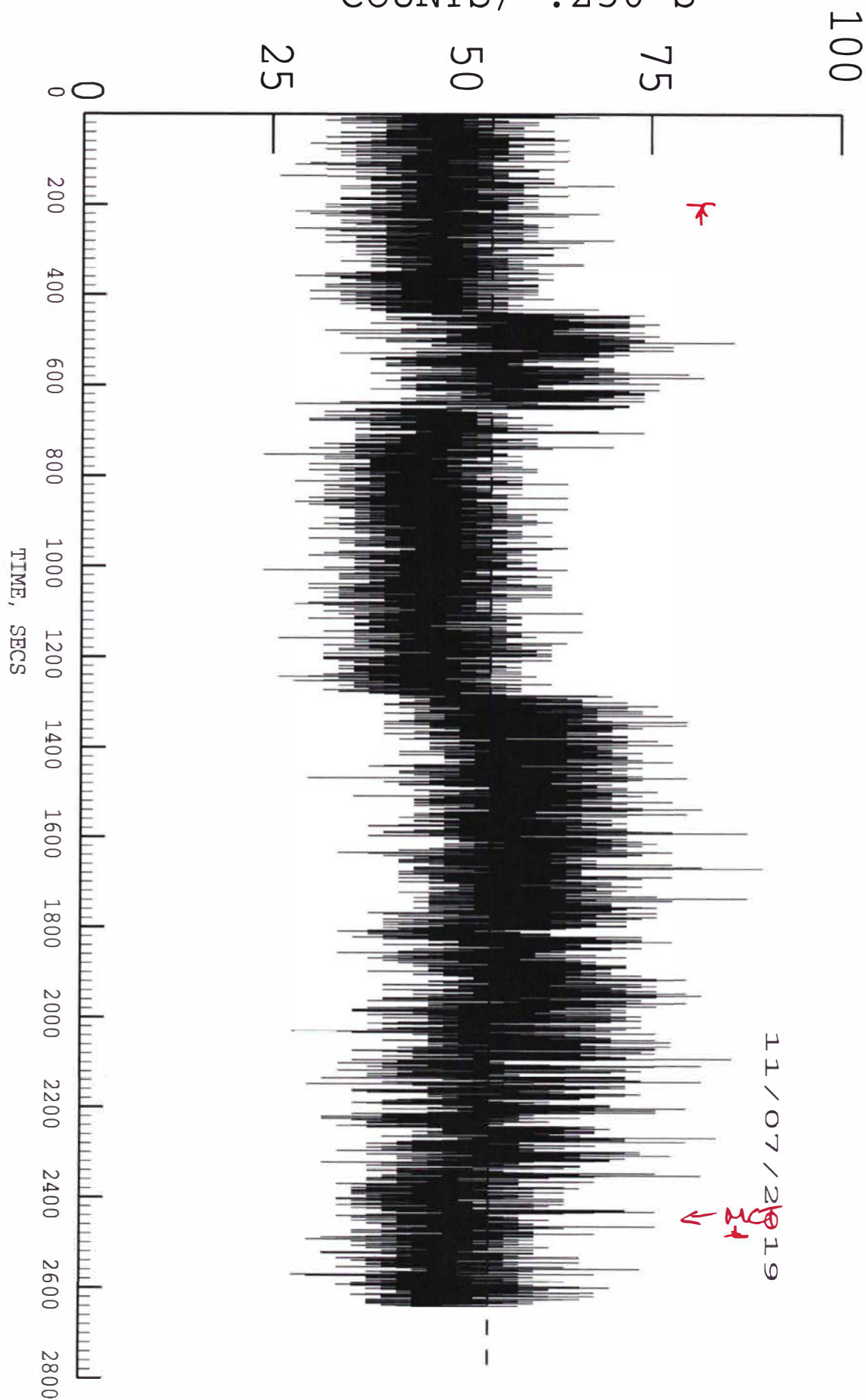


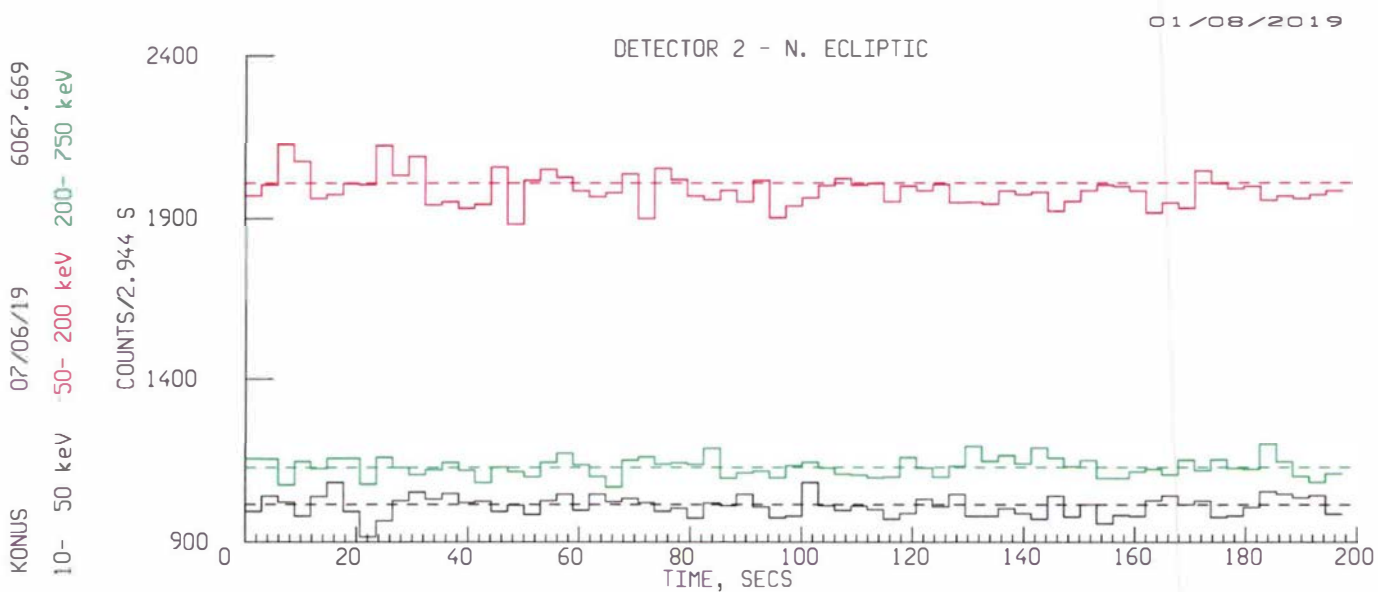
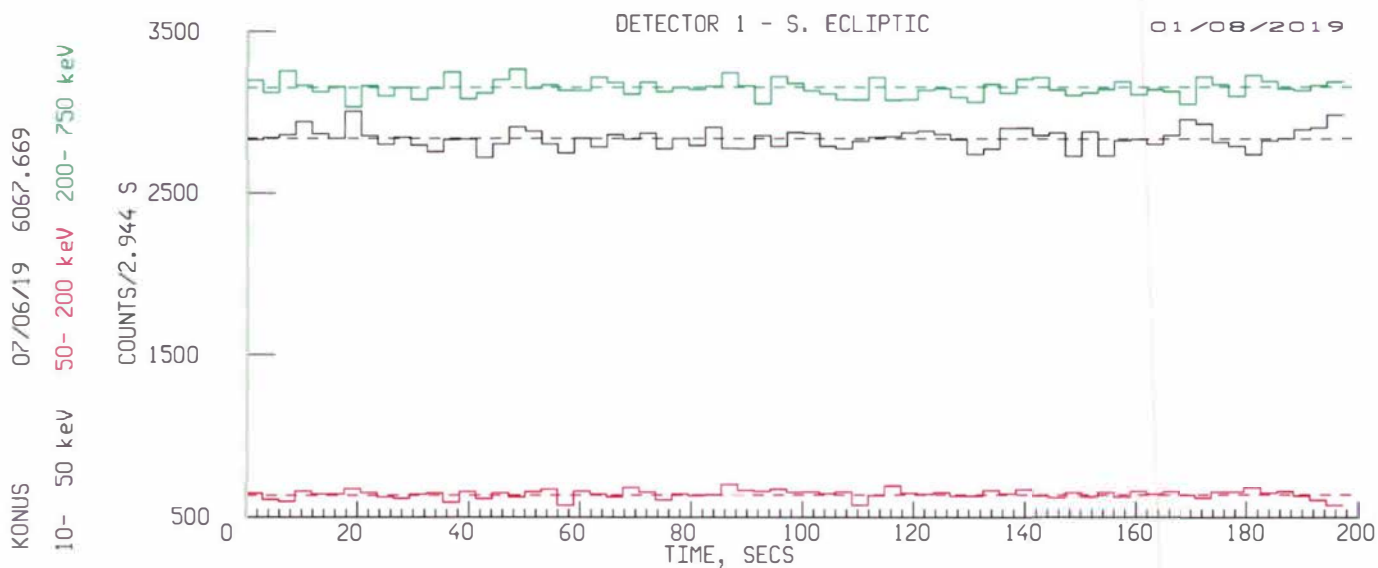
ODYSSEY 07/06/19 4823.782 01:20:23.782

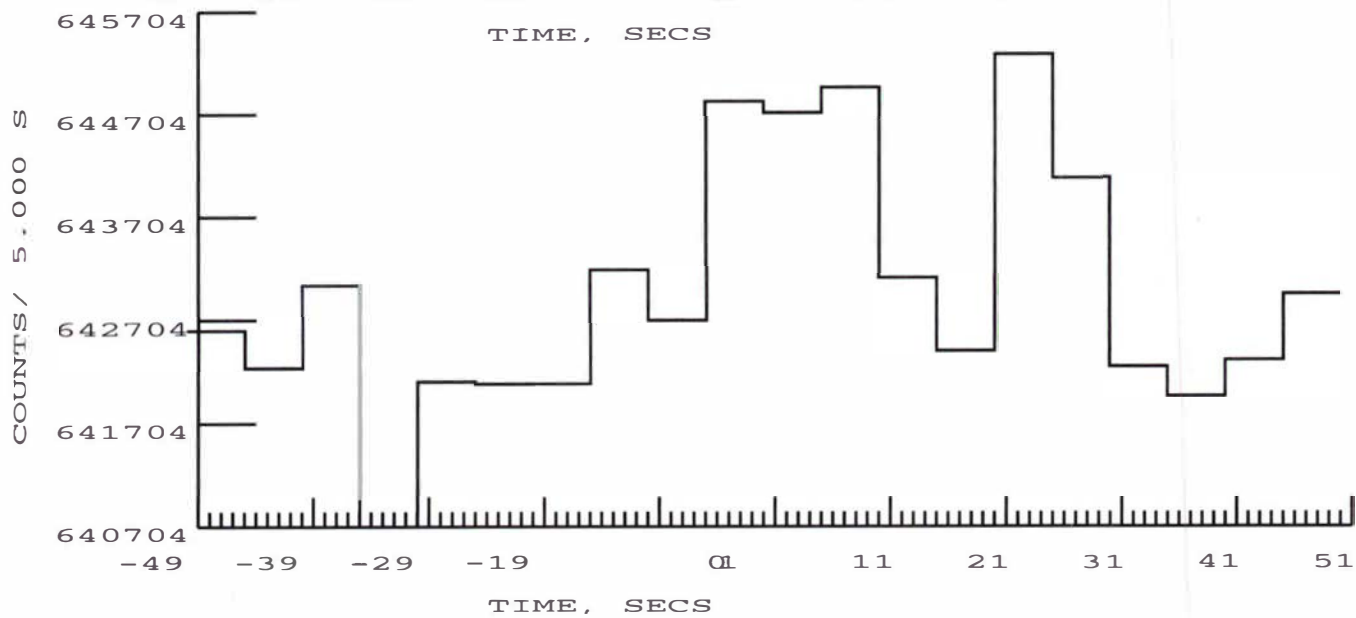
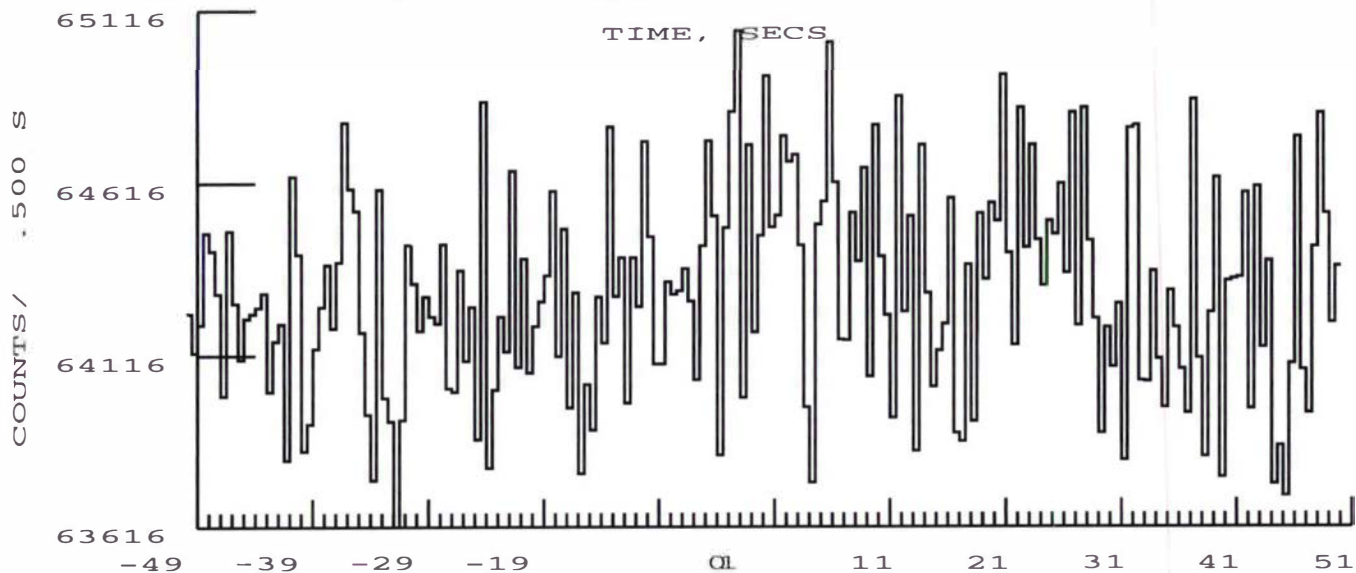
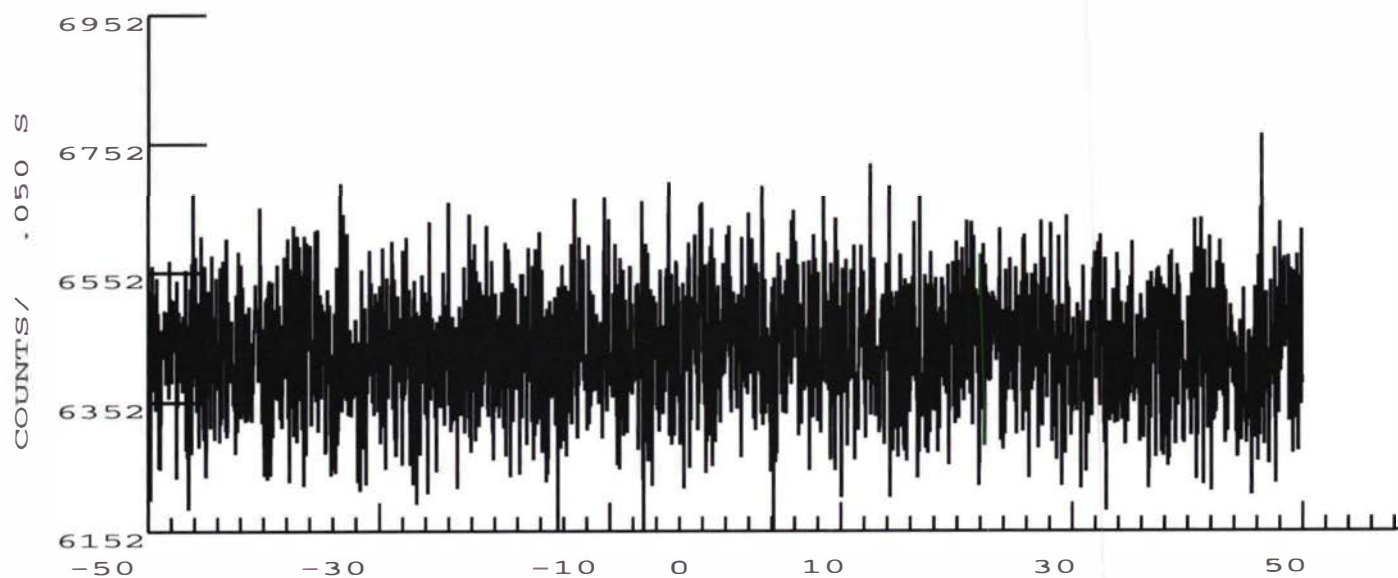
50-3000 keV

COUNTS/ .250 S

Prob. occulted



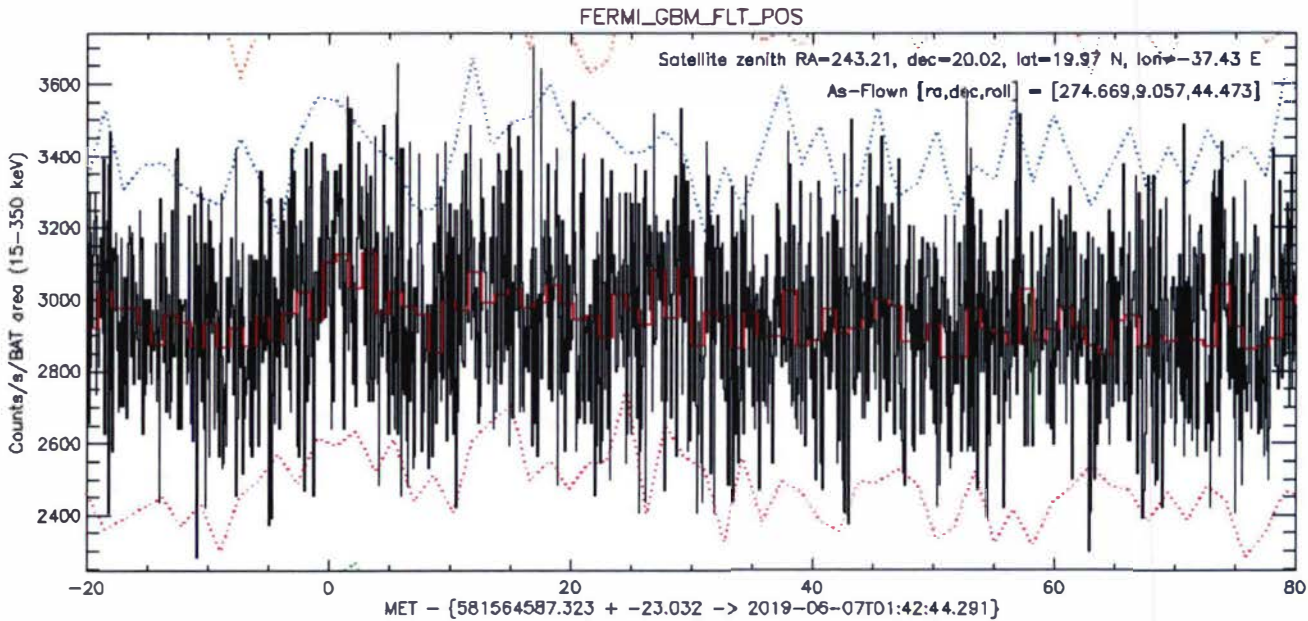




Subject: BAT lightcurve for trigger at 190607_0142
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 6/6/2019, 9:54 PM
To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190607_0142.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581564587.323
Swift Zenith(RA,dec):      243.21, 20.02
Swift Location(lon,lat,alt): -37.43 E, 19.97 N, 555 km
Time(MET + UTCF -> UT):    581564587.323 + -23.032 -> 2019-06-07T01:42:44.291
YYMMDD_SOD:               190607_06164.291      DOY=158
Obs Sequence Number:       00040644011
Obs Target Name:           CRATESJ1818+0903
Obs Date and Times:        2019-06-07 01:30:38 - 02:00:37
Obs Pointing(ra,dec,roll): 274.669, 9.057, 44.47
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190607_0142_bat64ms_ipn	87.0 KB
/tmp/swift/190607_0142.png	19.7 KB

KONUS

08/06/2019

71.748

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4100

3100

2100

1100

100

0

10000

20000

30000

40000

50000

60000

70000

80000

TIME, SECS

DETECTOR 1 - S. ECLIPPTIC 08/06/2019

KONUS

08/06/2019

71.748

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2080

1580

1080

580

80

0

10000

20000

30000

40000

50000

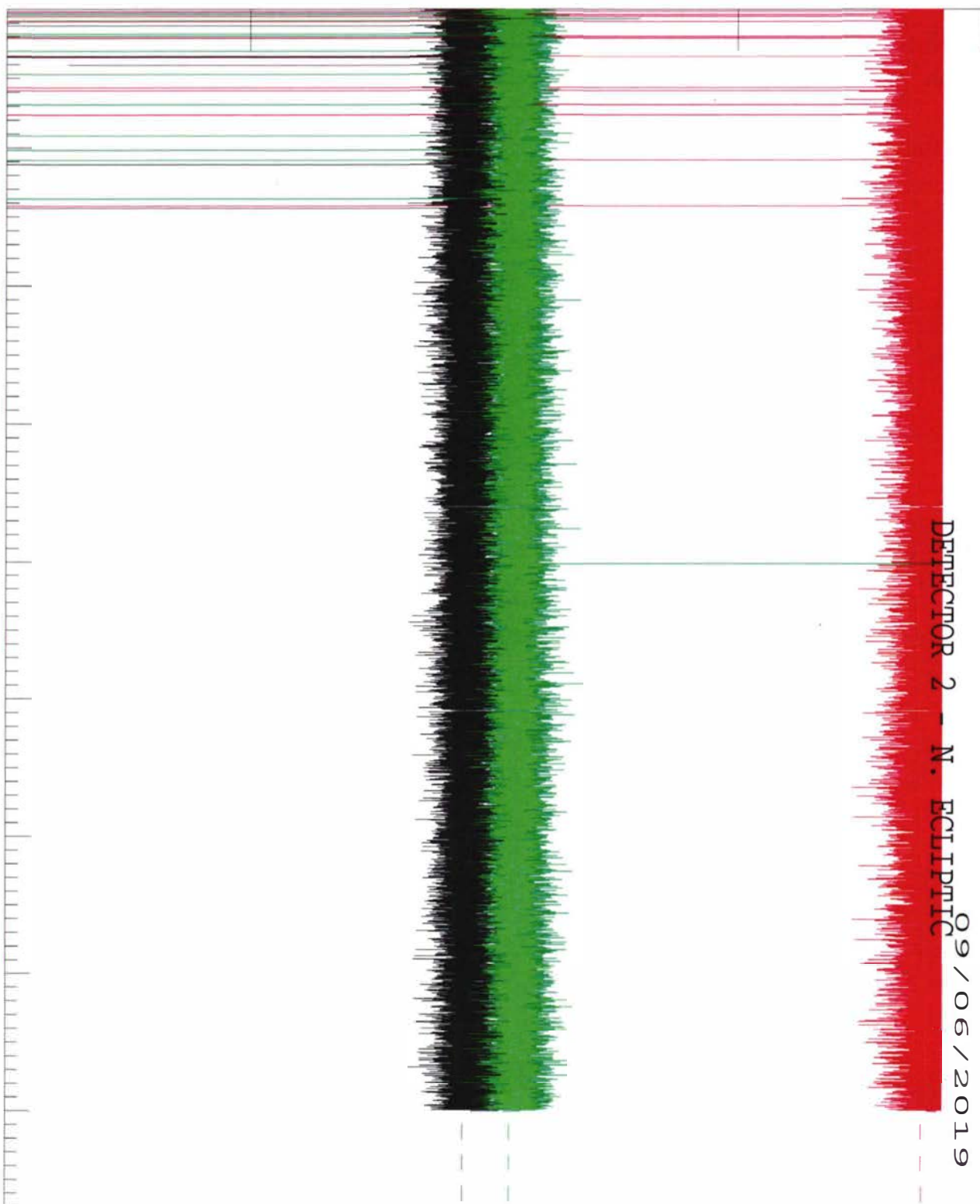
60000

70000

80000

TIME, SECS

DETECTOR 2 - N. ECLIPTEIC 09/06/2019



FERMI

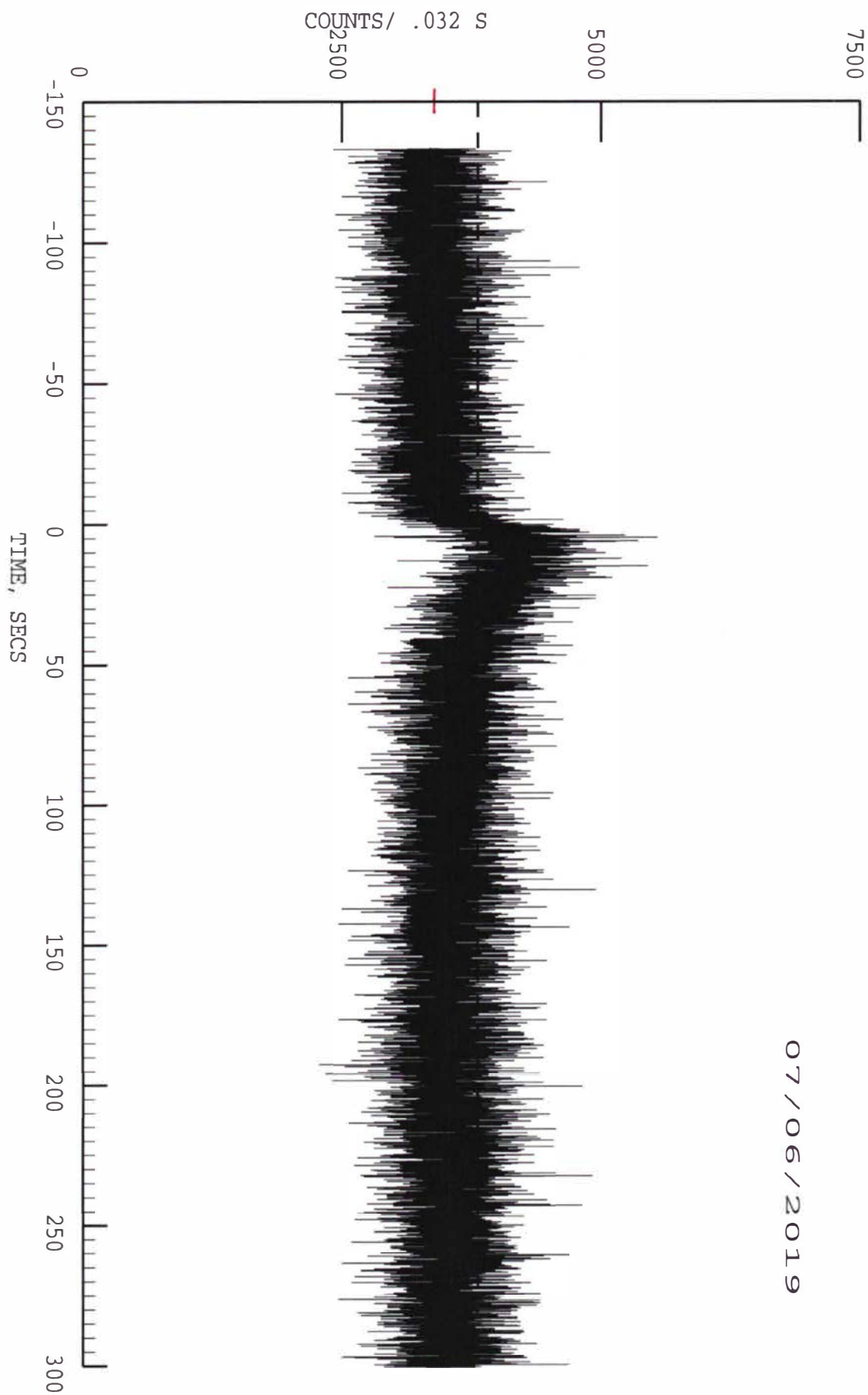
08/06/19

738.394

00:12:18.394

26- 293 keV

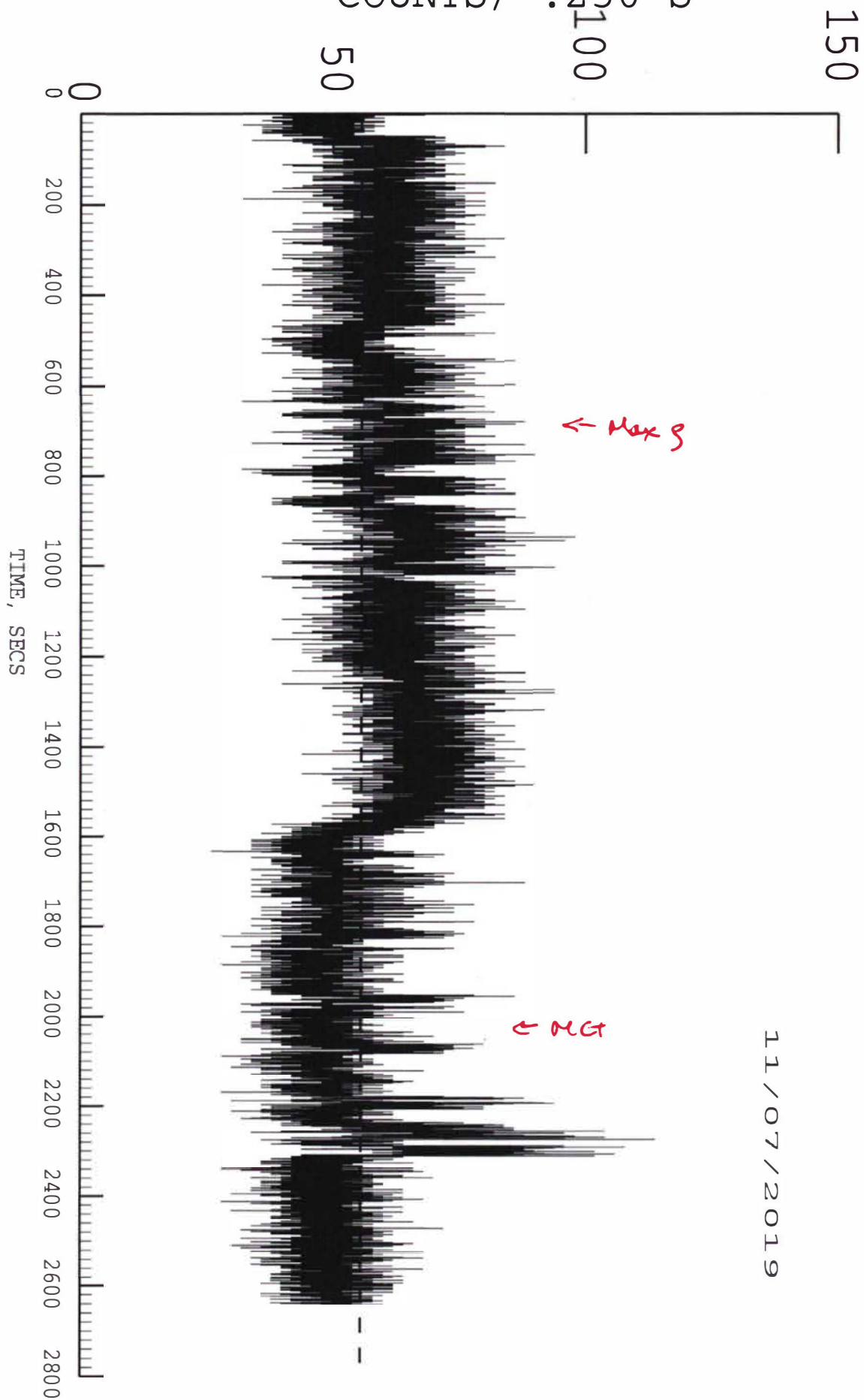
225.7 -31.4 2.2

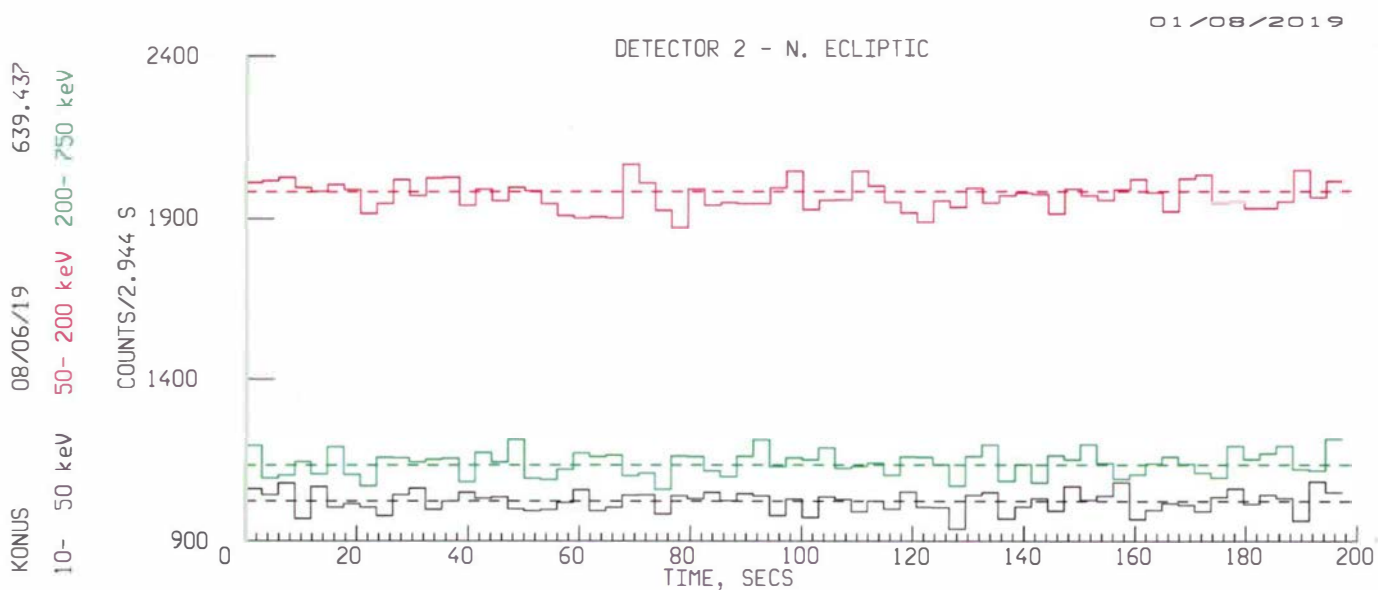
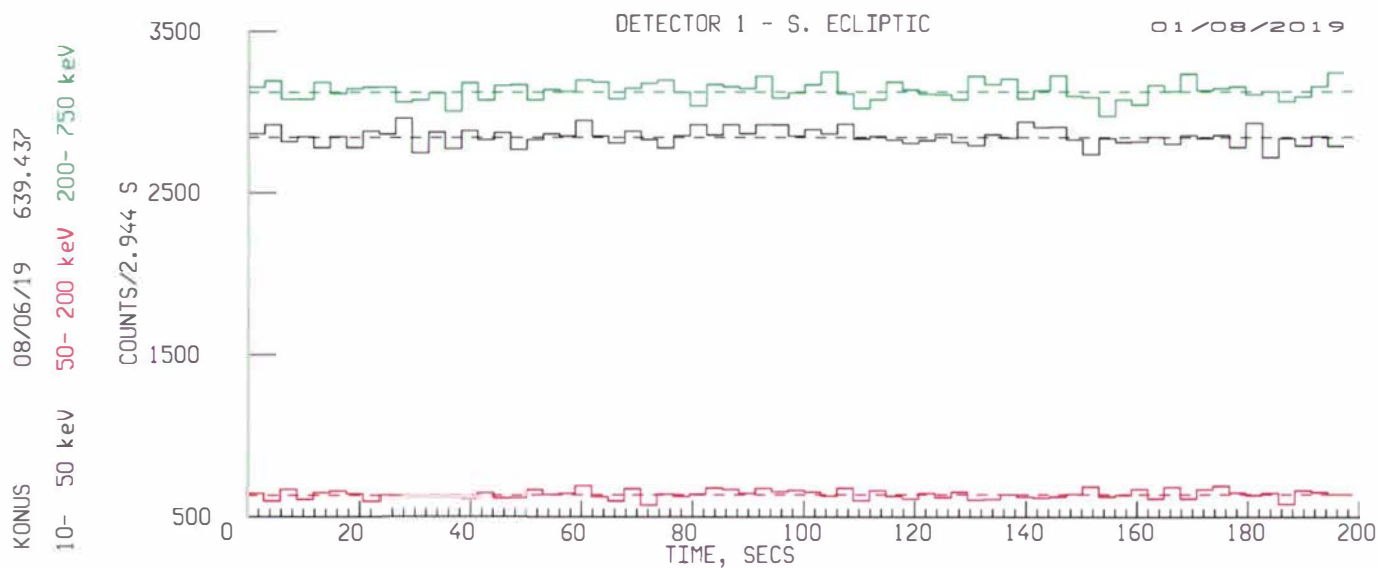


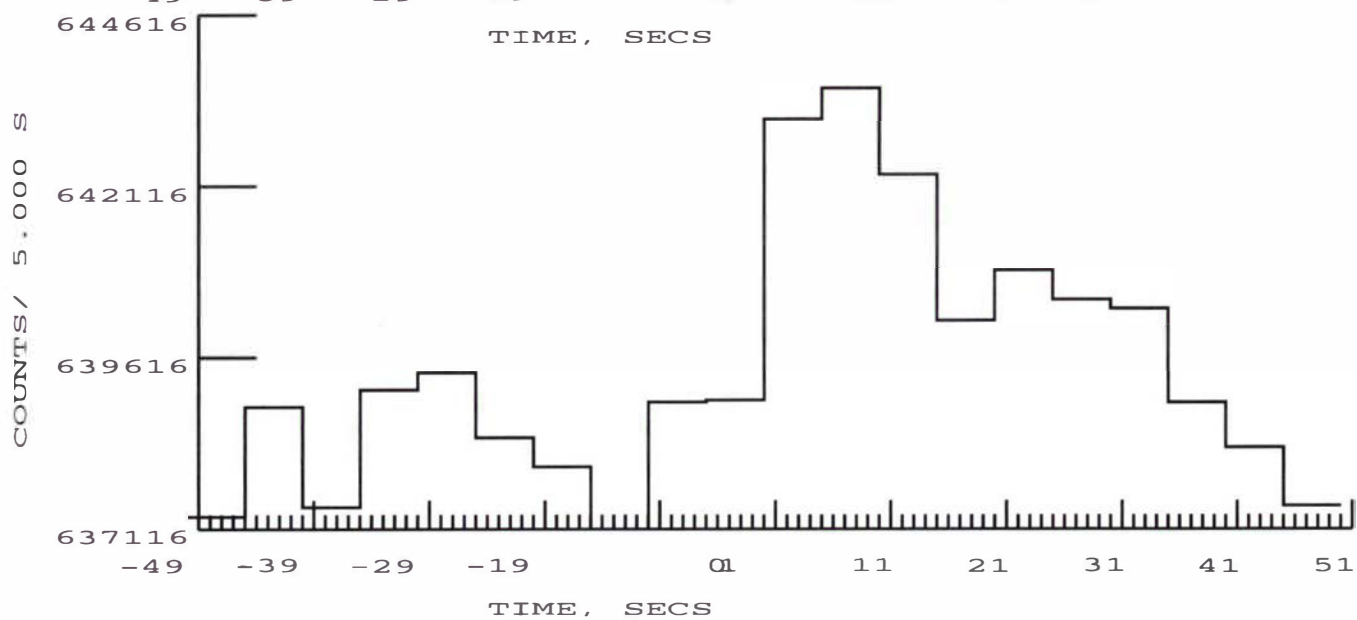
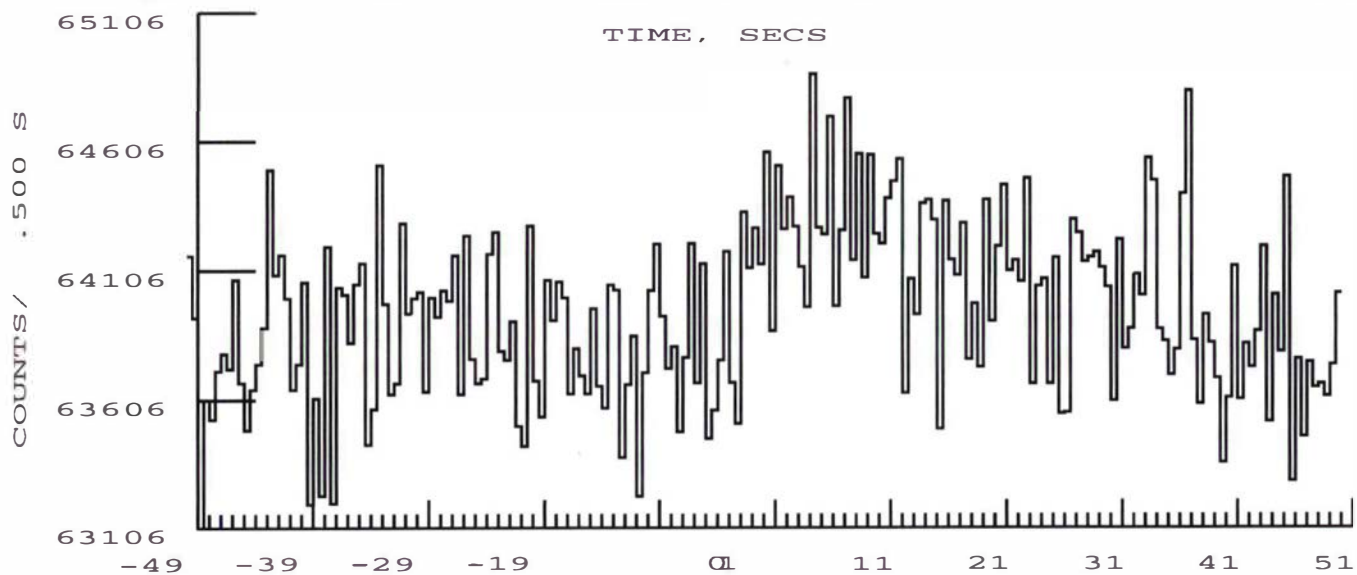
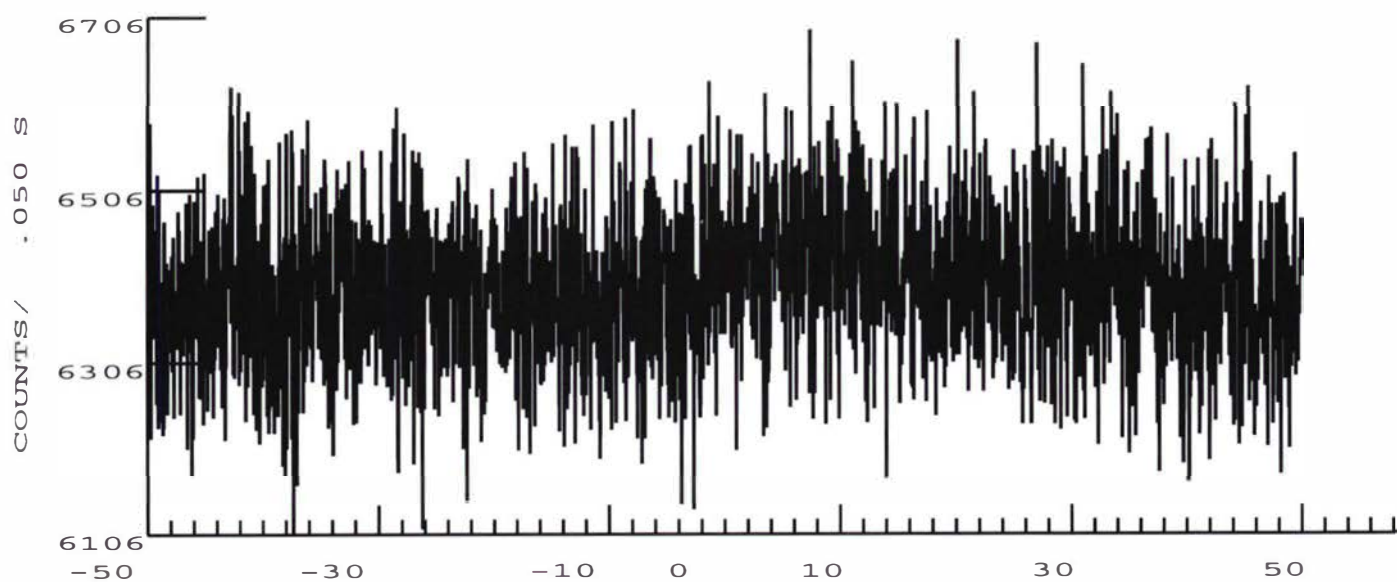
ODYSSEY 07/06/19 85822.325 23:50:22.325

50-3000 keV

COUNTS/ .250 S







BAT lightcurve for trigger at 190608_0012

Subject: BAT lightcurve for trigger at 190608_0012

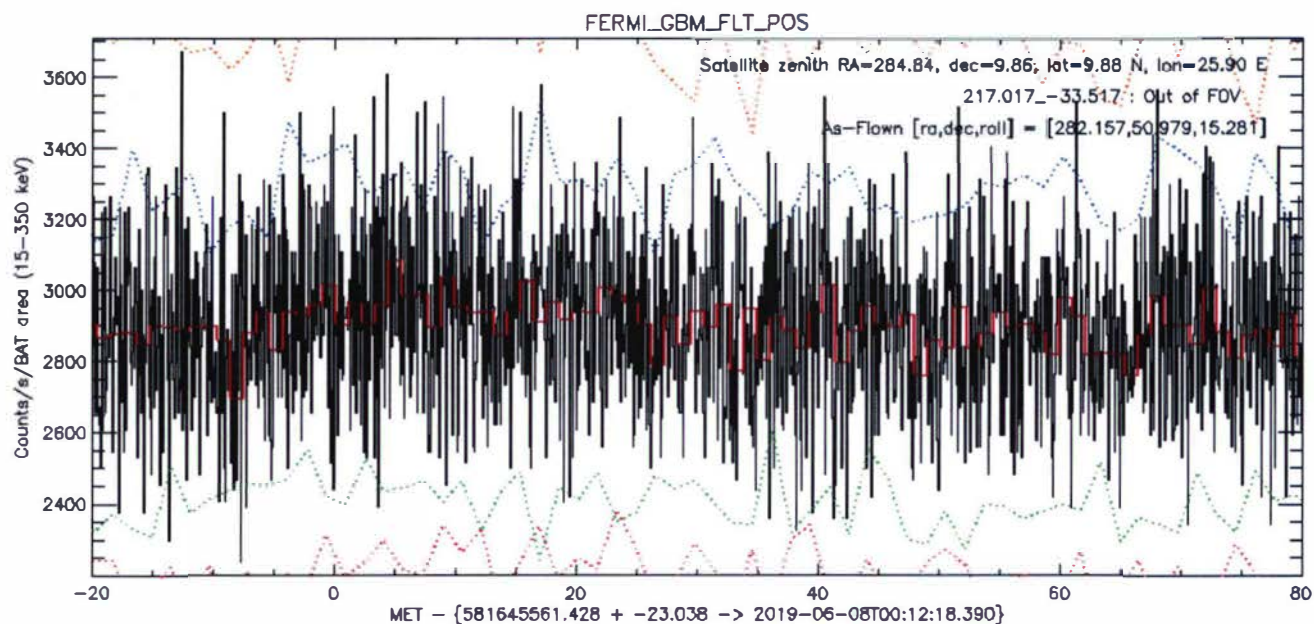
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/7/2019, 8:19 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190608_0012.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581645561.428 -s 217.017_-33.517
Swift Zenith(RA,dec):      284.84, 9.86
Swift Location(lon,lat,alt): 25.90 E, 9.88 N, 558 km
Time(MET + UTCF -> UT):   581645561.428 + -23.038 -> 2019-06-08T00:12:18.390
YYMMDD_SOD:               190608_00738.390      DOY=159
Obs Sequence Number:      00011336008
Obs Target Name:          ZTF19aanigr
Obs Date and Times:       2019-06-07 23:59:38 - 00:22:34
Obs Pointing(ra,dec,roll): 282.157, 50.979, 15.28
217.017_-33.517_imageloc (boresight_dist, angle): (102, 125)
217.017_-33.517_exposure (cm2 cos adjusted): 0
217.017_-33.517_altitude: 36 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190608_0012.png

21.2 KB

/tmp/swift/190608_0012_bat64ms_ipn

87.1 KB

KONUS

09/06/2019

60.476

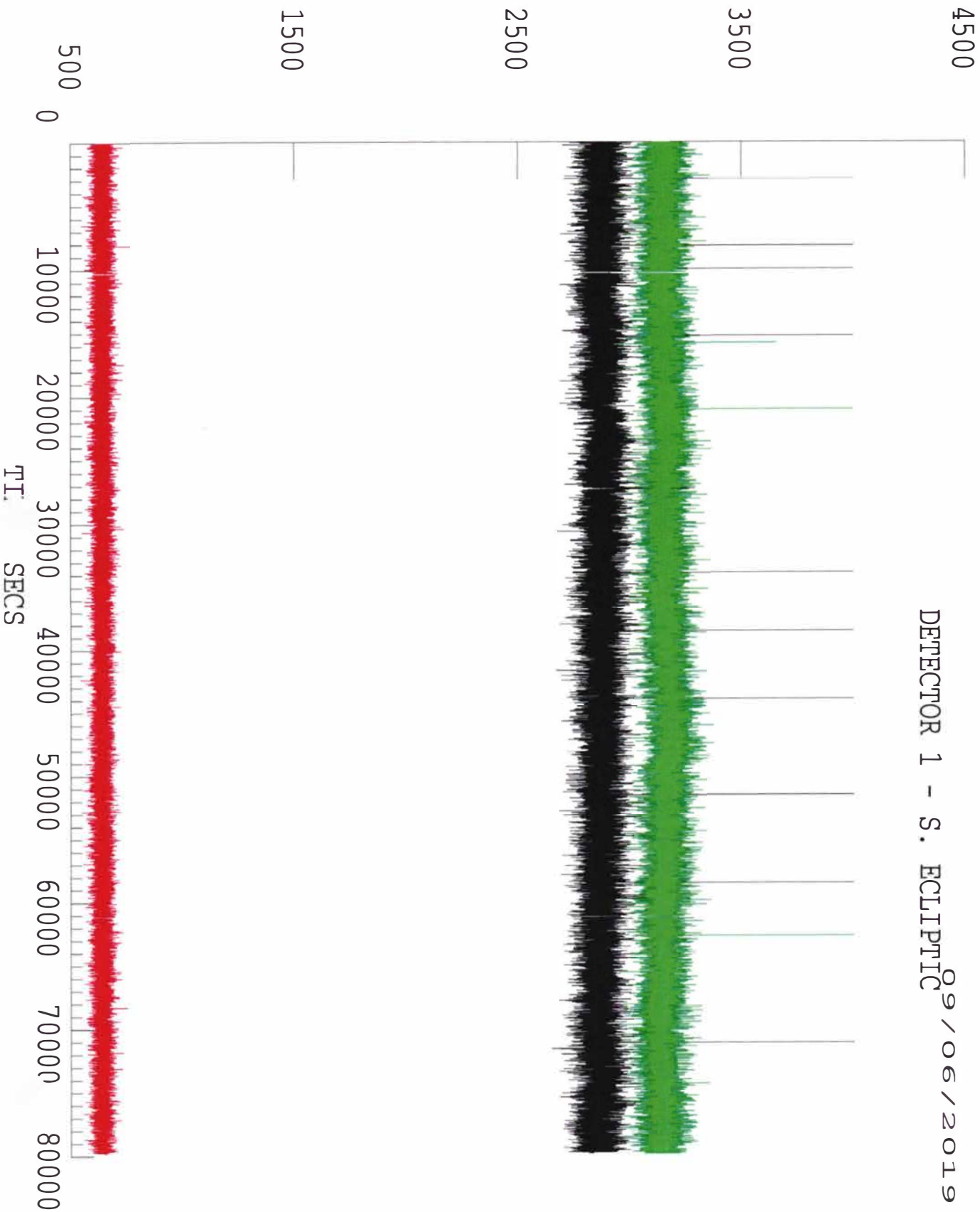
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

09/06/2019

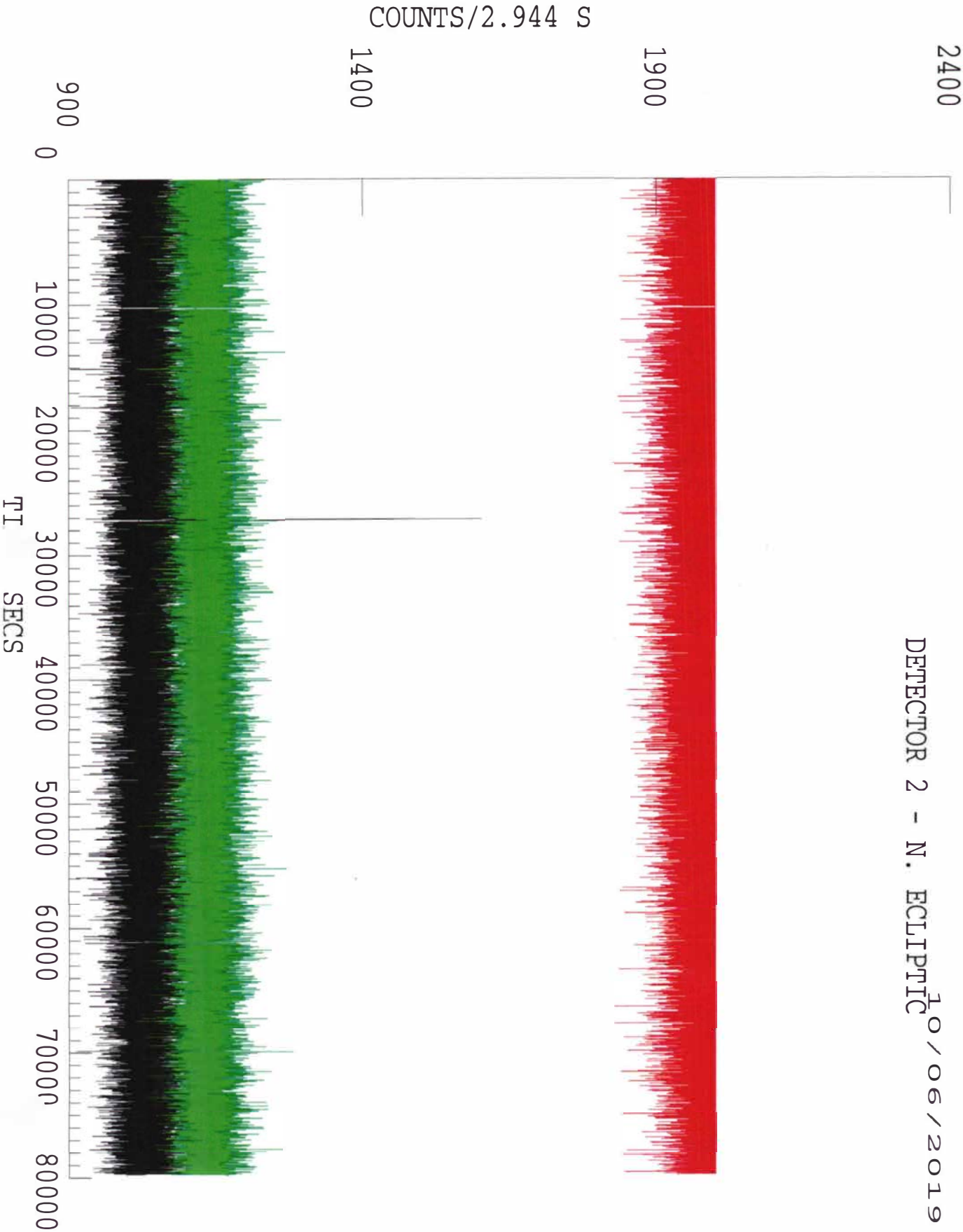
60.476

v01

10- 50 keV

50- 200 keV

200- 750 keV



FERMI

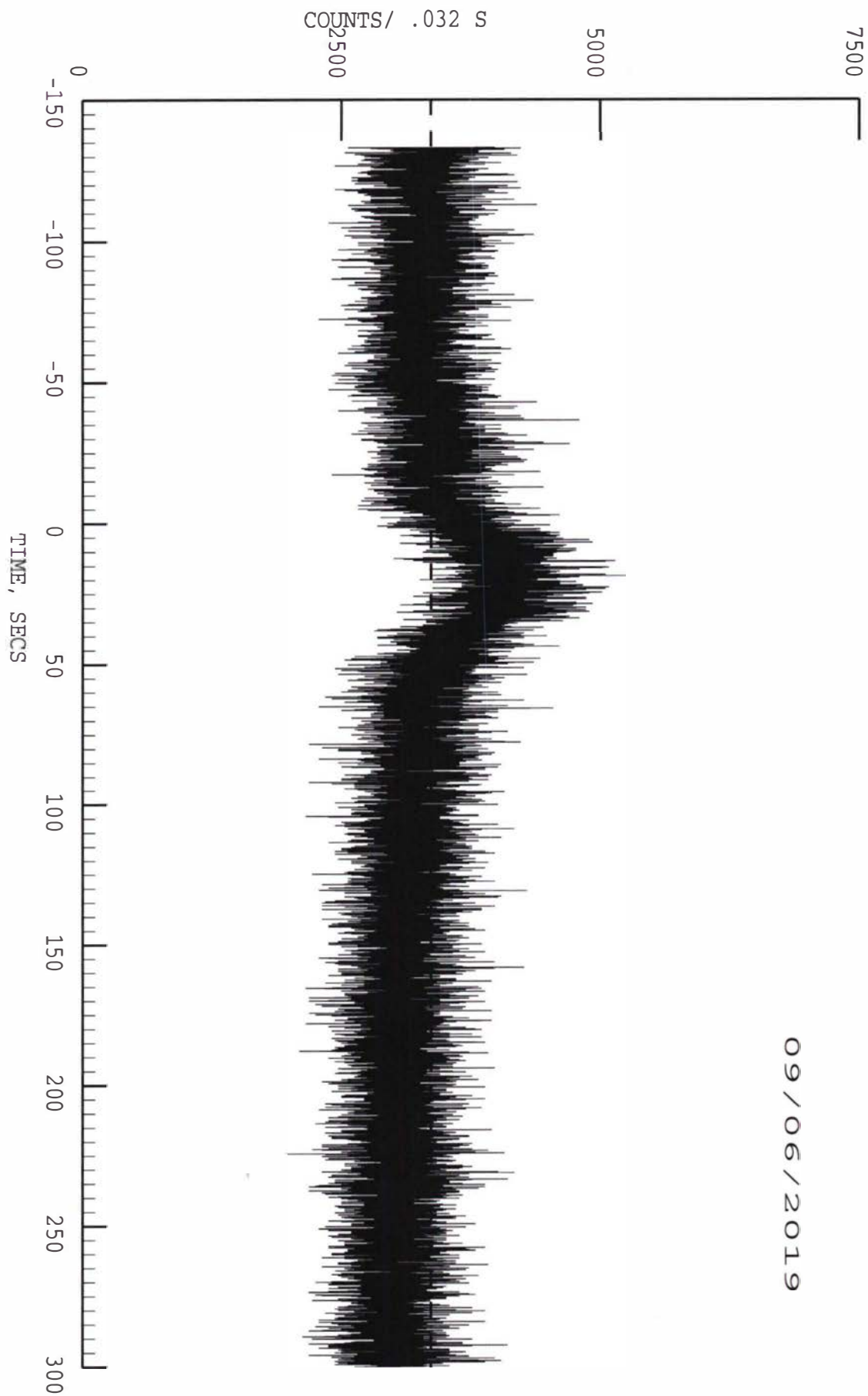
09/06/19

27245.259

07:34:05.259

26- 293 keV

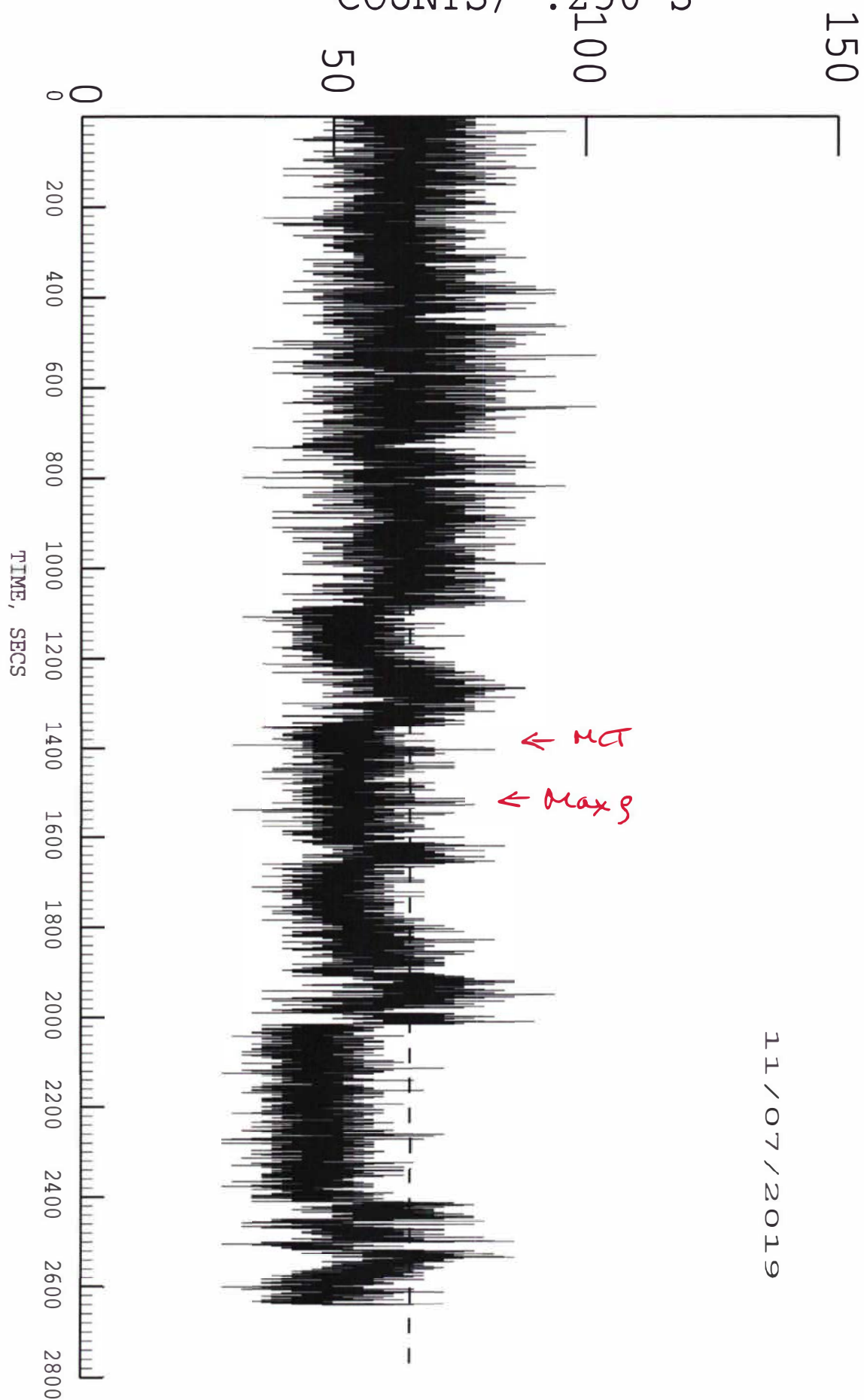
165.4 -50.4 1.9



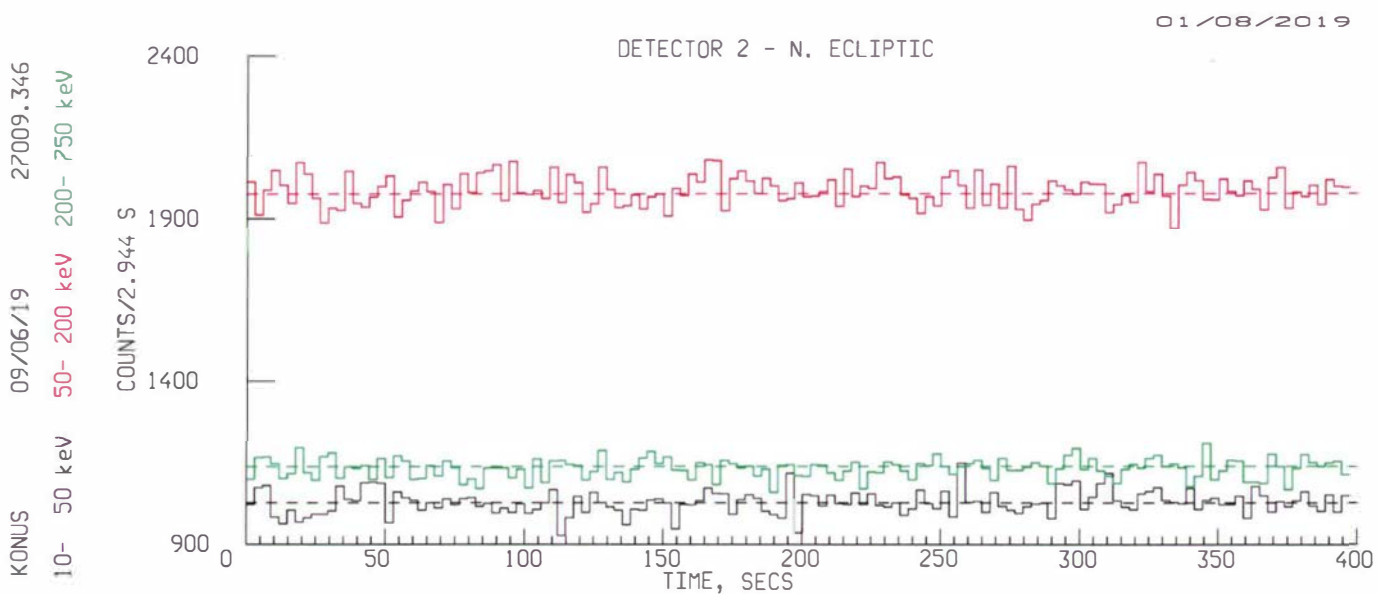
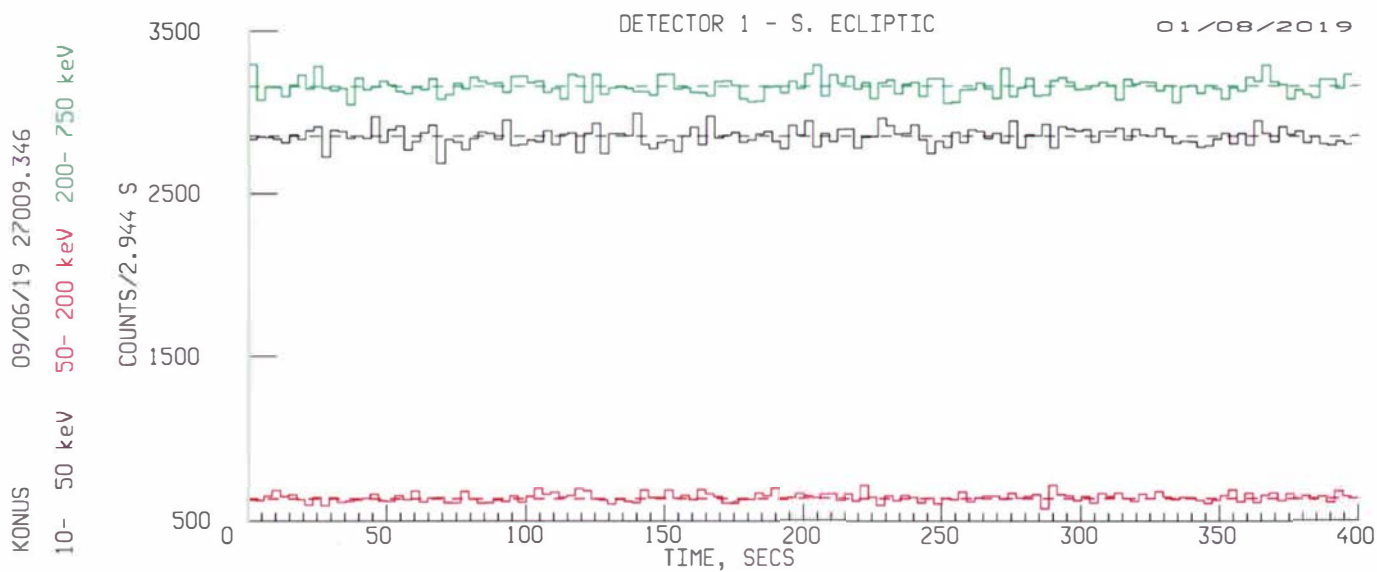
ODYSSEY 09/06/19 25880.301 07:11:20.301

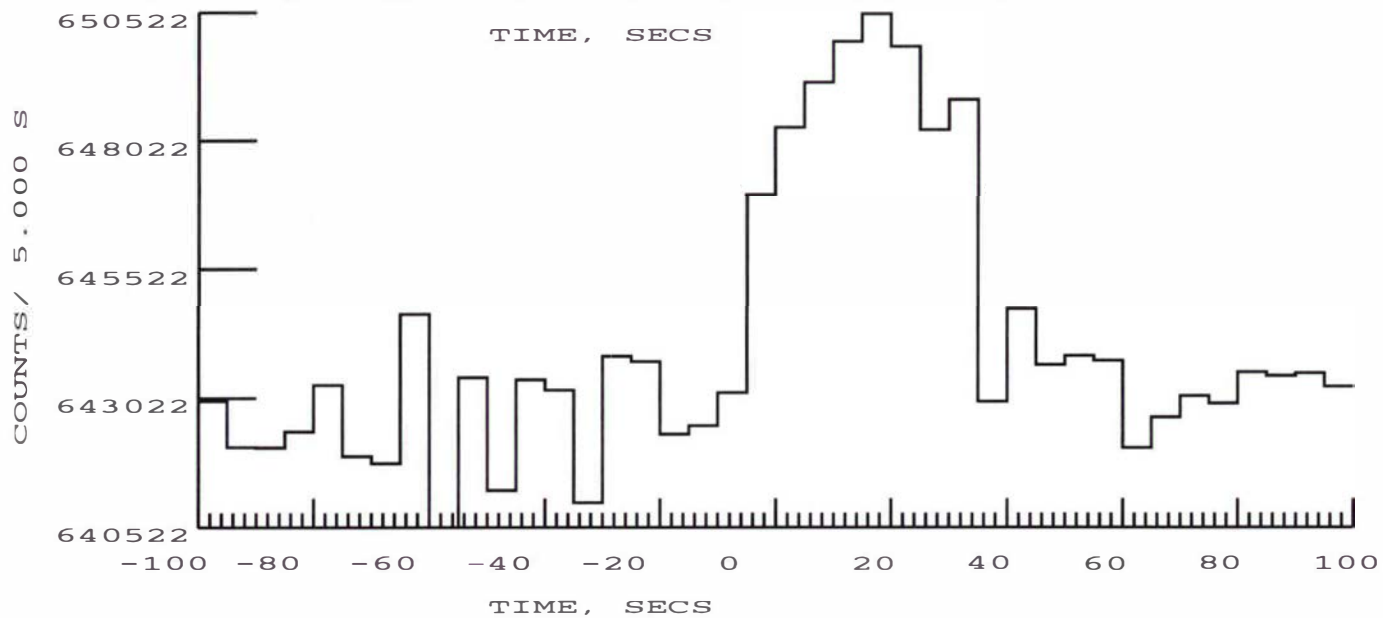
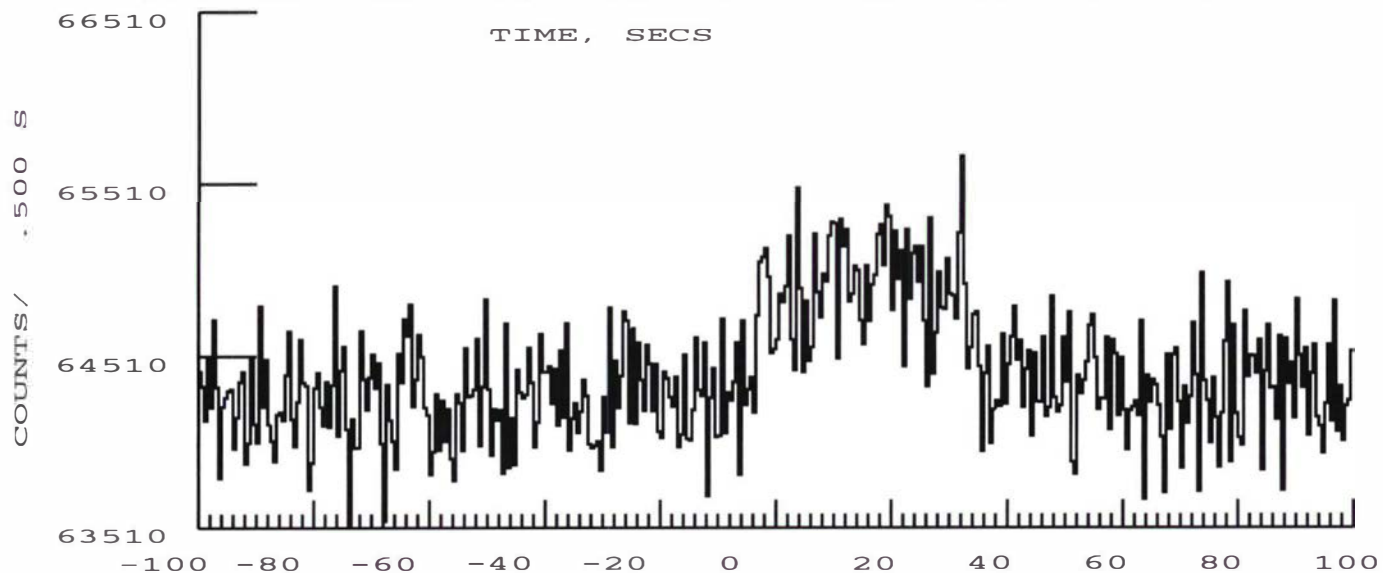
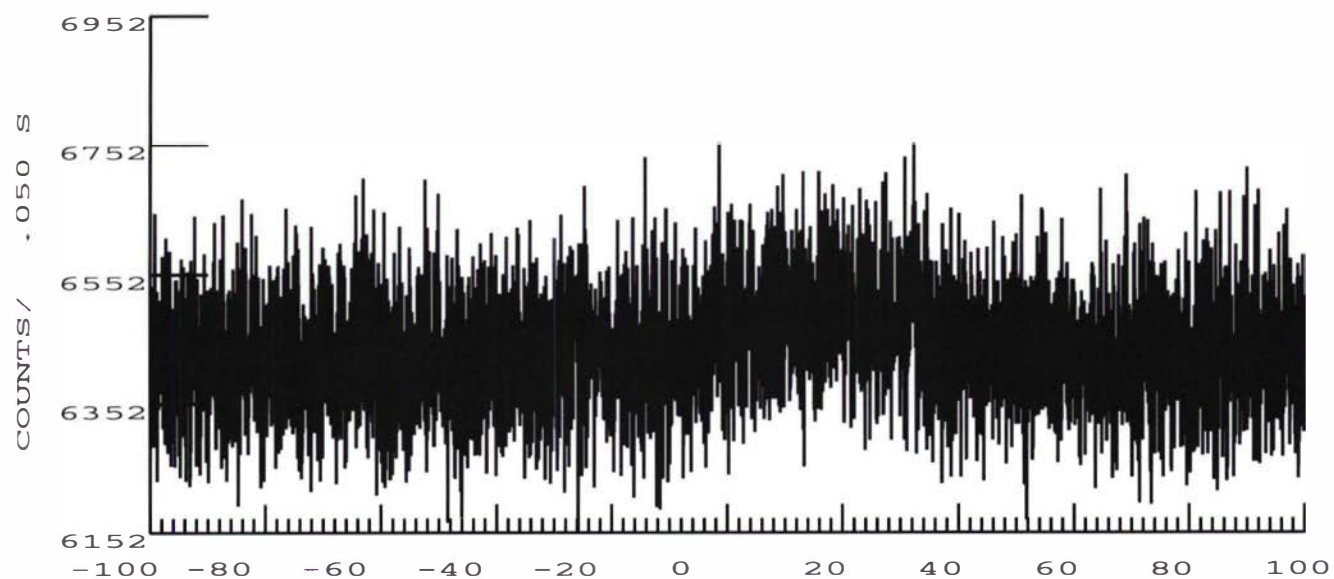
50-3000 keV

COUNTS/ .250 S



11/07/2019





BAT lightcurve for trigger at 190609_0734

Subject: BAT lightcurve for trigger at 190609_0734

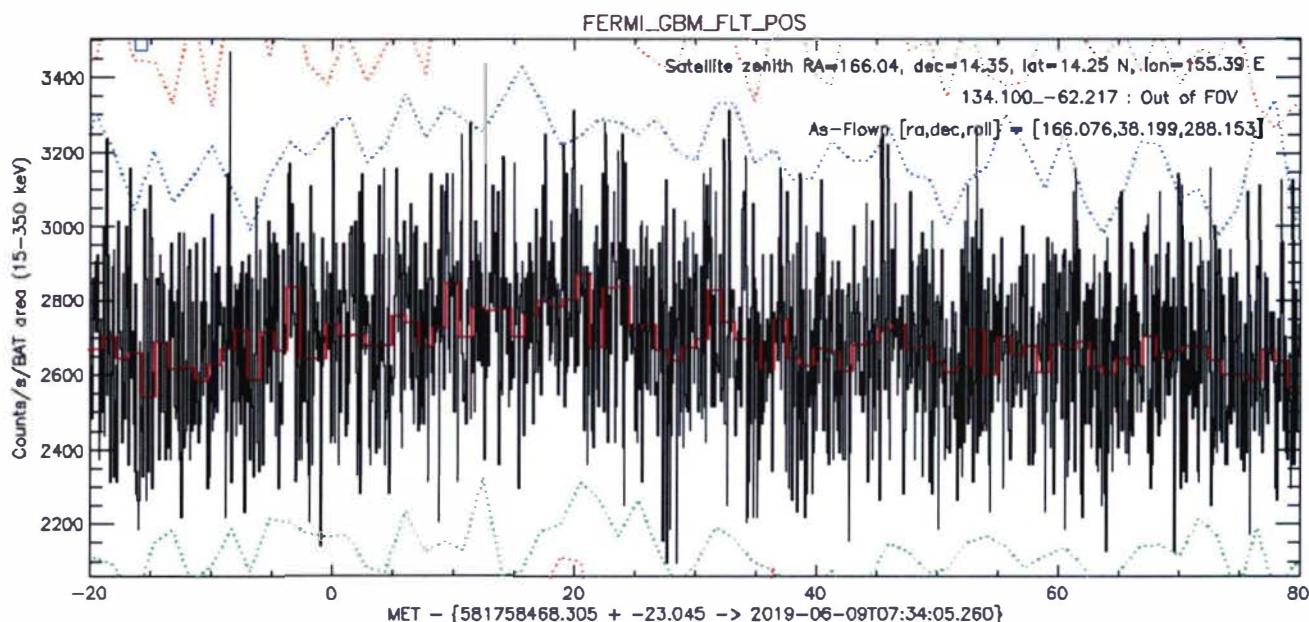
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/9/2019, 3:30 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190609_0734.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581758468.305 -s 134.100_-62.217
Swift Zenith(RA,dec):      166.04, 14.35
Swift Location(lon,lat,alt): 155.39 E, 14.25 N, 544 km
Time(MET + UTCF -> UT):    581758468.305 + -23.045 -> 2019-06-09T07:34:05.260
YYMMDD_SOD:               190609_27245.260      DOY=160
Obs Sequence Number:      00095330006
Obs Target Name:          MRK421
Obs Date and Times:       2019-06-09 07:31:38 - 07:50:34
Obs Pointing(ra,dec,roll): 166.076, 38.199, 288.15
134.100_-62.217_imageloc (boresight_dist, angle): (104, 177)
134.100_-62.217_exposure (cm2 cos adjusted): 0
134.100_-62.217_altitude: 32 (up)
```

--

David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190609_0734.png

19.6 KB

/tmp/swift/190609_0734_bat64ms_ipn

87.1 KB

Subject: GRB 190609A: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/13/2019, 2:40 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24804
SUBJECT: GRB 190609A: AstroSat CZTI detection
DATE: 19/06/13 09:39:49 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

P. Ghumatkar, V. Sharma, D. Bhattacharya, T. Khanam and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190609A, which was also detected by Fermi GBM (GCN #24773) and BALROG (Burgess J. et al., GCN #24774).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 07:34:44.5 UT. The measured peak count rate associated with the burst is 555 cts/s above the background in the combined data of four quadrants, with a total of 7392 cts. The local mean background count rate was 521 cts/s. Using cumulative rates, we measure a T90 of 40.1 s. In preliminary analysis, we find that 550 Compton events are associated with this event.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

KONUS

10/06/2019

49.203

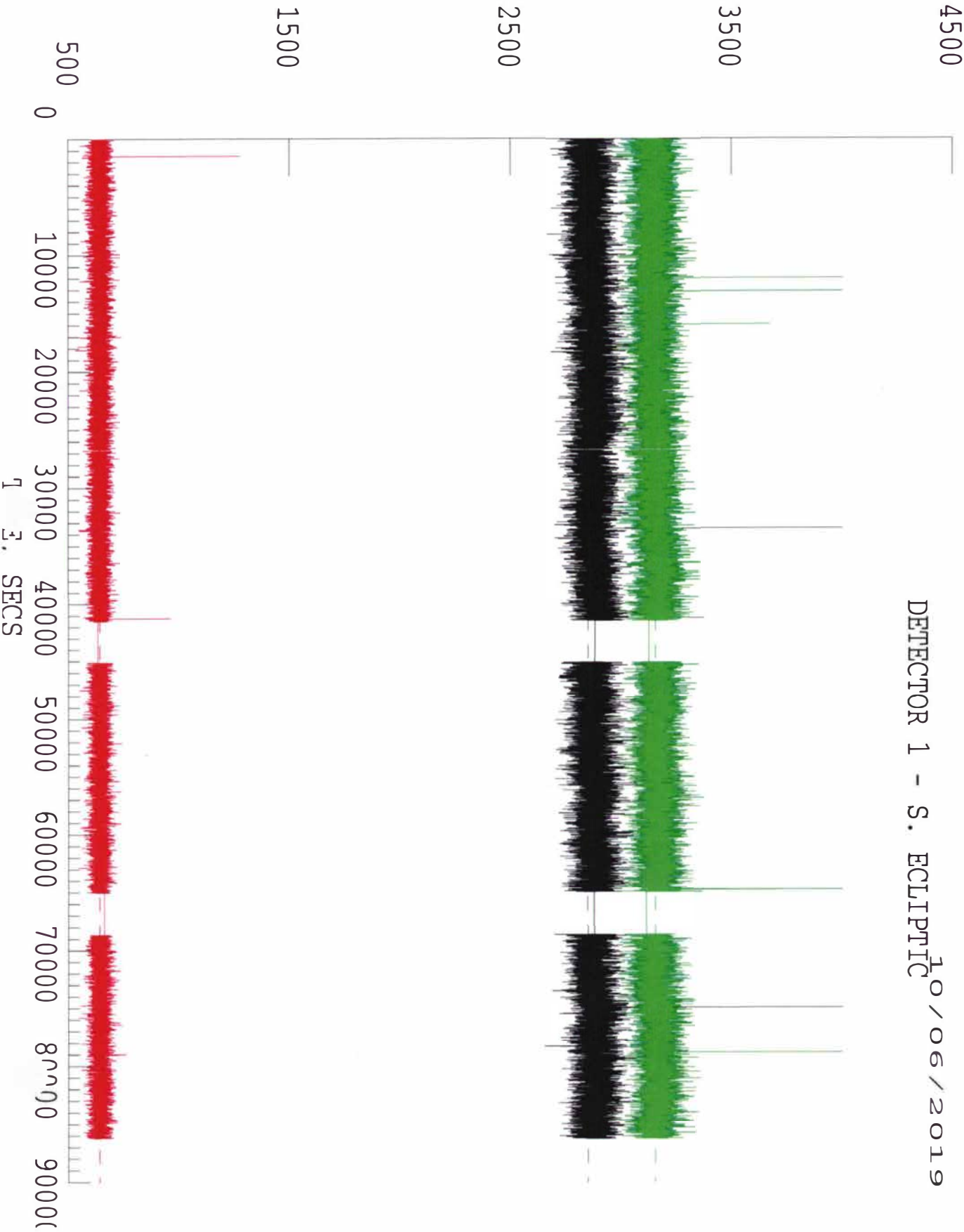
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

10/06/2019

49.203

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2400

1900

1400

900

0

10000

20000

30000

40000

50000

60000

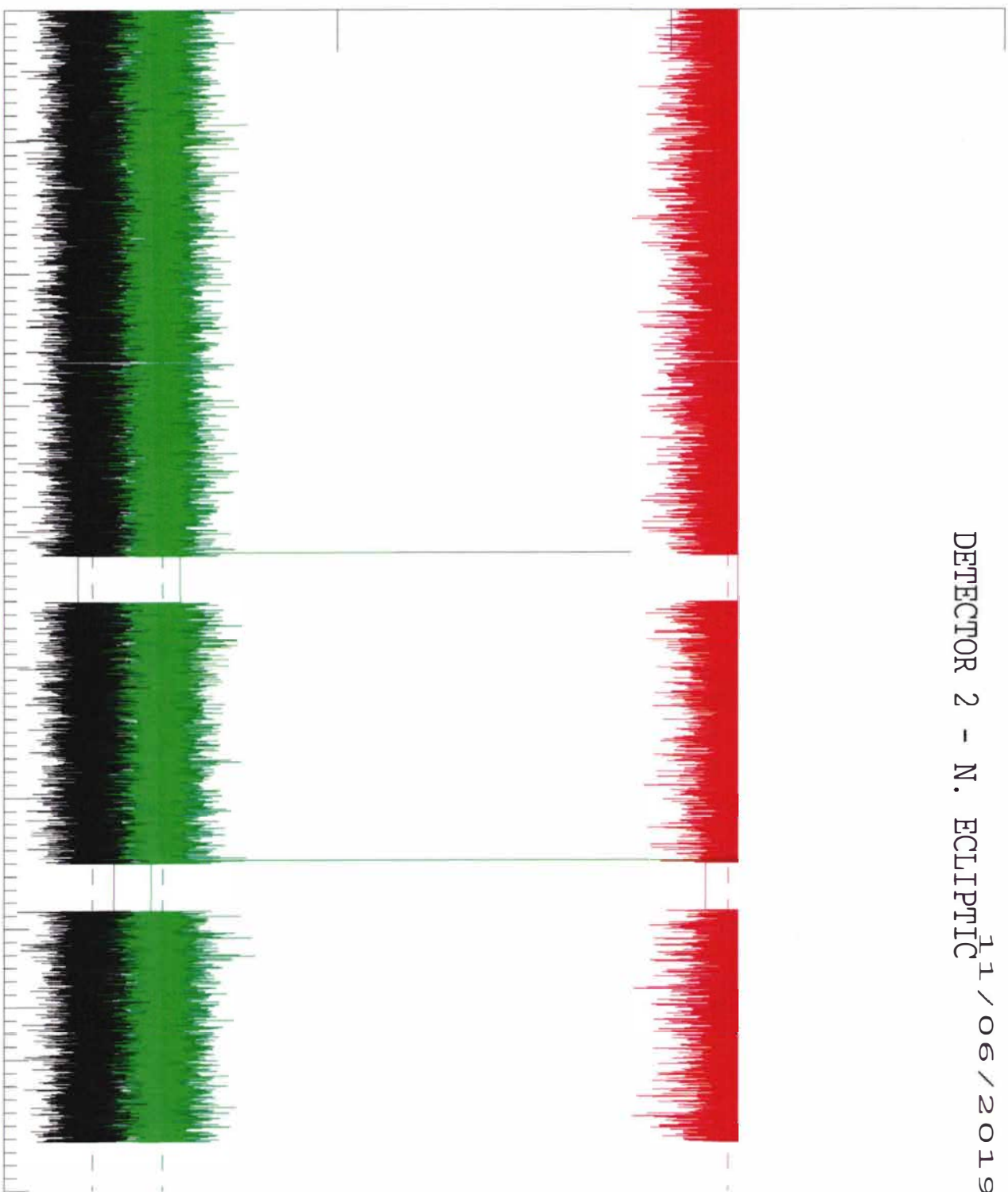
70000

80000

90000

T. SECS

DETECTOR 2 - N. ECLIP¹ / 06 / 2019



Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 6/10/2019, 4:39 AM
 To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Mon 10 Jun 19 11:39:28 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 907754, Seg_Num: 0
 GRB_RA: 46.289d {+03h 05m 09s} (J2000),
 46.527d {+03h 06m 07s} (current),
 45.675d {+03h 02m 42s} (1950)
 GRB_DEC: -7.666d {-07d 39' 57"} (J2000),
 -7.591d {-07d 35' 28"} (current),
 -7.859d {-07d 51' 33"} (1950)
 GRB_DATE: 18644 TJD; 161 DOY; 19/06/10
 GRB_TIME: 41265.71 SOD {11:27:45.71} UT
 TRIGGER_INDEX: 155
 GRB_PHI: -23.00 [deg]
 GRB_THETA: 13.60 [deg]
 DELTA_TIME: -75.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x43
 RATE_SIGNIF: 45.86 [sigma]
 IMAGE_SIGNIF: 9.91 [sigma]
 LC_URL: sw00907754000msb.lc
 SUN_POSTN: 78.39d {+05h 13m 35s} +23.01d {+23d 00' 26"}
 SUN_DIST: 43.68 [deg] Sun_angle= 2.1 [hr] (West of Sun)
 MOON_POSTN: 174.96d {+11h 39m 50s} +7.33d {+07d 19' 55"}
 MOON_DIST: 128.90 [deg]
 MOON_ILLUM: 53 [%]
 GAL_COORDS: 187.60,-52.84 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 41.42,-24.04 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred during a high background rate interval.
 COMMENTS: This trigger occurred at longitude,latitude = 263.70,-13.10 [deg].

0.62 s

 $4.1 \times 10^{-7} \text{ erg cm}^{-2}$ $3.9 \text{ phot/cm}^2\text{s}$

Subject: BAT lightcurve for trigger at 190610_1127

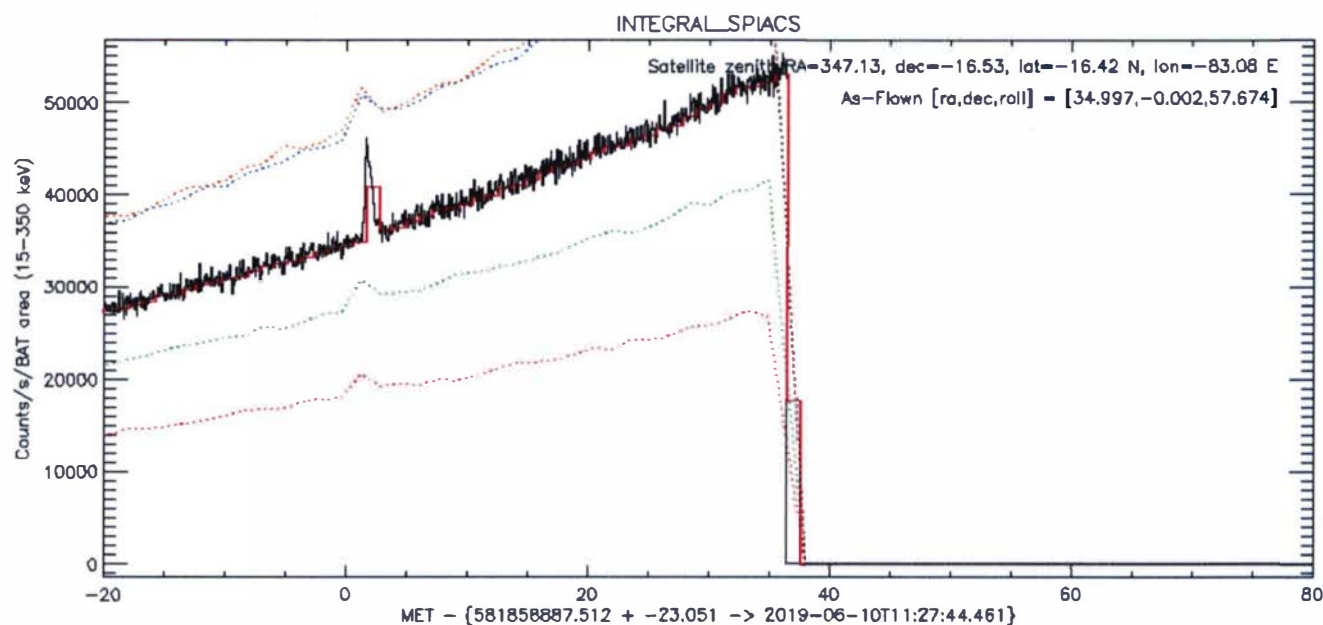
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/10/2019, 7:36 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190610_1127.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581858887.512
Swift Zenith(RA,dec):      347.13, -16.53
Swift Location(lon,lat,alt): -83.08 E, -16.42 N, 561 km
Time(MET + UTC -> UT):    581858887.512 + -23.051 -> 2019-06-10T11:27:44.461
YYMMDD_SOD:               190610_41264.461      DOY=161
Obs Sequence Number:      00074977013
Obs Target Name:          saa-cold-161-04
Obs Date and Times:       2019-06-10 11:24:38 - 11:51:34
Obs Pointing(ra,dec,roll): 34.997, -0.002, 57.67
```

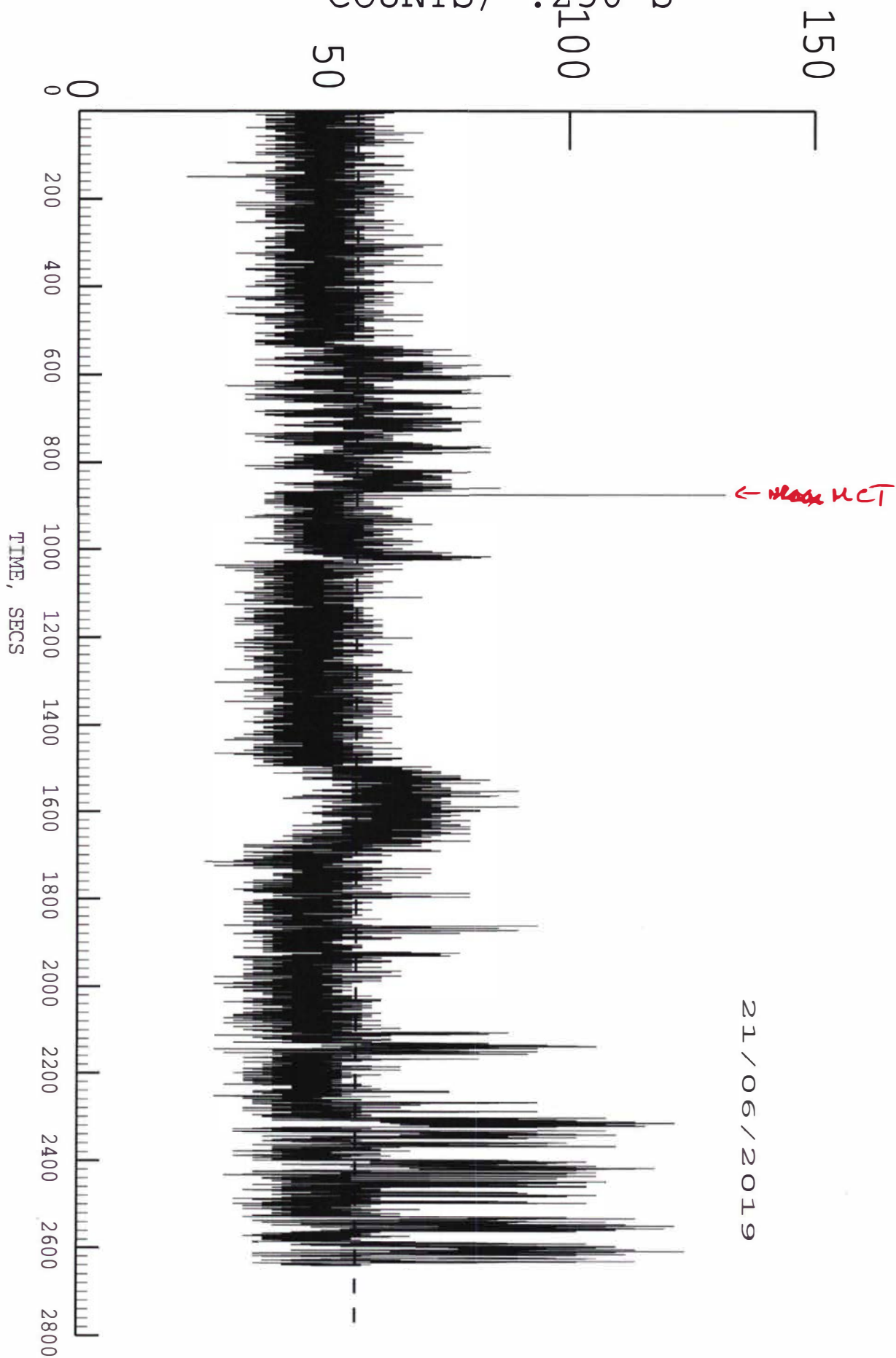
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190610_1127.png	15.3 KB
/tmp/swift/190610_1127_bat64ms_ipn	87.1 KB

ODYSSEY 10/06/19 39918.494 11:05:18.494^A
50-3000 keV

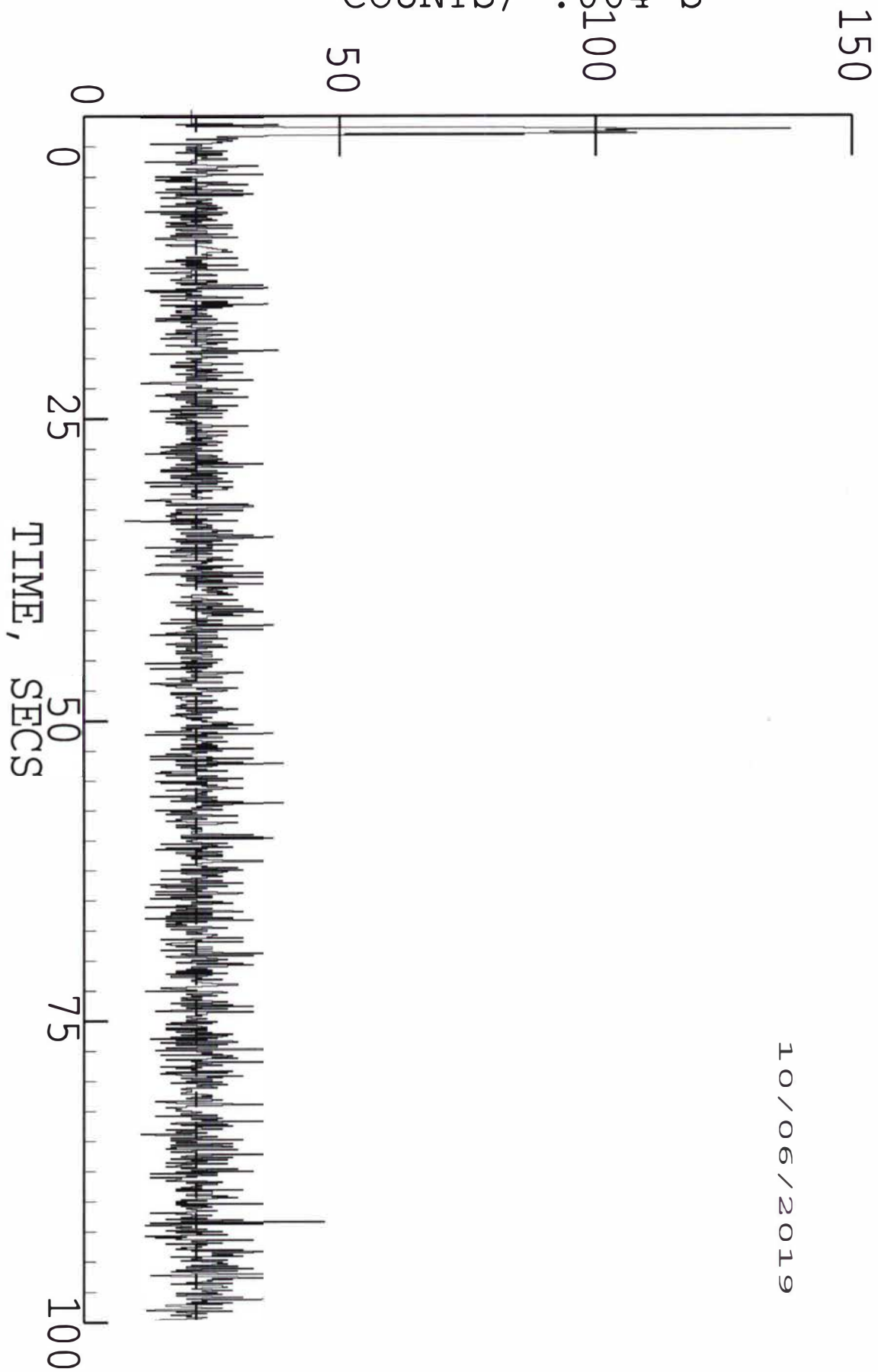
COUNTS/ .250 S



A

KONUS 10/06/19 41263.560 11:27:43.560
50- 200 keV

COUNTS/ .064 S

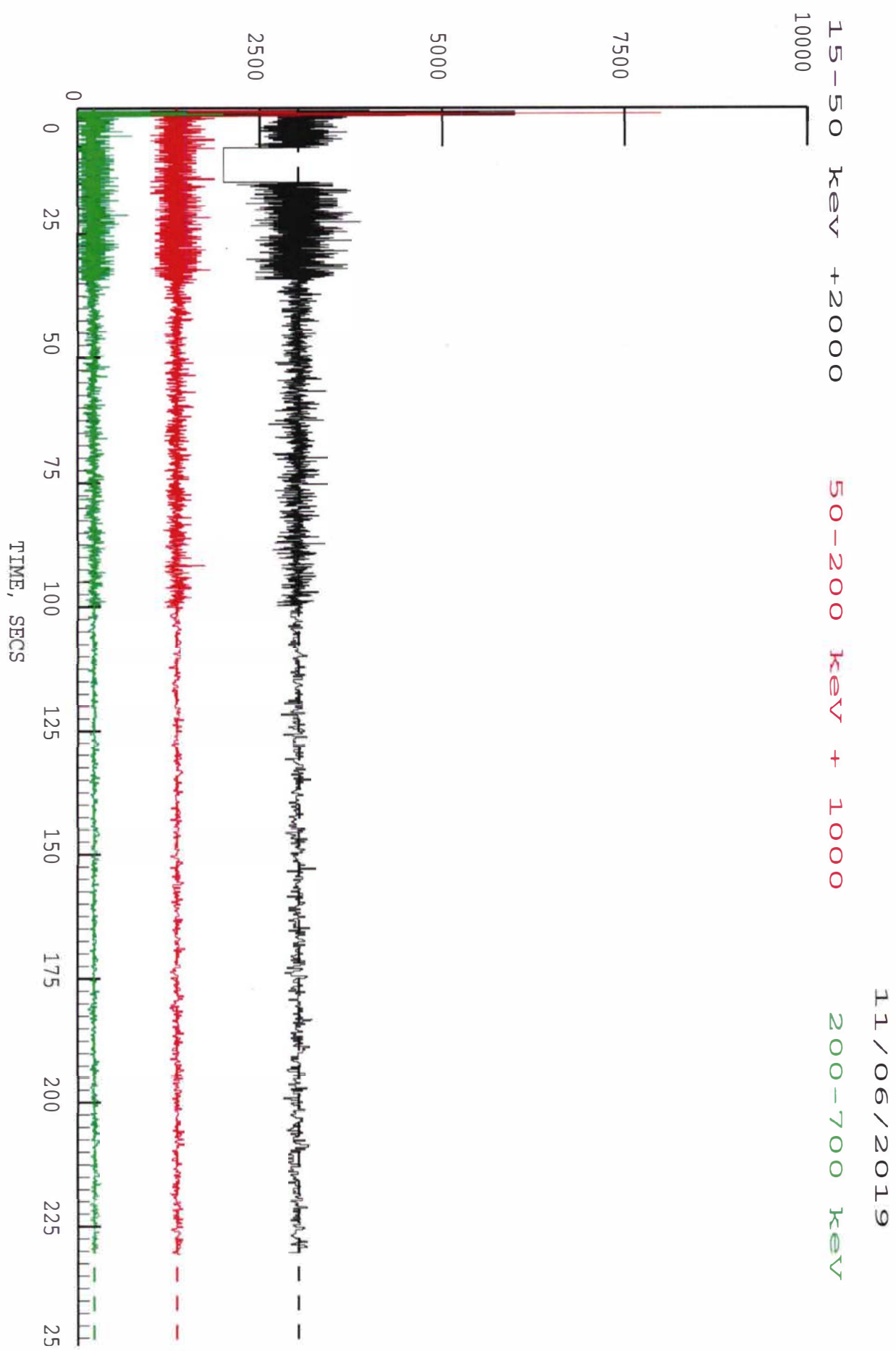


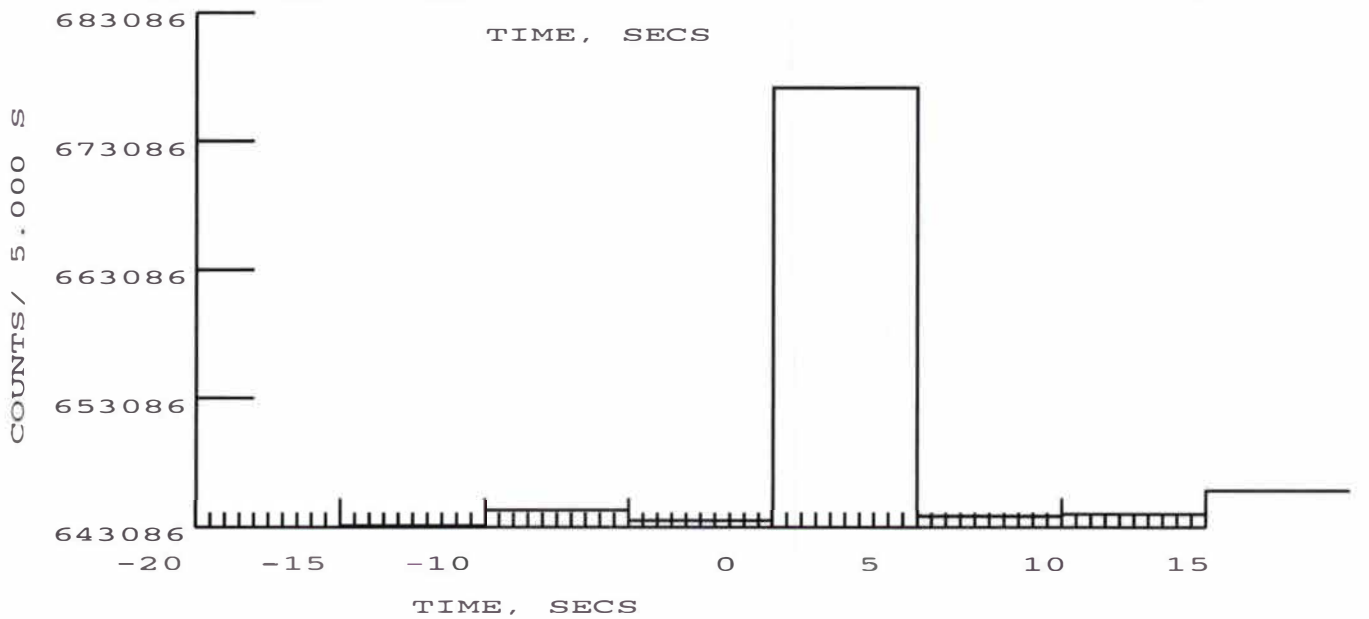
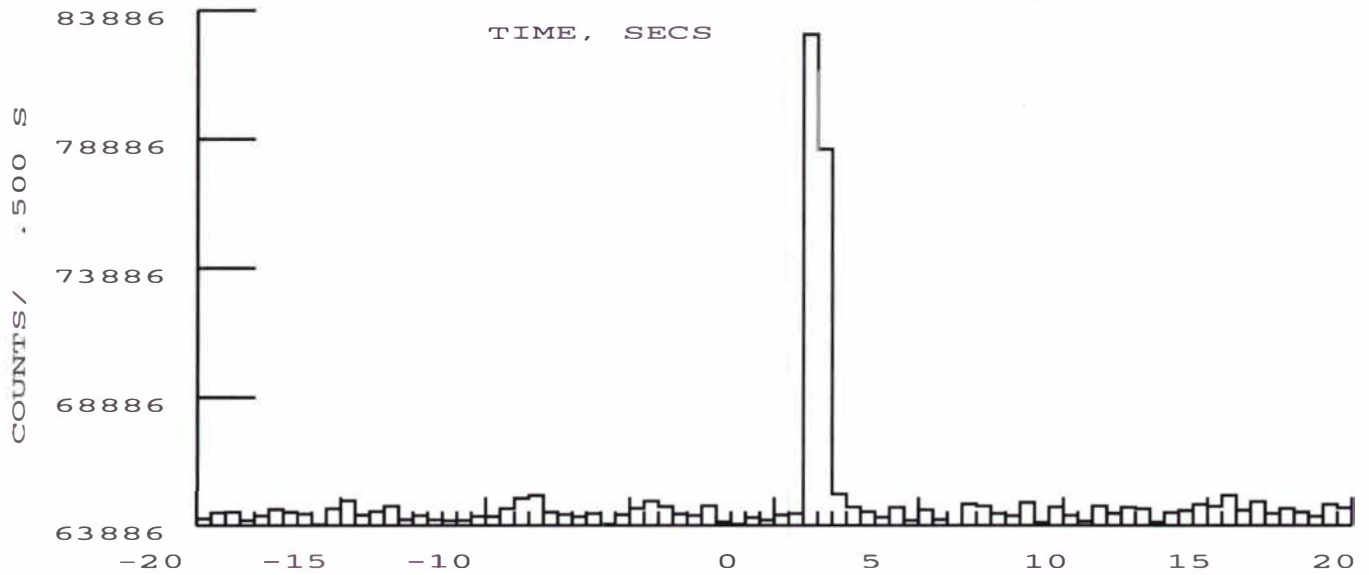
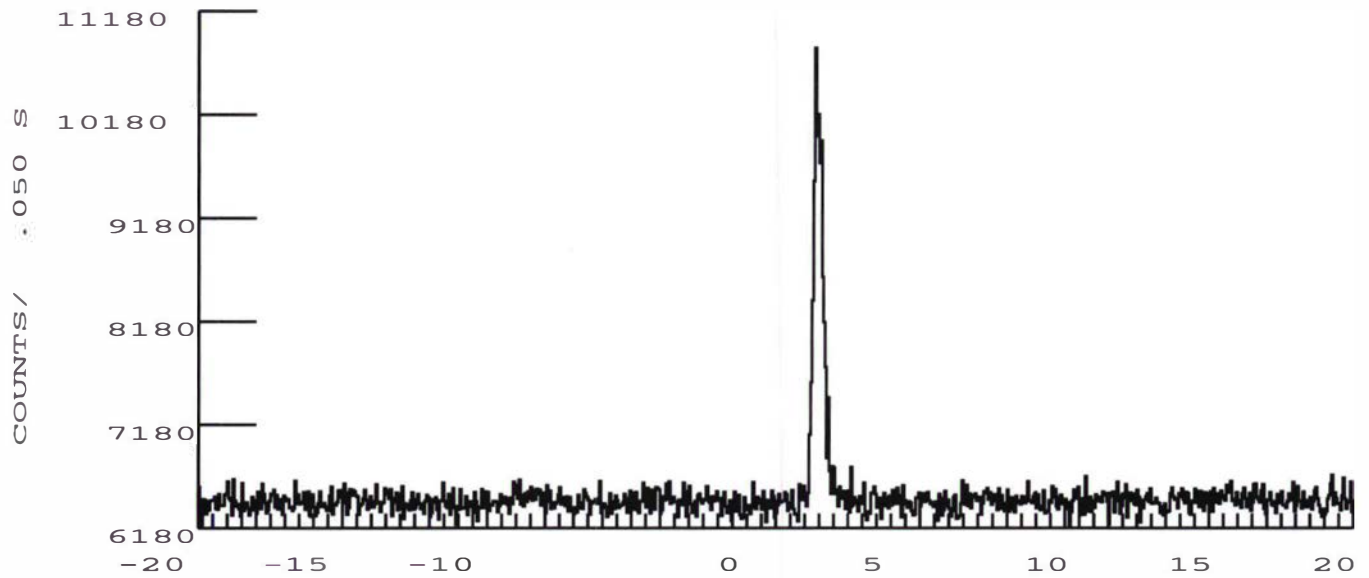
KONUS

10/06/19

COUNTS/SEC 41263.000

11:27:43.000





Subject: GRB 190610A: CALET Gamma-Ray Burst Monitor detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/13/2019, 3:22 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24805
SUBJECT: GRB 190610A: CALET Gamma-Ray Burst Monitor detection
DATE: 19/06/13 10:21:46 GMT
FROM: Valentin Pal'shin at AGU <val@phys.aoyama.ac.jp>

T. Tamura (Kanagawa U),
A. Yoshida, T. Sakamoto, V. Pal'shin, S. Sugita(AGU),
Y. Kawakubo (LSU), K. Yamaoka (Nagoya U), S. Nakahira (RIKEN),
Y. Asaoka, S. Ozawa, S. Torii (Waseda U), Y. Shimizu (Kanagawa U),
N. Cannady (GSFC/UMBC), M. L. Cherry (LSU),
S. Ricciardini (U of Florence), P. S. Marrocchesi (U of Siena),
and the CALET collaboration:

The short GRB 190610A (Swift-BAT trigger #907754: Evans et al., GCN Circ. 24775, Palmer et al., GCN Circ. 24783; Insight-HXMT/HE detection: Cai et al., GCN Circ. 24782) triggered the CALET Gamma-ray Burst Monitor (CGBM) at 11:27:45.359 UTC on 10 June 2019. The burst signal was seen by all CGBM detectors.

The burst light curve shows a single pulse which starts at $T+0.58$ sec, peaks at $T+0.83$ sec and ends at $T+1.41$ sec. The T_{90} and T_{50} durations measured by the SGM data are 0.61 ± 0.16 sec and 0.26 ± 0.05 sec (40-1000 keV), respectively.

The ground processed light curve is available at

http://cgbm.calet.jp/cgbm_trigger/ground/1244201256/

The CALET data used in this analysis are provided by the Waseda CALET Operation Center located at the Waseda University.

Subject: GRB 190610A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/11/2019, 3:48 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24782
SUBJECT: GRB 190610A: Insight-HXMT/HE detection
DATE: 19/06/11 10:47:53 GMT
FROM: Ce Cai at IHEP <caice@ihep.ac.cn>

C. Cai, S. Xiao, Q. Luo, Q. B. Yi, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

At 2019-06-10T11:27:45.00 (T0), Insight-HXMT/HE detected
GRB 190610A (trigger ID: HEB190610477) in a routine search of the data,
which was also triggered by Swift/BAT (GCN #24775).

The Insight-HXMT/HE light curve mainly consists of a single
pulse with a duration (T90) of 0.56 s measured from T0+0.96 s.
The 1-ms peak rate, measured from T0+1.04 s, is 22407 cnts/sec.
The total counts from this burst is 8510 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB190610477_lc.jpg

All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).
More information about it could be found at:
<http://www.hxmt.org>.

3

FERMI

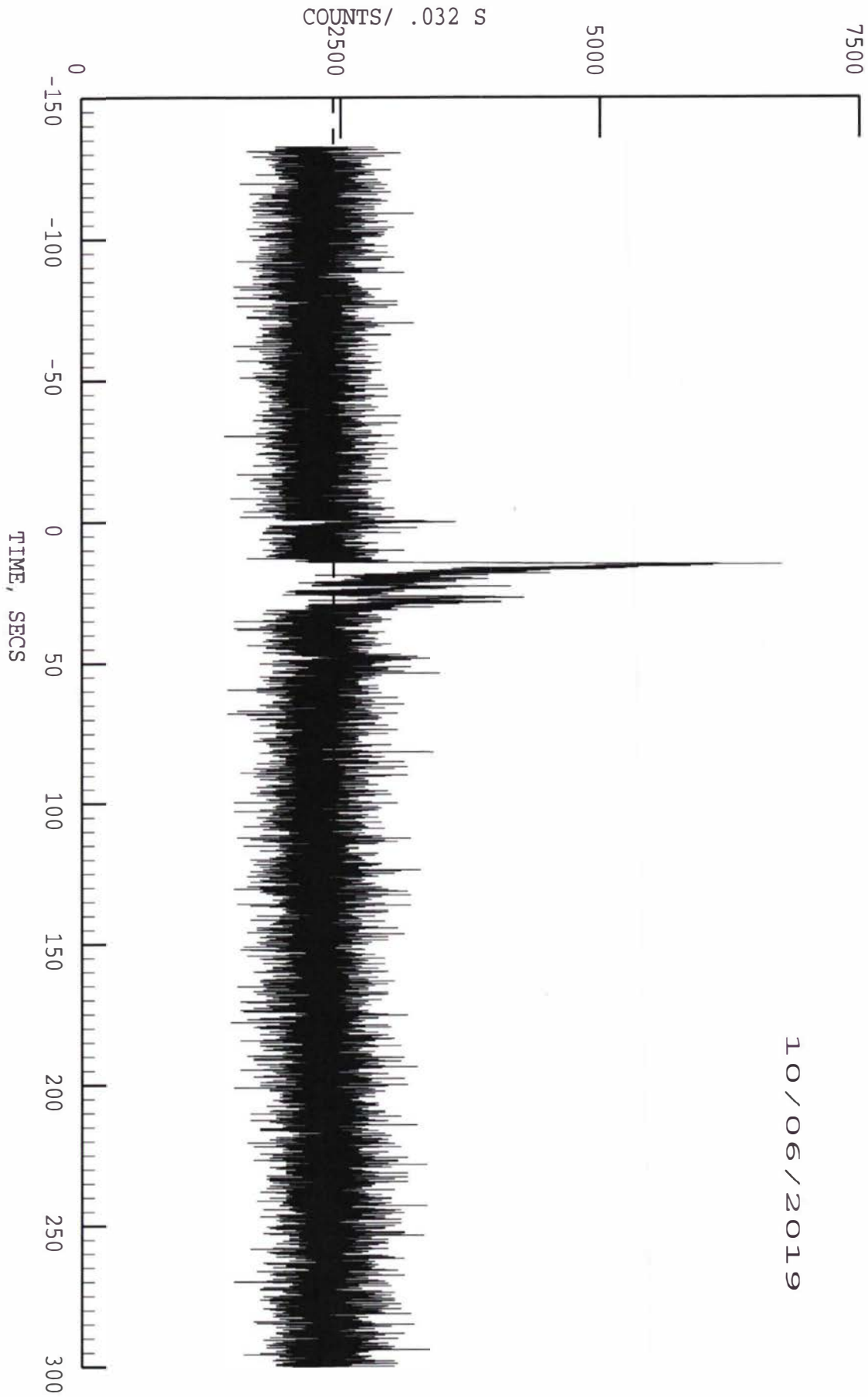
10/06/19

64789.908

17:59:49.908

26- 293 keV

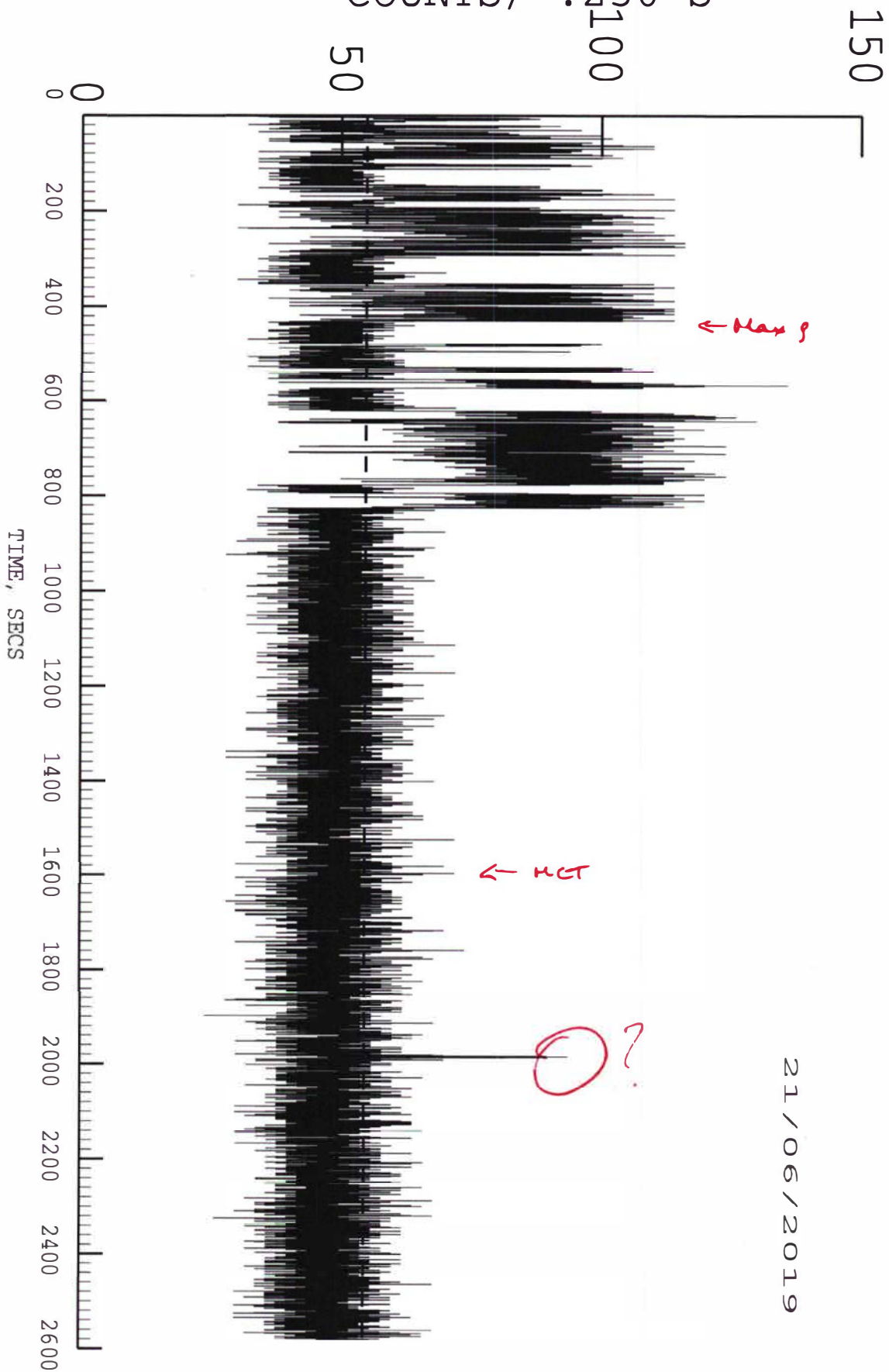
327.4 42.4 1.2



10/06/2019

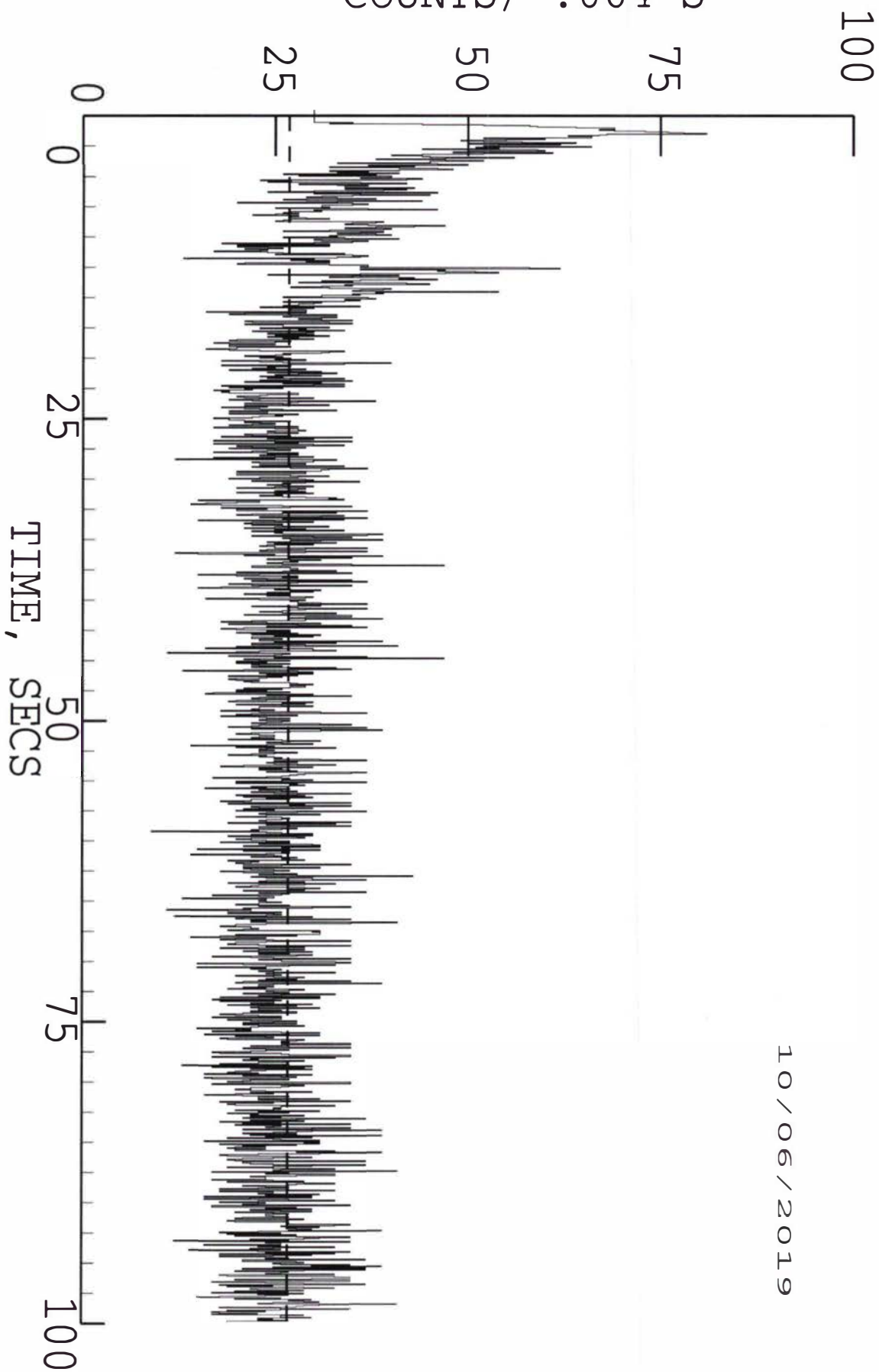
ODYSSEY 10/06/19 63498.084 17:38:18.084^B
50-3000 keV

COUNTS/ .250 S



KONUS 10/06/19 64805.352 18:00:05.352^B
50- 200 keV

COUNTS/ .064 S

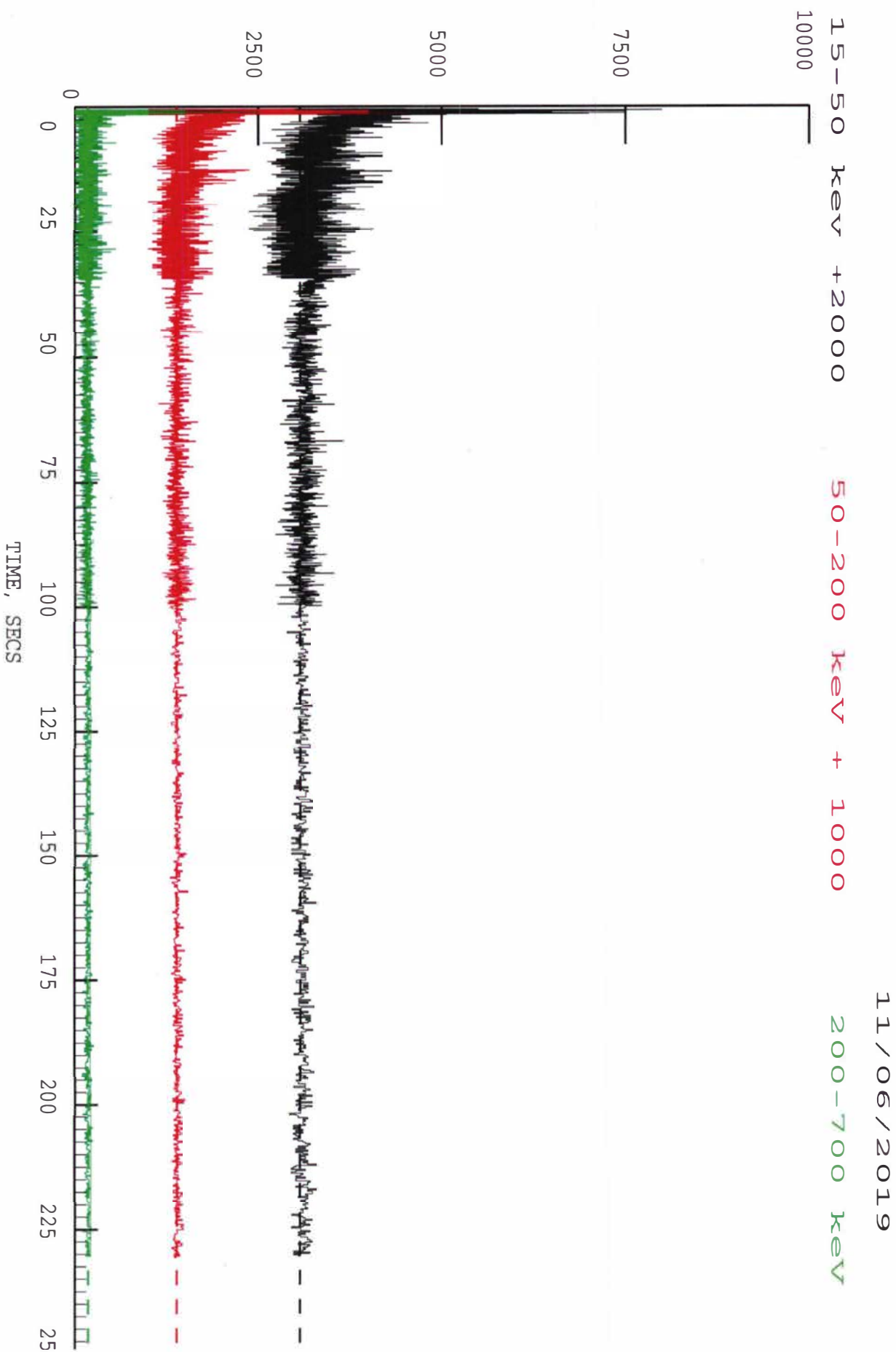


KONUS

10/06/19

COUNTS/SEC 64805.000

18:00:05.000



B

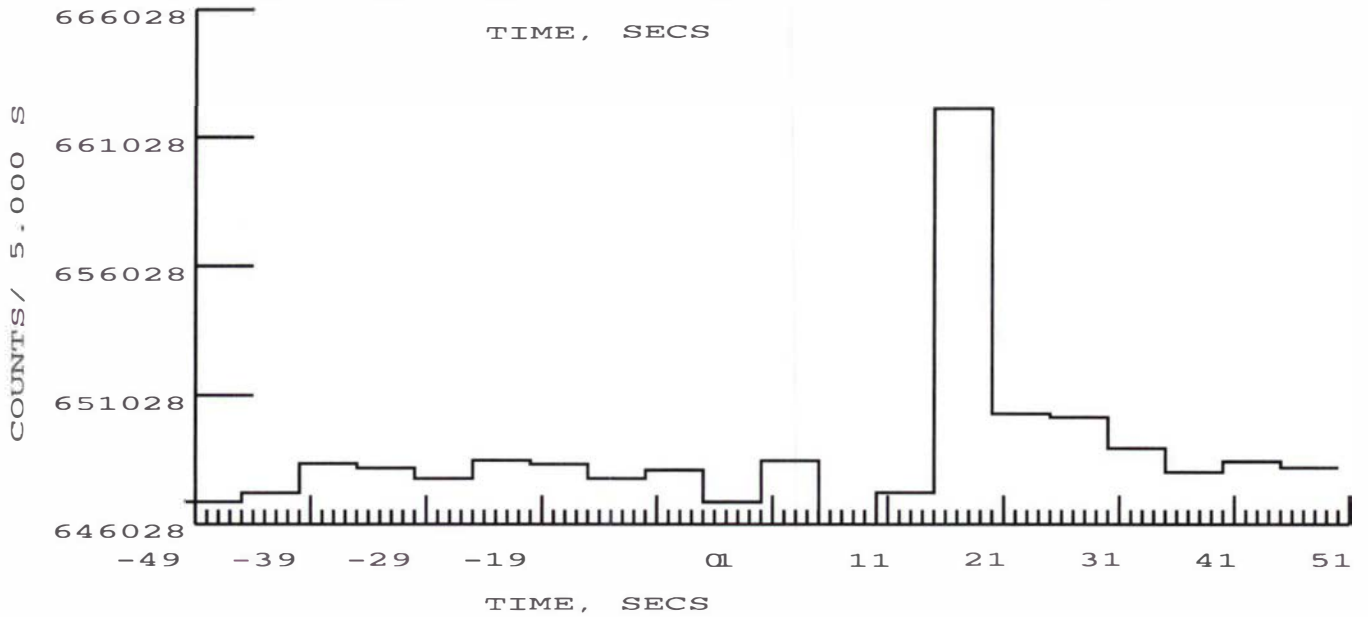
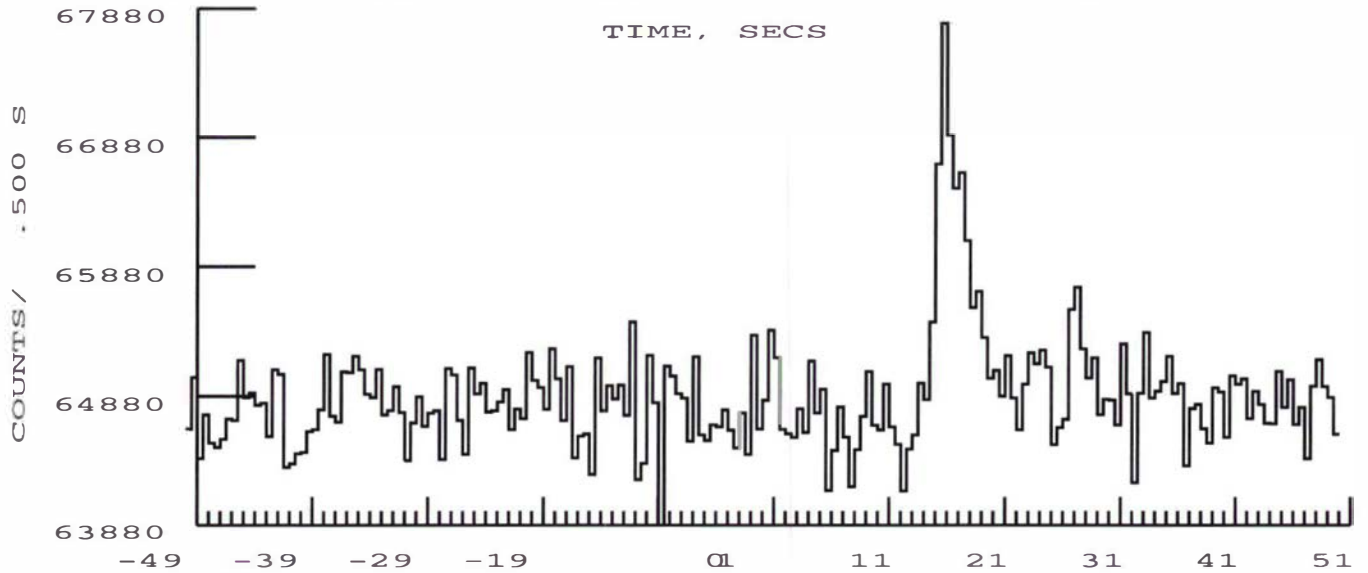
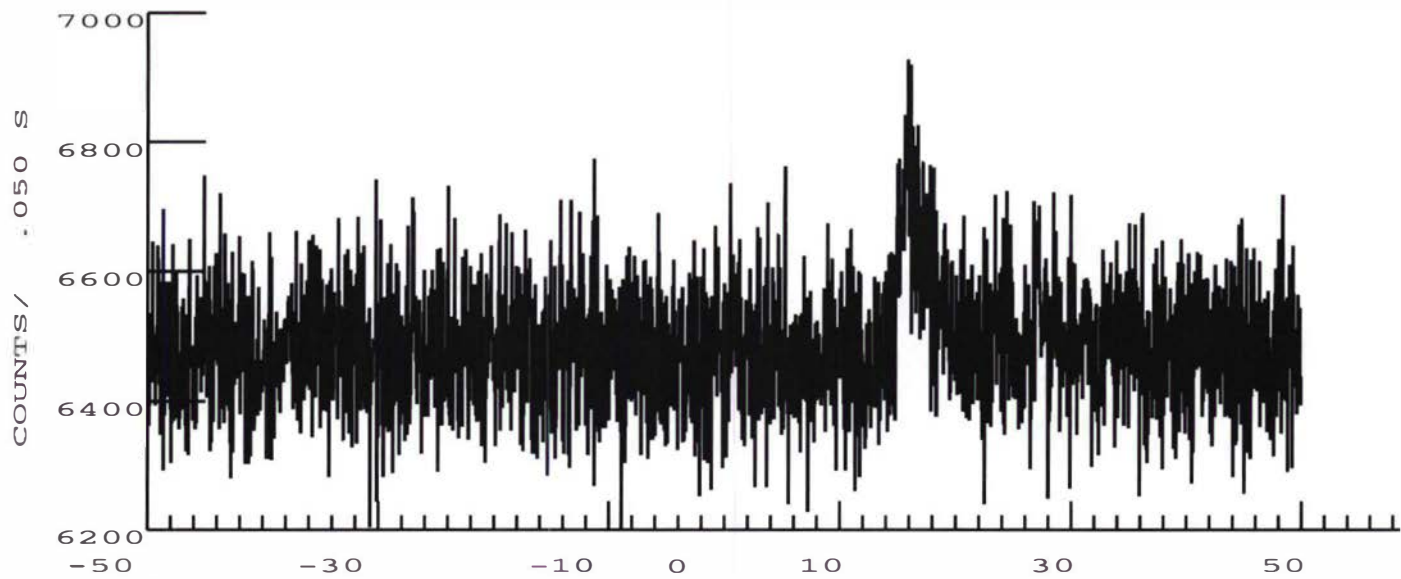
INTEGRAL

10/06/19

64789.000

17:59:49.0

11/07/19



Subject: BAT lightcurve for trigger at 190610_1759

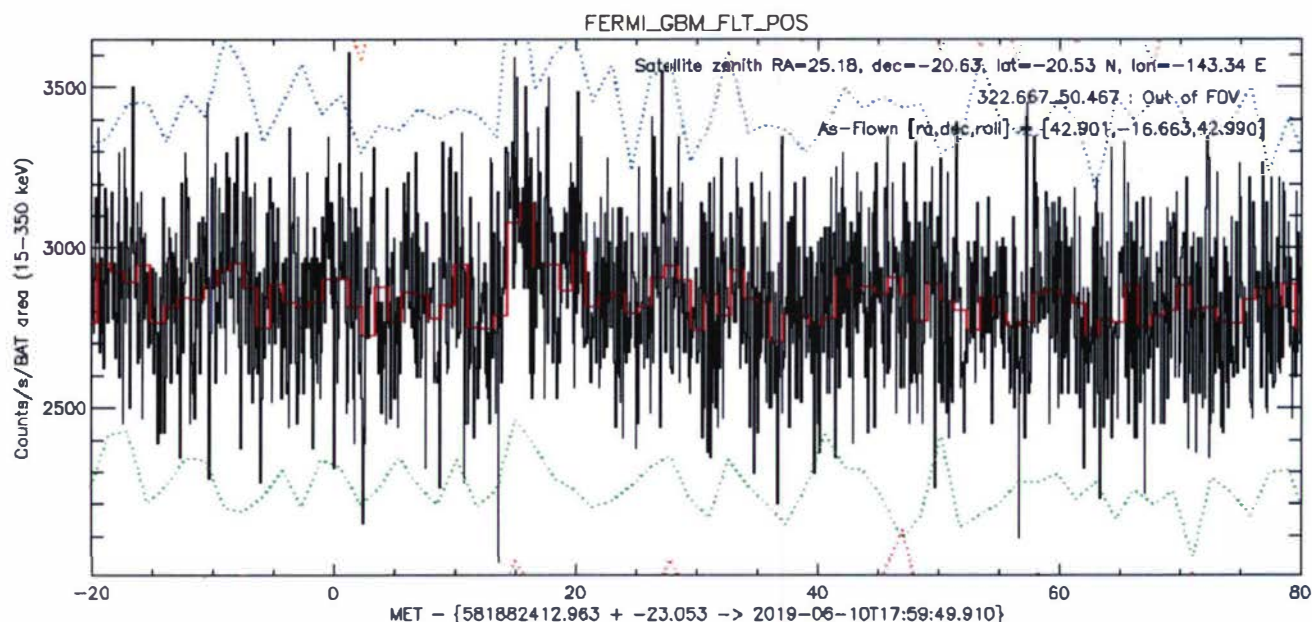
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/10/2019, 5:15 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

— /tmp/swift/190610_1759.png —



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581882412.963 -s 322.667_50.467
```

```
Swift Zenith(RA,dec):      25.18, -20.63
Swift Location(lon,lat,alt): -143.34 E, -20.53 N, 559 km
Time(MET + UTCF -> UT):    581882412.963 + -23.053 -> 2019-06-10T17:59:49.910
YYMMDD_SOD:               190610_64789.910      DOY=161
Obs Sequence Number:      00088799001
Obs Target Name:          NGC_1125
Obs Date and Times:       2019-06-10 17:55:38 - 18:24:38
Obs Pointing(ra,dec,roll): 42.901, -16.663, 42.99
322.667_50.467_imageloc (boresight_dist, angle): (97, -172)
322.667_50.467_exposure (cm^2 cos adjusted): 0
322.667_50.467_altitude: 23 (up)
```

```
--
David Palmer  palmer@lanl.gov  (505)665-6863 (voice)  (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data
```

— Attachments: —

/tmp/swift/190610_1759_bat64ms_ipn

87.0 KB

/tmp/swift/190610_1759.png

18.4 KB

B4

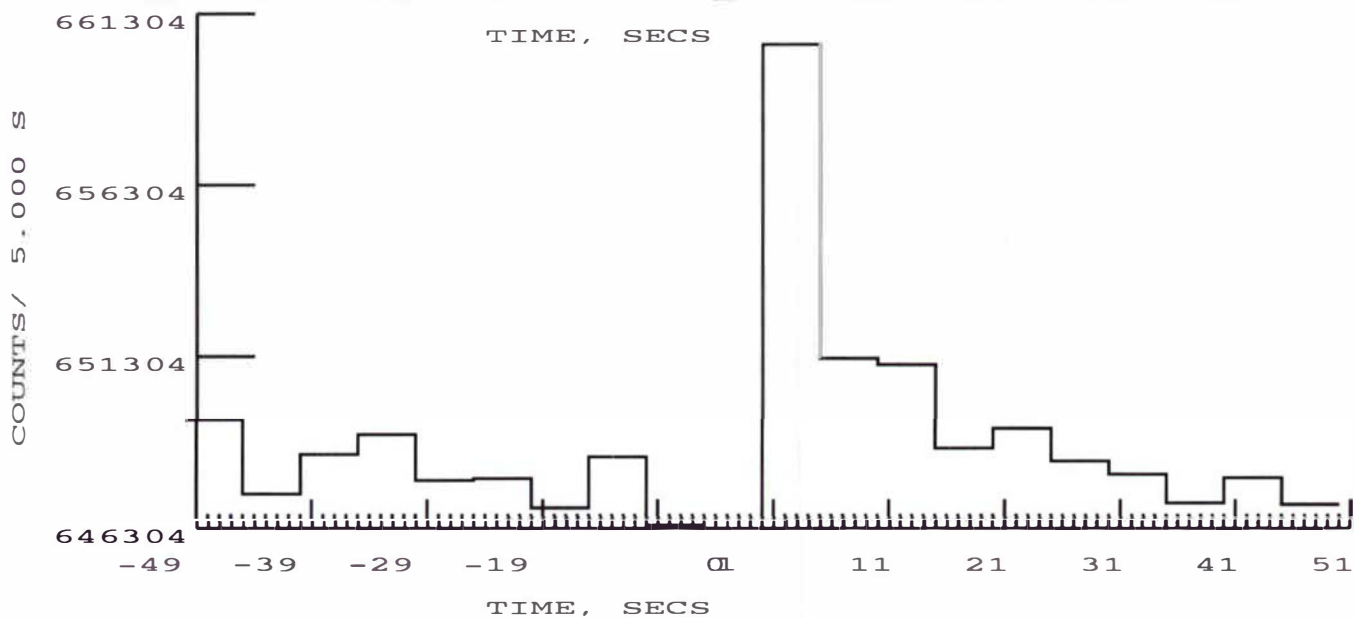
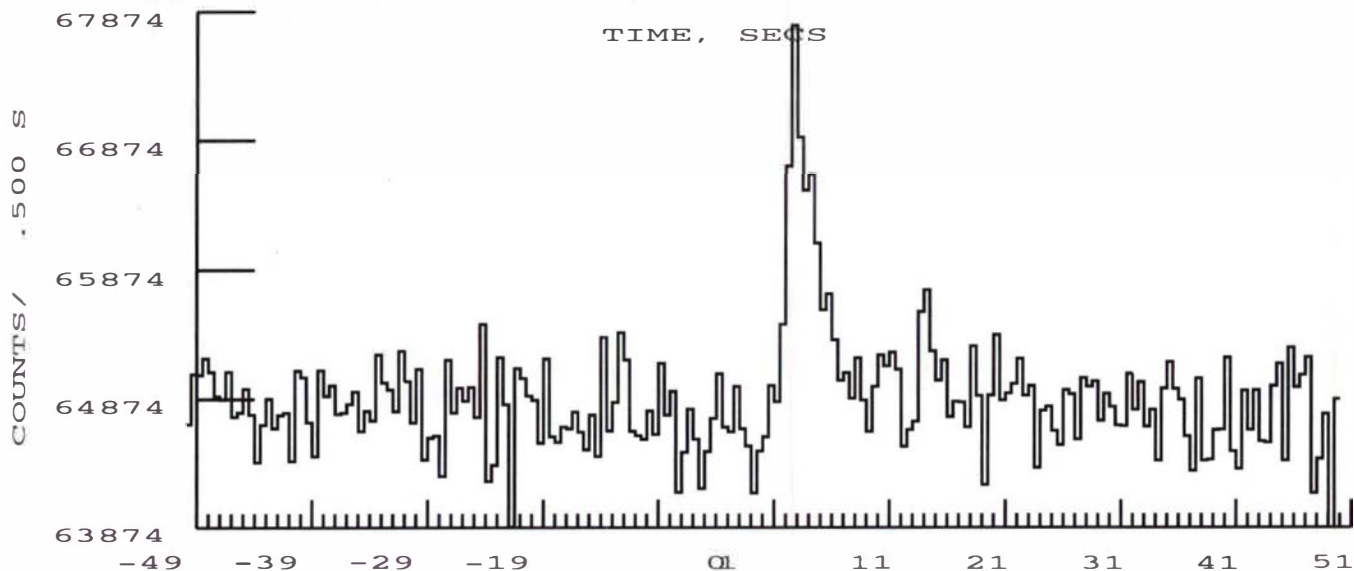
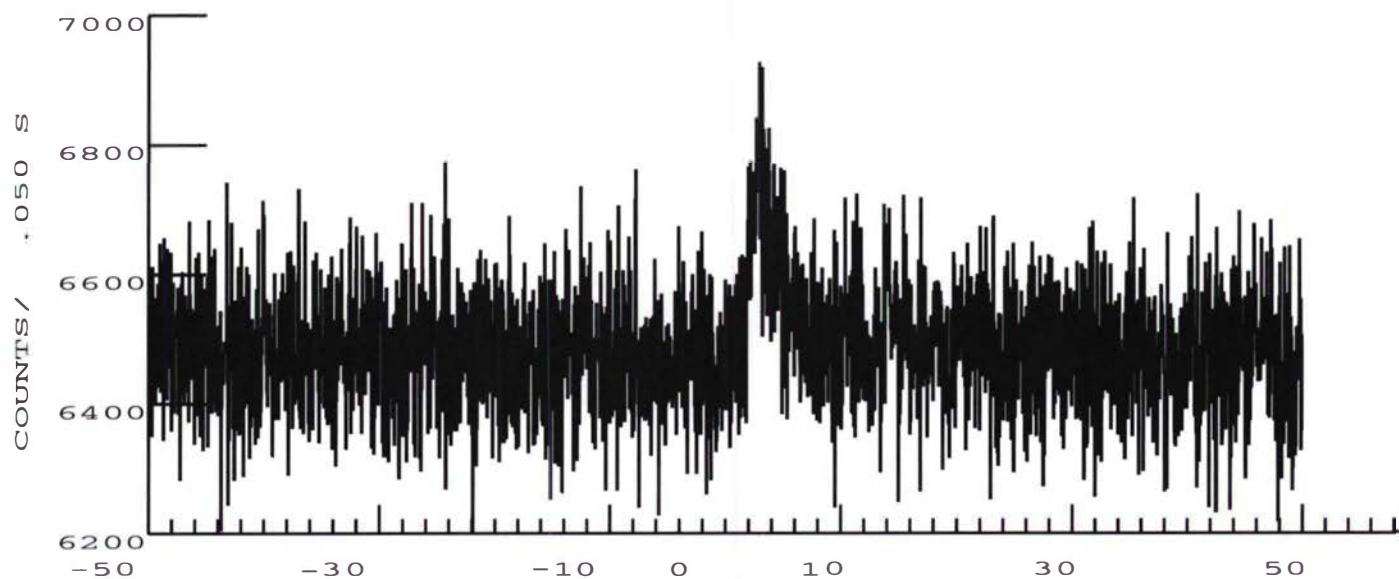
INTEGRAL

10/06/19

64802.000

18:00:02.0

21/06/19



Subject: BAT lightcurve for trigger at 190610_1800

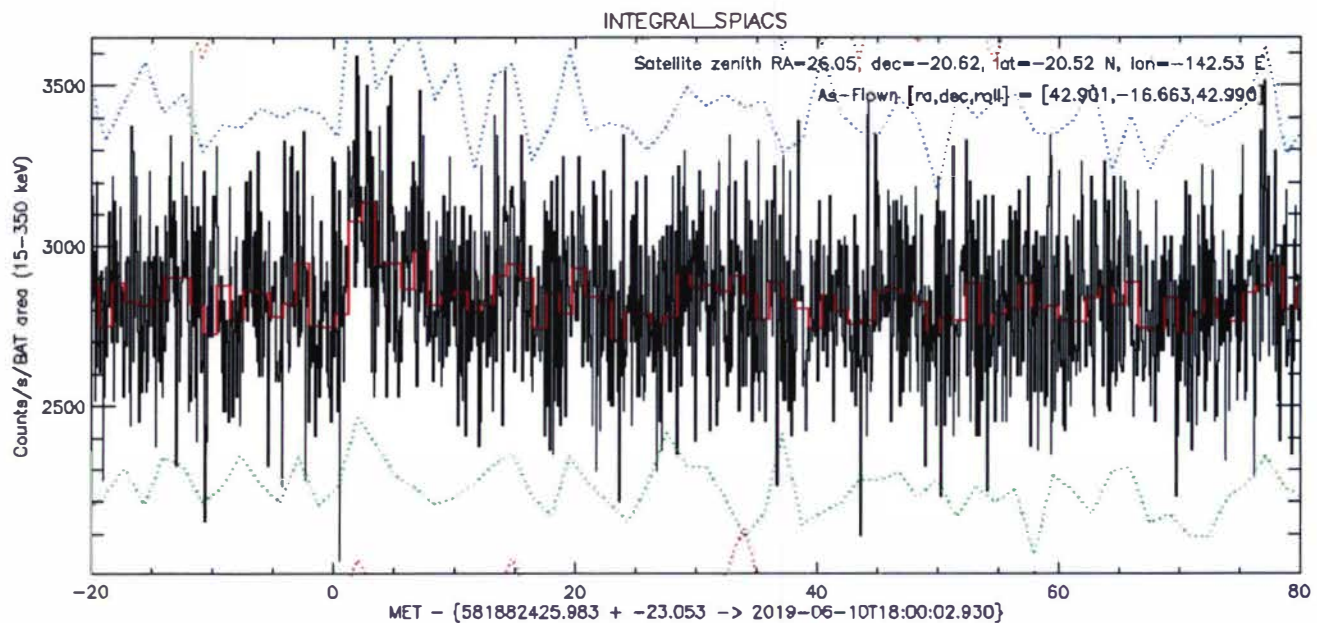
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/10/2019, 5:16 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190610_1800.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581882425.983
Swift Zenith(RA,dec):      26.05, -20.62
Swift Location(lon,lat,alt): -142.53 E, -20.52 N, 558 km
Time(MET + UTCf -> UT):    581882425.983 + -23.053 -> 2019-06-10T18:00:02.930
YYMMDD_SOD:               190610_64802.930      DOY=161
Obs Sequence Number:       00088799001
Obs Target Name:           NGC_1125
Obs Date and Times:        2019-06-10 17:55:38 - 18:24:38
Obs Pointing(ra,dec,roll): 42.901, -16.663, 42.99
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments—

/tmp/swift/190610_1800_bat64ms_ipn	87.0 KB
/tmp/swift/190610_1800.png	17.9 KB

Subject: GRB 190610B: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/11/2019, 11:21 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24789
SUBJECT: GRB 190610B: AstroSat CZTI detection
DATE: 19/06/12 06:19:37 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

P. Ghumatkar, V. Sharma, D. Bhattacharya, T. Khanam and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190610B, which was also detected by Fermi GBM (GCN #24777), BALROG (Burgess J. et al., GCN # 24778) and Global MASTER-Net (Lipunov V. et al., GCN # 24779).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 18:00:05.5 UT. The measured peak count rate associated with the burst is 346 cts/s above the background in the combined data of four quadrants, with a total of 1899 cts. The local mean background count rate was 548 cts/s. Using cumulative rates, we measure a T₉₀ of 13.5 s.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

EBC

FERMI

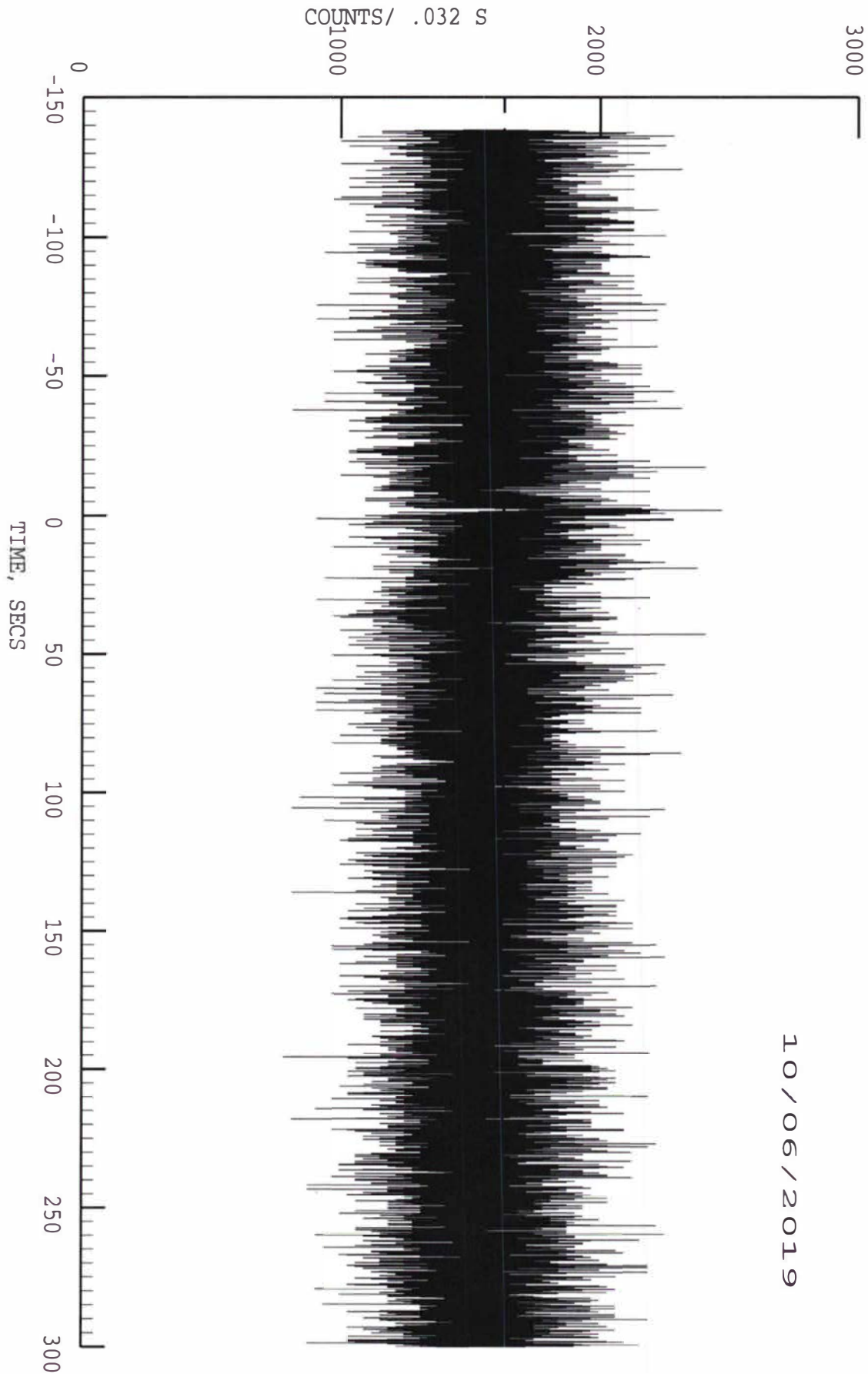
10/06/19

72023.685

20:00:23.685

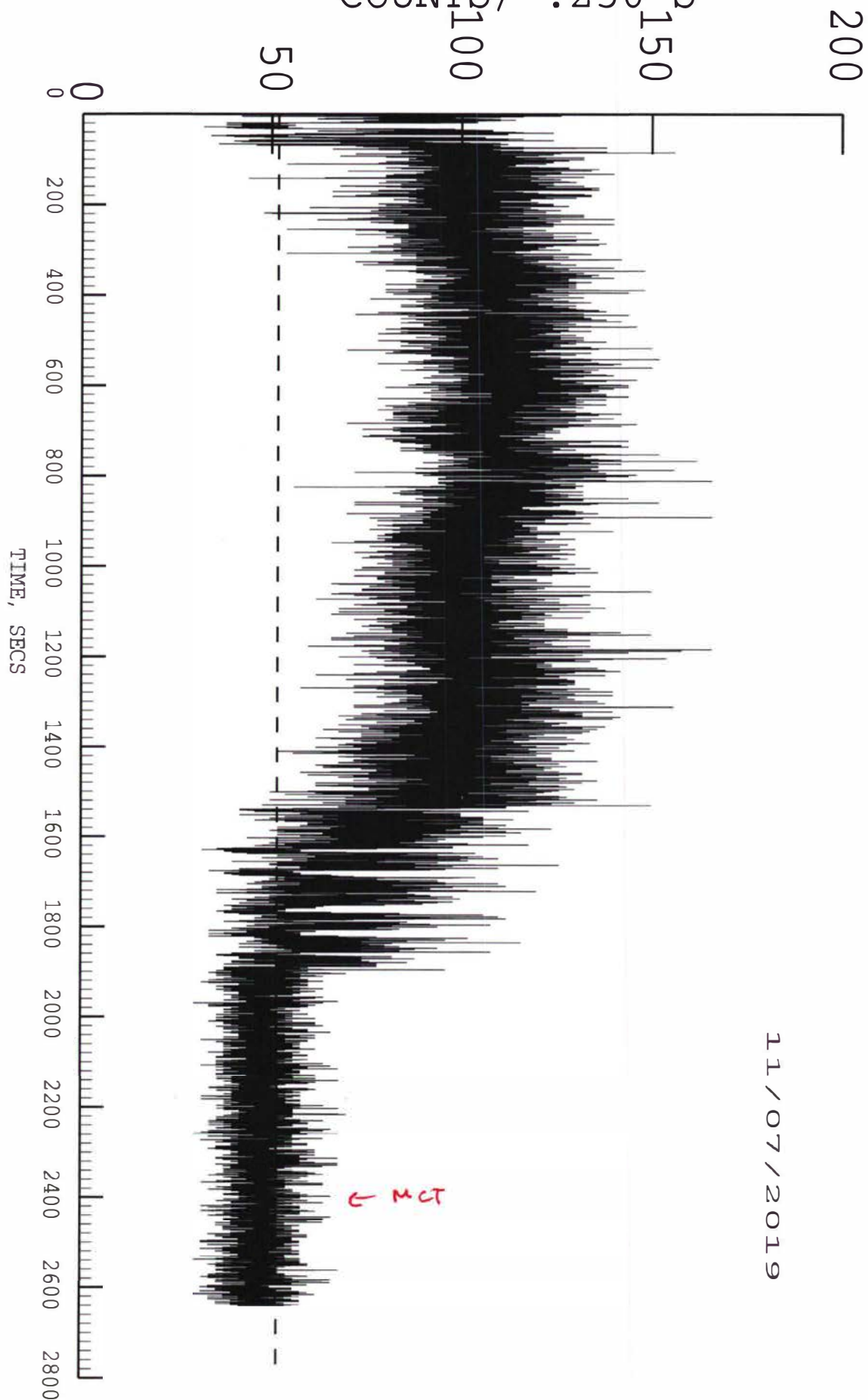
26- 293 keV

314.8 -15.7 11.2

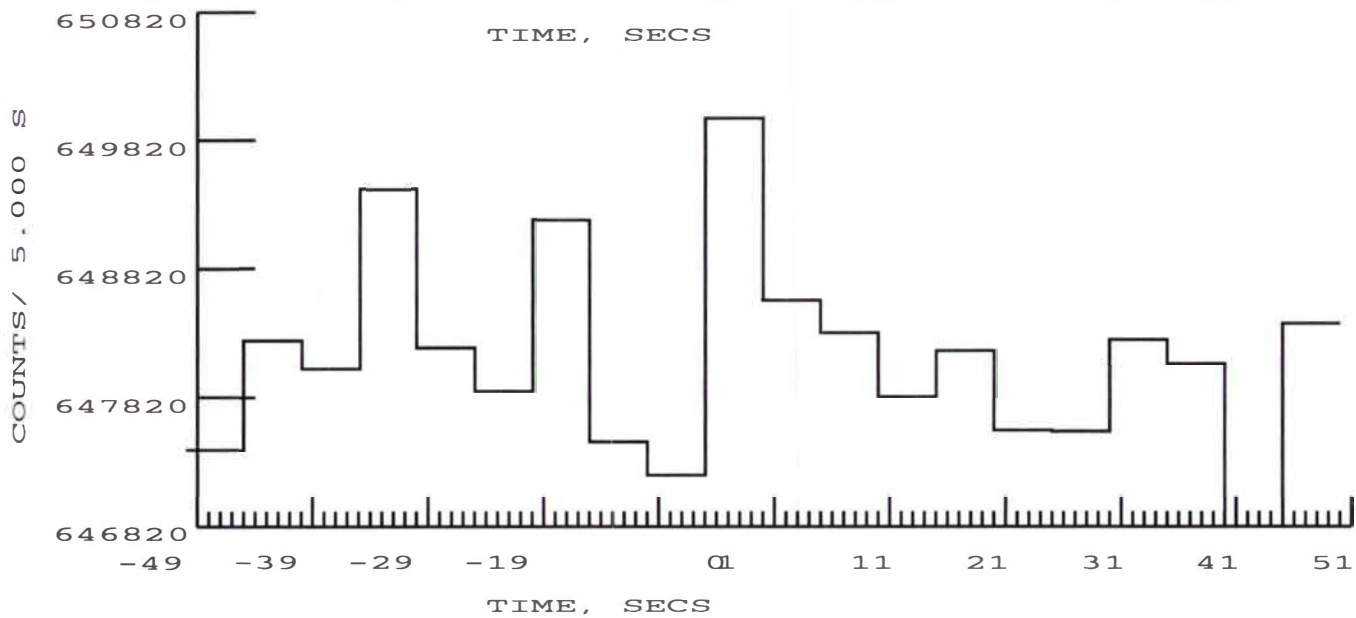
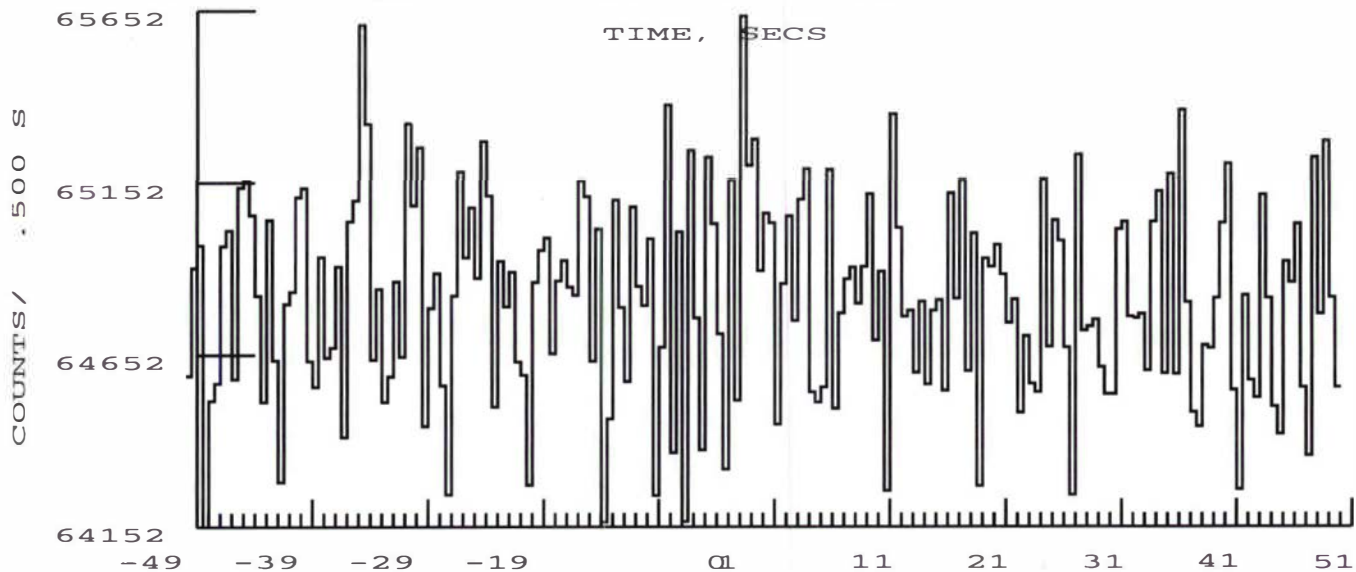
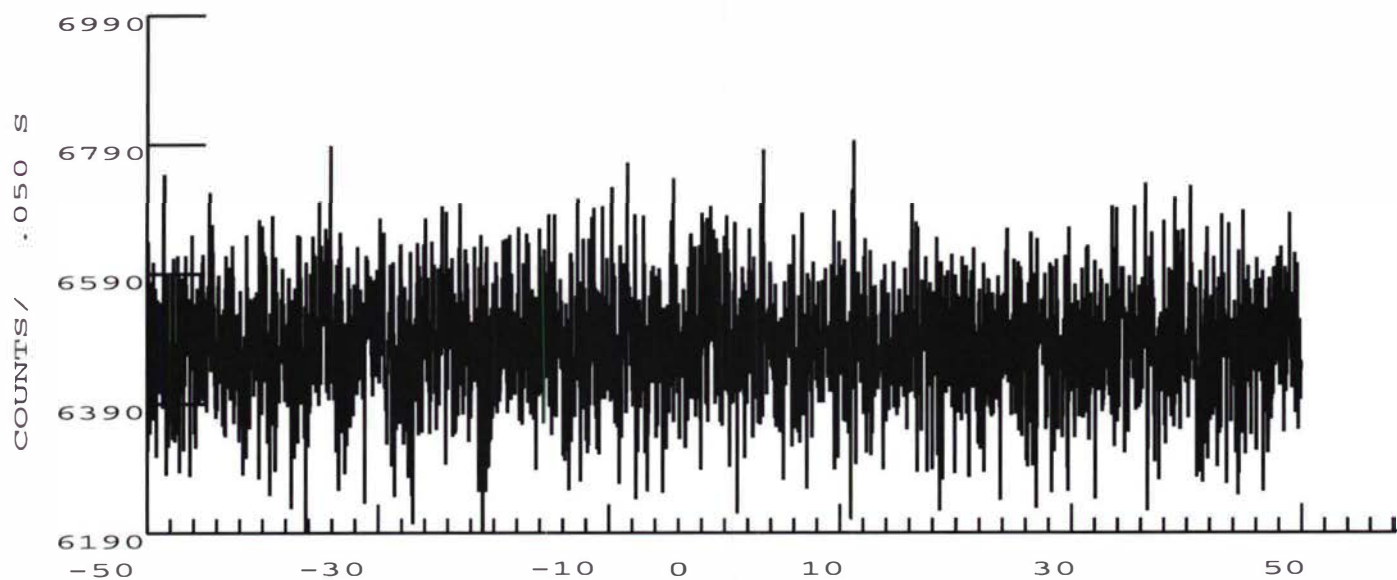


ODYSSEY 10/06/19 70697.951 19:38:17.951^c
50-3000 keV

COUNTS/ .250 S



c



Subject: BAT lightcurve for trigger at 190610_2000

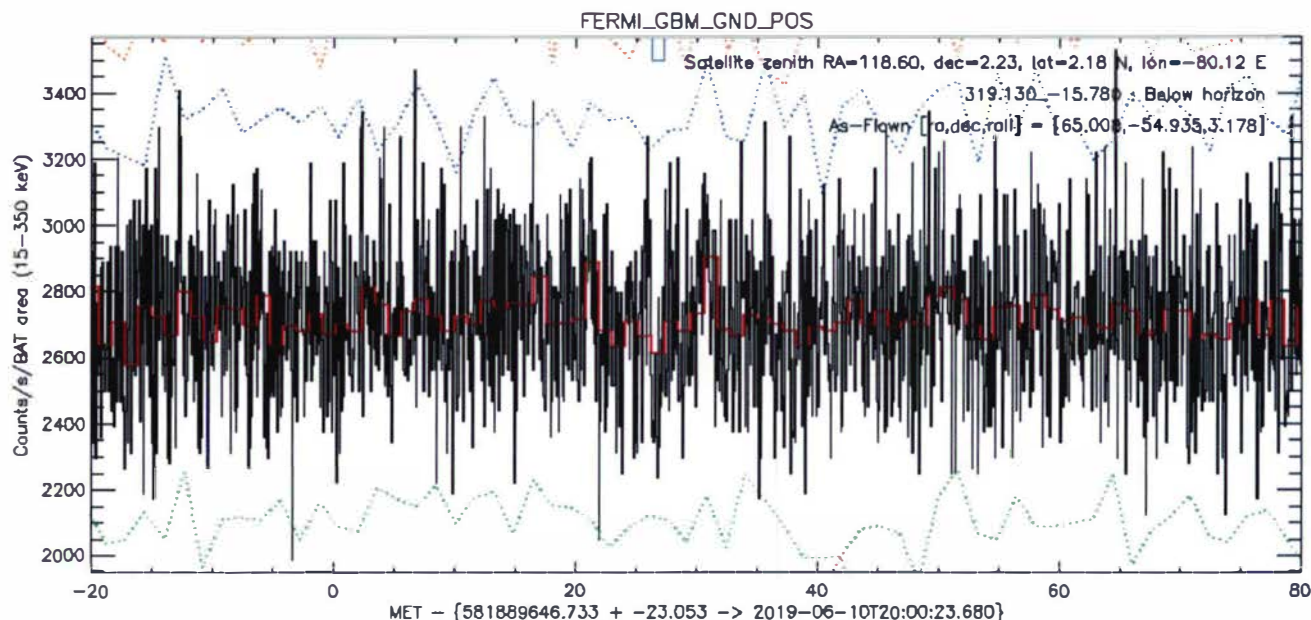
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/10/2019, 5:17 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

~/tmp/swift/190610_2000.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 581889646.733 -s 319.130_-15.780
```

```
Swift Zenith(RA,dec):      118.60, 2.23
Swift Location(lon,lat,alt): -80.12 E, 2.18 N, 543 km
Time(MET + UTCF -> UT):    581889646.733 + -23.053 -> 2019-06-10T20:00:23.680
YYMMDD_SOD:                190610_72023.680      DOY=161
Obs Sequence Number:       00035880131
Obs Target Name:           NGC 1566
Obs Date and Times:        2019-06-10 19:48:39 - 20:03:37
Obs Pointing(ra,dec,roll): 65.008, -54.935, 3.18
319.130_-15.780_imageloc (boresight_dist, angle): (86, 155)
319.130_-15.780_exposure (cm^2 cos adjusted): 0
319.130_-15.780_altitude: -43 (down)
```

```
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data
```

Attachments:

~/tmp/swift/190610_2000_bat64ms_ipn	87.1 KB
~/tmp/swift/190610_2000.png	19.2 KB

KONUS

11/06/2019

34.986

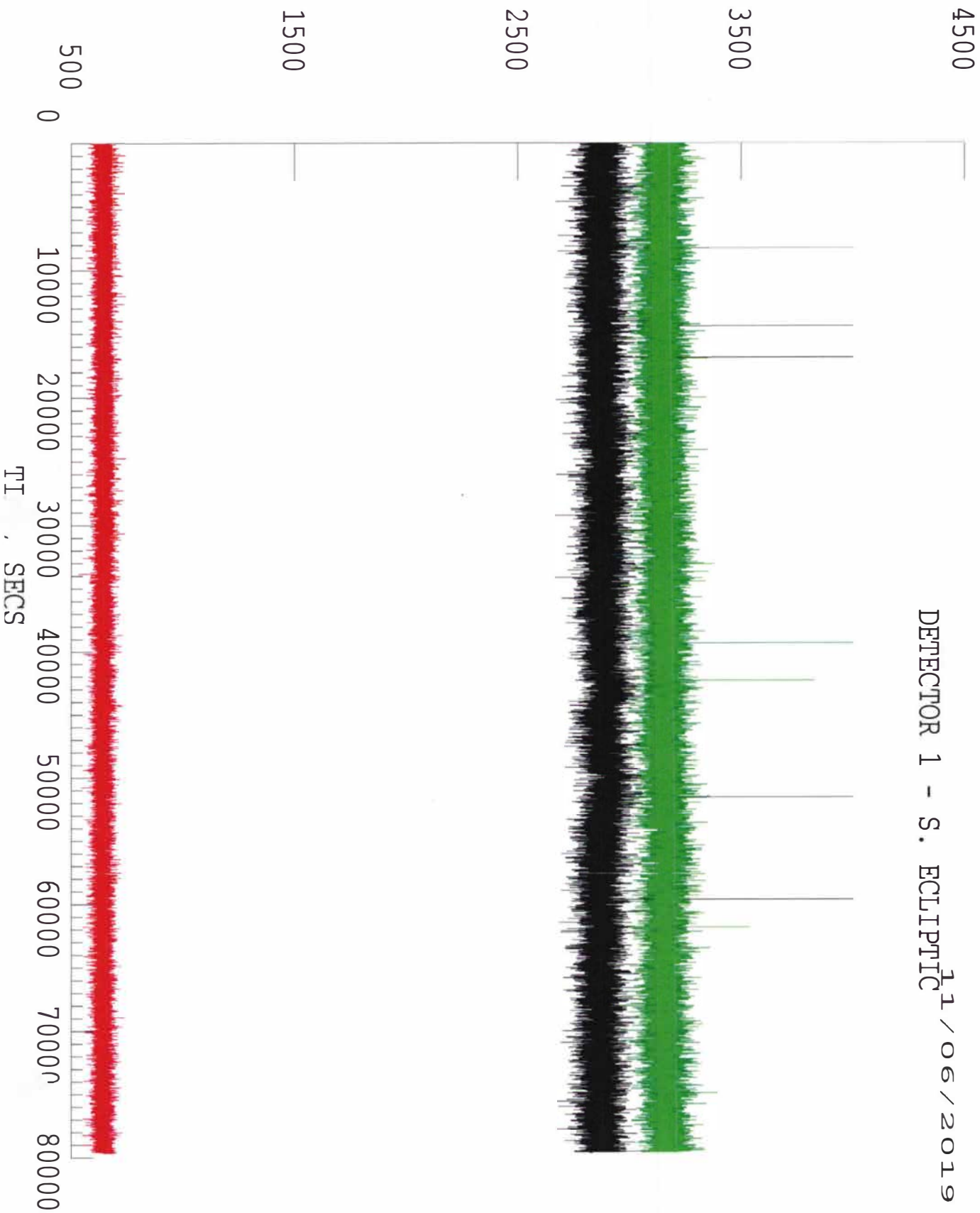
v01

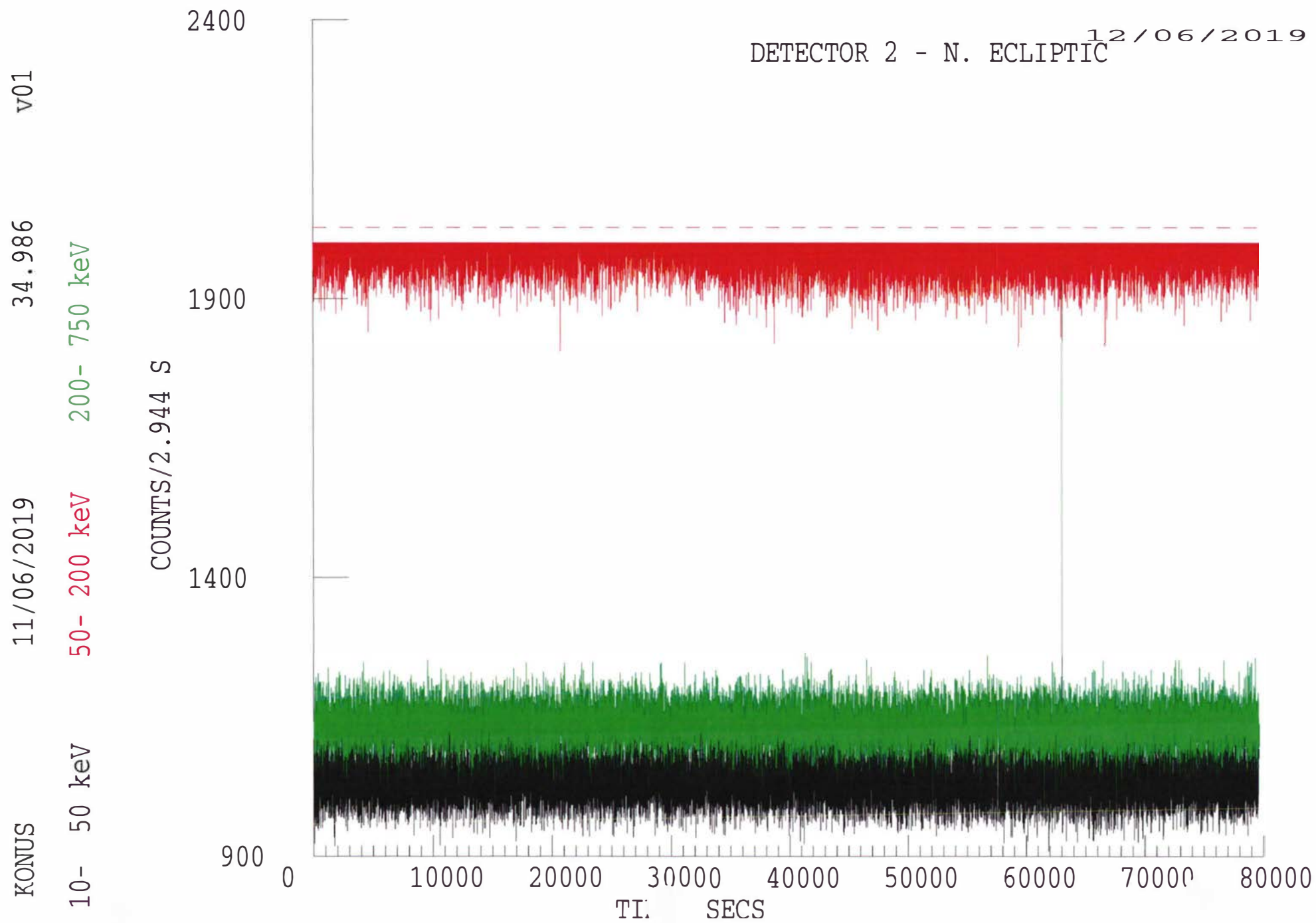
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S





Subject: GCN/SWIFT_BAT_LIGHTCURVE**From:** Bacodine <vxw@capella2.gsfc.nasa.gov>**Date:** 6/11/2019, 10:53 AM**To:** khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
NOTICE_DATE: Tue 11 Jun 19 17:53:28 UT
NOTICE_TYPE: Swift-BAT GRB Lightcurve
TRIGGER_NUM: 907950, Seg_Num: 0
GRB_RA: 324.769d {+21h 39m 05s} (J2000),
 325.111d {+21h 40m 27s} (current),
 323.886d {+21h 35m 33s} (1950)
GRB_DEC: -56.082d {-56d 04' 54"} (J2000),
 -55.993d {-55d 59' 35"} (current),
 -56.308d {-56d 18' 28"} (1950)
GRB_DATE: 18645 TJD; 162 DOY; 19/06/11
GRB_TIME: 64141.99 SOD {17:49:01.99} UT
TRIGGER_INDEX: 474
GRB_PHI: -7.14 [deg]
GRB_THETA: 35.46 [deg]
DELTA_TIME: -25.00 [sec]
TRIGGER_DUR: 3.072 [sec]
SOLN_STATUS: 0x3
RATE_SIGNIF: 9.84 [sigma]
IMAGE_SIGNIF: 8.07 [sigma]
LC_URL: sw00907950000msb.lc
SUN_POSTN: 79.70d {+05h 18m 48s} +23.10d {+23d 05' 54"}
SUN_DIST: 122.63 [deg] Sun_angle= 7.6 [hr] (West of Sun)
MOON_POSTN: 191.40d {+12h 45m 36s} +0.75d {+00d 45' 03"}
MOON_DIST: 113.41 [deg]
MOON_ILLUM: 67 [%]
GAL_COORDS: 339.07,-45.24 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 306.08,-39.30 [deg] ecliptic lon,lat of the burst (or transient)
COMMENTS: SWIFT-BAT GRB Lightcurve.
COMMENTS:
COMMENTS: The next comments were copied from the BAT_POS Notice:
COMMENTS: This is a rate trigger.
COMMENTS: A point_source was found.
COMMENTS: This does not match any source in the on-board catalog.
COMMENTS: This does not match any source in the ground catalog.
COMMENTS: This is a GRB.
COMMENTS: This trigger occurred at longitude,latitude = 199.79,-20.39 [deg].

41.8s

 $4.6 \times 10^{-7} \text{ erg cm}^{-2}$ 0.9 phot/cm²s

SPI NO

BAT

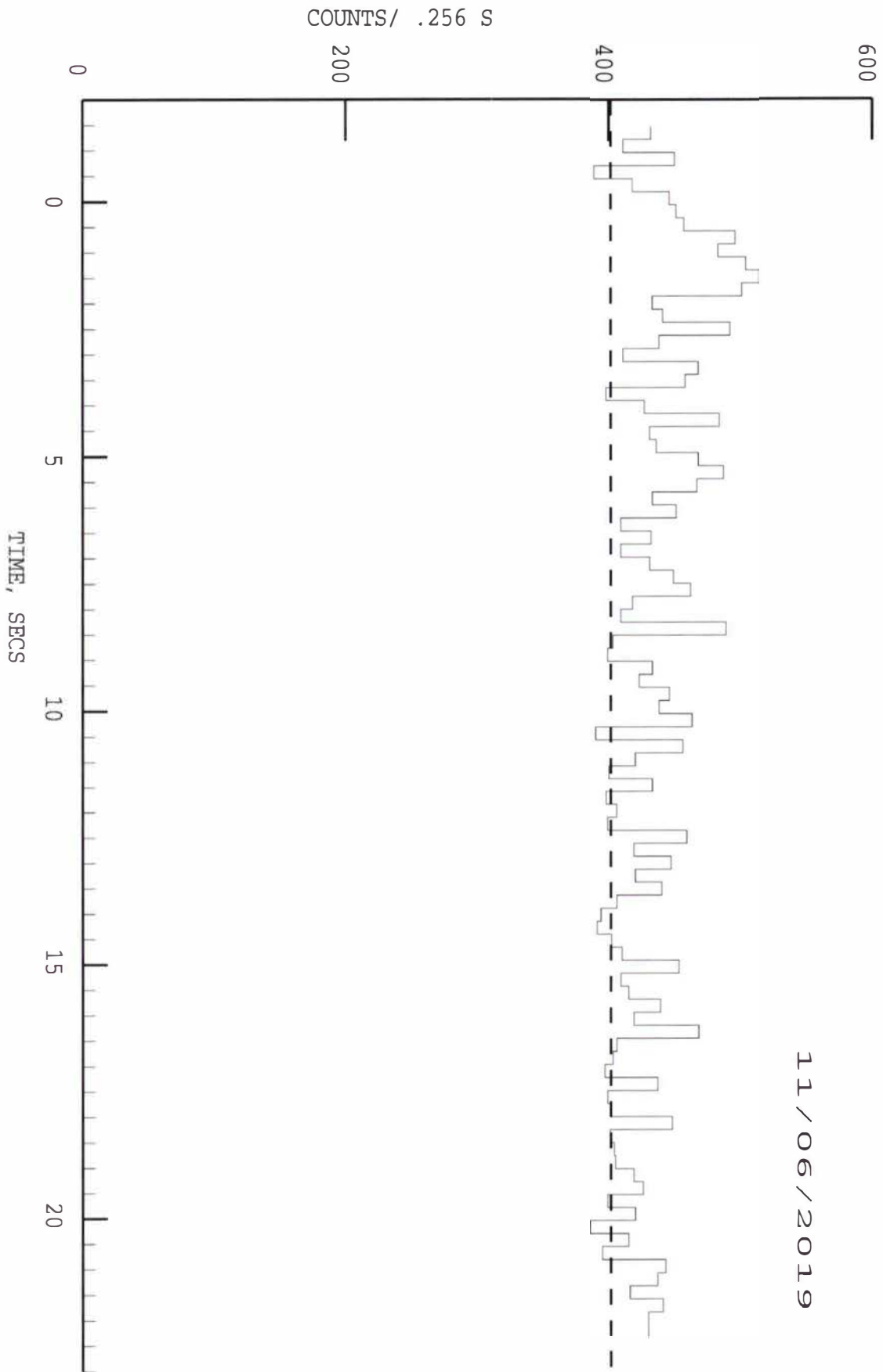
11/06/19

64141.998

17:49:01.998

A

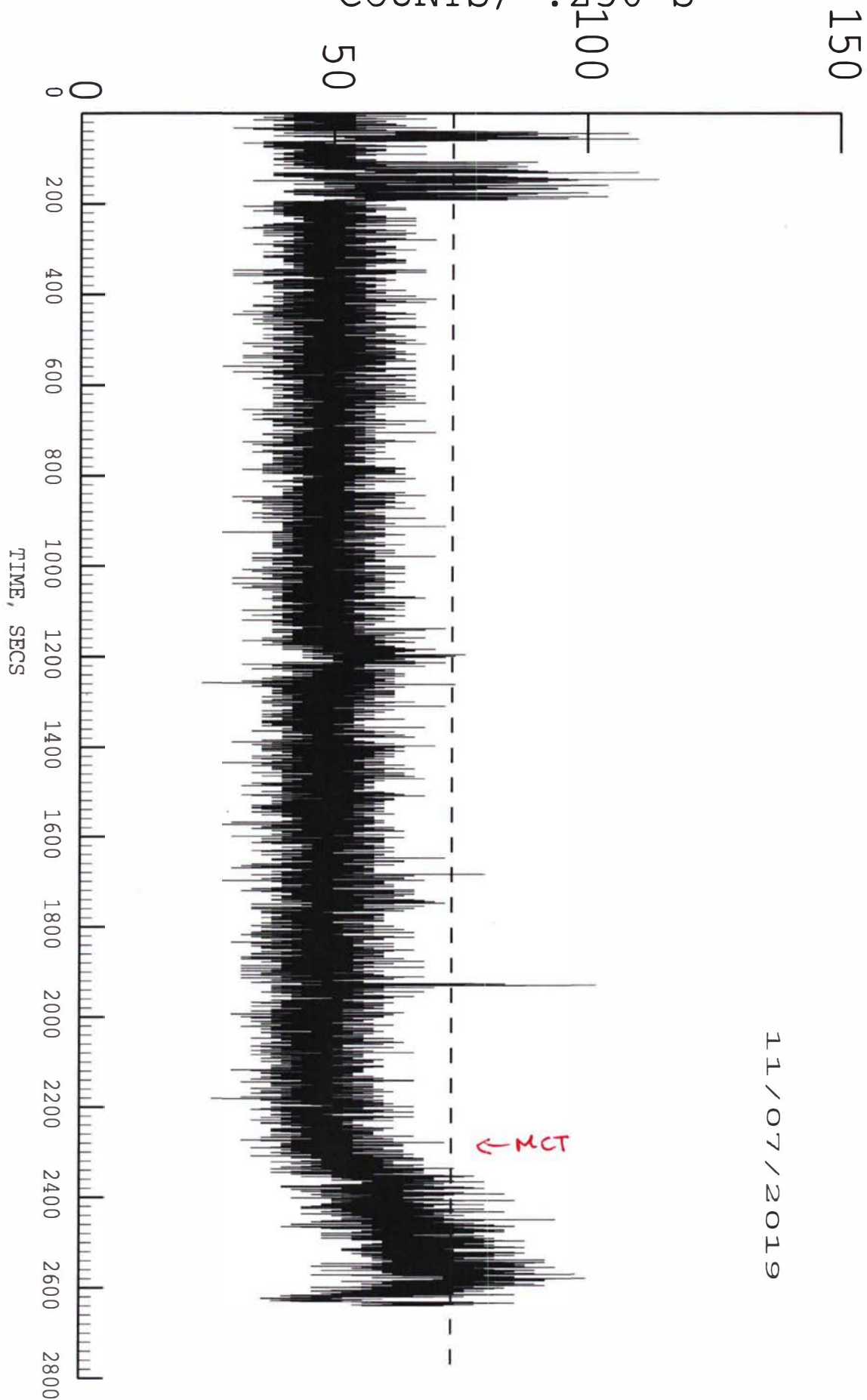
25- 100 keV



ODYSSEY 11/06/19 62776.539 17:26:16.539^A

50-3000 keV

COUNTS/ .250 S



B

FERMI

11/06/19

82069.337

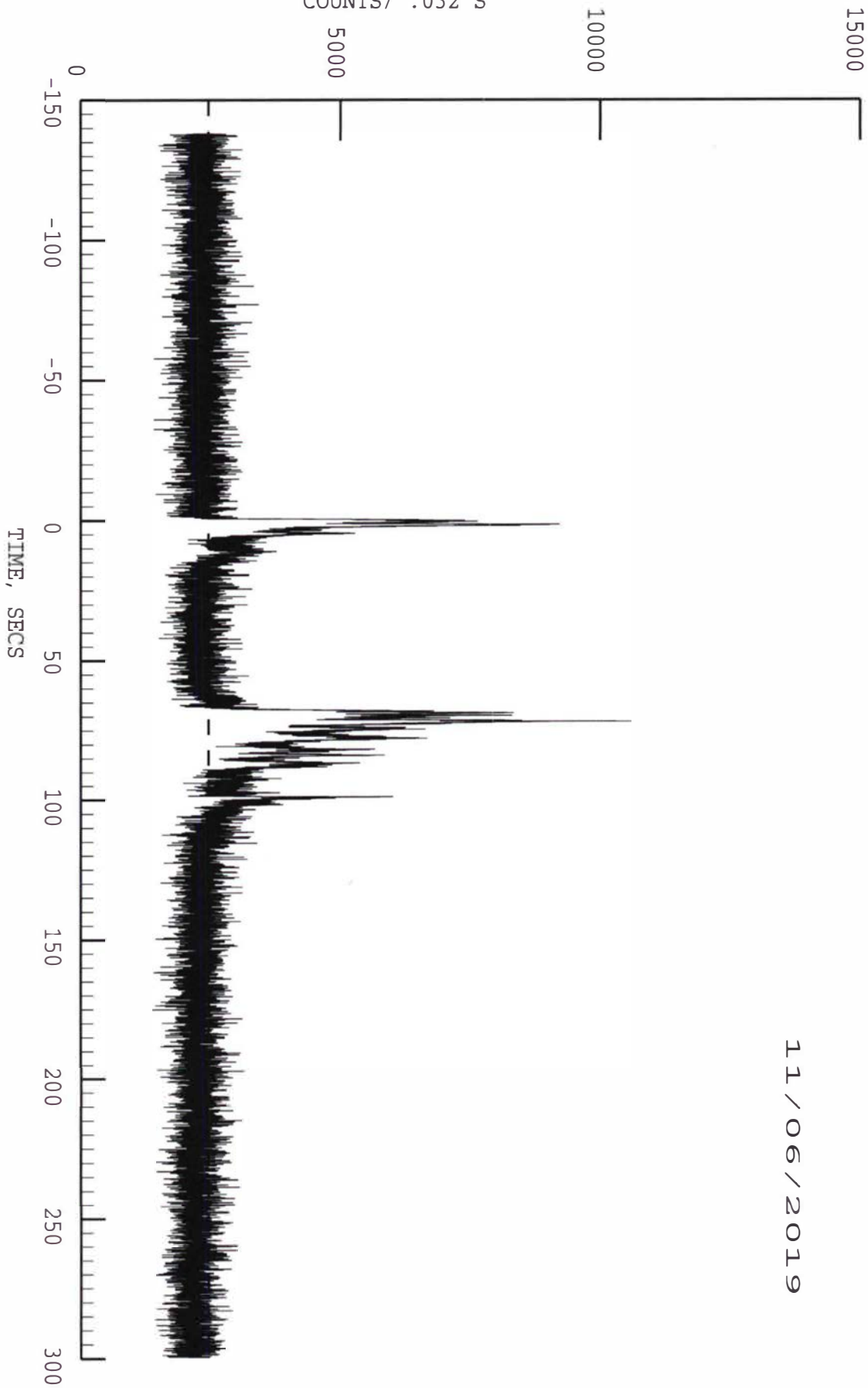
22:47:49.337

26- 293 keV

88.9 53 1

EL = 29.6

COUNTS/ .032 S

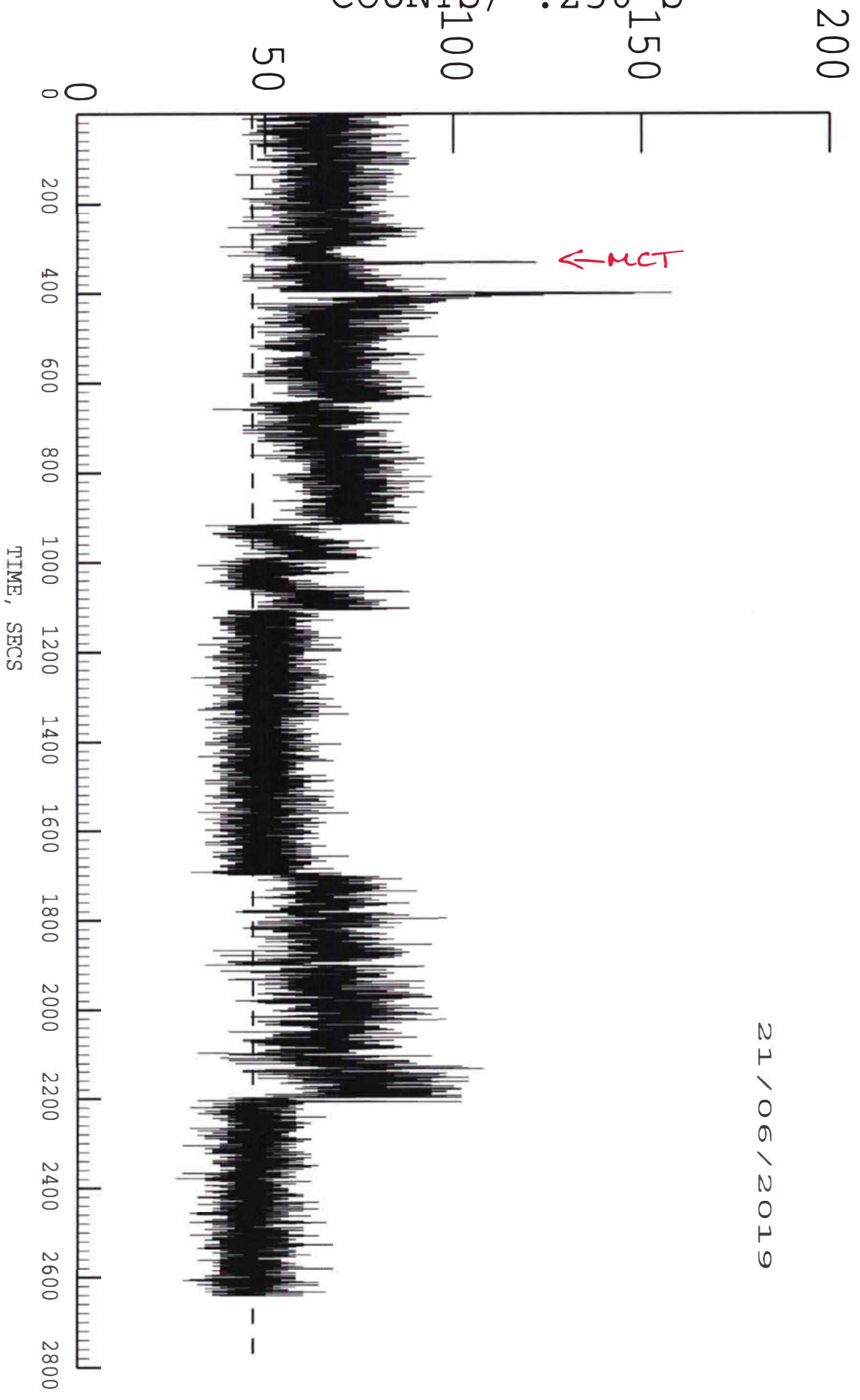


11/06/2019

B

ODYSSEY 11/06/19 80716.215 22:25:16.215
50-3000 keV

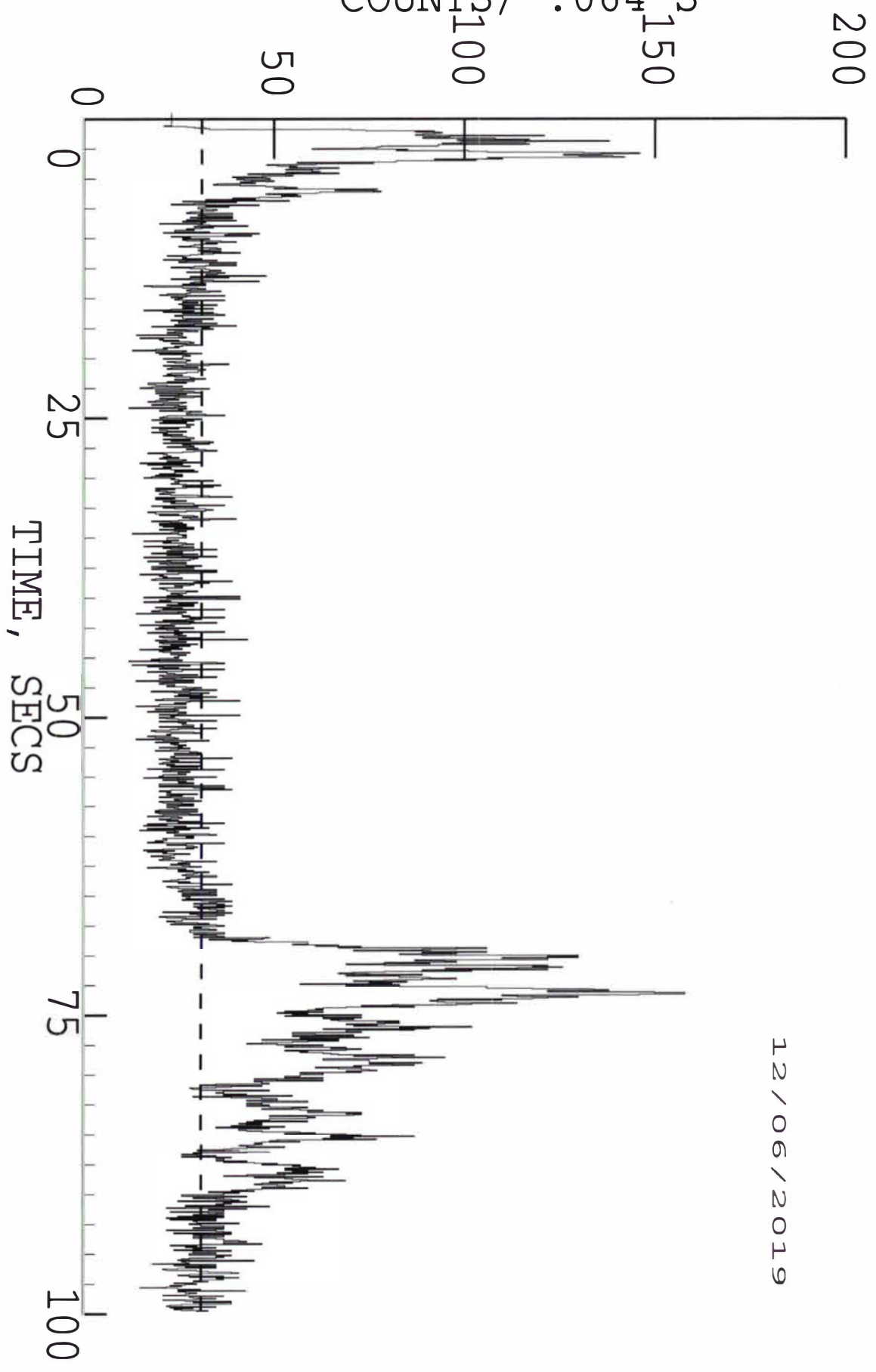
COUNTS/ .250 S



21/06/2019

KONUS 11/06/19 82065.599 22:47:45.599^R
50- 200 keV

COUNTS/ .064 S



12/06/2019

B

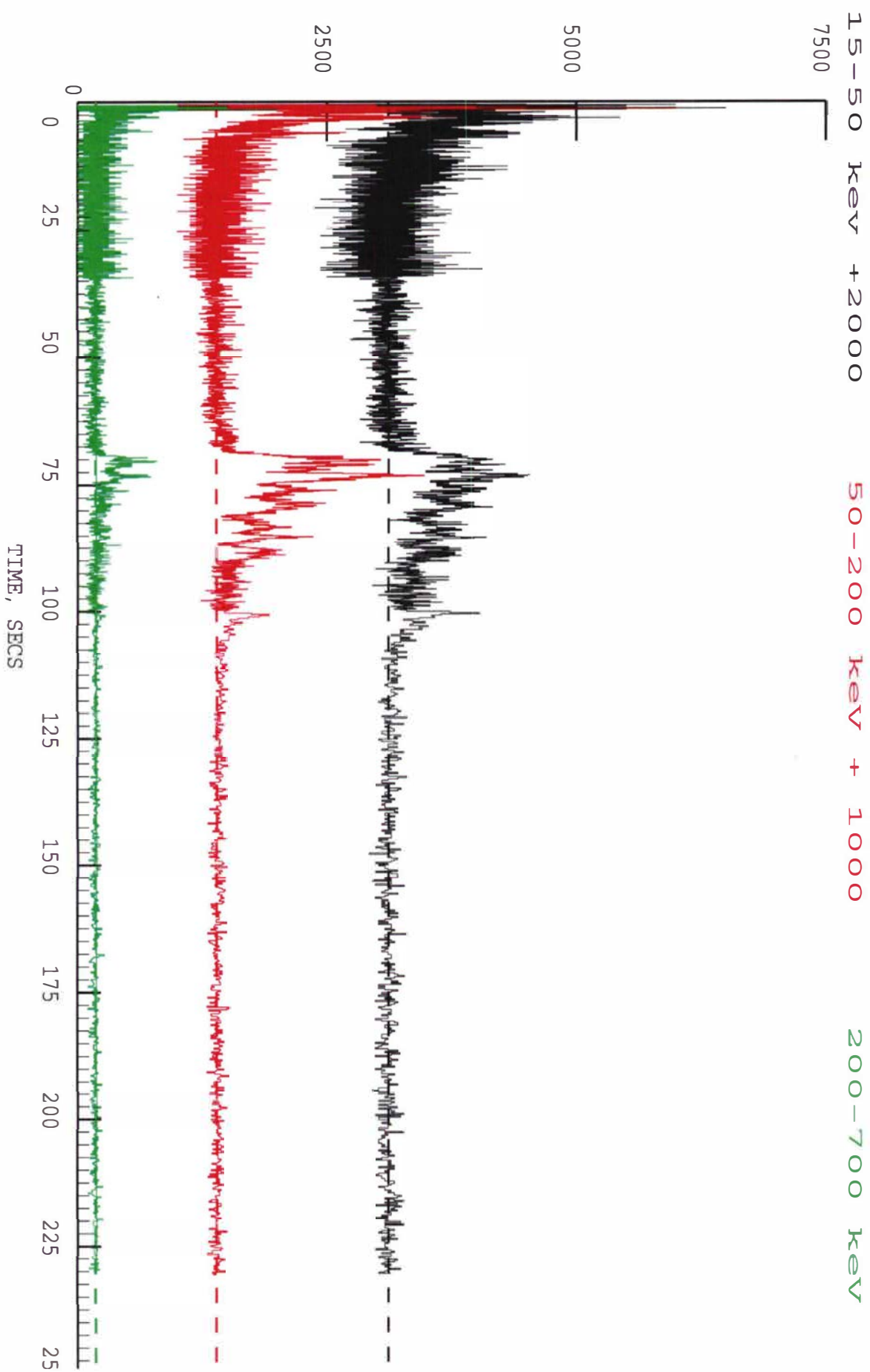
KONUS

11/06/19

82065.000

22:47:45.000

COUNTS/SEC



12/06/2019

B

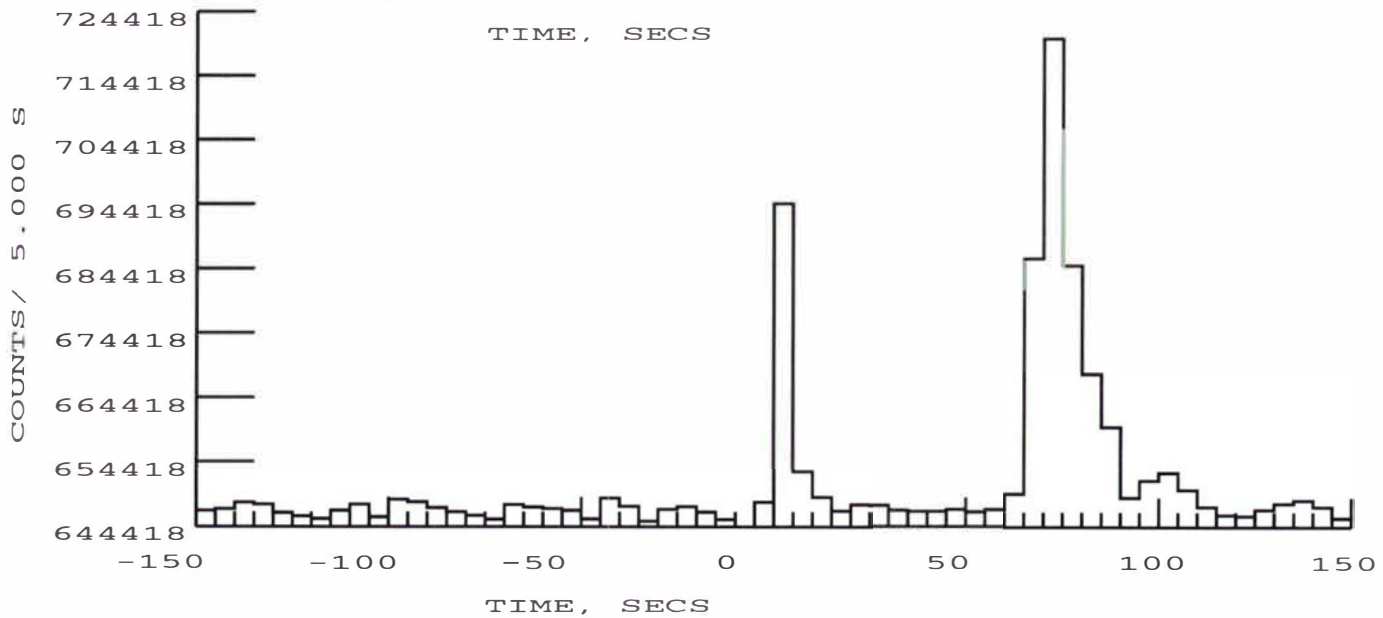
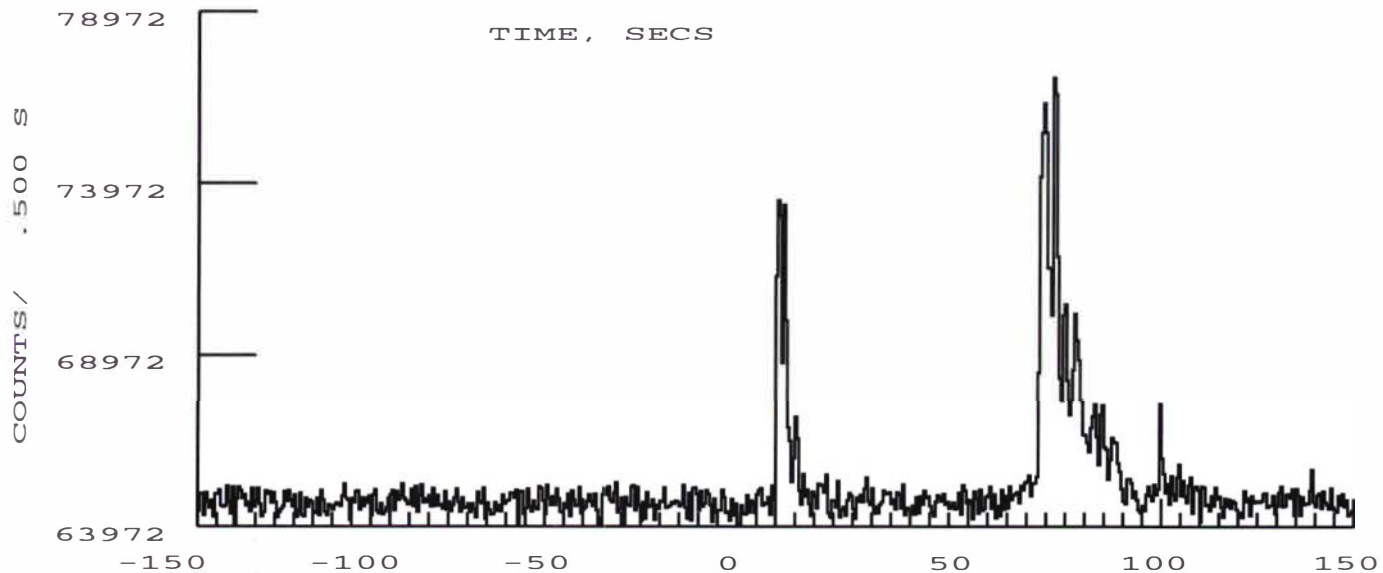
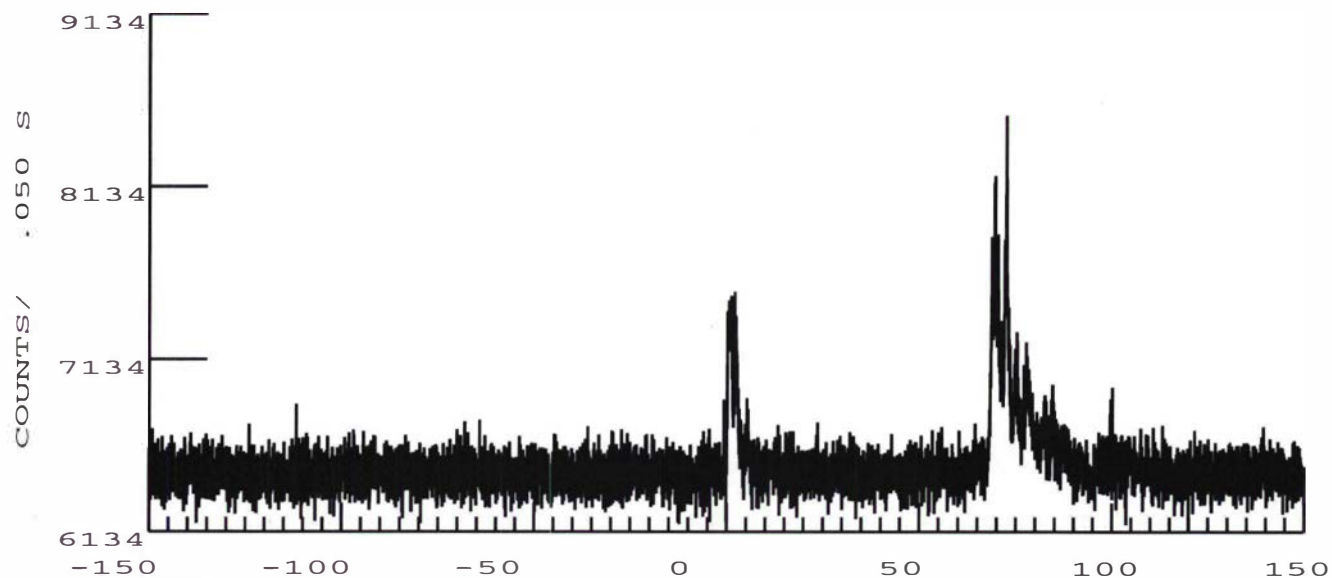
INTEGRAL

11/06/19

82069.000

22:47:49.0

11/07/19



Subject: BAT lightcurve for trigger at 190611_2247

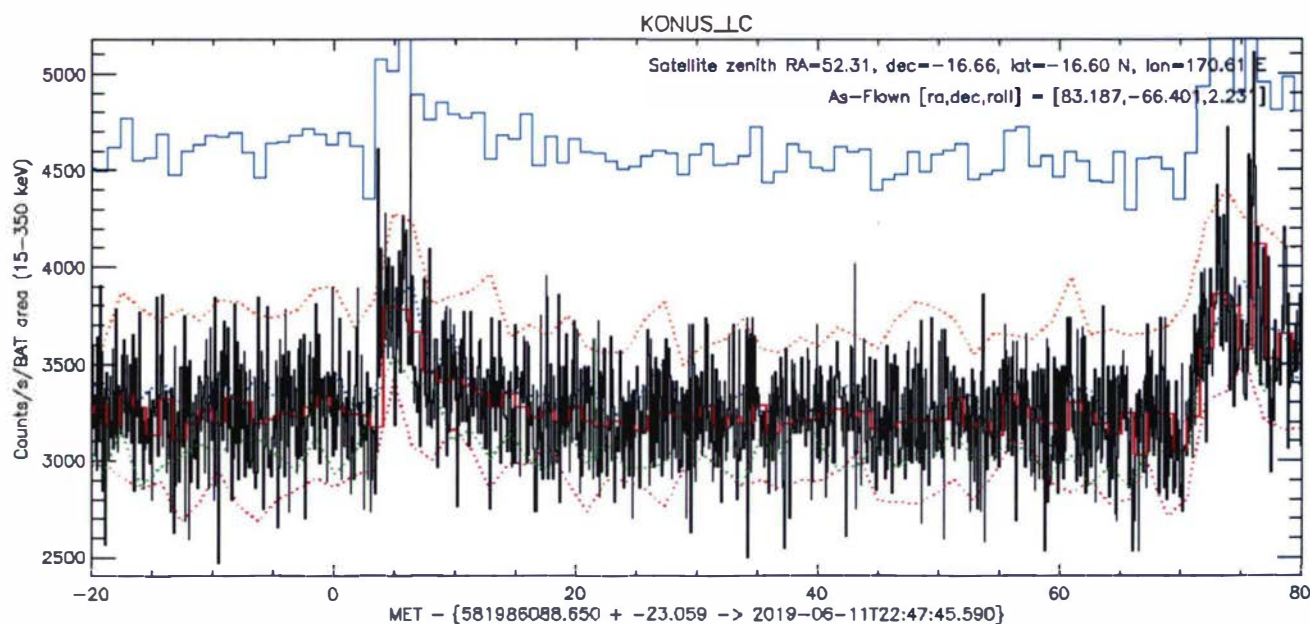
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/12/2019, 7:55 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190611_2247.png—



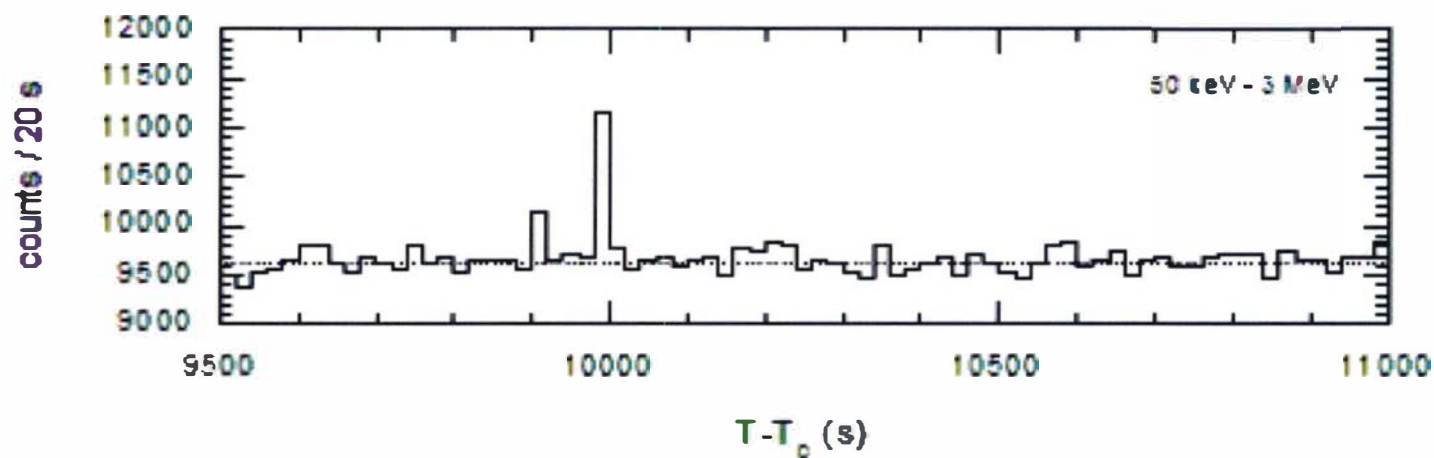
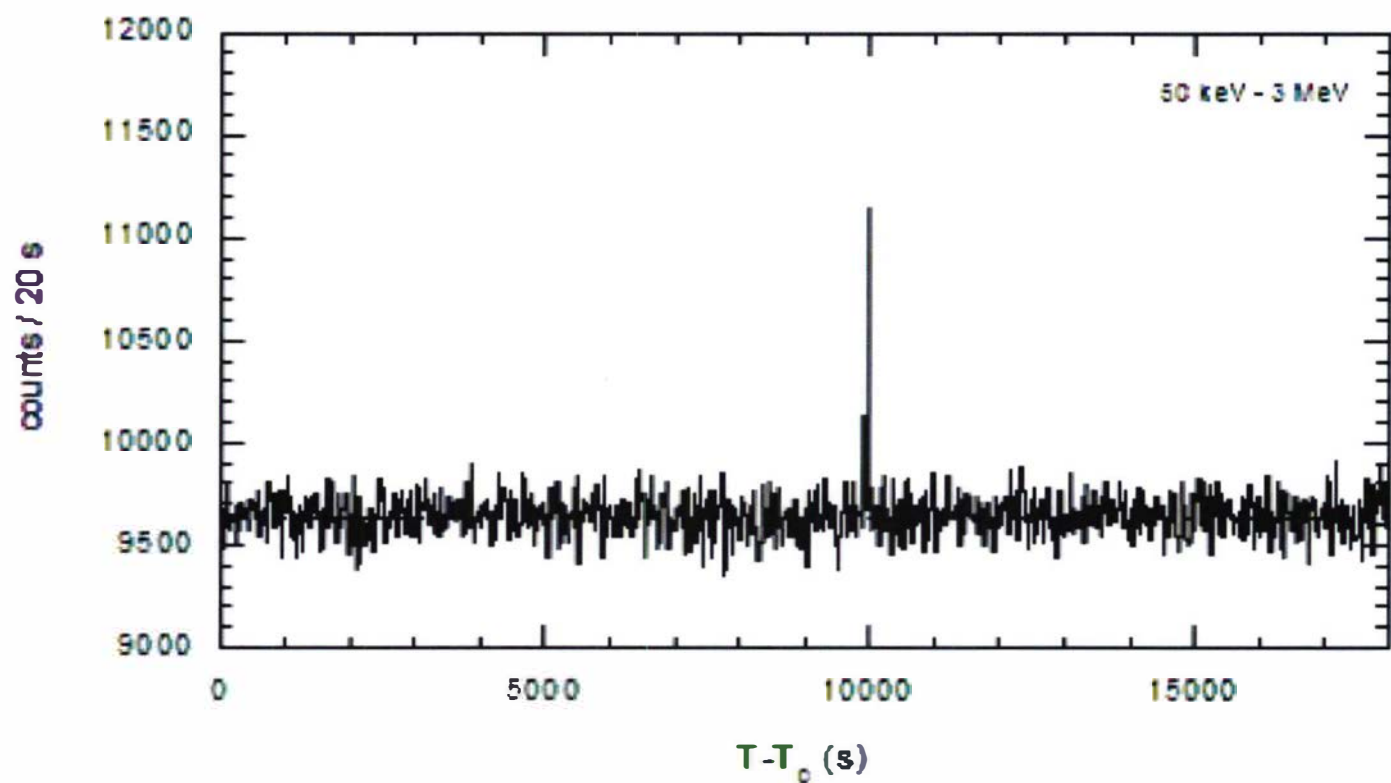
```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2019-06-11T22:47:45.590
Swift Zenith(RA,dec):      52.31, -16.66
Swift Location(lon,lat,alt): 170.61 E, -16.60 N, 555 km
Time(MET + UTC -> UT):    581986088.650 + -23.059 -> 2019-06-11T22:47:45.590
YYMMDD_SOD:               190611_82065.590      DOY=162
Obs Sequence Number:      00033538028
Obs Target Name:          LMC X-4
Obs Date and Times:       2019-06-11 22:30:35 - 22:56:34
Obs Pointing(ra,dec,roll): 83.187, -66.401, 2.23
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190611_2247.png	23.7 KB
/tmp/swift/190611_2247_bat64ms_ipn	87.1 KB

BepiColombo-MGNS GRB 190611
 $T_0 = 72228.906$ s UT (20:03:48.906)



Subject: GRB 190611B: CALET Gamma-Ray Burst Monitor detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/14/2019, 7:27 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24830
SUBJECT: GRB 190611B: CALET Gamma-Ray Burst Monitor detection
DATE: 19/06/14 14:25:24 GMT
FROM: Valentin Pal'shin at AGU <val@phys.aoyama.ac.jp>

N. Cannady (GSFC/UMBC),
A. Yoshida, T. Sakamoto, V. Pal'shin, S. Sugita (AGU),
Y. Kawakubo (LSU), K. Yamaoka (Nagoya U), S. Nakahira (RIKEN),
Y. Asaoka, S. Ozawa, S. Torii (Waseda U),
Y. Shimizu, T. Tamura (Kanagawa U),
M. L. Cherry (LSU), S. Ricciarini (U of Florence),
P. S. Marrocchesi (U of Siena)
and the CALET collaboration:

The long, bright GRB 190611B (Fermi GBM detection: Malacaria and Meegan, GCN Circ. 24794; IPN Triangulation: Hurley et al., GCN Circ. 24811; BALROG localization: Kunzweiler et al., GCN Circ. 24813) triggered the CALET Gamma-ray Burst Monitor (CGBM) at 22:47:46.257 UTC on 11 June 2019. The burst signal was seen by all CGBM detectors.

The burst light curve shows two multi-peaked pulses: the first starts at T+2.8 sec, peaks at T+4.9 sec and ends at T+16.9 sec, the second starts at T+67.4 sec, peaks at T+75.4 sec and ends at T+118.8 sec. The T90 and T50 durations measured by the SGM data are 100.9 +/- 3.9 sec and 13.9 +/- 1.1 sec (40-1000 keV), respectively.

The ground processed light curve is available at

http://cgbm.calet.jp/cgbm_trigger/ground/1244328454/

The CALET data used in this analysis are provided by the Waseda CALET Operation Center located at the Waseda University.

Subject: GRB 190611B: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/17/2019, 9:28 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24845
SUBJECT: GRB 190611B: AstroSat CZTI detection
DATE: 19/06/18 04:27:34 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

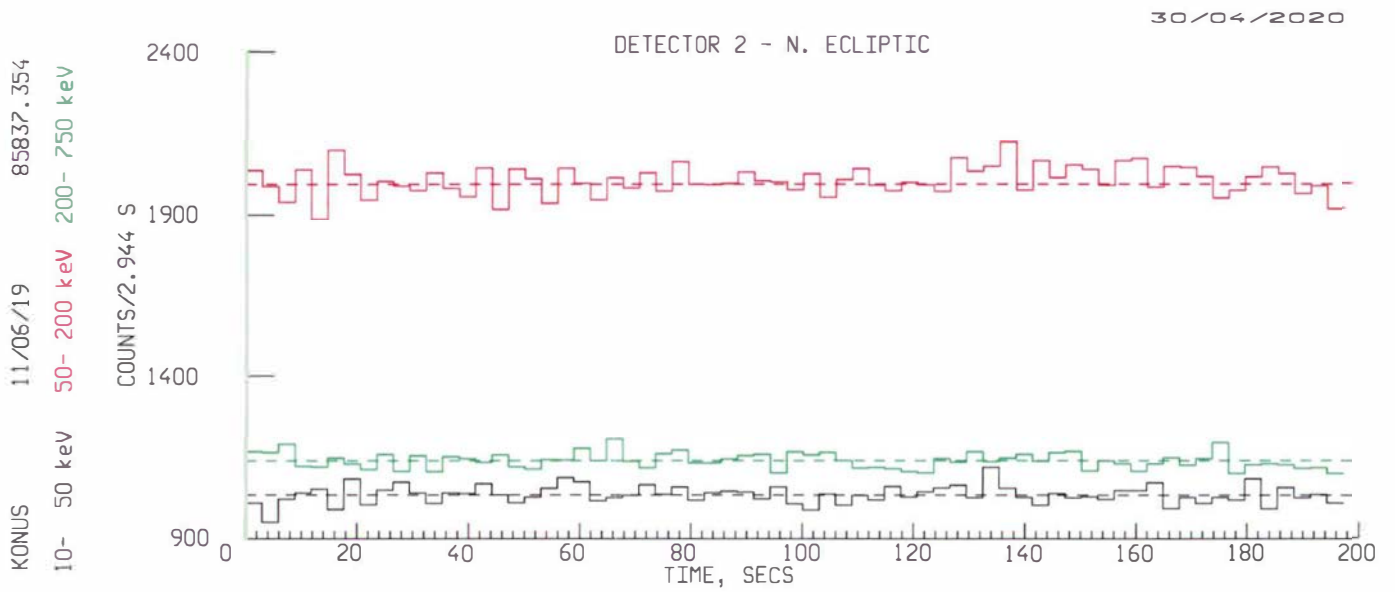
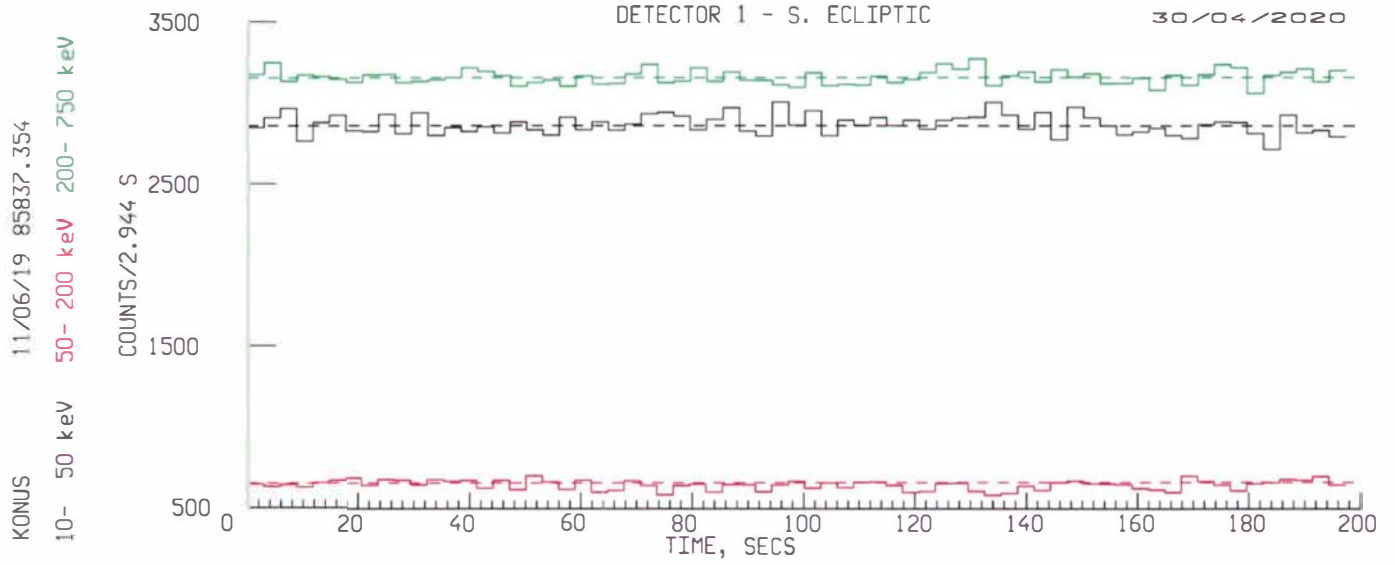
P. Ghumatkar, V. Sharma, D. Bhattacharya, T. Khanam and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadaawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190611B, which was also detected by Fermi GBM (Malacaria C. et al., GCN #24794), Global MASTER-Net (Lipunov V. et al., GCN #24795), IPN Triangulation (Hurley K. et al., GCN #24811), BALROG (Kunzweiler F. et al., GCN #24813), Konus-Wind (Frederiks D. et al., GCN #24827) and CALET (Cannady N. et al., GCN #24830).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 22:47:51.5 UT. Fermi/GBM lightcurve consists of two broad pulses. AstroSat could detect only first pulse of the burst, as during the second pulse the detector was in South Atlantic Anomaly (SAA). The measured peak count rate associated with the burst is 387 cts/s above the background in the combined data of four quadrants, with a total of 1251 cts. The local mean background count rate was 578 cts/s. Using cumulative rates, we measure a T90 of 7.35 s.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

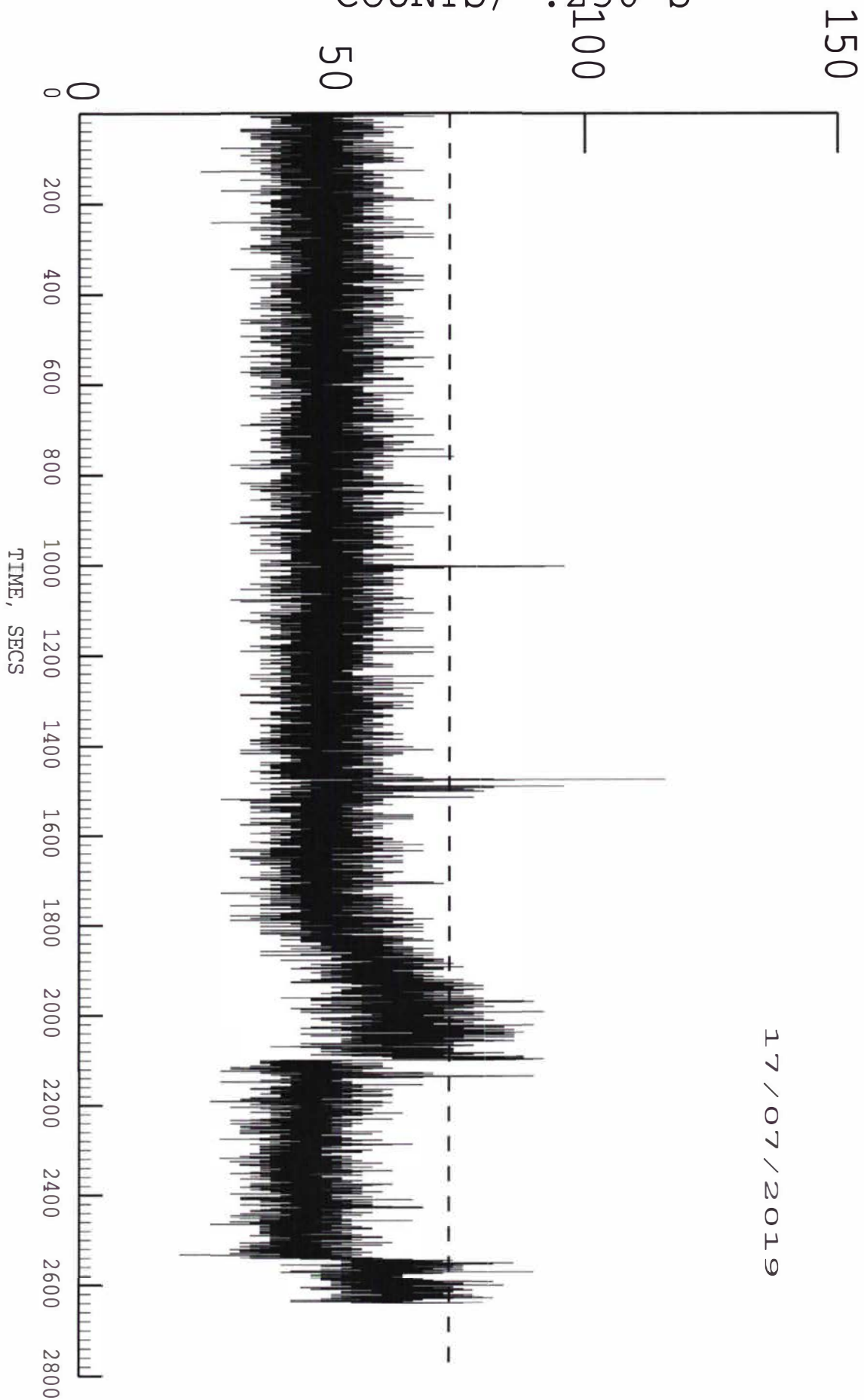


ODYSSEY 11/06/19 84616.150 23:30:16.150

50-3000 keV

Konus RT

COUNTS/ .250 S



KONUS

12/06/2019

23.714

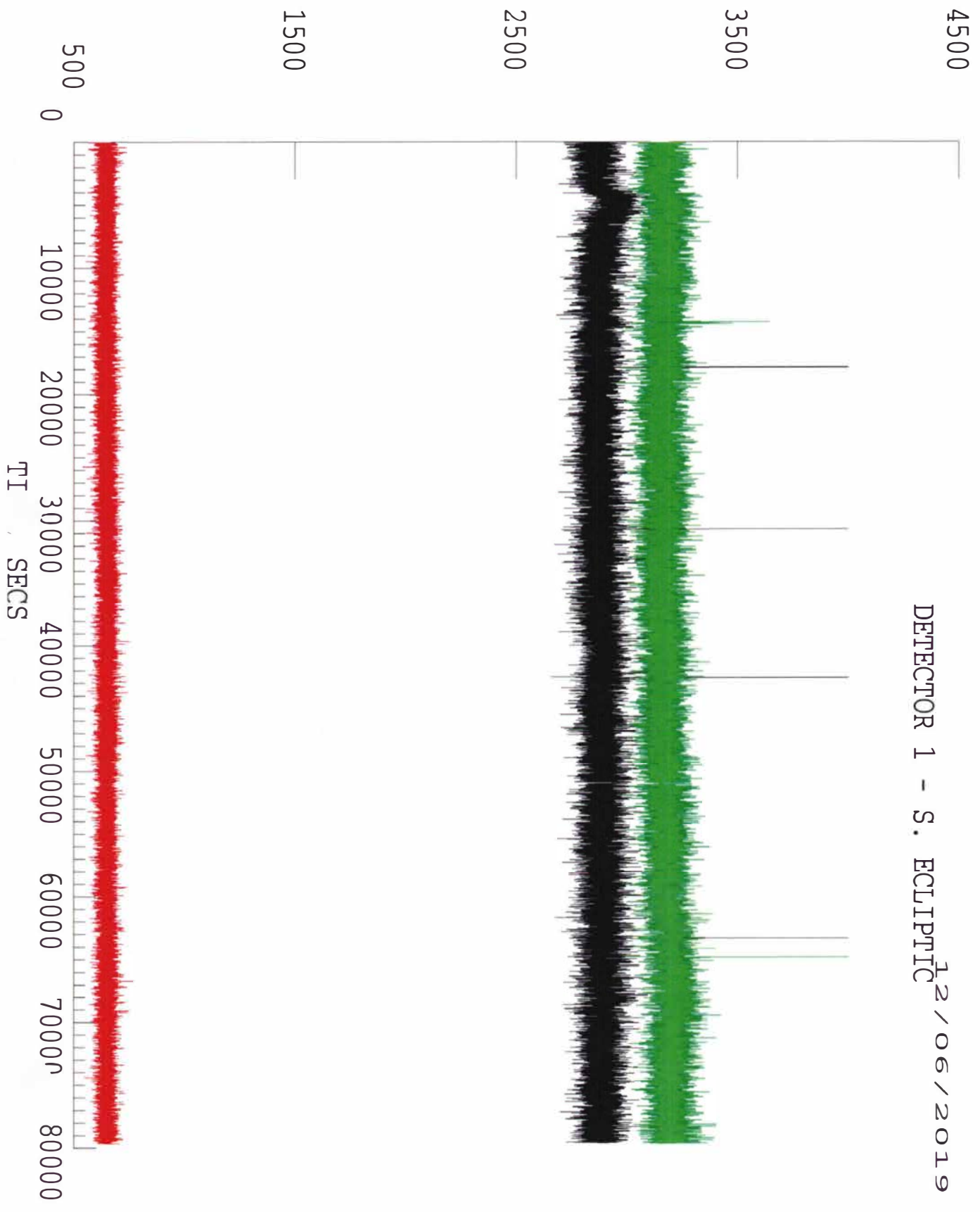
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



v01

23.714

12/06/2019

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2400

1900

1400

900

0

10000

20000

30000

40000

50000

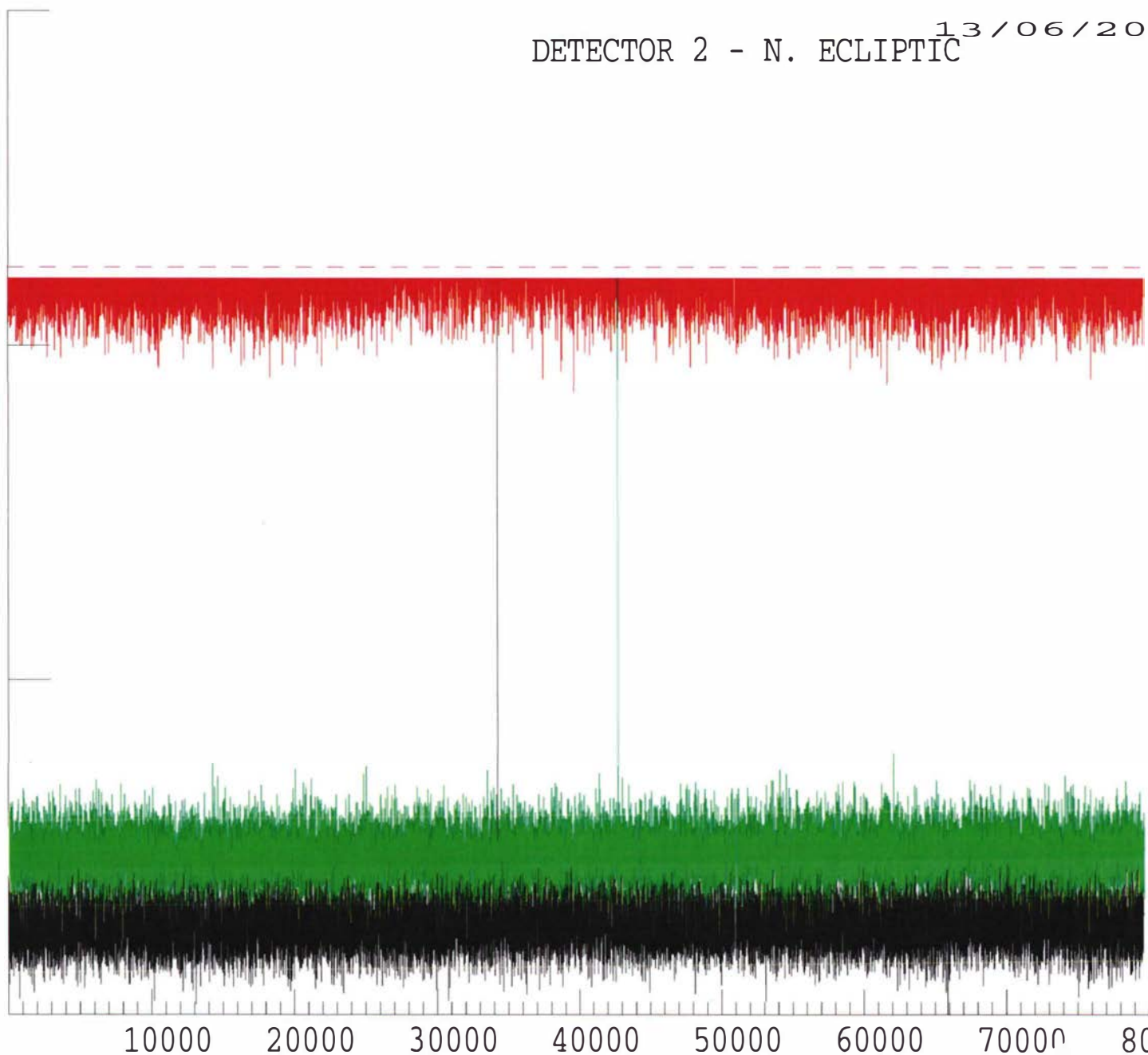
60000

70000

80000

TI . SECS

DETECTOR 2 - N. ECLIPTIC 13/06/2019



FERMI

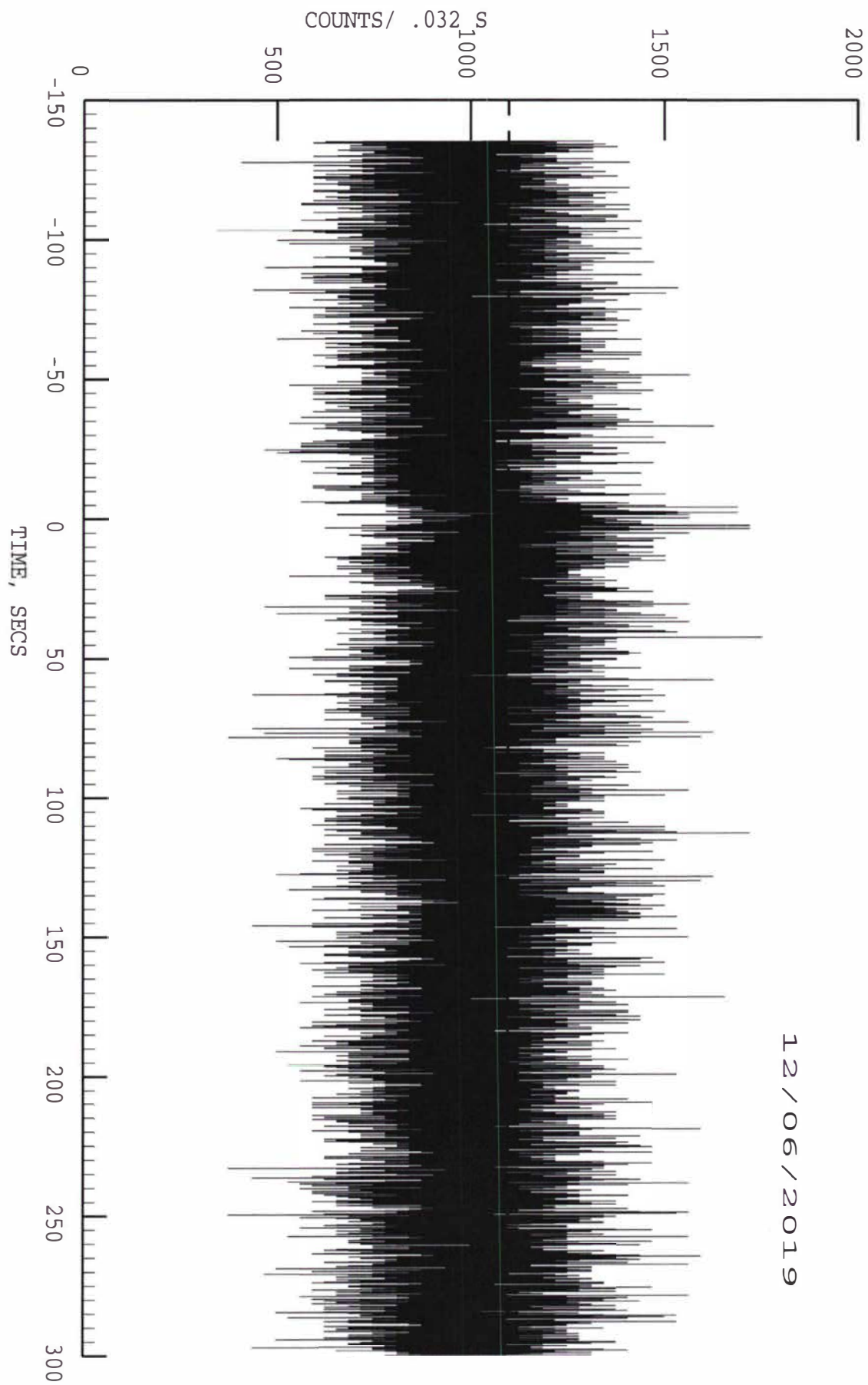
12/06/19

14244.648

03:57:24.648

26- 293 keV

223.9 62.1 9.3



ODYSSEY 12/06/19 12915.890 03:35:15.890

50-3000 keV

COUNTS/ .250 S

100

75

50

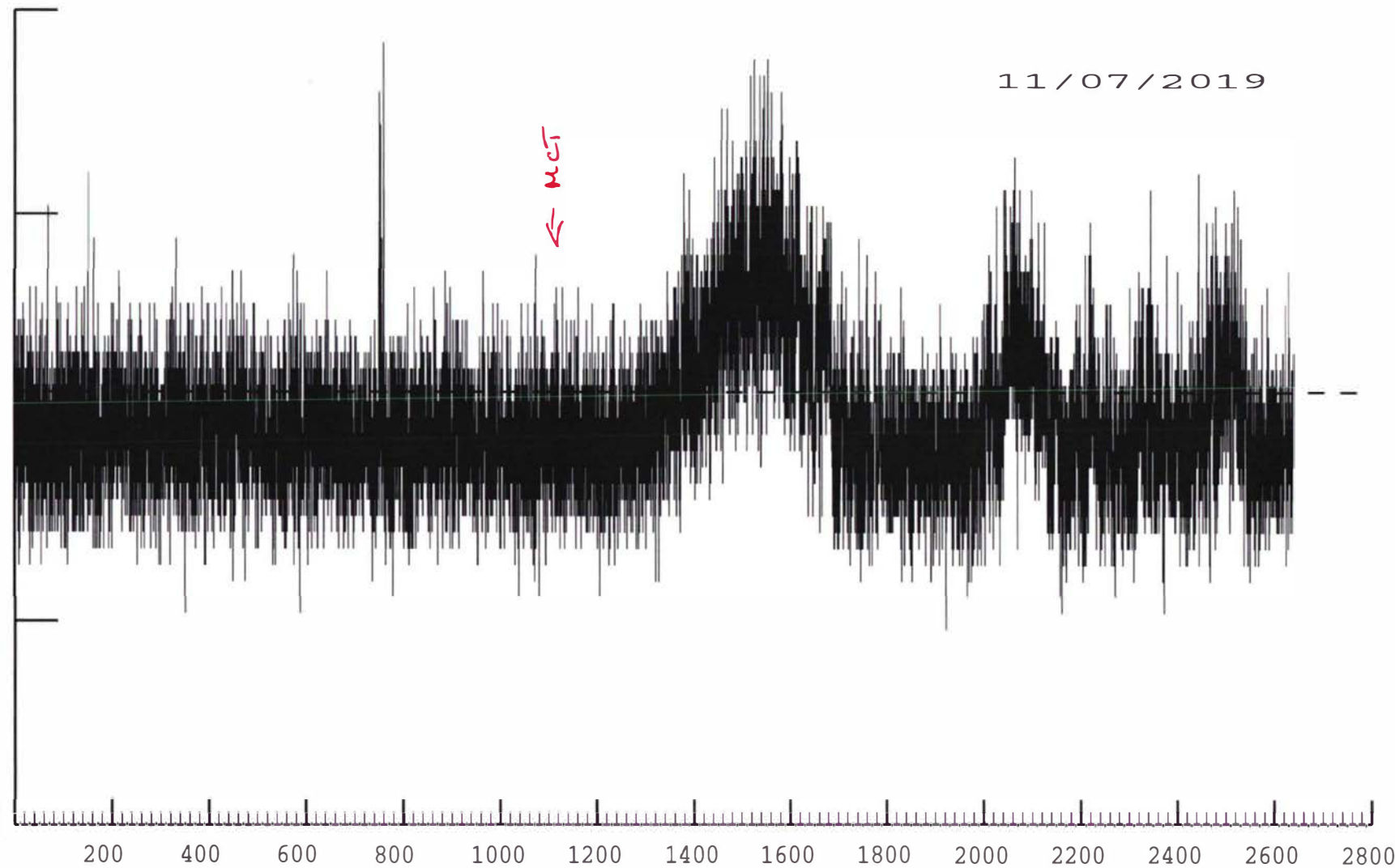
25

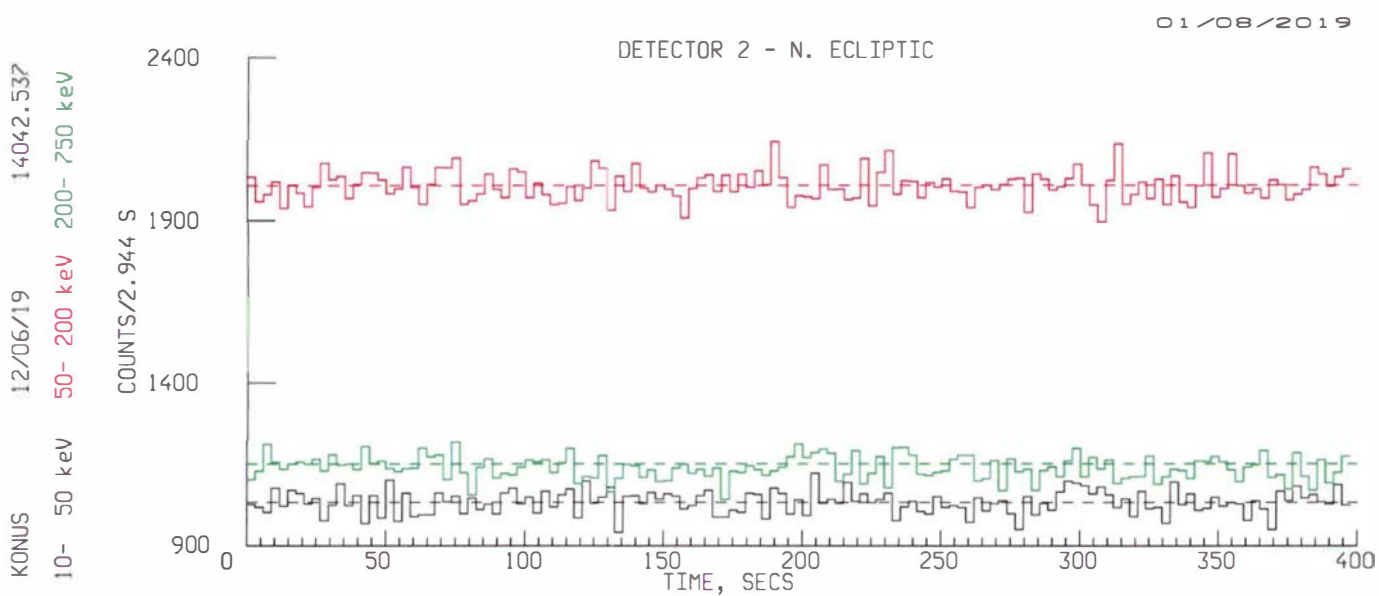
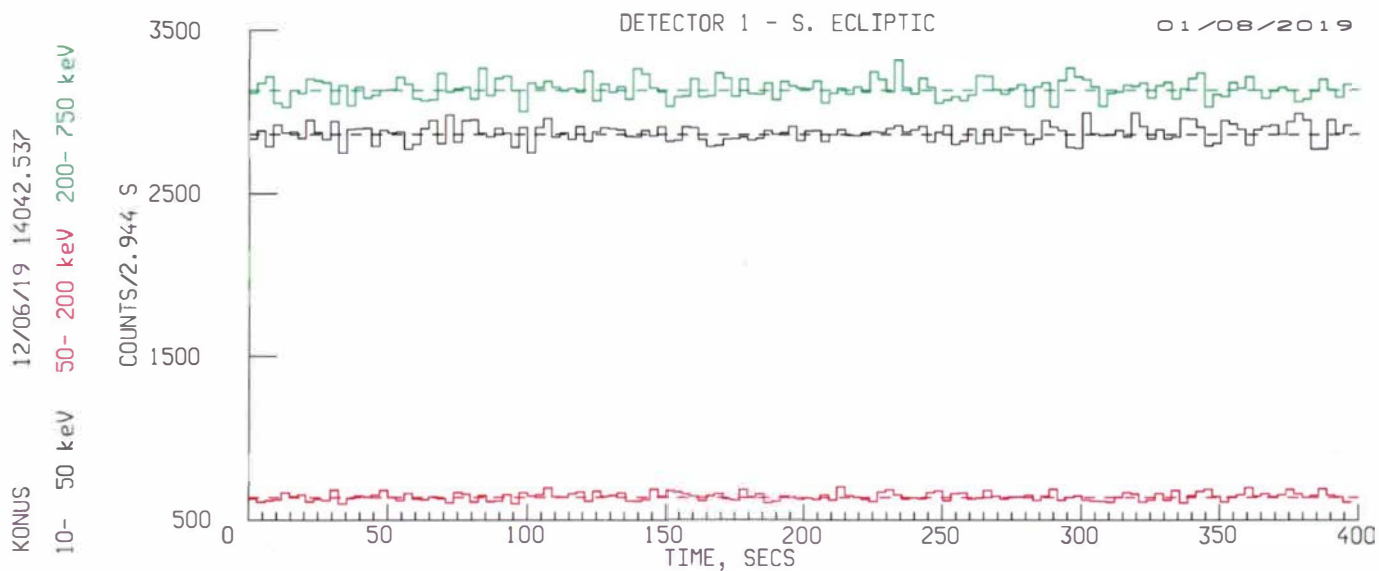
0

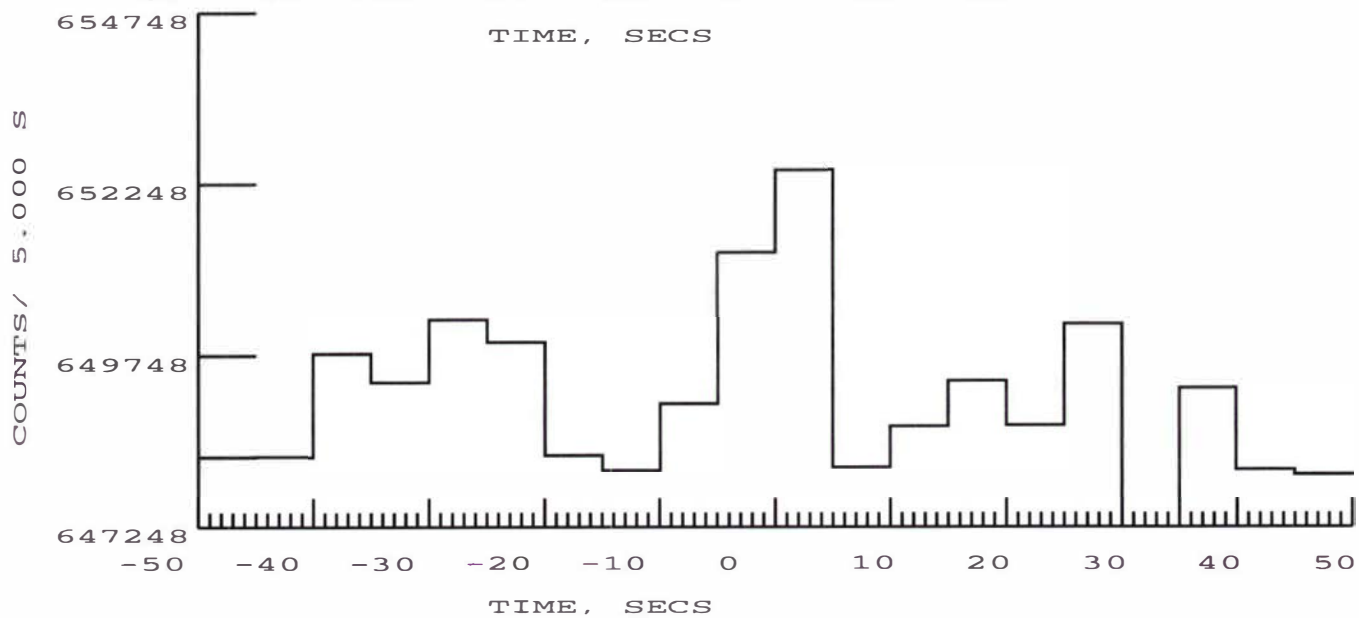
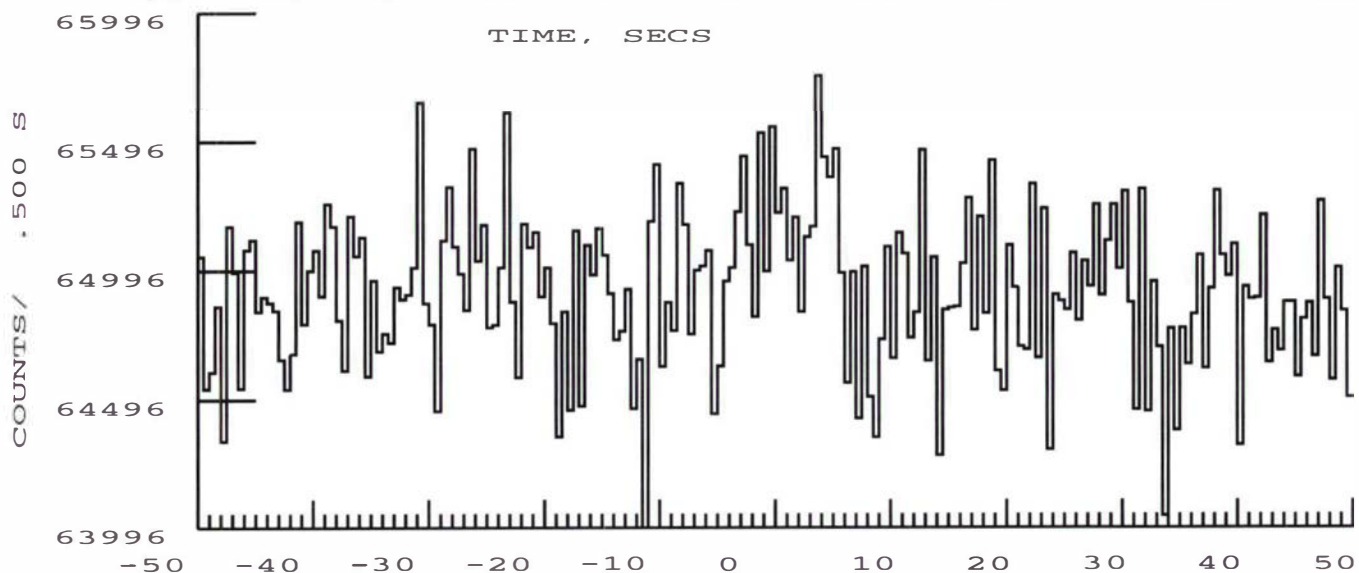
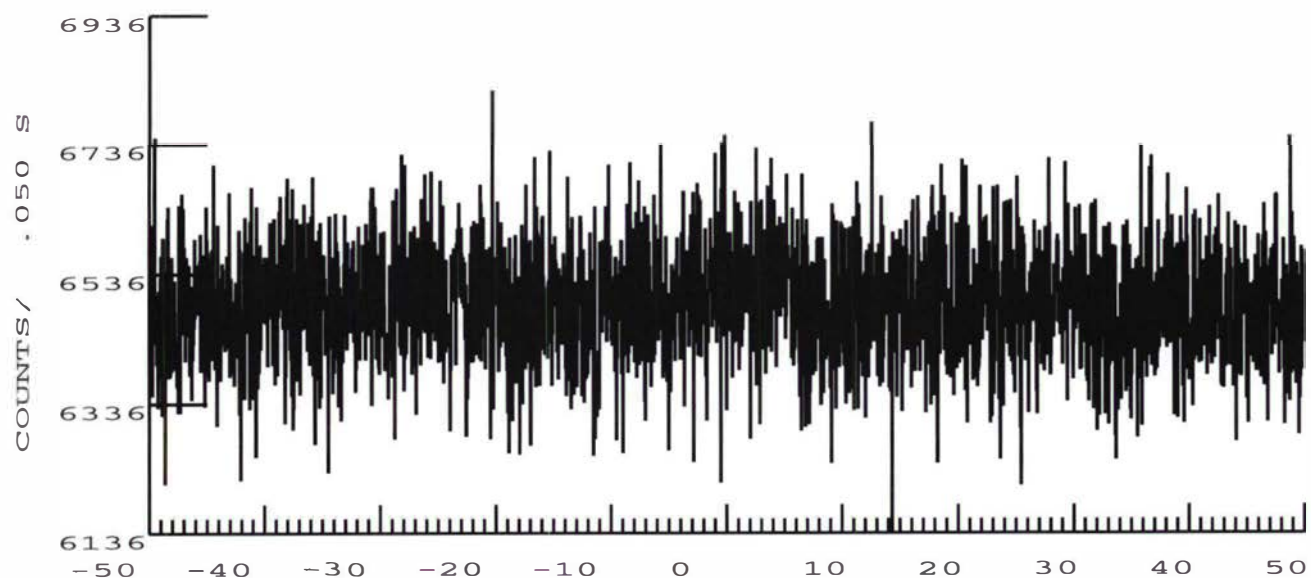
TIME, SECS

← MC

11/07/2019







BAT lightcurve for trigger at 190612_0357

Subject: BAT lightcurve for trigger at 190612_0357

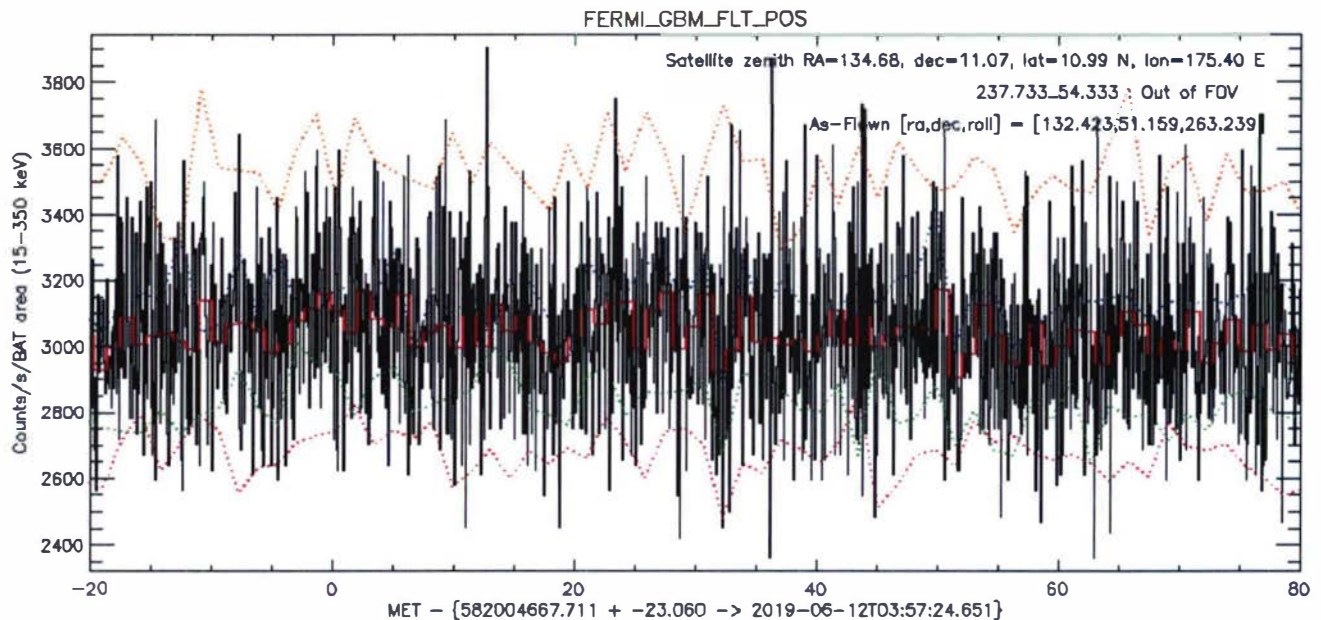
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/12/2019, 1:51 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190612_0357.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582004667.711 -s 237.733_54.333
Swift Zenith(RA,dec):      134.68, 11.07
Swift Location(lon,lat,alt): 175.40 E, 10.99 N, 543 km
Time(MET + UTCF -> UT):   582004667.711 + -23.060 -> 2019-06-12T03:57:24.651
YYMMDD_SOD:               190612_14244.651      DOY=163
Obs Sequence Number:      00032084030
Obs Target Name:          S85 0846+513
Obs Date and Times:       2019-06-12 03:45:38 - 04:11:35
Obs Pointing(ra,dec,roll): 132.423, 51.159, 263.24
237.733_54.333_imageloc (boresight_dist, angle): (58, 49)
237.733_54.333_exposure (cm2 cos adjusted): 0
237.733_54.333_altitude: 24 (up)
```

--

David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190612_0357_bat64ms_ipn

87.0 KB

/tmp/swift/190612_0357.png

26.1 KB

KONUS

13/06/2019

12.441

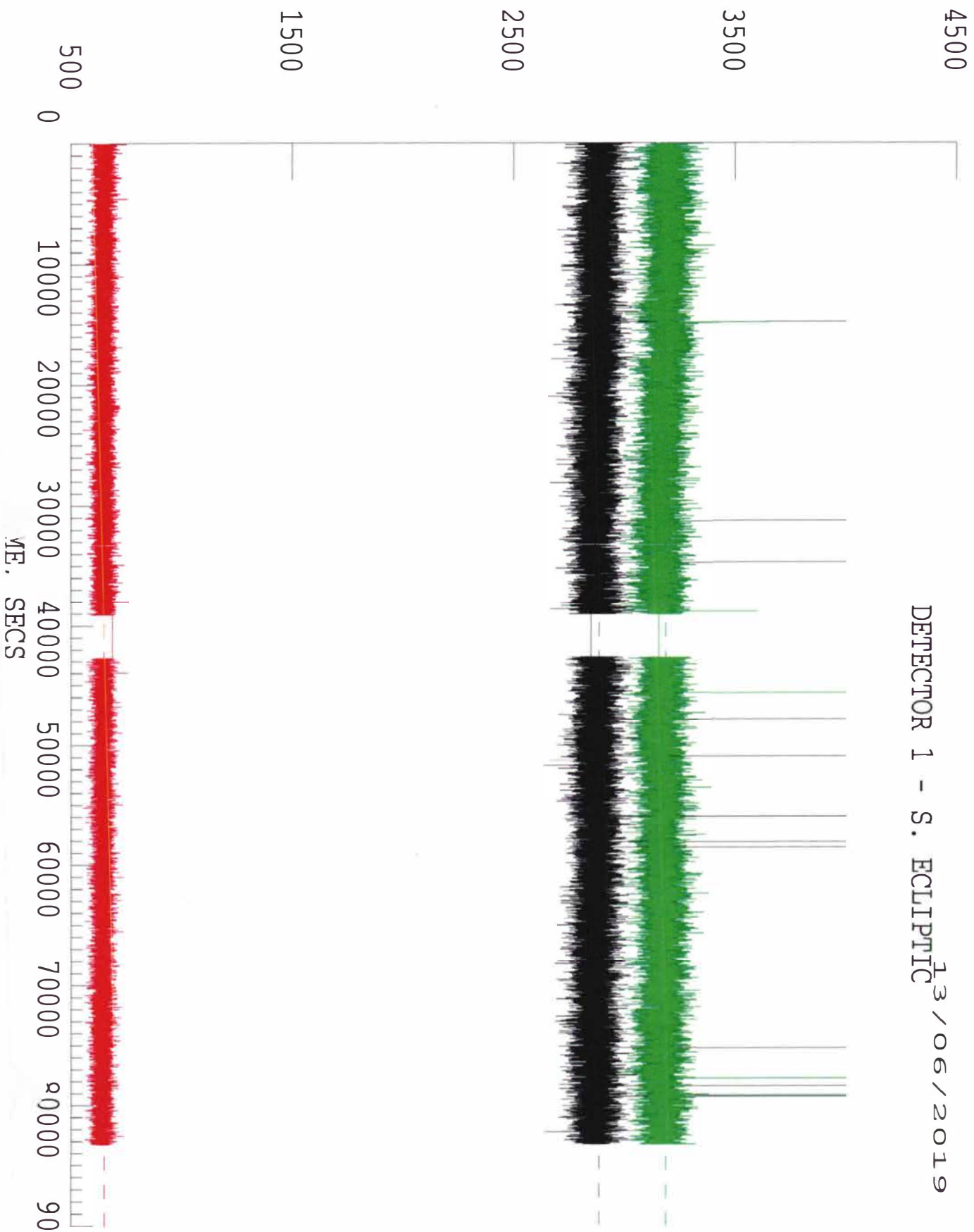
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

13/06/2019

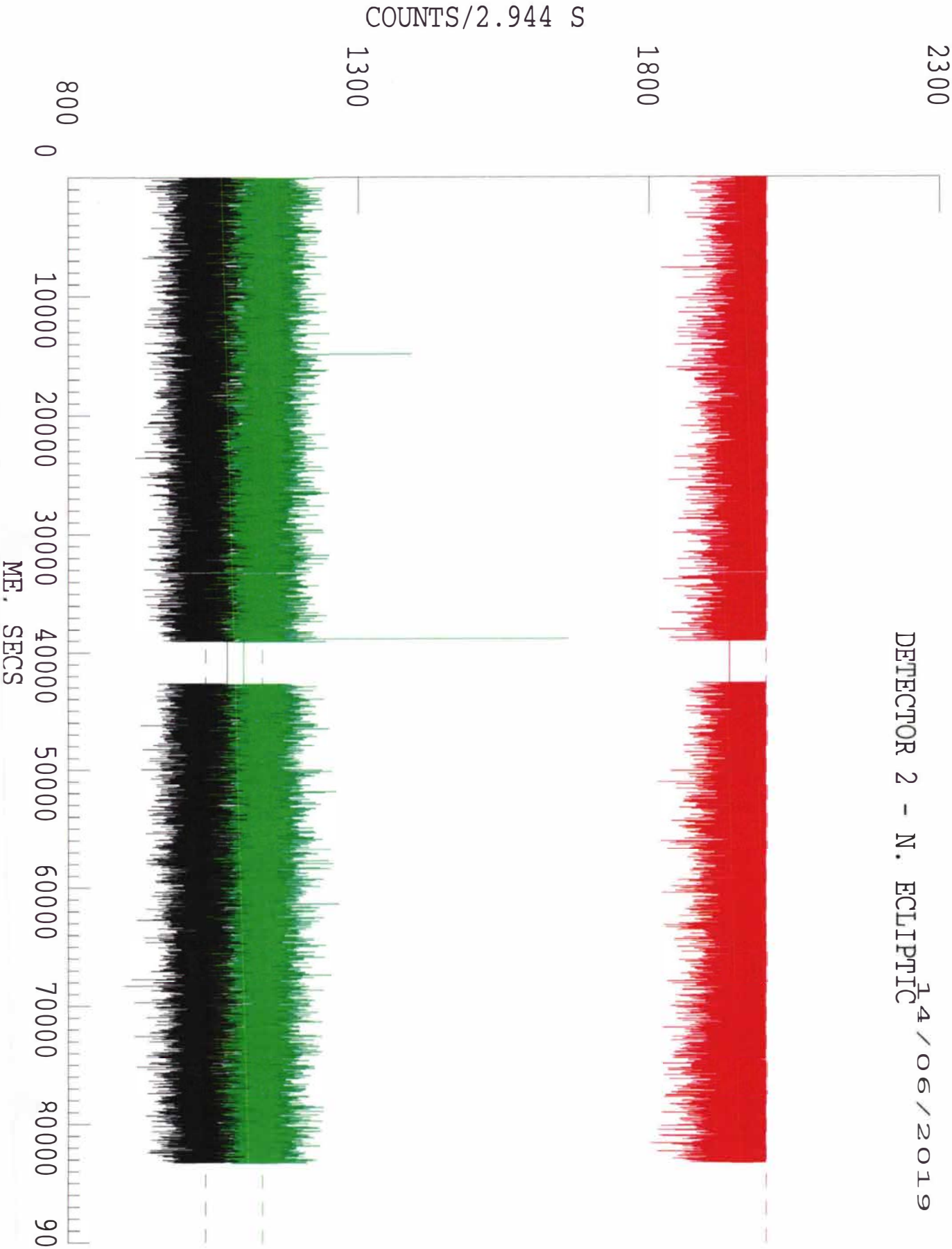
12.441

v01

10- 50 keV

50- 200 keV

200- 750 keV



Subject: GCN/SWIFT_BAT_LIGHTCURVE

From: Bacodine <vxw@capella2.gsfc.nasa.gov>

Date: 6/12/2019, 9:12 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Thu 13 Jun 19 04:11:12 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 908288, Seg_Num: 0
 GRB_RA: 182.559d {+12h 10m 14s} (J2000),
 182.796d {+12h 11m 11s} (current),
 181.945d {+12h 07m 47s} (1950)
 GRB_DEC: +67.233d {+67d 13' 58"} (J2000),
 +67.125d {+67d 07' 28"} (current),
 +67.511d {+67d 30' 39"} (1950)
 GRB_DATE: 18647 TJD; 164 DOY; 19/06/13
 GRB_TIME: 14838.31 SOD {04:07:18.31} UT
 TRIGGER_INDEX: 372
 GRB_PHI: -91.13 [deg]
 GRB_THETA: 39.21 [deg]
 DELTA_TIME: -57.00 [sec]
 TRIGGER_DUR: 16.384 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 13.41 [sigma]
 IMAGE_SIGNIF: 7.12 [sigma]
 LC_URL: sw00908288000msb.lc
 SUN_POSTN: 81.18d {+05h 24m 44s} +23.19d {+23d 11' 19"}
 SUN_DIST: 73.09 [deg] Sun_angle= -6.8 [hr] (East of Sun)
 MOON_POSTN: 209.74d {+13h 58m 59s} -6.69d {-06d 41' 13"}
 MOON_DIST: 76.30 [deg]
 MOON_ILLUM: 81 [%]
 GAL_COORDS: 129.04, 49.40 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 137.77, 58.53 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 236.28,20.14 [deg].

17.6 s

$1.7 \times 10^{-6} \text{ erg cm}^{-2}$

1.5 phot/cm²s

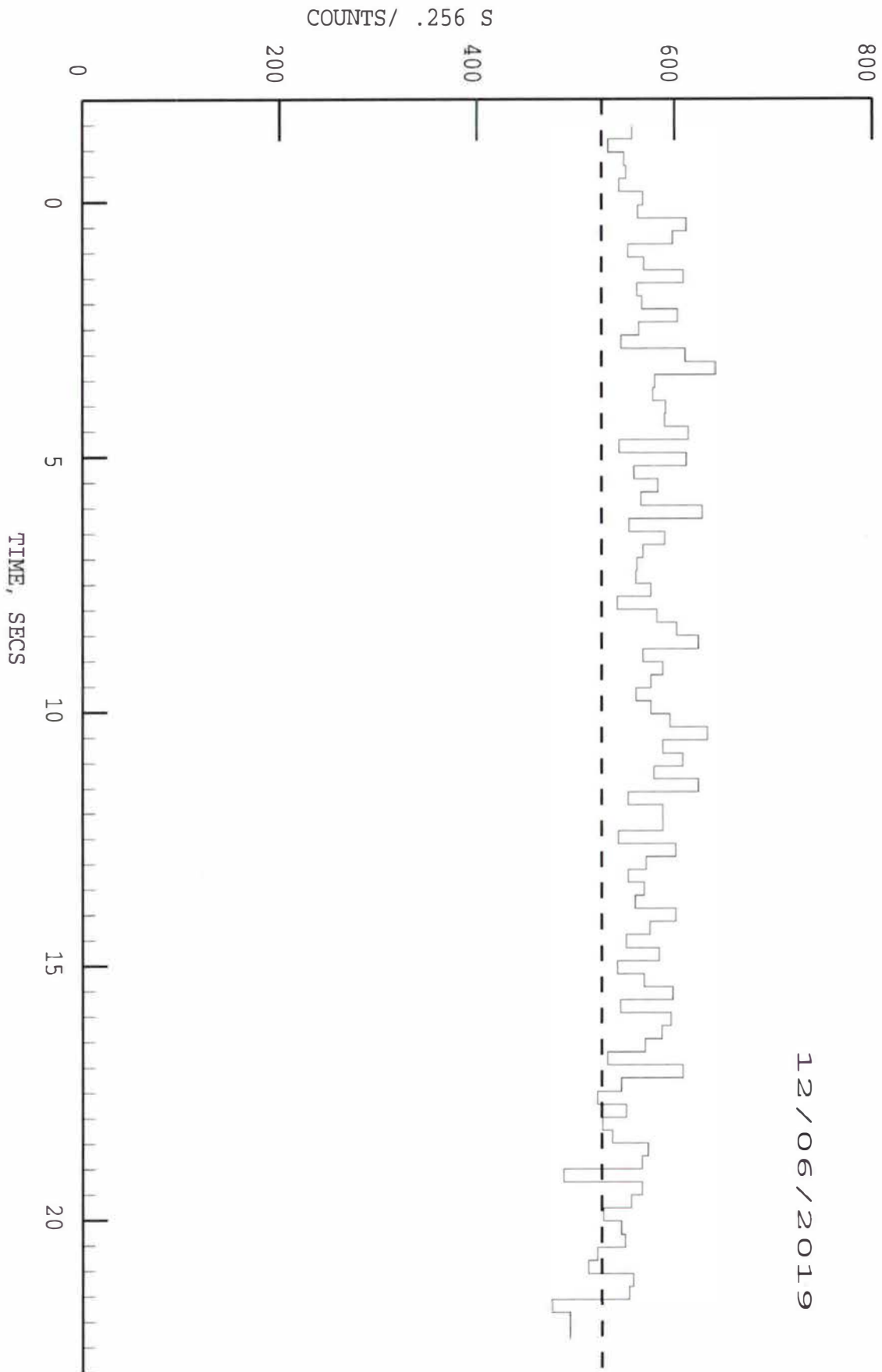
BAT

13/06/19

14838.310

04:07:18.310

25- 100 keV



Subject: BAT lightcurve for trigger at 190613_0407

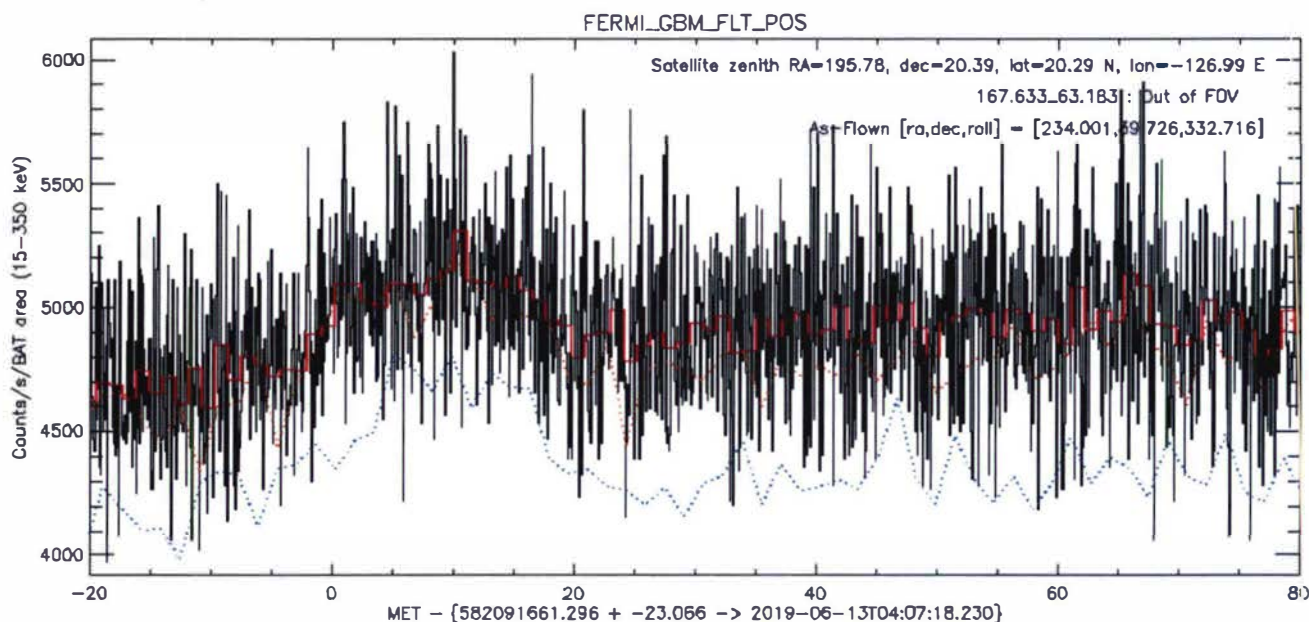
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/13/2019, 1:02 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190613_0407.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582091661.296 -s 167.633_63.183
Swift Zenith(RA,dec):      195.78, 20.39
Swift Location(lon,lat,alt): -126.99 E, 20.29 N, 545 km
Time(MET + UTCF -> UT):    582091661.296 + -23.066 -> 2019-06-13T04:07:18.230
YYMMDD_SOD:               190613_14838.230      DOY=164
Obs Sequence Number:       00011441007
Obs Target Name:           ZTF19aayejww
Obs Date and Times:        2019-06-13 03:58:37 - 04:08:23
Obs Pointing(ra,dec,roll): 234.001, 39.726, 332.72
167.633_63.183_imageloc (boresight_dist, angle): (45, -99)
167.633_63.183_exposure (cm² cos adjusted): 0
167.633_63.183_altitude: 66 (up)
```

```
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data
```

—Attachments:

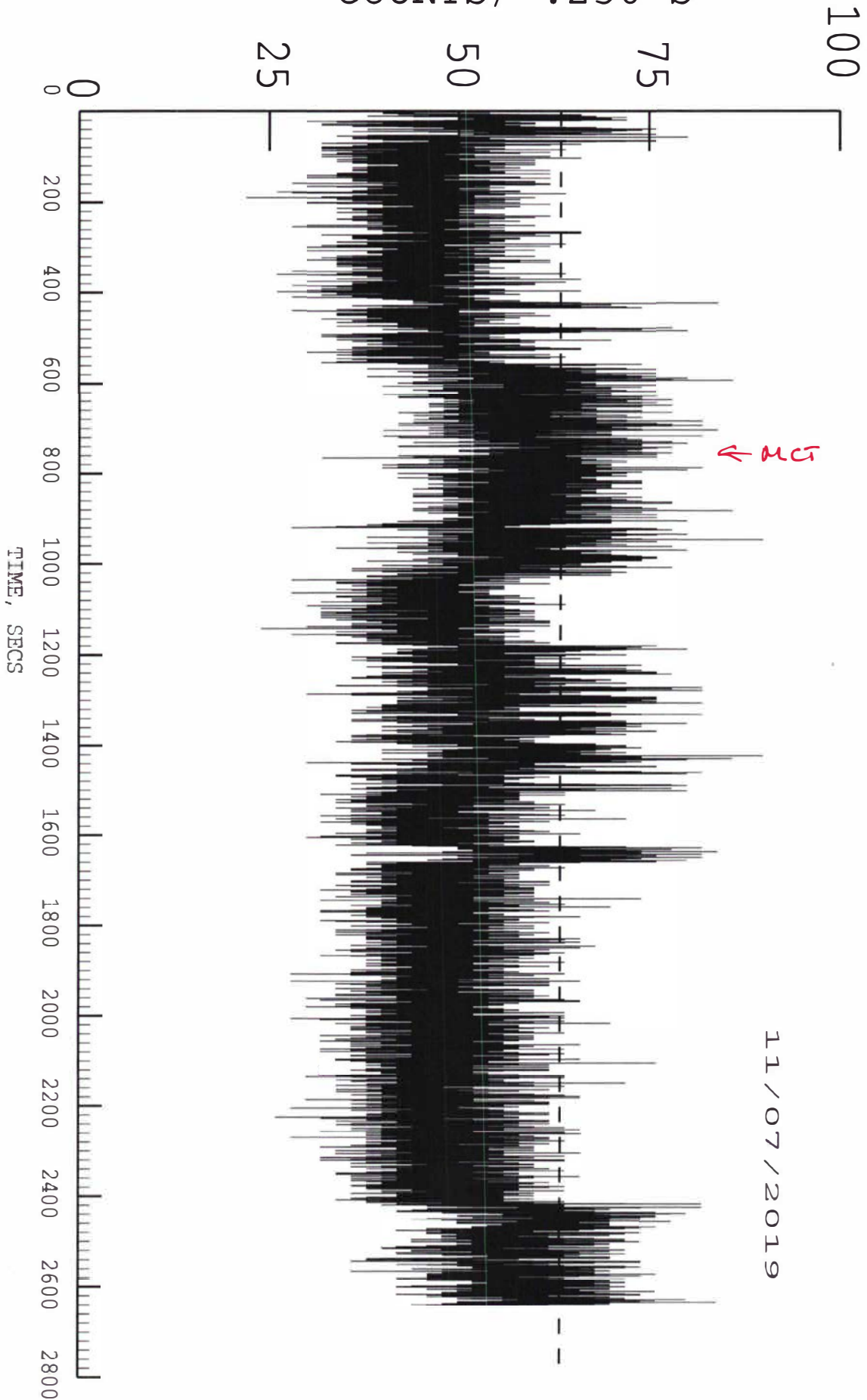
/tmp/swift/190613_0407_bat64ms_ipn

87.0 KB

/tmp/swift/190613_0407.png

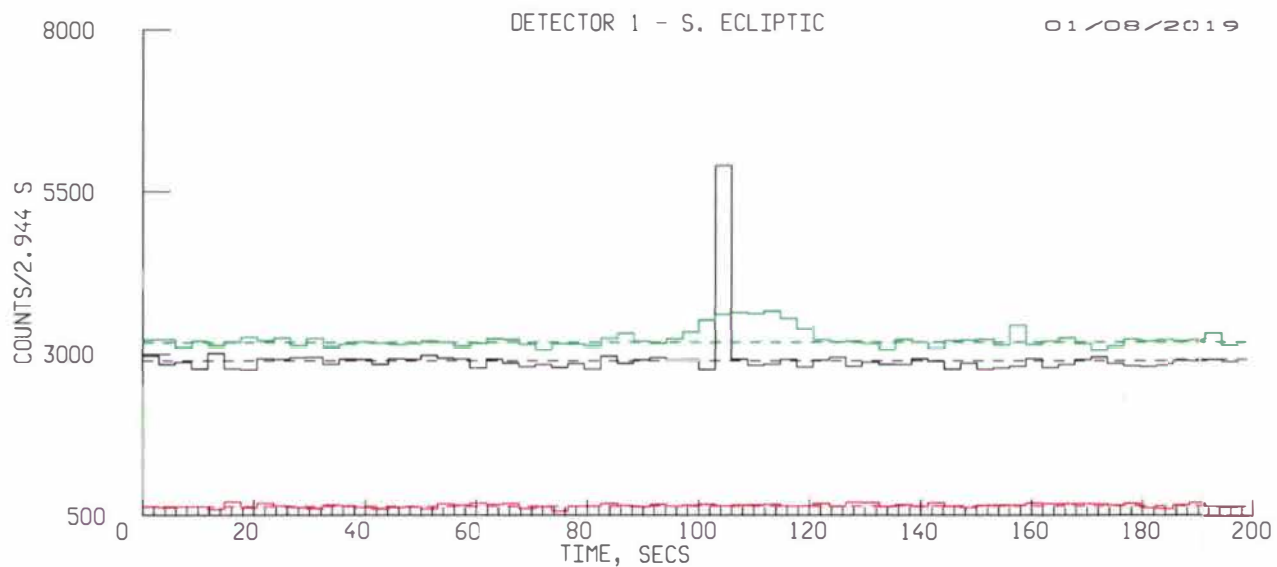
22.7 KB

ODYSSEY 13/06/19 13514.324 03:45:14.324^A
50-3000 keV
COUNTS/ .250 S



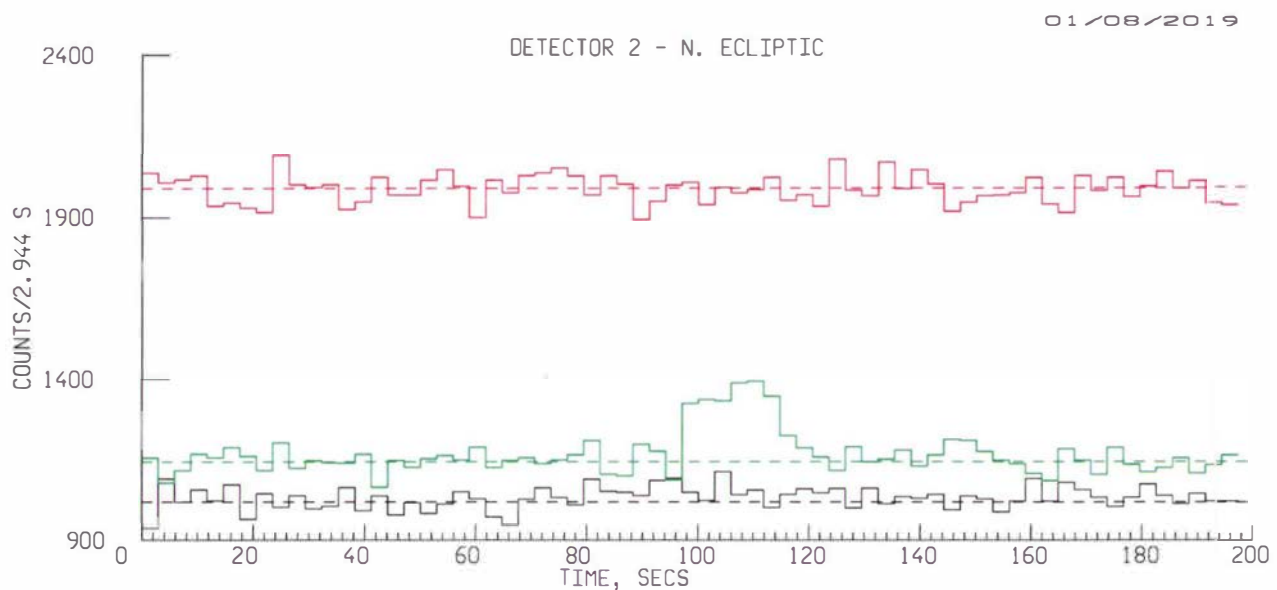
KONUS 13/06/19 14735.384

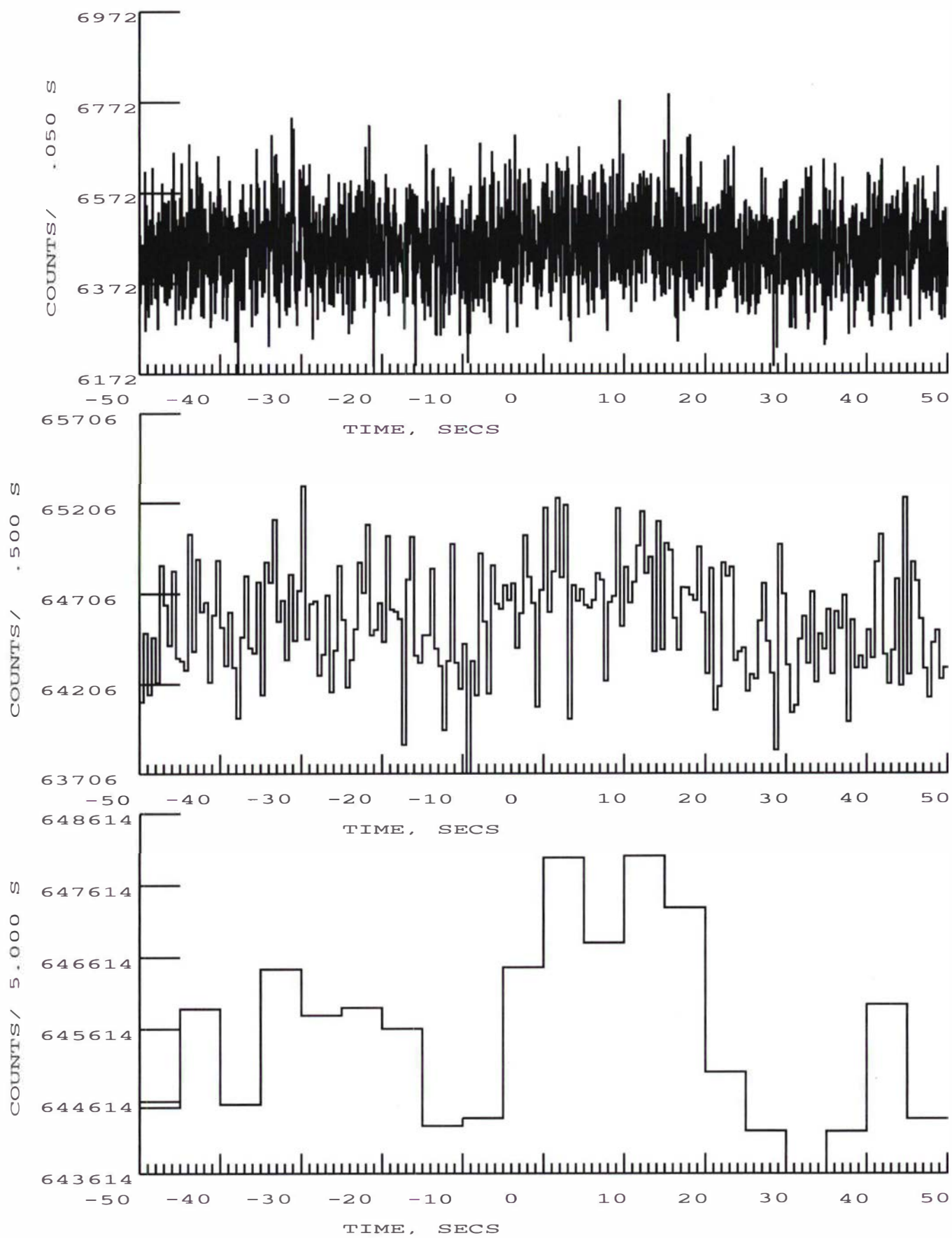
10- 50 keV 50- 200 keV 200- 750 keV



KONUS 13/06/19 14735.384

10- 50 keV 50- 200 keV 200- 750 keV





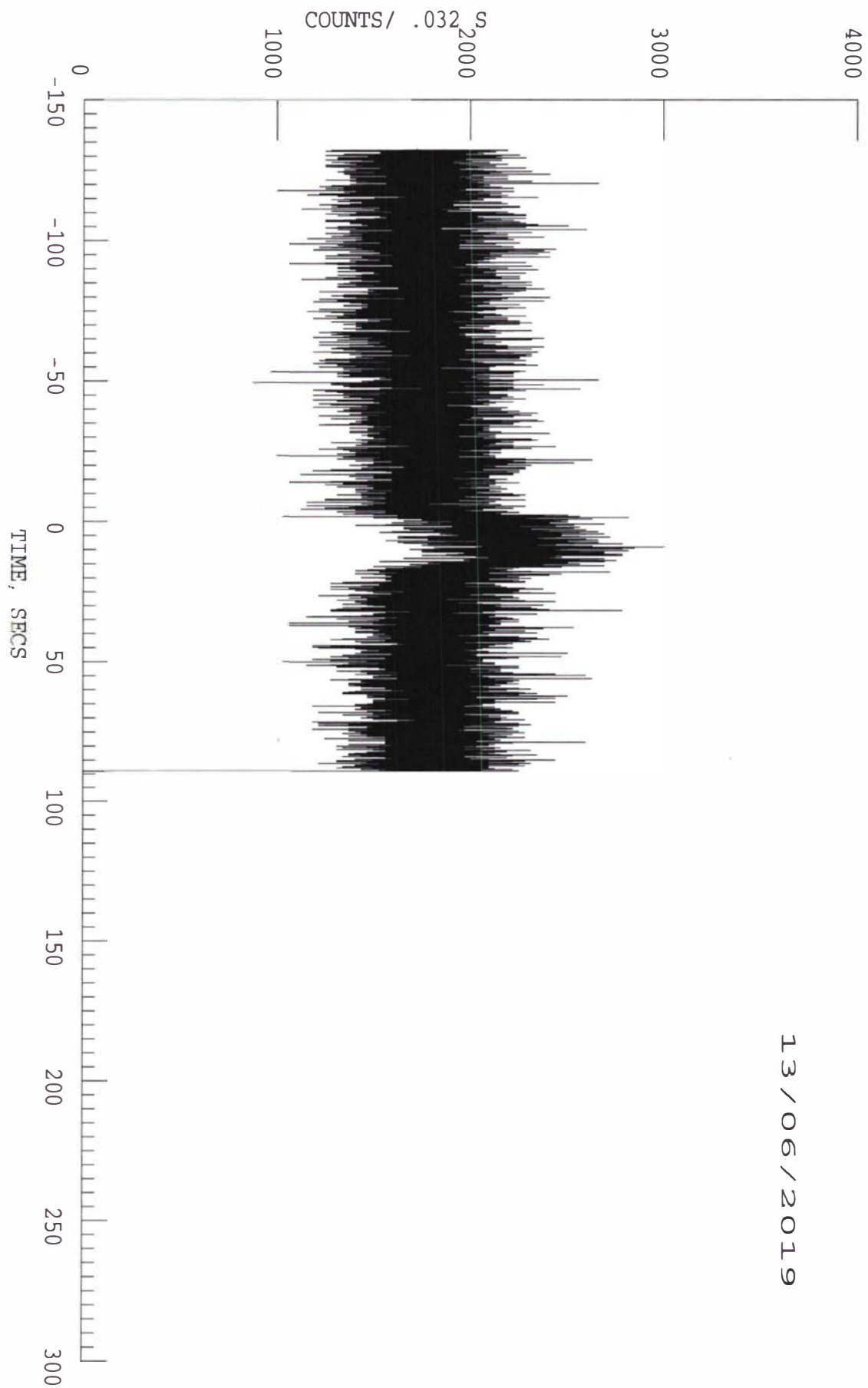
FERMI

13/06/19

14838.234

04:07:18.234

26- 293 keV



13/06/2019

Subject: GCN/SWIFT_BAT_LIGHTCURVE

From: Bacodine <vxw@capella2.gsfc.nasa.gov>

Date: 6/13/2019, 3:52 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Thu 13 Jun 19 10:51:08 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 908329, Seg_Num: 0
 GRB_RA: 305.422d {+20h 21m 41s} (J2000),
 305.678d {+20h 22m 43s} (current),
 304.763d {+20h 19m 03s} (1950)
 GRB_DEC: -4.664d {-04d 39' 49"} (J2000),
 -4.601d {-04d 36' 02"} (current),
 -4.824d {-04d 49' 25"} (1950)
 GRB_DATE: 18647 TJD; 164 DOY; 19/06/13
 GRB_TIME: 38822.05 SOD {10:47:02.05} UT
 TRIGGER_INDEX: 156
 GRB_PHI: 31.72 [deg]
 GRB_THETA: 45.70 [deg]
 DELTA_TIME: -31.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 31.89 [sigma]
 IMAGE_SIGNIF: 9.16 [sigma]
 LC_URL: sw00908329000msb.lc
 SUN_POSTN: 81.47d {+05h 25m 53s} +23.20d {+23d 12' 16"}
 SUN_DIST: 133.50 [deg] Sun_angle= 9.1 [hr] (West of Sun)
 MOON_POSTN: 213.32d {+14h 13m 17s} -8.07d {-08d 04' 00"}
 MOON_DIST: 91.68 [deg]
 MOON_ILLUM: 83 [%]
 GAL_COORDS: 39.26,-22.17 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 306.61, 14.39 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 198.11,4.83 [deg].

160.8 s

$2.3 \times 10^{-6} \text{ erg cm}^{-2}$

5.7 phot/cm²s

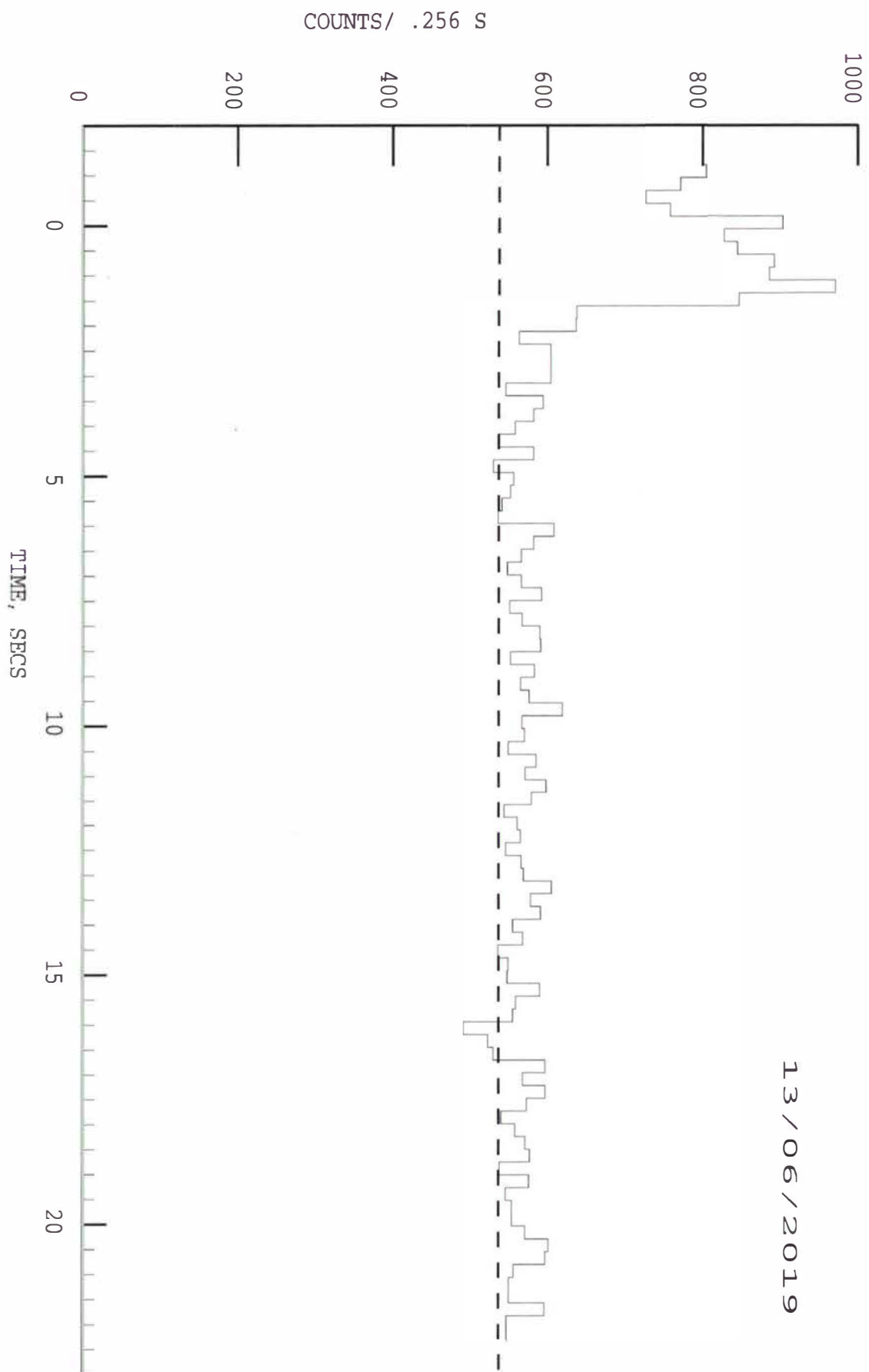
BAT

13/06/19

38822.053

10:47:02.053

25- 100 keV



Subject: BAT lightcurve for trigger at 190613_1047

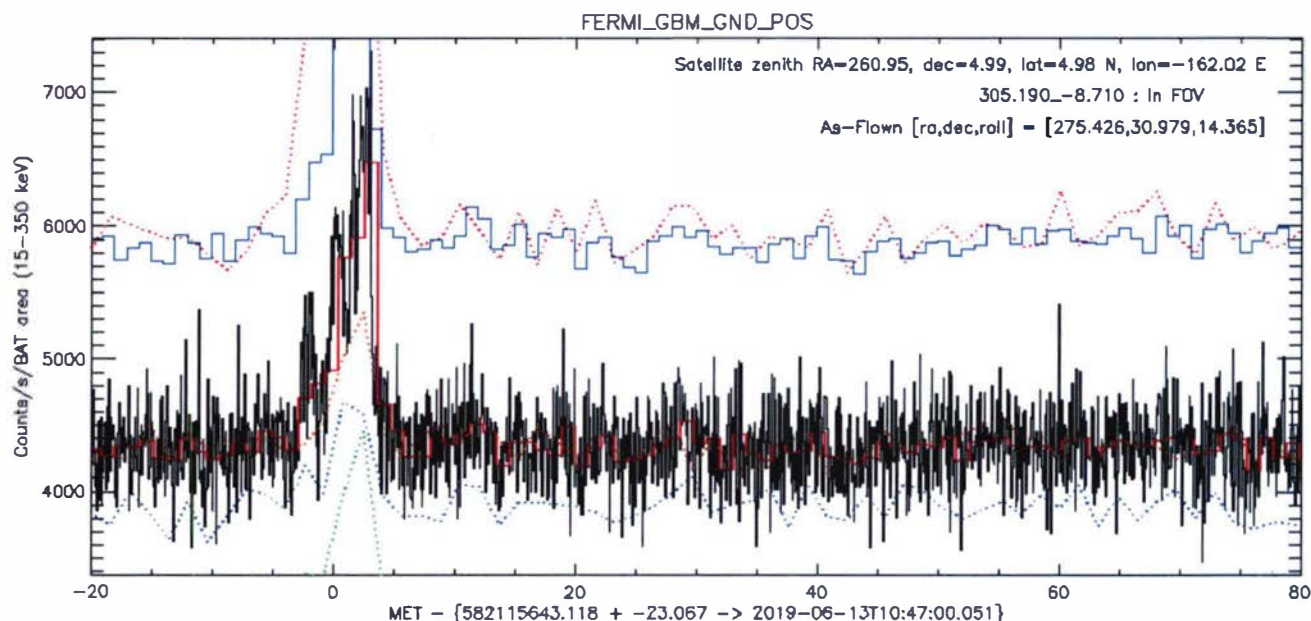
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/13/2019, 6:06 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190613_1047.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582115643.118 -s 305.190_-8.710
Swift Zenith(RA,dec):      260.95, 4.99
Swift Location(lon,lat,alt): -162.02 E, 4.98 N, 553 km
Time(MET + UTCF -> UT):   582115643.118 + -23.067 -> 2019-06-13T10:47:00.051
YYMMDD_SOD:               190613_38820.051      DOY=164
Obs Sequence Number:      00011408003
Obs Target Name:          SN2019cqc
Obs Date and Times:       2019-06-13 10:31:38 - 10:47:10
Obs Pointing(ra,dec,roll): 275.426, 30.979, 14.37
305.190_-8.710_imageloc (boresight_dist, angle): (49, 35)
305.190_-8.710_exposure (cm² cos adjusted): 444
305.190_-8.710_altitude: 67 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190613_1047_bat64ms_ipn

87.0 KB

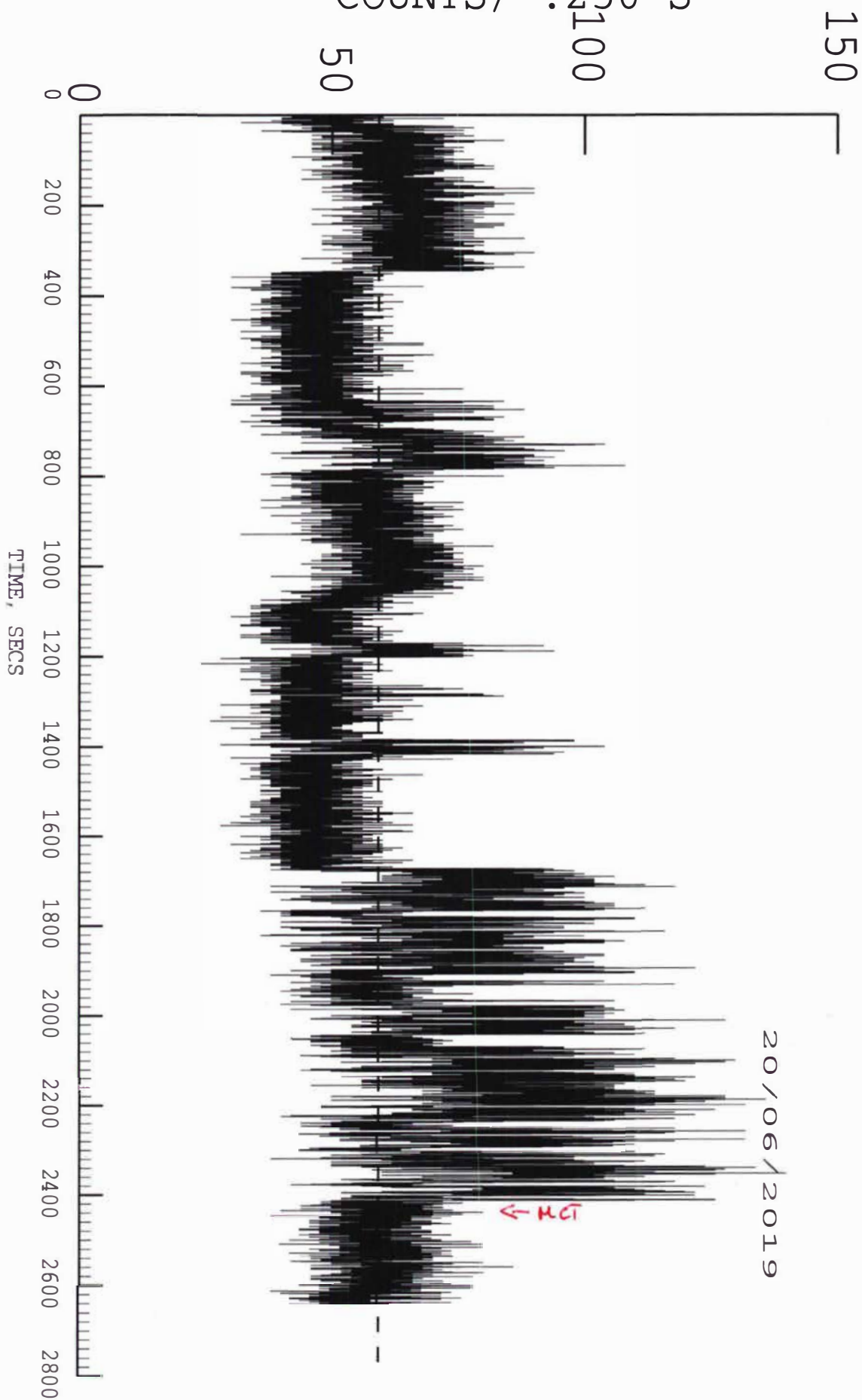
/tmp/swift/190613_1047.png

24.3 KB

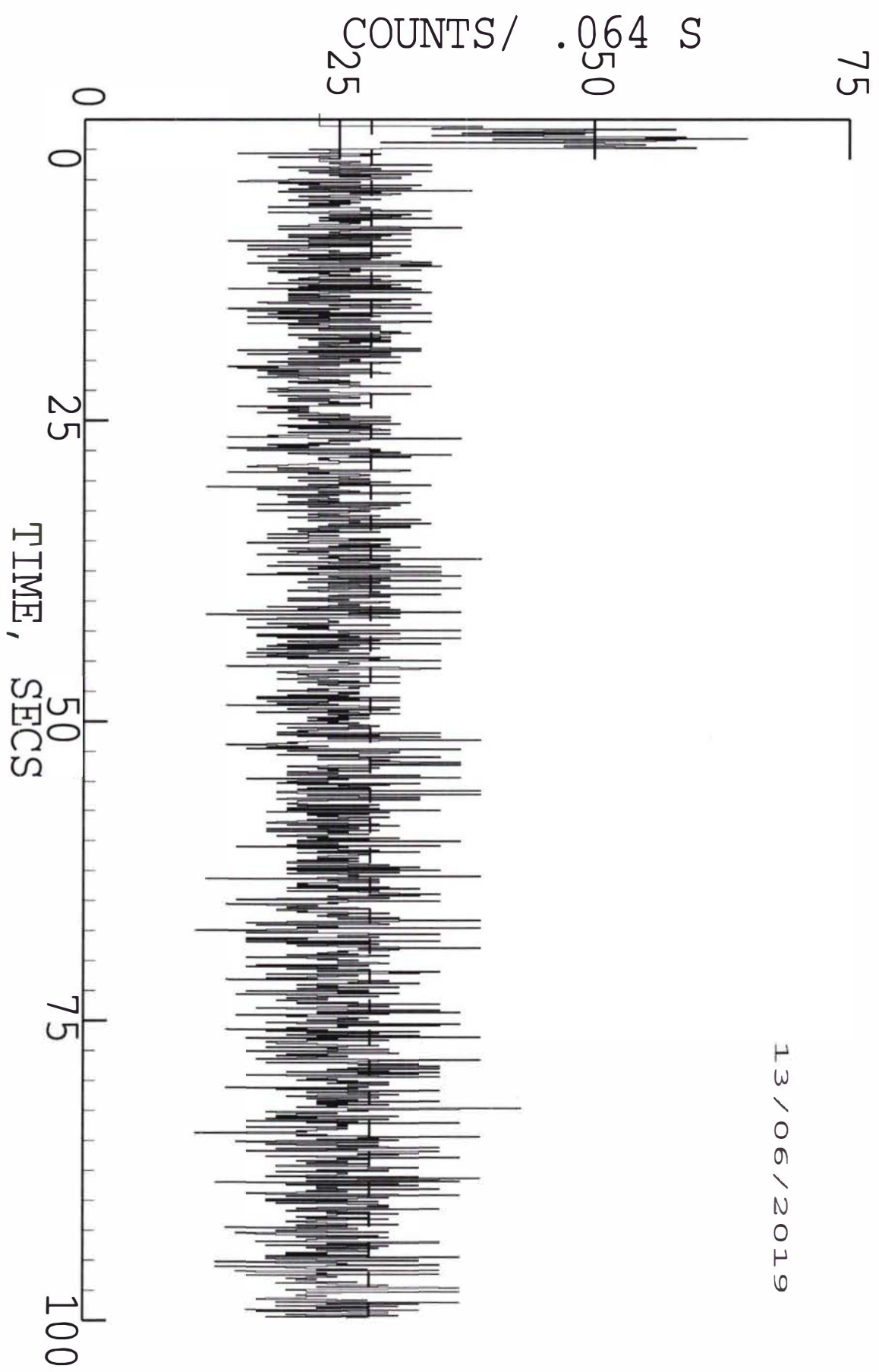
ODYSSEY 13/06/19 37513.894 10:25:13.894^B

50-3000 keV

COUNTS/ .250 S



KONUS 13/06/19 38825.774 10:47:05.774
50- 200 keV



13/06/2019

3

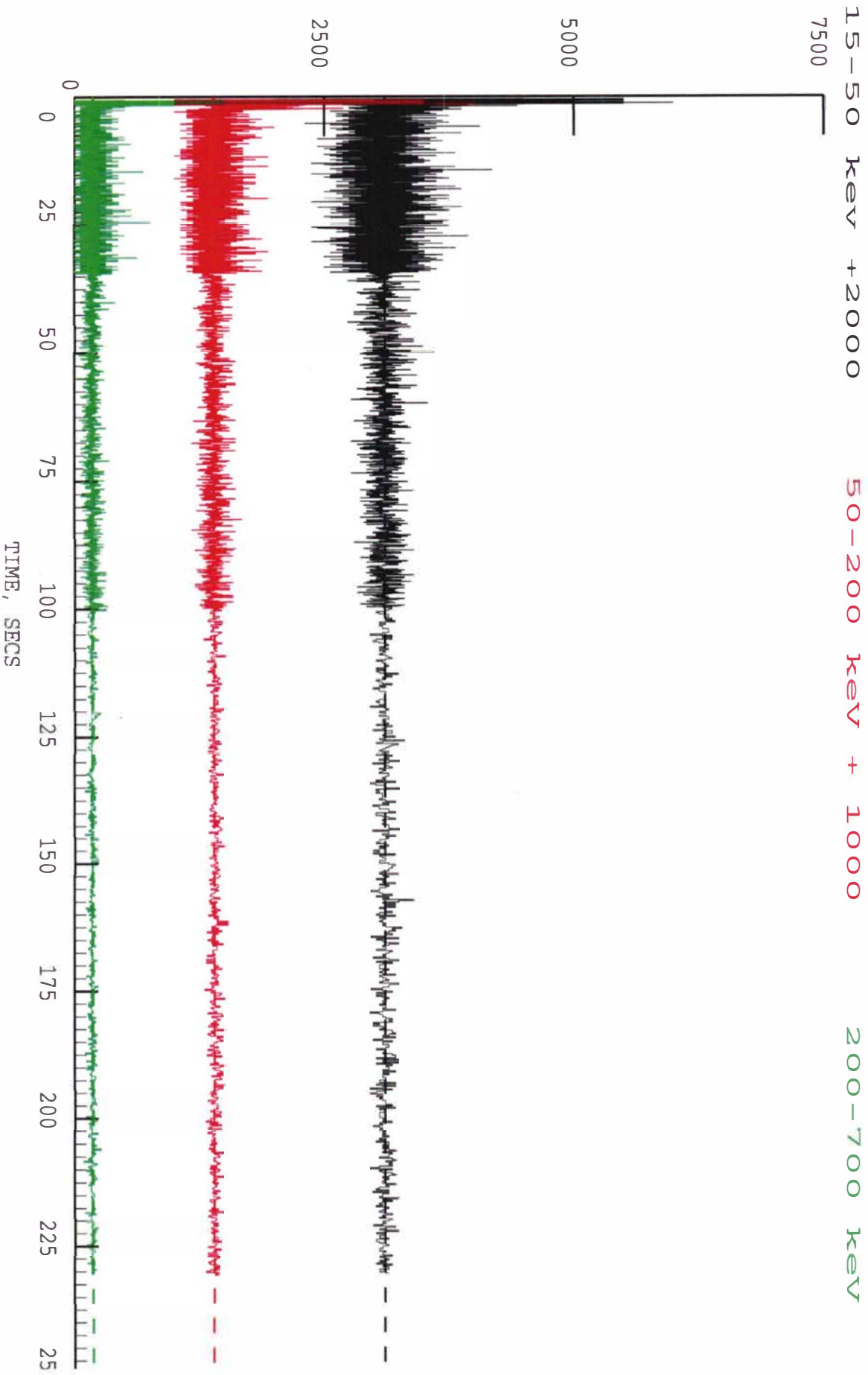
KONUS

13/06/19

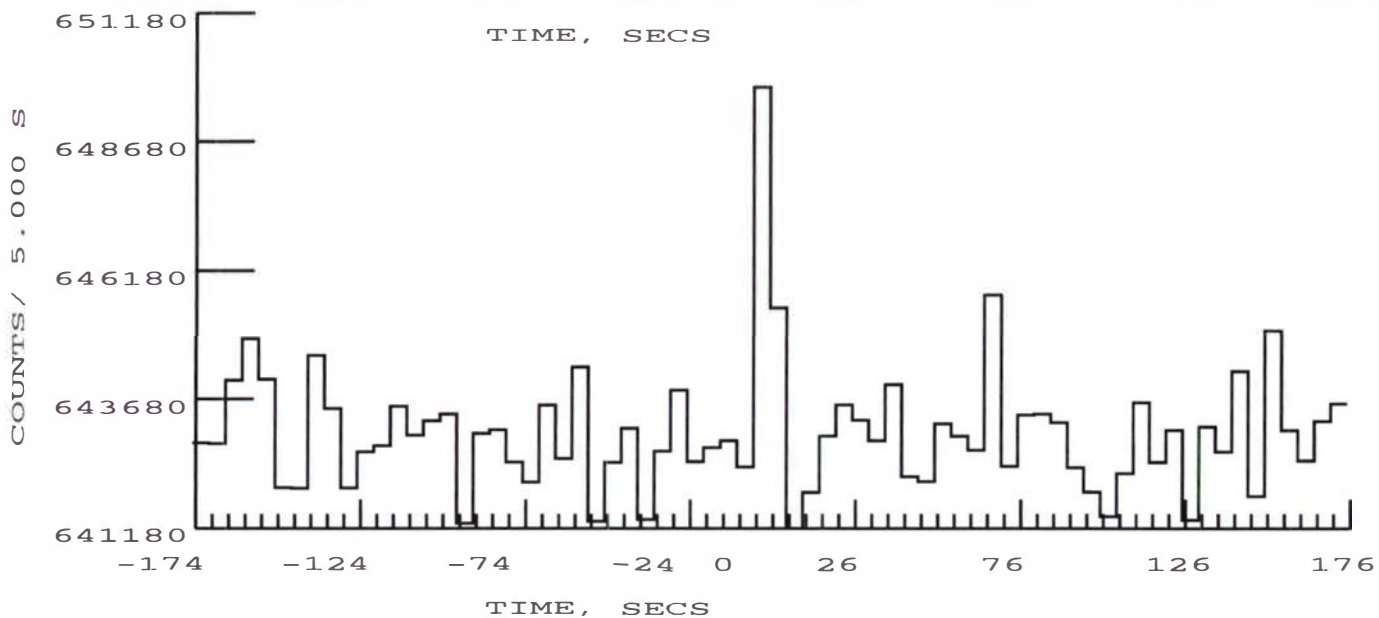
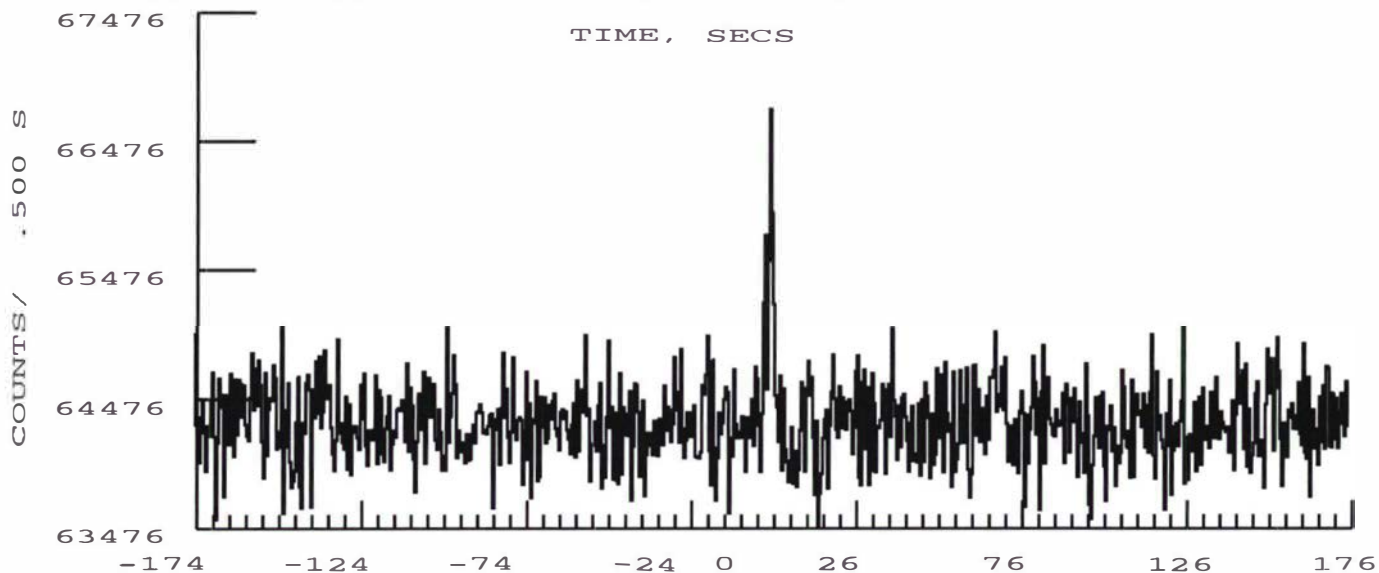
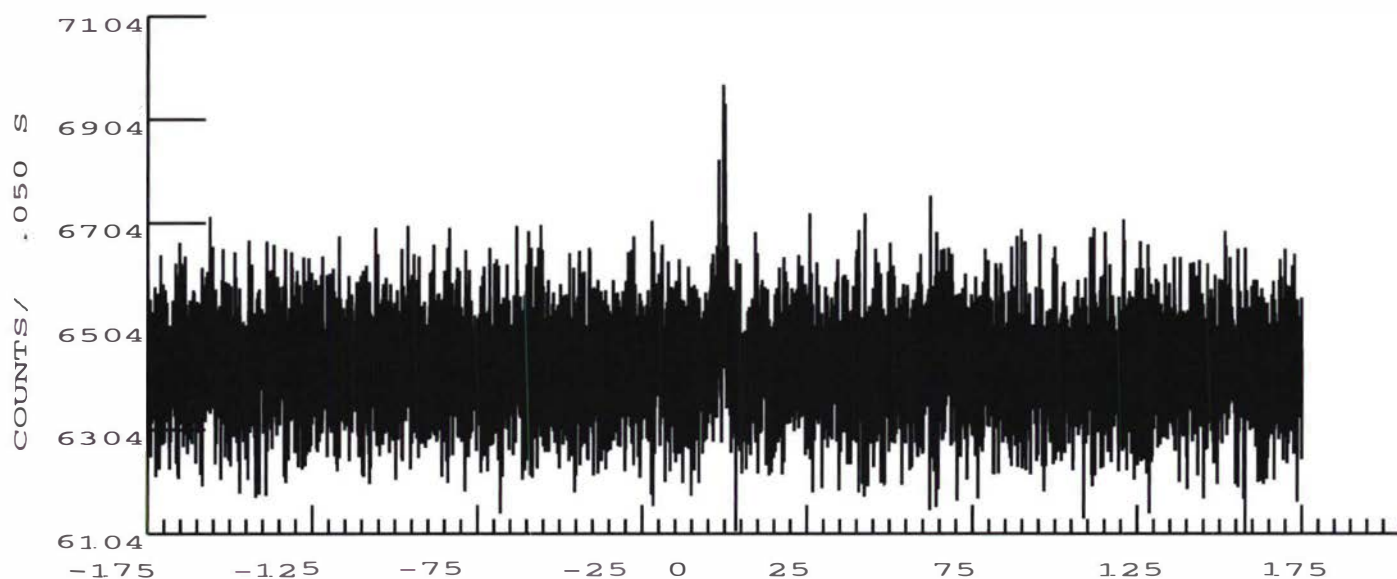
38825.000

10:47:05.000

COUNTS/SEC



14/06/2019



B

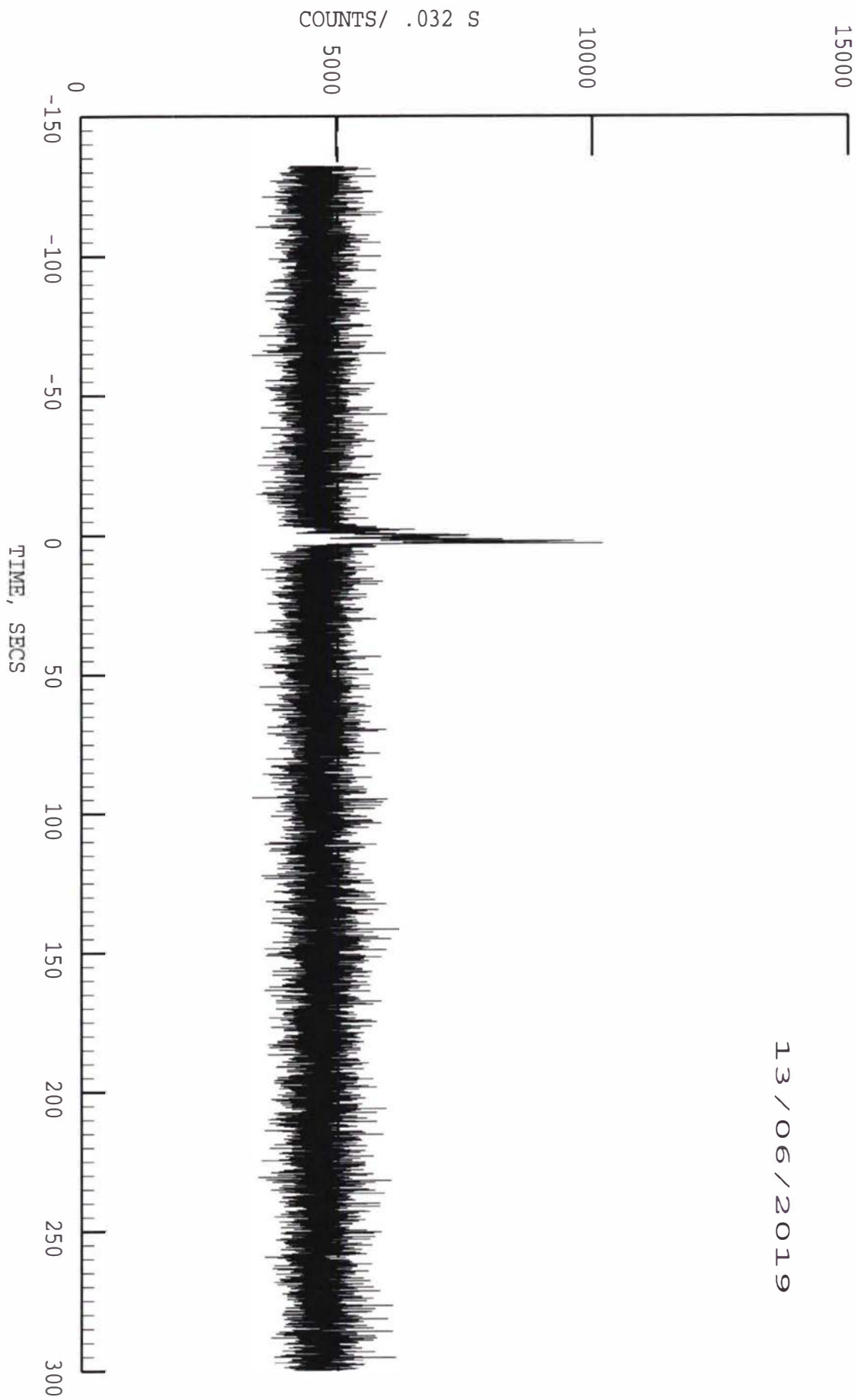
FERMI

13/06/19

38820.049

10:47:00.049

26- 293 keV



Subject: GRB 190613B: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/14/2019, 7:24 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24829
SUBJECT: GRB 190613B: Insight-HXMT/HE detection
DATE: 19/06/14 14:23:15 GMT
FROM: Qi Luo at IHEP <luoqi@ihep.ac.cn>

Q. Luo, S. Xiao, C. Cai, Q. B. Yi, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

At 2019-06-13T10:47:00.00 (T0), Insight-HXMT/HE detected
GRB 190613B (trigger ID: HEB190613449) in a routine search of the data,
which was also triggered by Fermi/GBM (GCN #24806) and Swift/BAT
(D'Ai et al. 2019, GCN #24807).

The Insight-HXMT/HE light curve mainly consists of two
pulses with a duration (T90) of 3.59 s measured from T0-0.56 s.
The 1-ms peak rate, measured from T0+2.09 s, is 2847 cnts/sec.
The total counts from this burst is 6013 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB190613449_lc.jpg

All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).
More information about it could be found at:
<http://www.hxmt.org>.

Subject: GRB 190613B: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/17/2019, 10:56 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24846
SUBJECT: GRB 190613B: AstroSat CZTI detection
DATE: 19/06/18 05:55:40 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

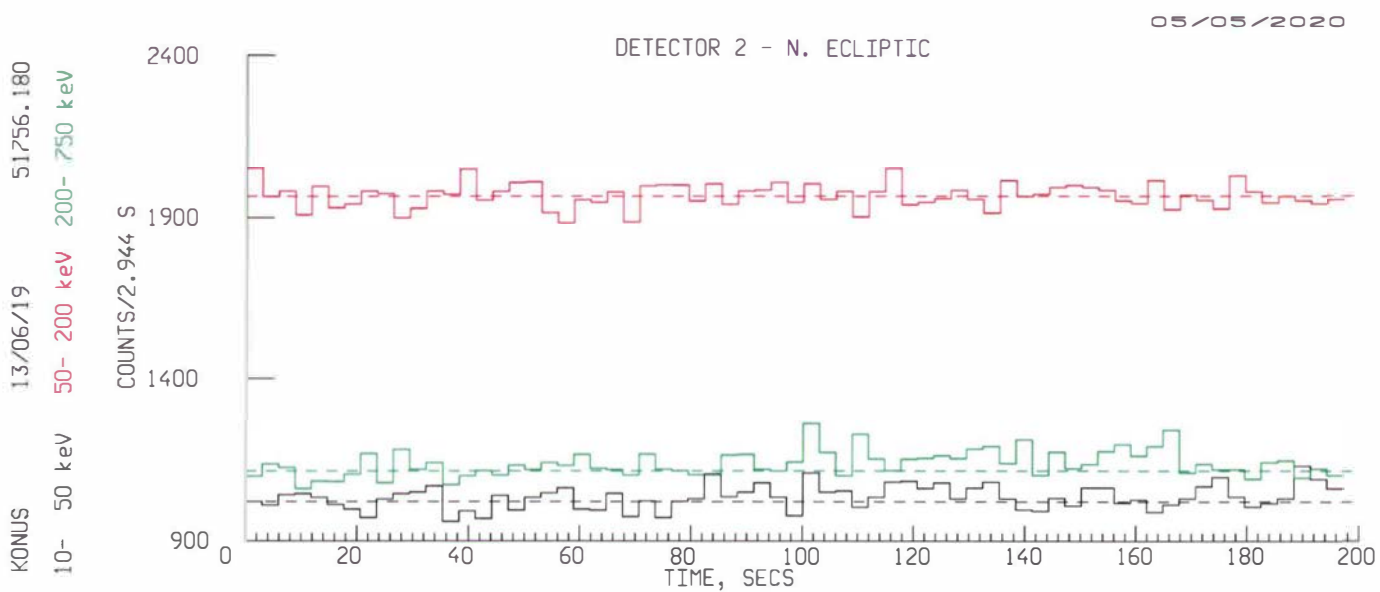
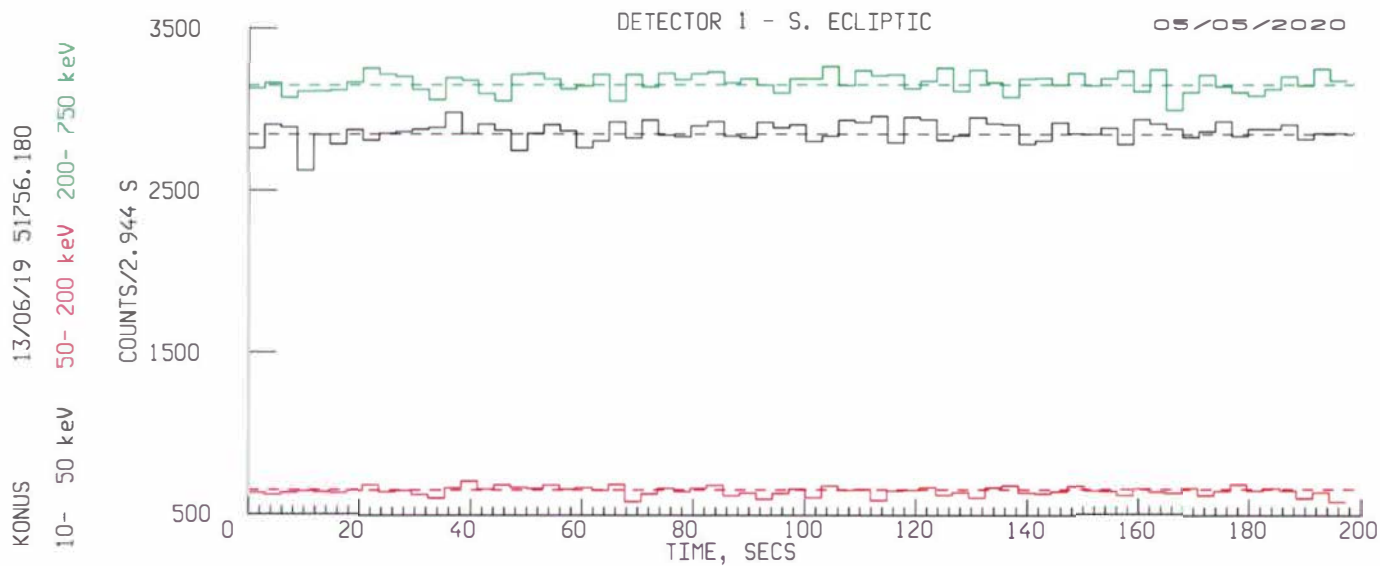
P. Ghumatkar, V. Sharma, D. Bhattacharya, T. Khanam and A. Vibhute (IUCAA), V. Bhalerao (IIT-8), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190613B, which was also detected by Fermi GBM (GCN #24806), Swift detection (D'Ai A. et al., GCN #24807), BALROG (Burgess J. et al., GCN #24808), Swift-XRT (Beardmore A.P. et al., GCN #24812), Swift-BAT (Ukwatta T.N. et al., GCN #24820), Insight-HXMT/HE (Luo Q. et al., GCN #24829) and Konus-Wind (Svinkin D. et al., GCN #24844).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 10:47:02.5 UT. The measured peak count rate associated with the burst is 439 cts/s above the background in the combined data of four quadrants, with a total of 1298 cts. The local mean background count rate was 654 cts/s. Using cumulative rates, we measure a T90 of 11.75 s.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

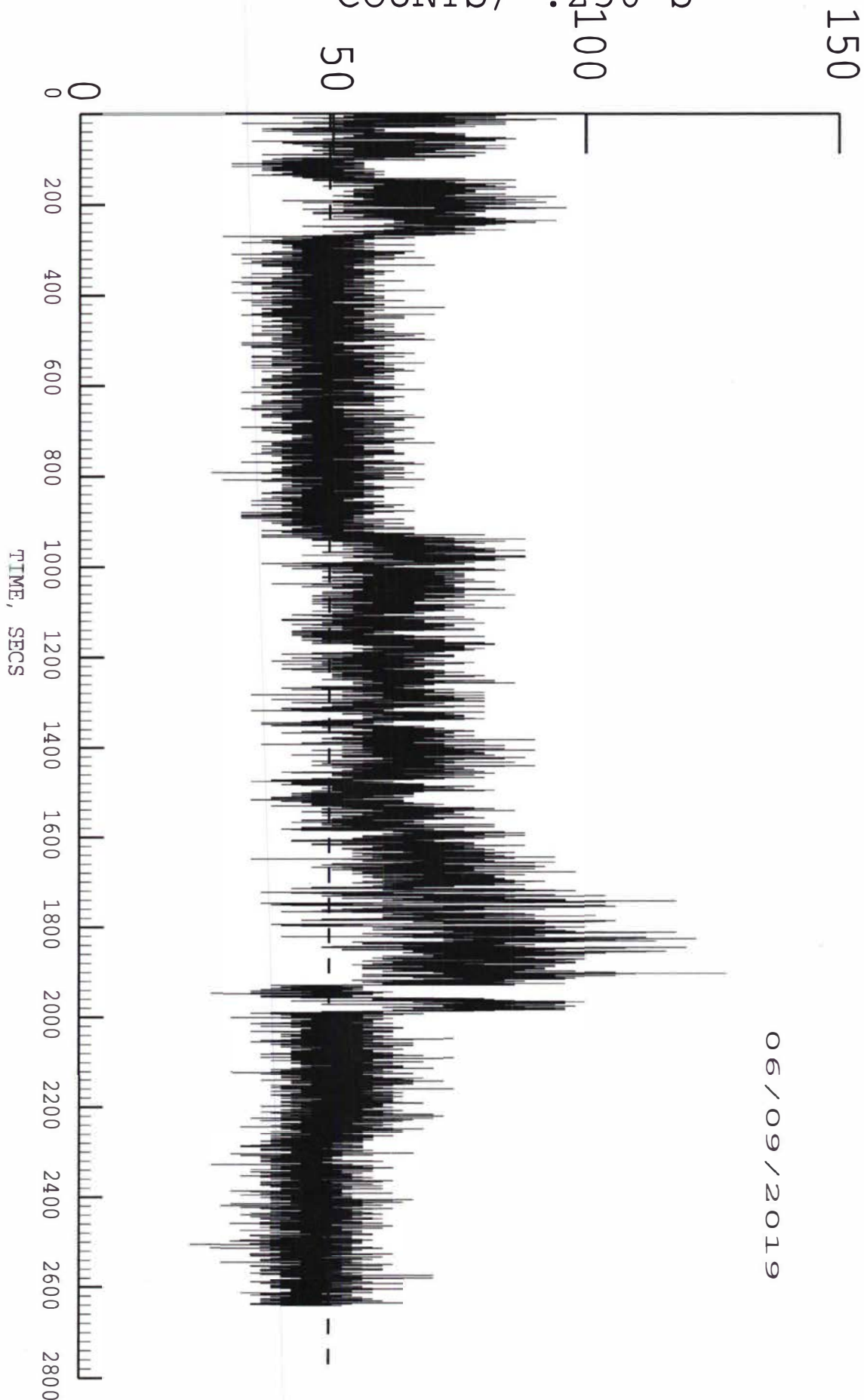


ODYSSEY 13/06/19 50533.665 14:02:13.665

50-3000 keV

COUNTS/ .250 S

Konus RI



KONUS

14/06/2019

1.168

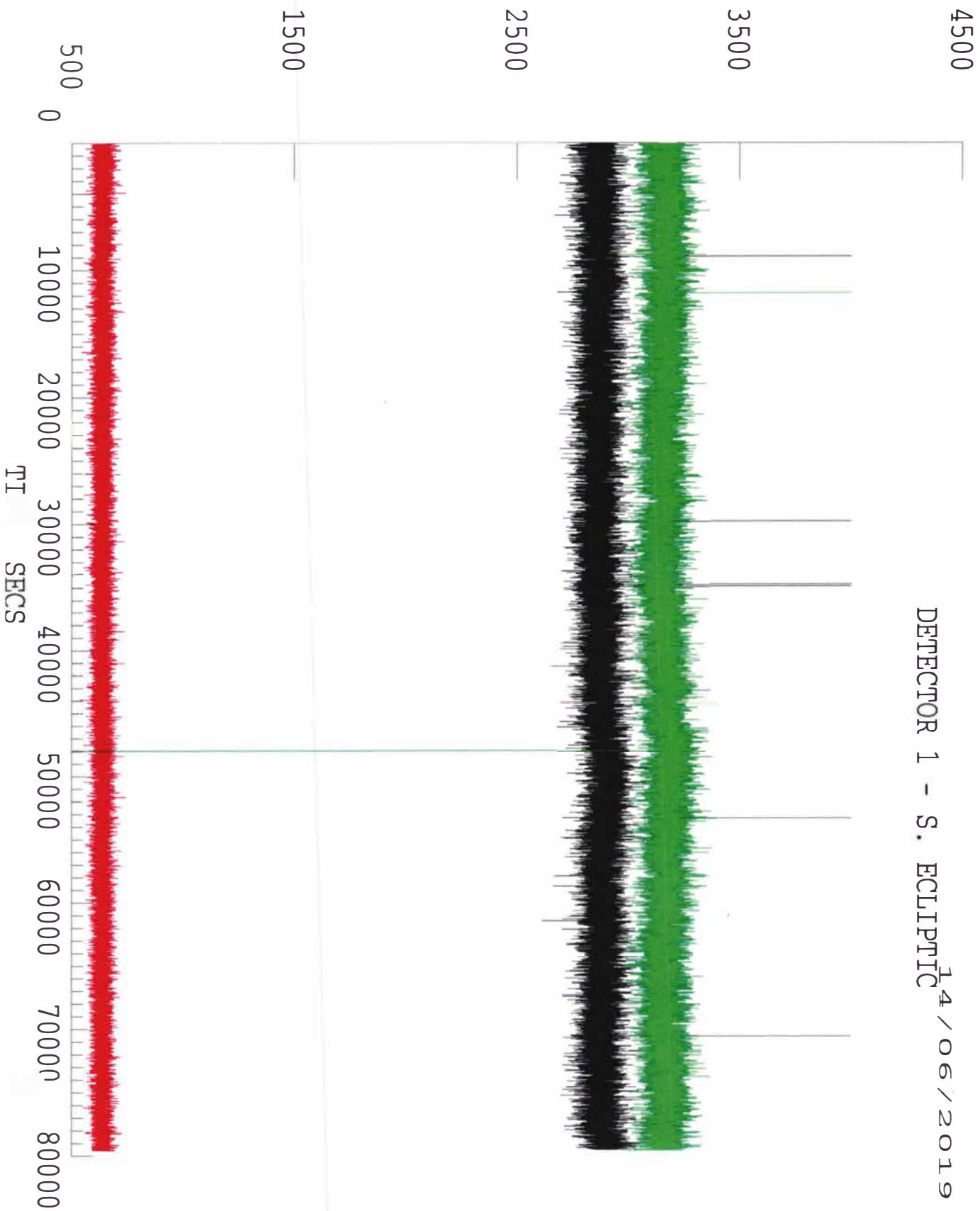
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

14/06/2019

1.168

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

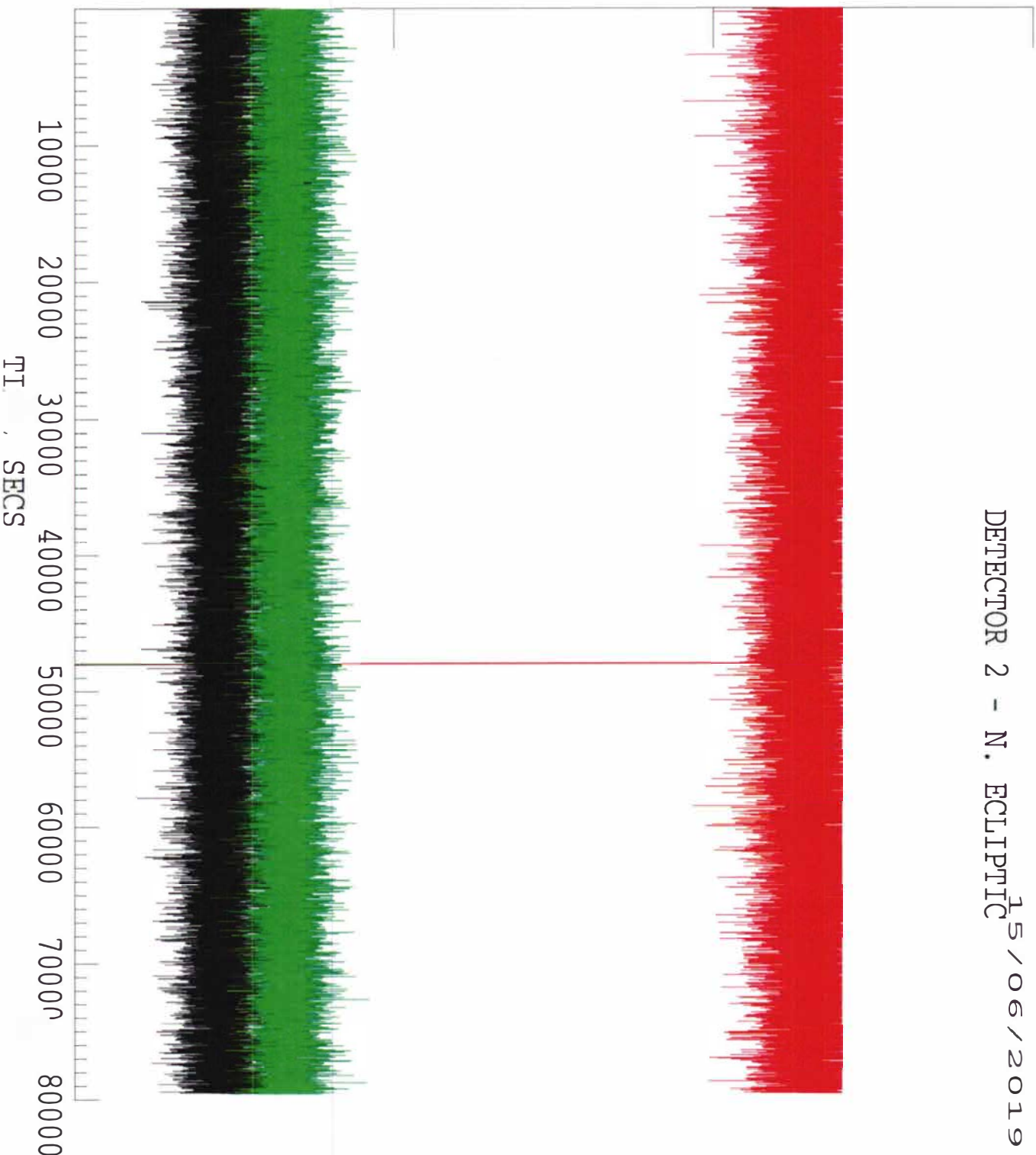
60000

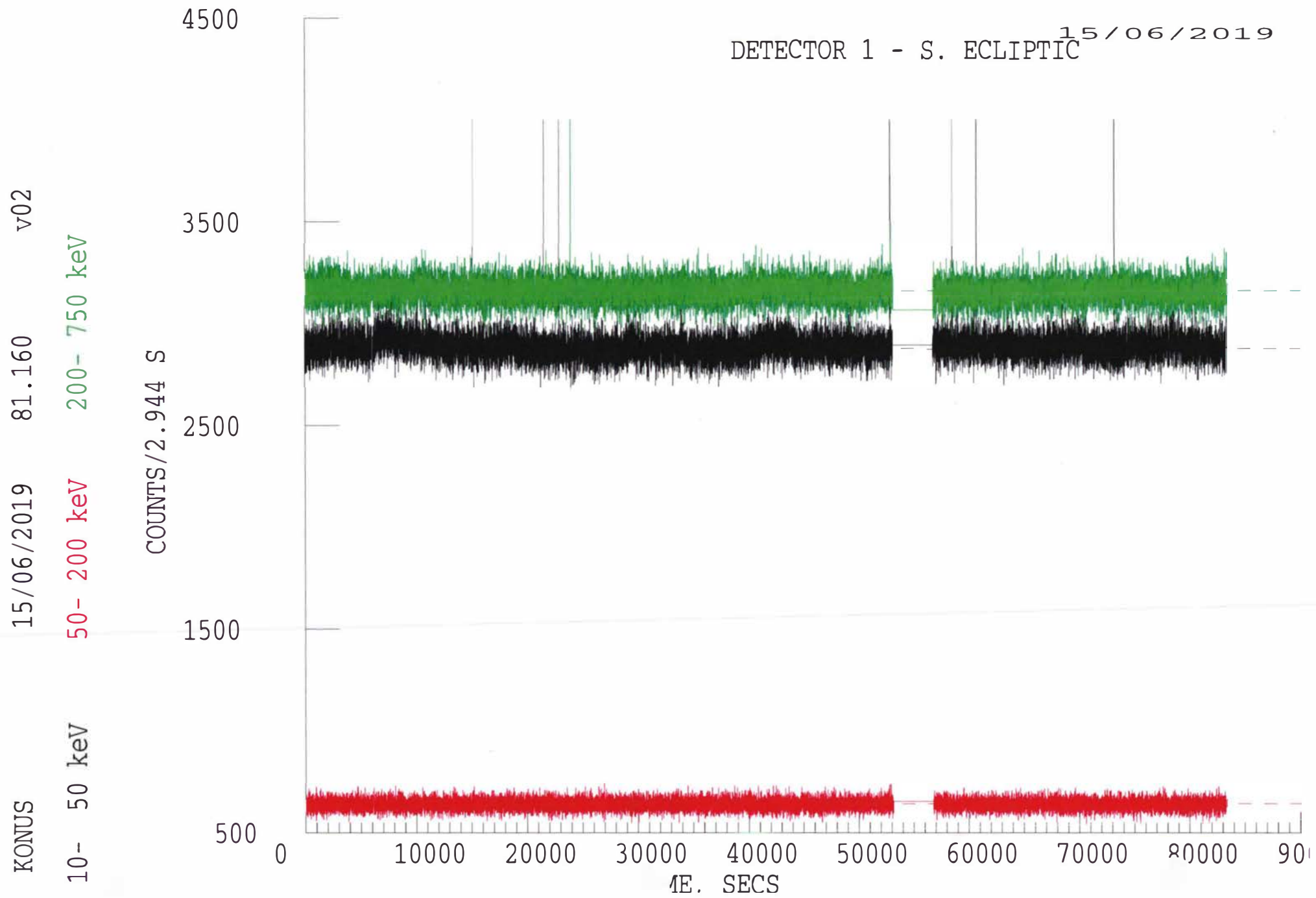
70000

80000

TI, SECS

DETECTOR 2 - N. ECLIP¹⁵ / 06 / 2019





KONUS

15/06/2019

81.160

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

60000

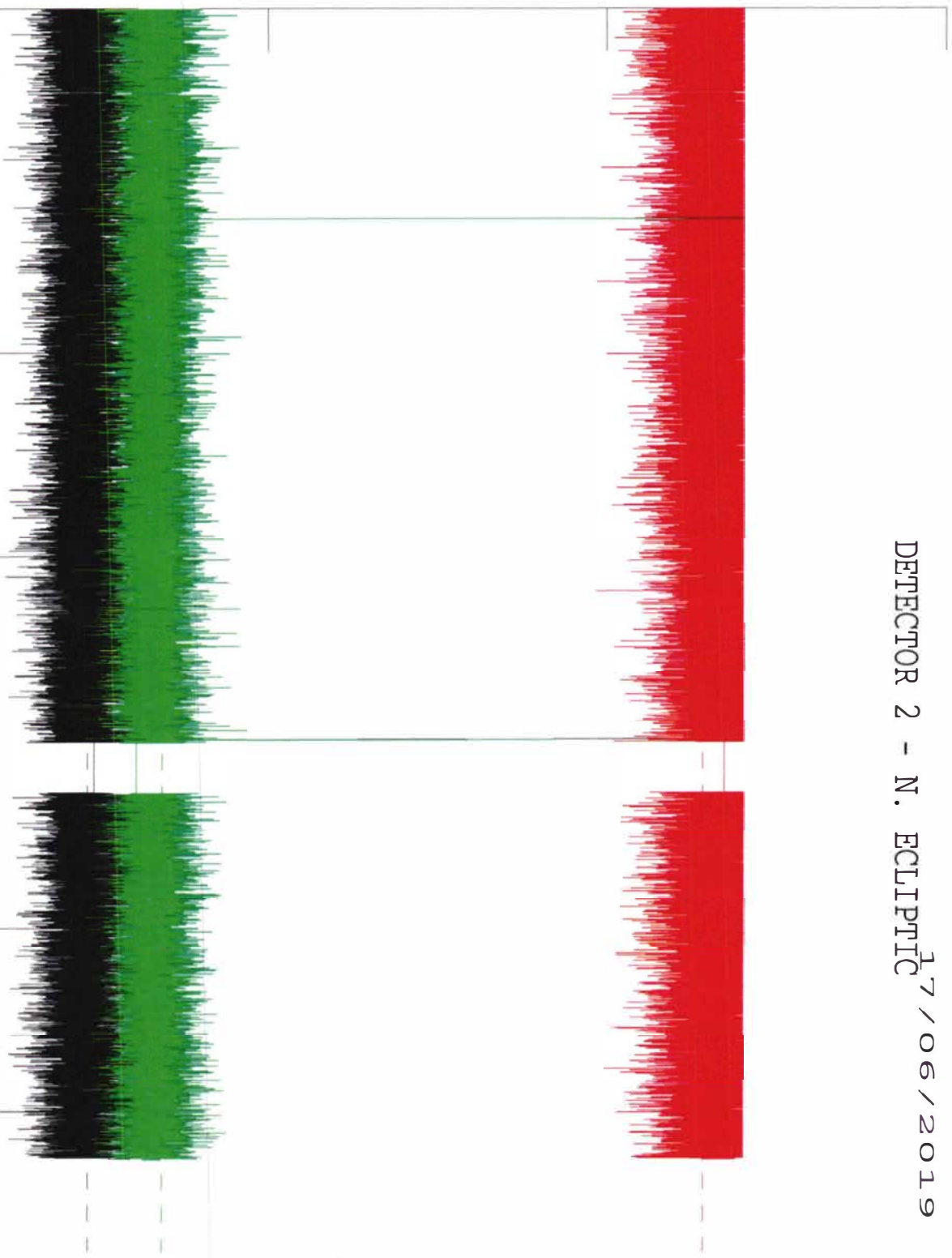
70000

80000

90000

ME. SECS

DETECTOR 2 - N. ECLIP¹⁷ / 06 / 2019

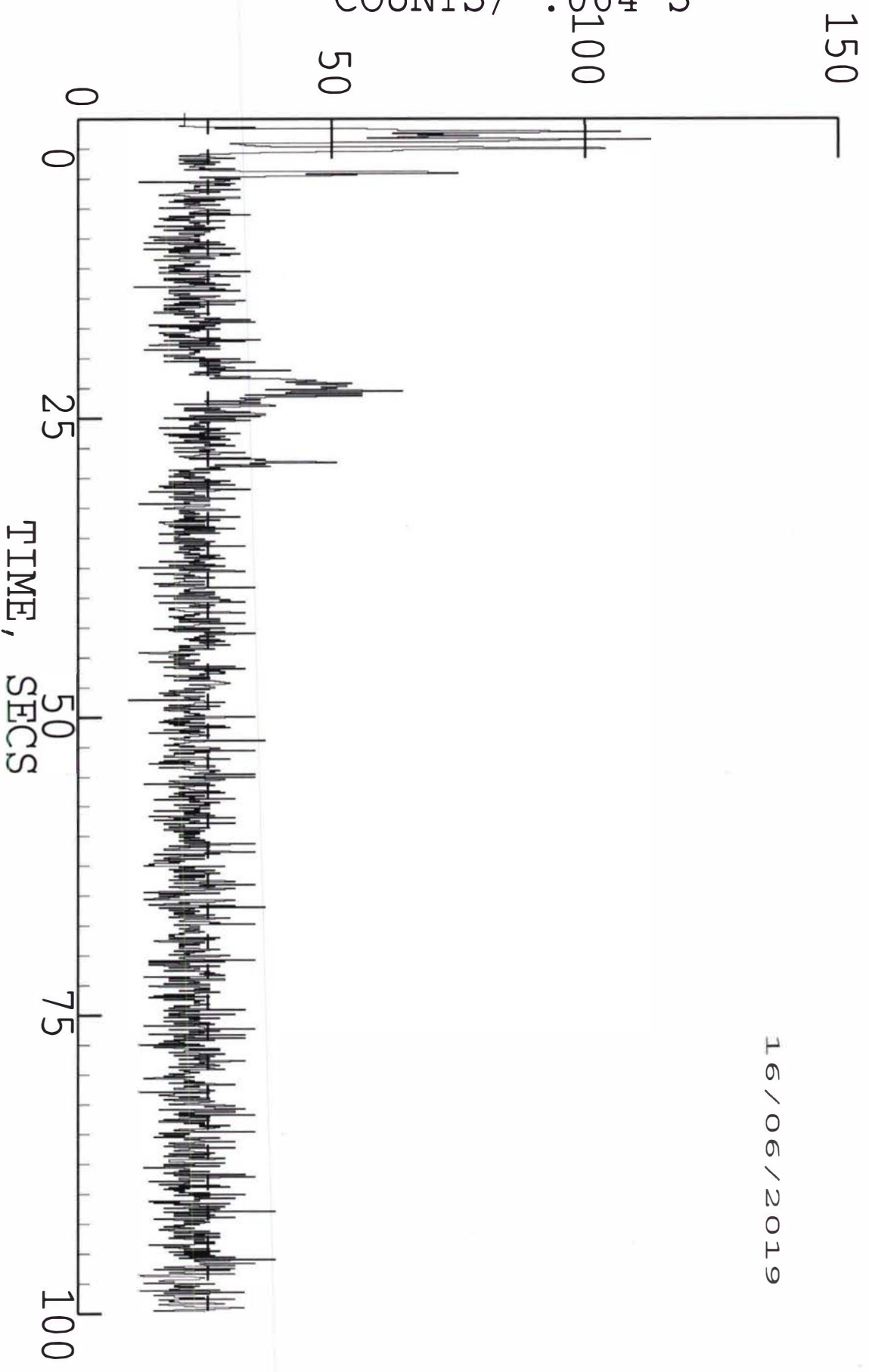


A

KONUS 15/06/19 52945.766 14:42:25.766

50- 200 keV

COUNTS/ .064 S



16/06/2019

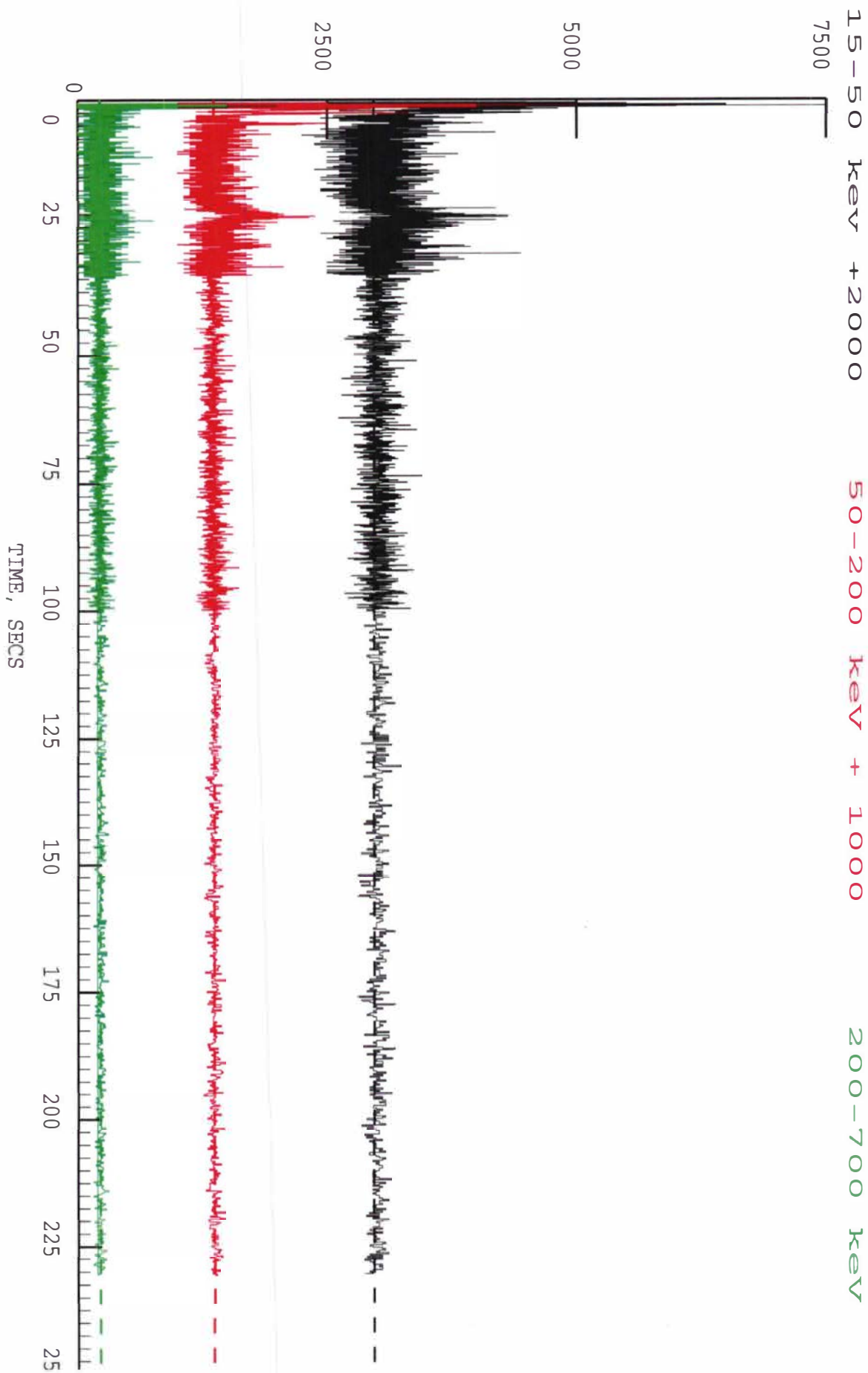
KONUS

15/06/19

52945.000

14:42:25.000

COUNTS/SEC

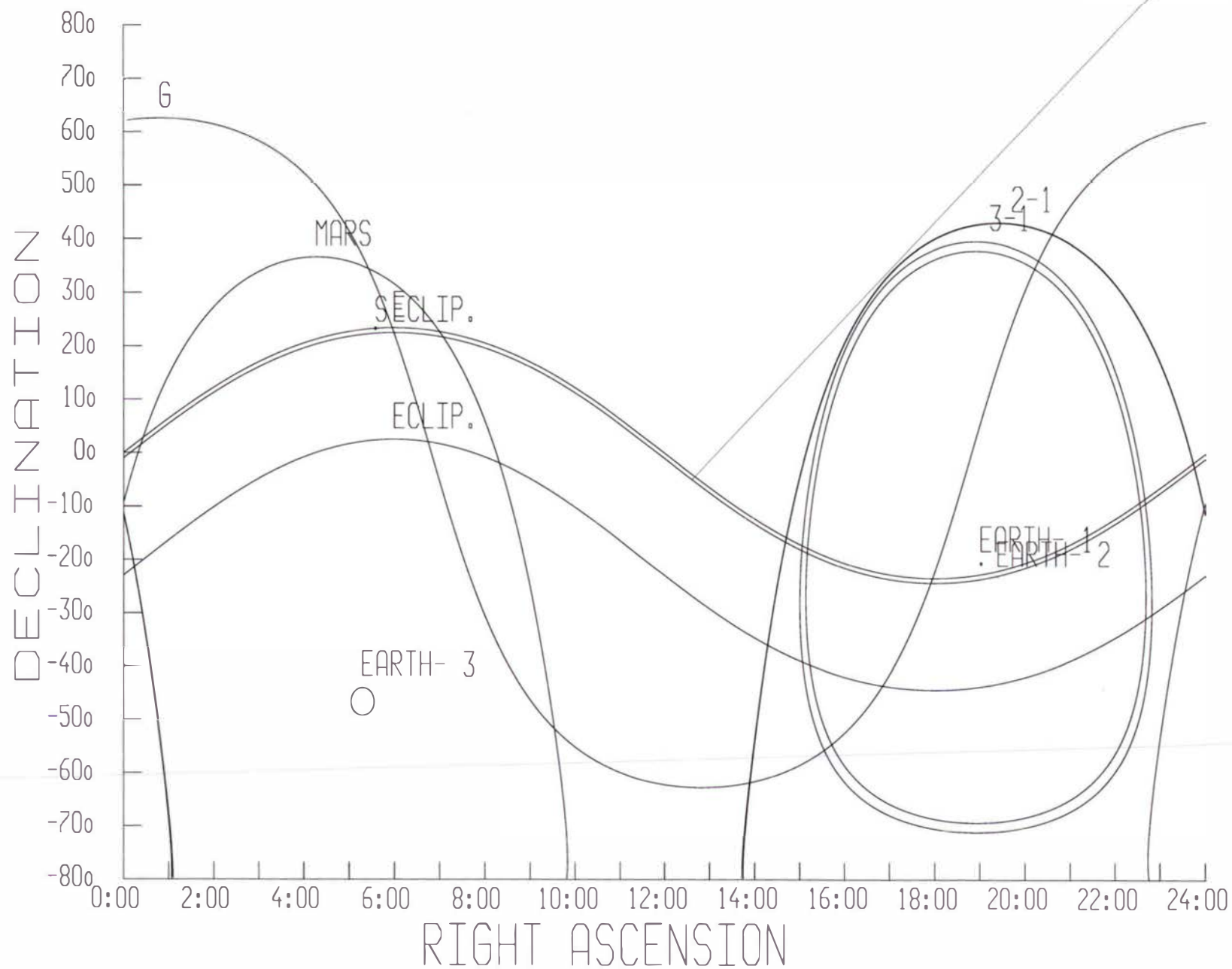


17/06/2019

EVENT OF JUN 15, 2019 14:42

06/05/2020

N-M = CORRELATION BETWEEN SATELLITES N AND M
EARTH-N = EARTH AS SEEN FROM SATELLITE N
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS1 2 MO 3 INTEGRAL



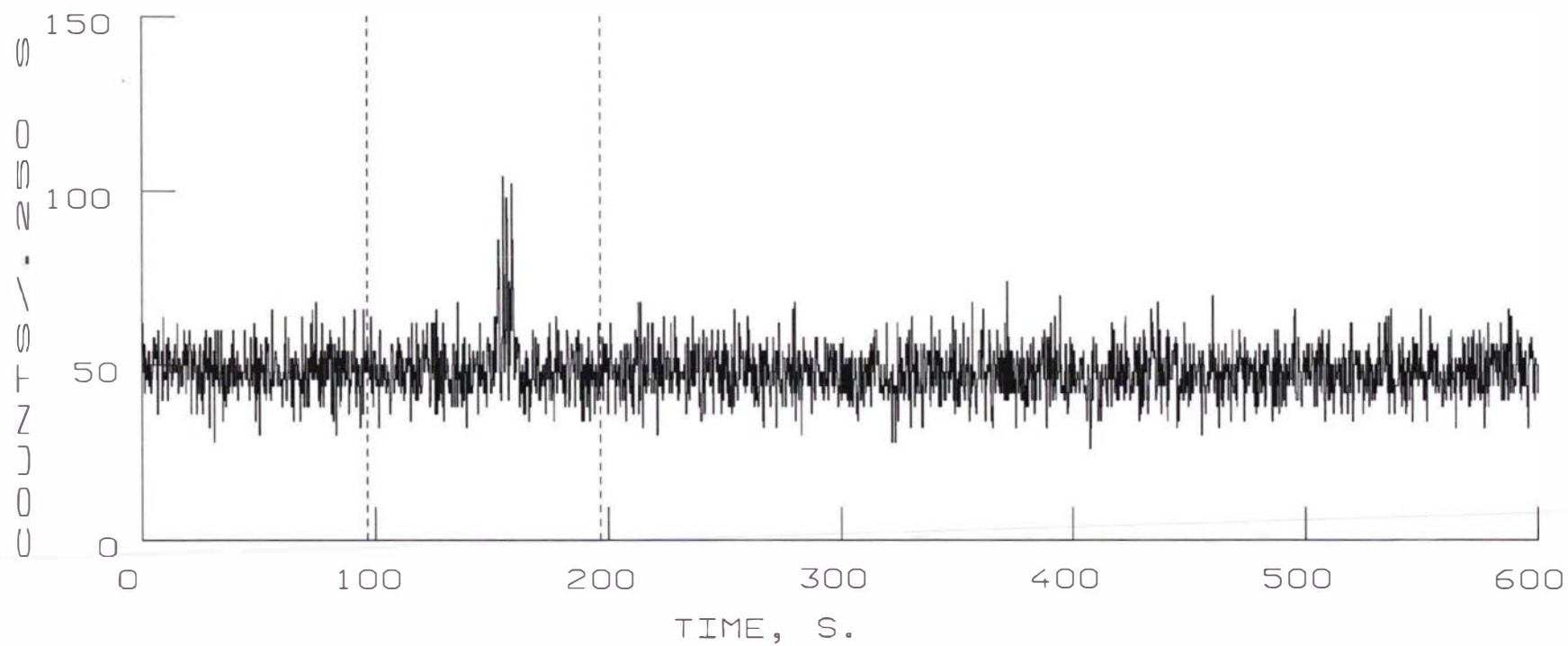
MS01 HEND

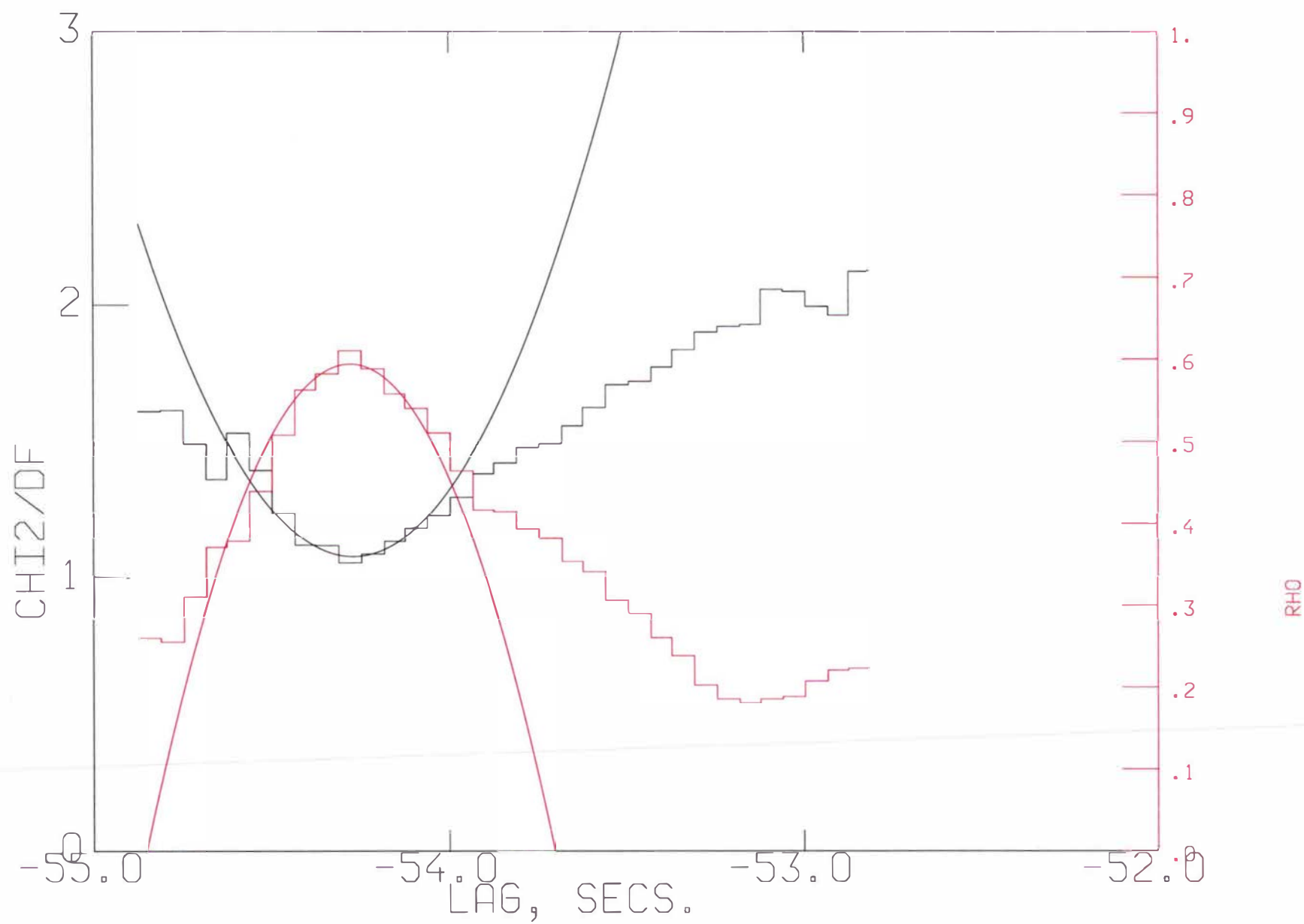
06/05/2020

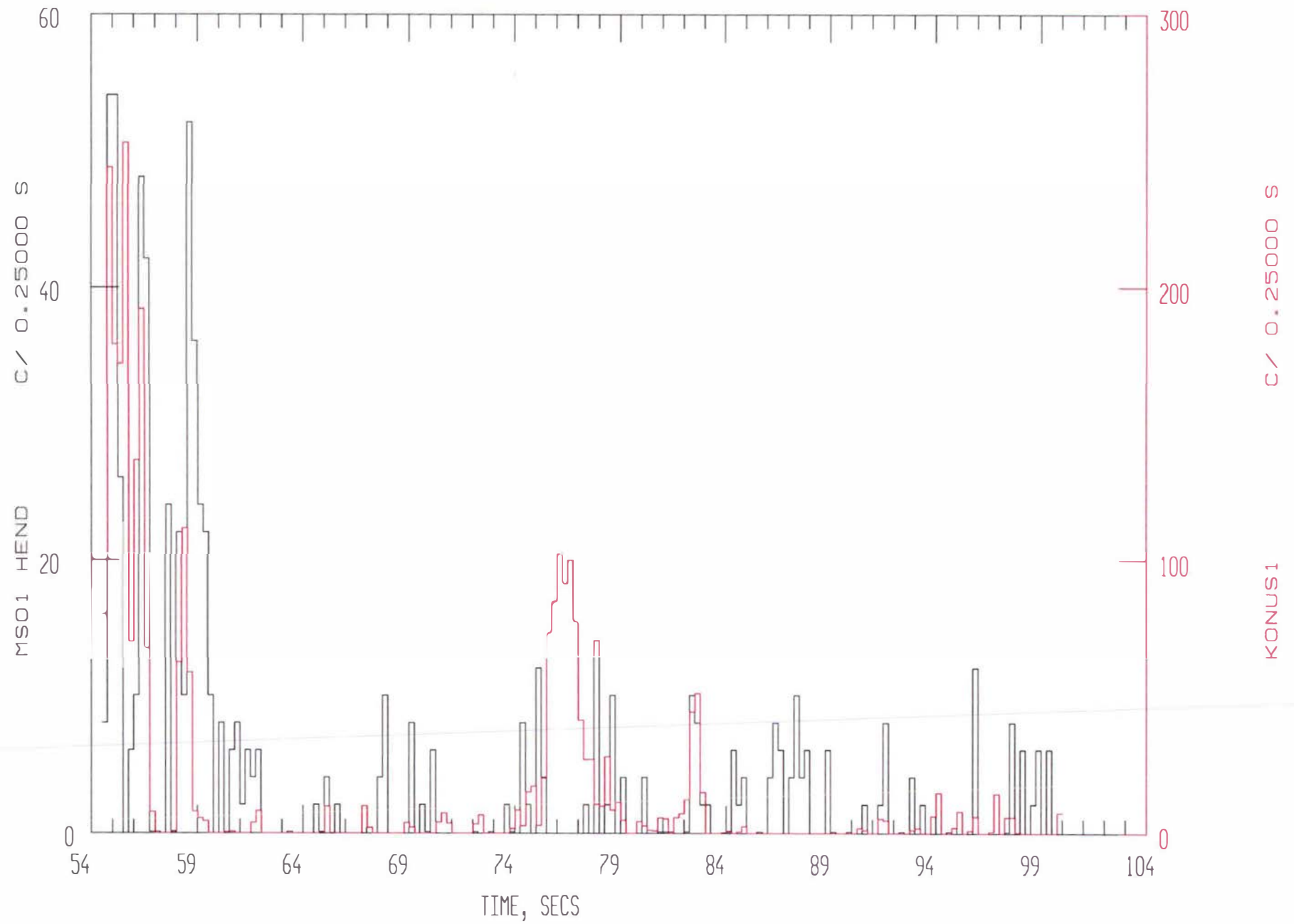
15/06/2019 53290.527 s

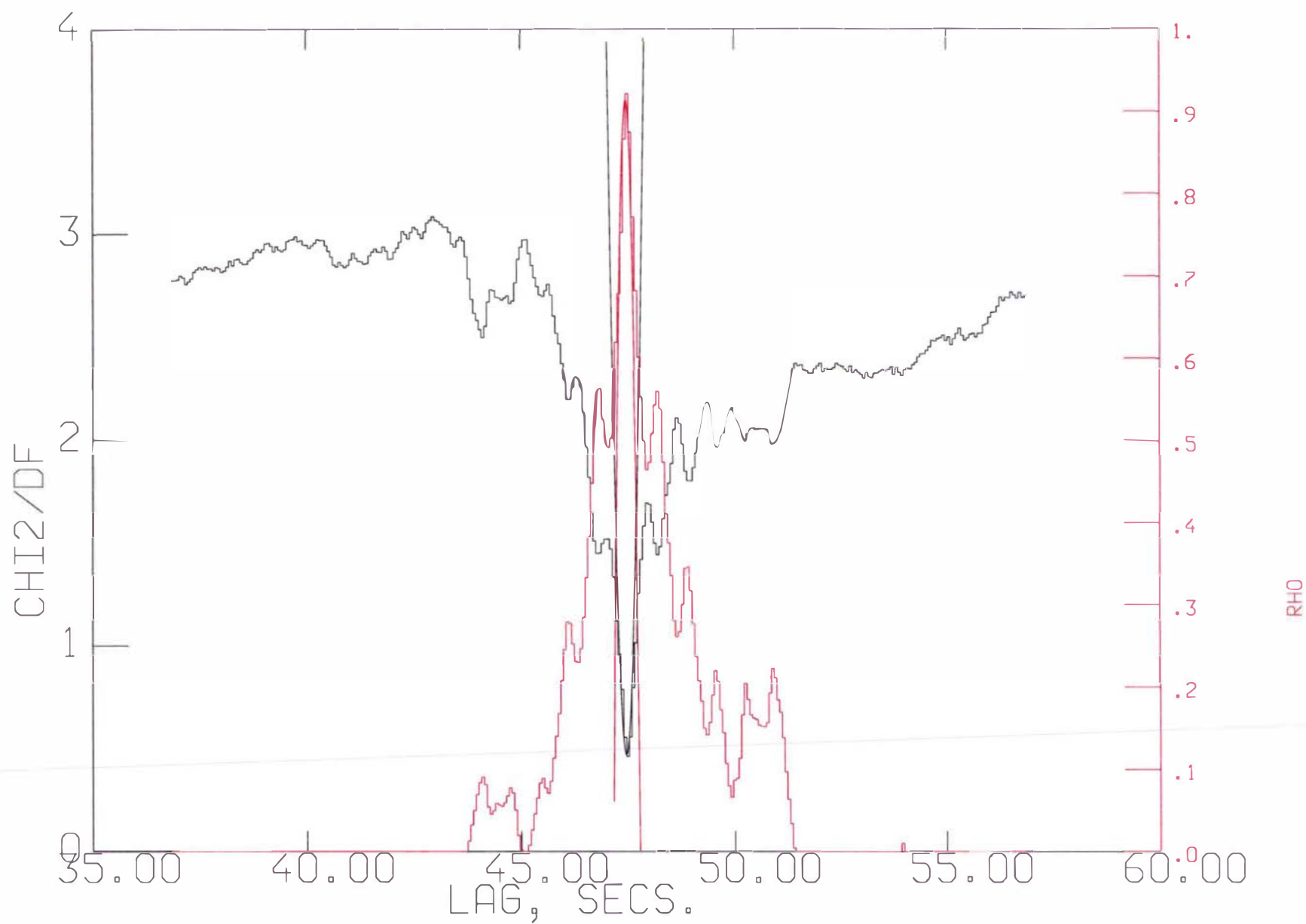
50-3000 keV

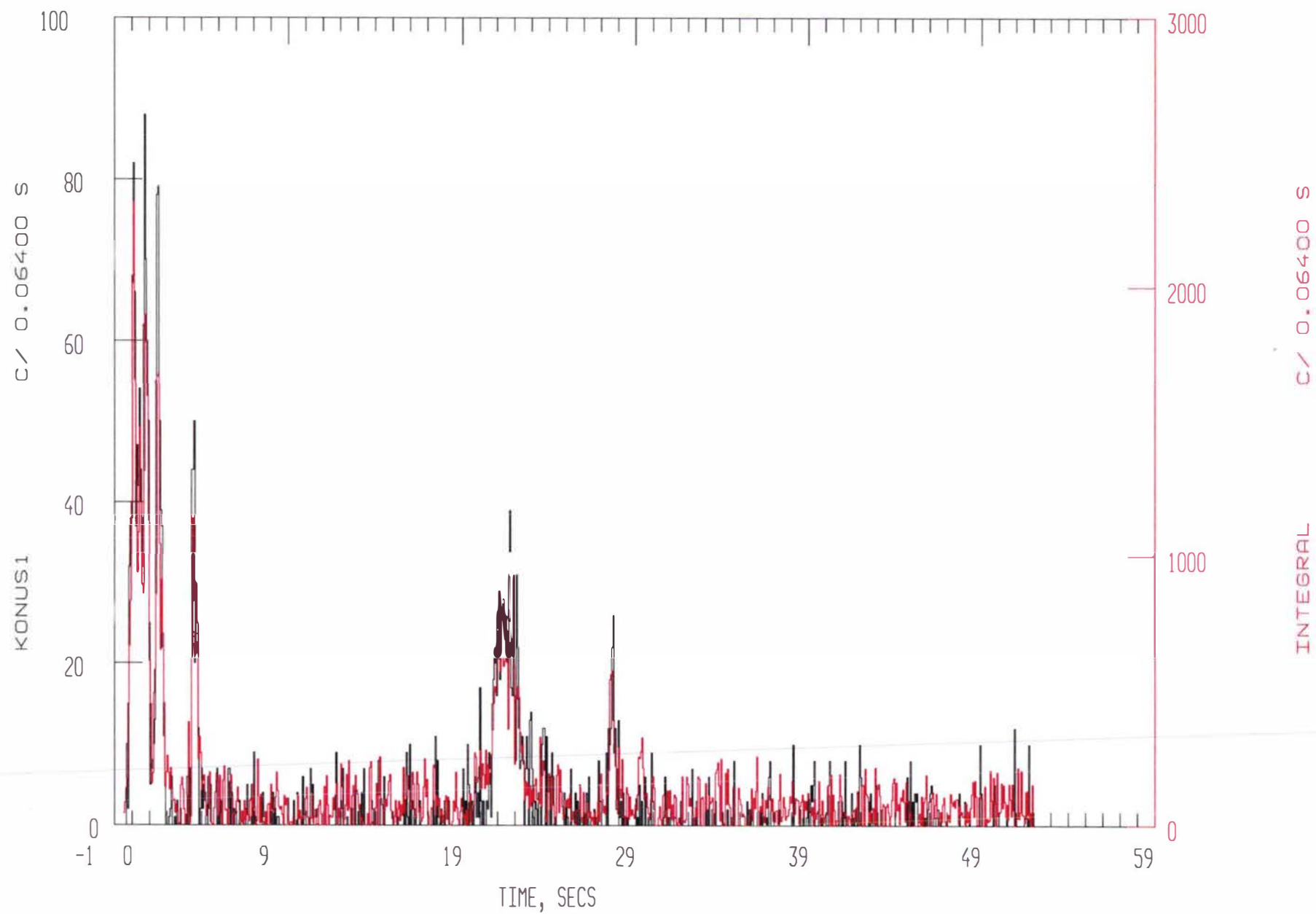
N= 10 M=40
>4.0 SIGMA FLUCTUATIONS

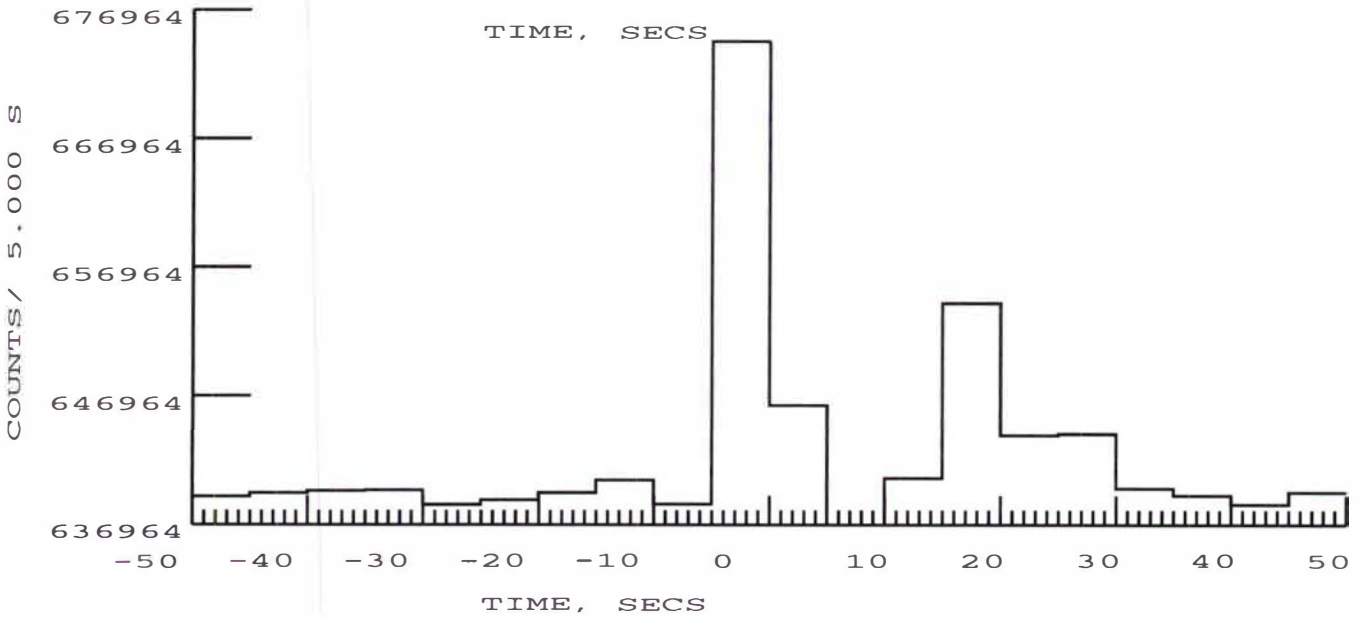
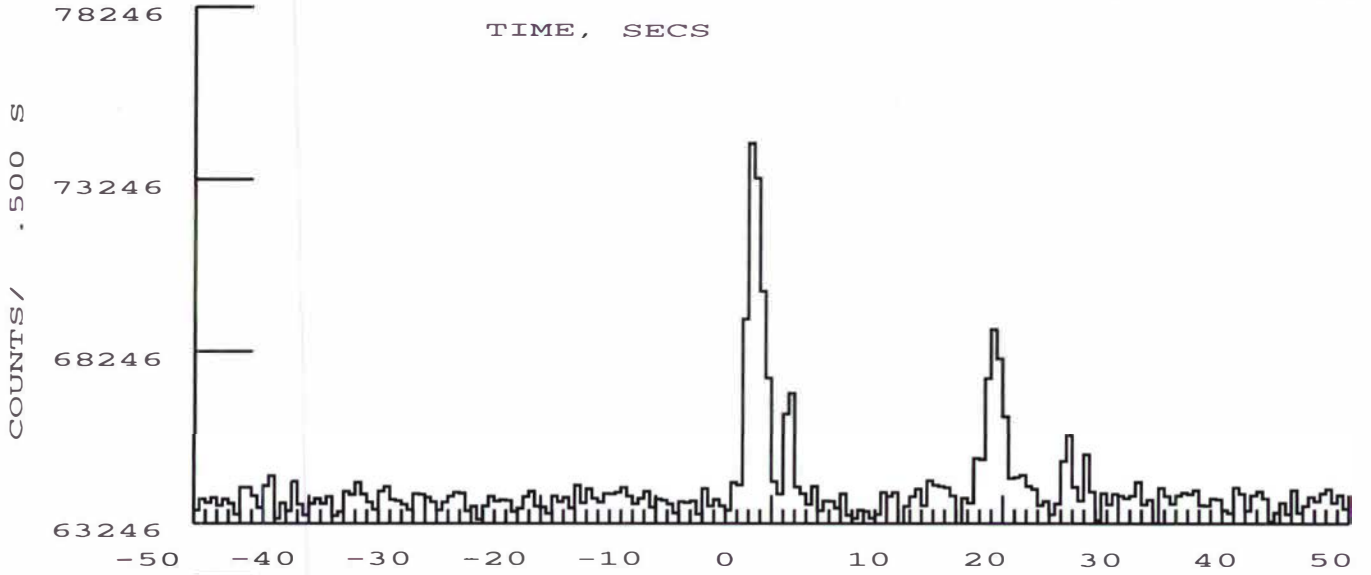
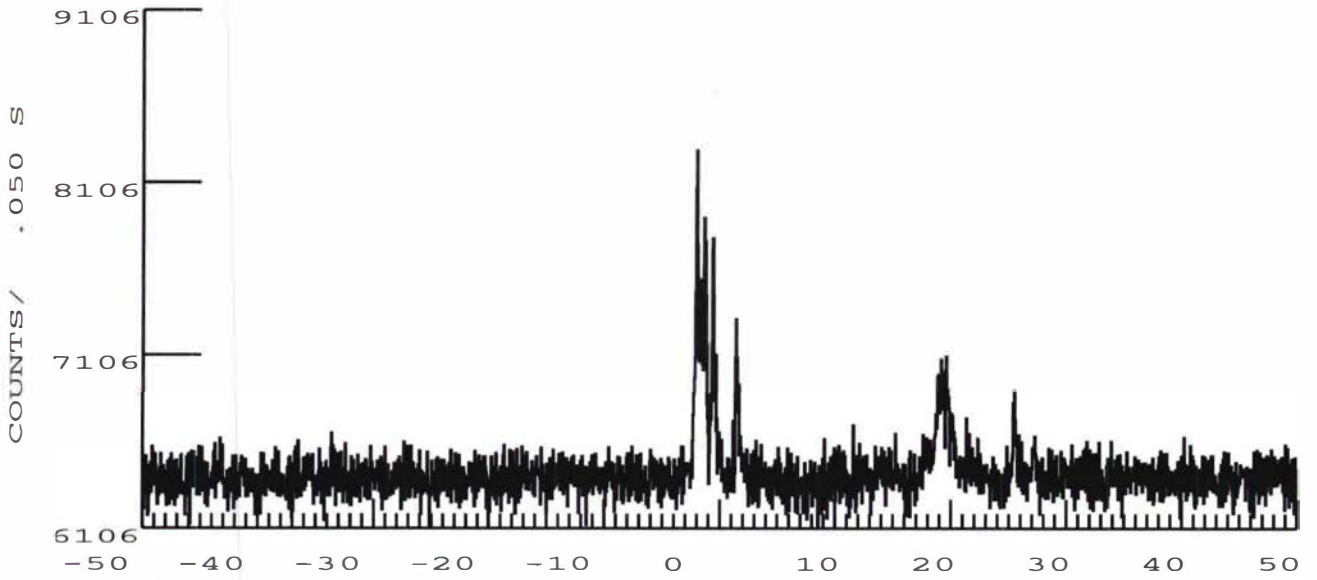












Subject: BAT lightcurve for trigger at 190615_1442

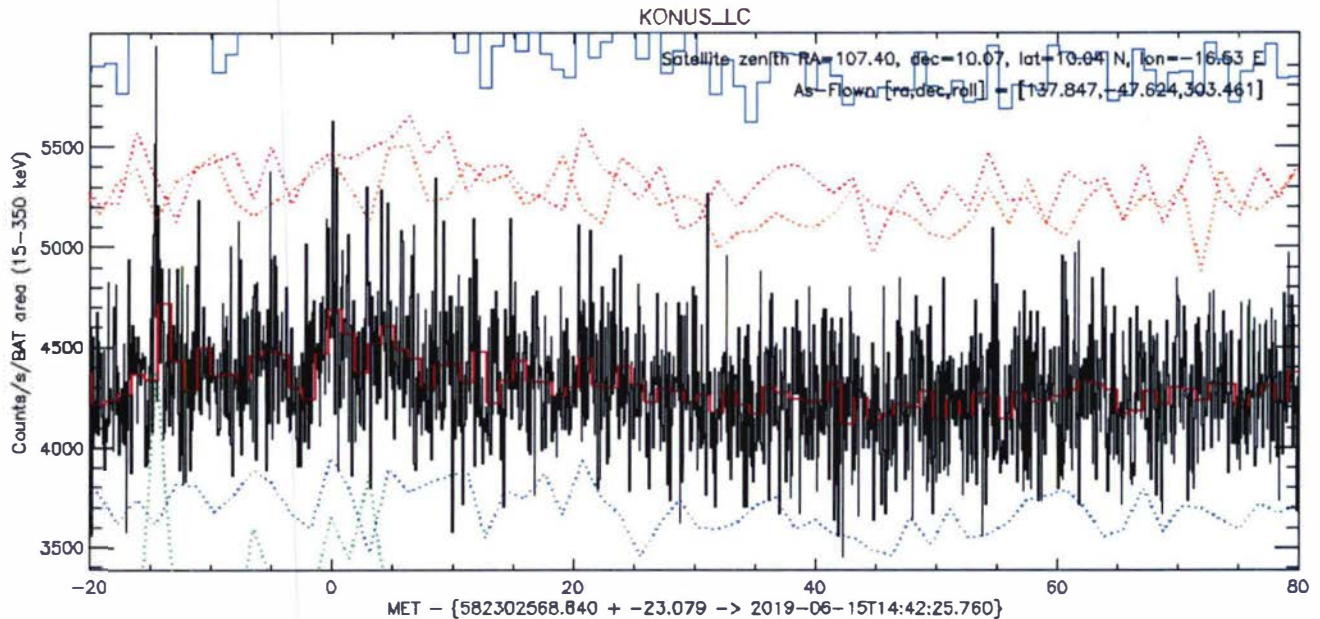
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/16/2019, 8:46 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190615_1442.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2019-06-15T14:42:25.760
Swift Zenith(RA,dec):      107.40, 10.07
Swift Location(lon,lat,alt): -16.53 E, 10.04 N, 546 km
Time(MET + UTC -> UT):    582302568.840 + -23.079 -> 2019-06-15T14:42:25.760
YYMMDD_SOD:               190615_52945.760      DOY=166
Obs Sequence Number:      03109786001
Obs Target Name:          4FGL J0911.6-4738
Obs Date and Times:       2019-06-15 14:35:38 - 14:50:34
Obs Pointing(ra,dec,roll): 137.847, -47.624, 303.46
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190615_1442_bat64ms_ipn	87.1 KB
/tmp/swift/190615_1442.png	20.3 KB

Subject: GRB 190615B: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/21/2019, 3:44 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24870
SUBJECT: GRB 190615B: AstroSat CZTI detection
DATE: 19/06/21 10:43:59 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

P. Ghumatkar, V. Sharma and D. Bhattacharya (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190615B, which was also detected by Insight-HXMT/HE (Luo Q. et al., GCN #24843).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with the strongest peak at 14:42:23.5 UT. The measured peak count rate associated with the burst is 946 cts/s above the background in the combined data of four quadrants, with a total of 4318 cts. The local mean background count rate was 640 cts/s. Using cumulative rates, we measure a T90 of 27.9 s.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

Subject: GRB 190615B: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/16/2019, 11:03 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24843
SUBJECT: GRB 190615B: Insight-HXMT/HE detection
DATE: 19/06/17 06:02:30 GMT
FROM: Qi Luo at IHEP <luoqi@ihep.ac.cn>

Q. Luo, S. Xiao, C. Cai, Q. B. Yi, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

At 2019-06-15T14:42:22.00 (T0), Insight-HXMT/HE detected
GRB 190615B (trigger ID: HEB190615612) in a routine search of the data,
which was also triggered by INTEGRAL (trigger_num:8299) and KONUS-Wind.

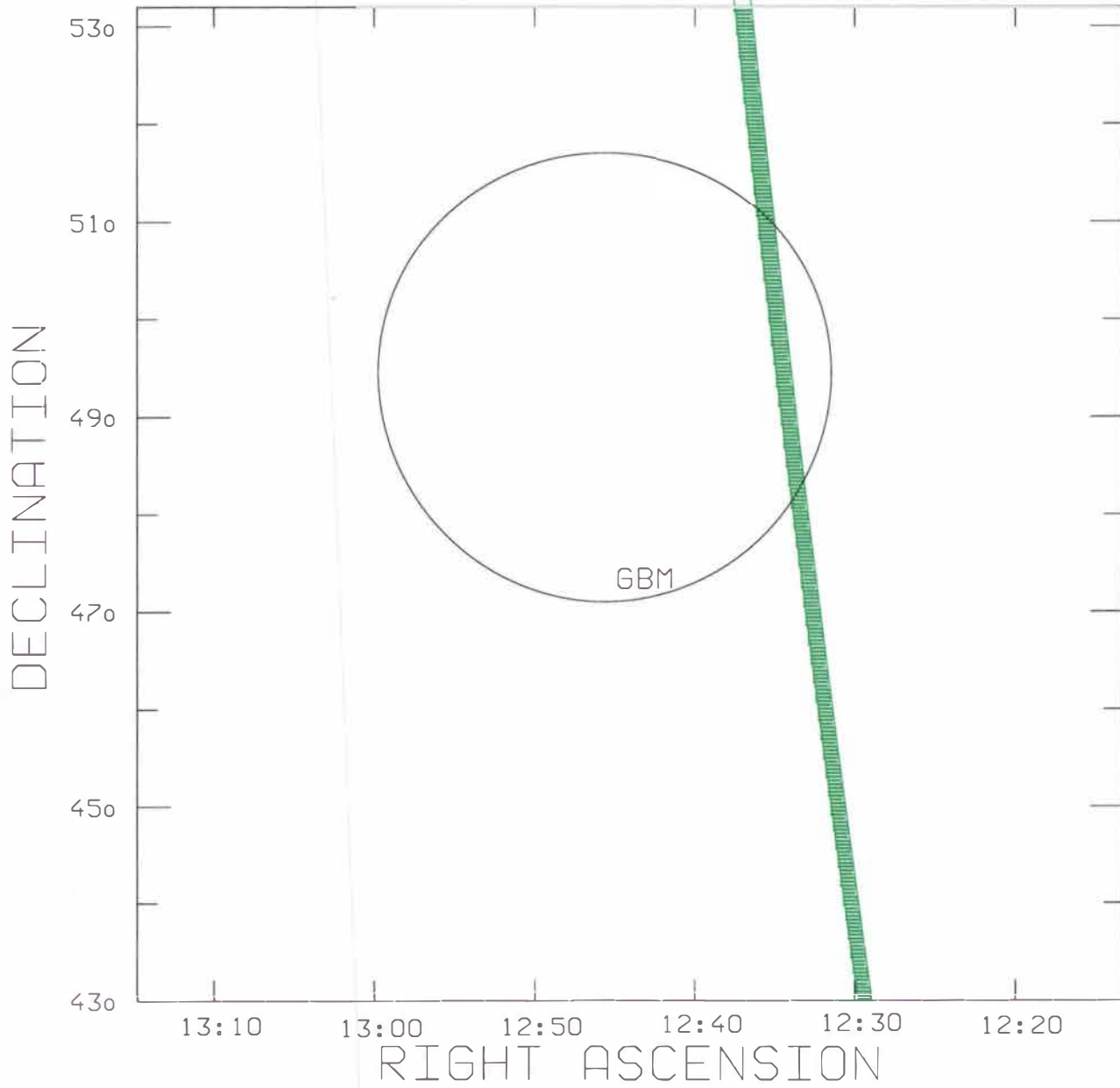
The Insight-HXMT/HE light curve mainly consists of two
pulses with a duration (T90) of 23.69 s measured from T0+0.66 s.
The 1-ms peak rate, measured from T0+0.74 s, is 1980 cnts/sec.
The total counts from this burst is 4942 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB190615612_lc.jpg

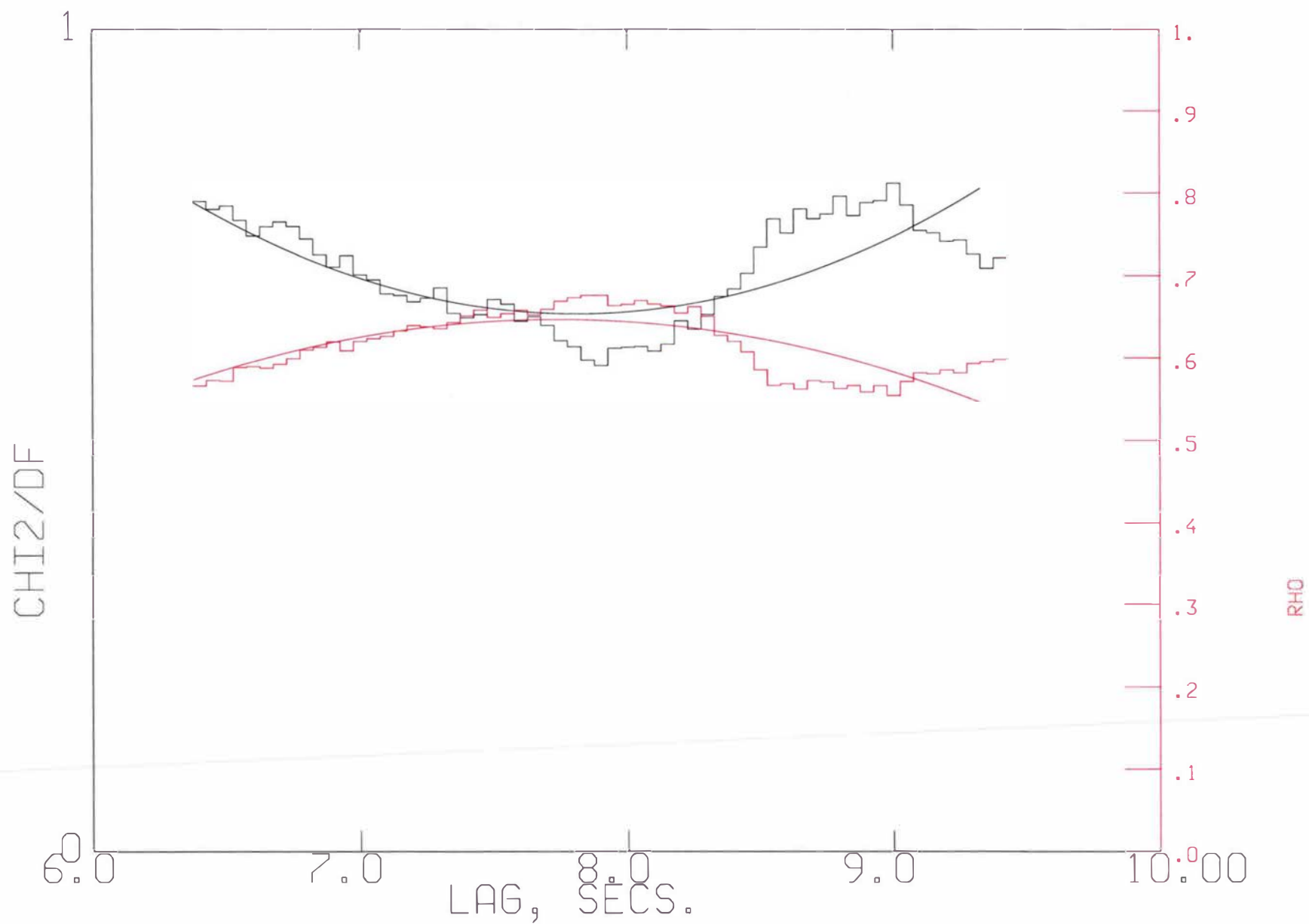
All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

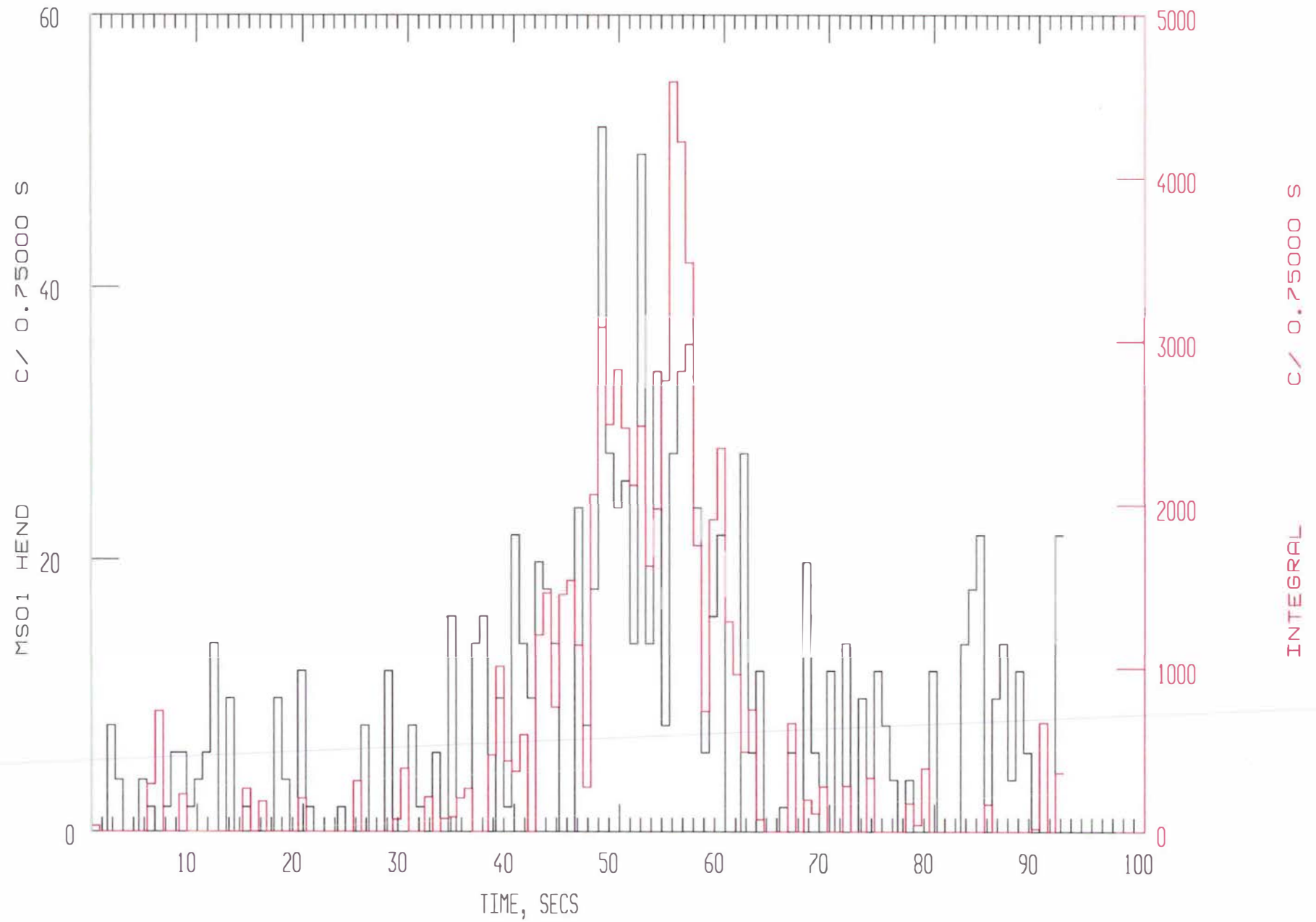
Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).
More information about it could be found at:
<http://www.hxmt.org>.

GRB190615 ~54944 S

06/05/2020







Subject: BAT lightcurve for trigger at 190615_1516

From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/16/2019, 8:47 PM

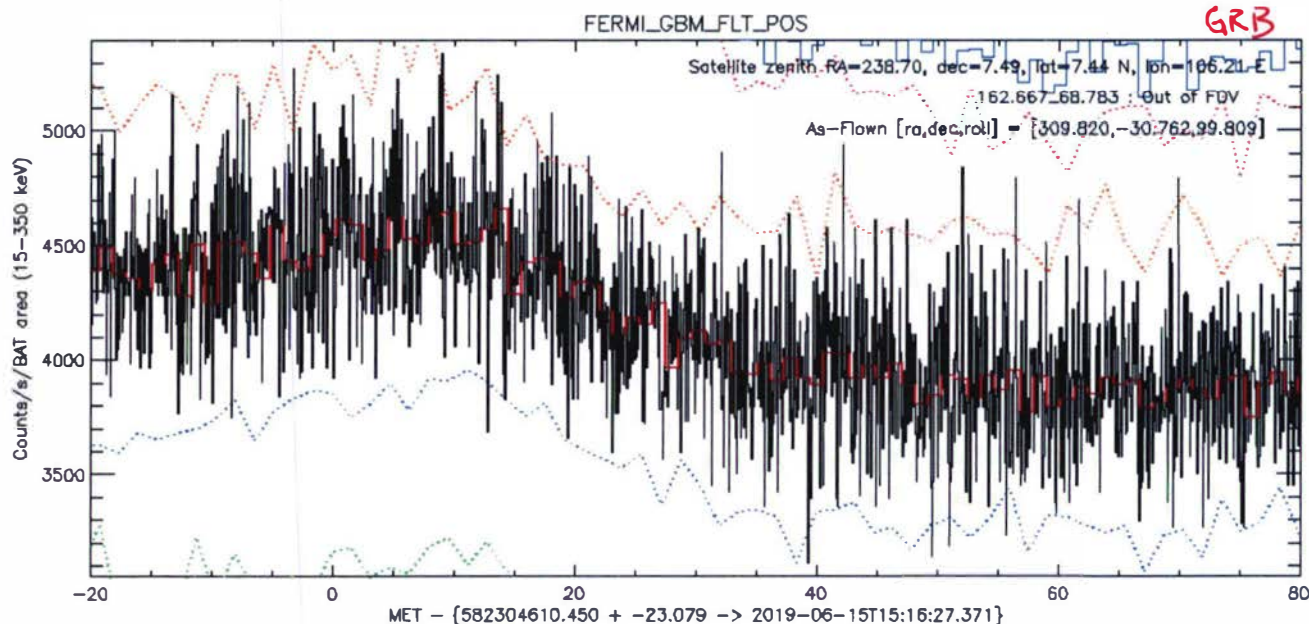
To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190615_1516.png

191.4 49.4 2.3
16.9 s
 $5 \times 10^{-6} \text{ erg cm}^{-2}$
 $4.6 \text{ phot/cm}^2 \text{ s}$

GRB



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582304610.450 -s 162.667_68.783
Swift Zenith(RA,dec):      238.70, 7.49
Swift Location(lon,lat,alt): 106.21 E, 7.44 N, 548 km
Time(MET + UTCF -> UT):    582304610.450 + -23.079 -> 2019-06-15T15:16:27.371
YYMMDD_SOD:               190615_54987.371      DOY=166
Obs Sequence Number:       00095141002
Obs Target Name:           ASASSN-15OI
Obs Date and Times:        2019-06-15 15:15:38 - 15:31:37
Obs Pointing(ra,dec,roll): 309.820, -30.762, 99.81
162.667_68.783_imageloc (boresight_dist, angle): (138, 153)
162.667_68.783_exposure (cm^2 cos adjusted): 0
162.667_68.783_altitude: 35 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments: —

/tmp/swift/190615_1516.png

21.6 KB

/tmp/swift/190615_1516_bat64ms_ipn

87.1 KB

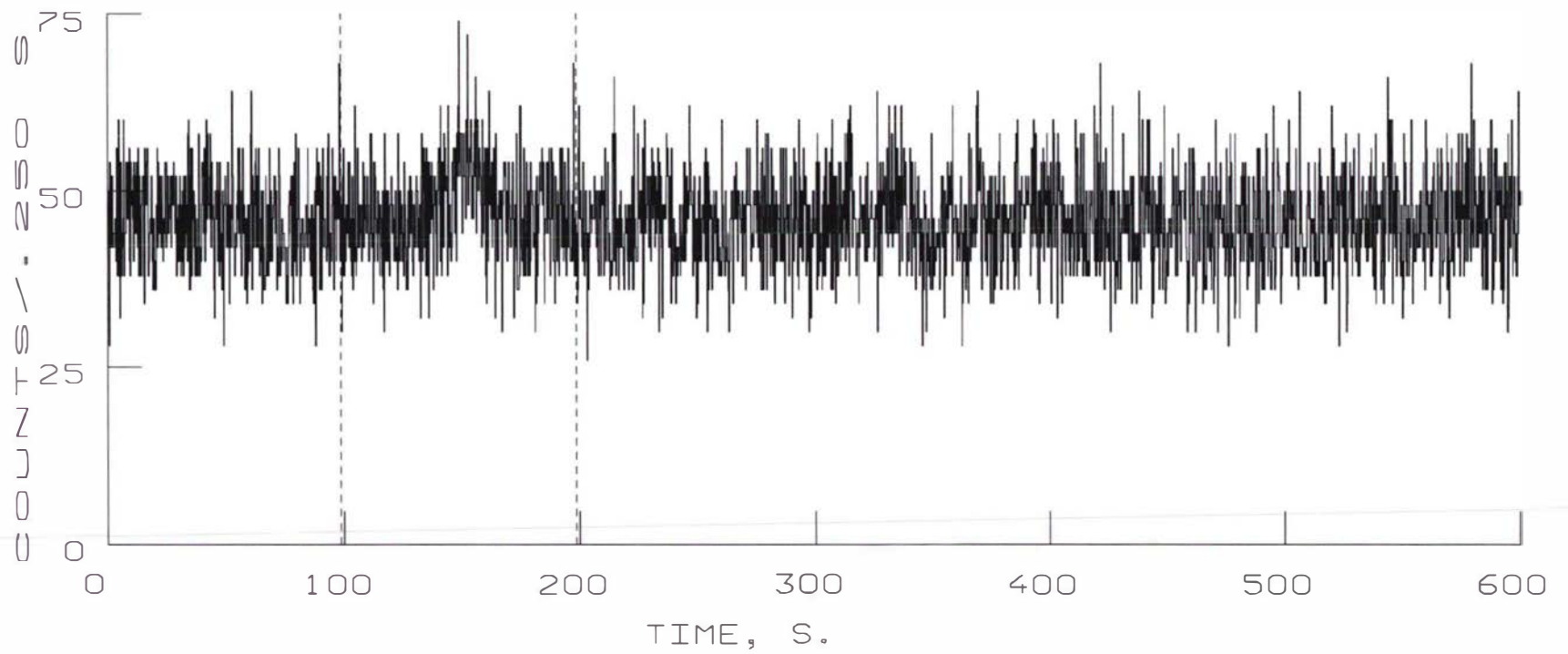
MS01 HEND

06/05/2020

15/06/2019 54310.508 s

50-3000 keV

MAXIMUM



B

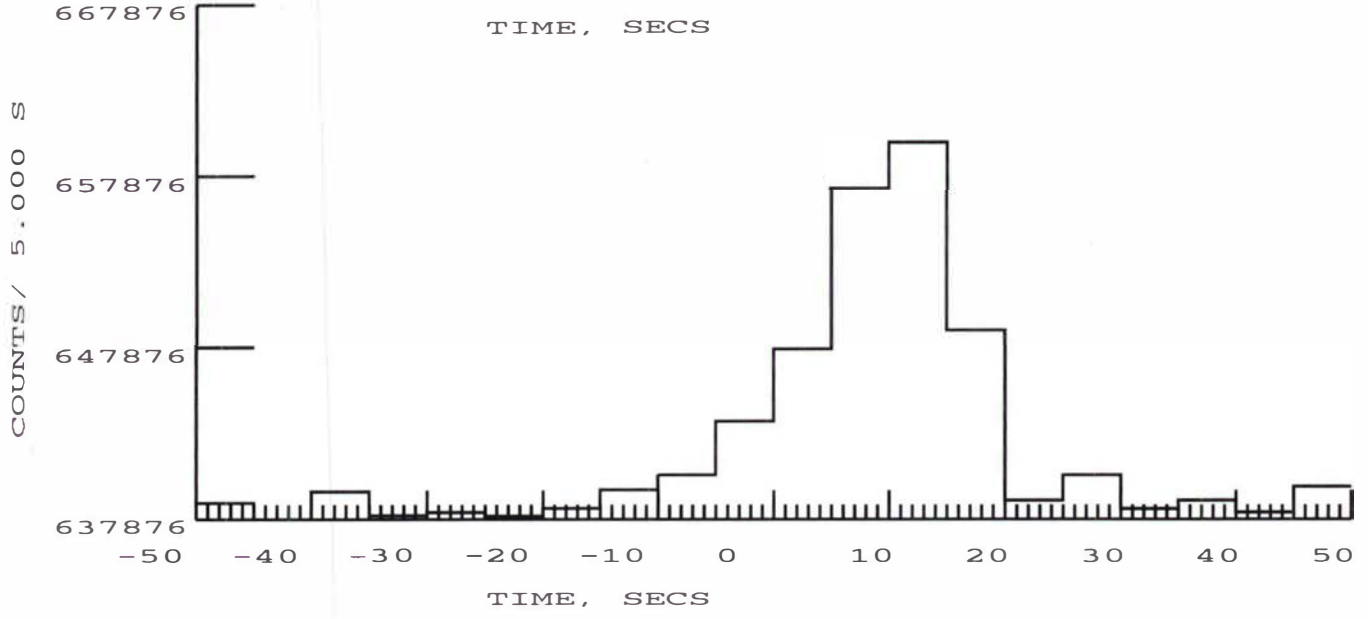
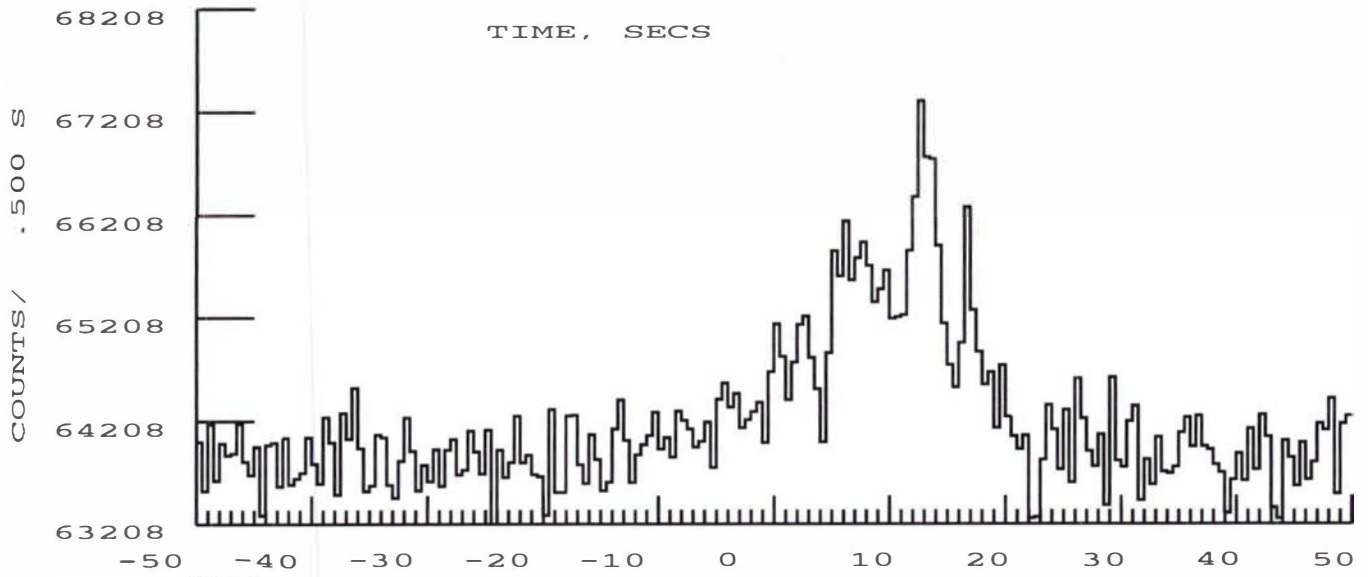
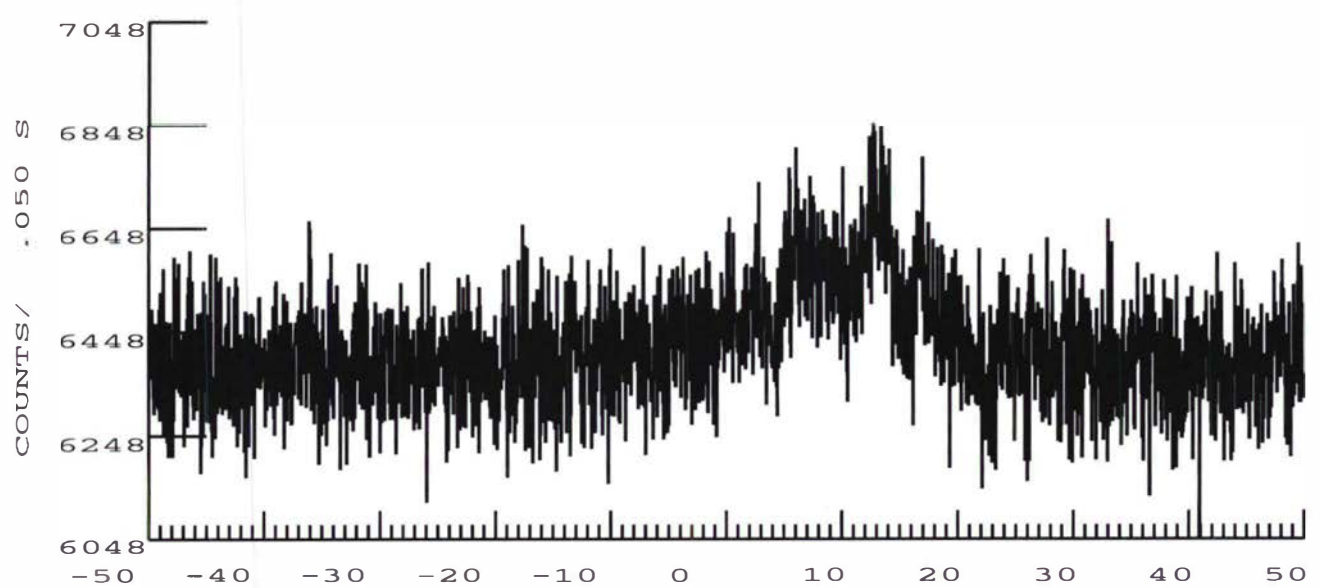
INTEGRAL

15/06/19

54987.000

15:16:27.0

11/07/19



Subject: GRB 190615A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/16/2019, 10:37 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24842
SUBJECT: GRB 190615A: Insight-HXMT/HE detection
DATE: 19/06/17 05:36:47 GMT
FROM: Qi Luo at IHEP <luogiq@ihep.ac.cn>

Q. Luo, S. Xiao, C. Cai, Q. B. Yi, C. K. Li,
X. B. Li, G. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, X. F. Lu,
A. M. Zhang, Y. F. Zhang, C. L. Zou (IHEP), Y. J. Jin,
Z. Zhang (THU), T. P. Li (IHEP/THU), F. J. Lu, L. M. Song,
M. Wu, Y. P. Xu, S. N. Zhang (IHEP),
report on behalf of the Insight-HXMT team:

S4987

At 2019-06-15T15:16:27.00 (T0), Insight-HXMT/HE detected
GRB 190615A (trigger ID: HEB190615636) in a routine search of the data,
which was also triggered by Fermi/GBM (GCN #24839).

The Insight-HXMT/HE light curve mainly consists of a single
pulse with a duration (T90) of 16.33 s measured from T0-1.65 s.
The 1-ms peak rate, measured from T0+7.80 s, is 606 cnts/sec.
The total counts from this burst is 4626 counts.

URL_LC: http://www.hxmt.org/images/GRB/HEB190615636_lc.jpg

All measurements above are made with the CsI detectors operating in the
regular mode with the energy range of about 80-800 keV (deposited energy).
Only gamma-rays with energy greater than about 200 keV can penetrate
the spacecraft and leave signals in the CsI detectors installed inside
of the telescope.

Insight-HXMT is the first Chinese space X-ray telescope, which was
funded jointly by the China National Space Administration (CNSA) and
the Chinese Academy of Sciences (CAS).

More information about it could be found at:

<http://www.hxmt.org>.

KONUS

16/06/2019

66.943

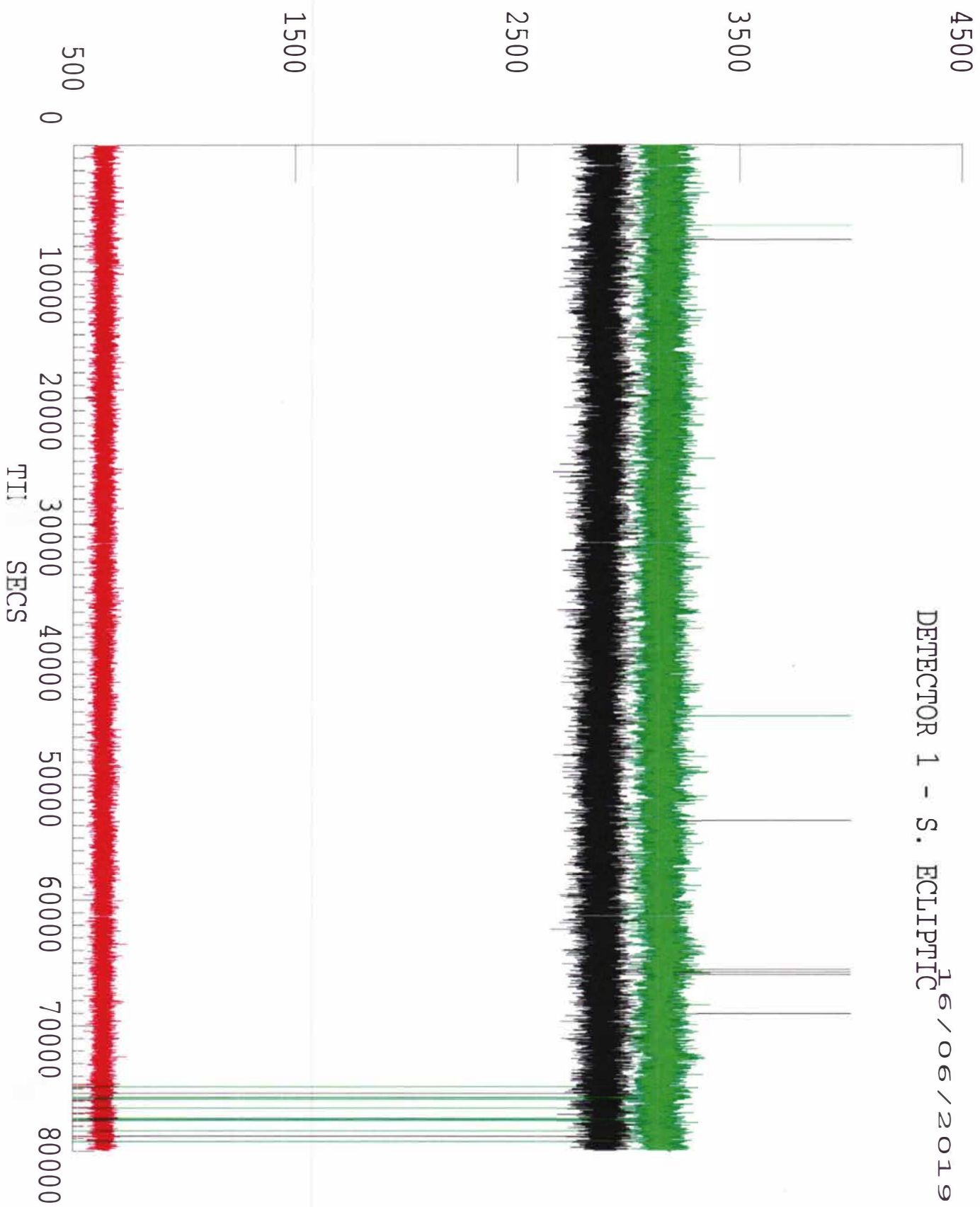
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

16/06/2019

66.943

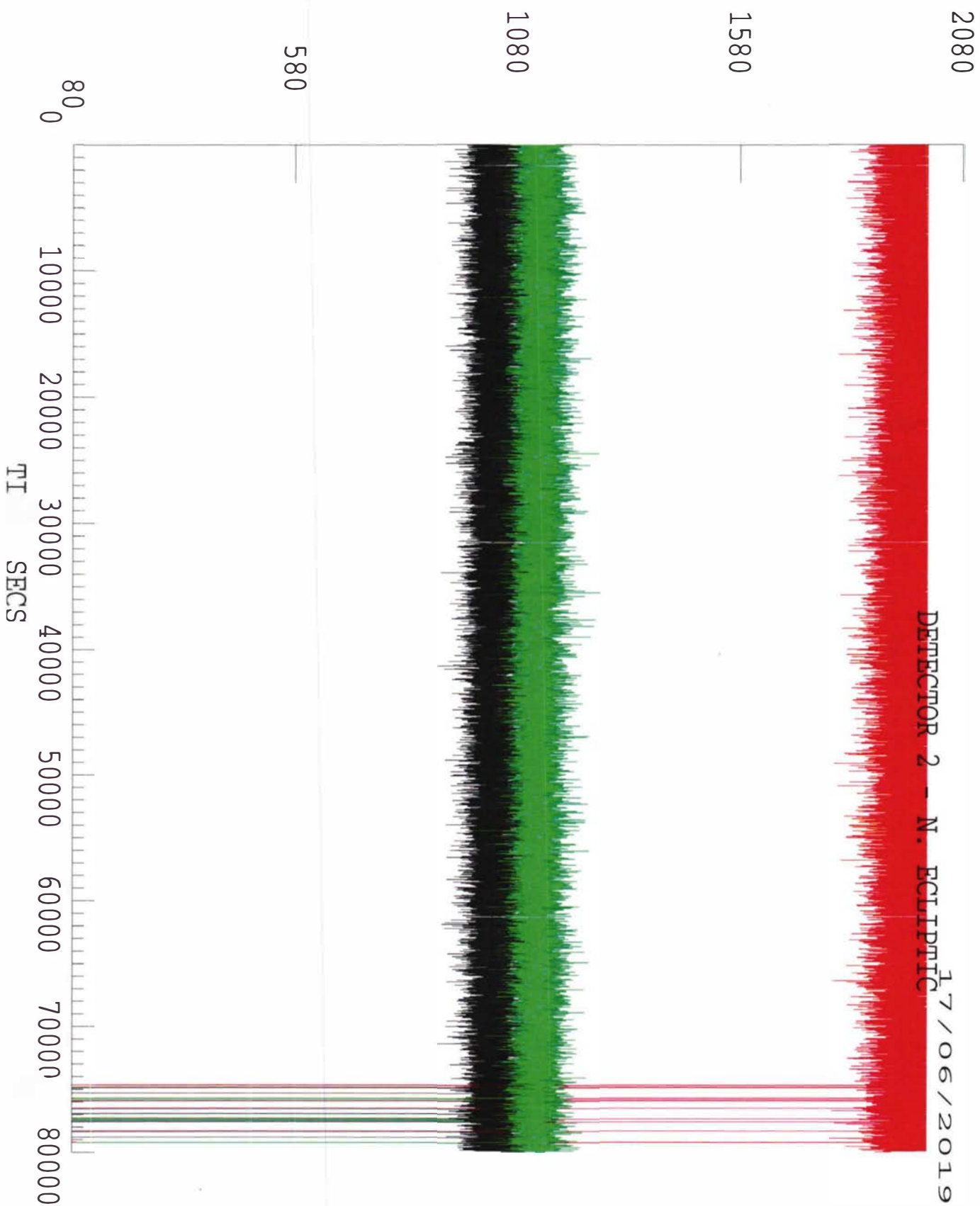
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

17/06/2019

55.670

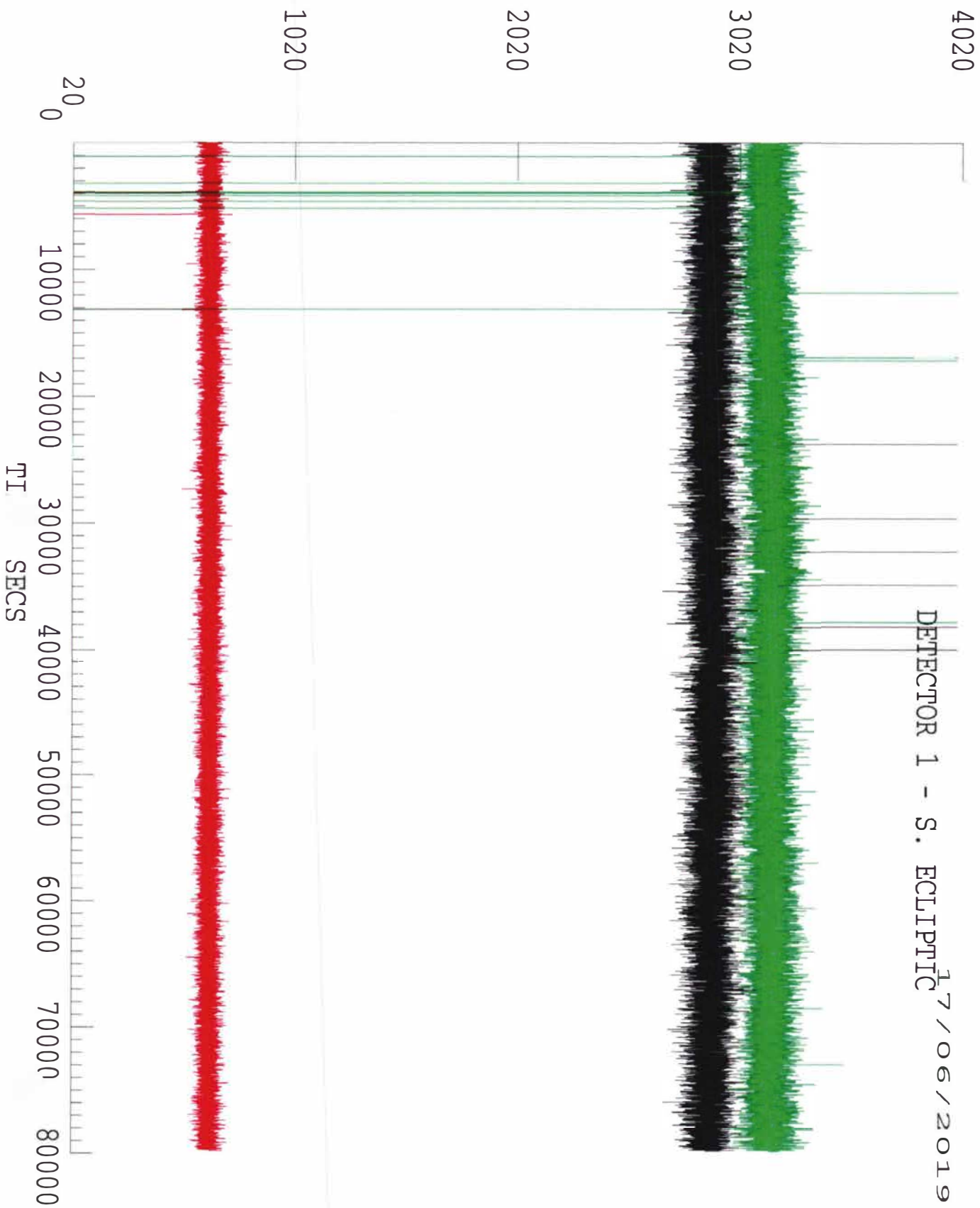
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

17/06/2019

55.670

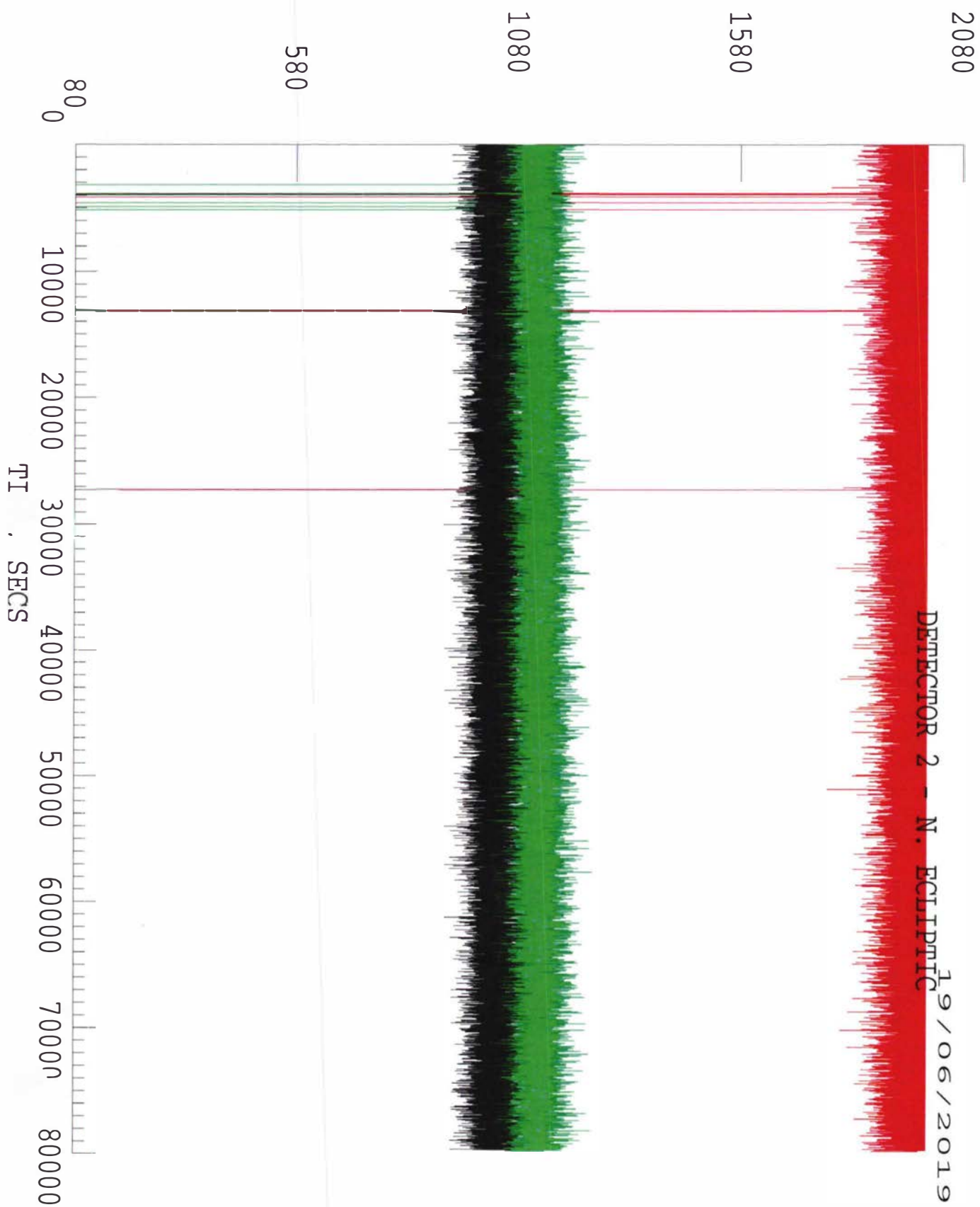
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

18/06/2019

44.398

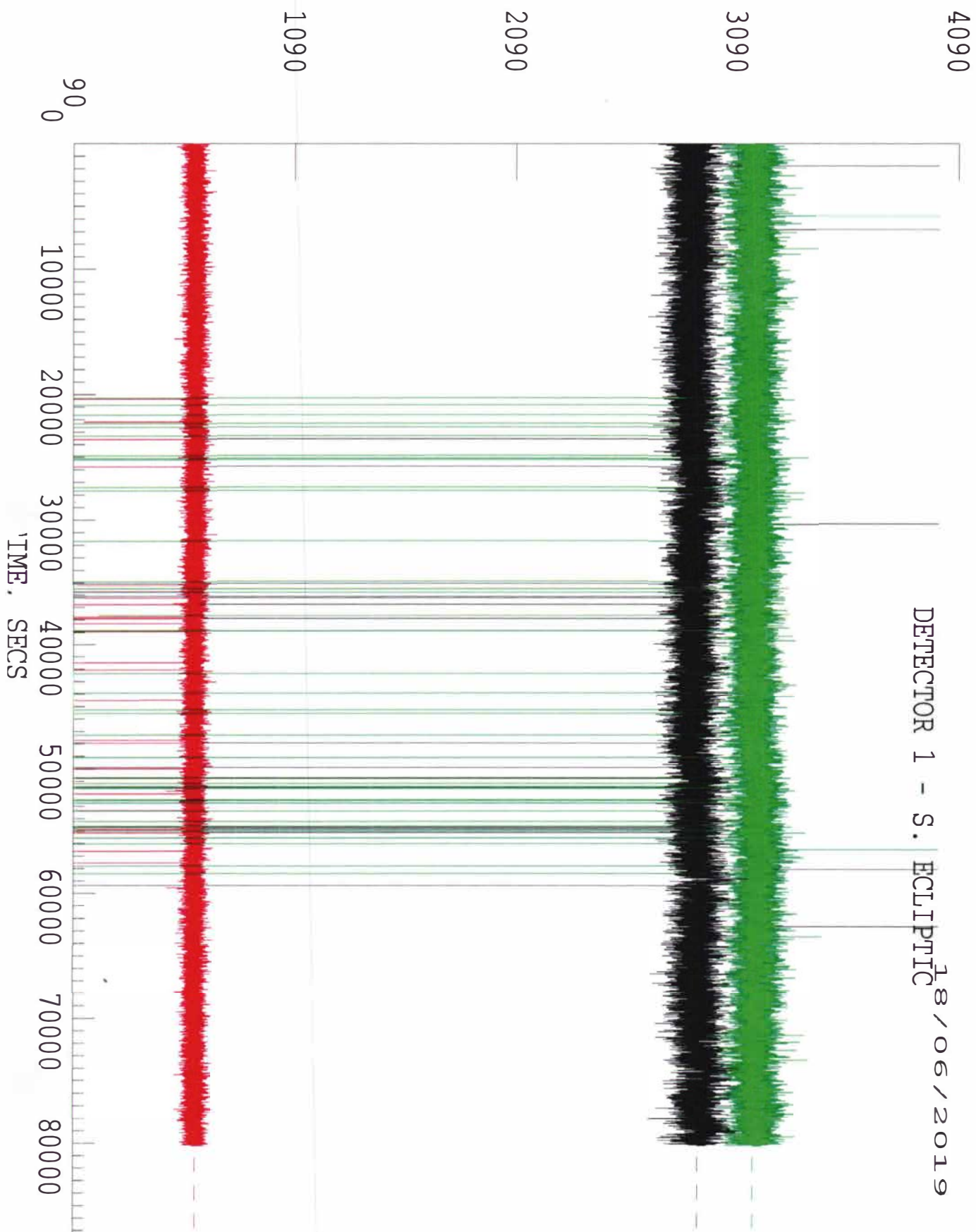
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

18/06/2019

44.398

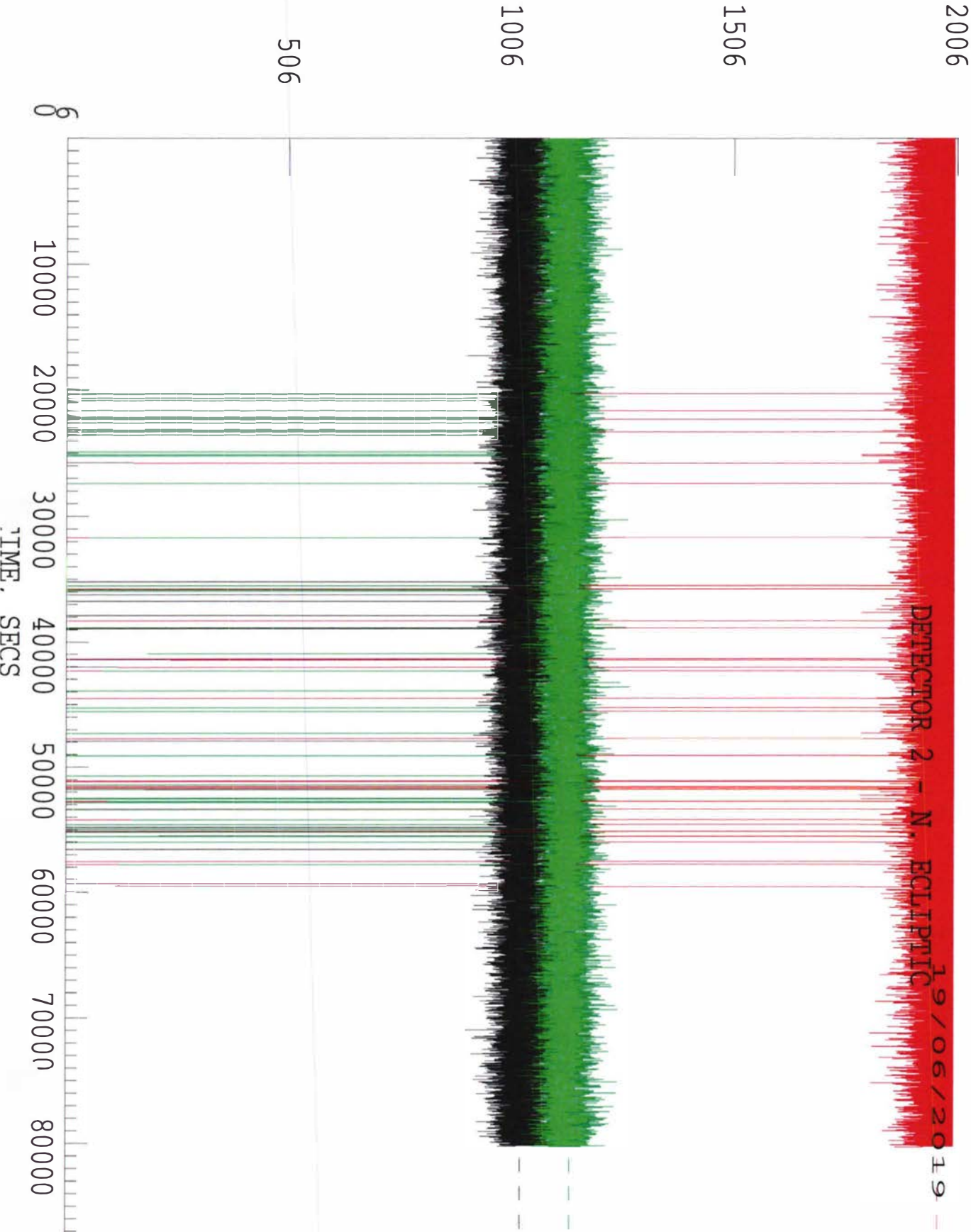
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

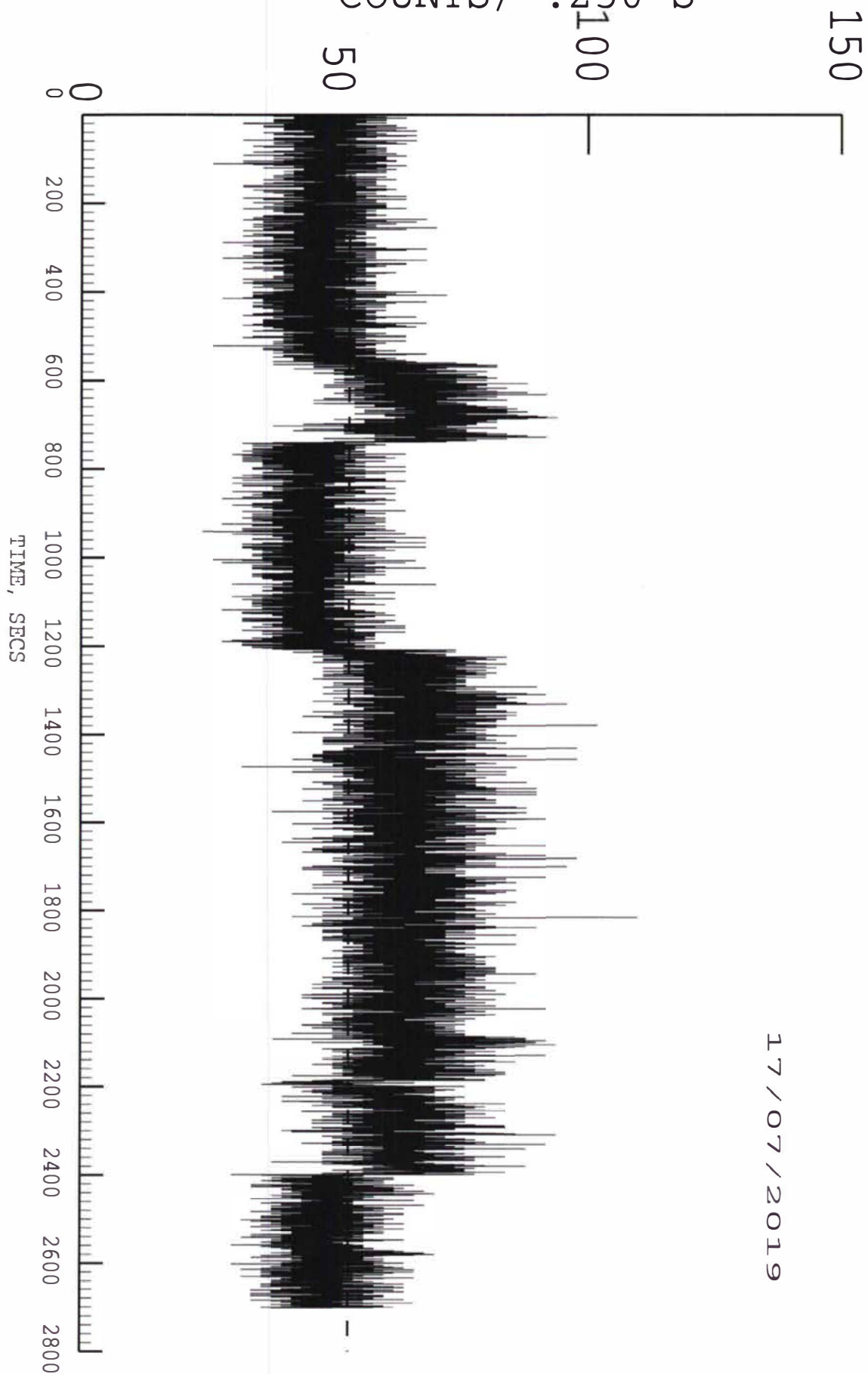


ODYSSEY 18/06/19 57485.812 15:58:05.812

50-3000 keV

COUNTS/ .250 S

Konus RI



17/07/2019

KONUS

19/06/2019

33.125

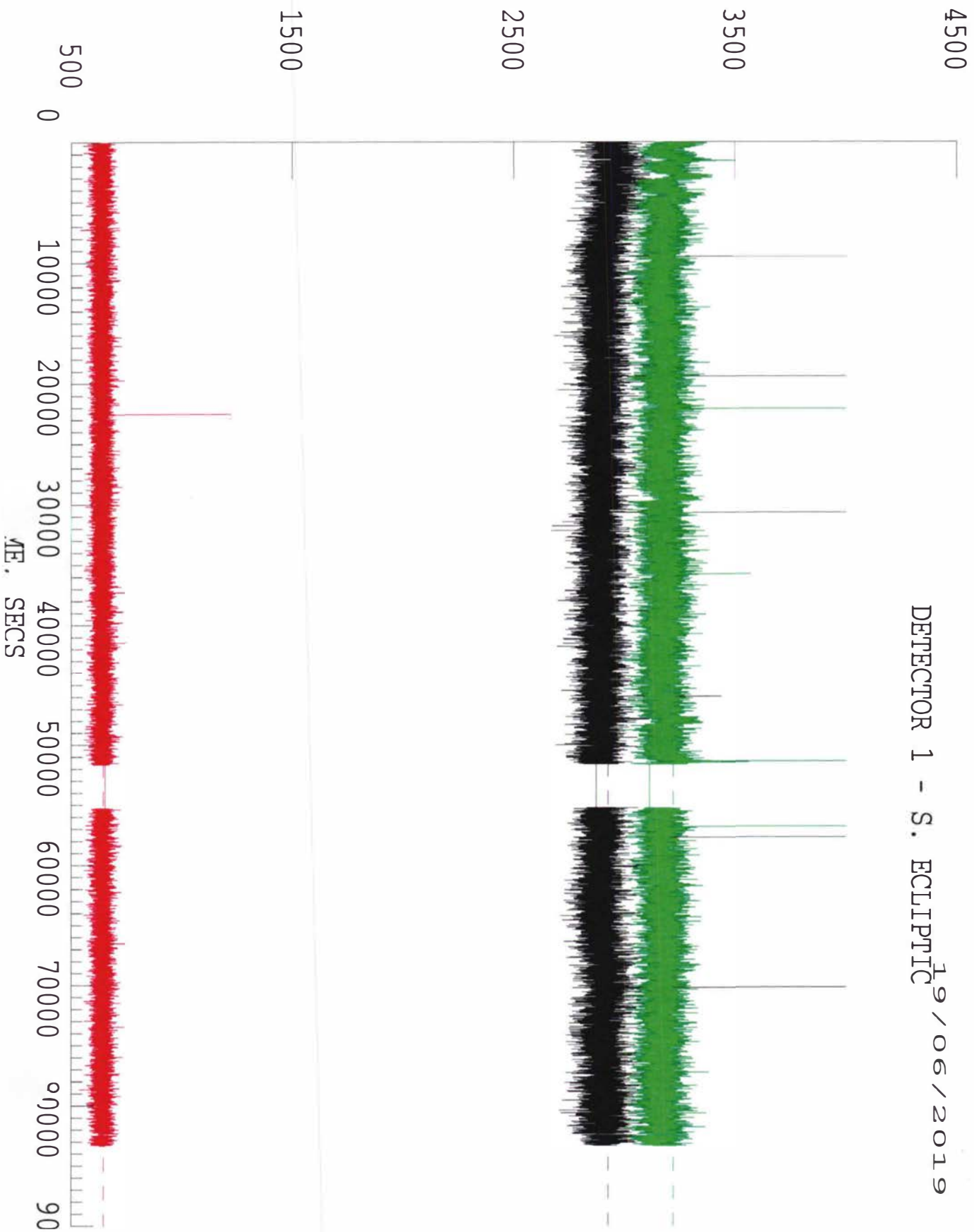
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

19/06/2019

33.125

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2400

1900

1400

900

0

10000

20000

30000

40000

50000

60000

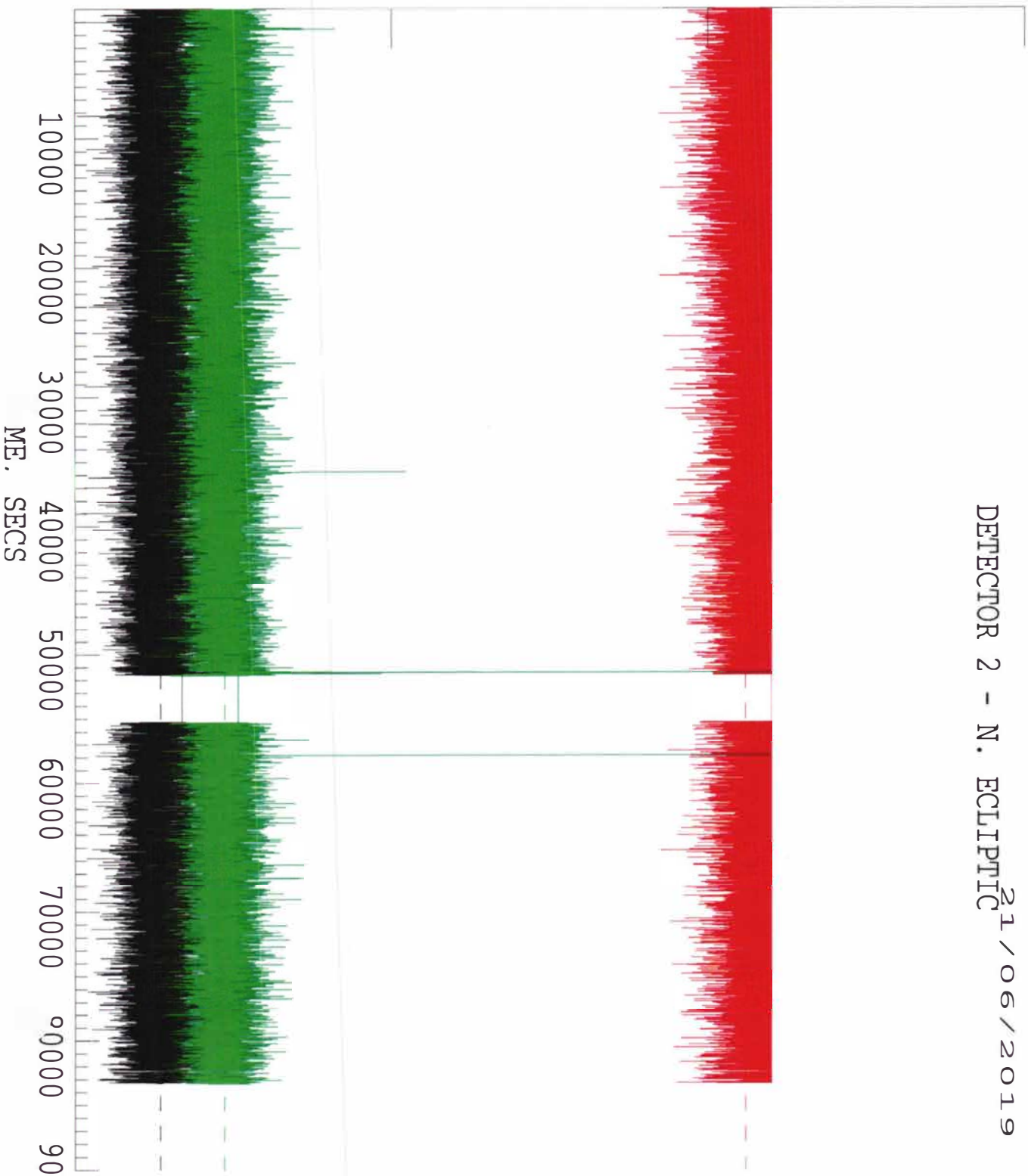
70000

80000

90

ME. SECS

DETECTOR 2 - N. ECLIP²¹/06/2019



A

FERMI

19/06/19

1561.777

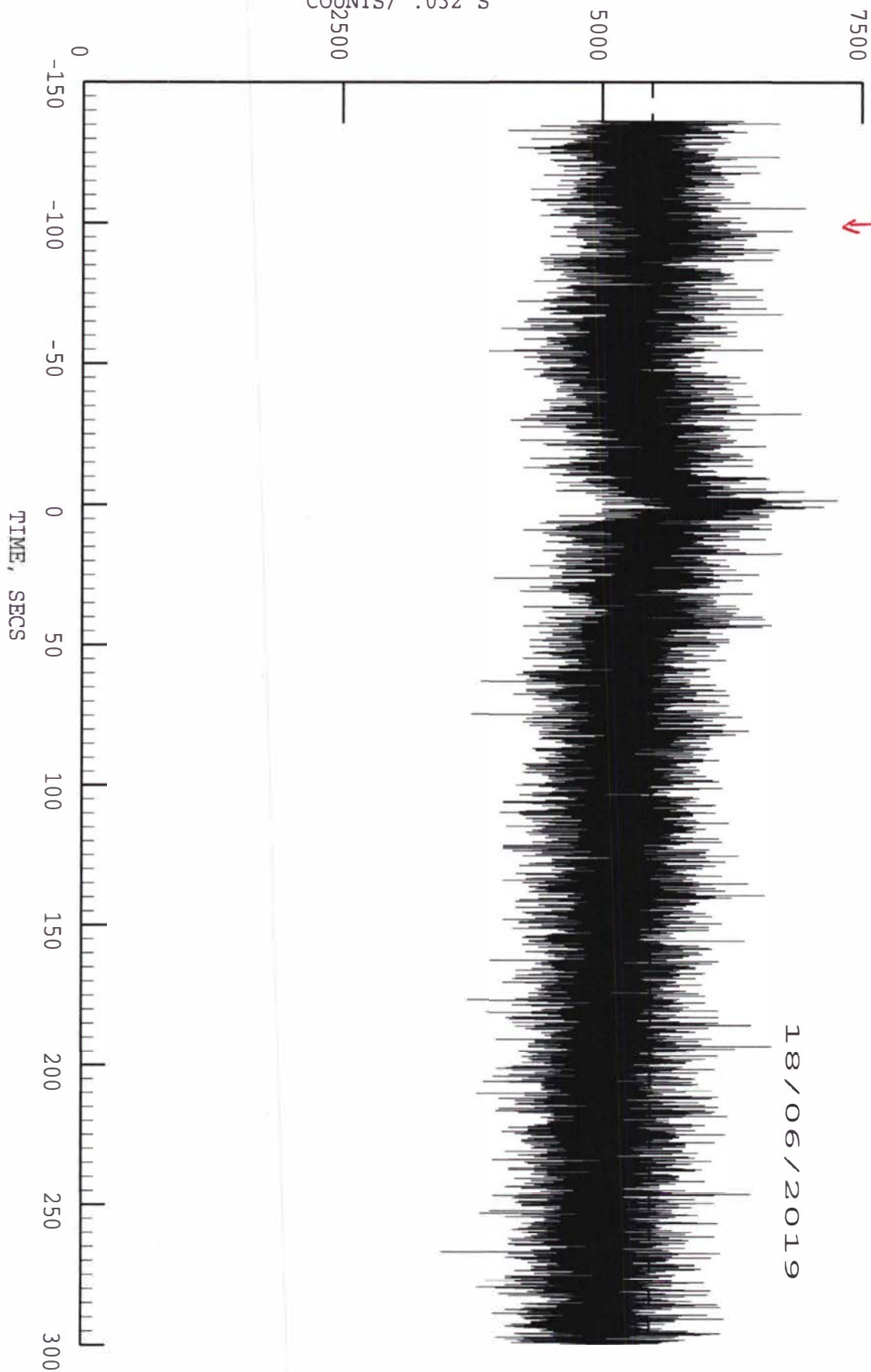
00:26:01.777

26- 293 keV

349.3 12.9 2

COUNTS/ .032 S

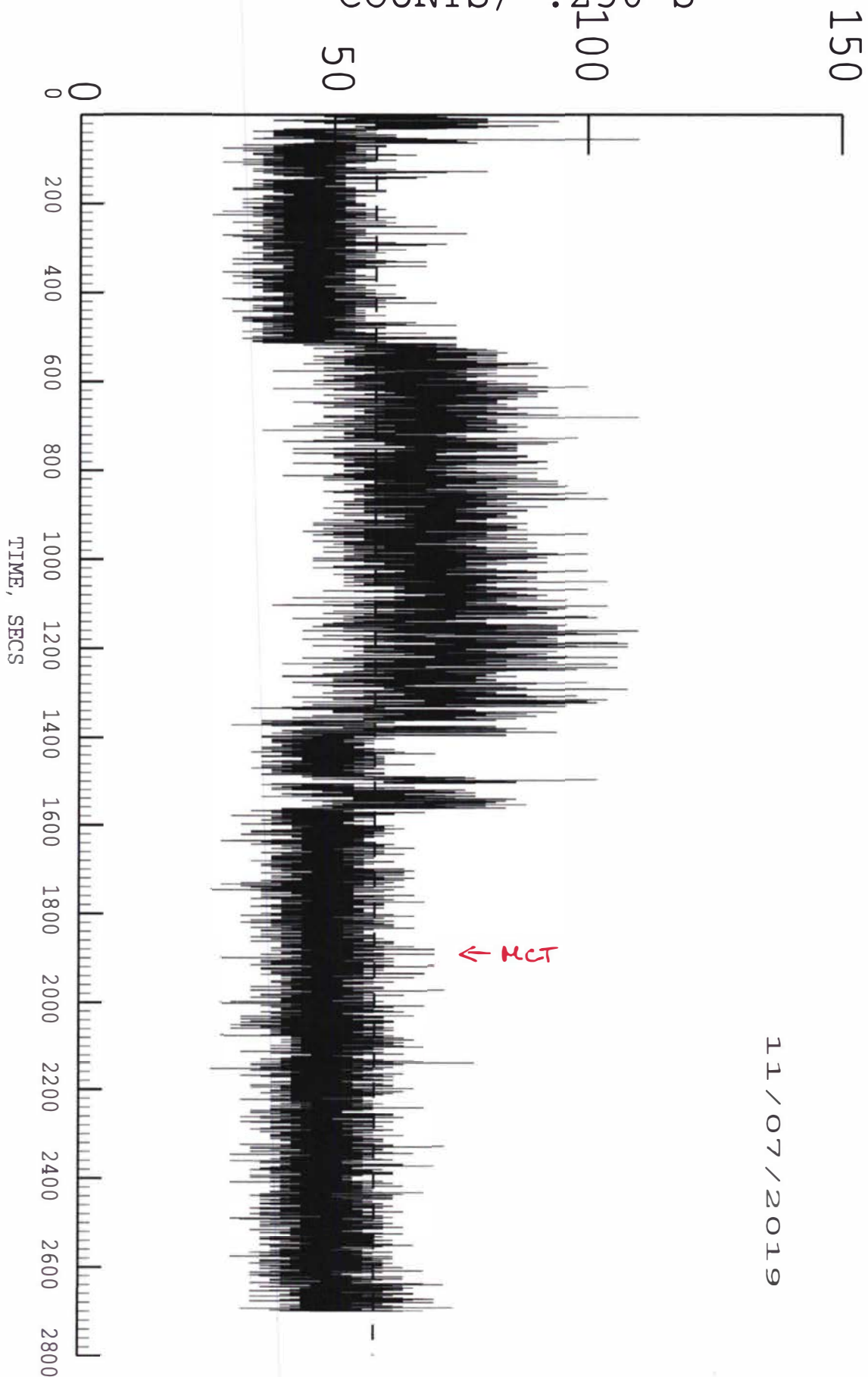
SPI N/O

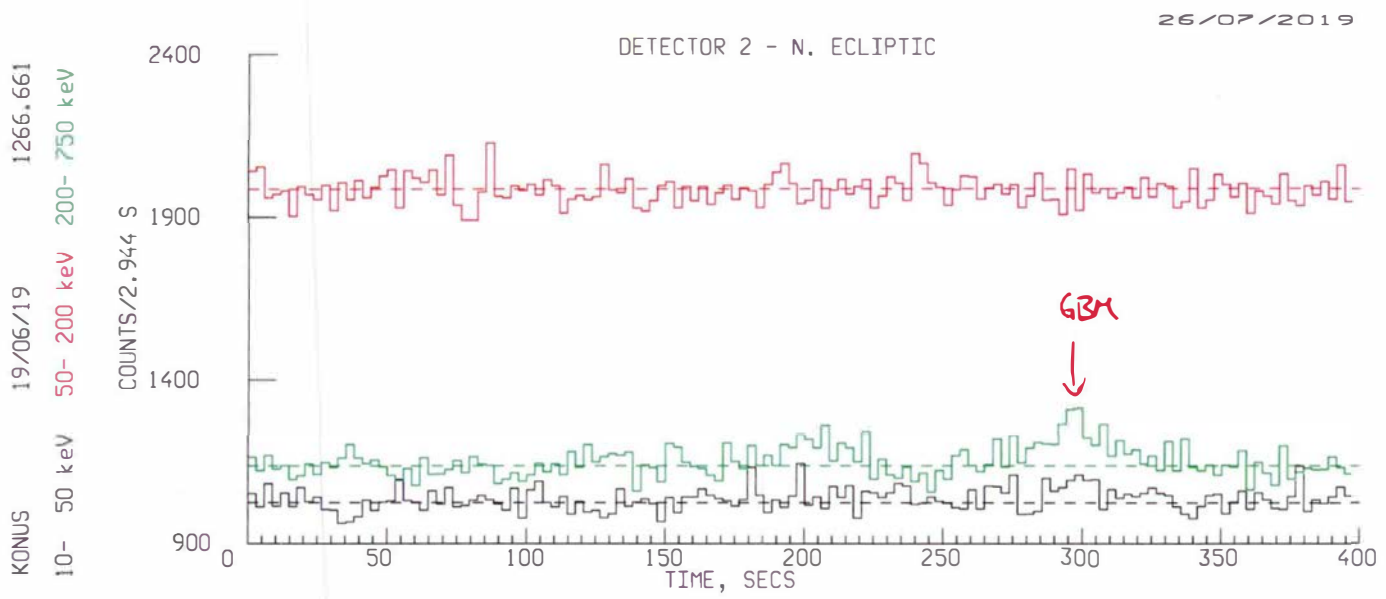
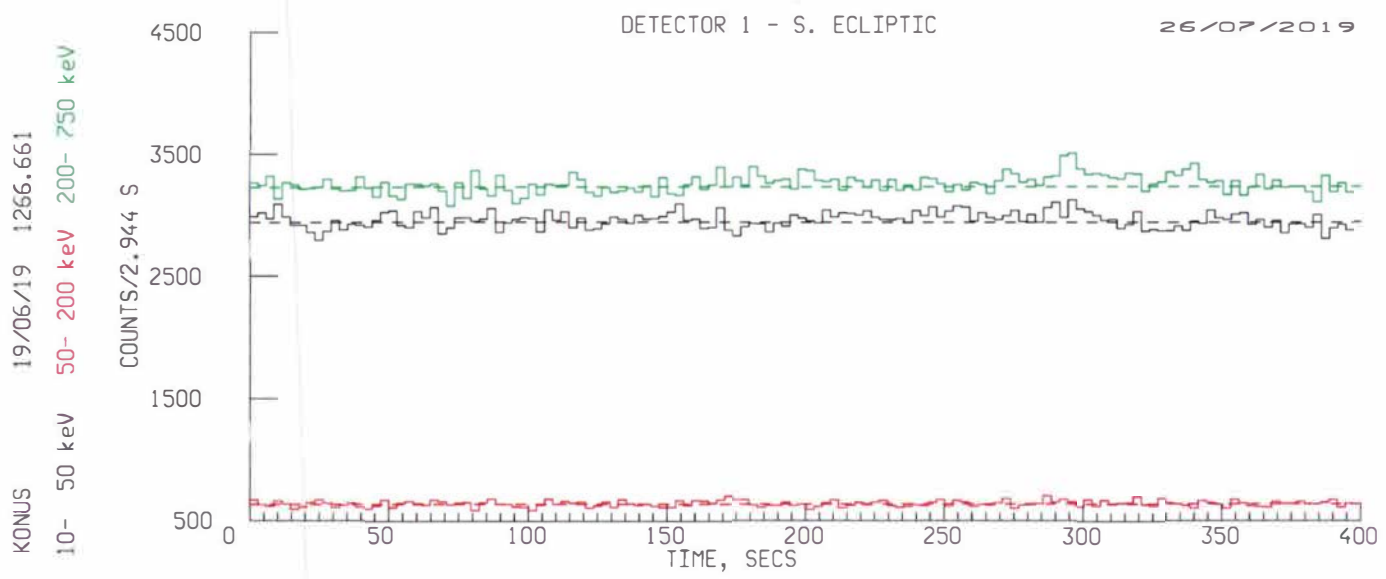


ODYSSEY 19/06/19 185.284 00:03:05.284^A

50-3000 keV

COUNTS/ .250 S





Subject: BAT lightcurve for trigger at 190619_0026

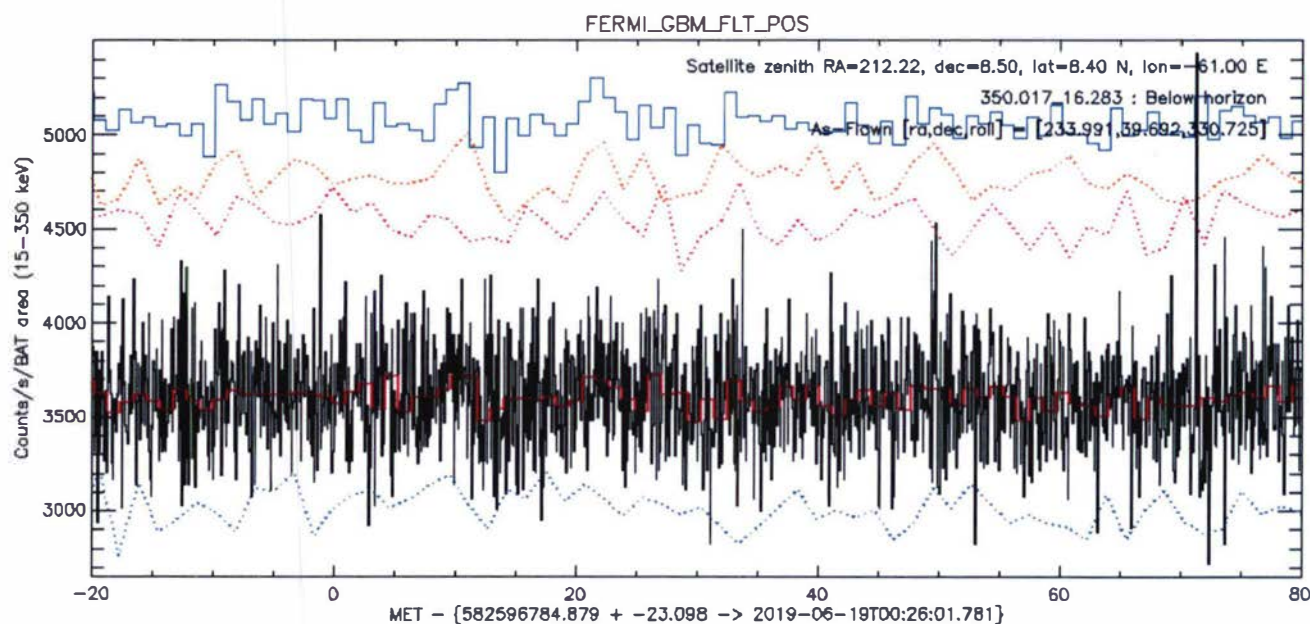
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/18/2019, 9:34 PM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190619_0026.png



```
% /Users/palmer/anaconda3/envs/dmqlab/bin/swinfo -o 582596784.879 -s 350.017_16.283
Swift Zenith(RA,dec):      212.22, 8.50
Swift Location(lon,lat,alt): -61.00 E, 8.40 N, 543 km
Time(MET + UTC -> UT):    582596784.879 + -23.098 -> 2019-06-19T00:26:01.781
YYMMDD_SOD:               190619_01561.781      DOY=170
Obs Sequence Number:      00011441014
Obs Target Name:          ZTF19aayejww
Obs Date and Times:       2019-06-19 00:09:37 - 00:29:36
Obs Pointing(ra,dec,roll): 233.991, 39.692, 330.73
350.017_16.283_imageloc (boresight_dist, angle): (98, -0)
350.017_16.283_exposure (cm² cos adjusted): 0
350.017_16.283_altitude: -19 (down)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

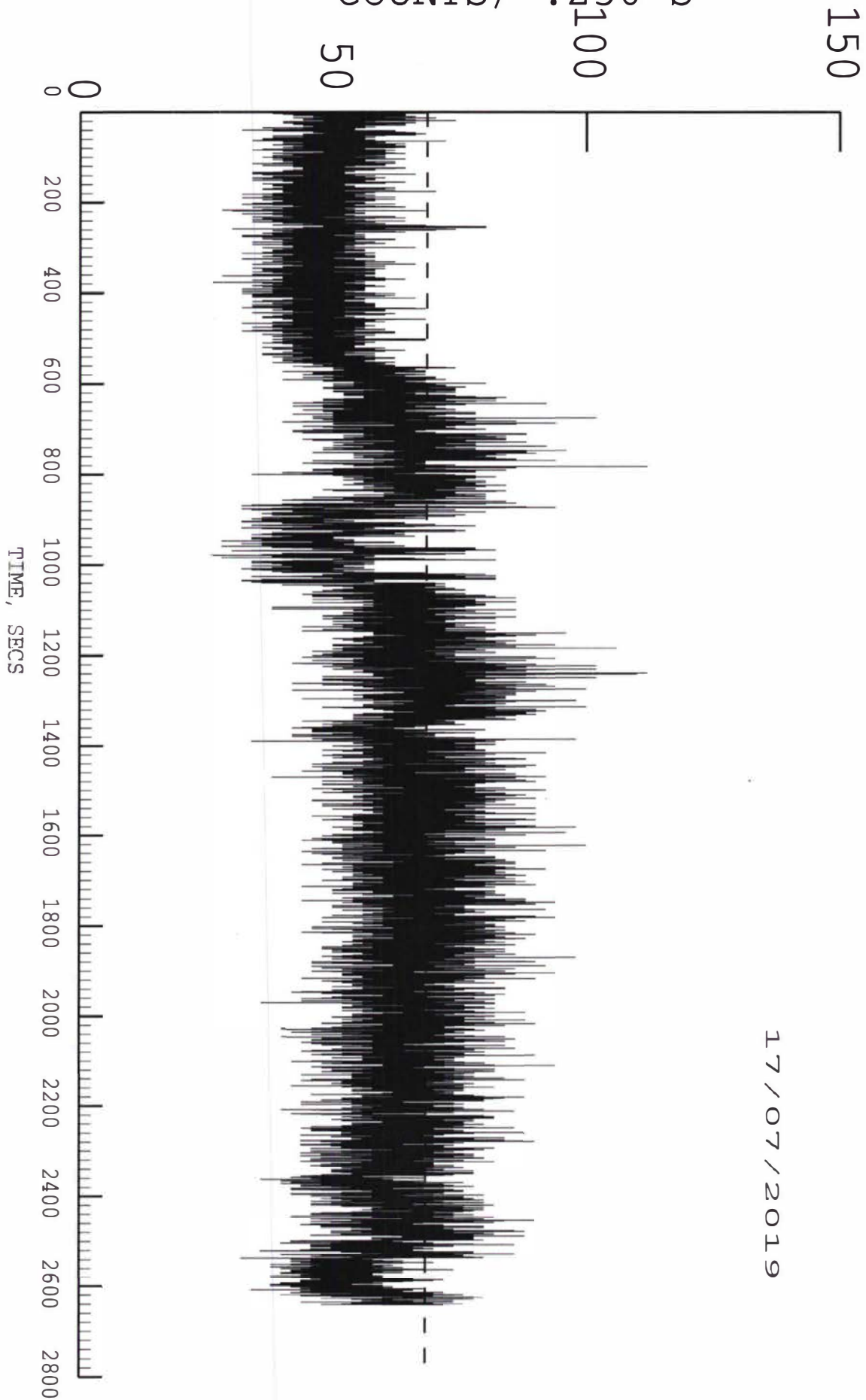
/tmp/swift/190619_0026_bat64ms_ipn	87.0 KB
/tmp/swift/190619_0026.png	19.2 KB

ODYSSEY 19/06/19 20764.915 05:46:04.915

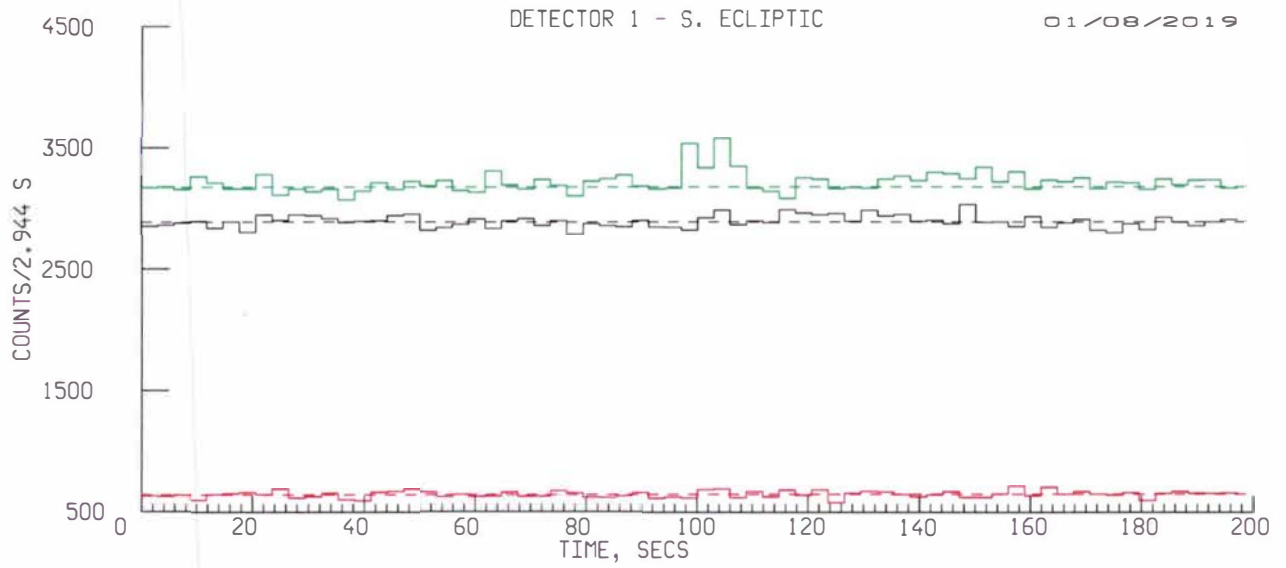
50-3000 keV

COUNTS/ .250 S

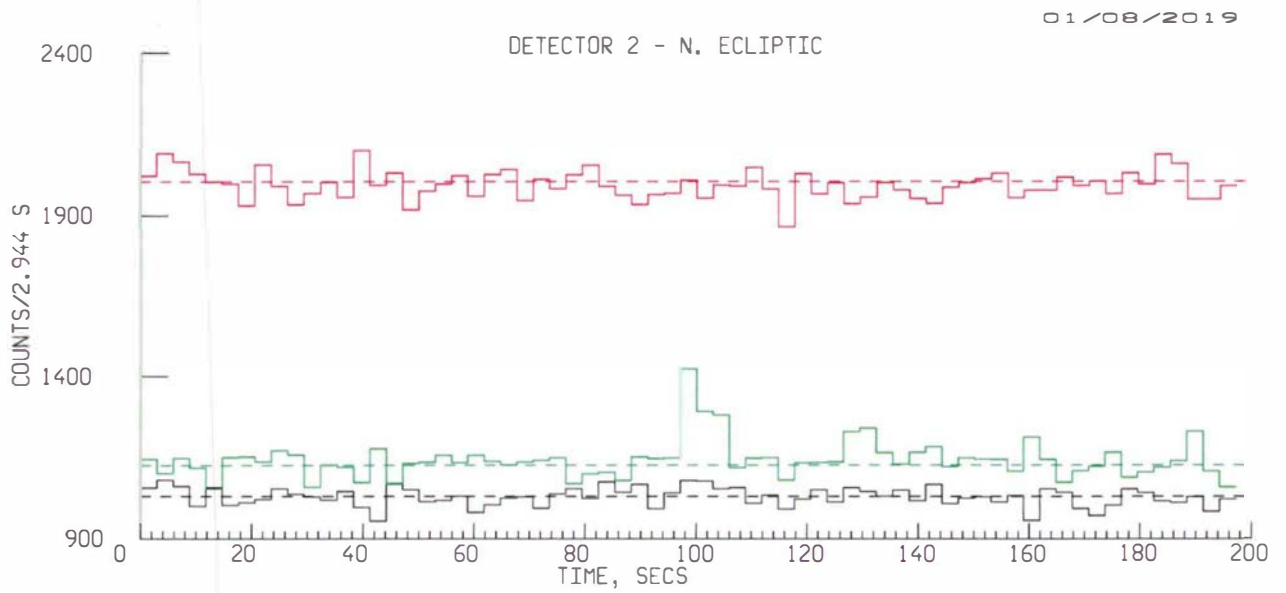
Konus RT



KONUS 19/06/19 35679.074
10- 50 keV 50- 200 keV 200- 750 keV



KONUS 19/06/19 35679.074
10- 50 keV 50- 200 keV 200- 750 keV

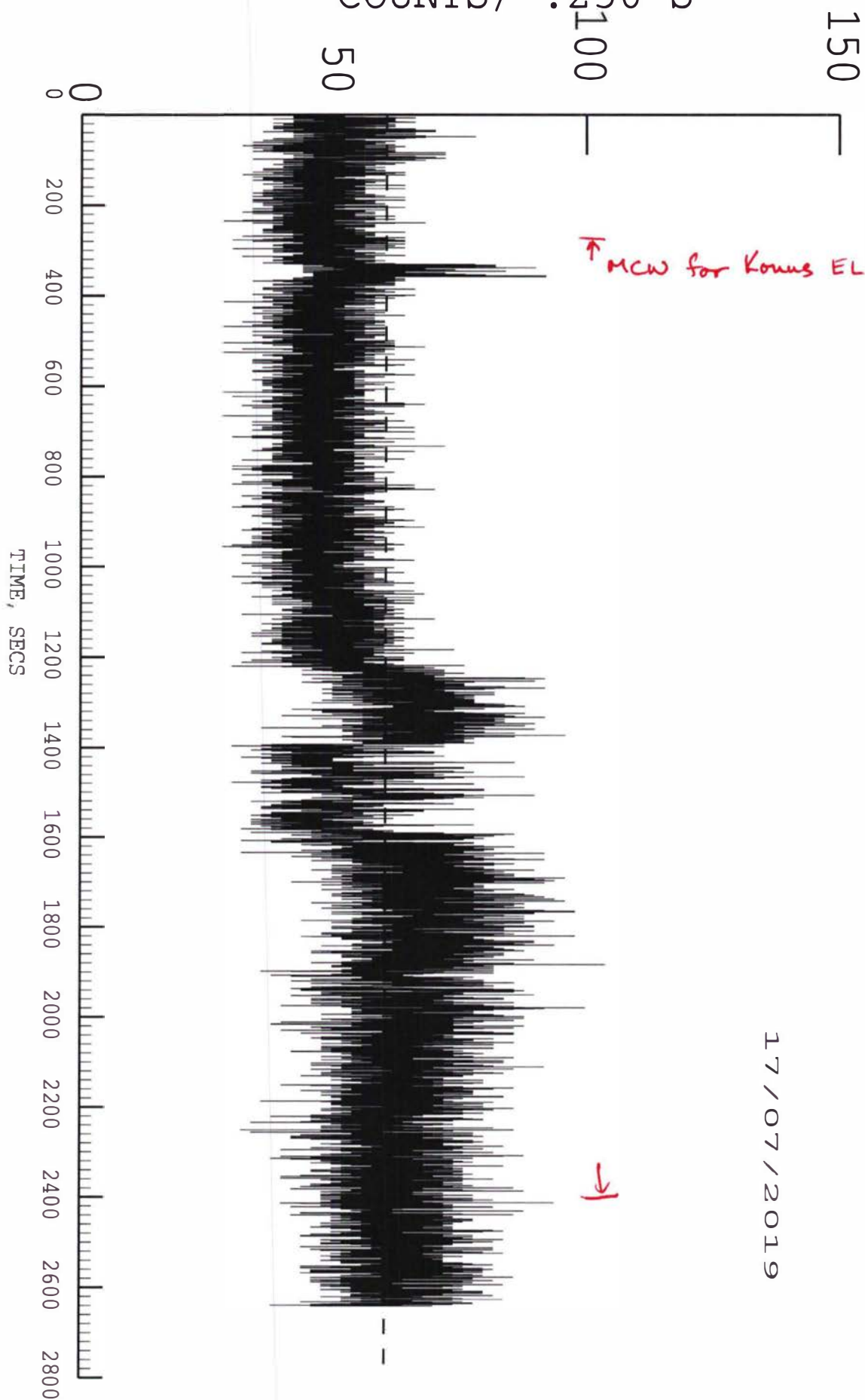


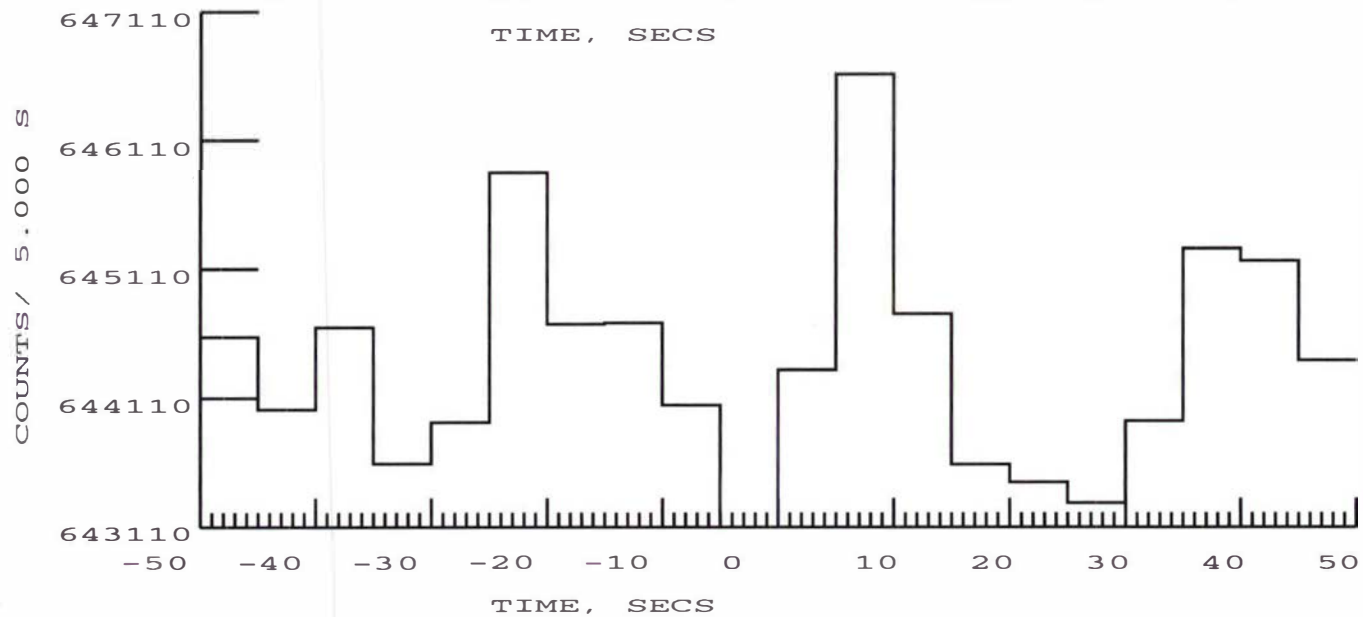
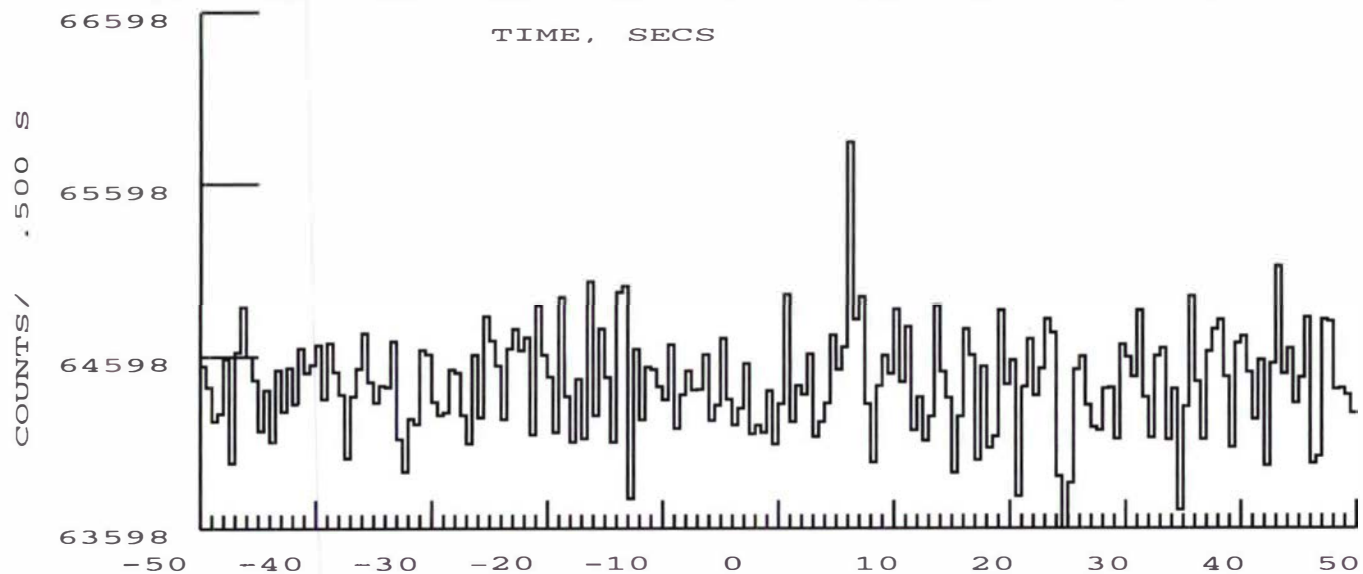
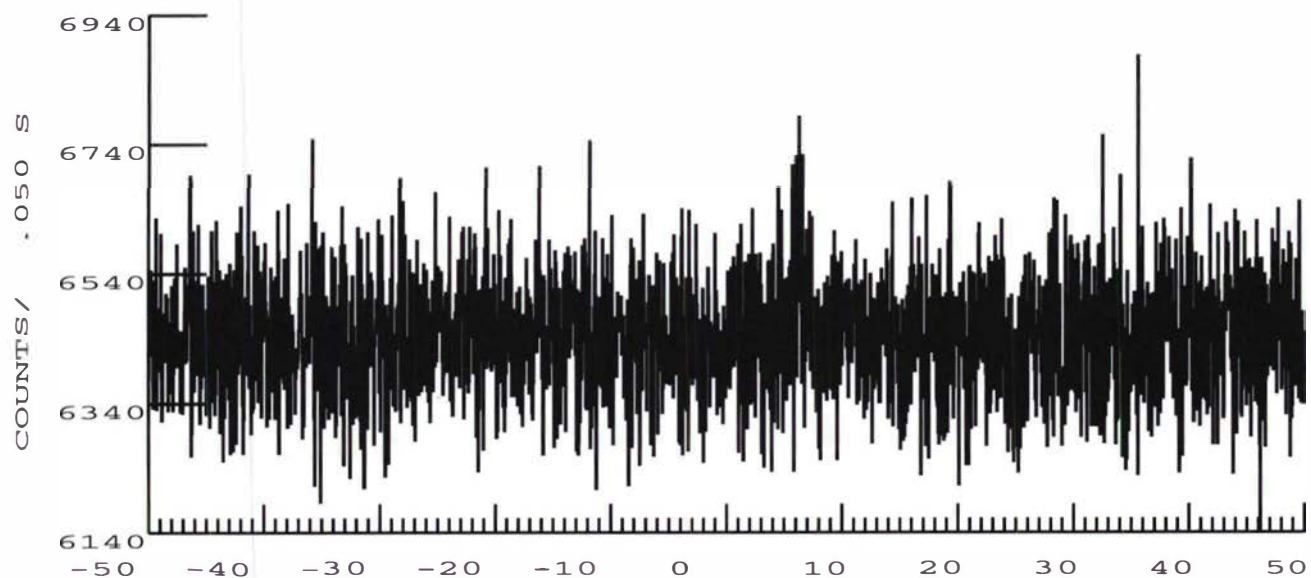
ODYSSEY 19/06/19 34444.678 09:34:04.678

50-3000 keV

Konus RT

COUNTS/ .250 S







Subject: IceCube-190619A - IceCube observation of a high-energy neutrino candidate event
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/19/2019, 8:37 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24854
SUBJECT: IceCube-190619A - IceCube observation of a high-energy neutrino candidate event
DATE: 19/06/19 15:37:27 GMT
FROM: Erik Blaufuss at U. Maryland/IceCube <blaufuss@umd.edu>

The IceCube Collaboration (<http://icecube.wisc.edu/>) reports:

On 19/06/19 at 13:14:18.04 UT IceCube detected a track-like event with a high probability of being of astrophysical origin. The event was selected by the ICECUBE_Astrotrack_Gold alert stream. The average astrophysical neutrino purity for Gold alerts is 50%. This alert has an estimated false alarm rate of 0.98 events per year due to atmospheric backgrounds. The IceCube detector was in a normal operating state at the time of detection.

After the initial automated alert (https://gcn.gsfc.nasa.gov/notices_amon_g_b/132707_54984442.amon), more sophisticated reconstruction algorithms have been applied offline, with the direction refined to:

Date: 19/06/19
Time: 13:14:18.04 UT
RA: 343.26 (+ 4.08 - 2.63 deg 90% PSF containment) J2000
Dec: 10.73 (+ 1.51 - 2.61 deg 90% PSF containment) J2000

We encourage follow-up by ground and space-based instruments to help identify a possible astrophysical source for the candidate neutrino.

There are no Fermi 4FGL or 3FHL catalog sources in the 90% uncertainty region. The nearest gamma-ray source in either catalog is 4FGL J2252.6+1245 at RA: 343.17 deg, Dec: 12.75 deg (2.73 deg away from the best-fit event position).

The IceCube Neutrino Observatory is a cubic-kilometer neutrino detector operating at the geographic South Pole, Antarctica. The IceCube realtime alert point of contact can be reached at roc@icecube.wisc.edu

B

FERMI

19/06/19

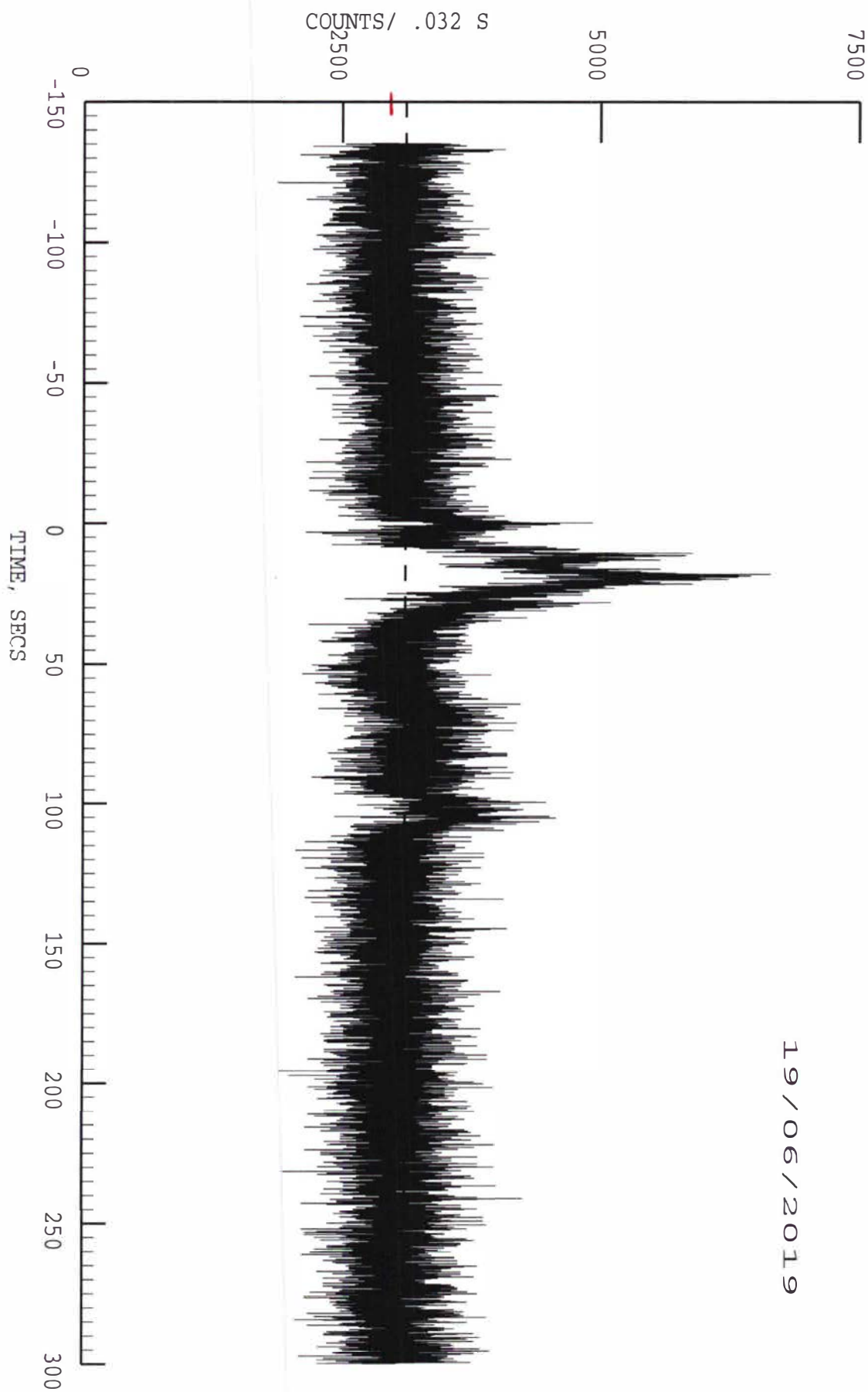
51385.891

14:16:25.891

26- 293 keV

291.1 20.2 1.8

EL 41.7



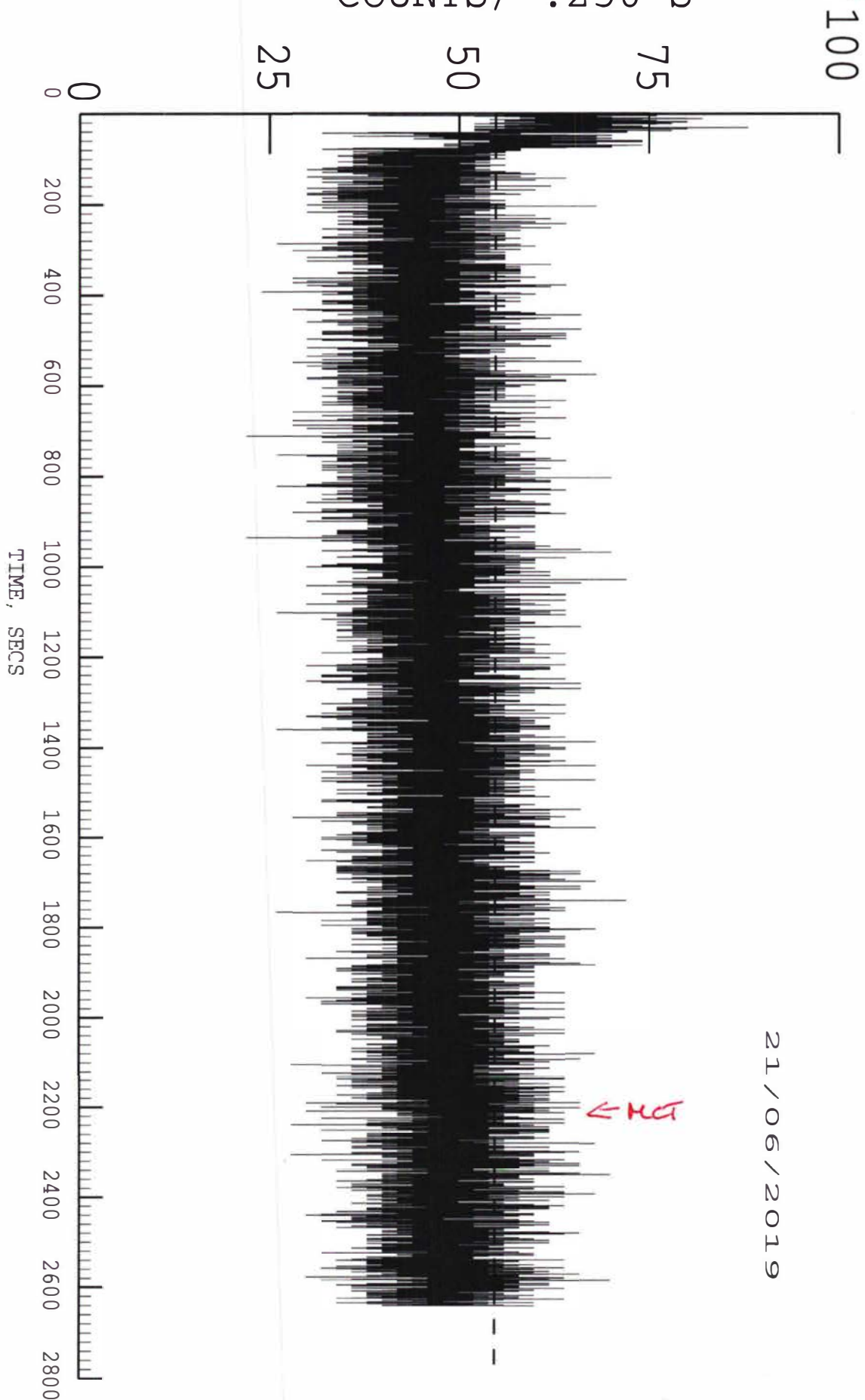
19/06/2019

ODYSSEY 19/06/19 50044.397 13:54:04.397^B

50-3000 keV

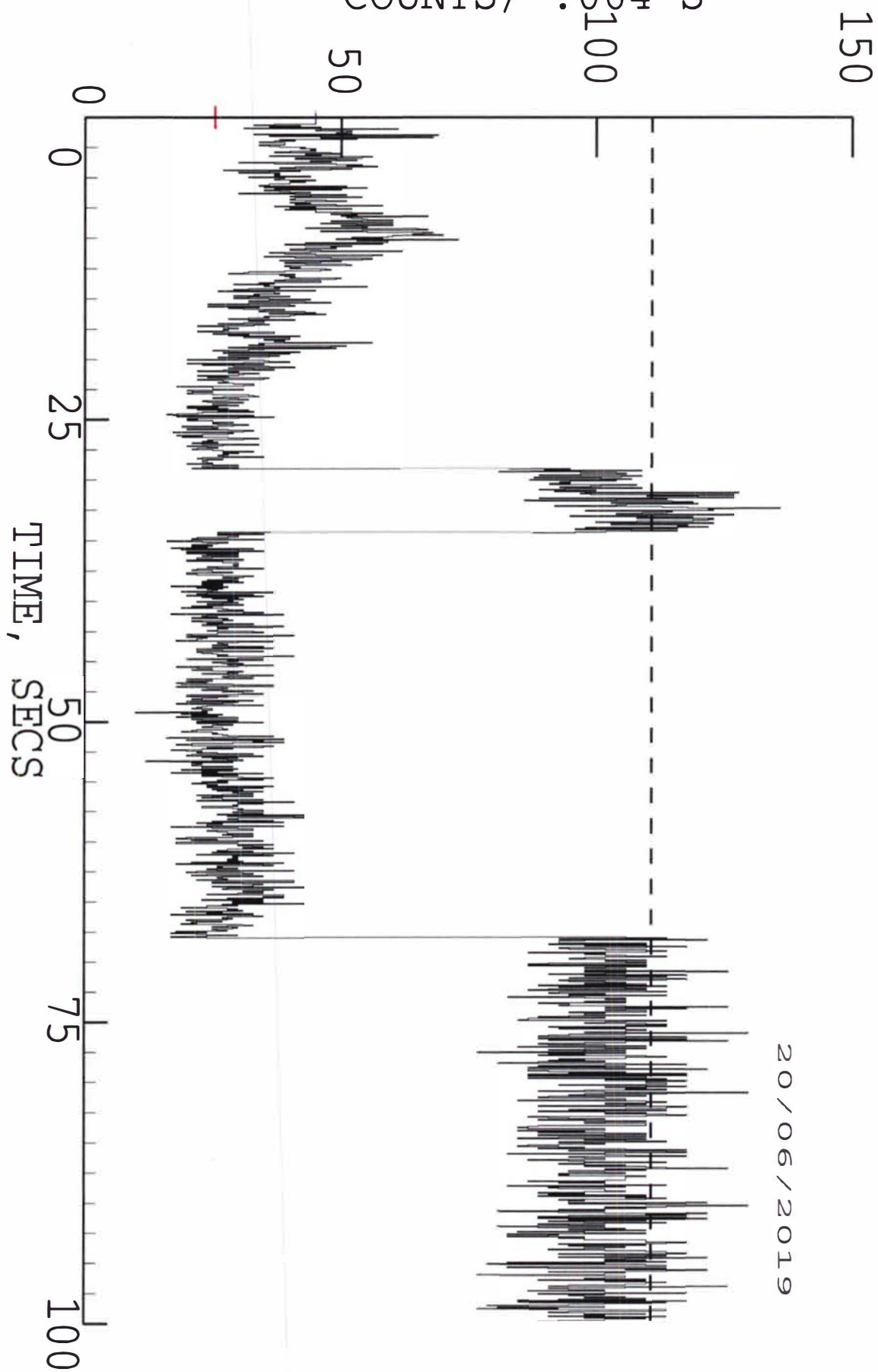
COUNTS/ .250 S

Prob. occulted



KONUS 19/06/19 51400.400 14:16:40.400^B
50- 200 keV

COUNTS/ .064 S



B

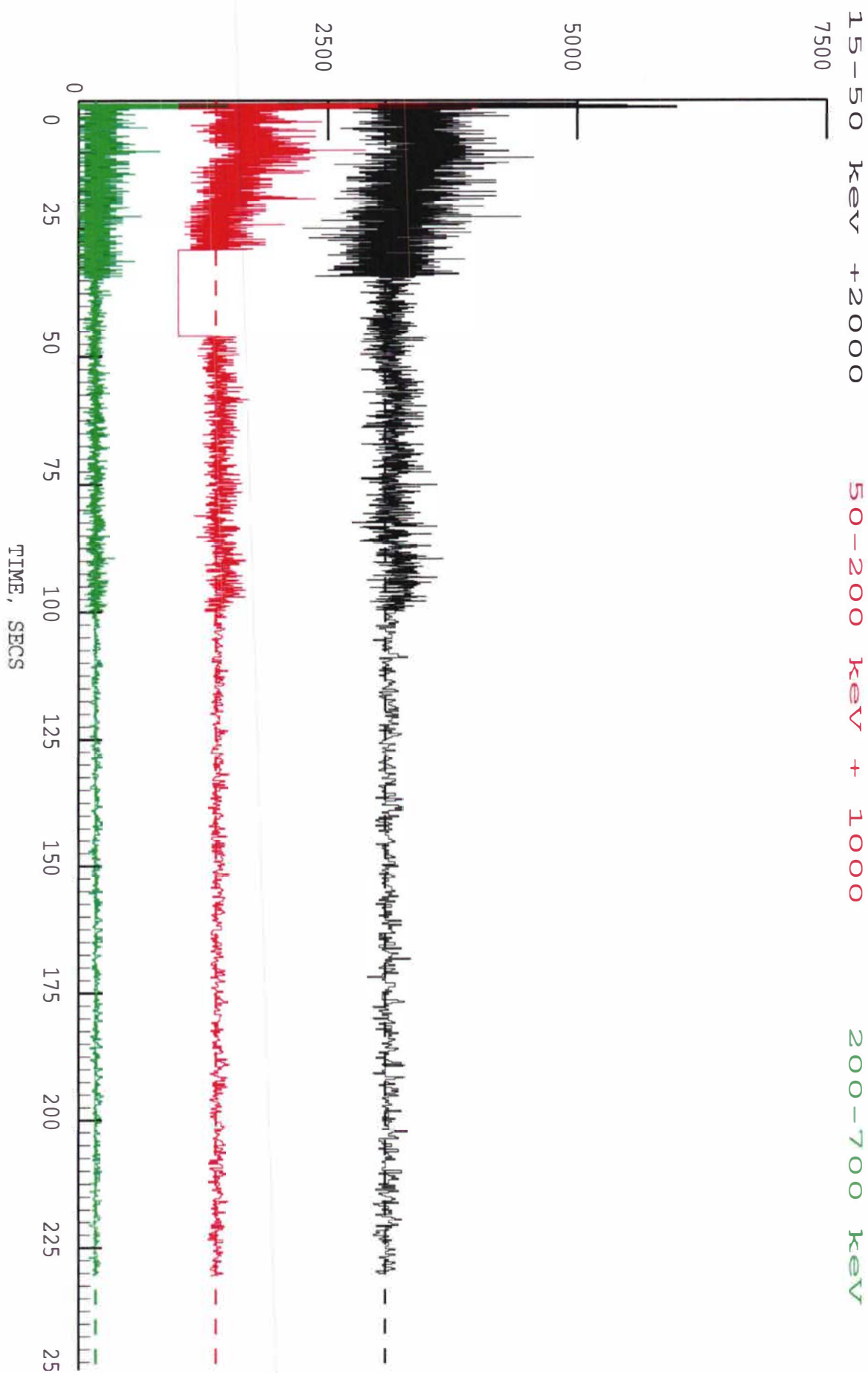
KONUS

19/06/19

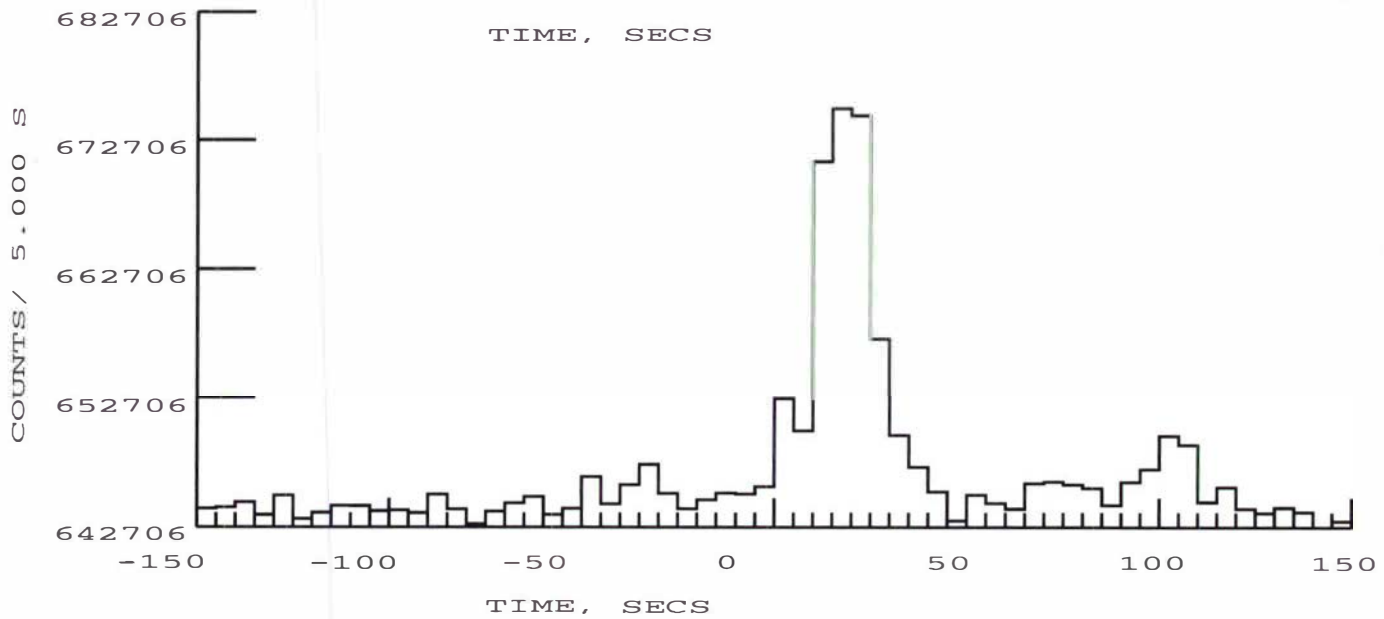
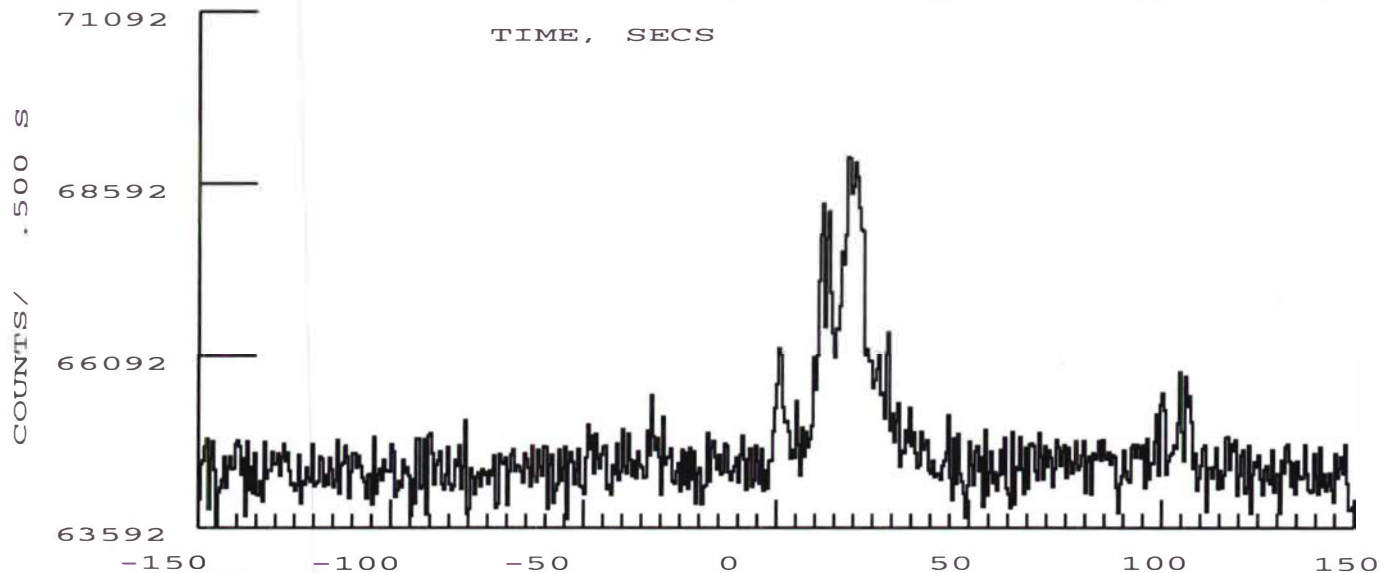
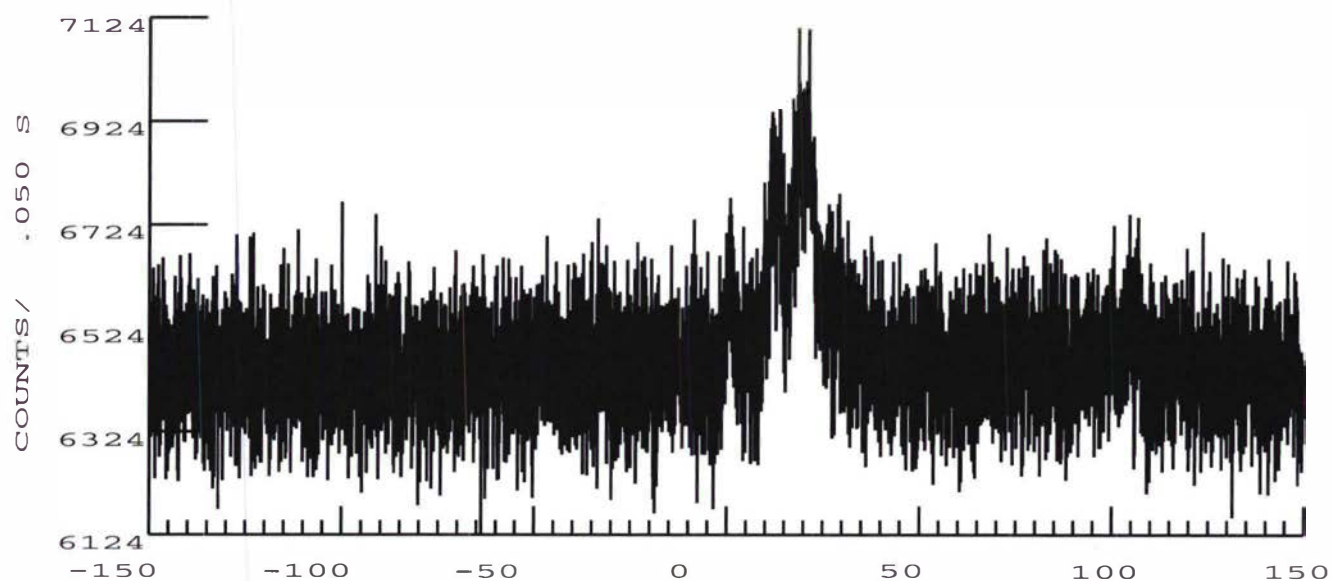
51400.000

14:16:40.000

COUNTS/SEC



20/06/2019



Subject: BAT lightcurve for trigger at 190619_1416

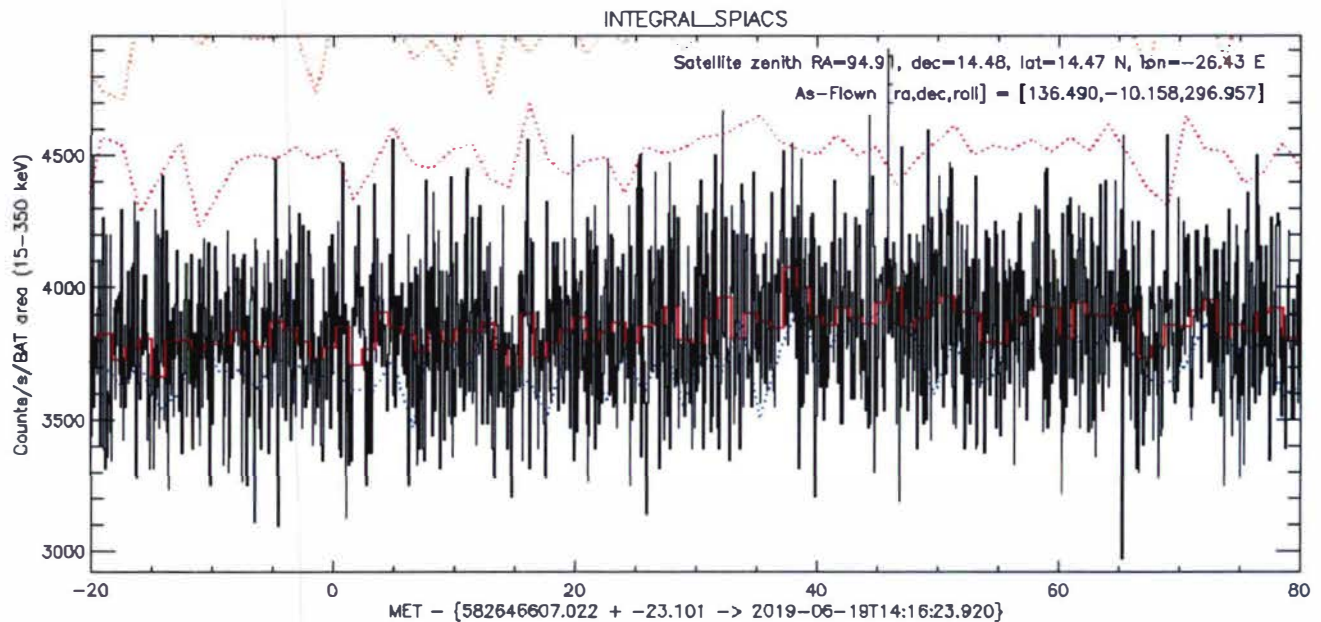
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/20/2019, 8:43 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190619_1416.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2019-06-19T14:16:23.920
Swift Zenith(RA,dec): 94.91, 14.48
Swift Location(lon,lat,alt): -26.43 E, 14.47 N, 550 km
Time(MET + UTC -> UT): 582646607.022 + -23.101 -> 2019-06-19T14:16:23.920
YYMMDD_SOD: 190619_51383.920 DOY=170
Obs Sequence Number: 03109875005
Obs Target Name: 4FGL J0906.1-1011
Obs Date and Times: 2019-06-19 14:14:38 - 14:30:34
Obs Pointing(ra,dec,roll): 136.490, -10.158, 296.96
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190619_1416_bat64ms_ipn

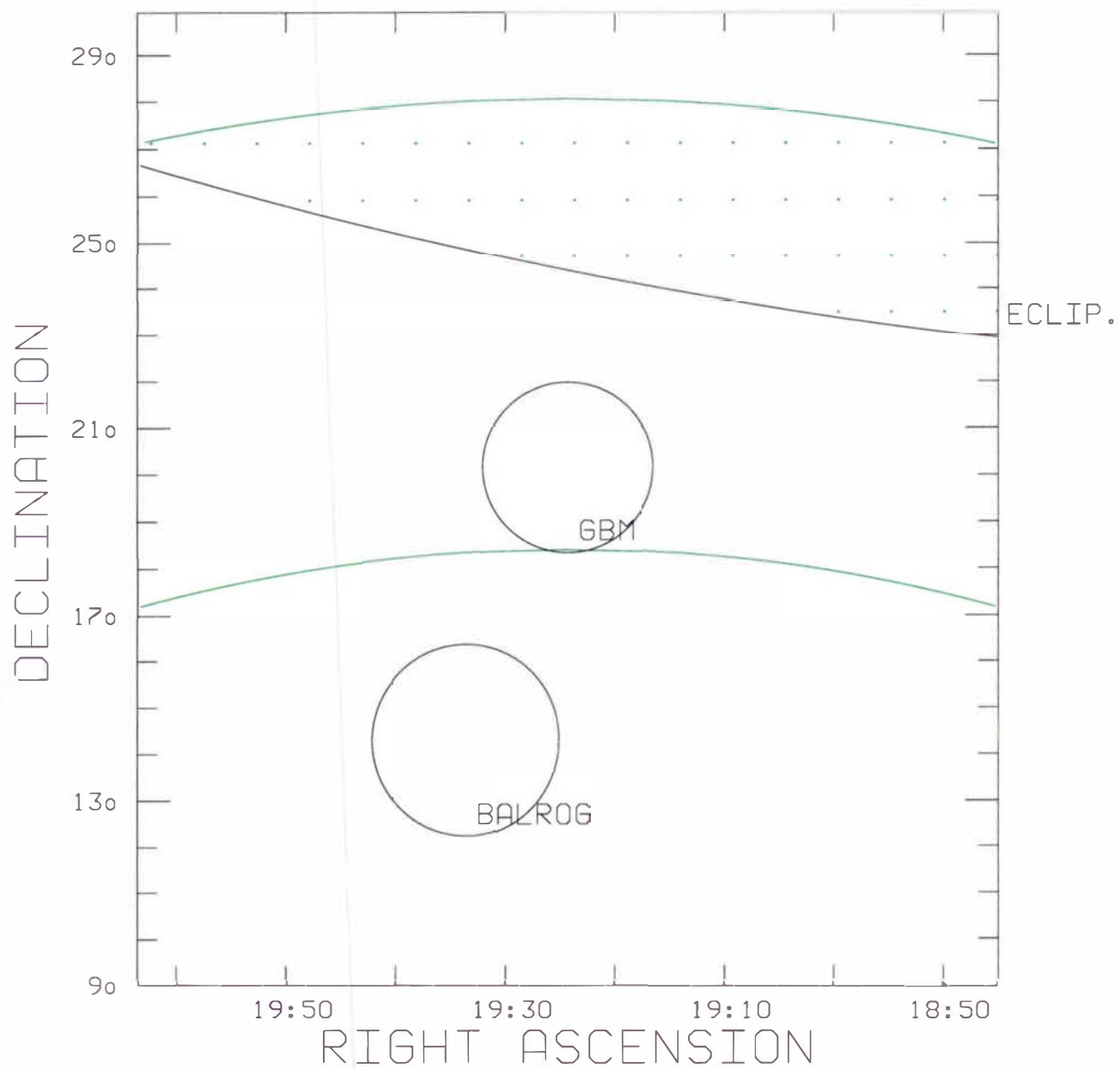
87.0 KB

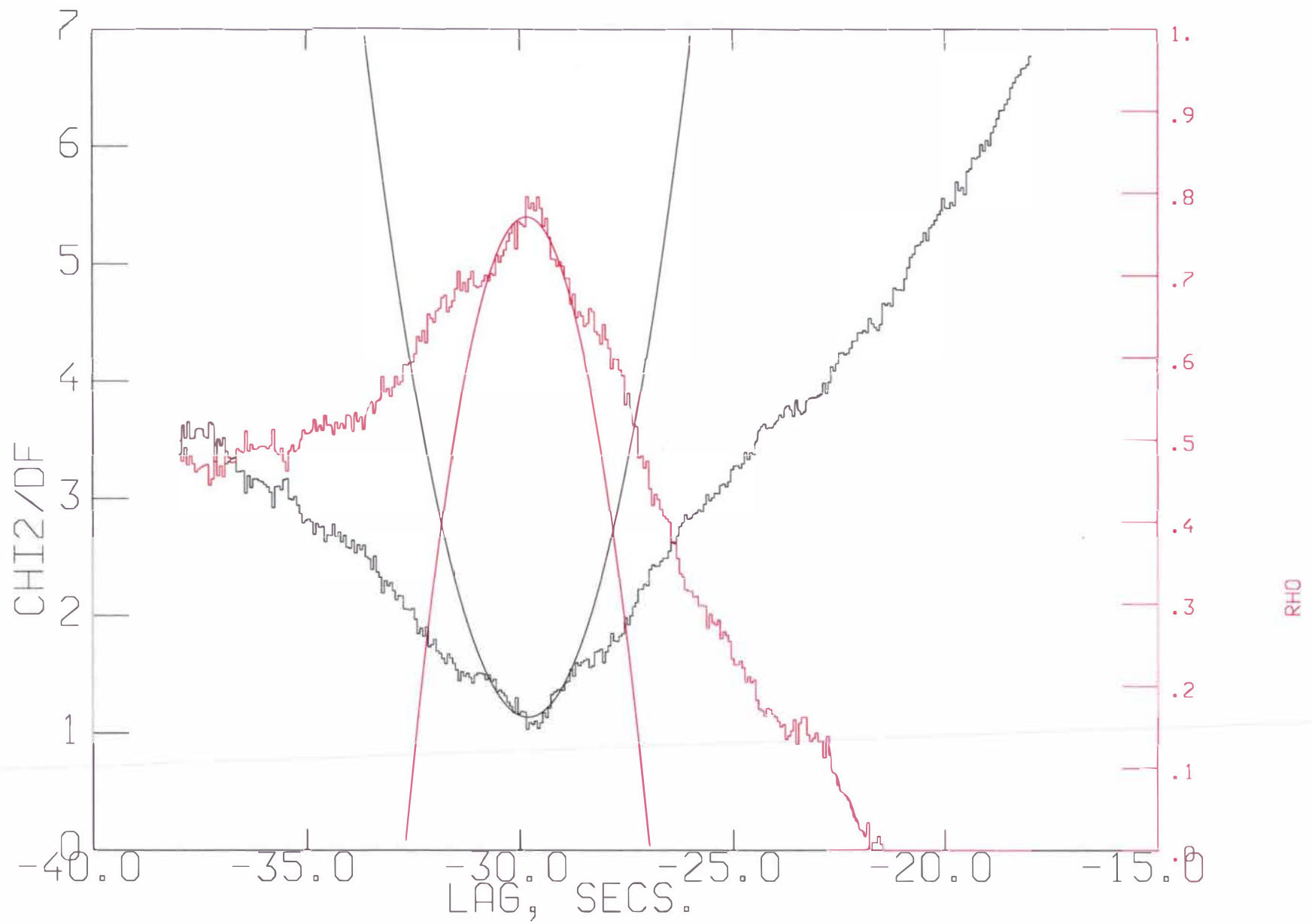
/tmp/swift/190619_1416.png

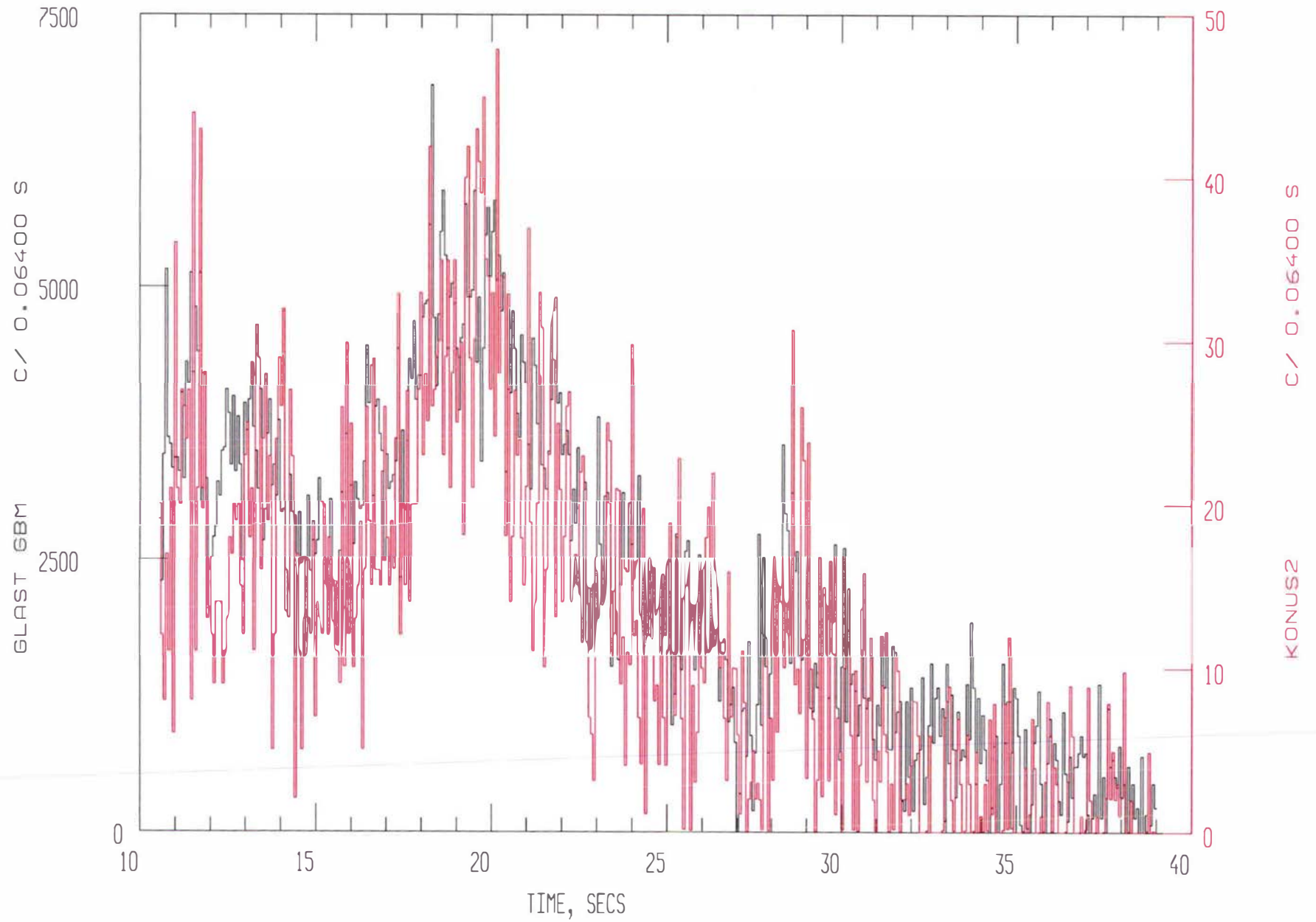
18.3 KB

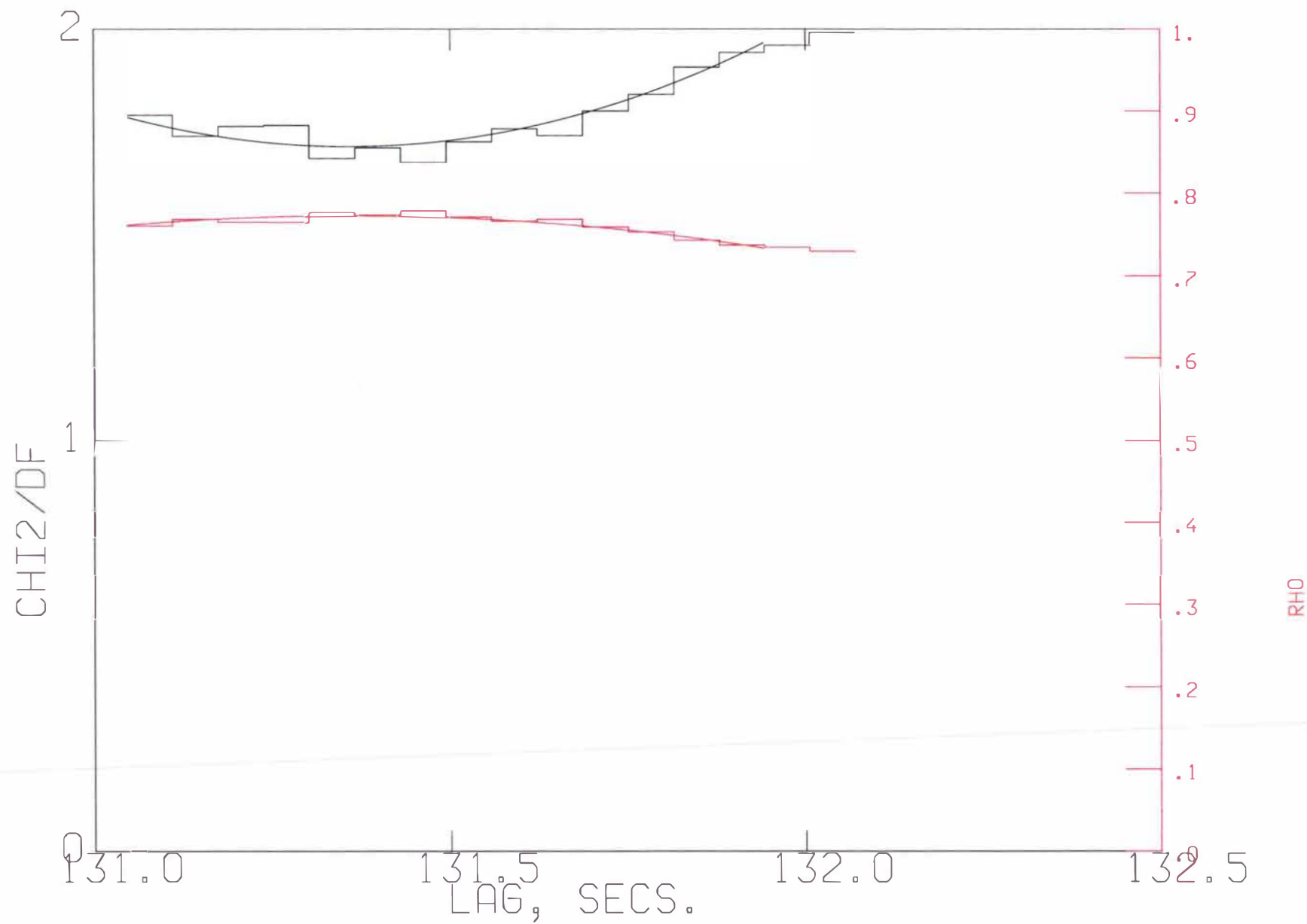
GRB190619 ~51385 S

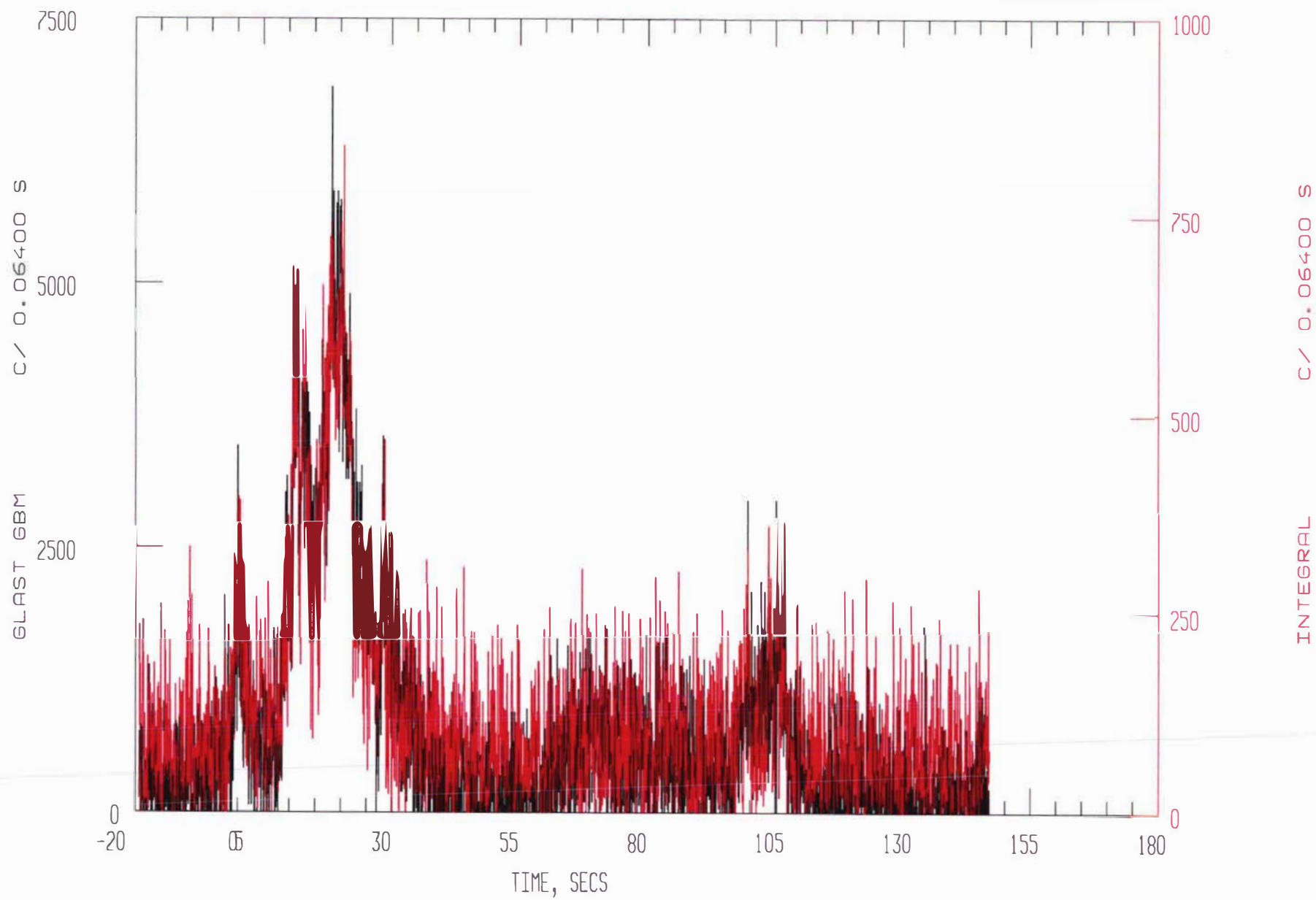
05/05/2020











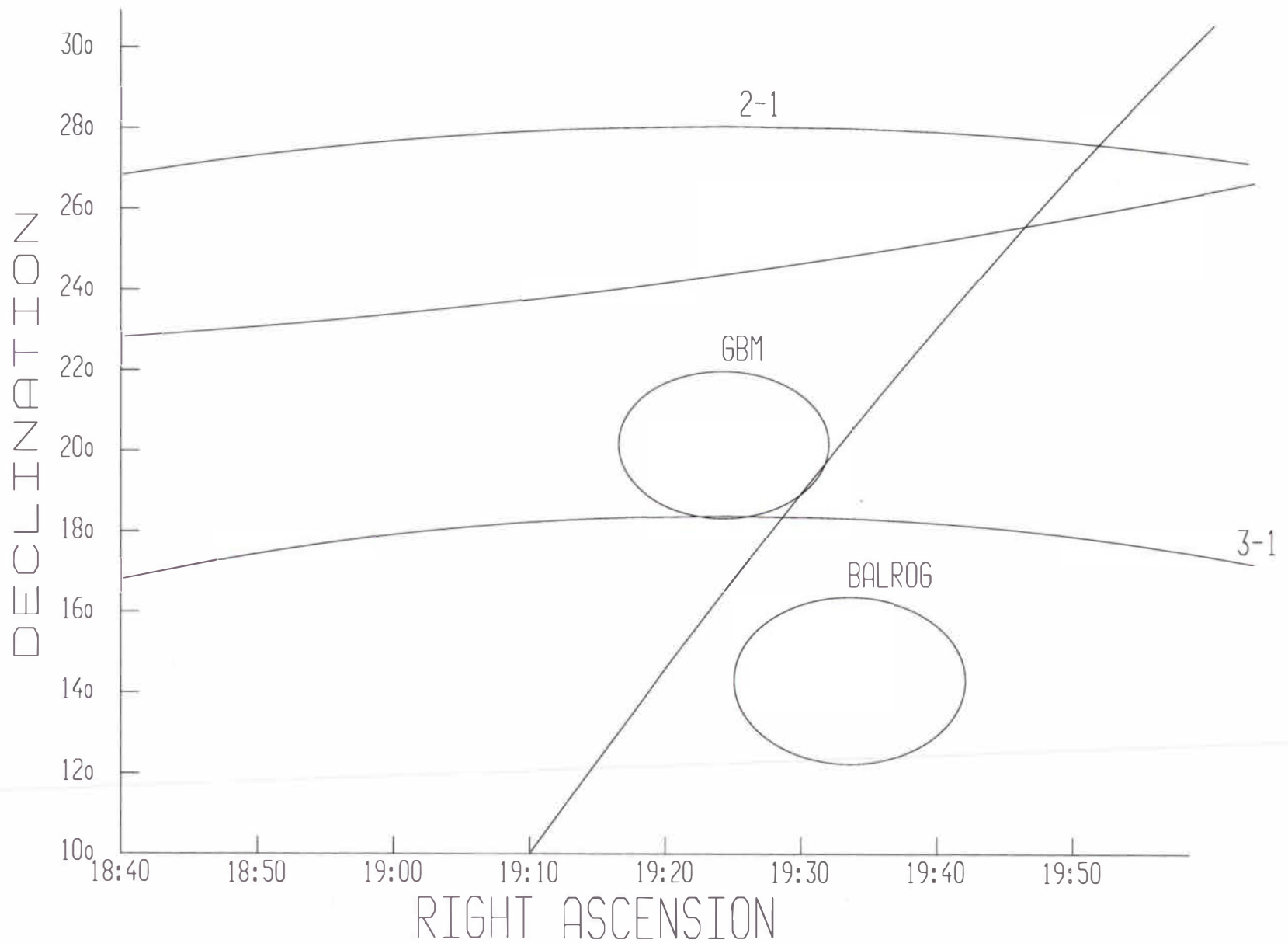
EVENT OF JUN 19, 2019 14:16

05/05/2020

1 FERM1
2 KONUS2
3 INTEGRAL

S=SUN
E=ECLIPTIC
G=GALACTIC EQUATOR

Z-Z = CORRELATION BETWEEN SATELLITES Z AND Z
EARTH-Z = EARTH AS SEEN FROM SATELLITE Z



Subject: GRB 190619B: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/25/2019, 11:23 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24883
SUBJECT: GRB 190619B: AstroSat CZTI detection
DATE: 19/06/26 06:22:17 GMT
FROM: Prachee Ghumatkar at IUCAA/AstroSat <prachee@iucaa.in>

P. Ghumatkar, V. Sharma, D. Bhattacharya and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190619B, which was also detected by Fermi GBM (GCN #24851), BALROG (Burgess J. et al., GCN #24852) and Global MASTER-Net (Lipunov V. et al., GCN #24853).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple pulses of emission with strongest peak at 14:16:44.5 UT. The measured peak count rate associated with the burst is 251 cts/s above the background in the combined data of four quadrants, with a total of 3318 cts. The local mean background count rate was 620 cts/s. Using cumulative rates, we measure a T90 of 38.6 s.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

v01

18.909

20/06/2019

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4070

3070

2070

1070

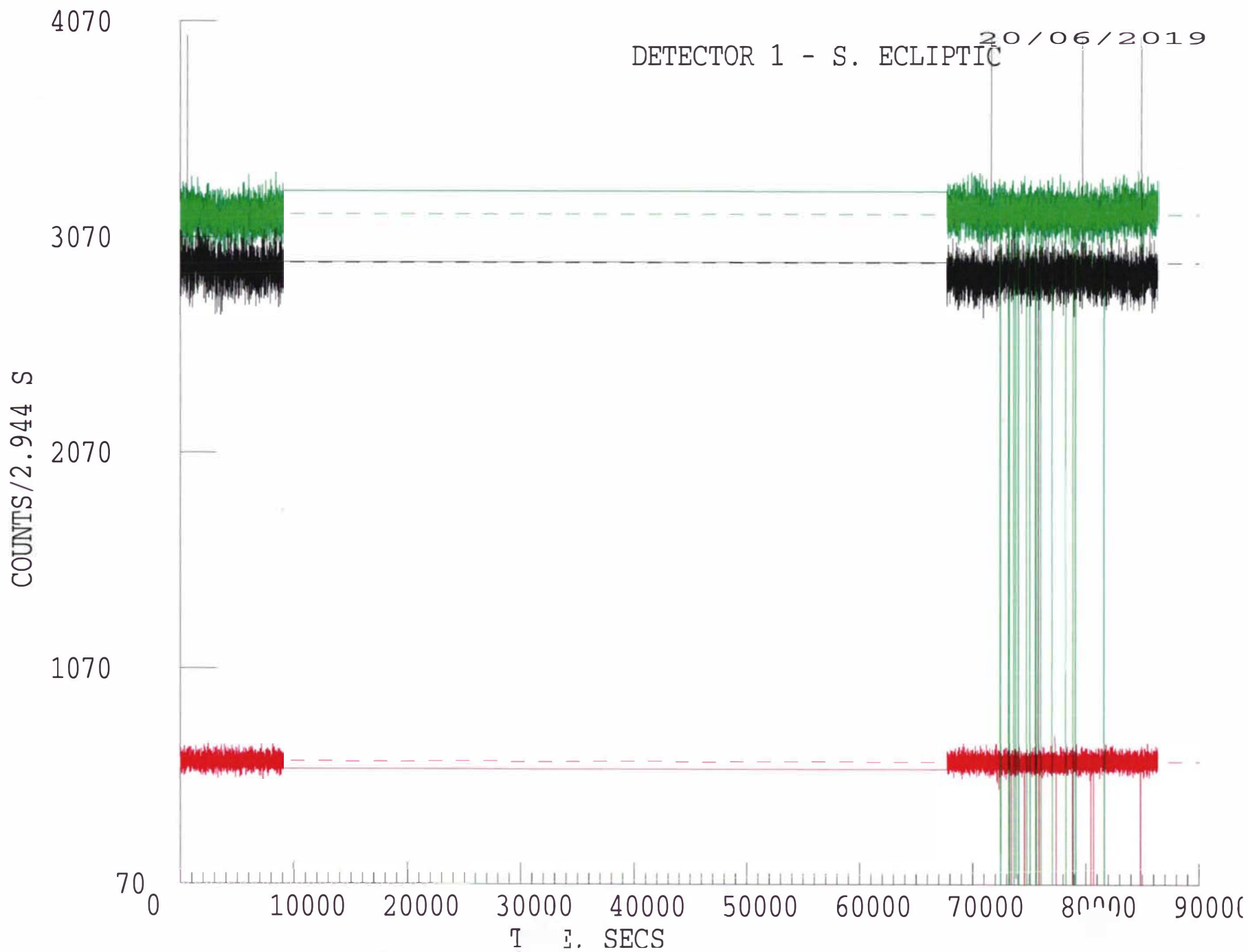
70
0

T, SECS

DETECTOR 1 - S. ECLIPTIC

20/06/2019

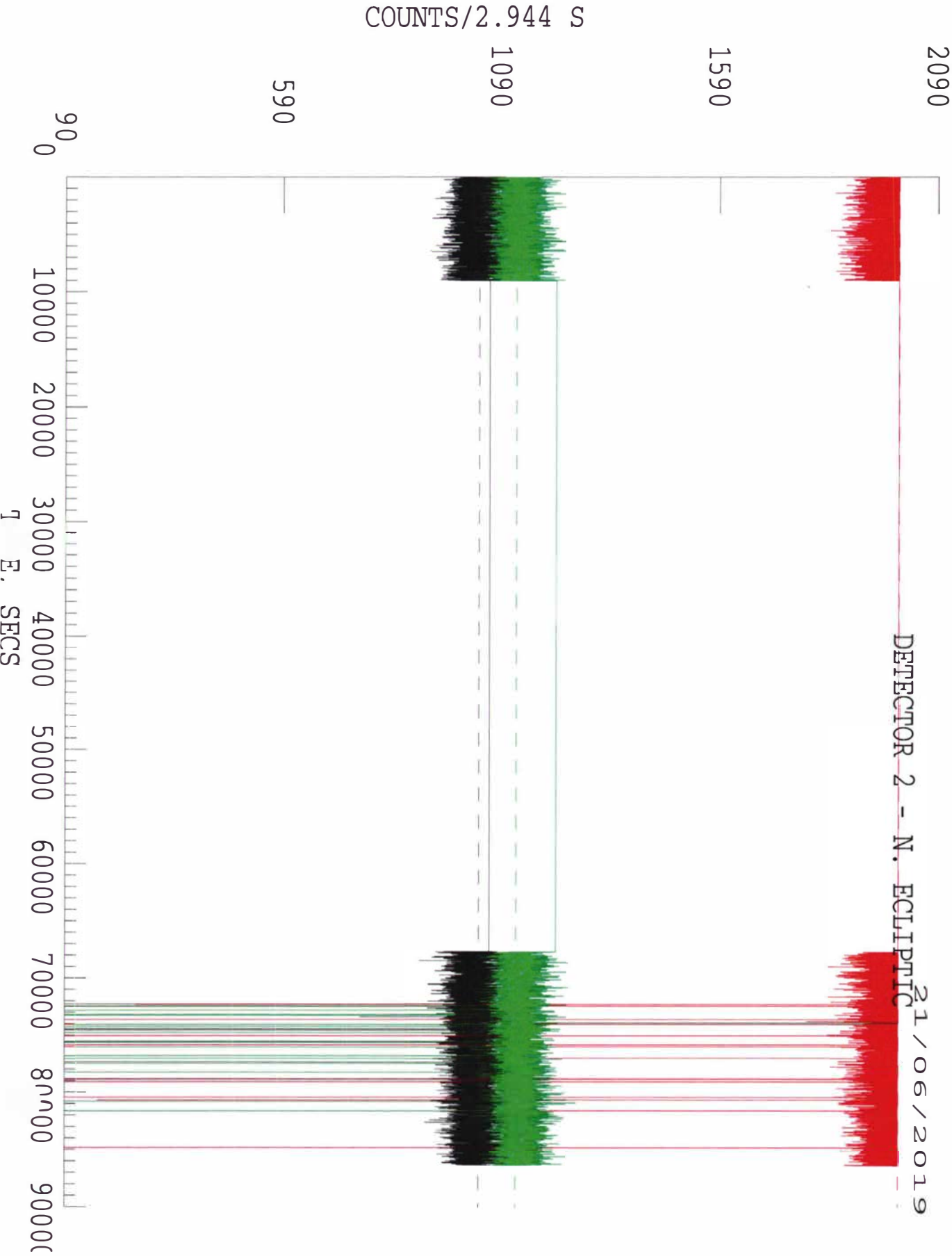
90000



10- 50 keV

50- 200 keV

200- 750 keV



A

FERMI

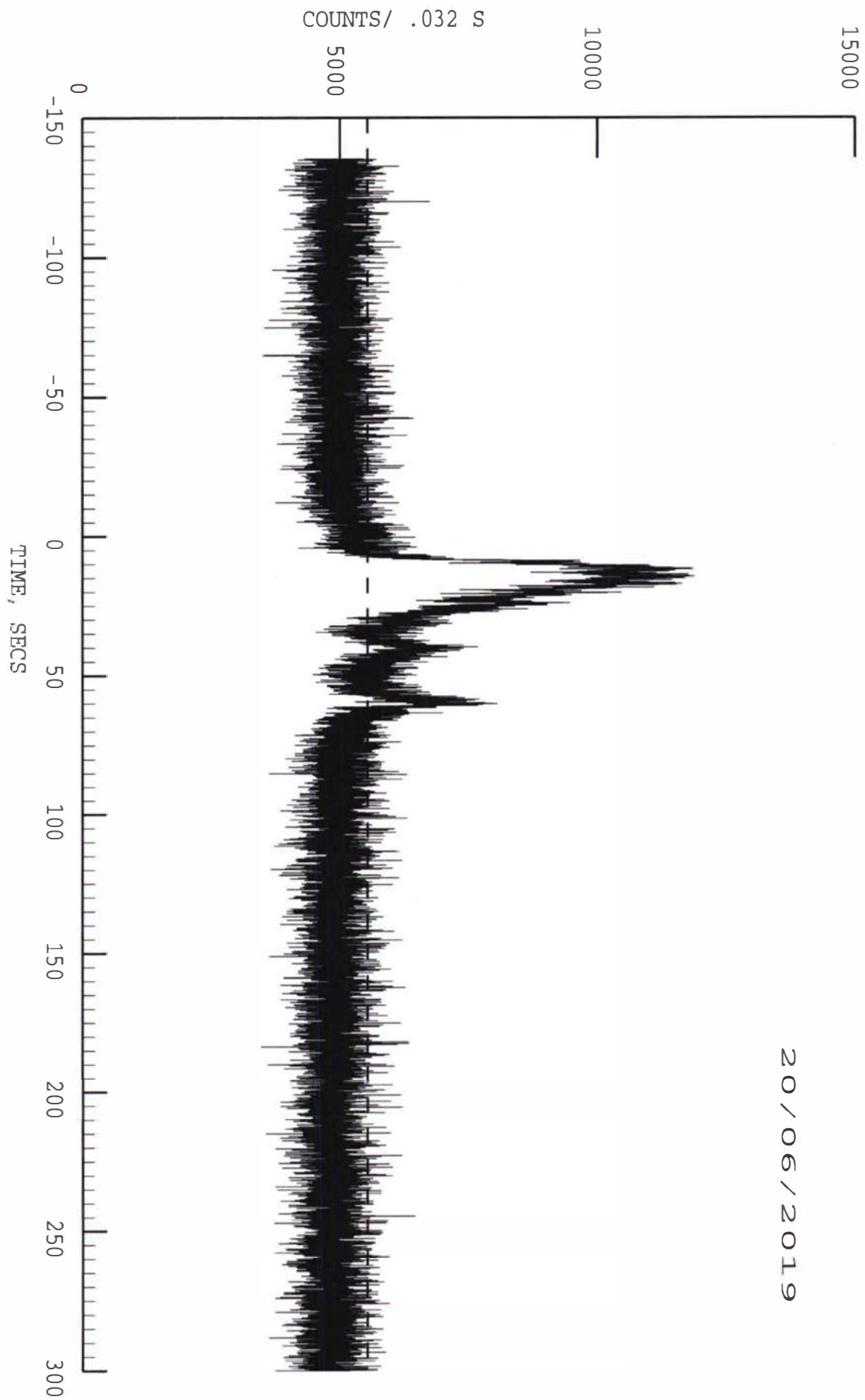
20/06/19

43810.809

12:10:10.809

26- 293 keV

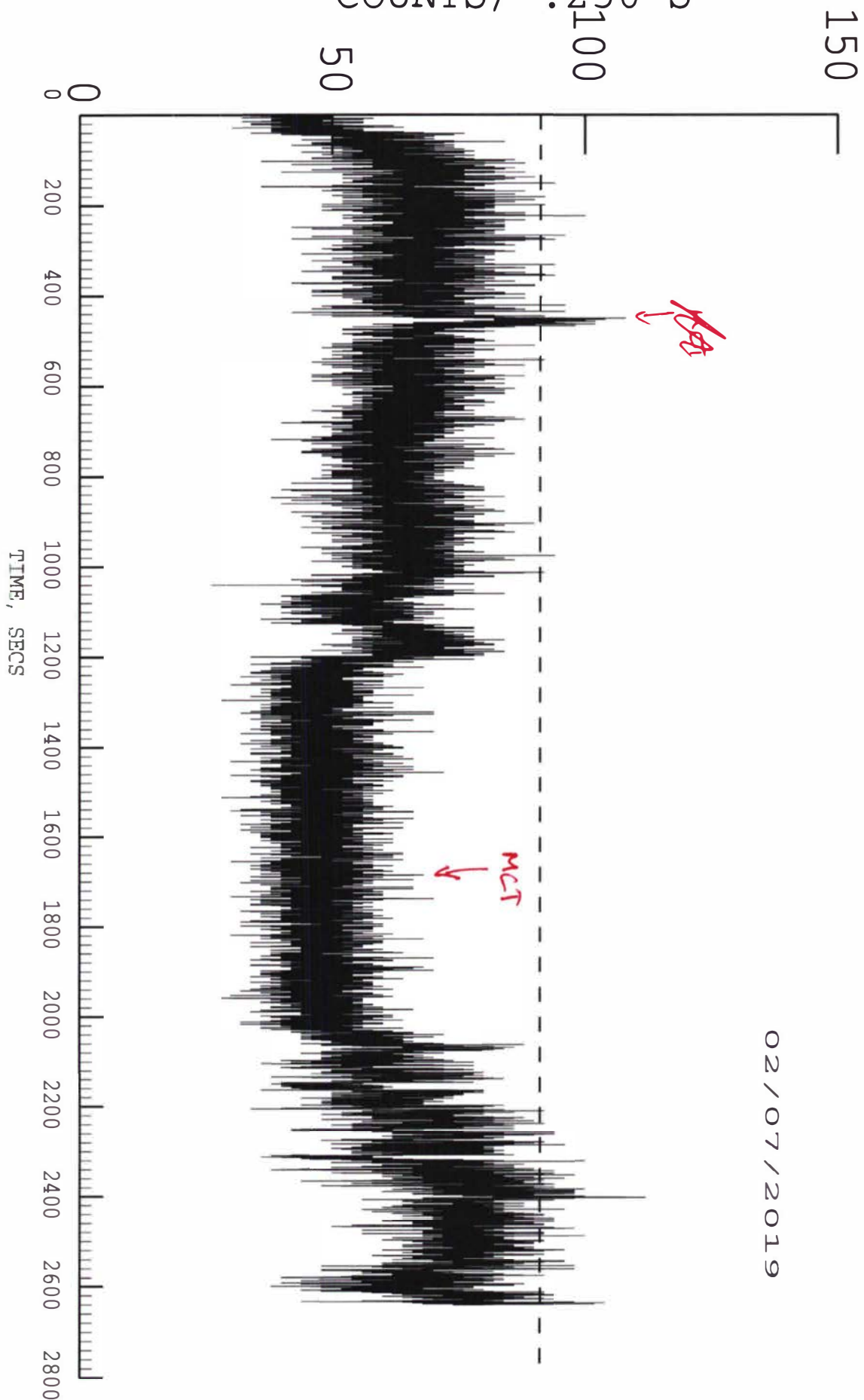
162.1 30.5 1.2

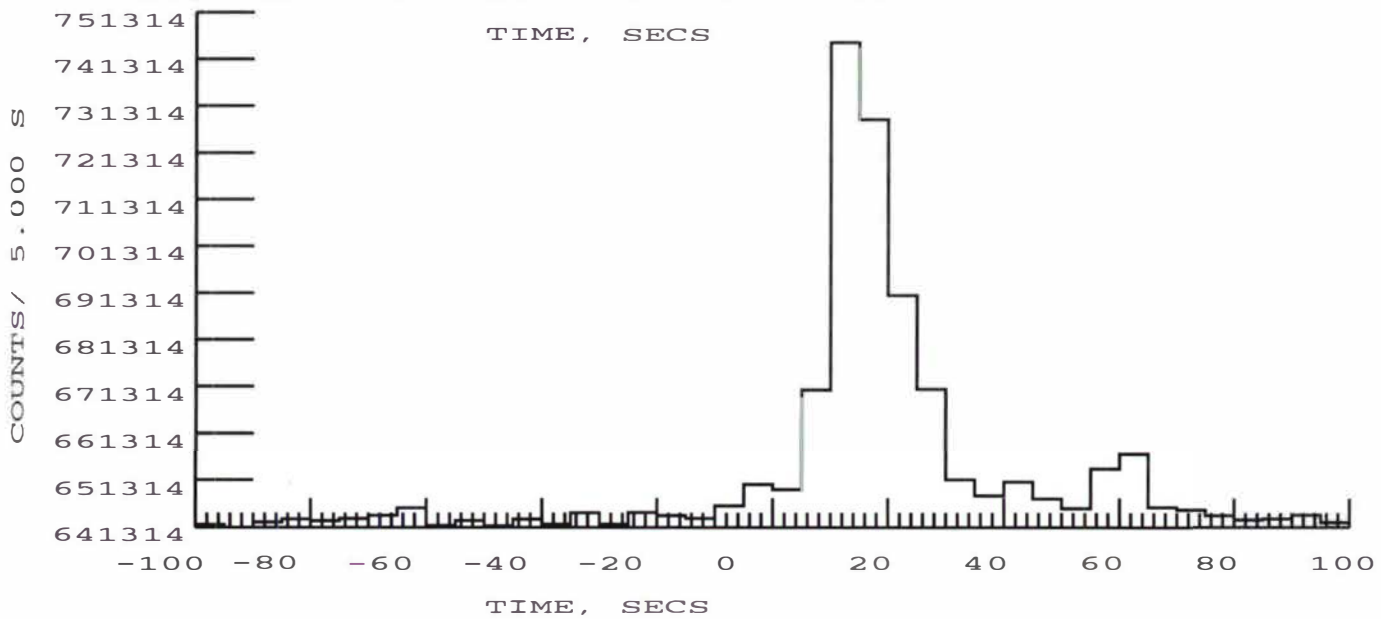
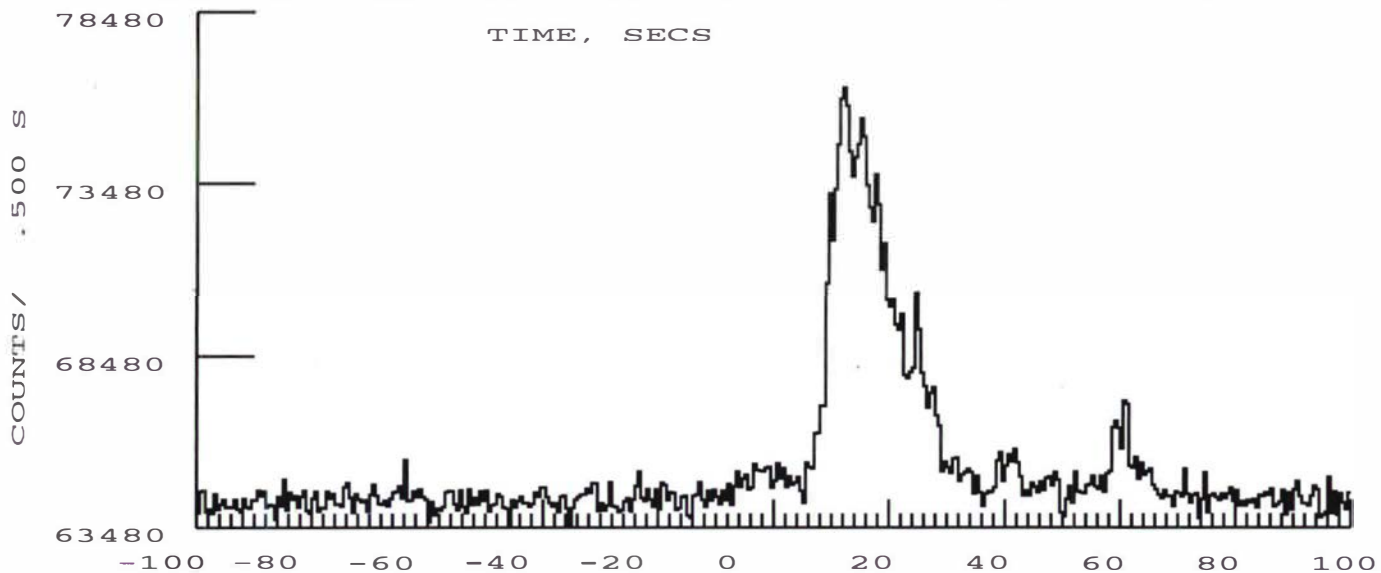
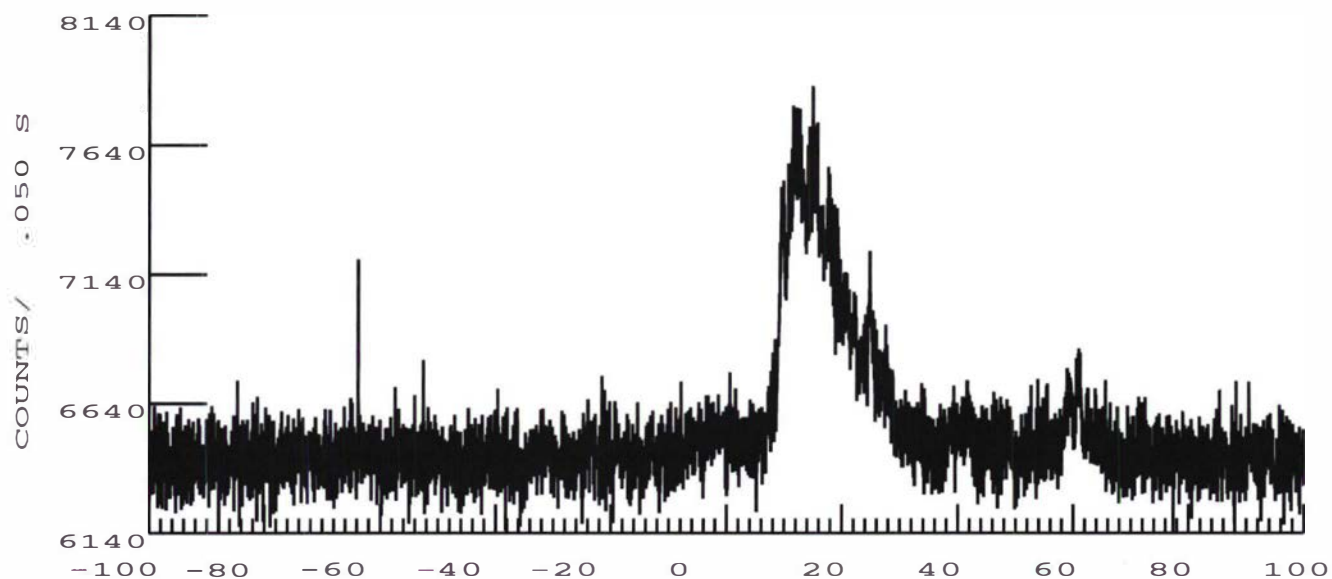


20/06/2019

ODYSSEY 20/06/19 42482.982 11:48:02.982^A
50-3000 keV

COUNTS/ .250 S





Subject: BAT lightcurve for trigger at 190620_1210

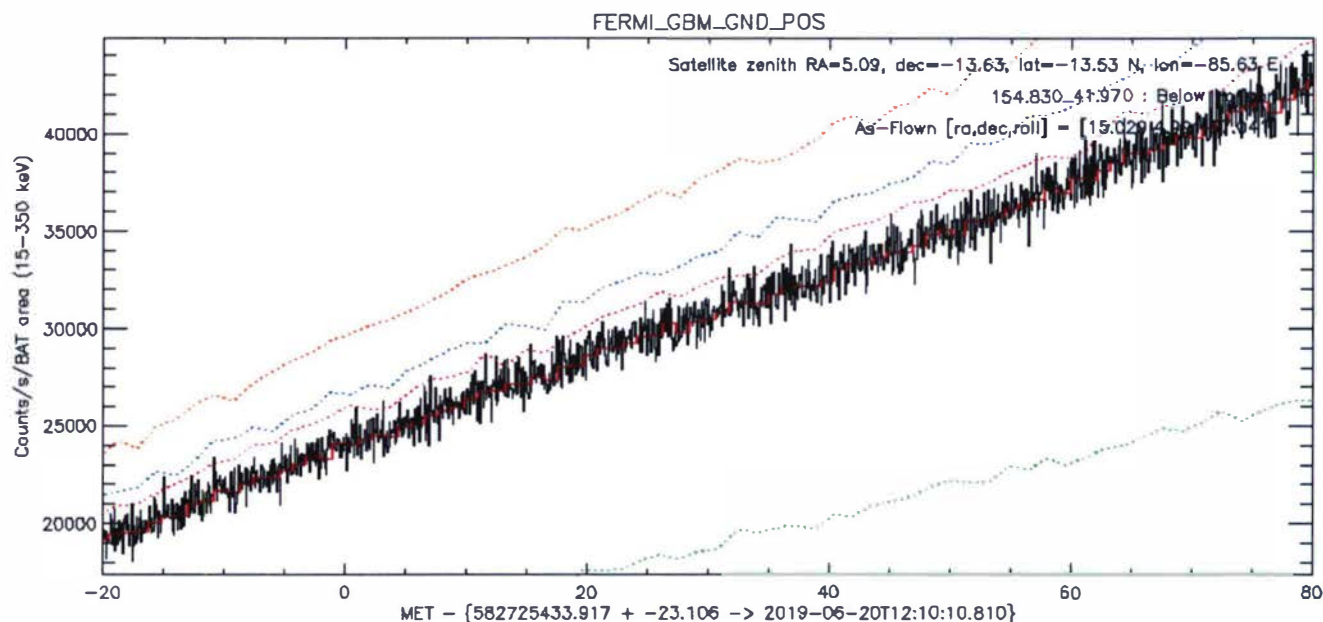
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/20/2019, 8:45 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190620_1210.png



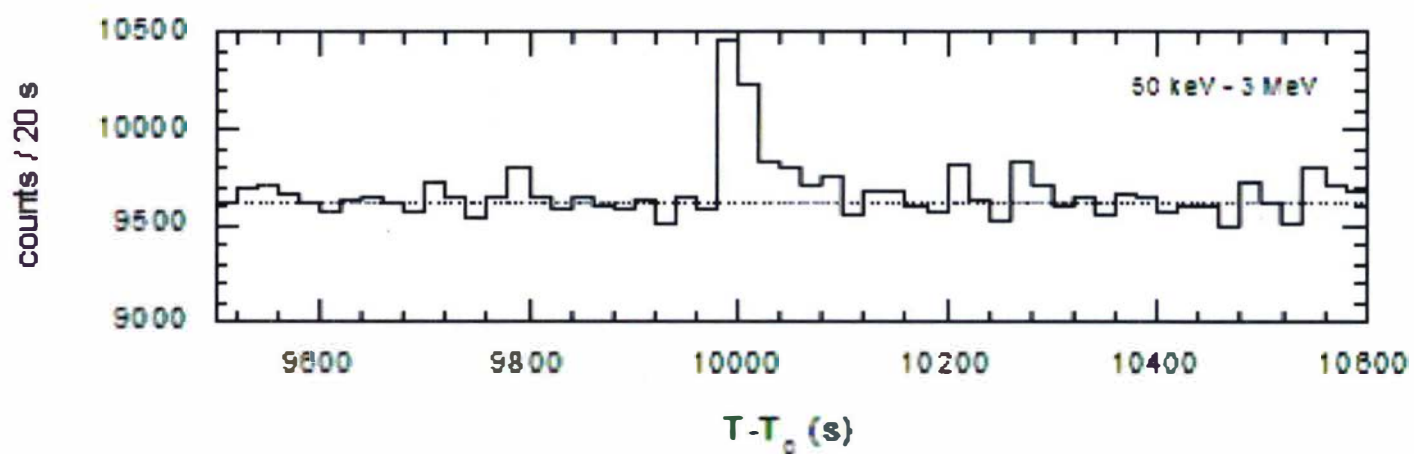
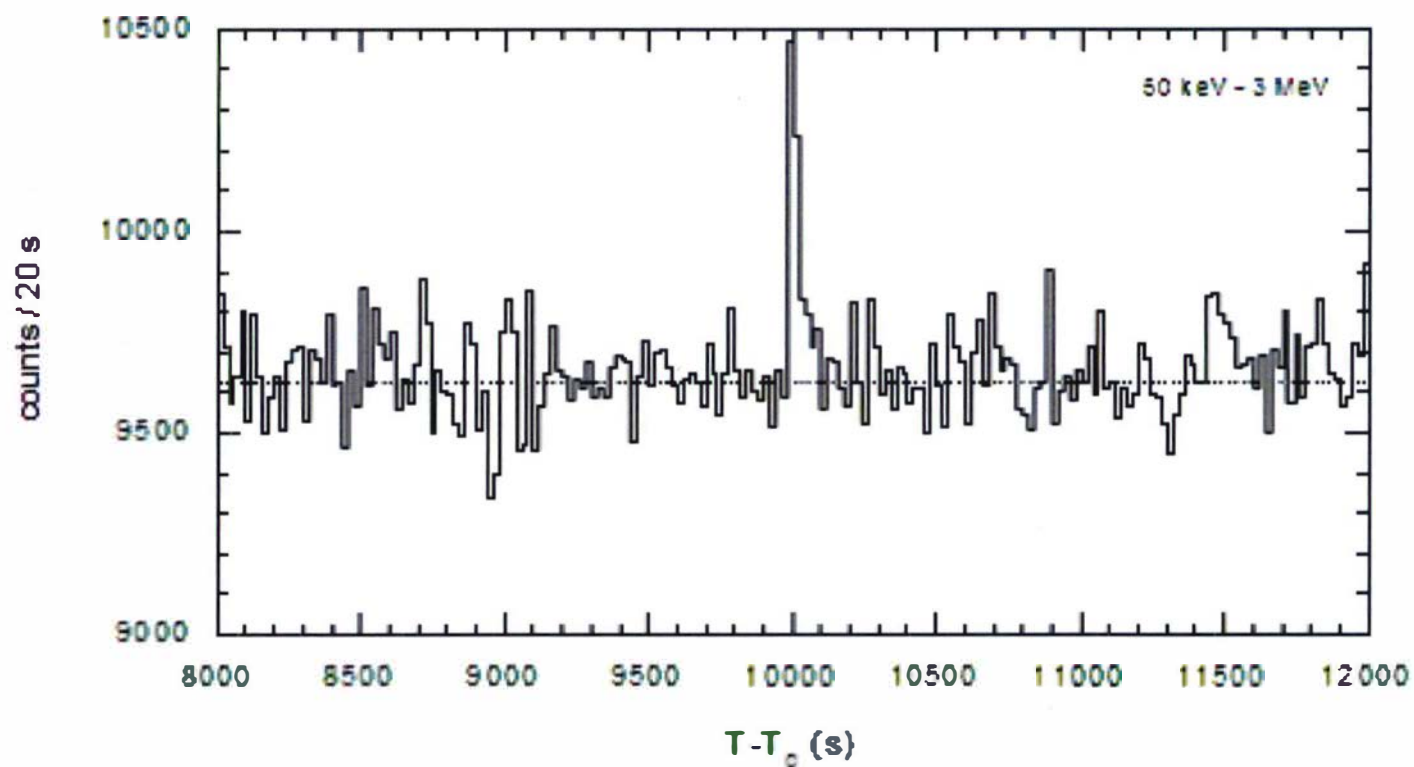
```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2019-06-20T12:10:10.810 -s 154.830_41.970
Swift Zenith(RA,dec):      5.09, -13.63
Swift Location(lon,lat,alt): -85.63 E, -13.53 N, 561 km
Time(MET + UTCF -> UT):    582725433.917 + -23.106 -> 2019-06-20T12:10:10.810
YYMMDD_SOD:               190620_43810.810      DOY=171
Obs Sequence Number:       00076378002
Obs Target Name:           saa-cold-171-05
Obs Date and Times:        2019-06-20 12:08:38 - 12:21:33
Obs Pointing(ra,dec,roll): 15.029, 4.991, 67.04
154.830_41.970_imageloc (boresight_dist, angle): (121, -123)
154.830_41.970_exposure (cm² cos adjusted): 0
154.830_41.970_altitude: -28 (down)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190620_1210_bat64ms_ipn	87.0 KB
/tmp/swift/190620_1210.png	19.1 KB

BepiColombo-MGNS GRB 190620
 $T_0 = 33914.337$ s UT (09:25:14.337)



B

FERMI

20/06/19

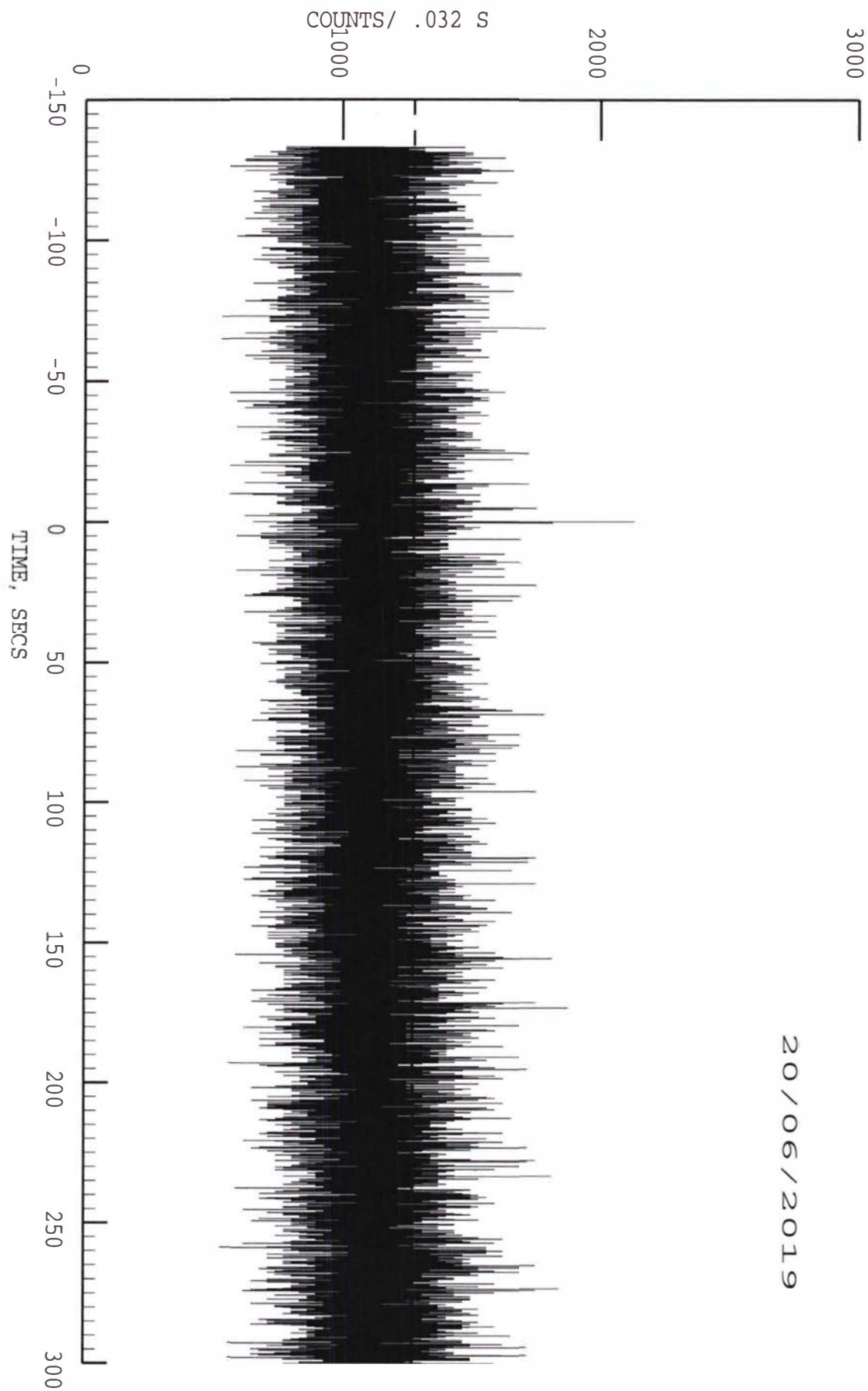
50007.802

13:53:27.802

26- 293 keV

319.2 -1.3 13.3

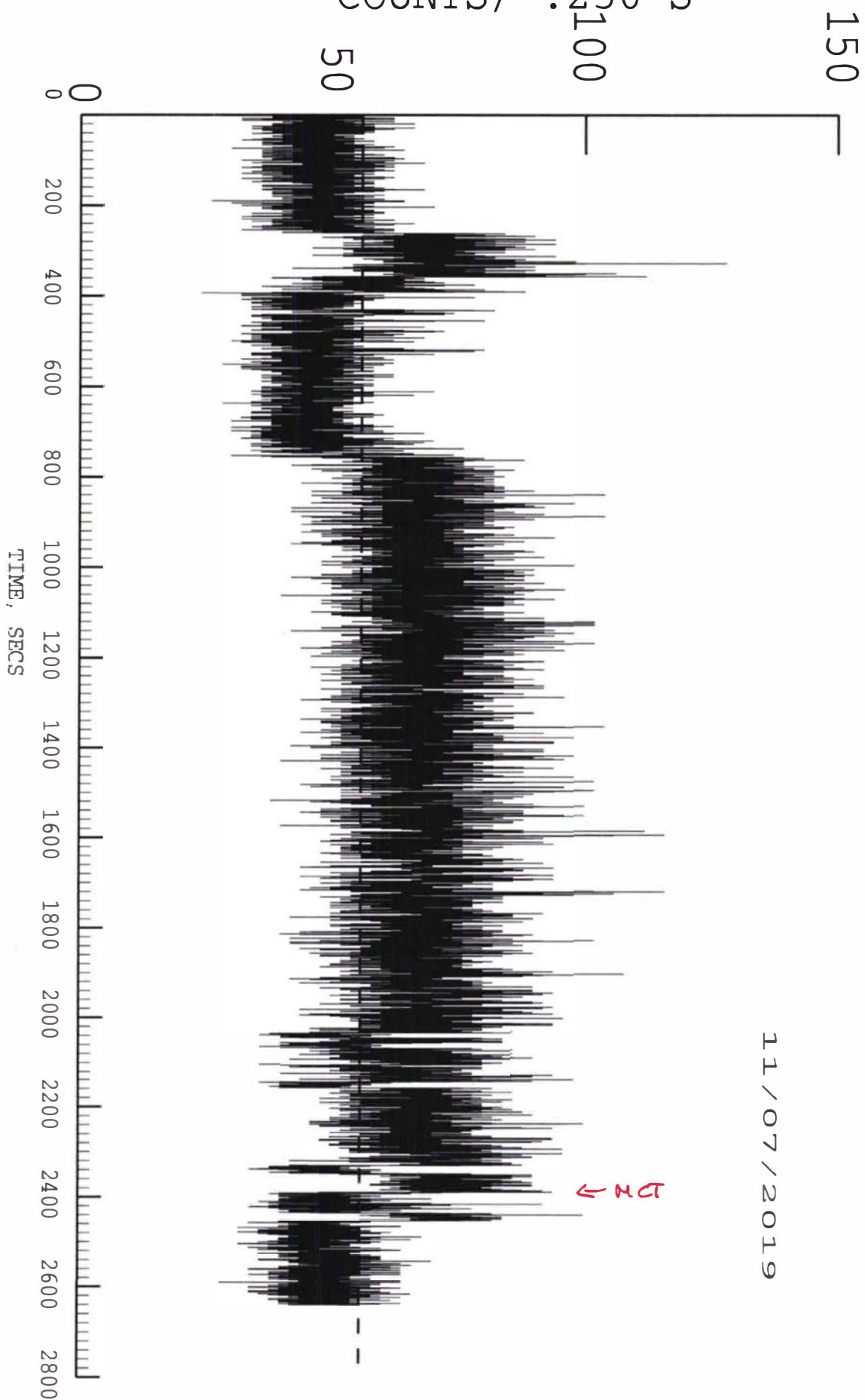
SPI NO



20/06/2019

ODYSSEY 20/06/19 48662.876 13:31:02.876^B
50-3000 keV

COUNTS/ .250 S



Subject: BAT lightcurve for trigger at 190620_1353

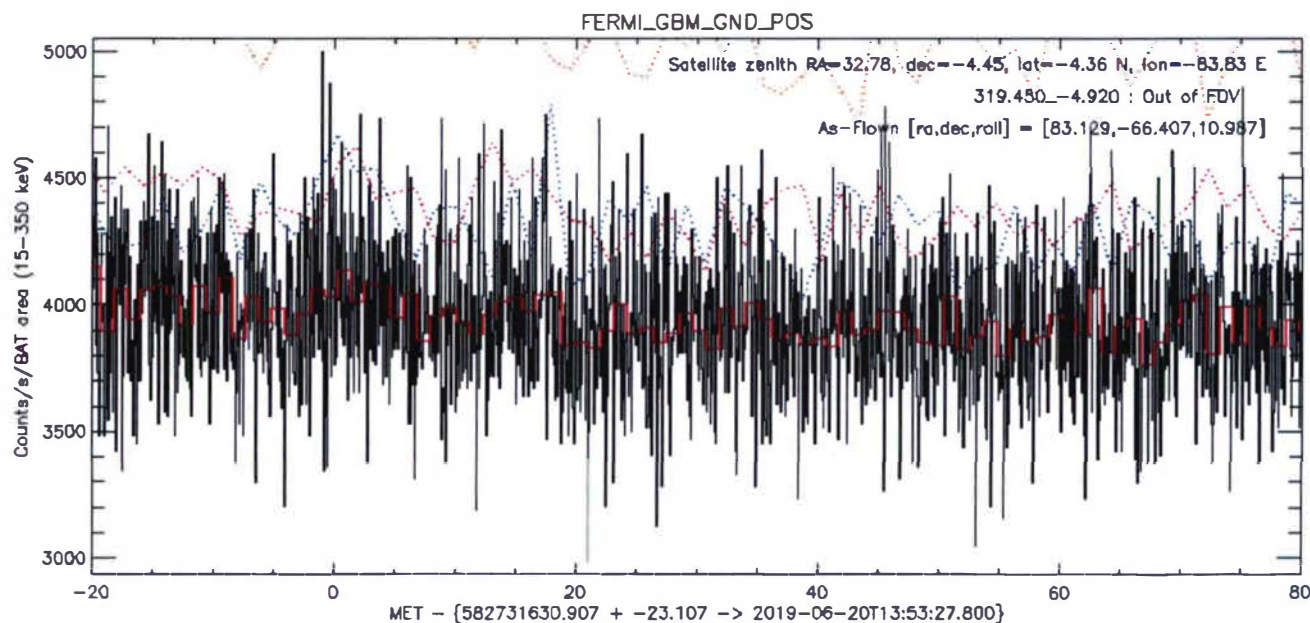
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/20/2019, 9:32 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190620_1353.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2019-06-20T13:53:27.800 -s 319.450 -4.920
Swift Zenith(RA,dec):      32.78, -4.45
Swift Location(lon,lat,alt): -83.83 E, -4.36 N, 559 km
Time(MET + UTCF -> UT):    582731630.907 + -23.107 -> 2019-06-20T13:53:27.800
YYMMDD_SOD:                190620_50007.800      DOY=171
Obs Sequence Number:       00033538037
Obs Target Name:           LMC X-4
Obs Date and Times:        2019-06-20 13:46:38 - 14:02:37
Obs Pointing(ra,dec,roll):  83.129, -66.407, 10.99
319.450-4.920_imageloc (boresight_dist, angle): (98, 136)
319.450-4.920_exposure (cm² cos adjusted): 0
319.450-4.920_altitude: 40 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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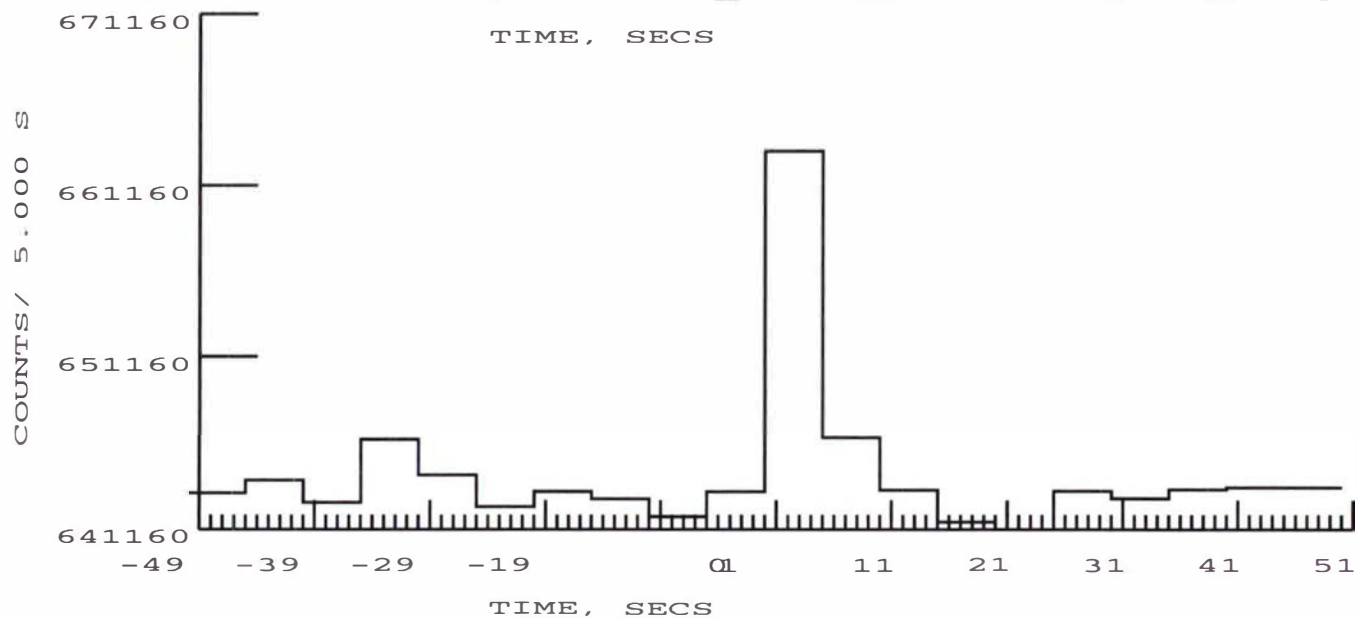
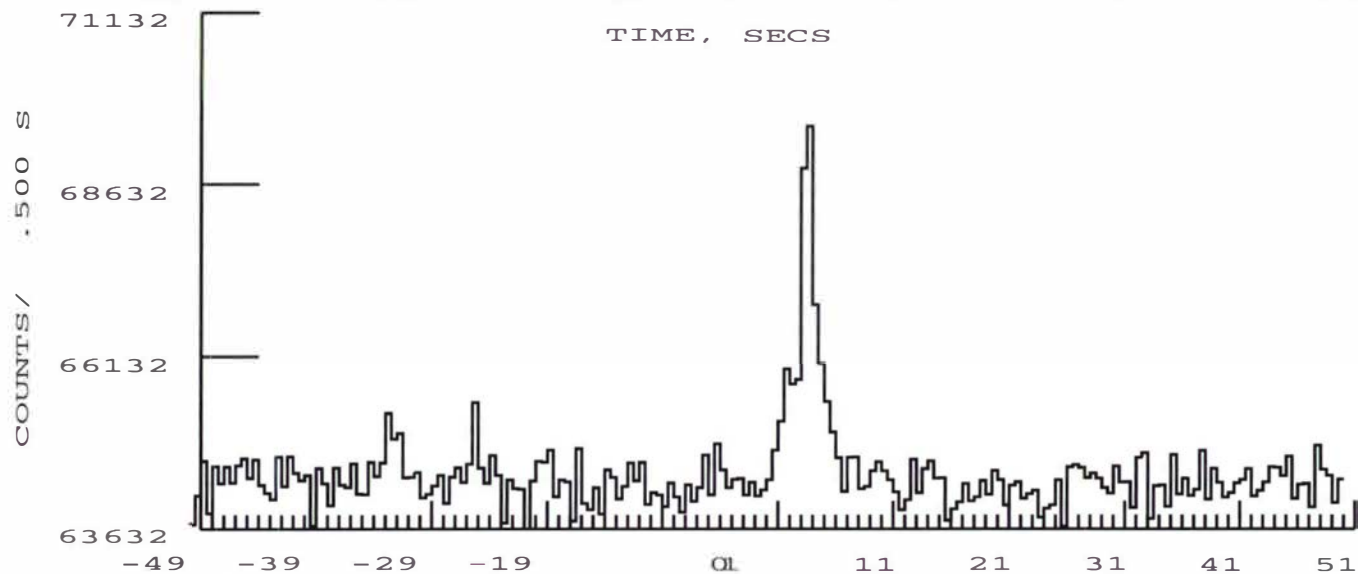
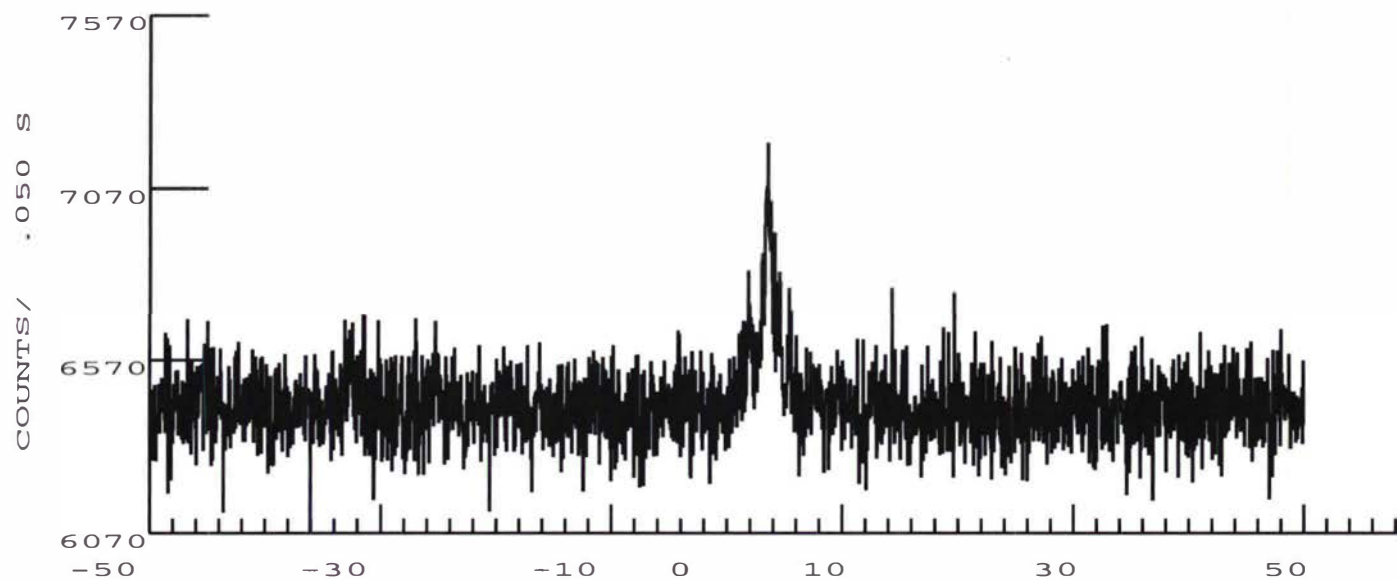
—Attachments:

/tmp/swift/190620_1353_bat64ms_ipn

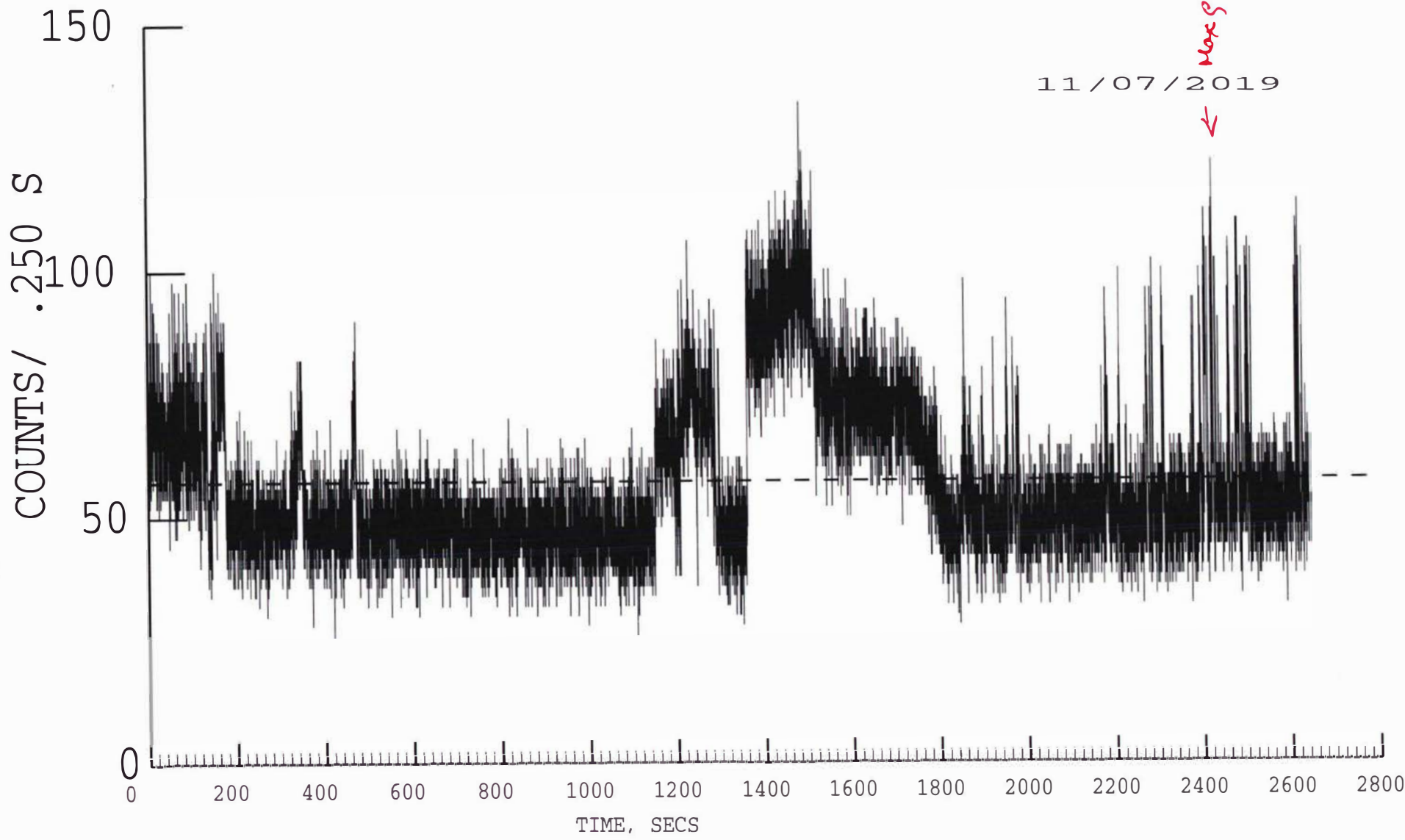
87.0 KB

/tmp/swift/190620_1353.png

20.3 KB



ODYSSEY 20/06/19 58082.705 16:08:02.705
50-3000 keV

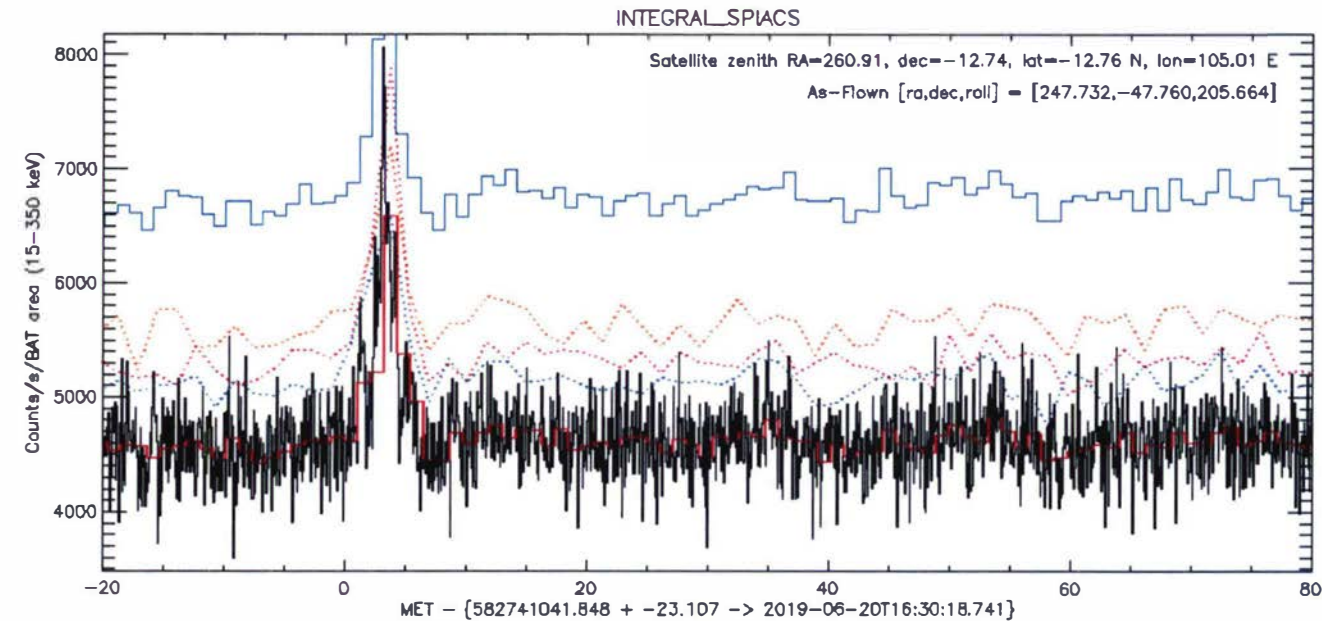




Subject: BAT lightcurve for trigger at 190620_1630
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 6/20/2019, 2:23 PM
To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190620_1630.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582741041.848
Swift Zenith(RA,dec):      260.91, -12.74
Swift Location(lon,lat,alt): 105.01 E, -12.76 N, 551 km
Time(MET + UTCF -> UT):   582741041.848 + -23.107 -> 2019-06-20T16:30:18.741
YYMMDD_SOD:               190620_59418.741      DOY=171
Obs Sequence Number:      00011093081
Obs Target Name:          MAXI J1631-479
Obs Date and Times:       2019-06-20 16:18:38 - 16:37:36
Obs Pointing(ra,dec,roll): 247.732, -47.760, 205.66
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190620_1630_bat64ms_ipn	87.0 KB
/tmp/swift/190620_1630.png	19.1 KB

v01

7.636

21/06/2019

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4100

3100

2100

1100

100

0

10000

20000

30000

40000

50000

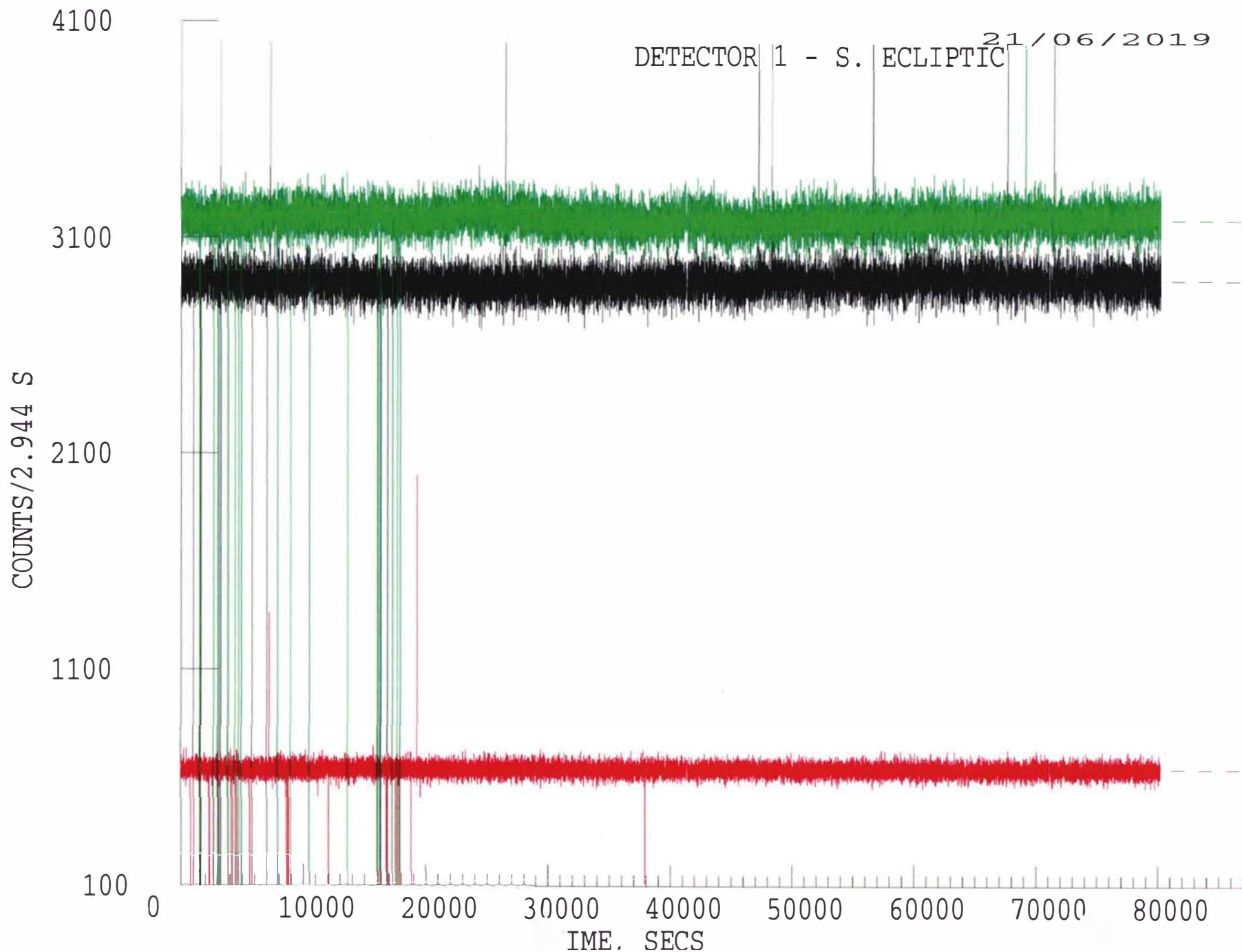
60000

70000

80000

TIME. SECS

DETECTOR 1 - S. ECLIPTIC 21/06/2019



KONUS

21/06/2019

7.636

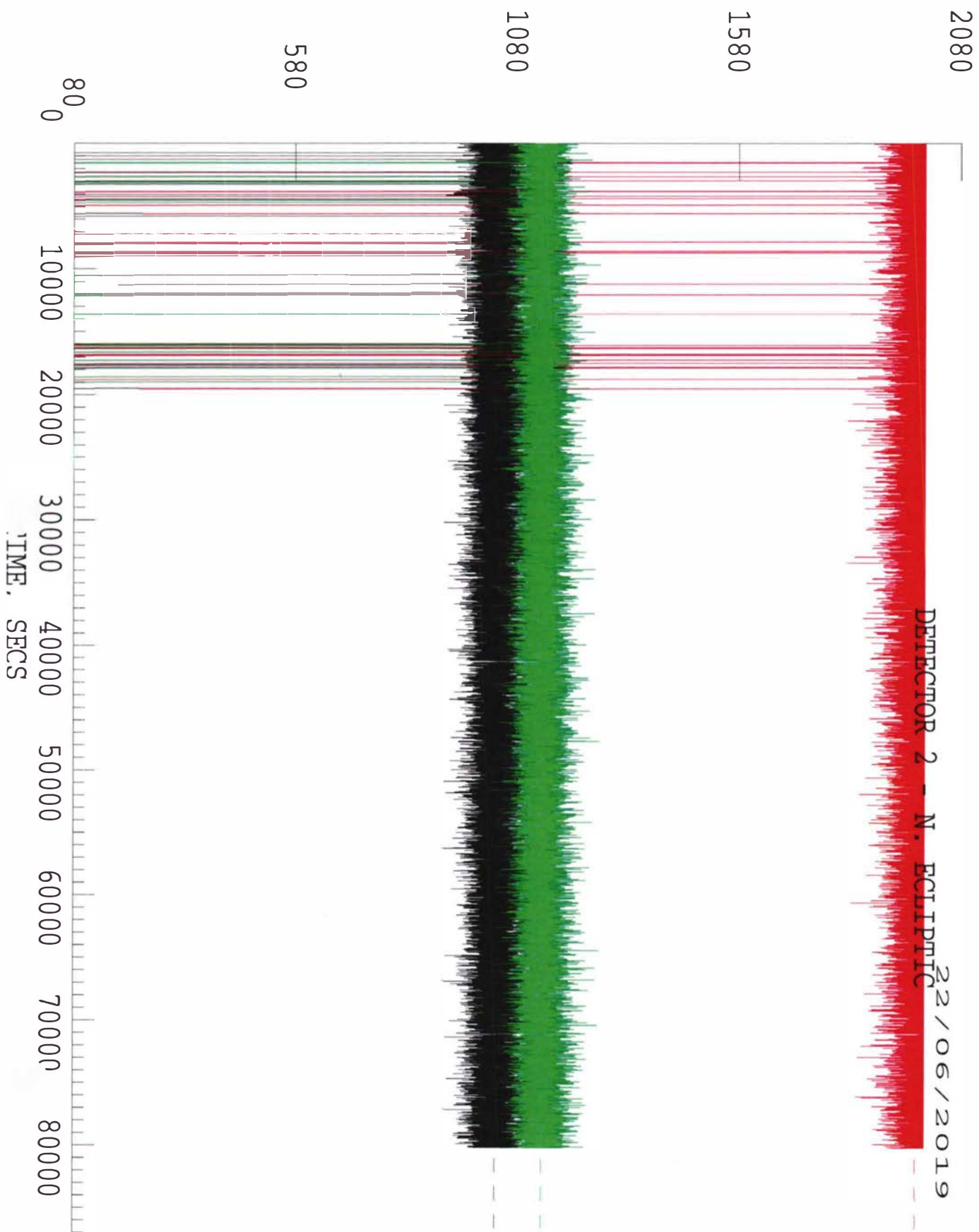
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

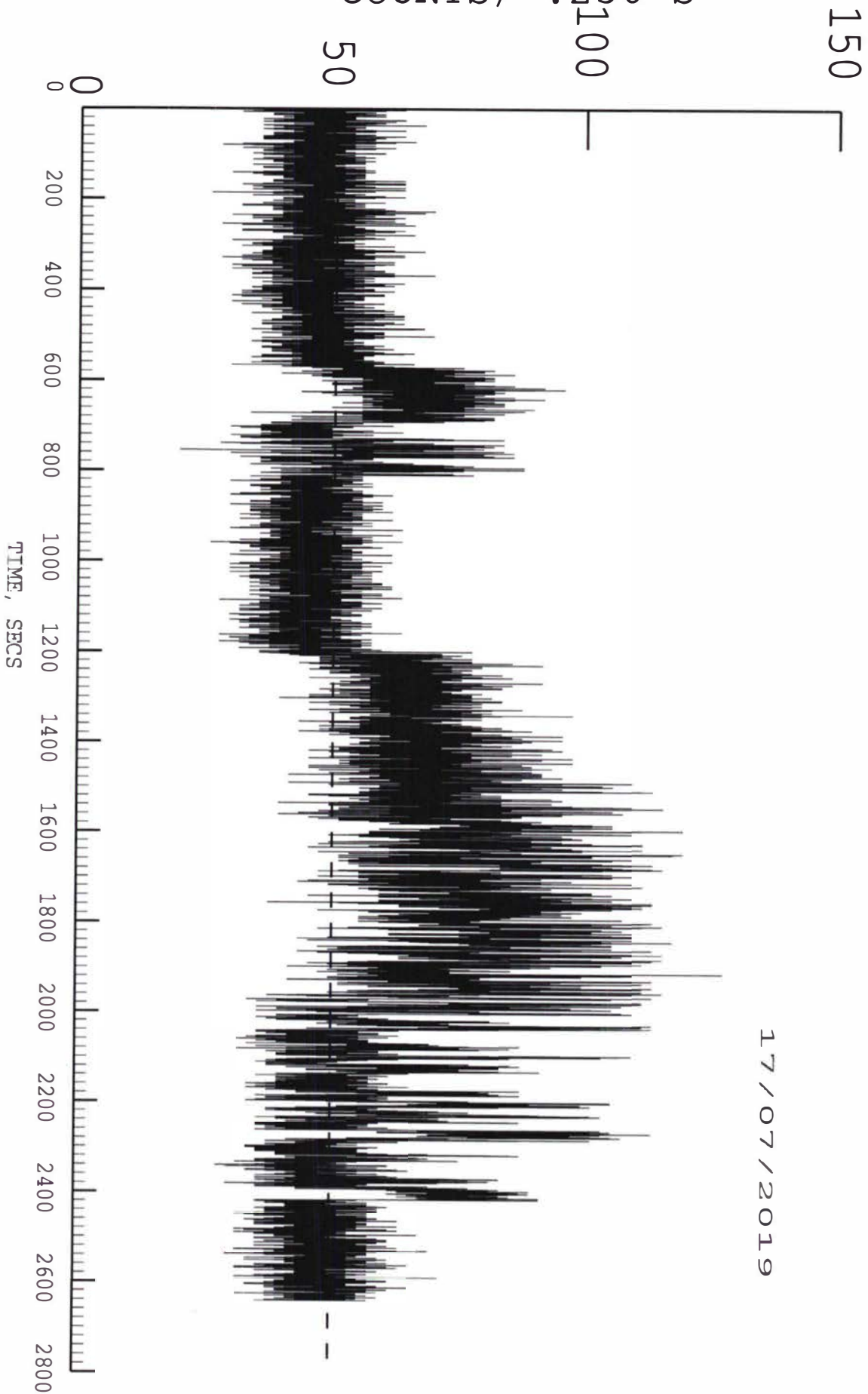


ODYSSEY 21/06/19 4622.123 01:17:02.123

50-3000 keV

Konus RT

COUNTS/ .250 S



KONUS

22/06/2019

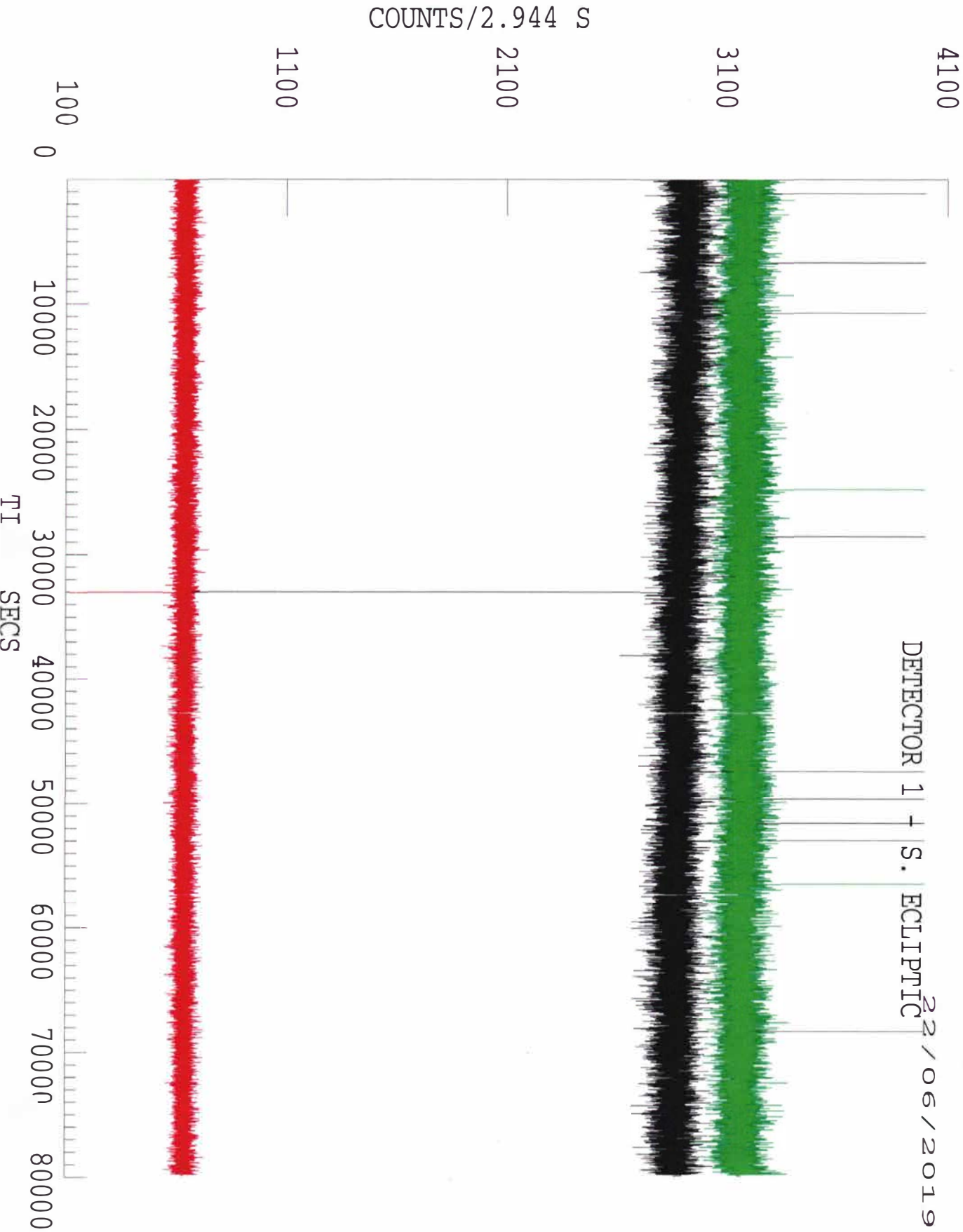
87.627

v01

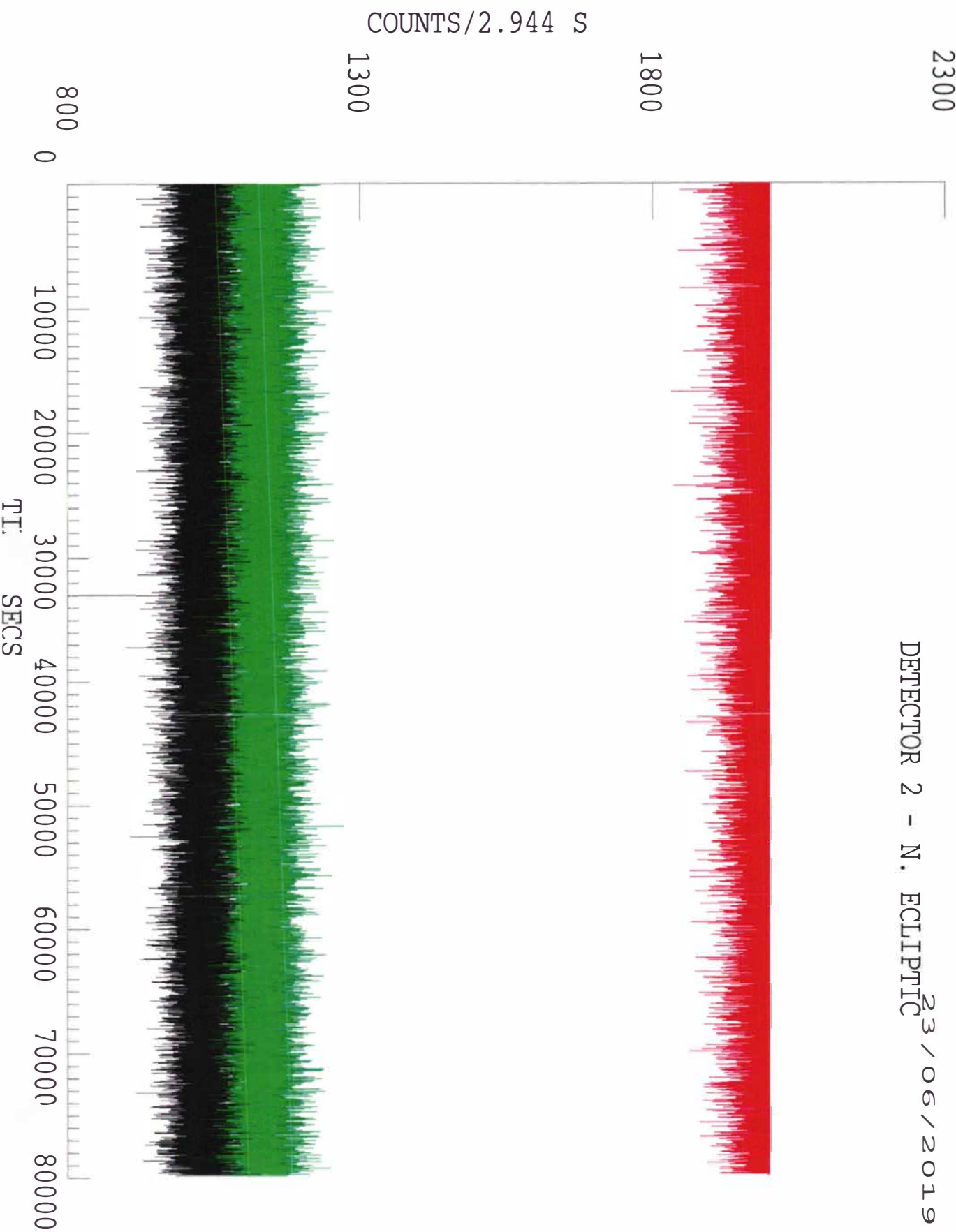
10- 50 keV

50- 200 keV

200- 750 keV



10- 50 keV50- 200 keV200- 750 keV



FERMI

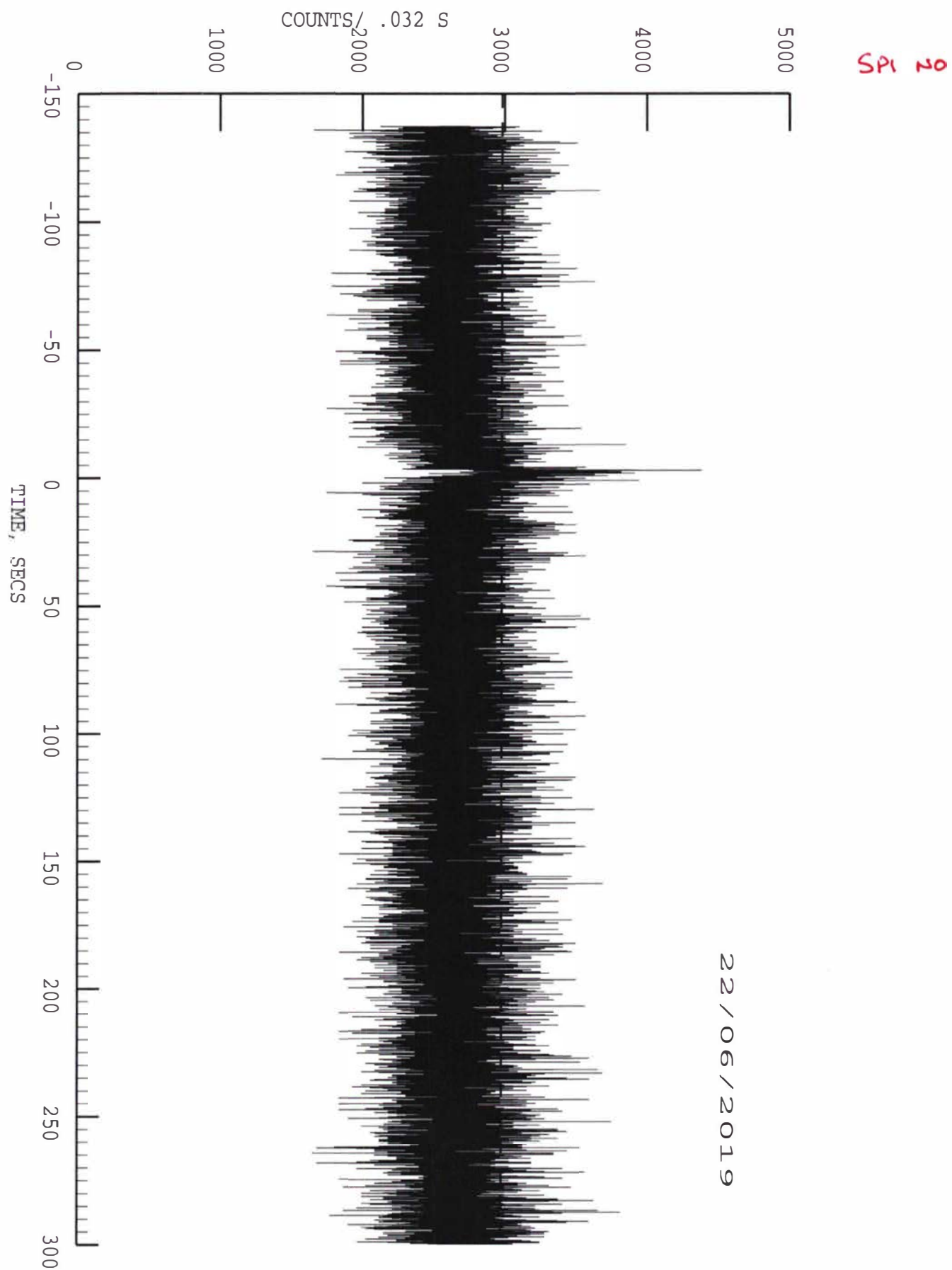
22/06/19

31806.276

08:50:06.276

26- 293 keV

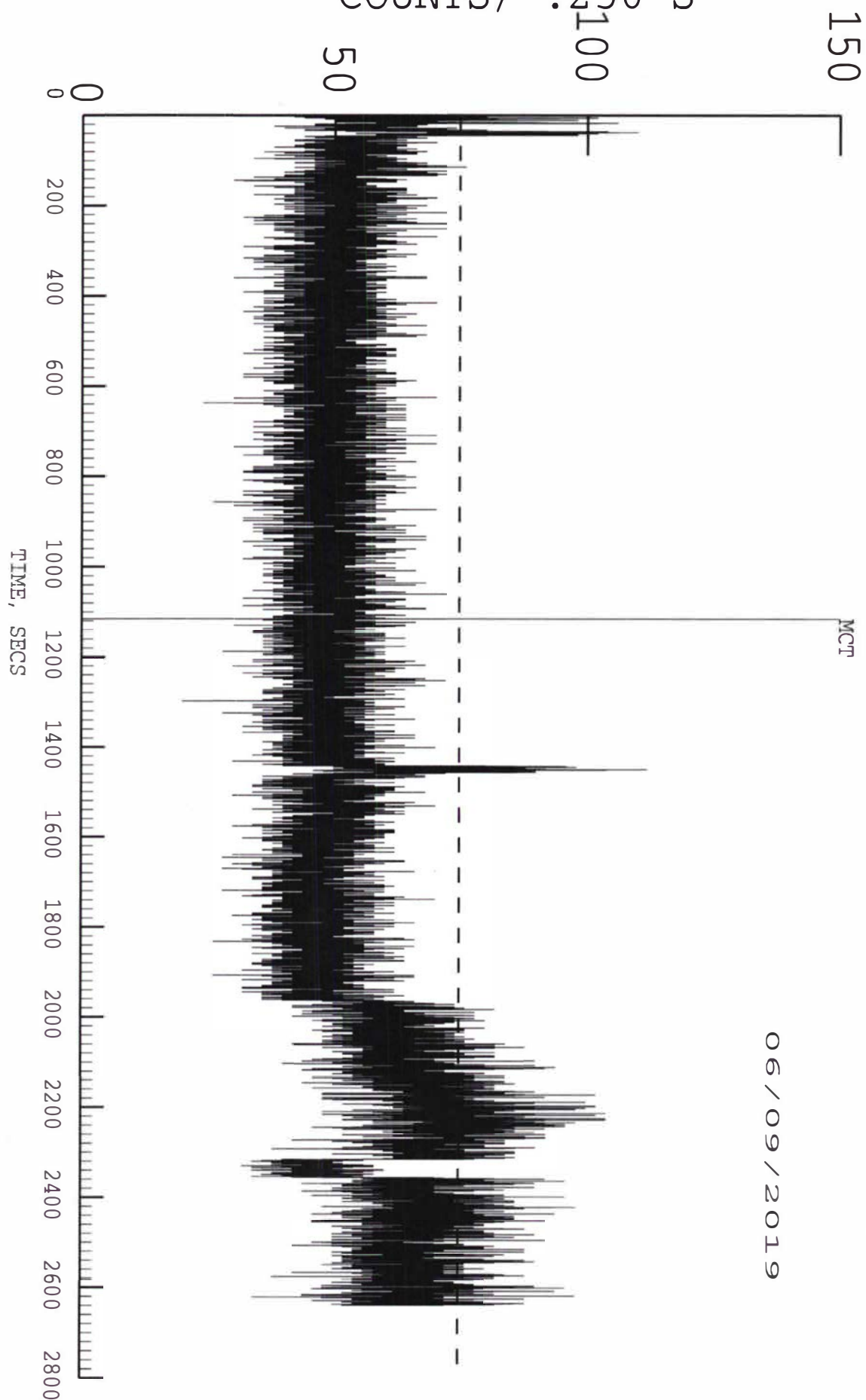
165.2 -53.6 22.9



ODYSSEY 22/06/19 30480.115 08:28:00.115

50-3000 keV

COUNTS/ .250 S



BAT lightcurve for trigger at 190622_0850

Subject: BAT lightcurve for trigger at 190622_0850

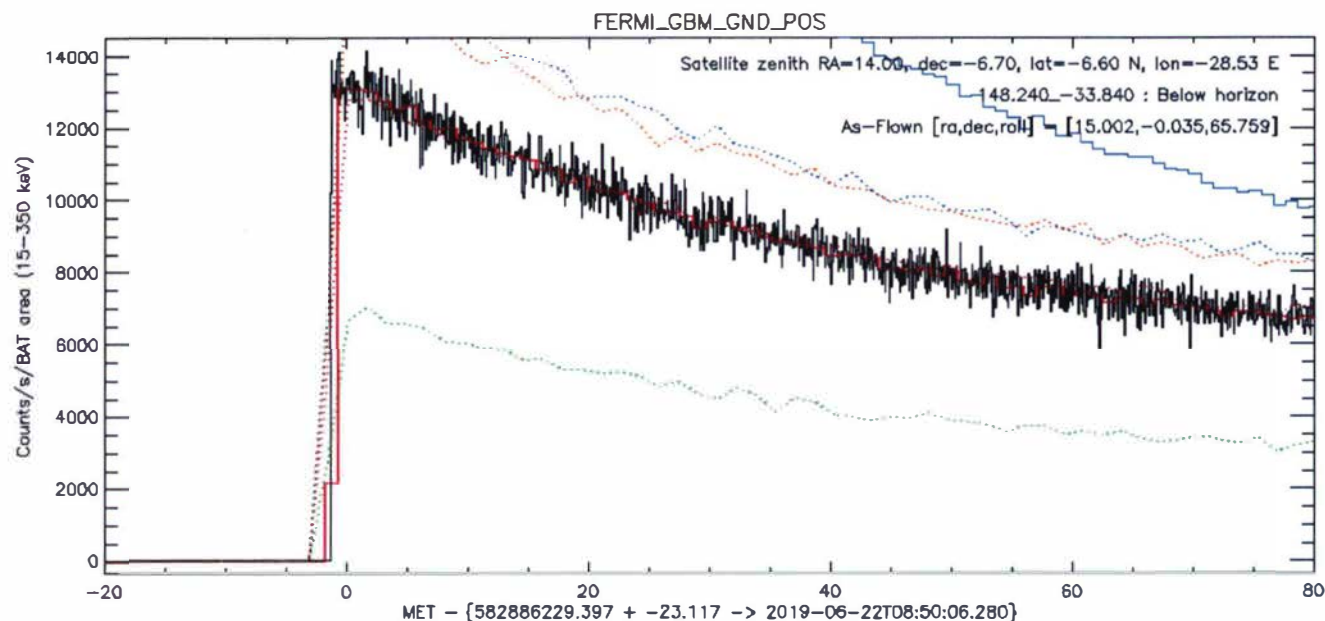
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/22/2019, 5:28 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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~/tmp/swift/190622_0850.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582886229.397 -s 148.240_-33.840
Swift Zenith(RA,dec):      14.00, -6.70
Swift Location(lon,lat,alt): -28.53 E, -6.60 N, 560 km
Time(MET + UTCF -> UT):   582886229.397 + -23.117 -> 2019-06-22T08:50:06.280
YYMMDD_SOD:               190622_31806.280      DOY=173
Obs Sequence Number:       00075183025
Obs Target Name:           saa-cold-173-05
Obs Date and Times:        2019-06-22 08:31:37 - 08:53:34
Obs Pointing(ra,dec,roll): 15.002, -0.035, 65.76
148.240_-33.840_imageloc (boresight_dist, angle): (125, -23)
148.240_-33.840_exposure (cm2 cos adjusted): 0
148.240_-33.840_altitude: -8 (down)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

-- Attachments:

/tmp/swift/190622_0850_bat64ms_ipn

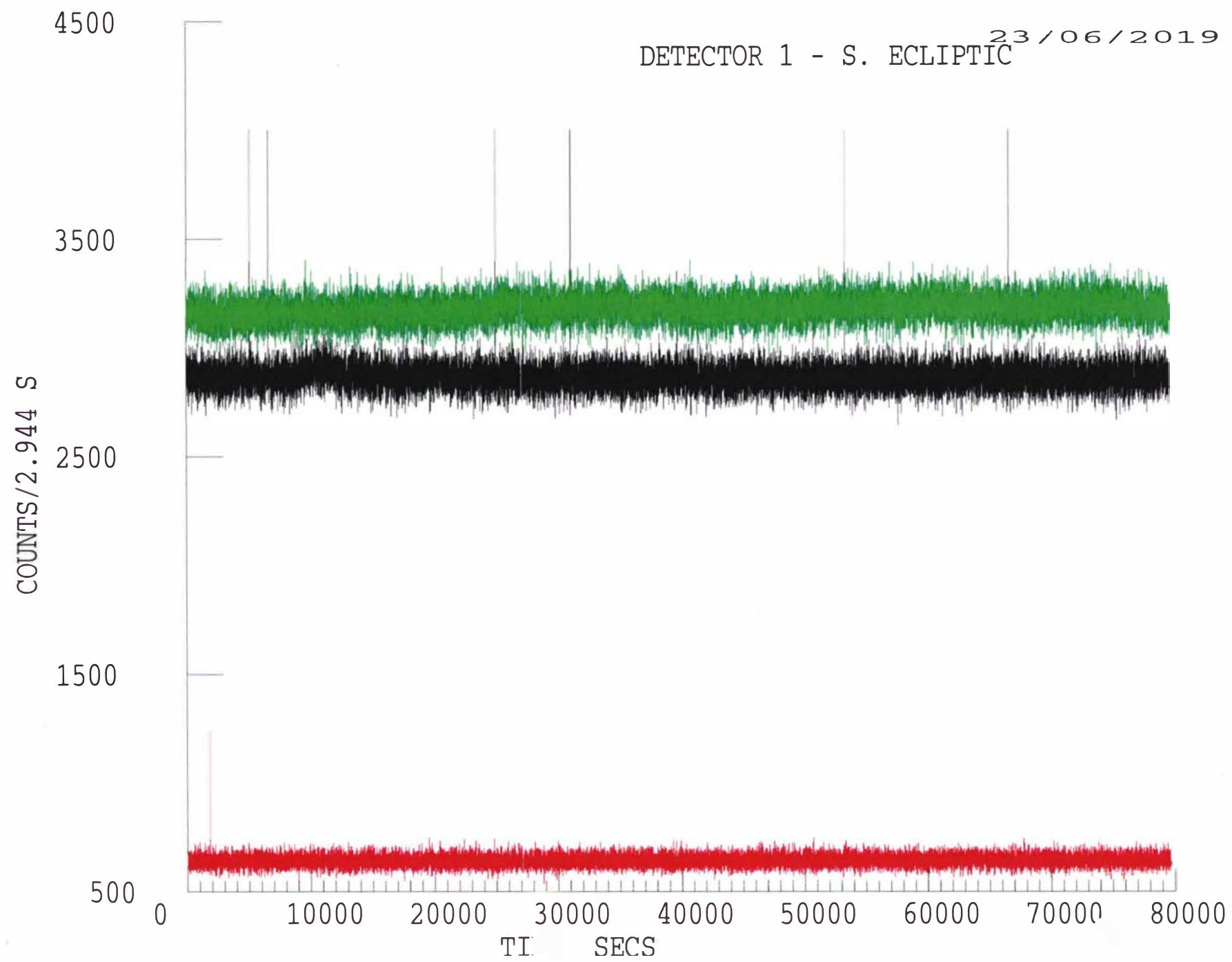
78.5 KB

/tmp/swift/190622_0850.png

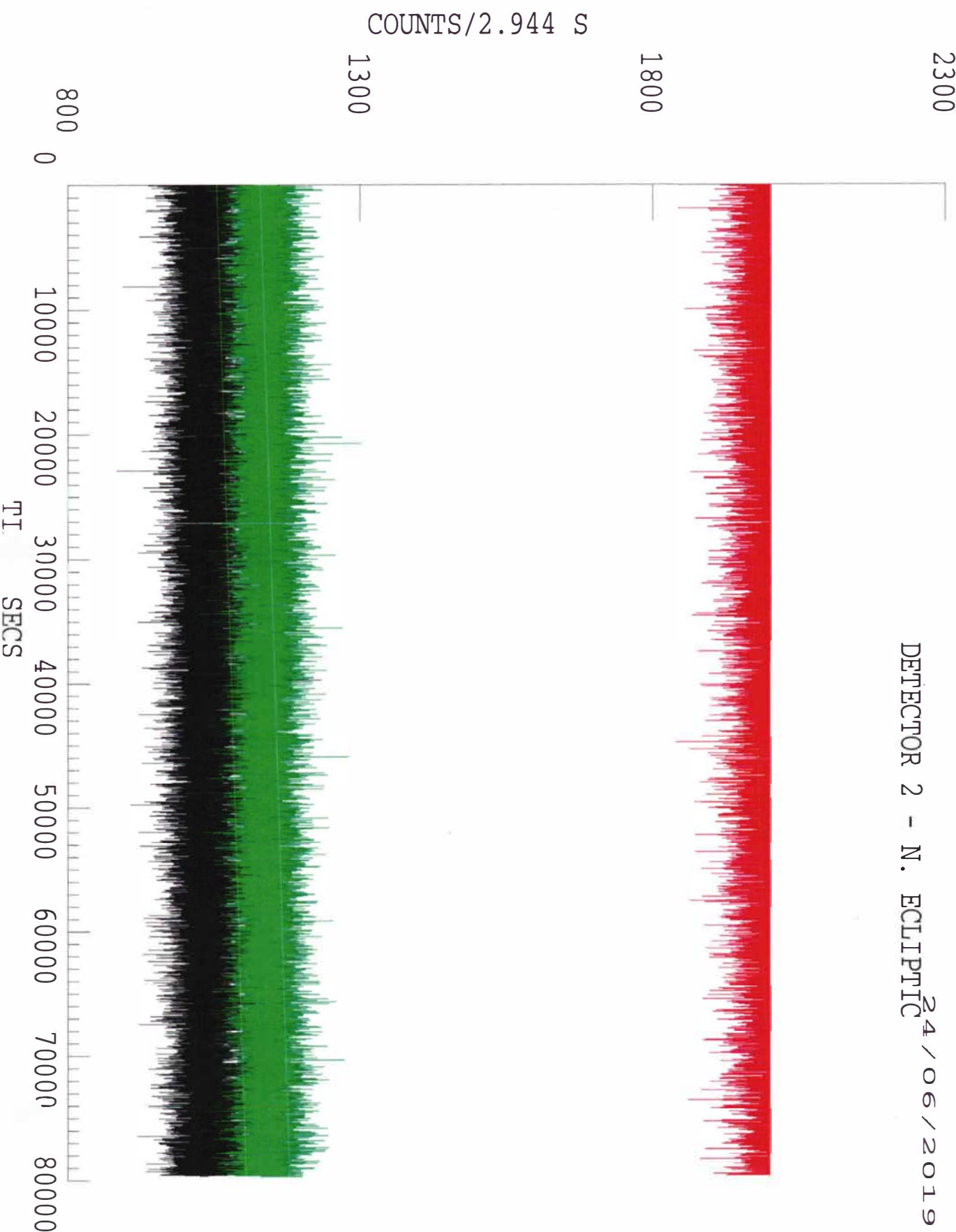
19.0 KB

KONUS 23/06/2019 76.355 v01

10- 50 keV 50- 200 keV 200- 750 keV



10- 50 keV50- 200 keV200- 750 keV

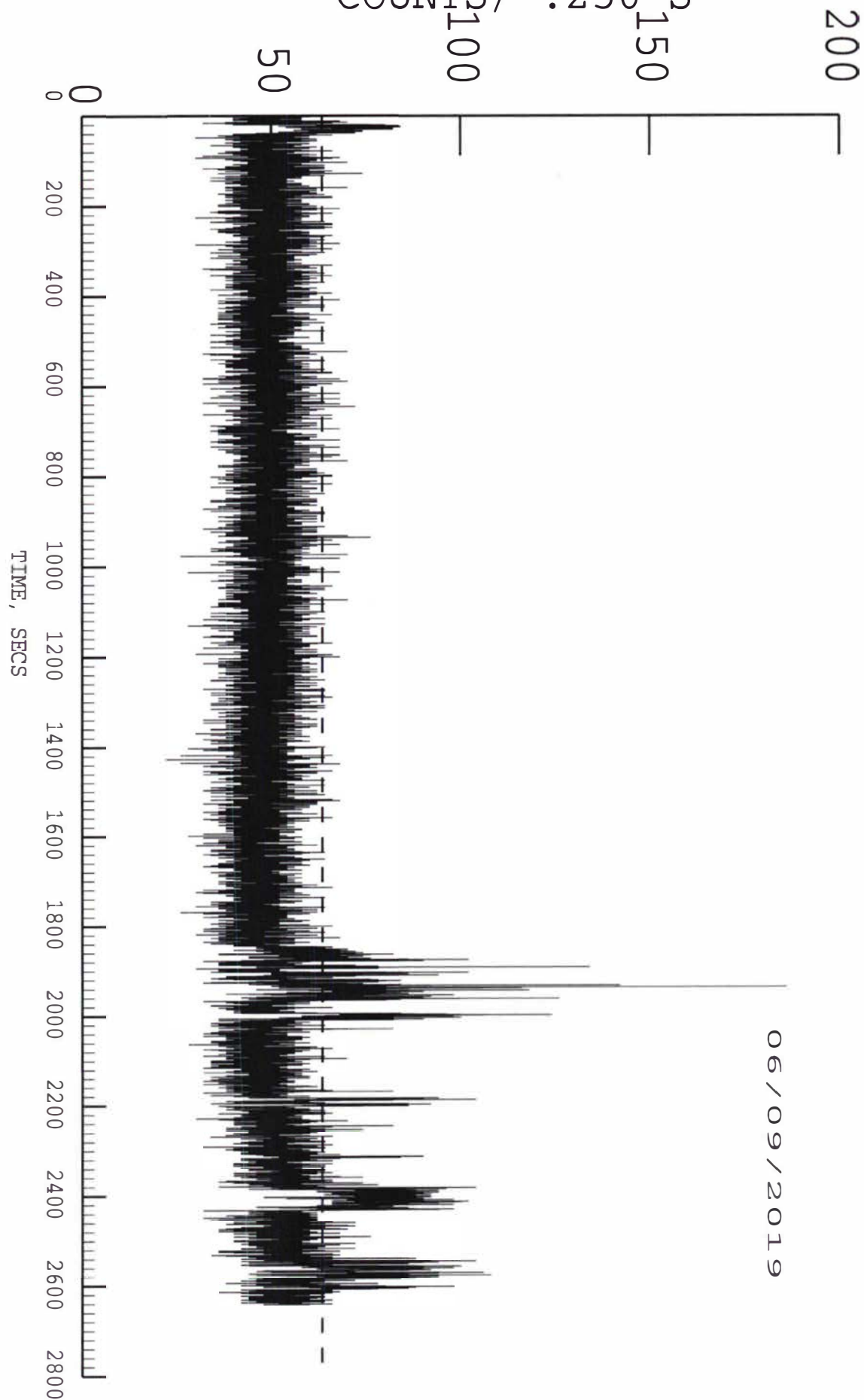


ODYSSEY 23/06/19 19438.766 05:23:58.766

50-3000 keV

Konus RI

COUNTS/ .250 S



FERMI

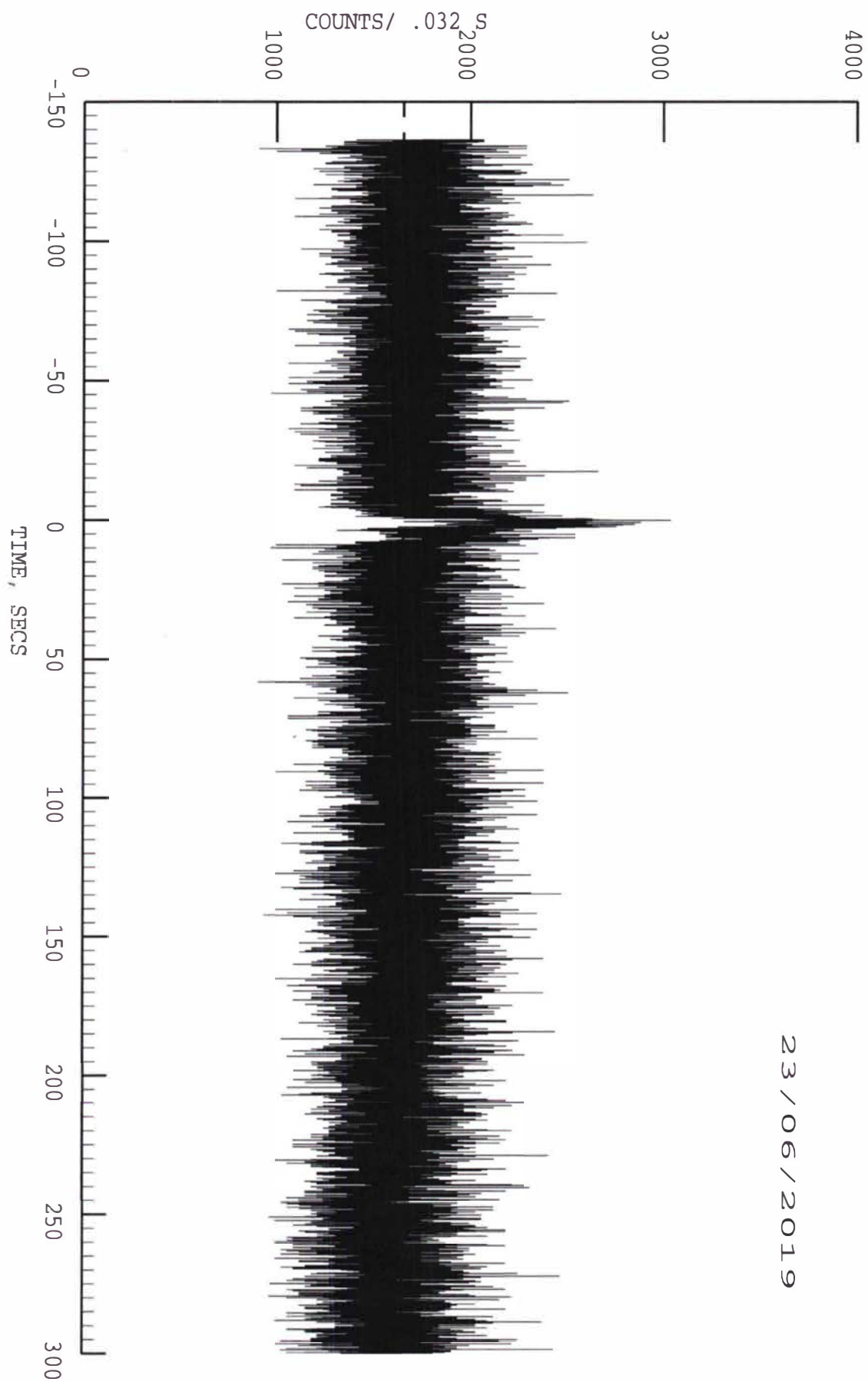
23/06/19

39807.095

11:03:27.095

26- 293 keV

335.5 - 23.3 4.1

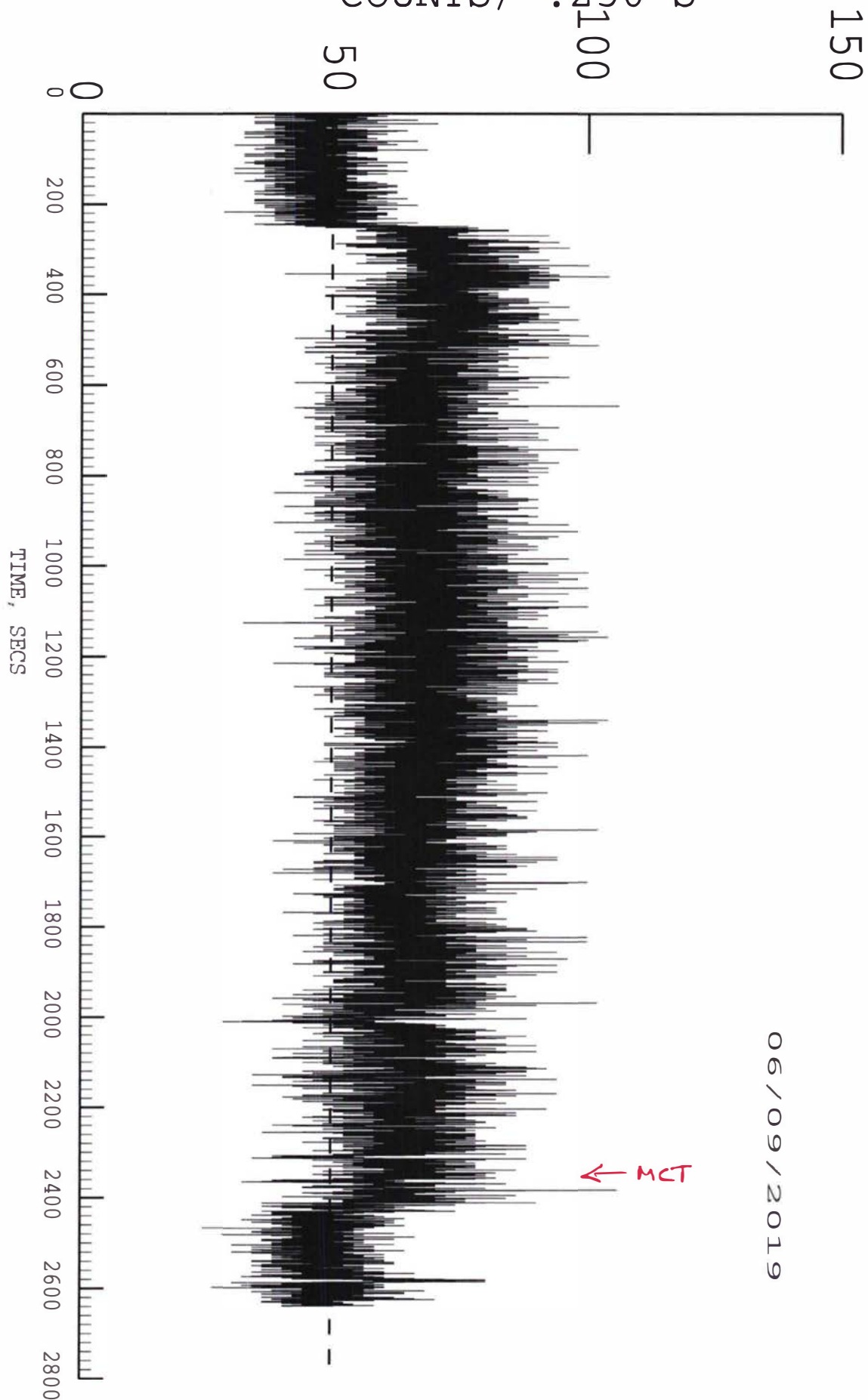


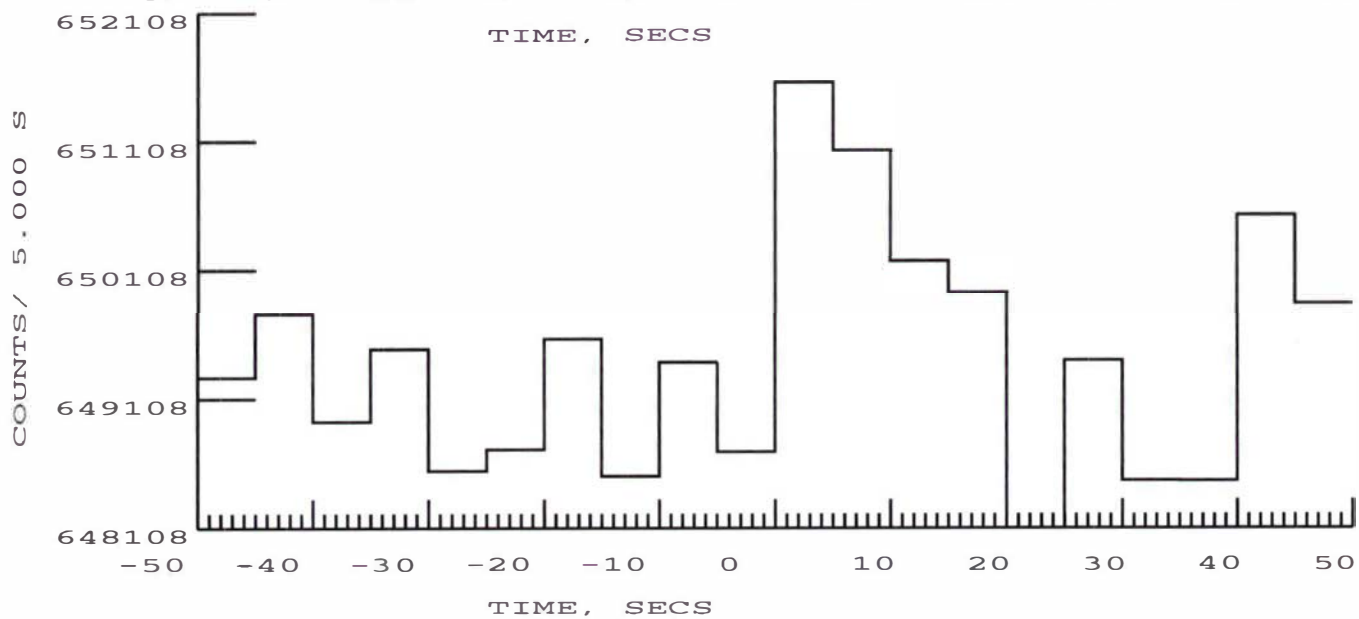
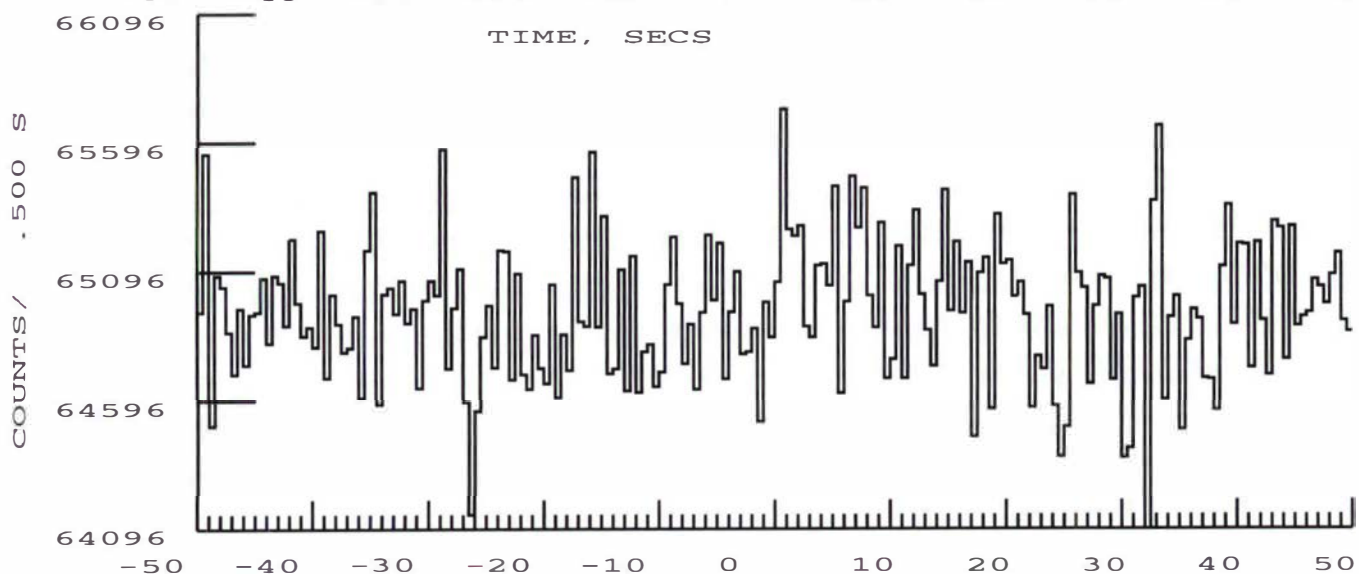
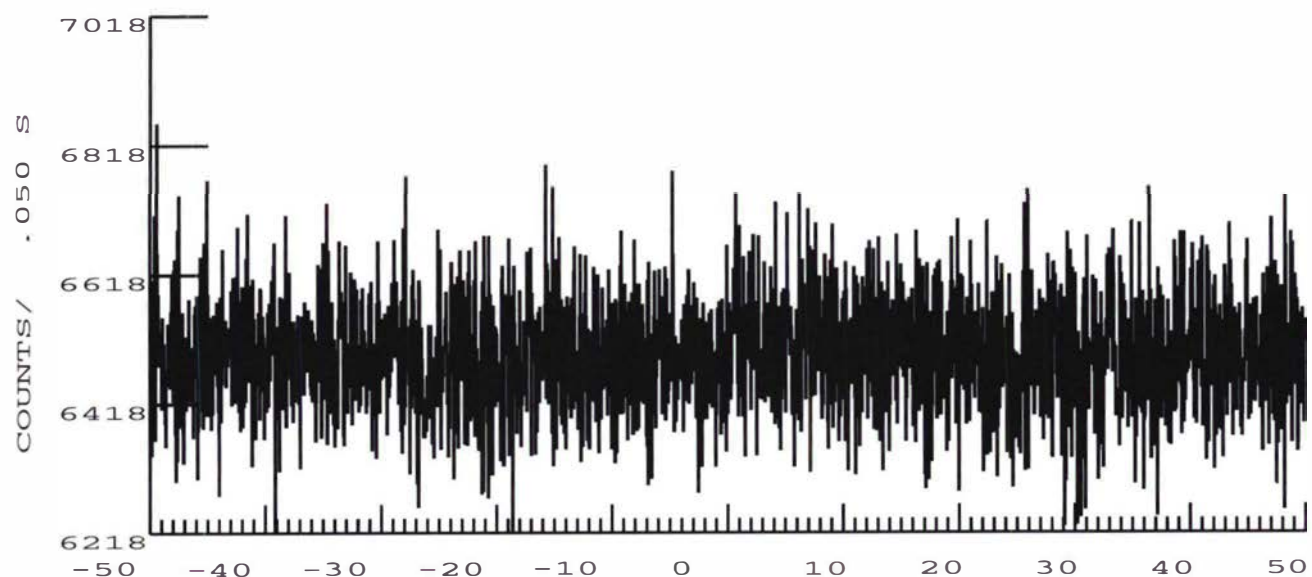
23/06/2019

ODYSSEY 23/06/19 38458.427 10:40:58.427

50-3000 keV

COUNTS/ .250 S

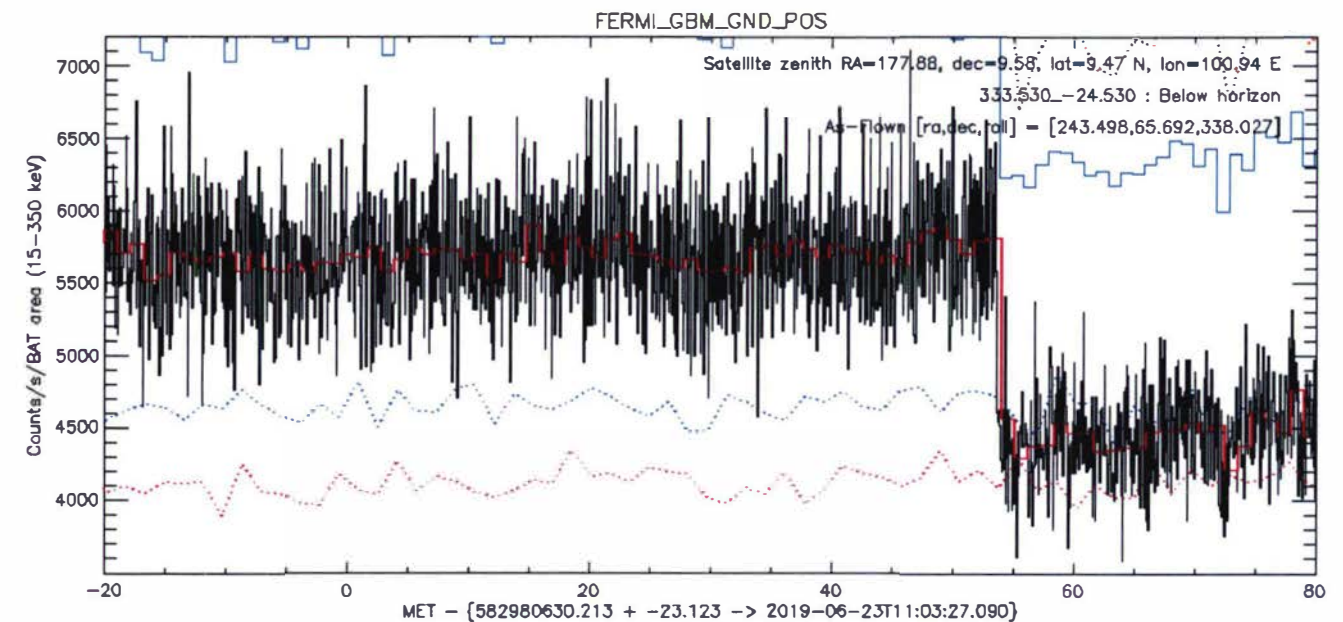




Subject: BAT lightcurve for trigger at 190623_1103
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 6/23/2019, 9:00 AM
To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190623_1103.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 582980630.213 -s 333.530_-24.530
Swift Zenith(RA,dec):      177.88, 9.58
Swift Location(lon,lat,alt): 100.94 E, 9.47 N, 544 km
Time(MET + UTCF -> UT):    582980630.213 + -23.123 -> 2019-06-23T11:03:27.090
YYMMDD_SOD:                190623_39807.090      DOY=174
Obs Sequence Number:        00095146023
Obs Target Name:             MRK 876
Obs Date and Times:          2019-06-23 10:54:38 - 11:13:35
Obs Pointing(ra,dec,roll):   243.498, 65.692, 338.03
333.530_-24.530_imageloc (boresight_dist, angle): (112, 33)
333.530_-24.530_exposure (cm^2 cos adjusted): 0
333.530_-24.530_altitude: -40 (down)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:

/tmp/swift/190623_1103.png	18.4 KB
/tmp/swift/190623_1103_bat64ms_ipn	87.1 KB

KONUS

24/06/2019

65.082

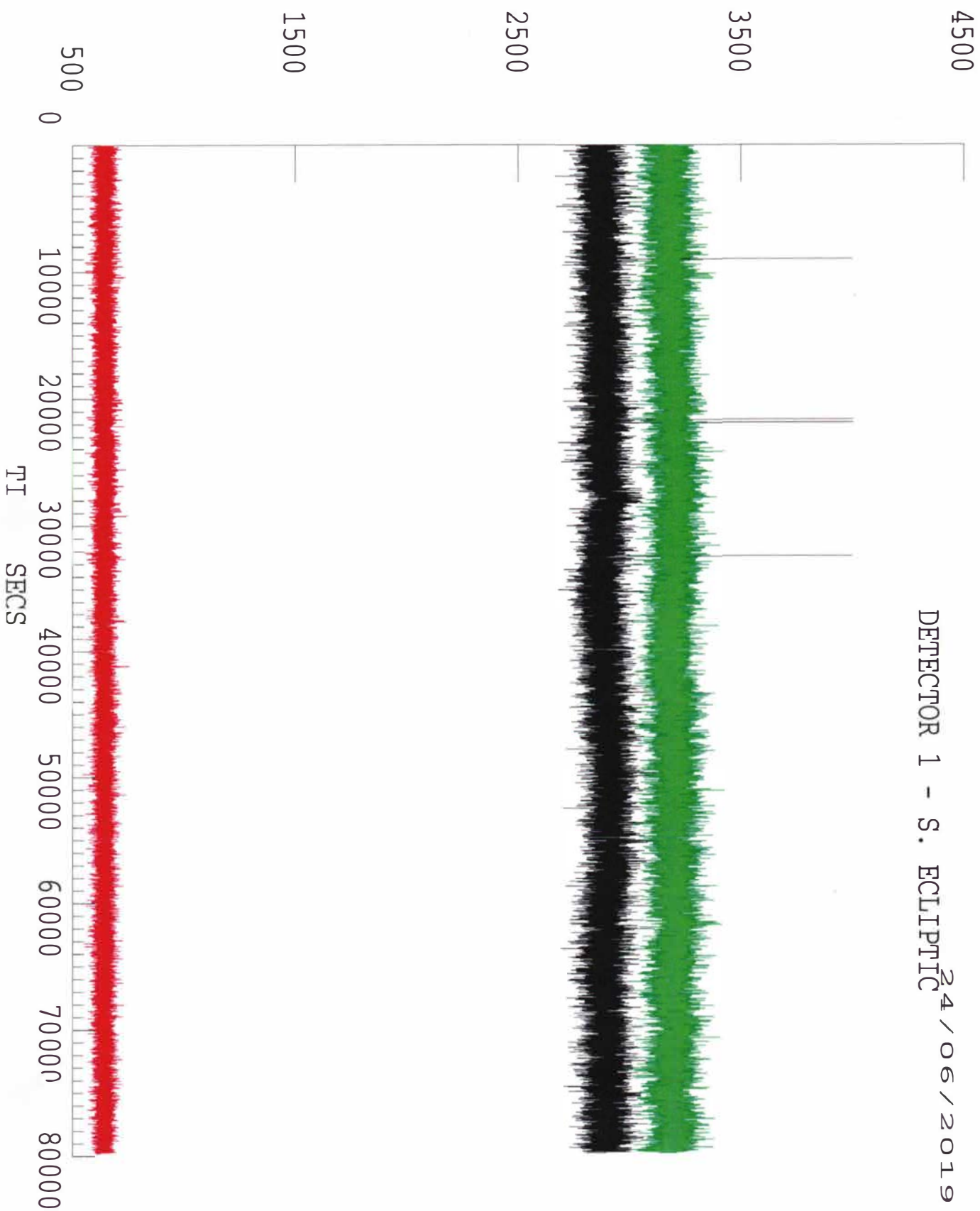
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

24/06/2019

65.082

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

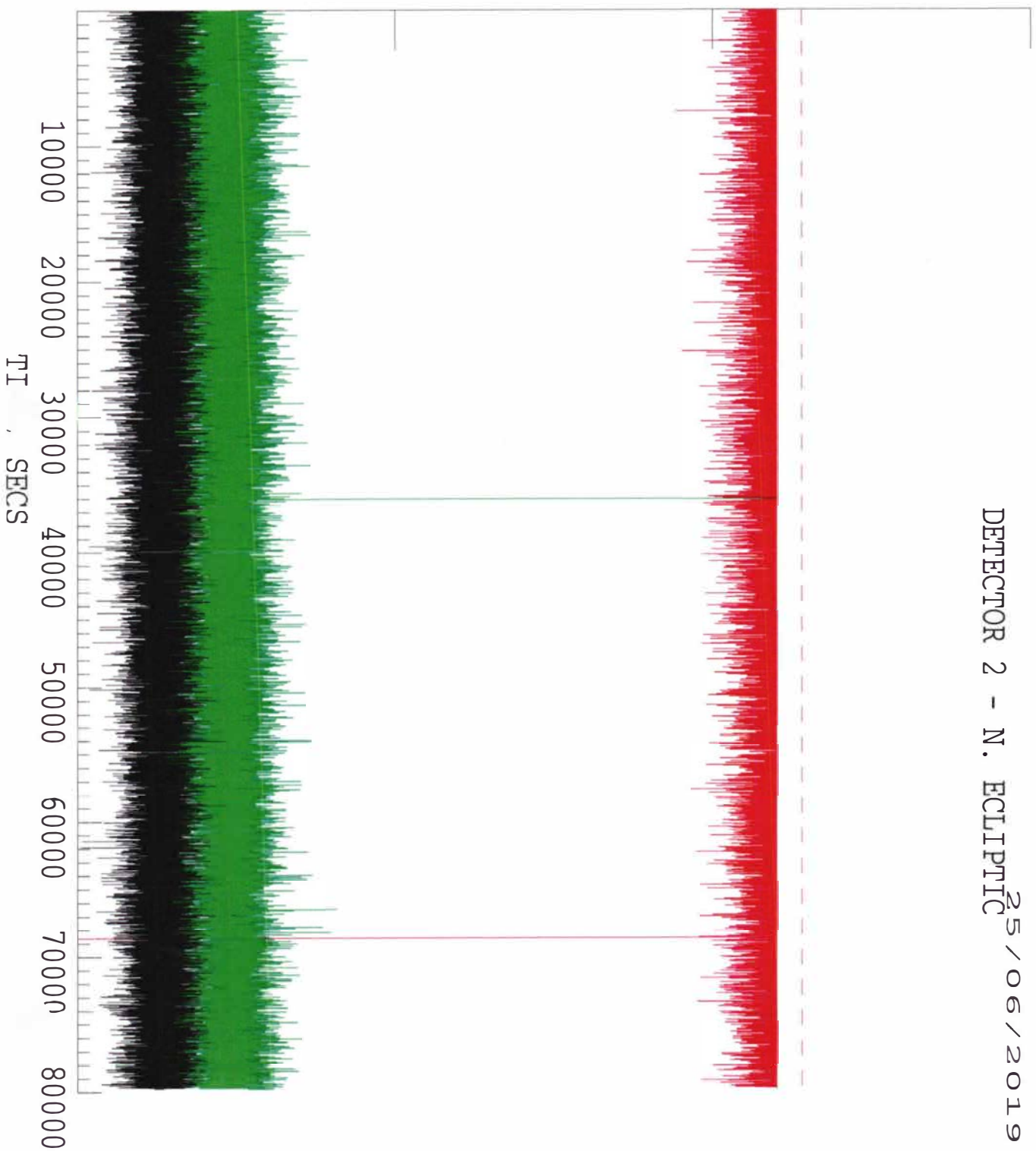
2400

1900

1400

900

0

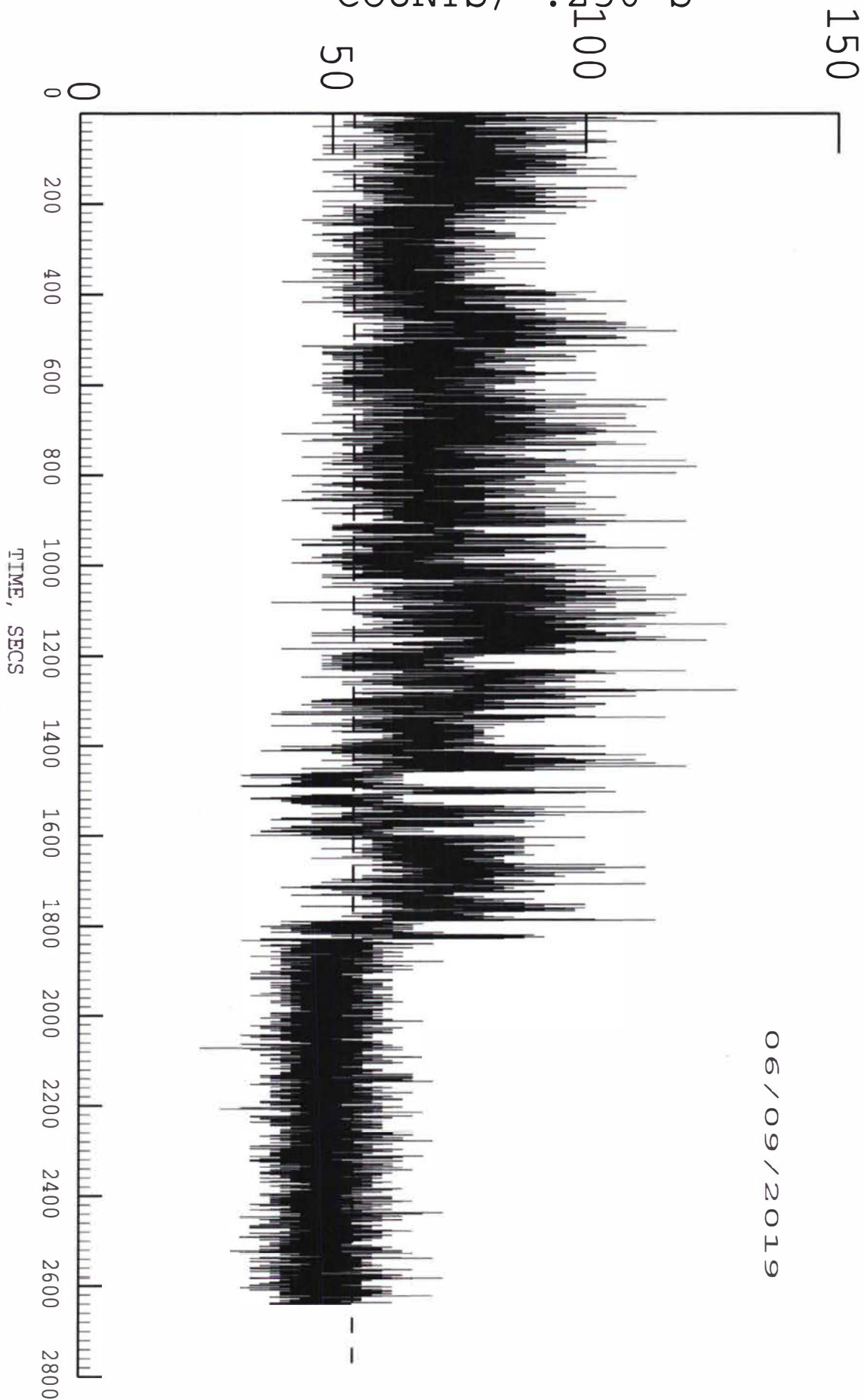


ODYSSEY 24/06/19 52676.640 14:37:56.640

50-3000 keV

COUNTS/ .250 S

Konus RT

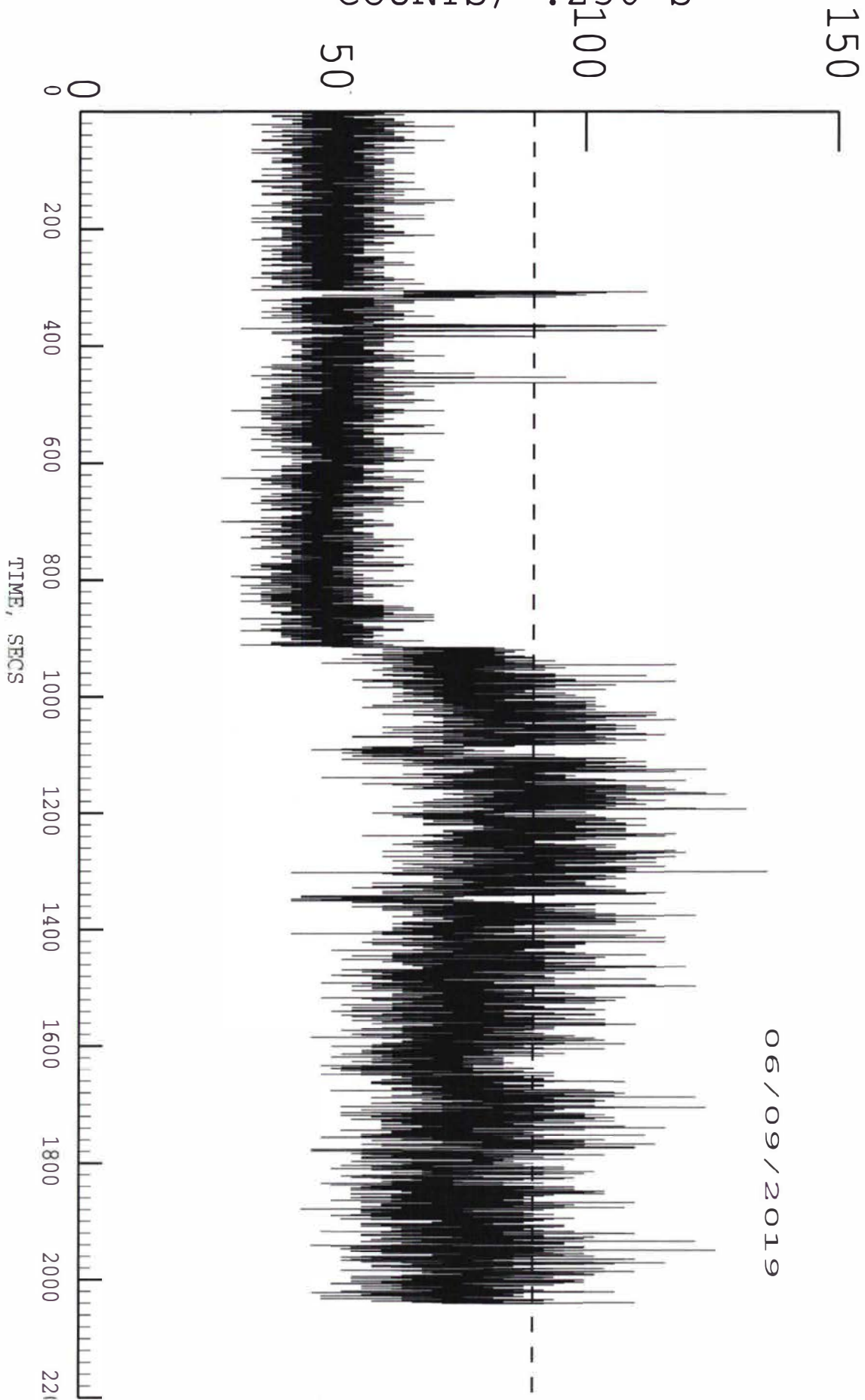


ODYSSEY 24/06/19 65156.410 18:05:56.410

50-3000 keV

COUNTS/ .250 S

Konus RT

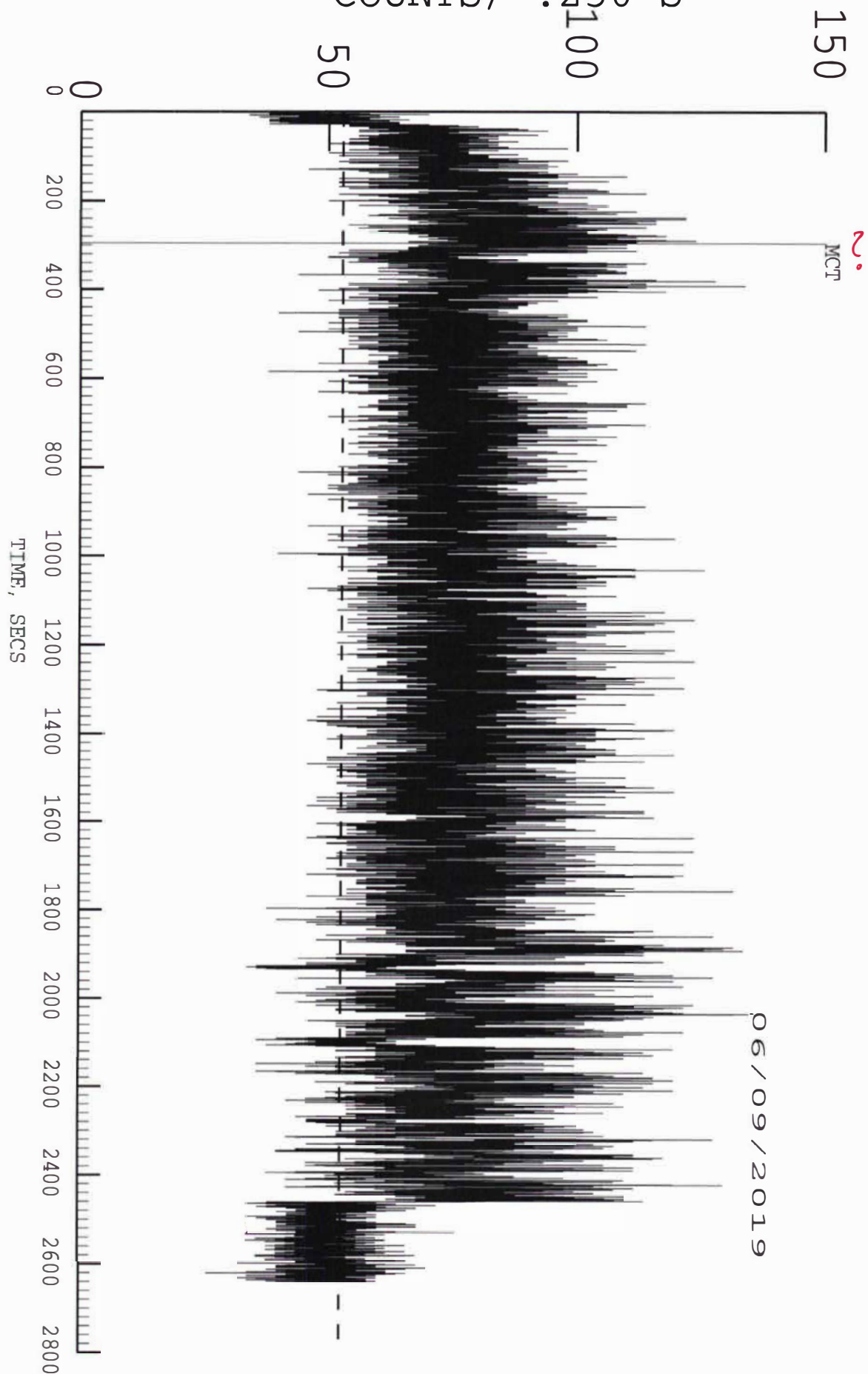


ODYSSEY 24/06/19 73076.277 20:17:56.277

50-3000 keV

COUNTS/ .250 S

?



KONUS

25/06/2019

50.865

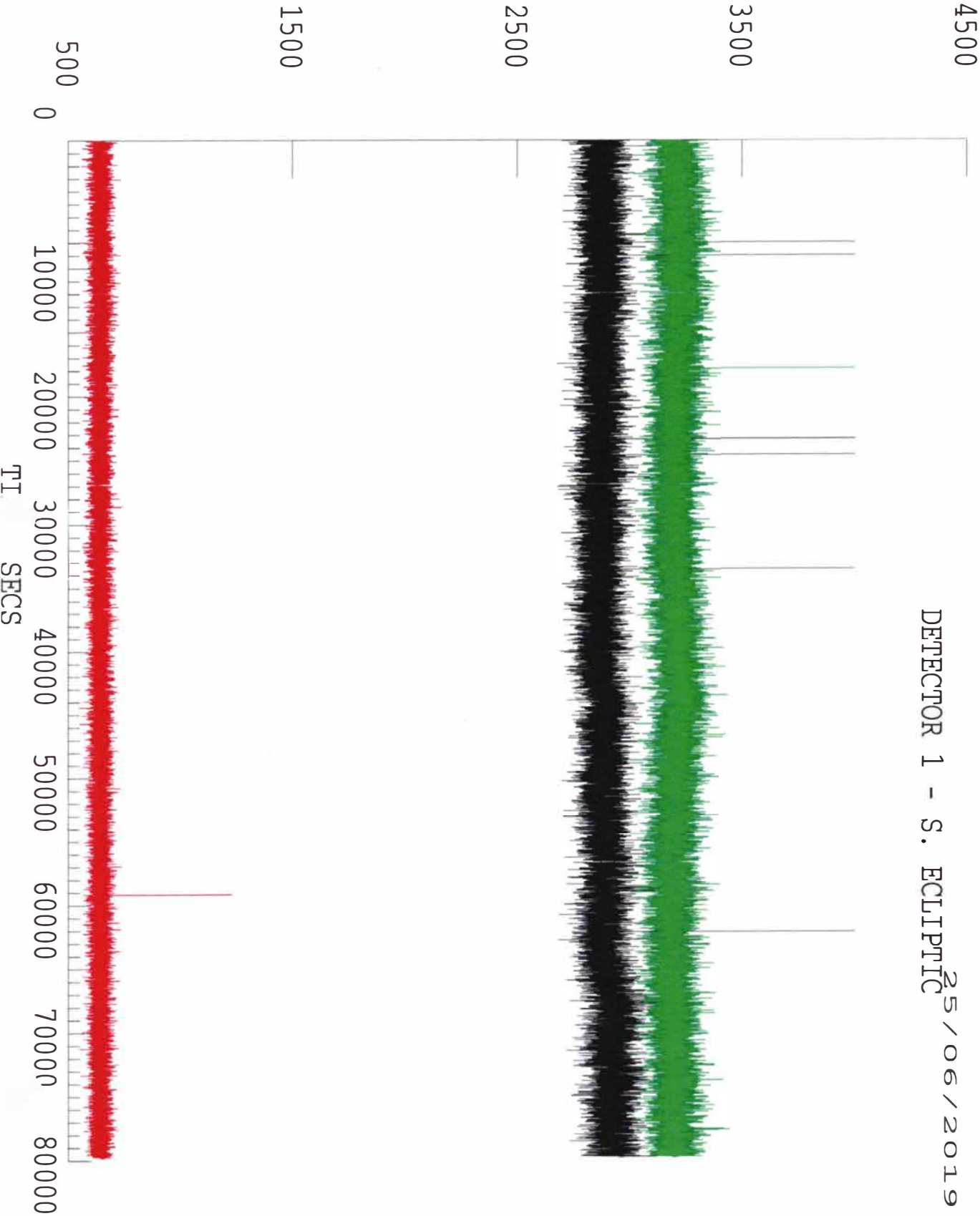
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

25/06/2019

50.865

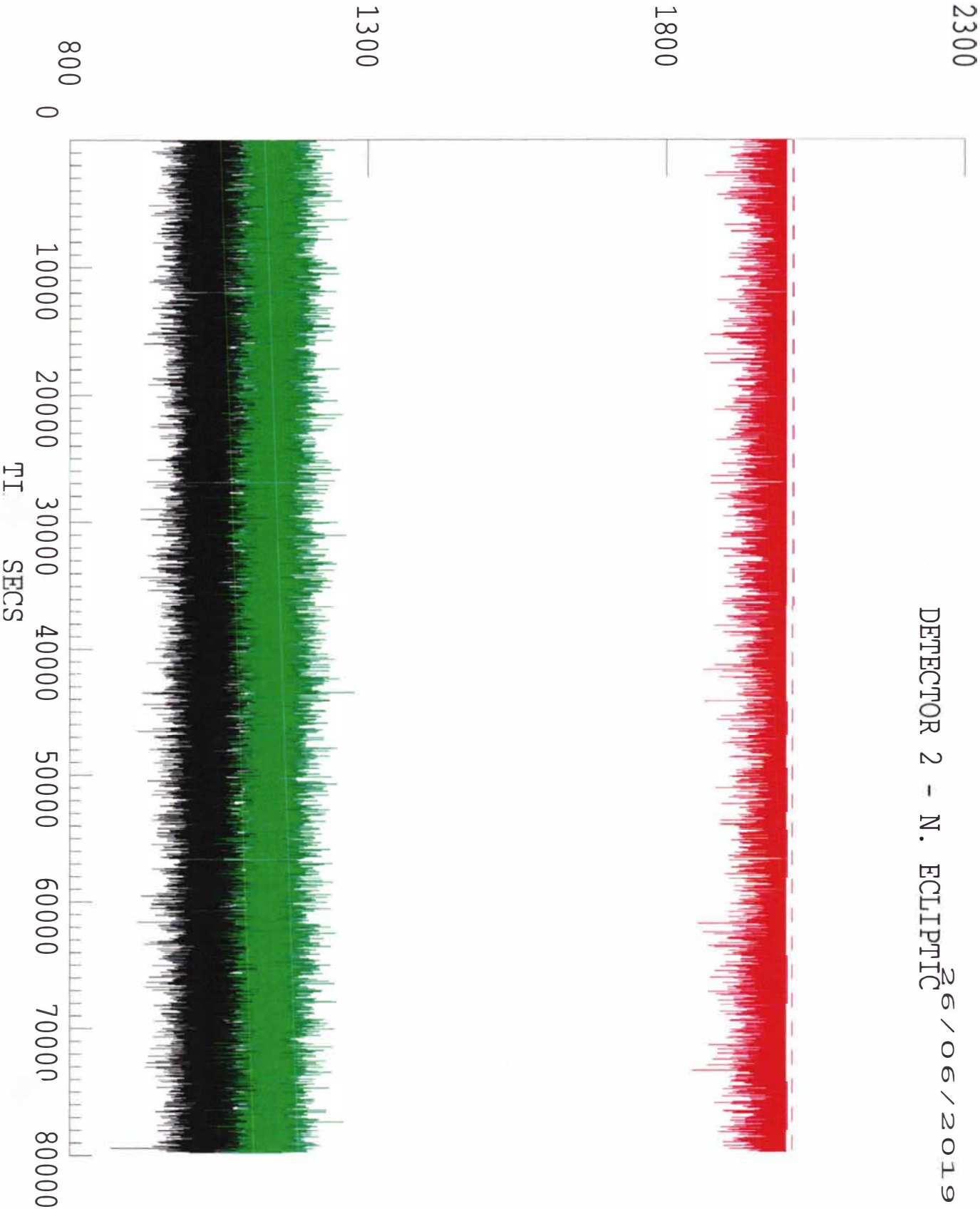
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

26/06/2019

39.593

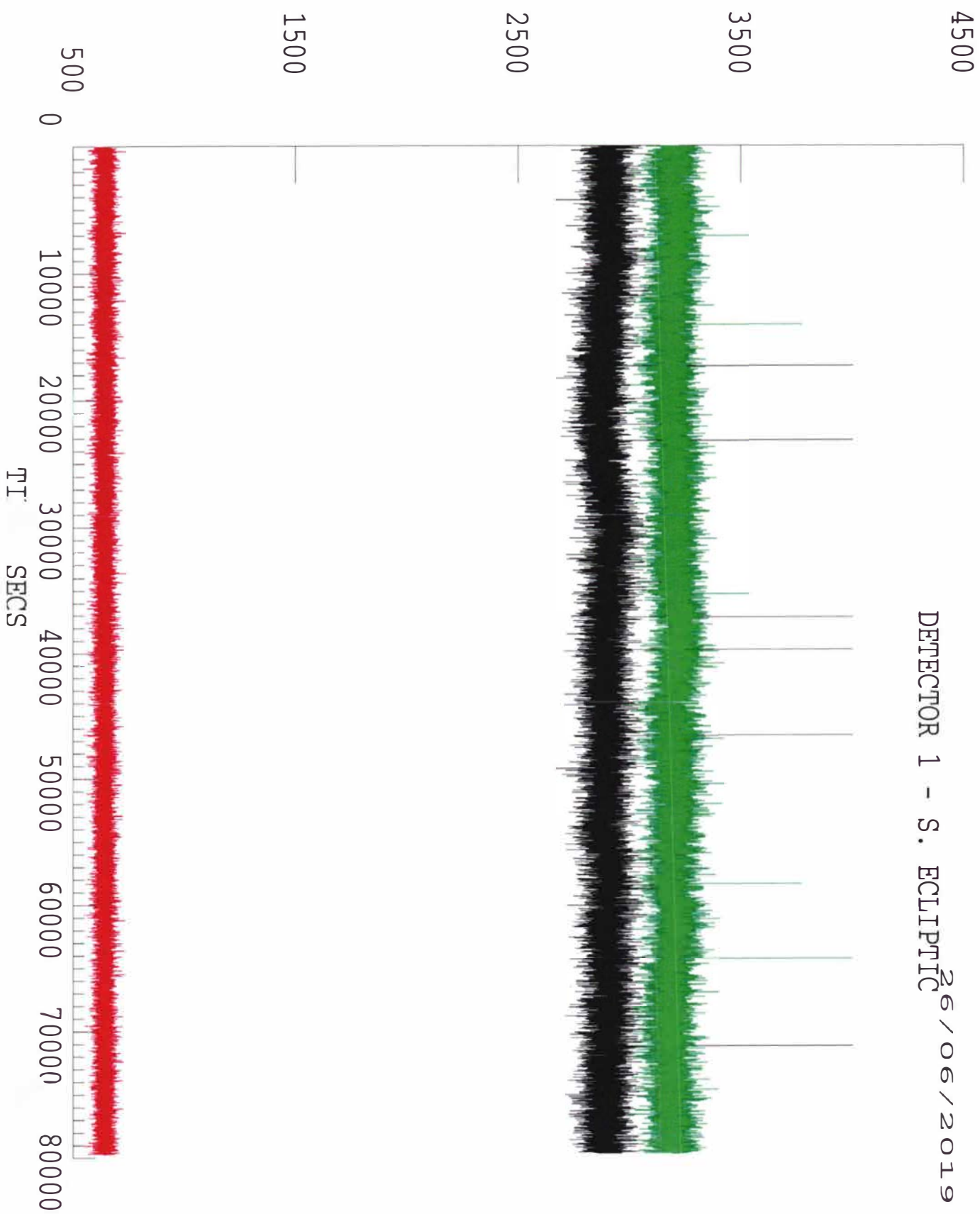
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

26/06/2019

39.593

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2400

1900

1400

900

0

10000

20000

30000

40000

50000

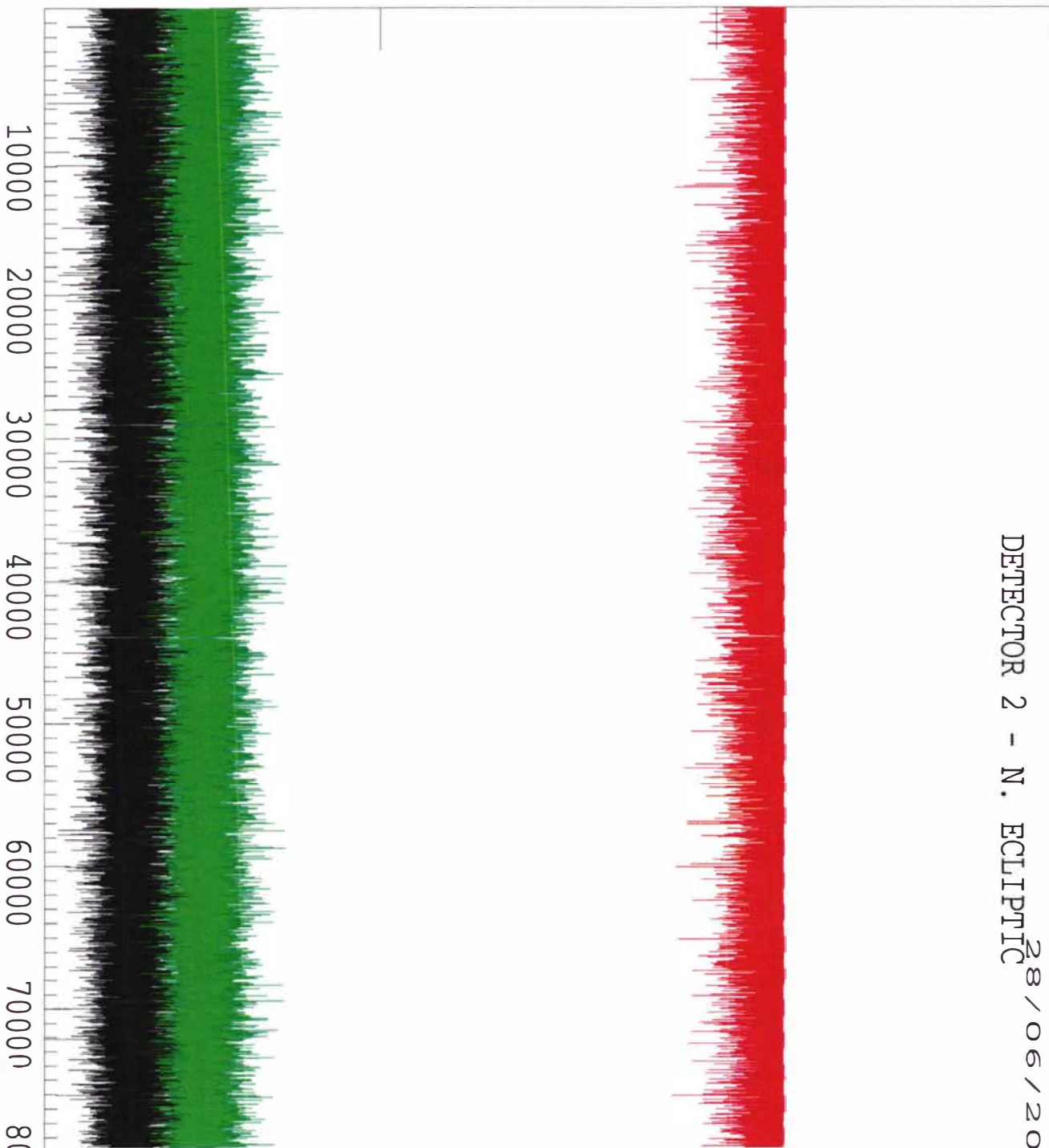
60000

70000

80000

TI . SECS

DETECTOR 2 - N. ECLIP²⁸TIC / 06 / 2019



A

FERMI

26/06/19

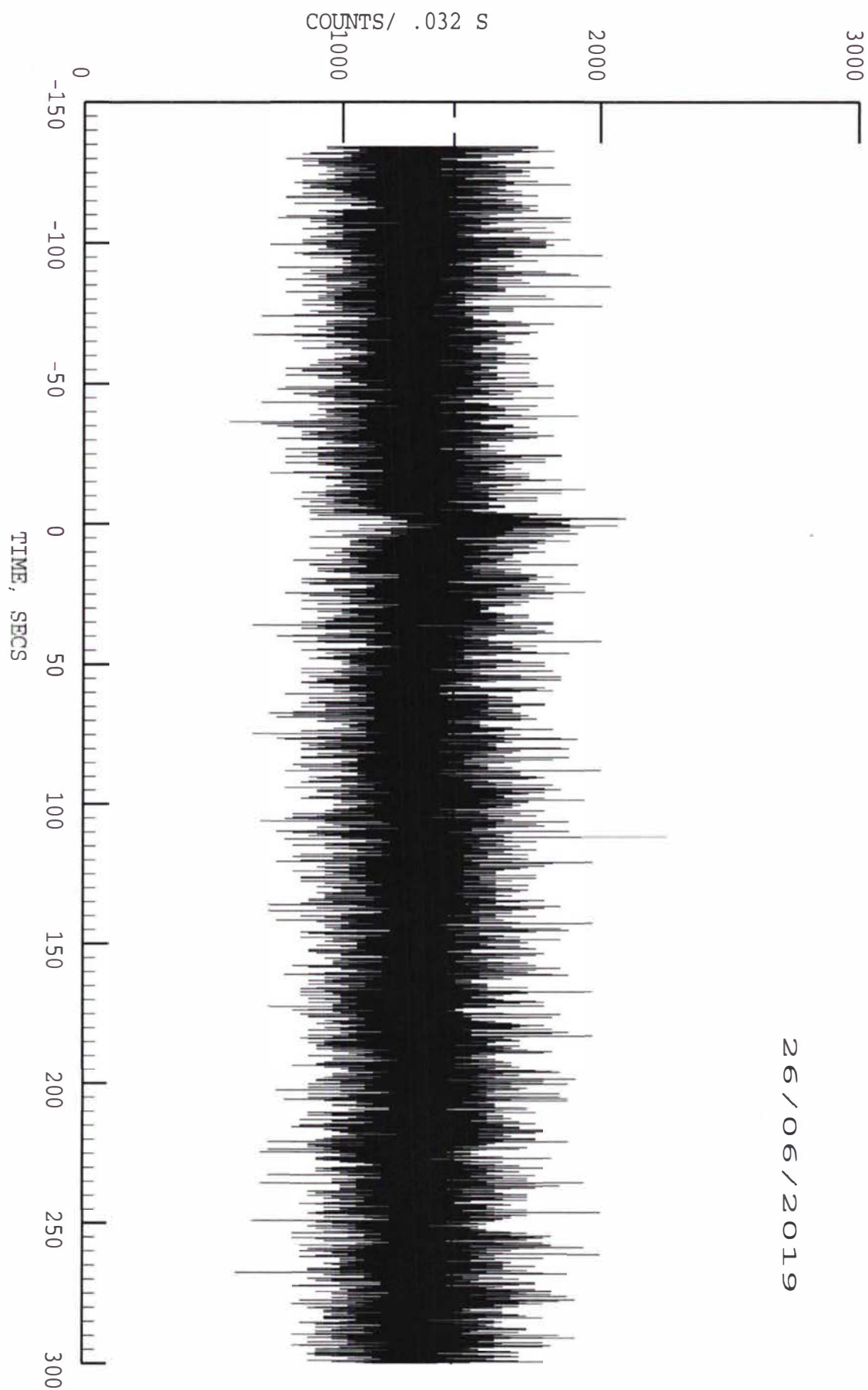
21981.684

06:06:21.684

26- 293 keV

145.7 -41.1 6.2

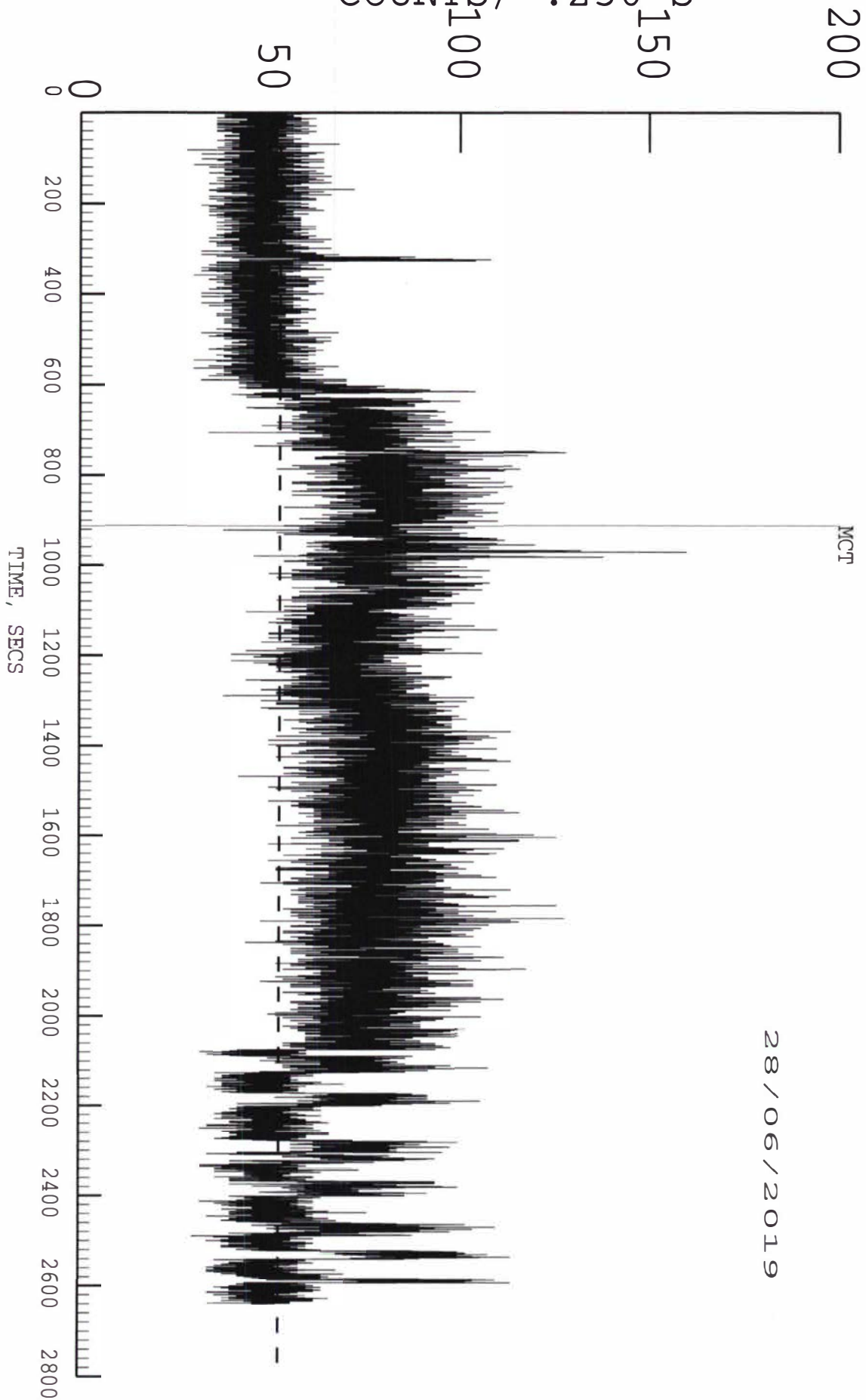
SPI NO



ODYSSEY 26/06/19 20634.107 05:43:54.107^A
50-3000 keV

COUNTS/ .250 S

Occluded



28/06/2019

Subject: BAT lightcurve for trigger at 190626_0606

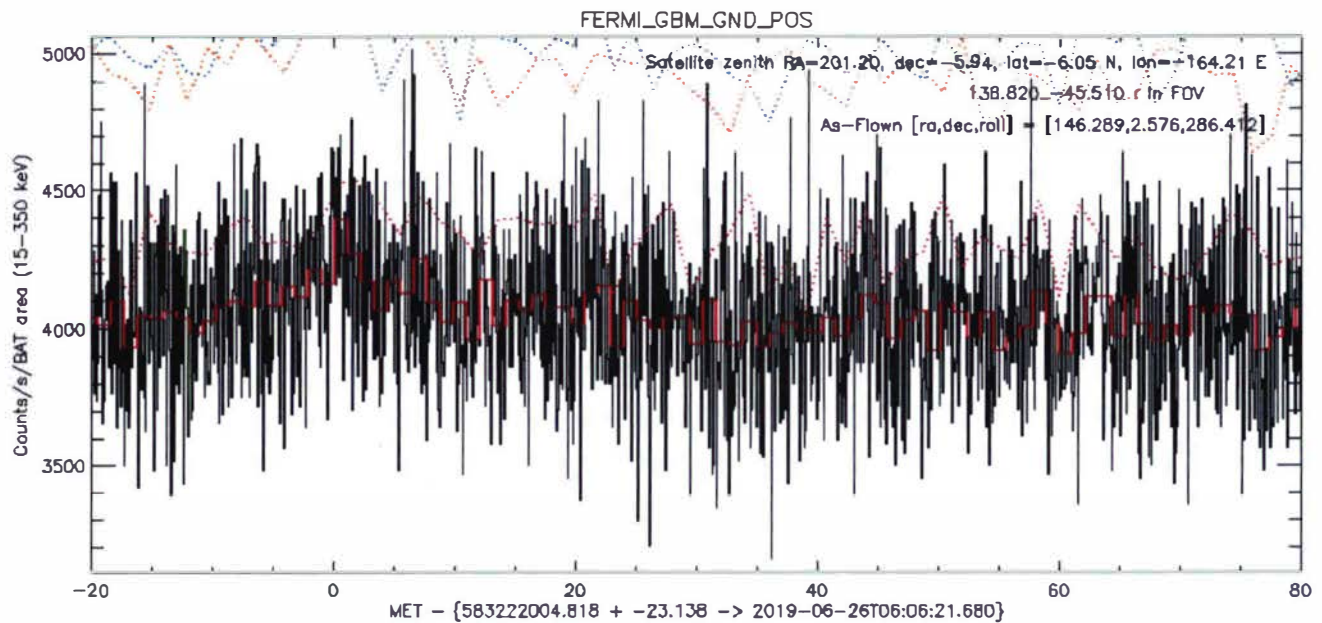
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/26/2019, 12:50 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190626_0606.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583222004.818 -s 138.820_-45.510
Swift Zenith(RA,dec):      201.20, -5.94
Swift Location(lon,lat,alt): -164.21 E, -6.05 N, 545 km
Time(MET + UTCF -> UT):    583222004.818 + -23.138 -> 2019-06-26T06:06:21.680
YYMMDD_SOD:               190626_21981.680      DOY=177
Obs Sequence Number:       00087099006
Obs Target Name:           Swift J0945.4+0233
Obs Date and Times:        2019-06-26 05:48:38 - 06:09:36
Obs Pointing(ra,dec,roll): 146.289, 2.576, 286.41
138.820_-45.510_imageloc (boresight_dist, angle): (49, 171)
138.820_-45.510_exposure (cm² cos adjusted): 1189
138.820_-45.510_altitude: 46 (up)
```

```
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data
```

—Attachments:

/tmp/swift/190626_0606_bat64ms_ipn	87.1 KB
/tmp/swift/190626_0606.png	19.1 KB

Subject: Re: BAT lightcurve for trigger at 190626_0606
From: "'Palmer, David' via ipn" <ipn@ssl.berkeley.edu>
Date: 6/26/2019, 7:25 AM
To: BAT TEAM <bat_team@bigbang.gsfc.nasa.gov>
CC: IPN <ipn@ssl.berkeley.edu>, David Palmer <dmopalmer@gmail.com>, "Vestrand, W" <vestrand@lanl.gov>, "Kippen, Marc" <mkippen@lanl.gov>, "gbm-burst-advocate@lists.nasa.gov" <gbm-burst-advocate@lists.nasa.gov>

Although there is a plausible bump in the lightcurve, this did not produce a rate trigger. The 64 second image trigger interval doesn't show any significant peak.

(The only blip is 5.0 sigma at (ra,dec)=(127.989,-22.066))

--
David Palmer palmer@lanl.gov (505)665-6863

On Jun 26, 2019, at 1:50 AM, palmer+automatic_lightcurve@lanl.gov wrote:

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

```
<_tmp_swift_190626_0606_bat64ms_ipn><_tmp_swift_190626_0606.png>
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583222004.818 -s 138.820_-45.510
Swift Zenith(RA,dec):      201.20, -5.94
Swift Location(lon,lat,alt): -164.21 E, -6.05 N, 545 km
Time(MET + UTCF -> UT):   583222004.818 + -23.138 -> 2019-06-26T06:06:21.680
YYMMDD_SOD:               190626_21981.680      DOY=177
Obs Sequence Number:      00087099006
Obs Target Name:          Swift J0945.4+0233
Obs Date and Times:       2019-06-26 05:48:38 - 06:09:36
Obs Pointing(ra,dec,roll): 146.289, 2.576, 286.41
138.820_-45.510_imageloc (boresight_dist, angle): (49, 171)
138.820_-45.510_exposure (cm2 cos adjusted): 1189
138.820_-45.510_altitude: 46 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

FERMI

26/06/19

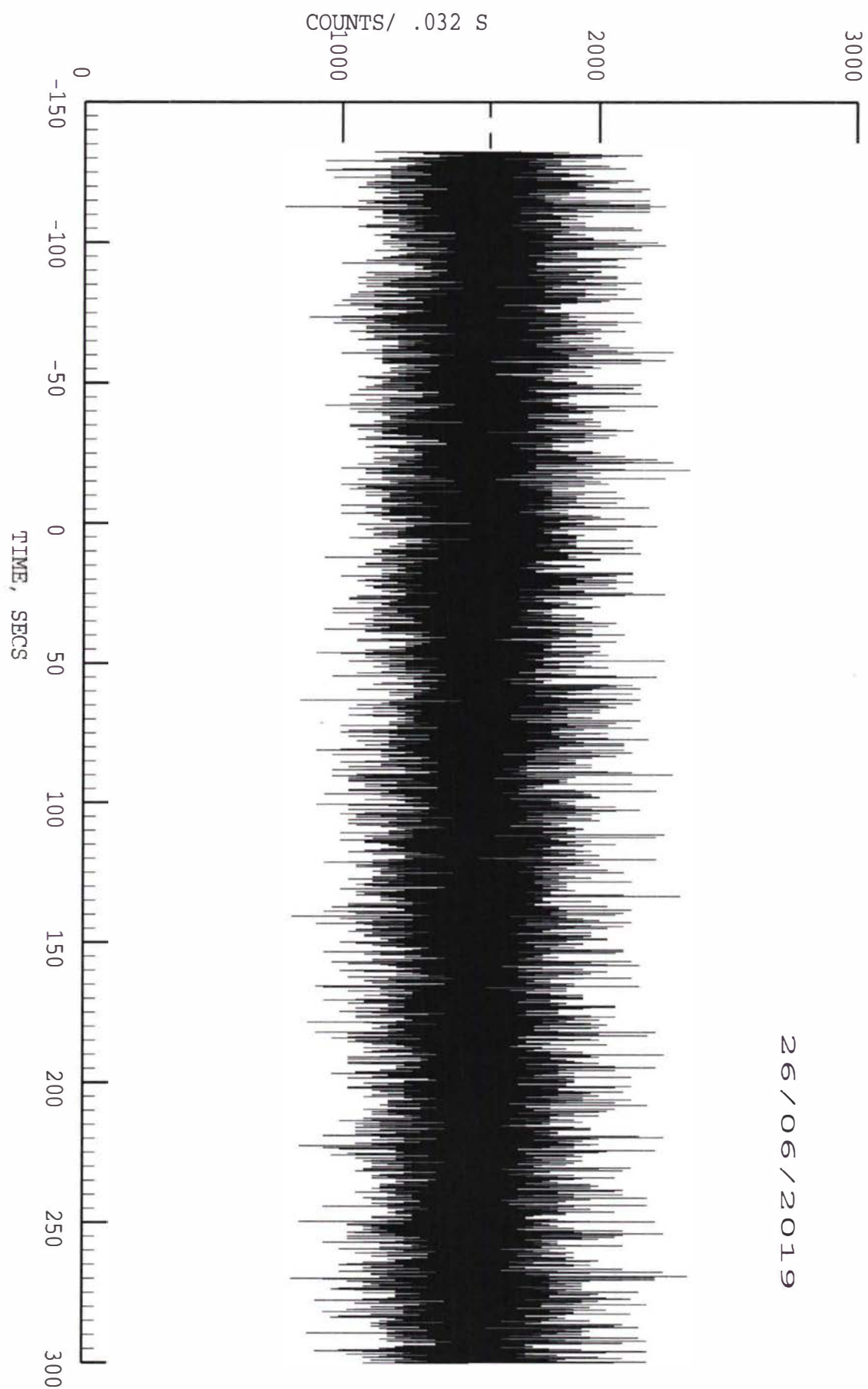
45408.943

12:36:48.943

B

26- 293 keV

Not a GRB



Subject: Fermi Gamma-ray Burst Monitor trigger 190626526/583245413 is not a GRB
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 7/2/2019, 11:14 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24968
SUBJECT: Fermi Gamma-ray Burst Monitor trigger 190626526/583245413 is not a GRB
DATE: 19/07/02 18:13:27 GMT
FROM: Cori Fletcher at USRA <cfletcher@usra.edu>

C. Fletcher (USRA) reports on behalf of
the Fermi Gamma-ray Burst Monitor Team:

◆The Fermi Gamma-ray Burst Monitor (GBM) trigger 190626526/583245413
at 12:36:48.94 UT on 26 June 2019, tentatively classified as a GRB, is in fact
not due to a GRB. This trigger is due to an unknown source."

For Fermi GBM data and info, please visit
the official Fermi GBM Support Page:
<https://fermi.gsfc.nasa.gov/ssc/data/access/gbm/>

Subject: BAT lightcurve for trigger at 190626_1236

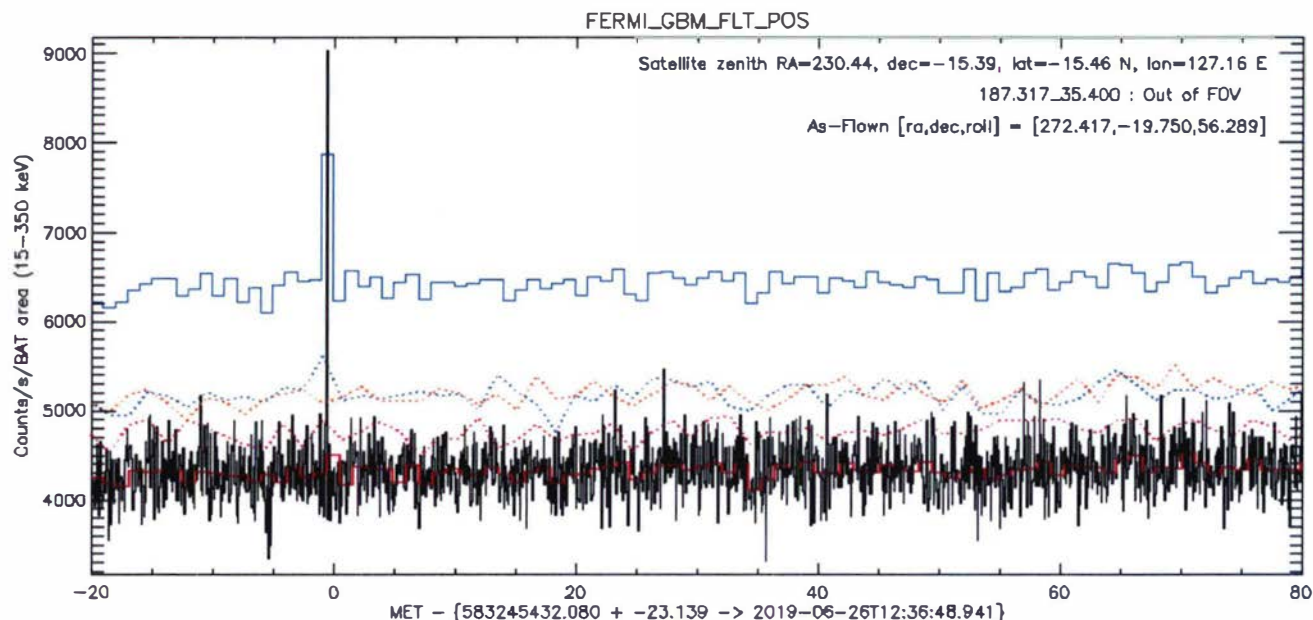
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/26/2019, 8:45 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

— /tmp/swift/190626_1236.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583245432.080 -s 187.317_35.400
Swift Zenith(RA,dec):      230.44, -15.39
Swift Location(lon,lat,alt): 127.16 E, -15.46 N, 546 km
Time(MET + UTCF -> UT):   583245432.080 + -23.139 -> 2019-06-26T12:36:48.941
YYMMDD_SOD:               190626_45408.941      DOY=177
Obs Sequence Number:      00031335029
Obs Target Name:          XTE J1810-197
Obs Date and Times:       2019-06-26 12:28:38 - 12:40:37
Obs Pointing(ra,dec,roll): 272.417, -19.750, 56.29
187.317_35.400_imageloc (boresight_dist, angle): (97, 159)
187.317_35.400_exposure (cm2 cos adjusted): 0
187.317_35.400_altitude: 48 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

— Attachments:

/tmp/swift/190626_1236.png	17.6 KB
/tmp/swift/190626_1236_bat64ms_ipn	87.1 KB

Subject: Re: BAT lightcurve for trigger at 190626_1236

From: "'Palmer, David' via ipn" <ipn@ssl.berkeley.edu>

Date: 6/26/2019, 10:45 AM

To: IPN <ipn@ssl.berkeley.edu>

CC: "Wren, James" <jwren@lanl.gov>, David Palmer <dmopalmer@gmail.com>, "Vestrand, W" <vestrand@lanl.gov>, "Kippen, Marc" <mkippen@lanl.gov>, "gbm-burst-advocate@lists.nasa.gov" <gbm-burst-advocate@lists.nasa.gov>, "BAT TEAM" <bat_team@bigbang.gsfc.nasa.gov>

Trigger #911374. This is an instrumental microphonic glitch not a GRB detection.

--
David Palmer palmer@lanl.gov (505)665-6863

On Jun 26, 2019, at 9:45 AM, palmer+automatic_lightcurve@lanl.gov wrote:

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

<tmp_swift_190626_1236.png><tmp_swift_190626_1236_bat64ms_ipn>
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583245432.080 -s 187.317_35.400
Swift Zenith(RA,dec): 230.44, -15.39
Swift Location(lon,lat,alt): 127.16 E, -15.46 N, 546 km
Time(MET + UTCF -> UT): 583245432.080 + -23.139 -> 2019-06-26T12:36:48.941
YYMMDD_SOD: 190626_45408.941 DOY=177
Obs Sequence Number: 00031335029
Obs Target Name: XTE J1810-197
Obs Date and Times: 2019-06-26 12:28:38 - 12:40:37
Obs Pointing(ra,dec,roll): 272.417, -19.750, 56.29
187.317_35.400_imageloc (boresight_dist, angle): (97, 159)
187.317_35.400_exposure (cm² cos adjusted): 0
187.317_35.400_altitude: 48 (up)

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

KONUS

27/06/2019

28.320

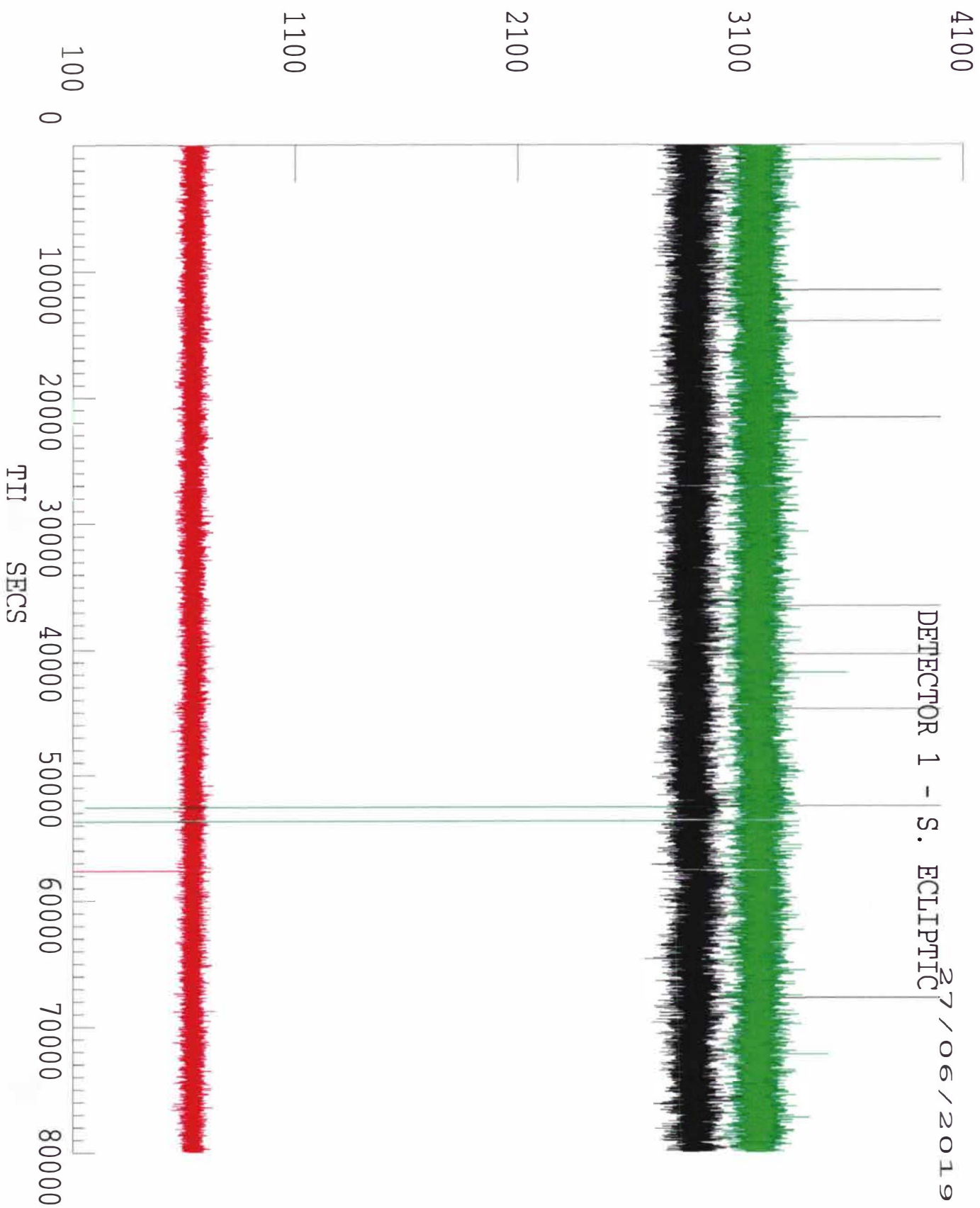
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

27/06/2019

28.320

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

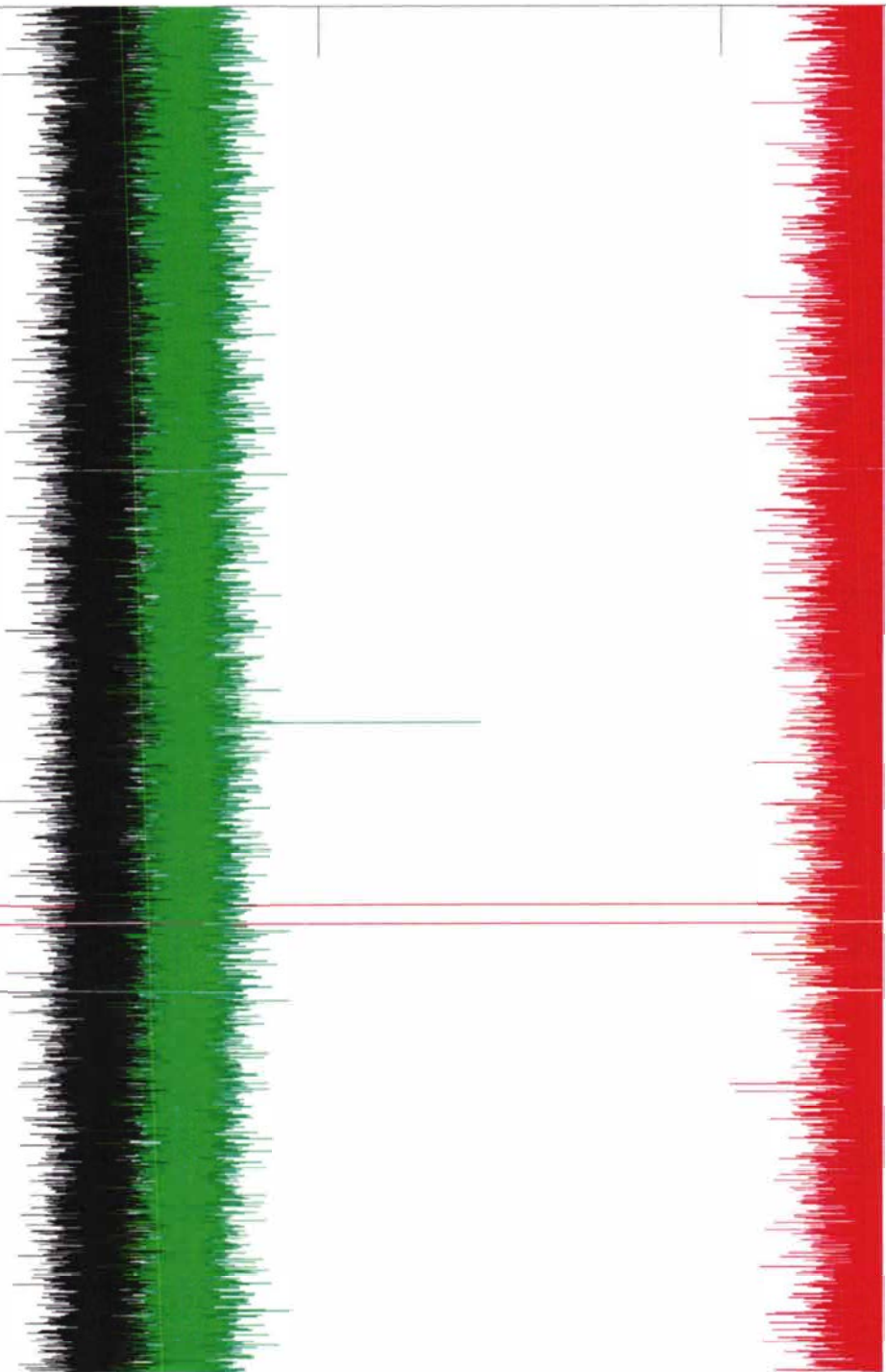
60000

70000

80000

TI SECS

DETECTOR 2 - N. ECLIP TIC²⁸/06/2019



Subject: GCN/SWIFT_BAT_LIGHTCURVE

From: Bacodine <vxw@capella2.gsfc.nasa.gov>

Date: 6/27/2019, 4:24 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Thu 27 Jun 19 11:23:31 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 911609, Seg_Num: 0
 GRB_RA: 244.830d {+16h 19m 19s} (J2000),
 245.089d {+16h 20m 21s} (current),
 244.167d {+16h 16m 40s} (1950)
 GRB_DEC: -5.292d {-05d 17' 31"} (J2000),
 -5.338d {-05d 20' 16"} (current),
 -5.172d {-05d 10' 19"} (1950)
 GRB_DATE: 18661 TJD; 178 DOY; 19/06/27
 GRB_TIME: 40711.12 SOD {11:18:31.12} UT
 TRIGGER_INDEX: 443
 GRB_PHI: -48.20 [deg]
 GRB_THETA: 28.24 [deg]
 DELTA_TIME: 12.00 [sec]
 TRIGGER_DUR: 2.048 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 12.28 [sigma]
 IMAGE_SIGNIF: 7.64 [sigma]
 LC_URL: sw00911609000msb.lc
 SUN_POSTN: 96.04d {+06h 24m 10s} +23.32d {+23d 19' 12"}
 SUN_DIST: 145.18 [deg] Sun_angle= -9.9 [hr] (East of Sun)
 MOON_POSTN: 28.54d {+01h 54m 10s} +6.17d {+06d 10' 11"}
 MOON_DIST: 143.63 [deg]
 MOON_ILLUM: 30 [%]
 GAL_COORDS: 8.17, 30.26 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 243.88, 15.89 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 237.23,-11.92 [deg].

1.6 s

 $9.9 \times 10^{-8} \text{ erg cm}^{-2}$ 1.1 phot/cm²s

SPI NO

A

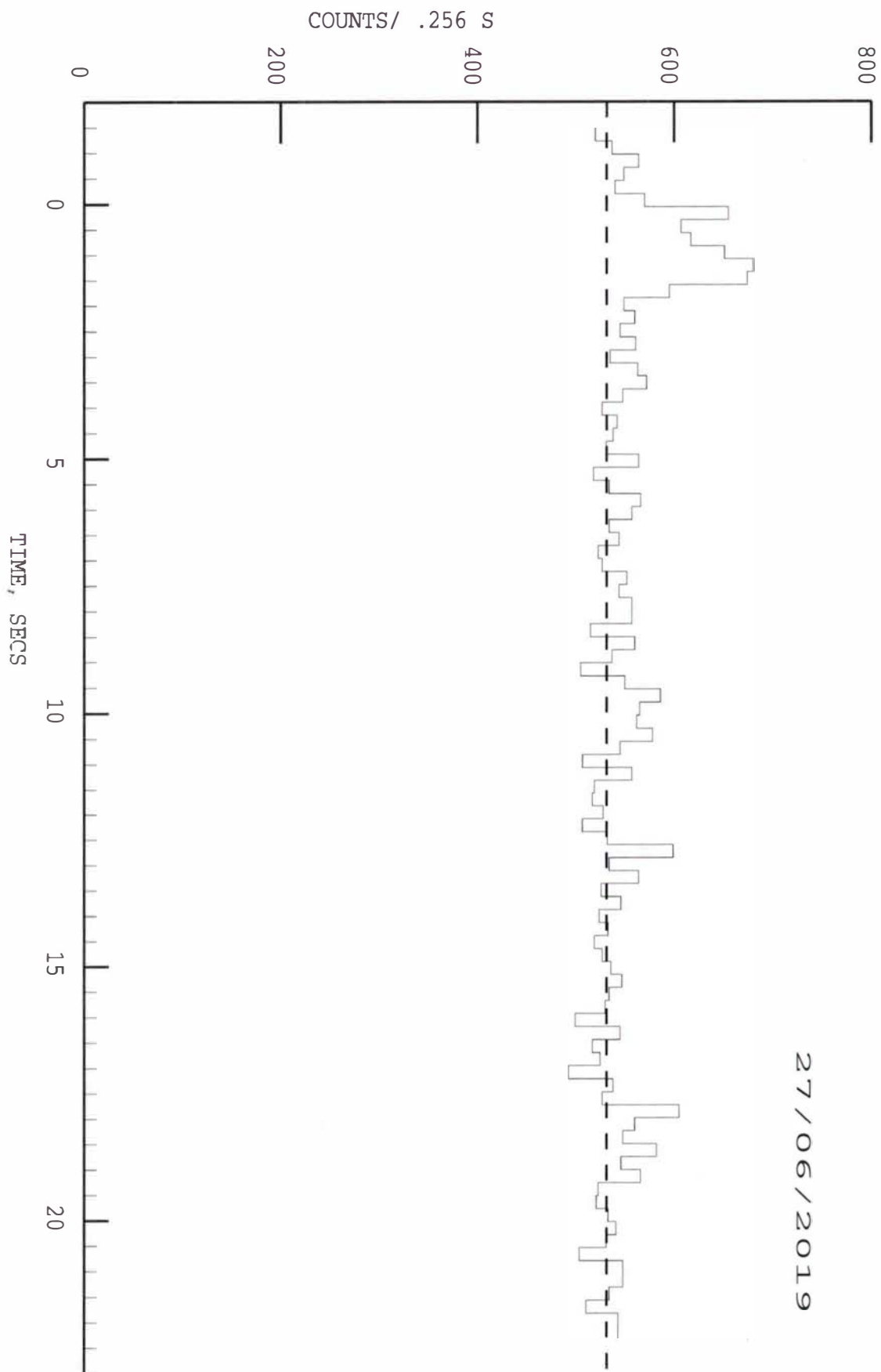
BAT

27/06/19

40711.127

11:18:31.127

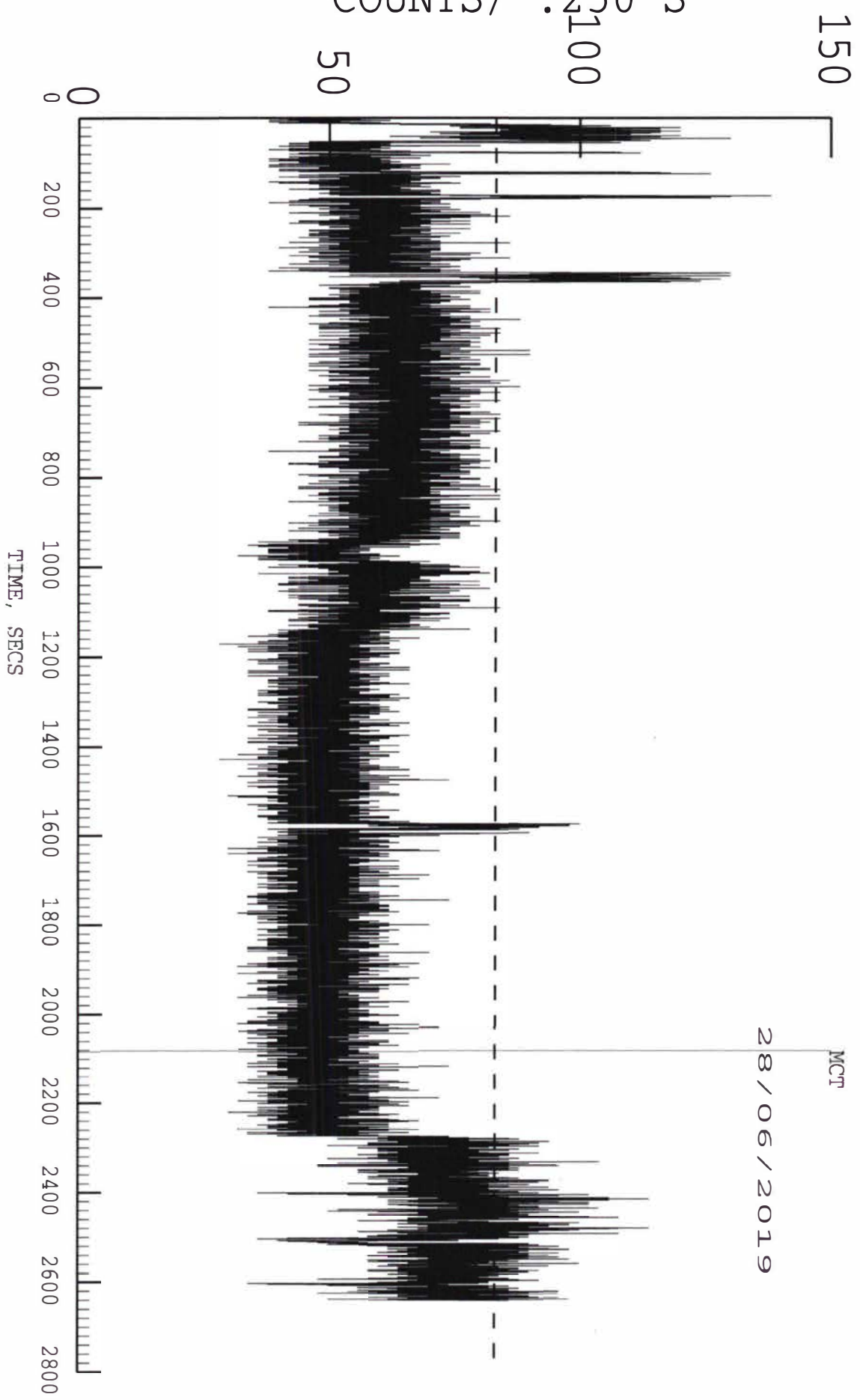
25- 100 keV



A

ODYSSEY 27/06/19 39352.240 10:55:52.240
50-3000 keV

COUNTS/ .250 S



FERMI

27/06/19

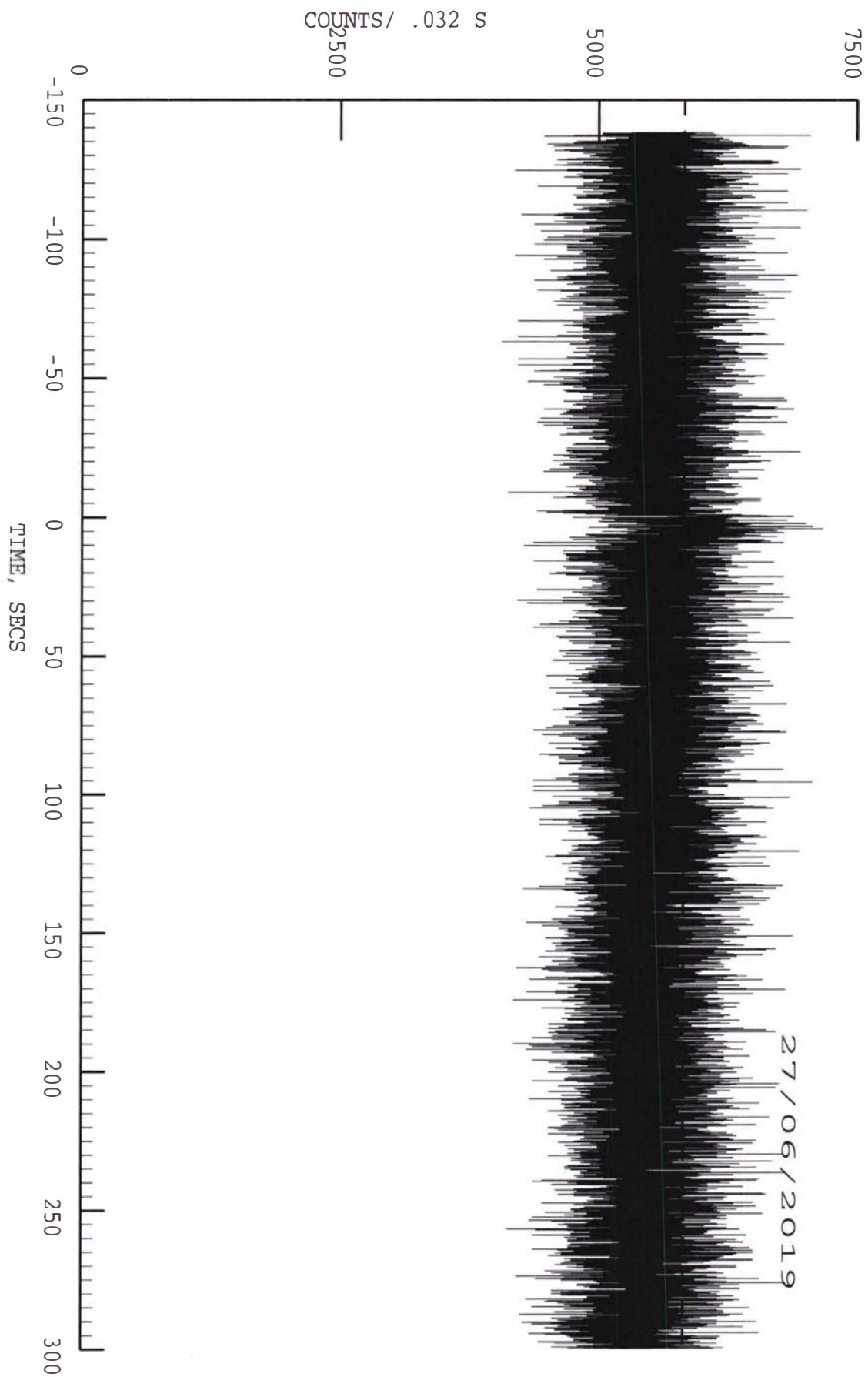
41519.942

11:31:59.942

B

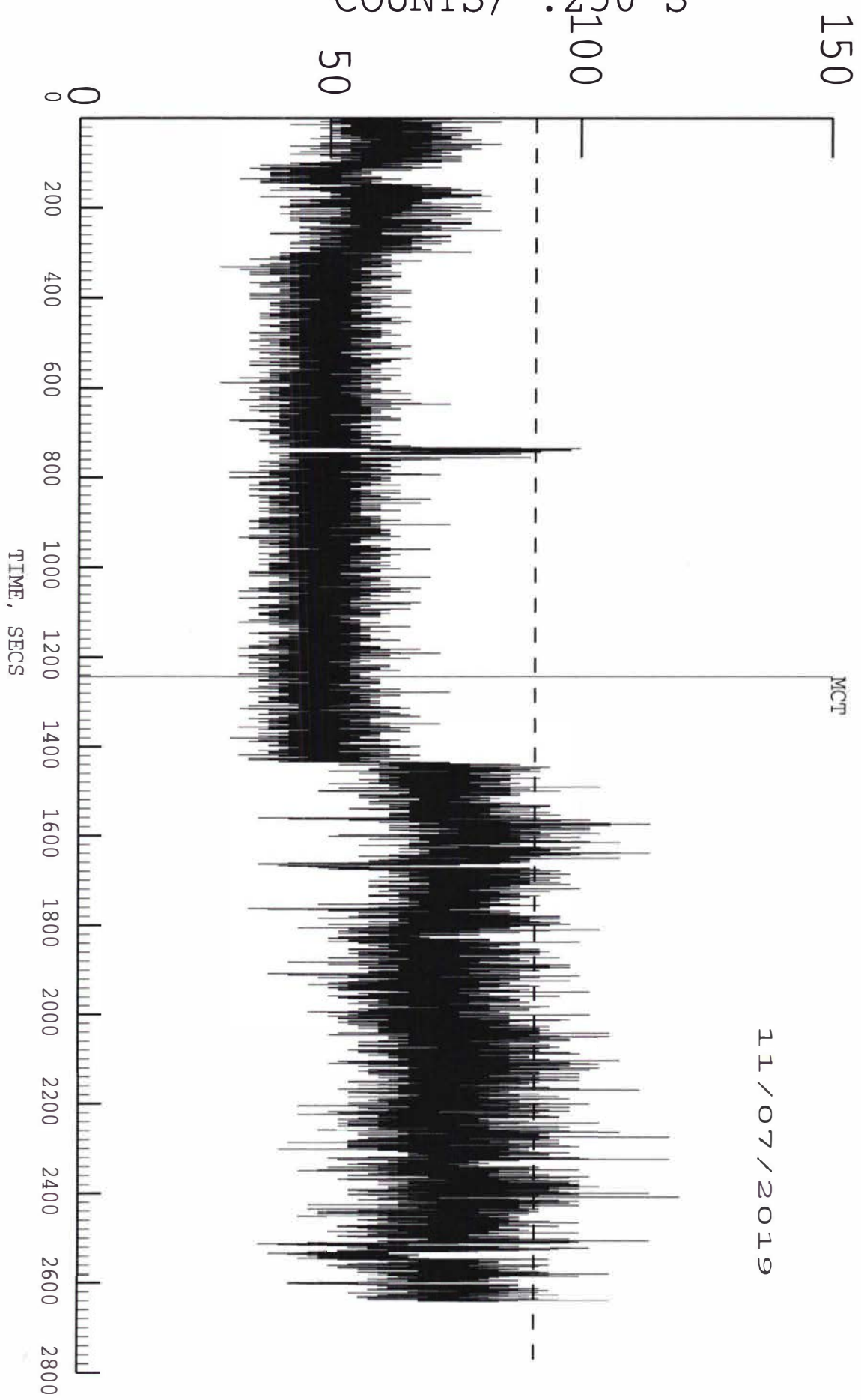
26- 293 keV

352.3 -8.9 23.6

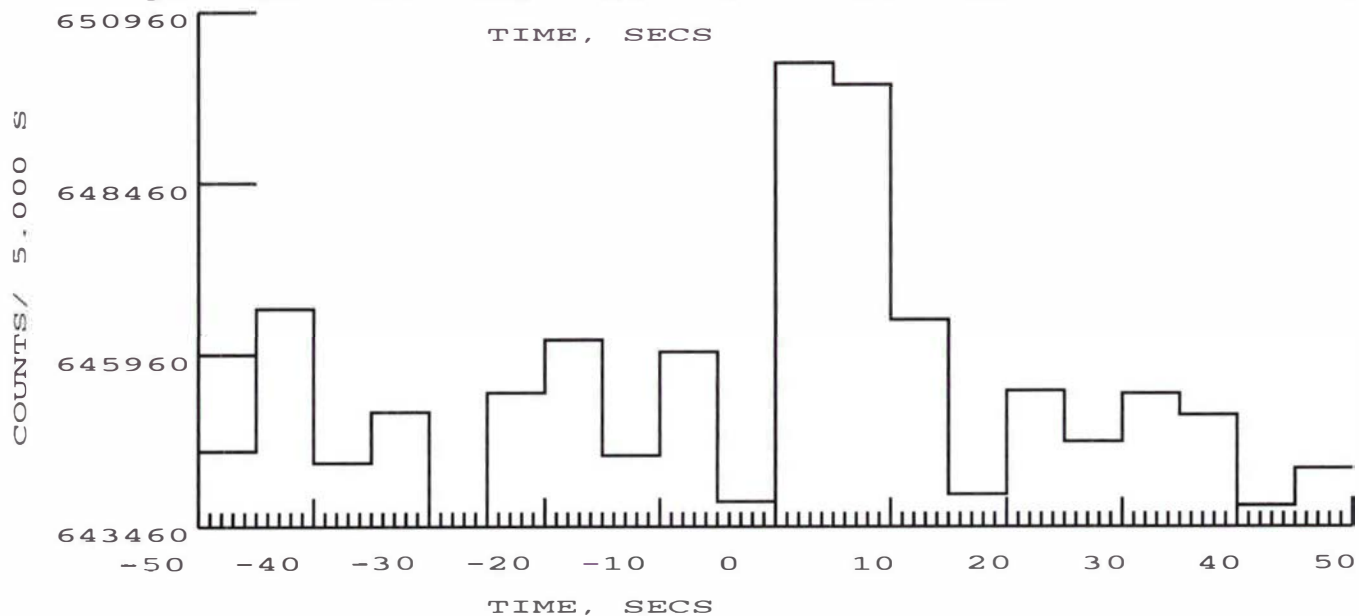
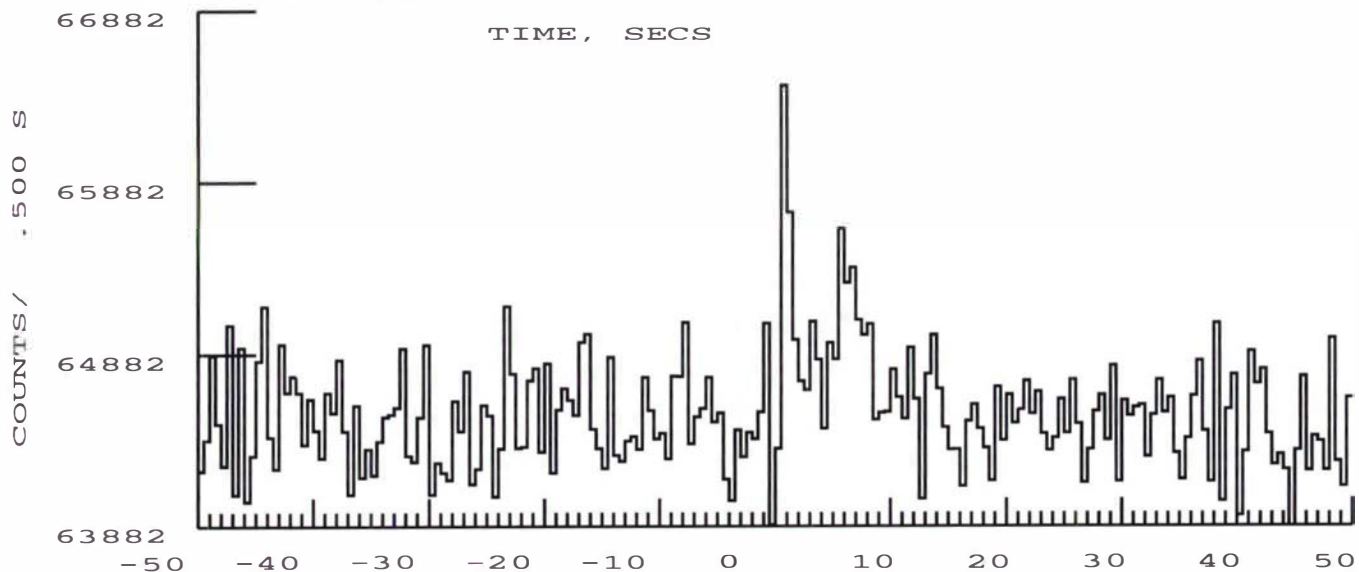
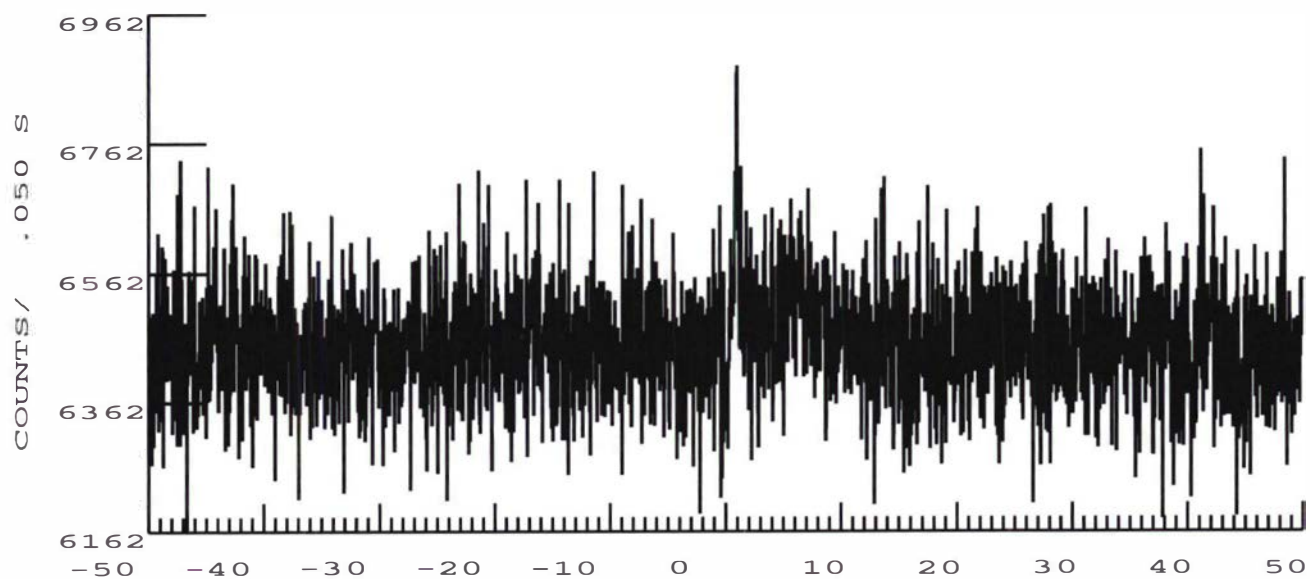


ODYSSEY 27/06/19 40192.219 11:09:52.219³
50-3000 keV

COUNTS/ .250 S



11/07/2019



Subject: BAT lightcurve for trigger at 190627_1131

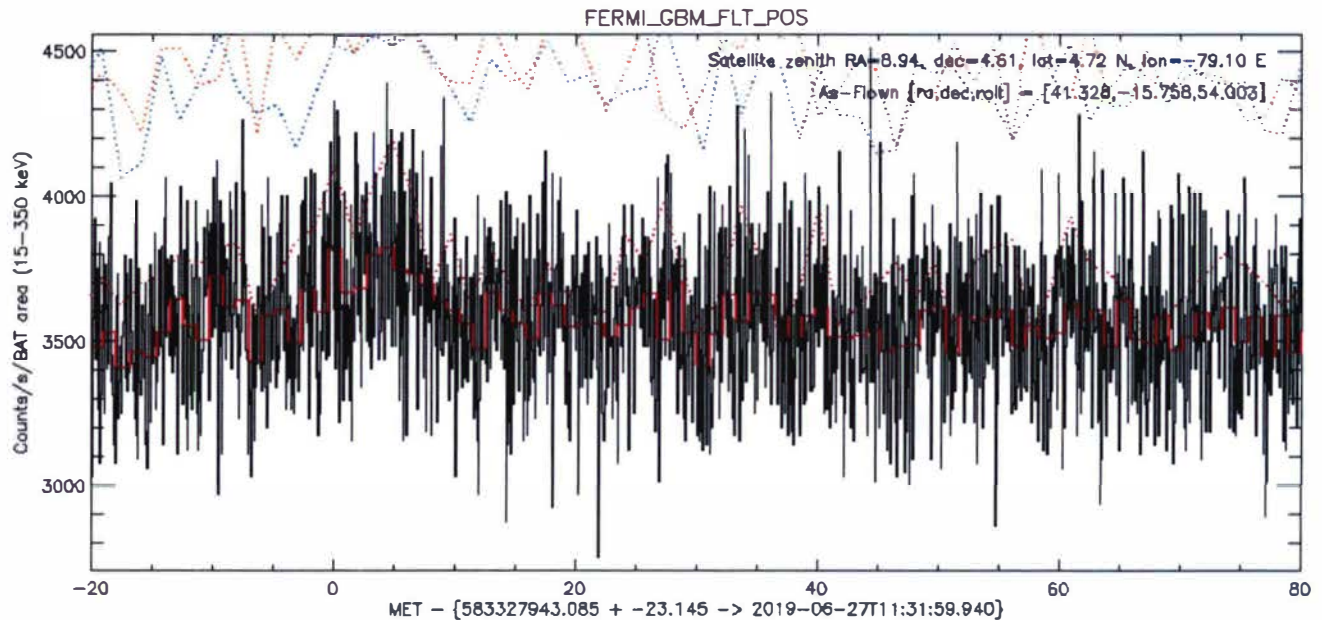
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/27/2019, 11:37 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190627_1131.png—

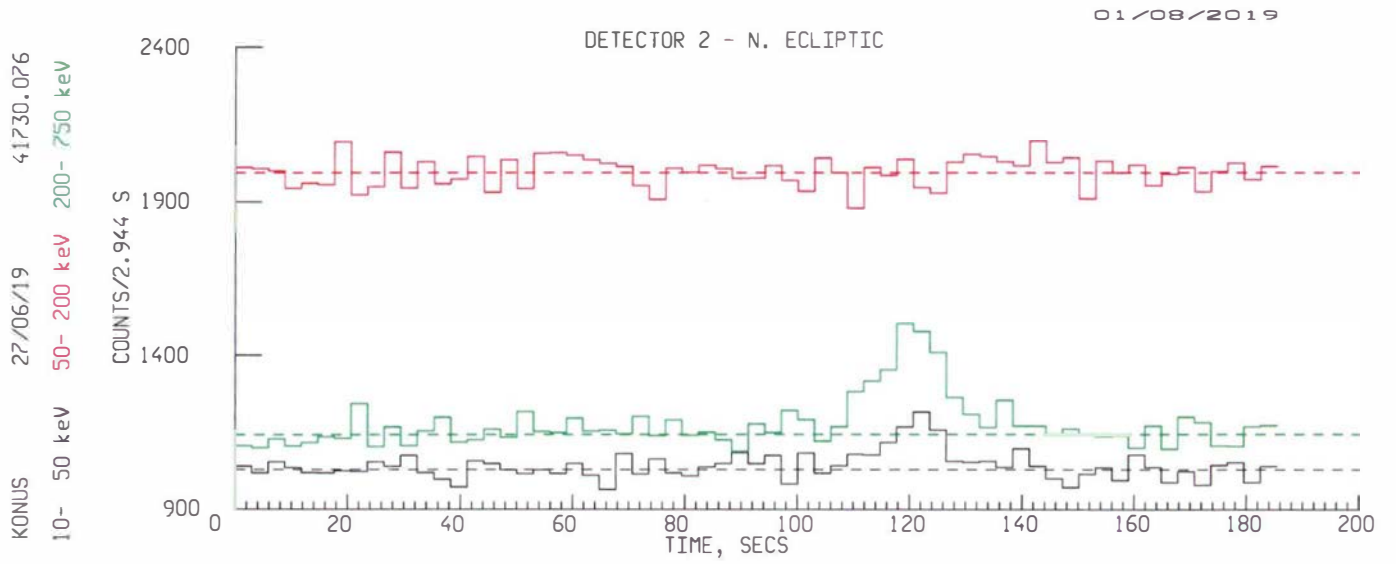
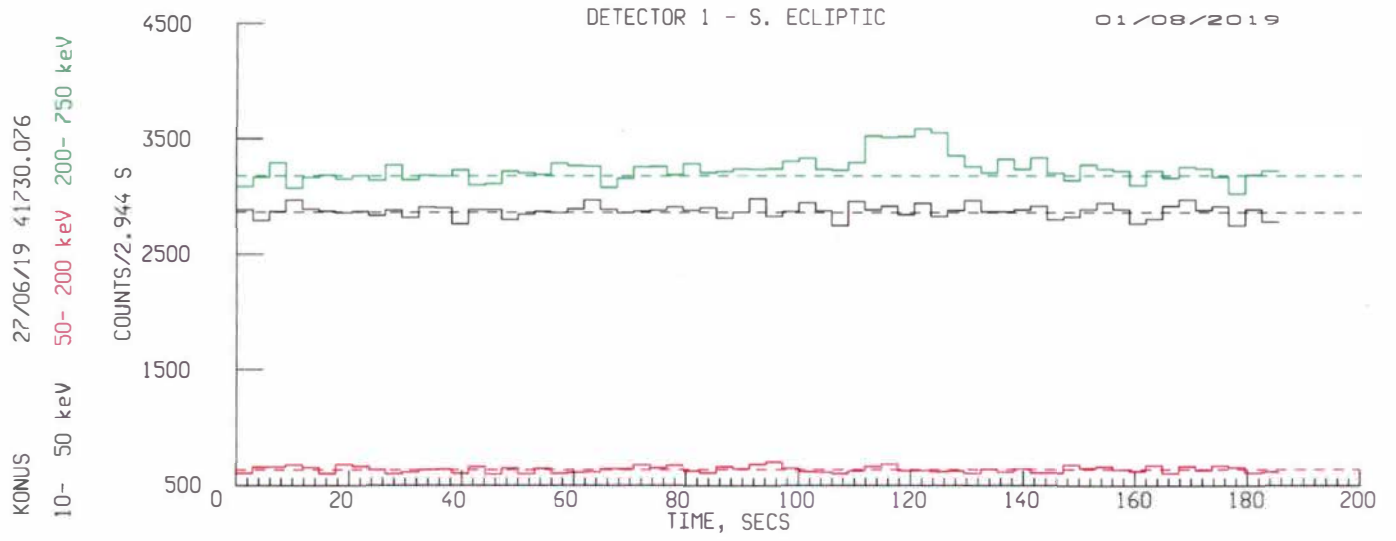


```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583327943.085
Swift Zenith(RA,dec):      8.94, 4.61
Swift Location(lon,lat,alt): -79.10 E, 4.72 N, 556 km
Time(MET + UTC -> UT):    583327943.085 + -23.145 -> 2019-06-27T11:31:59.940
YYMMDD_SOD:               190627_41519.940      DOY=178
Obs Sequence Number:      03107684001
Obs Target Name:          SGWGS-2893
Obs Date and Times:       2019-06-27 11:24:38 - 11:41:37
Obs Pointing(ra,dec,roll): 41.328, -15.758, 54.00
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190627_1131.png	20.0 KB
/tmp/swift/190627_1131_bat64ms_ipn	87.0 KB



ODYSSEY 27/06/19

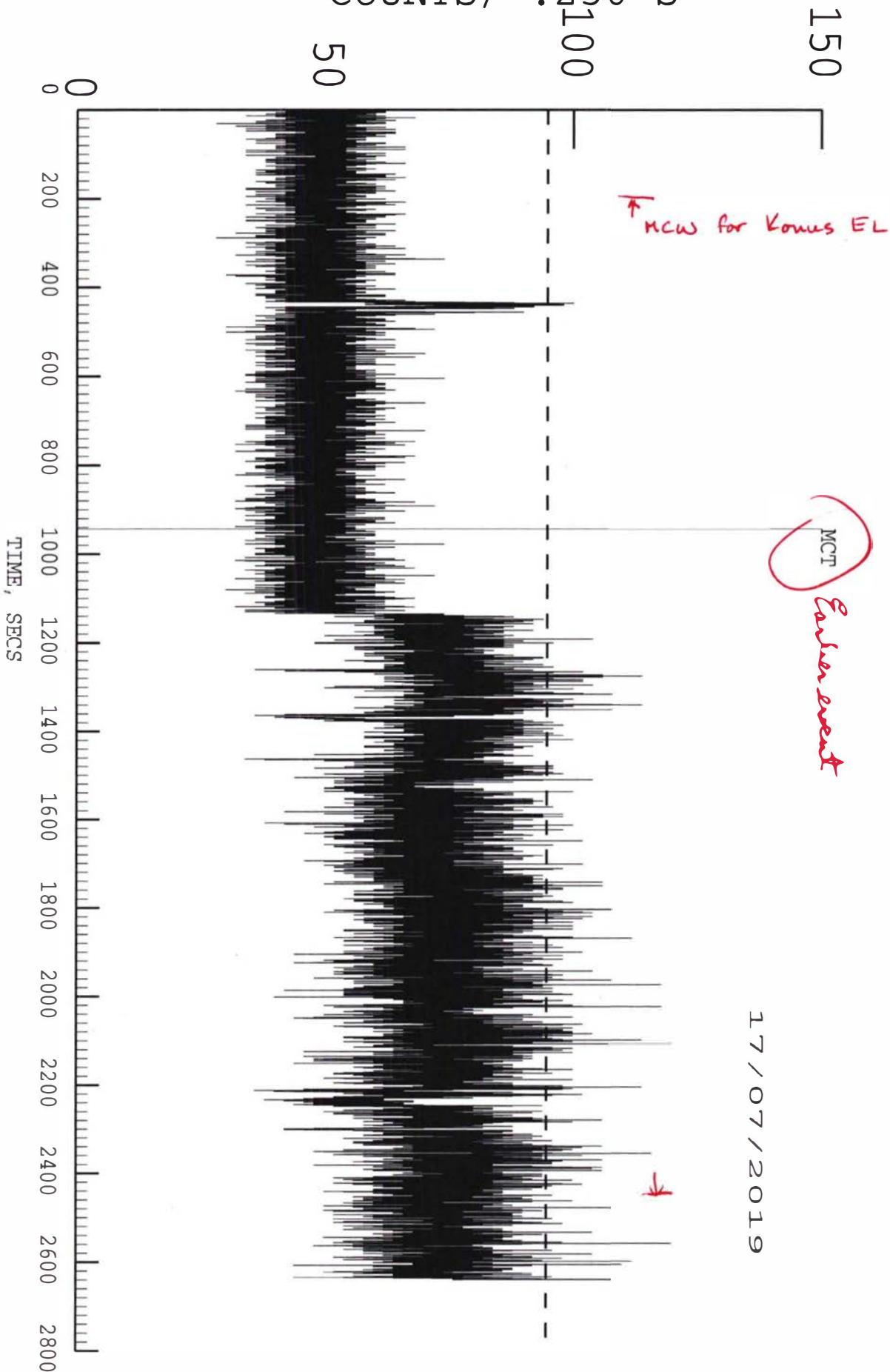
40492.218

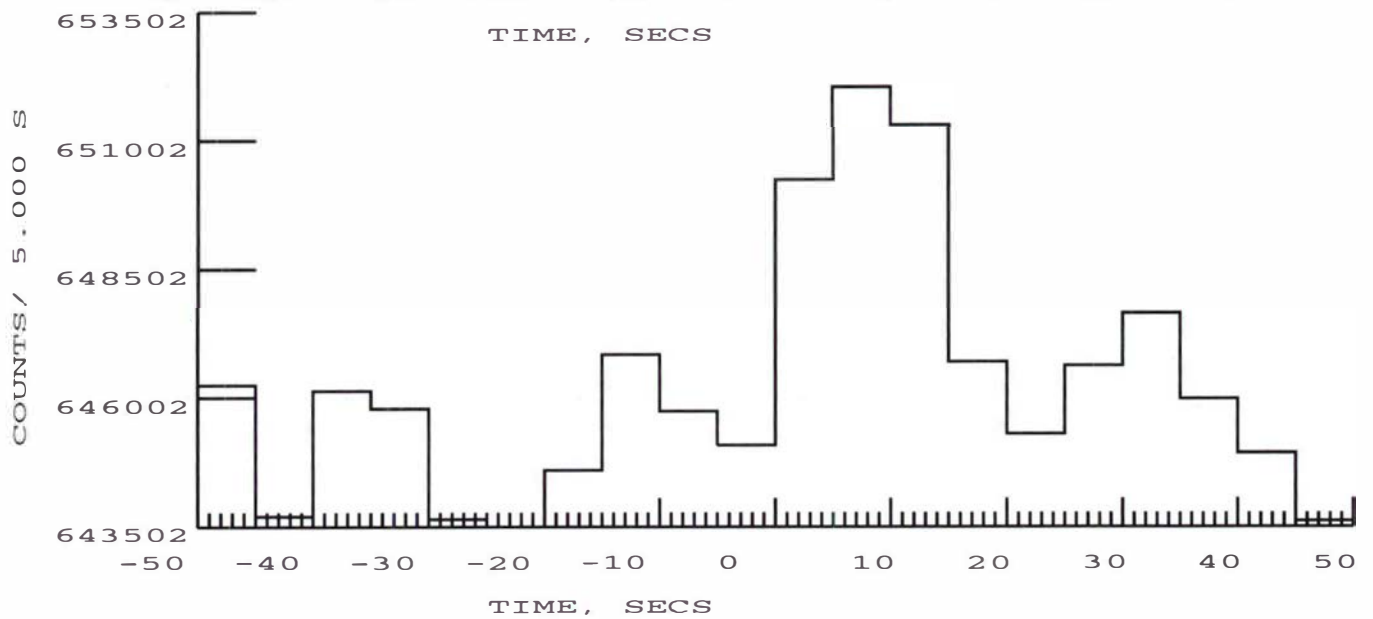
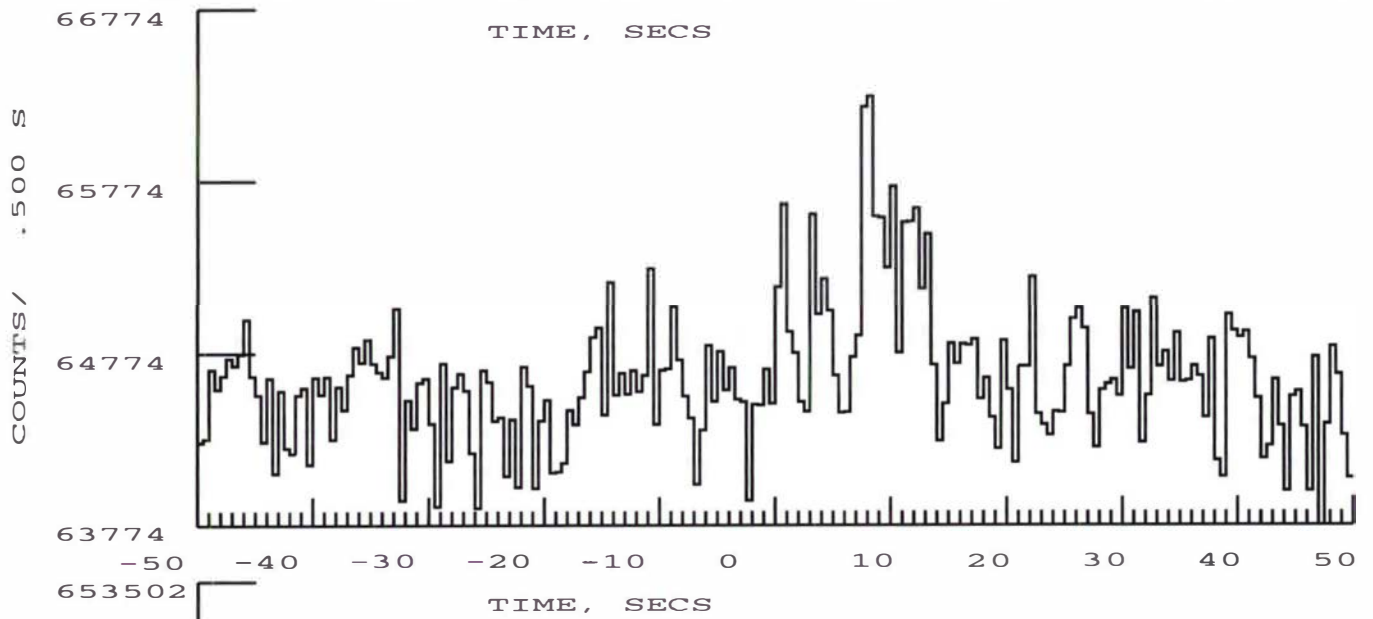
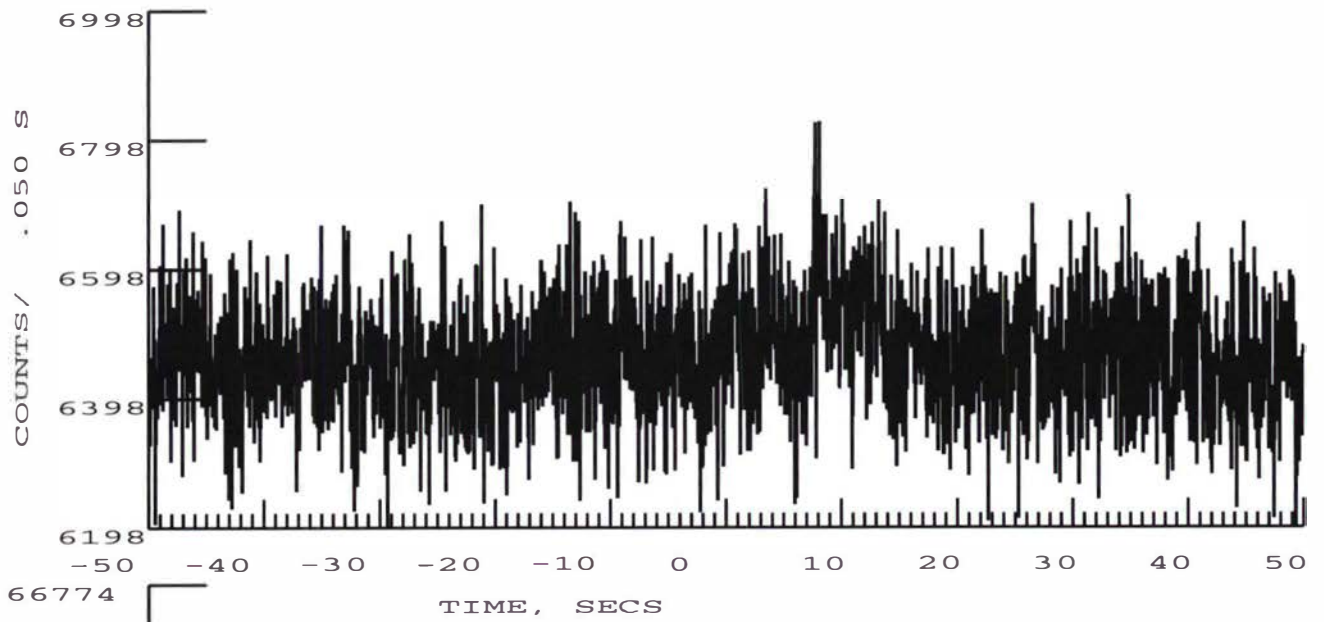
11:14:52.218

50-3000 keV

COUNTS/ .250 S

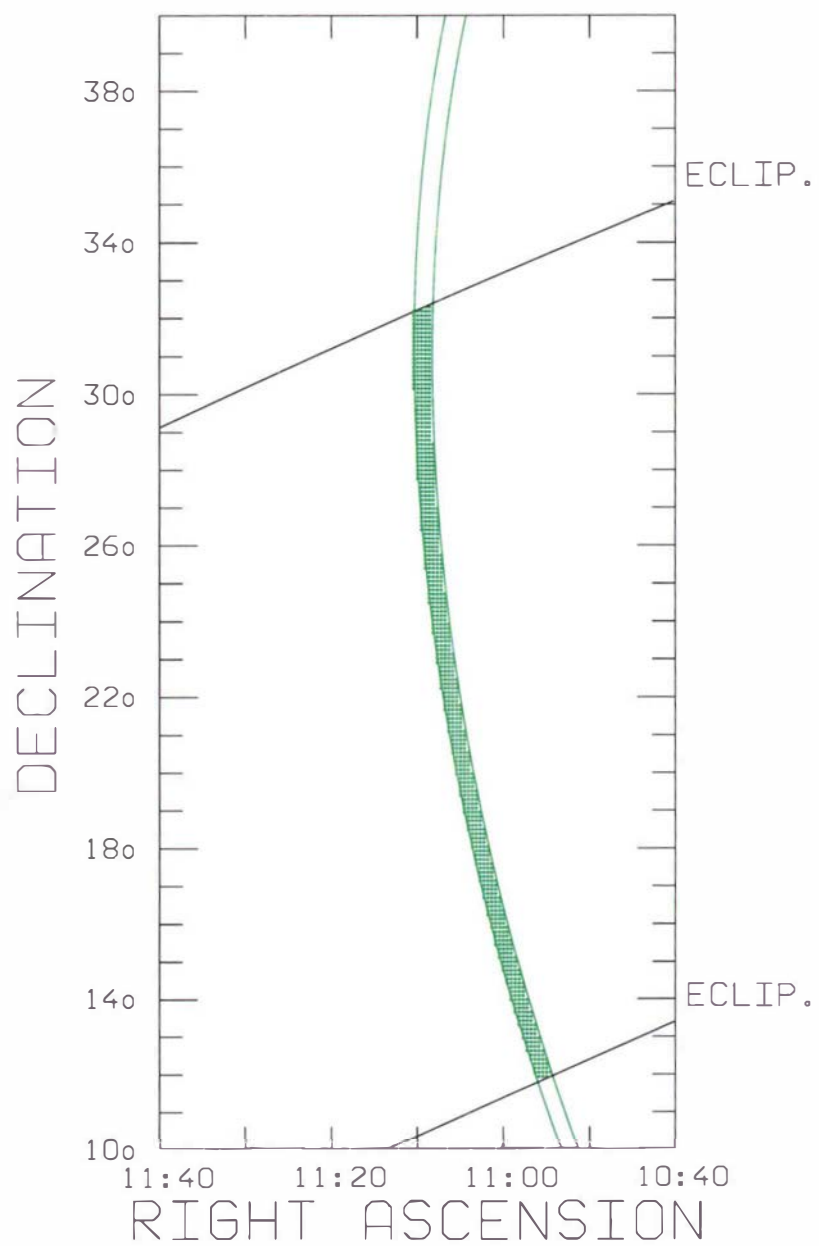
Konus RT





GRB190627 ~41740 S

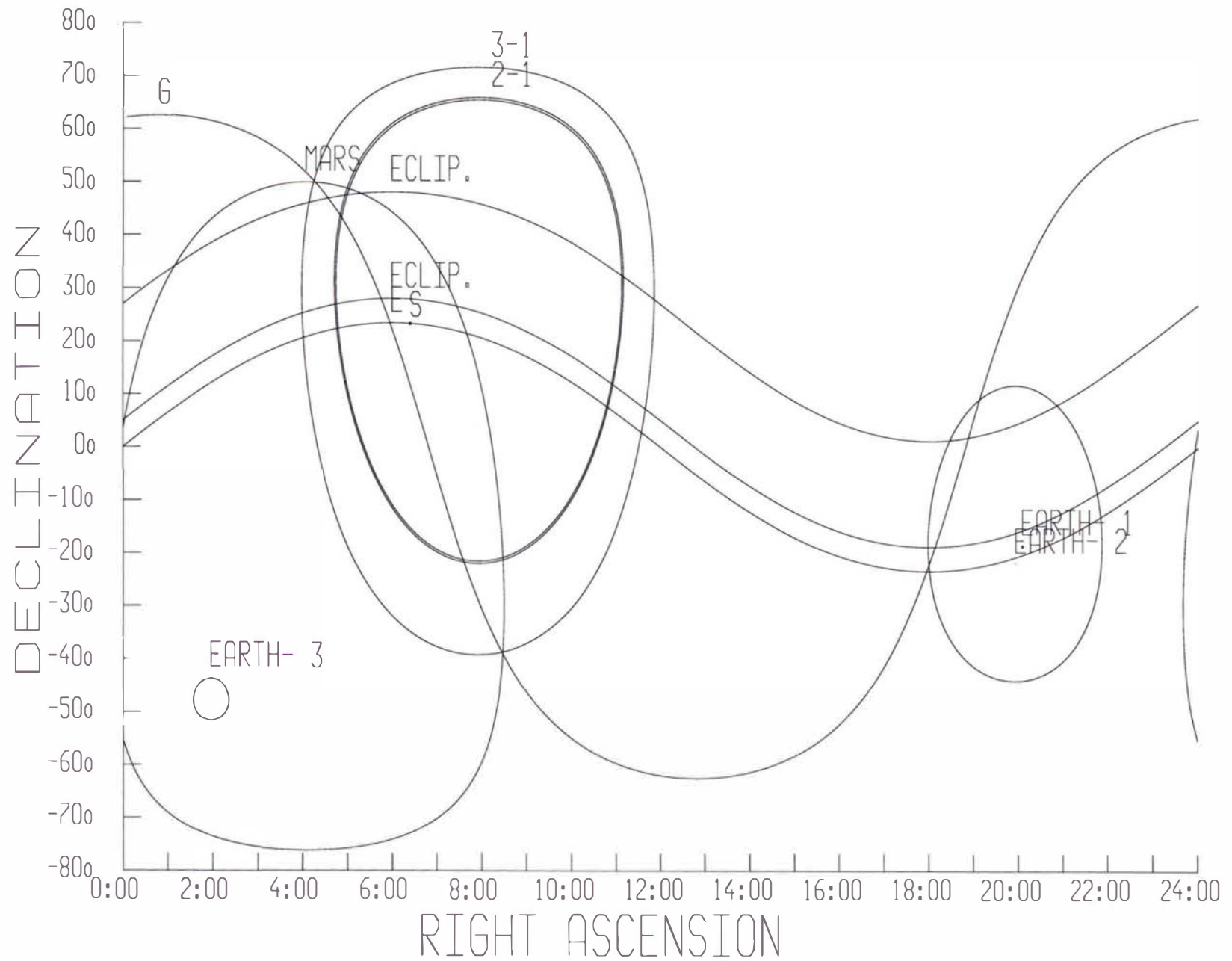
06/05/2020

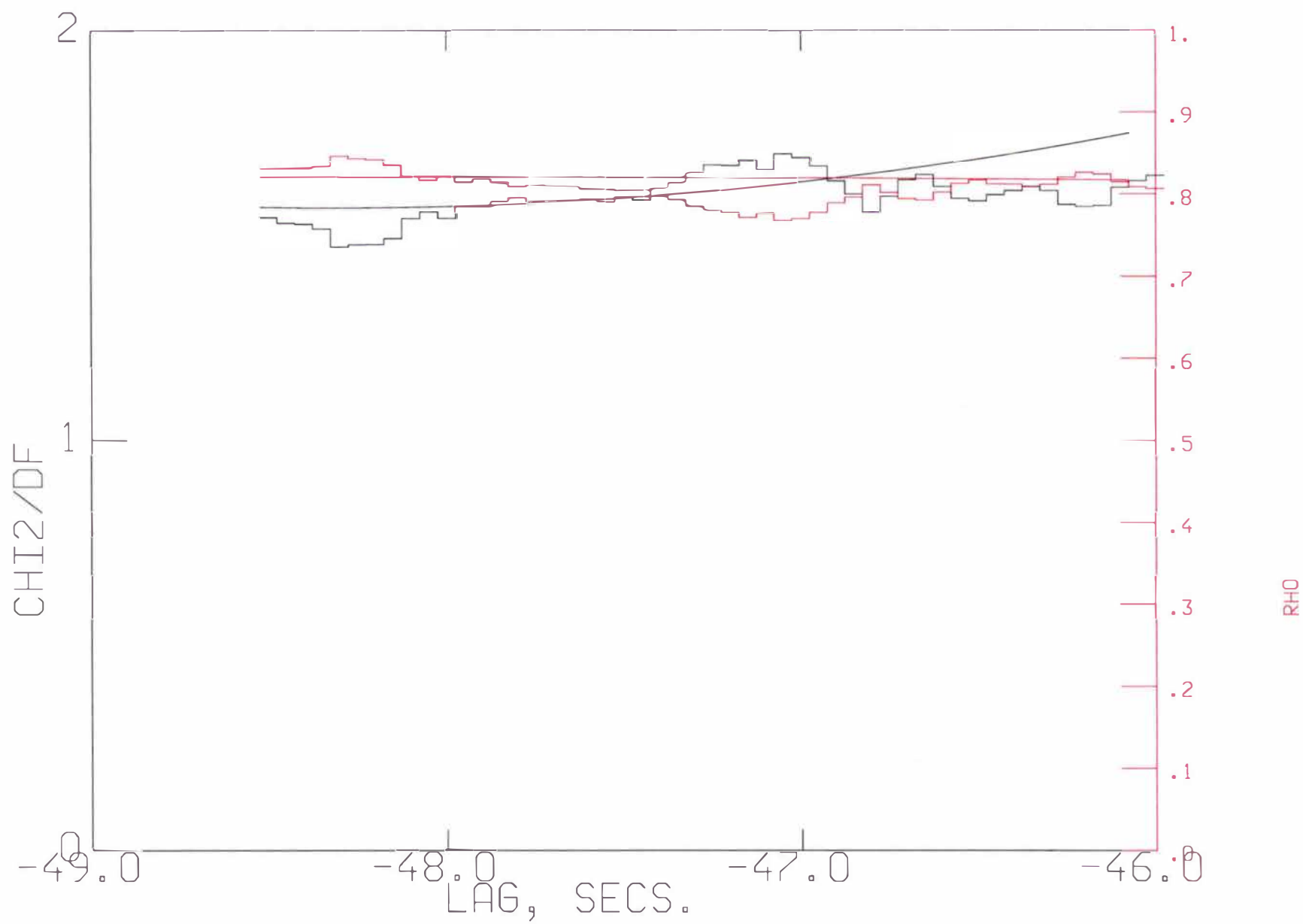


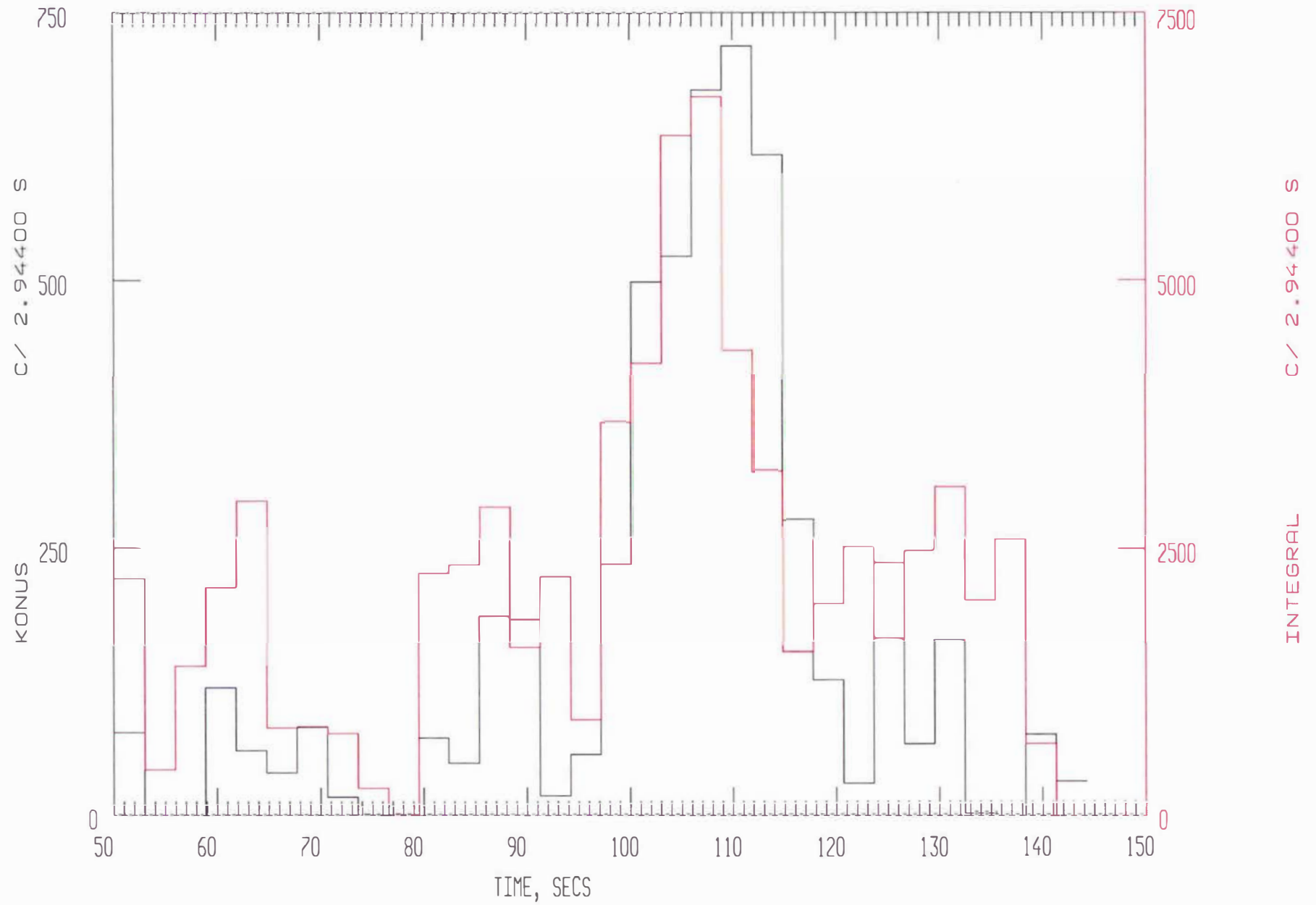
EVENT OF JUN 27, 2019 11:35

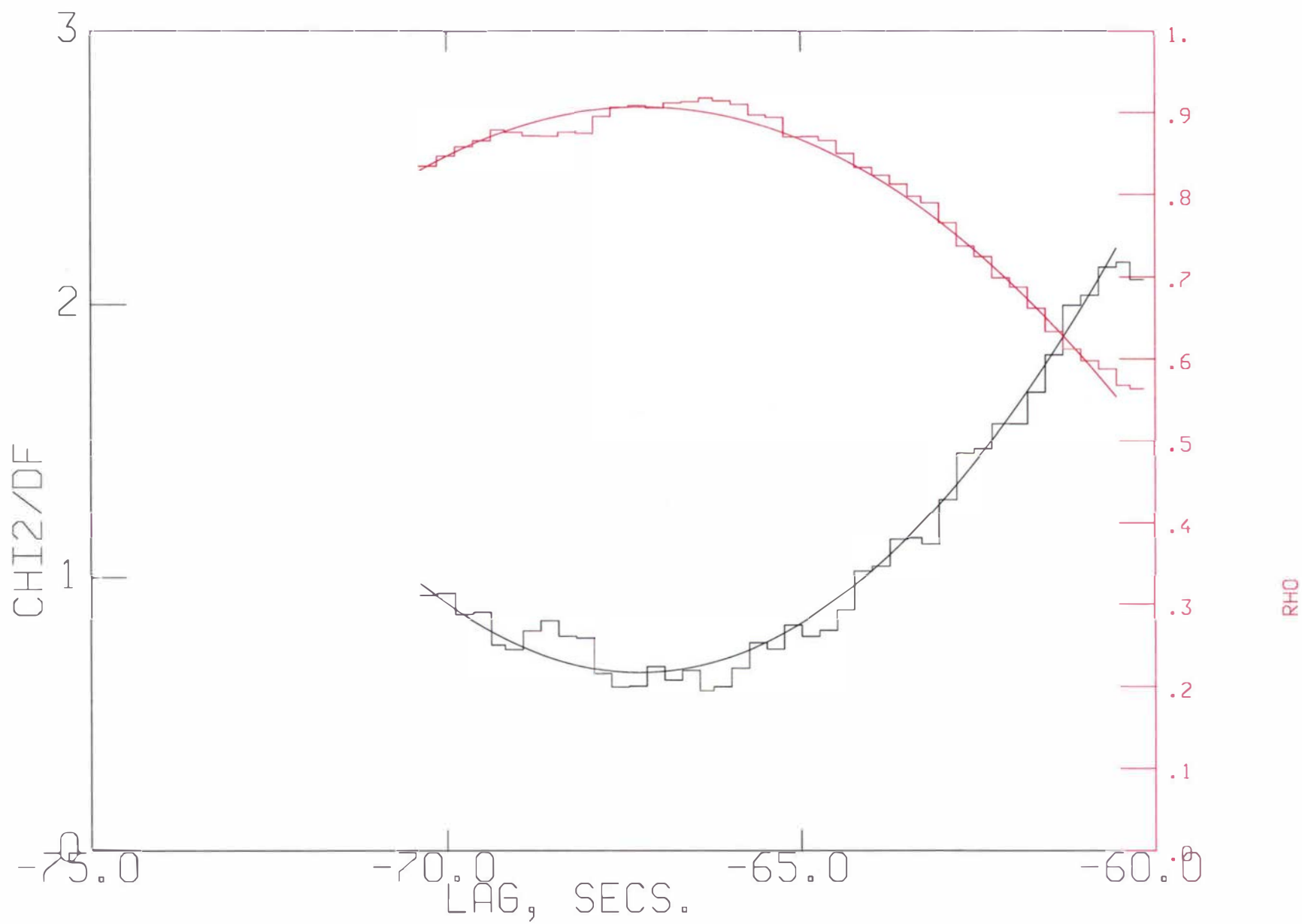
06/05/2020

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 MO 3 INTEGRAL









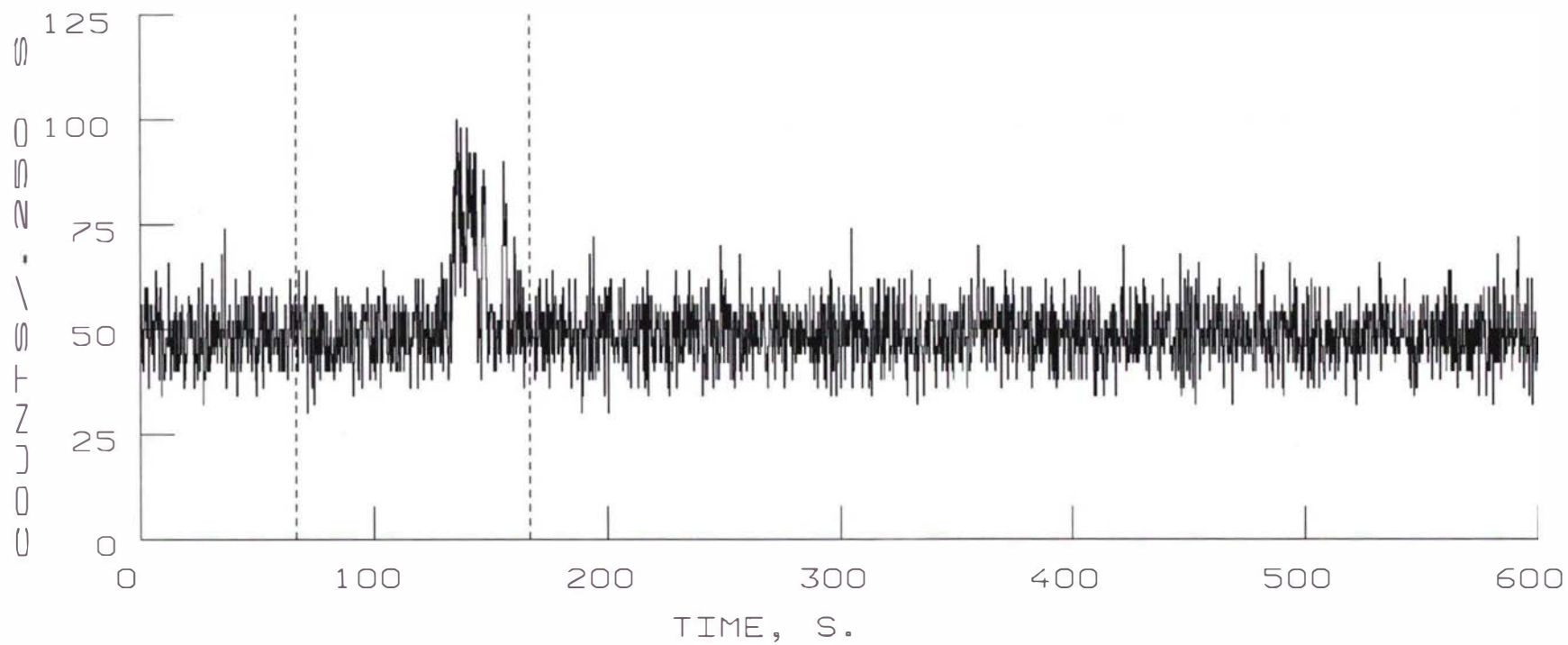
MS01 HEND

06/05/2020

27/06/2019 40792.215 s

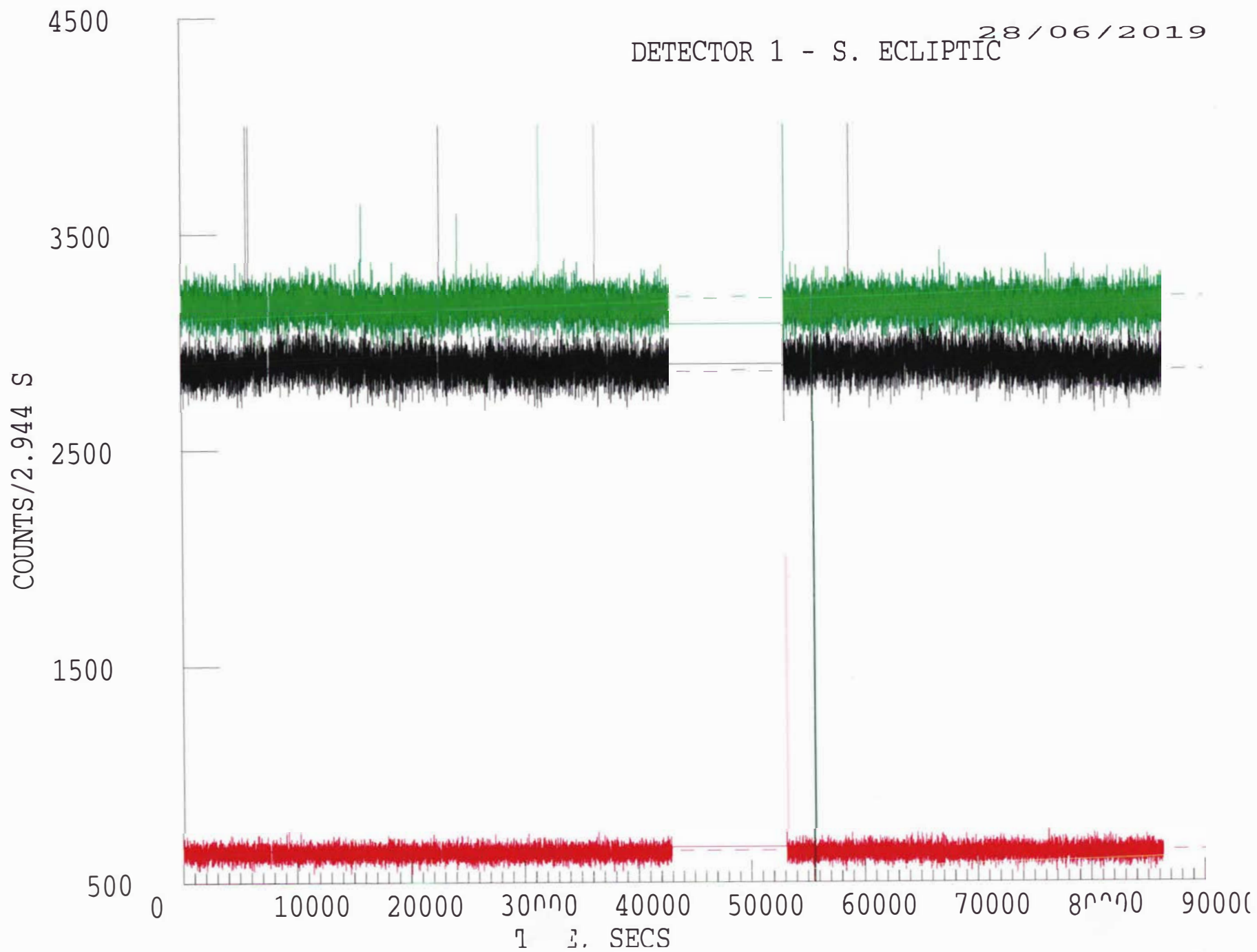
50-3000 keV

N= 10 M=80
>4.0 SIGMA FLUCTUATIONS



KONUS 28/06/2019 17.047 v01

10- 50 keV 50- 200 keV 200- 750 keV



KONUS

28/06/2019

17.047

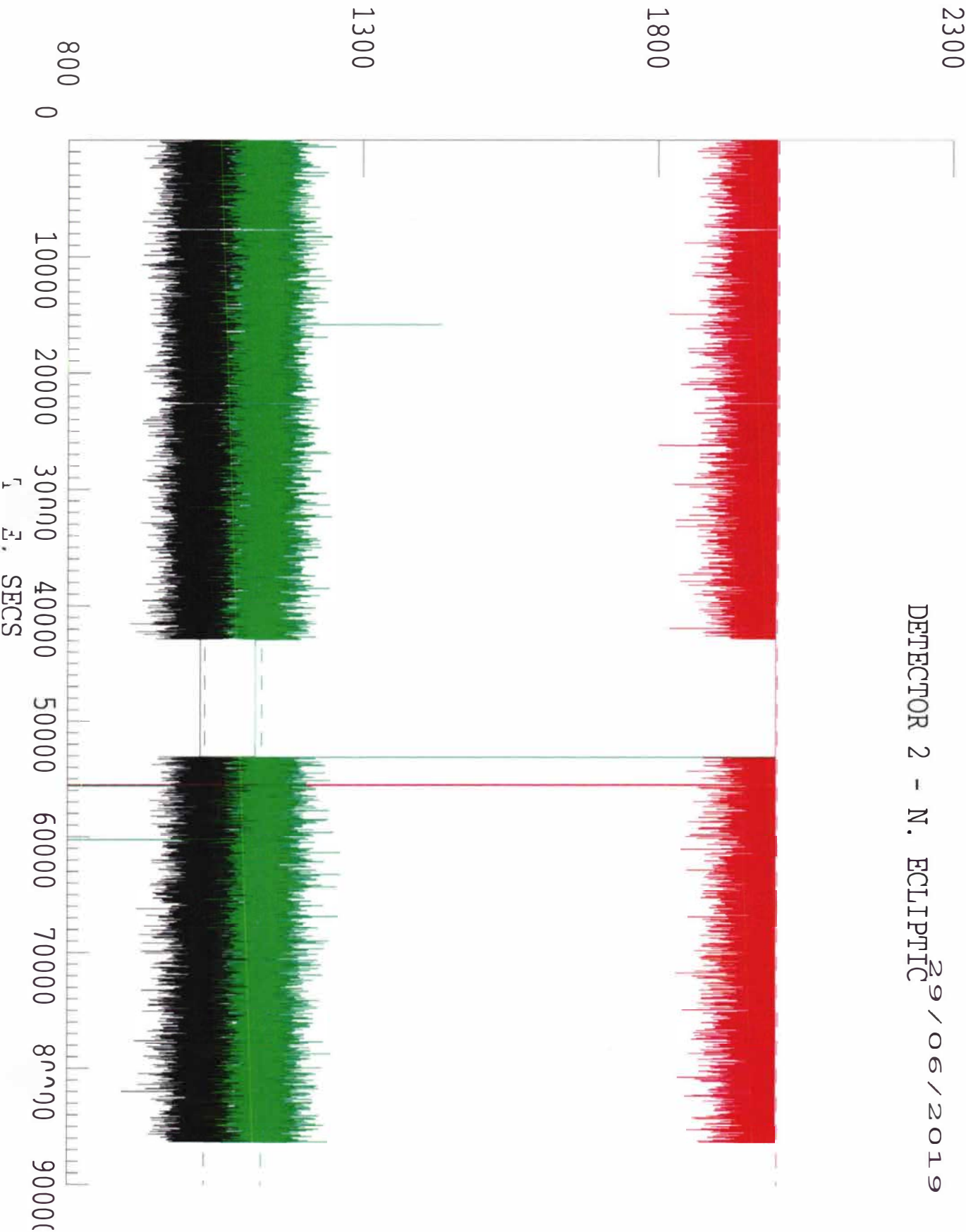
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: GRB 190628B - AstroSat CZTI detection

From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>

Date: 7/3/2019, 5:04 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 24972

SUBJECT: GRB 190628B - AstroSat CZTI detection

DATE: 19/07/03 12:04:21 GMT

FROM: Varun Bhalerao at Indian Inst of Tech <varunb@iitb.ac.in>

A. Marathe (NITK, IITB), Y. Sharma (IITB), V. Bhalerao (IITB), D. Bhattacharya (IUCAA), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

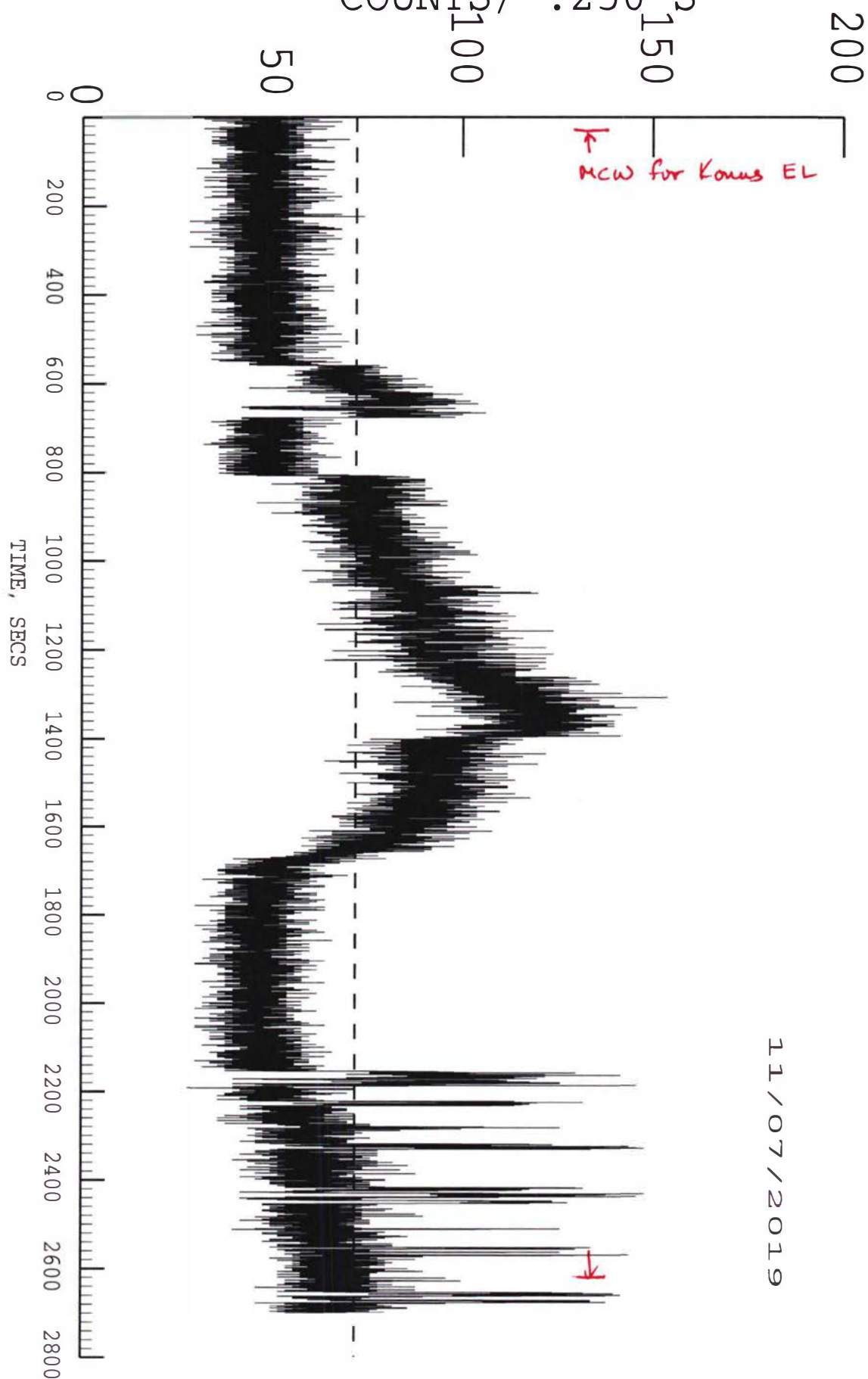
15819

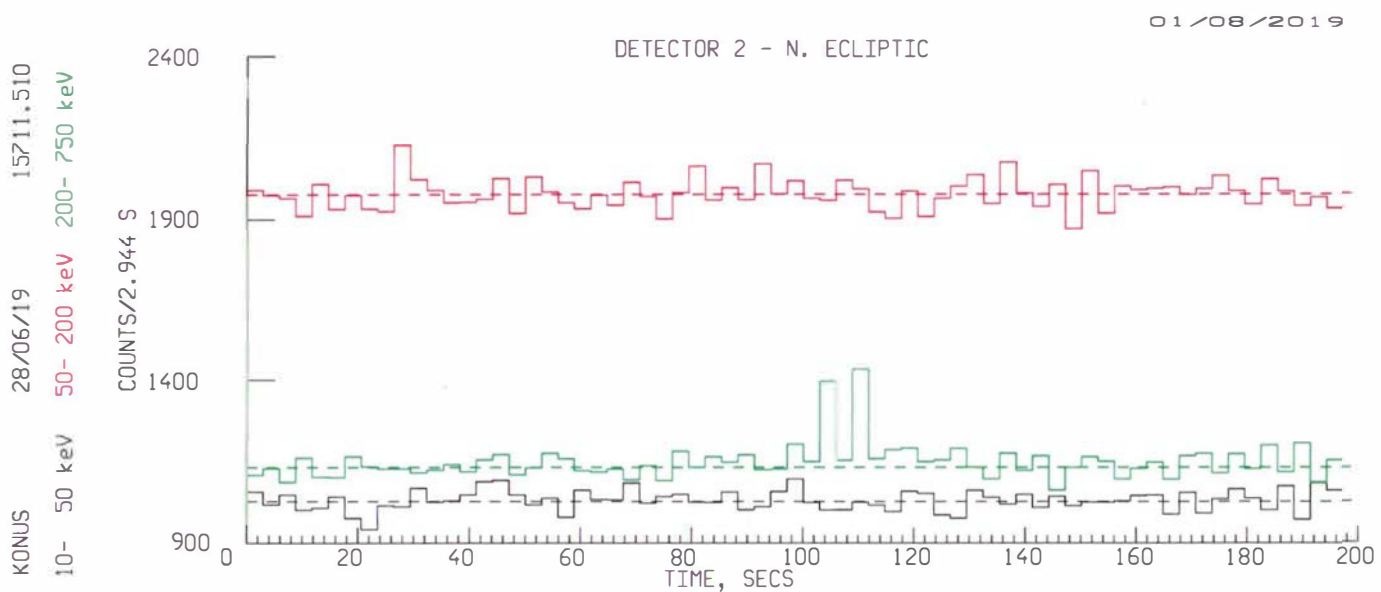
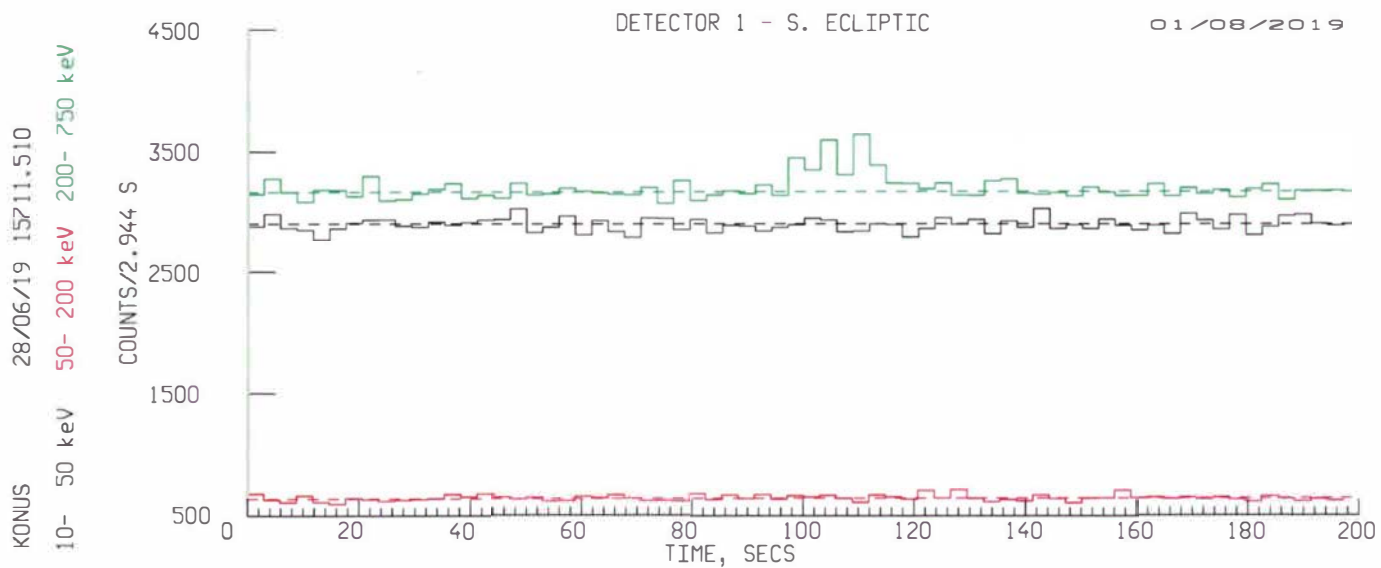
Analysis of AstroSat CZTI data showed the detection of a long GRB 190628B, in the 40-200 keV energy range. The light curve shows two pulses of emission with strongest peak at 04:23:39 UT. The measured peak count rate associated with the burst is 212 cts/s above the background in the combined data of quadrants B, C and D. with a total of 600 cts. Data from quadrant A were excluded from analysis due to noisy pixels. The local mean background count rate was 437 cts/s. Using cumulative rates, we measure a T90 of 12 s.

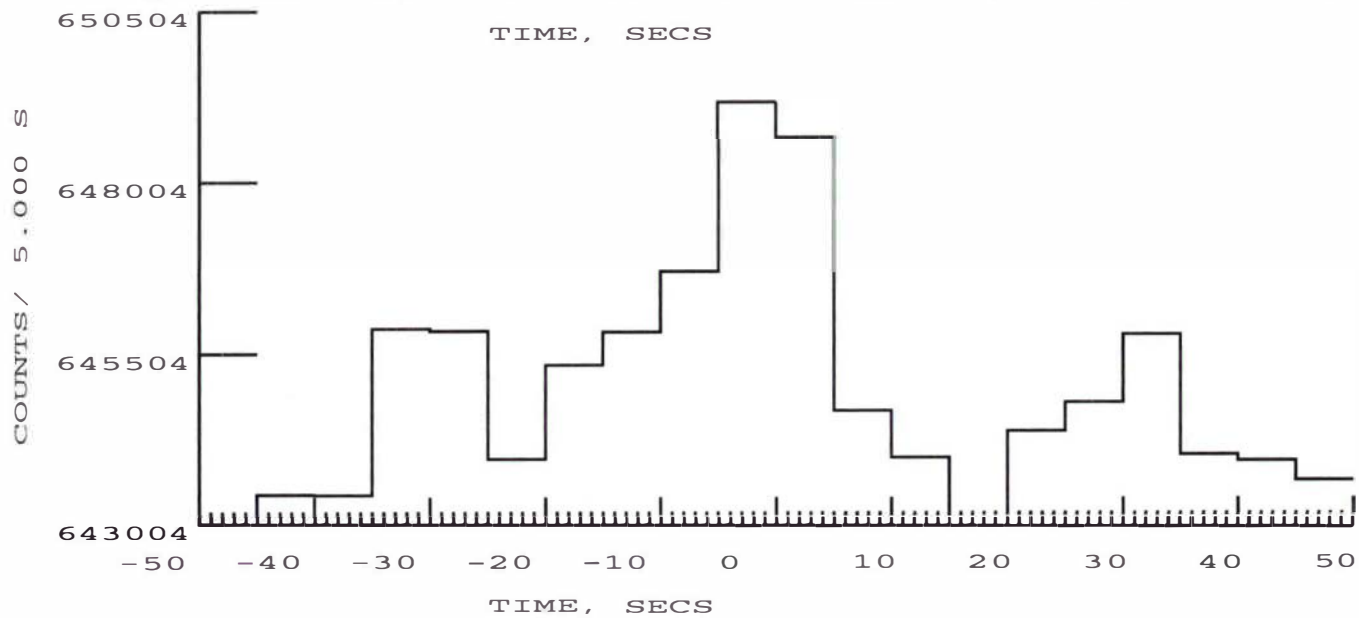
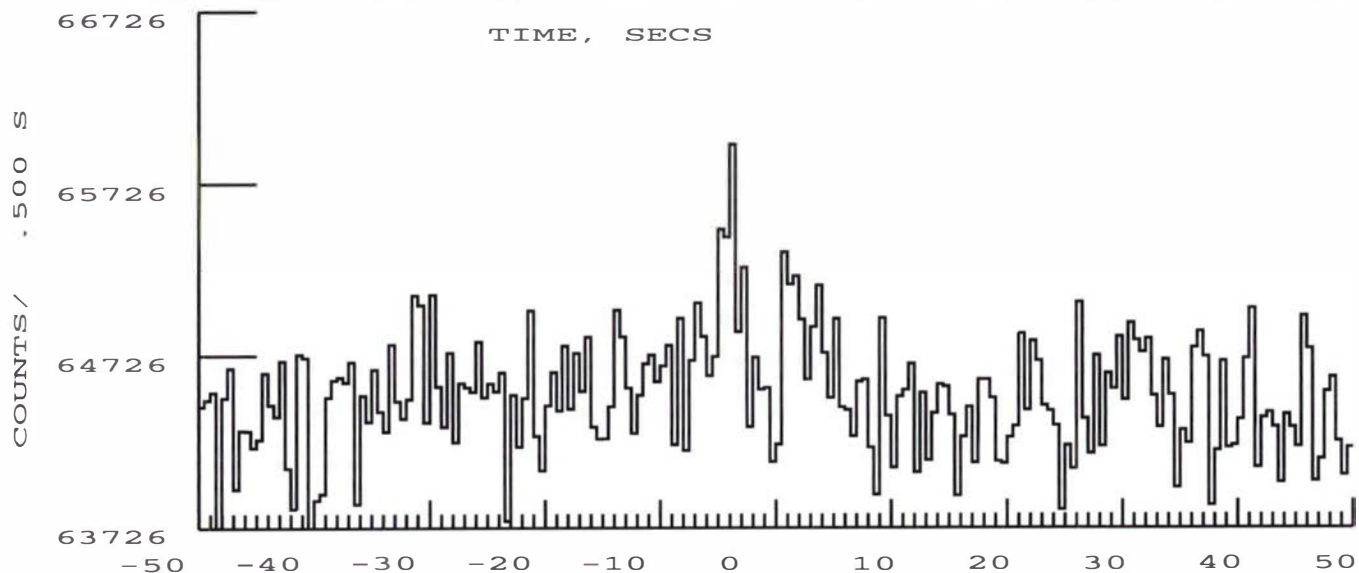
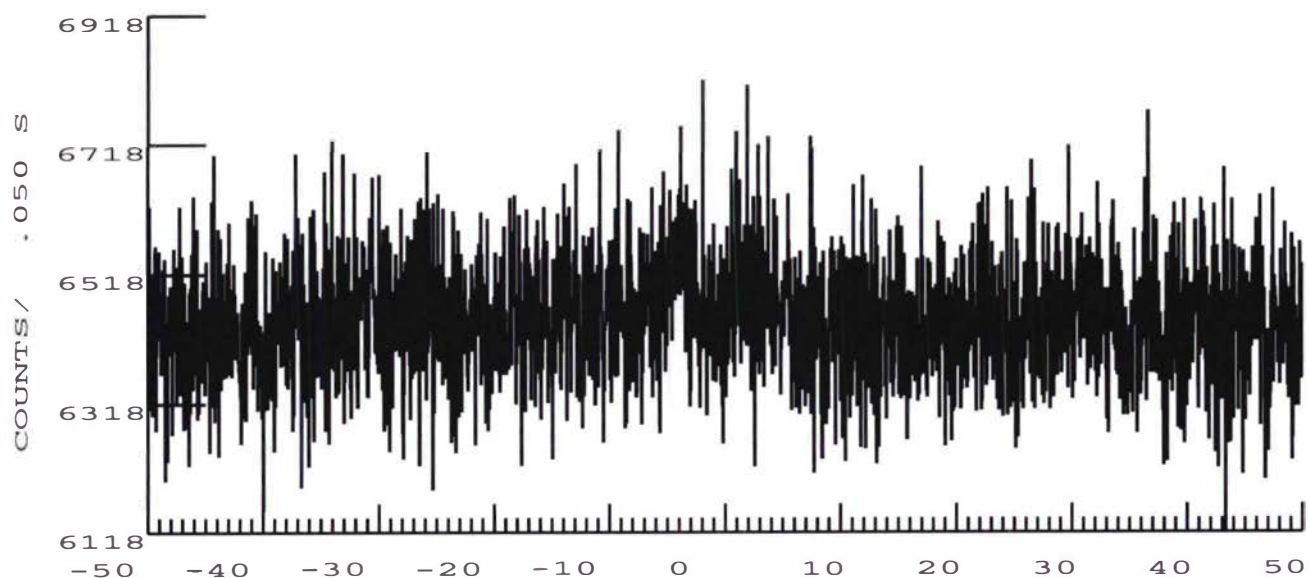
CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.

ODYSSEY 28/06/19 14451.133 04:00:51.133^A
50-3000 keV

COUNTS/ .250 S







B

FERMI

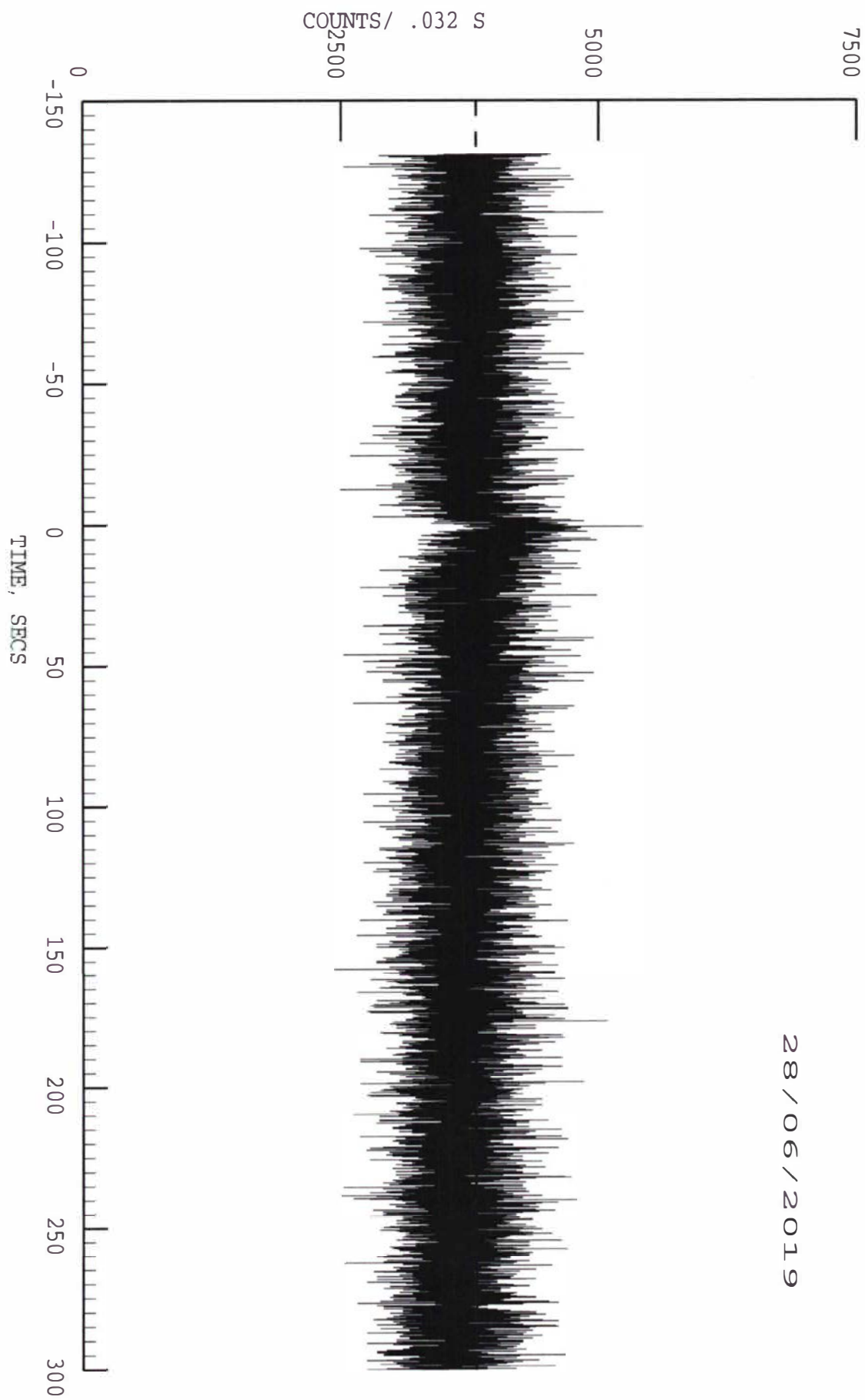
28/06/19

45055.320

12:30:55.320

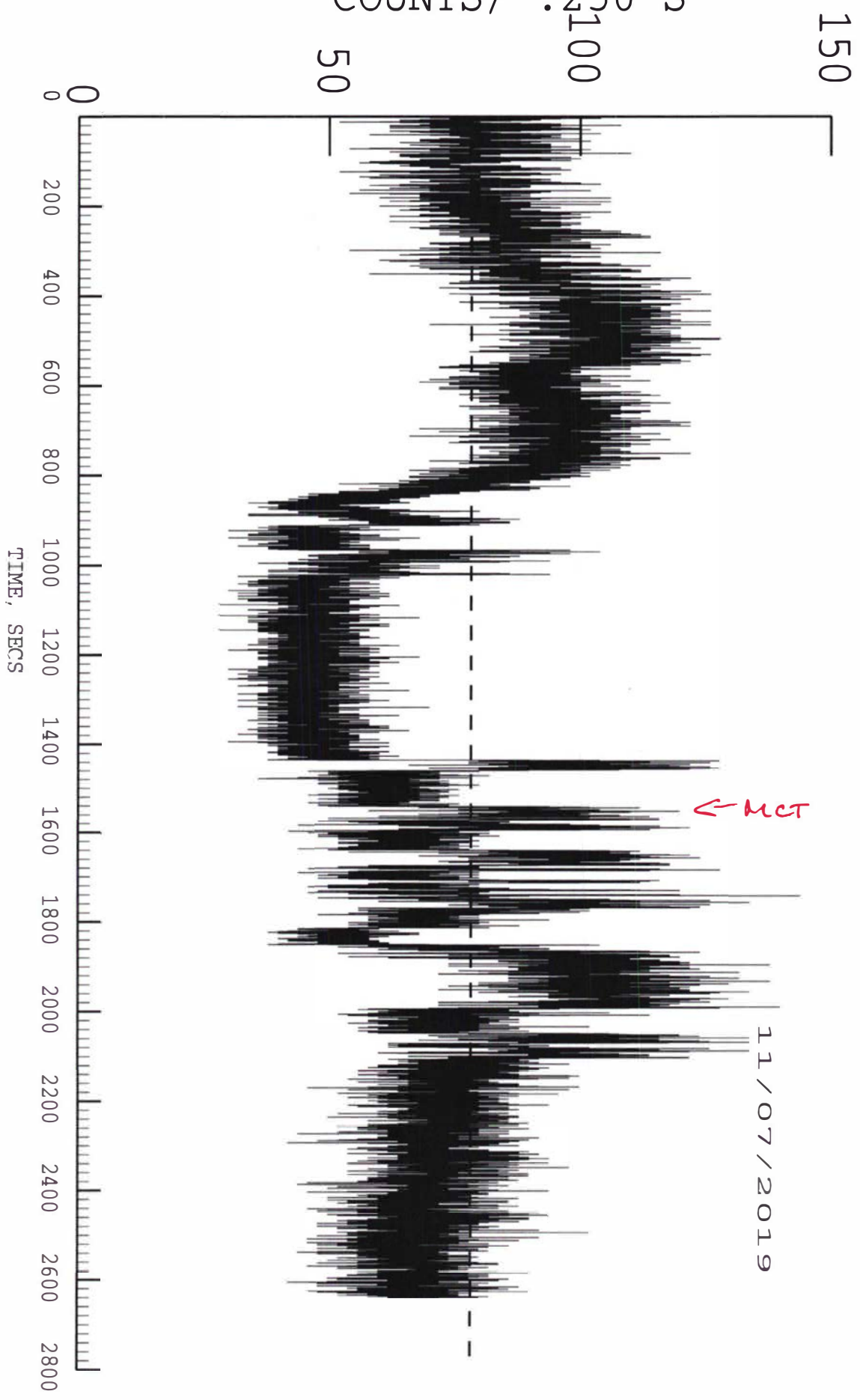
26- 293 keV

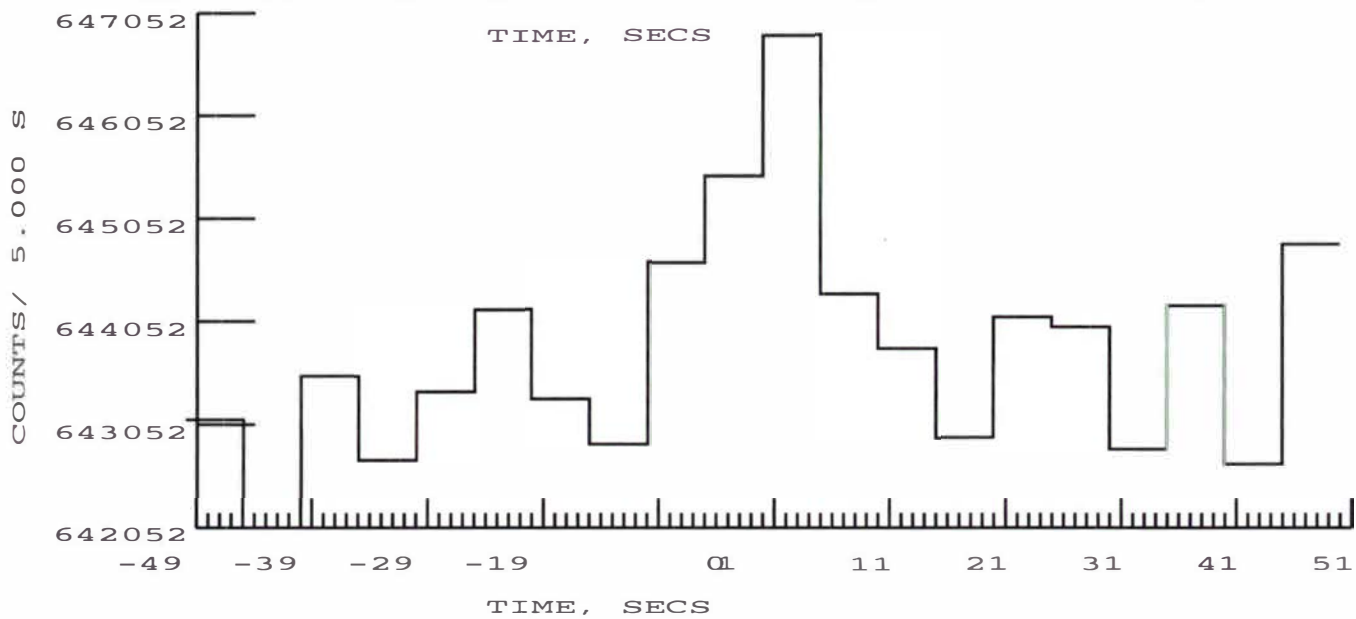
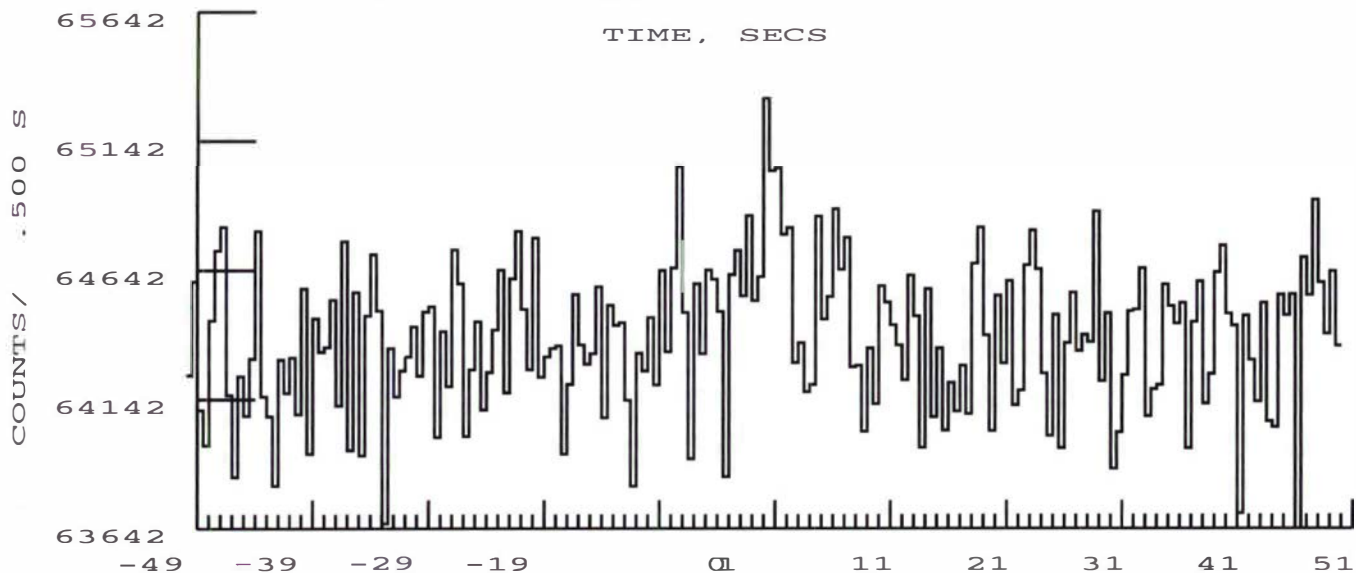
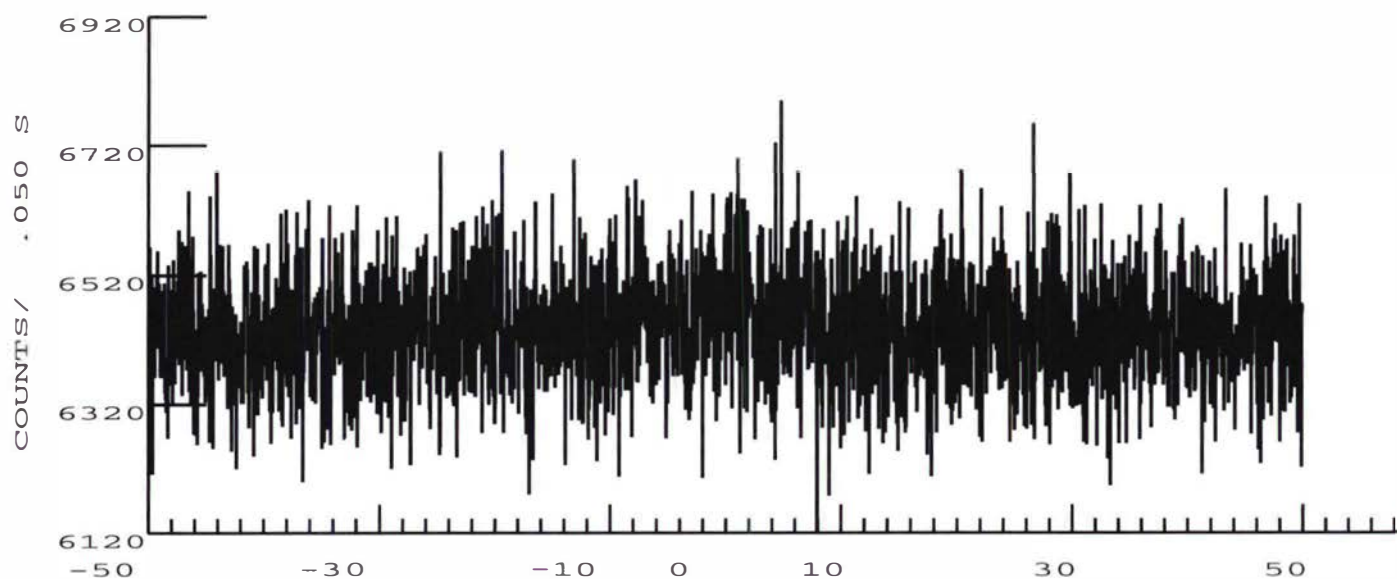
144.1 -77.1 6.4



28 / 06 / 2019

ODYSSEY 28/06/19 43730.613 12:08:50.613^B
50-3000 keV
COUNTS/ .250 S





Subject: BAT lightcurve for trigger at 190628_1230

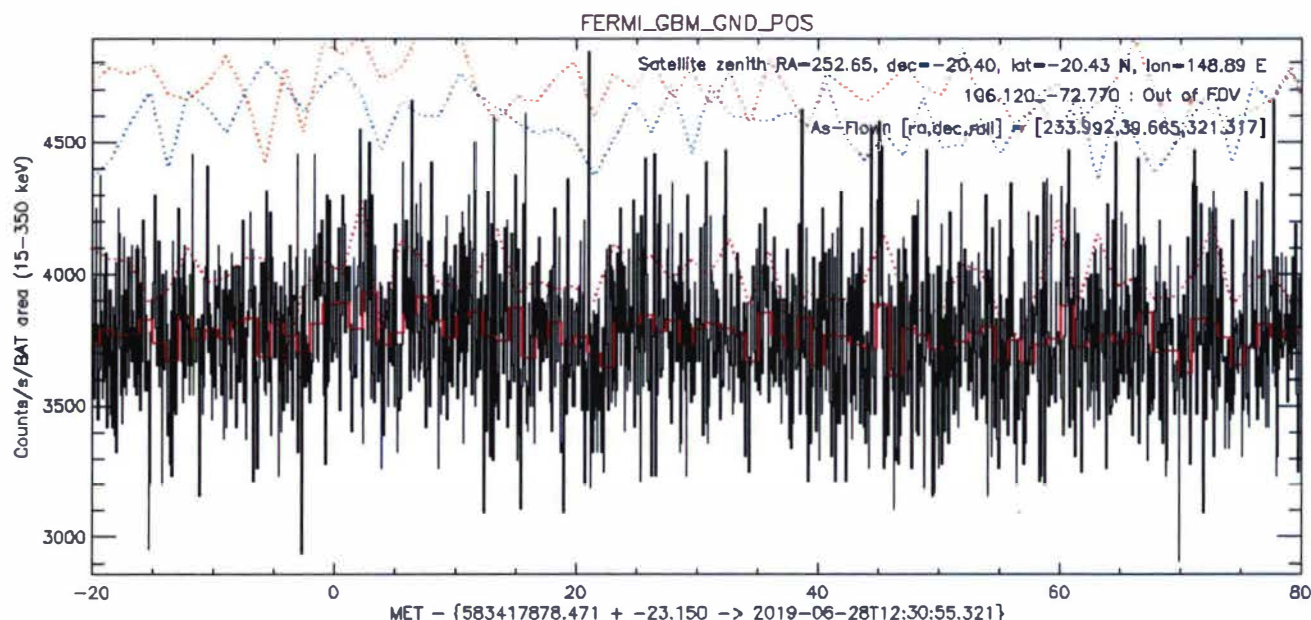
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/28/2019, 8:41 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190628_1230.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583417878.471 -s 106.120_-72.770
Swift Zenith(RA,dec):      252.65, -20.40
Swift Location(lon,lat,alt): 148.89 E, -20.43 N, 548 km
Time(MET + UTCF -> UT):   583417878.471 + -23.150 -> 2019-06-28T12:30:55.321
YYMMDD_SOD:               190628_45055.321      DOY=179
Obs Sequence Number:      00011441018
Obs Target Name:          ZTF19aayejww
Obs Date and Times:       2019-06-28 12:29:38 - 12:41:34
Obs Pointing(ra,dec,roll): 233.992, 39.665, 321.32
106.120_-72.770_imageloc (boresight_dist, angle): (139, 149)
106.120_-72.770_exposure (cm² cos adjusted): 0
106.120_-72.770_altitude: 29 (up)
```

```
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data
```

—Attachments:—

/tmp/swift/190628_1230.png	19.9 KB
/tmp/swift/190628_1230_bat64ms_ipn	87.1 KB

Subject: IceCube-190629A - IceCube observation of a high-energy neutrino candidate event

From: GCN Circulars <gcnirc@capella2.gsfc.nasa.gov>

Date: 6/29/2019, 3:47 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 24910

SUBJECT: IceCube-190629A - IceCube observation of a high-energy neutrino candidate event

DATE: 19/06/29 22:47:28 GMT

FROM: Erik Blaufuss at U. Maryland/IceCube <blaufuss@umd.edu>

The IceCube Collaboration (<http://icecube.wisc.edu/>) reports:

On 29/06/19 at 19:24:15.12 UT IceCube detected a track-like event with a moderate probability of being of astrophysical origin. The event was selected by the ICECUBE_Astrotrack_Bronze alert stream. The average astrophysical neutrino purity for Bronze alerts is 30%. This alert has an estimated false alarm rate of 0.64 events per year due to atmospheric backgrounds. The IceCube detector was in a normal operating state at the time of detection.

After the initial automated alert (https://gcn.gsfc.nasa.gov/notices_amon_g_b/132768_5390846.amon), more sophisticated reconstruction algorithms have been applied offline, with the direction refined to:

Date: 29/06/19

Time: 19:24:15.12 UT

RA: 27.22 (Dec value too close to pole for accurate error on RA) J2000

Dec: 84.33 (+4.95 -3.13 deg 90% PSF containment) J2000

We encourage follow-up by ground and space-based instruments to help identify a possible astrophysical source for the candidate neutrino.

Two gamma-ray sources listed in the 4FGL Fermi-LAT catalog are located within 2 deg of the best-fit candidate neutrino position. The sources are 4FGL J0151.3+8601 and 4FGL J0151.3+8601, both associated with BL Lac objects, and are located 1.5 and 1.7 deg away from the best-fit position, respectively. Both sources are also listed in the Fermi 3FHL catalog as 3FHL J0249.7+8434 and 3FHL J0148.4+8601, respectively. A total of 9 sources listed in the 4FGL catalog are contained in a 4 deg radius from the best-fit position, which approximately corresponds to the 90% containment radius of the event.

The IceCube Neutrino Observatory is a cubic-kilometer neutrino detector operating at the geographic South Pole, Antarctica. The IceCube realtime alert point of contact can be reached at roc@icecube.wisc.edu

Erik Blaufuss email: blaufuss@umd.edu
Department of Physics <http://icecube.umd.edu/~blaufuss>
University of Maryland Phone: 301-405-6077
College Park, MD 20742 Office: PSC 2208E
"Any chance collision, and I light up in the dark."

KONUS

30/06/2019

85.398

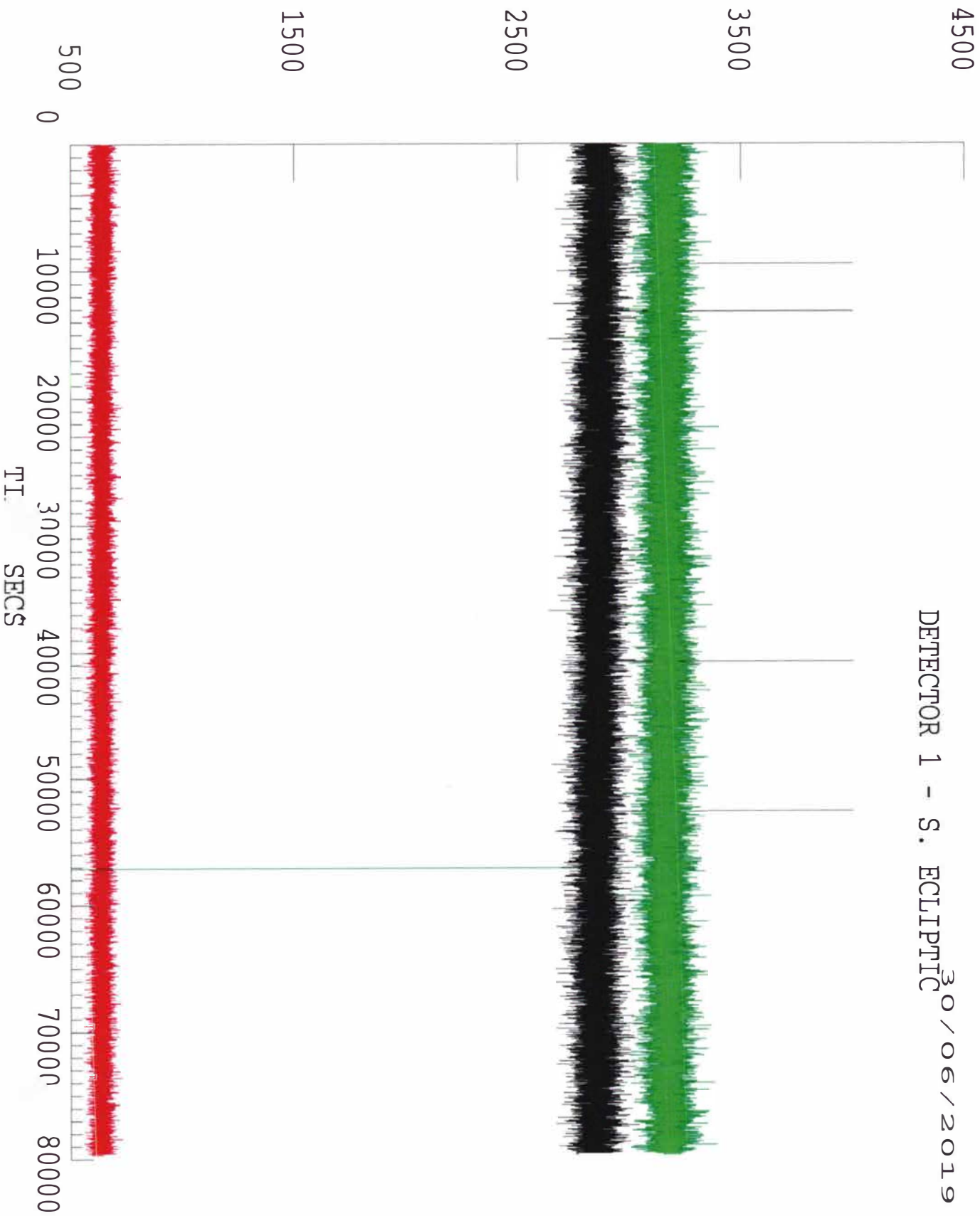
v01

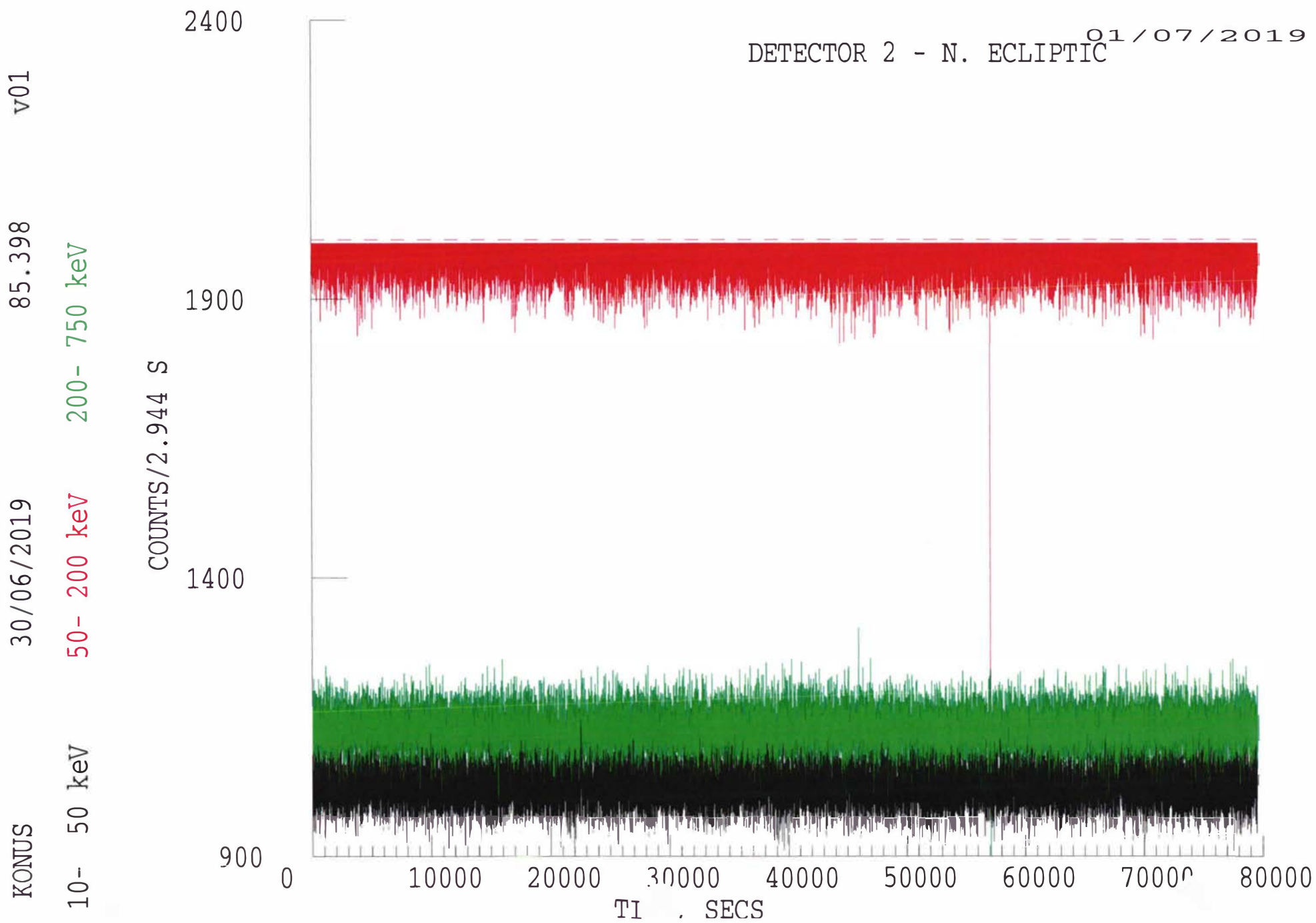
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S





Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 6/29/2019, 11:07 PM
 To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Sun 30 Jun 19 06:07:06 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 912102, Seg_Num: 0
 GRB_RA: 223.669d {+14h 54m 41s} (J2000),
 223.853d {+14h 55m 25s} (current),
 223.199d {+14h 52m 48s} (1950)
 GRB_DEC: +41.521d {+41d 31' 16"} (J2000),
 +41.443d {+41d 26' 33"} (current),
 +41.723d {+41d 43' 23"} (1950)
 GRB_DATE: 18664 TJD; 181 DOY; 19/06/30
 GRB_TIME: 21728.64 SOD {06:02:08.64} UT
 TRIGGER_INDEX: 146
 GRB_PHI: -123.80 [deg]
 GRB_THETA: 8.07 [deg]
 DELTA_TIME: 20.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 13.41 [sigma]
 IMAGE_SIGNIF: 8.43 [sigma]
 LC_URL: sw00912102000msb.lc
 SUN_POSTN: 98.92d {+06h 35m 42s} +23.18d {+23d 10' 57"}
 SUN_DIST: 97.70 [deg] Sun_angle= -8.3 [hr] (East of Sun)
 MOON_POSTN: 63.68d {+04h 14m 44s} +17.60d {+17d 36' 02"}
 MOON_DIST: 118.17 [deg]
 MOON_ILLUM: 8 [%]
 GAL_COORDS: 70.67, 60.99 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 201.25, 54.47 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 265.86,-18.37 [deg].

5.6 s

 $2.8 \times 10^{-7} \text{ erg cm}^{-2}$ 1.1 phot/cm²s

SPI NO

BAT

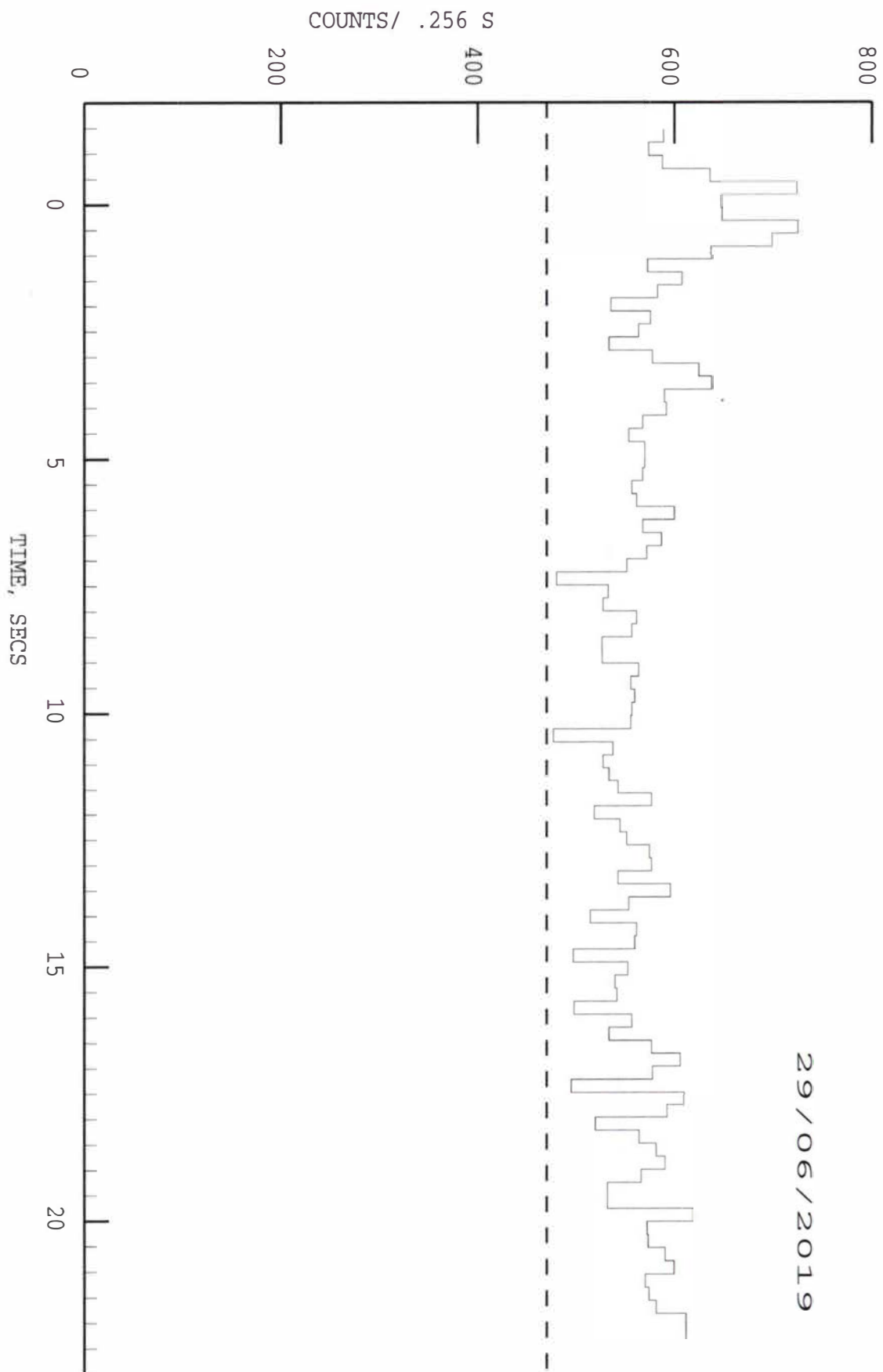
30/06/19

21728.648

06:02:08.648

A

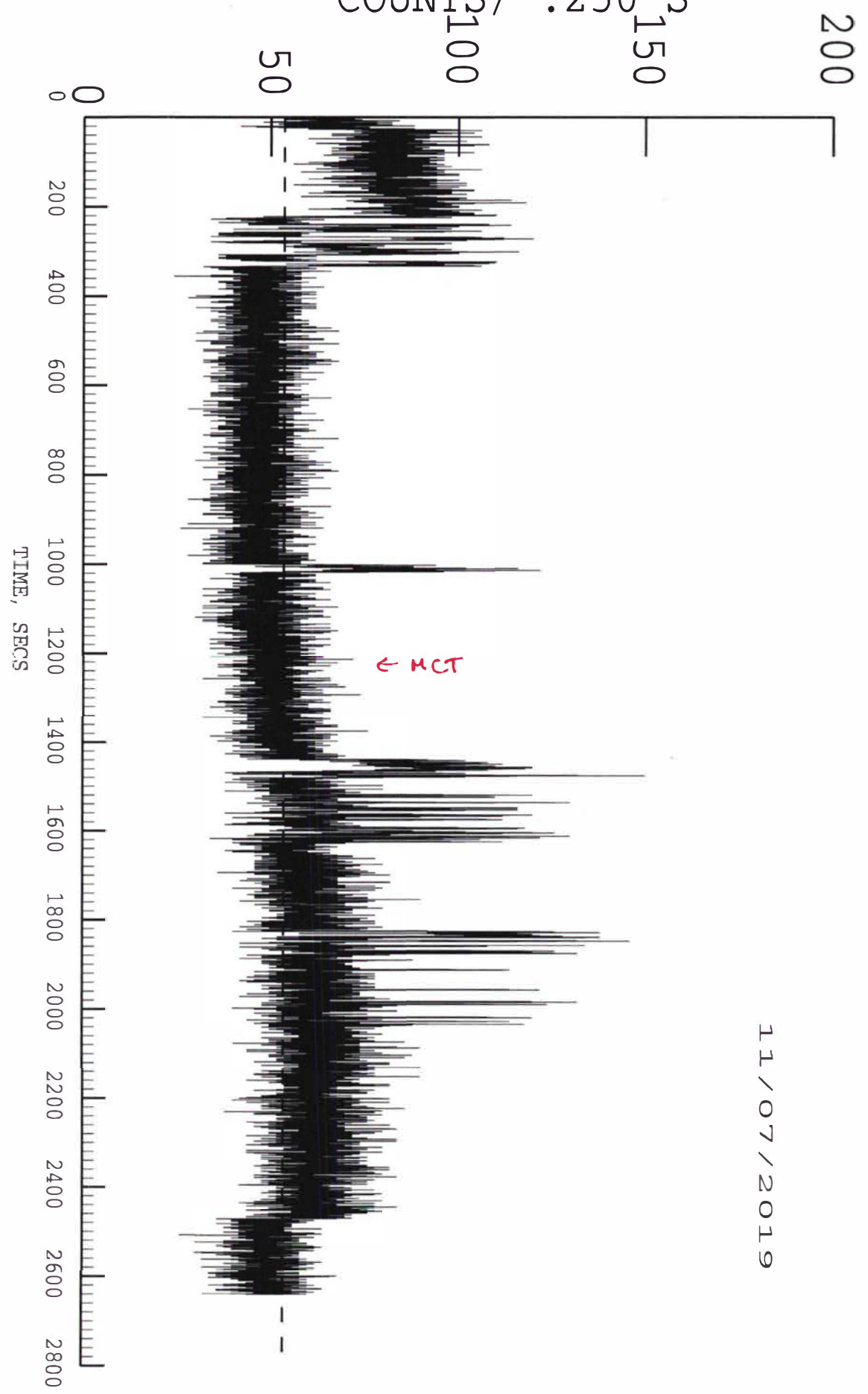
25- 100 keV



A

ODYSSEY 30/06/19 20387.954 05:39:47.954
50-3000 keV

COUNTS/ .250 S



FERMI

30/06/19

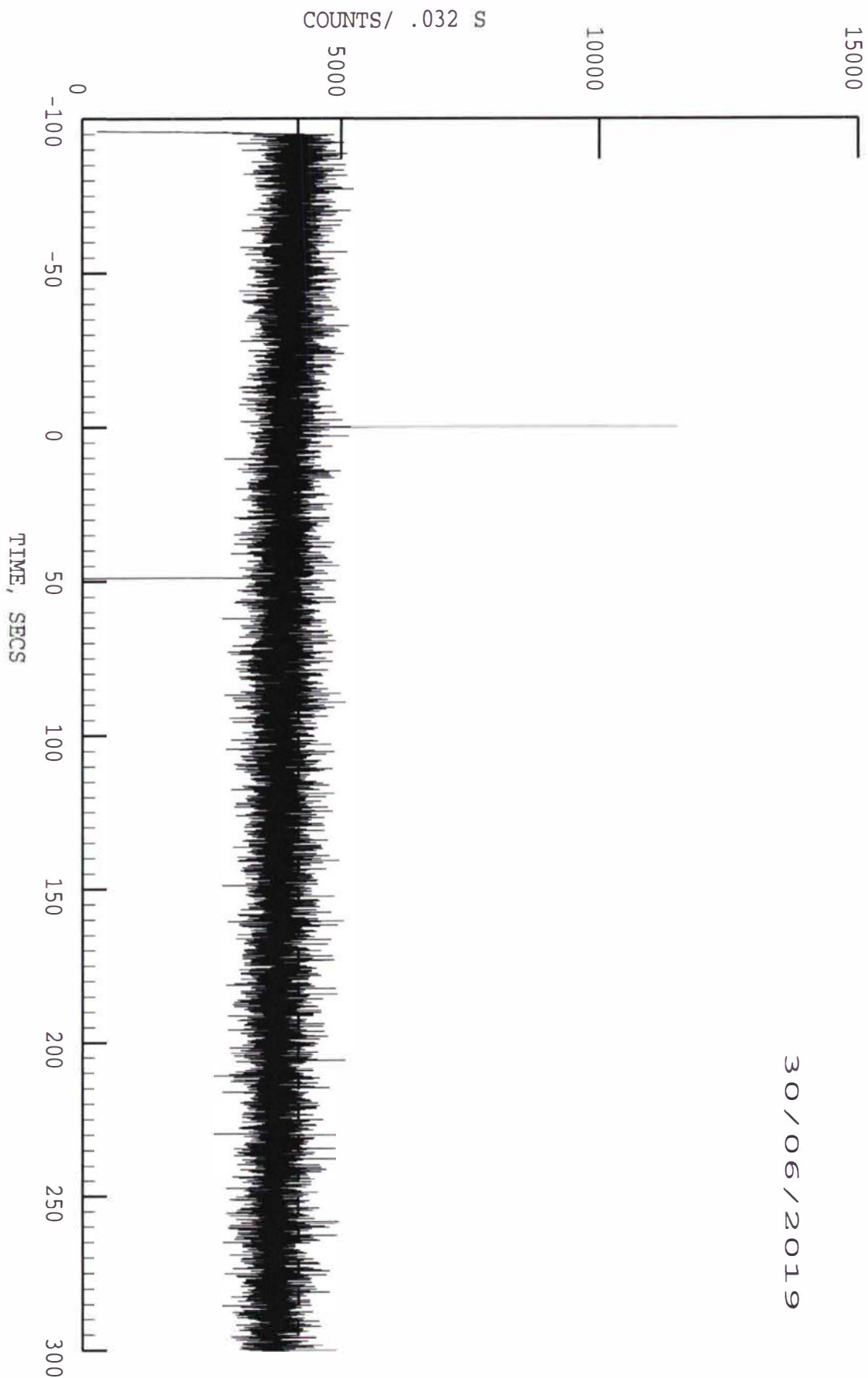
22198.319

06:09:58.319

B

26- 293 keV

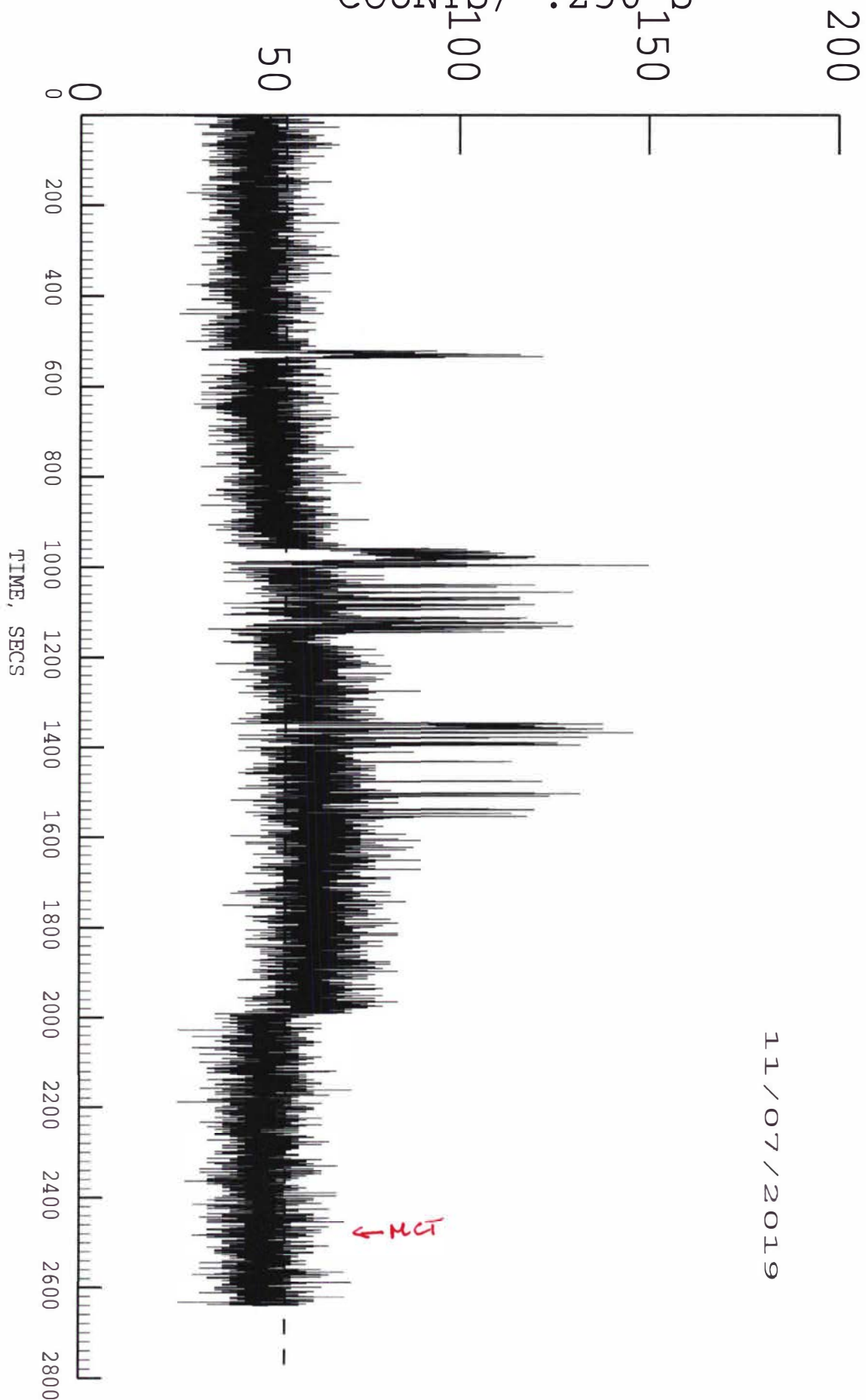
307 -1.3 7.6



30/06/2019

ODYSSEY 30/06/19 20867.936 05:47:47.936^B
50-3000 keV

COUNTS/ .250 S



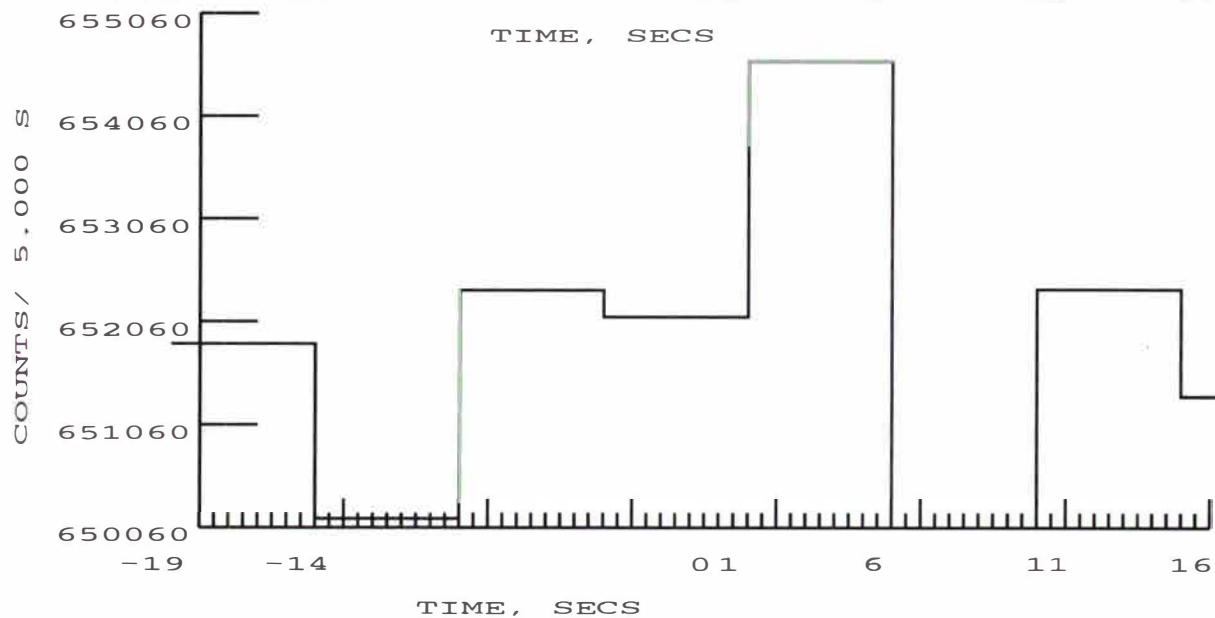
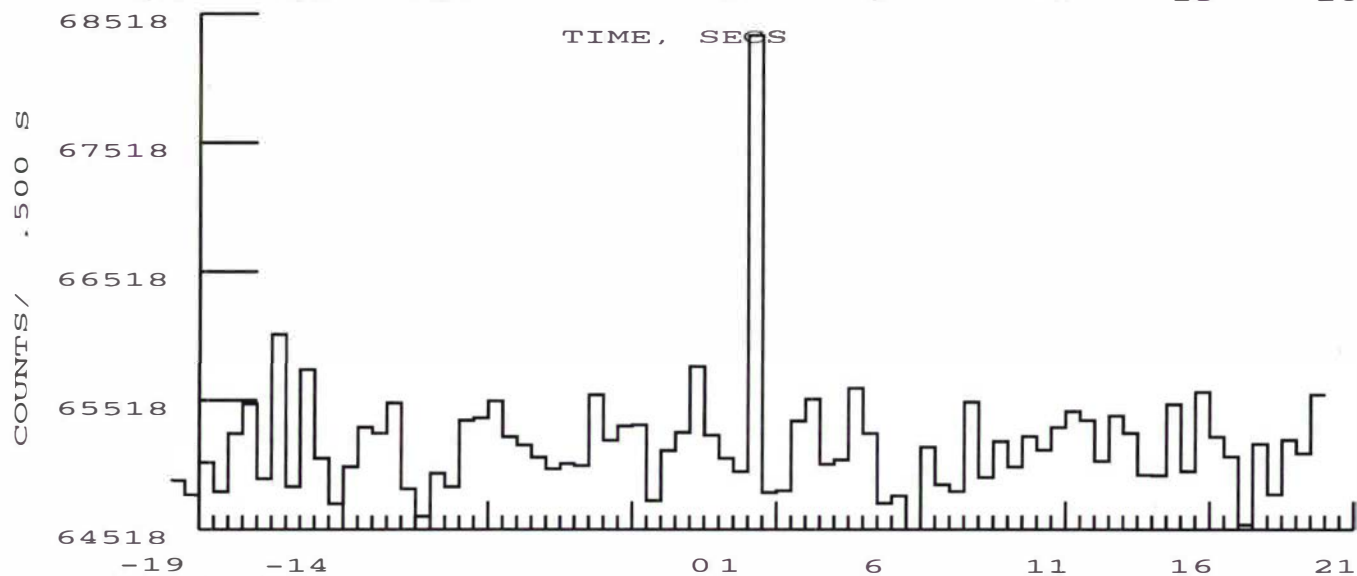
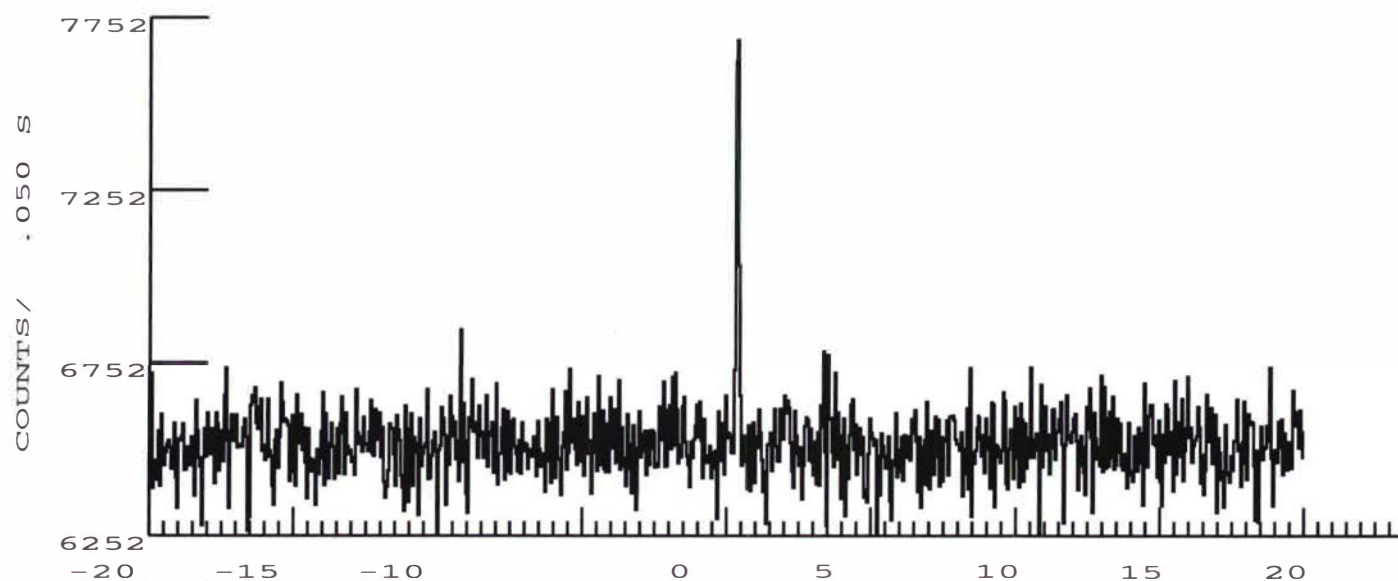
INTEGRAL

30/06/19

22198.000

06:09:58.0

11/07/19



Subject: BAT lightcurve for trigger at 190630_0609

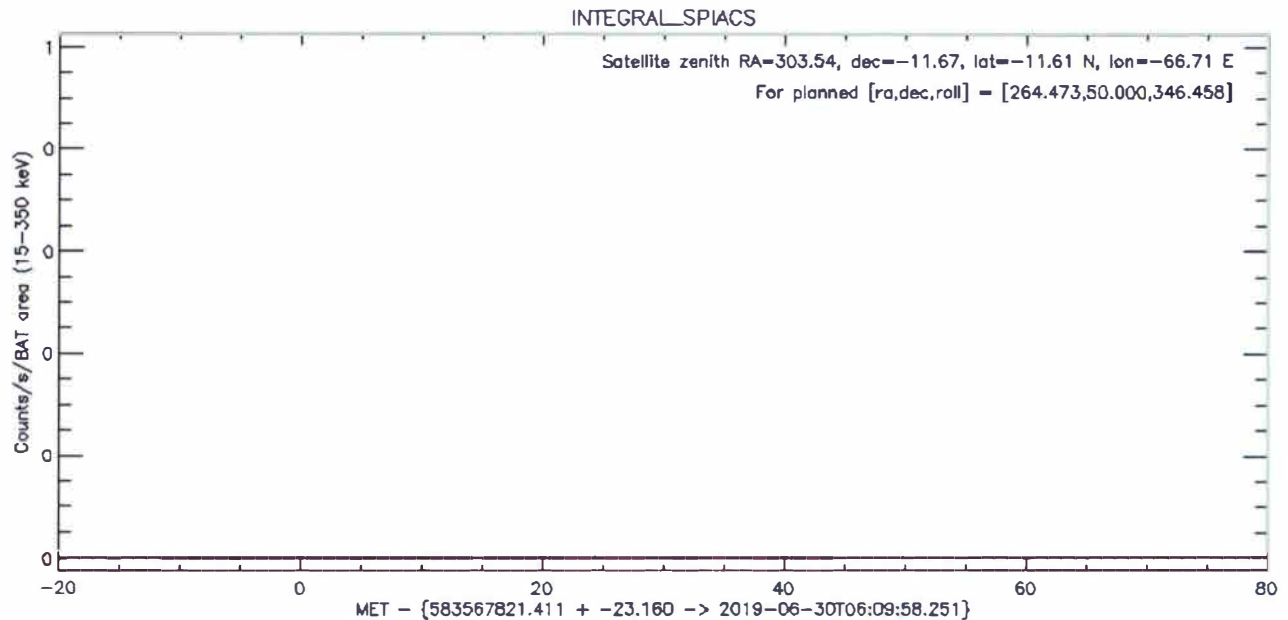
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 6/30/2019, 1:59 AM

To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrland@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

— /tmp/swift/190630_0609.png —



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583567821.411
Swift Zenith(RA,dec):      303.54, -11.67
Swift Location(lon,lat,alt): -66.71 E, -11.61 N, 549 km
Time(MET + UTCF -> UT):    583567821.411 + -23.160 -> 2019-06-30T06:09:58.251
YYMMDD_SOD:               190630_22198.251      DOY=181
Obs Sequence Number:      00075954004
Obs Target Name:          saa-cold-181-01 (planned)
Obs Date and Times:       2019-06-30 06:02:36 - 06:20:36
Obs Pointing(ra,dec,roll): 264.473, 50.000, 346.46
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

— Attachments: —

/tmp/swift/190630_0609_bat64ms_ipn

87.0 KB

/tmp/swift/190630_0609.png

7.4 KB

3

Subject: IPN triangulation of short GRB 190630A (=Fermi/GBM trigger 583567803) - GBM-INTEGRAL annulus

From: Dmitry Svinkin <svinkin@mail.ioffe.ru>

Date: 6/30/2019, 2:31 PM

To: IPN <ipn@ssl.berkeley.edu>

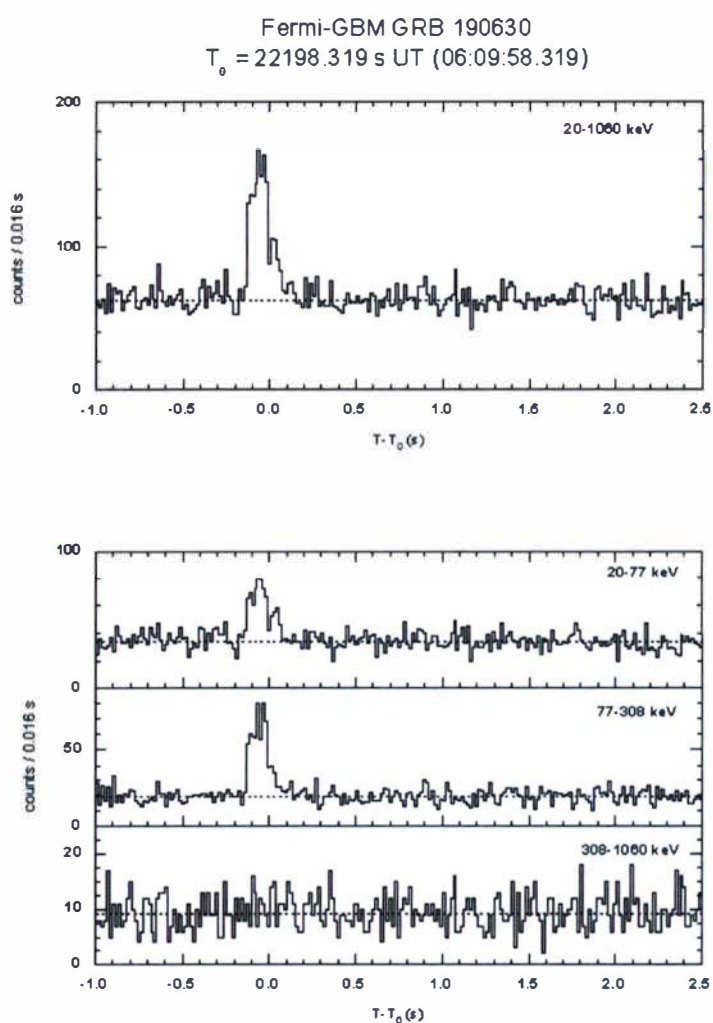
Dear colleagues,

A short-duration GRB 190630A (The Fermi GBM team, GCN Circ. 24912) has been detected by Fermi (GBM trigger 583567803), INTEGRAL (SPI-ACS), so far, at about 22198 s UT (06:09:58) - see the attached GBM figure.

We have triangulated this GRB to a GBM-INTEGRAL annulus centered at RA(2000)=32.604 deg (02h 10m 25s) Dec(2000)=-47.005 deg (-47d 00' 16"), whose radius is 73.654 ± 2.609 deg (3 sigma), see the attached figure.

Best regards,

—GRB20190630_22198_GBM_64ms.png



—GRB190630A_IPN_map.png

Subject: IPN triangulation of GRB 190630A (short)
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 7/2/2019, 5:02 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24965
SUBJECT: IPN triangulation of GRB 190630A (short)
DATE: 19/07/02 12:01:33 GMT
FROM: Anna Kozlova at Ioffe Institute <ann.kozlova@mail.ioffe.ru>

A. Kozlova and K. Hurley, on behalf of the IPN,

A. Goldstein, M. S. Briggs, and C. Wilson-Hodge
on behalf of the Fermi GBM team,

A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo,
and C. Ferrigno, on behalf of the INTEGRAL SPI-ACS GRB team,

and

S. Xiao, C. K. Li, X. B. Li, Y. Huang, and S. L. Xiong
on behalf of the Insight-HXMT GRB team,
report:

The short-duration GRB 190630A was detected
by Fermi (GBM trigger 583567803), INTEGRAL (SPI-ACS),
and Insight (HXMT/HE) at about 22198 s UT (06:09:58).

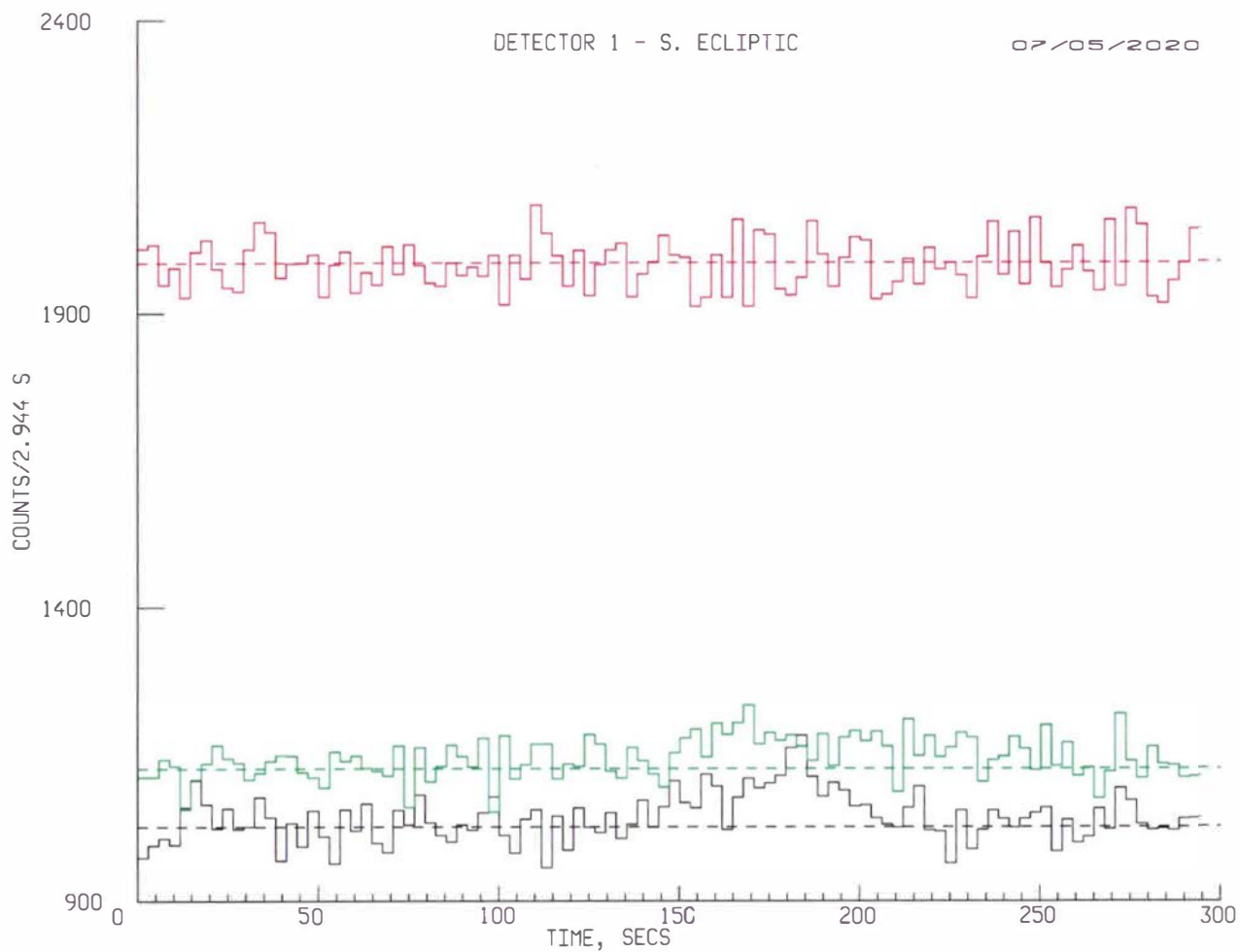
We have triangulated this GRB to a GBM-INTEGRAL annulus centered at
RA(2000)=32.604 deg (02h 10m 25s) Dec(2000)=-47.005 deg (-47d 00' 16"),
whose radius is 73.654 ± 2.609 deg (3 sigma).

The annulus is partially consistent with the 90% localization
probability region of GW compact binary merger candidate
event S190630ag (The LIGO Scientific Collaboration and the Virgo
Collaboration GCN Circ. 24922).

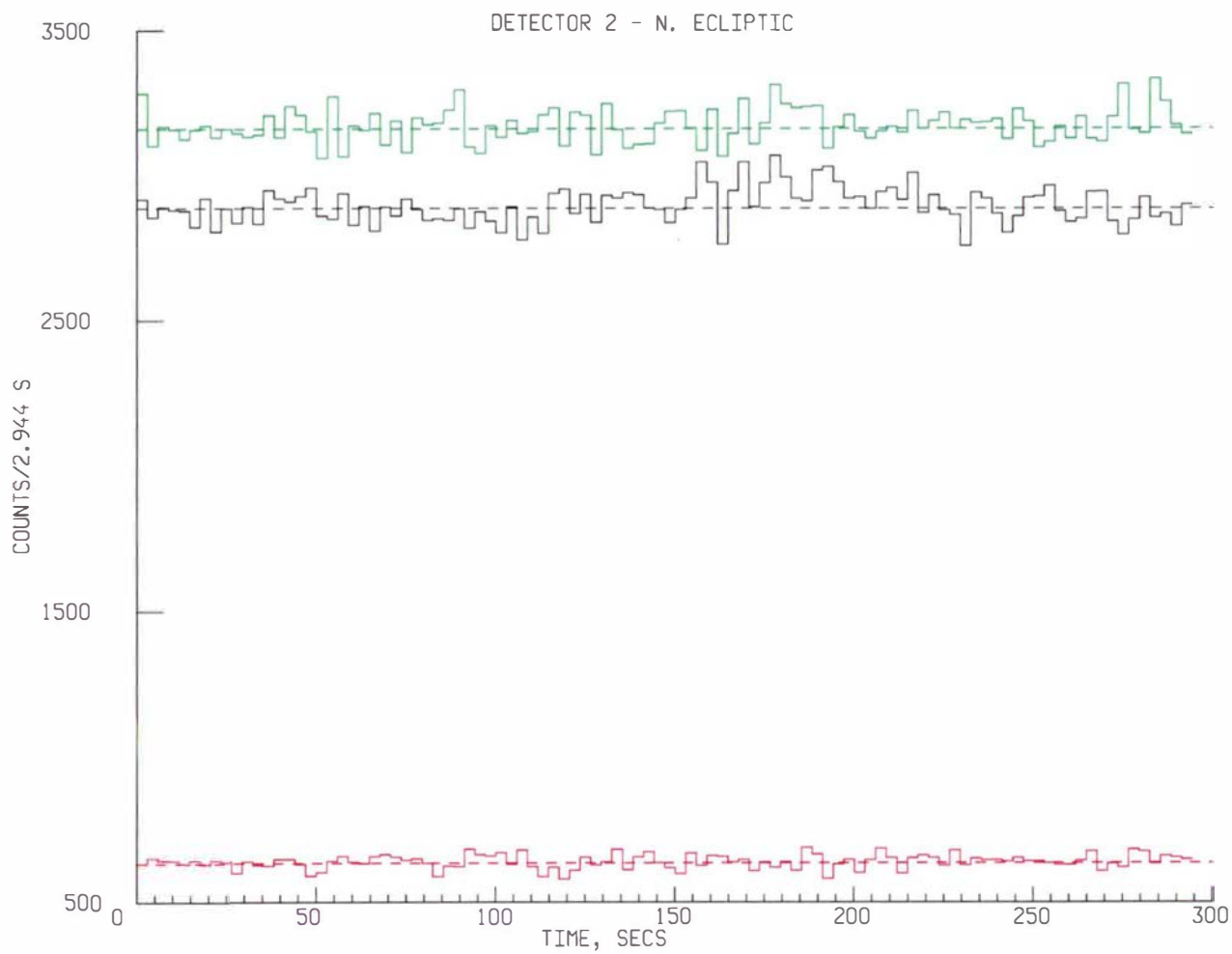
This annulus may be improved.

A triangulation map is posted at
http://www.ioffe.ru/LEA/GRBs/GRB190630_T22198/IPN/

KONUS 30/06/19 22453.908
10- 50 keV 50- 200 keV 200- 750 keV



KONUS 30/06/19 22453.908
10- 50 keV 50- 200 keV 200- 750 keV

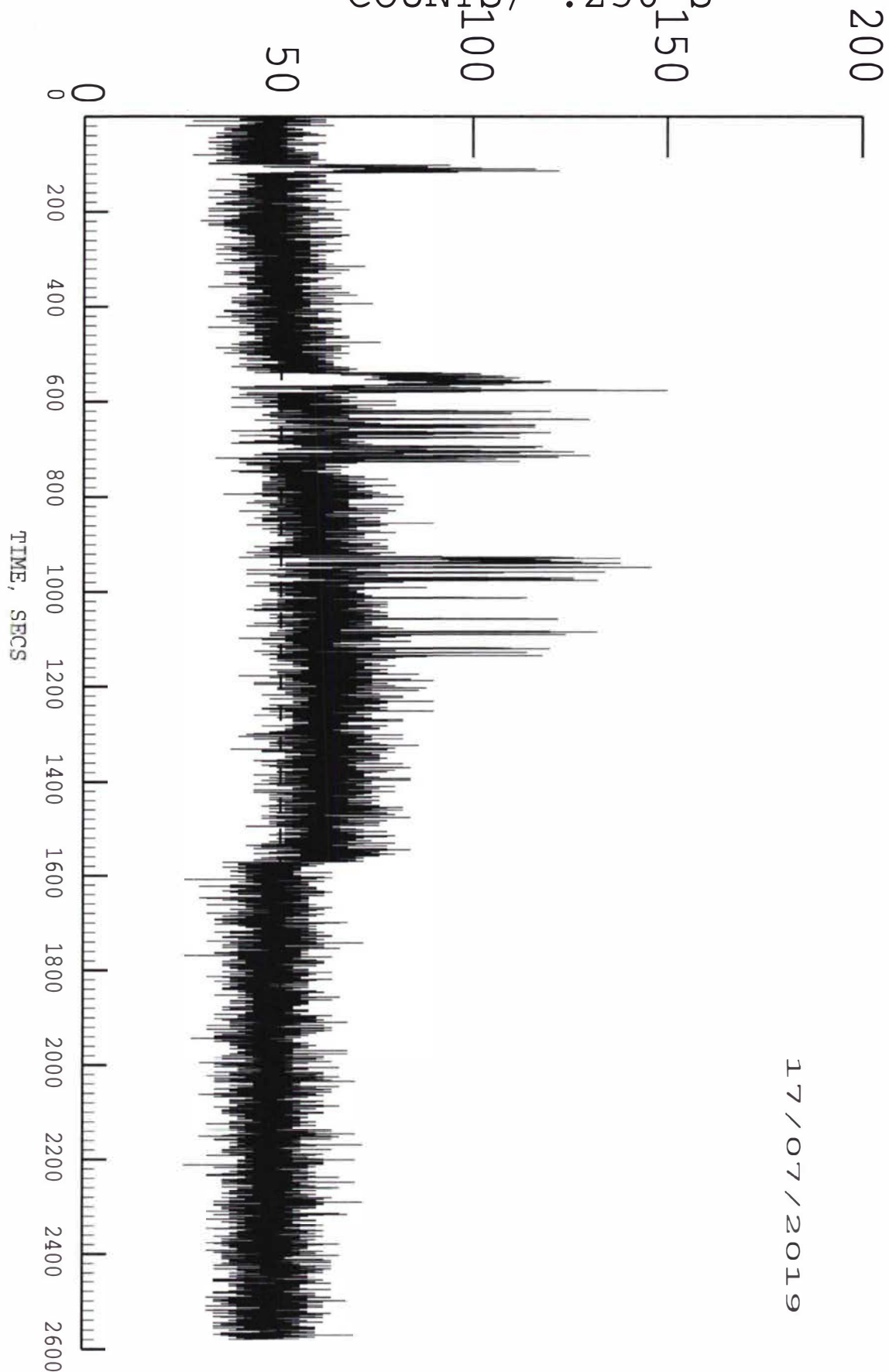


ODYSSEY 30/06/19 21287.932 05:54:47.932

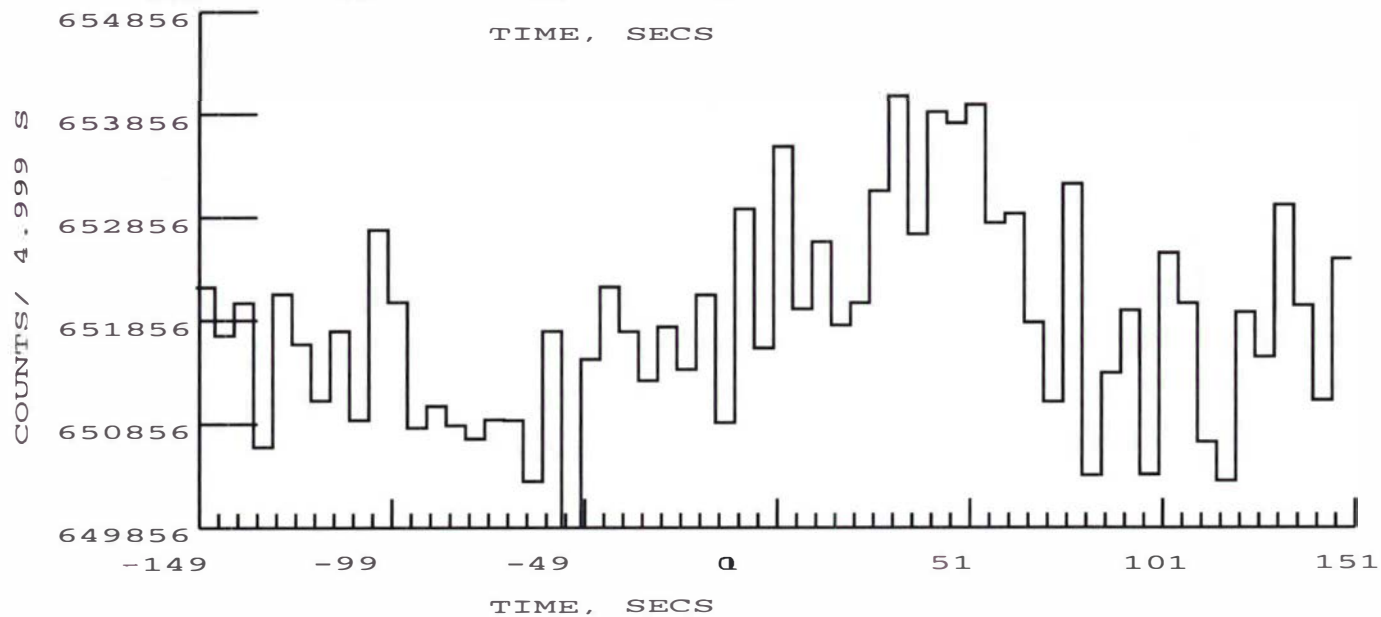
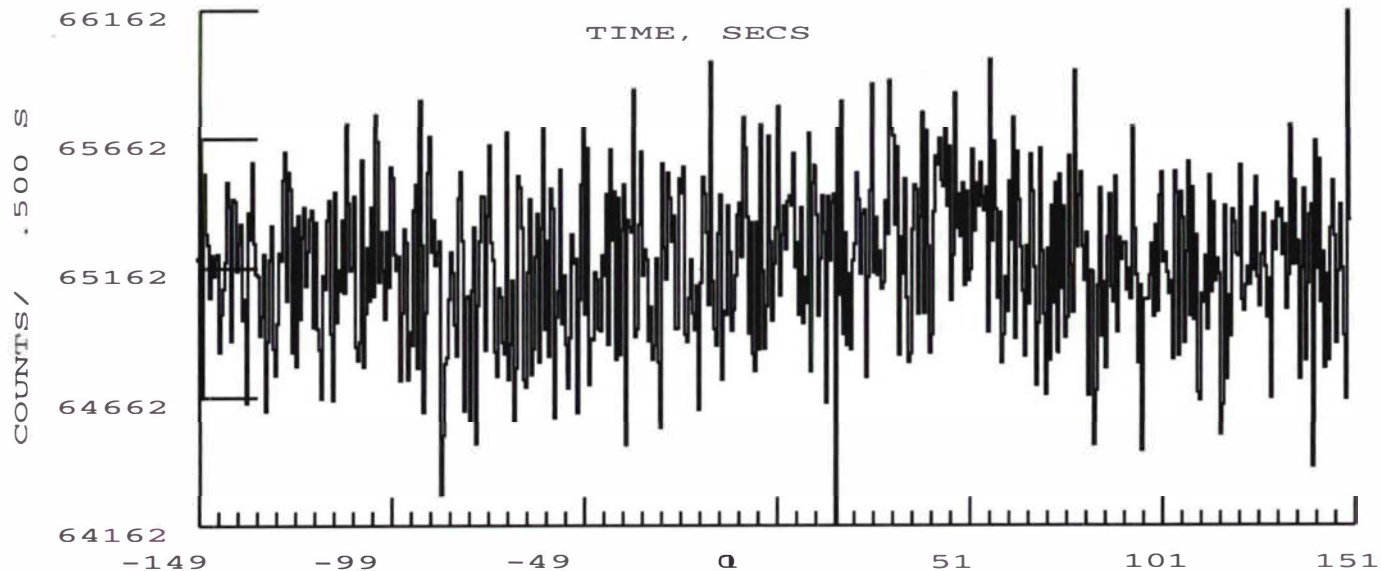
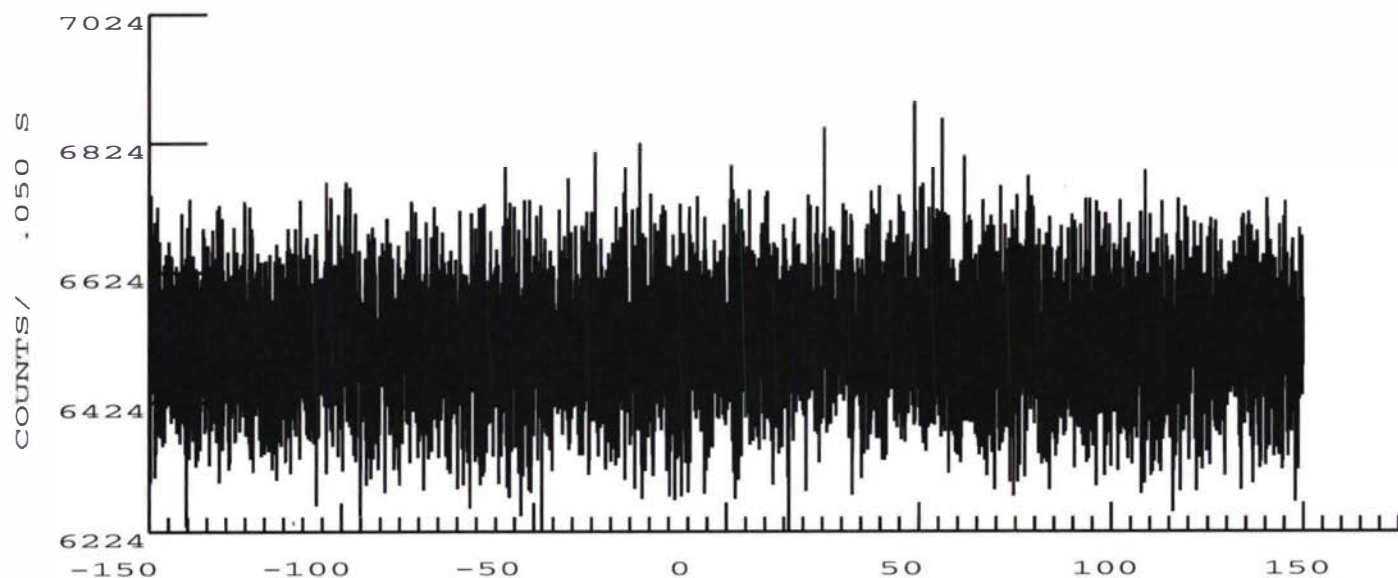
50-3000 keV

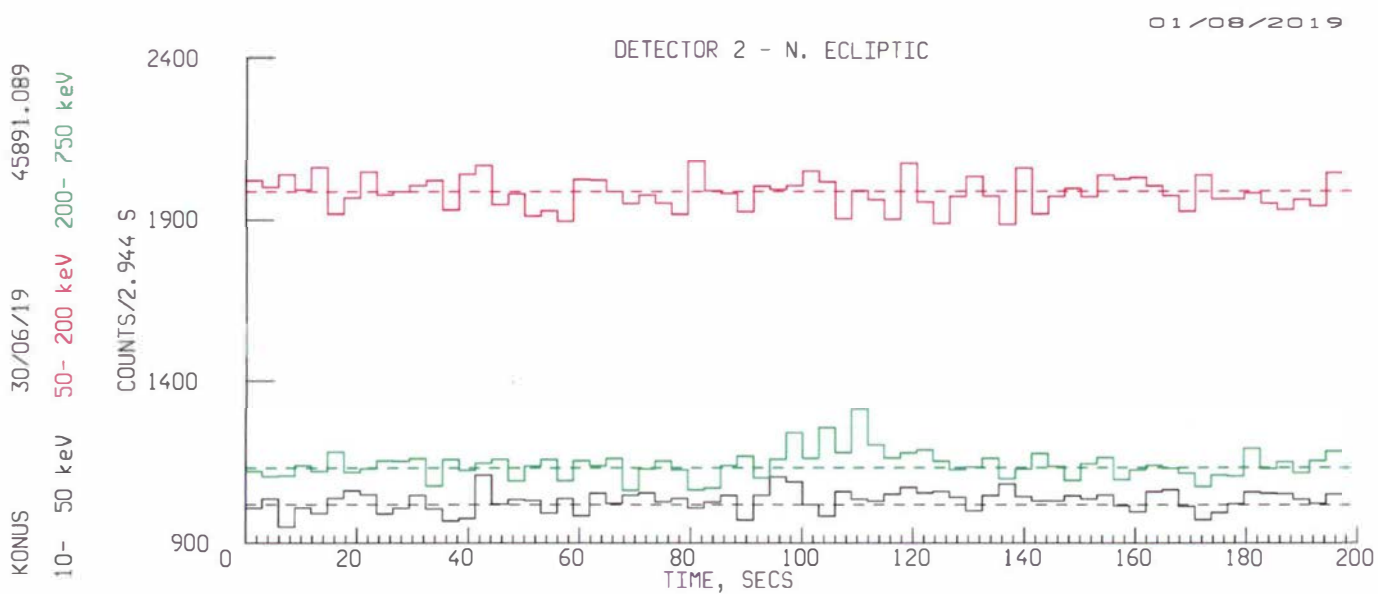
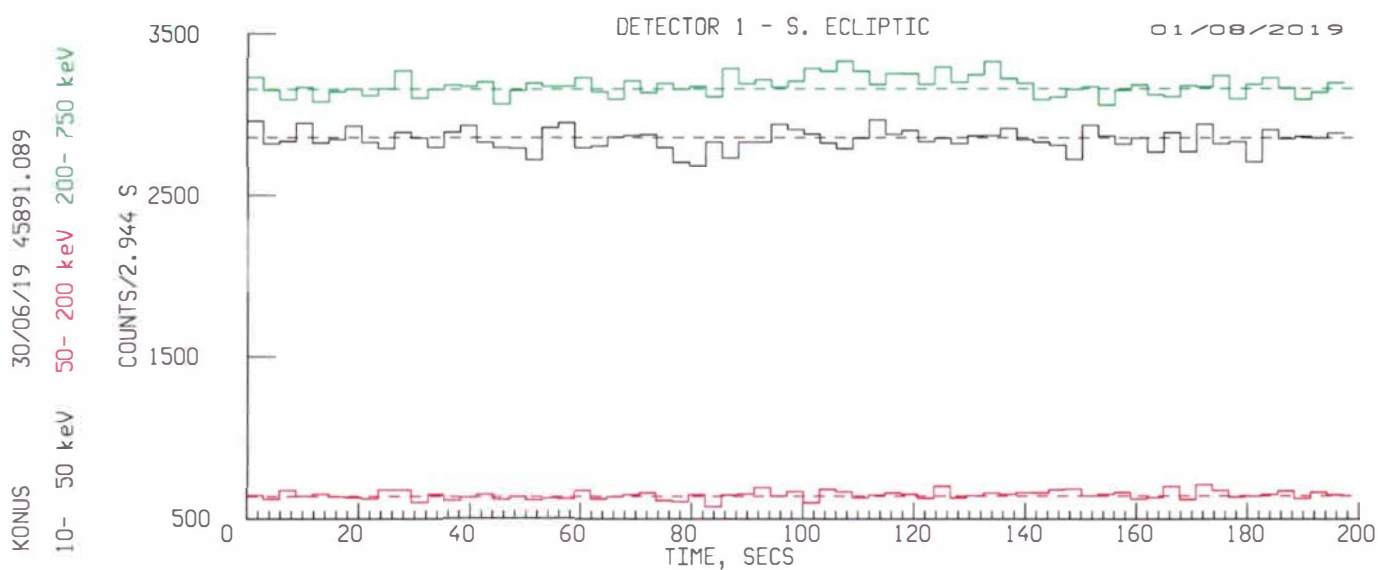
Konus RT

COUNTS/ .250 S



17/07/2019



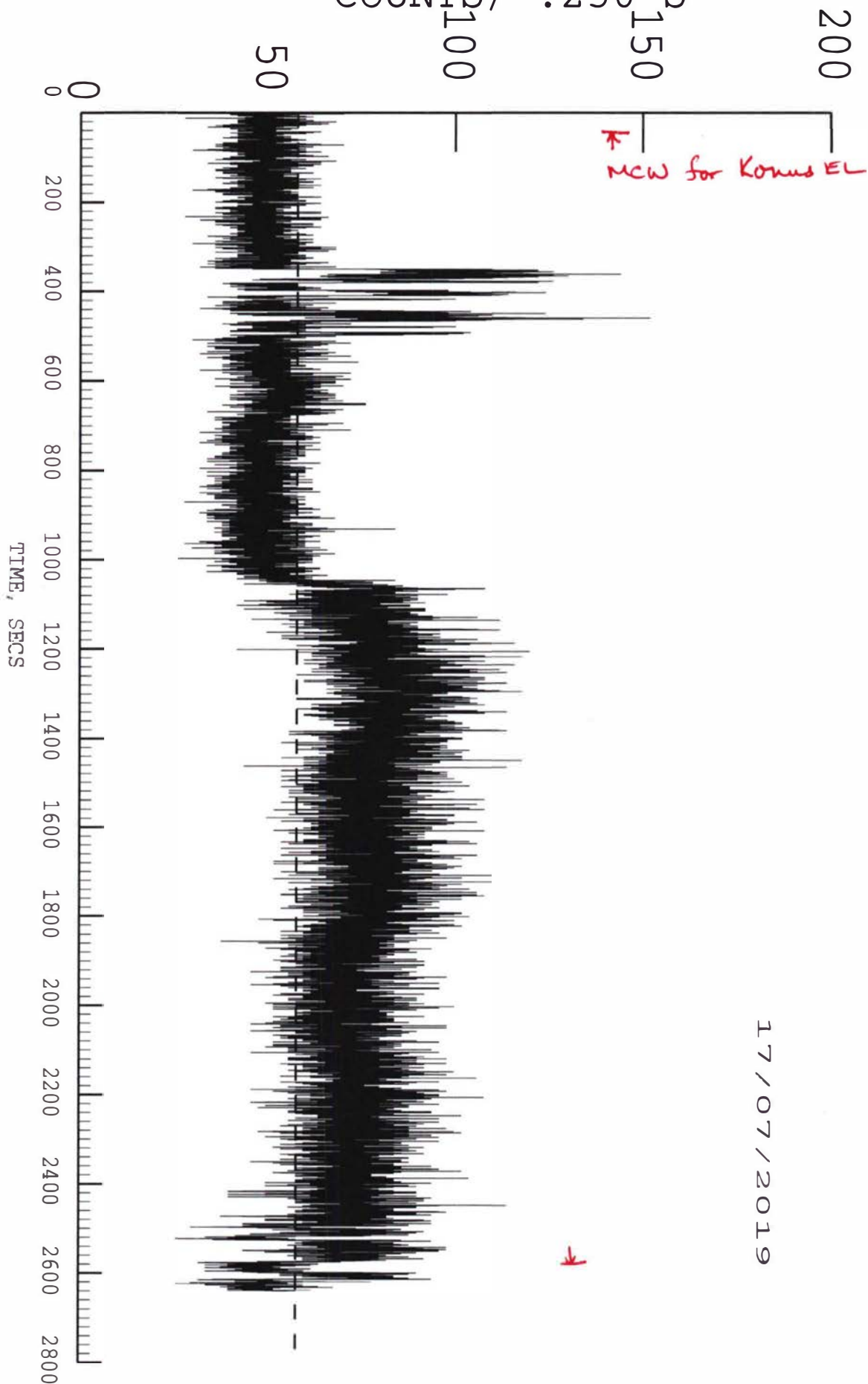


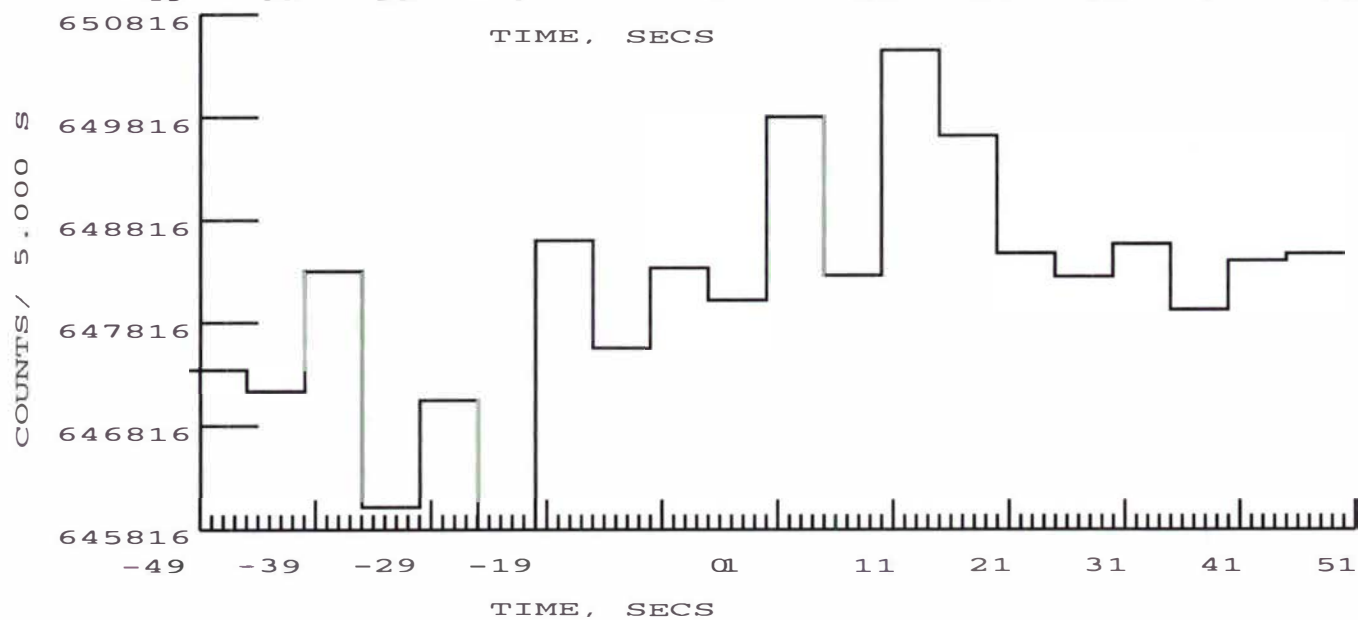
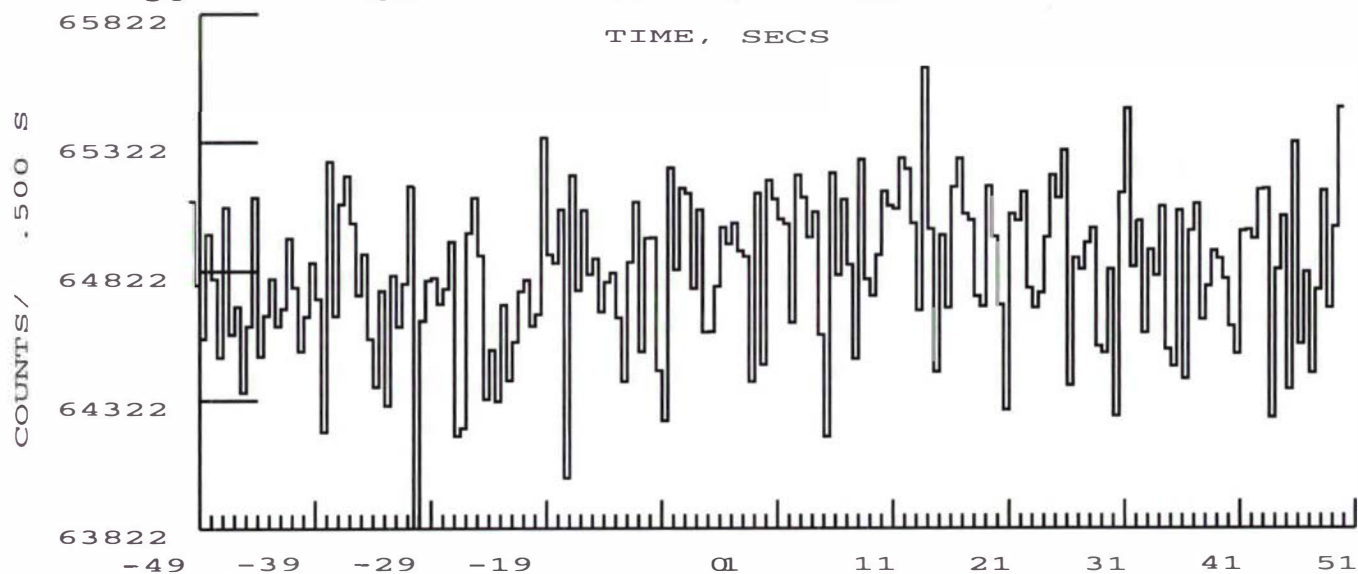
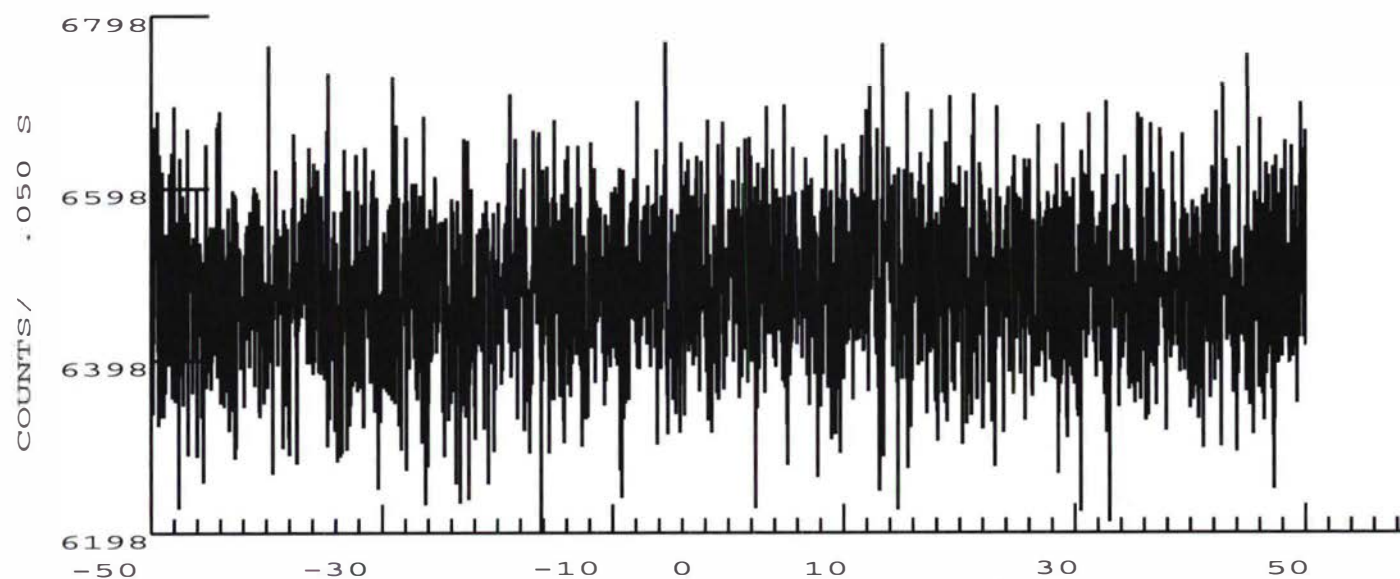
ODYSSEY 30/06/19 44627.510 12:23:47.510

50-3000 keV

Konus RT

COUNTS/ .250 S





Subject: LIGO/Virgo S190630ag: Identification of a GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 6/30/2019, 12:58 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 24922
SUBJECT: LIGO/Virgo S190630ag: Identification of a GW compact binary merger candidate
DATE: 19/06/30 19:57:47 GMT
FROM: Brandon Piotrkowski at U of Wisconsin-Milwaukee <piotrzk3@uwm.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

We identified the compact binary merger candidate S190630ag during real-time processing of data from LIGO Livingston Observatory (L1) and Virgo Observatory (V1) at 2019-06-30 18:52:05.180 UTC (GPS time: 1245955943.180). The candidate was found by the GstLAL [1] analysis pipeline.

S190630ag is an event of interest because its false alarm rate, as estimated by the online analysis, is 1.4×10^{-13} Hz, or about one in 10^5 years. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S190630ag>

The classification of the GW signal, in order of descending probability, is BBH (94%), MassGap (5%), NSBH (<1%), Terrestrial (<1%), or BNS (<1%).

Assuming the candidate is astrophysical in origin, there is strong evidence against the lighter compact object having a mass < 3 solar masses (HasNS: <1%). Using the masses and spins inferred from the signal, there is strong evidence against matter outside the final compact object (HasRemnant: <1%).

One sky map is available at this time and can be retrieved from the GraceDB event page:

* bayestar.fits.gz, an updated localization generated by BAYESTAR [2], distributed via GCN notice about 3 minutes after the candidate

The preferred sky map at this time is bayestar.fits.gz, with 90% credible region of 8493 deg². Marginalized over the whole sky, the a posteriori luminosity distance estimate is 1059 ± 307 Mpc (a posteriori mean $\pm$ standard deviation).

For further information about analysis methodology and the contents of

this alert, refer to the LIGO/Virgo Public Alerts User Guide

<https://emfollow.docs.ligo.org/userguide/>.

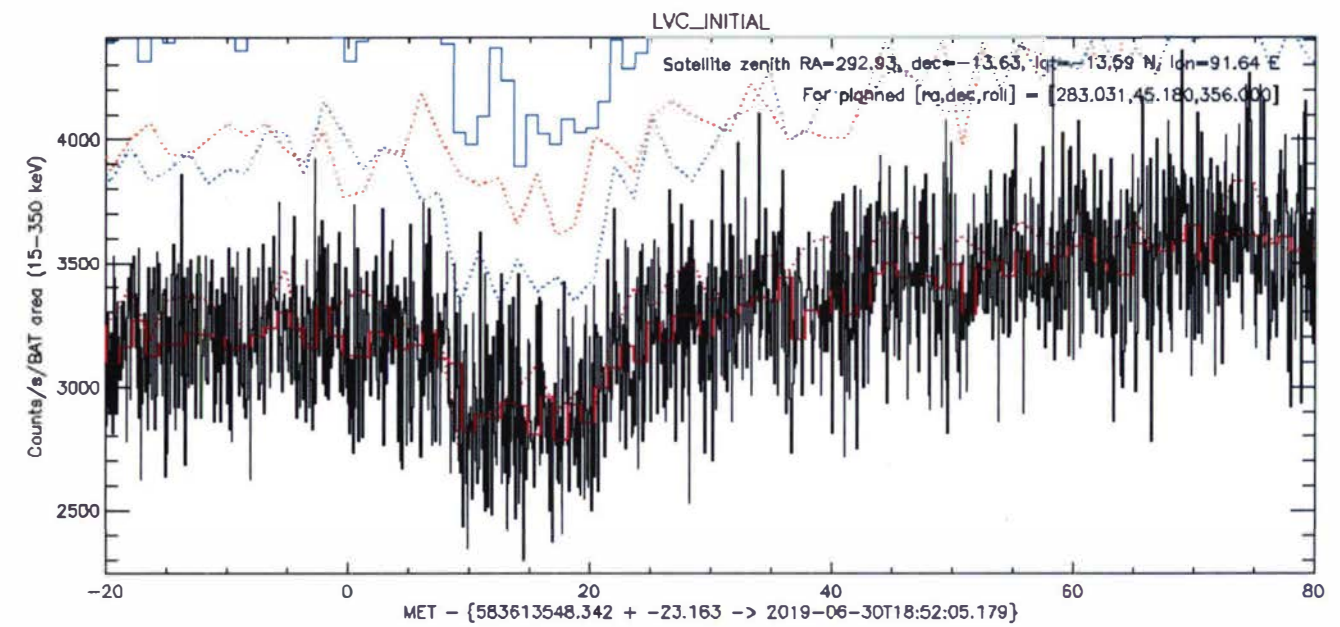
[1] Messick et al. PRD 95, 042001 (2017)

[2] Singer & Price PRD 93, 024013 (2016)

Subject: BAT lightcurve for trigger at 190630_1852
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 6/30/2019, 8:05 PM
To: jwren@lanl.gov, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

*****THIS IS AN AUTOMATICALLY GENERATED MESSAGE*****

—/tmp/swift/190630_1852.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 583613548.342
Swift Zenith(RA,dec):      292.93, -13.63
Swift Location(lon,lat,alt): 91.64 E, -13.59 N, 548 km
Time(MET + UTCF -> UT):    583613548.342 + -23.163 -> 2019-06-30T18:52:05.179
YYMMDD_SOD:               190630_67925.179      DOY=181
Obs Sequence Number:      00011469001
Obs Target Name:          HD 175289 (planned)
Obs Date and Times:       2019-06-30 18:51:36 - 18:56:36
Obs Pointing(ra,dec,roll): 283.031, 45.180, 356.00
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments:—

/tmp/swift/190630_1852.png	20.2 KB
/tmp/swift/190630_1852_bat64ms_ipn	87.0 KB

Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 6/30/2019, 4:57 PM
 To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_OATE: Sun 30 Jun 19 23:57:06 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 912239, Seg_Num: 0
 GRB_RA: 293.908d {+19h 35m 38s} (J2000),
 294.222d {+19h 36m 53s} (current),
 293.103d {+19h 32m 25s} (1950)
 GRB_DEC: -32.751d {-32d 45' 03"} (J2000),
 -32.707d {-32d 42' 24"} (current),
 -32.862d {-32d 51' 43"} (1950)
 GRB_DATE: 18664 TJD; 181 DOY; 19/06/30
 GRB_TIME: 85979.52 SOD {23:52:59.52} UT
 TRIGGER_INDEX: 146
 GRB_PHI: 136.09 [deg]
 GRB_THETA: 23.19 [deg]
 DELTA_TIME: 52.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 16.09 [sigma]
 IMAGE_SIGNIF: 9.75 [sigma]
 LC_URL: sw00912239000msb.lc
 SUN_POSTN: 99.69d {+06h 38m 46s} +23.14d {+23d 08' 13"}
 SUN_DIST: 164.02 [deg] Sun_angle= 11.0 [hr] (West of Sun)
 MOON_POSTN: 74.19d {+04h 56m 46s} +19.78d {+19d 46' 47"}
 MOON_DIST: 142.11 [deg]
 MOON_ILLUM: 4 [%]
 GAL_COORDS: 6.63,-22.96 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 290.32,-10.98 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 66.52,4.33 [deg].

38.4s

 $2.3 \times 10^{-6} \text{ erg cm}^{-2}$ 2.0 phot/cm²s

C

BAT

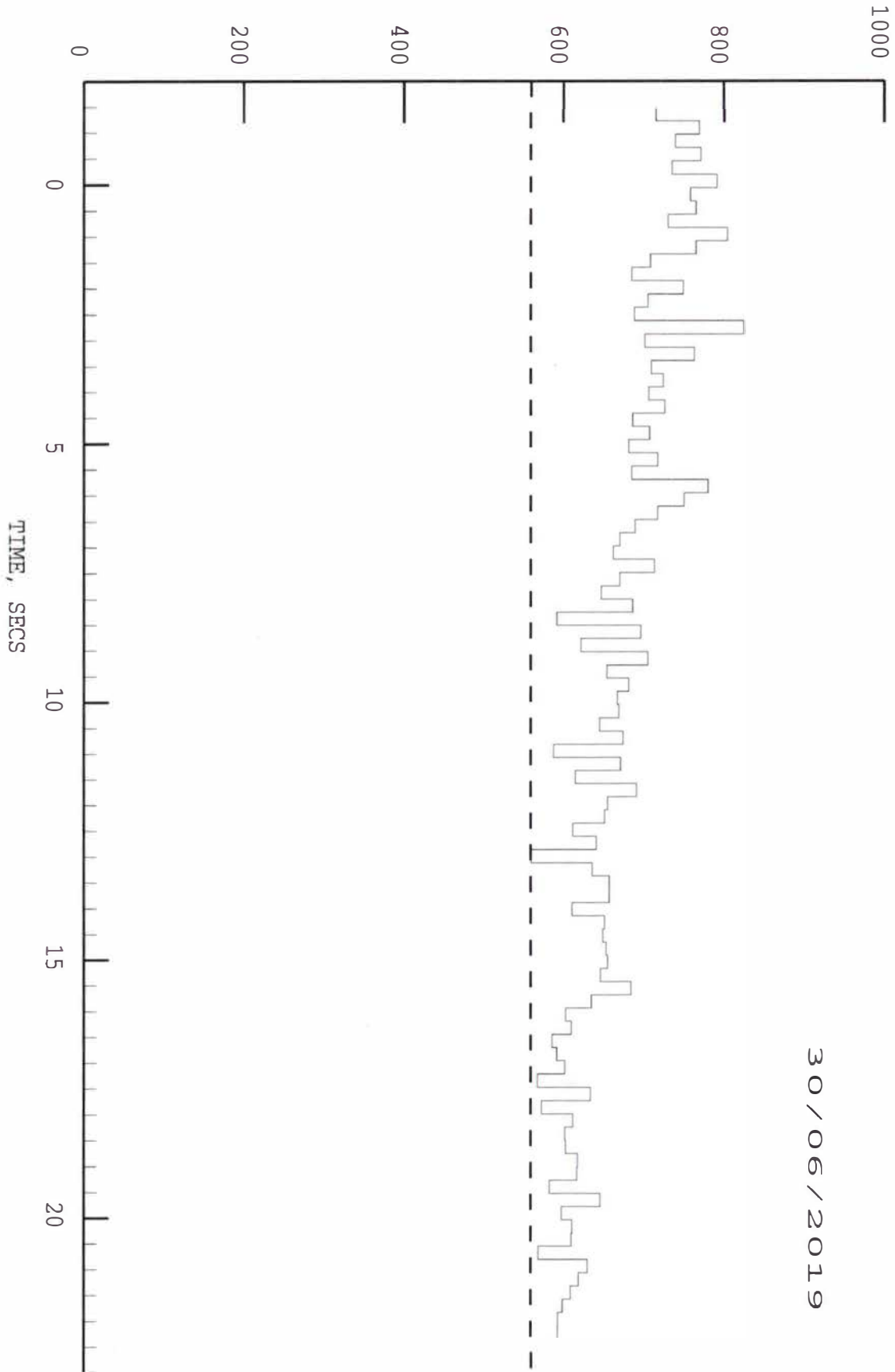
30/06/19

85979.524

23:52:59.524

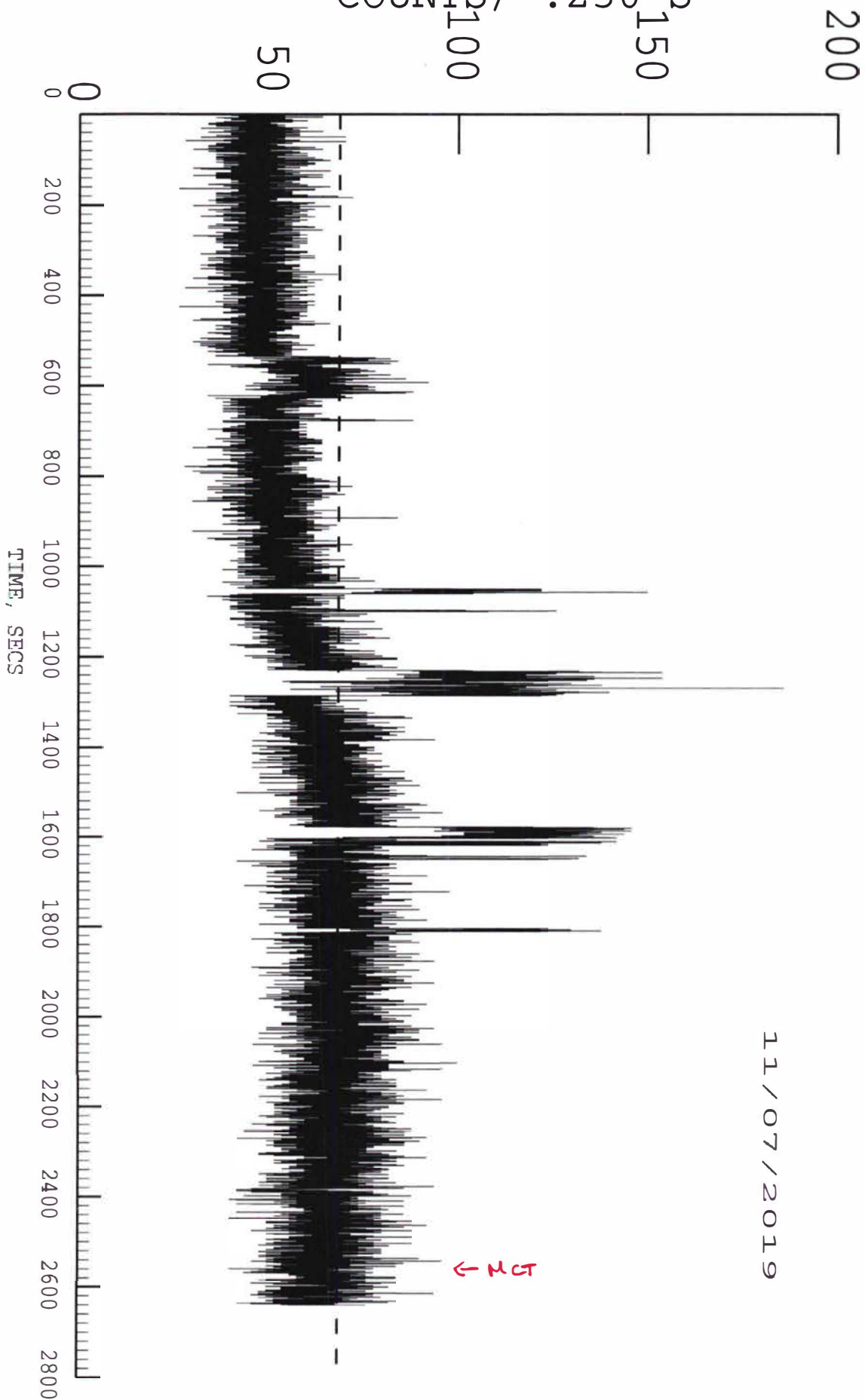
25- 100 keV

COUNTS/ .256 S

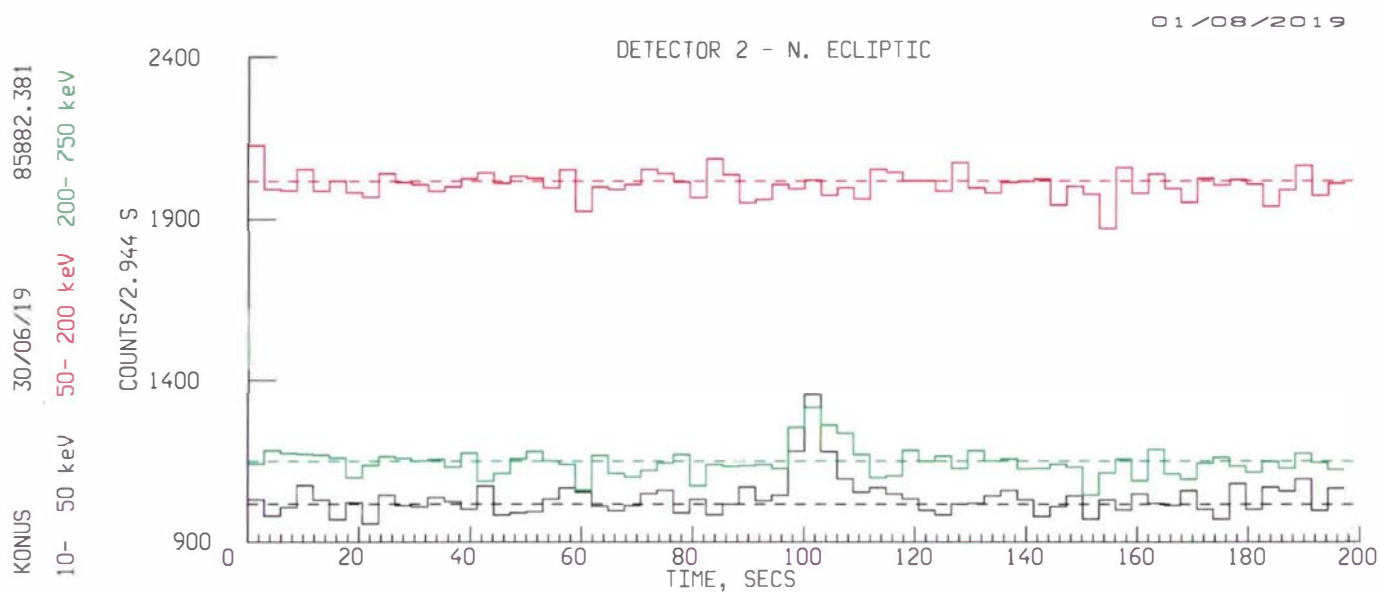
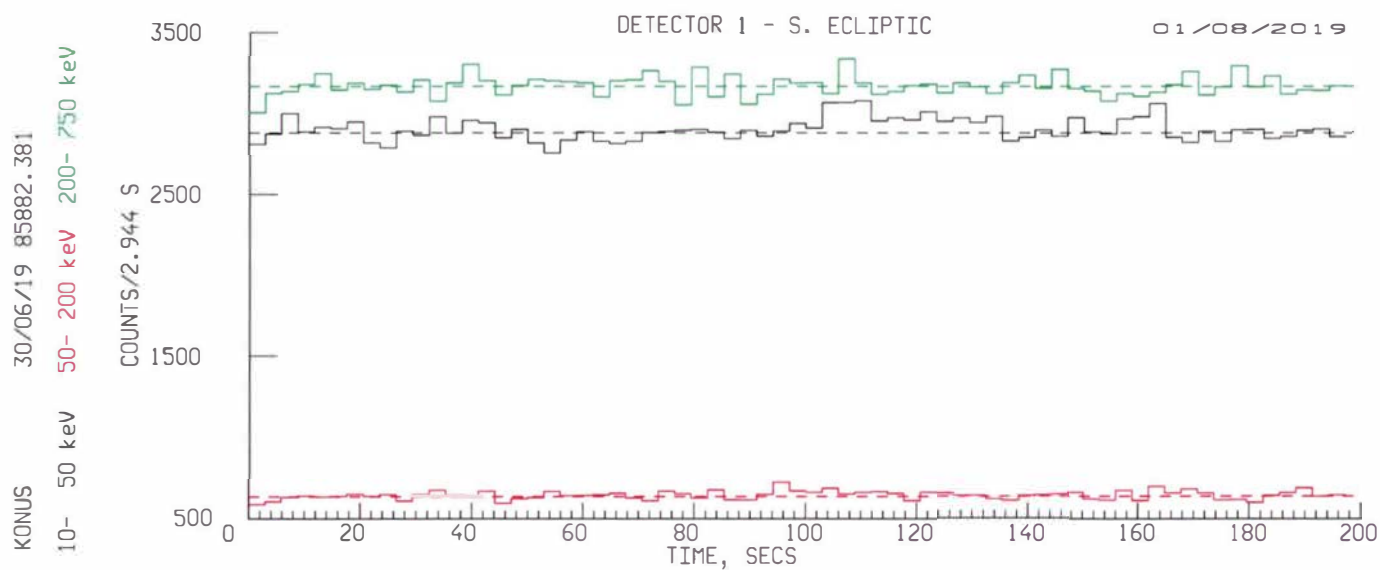


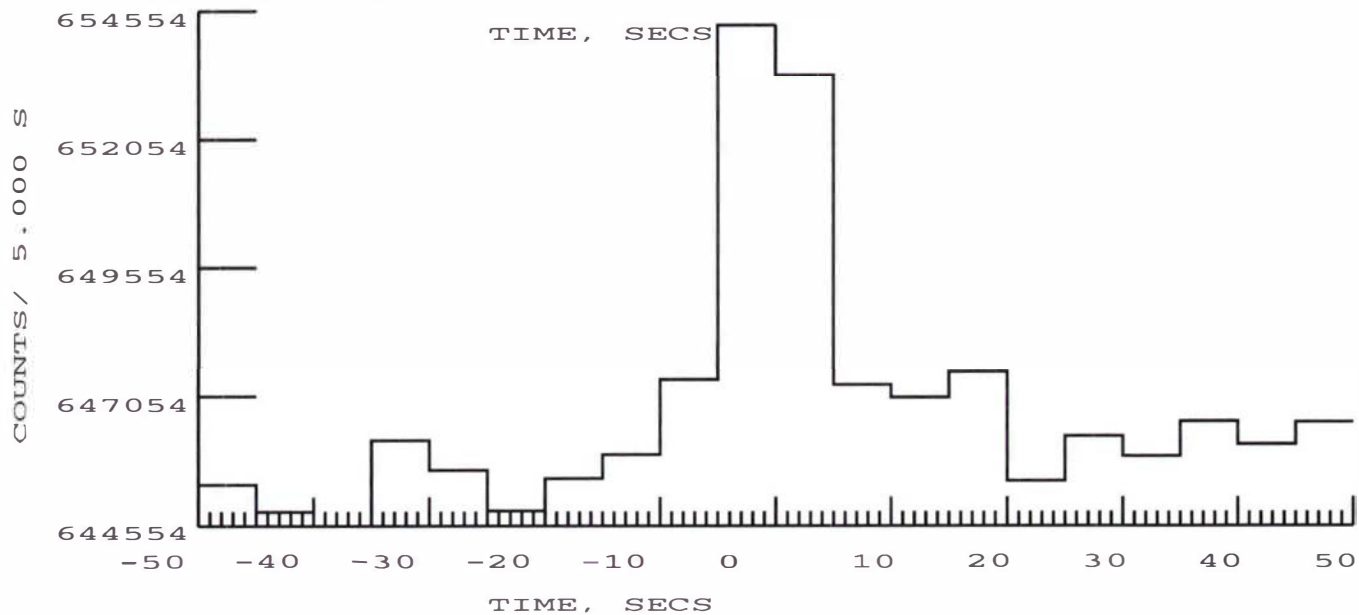
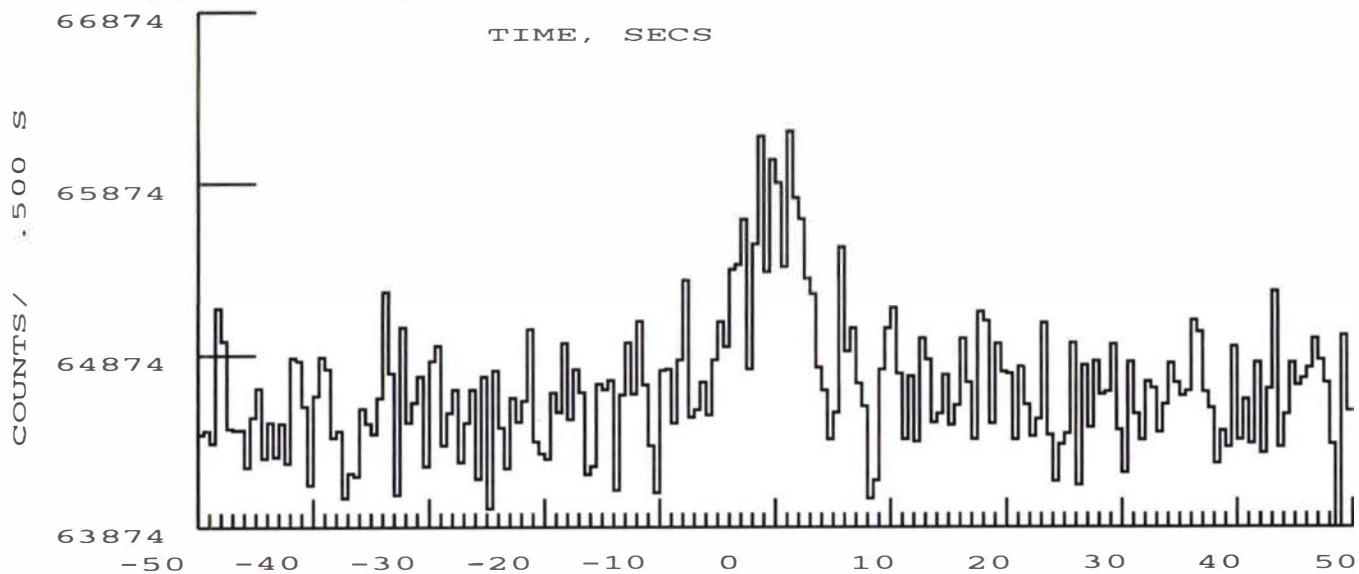
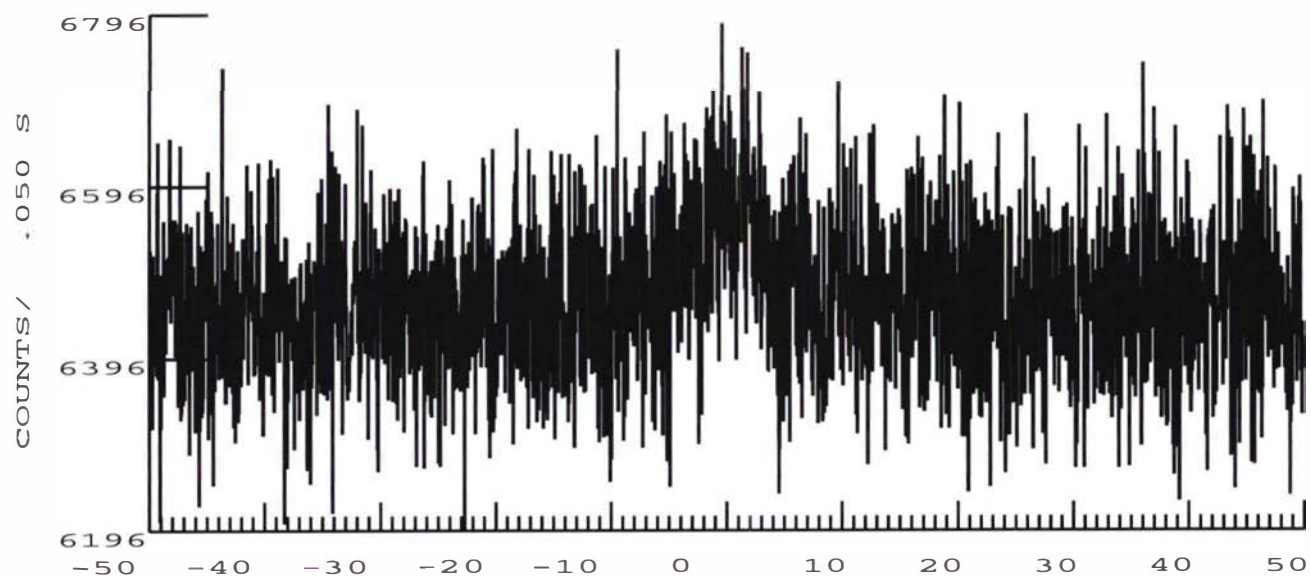
ODYSSEY 30/06/19 84646.801 23:30:46.801^c
50-3000 keV

COUNTS/ .250 S



11/07/2019





Subject: GRB 190630C: AstroSat CZTI detection

From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>

Date: 7/1/2019, 7:00 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 24939

SUBJECT: GRB 190630C: AstroSat CZTI detection

DATE: 19/07/01 13:59:57 GMT

FROM: Vidushi Sharma at IUCAA <vidushi@iucaa.in>

V. Sharma, R. Gaikwad, D. Bhattacharya and A. Vibhute (IUCAA), V. Bhalerao (IIT-B), A. R. Rao (TIFR) and S. Vadawale (PRL) report on behalf of the AstroSat CZTI collaboration:

Analysis of AstroSat CZTI data showed the detection of a long GRB 190630C, which was also detected by Swift (Ukwatta T. N. et al., GCN # 24927) and Swift-XRT (Goad M. R. et al., GCN # 24930).

The source was clearly detected in the 40-200 keV energy range. The light curve shows single pulse of emission with strongest peak at 23:53:01 UT. The measured peak count rate associated with the burst is 153 cts/s above the background in the combined data of ~~7~~ Four quadrants, with a total of 1301 cts. The local mean background count rate was 571 cts/s. Using cumulative rates, we measure a T90 of 21.3 s.

It was also clearly detected in the CsI anticoincidence (Veto) detector in the 100-500 keV energy range.

CZTI GRB detections are reported regularly on the payload site at <http://astrosat.iucaa.in/czti/?q=grb>. CZTI is built by a TIFR-led consortium of institutes across India, including VSSC, ISAC, IUCAA, SAC and PRL. The Indian Space Research Organisation funded, managed and facilitated the project.