

KONUS

31/03/2016

66.421

v03

10- 50 keV

50- 200 keV

200- 750 keV

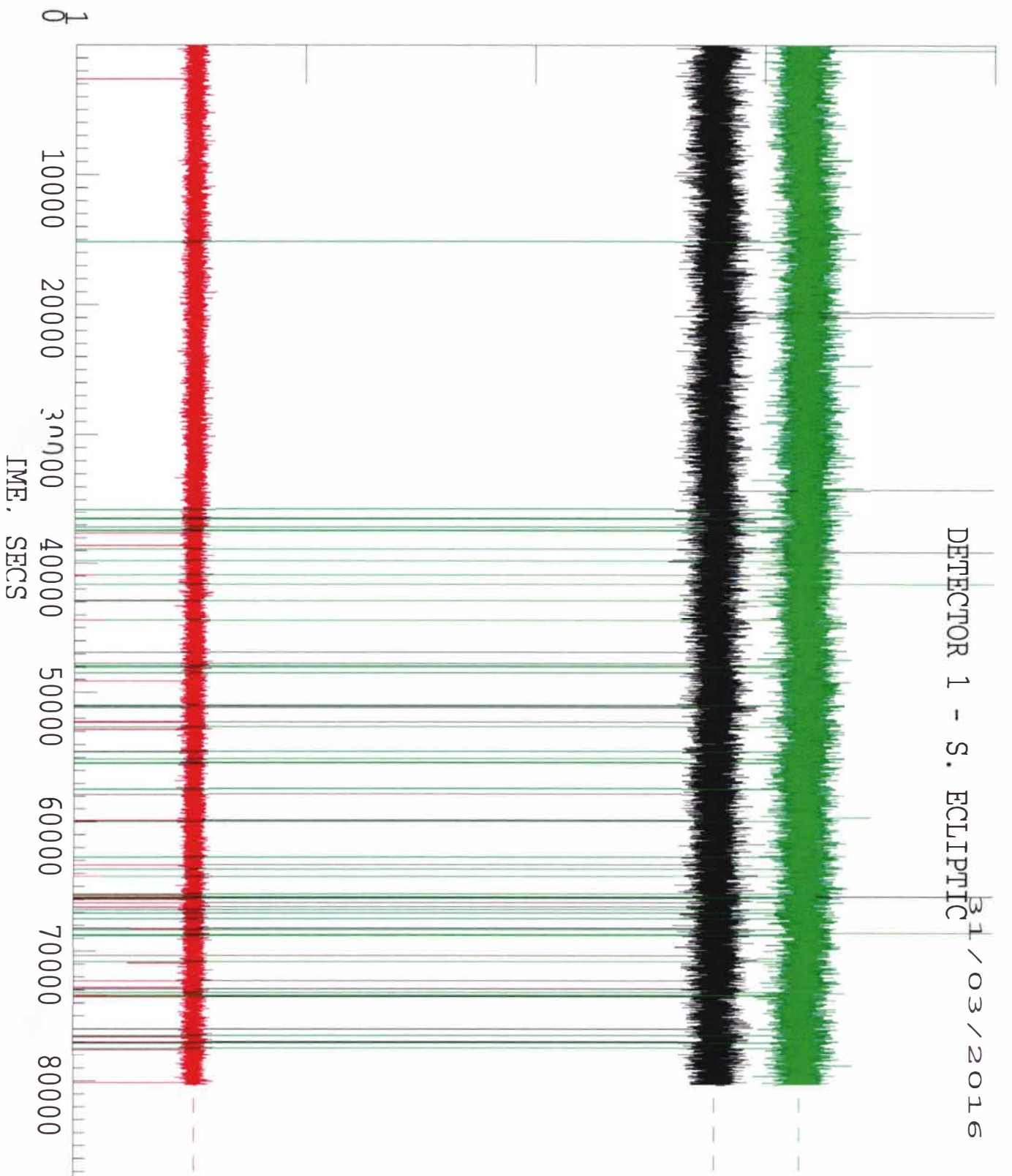
COUNTS/2.944 S

1001

2001

3001

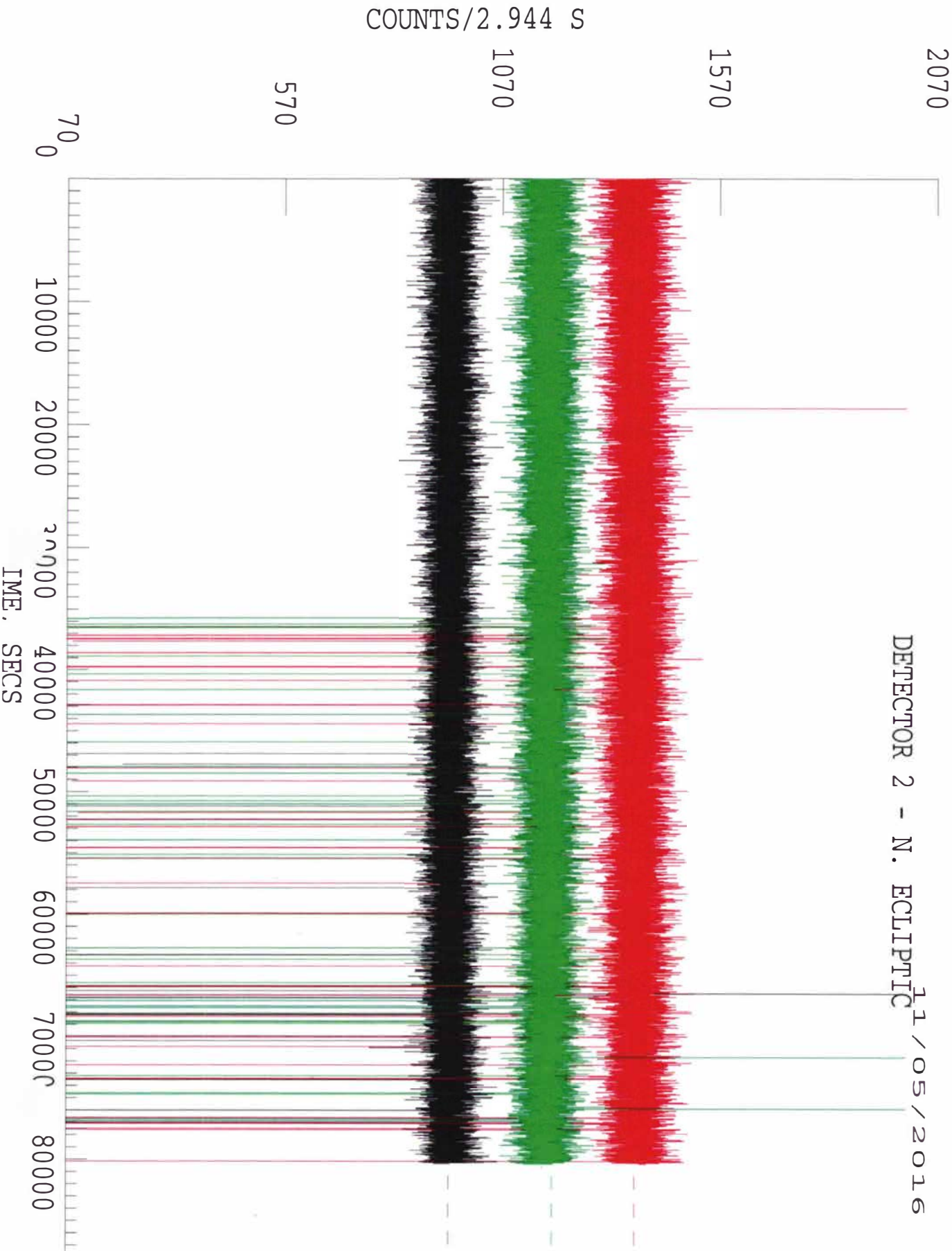
4001



10- 50 keV

50- 200 keV

200- 750 keV



KONUS

01/04/2016

55.148

v03

10- 50 keV

50- 200 keV

200- 750 keV

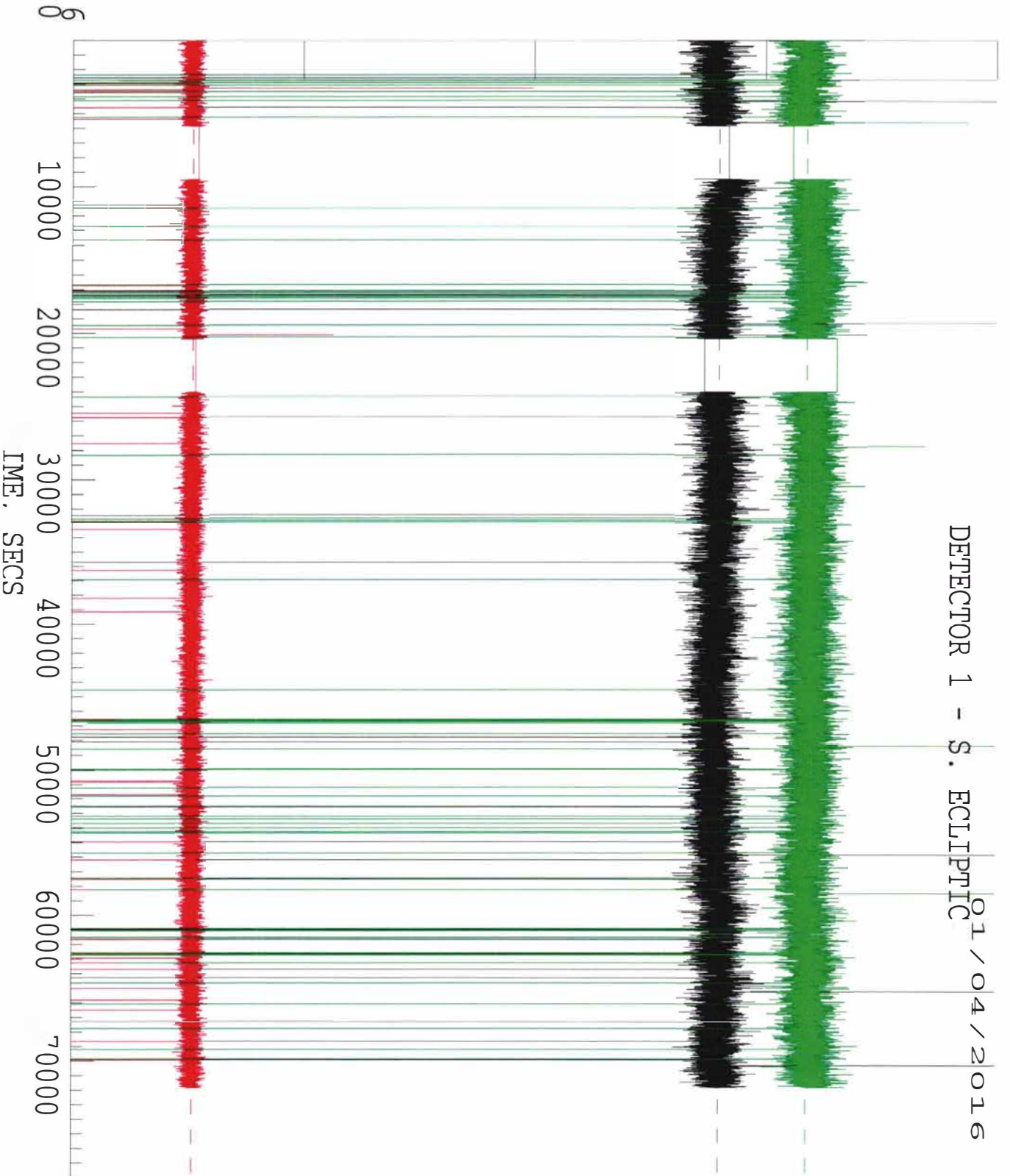
COUNTS/2.944 S

1006

2006

3006

4006



KONUS

01/04/2016

55.148

v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2006

1506

1006

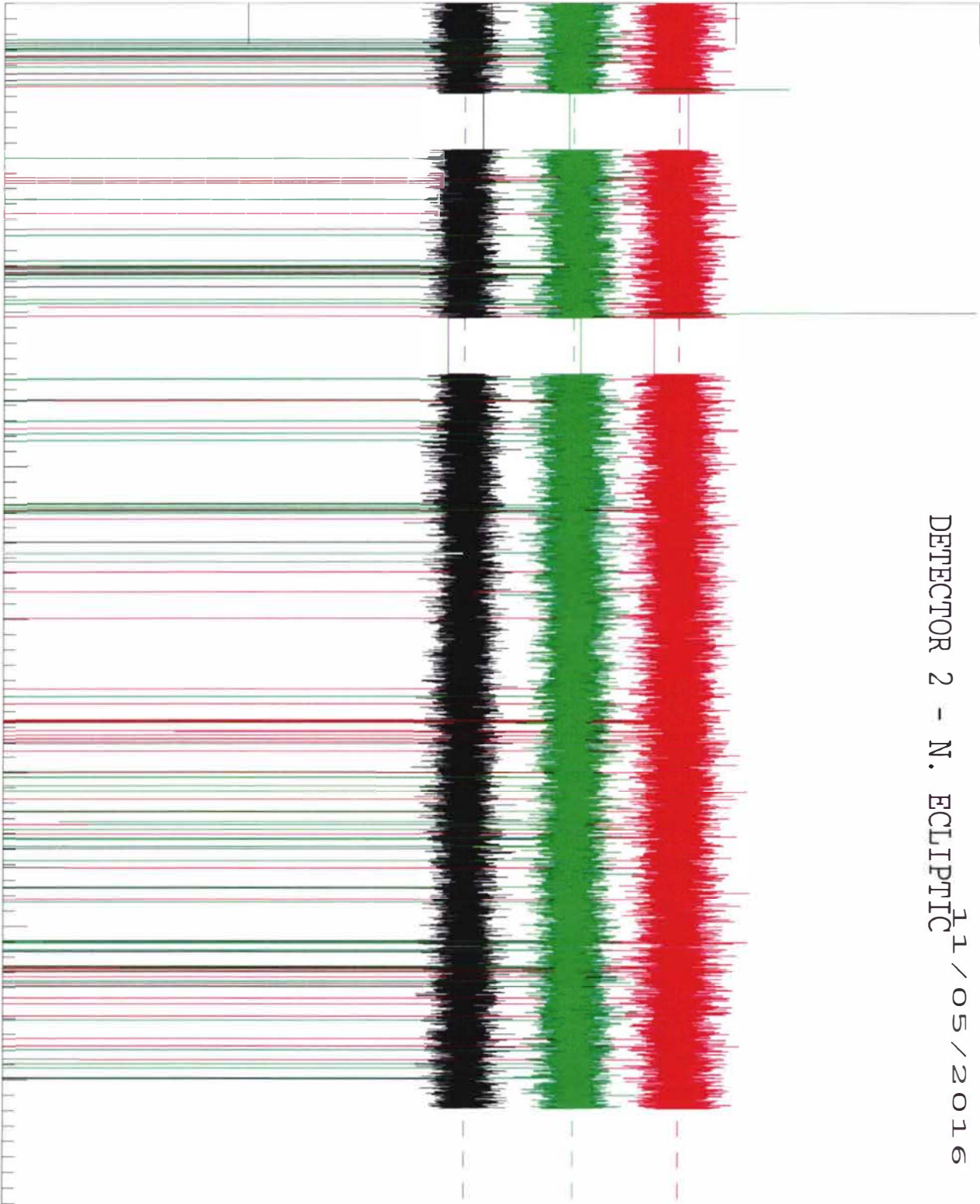
506

6

DETECTOR 2 - N. ECLIP TIC¹¹/05/2016

10000 20000 30000 40000 50000 60000 70000

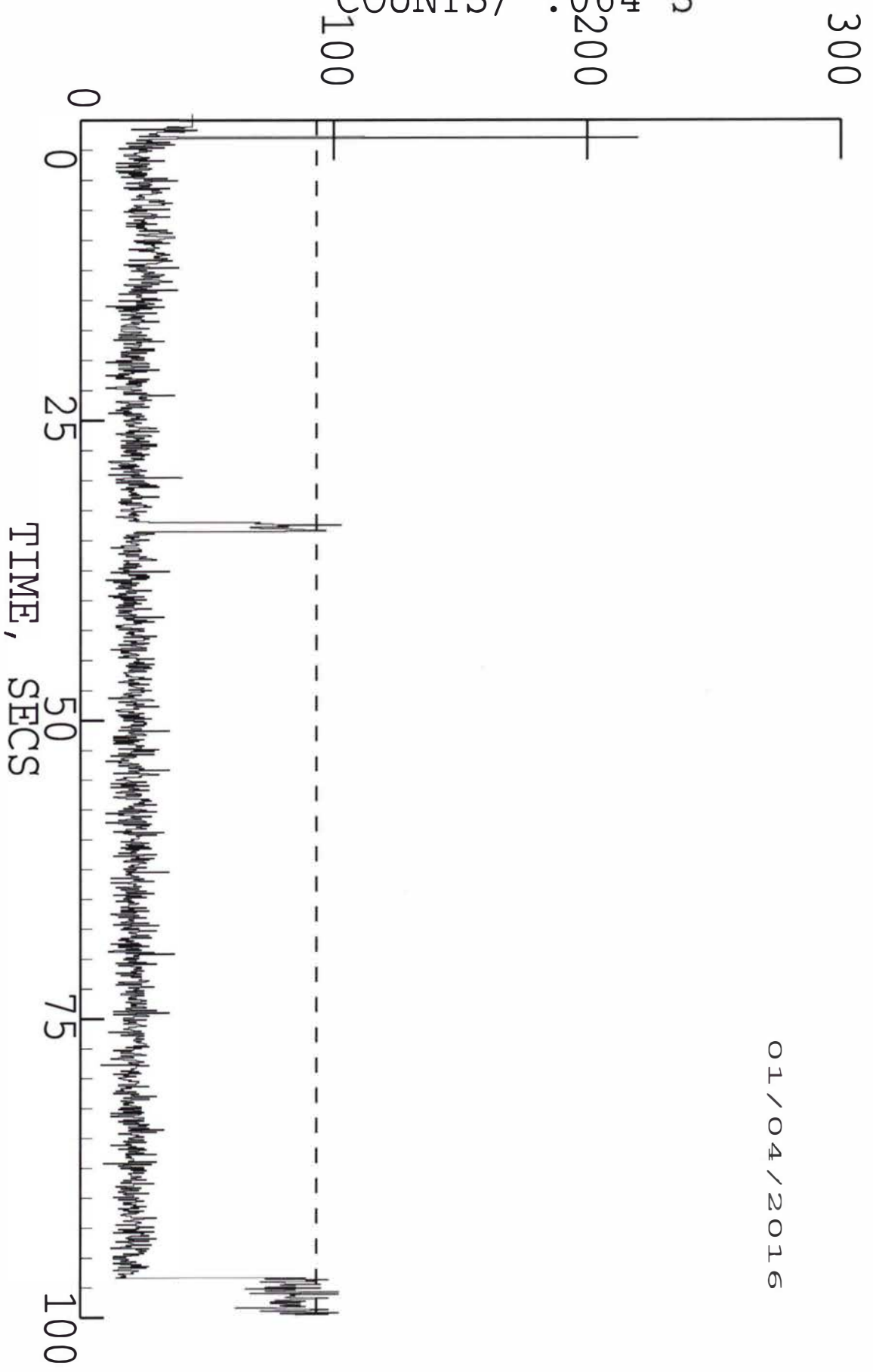
TIME, SECS



A

KONUS 01/04/16 5642.658 01:34:02.658
50- 200 keV

COUNTS/ .064 S



01/04/2016

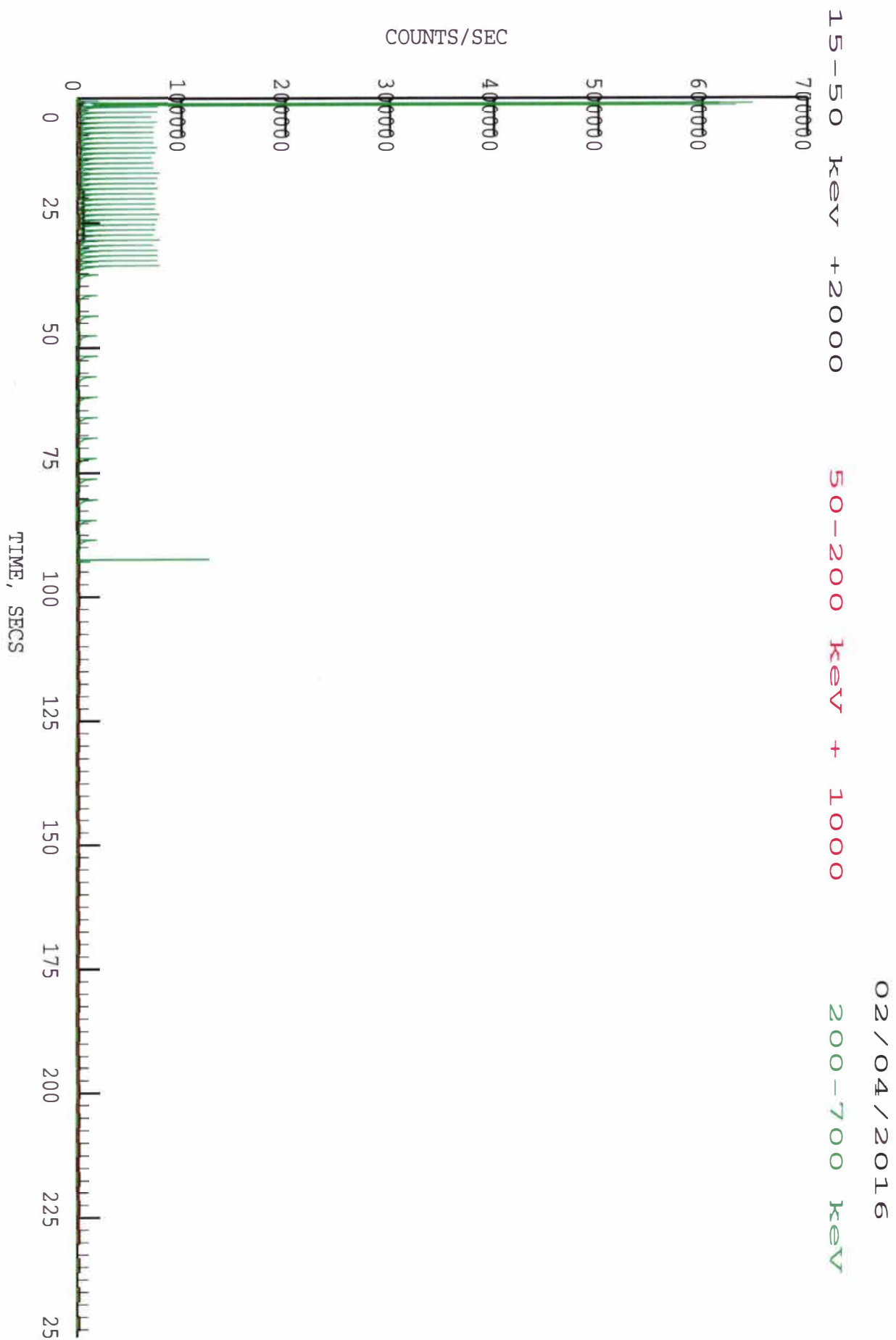
A

KONUS

01/04/16

5642.000

01:34:02.000



FERMI

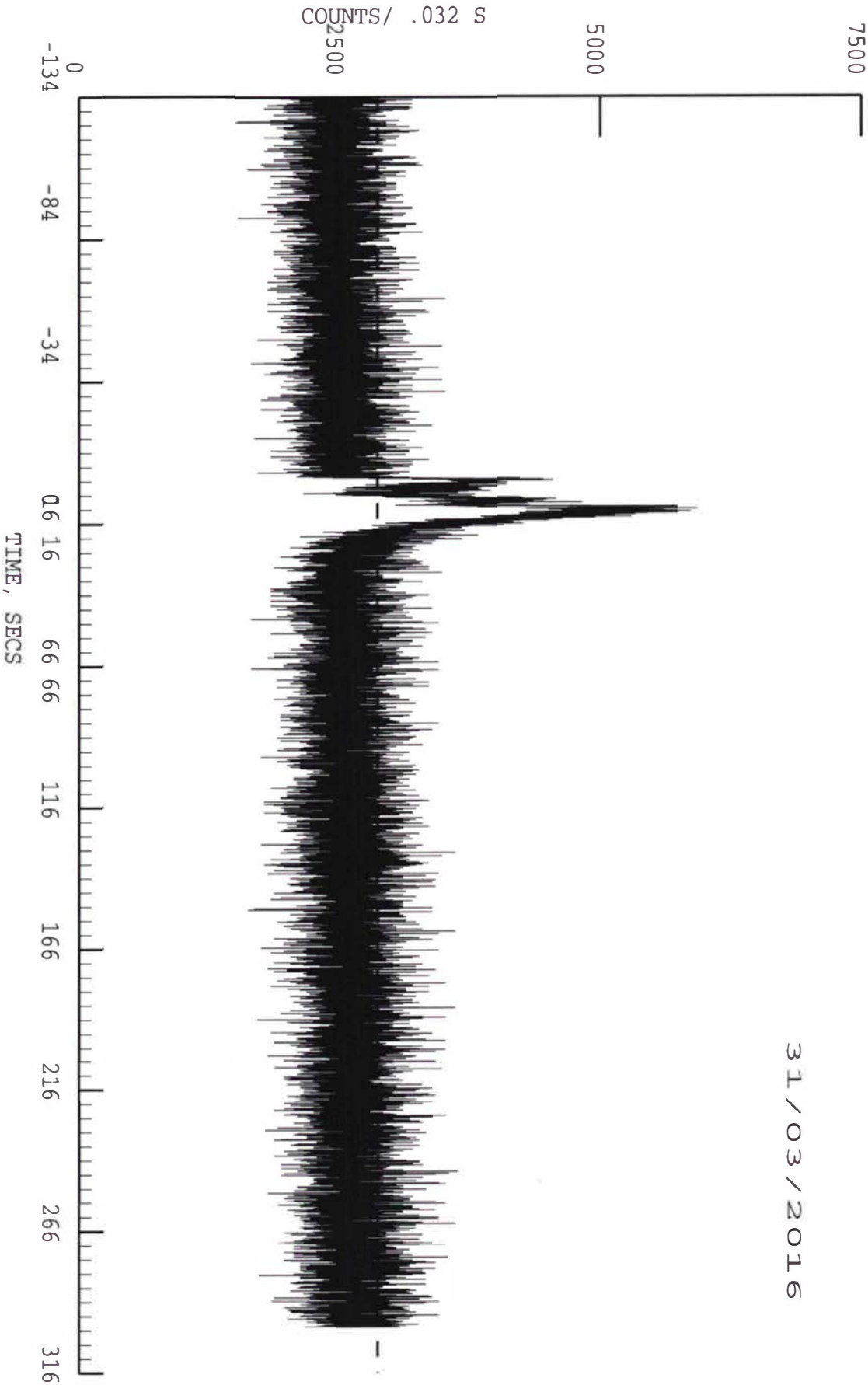
01/04/16

5642.509

01:34:02.509

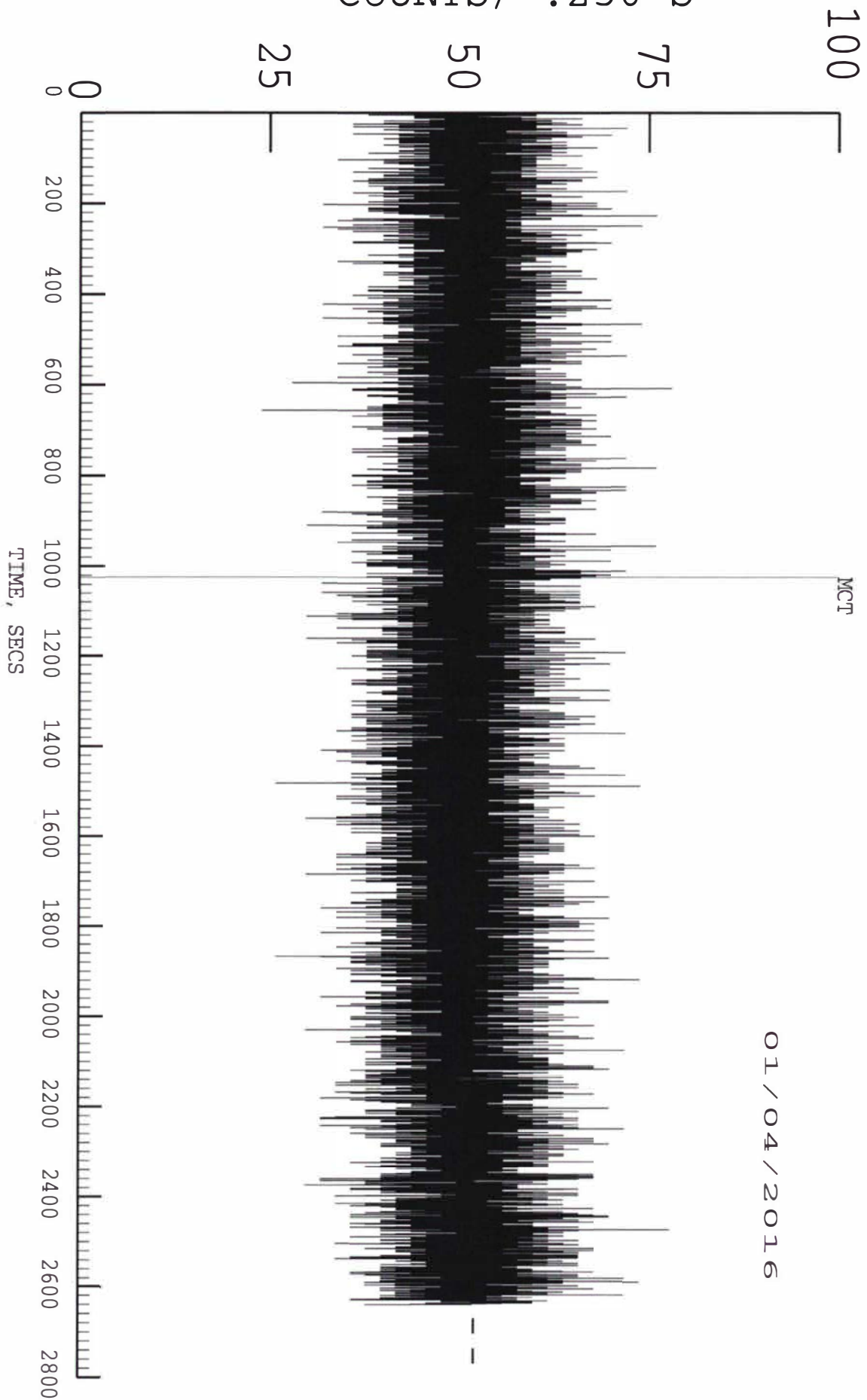
26- 293 keV

290.2 -28.9 2.7



31/03/2016

ODYSSEY 01/04/16 4322.429 01:12:02.429^A
50-3000 keV
COUNTS/ .250 S



RHESSI Data for 20160401_0132

No Data Available For This Time Range

off all month

Do Not Retry

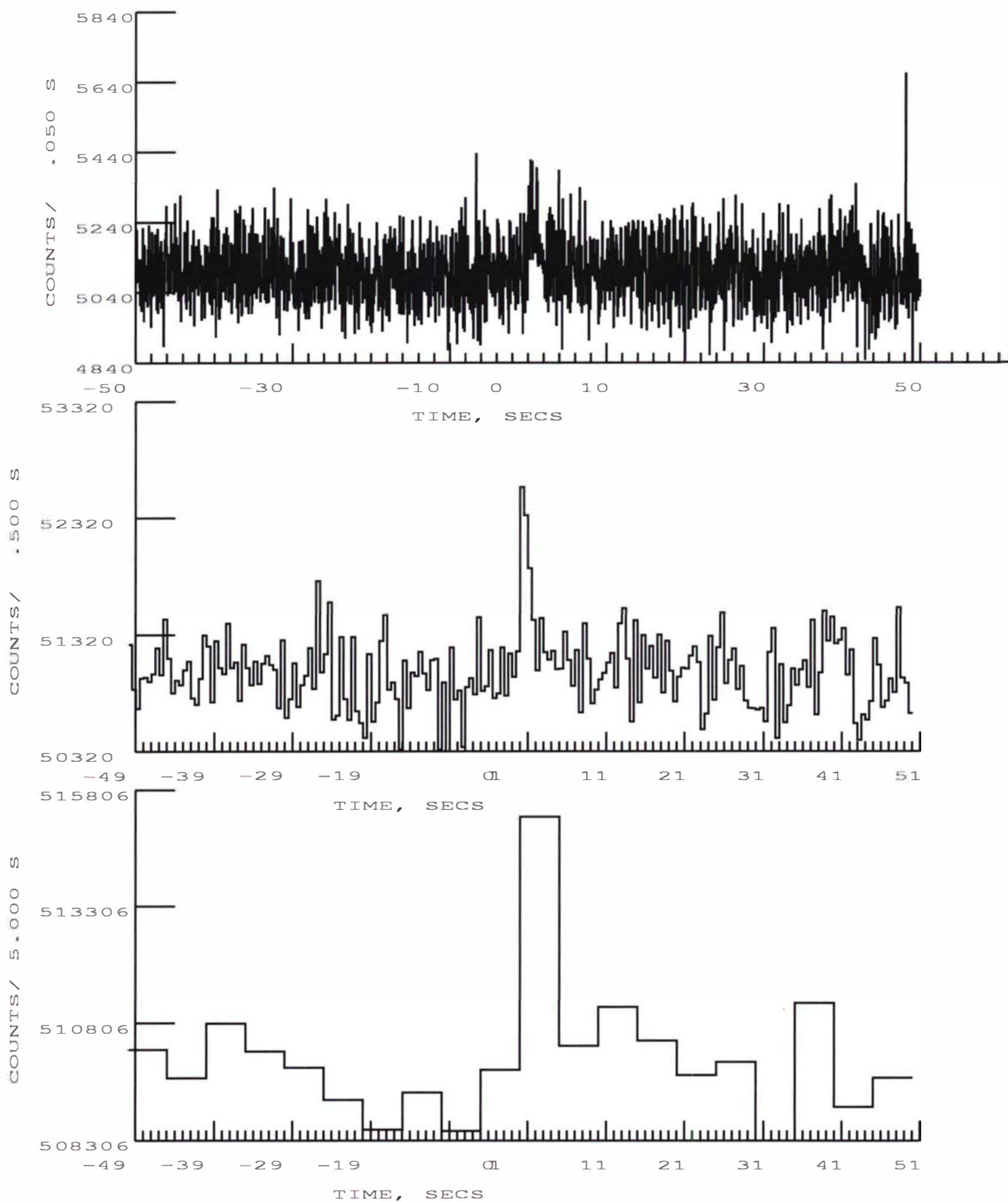
INTEGRAL

01/04/16

5642.000

01:34:02.0

15/07/16



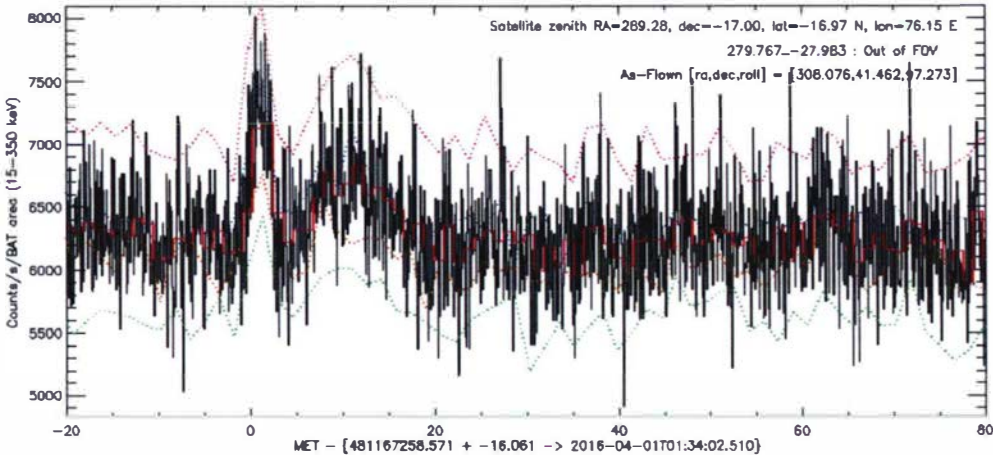
[Ipn] BAT lightcurve for trigger at 160401_0134



Subject: [Ipn] BAT lightcurve for trigger at 160401_0134
From: palmer+automatic_lightcurve@lanl.gov
Date: 3/31/2016 9:38 PM
To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

/tmp/swift/160401_0134.png



```
% /usr/local/bin/swinfo -o 481167258.571 -s 279.767_-27.983
Swift Zenith(RA,dec):      289.28, -17.00
Swift Location(lon,lat,alt): 76.15 E, -16.97 N, 562 km
Time(MET + UTCF -> UT): 481167258.571 + -16.061 -> 2016-04-01T01:34:02.510
YYMMDD_SOD:               160401_05642.510 DOY=092
Obs Sequence Number:      00034282004
Obs Target Name:          {[MT91]213}
Obs Date and Times:       2016-04-01 01:32:45 - 02:02:41
Obs Pointing(ra,dec,roll): 308.076, 41.462, 97.27
279.767_-27.983_imageloc (boresight_dist, angle): (74, 19)
279.767_-27.983_exposure (cm^2 cos adjusted): 0
279.767_-27.983_altitude: 99 (up)
```

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

Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

Attachments:

/tmp/swift/160401_0134.png

27.7 KB

/tmp/swift/160401_0134_bat64ms_ipn

87.1 KB

Date: Aug 25 2017

BURST TRIANGULATION CHECKLIST

1. Suzaku Data

- ☐ 1 second timing error corrected? (Jan 1 – Apr 24 2009, and July 1 – August 20, 2012 – leap sec.)

2. AGILE Data

- ☐ 1 second timing error corrected?

3. MESSENGER Data

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

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For Odyssey events

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

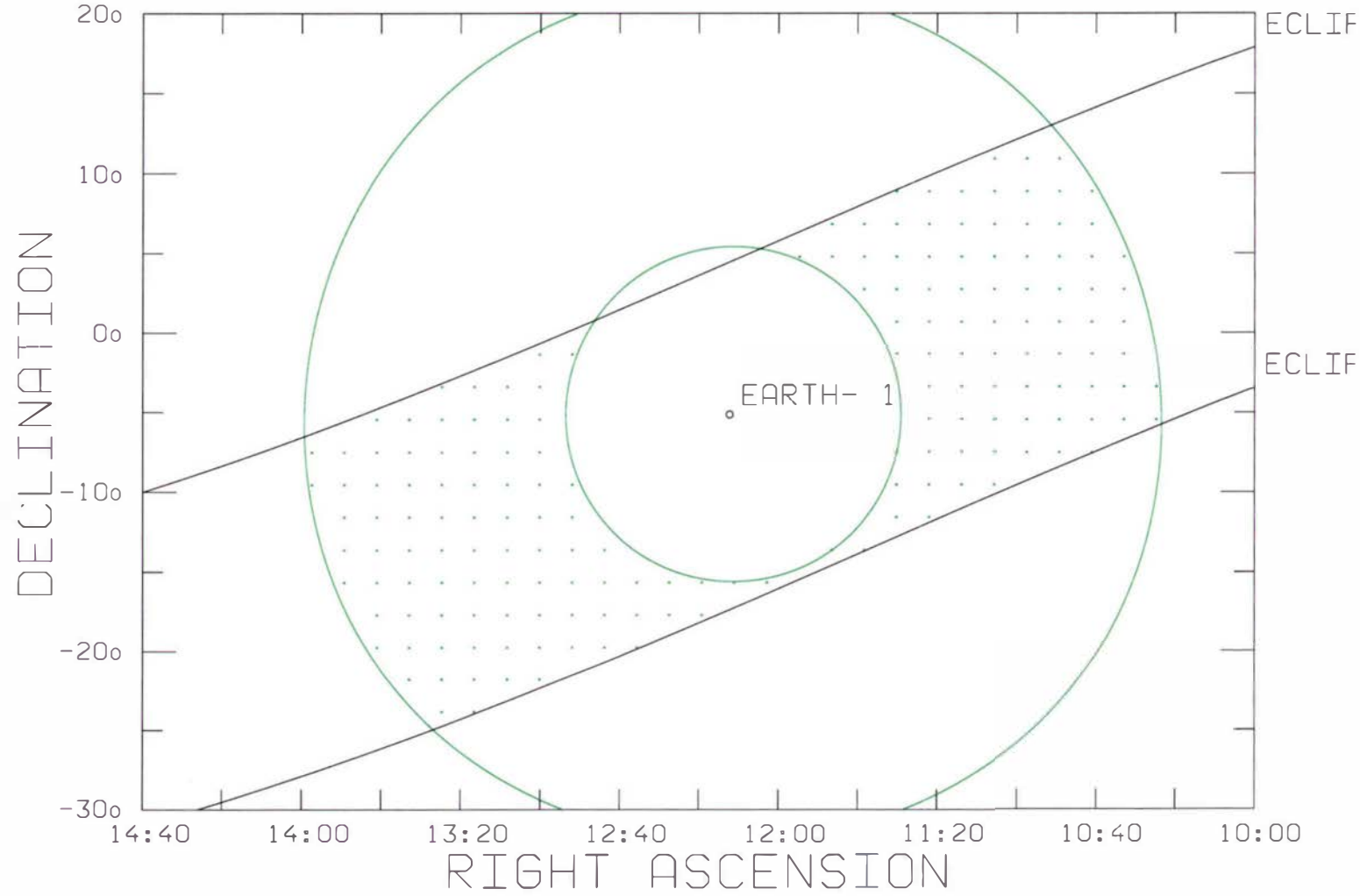
6. For 3 or More Spacecraft events

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

7. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?
- ☐ Hand-extracted data used (record starts at -30.000 s)?
- ☐ Volodymyr's website checked ? (<http://isdc.unige.ch/~savchenk/spiacs-online/spiacs-ipnlc.pl>)

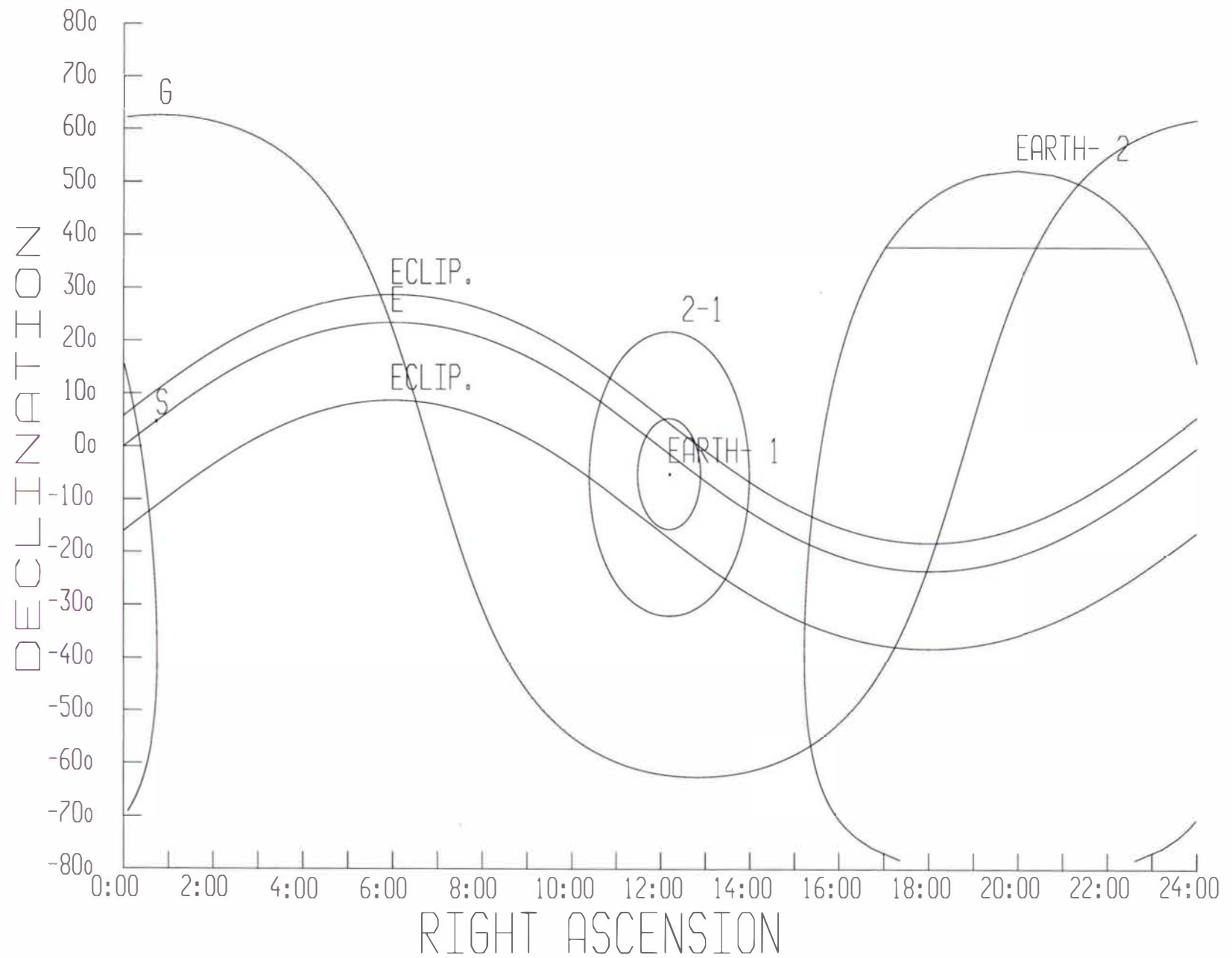
☒ ACCESS and MBL4 databases updated, with identical times?

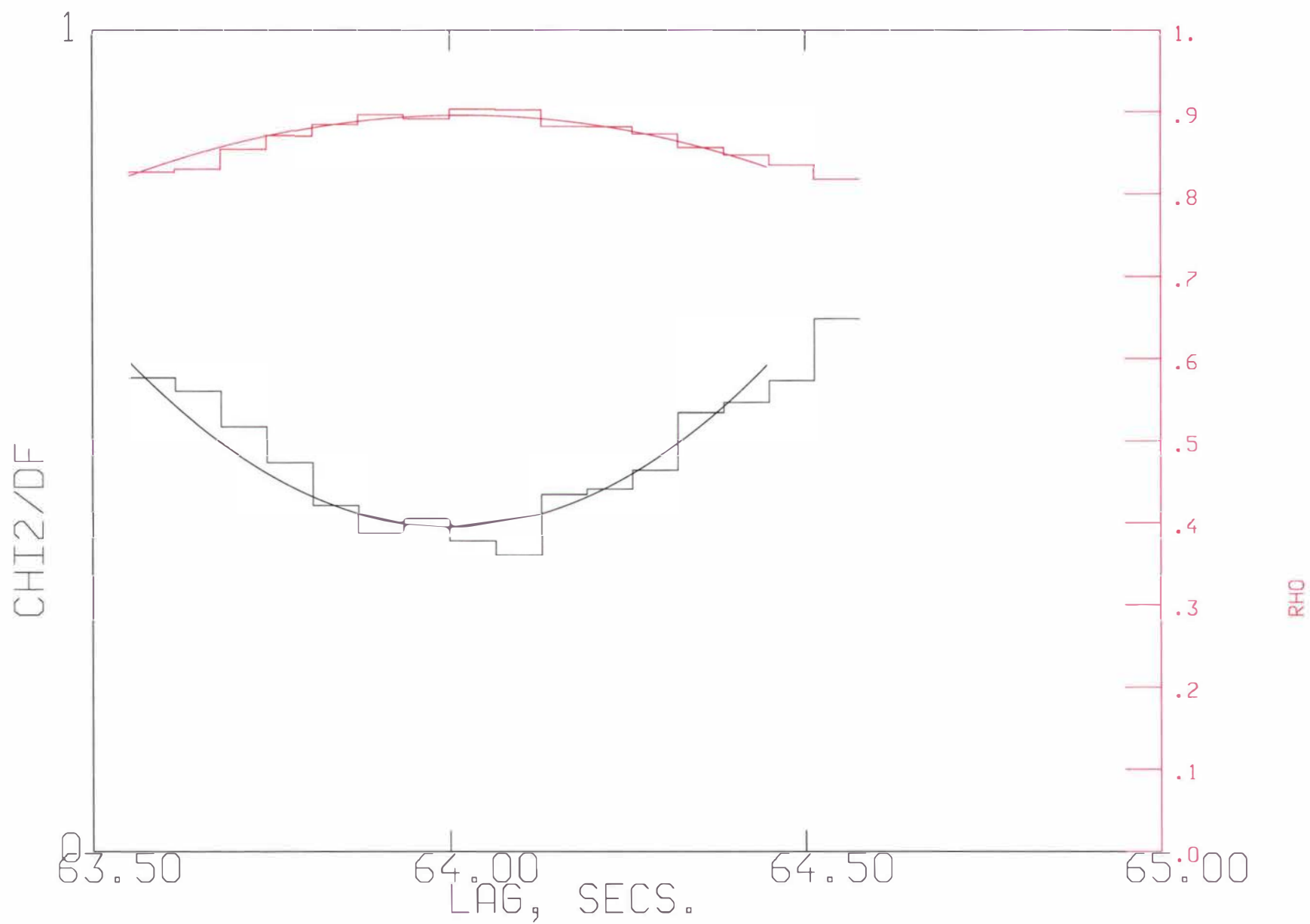


EVENT OF APR 1, 2016 5:36

25/08/2017

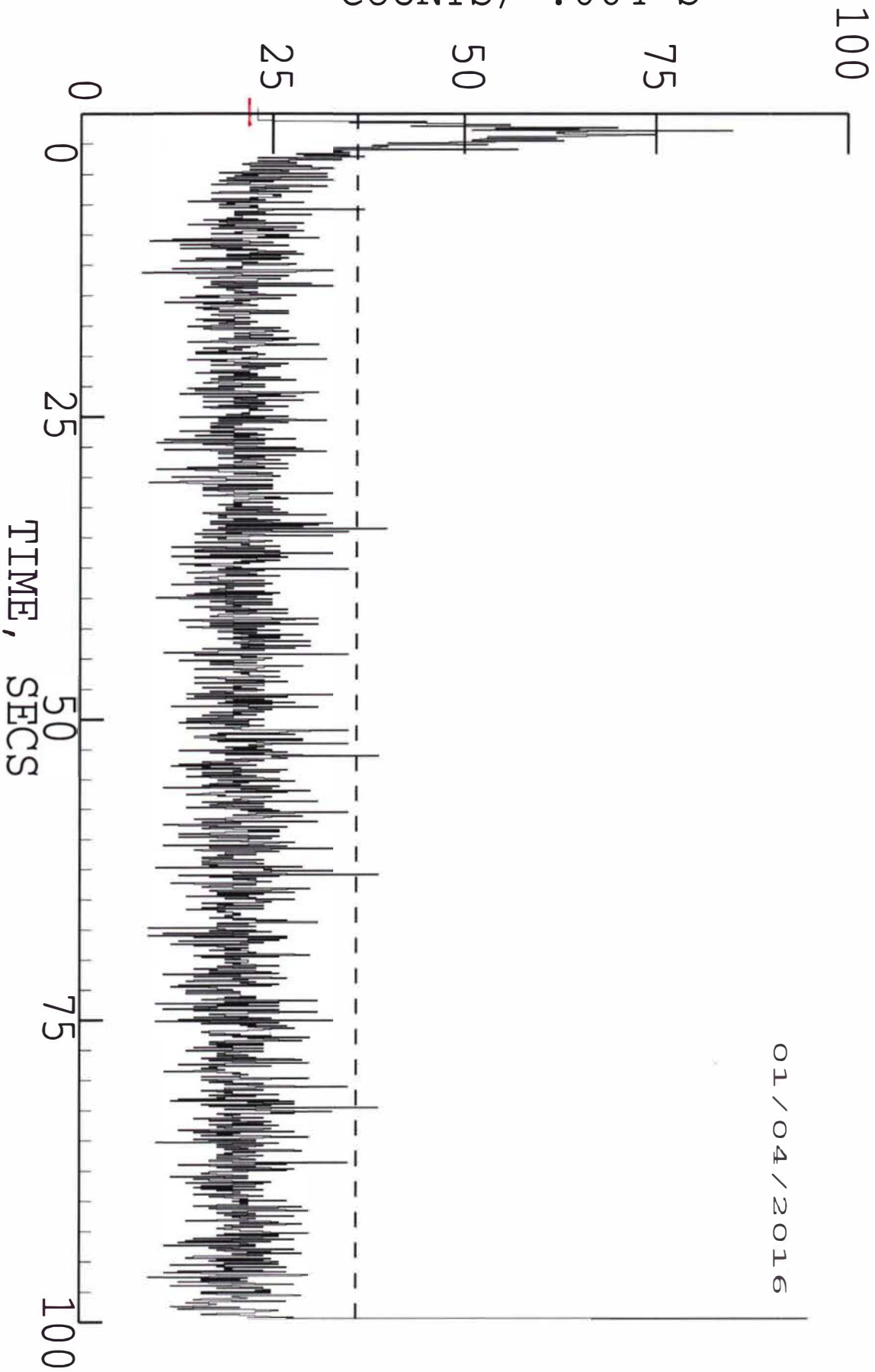
Z-Z = CORRELATION BETWEEN SATELLITES Z AND Z
EARTH-Z = EARTH AS SEEN FROM SATELLITE Z
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS1 2 SWIFT

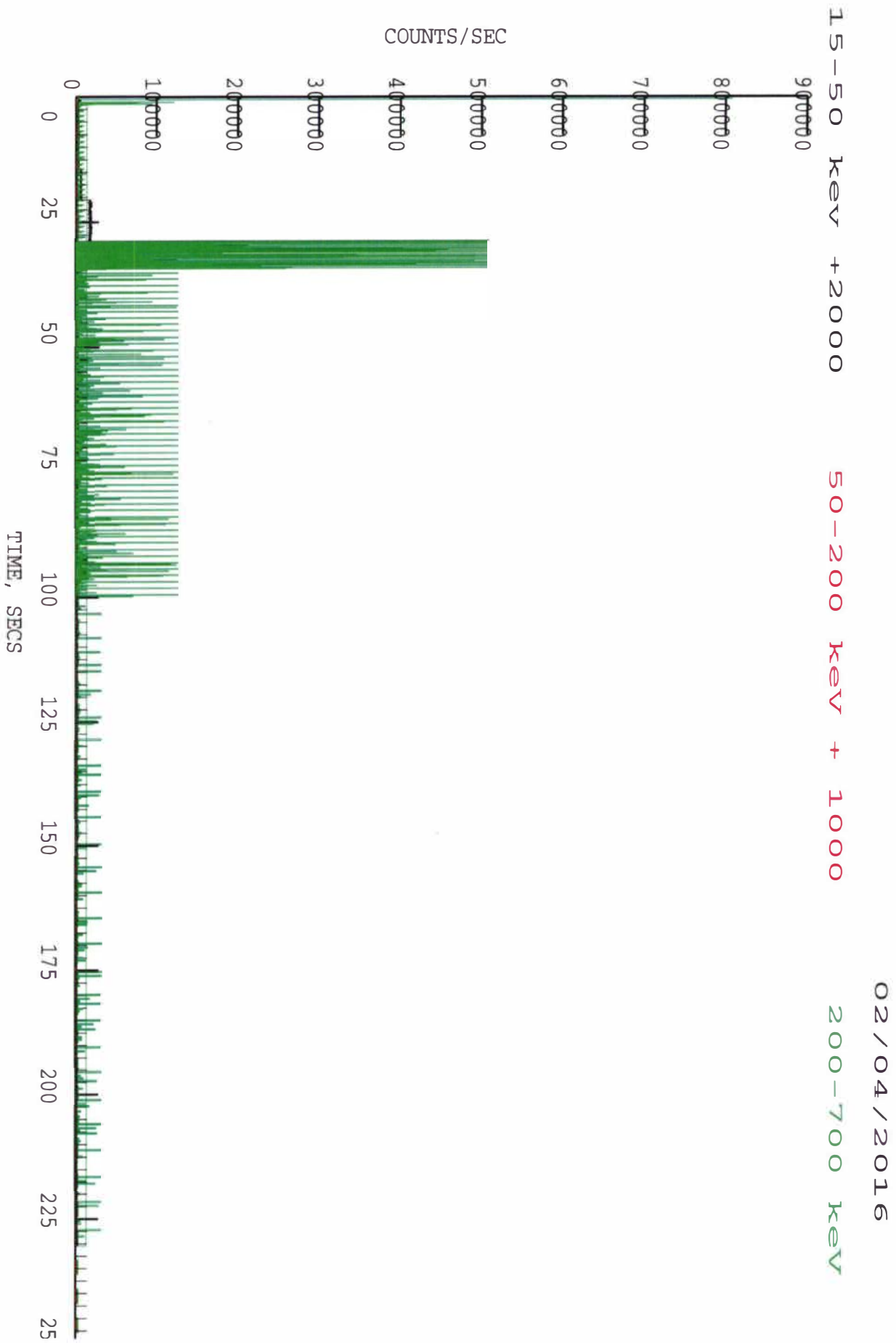




KONUS 01/04/16 20169.884 05:36:09.884^B
50- 200 keV

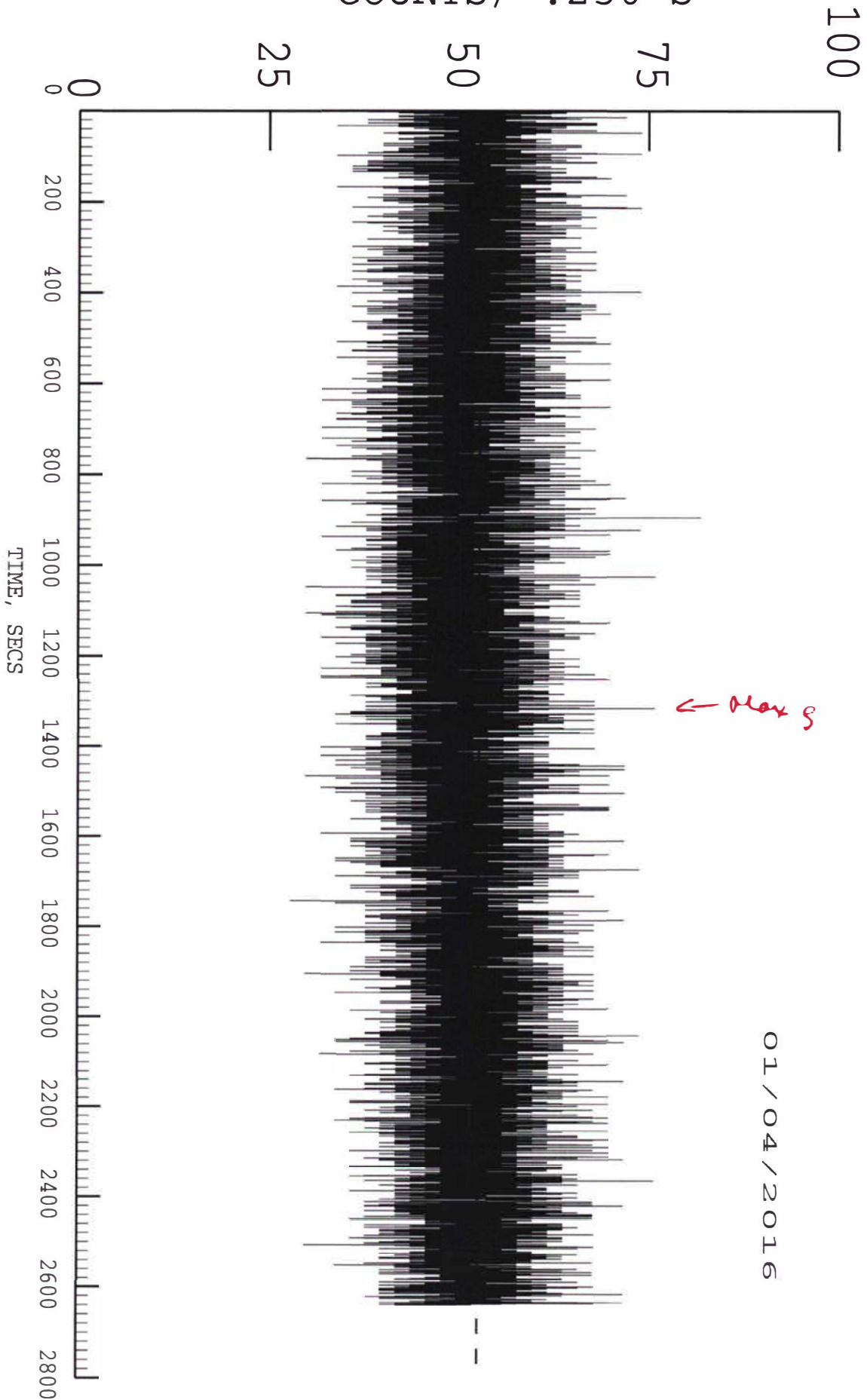
COUNTS/ .064 S





ODYSSEY 01/04/16 18842.174 05:14:02.174^B
50-3000 keV

COUNTS/ .250 S



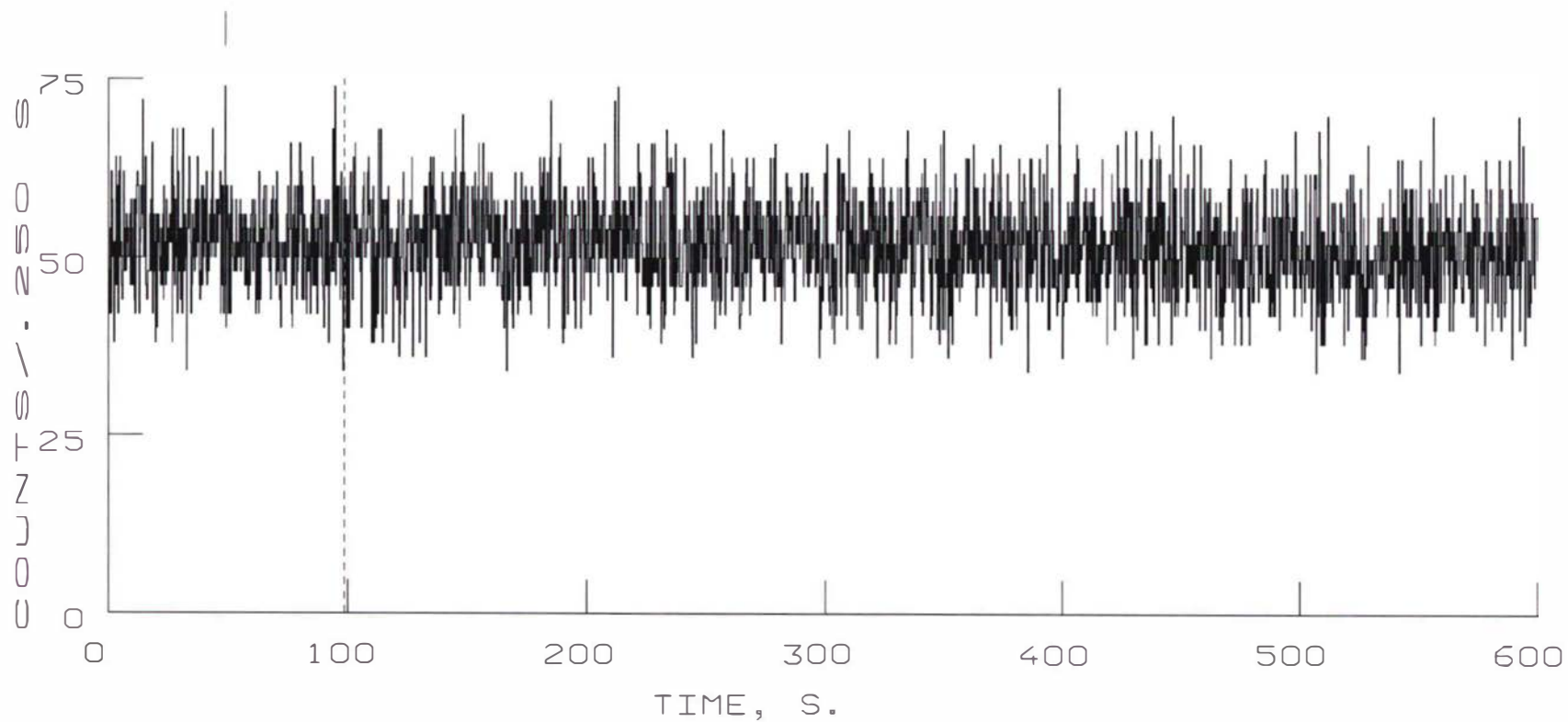
MS01 HEND

25/08/2017

01/04/2016 18842.174 s

50-3000 keV

MAXIMUM



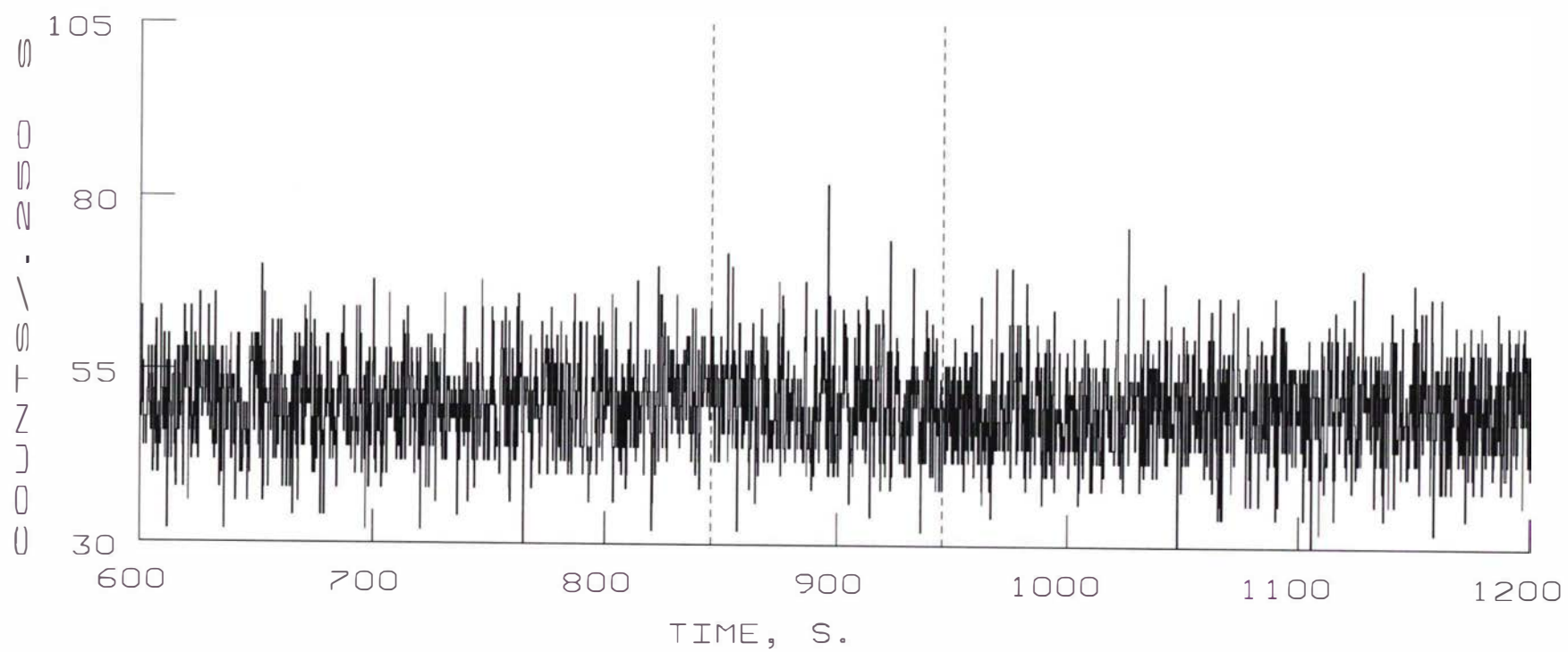
MS01 HEND

25/08/2017

01/04/2016 18842.174 s

50-3000 keV

MAXIMUM



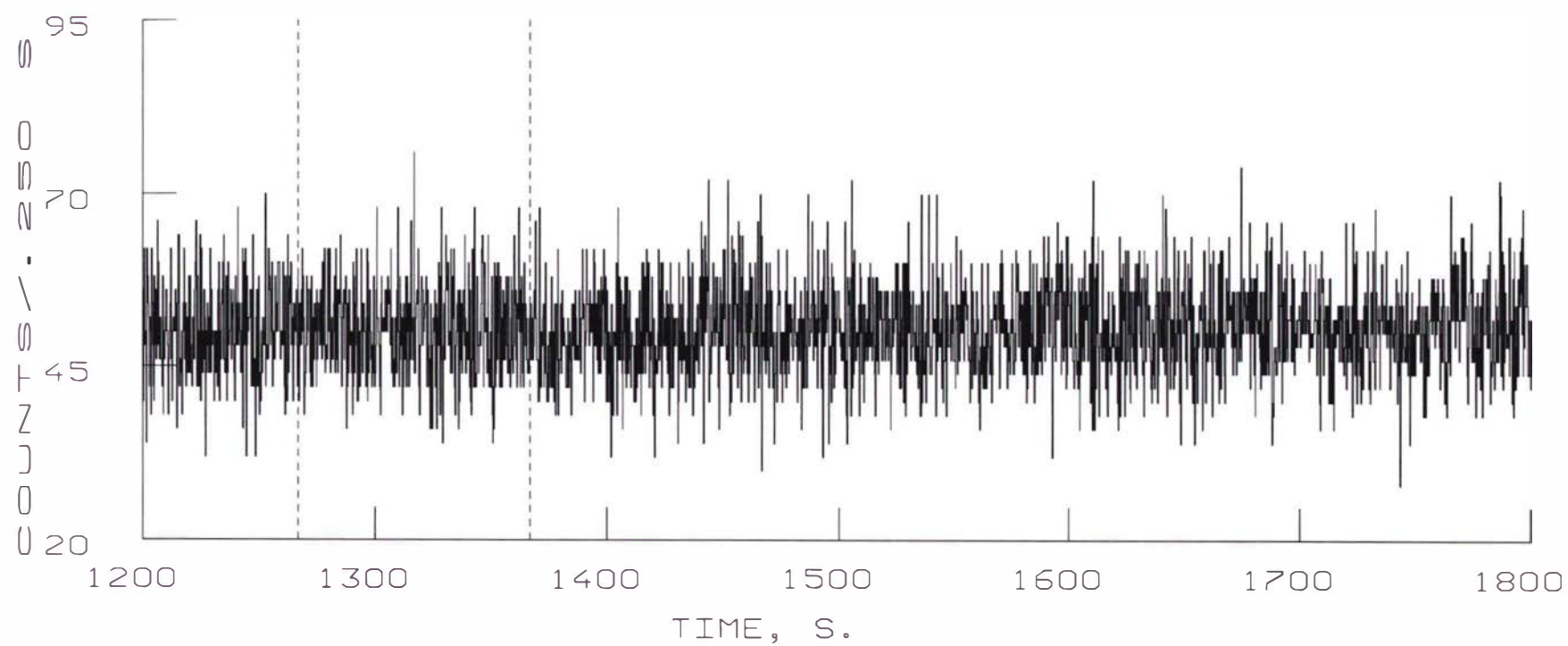
MS01 HEND

25/08/2017

01/04/2016 18842.174 s

50-3000 keV

MAXIMUM



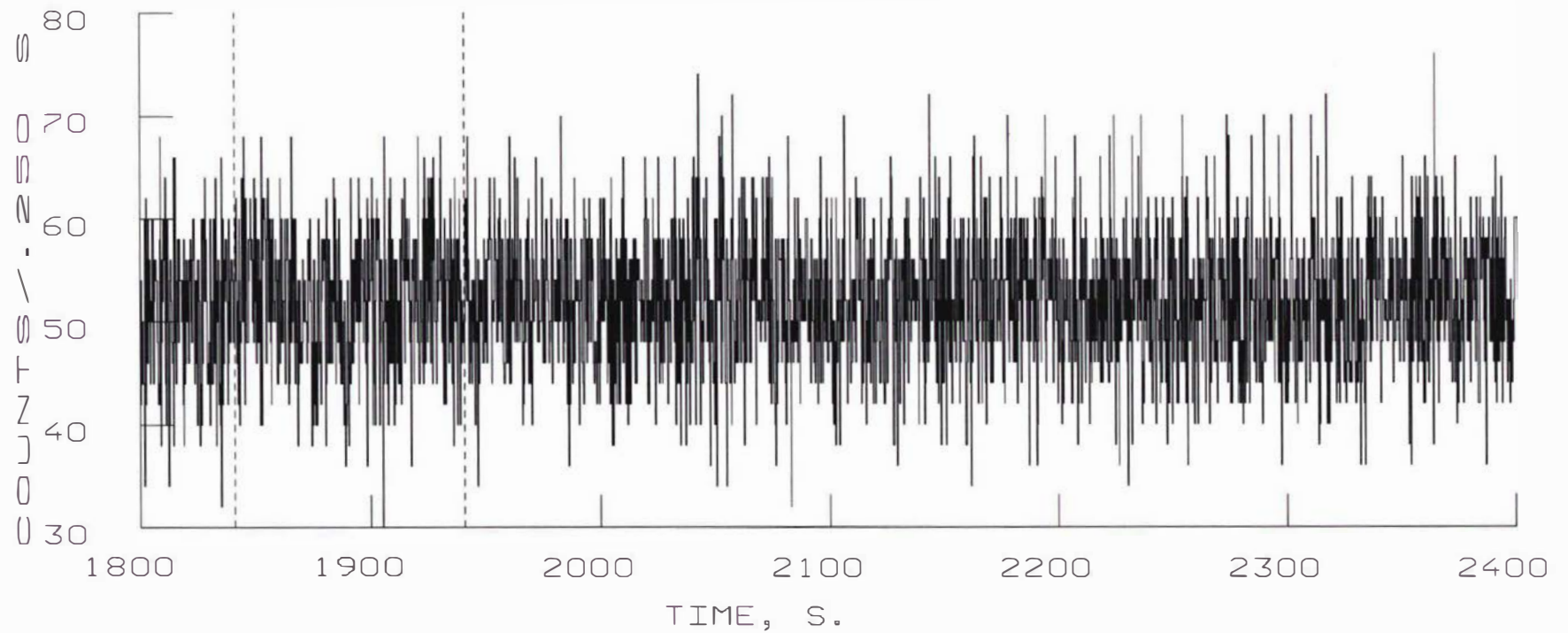
MS01 HEND

25/08/2017

01/04/2016 18842.174 s

50-3000 keV

N= 10 M=40
>4.0 SIGMA FLUCTUATIONS

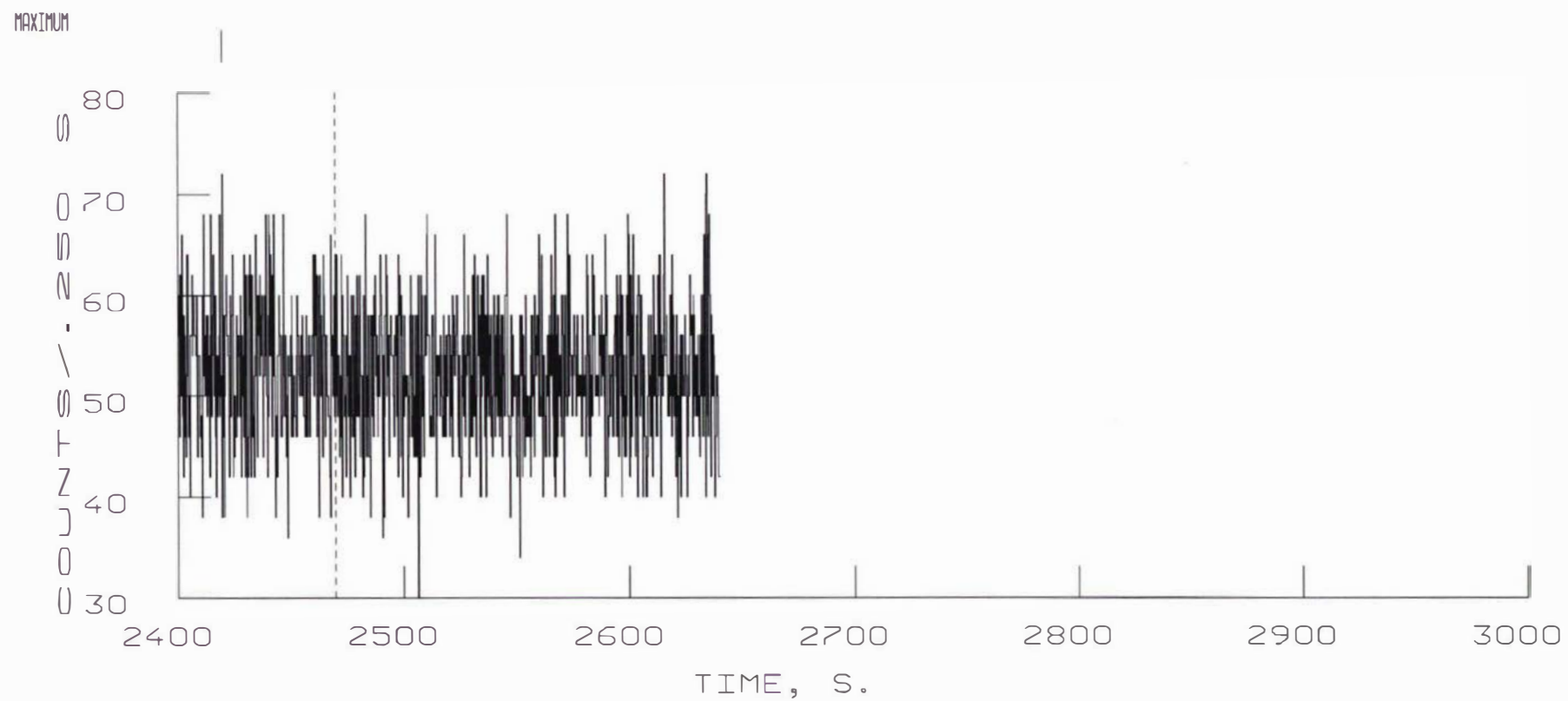


MS01 HEND

25/08/2017

01/04/2016 18842.174 s

50-3000 keV



RHESSI Data for 20160401_0534

No Data Available For This Time Range

Do Not Retry

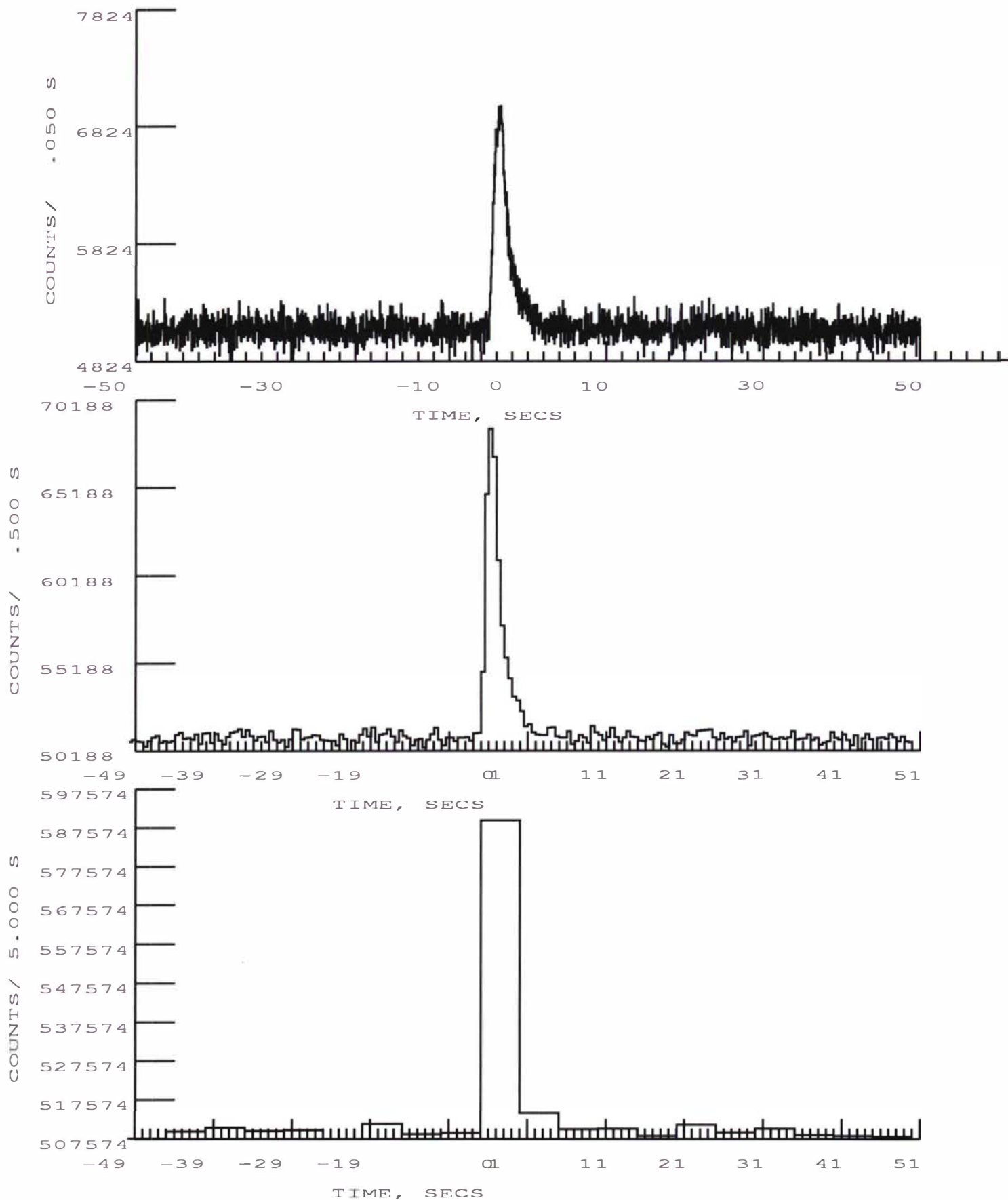
INTEGRAL

01/04/16

20169.000

05:36:09.0

15/07/16



Subject: [lpn] BAT lightcurve for trigger at 160401_0535

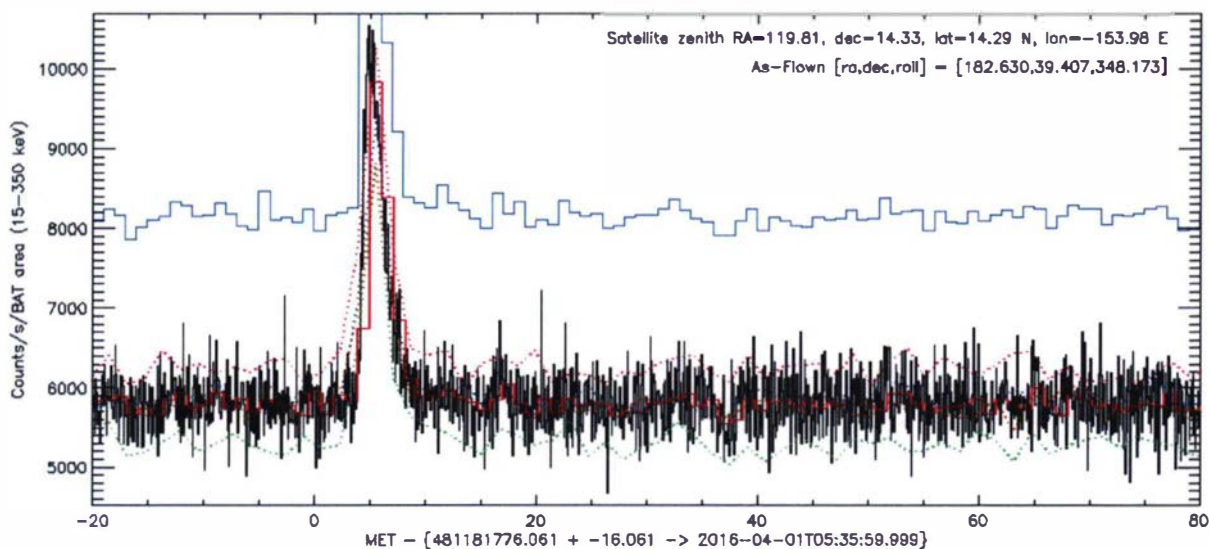
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/1/2016 7:04 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160401_0535.png



```
% /usr/local/bin/swinfo -o 481181776.061
Swift Zenith(RA,dec):      119.81, 14.33
Swift Location(lon,lat,alt): -153.98 E, 14.29 N, 553 km
Time(MET + UTC -> UT):    481181776.061 + -16.061 -> 2016-04-01T05:35:59.999
YYMMDD_SOD:               160401_20159.999      DOY=092
Obs Sequence Number:      00034455026
Obs Target Name:          NGC 4151
Obs Date and Times:       2016-04-01 05:28:45 - 05:49:40
Obs Pointing(ra,dec,roll): 182.630, 39.407, 348.17
```

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

lpn mailing list
lpn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/lpn>

— Attachments: —

/tmp/swift/160401_0535.png

24.2 KB

/tmp/swift/160401_0535_bat64ms_ipn

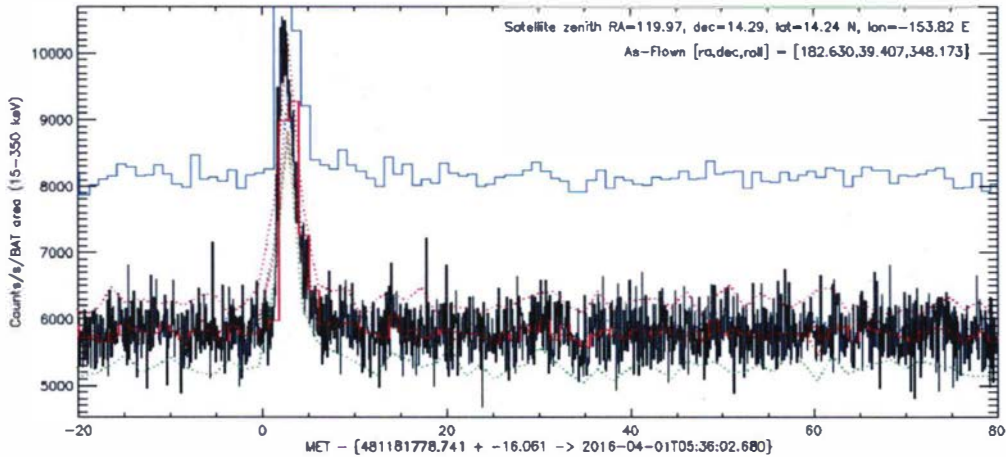
87.0 KB

3

Subject: [Ipn] BAT lightcurve for trigger at 160401_0536
From: palmer+automatic_lightcurve@lanl.gov
Date: 4/1/2016 2:02 AM
To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrands@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

/tmp/swift/160401_0536.png



```
% /usr/local/bin/swinfo -o 481181778.741
Swift Zenith(RA,dec):      119.97, 14.29
Swift Location(lon,lat,alt): -153.82 E, 14.24 N, 553 km
Time(MET + UTC -> UT): 481181778.741 + -16.061 -> 2016-04-01T05:36:02.680
YYMMDD_SOD:               160401_20162.680      DOY=092
Obs Sequence Number:      00034455026
Obs Target Name:          NGC 4151
Obs Date and Times:       2016-04-01 05:28:45 - 05:49:40
Obs Pointing(ra,dec,roll): 182.630, 39.407, 348.17
```

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

Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

Attachments:

/tmp/swift/160401_0536_bat64ms_ipn	87.0 KB
/tmp/swift/160401_0536.png	24.0 KB

Subject: GRB 160401A: a long GRB detected by INTEGRAL
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 4/1/2016 2:32 PM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 19251
SUBJECT: GRB 160401A: a long GRB detected by INTEGRAL
DATE: 16/04/01 21:32:32 GMT
FROM: Sandro Mereghetti at IASF/CNR <sandro@iasf-milano.inaf.it>

SPI - NO

S.Mereghetti (IASF-Milano), D.Gotz (CEA, Saclay), C.Ferrigno, E.Bozzo (ISDC, Versoix), and J.Borkowski (CAMK, Torun) on behalf of the IBAS Localization Team report:

a gamma ray burst lasting about 130 s has been detected by IBAS in the IBIS/ISGRI data at 20:20:30 UT of April 1, 2016.

73230

The refined coordinates (J2000) are:

R.A.= 89.7377 deg
DEC.= 26.6758 deg

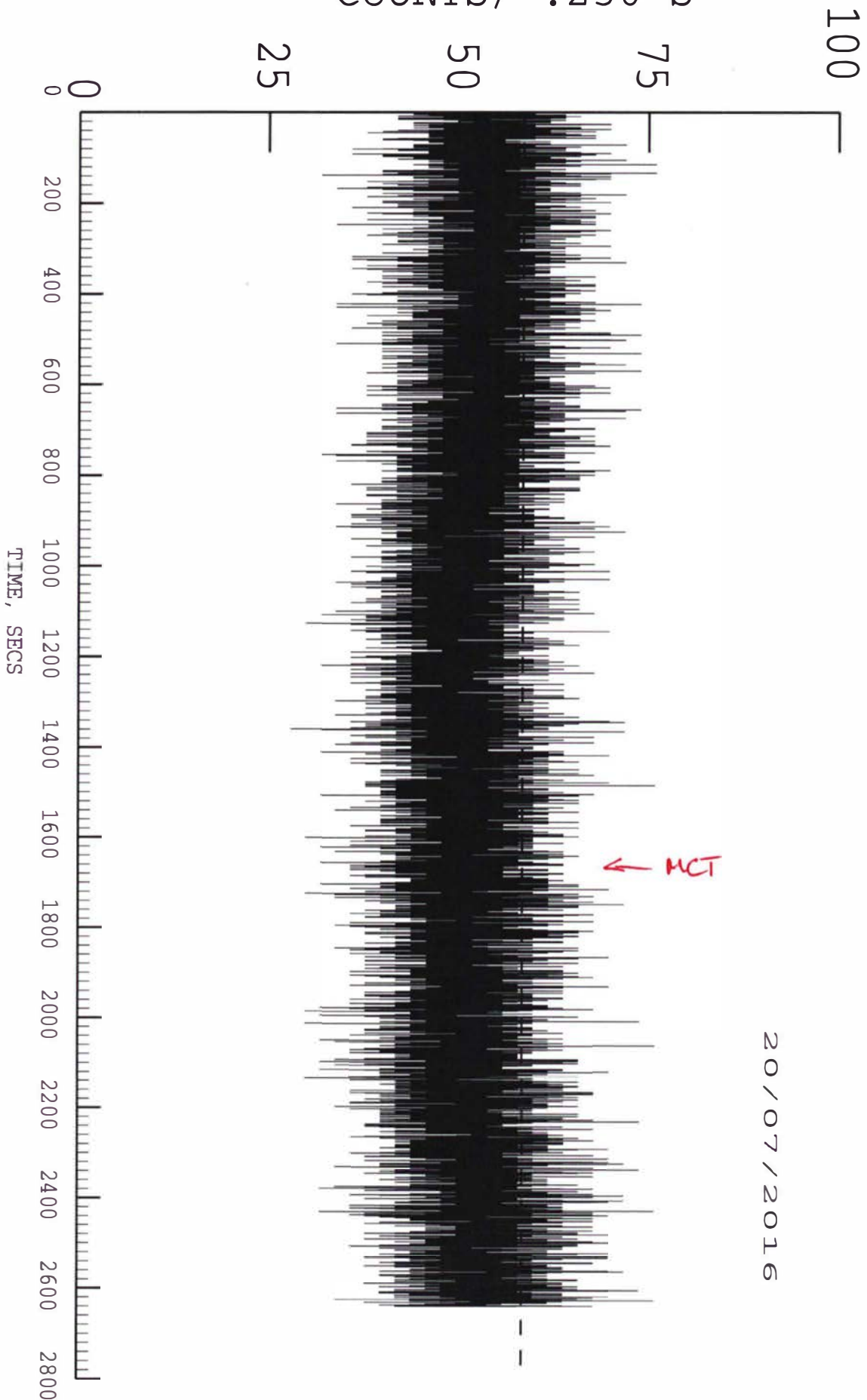
with an uncertainty of 2 arcmin (90% c.l.).

The burst had a peak flux of 0.7 counts/cm²/s (20-200 keV, 1-s integration time) and a fluence in the same energy range of about 1e-6 erg/cm².

A plot of the light curve will be posted at
http://ibas.iasf-milano.inaf.it/IBAS_Results.html

ODYSSEY 01/04/16 71881.246 19:58:01.246
50-3000 keV

COUNTS/ .250 S



C

Subject: [lpn] BAT lightcurve for trigger at 160401_2020

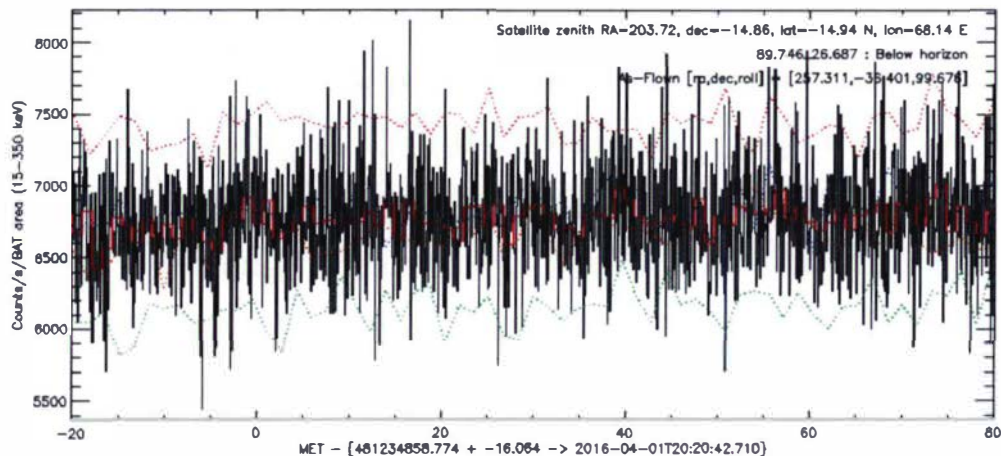
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/1/2016 4:37 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

/tmp/swift/160401_2020.png



```
% /usr/local/bin/swinfo -o 481234858.774 -s 89.746_26.687
Swift Zenith(RA,dec): 203.72, -14.86
Swift Location(lon,lat,alt): 68.14 E, -14.94 N, 566 km
Time(MET + UTC -> UT): 481234858.774 + -16.064 -> 2016-04-01T20:20:42.710
YYMMDD_S00: 160401_73242.710 DOY=092
Obs Sequence Number: 00031921121
Obs Target Name: IGR J17091-3624
Obs Date and Times: 2016-04-01 20:12:45 - 20:31:41
Obs Pointing(ra,dec,roll): 257.311, -36.401, 99.68
89.746_26.687_imageloc (boresight_dist, angle): (166, 41)
89.746_26.687_exposure (cm^2 cos adjusted): 0
89.746_26.687_altitude: -4 (down)
```

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

lpn mailing list
lpn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/lpn>

Attachments:

/tmp/swift/160401_2020_bat64ms_lpn	87.1 KB
/tmp/swift/160401_2020.png	27.1 KB

43C

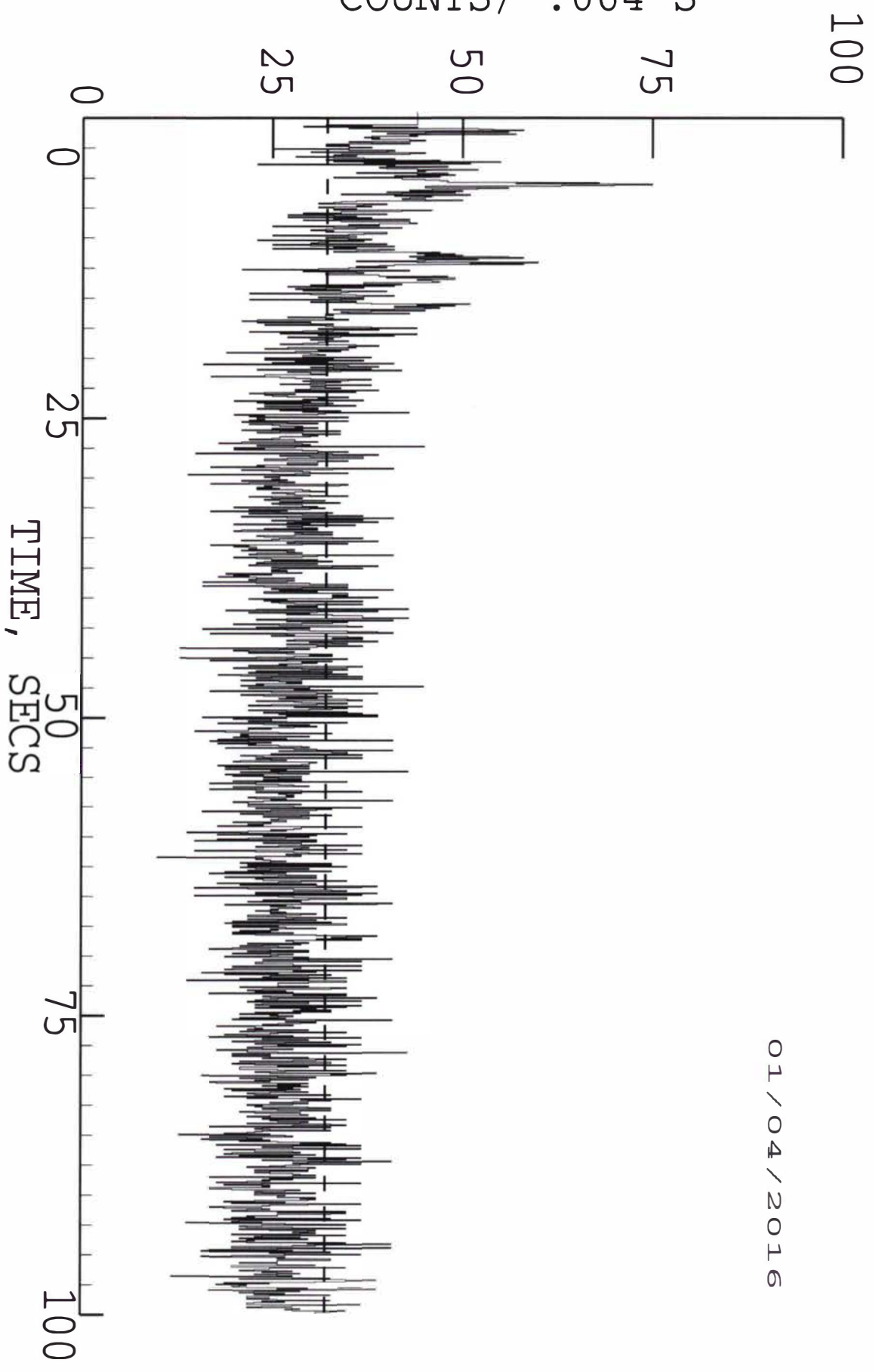
RHESSI Data for 20160401_2018

No Data Available For This Time Range

Do Not Retry

2

KONUS 01/04/16 83709.159 23:15:09.159
50- 200 keV
COUNTS/ .064 S

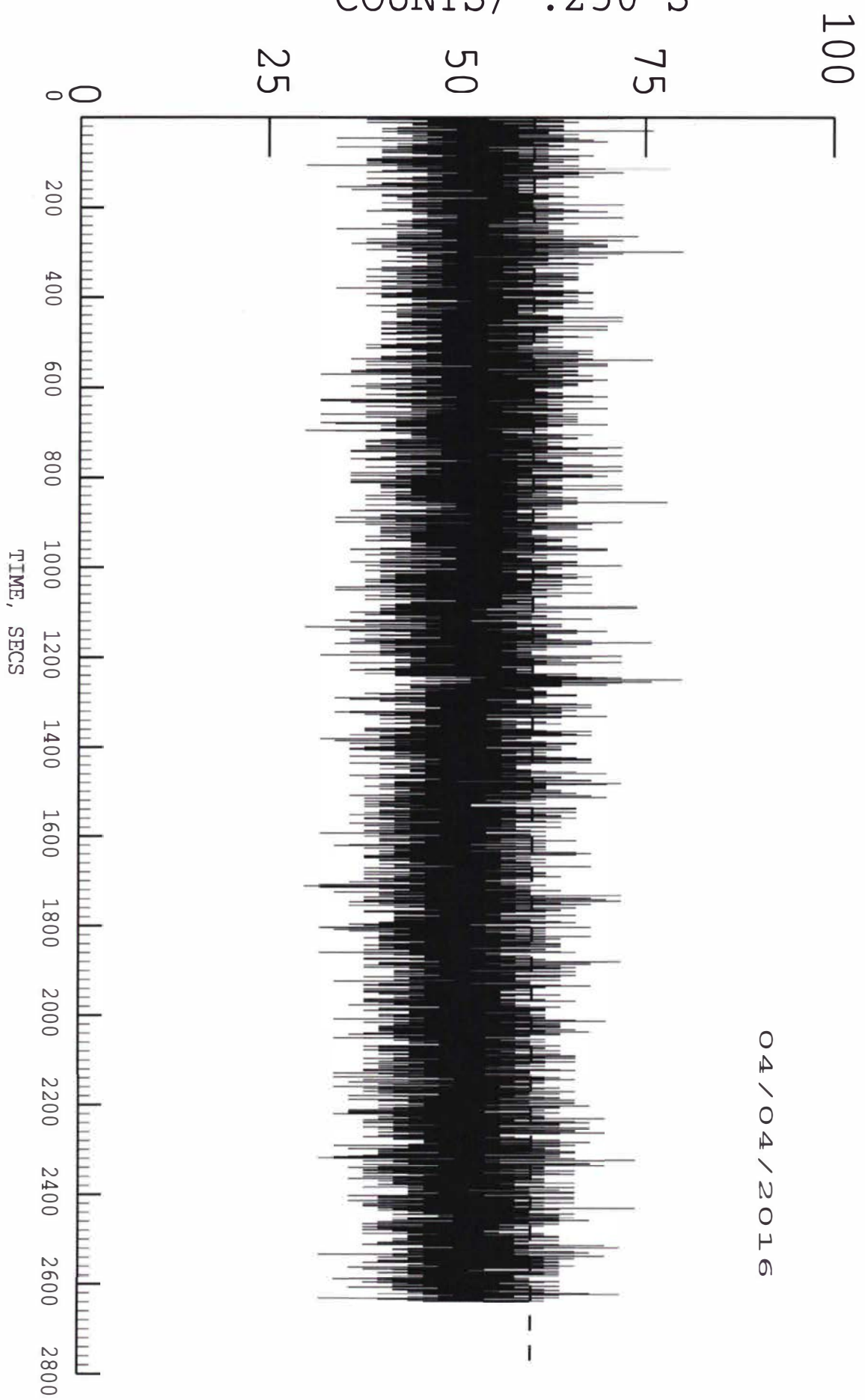


01/04/2016

D

ODYSSEY 01/04/16 82381.056 22:53:01.056
50-3000 keV

COUNTS/ .250 S



RHESSI Data for 20160401_2313

No Data Available For This Time Range

Do Not Retry

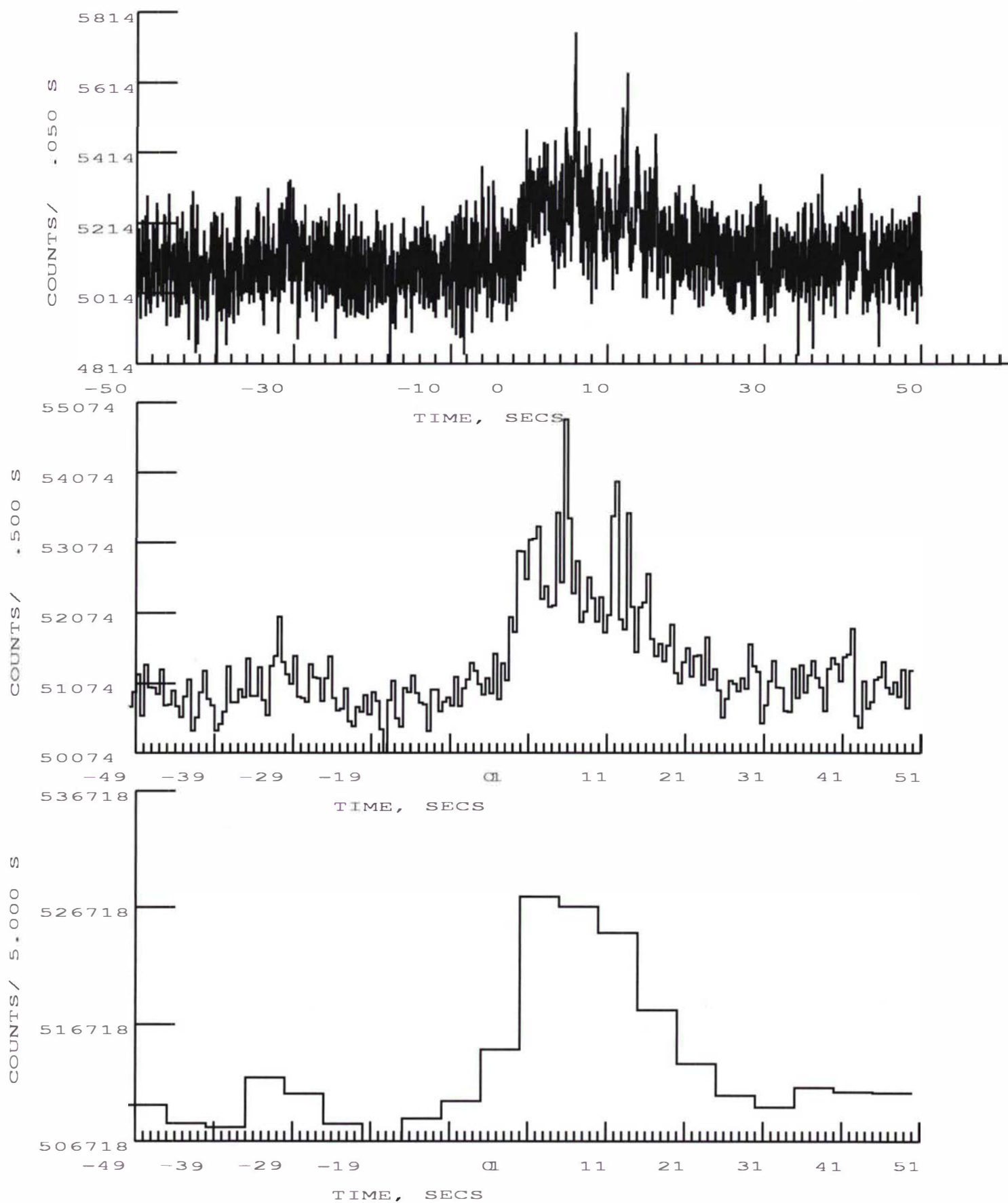
INTEGRAL

01/04/16

83709.000

23:15:09.0

15/07/16



Subject: [Ipn] BAT lightcurve for trigger at 160401_2315

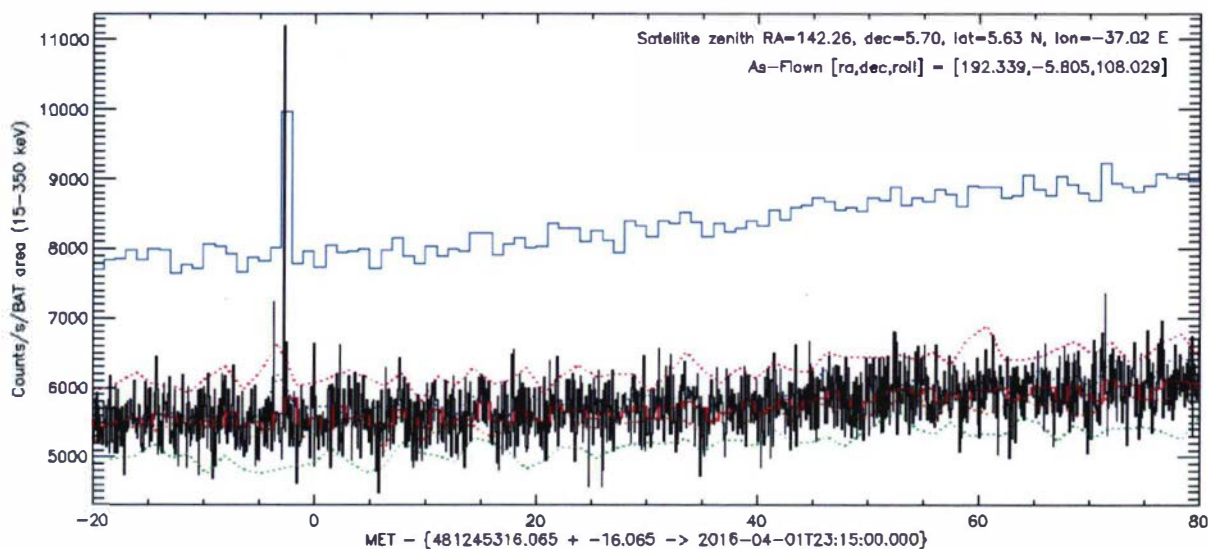
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/2/2016 3:17 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160401_2315.png



```
% /usr/local/bin/swinfo -o 481245316.065
Swift Zenith(RA,dec): 142.26, 5.70
Swift Location(lon,lat,alt): -37.02 E, 5.63 N, 555 km
Time(MET + UTC -> UT): 481245316.065 + -16.065 -> 2016-04-01T23:15:00.000
YYMMDD_SOD: 160401_83700.000 DOY=092
Obs Sequence Number: 00084997005
Obs Target Name: 3FGL J1249.5-0546
Obs Date and Times: 2016-04-01 23:07:45 - 23:15:42
Obs Pointing(ra,dec,roll): 192.339, -5.805, 108.03
```

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

Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160401_2315_bat64ms_ipn

87.0 KB

/tmp/swift/160401_2315.png

22.5 KB

KONUS

02/04/2016

1180.260

v03

10- 50 keV

50- 200 keV

200- 750 keV

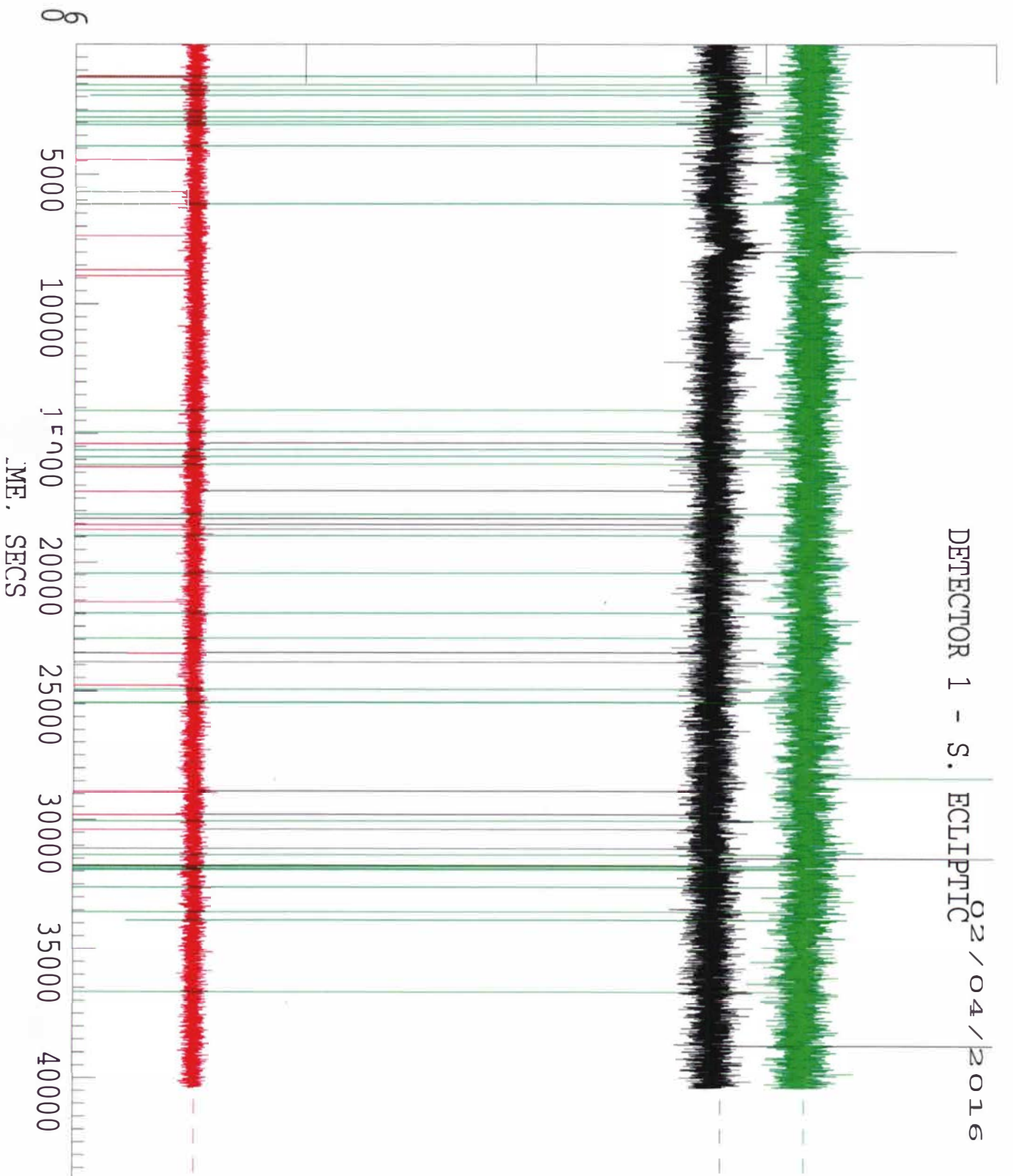
COUNTS/2.944 S

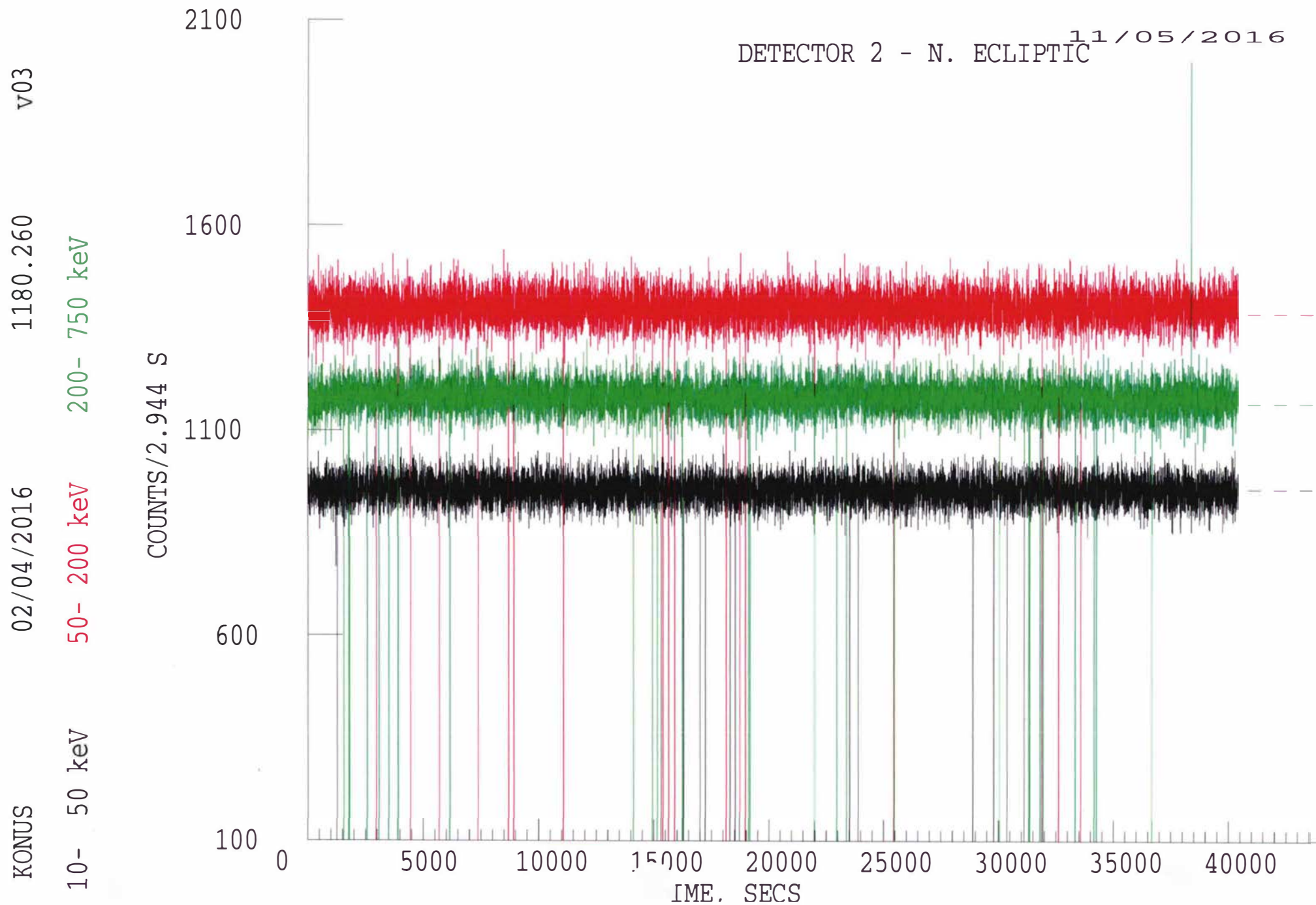
1006

2006

3006

4006





v03

32.603

03/04/2016

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4040

3040

2040

1040

40
0

10000

20000

30000

40000

50000

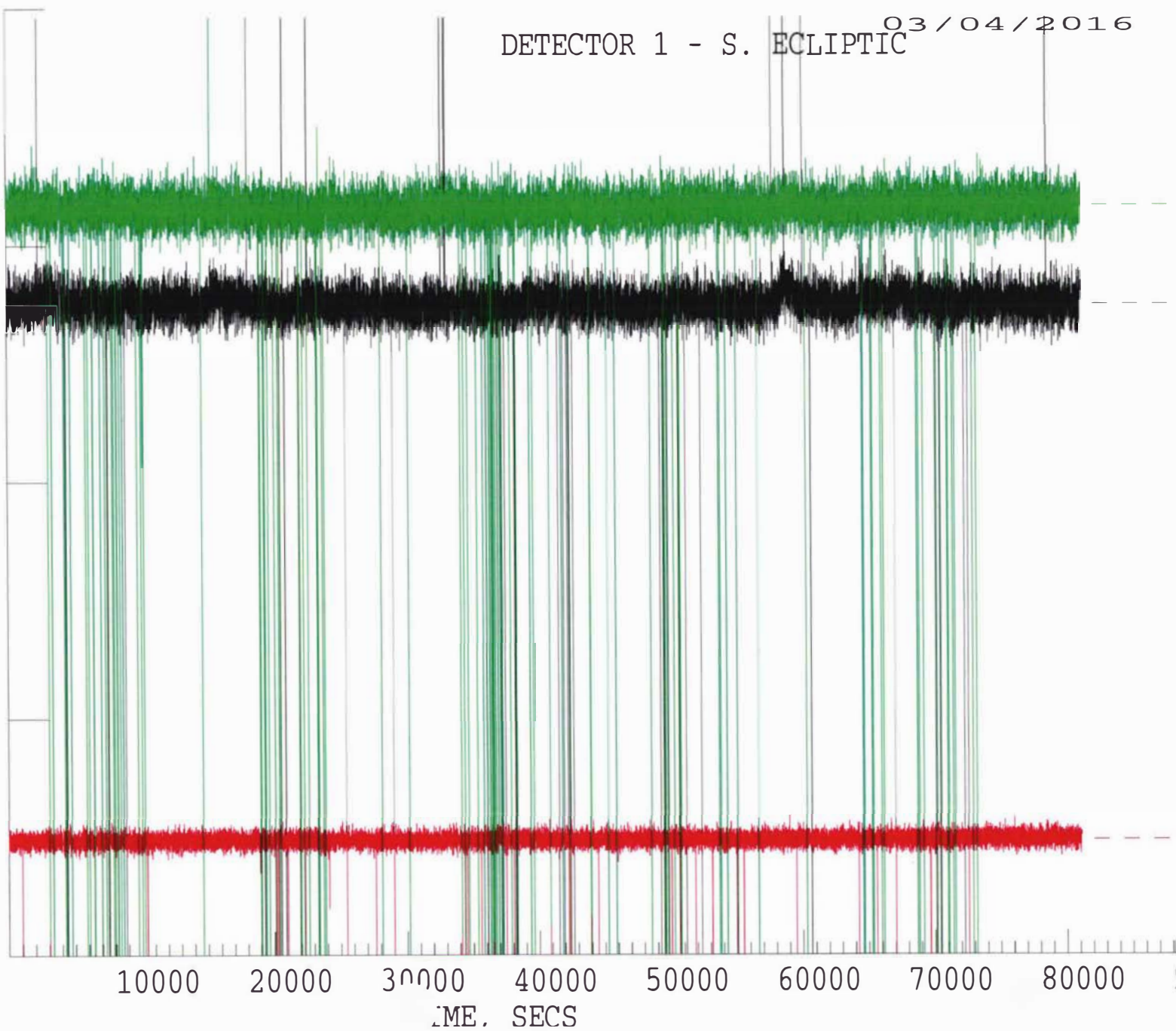
60000

70000

80000

DETECTOR 1 - S. ECLIPTIC 03/04/2016

TIME, SECS



KONUS

03/04/2016

32.603

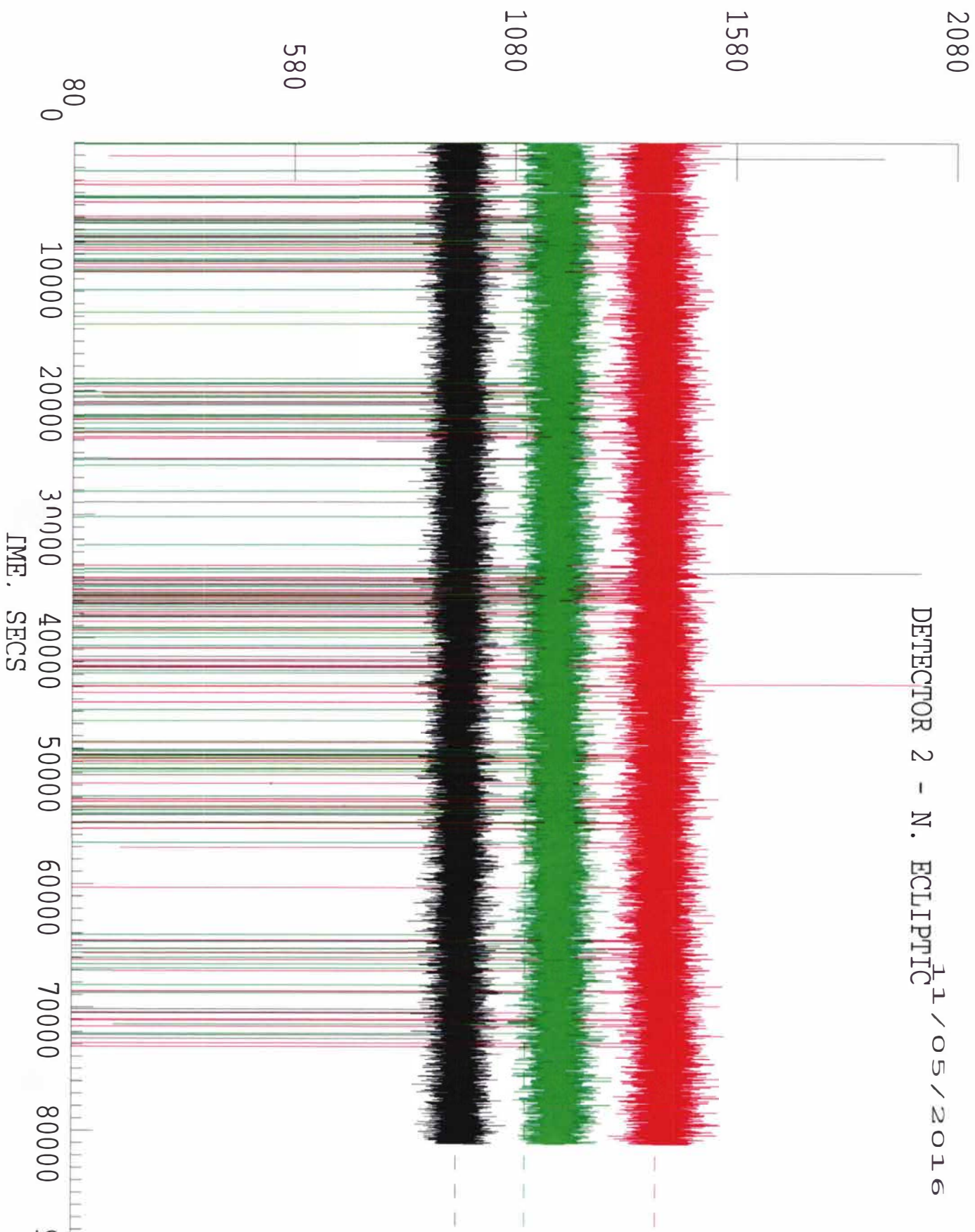
v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



v03

18.387

04/04/2016

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4040

3040

2040

1040

40
0

10000

20000

30000

40000

50000

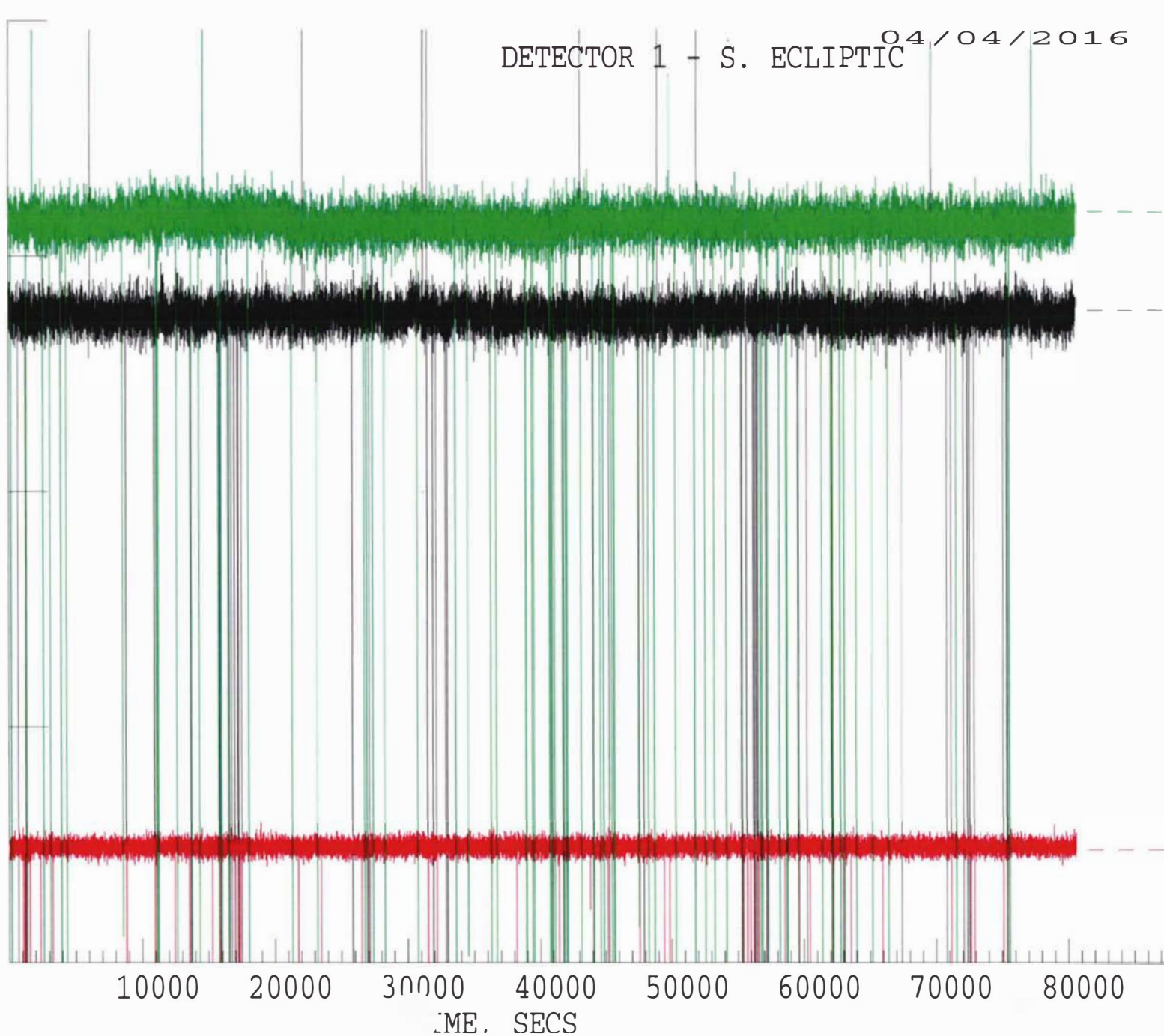
60000

70000

80000

TIME. SECS

DETECTOR 1 - S. ECLIPTIC 04/04/2016



KONUS

04/04/2016

18.387

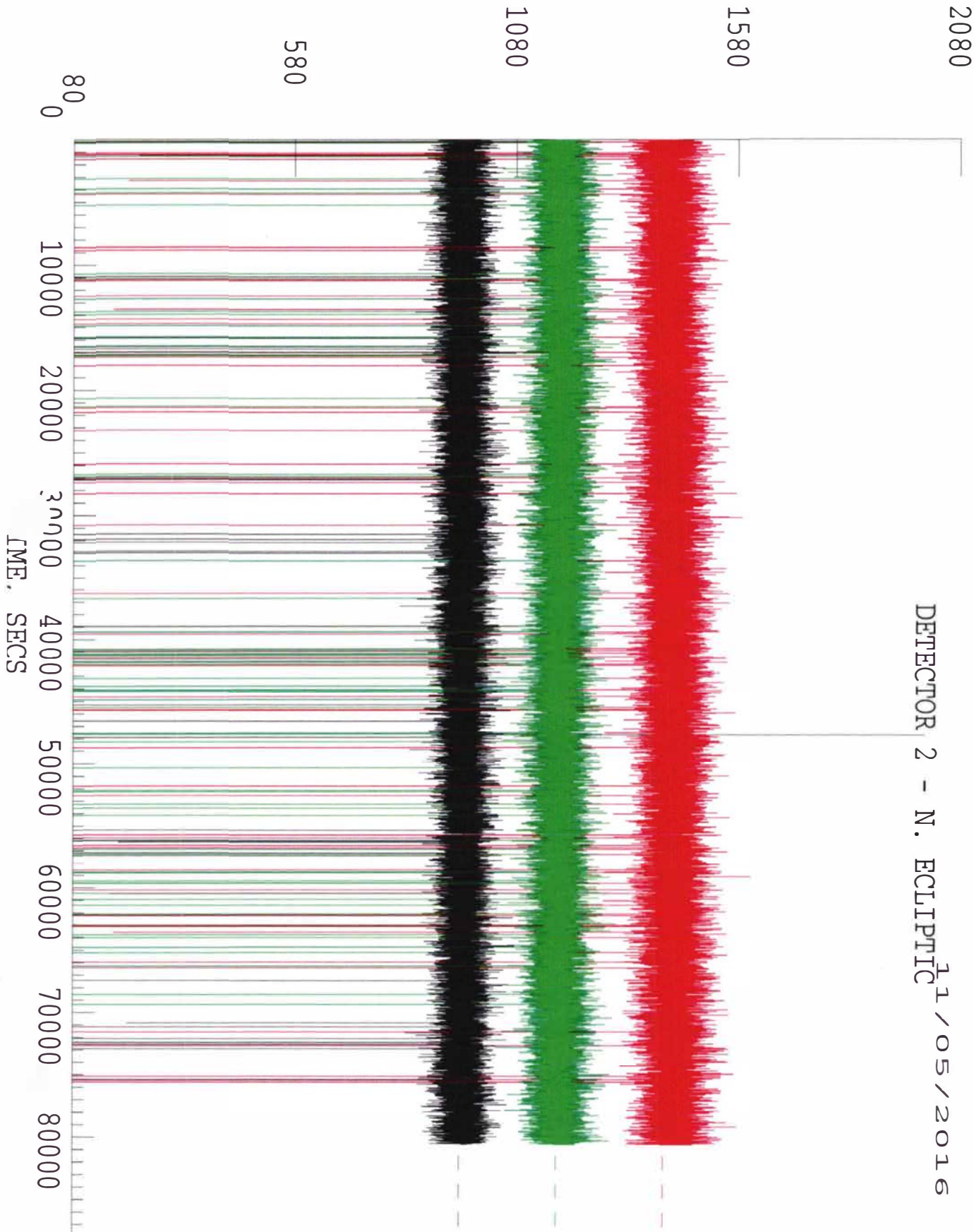
v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

05/04/2016

7.114

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4001

3001

2001

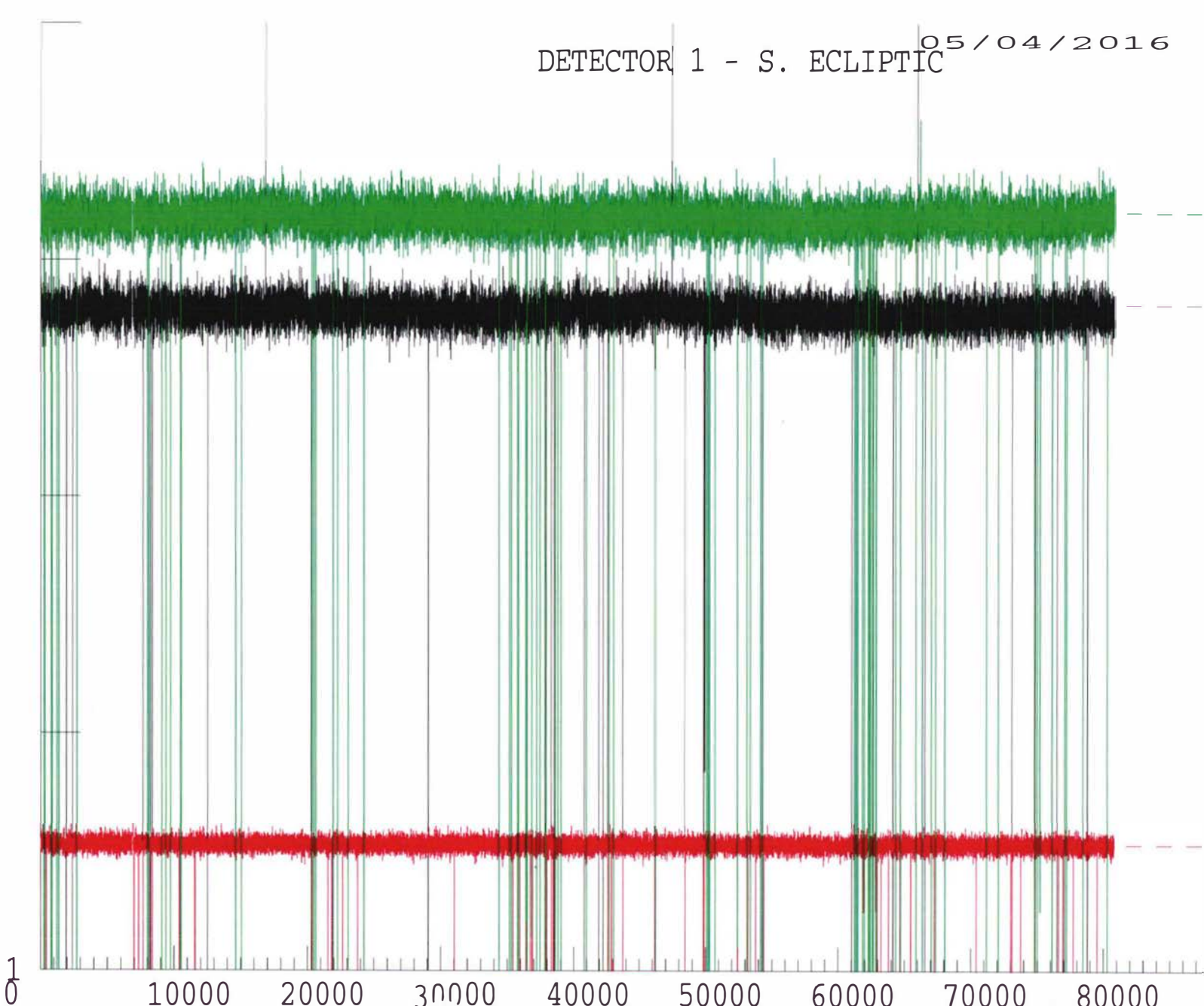
1001

0

TIME, SECS

DETECTOR 1 - S. ECLIPTIC

05/04/2016



KONUS

05/04/2016

7.114

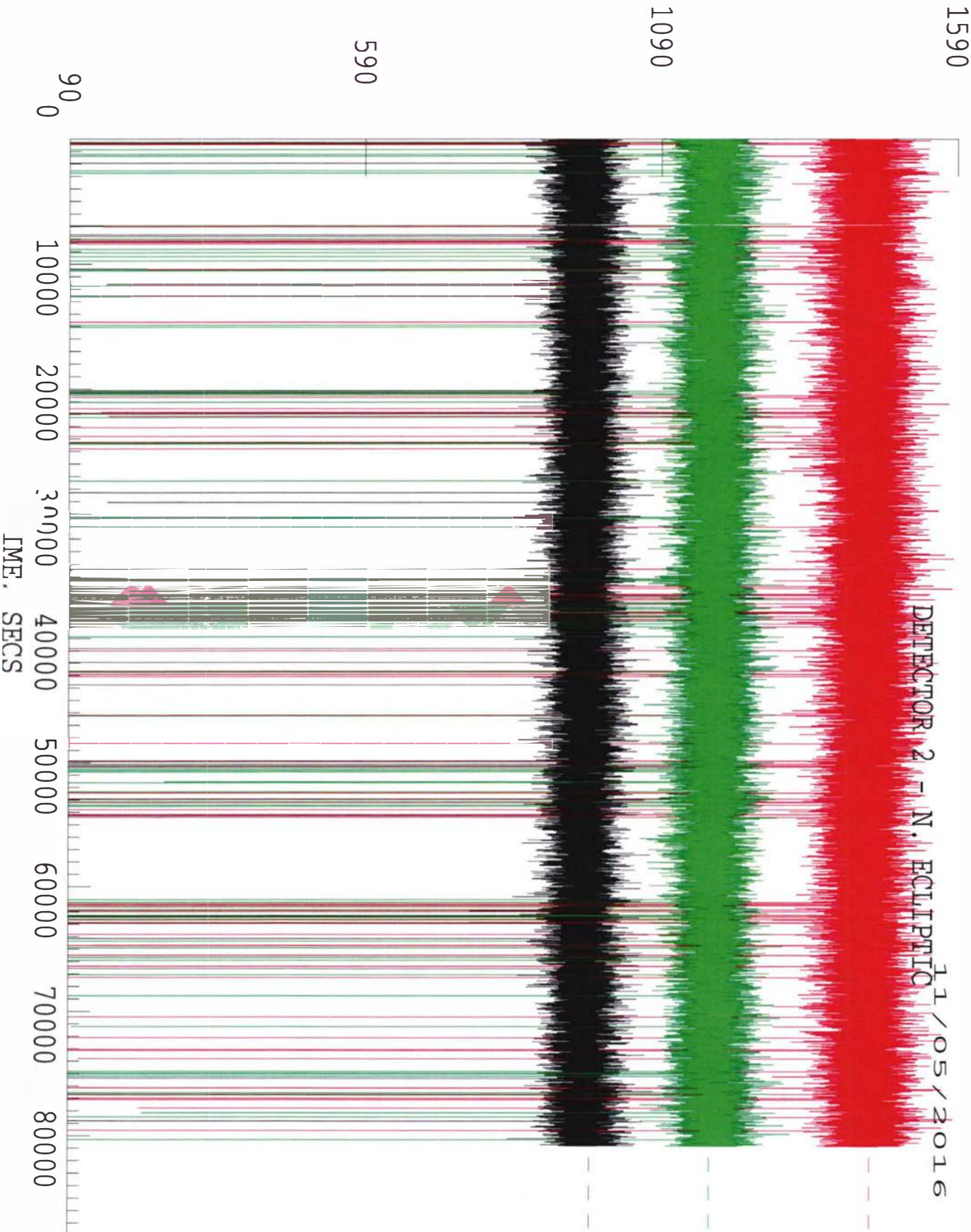
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

06/04/2016

87.105

v03

10- 50 keV

50- 200 keV

200- 750 keV

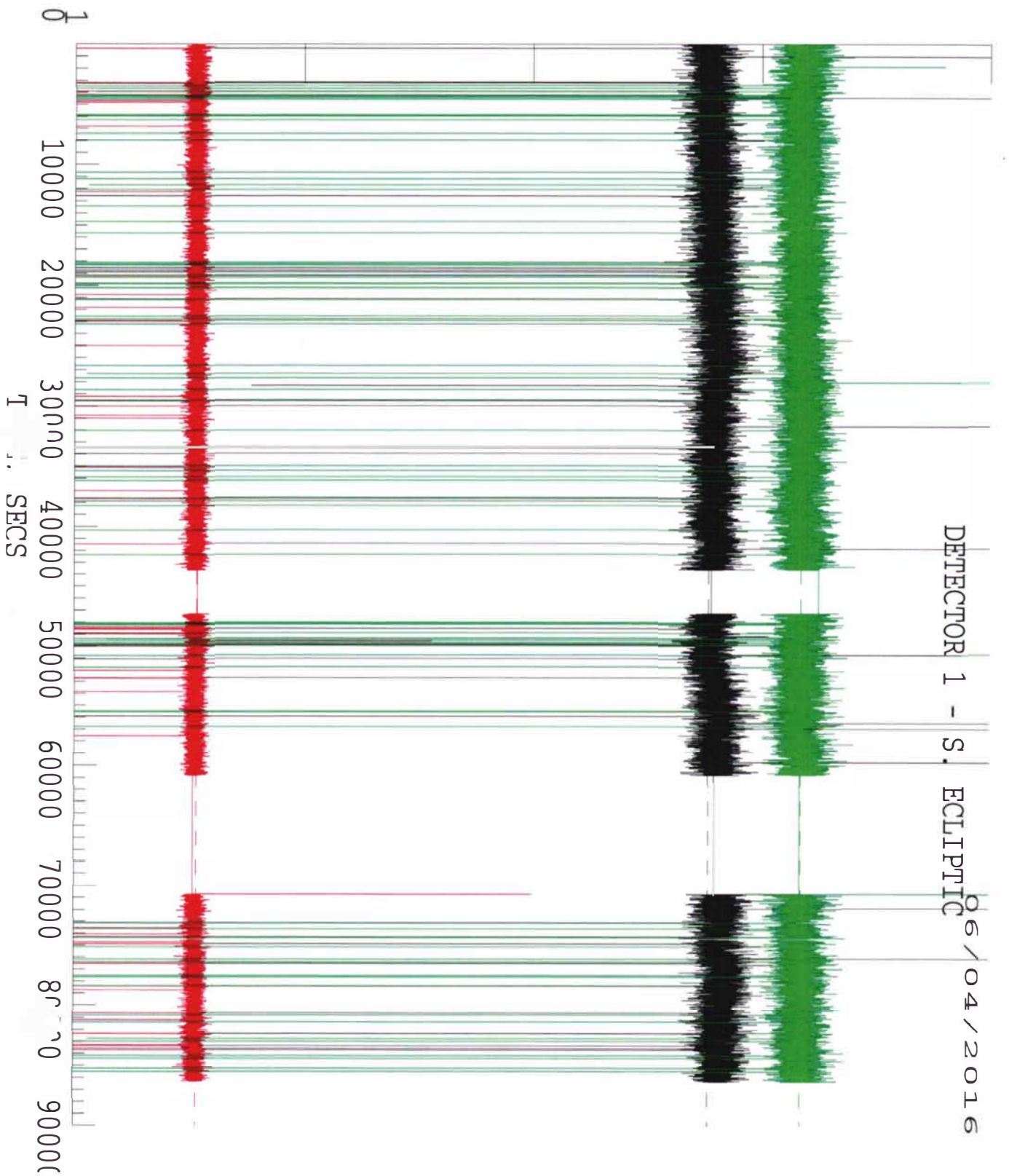
COUNTS/2.944 S

1001

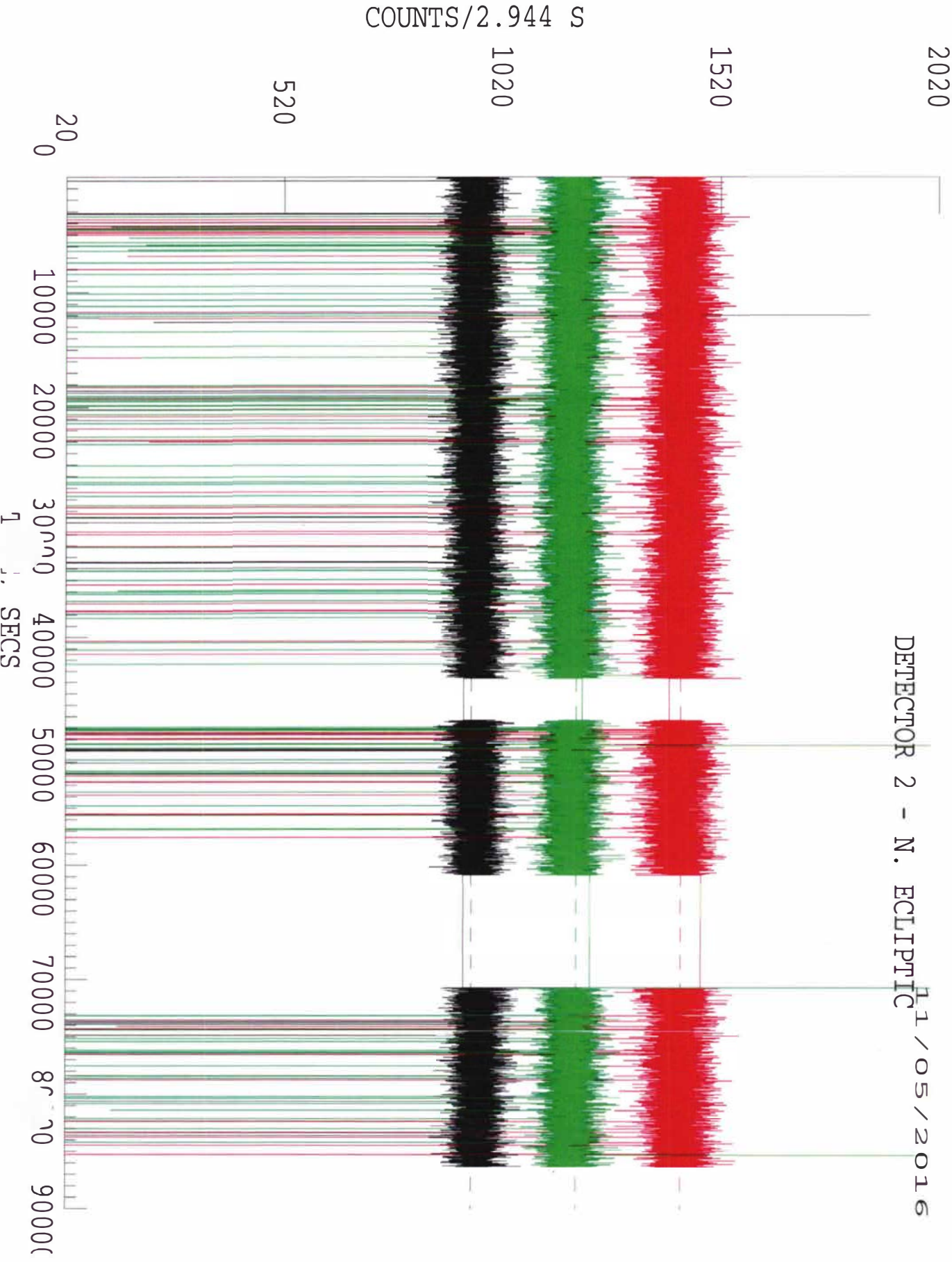
2001

3001

4001



10- 50 keV50- 200 keV200- 750 keV



FERMI

06/04/16

1964.666

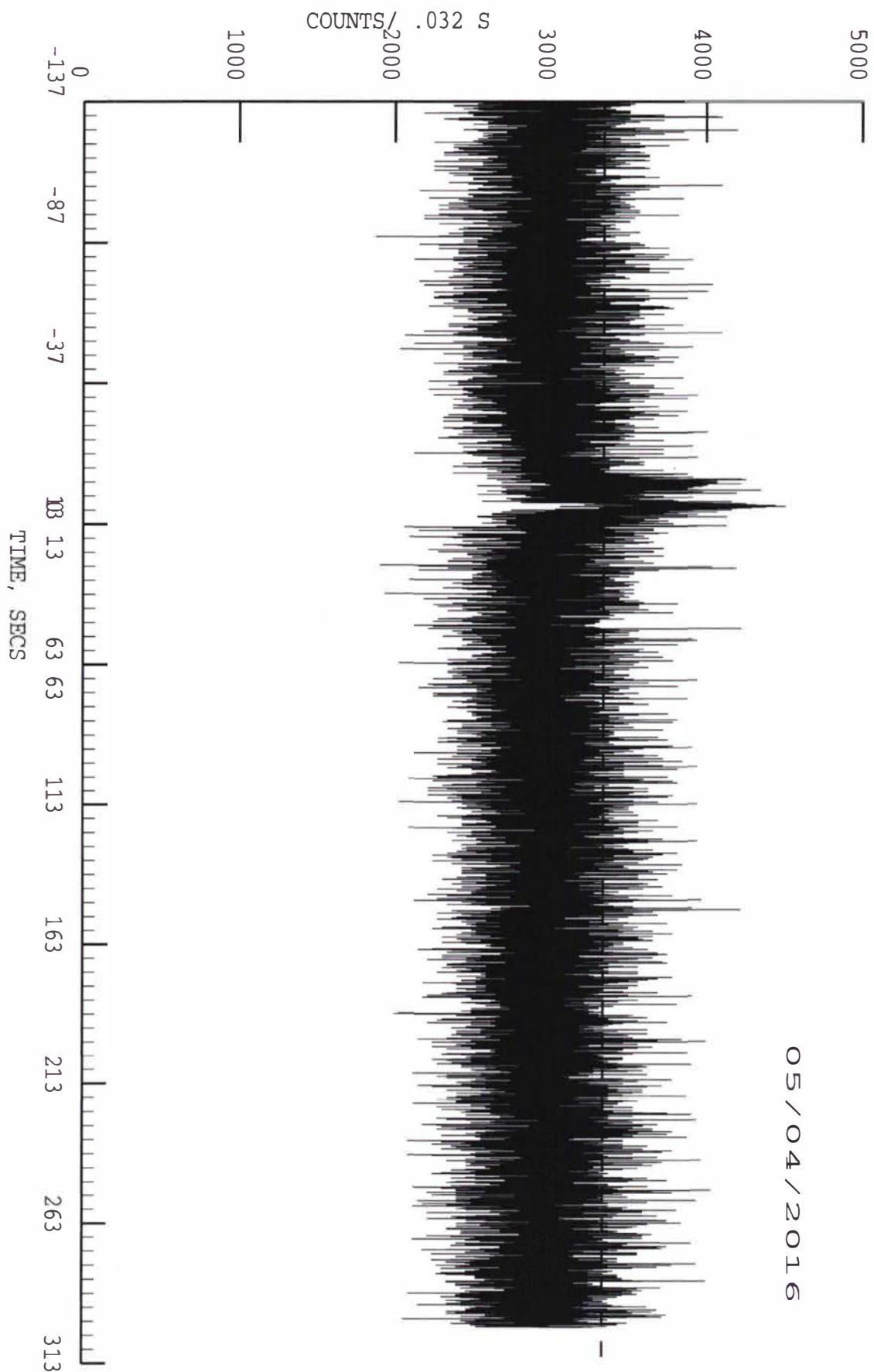
00:32:44.666

A

26- 293 keV

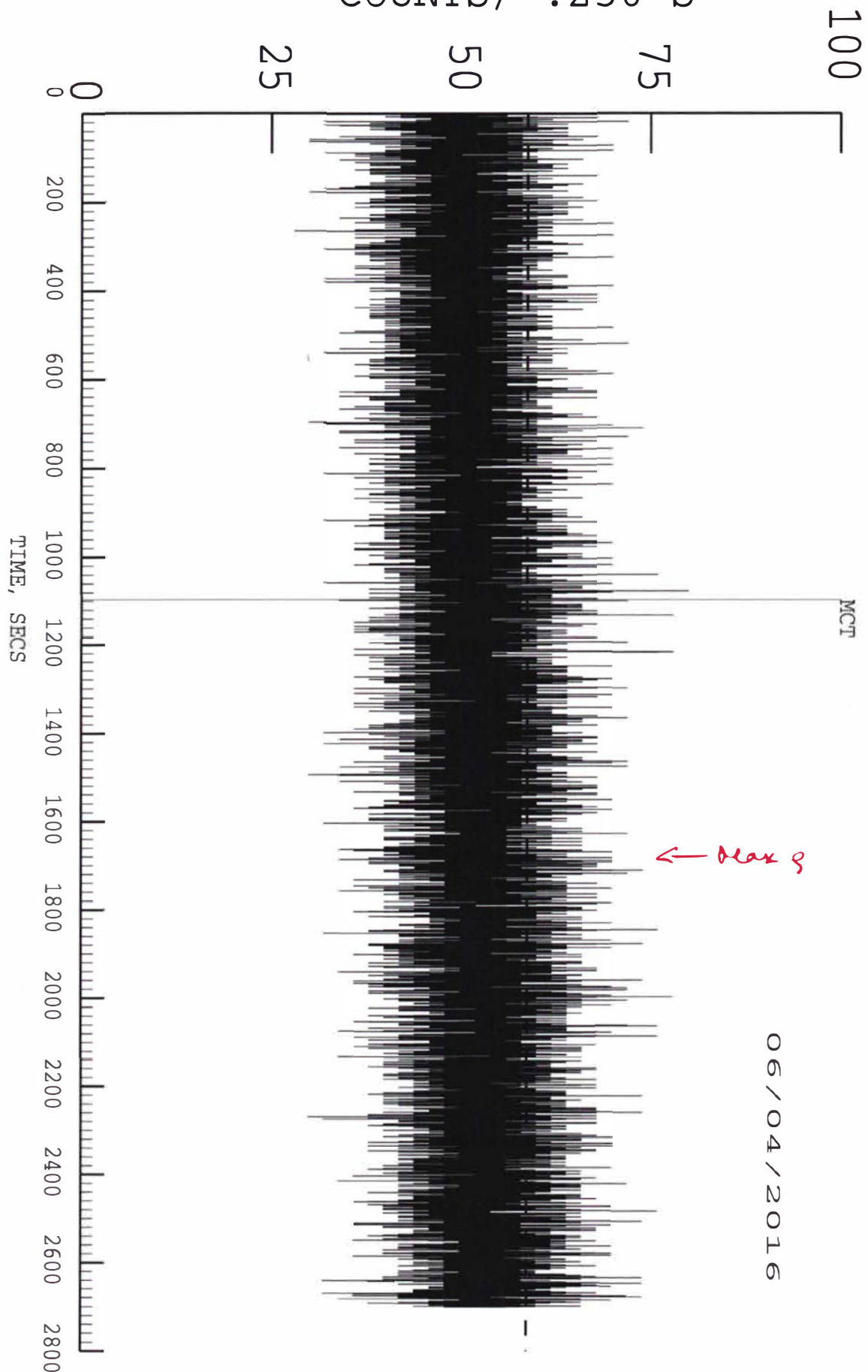
228.9 15.7 6.7

SPI-NO



ODYSSEY 06/04/16 594.886 00:09:54.886^A
50-3000 keV

COUNTS/ .250 S



Subject: [Ipn] BAT lightcurve for trigger at 160406_0032

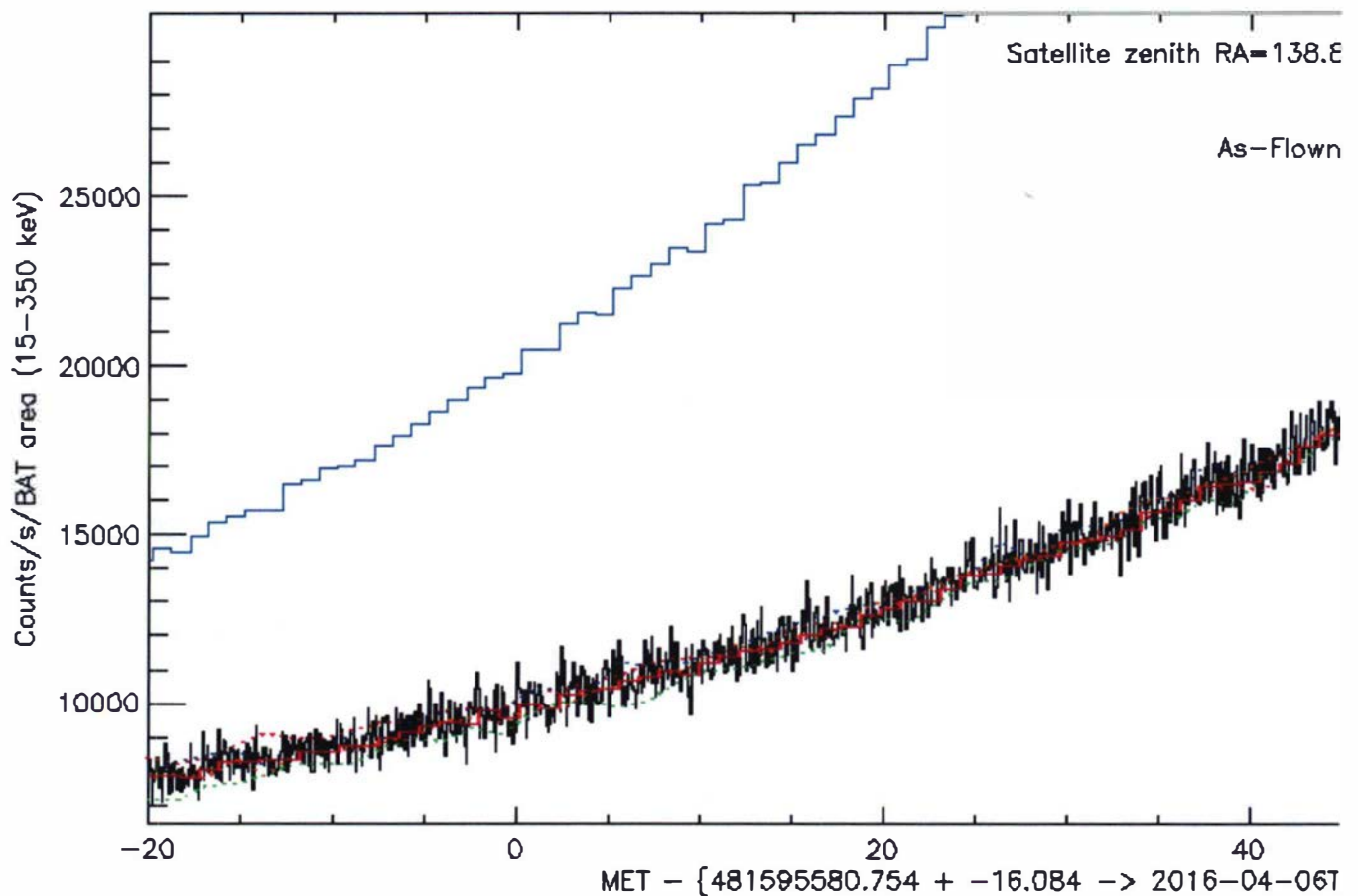
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/6/2016 1:48 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

— /tmp/swift/160406_0032.png —



% /usr/local/bin/swinfo -o 481595580.754 -s 214.790_33.130

Swift Zenith(RA,dec): 138.83, -3.52
Swift Location(lon,lat,alt): -63.89 E, -3.58 N, 553 km
Time(MET + UTCF -> UT): 481595580.754 + -16.084 -> 2016-04-06T00:32:44.670
YYMMDD_SOD: 160406_01964.670 DOY=097
Obs Sequence Number: 00074366102
Obs Target Name: saa-cold-97-00
Obs Date and Times: 2016-04-06 00:30:45 - 00:56:41
Obs Pointing(ra,dec,roll): 135.322, -74.991, 242.34
214.790_33.130_imageloc (boresight_dist, angle): (119, 98)
214.790_33.130_exposure (cm² cos adjusted): 0
214.790_33.130_altitude: 33 (up)

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
Ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

-- Attachments: --	
/tmp/swift/160406_0032_bat64ms_ipn	87.1 KB
/tmp/swift/160406_0032.png	20.0 KB

KONUS

06/04/16

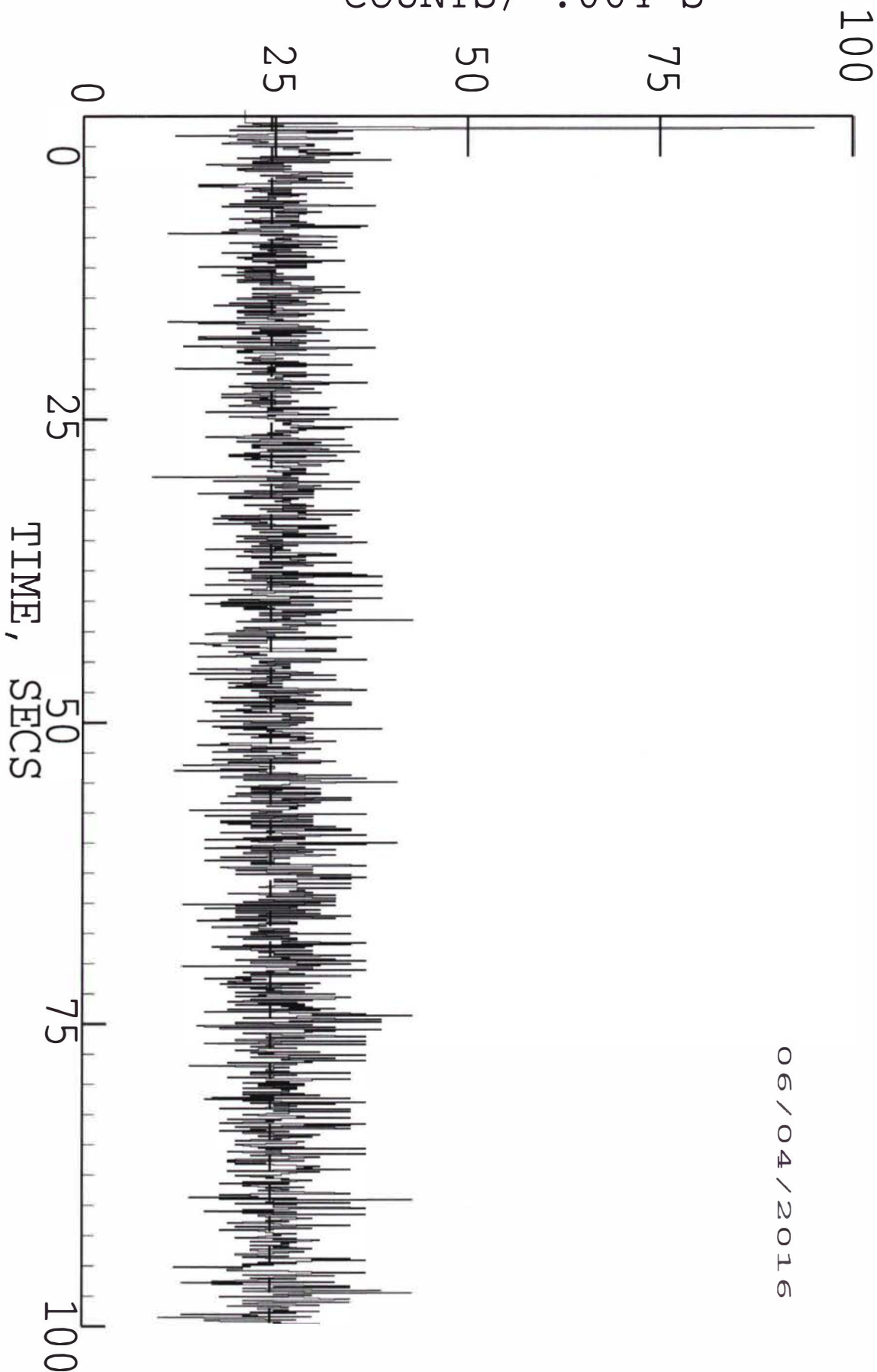
43477.581

12:04:37.581

50- 200 keV

261.8 32.3 11.8 (IPN)

COUNTS/ .064 S



06/04/2016

B

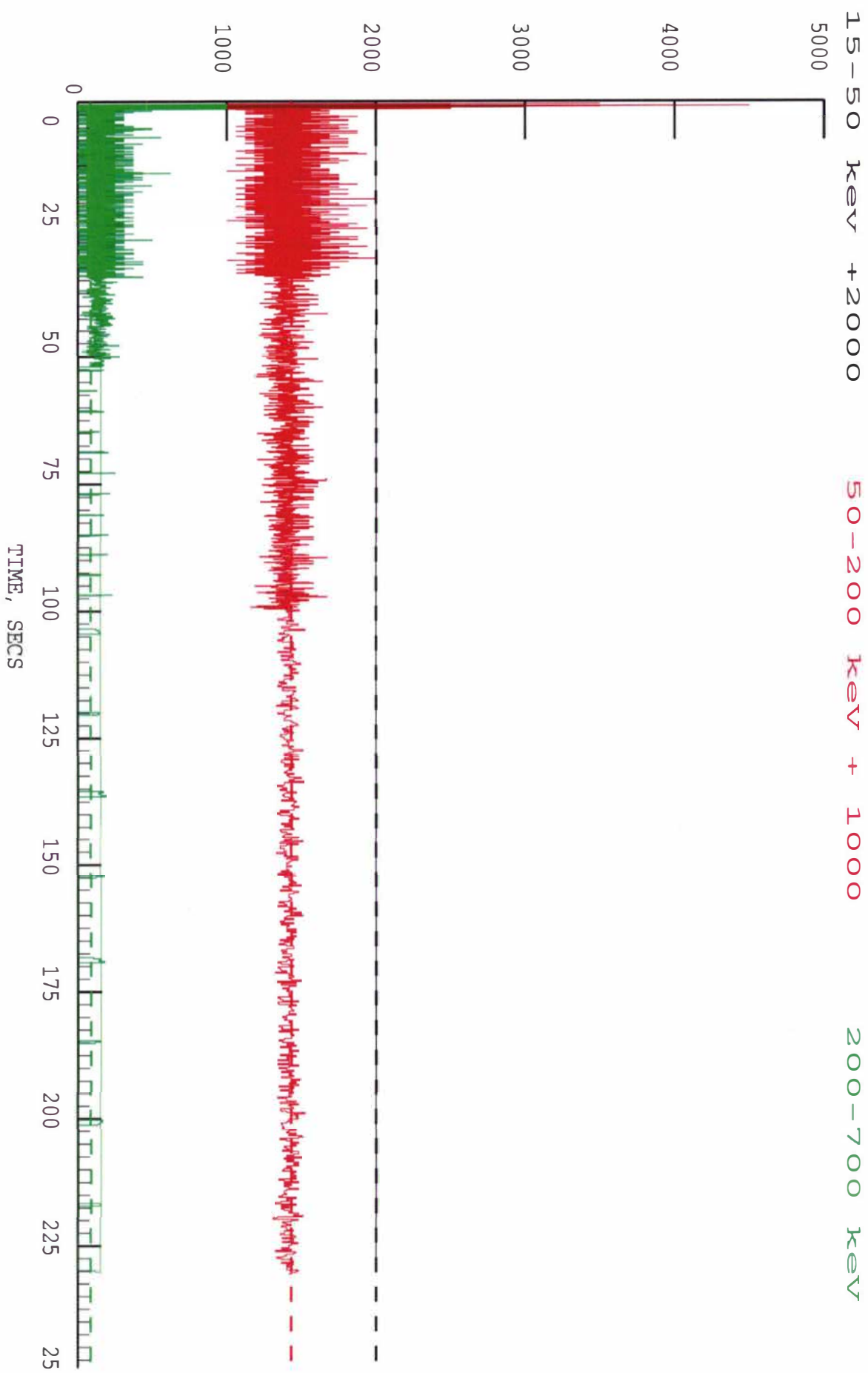
KONUS

06/04/16

43477.000

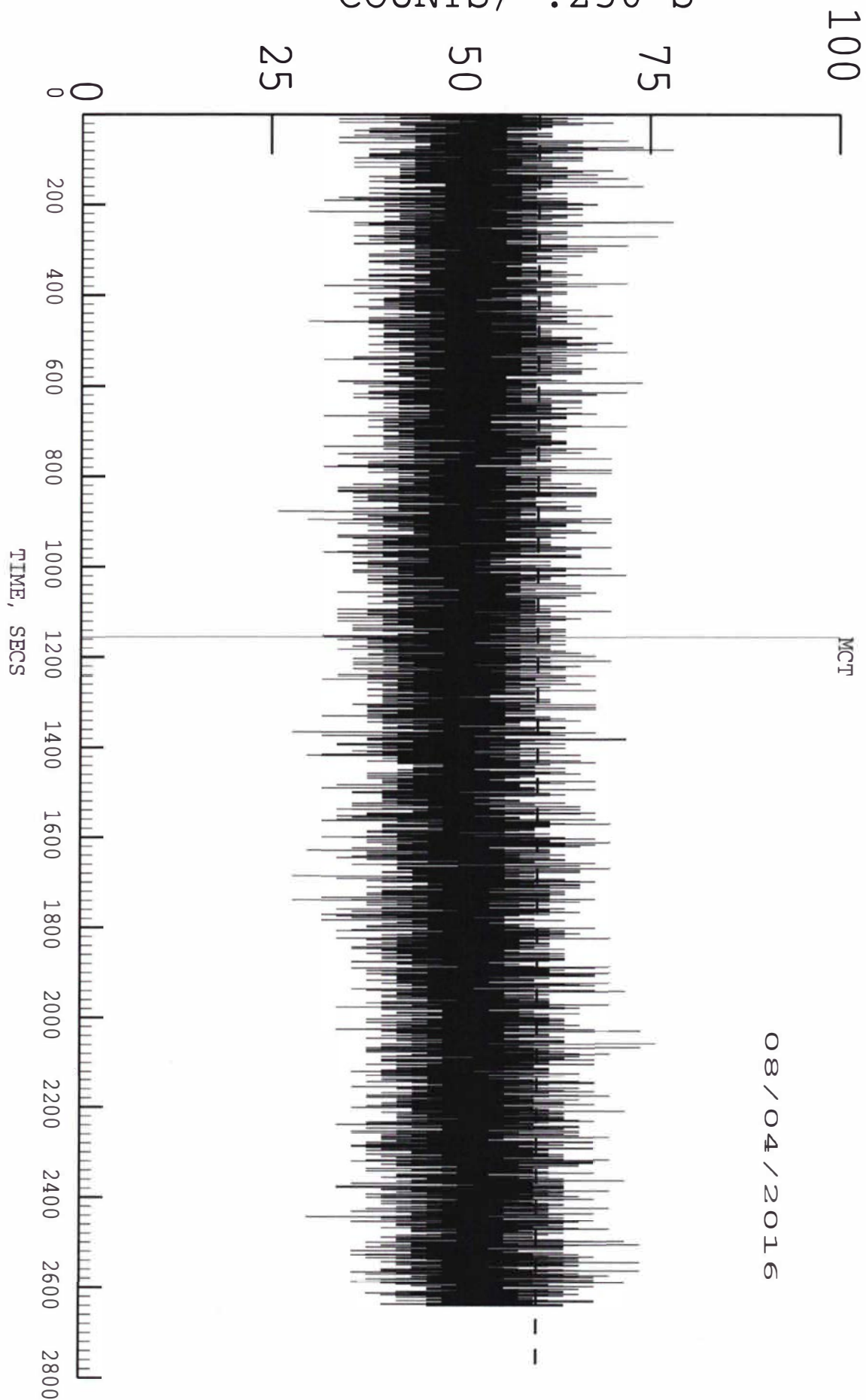
12:04:37.000

COUNTS/SEC



ODYSSEY 06/04/16 42114.165 11:41:54.165³
50-3000 keV

COUNTS/ .250 S



RHESSI Data for 20160406_1203

No Data Available For This Time Range

Do Not Retry

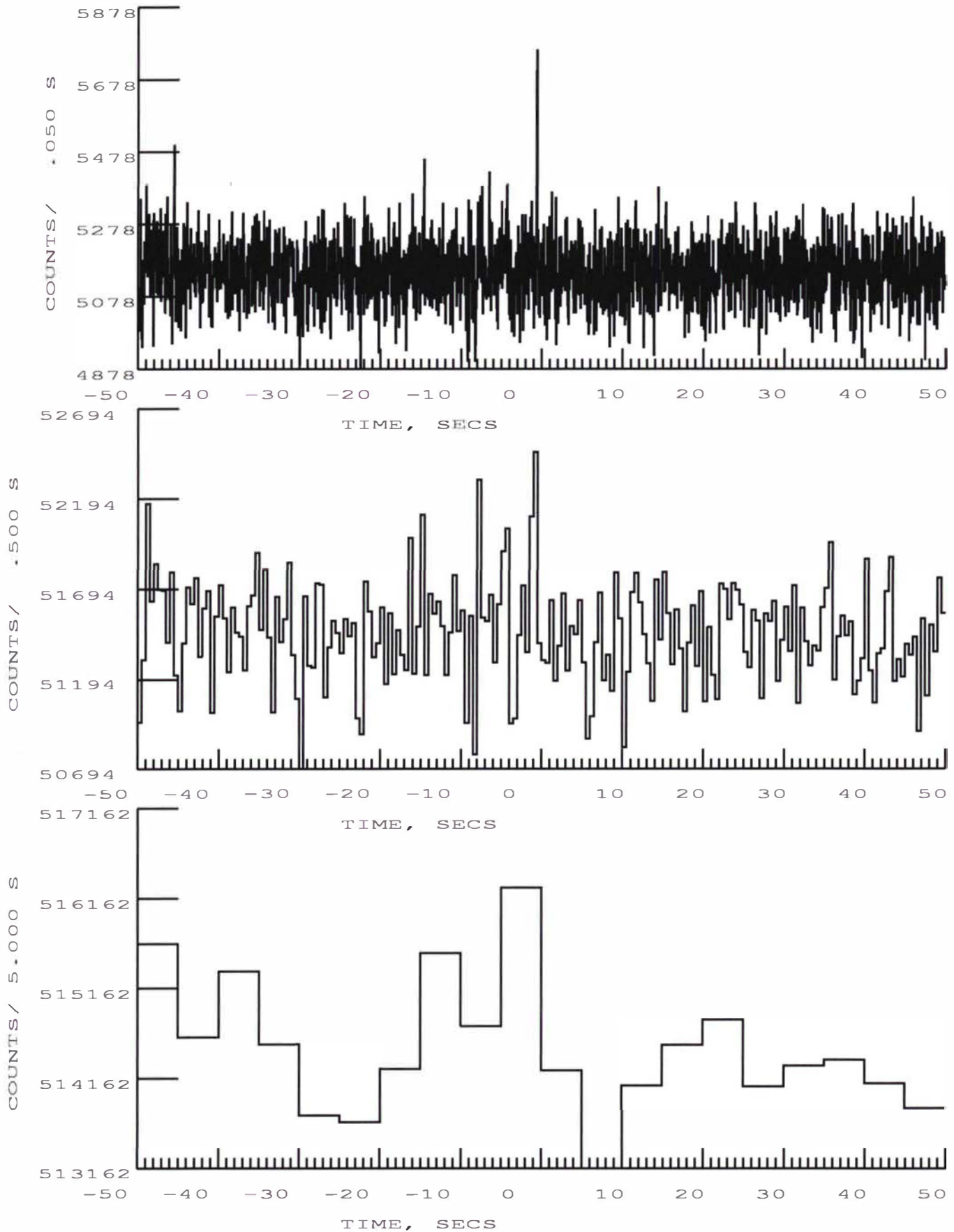
INTEGRAL

06/04/16

43477.000

12:04:37.0

15/07/16



B

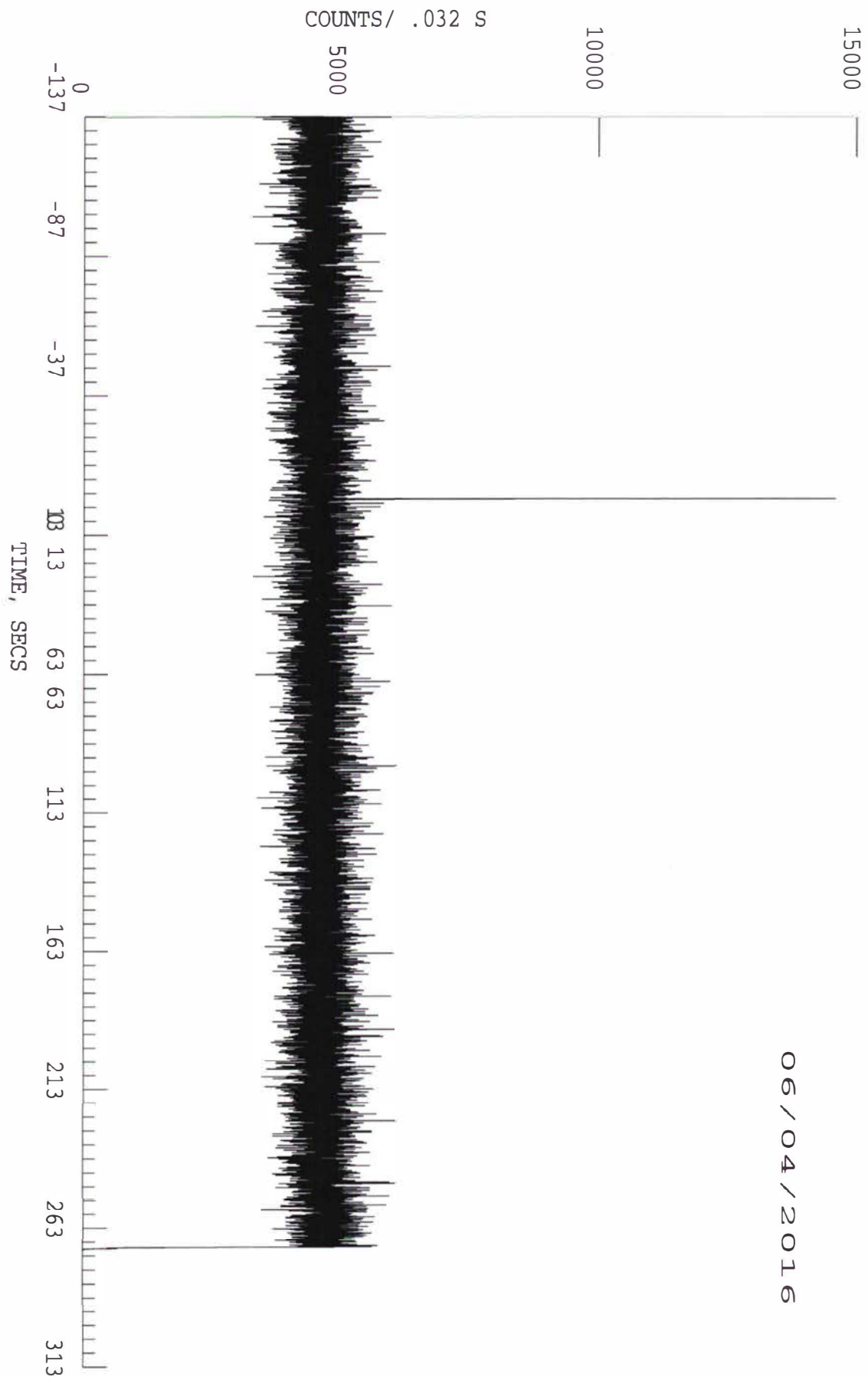
FERMI

06/04/16

43476.798

12:04:36.798

26- 293 keV



B

Subject: [lpn] BAT lightcurve for trigger at 160406_1204

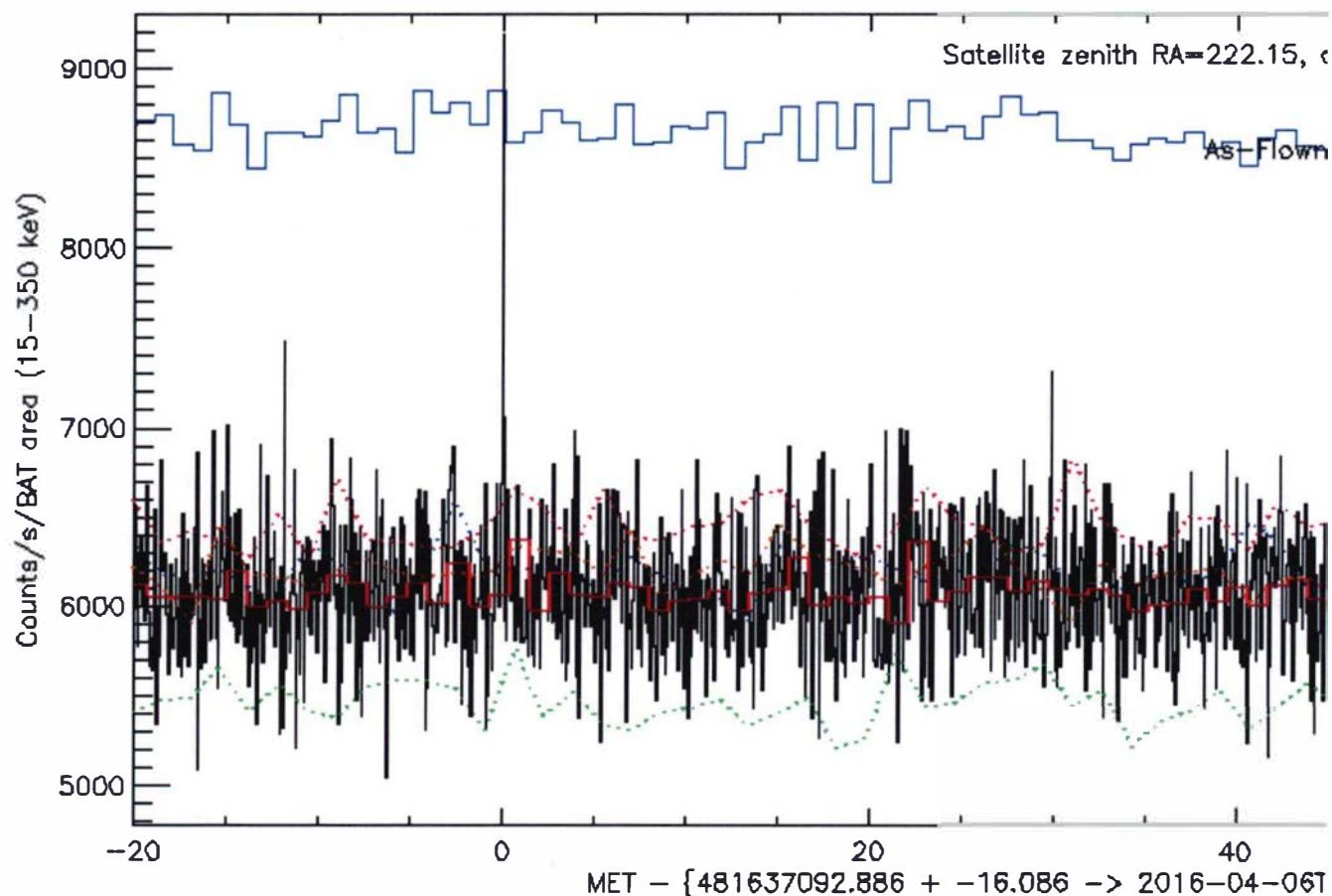
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/6/2016 10:16 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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—/tmp/swift/160406_1204.png



% /usr/local/bin/swinfo -o 481637092.886 -s 258.650_30.240

Swift Zenith(RA,dec): 222.15, -20.36
Swift Location(lon,lat,alt): -153.98 E, -20.43 N, 567 km
Time(MET + UTCF -> UT): 481637092.886 + -16.086 -> 2016-04-06T12:04:36.800
YYMMDD_SOD: 160406_43476.800 DOY=097
Obs Sequence Number: 00035068204
Obs Target Name: MCG-6.30.15
Obs Date and Times: 2016-04-06 11:52:45 - 12:11:44
Obs Pointing(ra,dec,roll): 204.028, -34.213, 179.11
258.650_30.240_imageloc (boresight_dist, angle): (83, 136)
258.650_30.240_exposure (cm² cos adjusted): 0
258.650_30.240_altitude: 52 (up)

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
Ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

-- Attachments: --	
/tmp/swift/160406_1204_bat64ms_ipn	87.1 KB
/tmp/swift/160406_1204.png	23.2 KB

FERMI

06/04/16

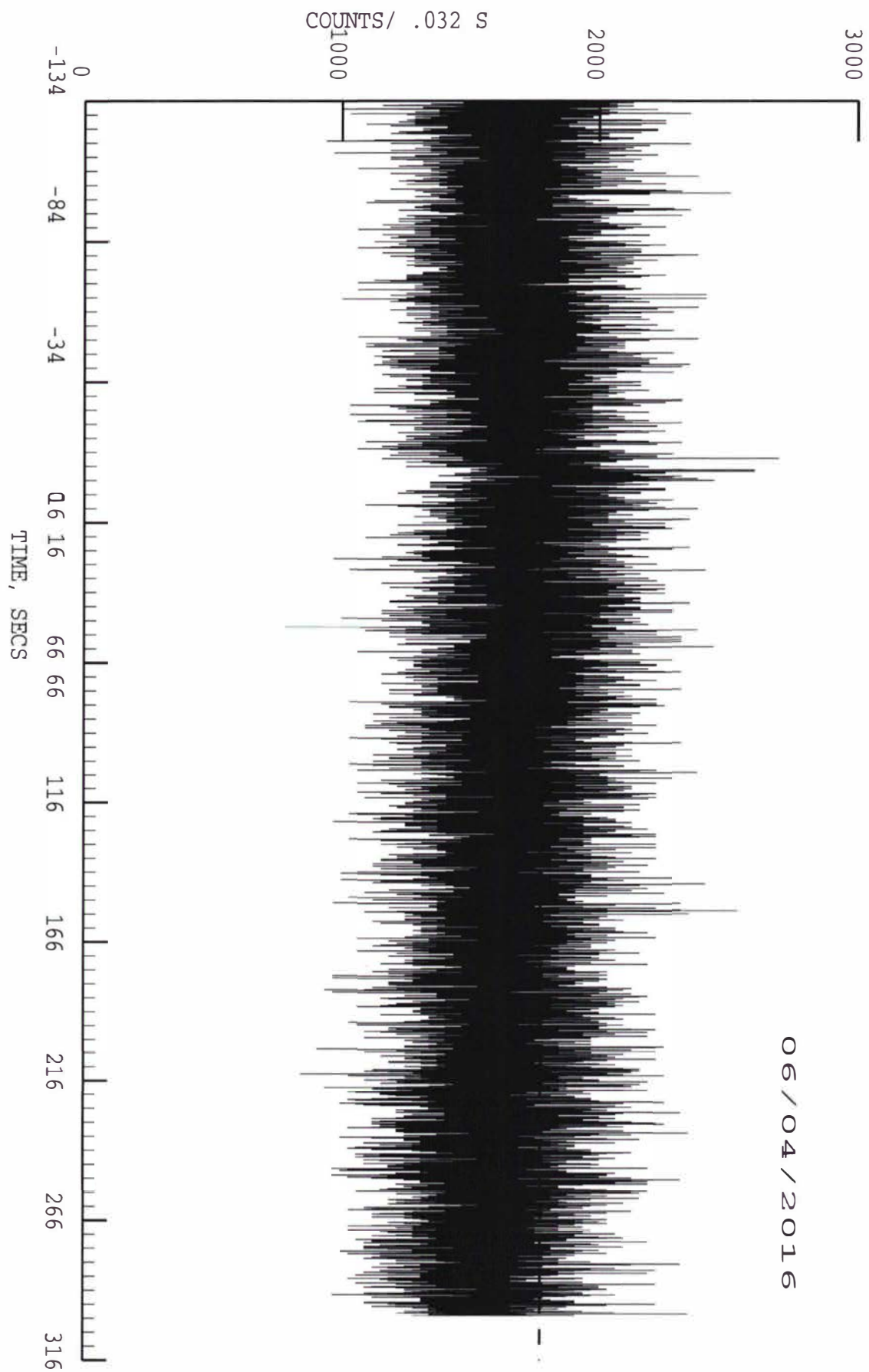
49229.314

13:40:29.314

BC

26- 293 keV

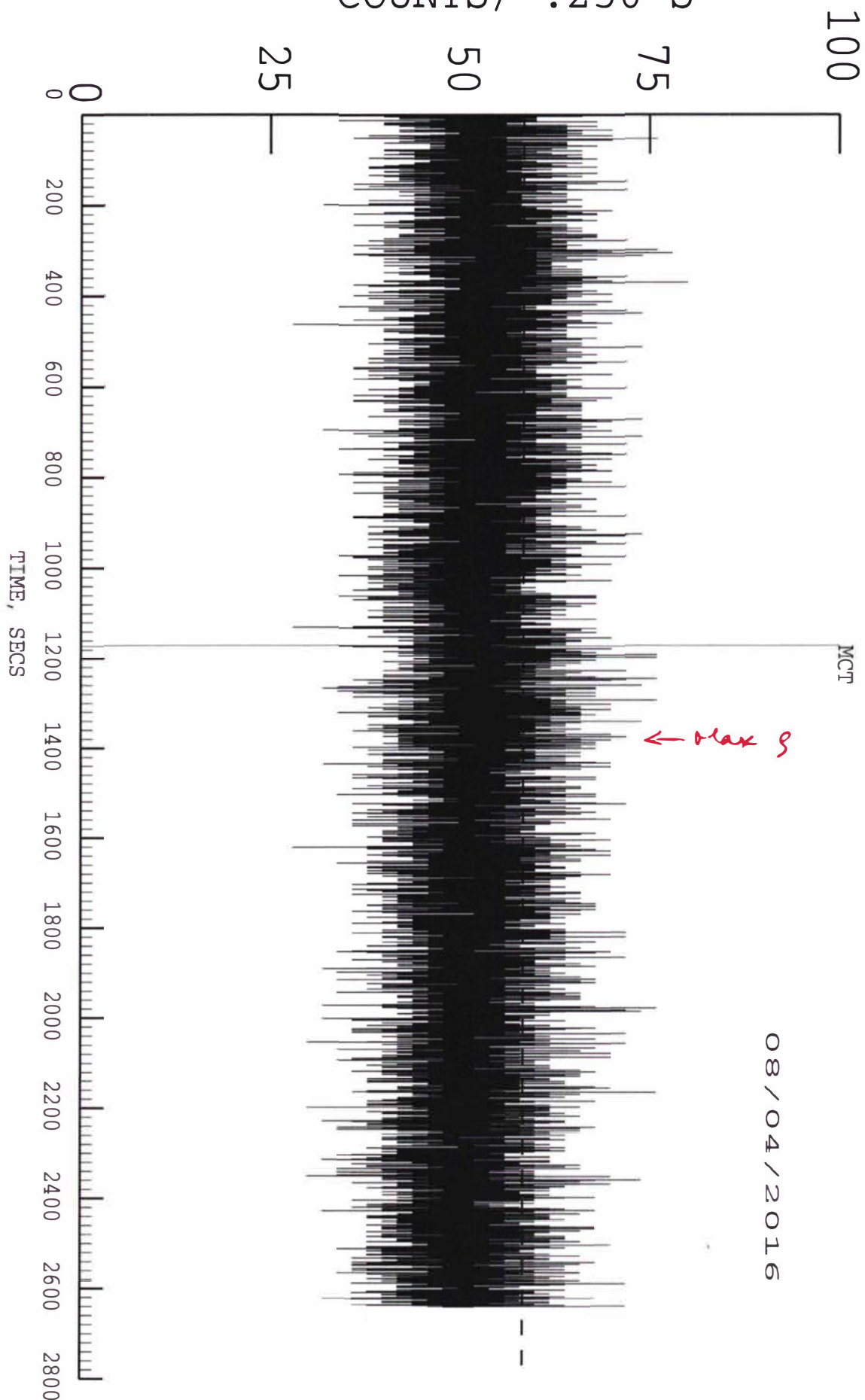
208.5 -76.4 6.4



ODYSSEY 06/04/16 47874.060 13:17:54.060^C

50-3000 keV

COUNTS/ .250 S



RHESSI Data for 20160406_1339

No Data Available For This Time Range

Do Not Retry

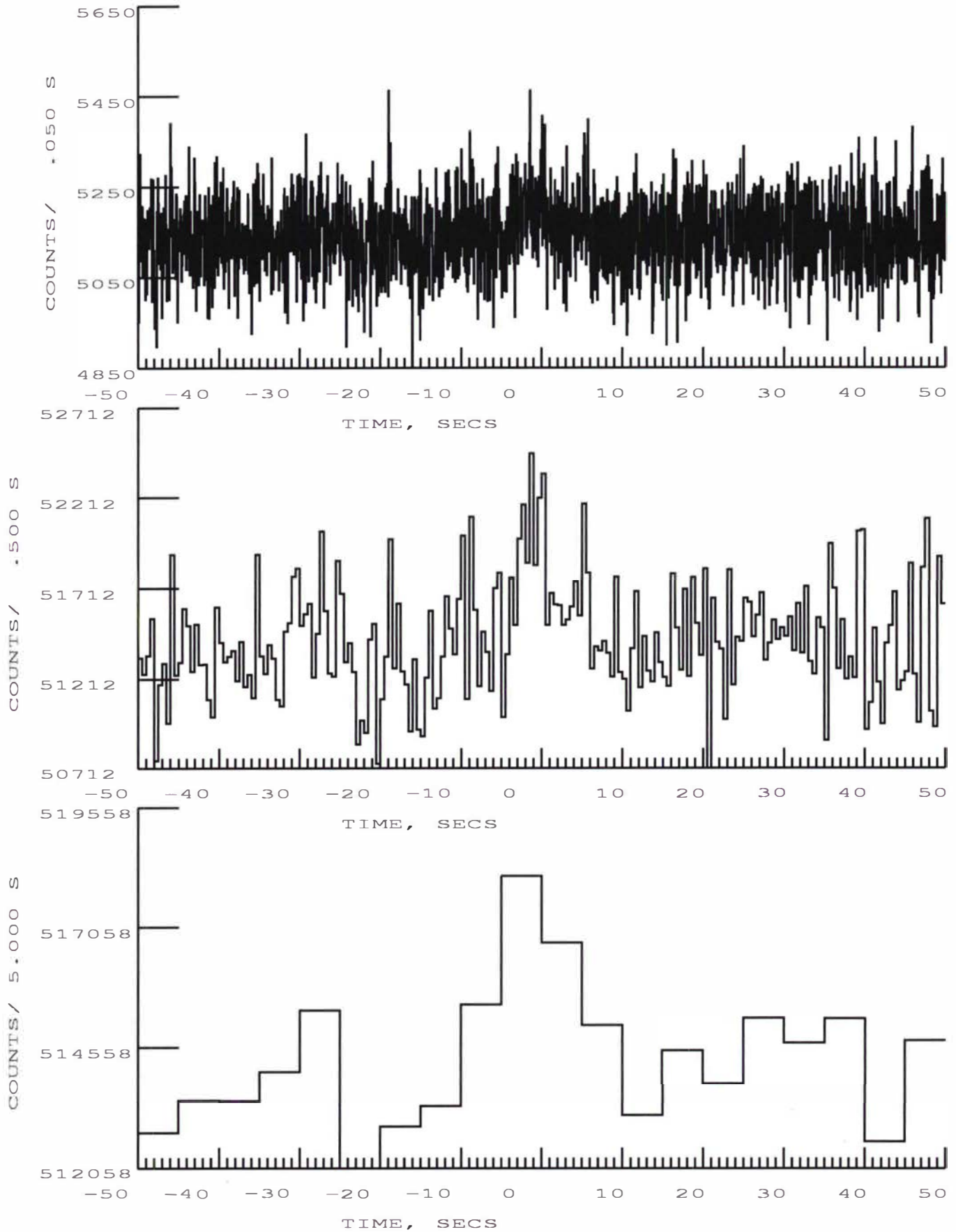
INTEGRAL

06/04/16

49229.000

13:40:29.0

15/07/16



Subject: [lpn] BAT lightcurve for trigger at 160406_1340

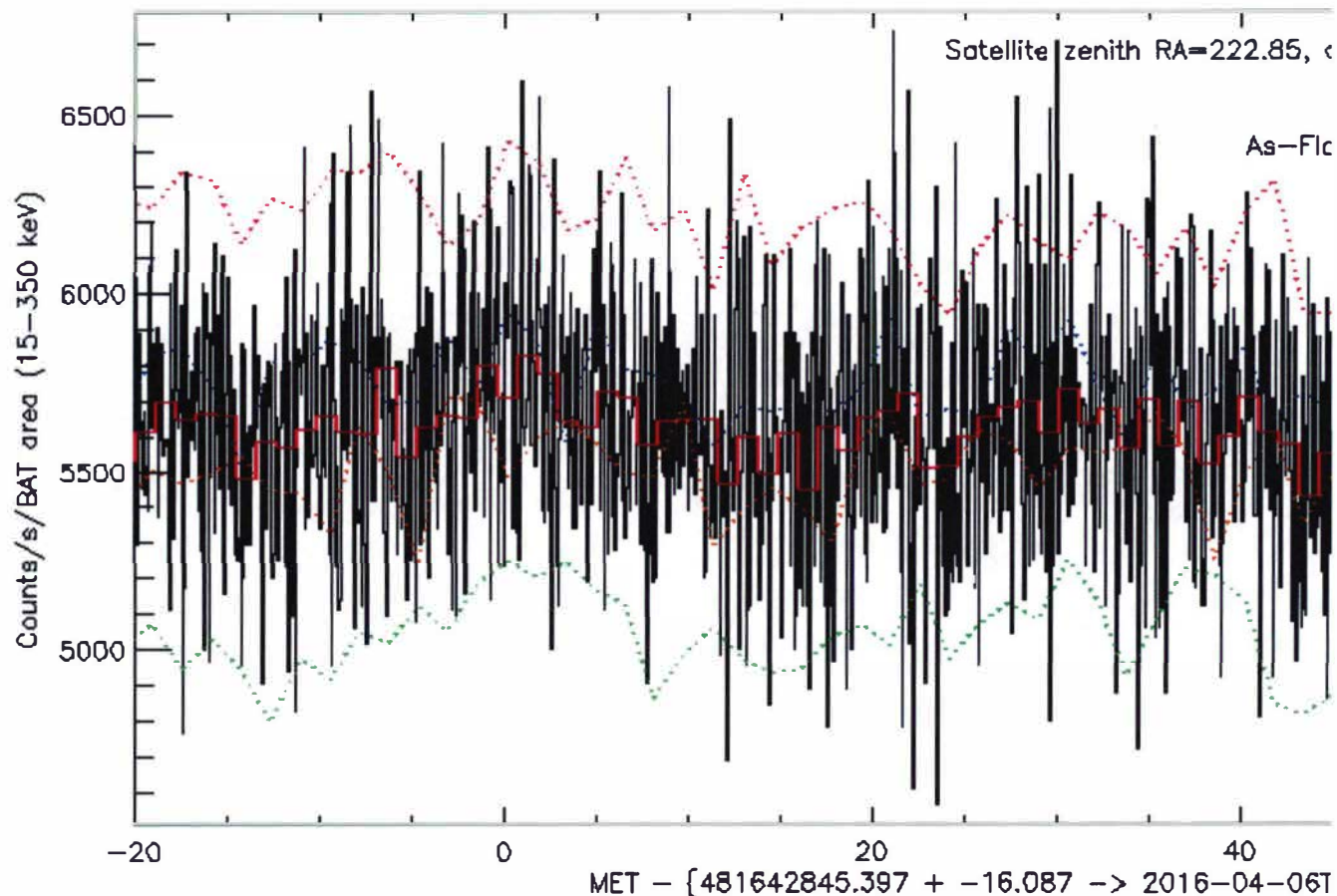
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/6/2016 10:16 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160406_1340.png—



% /usr/local/bin/swinfo -o 481642845.397 -s 177.083_-74.450

Swift Zenith(RA,dec): 222.85, -20.32
Swift Location(lon,lat,alt): -177.31 E, -20.38 N, 567 km
Time(MET + UTCF -> UT): 481642845.397 + -16.087 -> 2016-04-06T13:40:29.310
YYMMDD_SOD: 160406_49229.310 DOY=097
Obs Sequence Number: 00034466002
Obs Target Name: iPTF16zzz
Obs Date and Times: 2016-04-06 13:29:45 - 13:54:44
Obs Pointing(ra,dec,roll): 203.747, 13.813, 21.21
177.083_-74.450_imageloc (boresight_dist, angle): (90, 76)
177.083_-74.450_exposure (cm² cos adjusted): 0
177.083_-74.450_altitude: 54 (up)

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
Ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

-- Attachments:	
/tmp/swift/160406_1340.png	29.1 KB
/tmp/swift/160406_1340_bat64ms_ipn	87.1 KB

v03

76.569

07/04/2016

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

4100

3100

2100

1100

100

0

5000

10000

15000

20000

25000

30000

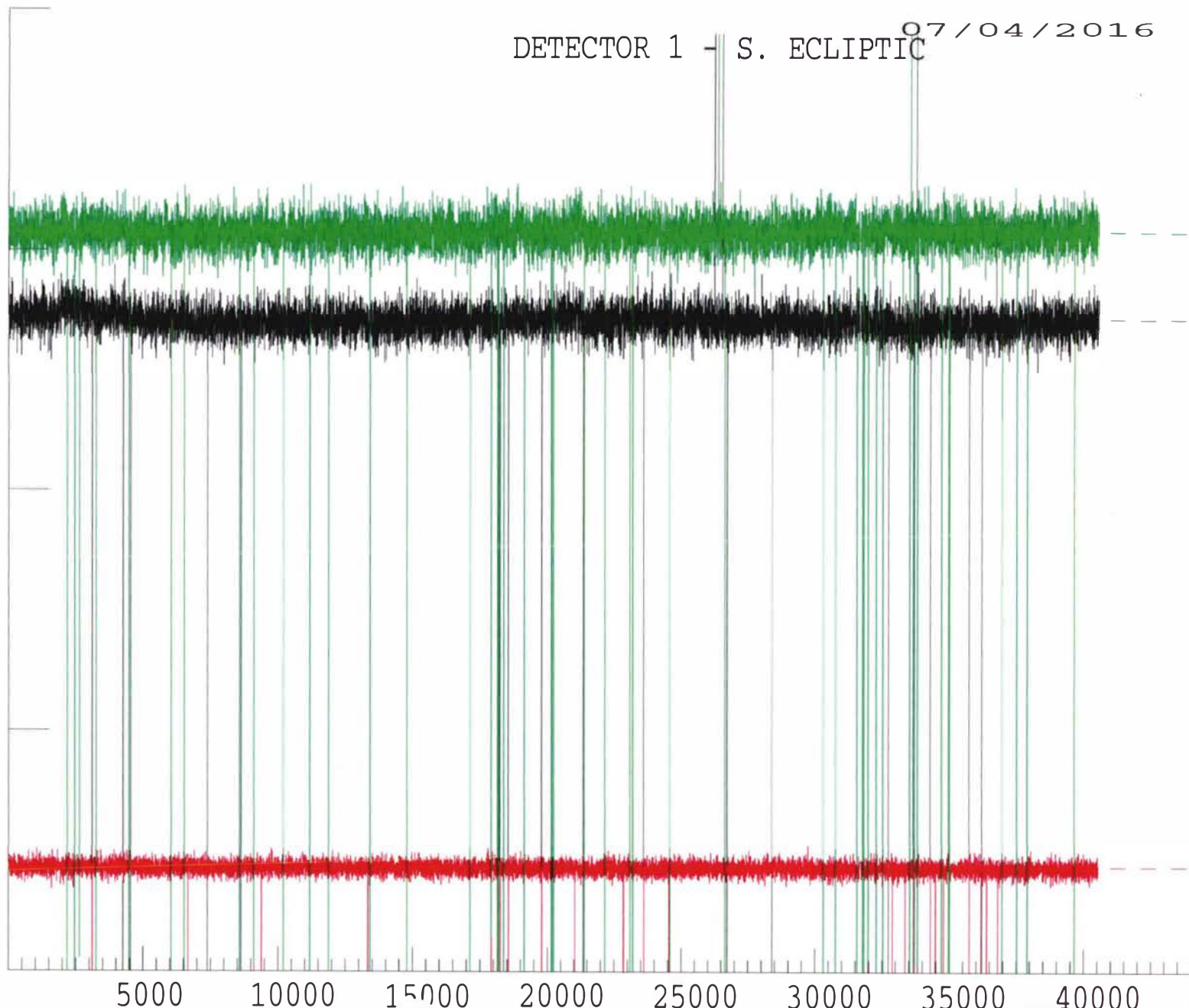
35000

40000

TIME, SECS

DETECTOR 1 - S. ECLIPTIC

07/04/2016



v03

76.569

07/04/2016

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2040

1540

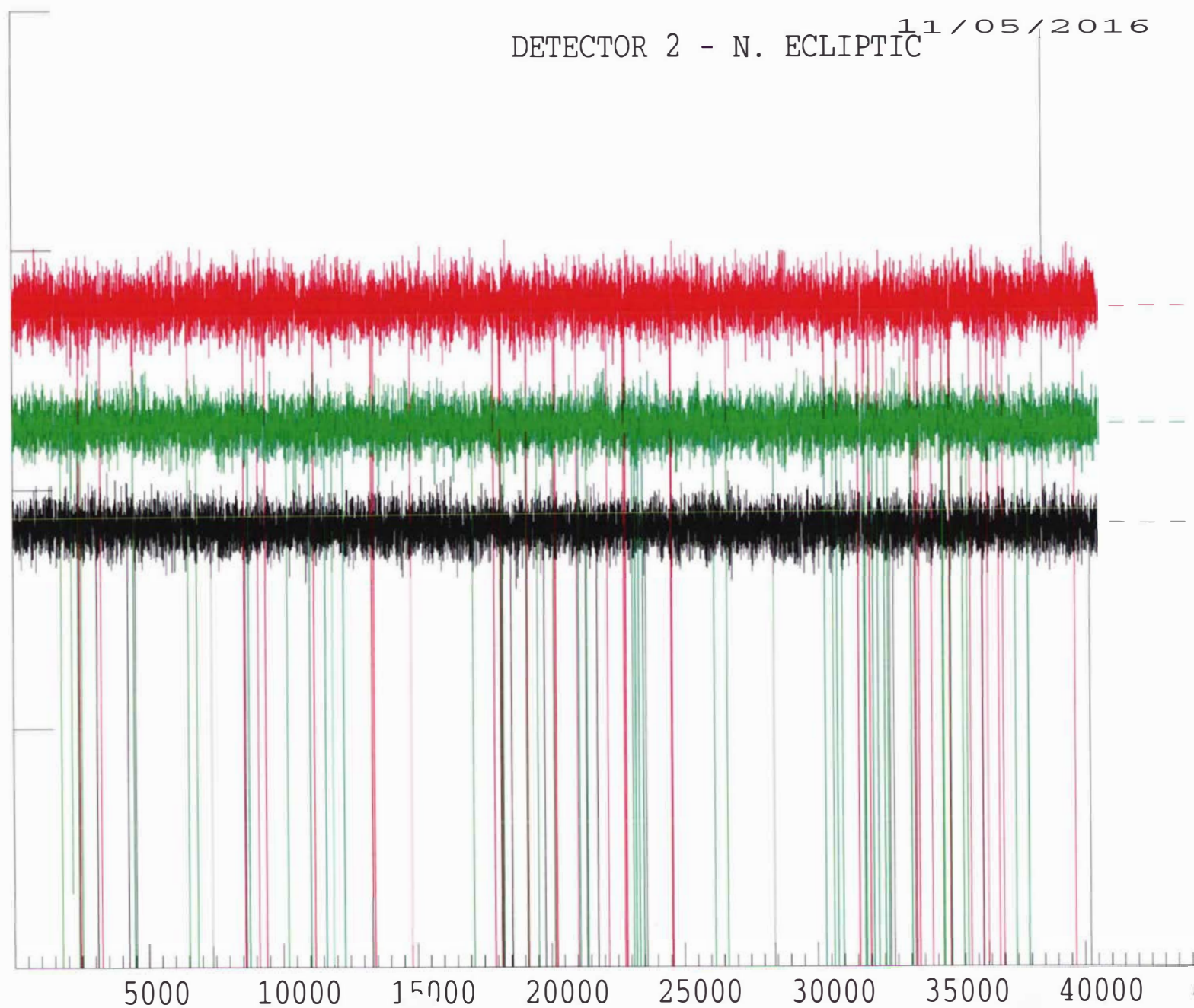
1040

540

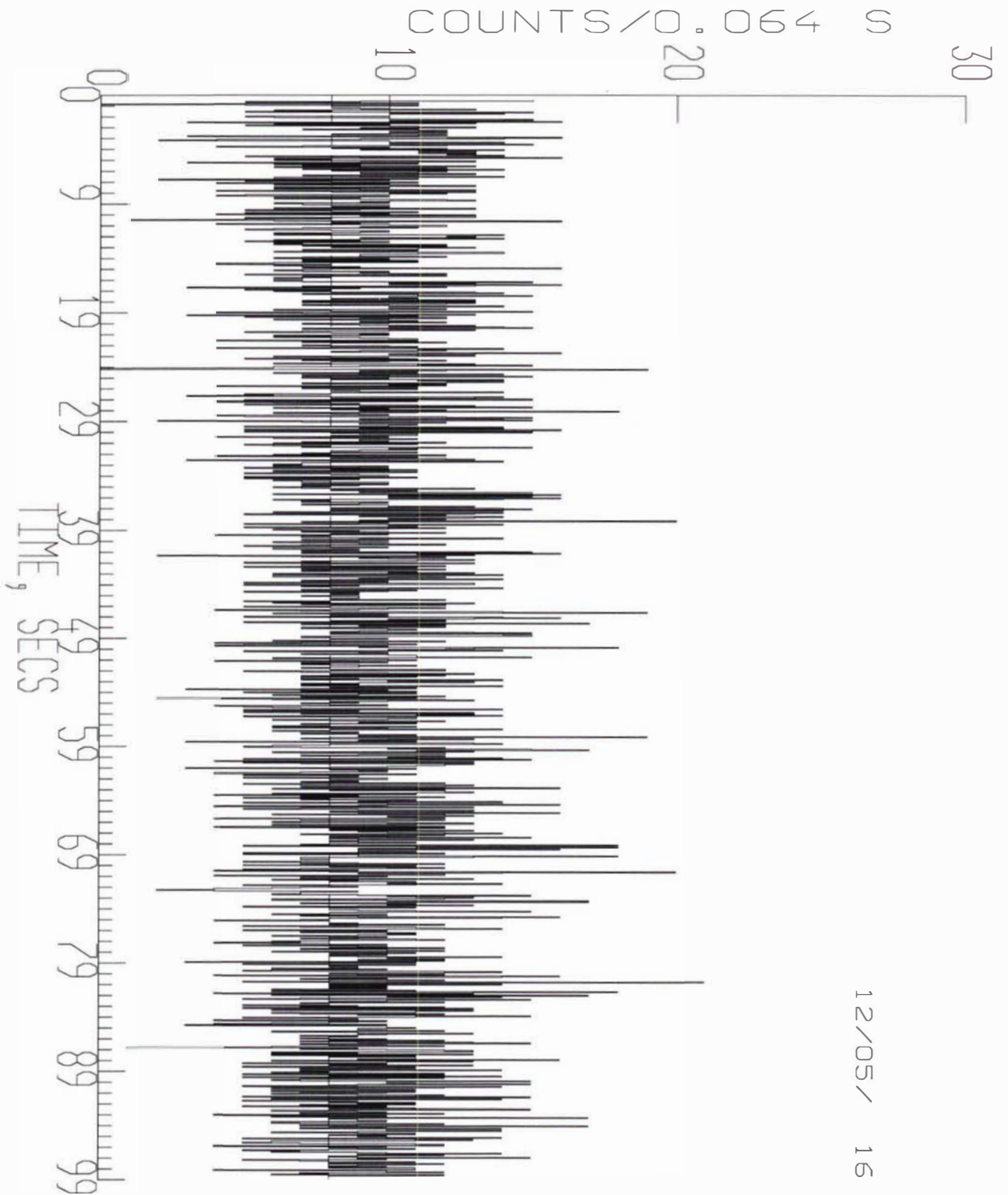
40
0

TIME. SECS

DETECTOR 2 - N. ECLIPTIC 11/05/2016



KONUS 07/04/16 58111.668
50- 200 keV

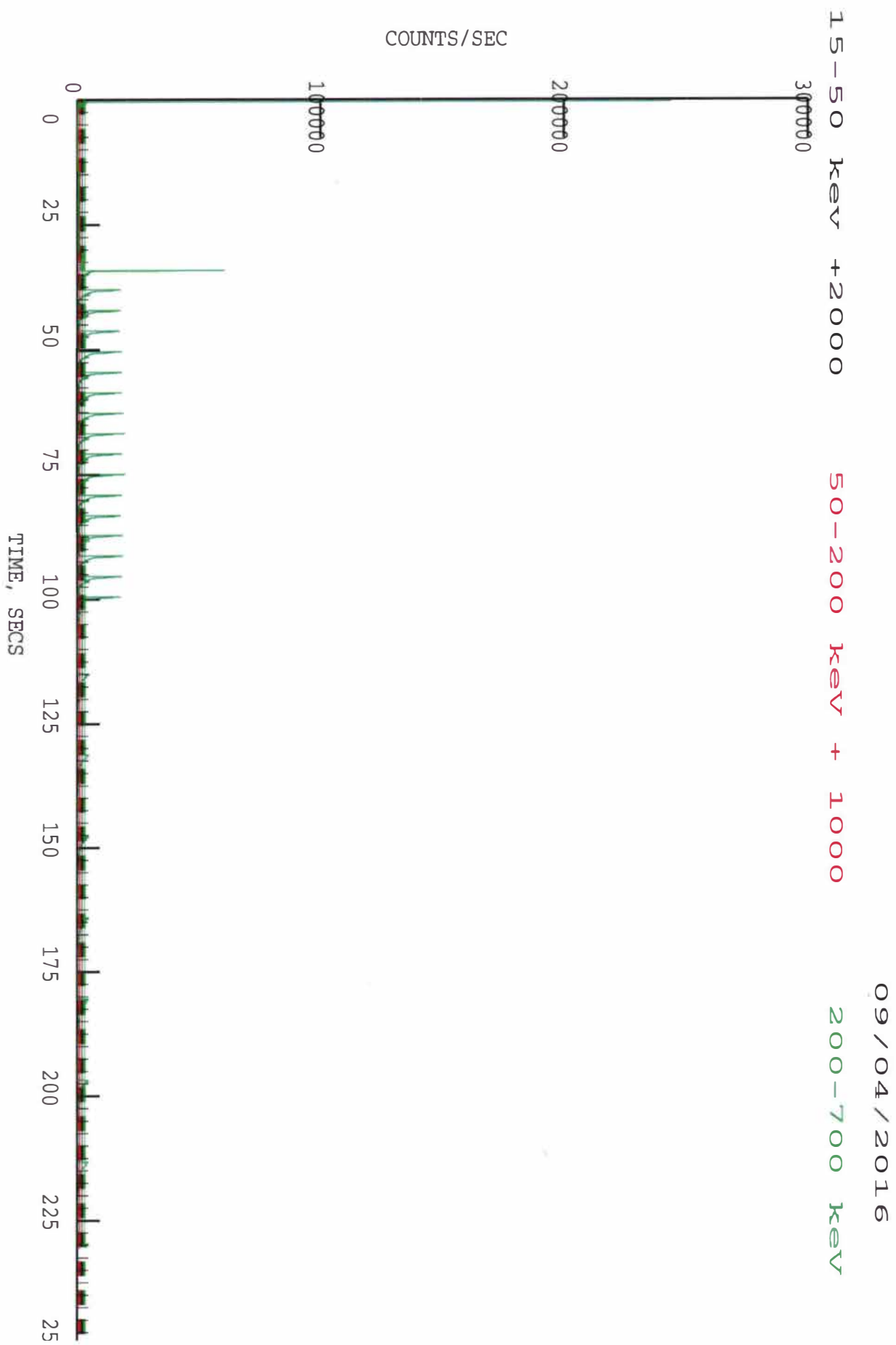


KONUS

07/04/16

58111.000

16:08:31.000



FERMI

07/04/16

58106.813

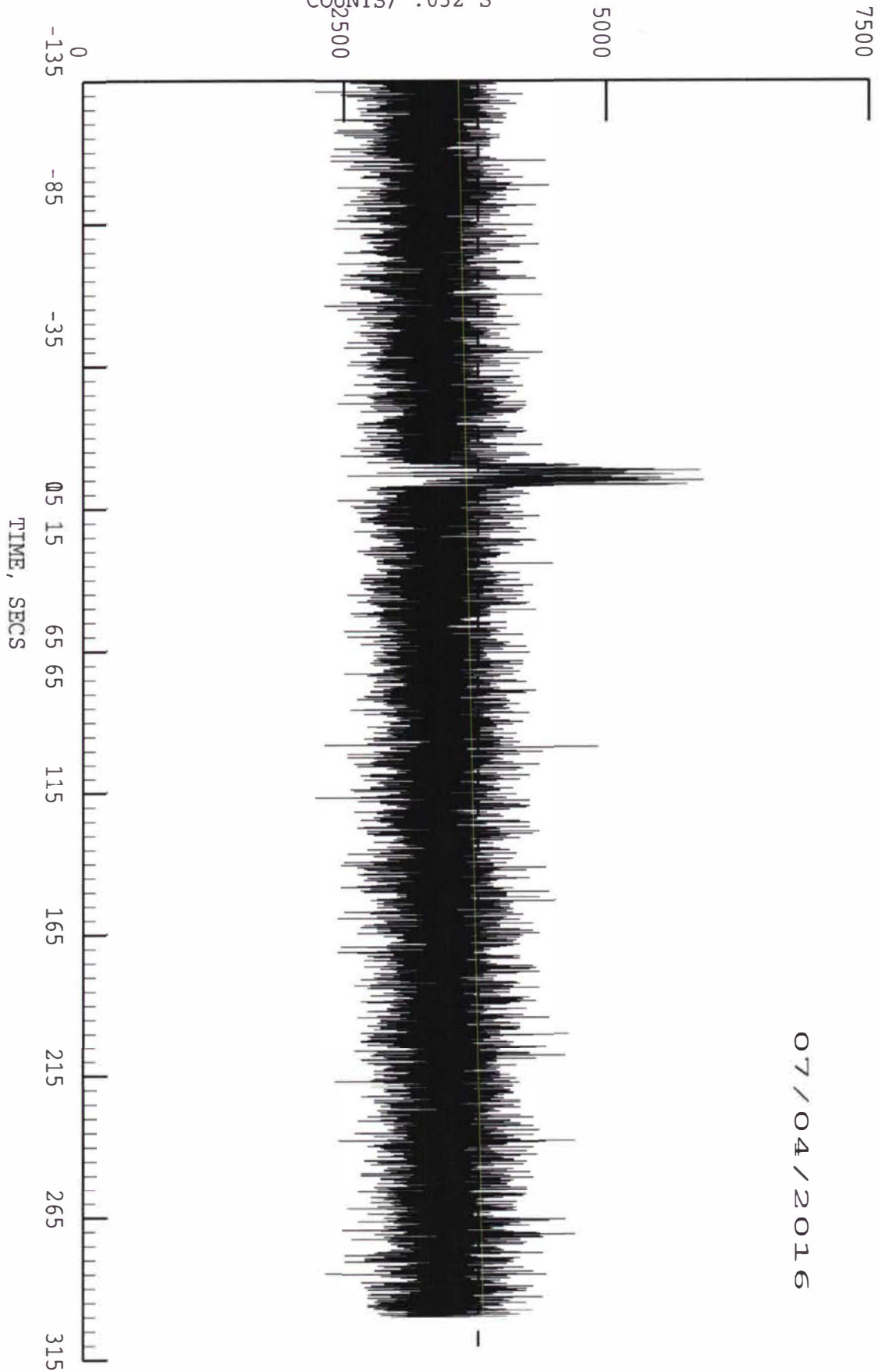
16:08:26.813

26- 293 keV

226.8 35.3 3.1

SPI N/O

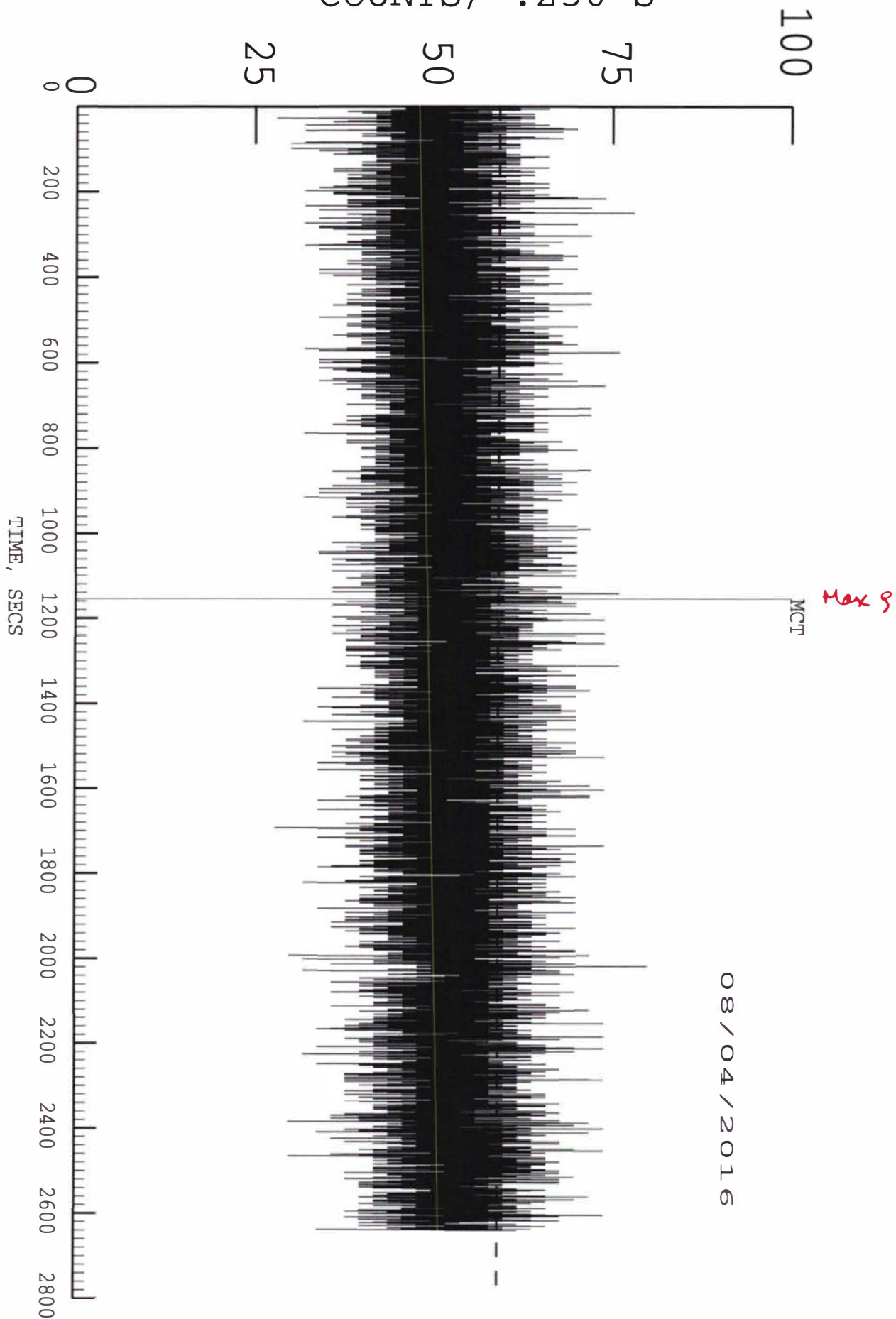
COUNTS/ .032 S



ODYSSEY 07/04/16 56752.387 15:45:52.387

50-3000 keV

COUNTS/ .250 S



08/04/2016

RHESSI Data for 20160407_1606

No Data Available For This Time Range

Do Not Retry

[Ipn] BAT lightcurve for trigger at 160407_1608

Subject: [Ipn] BAT lightcurve for trigger at 160407_1608

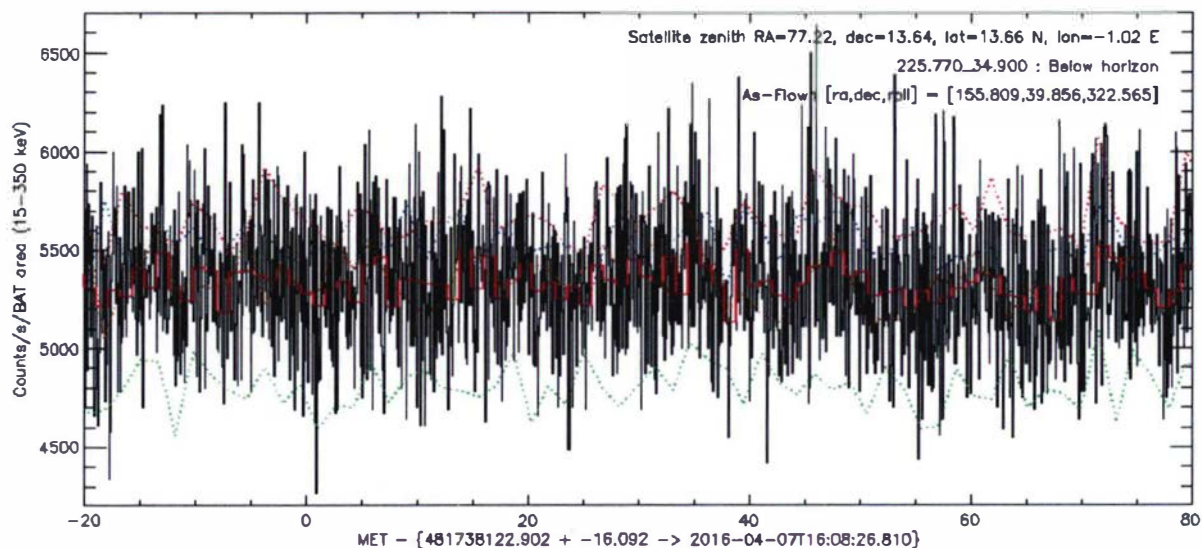
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/7/2016 12:41 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

— /tmp/swift/160407_1608.png



```
% /usr/local/bin/swinfo -o 481738122.902 -s 225.770_34.900
Swift Zenith(RA,dec): 77.22, 13.64
Swift Location(lon,lat,alt): -1.02 E, 13.66 N, 546 km
Time(MET + UTCF -> UT): 481738122.902 + -16.092 -> 2016-04-07T16:08:26.810
YYMMDD_SOD: 160407_58106.810 DOY=098
Obs Sequence Number: 00046481005
Obs Target Name: PB 00198
Obs Date and Times: 2016-04-07 16:03:34 - 16:14:39
Obs Pointing(ra,dec,roll): 155.809, 39.856, 322.56
225.770_34.900_imageloc (boresight_dist, angle): (54, 19)
225.770_34.900_exposure (cm² cos adjusted): 246
225.770_34.900_altitude: -10 (down)
```

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

Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

— Attachments: —

/tmp/swift/160407_1608_bat64ms_ipn

87.1 KB

/tmp/swift/160407_1608.png

28.7 KB

v04

200- 750 keV

4010

DETECTOR 1 - S. ECLIPTEIC 08/04/2016

10
0

T. SECS

0 10000 20000 30000 40000 50000 60000 70000 80000 900

KONUS

08/04/2016

62.352

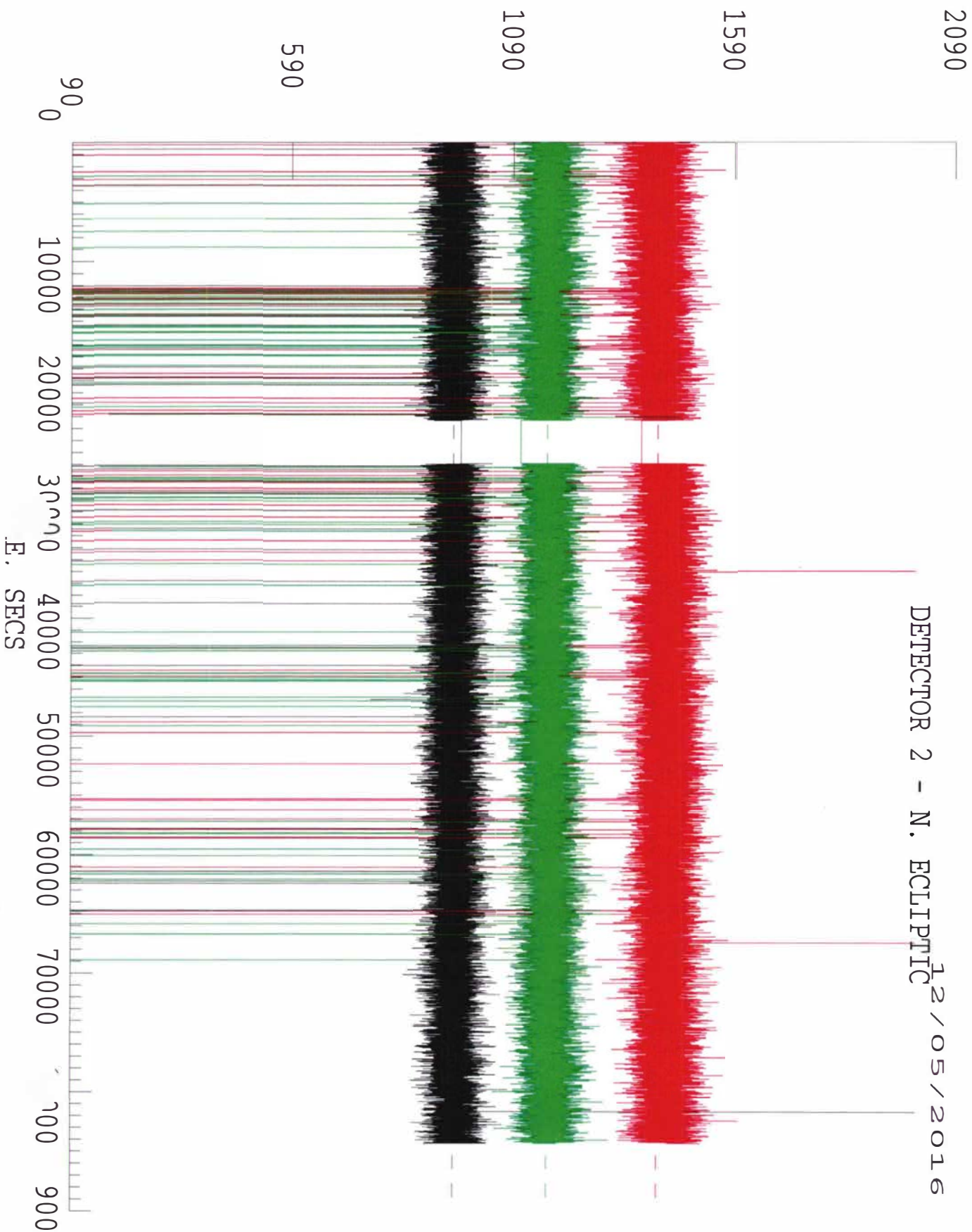
v04

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: GCN/SWIFT_BAT_LIGHTCURVE**From:** Bacodine <vxw@capella2.gsfc.nasa.gov>**Date:** 4/7/2016 11:29 PM**To:** khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
NOTICE_DATE: Fri 08 Apr 16 06:29:37 UT
NOTICE_TYPE: Swift-BAT GRB Lightcurve
TRIGGER_NUM: 682059, Seg_Num: 0
GRB_RA: 122.557d {+08h 10m 14s} (J2000),
 122.988d {+08h 11m 57s} (current),
 121.222d {+08h 04m 53s} (1950)
GRB_DEC: +71.140d {+71d 08' 25"} (J2000),
 +71.091d {+71d 05' 28"} (current),
 +71.287d {+71d 17' 14"} (1950)
GRB_DATE: 17486 TJD; 99 DOY; 16/04/08
GRB_TIME: 23143.77 SOD {06:25:43.77} UT
TRIGGER_INDEX: 482
GRB_PHI: -25.34 [deg]
GRB_THETA: 45.86 [deg]
DELTA_TIME: 13.00 [sec]
TRIGGER_DUR: 0.384 [sec]
SOLN_STATUS: 0x3
RATE_SIGNIF: 38.96 [sigma]
IMAGE_SIGNIF: 11.30 [sigma]
LC_URL: sw00682059000msb.lc
SUN_POSTN: 17.40d {+01h 09m 37s} +7.39d {+07d 23' 12"}
SUN_DIST: 87.98 [deg] Sun_angle= -7.0 [hr] (East of Sun)
MOON_POSTN: 29.39d {+01h 57m 35s} +8.58d {+08d 34' 39"}
MOON_DIST: 83.05 [deg]
MOON_ILLUM: 1 [%]
GAL_COORDS: 143.94, 31.90 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 105.52, 49.45 [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 = 128.38,16.35 [deg].

0.32 s

 $1.6 \times 10^{-7} \text{ erg cm}^{-2}$ $2.1 \text{ phot/cm}^2 \text{ s}$

BAT

08/04/16

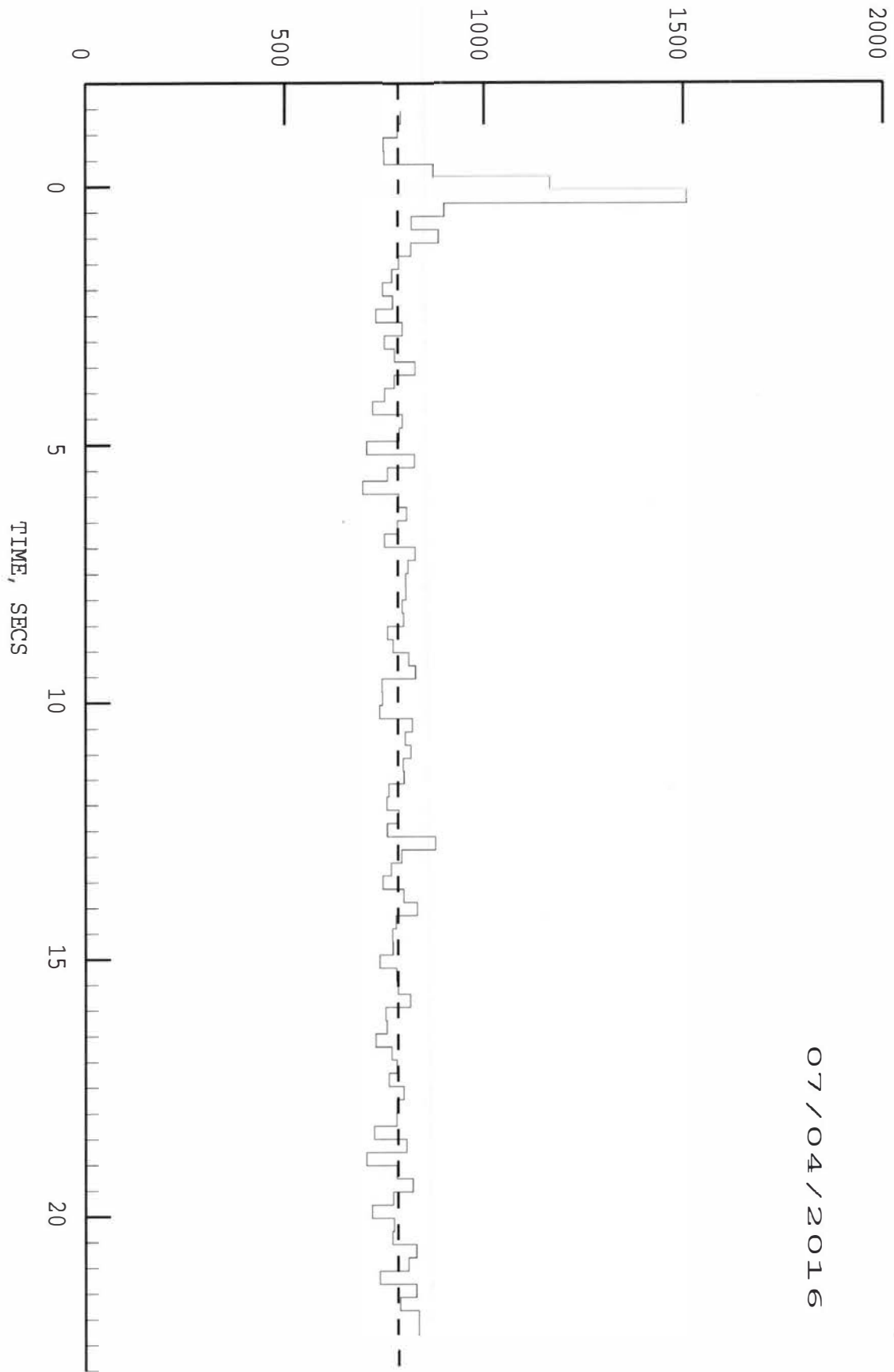
23143.777

06:25:43.777

25- 100 keV

COUNTS/ .256 S

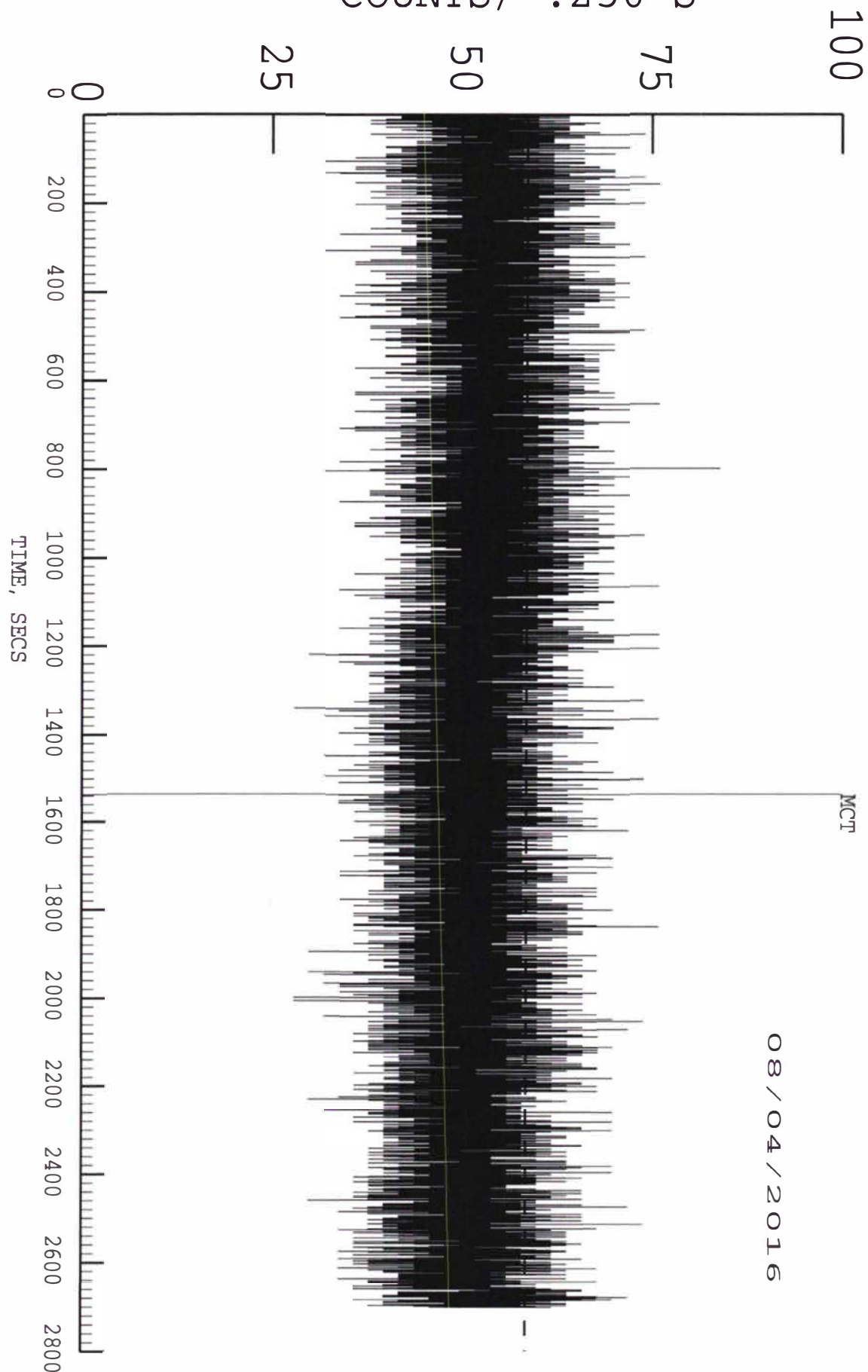
07 / 04 / 2016



ODYSSEY 08/04/16 21771.478 06:02:51.478

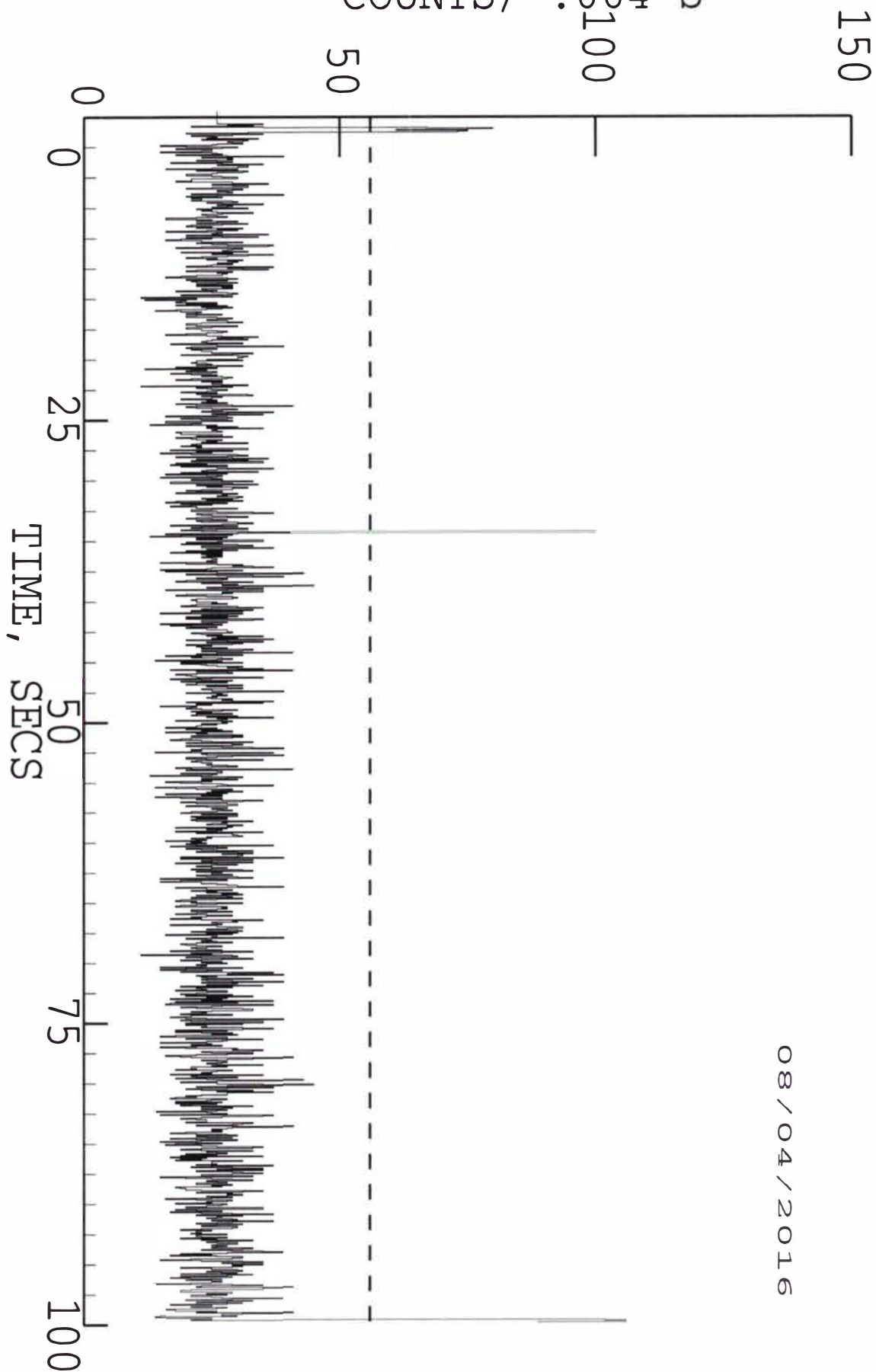
50-3000 keV

COUNTS/ .250 S



KONUS 08/04/16 23144.202 06:25:44.202
50- 200 keV

COUNTS/ .064 S

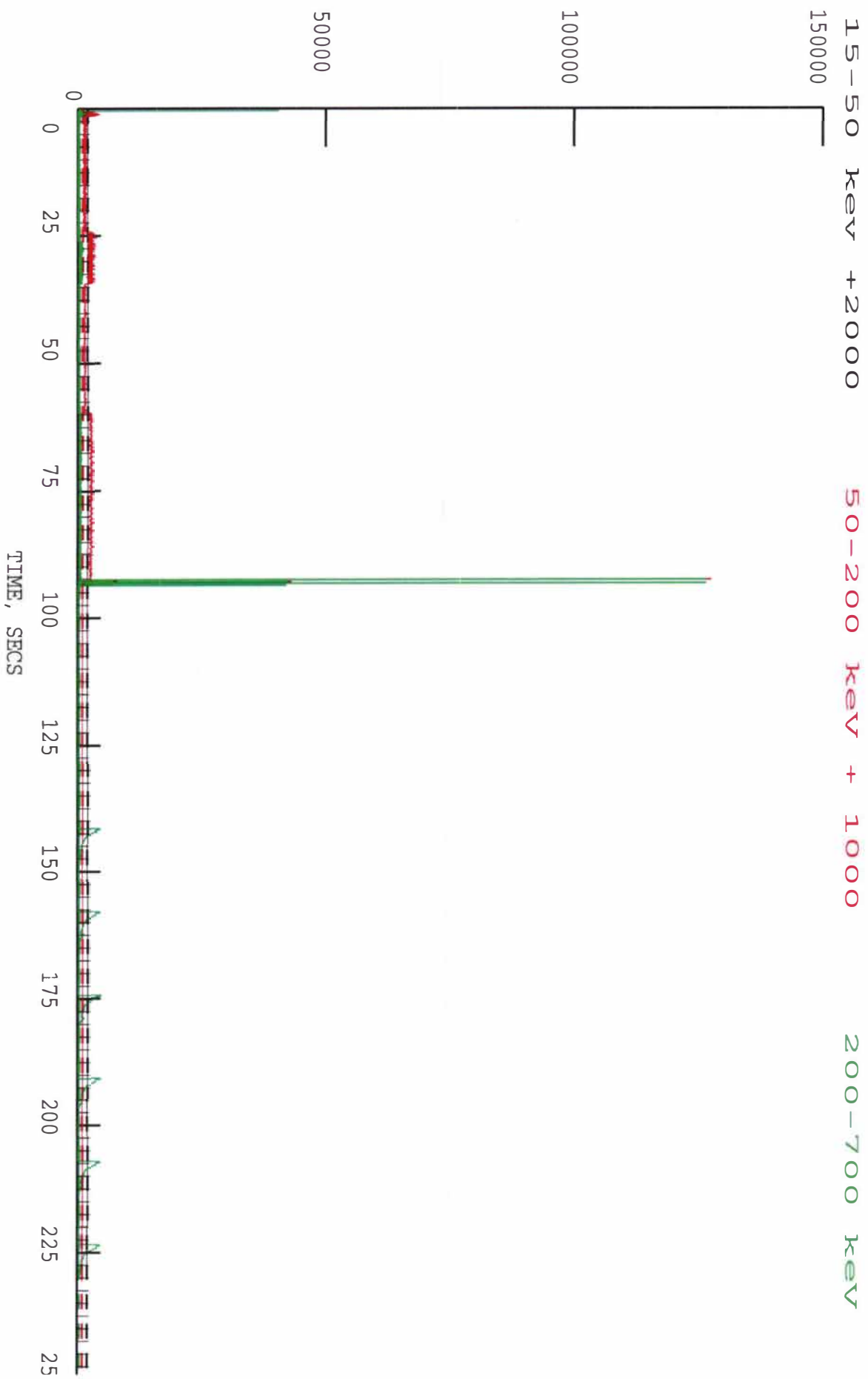


KONUS

08/04/16

COUNTS/SEC 23144.000

06:25:44.000

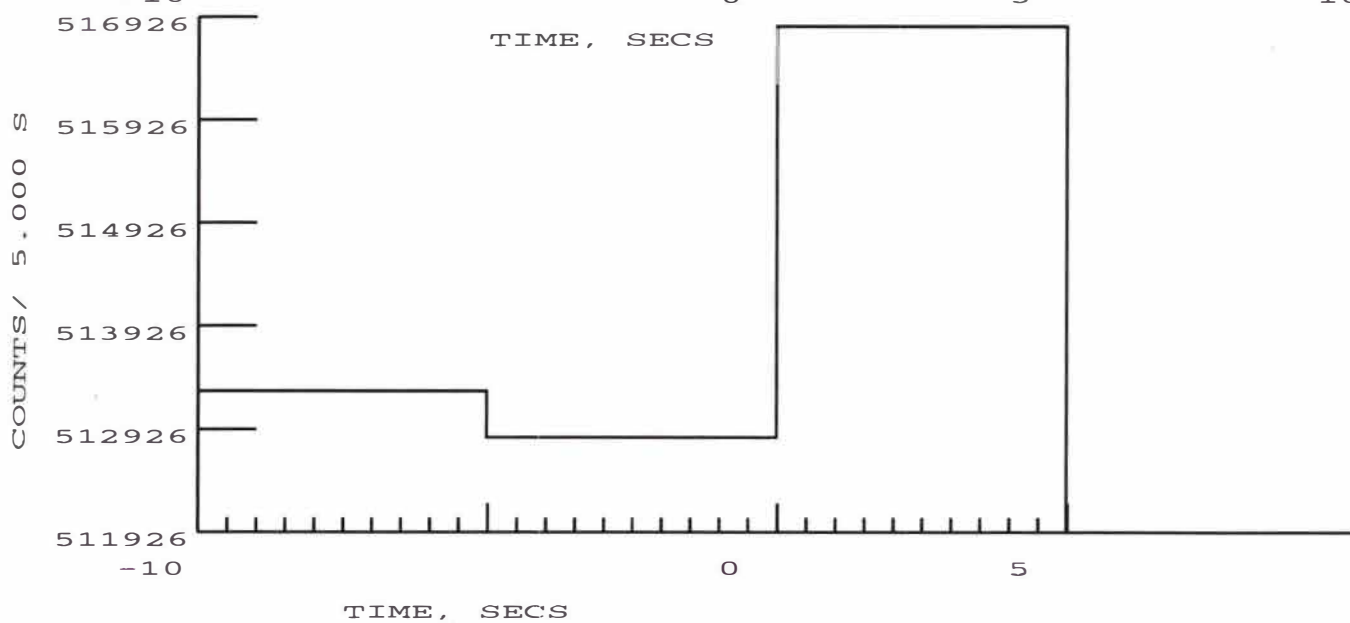
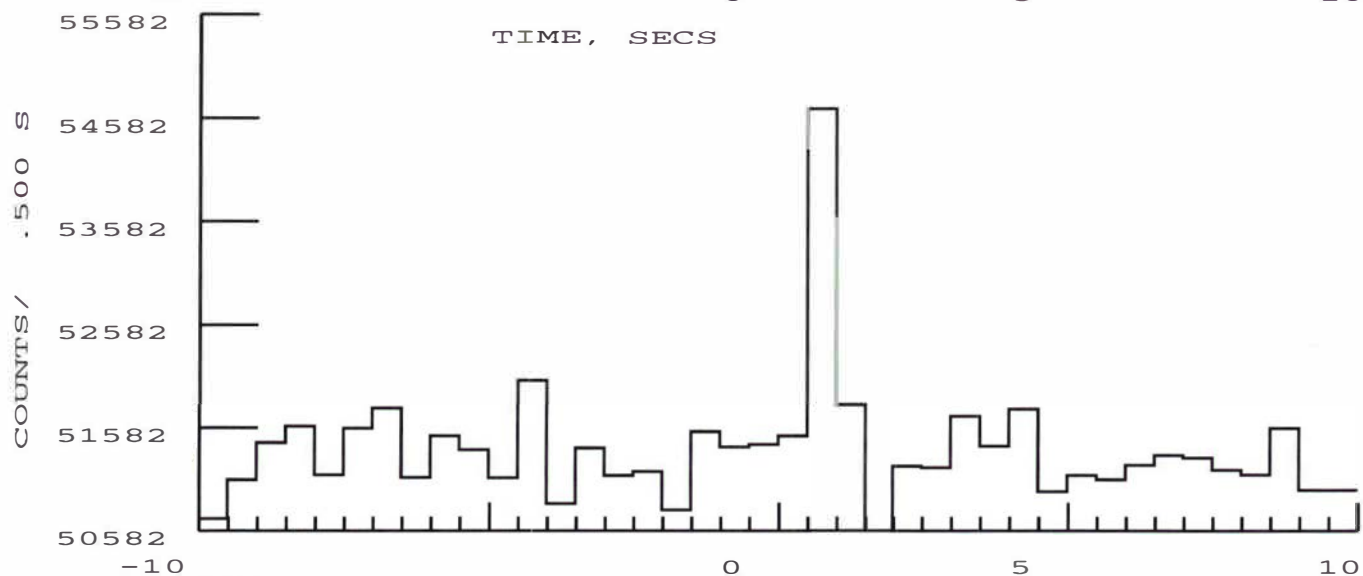
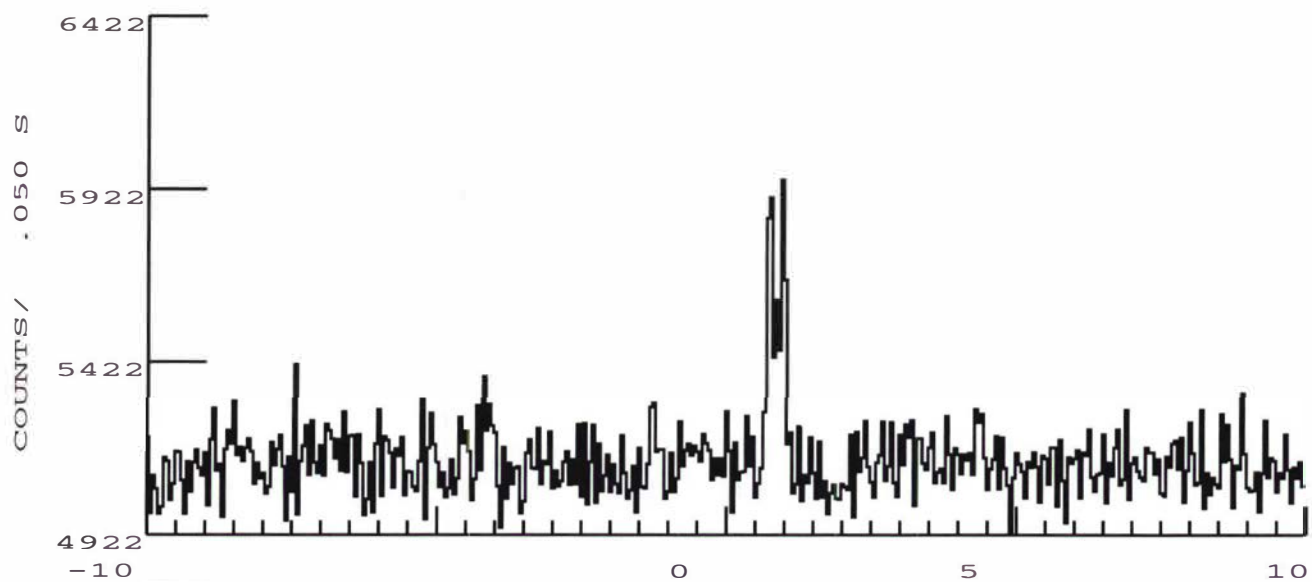


09/04/2016

RHESSI Data for 20160408_0624

No Data Available For This Time Range

Do Not Retry



FERMI

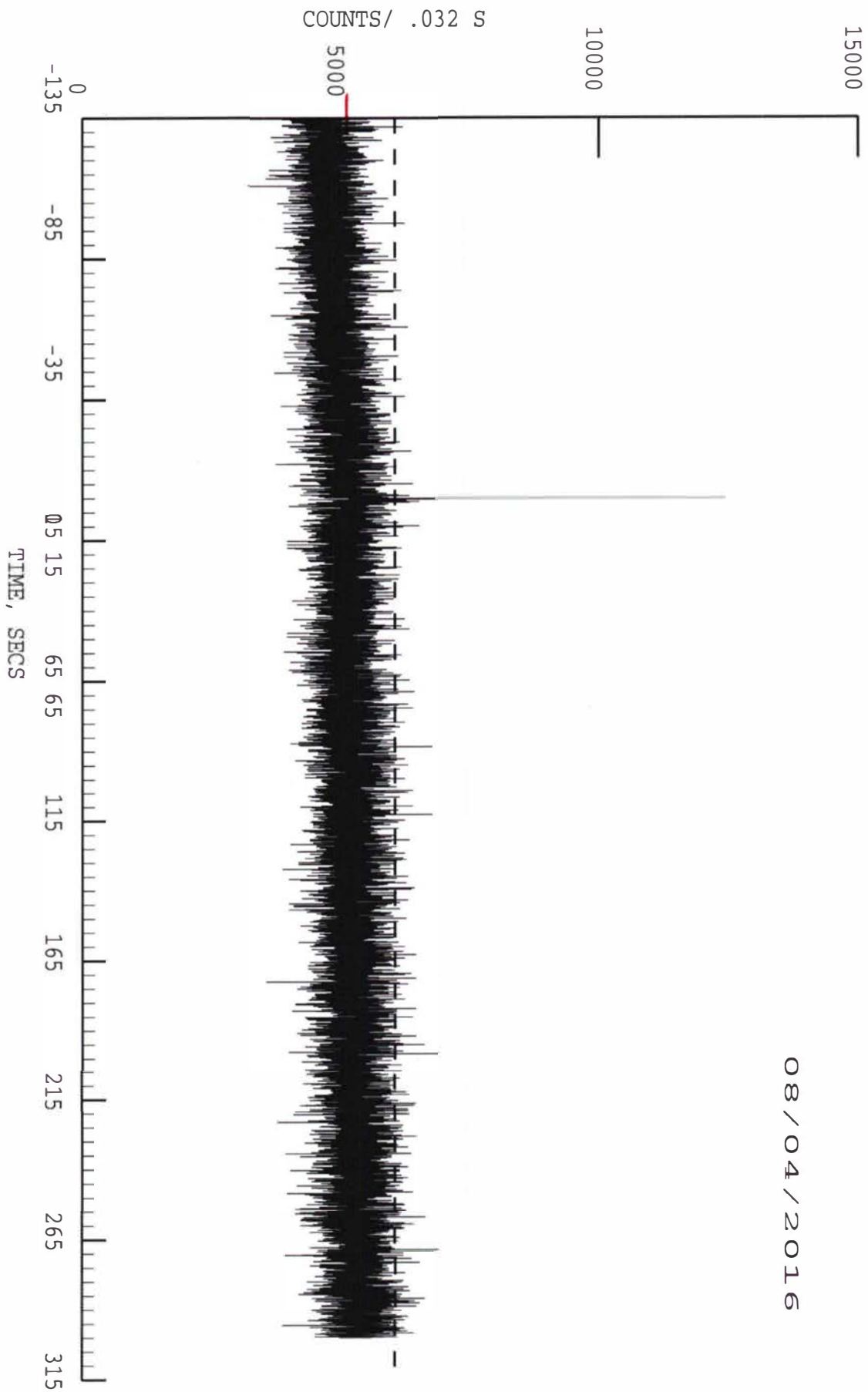
08/04/16

23143.857

06:25:43.857

26- 293 keV

08/04/2016



[Ipn] BAT lightcurve for trigger at 160408_0625

Subject: [Ipn] BAT lightcurve for trigger at 160408_0625

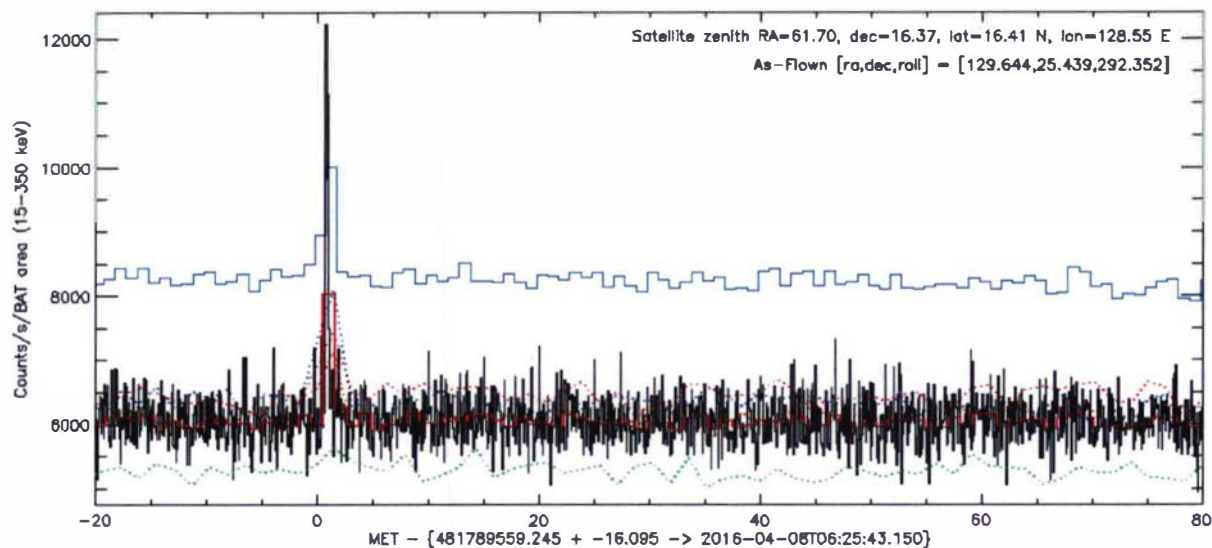
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/8/2016 3:37 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160408_0625.png



```
% /usr/local/bin/swinfo -o 481789559.245
Swift Zenith(RA,dec):      61.70, 16.37
Swift Location(lon,lat,alt): 128.55 E, 16.41 N, 547 km
Time(MET + UTCF -> UT):   481789559.245 + -16.095 -> 2016-04-08T06:25:43.150
YYMMDD_SOD:               160408_23143.150 DOY=099
Obs Sequence Number:       00034460003
Obs Target Name:           J083851.16+252714.1
Obs Date and Times:        2016-04-08 06:22:45 - 06:25:58
Obs Pointing(ra,dec,roll): 129.644, 25.439, 292.35
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160408_0625_bat64ms_ipn	87.1 KB
/tmp/swift/160408_0625.png	20.5 KB

Subject: GRB 160408A: CALET Gamma-Ray Burst Monitor detection

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

Date: 4/11/2016 7:48 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR

NUMBER: 19297

SUBJECT: GRB 160408A: CALET Gamma-Ray Burst Monitor detection

DATE: 16/04/12 02:48:31 GMT

FROM: Takanori Sakamoto at AGU <tsakamoto@phys.aoyama.ac.jp>

W. Ishizaki (ICRR), A. Yoshida, T. Sakamoto, Y. Kawakubo, M. Moriyama,
Y. Yamada (AGU), K. Yamaoka (Nagoya U), S. Nakahira (JAXA), I. Takahashi (IPMU),
Y. Asaoka, S. Ozawa, S. Torii (Waseda U), Y. Shimizu, T. Tamura (Kanagawa U),
M. L. Cherry (LSU), S. Ricciarini (U of Florence), P. S. Marrocchesi (U of Siena)
and the CALET collaboration:

The short-duration GRB 160408A (Swift, Evans et al. GCN Circ. 19260;
Fermi-GBM, Roberts et al. GCN Circ. 19265; INTEGRAL-ACS, Trigger #7441)
triggered the CALET Gamma-Ray Burst Monitor (CGBM) at 6:25:37.4 on
8 April 2016. The burst signal was detected by all CGBM instruments.

The light curve of the SGM shows a single peak. The emission starts at $T_0+6.4$ sec,
peaks at $T_0+6.5$ sec and ends at $T_0+7.1$ sec. The T_{90} duration
measured by the SGM data is 0.38 ± 0.18 sec (40-1000 keV).

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

KONUS

09/04/2016

51.080

v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4010

3010

2010

1010

10

10000

20000

30000

40000

50000

60000

70000

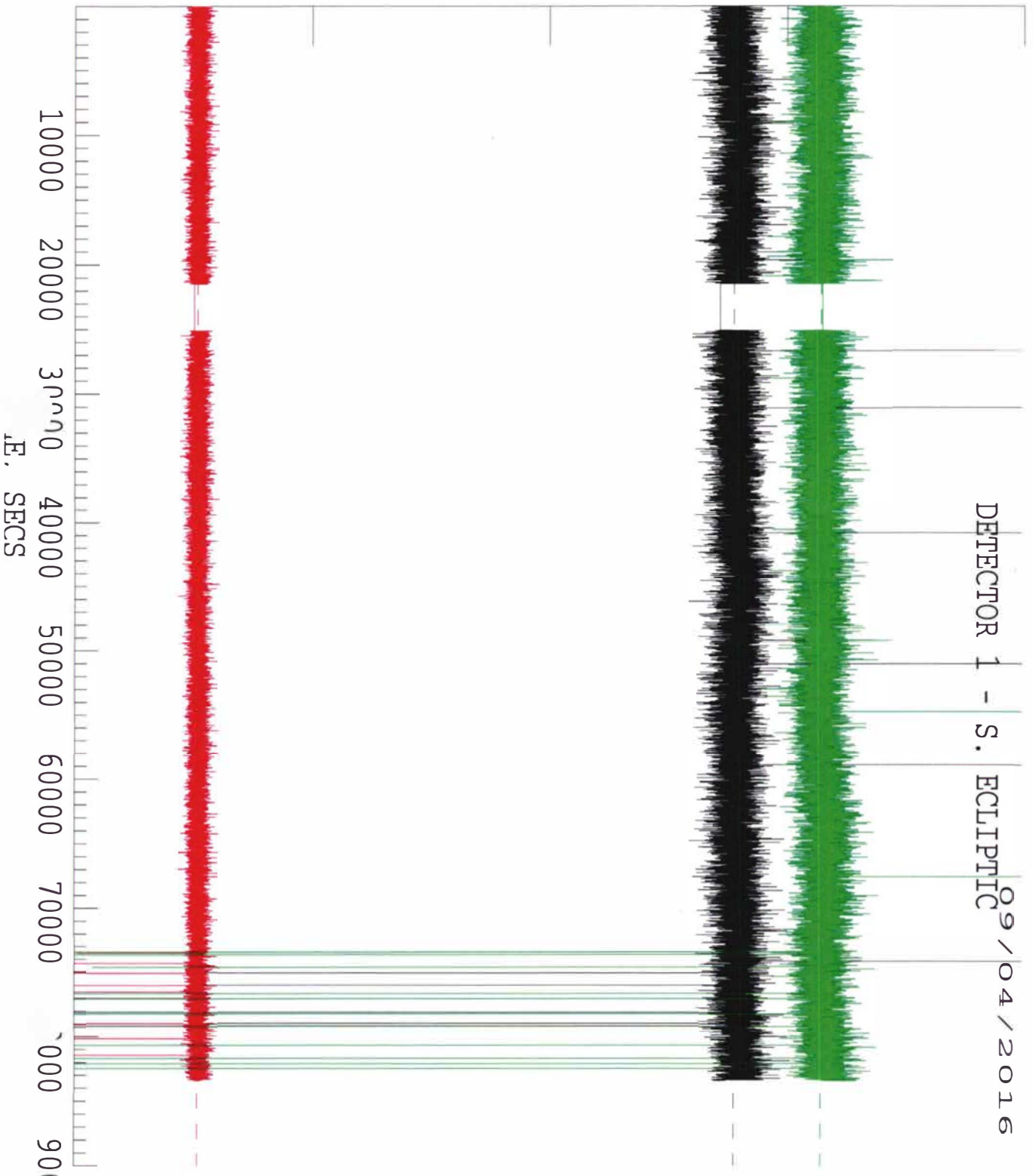
80000

90000

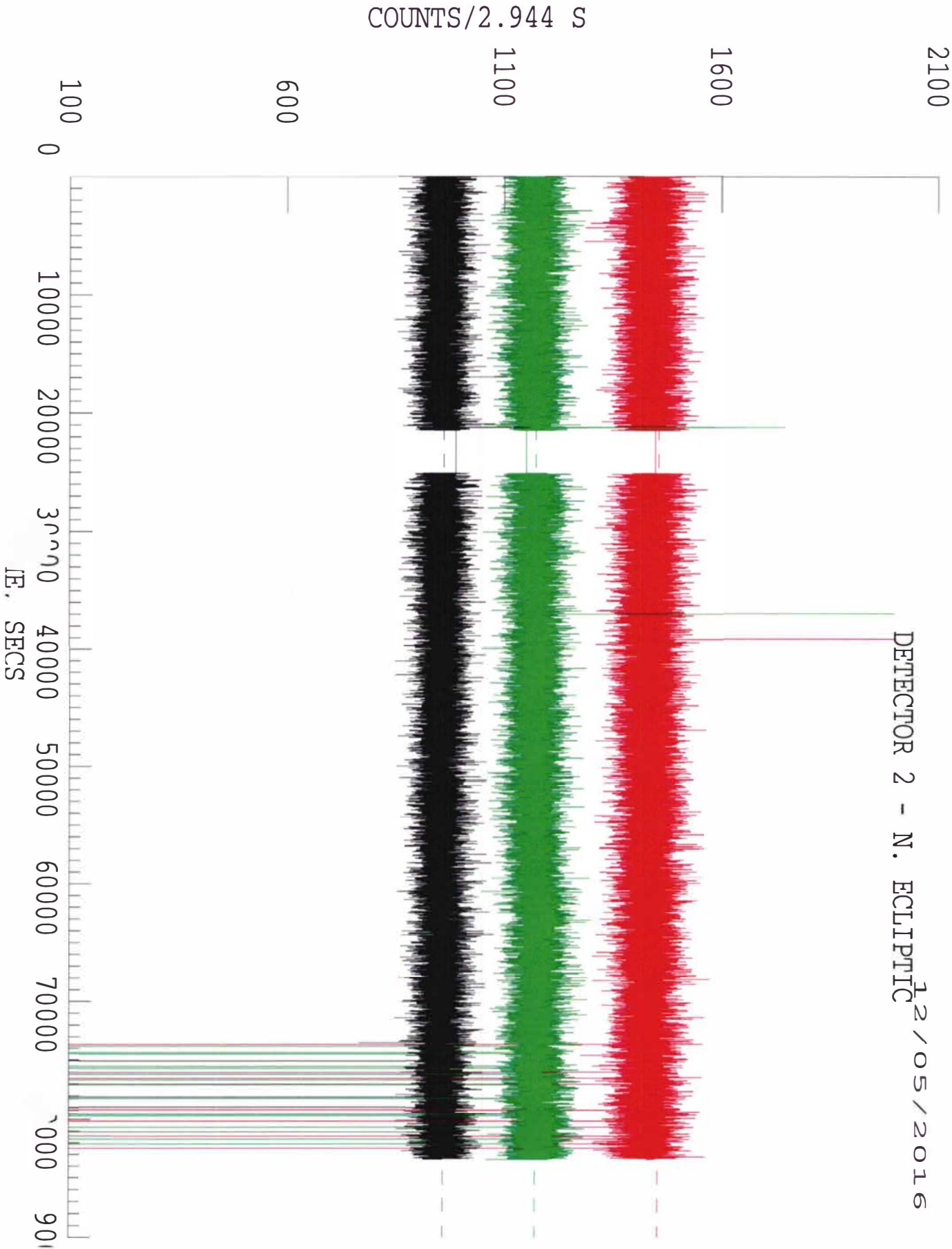
TIME, SECS

DETECTOR 1 - S. ECLIPTEIC

09/04/2016



10- 50 keV50- 200 keV200- 750 keV



KONUS

09/04/16

21254.430

05:54:14.430

50- 200 keV

COUNTS/ .064 S

75

50

25

0

0

25

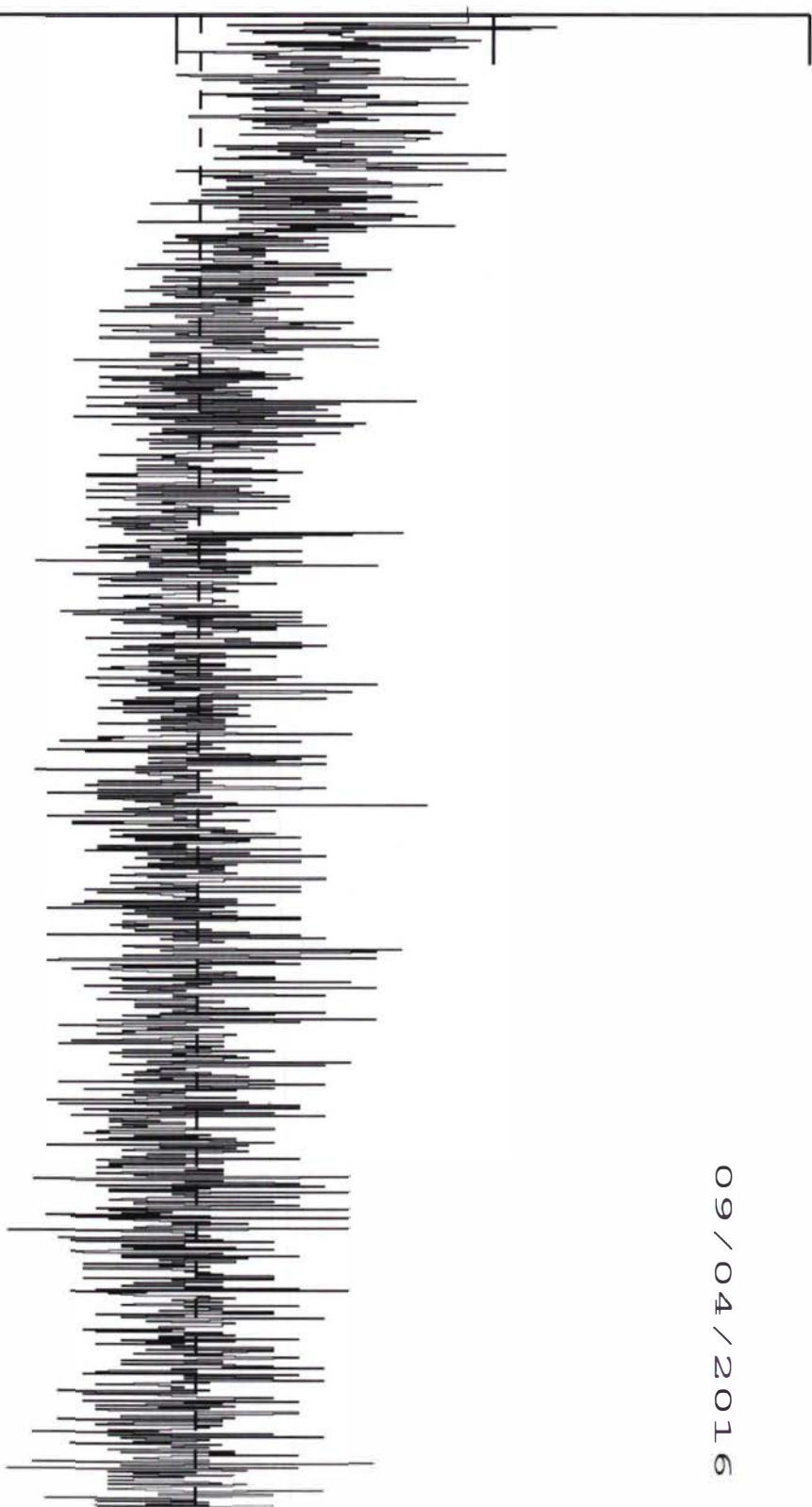
TIME, SECS

50

75

100

09/04/2016



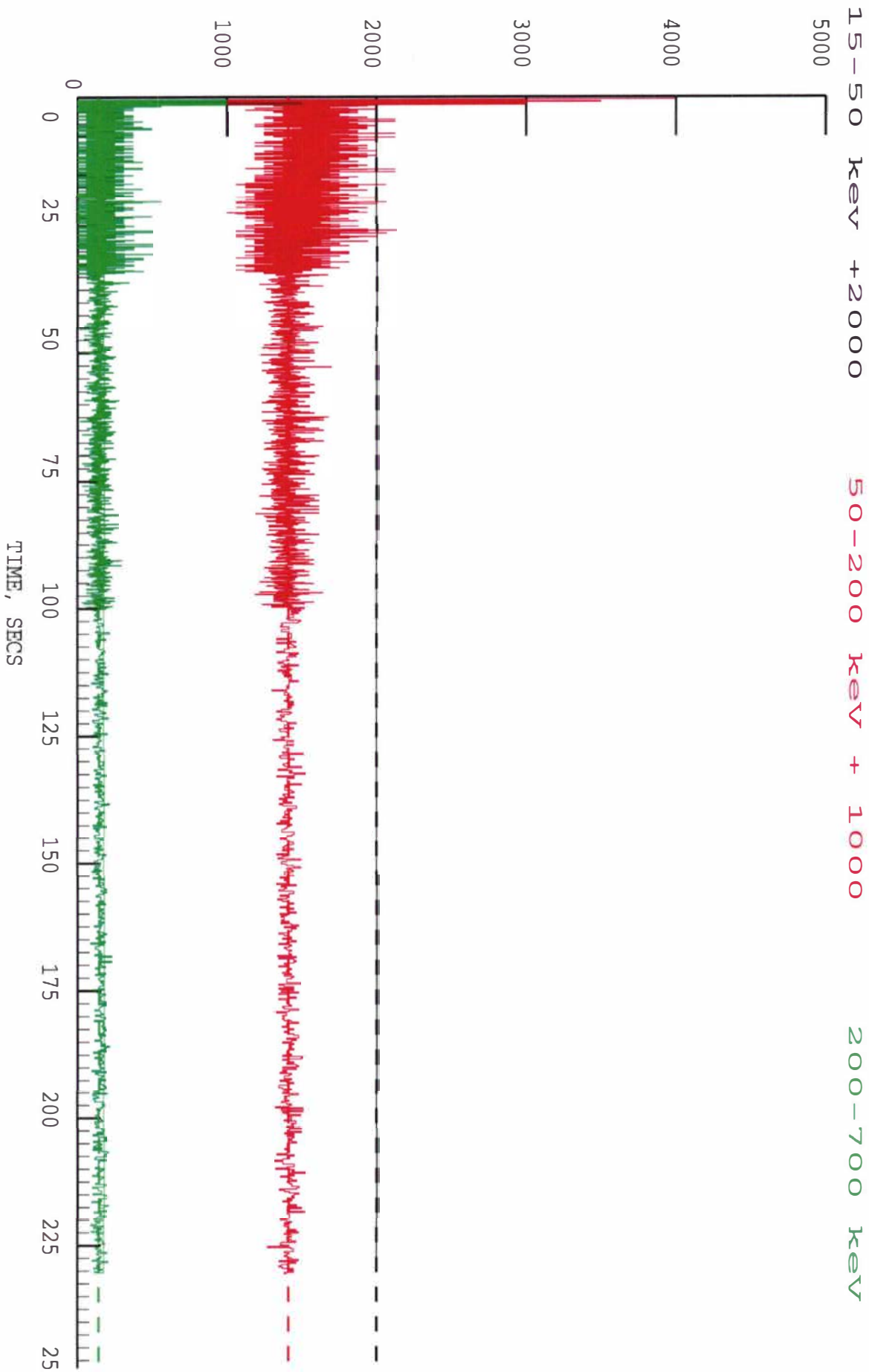
KONUS

09/04/16

21254.000

05:54:14.000

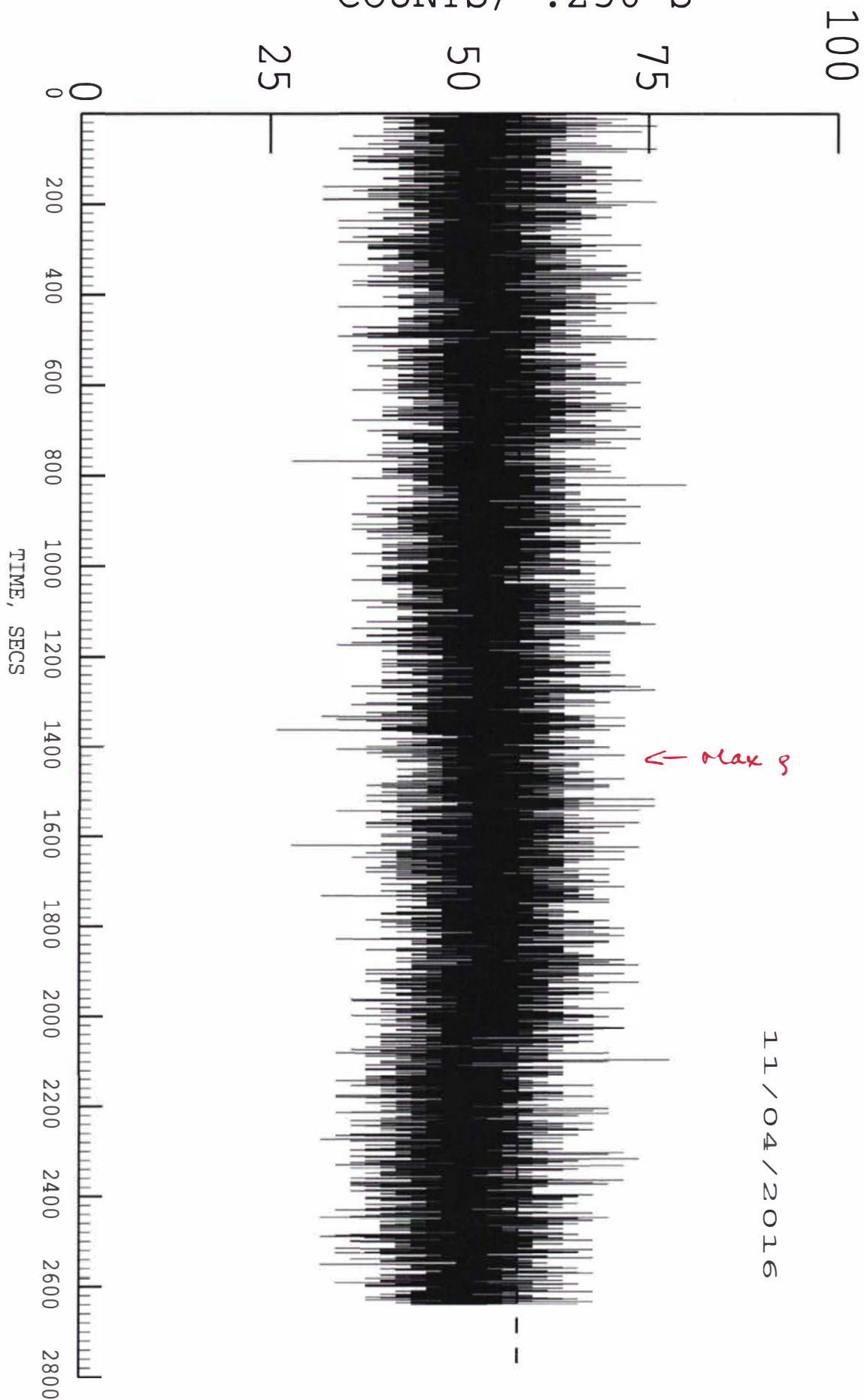
COUNTS/SEC



ODYSSEY 09/04/16 19909.986 05:31:49.986

50-3000 keV

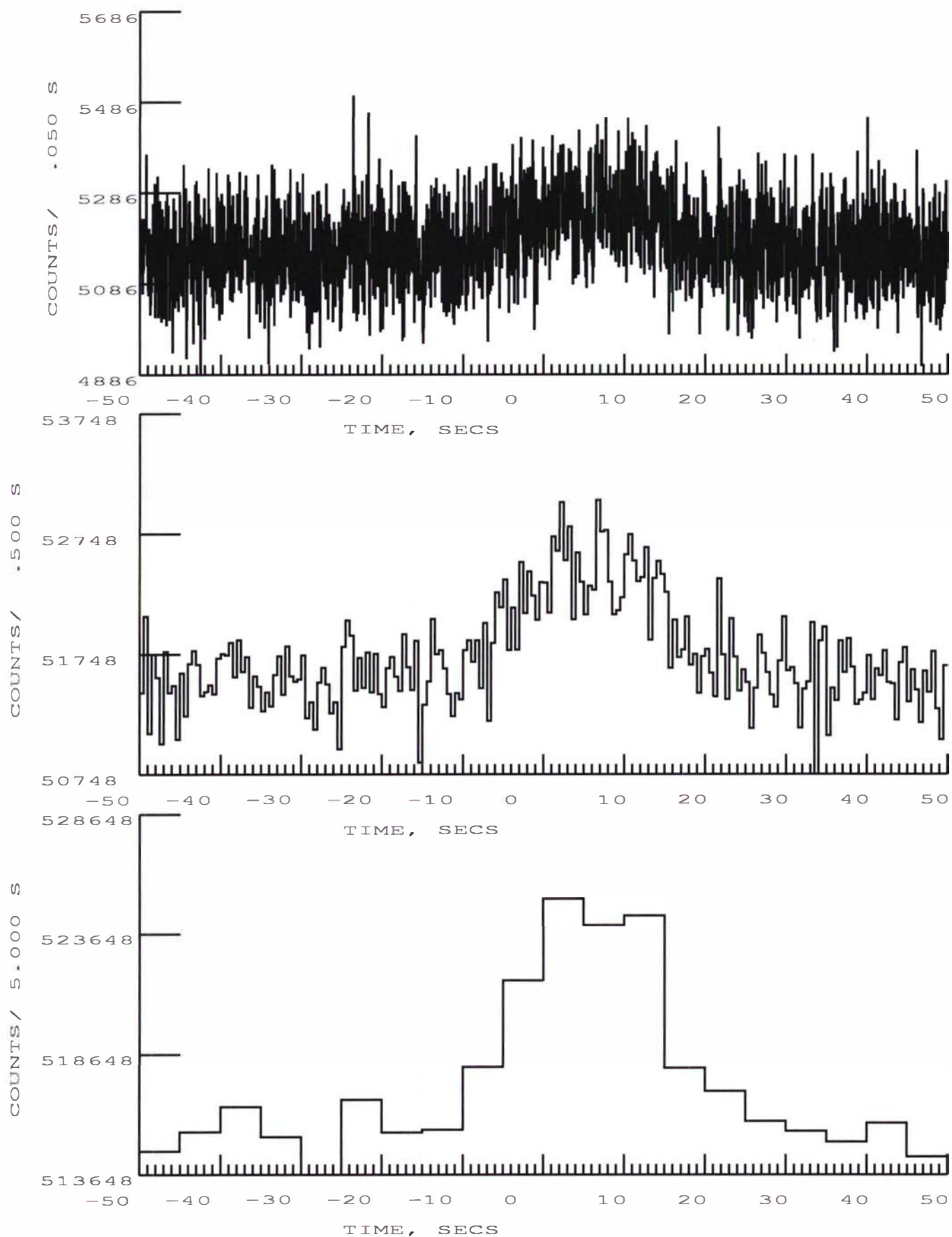
COUNTS/ .250 S



RHESSI Data for 20160409_0552

No Data Available For This Time Range

Do Not Retry



Subject: [Ipn] BAT lightcurve for trigger at 160409_0554

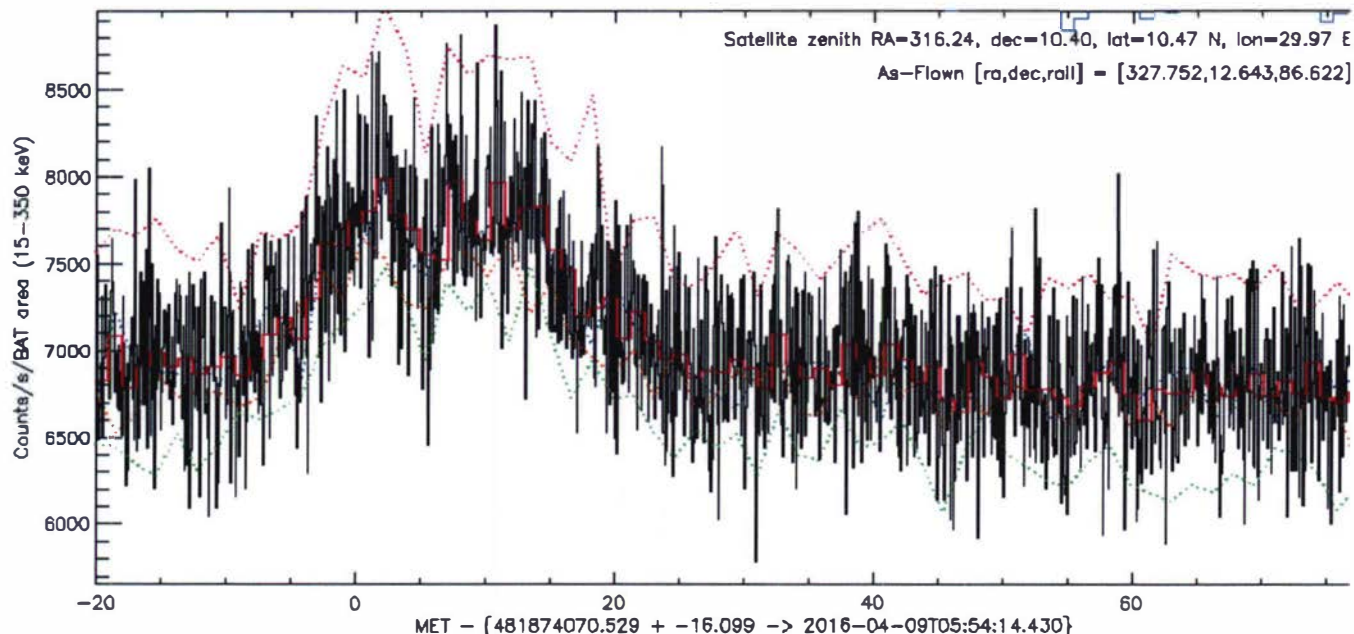
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/9/2016 1:36 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

— /tmp/swift/160409_0554.png —



```
% /usr/local/bin/swinfo -o 481874070.529
Swift Zenith(RA,dec):      316.24, 10.40
Swift Location(lon,lat,alt): 29.97 E, 10.47 N, 559 km
Time(MET + UTCF -> UT):   481874070.529 + -16.099 -> 2016-04-09T05:54:14.430
YYMMDD_SOD:               160409_21254.430      DOY=100
Obs Sequence Number:      00032906080
Obs Target Name:          AG Peg
Obs Date and Times:       2016-04-09 05:48:45 - 05:57:19
Obs Pointing(ra,dec,roll): 327.752, 12.643, 86.62
```

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

Ipn mailing list
Ipnl@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

— Attachments: —

/tmp/swift/160409_0554_bat64ms_ipn	87.1 KB
/tmp/swift/160409_0554.png	27.2 KB

Subject: [Ipn] GRB 160409A or new transient. Re: BAT lightcurve for trigger at 160409_0554

From: "Palmer, David" <palmer@lanl.gov>

Date: 4/11/2016 9:00 AM

To: "bat_team@bigbang.gsfc.nasa.gov" <bat_team@bigbang.gsfc.nasa.gov>, swift_on_duty_scientists swift_ods <swiftods@swift.psu.edu>, Neil Gehrels <gehrels@milkyway.gsfc.nasa.gov>

CC: "Wren, James" <jwren@lanl.gov>, Fermi GBM-BA <gbm-ba@mpe.mpg.de>, IPN <ipn@ssl.berkeley.edu>, David Palmer <dmopalmer@gmail.com>, "Kippen, Marc" <mkippen@lanl.gov>, "Vestrand, W" <vestrand@lanl.gov>

Possible GRB or new transient at T+2.5 days. It did not alert on-board because it is 9 arcmin away from a known source: far enough away to be definitely different, but close enough that the catalog matched.

I will submit a TOO

This event at

2016-04-09T05:54:14.430

was reported by Konus. It was imaged by BAT at 7.3 sigma

BR: Response from the dsp Imaging: 481874067.26400 - 481874083.64800 BR: 1 sources found

Src#10328 : 383 +/- 52 @ (th,ph)=(0.7310, 1.2280) (ra,dec)=(289.705,-5.390) `

It was close enough to 4U 1916-053 == V* V1405 Aql to be a catalog match onboard, but is actually almost 9 arcminutes away.

In the attached ...location.png, the circle marks the nominal V1405 Aql location, the green star near the circle is a true detection of the source back in 2006, the cluster of green stars 0.2 degrees South of the circle is the new GRB/transient.

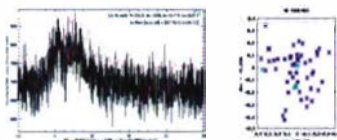
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-3169 (fax)

On Apr 9, 2016, at 2:36 PM, palmer+automatic_lightcurve@lanl.gov wrote:

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

<_tmp_swift_160409_0554_bat64ms_ipn><_tmp_swift_160409_0554.png>
% /usr/local/bin/swinfo -o 481874070.529
Swift Zenith(RA,dec): 316.24, 10.40
Swift Location(lon,lat,alt): 29.97 E, 10.47 N, 559 km
Time(MET + UTCF -> UT): 481874070.529 + -16.099 -> 2016-04-09T05:54:14.430
YYMMDD_SOD: 160409_21254.430 DOY=100
Obs Sequence Number: 00032906080
Obs Target Name: AG Peg
Obs Date and Times: 2016-04-09 05:48:45 - 05:57:19
Obs Pointing(ra,dec,roll): 327.752, 12.643, 86.62

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



lpn mailing list

lpn@ssl.berkeley.edu

<http://lists.ssl.berkeley.edu/mailman/listinfo/lpn>

KONUS

10/04/2016

39.807

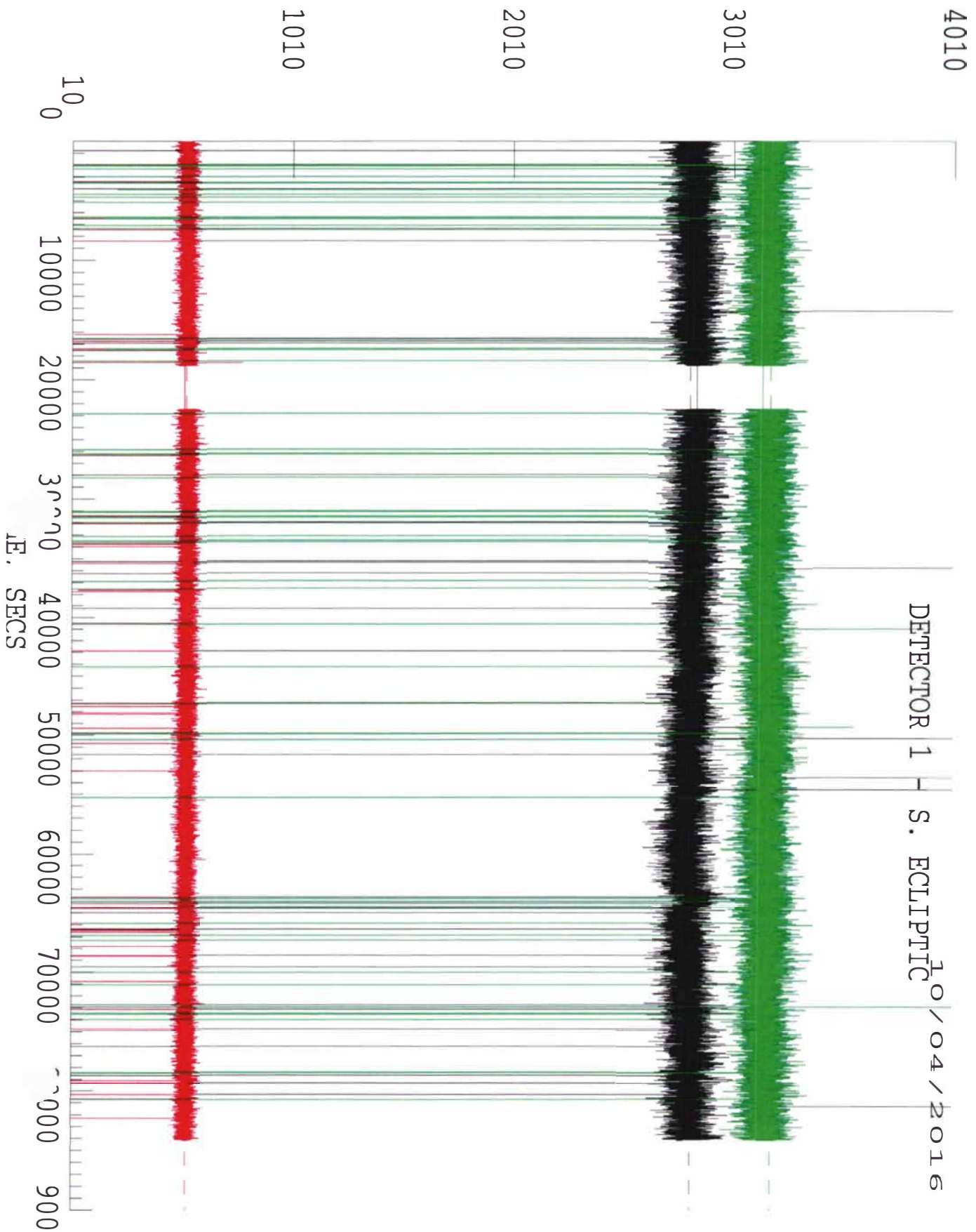
v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

10/04/2016

39.807

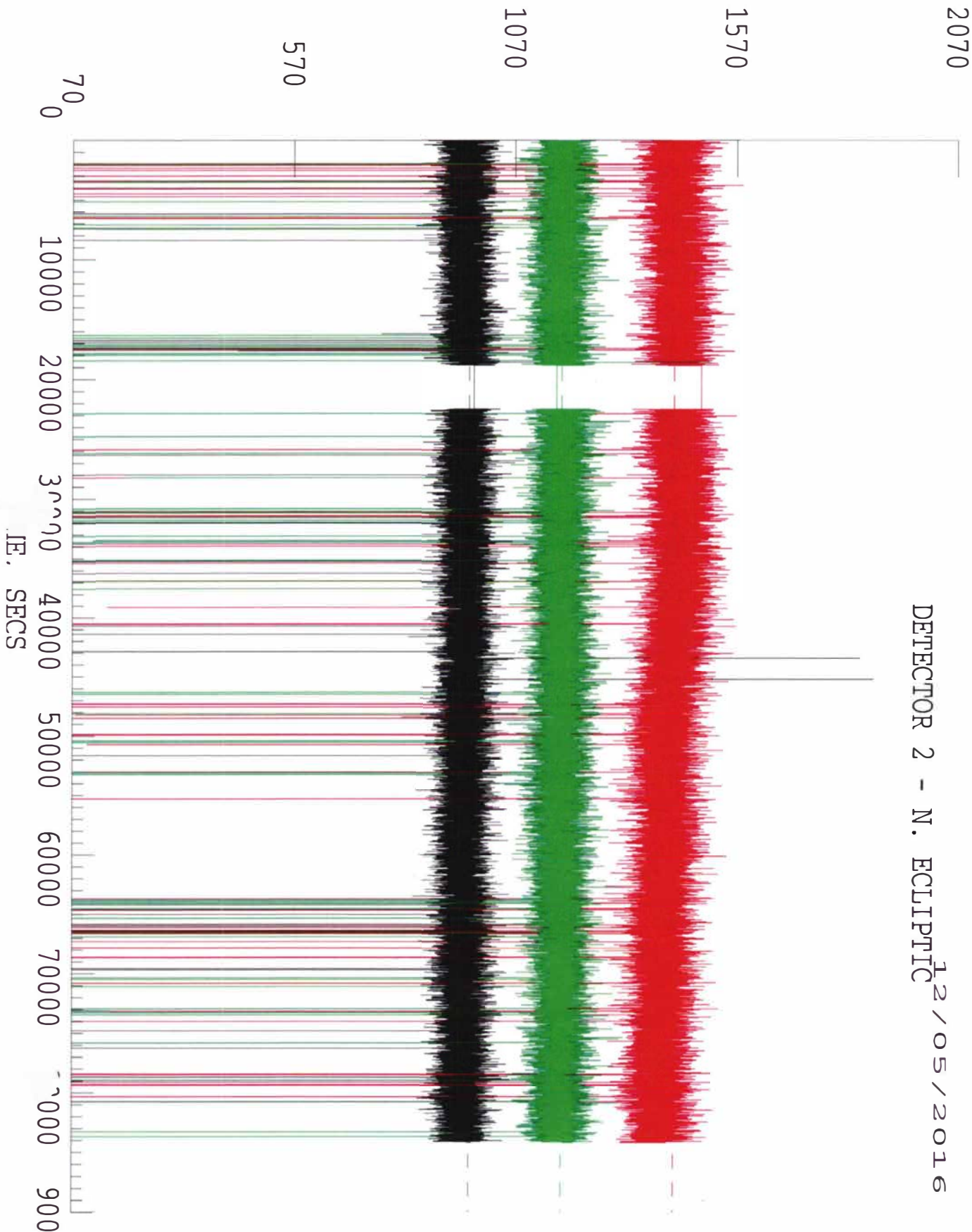
v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 4/9/2016 10:15 PM

To: khurley@ssl.berkeley.edu

S/H²

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Sun 10 Apr 16 05:15:01 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 682269, Seg_Num: 0
 GRB_RA: 150.681d {+10h 02m 43s} (J2000),
 150.892d {+10h 03m 34s} (current),
 150.032d {+10h 00m 08s} (1950)
 GRB_DEC: +3.443d {+03d 26' 37"} (J2000),
 +3.364d {+03d 21' 52"} (current),
 +3.685d {+03d 41' 08"} (1950)
 GRB_DATE: 17488 TJD; 101 DOY; 16/04/10
 GRB_TIME: 18588.05 SOD {05:09:48.05} UT
 TRIGGER_INDEX: 126
 GRB_PHI: 148.93 [deg]
 GRB_THETA: 36.75 [deg]
 DELTA_TIME: 17293.00 [sec]
 TRIGGER_DUR: 0.256 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 55.07 [sigma]
 IMAGE_SIGNIF: 9.07 [sigma]
 LC_URL: sw00682269000msb.lc
 SUN_POSTN: 19.19d {+01h 16m 46s} +8.11d {+08d 06' 33"}
 SUN_DIST: 130.48 [deg] Sun_angle= -8.8 [hr] (East of Sun)
 MOON_POSTN: 58.48d {+03h 53m 56s} +15.39d {+15d 23' 40"}
 MOON_DIST: 91.43 [deg]
 MOON_ILLUM: 11 [%]
 GAL_COORDS: 235.88, 43.29 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 151.51, -8.01 [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 = 249.59,-18.80 [deg].
 COMMENTS: The 3rd packet (of 3) was missing in the lightcurve data stream.

8.2 s

 $7.8 \times 10^{-7} \text{ erg cm}^{-2}$ 3.5 ph/s/cm²

BAT

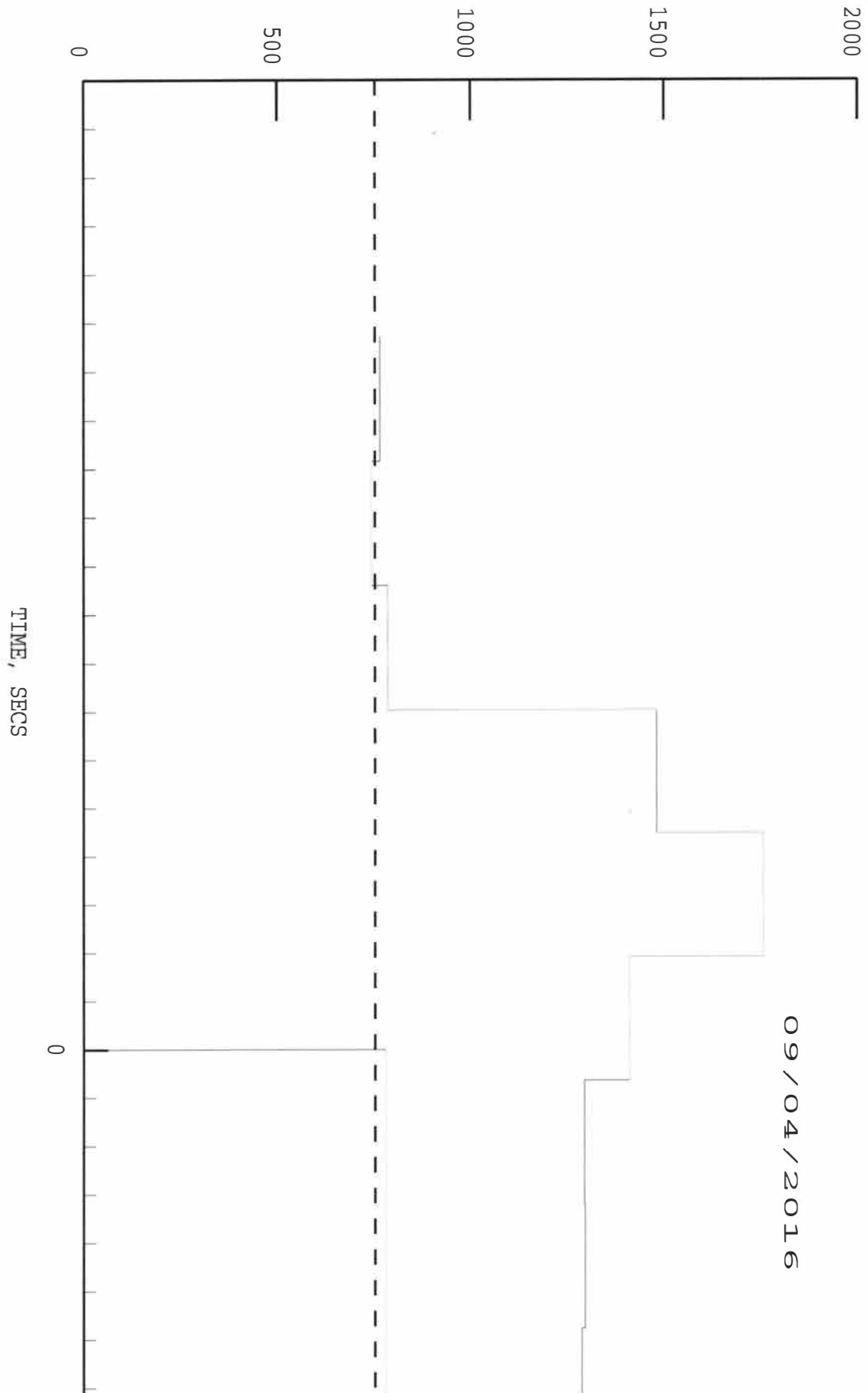
10/04/16

18588.056

05:09:48.056

25- 100 keV

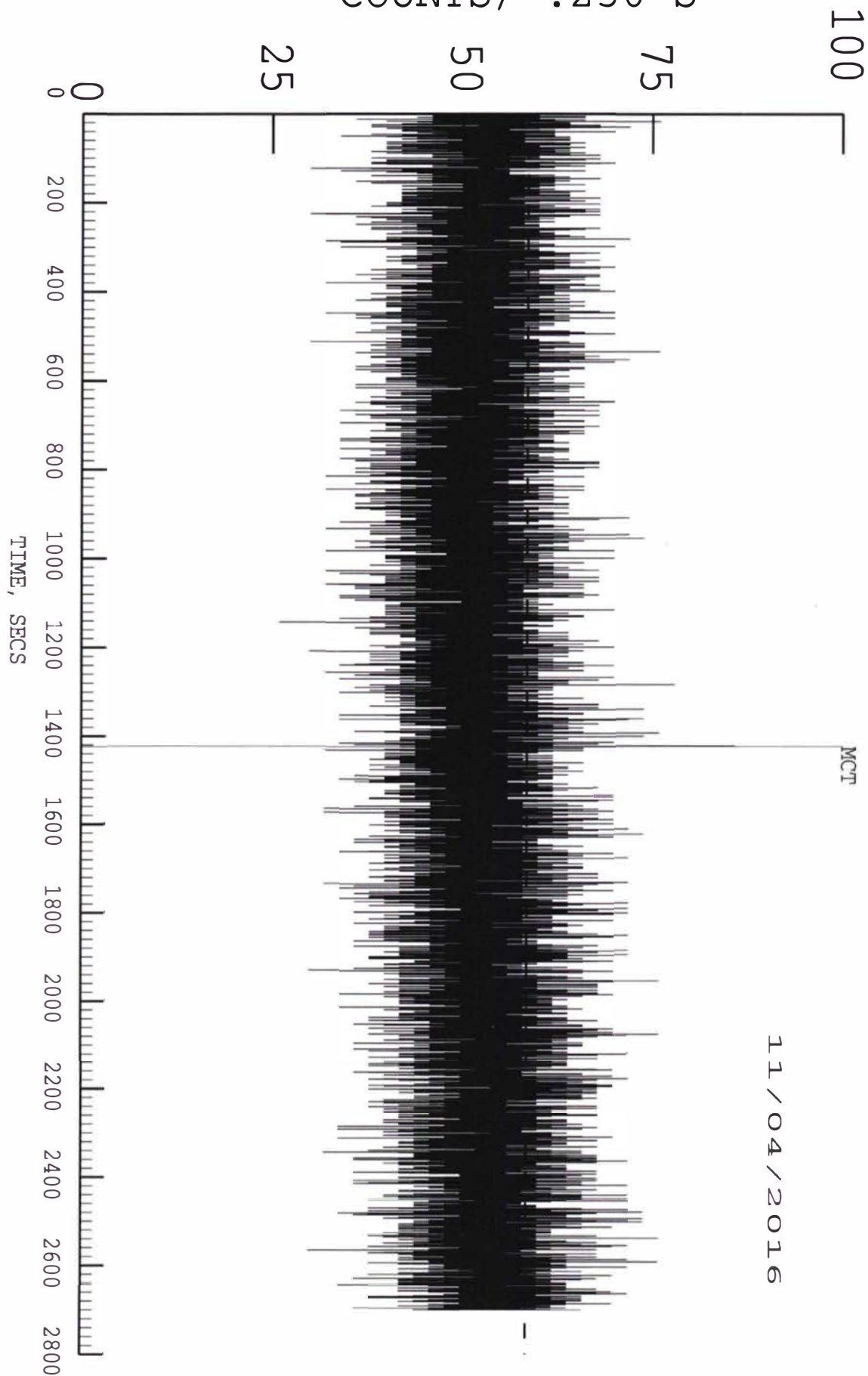
COUNTS/ .256 S



ODYSSEY 10/04/16 17208.519 04:46:48.519

50-3000 keV

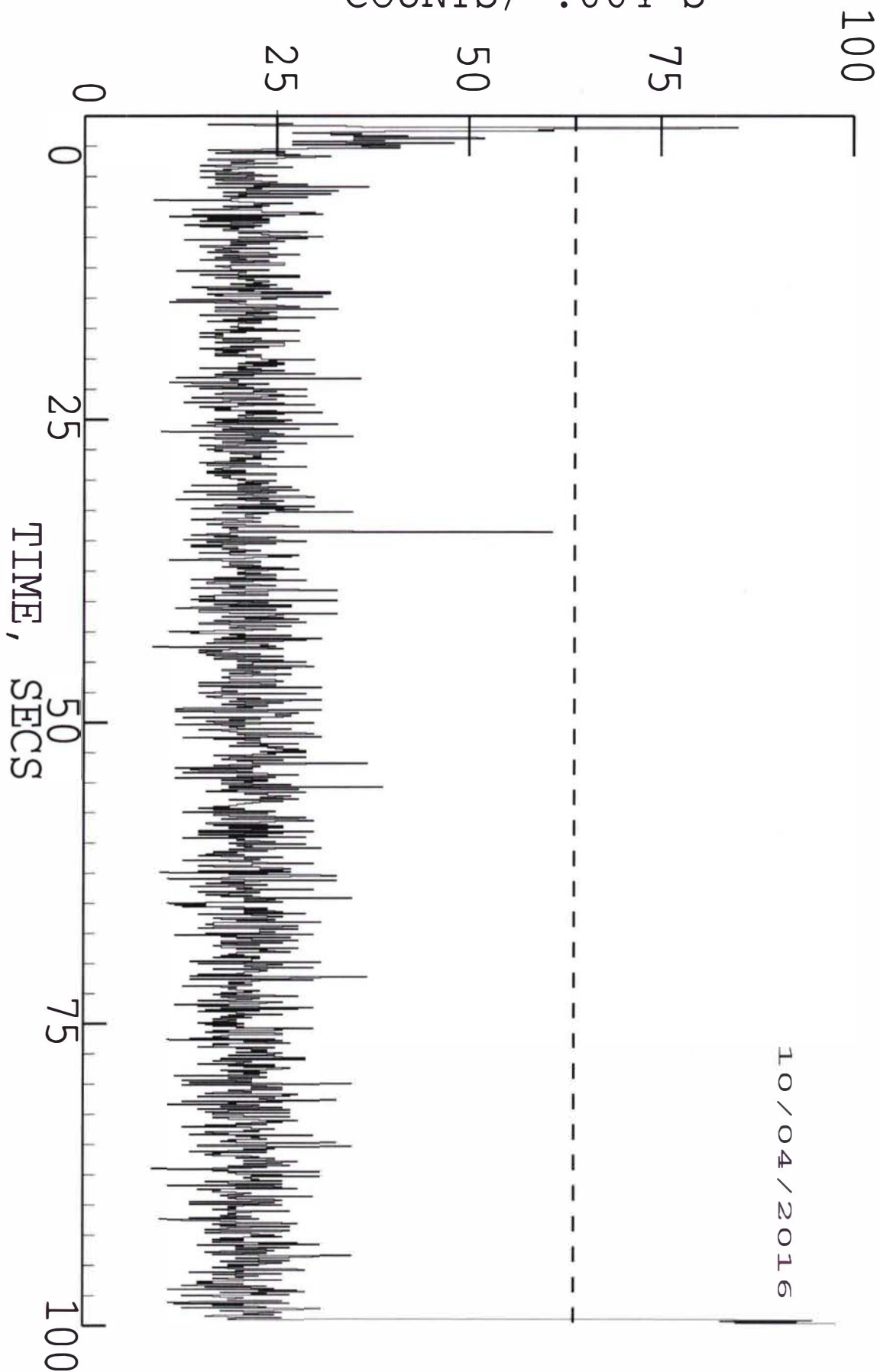
COUNTS/ .250 S



KONUS 10/04/16 18592.644 05:09:52.644

50- 200 keV

COUNTS/ .064 S



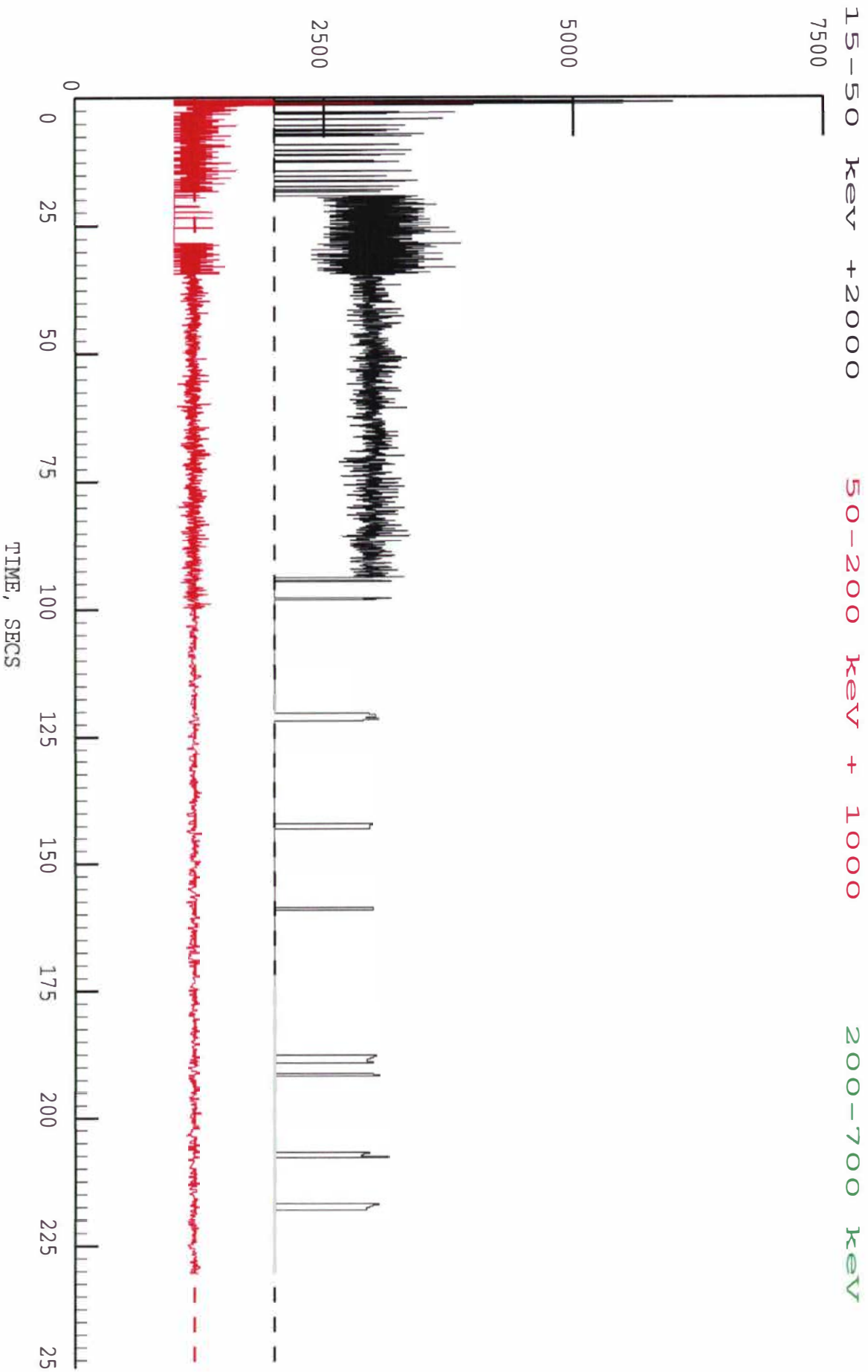
KONUS

10/04/16

18592.000

05:09:52.000

COUNTS/SEC



11/04/2016

RHESSI Data for 20160410_0508

No Data Available For This Time Range

Do Not Retry

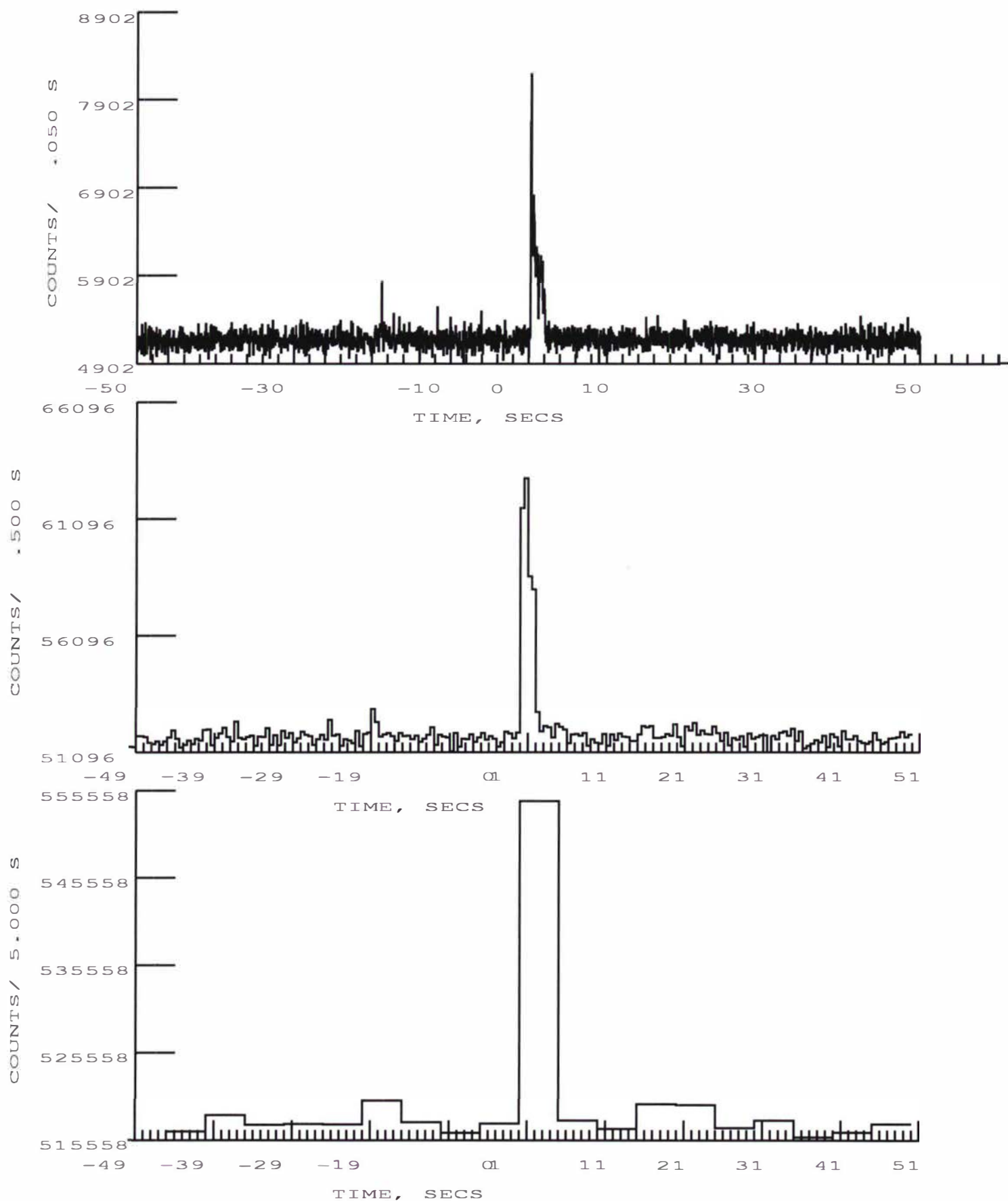
INTEGRAL

10/04/16

18588.000

05:09:48.0

15/07/16



Subject: [Ipn] BAT lightcurve for trigger at 160410_0509

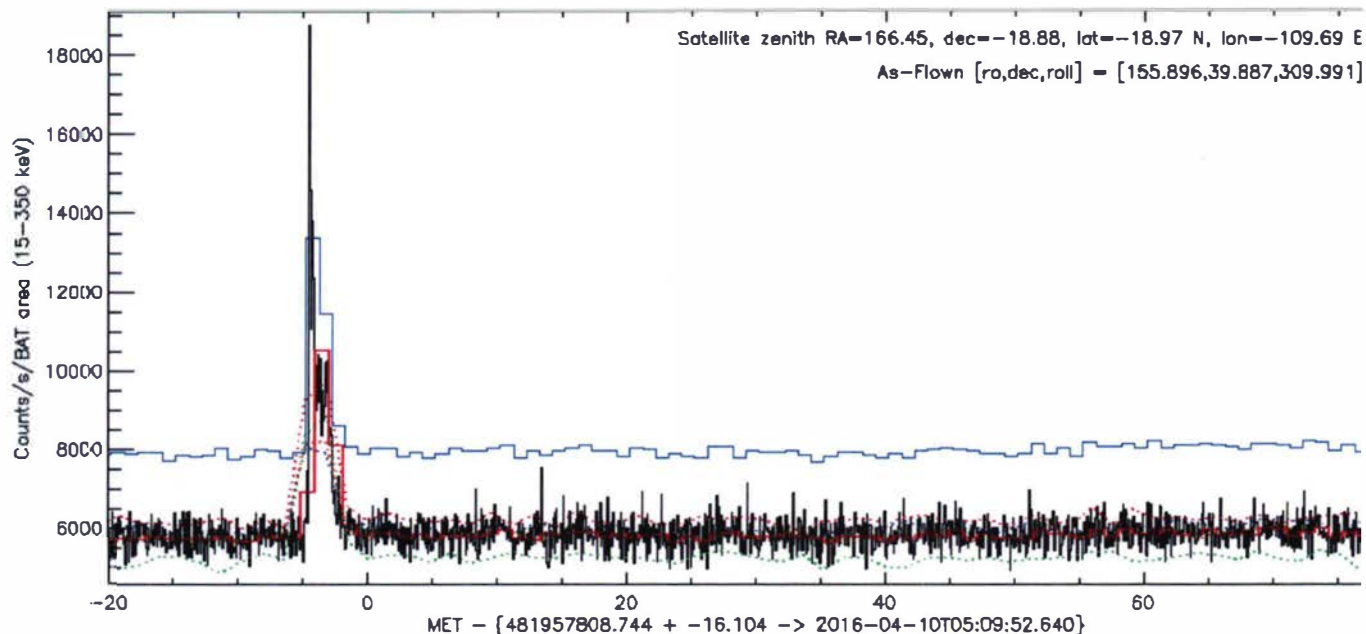
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/10/2016 11:27 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

— /tmp/swift/160410_0509.png —



```
% /usr/local/bin/swinfo -o 481957808.744
Swift Zenith(RA,dec):      166.45, -18.88
Swift Location(lon,lat,alt): -109.69 E, -18.97 N, 558 km
Time(MET + UTC -> UT):    481957808.744 + -16.104 -> 2016-04-10T05:09:52.640
YYMMDD_SOD:               160410_18592.640      DOY=101
Obs Sequence Number:      00046481007
Obs Target Name:          PB 00198
Obs Date and Times:       2016-04-10 04:51:45 - 05:09:56
Obs Pointing(ra,dec,roll): 155.896, 39.887, 309.99
```

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

Ipn mailing list
Ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

— Attachments: —

/tmp/swift/160410_0509.png	17.5 KB
/tmp/swift/160410_0509_bat64ms_ipn	87.0 KB

KONUS

11/04/2016

28.534

v03

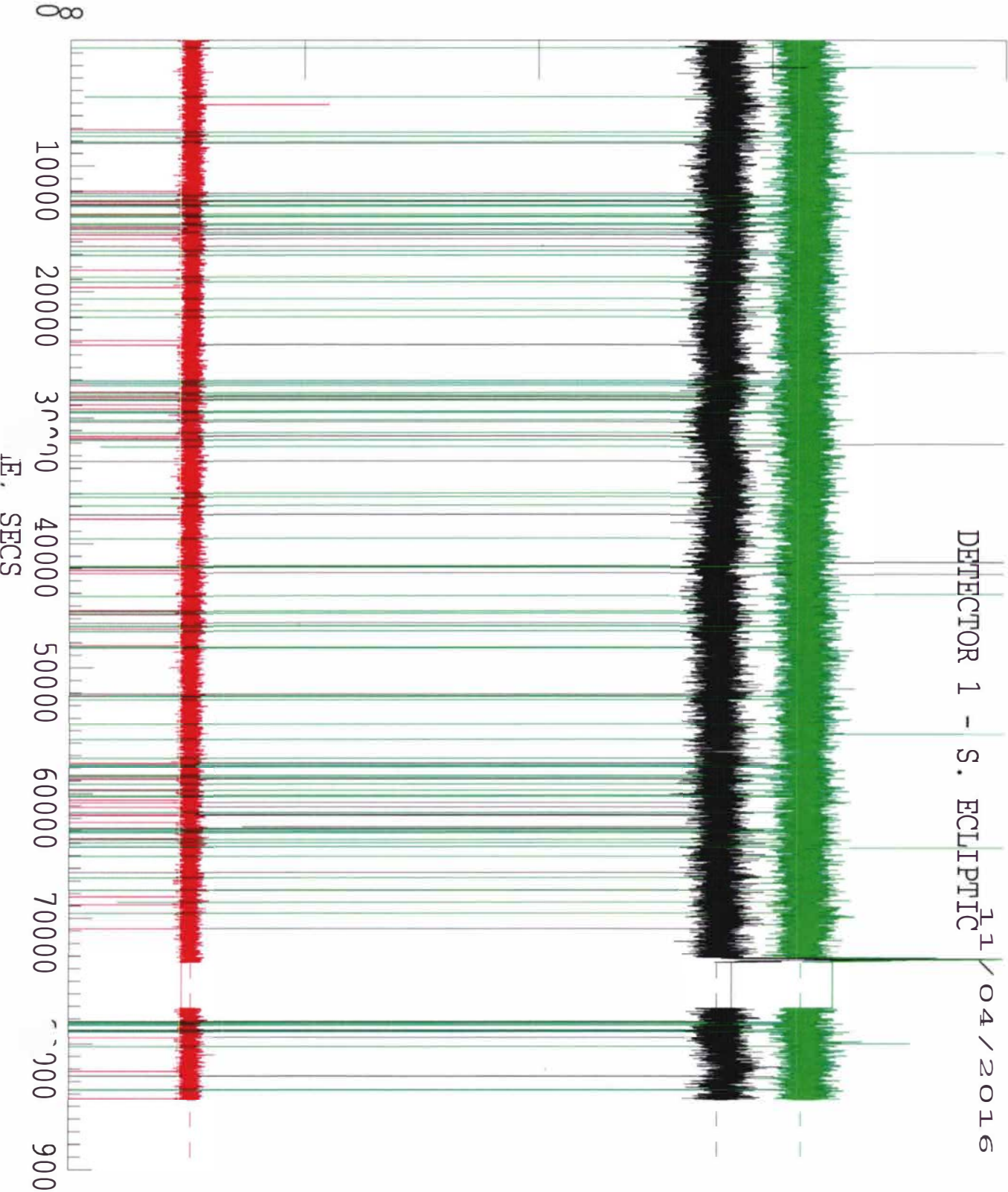
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

1008 2008 3008 4008



KONUS

11/04/2016

28.534

v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

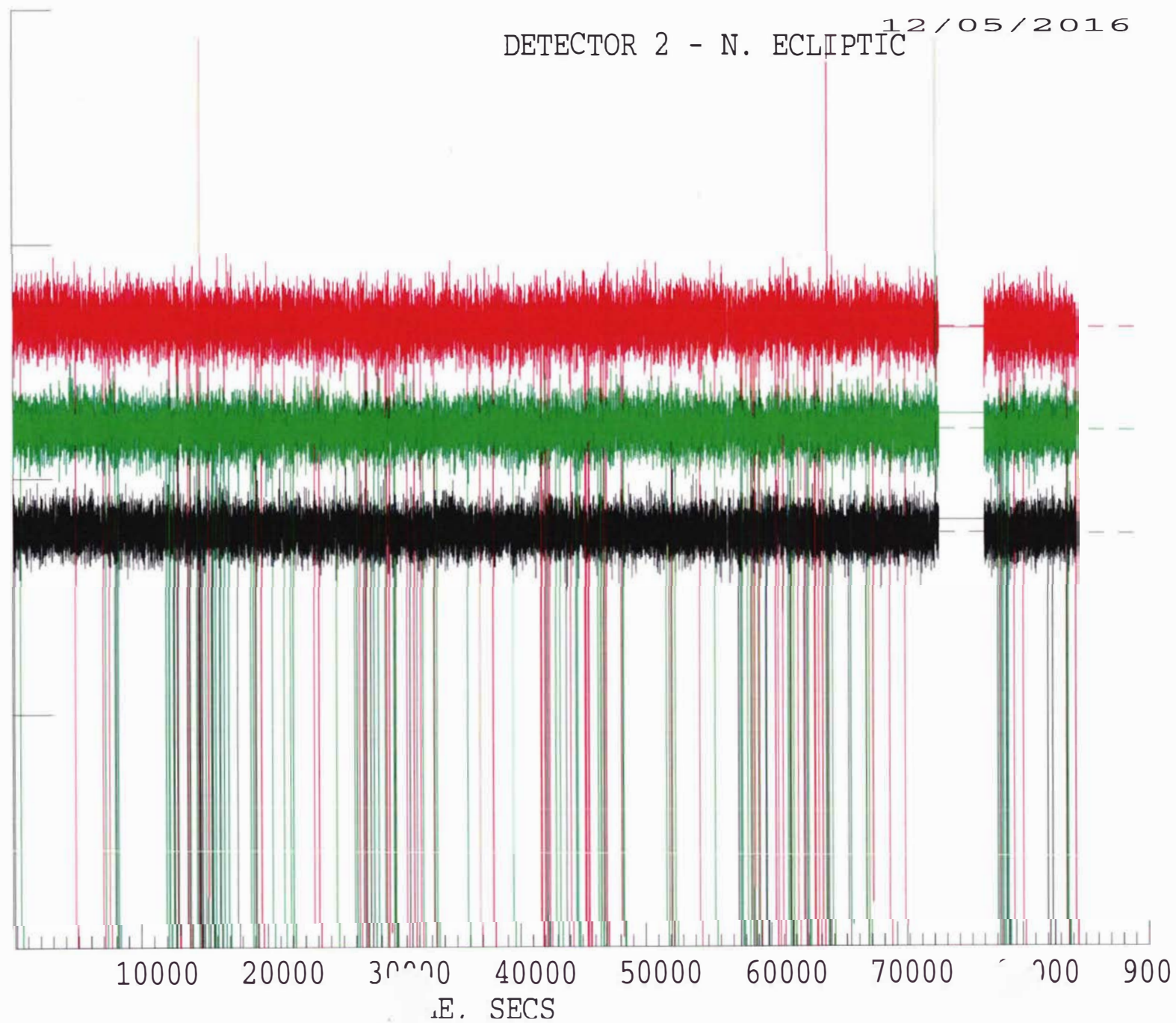
2060

1560

1060

560

60
0



From vxw@capella2.gsfc.nasa.gov Sun Apr 10 17:37:03 2016
X-Barracuda-Envelope-From: vxw@capella2.gsfc.nasa.gov
X-Barracuda-Effective-Source-IP: capella2.gsfc.nasa.gov[128.183.96.236]
X-Barracuda-Apparent-Source-IP: 128.183.96.236
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
Date: Sun, 10 Apr 2016 20:37:01 -0400
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
To: khurley@ssl.berkeley.edu
Subject: GCN/CALET_GBM_FLT_LIGHTCURVE
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
X-Barracuda-Scan-Msg-Size: 931
X-Barracuda-BRTS-Status: 1

TITLE: GCN/CALET NOTICE
NOTICE_DATE: Mon 11 Apr 16 00:37:00 UT
NOTICE_TYPE: CALET GBM Flight Lightcurve
POINT_RA: 32.68d {+02h 10m 43s} (J2000),
POINT_DEC: -0.24d {-00d 14' 26"} (J2000),
TRIGGER_NUM: 1144369866
TRIGGER_DATE: 17489 TJD; 102 DOY; 16/04/11
TRIGGER_TIME: 2195.29 SOD {00:36:35.29} UT
TRIGGER_DET: 1 1 0 (HXM1 HXM2 SGM)
SIGNIFICANCE: 10.19 [sigma]
FOREGND_DUR: 4.00 [sec]
BACKGND_DUR1: 16.00 [sec]
ENERGY_BAND: 25-100 [keV]
SC_LON_LAT: 184.02, -0.17 [deg]
LC_URL: http://cgbm.calet.jp/cgbm_trigger/flight//1144369866/index.html
COMMENTS: CALET-GBM Flight Lightcurve.
COMMENTS:
COMMENTS: NOTE: This CALET_GBM_FLT_LC event is temporally(7.0<100sec) coi
COMMENTS: The LC_URL file will not be created until ~15 min after the tri

Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 4/10/2016 6:34 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Mon 11 Apr 16 01:33:27 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 682339, Seg_Num: 0
 GRB_RA: 349.362d {+23h 17m 27s} (J2000),
 349.584d {+23h 18m 20s} (current),
 348.676d {+23h 14m 42s} (1950)
 GRB_DEC: -40.271d {-40d 16' 14"} (J2000),
 -40.182d {-40d 10' 53"} (current),
 -40.544d {-40d 32' 38"} (1950)
 GRB_DATE: 17489 TJD; 102 DOY; 16/04/11
 GRB_TIME: 5331.92 SOD {01:28:51.92} UT
 TRIGGER_INDEX: 181
 GRB_PHI: -133.50 [deg]
 GRB_THETA: 41.94 [deg]
 DELTA_TIME: 76.00 [sec]
 TRIGGER_DUR: 0.512 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 15.90 [sigma]
 IMAGE_SIGNIF: 7.44 [sigma]
 LC_URL: sw00682339000msb.lc
 SUN_POSTN: 19.97d {+01h 19m 52s} +8.42d {+08d 25' 14"}
 SUN_DIST: 56.12 [deg] Sun_angle= 2.0 [hr] (West of Sun)
 MOON_POSTN: 71.20d {+04h 44m 48s} +17.16d {+17d 09' 23"}
 MOON_DIST: 94.81 [deg]
 MOON_ILLUM: 18 [%]
 GAL_COORDS: 352.83,-66.56 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 332.74,-32.48 [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 = 212.42,7.15 [deg].

0.36 s

 $8 \times 10^{-8} \text{ erg cm}^{-2}$ 1.5 $\text{phot/cm}^2 \text{ s}$

SPI-NO

BAT

11/04/16

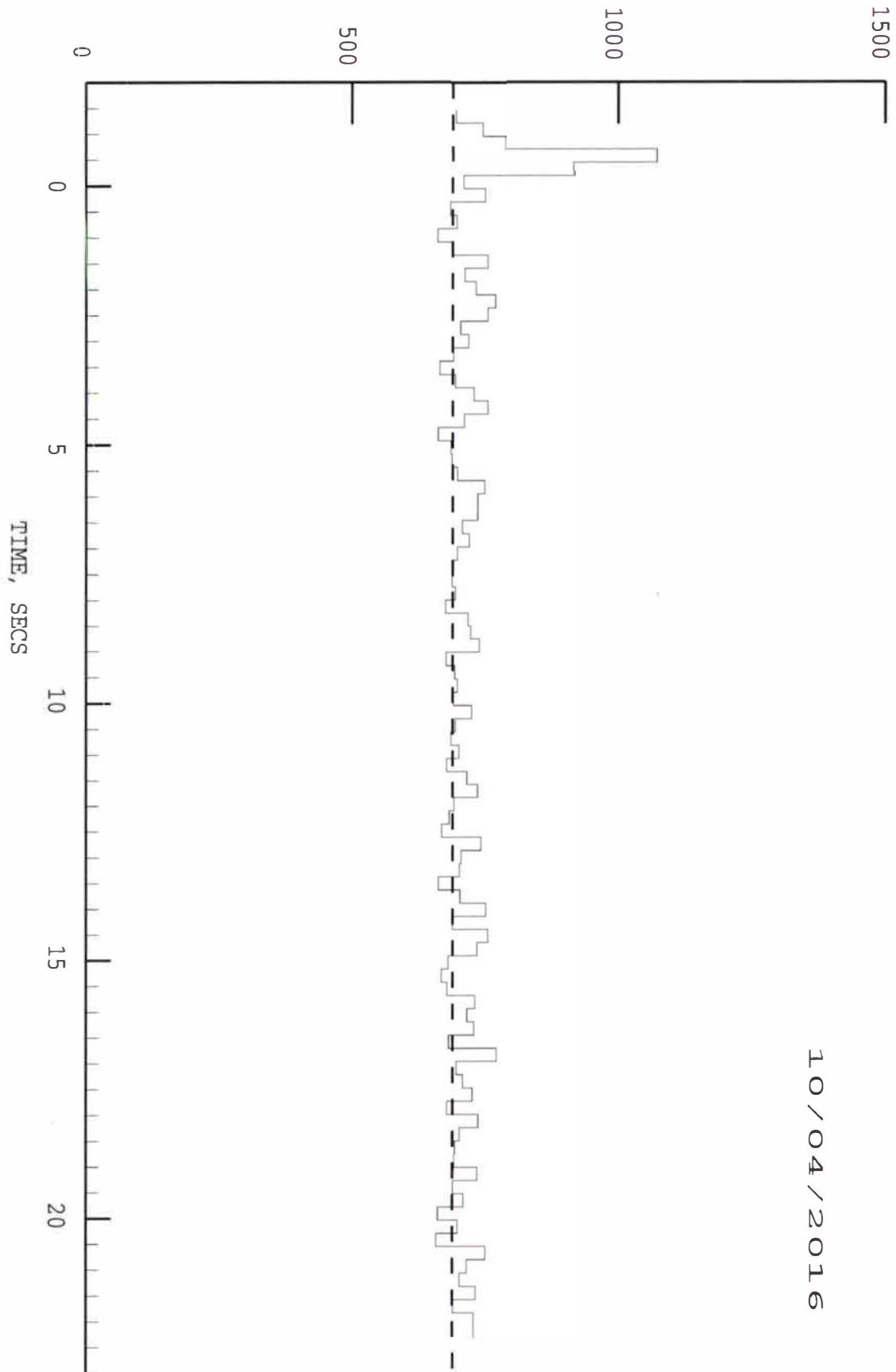
5331.924

01:28:51.924

A

25- 100 keV

COUNTS/ .256 S



Subject: [lpn] BAT lightcurve for trigger at 160411_0128

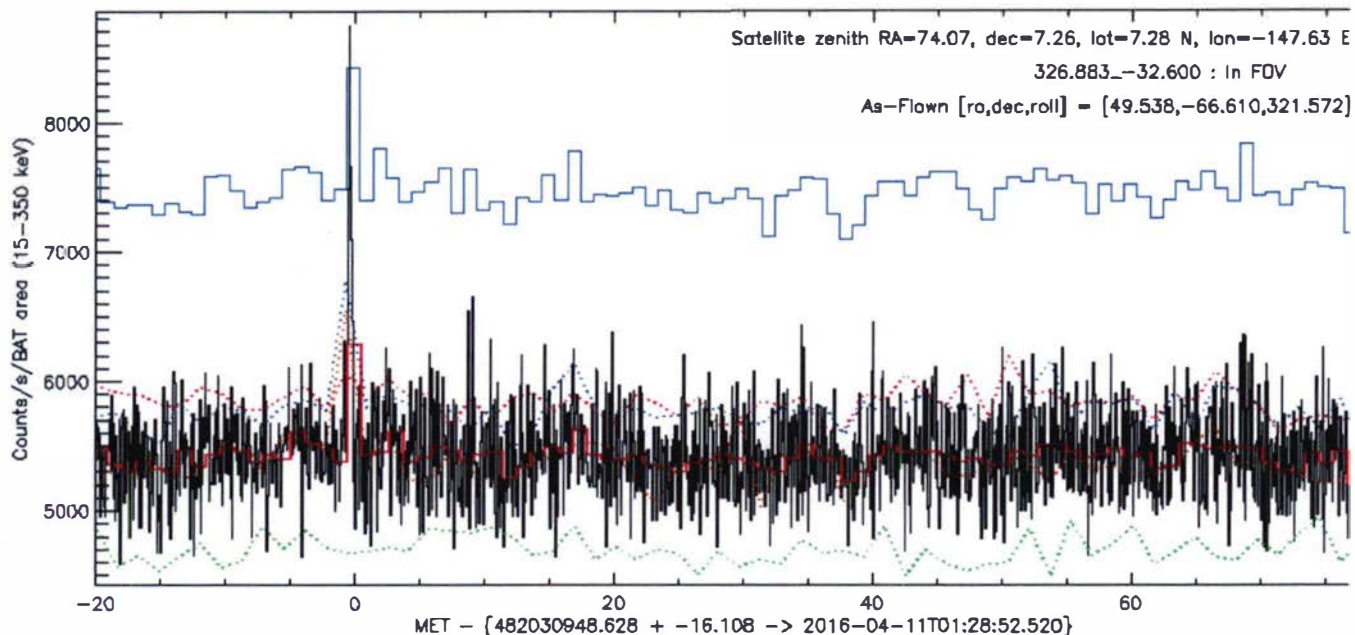
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/10/2016 9:14 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

~/tmp/swift/160411_0128.png



```
% /usr/local/bin/swinfo -o 482030948.628 -s 326.883_-32.600
Swift Zenith(RA,dec):      74.07, 7.26
Swift Location(lon,lat,alt): -147.63 E, 7.28 N, 547 km
Time(MET + UTCF -> UT):   482030948.628 + -16.108 -> 2016-04-11T01:28:52.520
YYMMDD_SOD:               160411_05332.520      DOY=102
Obs Sequence Number:      00033569073
Obs Target Name:          NGC 1313 X-2
Obs Date and Times:       2016-04-11 01:26:45 - 01:45:40
Obs Pointing(ra,dec,roll): 49.538, -66.610, 321.57
326.883_-32.600_imageloc (boresight_dist, angle): (58, -149)
326.883_-32.600_exposure (cm^2 cos adjusted): 219
326.883_-32.600_altitude: 5 (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

lpn mailing list
lpn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/lpn>

Attachments:

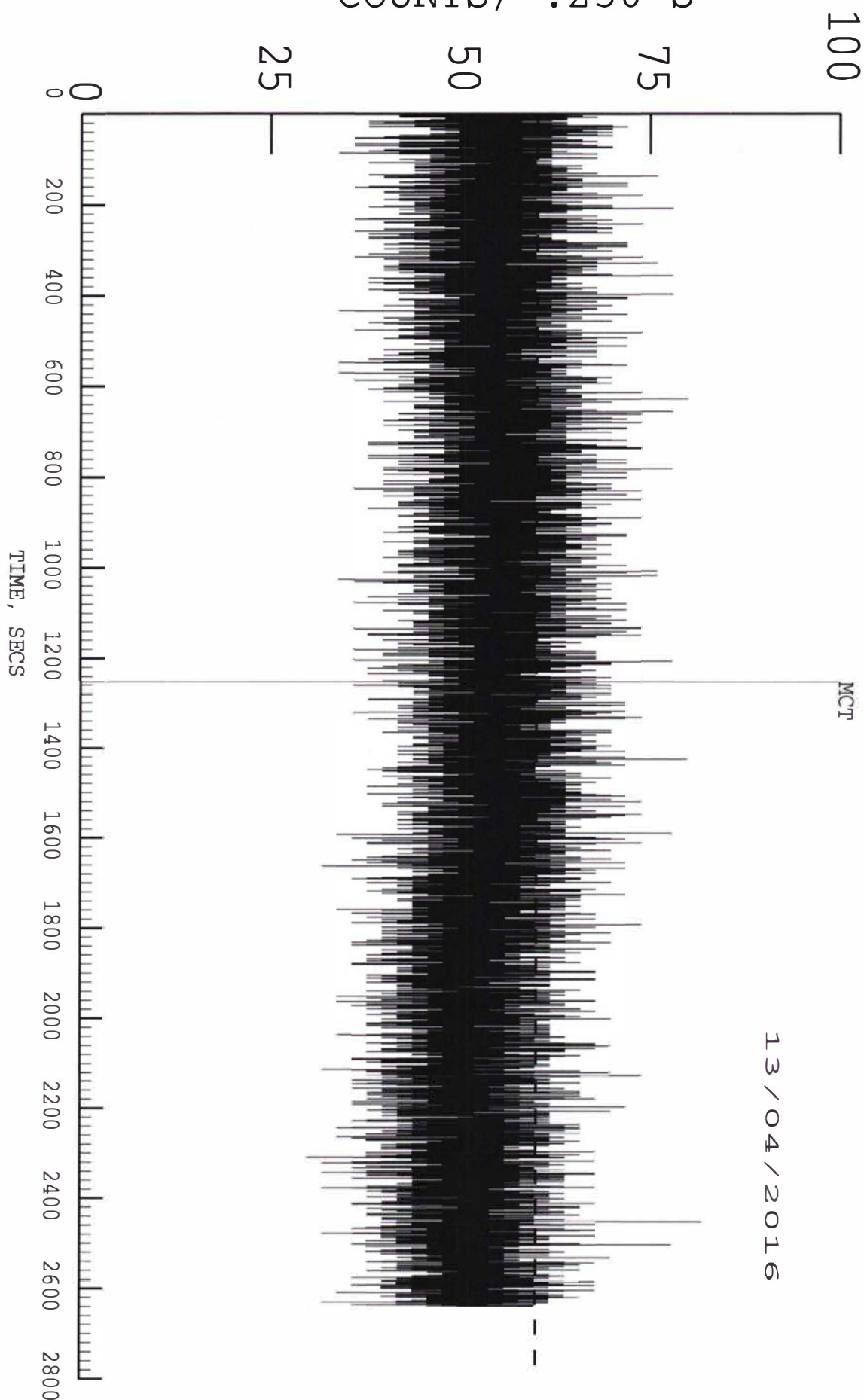
/tmp/swift/160411_0128_bat64ms_ipn	87.1 KB
/tmp/swift/160411_0128.png	24.8 KB

ODYSSEY 11/04/16 4007.232 01:06:47.232^A

50-3000 keV

COUNTS/ .250 S

Occulted



RHESSI Data for 20160411_0128

No Data Available For This Time Range

Do Not Retry

KONUS

11/04/16

73277.334

20:21:17.334^B

50- 200 keV

Solar

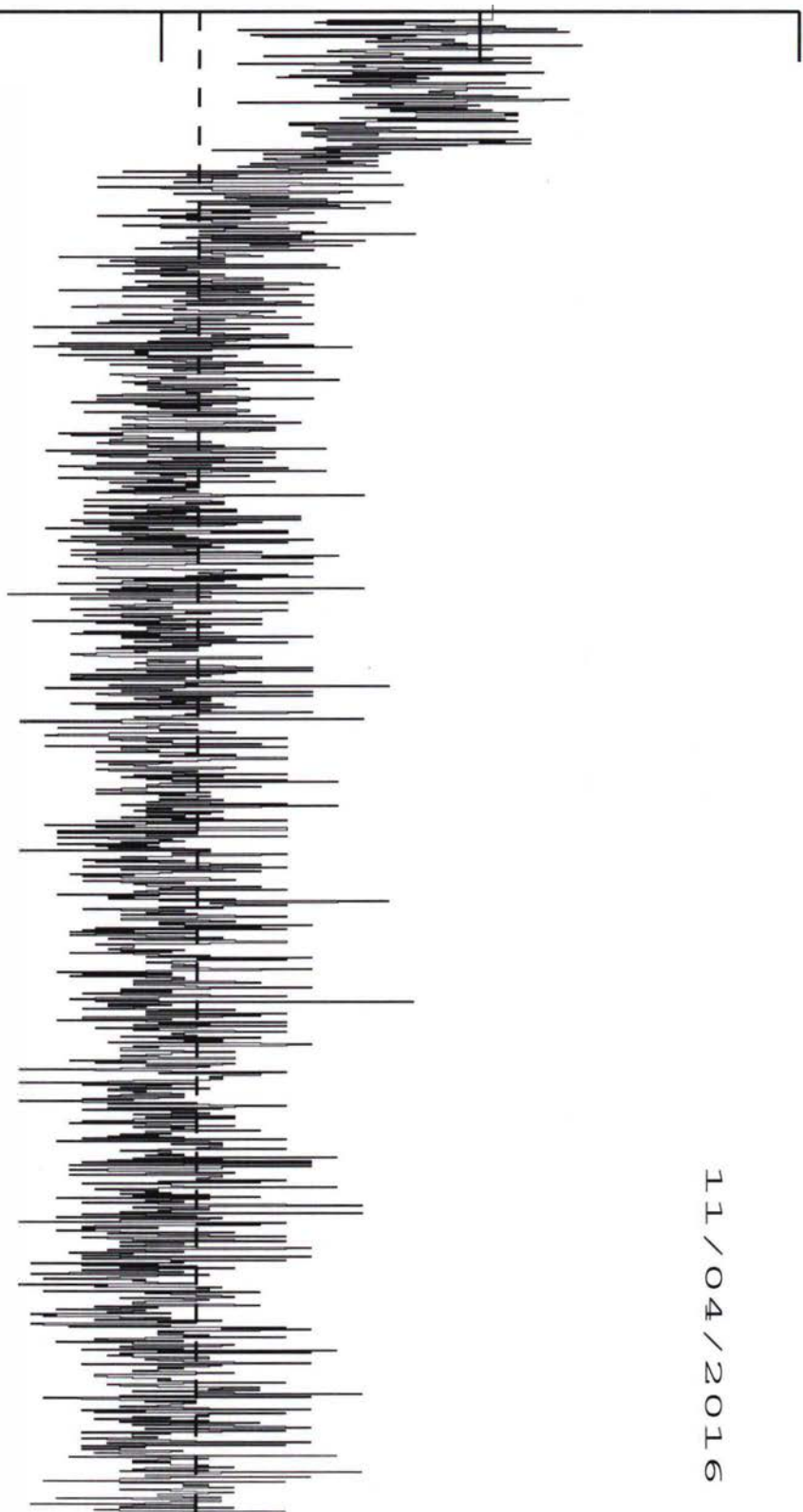
COUNTS/ .064 S

25

50

75

0
25
50
75
100
TIME, SECS



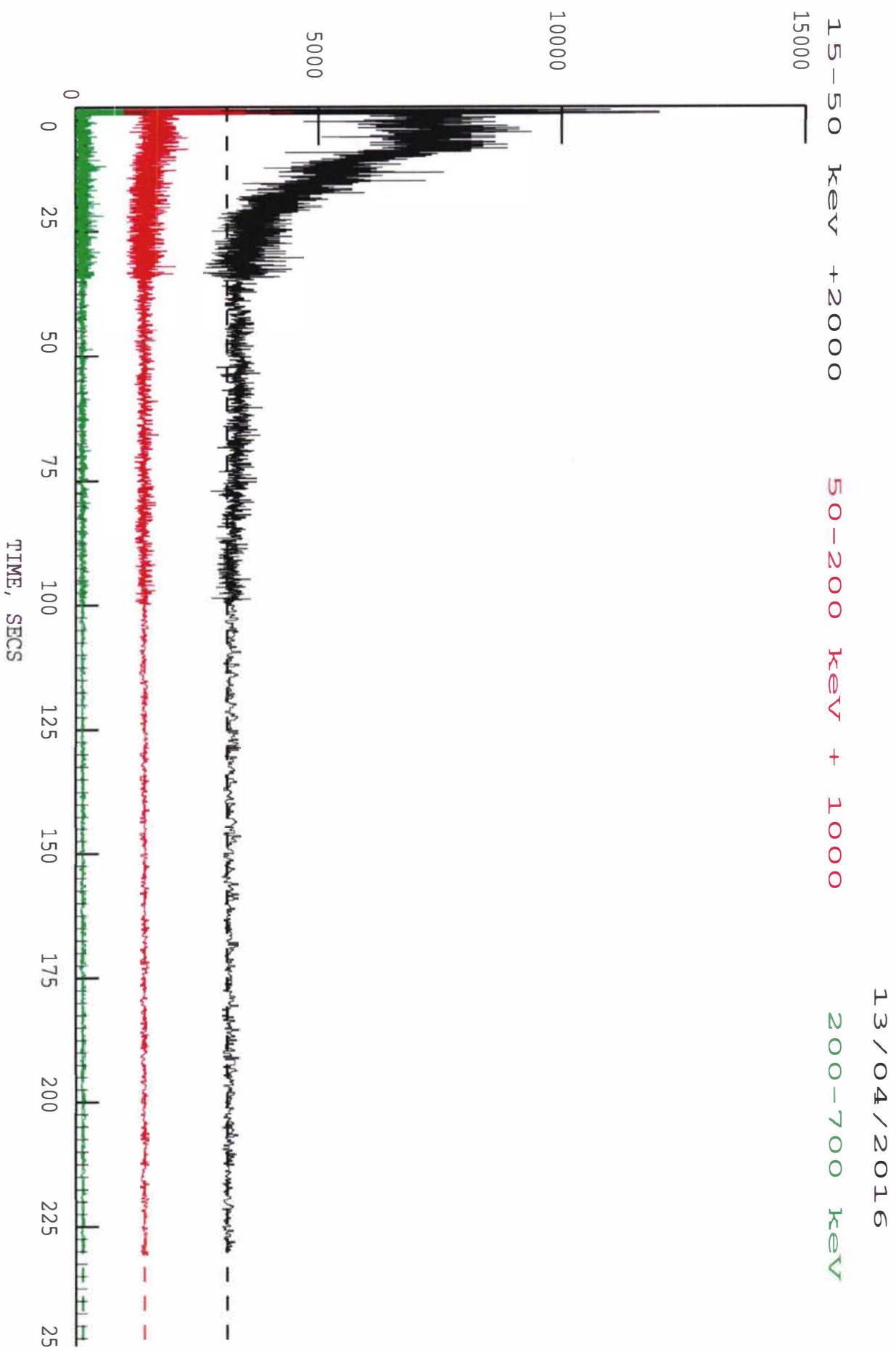
11/04/2016

KONUS

11/04/16

COUNTS/SEC 73277.000

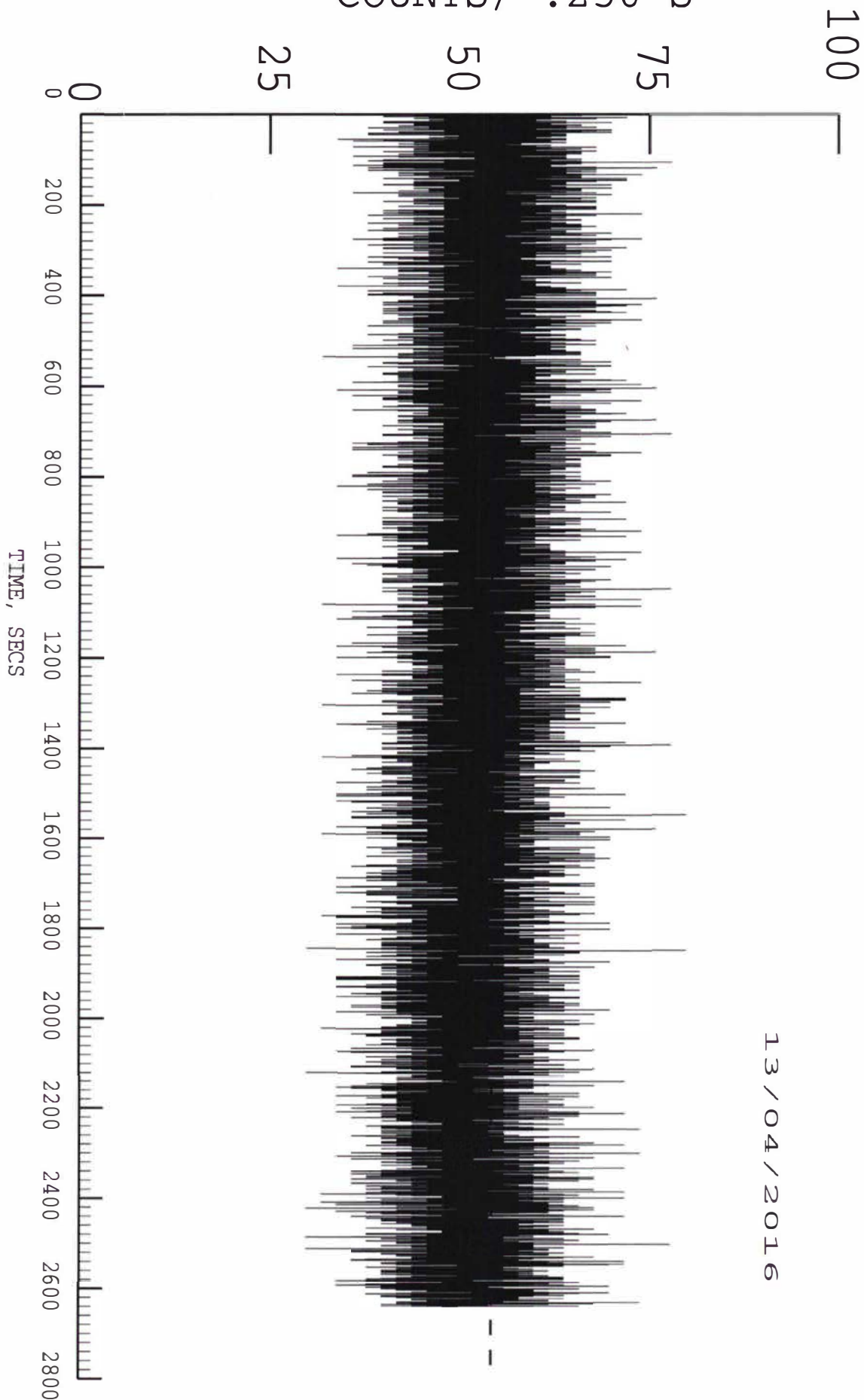
20:21:17.000



ODYSSEY 11/04/16 71926.032 19:58:46.032

50-3000 keV

COUNTS/ .250 S



13/04/2016

Subject: [Ipn] BAT lightcurve for trigger at 160411_2021

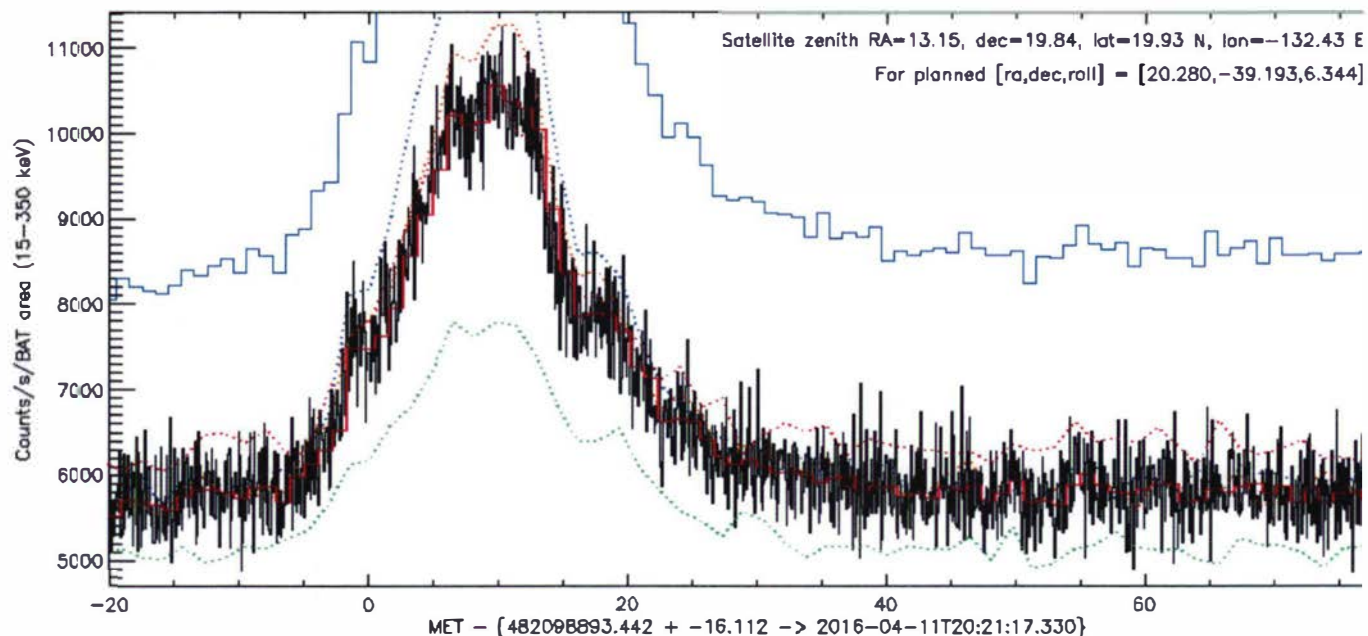
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/11/2016 4:56 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160411_2021.png—



```
% /usr/local/bin/swinfo -o 482098893.442
Swift Zenith(RA,dec):      13.15, 19.84
Swift Location(lon,lat,alt): -132.43 E, 19.93 N, 555 km
Time(MET + UTCF -> UT):    482098893.442 + -16.112 -> 2016-04-11T20:21:17.330
YYMMDD_SOD:                160411_73277.330      DOY=102
Obs Sequence Number:        00082825001
Obs Target Name:            1RXS J012106.4-391005 (planned)
Obs Date and Times:         2016-04-11  20:17:43 - 20:27:43
Obs Pointing(ra,dec,roll):  20.280, -39.193, 6.34
```

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

Ipn mailing list
Ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160411_2021.png	24.2 KB
/tmp/swift/160411_2021_bat64ms_ipn	63.2 KB

KONUS

12/04/2016

14.318

v02

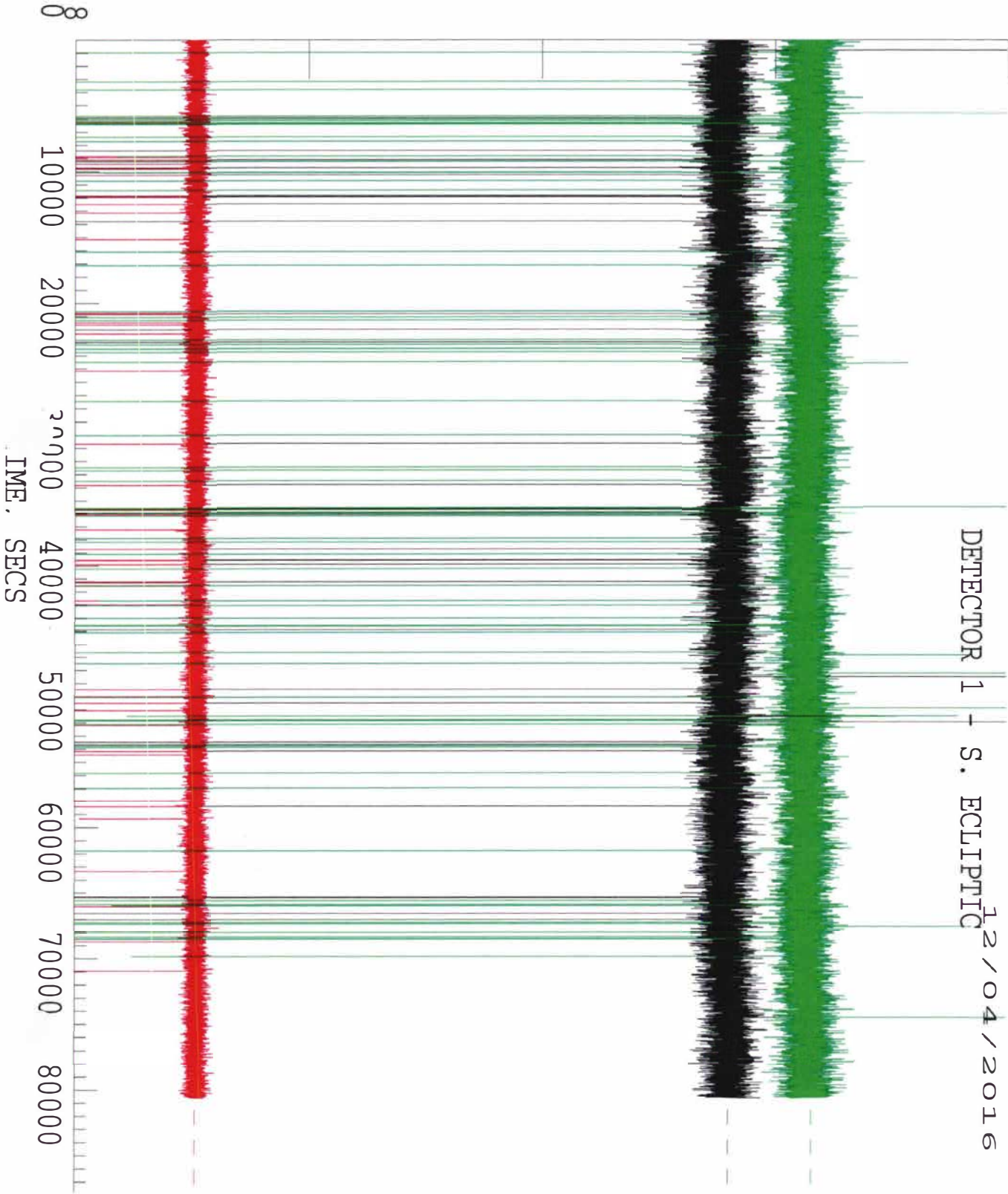
10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

1008 2008 3008 4008



KONUS

12/04/2016

14.318

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2060

1560

1060

560

60

0

10000

20000

30000

40000

50000

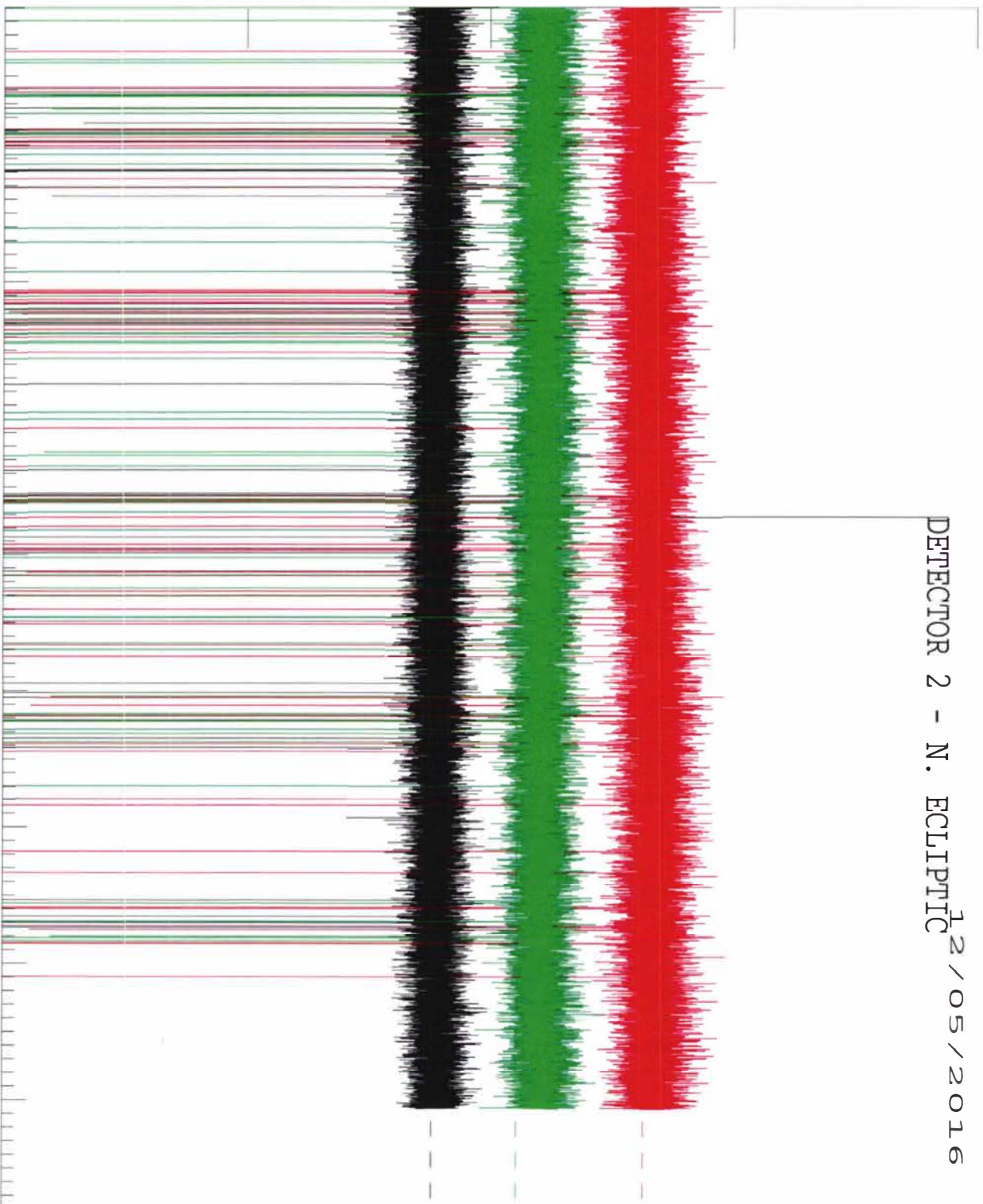
60000

70000

80000

TIME, SECS

DETECTOR 2 - N. ECLIPTIC
12/05/2016



Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 4/11/2016 9:28 PM
 To: khurley@ssl.berkeley.edu

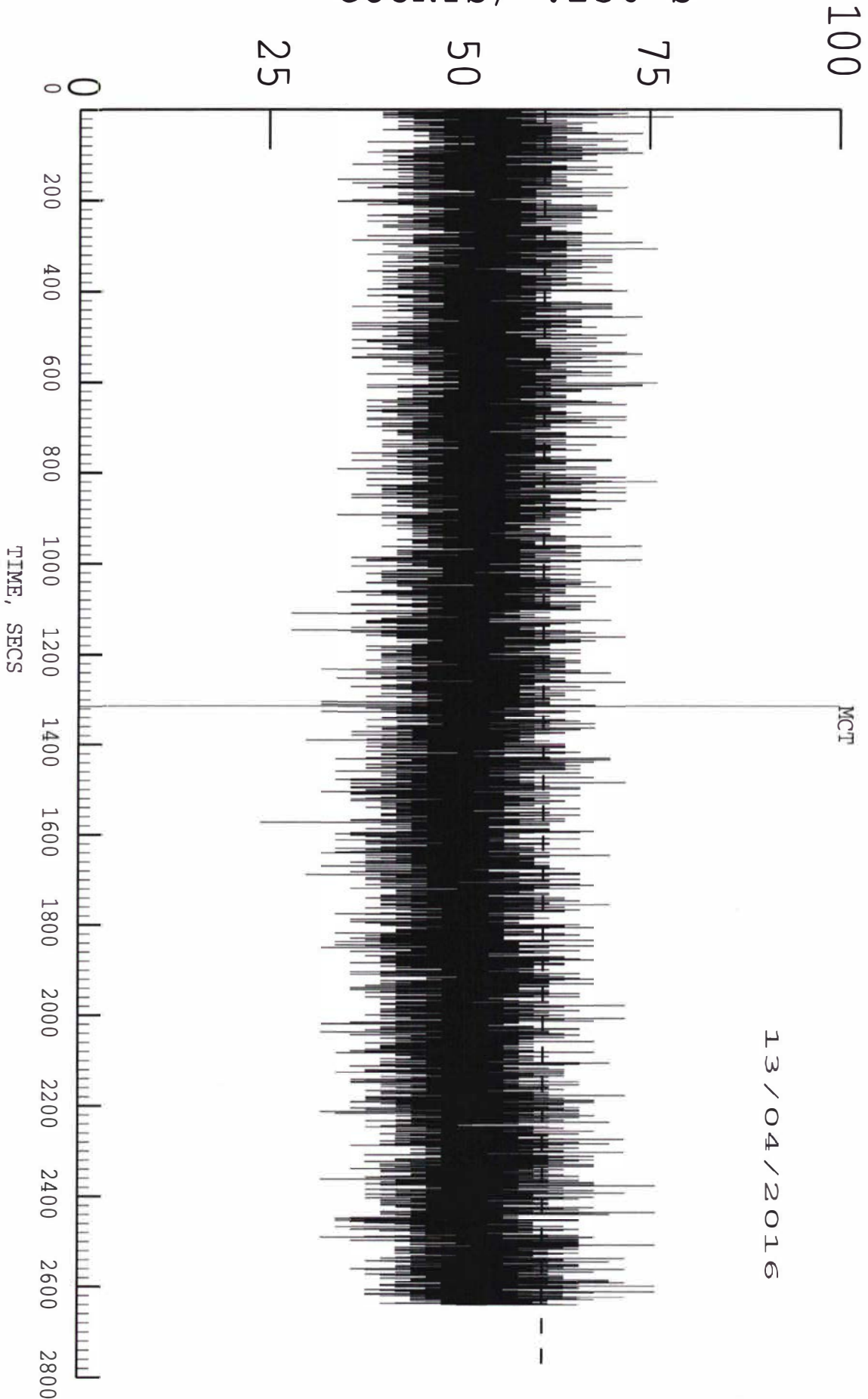
TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Tue 12 Apr 16 04:27:25 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 682522, Seg_Num: 0
 GRB_RA: 33.107d {+02h 12m 26s} (J2000),
 33.195d {+02h 12m 47s} (current),
 32.837d {+02h 11m 21s} (1950)
 GRB_DEC: -67.645d {-67d 38' 42"} (J2000),
 -67.569d {-67d 34' 09"} (current),
 -67.879d {-67d 52' 43"} (1950)
 GRB_DATE: 17490 TJD; 103 DOY; 16/04/12
 GRB_TIME: 15834.70 SOD {04:23:54.70} UT
 TRIGGER_INDEX: 137
 GRB_PHI: 151.11 [deg]
 GRB_THETA: 25.35 [deg]
 DELTA_TIME: 39.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x83
 RATE_SIGNIF: 11.57 [sigma]
 IMAGE_SIGNIF: 6.80 [sigma]
 LC_URL: sw00682522000msb.lc
 SUN_POSTN: 21.00d {+01h 24m 00s} +8.83d {+08d 49' 48"}
 SUN_DIST: 76.90 [deg] Sun_angle= -0.8 [hr] (East of Sun)
 MOON_POSTN: 87.83d {+05h 51m 20s} +18.22d {+18d 13' 06"}
 MOON_DIST: 94.54 [deg]
 MOON_ILLUM: 29 [%]
 GAL_COORDS: 291.66,-47.67 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 330.91,-68.62 [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: Since the IMAGE_SIGNIF is less than 7 sigma, this is a questionable detection.
 COMMENTS: This trigger occurred at longitude,latitude = 123.30,17.18 [deg].

31.6 s

 $1.9 \times 10^{-6} \text{ erg cm}^{-2}$ $1.6 \text{ phot/cm}^2 \text{ s}$

ODYSSEY 12/04/16 14505.525 04:01:45.525
50-3000 keV
COUNTS/ .250 S

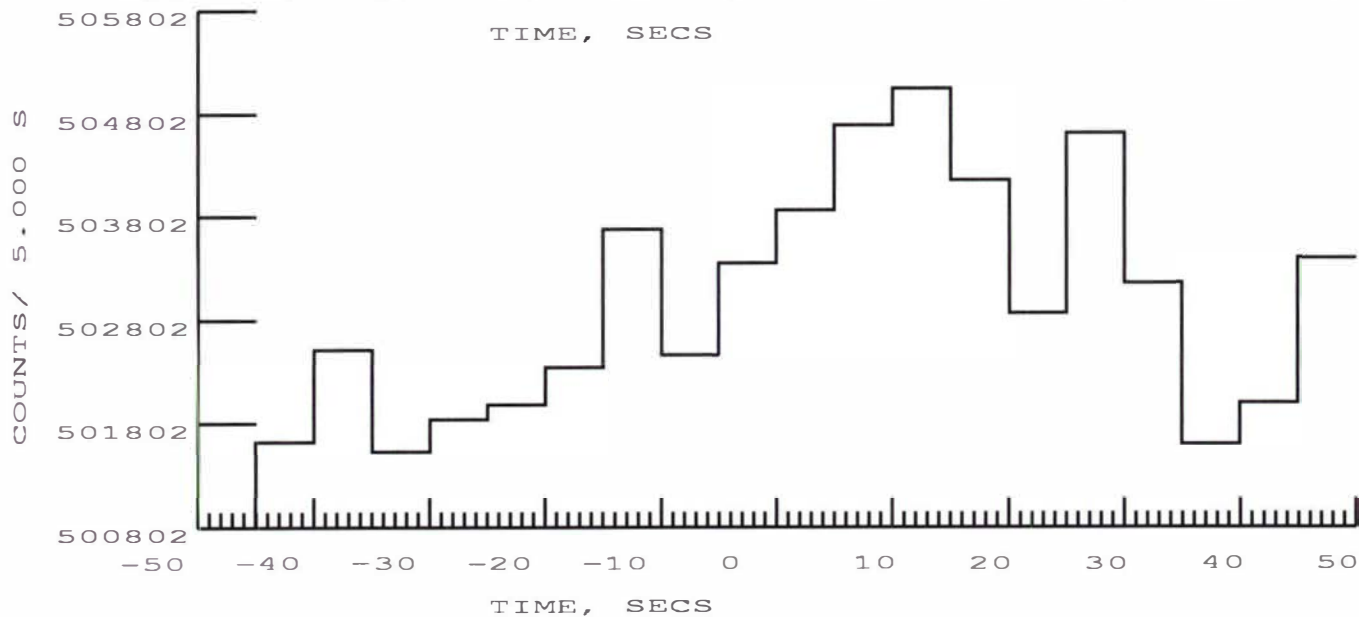
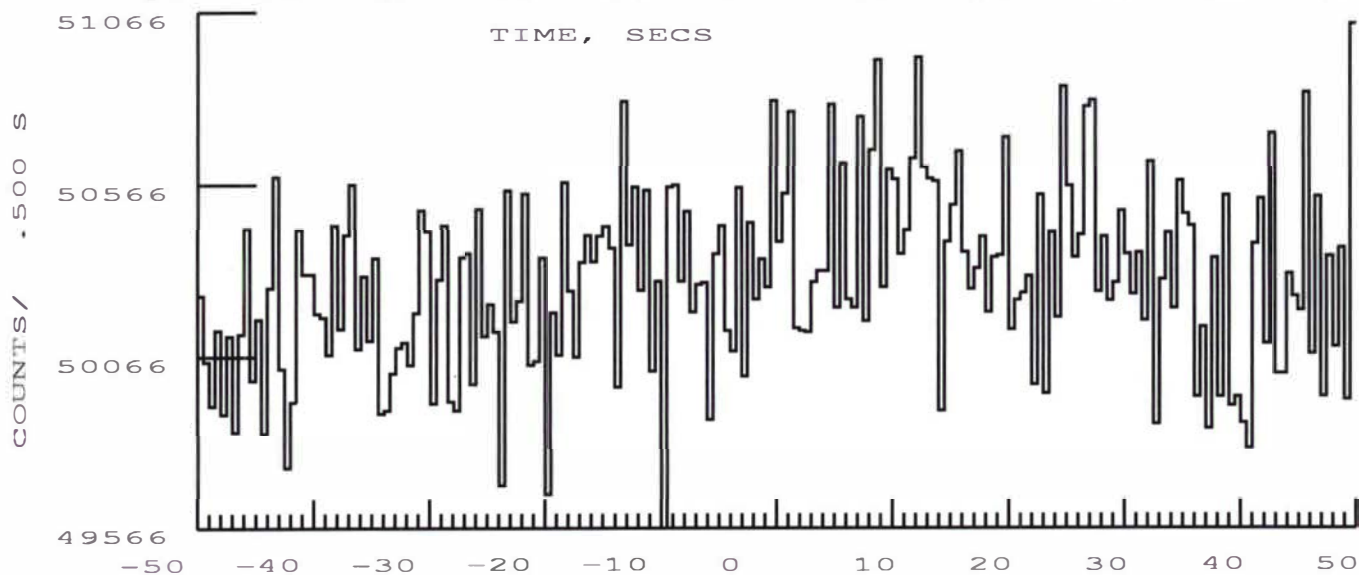
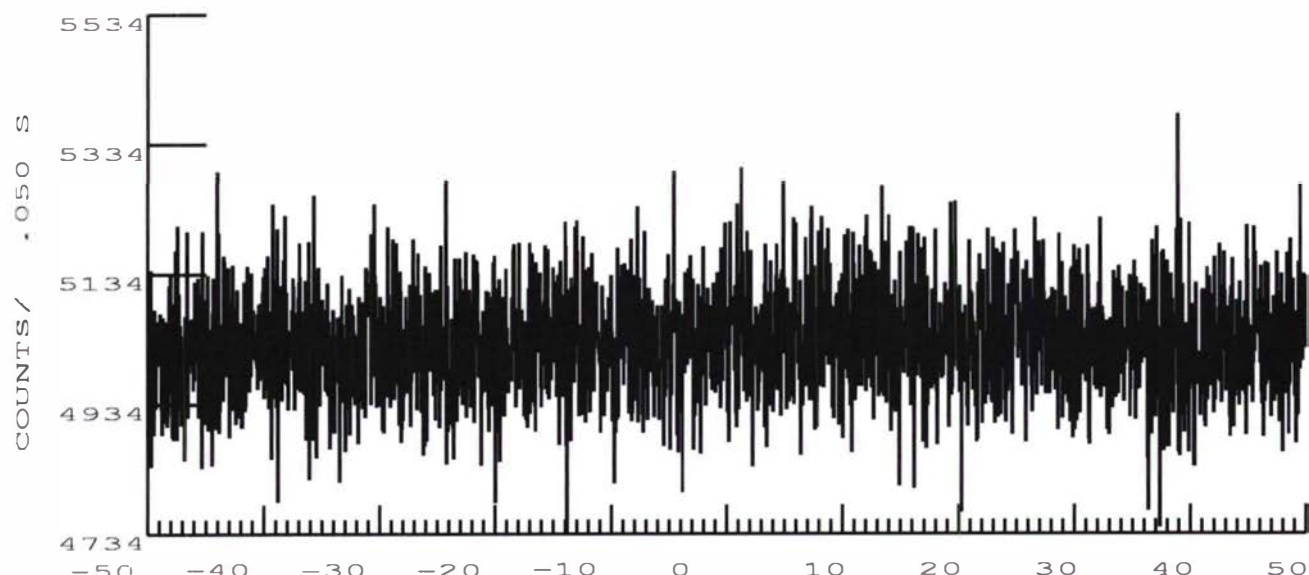
Occluded



RHESSI Data for 20160412_0422

No Data Available For This Time Range

Do Not Retry





Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 4/12/2016 1:43 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Tue 12 Apr 16 20:42:56 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 682614, Seg_Num: 0
 GRB_RA: 58.958d {+03h 55m 50s} (J2000),
 59.156d {+03h 56m 37s} (current),
 58.353d {+03h 53m 25s} (1950)
 GRB_DEC: -8.346d {-08d 20' 44"} (J2000),
 -8.299d {-08d 17' 56"} (current),
 -8.491d {-08d 29' 25"} (1950)
 GRB_DATE: 17490 TJD; 103 DOY; 16/04/12
 GRB_TIME: 74362.89 SOD {20:39:22.89} UT
 TRIGGER_INDEX: 160
 GRB_PHI: -146.96 [deg]
 GRB_THETA: 17.46 [deg]
 DELTA_TIME: 19.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0xC3
 RATE_SIGNIF: 13.63 [sigma]
 IMAGE_SIGNIF: 6.69 [sigma]
 LC_URL: sw00682614000msb.lc
 SUN_POSTN: 21.62d {+01h 26m 30s} +9.08d {+09d 04' 34"}
 SUN_DIST: 41.23 [deg] Sun_angle= -2.5 [hr] (East of Sun)
 MOON_POSTN: 97.65d {+06h 30m 36s} +18.18d {+18d 10' 31"}
 MOON_DIST: 46.31 [deg]
 MOON_ILLUM: 36 [%]
 GAL_COORDS: 198.49, -42.59 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 54.68, -28.06 [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. *No*
 COMMENTS: This trigger occurred during a high background rate interval.
 COMMENTS: Since the IMAGE_SIGNIF is less than 7 sigma, this is a questionable detection.
 COMMENTS: This trigger occurred at longitude,latitude = 308.72, -6.90 [deg].

KONUS

13/04/2016

3.045

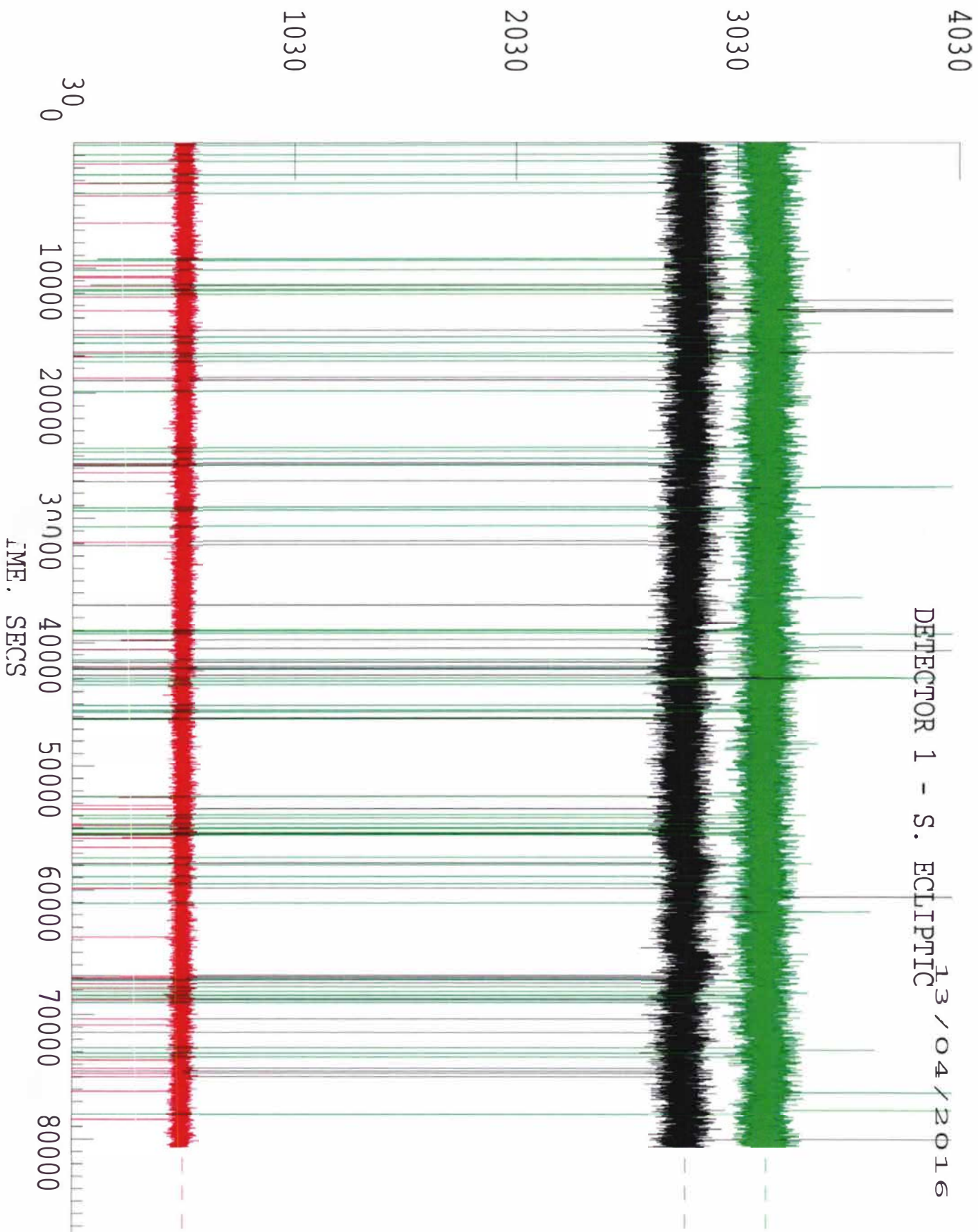
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

13/04/2016

3.045

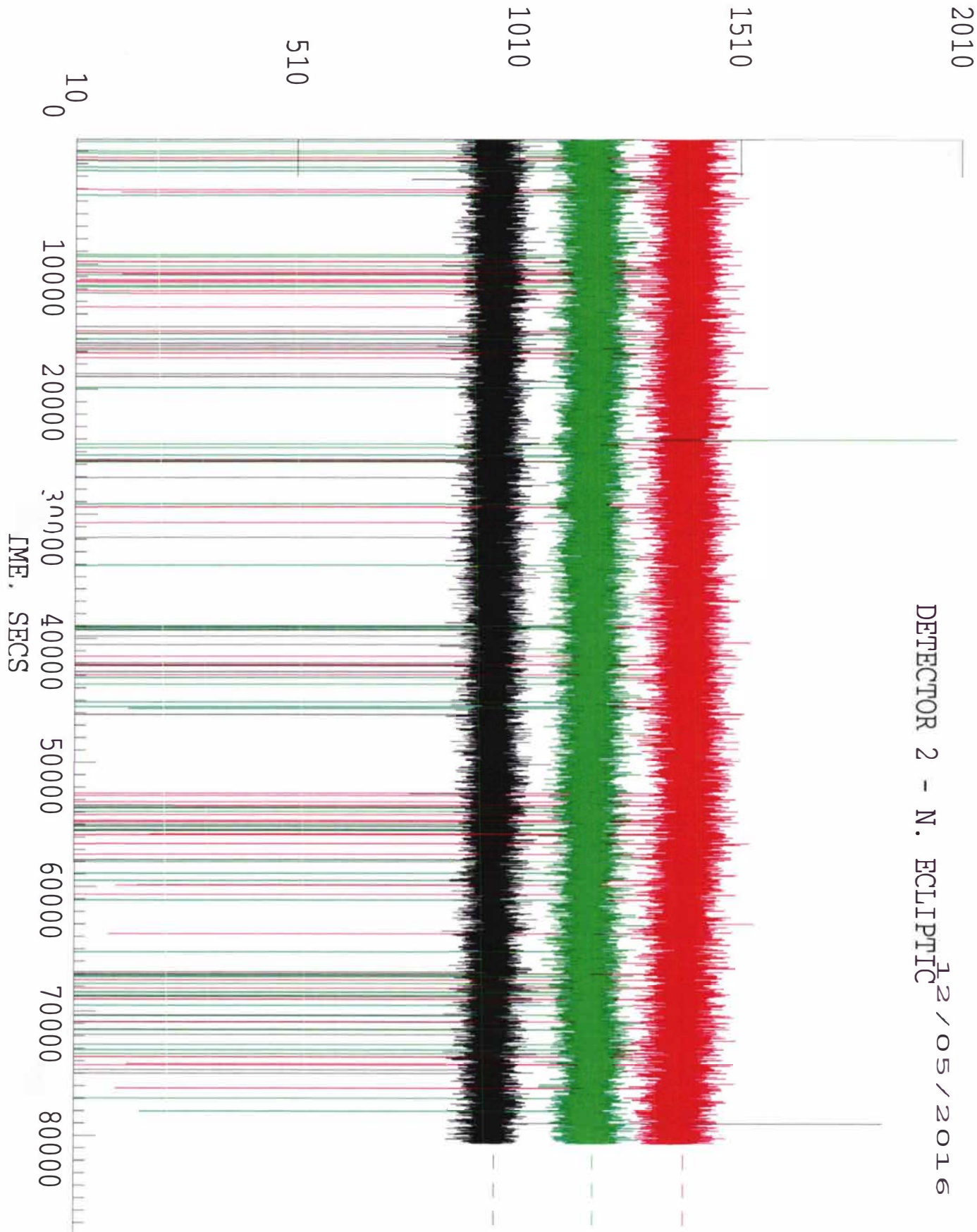
v02

10- 50 keV

50- 200 keV

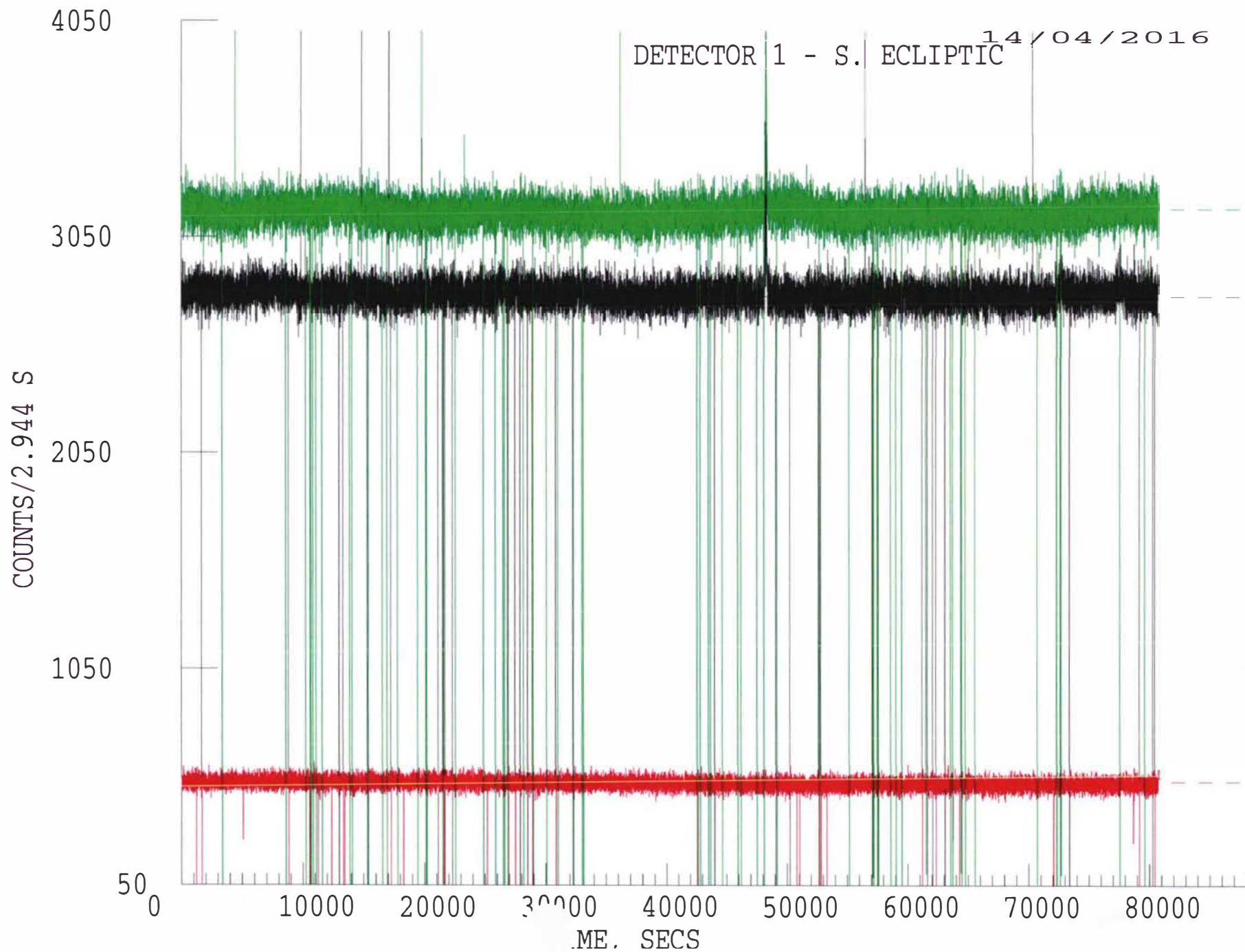
200- 750 keV

COUNTS/2.944 S



KONUS 14/04/2016 83.037 v02

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



KONUS

14/04/2016

83.037

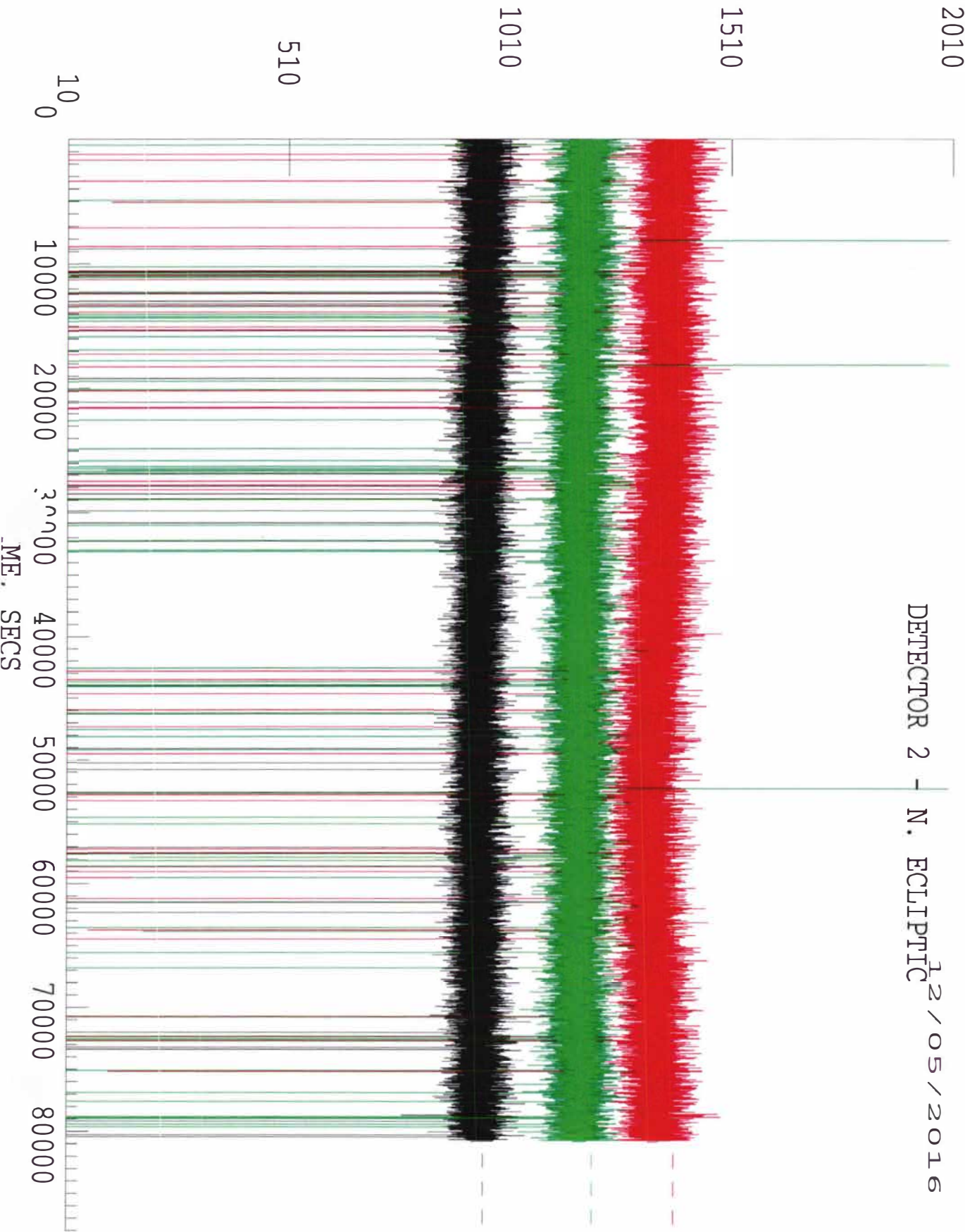
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

15/04/2016

71.764

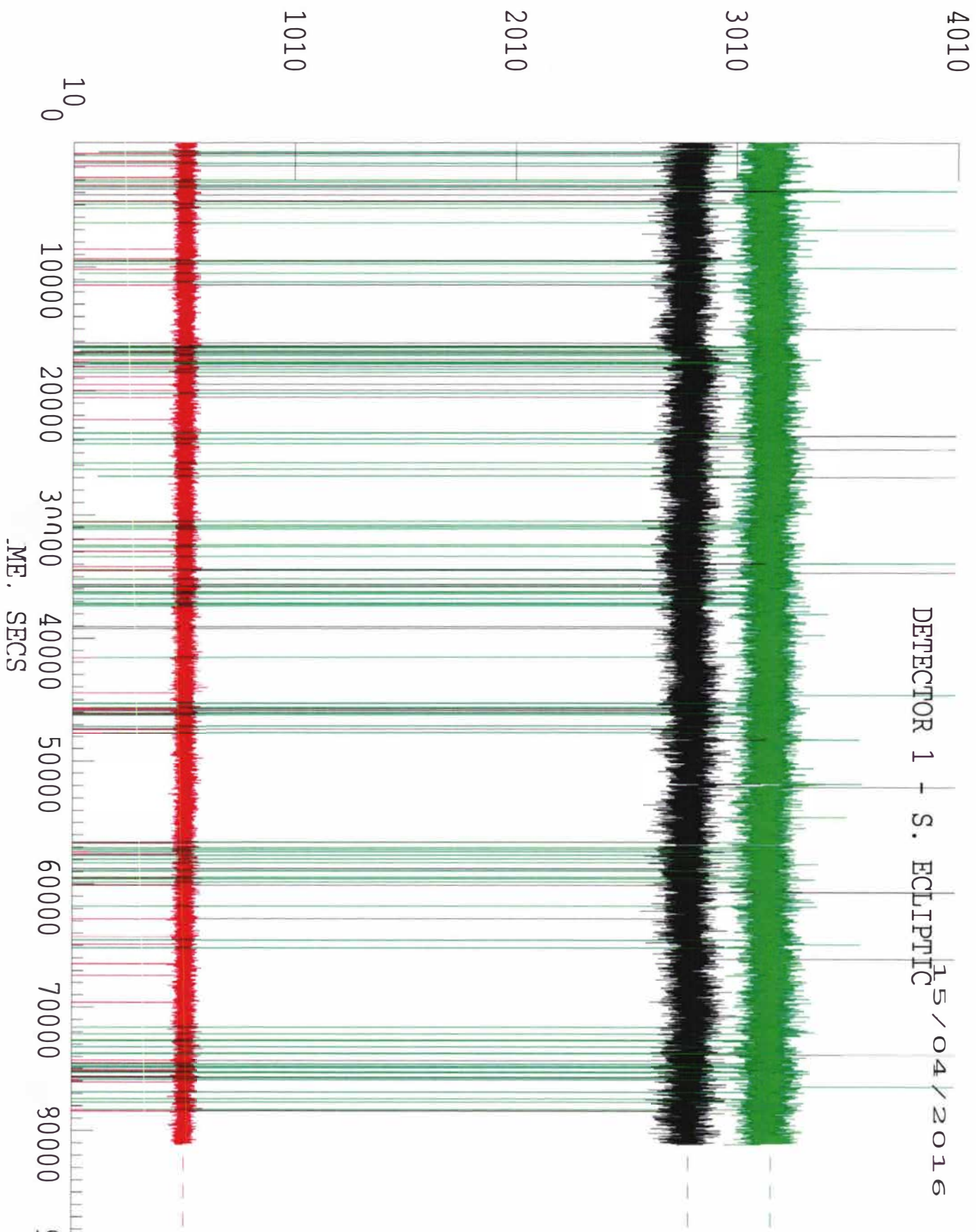
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

15/04/2016

71.764

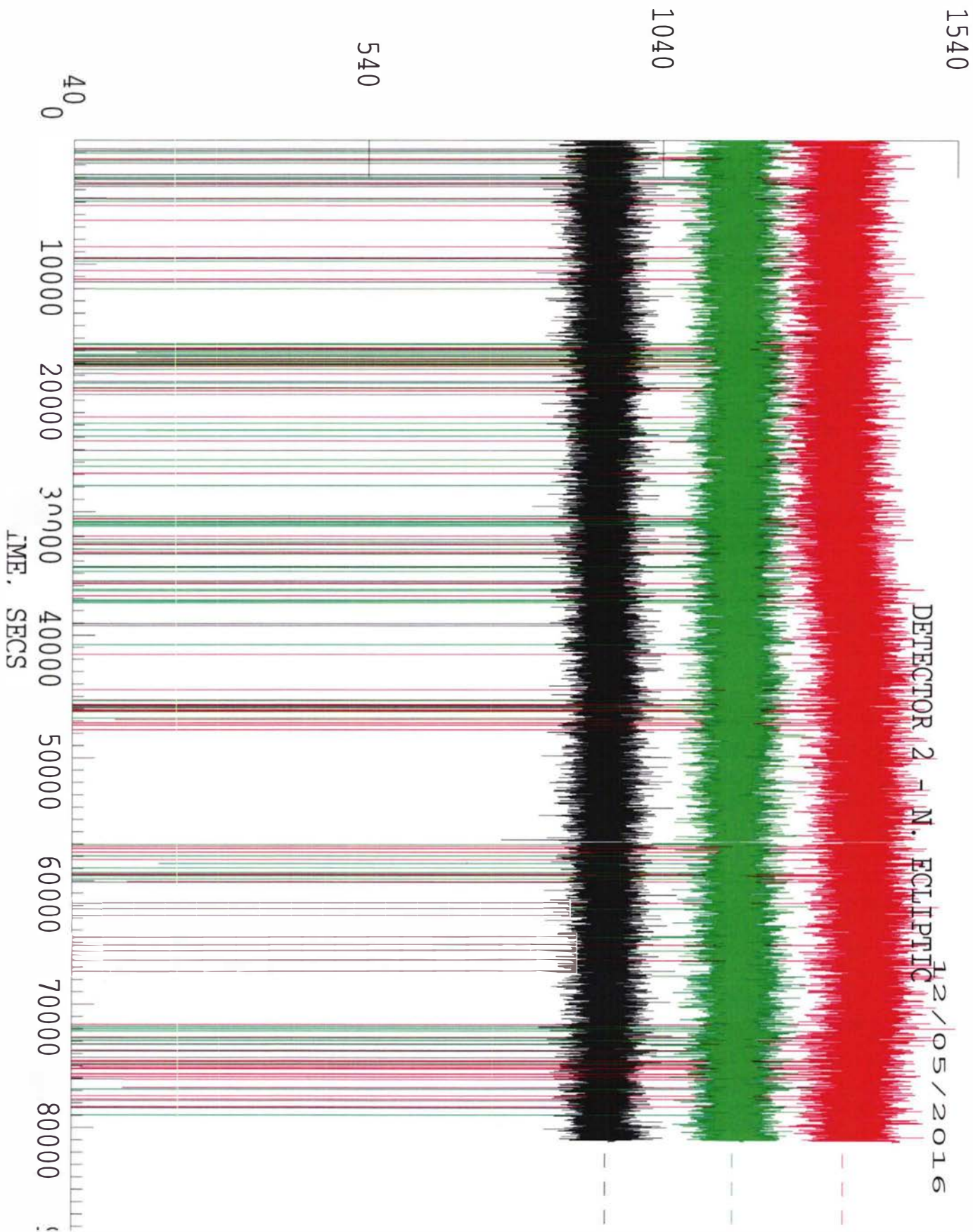
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

16/04/2016

119.371

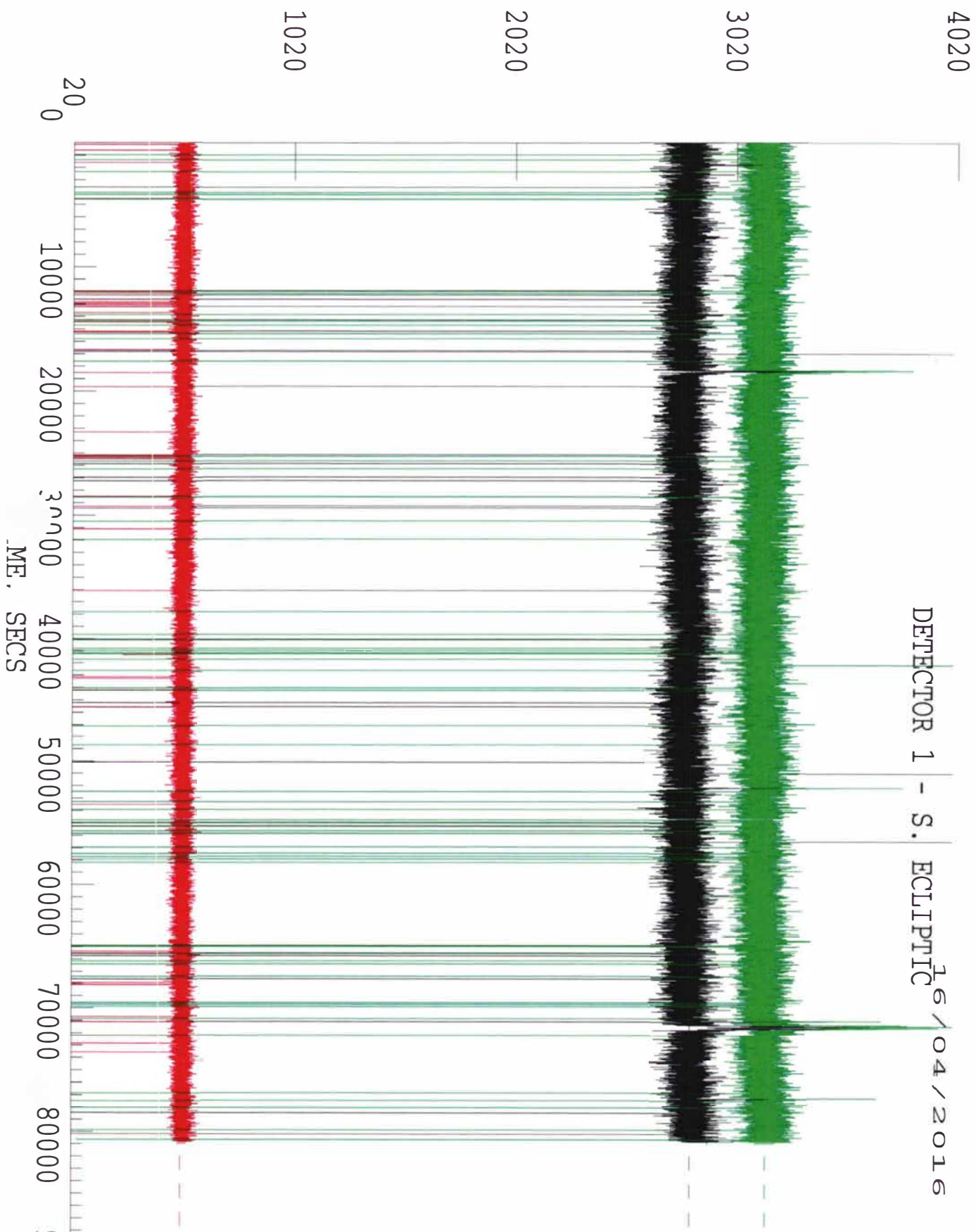
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

16/04/2016

119.371

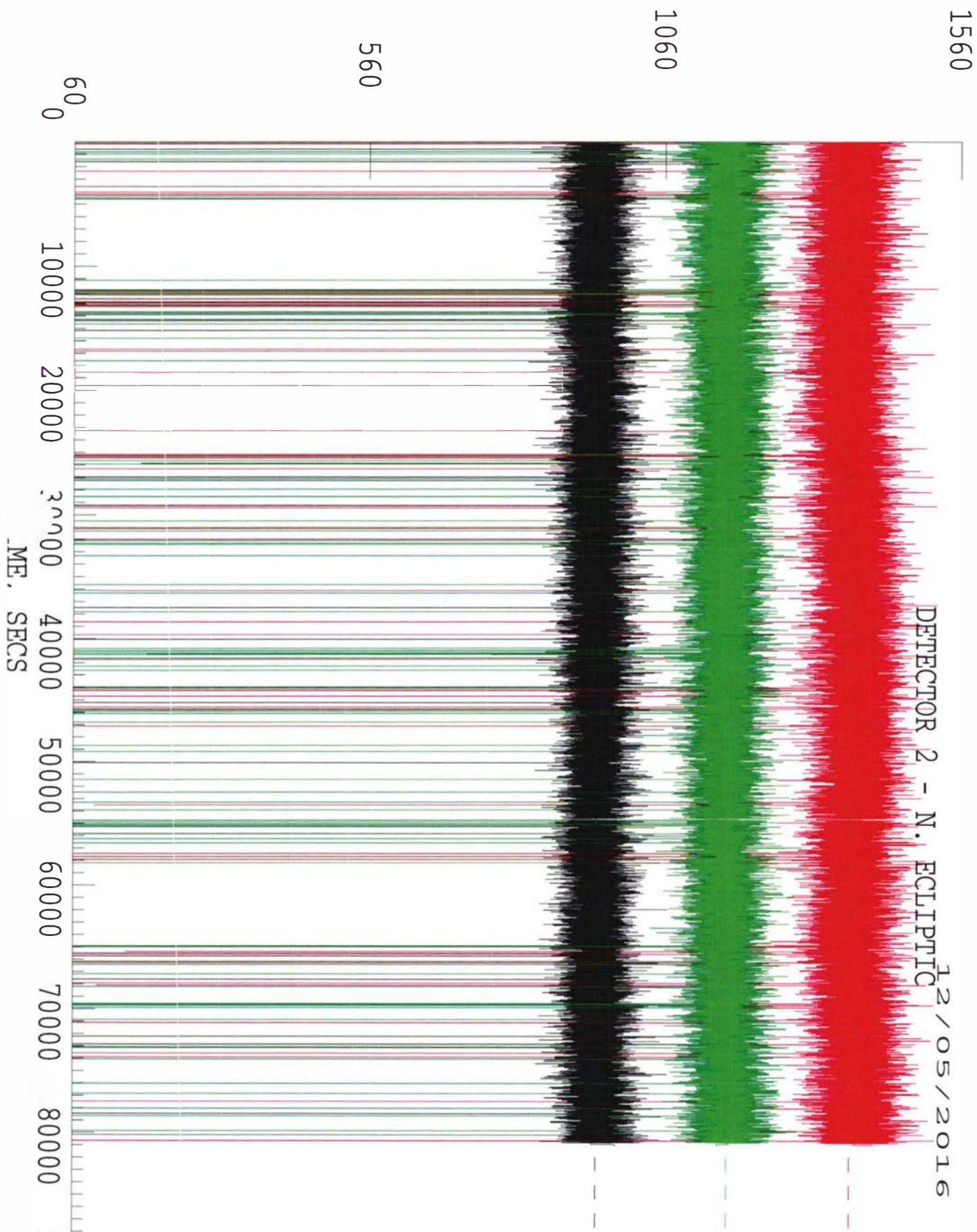
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



FERMI

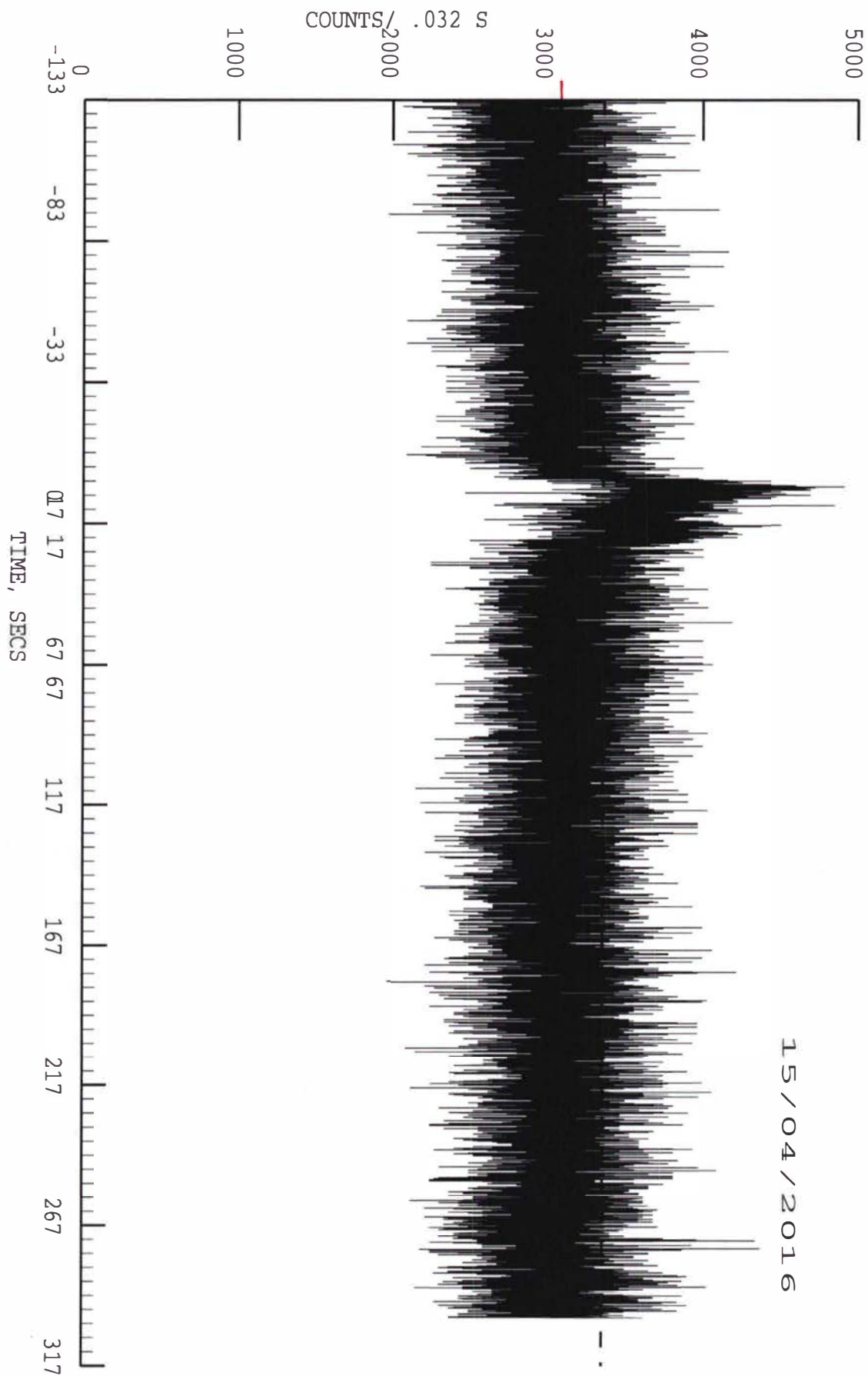
16/04/16

1895.680

00:31:35.680

26- 293 keV

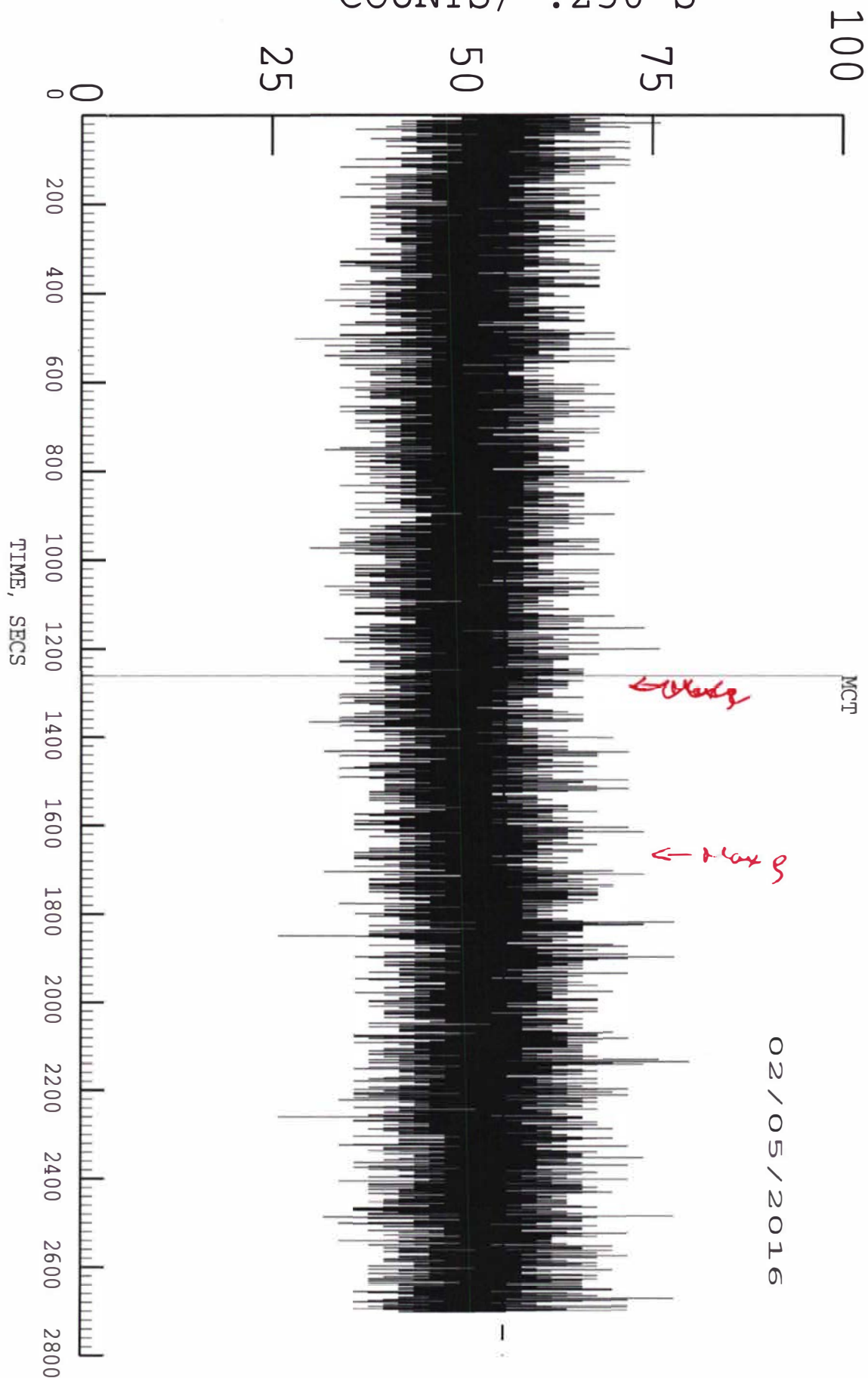
176.6 -49.5 5.1



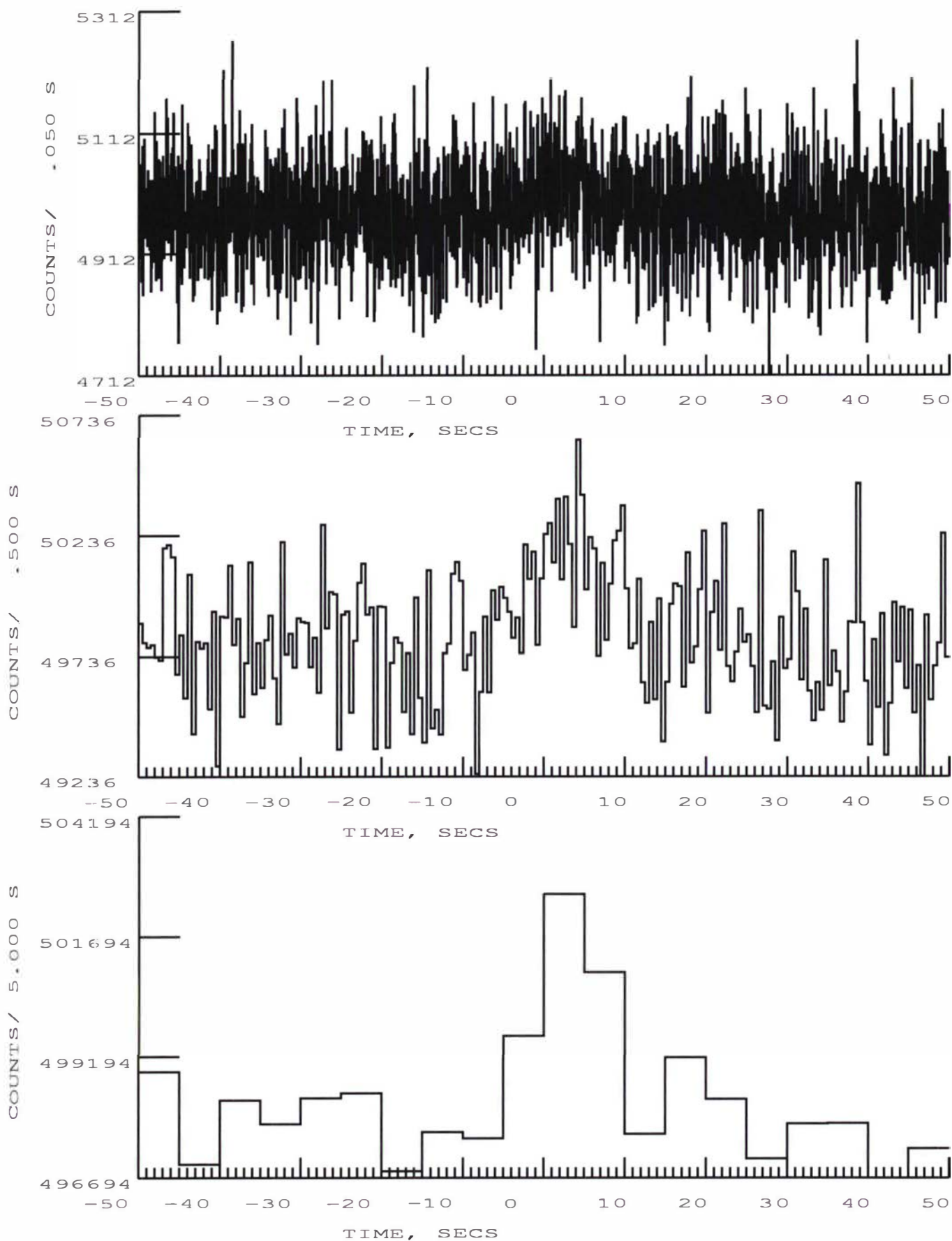
ODYSSEY 16/04/16 519.691 00:08:39.691

50-3000 keV

COUNTS/ .250 S



02/05/2016



RHESSI Data for 20160416_0029

No Data Available For This Time Range

Do Not Retry

Subject: [Ipn] BAT lightcurve for trigger at 160416_0031

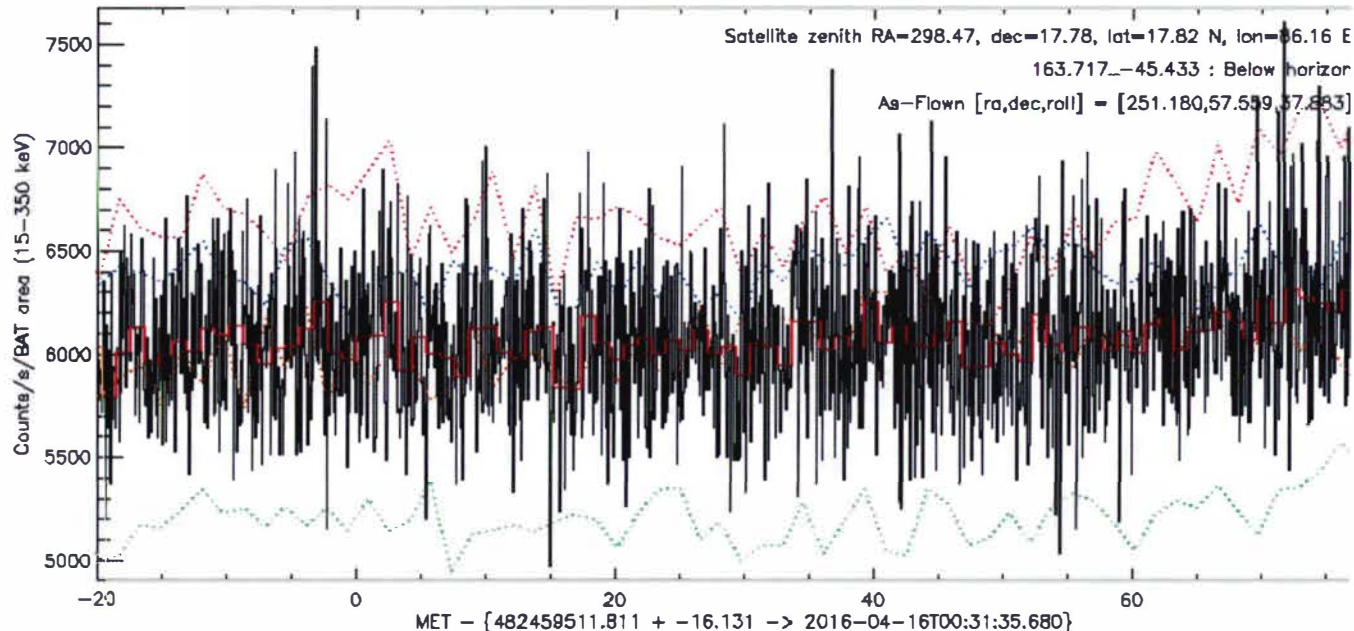
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/15/2016 8:32 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

~/tmp/swift/160416_0031.png



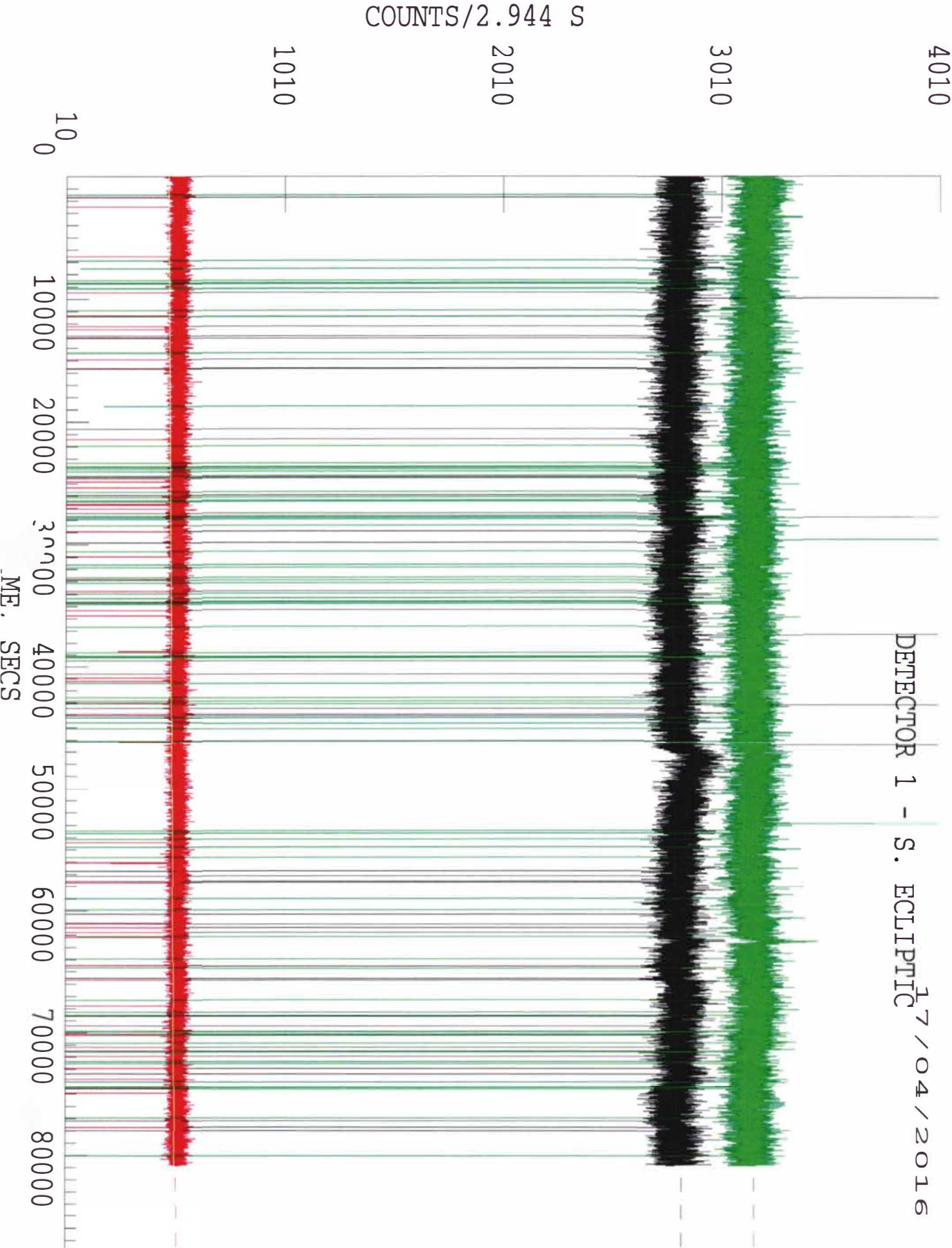
```
% /usr/local/bin/swinfo -o 482459511.811 -s 163.717_-45.433
Swift Zenith(RA,dec):      298.47, 17.78
Swift Location(lon,lat,alt): 86.16 E, 17.82 N, 562 km
Time(MET + UTCF -> UT):    482459511.811 + -16.131 -> 2016-04-16T00:31:35.680
YYMMDD_SOD:                160416_01895.680      DOY=107
Obs Sequence Number:        00033765053
Obs Target Name:            Swift J164449.3+573451
Obs Date and Times:          2016-04-16 00:26:45 - 00:31:41
Obs Pointing(ra,dec,roll):   251.180, 57.559, 37.88
163.717_-45.433_imageloc (boresight_dist, angle): (126, 112)
163.717_-45.433_exposure (cm^2 cos adjusted): 0
163.717_-45.433_altitude: -20 (down)
```

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

Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

— Attachments:	
/tmp/swift/160416_0031.png	28.4 KB
/tmp/swift/160416_0031_bat64ms_ipn	87.1 KB

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



KONUS

17/04/2016

46.275

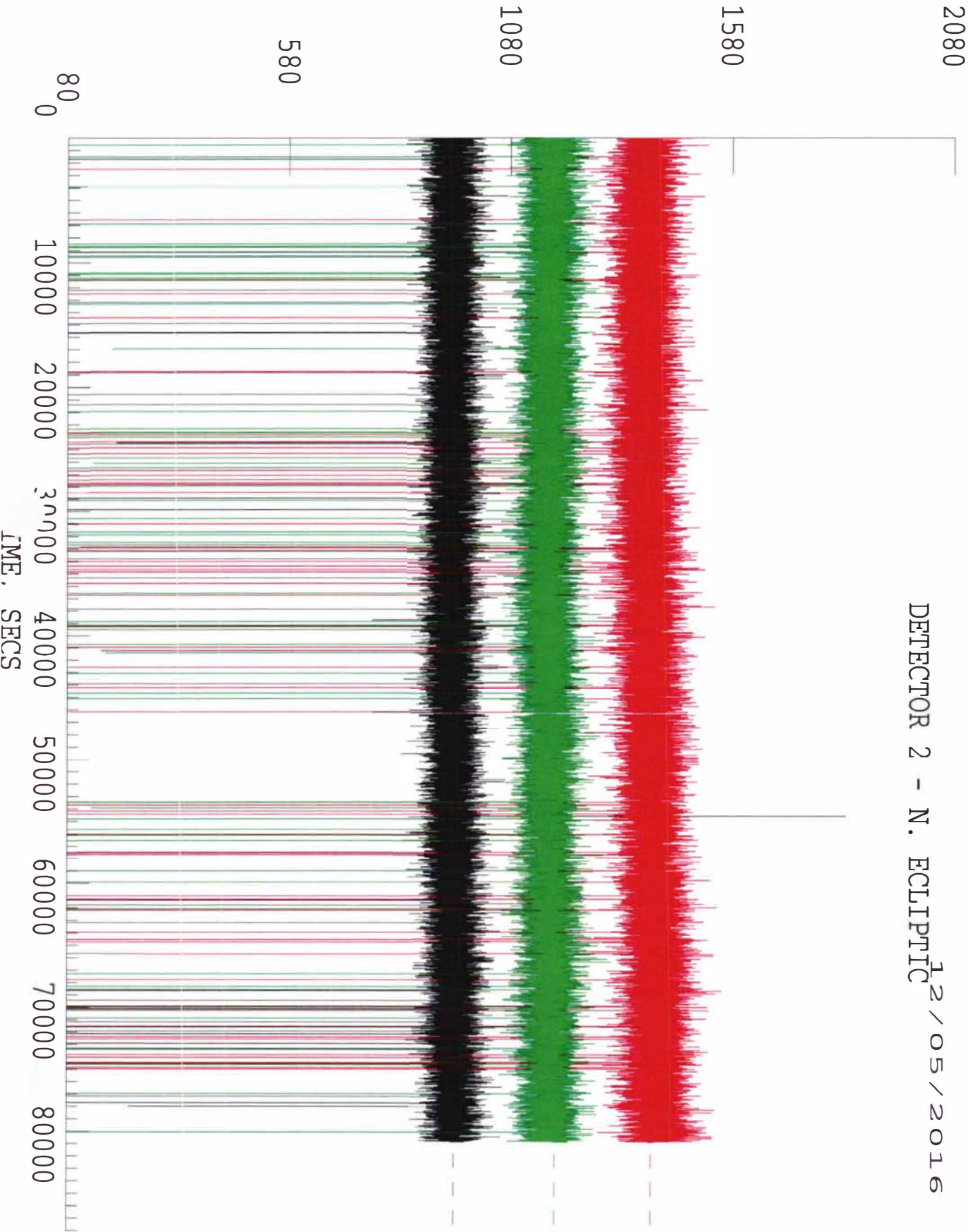
v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 4/16/2016 9:28 PM
 To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Sun 17 Apr 16 04:27:27 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 683076, Seg_Num: 0
 GRB_RA: 120.240d {+08h 00m 58s} (J2000),
 120.459d {+08h 01m 50s} (current),
 119.566d {+07h 58m 16s} (1950)
 GRB_DEC: +7.671d {+07d 40' 15"} (J2000),
 +7.625d {+07d 37' 30"} (current),
 +7.810d {+07d 48' 35"} (1950)
 GRB_DATE: 17495 TJD; 108 DOY; 16/04/17
 GRB_TIME: 15821.04 SOD {04:23:41.04} UT
 TRIGGER_INDEX: 452
 GRB_PHI: -170.00 [deg]
 GRB_THETA: 45.23 [deg]
 DELTA_TIME: -38.00 [sec]
 TRIGGER_DUR: 4.096 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 12.20 [sigma]
 IMAGE_SIGNIF: 7.19 [sigma]
 LC_URL: sw00683076000msb.lc
 SUN_POSTN: 25.62d {+01h 42m 30s} +10.62d {+10d 37' 05"}
 SUN_DIST: 93.31 [deg] Sun_angle= -6.3 [hr] (East of Sun)
 MOON_POSTN: 153.87d {+10h 15m 30s} +8.96d {+08d 57' 24"}
 MOON_DIST: 33.08 [deg]
 MOON_ILLUM: 79 [%]
 GAL_COORDS: 213.91, 18.93 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 120.76, -12.60 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS:
 COMMENTS: The next comments were copied from the BAT_POS Notice:
 COMMENTS: This is a rate trigger.
 COMMENTS: A point_source was found.
 COMMENTS: This does not match any source in the on-board catalog.
 COMMENTS: This does not match any source in the ground catalog.
 COMMENTS: This is a GRB.
 COMMENTS: This trigger occurred at longitude,latitude = 198.46,-17.76 [deg].

15s

 5.9×10^{-7} 1 phot/cm²s

SPI - NO

BAT

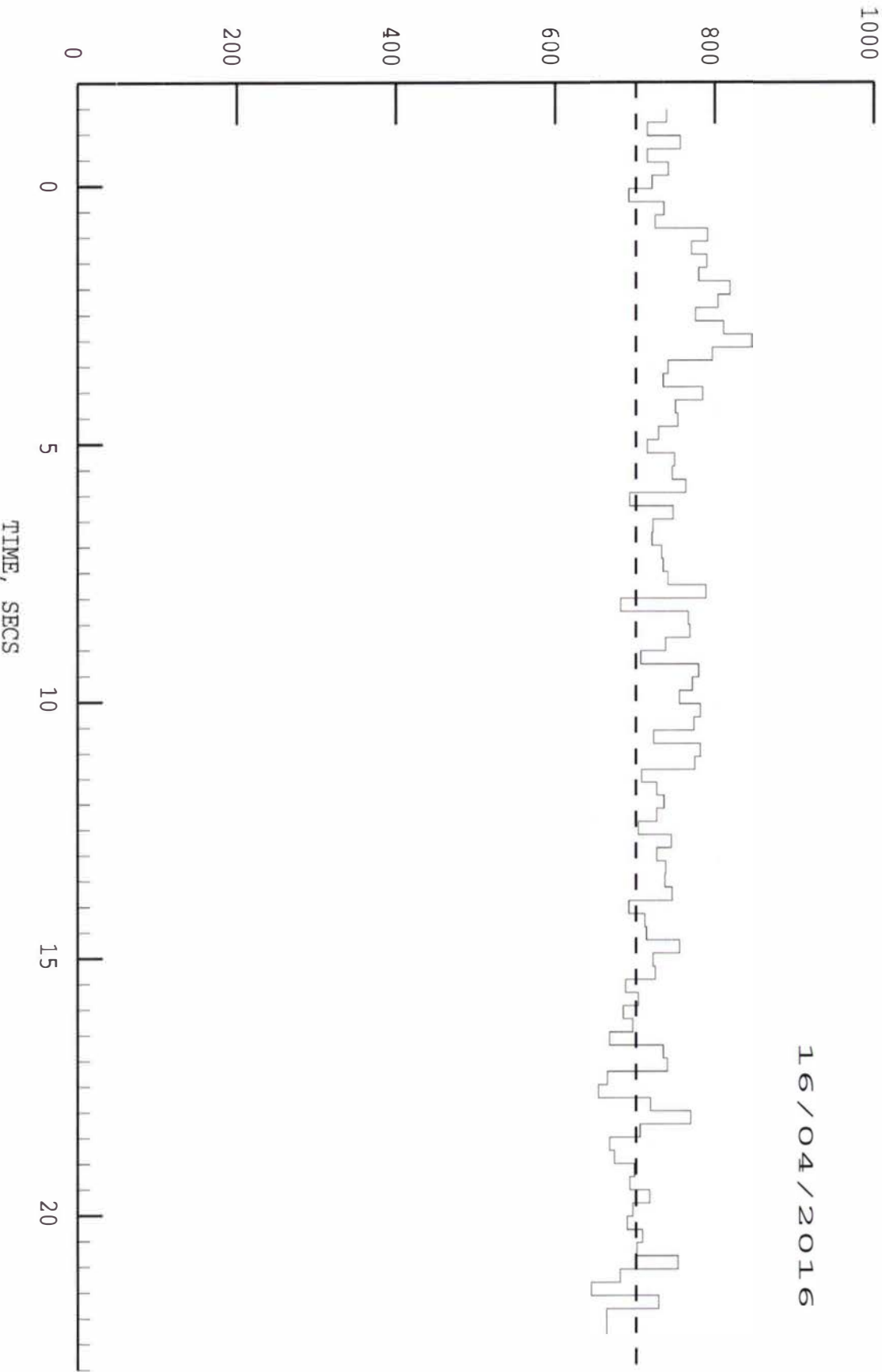
17/04/16

15821.047

04:23:41.047

25- 100 keV

COUNTS/ .256 S

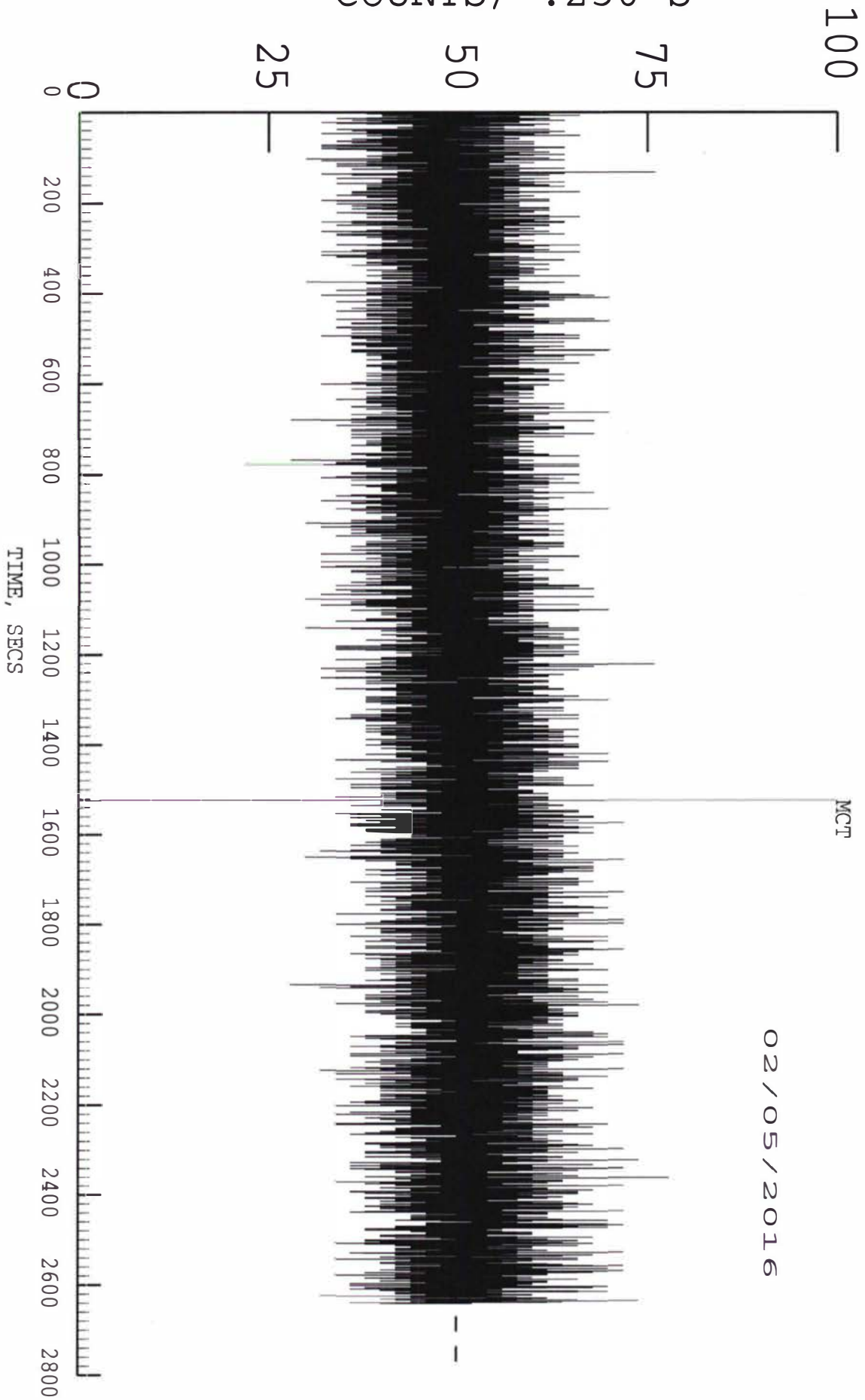


ODYSSEY 17/04/16 14497.921 04:01:37.921

50-3000 keV

COUNTS/ .250 S

Occulted



RHESSI Data for 20160417_0422

No Data Available For This Time Range

Do Not Retry

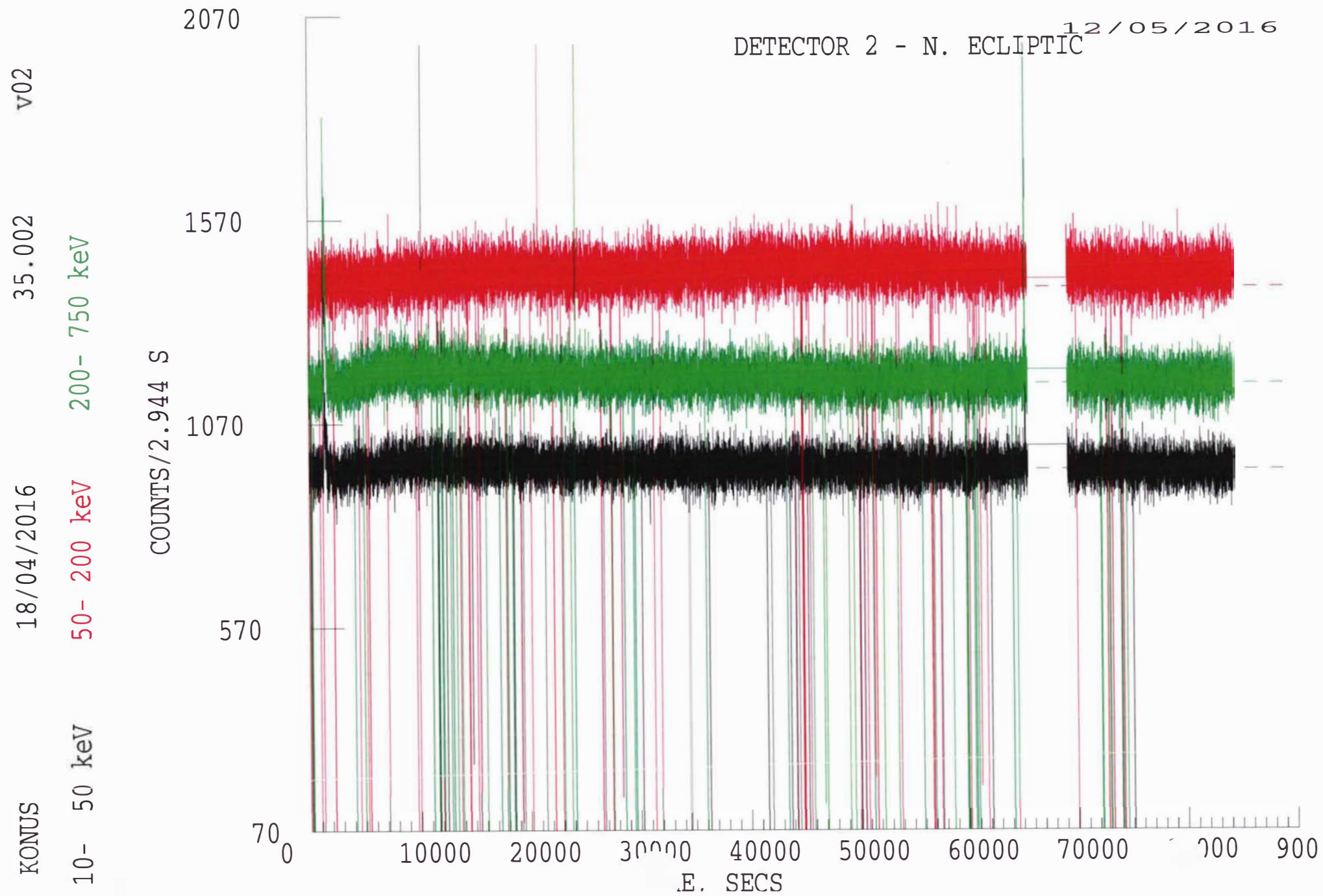
v02

200- 750 keV

4030

18/04/2016
IC

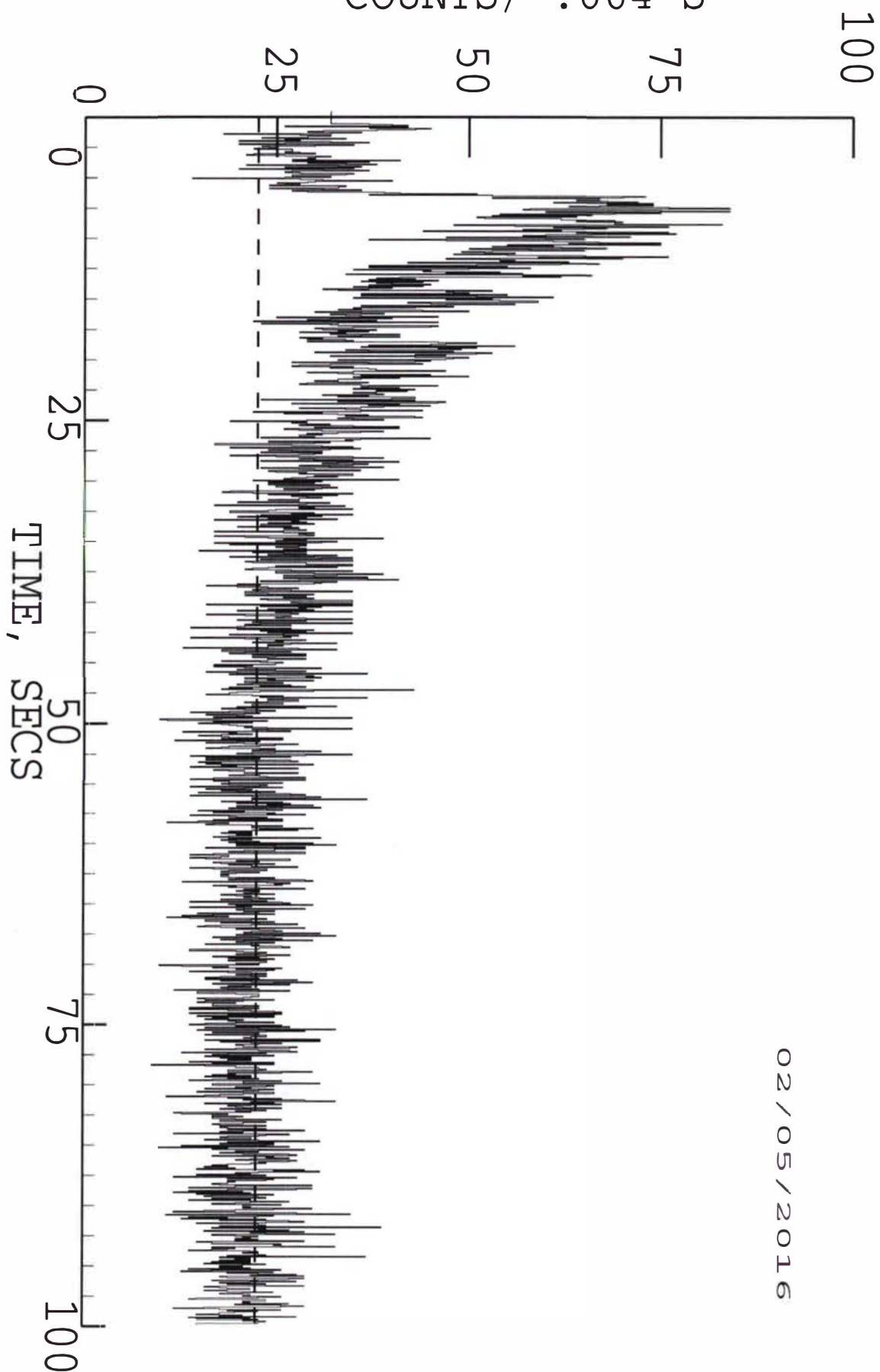
F. SECS



KONUS 18/04/16 65322.986 18:08:42.986
50- 200 keV

COUNTS/ .064 S

SPI - 100

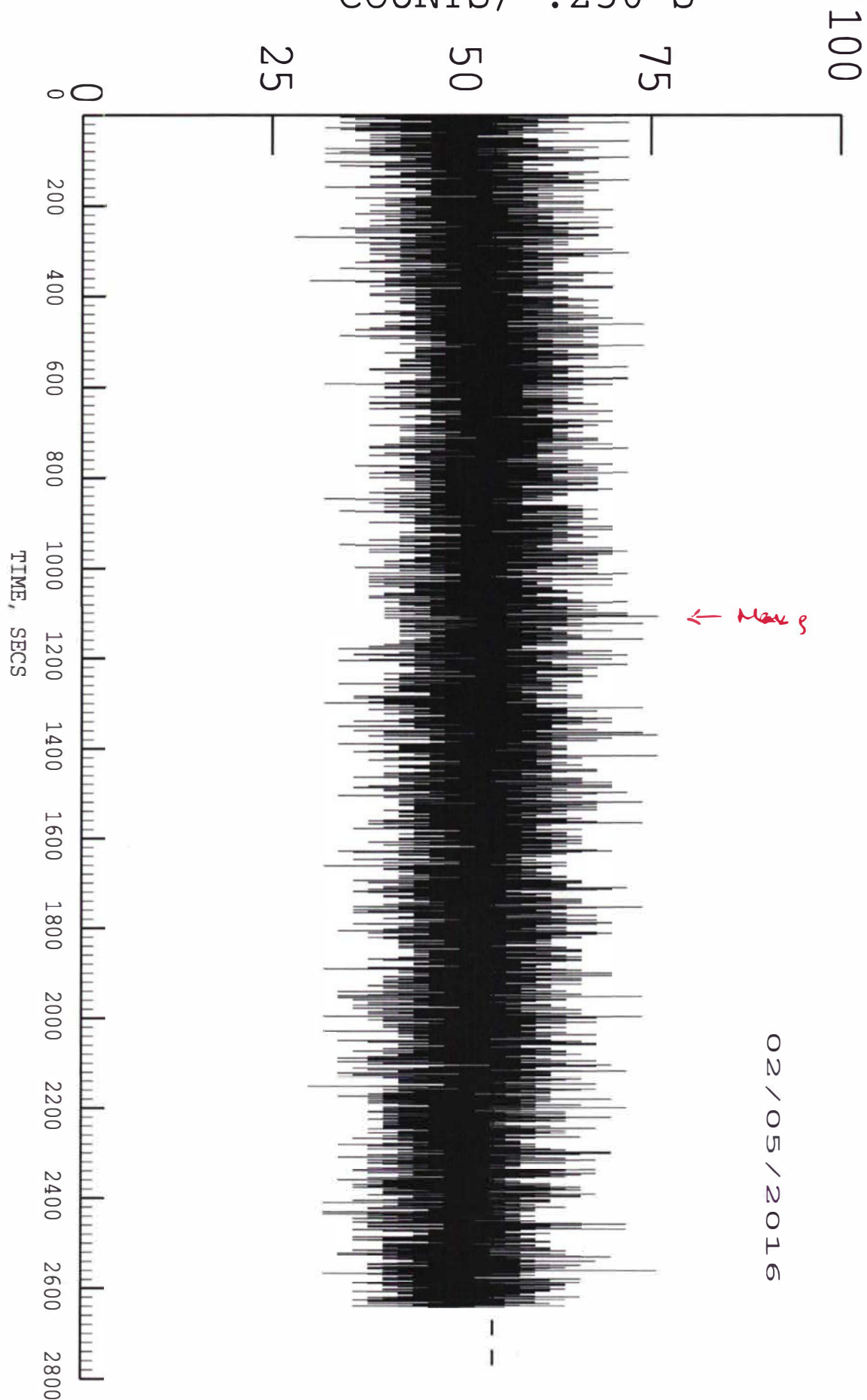


02/05/2016

ODYSSEY 18/04/16 63995.531 17:46:35.531

50-3000 keV

COUNTS/ .250 S



RHESSI Data for 20160418_1807

No Data Available For This Time Range

Do Not Retry

Subject: [Ipn] BAT lightcurve for trigger at 160418_1808

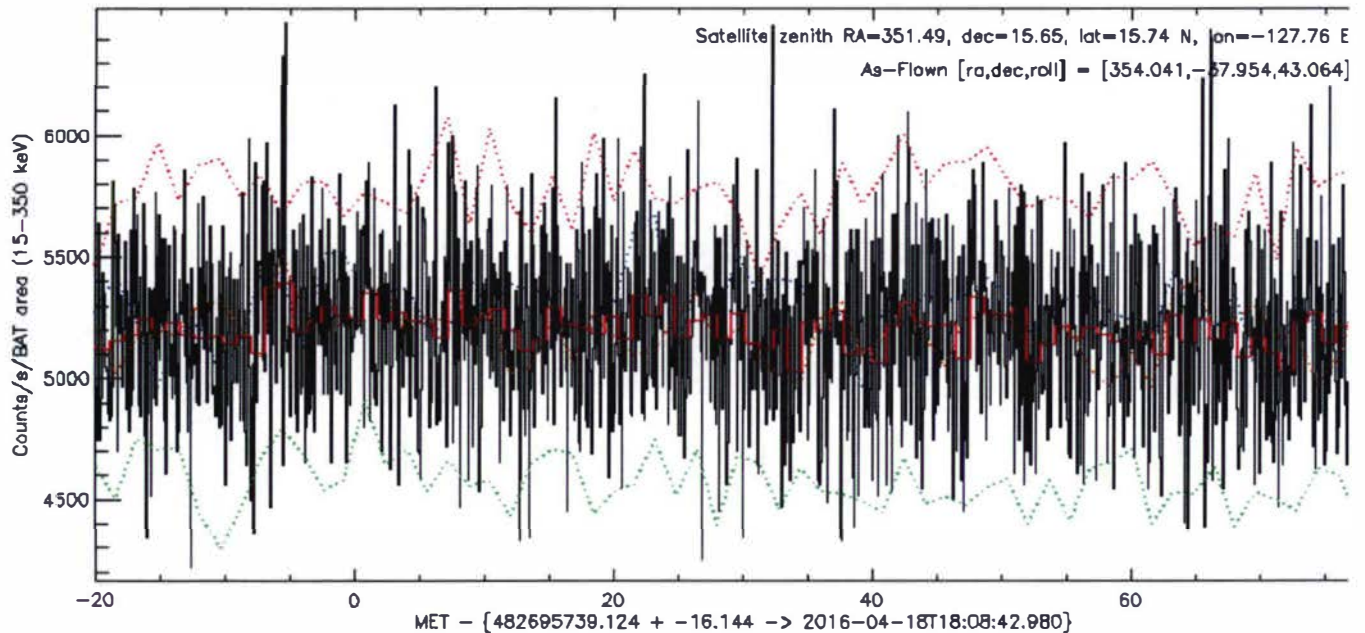
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/18/2016 4:56 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160418_1808.png—



```
% /usr/local/bin/swinfo -o 482695739.124
Swift Zenith(RA,dec):      351.49, 15.65
Swift Location(lon,lat,alt): -127.76 E, 15.74 N, 561 km
Time(MET + UTC -> UT):    482695739.124 + -16.144 -> 2016-04-18T18:08:42.980
YYMMDD_SOD:               160418_65322.980      DOY=109
Obs Sequence Number:      00084558013
Obs Target Name:          NGC7713
Obs Date and Times:       2016-04-18 17:54:45 - 18:17:43
Obs Pointing(ra,dec,roll): 354.041, -37.954, 43.06
```

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

Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160418_1808.png	27.6 KB
/tmp/swift/160418_1808_bat64ms_ipn	87.0 KB

KONUS

19/04/2016

11.953

v02

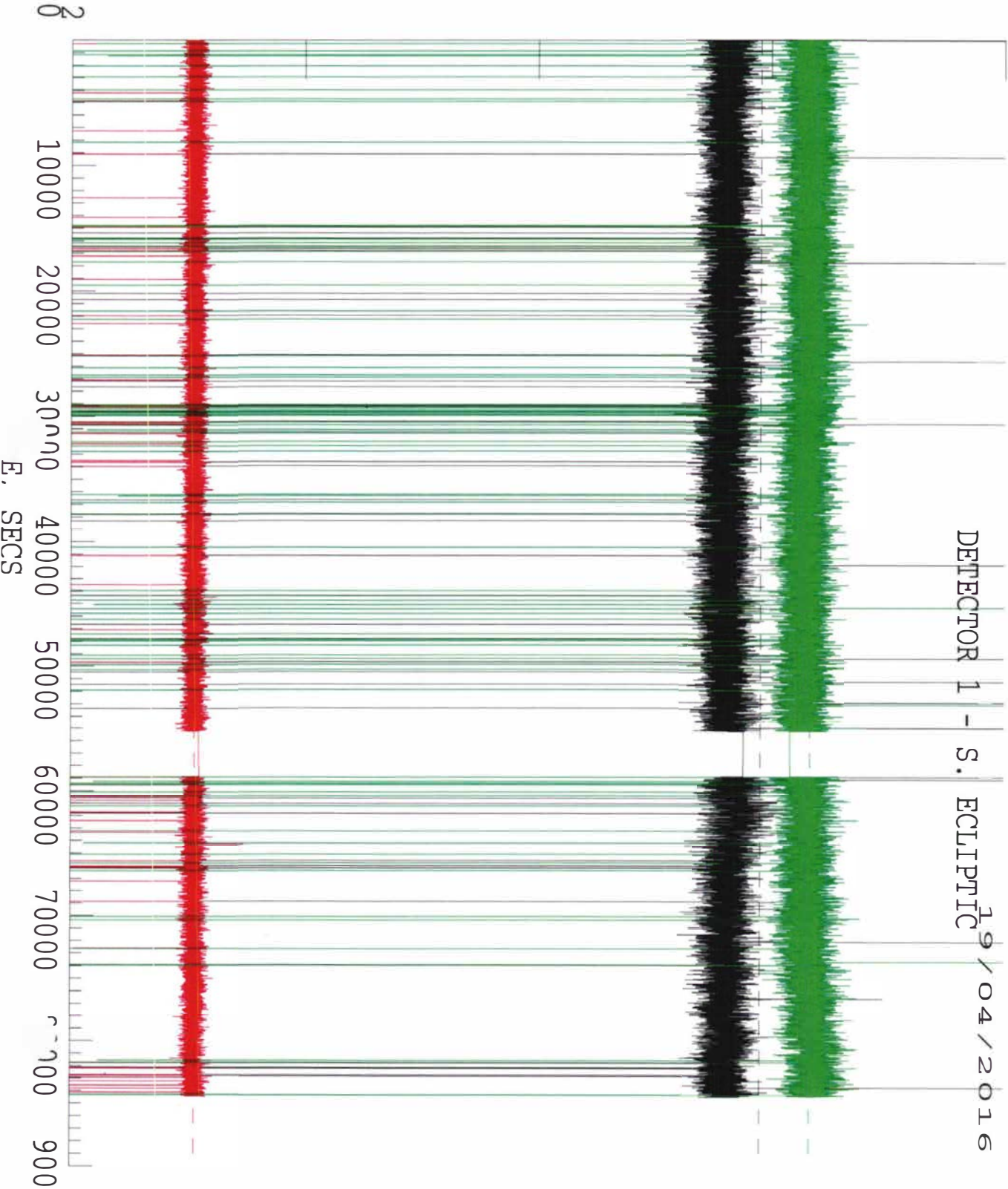
10- 50 keV

50- 200 keV

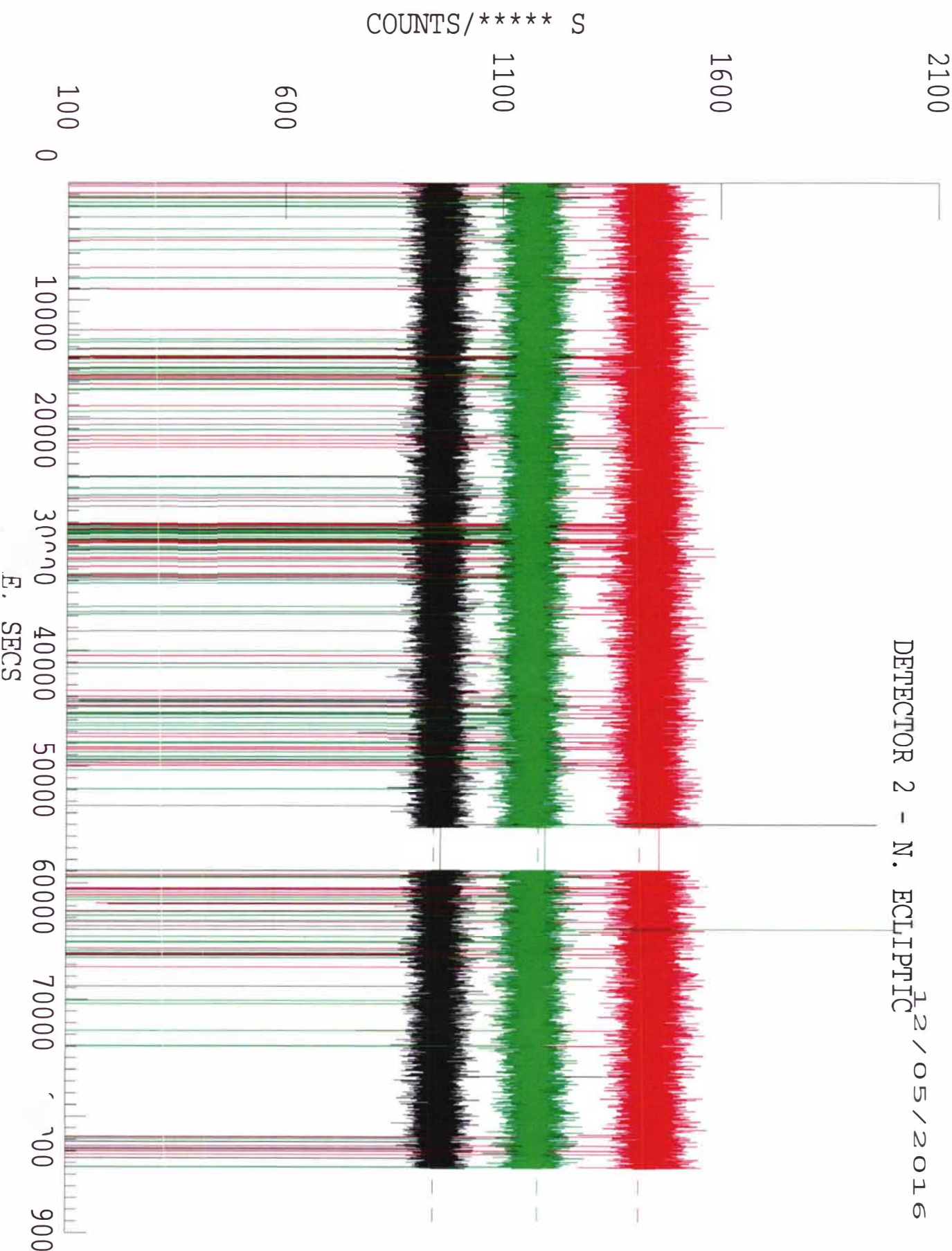
200- 750 keV

COUNTS/***** S

1002
2002
3002
4002



10- 50 keV50- 200 keV200- 750 keV



Subject: GCN/SWIFT_BAT_LIGHTCURVE
 From: Bacodine <vxw@capella2.gsfc.nasa.gov>
 Date: 4/19/2016 8:20 AM
 To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Tue 19 Apr 16 15:20:16 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 683383, Seg_Num: 0
 GRB_RA: 16.424d {+01h 05m 42s} (J2000),
 16.620d {+01h 06m 29s} (current),
 15.824d {+01h 03m 18s} (1950)
 GRB_DEC: -27.343d {-27d 20' 32"} (J2000),
 -27.256d {-27d 15' 19"} (current),
 -27.610d {-27d 36' 35"} (1950)
 GRB_DATE: 17497 TJD; 110 DOY; 16/04/19
 GRB_TIME: 54997.41 SOD {15:16:37.41} UT
 TRIGGER_INDEX: 148
 GRB_PHI: -144.59 [deg]
 GRB_THETA: 48.69 [deg]
 DELTA_TIME: -76.00 [sec]
 TRIGGER_DUR: 1.024 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 48.07 [sigma]
 IMAGE_SIGNIF: 16.19 [sigma]
 LC_URL: sw00683383000msb.lc
 SUN_POSTN: 27.91d {+01h 51m 38s} +11.47d {+11d 28' 10"}
 SUN_DIST: 40.24 [deg] Sun_angle= 0.8 [hr] (West of Sun)
 MOON_POSTN: 182.05d {+12h 08m 12s} +0.14d {+00d 08' 08"}
 MOON_DIST: 149.48 [deg]
 MOON_ILLUM: 94 [%]
 GAL_COORDS: 217.61,-86.82 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 3.21,-31.42 [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 = 359.76,-14.32 [deg].

8.8 s

 $3.5 \times 10^{-6} \text{ erg cm}^{-2}$ 8.9 phot/cm²s

A

BAT

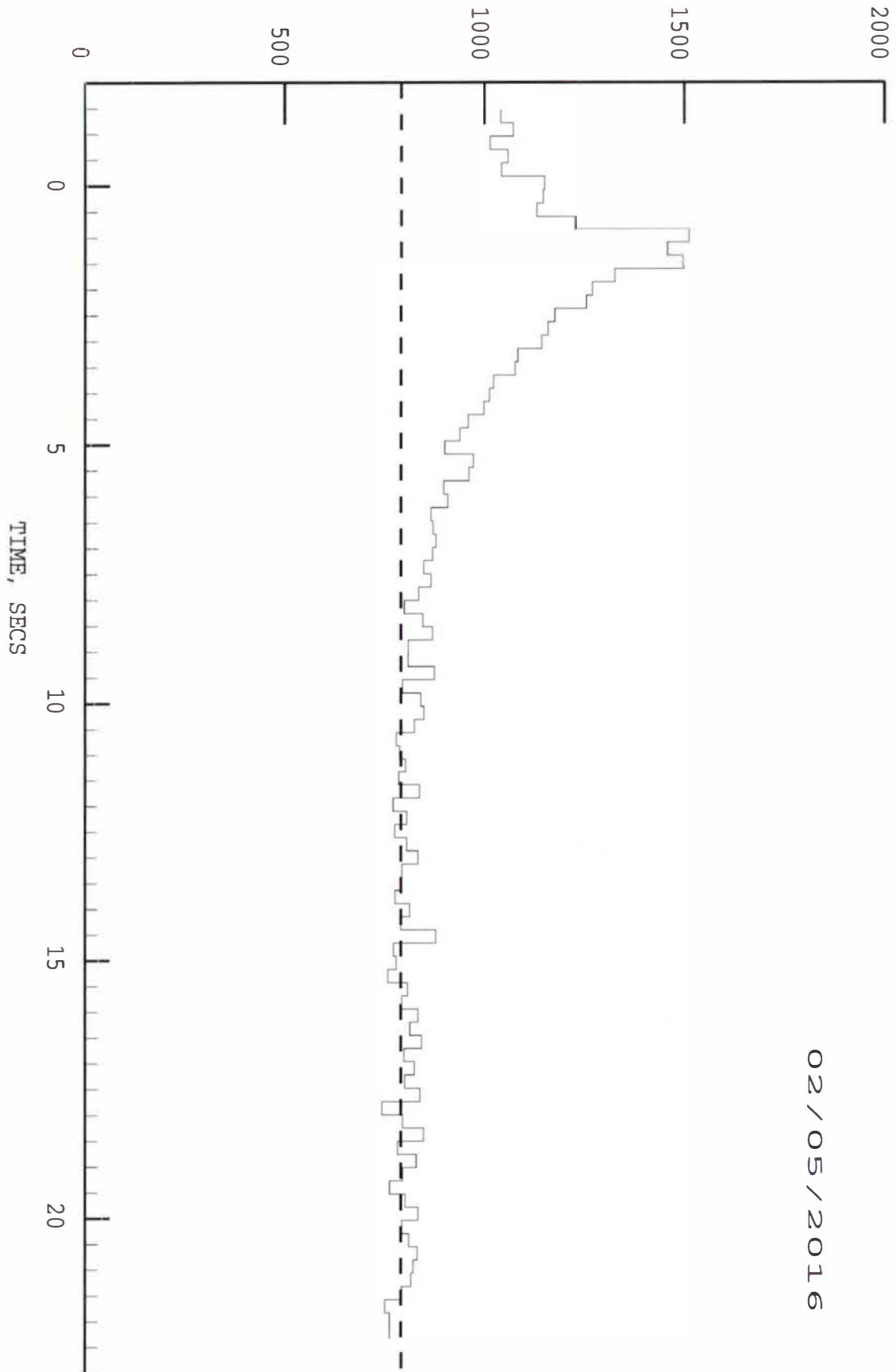
19/04/16

54997.419

15:16:37.419

25- 100 keV

COUNTS/ .256 S



02 / 05 / 2016

Subject: [Ipn] BAT lightcurve for trigger at 160419_1516

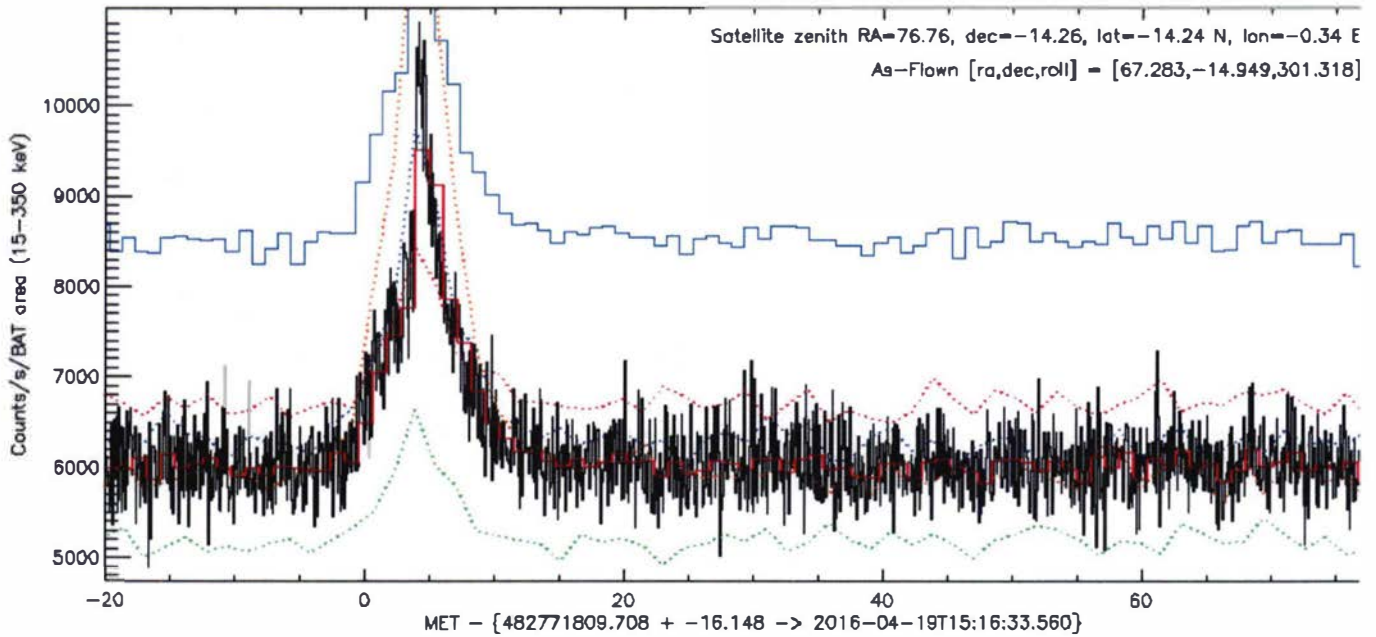
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/19/2016 2:24 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160419_1516.png



```
% /usr/local/bin/swinfo -o 482771809.708
Swift Zenith(RA,dec):      76.76, -14.26
Swift Location(lon,lat,alt): -0.34 E, -14.24 N, 555 km
Time(MET + UTC -> UT):    482771809.708 + -16.148 -> 2016-04-19T15:16:33.560
YYMMDD_SOD:              160419_54993.560      DOY=110
Obs Sequence Number:      00074856049
Obs Target Name:          saa-cold-110-02
Obs Date and Times:       2016-04-19 15:01:45 - 15:22:40
Obs Pointing(ra,dec,roll): 67.283, -14.949, 301.32
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
Ipns@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160419_1516_bat64ms_ipn

87.0 KB

/tmp/swift/160419_1516.png

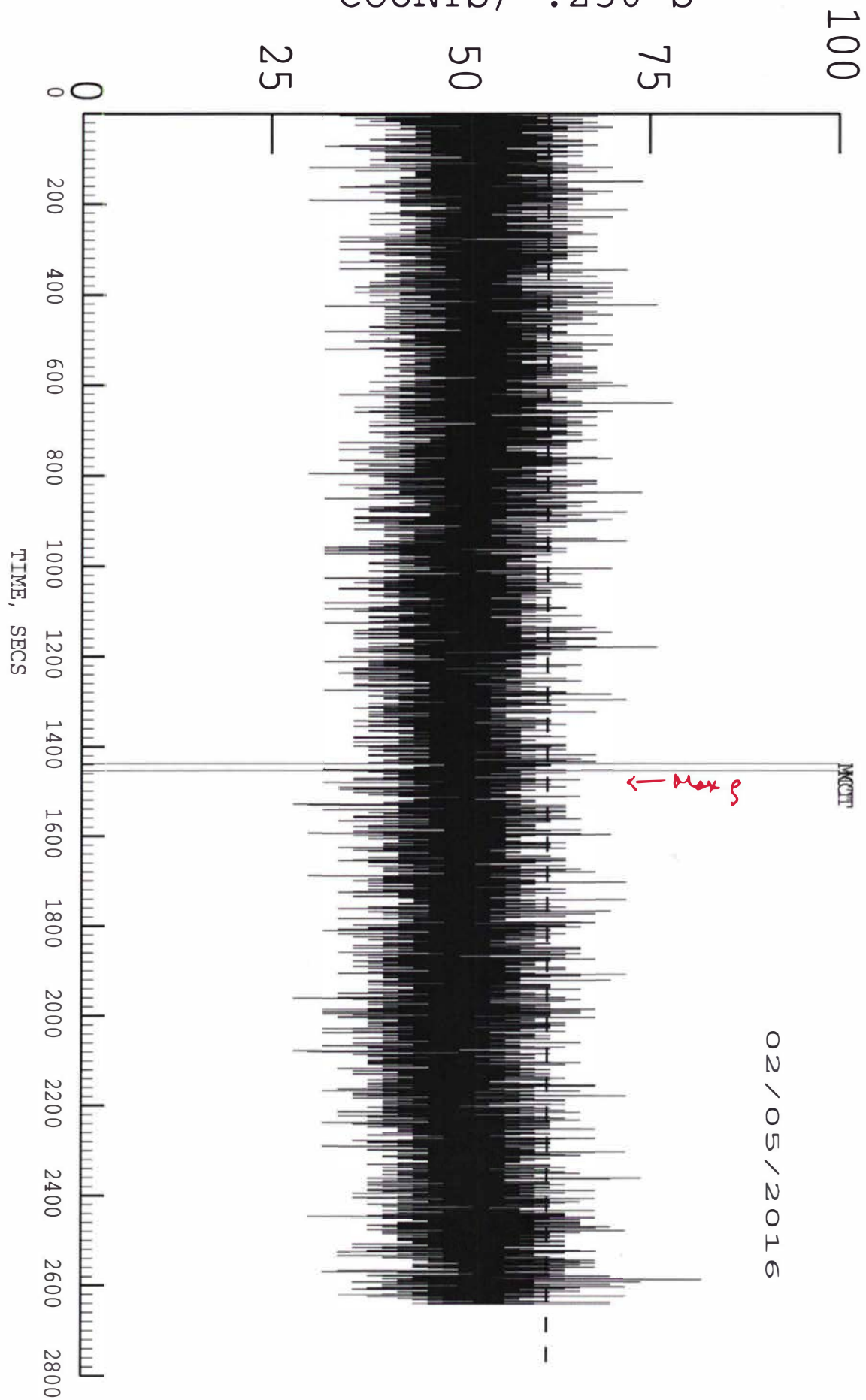
24.1 KB

A

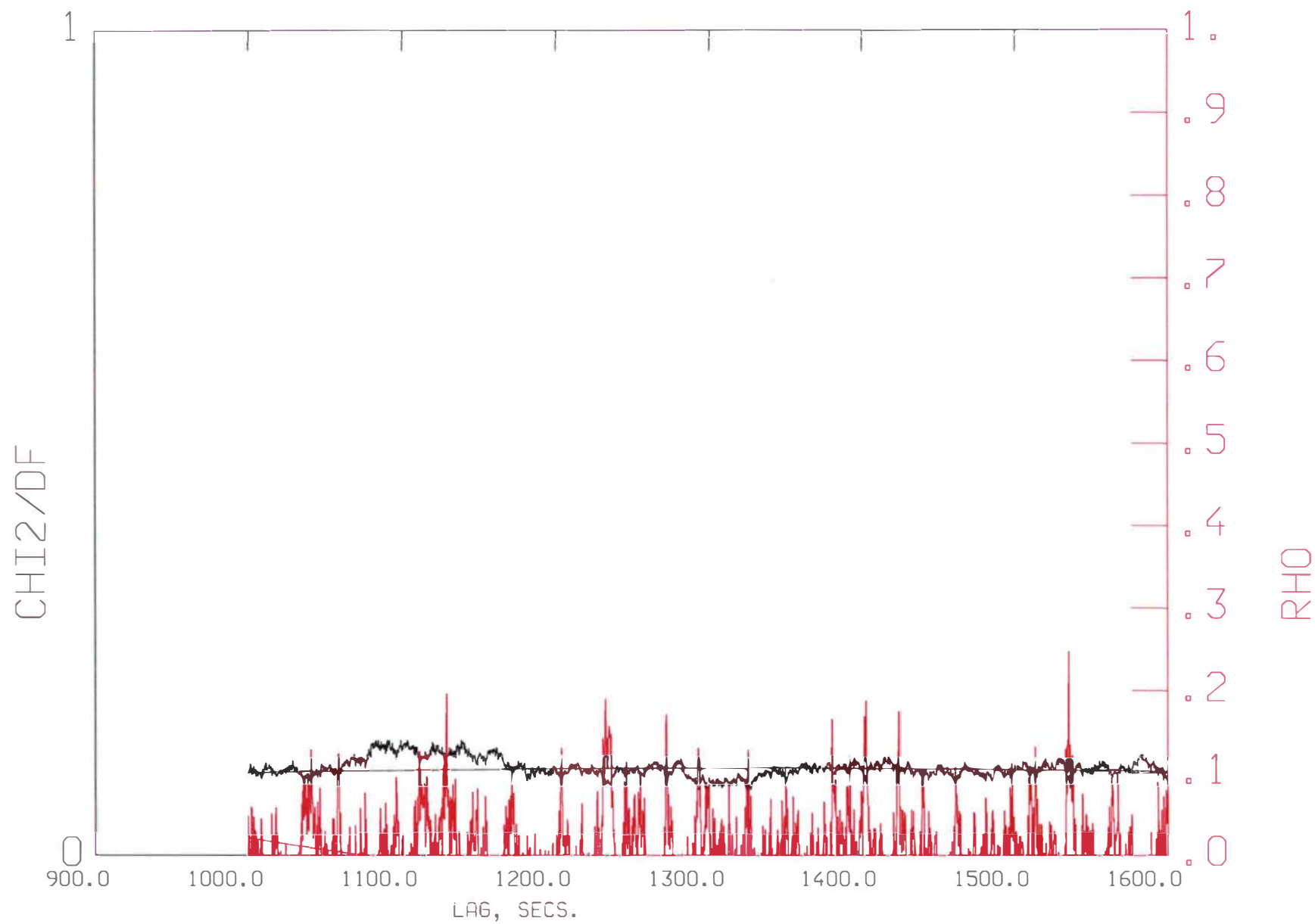
ODYSSEY 19/04/16 53674.186 14:54:34.186

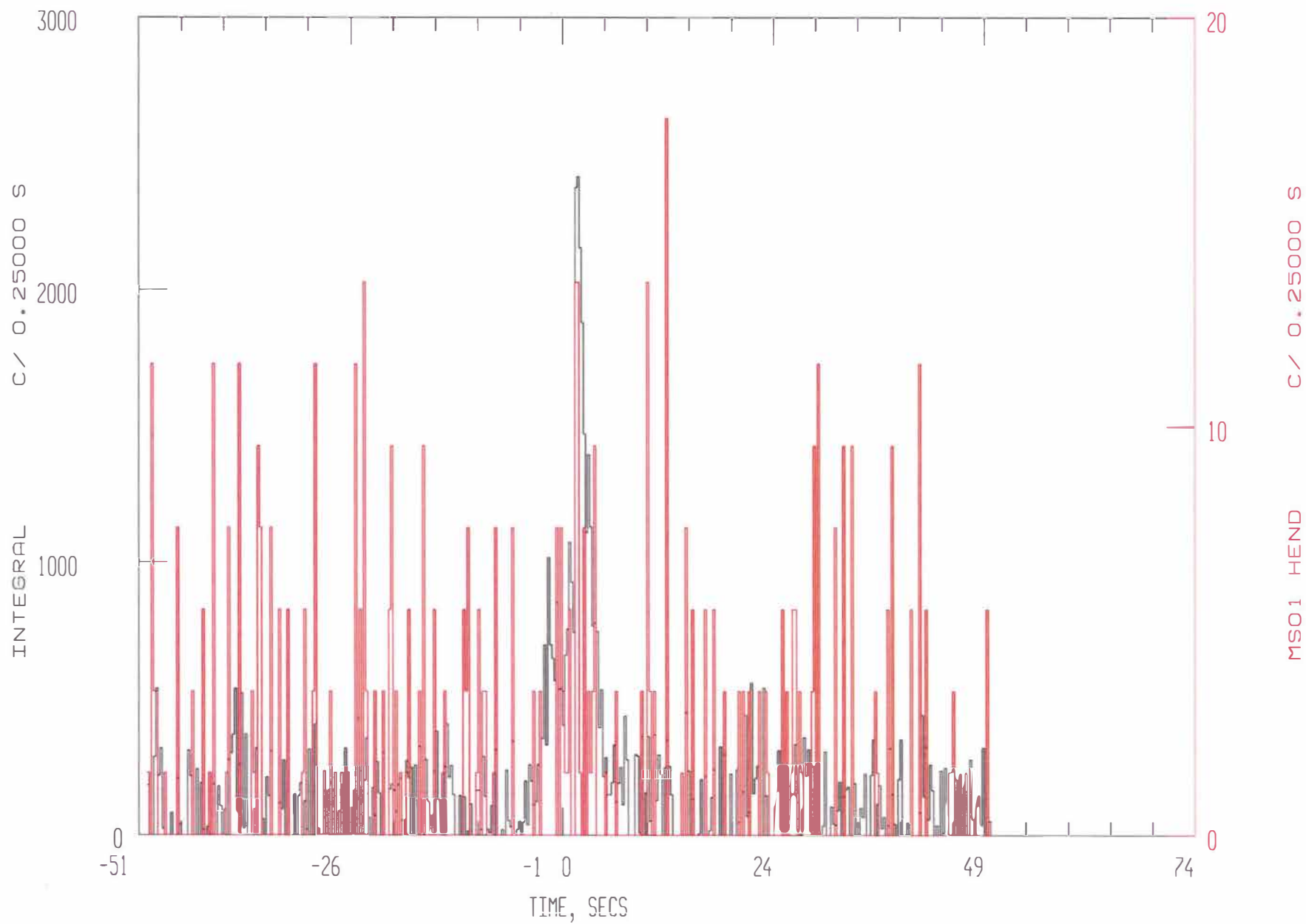
50-3000 keV

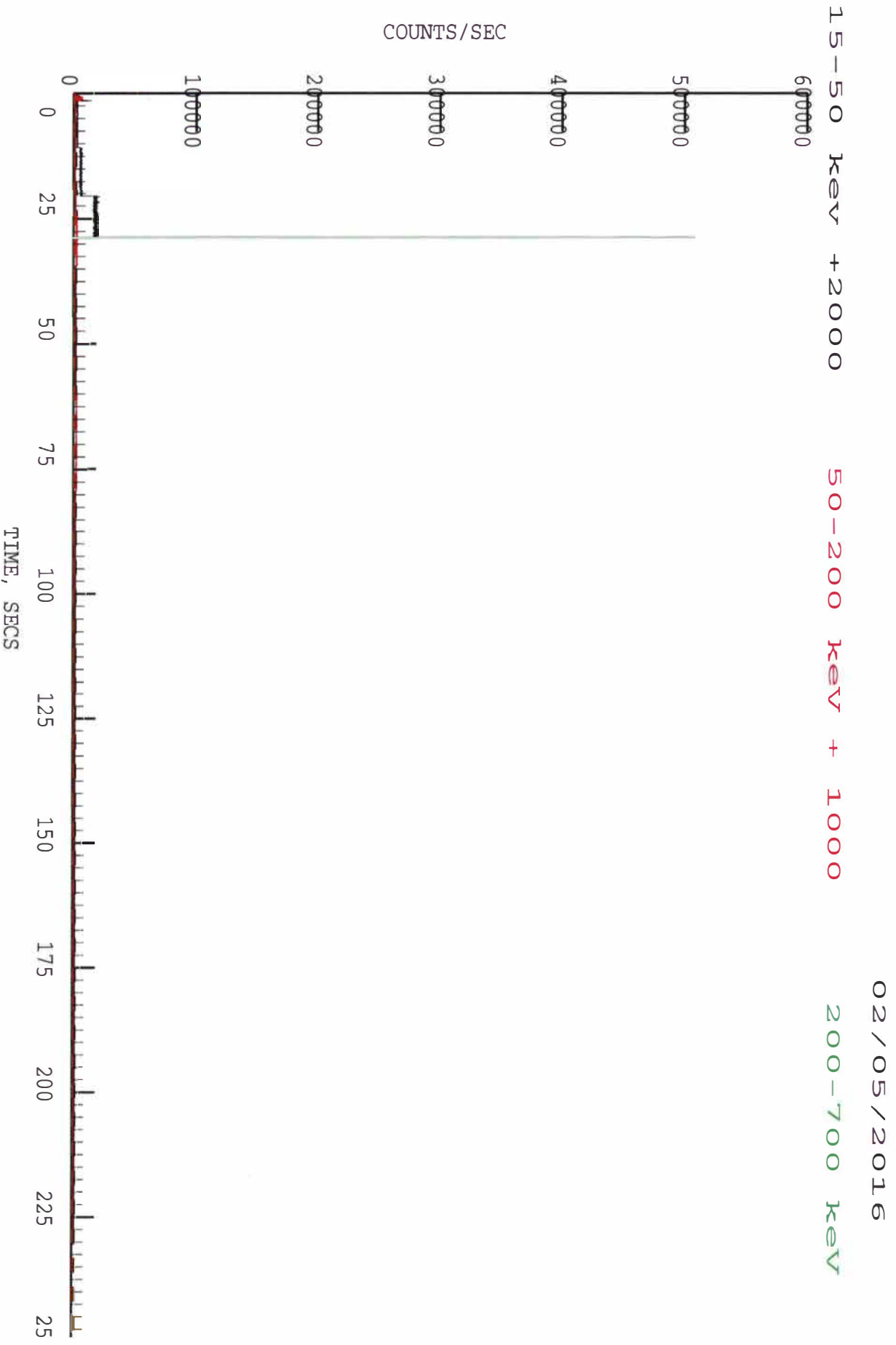
COUNTS/ .250 S



02/05/2016







RHESSI Data for 20160419_1515

No Data Available For This Time Range

Do Not Retry

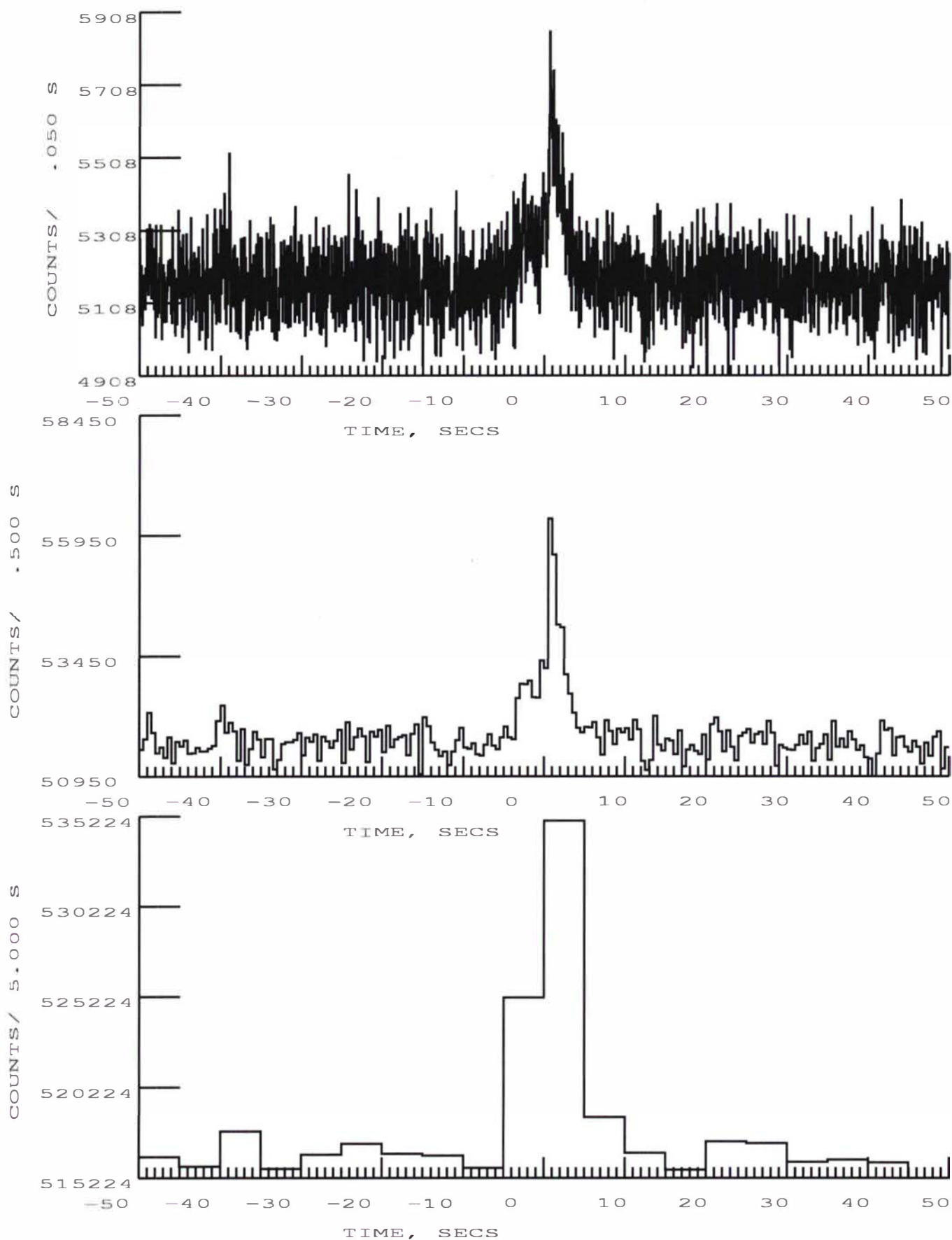
INTEGRAL

19/04/16

54997.000

15:16:37.0

15/07/16



B

Possible GRB

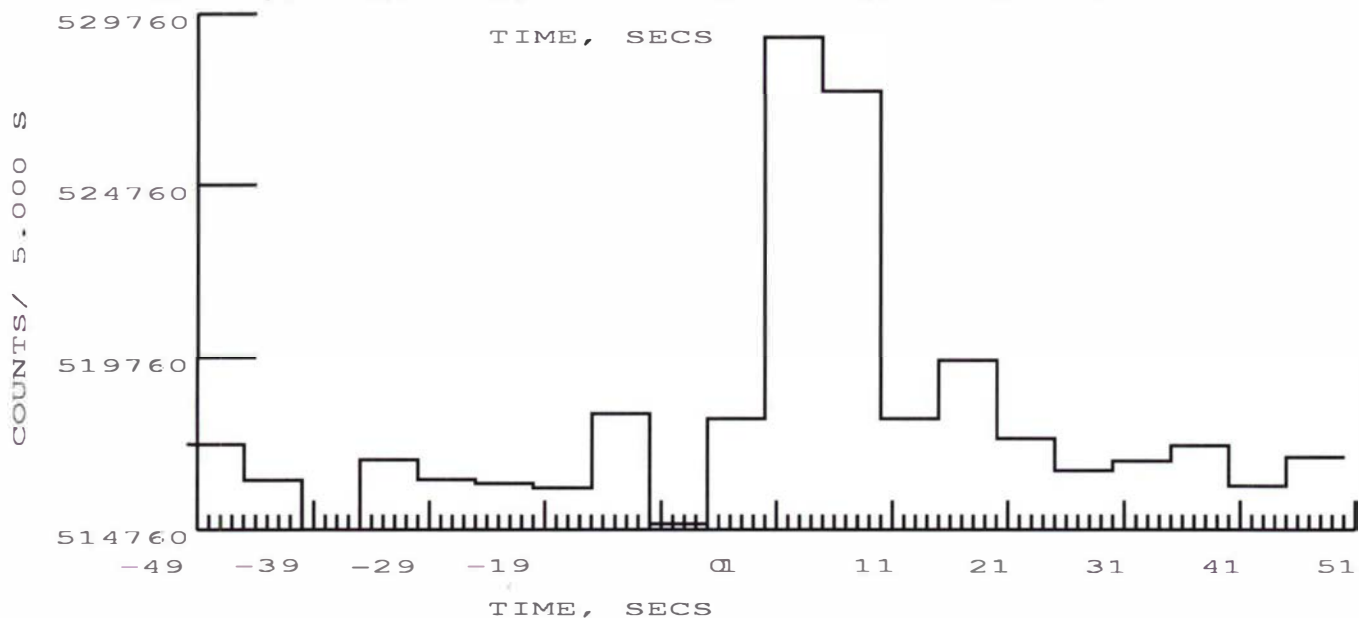
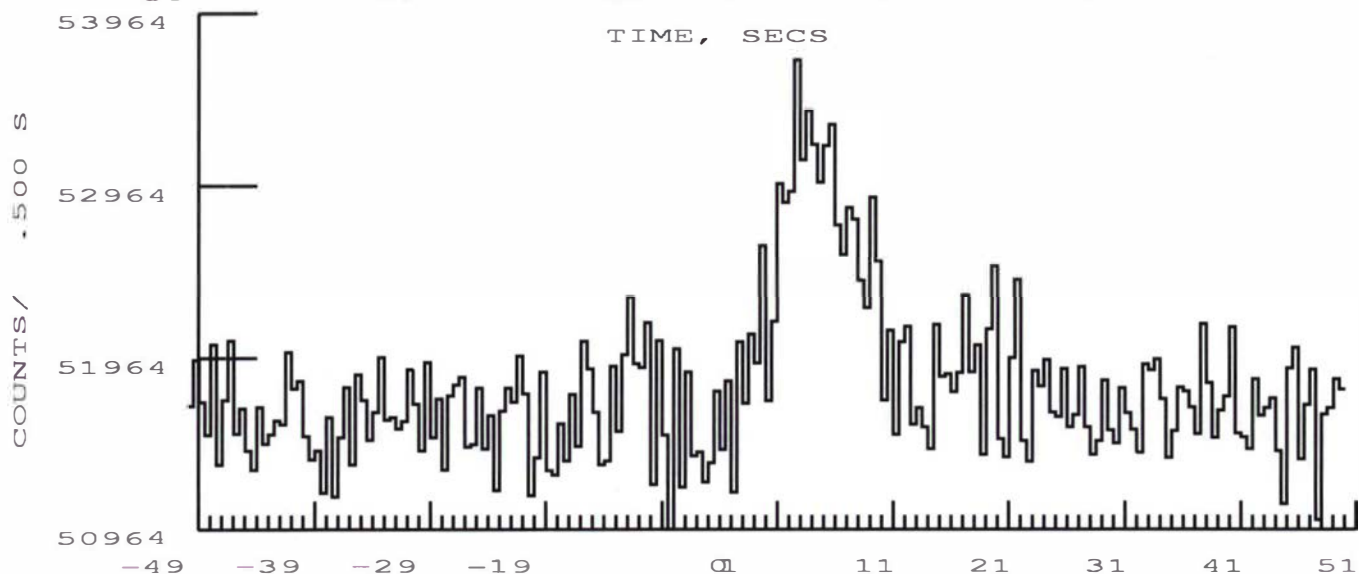
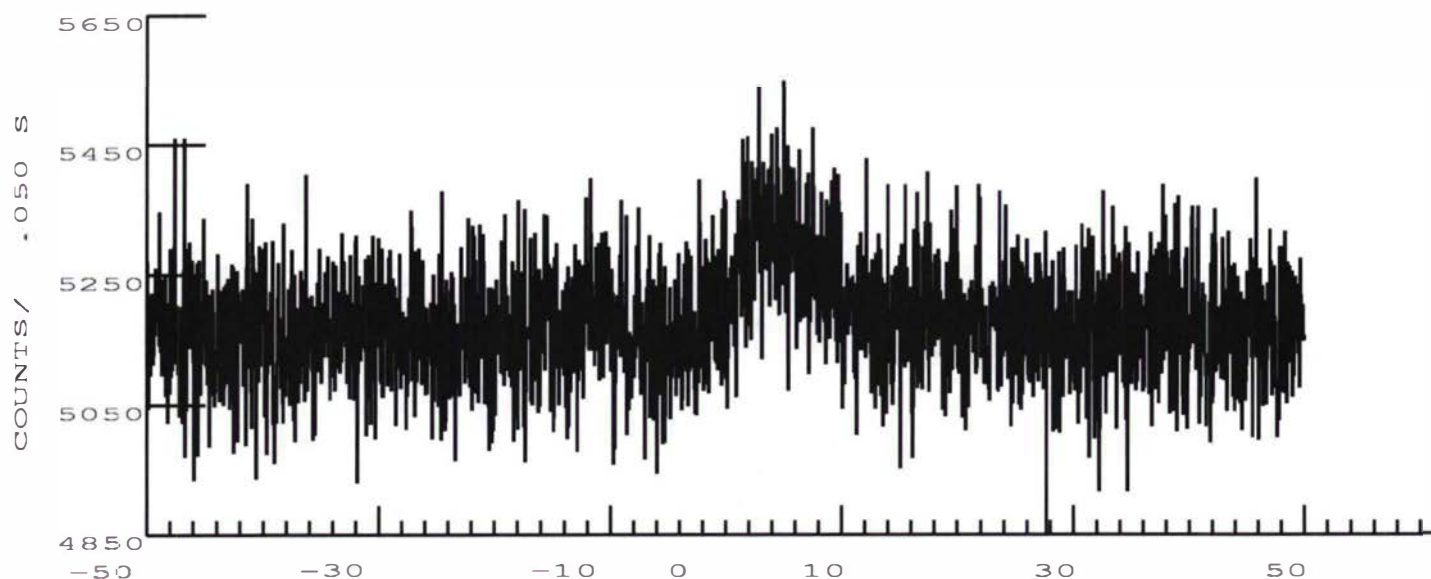
INTEGRAL

19/04/16

76595.000

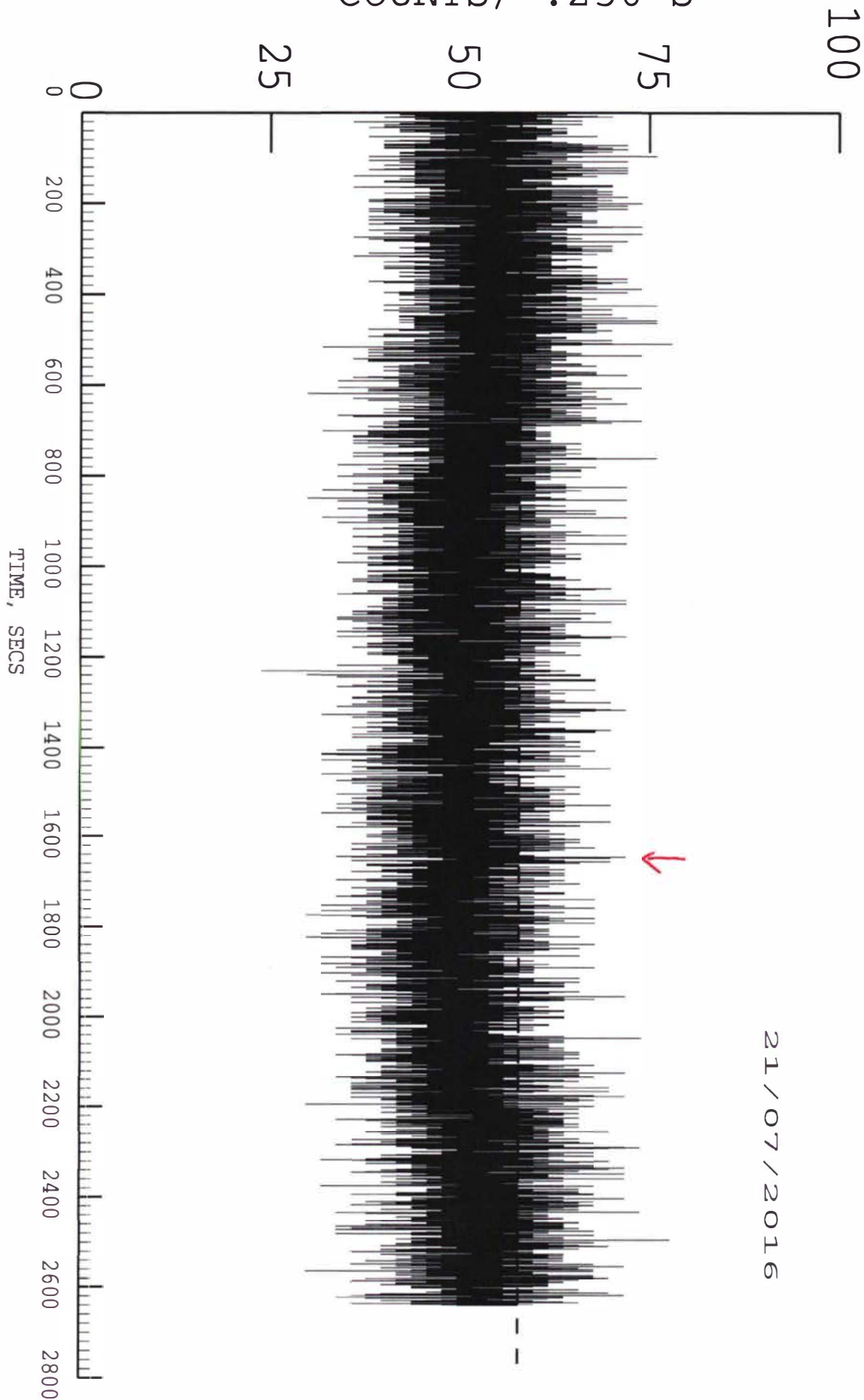
21:16:35.0

03/05/16



ODYSSEY 19/04/16 75273.807 20:54:33.807^B
50-3000 keV

COUNTS/ .250 S



21/07/2016

RHESSI Data for 20160419_2115

No Data Available For This Time Range

No data almost
all of April

Do Not Retry

Subject: [Ipn] BAT lightcurve for trigger at 160419_2116

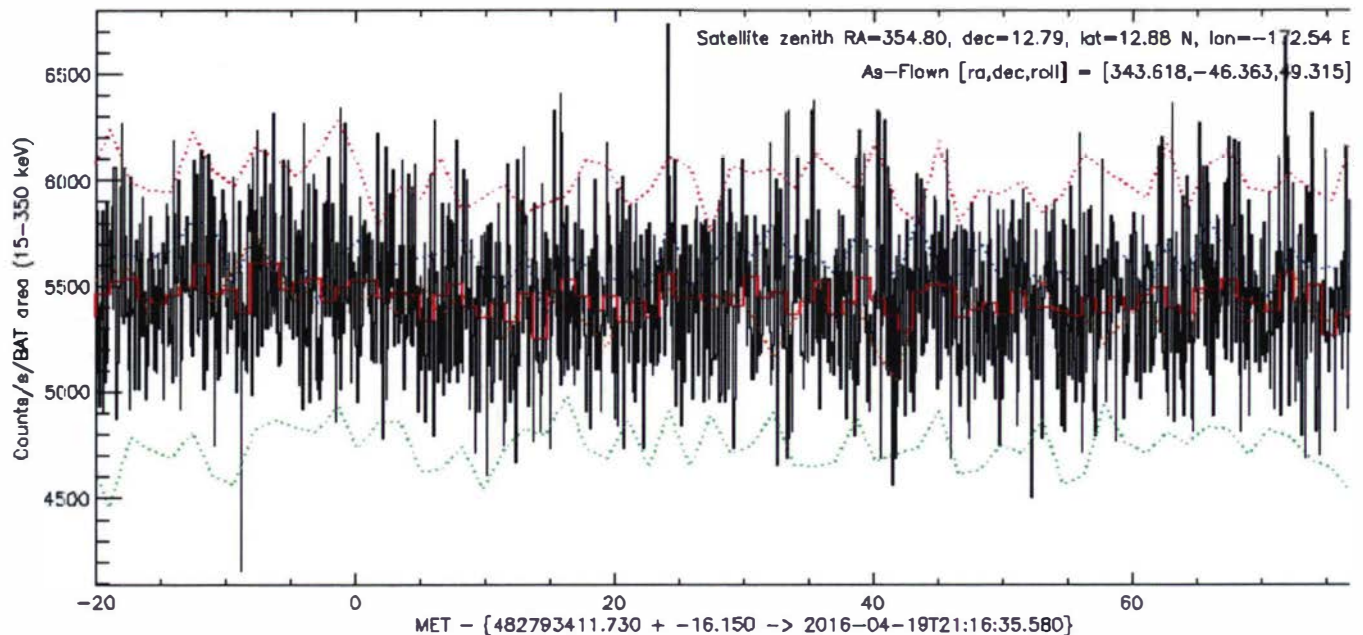
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/19/2016 4:52 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

— /tmp/swift/160419_2116.png —



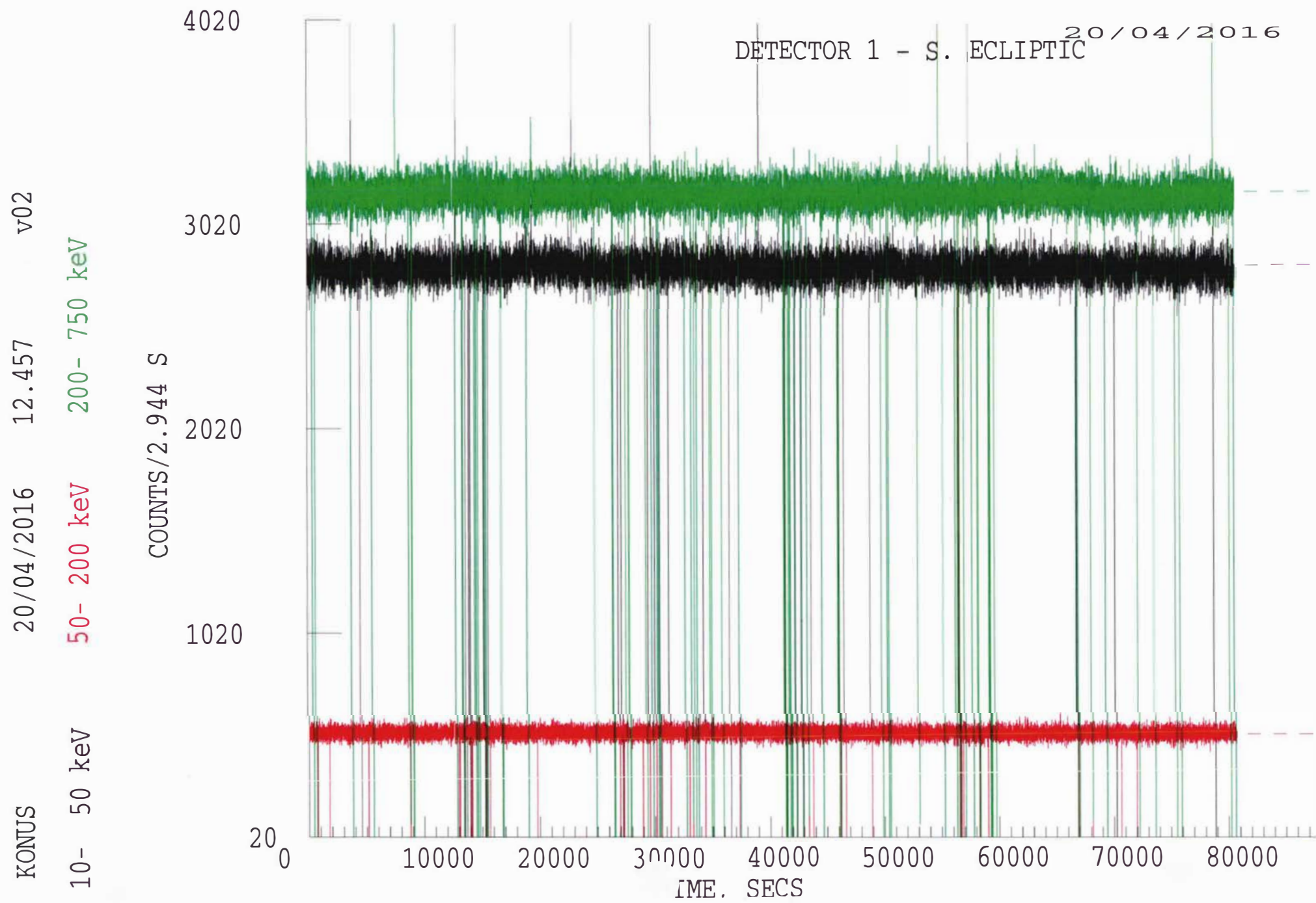
```
% /usr/local/bin/swinfo -o 482793411.730
Swift Zenith(RA,dec):      354.80, 12.79
Swift Location(lon,lat,alt): -172.54 E, 12.88 N, 561 km
Time(MET + UTC -> UT):    482793411.730 + -16.150 -> 2016-04-19T21:16:35.580
YYMMDD_SOD:               160419_76595.580      DOY=110
Obs Sequence Number:      00085801014
Obs Target Name:          SPT-CLJ2254-4620
Obs Date and Times:       2016-04-19   21:14:45 - 21:29:40
Obs Pointing(ra,dec,roll): 343.618, -46.363, 49.31
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

— Attachments: —

/tmp/swift/160419_2116_bat64ms_ipn	87.1 KB
/tmp/swift/160419_2116.png	26.0 KB



KONUS

20/04/2016

12.457

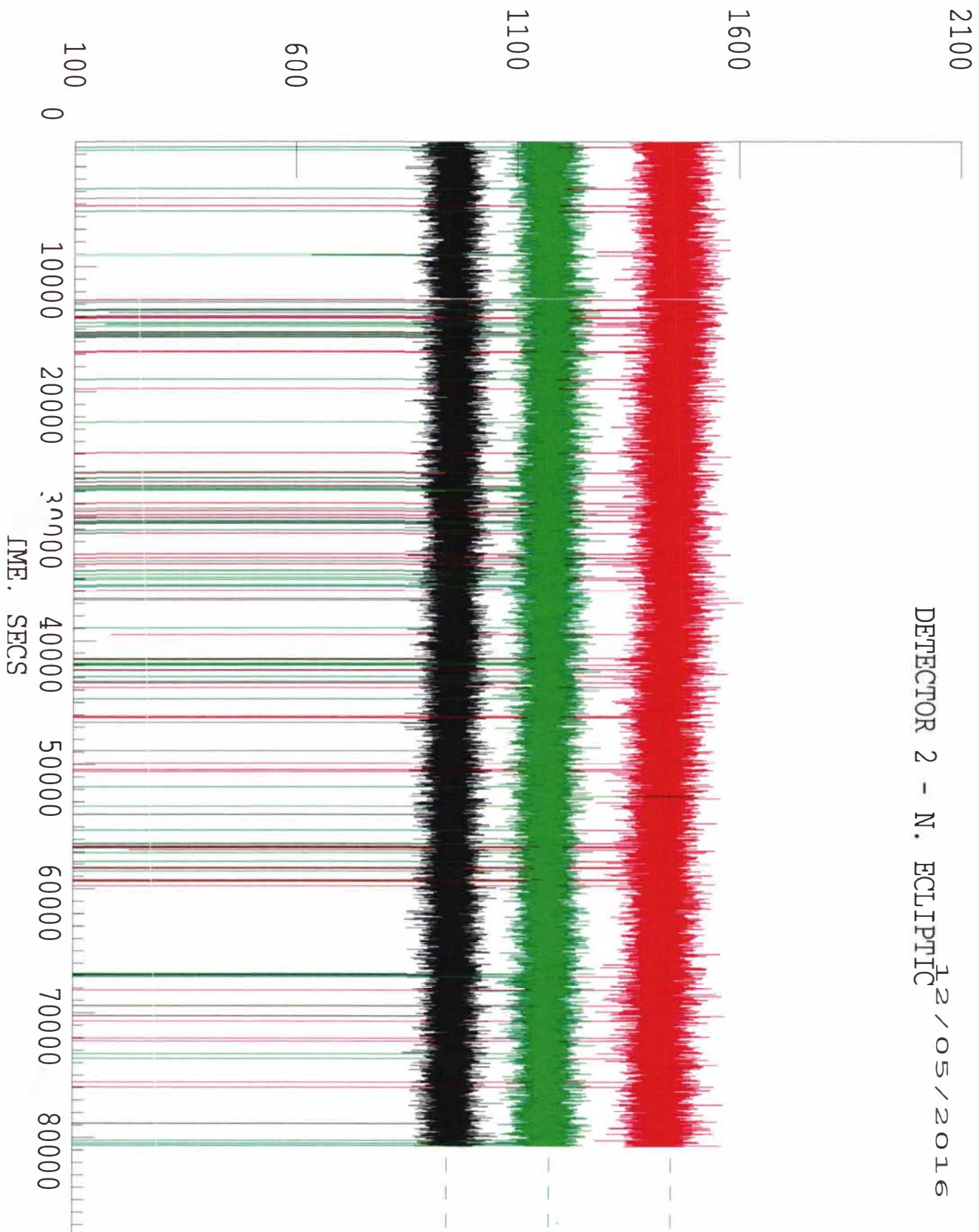
v02

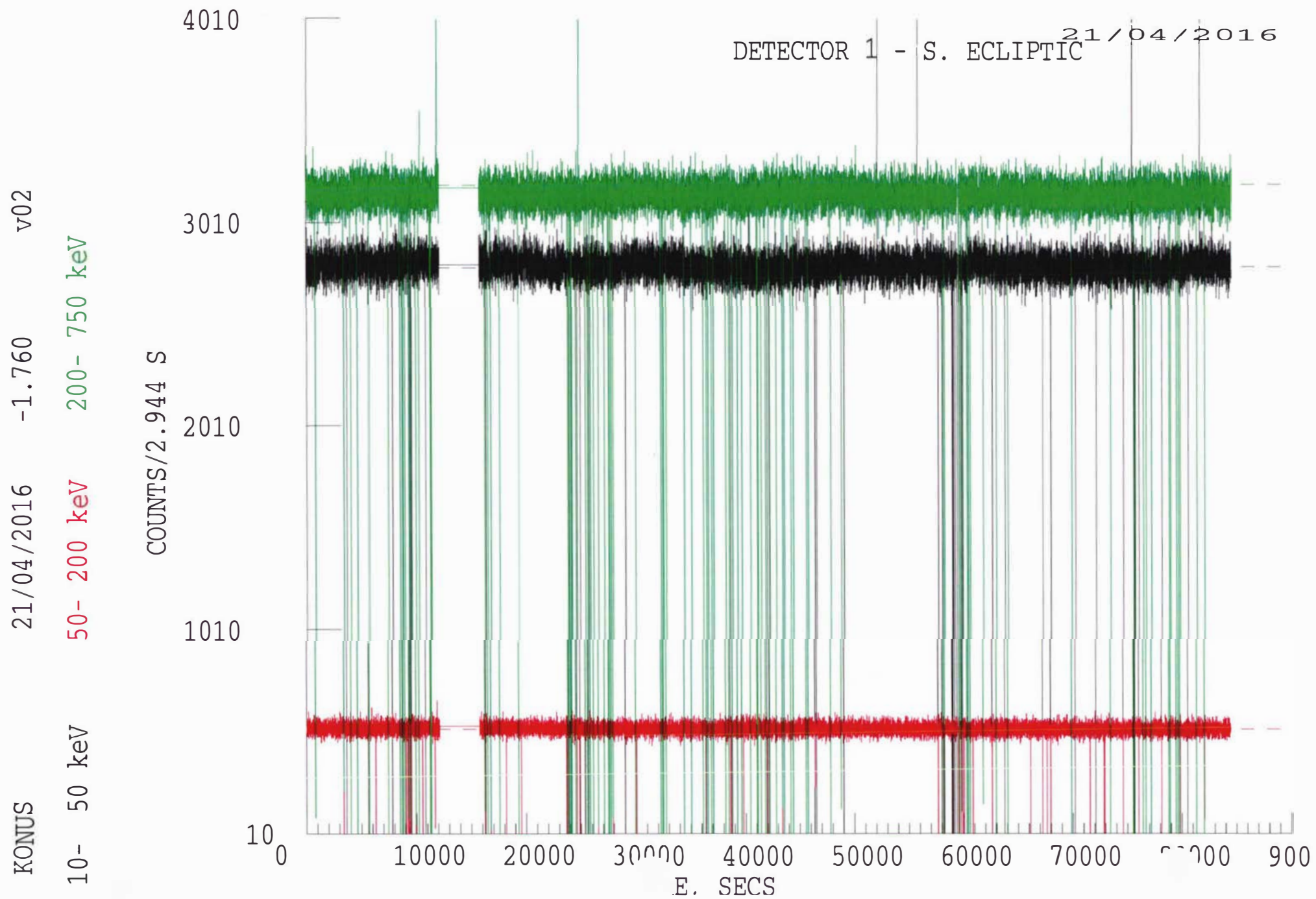
10- 50 keV

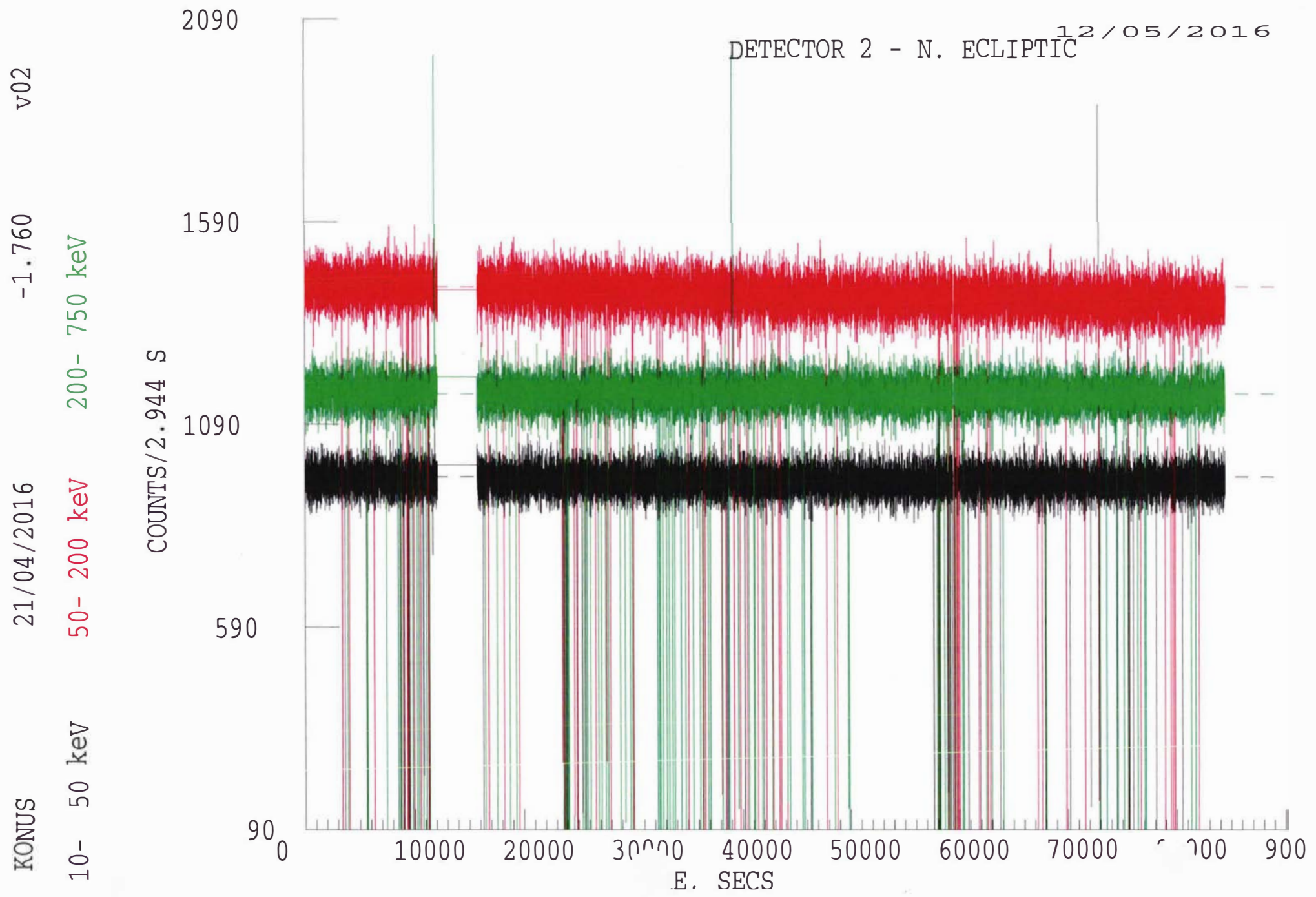
50- 200 keV

200- 750 keV

COUNTS/2.944 S







FERMI

21/04/16

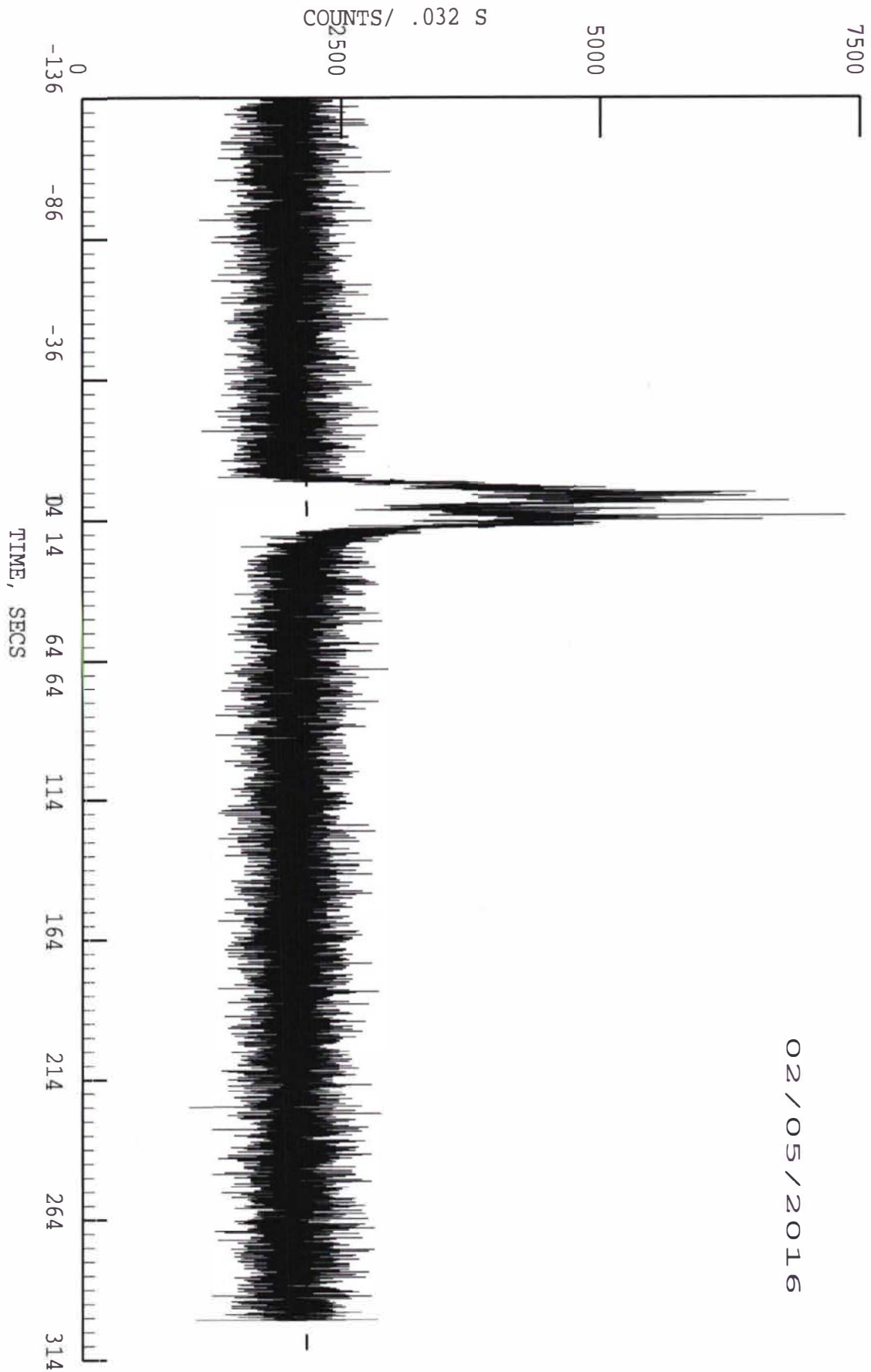
11853.153

03:17:33.153

26- 293 keV

47.2 62.8 1.2

SPI W/O

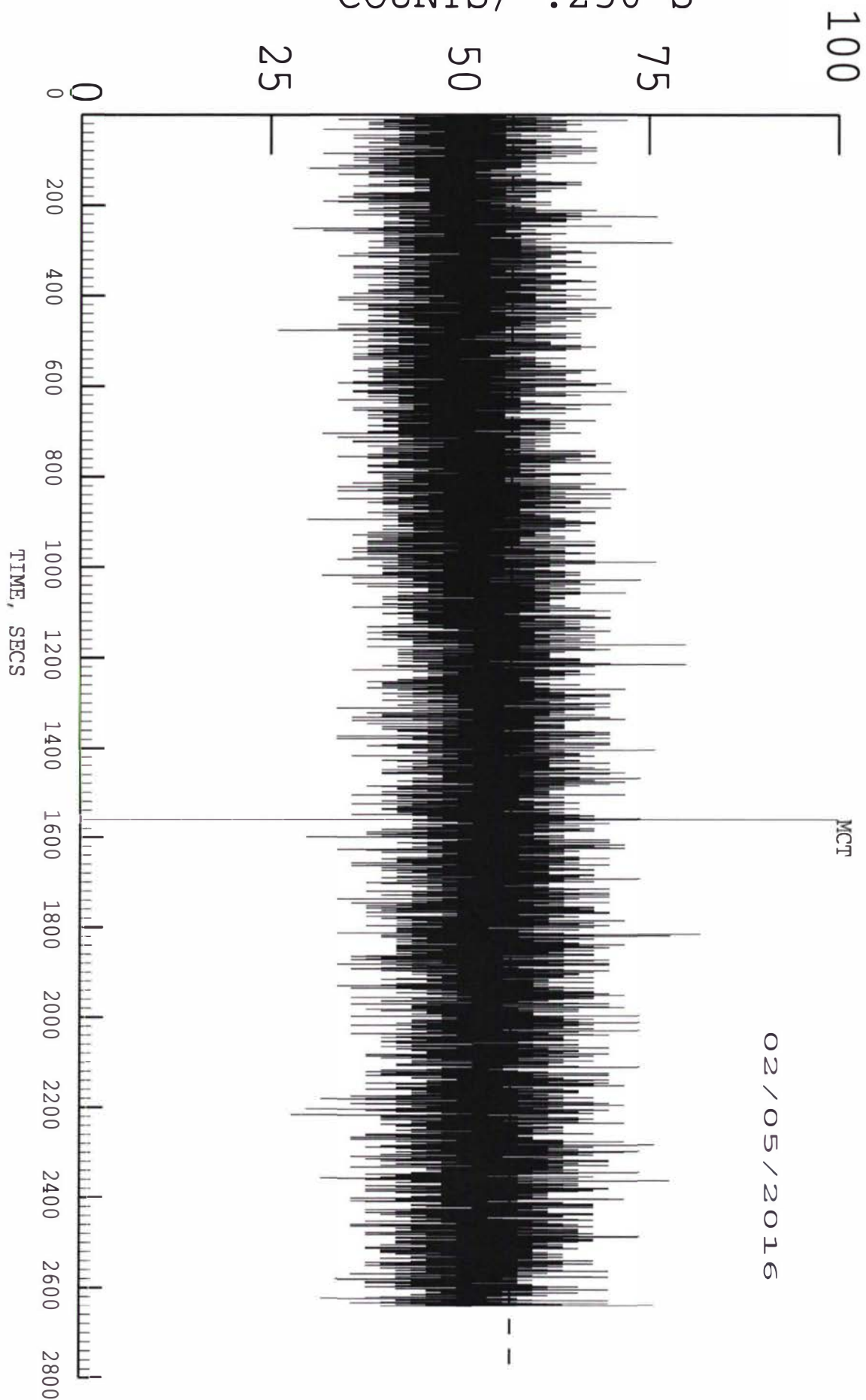


ODYSSEY 21/04/16 10531.906 02:55:31.906

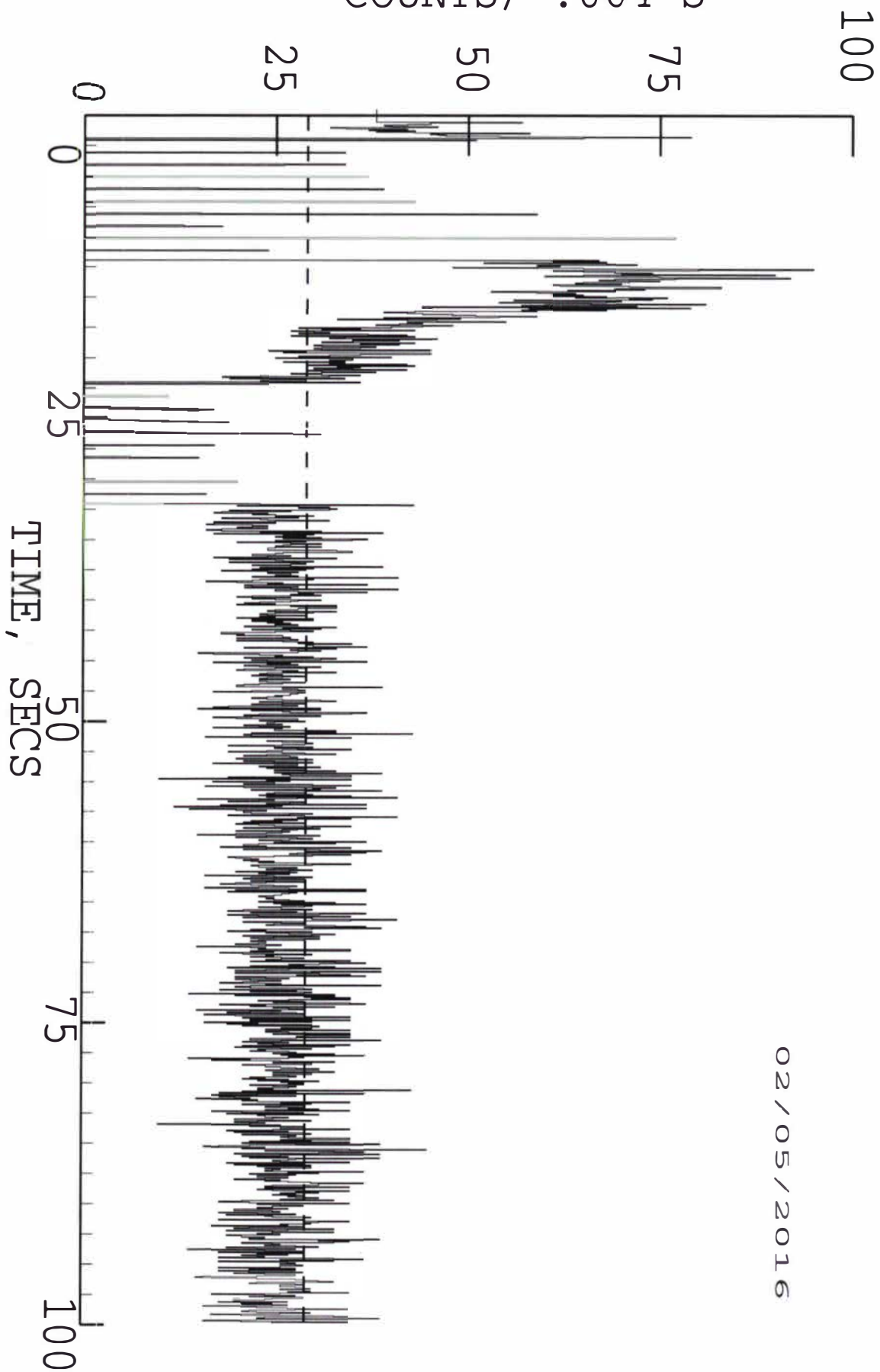
50-3000 keV

COUNTS/ .250 S

Occulted



KONUS 21/04/16 11851.790 03:17:31.790
50- 200 keV
COUNTS/ .064 S



02/05/2016

Subject: [lpn] BAT lightcurve for trigger at 160421_0317

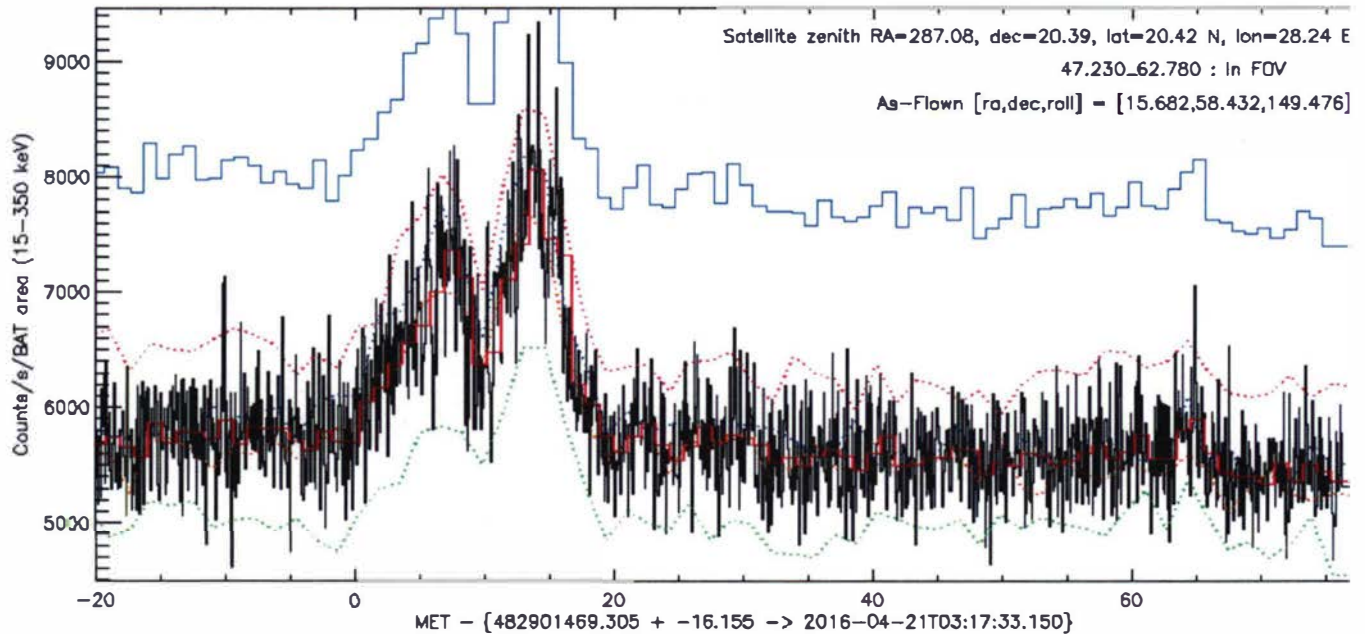
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/21/2016 3:20 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160421_0317.png—



```
% /usr/local/bin/swinfo -o 482901469.305 -s 47.230_62.780
Swift Zenith(RA,dec):      287.08, 20.39
Swift Location(lon,lat,alt): 28.24 E, 20.42 N, 560 km
Time(MET + UTCF -> UT):   482901469.305 + -16.155 -> 2016-04-21T03:17:33.150
YYMMDD_SOD:               160421_11853.150      DOY=112
Obs Sequence Number:       00036232010
Obs Target Name:           MOJ B0059+581
Obs Date and Times:        2016-04-21 03:15:45 - 03:36:48
Obs Pointing(ra,dec,roll): 15.682, 58.432, 149.48
47.230_62.780_imageloc (boresight_dist, angle): (16, -179)
47.230_62.780_exposure (cm2 cos adjusted): 4196
47.230_62.780_altitude: 29 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipnp mailing list
lpn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/lpn>

Attachments:

/tmp/swift/160421_0317.png	25.8 KB
/tmp/swift/160421_0317_bat64ms_lpn	76.8 KB

v02

78.232

22/04/2016

KONUS

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4020

3020

2020

1020

20
0

5000

10000

15000

20000

25000

30000

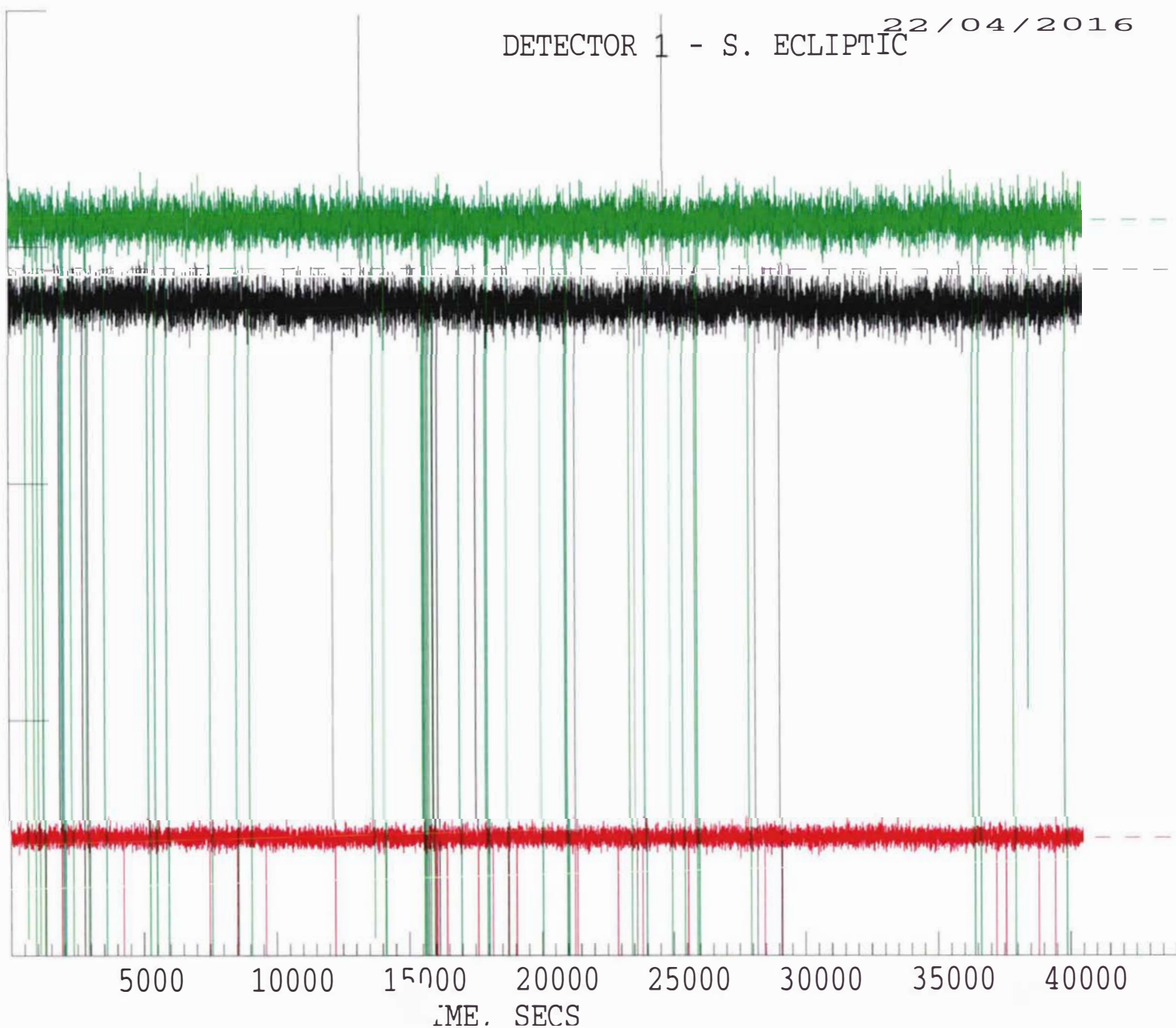
35000

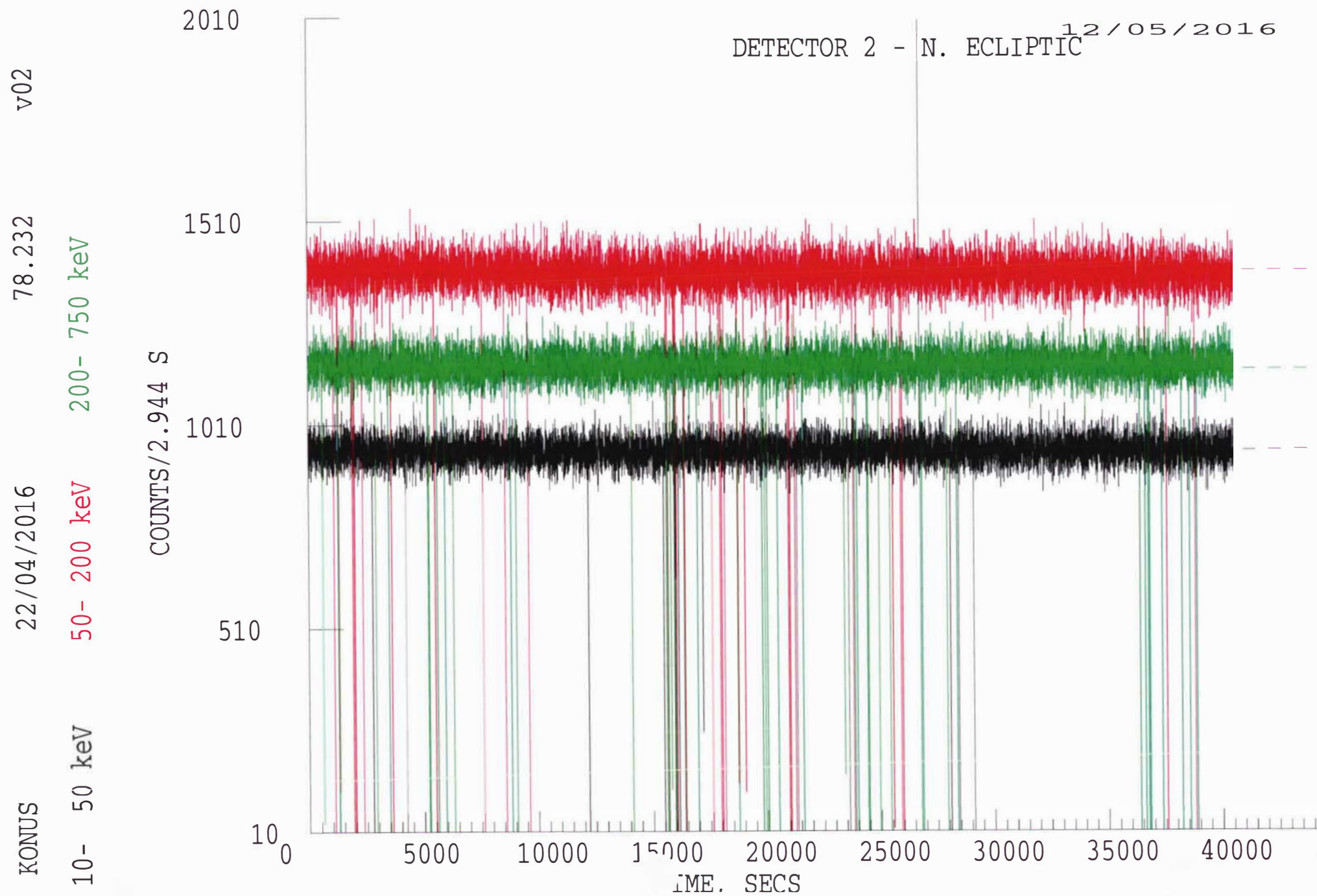
40000

TIME. SECS

DETECTOR 1 - S. ECLIPTIC

22/04/2016





FERMI

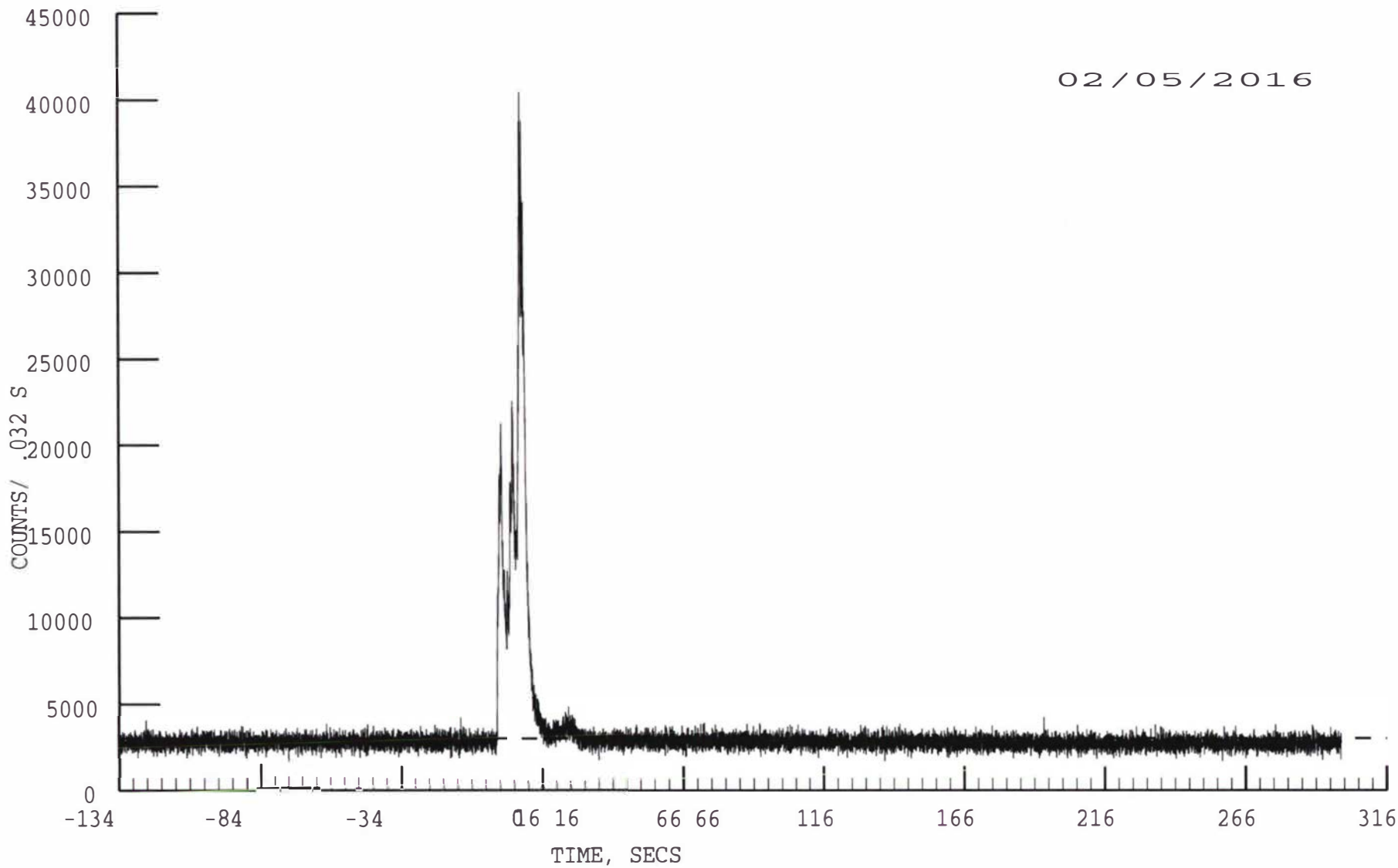
22/04/16

43140.807

11:59:00.807

26- 293 keV

41.3 -58.2 1

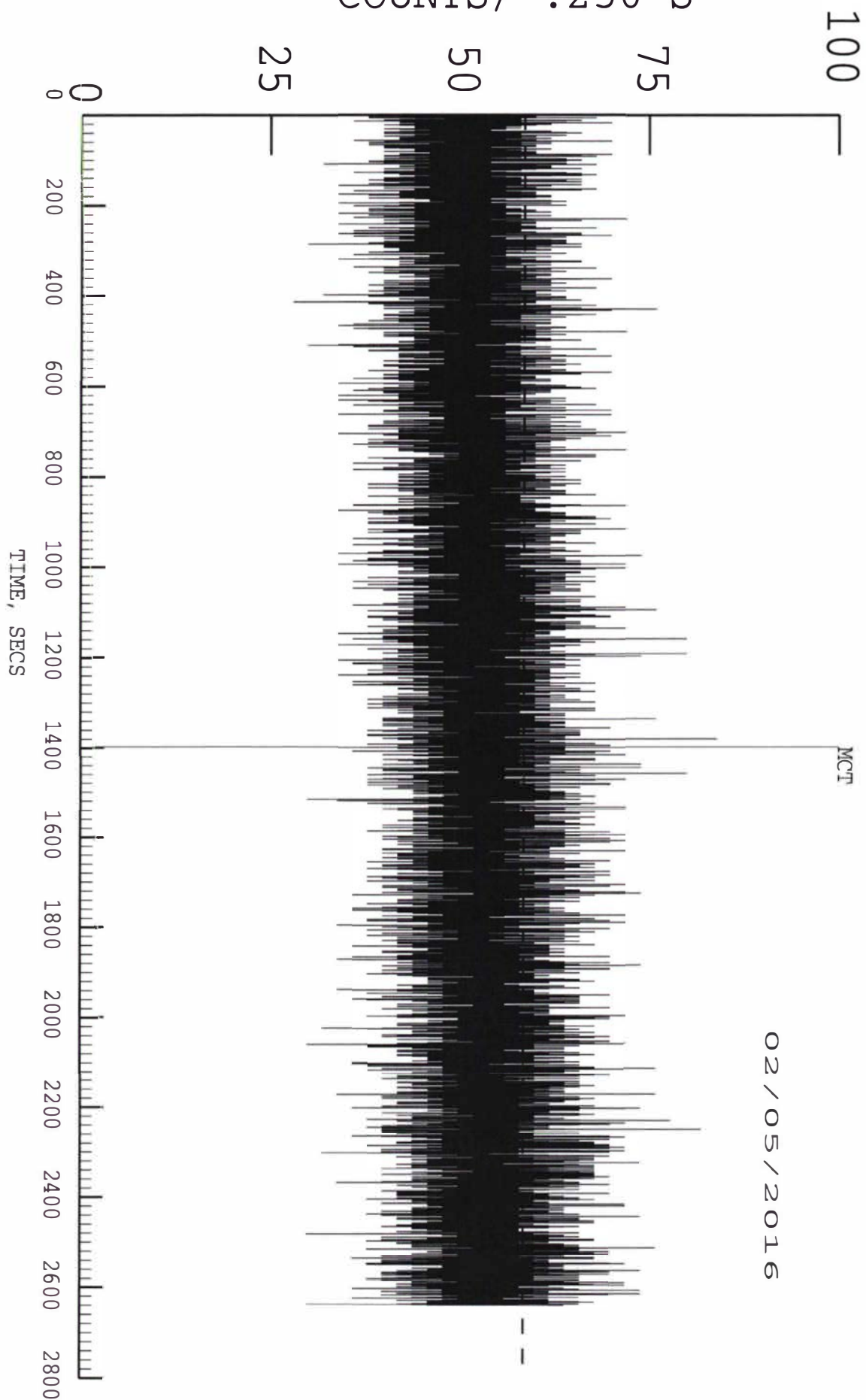


ODYSSEY 22/04/16 41789.835 11:36:29.835

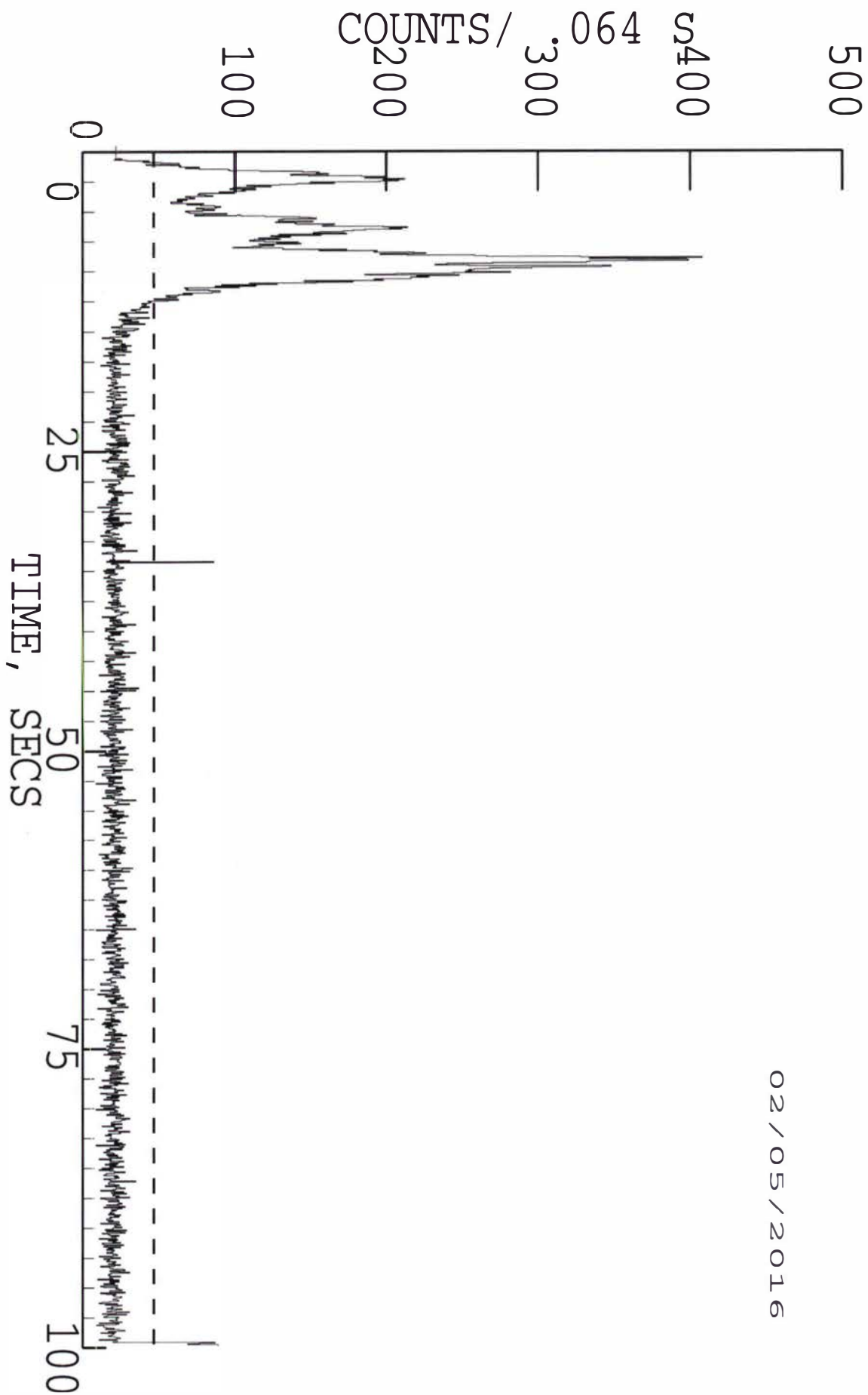
50-3000 keV

COUNTS/ .250 S

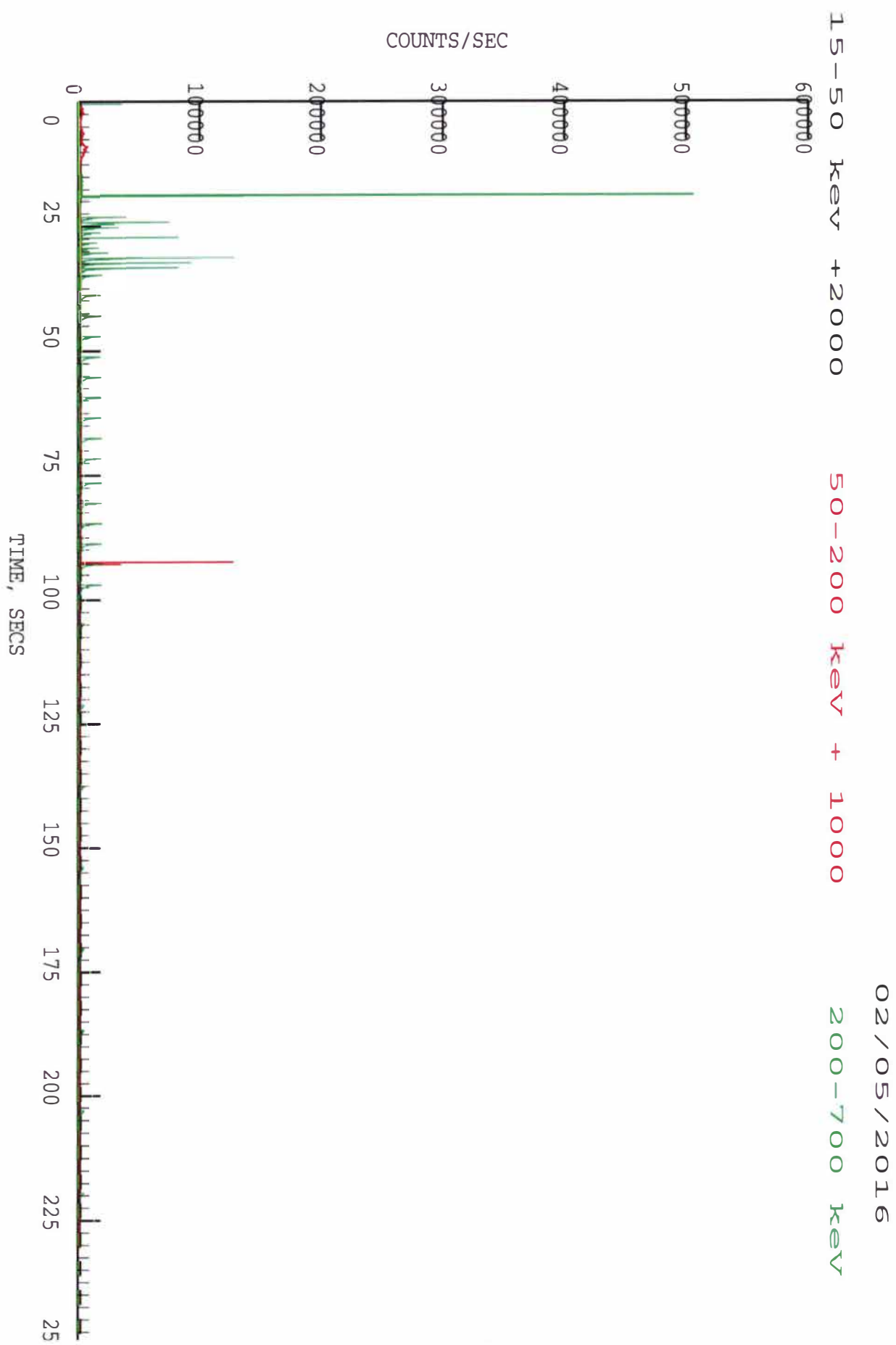
Occulted



KONUS 22/04/16 43139.194 11:58:59.194
50- 200 keV



02/05/2016



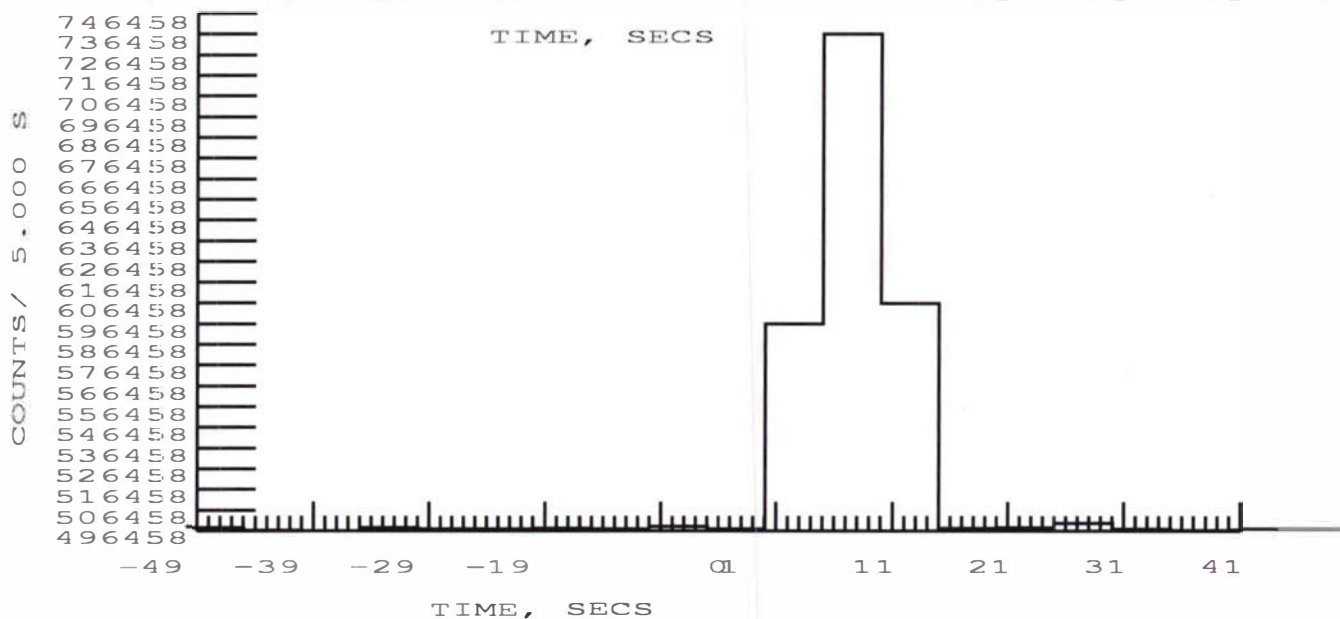
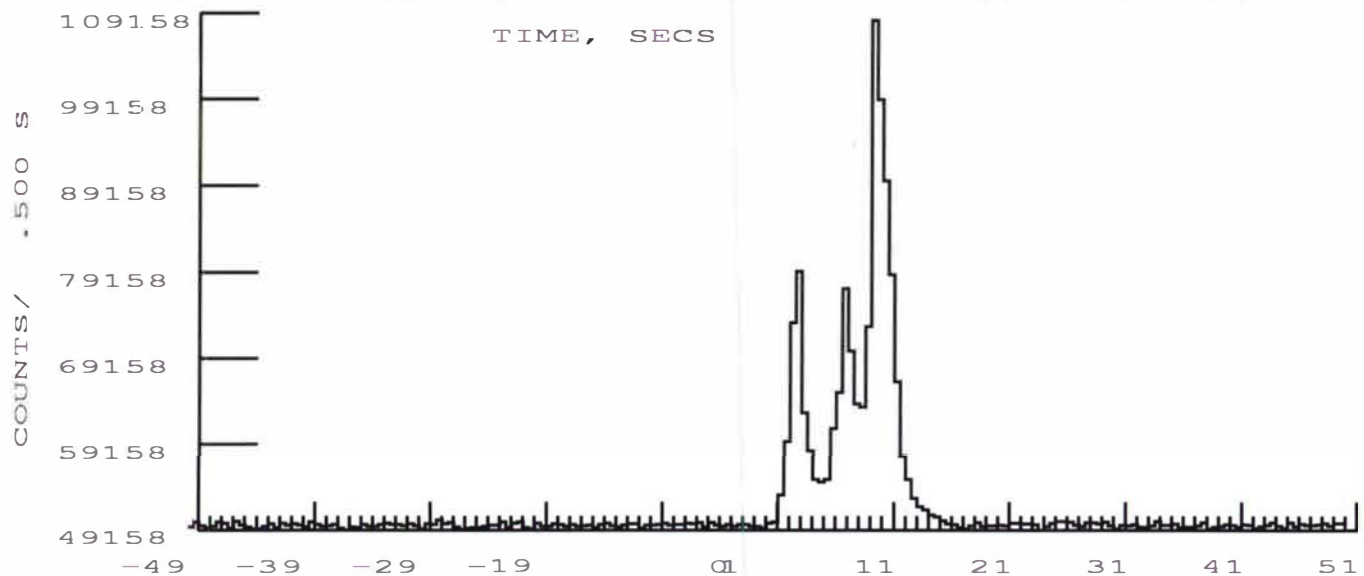
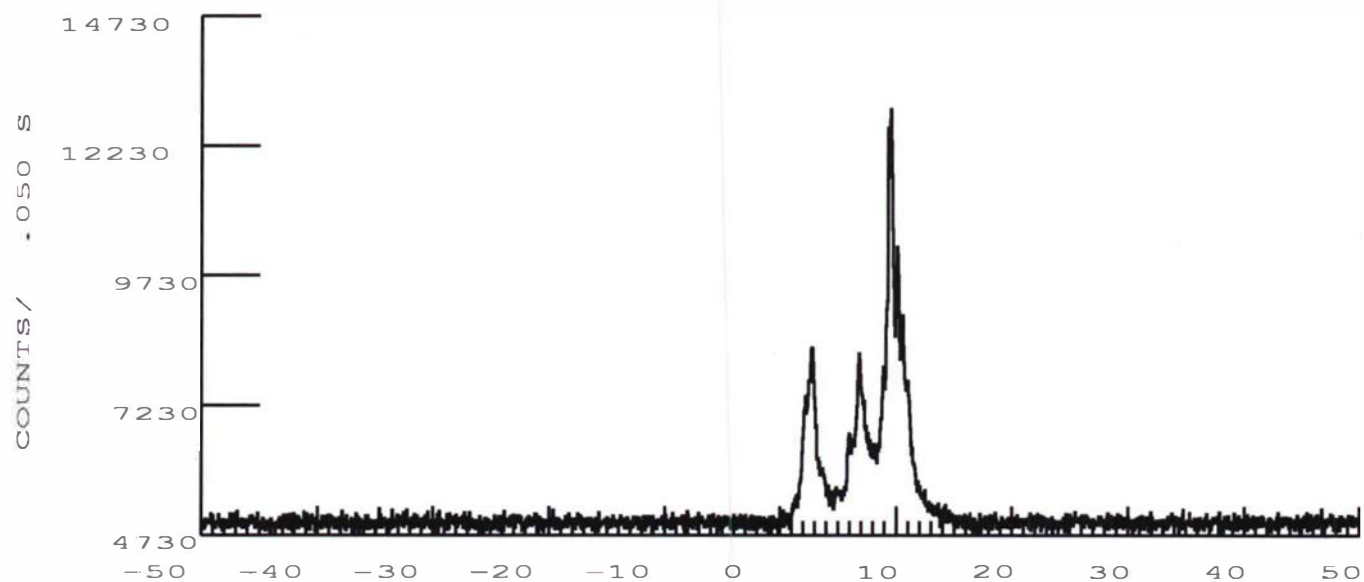
INTEGRAL

22/04/16

43140.000

11:59:00.0

15/07/16



Subject: [Ipn] BAT lightcurve for trigger at 160422_1158

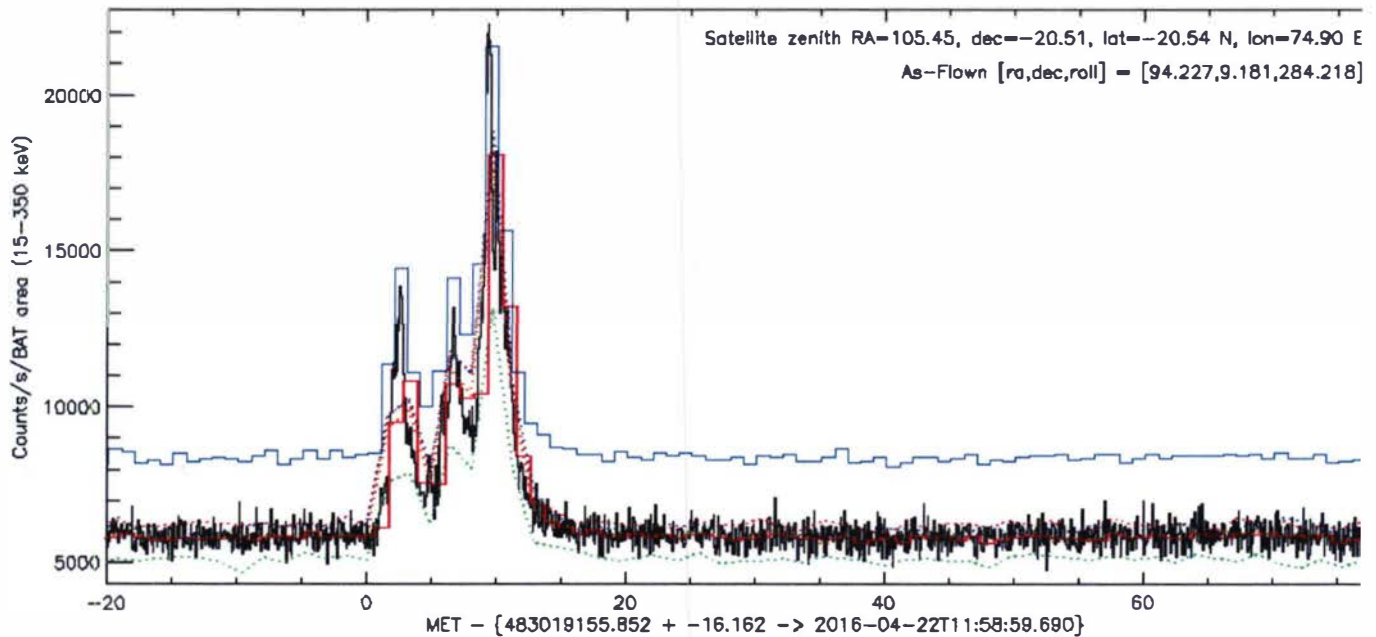
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/23/2016 10:24 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_tearn@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/sw/ft/160422_1158.png



```
% /usr/local/bin/swinfo -o 483019155.852
Swift Zenith(RA,dec):      105.45, -20.51
Swift Location(lon,lat,alt): 74.90 E, -20.54 N, 556 km
Time(MET + UTC -> UT):    483019155.852 + -16.162 -> 2016-04-22T11:58:59.690
YYMMDD_SOD:               160422_43139.690      DOY=113
Obs Sequence Number:      00030812167
Obs Target Name:          4U 0614+091
Obs Date and Times:       2016-04-22 11:36:45 - 12:03:39
Obs Pointing(ra,dec,roll): 94.227, 9.181, 284.22
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
Ipnl@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:

/tmp/swift/160422_1158.png	18.8 KB
/tmp/swift/160422_1158_bat64ms_ipn	87.1 KB

From vxw@capella2.gsfc.nasa.gov Fri Apr 22 04:59:22 2016
X-Barracuda-Envelope-From: vxw@capella2.gsfc.nasa.gov
X-Barracuda-Effective-Source-IP: capella2.gsfc.nasa.gov[128.183.96.236]
v-Barracuda-Apparent-Source-IP: 128.183.96.236
-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
Date: Fri, 22 Apr 2016 07:59:21 -0400
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
To: khurley@ssl.berkeley.edu
Subject: GCN/CALET_GBM_FLT_LIGHTCURVE
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
X-Barracuda-Scan-Msg-Size: 931
X-Barracuda-BRTS-Status: 1

TITLE: GCN/CALET NOTICE
NOTICE_DATE: Fri 22 Apr 16 11:59:20 UT
NOTICE_TYPE: CALET GBM Flight Lightcurve
POINT_RA: 145.63d {+09h 42m 32s} (J2000),
POINT_DEC: +12.39d {+12d 23' 38"} (J2000),
TRIGGER_NUM: 1145361199
TRIGGER_DATE: 17500 TJD; 113 DOY; 16/04/22
TRIGGER_TIME: 43148.28 SOD {11:59:08.28} UT
TRIGGER_DET: 0 0 1 (HXM1 HXM2 SGM)
SIGNIFICANCE: 9.30 [sigma]
FOREGND_DUR: 1.00 [sec]
BACKGND_DUR1: 16.00 [sec]
ENERGY_BAND: 40-230 [keV]
SC_LON_LAT: 115.09,12.31 [deg]
LC_URL: http://cgbm.calet.jp/cgbm_trigger/flight//1145361199/index.html
COMMENTS: CALET-GBM Flight Lightcurve.
MMENTS:
MMENTS: NOTE: This CALET_GBM_FLT_LC event is temporally(8.0<100sec) coi
COMMENTS: The LC_URL file will not be created until ~15 min after the tri

From vxw@capella2.gsfc.nasa.gov Fri Apr 22 11:57:44 2016
X-Barracuda-Envelope-From: vxw@capella2.gsfc.nasa.gov
X-Barracuda-Effective-Source-IP: capella2.gsfc.nasa.gov [128.183.96.236]
X-Barracuda-Apparent-Source-IP: 128.183.96.236
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
Date: Fri, 22 Apr 2016 14:57:42 -0400
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
To: khurley@ssl.berkeley.edu
Subject: GCN/FERMI LAT OFFLINE POSITION
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
X-Barracuda-Scan-Msg-Size: 1448
X-Barracuda-BRTS-Status: 1

TITLE: GCN/FERMI NOTICE
NOTICE_DATE: Fri 22 Apr 16 18:57:41 UT
NOTICE_TYPE: Fermi-LAT Offline Position
TRIGGER_NUM: 483019144
GRB_RA: 42.050d {+02h 48m 12s} (J2000),
42.162d {+02h 48m 39s} (current),
41.707d {+02h 46m 50s} (1950)
GRB_DEC: -57.900d {-57d 53' 59"} (J2000),
-57.833d {-57d 49' 56"} (current),
-58.107d {-58d 06' 25"} (1950)
GRB_ERROR: 4.20 [arcmin radius, 90% containment, statistical only]
GRB_DATE: 17500 TJD; 113 DOY; 16/04/22
GRB_TIME: 43140.81 SOD {11:59:00.81} UT
TRIGGER_ID: 0x20000000
MISC: 0x40000000
SUN_POSTN: 30.86d {+02h 03m 25s} +12.53d {+12d 32' 05"}
SUN_DIST: 70.98 [deg] Sun_angle= -0.8 [hr] (East of Sun)
MOON_POSTN: 218.02d {+14h 32m 04s} -10.93d {-10d 55' 38"}
MOON_DIST: 111.16 [deg]
MOON_ILLUM: 100 [%]
GAL_COORDS: 277.39,-53.05 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 358.49,-66.75 [deg] ecliptic lon,lat of the burst (or transient)
COMMENTS: Fermi LAT Offline position.
COMMENTS: This Notice was ground-generated -- not flight-generated.
COMMENTS: It is the result of human-in-the-loop processing.
COMMENTS: This is a human generated position of a LAT ground detection.
COMMENTS: This source corresponds to GBM trigger.

v02

66.959

23/04/2016

KONUS

200- 750 keV

50- 200 keV

10- 50 keV

COUNTS/2.944 S

4040

3040

2040

1040

40
0

10000

20000

30000

40000

50000

60000

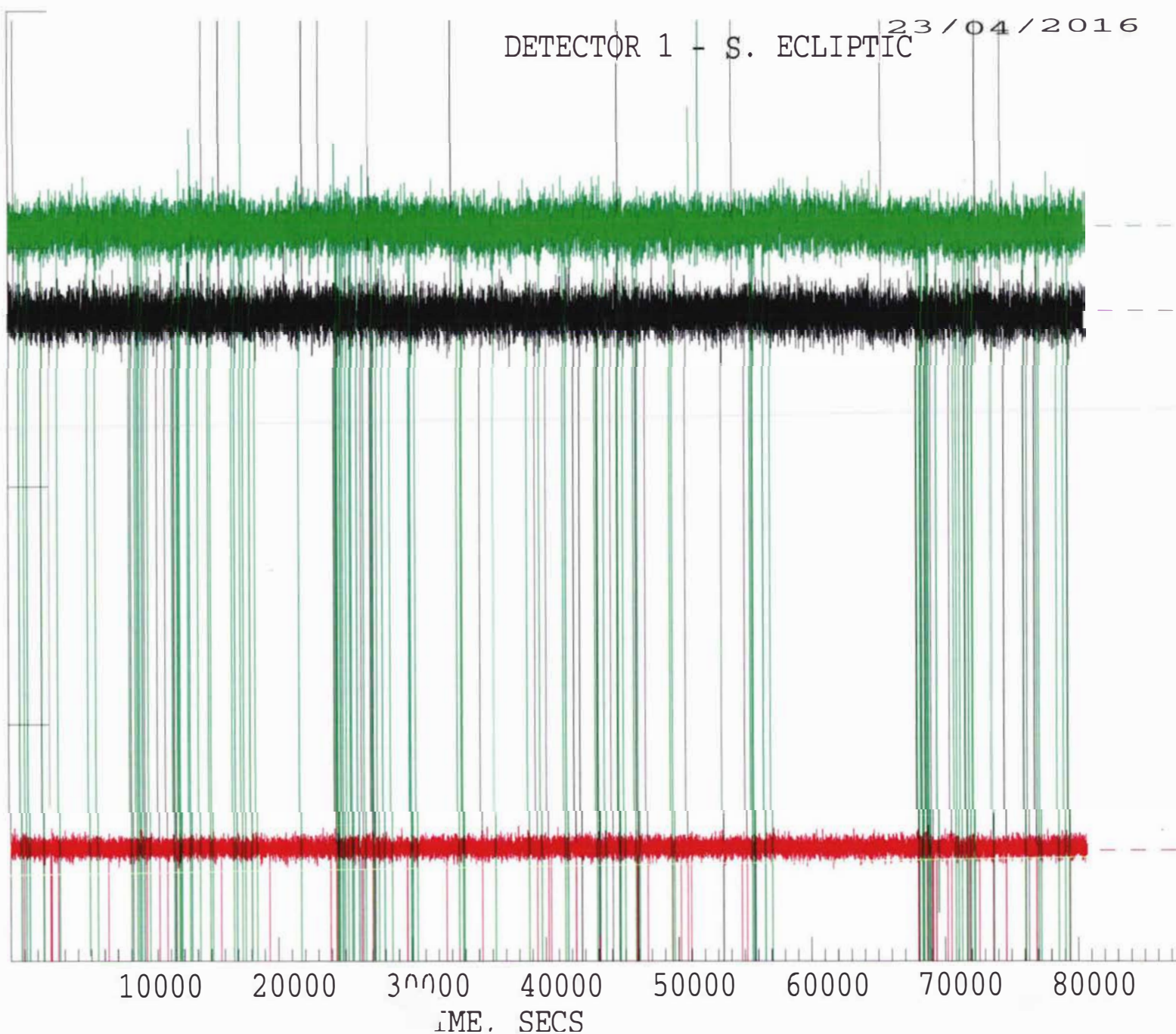
70000

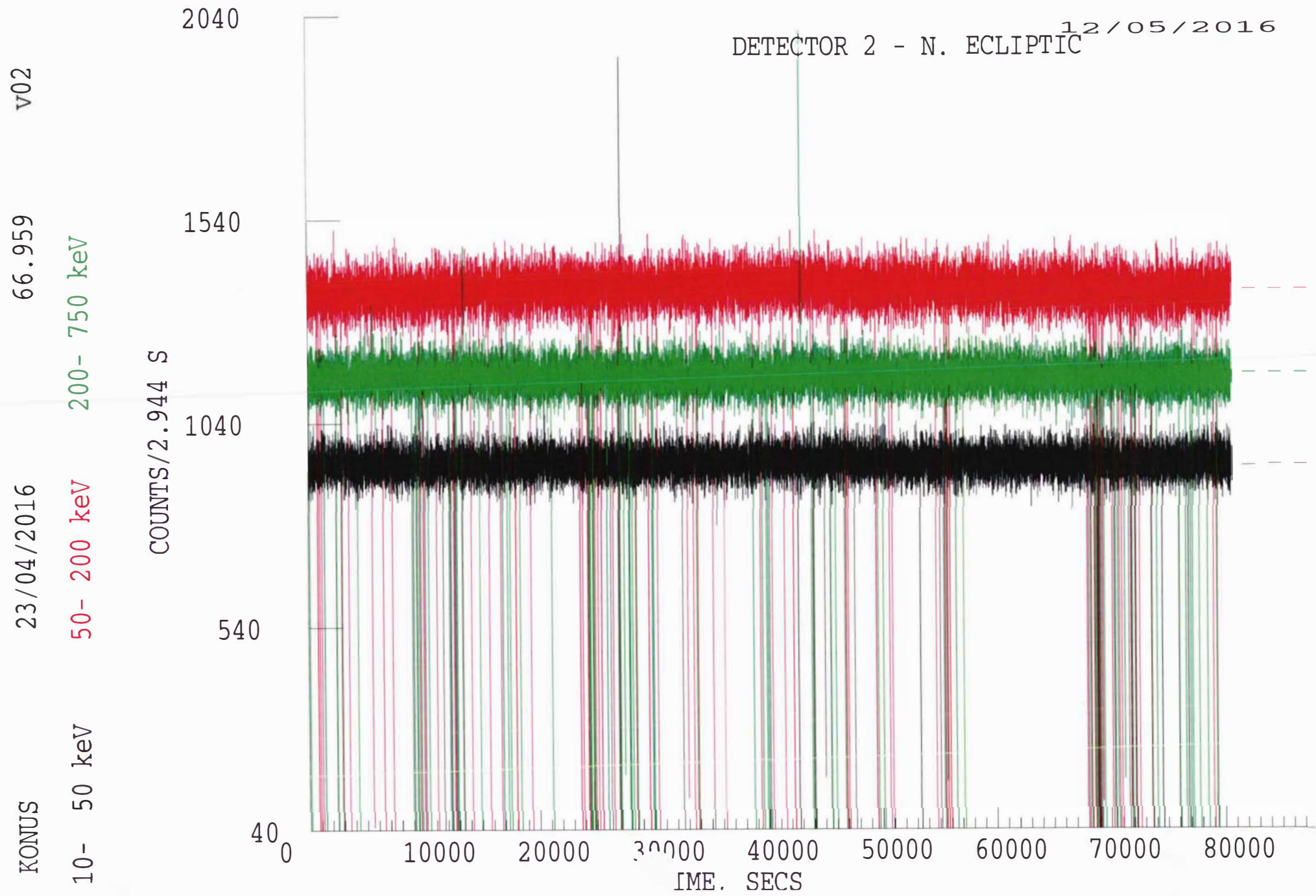
80000

TIME. SECS

DETECTOR 1 - S. ECLIPTIC

23/04/2016





FERMI

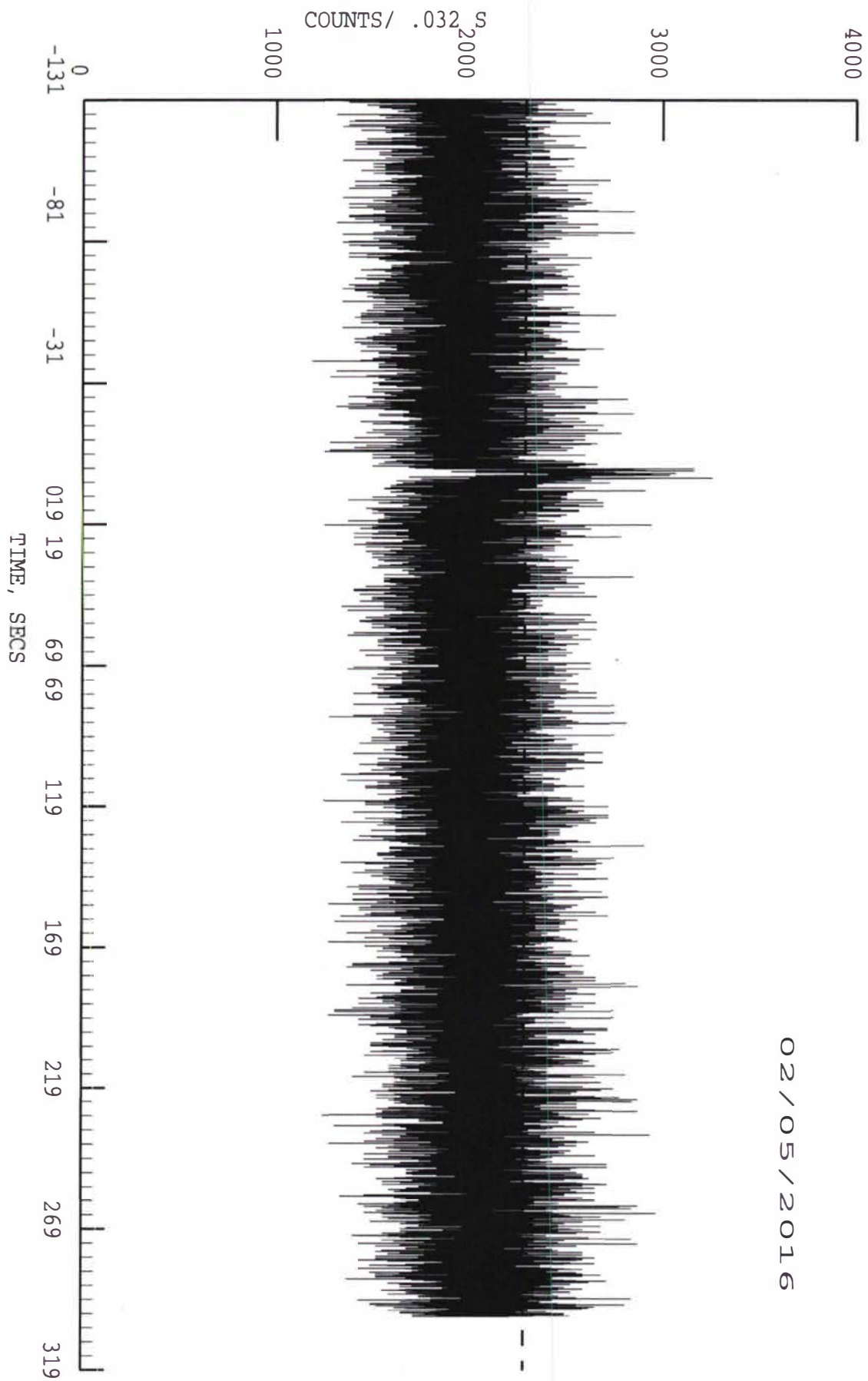
23/04/16

5686.148

01:34:46.148

26- 293 keV

355.8 17.5 6.9

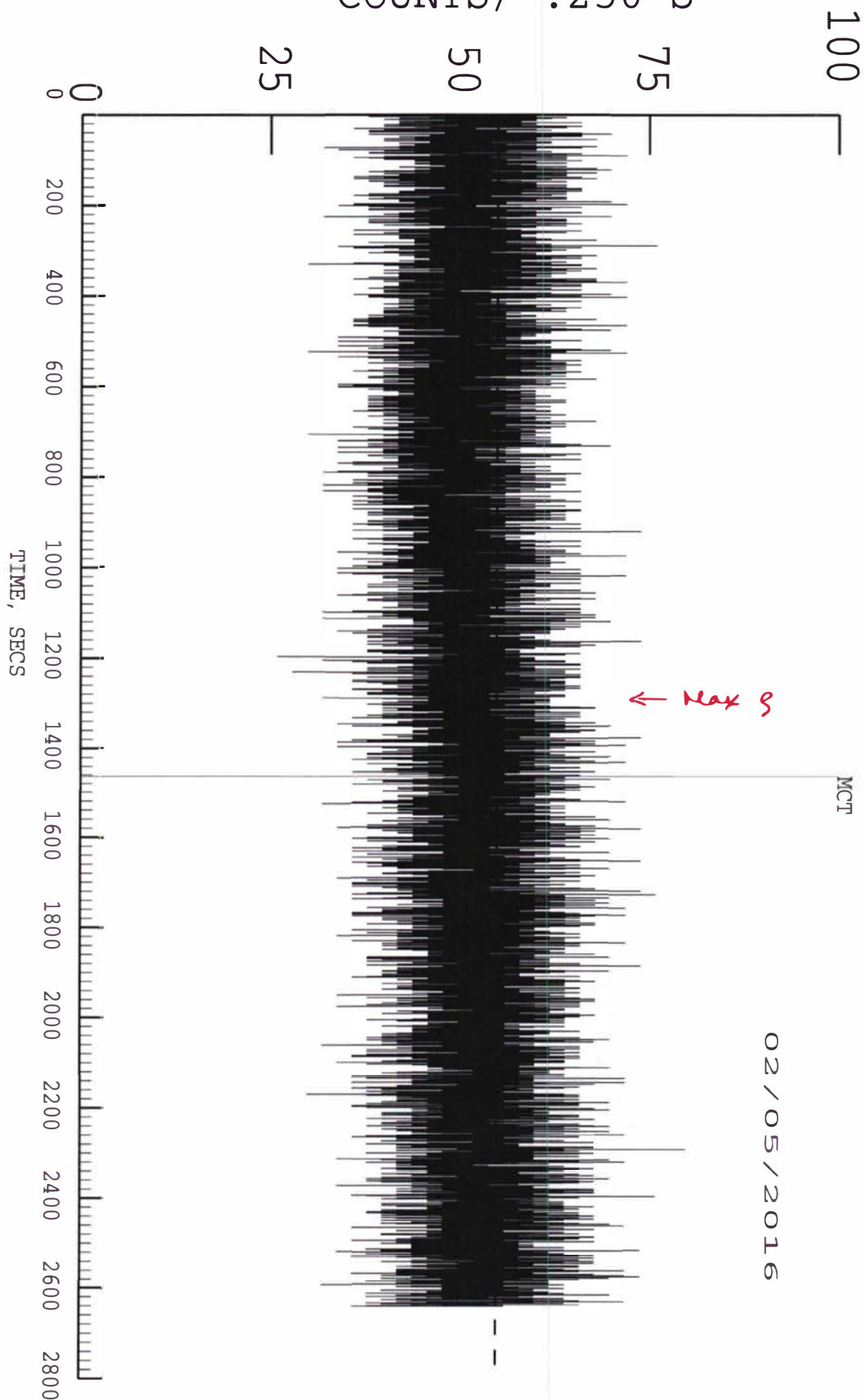


02/05/2016

ODYSSEY 23/04/16 4348.973 01:12:28.973

50-3000 keV

COUNTS/ .250 S



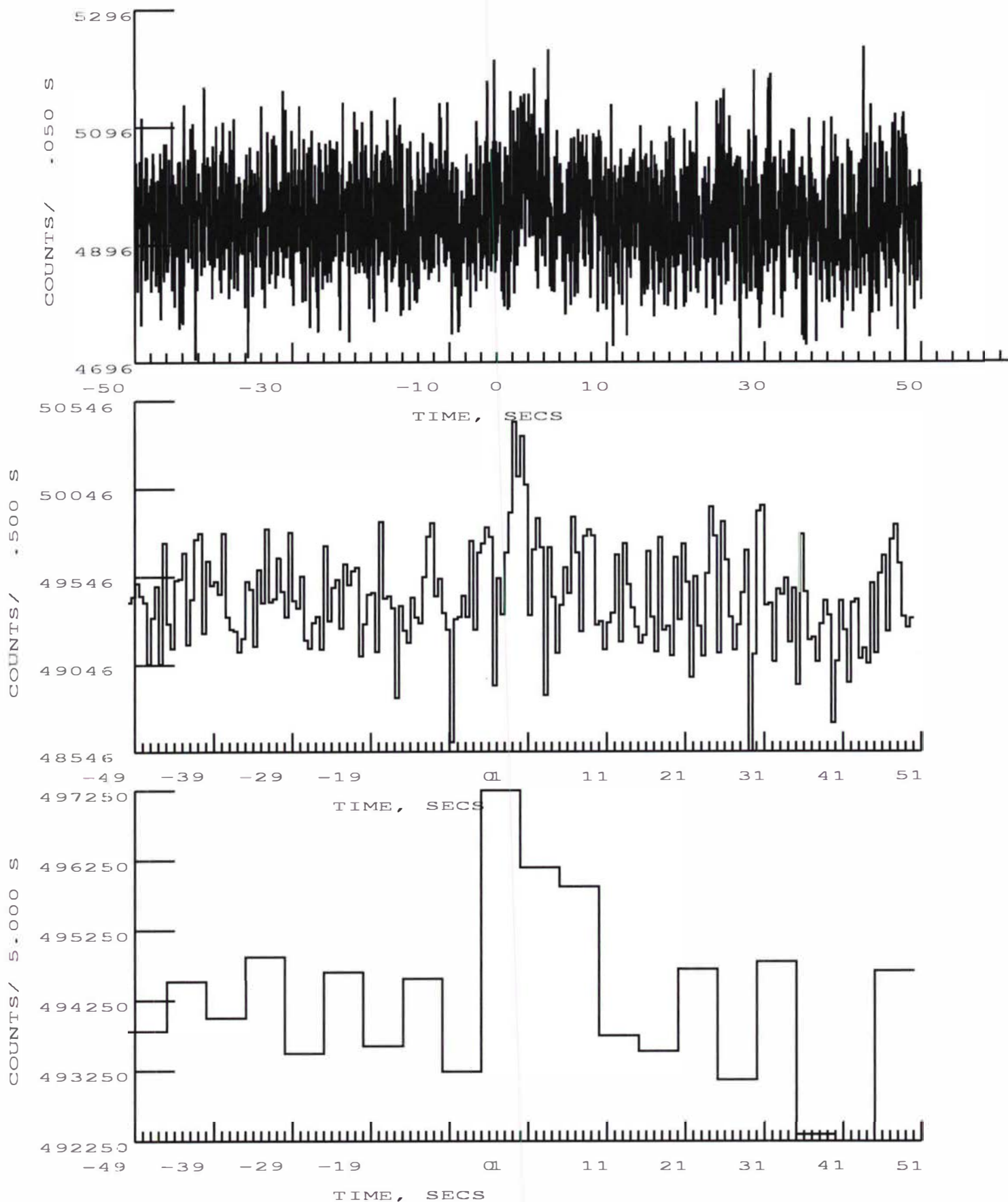
INTEGRAL

23/04/16

5686.000

01:34:46.0

15/07/16



Subject: [Ipn] BAT lightcurve for trigger at 160423_0134

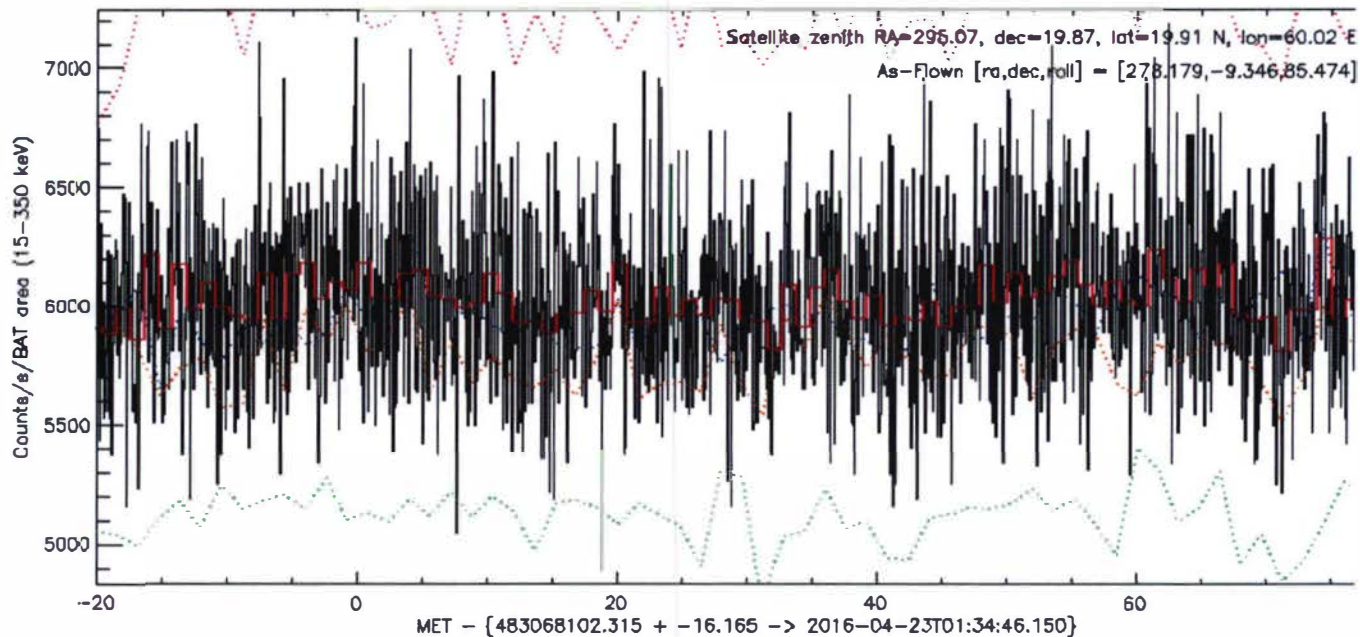
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/23/2016 10:25 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160423_0134.png—



```
% /usr/local/bin/swinfo -o 483068102.315
Swift Zenith(RA,dec):      295.07, 19.87
Swift Location(lon,lat,alt): 60.02 E, 19.91 N, 560 km
Time(MET + UTCF -> UT):   483068102.315 + -16.165 -> 2016-04-23T01:34:46.150
YYMMDD_SOD:               160423_05686.150      DOY=114
Obs Sequence Number:      00034056007
Obs Target Name:          XMMU J183245-0921539
Obs Date and Times:       2016-04-23 01:27:45 - 01:42:41
Obs Pointing(ra,dec,roll): 278.179, -9.346, 85.47
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-4414 (fax)
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Ipn mailing list
Ip@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

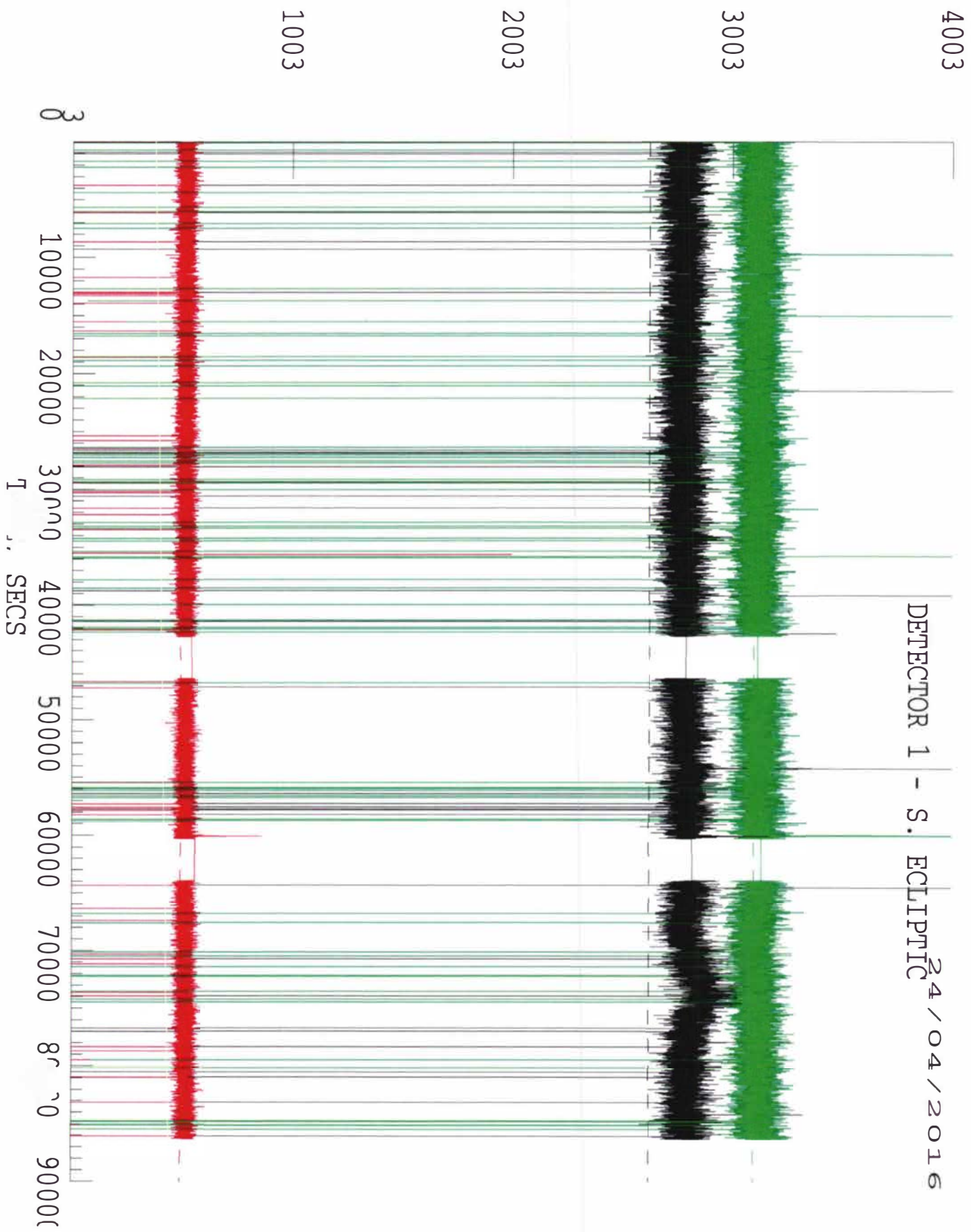
—Attachments:—

/tmp/swift/160423_0134_bat64ms_ipn	87.0 KB
/tmp/swift/160423_0134.png	26.8 KB

KONUS 24/04/2016 55.687 v02

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

COUNTS/2.944 S



KONUS

24/04/2016

55.687

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

2070

1570

1070

570

70

0

10000

20000

30000

40000

50000

60000

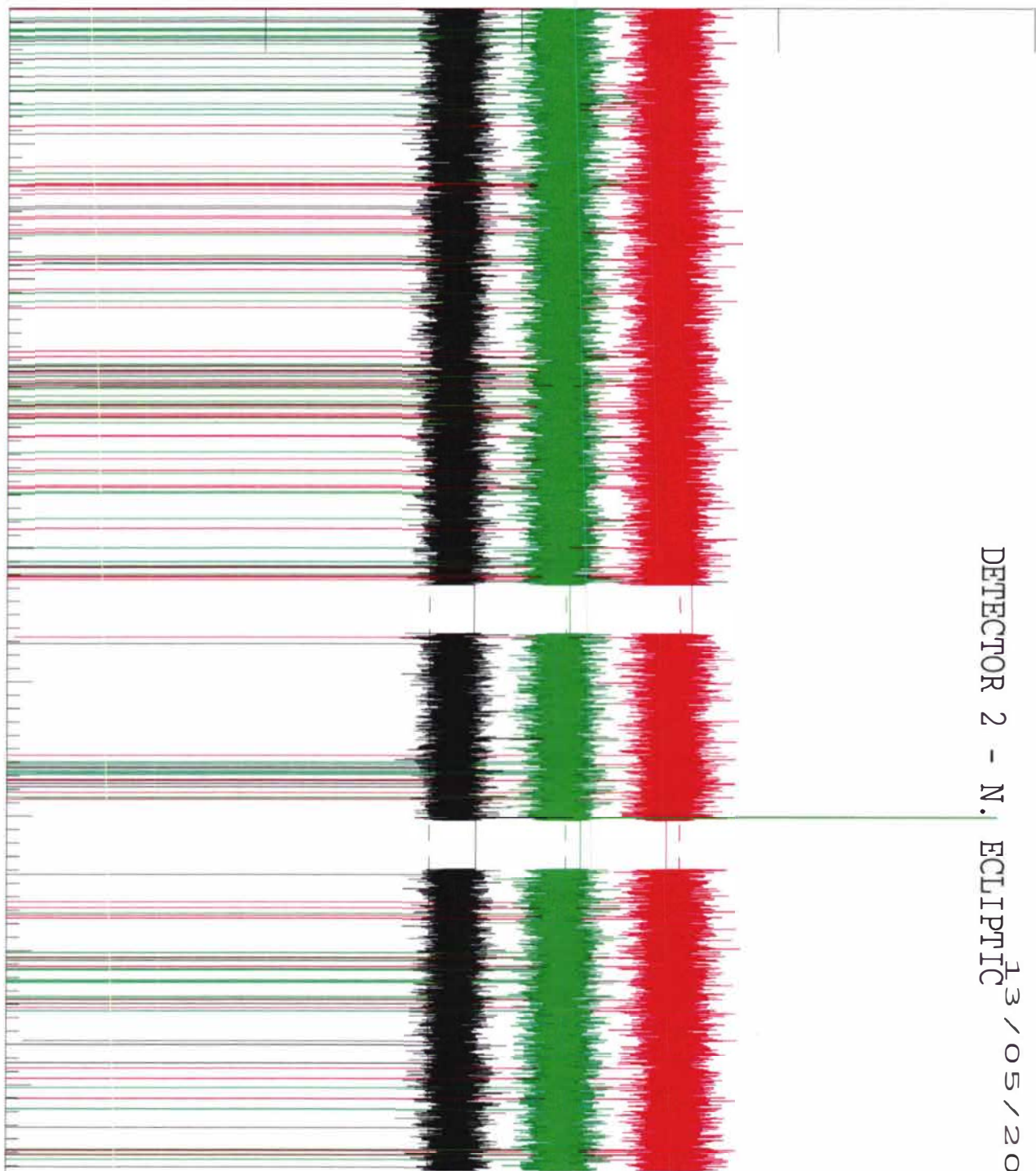
70000

80000

90000

TIME SECS

DETECTOR 2 - N. ECLIPHTIC¹³/05/2016



A

From vxw@capella2.gsfc.nasa.gov Sun Apr 24 04:52:57 2016
X-Barracuda-Envelope-From: vxw@capella2.gsfc.nasa.gov
X-Barracuda-Effective-Source-IP: capella2.gsfc.nasa.gov[128.183.96.236]
X-Barracuda-Apparent-Source-IP: 128.183.96.236
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
Date: Sun, 24 Apr 2016 07:52:55 -0400
From: Bacodine <vxw@capella2.gsfc.nasa.gov>
To: khurley@ssl.berkeley.edu
Subject: GCN/SWIFT BAT LIGHTCURVE
X-Barracuda-User-Whitelist: khurley@ssl.berkeley.edu
X-Barracuda-Scan-Msg-Size: 1759
X-Barracuda-BRTS-Status: 1

6.3s
 $1.2 \times 10^{-6} \text{ erg cm}^{-2}$
5.1 phot/cm²s
SPI N/O

TITLE: GCN/SWIFT NOTICE
NOTICE_DATE: Sun 24 Apr 16 11:52:48 UT
NOTICE_TYPE: Swift-BAT GRB Lightcurve
TRIGGER_NUM: 683906, Seg_Num: 0
GRB_RA: 319.481d {+21h 17m 55s} (J2000),
319.793d {+21h 19m 10s} (current),
318.517d {+21h 14m 04s} (1950)
GRB_DEC: -60.405d {-60d 24' 18"} (J2000),
-60.336d {-60d 20' 09"} (current),
-60.615d {-60d 36' 54"} (1950)
GRB_DATE: 17502 TJD; 115 DOY; 16/04/24
GRB_TIME: 42547.34 SOD {11:49:07.34} UT
TRIGGER_INDEX: 150
GRB_PHI: 172.69 [deg]
GRB_THETA: 44.36 [deg]
DELTA_TIME: -31.00 [sec]
TRIGGER_DUR: 1.024 [sec]
ALN_STATUS: 0x3
RATE_SIGNIF: 43.50 [sigma]
IMAGE_SIGNIF: 15.78 [sigma]
LC_URL: sw00683906000msb.lc
SUN_POSTN: 32.46d {+02h 09m 50s} +13.10d {+13d 05' 50"}
SUN_DIST: 93.05 [deg] Sun_angle= 4.8 [hr] (West of Sun)
MOON_POSTN: 238.40d {+15h 53m 36s} -15.37d {-15d 22' 04"}
MOON_DIST: 72.44 [deg]
MOON_ILLUM: 95 [%]
GAL_COORDS: 334.72,-41.20 [deg] galactic lon,lat of the burst (or transient)
ECL_COORDS: 300.39,-42.08 [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 = 72.33,-20.07 [deg

BAT

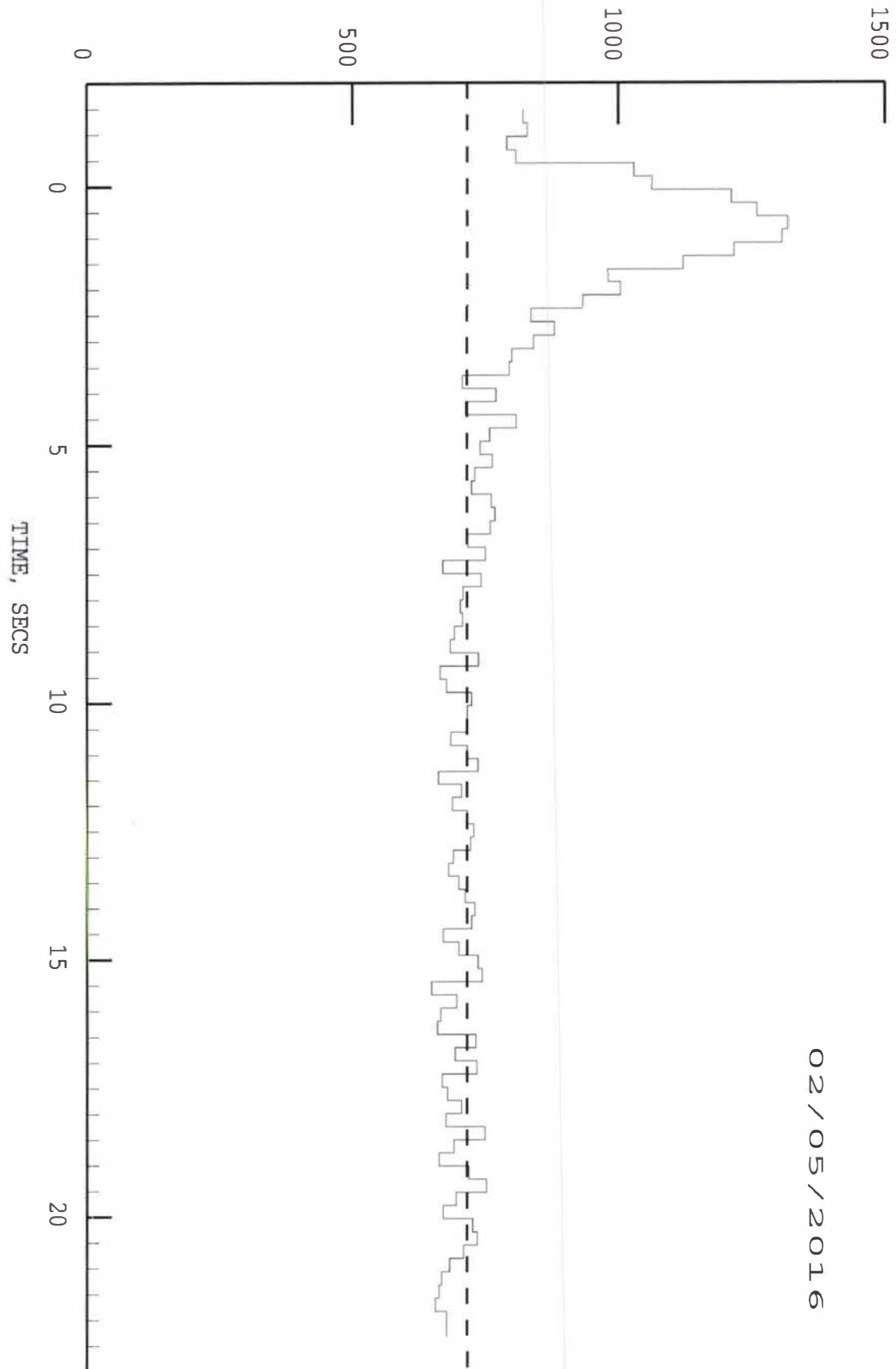
24/04/16

42547.348

11:49:07.348

25- 100 keV

COUNTS/ .256 S



FERMI

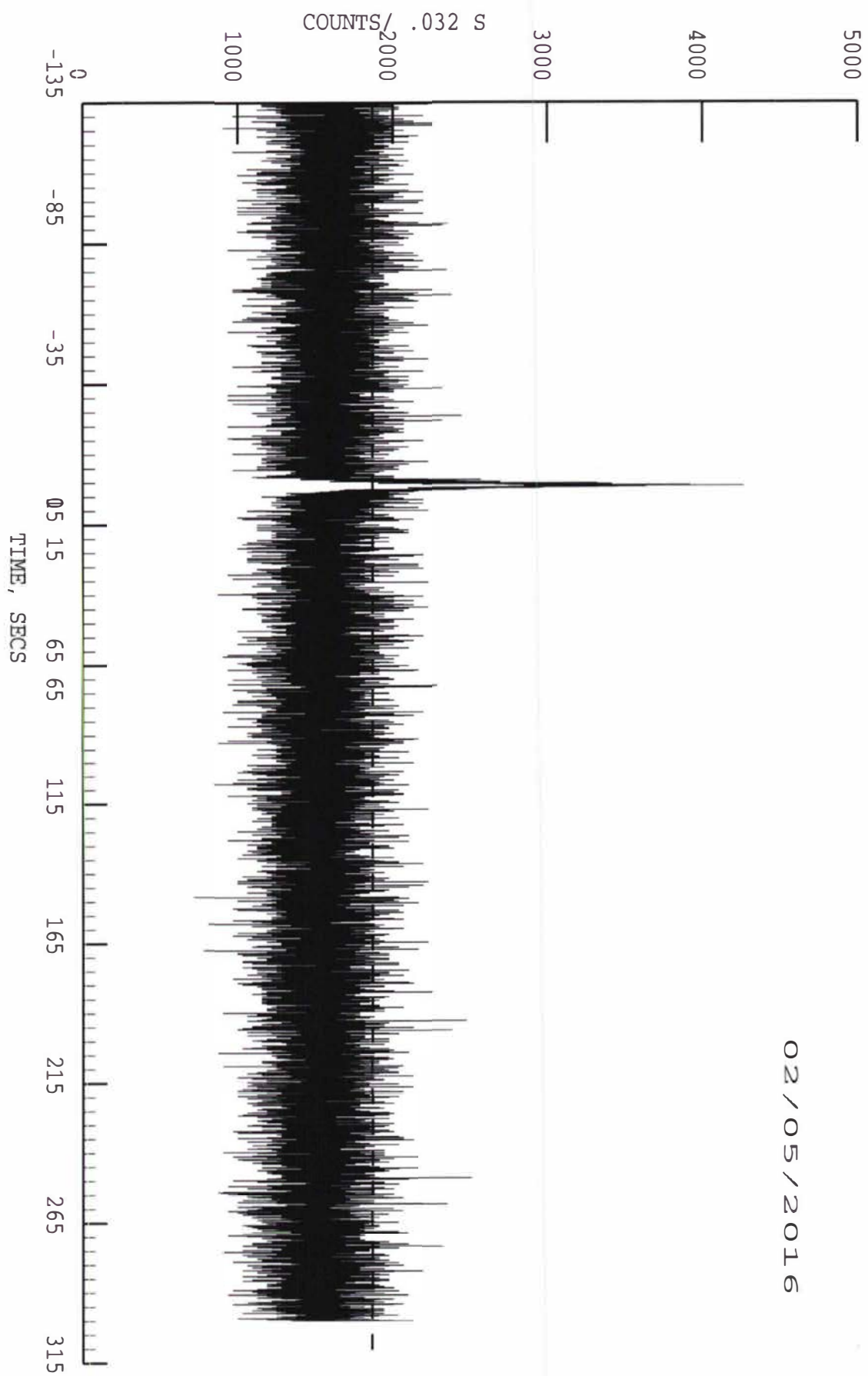
24/04/16

42546.477

11:49:06.477

A

26- 293 keV

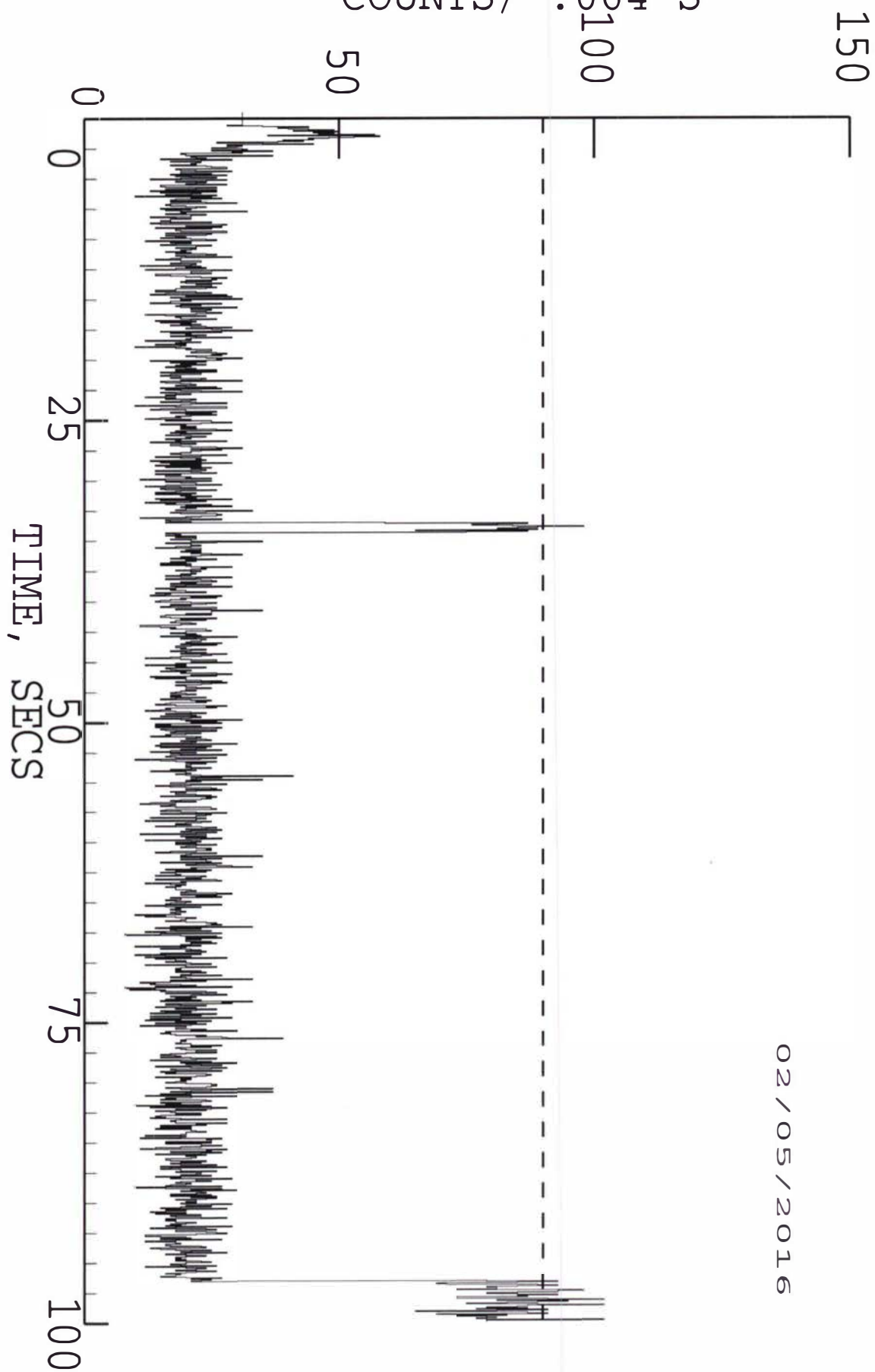


02/05/2016

A

KONUS 24/04/16 42546.397 11:49:06.397
50- 200 keV

COUNTS/ .064 S



A

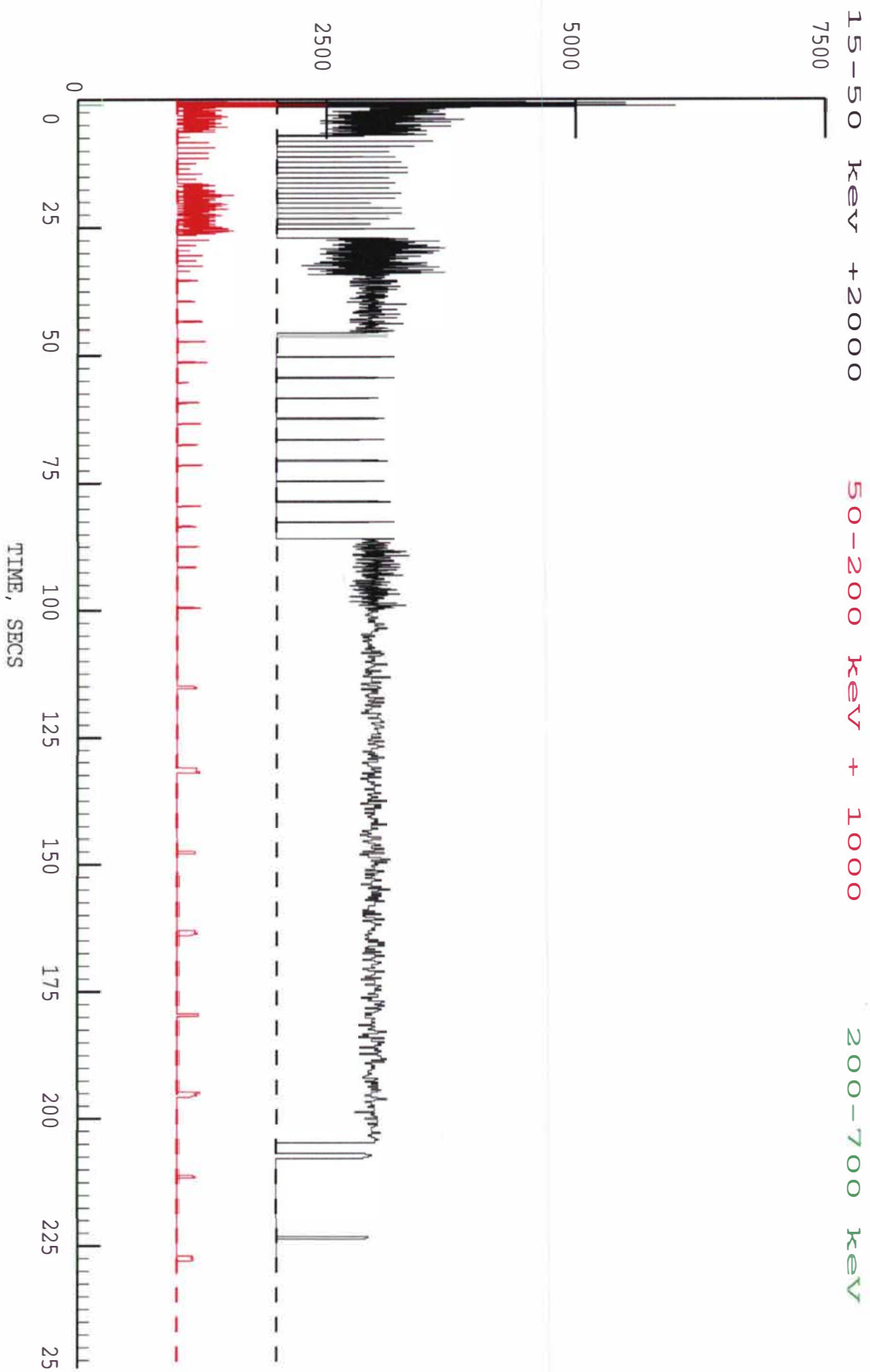
KONUS

24/04/16

42546.000

11:49:06.000

COUNTS/SEC

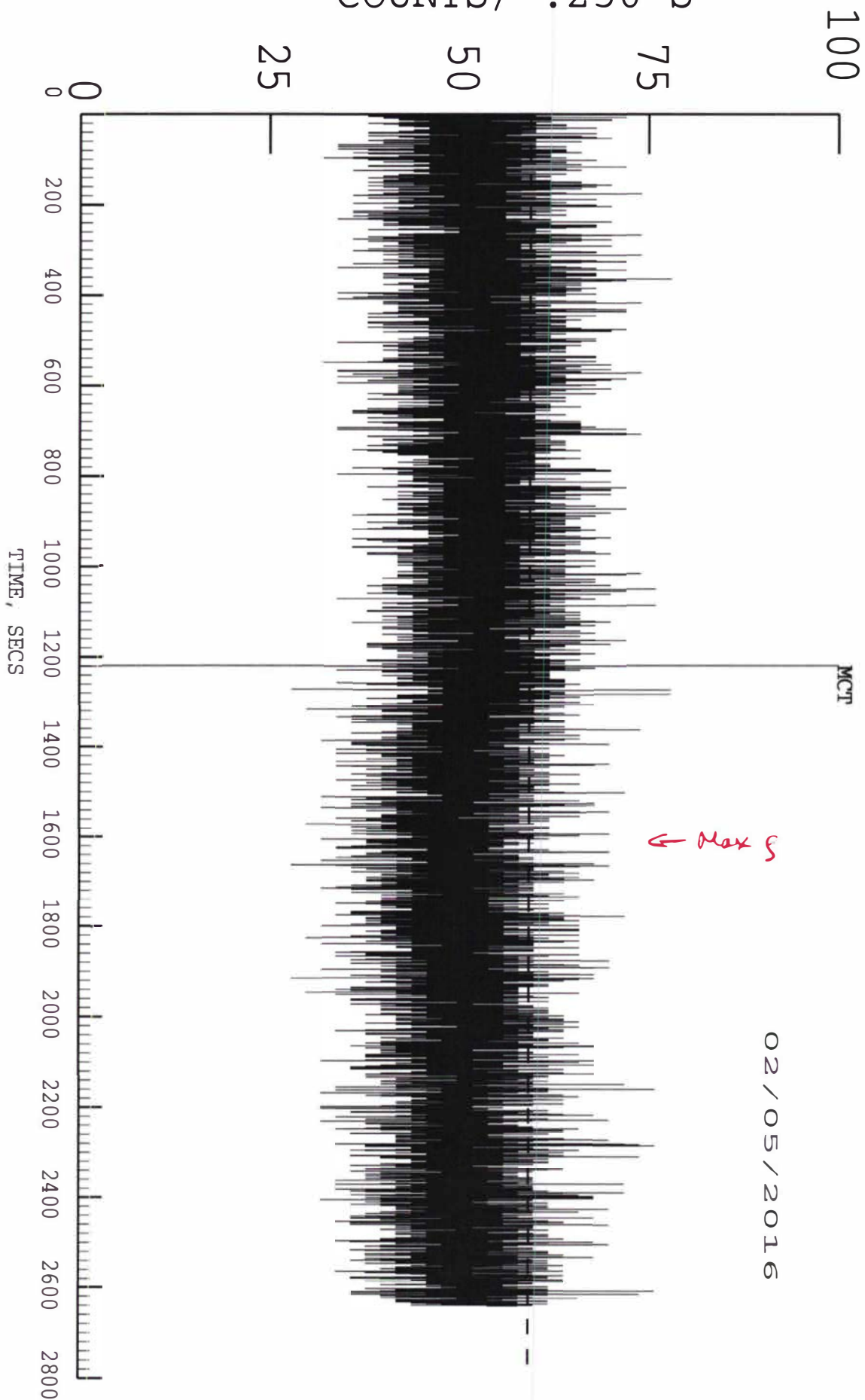


02/05/2016

ODYSSEY 24/04/16 41186.816 11:26:26.816

50-3000 keV

COUNTS/ .250 S



Subject: [Ipn] BAT lightcurve for trigger at 160424_1148

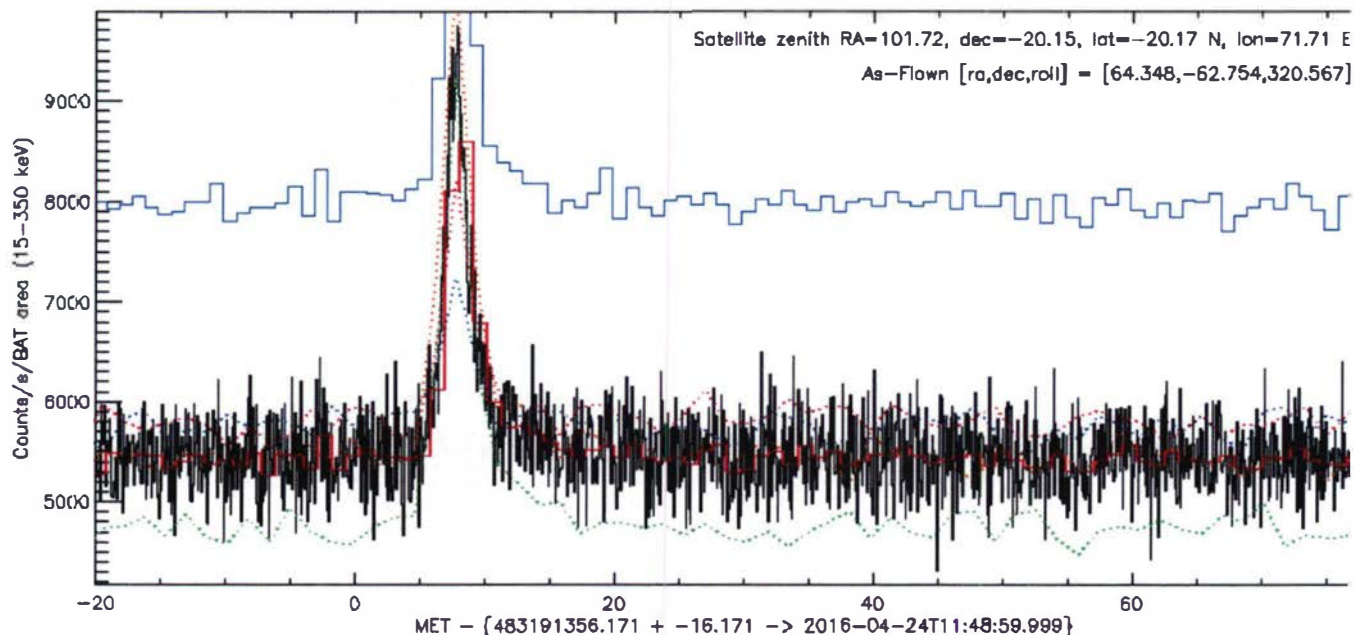
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/24/2016 2:21 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160424_1148.png—



```
% /usr/local/bin/swinfo -o 483191356.171
Swift Zenith(RA,dec):      101.72, -20.15
Swift Location(lon,lat,alt): 71.71 E, -20.17 N, 557 km
Time(MET + UTCF -> UT):   483191356.171 + -16.171 -> 2016-04-24T11:48:59.999
YYMMDD_SOD:               160424_42539.999      DOY=115
Obs Sequence Number:       00034132025
Obs Target Name:           NGC1559
Obs Date and Times:        2016-04-24 11:30:45 - 11:58:44
Obs Pointing(ra,dec,roll): 64.348, -62.754, 320.57
```

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

Ipn mailing list
Ipnlssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160424_1148_bat64ms_ipn	87.1 KB
/tmp/swift/160424_1148.png	24.6 KB

Date: Aug 10 2017

BURST TRIANGULATION CHECKLIST

1. Suzaku Data

- ☐ 1 second timing error corrected? (Jan 1 – Apr 24 2009, and July 1 – August 20, 2012 – leap sec.)

2. AGILE Data

- ☐ 1 second timing error corrected?

3. MESSENGER Data

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

4. For Konus events

- ☒ Konus ecliptic latitude used with latest calibration?

5. For Odyssey events

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

6. For 3 or More Spacecraft events

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

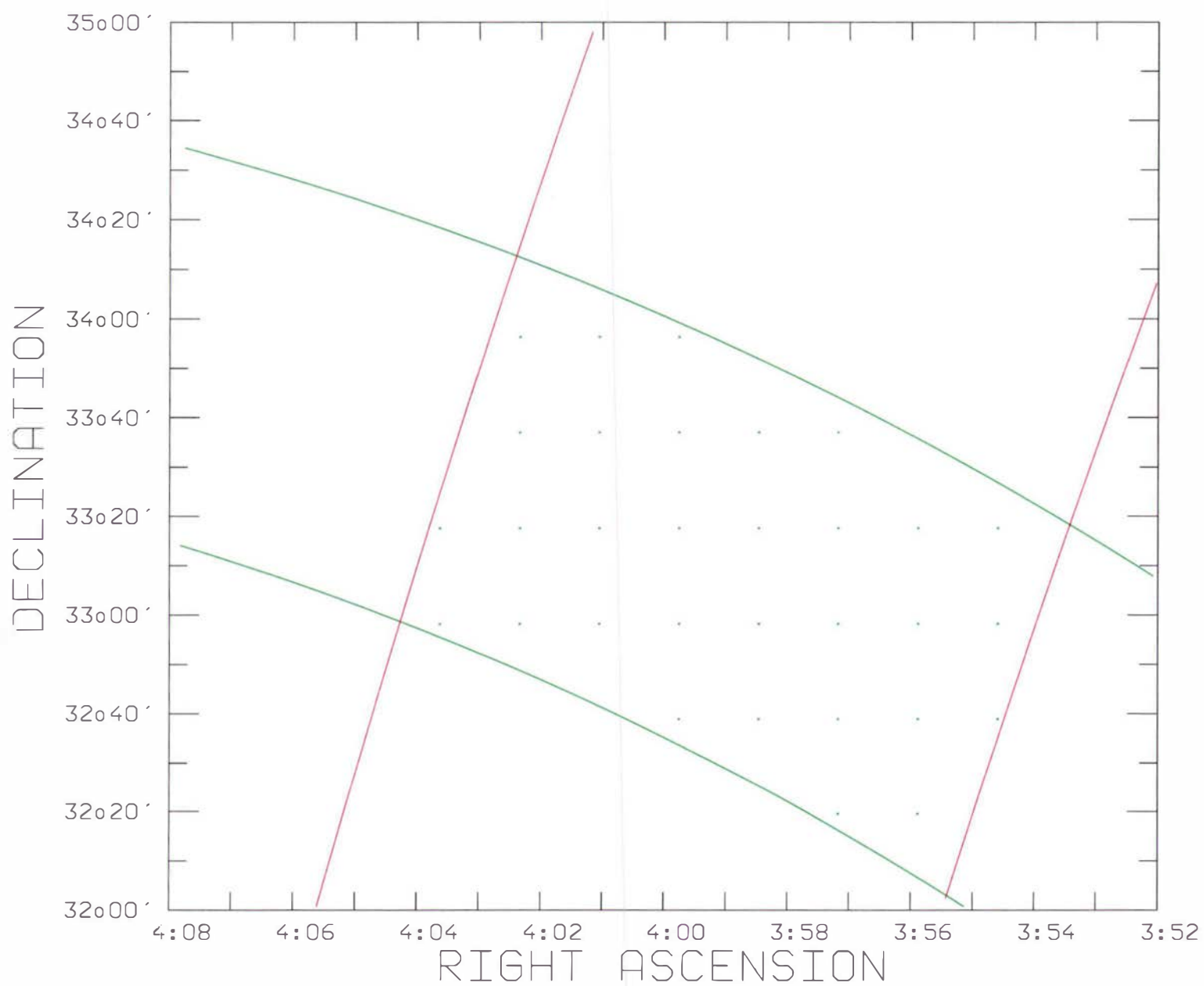
7. For INTEGRAL events

- ☐ INTEGRAL SPI-ACS website checked for bursts that weren't transmitted automatically?
- ☐ 125 ms added to INTEGRAL SPI-ACS time for bursts prior to April 2 2004 11:00 UT?
- ☐ Updated ephemeris used for bursts prior to September 30, 2003?
- ☐ Hand-extracted data used (record starts at -30.000 s)?
- ☐ Volodymyr's website checked ? (<http://isdc.unige.ch/~savchenk/spiacs-online/spiacs-ipn1c.pl>)

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

GRB160424 ~60080 S

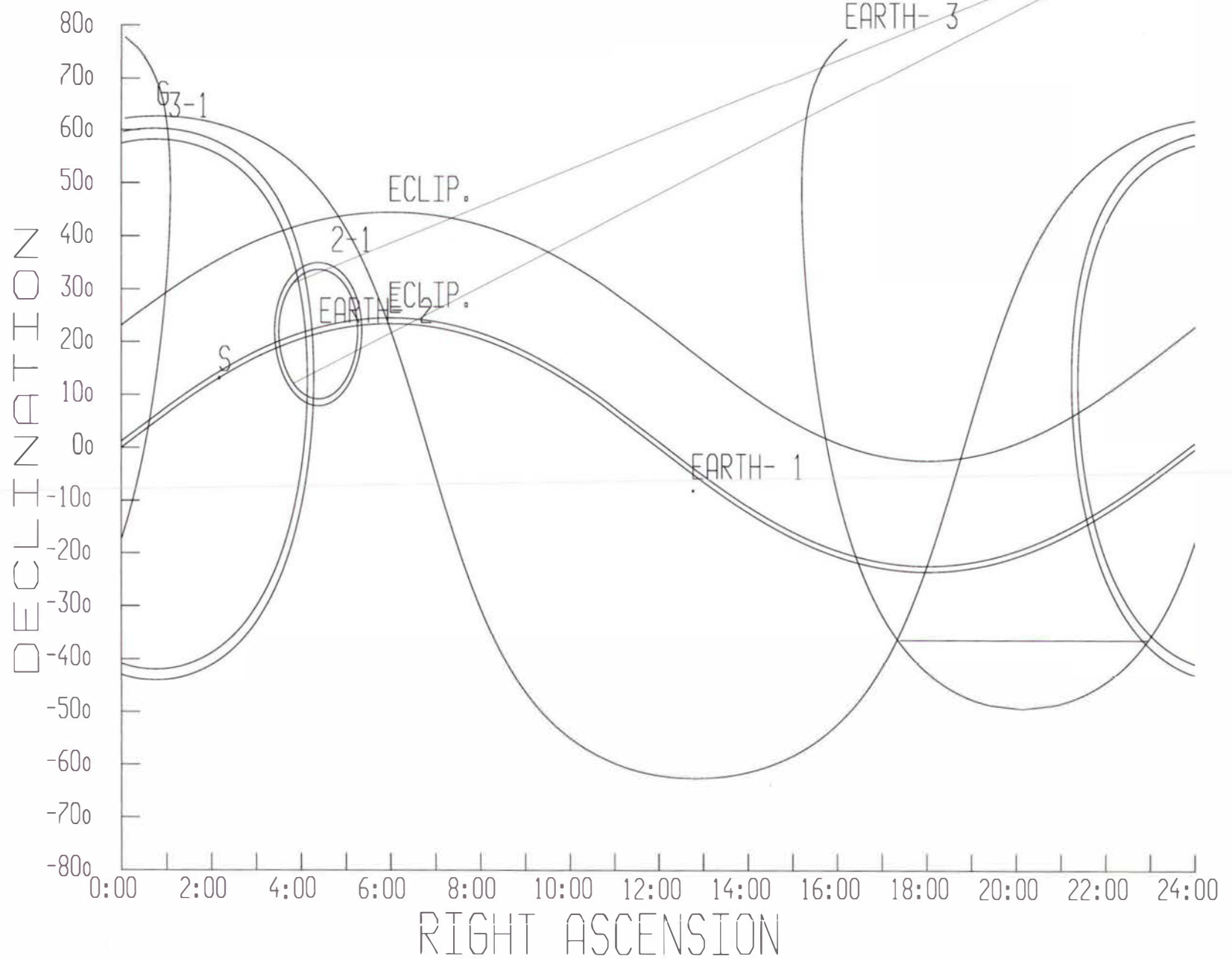
10/08/201

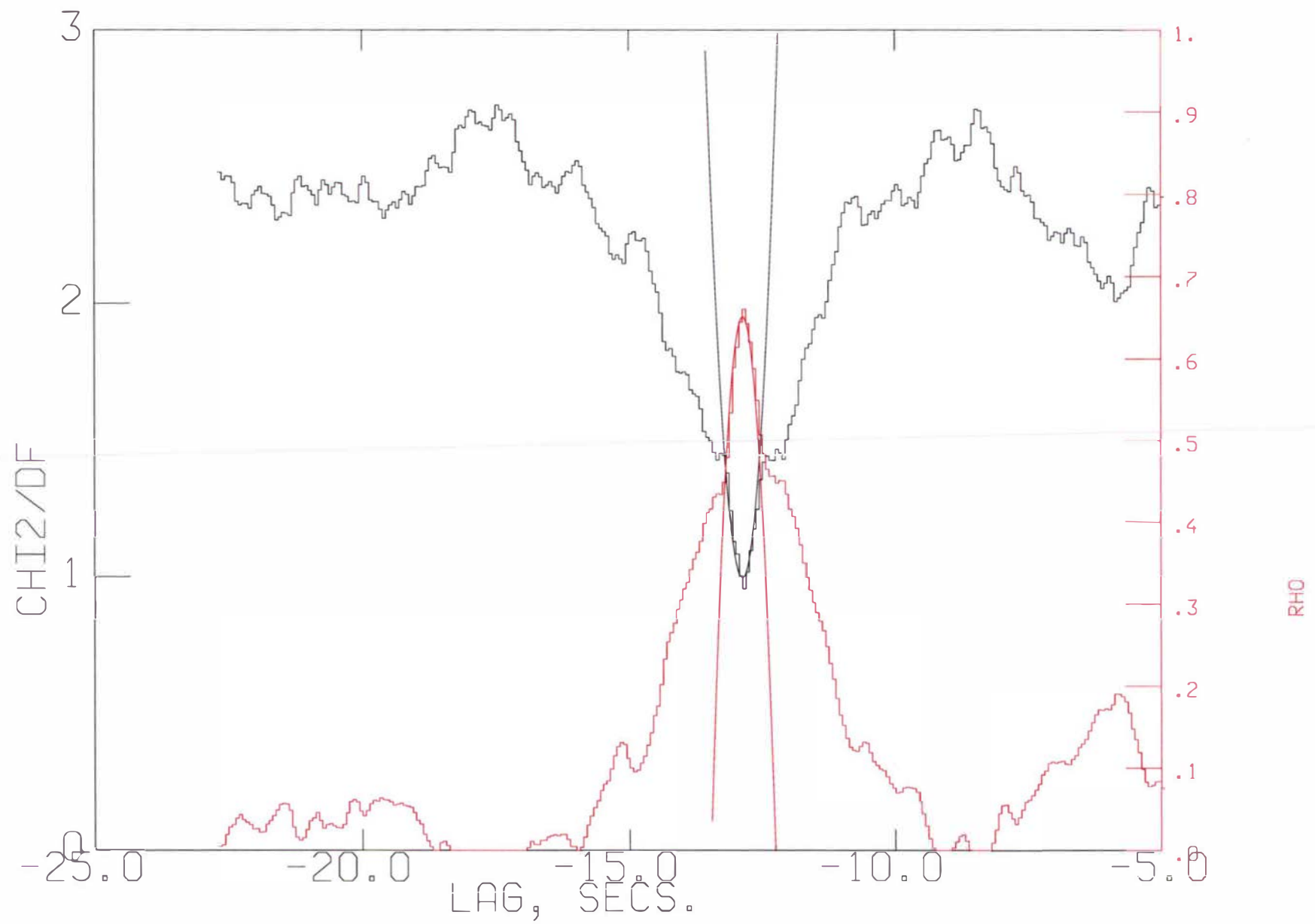


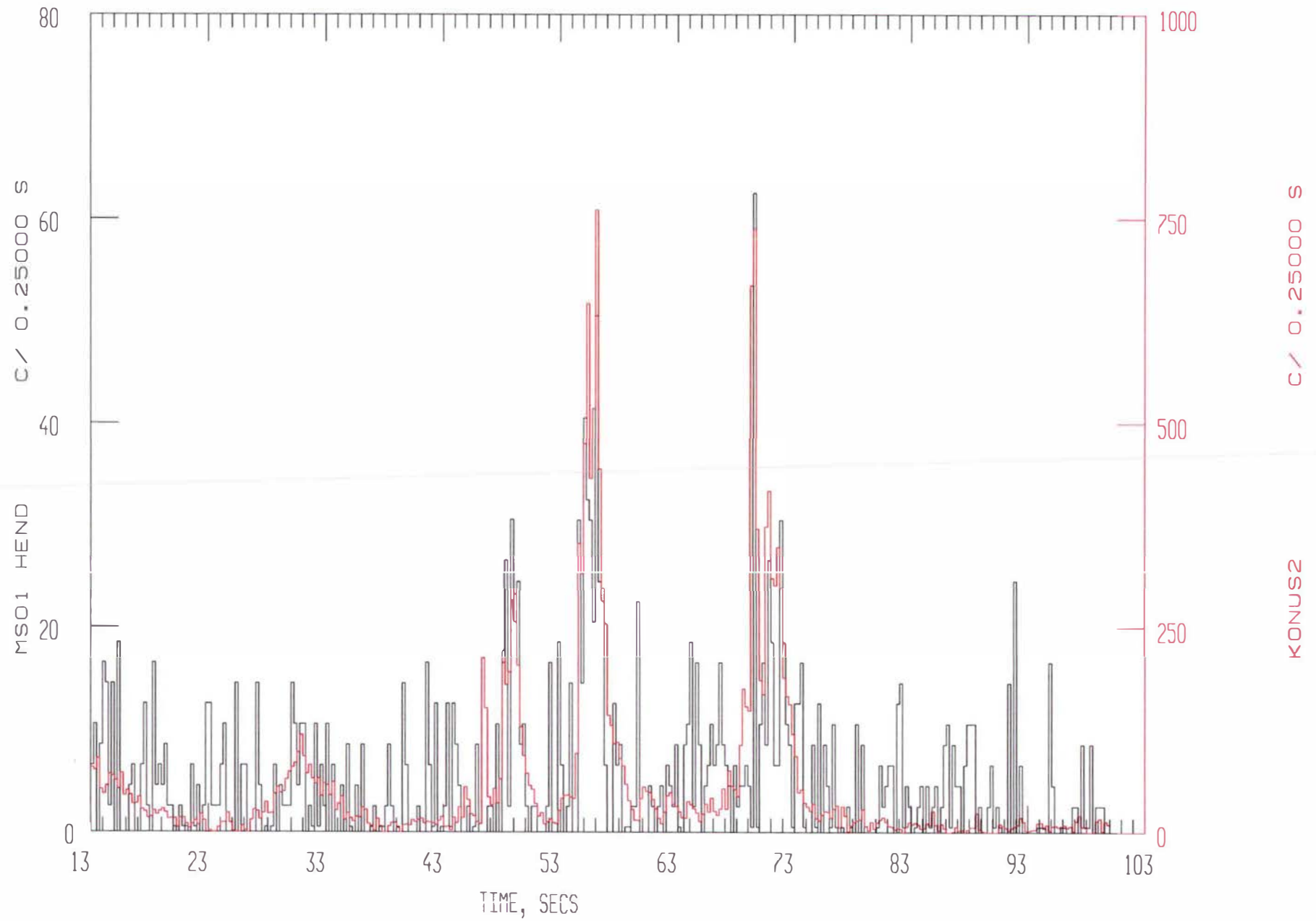
EVENT OF APR 24, 2016 16:41

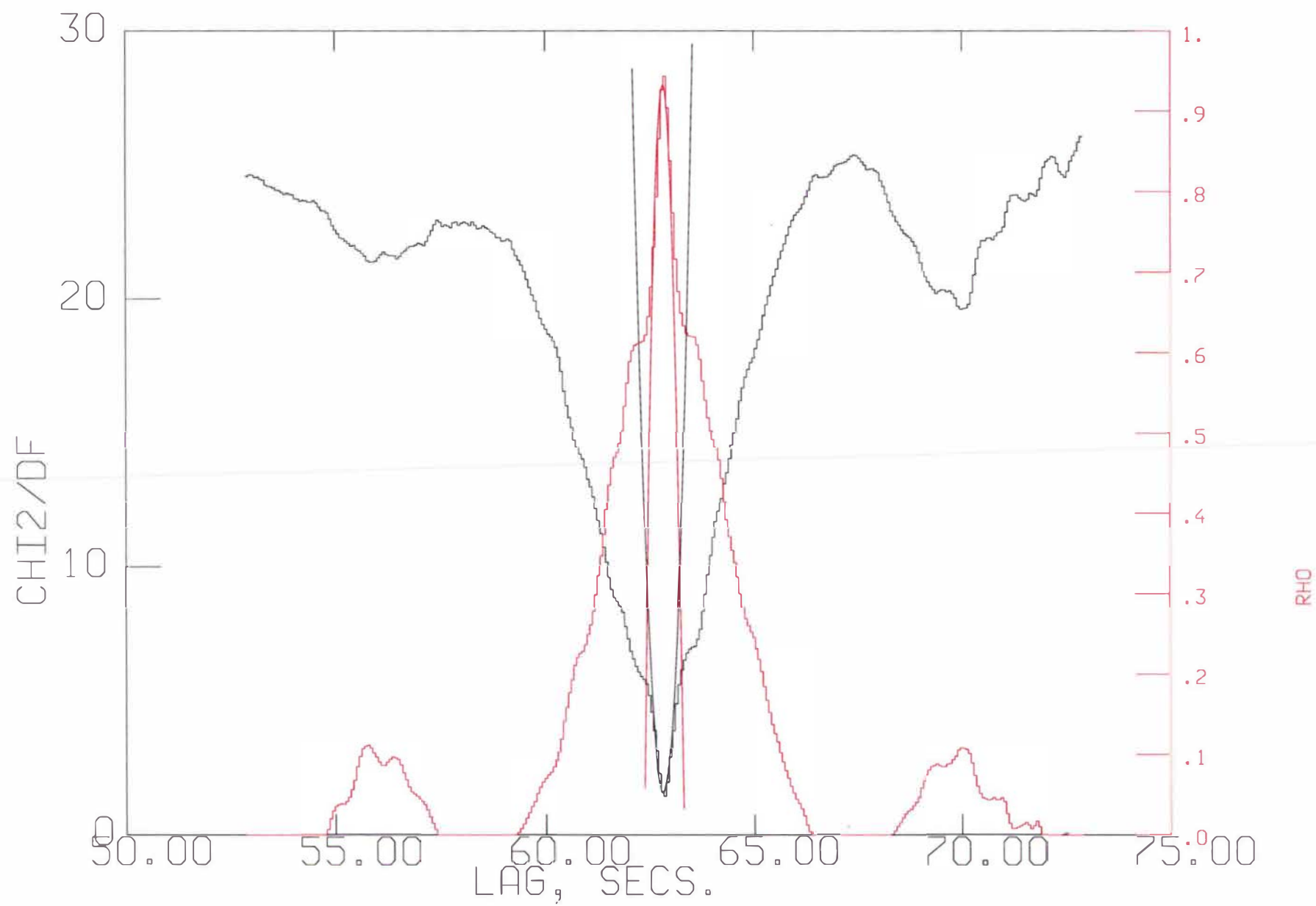
10/08/2017

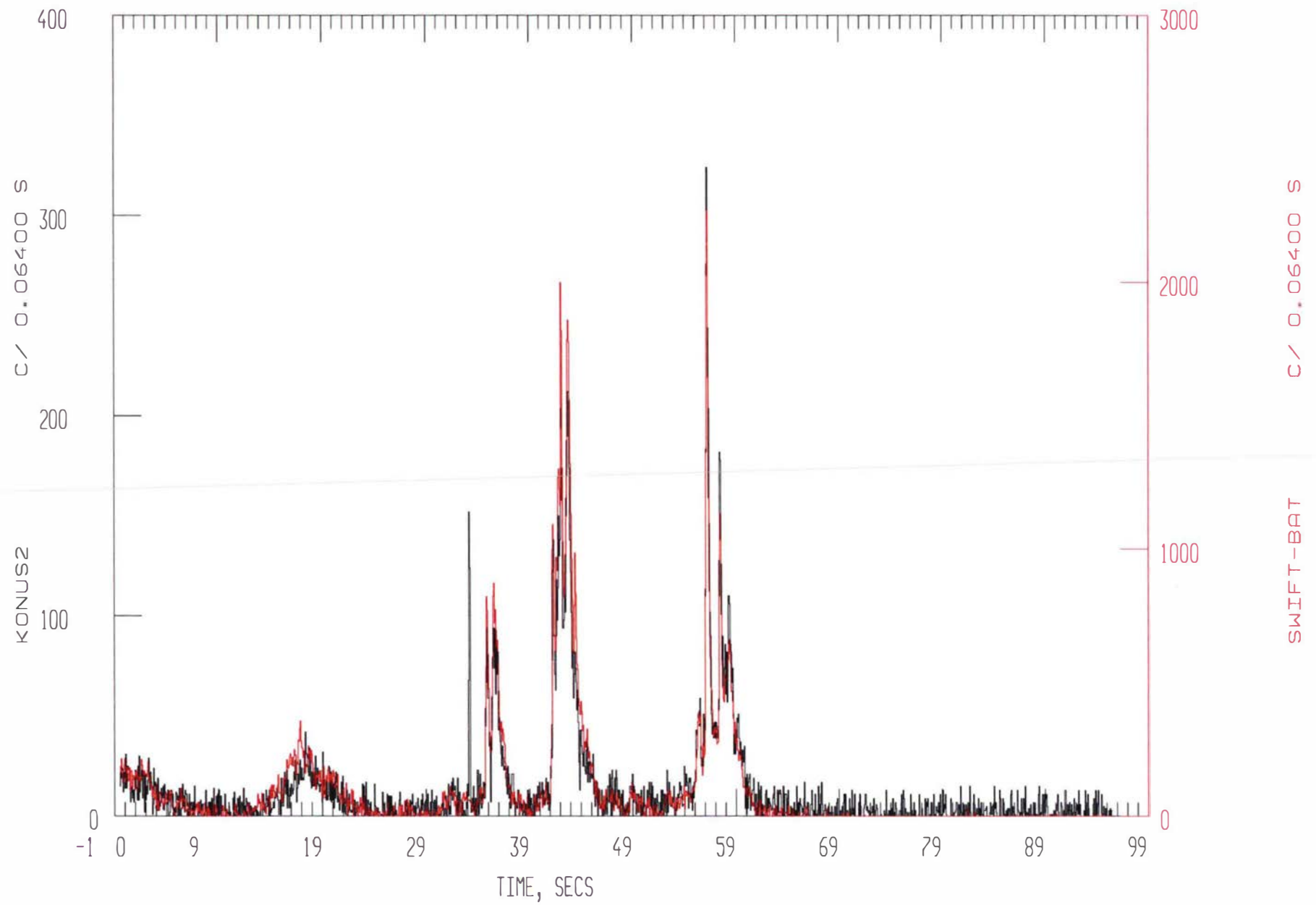
Z-Z = CORRELATION BETWEEN SATELLITES Z AND Z
EARTH-Z = EARTH AS SEEN FROM SATELLITE Z
S=SUN E=ECLIPTIC G=GALACTIC EQUATOR
1 KONUS2 2 MO 3 SWIFT











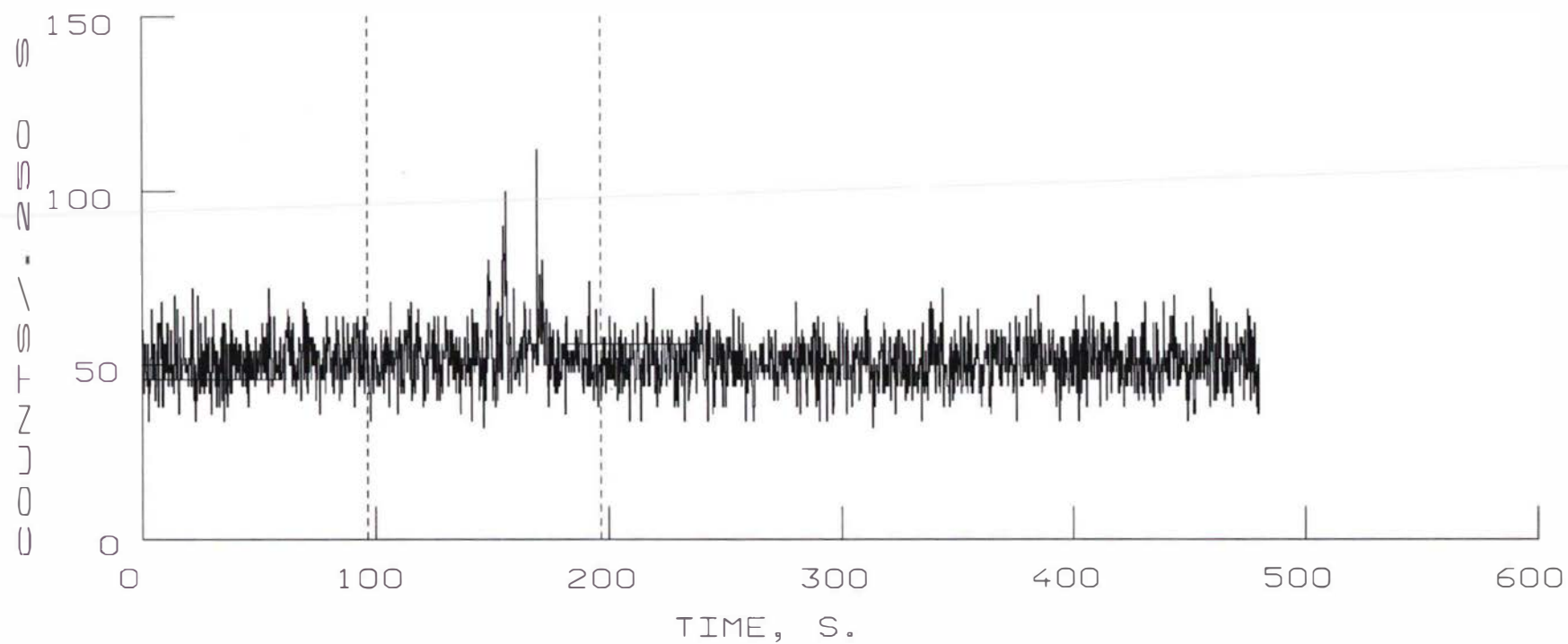
MS01 HEND

10/08/2017

24/04/2016 60266.523 s

50-3000 keV

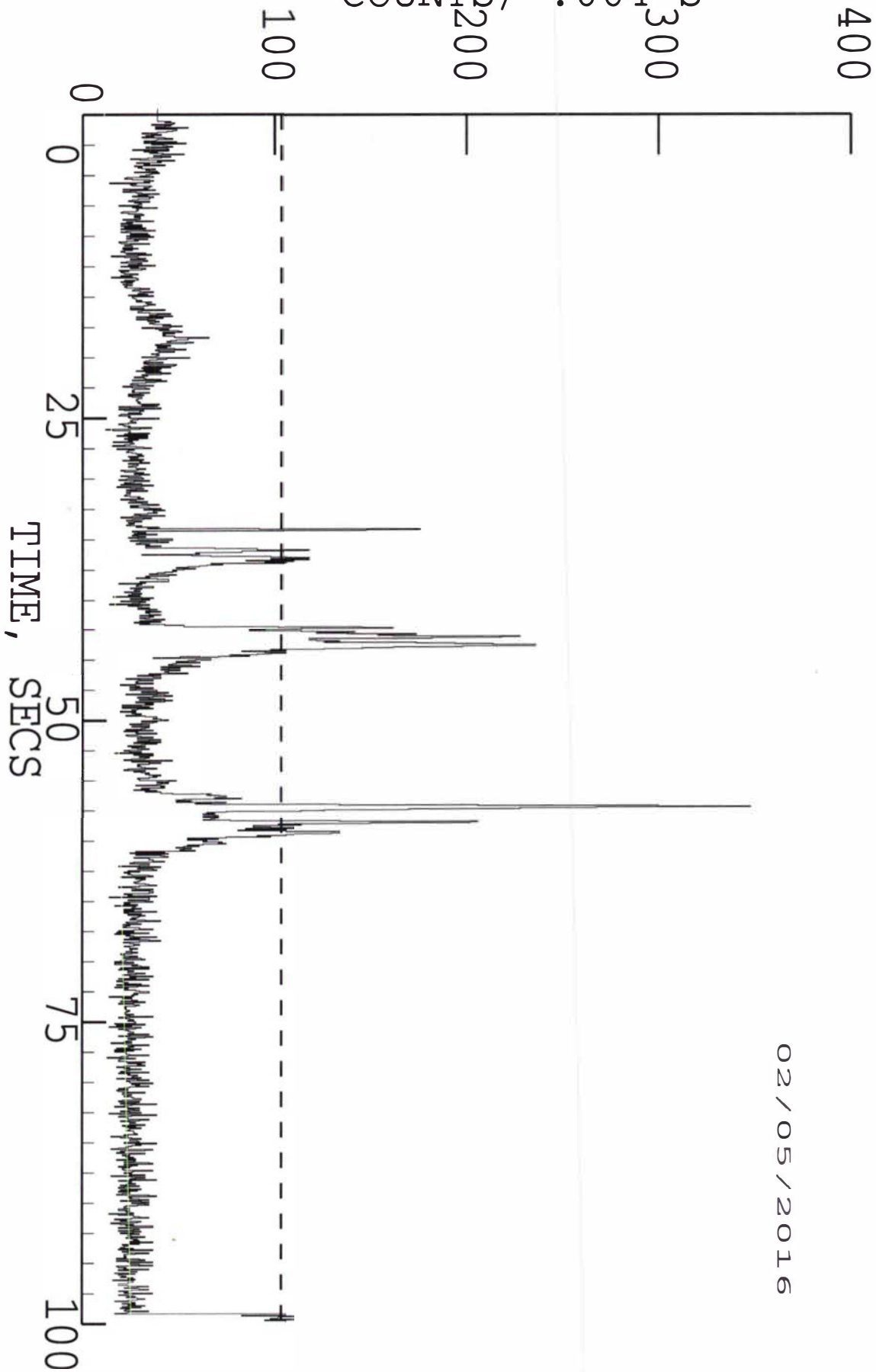
N= 10 M=**
>4.0 SIGMA FLUCTUATIONS



KONUS 24/04/16 60076.801 16:41:16.801⁵
50- 200 keV

COUNTS/ .064 S

SPI n/o



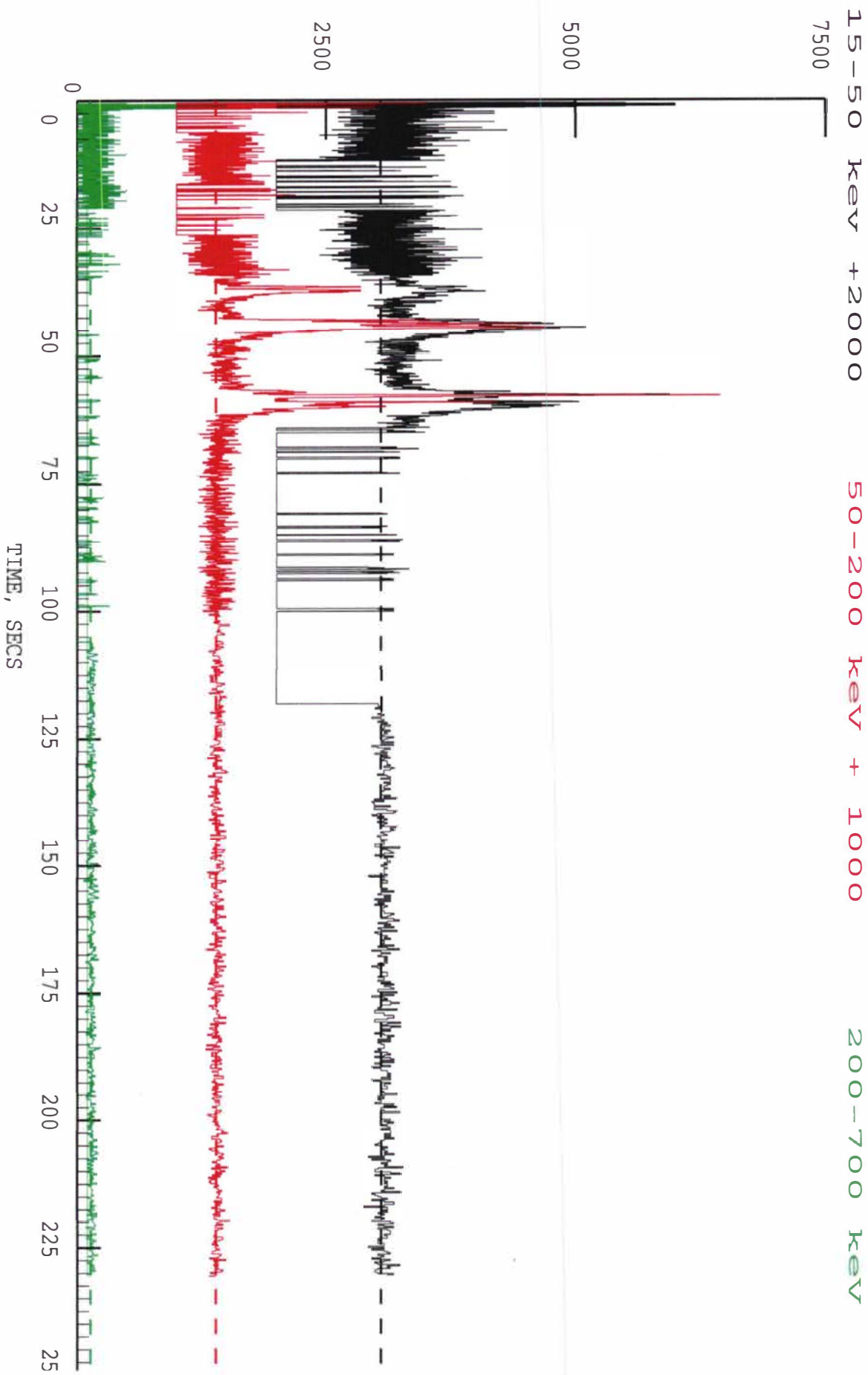
KONUS

24/04/16

60076.000

16:41:16.000

COUNTS/SEC



02/05/2016

Subject: [Ipn] BAT lightcurve for trigger at 160424_1641

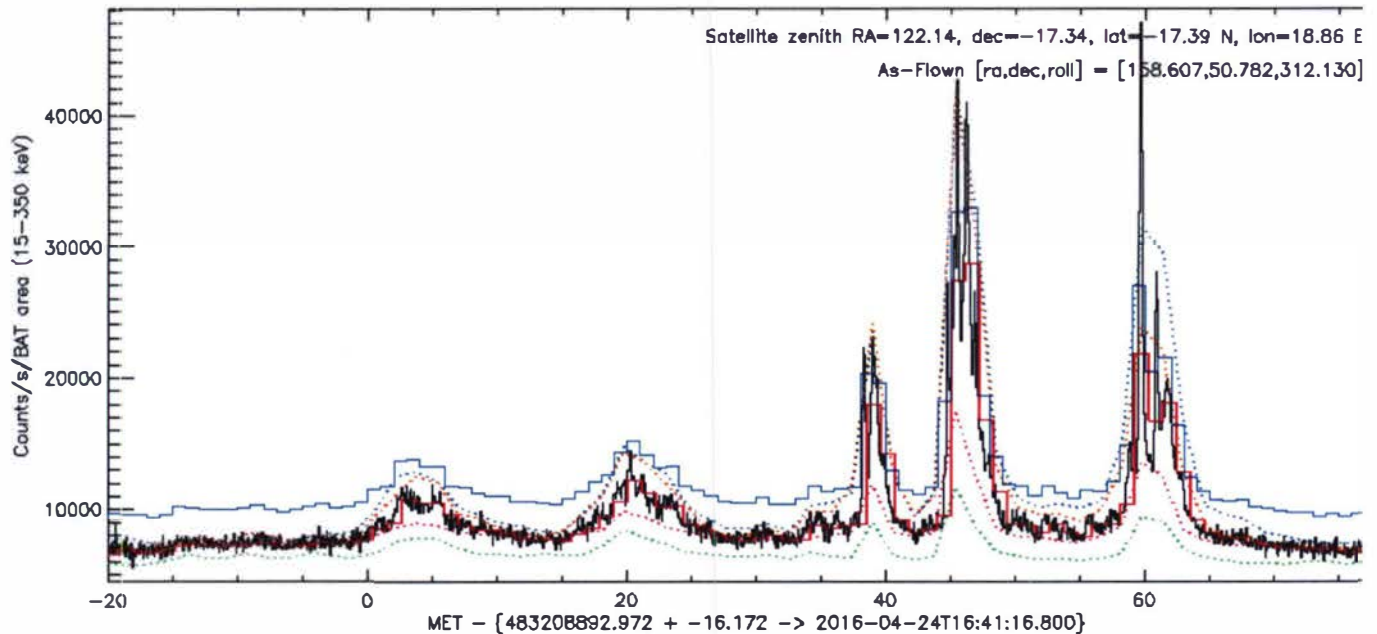
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/24/2016 6:22 PM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160424_1641.png—



```
% /usr/local/bin/swinfo -o 483208892.972
Swift Zenith(RA,dec):      122.14, -17.34
Swift Location(lon,lat,alt): 18.86 E, -17.39 N, 554 km
Time(MET + UTC -> UT):    483208892.972 + -16.172 -> 2016-04-24T16:41:16.800
YYMMDD_SOD:               160424_60076.800      DOY=115
Obs Sequence Number:       00084340006
Obs Target Name:           UGC5740
Obs Date and Times:        2016-04-24 16:40:45 - 16:51:43
Obs Pointing(ra,dec,roll): 158.607, 50.782, 312.13
```

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

Ipn mailing list
Ipnl@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160424_1641.png	19.7 KB
/tmp/swift/160424_1641_bat64ms_ipn	87.0 KB

KONUS

25/04/2016

44.414

v02

10- 50 keV

50- 200 keV

200- 750 keV

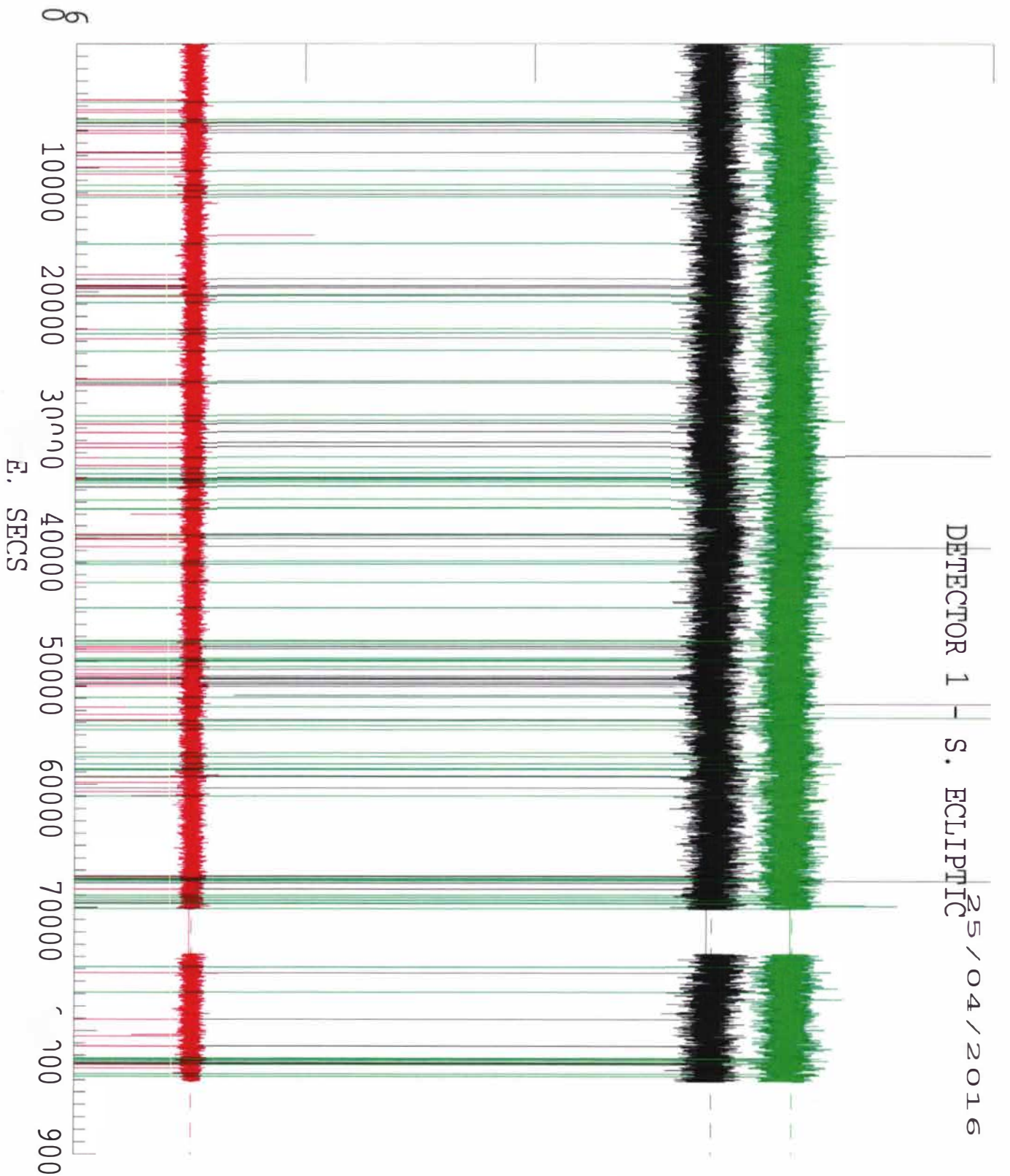
COUNTS/2.944 S

1006

2006

3006

4006



KONUS

25/04/2016

44.414

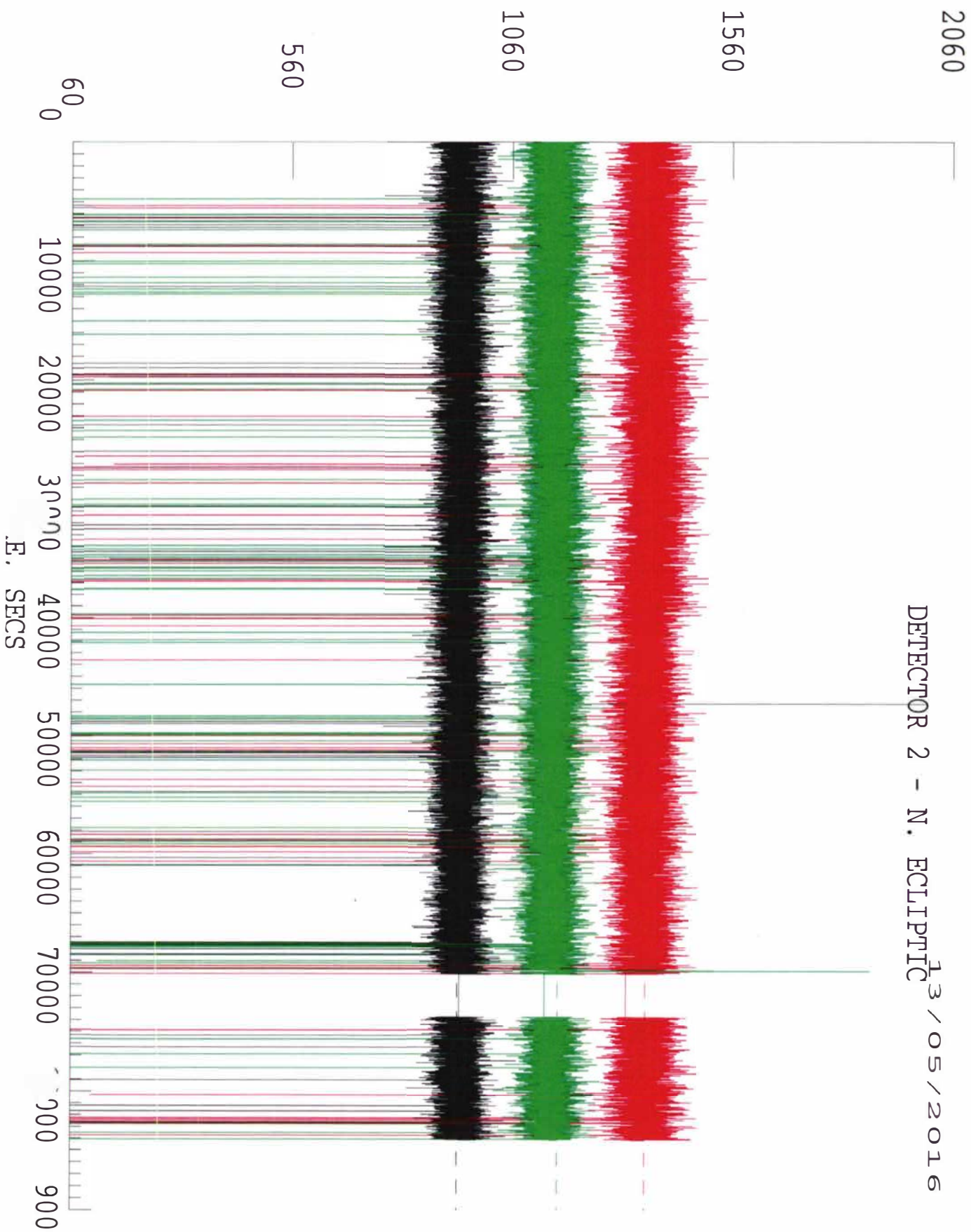
v02

10- 50 keV

50- 200 keV

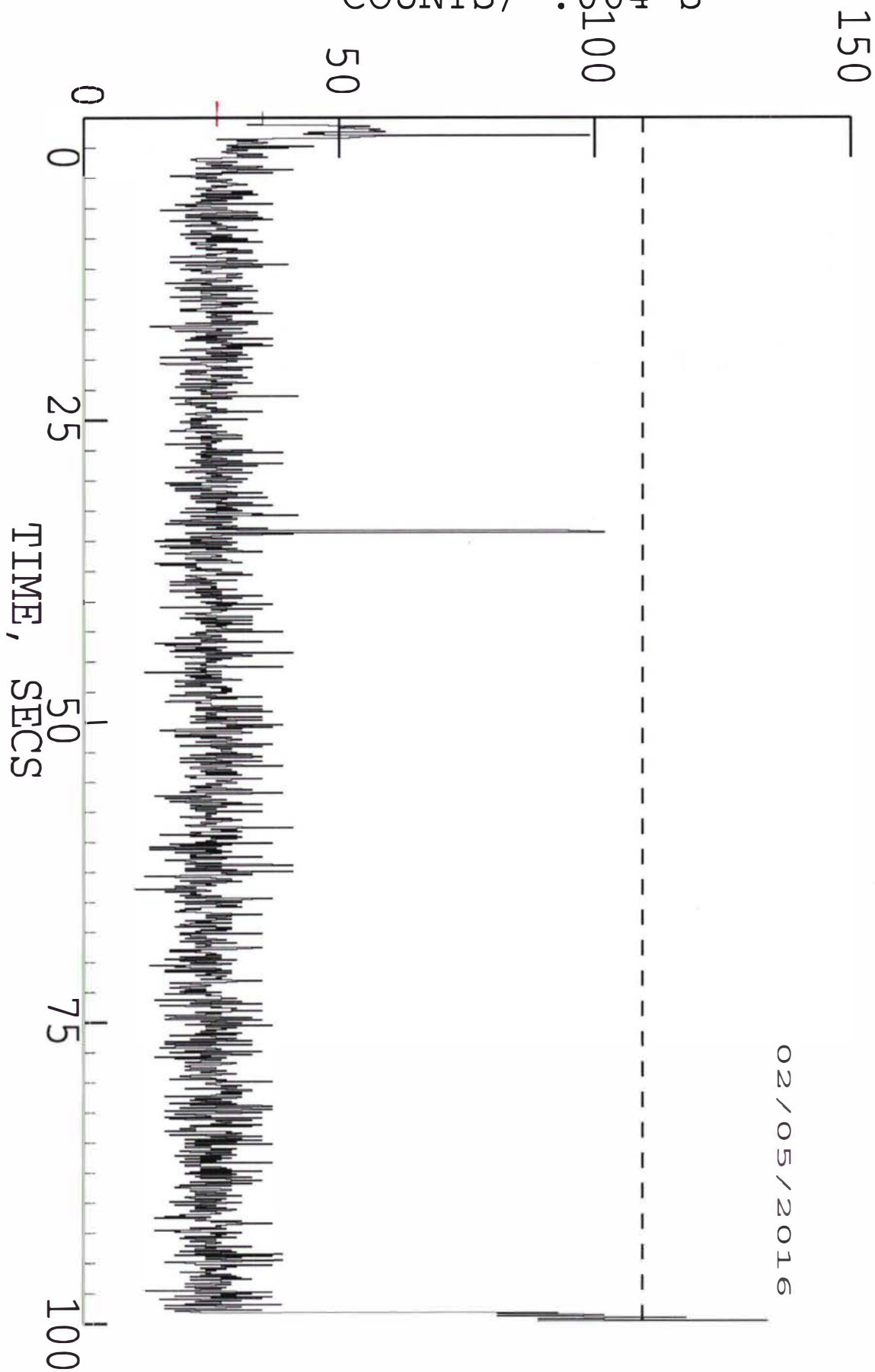
200- 750 keV

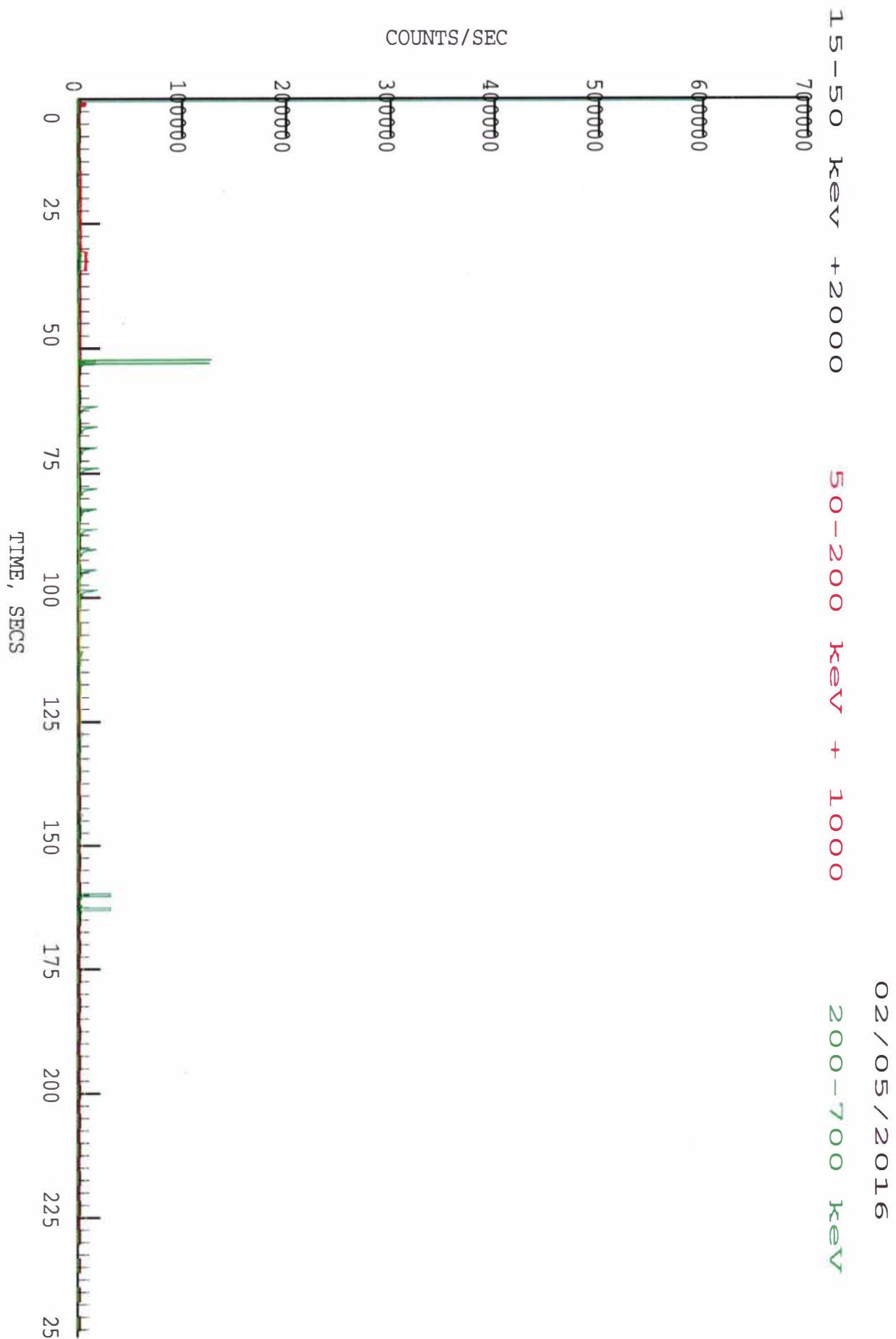
COUNTS/2.944 S



KONUS 25/04/16 69913.620 19:25:13.620
50- 200 keV
COUNTS/ .064 S

SP1 4/0

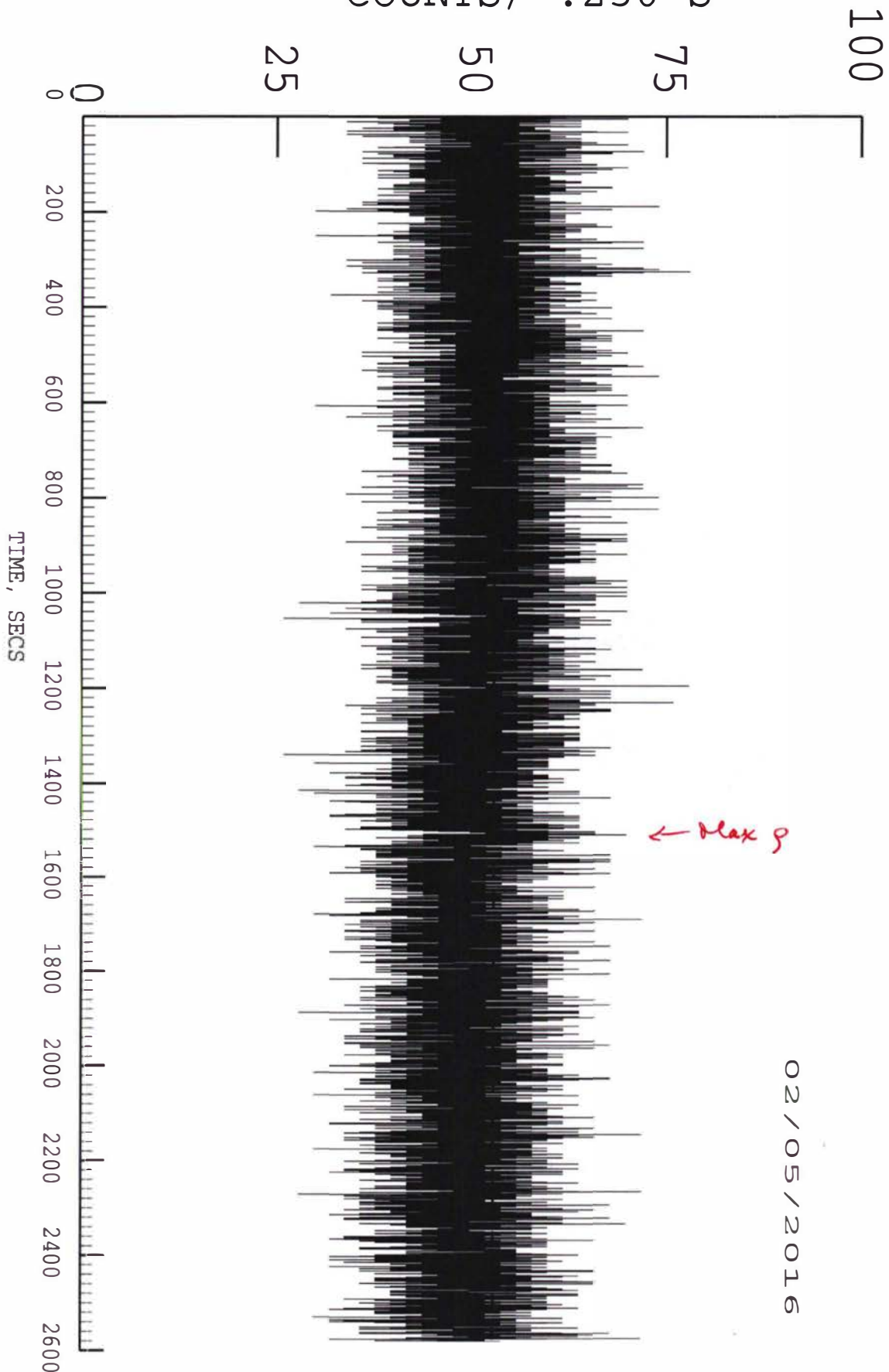




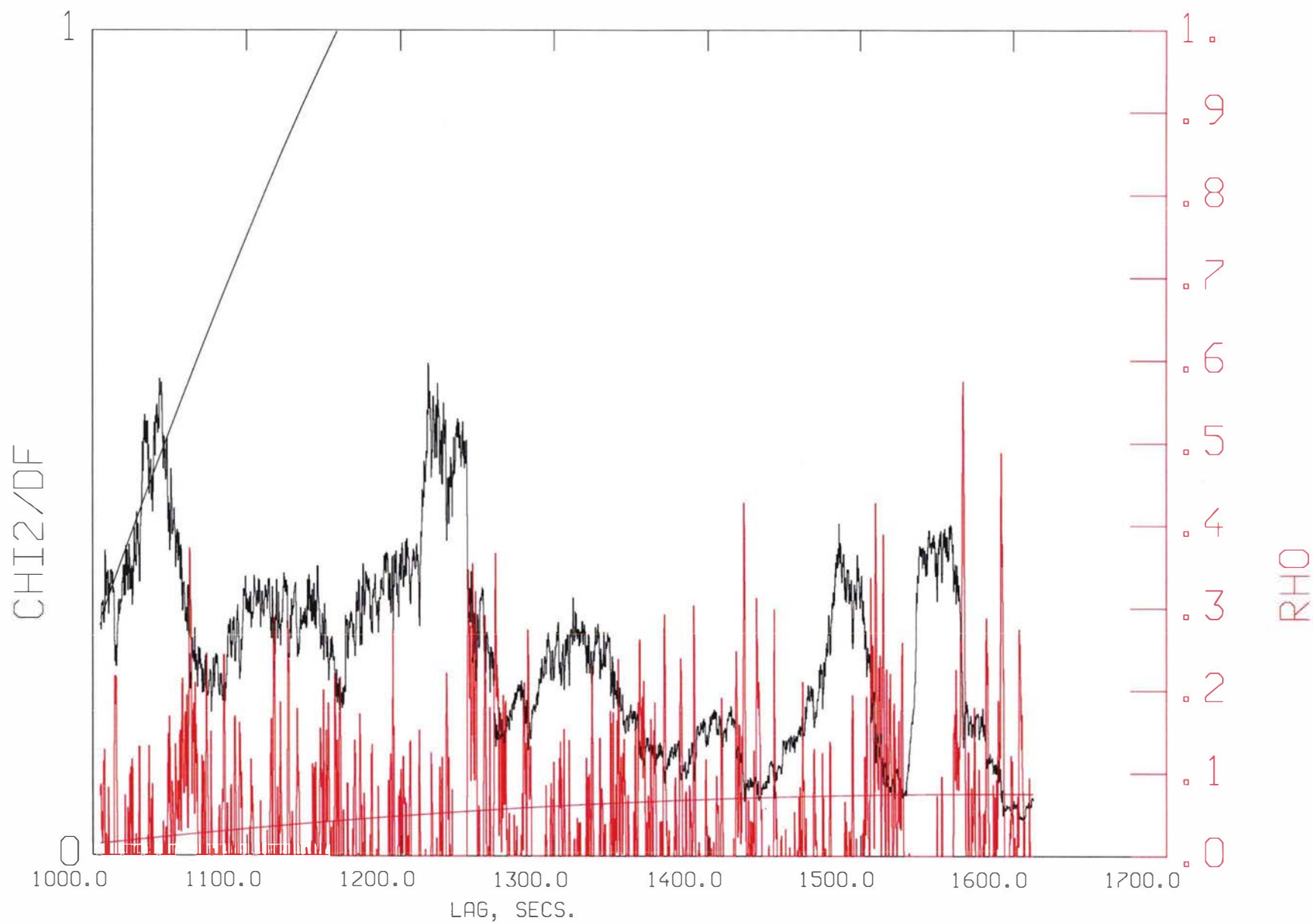
ODYSSEY 25/04/16 68604.810 19:03:24.810^A

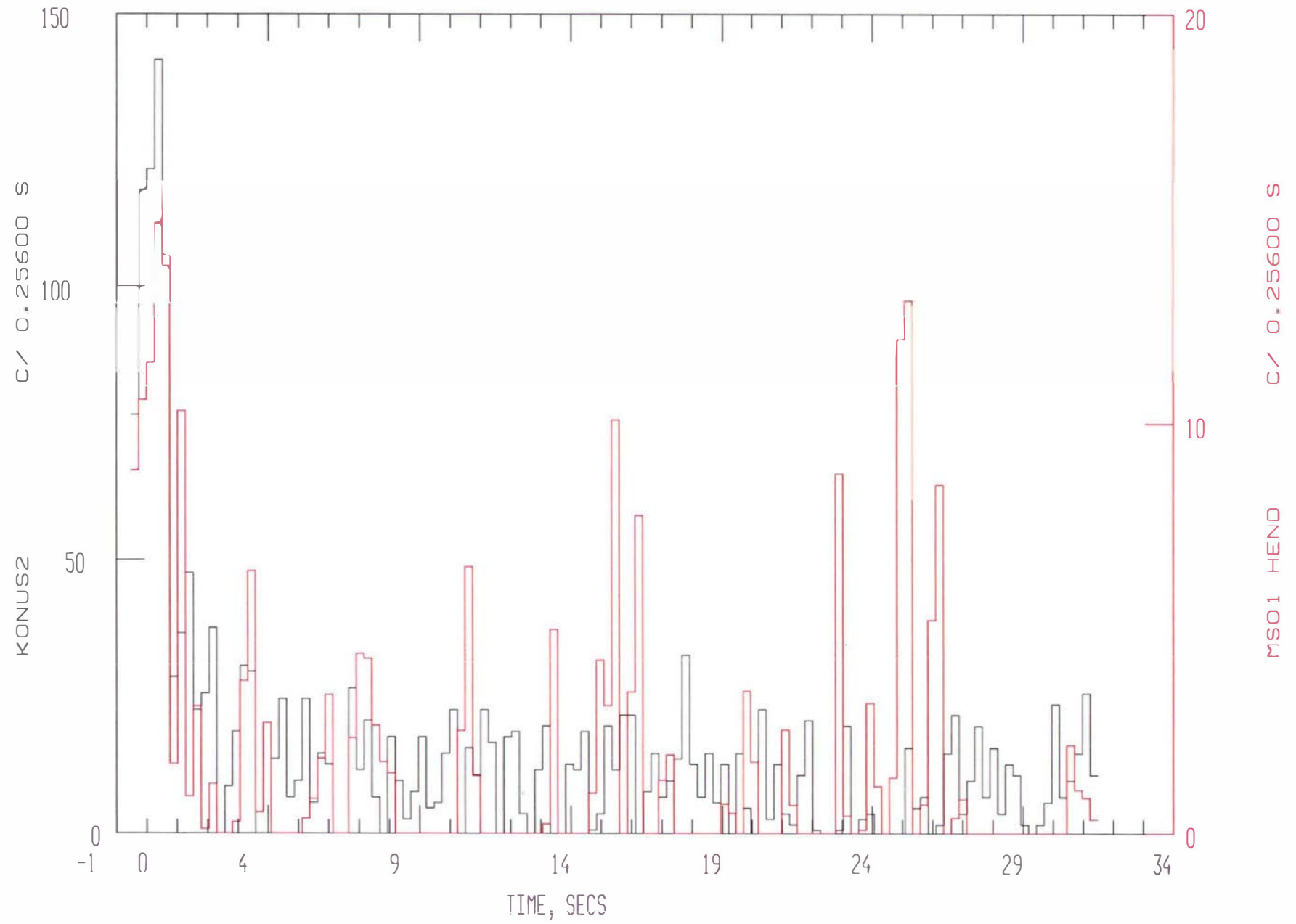
50-3000 keV

COUNTS/ .250 S



02/05/2016





Subject: [lpn] BAT lightcurve for trigger at 160425_1925

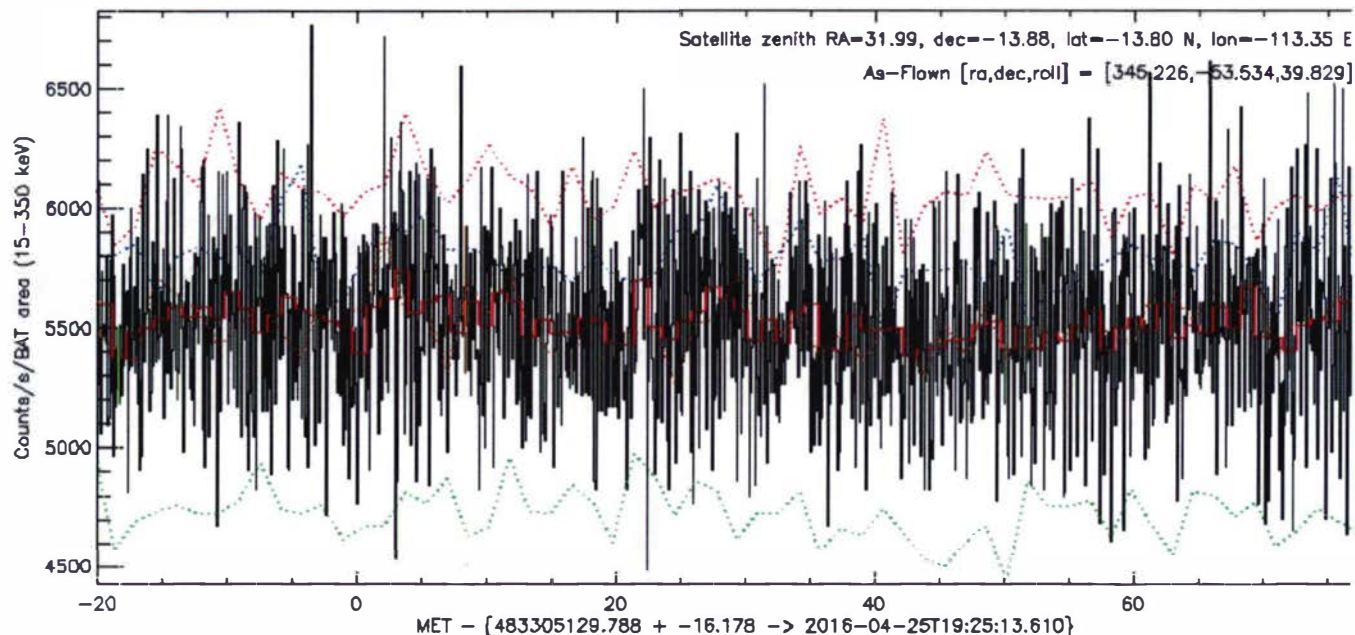
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/26/2016 9:54 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160425_1925.png—



```
% /usr/local/bin/swinfo -o 483305129.788
Swift Zenith(RA,dec):      31.99, -13.88
Swift Location(lon,lat,alt): -113.35 E, -13.80 N, 565 km
Time(MET + UTC -> UT):    483305129.788 + -16.178 -> 2016-04-25T19:25:13.610
YYMMDD_SOD:               160425_69913.610      DOY=116
Obs Sequence Number:      00085798011
Obs Target Name:          SPT-CLJ2300-5331
Obs Date and Times:       2016-04-25 19:13:45 - 19:30:41
Obs Pointing(ra,dec,roll): 345.226, -53.534, 39.83
```

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

Ipn mailing list
lpn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments:—

/tmp/swift/160425_1925_bat64ms_ipn	87.0 KB
/tmp/swift/160425_1925.png	28.5 KB

Subject: GCN/SWIFT_BAT_LIGHTCURVE

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

Date: 4/25/2016 4:33 PM

To: khurley@ssl.berkeley.edu

TITLE: GCN/SWIFT NOTICE
 NOTICE_DATE: Mon 25 Apr 16 23:33:04 UT
 NOTICE_TYPE: Swift-BAT GRB Lightcurve
 TRIGGER_NUM: 1083886, Seg_Num: 189
 GRB_RA: 280.313d {+18h 41m 15s} (J2000),
 280.647d {+18h 42m 35s} (current),
 279.290d {+18h 37m 10s} (1950)
 GRB_DEC: -54.359d {-54d 21' 33"} (J2000),
 -54.343d {-54d 20' 34"} (current),
 -54.407d {-54d 24' 24"} (1950)
 GRB_DATE: 17503 TJD; 116 DOY; 16/04/25
 GRB_TIME: 84371.34 SOD {23:26:11.34} UT
 TRIGGER_INDEX: 123
 GRB_PHI: -126.98 [deg]
 GRB_THETA: 24.65 [deg]
 DELTA_TIME: 958.00 [sec]
 TRIGGER_DUR: 0.256 [sec]
 SOLN_STATUS: 0x3
 RATE_SIGNIF: 0.00 [sigma]
 IMAGE_SIGNIF: 0.00 [sigma]
 LC_URL: sw00684098000msb.lc
 SUN_POSTN: 33.86d {+02h 15m 27s} +13.58d {+13d 34' 45"}
 SUN_DIST: 114.46 [deg] Sun_angle= 7.5 [hr] (West of Sun)
 MOON_POSTN: 256.90d {+17h 07m 35s} -17.71d {-17d 42' 51"}
 MOON_DIST: 40.93 [deg]
 MOON_ILLUM: 88 [%]
 GAL_COORDS: 341.31,-20.34 [deg] galactic lon,lat of the burst (or transient)
 ECL_COORDS: 277.00,-31.17 [deg] ecliptic lon,lat of the burst (or transient)
 COMMENTS: SWIFT-BAT GRB Lightcurve.
 COMMENTS: WARNING: No BAT_Position TDRSS message was received for this trigger_number!
 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 = 12.15,15.67 [deg].
 COMMENTS: The 3rd packet (of 3) was missing in the lightcurve data stream.

304 s

 $2.1 \times 10^{-6} \text{ erg cm}^{-2}$ $2.8 \text{ phot/cm}^2 \text{ s}$

SPI o/o

BAT

25/04/16

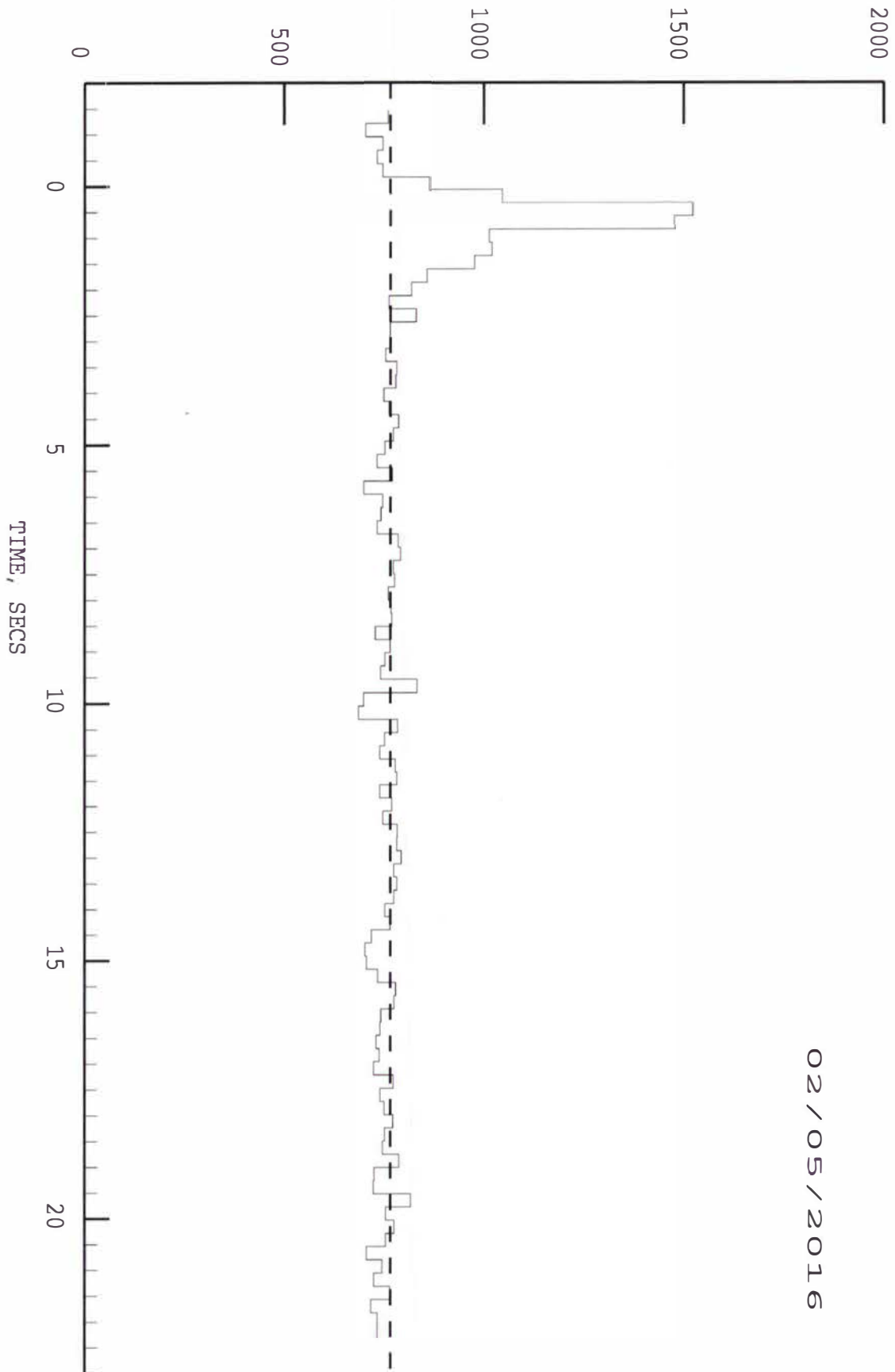
84371.341

23:26:11.341

25- 100 keV

COUNTS/ .256 S

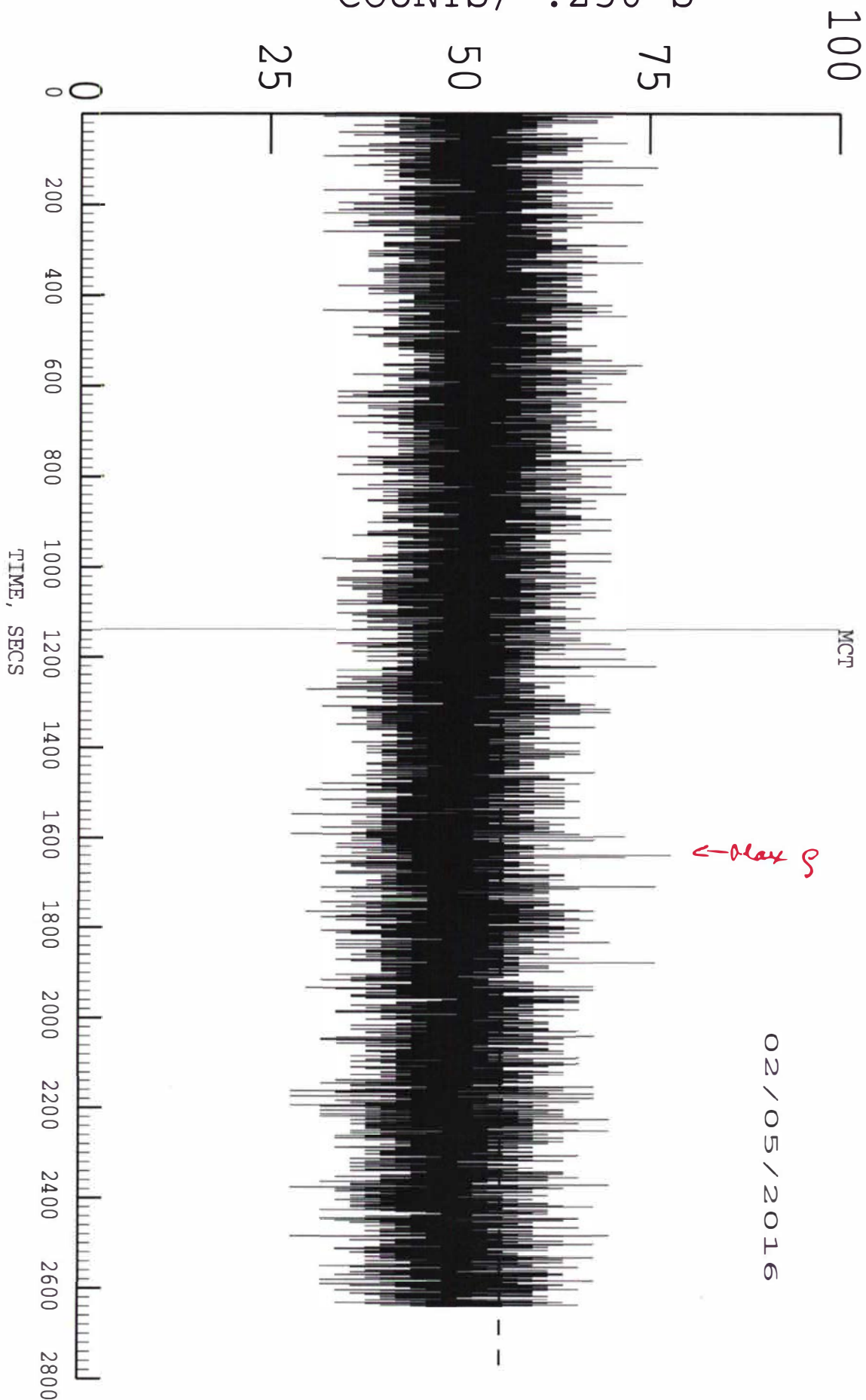
02/05/2016



ODYSSEY 25/04/16 83004.558 23:03:24.558

50-3000 keV

COUNTS/ .250 S



KONUS

26/04/2016

30.197

v02

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

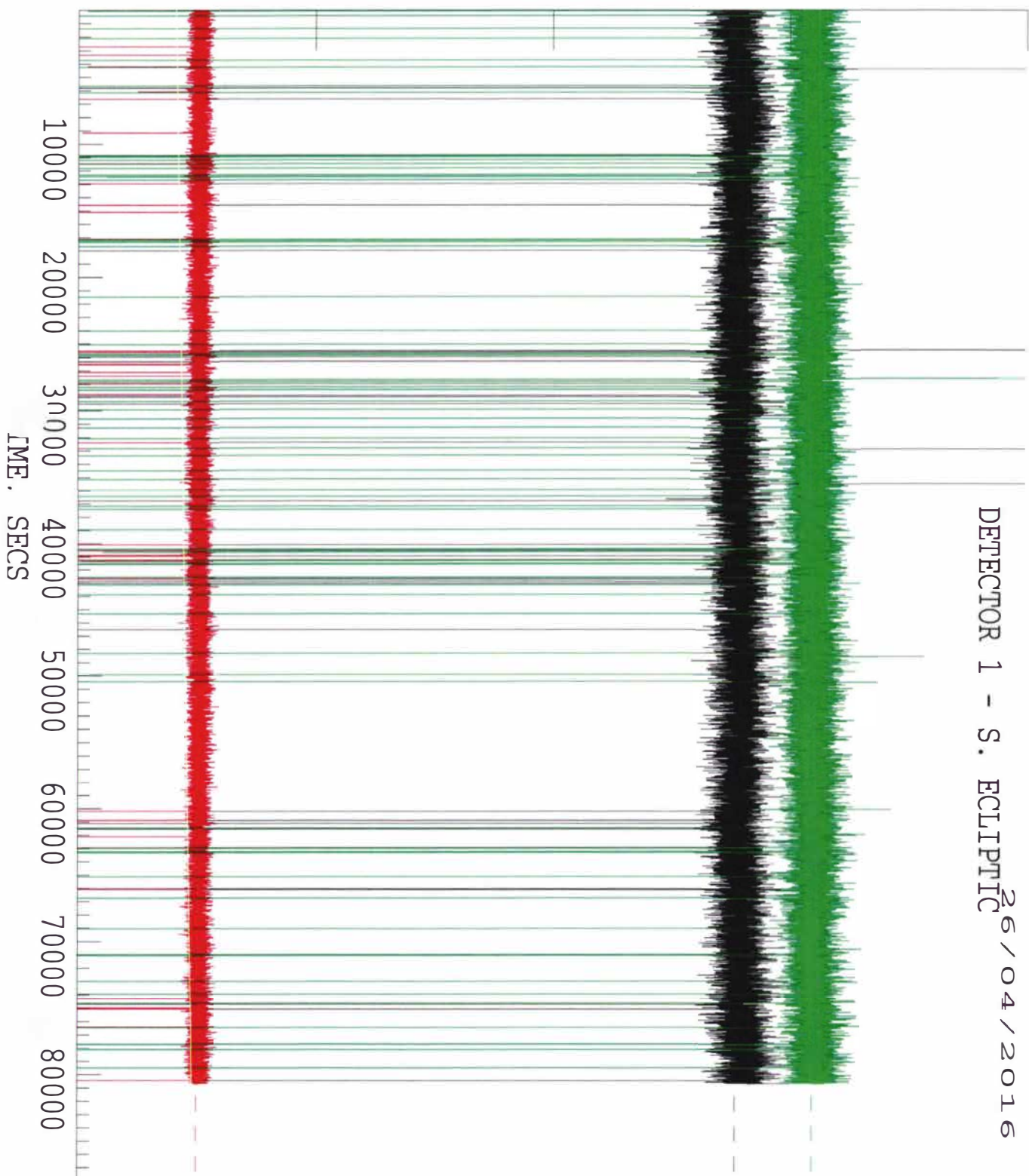
1009

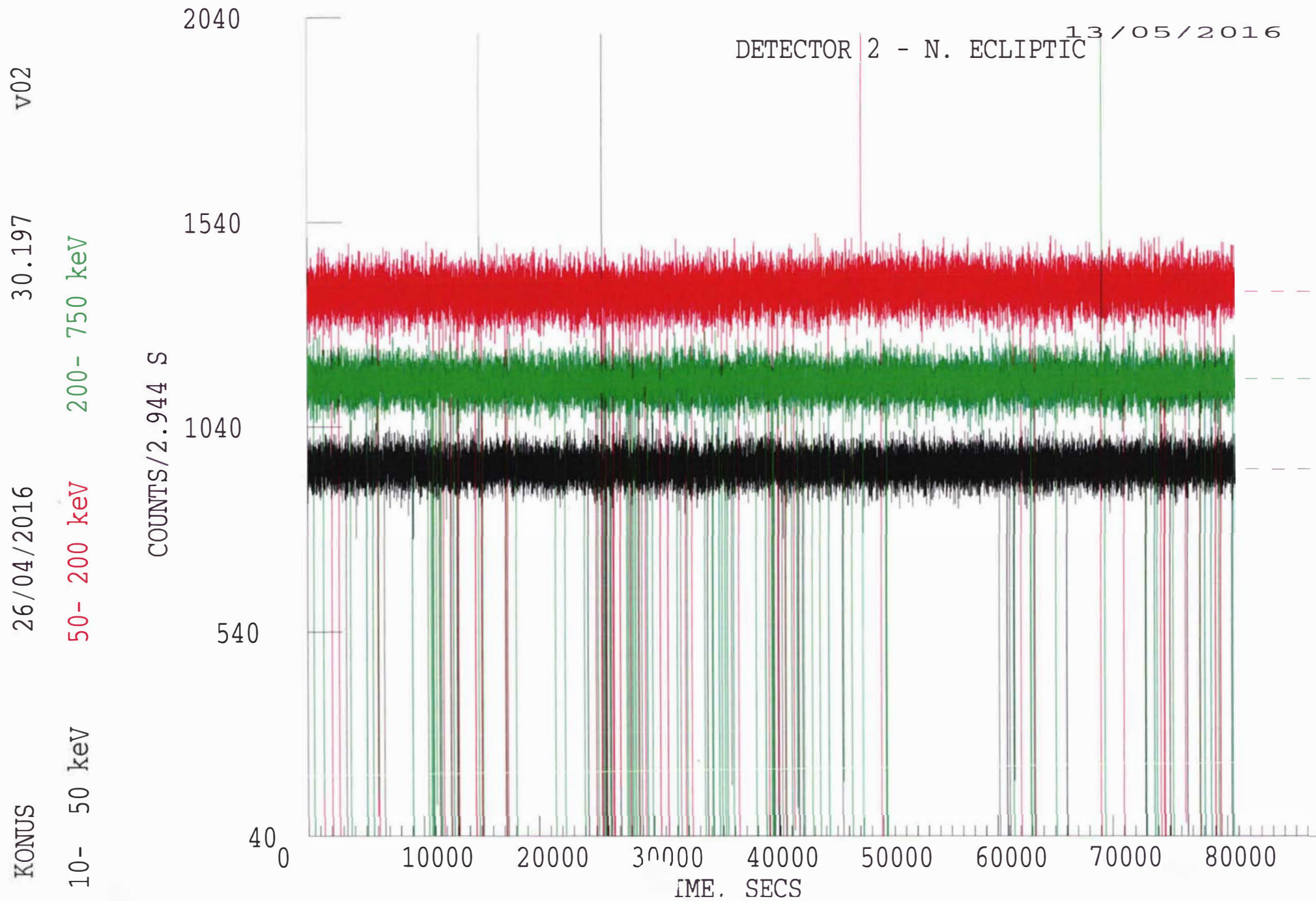
2009

3009

4009

8





KONUS

27/04/2016

18.925

v02

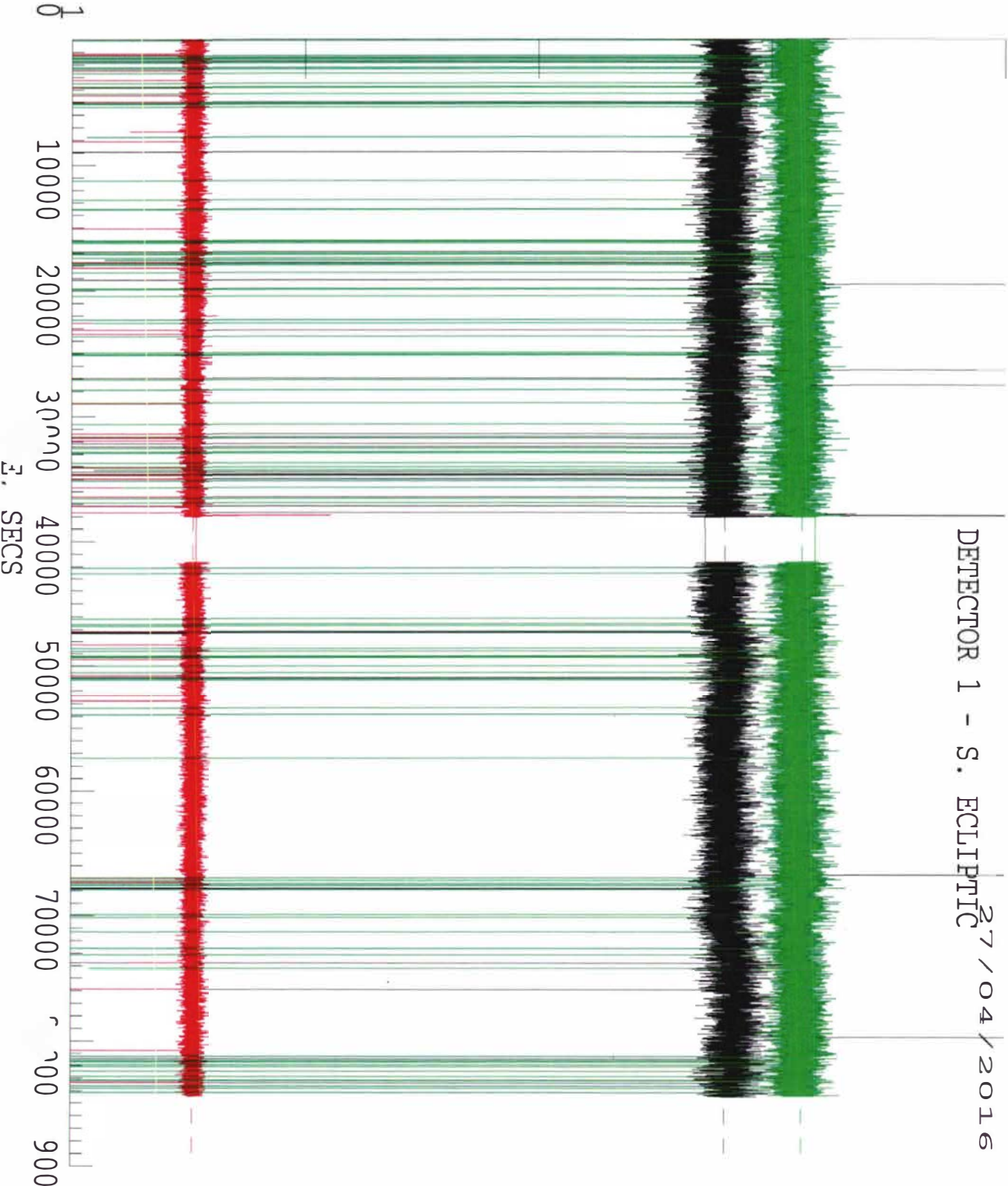
10- 50 keV

50- 200 keV

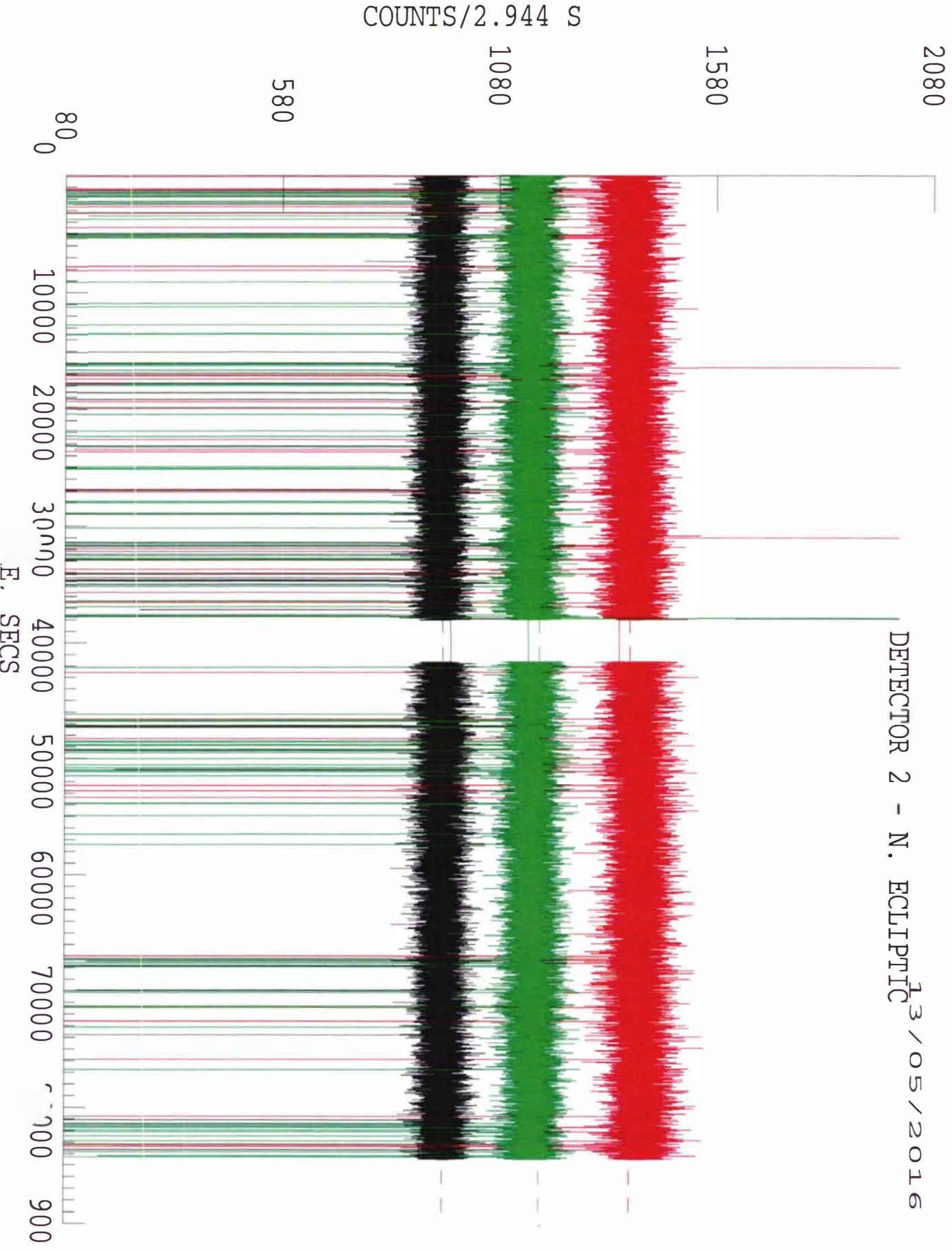
200- 750 keV

COUNTS/2.944 S

4001
3001
2001
1001



10- 50 keV50- 200 keV200- 750 keV



Subject: ICECUBE-160427A neutrino candidate event: updated direction information
From: GCN Circulars <gcncirc@capella2.gsfc.nasa.gov>
Date: 4/29/2016 9:30 AM
To: khurley@ssl.berkeley.edu

TITLE: GCN CIRCULAR
NUMBER: 19363
SUBJECT: ICECUBE-160427A neutrino candidate event: updated direction information
DATE: 16/04/29 16:29:47 GMT
FROM: Erik Blaufuss at U. Maryland/IceCube <blaufuss@icecube.umd.edu>

21152

IceCube detected a candidate cosmic neutrino IceCube-160427A, "AMON ICECUBE HESE 127853 67093193" at 05:52:32.00 UT on 16/04/27 (http://gcn.gsfc.nasa.gov/notices_amon/67093193_127853.amon) The event was a high energy starting event (HESE) with track-like characteristics and it arrived when the IceCube detector was in a normal operating state.

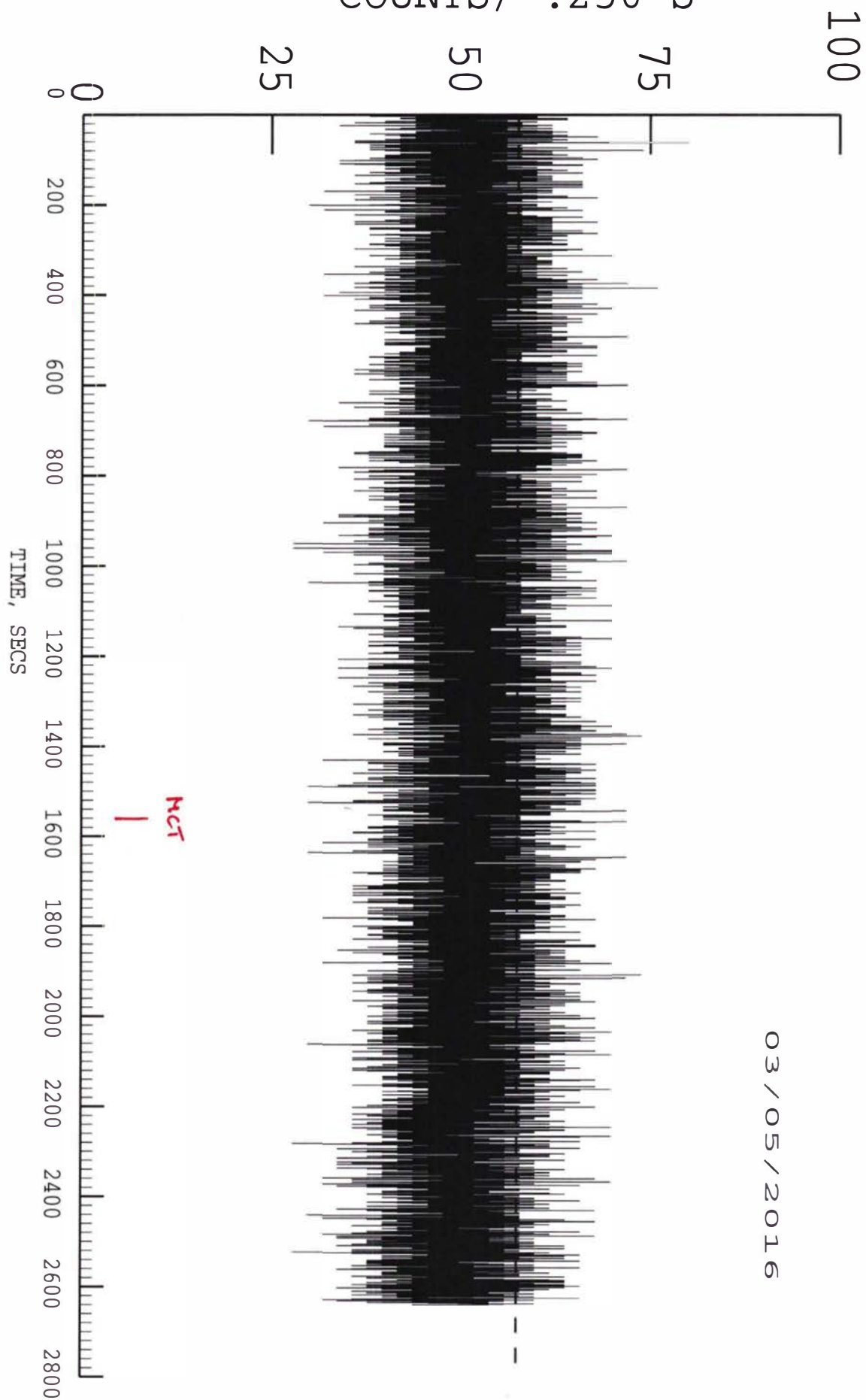
More sophisticated reconstruction algorithms have been applied offline, with the direction refined to RA=240.57d and DEC=+9.34d (J2000), and the position uncertainty reduced to an estimated 0.6 degrees or 36 arcminutes radius (stat+sys, 90% containment). We encourage followup by ground and space-based instruments to help identify a possible astrophysical source for the neutrino.

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

MCT 20896

INTEGRAL No data

ODYSSEY 27/04/16 19582.638 05:26:22.638^A
50-3000 keV
COUNTS/ .250 S



Subject: RHESSI Data for 20160427_0549

From: <x2hessi@ssl.berkeley.edu>

Date: 5/3/2016 4:02 PM

To: khurley@ssl.berkeley.edu

RHESSI Data for 20160427_0549

— hsi_20160427_054912.grb —

```
# HESSI 25 to 150 keV Counts
# Created 3-May-2016 16:02:07.00
# Detectors: 3r 4r 5r 6r 8r 9r
# columns: time (sec) counts (summed over detectors)
# time_interval = 0.0640000
# No SAA
# No Eclipse
# Full time range in non-SAA data gap
'HESSI' '27/04/16' 20952.000
25.0000 150.000
-0.0640000 0.0640000
0.00000 -0.0640000
```

— hsi_20160427_054912.eph —

```
# HESSI Ephemeris
# Created 3-May-2016 16:02:08.00
# Columns: time (sec) ra (deg) dec (deg) dist (km)
# time_interval = 20.0000
# No SAA
# No Eclipse
# Full time range in non-SAA data gap
'HESSI' '27/04/16' 20952.000
20.0000
0.000000 72.1030 9.79029 6865.96
20.000000 73.1376 10.5539 6866.08
40.000000 74.1770 11.3140 6866.17
60.000000 75.2214 12.0700 6866.26
80.000000 76.2719 12.8222 6866.34
100.00000 77.3290 13.5706 6866.43
120.00000 78.3921 14.3139 6866.51
140.00000 79.4625 15.0525 6866.59
160.00000 80.5408 15.7865 6866.68
180.00000 81.6260 16.5145 6866.76
200.00000 82.7197 17.2370 6866.83
220.00000 83.8224 17.9538 6866.91
240.00000 84.9333 18.6639 6866.99
260.00000 86.0537 19.3675 6867.06
280.00000 87.1843 20.0644 6867.14
300.00000 88.3241 20.7536 6867.21
320.00000 89.4745 21.4353 6867.28
340.00000 90.6361 22.1094 6867.35
360.00000 91.8080 22.7747 6867.42
380.00000 92.9915 23.4314 6867.49
```

— Attachments: —

hsi_20160427_054912.grb

364 bytes

hsi_20160427_054912.eph

1.4 KB



Subject: Re: ICECUBE-160427A neutrino candidate event: updated direction information
From: "Palmer, David" <palmer@lanl.gov>
Date: 5/3/2016 4:35 PM
To: Kevin Hurley <khurley@ssl.berkeley.edu>

Nothing visible. The source was outside of the FOV, (but not by very far) and above the horizon.

```
% /usr/local/bin/swinfo -o 2016-04-27T05:52:32 -s 240.6_9.4
Swift Zenith(RA,dec):      250.30, 20.57
Swift Location(lon,lat,alt): -53.31 E, 20.54 N, 551 km
Time(MET + UTCF -> UT):    483429168.185 + -16.184 -> 2016-04-27T05:52:31.999
YYMMDD_SOD:                160427_21151.999      DOY=118
Obs Sequence Number:       00034339011
Obs Target Name:           WD1145+017
Obs Date and Times:        2016-04-27 05:22:45 - 05:52:41
Obs Pointing(ra,dec,roll): 177.088, 1.473, 281.28
240.6_9.4_imageloc (boresight_dist, angle): (64, 69)
240.6_9.4_exposure (cm^2 cos adjusted): 0
240.6_9.4_altitude: 98 (up)
```

--
David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-3169 (fax)

On May 3, 2016, at 5:28 PM, Kevin Hurley <khurley@ssl.berkeley.edu> wrote:

Dear David,

Could you generate a BAT lightcurve for the time around this event please?

Thanks

Kevin

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

Subject: ICECUBE-160427A neutrino candidate event: updated direction information
Date: Fri, 29 Apr 2016 12:30:00 -0400
From: GCN Circulars <gcn@capella2.gsfc.nasa.gov>
To: khurley@ssl.berkeley.edu

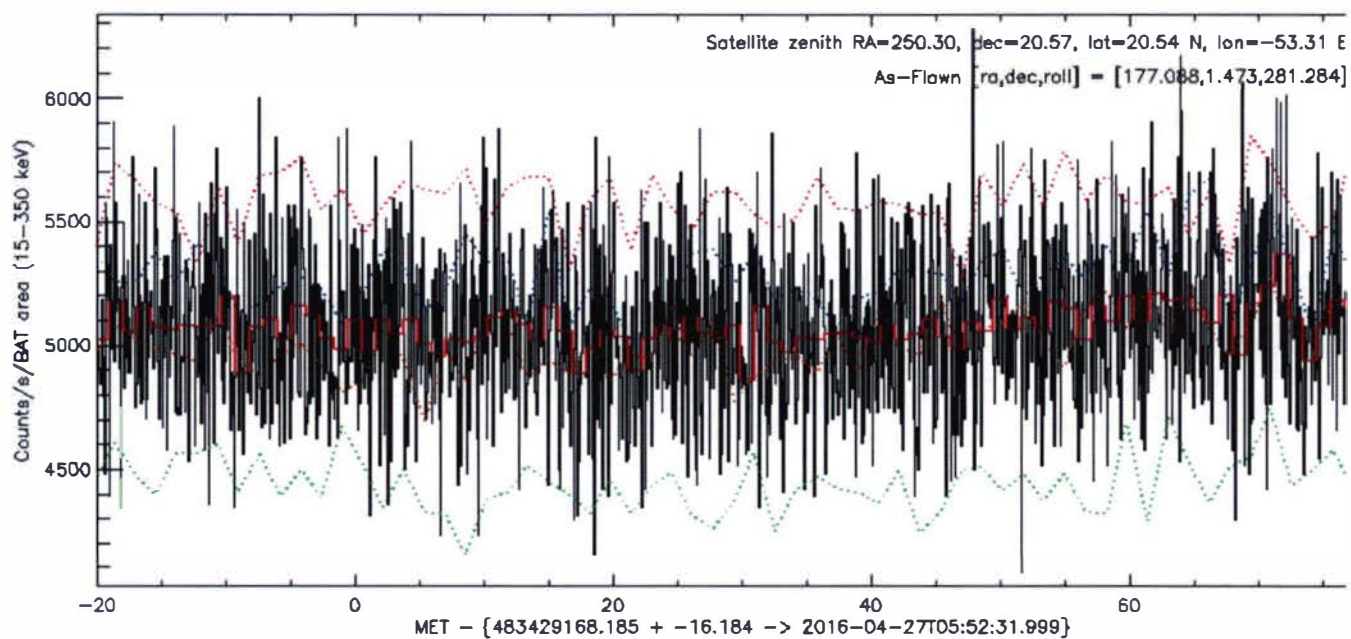
TITLE: GCN CIRCULAR
NUMBER: 19363
SUBJECT: ICECUBE-160427A neutrino candidate event: updated direction information
DATE: 16/04/29 16:29:47 GMT
FROM: Erik Blaufuss at U. Maryland/IceCube <blaufuss@icecube.umd.edu>

IceCube detected a candidate cosmic neutrino IceCube-160427A, "AMON ICECUBE HESE 127853 67093193" at 05:52:32.00 UT on 16/04/27 (http://gcn.gsfc.nasa.gov/notices_amon/67093193_127853_amon) The event was a high energy starting event (HESE) with track-like characteristics and it arrived when the IceCube detector was in a normal operating state.

More sophisticated reconstruction algorithms have been applied offline, with the direction refined to RA=240.57d and DEC=+9.34d (J2000), and the position uncertainty reduced to an estimated 0.6 degrees or 36 arcminutes radius (stat+sys, 90% containment). We encourage followup by ground and space-based instruments to help identify a possible astrophysical source for the neutrino.

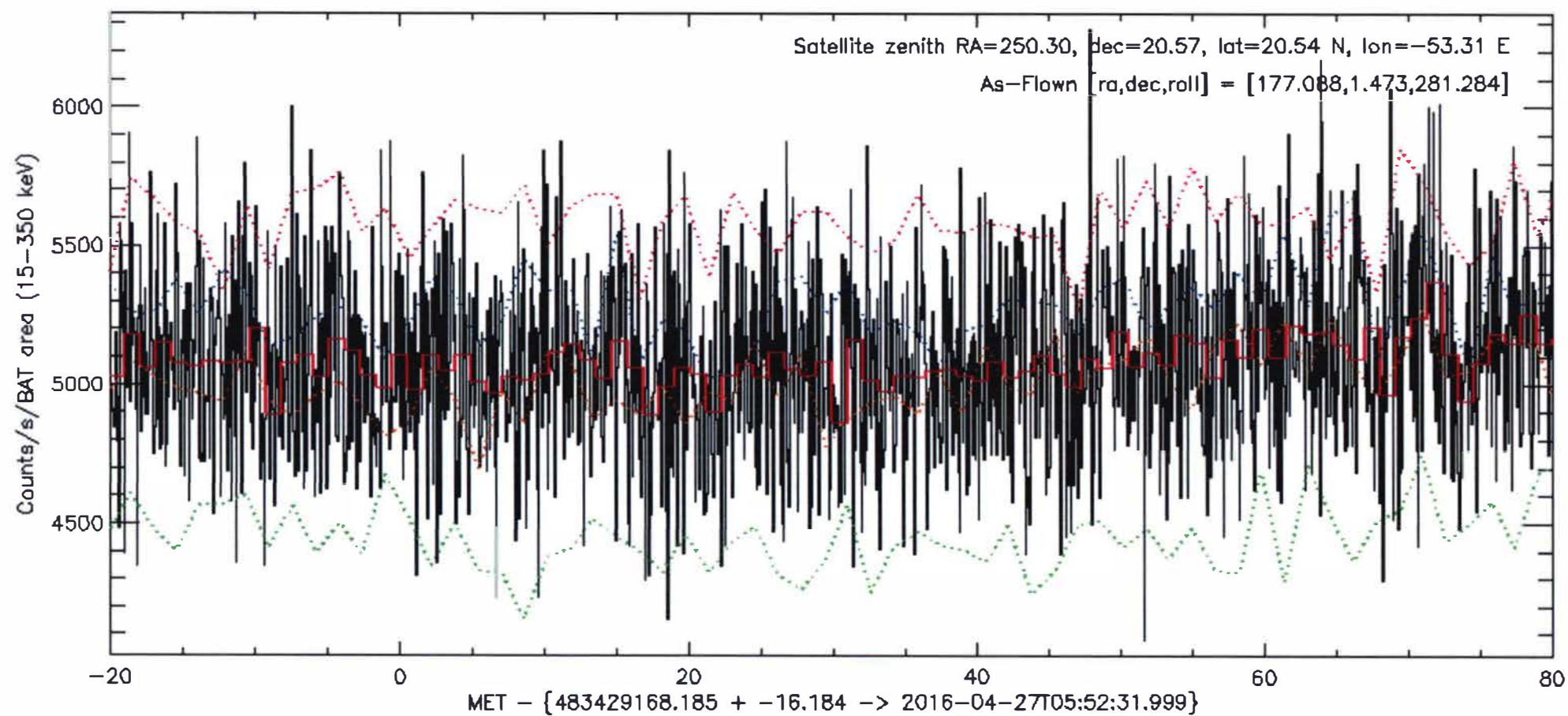
The IceCube neutrino observatory is a cubic-kilometer neutrino detector operating at the geographic south Pole, Antarctica.
The IceCube realtime alert point of contact can be reached at roc@icecube.wisc.edu

--160427_0552.png--



Attachments:

160427_0552.png	28.0 KB
160427_0552_bat64ms_ipn	91.6 KB

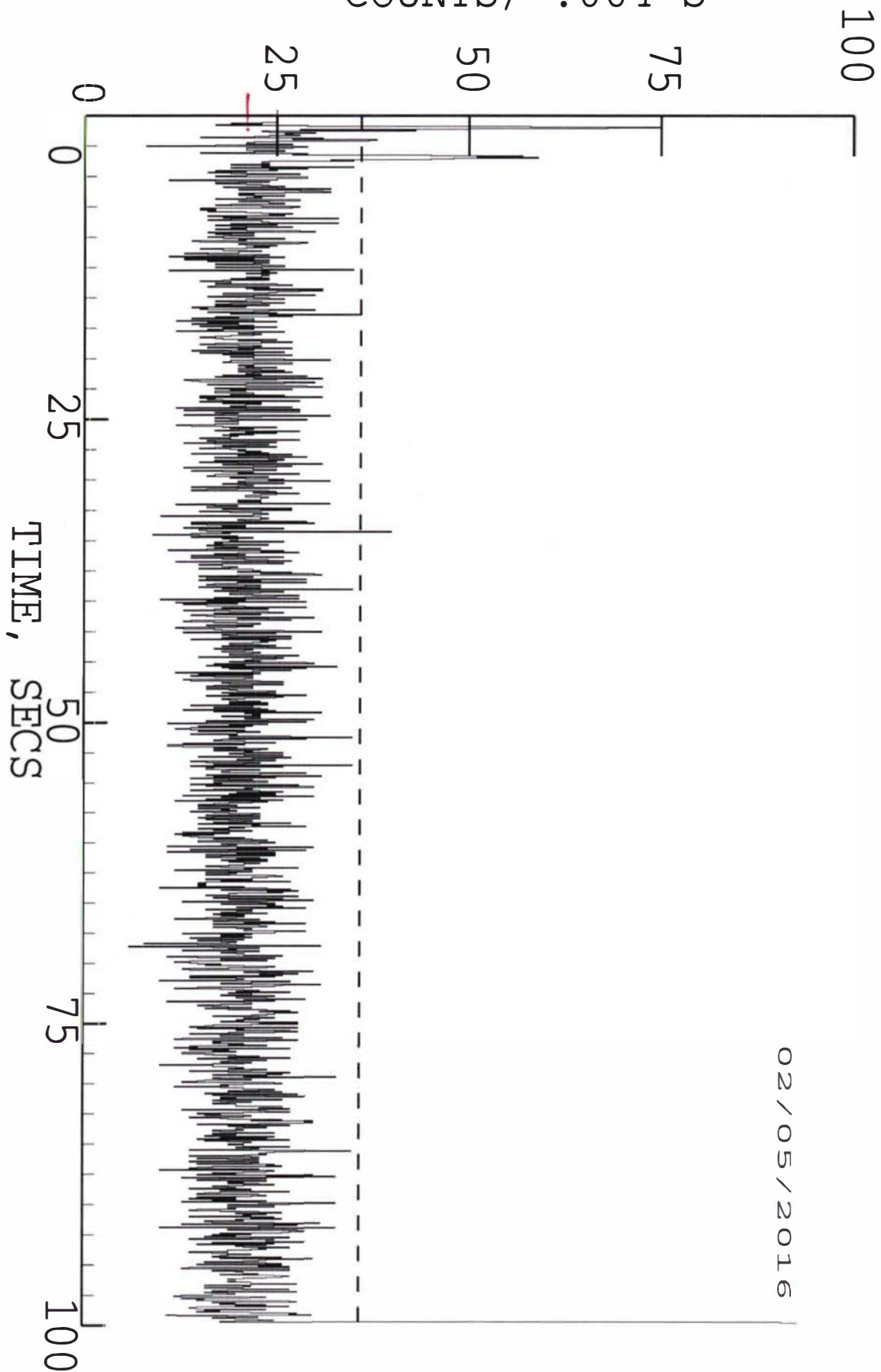


KONUS 27/04/16 37785.294 10:29:45.294^B

50- 200 keV

COUNTS/ .064 S

SPI N/O



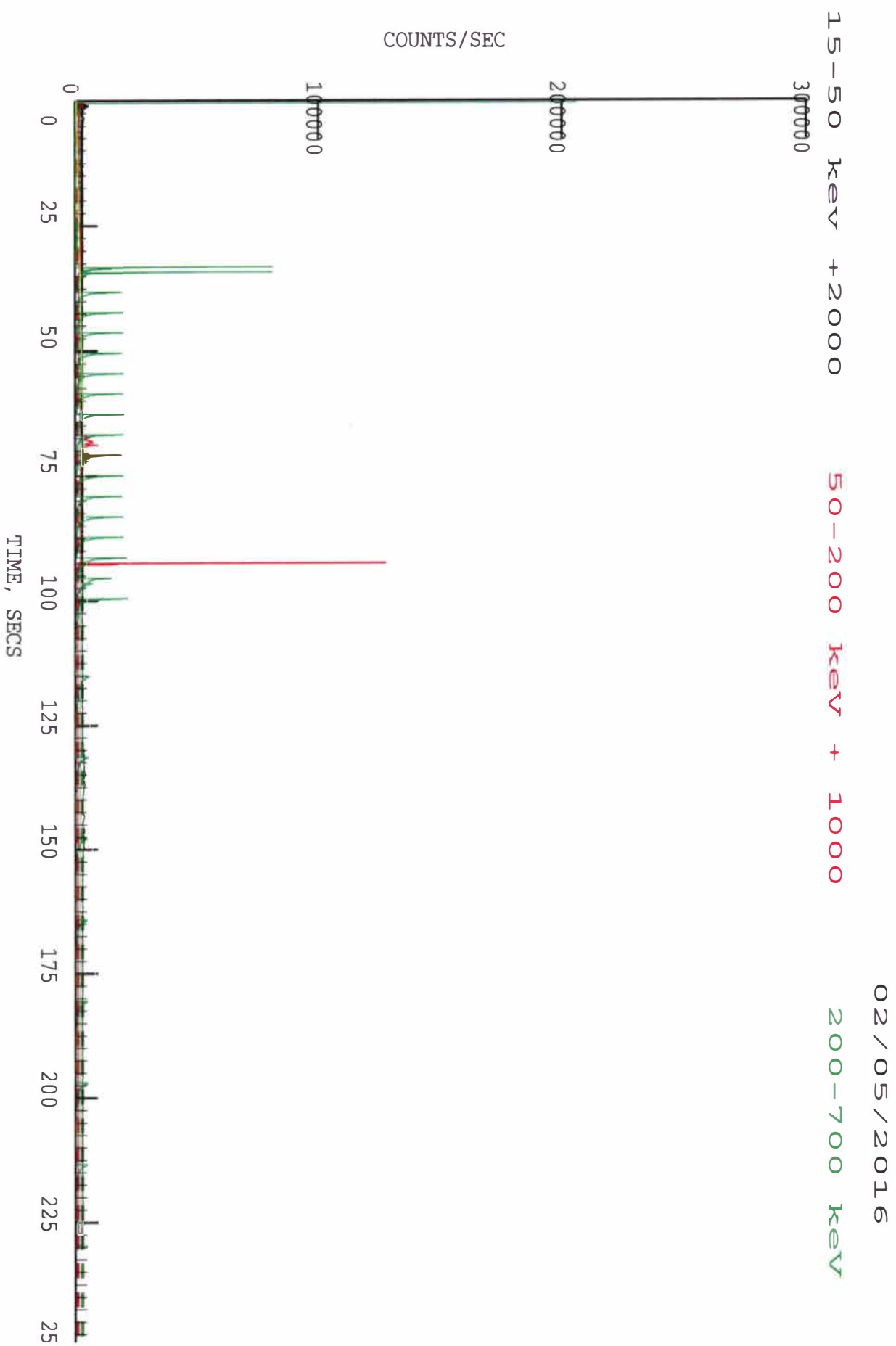
B

KONUS

27/04/16

37785.000

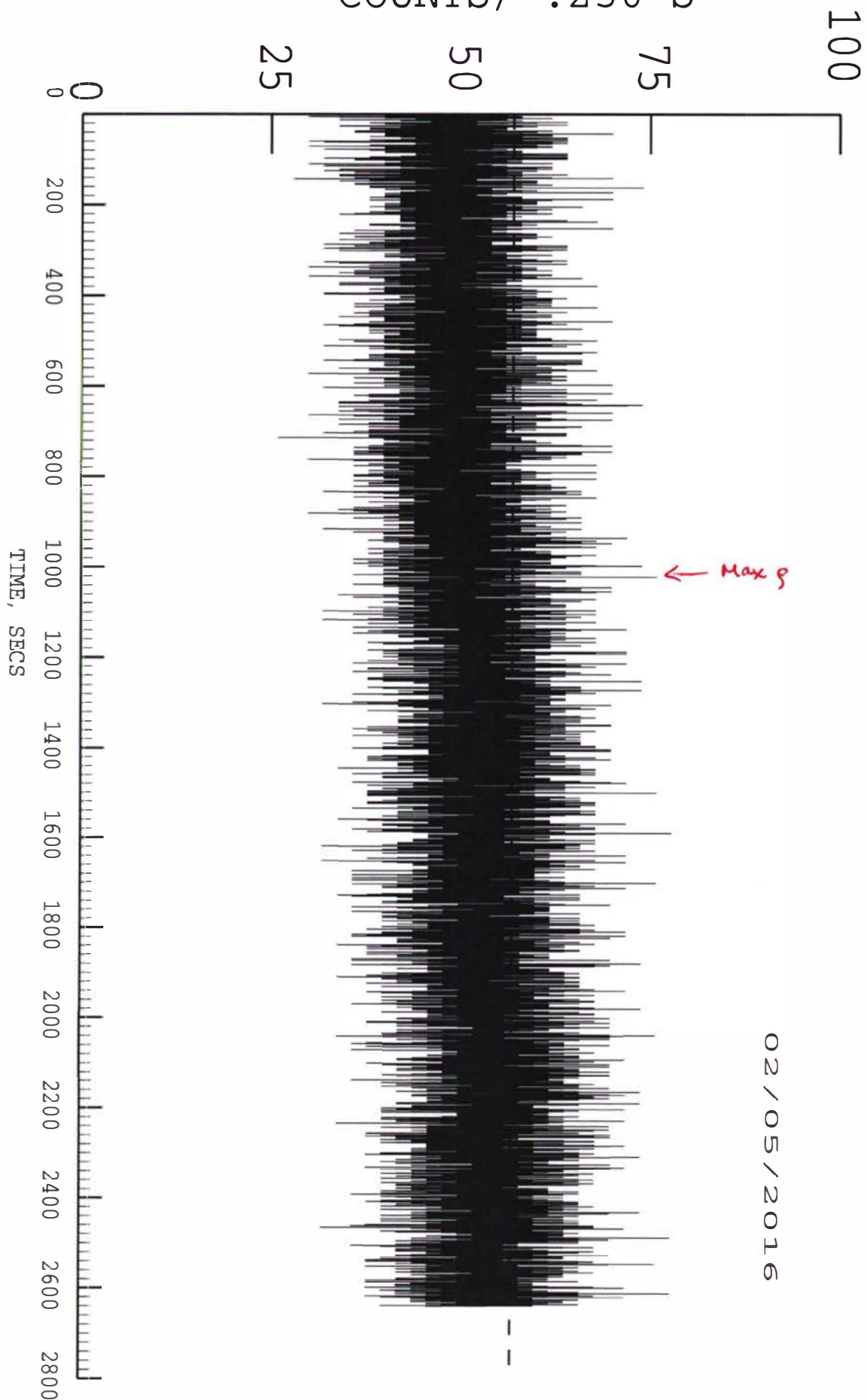
10:29:45.000



ODYSSEY 27/04/16 36442.338 10:07:22.338^B

50-3000 keV

COUNTS/ .250 S



Subject: Re: [Ipn] bright long GRB 20160427_T37785
From: "Palmer, David" <palmer@lanl.gov>
Date: 4/27/2016 1:31 PM
To: Dmitry Svinkin <svinkin@mail.ioffe.ru>
CC: IPN <ipn@ssl.berkeley.edu>

We see neither the precursor pulse (already distributed) nor the activity at T+130 (attached)

T+130 info:

% /usr/local/bin/swinfo -o 20160427_T37915
Swift Zenith(RA,dec): 219.60, 18.04
Swift Location(lon,lat,alt): -154.04 E, 17.97 N, 548 km
Time(MET + UTCF -> UT): 483445931.186 + -16.185 -> 2016-04-27T10:31:54.999
YYMMDD_SOD: 160427_37914.999 DOY=118
Obs Sequence Number: 00034287027
Obs Target Name: RE 1034+396
Obs Date and Times: 2016-04-27 10:23:45 - 10:40:44
Obs Pointing(ra,dec,roll): 158.601, 39.644, 296.17

David Palmer palmer@lanl.gov (505)665-6863 (voice) (505)665-3169 (fax)

On Apr 27, 2016, at 1:59 PM, Dmitry Svinkin <svinkin@mail.ioffe.ru> wrote:

Dear colleagues,

A bright, long-duration GRB 20160427_T37785 triggered Konus-Wind at 2016-04-27 T0(KW)=37785.294 s UT (10:29:45.294) - see the attached figure.

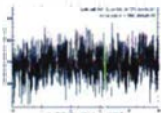
The source of the burst is in the southern ecliptic hemisphere.

Any other detections?

Best regards,

Dmitry

<kw20160427_37785_256ms.png>
Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>



Ipn mailing list
ipn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

B

Subject: [Ipn] BAT lightcurve for trigger at 160427_1029

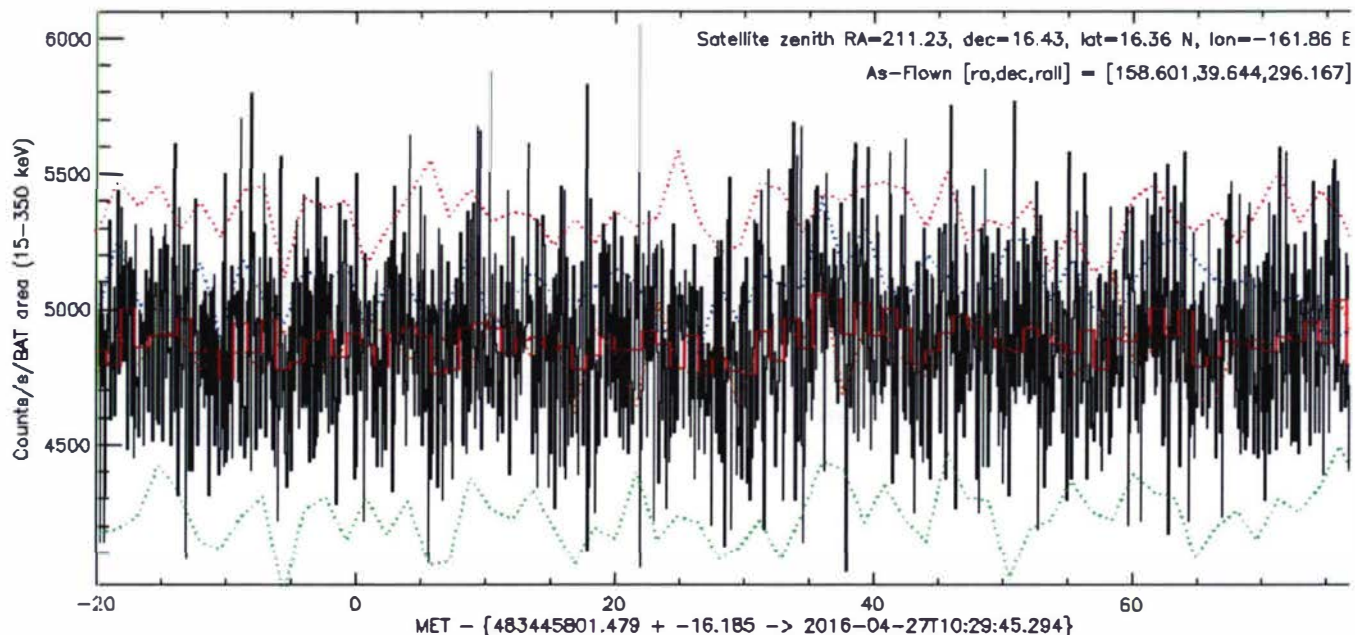
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/27/2016 11:43 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

—/tmp/swift/160427_1029.png



```
% /usr/local/bin/swinfo -o 483445801.479
Swift Zenith(RA,dec):      211.23, 16.43
Swift Location(lon,lat,alt): -161.86 E, 16.36 N, 547 km
Time(MET + UTCF -> UT):   483445801.479 + -16.185 -> 2016-04-27T10:29:45.294
YYMMDD_SOD:               160427_37785.294      DOY=118
Obs Sequence Number:      00034287027
Obs Target Name:          RE 1034+396
Obs Date and Times:       2016-04-27 10:23:45 - 10:40:44
Obs Pointing(ra,dec,roll): 158.601, 39.644, 296.17
```

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

Ipn mailing list
Ipnl@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/ipn>

—Attachments: —

/tmp/swift/160427_1029_bat64ms_ipn	87.1 KB
/tmp/swift/160427_1029.png	28.1 KB

KONUS

28/04/2016

7.652

v03

10- 50 keV

50- 200 keV

200- 750 keV

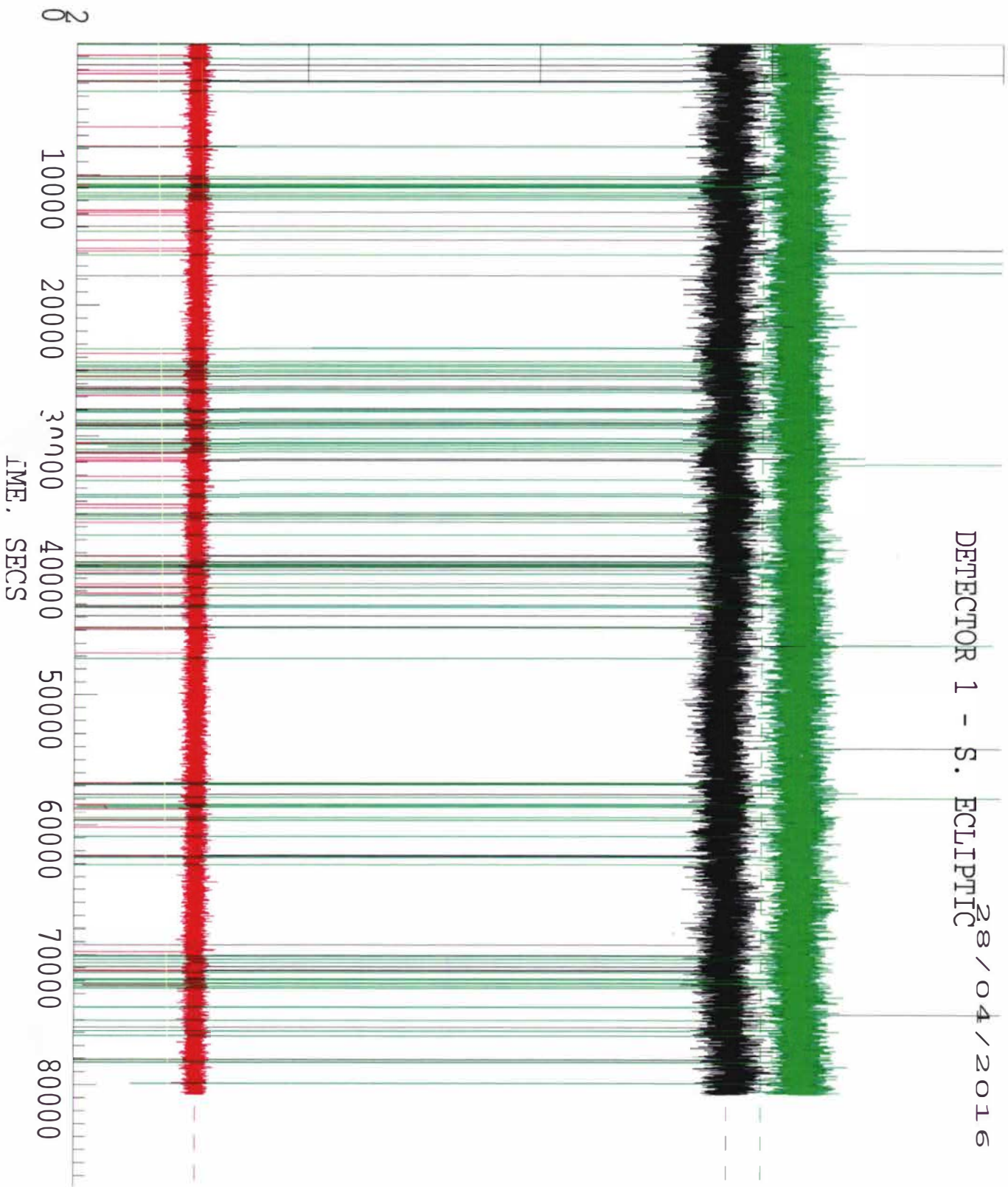
COUNTS/2.944 S

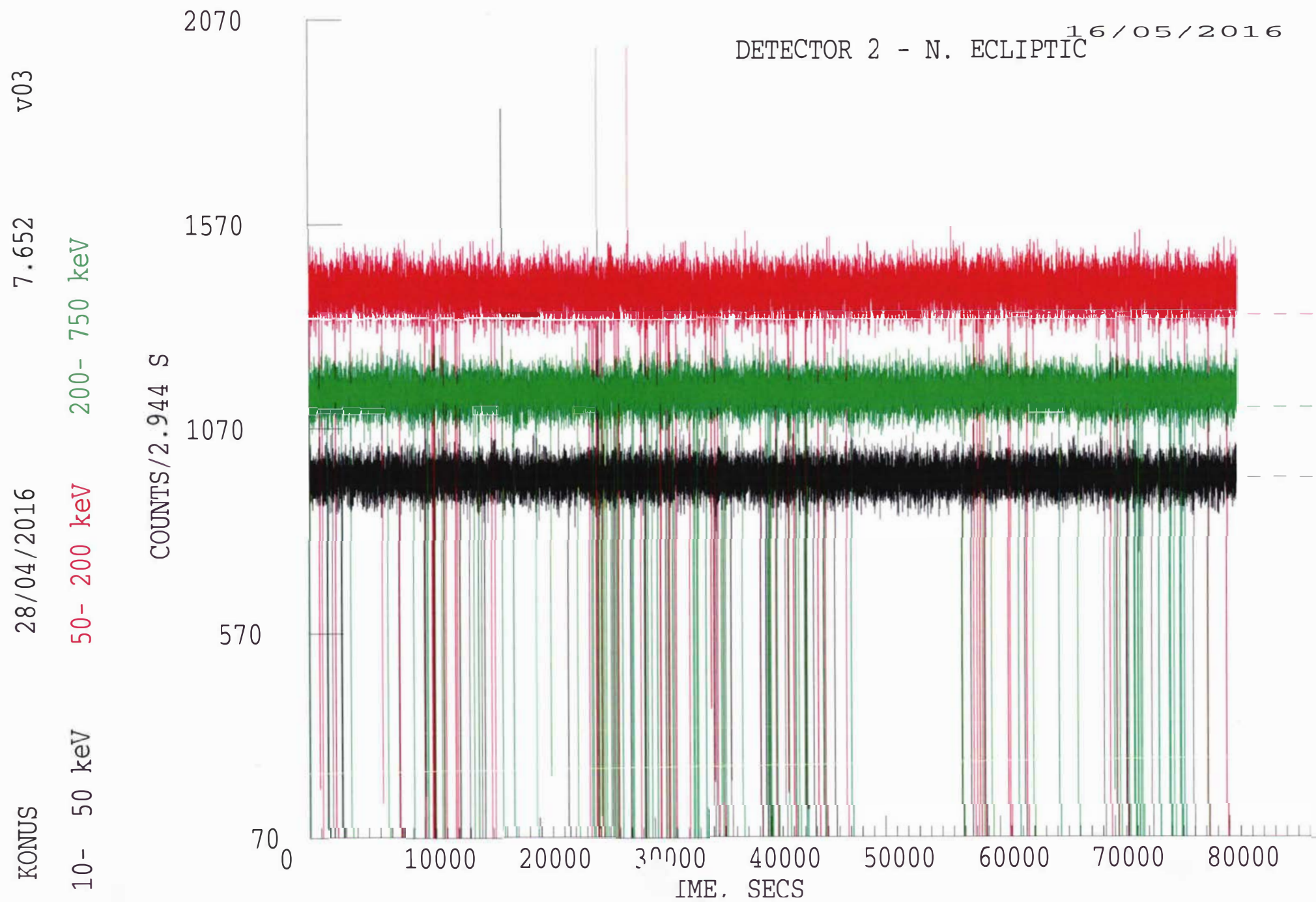
1002

2002

3002

4002





FERMI

28/04/16

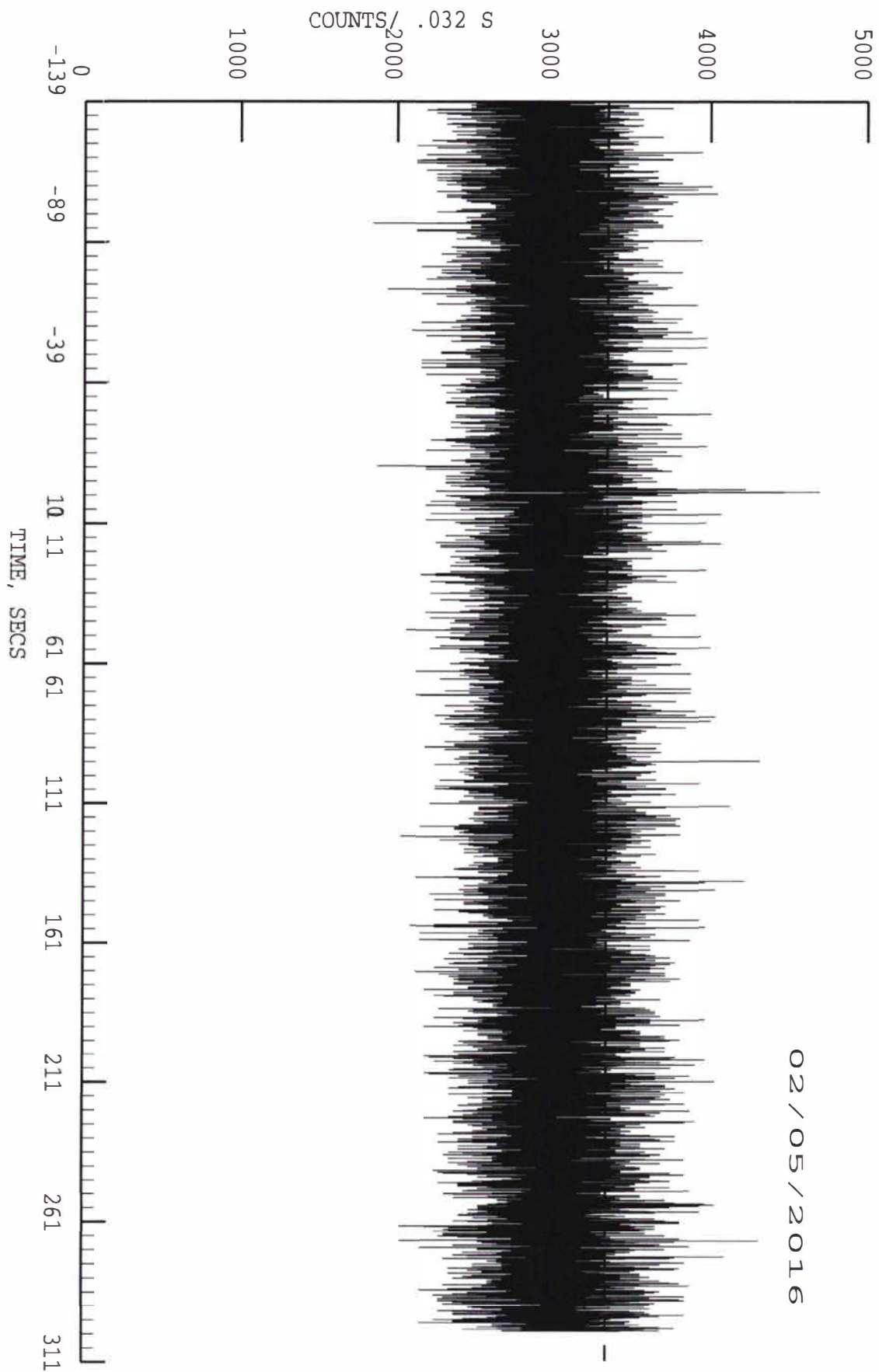
35597.762

09:53:17.762

26- 293 keV

28.2 - 26.5 8.8

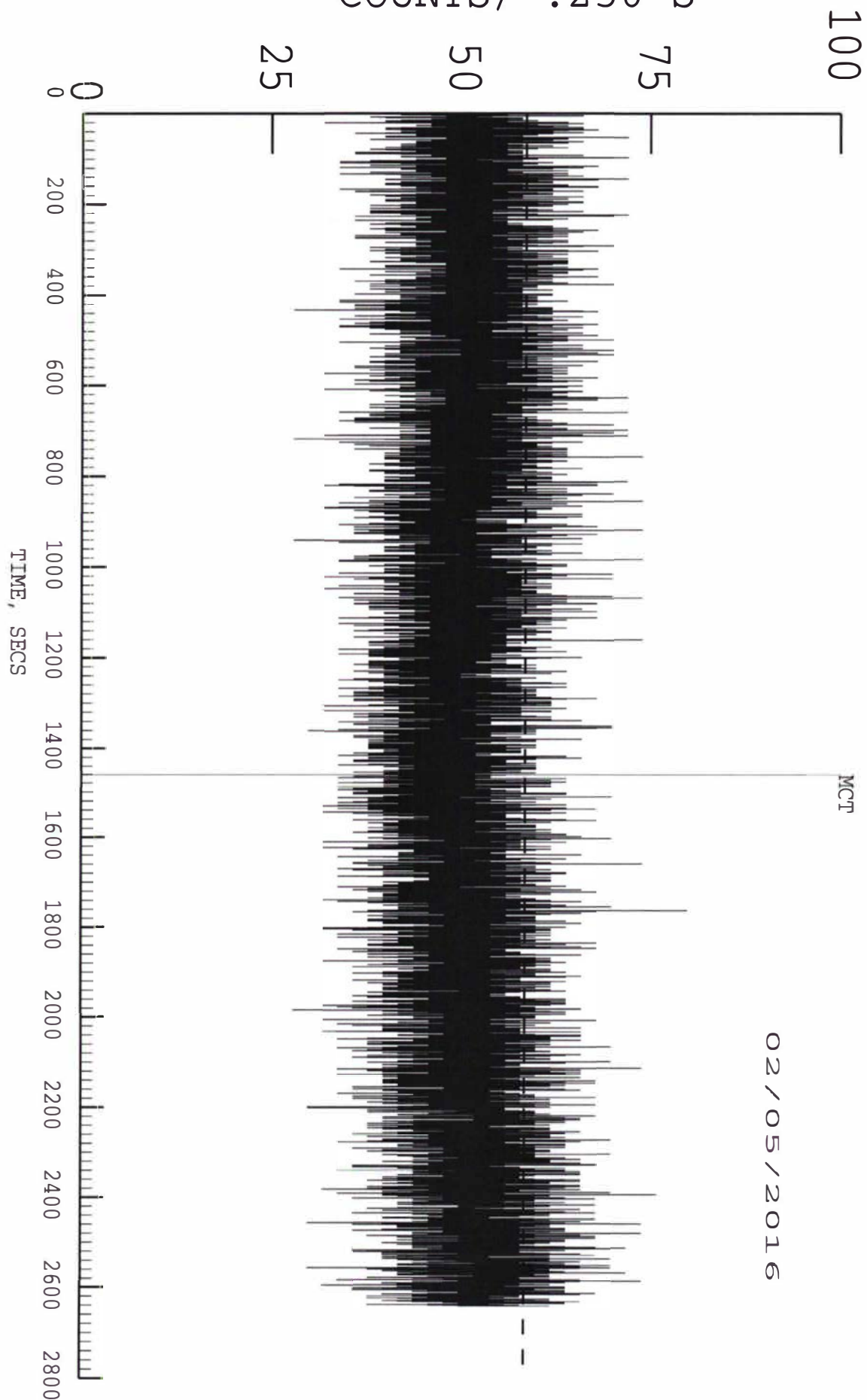
SPI N/O



ODYSSEY 28/04/16 34280.847 09:31:20.847

50-3000 keV

COUNTS/ .250 S



Subject: [lpn] BAT lightcurve for trigger at 160428_0953

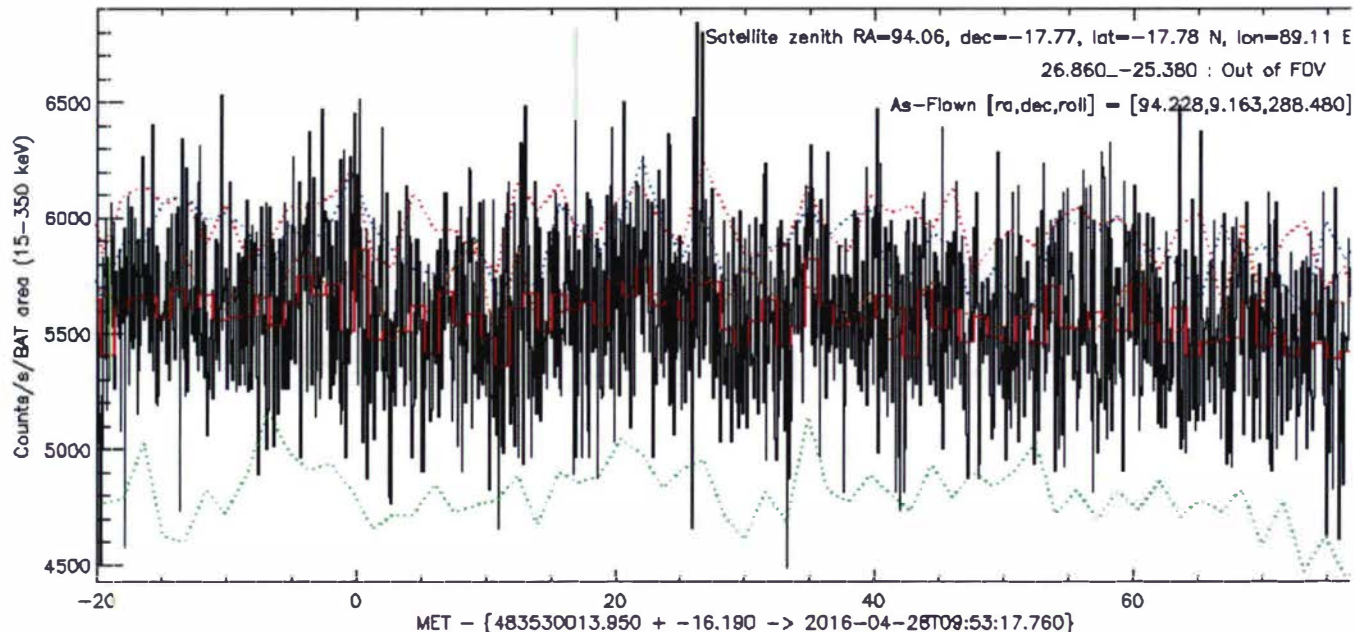
From: palmer+automatic_lightcurve@lanl.gov

Date: 4/28/2016 9:09 AM

To: jwren@lanl.gov, gbm-ba@mpe.mpg.de, ipn@ssl.berkeley.edu, dmopalmer@gmail.com, vestrand@lanl.gov, mkippen@lanl.gov, bat_team@bigbang.gsfc.nasa.gov, palmer+automatic_lightcurve@lanl.gov

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

~/tmp/swift/160428_0953.png



```
% /usr/local/bin/swinfo -o 483530013.950 -s 26.860_-25.380
Swift Zenith(RA,dec):      94.06, -17.77
Swift Location(lon,lat,alt): 89.11 E, -17.78 N, 561 km
Time(MET + UTCF -> UT):    483530013.950 + -16.190 -> 2016-04-28T09:53:17.760
YYMMDD_SOD:                160428_35597.760      DOY=119
Obs Sequence Number:        00030812170
Obs Target Name:            4U 0614+091
Obs Date and Times:          2016-04-28 09:35:45 - 09:53:42
Obs Pointing(ra,dec,roll):   94.228, 9.163, 288.48
26.860_-25.380_imageloc (boresight_dist, angle): (74, -138)
26.860_-25.380_exposure (cm^2 cos adjusted): 0
26.860_-25.380_altitude: 51 (up)
```

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

lpn mailing list
lpn@ssl.berkeley.edu
<http://lists.ssl.berkeley.edu/mailman/listinfo/lpn>

— Attachments:

/tmp/swift/160428_0953.png	29.3 KB
/tmp/swift/160428_0953_bat64ms_ipn	87.0 KB

KONUS

29/04/2016

87.644

v03

10- 50 keV

50- 200 keV

200- 750 keV

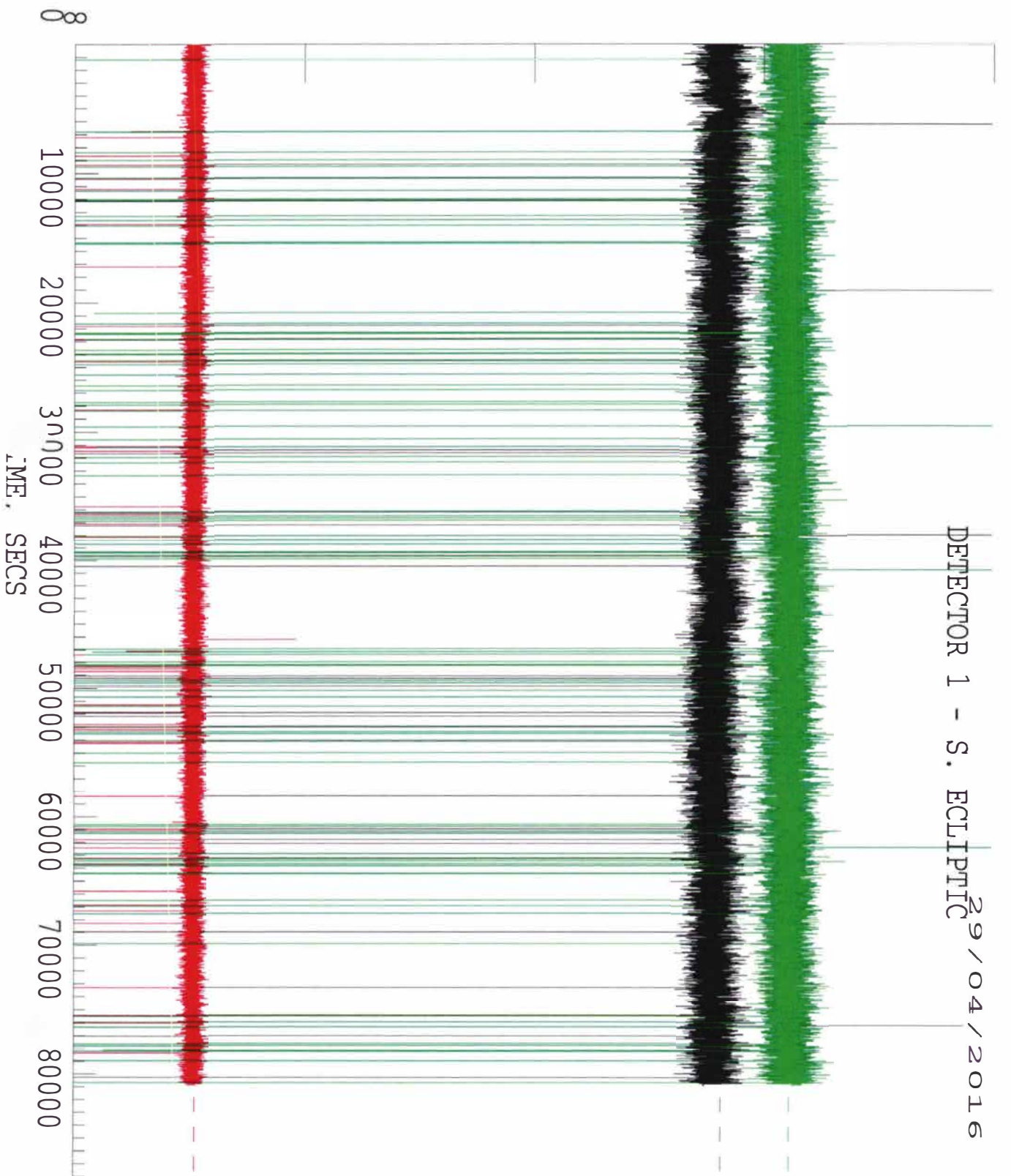
COUNTS/2.944 S

1008

2008

3008

4008



KONUS

29/04/2016

87.644

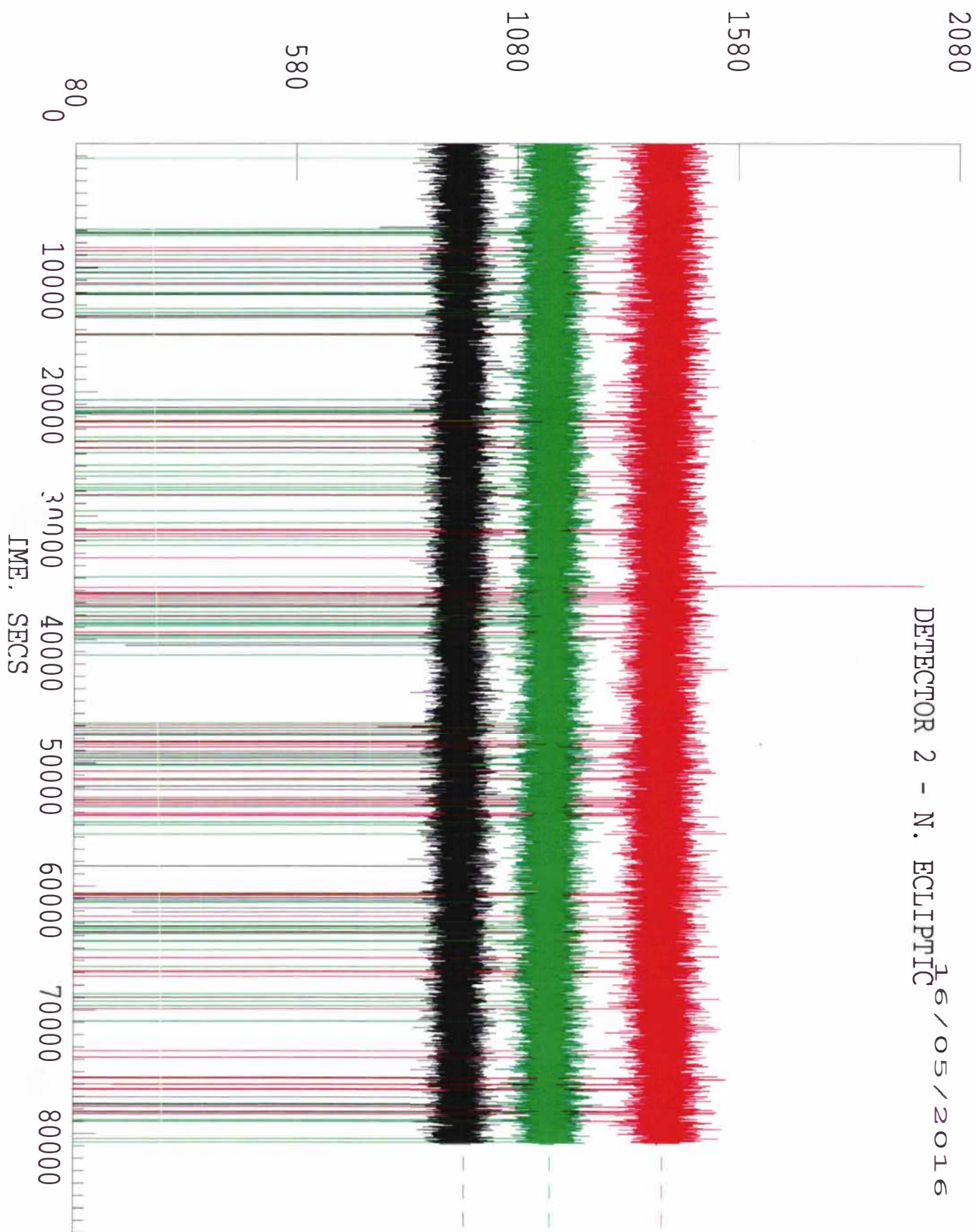
v03

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S



KONUS

30/04/2016

76.371

v05

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

4060

3060

2060

1060

60

0

10000

20000

30000

40000

50000

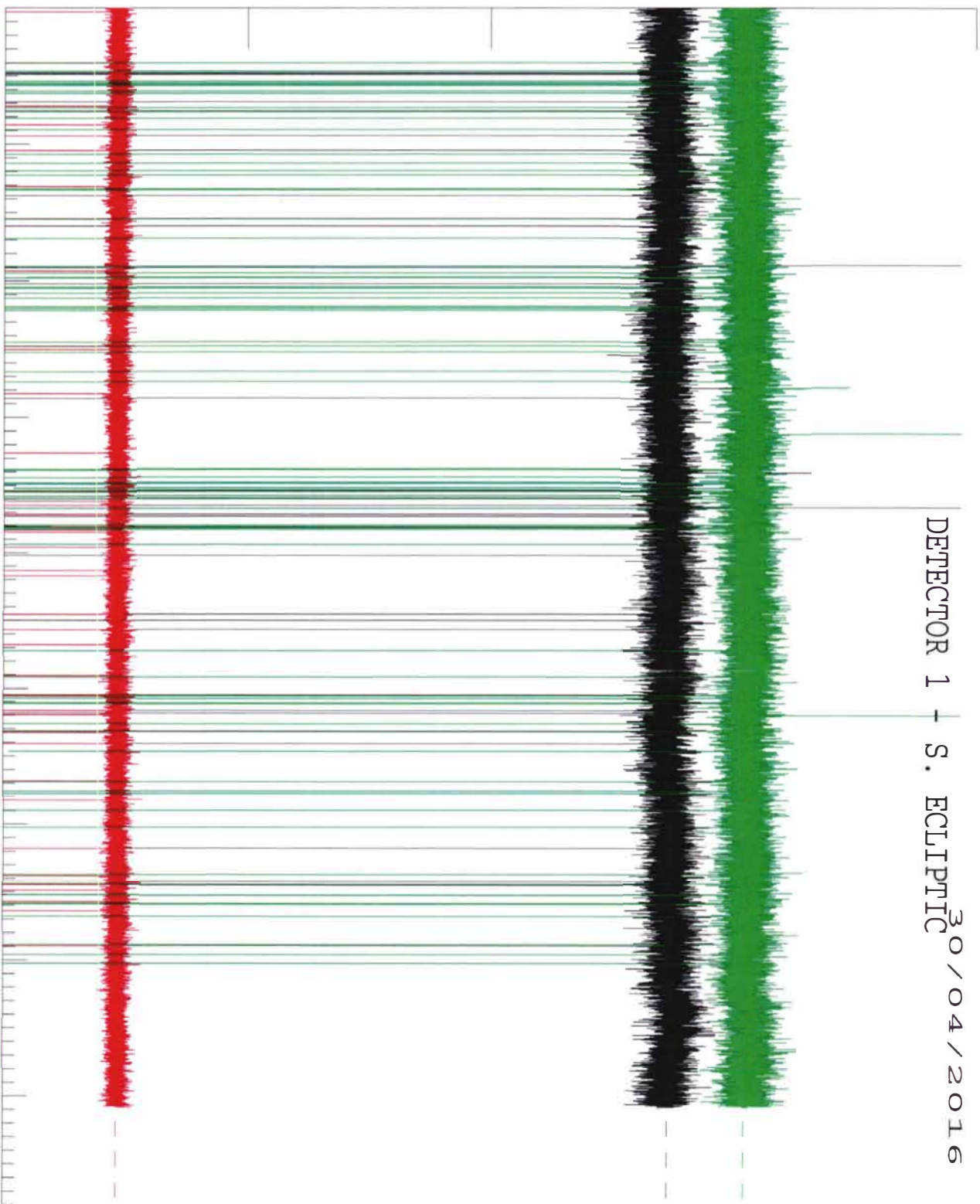
60000

70000

80000

TIME, SECS

DETECTOR 1 - S. ECLIPTEIC^{30/04/2016}



KONUS

30/04/2016

76.371

v05

10- 50 keV

50- 200 keV

200- 750 keV

COUNTS/2.944 S

