

v01

69.954

01/01/2020

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

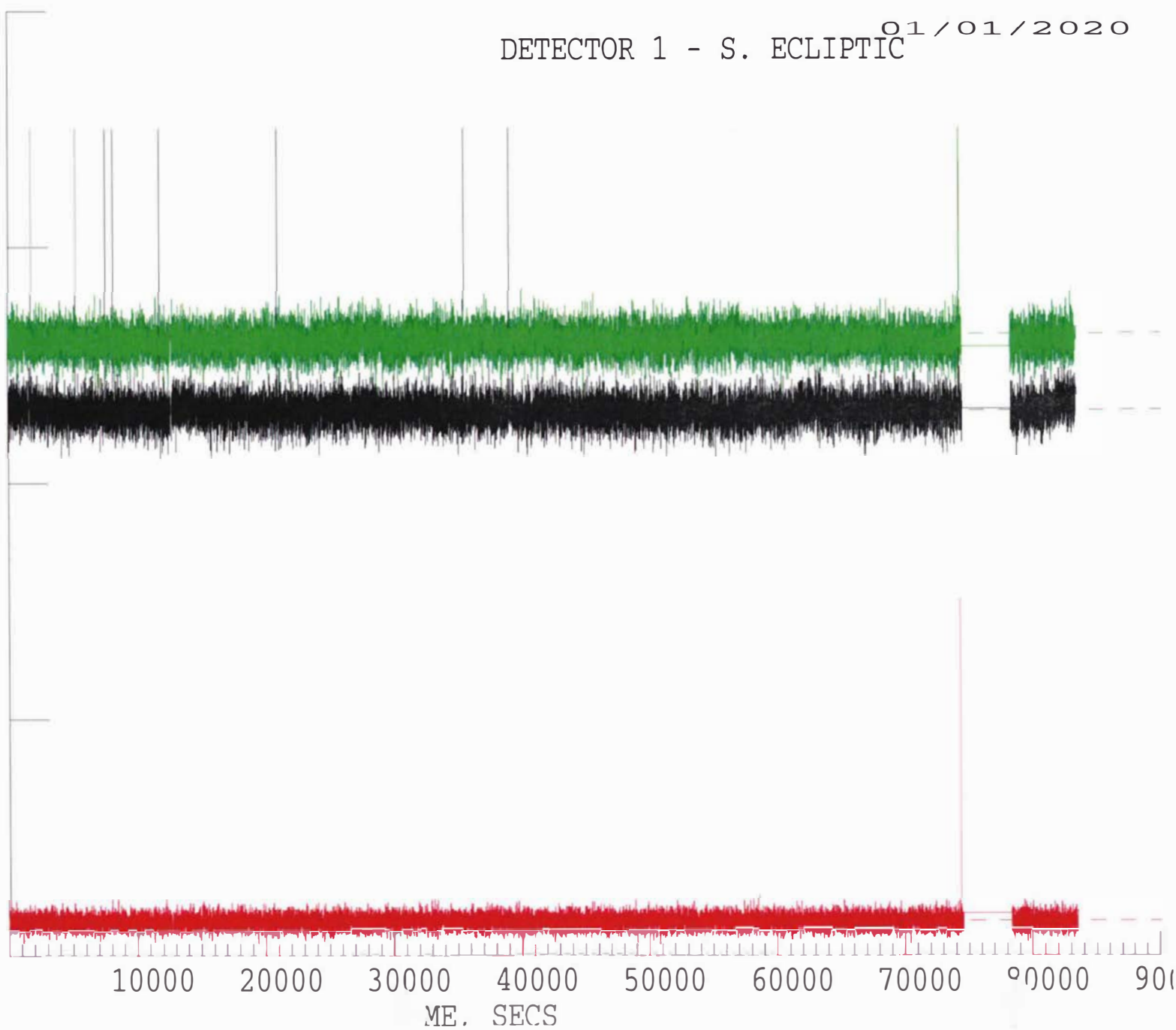
70000

80000

90000

ME. SECS

DETECTOR 1 - S. ECLIPTIC 01/01/2020



KONUS

01/01/2020

69.954

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

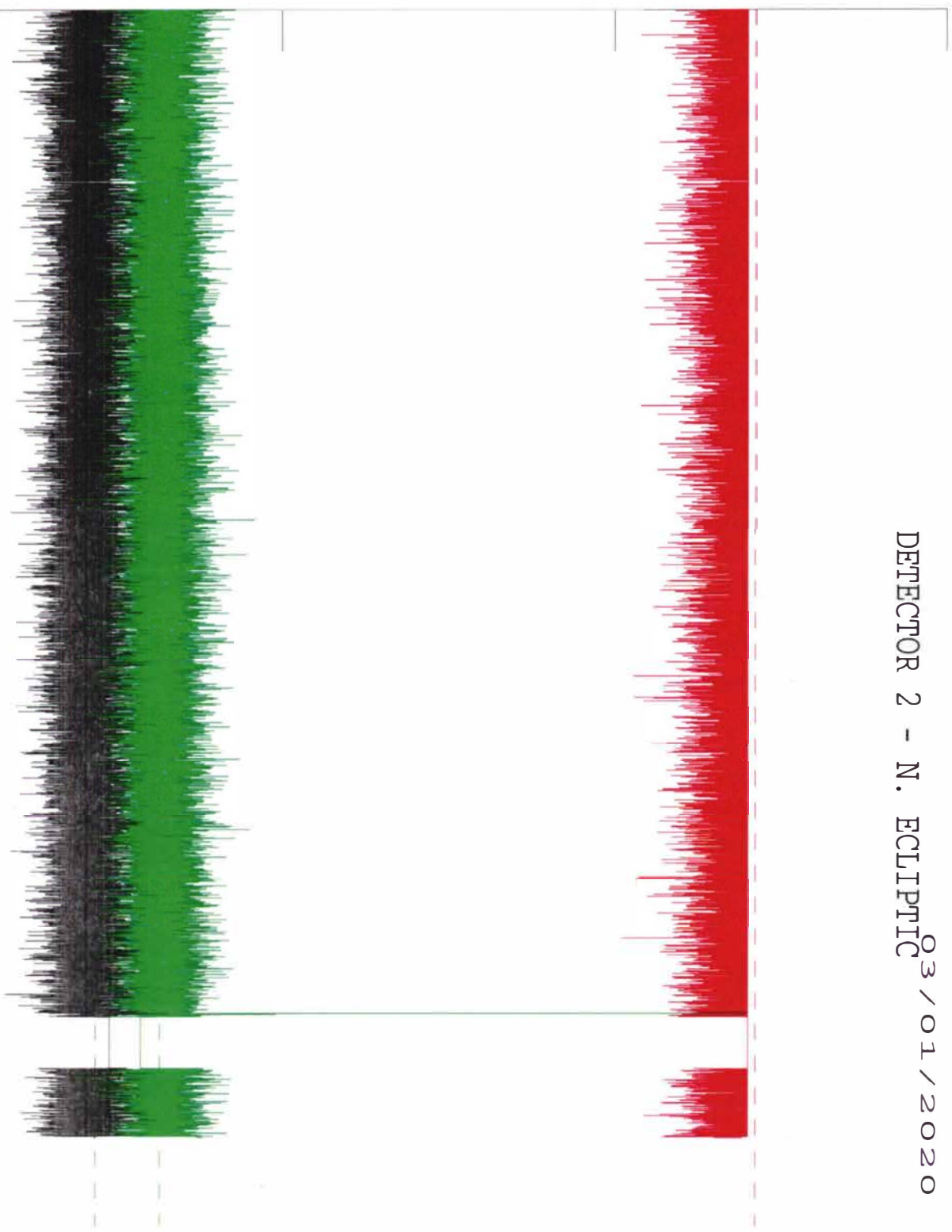
70000

80000

90000

ME. SECS

DETECTOR 2 - N. ECLIPTEIC^{O3}/01/2020



Subject: GCN/ICECUBE_ASTROTRACK_BRONZE

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

Date: 1/1/2020, 2:07 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/AMON NOTICE
NOTICE_DATE: Wed 01 Jan 20 22:07:17 UT
NOTICE_TYPE: ICECUBE Astrotrack Bronze
STREAM: 25
RUN_NUM: 133572
EVENT_NUM: 82361476
SRC_RA: 46.3599d {+03h 05m 26s} (J2000),
46.6463d {+03h 06m 35s} (current),
45.6452d {+03h 02m 35s} (1950)
SRC_DEC: +20.4200d {+20d 25' 12"} (J2000),
+20.4966d {+20d 29' 48"} (current),
+20.2266d {+20d 13' 36"} (1950)
SRC_ERROR: 103.19 [arcmin radius, stat-only, 90% containment]
SRC_ERROR50: 75.60 [arcmin radius, stat-only, 50% containment]
DISCOVERY_DATE: 18849 TJD; 1 DOY; 20/01/01 (yy/mm/dd)
DISCOVERY_TIME: 39606 SOD {11:00:06.07} UT
REVISION: 1
ENERGY: 1.5538e+02 [TeV]
SIGNALNESS: 4.6281e-01 [dn]
FAR: 1.5642 [yr⁻¹]
SUN_POSTN: 281.91d {+18h 47m 38s} -22.98d {-22d 59' 03"}
SUN_DIST: 128.91 [deg] Sun_angle= -8.3 [hr] (East of Sun)
MOON_POSTN: 359.43d {+23h 57m 44s} -5.92d {-05d 55' 04"}
MOON_DIST: 53.36 [deg]
GAL_COORDS: 160.73, -32.44 [deg] galactic lon,lat of the event
ECL_COORDS: 49.64, 2.88 [deg] ecliptic lon,lat of the event
COMMENTS: IceCube Bronze event.
COMMENTS: The position error is statistical only, there is no systematic added.

FERMI

01/01/20

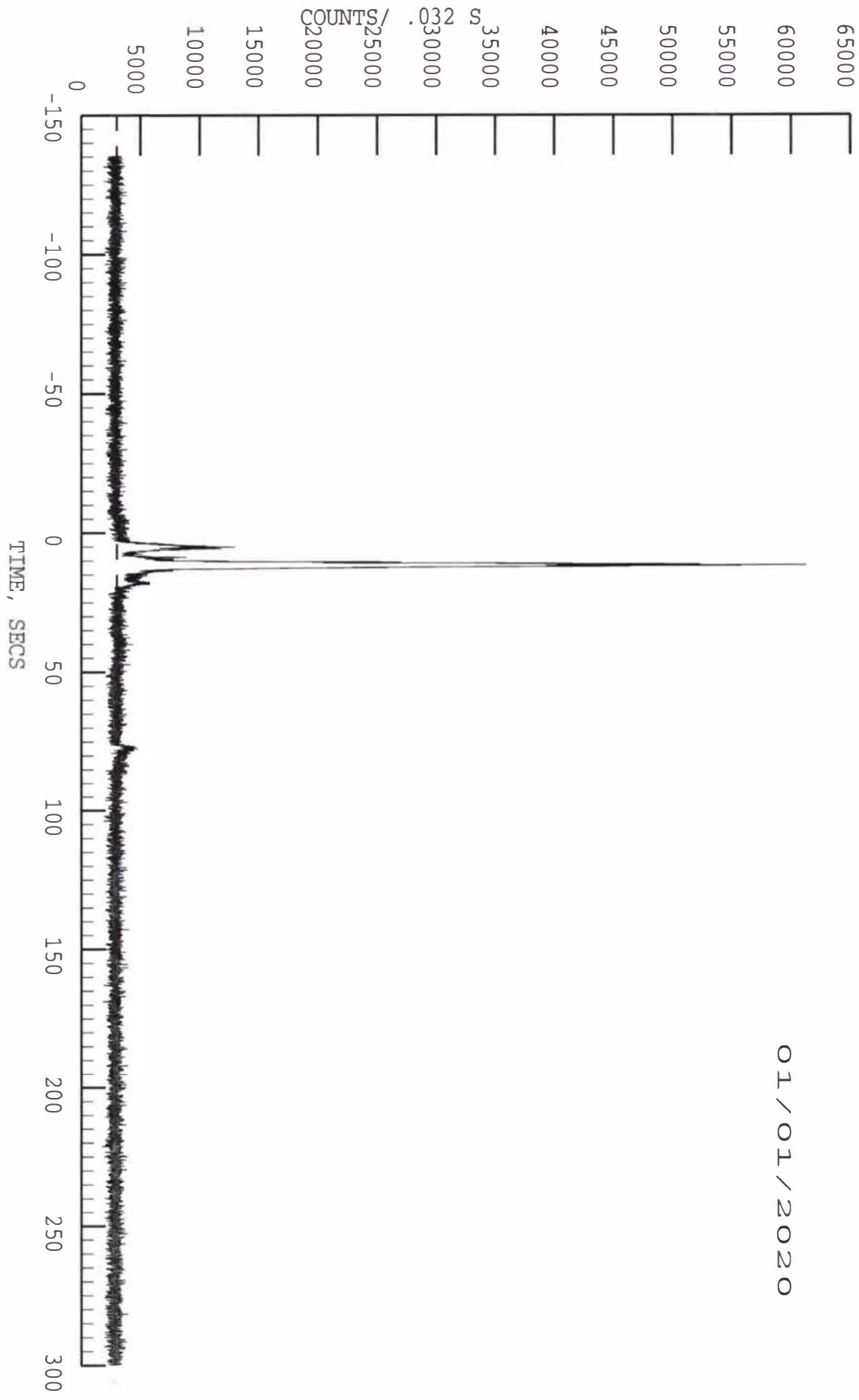
74366.451

20:39:26.451

26- 293 keV

257.4 -35.1 1

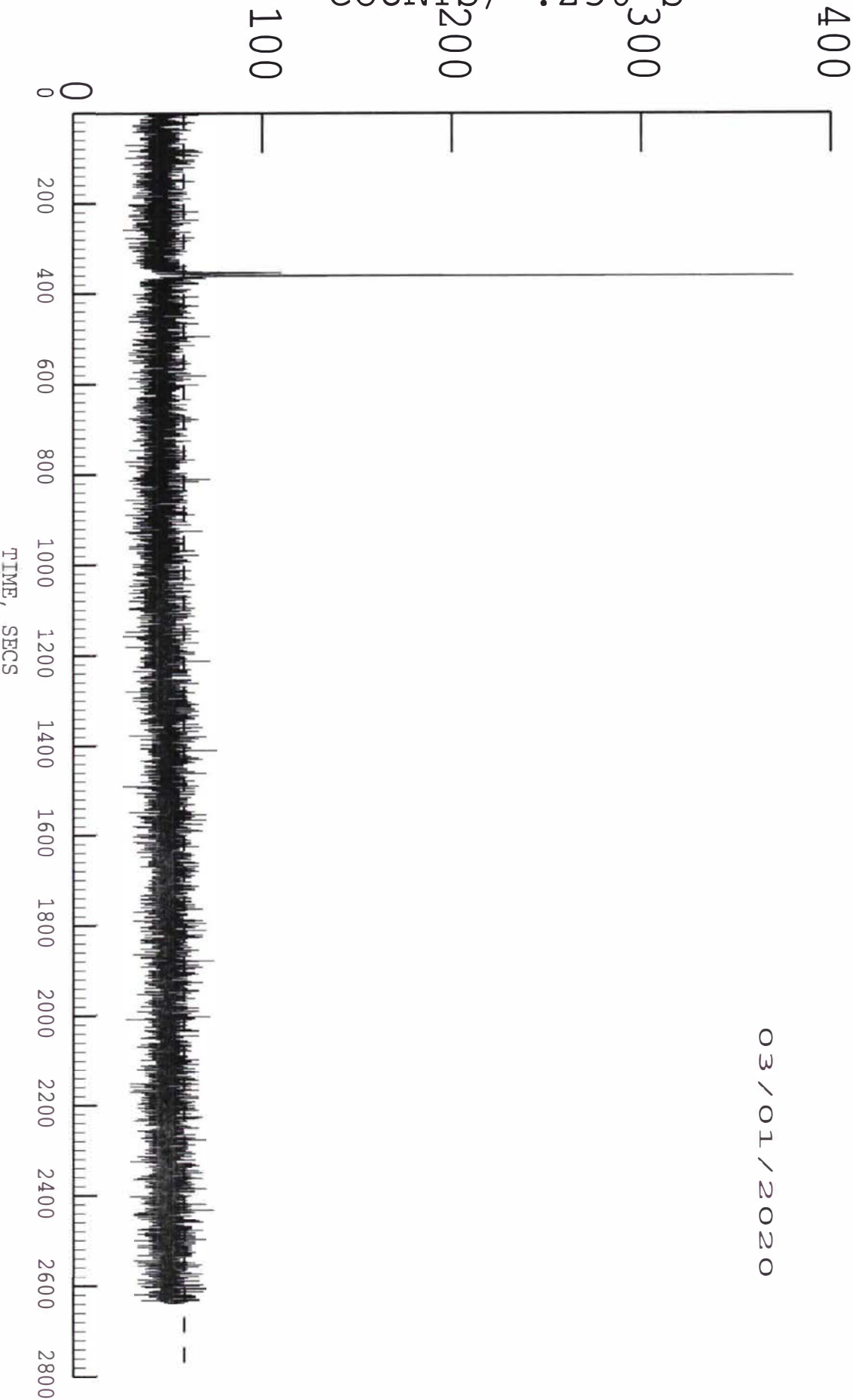
SPI N/O



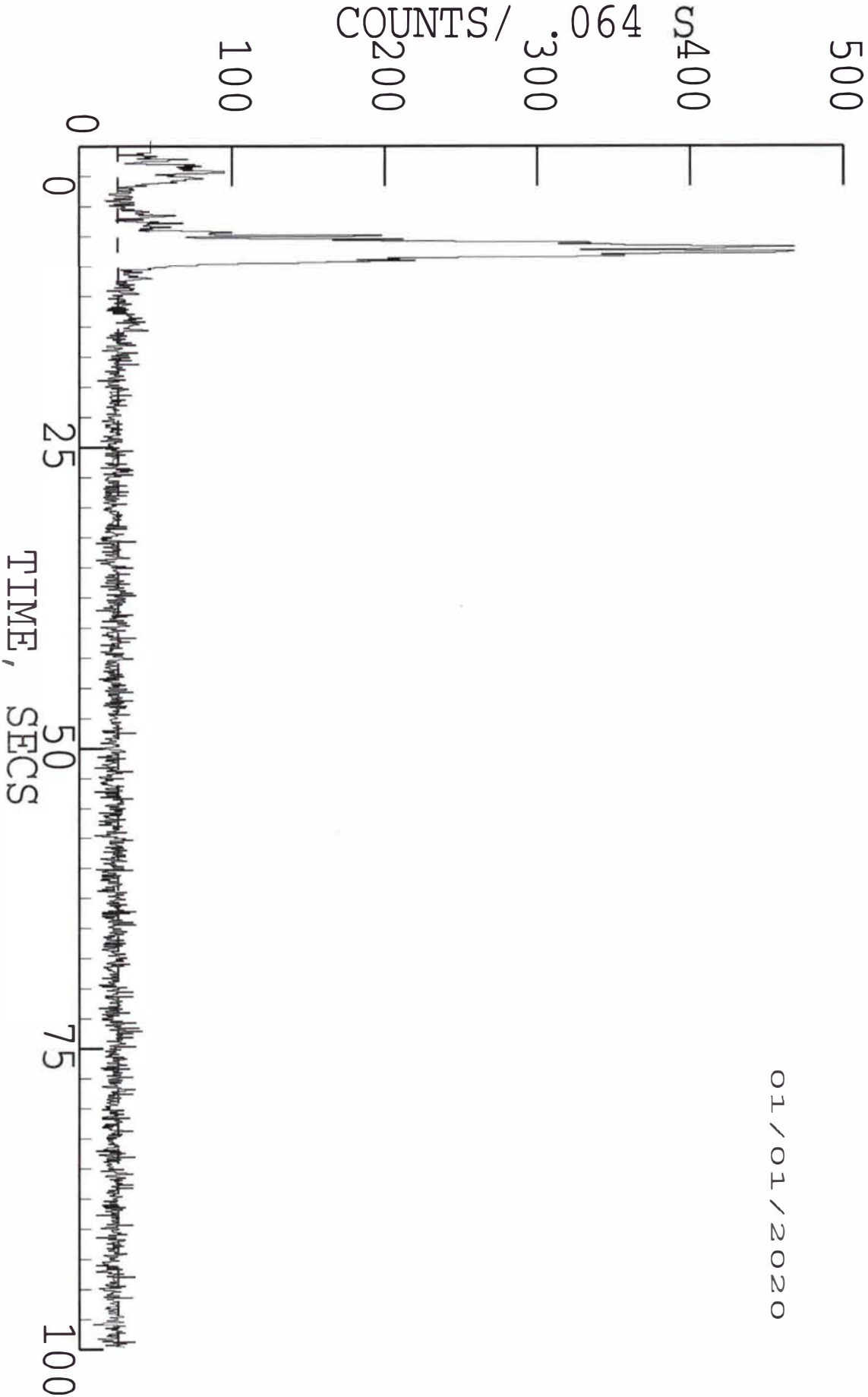
01/01/2020

50-3000 keV

COUNTS/ .250 S



03 / 01 / 2020



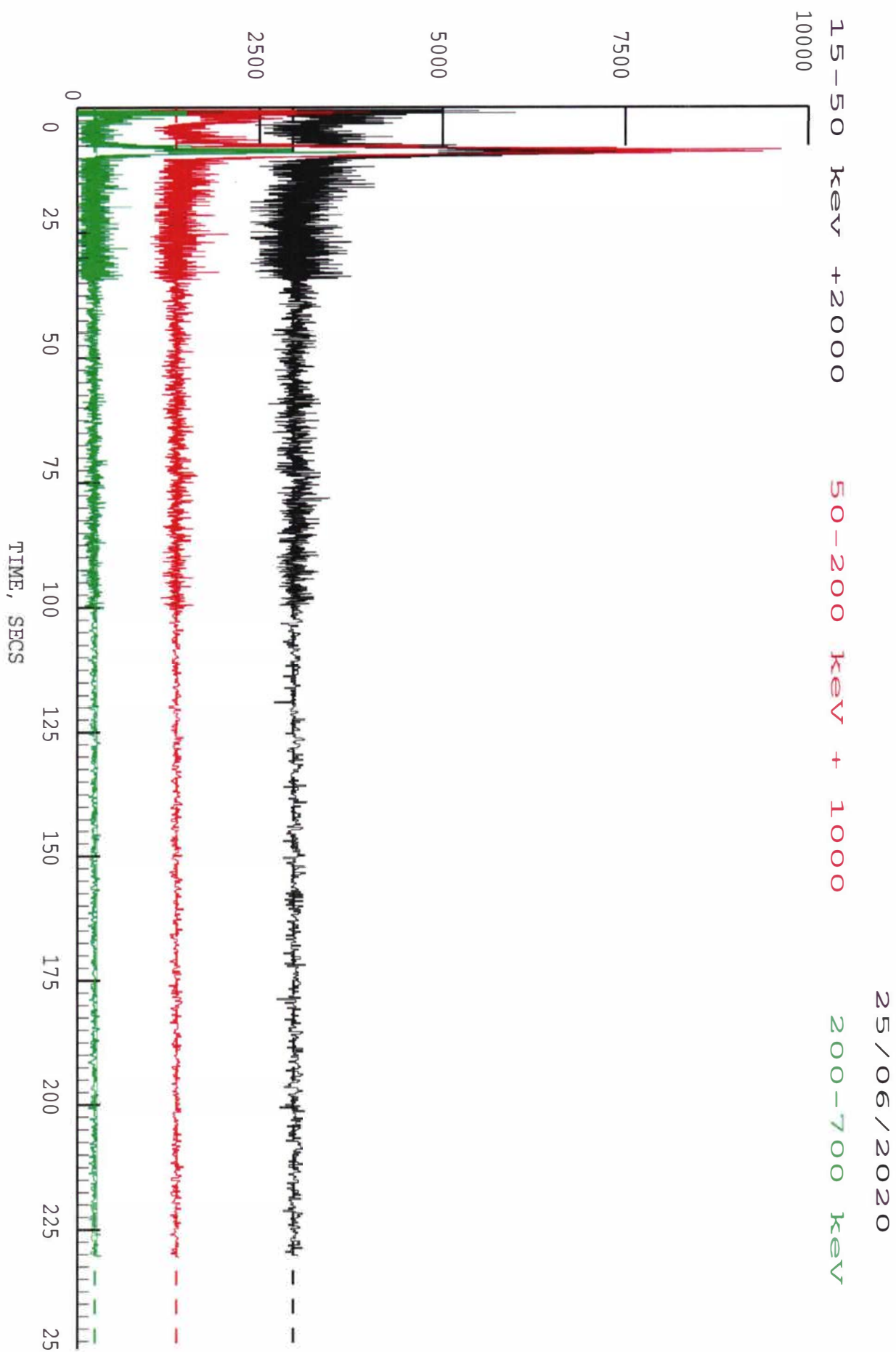
01/01/2020

KONUS

01/01/20

COUNTS/SEC 74367.000

20:39:27.000



BAT lightcurve for trigger at 200101_2039

Subject: BAT lightcurve for trigger at 200101_2039

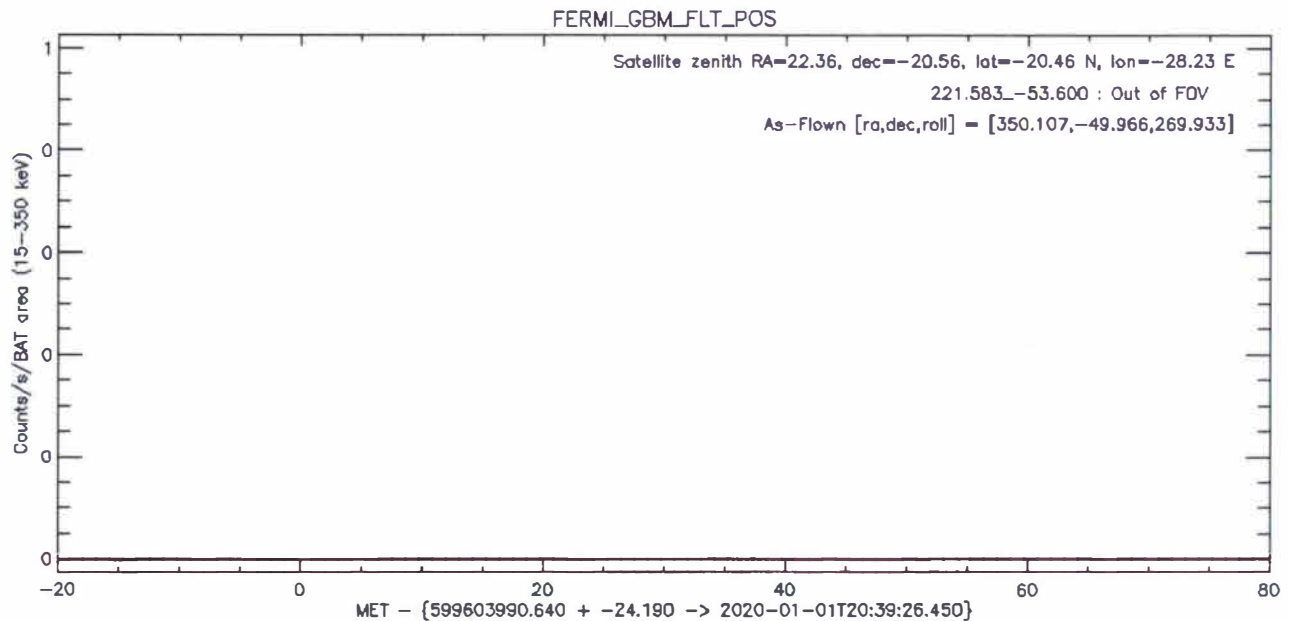
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/1/2020, 3:36 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200101_2039.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 599603990.640 -s 221.583_-53.600
Swift Zenith(RA,dec):      22.36, -20.56
Swift Location(lon,lat,alt): -28.23 E, -20.46 N, 563 km
Time(MET + UTCF -> UT):    599603990.640 + -24.190 -> 2020-01-01T20:39:26.450
YYMMDD_SOD:               200101_74366.450      DOY=001
Obs Sequence Number:       00076196010
Obs Target Name:           saa-cold-1-06
Obs Date and Times:        2020-01-01 20:22:37 - 20:50:35
Obs Pointing(ra,dec,roll): 350.107, -49.966, 269.93
221.583_-53.600_imageloc (boresight_dist, angle): (68, -150)
221.583_-53.600_exposure (cm2 cos adjusted): 0
221.583_-53.600_altitude: 9 (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/200101_2039_bat64ms_ipn

87.0 KB

/tmp/swift/200101_2039.png

7.9 KB

Subject: GRB 200101A : AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/2/2020, 9:58 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26632
SUBJECT: GRB 200101A : AstroSat CZTI detection
DATE: 20/01/02 17:58:05 GMT
FROM: Ramkrishna Gaikwad at IUCAA/AstroSat <ramkrishna@iucaa.in>

R. Gaikwad, S. Gupta, 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 GRB 200101A, which was also detected by Fermi GBM Final Real-time Localization (GCN #26624), Global MASTER-Net (Lipunov V. et al., GCN #26626), BALROG localization (Kunzweiler F. et al., GCN #26625) and Fermi GBM (Veres P. et al., GCN #26627).

The source was clearly detected in the 40-200 keV energy range. The light curve shows multiple peak of emission with strongest peak at 2020-01-01 20:39:27.0 UT. The measured peak count rate associated with the burst is 1588 cts/s above the background in the combined data of four quadrants, with a total of 6659 cts. The local mean background count rate was 570 cts/s. Using cumulative rates, we measure a T90 of 16.69 s. In preliminary analysis, we find that 497 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: GRB 200101A: CALET Gamma-Ray Burst Monitor detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/7/2020, 6:33 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26663
SUBJECT: GRB 200101A: CALET Gamma-Ray Burst Monitor detection
DATE: 20/01/08 02:32:40 GMT
FROM: Valentin Pal'shin at AGU <val@phys.aoyama.ac.jp>

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

The long bright GRB 200101A (Fermi-GBM detection: The Fermi GBM team, GCN Circ. 26624, Veres and Meegan, GCN Circ. 26627; BALROG localization: Kunzweiler et al., GCN Circ. 26625; AstroSat CZTI detection: Gaikwad et al., GCN Circ. 26632; IPN triangulation: Hurley, GCN Circ. 26635; Konus-Wind observation: Tsvetkova et al., GCN Circ. 26637; <https://gcn.gsfc.nasa.gov/other/200101A.gcn3>) triggered the CALET Gamma-ray Burst Monitor (CGBM) at 20:39:30.398 UTC on 1 January 2020. The burst signal was seen by all CGBM detectors. Because of a server problem no CGBM GCN notice was automatically distributed for this event.

The burst light curve shows the main emission episode with two multi-peaked pulses which starts at T-8.0 sec, peaks at T+8.0 sec and ends at T+16.8 sec, followed by a weak pulse at ~T0+75 sec. The T90 and T50 durations measured by the SGM data are 15.4 +/- 12.0 sec and 1.5 +/- 0.1 sec (40-1000 keV), respectively.

The ground processed light curve is available at

http://cgbm.calet.jp/cgbm_trigger/ground/1261946195/

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

KONUS

02/01/2020

58.681

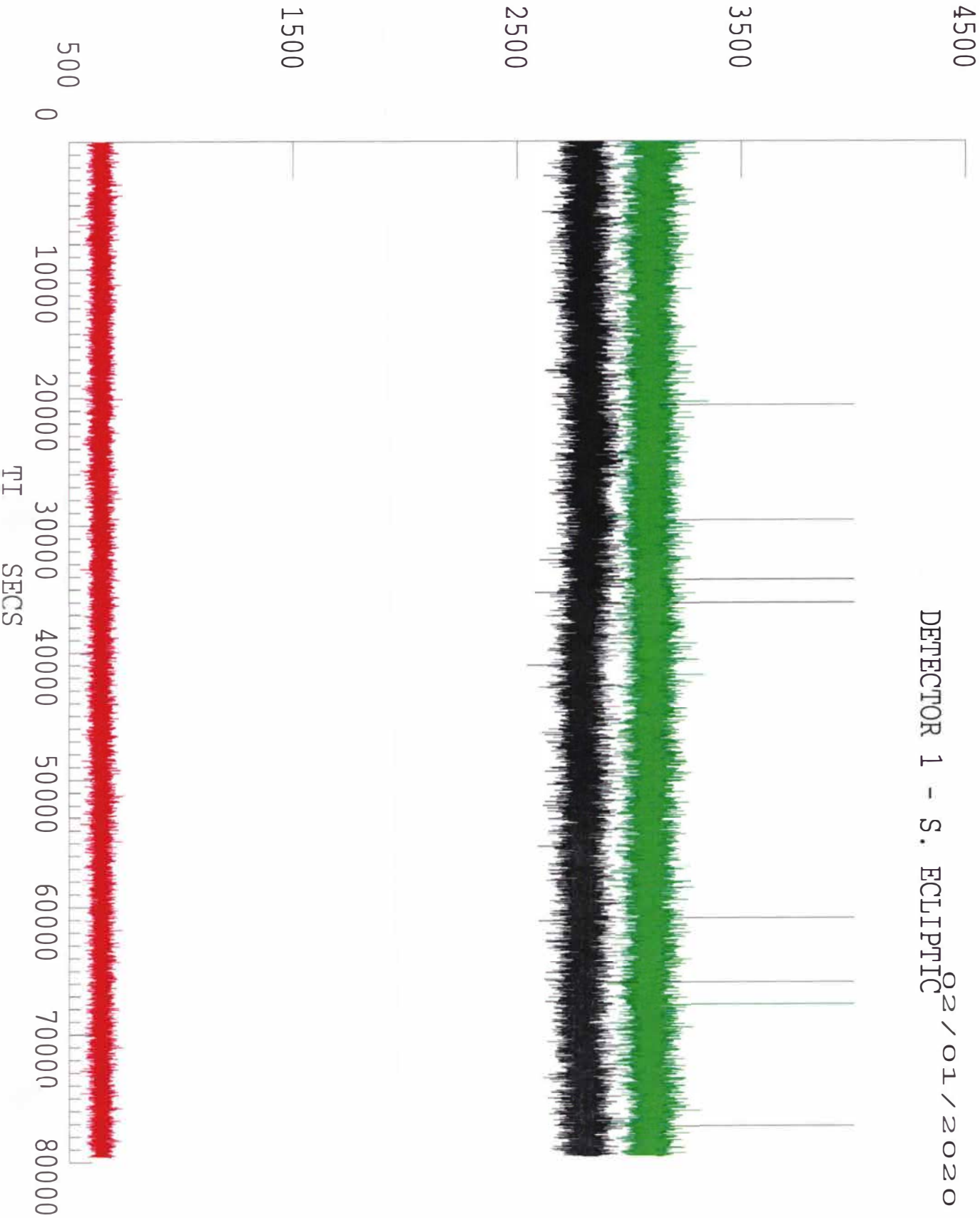
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

02/01/2020

58.681

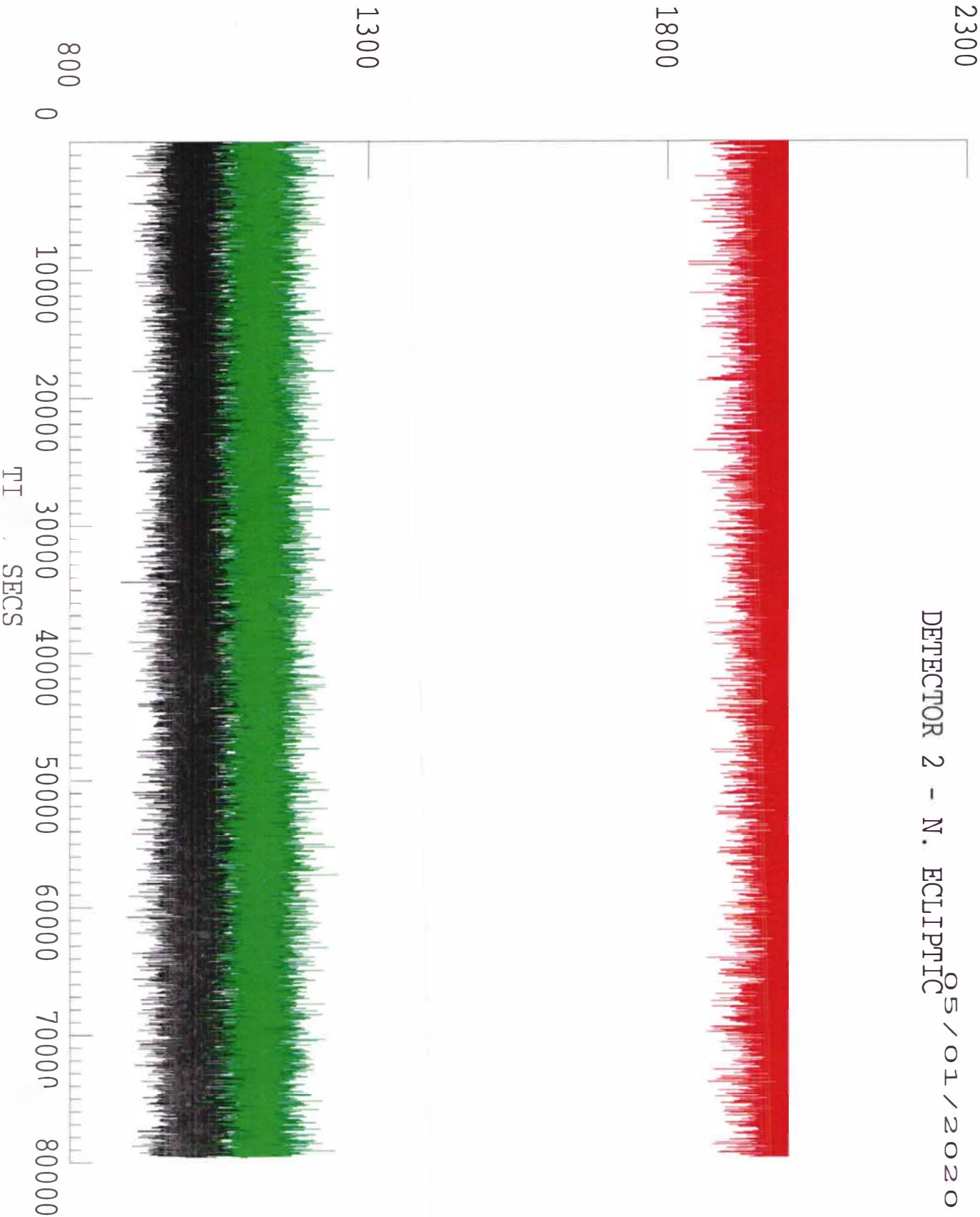
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

03/01/2020

47.408

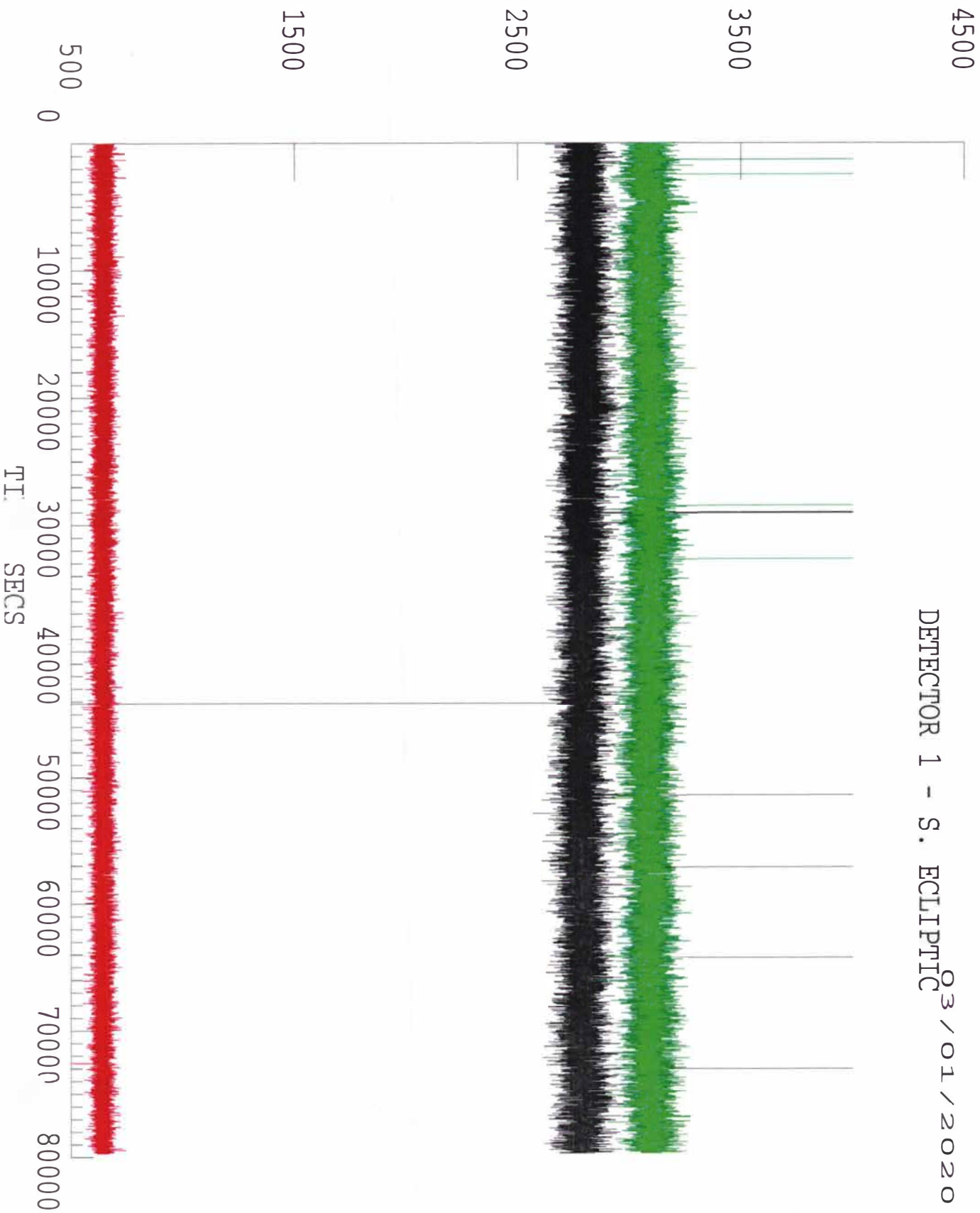
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

03/01/2020

47.408

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

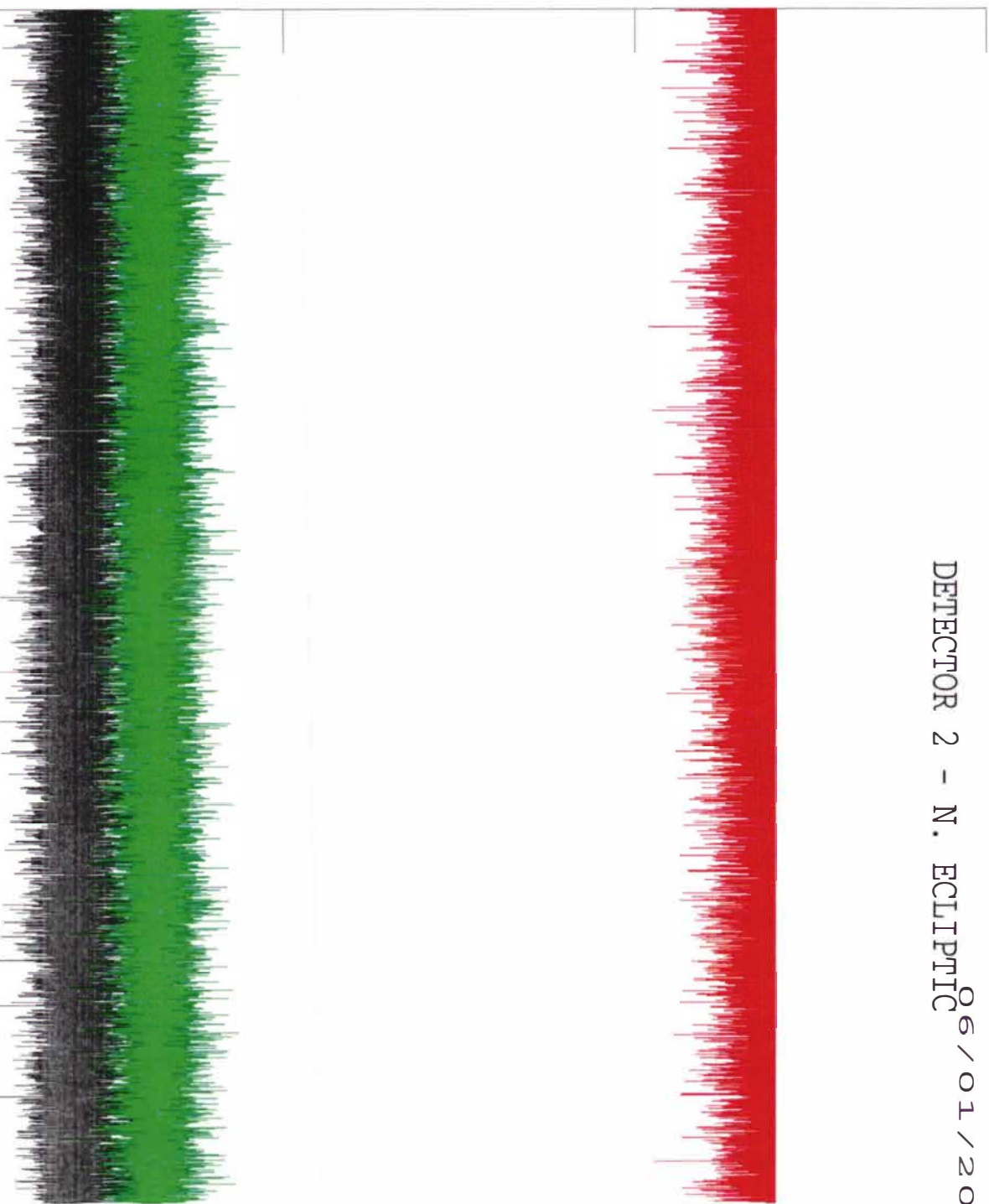
60000

70000

80000

TIME SECS

DETECTOR 2 - N. ECLIPTEIC^{06/01/2020}



FERMI

03/01/20

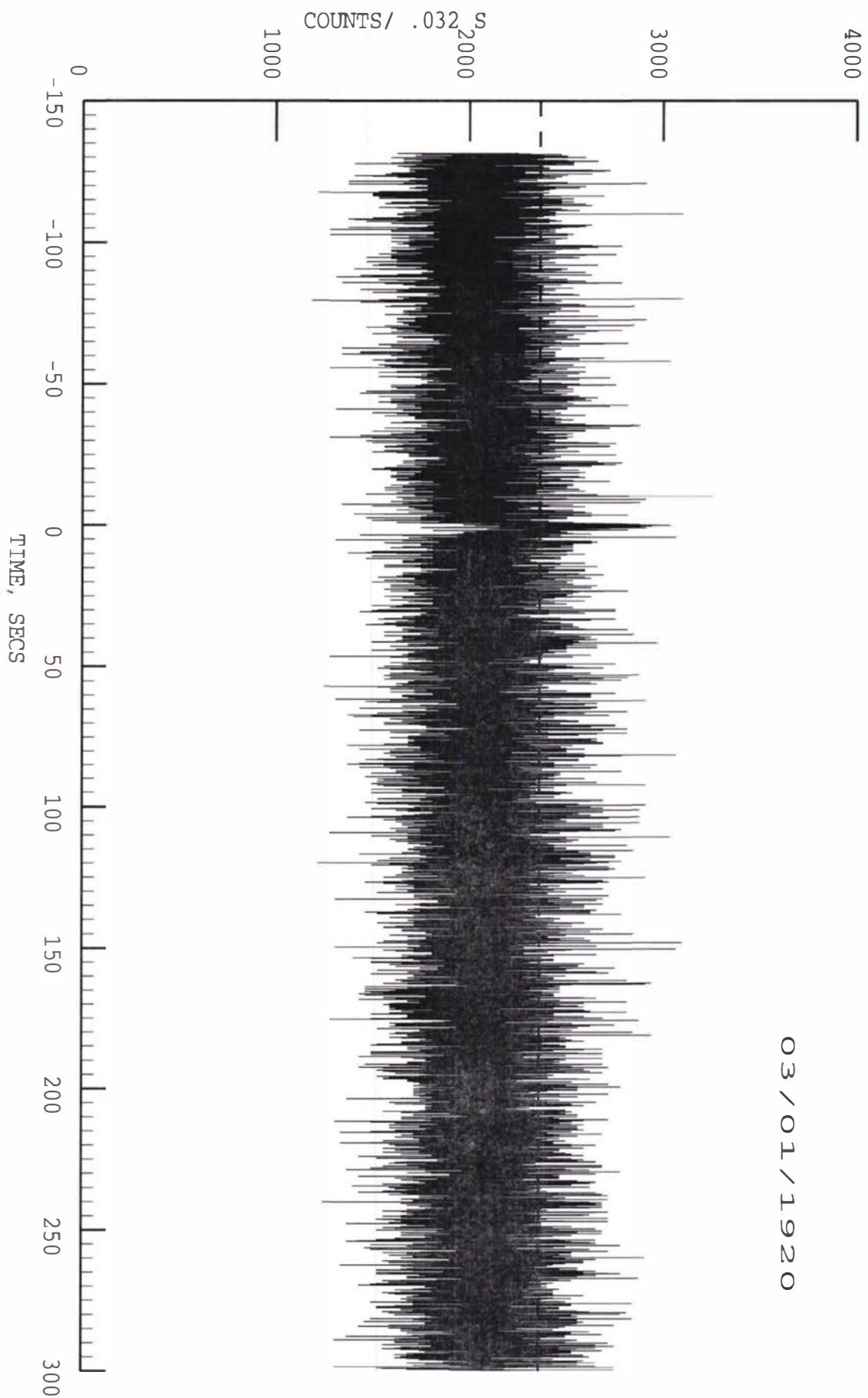
58610.019

16:16:50.019

A

26- 293 keV

355.4 -38.4 16.7



A

15:54:01.429

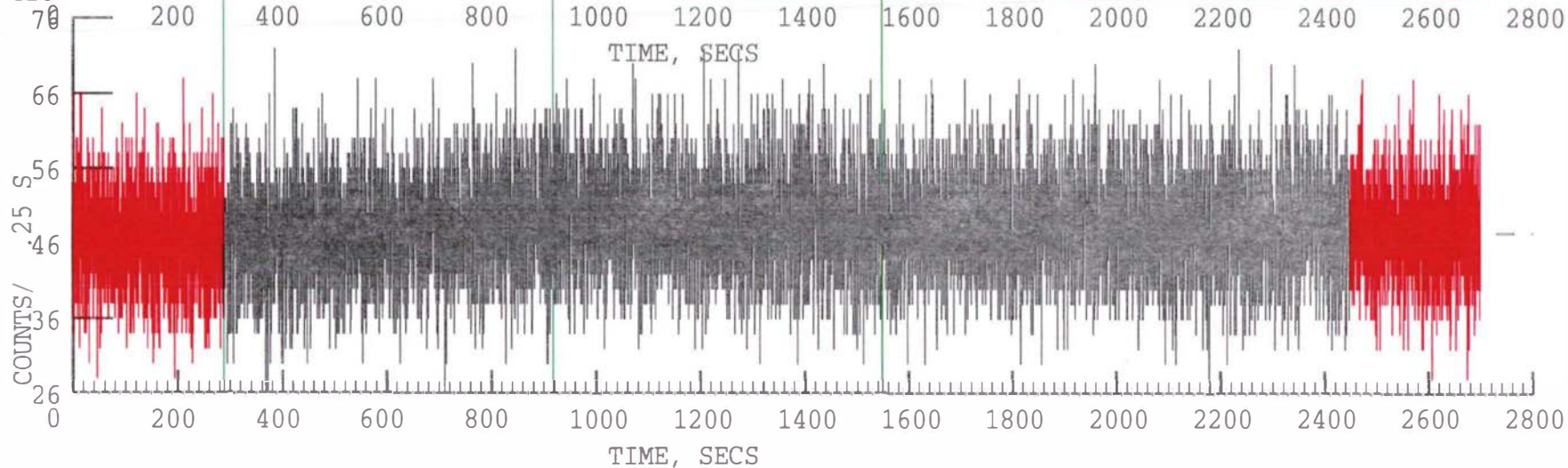
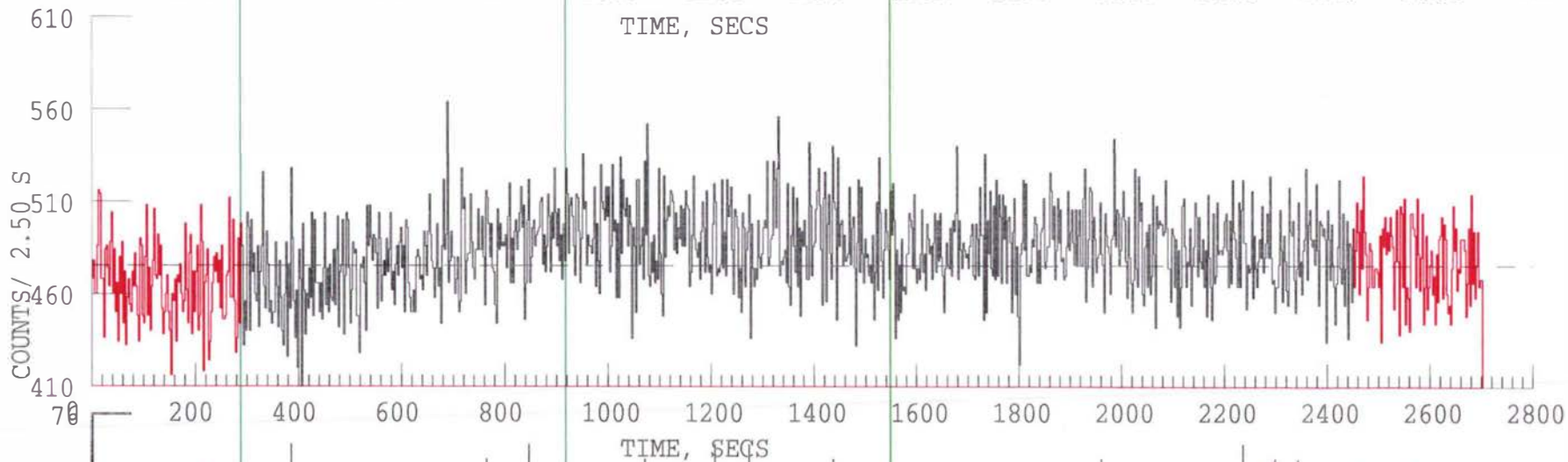
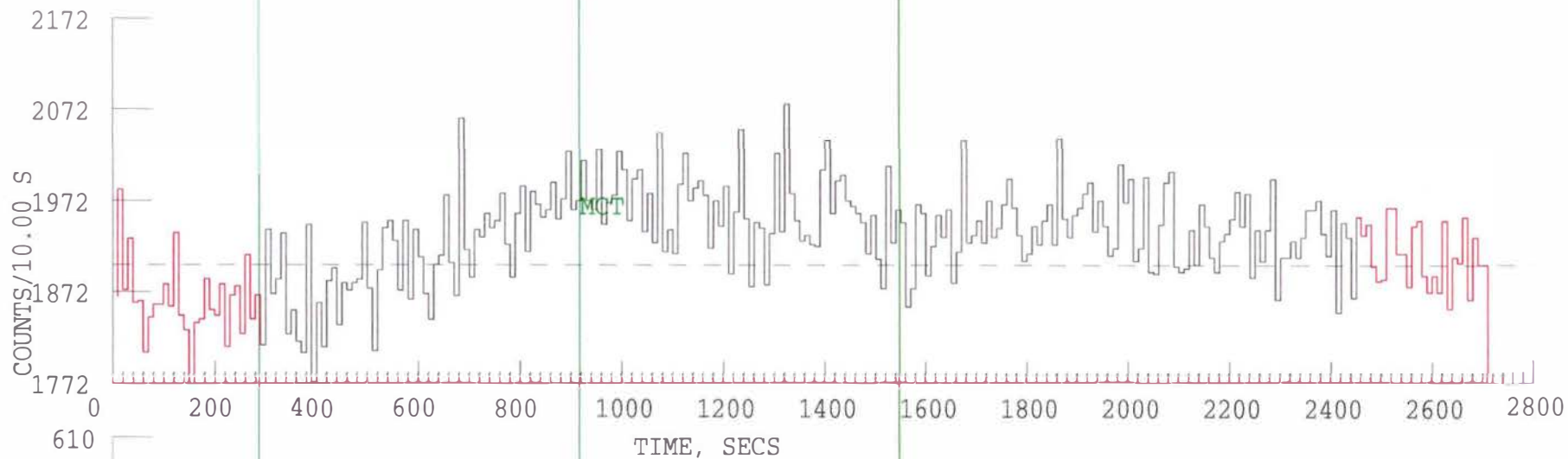
57241.429

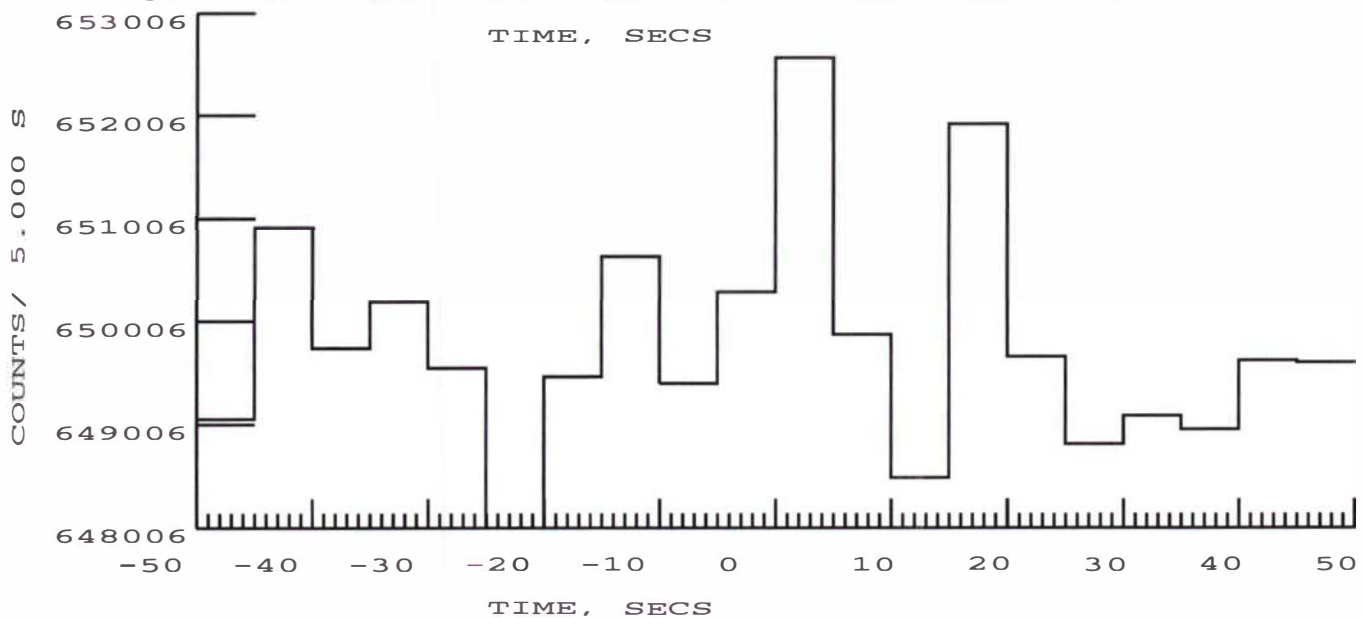
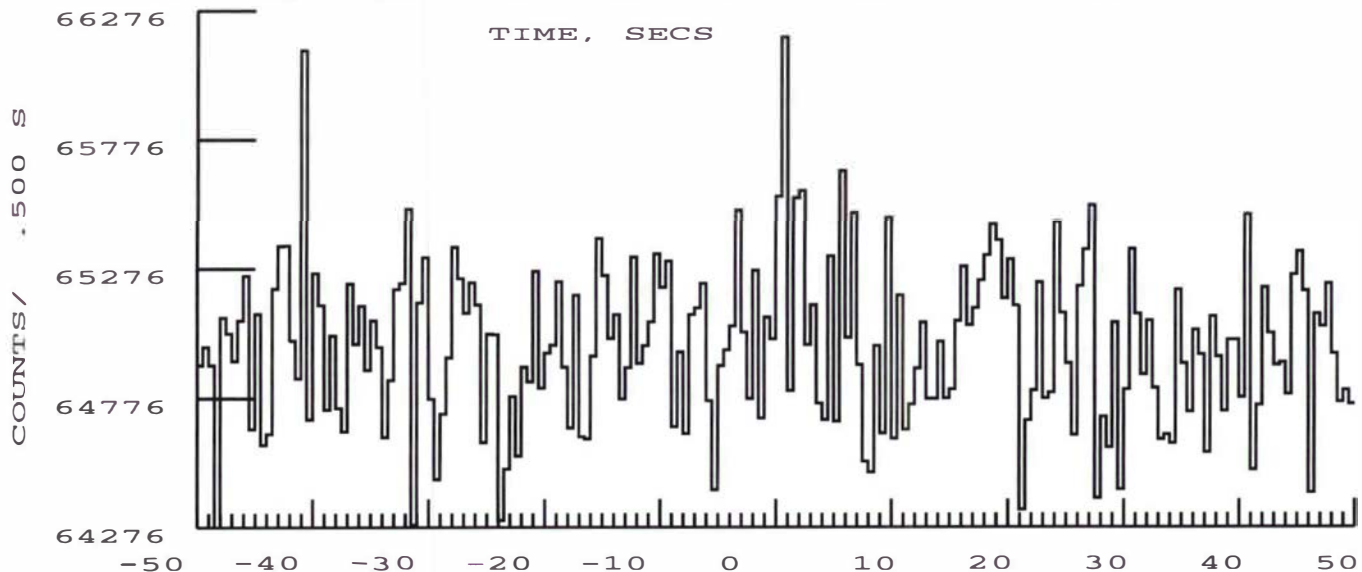
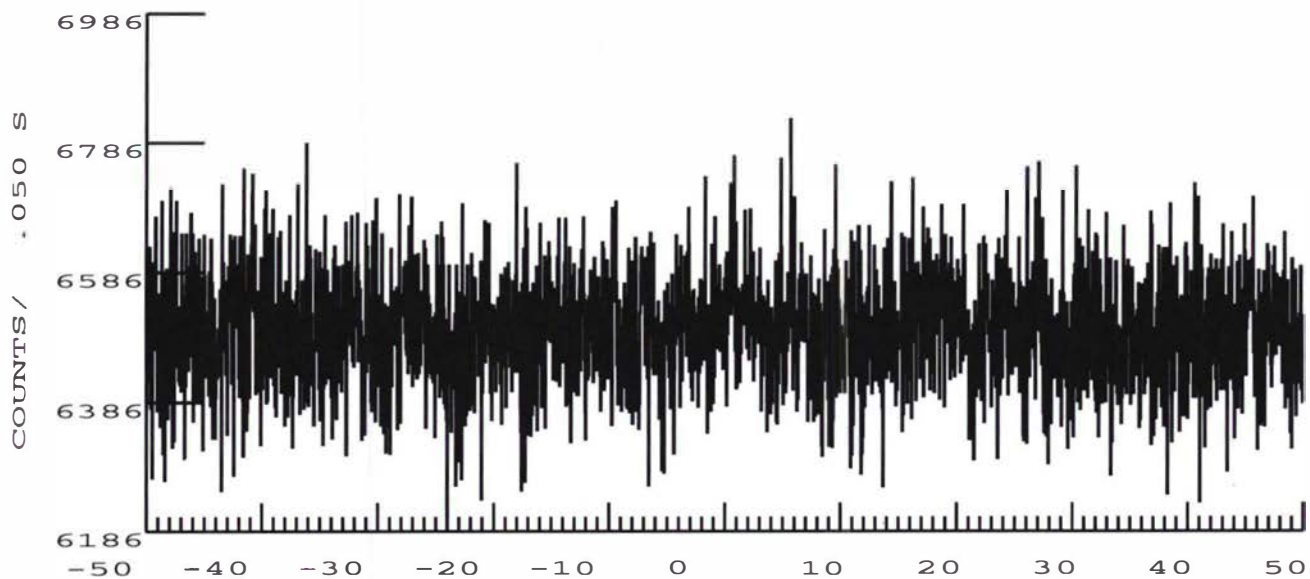
03/01/20

ODYSSEY

50-3000 keV

24/01/2020





Subject: BAT lightcurve for trigger at 200103_1616

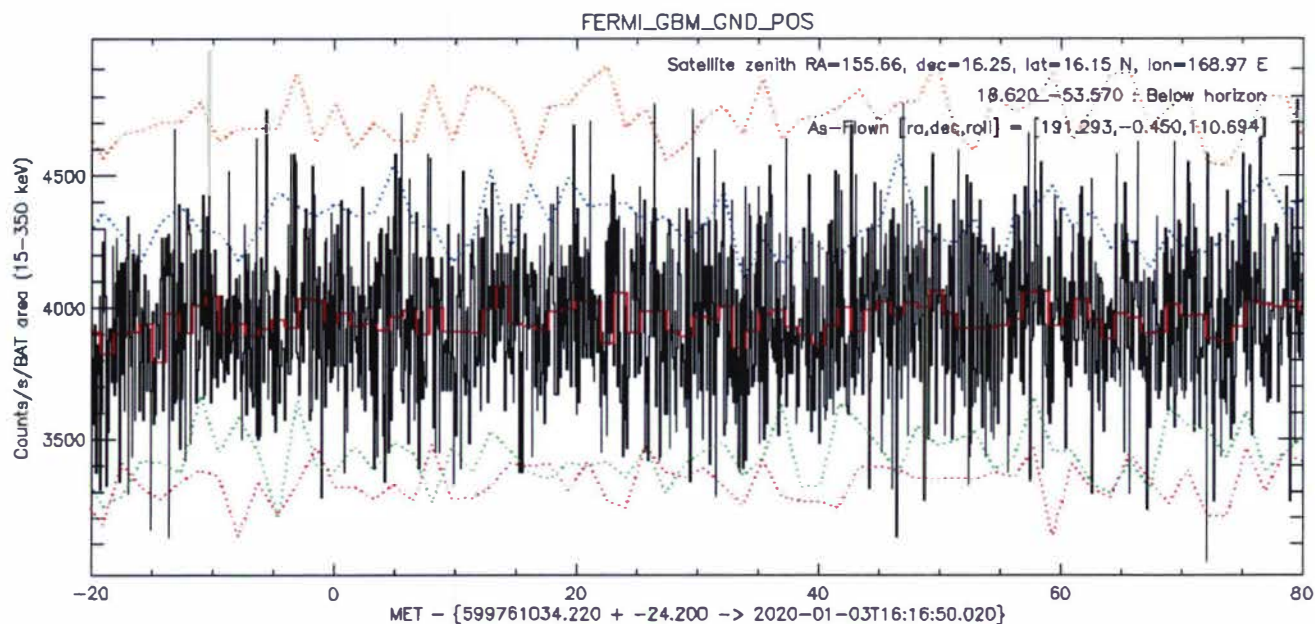
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/3/2020, 3:47 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200103_1616.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 599761034.220 -s 18.620_-53.570
```

```
Swift Zenith(RA,dec):      155.66, 16.25
Swift Location(lon,lat,alt): 168.97 E, 16.15 N, 547 km
Time(MET + UTCF -> UT):    599761034.220 + -24.200 -> 2020-01-03T16:16:50.020
YYMMDD_SOD:                200103_58610.020      DOY=003
Obs Sequence Number:       00013038002
Obs Target Name:           SN2019yvr
Obs Date and Times:        2020-01-03 16:04:37 - 16:22:31
Obs Pointing(ra,dec,roll): 191.293, -0.450, 110.69
18.620_-53.570_imageloc (boresight_dist, angle): (126, -15)
18.620_-53.570_exposure (cm2 cos adjusted): 0
18.620_-53.570_altitude: -17 (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/200103_1616_bat64ms_ipn

87.0 KB

/tmp/swift/200103_1616.png

22.3 KB

FERMI

03/01/20

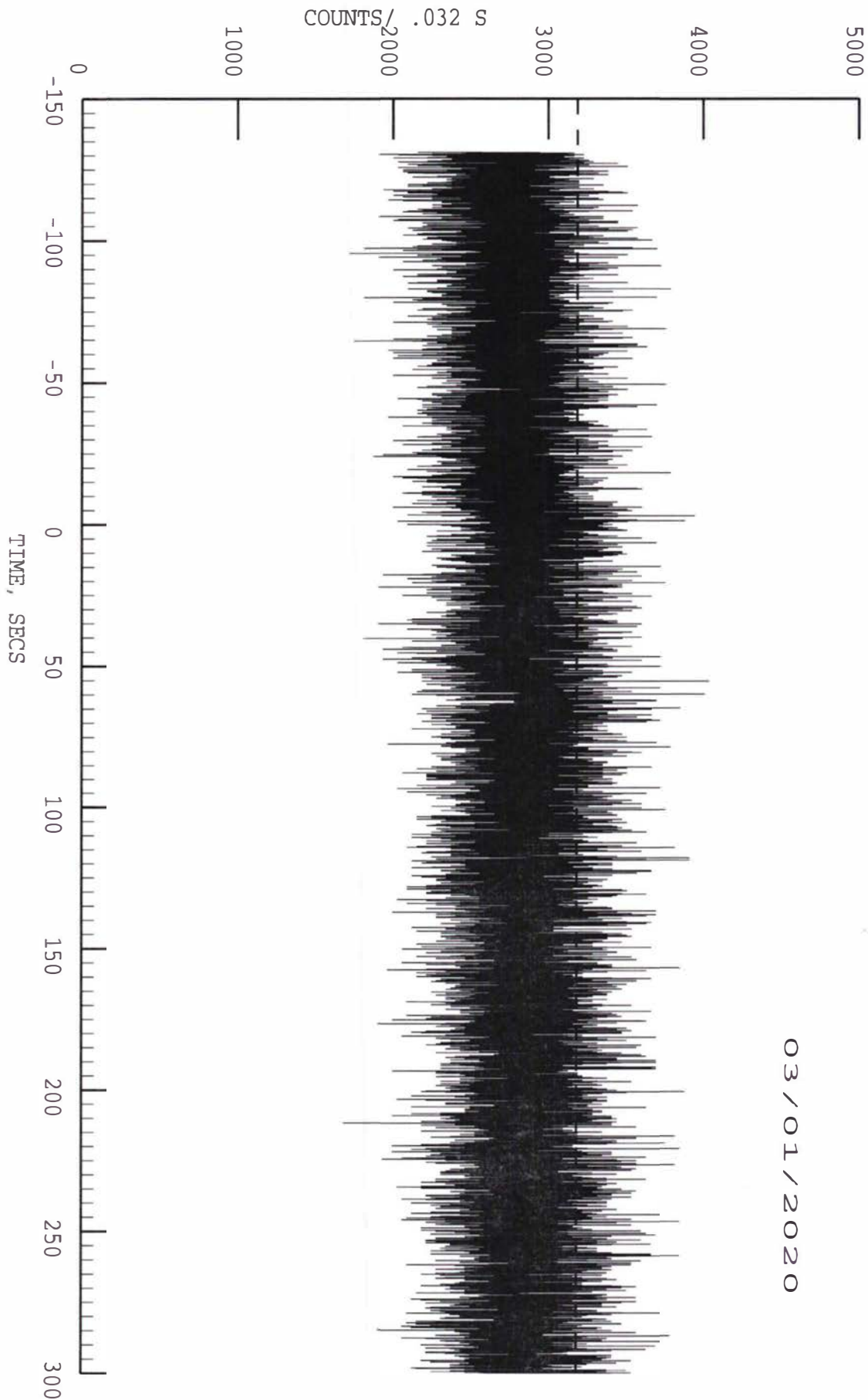
59543.473

16:32:23.473

B

26- 293 keV

118.5 0.9 16.7



03/01/2020

B

16:10:01.409

58201.409

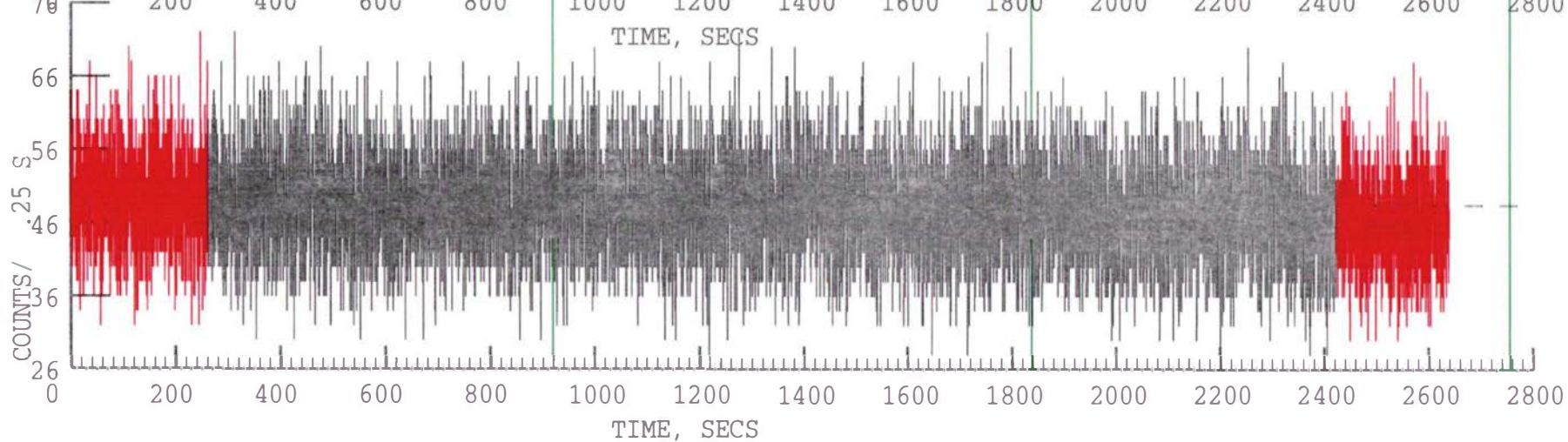
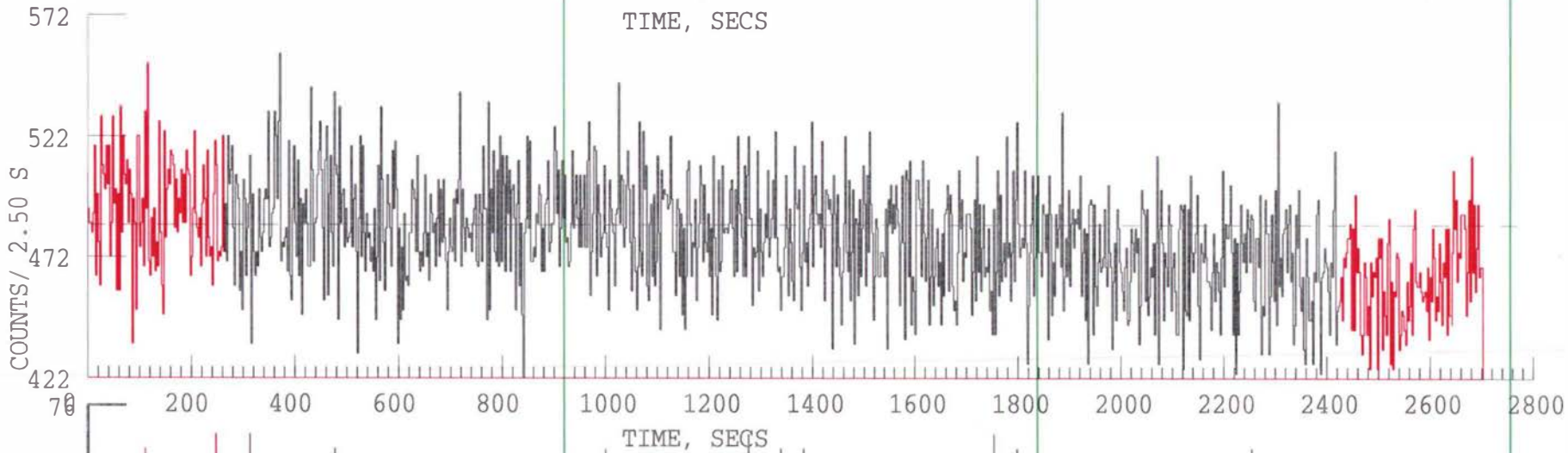
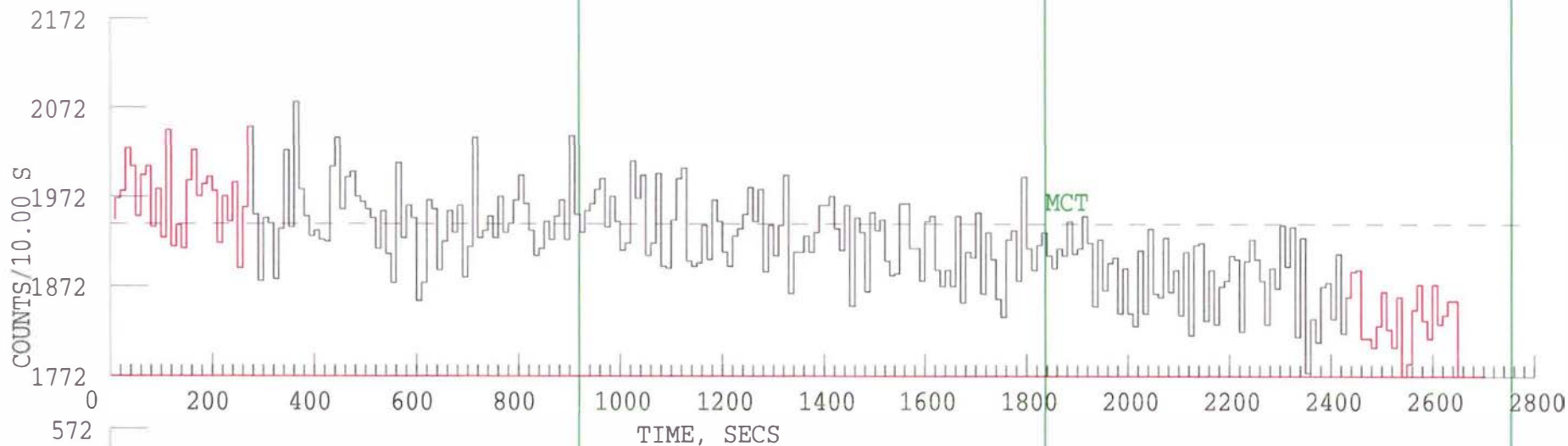
03/01/20

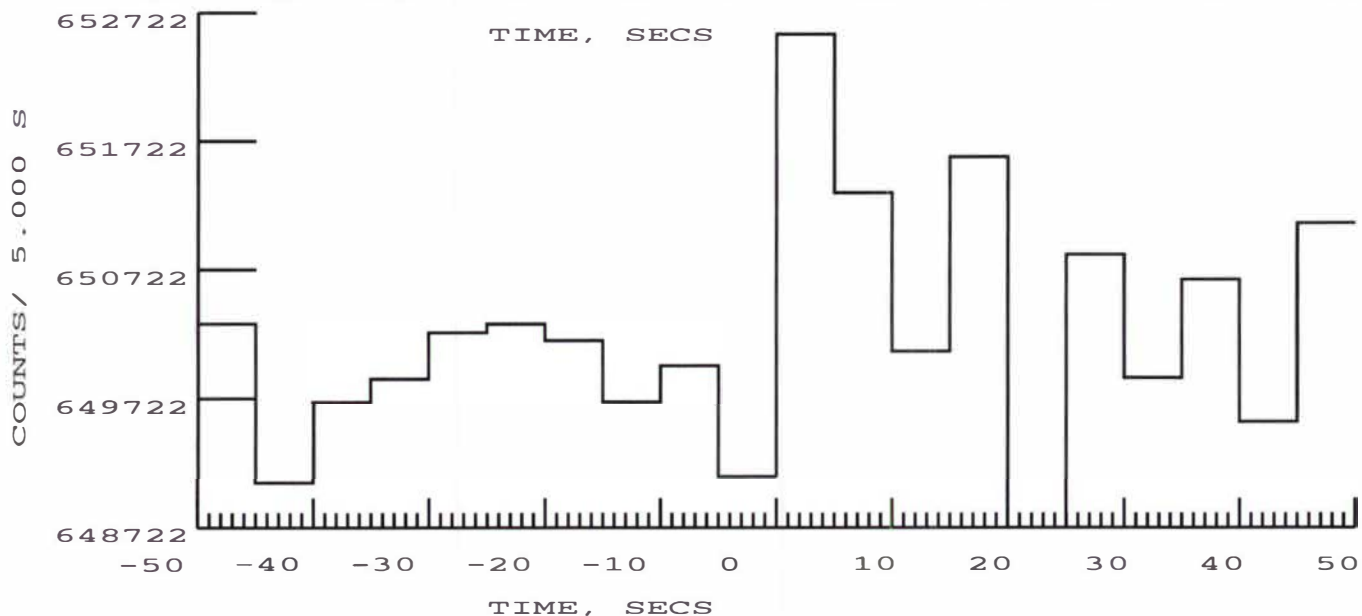
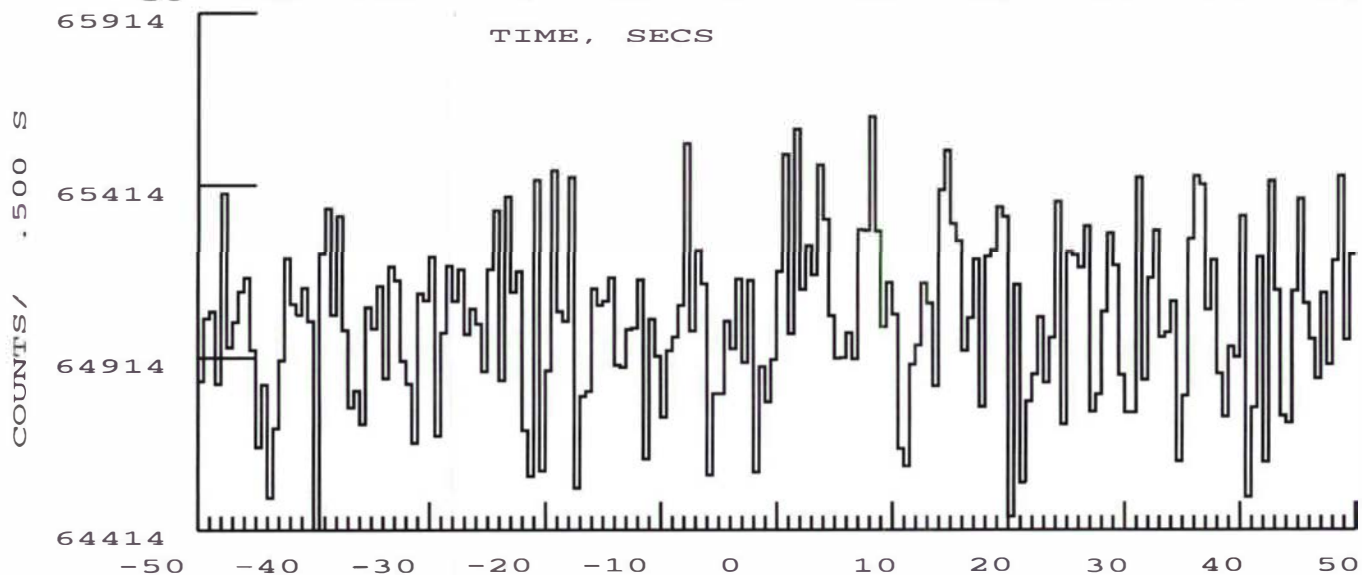
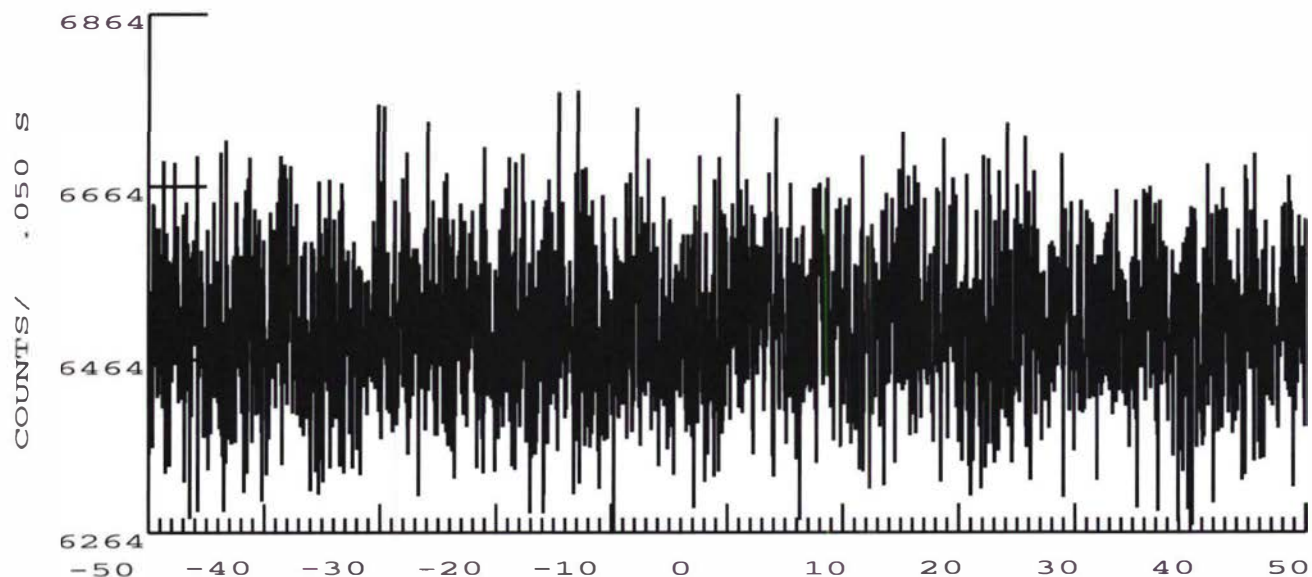
ODYSSEY

Deculted

50-3000 keV

24/01/2020





Subject: BAT lightcurve for trigger at 200103_1632

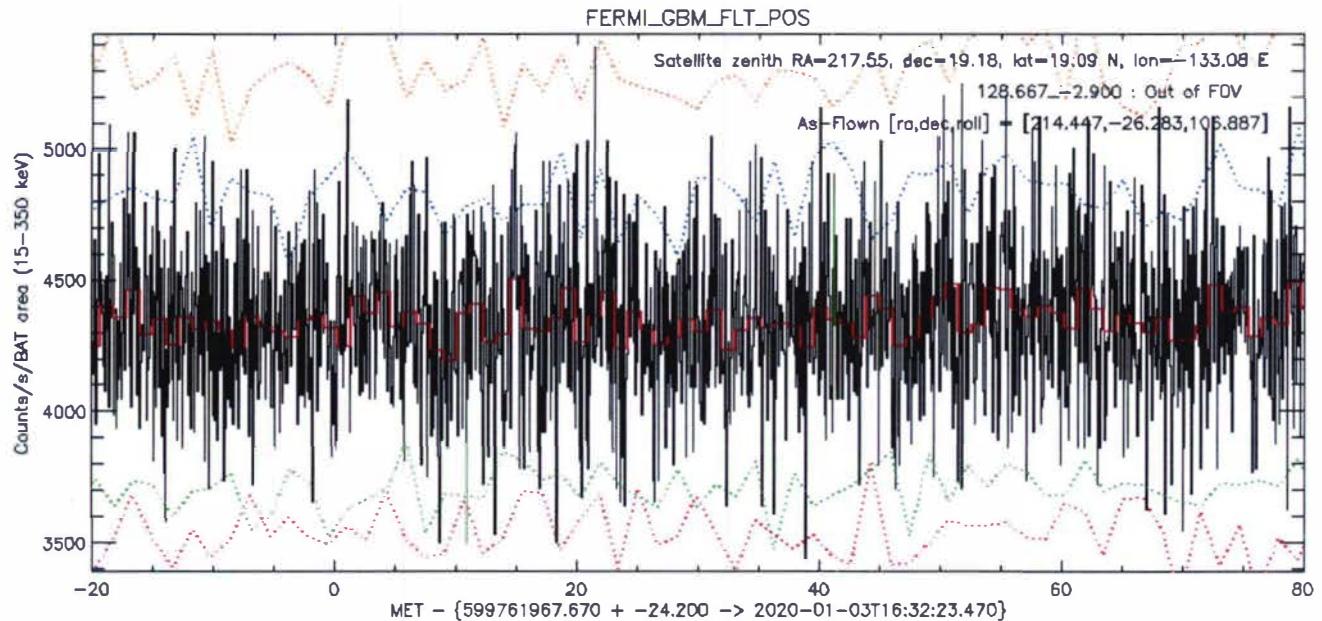
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/3/2020, 3:47 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200103_1632.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 599761967.670 -s 128.667_-2.900
Swift Zenith(RA,dec):      217.55, 19.18
Swift Location(lon,lat,alt): -133.08 E, 19.09 N, 542 km
Time(MET + UTCF -> UT):   599761967.670 + -24.200 -> 2020-01-03T16:32:23.470
YYMMDD_SOD:               200103_59543.470      DOY=003
Obs Sequence Number:      03108257002
Obs Target Name:          SGWGS-3466
Obs Date and Times:       2020-01-03 16:22:36 - 16:34:32
Obs Pointing(ra,dec,roll): 214.447, -26.283, 106.89
128.667_-2.900_imageloc (boresight_dist, angle): (85, 72)
128.667_-2.900_exposure (cm² cos adjusted): 0
128.667_-2.900_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/200103_1632_bat64ms_ipn	87.0 KB
/tmp/swift/200103_1632.png	22.2 KB

KONUS

04/01/2020

33.191

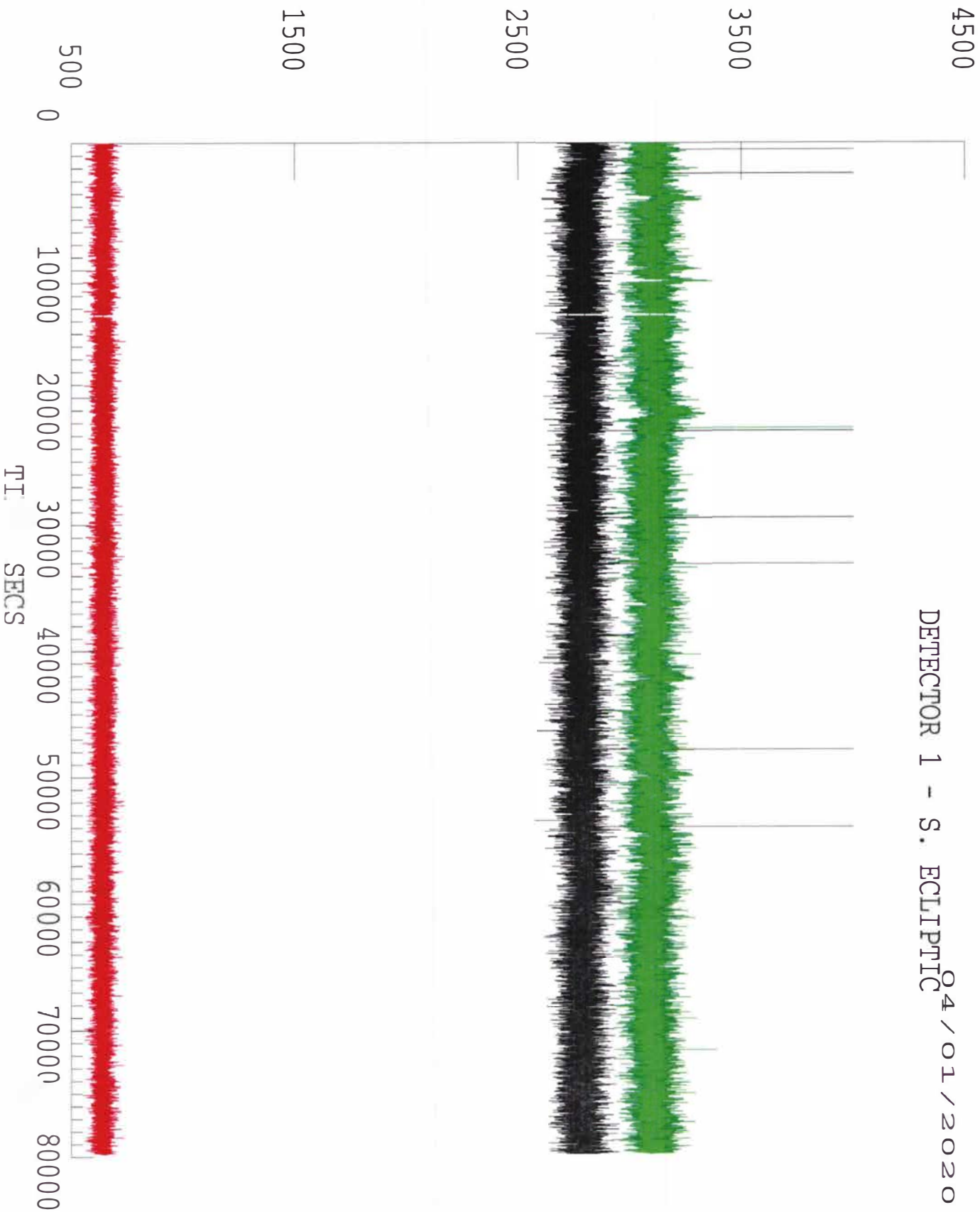
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

04/01/2020

33.191

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

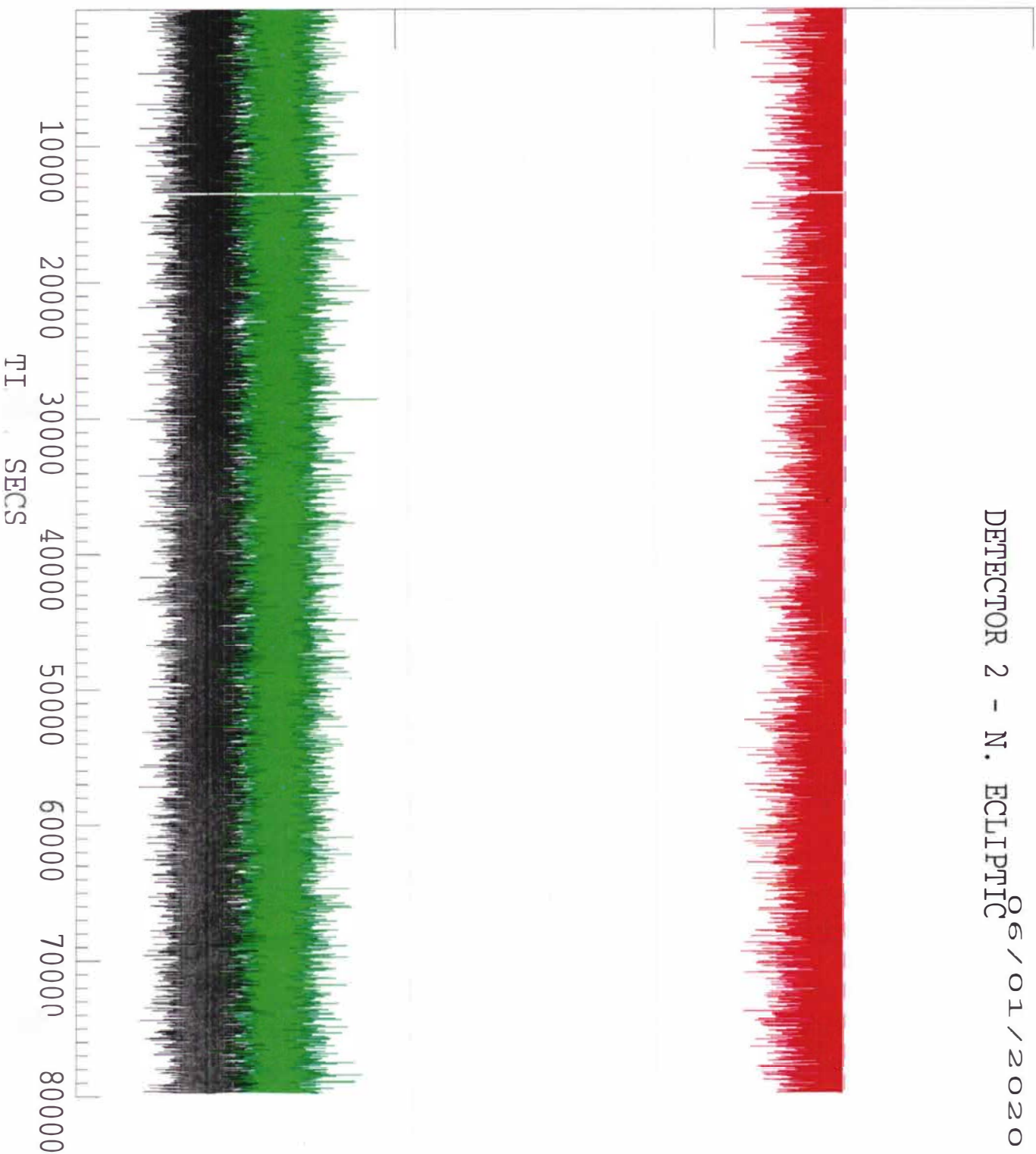
2300

1800

1300

800

0



KONUS

05/01/2020

21.918

v01

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. ECLIPPTIC^{05/01/2020}

KONUS

05/01/2020

21.918

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

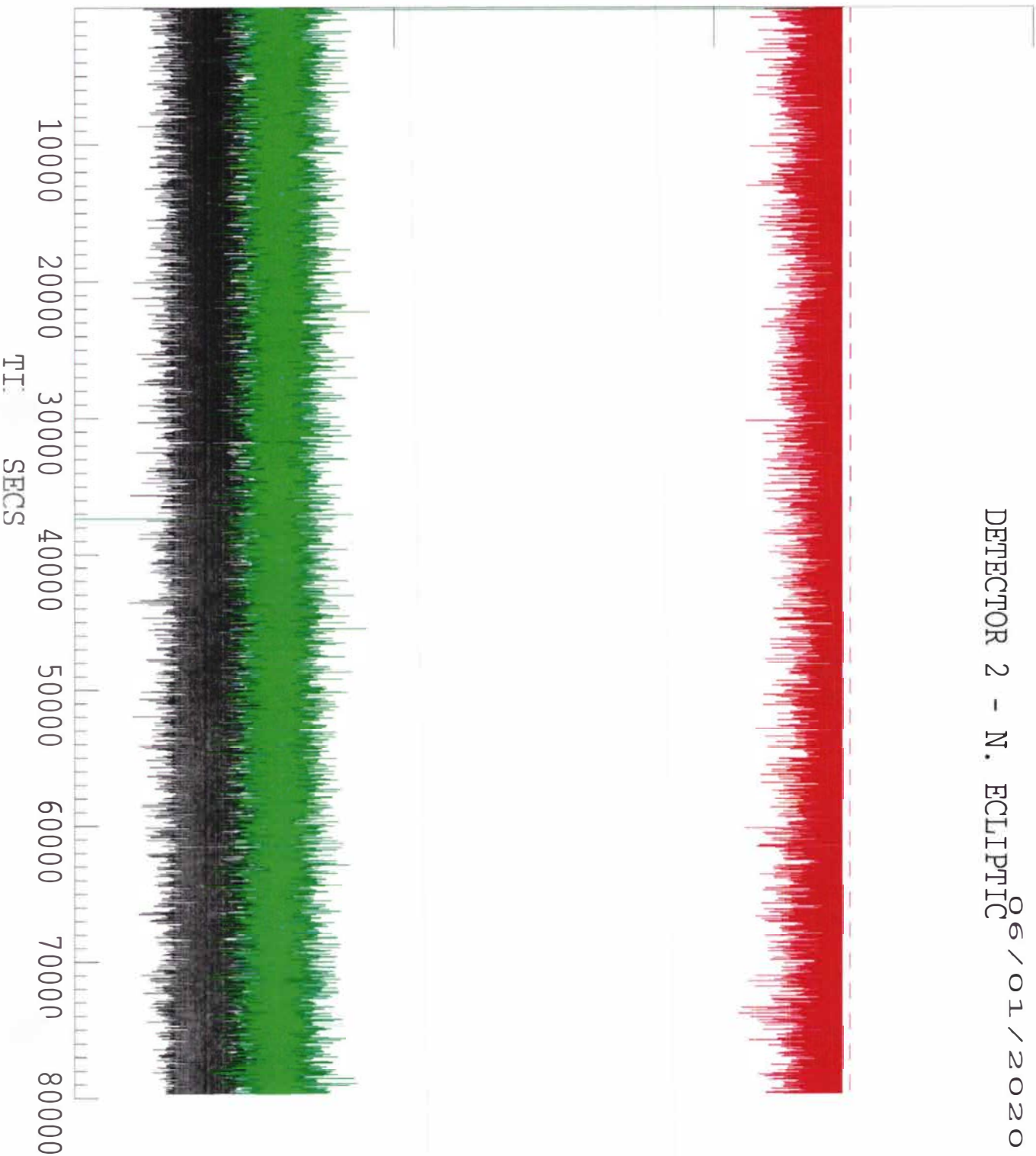
2300

1800

1300

800

0



Subject: LIGO/Virgo S200105ae: A subthreshold GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/6/2020, 10:26 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26640
SUBJECT: LIGO/Virgo S200105ae: A subthreshold GW compact binary merger candidate
DATE: 20/01/06 18:25:26 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 S200105ae in data from LIGO Livingston Observatory (L1) and Virgo Observatory (V1) at 2020-01-05 16:24:26.057 UTC (GPS time: 1262276684.057). The candidate was found by the GstLAL [1] analysis pipeline. LIGO Hanford Observatory (H1) was offline at the time.

The signal-to-noise ratio (SNR) was below threshold in V1 so the candidate was treated as a single-instrument event. The false alarm rate (FAR) estimated from the L1 trigger, $7.6e-07$ Hz -- or about 24 per year -- was above the threshold we normally use for issuing a public alert. However, after further offline analysis of the candidate, we believe that its significance is greater than that calculated in real-time processing. Follow-up observations may therefore be justified.

The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S200105ae>

We cannot quantify the probability of this event being astrophysical at this time. However, if it is astrophysical, it is most consistent with being a neutron star - black hole (NSBH) event. Under this assumption, there is strong evidence for the lighter compact object having a mass < 3 solar masses (HasNS: >99%). Using the masses and spins inferred from the signal, it is possible but unlikely that the merger left matter outside the final compact object. (HasRemnant was estimated as 12% by the initial analysis, but this value is considered uncertain.)

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

* bayestar.fits.gz,0, an initial localization generated by BAYESTAR [2]. No GCN notice has been issued for this candidate.

For the bayestar.fits.gz sky map, the 90% credible region is 7719 deg², dominated by the L1 antenna response. Marginalized over the whole sky, the a posteriori luminosity distance estimate is 265 ± 71 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)

BAT lightcurve for trigger at 200105_1624

Subject: BAT lightcurve for trigger at 200105_1624

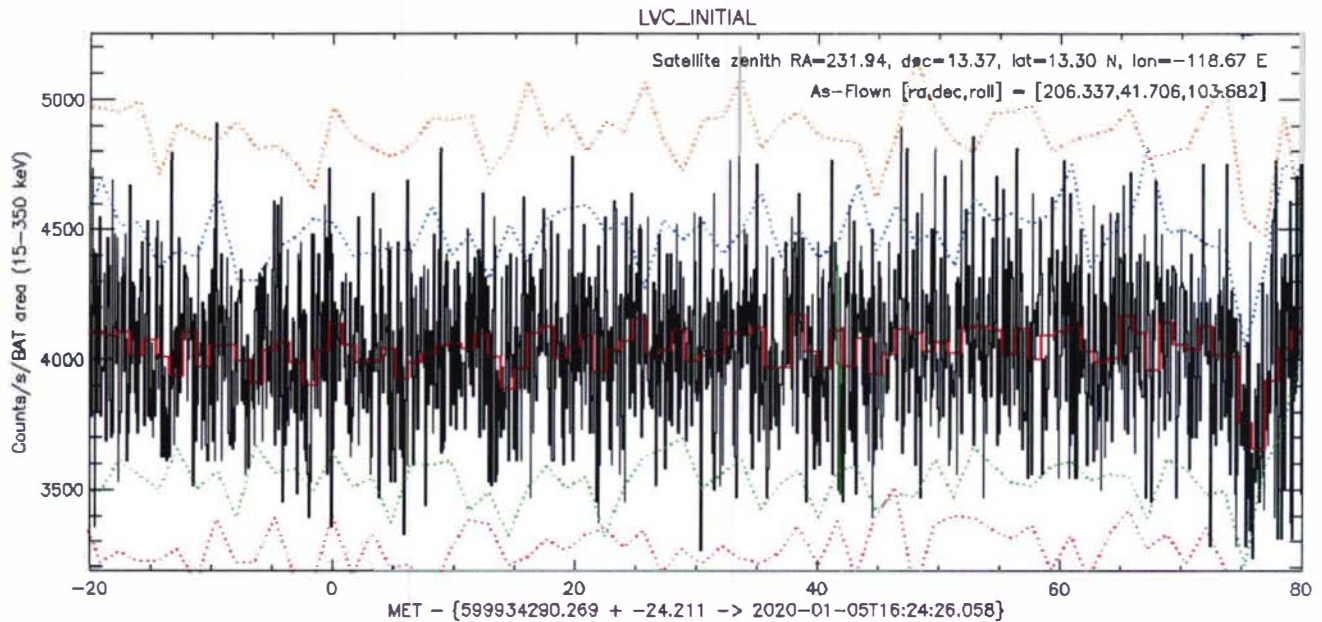
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/6/2020, 12:50 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200105_1624.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 599934290.269
Swift Zenith(RA,dec):      231.94, 13.37
Swift Location(lon,lat,alt): -118.67 E, 13.30 N, 542 km
Time(MET + UTC -> UT):    599934290.269 + -24.211 -> 2020-01-05T16:24:26.058
YYMMDD_SOD:               200105_59066.058      DOY=005
Obs Sequence Number:      00011388003
Obs Target Name:          NGC 5290
Obs Date and Times:       2020-01-05 15:55:37 - 16:25:32
Obs Pointing(ra,dec,roll): 206.337, 41.706, 103.68
```

--
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/200105_1624.png	22.2 KB
/tmp/swift/200105_1624_bat64ms_ipn	87.1 KB

FERMI

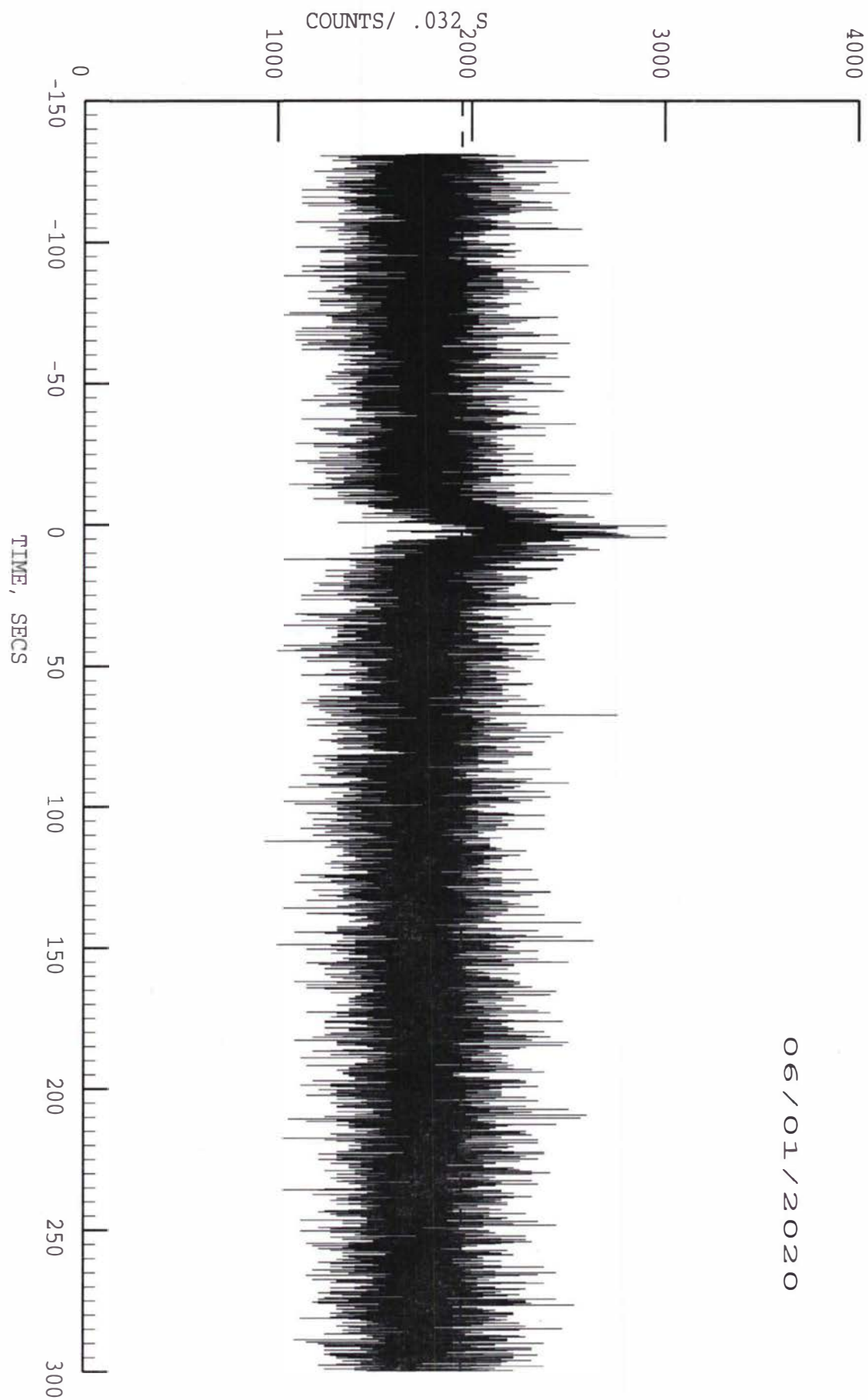
05/01/20

78928.993

21:55:28.993

26- 293 keV

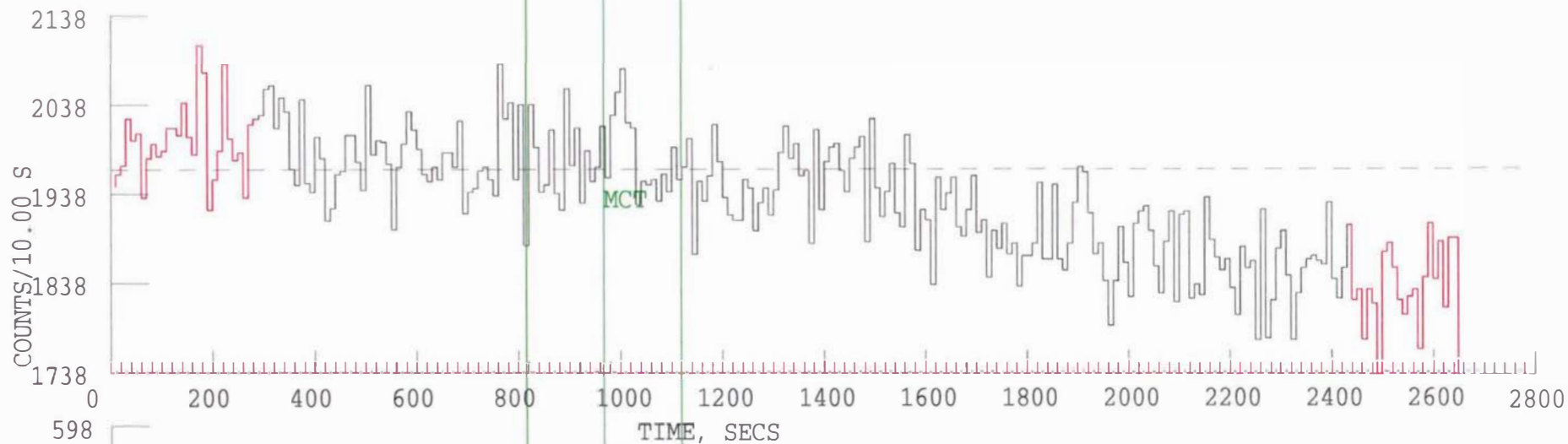
323 -41.2 4.9



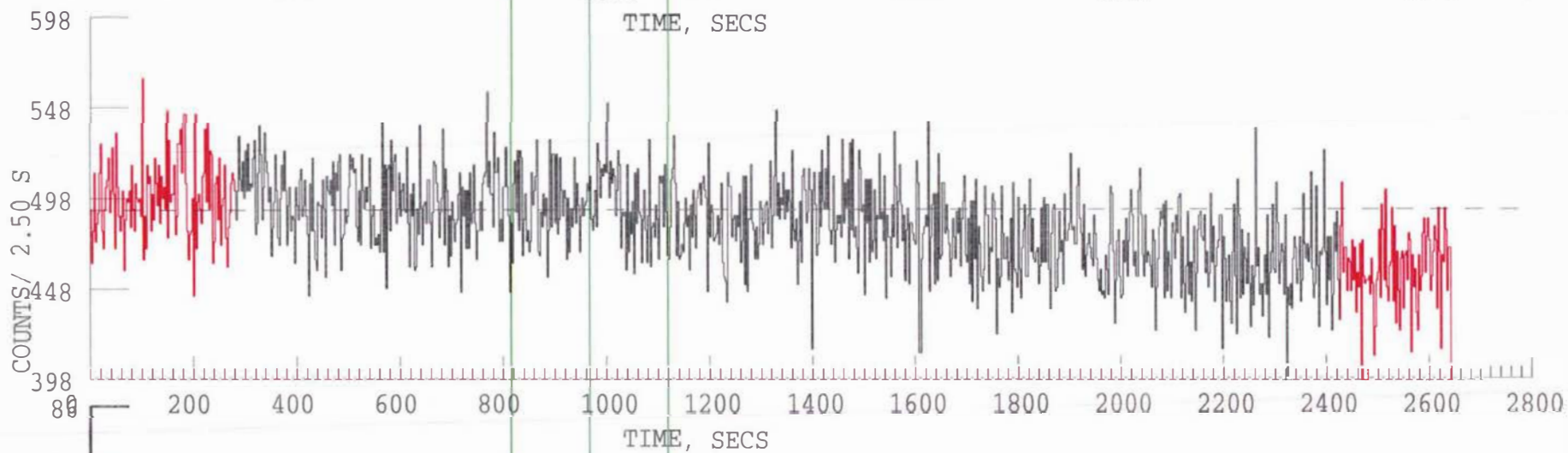
06/01/2020

24/01/2020

21:32:58.090

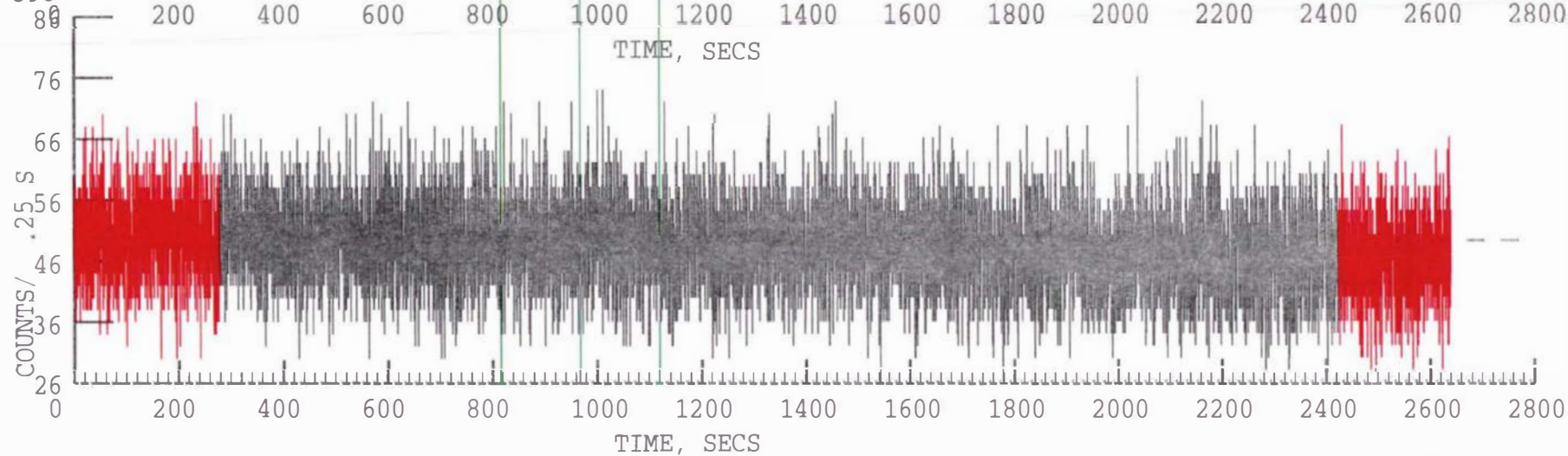


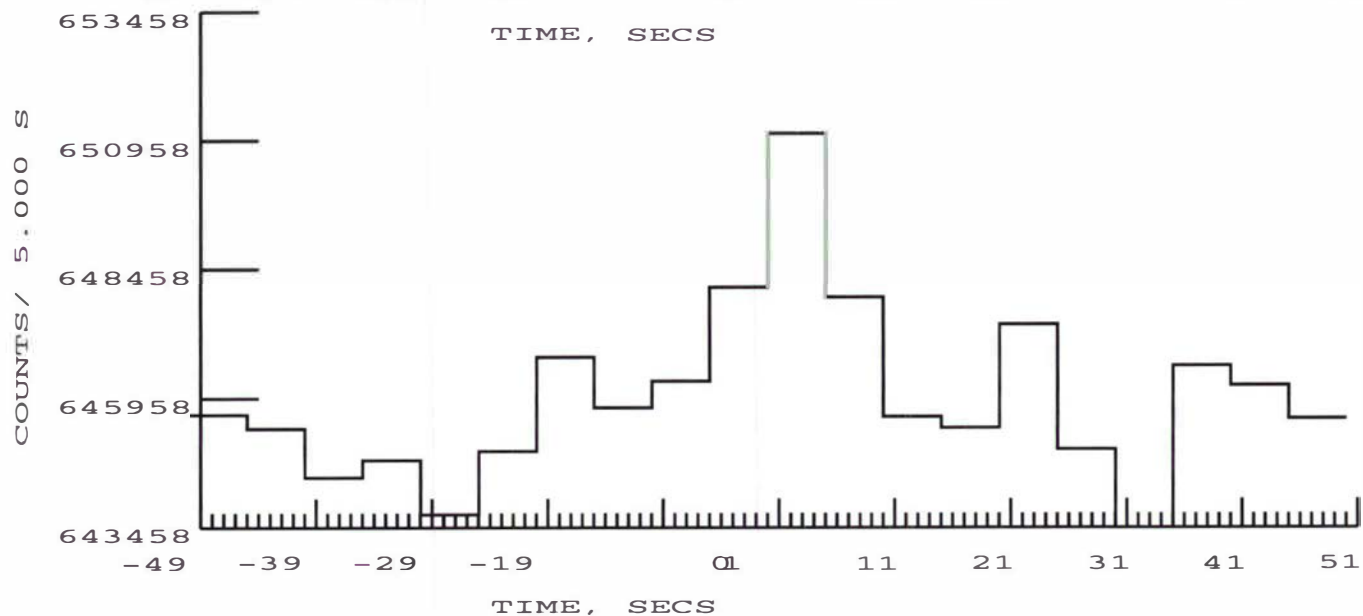
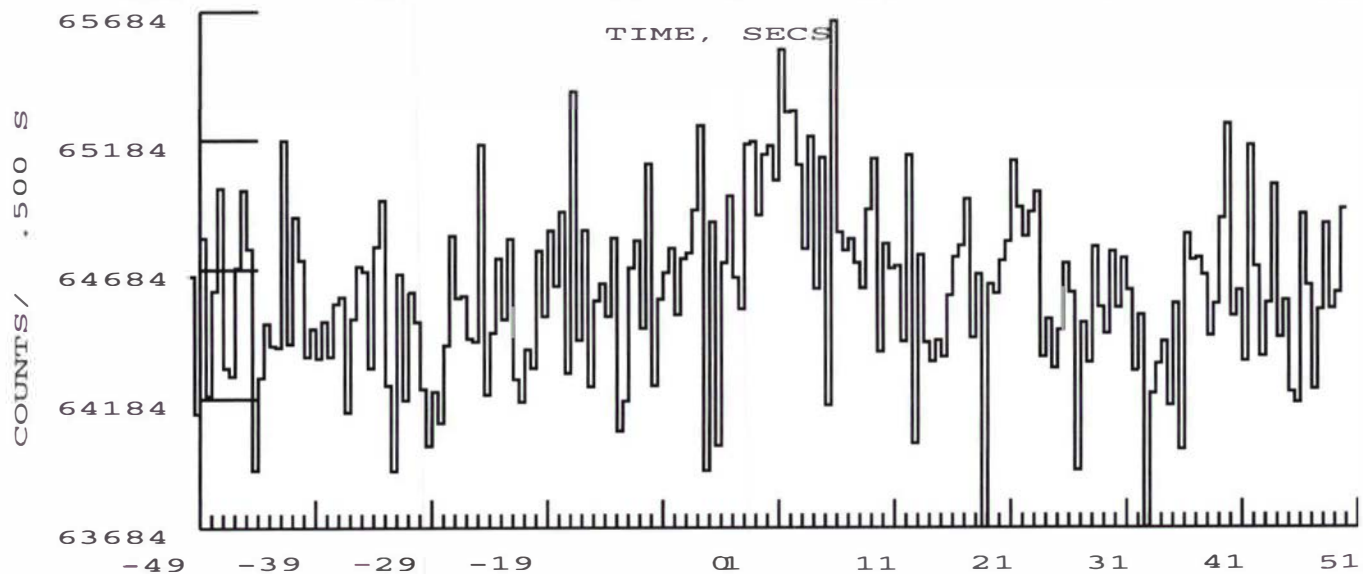
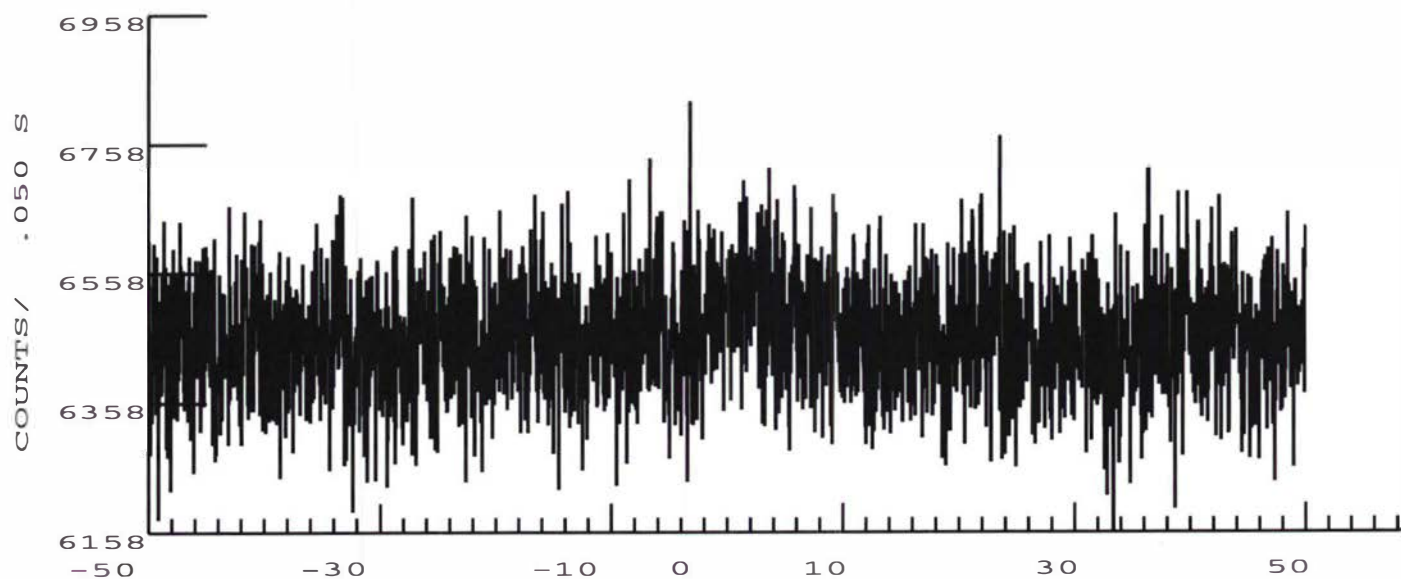
77578.090



05/01/20

50-3000 keV





BAT lightcurve for trigger at 200105_2155

Subject: BAT lightcurve for trigger at 200105_2155

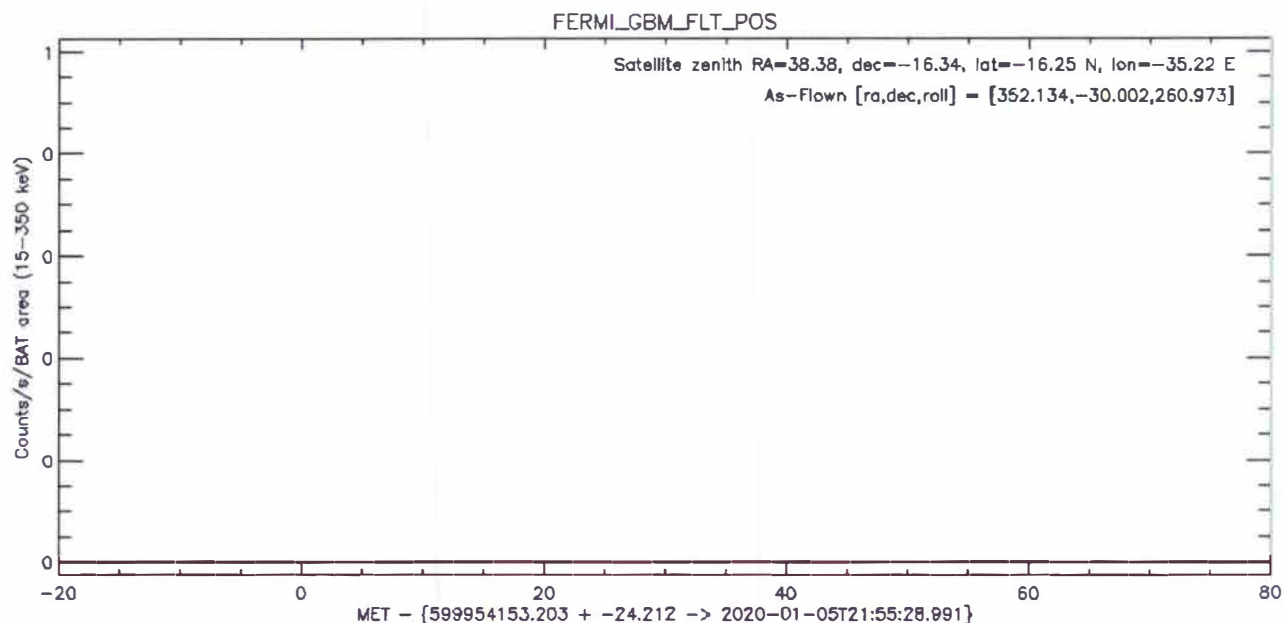
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/6/2020, 12:14 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200105_2155.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 599954153.203
Swift Zenith(RA,dec):      38.38, -16.34
Swift Location(lon,lat,alt): -35.22 E, -16.25 N, 561 km
Time(MET + UTC -> UT):    599954153.203 + -24.212 -> 2020-01-05T21:55:28.991
YYMMDD_SOD:               200105_78928.991      DOY=005
Obs Sequence Number:      00076307003
Obs Target Name:          saa-cold-102-01
Obs Date and Times:       2020-01-05  21:40:37 - 22:04:34
Obs Pointing(ra,dec,roll): 352.134, -30.002, 260.97
```

--
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/200105_2155_bat64ms_ipn

87.0 KB

/tmp/swift/200105_2155.png

7.4 KB

Subject: GRB 200105A: MAXI/GSC detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/5/2020, 4:54 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26638
SUBJECT: GRB 200105A: MAXI/GSC detection
DATE: 20/01/06 00:53:30 GMT
FROM: Satoshi Sugita at Aoyama Gakuin U. <sugita@phys.aoyama.ac.jp>

S. Sugita, M. Serino (AGU),
H. Negoro, M. Nakajima, W. Maruyama, M. Aoki, K. Kobayashi, R. Takagi (Nihon U.),
T. Mihara, C. Guo, Y. Zhou, T. Tamagawa, M. Matsuoka (RIKEN),
T. Sakamoto, H. Nishida, A. Yoshida (AGU),
Y. Tsuboi, W. Iwakiri, R. Sasaki, H. Kawai, T. Sato (Chuo U.),
M. Shidatsu (Ehime U.),
N. Kawai, M. Oeda, K. Shiraishi (Tokyo Tech),
S. Nakahira, Y. Sugawara, S. Ueno, H. Tomida, M. Ishikawa, R. Shimomukai, M. Tominaga (JAXA),
Y. Ueda, A. Tanimoto, S. Yamada, S. Ogawa, K. Setoguchi, T. Yoshitake (Kyoto U.),
H. Tsunemi, T. Yoneyama, K. Asakura, S. Ide (Osaka U.),
M. Yamauchi, S. Iwahori, Y. Kurihara, K. Kurogi, K. Miike (Miyazaki U.),
T. Kawamuro (NAOJ),
K. Yamaoka (Nagoya U.),
Y. Kawakubo (LSU),
M. Sugizaki (NAOC)
report on behalf of the MAXI team:

The MAXI/GSC nova alert system triggered a bright uncatalogued X-ray transient source at 21:55:28 UT on 2020 January 05. Assuming that the source flux was constant over the transit, we obtain the source position at
(R.A., Dec) = (319.281 deg, -35.846 deg) = (21 17 07, -35 50 45) (J2000)
with a statistical 90% C.L. elliptical error region
with long and short radii of 0.11 deg and 0.1 deg, respectively.
The roll angle of long axis from the north direction is 27.0 deg counterclockwise.
There is an additional systematic uncertainty of 0.1 deg (90% containment radius).

Without assumptions on the source constancy, we obtain a rectangular error box for the transient source with the following corners:
(318.473, -35.441) deg = (21 13 53, -35 26 27) (J2000)
(318.374, -35.646) deg = (21 13 29, -35 38 45) (J2000)
(320.376, -36.262) deg = (21 21 30, -36 15 43) (J2000)
(320.470, -36.054) deg = (21 21 52, -36 03 14) (J2000)

The X-ray flux averaged over the scan was 710 +/- 50 mCrab (4.0-10.0keV, 1 sigma error).

There was no significant excess flux in the previous transit at 20:42 UT with an upper limit of 20 mCrab.

KONUS

06/01/2020

10.646

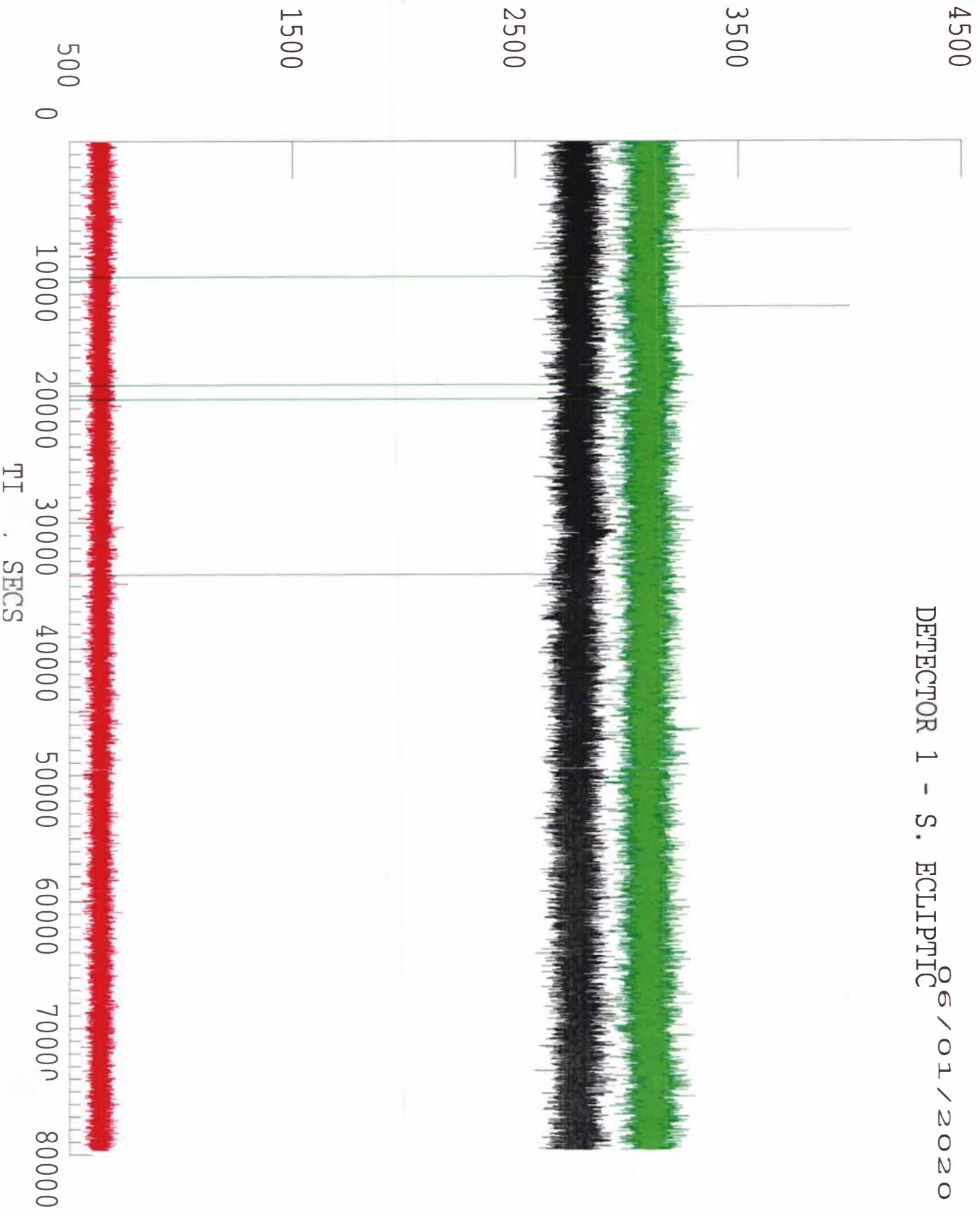
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

06/01/2020

10.646

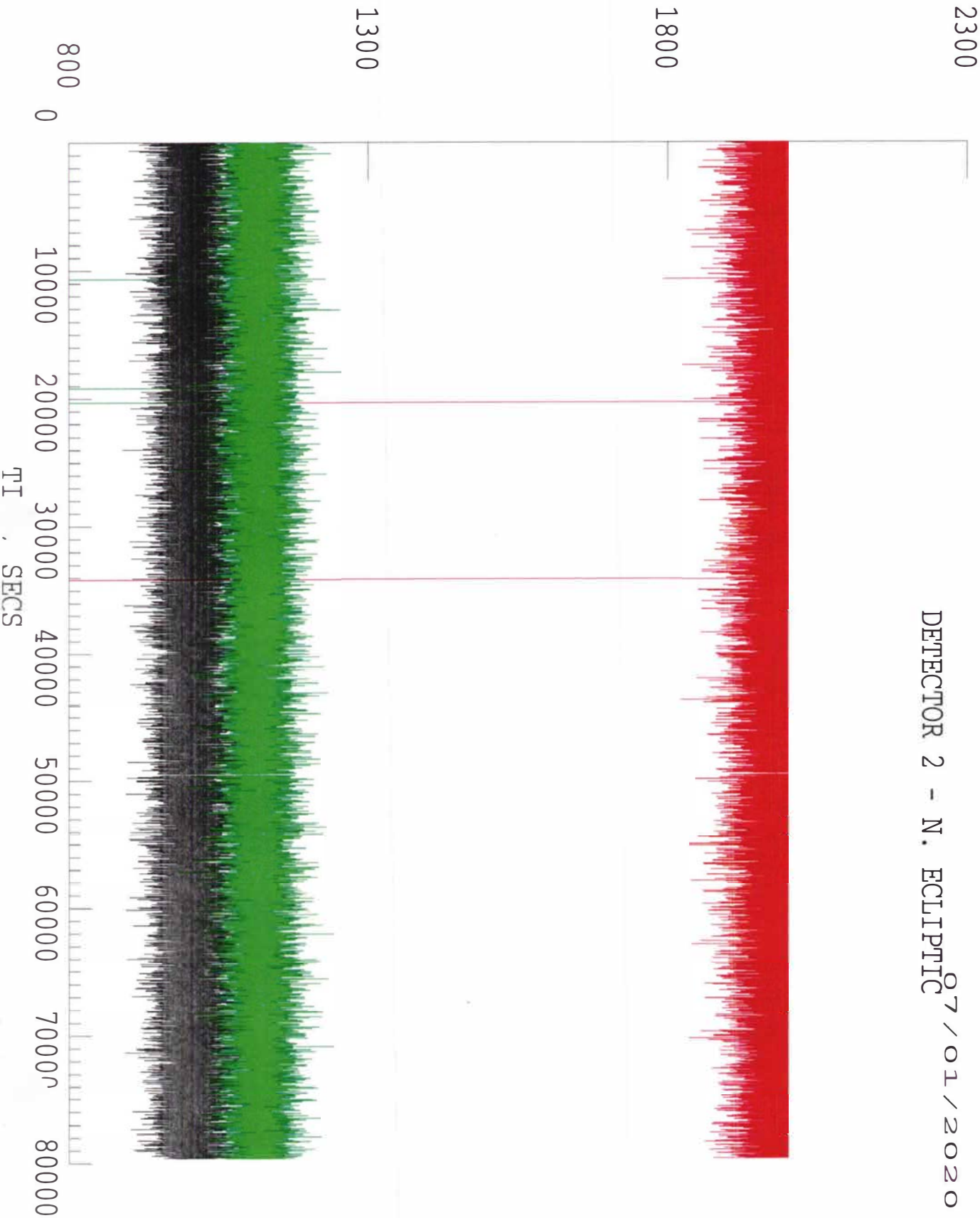
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: S200106au and S200106av: Retraction of GW compact binary merger candidates
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/6/2020, 10:58 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26641
SUBJECT: S200106au and S200106av: Retraction of GW compact binary merger candidates
DATE: 20/01/06 18:57:56 GMT
FROM: Peter Shawhan at U of Maryland/LSC <pshawhan@umd.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

The triggers S200106au and S200106av were caused by chance coincidences between light scattering episodes in the two LIGO detectors and are no longer considered to be candidates of interest.

BAT lightcurve for trigger at 200106_1834

Subject: BAT lightcurve for trigger at 200106_1834

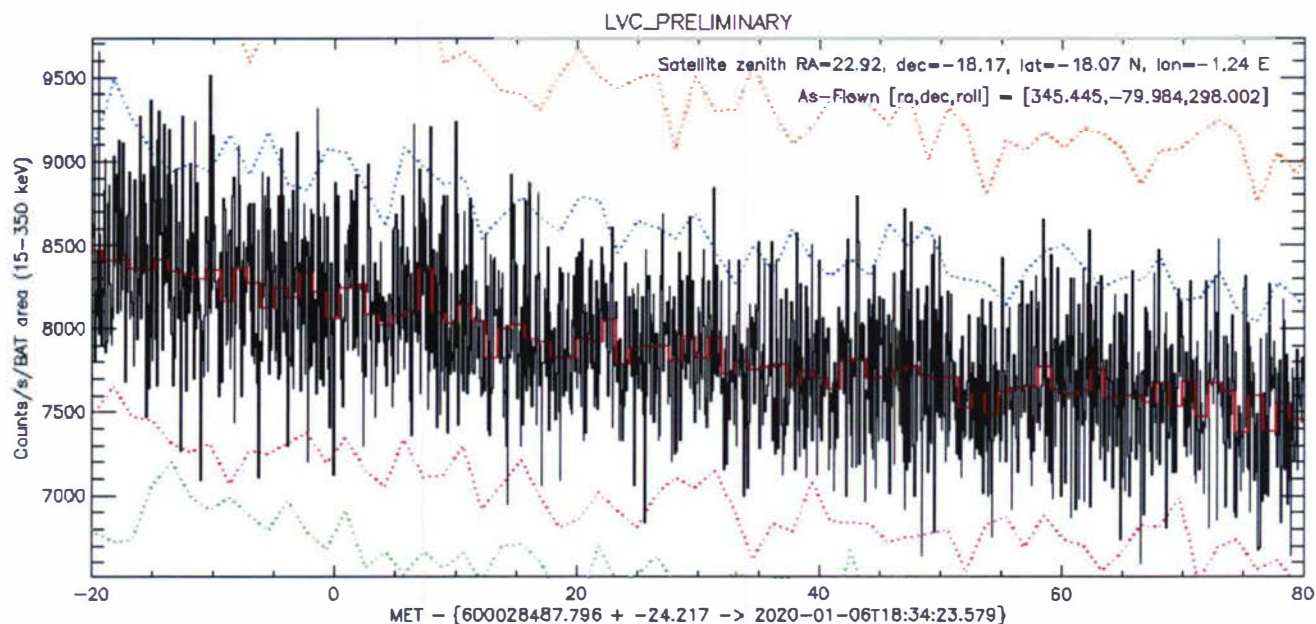
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/6/2020, 1:44 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200106_1834.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600028487.796
Swift Zenith(RA,dec):      22.92, -18.17
Swift Location(lon,lat,alt): -1.24 E, -18.07 N, 561 km
Time(MET + UTCF -> UT):   600028487.796 + -24.217 -> 2020-01-06T18:34:23.579
YYMMDD_SOD:               200106_66863.579      DOY=006
Obs Sequence Number:      00074333176
Obs Target Name:          saa-cold-135-03
Obs Date and Times:       2020-01-06  18:10:37 - 18:38:35
Obs Pointing(ra,dec,roll): 345.445, -79.984, 298.00
```

--
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/200106_1834.png	20.6 KB
/tmp/swift/200106_1834_bat64ms_ipn	87.0 KB

v01

-.627

07/01/2020

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

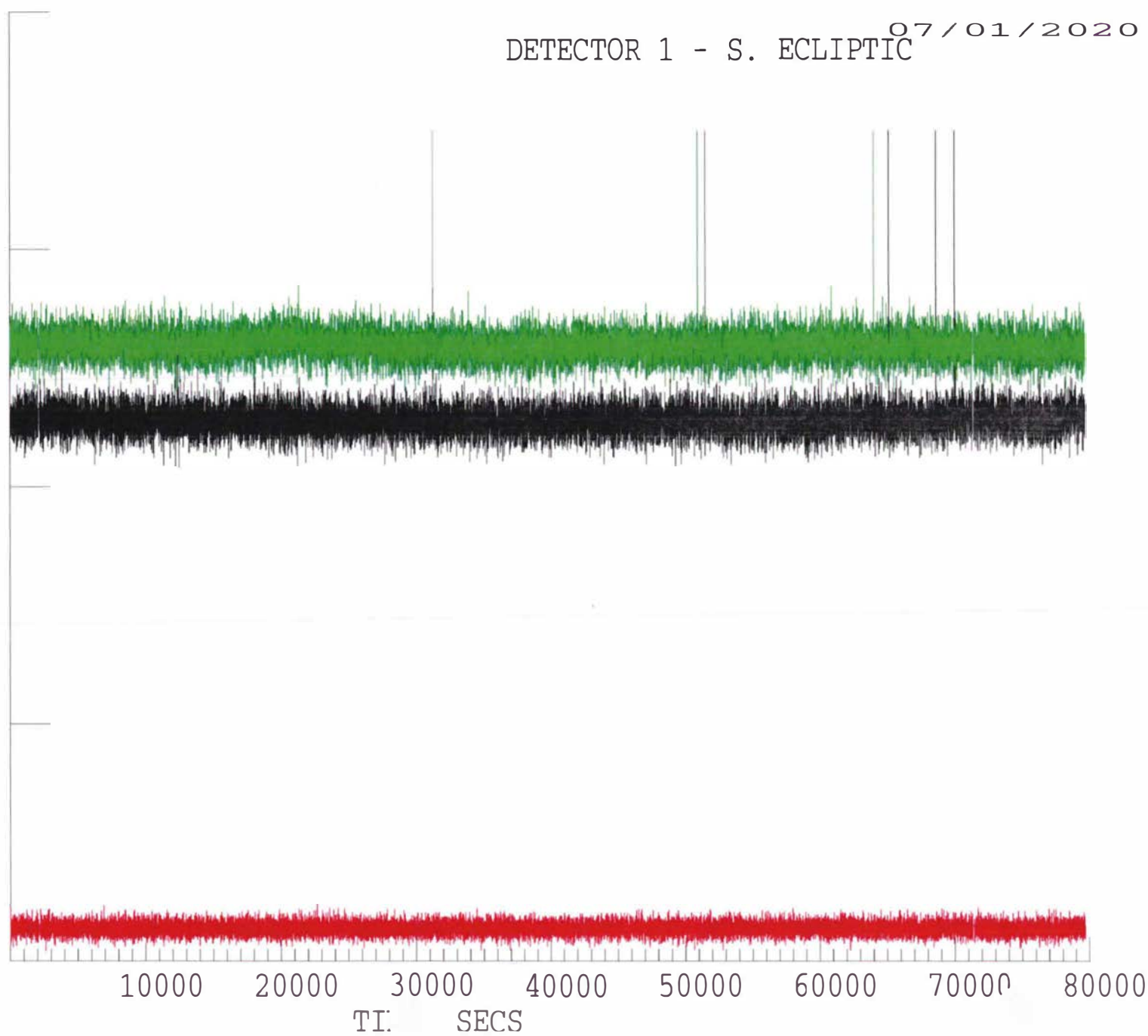
10000

20000

TI: SECS

DETECTOR 1 - S. ECLIPTIC

07/01/2020



KONUS

07/01/2020

-.627

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

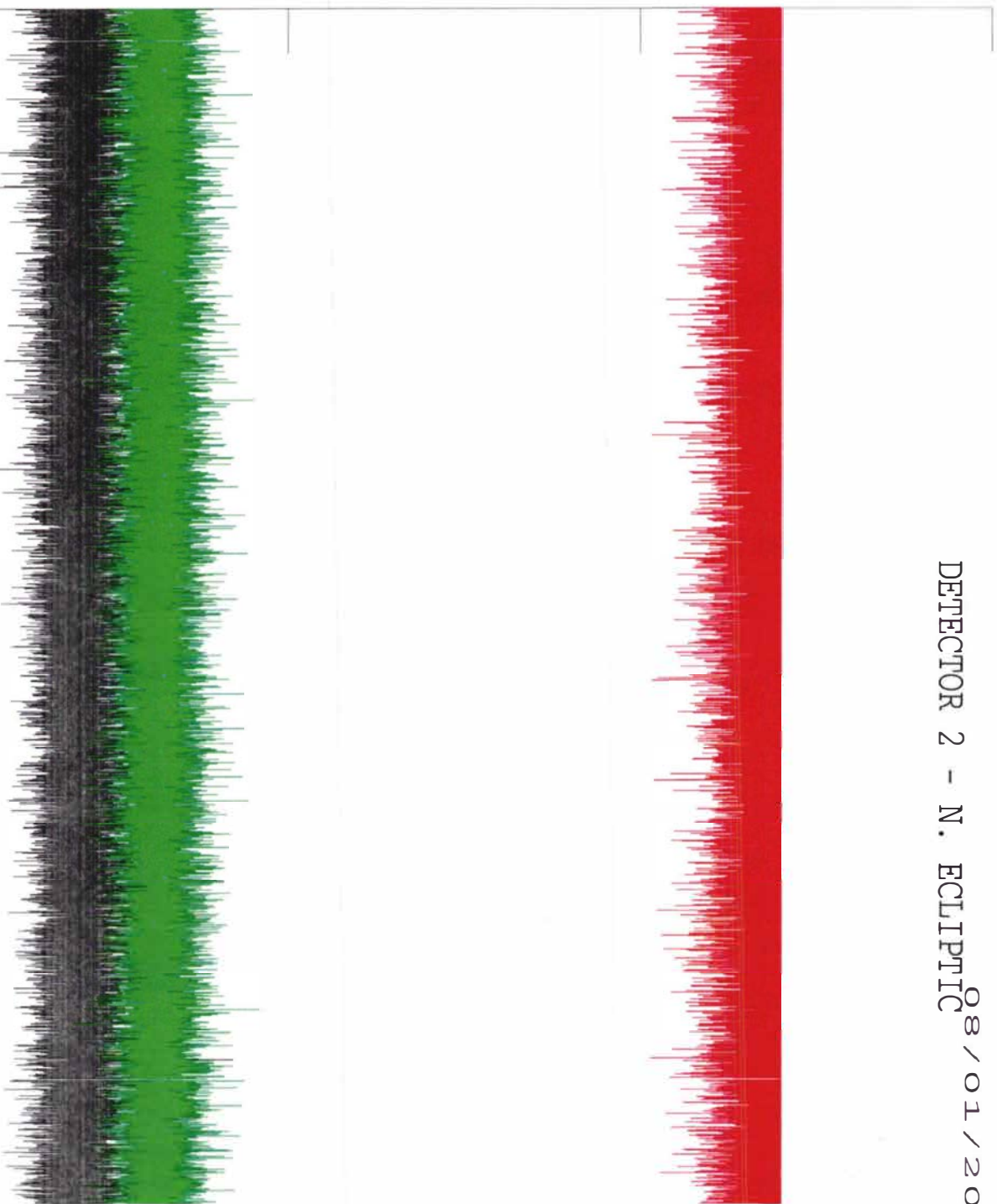
60000

70000

80000

TI SECS

DETECTOR 2 - N. ECLIP^{08/01/2020}TIC



Subject: IceCube-200107A: IceCube observation of a high-energy neutrino candidate event
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/7/2020, 9:36 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26655
SUBJECT: IceCube-200107A: IceCube observation of a high-energy neutrino candidate event
DATE: 20/01/07 17:36:04 GMT
FROM: Robert Stein at DESY <robert.stein@desy.de>

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

On 20/01/07 at 09:42:18.36 UT IceCube detected a high-energy starting event [1]. Though it did not pass the Gold or Bronze starting track classification, a new neural network classifier identified the event as a starting track. Visual inspection is consistent with this classification. High-energy starting events have a rate of ~12 per year, out of which ~2 per year are starting tracks. Because the event was not identified as either Gold or Bronze, we do not currently report a false alert rate or signalness. However, given the topology and light deposition of this event, we identify it as a potential astrophysical neutrino of interest to the community. The IceCube detector was in a normal operating state at the time of detection.

Sophisticated reconstruction algorithms have been applied offline, with the direction refined to:

Date: 20/01/07
Time: 09:42:18.36 UT
RA: 148.18 (+ 2.20 - 1.83 deg 90% PSF containment) J2000
Dec: 35.46 (+ 1.10 - 1.22 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 two Fermi 4FGL sources located within the 90% localization region. The nearest gamma-ray source is 4FGL J0955.1+3551 at RA: 148.78 deg, Dec: 35.86 deg (0.63 deg away from the best-fit event position). Another source, 4FGL J0957.8+3423, is located at RA: 149.47 deg, Dec: 34.40 (1.50 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 <<mailto:roc@icecube.wisc.edu>>
[1] The IceCube Collaboration, Phys. Rev. Lett. 113, 101101 (2014)

Subject: BAT lightcurve for trigger at 200107_0942

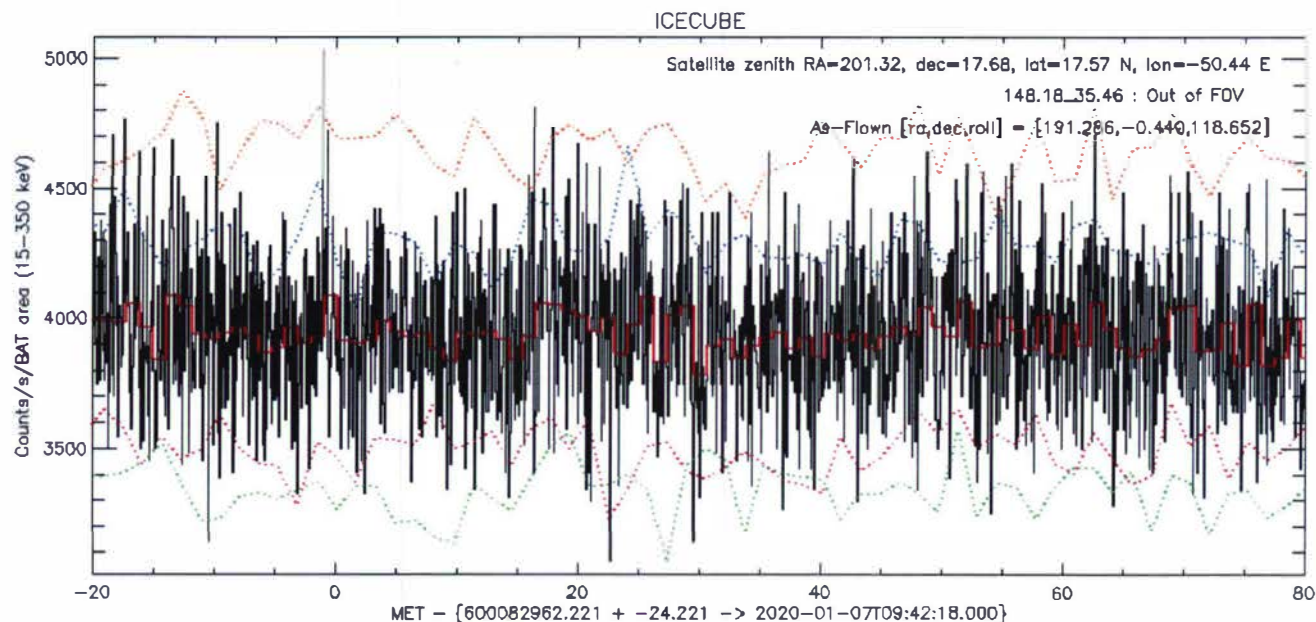
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/7/2020, 3:04 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200107_0942.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600082962.221 -s 148.18_35.46
Swift Zenith(RA,dec):      201.32, 17.68
Swift Location(lon,lat,alt): -50.44 E, 17.57 N, 545 km
Time(MET + UTCF -> UT):    600082962.221 + -24.221 -> 2020-01-07T09:42:18.000
YYMMDD_SOD:                200107_34938.000      DOY=007
Obs Sequence Number:       00013038004
Obs Target Name:           SN2019yvr
Obs Date and Times:        2020-01-07 09:33:37 - 09:43:34
Obs Pointing(ra,dec,roll): 191.286, -0.440, 118.65
148.18_35.46_imageloc (boresight_dist, angle): (54, 108)
148.18_35.46_exposure (cm² cos adjusted): 0
148.18_35.46_altitude: 63 (up)
```

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

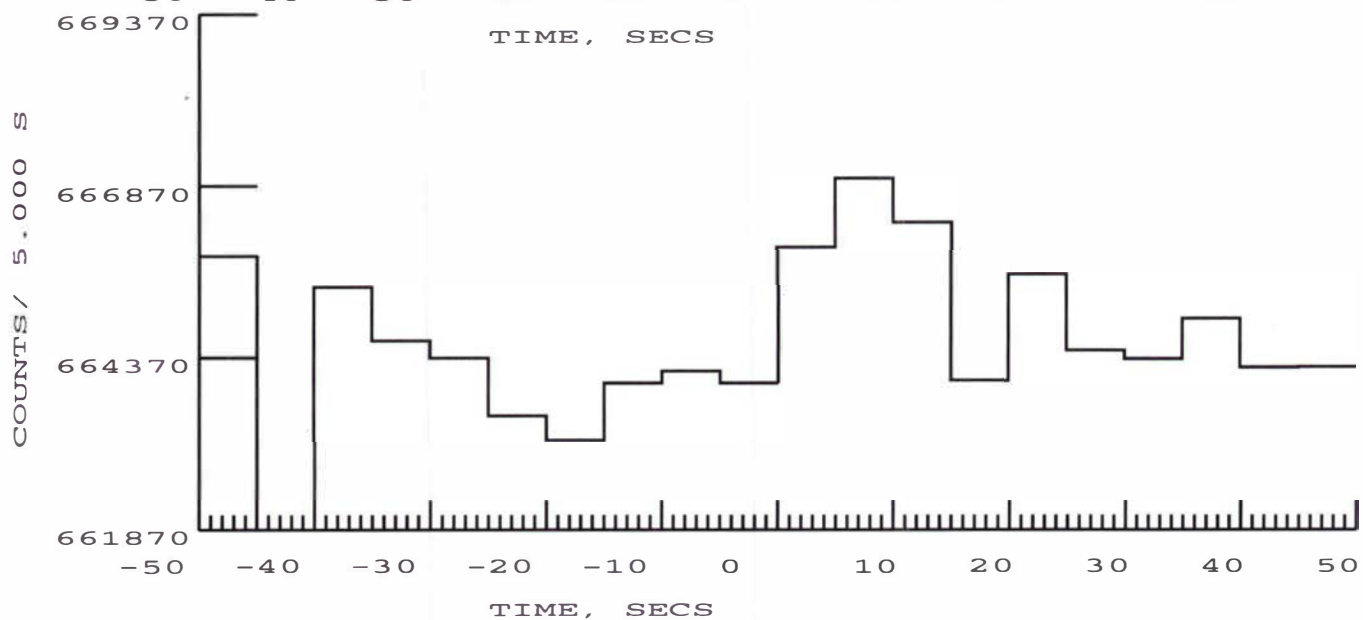
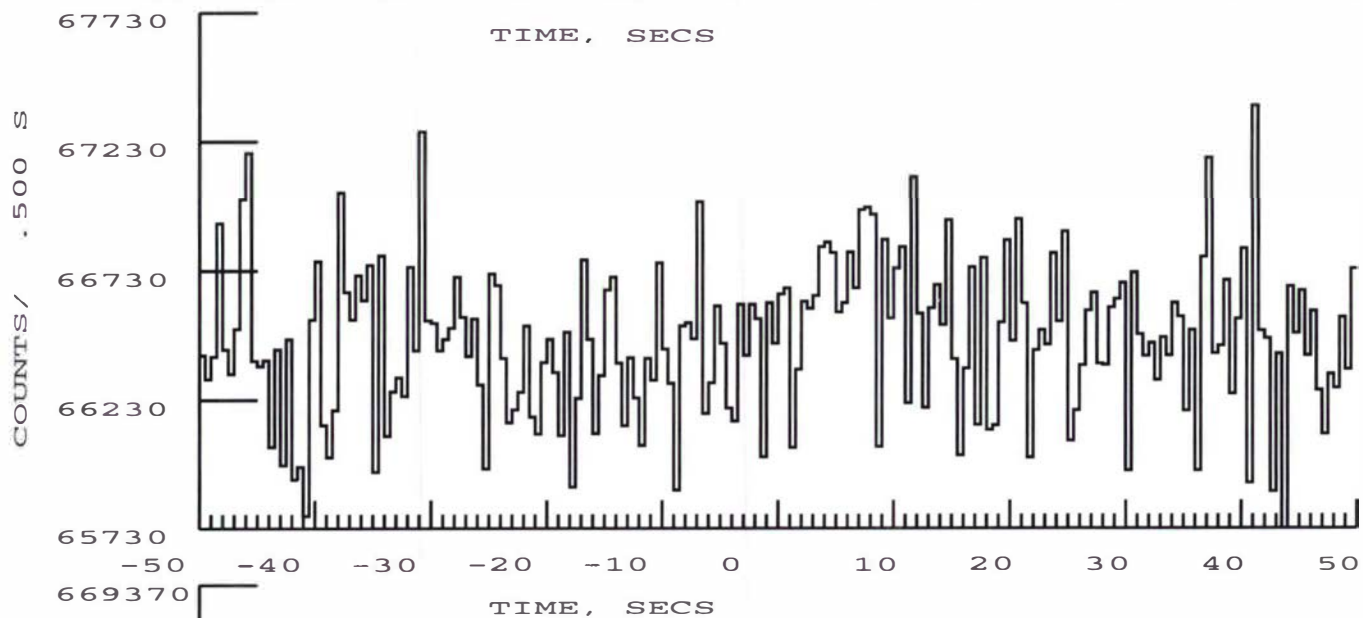
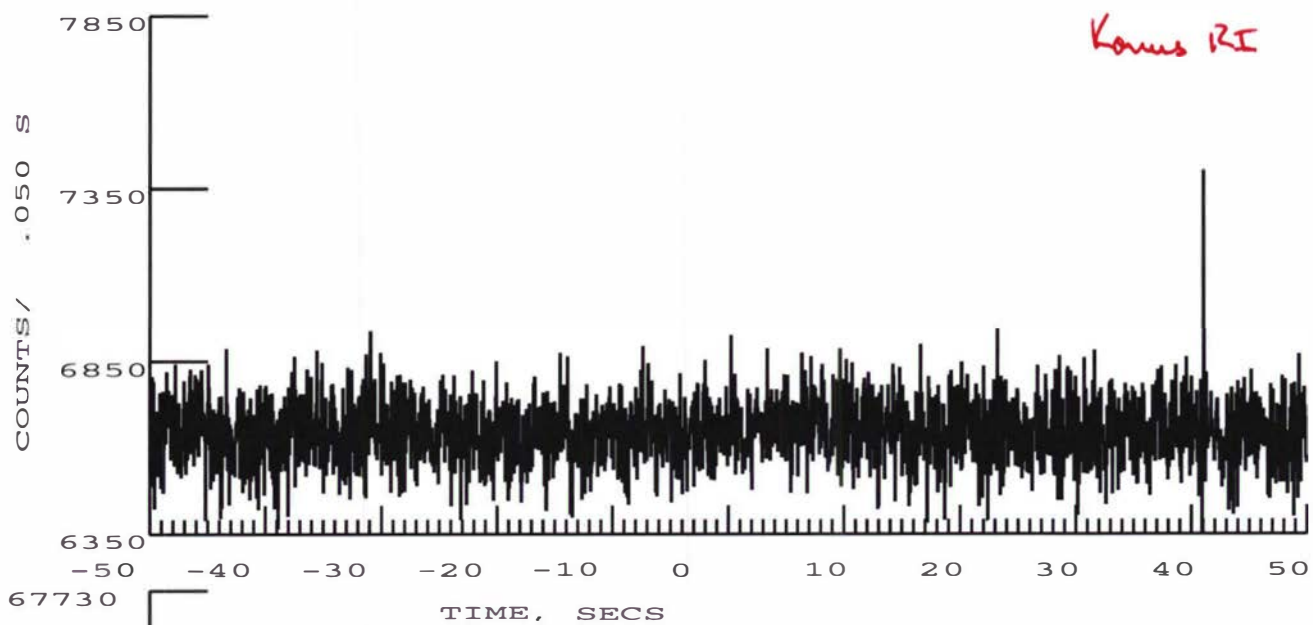
—Attachments:

/tmp/swift/200107_0942_bat64ms_ipn

87.0 KB

/tmp/swift/200107_0942.png

22.4 KB



Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 1/7/2020, 11:30 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Tue 07 Jan 20 19:30:28 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 948219, Seg_Num: 0
 GRB_RA: 107.066d {+07h 08m 16s} (J2000),
 106.350d {+07h 05m 24s} (current),
 108.814d {+07h 15m 15s} (1950)
 GRB_DEC: -83.716d {-83d 42' 56"} (J2000),
 -83.748d {-83d 44' 51"} (current),
 -83.630d {-83d 37' 47"} (1950)
 GRB_DATE: 18855 TJD; 7 DOY; 20/01/07
 GRB_TIME: 69988.70 SOD {19:26:28.70} UT
 TRIGGER_INDEX: 298
 GRB_PHI: 8.33 [deg]
 GRB_THETA: 30.05 [deg]
 DELTA_TIME: -11.00 [sec]
 TRIGGER_DUR: 4.096 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 11.26 [sigma]
 IMAGE_SIGNIF: 9.77 [sigma]
 LC_URL: sw00948219000msb.lc
 SUN_POSTN: 288.38d {+19h 13m 32s} -22.36d {-22d 21' 37"}
 SUN_DIST: 73.89 [deg] Sun_angle= -11.9 [hr] (East of Sun)
 MOON_POSTN: 68.05d {+04h 32m 12s} +19.28d {+19d 16' 40"}
 MOON_DIST: 104.33 [deg]
 MOON_ILLUM: 90 [%]
 GAL_COORDS: 295.93,-26.49 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 263.88,-72.48 [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 = 202.81,5.51 [deg].

86.7g

 $3 \times 10^{-6} \text{ erg cm}^{-2}$ $1.9 \text{ phot/cm}^2 \text{ s}$

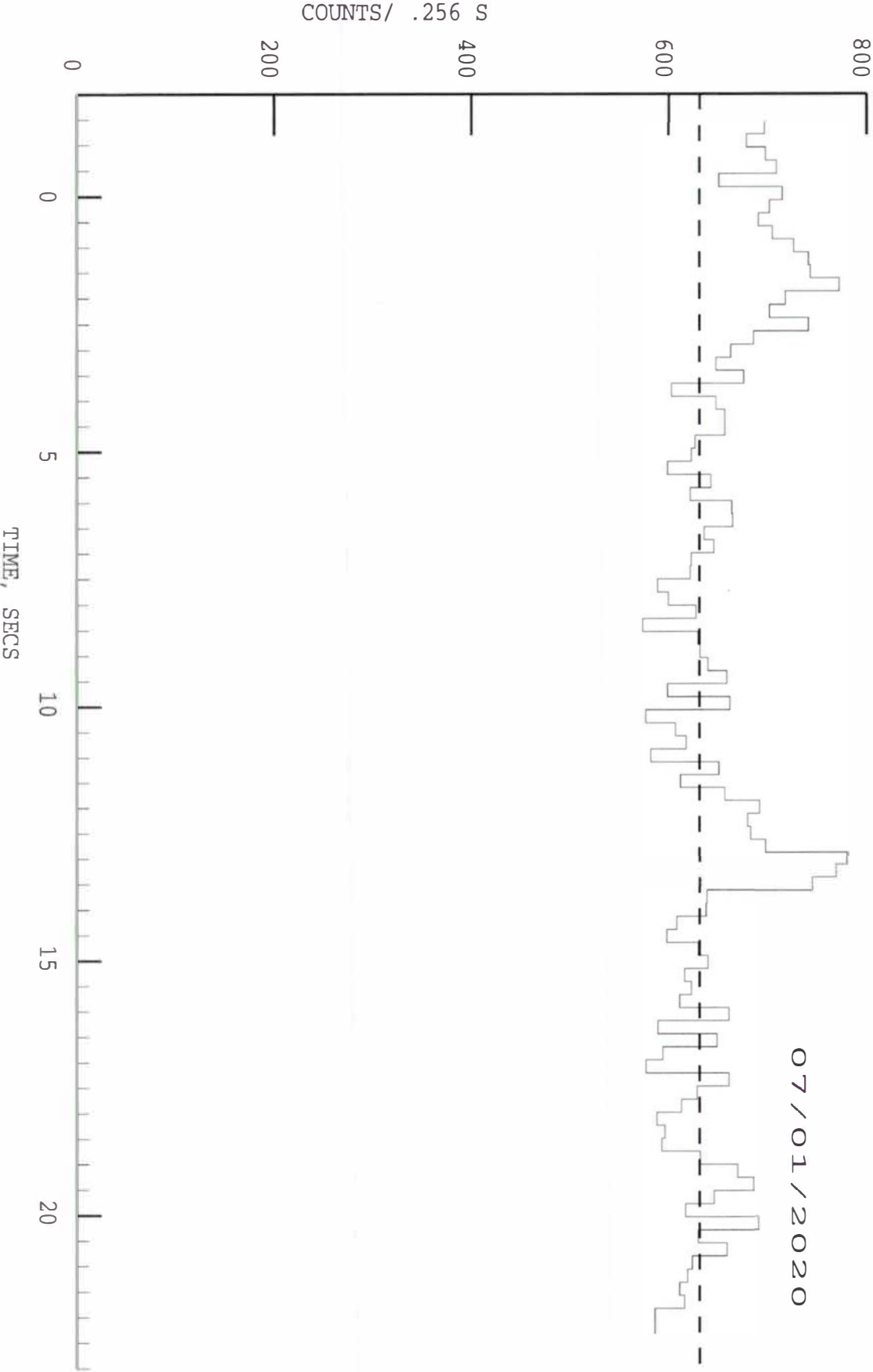
BAT

07/01/20

69988.705

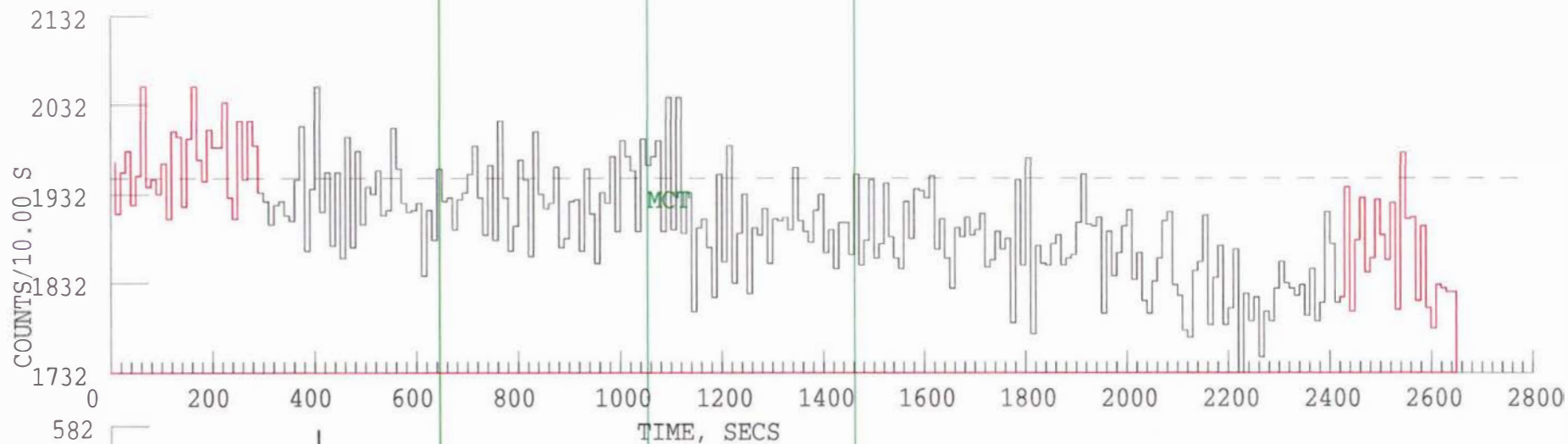
19:26:28.705

25- 100 keV

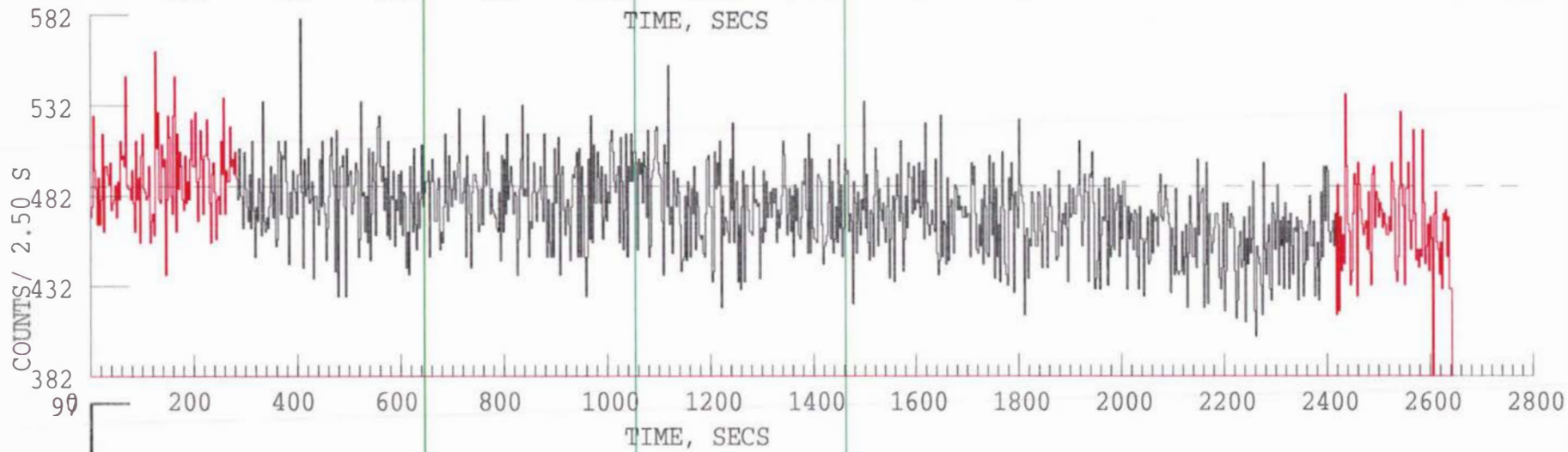


24/01/2020

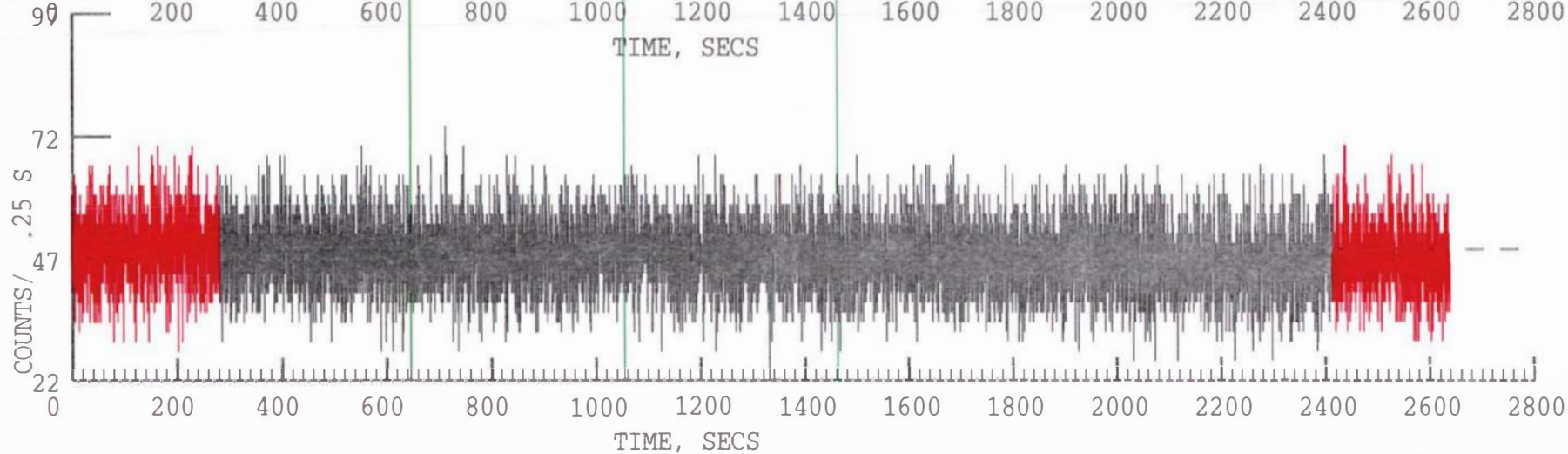
19:03:55.099

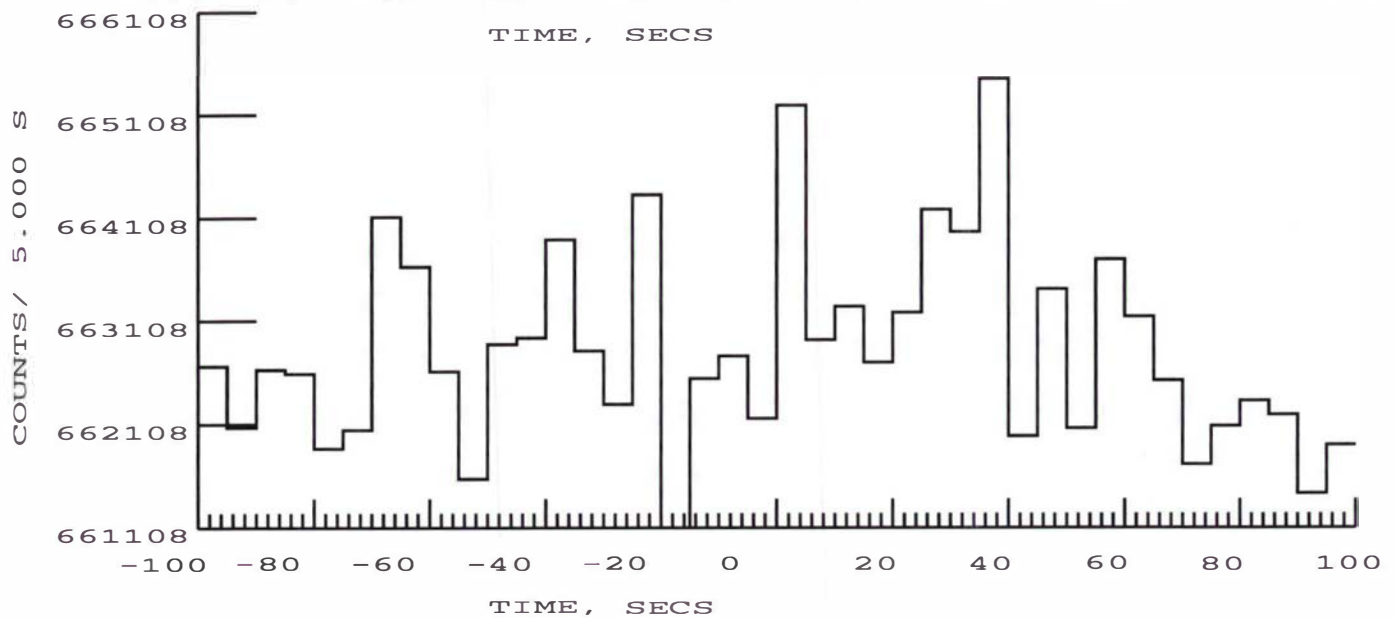
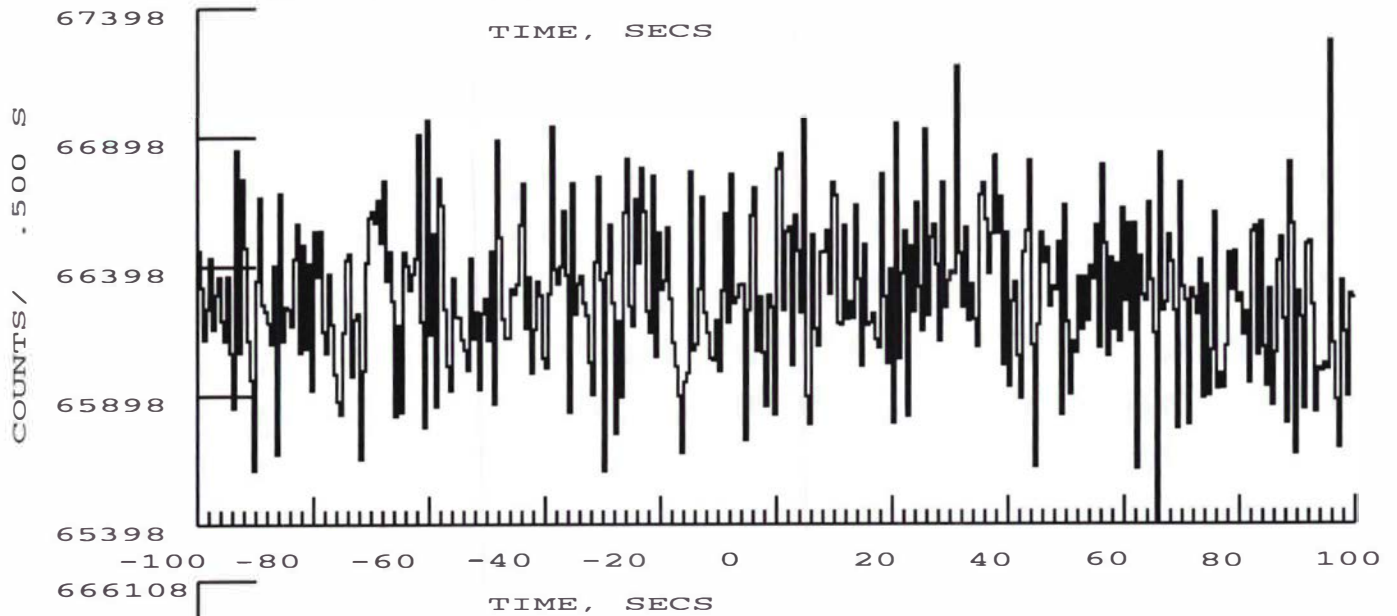
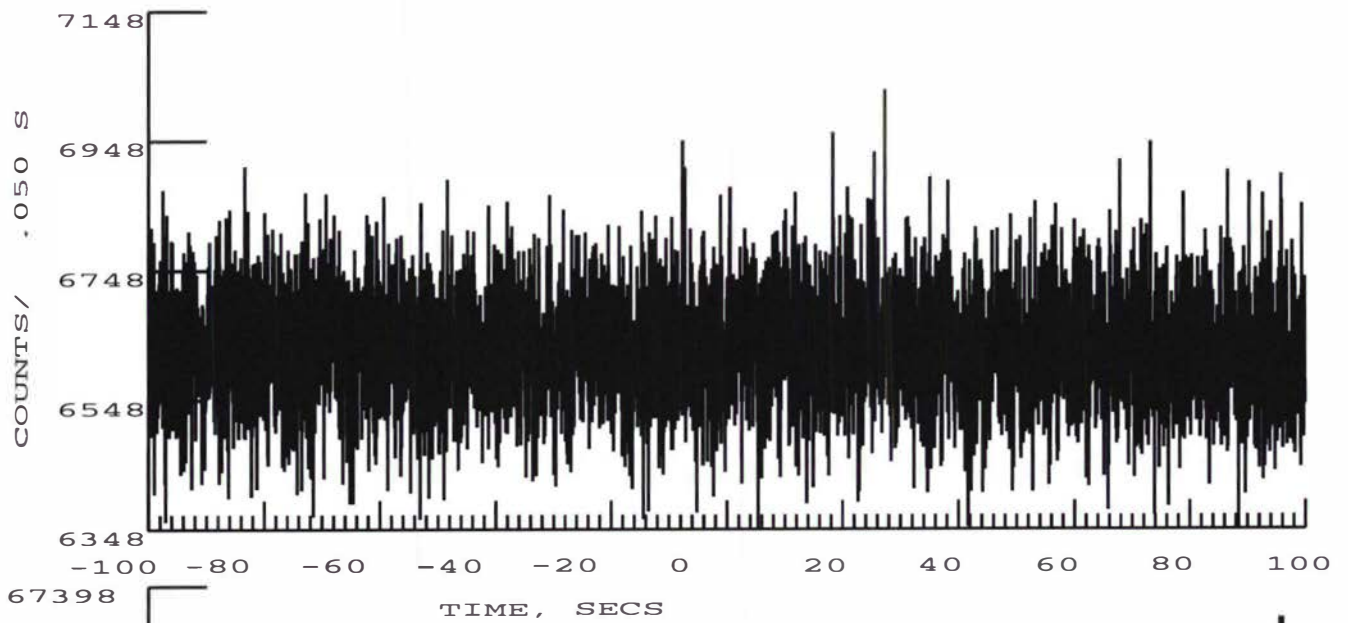


68635.099



07/01/20
50-3000 keV





BAT lightcurve for trigger at 200107_1926

Subject: BAT lightcurve for trigger at 200107_1926

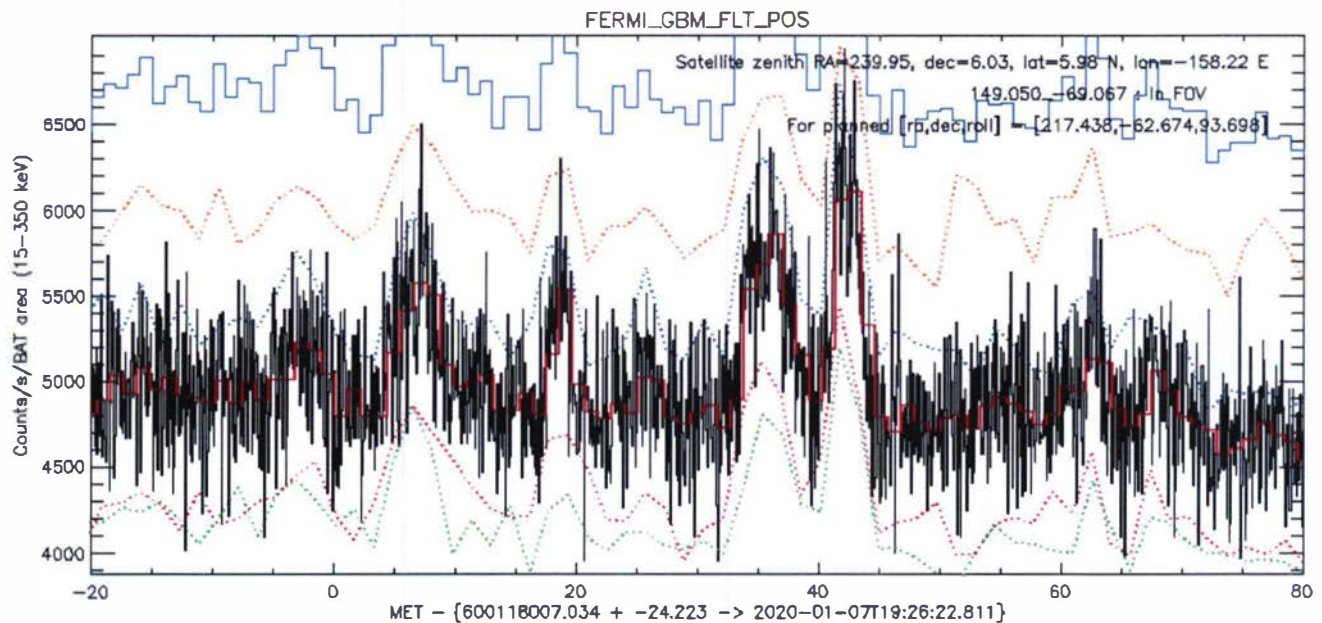
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/7/2020, 1:40 PM

To: 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, auc444@psu.edu

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

—/tmp/swift/200107_1926.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600118007.034 -s 149.050_-69.067
Swift Zenith(RA,dec):      239.95, 6.03
Swift Location(lon,lat,alt): -158.22 E, 5.98 N, 542 km
Time(MET + UTCF -> UT):    600118007.034 + -24.223 -> 2020-01-07T19:26:22.811
YYMMDD_SOD:                200107_69982.811      DOY=007
Obs Sequence Number:       00095121010
Obs Target Name:           PROXIMA CEN (planned)
Obs Date and Times:        2020-01-07 19:16:35 - 19:41:35
Obs Pointing(ra,dec,roll): 217.438, -62.674, 93.70
149.050_-69.067_imageloc (boresight_dist, angle): (27, 43)
149.050_-69.067_exposure (cm² cos adjusted): 3025
149.050_-69.067_altitude: 17 (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/200107_1926_bat64ms_ipn

87.0 KB

/tmp/swift/200107_1926.png

26.4 KB

FERMI

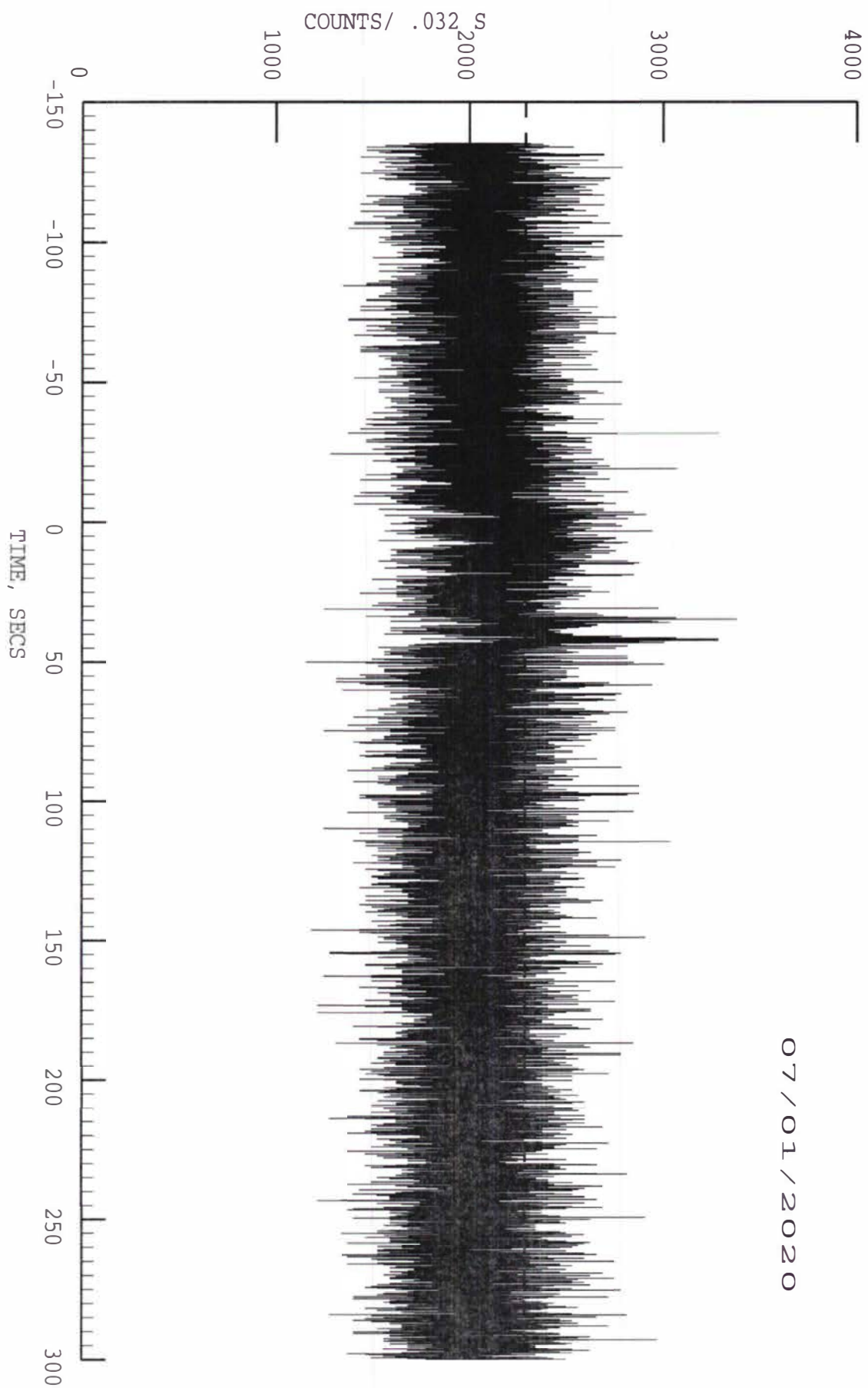
07/01/20

69982.806

19:26:22.806

26- 293 keV

07/01/2020



KONUS

08/01/2020

79.364

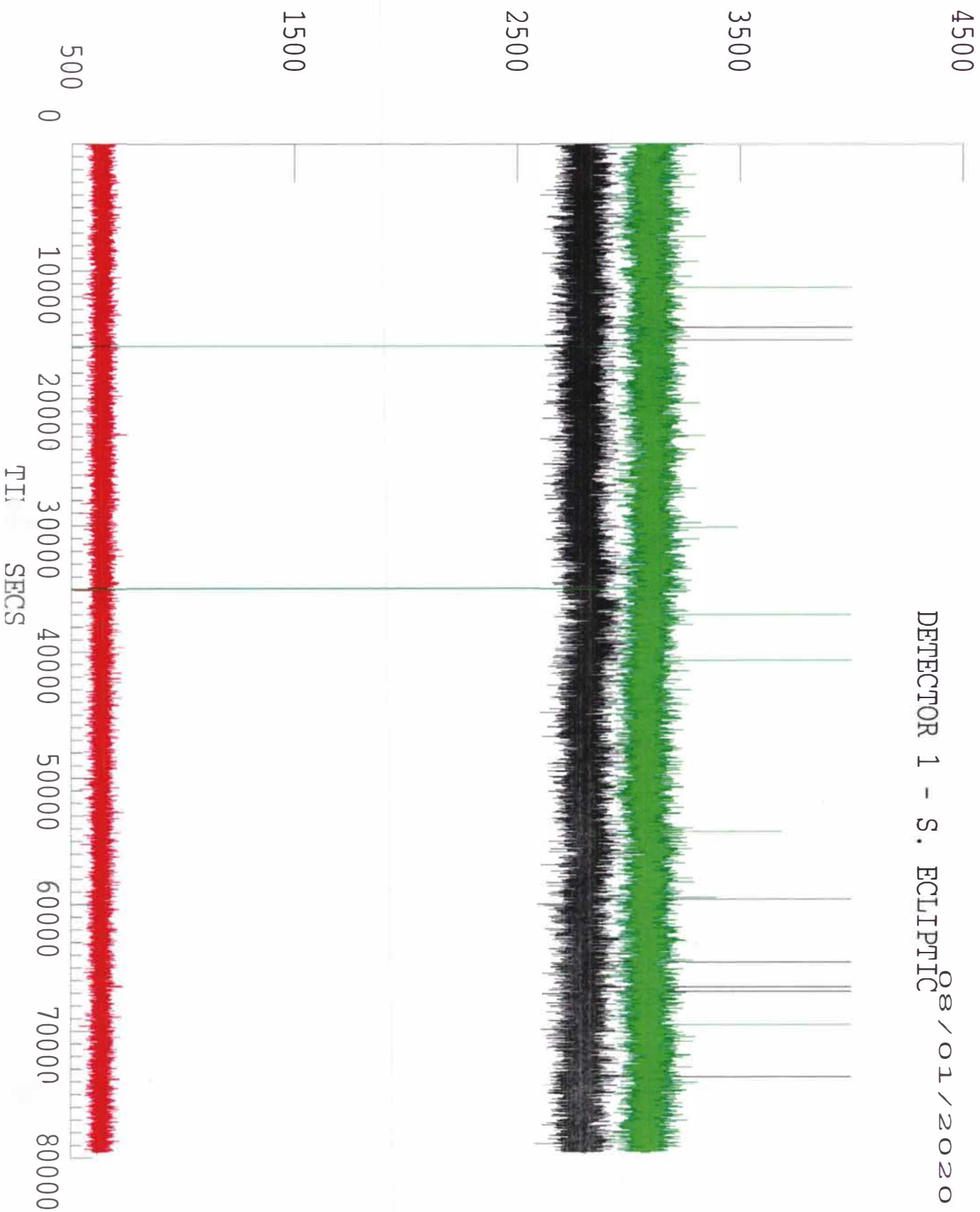
v01

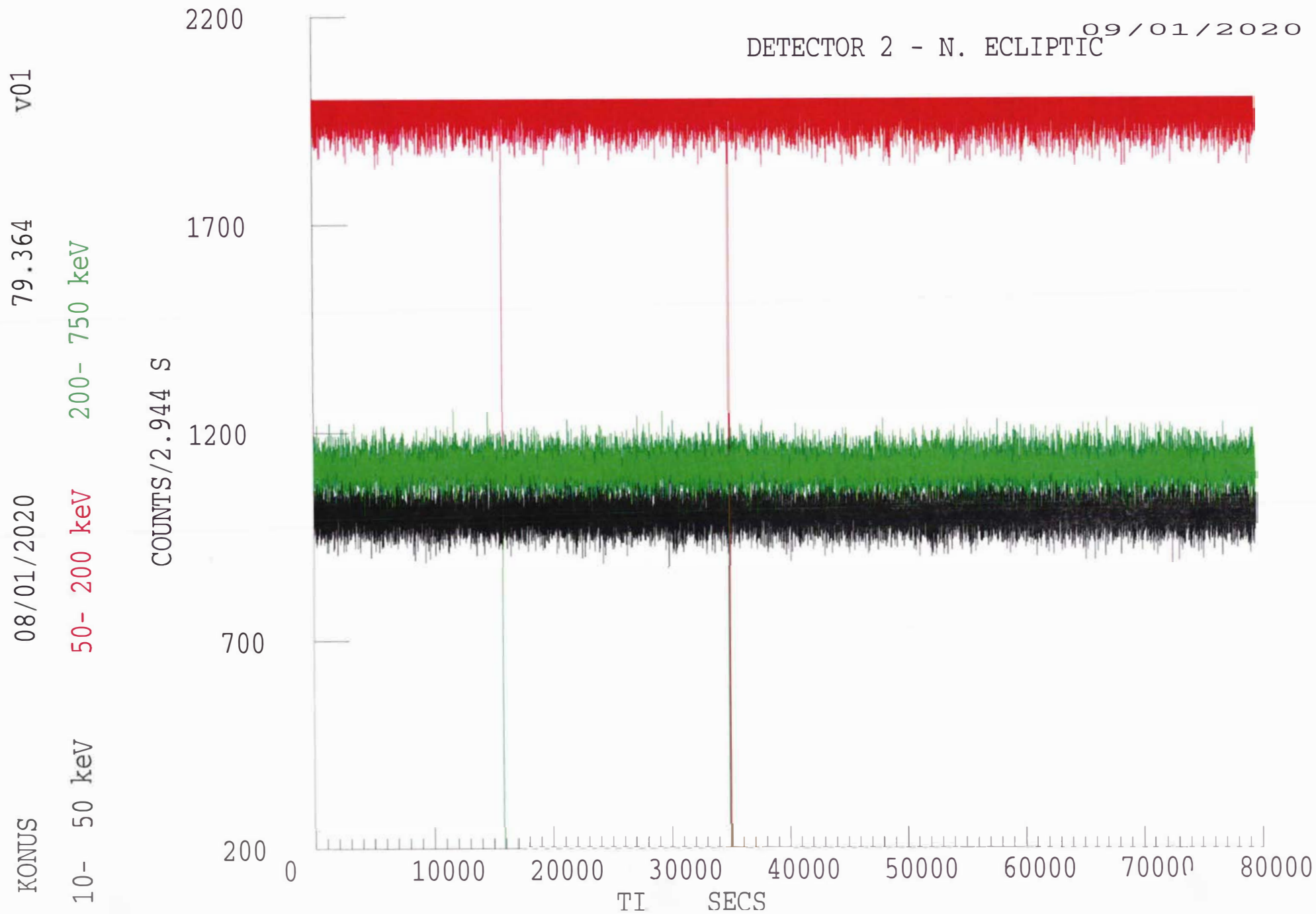
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S





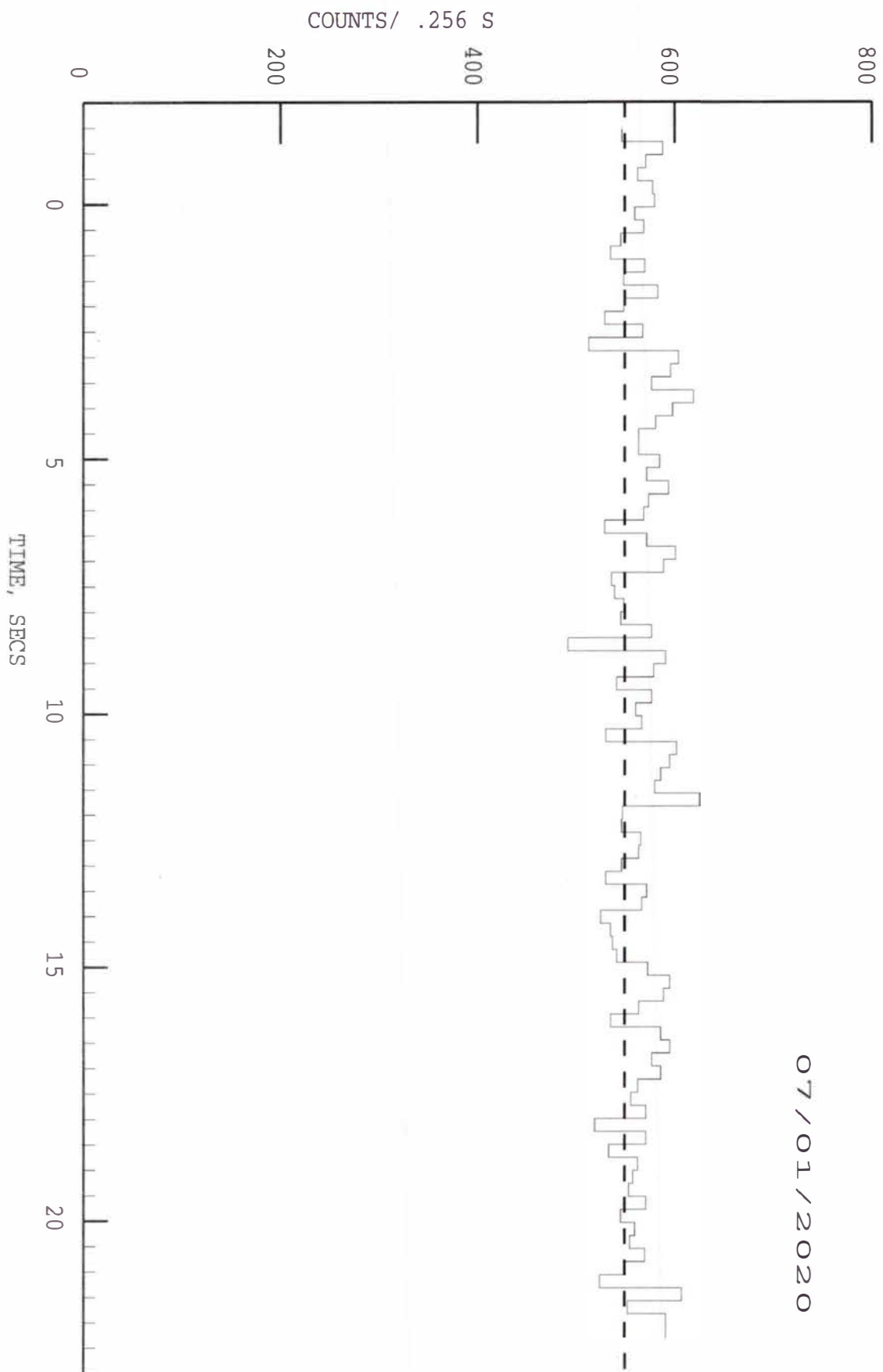
BAT

08/01/20

111.776

00:01:51.776

25- 100 keV



Subject: Fermi-LAT ANTARES coincidence

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

Date: 1/8/2020, 11:48 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26674

SUBJECT: Fermi-LAT ANTARES coincidence

DATE: 20/01/08 19:46:49 GMT

FROM: Colin F Turley at AMON, Penn State U <cft114@psu.edu>

+++++

ANTARES 200108A: AMON + ANTARES Identification of a High-Energy Neutrino + Fermi LAT Coincidence

C. F. Turley and D. B. Fox (for AMON <https://www.amon.psu.edu/>) + M. Ageron (CNRS/PPM) A.Coleiro (Univ. de Paris/APC), D. Dornic (CNRS/PPM), A. Kouchner (Univ. de Paris/APC) (for ANTARES) report:

"During operations of the AMON ANTARES neutrino + Fermi LAT gamma-ray multimessenger alerts, at 2020 January 8 at 09:30:14 UT, we identified a low false alarm-rate (2.39 per year) coincidence between a single ANTARES neutrino and one Fermi LAT photon. An alert was automatically generated and, after human review, distributed to AMON partner facilities at 2020 January 8, 15:04 UT. We are now reporting this alert publicly. Alert details are as follows:

Date: 8 January 2020
Time: 09:30:14.48 UT
R.A.: 02:53:55.6 (J2000)
Dec.: -18:04:02 (J2000)
r_90: 0.832 deg (90%-containment)
FAR: 2.387 yr⁻¹

ANTARES 200108A is a high-energy neutrino-induced muon event detected by ANTARES (Ageron et al. 2011) with coordinates R.A. 02:53:47.8, Dec. -18:07:23 (J2000) at 09:25:12 UT, and a p-value based on the number of hits used for the reconstruction of 0.0269, which relates to the deposited energy.

The minimum false alarm rate coincidence from our analysis associates this neutrino with one Fermi LAT photon. The photon is detected at 09:35:16.96 UT with coordinates R.A. 02:54:06.79, Dec. -18:01:00.12 (J2000) and energy 778.3 MeV. The best-fit localization and uncertainty for a point source yielding the ANTARES 200108A neutrino and the photon is as quoted above. The false alarm rate for ANTARES neutrino + Fermi LAT gamma-ray coincidences of this quality or better is 1 per 0.419 years.

Details of the ANTARES + Fermi LAT coincidence search procedures are provided in Ayala Solares et al. 2019 (ApJ 886, 98). False alarm rates are established from 73,000 years of simulated observation and take into account the point spread functions of the associated neutrino + photons, the known backgrounds at this sky position, the energy of the neutrino, and the energies of the Fermi LAT photons (within broad ranges).

This nearest LAT source to this transient is 3FGL J0251.1-1829, which is 0.77 deg away, within the 90%-containment region for this coincidence.

We provide the associated AMON alert for this coincidence in GCN Alert format, below."

////////////////////////////////////

TITLE: GCN/AMON NOTICE

NOTICE_DATE: Wed 08 Jan 2020 09:30:14.48 UT

NOTICE_TYPE: Fermi-LAT ANTARES coincidence

AMON_NUM: 1440223121

SRC_RA: 43.4818d {+02h 53m 55.6s} (J2000),

43.7129 d{+02h 54m 51.1s} (current),

42.9035d {02:51:36.8} (1950)

SRC_DEC: -18.0673d {-18d 04' 02"} (J2000),

17.9866d {-17d 59' 12"} (current),

-18.2702d {-18d 16' 13"} (1950)

SRC_ERROR90: 0.832 [deg, stat, 90% containment]
DISCOVERY_DATE: 18856 TJD; 8 DOY; 20/01/082 (yy/mm/dd)
DISCOVERY_TIME: 34214 SOD {01:42:52.783} UT
REVISION: 0
DELTA_T: 604.96 [sec]
SIGMA_T: 302.48 [sec]
FAR: 2.387 [yr⁻¹]
SUN_POSTN: 289.0042d {+19h 16m 01s} -22.2867d {-22d 17' 12"}
SUN_DIST: 104.29 [deg] Sun_angle= 6.95 [hr] (East of Sun)
MOON_POSTN: 79.4917d {+05h 17m 58s} +21.4503 {+21d 27' 01"}
MOON_DIST: 53.03 [deg]
GAL_COORDS: 201.6015, -60.4037 [deg] galactic lon,lat of the event
COMMENTS: ALERT FROM FERMI-LAT ANTARES COINCIDENCE STREAM

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Colin F. Turley
860-685-1260 Cell
cft114@psu.edu email

Department of Physics, Penn State University
104 Davey Lab, Box 52
University Park, PA 16802-6300

Subject: LIGO/Virgo S200108v: Retraction of GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/8/2020, 2:19 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26665
SUBJECT: LIGO/Virgo S200108v: Retraction of GW compact binary merger candidate
DATE: 20/01/08 10:18:54 GMT
FROM: Roberto De Pietri at LIGO/Virgo <roberto.depietri@unipr.it>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

The trigger S200108v is no longer considered to be a candidate of interest. There is an instrumental artifact present in L1.

BAT lightcurve for trigger at 200108_1000

Subject: BAT lightcurve for trigger at 200108_1000

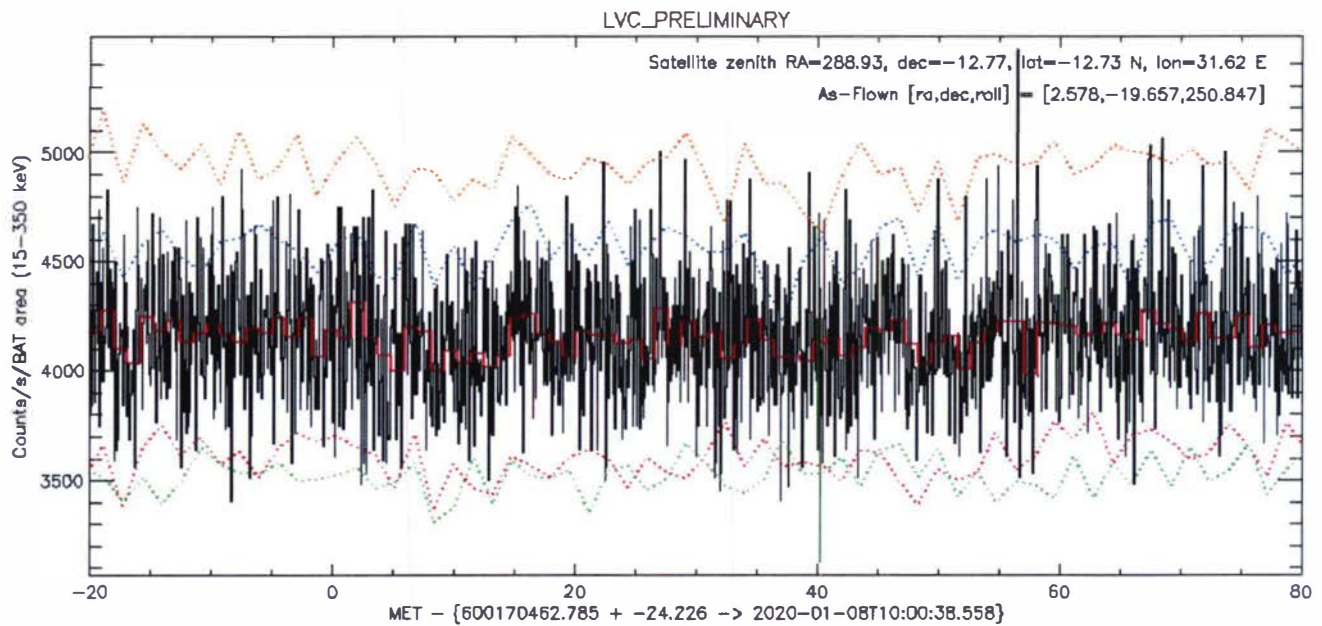
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/8/2020, 7:41 AM

To: 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, auc444@psu.edu

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

— /tmp/swift/200108_1000.png —



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2020-01-08T10:00:38.558
Swift Zenith(RA,dec):      288.93, -12.77
Swift Location(lon,lat,alt): 31.62 E, -12.73 N, 547 km
Time(MET + UTC -> UT):    600170462.785 + -24.226 -> 2020-01-08T10:00:38.558
YYMMDD_SOD:               200108_36038.558      DOY=008
Obs Sequence Number:      00012179013
Obs Target Name:          ZTF19acfwynw
Obs Date and Times:       2020-01-08 09:59:37 - 10:28:36
Obs Pointing(ra,dec,roll): 2.578, -19.657, 250.85
```

--
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/200108_1000.png	21.4 KB
/tmp/swift/200108_1000_bat64ms_ipn	87.1 KB

KONUS

09/01/2020

65.147

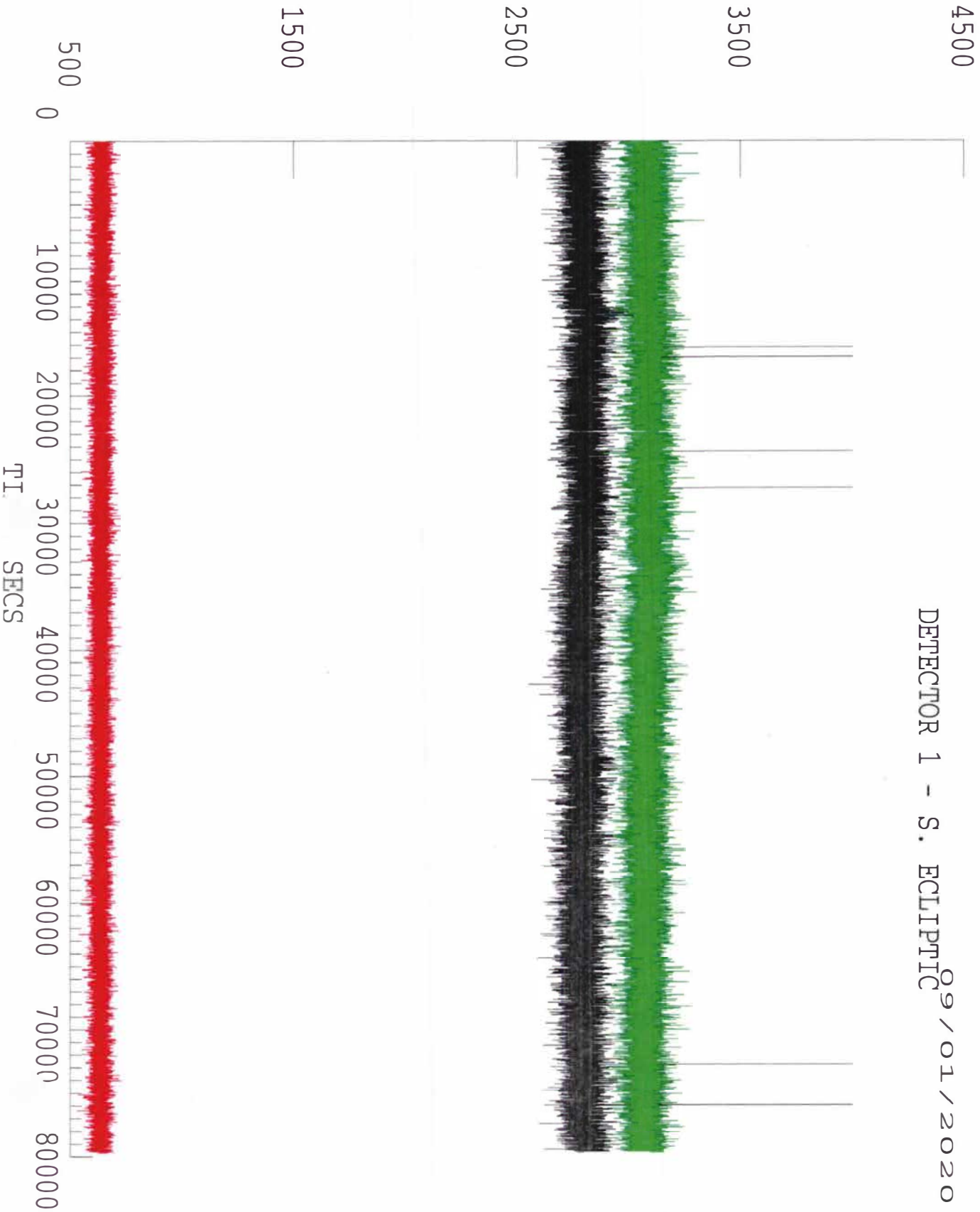
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

09/01/2020

65.147

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

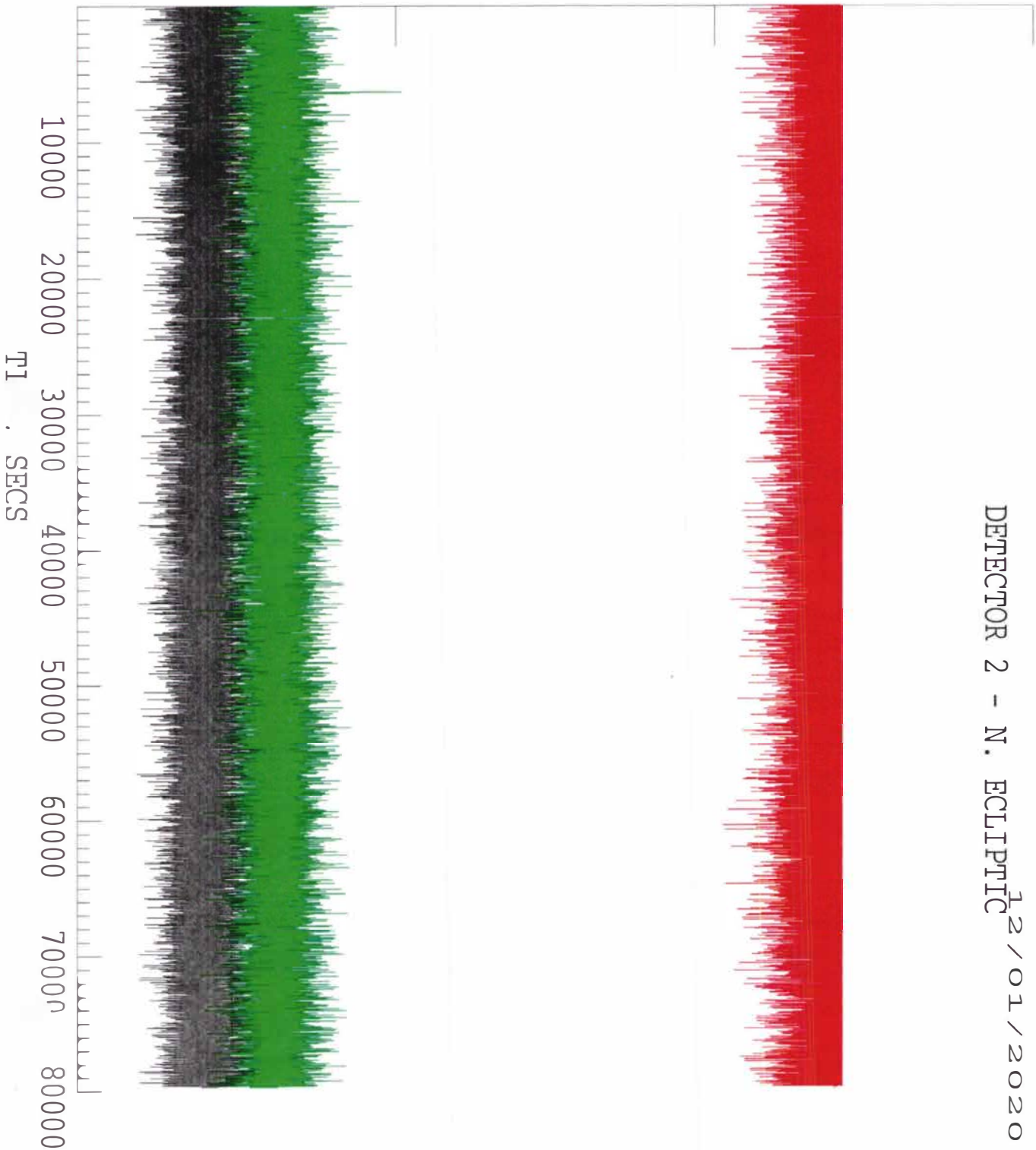
2300

1800

1300

800

0



Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 1/8/2020, 5:50 PM
 To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Thu 09 Jan 20 01:50:14 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 948361, Seg_Num: 0
 GRB_RA: 307.171d {+20h 28m 41s} (J2000),
 307.310d {+20h 29m 14s} (current),
 306.825d {+20h 27m 18s} (1950)
 GRB_DEC: +53.003d {+53d 00' 12"} (J2000),
 +53.071d {+53d 04' 14"} (current),
 +52.836d {+52d 50' 08"} (1950)
 GRB_DATE: 18857 TJD; 9 DOY; 20/01/09
 GRB_TIME: 6376.21 SOD {01:46:16.21} UT
 TRIGGER_INDEX: 477
 GRB_PHI: -179.97 [deg]
 GRB_THETA: 15.25 [deg]
 DELTA_TIME: -43.00 [sec]
 TRIGGER_DUR: 8.192 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 19.57 [sigma]
 IMAGE_SIGNIF: 12.72 [sigma]
 LC_URL: sw00948361000msb.lc
 SUN_POSTN: 289.76d {+19h 19m 03s} -22.19d {-22d 11' 34"}
 SUN_DIST: 76.79 [deg] Sun_angle= -1.2 [hr] (East of Sun)
 MOON_POSTN: 85.78d {+05h 43m 08s} +22.21d {+22d 12' 36"}
 MOON_DIST: 96.56 [deg]
 MOON_ILLUM: 96 [%]
 GAL_COORDS: 89.28, 8.26 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 341.42, 67.44 [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 = 118.28,-2.14 [deg].

115 s

 $2.1 \times 10^{-6} \text{ erg cm}^{-2}$ $0.7 \text{ phot/cm}^2 \text{ s}$

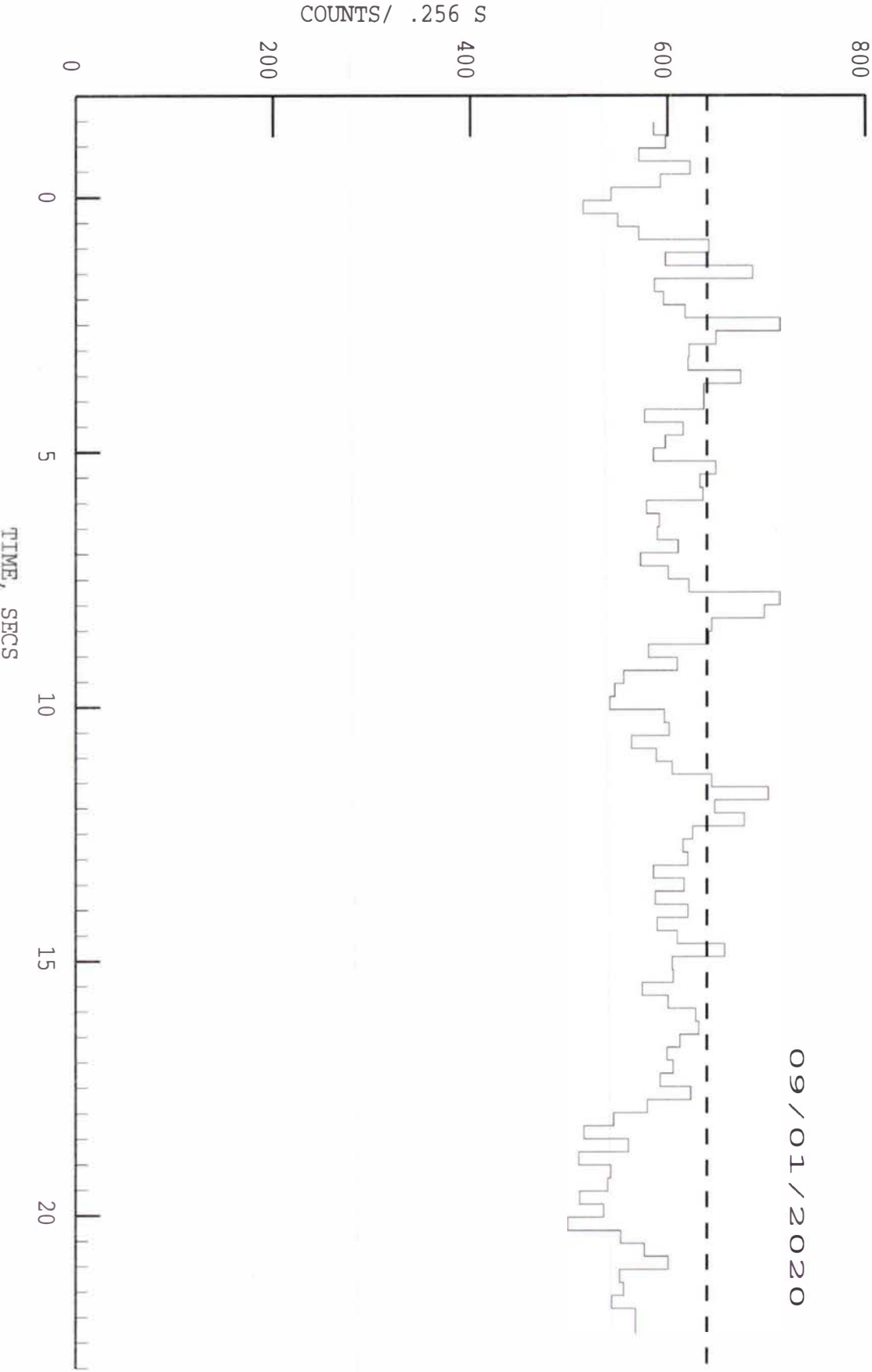
BAT

09/01/20

6376.218

01:46:16.218

25- 100 keV



BAT lightcurve for trigger at 200109_0145

Subject: BAT lightcurve for trigger at 200109_0145

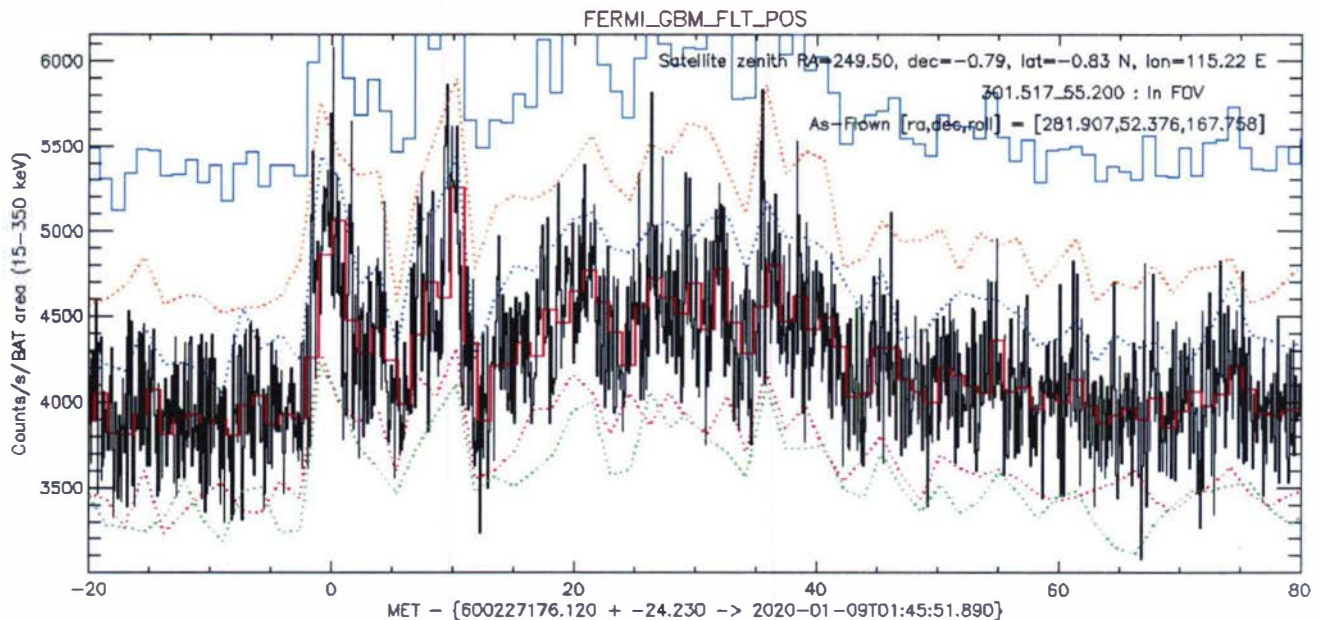
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/9/2020, 7:37 AM

To: aaron.tohu@gmail.com, 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/200109_0145.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2020-01-09T01:45:51.890 -s 301.517_55.200
Swift Zenith(RA,dec):      249.50, -0.79
Swift Location(lon,lat,alt): 115.22 E, -0.83 N, 543 km
Time(MET + UTCF -> UT):   600227176.120 + -24.230 -> 2020-01-09T01:45:51.890
YYMMDD_SOD:               200109_06351.890      DOY=009
Obs Sequence Number:      03110112005
Obs Target Name:          4FGL J1847.6+5219
Obs Date and Times:       2020-01-09 01:35:37 - 01:47:03
Obs Pointing(ra,dec,roll): 281.907, 52.376, 167.76
301.517_55.200_imageloc (boresight_dist, angle):(12, 171)
301.517_55.200_exposure (cm2 cos adjusted): 4270
301.517_55.200_altitude: 43 (up)
```

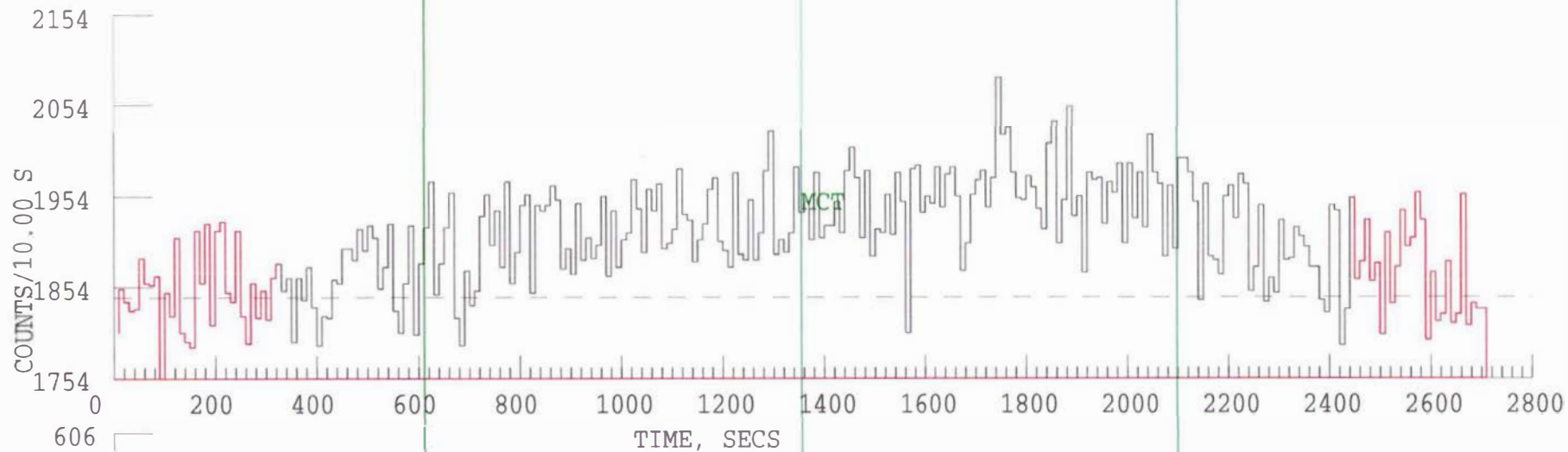
--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

Attachments:

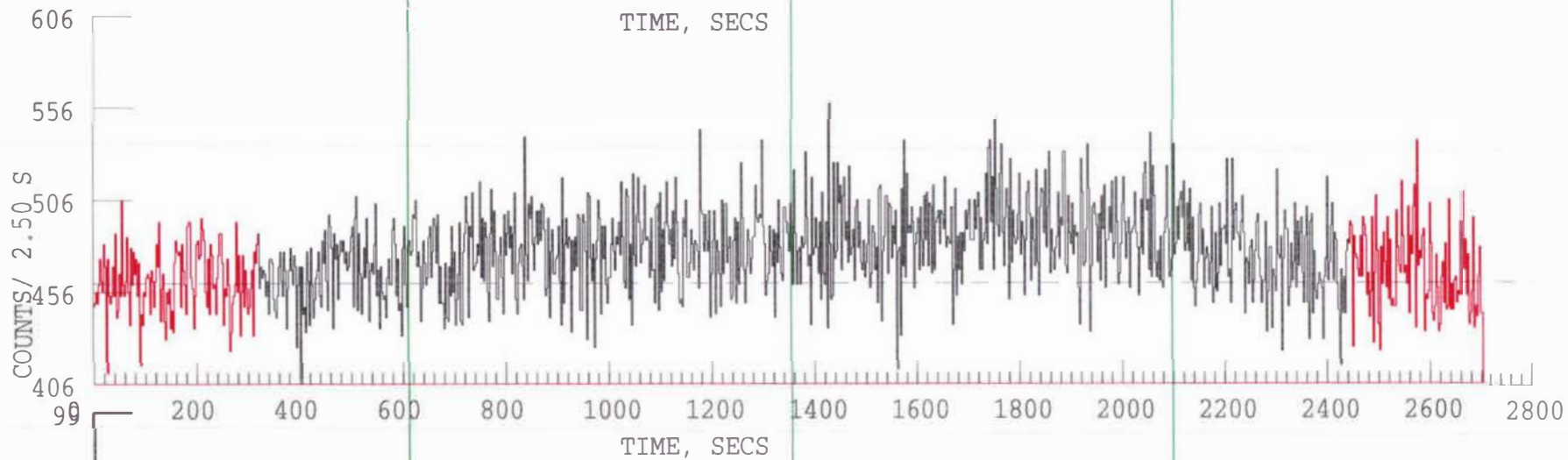
~/tmp/swift/200109_0145.png	26.8 KB
~/tmp/swift/200109_0145_bat64ms_ipn	87.0 KB

24/01/2020

01:22:53.166

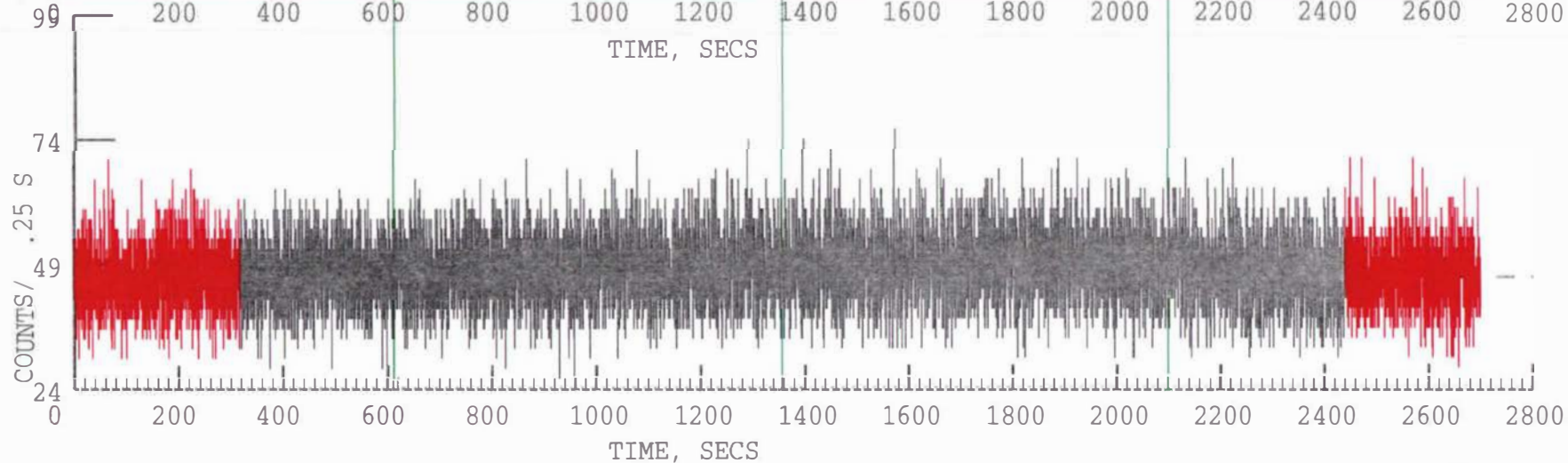


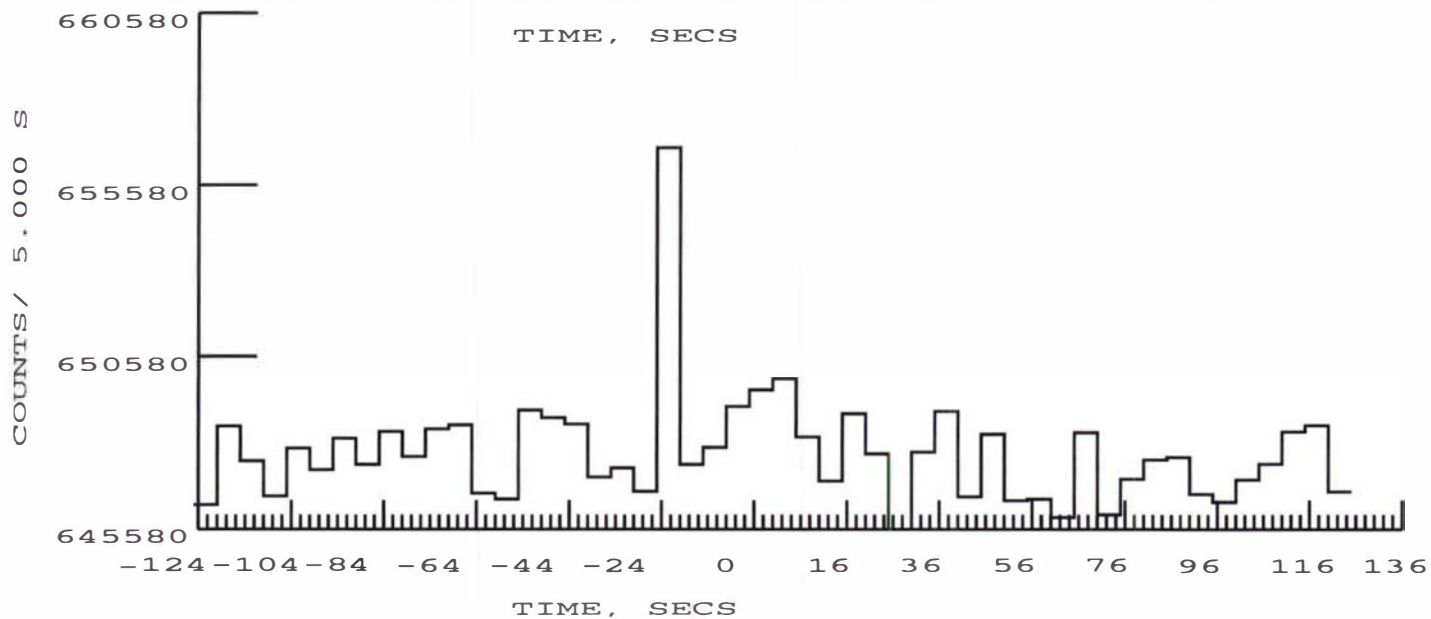
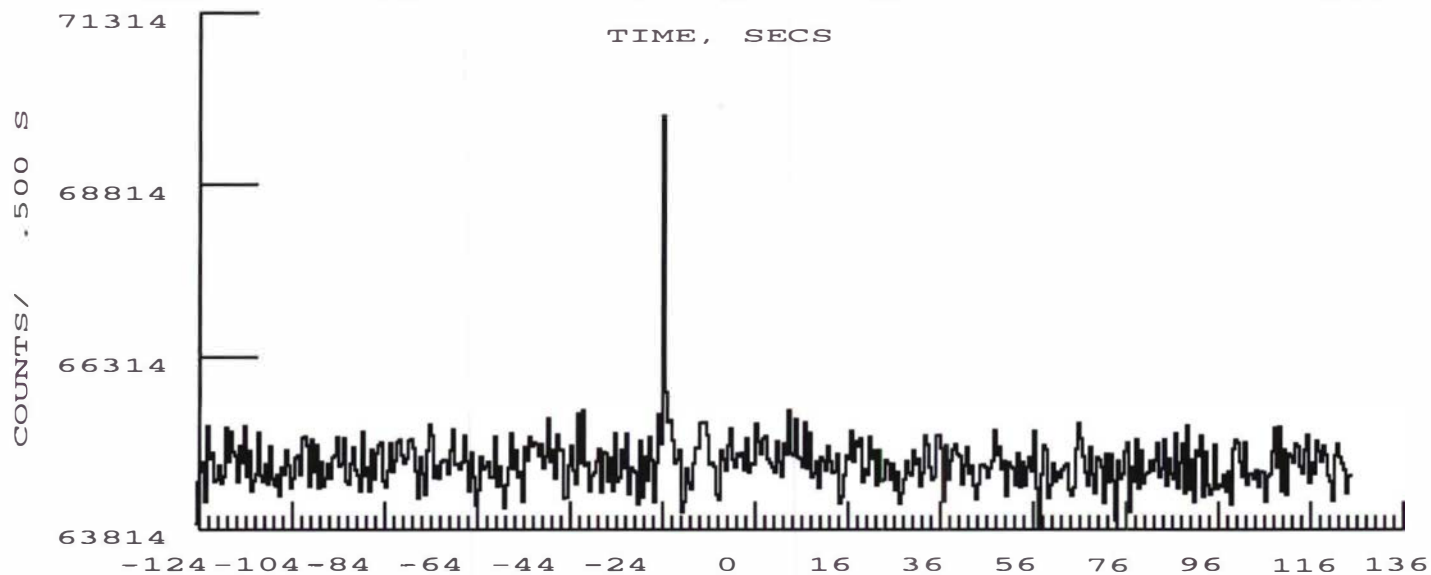
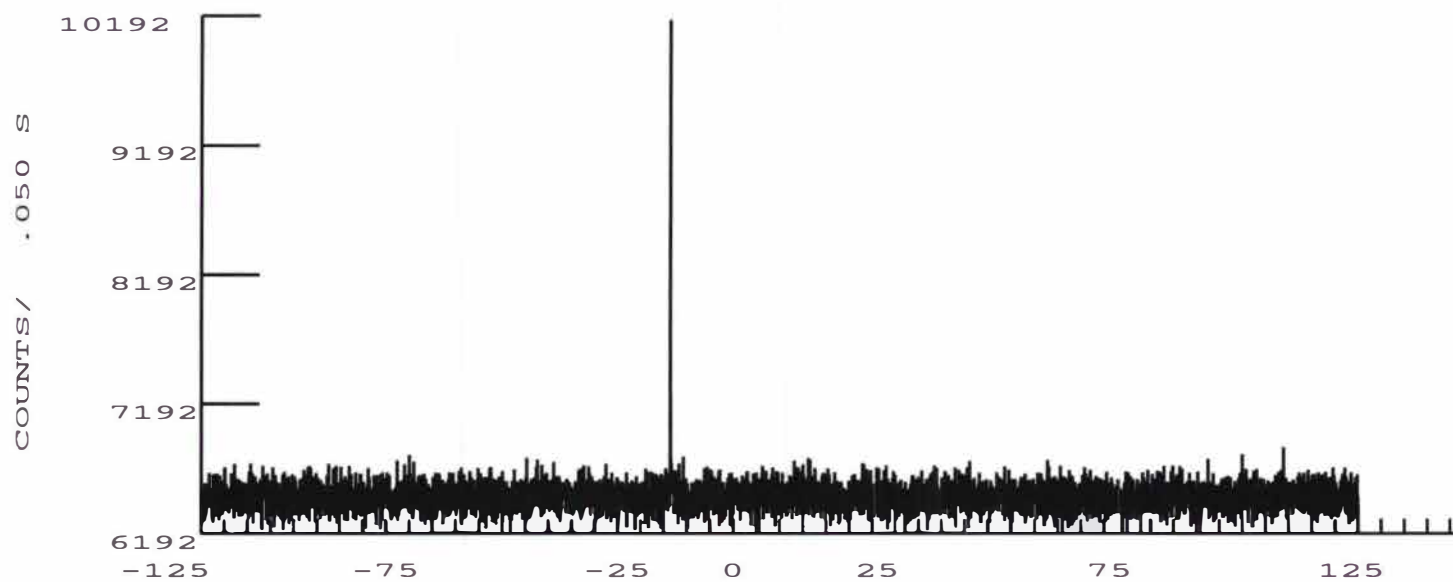
4973.166

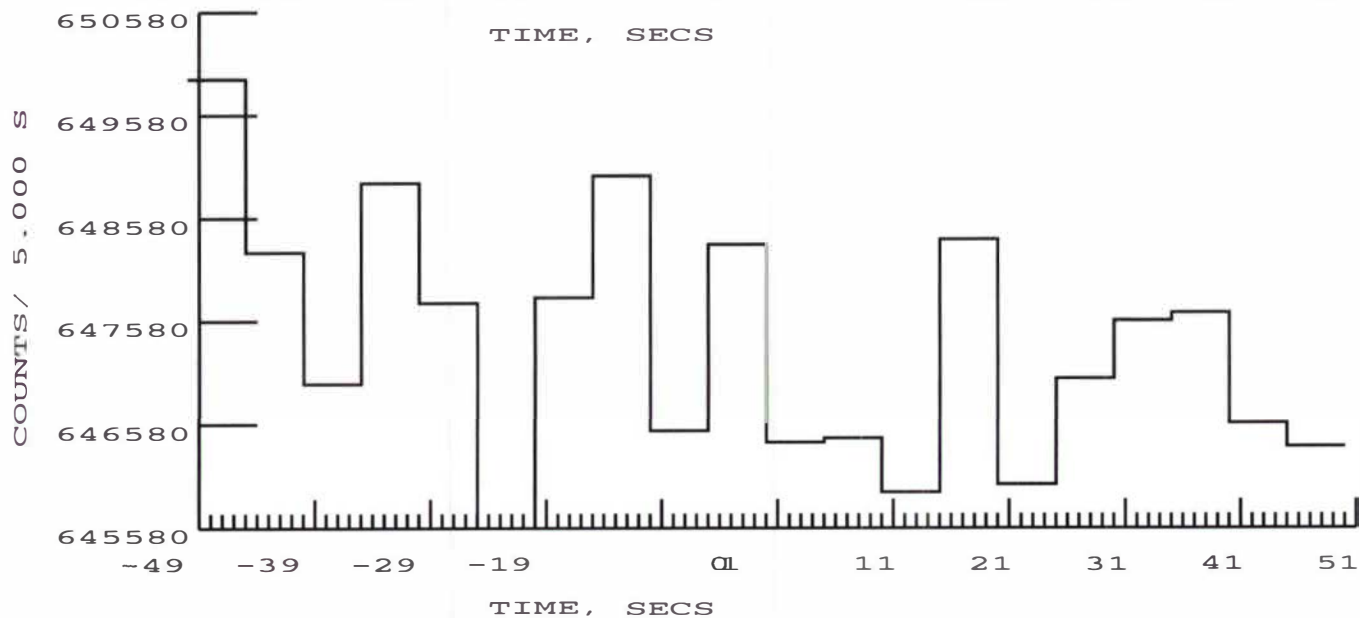
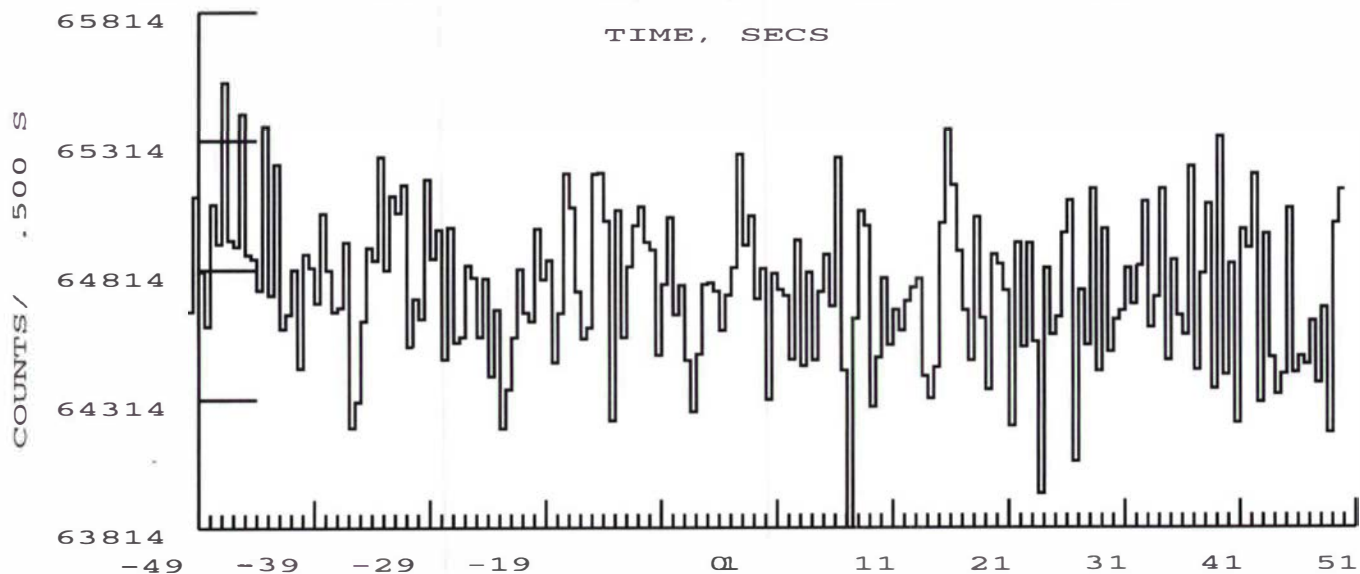
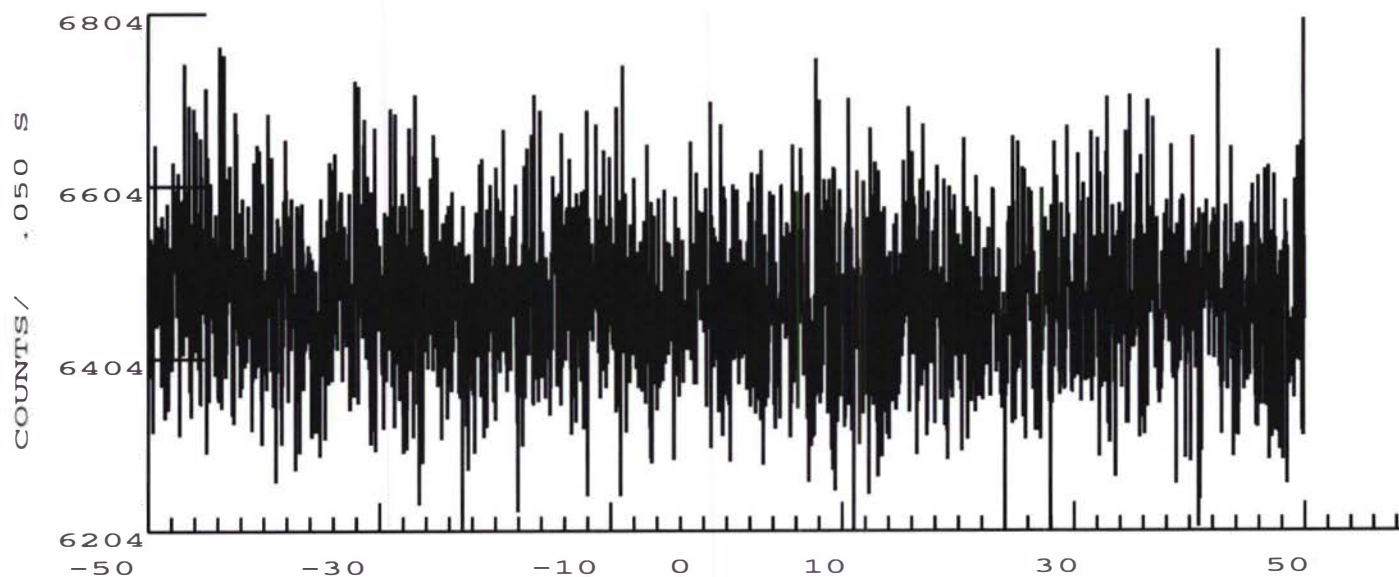


09/01/20

50-3000 keV







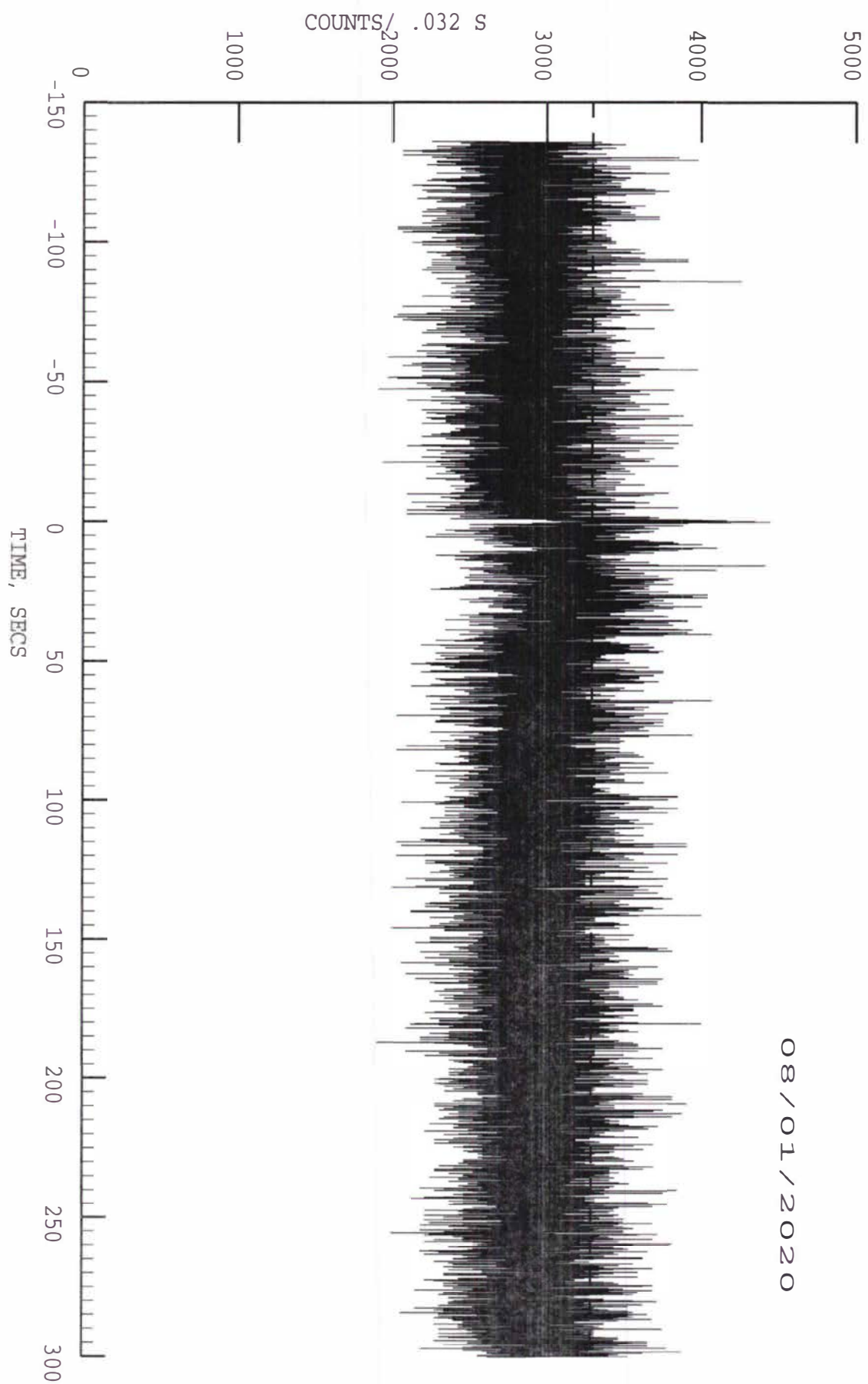
FERMI

09/01/20

6351.894

01:45:51.894

26- 293 keV



Subject: GRB 200109A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/11/2020, 7:05 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26710
SUBJECT: GRB 200109A: Insight-HXMT/HE detection
DATE: 20/01/12 03:04:57 GMT
FROM: Shuo Xiao at IHEP <xiaoshuo@ihep.ac.cn>

S. Xiao, Y. F. Du, Y. G. Zheng, C. Cai, Q. Luo, Q. B. Yi,
Y. Huang, C. K. Li, G. Li, X. B. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, A. M. Zhang,
Y. F. Zhang, X. F. Lu, 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 2020-01-09T01:45:51.89 (T0), Insight-HXMT/HE detected
GRB 200109A (trigger ID: HEB200109073) in a routine search of the data,
which also triggered Fermi/GBM (GCN #26689), and Swift (GCN #26678).

The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 36.405 s measured from T0-0.650 s.
The 1-ms peak rate, measured from T0+ 9.281 s, is 595 cnts/sec.
The total counts from this burst is 6014 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB200109073_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: IceCube-200109A: IceCube observation of a high-energy neutrino candidate event
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/9/2020, 5:15 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26696
SUBJECT: IceCube-200109A: IceCube observation of a high-energy neutrino candidate event
DATE: 20/01/10 01:14:56 GMT
FROM: Robert Stein at DESY <robert.stein@desy.de>

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

On 20/01/09 at 23:41:39.94 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 0.64 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/133609_37927131.amon), more sophisticated reconstruction algorithms have been applied offline, with the direction refined to:

Date: 20/01/09
Time: 23:41:39.94 UT
RA: 164.49 (+4.94 -4.19 deg 90% PSF containment) J2000
Dec: 11.87 (+1.16 -1.36 deg 90% PSF containment) J2000

Due to the unique topology of this event, with a partially-contained track in the detector, it was challenging for online algorithms to reconstruct. The initially-reported direction was offset from this updated best-fit position by approximately 3 degrees.

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

There is one Fermi 4FGL source within the 90% localization region, 4FGL J1103.0+1157 at RA: 165.77 deg, Dec: 11.97 deg (1.26 deg away from the best-fit event position). This source, which is associated with the quasar TXS 1100+122 at $z=0.91$, is also found in the 3FHL catalog.

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

Subject: GCN/ICECUBE_ASTROTRACK_GOLD
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
Date: 1/9/2020, 5:28 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN/AMON NOTICE
NOTICE_DATE: Fri 10 Jan 20 01:28:19 UT
NOTICE_TYPE: ICECUBE Astrotrack Gold
STREAM: 24
RUN_NUM: 133609
EVENT_NUM: 37927131
SRC_RA: 164.4900d {+10h 57m 58s} (J2000),
164.7527d {+10h 59m 01s} (current),
163.8333d {+10h 55m 20s} (1950)
SRC_DEC: +11.8699d {+11d 52' 12"} (J2000),
+11.7624d {+11d 45' 45"} (current),
+12.1377d {+12d 08' 16"} (1950)
SRC_ERROR: 174.60 [arcmin radius, stat-only, 90% containment]
SRC_ERROR50: 96.60 [arcmin radius, stat-only, 50% containment]
DISCOVERY_DATE: 18857 TJD; 9 DOY; 20/01/09 (yy/mm/dd)
DISCOVERY_TIME: 85299 SOD {23:41:39.93} UT
REVISION: 1
ENERGY: 3.7523e+02 [TeV]
SIGNALNESS: 7.6931e-01 [dn]
FAR: 0.6409 [yr⁻¹]
SUN_POSTN: 290.84d {+19h 23m 21s} -22.05d {-22d 03' 15"}
SUN_DIST: 127.66 [deg] Sun_angle= 8.4 [hr] (West of Sun)
MOON_POSTN: 100.41d {+06h 41m 38s} +23.14d {+23d 08' 22"}
MOON_DIST: 61.97 [deg]
GAL_COORDS: 237.19, 59.33 [deg] galactic lon,lat of the event
ECL_COORDS: 161.15, 4.85 [deg] ecliptic lon,lat of the event
COMMENTS: IceCube Gold event.
COMMENTS: The position error is statistical only, there is no systematic added.

v02

53.875

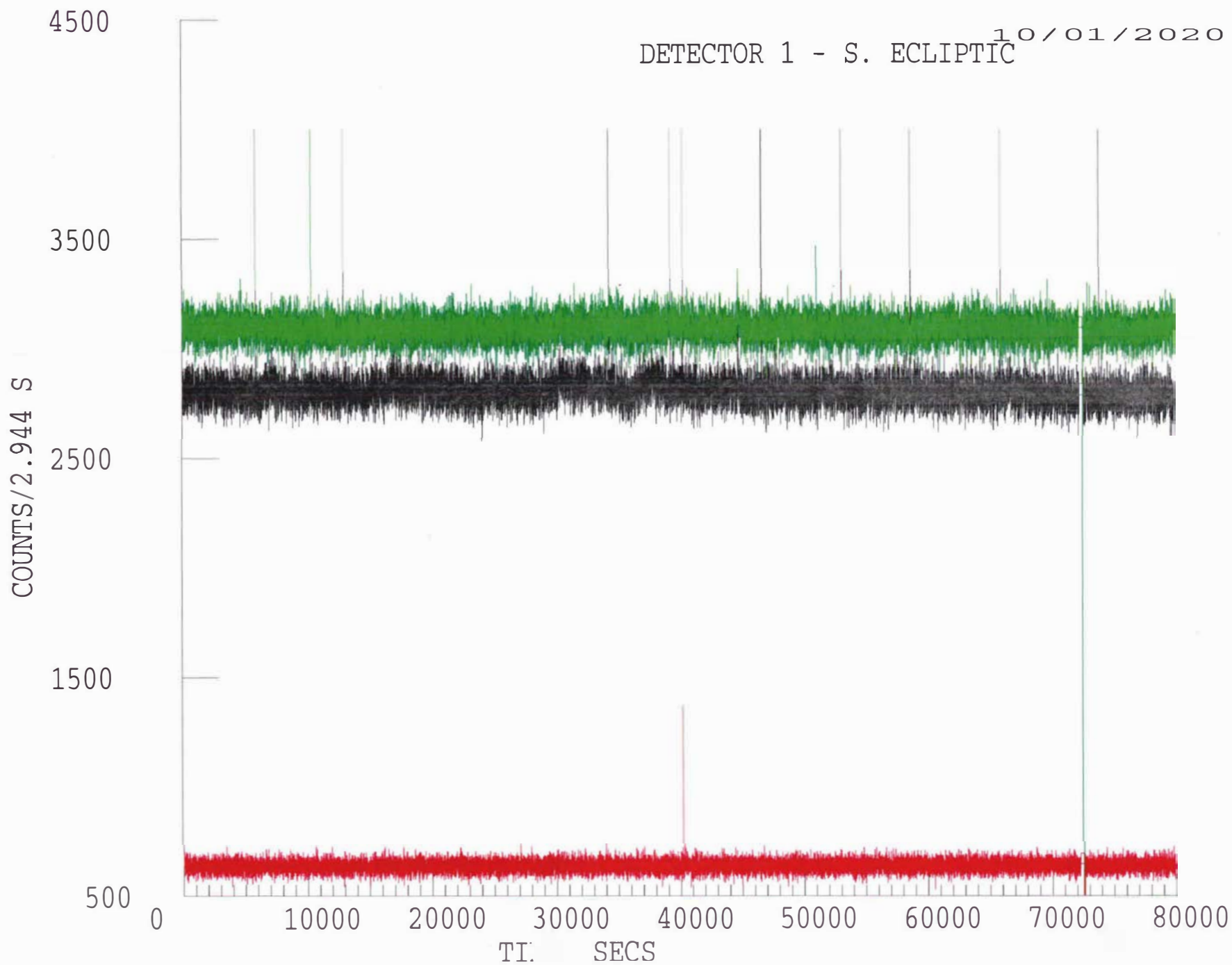
10/01/2020

KONUS

10- 50 keV

50- 200 keV

200- 750 keV



KONUS

10/01/2020

53.875

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

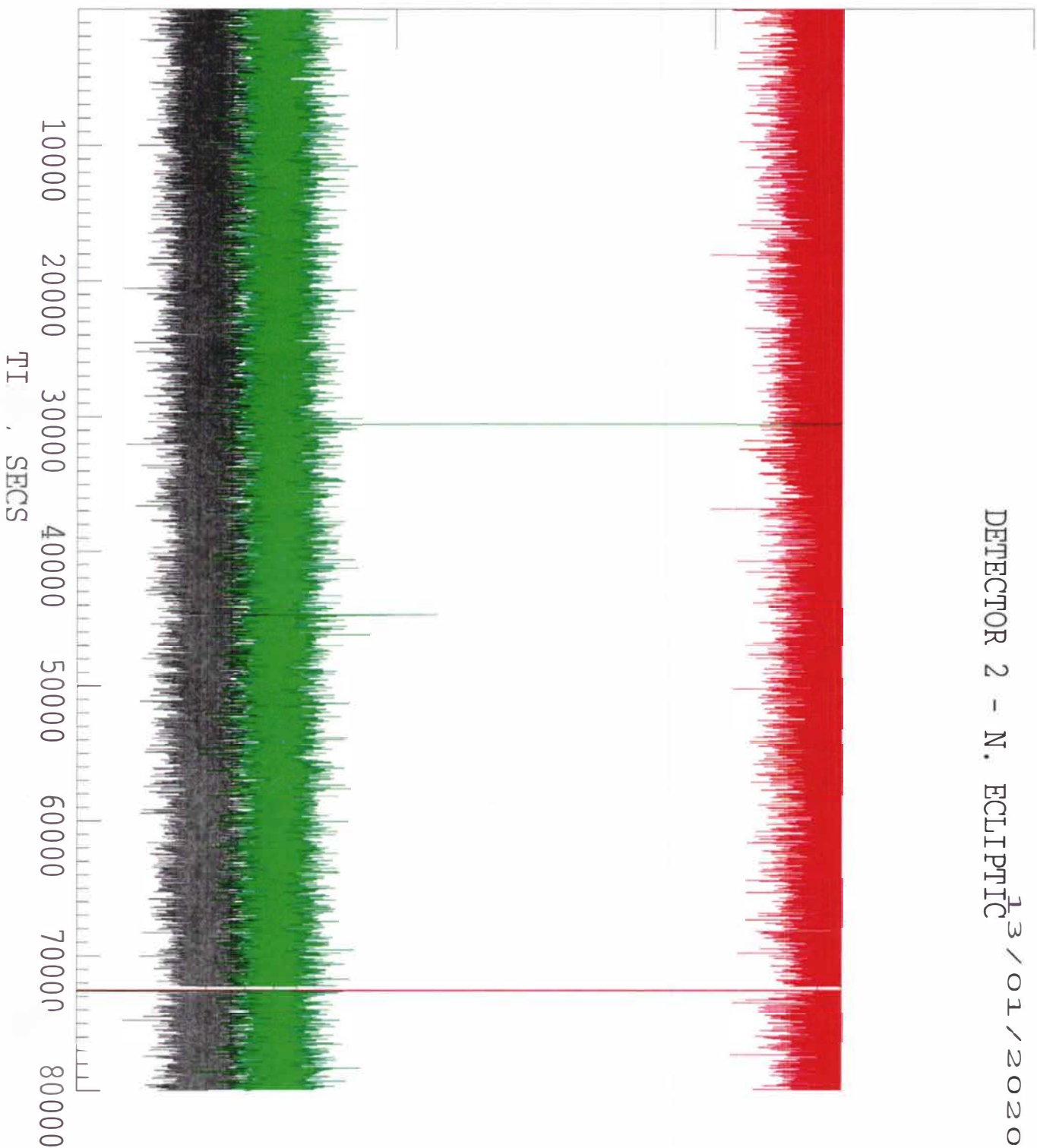
2300

1800

1300

800

0



FERMI

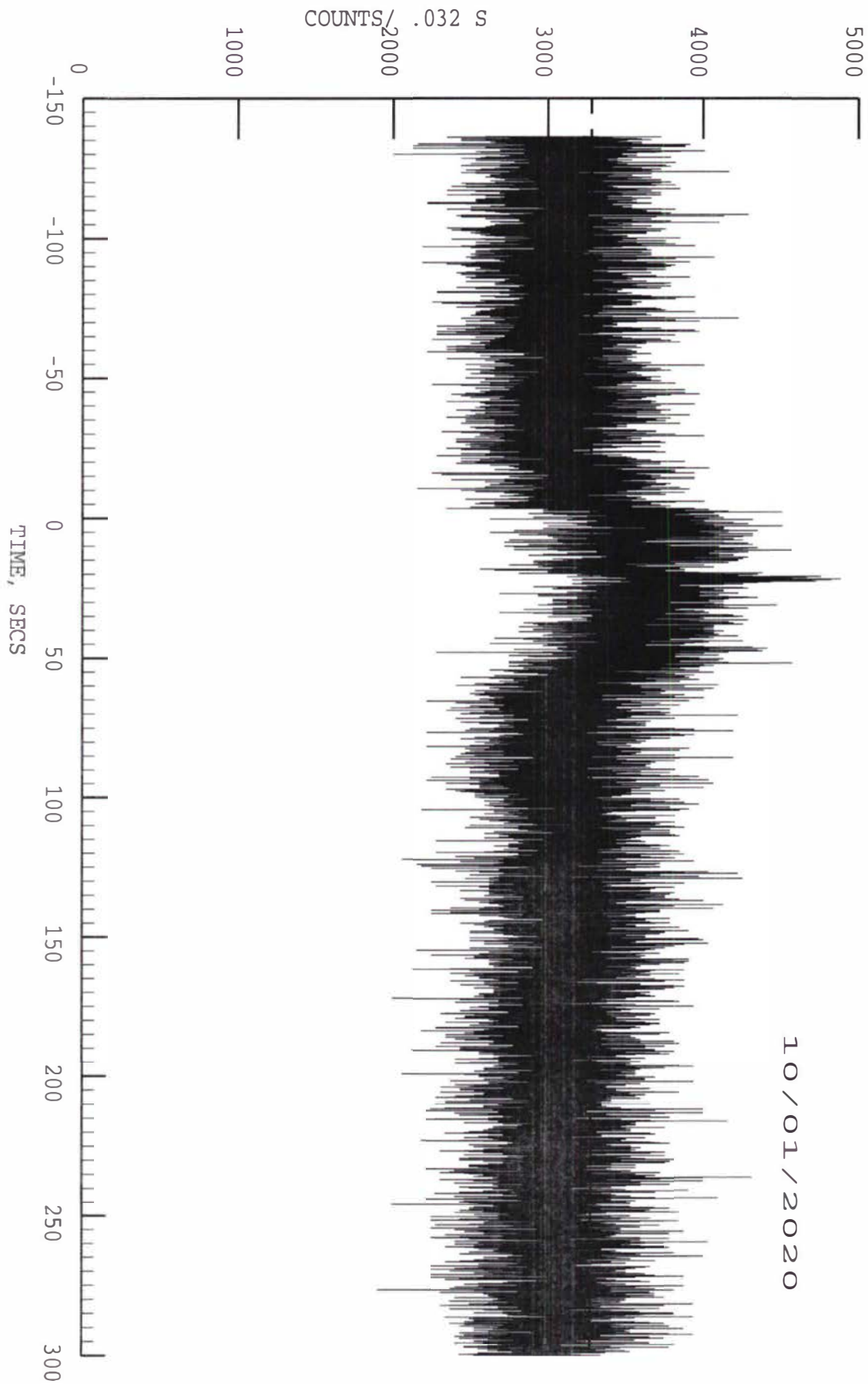
10/01/20

44768.356

12:26:08.356

26- 293 keV

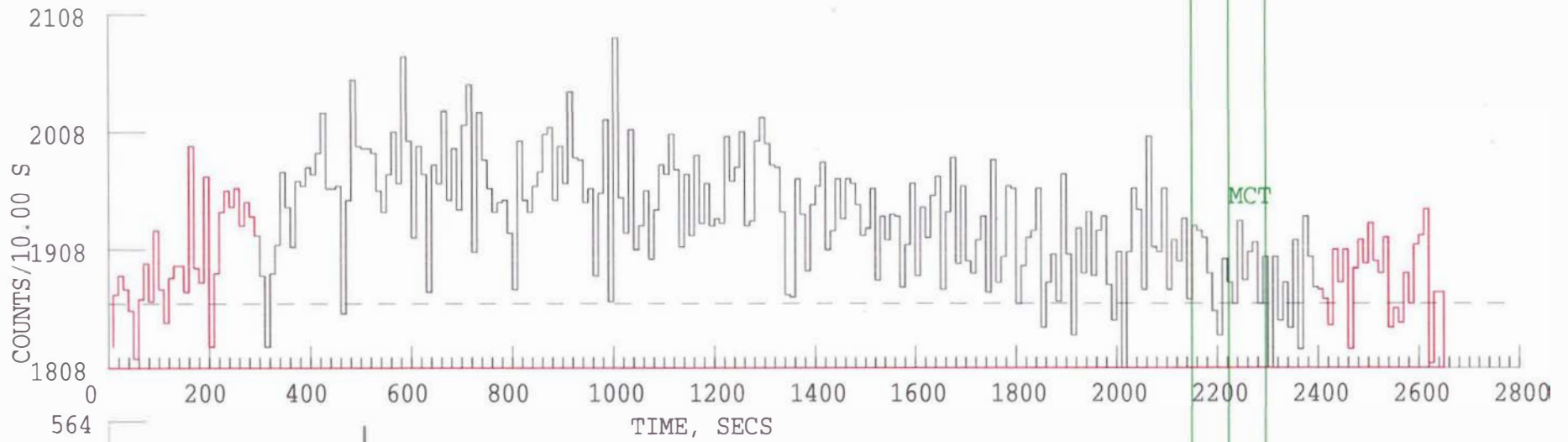
96.1 28.9 2.2



12:03:50.960

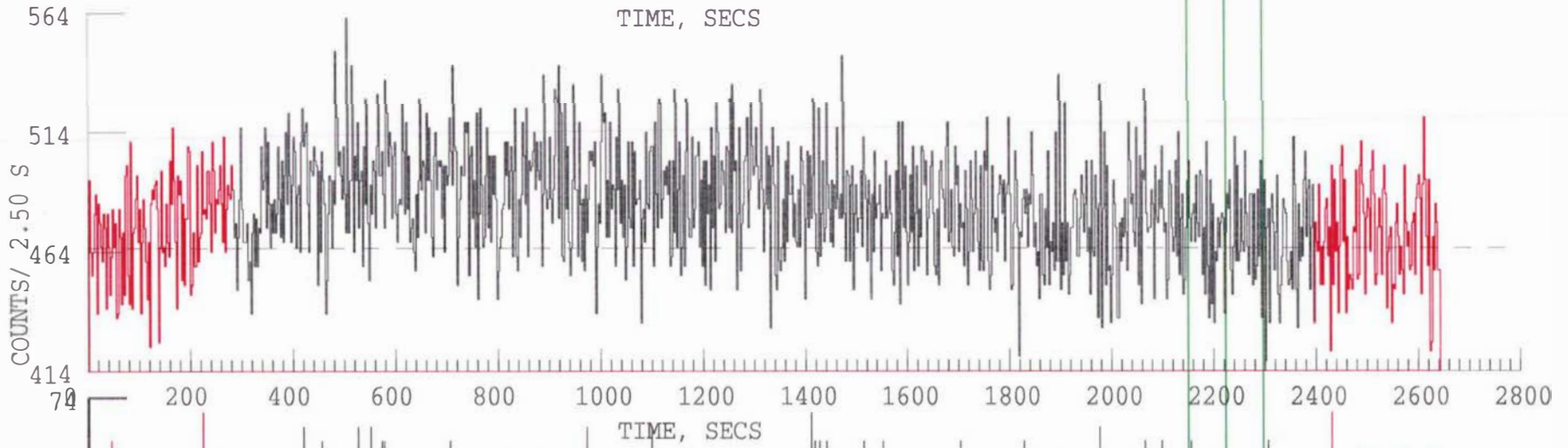
Pub. occulted

24/01/2020



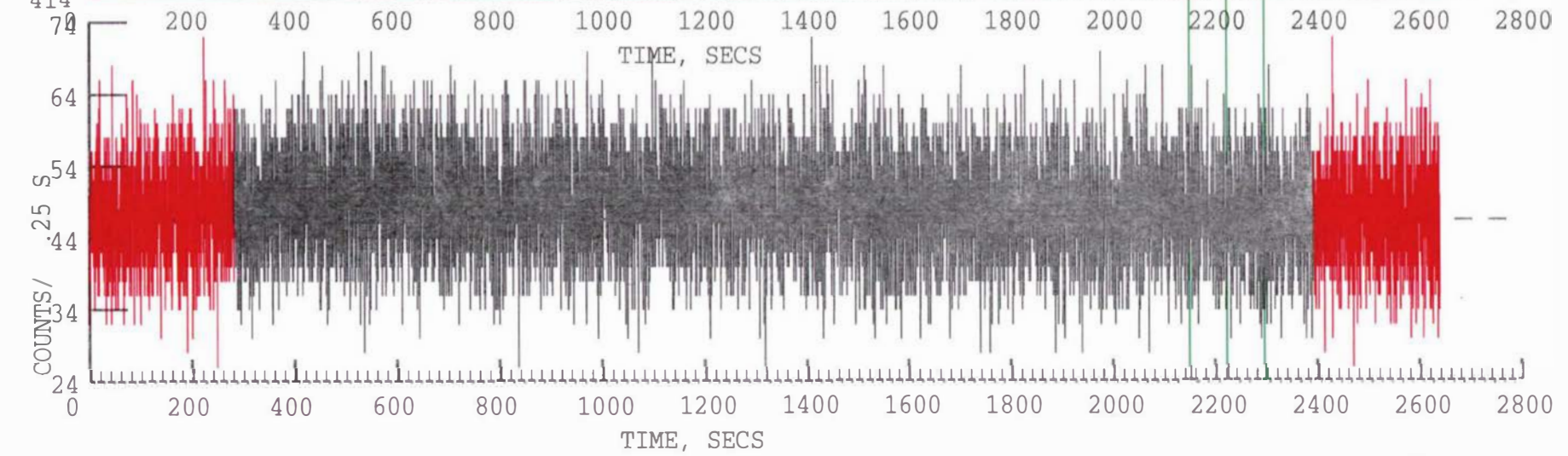
43430.960

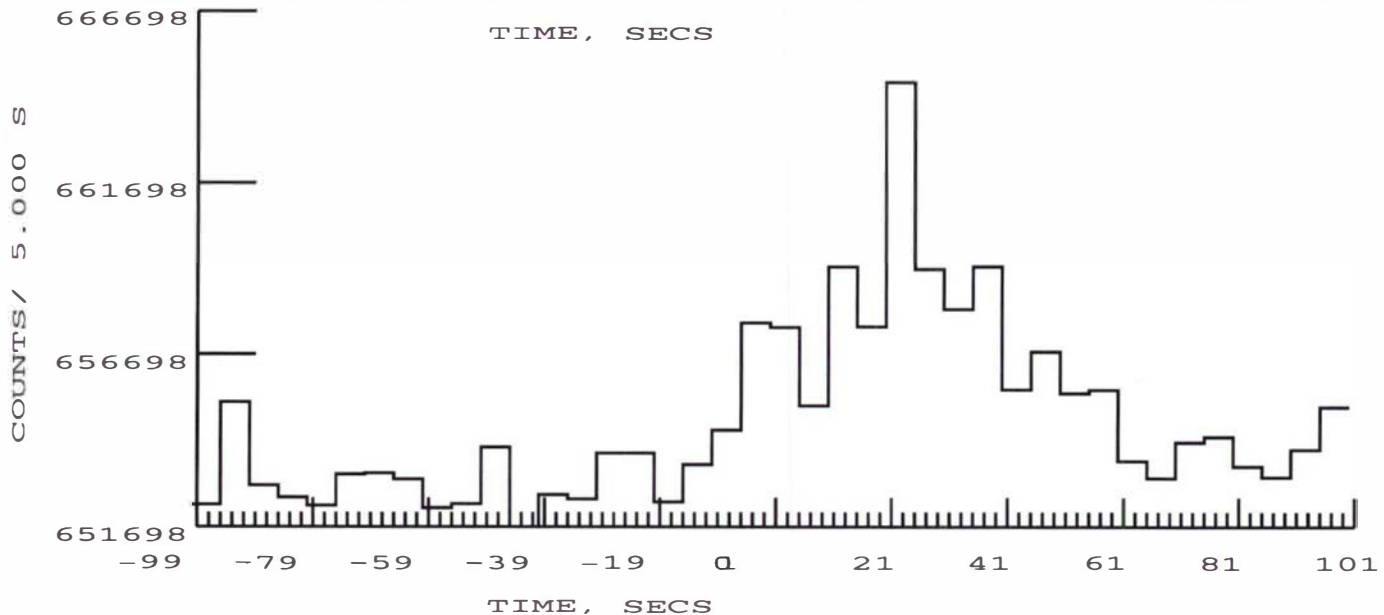
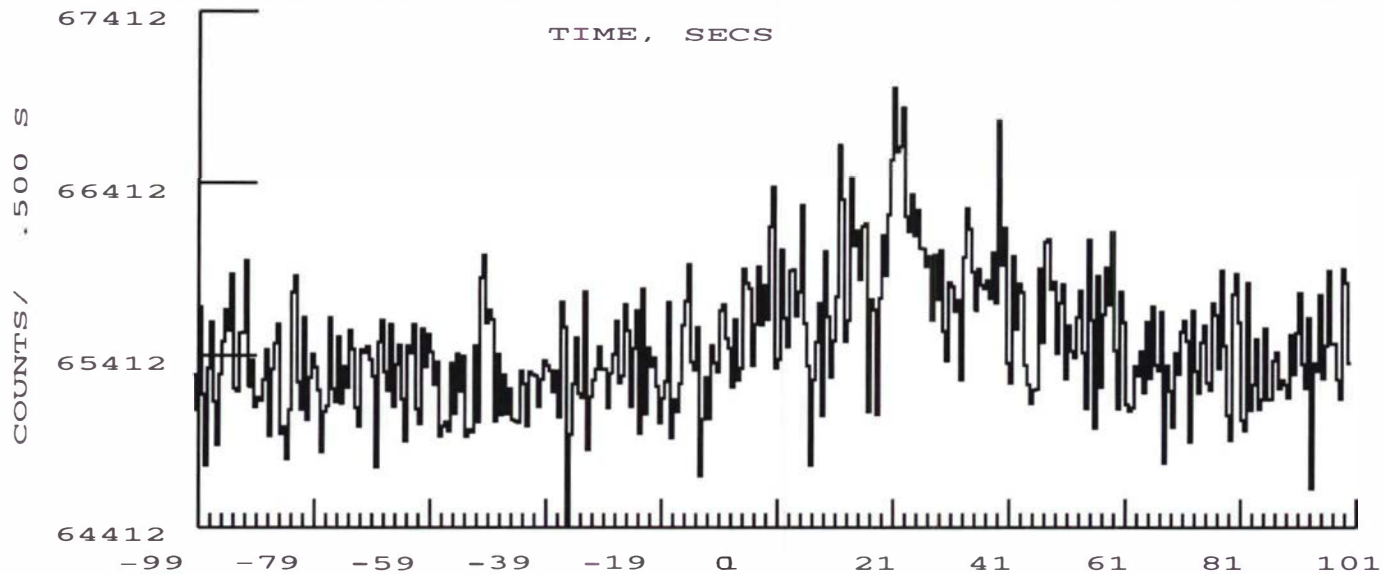
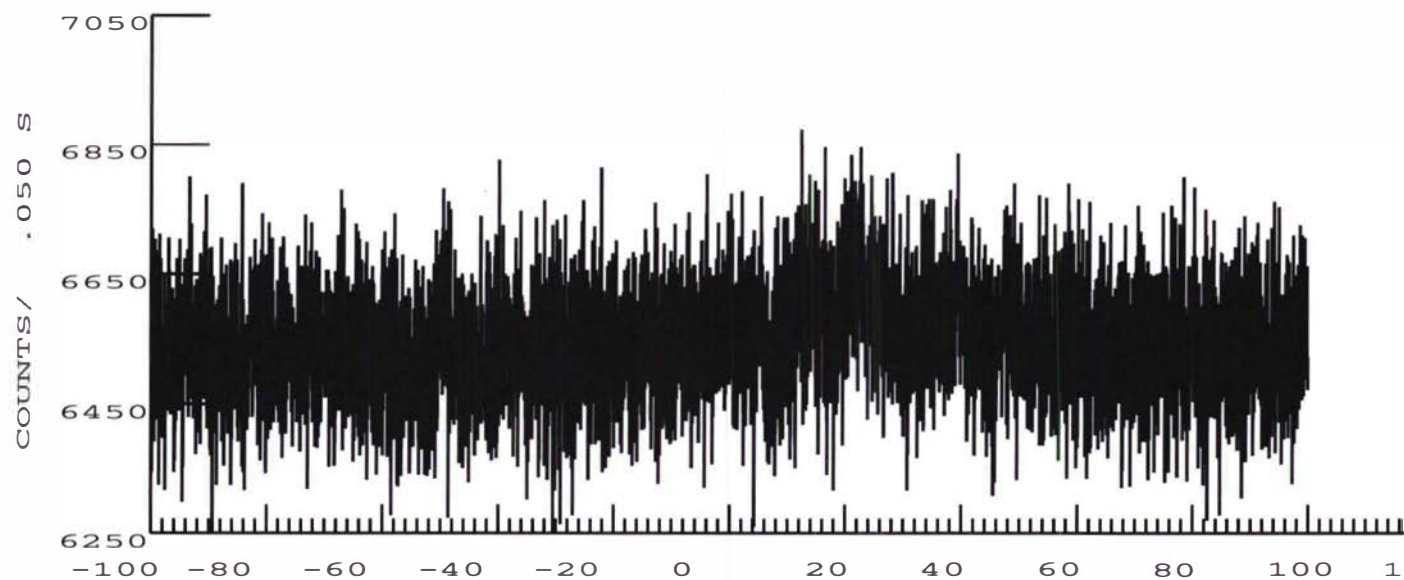
50-3000 keV



10/01/20

ODYSSEY





BAT lightcurve for trigger at 200110_1226

Subject: BAT lightcurve for trigger at 200110_1226

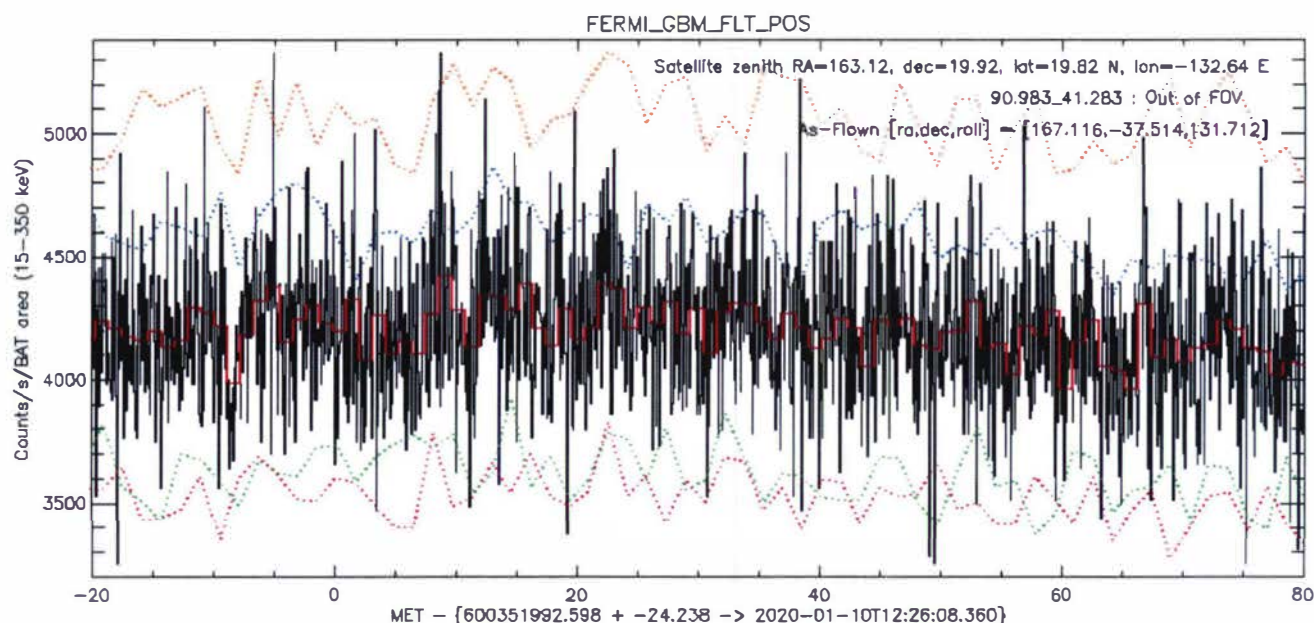
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/10/2020, 10:32 AM

To: aaron.tohu@gmail.com, 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/200110_1226.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2020-01-10T12:26:08.360 -s 90.983_41.283
Swift Zenith(RA,dec):      163.12, 19.92
Swift Location(lon,lat,alt): -132.64 E, 19.82 N, 552 km
Time(MET + UTCF -> UT):    600351992.598 + -24.238 -> 2020-01-10T12:26:08.360
YYMMDD_SOD:                200110_44768.360      DOY=010
Obs Sequence Number:       03106922003
Obs Target Name:           SGWGS-2131
Obs Date and Times:        2020-01-10 12:20:37 - 12:32:35
Obs Pointing(ra,dec,roll): 167.116, -37.514, 131.71
90.983_41.283_imageloc (boresight_dist, angle): (105, 89)
90.983_41.283_exposure (cm2 cos adjusted): 0
90.983_41.283_altitude: 49 (up)
```

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

—Attachments:—

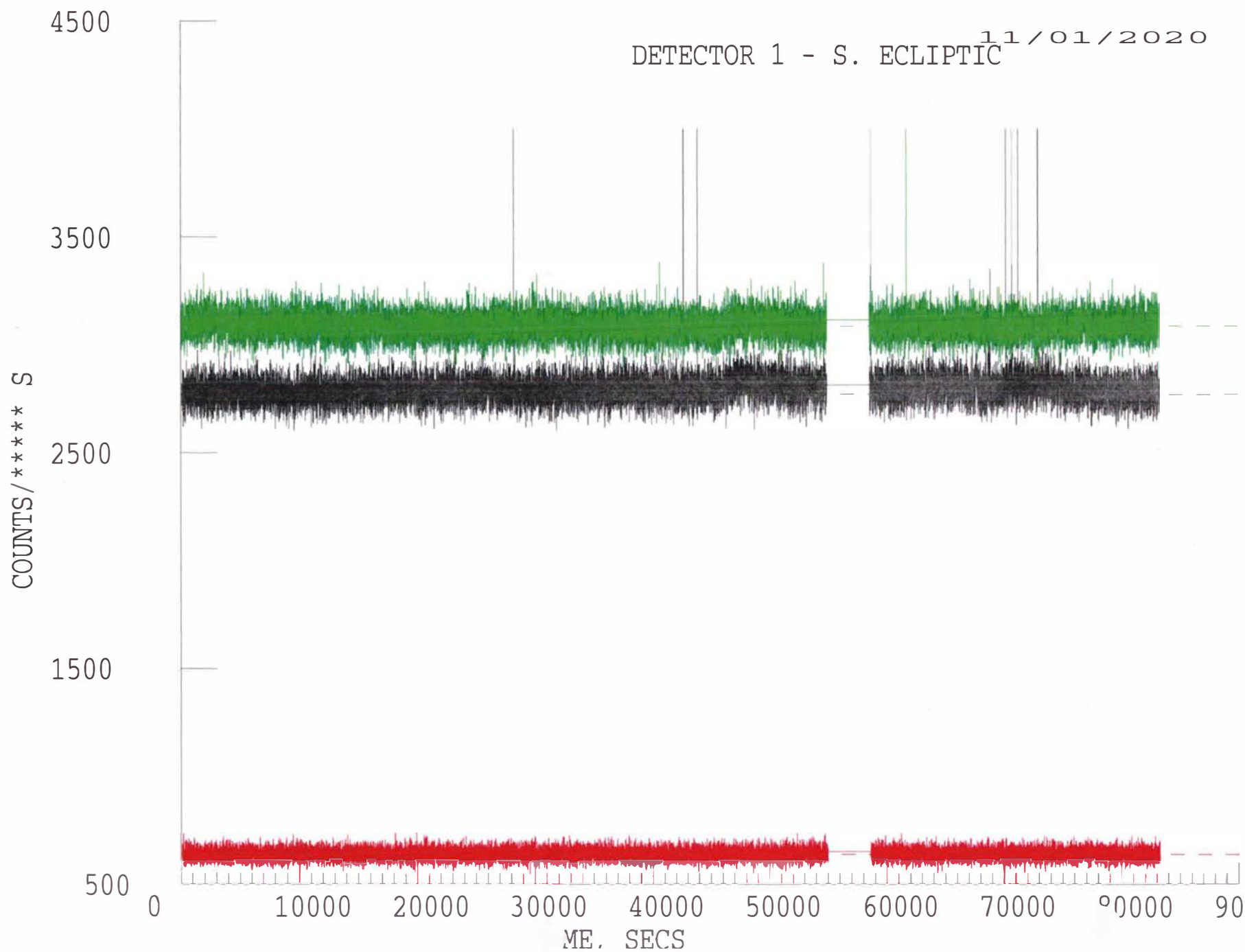
/tmp/swift/200110_1226.png	23.3 KB
/tmp/swift/200110_1226_bat64ms_ipn	87.1 KB

KONUS 11/01/2020 -71.036 v01

10- 50 keV

50- 200 keV

200- 750 keV



KONUS

11/01/2020

-71.036

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/***** S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

60000

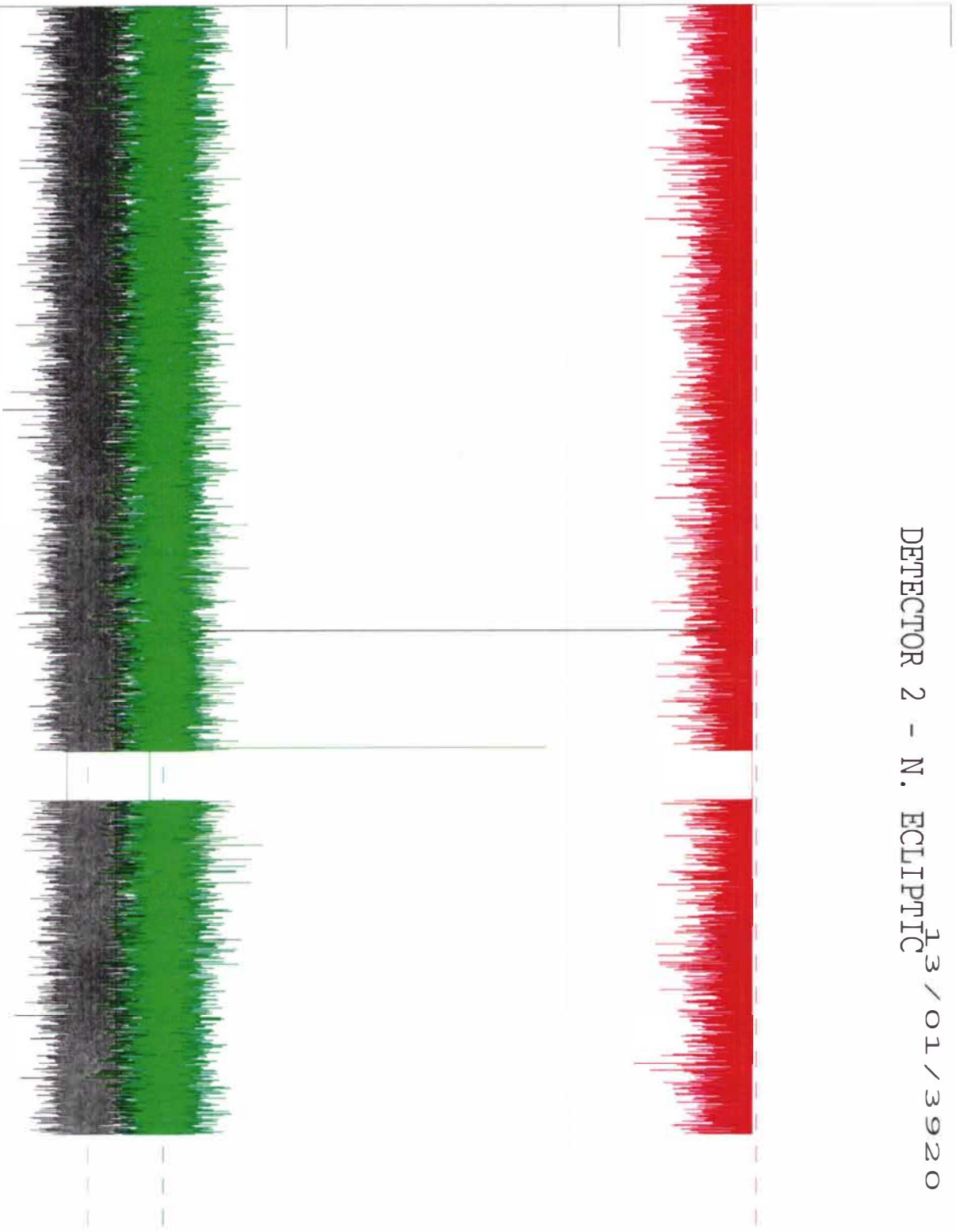
70000

80000

90

ME. SECS

DETECTOR 2 - N. ECLIP¹₃ / 01 / 3920



FERMI

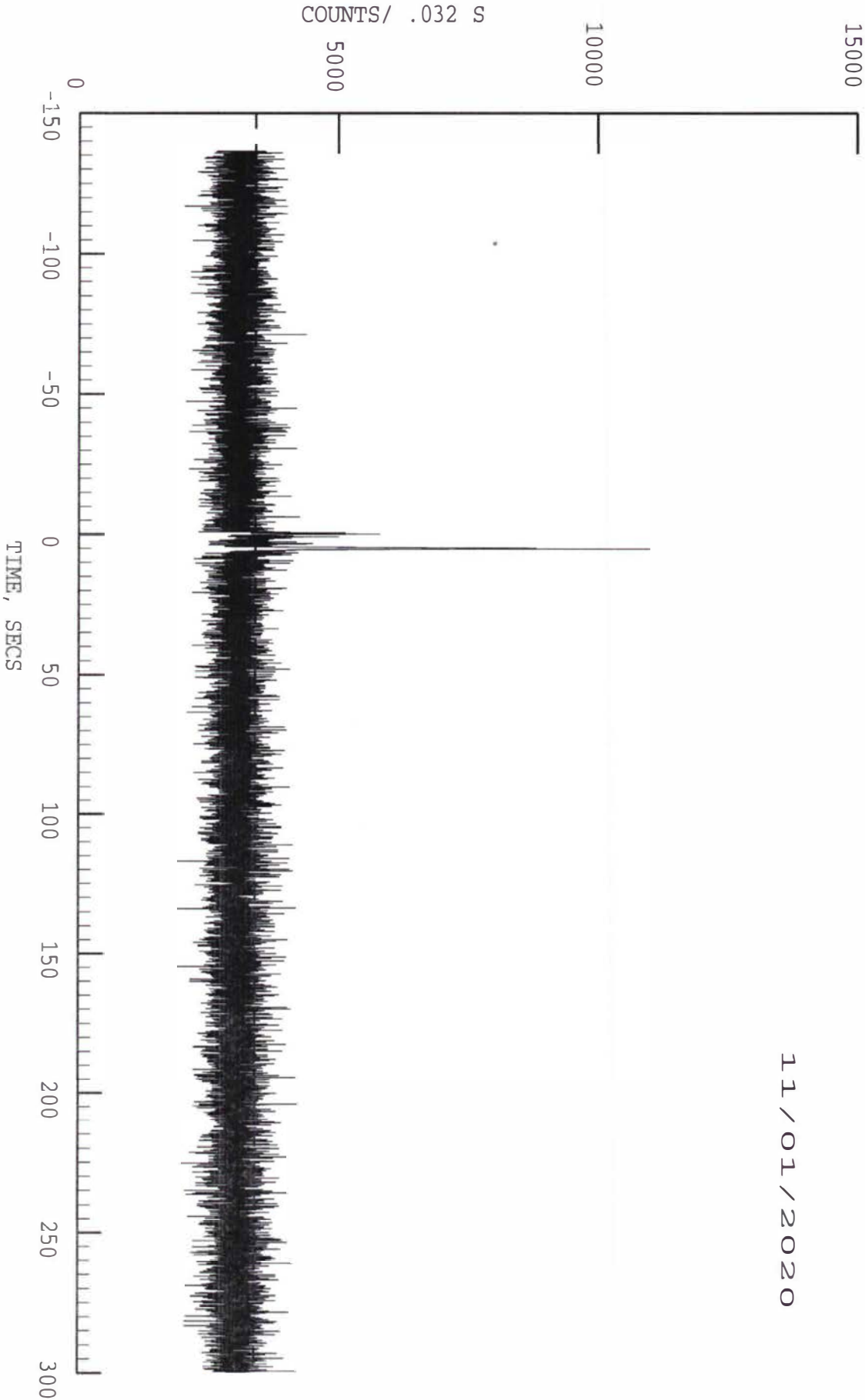
11/01/20

54668.106

15:11:08.106

26- 293 keV

104.5 31.7 3.5



11/01/2020

14:48:49.254

53329.254

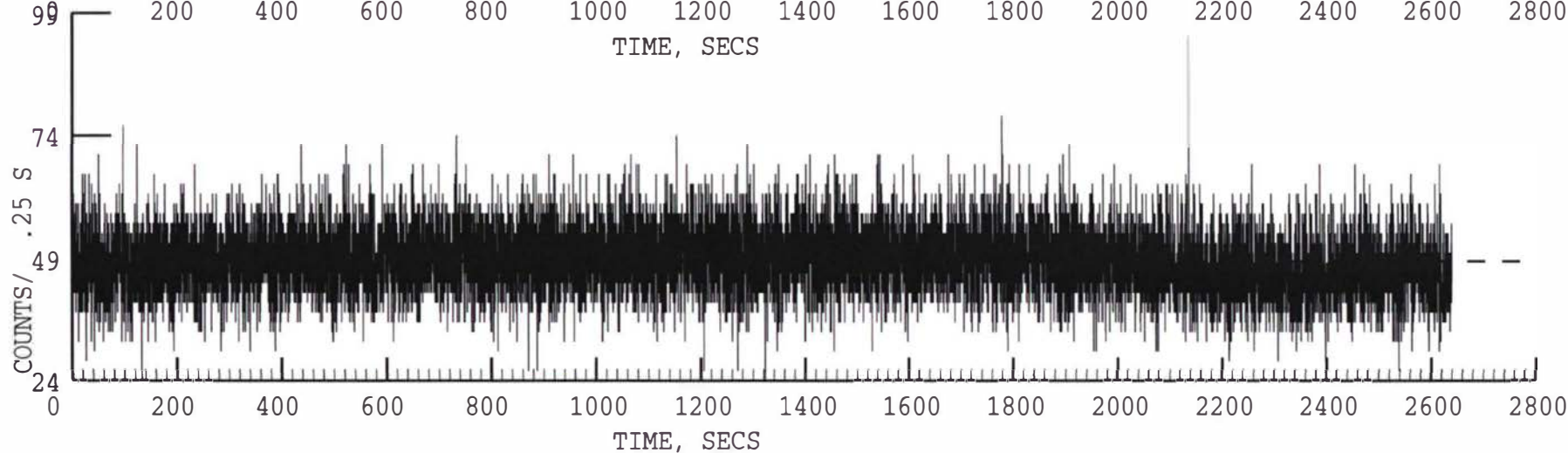
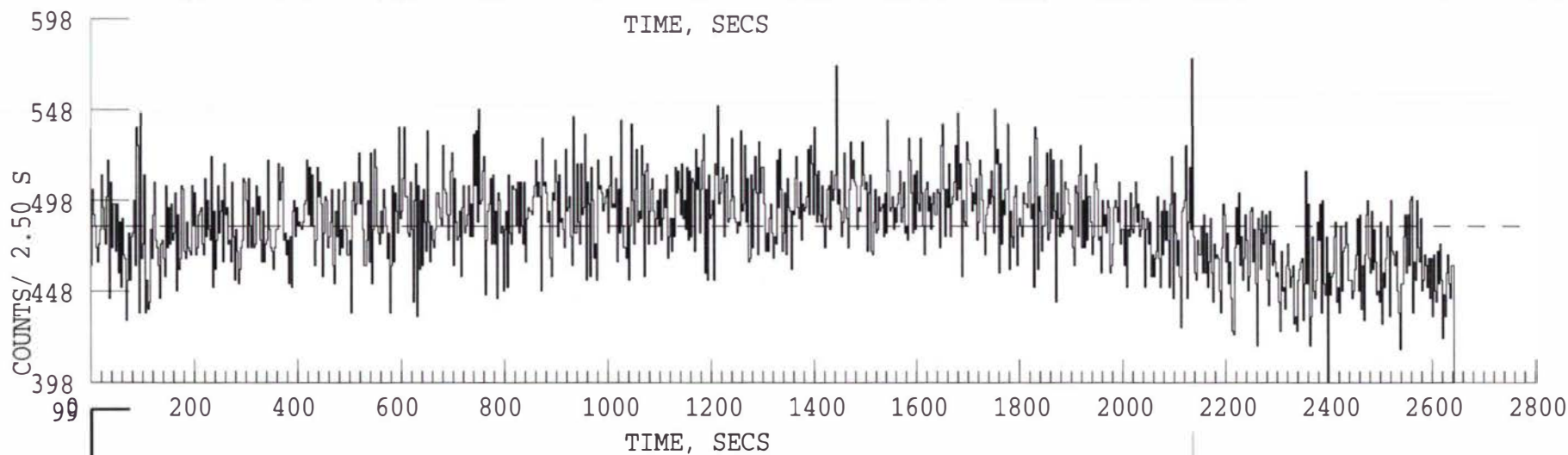
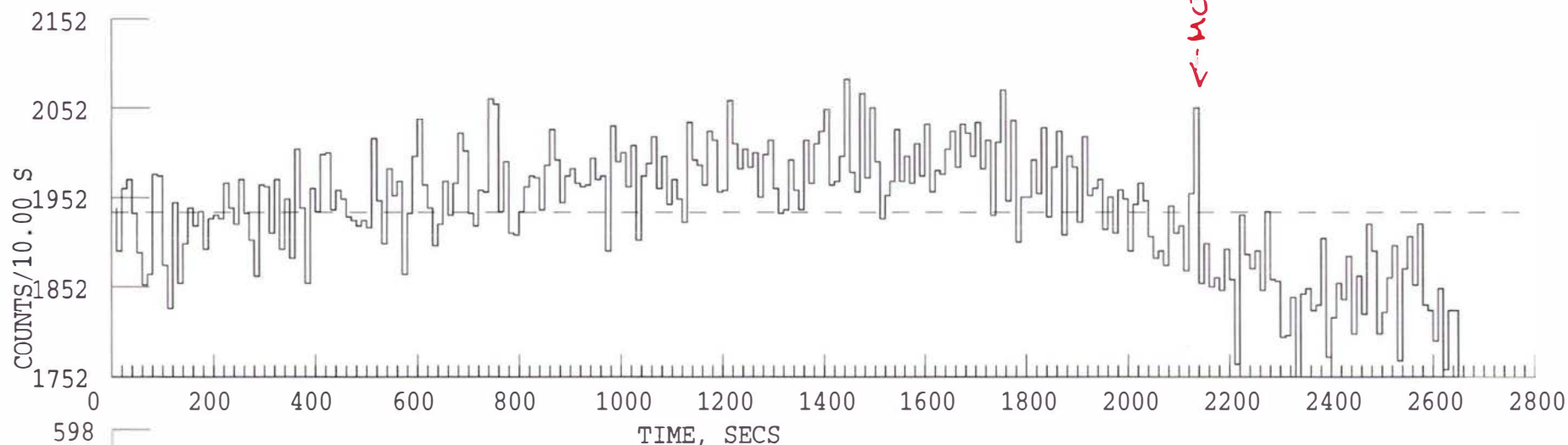
11/01/20

ODYSSEY

50-3000 keV

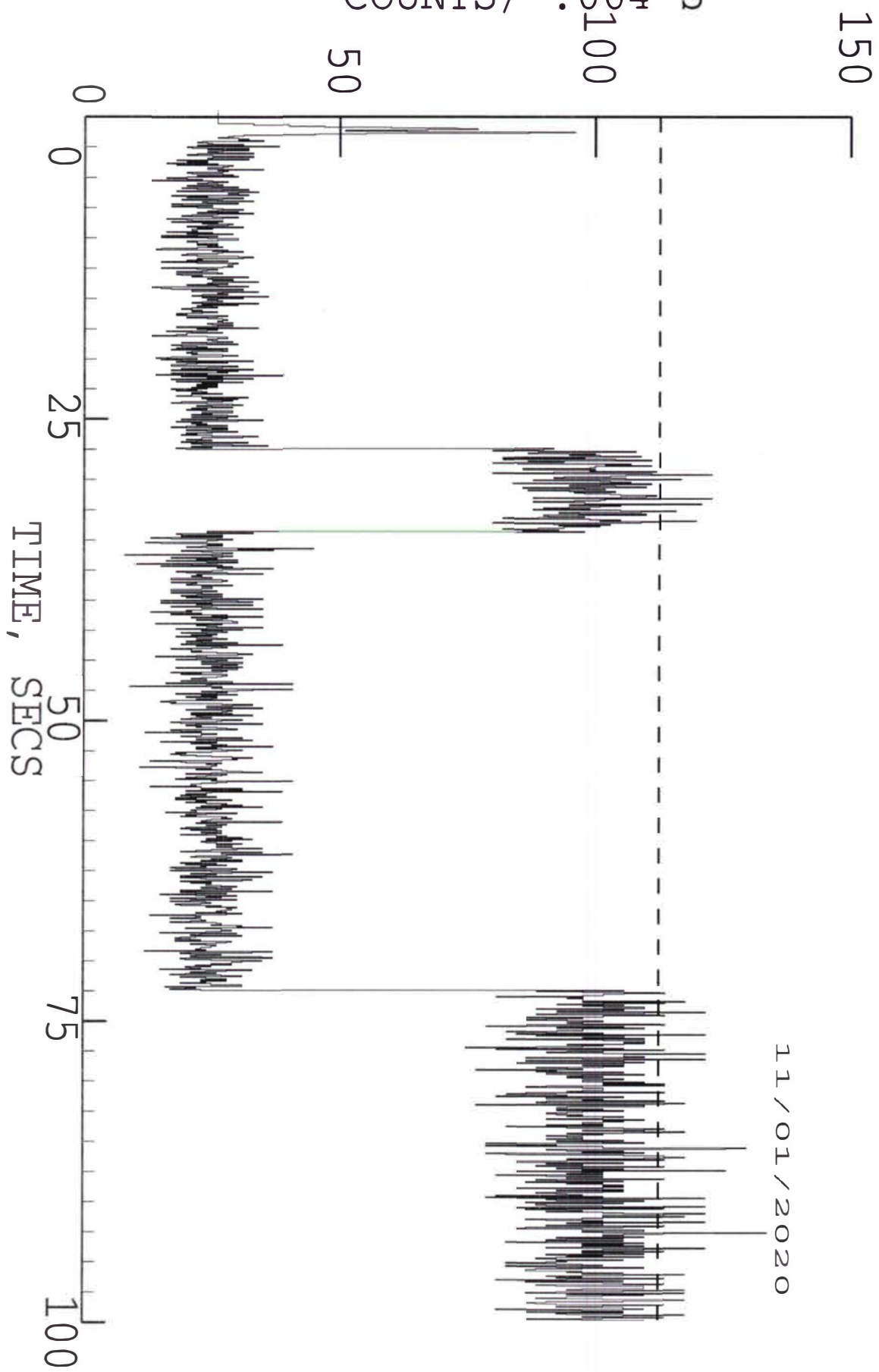
27/03/2020

←-Hg



KONUS 11/01/20 54677.988 15:11:17.988
50- 200 keV

COUNTS/ .064 S



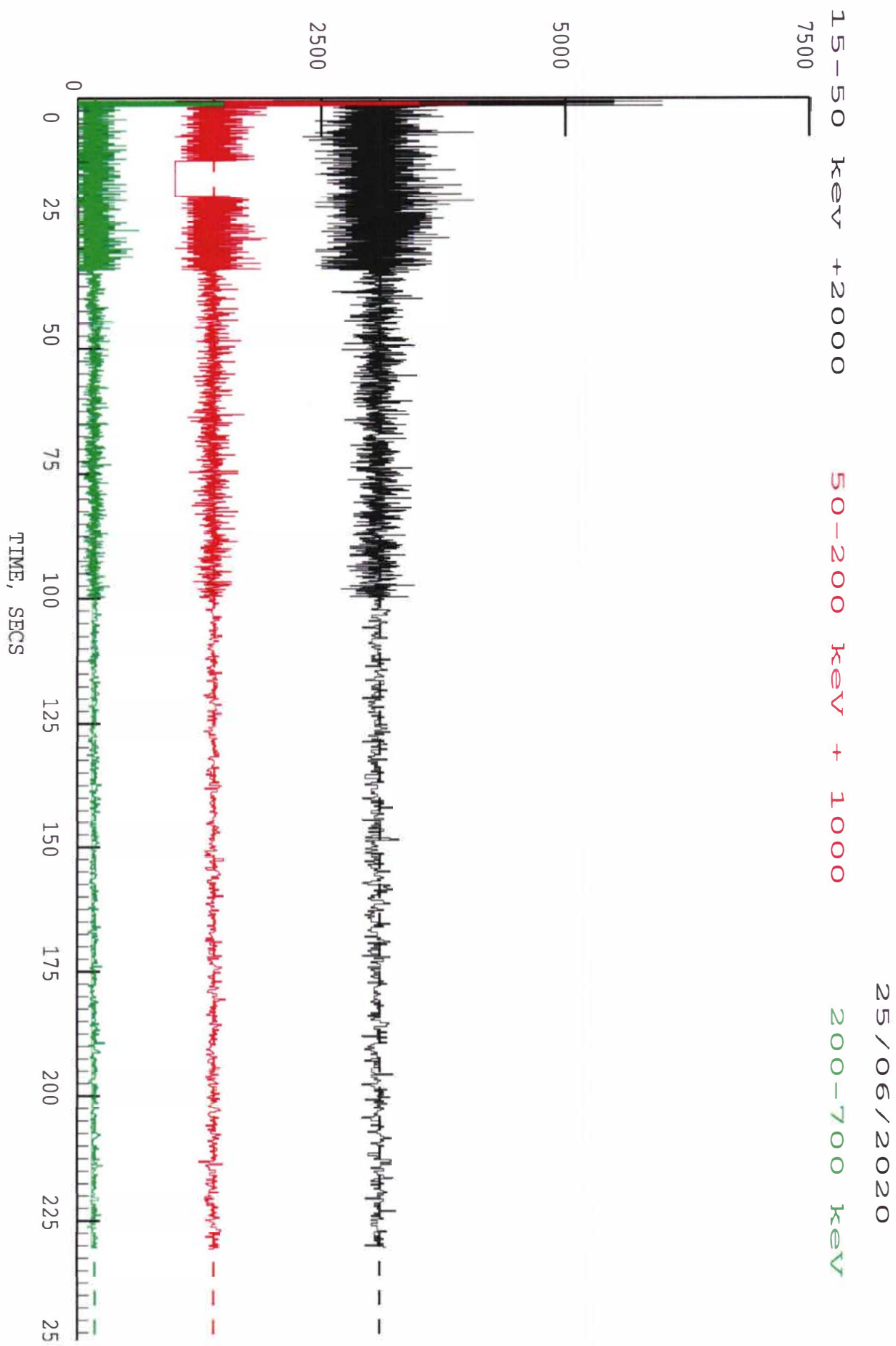
KONUS

11/01/20

54677.000

15:11:17.000

COUNTS/SEC



Subject: IPN triangulation of GRB 200111A
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/15/2020, 10:12 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26778
SUBJECT: IPN triangulation of GRB 200111A
DATE: 20/01/15 18:10:59 GMT
FROM: Anna Kozlova at Ioffe Institute <ann.kozlova@mail.ioffe.ru>

K. Hurley, on behalf of the IPN,

I. G. Mitrofanov, D. V. Golovin, A. S. Kozyrev, M. L. Litvak,
and A. B. Sanin, on behalf of the HEND-Odyssey GRB team,

A. Ridnaia, S. Golenetskii, R. Aptekar, D. Frederiks, D. Svinkin,
and T. Cline on behalf of the Konus-Wind team,

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,

S. Barthelmy, J. Cummings, H. Krimm, and D. Palmer,
on behalf of the Swift-BAT team, and

W. Boynton, C. Fellows, K. Harshman, H. Enos, and R. Starr,
on behalf of the GRS-Odyssey GRB team, report:

The long-duration GRB 200111A (The Fermi GBM team, GCN Circ. 26705;
Insight-HXMT/HE detection: Xiao et al., GCN Circ. 26714)
was detected by Konus-Wind, Fermi (GBM trigger 600448273),
INTEGRAL (SPI-ACS), Mars-Odyssey (HEND), Insight (HXMT/HE),
and Swift (BAT) at about 54668 s UT (15:11:08).
The burst was outside the coded field of view of the BAT.

We have triangulated it to a preliminary, 3 sigma error box
whose coordinates are:

```
-----  
RA(2000), deg          Dec(2000), deg  
-----  
Center:  
107.869 (07h 11m 29s) +32.551 (+32d 33' 03")  
Corners:  
107.545 (07h 10m 11s) +34.162 (+34d 09' 42")  
107.747 (07h 10m 59s) +34.483 (+34d 28' 58")  
108.134 (07h 12m 32s) +30.686 (+30d 41' 10")  
107.920 (07h 11m 41s) +30.214 (+30d 12' 52")  
-----
```

The error box area is about 2864 sq. arcmin, and its maximum
dimension is 4.3 deg (the minimum one is 12.2 arcmin).
The Sun distance was about 167 deg.

This box may be improved.

The IPN localization is consistent with, but reduces the area of, the
Fermi-GBM one.

A triangulation map is posted at
http://www.ioffe.ru/LEA/GRBs/GRB200111_T54677/IPN/

The Konus-Wind time history and spectrum will be given in a forthcoming
GCN Circular.

Subject: Fwd: IPN triangulation of GRB 200111A
From: Anna Ridnaia <ann_kozlova@mail.ioffe.ru>
Date: 1/15/2020, 5:36 AM
To: IPN <ipn@ssl.berkeley.edu>

Dear colleagues,

The long-duration GRB 200111A (The Fermi GBM team, GCN Circ. 26705; Insight-HXMT/HE detection: Xiao et al., GCN Circ. 26714) was observed by Konus-Wind, Fermi (GBM trigger 600448273), INTEGRAL (SPI-ACS), Mars-Odyssey (HEND), Insight (HXMT/HE), and Swift (BAT) outside the coded FoV, at about 54668 s UT (15:11:08).

We have triangulated this GRB to a Konus-HEND annulus centered at RA(2000)=63.109 deg (04h 12m 26s) Dec(2000)=+20.878 deg (+20d 52' 41"), whose radius is 41.325 +/- 0.102 deg (3 sigma), and to a Konus-GBM annulus centered at RA(2000)=135.046 deg (09h 00m 11s) Dec(2000)=+17.592 deg (+17d 35' 30"), whose radius is 28.669 +/- 0.948 deg (3 sigma).

The annuli intersect to form two error boxes one of which is inconsistent with the KW ecliptic latitude response.

The correct preliminary 3-sigma error box is (see the attached figure):

RA(2000), deg	Dec(2000), deg
---------------	----------------

Center:

107.869 (07h 11m 29s) +32.551 (+32d 33' 03")

Corners:

107.545 (07h 10m 11s) +34.162 (+34d 09' 42")

107.747 (07h 10m 59s) +34.483 (+34d 28' 58")

108.134 (07h 12m 32s) +30.686 (+30d 41' 10")

107.920 (07h 11m 41s) +30.214 (+30d 12' 52")

The error box area is about 2864 sq. arcmin, and its maximum dimension is 4.3 deg (the minimum one is 12.2 arcmin).

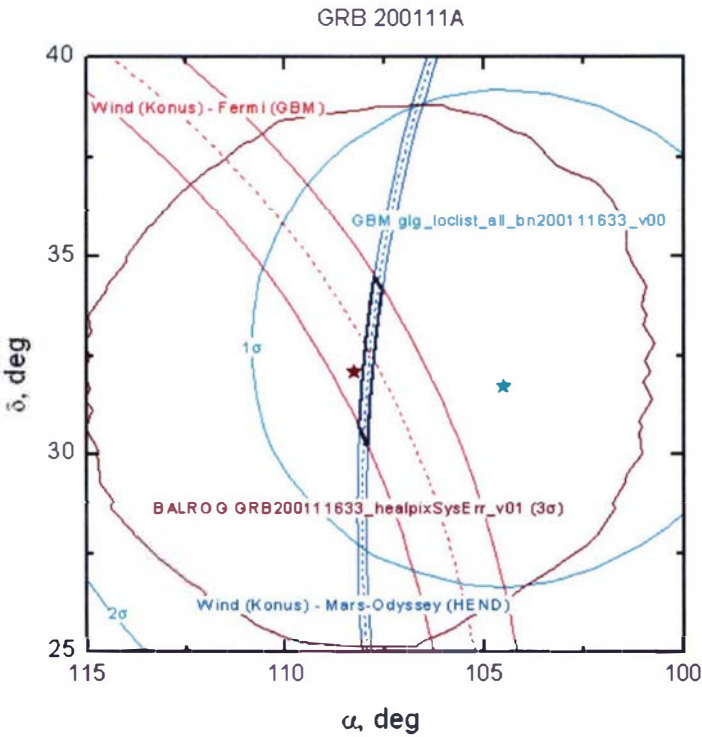
The Sun distance was about 167 deg.

This box may be improved.

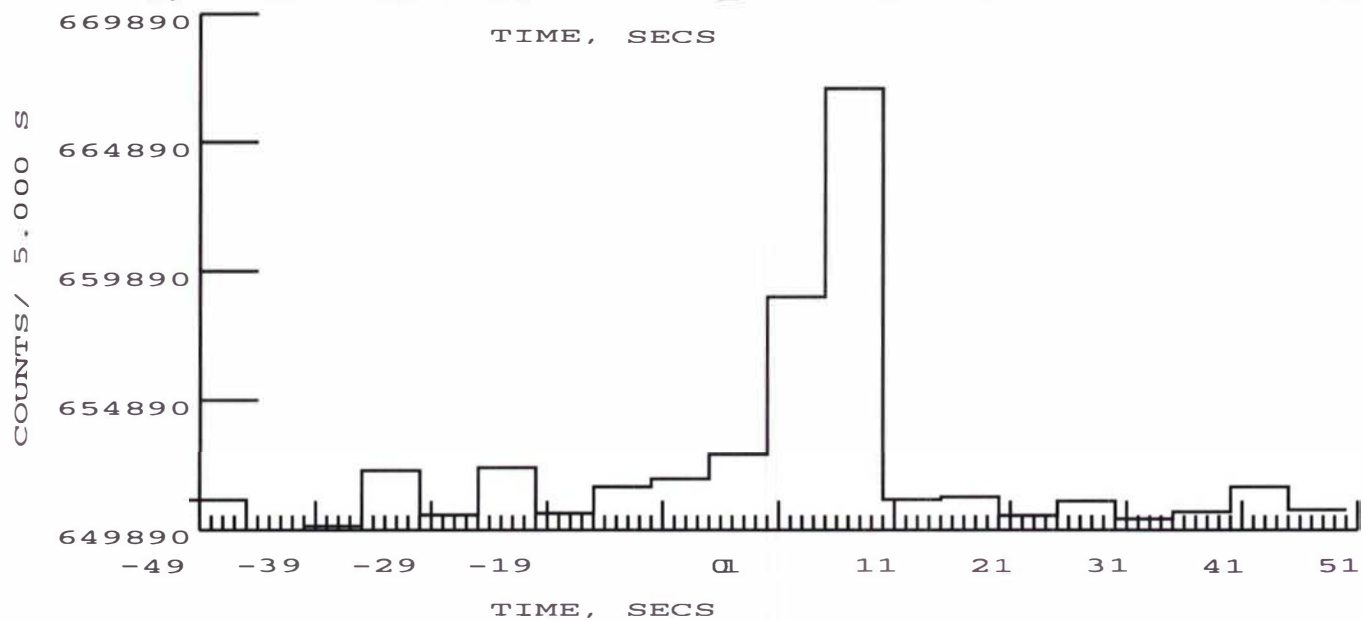
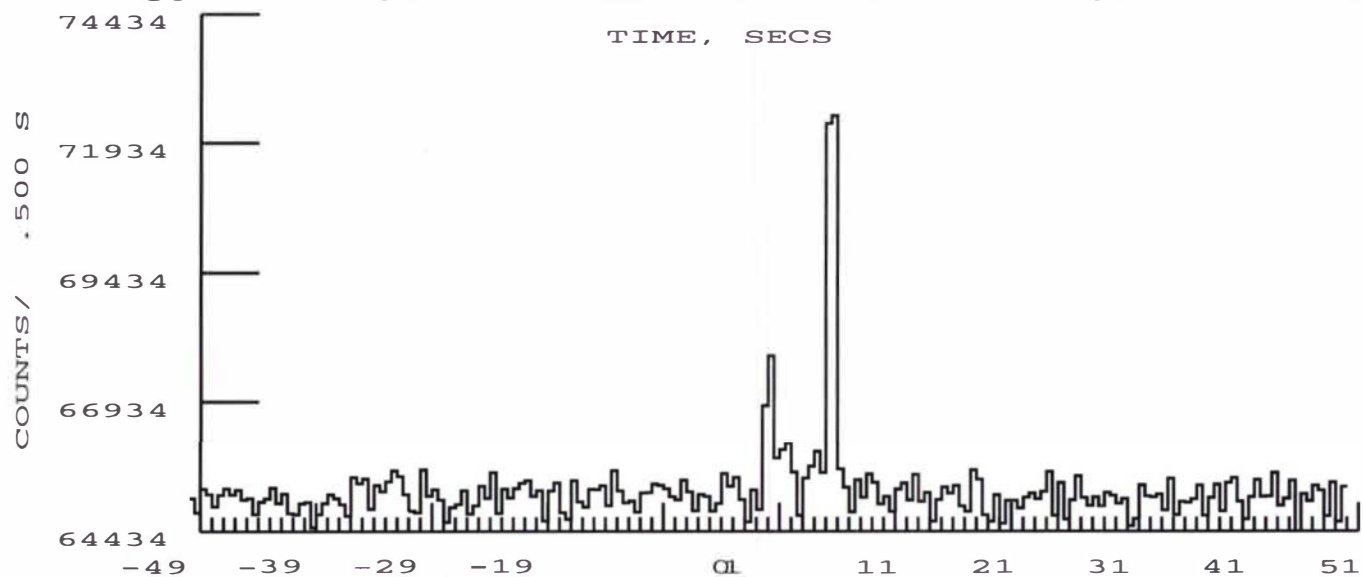
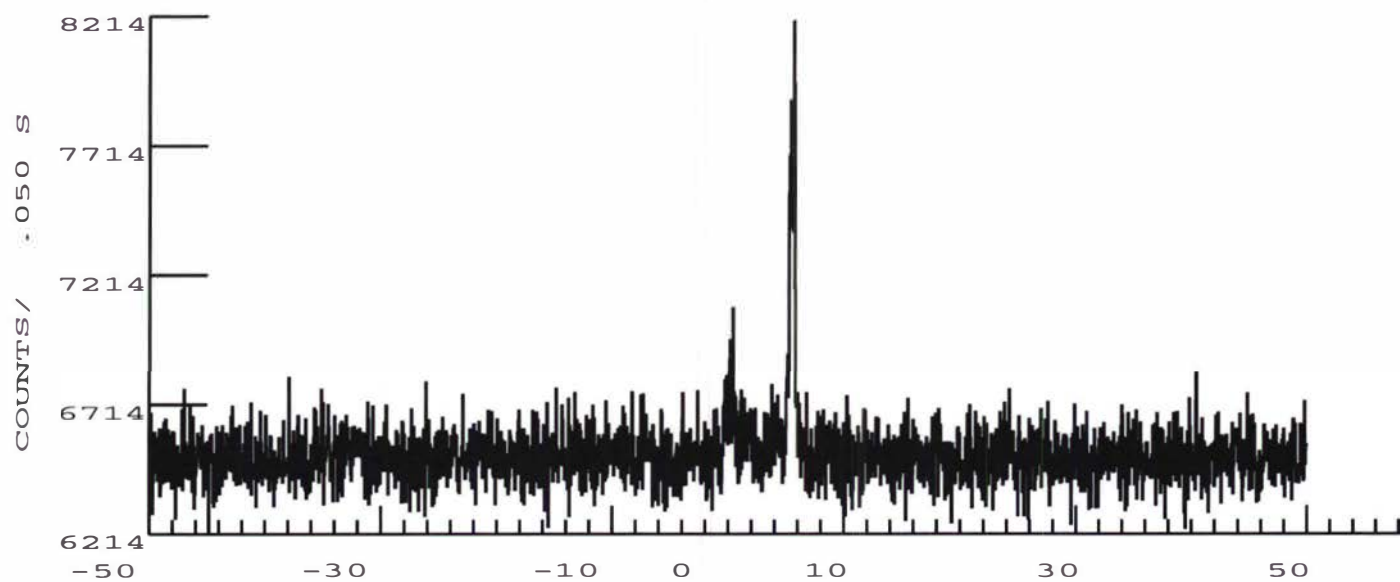
Best regards,

Anna

— GRB200111A_IPN_map.png —



Attachments: [GRB200111A_IPN_map.png](#) 9.1 KB



BAT lightcurve for trigger at 200111_1511

Subject: BAT lightcurve for trigger at 200111_1511

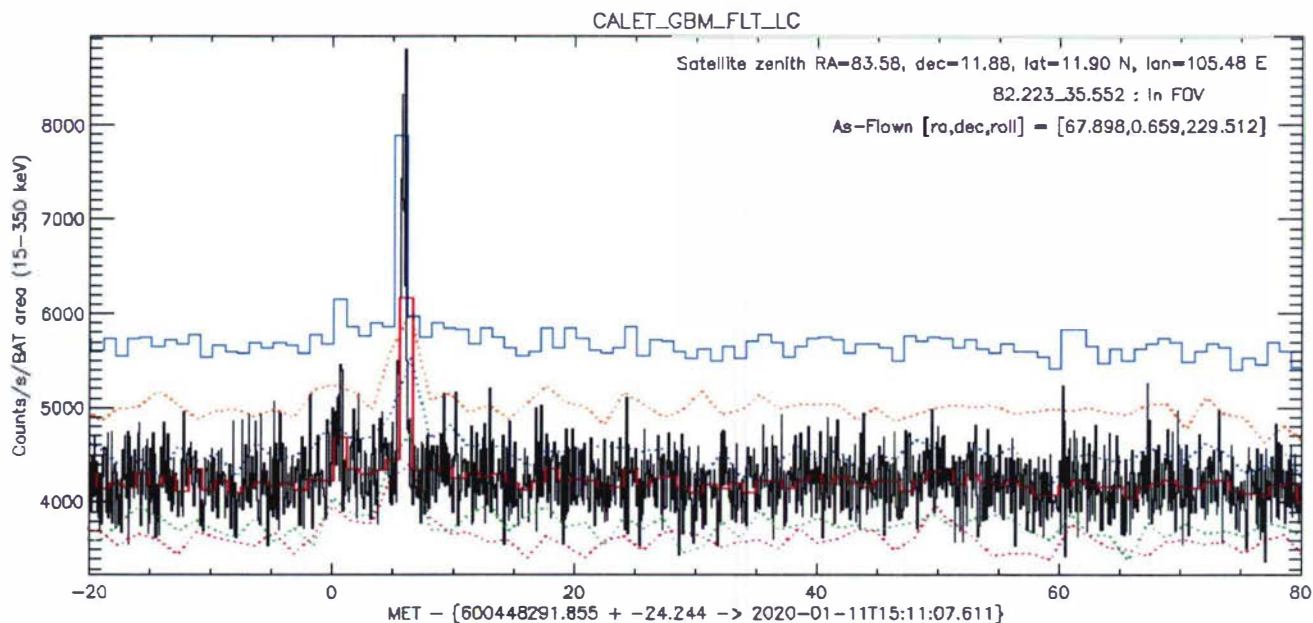
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/11/2020, 11:40 AM

To: aaron.tohu@gmail.com, 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/200111_1511.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600448291.855 -s 82.223_35.552
Swift Zenith(RA,dec):      83.58, 11.88
Swift Location(lon,lat,alt): 105.48 E, 11.90 N, 558 km
Time(MET + UTCF -> UT):   600448291.855 + -24.244 -> 2020-01-11T15:11:07.611
YYMMDD_SOD:               200111_54667.611      DOY=011
Obs Sequence Number:      03108955001
Obs Target Name:          SGWGS-4164
Obs Date and Times:       2020-01-11 15:04:37 - 15:22:35
Obs Pointing(ra,dec,roll): 67.898, 0.659, 229.51
82.223_35.552_imageloc (boresight_dist, angle): (37, 60)
82.223_35.552_exposure (cm2 cos adjusted): 1214
82.223_35.552_altitude: 89 (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/200111_1511_bat64ms_ipn

87.1 KB

/tmp/swift/200111_1511.png

20.1 KB

Subject: GRB 200111A Re: BAT lightcurve for trigger at 200111_1511

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

Date: 1/13/2020, 9:19 AM

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

CC: Aaron Tohuvavohu <aaron.tohu@gmail.com>, David Palmer <dmopalmer@gmail.com>, "gbm-burst-advocate@lists.nasa.gov" <gbm-burst-advocate@lists.nasa.gov>, BAT TEAM <bat_team@bigbang.gsfc.nasa.gov>

Here is the 1 ms lightcurve of this burst-with-short-peak. The peak is half a second long, but BAT triggered 5 seconds before then, and CALET_GBM triggered at about the same time. Therefore this is not a 'short burst' or a 'short burst with persistent emission'.

NUMBER: 26714

SUBJECT: GRB 200111A: Insight-HXMT/HE detection
describes the lightcurve.

NUMBER: 26705

SUBJECT: GRB 200111A: Fermi GBM Final Real-time Localization
gives a location which is outside of the BAT FOV but above the horizon, consistent with no imaging detection:

```
(base) % swinfo -o 600448291.855 -s 104_31
Swift Zenith(RA,dec): 83.58, 11.89
Swift Location(lon,lat,alt): 105.48 E, 11.91 N, 557 km
Time(MET + UTCF -> UT): 600448291.855 + -24.244 -> 2020-01-11T15:11:07.611
YYMMDD_SOD: 200111_54667.611 DOY=011
Obs Sequence Number: 03108955001
Obs Target Name: SGWGS-4164
Obs Date and Times: 2020-01-11 15:04:37 - 15:22:35
Obs Pointing(ra,dec,roll): 67.898, 0.659, 229.51
104_31_imageloc (boresight_dist, angle): (46, 85)
104_31_exposure (cm^2 cos adjusted): 0
104_31_altitude: 86 (up)
```

--

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

> On Jan 11, 2020, at 12:40 PM, palmer+automatic_lightcurve@lanl.gov wrote:

>

>

>

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

>

> <_tmp_swift_200111_1511_bat64ms_ipn><_tmp_swift_200111_1511.png>

> % /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600448291.855 -s 82.223_35.552

> Swift Zenith(RA,dec): 83.58, 11.88

> Swift Location(lon,lat,alt): 105.48 E, 11.90 N, 558 km

> Time(MET + UTCF -> UT): 600448291.855 + -24.244 -> 2020-01-11T15:11:07.611

> YYMMDD_SOD: 200111_54667.611 DOY=011

> Obs Sequence Number: 03108955001

> Obs Target Name: SGWGS-4164

> Obs Date and Times: 2020-01-11 15:04:37 - 15:22:35

> Obs Pointing(ra,dec,roll): 67.898, 0.659, 229.51

> 82.223_35.552_imageloc (boresight_dist, angle): (37, 60)

> 82.223_35.552_exposure (cm^2 cos adjusted): 1214

> 82.223_35.552_altitude: 89 (up)

>

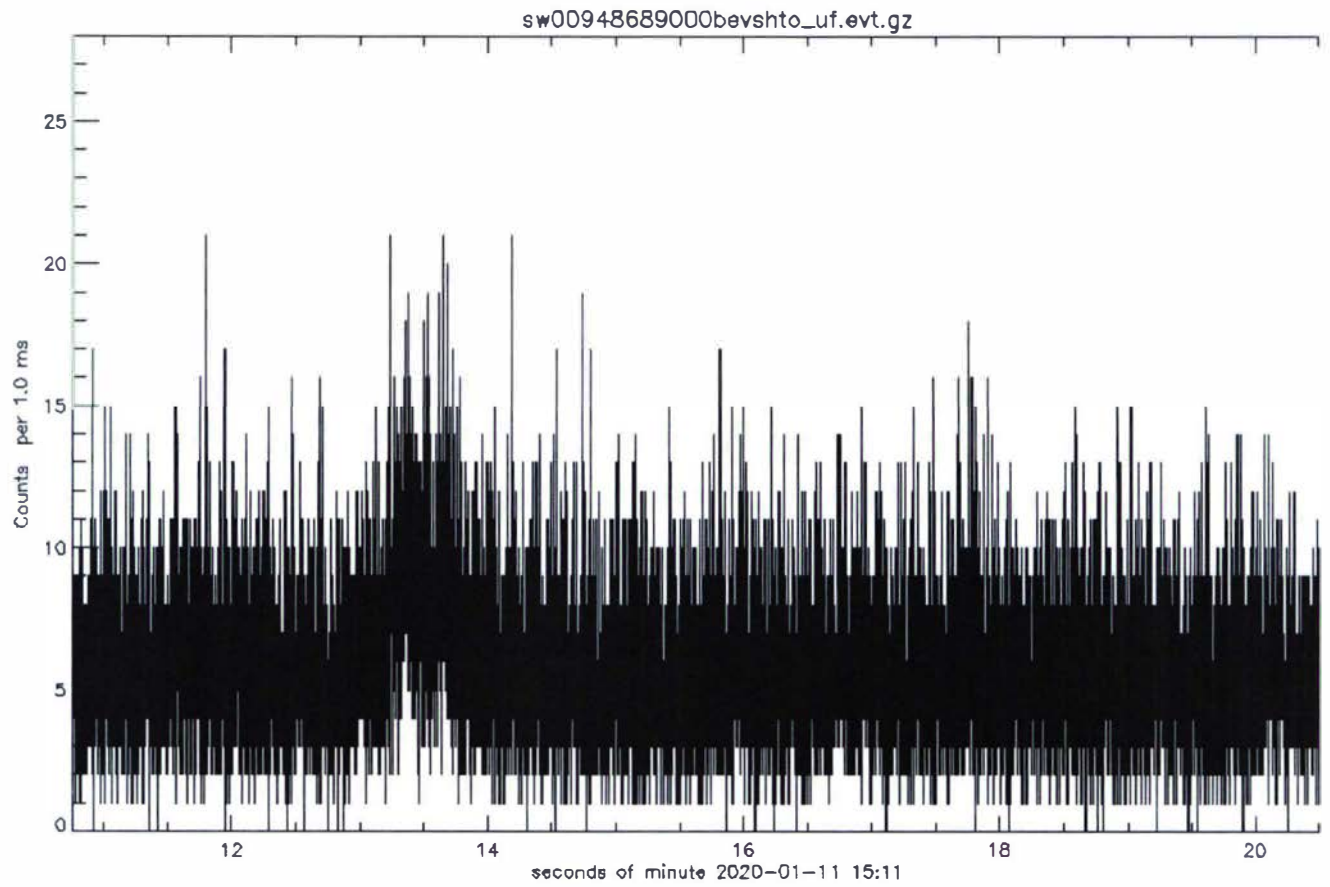
>

> --

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

> TSPA -- Automatically generated plot of publicly-available scientific data

>



Attachments:

sw00948689000bevsho_uf.evt.gz.ipn

197 KB

Subject: GRB 200111A: CALET Gamma-Ray Burst Monitor detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/16/2020, 5:59 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26795
SUBJECT: GRB 200111A: CALET Gamma-Ray Burst Monitor detection
DATE: 20/01/17 01:58:51 GMT
FROM: Valentin Pal'shin at AGU <val@phys.aoyama.ac.jp>

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

The long GRB 200111A (Fermi GBM Final Real-time Localization:
The Fermi GBM team, GCN Circ. 26705; Insight-HXMT/HE detection:
Xiao et al., GCN Circ. 26714; IPN triangulation: Hurley et al.,
GCN Circ. 26778; AstroSat CZTI detection: Gaikwad et al., GCN Circ. 26783;
<https://gcncirc.gsfc.nasa.gov/other/200111A.gcnc3>)
triggered the CALET Gamma-ray Burst Monitor (CGBM) at 15:11:07.610 UTC
on 11 January 2020. The burst signal was seen by all CGBM detectors.

The burst light curve shows a multi-peaked structure followed by a short
pulse. The emission starts at T+0.0 sec, peaks at T+6.0 sec and ends at
T+6.4 sec. The T90 and T50 durations measured by the SGM data are
6.0 +/- 0.5 sec and 3.9 +/- 1.9 sec (40-1000 keV), respectively.

The ground processed light curve is available at

http://cgbm.calet.jp/cgbm_trigger/ground/1262790473/

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

Subject: GRB 200111A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/12/2020, 5:52 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26714
SUBJECT: GRB 200111A: Insight-HXMT/HE detection
DATE: 20/01/12 13:51:48 GMT
FROM: Shuo Xiao at IHEP <xiaoshuo@ihep.ac.cn>

S. Xiao, Y. F. Du, Y. G. Zheng, C. Cai, Q. Luo, Q. B. Yi,
Y. Huang, C. K. Li, G. Li, X. B. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, A. M. Zhang,
Y. F. Zhang, X. F. Lu, 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 2020-01-11T15:11:07.61 (T0), Insight-HXMT/HE detected
GRB 200111A (trigger ID: HEB200111632) in a routine search of the data,
which also triggered Fermi/GBM (GCN #26705).

The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 8.474 s measured from T0-0.030 s.
The 1-ms peak rate, measured from T0+5.459 s, is 1355 cnts/sec.
The total counts from this burst is 2111 counts.

URL_LC: http://www.hxmt.org/images/GRB/HEB200111632_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 200111A: AstroSat CZTI detection

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

Date: 1/16/2020, 2:01 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26783

SUBJECT: GRB 200111A: AstroSat CZTI detection

DATE: 20/01/16 10:01:06 GMT

FROM: Ramkrishna Gaikwad at IUCAA/AstroSat <ramkrishna@iucaa.in>

R. Gaikwad, S. Gupta, 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 GRB 200111A, which was also detected by Fermi GBM Final Real-time Localization (GCN #26705) and Insight-HXMT/HE (Xiao S. et al., GCN #26714).

The source was clearly detected in the 40-200 keV energy range. The light curve showed multiple peaks of emission peaking at 2020-01-11 15:11:09.0 UT. The measured peak count rate associated with the burst is 421 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 548 cts/s. Using cumulative rates, we measure a T90 of 8.6 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.

KONUS

12/01/2020

31.329

v01

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

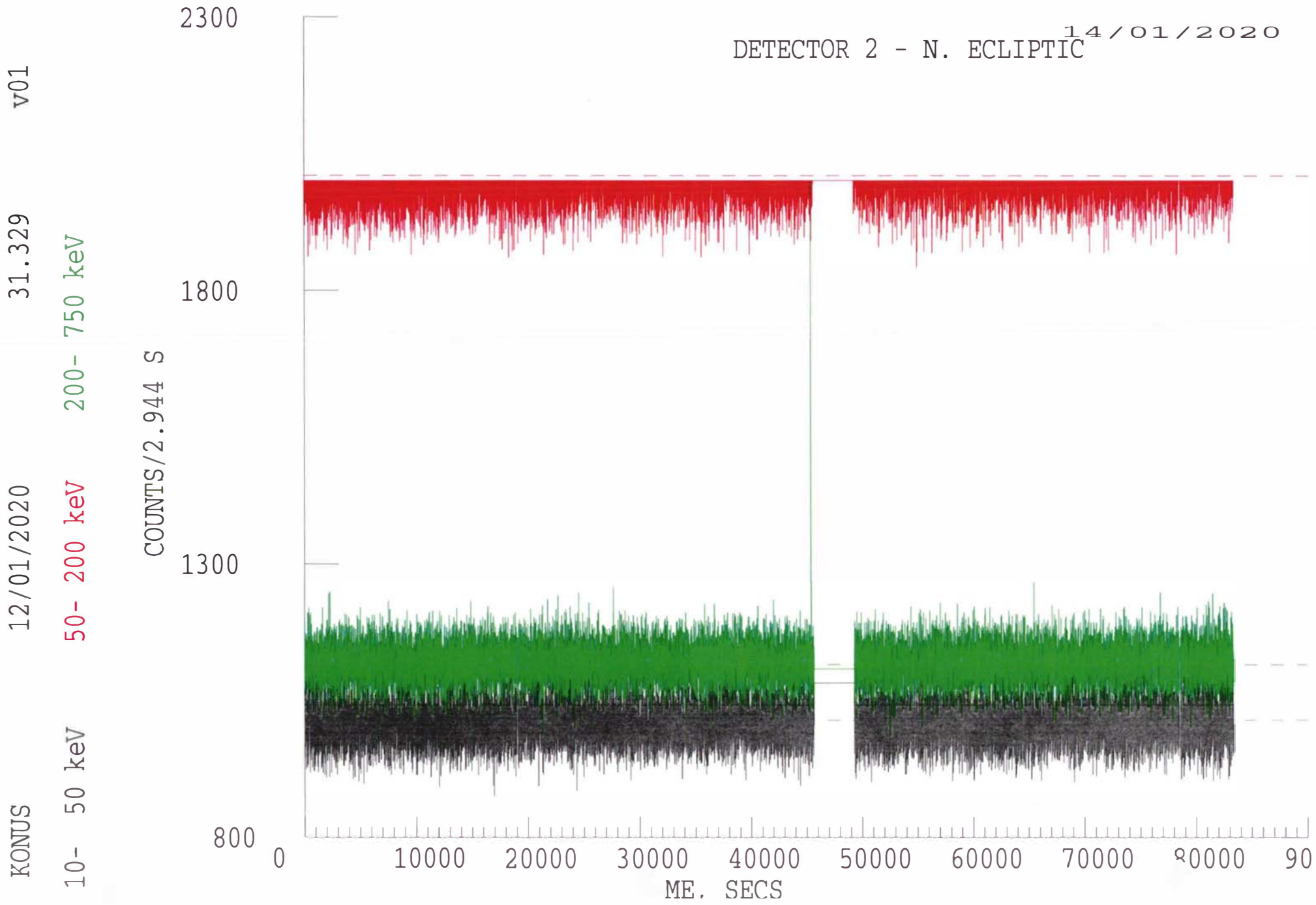
70000

80000

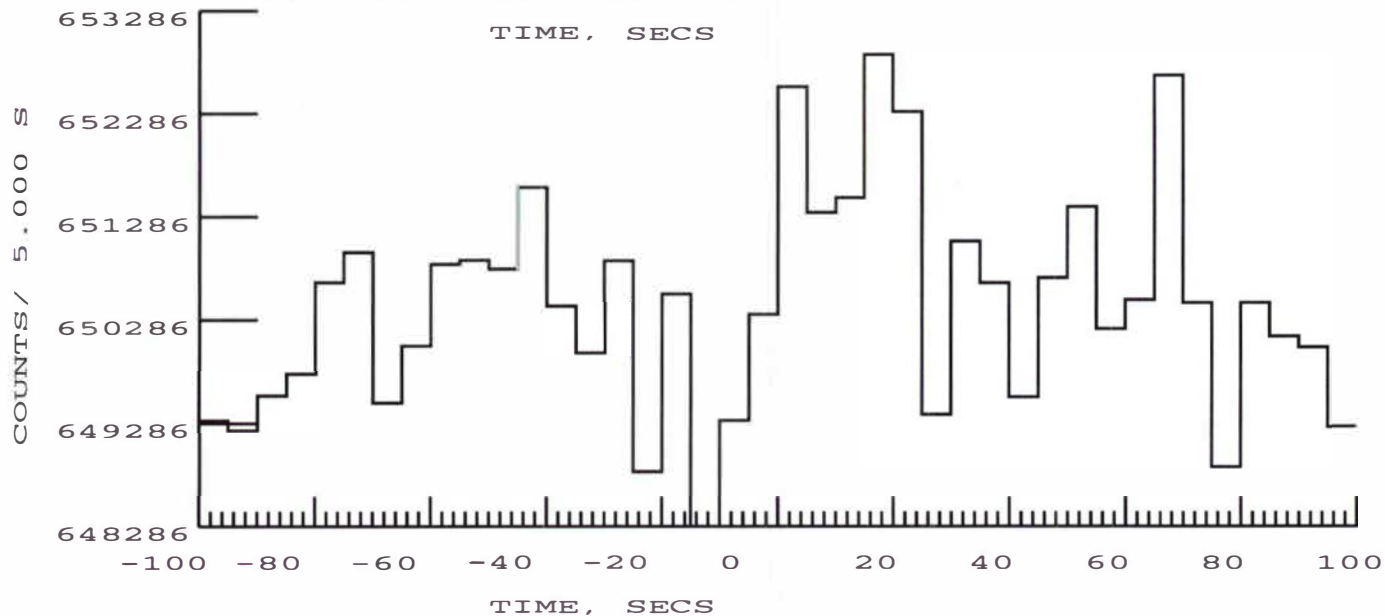
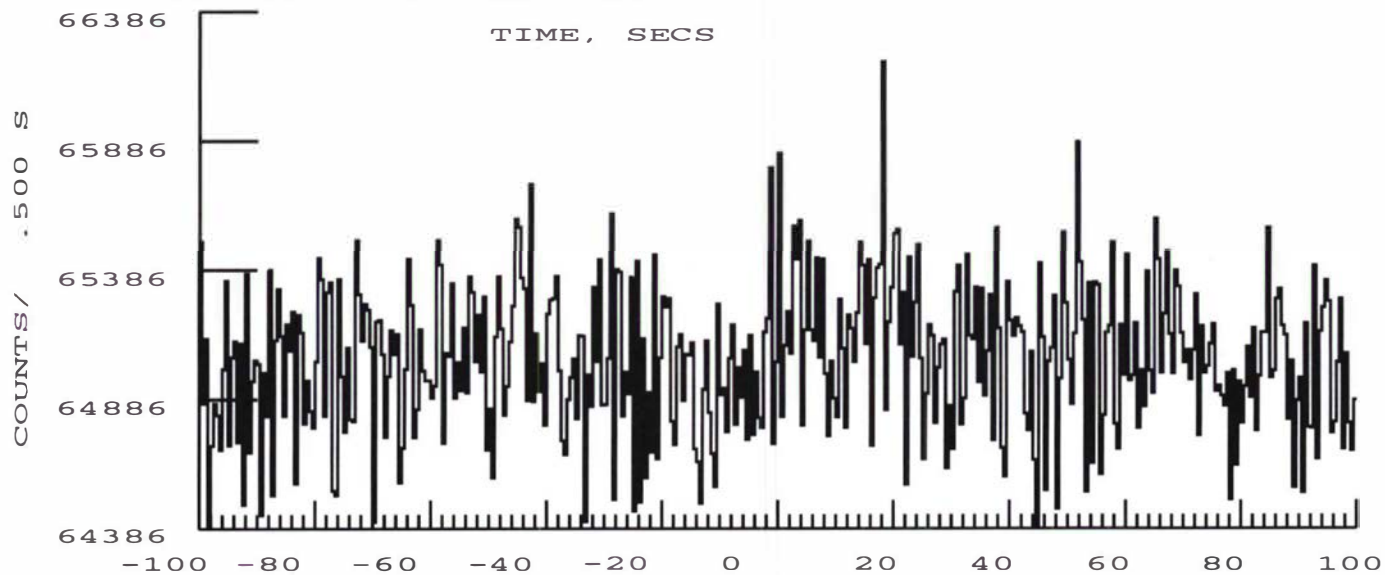
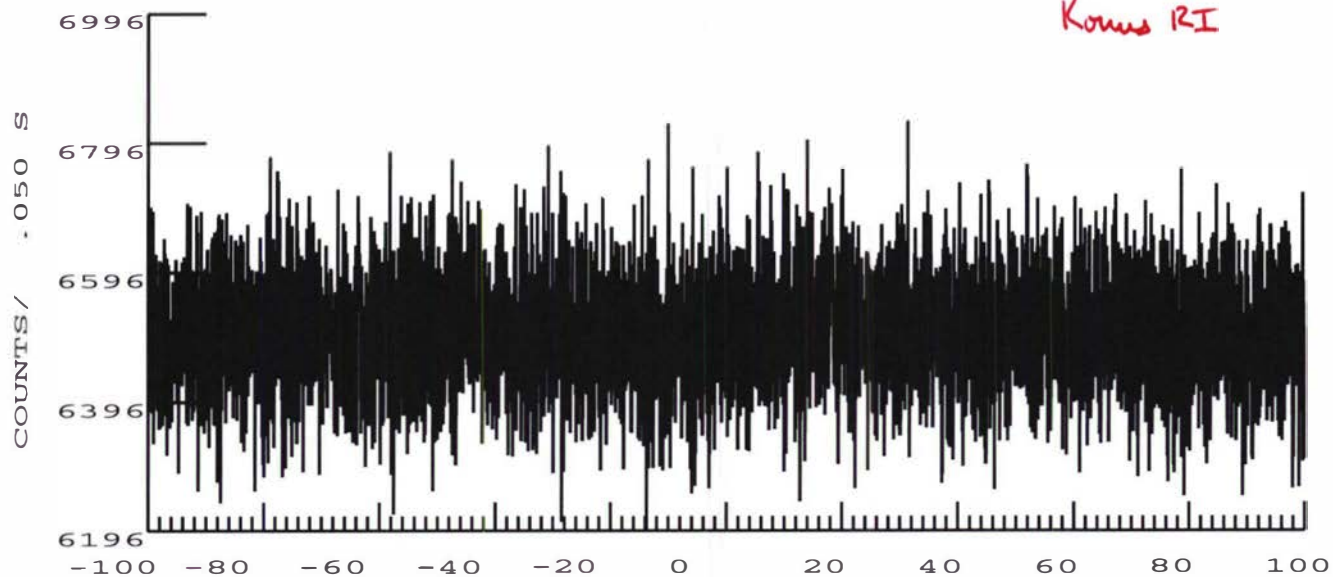
90

ME, SECS

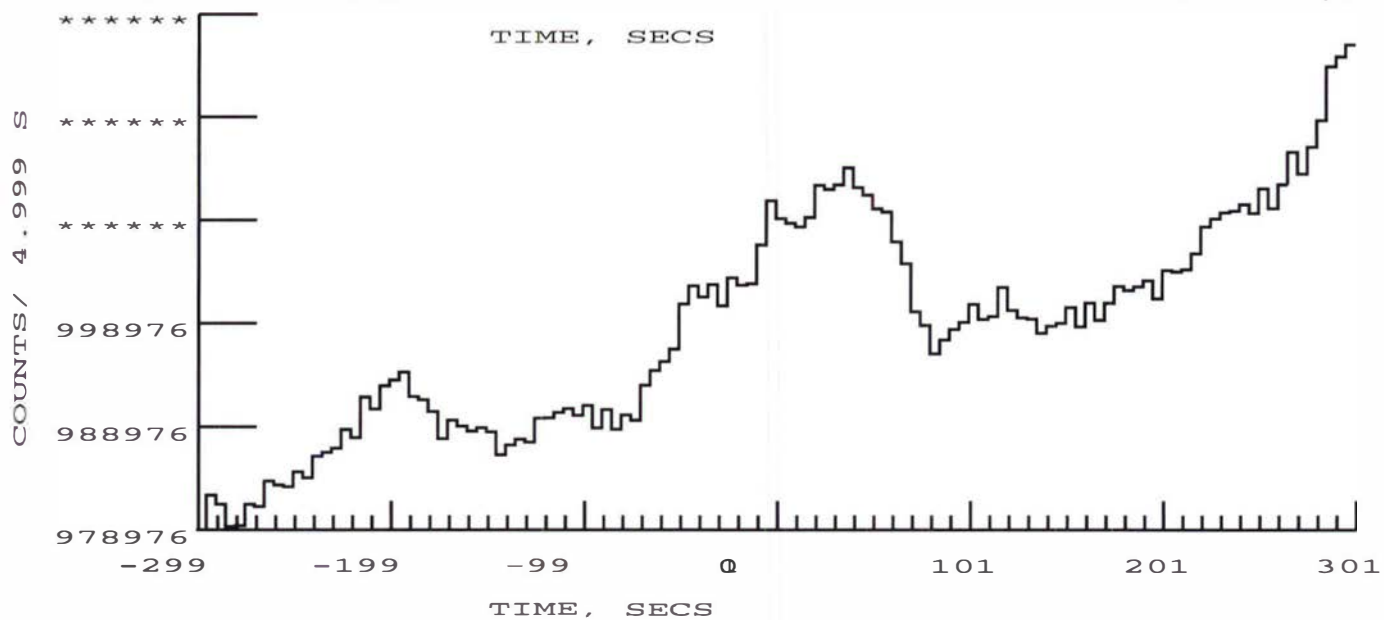
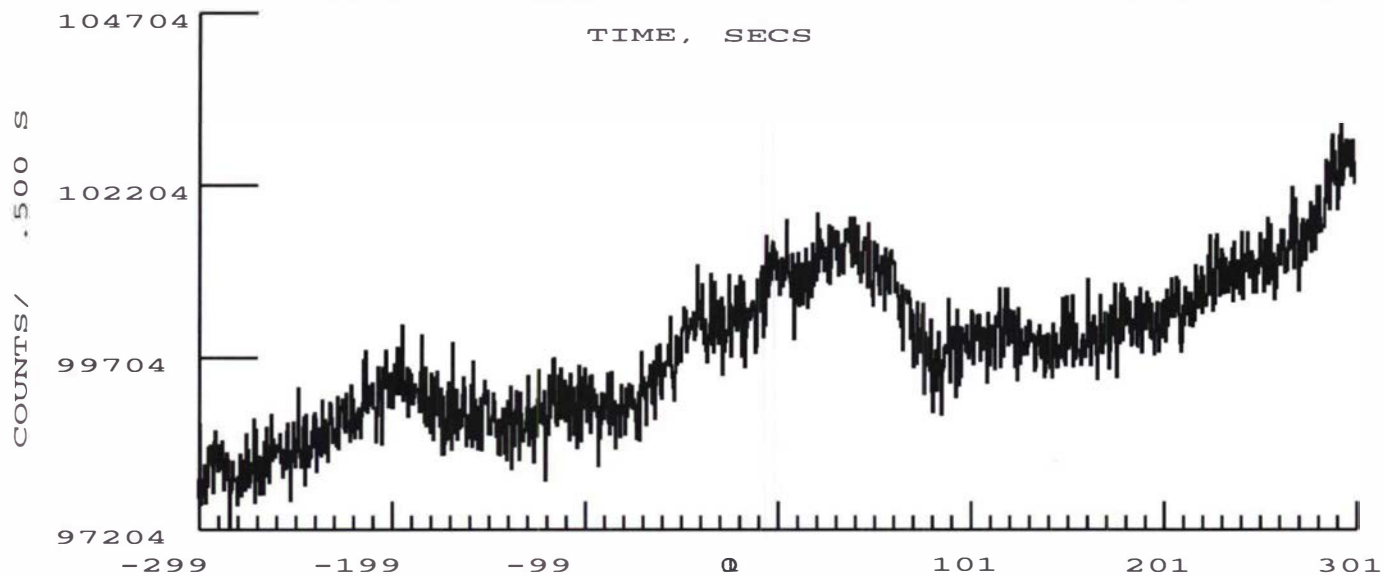
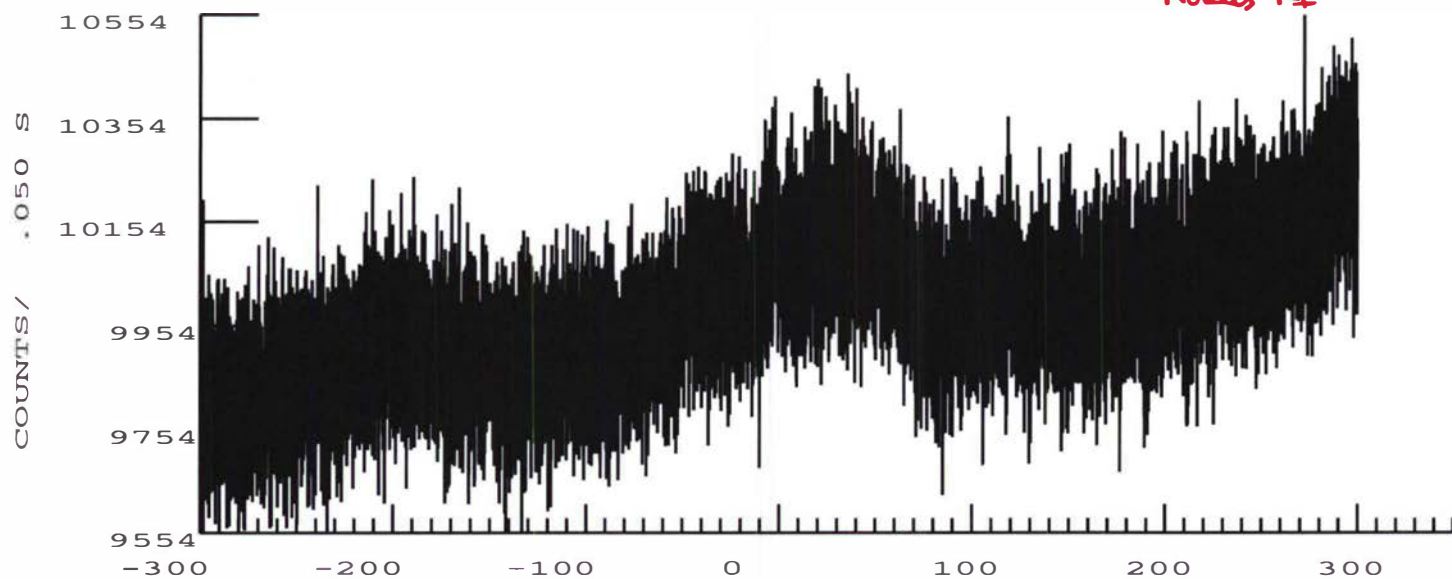
DETECTOR 1 - S. ECLIPTEIC¹2/01/2020



Konus RI



Konus RT



Subject: BAT lightcurve for trigger at 200112_0928

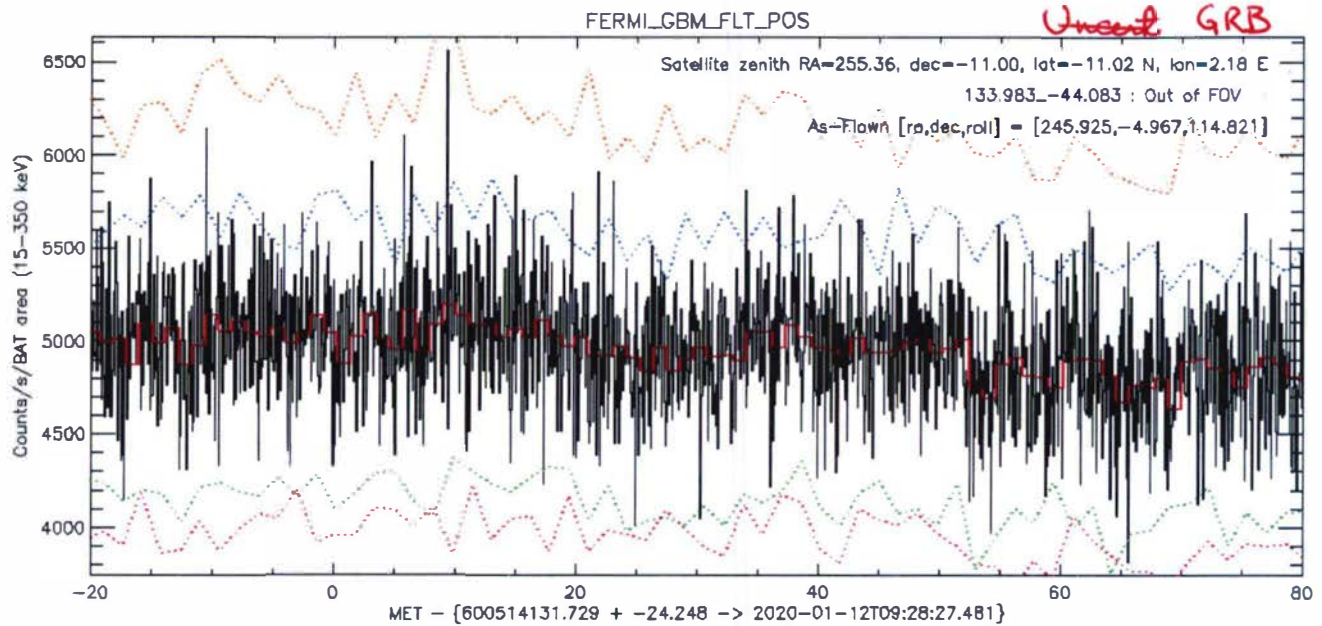
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/12/2020, 7:01 AM

To: aaron.tohu@gmail.com, 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/200112_0928.png



```
% /Users/palmer/anaconda3/envs/dmoplabin/bin/swinfo -o 600514131.729 -s 133.983_-44.083
Swift Zenith(RA,dec):      255.36, -11.00
Swift Location(lon,lat,alt): 2.18 E, -11.02 N, 545 km
Time(MET + UTCF -> UT):   600514131.729 + -24.248 -> 2020-01-12T09:28:27.481
YYMMDD_SOD:               200112_34107.481      DOY=012
Obs Sequence Number:       00076682001
Obs Target Name:           saa-cold-12-00
Obs Date and Times:        2020-01-12 09:15:37 - 09:31:34
Obs Pointing(ra,dec,roll): 245.925, -4.967, 114.82
133.983_-44.083_imageloc (boresight_dist, angle): (102, 18)
133.983_-44.083_exposure (cm^2 cos adjusted): 0
133.983_-44.083_altitude: 9 (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

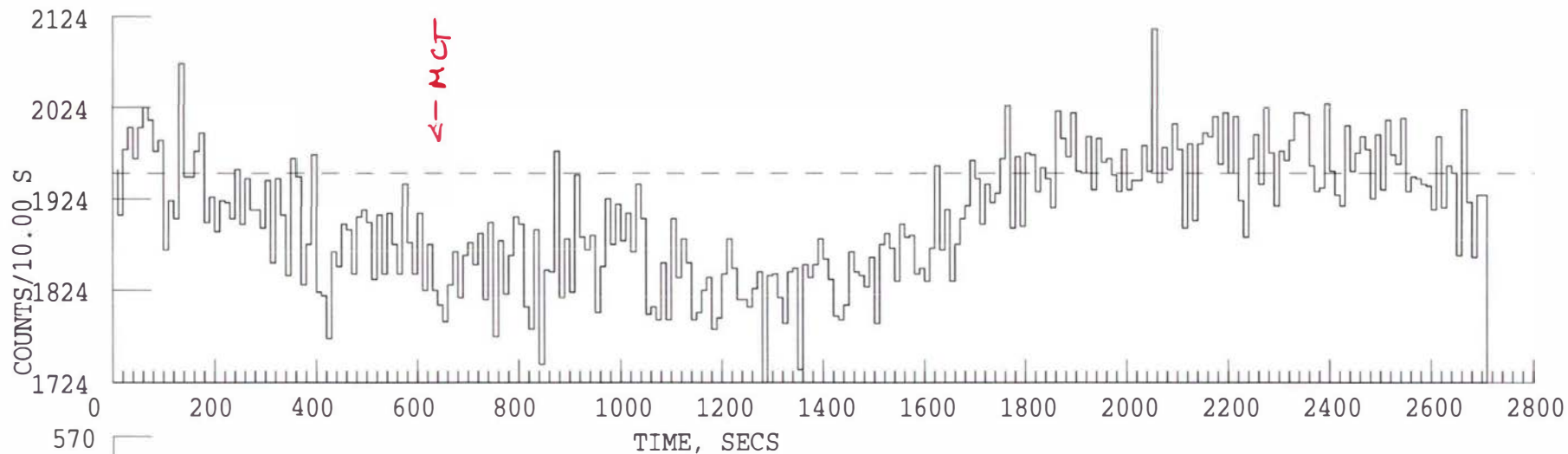
—Attachments:

/tmp/swift/200112_0928.png	21.6 KB
/tmp/swift/200112_0928_bat64ms_ipn	87.1 KB

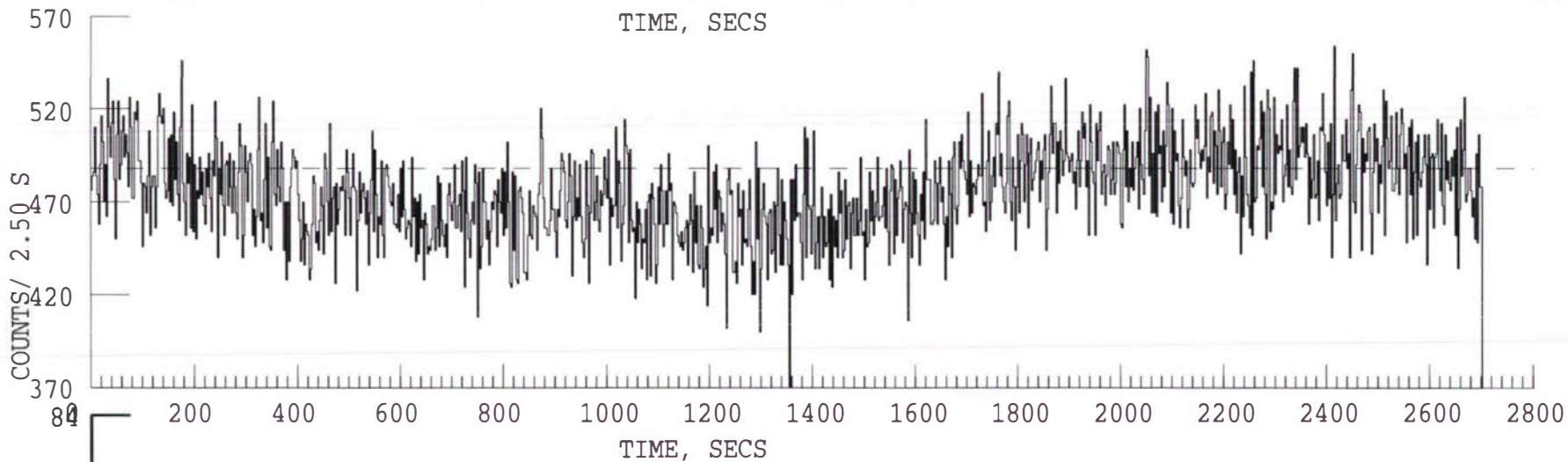
27/03/2020

A

09:05:48.090

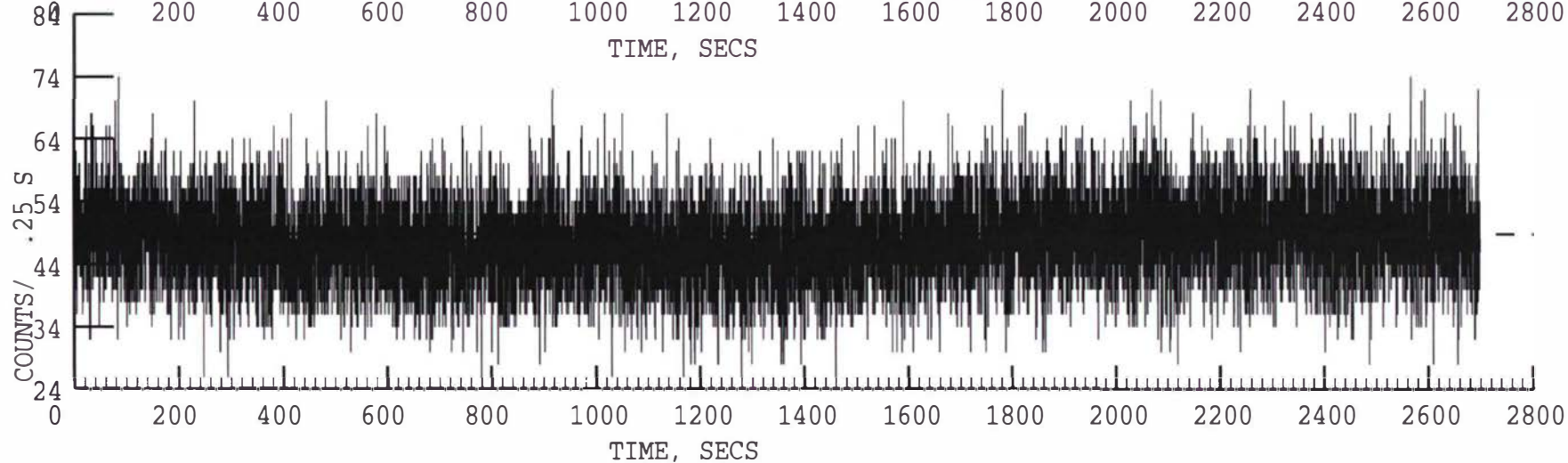


32748.090



12/01/20

50-3000 keV



ODYSSEY

FERMI

12/01/20

45391.101

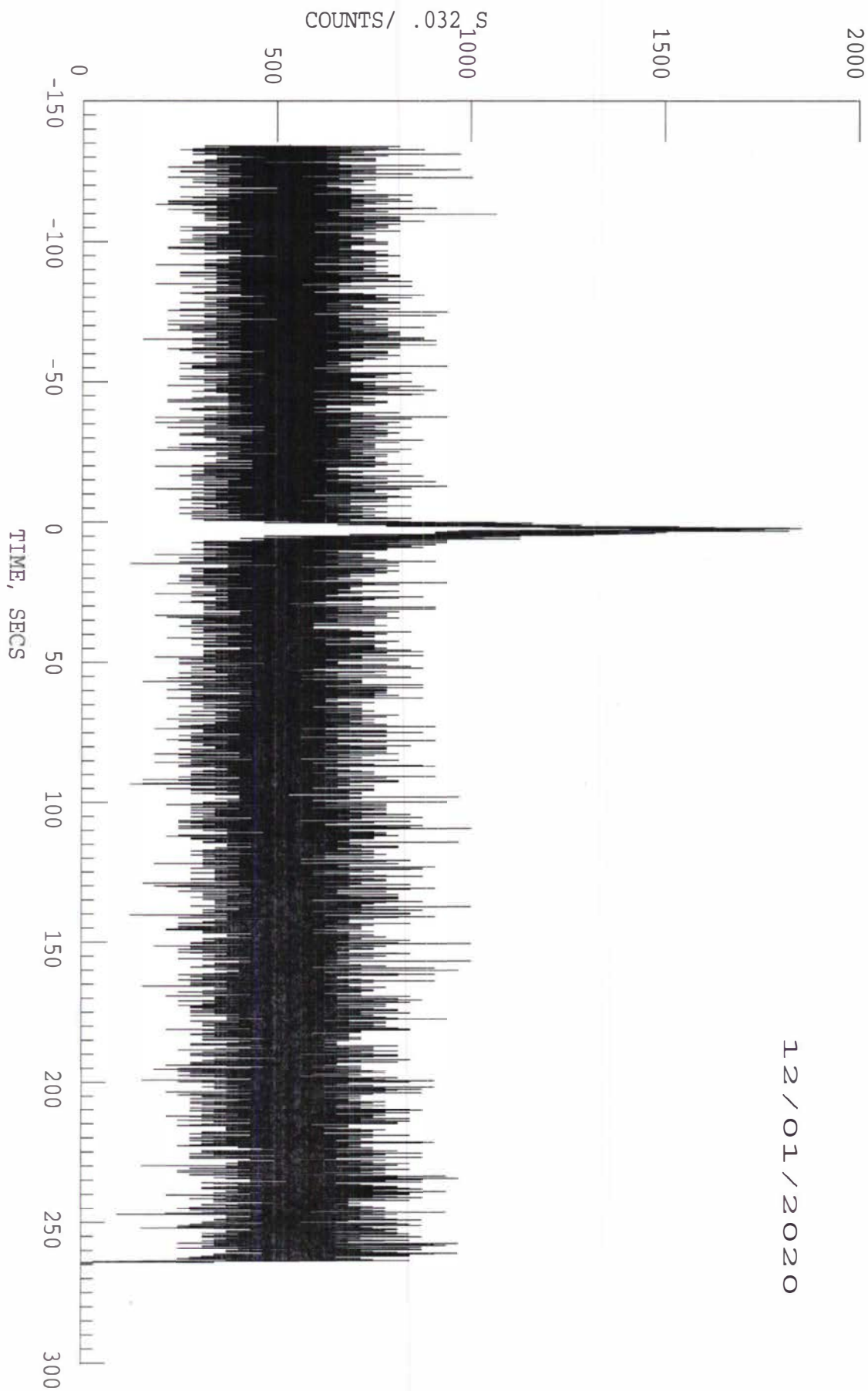
12:36:31.101

B

26- 293 keV

SPI N/O

150.1 64.4 2



12/01/2020

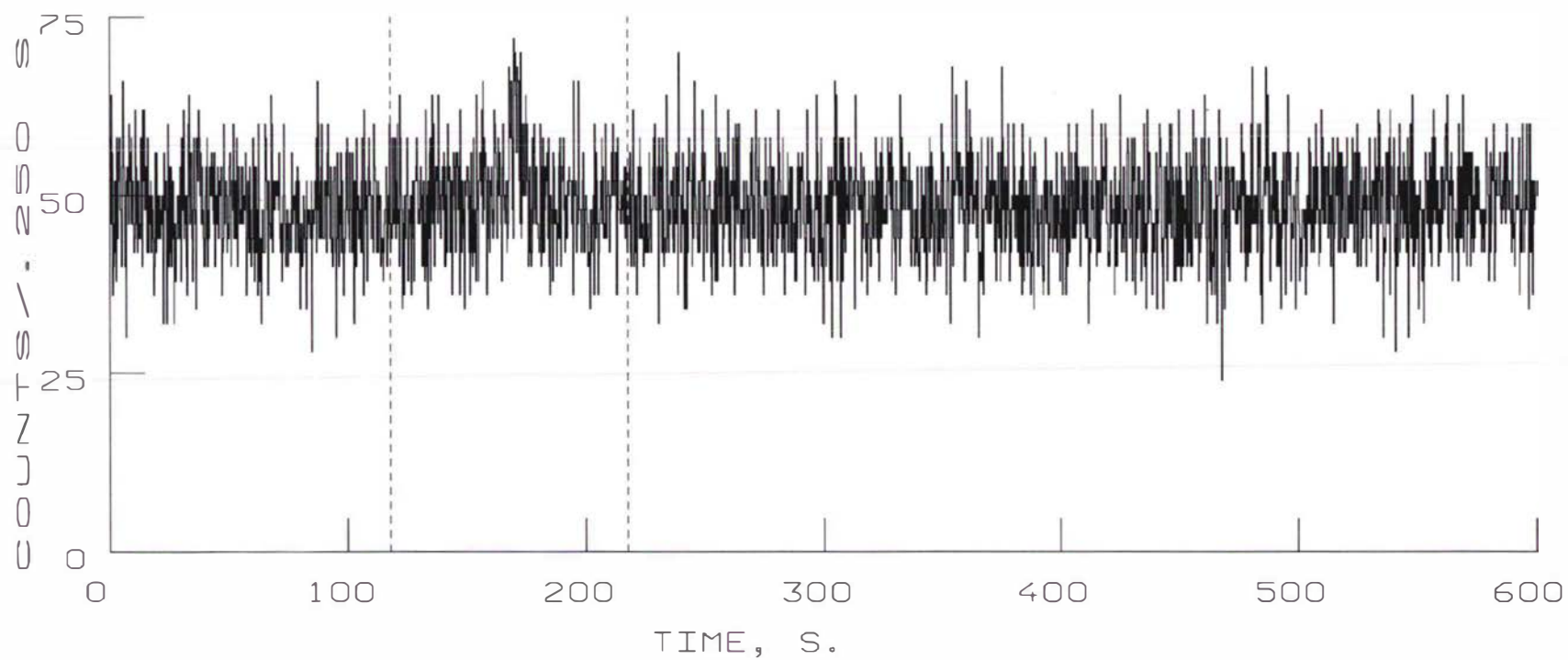
MS01 HEND

06/03/2020

12/01/2020 45527.855 s

50-3000 keV

N= 10 M=20
>4.0 SIGMA FLUCTUATIONS



8

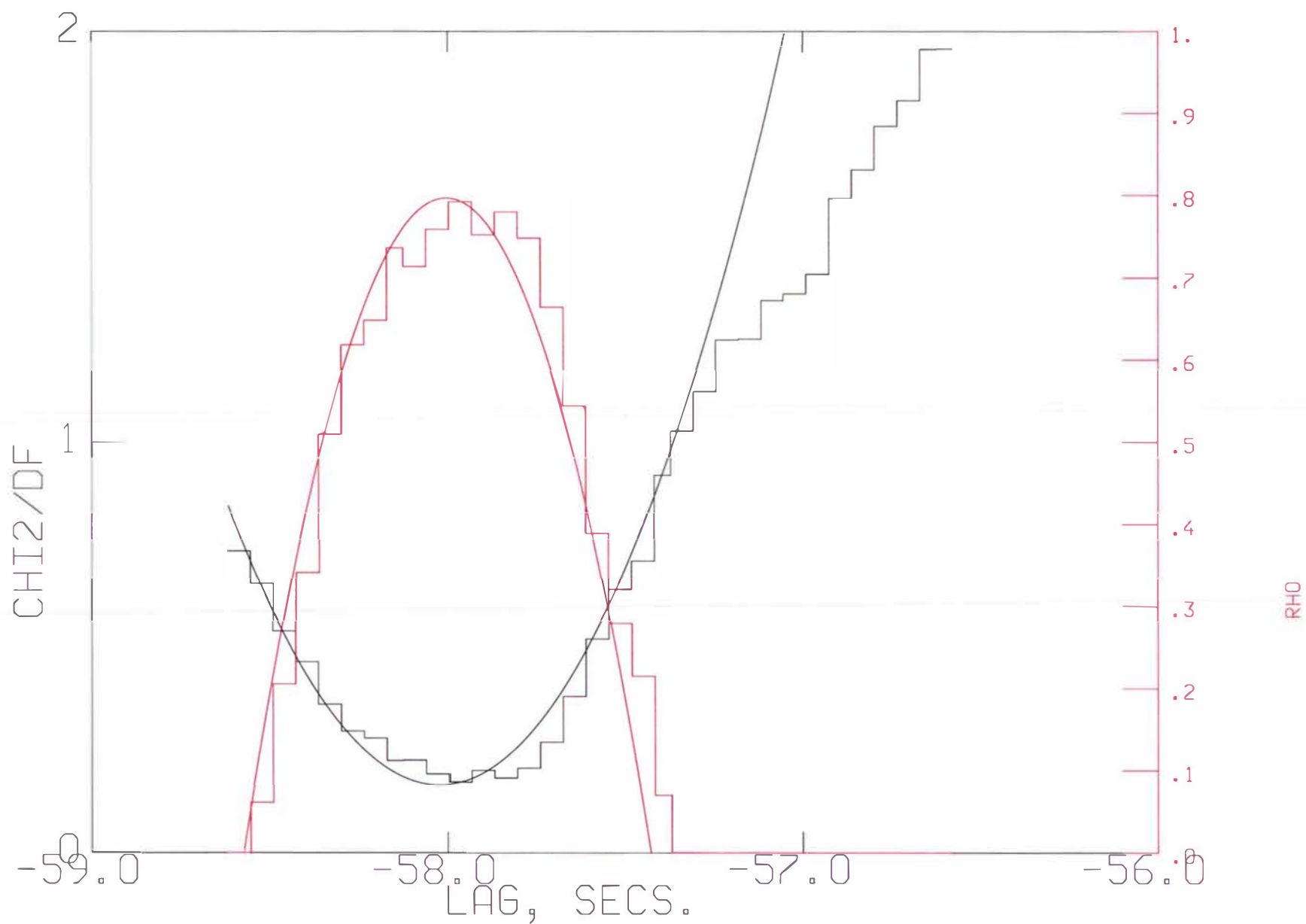
MS01 HEND -KONUS2

CORRELATION

12/01/20

45637.855

6/ 3/20



B

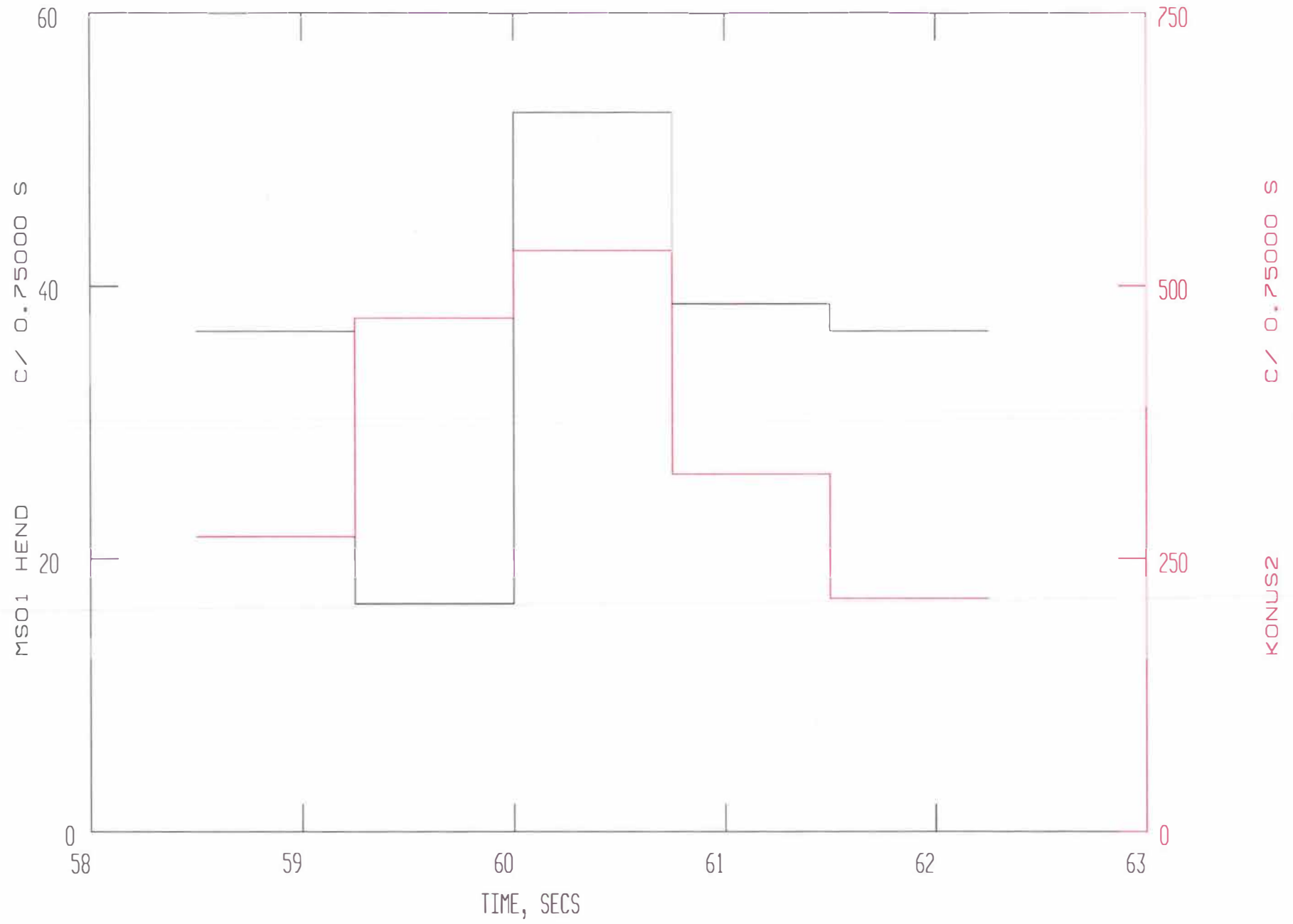
MSO1 HEND -KONUS2

CORRELATION

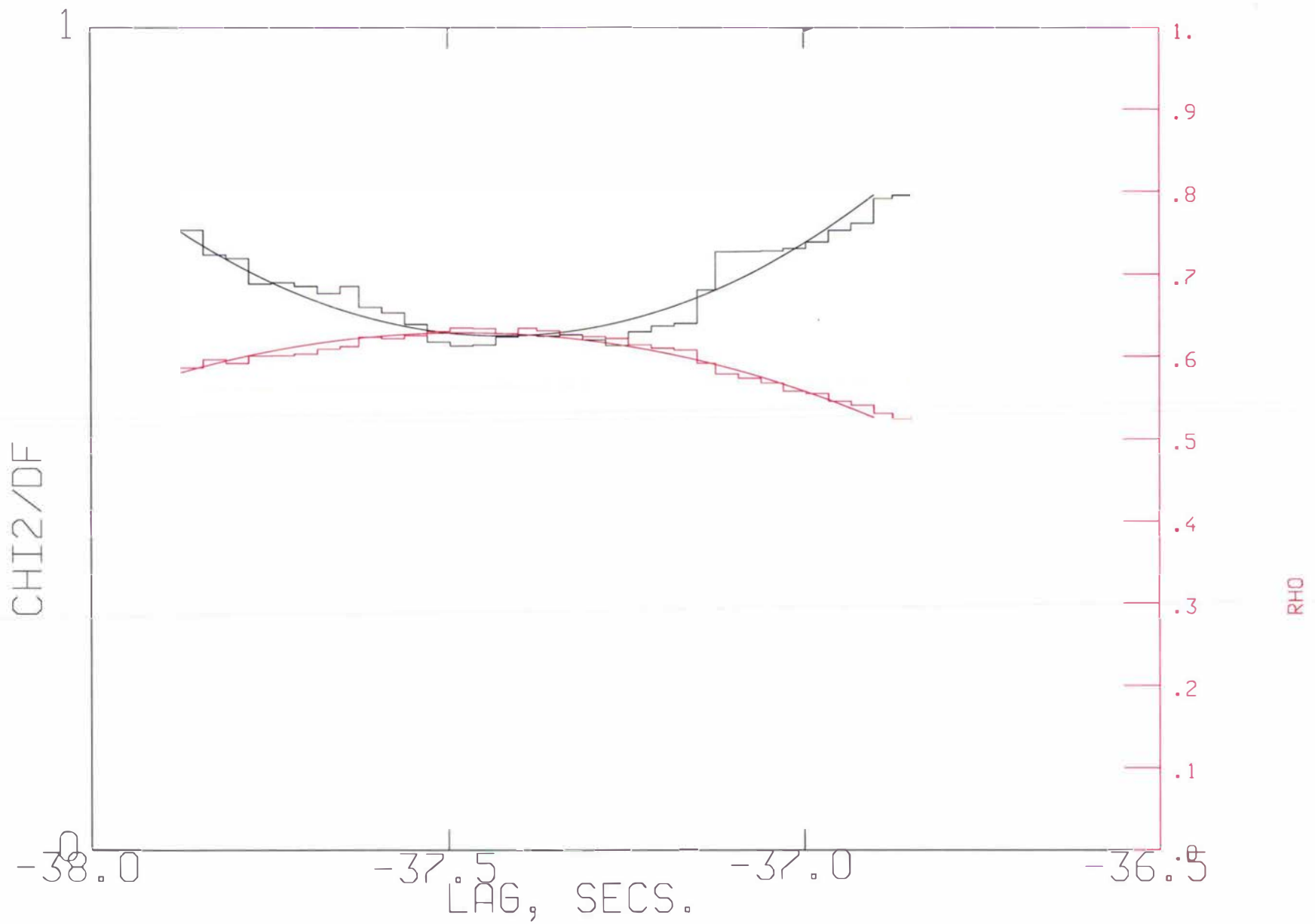
12/01/20

45637.855

6/ 3/20

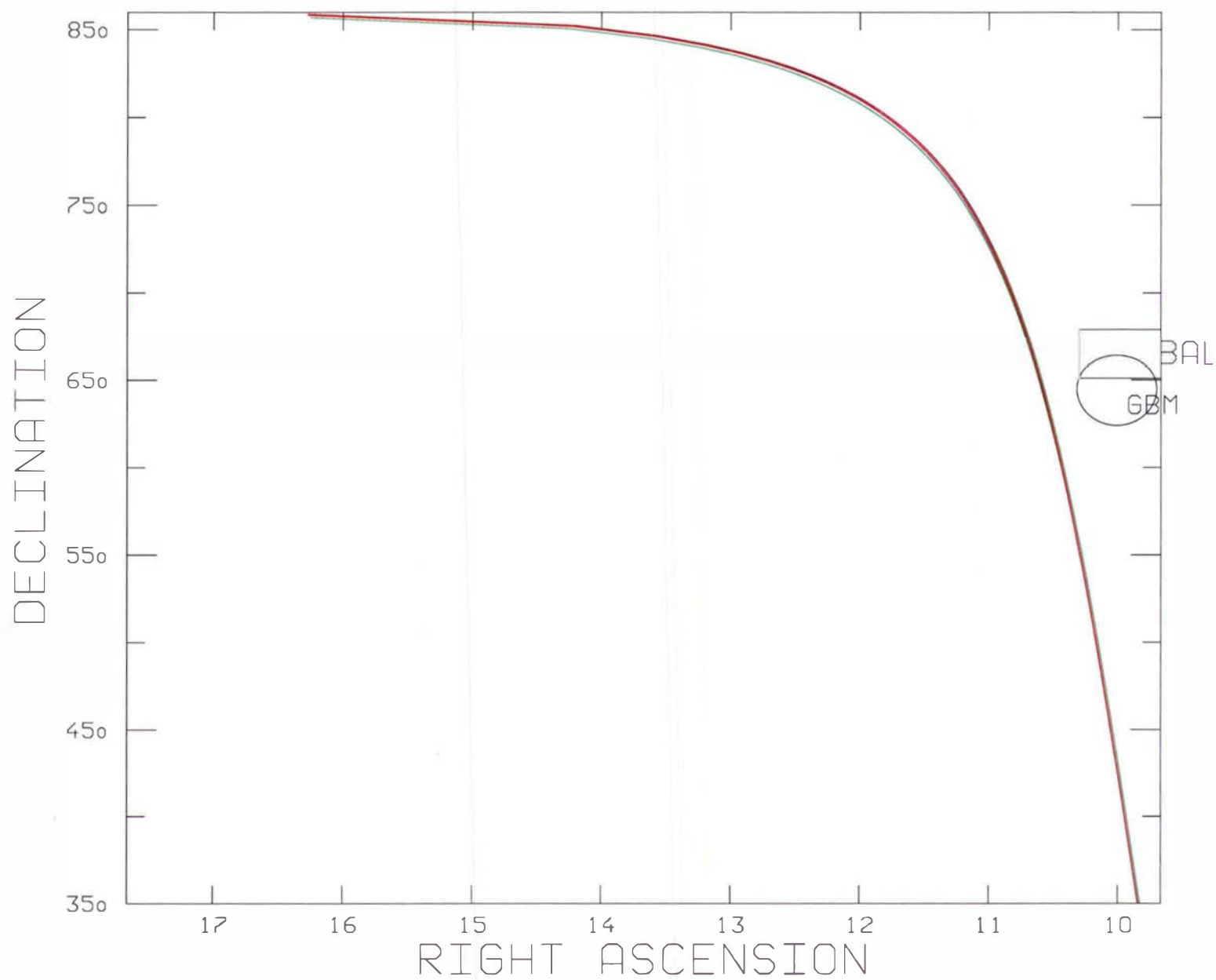


B



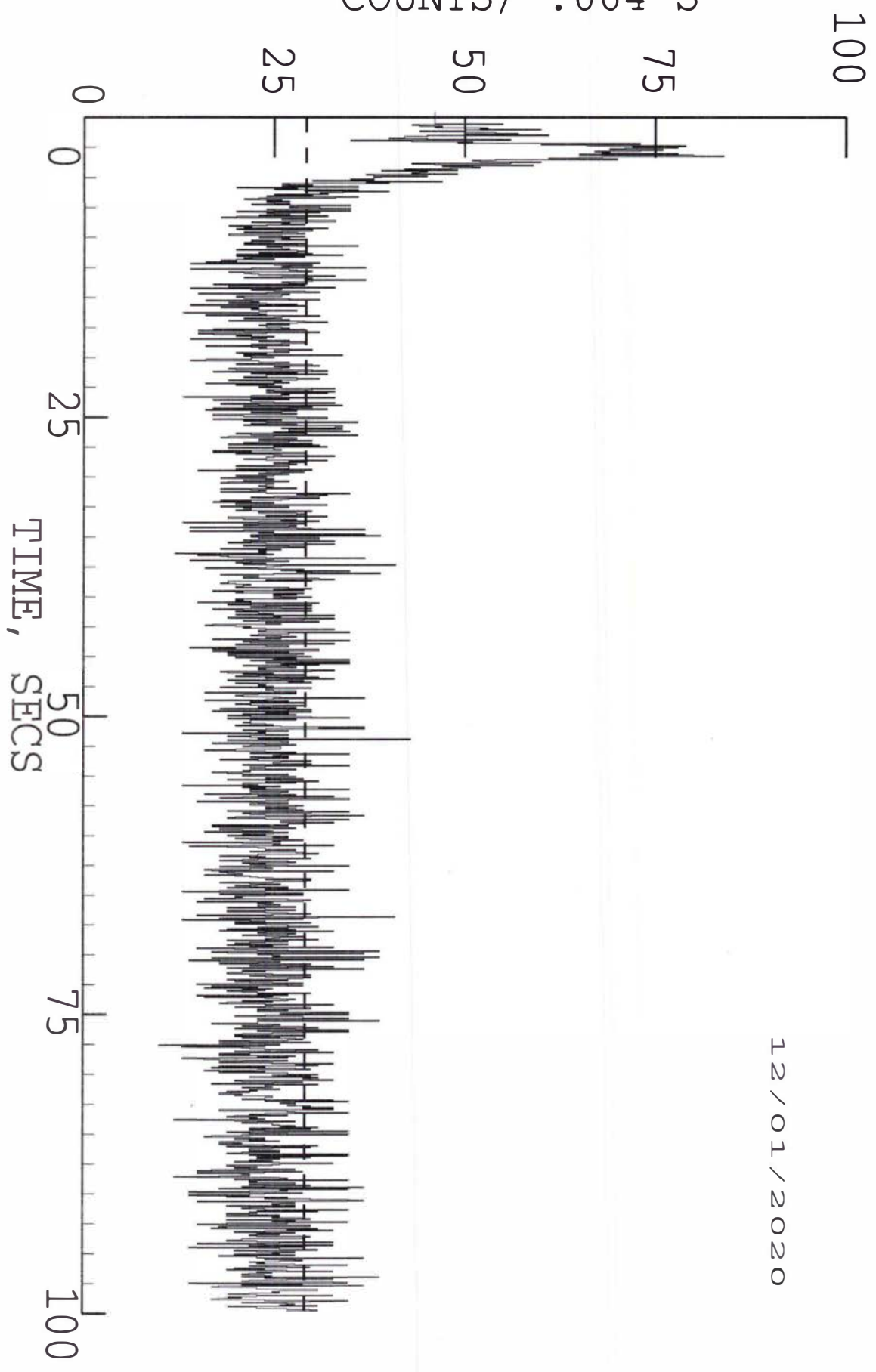
GRB200112 ~45332 S

06/03/2020



B

KONUS 12/01/20 45394.462 12:36:34.462
50- 200 keV
COUNTS/ .064 S



12/01/2020

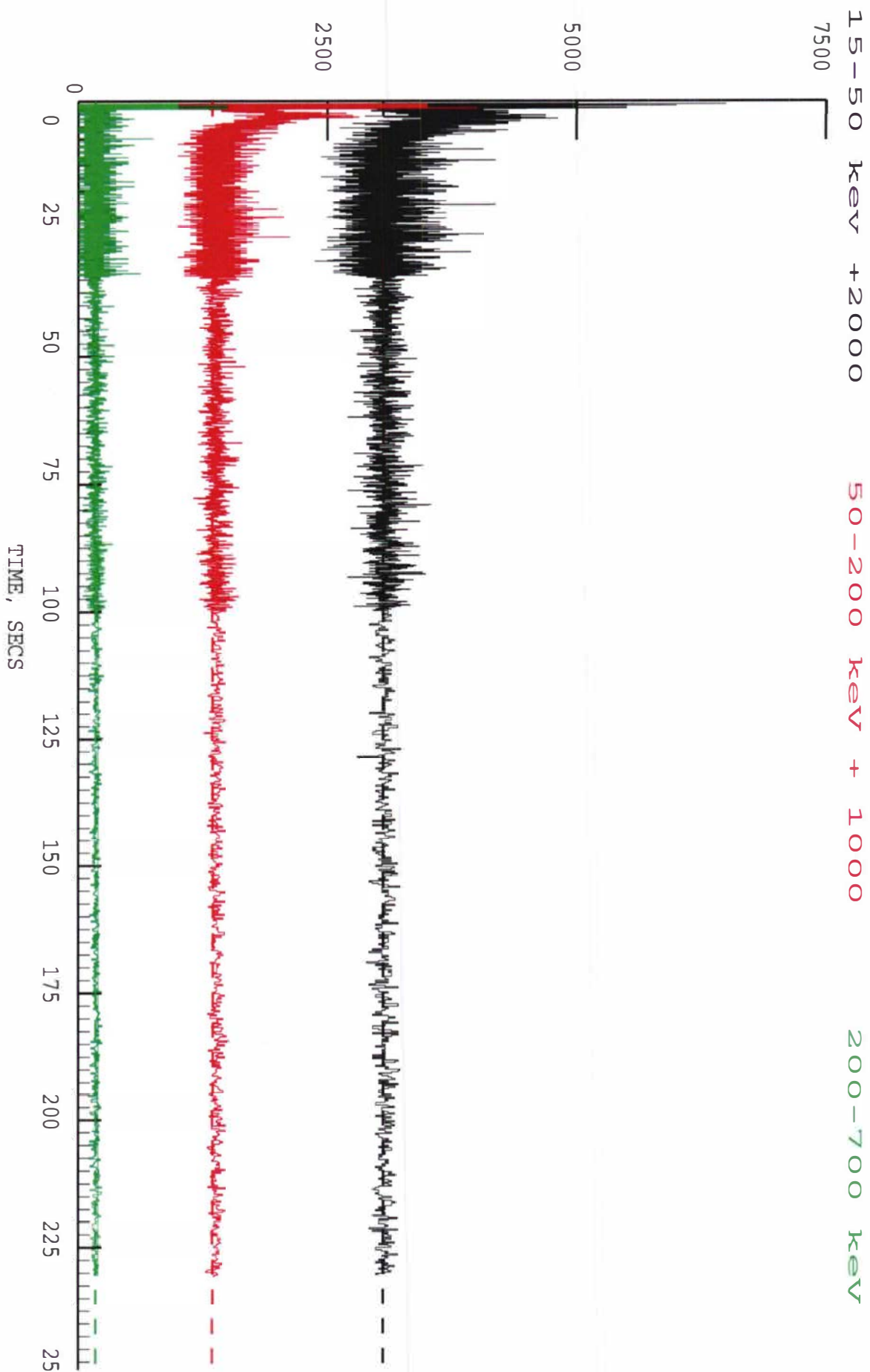
KONUS

12/01/20

45394.000

12:36:34.000

COUNTS/SEC



25 / 06 / 2020

Subject: BAT lightcurve for trigger at 200112_1236

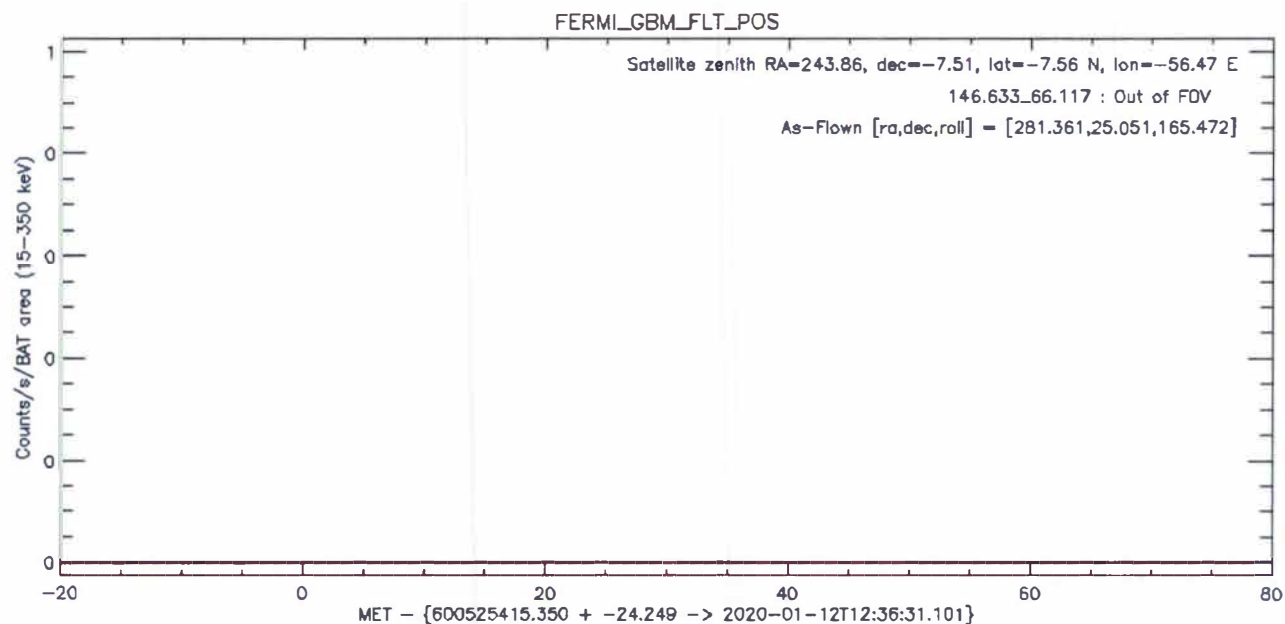
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/12/2020, 10:46 AM

To: aaron.tohu@gmail.com, 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/200112_1236.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600525415.350 -s 146.633_66.117
```

```
Swift Zenith(RA,dec): 243.86, -7.51
```

```
Swift Location(lon,lat,alt): -56.47 E, -7.56 N, 545 km
```

```
Time(MET + UTCF -> UT): 600525415.350 + -24.249 -> 2020-01-12T12:36:31.101
```

```
YYMMDD_SOD: 200112_45391.101 DOY=012
```

```
Obs Sequence Number: 00076749001
```

```
Obs Target Name: saa-cold-12-02
```

```
Obs Date and Times: 2020-01-12 12:31:36 - 12:58:35
```

```
Obs Pointing(ra,dec,roll): 281.361, 25.051, 165.47
```

```
146.633_66.117_imageloc (boresight_dist, angle): (83, 88)
```

```
146.633_66.117_exposure (cm2 cos adjusted): 0
```

```
146.633_66.117_altitude: 13 (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/200112_1236.png

7.8 KB

/tmp/swift/200112_1236_bat64ms_ipn

87.0 KB

Subject: GRB 200112A: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/13/2020, 4:11 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26729
SUBJECT: GRB 200112A: AstroSat CZTI detection
DATE: 20/01/13 12:11:04 GMT
FROM: Ramkrishna Gaikwad at IUCAA/AstroSat <ramkrishna@iucaa.in>

R. Gaikwad, V. Sharma, A. Vibhute 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 GRB 200112A, which was also detected by Fermi GBM Final Real-time Localization (GCN #26711) and BALROG localization (Biltzinger B. et al., GCN #26713).

The source was clearly detected in the 40-200 keV energy range. The light curve showed a single peak of emission peaking at 2020-01-12 12:36:31.0 UT. The measured peak count rate associated with the burst is 688 cts/s above the background in the combined data of four quadrants, with a total of 2590 cts. The local mean background count rate was 536 cts/s. Using cumulative rates, we measure a T90 of 11.9 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: LIGO/Virgo S200112r: Identification of a GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/12/2020, 8:27 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26715
SUBJECT: LIGO/Virgo S200112r: Identification of a GW compact binary merger candidate
DATE: 20/01/12 16:27:18 GMT
FROM: Erik Katsavounidis at MIT <kats@ligo.mit.edu>

LIGO/Virgo S200112r: Identification of a GW compact binary merger candidate

The LIGO Scientific Collaboration and the Virgo Collaboration report:

We identified the compact binary merger candidate S200112r during real-time processing of data from LIGO Livingston Observatory (L1) and Virgo Observatory (V1) at 2020-01-12 15:58:38.094 UTC (GPS time: 1262879936.094). The candidate was found by the GstLAL [1] analysis pipeline.

S200112r is an event of interest because its false alarm rate, as estimated by the online analysis, is 1.3×10^{-11} Hz, or about one in 10^3 years. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S200112r>

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

Assuming the candidate is astrophysical in origin, the probability that the lighter compact object has a mass < 3 solar masses (HasNS) is <1%. Using the masses and spins inferred from the signal, the probability of matter outside the final compact object (HasRemnant) is <1%.

Two sky maps are available at this time and can be retrieved from the GraceDB event page:

- * bayestar.fits.gz,0, an initial localization generated by BAYESTAR [2], distributed via GCN notice about 2 minutes after the candidate event time.

- * bayestar.fits.gz,1 -- identical to bayestar.fits.gz,0

The preferred sky map at this time is bayestar.fits.gz,1. For the bayestar.fits.gz,1 sky map, the 90% credible region is 6199 deg².

Marginalized over the whole sky, the a posteriori luminosity distance estimate is 1136 ± 320 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 200112_1558

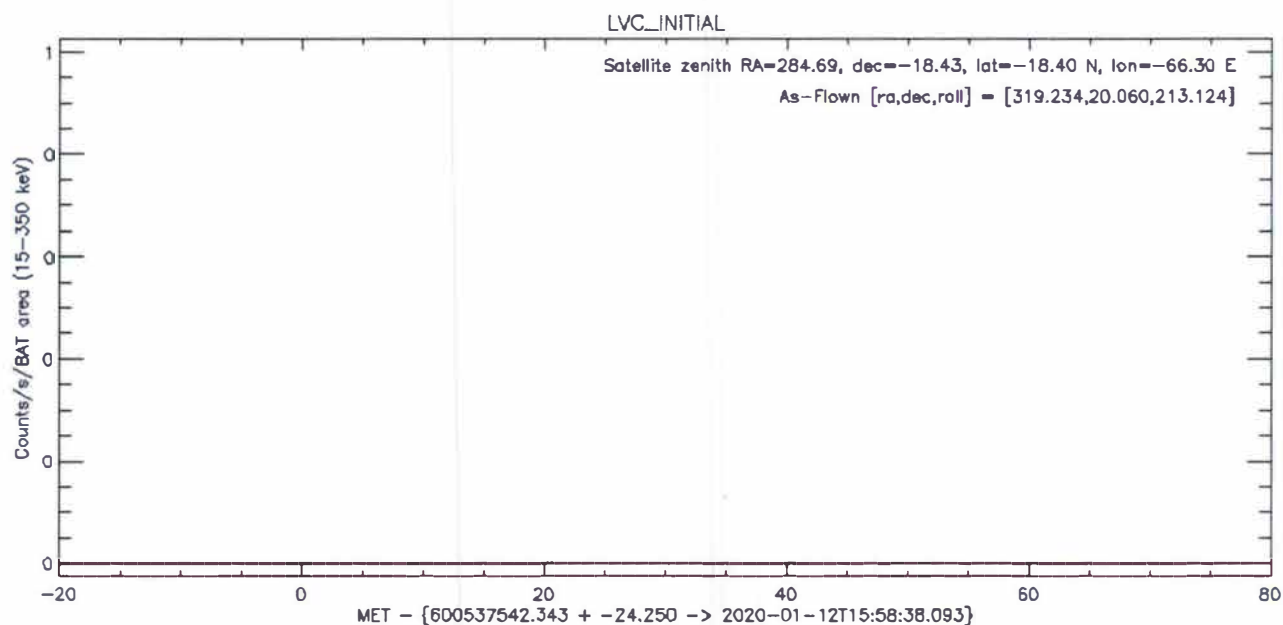
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/12/2020, 10:46 AM

To: aaron.tohu@gmail.com, 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/200112_1558.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600537542.343
Swift Zenith(RA,dec):      284.69, -18.43
Swift Location(lon,lat,alt): -66.30 E, -18.40 N, 547 km
Time(MET + UTC -> UT):    600537542.343 + -24.250 -> 2020-01-12T15:58:38.093
YYMMDD_SOD:              200112_57518.093      DOY=012
Obs Sequence Number:      00076303006
Obs Target Name:          saa-cold-12-04
Obs Date and Times:       2020-01-12 15:51:37 - 16:18:35
Obs Pointing(ra,dec,roll): 319.234, 20.060, 213.12
```

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

/tmp/swift/200112_1558_bat64ms_ipn	87.1 KB
/tmp/swift/200112_1558.png	7.3 KB

KONUS

13/01/2020

17.112

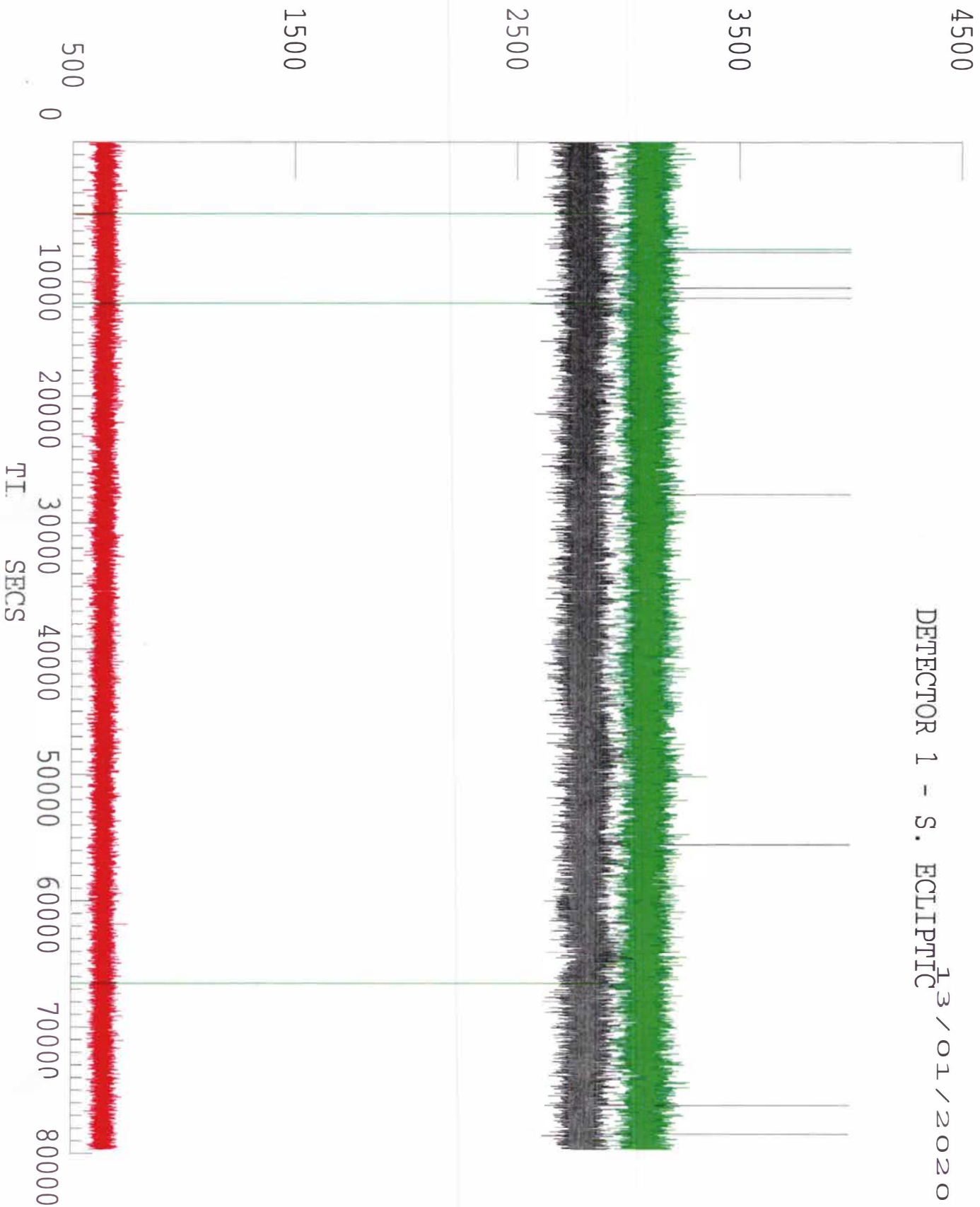
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

13/01/2020

17.112

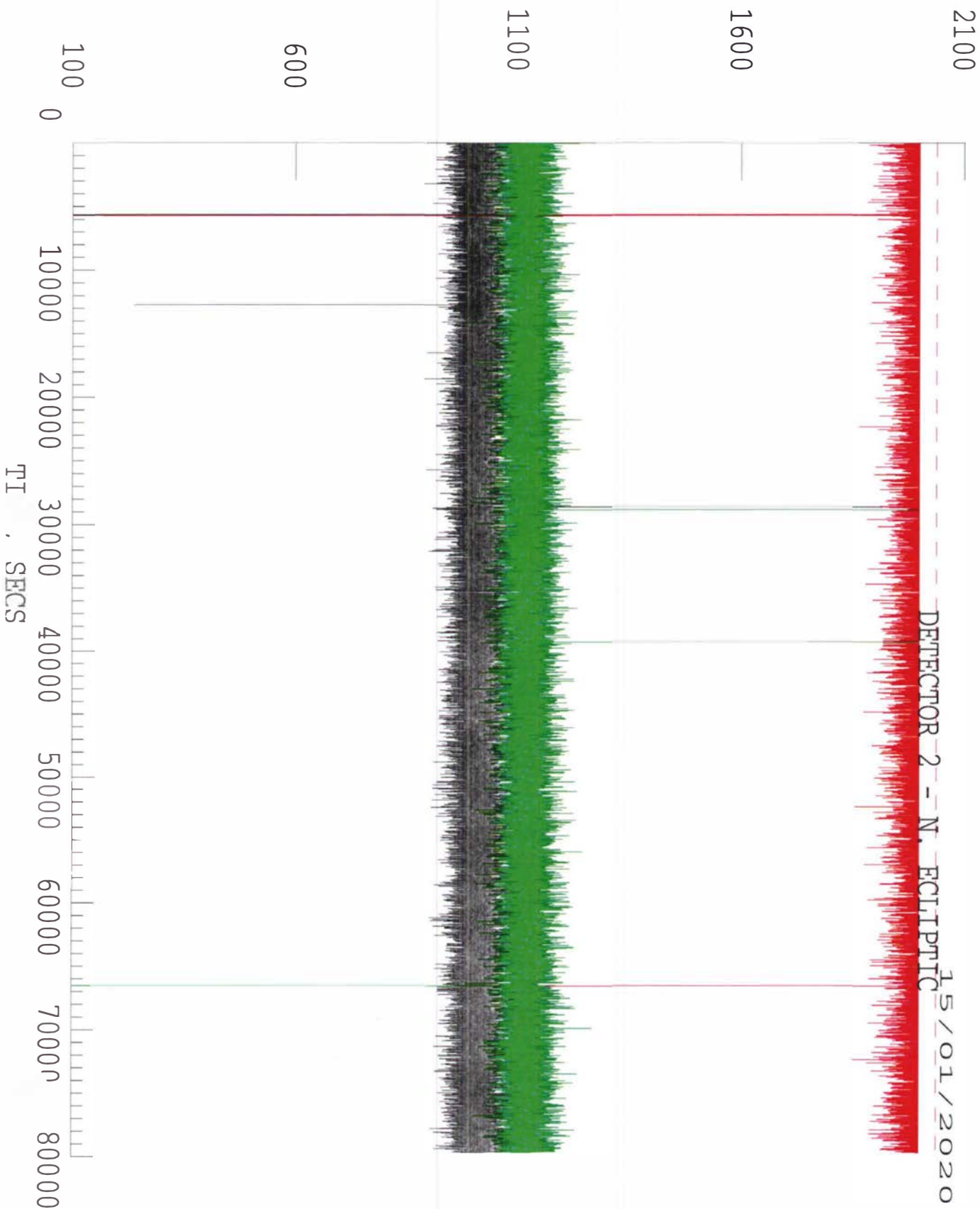
v02

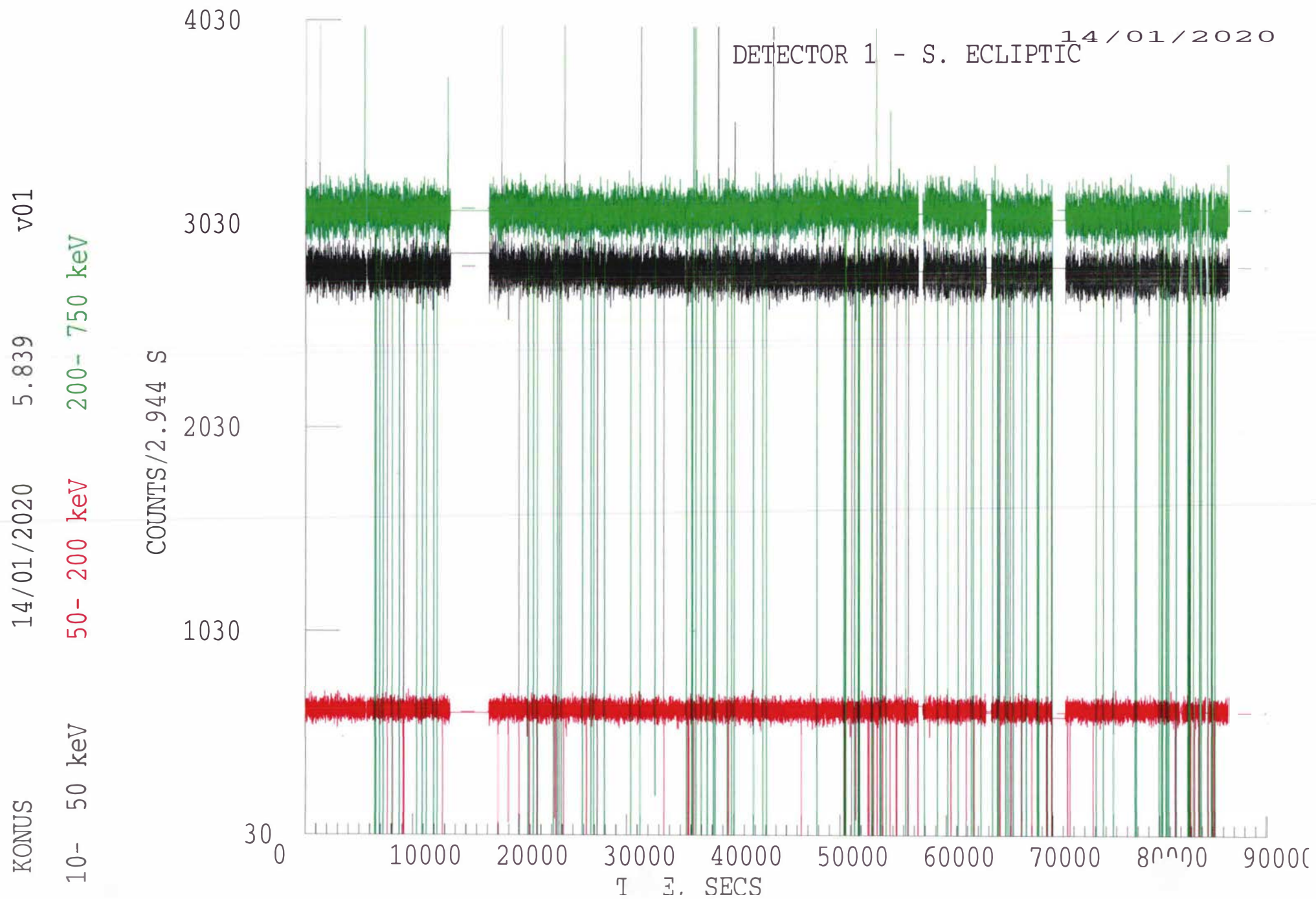
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S





KONUS

14/01/2020

5.839

v01

10- 50 keV

50- 200 keV

200- 750 keV

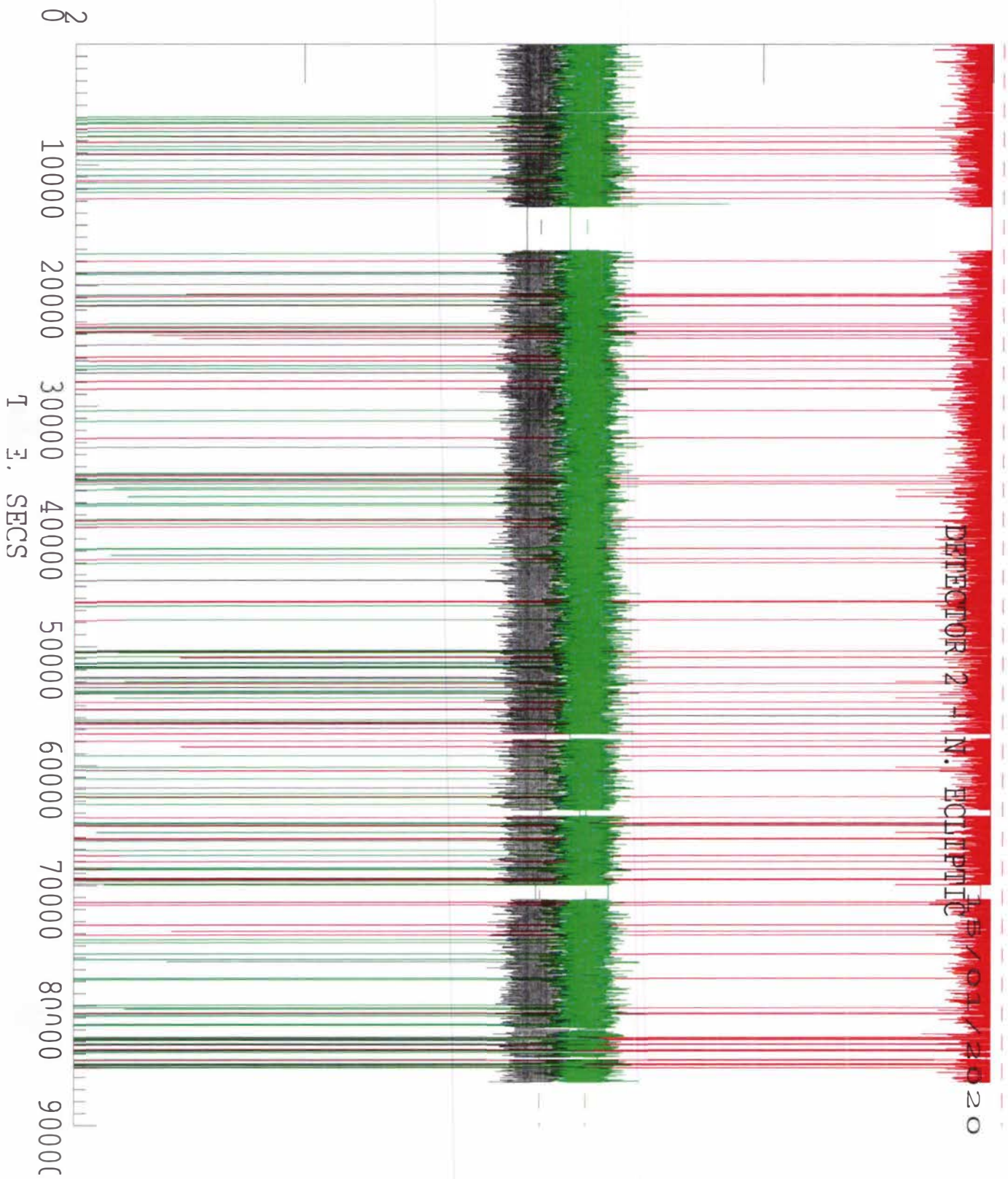
COUNTS/2.944 S

2002

1502

1002

502



Subject: LIGO/Virgo S200114f: Identification of a GW unmodeled transient candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/13/2020, 7:26 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26734
SUBJECT: LIGO/Virgo S200114f: Identification of a GW unmodeled transient candidate
DATE: 20/01/14 03:24:22 GMT
FROM: Deep Chatterjee at University of Wisconsin, Milwaukee <deep@uwm.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

We identified the unmodeled transient candidate S200114f during real-time processing of data from LIGO Hanford Observatory (H1), LIGO Livingston Observatory (L1), and Virgo Observatory (V1) at 2020-01-14 02:08:18.239 UTC (GPS time: 1263002916.239). The candidate was found by the CWB [1] analysis pipeline with a version of the search called $\diamond$ IMBH $\diamond$. This name is not a classification of the candidate.

S200114f is an event of interest because its false alarm rate, as estimated by the online analysis, is $1.2e-09$ Hz, or about one in 25 years. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S200114f>

Two sky maps are available at this time and can be retrieved from the GraceDB event page:

- * cWB.fits.gz,1, an initial localization generated by cWB, distributed via GCN notice about 5 minutes after the candidate event time.

- * cWB.fits.gz,3 -- this is identical to cWB.fits.gz,1

The preferred sky map at this time is cWB.fits.gz,3. For the cWB.fits.gz,3 sky map, the 90% credible region is 403 deg².

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] Klimenko et al. PRD 93, 042004 (2016)

BAT lightcurve for trigger at 200114_0208

Subject: BAT lightcurve for trigger at 200114_0208

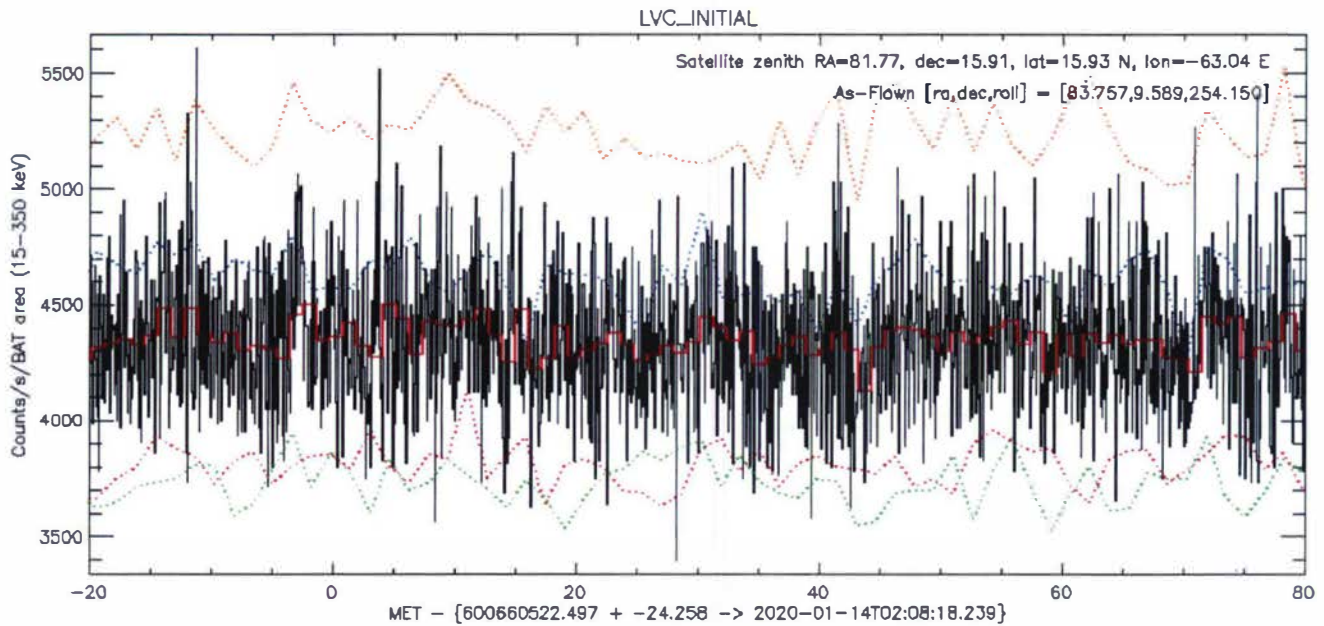
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/14/2020, 7:56 AM

To: aaron.tohu@gmail.com, 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/200114_0208.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2020-01-14T02:08:18.239
Swift Zenith(RA,dec):      81.77, 15.91
Swift Location(lon,lat,alt): -63.04 E, 15.93 N, 557 km
Time(MET + UTCF -> UT):    600660522.497 + -24.258 -> 2020-01-14T02:08:18.239
YYMMDD_SOD:                200114_07698.239      DOY=014
Obs Sequence Number:        03110609005
Obs Target Name:             4FGL J0535.3+0934
Obs Date and Times:          2020-01-14 02:04:37 - 02:18:34
Obs Pointing(ra,dec,roll):   83.757, 9.589, 254.15
```

--
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/200114_0208.png	21.7 KB
/tmp/swift/200114_0208_bat64ms_ipn	87.1 KB

FERMI

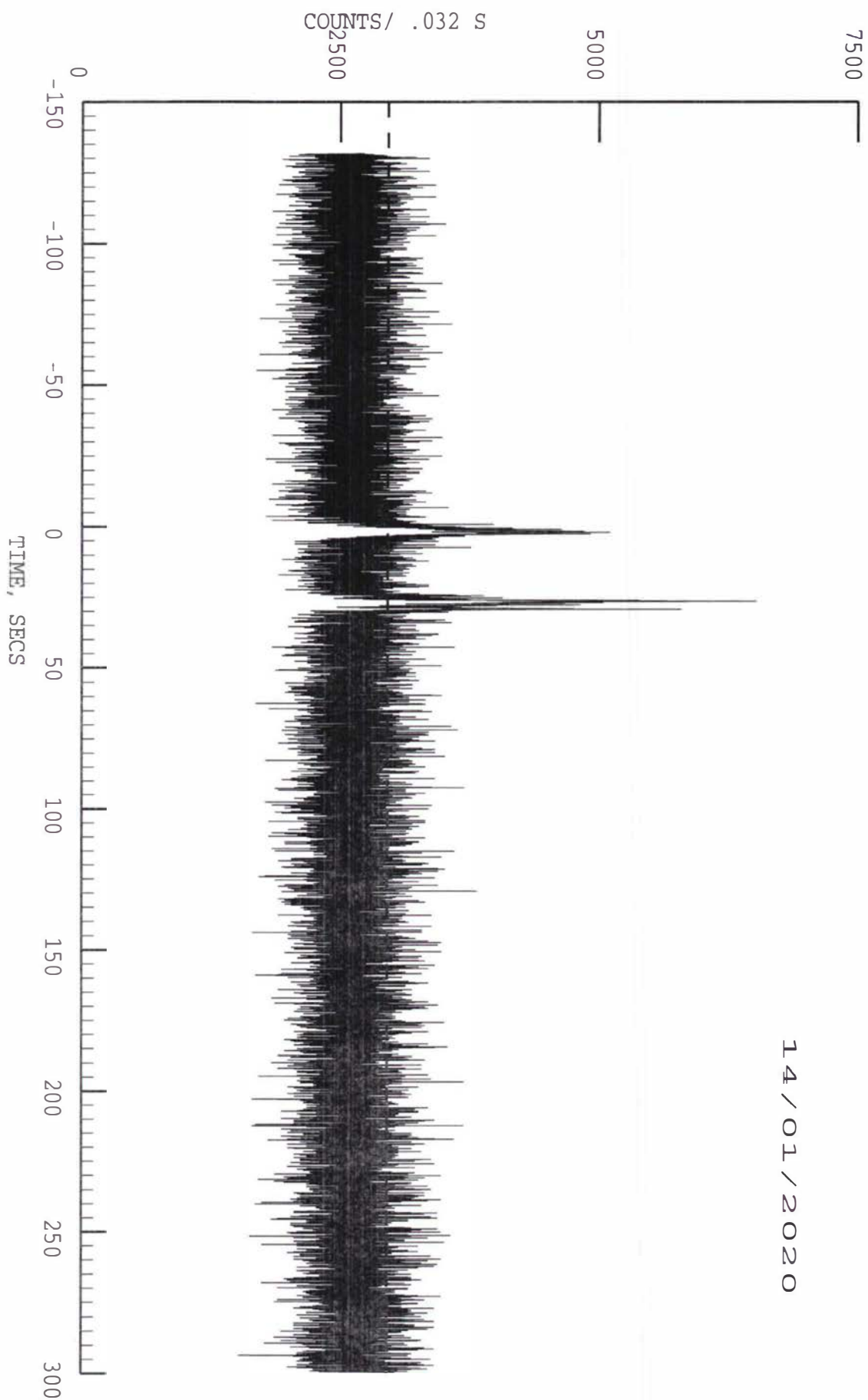
14/01/20

13243.724

03:40:43.724

26- 293 keV

199.4 0.3 2.6



ODYSSEY 14/01/20 11925.392 03:18:45.392
50-3000 keV

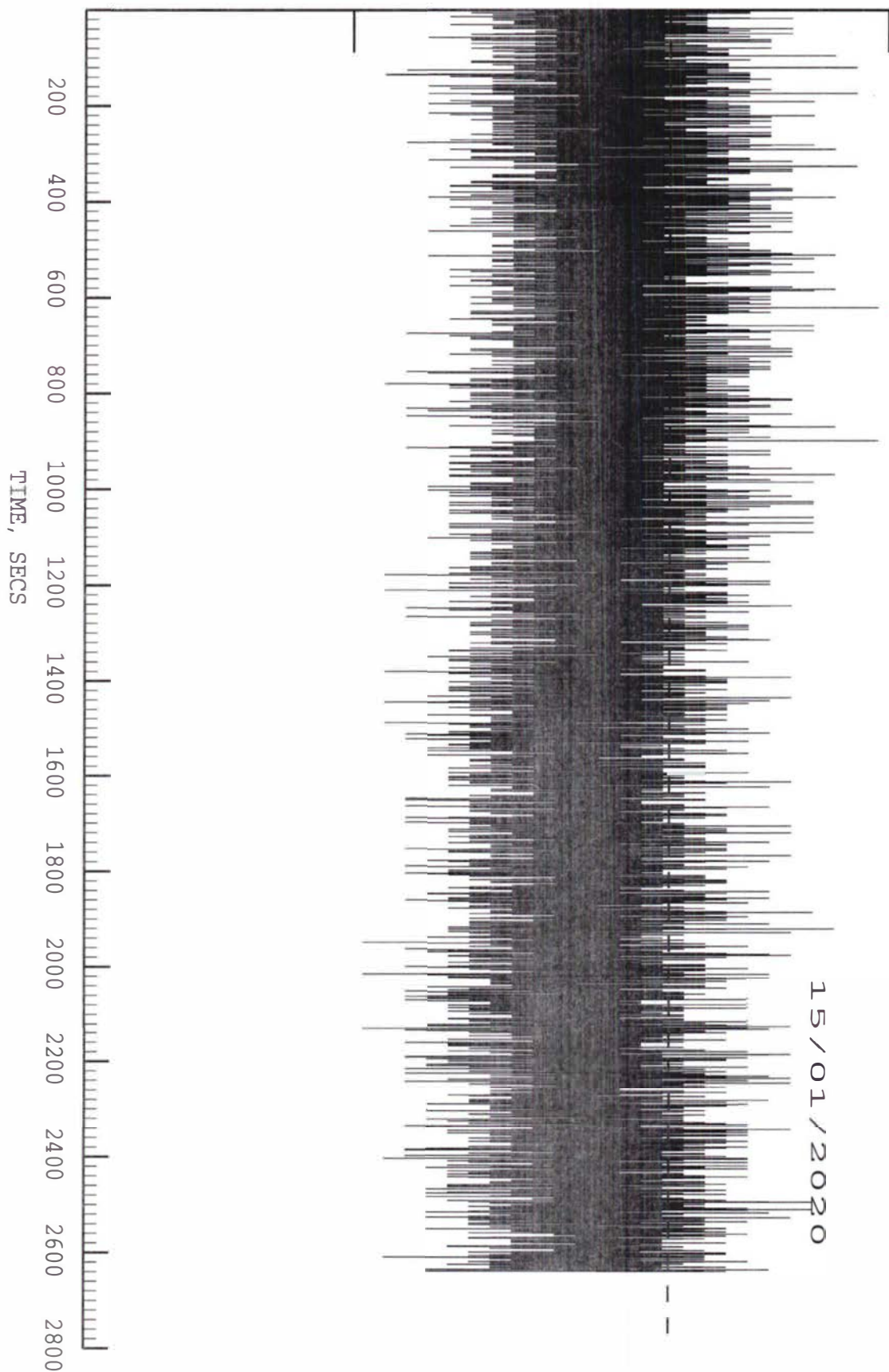
Occulted

COUNTS/ .250 S

75

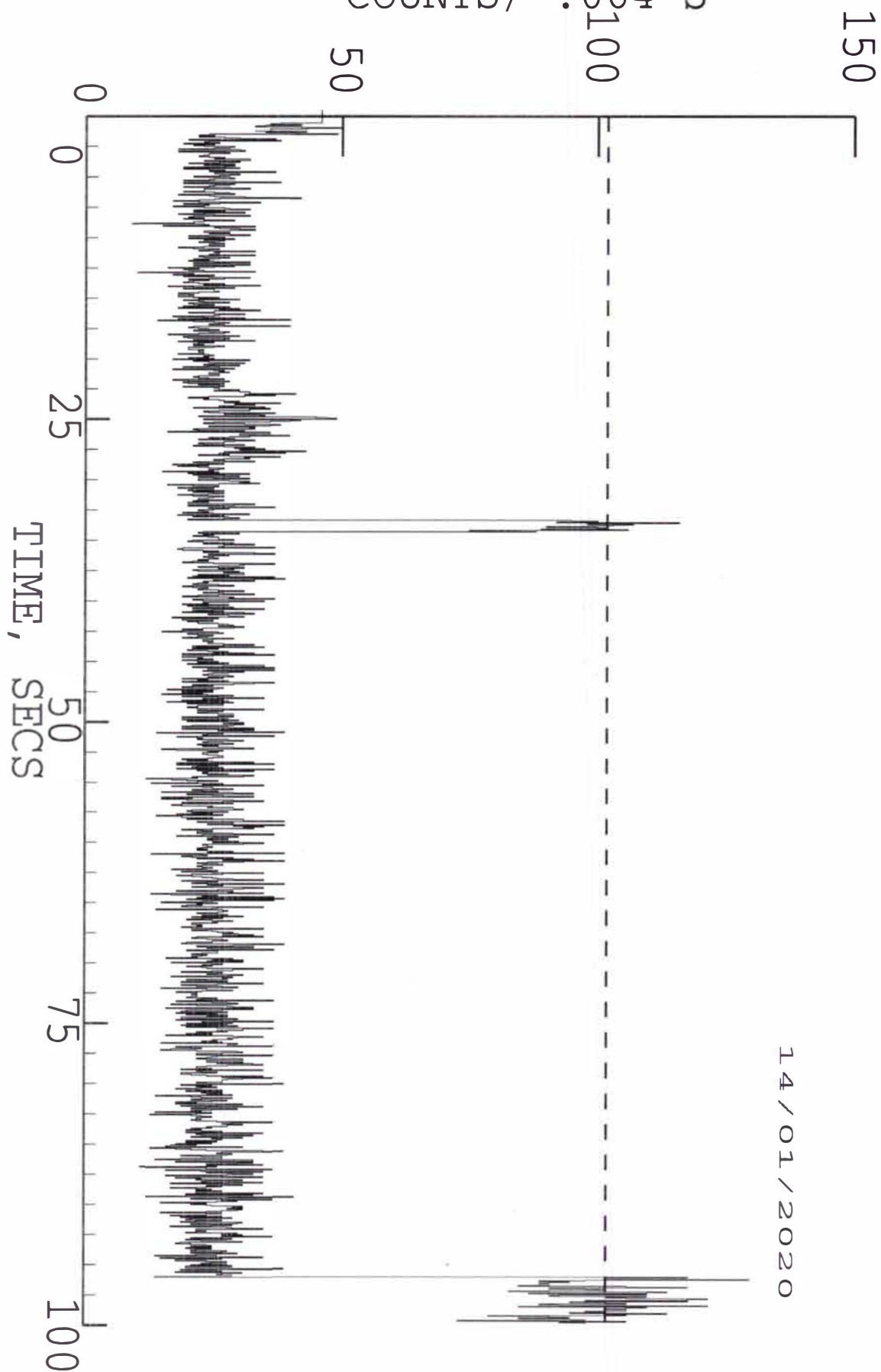
25

0



KONUS 14/01/20 13248.578 03:40:48.578
50- 200 keV

COUNTS/ .064 S



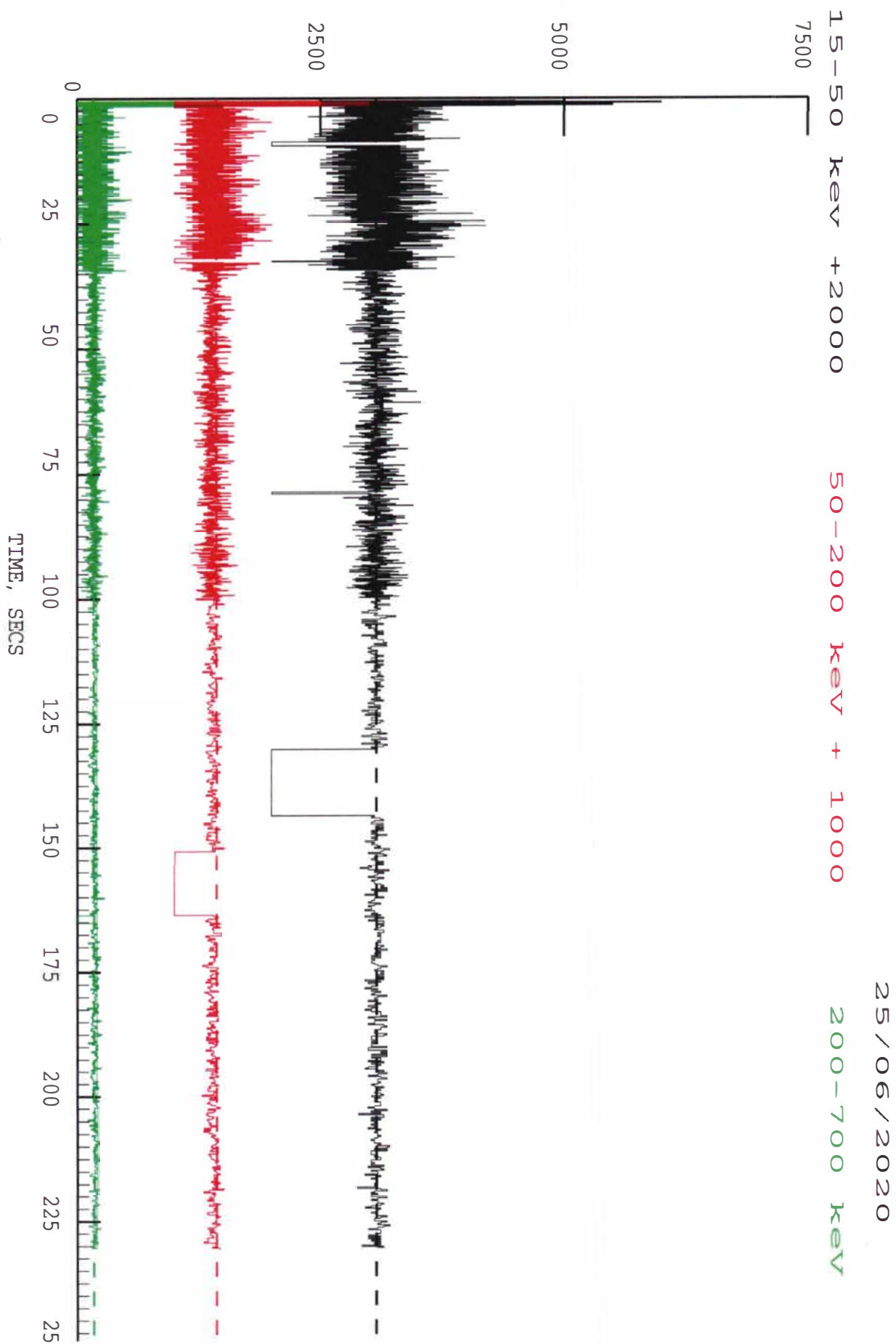
KONUS

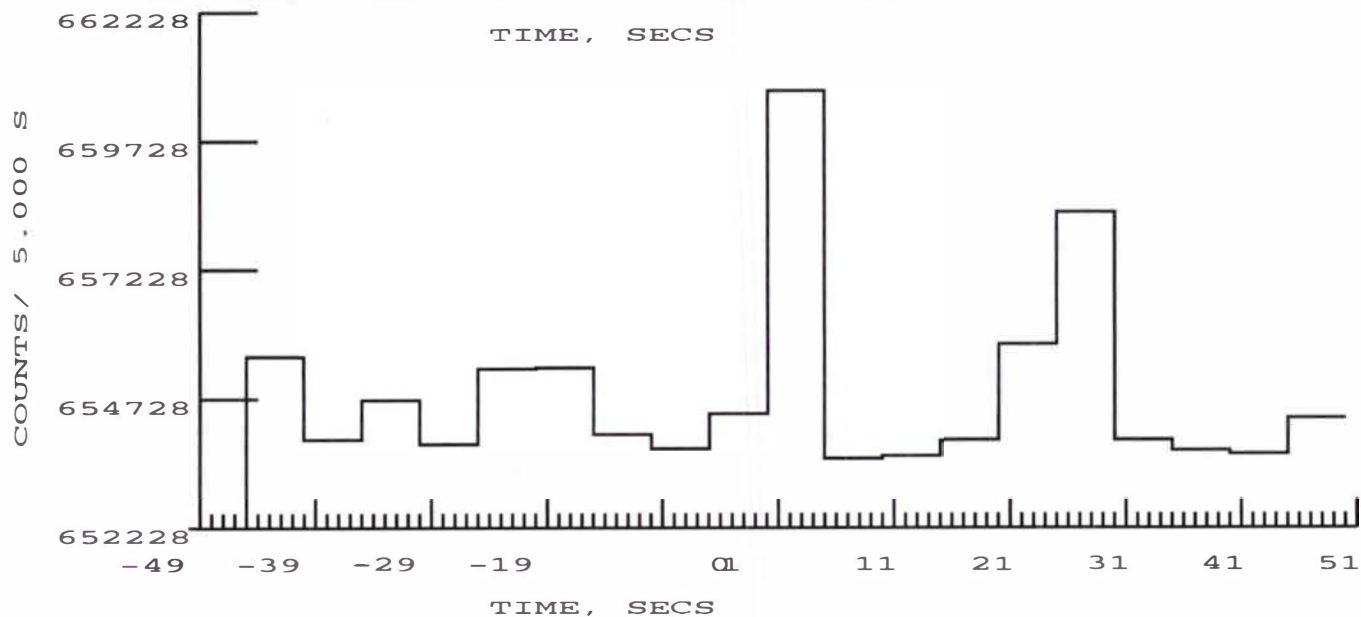
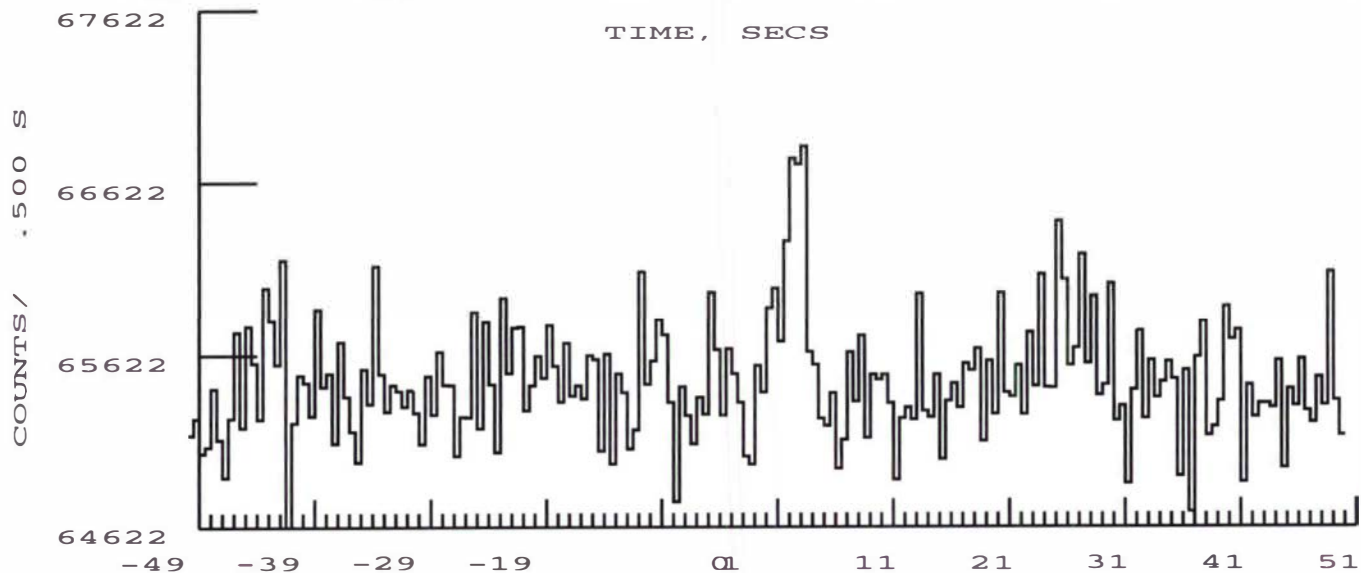
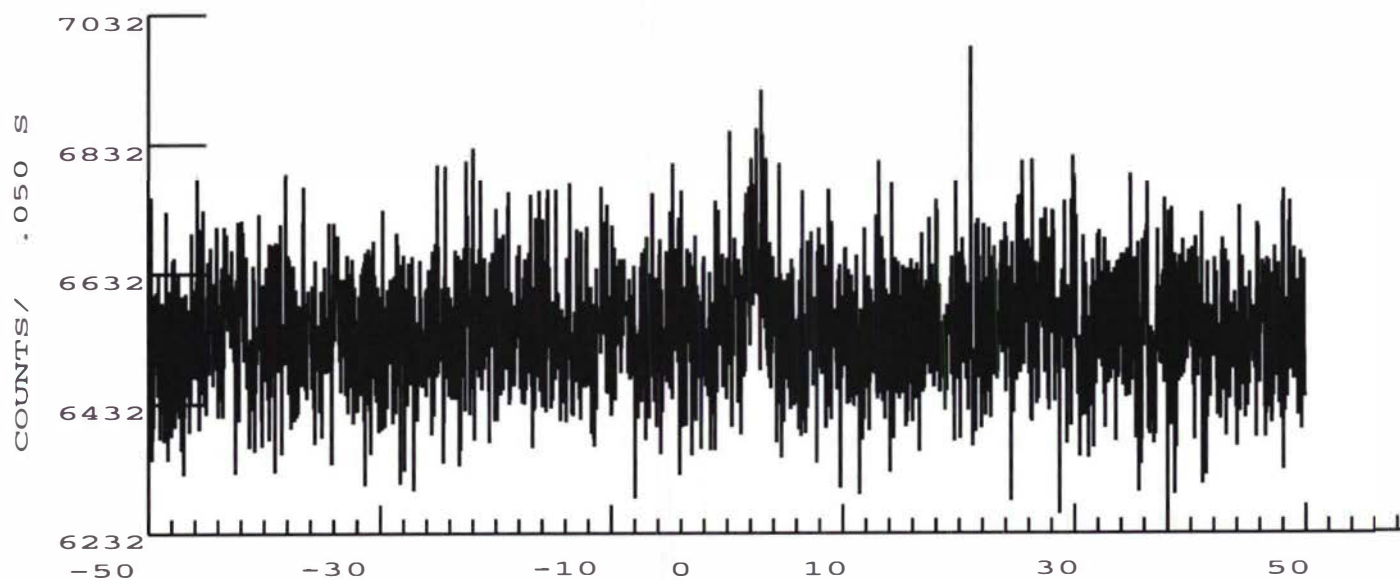
14/01/20

13248.000

03:40:48.000

COUNTS/SEC

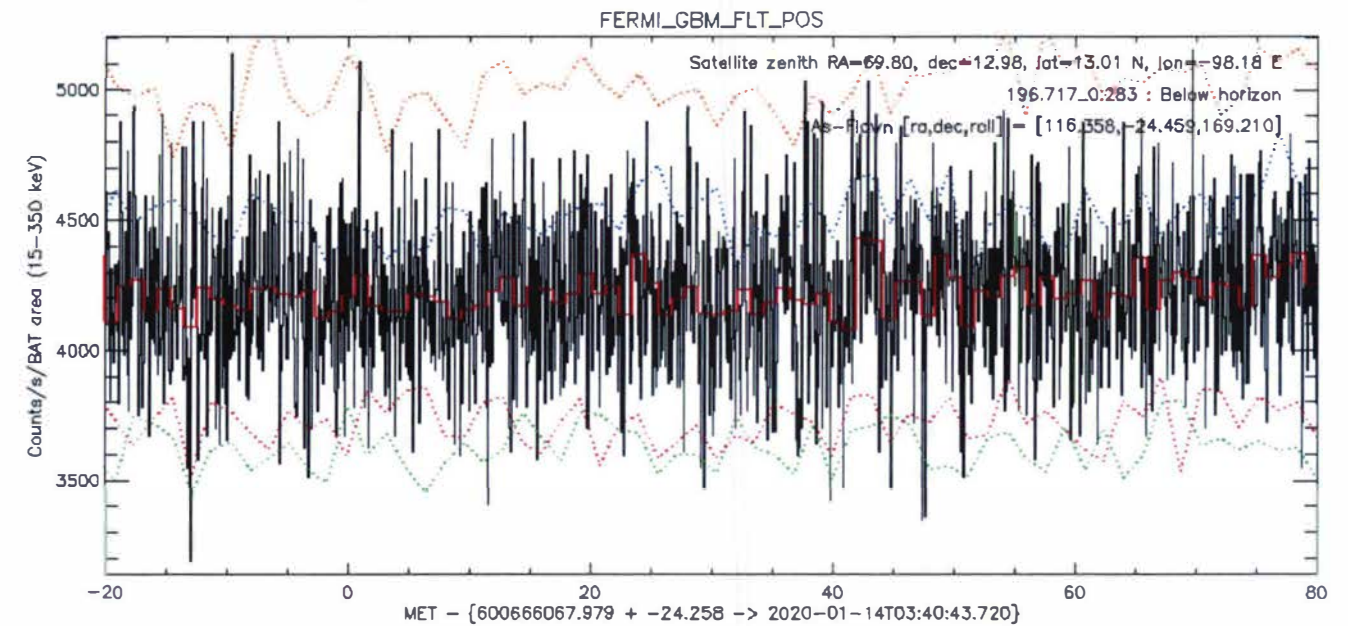




Subject: BAT lightcurve for trigger at 200114_0340
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 1/14/2020, 7:57 AM
To: aaron.tohu@gmail.com, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

~/tmp/swift/200114_0340.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 2020-01-14T03:40:43.720 -s 196.717_0.283
Swift Zenith(RA,dec):      69.80, 12.98
Swift Location(lon,lat,alt): -98.18 E, 13.01 N, 556 km
Time(MET + UTCF -> UT):    600666067.979 + -24.258 -> 2020-01-14T03:40:43.720
YYMMDD_SOD:                200114_13243.720      DOY=014
Obs Sequence Number:       00087872002
Obs Target Name:           OGP_4553
Obs Date and Times:        2020-01-14 03:33:37 - 03:50:34
Obs Pointing(ra,dec,roll): 116.358, -24.459, 169.21
196.717_0.283_imageloc (boresight_dist, angle): (81, -173)
196.717_0.283_exposure (cm^2 cos adjusted): 0
196.717_0.283_altitude: -13 (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/200114_0340_bat64ms_ipn	87.1 KB
~/tmp/swift/200114_0340.png	23.0 KB

Subject: GRB 200114A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/15/2020, 5:03 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26773
SUBJECT: GRB 200114A: Insight-HXMT/HE detection
DATE: 20/01/15 13:02:23 GMT
FROM: Ce Cai at IHEP <caice@ihep.ac.cn>

C. Cai, S. Xiao, Y. F. Du, Y. G. Zheng, Q. Luo, Q. B. Yi,
Y. Huang, C. K. Li, G. Li, X. B. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, A. M. Zhang,
Y. F. Zhang, X. F. Lu, 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 2020-01-14T03:40:45.50 (T0), Insight-HXMT/HE detected
GRB 200114A (trigger ID: HEB200114153) in a routine search of the data,
which also triggered Fermi/GBM (GCN #26735).

The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 30.02 s measured from T0-2.72 s.
The 1-ms peak rate, measured from T0-0.57 s, is 1112 cnts/sec.
The total counts from this burst is 6070 counts.
URL_LC: <http://www.hxmt.org/images/GRB/HEB200114153 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 200114A: AstroSat CZTI detection

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

Date: 1/14/2020, 5:18 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26746

SUBJECT: GRB 200114A: AstroSat CZTI detection

DATE: 20/01/14 13:17:48 GMT

FROM: Ramkrishna Gaikwad at IUCAA/AstroSat <ramkrishna@iucaa.in>

R. Gaikwad, S. Gupta, 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 GRB 200114A, which was also detected by Fermi GBM Final Real-time Localization (GCN #26735), BALROG localization (Kunzweiler F. et al., GCN #26736) and Global MASTER-Net (Lipunov V. et al., GCN #26737).

The source was clearly detected in the 40-200 keV energy range. The light curve showed multiple peaks of emission with the strongest peak at 2020-01-14 03:40:45.0 UT. The measured peak count rate associated with the burst is 267 cts/s above the background in the combined data of four quadrants, with a total of 2222 cts. The local mean background count rate was 487 cts/s. Using cumulative rates, we measure a T90 of 38.4 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

85.831

15/01/2020

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

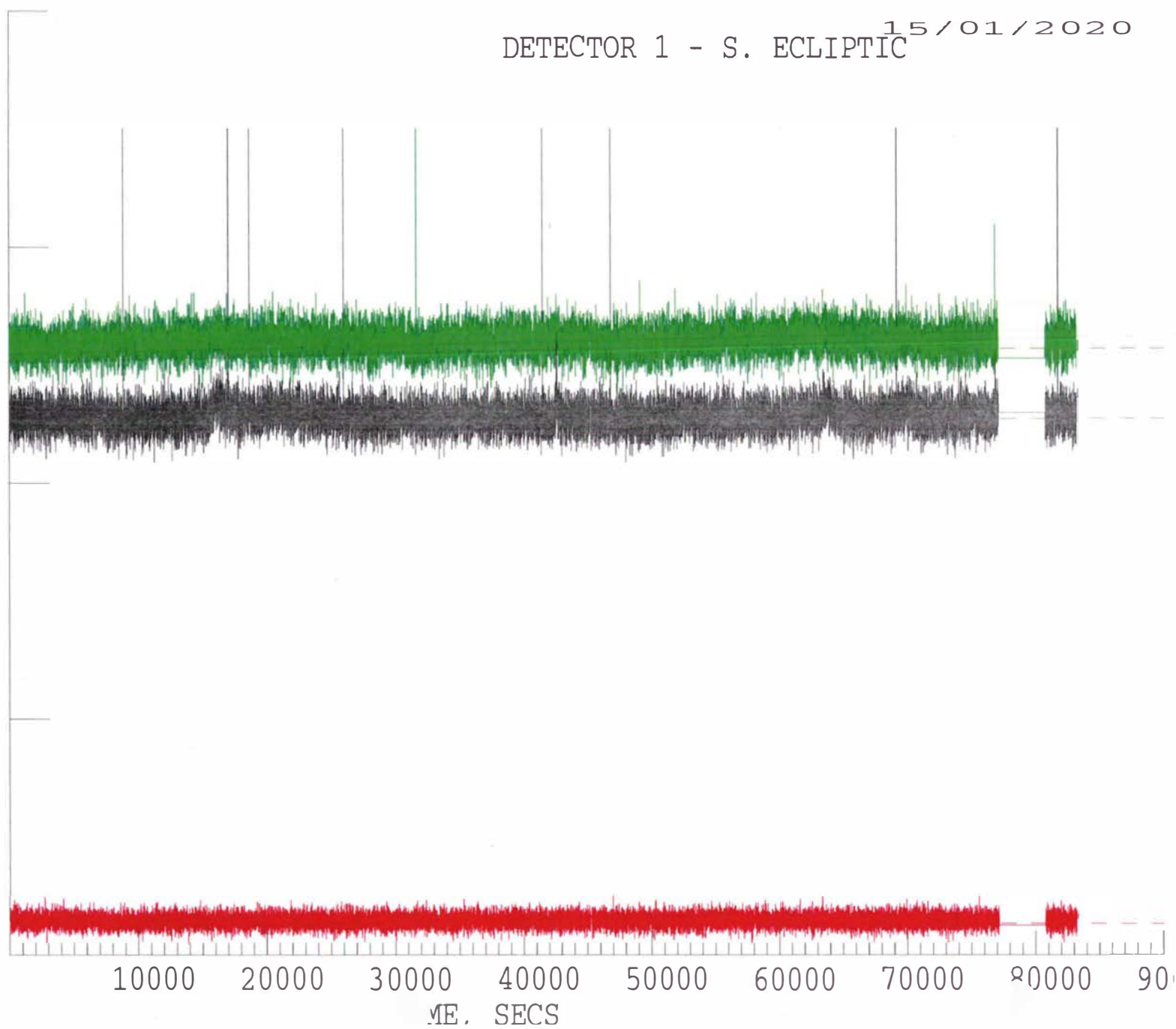
70000

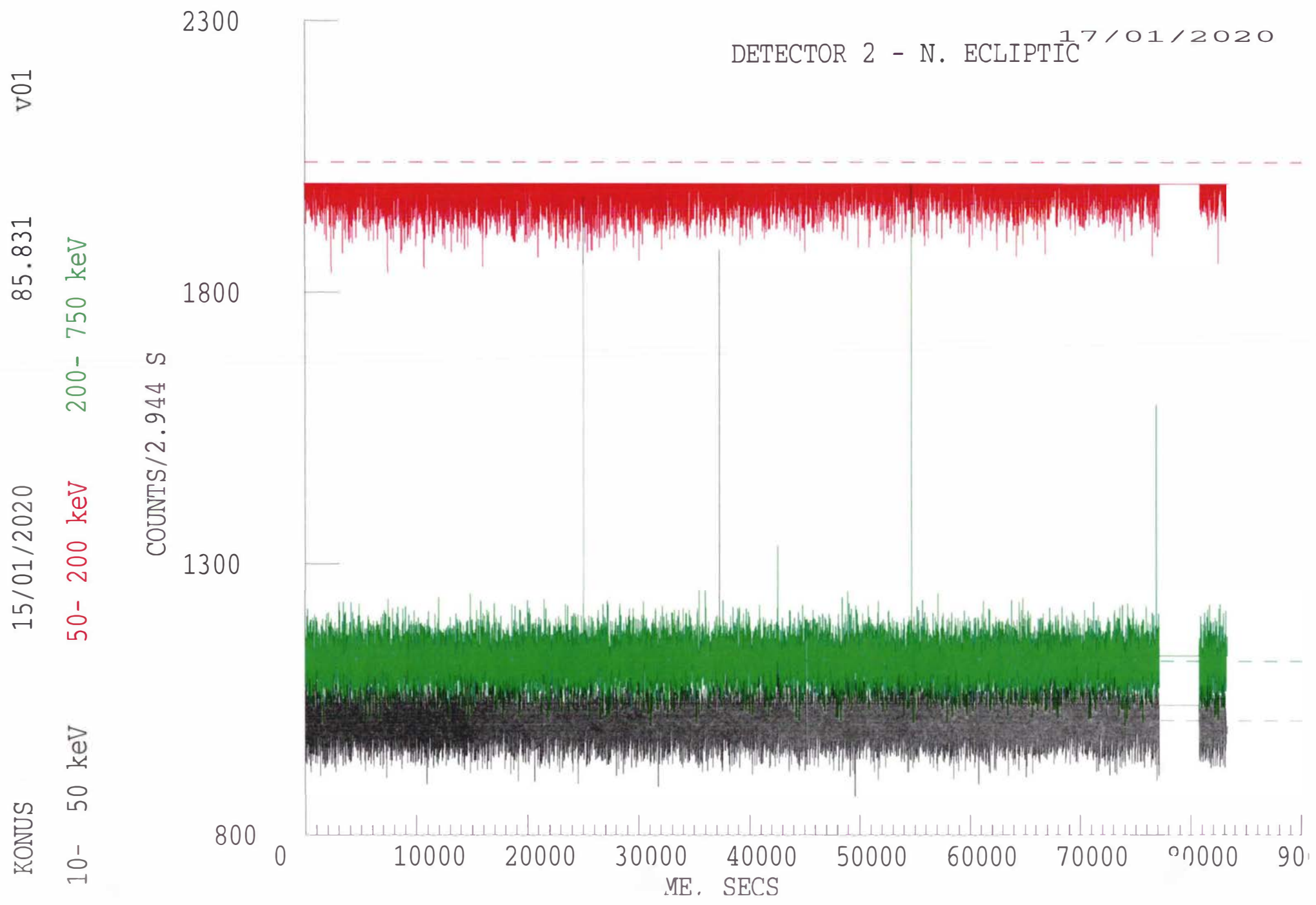
80000

90000

ME. SECS

DETECTOR 1 - S. ECLIPTIC 15/01/2020





Subject: LIGO/Virgo S200115j: Identification of a GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/14/2020, 10:10 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26759
SUBJECT: LIGO/Virgo S200115j: Identification of a GW compact binary merger candidate
DATE: 20/01/15 06:08:31 GMT
FROM: Deep Chatterjee at University of Wisconsin, Milwaukee <deep@uwm.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

We identified the compact binary merger candidate S200115j during real-time processing of data from LIGO Hanford Observatory (H1), LIGO Livingston Observatory (L1), and Virgo Observatory (V1) at 2020-01-15 04:23:09.742 UTC (GPS time: 1263097407.742). The candidate was found by the GstLAL [1], PyCBC Live [2], MBTAOnline [3], and SPIIR [4] analysis pipelines.

S200115j is an event of interest because its false alarm rate, as estimated by the online analysis, is 2.1×10^{-11} Hz, or about one in 10^3 years. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S200115j>

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

Assuming the candidate is astrophysical in origin, the probability that the lighter compact object has a mass < 3 solar masses (HasNS) is 99%. Using the masses and spins inferred from the signal, the probability of matter outside the final compact object (HasRemnant) is 9%.

Three sky maps are available at this time and can be retrieved from the GraceDB event page:

- * bayestar.fits.gz,0, an initial localization generated by BAYESTAR [5], distributed via GCN notice about 6 minutes after the candidate event time.

- * bayestar.fits.gz,1, an initial localization generated by BAYESTAR [5], distributed via GCN notice about 12 minutes after the candidate event time.

- * bayestar.fits.gz,2, an initial localization generated by BAYESTAR [5], distributed via GCN notice about an hour after the candidate event time.

The preferred sky map at this time is bayestar.fits.gz,2. For the bayestar.fits.gz,2 sky map, the 90% credible region is 908 deg^2 . Marginalized over the whole sky, the a posteriori luminosity distance estimate is $331 \pm 97 \text{ Mpc}$ (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] Nitz et al. PRD 98, 024050 (2018)
- [3] Adams et al. CQG 33, 175012 (2016)
- [4] Qi Chu, PhD Thesis, The University of Western Australia (2017)
- [5] Singer & Price PRD 93, 024013 (2016)

Subject: BAT lightcurve for trigger at 200115_0423

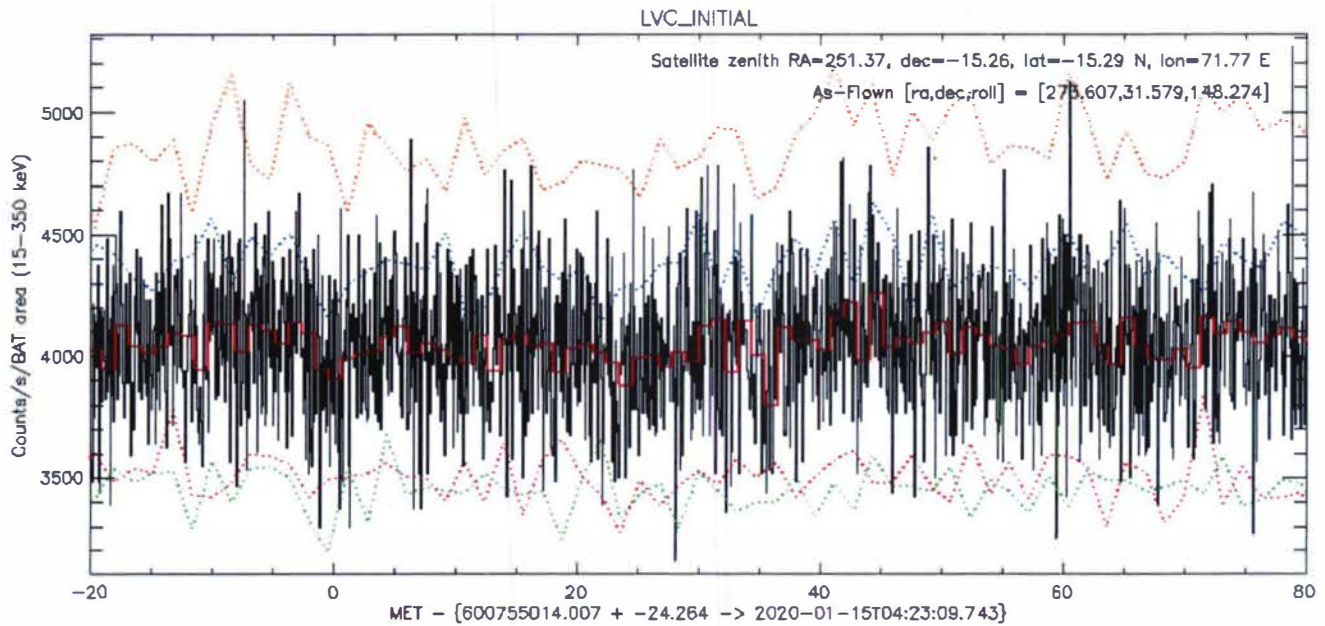
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/15/2020, 6:01 AM

To: aaron.tohu@gmail.com, 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/200115_0423.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600755014.007
Swift Zenith(RA,dec):      251.37, -15.26
Swift Location(lon,lat,alt): 71.77 E, -15.29 N, 548 km
Time(MET + UTCF -> UT):   600755014.007 + -24.264 -> 2020-01-15T04:23:09.743
YYMMDD_SOD:               200115_15789.743      DOY=015
Obs Sequence Number:      03109803007
Obs Target Name:          4FGL J1814.4+3132
Obs Date and Times:       2020-01-15 04:18:29 - 04:35:33
Obs Pointing(ra,dec,roll): 273.607, 31.579, 148.27
```

--
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/200115_0423_bat64ms_ipn

87.0 KB

/tmp/swift/200115_0423.png

22.4 KB

Subject: GCN/SWIFT_BAT_LIGHTCURVE
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
Date: 1/15/2020, 3:54 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Wed 15 Jan 20 11:54:18 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 949361, Seg_Num: 0
 GRB_RA: 56.454d {+03h 45m 49s} (J2000),
 56.720d {+03h 46m 53s} (current),
 55.791d {+03h 43m 10s} (1950)
 GRB_DEC: +5.613d {+05d 36' 46"} (J2000),
 +5.674d {+05d 40' 27"} (current),
 +5.458d {+05d 27' 27"} (1950)
 GRB_DATE: 18863 TJD; 15 DOY; 20/01/15
 GRB_TIME: 42623.73 SOD {11:50:23.73} UT
 TRIGGER_INDEX: 20000
 GRB_PHI: -165.25 [deg]
 GRB_THETA: 30.10 [deg]
 DELTA_TIME: 0.00 [sec]
 TRIGGER_DUR: 64.000 [sec]
 SOLN_STATUS: 0x13
 RATE_SIGNIF: 0.00 [sigma]
 IMAGE_SIGNIF: 15.01 [sigma]
 LC_URL: sw00949361000msb.lc
 SUN_POSTN: 296.72d {+19h 46m 52s} -21.17d {-21d 10' 00"}
 SUN_DIST: 119.98 [deg] Sun_angle= -8.0 [hr] (East of Sun)
 MOON_POSTN: 179.78d {+11h 59m 07s} +5.71d {+05d 42' 35"}
 MOON_DIST: 122.03 [deg]
 MOON_ILLUM: 73 [%]
 GAL_COORDS: 181.73,-36.65 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 55.49,-13.90 [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 an image 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 = 210.16,18.06 [deg].

158 s

 $10^{-5} \text{ erg cm}^{-2}$ $3.6 \text{ phot/cm}^2 \text{ s}$

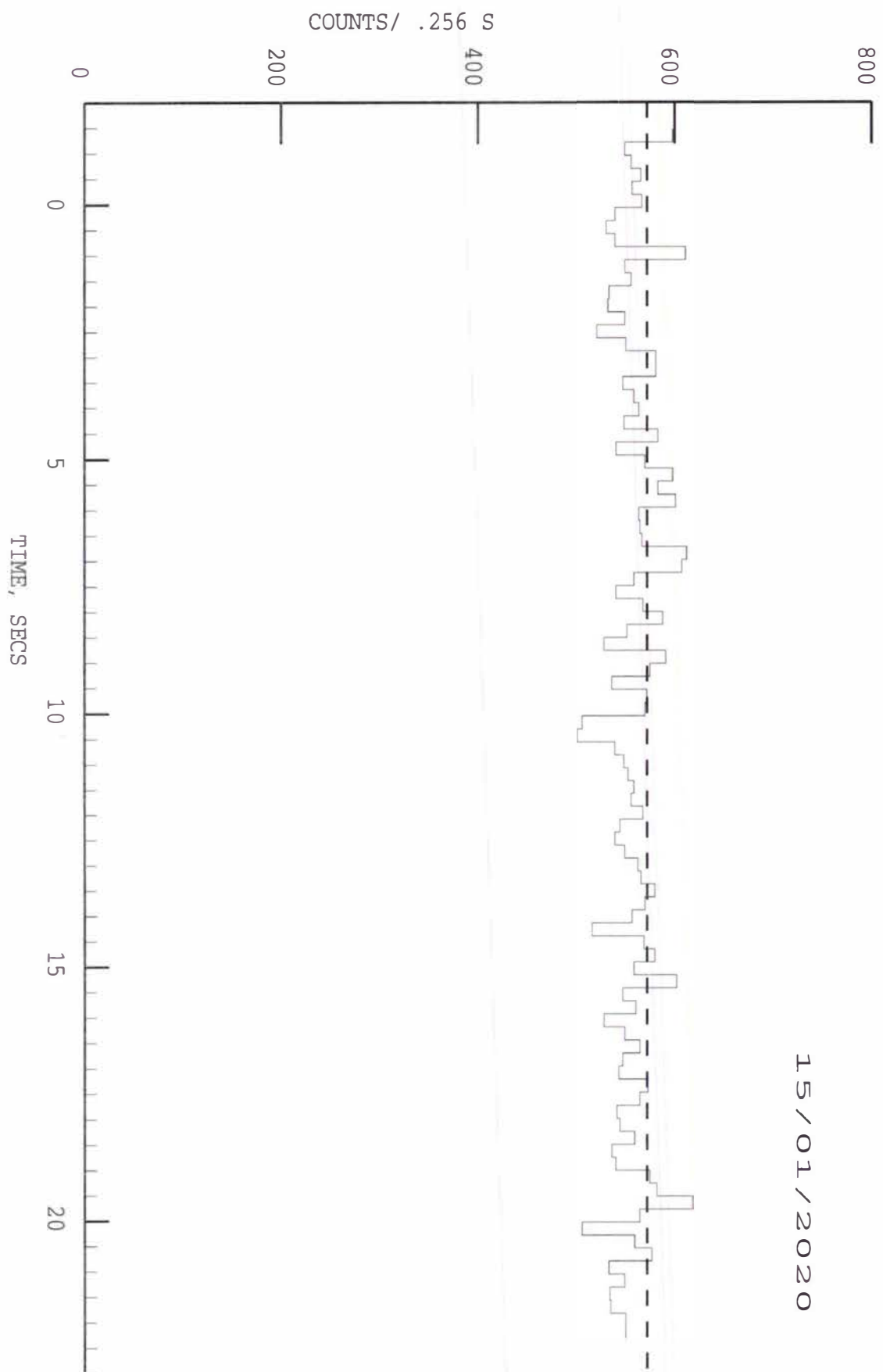
BAT

15/01/20

42623.734

11:50:23.734

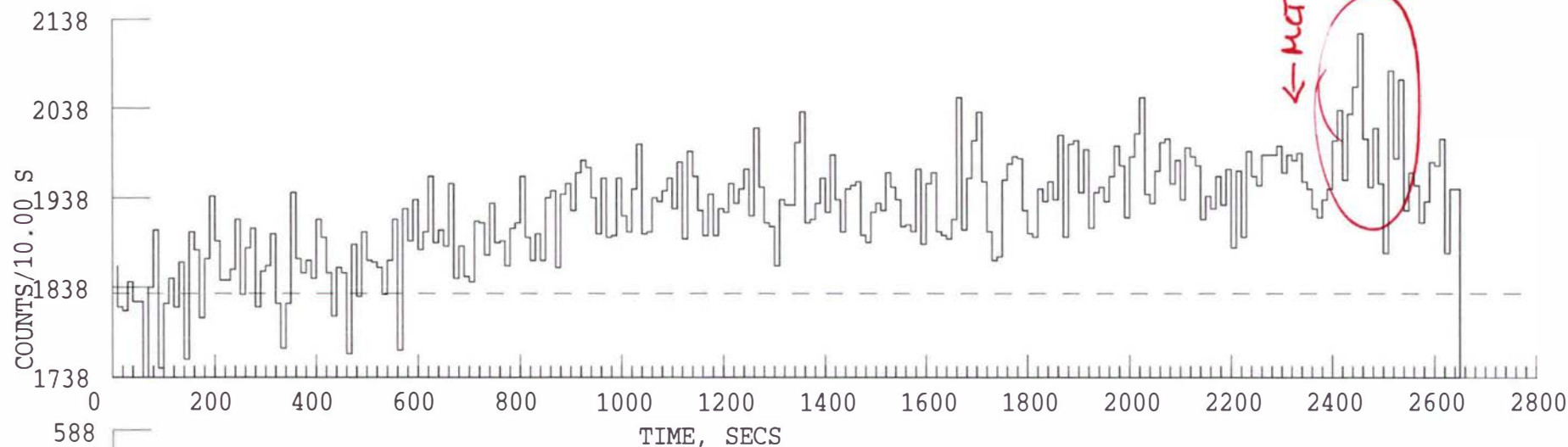
25- 100 keV



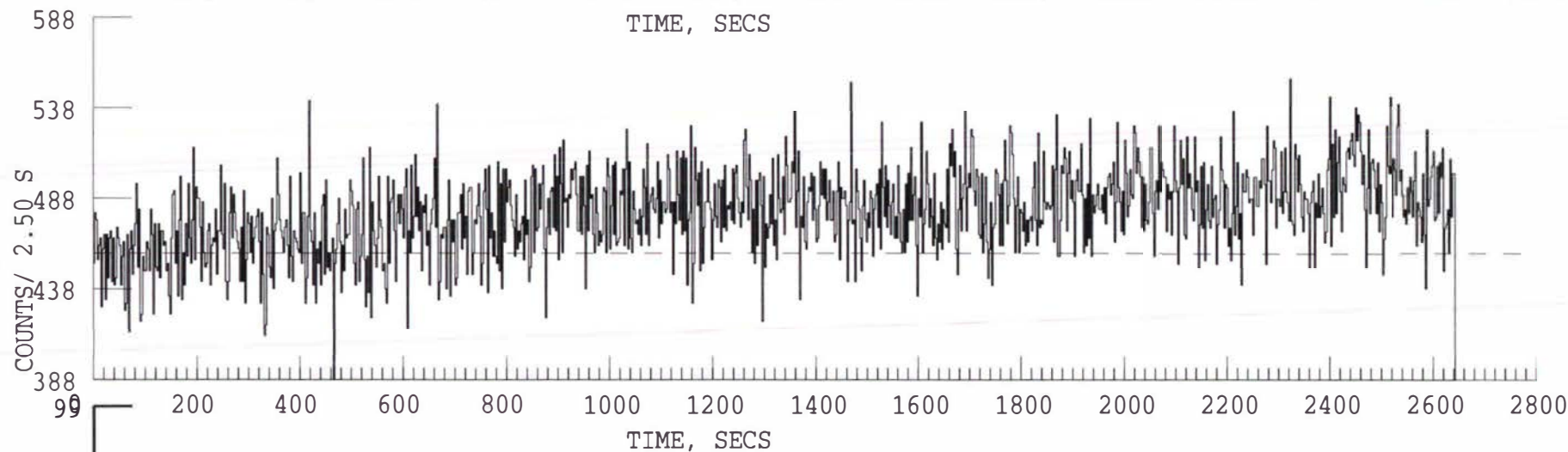
27/03/2020

A

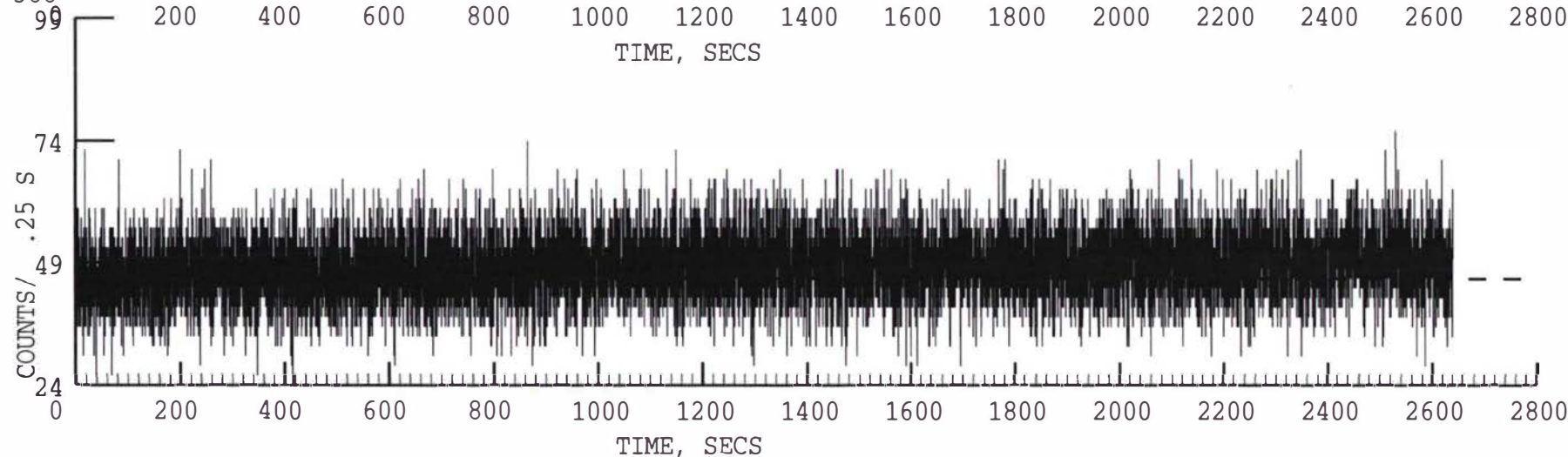
11:27:43.350

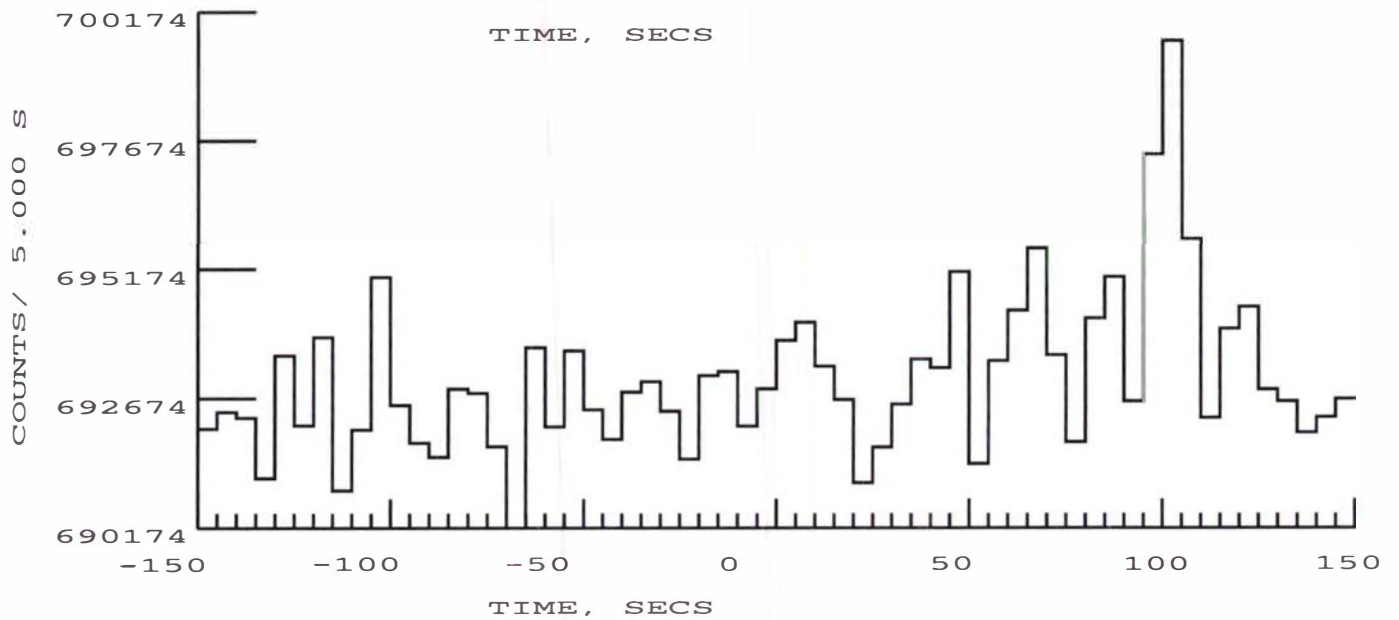
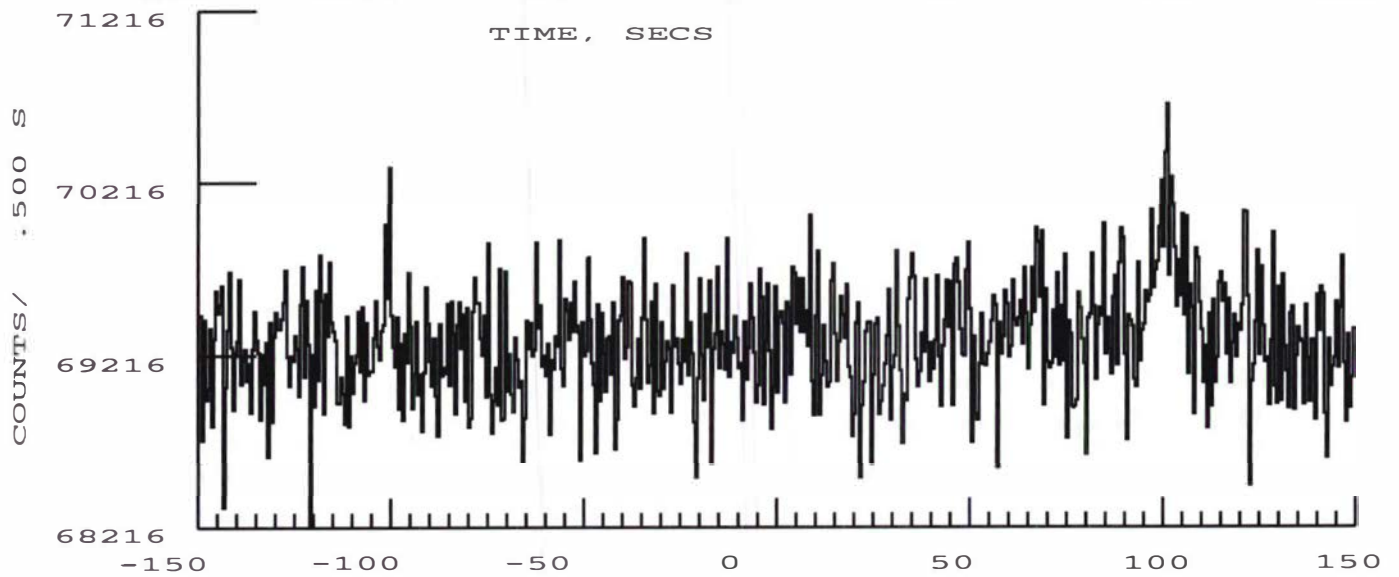
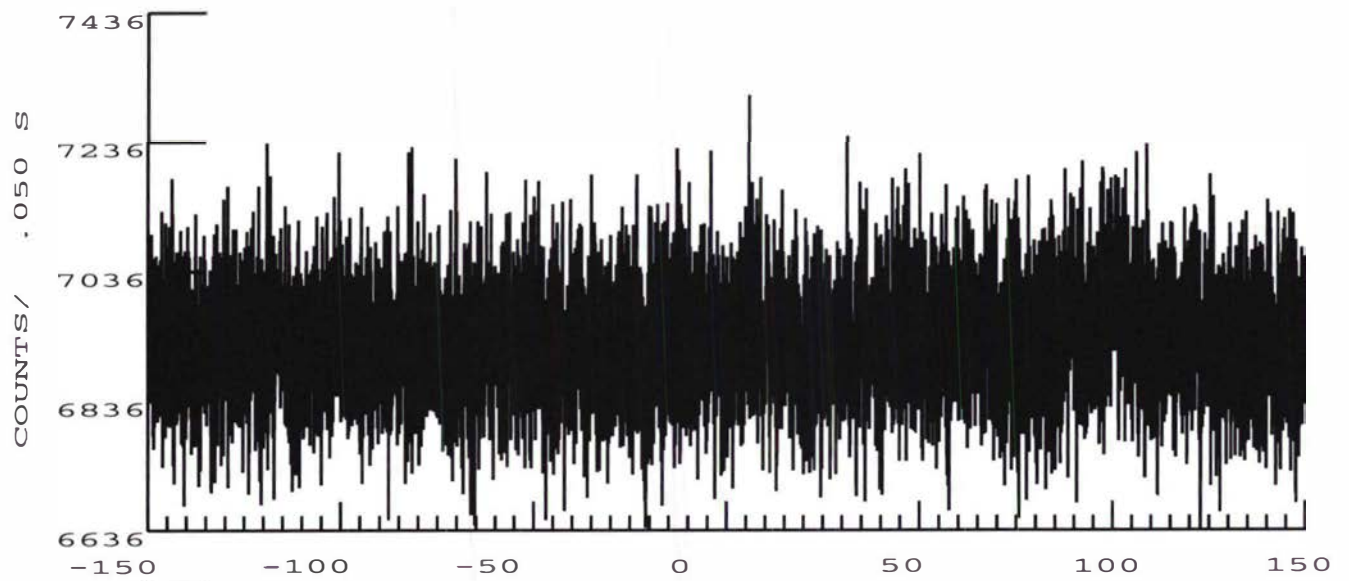


41263.350



15/01/20
50-3000 keV





Subject: GRB 200115A: CALET Gamma-Ray Burst Monitor detection
From: GCN Circulars <gcnirc@capella2.gsfc.nasa.gov>
Date: 1/17/2020, 6:18 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26809
SUBJECT: GRB 200115A: CALET Gamma-Ray Burst Monitor detection
DATE: 20/01/18 02:18:13 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. Torii (Waseda U), Y. Shimizu (Kanagawa U),
N. Cannady (GSFC/UMBC), M. L. Cherry (LSU),
S. Ricciarini (U of Florence), P. S. Marrocchesi (U of Siena),
and the CALET collaboration:

The very long GRB 200115A detected by Swift (Cenko et al., GCN Circ. 26771, Laha et al., GCN Circ. 26780; <https://gcn.gsfc.nasa.gov/other/200115A.gcn3>) triggered the CALET Gamma-ray Burst Monitor (CGBM) at 11:52:05.424 UTC on 15 January 2020. The burst signal was seen by all CGBM detectors. Because of a problem in one of the ground alert processing script, the GCN notice was not distributed automatically for this event.

The burst light curve shows a multi-peaked structure which starts at T-206 sec, peaks at T-3 sec and ends at T+221 sec. The T90 and T50 durations measured by the SGM data are 347 +/- 46 sec and 104 +/- 29 sec (40-1000 keV), respectively.

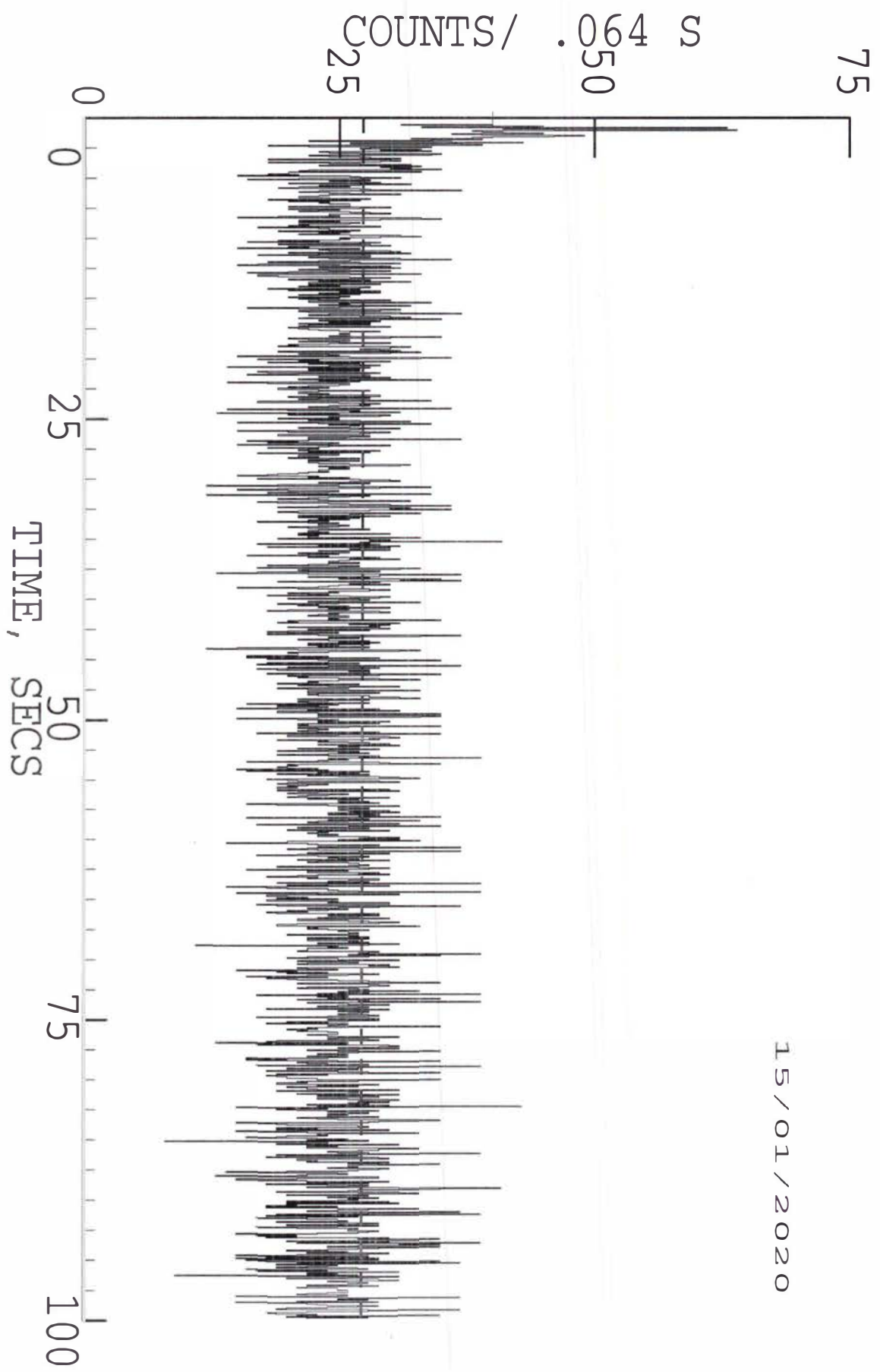
The ground processed light curve is available at

http://cgbm.calet.jp/cgbm_trigger/ground/1263124124/

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

B

KONUS 15/01/20 76968.819 21:22:48.819
50- 200 keV



15/01/2020

B

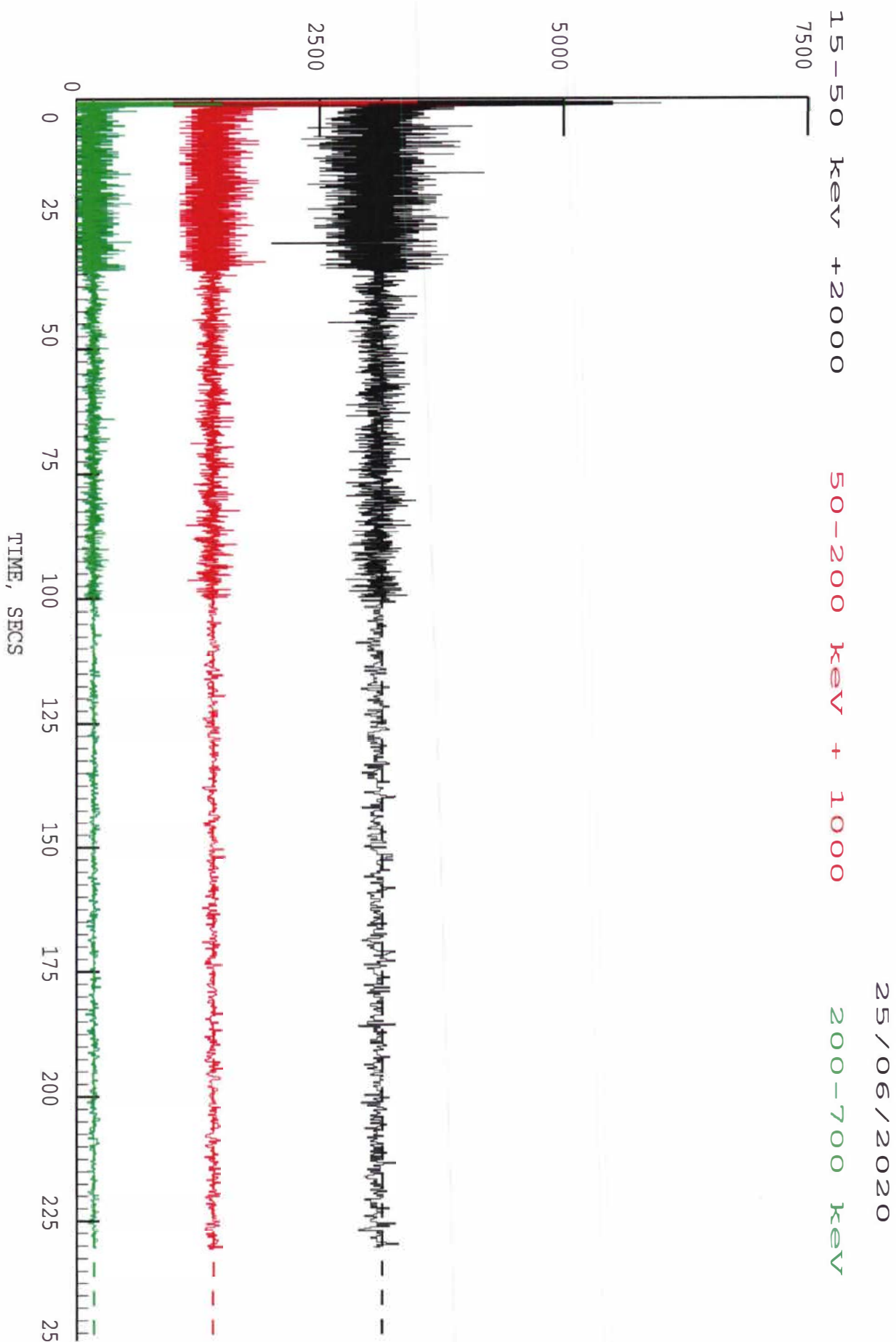
KONUS

15/01/20

76968.000

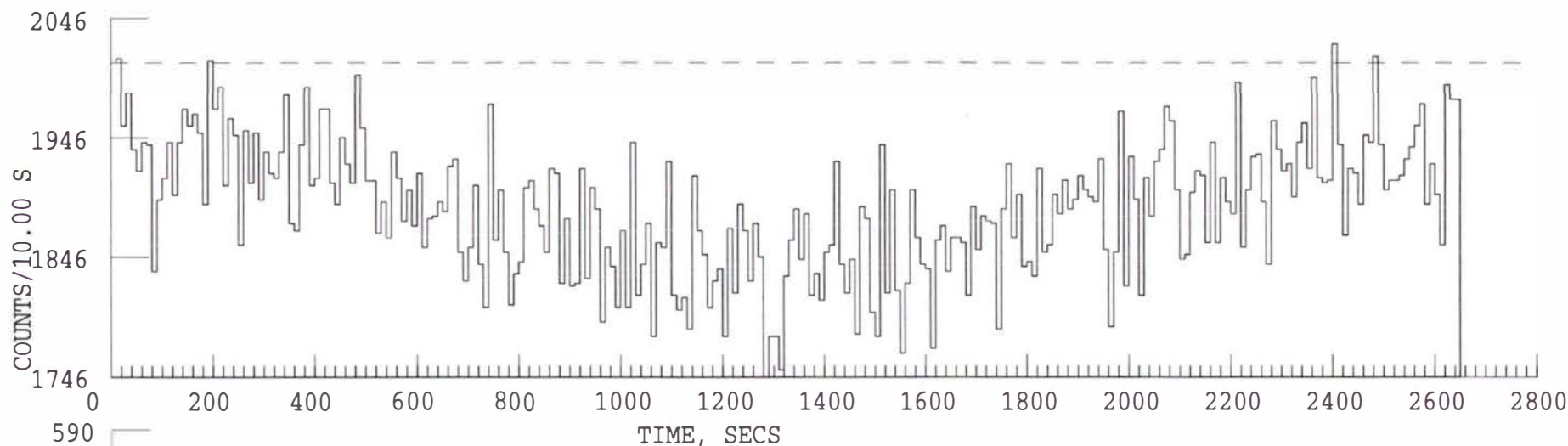
21:22:48.000

COUNTS/SEC

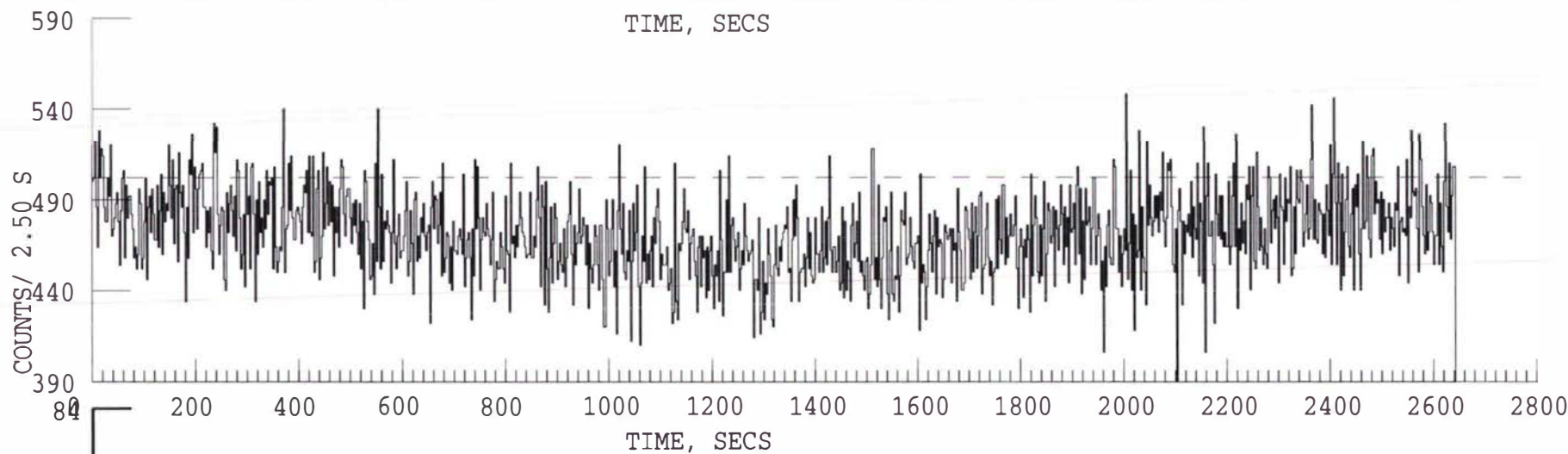


27/03/2020

21:00:42.737

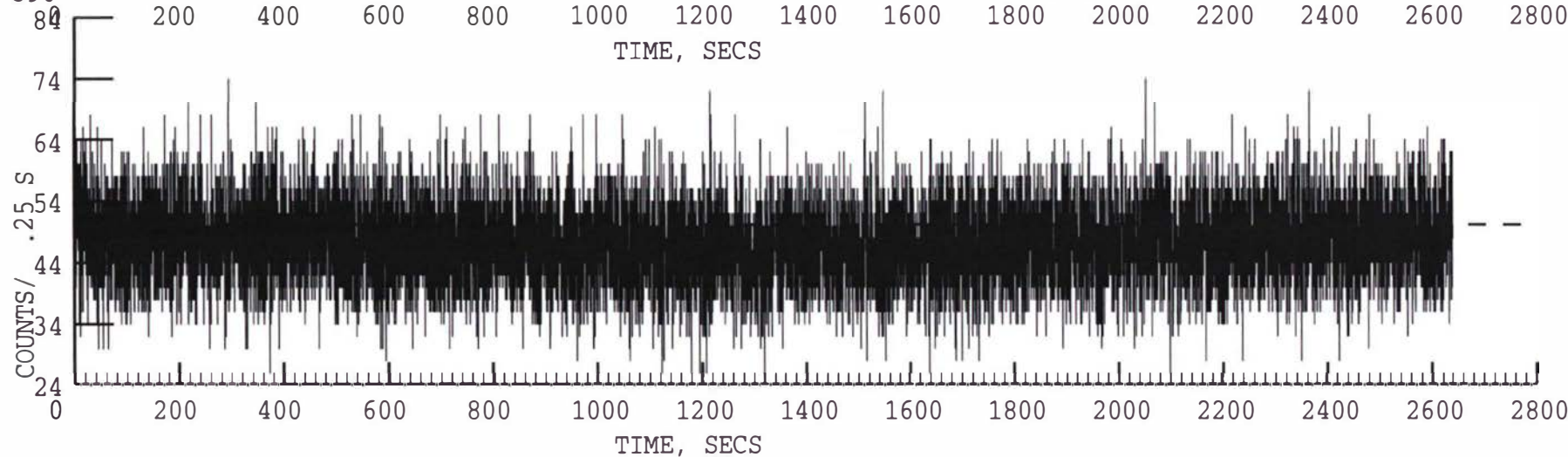


75642.737



15/01/20

50-3000 keV



B

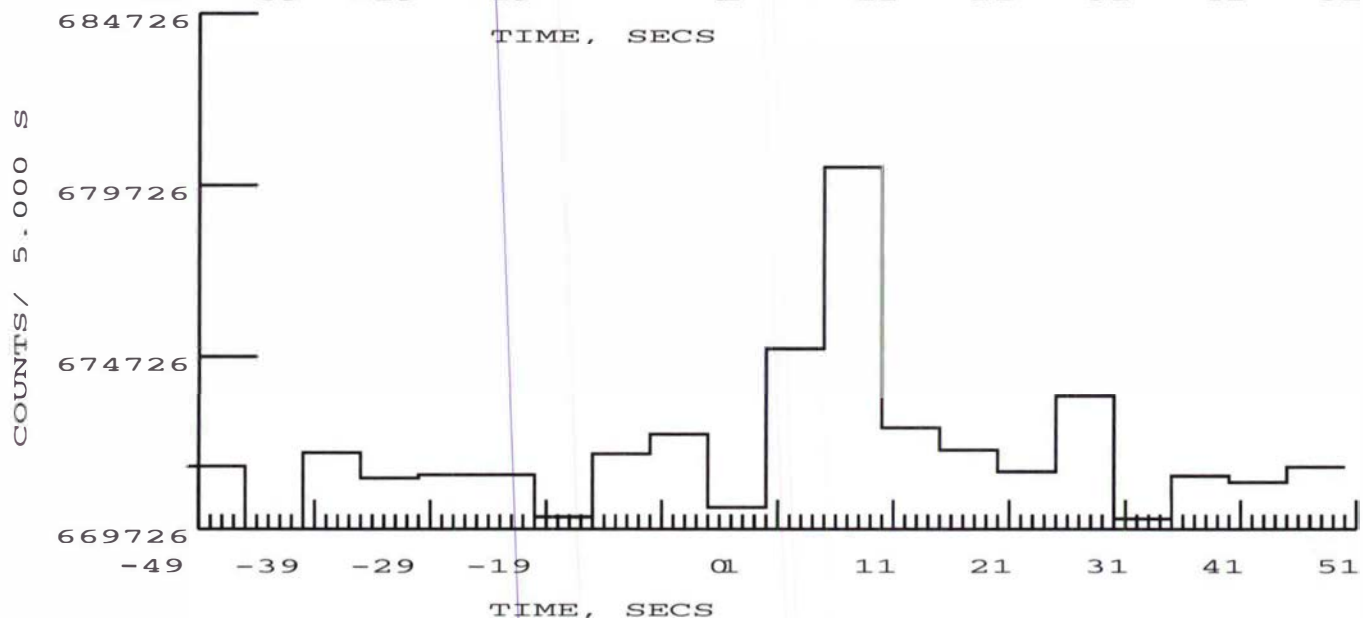
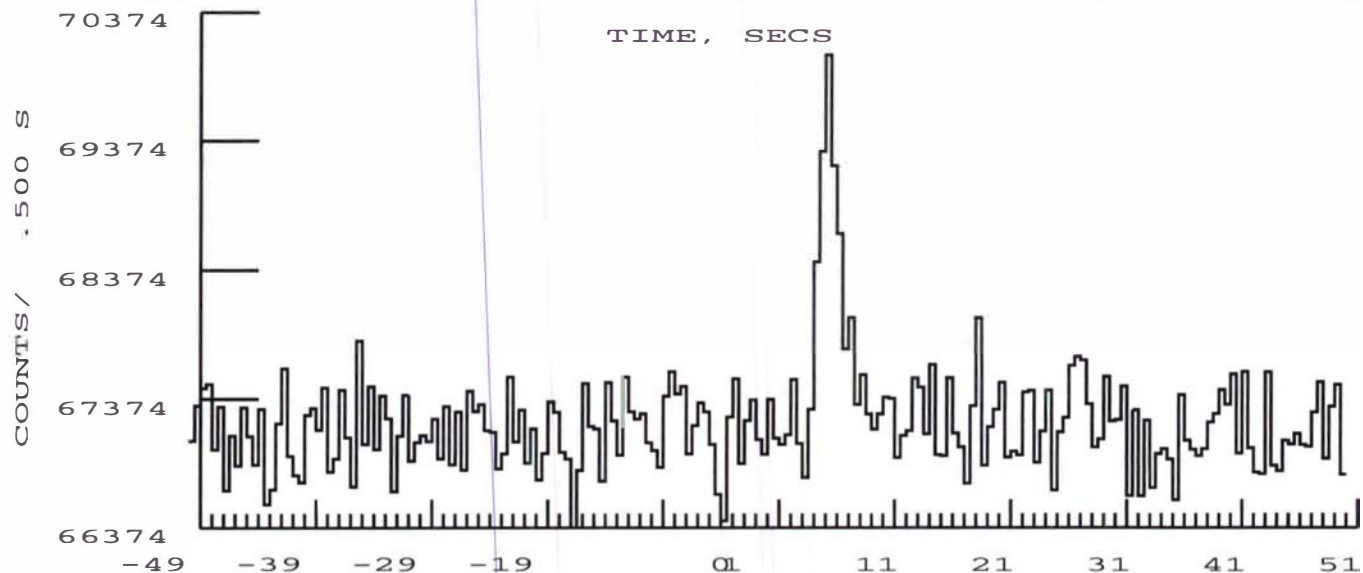
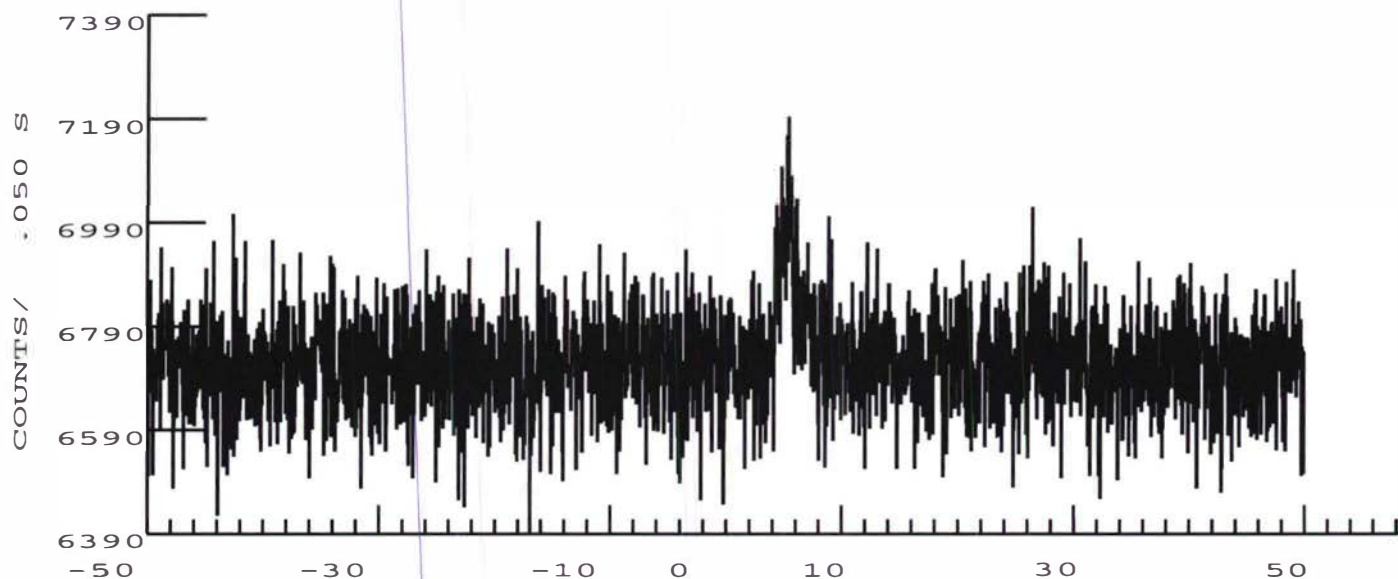
INTEGRAL

15/01/20

76968.000

21:22:48.0

26/03/20



Subject: BAT lightcurve for trigger at 200115_2122

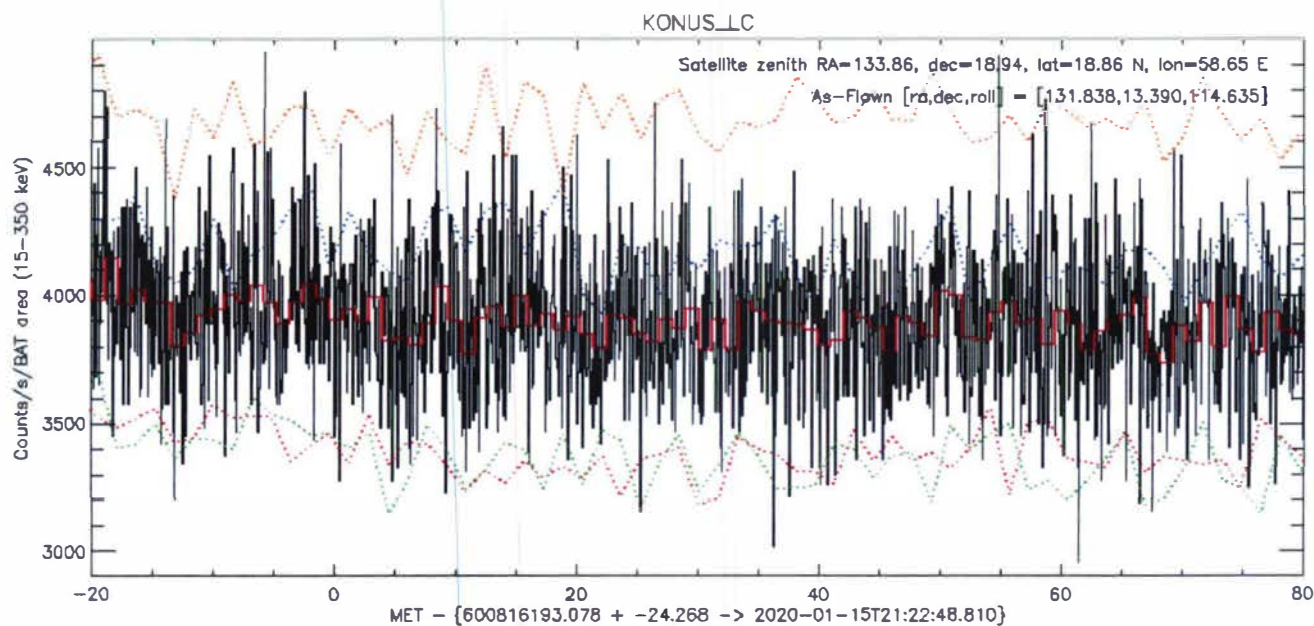
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/15/2020, 11:48 PM

To: aaron.tohu@gmail.com, 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

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—/tmp/swift/200115_2122.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600816193.078
Swift Zenith(RA,dec):      133.86, 18.94
Swift Location(lon,lat,alt): 58.65 E, 18.86 N, 557 km
Time(MET + UTC -> UT):    600816193.078 + -24.268 -> 2020-01-15T21:22:48.810
YYMMDD_SOD:               200115_76968.810      DOY=015
Obs Sequence Number:      00049761002
Obs Target Name:          UGC04599
Obs Date and Times:       2020-01-15 21:20:34 - 21:23:19
Obs Pointing(ra,dec,roll): 131.838, 13.390, 114.64
```

--
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/200115_2122_bat64ms_ipn	87.0 KB
/tmp/swift/200115_2122.png	22.3 KB

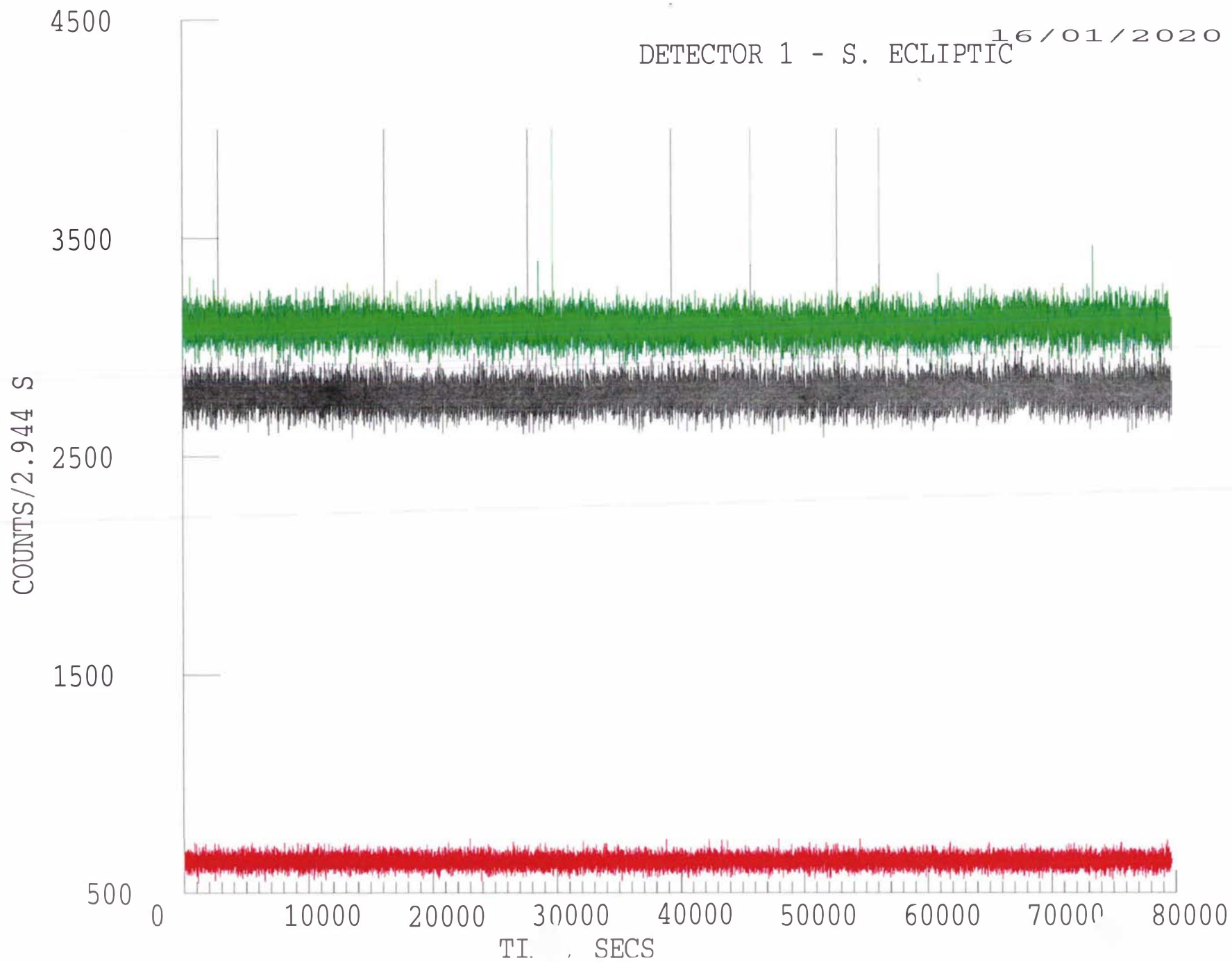
v02

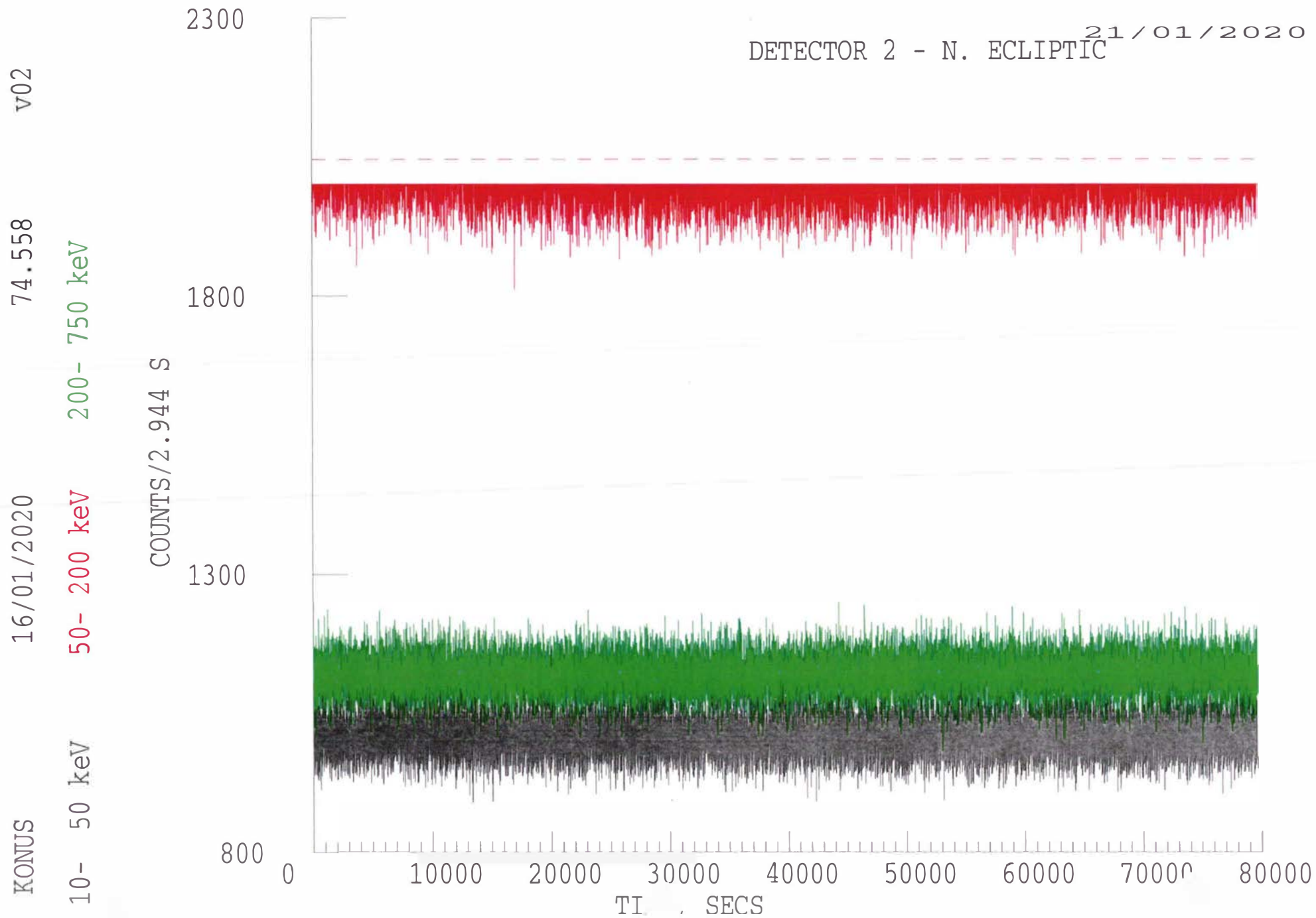
74.558

16/01/2020

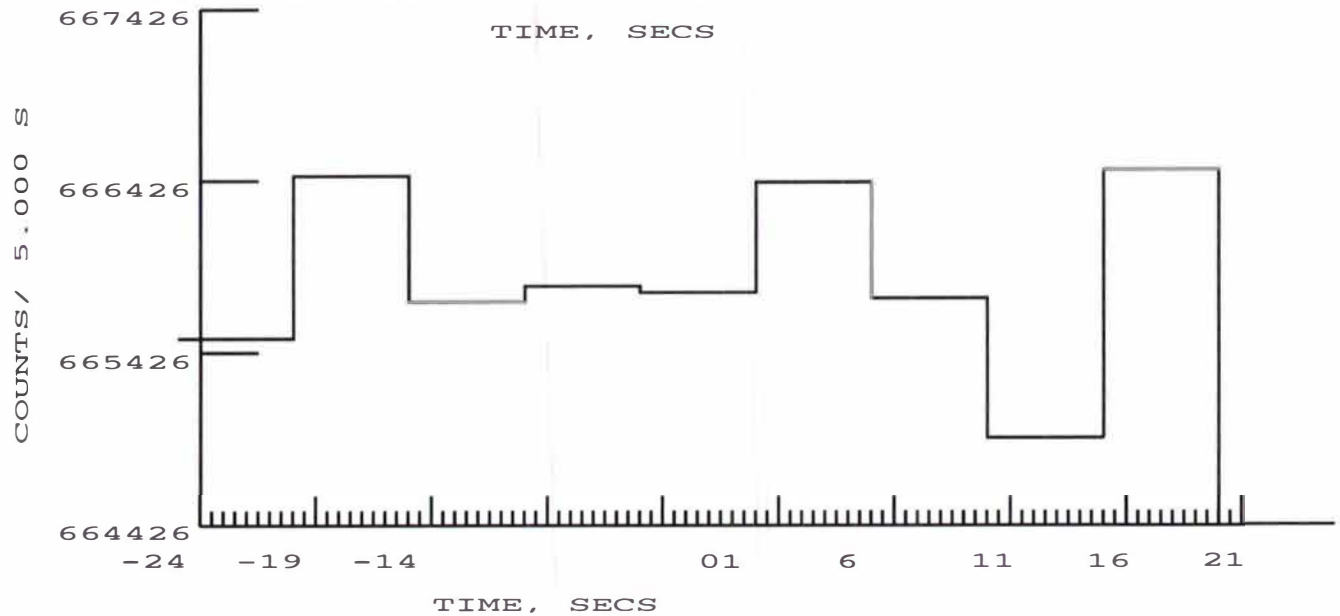
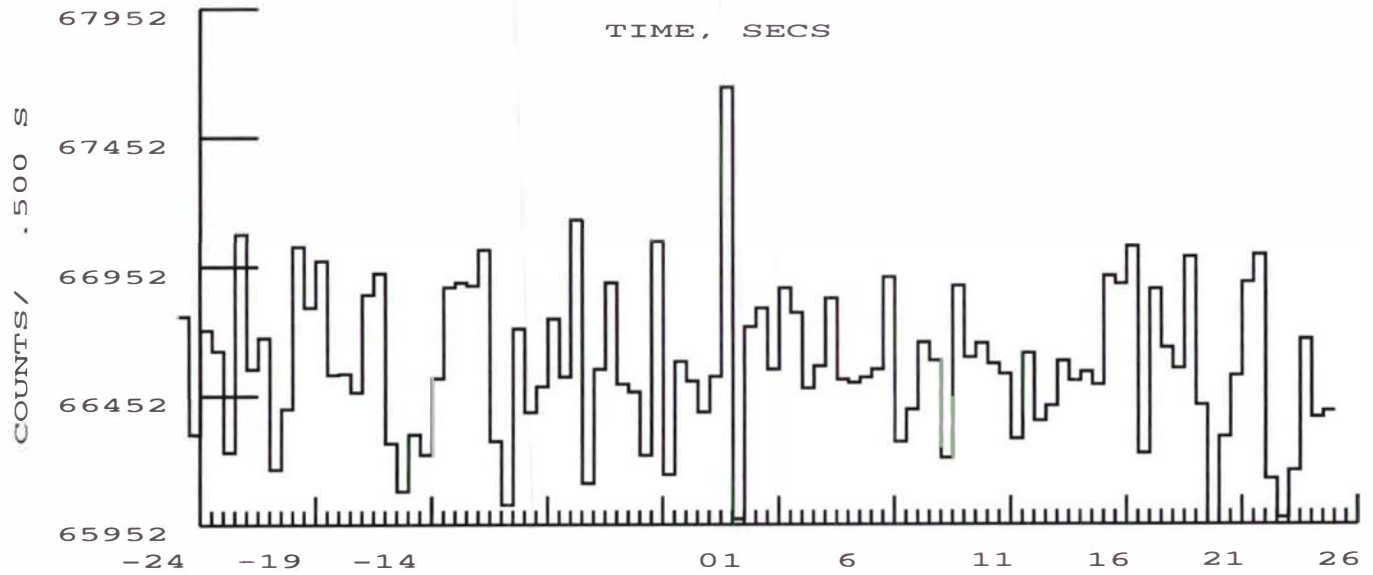
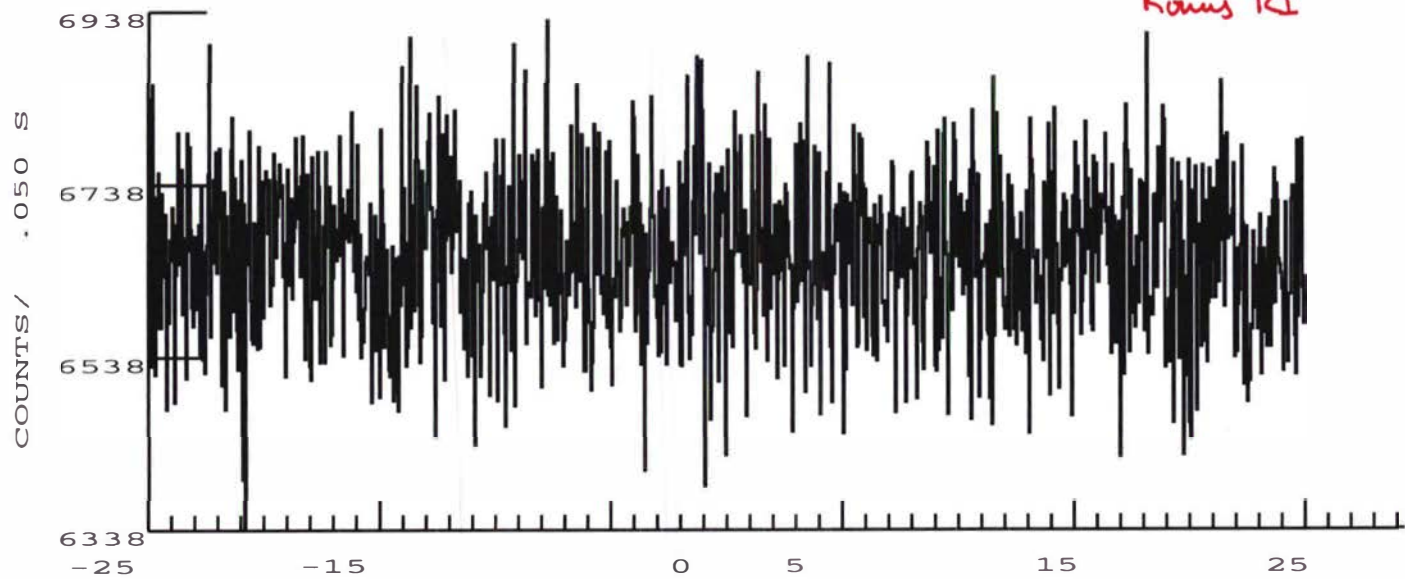
KONUS

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





Konus RT



Subject: LIGO/Virgo S200116ah: Retraction of GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/16/2020, 4:28 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26785
SUBJECT: LIGO/Virgo S200116ah: Retraction of GW compact binary merger candidate
DATE: 20/01/16 12:28:22 GMT
FROM: Erik Katsavounidis at MIT <kats@ligo.mit.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

The trigger S200116ah is no longer considered to be a candidate of interest. The candidate is attributed to non-stationary noise in the L1 detector and is not significant without the contribution from L1.

Subject: BAT lightcurve for trigger at 200116_1156

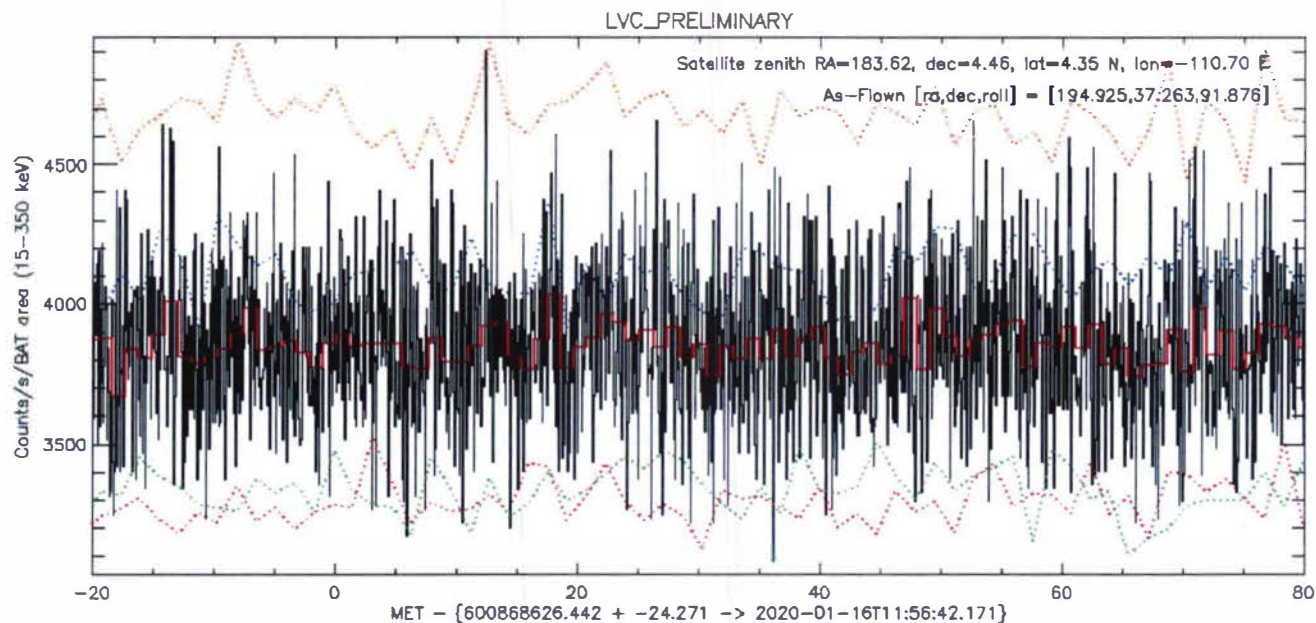
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/16/2020, 9:22 PM

To: aaron.tohu@gmail.com, 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/200116_1156.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600868626.442
Swift Zenith(RA,dec):      183.62, 4.46
Swift Location(lon,lat,alt): -110.70 E, 4.35 N, 553 km
Time(MET + UTCF -> UT):    600868626.442 + -24.271 -> 2020-01-16T11:56:42.171
YYMMDD_SOD:                200116_43002.171      DDY=016
Obs Sequence Number:        03105019004
Obs Target Name:            SGWGS-228
Obs Date and Times:          2020-01-16  11:50:37 - 12:05:36
Obs Pointing(ra,dec,roll):   194.925, 37.263, 91.88
```

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/200116_1156.png	22.0 KB
/tmp/swift/200116_1156_bat64ms_ipn	87.1 KB

BAT lightcurve for trigger at 200116_1851

Subject: BAT lightcurve for trigger at 200116_1851

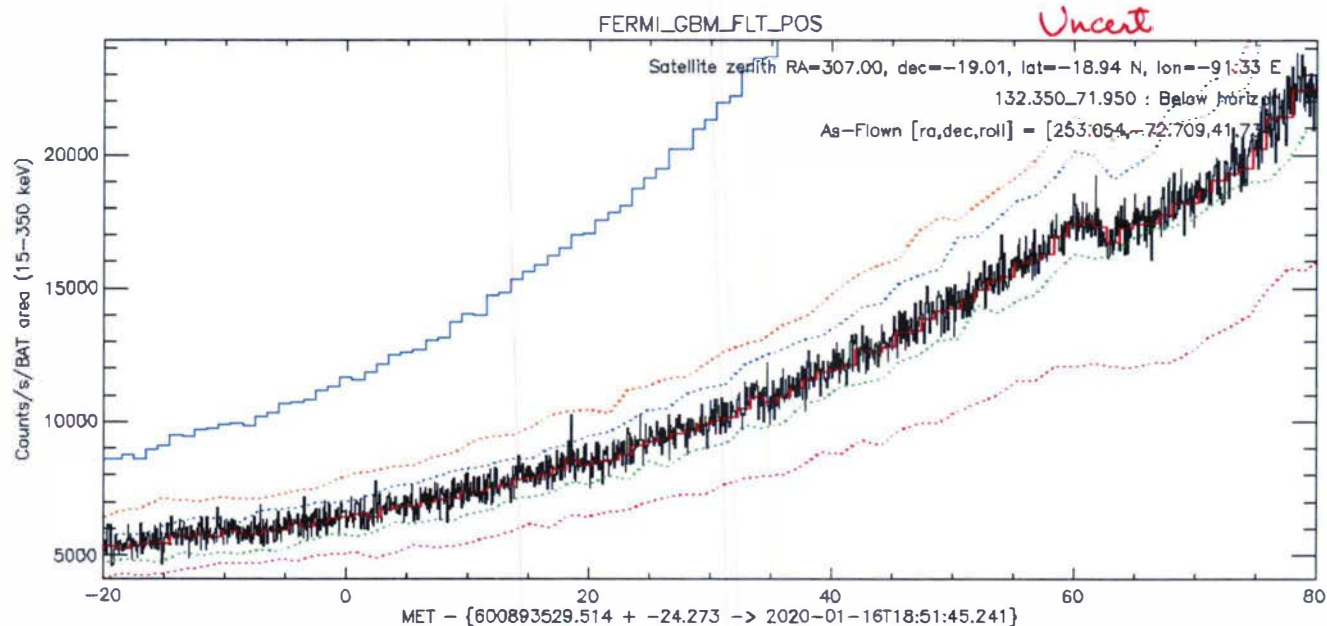
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/17/2020, 12:36 AM

To: aaron.tohu@gmail.com, 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/200116_1851.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600893529.514 -s 132.350_71.950
Swift Zenith(RA,dec):      307.00, -19.01
Swift Location(lon,lat,alt): -91.33 E, -18.94 N, 547 km
Time(MET + UTCF -> UT):   600893529.514 + -24.273 -> 2020-01-16T18:51:45.241
YYMMDD_SOD:               200116_67905.241      DOY=016
Obs Sequence Number:      03109948009
Obs Target Name:          4FGL J1651.7-7241
Obs Date and Times:       2020-01-16 18:45:37 - 18:52:35
Obs Pointing(ra,dec,roll): 253.054, -72.709, 41.73
132.350_71.950_imageloc (boresight_dist, angle): (163, 165)
132.350_71.950_exposure (cm² cos adjusted): 0
132.350_71.950_altitude: -14 (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/200116_1851_bat64ms_ipn

87.0 KB

/tmp/swift/200116_1851.png

19.8 KB

KONUS

17/01/2020

63.285

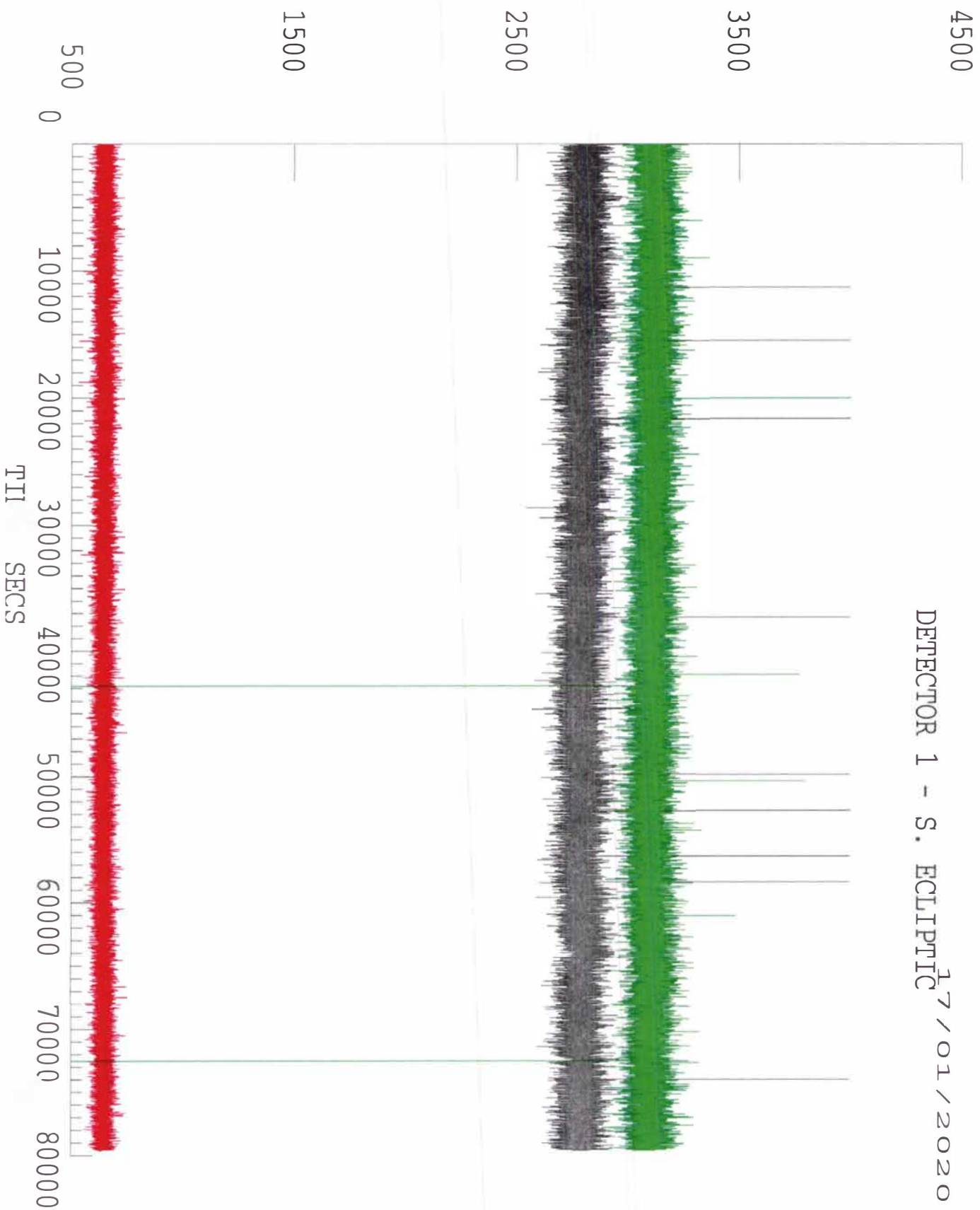
v01

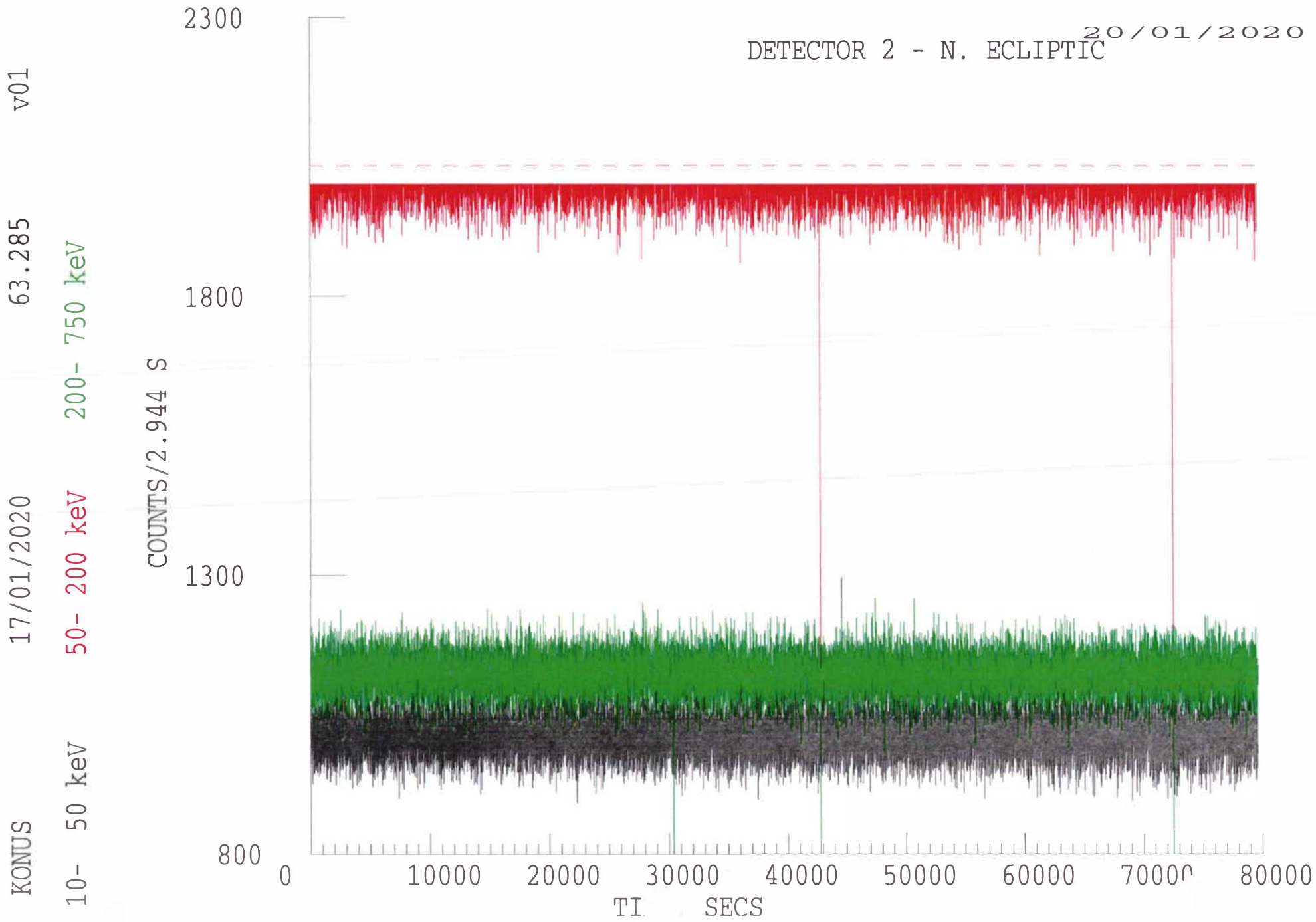
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S





Subject: GCN/ICECUBE_ASTROTRACK_BRONZE

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

Date: 1/17/2020, 6:25 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN/AMON NOTICE
NOTICE_DATE: Fri 17 Jan 20 14:25:18 UT
NOTICE_TYPE: ICECUBE Astrotrack Bronze
STREAM: 25
RUN_NUM: 133634
EVENT_NUM: 1410505
SRC_RA: 116.2399d {+07h 44m 58s} (J2000),
116.5524d {+07h 46m 13s} (current),
115.4594d {+07h 41m 50s} (1950)
SRC_DEC: +29.1299d {+29d 07' 48"} (J2000),
+29.0803d {+29d 04' 49"} (current),
+29.2513d {+29d 15' 05"} (1950)
SRC_ERROR: 54.60 [arcmin radius, stat-only, 90% containment]
SRC_ERROR50: 30.60 [arcmin radius, stat-only, 50% containment]
DISCOVERY_DATE: 18865 TJD; 17 DOY; 20/01/17 (yy/mm/dd)
DISCOVERY_TIME: 40109 SOD {11:08:29.69} UT
REVISION: 1
ENERGY: 1.0839e+02 [TeV]
SIGNALNESS: 3.7540e-01 [dn]
FAR: 1.9258 [yr⁻¹]
SUN_POSTN: 298.97d {+19h 55m 53s} -20.77d {-20d 46' 06"}
SUN_DIST: 171.40 [deg] Sun_angle= -11.8 [hr] (East of Sun)
MOON_POSTN: 207.41d {+13h 49m 38s} -5.94d {-05d 56' 14"}
MOON_DIST: 93.63 [deg]
GAL_COORDS: 191.06, 23.70 [deg] galactic lon,lat of the event
ECL_COORDS: 112.94, 7.76 [deg] ecliptic lon,lat of the event
COMMENTS: IceCube Bronze event.
COMMENTS: The position error is statistical only, there is no systematic added.

FERMI

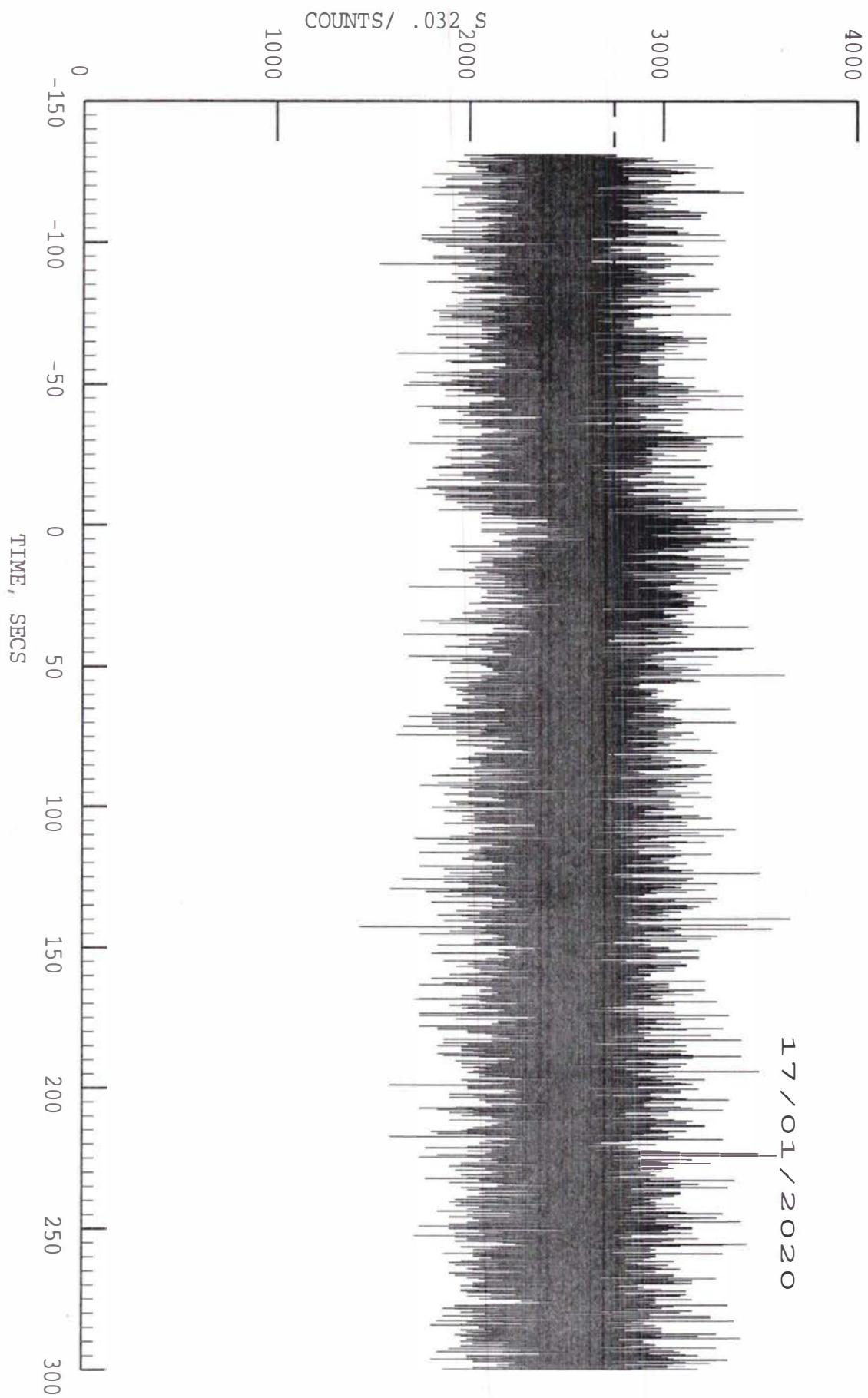
17/01/20

44646.532

12:24:06.532

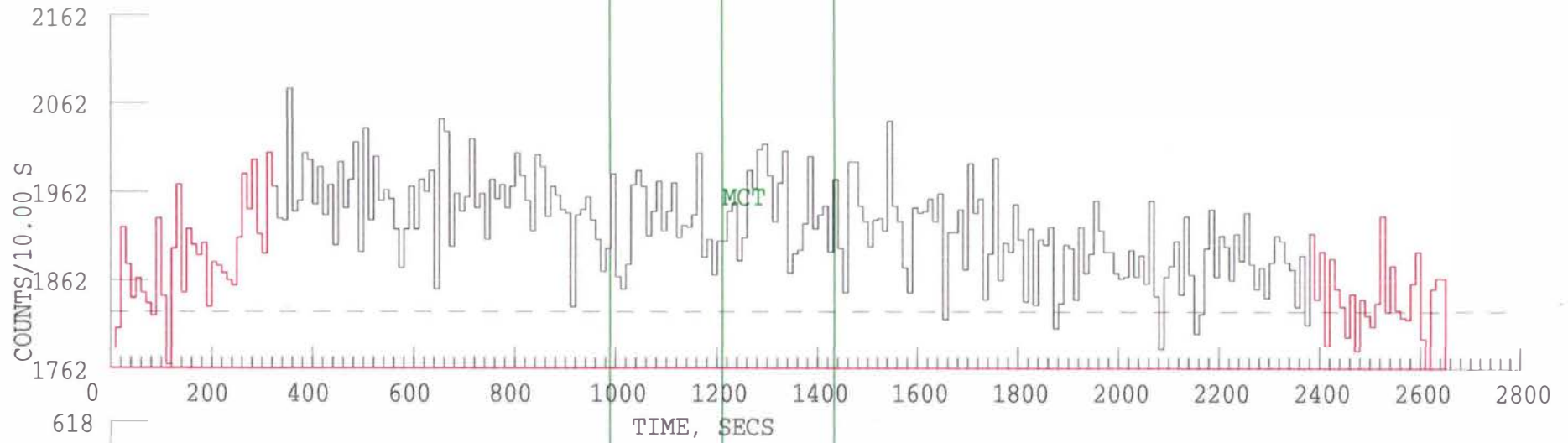
26- 293 keV

129.7 -62.5 5.3

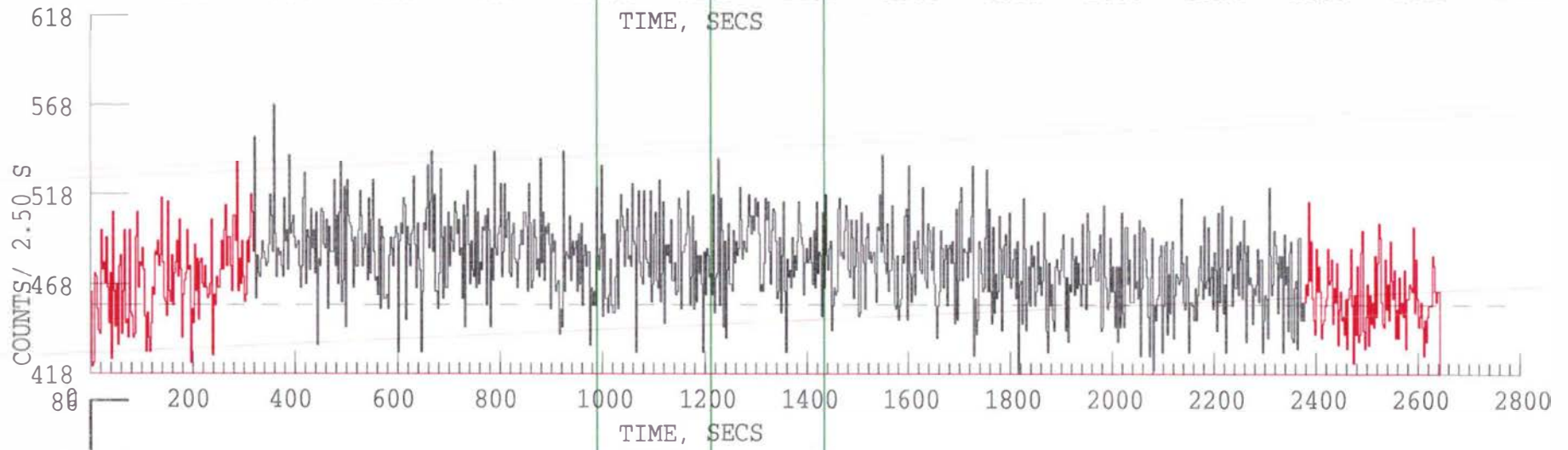


24/01/2020

12:01:40.248

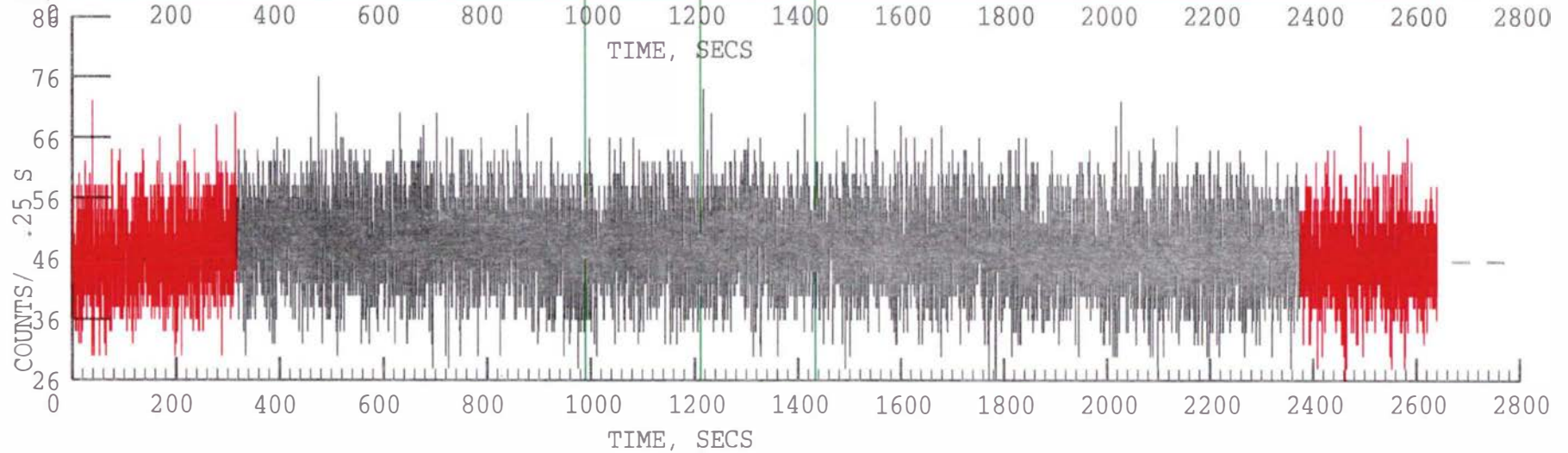


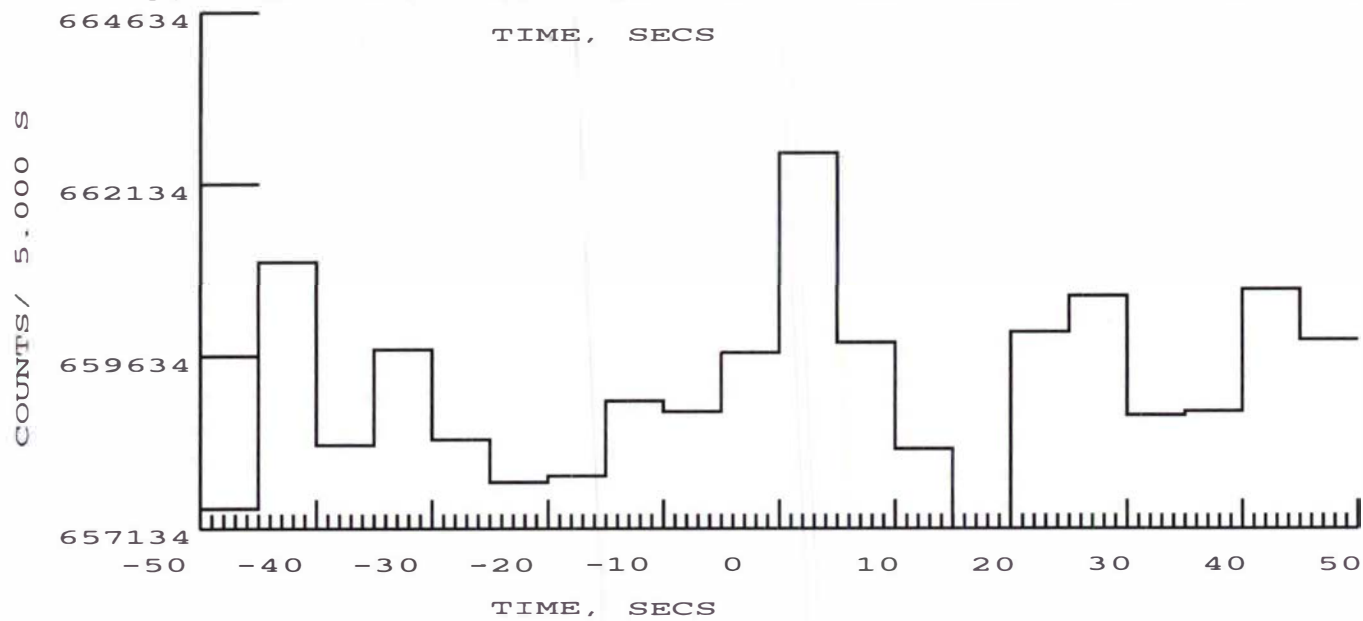
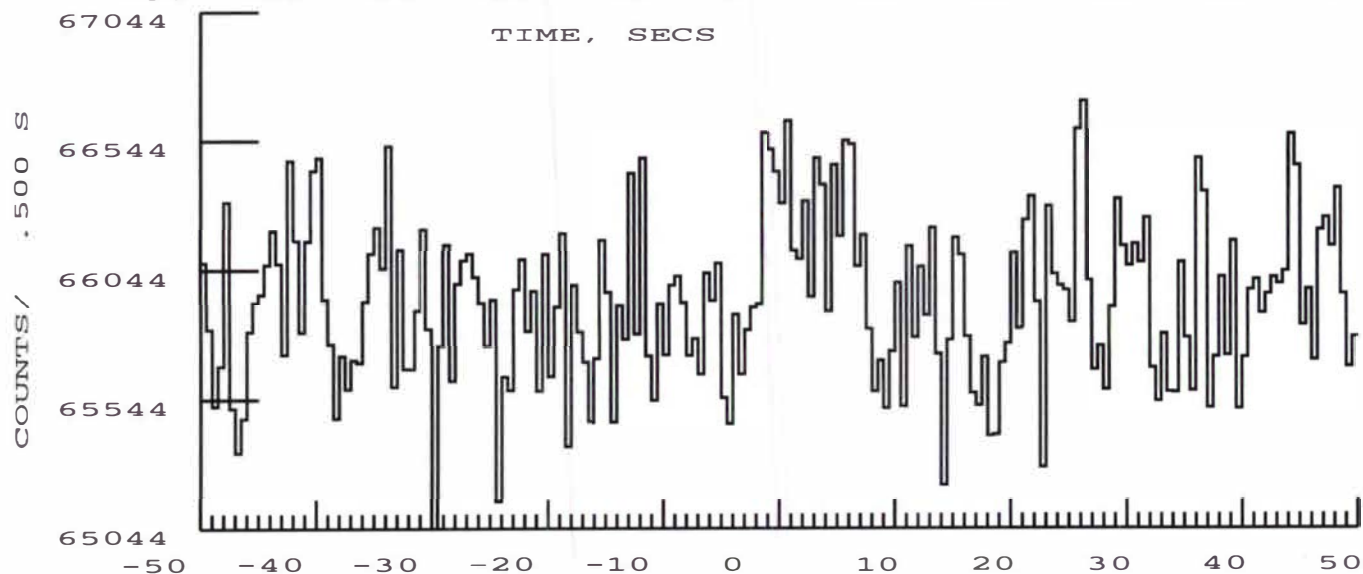
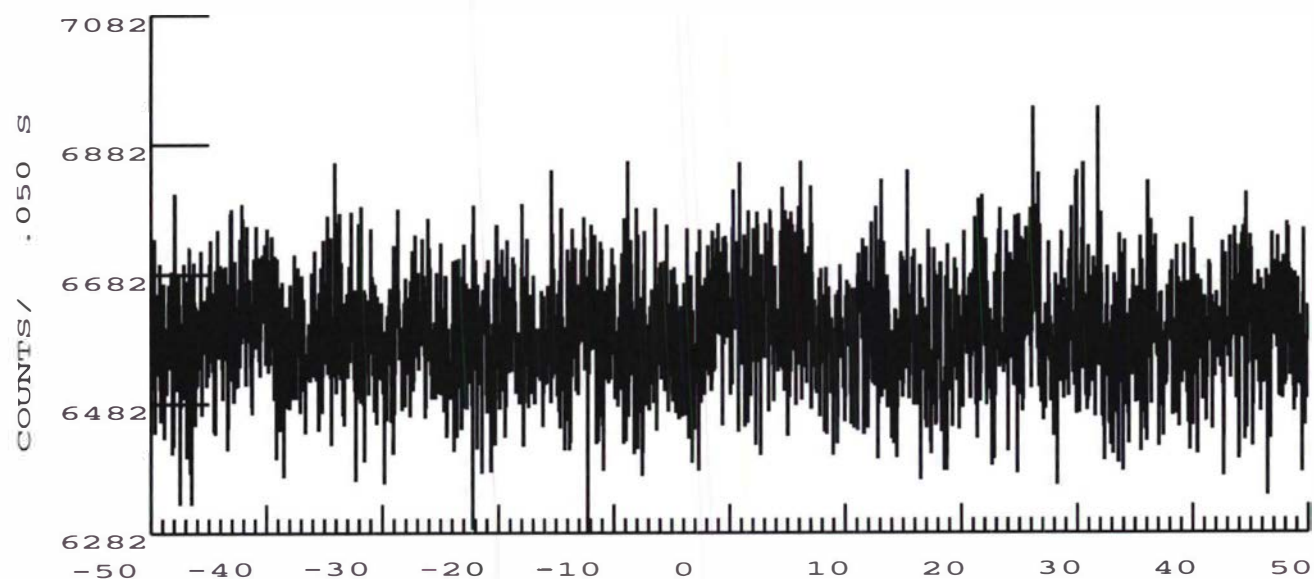
43300.248



17/01/20

50-3000 keV





Subject: BAT lightcurve for trigger at 200117_1224

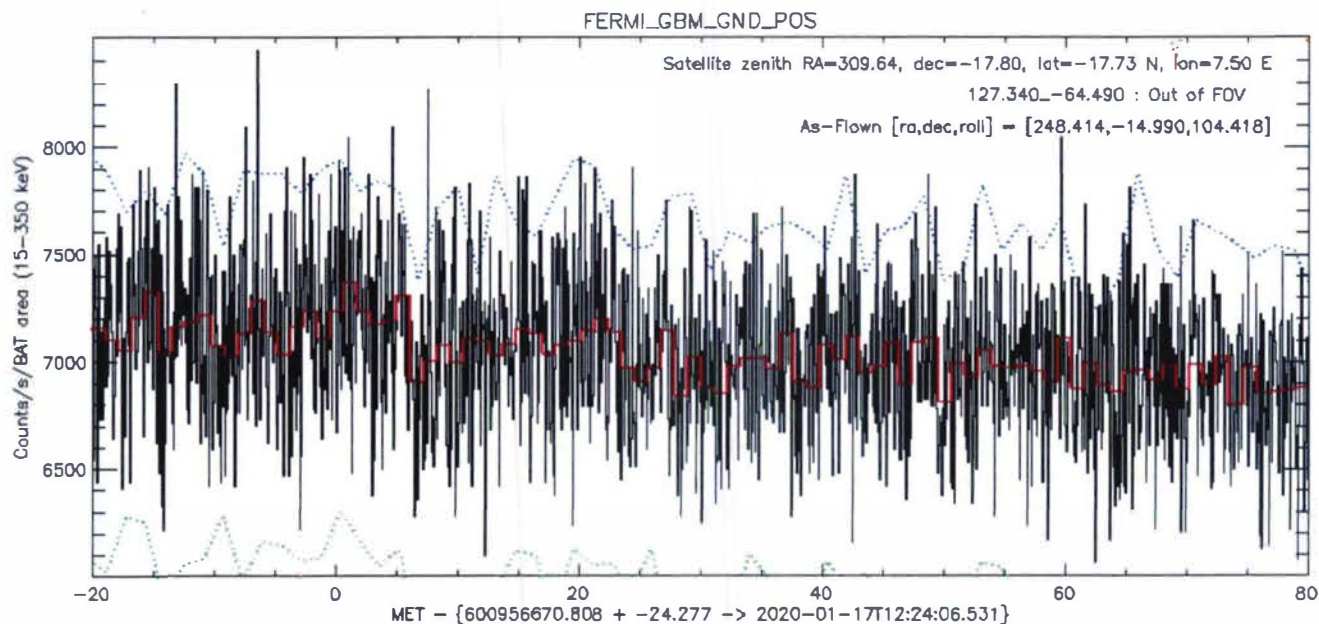
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/17/2020, 7:05 AM

To: aaron.tohu@gmail.com, ipn@ssl.berkeley.edu, dmpalmer@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/200117_1224.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 600956670.808 -s 127.340_-64.490
Swift Zenith(RA,dec):      309.64, -17.80
Swift Location(lon,lat,alt): 7.50 E, -17.73 N, 547 km
Time(MET + UTC -> UT):    600956670.808 + -24.277 -> 2020-01-17T12:24:06.531
YYMMDD_SOD:               200117_44646.531      DOY=017
Obs Sequence Number:      00074384017
Obs Target Name:          saa-cold-27-01
Obs Date and Times:       2020-01-17 11:58:37 - 12:26:36
Obs Pointing(ra,dec,roll): 248.414, -14.990, 104.42
127.340_-64.490_imageloc (boresight_dist, angle): (89, 7)
127.340_-64.490_exposure (cm2 cos adjusted): 0
127.340_-64.490_altitude: 15 (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/200117_1224.png	17.2 KB
~/tmp/swift/200117_1224_bat64ms_ipn	86.0 KB

KONUS

18/01/2020

49.068

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4060

3060

2060

1060

60

0

10000

20000

30000

40000

50000

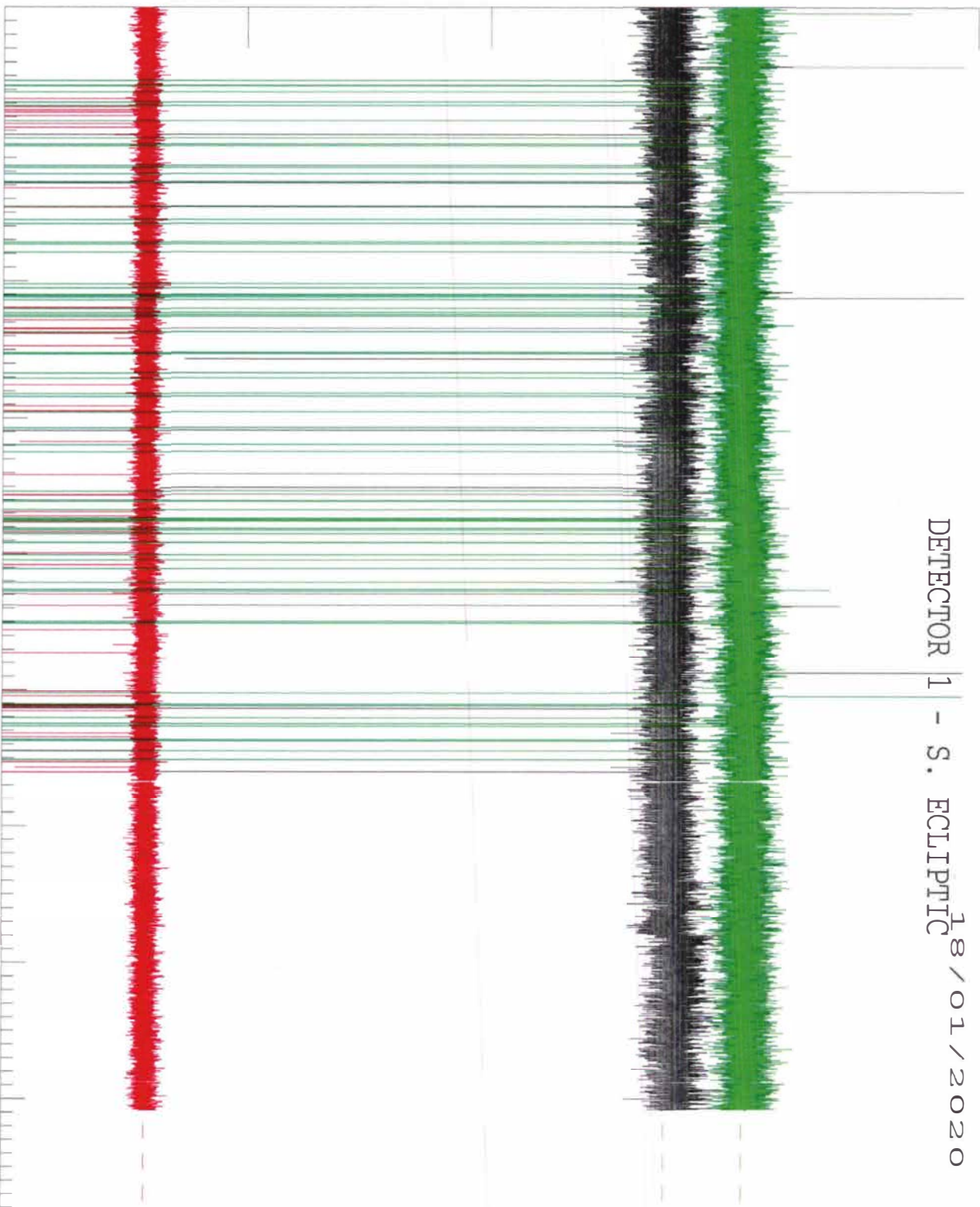
60000

70000

80000

TIME, SECS

DETECTOR 1 - S. ECLIP¹₈/01/2020



KONUS

18/01/2020

49.068

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2010

1510

1010

510

10

10000

20000

30000

40000

50000

60000

70000

80000

TIME, SECS

DETECTOR 2 - N. ECLIPSE

KONUS

19/01/2020

-66.229

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/***** S

4500

3500

2500

1500

500

0

10000

20000

30000

40000

50000

60000

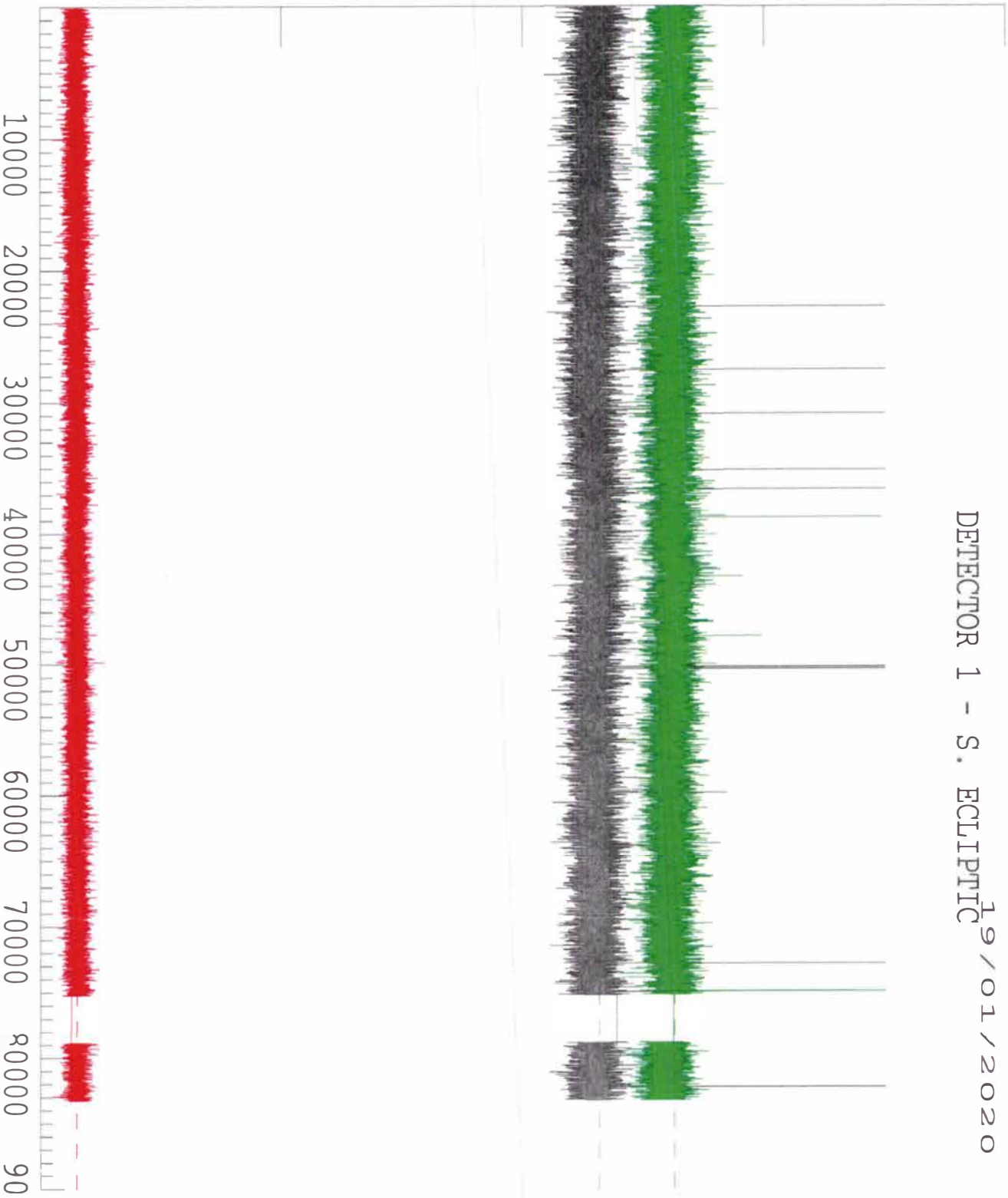
70000

80000

90

ME. SECS

DETECTOR 1 - S. ECLIPTEIC¹⁹/01/2020



KONUS

19/01/2020

-66.229

v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/***** S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

60000

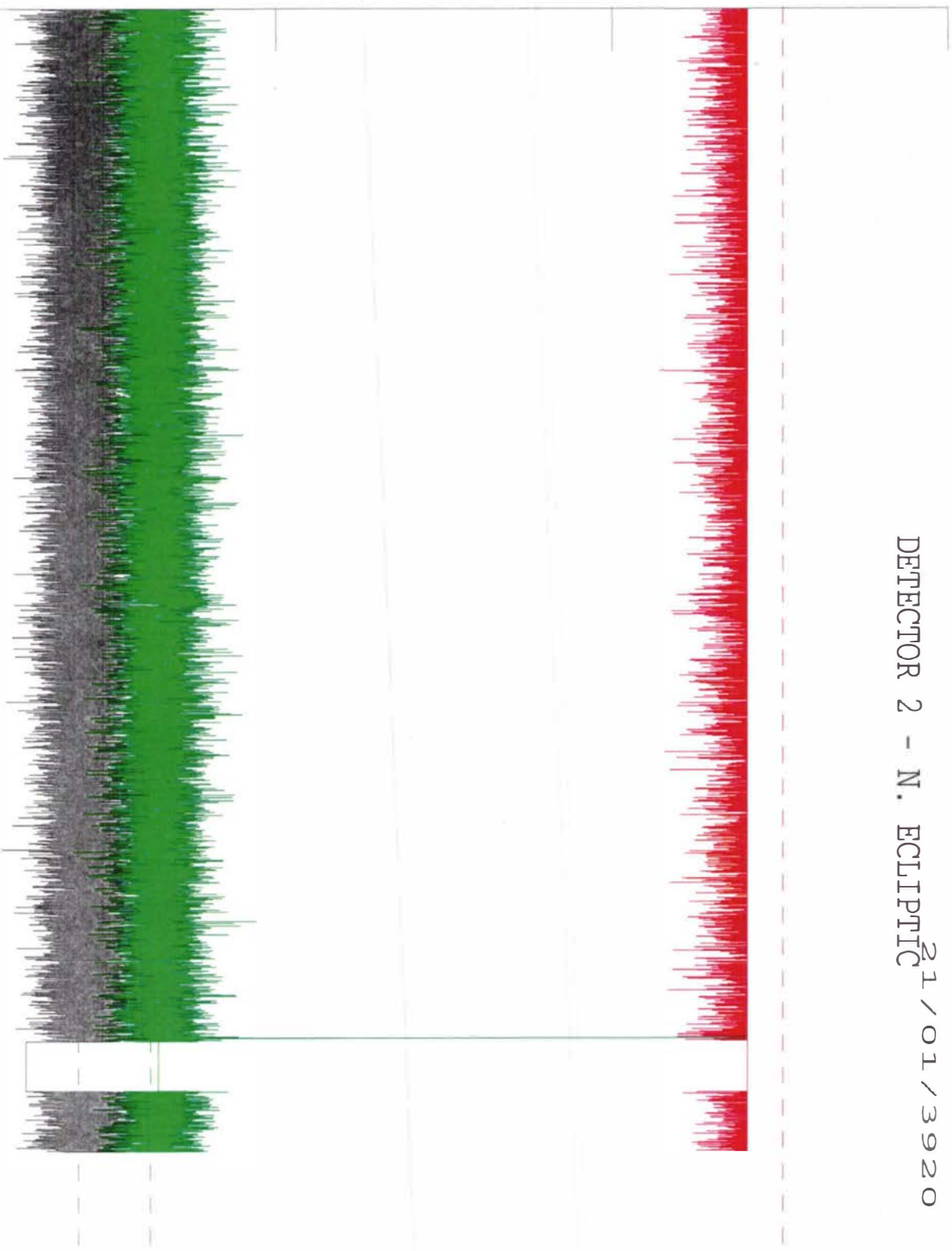
70000

80000

90

ME. SECS

DETECTOR 2 - N. ECLIPHTIC²¹ / 01 / 3920



A

FERMI

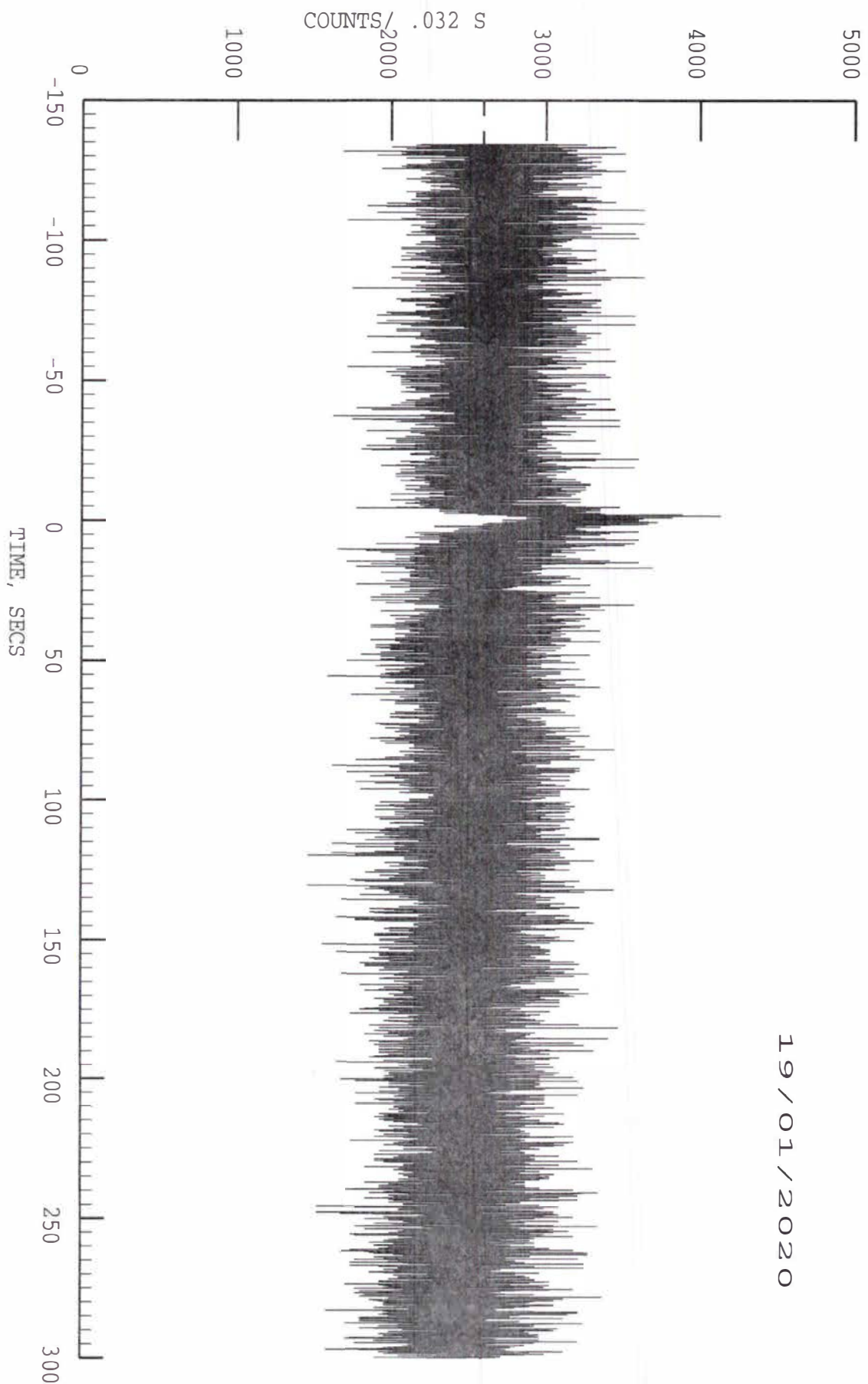
19/01/20

59827.531

16:37:07.531

26- 293 keV

271 - 77.1 8.6



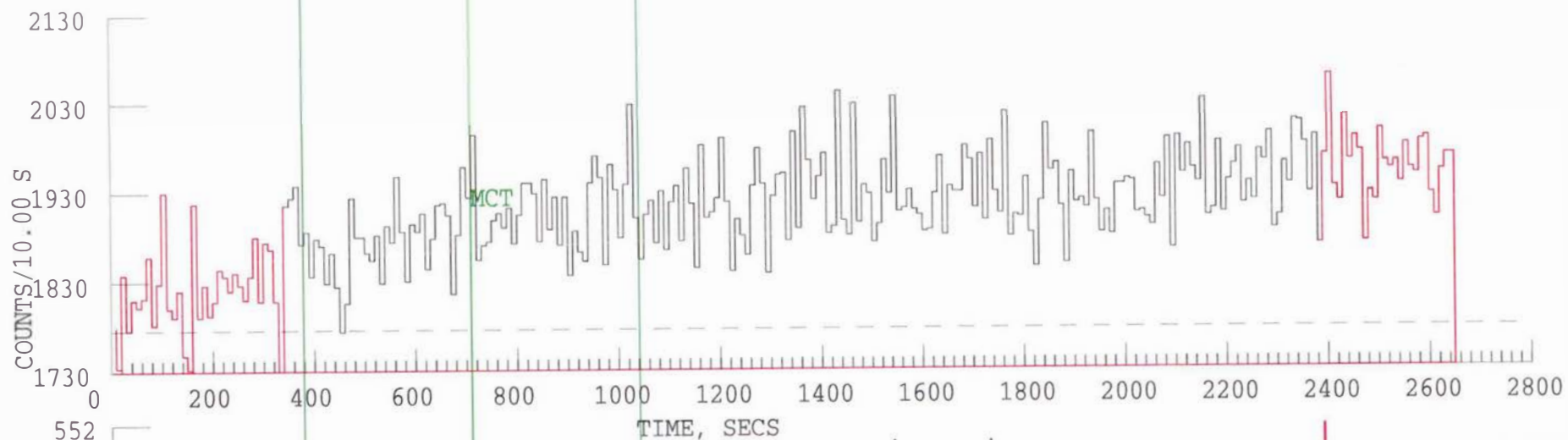
19/01/2020

A

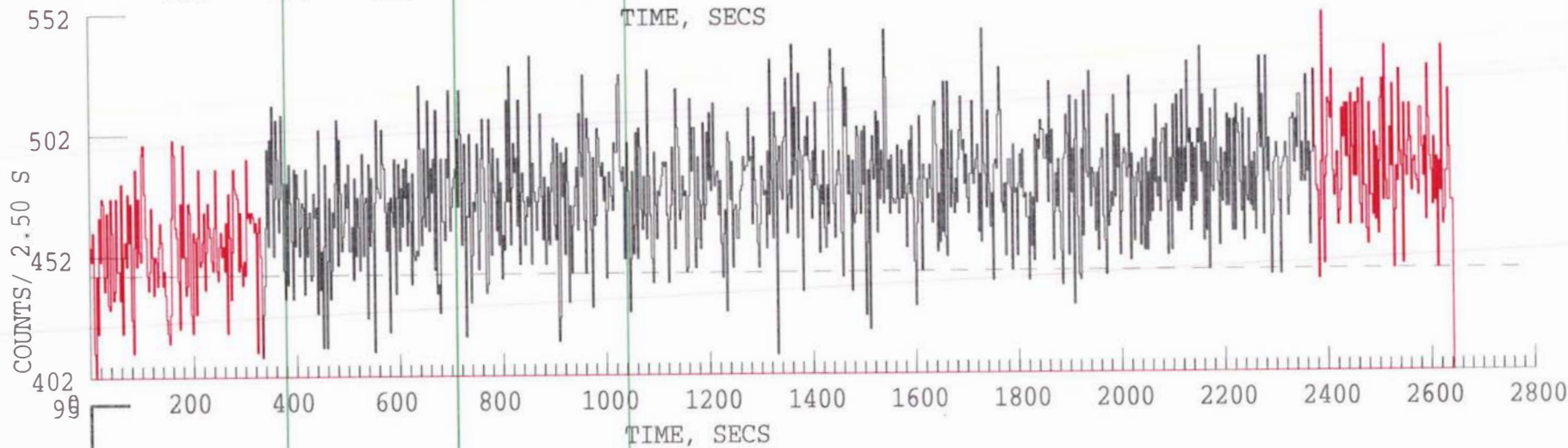
24/01/2020

16:14:36.930

Occulted

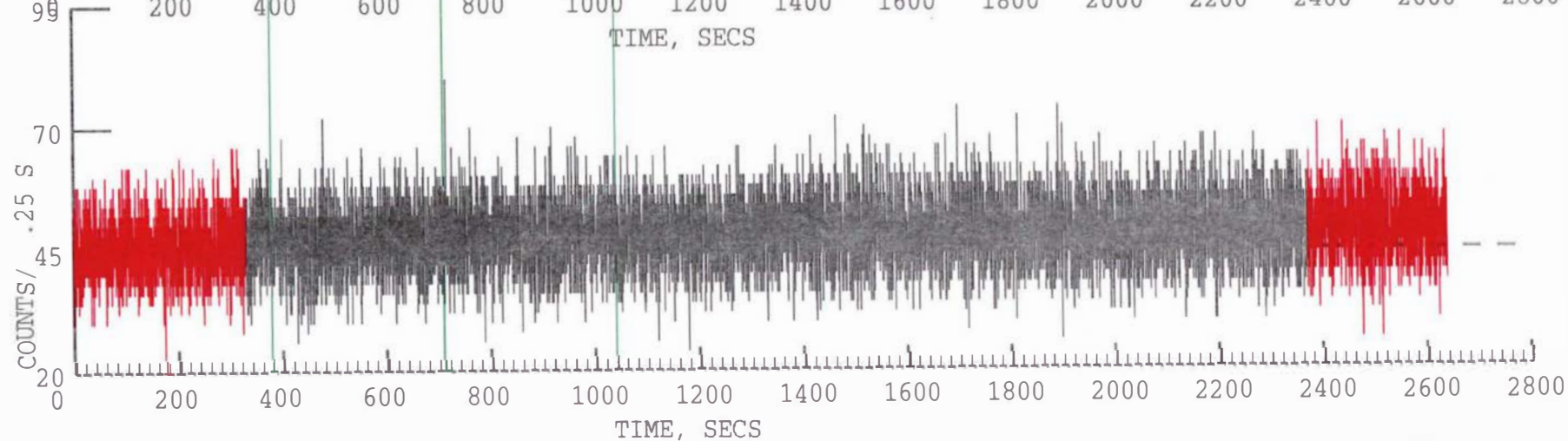


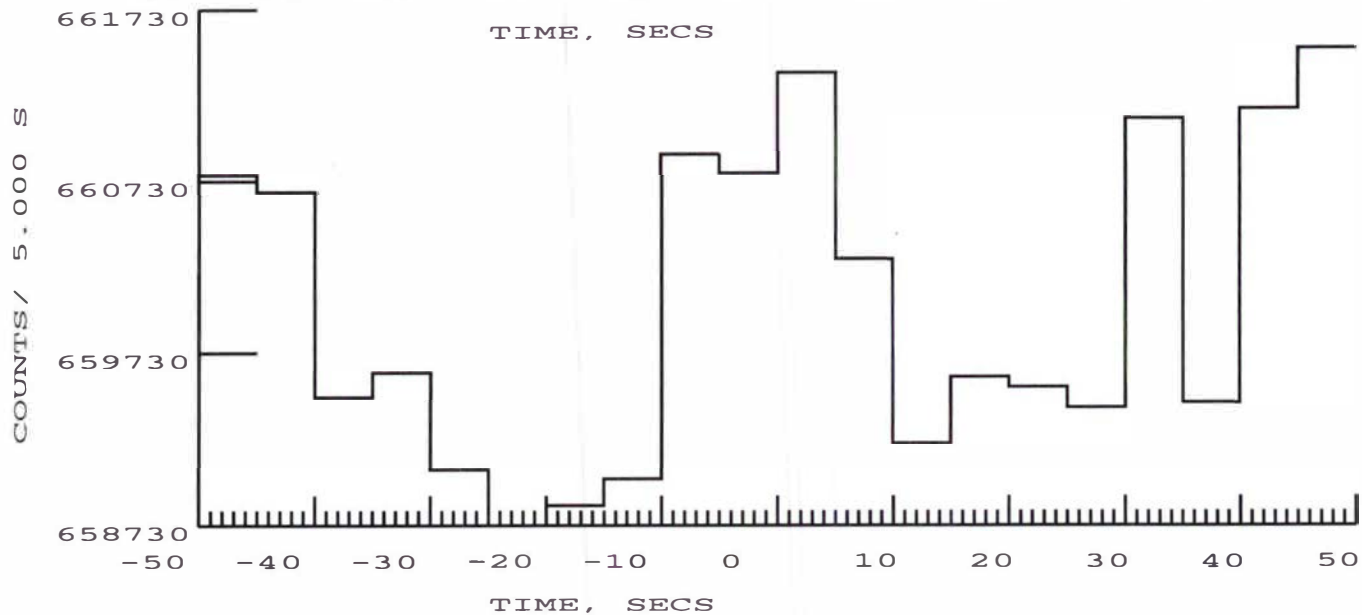
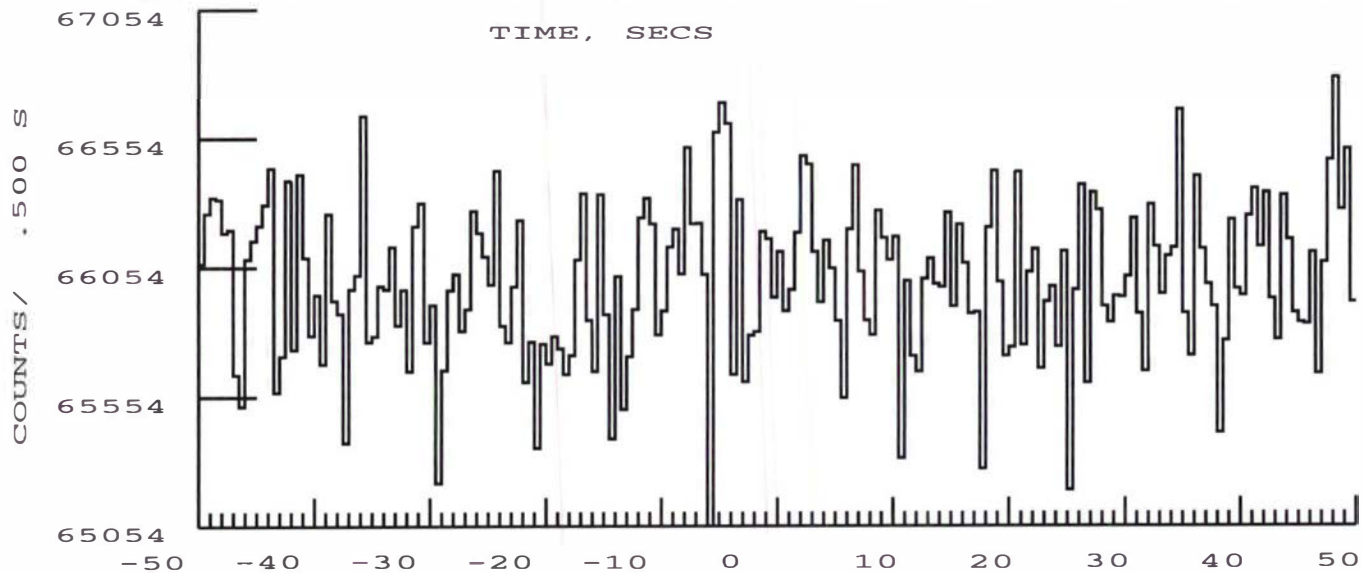
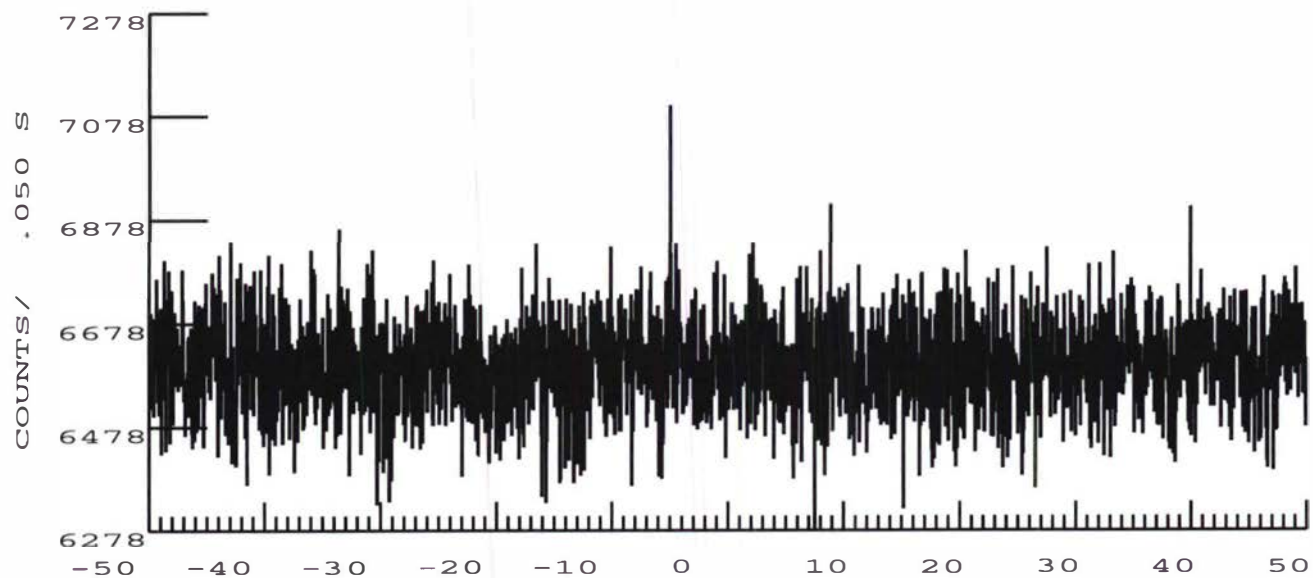
58476.930



19/01/20

50-3000 keV





Subject: BAT lightcurve for trigger at 200119_1637

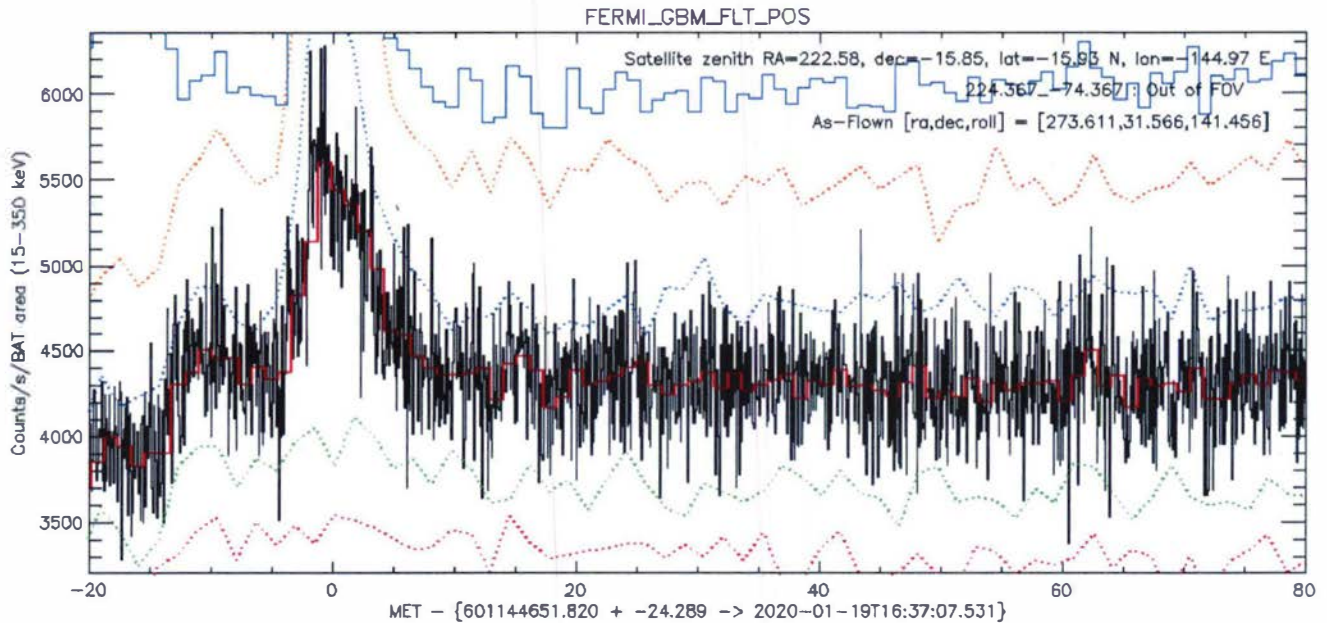
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/20/2020, 3:15 AM

To: aaron.tohu@gmail.com, 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/200119_1637.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601144651.820 -s 224.367_-74.367
Swift Zenith(RA,dec):      222.58, -15.85
Swift Location(lon,lat,alt): -144.97 E, -15.93 N, 554 km
Time(MET + UTCF -> UT):   601144651.820 + -24.289 -> 2020-01-19T16:37:07.531
YYMMDD_SOD:               200119_59827.531      DOY=019
Obs Sequence Number:      03109803008
Obs Target Name:          4FGL J1814.4+3132
Obs Date and Times:       2020-01-19 16:36:37 - 16:50:33
Obs Pointing(ra,dec,roll): 273.611, 31.566, 141.46
224.367_-74.367_imageloc (boresight_dist, angle): (111, -39)
224.367_-74.367_exposure (cm² cos adjusted): 0
224.367_-74.367_altitude: 55 (up)
```

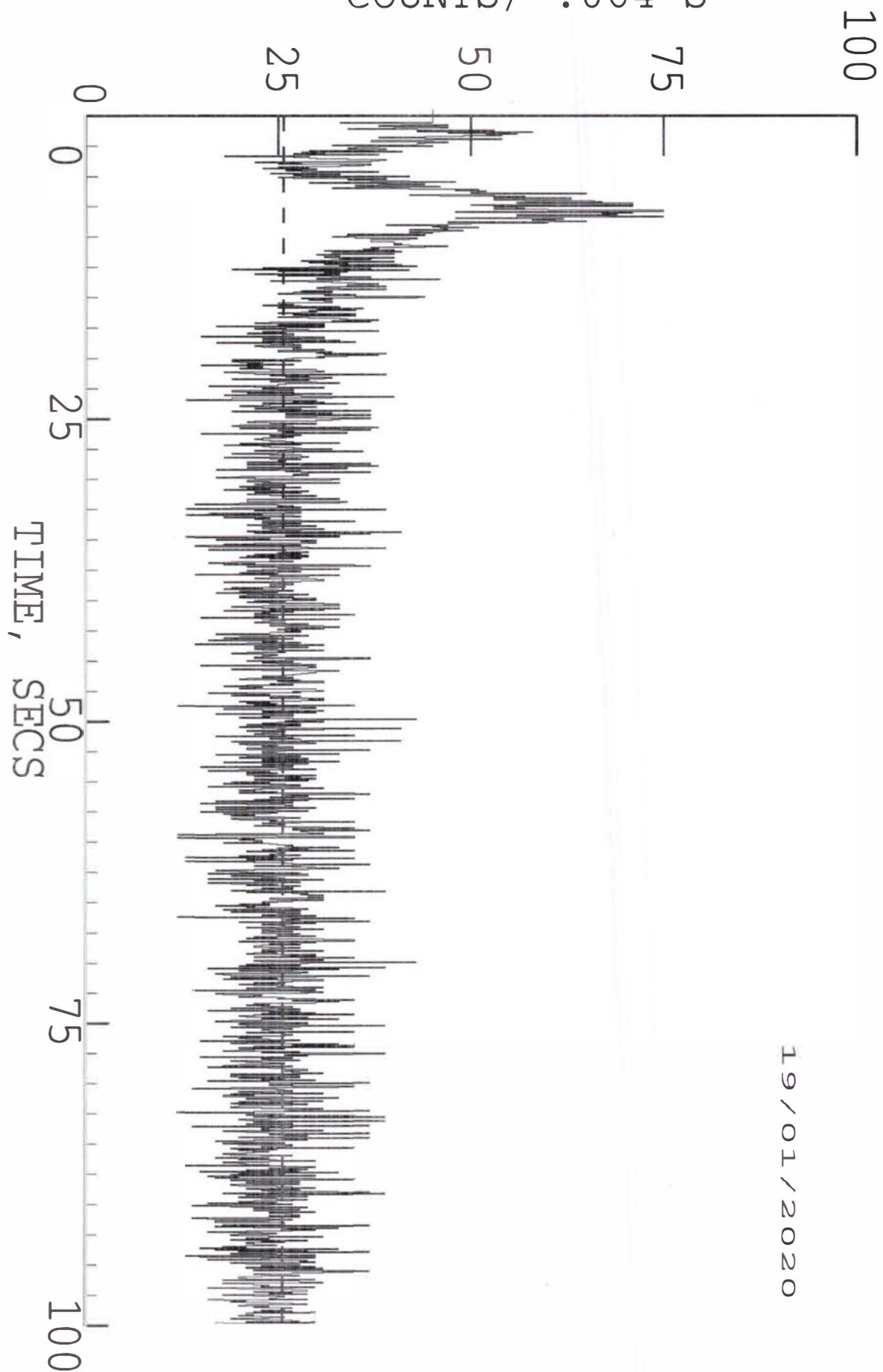
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
TSPA -- Automatically generated plot of publicly-available scientific data

—Attachments—

/tmp/swift/200119_1637.png	22.3 KB
/tmp/swift/200119_1637_bat64ms_ipn	87.0 KB

KONUS 19/01/20 74953.503 20:49:13.503^B
50- 200 keV

COUNTS/ .064 S



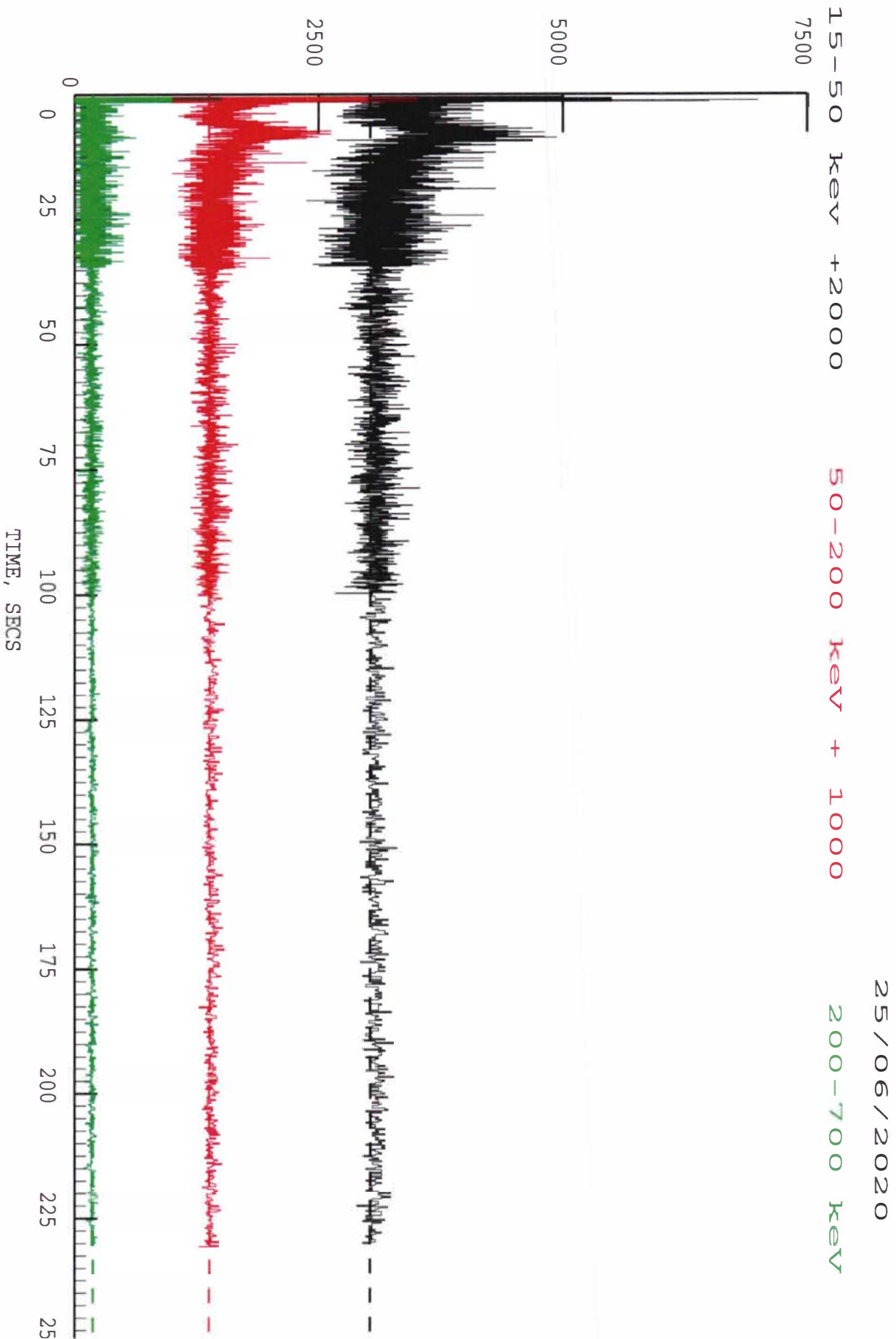
KONUS

19/01/20

74953.000

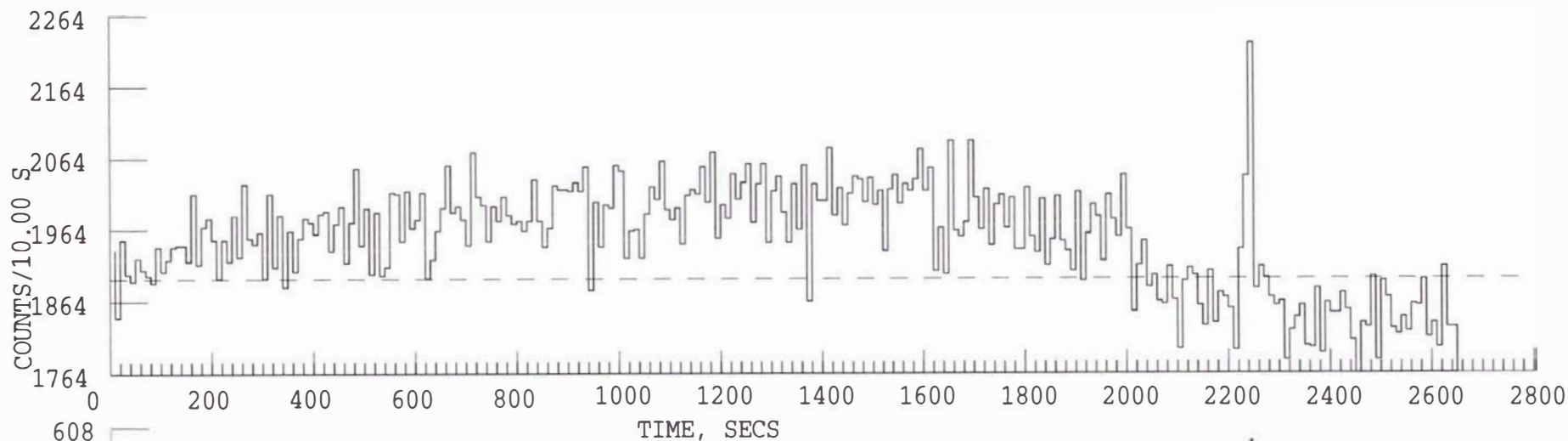
20:49:13.000

COUNTS/SEC

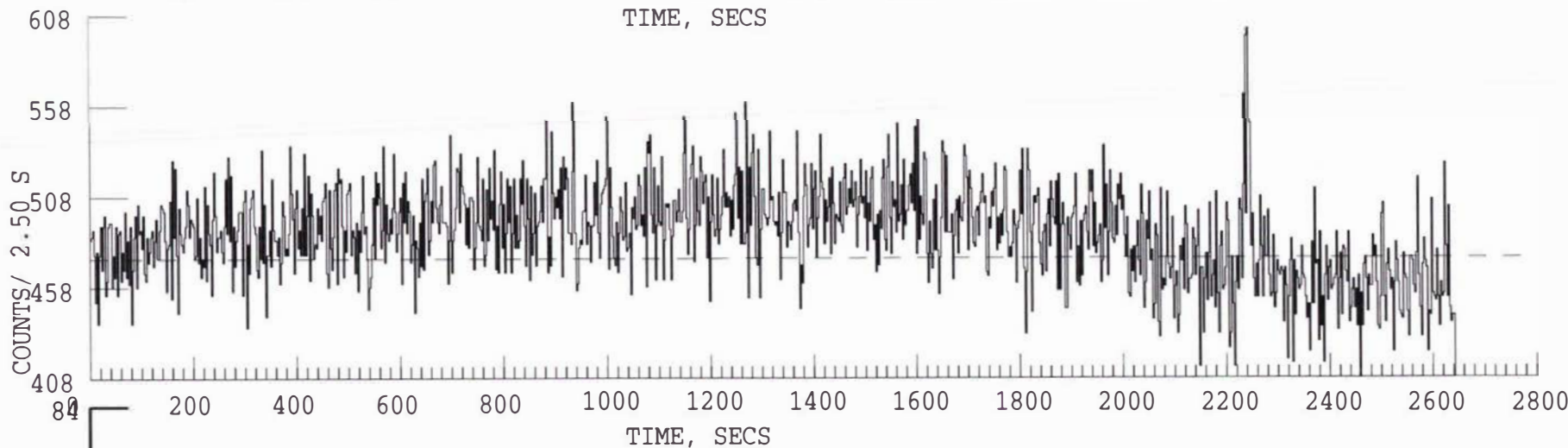


27/03/2020

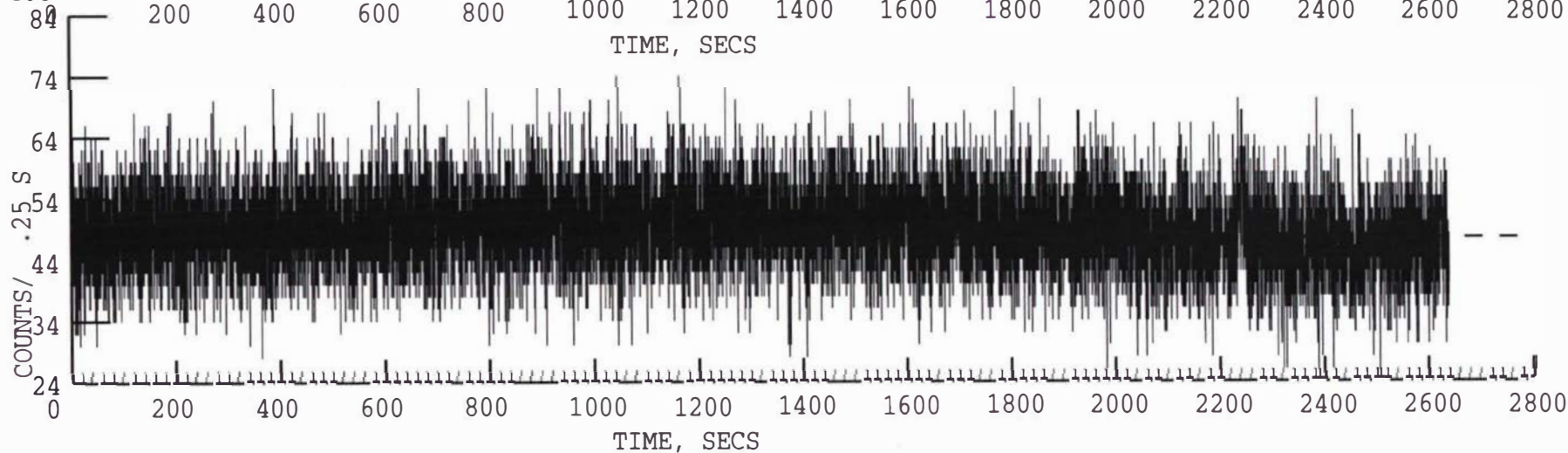
20:26:36.655

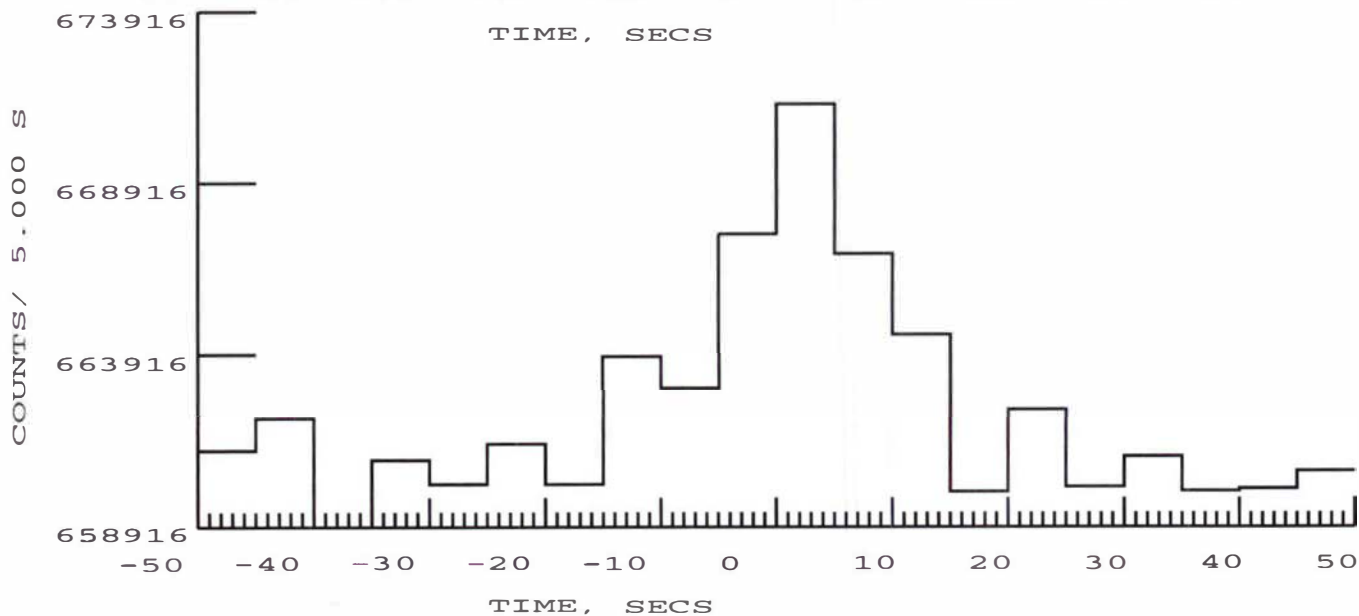
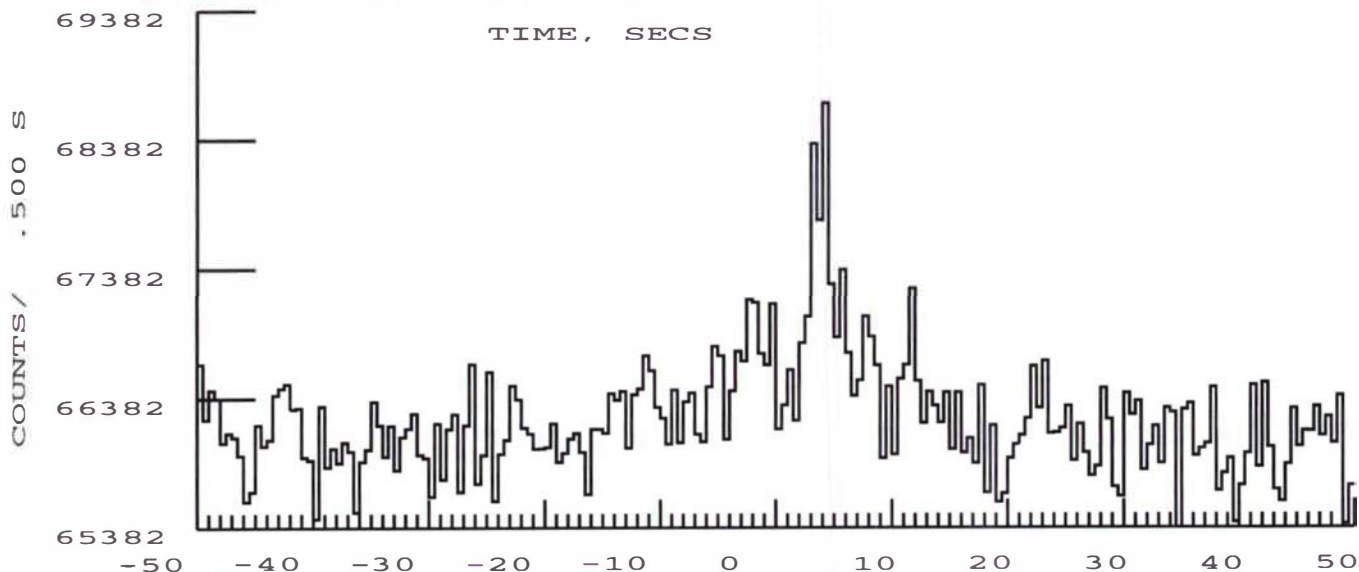
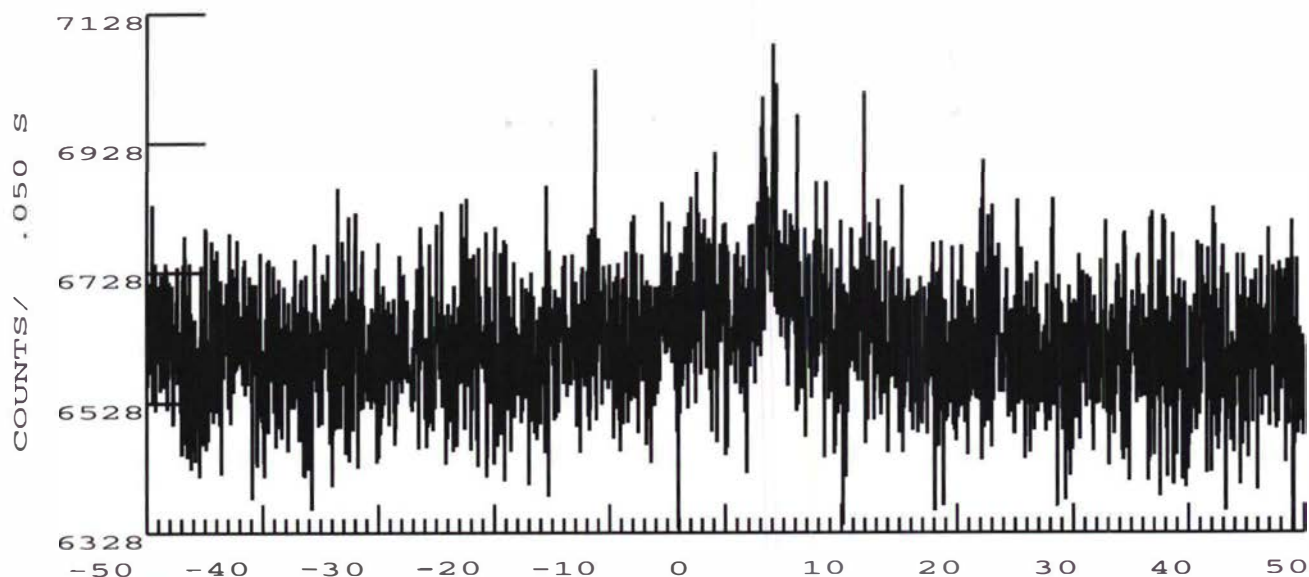


73596.655



19/01/20
ODYSSEY
50-3000 keV





Subject: BAT lightcurve for trigger at 200119_2049

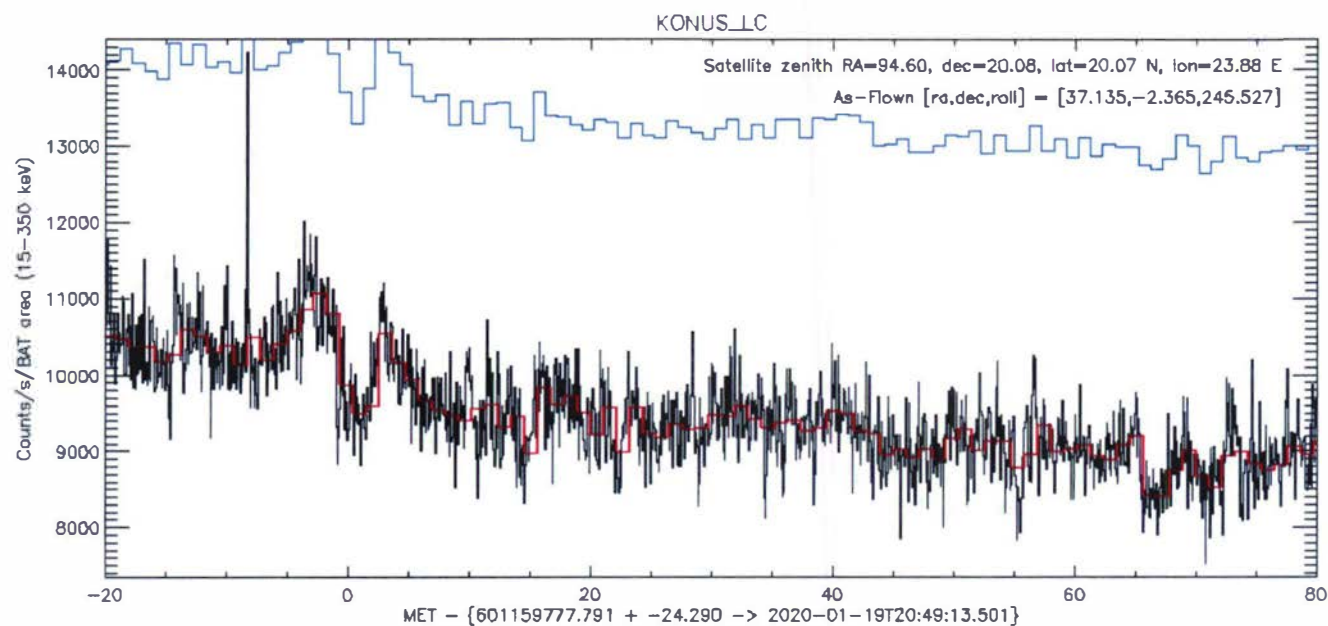
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/20/2020, 2:21 AM

To: aaron.tohu@gmail.com, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrاند@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/200119_2049.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601159777.791
Swift Zenith(RA,dec):      94.60, 20.08
Swift Location(lon,lat,alt): 23.88 E, 20.07 N, 556 km
Time(MET + UTC -> UT):    601159777.791 + -24.290 -> 2020-01-19T20:49:13.501
YYMMDD_SOD:               200119_74953.501      DOY=019
Obs Sequence Number:      07031223002
Obs Target Name:          J0228.5-0222
Obs Date and Times:       2020-01-19  20:42:37 - 20:51:33
Obs Pointing(ra,dec,roll): 37.135, -2.365, 245.53
```

--
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/200119_2049.png

14.1 KB

/tmp/swift/200119_2049_bat64ms_ipn

87.0 KB

Subject: Re: [EXTERNAL] BAT lightcurve for trigger at 200119_2049

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

Date: 1/20/2020, 4:29 PM

To: "<palmer+automatic_lightcurve@lanl.gov>" <palmer+automatic_lightcurve@lanl.gov>

CC: Aaron Tohuavohu <aaron.tohu@gmail.com>, 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>, BAT TEAM <bat_team@bigbang.gsfc.nasa.gov>

This was during a time of hot pixels.

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

On Jan 20, 2020, at 3:21 AM, palmer+automatic_lightcurve@lanl.gov wrote:

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

```
<_tmp_swift_200119_2049.png><_tmp_swift_200119_2049_bat64ms_ipn>
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601159777.791
Swift Zenith(RA,dec):      94.60, 20.08
Swift Location(lon,lat,alt): 23.88 E, 20.07 N, 556 km
Time(MET + UTCF -> UT):    601159777.791 + -24.290 -> 2020-01-19T20:49:13.501
YYMMDD_SOD:                200119_74953.501      DOY=019
Obs Sequence Number:        07031223002
Obs Target Name:            J0228.5-0222
Obs Date and Times:          2020-01-19   20:42:37 - 20:51:33
Obs Pointing(ra,dec,roll):   37.135, -2.365, 245.53
```

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

v01

26.523

20/01/2020

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

10000

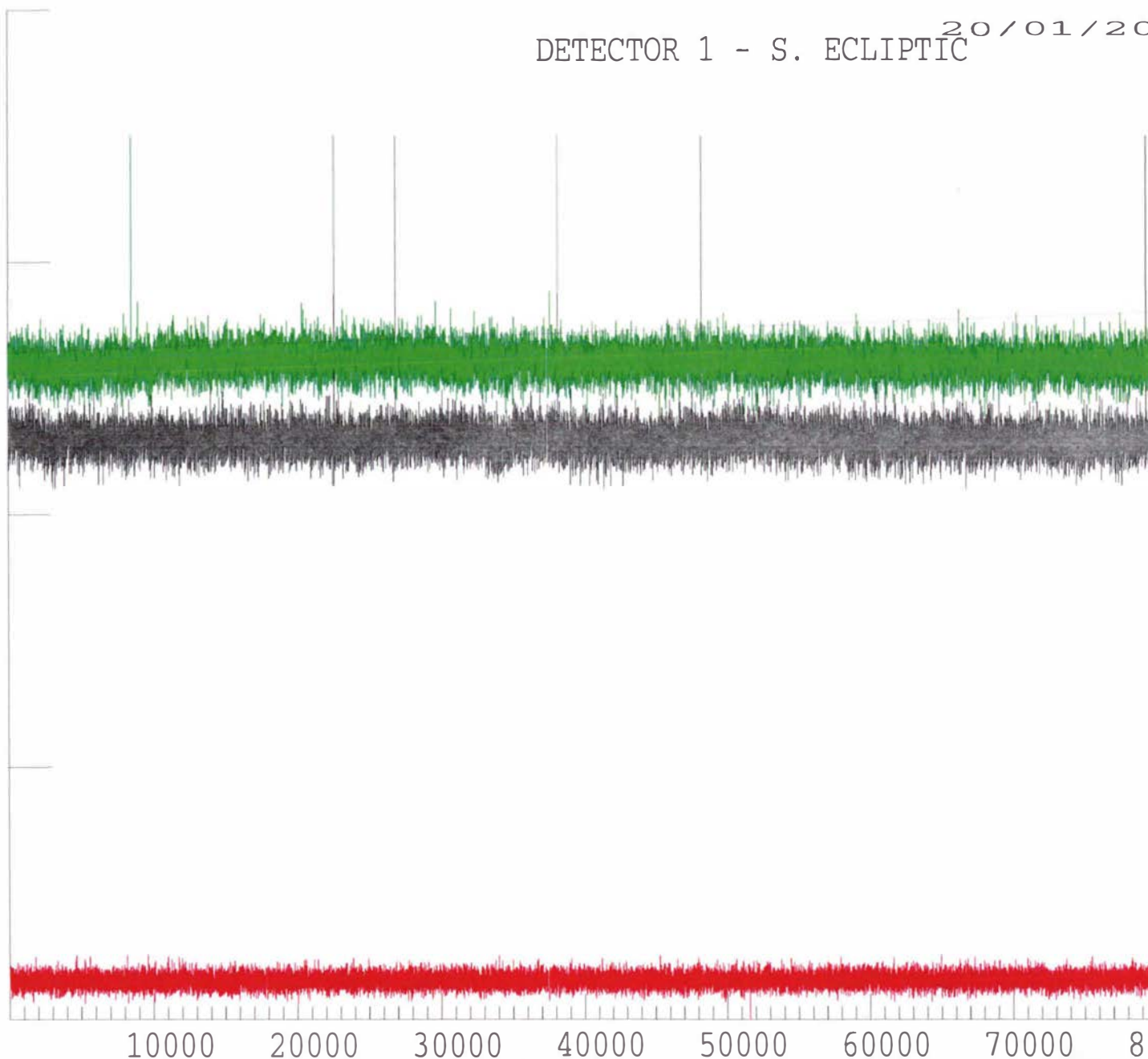
20000

TII SECS

DETECTOR 1 - S. ECLIPTIC

20/01/2020

80000



KONUS

20/01/2020

26.523

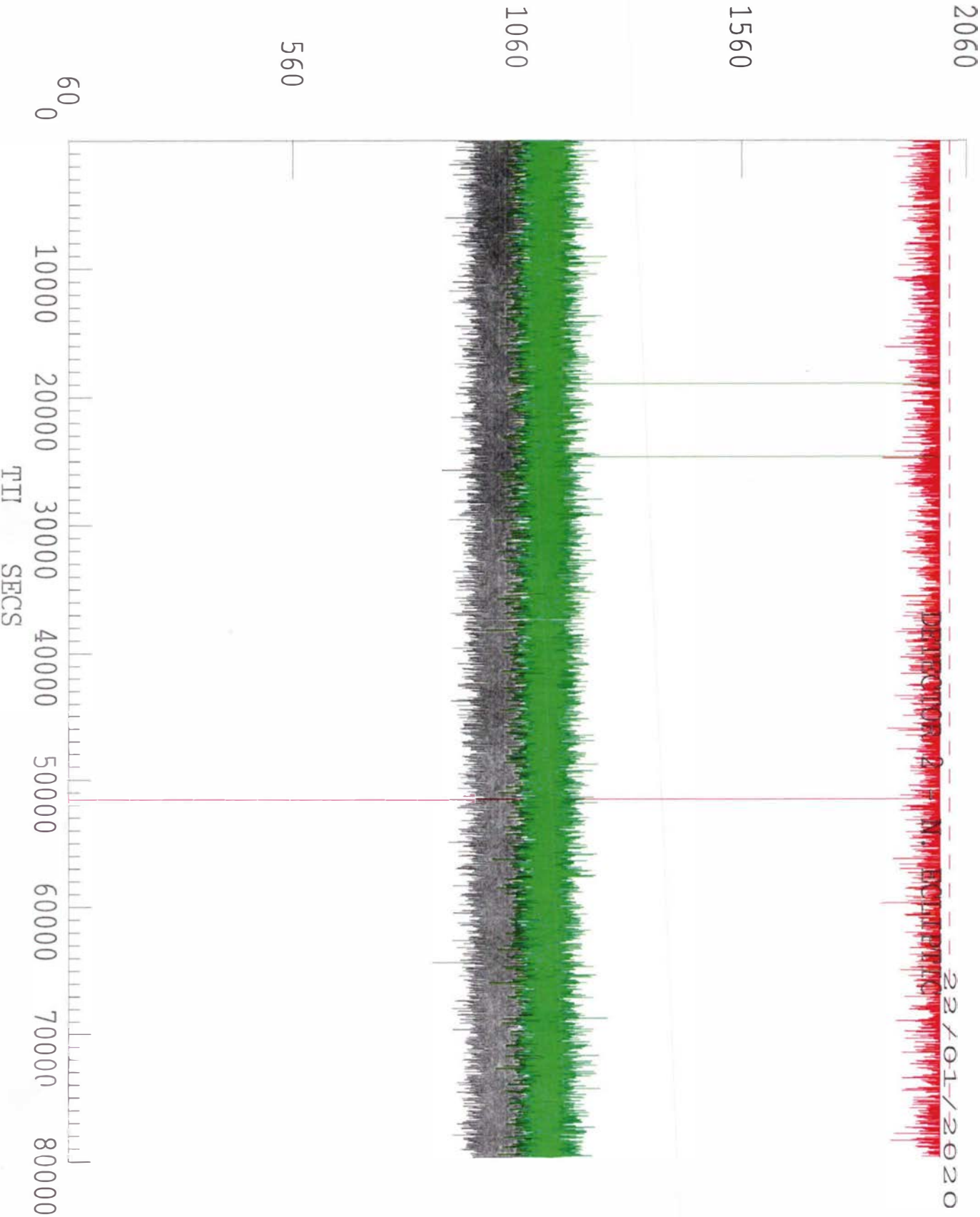
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: GCN/ICECUBE_ASTROTRACK_BRONZE

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

Date: 1/20/2020, 10:49 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN/AMON NOTICE
NOTICE_DATE: Mon 20 Jan 20 18:49:08 UT
NOTICE_TYPE: ICECUBE Astrotrack Bronze
STREAM: 25
RUN_NUM: 133644
EVENT_NUM: 43767651
SRC_RA: 67.7381d {+04h 30m 57s} (J2000),
67.9682d {+04h 31m 52s} (current),
67.1647d {+04h 28m 40s} (1950)
SRC_DEC: -14.5870d {-14d 35' 12"} (J2000),
-14.5449d {-14d 32' 41"} (current),
-14.6938d {-14d 41' 37"} (1950)
SRC_ERROR: 30.80 [arcmin radius, stat-only, 90% containment]
SRC_ERROR50: 12.00 [arcmin radius, stat-only, 50% containment]
DISCOVERY_DATE: 18868 TJD; 20 DOY; 20/01/20 (yy/mm/dd)
DISCOVERY_TIME: 67698 SOD {18:48:18.55} UT
REVISION: 0
ENERGY: 6.0702e+03 [TeV]
SIGNALNESS: 3.2893e-01 [dn]
FAR: 0.3565 [yr⁻¹]
SUN_POSTN: 302.36d {+20h 09m 26s} -20.11d {-20d 06' 39"}
SUN_DIST: 116.29 [deg] Sun_angle= -8.4 [hr] (East of Sun)
MOON_POSTN: 249.99d {+16h 39m 58s} -19.76d {-19d 45' 45"}
MOON_DIST: 145.63 [deg]
GAL_COORDS: 210.78, -37.62 [deg] galactic lon,lat of the event
ECL_COORDS: 63.06, -35.97 [deg] ecliptic lon,lat of the event
COMMENTS: IceCube Bronze event.
COMMENTS: The position error is statistical only, there is no systematic added.

Subject: IceCube-200120A: Event likely due to background
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/24/2020, 12:27 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26874
SUBJECT: IceCube-200120A: Event likely due to background
DATE: 20/01/24 20:27:08 GMT
FROM: Erik Blaufuss at U. Maryland/IceCube <blaufuss@umd.edu>

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

On 20/01/20 IceCube reported a track-like event with a moderate probability of being of astrophysical origin (<https://gcn.gsfc.nasa.gov/gcn/gcn3/26832.gcn3>). After further study, we now believe this event to likely be due to a highly inclined muon bundle. Muon bundles are a background arising from down-going cosmic ray air showers and are not from a neutrino of astrophysical origin.

This conclusion is driven by observations with the IceTop surface array portion of IceCube at the time of the alert. The IceTop surface array detects charged particles from cosmic ray induced extensive air showers that occur in the atmosphere above the IceCube detector. IceTop data is presently not accounted for in the IceCube realtime alert system. A preliminary offline cross check of IceTop data indicate a background origin for this alert.

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

FERMI

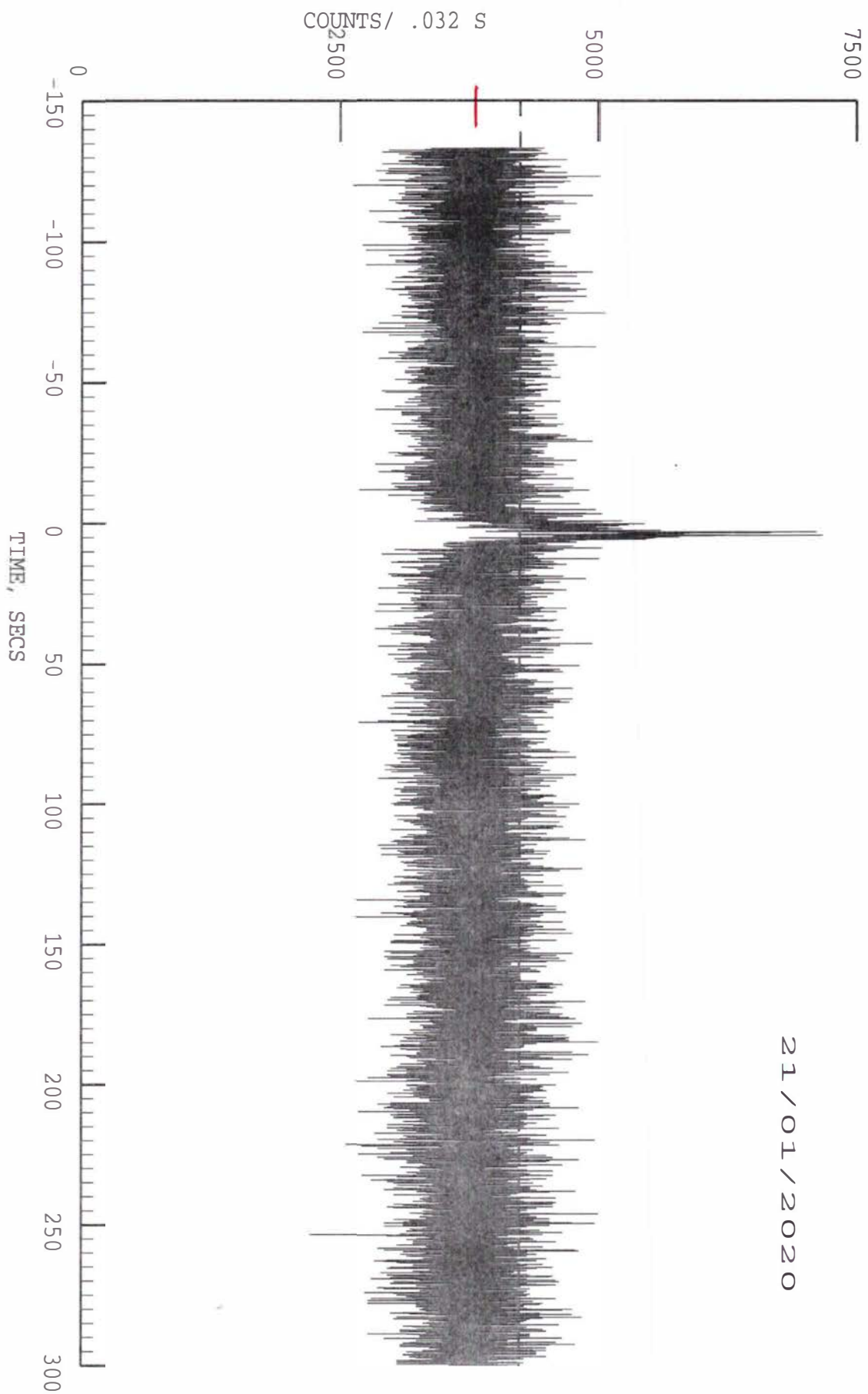
20/01/20

83095.338

23:04:55.338

26- 293 keV

137.1 -70.4 0.0



21/01/2020

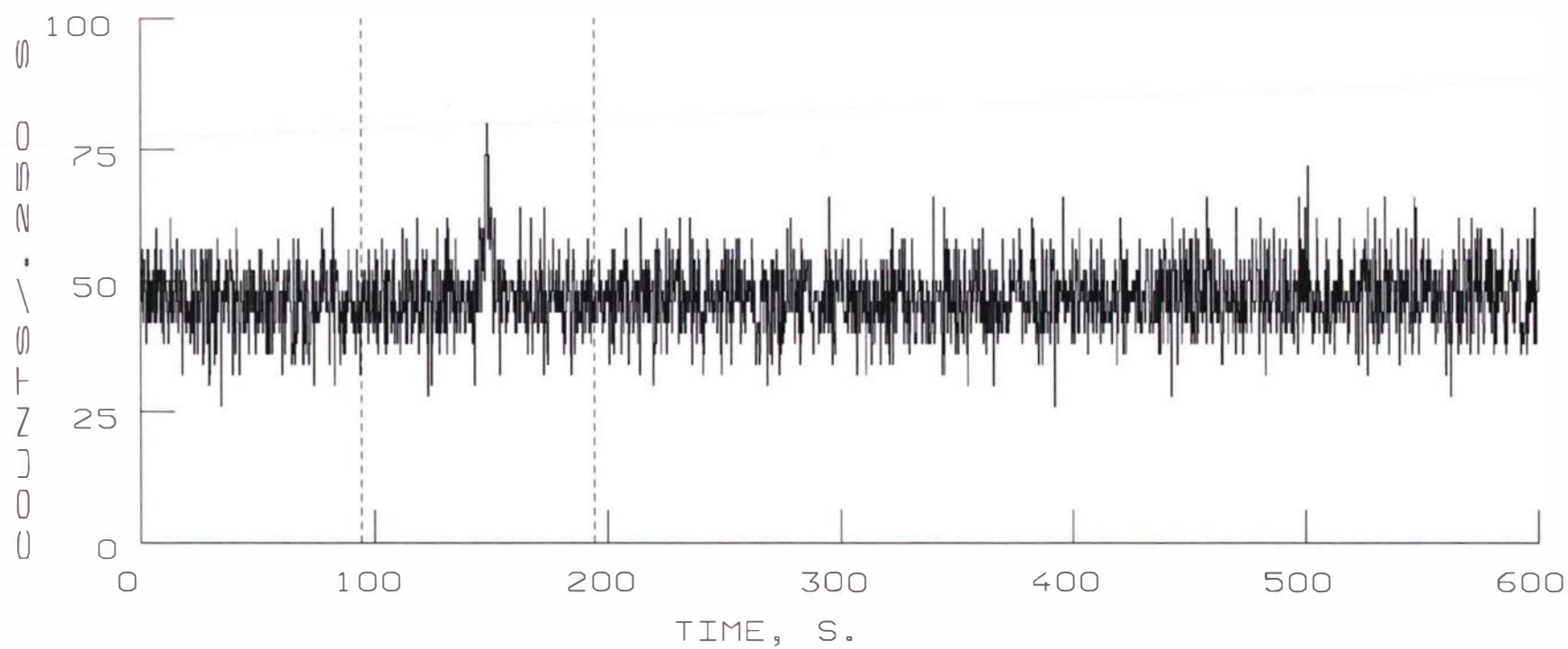
MS01 HEND

12/06/2020

20/01/2020 82714.961 s

50-3000 keV

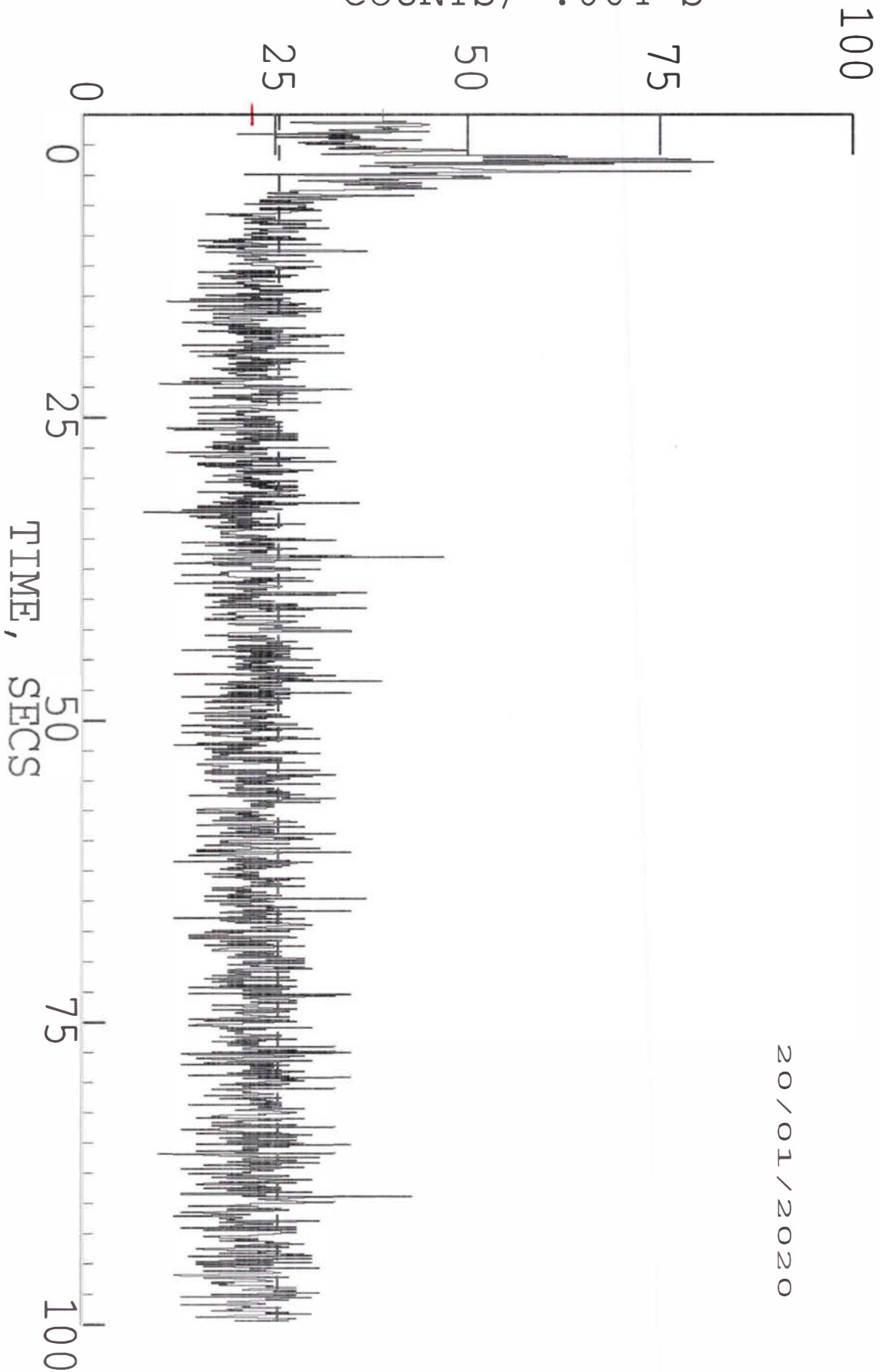
N= 10 M=16
>4.0 SIGMA FLUCTUATIONS



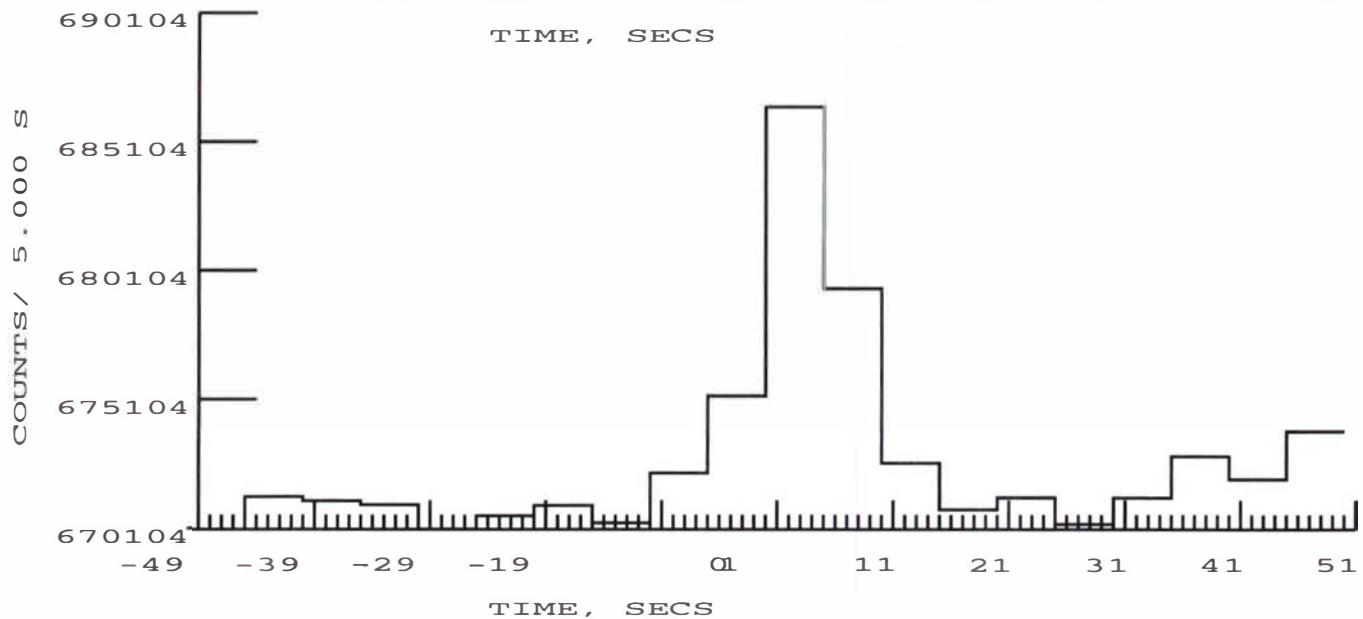
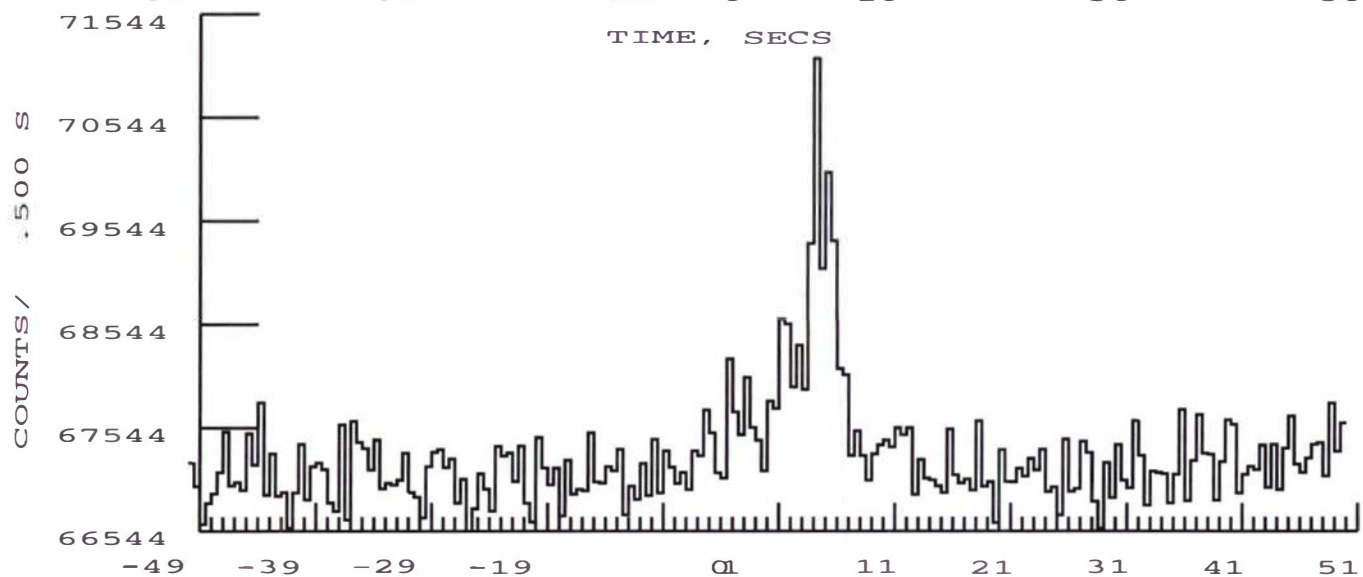
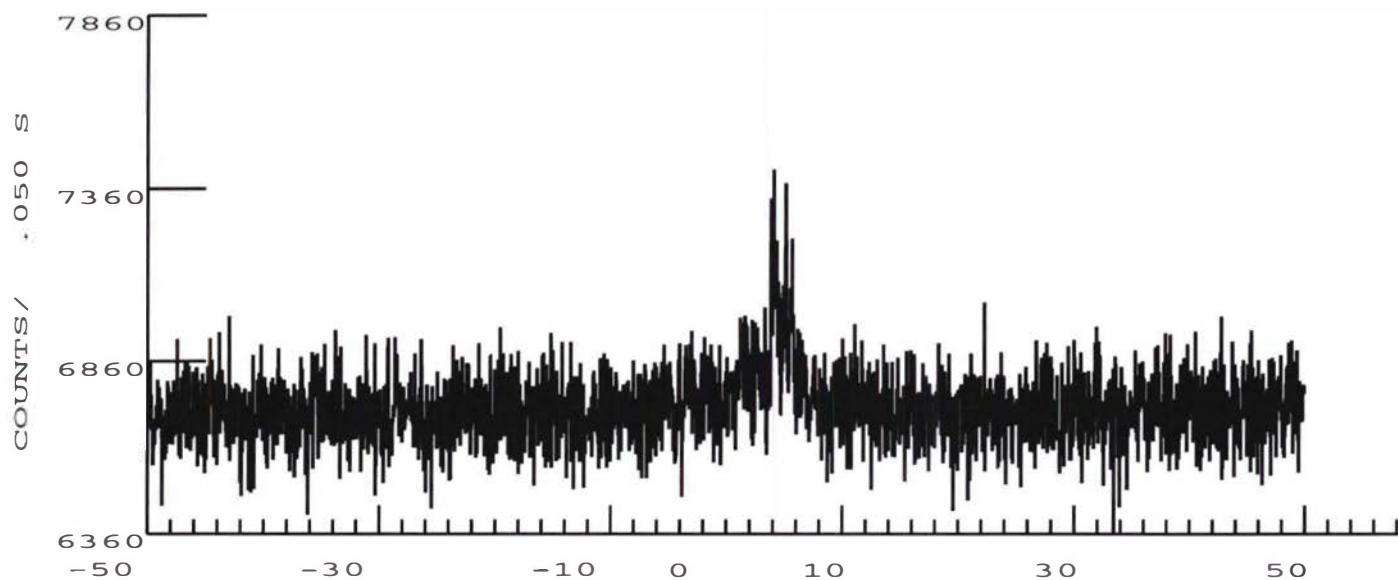
KONUS 20/01/20 83096.553 23:04:56.553

50- 200 keV

COUNTS/ .064 S



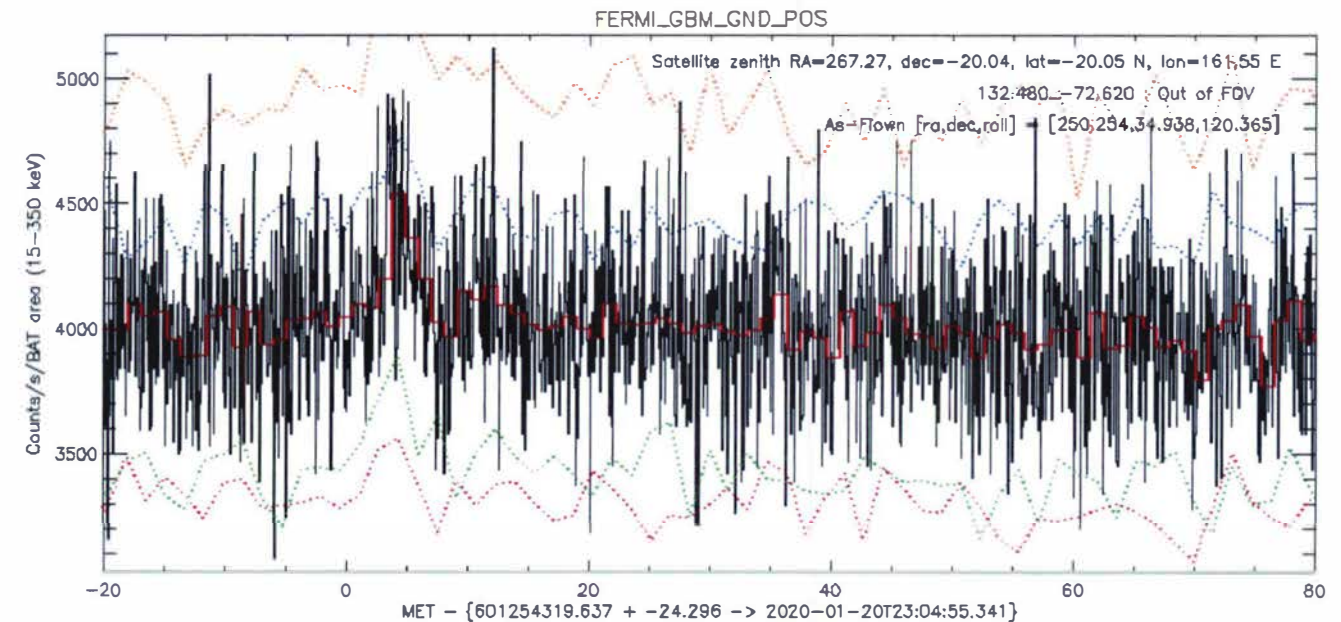
20/01/2020



Subject: BAT lightcurve for trigger at 200120_2304
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 1/20/2020, 11:03 PM
To: aaron.tohu@gmail.com, 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/200120_2304.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601254319.637 -s 132.480_-72.620
Swift Zenith(RA,dec):      267.27, -20.04
Swift Location(lon,lat,alt): 161.55 E, -20.05 N, 551 km
Time(MET + UTCF -> UT):    601254319.637 + -24.296 -> 2020-01-20T23:04:55.341
YYMMDD_SOD:                200120_83095.341      DOY=020
Obs Sequence Number:       00011395009
Obs Target Name:           SDSS J164100.10+345452.7
Obs Date and Times:        2020-01-20 23:02:37 - 23:14:33
Obs Pointing(ra,dec,roll): 250.254, 34.938, 120.36
132.480_-72.620_imageloc (boresight_dist, angle): (131, -10)
132.480_-72.620_exposure (cm^2 cos adjusted): 0
132.480_-72.620_altitude: 30 (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/200120_2304.png	23.2 KB
/tmp/swift/200120_2304_bat64ms_ipn	87.1 KB

Subject: GRB 200120A: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/21/2020, 8:06 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26840
SUBJECT: GRB 200120A: Insight-HXMT/HE detection
DATE: 20/01/21 16:05:04 GMT
FROM: YaoGuang Zheng at IHEP <zhengyg@ihep.ac.cn>

Y. G. Zheng, C. Cai, Y. F. Du, W. C. Xue,
Q. Luo, S. Xiao, Q. B. Yi, Y. Huang, C. K. Li, G. Li,
X. B. Li, J. Y. Liao, S. L. Xiong, C. Z. Liu,
X. F. Li, Z. W. Li, Z. Chang, A. M. Zhang, Y. F. Zhang,
X. F. Lu, 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 2020-01-20T23:04:58.60 (T0), Insight-HXMT/HE detected
GRB 200120A (trigger ID: HEB200120961) in a routine search of the data,
which also triggered Fermi/GBM (GCN #26831).

The Insight-HXMT/HE light curve mainly consists of a single
pulse with a duration (T90) of 5.66 s measured from T0-2.86 s.
The 1-ms peak rate, measured from T0-0.08 s, is 890 cnts/sec.
The total counts from this burst is 2641 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB200120961_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 200120A: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/22/2020, 4:07 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26851
SUBJECT: GRB 200120A: AstroSat CZTI detection
DATE: 20/01/22 12:06:37 GMT
FROM: Ramkrishna Gaikwad at IUCAA/AstroSat <ramkrishna@iucaa.in>

R. Gaikwad, S. Gupta, 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 a weak detection of a long GRB 200120A, which was also detected by Fermi GBM Final Real-time Localization (GCN #26831) and IceCube (Lagunas C. et al., GCN #26832).

The source was clearly detected in the 40-200 keV energy range. The light curve showed a single peak of emission peaking at 2020-01-20 23:04:55.0 UT. The measured peak count rate associated with the burst is 156 cts/s above the background in the combined data of four quadrants, with a total of 805 cts. The local mean background count rate was 678 cts/s. Using cumulative rates, we measure a T90 of 9.8 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: IPN Triangulation of GRB 200120A

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

Date: 1/22/2020, 10:11 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26856

SUBJECT: IPN Triangulation of GRB 200120A

DATE: 20/01/22 18:11:06 GMT

FROM: Anna Ridnaia at Ioffe Institute <ridnaia@mail.ioffe.ru>

K. Hurley, on behalf of the IPN,

I. G. Mitrofanov, D. V. Golovin, A. S. Kozyrev, M. L. Litvak,
and A. B. Sanin, on behalf of the HEND-Odyssey GRB team,

A. Ridnaia, S. Golenetskii, R. Aptekar, D. Frederiks, D. Svinkin,
and T. Cline on behalf of the Konus-Wind team,

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,

S. Barthelmy, J. Cummings, H. Krimm, and D. Palmer,
on behalf of the Swift-BAT team, and

W. Boynton, C. Fellows, K. Harshman, H. Enos, and R. Starr,
on behalf of the GRS-Odyssey GRB team, report:

The long-duration GRB 200120A (The Fermi GBM team, GCN Circ. 26831;
Insight-HXMT/HE detection: Zheng et al., GCN Circ. 26840;
AstroSat CZTI detection: Gaikwad et al., GCN Circ. 26851)
was detected by Konus-Wind, Fermi (GBM trigger 601254300),
INTEGRAL (SPI-ACS), Mars-Odyssey (HEND), Insight (HXMT/HE),
AstroSat (CZTI), and Swift (BAT) at about 83095 s UT (23:04:55).
The burst was outside the coded field of view of the BAT.

We have triangulated it to a preliminary, 3 sigma error box
whose coordinates are:

RA(2000), deg	Dec(2000), deg
Center:	
137.180 (09h 08m 43s)	-70.389 (-70d 23' 22")
Corners:	
136.684 (09h 06m 44s)	-70.872 (-70d 52' 19")
136.099 (09h 04m 24s)	-70.854 (-70d 51' 15")
137.657 (09h 10m 38s)	-69.906 (-69d 54' 21")
138.218 (09h 12m 52s)	-69.919 (-69d 55' 08")

The error box area is 686 sq. arcmin, and its maximum
dimension is 1.2 deg (the minimum one is 10.6 arcmin).
The Sun distance was 88 deg.

This box may be improved.

The IPN localization is consistent with, but reduces
the area of, the Fermi-GBM (GCN Circ. 26831) and
BALROG (<https://grb.mpe.mpg.de/grb/GRB200120962>) one.

This event is spatially and temporally inconsistent
with the IceCube 200120A neutrino candidate event (GCN Circ. 26832).

A triangulation map is posted at
http://www.ioffe.ru/LEA/GRBs/GRB200120_T83096/IPN/

The Konus-Wind time history and spectrum will be given in a forthcoming
GCN Circular.

Subject: IPN Triangulation of GRB 200120A (=Fermi/GBM trigger 601254300) - single box
From: Anna Ridnaia <ridnaia@mail.ioffe.ru>
Date: 1/22/2020, 2:58 AM
To: ipn@ssl.berkeley.edu

Dear colleagues,

The long-duration GRB 200120A (The Fermi GBM team, GCN 26831; Insight-HXMT/HE detection: Zheng et al., GCN 26840) was detected by Fermi (GBM trigger 601254300), Konus-Wind, INTEGRAL (SPI-ACS), Mars-Odyssey (HEND), Insight (HXMT/HE), and Swift (BAT), outside the coded FoV, at about 83095 s UT (23:04:55).

We have triangulated it to a Konus-INTEGRAL annulus centered at RA(2000)=141.975 deg (09h 27m 54s) Dec(2000)=+18.290 deg (+18d 17' 25"), whose radius is 88.744 ± 0.494 deg (3 sigma) and to a GBM-HEND annulus centered at RA(2000)=250.086 deg (16h 40m 21s) Dec(2000)=-22.027 deg (-22d 01' 38"), whose radius is 76.574 ± 0.088 deg (3 sigma).

The annuli intersect to form two error boxes one of which is inconsistent with the KW ecliptic latitude response and the GBM Final position (glg_loclist_all_bn200120962_v00.txt).

The correct preliminary 3-sigma error box is (see the attached figure):

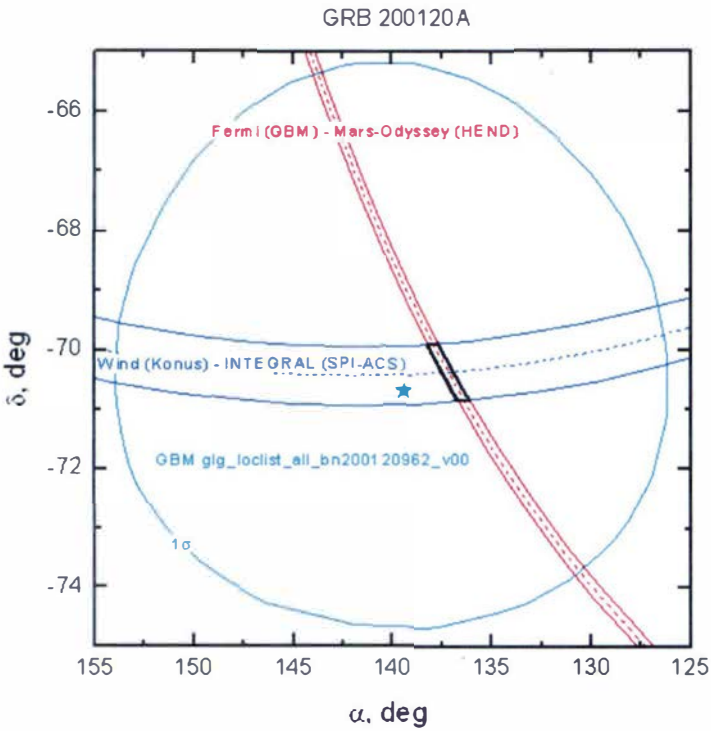
RA(2000), deg	Dec(2000), deg
Center:	
137.180 (09h 08m 43s)	-70.389 (-70d 23' 22")
Corners:	
136.684 (09h 06m 44s)	-70.872 (-70d 52' 19")
136.099 (09h 04m 24s)	-70.854 (-70d 51' 15")
137.657 (09h 10m 38s)	-69.906 (-69d 54' 21")
138.218 (09h 12m 52s)	-69.919 (-69d 55' 08")

The error box area is 686 sq. arcmin, and its maximum dimension is 1.2 deg (the minimum one is 10.6 arcmin). The Sun distance was 88 deg.

Best regards,

Anna

—GRB200120A_IPN_map.png—



Attachments:	
GRB200120A_IPN_map.png	7.2 KB

KONUS

21/01/2020

568.722

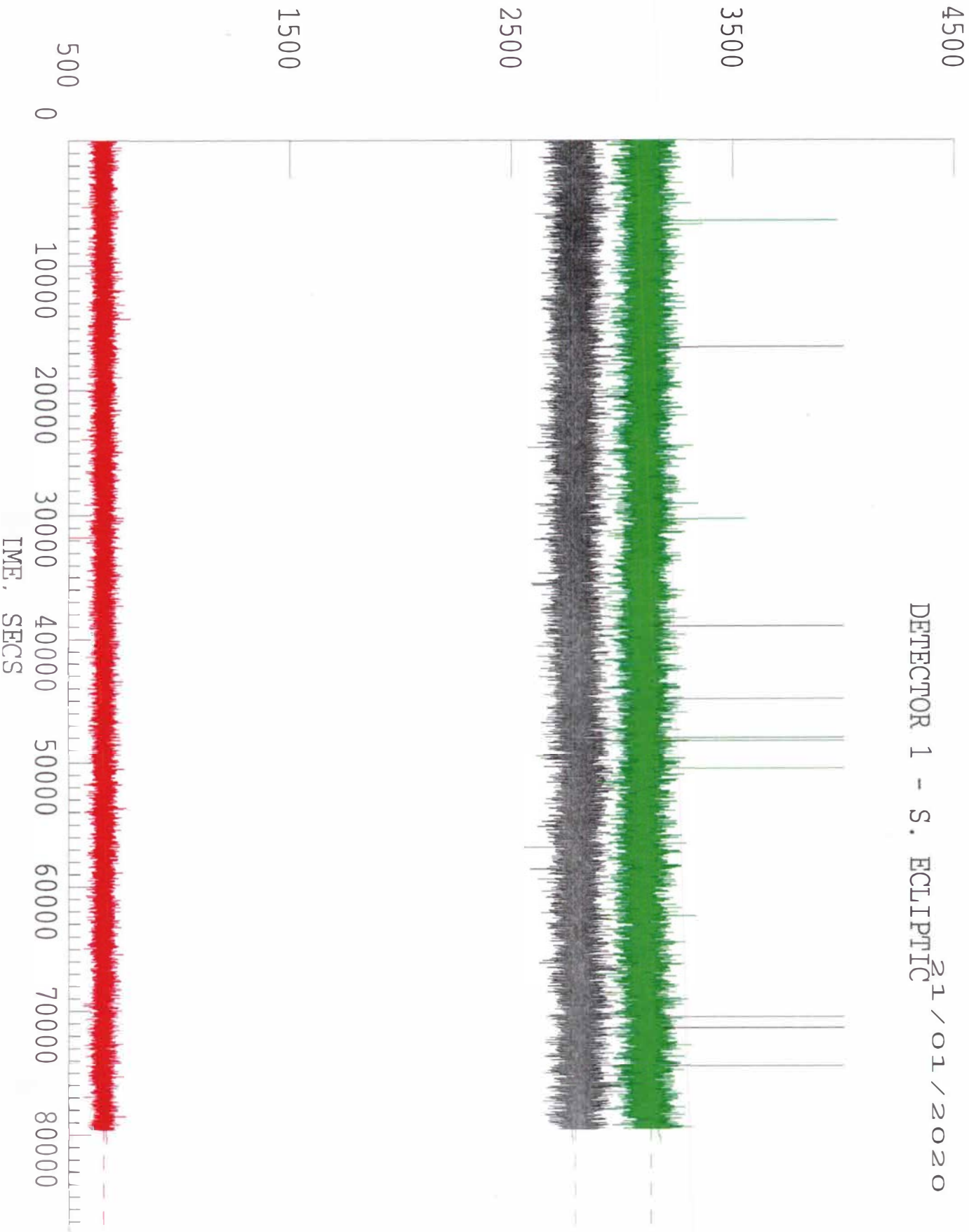
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



v01

568.722

21/01/2020

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

60000

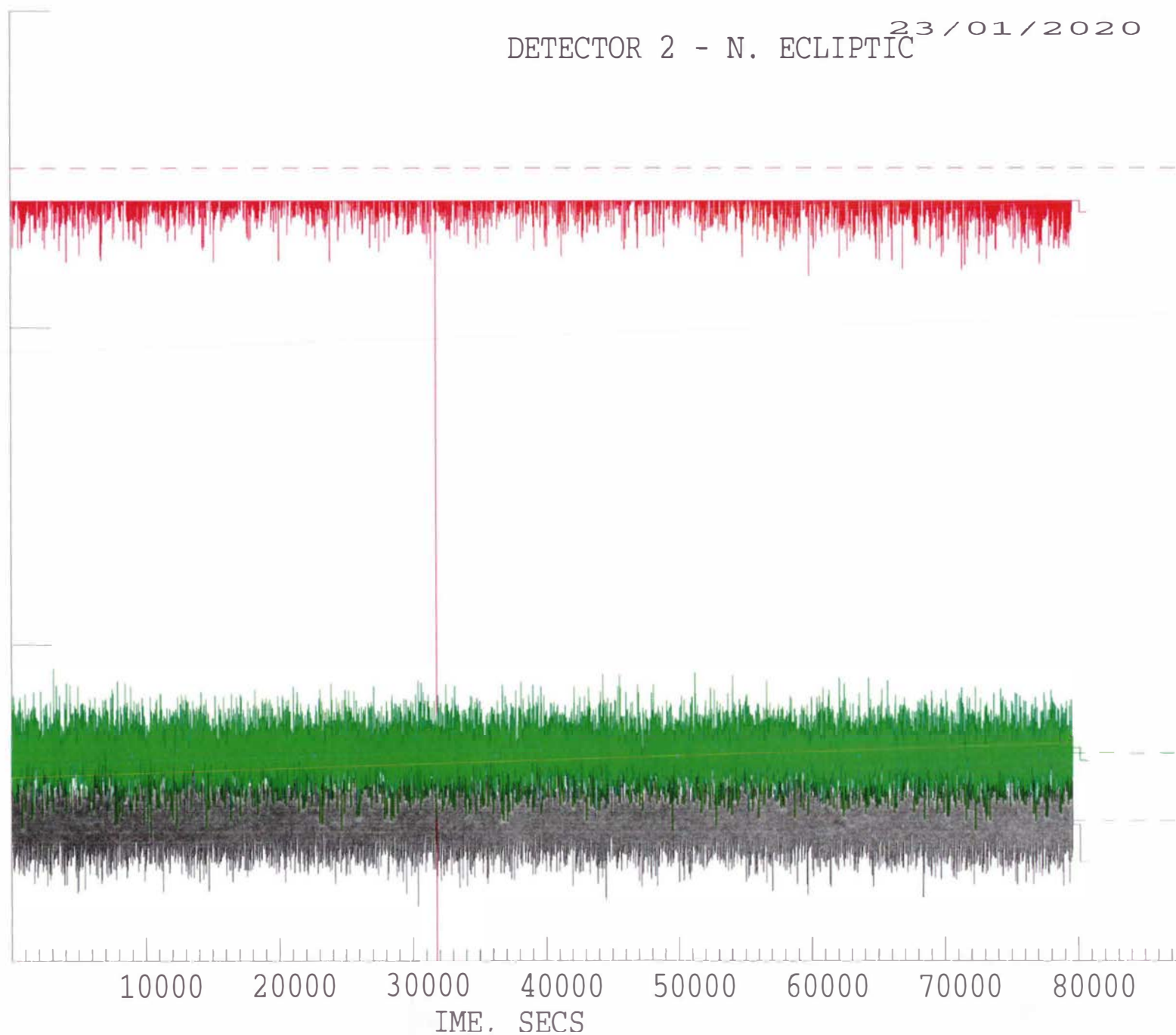
70000

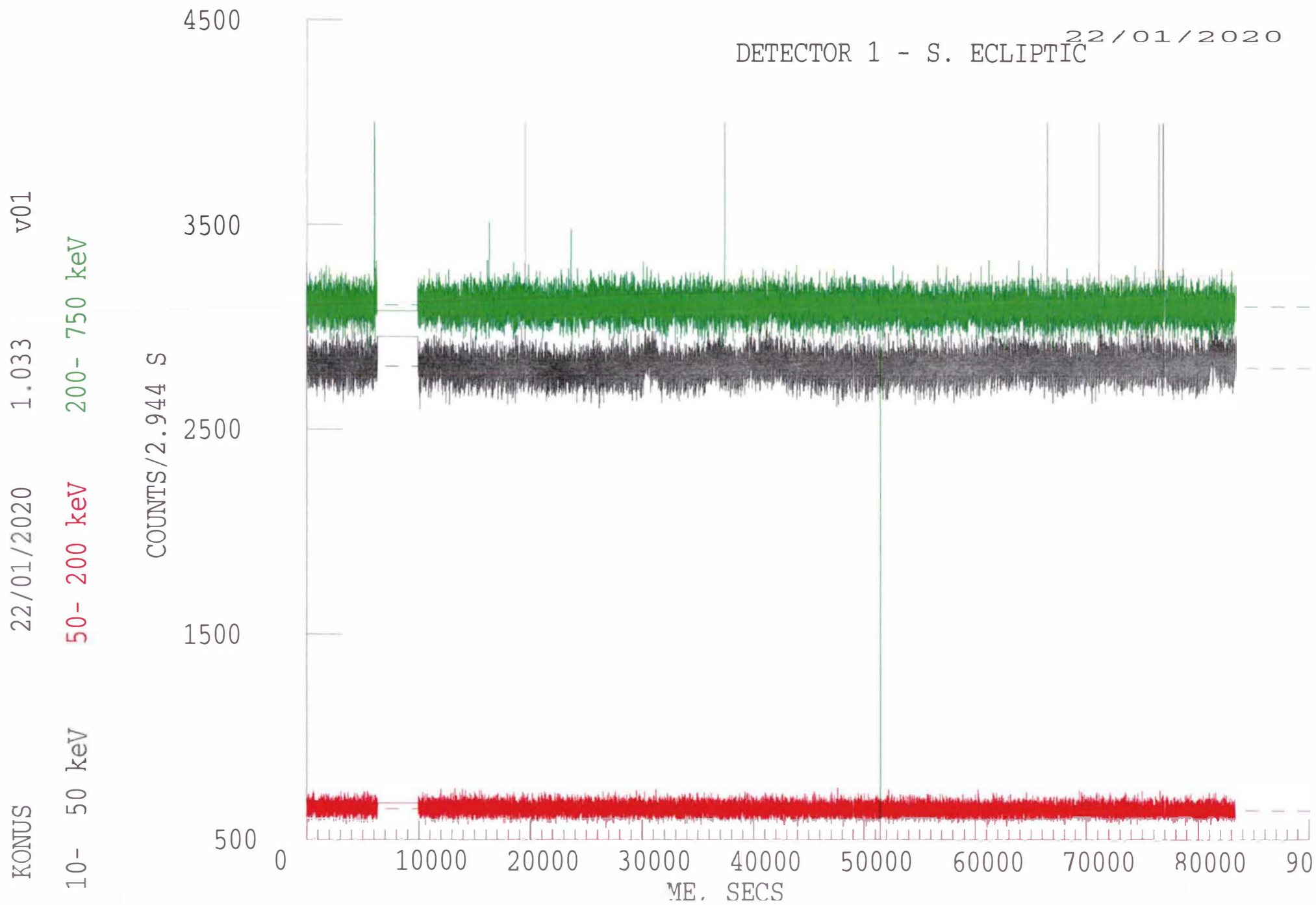
80000

IME. SECS

DETECTOR 2 - N. ECLIPTIC

23/01/2020





KONUS

22/01/2020

1.033

v01

10- 50 keV

50- 200 keV

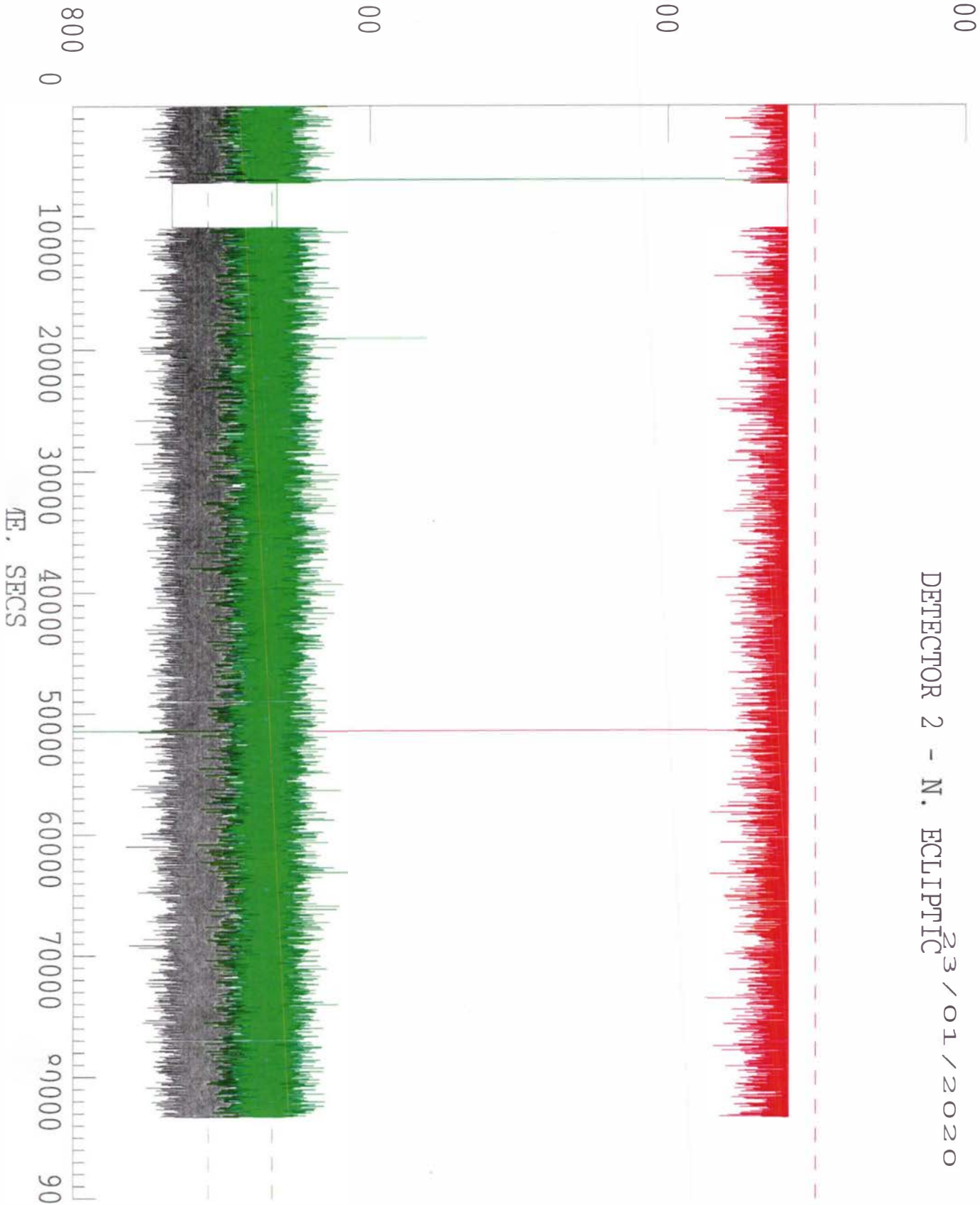
200- 750 keV

COUNTS/2.944 S

1300

1800

2300



Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 1/21/2020, 5:59 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
NOTICE_DATE: Wed 22 Jan 20 01:57:57 UT
NOTICE_TYPE: Swift-BAT GRB Lightcurve
TRIGGER_NUM: 950330, Seg_Num: 0
GRB_RA: 209.981d {+13h 59m 55s} (J2000),
210.209d {+14h 00m 50s} (current),
209.413d {+13h 57m 39s} (1950)
GRB_DEC: +27.566d {+27d 33' 56"} (J2000),
+27.469d {+27d 28' 08"} (current),
+27.807d {+27d 48' 26"} (1950)
GRB_DATE: 18870 TJD; 22 DOY; 20/01/22
GRB_TIME: 6060.36 SOD {01:41:00.36} UT
TRIGGER_INDEX: 124
GRB_PHI: -156.95 [deg]
GRB_THETA: 31.04 [deg]
DELTA_TIME: 12.00 [sec]
TRIGGER_DUR: 0.512 [sec]
SOLN_STATUS: 0x3
RATE_SIGNIF: 20.09 [sigma]
IMAGE_SIGNIF: 11.46 [sigma]
LC_URL: sw00950330000msb.lc
SUN_POSTN: 303.73d {+20h 14m 56s} -19.82d {-19d 49' 28"}
SUN_DIST: 101.99 [deg] Sun_angle= 6.2 [hr] (West of Sun)
MOON_POSTN: 268.15d {+17h 52m 36s} -22.58d {-22d 34' 41"}
MOON_DIST: 75.06 [deg]
MOON_ILLUM: 8 [%]
GAL_COORDS: 38.52, 74.80 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 196.15, 36.93 [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 = 9.50,0.37 [deg].

175 s

$1.1 \times 10^{-5} \text{ erg cm}^{-2}$

0.1 phot/cm²s

BAT

22/01/20

6060.369

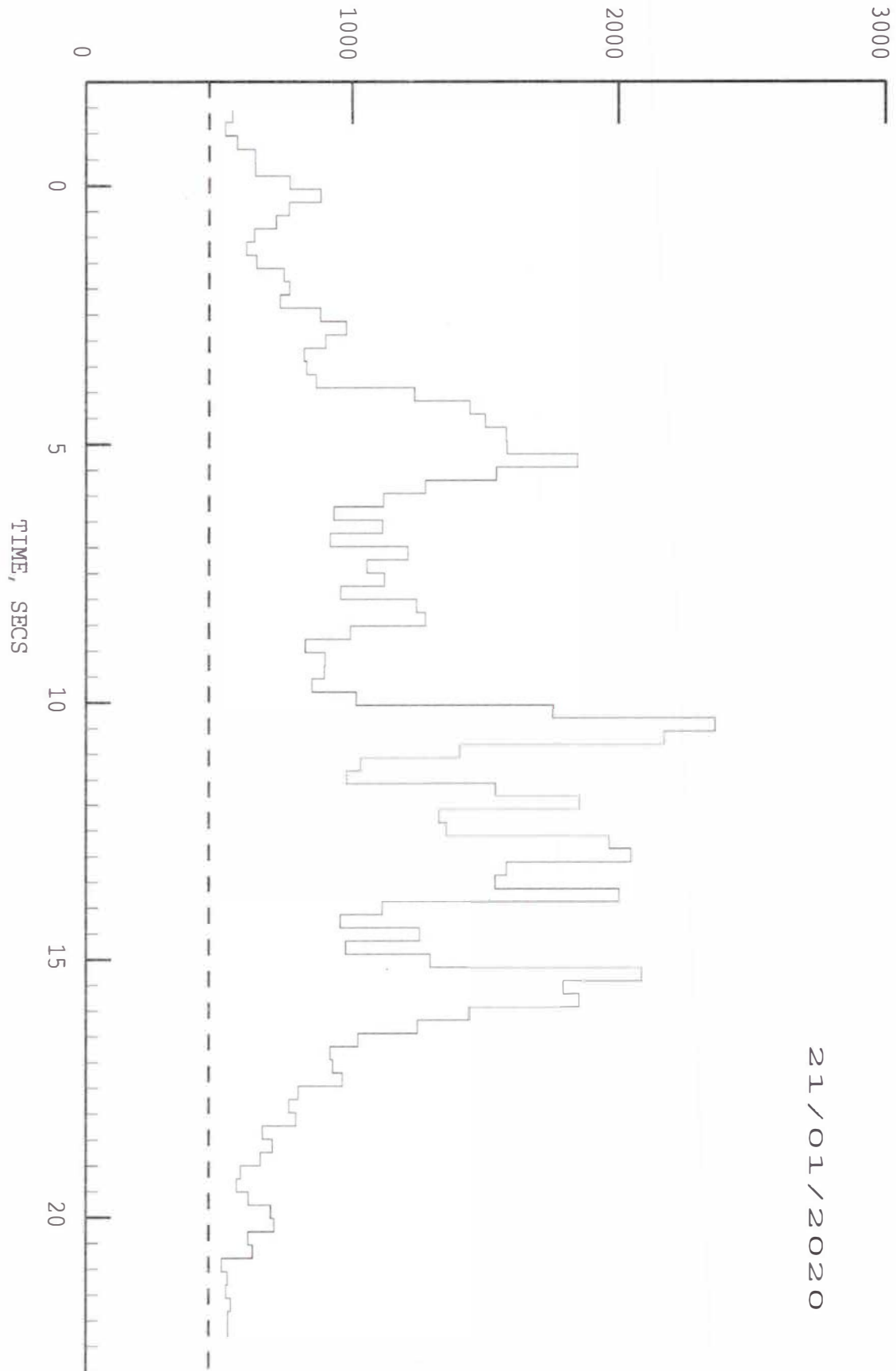
01:41:00.369

A

25- 100 keV

COUNTS/ .256 S

21/01/2020



Subject: BAT lightcurve for trigger at 200122_0141

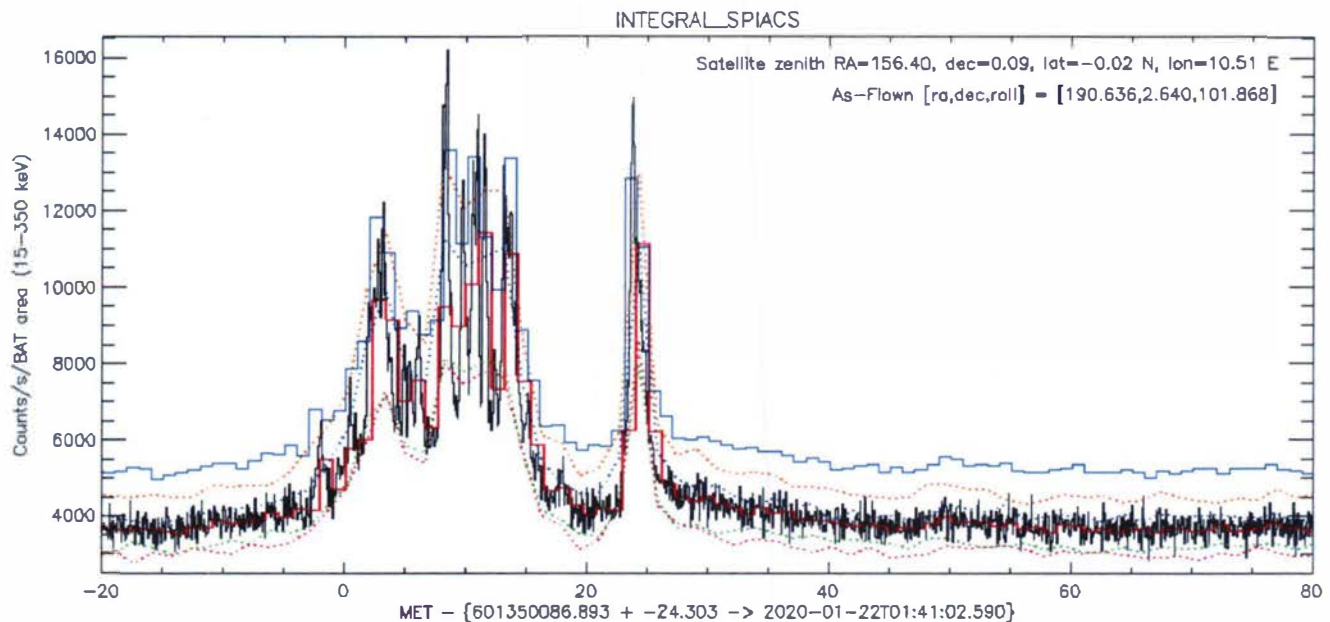
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/21/2020, 8:15 PM

To: aaron.tohu@gmail.com, 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/200122_0141.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601350086.893
Swift Zenith(RA,dec):      156.40, 0.09
Swift Location(lon,lat,alt): 10.51 E, -0.02 N, 558 km
Time(MET + UTCF -> UT):   601350086.893 + -24.303 -> 2020-01-22T01:41:02.590
YYMMDD_SOD:               200122_06062.590      DOY=022
Obs Sequence Number:      00013147005
Obs Target Name:          AT2020ue
Obs Date and Times:       2020-01-22 01:28:37 - 01:41:05
Obs Pointing(ra,dec,roll): 190.636, 2.640, 101.87
```

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

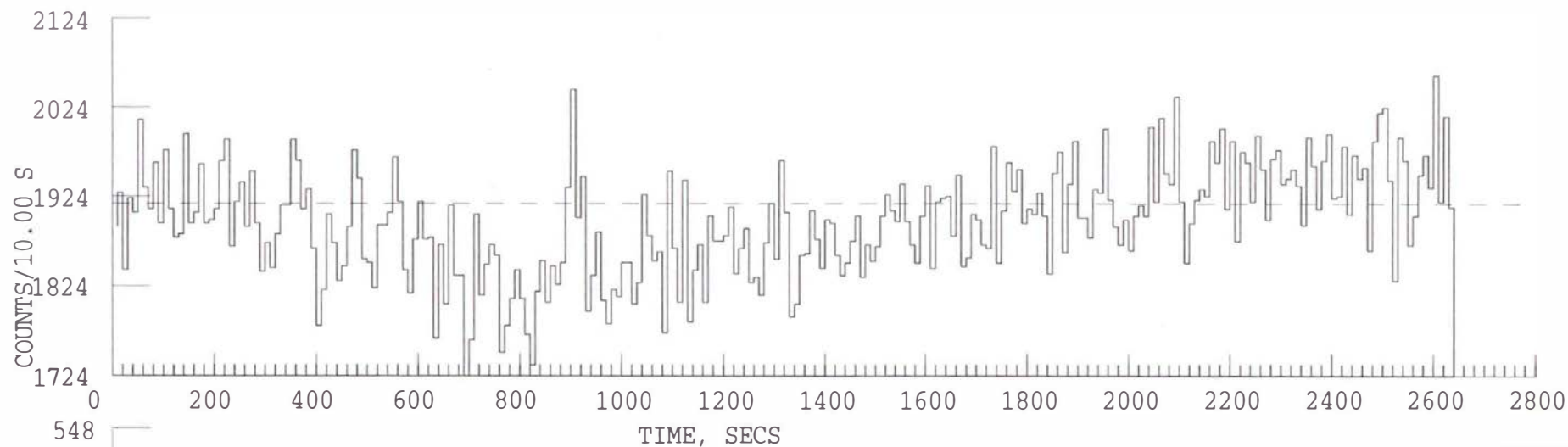
—Attachments:

/tmp/swift/200122_0141.png	22.2 KB
/tmp/swift/200122_0141_bat64ms_ipn	87.0 KB

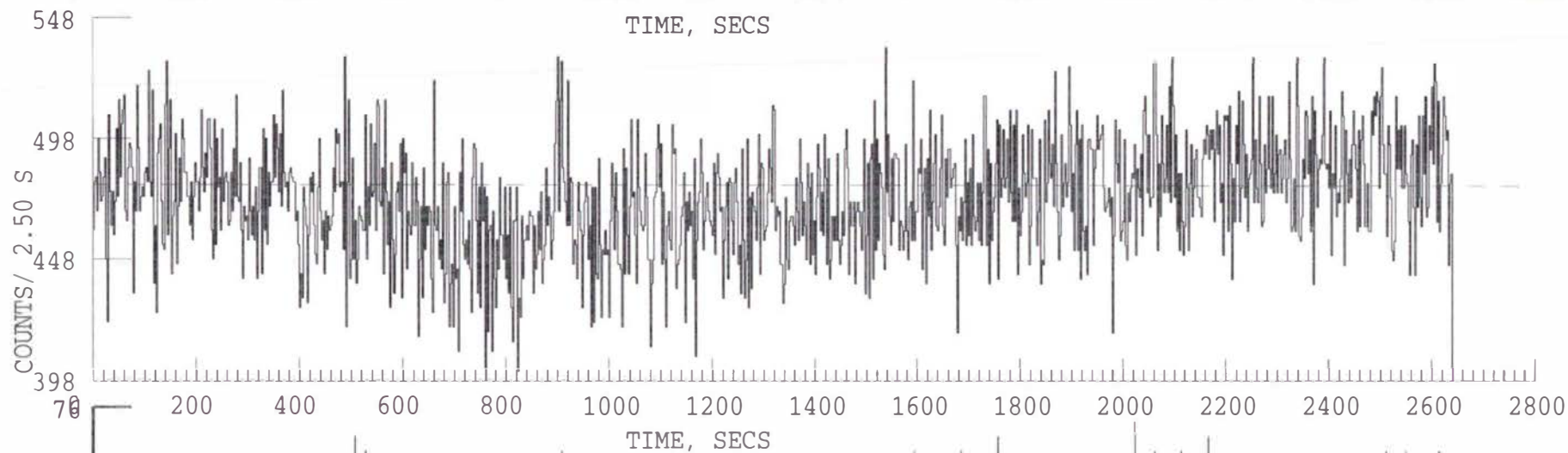
23/01/2020

A

01:18:33.277

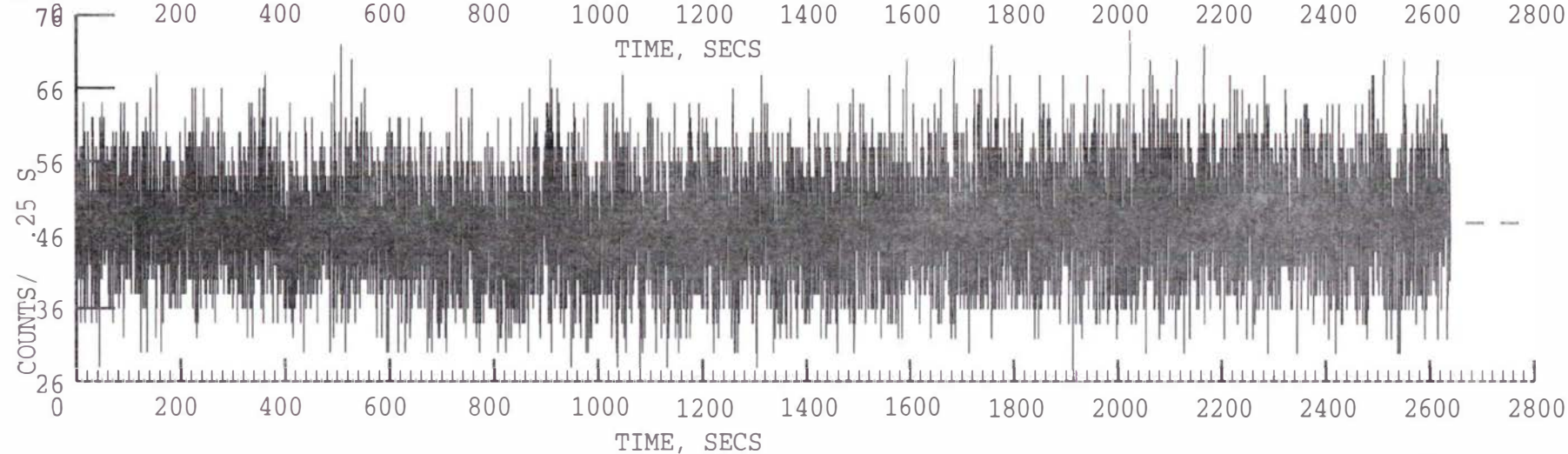


4713.277



22/01/20
50-3000 keV

ODYSSEY



KONUS

22/01/20

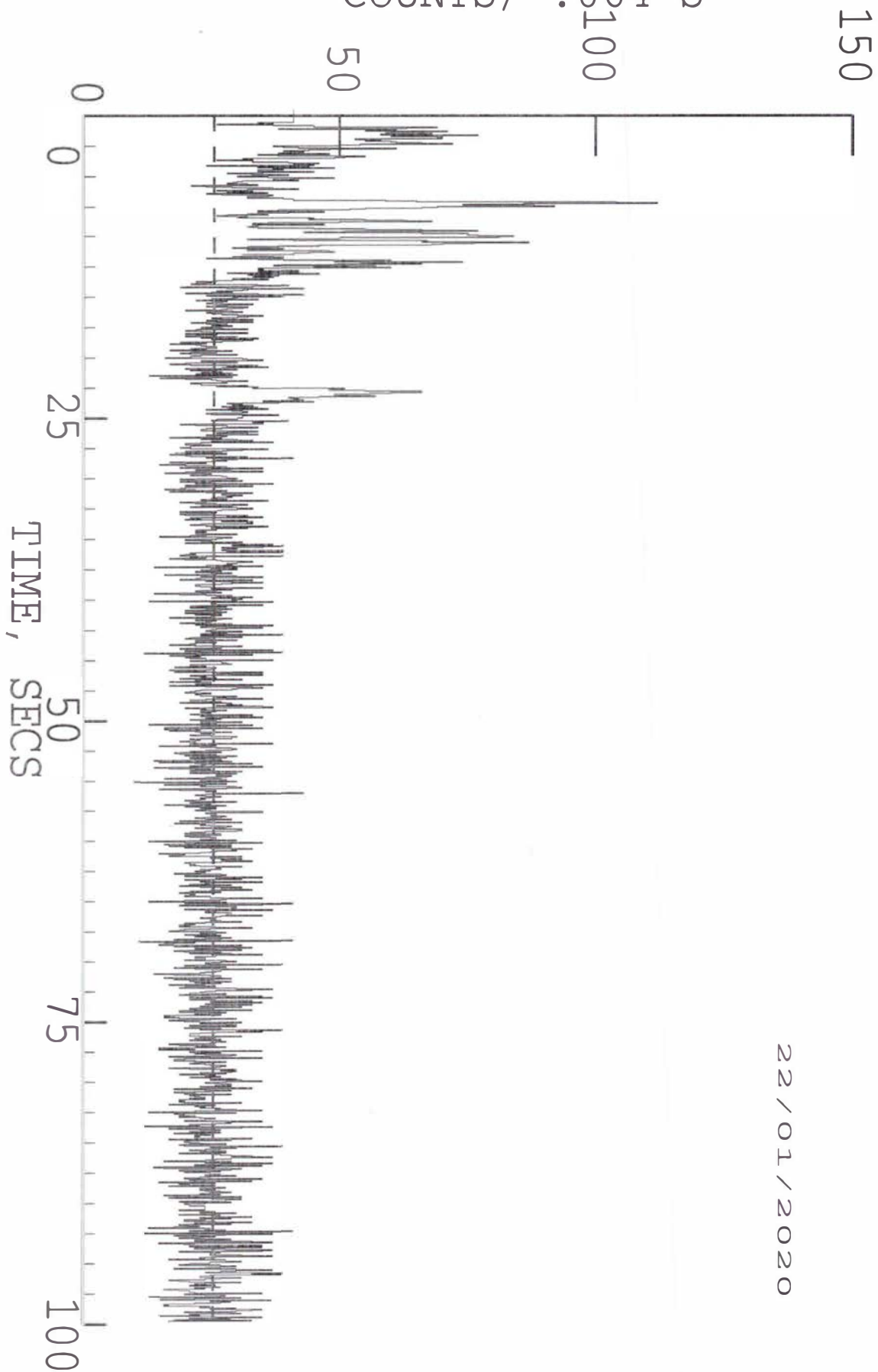
6066.859

01:41:06.859

A

50- 200 keV

COUNTS/ .064 S



22/01/2020

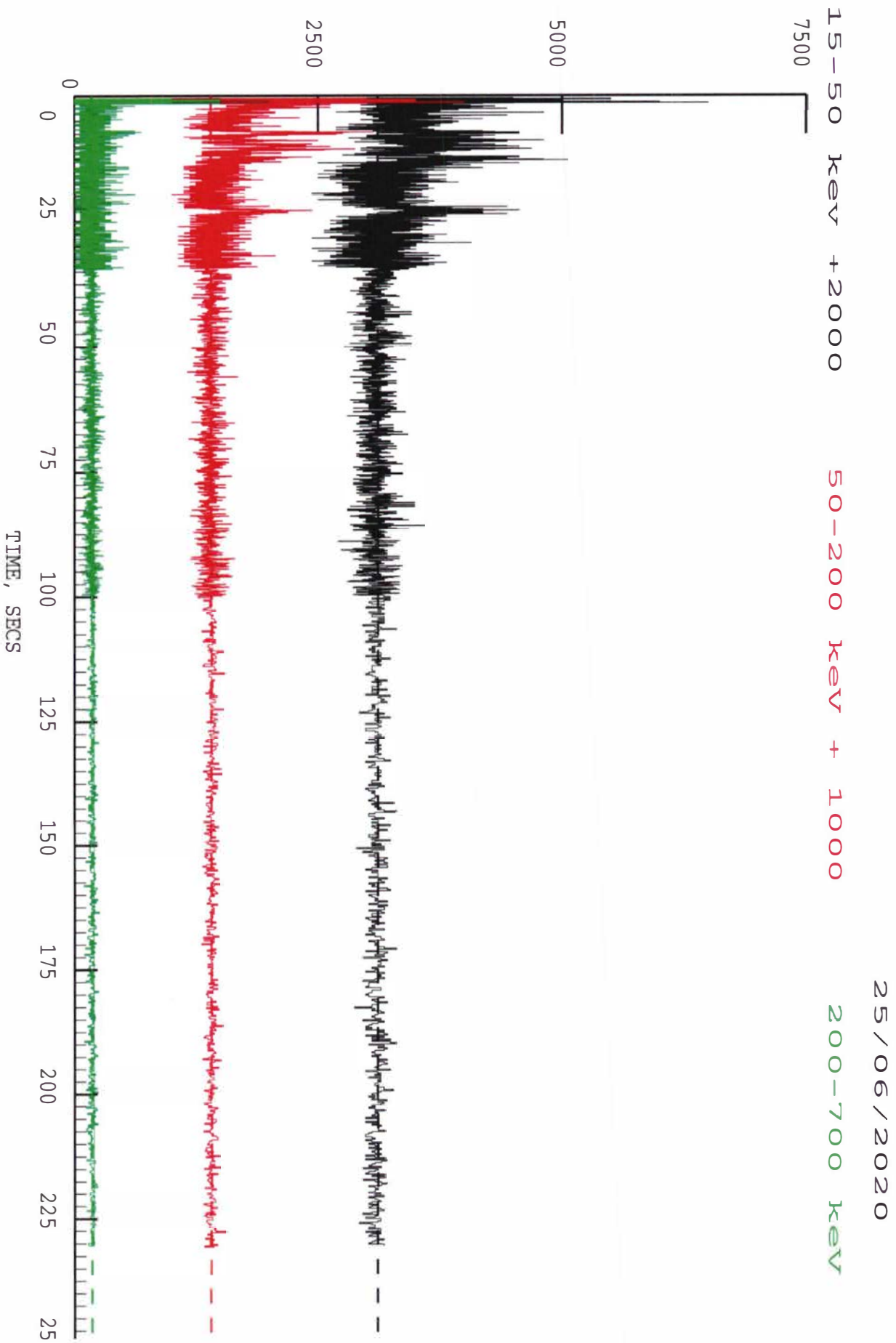
01:41:06.000

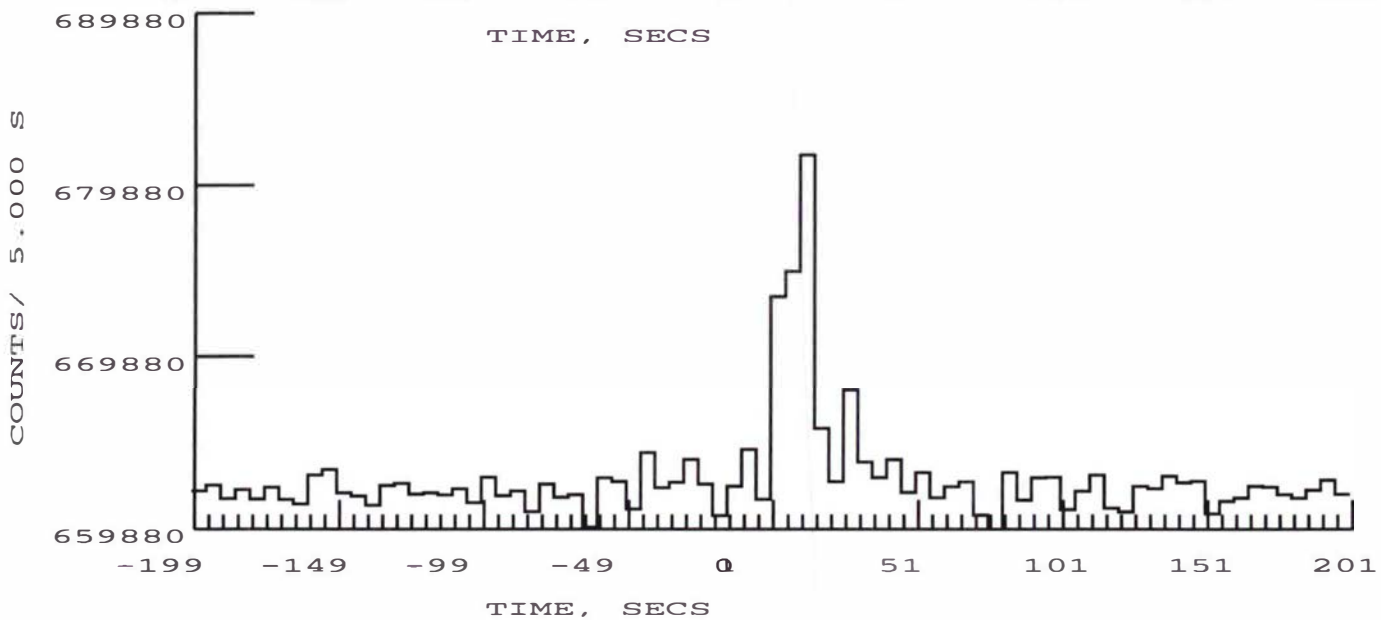
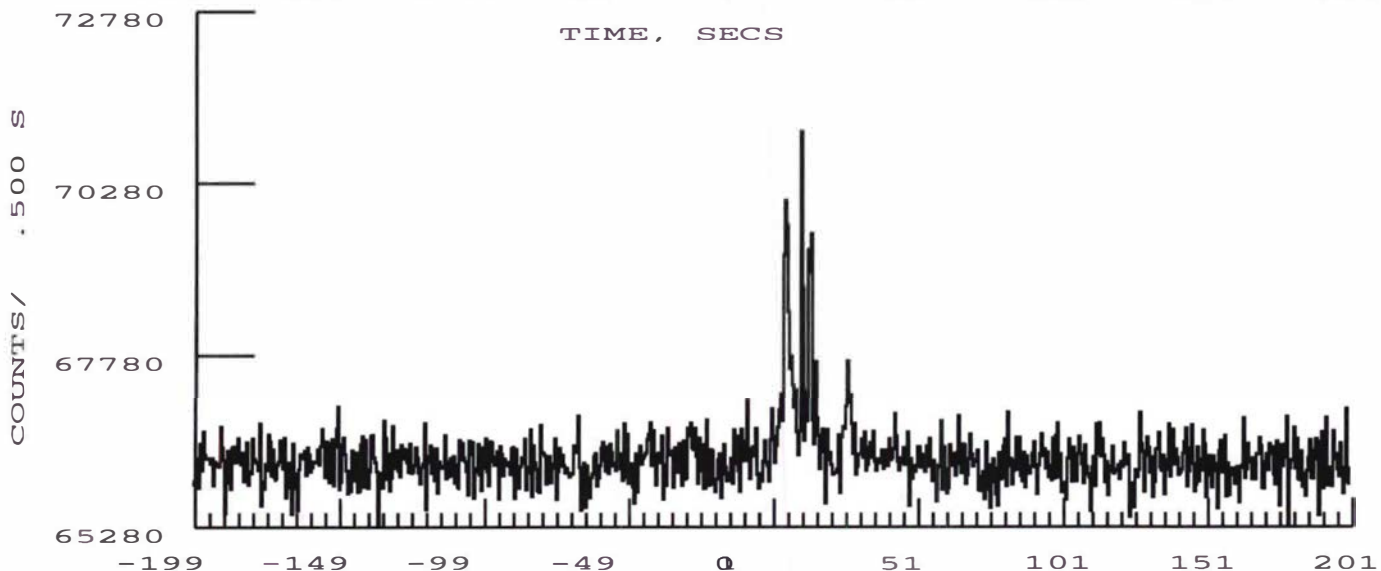
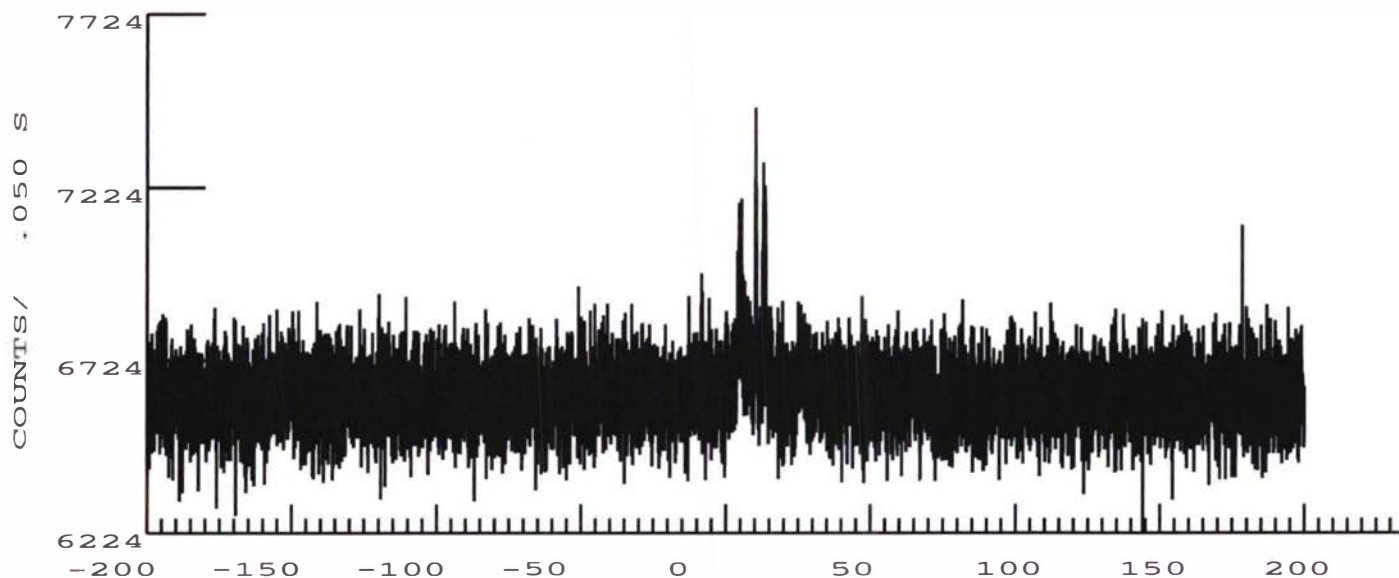
6066.000

22/01/20

KONUS

COUNTS/SEC





Subject: GRB 200122A: AstroSat CZTI detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/24/2020, 6:52 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26871
SUBJECT: GRB 200122A: AstroSat CZTI detection
DATE: 20/01/24 14:51:04 GMT
FROM: Ramkrishna Gaikwad at IUCAA/AstroSat <ramkrishna@iucaa.in>

R. Gaikwad, S. Gupta, 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 200122A, which was also detected by Swift (Sonbas E. et al., GCN #26844), Global MASTER-Net (Lipunov V. et al., GCN #26845), Swift-XRT (Osborne J. et al., GCN #26846), GOTO (Wiersema K. et al., GCN #26853), Swift/UVOT (Belles A. et al., GCN #26859), Xinglong-2.16m (Liu X. et al., GCN #26860), RATIR (Watson A. et al., GCN #26862), MITSuME Akeno (Adachi R. et al., GCN #26864) and Konus-Wind (Frederiks D. et al., GCN #26864).

The source was clearly detected in the 40-200 keV energy range. The light curve showed multiple peak of emissions with the strongest peak at 2020-01-22 01:41:00.0 UT. The measured peak count rate associated with the burst is 74 cts/s above the background in the combined data of four quadrants, with a total of 5463 cts. The local mean background count rate was 664 cts/s. Using cumulative rates, we measure a T90 of 39.3 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.

FERMI

22/01/20

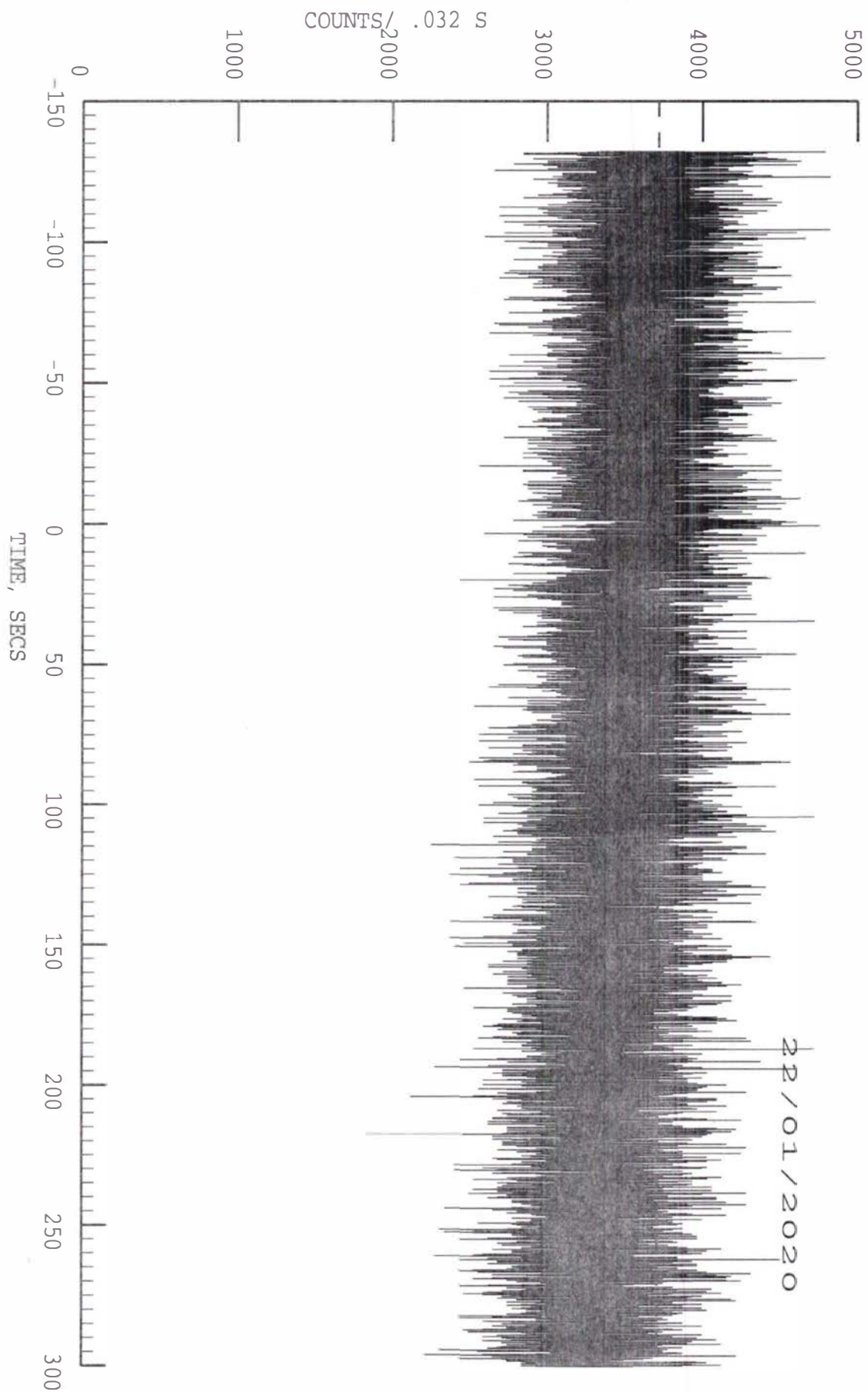
19100.738

05:18:20.738

B

26- 293 keV

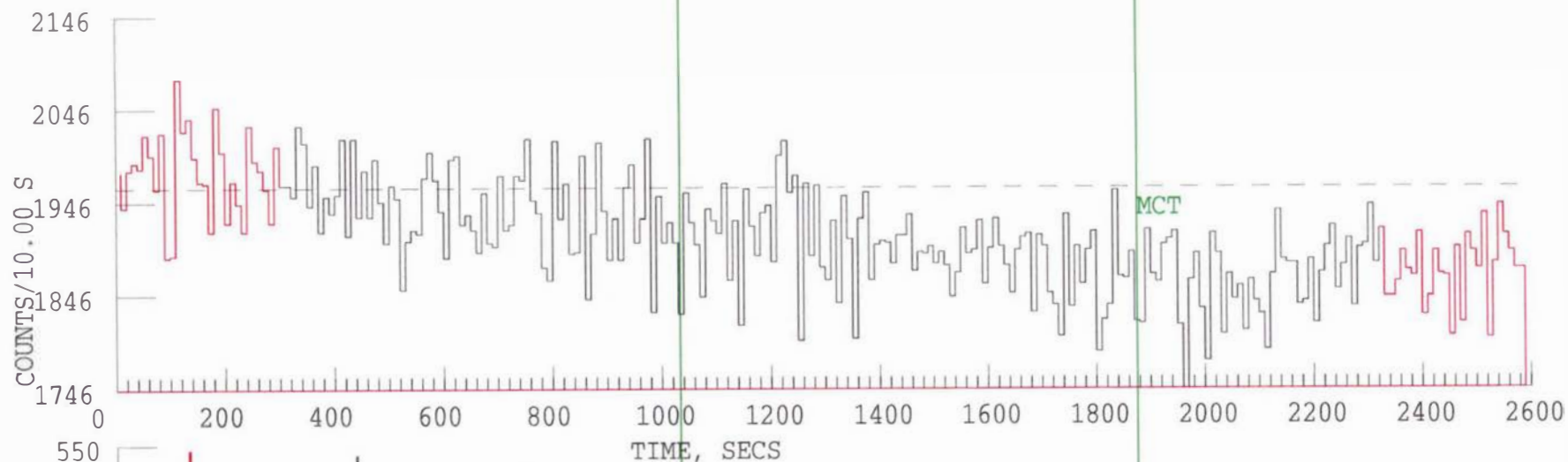
SPI NO
124.7 67.1 16.6



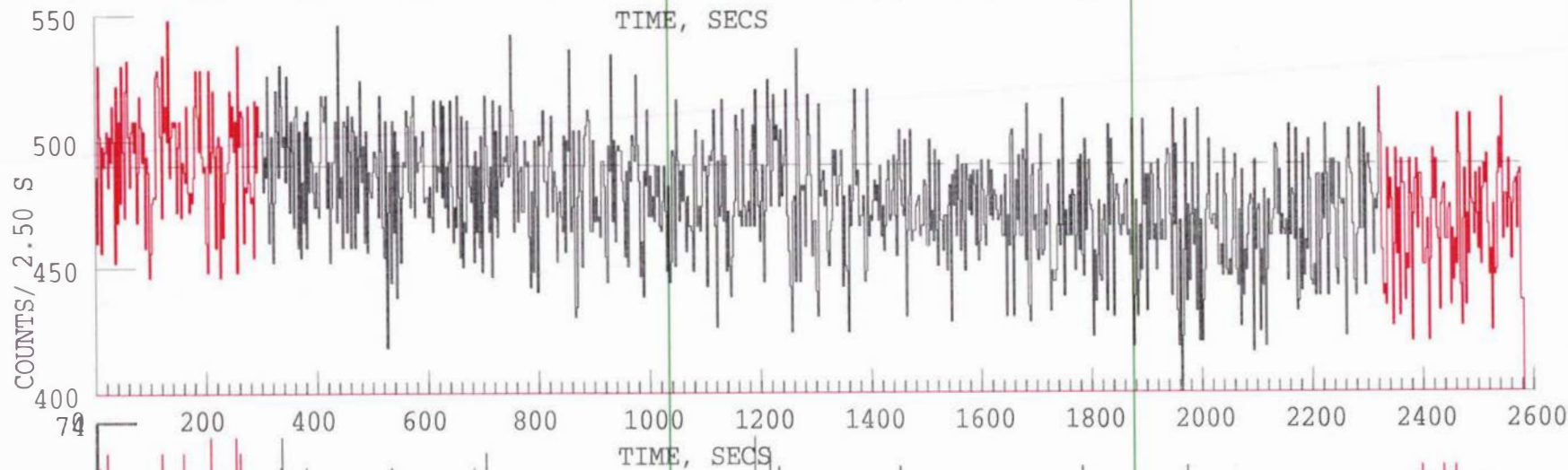
24/01/2020

B

04:56:33.047



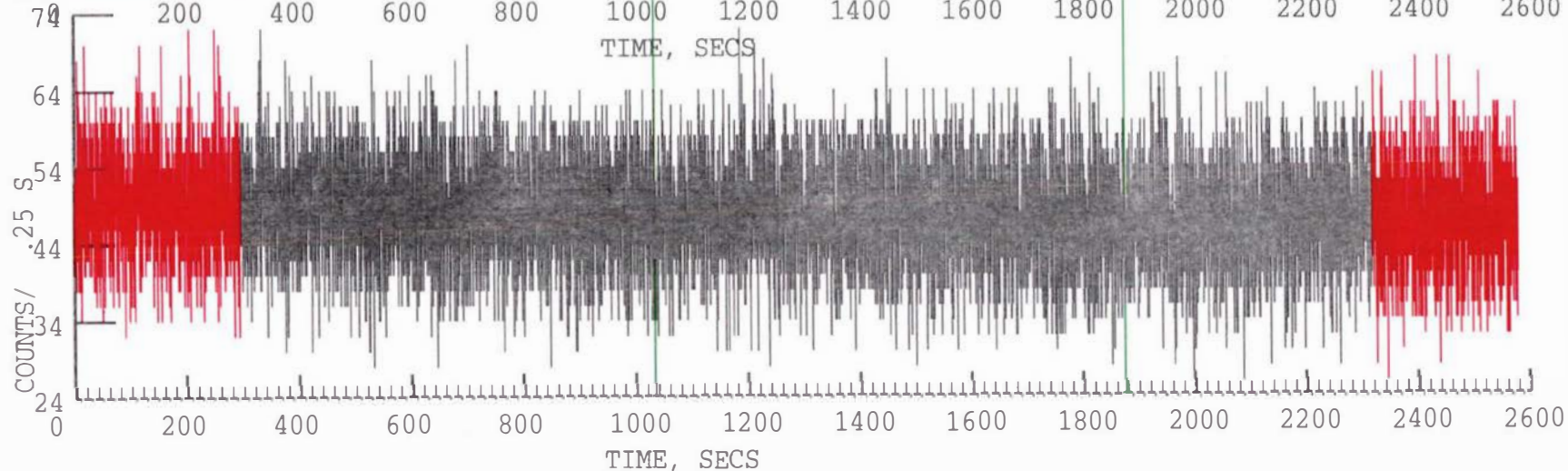
17793.047



50-3000 keV

22/01/20

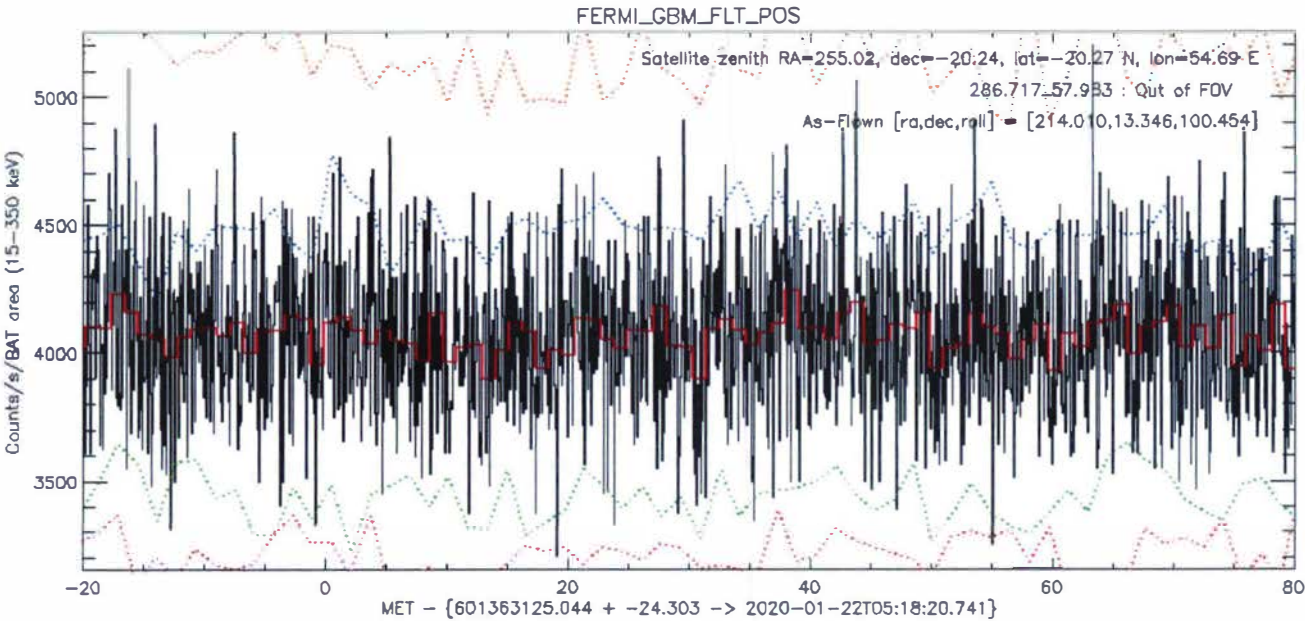
ODYSSEY



Subject: BAT lightcurve for trigger at 200122_0518
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>
Date: 1/22/2020, 2:47 AM
To: aaron.tohu@gmail.com, 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/200122_0518.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601363125.044 -s 286.717_57.983
Swift Zenith(RA,dec):      255.02, -20.24
Swift Location(lon,lat,alt): 54.69 E, -20.27 N, 553 km
Time(MET + UTCF -> UT):   601363125.044 + -24.303 -> 2020-01-22T05:18:20.741
YYMMDD_SOD:               200122_19100.741      DOY=022
Obs Sequence Number:      00036386007
Obs Target Name:          2cmXB1413+135
Obs Date and Times:       2020-01-22 05:09:37 - 05:23:32
Obs Pointing(ra,dec,roll): 214.010, 13.346, 100.45
286.717_57.983_imageloc (boresight_dist, angle): (70, -158)
286.717_57.983_exposure (cm² cos adjusted): 0
286.717_57.983_altitude: 31 (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/200122_0518_bat64ms_ipn	87.0 KB
/tmp/swift/200122_0518.png	20.9 KB

Subject: GRB 200122B: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/25/2020, 6:14 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26877
SUBJECT: GRB 200122B: Insight-HXMT/HE detection
DATE: 20/01/25 14:13:08 GMT
FROM: Qibin Yi at IHEP, HXMT <yiqb@ihep.ac.cn>

GRB 200122B: Insight-HXMT/HE detection

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 2020-01-22T05:18:20.20 (T0), Insight-HXMT/HE detected
GRB 200122B (trigger ID: HEB200122221) in a routine search of the data,
which was also triggered by Fermi/GBM (NUM #601363105).

The Insight-HXMT/HE light curve mainly consists of a single
pulse with a duration (T90) of 2.16 s measured from T0-0.53 s.
The 1-ms peak rate, measured from T0-0.06 s, is 1340 cts/sec.
The total counts from this burst is 1335 counts.
URL_LC: http://www.hxmt.org/images/GRB/HEB200122221_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: BAT lightcurve for trigger at 200122_0955

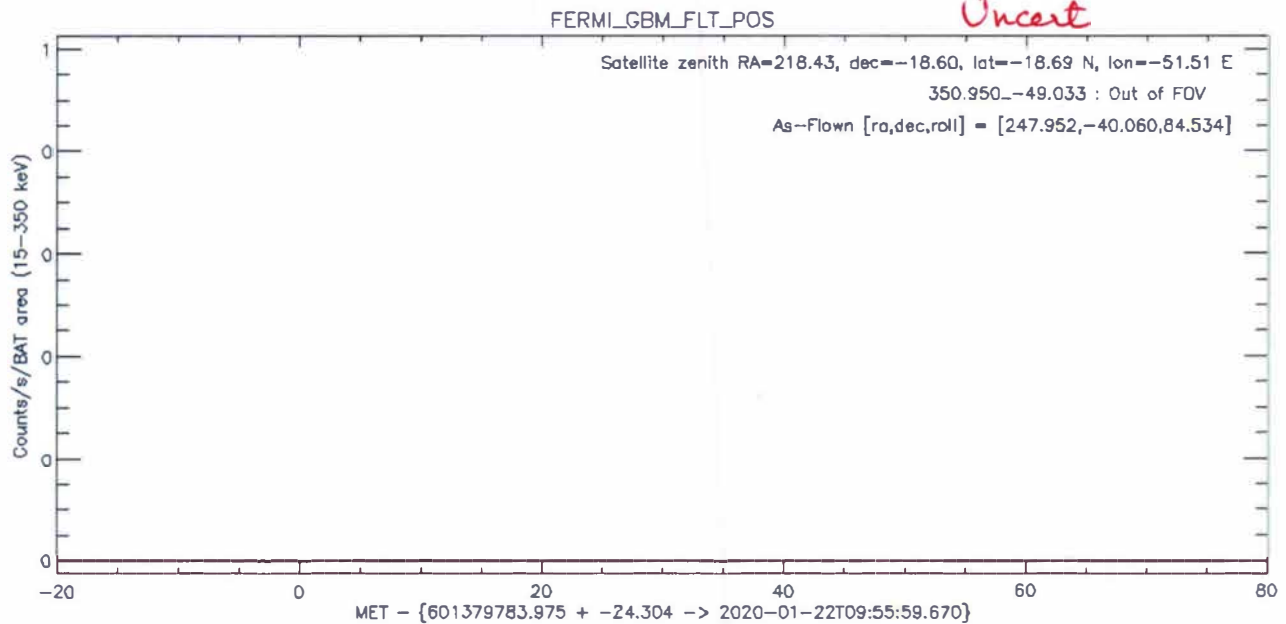
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/22/2020, 5:43 AM

To: aaron.tohu@gmail.com, 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/200122_0955.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601379783.975 -s 350.950_-49.033
Swift Zenith(RA,dec):      218.43, -18.60
Swift Location(lon,lat,alt): -51.51 E, -18.69 N, 557 km
Time(MET + UTCF -> UT):   601379783.975 + -24.304 -> 2020-01-22T09:55:59.670
YYMMDD_SOD:               200122_35759.670      DOY=022
Obs Sequence Number:      00076342008
Obs Target Name:          saa-cold-19-03
Obs Date and Times:       2020-01-22 09:45:37 - 10:13:35
Obs Pointing(ra,dec,roll): 247.952, -40.060, 84.53
350.950_-49.033_imageloc (boresight_dist, angle): (68, -38)
350.950_-49.033_exposure (cm2 cos adjusted): 0
350.950_-49.033_altitude: 13 (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/200122_0955.png	7.9 KB
/tmp/swift/200122_0955_bat64ms_ipn	87.0 KB

v01

81.024

23/01/2020

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

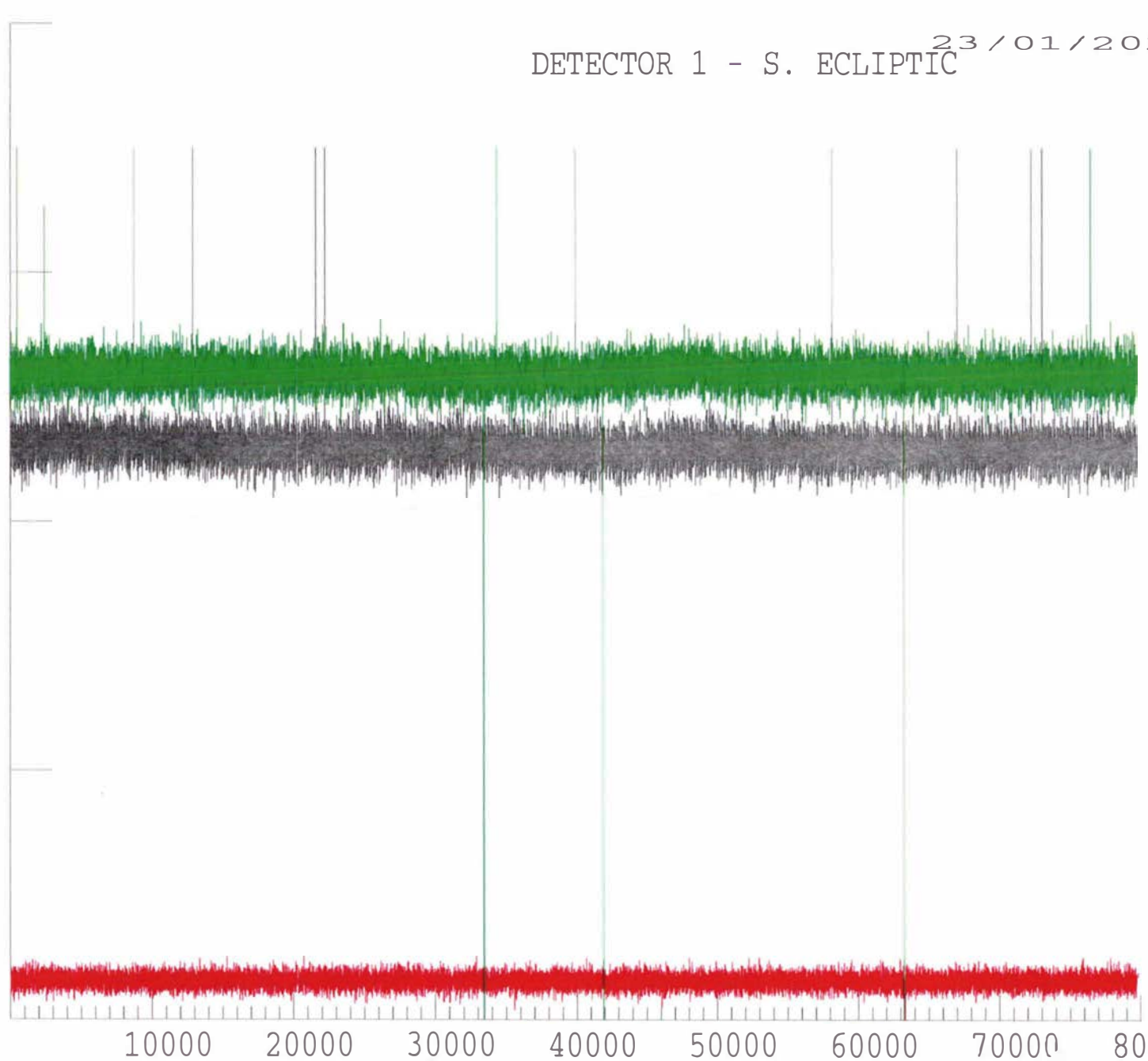
60000

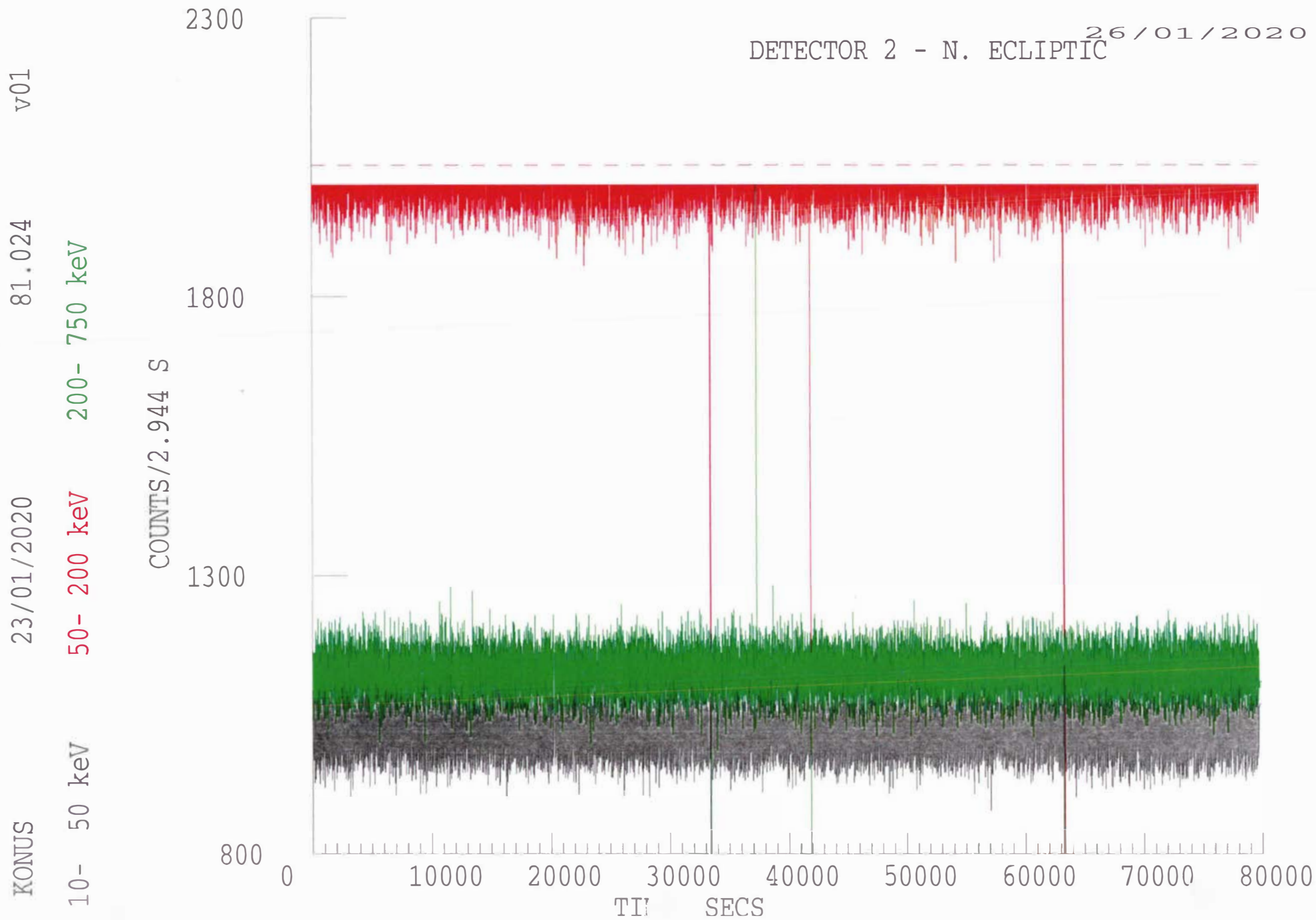
70000

80000

TIME SECS

DETECTOR 1 - S. ECLIPTIC 23/01/2020





v02

69.751

24/01/2020

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

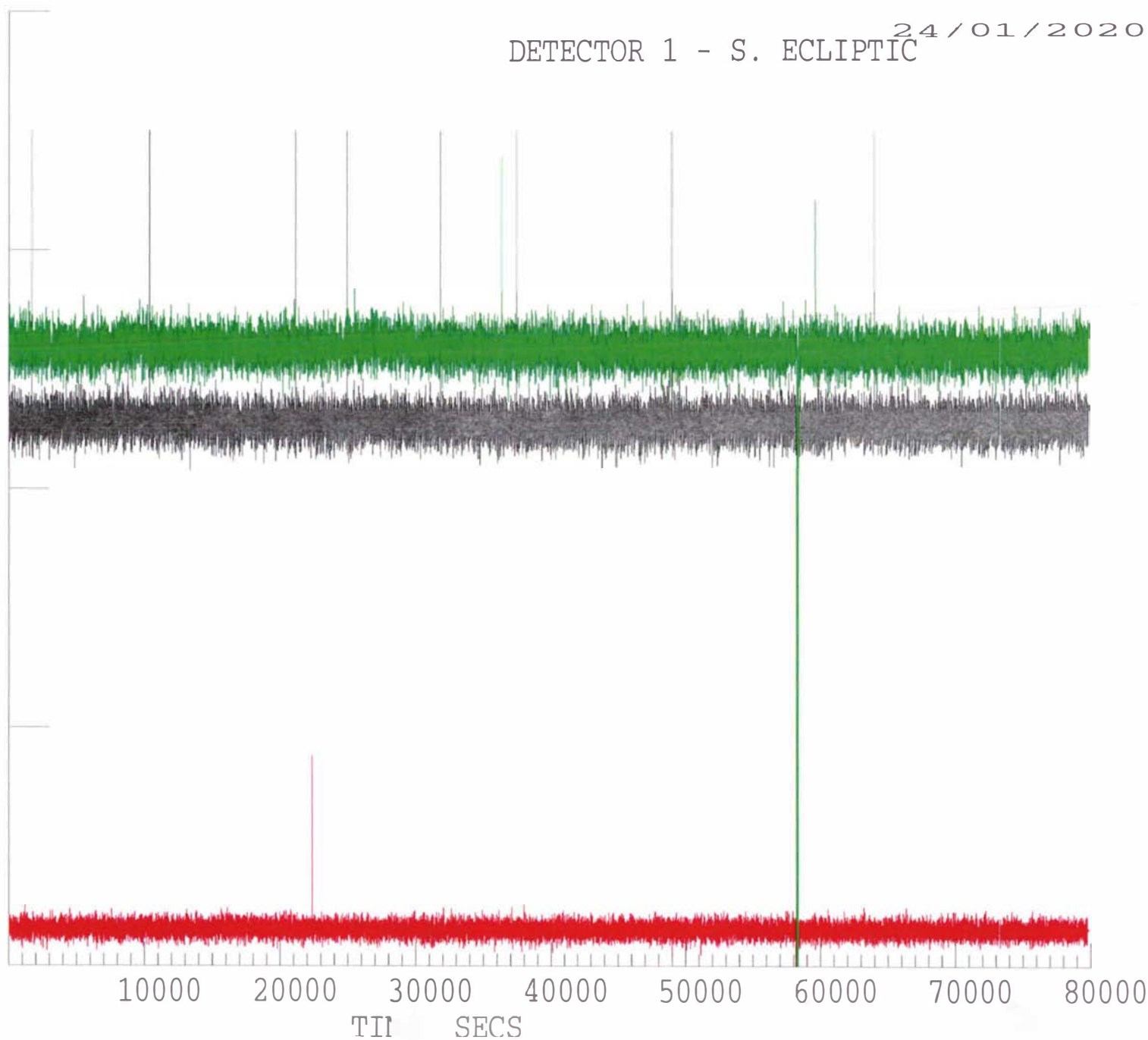
10000

20000

TIME SECS

DETECTOR 1 - S. ECLIPTIC

24/01/2020



v02

69.751

24/01/2020

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

2200

1700

1200

700

200

0

10000

20000

30000

40000

50000

60000

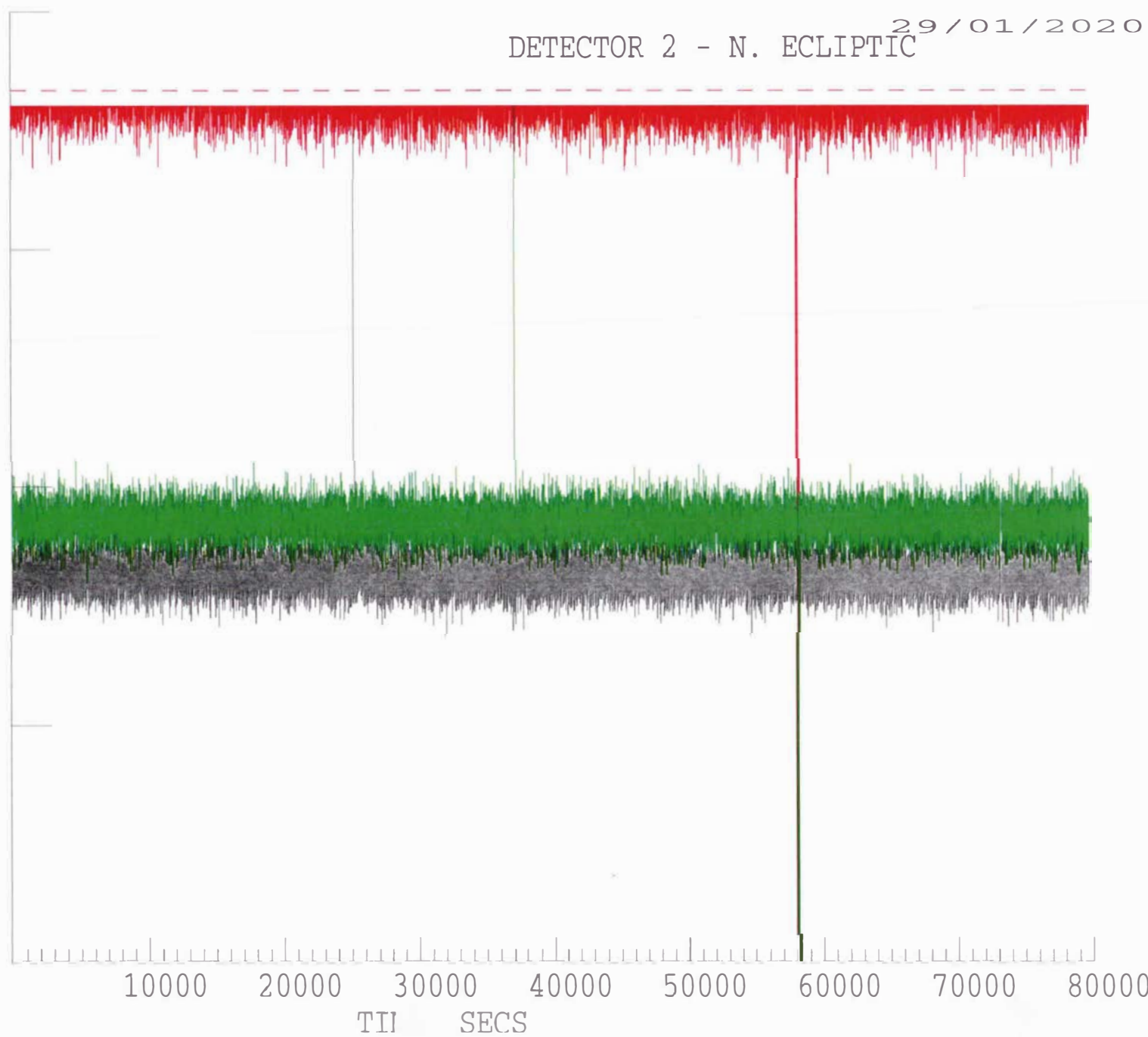
70000

80000

TIME SECS

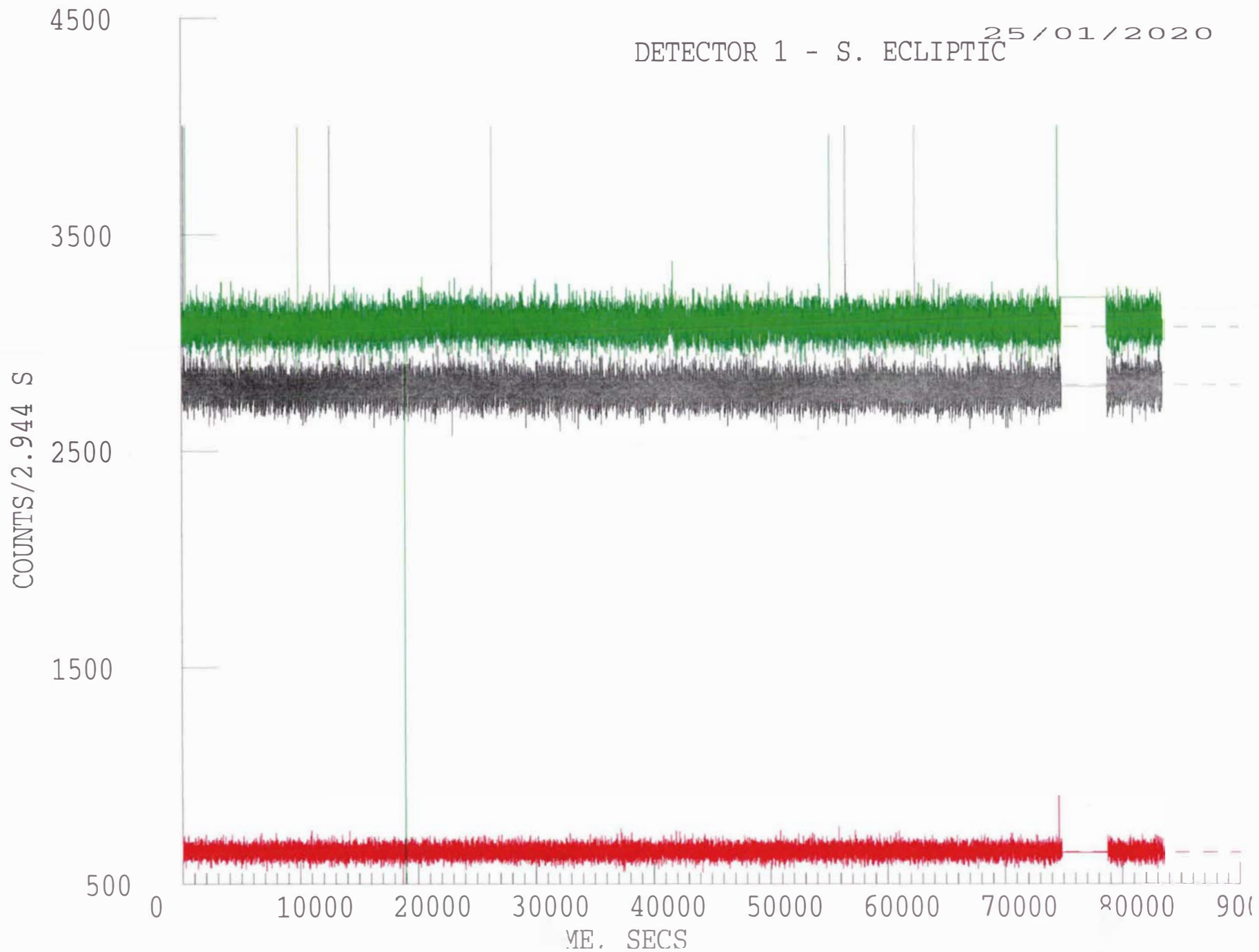
DETECTOR 2 - N. ECLIPTIC

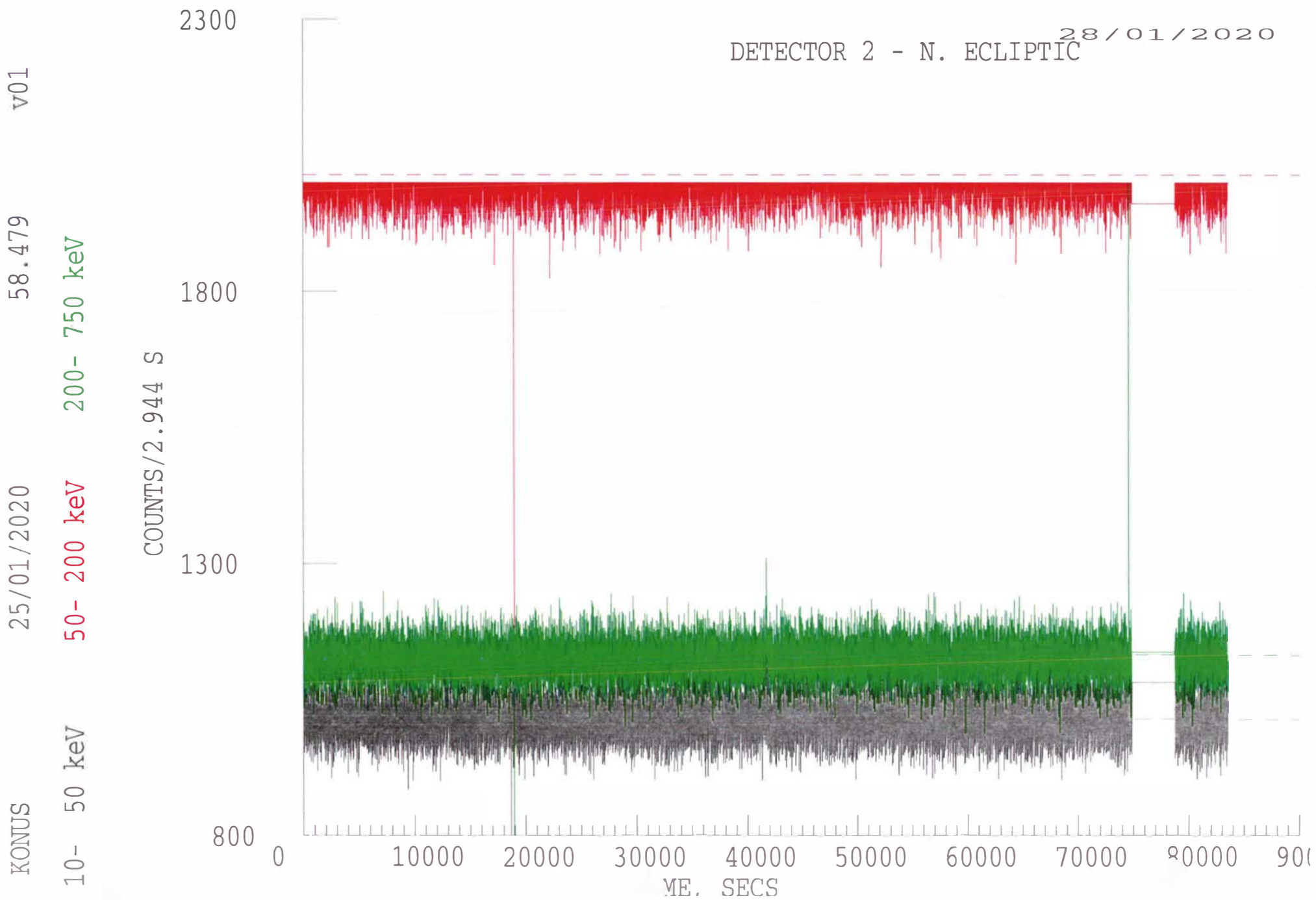
29/01/2020



KONUS 25/01/2020 58.479 v01

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





Subject: GCN/SWIFT_BAT_LIGHTCURVE
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
Date: 1/25/2020, 3:37 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
NOTICE_DATE: Sat 25 Jan 20 11:35:50 UT
NOTICE_TYPE: Swift-BAT GRB Lightcurve
TRIGGER_NUM: 952164, Seg_Num: 0
GRB_RA: 228.047d {+15h 12m 11s} (J2000),
228.316d {+15h 13m 16s} (current),
227.377d {+15h 09m 30s} (1950)
GRB_DEC: -8.148d {-08d 08' 53"} (J2000),
-8.223d {-08d 13' 21"} (current),
-7.961d {-07d 57' 39"} (1950)
GRB_DATE: 18873 TJD; 25 DOY; 20/01/25
GRB_TIME: 41499.19 SOD {11:31:39.19} UT
TRIGGER_INDEX: 454
GRB_PHI: 102.34 [deg]
GRB_THETA: 28.97 [deg]
DELTA_TIME: -31.00 [sec]
TRIGGER_DUR: 8.192 [sec]
SOLN_STATUS: 0x3
RATE_SIGNIF: 12.20 [sigma]
IMAGE_SIGNIF: 7.97 [sigma]
LC_URL: sw00952164000msb.lc
SUN_POSTN: 307.30d {+20h 29m 12s} -19.03d {-19d 01' 30"}
SUN_DIST: 76.97 [deg] Sun_angle= 5.3 [hr] (West of Sun)
MOON_POSTN: 314.81d {+20h 59m 15s} -20.17d {-20d 10' 16"}
MOON_DIST: 83.91 [deg]
MOON_ILLUM: 0 [%]
GAL_COORDS: 351.98, 40.95 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 227.88, 9.37 [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 = 352.53,-8.22 [deg].

351 s

 $8.7 \times 10^{-6} \text{ erg cm}^{-2}$ 4 phot/cm²

BAT

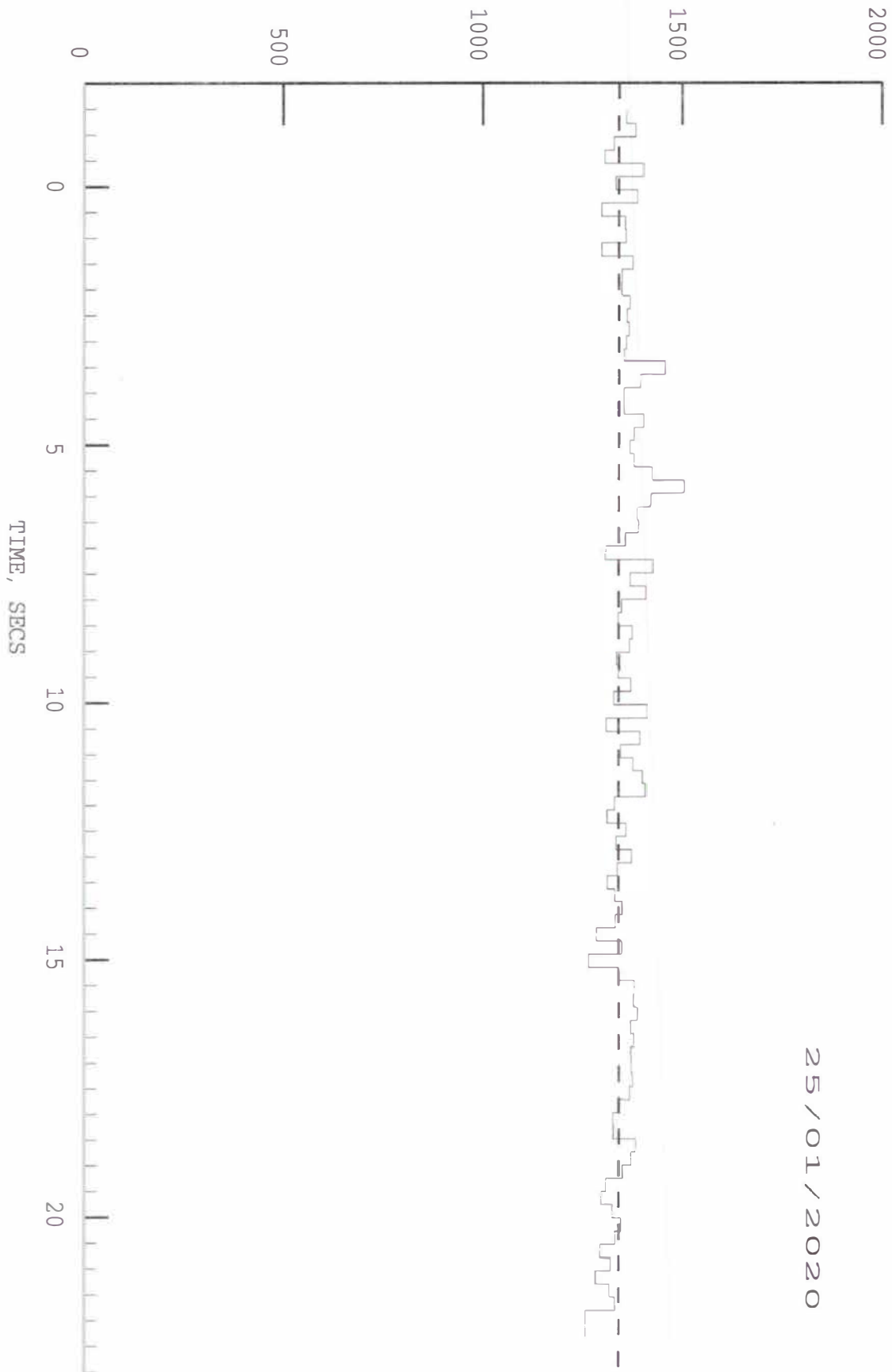
25/01/20

41499.198

11:31:39.198

25- 100 keV

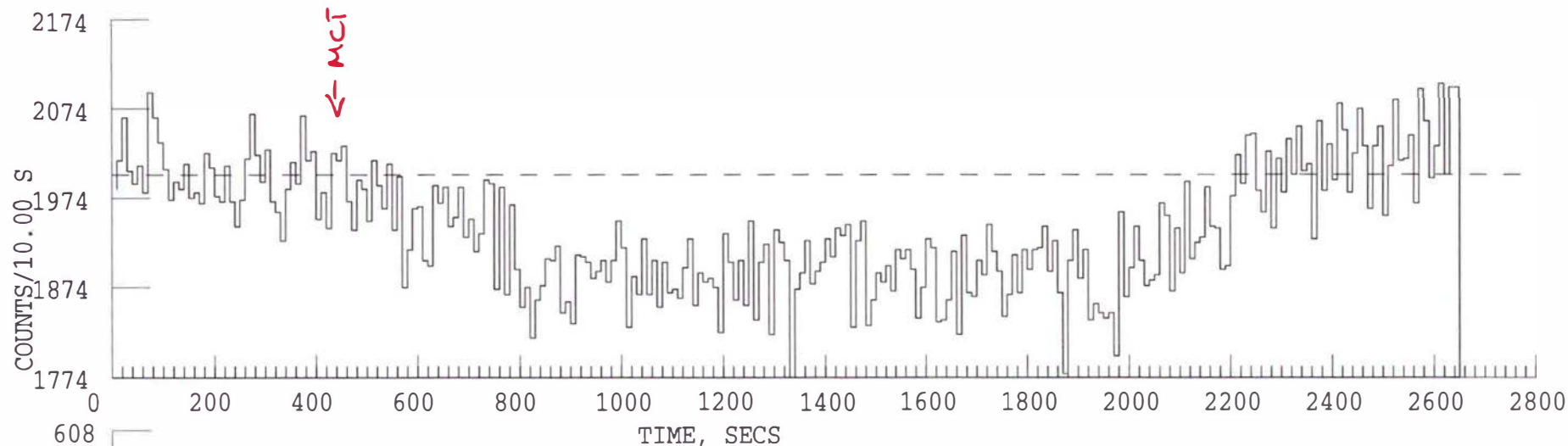
COUNTS/ .256 S



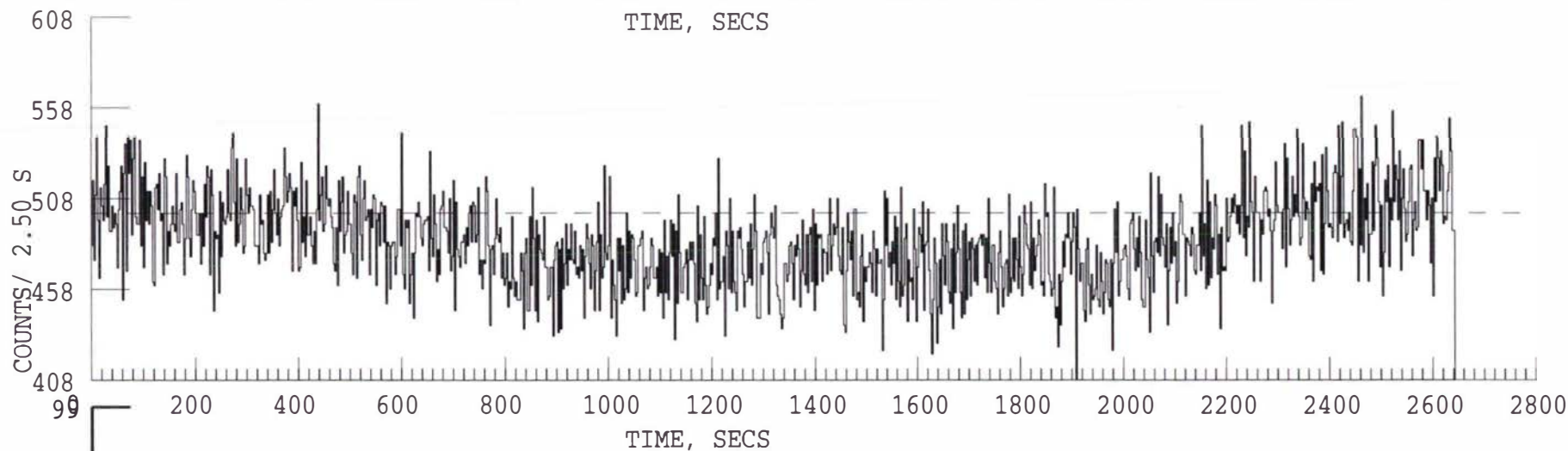
27/03/2020

A

11:09:28.054

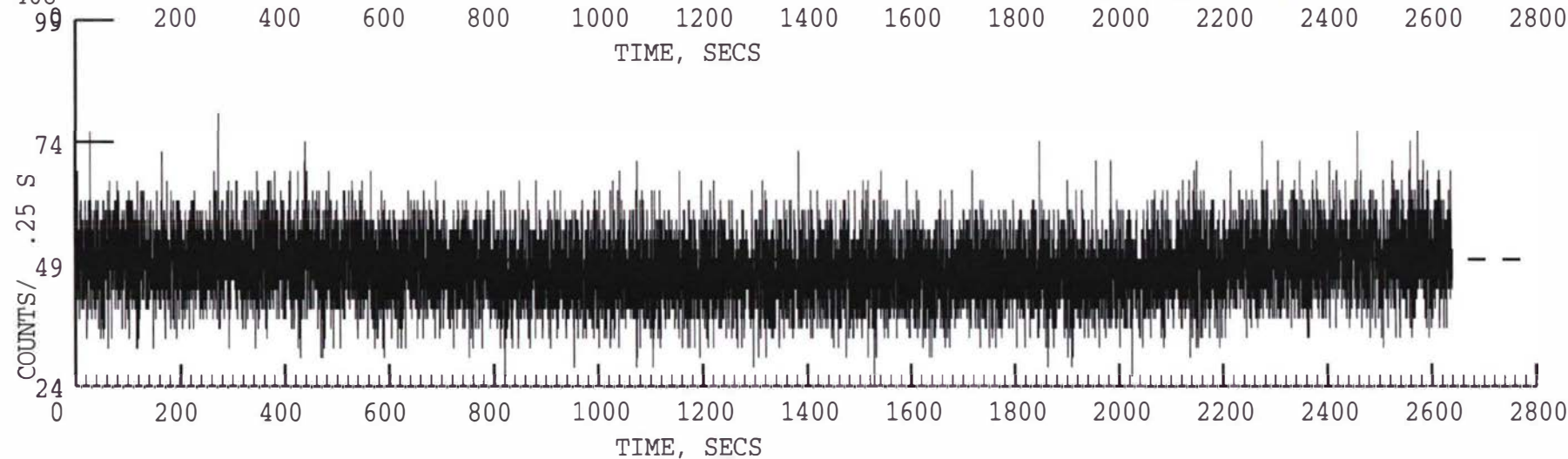


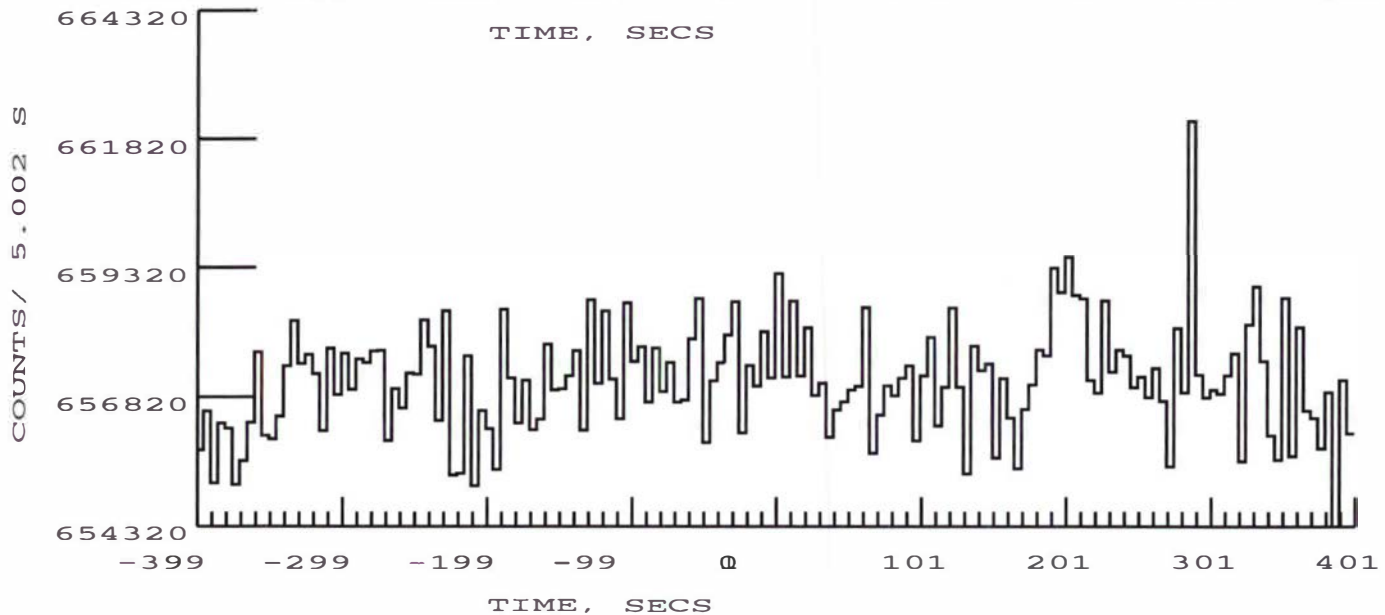
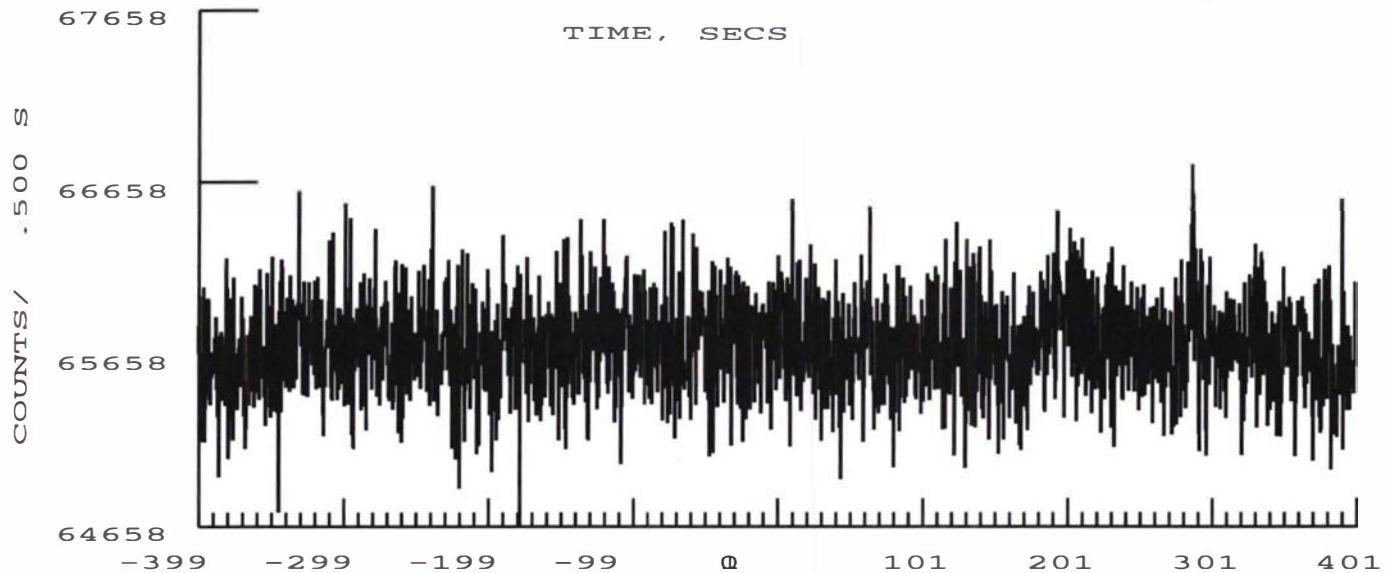
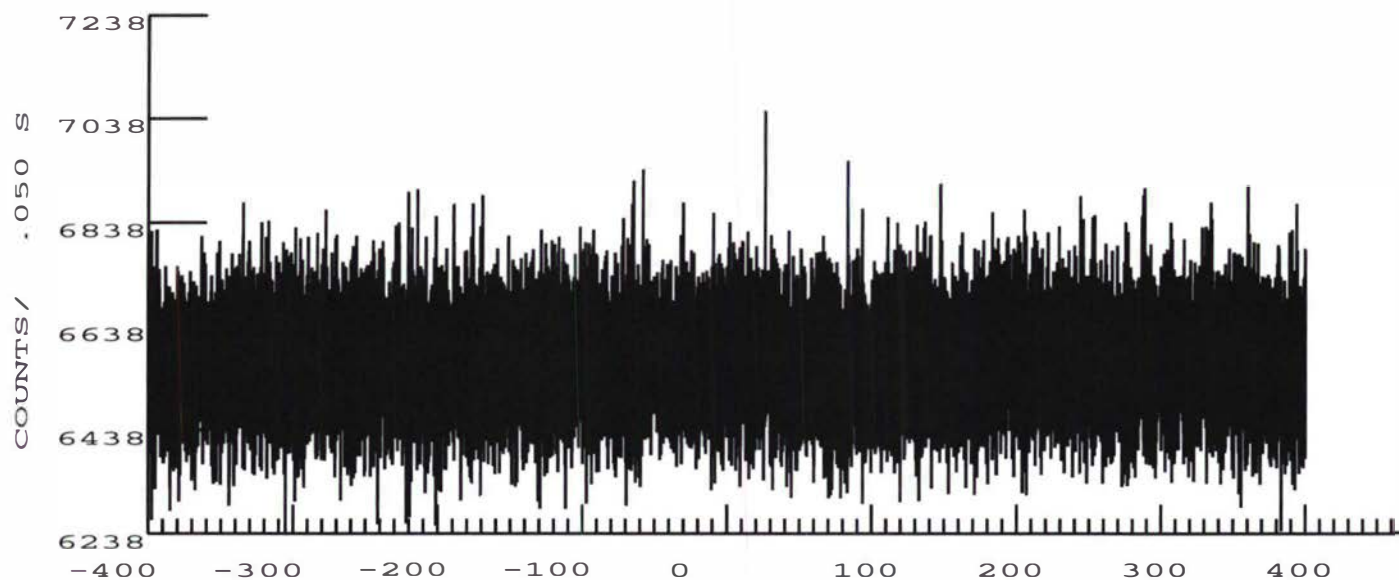
40168.054



25/01/20

50-3000 keV





B

FERMI

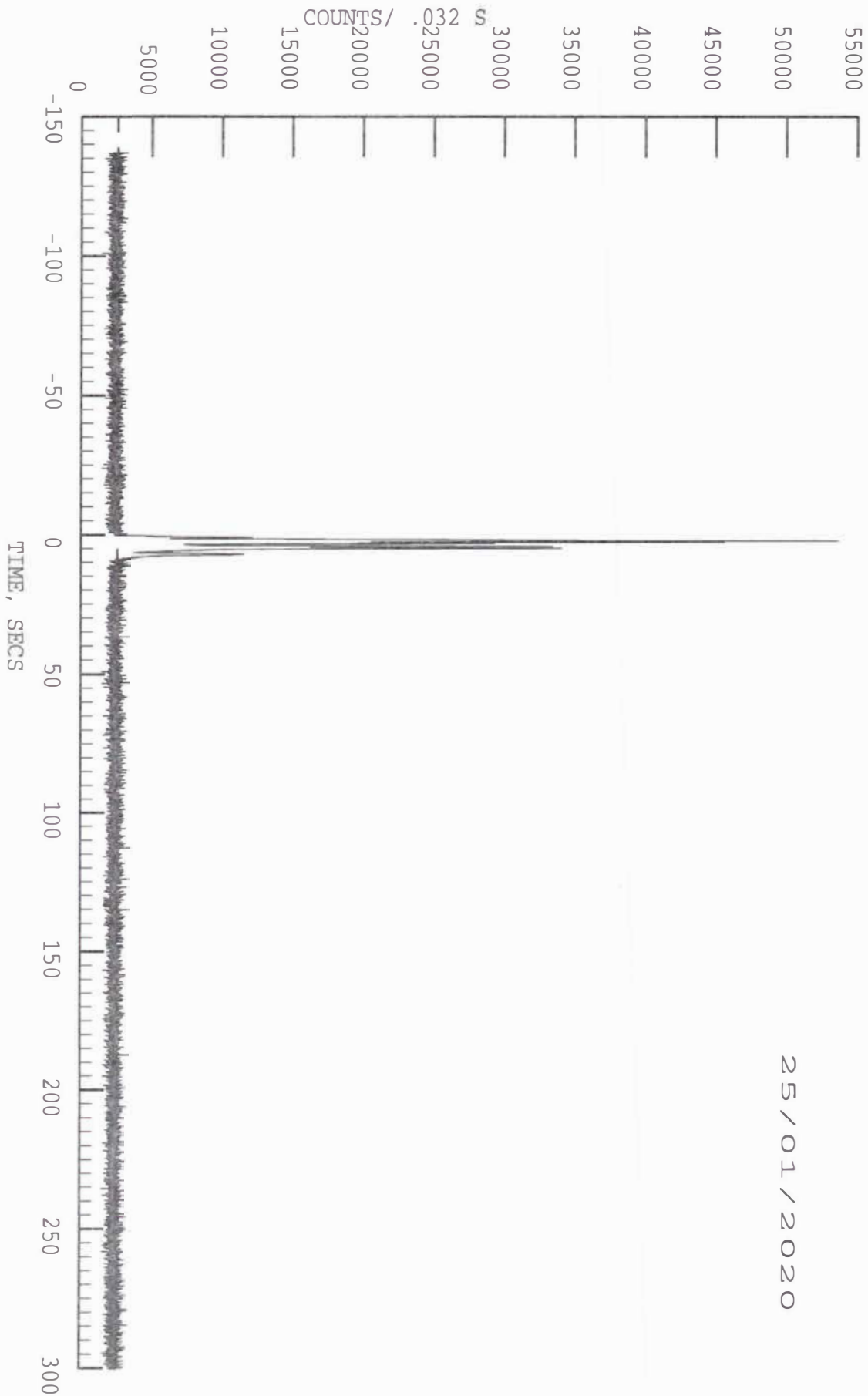
25/01/20

74611.188

20:43:31.188

26- 293 keV

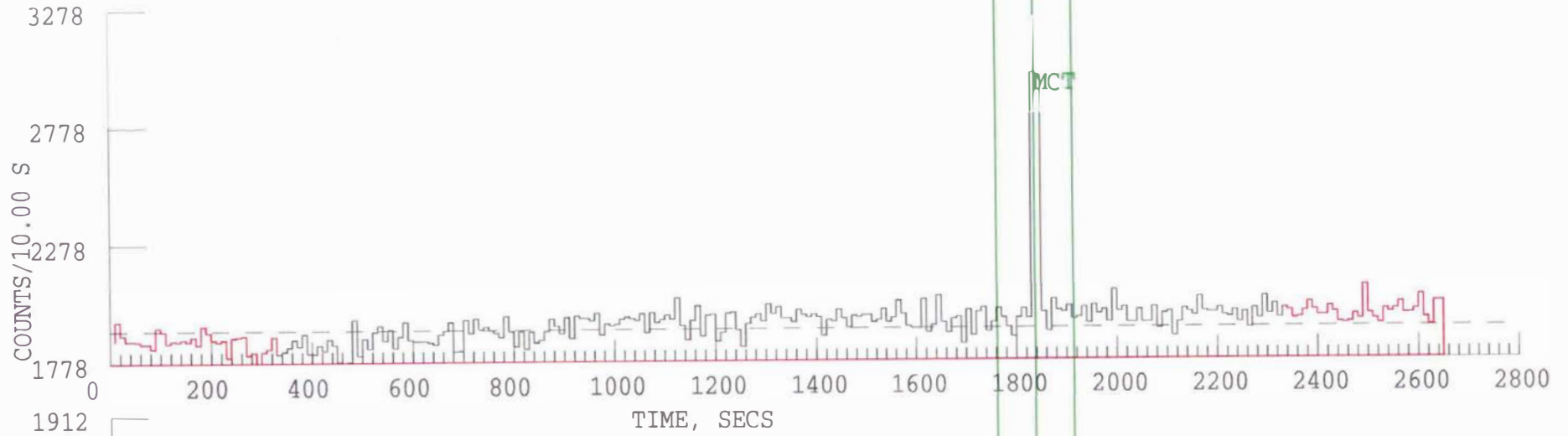
7.4 64.7 1 SPI W/O



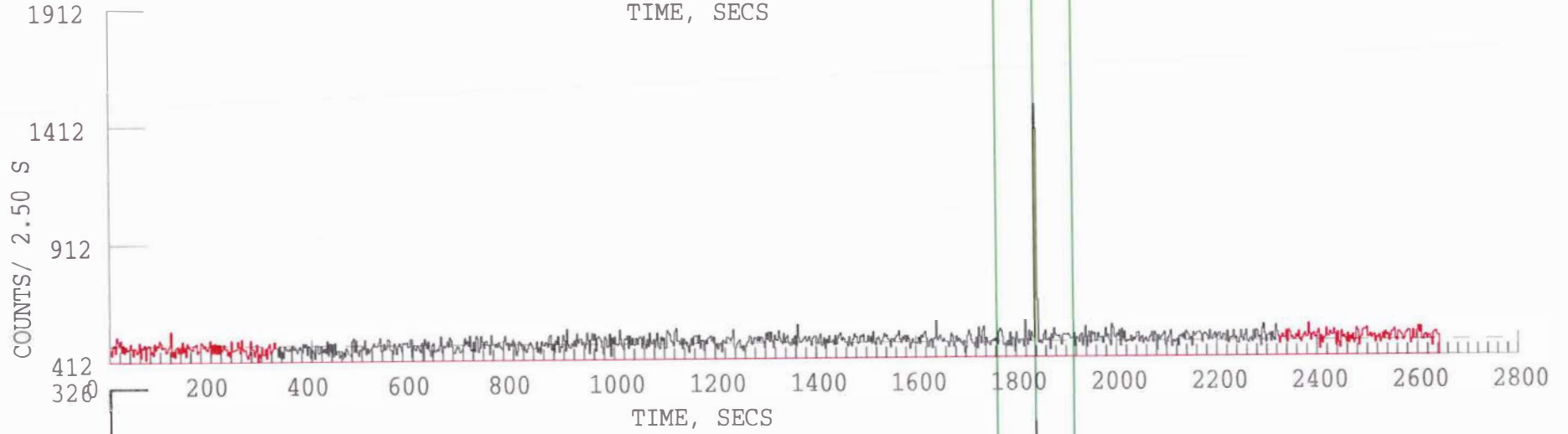
25 / 01 / 2020

29/01/2020

20:21:27.459

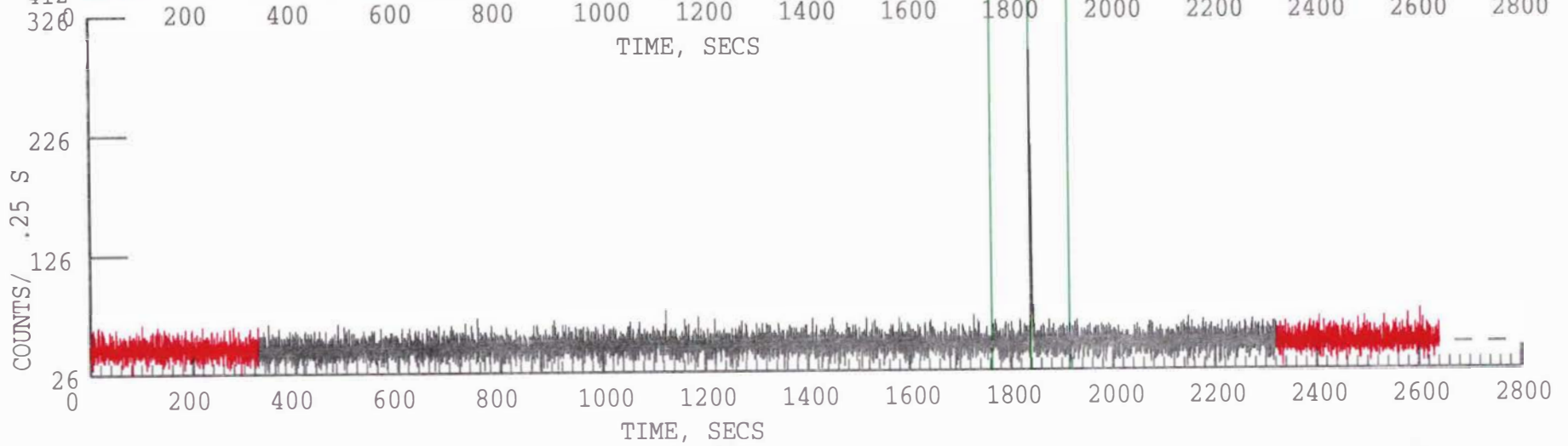


73287.459



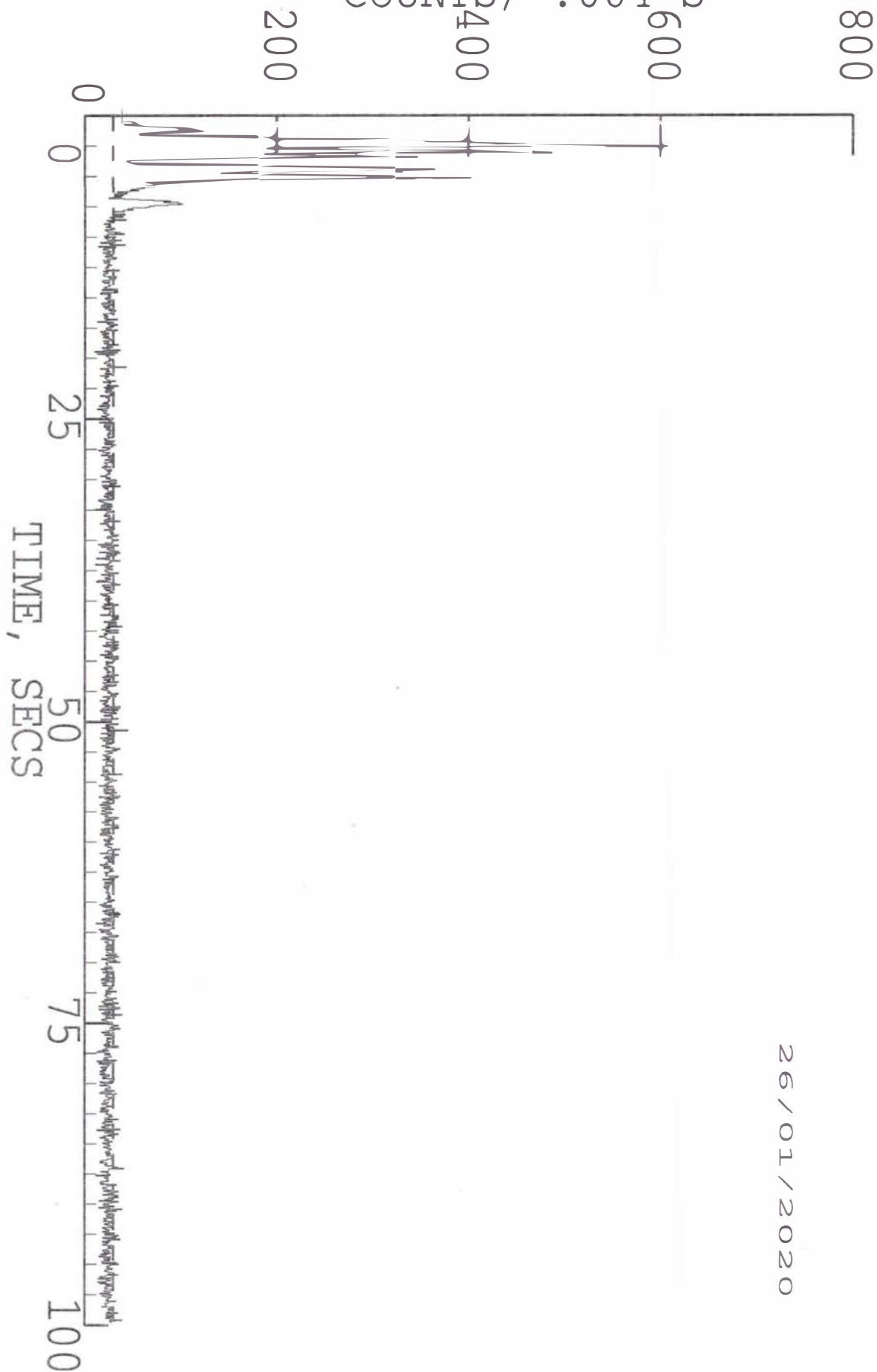
25/01/20

50-3000 keV



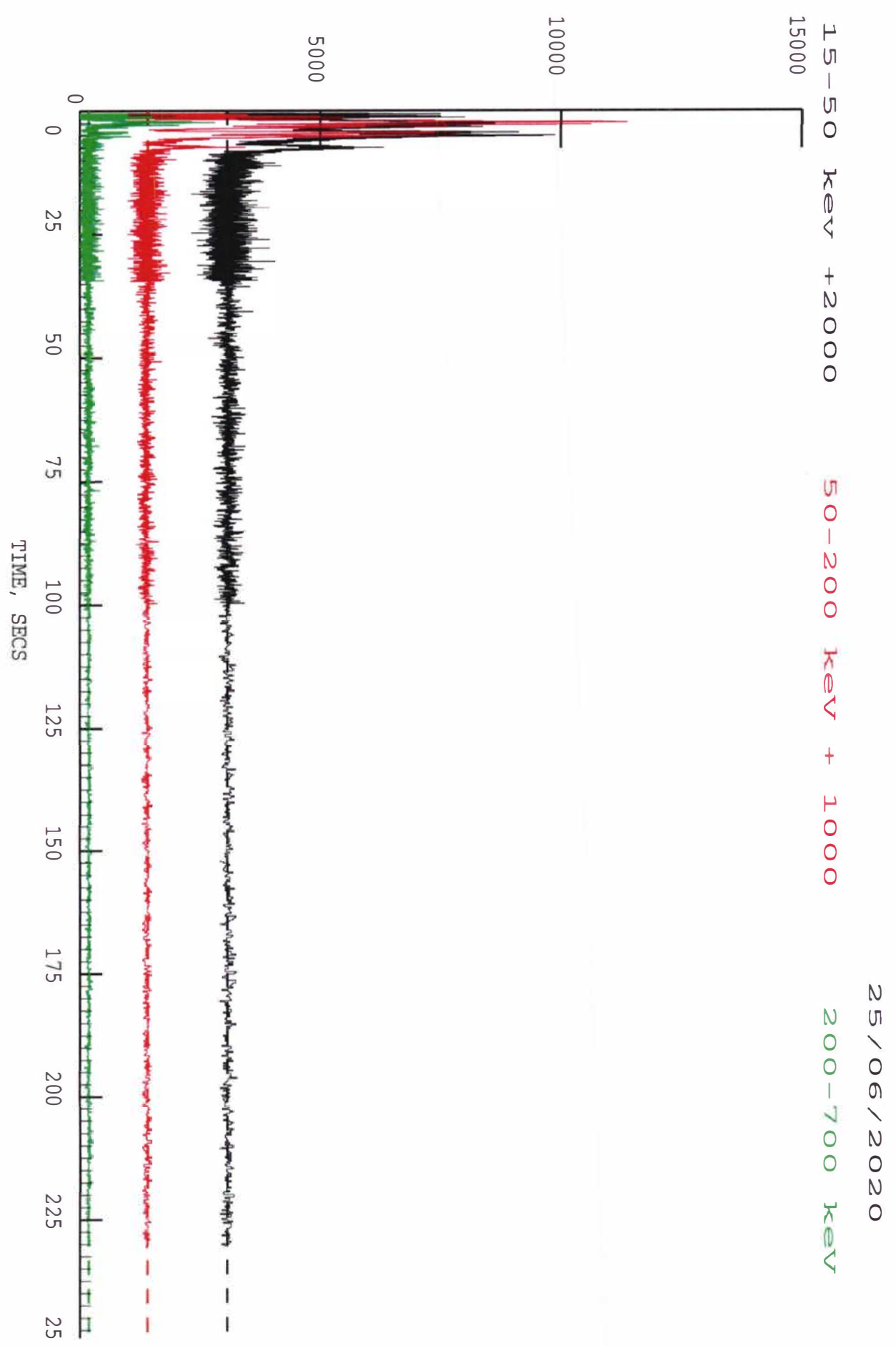
KONUS 25/01/20 74611.206 20:43:31.206
50- 200 keV

COUNTS/ .064 S



26/01/2020

B



Subject: BAT lightcurve for trigger at 200125_2043

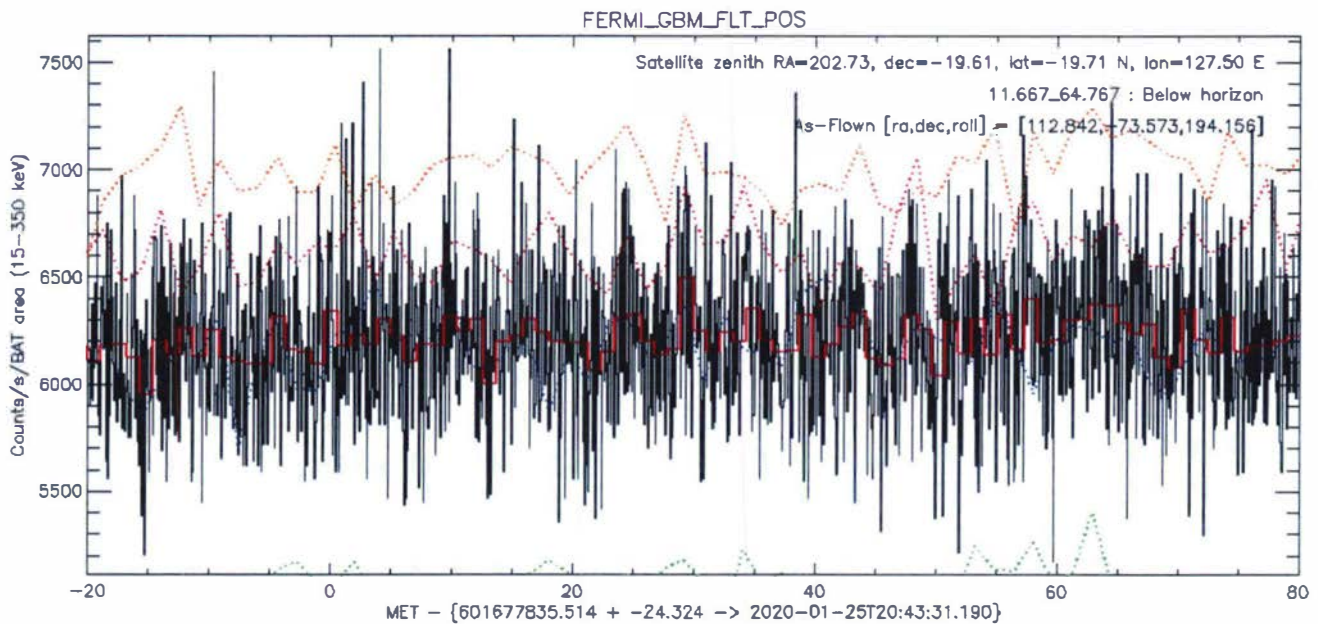
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/25/2020, 5:42 PM

To: aaron.tohu@gmail.com, 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/200125_2043.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601677835.514 -s 11.667_64.767
Swift Zenith(RA,dec):      202.73, -19.61
Swift Location(lon,lat,alt): 127.50 E, -19.71 N, 562 km
Time(MET + UTCF -> UT):    601677835.514 + -24.324 -> 2020-01-25T20:43:31.190
YYMMDD_SOD:               200125_74611.190      DOY=025
Obs Sequence Number:       00012838001
Obs Target Name:           TOI 150
Obs Date and Times:        2020-01-25  20:18:37 - 20:48:36
Obs Pointing(ra,dec,roll): 112.842, -73.573, 194.16
11.667_64.767_imageloc (boresight_dist, angle): (153, 9)
11.667_64.767_exposure (cm² cos adjusted): 0
11.667_64.767_altitude: -21 (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/200125_2043.png	23.1 KB
/tmp/swift/200125_2043_bat64ms_ipn	87.0 KB

Subject: IPN triangulation of long bright GRB 200125B - Konus-GBM annulus
From: Dmitry Svinkin <svinkin@mail.ioffe.ru>
Date: 1/27/2020, 4:30 AM
To: IPN <ipn@ssl.berkeley.edu>

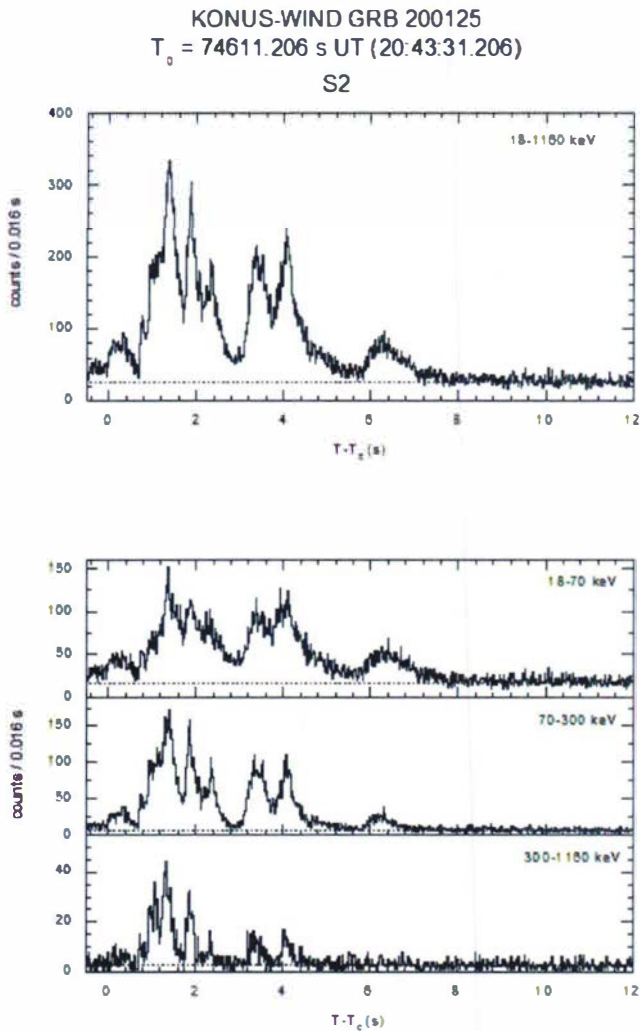
Dear colleagues,

The long duration, very bright GRB 200125B (Fermi-GBM detection: The Fermi GBM team, GCN Circ. 26879; BALROG localization: Biltzinger et al., GCN Circ. 26880) was detected by Fermi (GBM trigger 601677816), Konus-Wind, and Insight-HXMT/HE (Cai et al., GCN Circ. 26888) at about 74611 s UT (20:43:31), see the attached figure.

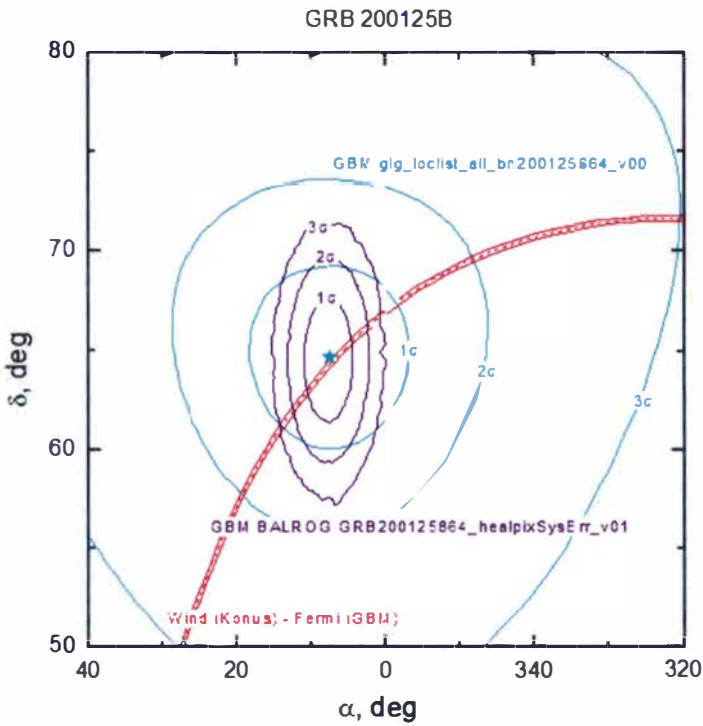
We have triangulated this GRB to a Konus-GBM annulus centered at RA(2000)=321.900 deg (21h 27m 36s) Dec(2000)=-14.917 deg (-14d 55' 02"), whose radius is 86.537 ± 0.136 deg (3 sigma), see the attached figure.

Best regards,
Dmitry

—kw200125_74611_16ms.png



—GRB200125B_IPN_map.png



Attachments:		
kw20200125_74611_16ms.png		9.6 KB
GRB200125B_IPN_map.png		8.7 KB

Subject: IPN triangulation of GRB 200125B

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

Date: 1/28/2020, 8:20 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26918

SUBJECT: IPN triangulation of GRB 200125B

DATE: 20/01/28 16:20:12 GMT

FROM: Dmitry Svinkin at Ioffe Institute <svinkin@mail.ioffe.ru>

D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Ridnaia,
and T. Cline on behalf of the Konus-Wind team,

K. Hurley, on behalf of the IPN,

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

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

The long-duration, very bright GRB 200125B
(Fermi-GBM detection: The Fermi GBM team, GCN Circ. 26879;
BALROG localization: Biltzinger et al., GCN Circ. 26880;
Insight-HXMT/HE detection: Cai et al., GCN Circ. 26888)
was detected by Fermi (GBM trigger 601677816), Konus-Wind,
and Insight (HXMT/HE) at about 74611 s UT (20:43:31).

We have triangulated this GRB to a Konus-GBM annulus centered at
RA(2000)=321.900 deg (21h 27m 36s) Dec(2000)=-14.917 deg (-14d 55' 02")
whose radius is 86.537 ± 0.136 deg (3 sigma) and a wider
Konus-HXMT annulus.

These annuli may be improved.

The annulus is consistent with, but reduces
the area of, the final Fermi-GBM (GCN Circ. 26879) and
BALROG (GCN Circ. 26880) localizations.

A triangulation map is posted at
http://www.ioffe.ru/LEA/GRBs/GRB200125_T74611/IPN/

The Konus-Wind time history and spectrum will be given in a forthcoming
GCN Circular.

Subject: GRB 200125B: Insight-HXMT/HE detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/26/2020, 6:10 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26888
SUBJECT: GRB 200125B: Insight-HXMT/HE detection
DATE: 20/01/26 14:10:22 GMT
FROM: Ce Cai at IHEP <caice@ihep.ac.cn>

C. Cai, S. Xiao, Y. F. Du, Y. G. Zheng, Q. Luo, Q. B. Yi,
Y. Huang, C. K. Li, G. Li, X. B. Li, J. Y. Liao, S. L. Xiong,
C. Z. Liu, X. F. Li, Z. W. Li, Z. Chang, A. M. Zhang,
Y. F. Zhang, X. F. Lu, 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 2020-01-25T20:43:31.90 (T0), Insight-HXMT/HE detected
GRB 200125B (trigger ID: HEB200125863) in a routine search of the data,
which also triggered Fermi/GBM (GCN #26879).

The Insight-HXMT/HE light curve mainly consists of multiple
pulses with a duration (T90) of 4.66 s measured from T0-0.11 s.
The 1-ms peak rate, measured from T0+0.57 s, is 9038 cnts/sec.
The total counts from this burst is 18553 counts.

URL_LC: http://www.hxmt.org/images/GRB/HEB200125863_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>.

v01

47.206

26/01/2020

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

10000

20000

30000

40000

50000

60000

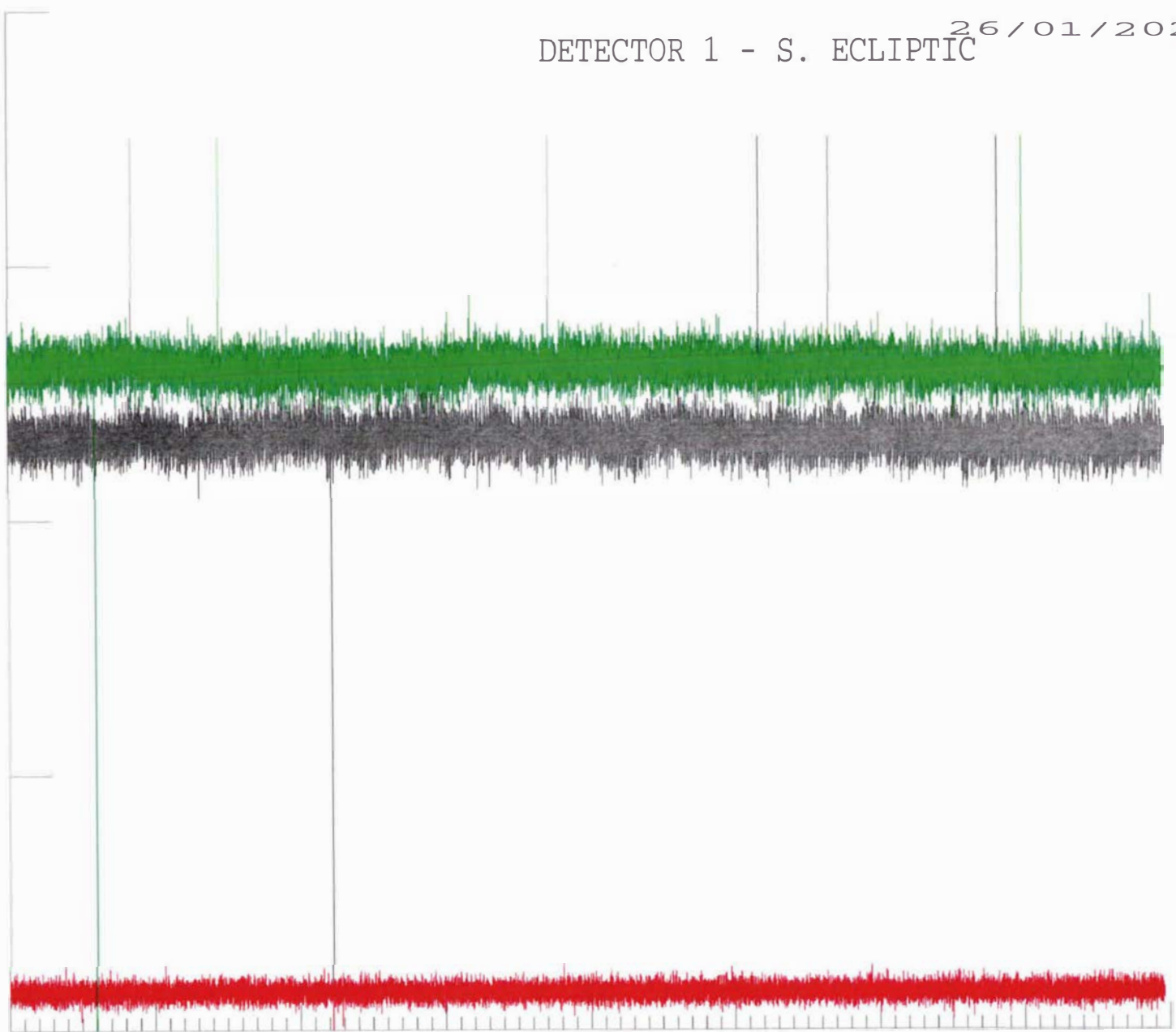
70000

80000

TIME SECS

DETECTOR 1 - S. ECLIPTIC

26/01/2020



v01

47.206

26/01/2020

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

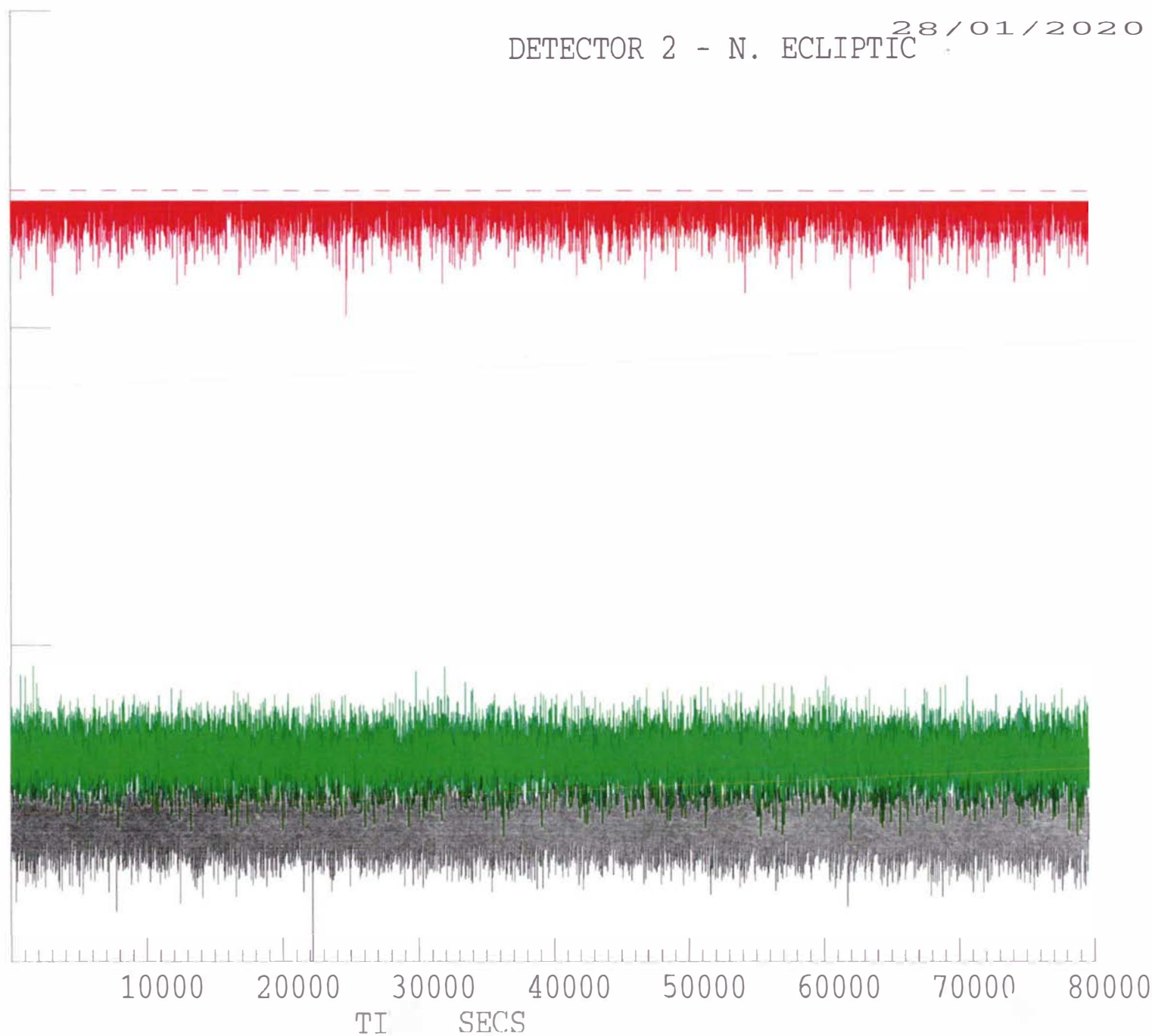
20000

TI

SECS

DETECTOR 2 - N. ECLIPTIC

28/01/2020



10:48:26.543

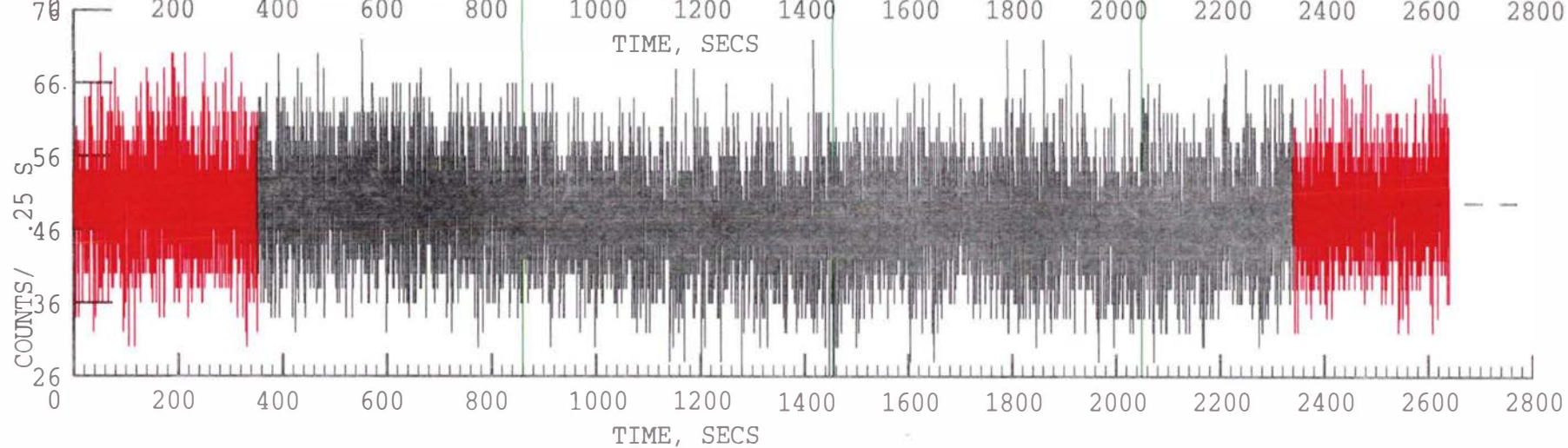
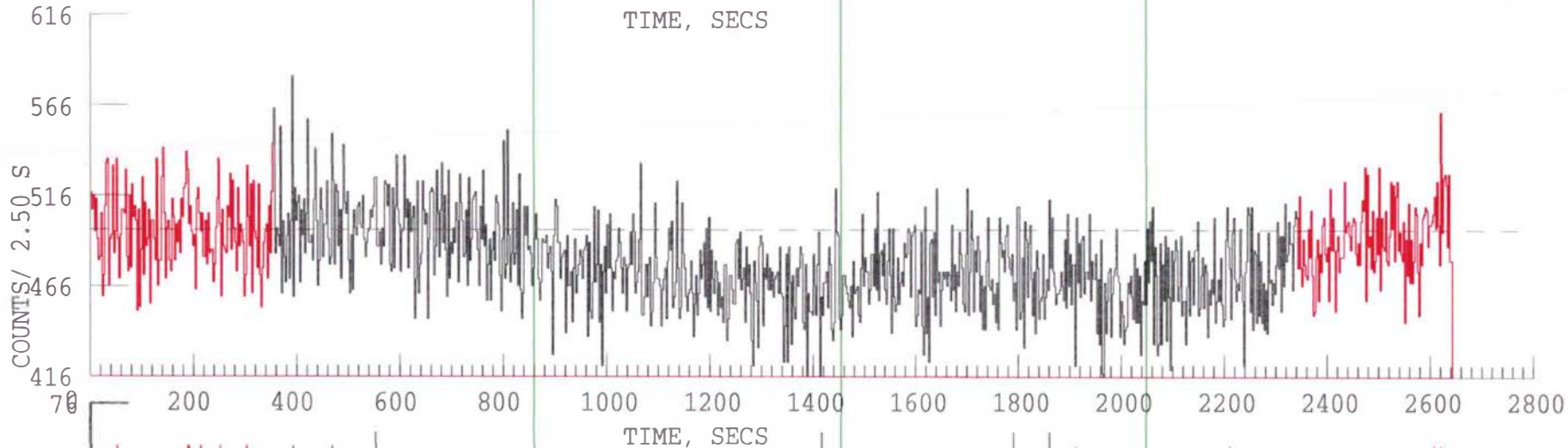
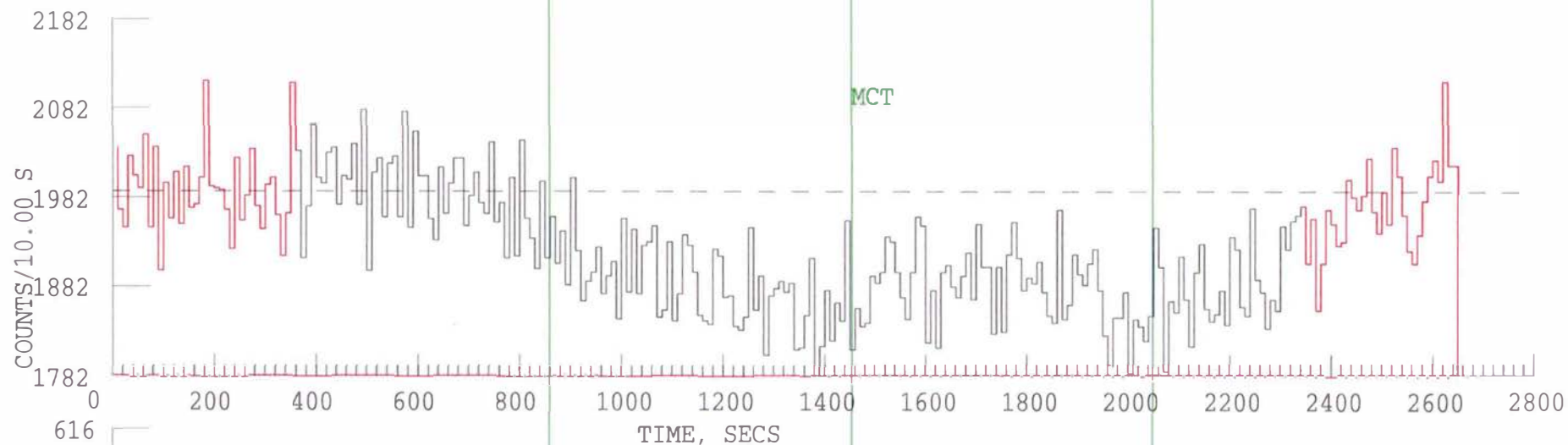
38906.543

26/01/20

ODYSSEY

50-3000 keV

29/01/2020



59.5 -59.6 12.3

SPI NO

GRB

0.8 s

 $1.3 \times 10^{-7} \text{ erg cm}^{-2}$ 1.7 ph/s/cm^2

Subject: BAT lightcurve for trigger at 200126_1110

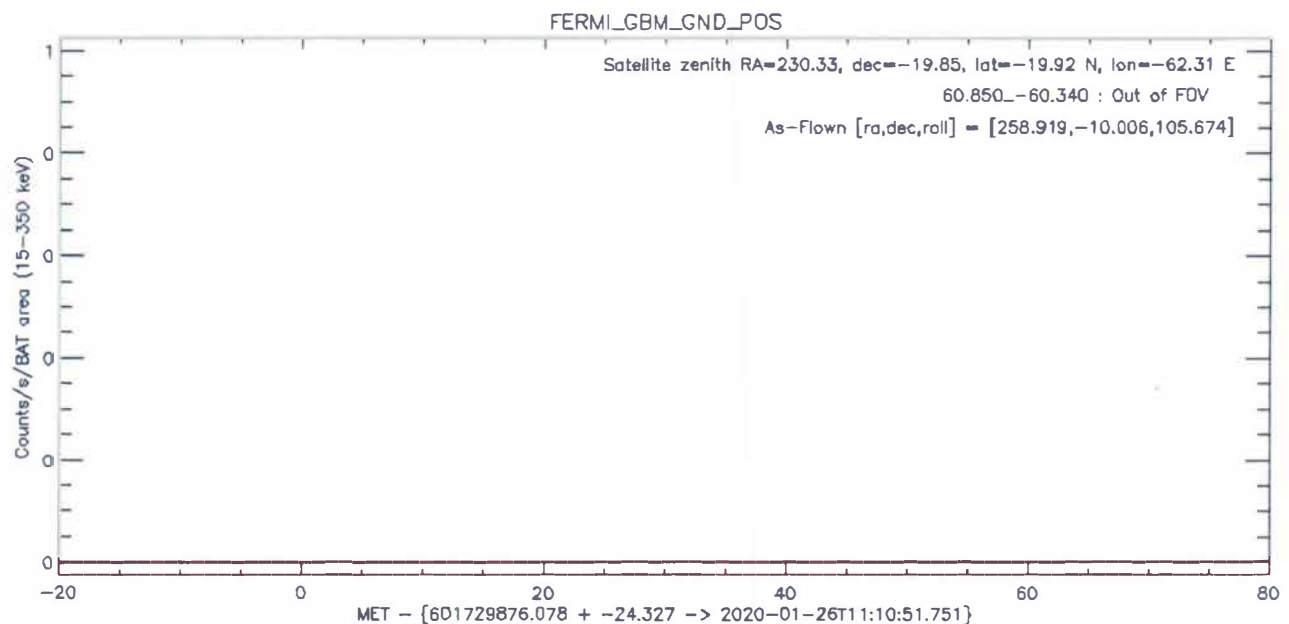
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/26/2020, 5:47 AM

To: aaron.tohu@gmail.com, 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/200126_1110.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601729876.078 -s 60.850_-60.340
Swift Zenith(RA,dec):      230.33, -19.85
Swift Location(lon,lat,alt): -62.31 E, -19.92 N, 560 km
Time(MET + UTCF -> UT):   601729876.078 + -24.327 -> 2020-01-26T11:10:51.751
YYMMDD_SOD:               200126_40251.751      DOY=026
Obs Sequence Number:       00075302013
Obs Target Name:           saa-cold-299-05
Obs Date and Times:        2020-01-26 11:03:37 - 11:26:34
Obs Pointing(ra,dec,roll): 258.919, -10.006, 105.67
60.850_-60.340_imageloc (boresight_dist, angle): (108, -25)
60.850_-60.340_exposure (cm^2 cos adjusted): 0
60.850_-60.340_altitude: 14 (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/200126_1110.png

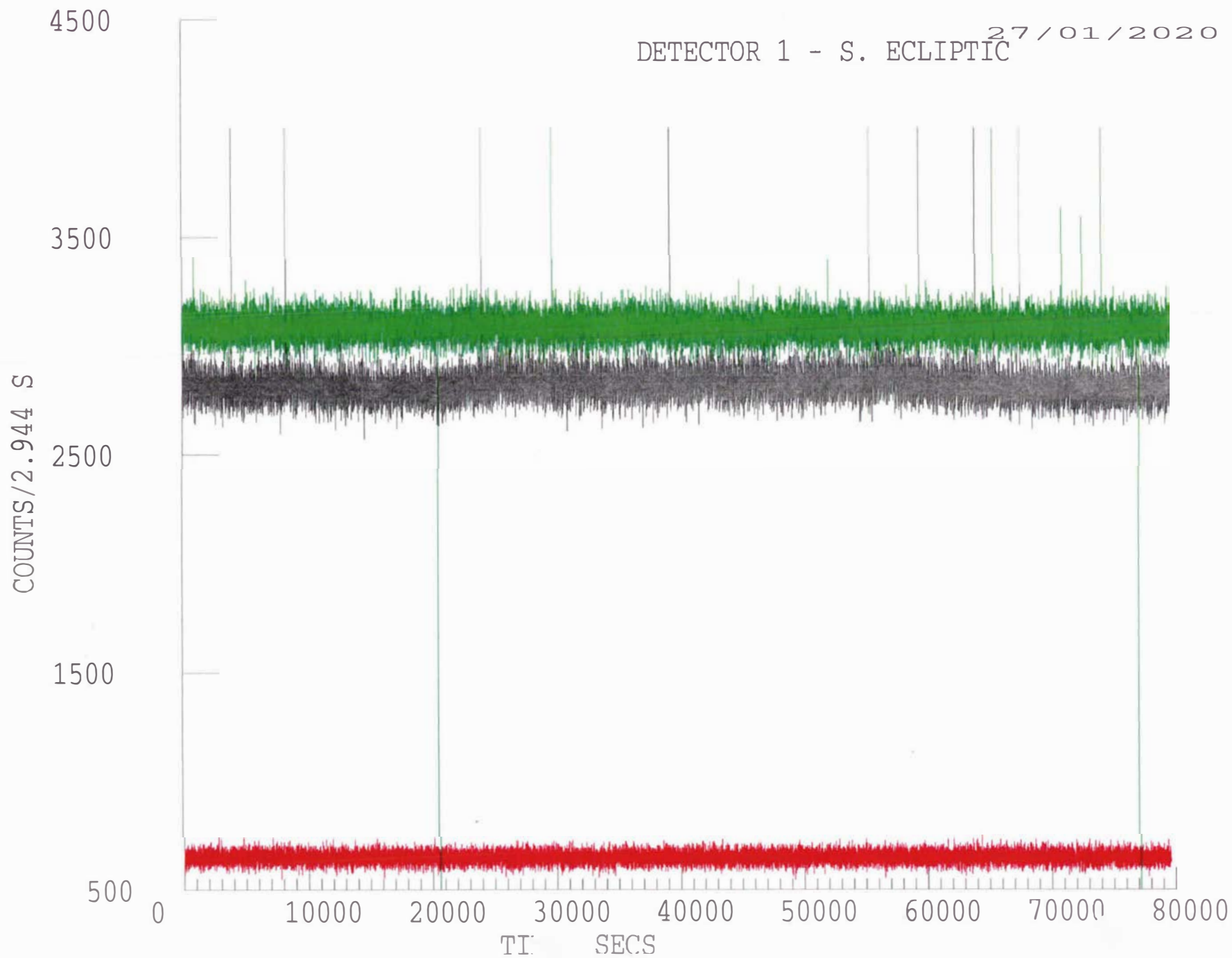
7.9 KB

/tmp/swift/200126_1110_bat64ms_ipn

87.0 KB

KONUS 27/01/2020 32.989 v01

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



v01

32.989

27/01/2020

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2300

1800

1300

800

0

10000

20000

30000

40000

50000

60000

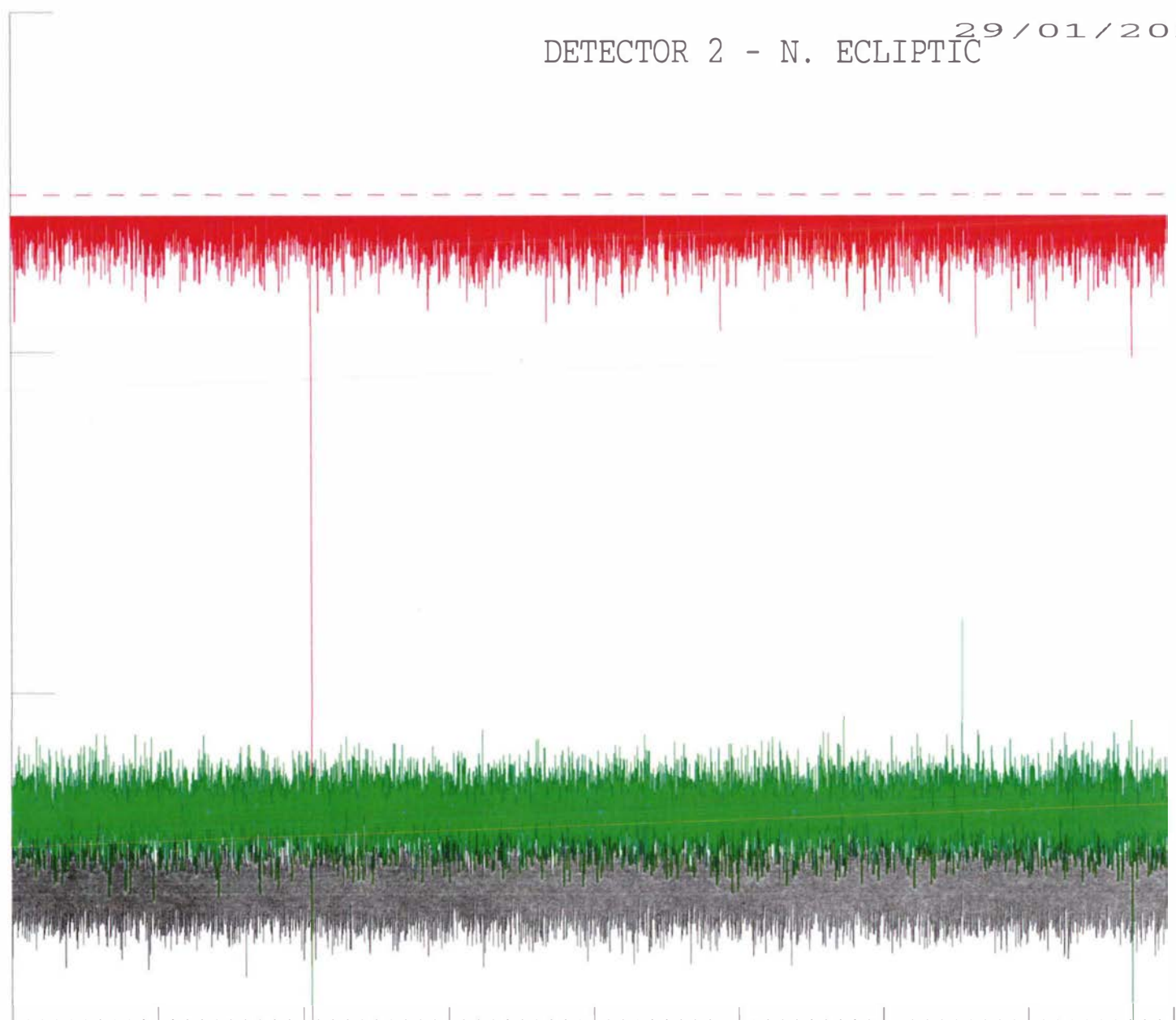
70000

80000

TIME SECS

DETECTOR 2 - N. ECLIPTIC

29/01/2020



Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 1/27/2020, 6:49 AM
 To: khurley@ssl.berkeley.edu

SPI NO

217s

 $2.4 \times 10^{-6} \text{ erg cm}^{-2}$ 0.7 phot/cm²s

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Mon 27 Jan 20 14:48:48 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 952791, Seg_Num: 0
 GRB_RA: 295.204d {+19h 40m 49s} (J2000),
 295.361d {+19h 41m 27s} (current),
 294.815d {+19h 39m 16s} (1950)
 GRB_DEC: +44.910d {+44d 54' 35"} (J2000),
 +44.957d {+44d 57' 26"} (current),
 +44.792d {+44d 47' 31"} (1950)
 GRB_DATE: 18875 TJD; 27 DOY; 20/01/27
 GRB_TIME: 53071.66 SOD {14:44:31.66} UT
 TRIGGER_INDEX: 20000
 GRB_PHI: -38.19 [deg]
 GRB_THETA: 37.48 [deg]
 DELTA_TIME: 0.00 [sec]
 TRIGGER_DUR: 64.000 [sec]
 SOLN_STATUS: 0x13
 RATE_SIGNIF: 0.00 [sigma]
 IMAGE_SIGNIF: 12.94 [sigma]
 LC_URL: sw00952791000msb.lc
 SUN_POSTN: 309.52d {+20h 38m 05s} -18.49d {-18d 29' 20"}
 SUN_DIST: 64.75 [deg] Sun_angle= 0.9 [hr] (West of Sun)
 MOON_POSTN: 340.99d {+22h 43m 57s} -12.92d {-12d 55' 25"}
 MOON_DIST: 71.08 [deg]
 MOON_ILLUM: 7 [%]
 GAL_COORDS: 78.16, 10.79 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 314.48, 64.51 [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 an image 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 = 350.30,13.57 [deg].

BAT

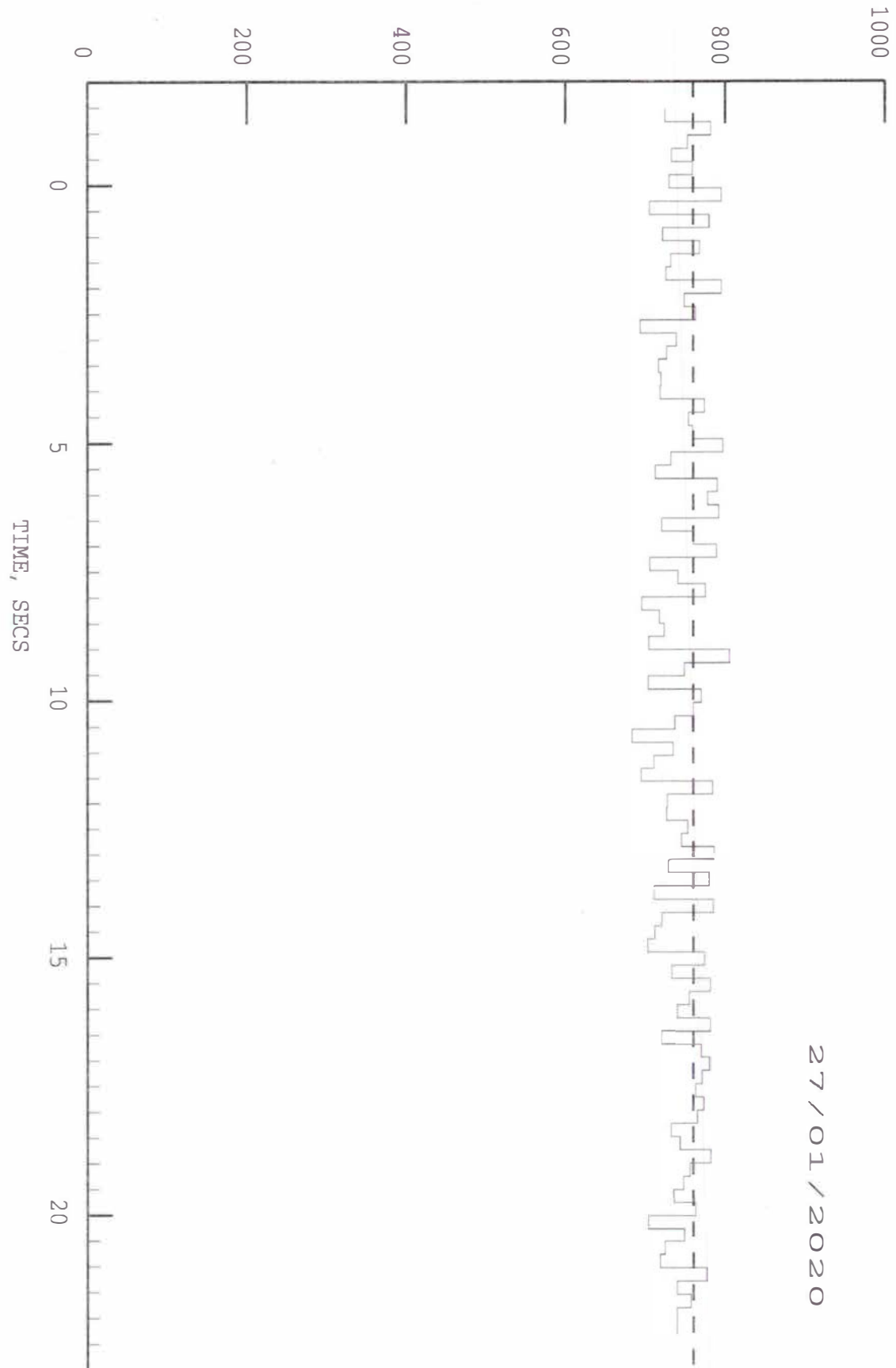
27/01/20

53071.666

14:44:31.666

25- 100 keV

COUNTS/ .256 S

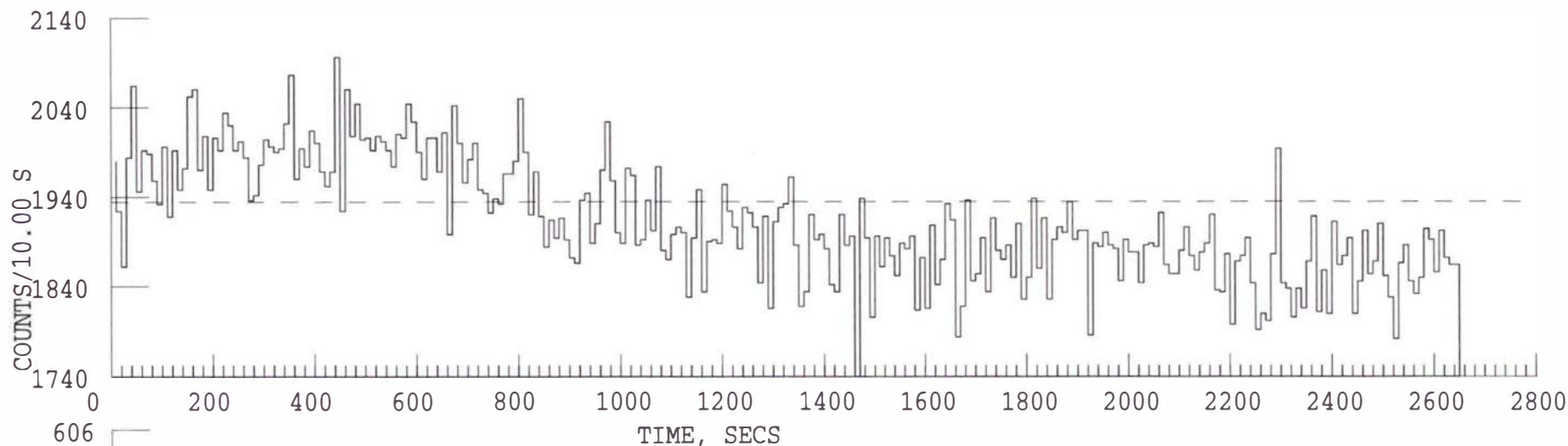


27/03/2020

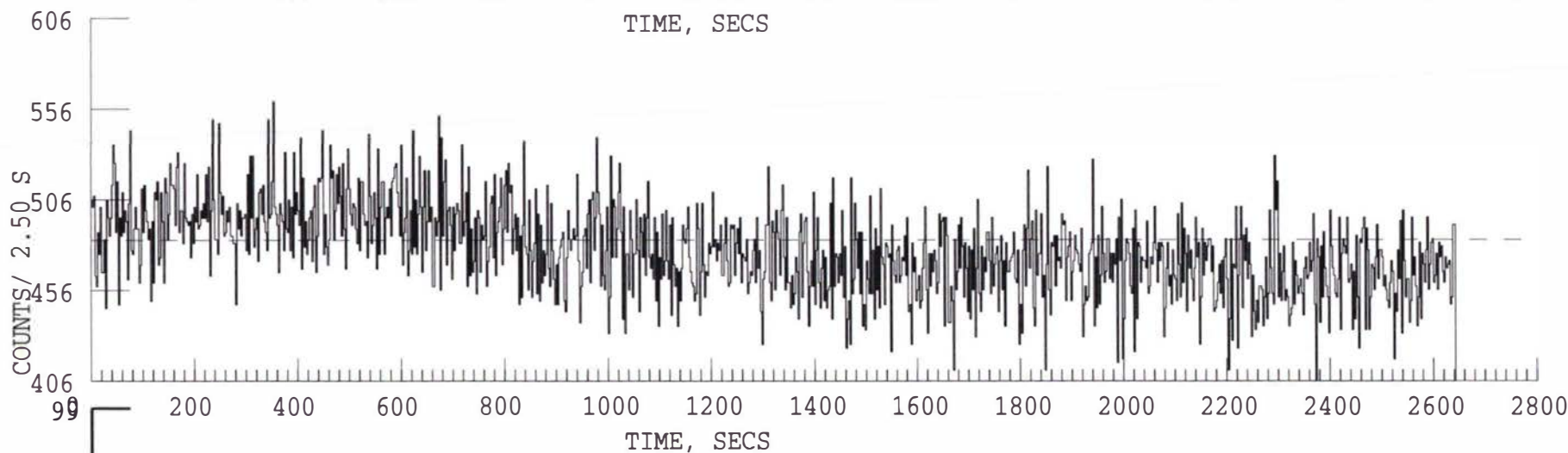
A

14:22:24.774

Occulted

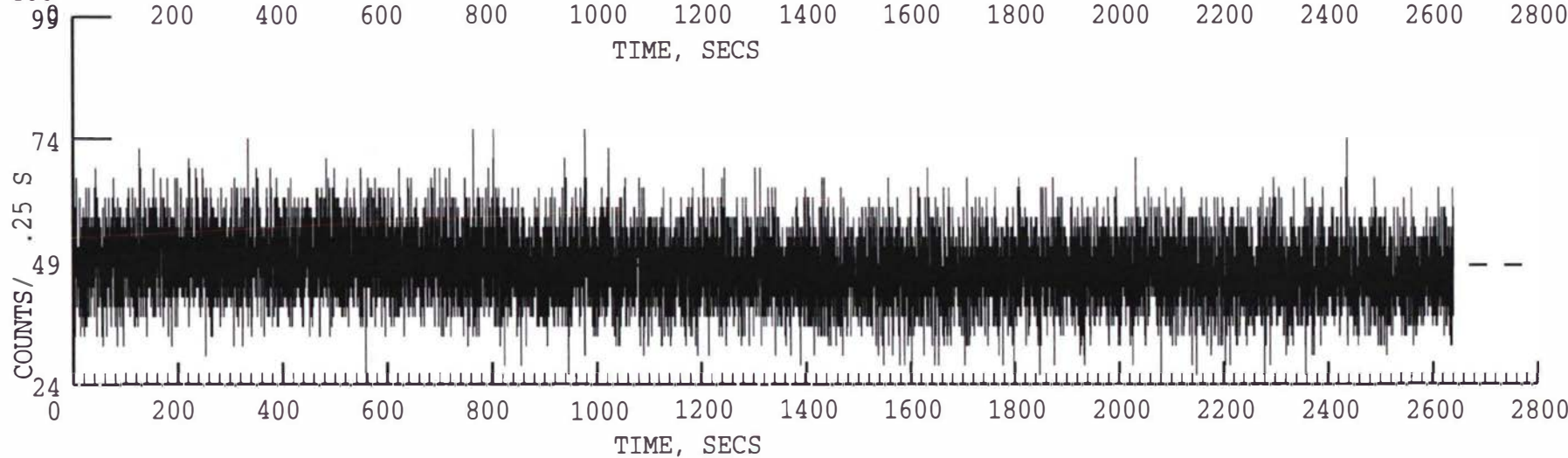


51744.774



27/01/20

50-3000 keV



ODYSSEY

B

FERMI

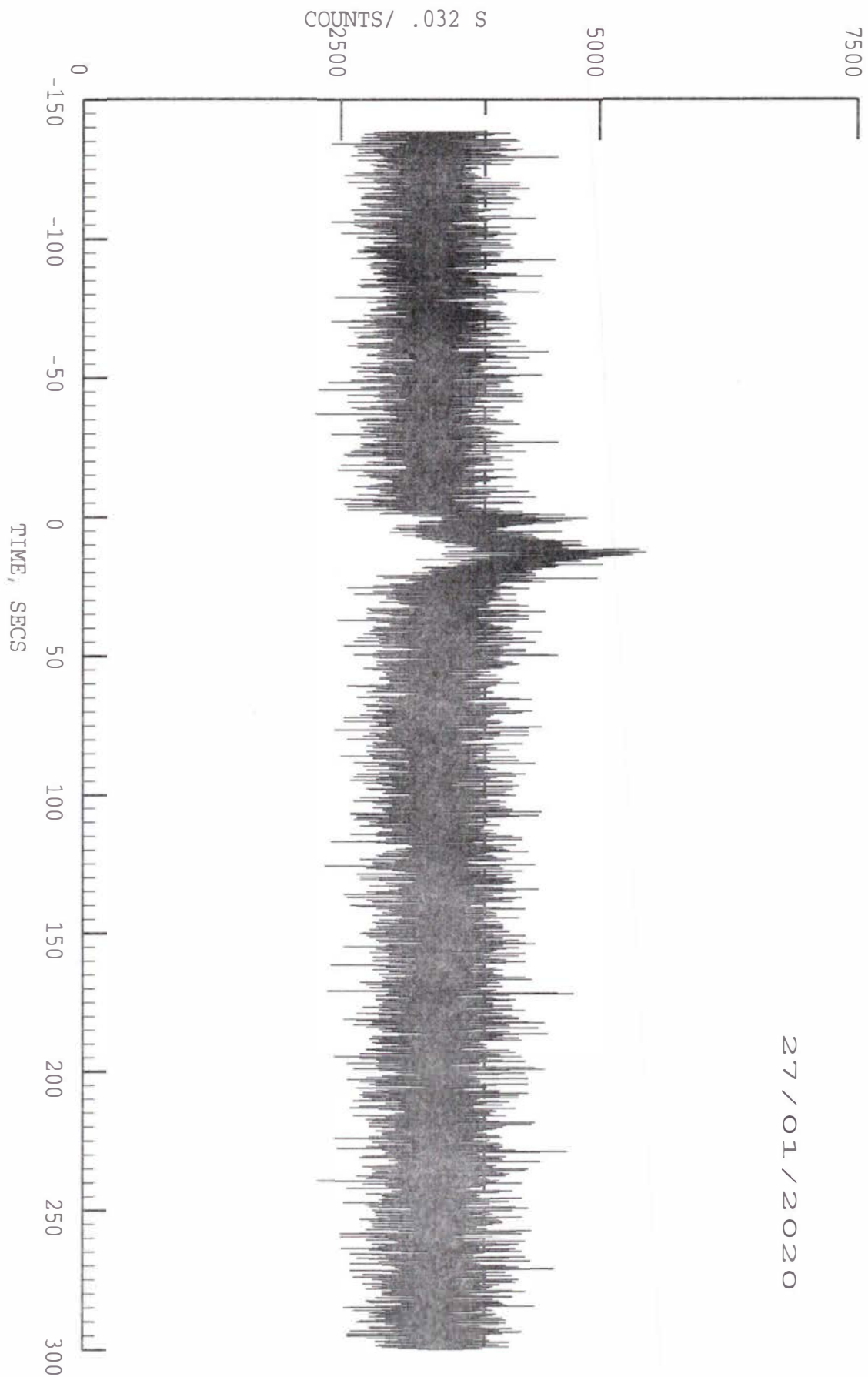
27/01/20

65478.671

18:11:18.671

26- 293 keV

75.9 20.1 3.3

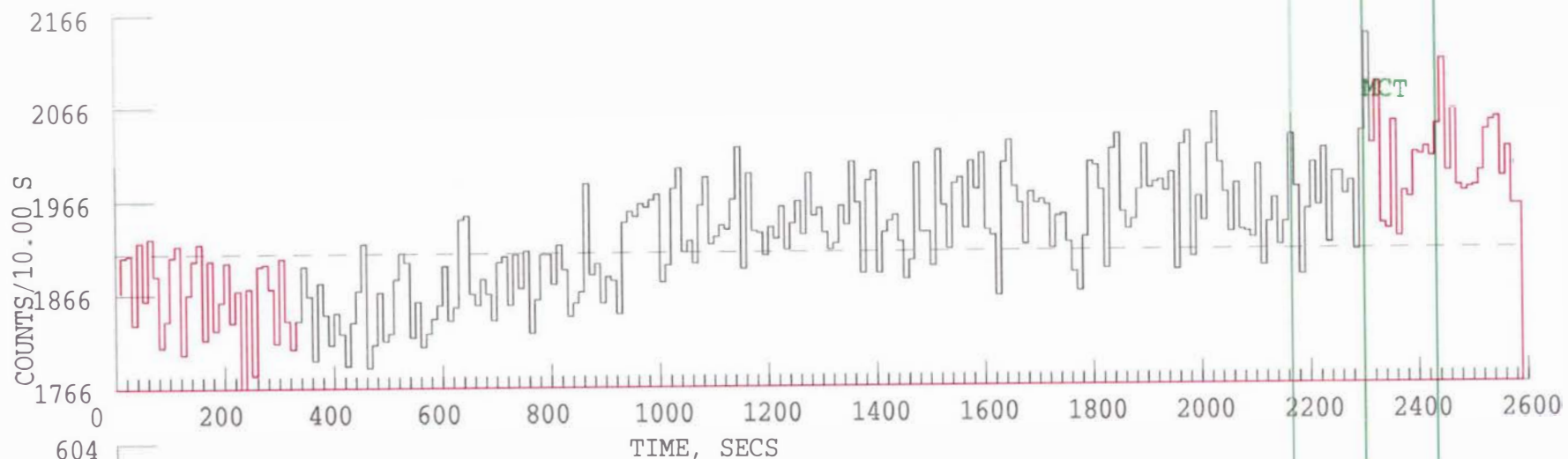


27 / 01 / 2020

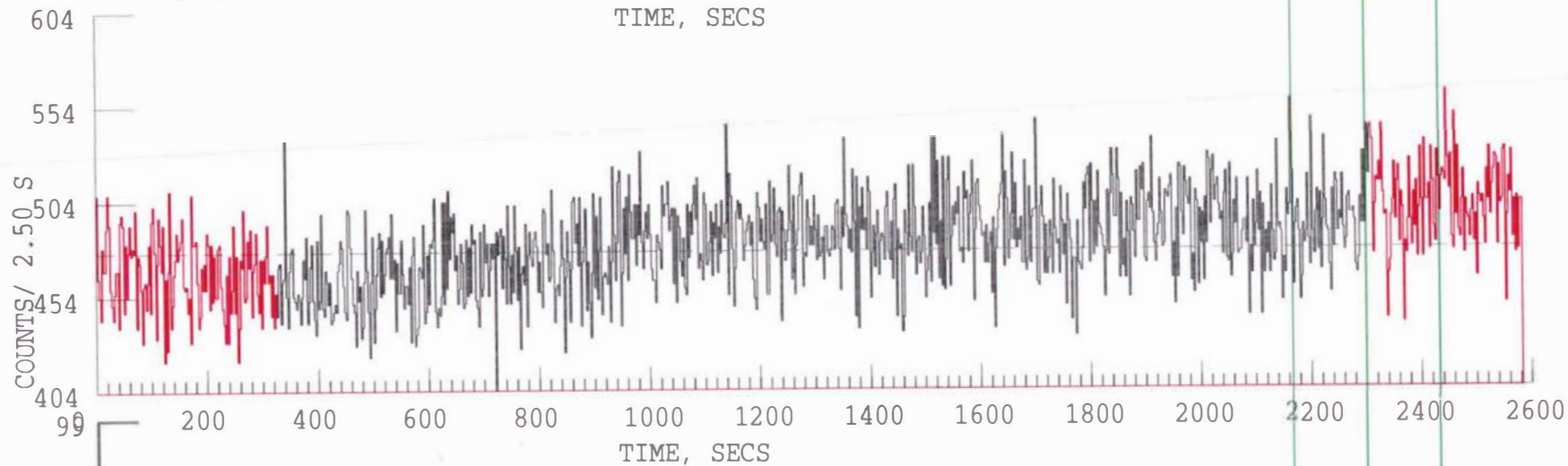
B

03/02/2020

17:49:24.670

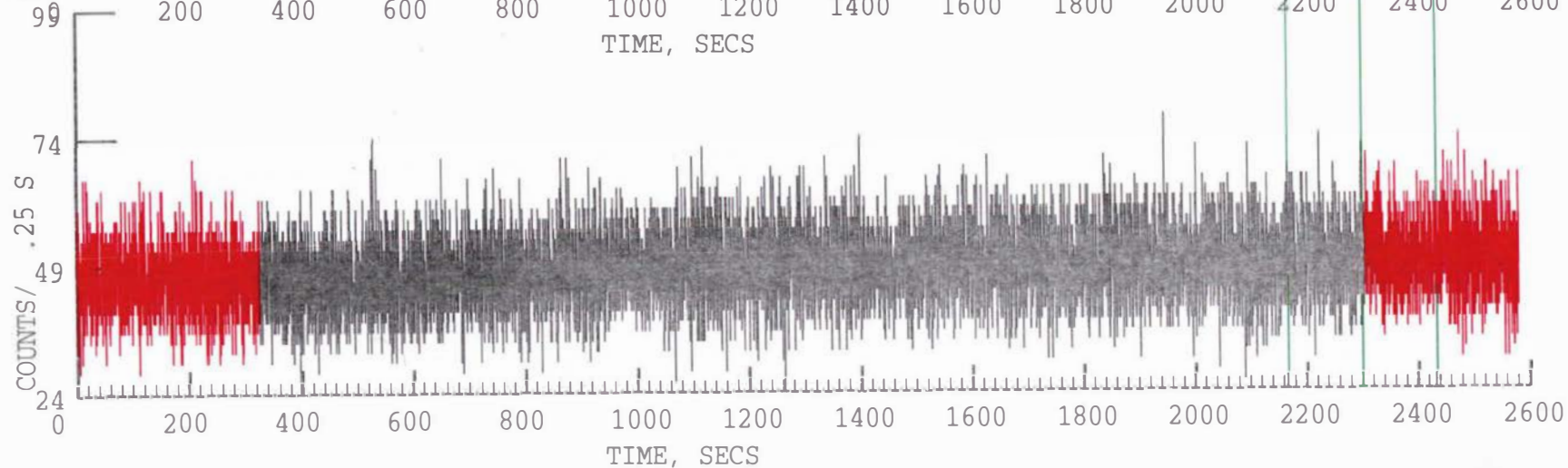


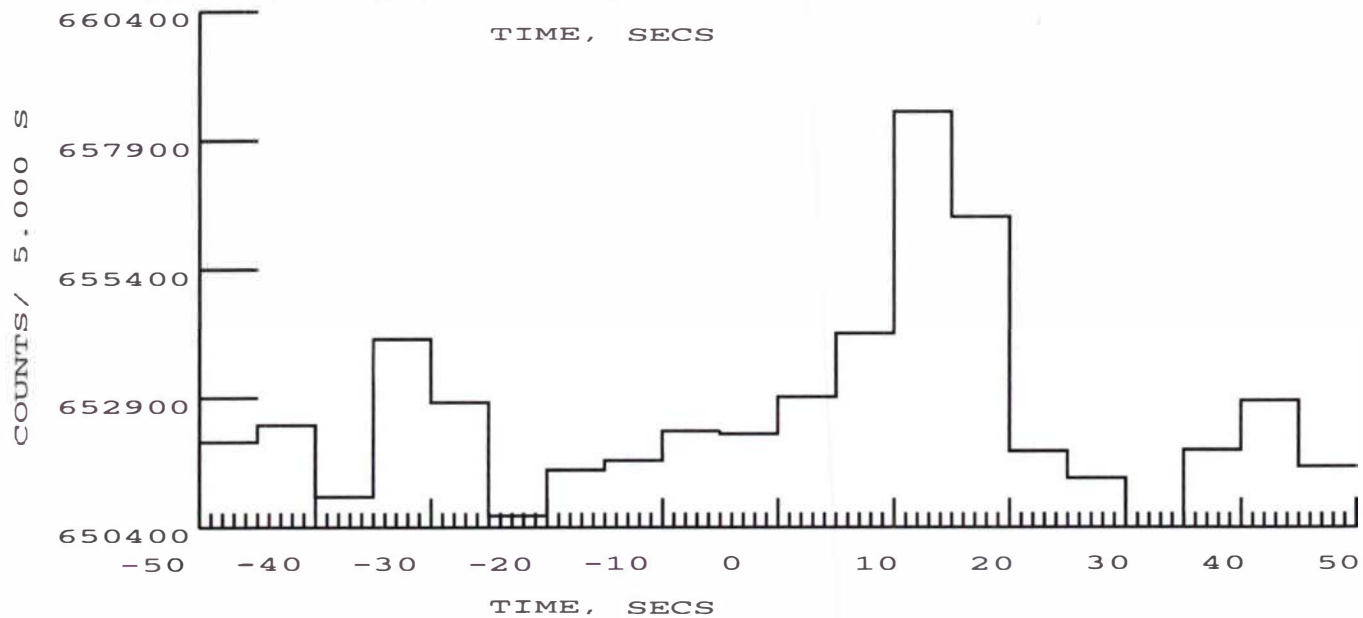
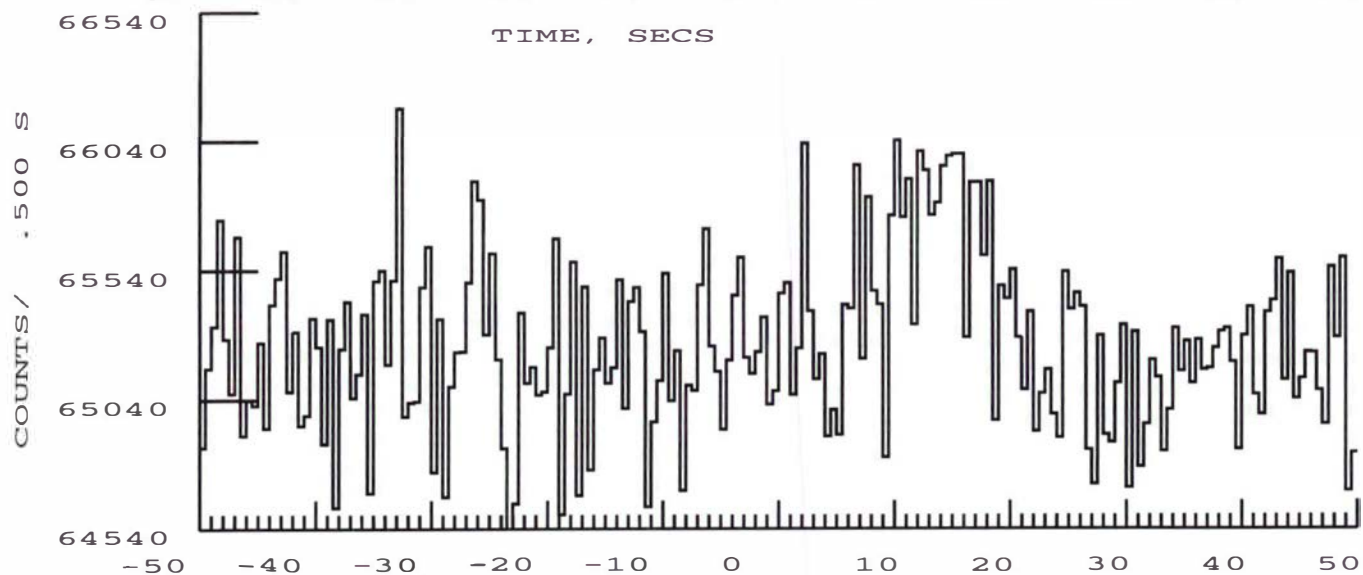
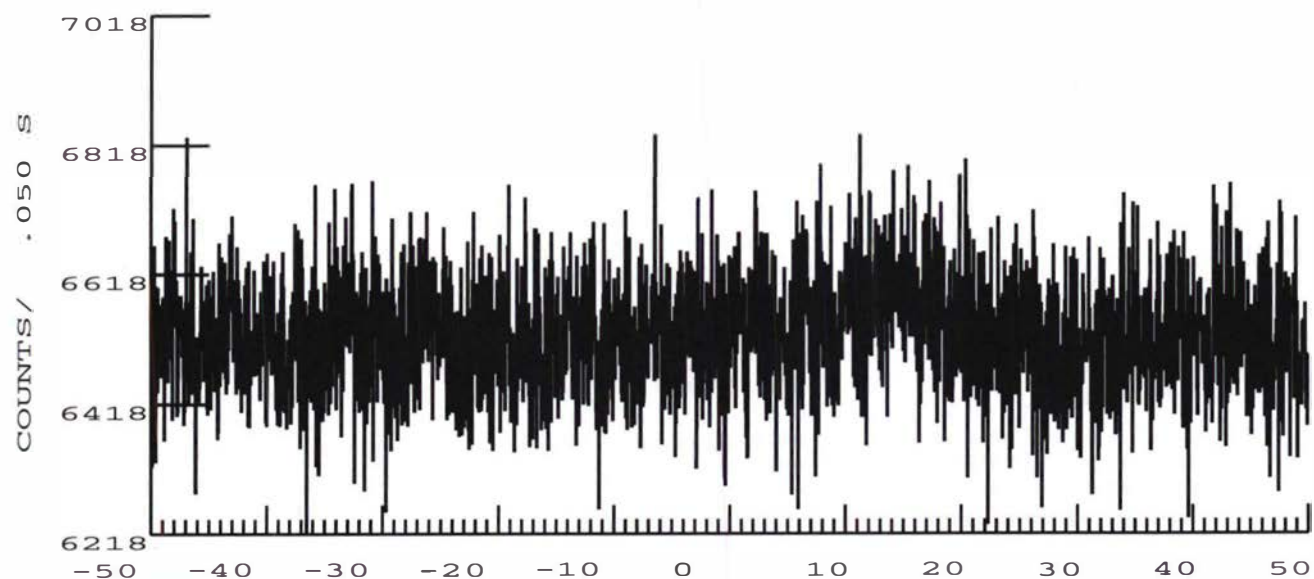
64164.670



27/01/20

50-3000 keV





Subject: BAT lightcurve for trigger at 200127_1811

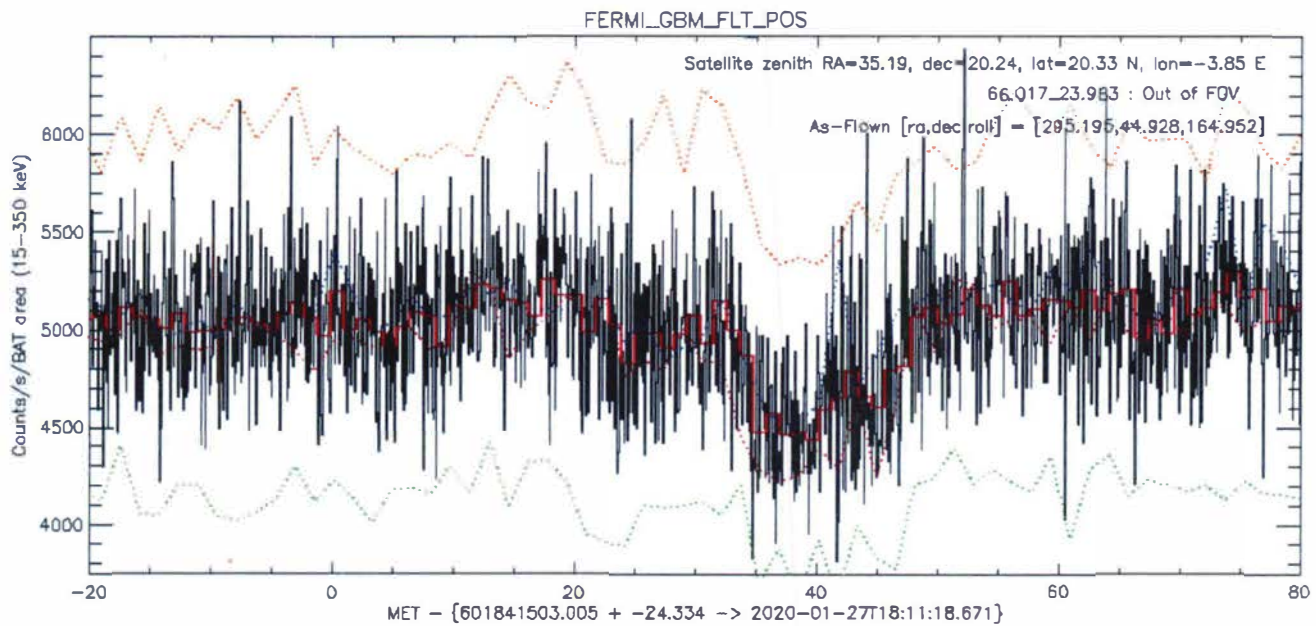
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/27/2020, 4:19 PM

To: aaron.tohu@gmail.com, 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/200127_1811.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601841503.005 -s 66.017_23.983
Swift Zenith(RA,dec):      35.19, 20.24
Swift Location(lon,lat,alt): -3.85 E, 20.33 N, 544 km
Time(MET + UTCF -> UT):    601841503.005 + -24.334 -> 2020-01-27T18:11:18.671
YYMMDD_SOD:                200127_65478.671      DOY=027
Obs Sequence Number:        00952791000
Obs Target Name:
Obs Date and Times:          2020-01-27 17:28:35 - 18:11:48
Obs Pointing(ra,dec,roll):    295.195, 44.928, 164.95
66.017_23.983_imageloc (boresight_dist, angle): (98, 149)
66.017_23.983_exposure (cm² cos adjusted): 0
66.017_23.983_altitude: 84 (up)
```

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

—Attachments:

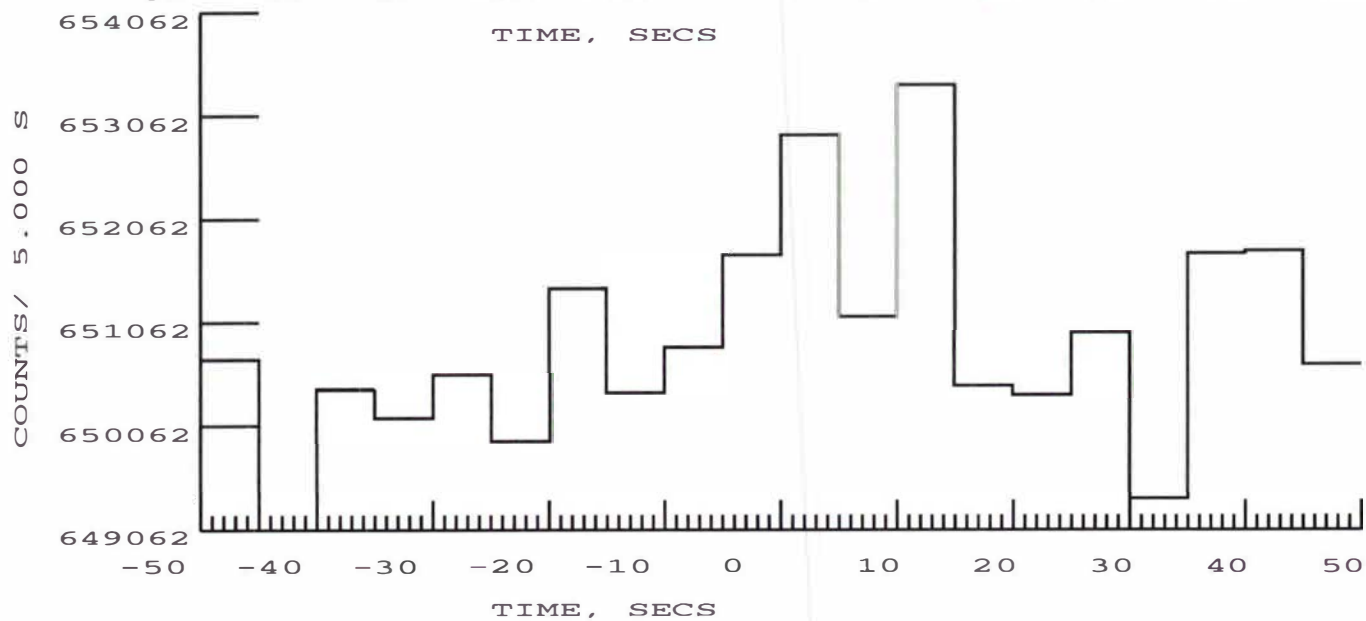
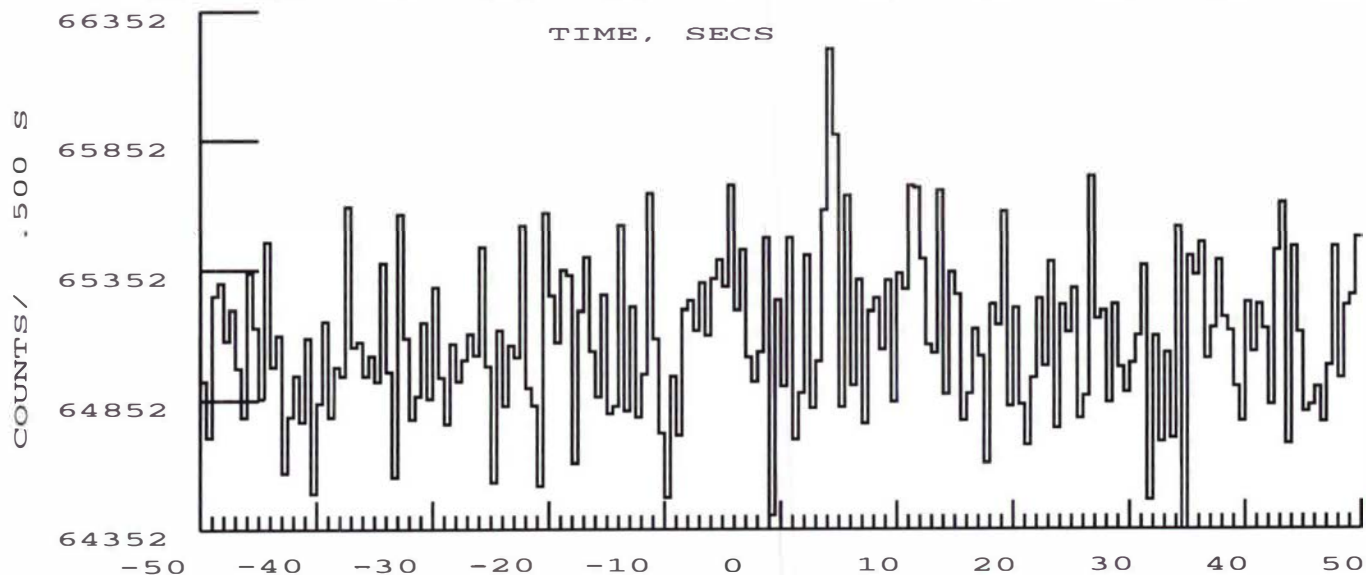
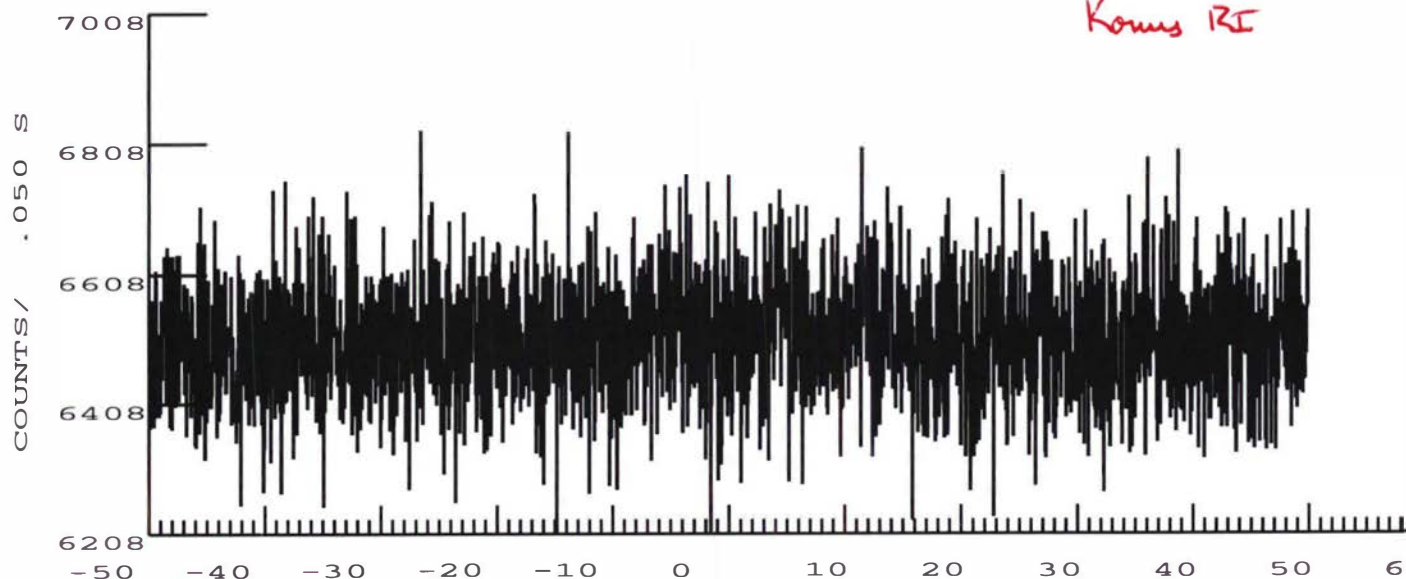
/tmp/swift/200127_1811_bat64ms_ipn

87.1 KB

/tmp/swift/200127_1811.png

23.1 KB

Konus RE



Subject: Fermi-LAT-ANTARES coincidence

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

Date: 1/28/2020, 5:02 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26915

SUBJECT: Fermi-LAT-ANTARES coincidence

DATE: 20/01/28 13:01:29 GMT

FROM: Colin F Turley at AMON, Penn State U <cft114@psu.edu>

 ANTARES 200127A: AMON + ANTARES Identification of a Low False-Alarm
 Rate High-Energy Neutrino + Fermi LAT Coincidence

C. F. Turley and D. B. Fox (for AMON <https://www.amon.psu.edu/>) +
 M. Ageron (CNRS/CPPM) A.Coleiro (Univ. de Paris/APC), D. Dornic
 (CNRS/CPPM), A. Kouchner (Univ. de Paris/APC) (for ANTARES) report:

"During operations of the AMON ANTARES neutrino + Fermi LAT gamma-ray
 multimessenger alerts, at 2020 January 27 at 18:52:02.9 UT, we identified
 a low false alarm-rate (1 per 4.04 years) coincidence between a single
 ANTARES neutrino and two Fermi LAT photons. An alert was automatically
 generated and, after human review, distributed to AMON partner
 facilities at 2020 January 28, 02:09 UT. We are now reporting this
 alert publicly. Alert details are as follows:

Date: 27 January 2020
 Time: 18:52:02.95 UT
 R.A.: 16:01:47.1 (J2000)
 Dec.: -52:57:28.6 (J2000)
 r_90: 0.233 deg (90%-containment)
 FAR: 0.25 yr⁻¹

ANTARES 200127A is a high-energy neutrino-induced muon event detected
 by ANTARES (Ageron et al. 2011) with coordinates R.A. 16:16:33,
 Dec. -53:36:46.8 (J2000) at 18:55:05 UT, and a p-value based on the
 number of hits used for the reconstruction of 0.433, which relates
 to the deposited energy.

The minimum false alarm rate coincidence from our analysis associates
 this neutrino with two Fermi LAT photons. The first photon was detected at
 18:49:25.9 UT with coordinates R.A. 16:01:47.52, Dec. -52:57:19.44 (J2000)
 and energy 33.28 GeV. The second photon was detected at 18:51:37.9 UT with
 coordinates R.A. 16:00:34.08, Dec -52:37:48.00 (J2000) and energy 2.18 GeV.
 The best-fit localization and uncertainty for a point source yielding the
 ANTARES 200127 neutrino and the photon is as quoted above. The false alarm
 rate for ANTARES neutrino + Fermi LAT gamma-ray coincidences of this quality
 or better is 1 per 4.036 years. We notice that this Fermi-LAT-ANTARES
 coincidence is spatially matching the 50% credible region of the GW
 event S200128d but preceded it by approximately 7.5 hours.

Details of the ANTARES + Fermi LAT coincidence search procedures are
 provided in Ayala Solares et al. (AMON + ANTARES) 2019 (ApJ 886 (2019)
 98, ArXiv:1904.06420). False alarm rates are established from 73,000
 years of simulated observation and take into account the point spread
 functions of the associated neutrino + photons, the known backgrounds
 at this sky position, the energy of the neutrino, and the energies of
 the Fermi LAT photons (within broad ranges).

The AMON alert for this coincidence is provided in GCN Alert format
 below."

////////////////////////////////////
 TITLE: GCN/AMON NOTICE
 NOTICE_DATE: Mon 27 Jan 2020 18:52:02.95 UT
 NOTICE_TYPE: Fermi-LAT ANTARES coincidence
 AMON_NUM: 1441204786
 SRC_RA: 240.4463d {+16h 01m 47.1s} (J2000),
 240.8313d {+16h 03m 19.5s} (current),
 239.4871d {15:57:56.9} (1950)
 SRC_DEC: -52.9579d {-52d 57' 29"} (J2000),
 -53.0125d {-53d 00' 45"} (current),

-52.8186d {-52d 49' 07"} (1950)

SRC_ERROR90: 0.233 [deg, stat, 90% containment]
DISCOVERY_DATE: 18875 TJD; 27 DOY; 20/01/27 (yy/mm/dd)
DISCOVERY_TIME: 67922 SOD {18:52:02.95} UT
REVISION: 0
DELTA_T: 339.09 [sec]
SIGMA_T: 139.56 [sec]
FAR: 0.2478 [yr⁻¹]
SUN_POSTN: 309.754d {+20h 39m 01s} -18.431d {-18d 25' 52"}
SUN_DIST: 62.98 [deg] Sun_angle= 4.20 [hr] (West of Sun)
MOON_POSTN: 346.433d {+23h 05m 44s} -10.925d {-10d 55' 31"}
MOON_DIST: 90.67 [deg]
GAL_COORDS: 329.416, +0.233 [deg] galactic lon,lat of the event
COMMENTS: ALERT FROM FERMI-LAT ANTARES COINCIDENCE STREAM

+++++

Colin F. Turley
860-685-1260 Cell
cft114@psu.edu email

Department of Physics, Penn State University
104 Davey Lab, Box 52
University Park, PA 16802-6300

v01

21.716

28/01/2020

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

10000

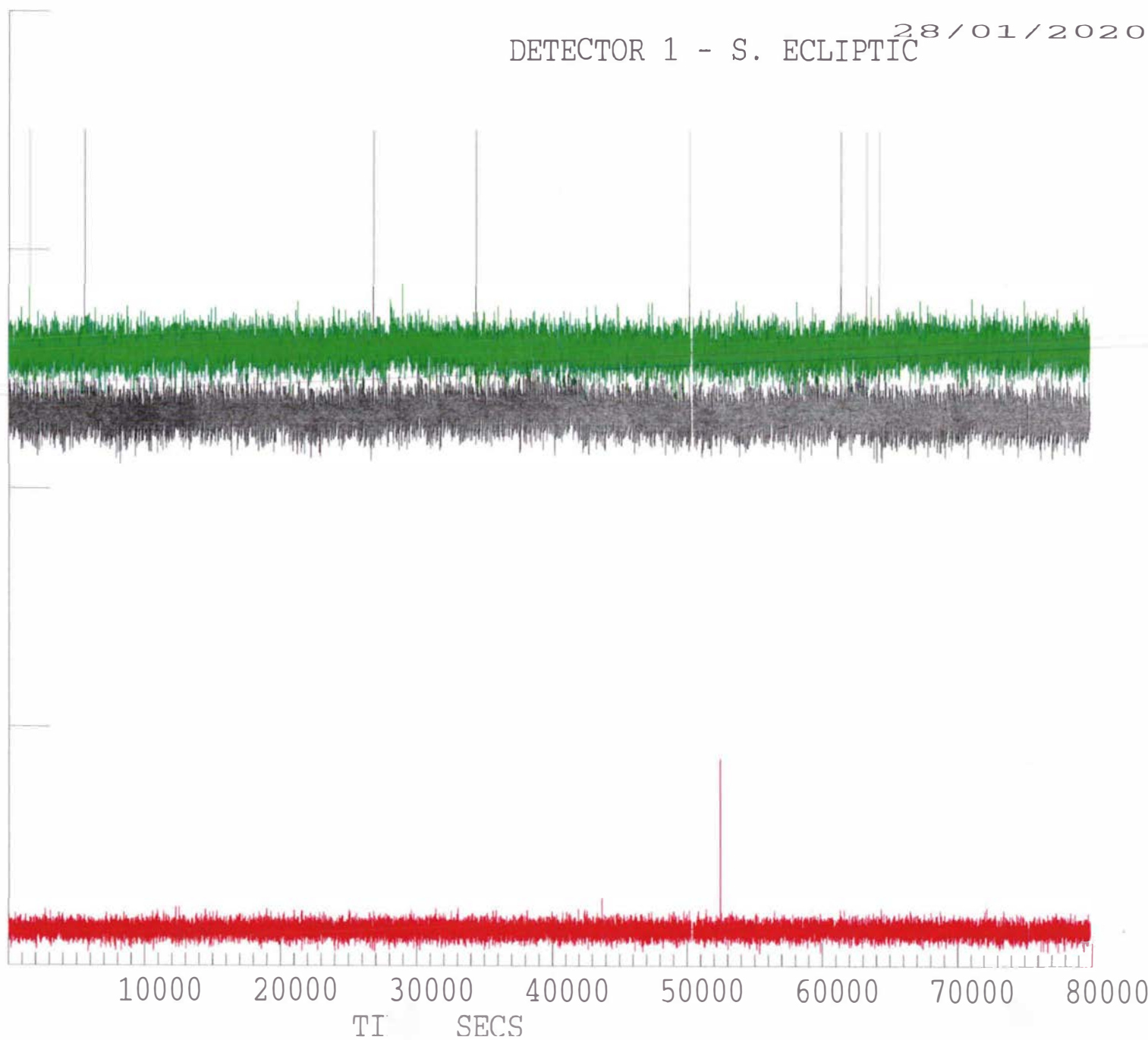
20000

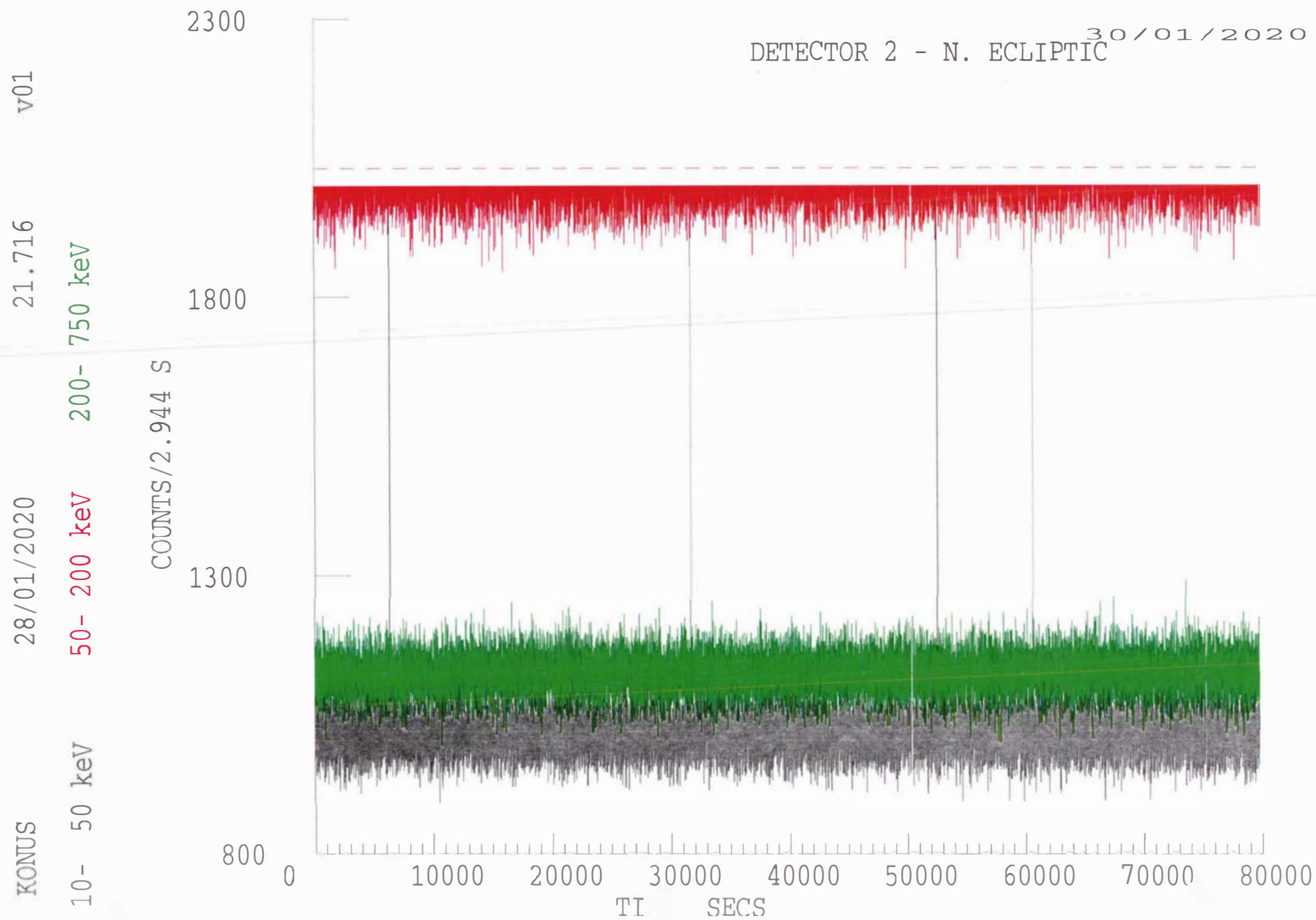
TI

SECS

DETECTOR 1 - S. ECLIPTIC

28/01/2020





Subject: LIGO/Virgo S200128d: Identification of a GW compact binary merger candidate
From: GCN Circulars <gcnirc@capella2.gsfc.nasa.gov>
Date: 1/27/2020, 6:57 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26906
SUBJECT: LIGO/Virgo S200128d: Identification of a GW compact binary merger candidate
DATE: 20/01/28 02:56:16 GMT
FROM: Erik Katsavounidis at MIT <kats@ligo.mit.edu>

The LIGO Scientific Collaboration and the Virgo Collaboration report:

We identified the compact binary merger candidate S200128d during real-time processing of data from LIGO Hanford Observatory (H1) and LIGO Livingston Observatory (L1) at 2020-01-28 02:20:11.903 UTC (GPS time: 1264213229.903). The candidate was found by the PyCBC Live [1], CWB [2], MBTAOnline [3], and GstLAL [4] analysis pipelines.

S200128d is an event of interest because its false alarm rate, as estimated by the online analysis, is 1.6×10^{-8} Hz, or about one in 1 year, 11 months. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S200128d>

The classification of the GW signal, in order of descending probability, is BBH (97%), Terrestrial (3%), BNS (<1%), NSBH (<1%), or MassGap (<1%).

Assuming the candidate is astrophysical in origin, the probability that the lighter compact object has a mass < 3 solar masses (HasNS) is <1%. Using the masses and spins inferred from the signal, the probability of matter outside the final compact object (HasRemnant) is <1%.

Two sky maps are available at this time and can be retrieved from the GraceDB event page:

- * bayestar.fits.gz,0, an initial localization generated by BAYESTAR [5], distributed via GCN notice about 3 minutes after the candidate event time.

- * bayestar.fits.gz,1, an initial localization generated by BAYESTAR [5], distributed via GCN notice about 9 minutes after the candidate event time.

The preferred sky map at this time is bayestar.fits.gz,1. For the bayestar.fits.gz,1 sky map, the 90% credible region is 2521 deg². Marginalized over the whole sky, the a posteriori luminosity distance

estimate is 4031 ± 1241 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] Klimentenko et al. PRD 93, 042004 (2016)
- [3] Adams et al. CQG 33, 175012 (2016)
- [4] Messick et al. PRD 95, 042001 (2017)
- [5] Singer & Price PRD 93, 024013 (2016)

Re: BAT lightcurve for trigger at 200128_0220

Subject: Re: BAT lightcurve for trigger at 200128_0220

From: Aaron Tohuvavohu <aaron.tohu@gmail.com>

Date: 1/28/2020, 9:35 AM

To: "<palmer+automatic_lightcurve@lanl.gov>" <palmer+automatic_lightcurve@lanl.gov>

CC: IPN <ipn@ssl.berkeley.edu>, David Palmer <dmopalmer@gmail.com>, vestrand@lanl.gov, mkippen@lanl.gov, gbm-burst-advocate@lists.nasa.gov, bat_team@bigbang.gsfc.nasa.gov

This weak spike at $t_0 \sim 14$ s with multiple bins apparently above bkg is entirely due to a single noisy detector.

On Tue, Jan 28, 2020, 11:45 AM <palmer+automatic_lightcurve@lanl.gov> wrote:

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

```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601870836.240
Swift Zenith(RA,dec): 77.32, 12.63
Swift Location(lon,lat,alt): -84.27 E, 12.65 N, 547 km
Time(MET + UTCF -> UT): 601870836.240 + -24.336 -> 2020-01-28T02:20:11.904
YYMMDD_SOD: 200128_08411.904 DOY=028
Obs Sequence Number: 00037216006
Obs Target Name: MASER 024240.7-0000
Obs Date and Times: 2020-01-28 01:59:37 - 02:29:34
Obs Pointing(ra,dec,roll): 40.666, 0.035, 242.89
```

--

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

TSPA -- Automatically generated plot of publicly-available scientific data

BAT lightcurve for trigger at 200128_0220

Subject: BAT lightcurve for trigger at 200128_0220

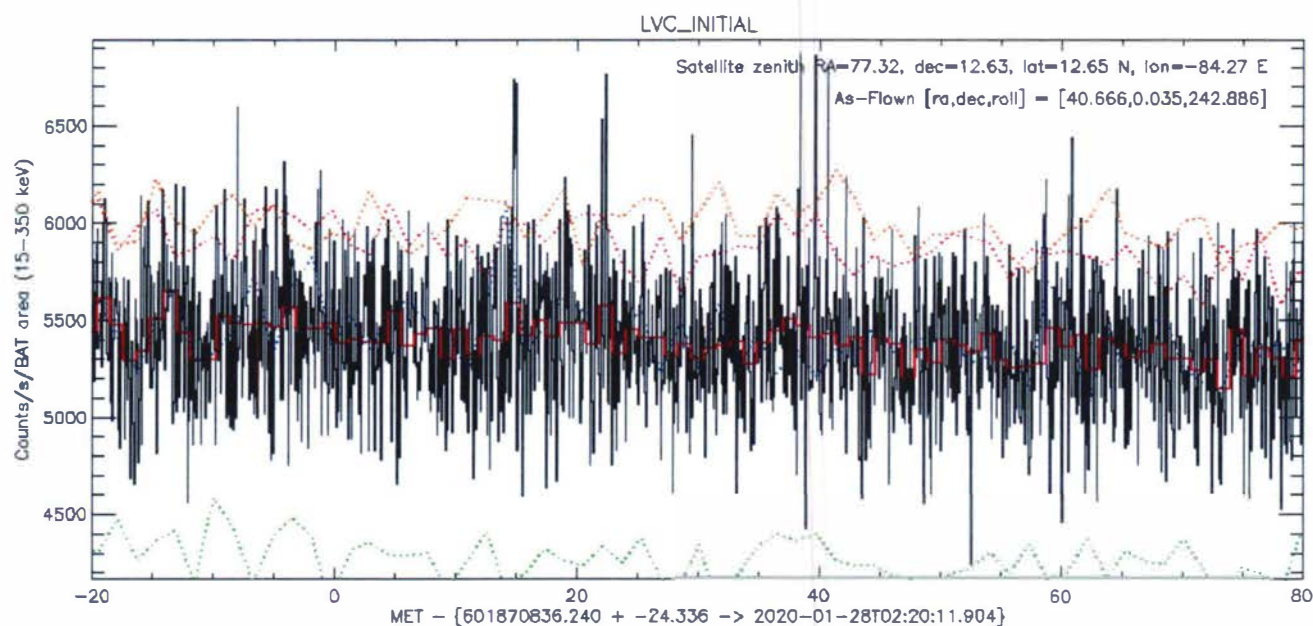
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/28/2020, 8:45 AM

To: aaron.tohu@gmail.com, 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/200128_0220.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601870836.240
Swift Zenith(RA,dec):      77.32, 12.63
Swift Location(lon,lat,alt): -84.27 E, 12.65 N, 547 km
Time(MET + UTCF -> UT):   601870836.240 + -24.336 -> 2020-01-28T02:20:11.904
YYMMDD_SOD:               200128_08411.904      DOY=028
Obs Sequence Number:      00037216006
Obs Target Name:          MASER 024240.7-0000
Obs Date and Times:       2020-01-28  01:59:37 - 02:29:34
Obs Pointing(ra,dec,roll): 40.666, 0.035, 242.89
```

--
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/200128_0220_bat64ms_ipn	87.1 KB
/tmp/swift/200128_0220.png	23.1 KB

A

FERMI

28/01/20

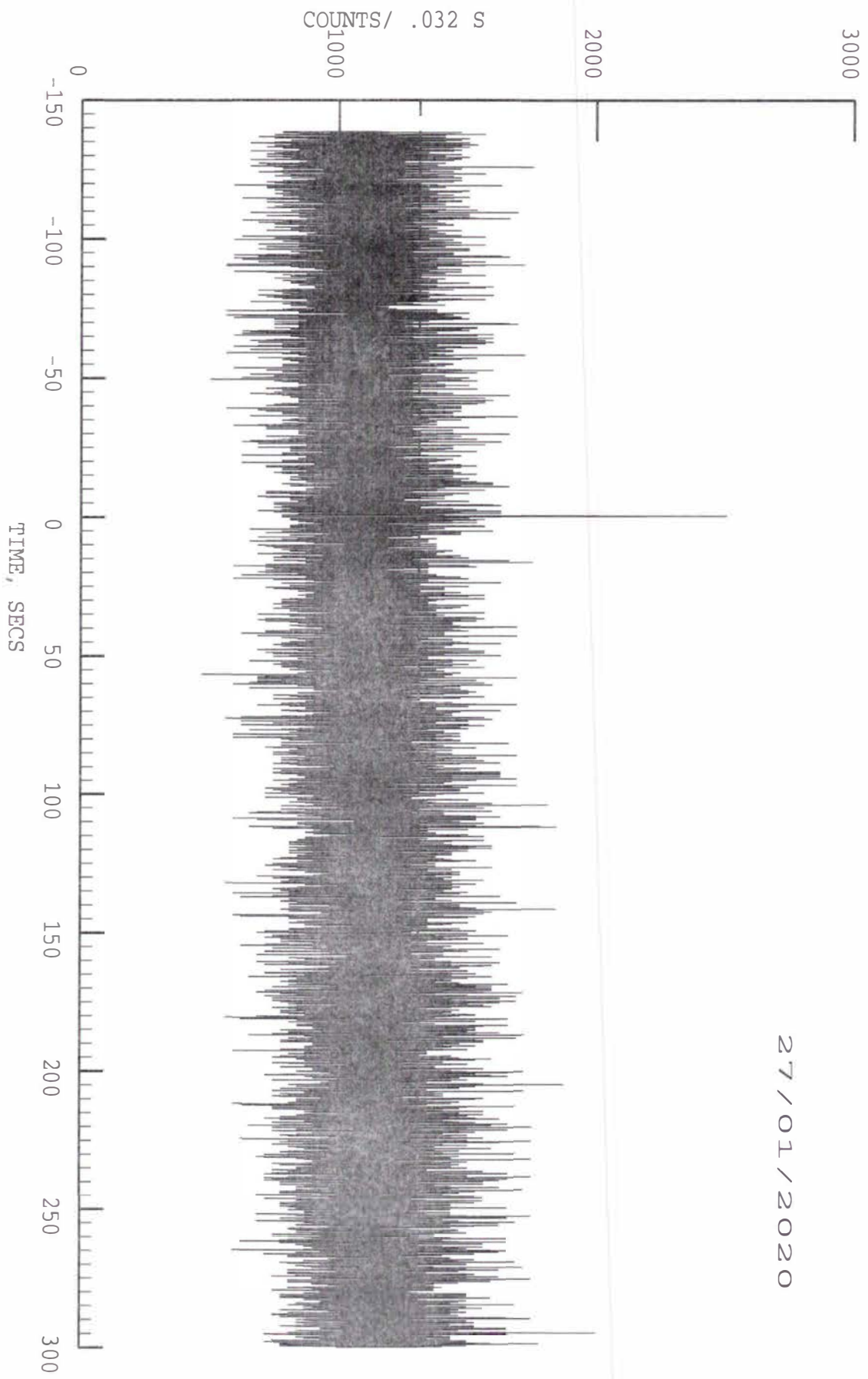
13205.775

03:40:05.775

26- 293 keV

SPI NO

158.6 41.6 18.9

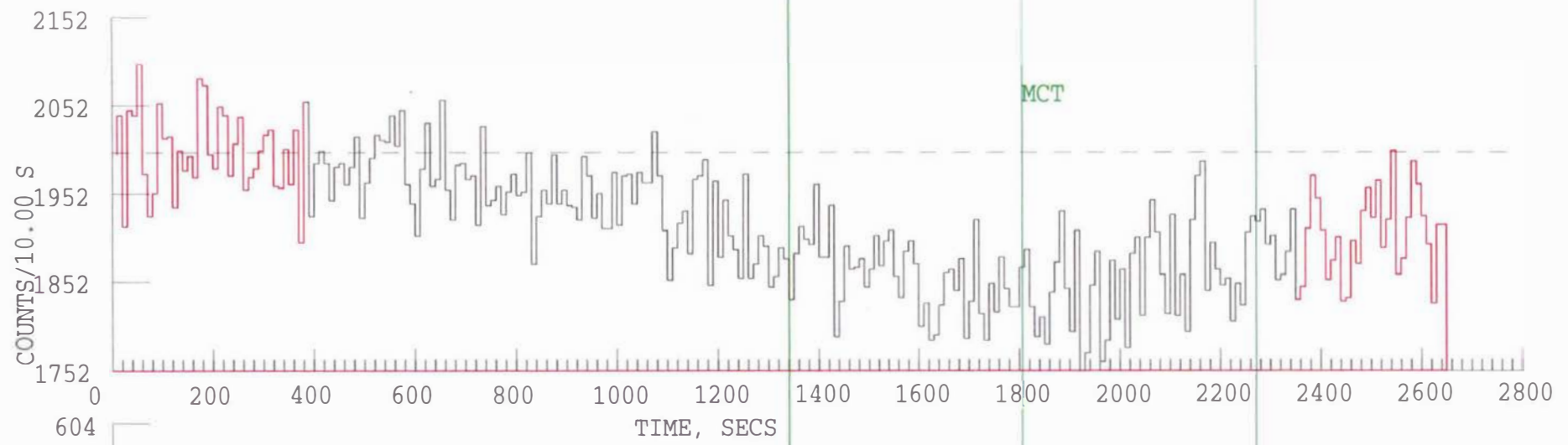


27/01/2020

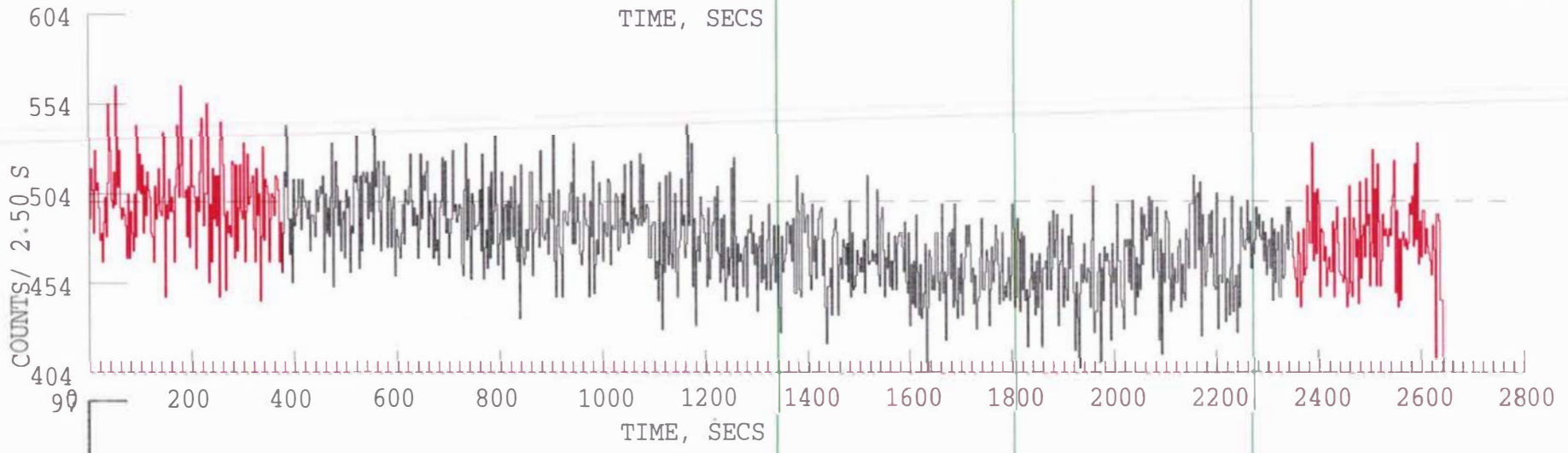
A

03/02/2020

03:17:24.059

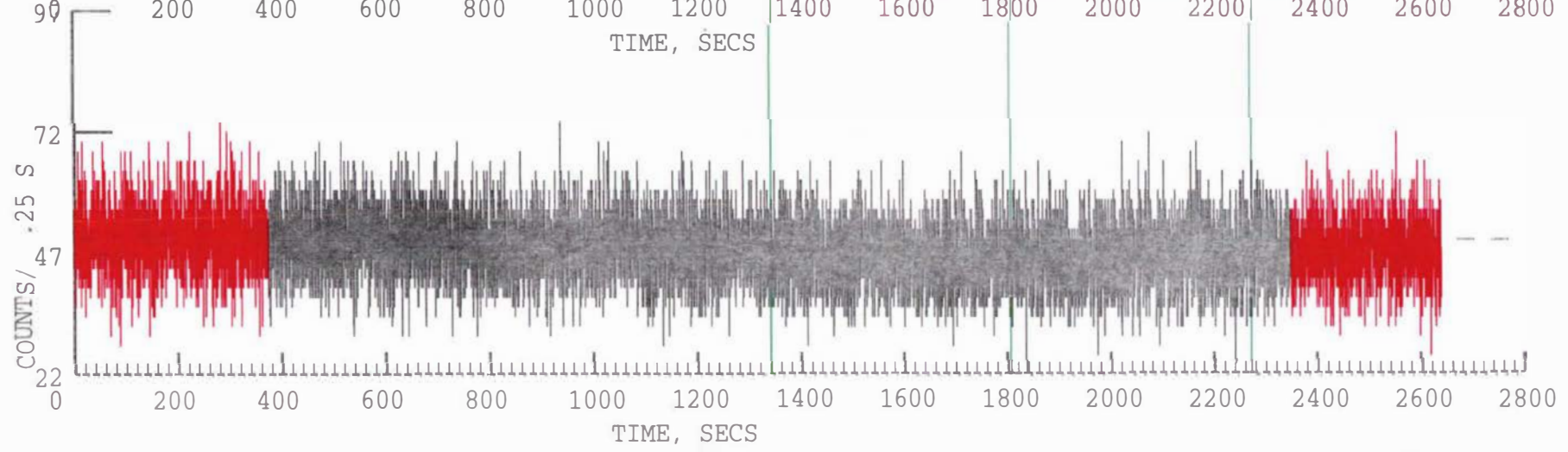


11844.059



28/01/20

50-3000 keV



Subject: BAT lightcurve for trigger at 200128_0340

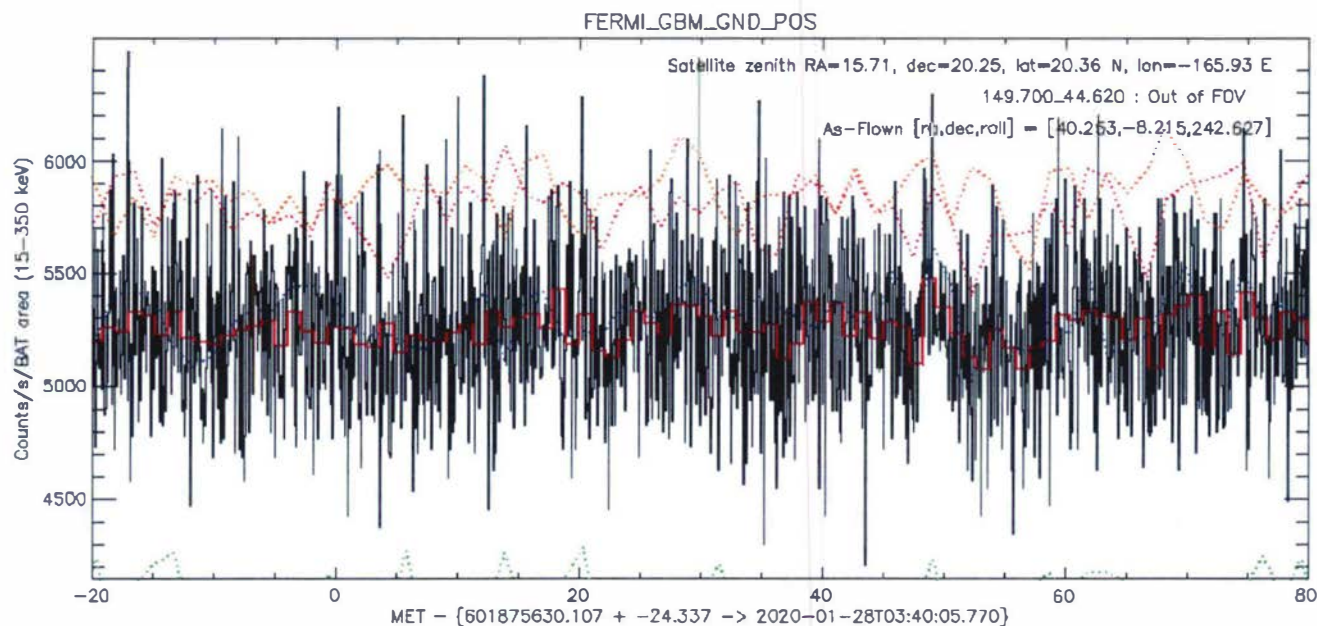
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/28/2020, 8:45 AM

To: aaron.tohu@gmail.com, 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/200128_0340.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601875630.107 -s 149.700_44.620
Swift Zenith(RA,dec):      15.71, 20.25
Swift Location(lon,lat,alt): -165.93 E, 20.36 N, 543 km
Time(MET + UTCF -> UT):    601875630.107 + -24.337 -> 2020-01-28T03:40:05.770
YYMMDD_SOD:                200128_13205.770      DOY=028
Obs Sequence Number:        00030874018
Obs Target Name:             NGC 1052
Obs Date and Times:          2020-01-28 03:36:37 - 03:53:33
Obs Pointing(ra,dec,roll):   40.253, -8.215, 242.63
149.700_44.620_imageloc (boresight_dist, angle): (110, 73)
149.700_44.620_exposure (cm2 cos adjusted): 0
149.700_44.620_altitude: 10 (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/200128_0340.png	23.0 KB
/tmp/swift/200128_0340_bat64ms_ipn	87.1 KB

B

From kevinhurley+caf_ =khurley2=ssl.berkeley.edu@berkeley.edu Tue Jan 28 07:31:52
Date: Tue, 28 Jan 2020 10:31:48 -0500
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
To: khurley@ssl.berkeley.edu
Subject: GRB 200128B: AGILE/MCAL detection of a burst

SPI N/O

TITLE: GCN CIRCULAR
NUMBER: 26917
SUBJECT: GRB 200128B: AGILE/MCAL detection of a burst
DATE: 20/01/28 15:31:14 GMT
FROM: Alessandro Ursi at INAF/IAPS <alessandro.ursi@gmail.com>

A. Ursi (INAF/IAPS), M. Tavani (INAF/IAPS, and Univ. Roma Tor Vergata), M. Cardillo, C. Casentini, G. Piano (INAF/IAPS), F. Lucarelli, C. Pittori, F. Verrecchia (SSDC, and INAF/OAR), A. Bulgarelli, V. Fioretti, N. Parmiggiani (INAF/OAS-Bologna), M. Pilia (INAF/OA-Cagliari), F. Longo (Univ. Trieste and INFN Trieste), report on behalf of the AGILE Team:

The AGILE mini-calorimeter (MCAL) detected a short hard burst at T0 = 2020-01-28 12:23:29.98 +/- 0.01 s (UTC).

44609

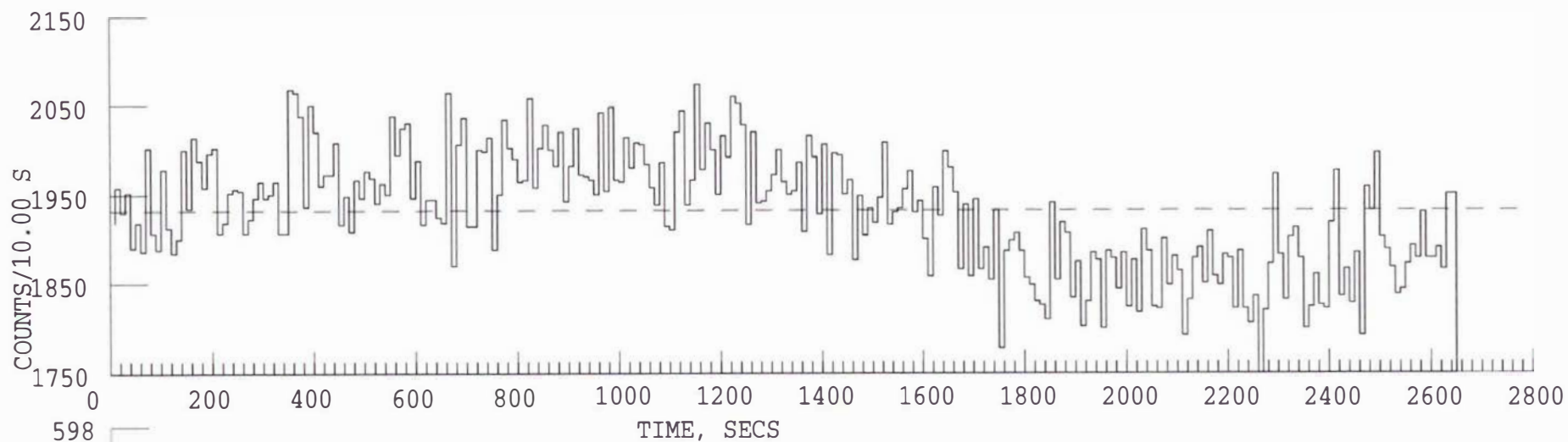
The event triggered the 64 ms MCAL logic timescale and lasted about 0.10 s, releasing a total number of ~90 counts in the detector (in the 0.4-100 MeV energy range), above an average background rate of ~500 counts / s.

The light curve shows a single peak and can be found at http://www.agilescienceapp.it/notices/GRB_066265_507299009.979947.png.

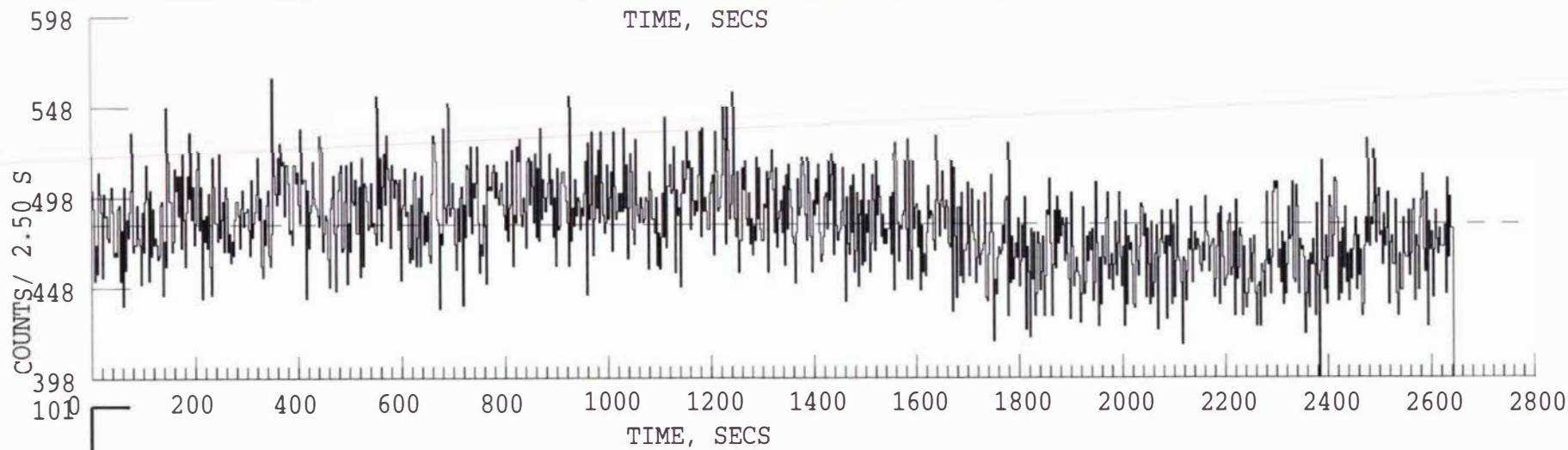
The AGILE-MCAL detector is a CsI detector with a 4 pi FoV, sensitive in the energy range 0.4-100 MeV. Additional analysis of AGILE data is in progress.

27/03/2020

12:01:23.505

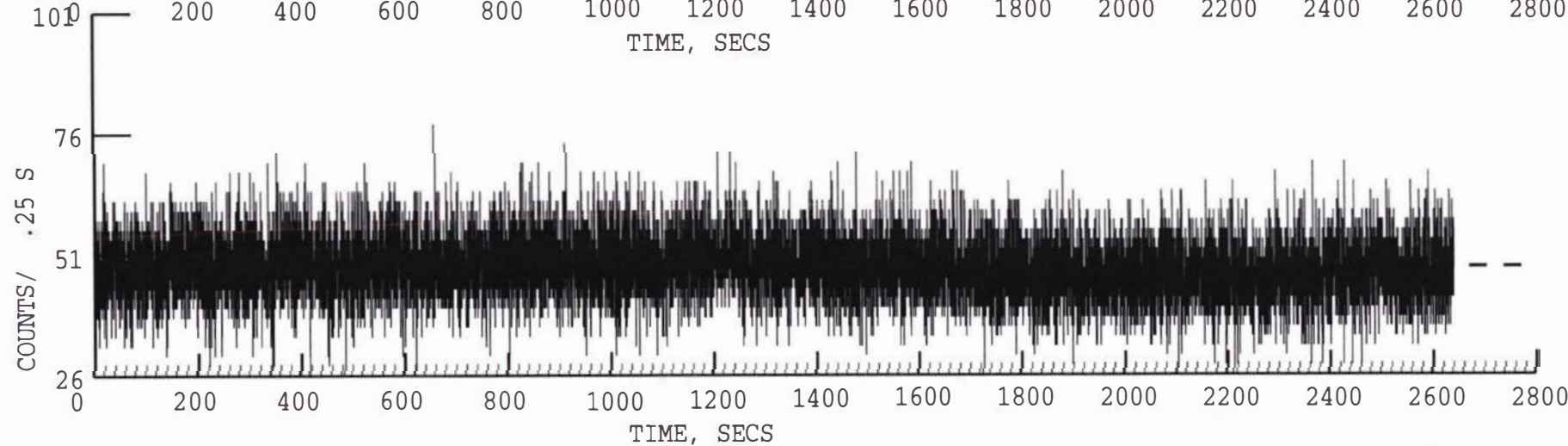


43283.505



28/01/20

50-3000 keV



v01

10.444

29/01/2020

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

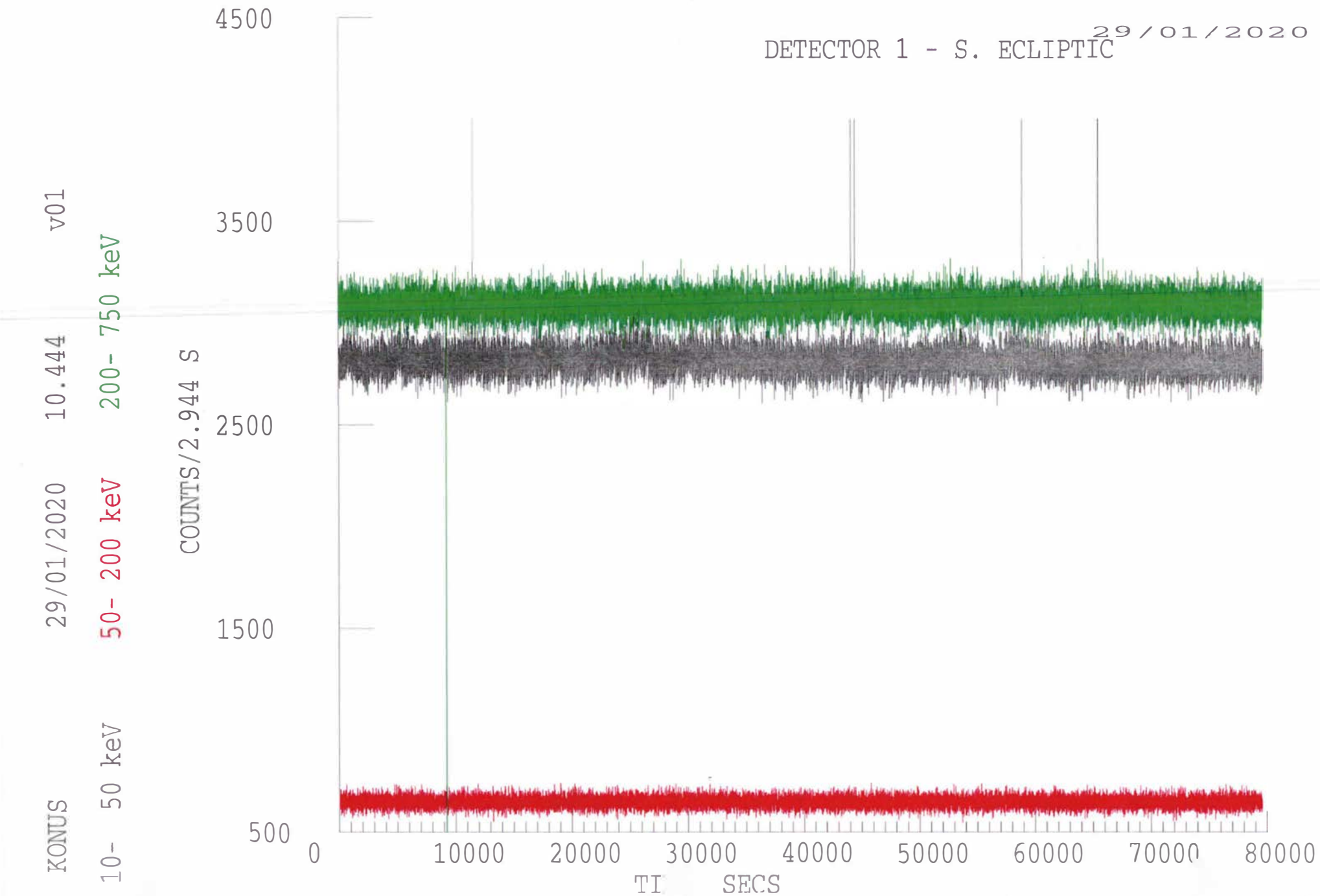
70000

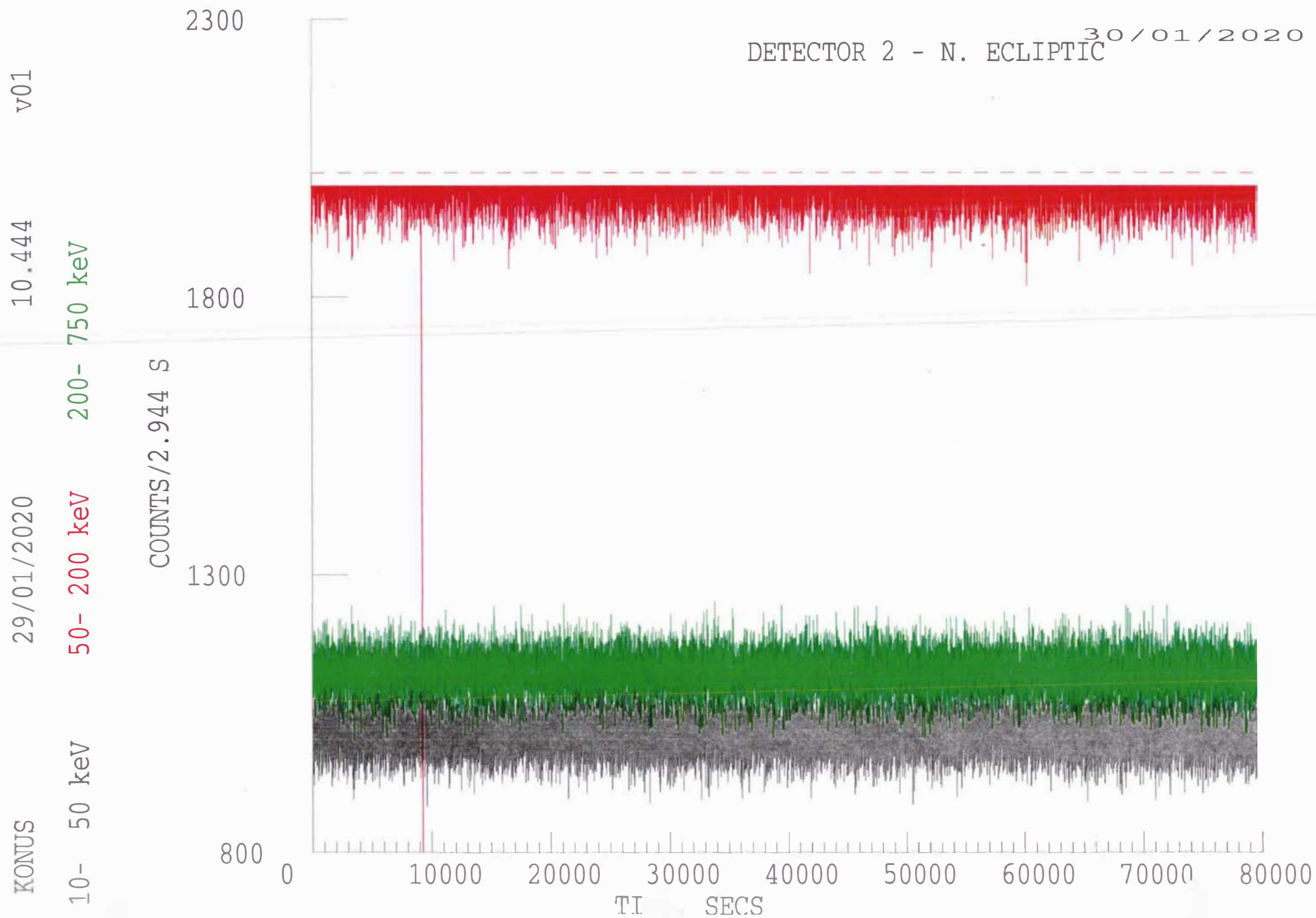
80000

TI SECS

DETECTOR 1 - S. ECLIPTIC

29/01/2020





Subject: LIGO/Virgo S200129m: Identification of a GW compact binary merger candidate
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 1/29/2020, 12:06 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26926
SUBJECT: LIGO/Virgo S200129m: Identification of a GW compact binary merger candidate
DATE: 20/01/29 08:05:31 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 S200129m during real-time processing of data from LIGO Hanford Observatory (H1), LIGO Livingston Observatory (L1), and Virgo Observatory (V1) at 2020-01-29 06:54:58.435 UTC (GPS time: 1264316116.435). The candidate was found by the GstLAL [1], CWB [2], PyCBC Live [3], MBTAOnline [4], and SPIIR [5] analysis pipelines.

Some scattering noise could be seen around the time of the event in Virgo data; follow-up studies are on-going. We will update the localization if warranted by offline analysis.

S200129m is an event of interest because its false alarm rate, as estimated by the online analysis, is $6.7e-32$ Hz, or about one in $1e23$ years. The event's properties can be found at this URL:

<https://gracedb.ligo.org/superevents/S200129m>

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

Assuming the candidate is astrophysical in origin, the probability that the lighter compact object has a mass < 3 solar masses (HasNS) is <1%. Using the masses and spins inferred from the signal, the probability of matter outside the final compact object (HasRemnant) is <1%.

Two sky maps are available at this time and can be retrieved from the GraceDB event page:

- * bayestar.fits.gz,0, an initial localization generated by BAYESTAR [6], distributed via GCN notice about 4 minutes after the candidate event time.

- * bayestar.fits.gz,1, an initial localization generated by BAYESTAR [6], distributed via GCN notice about 13 minutes after the candidate event time.

The preferred sky map at this time is bayestar.fits.gz,1. For the bayestar.fits.gz,1 sky map, the 90% credible region is 53 deg². Marginalized over the whole sky, the a posteriori luminosity distance estimate is 908 ± 202 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. PRO 95, 042001 (2017)
- [2] Klimentko et al. PRO 93, 042004 (2016)
- [3] Nitz et al. PRO 98, 024050 (2018)
- [4] Adams et al. CQG 33, 175012 (2016)
- [5] Qi Chu, PhD Thesis, The University of Western Australia (2017)
- [6] Singer & Price PRO 93, 024013 (2016)

Subject: BAT lightcurve for trigger at 200129_0654

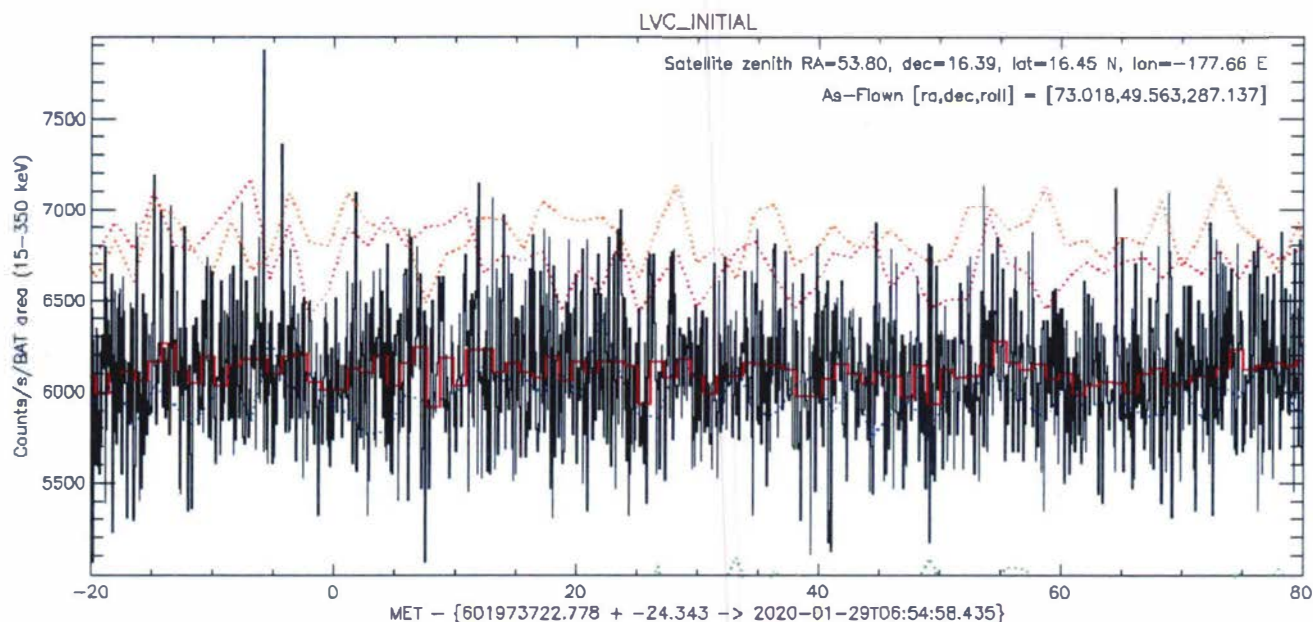
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/29/2020, 1:36 AM

To: aaron.tohu@gmail.com, 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/200129_0654.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601973722.778
Swift Zenith(RA,dec):      53.80, 16.39
Swift Location(lon,lat,alt): -177.66 E, 16.45 N, 544 km
Time(MET + UTCf -> UT):   601973722.778 + -24.343 -> 2020-01-29T06:54:58.435
YYMMDD_SOD:               200129_24898.435      DOY=029
Obs Sequence Number:      00035281014
Obs Target Name:          Swift J0452.2+4933
Obs Date and Times:       2020-01-29 06:37:37 - 07:03:32
Obs Pointing(ra,dec,roll): 73.018, 49.563, 287.14
```

--
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/200129_0654.png	21.0 KB
/tmp/swift/200129_0654_bat64ms_ipn	87.1 KB

FERMI

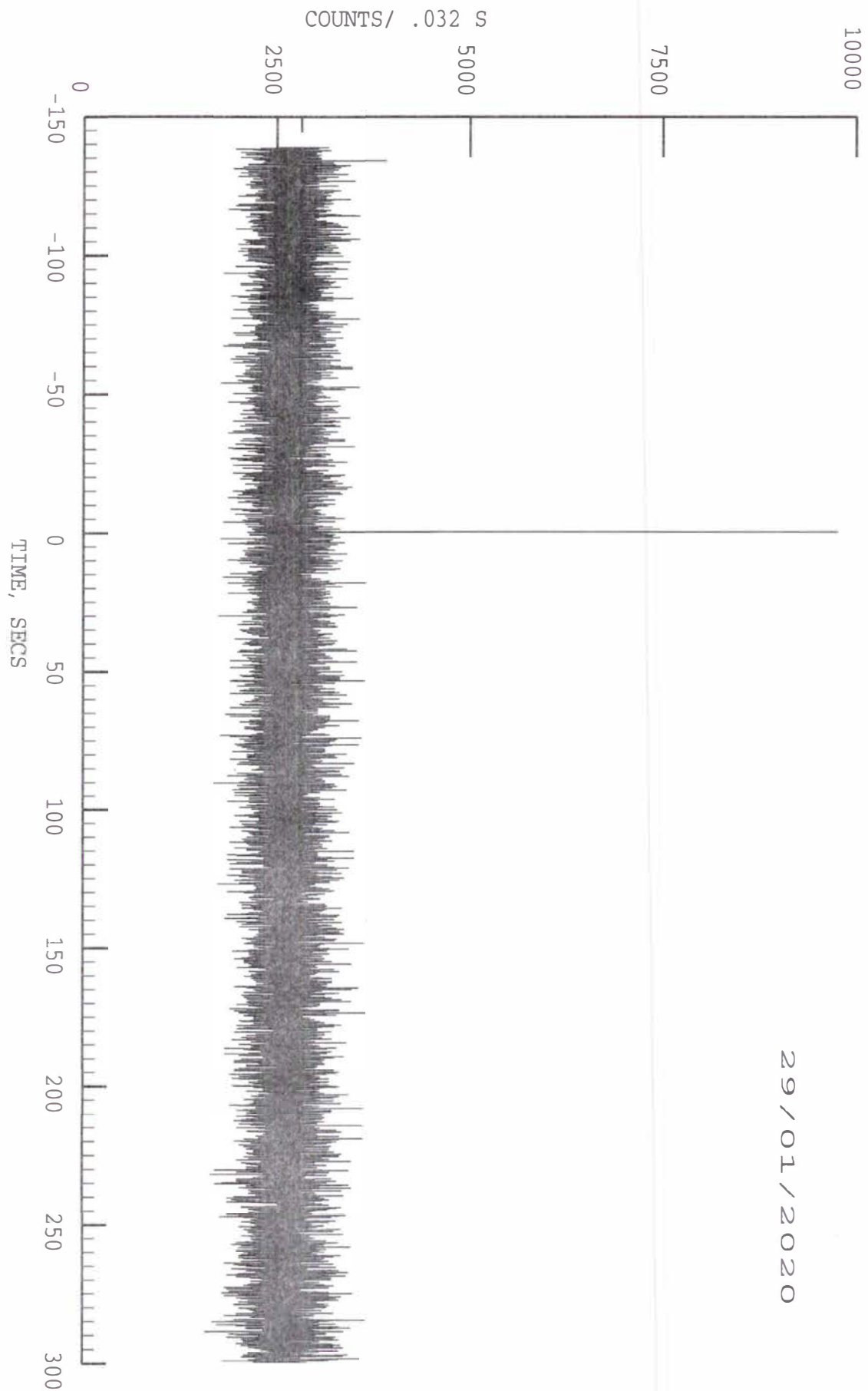
29/01/20

35324.182

09:48:44.182

26- 293 keV

346.3 -45 13.1 GRB

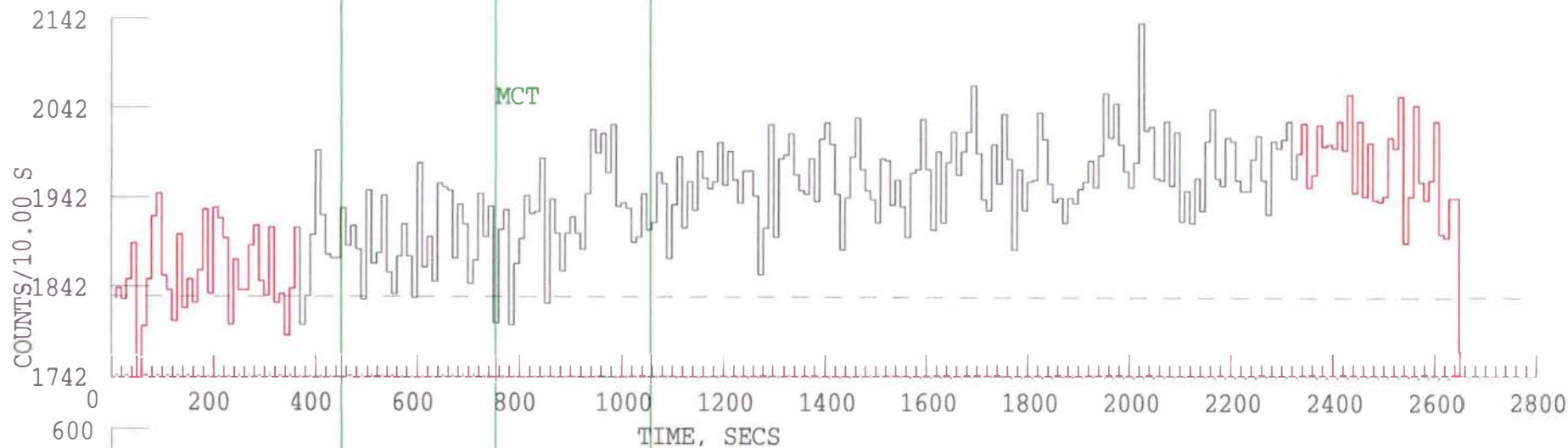


29 / 01 / 2020

30/01/2020

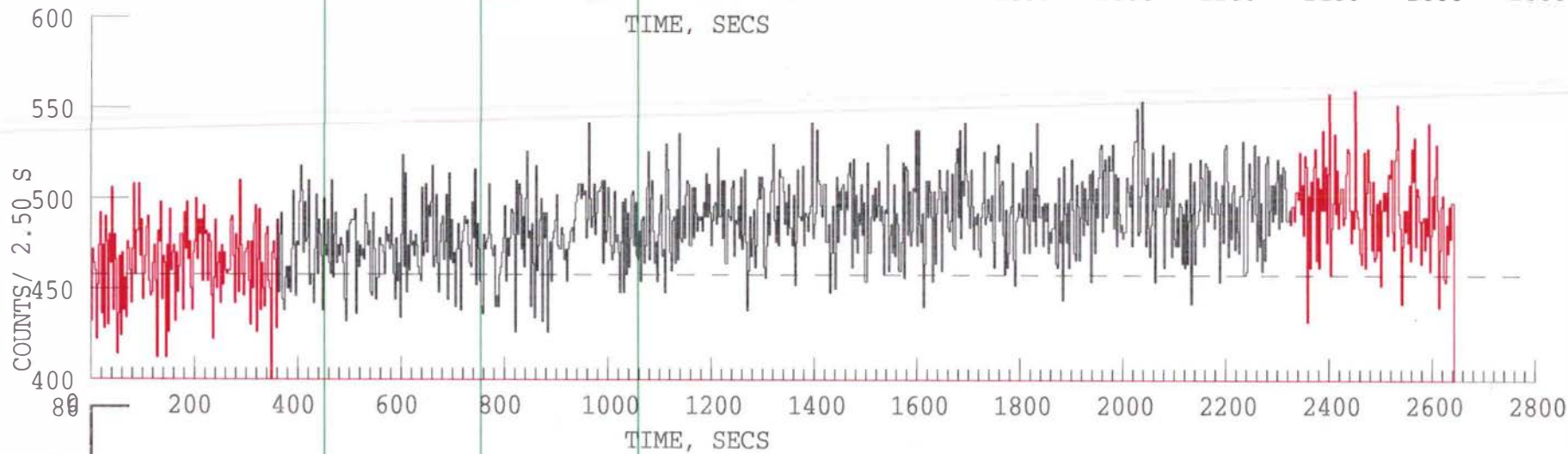
09:26:22.026

Overhead



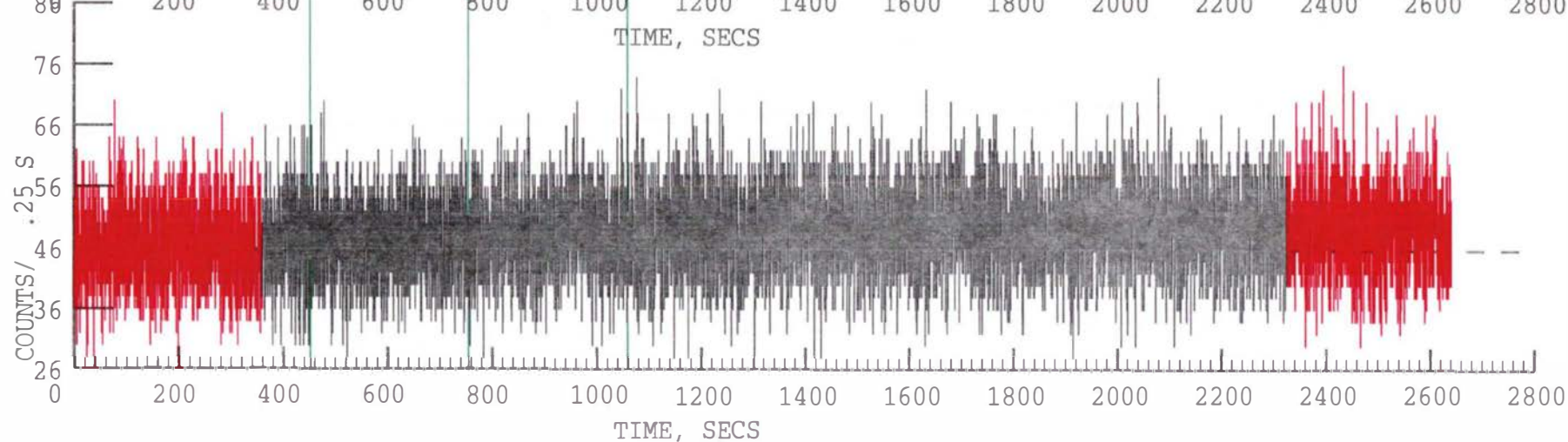
33982.026

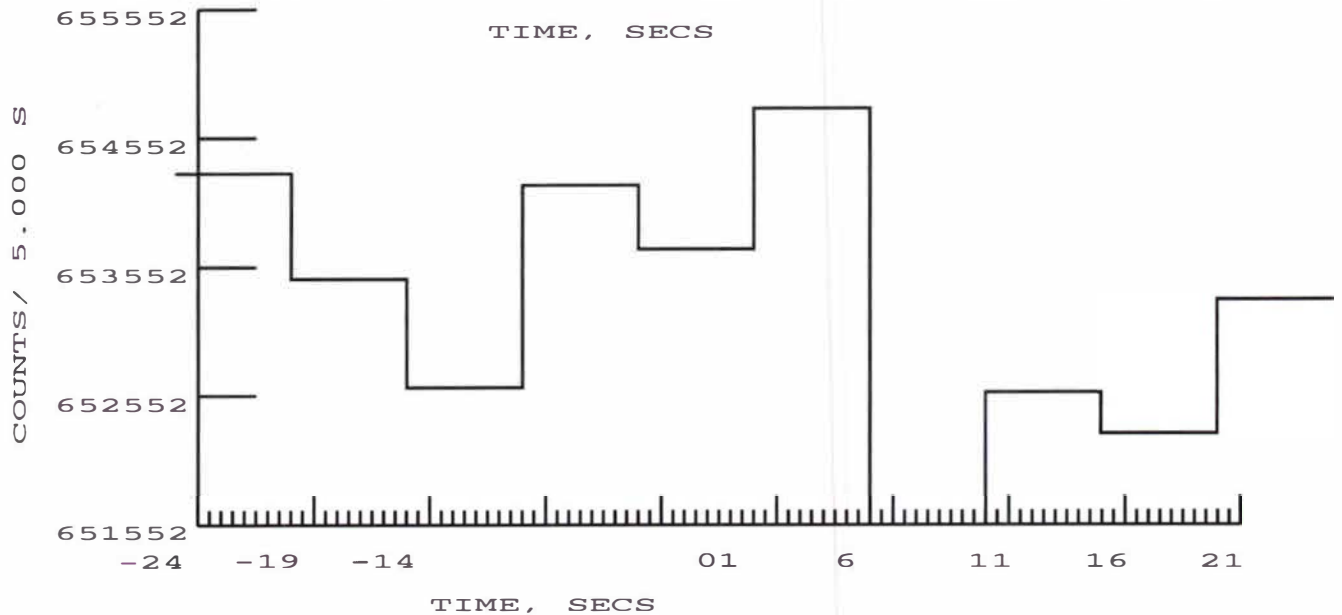
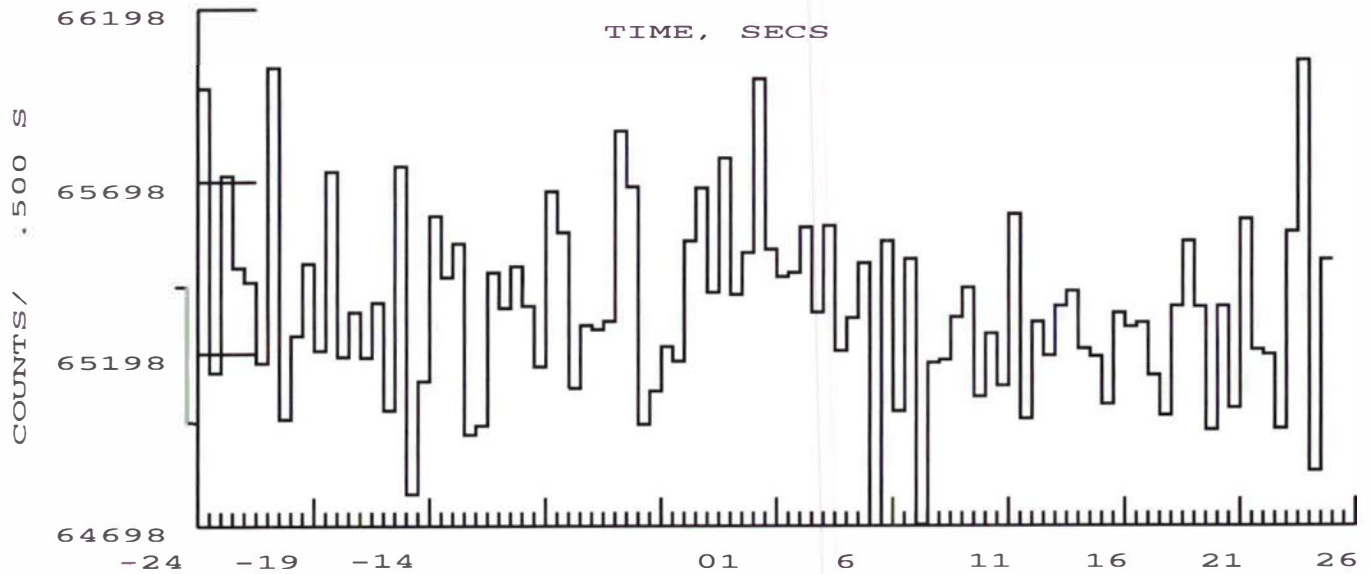
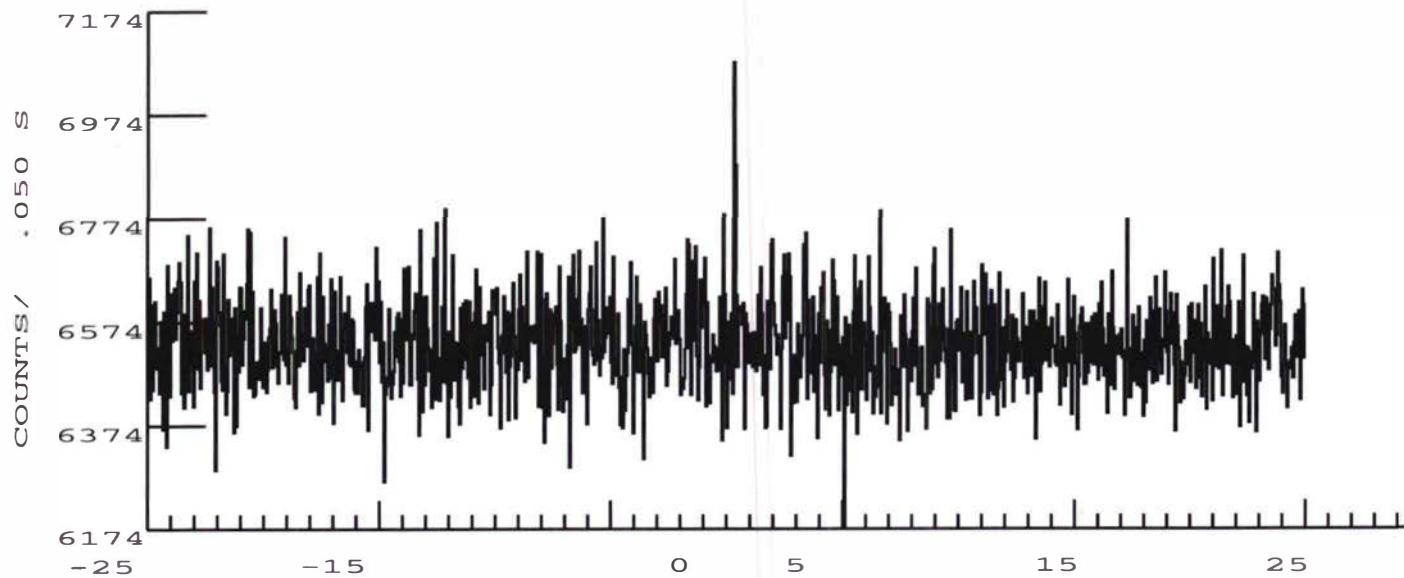
50-3000 keV



29/01/20

ODYSSEY





BAT lightcurve for trigger at 200129_0948

Subject: BAT lightcurve for trigger at 200129_0948

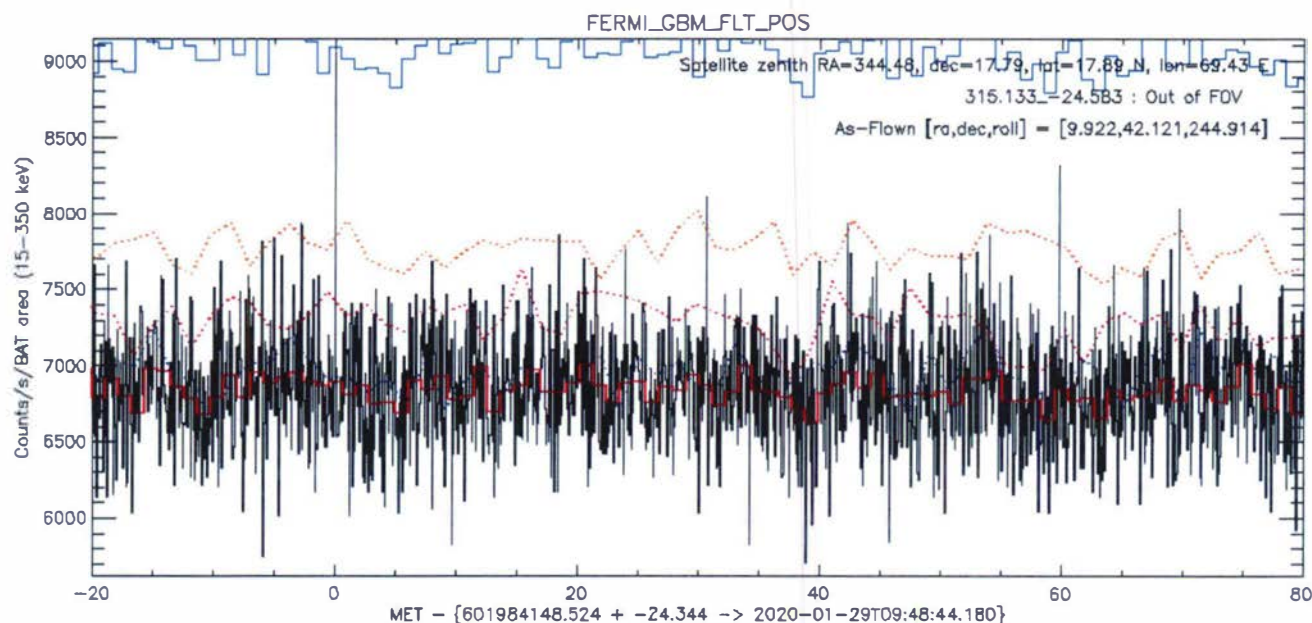
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/29/2020, 4:22 AM

To: aaron.tohu@gmail.com, 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/200129_0948.png



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 601984148.524 -s 315.133_-24.583
Swift Zenith(RA,dec):      344.48, 17.79
Swift Location(lon,lat,alt): 69.43 E, 17.89 N, 543 km
Time(MET + UTCf -> UT):   601984148.524 + -24.344 -> 2020-01-29T09:48:44.180
YYMMDD_SOD:               200129_35324.180      DOY=029
Obs Sequence Number:      03110241002
Obs Target Name:          4FGL J0039.7+4203
Obs Date and Times:       2020-01-29   09:42:37 - 10:00:33
Obs Pointing(ra,dec,roll): 9.922, 42.121, 244.91
315.133_-24.583_imageloc (boresight_dist, angle): (84, -107)
315.133_-24.583_exposure (cm^2 cos adjusted): 0
315.133_-24.583_altitude: 62 (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/200129_0948.png	20.8 KB
/tmp/swift/200129_0948_bat64ms_ipn	87.0 KB

Re: [EXTERNAL] BAT lightcurve for trigger at 200129_0948

Subject: Re: [EXTERNAL] BAT lightcurve for trigger at 200129_0948

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

Date: 1/30/2020, 1:52 PM

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

CC: "Lien, Amy Yarleén. (GSFC-660.0)[UNIVERSITY OF MARYLAND BALTIMORE CO]" <amy.y.lien@nasa.gov>, "ipn@ssl.berkeley.edu" <ipn@ssl.berkeley.edu>

Dmitry et al.

This event did not rate-trigger BAT. As a result, no finer resolution data was produced. The 64 ms lightcurve single-bin peak is the best available data.

--

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

On Jan 30, 2020, at 12:50 PM, Dmitry Svinkin <svinkin@mail.ioffe.ru> wrote:

Dear Amy,

Could you produce 2 ms lightcurve for this out of the FoV GRB in the IPN format.
I am not sure that my previous letter reach David.

Best regards,
Dmitry

----- Forwarded Message -----

Subject: Fwd: BAT lightcurve for trigger at 200129_0948

Date: Wed, 29 Jan 2020 23:25:57 +0300

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

To: Palmer, David <palmer@lanl.gov>

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

Dear David,

Could you send us a 2 ms lc for this GRB.

Dmitry

----- Forwarded Message -----

Subject: BAT lightcurve for trigger at 200129_0948

Date: Wed, 29 Jan 2020 05:22:08 -0700

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

Reply-To: palmer+automatic_lightcurve@lanl.gov

To: aaron.tohu@gmail.com, 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*****

--
You received this message because you are subscribed to the Google Groups "ipn" group.
To unsubscribe from this group and stop receiving emails from it, send an email to ipn+unsubscribe@ssl.berkeley.edu.

<_tmp_swift_200129_0948.png><_tmp_swift_200129_0948_bat64ms_ipn><Attached Message Part.txt>

v01

90.435

30/01/2020

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

4500

3500

2500

1500

500

0

10000

20000

30000

40000

50000

60000

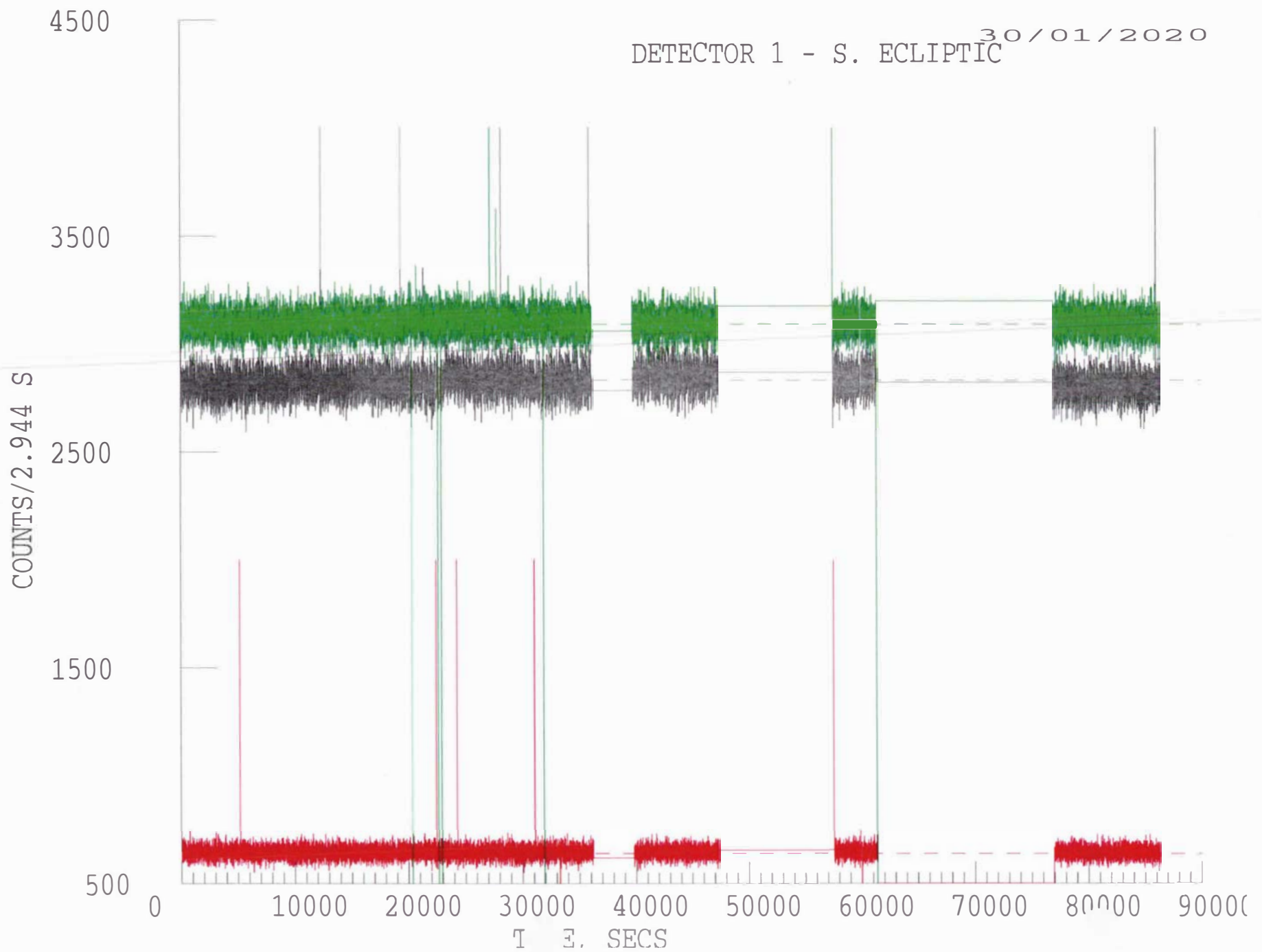
70000

80000

90000

T. SECS

DETECTOR 1 - S. ECLIPTIC 30/01/2020



KONUS

30/01/2020

90.435

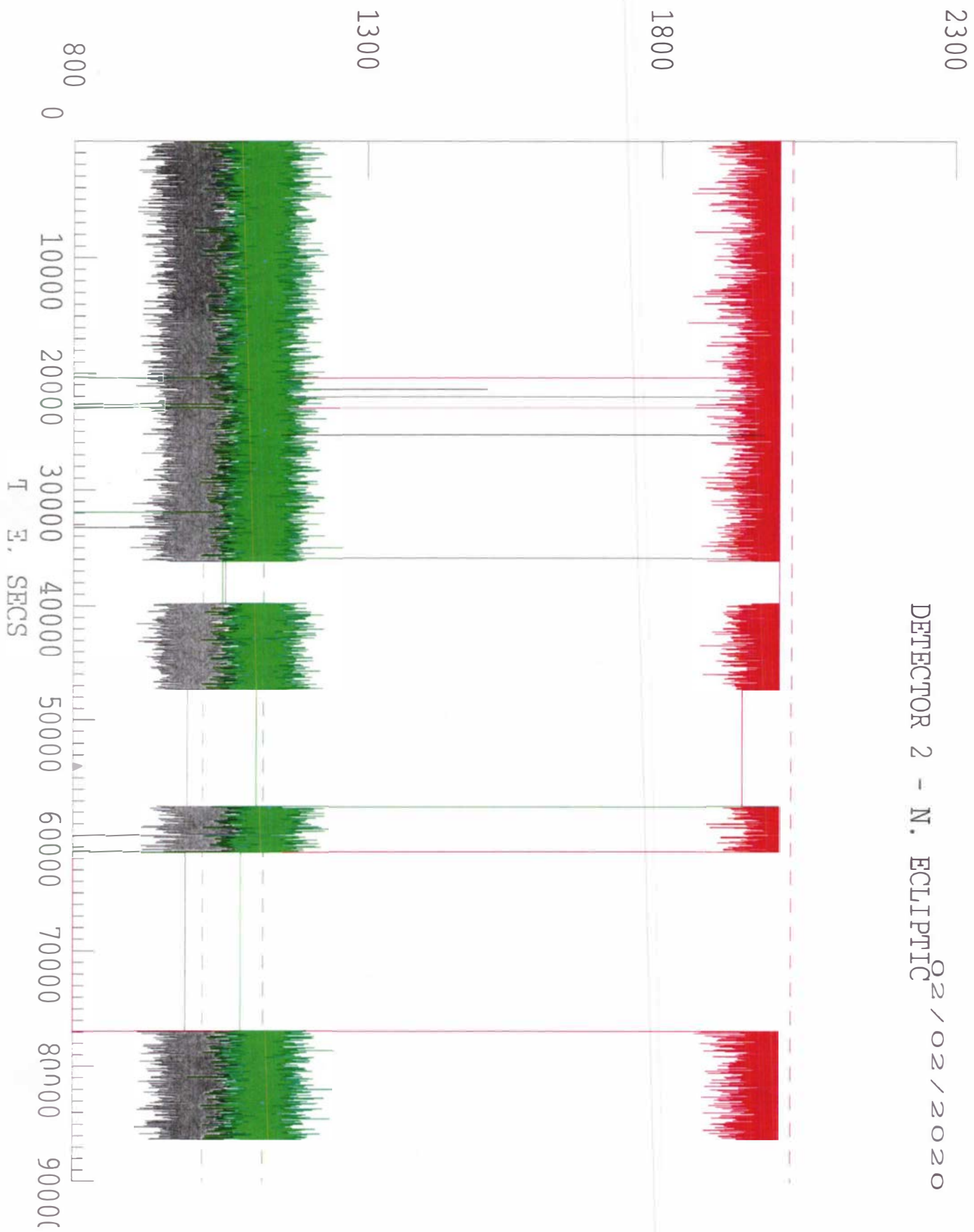
v01

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



FERMI

30/01/20

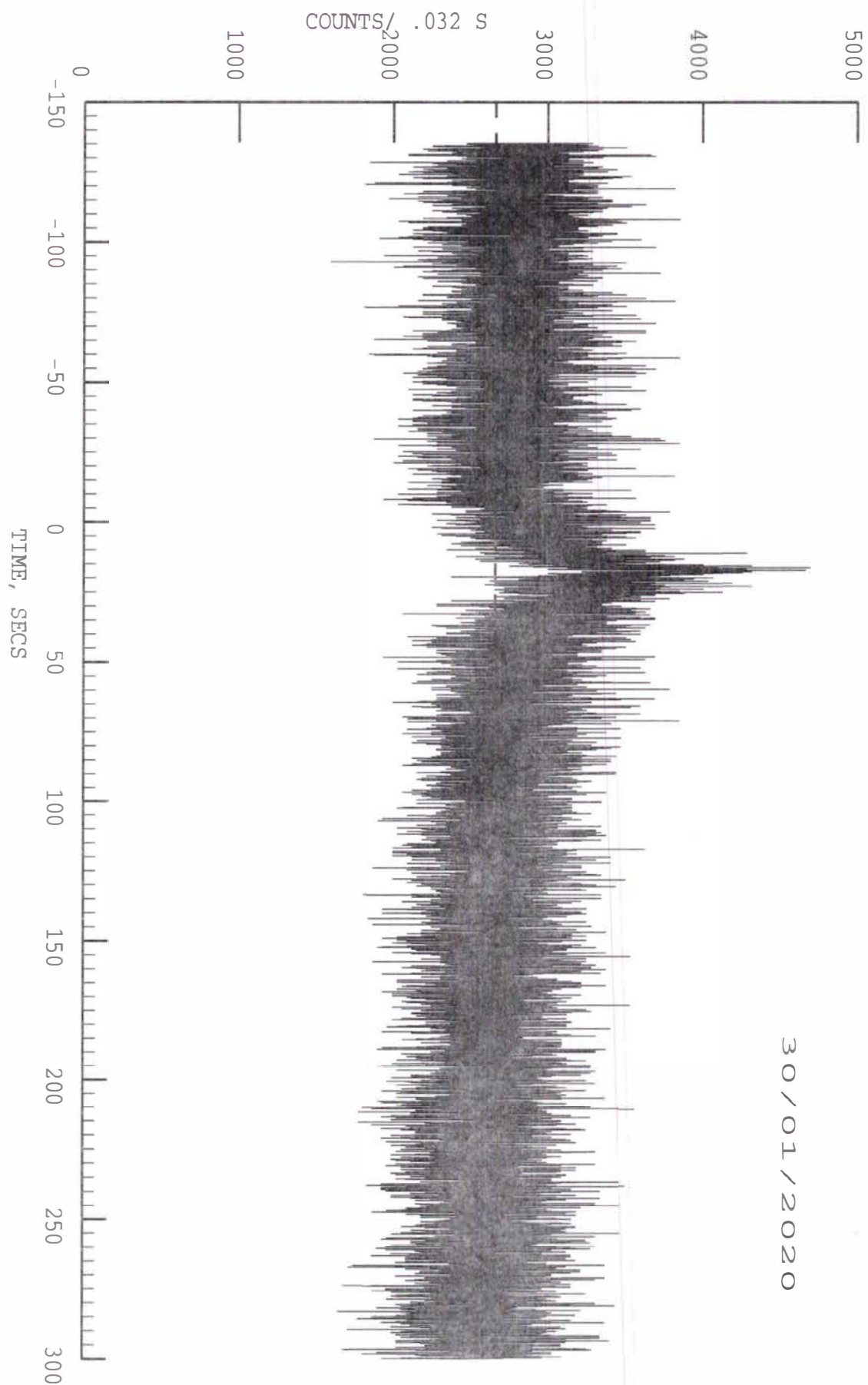
21436.079

05:57:16.079

A

26- 293 keV

329.3 - 65.7 1.7

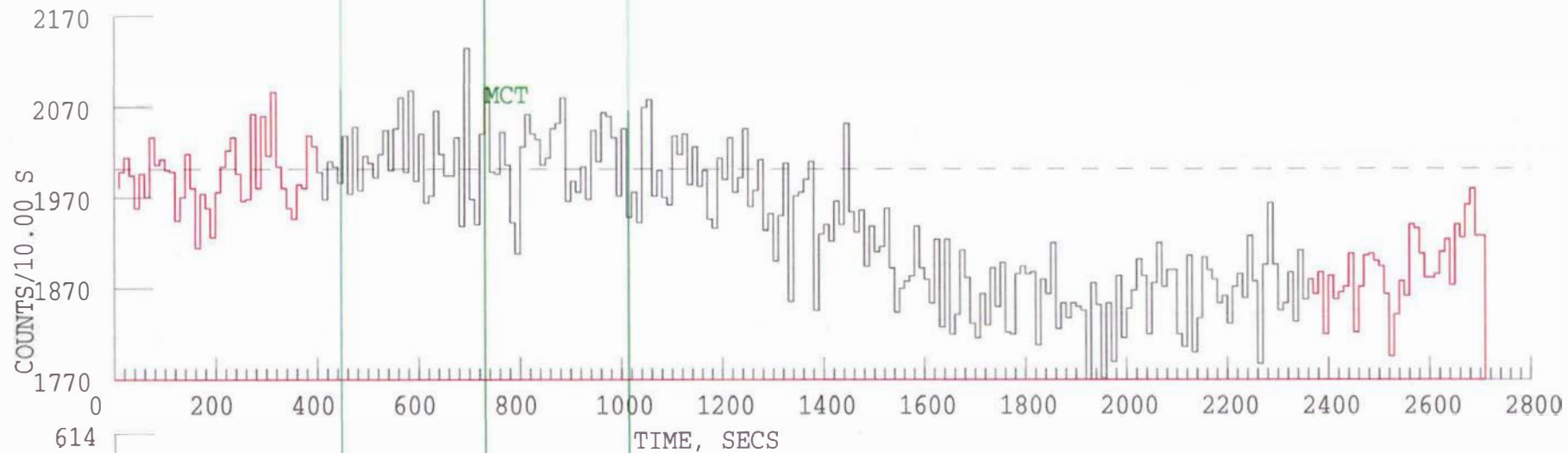


A

30/01/2020

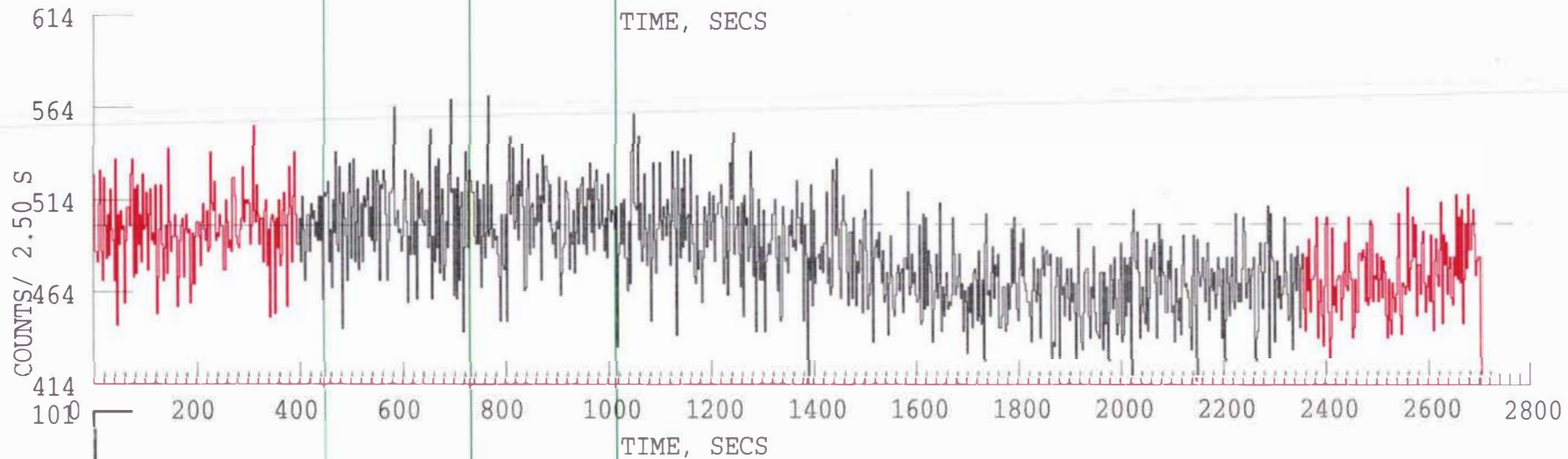
05:34:20.743

Observed



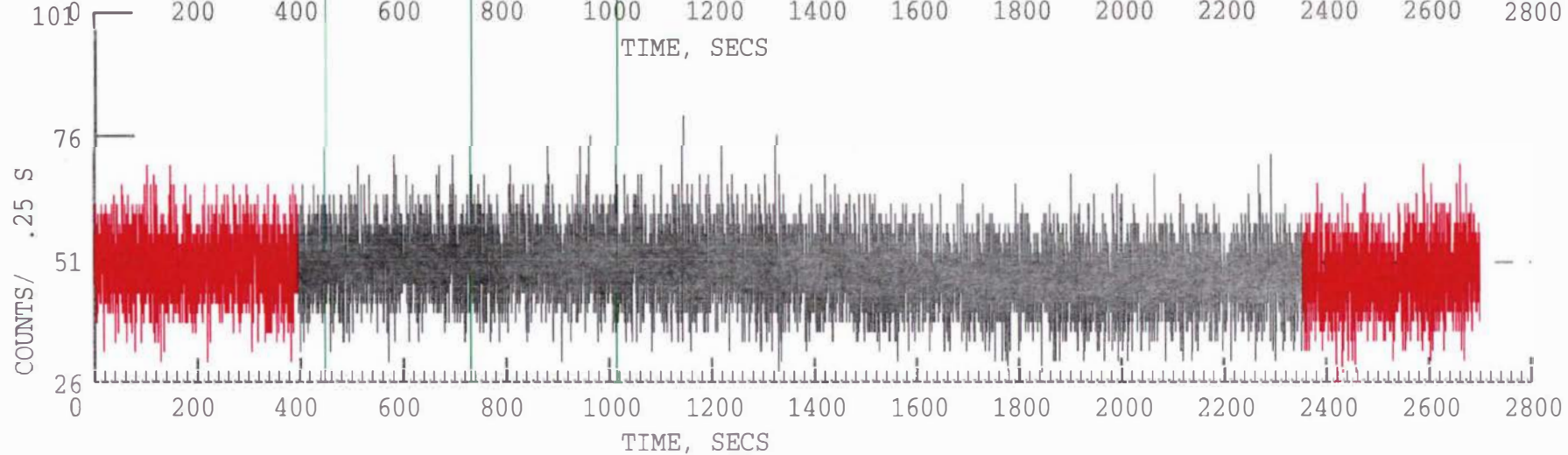
20060.743

50-3000 keV



30/01/20

ODYSSEY



A

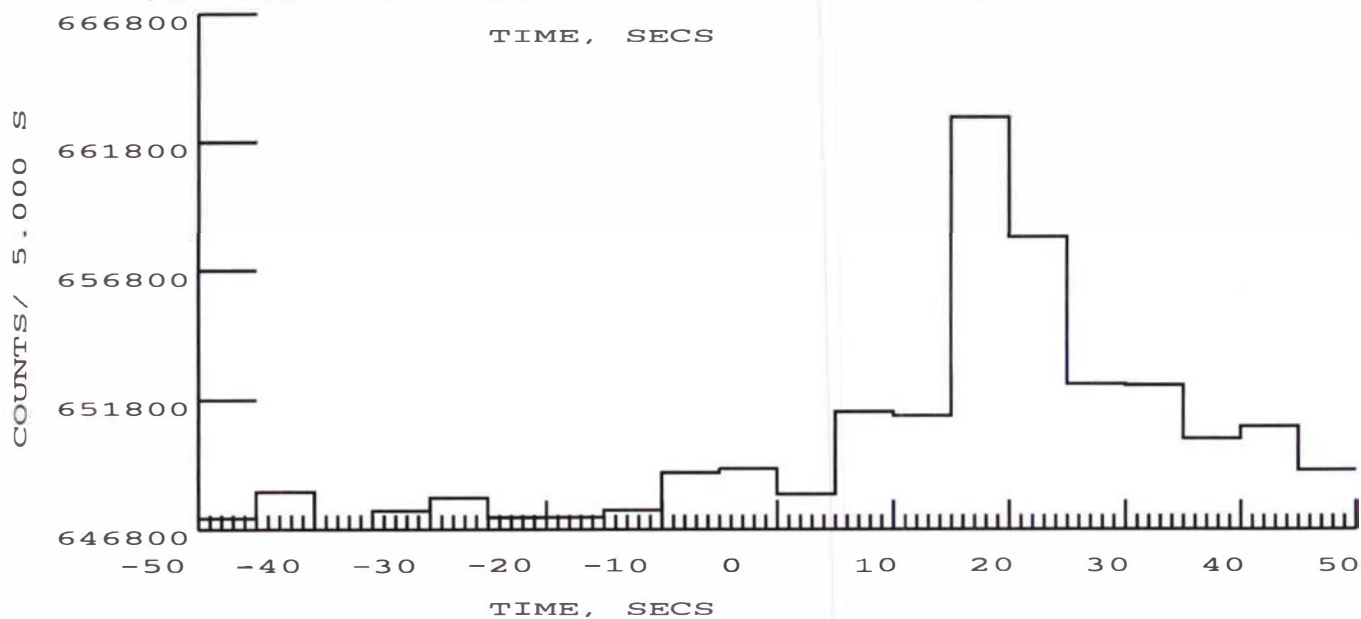
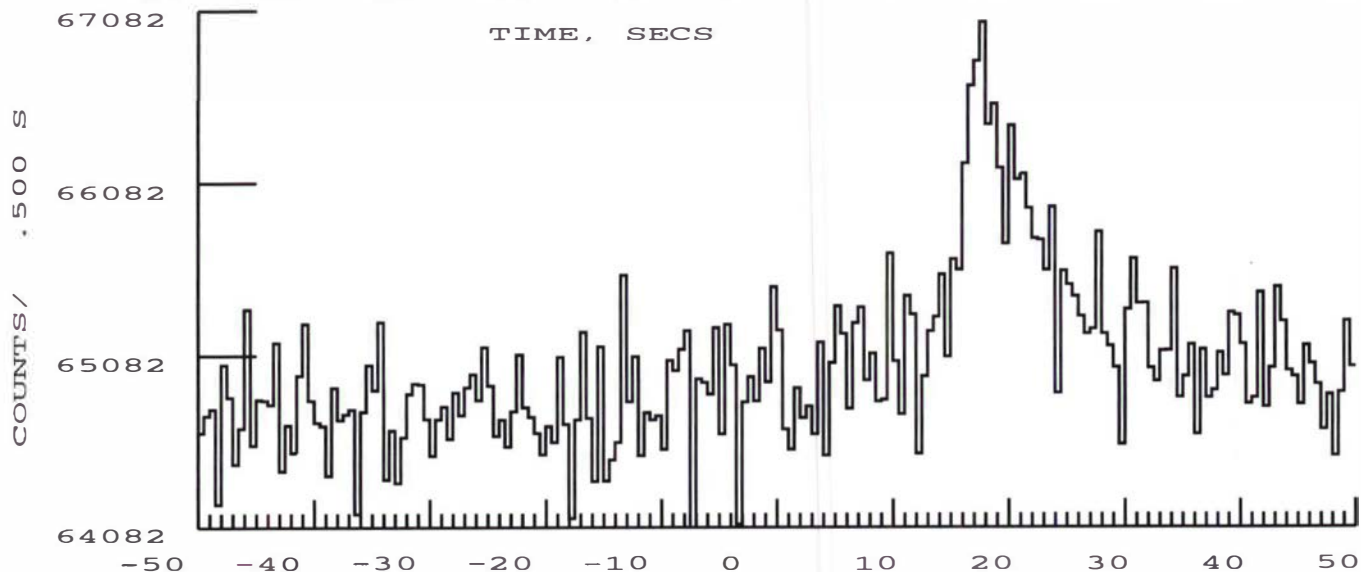
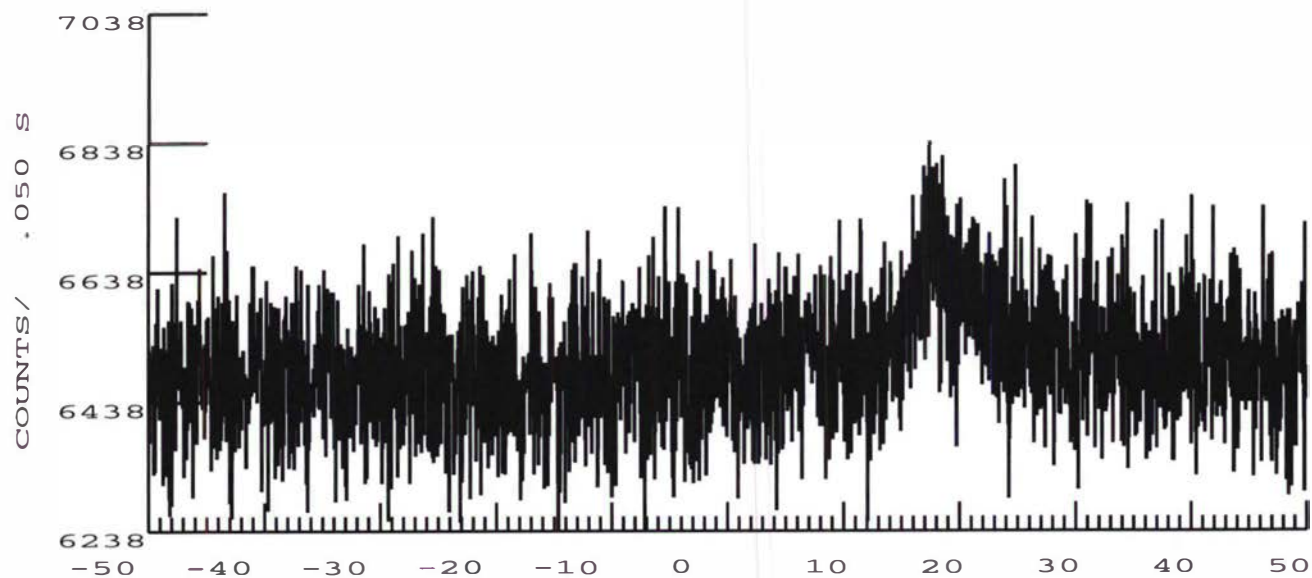
INTEGRAL

30/01/20

21436.000

05:57:16.0

26/03/20



Subject: BAT lightcurve for trigger at 200130_0557

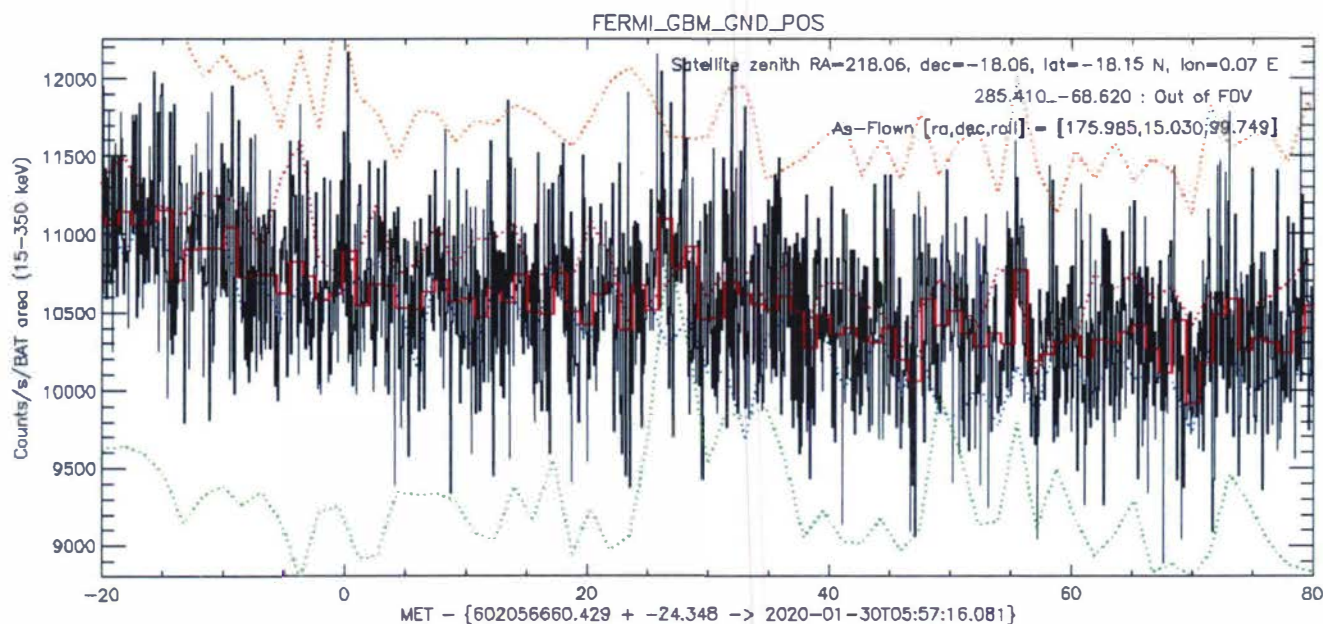
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/30/2020, 1:23 AM

To: aaron.tohu@gmail.com, 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/200130_0557.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 602056660.429 -s 285.410_-68.620
Swift Zenith(RA,dec):      218.06, -18.06
Swift Location(lon,lat,alt): 0.07 E, -18.15 N, 562 km
Time(MET + UTC -> UT):    602056660.429 + -24.348 -> 2020-01-30T05:57:16.081
YYMMDD_SOD:               200130_21436.081      DOY=030
Obs Sequence Number:      00075050007
Obs Target Name:          saa-cold-202-06
Obs Date and Times:       2020-01-30 05:33:37 - 06:00:34
Obs Pointing(ra,dec,roll): 175.985, 15.030, 99.75
285.410_-68.620_imageloc (boresight_dist, angle): (111, -31)
285.410_-68.620_exposure (cm² cos adjusted): 0
285.410_-68.620_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/200130_0557_bat64ms_ipn	87.1 KB
/tmp/swift/200130_0557.png	26.2 KB

B

FERMI

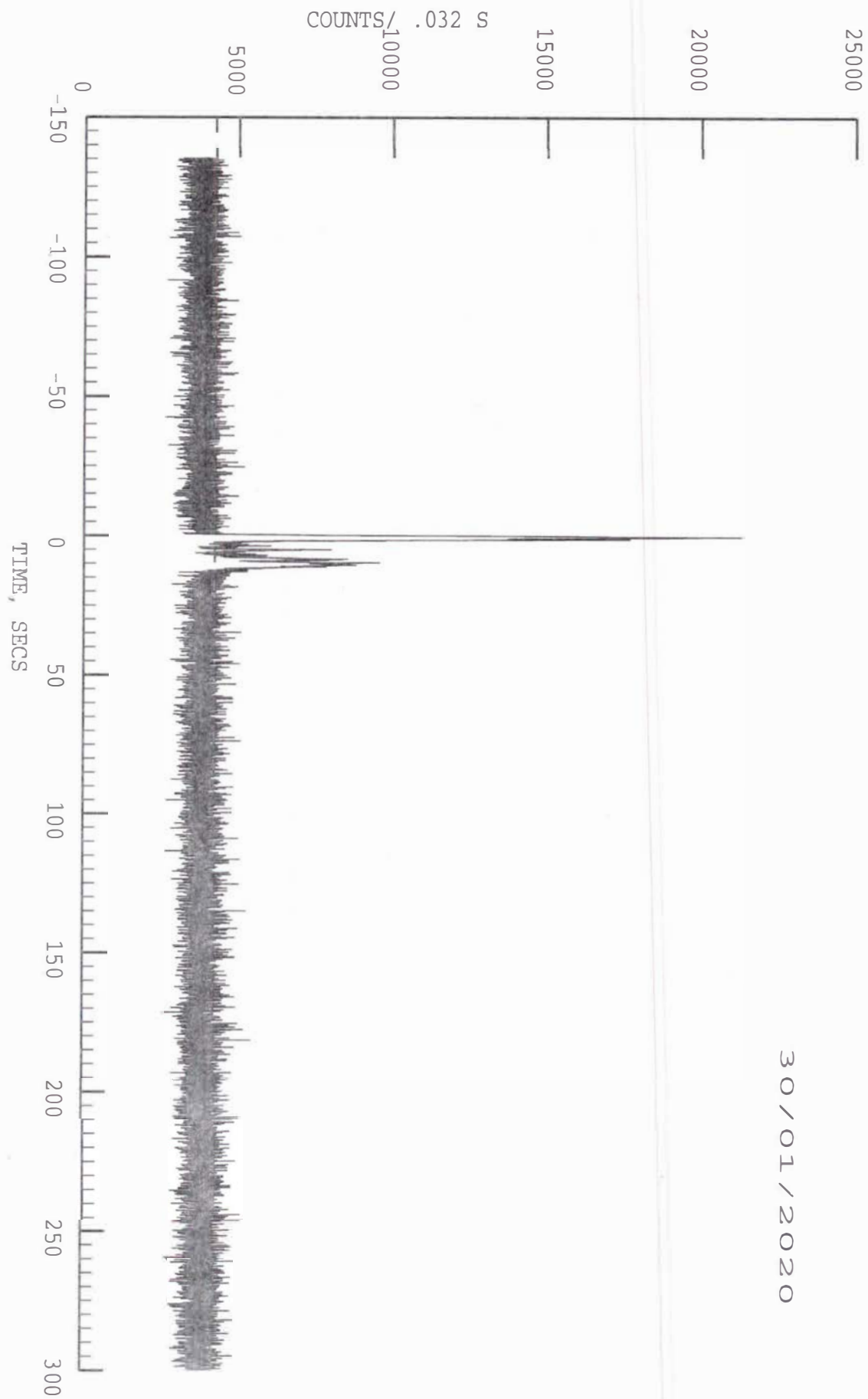
30/01/20

35996.672

09:59:56.672

26- 293 keV

137.5 -51.3 3.5



30/01/2020

03/02/2020

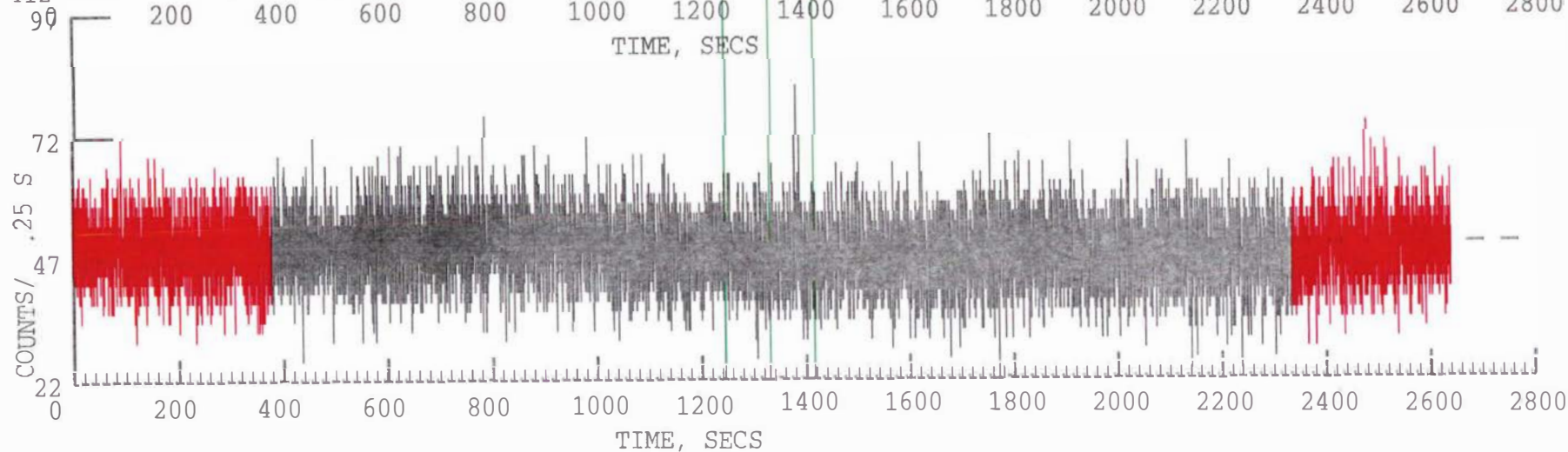
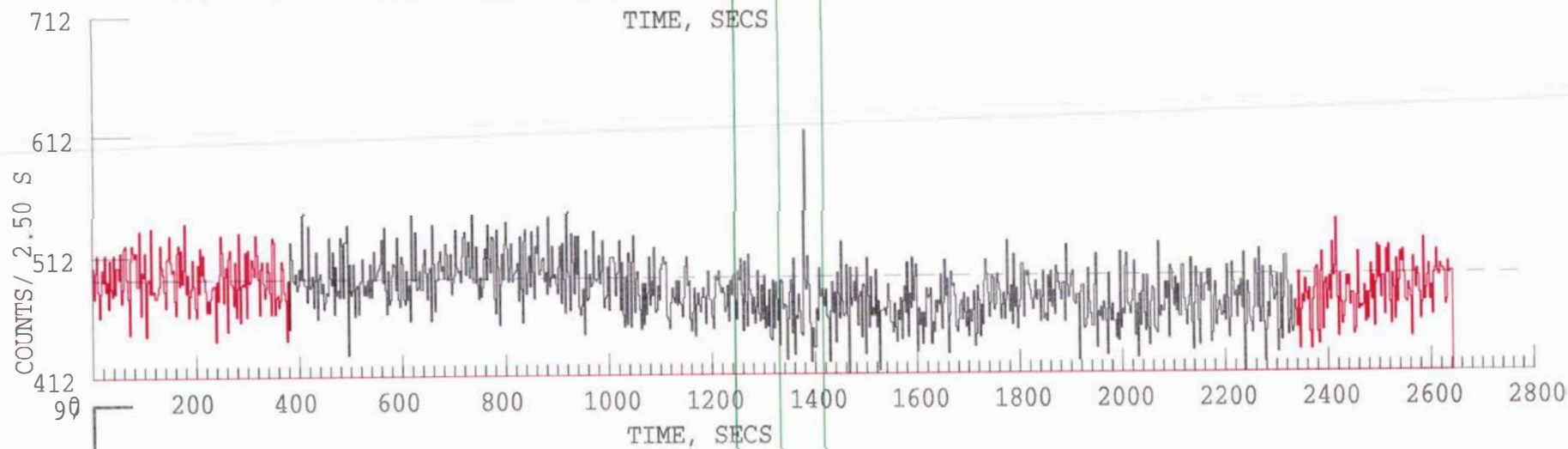
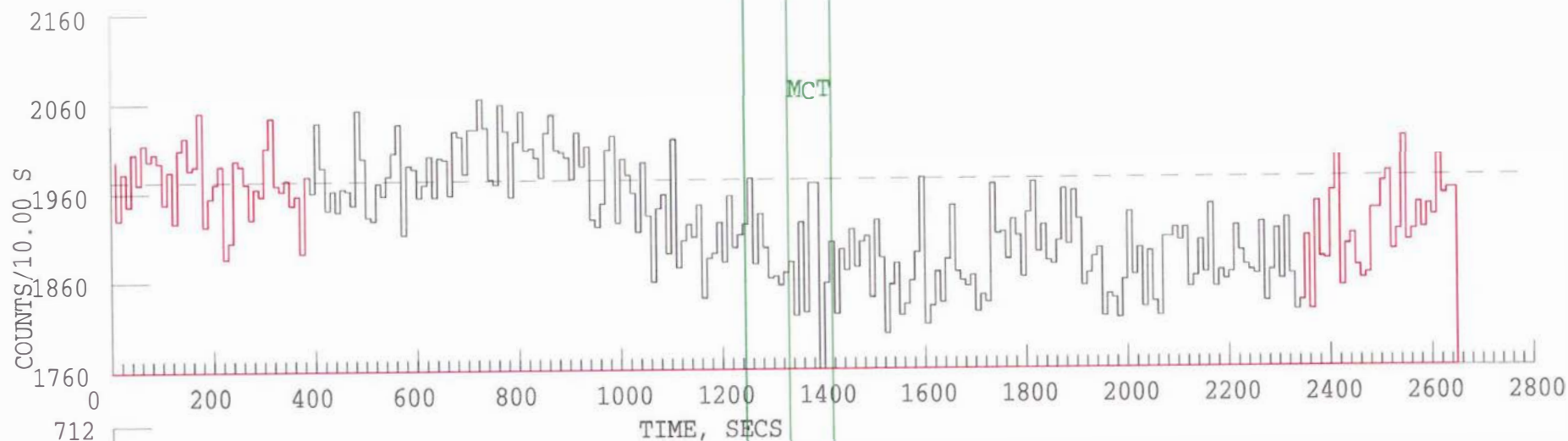
09:37:20.593

34640.593

30/01/20

ODYSSEY

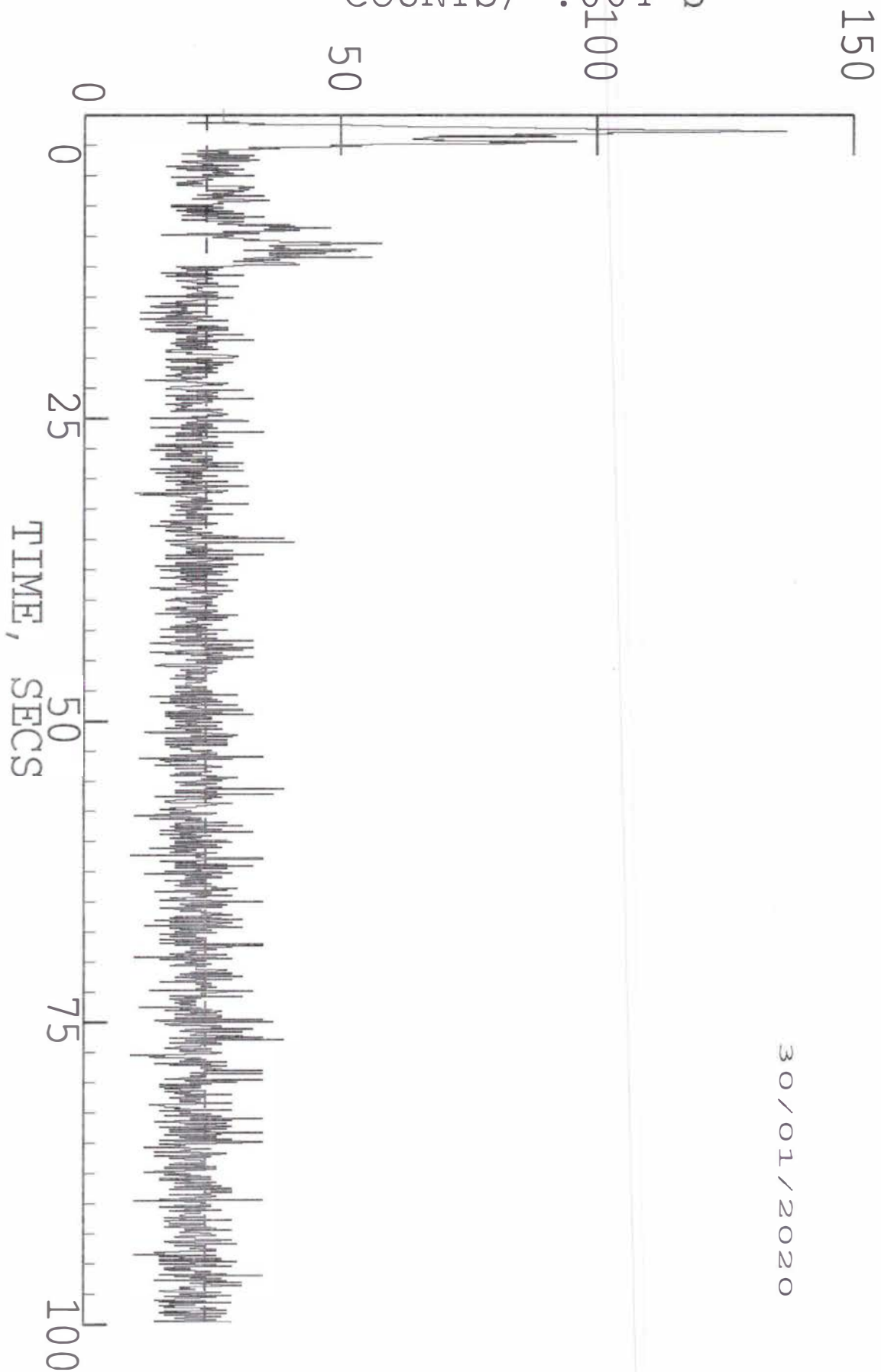
50-3000 keV



KONUS 30/01/20 35999.282 09:59:59.282^B

50- 200 keV

COUNTS/ .064 S



30/01/2020

B

KONUS

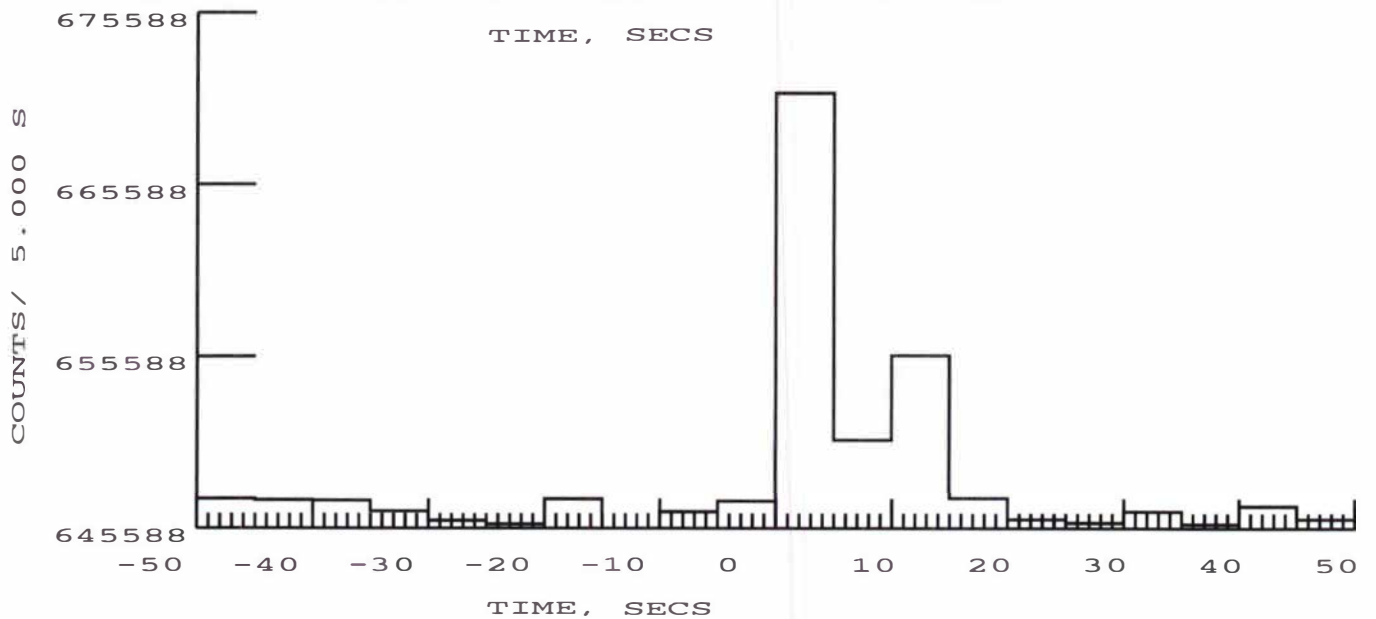
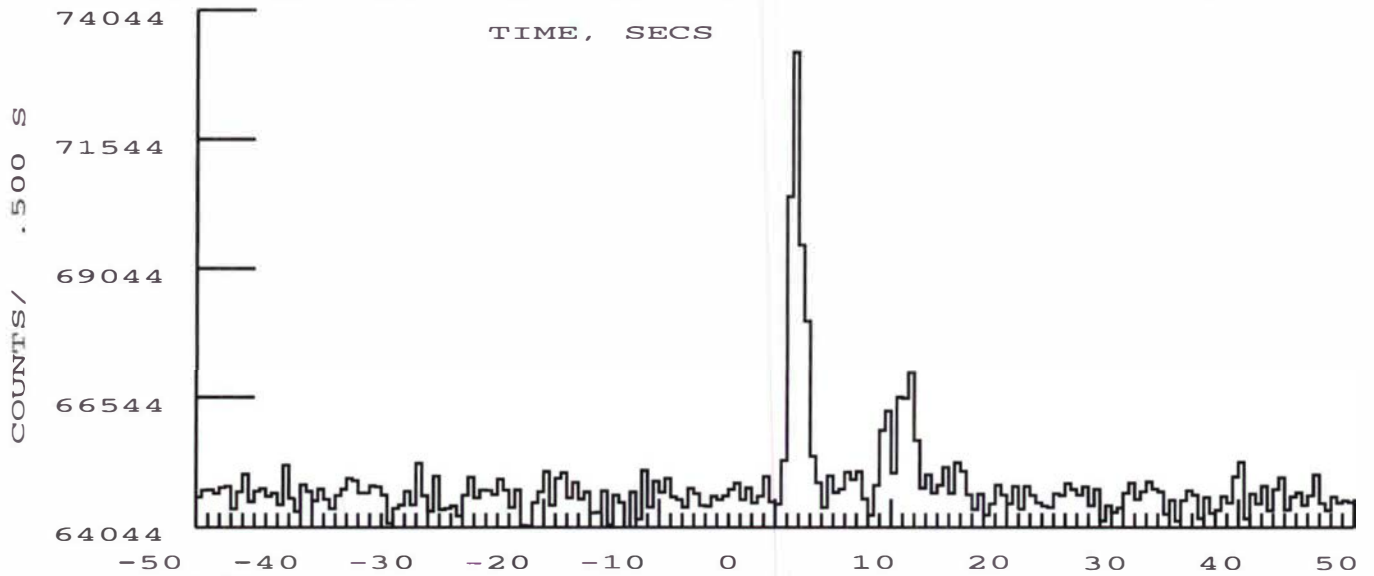
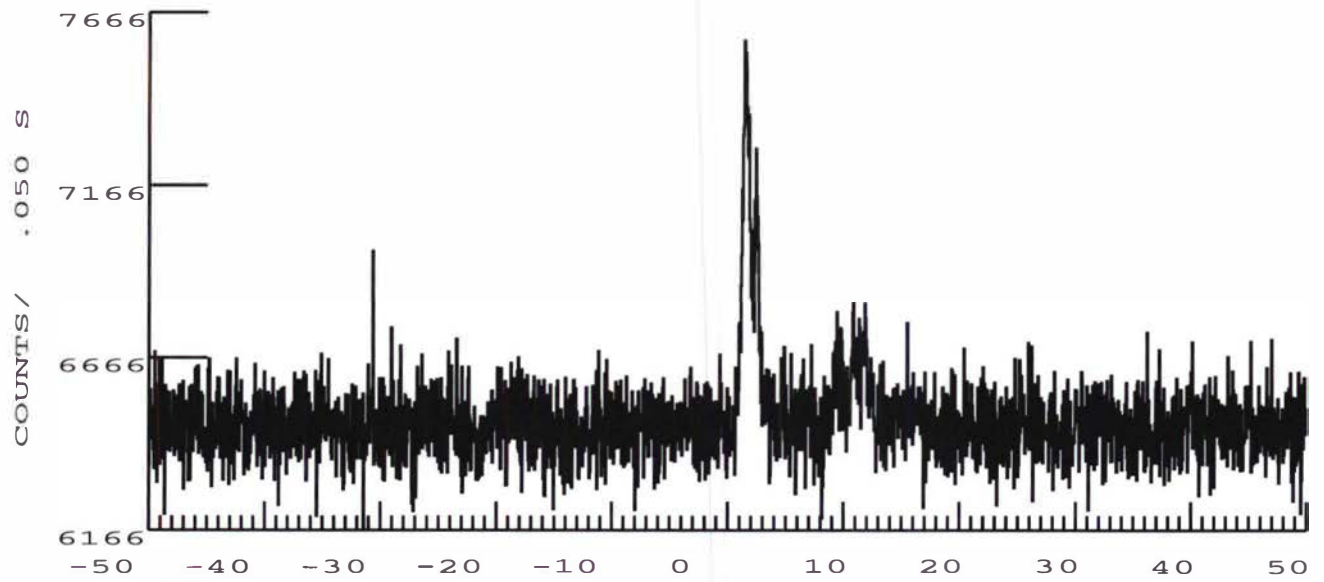
30/01/20

COUNTS/SEC 35999.000

09:59:59.000

25/06/2020





Subject: BAT lightcurve for trigger at 200130_0959

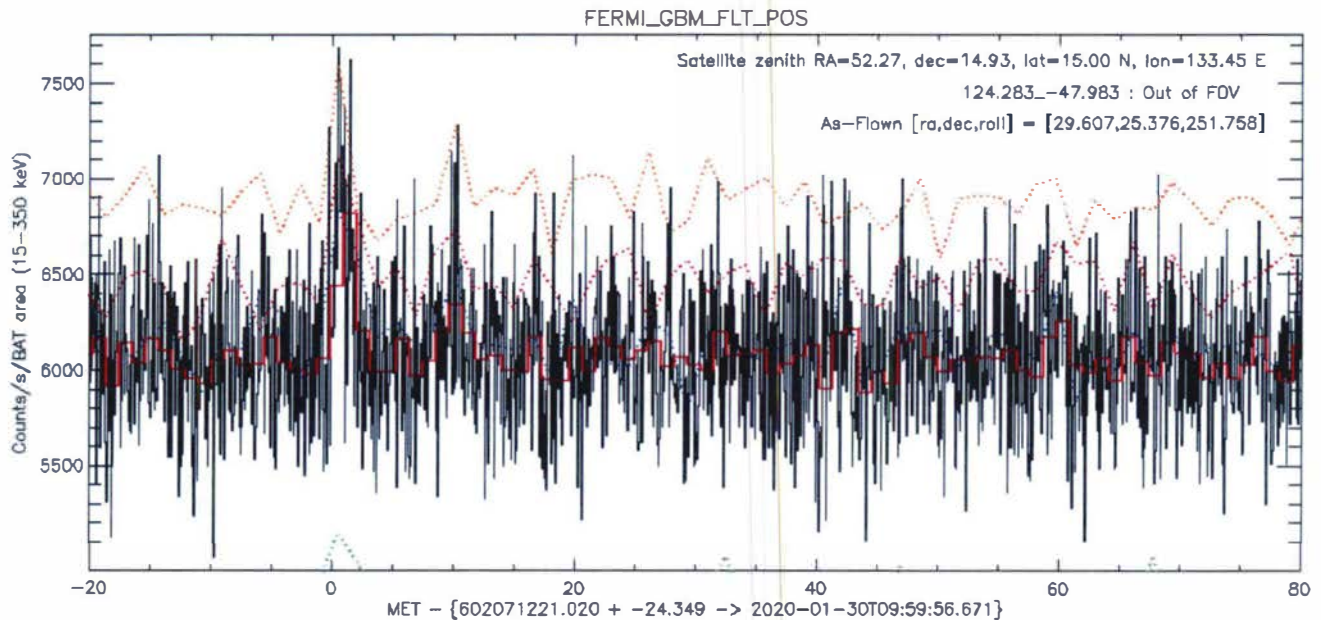
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/30/2020, 4:24 AM

To: aaron.tohu@gmail.com, 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/200130_0959.png—



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 602071221.020 -s 124.283_-47.983
Swift Zenith(RA,dec):      52.27, 14.93
Swift Location(lon,lat,alt): 133.45 E, 15.00 N, 543 km
Time(MET + UTCF -> UT):   602071221.020 + -24.349 -> 2020-01-30T09:59:56.671
YYMMDD_SOD:               200130_35996.671      DOY=030
Obs Sequence Number:      03105769001
Obs Target Name:          SGWGS-978
Obs Date and Times:       2020-01-30 09:49:37 - 10:04:35
Obs Pointing(ra,dec,roll): 29.607, 25.376, 251.76
124.283_-47.983_imageloc (boresight_dist, angle): (112, 152)
124.283_-47.983_exposure (cm2 cos adjusted): 0
124.283_-47.983_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/200130_0959.png	22.7 KB
/tmp/swift/200130_0959_bat64ms_ipn	87.1 KB

Subject: IPN triangulation of long GRB 200130B (=Fermi/GBM trigger 602071201) - single box
From: Dmitry Svinkin <svinkin@mail.ioffe.ru>
Date: 1/30/2020, 11:45 AM
To: IPN <ipn@ssl.berkeley.edu>

Dear colleagues,

The long-duration GRB 200130B
(Fermi-GBM detection: The Fermi GBM team, GCN 26944;
BALROG localization: Kunzweiler et al., GCN 26945)
was detected by Fermi (GBM trigger 602071201), Konus-Wind,
INTEGRAL (SPI-ACS), Mars-Odyssey (HEND), and Swift (BAT),
outside the coded FoV, at about 35997 s UT (09:59:57).

We have triangulated it to a Konus-GBM annulus centered at
RA(2000)=143.241 deg (09h 32m 58s) Dec(2000)=+14.212 deg (+14d 12' 43"),
whose radius is 64.279 ± 0.833 deg (3 sigma) and to a Konus-HEND
annulus centered at
RA(2000)=76.694 deg (05h 06m 47s) Dec(2000)=+22.844 deg (+22d 50' 39"), whose radius is 88.846 ± 0.108 deg (3 sigma).

The annuli intersect to form two error boxes one of which is inconsistent with the KW ecliptic latitude response and the GBM
Final position (glg_loclist_all_bn200130417_v00).

The correct preliminary 3-sigma error box is (see the attached figure):

RA(2000), deg	Dec(2000), deg
Center:	
134.742 (08h 58m 58s)	-49.627 (-49d 37' 38")
Corners:	
133.618 (08h 54m 28s)	-50.349 (-50d 20' 55")
134.000 (08h 56m 00s)	-50.392 (-50d 23' 31")
135.836 (09h 03m 21s)	-48.893 (-48d 53' 34")
135.462 (09h 01m 51s)	-48.857 (-48d 51' 26")

The error box area is 1487 sq. arcmin, and its maximum
dimension is 2.045 deg (the minimum one is 13 arcmin).
The Sun distance was 112 deg.

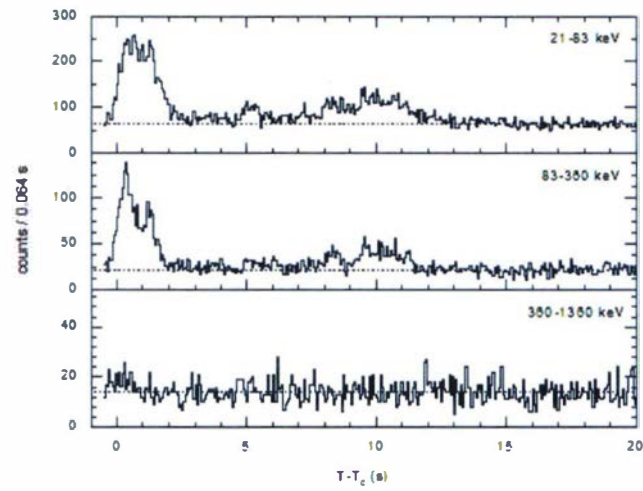
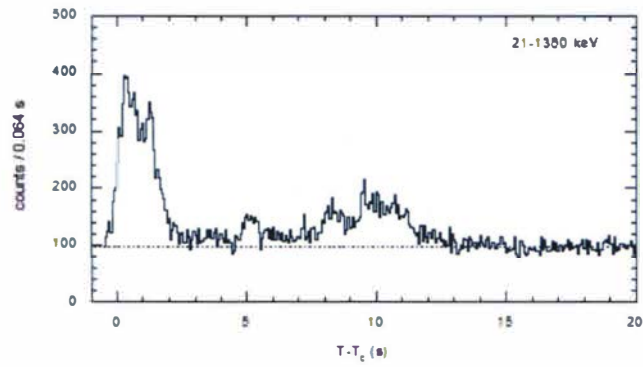
Best regards,

Dmitry

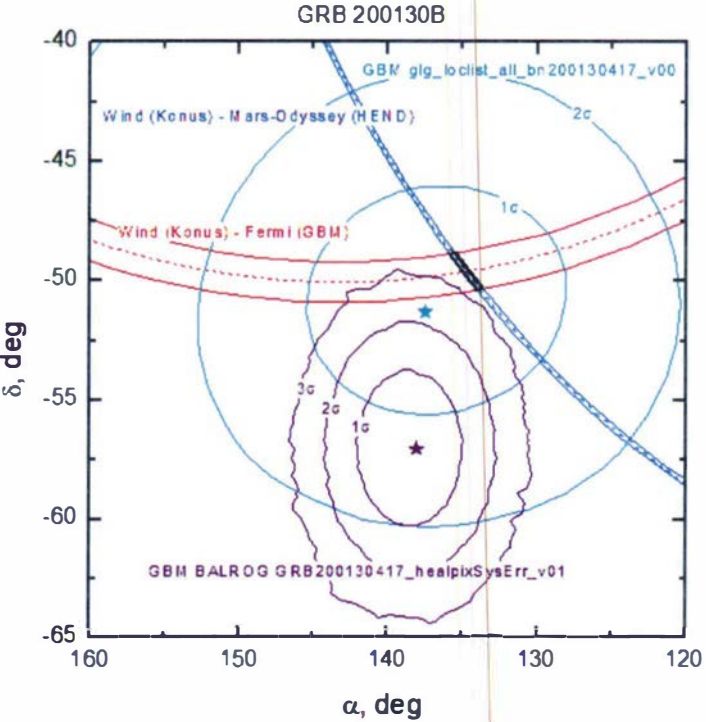
—kw20200130_35999_64ms.png

KONUS-WIND GRB 200130
 $T_0 = 35999.282$ s UT (09:59:59.282)

S1



—GRB200130B_IPN_map.png



Attachments:		
kw20200130_35999_64ms.png		9.2 KB
GRB200130B_IPN_map.png		10.5 KB

Subject: IPN triangulation of GRB 200130B

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

Date: 1/31/2020, 4:16 AM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 26949

SUBJECT: IPN triangulation of GRB 200130B

DATE: 20/01/31 12:15:53 GMT

FROM: Dmitry Svinkin at Ioffe Institute <svinkin@mail.ioffe.ru>

K. Hurley, on behalf of the IPN,

I. G. Mitrofanov, D. V. Golovin, A. S. Kozyrev, M. L. Litvak,
and A. B. Sanin, on behalf of the HEND-Odyssey GRB team,

D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Ridnaia,
and T. Cline on behalf of the Konus-Wind team,

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,

S. Barthelmy, J. Cummings, H. Krimm, and D. Palmer,
on behalf of the Swift-BAT team, and

W. Boynton, C. Fellows, K. Harshman, H. Enos, and R. Starr,
on behalf of the GRS-Odyssey GRB team, report:

The long-duration GRB 200130B

(Fermi-GBM detection: The Fermi GBM team, GCN Circ. 26944;
BALROG localization: Kunzweiler et al., GCN Circ. 26945)
was detected by Fermi (GBM trigger 602071201), Konus-Wind,
INTEGRAL (SPI-ACS), Mars-Odyssey (HEND), and Swift (BAT),
at about 35997 s UT (09:59:57).

The burst was outside the coded field of view of the BAT.

We have triangulated it to a preliminary, 3 sigma error box
whose coordinates are:

RA(2000), deg	Dec(2000), deg
Center:	
134.742 (08h 58m 58s) -49.627 (-49d 37' 38")	
Corners:	
133.618 (08h 54m 28s) -50.349 (-50d 20' 55")	
134.000 (08h 56m 00s) -50.392 (-50d 23' 31")	
135.836 (09h 03m 21s) -48.893 (-48d 53' 34")	
135.462 (09h 01m 51s) -48.857 (-48d 51' 26")	

The error box area is 1487 sq. arcmin, and its maximum
dimension is 2.0 deg (the minimum one is 13 arcmin).
The Sun distance was 112 deg.

This box may be improved.

The IPN localization is consistent with, but reduces the area of, the
Fermi-GBM final position (GCN Circ. 26944).

A triangulation map is posted at
http://www.ioffe.ru/LEA/GRBs/GRB200130_T35999/IPN

The Konus-Wind time history and spectrum will be given in a forthcoming
GCN Circular.

v01

77.690

31/01/2020

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

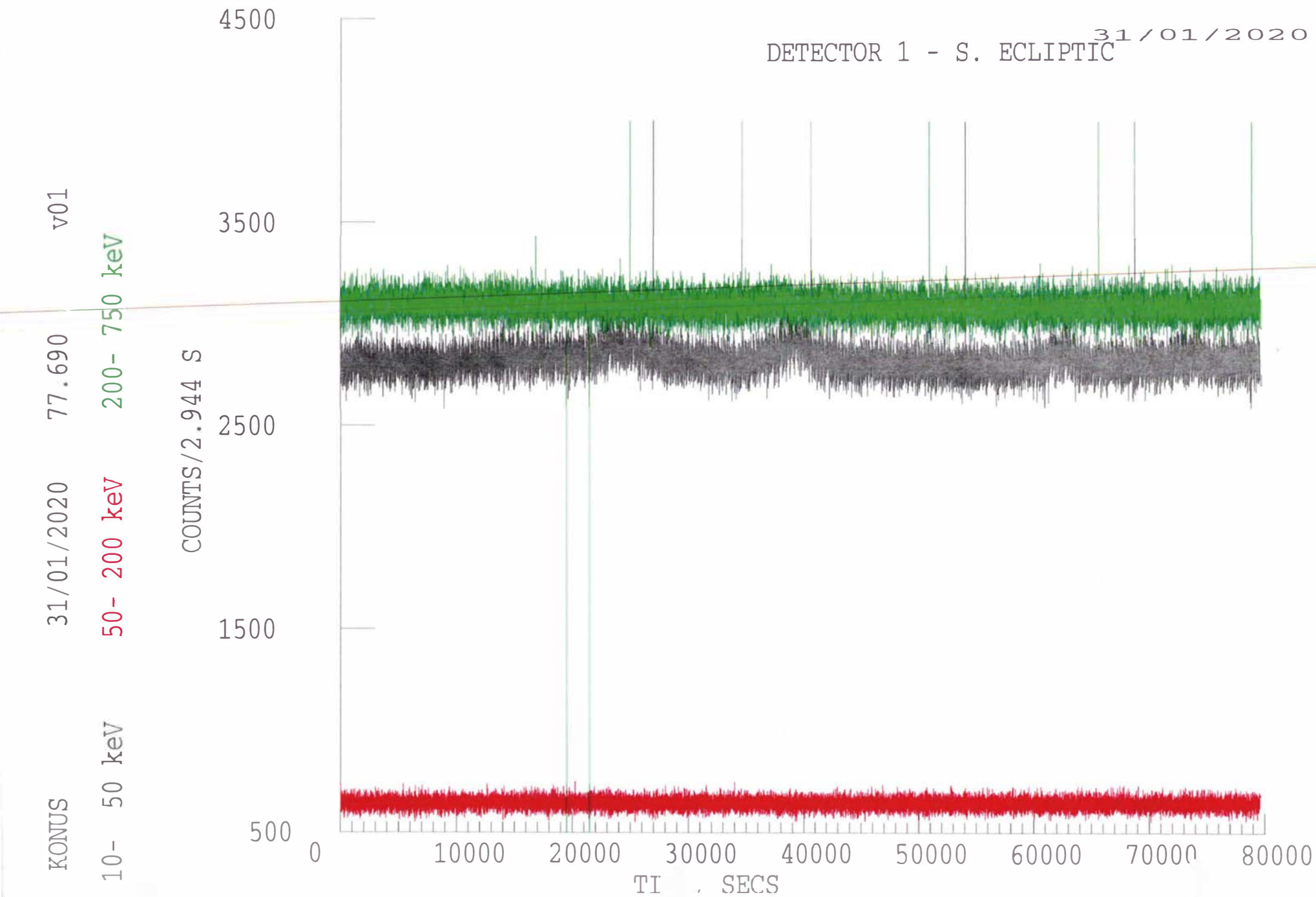
60000

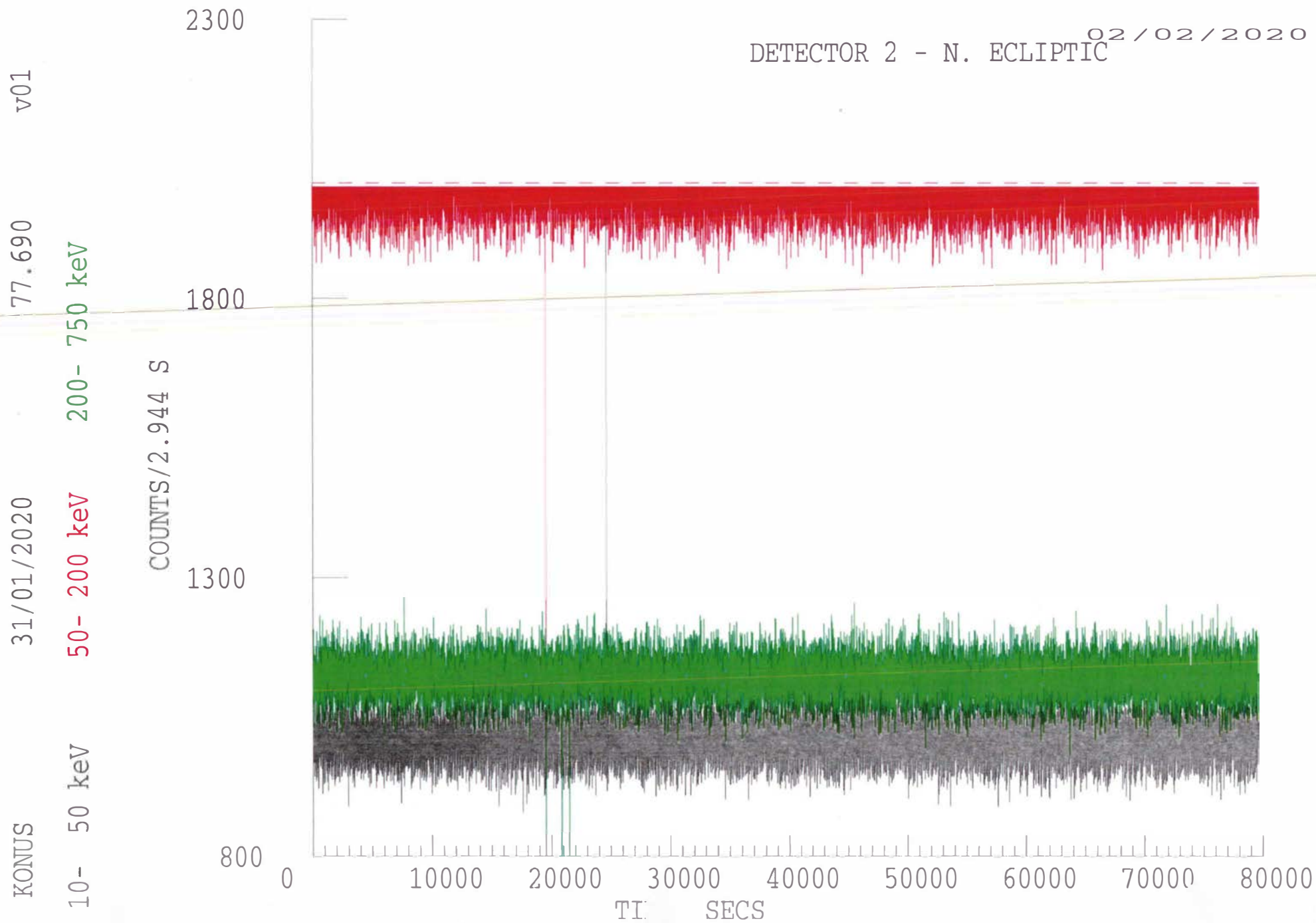
70000

80000

TI , SECS

DETECTOR 1 - S. ECLIPTIC 31/01/2020





Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 1/31/2020, 2:49 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Fri 31 Jan 20 22:47:11 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 953689, Seg_Num: 0
 GRB_RA: 3.095d {+00h 12m 23s} (J2000),
 3.361d {+00h 13m 27s} (current),
 2.438d {+00h 09m 45s} (1950)
 GRB_DEC: +51.124d {+51d 07' 25"} (J2000),
 +51.235d {+51d 14' 07"} (current),
 +50.846d {+50d 50' 44"} (1950)
 GRB_DATE: 18879 TJD; 31 DOY; 20/01/31
 GRB_TIME: 81675.99 SOD {22:41:15.99} UT
 TRIGGER_INDEX: 146
 GRB_PHI: -16.42 [deg]
 GRB_THETA: 23.15 [deg]
 DELTA_TIME: 44.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 255.99 [sigma]
 IMAGE_SIGNIF: 25.71 [sigma]
 LC_URL: sw00953689000msb.lc
 SUN_POSTN: 313.98d {+20h 55m 56s} -17.32d {-17d 19' 25"}
 SUN_DIST: 80.97 [deg] Sun_angle= -3.3 [hr] (East of Sun)
 MOON_POSTN: 28.83d {+01h 55m 20s} +6.63d {+06d 38' 02"}
 MOON_DIST: 49.34 [deg]
 MOON_ILLUM: 39 [%]
 GAL_COORDS: 116.70,-11.28 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 28.53, 44.49 [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 = 310.10,9.30 [deg].

32.7s

 $7 \times 10^{-6} \text{ erg cm}^{-2}$ 26.9 $\text{phot}/\text{cm}^2 \text{ s}$

BAT

31/01/20

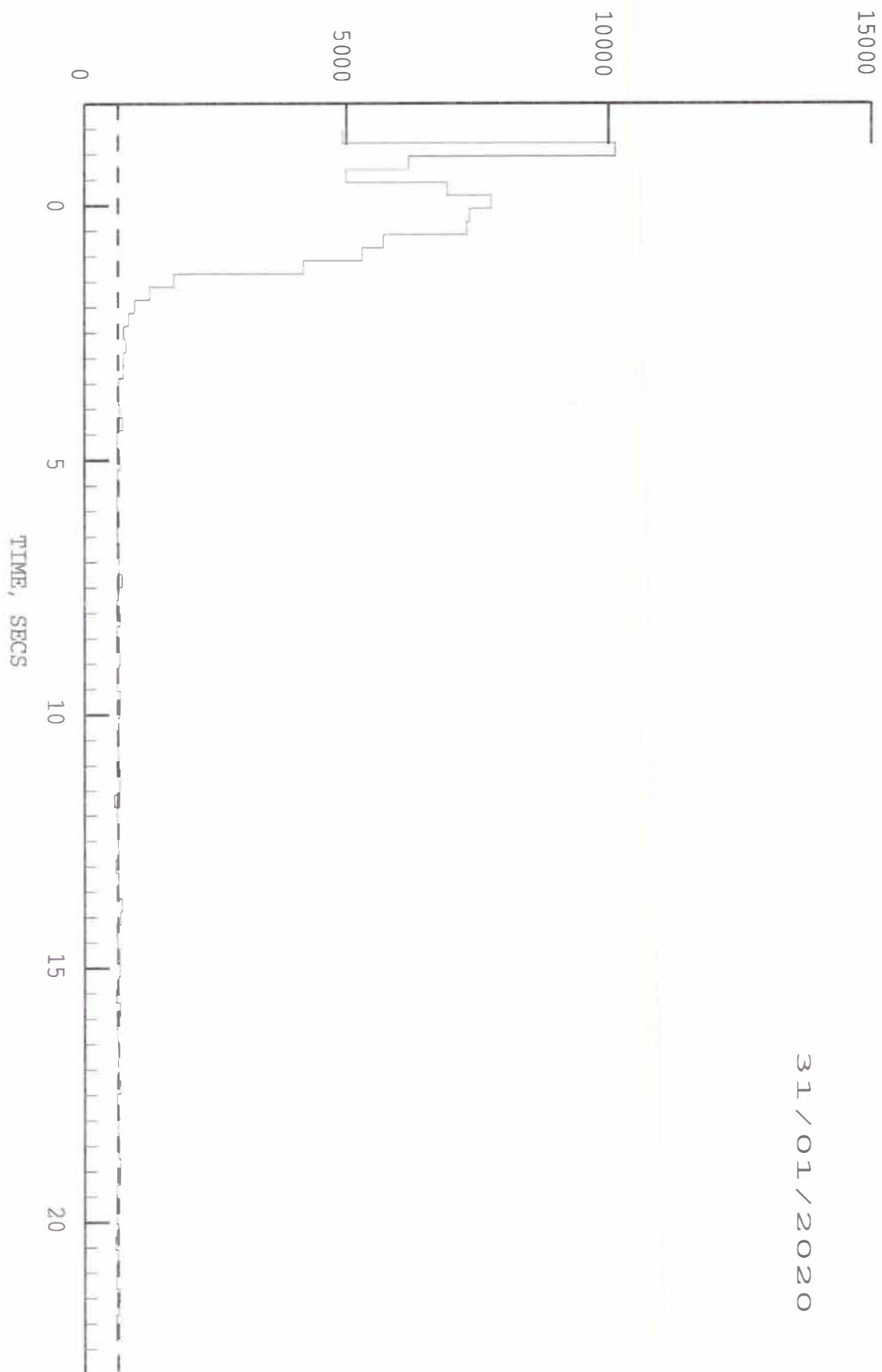
81675.994

22:41:15.994

25- 100 keV

COUNTS/ .256 S

31 / 01 / 2020



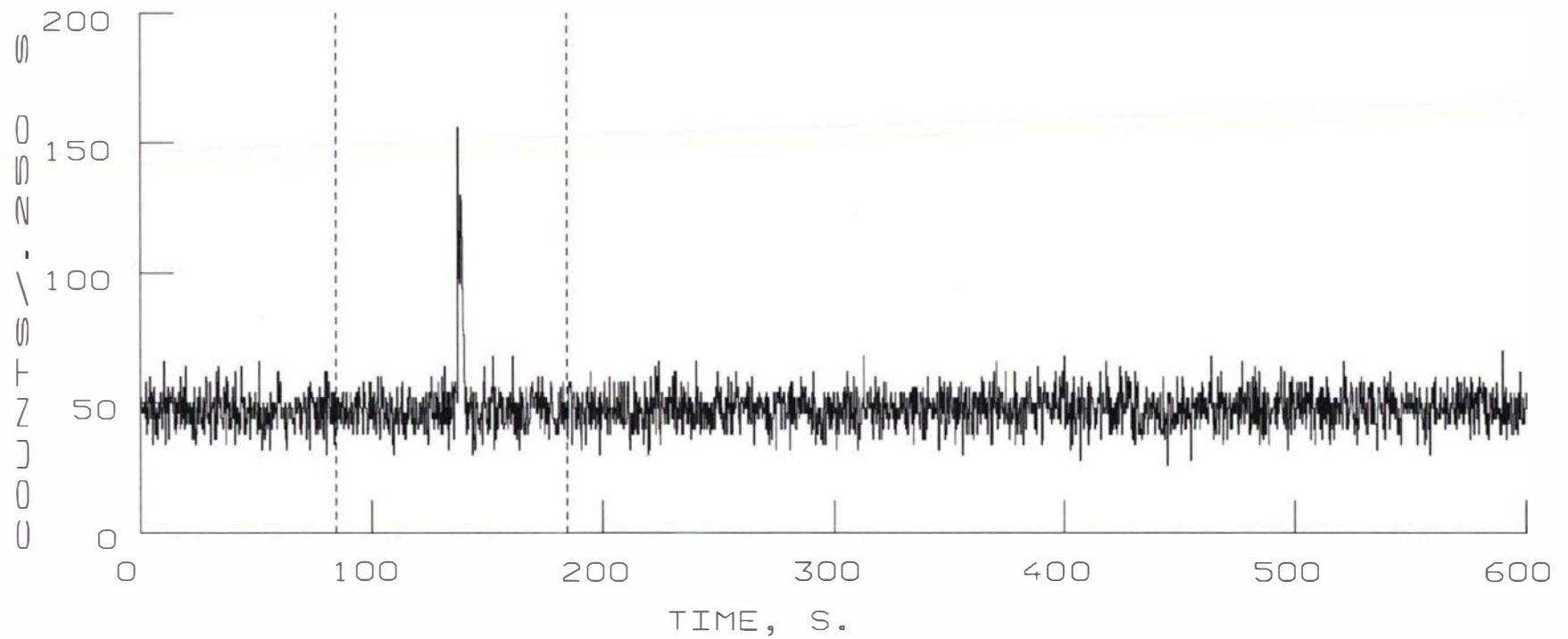
MS01 HEND

12/06/2020

31/01/2020 81978.227 s

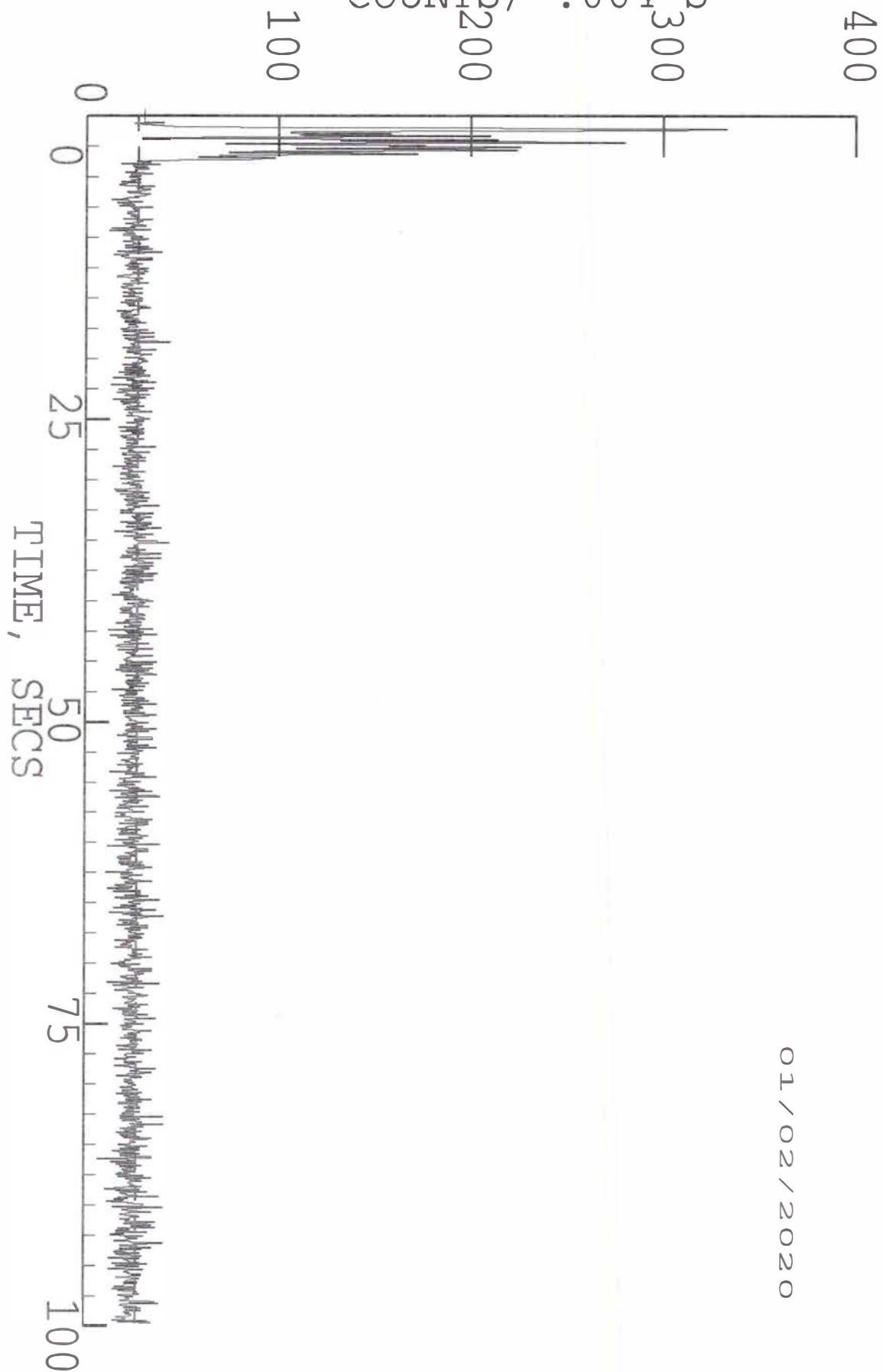
50-3000 keV

N= 10 M=12
>4.0 SIGMA FLUCTUATIONS



KONUS 31/01/20 81673.507 22:41:13.507
50- 200 keV

COUNTS/ .064 S



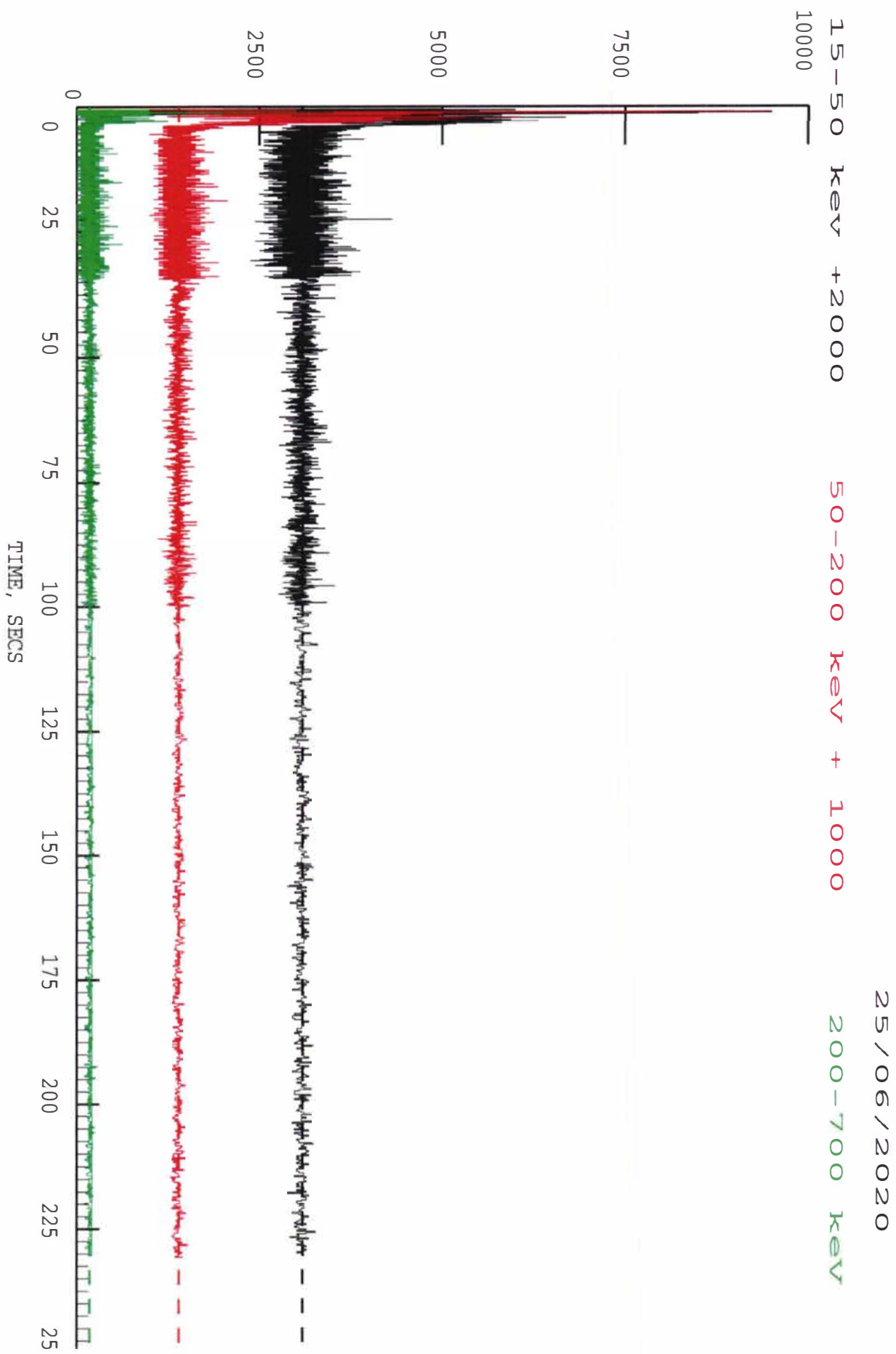
01/02/2020

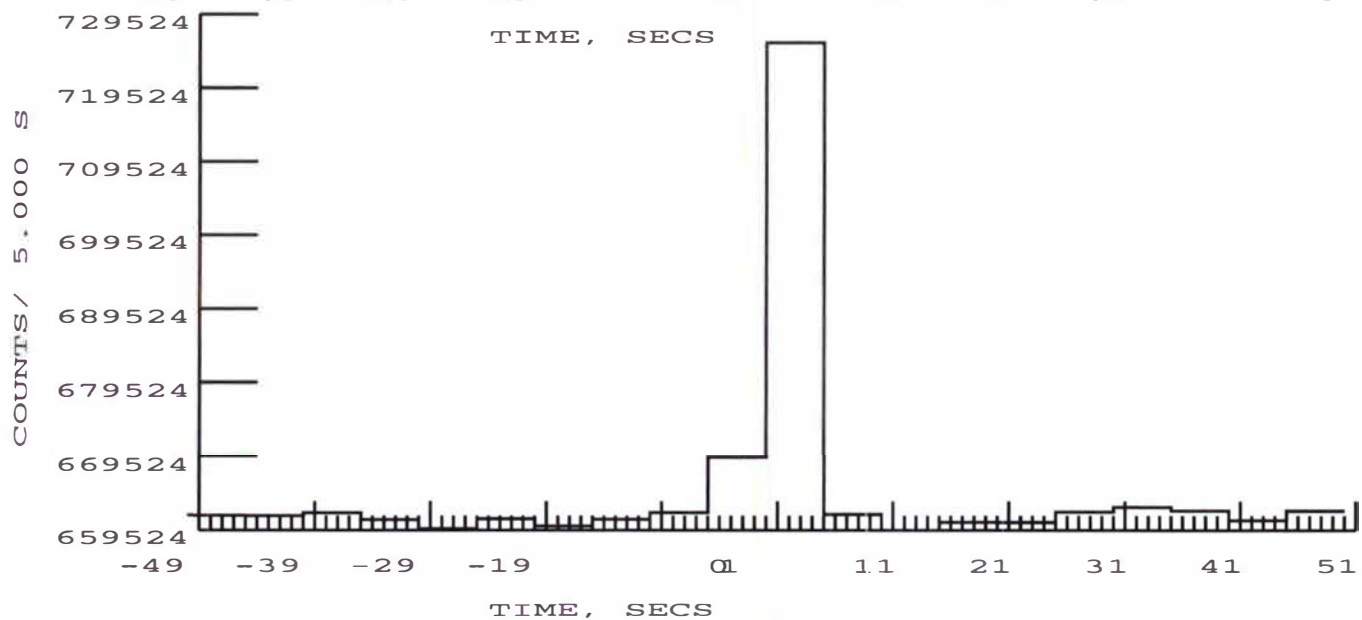
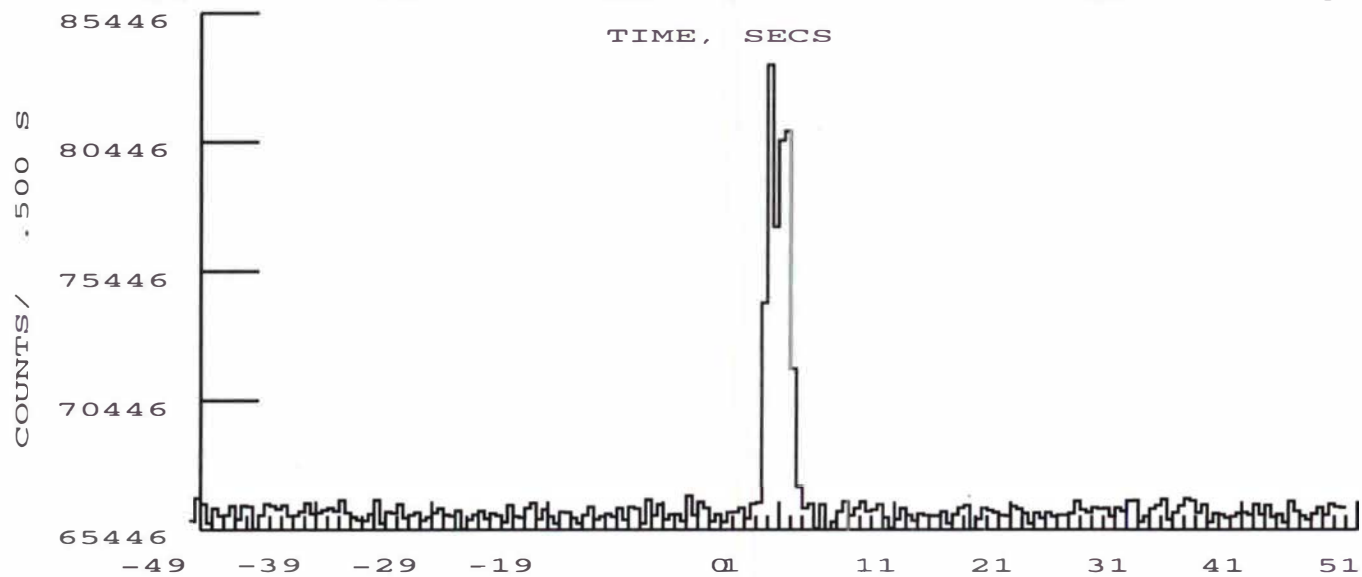
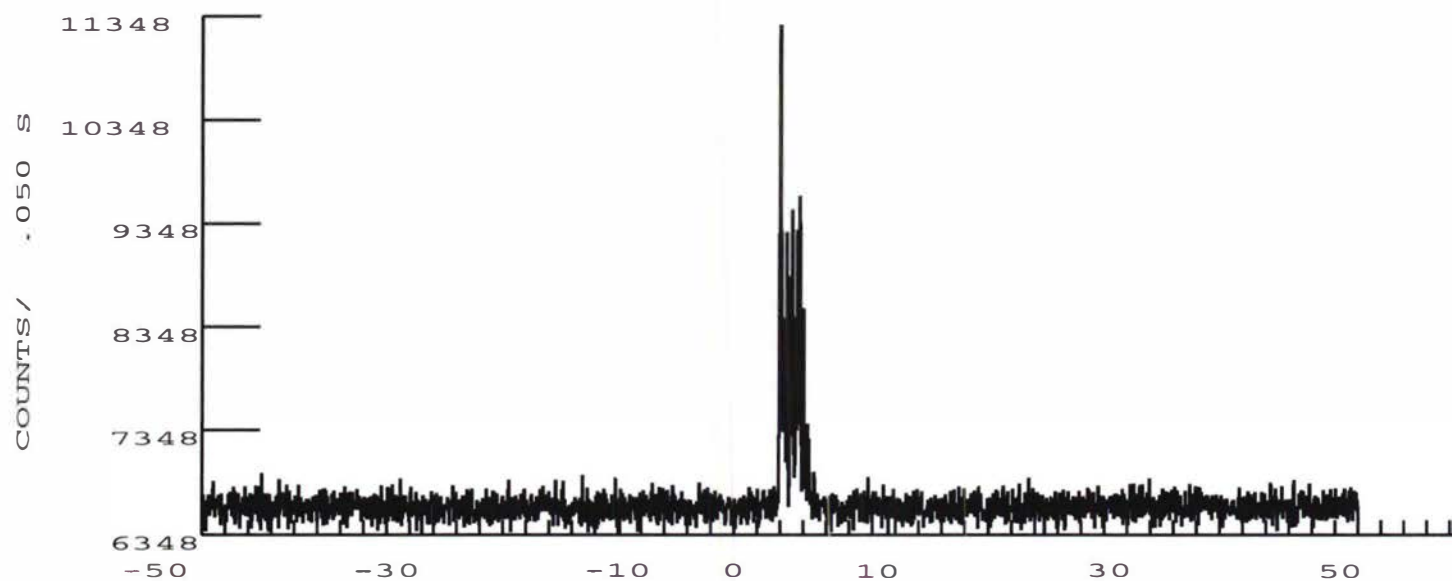
KONUS

31/01/20

COUNTS/SEC 81673.000

22:41:13.000





BAT lightcurve for trigger at 200131_2241

Subject: BAT lightcurve for trigger at 200131_2241

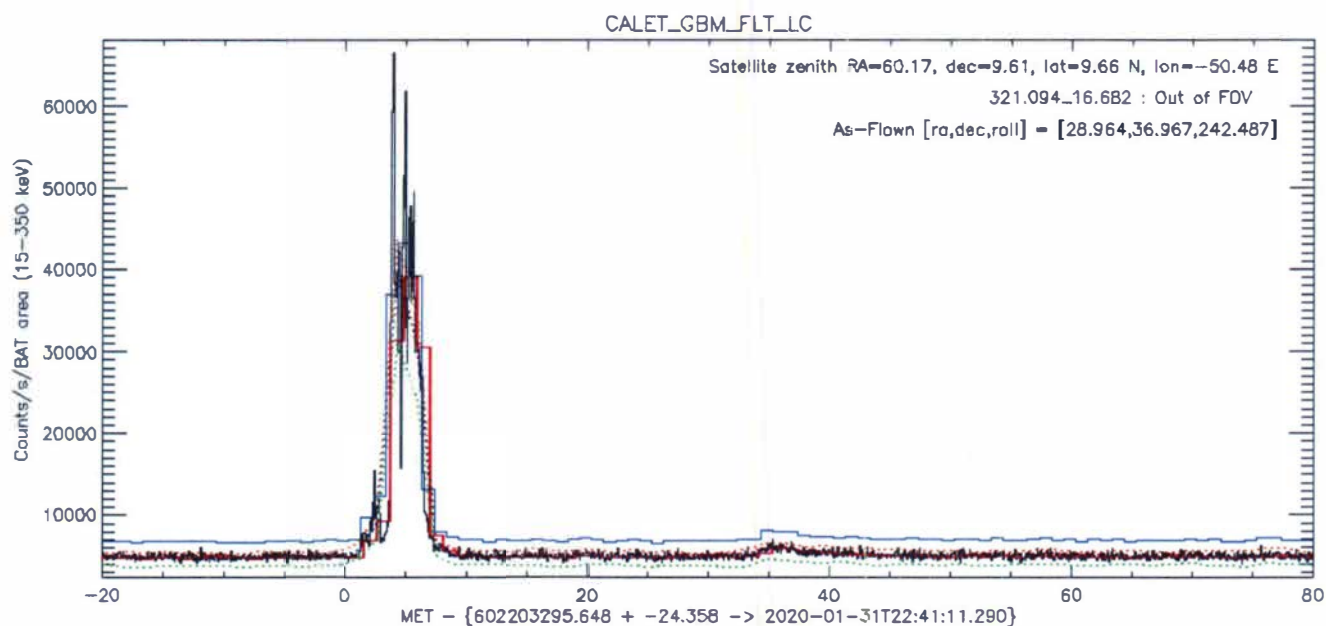
From: "palmer+automatic_lightcurve via ipn" <ipn@ssl.berkeley.edu>

Date: 1/31/2020, 5:25 PM

To: aaron.tohu@gmail.com, 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/200131_2241.png —



```
% /Users/palmer/anaconda3/envs/dmplab/bin/swinfo -o 602203295.648 -s 321.094_16.682
```

Swift Zenith(RA,dec): 60.17, 9.61

Swift Location(lon,lat,alt): -50.48 E, 9.66 N, 543 km

Time(MET + UTCF -> UT): 602203295.648 + -24.358 -> 2020-01-31T22:41:11.290

YYMMDD_SOD: 200131_81671.290 DOY=031

Obs Sequence Number: 03105108007

Obs Target Name: SGWGS-317

Obs Date and Times: 2020-01-31 22:28:37 - 22:41:25

Obs Pointing(ra,dec,roll): 28.964, 36.967, 242.49

321.094_16.682_imageloc (boresight_dist, angle): (63, -62)

321.094_16.682_exposure (cm² cos adjusted): 0

321.094_16.682_altitude: 17 (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/200131_2241_bat64ms_ipn

59.3 KB

/tmp/swift/200131_2241.png

14.6 KB

Subject: GCN/CALET_GBM_FLT_LIGHTCURVE
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
Date: 1/31/2020, 2:42 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN/CALET NOTICE
NOTICE_DATE: Fri 31 Jan 20 22:41:51 UT
NOTICE_TYPE: CALET GBM Flight Lightcurve
POINT_RA: 321.09d {+21h 24m 23s} (J2000),
POINT_DEC: +16.68d {+16d 40' 55"} (J2000),
TRIGGER_NUM: 1264545439
TRIGGER_DATE: 18879 TJD; 31 DOY; 20/01/31
TRIGGER_TIME: 81671.29 SOD {22:41:11.29} UT
TRIGGER_DET: 1 1 1 (HXM1 HXM2 SGM)
SIGNIFICANCE: 93.90 [sigma]
FOREGND_DUR: 4.00 [sec]
BACKGND_DUR1: 16.00 [sec]
ENERGY_BAND: 40-230 [keV]
SC_LON_LAT: 210.38,16.77 [deg]
LC_URL: http://cgbm.calet.jp/cgbm_trigger/flight//1264545439/index.html
COMMENTS: CALET-GBM Flight Lightcurve.
COMMENTS:
COMMENTS: NOTE: This CALET_GBM_FLT_LC event is temporally(4.0<100sec) coincident with the SWIFT_BAT event (trignum=953689).
COMMENTS: The LC_URL file will not be created until ~15 min after the trigger.

Subject: GRB 200131A: CALET Gamma-Ray Burst Monitor detection
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 2/2/2020, 11:07 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 26972
SUBJECT: GRB 200131A: CALET Gamma-Ray Burst Monitor detection
DATE: 20/02/03 07:07:14 GMT
FROM: Valentin Pal'shin at AGU <val@phys.aoyama.ac.jp>

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

The bright GRB 200131A detected by Swift (Sbarufatti et al.,
GCN Circ. 26953, Sakamoto et al., GCN Circ. 26967;
<https://gcn.gsfc.nasa.gov/other/200131A.gcn3>)
triggered the CALET Gamma-ray Burst Monitor (CGBM) at 22:41:11.299 UTC
on 31 January 2020. The burst signal was seen by all CGBM detectors.

The burst light curve shows a multi-peaked structure which starts
at T+3.3 sec, peaks at T+3.8 sec and ends at T+6.4 sec.
The T90 and T50 durations measured by the SGM data are 2.2 +/- 0.1 sec
and 1.4 +/- 0.1 sec (40-1000 keV), respectively.

The ground processed light curve is available at

http://cgbm.calet.jp/cgbm_trigger/ground/1264545439/

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