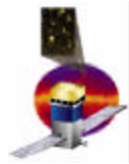




EGRET Analysis

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**SSC-LAT Science Tools Workshop
June 12-14, 2002, SLAC**



Sample LIKE run

```
cosmic[pln]: jaelike5.58
LIKE5 - version 5.58
Which ctl file? (return for CTL in current directory)
                (or for generic CTL file)
                (Enter Q to abort, ? for help)
```

```
Enter CTL filename:
Will use CTLFILE: CTL
Local CTL file does not exist. Will use generic
CTL from directory:/C/egret/data/misc/
READING CTL CARDS
Enter . to change EGRET cycle
Enter CMAPFILE name( <cr> to abort):counts.vp2120.g002
```

Select data file

```
fileid from exposure file:07 Mode: 74
```

```
Reading file: /glast/00/egret_data/fits/counts.vp2120.g002
```

```
-----
--
THERE ARE 2 IMAGES with energy ranges:
```

- 1 30 MeV - 100 MeV
- 2 100 MeV - 99999 MeV

```
WHICH DO YOU WANT?
```

```
2 Reading file: /glast/00/egret_data/fits/exposr.vp2120.g002
```

Select energy range

```
-----
--
MPE software does not support PSF for this energy range;
```

```
PSF being generated for 100.0000 < E < 10000.00
```

```
Using CALFILEs with suffix:07
```

```
Reading file: /C/egret/data/difmaps/cfgas.gal.g002b
```

```
-----
--
Multiplying the gasmap by exposure map.
```

```
The model has already been convolved.
```

```
Input radius for analysis (Ranal, cr for 15.00):
```

```
Setting ROI to entire map:
```

```
Long. 40.2500 to 129.750; Lat. -29.7500 to 49.7500
```

```
Setting up logarithm table for likelihood.
```

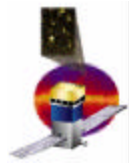
```
Restrict Gmult: F Gmult value: 1.00000
```

```
Restrict Gbias: F Gbias value: 1.50000
```

```
Gmult notification range: 0.80 to 1.20
```

```
Gbias notification range: 0.75 to 3.00
```

```
User is notified if range is violated
```



(cont.)

Optimize point source flux at fixed position

Position

```
like>l
Input      test point:  GLON and GLAT
(A to abort, cr for  84.750  9.750):88.74 25.07
Input Source Name (cr for                               ):3EG J1835+5918
```

Name

```
-----
Estimate of Gmult and Gbias with counts=0:
Correlation coefficient for Gmult/Gbias:  -0.860156
Gmult   0.289616 +/-   0.098463
Gbias   3.87998 +/-   0.21070
Log likelihood:      -2558.82
-----
```

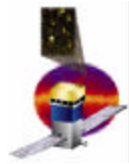
```
-----
Simultaneous estimate of Gmult, Gbias and Counts:
Correlation coefficient for Counts/Gmult:  0.125127
Correlation coefficient for Counts/Gbias:  -0.231556
Correlation coefficient for Gmult/Gbias:  -0.858785
Gmult   0.425805 +/-   0.098612
Gbias   3.345025 +/-   0.213380
Counts  104.95 +/-    16.32
Log likelihood:      -2519.55
Test statistic:      78.54
Corresponding delta Counts:  - 15.2877 ; + 16.1541
Assymmetric 68% confidence Counts range:  89.6696 121.111
-----
```

Name	L	B	sqrt(TS)	Flux+/- 1 sigma	(U.L.)
Cnts +/- 1 sigma (U.L.)	Gmult	Gbias	Ranal	Asp.	EXP lnL
3EG J1835+5918	88.74	25.07	8.9	49.752	7.738
104.95 16.32	0.426	3.345	15.0	14.2	21.09 -2519.55

Oops! - another case of Gmult= 0.43 outside the expected range: 0.80 < Gmult < 1.20 - you may wish to use the CB command with Gmult fixed.
 Oops! - another case of Gbias= 3.35 outside the expected range: 0.75 < Gbias < 3.00 - you may wish to use the GC command with Gbias fixed.

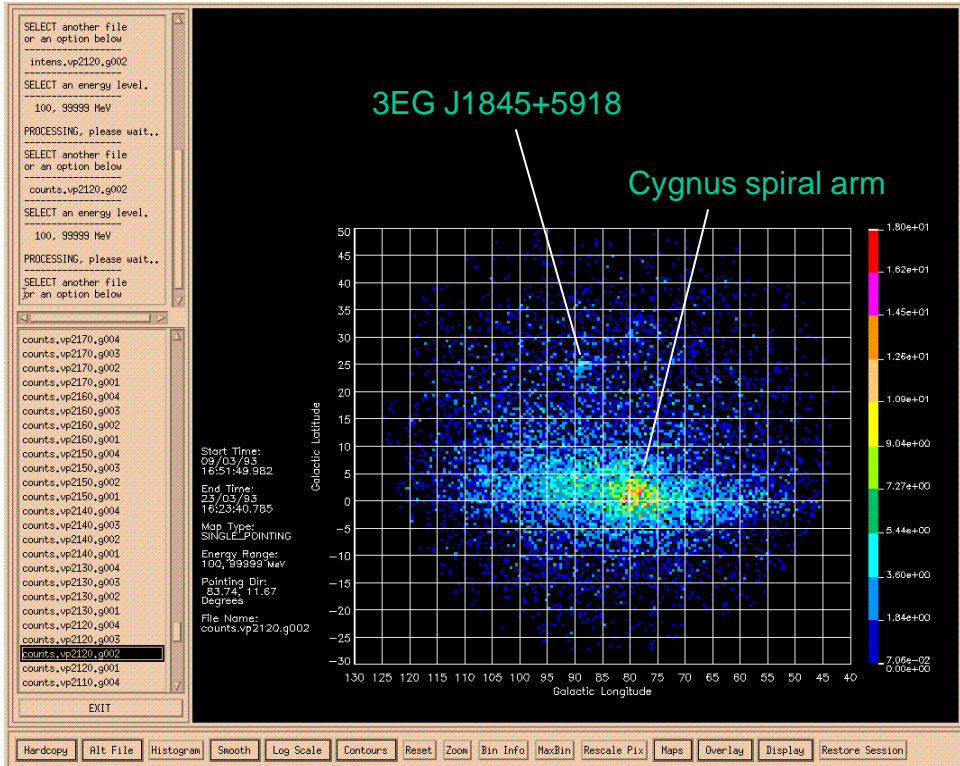
Significance of detection

```
like>q
```

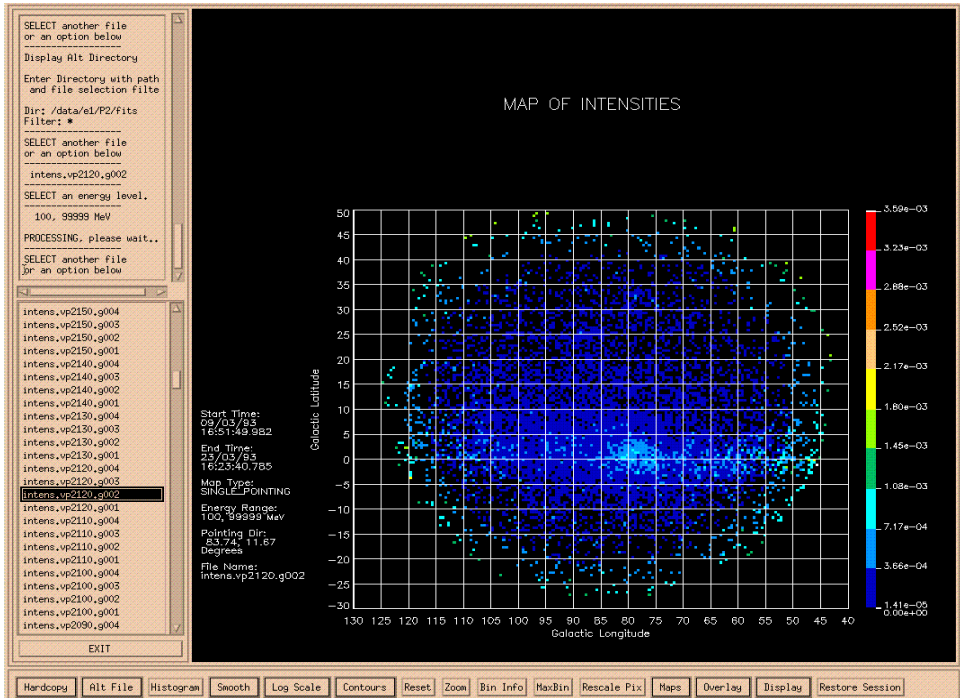


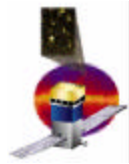
Counts & Intensity Maps

Counts
Map



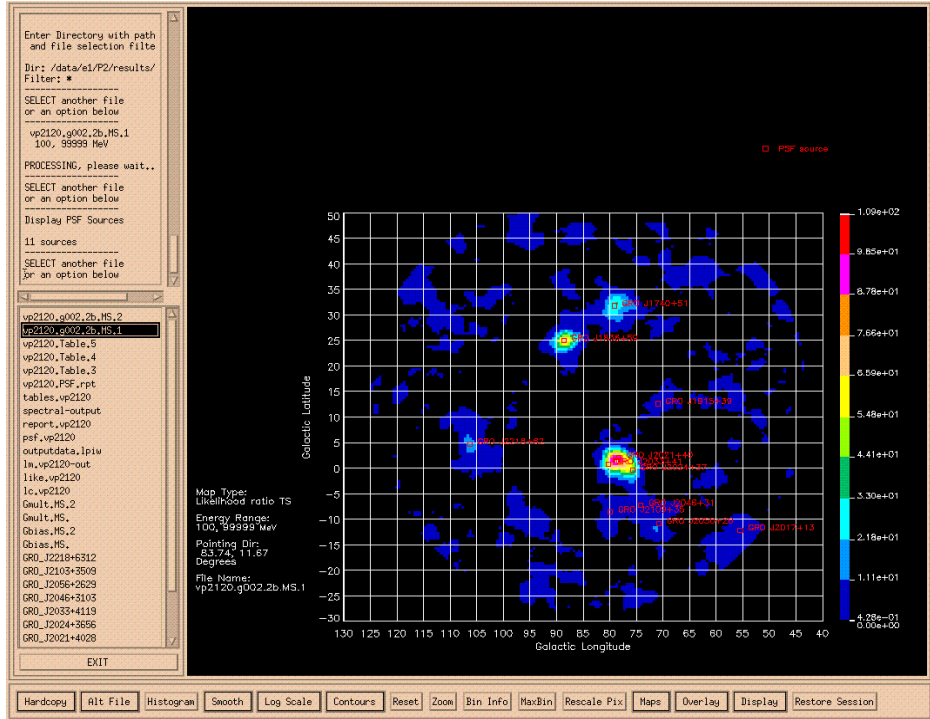
Intensity
Map



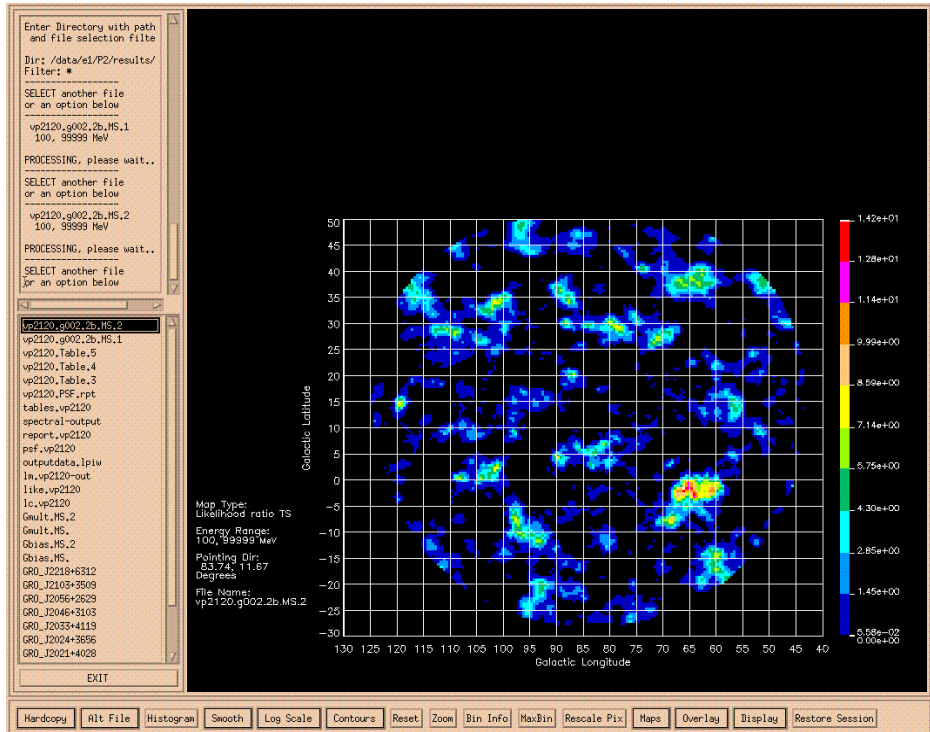


Likelihood Maps

Single Source Likelihood Map



Residual Likelihood Map





Sample SPECTRAL run

```
cosmic[pln]: spectral
```

```
This is the EGRET spectrum-fitting program version 2.12.
```

```
Please specify the data file name.
```

```
: spec.2120
```

```
That file seems to be a DC source spectrum file.
```

```
Which type of EGRET events were used to make your data file?
```

```
1: Class A
```

```
2: Class A+B+C
```

```
: 2
```

```
Response matrix found.
```

```
Proceeding with fit.
```

```
The results of the fit will be in the file specout.pln.020610.1340.xx
```

```
Setting up energy bins...
```

```
Exposure:
```

5.39390E+07	1.50559E+08	2.08729E+08	2.46428E+08	2.68540E+08
2.40899E+08	2.09264E+08	1.83624E+08	1.28537E+08	

```
Data file header:
```

```
User-id : pln
```

```
Time run: Tue Jul 16 17:34:06 1996
```

```
Source position (RA,DEC): 278.866 59.301
```

```
Phase interval: 0.0000 1.0000
```

```
Viewing period: 212.0 9055.6638888889 9069.6948495370
```

```
Rescaling bins...
```

```
Commands: Fit,Counts,Rebin,Parameters,  
Newphase,Write,Display,Top,Spawn,Help,Quit.
```

```
Enter command: f
```

```
LEAST-SQUARES FIT TO DATA
```

```
Analyzing data...
```

```
ITERATION 0:
```

```
Estimate of alpha: 1.5378
```

```
Error on alpha: 0.1405
```

```
Flux at 750. MeV: 8.997E-11
```

```
Error on that flux: 1.589E-11
```

```
Correlation coefficient: 0.00
```

```
Reduced chi-squared: 1.90
```

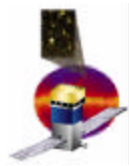
```
Hit <cr> when ready.
```

```
Commands: Fit,Counts,Rebin,Parameters,  
Newphase,Write,Display,Top,Spawn,Help,Quit.
```

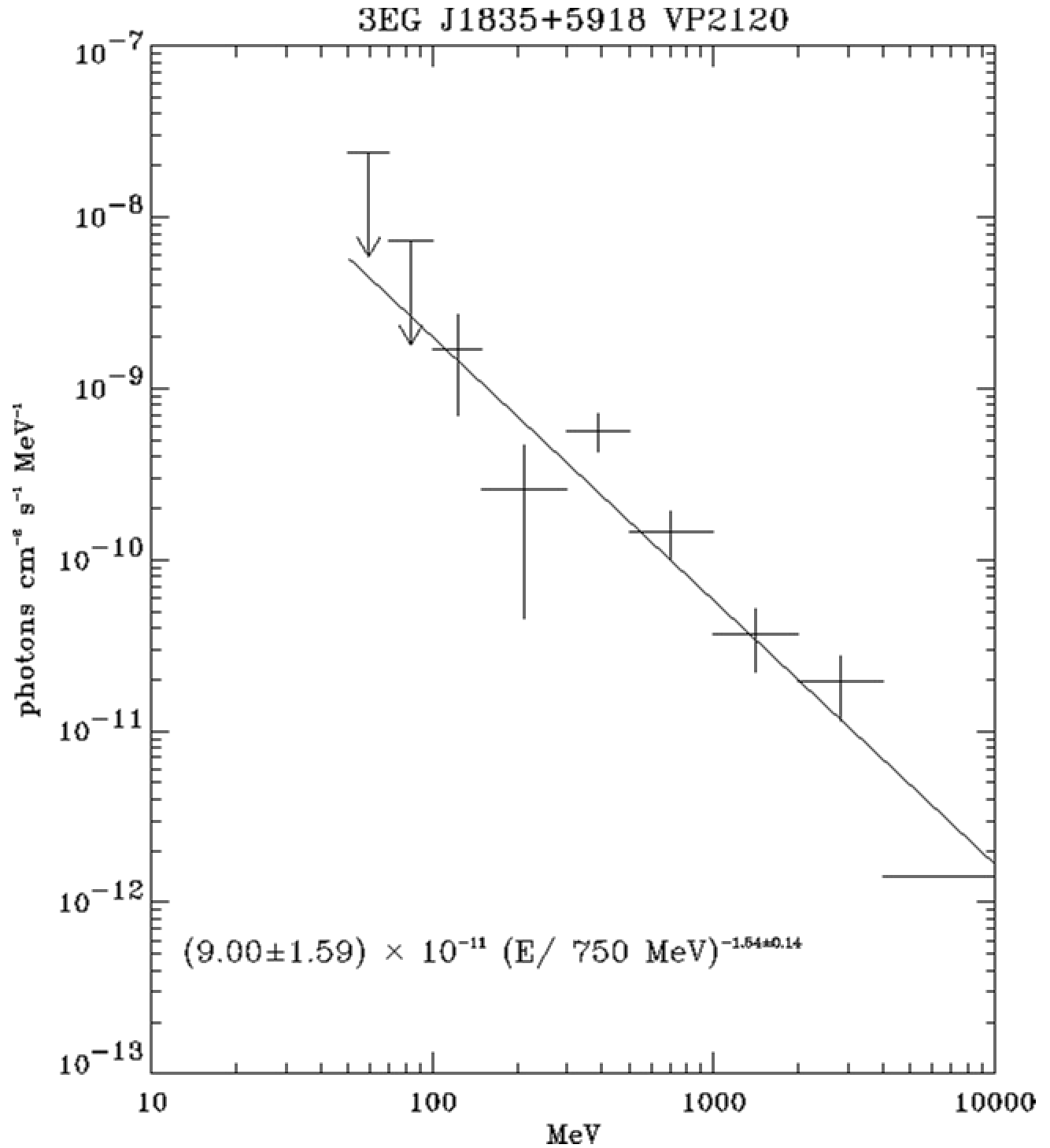
```
Enter command: w
```

```
Commands: Fit,Counts,Rebin,Parameters,  
Newphase,Write,Display,Top,Spawn,Help,Quit.
```

```
Enter command: q
```



Standard Spectrum Plot





SPECTRAL Output

Event class: A+B+C

Plotting programs read this file

Bin	Lo edge	High edge	Meas Counts	Background	Source	Uncertainty
C	-----	-----	0.0	0.0	0.0	0.0
1	50.	70.	0.0	0.0	0.0	13.7
2	70.	100.	0.0	0.0	0.0	16.3
3	100.	150.	17.9	0.0	17.9	10.5
4	150.	300.	10.0	0.0	10.0	8.2
5	300.	500.	30.6	0.0	30.6	7.4
6	500.	1000.	17.8	0.0	17.8	5.4
7	1000.	2000.	7.8	0.0	7.8	3.1
8	2000.	4000.	7.2	0.0	7.2	3.0
9	4000.	10000.	1.1	0.0	1.1	1.1

FIT PARAMETERS

Form of spectrum: straight
 Guess for power-law slope: 1.54
 Bins used in analysis: 1 - 9 of 9
 Extra iterations: 0
 Automatic normalization

LEAST-SQUARES FIT TO DATA**ITERATION 0:**

Estimate of alpha: 1.5378
 Error on alpha: 0.1405
 Flux at 750. MeV: 8.997E-11
 Error on that flux: 1.589E-11
 Correlation coefficient: 0.00

Reduced chi-squared: 1.90
 Warning: counts in bin (0) <=0.
 Mon Jun 10 13:40:50 2002
 Event data comes from SELECT file
 spec.2120
 Source RA and DEC: 278.866 59.3010
 Source data from pulsar phase 0.000 to 1.000
 Background data from pulsar phase 0.000 to 0.000



(cont.)

* = measured counts; + = model counts; # = both

BIN	ENERGY	SOURCE	MODEL	
1	70.	0.00	5.20	*
2	100.	0.00	11.82	*
3	150.	17.86	15.42	
4	300.	10.04	24.31	
5	500.	30.59	13.29	
6	1000.	17.77	11.78	
7	2000.	7.77	7.01	
8	4000.	7.17	4.23	
9	10000.	1.09	2.57	*

* = (OBSERVED COUNTS - MODEL) normalized to unit variance

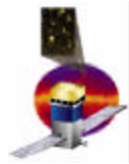
BIN	ENERGY	CHI	CHI^2	
1	70.	-0.38	0.14	
2	100.	-0.73	0.53	
3	150.	0.23	0.05	
4	300.	-1.73	3.00	
5	500.	2.35	5.52	
6	1000.	1.10	1.21	
7	2000.	0.25	0.06	
8	4000.	0.99	0.97	
9	10000.	-1.35	1.81	

Properties of photon spectrum

Model norm, error, slope, error, Enorm, slope2::

8.99662E-11 1.58904E-11 1.53778 0.140468 750.382 1.53778

chan	emin	emax	obs/model	sigma/model	model flux	observed	sigma
1	50.	70.	0.000E+00	2.641E+00	4.458E-09	0.000E+00	1.177E-08
2	70.	100.	0.000E+00	1.378E+00	2.615E-09	0.000E+00	3.605E-09
3	100.	150.	1.158E+00	6.836E-01	1.454E-09	1.684E-09	9.940E-10
4	150.	300.	4.130E-01	3.389E-01	6.190E-10	2.556E-10	2.098E-10
5	300.	500.	2.301E+00	5.536E-01	2.469E-10	5.680E-10	1.367E-10
6	500.	1000.	1.509E+00	4.618E-01	9.719E-11	1.466E-10	4.488E-11
7	1000.	2000.	1.109E+00	4.423E-01	3.347E-11	3.711E-11	1.480E-11
8	2000.	4000.	1.693E+00	7.038E-01	1.153E-11	1.952E-11	8.114E-12
9	4000.	10000.	4.241E-01	4.280E-01	3.310E-12	1.404E-12	1.417E-12



VO1P1010

Exposure History File

EXPOSURE HISTORY FILE

* TJD	* MSD	* FLAGS	* MODES	* +Z-RA	* ASPECT	* +X-RA	* +XDC	* LIVET	* ELAPSED	* STR RA	* STR DEC	* END RA	* END DEC
*		SAAPE	T&D C THR		+Z-DC			SEC	T, SEC				
8392	62340678	FFF	7fff e 4 4	1.5370	0.2997	5.9181	0.8109	1118.0	1380.346	-2.0647	-0.4777	-0.5828	0.1162
8392	63721024	FFF	7eff e 4 4	1.5375	0.2990	5.9190	0.8115	107.8	131.062	-0.5828	0.1162	-0.4511	0.1834
8392	63852086	FFF	7e7f e 4 4	1.5380	0.2992	5.9194	0.8115	53.0	65.563	-0.4511	0.1834	-0.3840	0.2158
8392	63917649	FFF	7c7f e 4 4	1.5381	0.2991	5.9195	0.8115	51.2	65.500	-0.3840	0.2158	-0.3161	0.2473
8392	63983149	FFF	3c7f e 4 4	1.5382	0.2991	5.9196	0.8115	101.9	131.062	-0.3161	0.2473	-0.1768	0.3068
8392	64114211	FFF	3c7c e 4 4	1.5382	0.2990	5.9197	0.8116	53.4	65.563	-0.1768	0.3068	-0.1053	0.3344
8392	64179774	FFF	387c e 4 4	1.5380	0.2990	5.9196	0.8115	53.5	65.562	-0.1053	0.3344	-0.0325	0.3604
8392	64245336	FFF	187c e 4 4	1.5379	0.2988	5.9197	0.8115	53.0	65.500	-0.0325	0.3604	0.0417	0.3847
8392	64310836	FFF	107c e 4 4	1.5377	0.2987	5.9197	0.8115	112.8	131.063	0.0417	0.3847	0.1944	0.4271
8392	64441899	FFF	007c e 4 4	1.5375	0.2986	5.9196	0.8115	0.0	2228.250	0.1944	0.4271	2.7034	-0.1916
8392	66670149	FFF	017c e 4 4	1.5380	0.2995	5.9190	0.8115	119.4	131.062	2.7034	-0.1916	2.8396	-0.2554
8392	66801211	FFF	01fc e 4 4	1.5383	0.2994	5.9194	0.8113	58.4	65.563	2.8396	-0.2554	2.9093	-0.2856
8392	66866774	FFF	03fc e 4 4	1.5383	0.2993	5.9196	0.8113	56.9	65.500	2.9093	-0.2856	2.9802	-0.3144
8392	66932274	FFF	43fc e 4 4	1.5382	0.2992	5.9196	0.8114	55.7	65.562	2.9802	-0.3144	3.0524	-0.3418
8392	66997836	FFF	43ff e 4 4	1.5382	0.2990	5.9197	0.8115	107.9	131.063	3.0524	-0.3418	-3.0821	-0.3913
8392	67128899	FFF	47ff e 4 4	1.5380	0.2990	5.9196	0.8115	53.5	65.562	-3.0821	-0.3913	-3.0057	-0.4130
8392	67194461	FFF	67ff e 4 4	1.5379	0.2988	5.9196	0.8116	51.3	65.500	-3.0057	-0.4130	-2.9279	-0.4327
8392	67259961	FFF	6fff e 4 4	1.5375	0.2987	5.9194	0.8115	100.6	131.063	-2.9279	-0.4327	-2.7684	-0.4646
8392	67391024	FFF	7fff e 4 4	1.5370	0.2987	5.9191	0.8114	1441.5	1900.562	-2.7684	-0.4646	-0.6204	0.1006
8392	69291586	FFF	7e7f e 4 4	1.5374	0.2991	5.9190	0.8114	106.4	131.063	-0.6204	0.1006	-0.4892	0.1683
8392	69422649	FFF	7e7f e 4 4	1.5379	0.2993	5.9193	0.8115	26.5	32.768	-0.4892	0.1683	-0.4559	0.1848
8392	69455417	FFF	7e7f e 4 4	1.5379	0.2993	5.9193	0.8115	0.0	923.644	-0.4559	0.1848	0.6011	0.4917
8392	70379061	FFF	007c e 4 4	1.5371	0.2990	5.9188	0.8115	0.0	1861.650	0.6011	0.4917	2.6650	-0.1765
8392	72240711	FFF	017c e 4 4	1.5378	0.2993	5.9189	0.8116	120.4	131.063	2.6650	-0.1765	2.8003	-0.2412
8392	72371774	FFF	01fc e 4 4	1.5383	0.2995	5.9192	0.8115	116.6	131.062	2.8003	-0.2412	2.9398	-0.3014
8392	72502836	FFF	43fc e 4 4	1.5385	0.2993	5.9198	0.8114	111.9	131.063	2.9398	-0.3014	3.0844	-0.3559
8392	72633899	FFF	43ff e 4 4	1.5382	0.2990	5.9199	0.8114	106.4	131.062	3.0844	-0.3559	-3.0486	-0.4034
8392	72764961	FFF	67ff e 4 4	1.5381	0.2991	5.9195	0.8114	102.4	131.063	-3.0486	-0.4034	-2.8929	-0.4423
8392	72896024	FFF	6fff e 4 4	1.5377	0.2988	5.9194	0.8115	102.8	131.125	-2.8929	-0.4423	-2.7320	-0.4715
8392	73027149	FFF	7fff e 4 4	1.5370	0.2984	5.9193	0.8115	1400.3	1810.397	-2.7320	-0.4715	-0.6821	0.0719
8392	74837546	FFF	7fff e 4 4	1.5372	0.2989	5.9190	0.8115	0.0	1486.833	-0.6821	0.0719	1.0304	0.4810
8392	76324379	FFF	007c e 4 4	1.5364	0.2991	5.9180	0.8112	0.0	1552.395	1.0304	0.4810	2.6936	-0.1945

Earth position at beginning and end of the interval

Elapsed time

Live time

Orthogonal axis direction

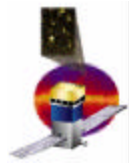
Pointing direction

TASC coinc. & thr.

TOF coinc. modes SAA, pointing dev., excluded

Milliseconds of day

Truncated Julian Day



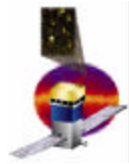
Timeline File

```

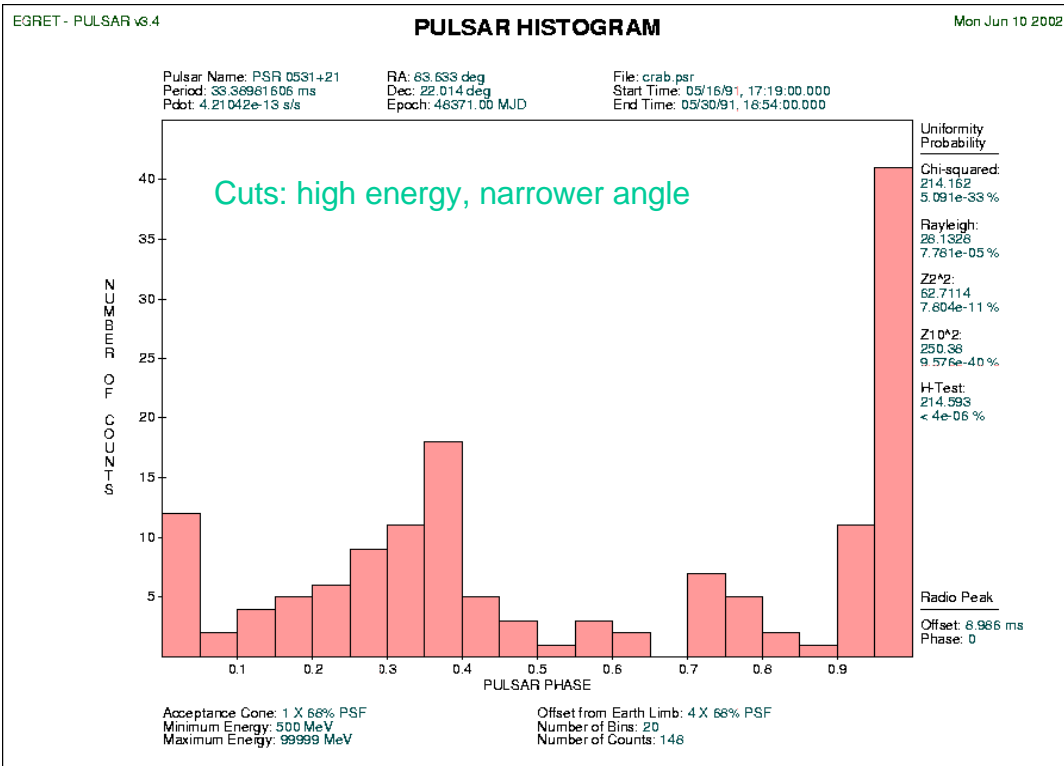
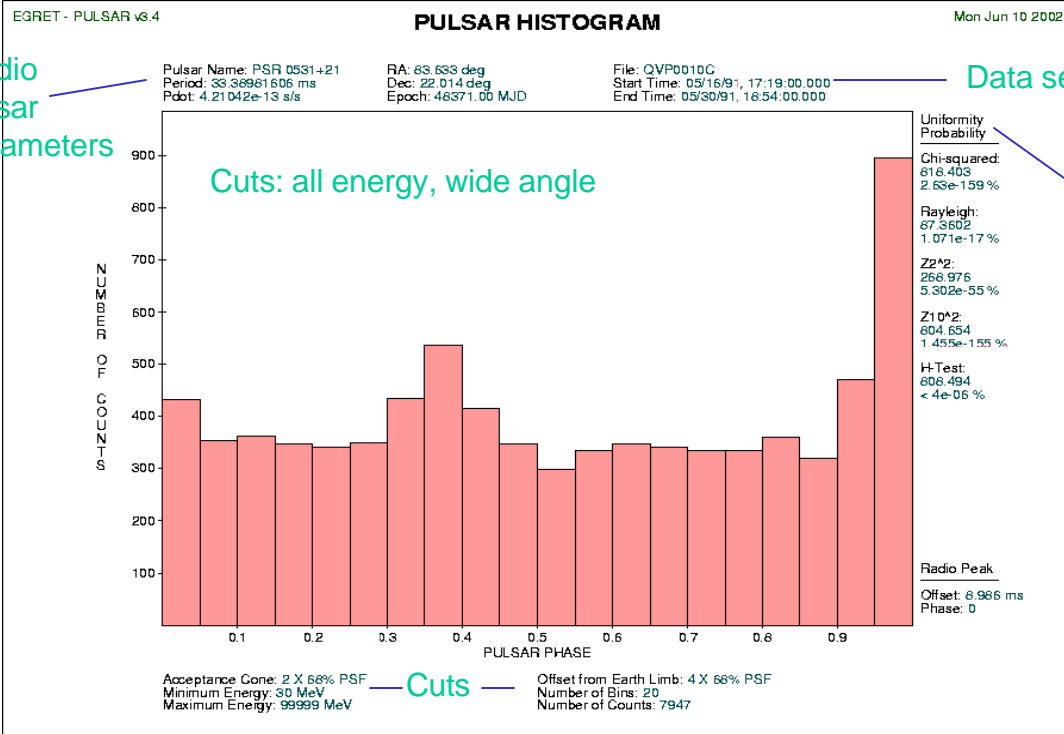
* VPN      DATE      TIME(UT)      KEYWORD      FREE TEXT AND VALUE
*|--| |-----| |-----| |-----|----->
0001 04/15/91 19:07:32.000 START Viewing
          SC-Z-CEL 108.120, -6.520
          SC-X-CEL 19.04, 8.06
          TEST MODE. Low Voltage Power On.
          19:07:32.000 TASCIN
04/19/91 14:33:49.000 CALIBRATION. All Vert. TASC In.
          14:39:49.000 END CALIBRATION.
          23:13:13.000 CALIBRATION. All Vert. TASC In. Low V
          23:27:25.000 END CALIBRATION.
04/20/91 00:48:00.000 CALIBRATION. Cent. Vert. TASC In.
          01:06:41.000 END CALIBRATION.
          17:29:11.000 END TEST. All Types. TASC in at 1 MeV
          22:18:59.000 CALIBRATION. All Vert. TASC in, 1 MeV
          22:42:33.000 END CALIBRATION All Types TASC in
04/21/91 00:04:27.000 CALIBRATION. Cent. Vert. TASC Inc. V
          00:18:08.000 END CALIBRATION All Types. TASC in.
          01:39:24.000 CALIBRATION. Cent. Vert. TASC in 1 MeV
          01:57:46.000 END CALIBRATION. All Types. TASC in
          10:28:03.000 EXCLUDE Spacecraft testing. No HV.
          20:09:18.000 END EXCLUDE TASC in. 2.5 MeV
04/22/91 11:35:15.000 EXCLUDE Spacecraft testing. No HV.
          21:00:00.000 END EXCLUDE
04/22/91 21:00:00.000 STOP VIEWing period
0002 04/22/91 21:09:02.000 START Viewing period
          SC-Z-CEL 86.760, 22.090 Crab -3
          SC-X-CEL 357.020, -0.660
          ! All Types. TASC out.
          23:19:56.000 EXCLUDE Bad Ephemeris data.
04/23/91 04:36:58.024 END EXCLUDE
          20:14:23.000 ALBEDO MODE Cent Vert. TASC in 15 MeV
          20:29:56.000 END ALBEDO. All Types TASC out, TOF=24
          22:00:43.000 ! TOF=32. TASC in 2.5 MeV.
04/26/91 00:21:00.000 CALIBRATION Cent. Vert. TASC in 15 MeV
          00:31:00.000 ! Event Fmtr=2, rej long evts
          00:36:00.000 END CALIBRATION All Types, TASC in 2.5
          18:21:18.250 EXCLUDE ! T6, T7 dis. TASC out
          19:57:25.438 END EXCLUDE! All Types. TASC in 2.5 MeV
04/28/91 15:13:00.000 STOP VIEWing period
0003 04/28/91 16:02:00.000 START Viewing period Retargeted
          SC-Z-CEL 89.800, 15.250 Crab -9
          SC-X-CEL 342.470, 47.500
          22:20:00.000 CALIBRATION. Cent. Vert. TOF=24, TASC in
          22:30:00.000 END CALIBRATION. All Types, TASC in 2.5

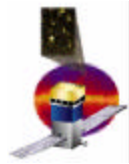
* VPN      DATE      TIME(UT)      KEYWORD      FREE TEXT AND VALUE
*|--| |-----| |-----| |-----|----->
0004 05/01/91 16:37:00.000 STOP VIEWing period
0004 05/01/91 17:19:00.000 START VIEWing Period
          SC-Z-CEL 89.770, 15.240 Crab -9
          SC-X-CEL 12.230, -38.580
05/03/91 03:40:00.000 CALIBRATION. Cent. Vert. TASC in, EF=2
          03:55:00.000 END CALIBRATION. ALL Types, TASC in 2.5
          15:31:50.000 EXCLUDE Diagonal telescopes disabled.
          20:20:39.000 END EXCLUDE
05/04/91 16:16:00.000 STOP VIEWing period

```



Standard Pulsar Program





Transf: SMDB -> events

The screenshot shows a terminal window titled 'mpesun14.mpe-garching.mpg' with a menu bar (File, Edit, View, Window, Help) and a toolbar. The terminal output is as follows:

```
TRANSFER-Routine
Transfer Read Data SMDB-Path: USER Evts-Path: USER Exit
The Path of Event-Files is: /mpe/u/e/egret/egret/evts
Your pulsartime file is: /data/e1/dat/timing/psrttime.dat
The Path of SMDB-Files is set to: /mpe/u/e/egret/egret/smdb/

Read Data of Event-Files
Select Event-File
TRAILER
EVENTS
Nr. of Evt.: 8 NEXT PREV
EXIT

mpesun14.mpe-garching.mpg
File Edit View Window Help
Quick Connect Profiles
TRAILER 1: 999.9 vp:4270 z-lon: 153.75 z-lat: -9.99 x-lon: 227.43 x-lat: 57.93
TRAILER 2: avlong: 151.15 avlat: -12.04 avene: 388.64
begin: day 9951 msec 55854804
end: day 9966 msec 45235116
TRAILER 3: pulsarname: P0218+42 epoch: 49996.000000000
TRAILER 4: ra: 0.603 dec: 0.742 ph0: 0.798
TRAILER 5: f0: 430.461 f1: -1.43407e-14 f2: 0.00e+00
TRAILER 7: ezen0: 0.0 ezen1: 110.0 reject evts:12715 psr-time corr.: 0.00
Events of /mpe/u/e/egret/egret/evts/QVP4270B.EVT.P0218+42
Evt No.:00000 MJD: 9951.648331377 Earth:104.96 lon:132.85 lat:-33.51 ene: 49.20 class:B
Evt No.:00001 MJD: 9951.648575077 Earth: 81.55 lon:136.15 lat: 1.77 ene: 1046.55 class:A
Evt No.:00002 MJD: 9951.648818180 Earth: 94.32 lon:137.15 lat:-18.42 ene: 135.73 class:A
Evt No.:00003 MJD: 9951.649254565 Earth:109.08 lon:133.87 lat:-35.60 ene: 2174.51 class:B
Evt No.:00004 MJD: 9951.650422933 Earth:109.22 lon:147.64 lat:-41.95 ene: 54.83 class:B
Connected to mpesun14.mpe-garching.mpg.de SSH2 - 3des-cbc - hmac-sha1 - 126x22 1, 22 00:43:00
```



PSRs: Barycentric Correction

TRANSFER-Routine

Transfer Read Data SMOB-Path: USER Evts-Path: USER Exit

The Path of Event-Files is: /mpe/u/e/egret/egret/evts
 Your pulsartime file is: /data/e1/dat/timing/psrtime.dat
 Your selected smdb-file is: /data/e1/P1/smdb/QP0001A

Barycentric timing

NO BARYCENTRIC TIMING

SPECIFY PULSAR

Set PSRTIME-File

List_PSR

Pulsarname: (xxxx+xx) 0531+21

Arrival-time correction:(ms)

Done

Cancel

Pulsar Time Data

Time Interval : 48361 48368

0531+21	05 34 31.974	22 00 52.05 48282	48316 48299,000000134	29,3616010684378	-3,777260-10	0,000+00	5,5 P
0531+21	05 34 31.975	22 00 52.05 48331	48381 48356,000000169	29,3497409683139	-3,776650-10	1,150-20	3,5 P
0531+21	05 34 31.973	22 00 52.06 48331	48403 48367,000000124	29,3493820673442	-3,776600-10	7,450-21	3,5 P
0531+21	05 34 31.973	22 00 52.06 48331	48412 48371,000000104	29,3492515379593	-3,776570-10	8,180-21	3,7 P
0531+21	05 34 31.973	22 00 52.06 48406	48493 48449,000000288	29,3467067038240	-3,775750-10	1,060-20	5,4 P

Cancel

Done

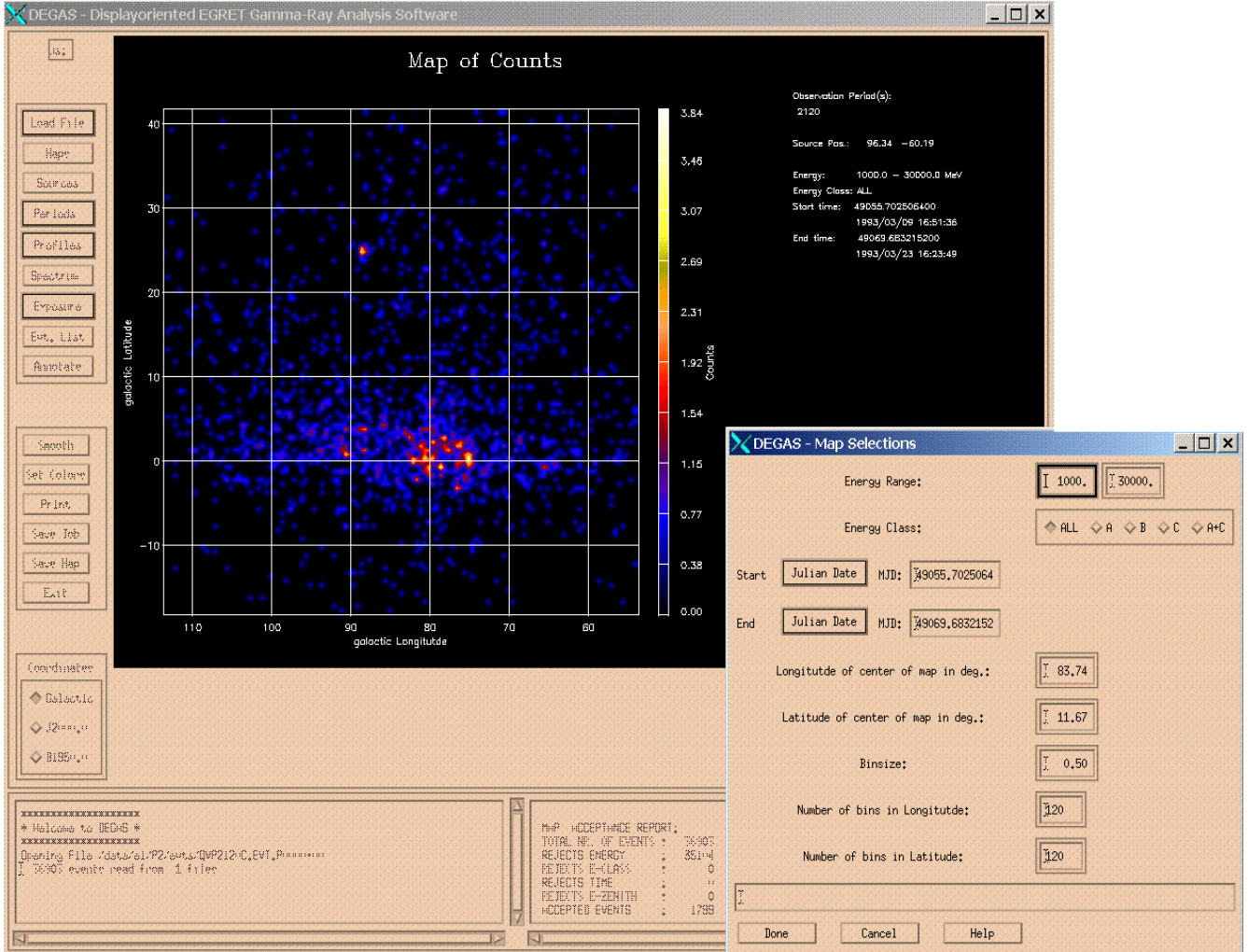
```

d module: READ_DATA.
d module: OS_PICKFILE.
d module: VALID_DIR.
d module: GETDIRS.
d module: GETFILES.
d module: PICKFILE_EV.
d module: PICKFILE.
d module: PICKFILE.
% Compiled module: XREGISTERED.
% Compiled module: XMANAGER.
% XMANAGER: The MODAL keyword to the XMANAGER procedure is obsolete. It is superseded by the MODAL keyword to the
  WIDGET_BASE function.
% Compiled module: RSTRPOS.
% Compiled module: REVERSE.
READTLF REQUEST FOR OBSERVATION PERIOD: 1
START OF PERIOD: 1 FOUND. TIME: 4 15 91 19 7 32 0
END OF PERIOD: 1 FOUND. TIME: 4 22 91 21 0 0 0
READTLF REQUEST FOR OBSERVATION PERIOD: 1
START OF PERIOD: 1 FOUND. TIME: 4 15 91 19 7 32 0
END OF PERIOD: 1 FOUND. TIME: 4 22 91 21 0 0 0
% Compiled module: CW_FIELD.
  
```

Connected to mpesun14.mpe-garching.mpg.de SSH2 - 3des-cbc - hmac-sha1 - 126x22 | 1, 22 | 00:55:00



Event-Based Analysis Environment





Periodicity Search Panel

DEGAS - Displayoriented EGRET Gamma-Ray Analysis Software

PSR B2229+61 Frequency scan

Observation Period(s): 340

Source Pos.: 106.65 2.95

Energy: 100.0 - 30000.0 MeV

Energy Class: ALL

Start time: 48819.732837000
1992/07/15 17:35:17

End time: 48840.603190000
1992/08/05 14:28:35

PSR parameters:

RA: 337.272000091743

Dec: 61.235914666624

first Freq.: 19.3789771623917

last Freq.: 19.3789827080929

of steps: 201

Best Freq.: 19.3789799352423

F0: 19.3789799352423

F1: -2.93939000E-11

F2: 0.0000000E+00

Coordinates

- Galactic
- J2000.0
- B1950.0

```

*****
* Welcome to DEGAS *
*****
Opening File /u/s/rlr/egret/evts/QVP/3d+u,EVT,P2229+61
57077 events read from 1 files
Opening File /u/s/rlr/egret/evts/QVP/3d+u,EVT,P2229+61
157077 events read from 1 files

```

DEGAS - Pulsar Frequency Search Selections

Energy Range:

Energy Class: ALL A B C A+C

Start MJD and Time:

End MJD and Time:

Acceptance angle (deg) :

Acceptance angle spectral index :

Pulsar frequency :

Pulsar frequency 1st derivative :

Pulsar frequency 2nd derivative :

Starting Epoch of ephemerides :

Select scan type:

- Freq.-Scan
- IFS-Scan

First Frequency :

Last Frequency :

Number of bins for Frequencies to search :

Select test statistik :

- Pearson-Test
- Rayleigh-Test
- Zn-Test
- Protheroe Test
- H-Test

Done Cancel Help



Pulsar Light Curve Panel

The screenshot displays the DEGAS (Displayoriented EGRET Gamma-Ray Analysis Software) interface. The main window shows a histogram of counts per bin versus PSR phase for PSR B2229+61. The x-axis ranges from 0.0 to 1.0, and the y-axis ranges from 0 to 8. The histogram shows a complex pulse profile with multiple peaks. To the right of the plot, observation and PSR parameters are listed.

Observation Period(s):
340

Source Pos: 106.65 2.95

Energy: 100.0 - 30000.0 MeV
Energy Class: ALL

Start time: 48819.732837200
1992/07/16 17:35:17

End time: 48840.603189800
1992/08/06 14:28:35

PSR parameters:
RA: 337.272000001743
Dec: 61.235816666624
TO: 48830.000000000
FO: 19.3789799382423
PI: -2.93939e-11
F2: 0.0000e+00
Q12 Test: 23.94 P < 2.4000
Z2 Test: 0.53 P < 7.6880
Z10 Test: 31.72 P < 4.6380
H Test: 2.30 P < 3.1582

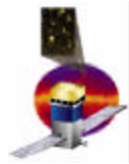
The 'Pulsar Selections' dialog box is open, showing various parameters for event selection:

- Energy Range:** 100.0 - 30000.0
- Energy Class:** ALL
- Start:** Julian Date: 48819.7328372
- End:** Julian Date: 48840.6031898
- Longitude (deg):** 106.65
- Latitude (deg):** 2.95
- Acceptance angle (deg):** 2.50
- Acceptance angle spectral index:** 0.534
- Pulsar frequency:** 19.3789799382423
- Pulsar frequency 1st derivative:** -2.939390000000E-11
- Pulsar frequency 2nd derivative:** 0.000000000000E+00
- Starting Epoch of ephemerides:** 48830.0000000000000
- Phase shift:** 0.00
- Number of bins for Lightcurve:** 50

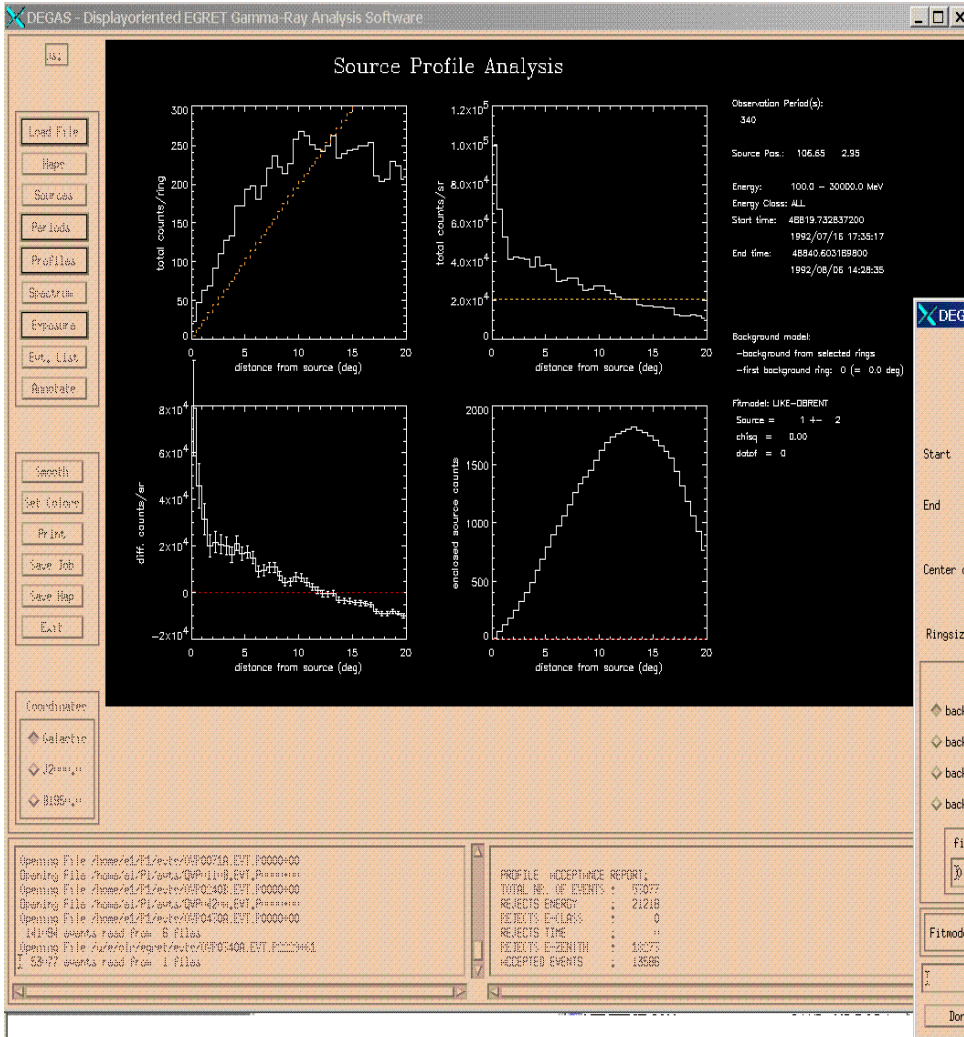
At the bottom of the main window, a 'PULSAR ACCEPTABLE REPORT' is visible:

```

PULSAR ACCEPTABLE REPORT:
TOTAL NR. OF EVENTS : 5377
REJECTS ENERGY : 2148
REJECTS E-CLASS : 11
REJECTS ACC. ANGLE : 35636
REJECTS TIME : 11
REJECTS E-DEPTH : 26
ACCEPTED EVENTS : 143
  
```



Spatial/Temporal Profile Panel



DEGAS - Profile Selections

Energy Range: 100.0 30000.0
Energy Class: ALL A B C RHC
Start: Julian Date MJD: 48819.7328372
End: Julian Date MJD: 48840.6031898
Center of profile (in deg.): Longitude 106.65 Latitude 2.95
Ringsize: 0.50 Number of Rings: 40

Background estimate:
 background from selected rings
 background from rings > 90% enclosure
 background from phases
 background from diffuse maps

first ring 0 last ring 39

Fitmodel: LIKE-DIRENT

Done Reset Cancel Help