Short Burst Search Update

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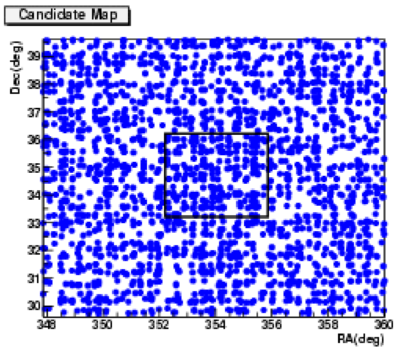
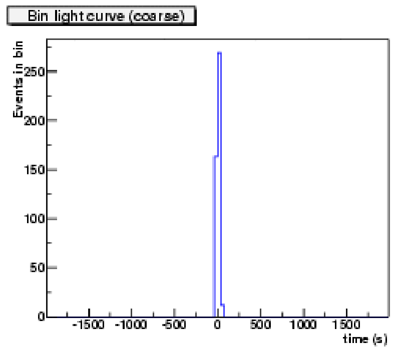
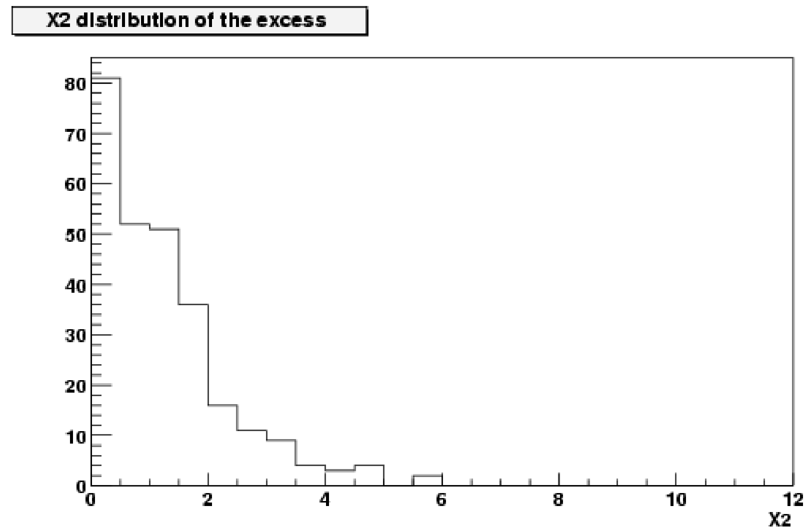
Milagro Collaboration Meeting
07/2003

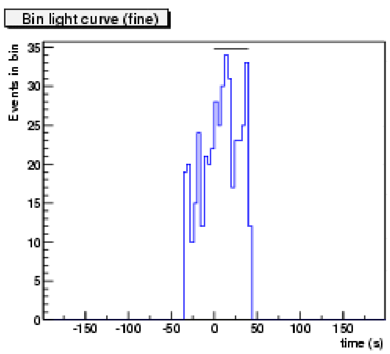
What's new?

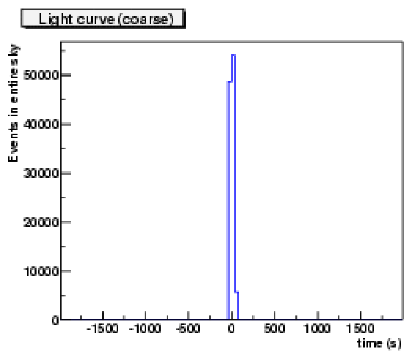
- X2 distribution plots
- Follow-ups to alerts after looking at data.
- Pager message now gives est. annual rate.
- Time gaps monitored.

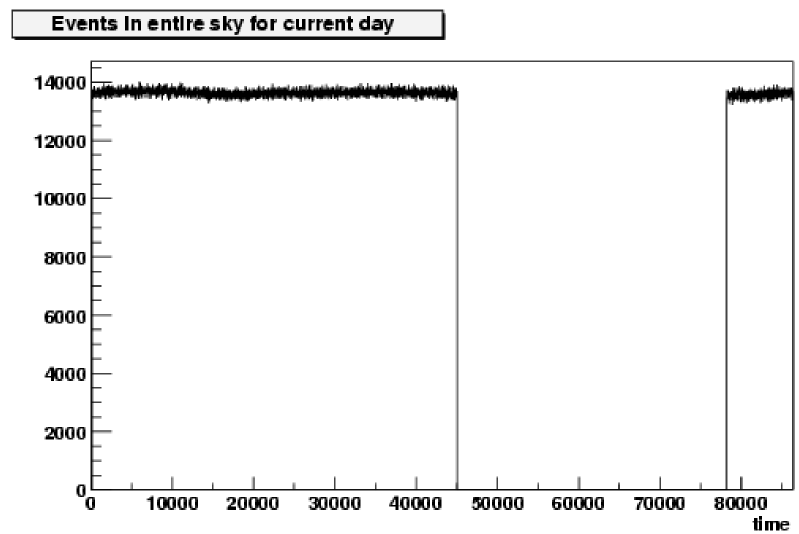


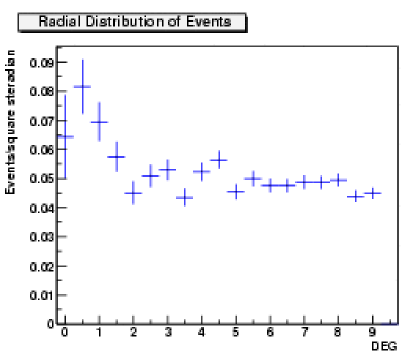










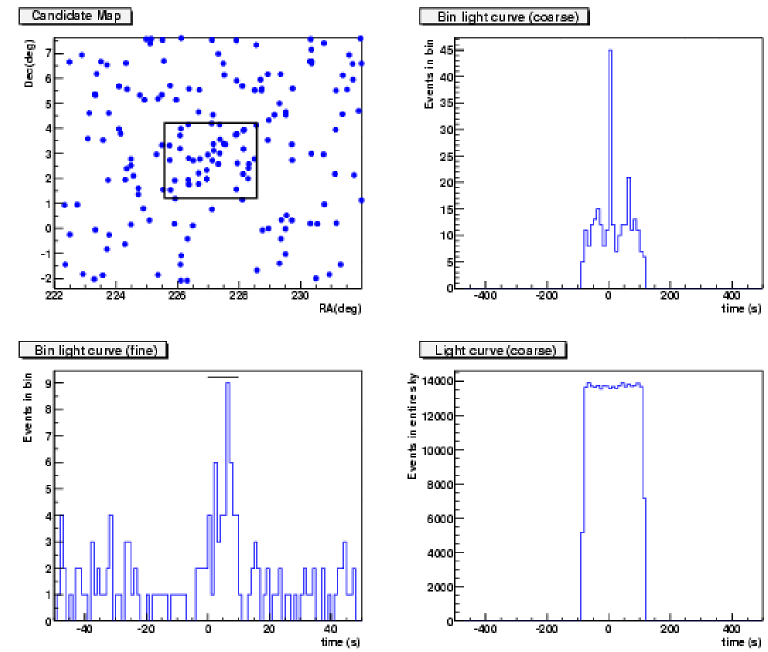


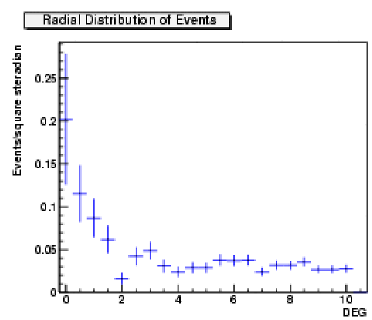
TITLE:	MILAGRO BURST POSITION NOTICE - SOCKET
NOTICE_TYPE:	MILAGRO Short Preliminary
TRIGGER_NUM:	2573
GRB_DATE:	12825 TJD; 185 DOY; 07/05/2003
GRB_TIME:	44998.053538 SOD; (12:29:58.053538) UT
GRB_RUN_INFO:	RUN 5048 SUBRUN 193
GRB_DURATION:	39.81072 SEC
GRB_MIL_RA:	353.9 DEG (23h:32m:00s)
GRB_MIL_DEC:	34.6 DEG
GRB_SIGNAL:	261 EVENTS
GRB_BACKGROUND:	171.16694 EVENTS
GRB_SIGNIFICANCE:	1.09747e-10 (pre trials)
GRB_SIGNIFICANCE:	EST ANNUAL RATE (post trials): 212.817
GRB_MIL_ZEN:	8.3 DEG

Recent Alerts

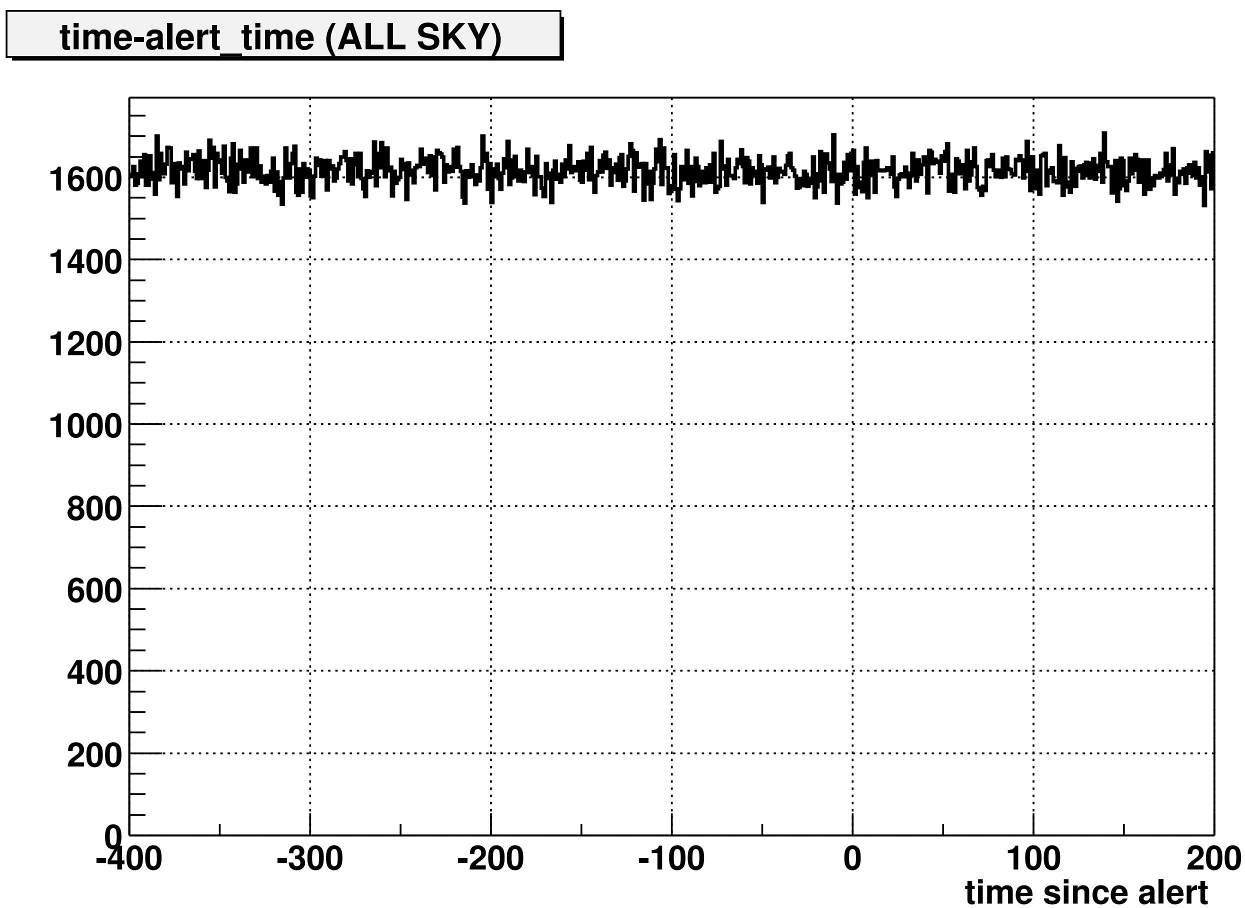
Date	Duration	RA	Dec	Est. Annual Rate	Comments
06/28/03	39.8	155.56	3.2	6.17	OK
06/28/03	2.51	100.09	54	11.09	OK
06/20/03	39.81	94.96	44	2.27	OK
06/14/03	10	226.98	2.6	0.68	OK
06/14/03	6.31	226.98	2.6	6.18	OK
06/11/03	6.31	58.79	20.6	9.53	OK
06/07/03	2.51	148.36	48.4	8.62	OK
05/18/03	39.81	319.18	8	0.44	OK
05/14/03	10	137.67	32.8	7.76	OK
05/12/03	0.63	53.01	26.2	5.94	detector problem
05/04/03	1.58	331.88	69.2	2.52	OK
05/04/03	39.81	276.4	24.8	5.92	OK
05/01/03	1.58	8.21	37.8	6.29	detector problem

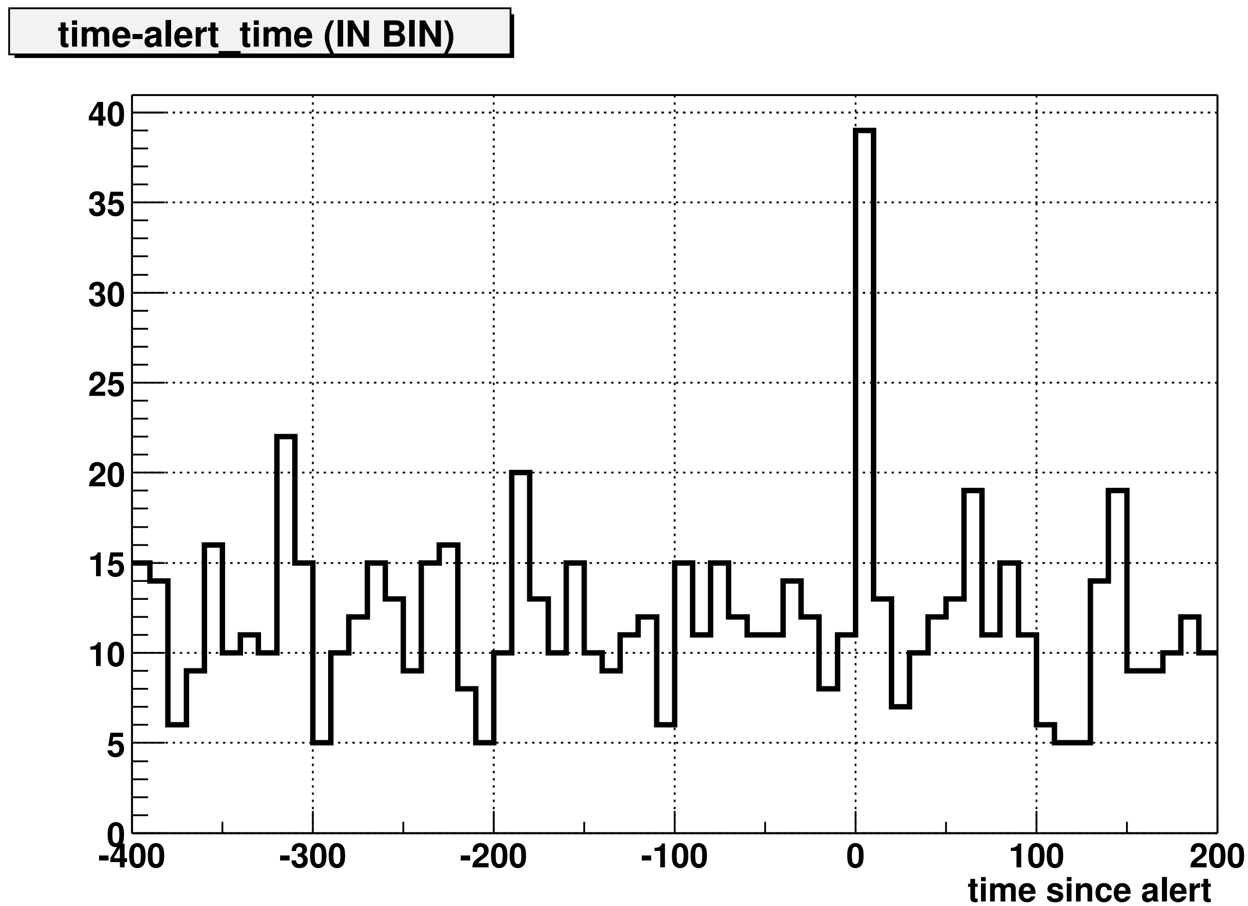
Alert of 06/14/03

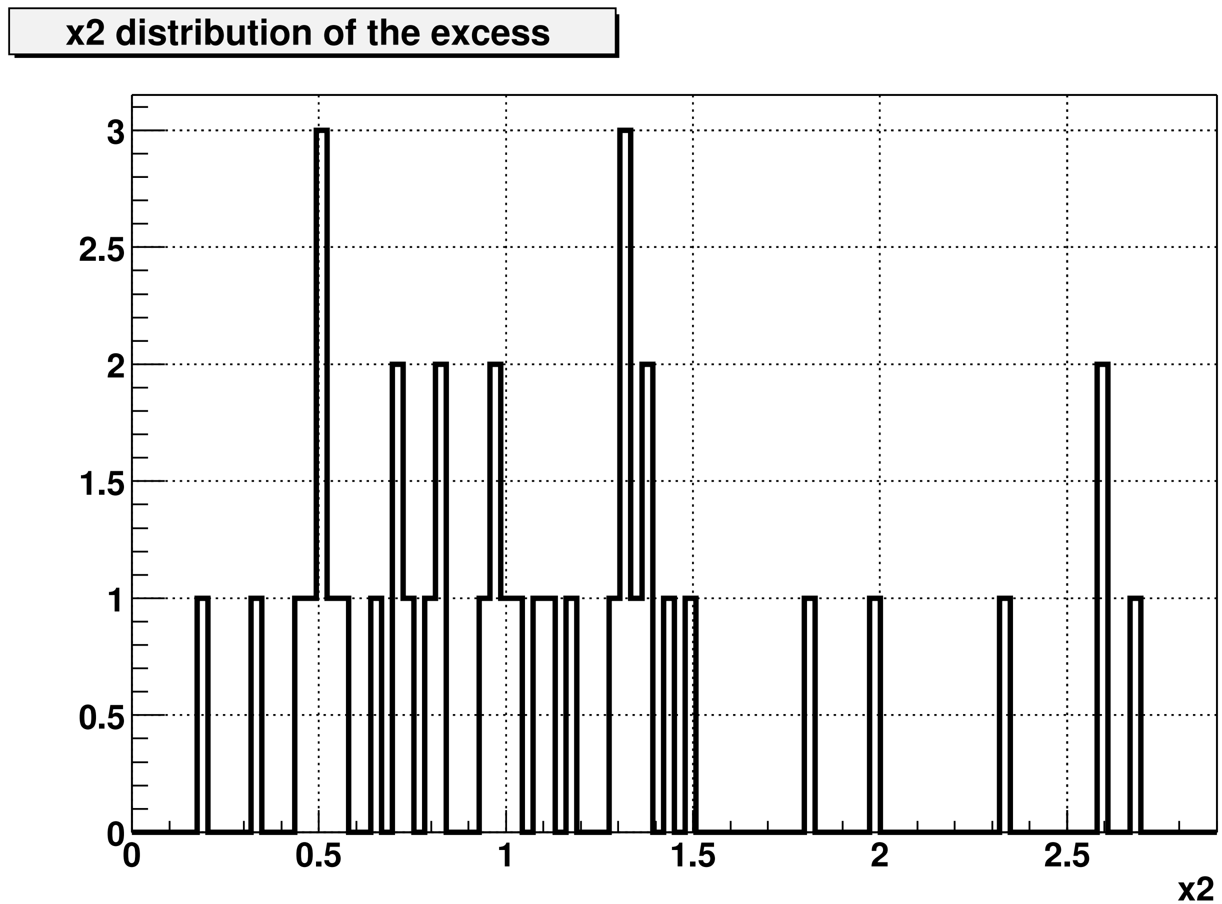


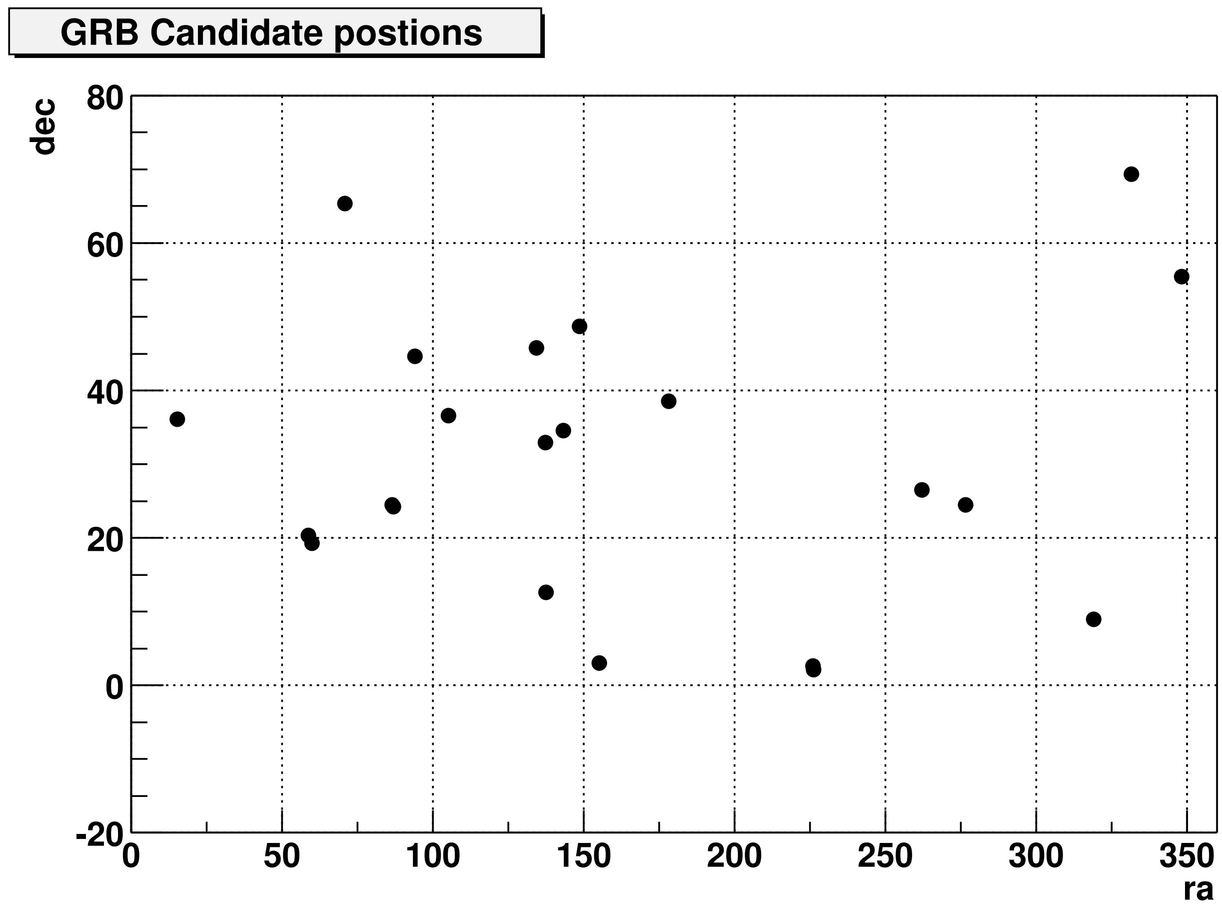


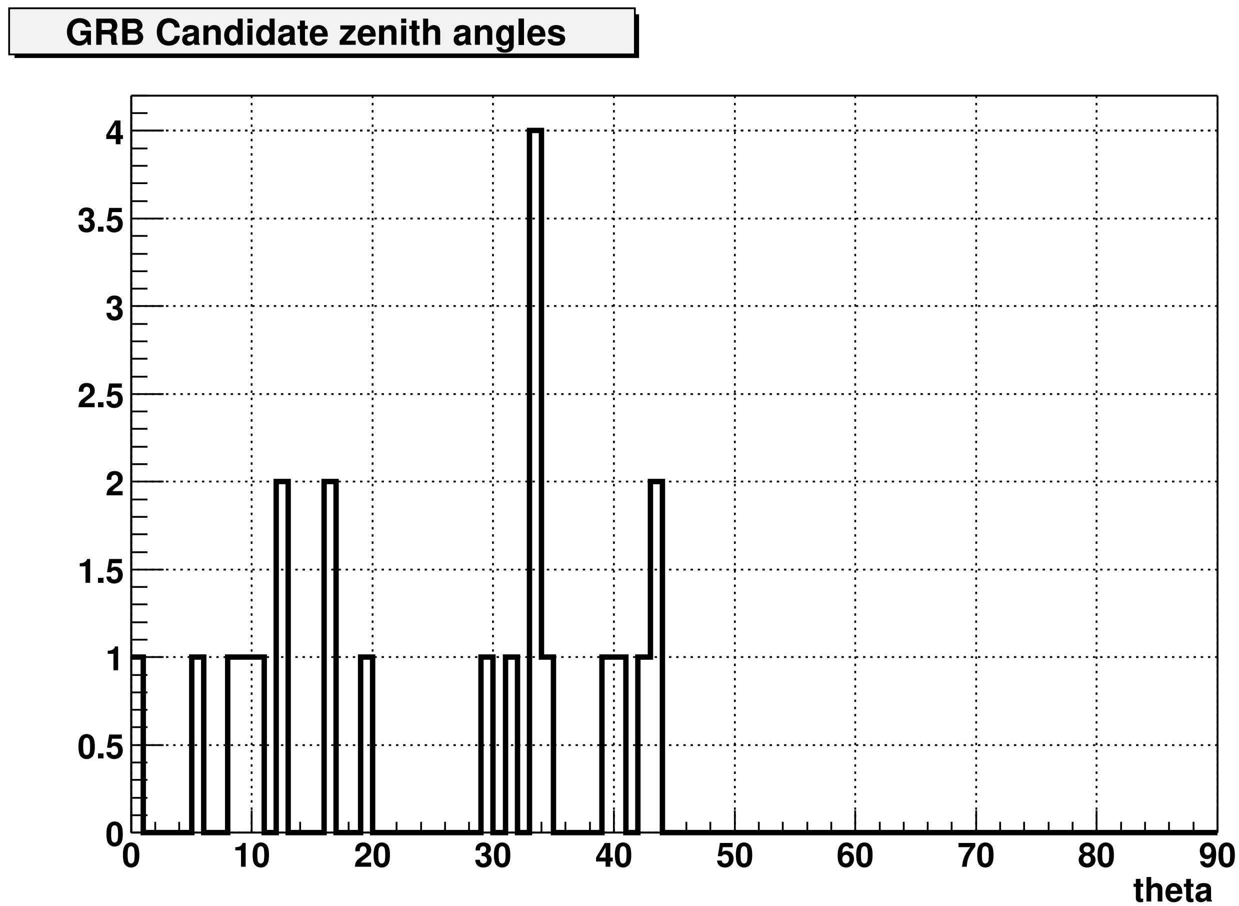
TITLE: MILAGRO BURST POSITION NOTICE
GRB_DATE: 12805 TJD; 165 DOY; 06/14/2003
GRB_TIME: 18187.000016 SOD; {05:03:7.000016} UT
GRB_RUN_INFO: RUN 5007 SUBRUN 78
GRB_DURATION: 10.00000 SEC
GRB_MIL_RA: 227.0 DEG {15h:04m:00s}
GRB_MIL_DEC: 2.6 DEG
GRB_SIGNAL: 45 EVENTS
GRB_BACKGROUND: 11.73663 EVENTS
GRB_SIGNIFICANCE: 1.20606e-13 (pre trials)
GRB_SIGNIFICANCE: EST ANNUAL RATE (post trials): 0.68448
GRB_MIL_ZEN: 33.6 DEG

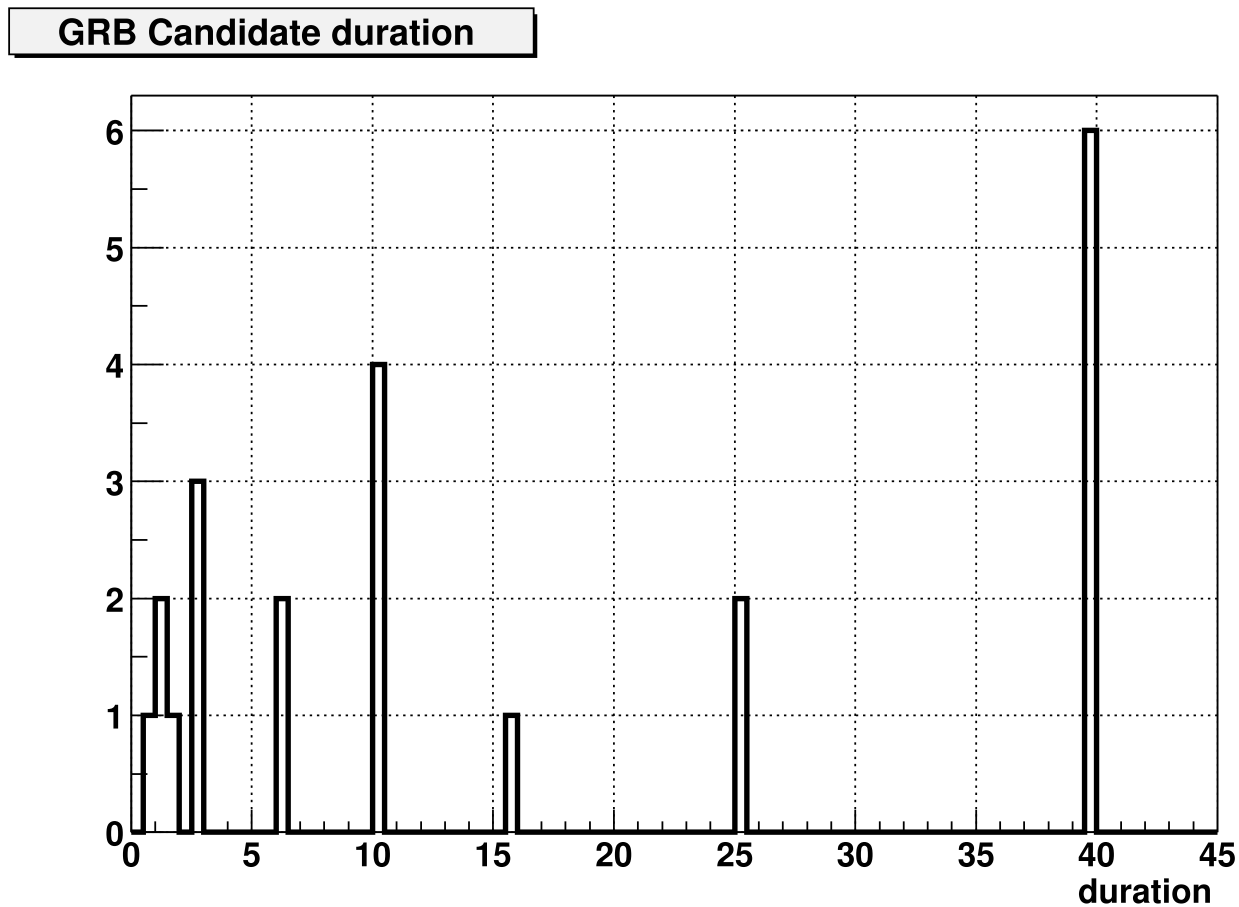

time-alert_time (ALL SKY)
1600
1400
1200
1000
800
600
400
200
0
-400
-300
-200
-100
0
100
200
time since alert


time-alert_time (IN BIN)
40
35
30
25
20
15
10
5
0
-400
-300
-200
-100
0
100
200
time since alert

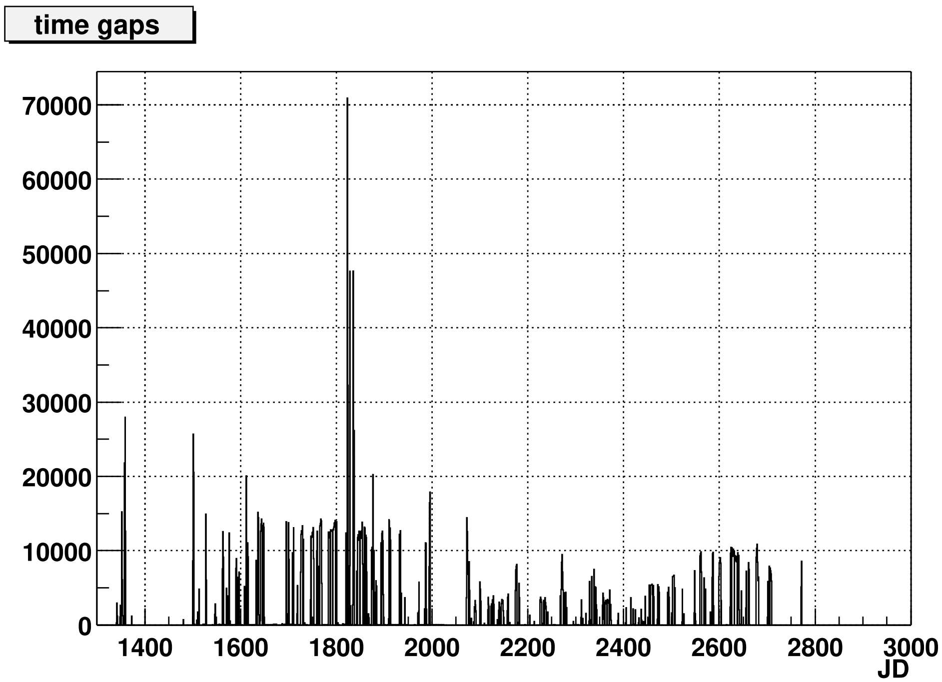

x2 distribution of the excess
3
2.5
2
1.5
1
0.5
0
0
0.5
1
1.5
2
2.5
x2

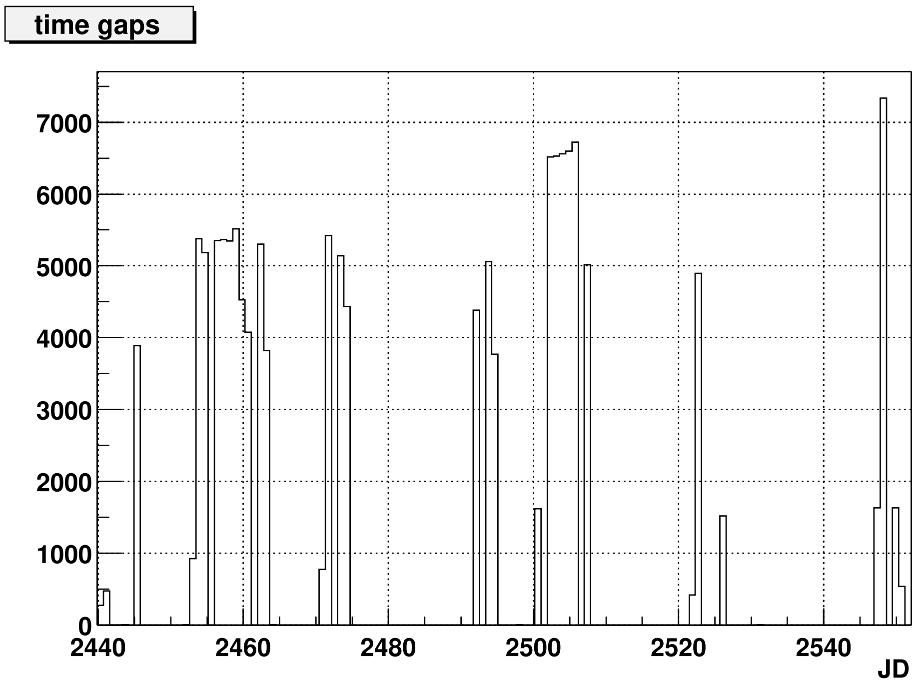

GRB Candidate postions
dec
ra
80
60
40
20
0
-20
0
50
100
150
200
250
300
350


GRB Candidate zenith angles
0
0.5
1
1.5
2
2.5
3
3.5
4
0
10
20
30
40
50
60
70
80
90
theta


GRB Candidate duration
0
1
2
3
4
5
6
0
5
10
15
20
25
30
35
40
45
duration

Time Gaps


time gaps
70000
60000
50000
40000
30000
20000
10000
0
1400
1600
1800
2000
2200
2400
2600
2800
3000
JD


time gaps
7000
6000
5000
4000
3000
2000
1000
0
2440
2460
2480
2500
2520
2540
JD