

GALACTIC PLANE - UPDATE

Peter Newirthy & Roman Floyd

MILAGRO COLLAB. MEETING
7/2003

OLD 14 MONTH DATA SET : 425 DAYS
[JULY 2000 - SEPT 2001]

V62 NOW RUNNING OK (LOT OF HELP FROM ROMA)
ON GALACTIC PLANE

[STILL HAVE TROUBLES WITH ANALYSIS]

NEW DATA SET : 600 days
[SEPT 2001 - MAY 2003]

HOT - OFF - THE - PRESS

SAM THURSDAY

296 DAYS ANALYSED

$\frac{2}{2}$

NEW DATA

(A) ZENITH BREATHING
QUITE VISIBLE

(B) 10° ZENITH CORRECTION
FUNCTIONS GENERATED
(2 MONTH DATA SETS)

(C) BAD DATA HUNT &
EXCLUSION DONE

ANOMALOUS RATES

ANOMALOUS AMPLITUDES

ANOMALOUS χ^2 (SHAPE CHANGES)

ANOMALOUS χ^2 FRACTION

(NULL SET)

SHOULD HAVE
REPOSITORY
OF "BAD"
UNION OF ALL

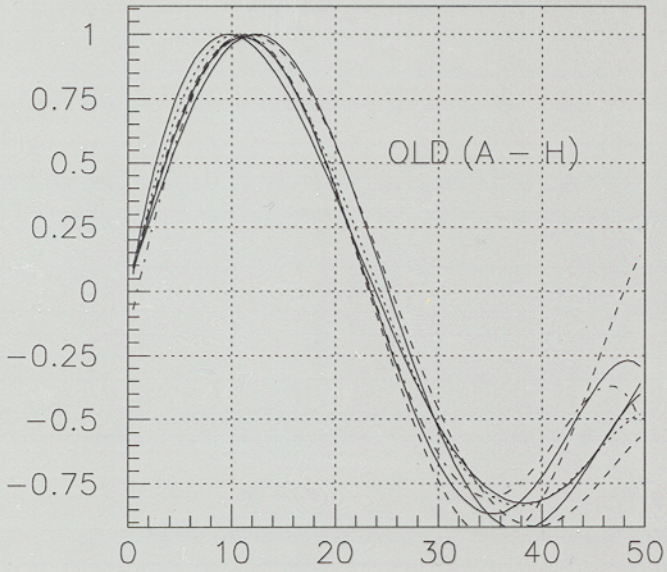
(D) ANALYSIS WITH 10% TIME

SWAPPING DONE W.

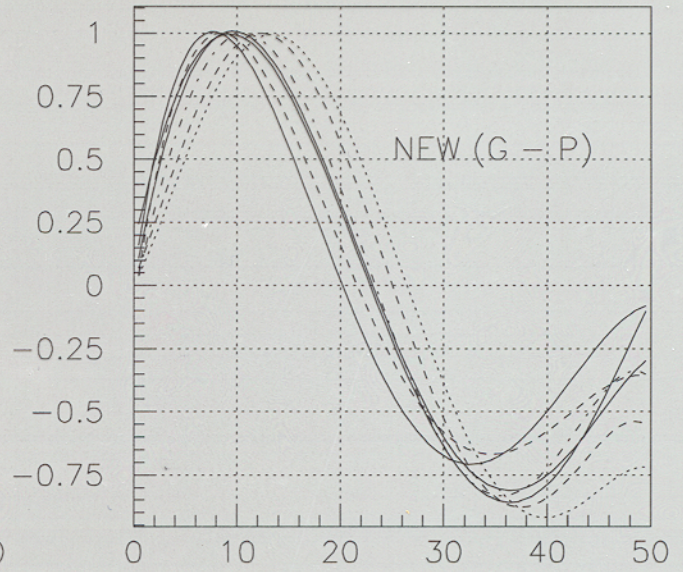
(1) ZENITH BREATHING
CORRECTION

(2) GALACTIC PLANE EXCLUDED
SUN-MOON EXCLUDED

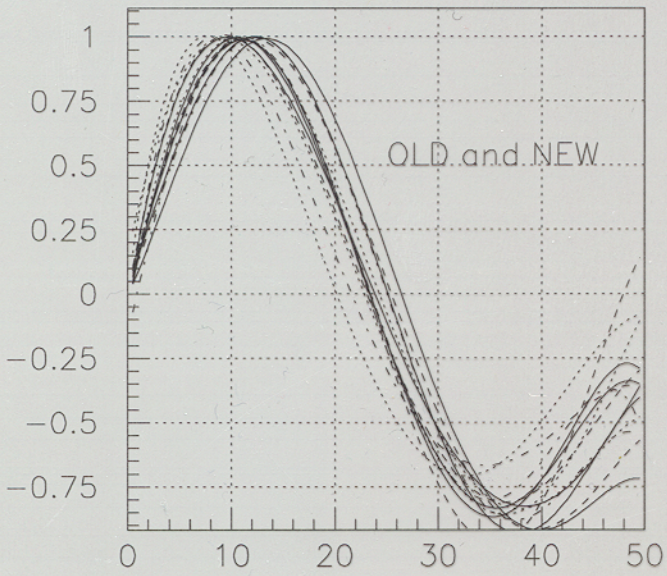
ZENITH BREATHING CORRECTION FUNCTIONS



essz1parznewzgza.f

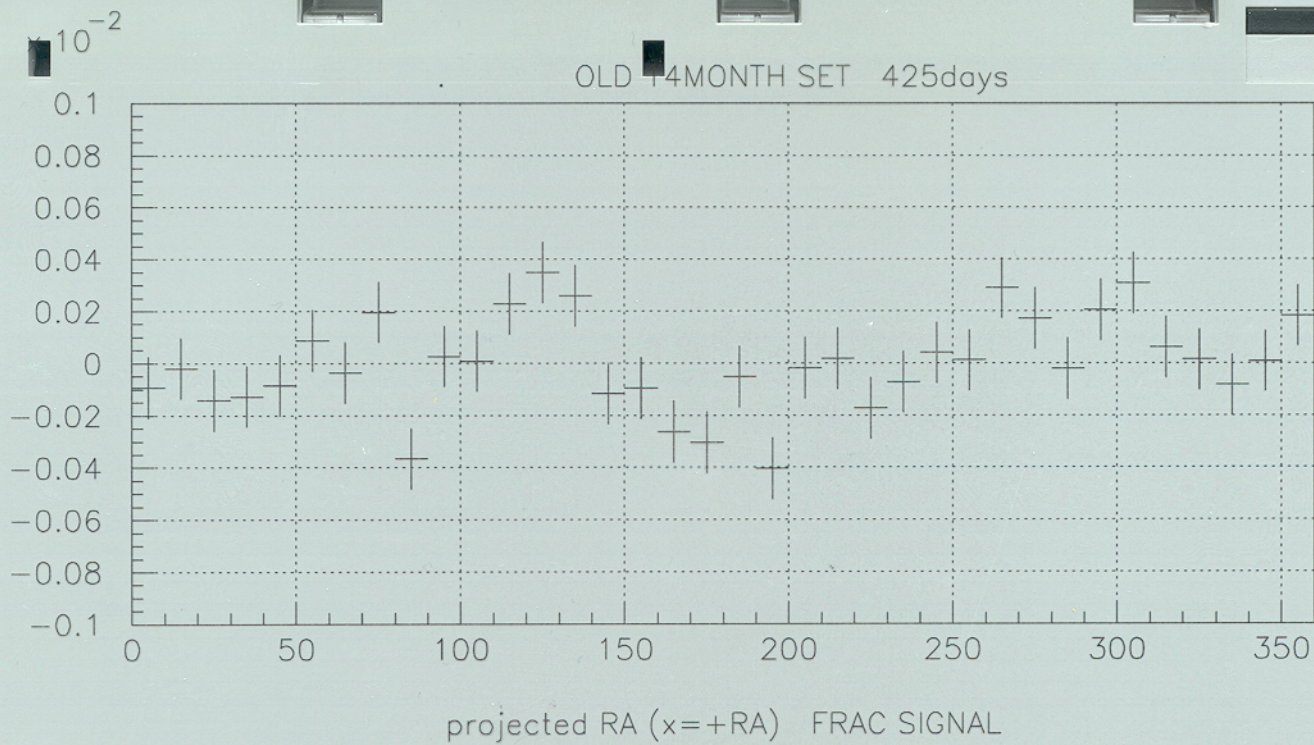


zpiccioni/milagro/zenith/essz1parznewzgh.f



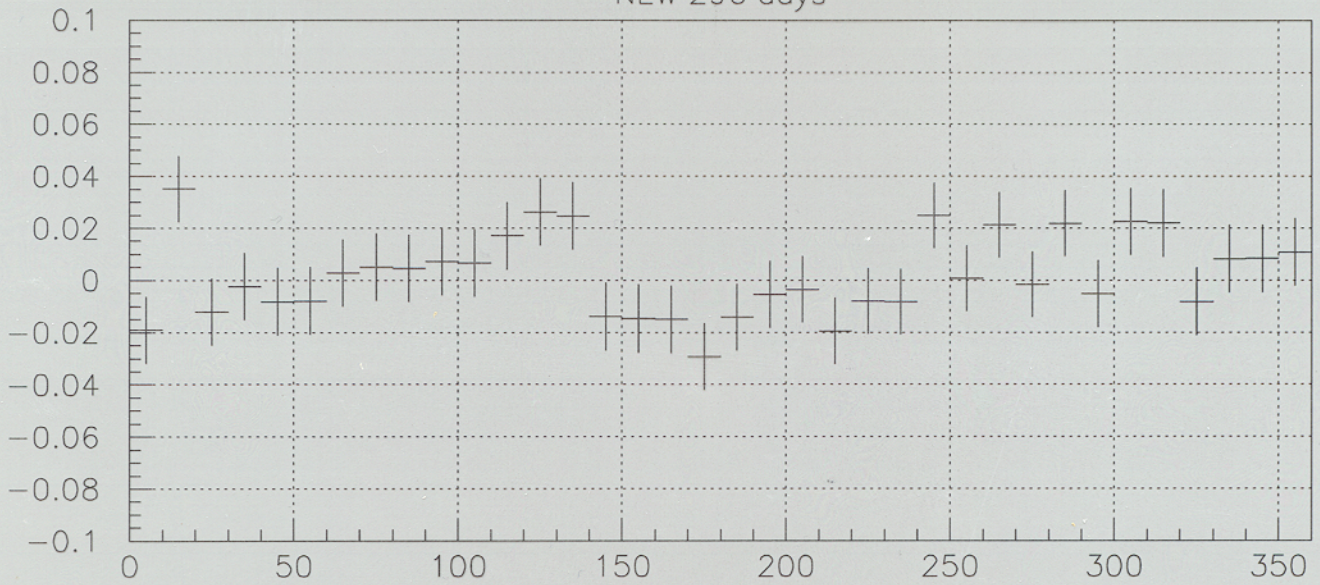
essz1parznewzgza.f

OLD 14MONTH SET 425days



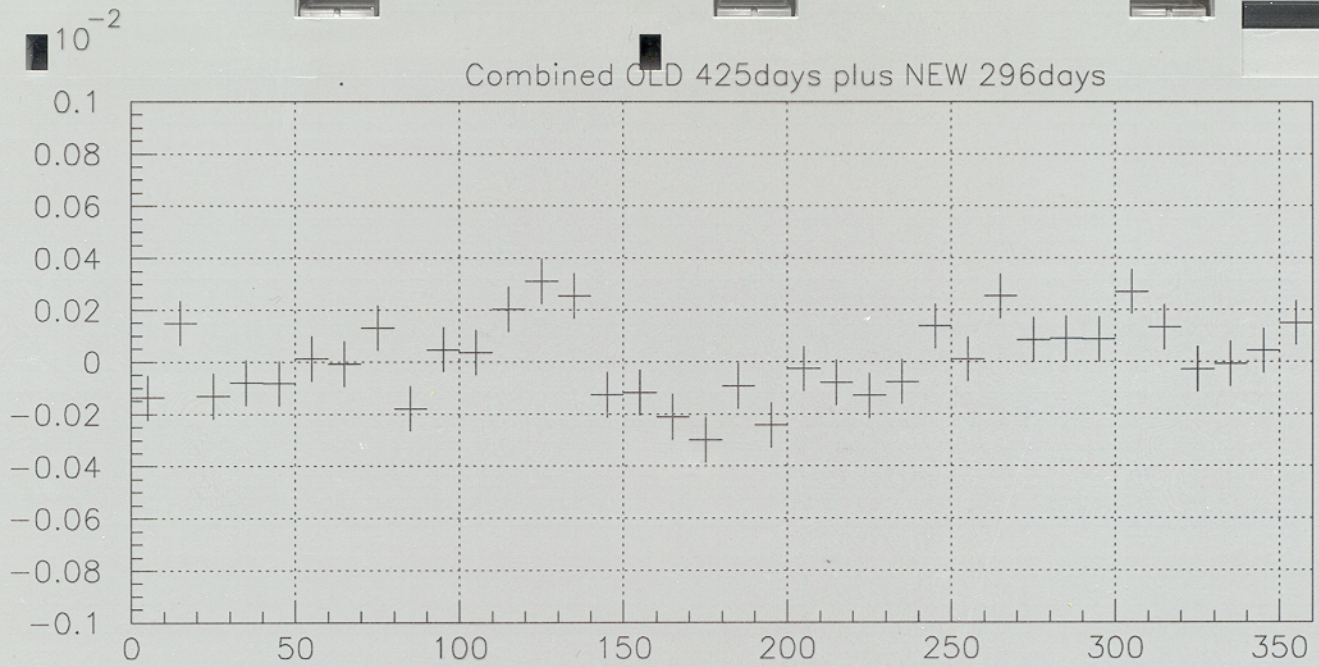
NEW 296 days

10^{-2}



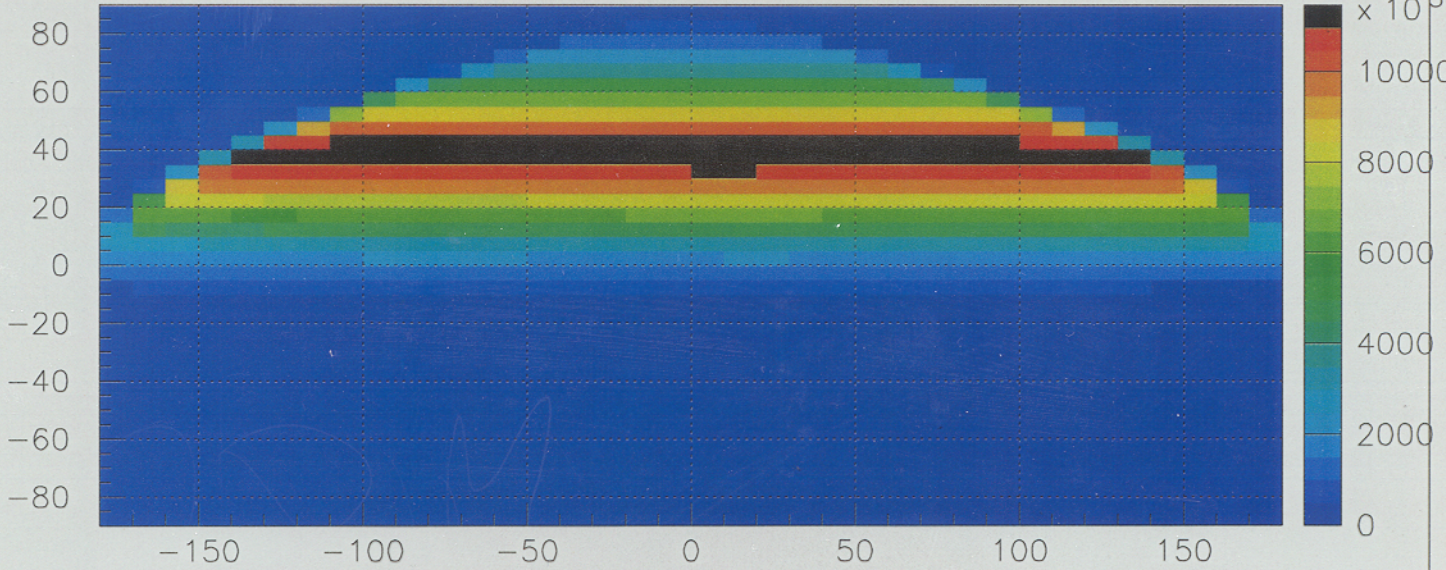
projected RA (x=+RA) FRAC SIGNAL

Combined OLD 425days plus NEW 296days

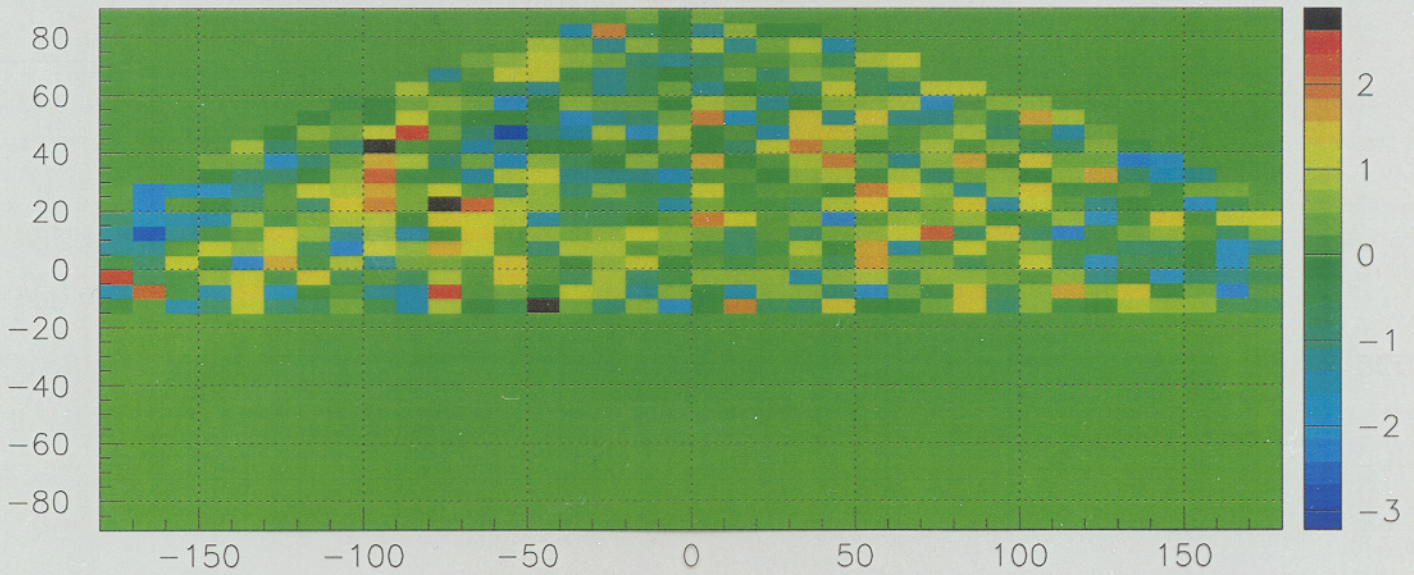


projected RA (x=+RA) FRAC SIGNAL

OLD 14MONTH SET 425days



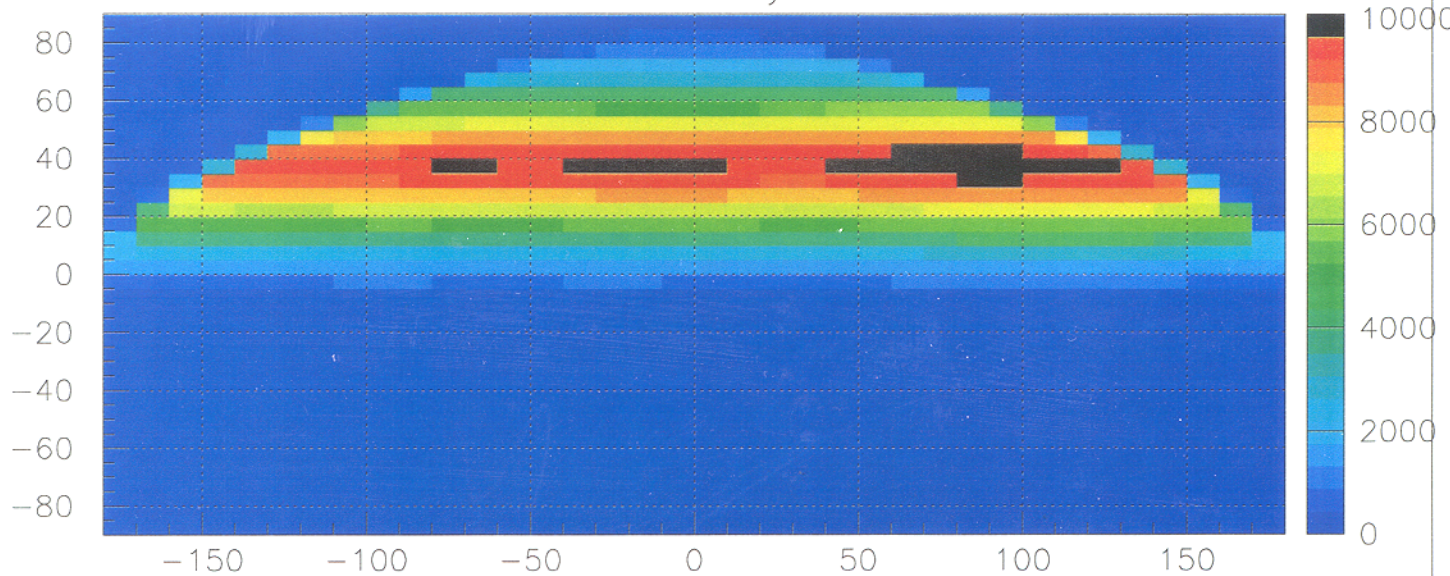
RA DEC COORDS (x=-RA) SIGNAL (expos)



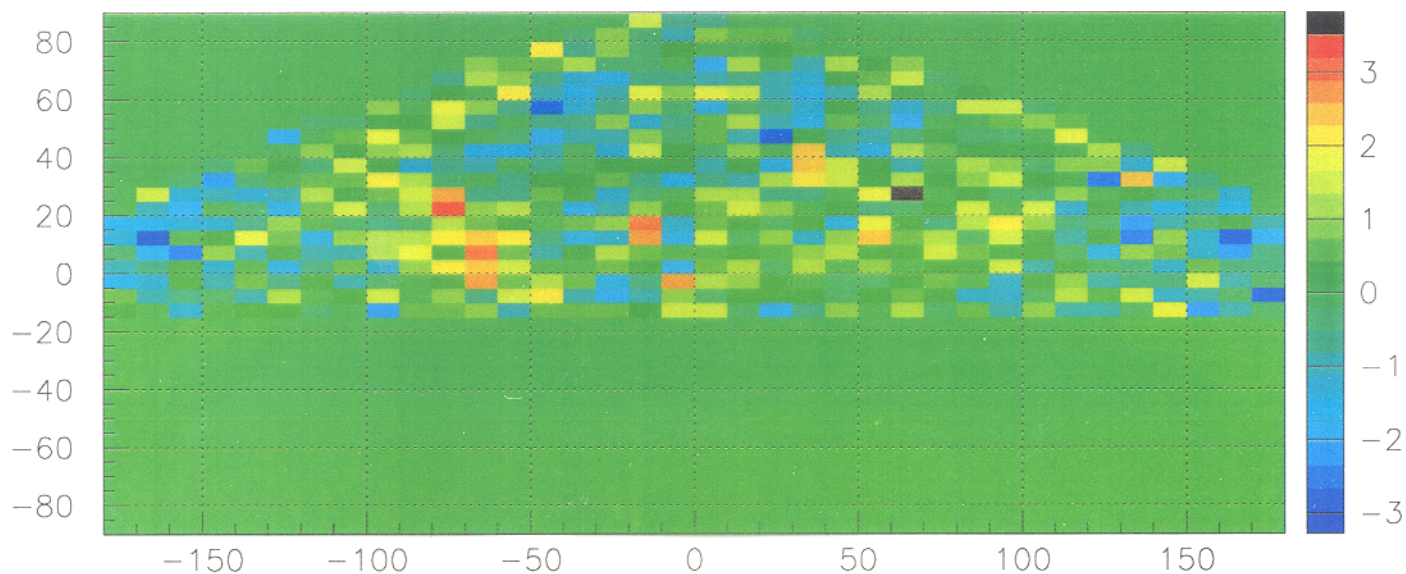
RA DEC COORDS (x=-RA) SIGNIFICANCE

NEW 296 days

$\times 10^3$

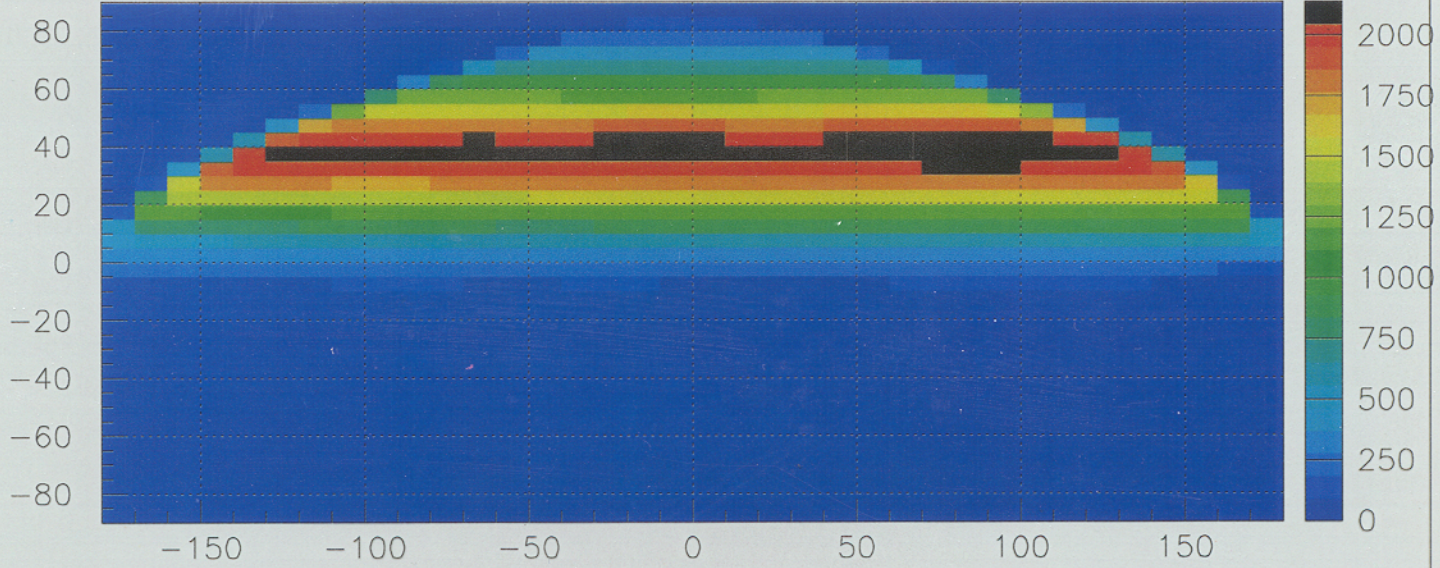


RA DEC COORDS ($x=-RA$) SIGNAL (expos)

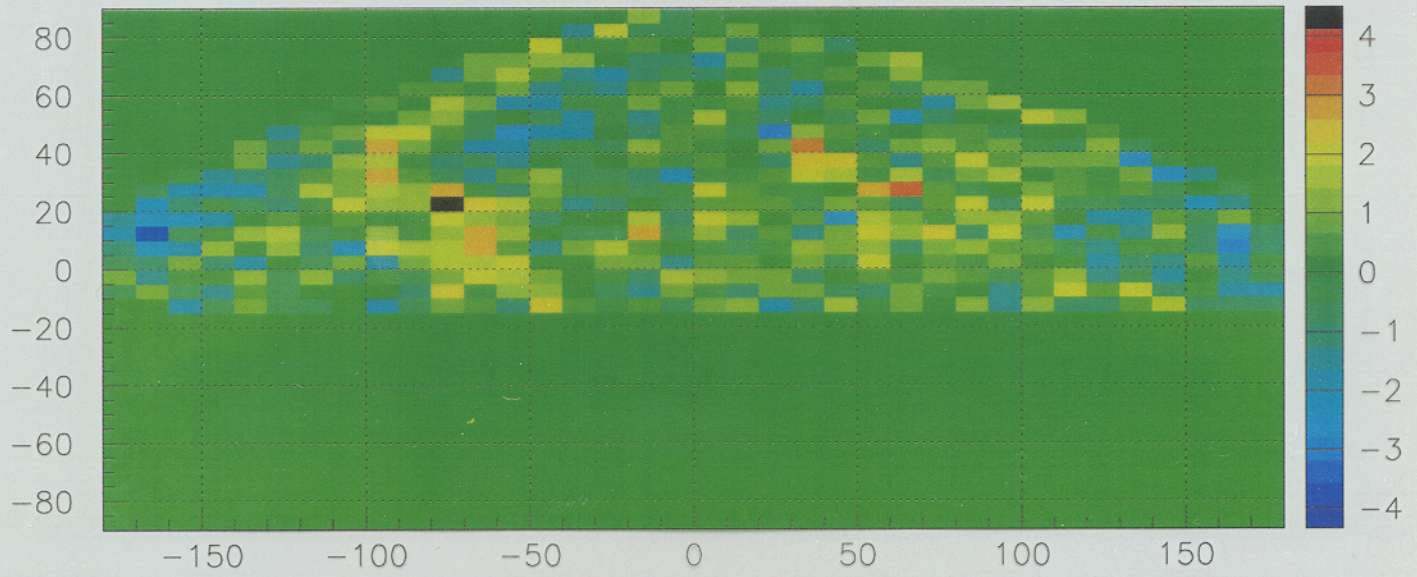


RA DEC COORDS ($x=-RA$) SIGNIFICANCE

Combined GED 425days plus NEW 296days

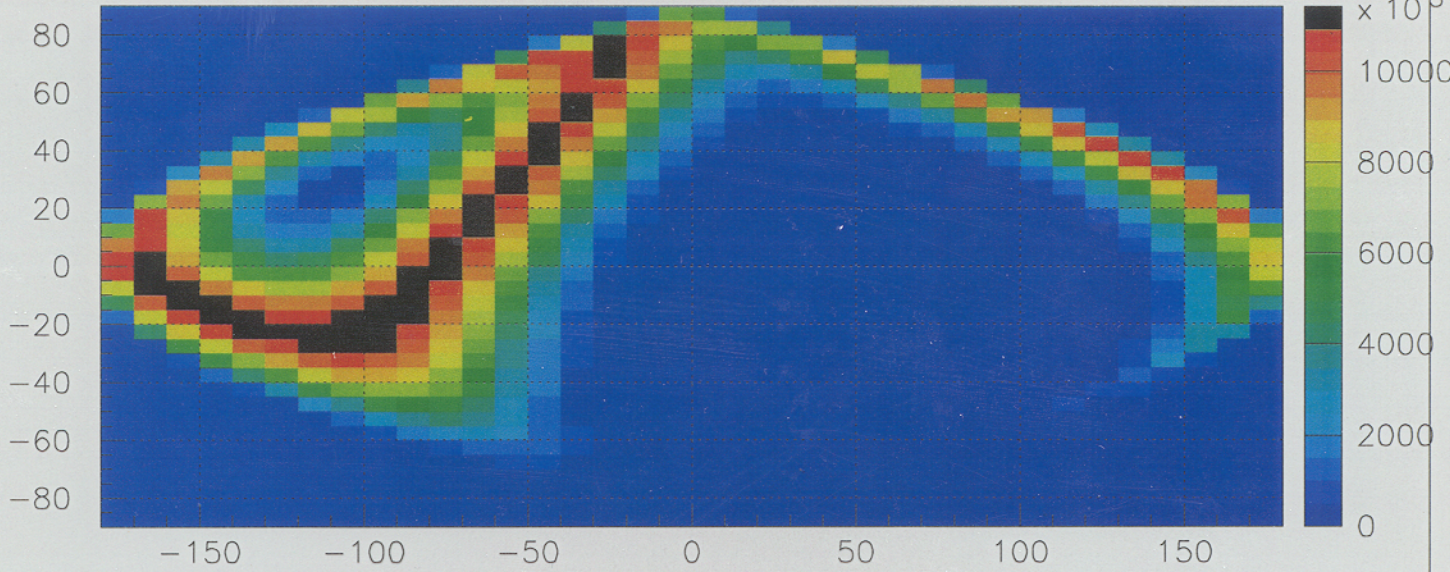


RA DEC COORDS (x=-RA) SIGNAL (expos)

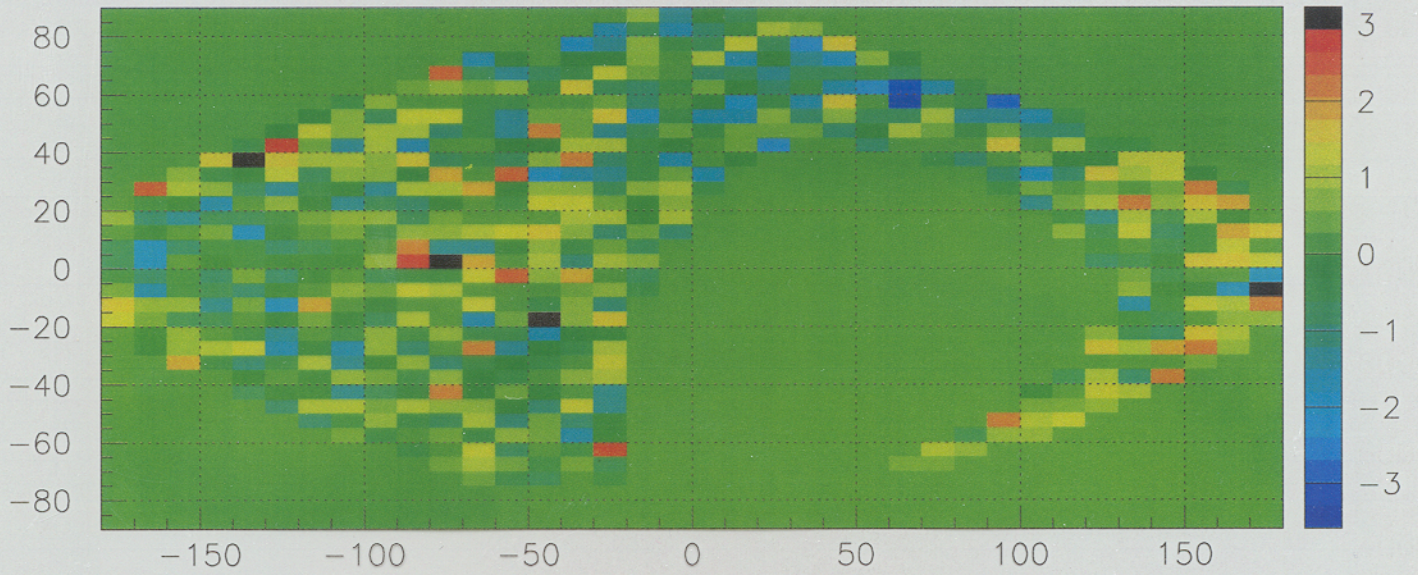


RA DEC COORDS (x=-RA) SIGNIFICANCE

OLD 14MONTH SET 425days

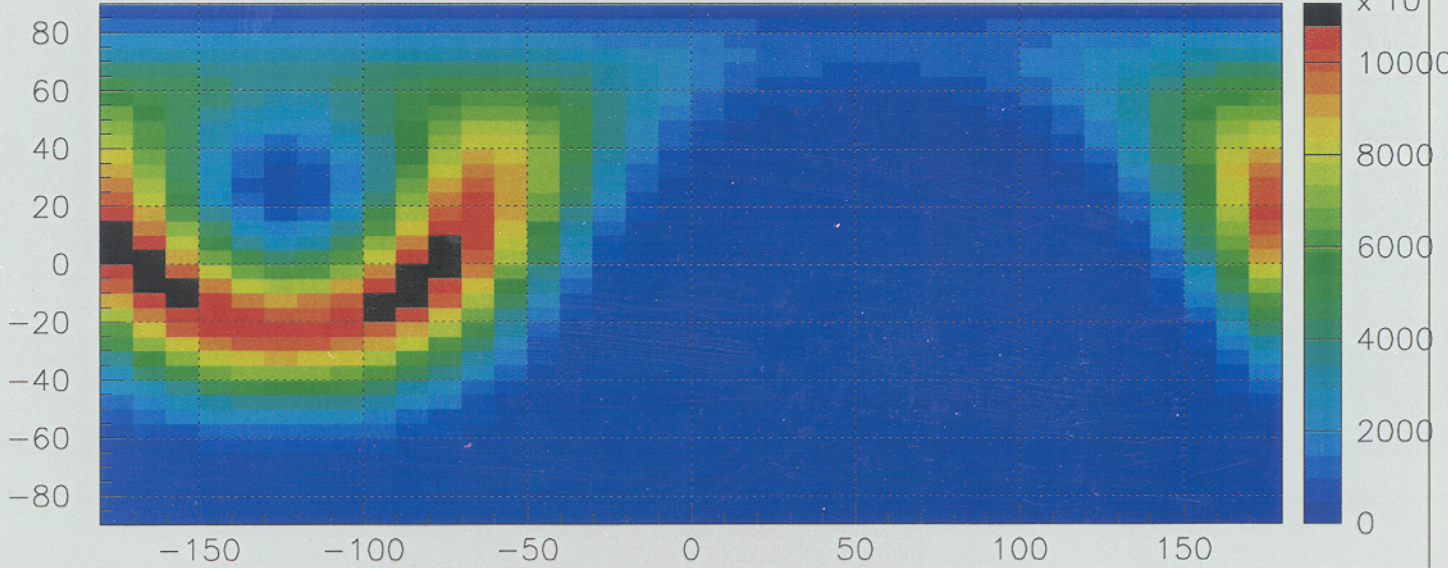


GALACTIC COORDS (x=-gl) SIGNAL (expos)

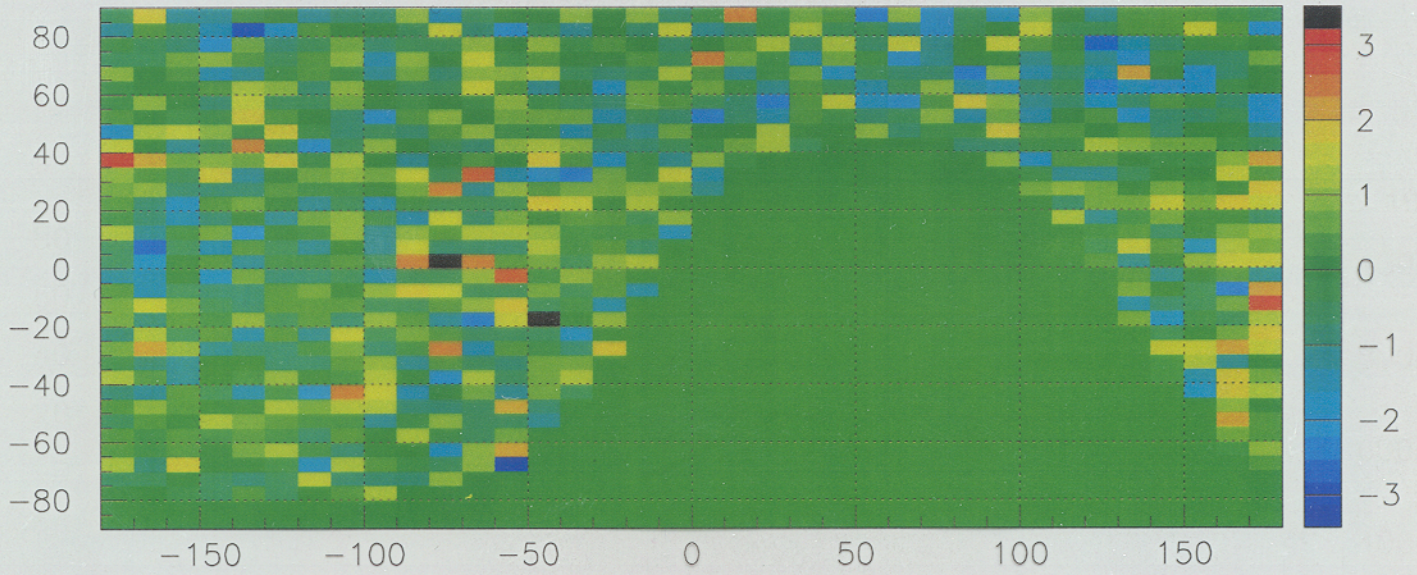


GALACTIC COORDS (x=-gl) SIGNIFICANCE

OLD 4MONTH SET 425days



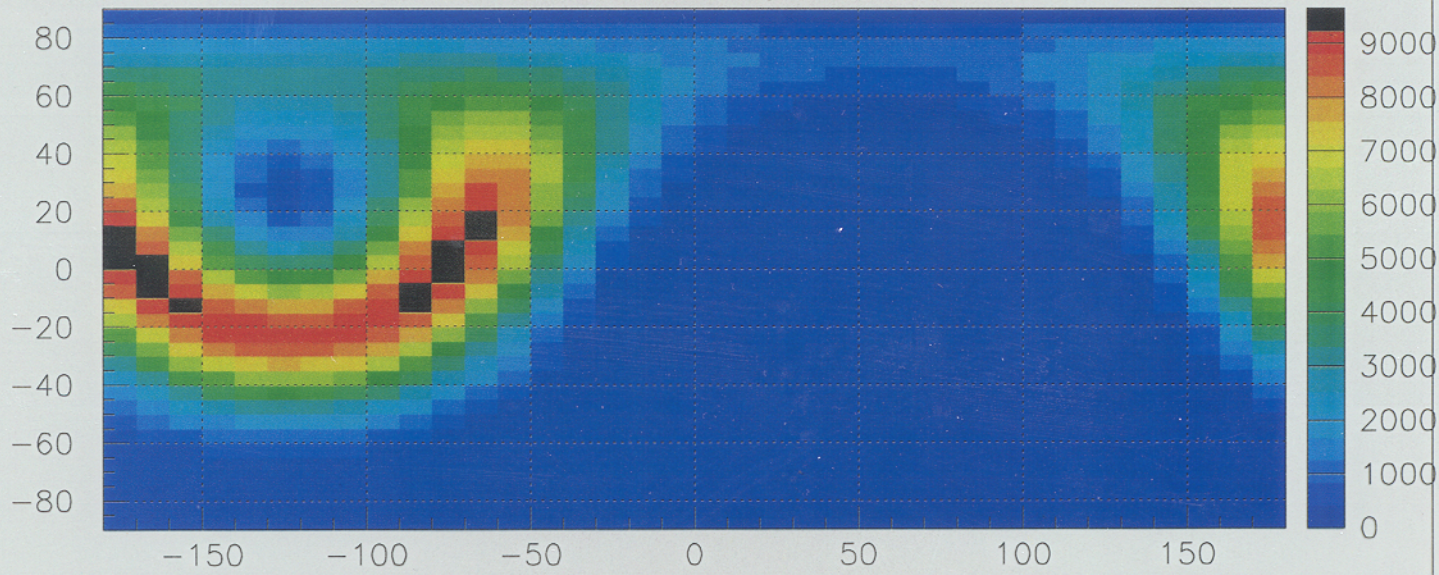
GALACTIC COORDS (x=-gl) SIGNAL (expos)



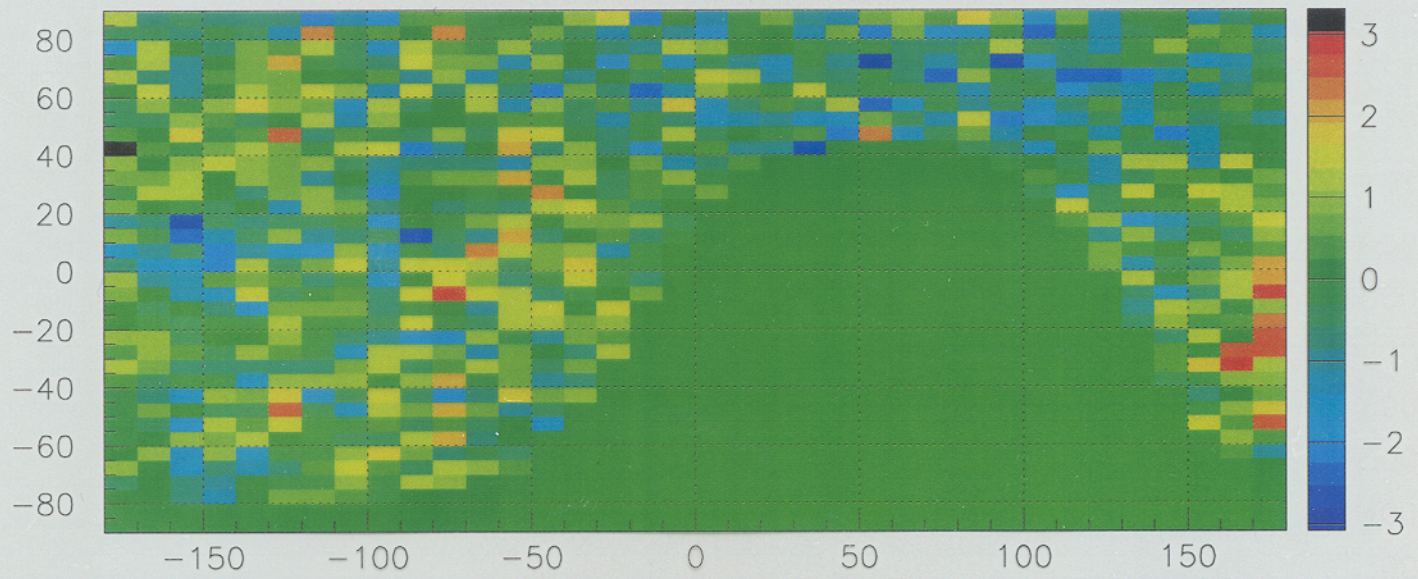
GALACTIC COORDS (x=-gl) SIGNIFICANCE

NEW 296 days

$\times 10^4$

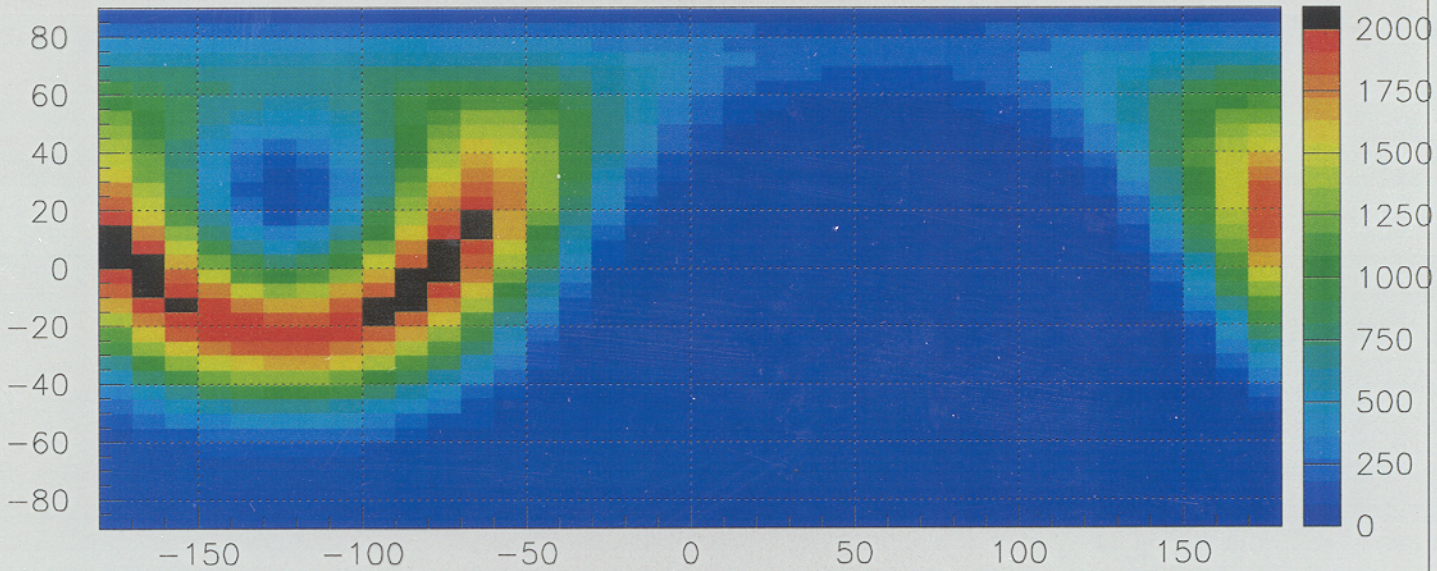


GALACTIC COORDS (x=-gl) SIGNAL (expos)

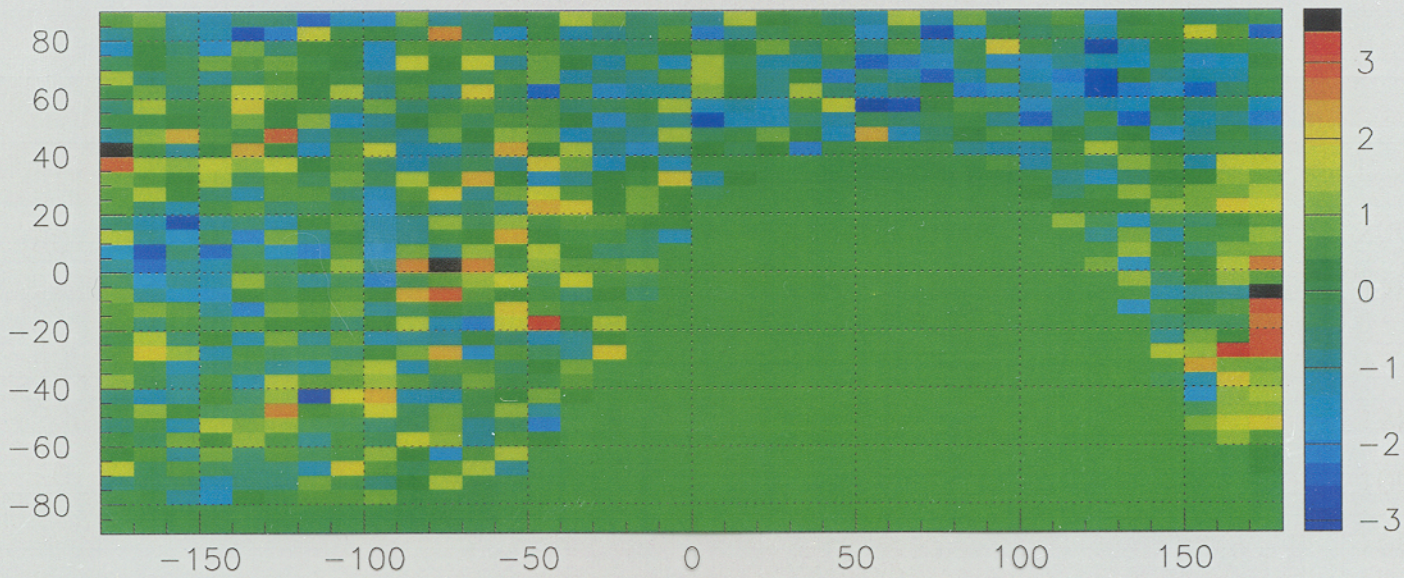


GALACTIC COORDS (x=-gl) SIGNIFICANCE

Combined OLD 425days plus NEW 296days



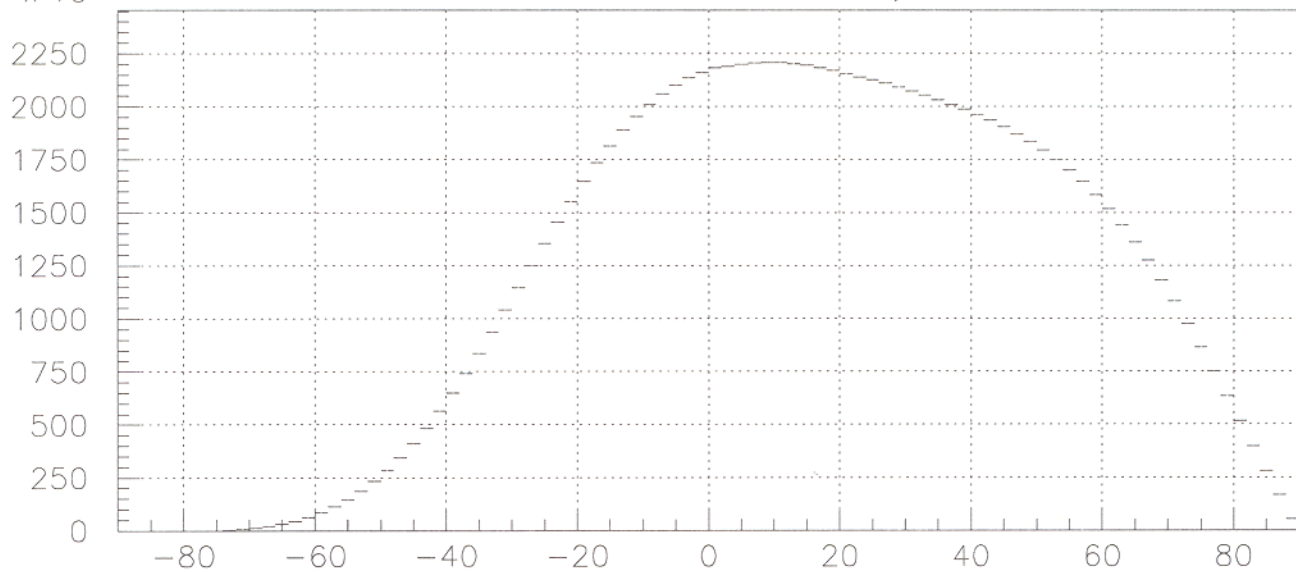
GALACTIC COORDS (x=-gl) SIGNAL (expos)



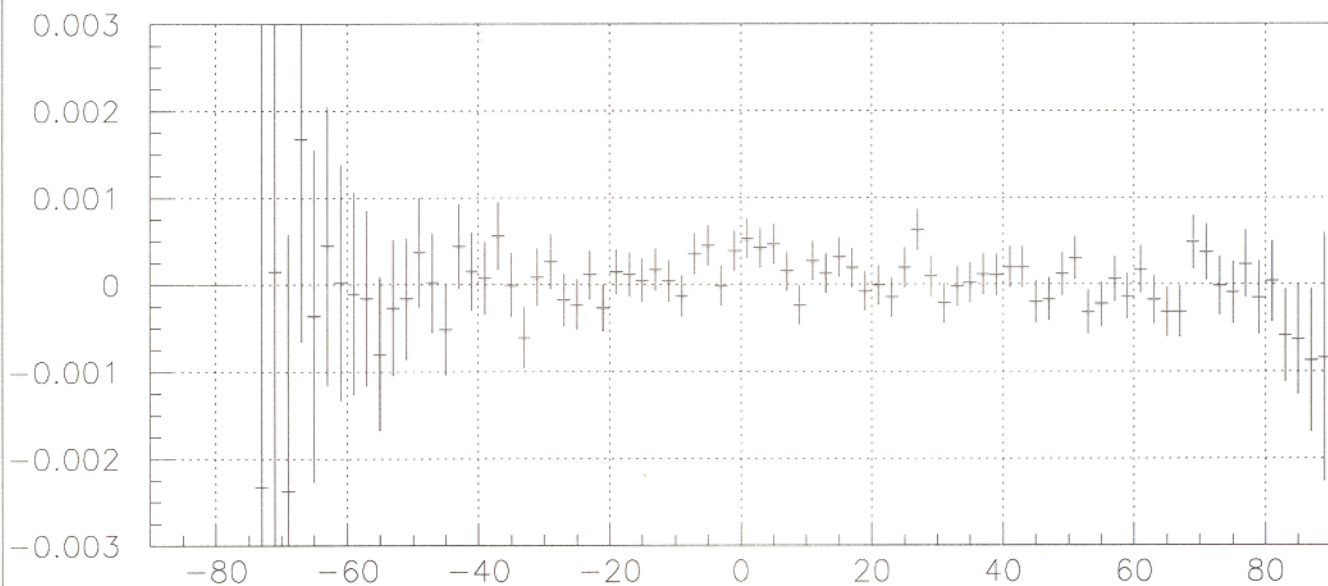
GALACTIC COORDS (x=-gl) SIGNIFICANCE

OLD 14MONTH SET 425days

$\times 10^4$



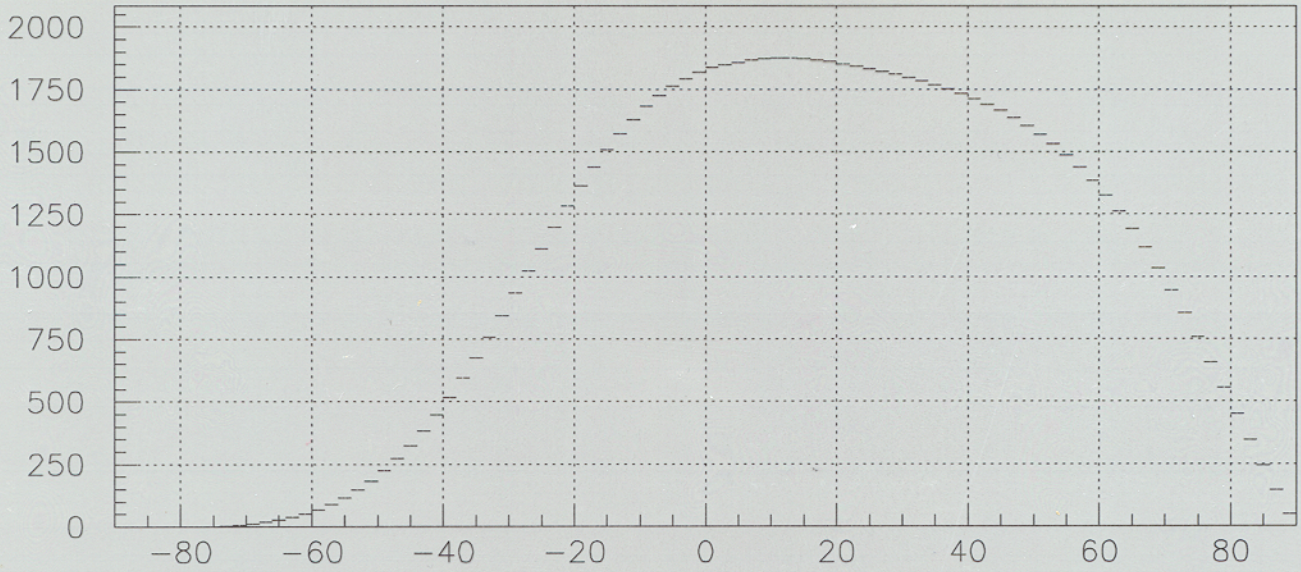
IG - GAL LATITUDE profile SIGNAL(expos)



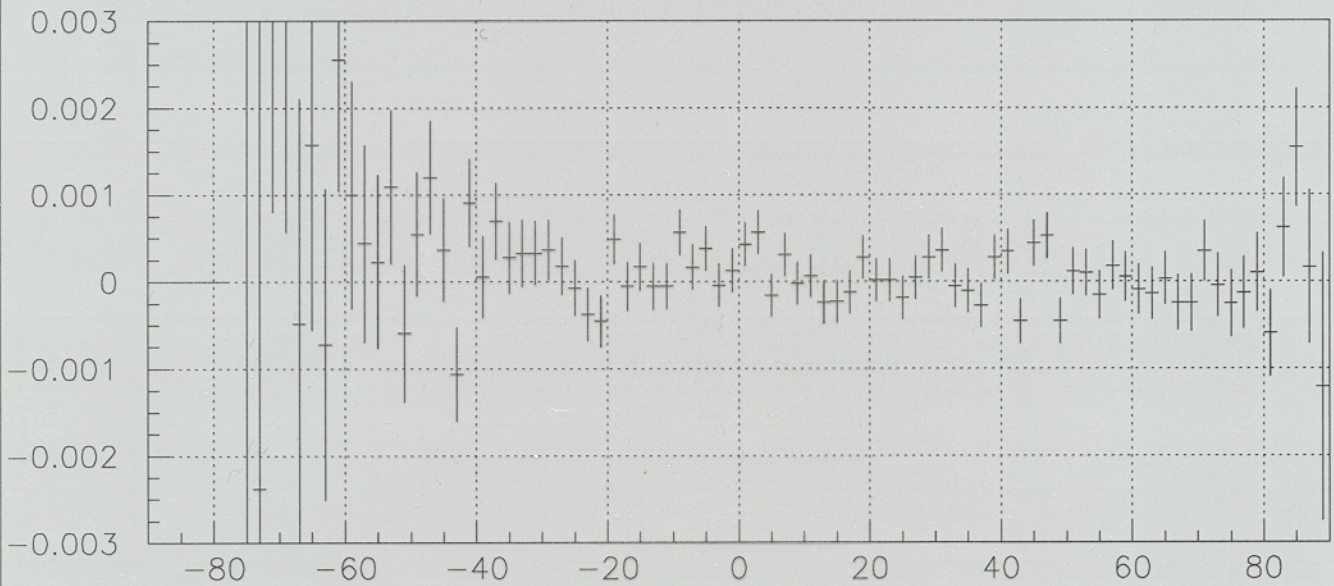
IG - GAL LATITUDE profile FRAC SIGNAL

10⁴

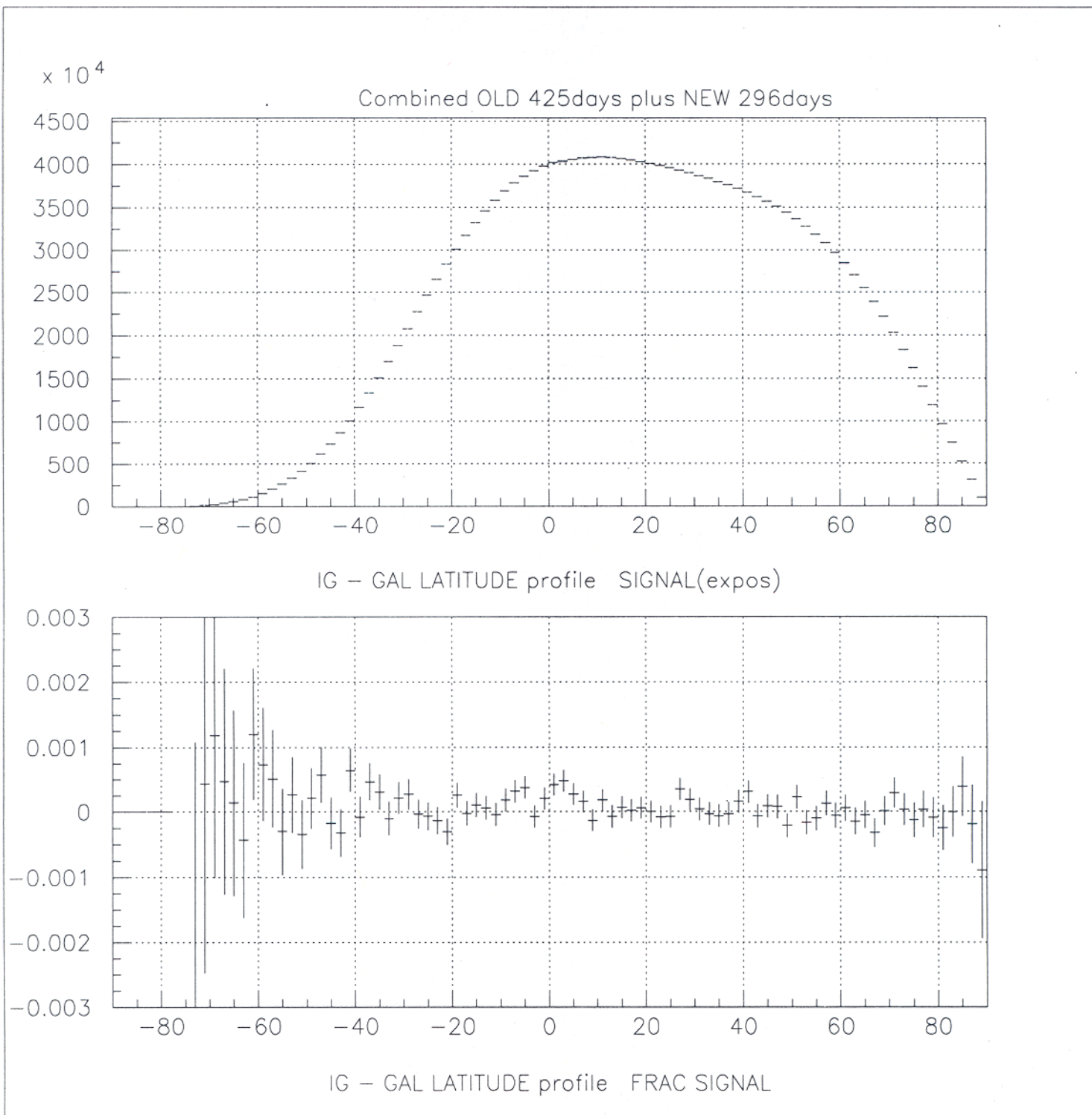
NEW 296 days



IG - GAL LATITUDE profile SIGNAL(expos)

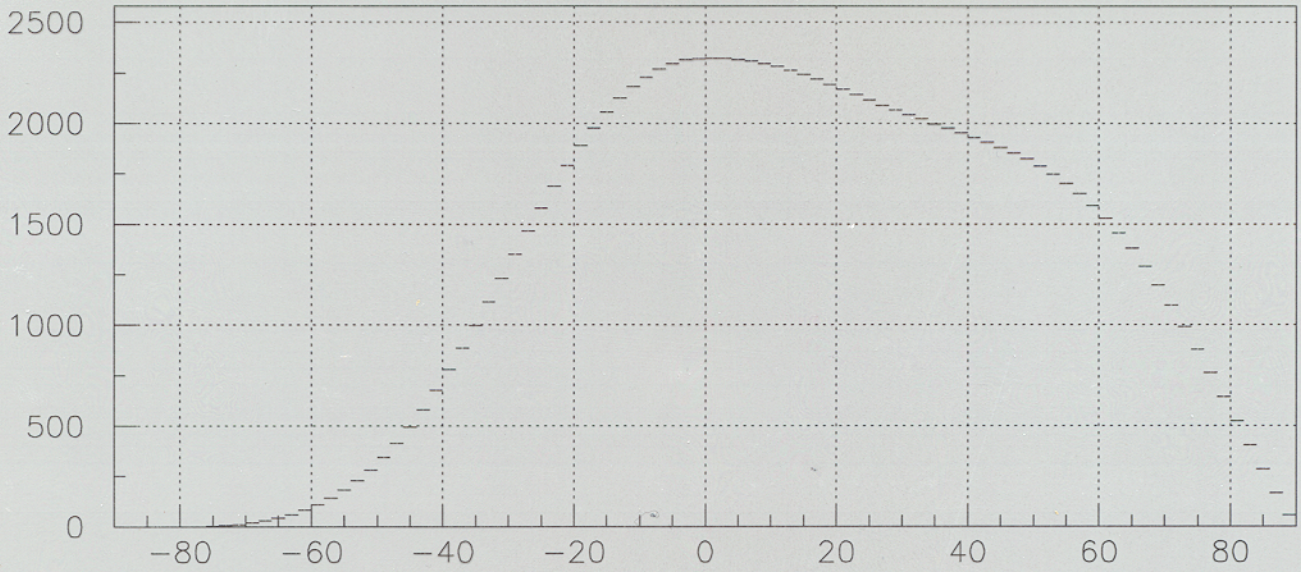


IG - GAL LATITUDE profile FRAC SIGNAL

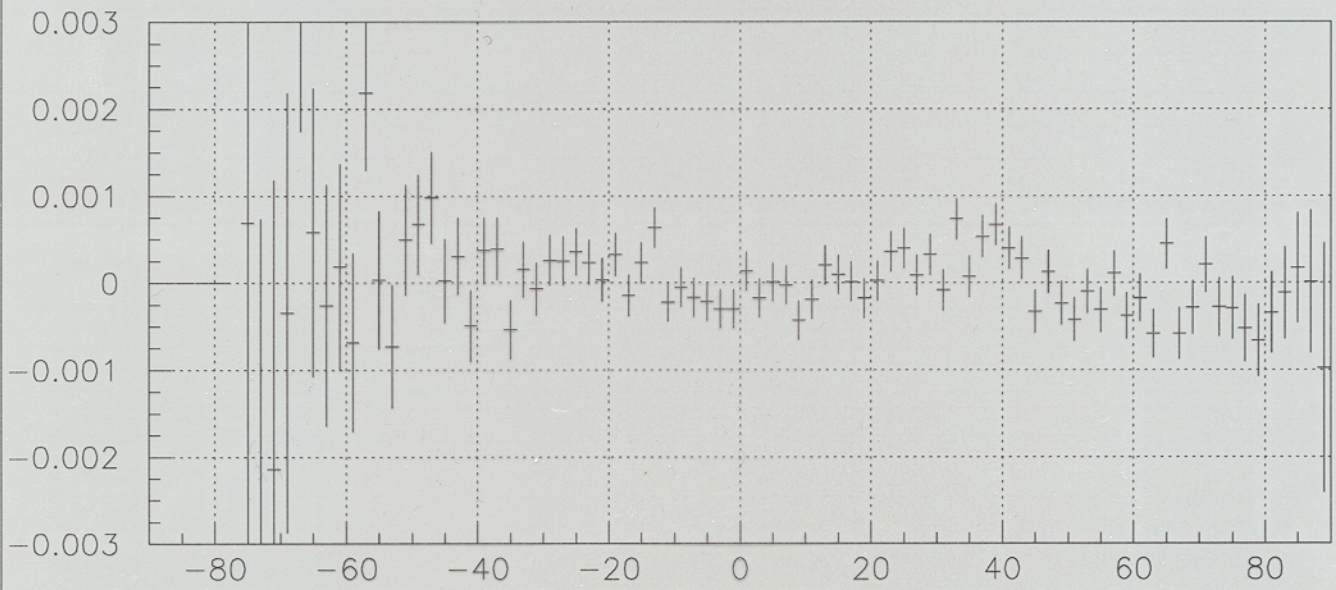


10⁴

OLD 14MONTH SET 425days



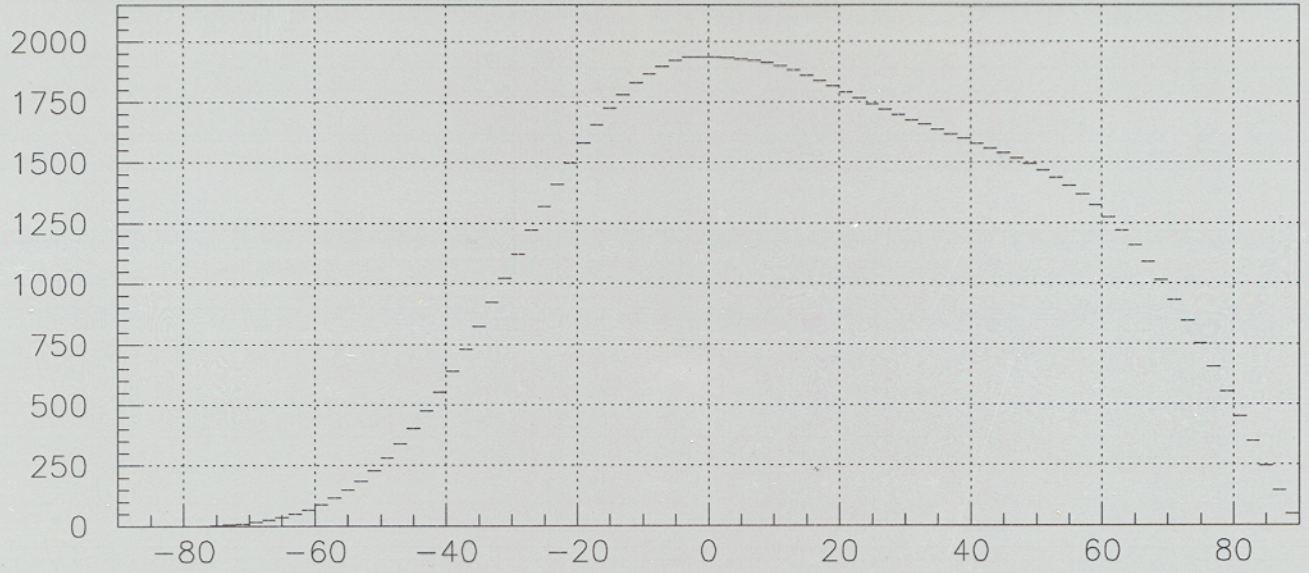
OG - GAL LATITUDE profile SIGNAL(expos)



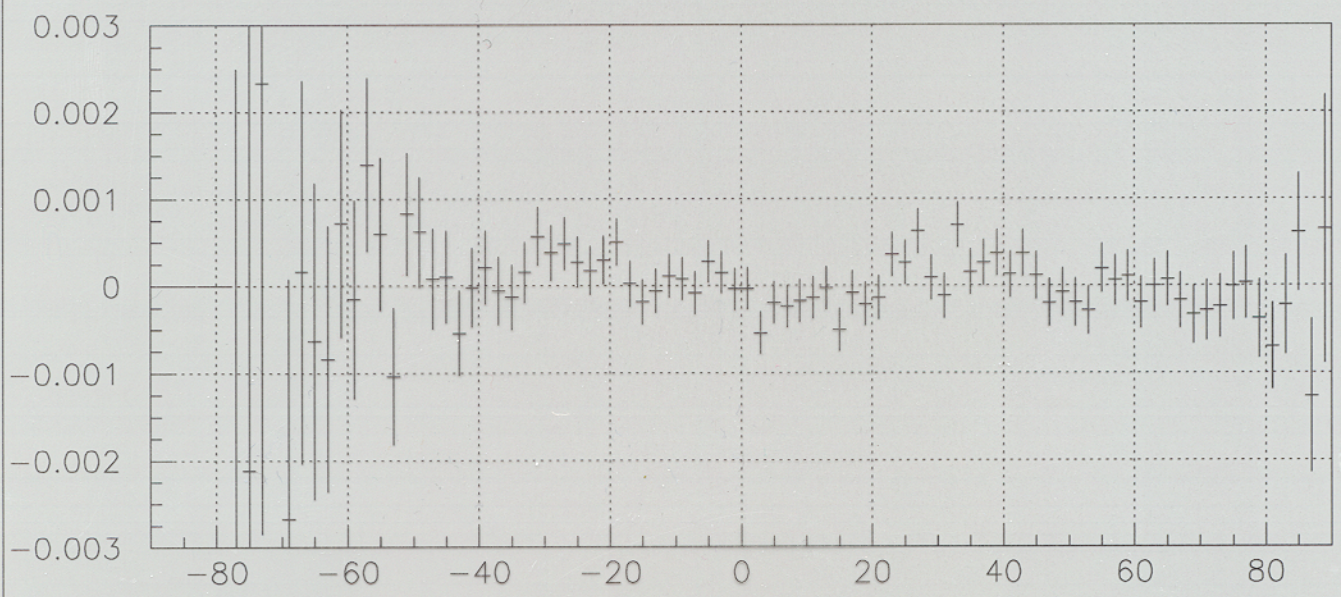
OG - GAL LATITUDE profile FRAC SIGNAL

NEW 296 days

$\times 10^4$



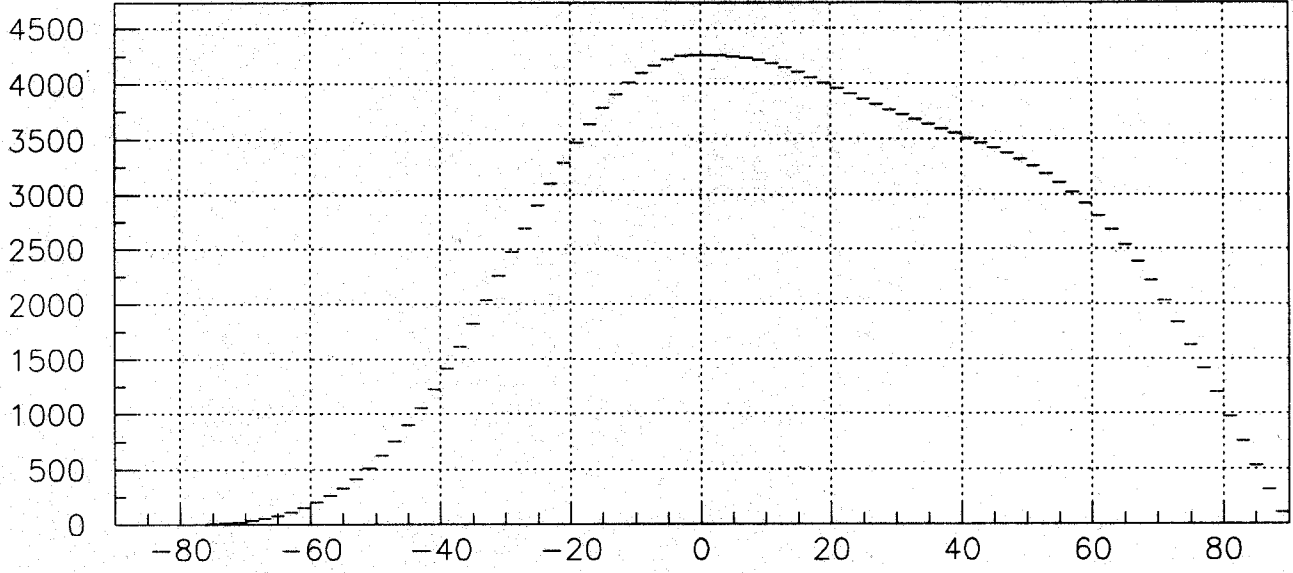
OG - GAL LATITUDE profile SIGNAL(expos)



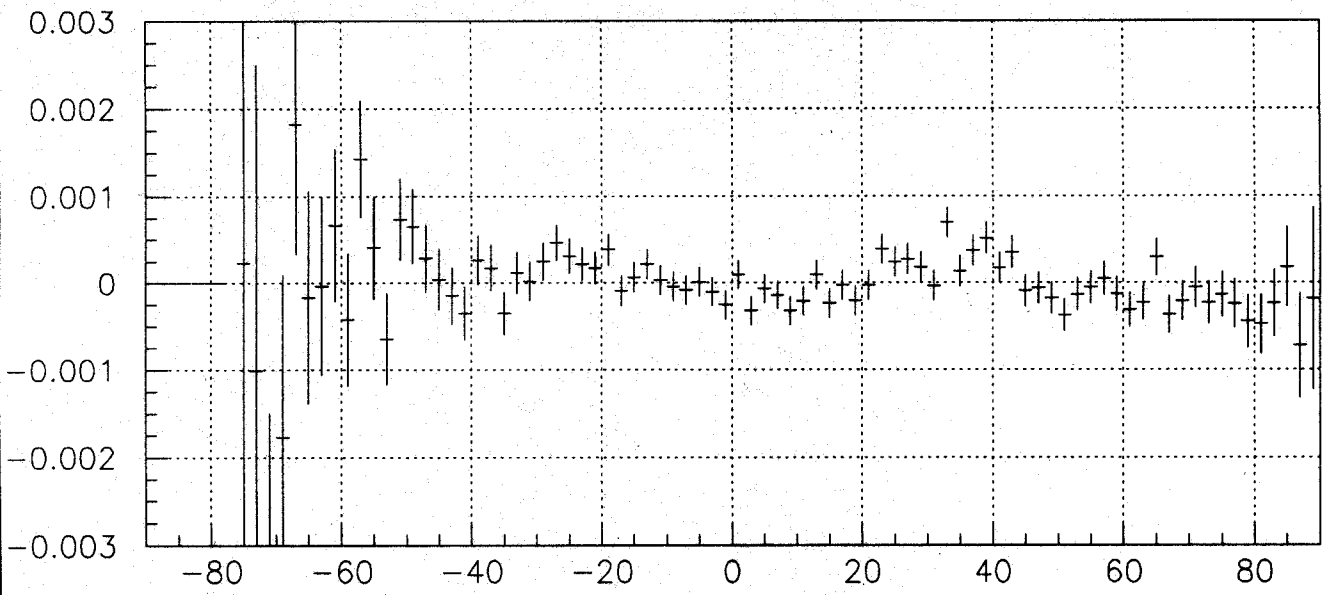
OG - GAL LATITUDE profile FRAC SIGNAL

$\times 10^4$

Combined OLD 425days plus NEW 296days

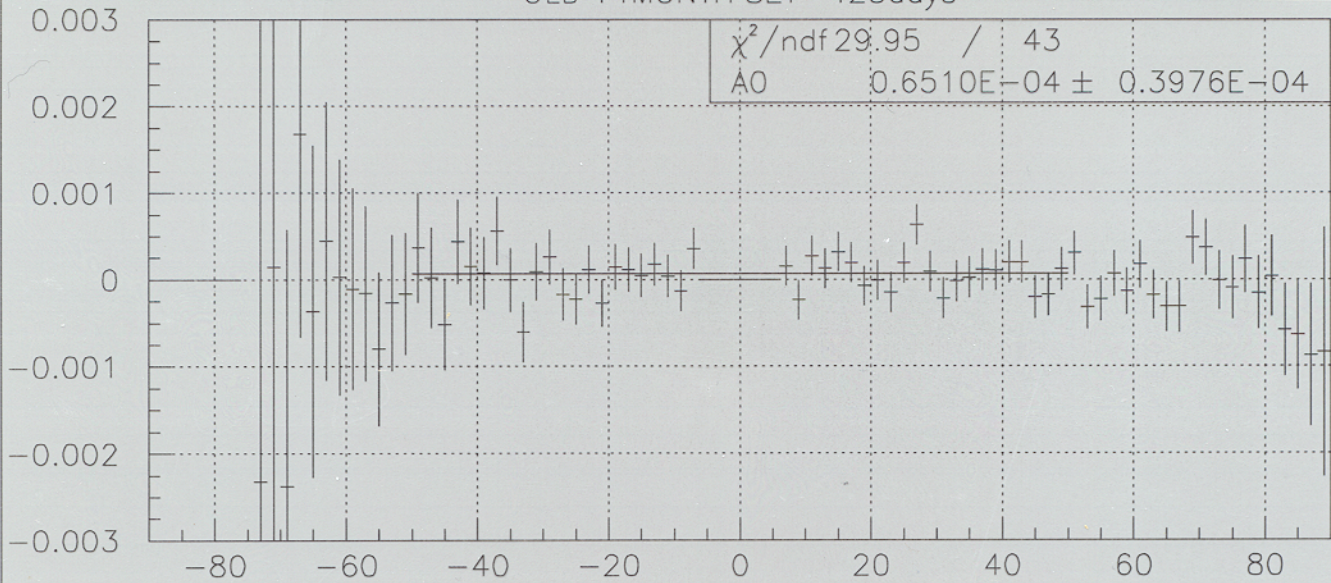


OG - GAL LATITUDE profile SIGNAL(expos)

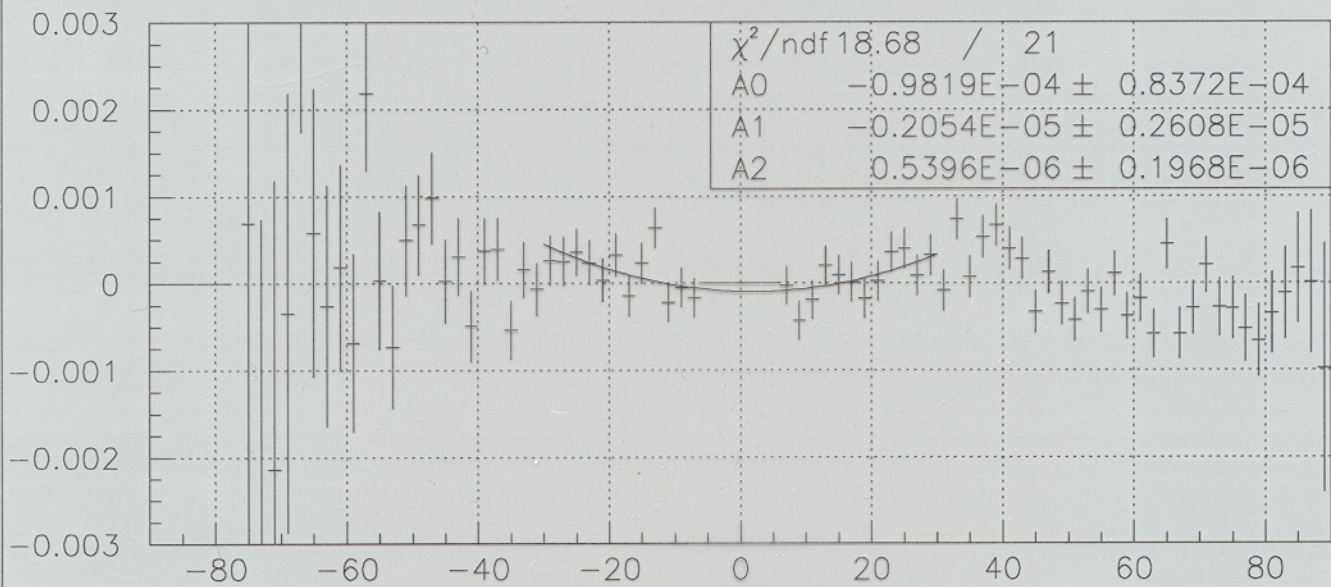


OG - GAL LATITUDE profile FRAC SIGNAL

OLD 14MONTH SET 425days

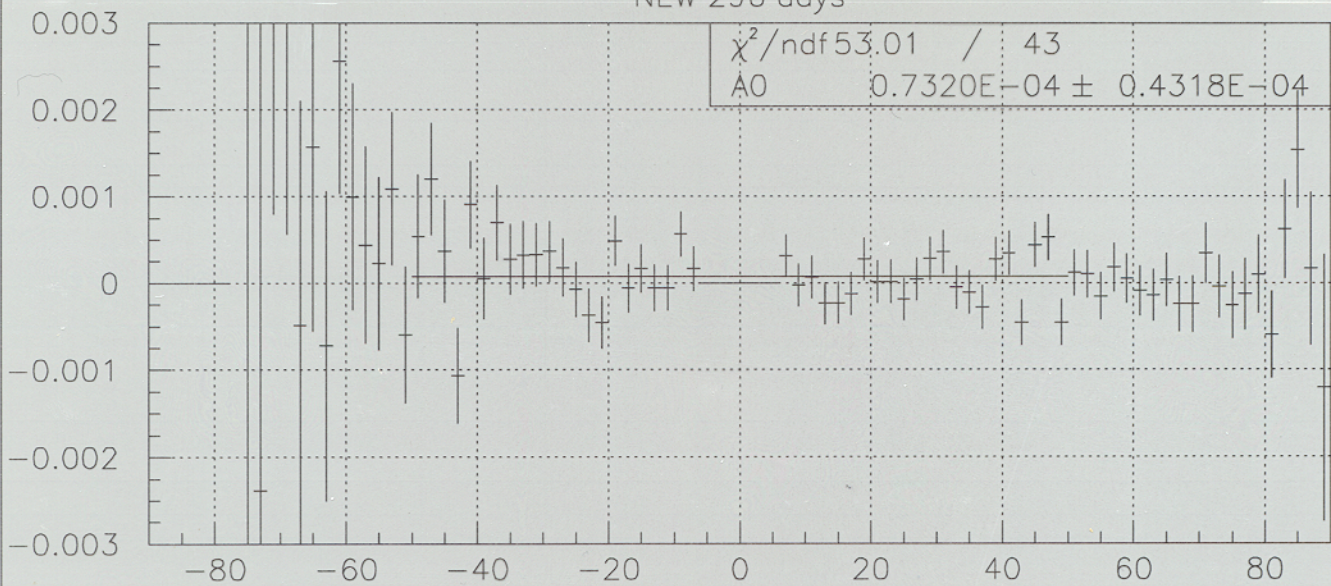


IG - GAL LATITUDE profile FRAC SIGNAL GAL NULLED

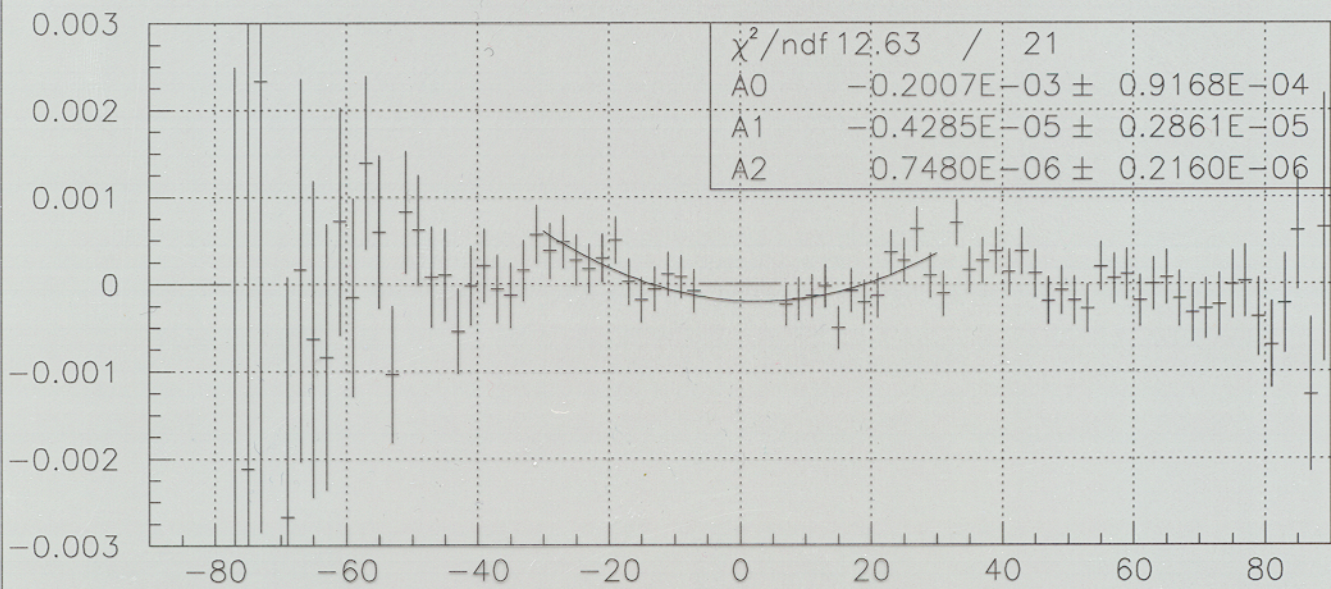


OG - GAL LATITUDE profile FRAC SIGNAL GAL NULLED

NEW 296 days

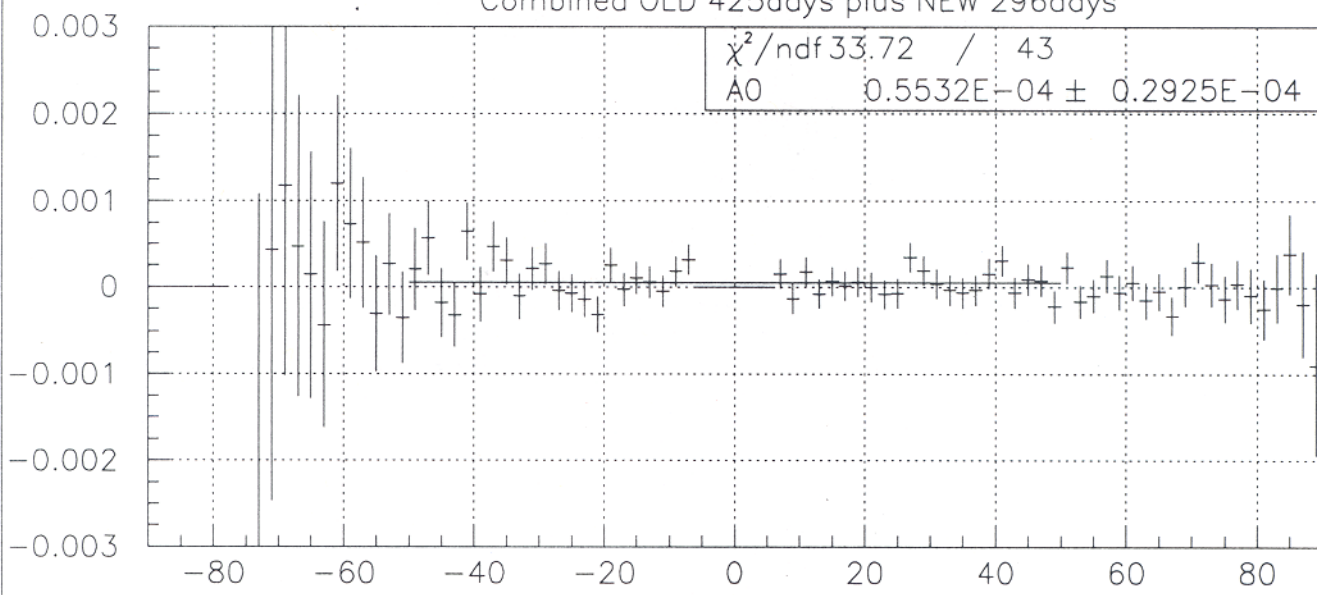


IG - GAL LATITUDE profile FRAC SIGNAL GAL NULLED

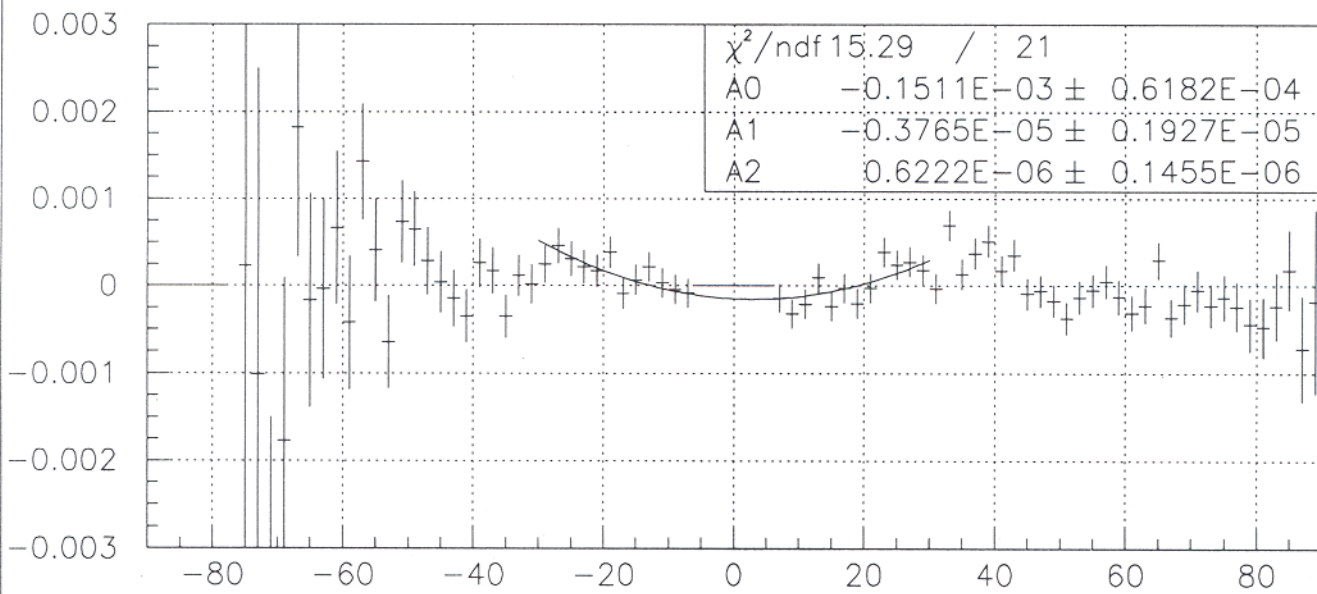


OG - GAL LATITUDE profile FRAC SIGNAL GAL NULLED

Combined OLD 425days plus NEW 296days



IG - GAL LATITUDE profile FRAC SIGNAL GAL NULLED



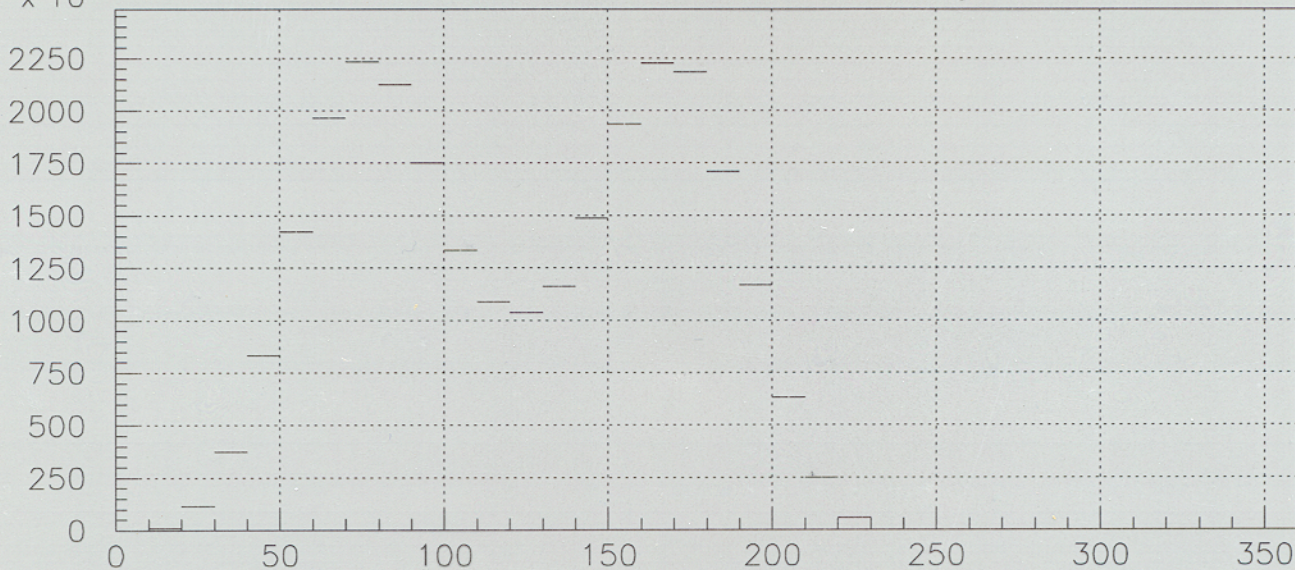
OG - GAL LATITUDE profile FRAC SIGNAL GAL NULLED

PLATEAU OR FLOOR SHIFT

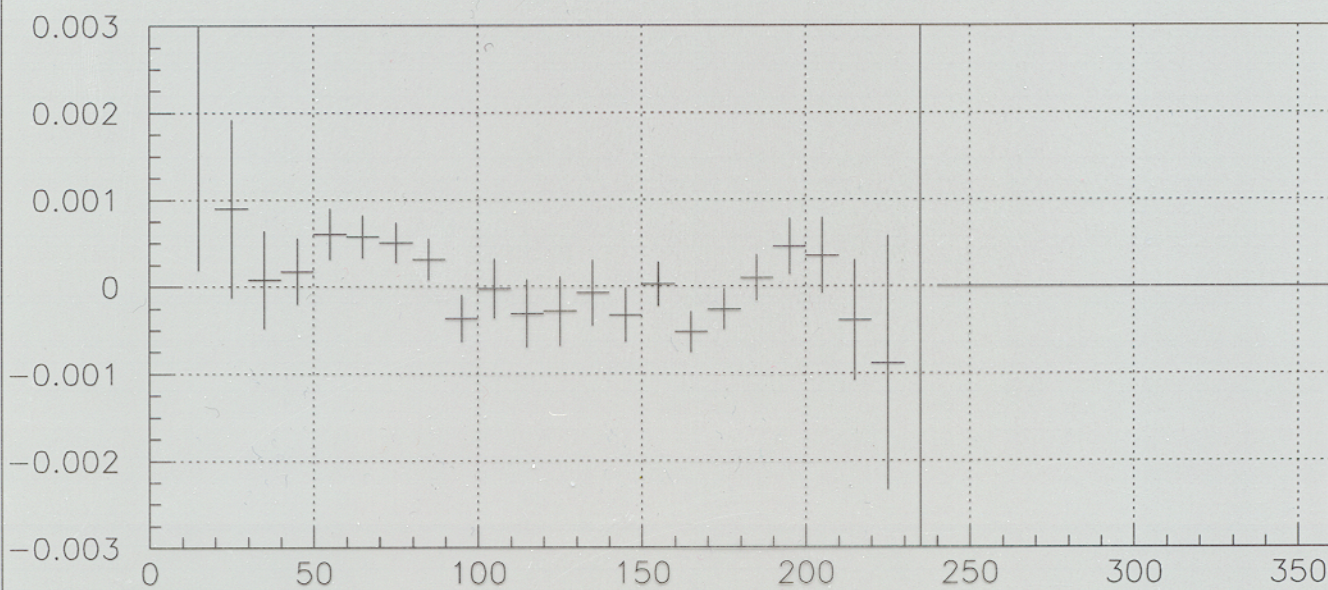
	^{425d} OLD	^{296d} NEW	^{721d} ALL
IG	0.65 ± 0.40	0.73 ± 0.43	0.55 ± 0.29
OG	-1.0 ± 0.8	-2.0 ± 0.9	-1.5 ± 0.6

OLD 4MONTH SET 425days

$\times 10^4$



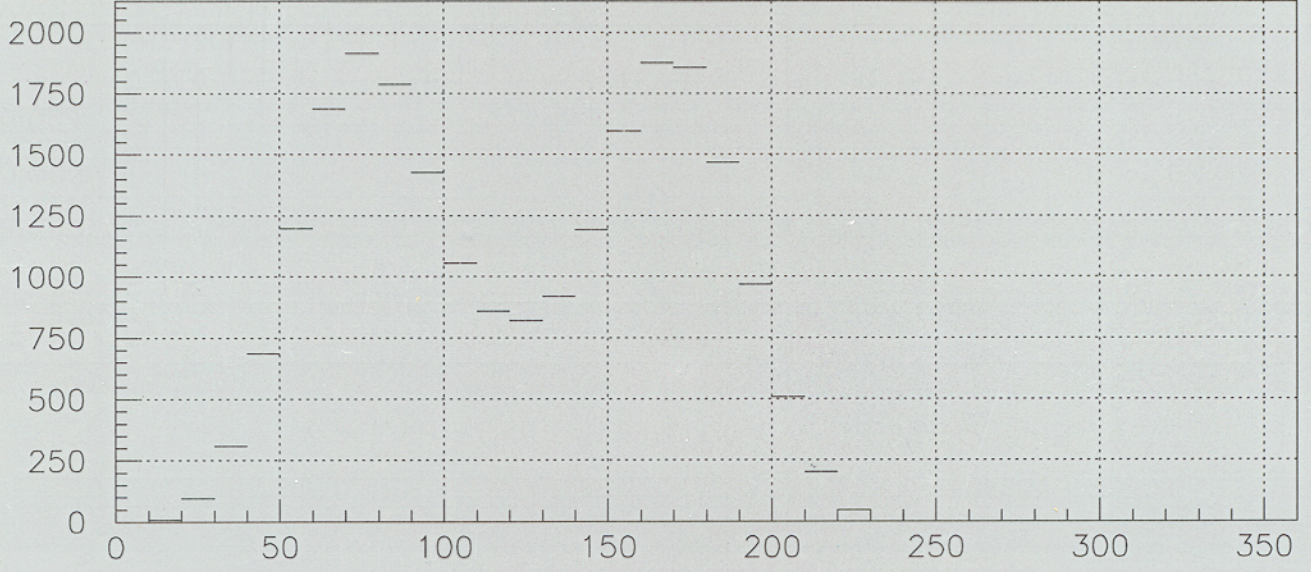
GAL LONGIT (x=+gl) lat band +/- 5deg SIGNAL (expos)



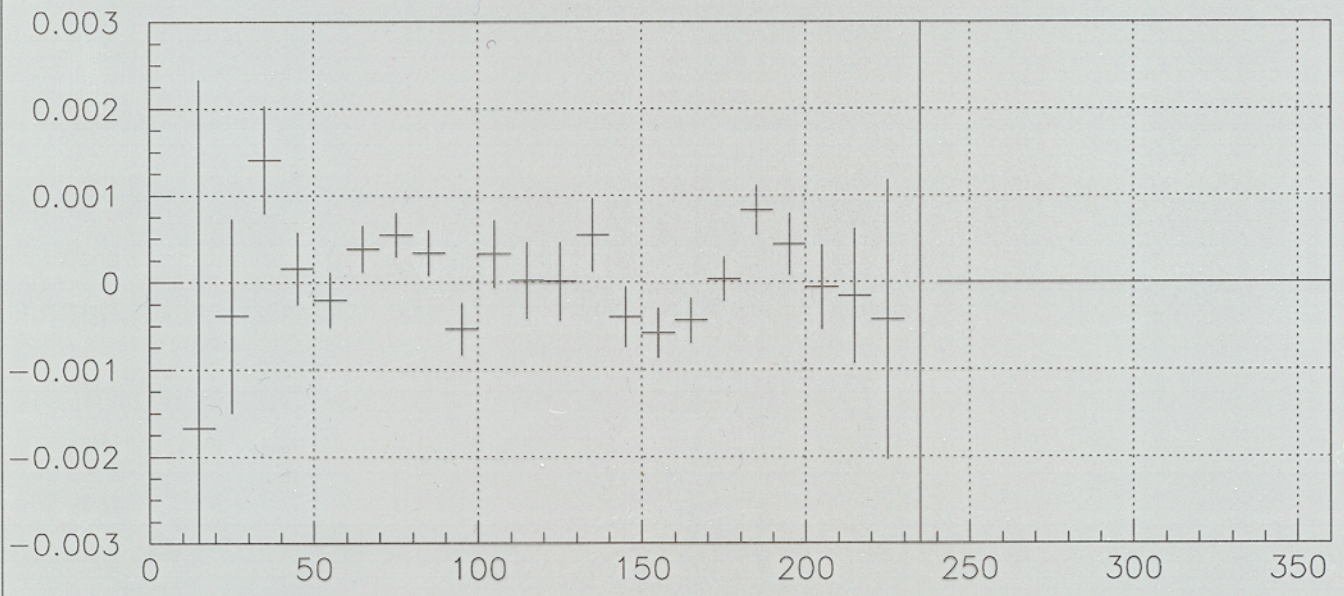
GAL LONGIT (x=+gl) lat band +/- 5deg FRAC SIGNAL

$\times 10^4$

NEW 296 days



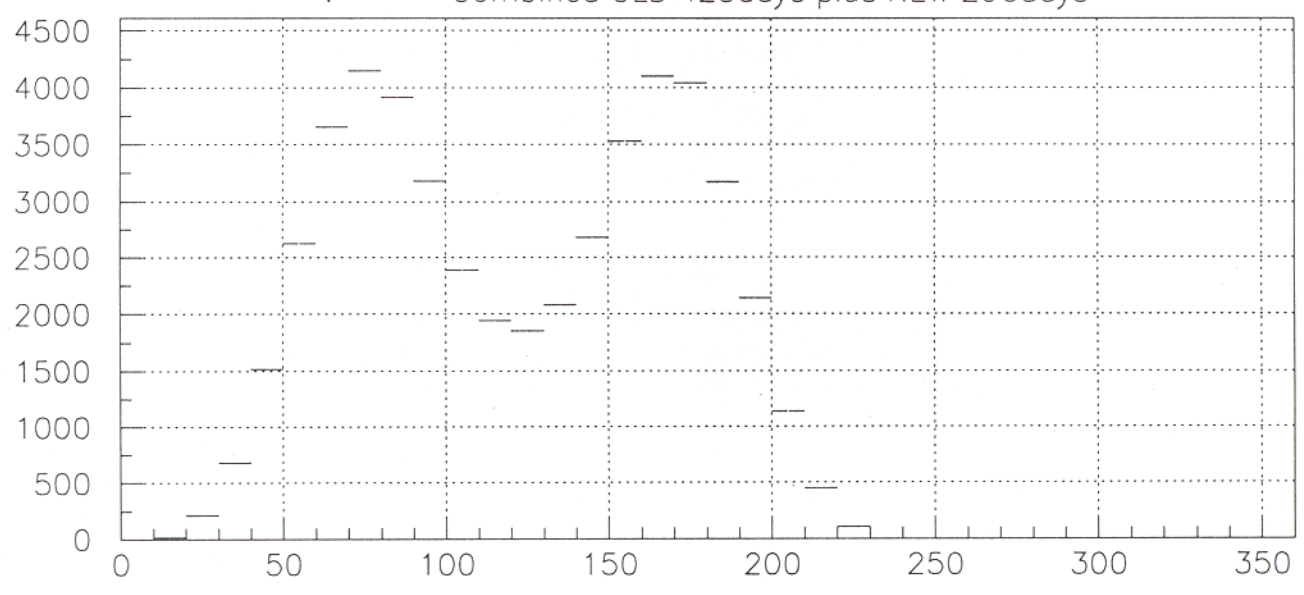
GAL LONGIT (x=+gl) lat band +/- 5deg SIGNAL (expos)



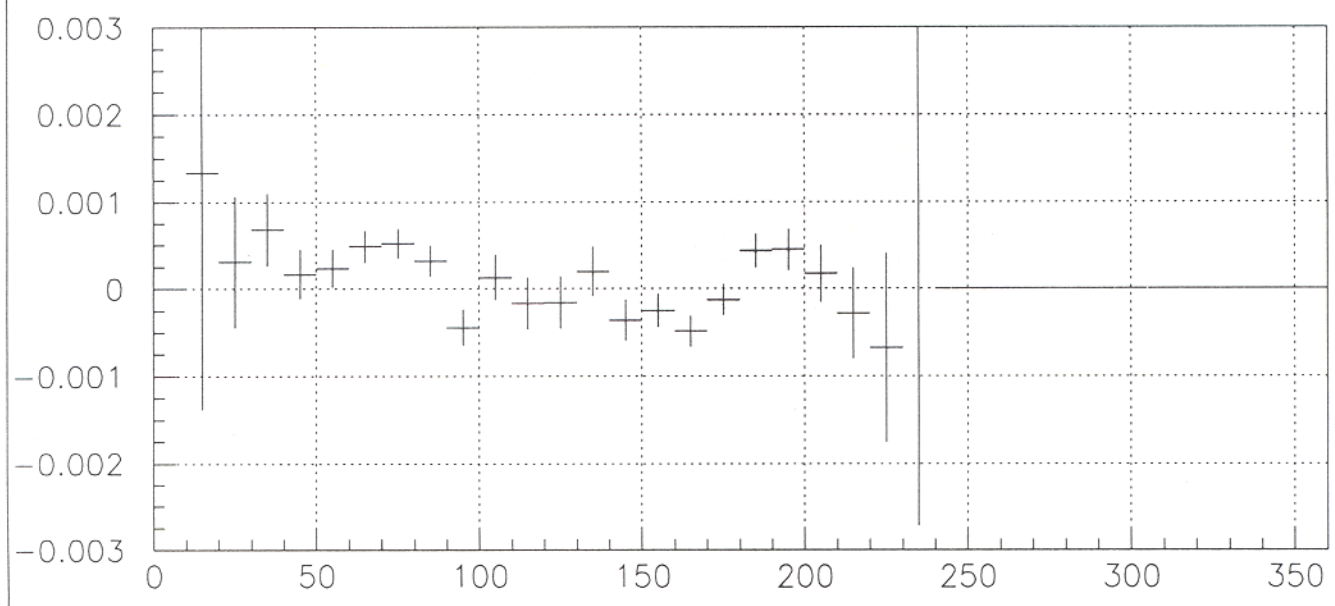
GAL LONGIT (x=+gl) lat band +/- 5deg FRAC SIGNAL

$\times 10^4$

Combined OLD 425days plus NEW 296days



GAL LONGIT (x=+gl) lat band +/- 5deg SIGNAL (expos)



GAL LONGIT (x=+gl) lat band +/- 5deg FRAC SIGNAL

FRACTIONAL EXCESS (10^{-4})

	OLD ^{425d}	NEW ^{296d}	$\Delta = \text{NEW} - \text{OLD}$
IG $\pm 2^\circ$	4.57 ± 1.64	2.78 ± 1.79	-1.8 ± 2.4
IG $\pm 5^\circ$	3.77 ± 1.08 (3.50)	1.93 ± 1.17 (1.60)	-1.8 ± 1.6
OG $\pm 2^\circ$	-0.8 ± 1.6	-0.4 ± 1.8	$+0.4 \pm 2.4$
OG $\pm 5^\circ$	-1.3 ± 1.1 (-1.20)	-0.6 ± 1.2 -0.50	$+0.7 \pm 1.6$



CONSISTENCY

ALL = COMBINED DATA SET

FRAC. EXCESS (10^4)

	ALL τ_{21d}	ALL τ_{21d} (FLOOR SUSTA)
$IG \pm 2^\circ$	3.75 ± 1.21	3.20 ± 1.24
$IG \pm 5^\circ$	2.93 ± 0.80 (3.7σ)	2.38 ± 0.85 (2.8σ)
$OG \pm 2^\circ$	-0.62 ± 1.58	$+0.9 \pm 1.3$
$OG \pm 5^\circ$	-0.98 ± 0.78 (-1.2σ)	$+0.5 \pm 1.0$ (0.5σ)