# The Arrival Direction of EAS Observed by Kinki Array with Energy Around 10<sup>15</sup> eV (II)

Michiyuki CHIKAWA<sup>1</sup>, Takashi KITAMURA<sup>2</sup>, Takeharu KONISHI<sup>3</sup>, Katsufumi TSUJI<sup>3</sup>, Yukihiro KATO<sup>3</sup>,

Masaru TAKAZAWA<sup>3</sup>, Soji OHARA<sup>4</sup>

<sup>1</sup> Research Institute for Science and Technology, Kinki University

Kowakae, Higashi-Osaka 577, Japan

<sup>2</sup> Faculty of Biology and Mechanics,,Kinki University

Iwade-Cyou, Wakayama, Japan

<sup>3</sup>Faculty of Science and Engeneering, Kinki University Kowakae, Higashi-Osaka 577, Japan

<sup>4</sup> Faculty of Economics, Nara Industrial University

Nara 636, Japan

(Received 16th January, 1997)

#### Abstract

We have reported a seriese of asearch for the directional analysis of EAS for the Kinki data concerning on the galactic coordinates with energy range between  $10^{14}$  and  $10^{17}$ eV at sea level.

In this report, I will present some basic results about the distribution of arrival distribution of EAS in the galactic coordinates. No strong statistical significance of deviation from isotropy was found for the galactic plane enhancement. Concerning on the galactic enhancement tactor  $f_e$  a comparison with some other higher energy experiment is also presented.

Key words: EAS, the galactic plane enhancement, Durham formulation.

#### **1** Introduction

There has been published many papers on the arrival directional analysis of extensive cosmic rays various energy range[1]. Approximately 296k events in the period between 1989 and 1995 of the Kinki data are analysed [2]. An anisotropic distribution for the galactic plane was investigated for these data. We also compare from our low energy EAS to most high energy ones[3]. We have already reported some results elsewhere[4].

## 2 The Galactic Plane Enhancement of EAS

We especially take notice of an analysis on the galactic plane enhancement of the arrival direction of Cosmic rays. The galactic latitude enhancement factor, fe values were calculated from ratio of the number of observed events to expected events,  $n_{obs}/n_{exp}$ .  $n_{obs}$  is the number of observed events and  $n_{exp}$  is the number of expected ones which are take into account of correction of observation efficiencies using Monte Carlo generated events and observed a real celestial declination( $\delta$ ) distribution. The f values for the directions of the galactic centre and anti-centre are compared. These distributions are evaluated with the fit of Durham formulation[5]:

$$I(b)/I_o = n_{obs}/n_{exp}$$
  
=(1-f<sub>e</sub>) (const) f<sub>e</sub> e<sup>-b2</sup>,

where I(b) is the observed cosmic rays intensity at the galactic latitude b,  $I_o$  is the overall average intensity, and 'const' is a correct average intensity for normalisation which is currently taken to be 1.4. And calculations were done for the data dividing into two direction concerning on the galactic longitude l, i.e.,the galactic 'centre' and the galactic 'anti-centre', corresponding to 270 < l < 90 and 90 < l < 270 in unit of degrees, respectively. Calculation results for our data with cut of these directional criteria are shown in Table-1. Fig-1 is shown their plot with other experimental data for the 'uncut' distribution.

#### **3 Results**

1. We analyse about 300k EAS events, however, this number of events isn't enough to recognise of anisotropy less than 0.1% in this energy region.

2. Following  $f_e$  values are obtained for the data of the Kinki array:

 $f_{e}(uncut)=0.014 \pm 0.007,$ 

 $f_e(centre)=0.011 \pm 0.010$ ,

 $f_e(anti-centre)=0.016 \pm 0.010.$ 

It seems that the distribution of arrival direction of EAS suggests isotropic our low energy region.

A comparison with the energy dependence of some higher energy experiments shown in the figures, in the view of the  $f_e$  are summarised as following for 'uncut', 'centre' and 'anti-centre' distributions:

- seems very weak energy dependences,

- this weak dependence is not evident,

- need more accurate analyisis.

#### Acknowledgement

We thank for Kinki University for financial support. We would like to thank Professor AA Watson at Leeds University in UK for his invaluable suggestion and the original idea of this work.

# References

[1]MS Gillmann and AA Watson: 23rd ICRC(Calgary), (1993) M Giller et al.: Proc. 23rd CRC(Calgary)2, 81(1993) DJ Cutler et al.: Astrophys. J 376, 322(1991) K Nagashima et al.: Nuovo Cimento, 12C N.6, 695(1989)
[2]M Chikawa et al.: 23rd ICRC(Calgary), HE, Vol4, 219(1993) M Chikawa et al.: 24th ICRC(Rome), OG3.1.6, 780(1995)
[3]Data base of experiments: [SUGER, Yakutsk, Volcano Ranch, Haverah Park] Catalogue of Highest Energy Cosmic Rays, World Data Centre C2 for Cosmic Rays, No.1, No2, no3, Institute of Physical and Chemical Research, Japan [AKENO] Proceedings of ICRC (Dublin) OG6.3-5, p119(1991)
[4]M Chikwa et al.:Sci.& Tech, Kinki unive. Press, No.8, (1996)

[5]J Wdowczyk and AW Wolfendale: J. Phys. G.:Nucl. Phys., 10, 1453(1984)

# **Table Captions**

**Table-1** Calculation results of the galactic latitude b vs.  $n_{obs}/n_{exp}$  and their errors for the Kinki data.

Table-2 Asummary of f<sub>e</sub> values of our data and some other experiments.

## **Figure Caption**

**Fig.-1** The galactic enhancement factor  $f_e$  for the 'uncut' distribution. Closed circle are our data and cross for Akeno, asterisc for Volcano Ranch, triangle for Yakutsk, square for SUGER, and open circle for Haverah Park.

b $OSe error exp(int)$ exp $error Obs/exp error Obs/exp error0.00+/-0.00-75$ 5.00+/-2.24 0.00 0.00+/-0.00 -55 15.00+/-3.87 14.10 14.10+/-0.97 1.064+/-0.284 -55 710.00+/-22.665 806.72 792.62+/- 8.68 0.896+/-0.035 -45 5320.00+/-172.94 6389.64 5582.92+/-26.25 0.953+/-0.014 -55 710.00+/-126.70 20371.04 13981.40+/ 42.89 -974+/-0.009 -25 22238.00+/-149.12 42669.80 22298.77+/-55.08 0.997+/-0.007 -5 23849.00+/-154.43 91859.27 23602.61+/- 52.07 1.004+/-0.009 -5 23849.00+/-154.43 91859.27 23602.61+/- 52.07 1.004+/-0.007 -5 19928.00+/-141.17 111732.91 19873.65+/- 41.87 1.003+/-0.007 -5 19928.00+/-141.17 111732.91 19873.65+/- 41.87 1.003+/-0.007 -5 19928.00+/-131.91 164820.03 71703.27+/- 35.17 1.004+/-0.008 25 17401.00+/-133.91 164820.03 71703.27+/- 35.17 1.004+/-0.008 55 18119.00+/-148.12 00321.98 18121.292/- 38.19 1.004+/-0.008 55 18119.00+/-148.12 00321.98 18121.292/- 38.19 1.004+/-0.008 65 607.00+/- 81.28 241556.42 6441.92+/- 18.61 1.002+/-0.008 65 607.00+/- 81.28 241556.42 6441.92+/- 18.61 1.002+/-0.003 -55 2.00+/- 1.73 0.00 0.00+/- 0.00 0.000+/-0.00 -55 2.00+/- 1.73 0.00 0.00+/- 0.00 0.000+/-0.000 -55 2.00+/- 1.73 0.00 0.00+/- 0.00 0.000+/-0.001 -55 2.00+/- 1.81 28331 4.50 12773.274/- 7.84 0.937+/-0.023 -25 3899.00+/-62.44 6160.48 3334.45+/- 12.29 0.991+/-0.011 -5 6034.00+/-97.68 12564.11 6403.644+/- 16.02 0.942+/-0.012 -55 606.00+/-98.92 2554.95 7800.84+/- 17.75 0.991+/-0.011 -5 8050.00+/-98.92 2554.95 7800.84+/- 17.70 0.991+/-0.011 -5 8050.00+/-98.92 2554.95 7800.84+/- 17.70 0.991+/-0.012 -5 7806.00+/-98.92 35527.1 8502.76+ 24.43 9.099+/-0.011 -5 8024.00+/-91.58 64082.50 8555.39+/- 17.66 0.980+/-0.011 -5 8030.00+/-0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -55 13.00+/- 1.61 078 2336.81 13022.91+/- 15.20 0.991+/-0.013 -5 8030.00+/-73.51 1814.89 250.81+/- 17.20 0.991+/-0.	***	uncut 241591 evs	***						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	b	obs error	exp(int)	exp error	obs/exp error				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-85	0.00+/- 0.00	0.00	0.00+/- 0.00	0.000+/-0.000				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-75	5.00+/- 2.24	0.00	0.00+/- 0.00	0.000+/-0.000				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-65	15.00+/- 3.87	14.10	14.10+/- 0.97	1.064 + / - 0.284				
-45 5320.00+/-12.94 6389.64 5582.92+/-26.25 0.953+/-0.014 -53 13619.00+/-116.70 20371.04 13981.40+/-42.85 0.974+/-0.007 -52 32840.00+/-159.58 68256.66 25586.85+/-57.44 0.995+/-0.007 -5 23849.00+/-154.43 91859.27 23602.61+/- 52.07 1.010+/-0.007 15 18472.00+/-153.19 130134.52 18401.61+/- 38.03 1.003+/-0.007 25 17801.00+/-131.91 164820.03 17103.274/- 35.13 1.0174/-0.008 25 17801.00+/-131.91 164820.03 17103.274/- 35.13 1.0174/-0.008 45 17176.00+/-131.06 182200.06 17380.03+/- 35.93 0.988+/-0.008 45 19200.00+/-184.52 18401.017+/-41.81 1.002+/-0.008 45 15665.00+/-125.16 235114.50 15631.46+/- 35.20 1.002+/-0.008 85 16607.00+/-81.28 241556.42 6441.92+/- 18.61 1.026+/-0.013 *** Centre : 88581 evs *** b cbs error exp(int) exp error -85 0.00+/- 0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -65 2.00+/- 1.41 0.21 0.21+/- 0.05 9.747+/-7.280 -55 29.00+/- 5.49 28.33 28.12+/- 0.79 1.031+/-0.194 -45 390.00+/-91.75 452.76 424.43+/- 3.58 0.919+/-0.047 -35 1661.00+/-40.76 2226.02 1773.27+/- 7.84 0.937+/-0.023 -55 7906.00+/-81.2 23544.95 7980.84+/- 17.75 0.991+/-0.011 15 8876.00+/-91.13 84341.42 8945.74+/- 16.02 0.942+/-0.012 -5 7906.00+/-81.92 20544.95 7980.84+/- 17.75 0.991+/-0.011 15 8876.00+/-91.13 86321.63 6374.03+/- 16.02 0.942+/-0.011 15 8876.00+/-91.13 86326.8555.39+/- 17.66 0.980+/-0.011 15 8876.00+/-91.31 86351.63 6574.01/- 17.90 1.0292+/-0.011 15 8876.00+/-91.31 86351.63 6574.01/- 17.90 1.0292+/-0.011 15 8876.00+/-91.31 86351.63 6575.03+/- 17.69 0.980+/-0.011 15 8836.00+/-91.38 64082.50 8555.39+/- 17.64 0.980+/-0.011 15 8836.00+/-91.39 64082.50 8555.39+/- 17.64 0.980+/-0.011 15 8836.00+/-91.39 64082.50 8555.39+/- 17.64 0.980+/-0.011 15 8836.00+/-91.39 64082.50 8555.39+/- 17.64 0.980+/-0.011 15 8836.00+/-91.58 64082.50 8555.39+/- 17.64 0.980+/-0.011 15 8360.00+/-91.59 63947.73 2962.11+/- 9.40 1.020+/-0.019 *** anti-centre : 153010 evs *** b obs error exp(int) exp error 65 .000+/-0.00 0.000+/- 0.00 0.000+/-0.000 -55 1200+/-0.13 18651.53 6574.43+/- 18.50 0.980+/-0.011 15 9895.00+/-91.51 18442.03 84	-55	710.00+/-26.65	806.72	792.62+/- 8.68	0.896+/-0.035				
-35 13619.00+/-116.70 20371.04 13981.40+/- 42.89 0.974+/-0.009 -25 2238.00+/-181.2 42669.02 2298.77+/- 55.08 0.997+/-0.007 -5 23849.00+/-154.43 91859.27 23602.61+/- 52.07 1.010+/-0.007 -5 13928.00+/-141.17 111732.91 19873.65+/- 41.87 1.003+/-0.007 15 18472.00+/-135.91 130134.52 18401.61+/- 38.03 1.004+/-0.008 25 17801.00+/-131.42 147716.77 17582.25+/- 36.17 1.017+/-0.008 45 17401.00+/-131.42 147716.77 17582.25+/- 35.17 1.017+/-0.008 45 17401.00+/-131.61 126200.06 17380.03+/- 35.93 0.988+/-0.008 55 18119.00+/-134.61 200321.98 18121.292+/- 38.19 1.002+/-0.008 85 6607.00+/- 81.28 241556.42 6441.92+/- 18.61 1.002+/-0.008 85 6607.00+/- 81.28 241556.42 6441.92+/- 18.61 1.026+/-0.013 *** centre : 88581 evs *** b cbs error exp(int) exp error -85 0.00+/- 0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -75 3.00+/- 1.73 0.00 0.00+/- 0.00 0.000+/-0.000 -65 2.00+/- 5.39 28.33 28.12+/- 0.79 1.031+/-0.194 -45 390.00+/-19.75 452.76 424.43+/- 3.58 0.919+/-0.047 -55 29.00+/- 5.39 28.33 28.124/- 0.79 1.031+/-0.194 -45 390.00+/-19.76 422.620 1773.27+/- 7.84 0.937+/-0.023 -25 3899.00+/-62.44 6160.48 3934.45+/- 12.29 0.991+/-0.016 -15 603.00+/-77.68 12564.11 6403.64+/- 16.02 0.942+/-0.011 58677.00+/-93.15 23935.68 8850.73+/- 18.65 0.992+/-0.011 5863.00+/-91.95 452.774+74.850 0.992+/-0.011 5863.00+/-91.95 4520.50 5553.91+0.77.6 0.994+/-0.011 5863.00+/-91.95 46402.50 5555.91+0.77.6 0.996+/-0.011 5824.00+/-91.58 64082.50 5555.91+0.77.6 0.996+/-0.011 5853.00+/-94.95 9377.11 8502.26+/- 17.49 1.020+/-0.011 15826.00+/-91.58 64082.50 5555.91+0.77.6 0.980+/-0.011 5826.00+/-91.58 64082.50 5555.91+0.77.6 0.980+/-0.011 5826.00+/-91.58 64082.50 5555.91+0.77.6 0.980+/-0.011 5826.00+/-91.58 64082.50 5555.91+0.77.6 0.980+/-0.011 5826.00+/-91.58 64082.50 5555.91+0.76.6 0.980+/-0.011 5826.00+/-91.58 64082.50 5555.91+0.76.6 0.980+/-0.011 5826.00+/-91.58 64082.50 5555.91+0.76.6 0.980+/-0.011 5826.00+/-91.59 1841.498 12202.11+/- 9.40 1.020+/-0.010 -51943.00+/-13.41 0.00 0.00+/- 0.00 0.000+/-0.000 -51943.00+/-13.45 1834.981.202.	-45	5320.00+/-72.94	6389.64	5582.92+/- 26.25	0.953+/-0.014				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-35	13619.00+/-116.70	0 20371.04	13981.40+/- 42.89	0.974+/-0.009				
-15 25466.00+/-159.58 68256.66 25586.85+/- 57.44 0.995+/-0.007 -5 23849.00+/-141.37 111732.91 19873.65+/- 41.87 1.003+/-0.007 15 18472.00+/-135.91 130134.52 18401.61+/- 38.03 1.004+/-0.008 25 17801.00+/-134.21 47716.77 17582.25+/- 35.17 1.017+/-0.008 45 17176.00+/-131.06 182200.06 17380.03+/- 35.93 0.988+/-0.008 45 17176.00+/-134.61 200321.98 18121.29+/- 38.19 1.002+/-0.008 45 19200.00+/-138.56 219483.05 19161.07+/- 41.18 1.002+/-0.008 55 18119.00+/-134.61 200321.98 18121.29+/- 38.19 1.002+/-0.008 55 19200.00+/-138.56 219483.05 19161.07+/- 41.18 1.002+/-0.008 85 6607.00+/- 81.28 241556.42 6441.92+/- 18.61 1.026+/-0.013 *** centre : 88581 evs *** b cbs error exp(int) exp error obs/exp error -85 0.00+/- 0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -75 3.00+/- 1.73 0.00 0.00+/- 0.00 0.000+/-0.000 -55 2.90+/- 5.39 2.83 28.12+/- 0.79 1.031+/-0.194 -45 390.00+/-19.75 452.76 424.43+/- 3.58 0.919+/-0.047 -35 1661.00+/-40.76 2226.02 1773.27+/- 7.84 0.937+/-0.023 -57 990.00+/-77.68 12564.11 6403.64+/- 16.02 0.942+/-0.012 -5 7906.00+/-77.68 12564.11 6403.64+/- 16.02 0.942+/-0.012 -5 7906.00+/-88.92 20544.95 7980.84+/- 17.50 0.990+/-0.011 15 8876.00+/-91.13 3841.42 8945.74+/- 18.50 0.990+/-0.011 15 8876.00+/-91.13 86452.08 8555.39+/- 17.60 0.990+/-0.011 15 8826.00+/-91.13 86452.08 8555.39+/- 17.60 0.990+/-0.011 15 8826.00+/-91.58 64082.50 8555.39+/- 17.60 0.990+/-0.011 15 8826.00+/-91.58 64082.50 8555.39+/- 17.60 0.990+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-91.58 64082.50 8555.39+/- 17.61 0.990+/-0.003 *** anti-centre : 153010 evs *** b obs error exp(int) exp error -85 0.00+/- 3.61 13.89 13.89+/- 0.95 0.936+/-0.013 45 3020.00+/-36.12 7939.224/- 16.74 0.987+/-0.023 -55 681.00+/-26.10 778.39 764.50+/- 8.29 0.891+/-0.035 -55 13.00+/-36.11 33.89 13.89+/- 0.95 0.936+/-0.011 15 8948.00+/-13.41 0.00 0.00+/- 0.00 0.000+/-0.000 -55 13.00+/-36.12 7739 1483.13+/- 49.16 1.001+/-0.011 15 8948.00+/-94.15 199	-25	22238.00+/-149.12	2 42669.80	22298.77+/- 55.08	0.997+/-0.007				
-5 23849.00+/-154.43 91859.27 23602.61+/ 52.07 1.010+/-0.007 5 19928.00+/-141.17 11123.91 1987.65+/ 41.87 1.003+/-0.007 15 18472.00+/-133.91 130134.52 18401.61+/ 38.03 1.004+/-0.008 25 17801.00+/-133.91 164820.03 17103.27+/ 35.17 1.017+/-0.008 45 17176.00+/-131.91 164820.03 17103.27+/ 35.17 1.017+/-0.008 45 17176.00+/-131.91 164820.03 17103.27+/ 35.17 1.000+/-0.008 45 18119.00+/-134.61 20031.98 1812.92+/ 38.19 1.000+/-0.008 45 19200.00+/-138.56 219483.05 19161.07+/ 41.18 1.002+/-0.008 45 19200.00+/-138.56 219483.05 19161.07+/ 41.18 1.002+/-0.008 45 19200.00+/-18.28 241556.42 6441.92+/- 18.61 1.026+/-0.013 *** Centre : 88581 evs *** b	-15	25466.00+/-159.5	3 68256.66	25586.85+/- 57.44	0.995+/-0.007				
<pre>5 19928.00+/-141.1/ 111/32.91 19873.65+/- 41.87 1 1004+/-0.007 25 17801.00+/-133.42 147716.77 17582.25+/- 36.19 1 012+/-0.008 25 17401.00+/-131.06 182200.06 17380.03+/- 35.93 1 0.02+/-0.008 25 18119.00+/-134.61 200321.98 18121.92+/- 38.19 1 0.00+/-0.008 25 15665.00+/-125.16 235114.50 15631.46+/- 35.20 1 0.02+/-0.008 25 15665.00+/-125.16 235114.50 15631.46+/- 35.20 1 0.02+/-0.008 25 6607.00+/- 81.28 241556.42 6441.92+/- 18.61 1 0.02+/-0.008 25 0.00+/- 0.00 275 3.00+/- 0.00 265 2.00+/- 1.41 27 3.00+/- 1.73 28.00 0.00+/- 0.00 275 3.00+/- 1.73 28.00 0.00+/- 0.00 275 3.00+/- 1.73 28.33 28.12+/- 0.79 28.33 28.12+/- 0.79 29.00+/-5.39 28.33 28.12+/- 0.79 29.00+/-0.047 25 29.00+/-5.39 28.33 28.12+/- 0.79 29.00+/-0.047 25 3899.00+/-62.44 6160.48 3934.45+/- 12.29 29.091+/-0.016 25 6034.00+/-97.68 20.00+/-93.15 29395.68 8850.73+/- 18.65 29.091+/-0.011 28.867.00+/-93.15 29395.68 8850.73+/- 18.65 29.091+/-0.011 28.875.00+/-94.21 38341.42 8945.74+/- 18.50 29.991+/-0.011 28.875.00+/-92.39 5527.11 8502.26+/- 17.49 1.0024/-0.011 25 7503.00+/-86.62 79941.59 7599.22+/- 16.74 29.994+/-0.011 25 753.00+/-91.58 64082.50 8555.39+/- 17.20 29.994+/-0.011 25 753.00+/-92.99 5527.11 8502.26+/- 17.49 1.0024/-0.011 25 7503.00+/-94.99 770242.88 8259.87+/- 17.20 29.994+/-0.011 25 7503.00+/-94.99 77242.88 8259.87+/- 17.20 29.994+/-0.011 25 7503.00+/-94.95 7994.22+ 16.74 20.996+/-0.011 25 7503.00+/-24.95 89477.73 2962.11+/- 9.40 1.020+/-0.012 27 6582.00+/-11.31 6615.63 6574.03+/- 16.38 1.001+/-0.013 35 3020.00+/-54.95 89477.73 2962.11+/- 9.40 1.020+/-0.019 *** anti-centre : 153010 evs *** b dbs error exp(int) exp error 35 0.00+/- 1.41 0.00 0.00+/- 0.00 35 2.00+/-1.13 6615.63 6574.03+/- 16.74 35 0.981+/-0.035 25 1933.00+/-1354 24500 24 1834.26+/- 49.51 30.996+/-0.011 35 8948.00+/-193.51 1814.64 81220.11+/- 39.12 3080.00+/-259.89 15207.36 3475.72+/- 20.31 3081+/-0.037 35 0050+/-93.91 1814.06 0824.50+/- 18.87 30950+0-/-93.75 118116.60 8824.50+/- 18.87 30950+0-/-93.75 118116.60 8824.50+/- 18.87 30950+0+/-93.89 152077.36 3477.74/- 28.22 3003+0+/</pre>	-5	23849.00+/-154.4	3 91859.27	23602.61+/- 52.07	1.010+/-0.007				
15 184/2.00+/-133.91 130134.52 18401.61/- 38.03 1.004/-0.008 17401.00+/-131.91 164820.03 17103.27+/- 35.17 1.017+/-0.008 17176.00+/-131.61 182200.06 17380.03+/- 35.93 0.988+/-0.008 15 1819.00+/-134.61 200321.98 1812.03+/- 35.93 0.988+/-0.008 15 19200.00+/-138.56 219483.05 19161.07+/- 41.18 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.000 1.002+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 0.000+/-0.00 1.031+/-0.019 1.031+/-0.012 5 8050.00+/-88.92 20544.95 7980.84+/- 17.75 0.991+/-0.011 15 8075.00+/-94.21 38341.42 8945.74+/- 18.50 0.992+/-0.011 15 8057.00+/-94.21 38341.42 8945.74+/- 18.50 0.992+/-0.011 15 8056.00+/-92.39 5557.11 8502.26+/- 17.49 1.020+/-0.011 15 8056.00+/-91.58 64082.50 855.39+/- 17.66 0.980+/-0.011 15 8224.00+/-91.58 64082.50 855.39+/- 17.66 0.980+/-0.011 15 8224.00+/-91.58 64082.50 855.39+/- 17.60 0.980+/-0.011 15 8230.00+/-181.13 86515.63 6574.03+/- 16.38 1.001+/-0.013 85 3020.00+/-54.95 89477.73 2962.11+/- 9.40 1.020+/-0.009 -55 618.00+/-25.10 778.3 764.50+/- 8.29 0.936+/-0.011 15 9856.00+/-93.55 1814.498 12206.11+/- 9.10 1.020+/-0.009 -55 6582.00+/-93.75 118116.60 8824.50+/- 16.38 1.005	5	19928.00+/-141.1	/ 111732.91	19873.65+/- 41.87	1.003+/-0.007				
25 17801.00+/-133.42 147/16.7/ 17582.25+/- 36.19 1.012+/-0.008 15 17176.00+/-131.06 182200.06 17380.037+/- 35.93 0.988+/-0.008 15 18119.00+/-134.61 200321.98 18121.92+/- 38.19 1.002+/-0.008 15 15665.00+/-125.16 235114.50 15631.464/- 35.20 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.008 1.002+/-0.000 1.002+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.000 0.000+/-0.001 1.031+/-0.194 45 390.00+/-19.75 452.76 424.43+/- 3.58 0.919+/-0.012 25 3899.00+/-62.44 6160.48 3934.45+/- 12.29 0.991+/-0.011 5 8677.00+/-93.15 29395.68 8850.73+/- 18.65 0.992+/-0.011 5 8675.00+/-94.13 3841.28 945.74+/- 18.50 0.992+/-0.011 15 8676.00+/-94.13 8361.28 6485.274+/- 18.50 0.992+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-91.13 86113.89 1.020+/-0.012 *** anti-centre : 153010 evs *** b obs error exp(int) exp error 85 0.00+/- 1.41 0.00 0.00+/- 0.00 0.000+/-0.000 1.020+/-0.001 1.020+/-0.019 *** anti-centre : 153010 evs *** b obs error exp(int) exp error 85 0.00+/- 3.61 13.89 1.020+/-0.012 1.020+/-0.013 1.020+/-0.013 1.020+/-0.013 1.020+/-0.013 1.020+/-0.013 1.020+/-0.013 1.020+/-0.013 1.020+/-0.013 1.020+/-0.003 1.020+/-0.000 1.021+/-0.013 1.030+/-0.003 1.021+/-0.013 1.030+/-0.003 1.031+/-0.013 1.031+/-0.011 1.031+/-0.011 1.031+/-0.011 1.031+/-0.011 1.031+/-0.011 1.031	15	184/2.00+/-135.9	1 130134.52	18401.61+/- 38.03	1.004+/-0.008				
35       17401.00+/-131.91       164620.03       17103.27+/-35.17       1.017+/-0.008         45       17176.00+/-134.61       200321.98       18121.92+/-38.19       1.000+/-0.008         15       15665.00+/-125.16       235114.50       15631.46+/-35.20       1.002+/-0.008         85       6607.00+/-81.28       241556.42       6441.92+/-18.61       1.002+/-0.008         85       6607.00+/-81.28       241556.42       6441.92+/-18.61       1.002+/-0.008         85       6607.00+/-81.28       241556.42       6441.92+/-18.61       1.002+/-0.008         85       0.00+/-0.00       0.00       0.00+/-0.00       0.000+/-0.000         -85       0.00+/-1.73       0.00       0.00+/-0.00       0.000+/-0.000         -75       3.00+/-1.73       0.00       0.00+/-0.00       0.000+/-0.000         -55       2.00+/-5.92       28.33       28.12+/-       0.79       1.031+/-0.194         -55       2.00+/-1.97.5       452.76       42.4.43/-       3.58       0.919+/-0.014         -35       1661.00+/-40.76       2226.02       1773.27+/-       7.84       0.937+/-0.012         -5       7906.00+/-88.92       20544.95       7980.84+/-       17.75       0.991+/-0.011         5	25	17801.00+/-133.4	2 147716.77	1/582.25+/- 36.19	1.012+/-0.008				
43       1717-0.00+/-131.00       182200.00       17380.03+/-35.35       0.984+/-0.008         55       18119.00+/-138.56       219483.05       19161.07+/-41.18       1.002+/-0.008         15665.00+/-125.16       235114.50       15631.46+/-35.20       1.002+/-0.008         85       6607.00+/-81.28       241556.42       6441.92+/-18.61       1.026+/-0.013         ***       b       obs       error       exp       error         -85       0.00+/-       0.00       0.00+/-       0.00       0.000+/-0.000         -75       3.00+/-       1.41       0.21       0.21+/-       0.05       9.747+/-7.280         -55       29.00+/-       5.39       28.33       28.12+/-       0.79       1.031+/-0.194         -45       390.00+/-62.44       6160.48       3934.45+/-       12.29       0.991+/-0.012         -57       26.00+/-88.92       20544.95       780.84+/-       17.75       0.991+/-0.016         -5       0.60+/-88.92       20544.95       780.84+/-       1.020+/-0.011       15         5867.00+/-93.15       29395.68       8850.73+/-       18.65       0.980+/-0.011         58676.00+/-88.92       20544.95       780.84+/-       1.020+/-0.011       12	30	1/401.00+/-131.9	104820.03	1/103.2/+/- 35.1/	1.01/+/-0.008				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	40	1/1/0.00+/~131.00	182200.00	1/380.03+/-35.93	0.988+/-0.008				
05       15205.00+/-125.16       235141.50       15501.46+/-35.20       1.002+/-0.008         85       6607.00+/-81.28       241556.42       6441.92+/-18.61       1.002+/-0.008         *** centre : 88581       evs ***       b       obs       error       exp(int)       exp       error         -85       0.00+/-       0.00       0.00+/-       0.00       0.00+/-       0.00+/-       0.00+/-0.00         -75       3.00+/-       1.73       0.00       0.00+/-       0.00       0.00+/-0.00         -55       2.00+/-       1.41       0.21       0.21+/-       0.05       9.747+/-7.280         -55       29.00+/-       5.39       28.33       28.12+/-       0.79       1.031+/-0.194         -45       39.00+/-40.76       2226.02       1773.27+/-       7.84       0.937+/-0.023         -25       3899.00+/-40.76       2226.42       1773.27+/-       7.84       0.937+/-0.012         -5       7906.00+/-88.92       20544.95       7980.84+/-       17.70       0.991+/-0.011         5       8853.00+/-94.13       845.74+/-       18.50       0.992+/-0.011       1.022+/-0.011         5       8853.00+/-91.18       845.25       855.39+/-       17.60       0.980	55	10119.00+/-134.0	200321.90	10121.92+/- 30.19	1.000 + 7 - 0.000				
75       15005.00+/-12.128       23114:30       15031.40/-       35.20       1.026+/-0.013         ***       Centre:       88581       evs ***       1.026+/-0.013         ***       Centre:       88581       evs ***       0       0.000+/-0.000       0.000+/-0.000         -75       3.00+/-1.73       0.00       0.00+/-0.00       0.000+/-0.000       0.000+/-0.000         -55       29.00+/-5.39       28.33       28.12+/-       0.79       9.747+/-7.280         -55       29.00+/-5.39       28.33       28.12+/-       0.79       1.031+/-0.013         -55       29.00+/-5.39       28.23       28.12+/-       0.997+/-0.023         -55       29.00+/-52.44       6160.48       3934.45+/-       12.29       0.991+/-0.013         -55       29.00+/-77.68       12564.11       6403.64+/-       16.02       0.942+/-0.012         -5       7906.00+-88.92       20544.95       7980.84+/-       17.75       0.991+/-0.011         5       8850.00+/-91.315       29395.68       8850.73+/-       18.65       0.992+/-0.011         15       8836.00+/-91.58       64082.50       8555.39+/-       17.66       0.980+/-0.011         15       8236.00+/-91.58       64082.50	75	15665 00 + / - 125 10	5 225114 50	$15621 \ 461 \ - 25 \ 20$	1.002 + / - 0.000				
b       0007.007/-012.2       241300.42       0441.327/-010.01       11.0207/-0.015         ****       centre : 88581 evs ***       b       obs error exp(int)       exp error       obs/exp error         -85       0.00+/-0.00       0.00       0.00+/-0.00       0.000+/-0.00       0.000+/-0.000         -75       3.00+/-1.41       0.21       0.21+/-       0.79       9.747+/-7.280         -55       29.00+/-5.39       28.33       28.12+/-       0.79       1.031+/-0.014         -45       390.00+/-19.75       452.76       424.43+/-       3.58       0.919+/-0.047         -35       1661.00+/-40.76       2226.02       1773.27+/-       7.84       0.937+/-0.023         -55       7906.00+/-88.92       20544.95       780.84+/-       16.02       0.942+/-0.012         -5       7906.00+/-84.21       3834.142       8945.74+/-       18.65       0.980+/-0.011         15       867.00+/-94.21       3834.142       8945.74+/-       17.90       1.020+/-0.011         15       8853.00+/-91.58       64082.50       8555.39+/-       17.60       0.980+/-0.011         15       836.00+/-91.58       64082.50       8555.39+/-       17.60       0.980+/-0.011         16       7503.0	25	15005.00+/-125.10	233114.30	$6441 \ 921/- \ 18 \ 61$	1.002 + 7 - 0.000				
<pre>*** centre : 88581 evs *** b</pre>	65	0007.00+/- 01.20	5 241550.42	0441.92+/- 10.01	1.0207/-0.013				
b obs error exp(int) exp error obs/exp error -85 0.00+/-0.00 0.00 0.00+/-0.00 0.000+/-0.000 -75 3.00+/-1.73 0.00 0.00+/-0.00 0.000+/-0.000 -65 2.00+/-1.41 0.21 0.21+/- 0.05 9.747+/-7.280 -55 29.00+/-5.39 28.33 28.12+/- 0.79 1.031+/-0.194 -45 390.00+/-19.75 452.76 424.43+/- 3.58 0.919+/-0.047 -35 1661.00+/-40.76 2226.02 1773.27+/- 7.84 0.937+/-0.023 -25 3899.00+/-62.44 6160.48 3934.45+/- 12.29 0.991+/-0.016 -15 6034.00+/-77.68 12564.11 6403.64+/- 16.02 0.942+/-0.012 -5 7906.00+/-88.92 2054.95 7980.84+/- 17.75 0.991+/-0.011 15 8876.00+/-94.21 38341.42 8945.74+/- 18.65 0.980+/-0.011 15 8876.00+/-94.21 38341.42 8945.74+/- 18.50 0.992+/-0.011 15 8853.00+/-91.38 64082.50 8555.39+/- 17.66 0.980+/-0.011 15 8366.00+/-91.39 55527.11 8502.26+/- 17.49 1.002+/-0.011 15 8366.00+/-91.58 64082.50 8555.39+/- 17.66 0.980+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 15 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.012 75 6582.00+/-81.13 86515.63 6574.03+/- 16.38 1.001+/-0.013 85 3020.00+/-54.95 89477.73 2962.11+/- 9.40 1.020+/-0.019 *** anti-centre : 153010 evs *** b obs error exp(int) exp error -85 0.00+/- 0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -75 2.00+/- 1.41 0.00 0.00+/- 0.00 0.000+/-0.000 -65 13.00+/-3.61 13.89 13.89+/- 0.95 0.936+/-0.014 -35 11958.00+/-102.3 5184.498 12208.11+/- 39.12 0.980+/-0.003 -45 4930.00+/- 7.021 5936.87 5158.48+/- 24.48 0.956+/-0.014 -35 11958.00+/-126.27 71314.02 15621.66+/- 40.98 1.021+/-0.003 -51 1943.00+/-126.27 71314.02 15621.66+/- 40.98 1.021+/-0.009 -51 1231.00+/-126.27 71314.02 15621.66+/- 40.98 1.021+/-0.009 -51 1251.00+/-93.51 11814.98 12208.11+/- 39.12 0.980+/-0.009 -51 1251.00+/-93.51 11816.60 8824.50+/- 18.63 1.006+/-0.011 15 9956.00+/-97.96 91792.54 9455.72+/-20.31 1.013+/-0.011 15 9965.00+/-93.75 118116.60 8824.50+/- 18.63 1.006+/-0.011 15 9965.00+/-93.75 118116.60 8824.50+/- 18.63 1.006+/-0.011 15 8965.00+/-93.75 118116.60 8824.50+/- 18.63 1.006+/-0.011 15 9985.00+/-93.75 11816.60 8824.50+/- 18.63 1.003+/-0.010 15 1997.00+/-198.15 139540.25 11561.73+/- 28.22	***	centre : 88581 ev	7S ***						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	b	obs error	exp(int)	exp error	obs/exp error				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-85	0.00+/- 0.00	0.00	0.00+/- 0.00	0.000+/-0.000				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-75	3.00+/- 1.73	0.00	0.00+/- 0.00	0.000+/-0.000				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-65	2.00+/- 1.41	0.21	0.21+/- 0.05	9.747+/-7.280				
-45 $390.00+/-19.75$ 452.76 $424.43+/-$ 3.58 $0.919+/-0.047$ -35 $1661.00+/-40.76$ 2226.02 $1773.27+/-$ 7.84 $0.937+/-0.023$ -25 $3899.00+/-62.44$ $6160.48 3934.45+/- 12.29 0.991+/-0.016-15 6034.00+/-77.68 12564.11 6403.64+/- 16.02 0.942+/-0.012-5 7906.00+/-88.92 20544.95 7980.84+/- 17.75 0.991+/-0.0115 8677.00+/-93.15 29395.68 8850.73+/- 18.65 0.980+/-0.01115 8876.00+/-94.21 38341.42 8945.74+/- 18.50 0.992+/-0.01125 8853.00+/-94.09 47024.84 8683.42+/- 17.90 1.020+/-0.01145 8386.00+/-91.58 64082.50 8555.39+/- 17.66 0.980+/-0.01145 8386.00+/-91.58 64082.50 8555.39+/- 17.66 0.980+/-0.01145 8386.00+/-91.58 64082.50 8555.39+/- 17.66 0.980+/-0.01155 7503.00+/-86.62 79941.59 7599.22+/- 16.74 0.987+/-0.01275 6582.00+/-81.13 86515.63 6574.03+/- 16.38 1.001+/-0.01385 3020.00+/-54.95 89477.73 2962.11+/- 9.40 1.020+/-0.019*** anti-centre : 153010 evs ***b obs error exp(int) exp error 0.000+/-0.000-75 2.00+/- 1.41 0.00 0.00+/ 0.00 0.000+/-0.000-75 13.00+/ 3.61 13.89 13.89+/ 0.95 0.936+/-0.267-55 681.00+/- 26.10 778.39 764.50+/ 8.29 0.891+/-0.035-55 681.00+/- 10.21 5393.687 5158.48+/- 24.48 0.956+/-0.014-35 11958.00+/-109.35 18144.98 12208.11+/ 39.12 0.980+/-0.008-15 19432.00+/-135.42 36509.24 18364.26+/ 49.51 0.999+/-0.008-5 15943.00+/-126.27 71314.02 15621.66+/ 40.98 1.021+/-0.009-5 11251.00+/-106.07 82336.81 11022.79+/ 26.07 1.021+/-0.01015 9596.00+/ 97.96 91792.54 9455.72+/ 20.31 1.015+/-0.01125 8948.00+/ 94.59 100691.23 8898.69+/ 18.63 1.006+/-0.01125 8948.00+/ 94.59 100691.23 898.69+/ 18.63 1.002+/-0.01125 8956.00+/ 93.75 118116.60 8824.50+/ 18.87 0.996+/-0.01125 8956.00+/ 93.75 118116.60 8824.50+/ 18.87 0.996+/-0.01125 8956.00+/ 93.75 118161.73+/ 28.22 1.003+/-0.01025 11697.00+/-108.15 139540.25 11561.73+/ 28.22 1.003+/-0.010$	-55	29.00+/- 5.39	28.33	28.12+/- 0.79	1.031+/-0.194				
-35 $1661.00+/-40.76$ $2226.02$ $1773.27+/-$ 7.84 $0.937+/-0.023$ -25 $3899.00+/-62.44$ $6160.48$ $3934.45+/ 12.29$ $0.991+/-0.016$ -15 $6034.00+/-77.68$ $12564.11$ $6403.64+/ 16.02$ $0.942+/-0.012$ -5 $7906.00+/-88.92$ $20544.95$ $7980.84+/ 17.75$ $0.991+/-0.011$ 5 $8677.00+/-93.15$ $29395.68$ $8850.73+/ 18.65$ $0.980+/-0.011$ 15 $8876.00+/-94.21$ $38341.42$ $8945.74+/ 18.50$ $0.992+/-0.011$ 15 $8875.00+/-94.21$ $38341.42$ $8945.74+/ 18.50$ $0.992+/-0.011$ 15 $8853.00+/-92.39$ $55527.11$ $8502.26+/ 17.49$ $1.004+/-0.011$ 45 $8386.00+/-91.58$ $64082.50$ $8555.39+/ 17.66$ $0.980+/-0.011$ 15 $8224.00+/-90.69$ $72342.38$ $8259.87+/ 17.20$ $0.996+/-0.011$ 165 $7503.00+/-86.62$ $79941.59$ $7599.22+/ 16.74$ $0.987+/-0.012$ 175 $6582.00+/-81.13$ $86515.63$ $6574.03+/ 16.38$ $1.001+/-0.013$ 85 $3020.00+/-54.95$ $89477.73$ $2962.11+/ 9.40$ $1.020+/-0.019$ *** anti-centre : $153010$ evs *** b obs error exp(int) exp error obs/exp error -85 $0.00+/ 0.00$ $0.00$ $0.00+/ 0.00$ $0.000+/-0.000$ -75 $2.00+/ 1.41$ $0.00$ $0.00+/ 0.93$ $0.936+/-0.267$ -55 $681.00+/ 26.10$ $778.39$ $764.50+/ 8.29$ $0.891+/-0.035$ -55 $681.00+/ 10.778.39$ $764.50+/ 8.29$ $0.891+/-0.035$ -51 $5943.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.996+/-0.011$ -35 $11958.00+/-139.40$ $55692.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ -5 $15943.00+/-135.42$ $365092.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ -5 $15943.00+/-136.17$ $82336.81$ $11022.79+/ 26.07$ $1.021+/-0.010$ 15 $9596.00+/-97.96$ $91792.54$ $9455.72+/ 20.31$ $1.012+/-0.011$ 15 $8948.00+/-94.59$ $100691.23$ $8898.69+/-1$ $18.63$ $1.002+/-0.011$ 15 $8948.00+/-94.59$ $100691.23$ $898.69+/-1$ $18.63$ $1.002+/-0.011$ 15 $8948.00+/-94.75$ $118116.60$ $8824.50+/-18.87$ $0.996+/-0.011$ 15 $9895.00+/-93.75$ $118116.60$ $8824.50+/-18.87$ $0.996+/-0.011$ 15 $9895.00+/-93.75$ $118116.60$ $8824.50+/-18.87$ $0.996+/-0.011$ 15 $9083.00+/-95.30$ $148597.59$ $9057.34+/-22.22$ $1.003+/-0.010$ 15 $1067.00+/-108.1$	-45	390.00+/-19.75	452.76	424.43+/- 3.58	0.919+/-0.047				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-35	1661.00+/-40.76	2226.02	1773.27+/- 7.84	0.937+/-0.023				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-25	3899.00+/-62.44	6160.48	3934.45+/- 12.29	0.991+/-0.016				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-15	6034.00+/-77.68	12564.11	6403.64+/- 16.02	0.942+/-0.012				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-5	7906.00+/-88.92	20544.95	7980.84+/- 17.75	0.991+/-0.011				
15 88/6.00+/-94.21 38341.42 8945.74+/- 18.50 0.992+/-0.011 25 8853.00+/-94.09 47024.84 8683.42+/- 17.90 1.020+/-0.011 35 8536.00+/-92.39 55527.11 8502.26+/- 17.49 1.004+/-0.011 45 8386.00+/-91.58 64082.50 8555.39+/- 17.66 0.980+/-0.011 55 8224.00+/-90.69 72342.38 8259.87+/- 17.20 0.996+/-0.011 65 7503.00+/-86.62 79941.59 7599.22+/- 16.74 0.987+/-0.012 75 6582.00+/-81.13 86515.63 6574.03+/- 16.38 1.001+/-0.013 85 3020.00+/-54.95 89477.73 2962.11+/- 9.40 1.020+/-0.019 *** anti-centre : 153010 evs *** b obs error exp(int) exp error $0.000+/-0.000$ 0.000+/-0.000 -75 2.00+/- 1.41 0.00 0.00+/- 0.00 0.000+/-0.000 -65 13.00+/- 3.61 13.89 13.89+/- 0.95 0.936+/-0.267 -55 681.00+/- 26.10 778.39 764.50+/- 8.29 0.891+/-0.035 -45 4930.00+/- 70.21 5936.87 5158.48+/- 24.48 0.956+/-0.014 -35 11958.00+/-109.35 18144.98 12208.11+/- 39.12 0.980+/-0.009 -25 18339.00+/-135.42 36509.24 18364.26+/- 49.51 0.999+/-0.008 -15 19432.00+/-139.40 55692.37 19183.13+/- 49.16 1.013+/-0.008 -5 15943.00+/-126.27 71314.02 15621.66+/- 40.98 1.021+/-0.010 15 9596.00+/- 97.96 91792.54 9455.72+/- 20.31 1.015+/-0.011 25 8865.00+/- 94.15 109292.10 8600.87+/- 17.96 1.031+/-0.011 35 8865.00+/- 94.15 109292.10 8600.87+/- 17.96 1.031+/-0.011 35 8865.00+/- 93.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 35 8948.00+/- 94.15 139540.25 11561.73+/- 28.22 1.003+/-0.011 35 9895.00+/- 93.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 35 9895.00+/- 93.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 35 9895.00+/- 94.75 139540.25 11561.73+/- 28.22 1.003+/-0.011 35 8865.00+/- 94.75 139540.25 11561.73+/- 28.22 1.003+/-0.011 35 87.00+/- 108.15 139540.25 11561.73+/- 28.22 1.003+/-0.011 85 3587.00+/- 59.89 152077.36 3479.77+/- 10.63 1.031+/-0.011	5	8677.00+/-93.15	29395.68	8850.73+/- 18.65	0.980+/-0.011				
25 $8853.00+/-94.09$ $47024.84$ $8683.42+/-17.90$ $1.020+/-0.011$ 35 $8536.00+/-92.39$ $55527.11$ $8502.26+/-17.49$ $1.004+/-0.011$ 45 $8386.00+/-91.58$ $64082.50$ $8555.39+/-17.66$ $0.980+/-0.011$ 55 $8224.00+/-90.69$ $72342.38$ $8259.87+/-17.20$ $0.996+/-0.011$ 55 $8224.00+/-86.62$ $79941.59$ $7599.22+/-16.74$ $0.987+/-0.012$ 75 $6582.00+/-81.13$ $86515.63$ $6574.03+/-16.38$ $1.001+/-0.013$ 85 $3020.00+/-54.95$ $89477.73$ $2962.11+/ 9.40$ $1.020+/-0.019$ *** anti-centre : $153010$ evs *** b obs error exp(int) exp error $0.000+/-0.000$ -75 $2.00+/ 1.41$ $0.00$ $0.00+/ 0.00$ $0.000+/-0.000-65$ $13.00+/ 3.61$ $13.89$ $13.89+/ 0.95$ $0.936+/-0.267-55$ $681.00+/ 26.10$ $778.39$ $764.50+/ 8.29$ $0.891+/-0.035-45$ $4930.00+/ 70.21$ $5936.87$ $5158.48+/ 24.48$ $0.956+/-0.014-35$ $11958.00+/-109.35$ $18144.98$ $12208.11+/ 39.12$ $0.980+/-0.009-5$ $15943.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.999+/-0.008-5$ $15943.00+/-126.27$ $71314.02$ $15621.66+/ 40.98$ $1.021+/-0.0095$ $11251.00+/-106.07$ $82336.81$ $11022.79+/ 26.07$ $1.021+/-0.01015$ $9895.00+/ 97.96$ $91792.54$ $9455.72+/ 20.31$ $1.015+/-0.01135$ $8865.00+/ 94.15$ $109292.10$ $8600.87+/ 1.887$ $0.996+/-0.01135$ $8865.00+/ 94.75$ $100691.23$ $8898.69+/ 18.63$ $1.006+/-0.01135$ $8865.00+/ 94.75$ $100691.23$ $8998.69+/ 18.63$ $1.002+/-0.01115$ $9895.00+/ 93.75$ $118116.60$ $8824.50+/ 18.87$ $0.996+/-0.01115$ $9895.00+/ 93.75$ $11816.60$ $8824.50+/ 18.87$ $0.996+/-0.01115$ $9895.00+/ 93.75$ $11816.60$ $8824.50+/ 18.87$ $0.996+/-0.01115$ $9083.00+/ 93.75$ $11816.60$ $8824.50+/ 18.87$ $0.996+/-0.01115$ $9083.00+/ 93.75$ $118040.25$ $11561.73+/ 28.22$ $1.003+/-0.0111031+/-0.01015$ $9083.00+/ 95.30$ $148597.59$ $9057.34+/ 22.22$ $1.003+/-0.0111.031+/-0.017$	15	8876.00+/-94.21	38341.42	8945.74+/- 18.50	0.992+/-0.011				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	25	8853.00+/-94.09	47024.84	8683.42+/- 17.90	1.020+/-0.011				
45 8386.00+/-91.58 64082.50 8555.39+/-17.66 0.980+/-0.011 55 8224.00+/-90.69 72342.38 8259.87+/-17.20 0.996+/-0.011 65 7503.00+/-86.62 79941.59 7599.22+/-16.74 0.987+/-0.012 75 6582.00+/-81.13 86515.63 6574.03+/-16.38 1.001+/-0.013 85 3020.00+/-54.95 89477.73 2962.11+/- 9.40 1.020+/-0.019 *** anti-centre : 153010 evs *** b obs error exp(int) exp error obs/exp error -85 0.00+/- 0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -75 2.00+/- 1.41 0.00 0.00+/- 0.00 0.000+/-0.000 -65 13.00+/- 3.61 13.89 13.89+/- 0.95 0.936+/-0.267 -55 681.00+/- 26.10 778.39 764.50+/- 8.29 0.891+/-0.035 -45 4930.00+/- 70.21 5936.87 5158.48+/- 24.48 0.956+/-0.014 -35 11958.00+/-109.35 18144.98 12208.11+/- 39.12 0.980+/-0.009 -25 18339.00+/-135.42 36509.24 18364.26+/- 49.51 0.999+/-0.008 -5 15943.00+/-126.27 71314.02 15621.66+/- 40.98 1.021+/-0.001 15 9596.00+/- 97.96 91792.54 9455.72+/- 20.31 1.015+/-0.011 25 8948.00+/- 94.59 100691.23 8898.69+/- 18.63 1.006+/-0.011 35 8865.00+/- 94.15 109292.10 8600.87+/- 17.96 1.031+/-0.011 35 8865.00+/- 94.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 35 895.00+/- 93.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 35 9895.00+/- 93.75 11816.60 8824.50+/- 18.87 0.996+/-0.011 35 8945.00+/- 93.75 11816.60 8824.50+/- 18.87 0.996+/-0.011 35 9895.00+/- 93.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 35 8065.00+/- 94.75 13940.25 11561.73+/- 28.22 1.003+/-0.011 15 9083.00+/- 95.30 148597.59 9057.34+/- 22.22 1.003+/-0.011 85 3587.00+/- 59.89 152077.36 3479.77+/- 10.63 1.031+/-0.017	32	8536.00+/-92.39	55527.11	8502.26+/- 17.49	1.004 + / - 0.011				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	40	8380.00+/-91.58	04082.00	8555.39+/-1/.00	0.980 + / - 0.011				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	22	7502 00 / 96 62	72342.30	7500 221 / 16 74	0.990 + / - 0.011				
75 $0382.00+/-81.13$ $00313.03$ $0574.03+/-18.36$ $1.001+/-0.013$ 85 $3020.00+/-54.95$ $89477.73$ $2962.11+/ 9.40$ $1.020+/-0.019$ *** anti-centre : $153010$ evs ***bobserrorexperror $0.00$ -85 $0.00+/ 0.00$ $0.00+/ 0.00$ $0.000+/-0.000$ -75 $2.00+/ 1.41$ $0.00$ $0.00+/ 0.000+/-0.000$ -65 $13.00+/ 3.61$ $13.89$ $13.89+/ 0.95$ -55 $681.00+/ 26.10$ $778.39$ $764.50+/ 8.29$ $0.891+/-0.035$ -45 $4930.00+/ 70.21$ $5936.87$ $5158.48+/ 24.48$ $0.956+/-0.014$ -35 $11958.00+/-109.35$ $18144.98$ $12208.11+/ 39.12$ $0.980+/-0.009$ -25 $18339.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.999+/-0.008$ -15 $19432.00+/-139.40$ $55692.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ -5 $15943.00+/-126.27$ $71314.02$ $15621.66+/ 40.98$ $1.021+/-0.010$ 15 $9596.00+/ 97.96$ $91792.54$ $9455.72+/ 20.31$ $1.015+/-0.011$ 15 $8948.00+/ 94.59$ $100691.23$ $898.69+/ 18.63$ $1.006+/-0.011$ 15 $9895.00+/ 94.7127978.52$ $9861.92+/ 23.26$ $1.003+/-0.010$ 15 $9895.00+/ 99.47$ $127978.52$ $9861.92+/ 23.26$ $1.003+/-0.011$ <td>75</td> <td>/503.00+/-00.0Z</td> <td>79941.09</td> <td>(539.22+) = 10.74</td> <td><math>1.001 \cdot (0.012)</math></td>	75	/503.00+/-00.0Z	79941.09	(539.22+) = 10.74	$1.001 \cdot (0.012)$				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	75	2020 00 / -54 05	00313.03	2962 11 / - 9.40	1.001 + / - 0.013				
*** anti-centre : $153010 \text{ evs}$ *** b obs error exp(int) exp error obs/exp error -85 0.00+/- 0.00 0.00 0.00+/- 0.00 0.000+/-0.000 -75 2.00+/- 1.41 0.00 0.00+/- 0.00 0.000+/-0.000 -65 13.00+/- 3.61 13.89 13.89+/- 0.95 0.936+/-0.267 -55 681.00+/- 26.10 778.39 764.50+/- 8.29 0.891+/-0.035 -45 4930.00+/- 70.21 5936.87 5158.48+/- 24.48 0.956+/-0.014 -35 11958.00+/-109.35 18144.98 12208.11+/- 39.12 0.980+/-0.009 -25 18339.00+/-135.42 36509.24 18364.26+/- 49.51 0.999+/-0.008 -15 19432.00+/-139.40 55692.37 19183.13+/- 49.16 1.013+/-0.008 -5 15943.00+/-126.27 71314.02 15621.66+/- 40.98 1.021+/-0.009 5 11251.00+/-106.07 82336.81 11022.79+/- 26.07 1.021+/-0.010 15 9596.00+/- 97.96 91792.54 9455.72+/- 20.31 1.015+/-0.011 25 8948.00+/- 94.59 100691.23 8898.69+/- 18.63 1.006+/-0.011 35 8865.00+/- 94.15 109292.10 8600.87+/- 17.96 1.031+/-0.011 45 8790.00+/- 93.75 118116.60 8824.50+/- 18.87 0.996+/-0.011 55 9895.00+/- 99.47 127978.52 9861.92+/- 23.26 1.003+/-0.010 65 11697.00+/-108.15 139540.25 11561.73+/- 28.22 1.003+/-0.010 75 9083.00+/- 95.30 148597.59 9057.34+/- 22.22 1.003+/-0.011 85 3587.00+/- 59.89 152077.36 3479.77+/- 10.63 1.031+/-0.017	05	5020.007/~54.95	094/1./3	2302.11+/- 3.40	1.0207/-0.019				
b obs error $exp(int)$ $exp$ error $obs/exp$ error -85 $0.00+/-0.00$ $0.00$ $0.00+/-0.00$ $0.000+/-0.00$ -75 $2.00+/-1.41$ $0.00$ $0.00+/ 0.00$ $0.000+/-0.000$ -65 $13.00+/-3.61$ $13.89$ $13.89+/ 0.95$ $0.936+/-0.267$ -55 $681.00+/-26.10$ $778.39$ $764.50+/ 8.29$ $0.891+/-0.035$ -45 $4930.00+/-70.21$ $5936.87$ $5158.48+/-24.48$ $0.956+/-0.014$ -35 $11958.00+/-109.35$ $18144.98$ $12208.11+/ 39.12$ $0.980+/-0.009$ -25 $18339.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.999+/-0.008$ -15 $19432.00+/-139.40$ $55692.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ -5 $15943.00+/-126.27$ $71314.02$ $15621.66+/ 40.98$ $1.021+/-0.009$ 5 $11251.00+/-106.07$ $82336.81$ $11022.79+/ 26.07$ $1.021+/-0.010$ 15 $9596.00+/ 97.96$ $91792.54$ $9455.72+/ 20.31$ $1.015+/-0.011$ 25 $8948.00+/ 94.59$ $100691.23$ $8898.69+/ 18.63$ $1.006+/-0.011$ 35 $8865.00+/ 94.15$ $109292.10$ $8600.87+/ 17.96$ $1.031+/-0.011$ 45 $8790.00+/ 93.75$ $118116.60$ $8824.50+/ 18.87$ $0.996+/-0.011$ 5 $9895.00+/ 99.47$ $127978.52$ $9861.92+/ 23.26$ $1.003+/-0.010$ 65 $11697.00+/-108.15$ $139540.25$ $11561.73+/ 28.22$ $1.012+/-0.010$ 75 $9083.00+/ 95.30$ $148597.59$ $9057.34+/ 22.22$ $1.003+/-0.011$ 85 $3587.00+/ 59.89$ $152077.36$ $3479.77+/ 10.63$	***	*** anti-centre : 153010 evs ***							
-85 $0.00+/ 0.00$ $0.00+/ 0.00$ $0.00+/ 0.00$ $-75$ $2.00+/ 1.41$ $0.00$ $0.00+/ 0.00$ $0.00+/-0.000$ $-65$ $13.00+/ 3.61$ $13.89$ $13.89+/ 0.95$ $0.936+/-0.267$ $-55$ $681.00+/ 26.10$ $778.39$ $764.50+/ 8.29$ $0.891+/-0.035$ $-45$ $4930.00+/ 70.21$ $5936.87$ $5158.48+/ 24.48$ $0.956+/-0.014$ $-35$ $11958.00+/-109.35$ $18144.98$ $12208.11+/ 39.12$ $0.980+/-0.009$ $-25$ $18339.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.999+/-0.008$ $-15$ $19432.00+/-139.40$ $55692.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ $-5$ $15943.00+/-126.27$ $71314.02$ $15621.66+/ 40.98$ $1.021+/-0.009$ $5$ $11251.00+/-106.07$ $82336.81$ $11022.79+/ 26.07$ $1.021+/-0.010$ $15$ $9596.00+/ 97.96$ $91792.54$ $9455.72+/ 20.31$ $1.015+/-0.011$ $15$ $8948.00+/ 94.59$ $100691.23$ $8898.69+/ 18.63$ $1.006+/-0.011$ $15$ $8995.00+/ 94.75$ $118116.60$ $8824.50+/ 18.87$ $0.996+/-0.011$ $15$ $9895.00+/ 99.47$ $127978.52$ $9861.92+/ 23.26$ $1.003+/-0.010$ $15$ $1697.00+/-108.15$ $139540.25$ $11561.73+/ 28.22$ $1.002+/-0.010$ $75$ $9083.00+/-$ <td>b</td> <td>obs error</td> <td>exp(int)</td> <td>exp error</td> <td>obs/exp error</td>	b	obs error	exp(int)	exp error	obs/exp error				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-85	0.00+/- 0.00	0.00	0.00+/- 0.00	0.000+/-0.000				
-65 $13.00+/ 3.61$ $13.89$ $13.89+/ 0.95$ $0.936+/-0.267$ $-55$ $681.00+/ 26.10$ $778.39$ $764.50+/ 8.29$ $0.891+/-0.035$ $-45$ $4930.00+/ 70.21$ $5936.87$ $5158.48+/ 24.48$ $0.956+/-0.014$ $-35$ $11958.00+/-109.35$ $18144.98$ $12208.11+/ 39.12$ $0.980+/-0.009$ $-25$ $18339.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.999+/-0.008$ $-15$ $19432.00+/-139.40$ $55692.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ $-5$ $15943.00+/-126.27$ $71314.02$ $15621.66+/ 40.98$ $1.021+/-0.009$ $5$ $11251.00+/-106.07$ $82336.81$ $11022.79+/ 26.07$ $1.021+/-0.010$ $15$ $9596.00+/ 91.792.54$ $9455.72+/ 20.31$ $1.015+/-0.011$ $25$ $8948.00+/ 94.59$ $100691.23$ $8898.69+/ 18.63$ $1.006+/-0.011$ $35$ $865.00+/ 94.15$ $109292.10$ $8600.87+/ 18.87$ $0.996+/-0.011$ $15$ $9895.00+/ 93.75$ $118116.60$ $8824.50+/ 18.87$ $0.996+/-0.011$ $15$ $9895.00+/ 99.47$ $127978.52$ $9861.92+/ 23.26$ $1.003+/-0.010$ $165$ $11697.00+/-108.15$ $139540.25$ $11561.73+/ 28.22$ $1.012+/-0.010$ $75$ $9083.00+/ 95.89$ $152077.36$ $3479.77+/ 10.63$ $1.031+/-0.017$	-75	2.00 + / - 1.41	. 0.00	0.00+/- 0.00	0.000+/-0.000				
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	-65	13.00+/- 3.61	13.89	13.89+/- 0.95	0.936+/-0.267				
-45 $4930.00+/-70.21$ $5936.87$ $5158.48+/-24.48$ $0.956+/-0.014$ -35 $11958.00+/-109.35$ $18144.98$ $12208.11+/-39.12$ $0.980+/-0.009$ -25 $18339.00+/-135.42$ $36509.24$ $18364.26+/-49.51$ $0.999+/-0.008$ -15 $19432.00+/-139.40$ $55692.37$ $19183.13+/-49.16$ $1.013+/-0.008$ -5 $15943.00+/-126.27$ $71314.02$ $15621.66+/-40.98$ $1.021+/-0.009$ 5 $11251.00+/-106.07$ $82336.81$ $11022.79+/-26.07$ $1.021+/-0.010$ 15 $9596.00+/-97.96$ $91792.54$ $9455.72+/-20.31$ $1.015+/-0.011$ 25 $8948.00+/-94.59$ $100691.23$ $8898.69+/-18.63$ $1.006+/-0.011$ 35 $8865.00+/-94.15$ $109292.10$ $8600.87+/-17.96$ $1.031+/-0.011$ 45 $8790.00+/-93.75$ $118116.60$ $8824.50+/-18.87$ $0.996+/-0.011$ 55 $9895.00+/-99.47$ $127978.52$ $9861.92+/-23.26$ $1.003+/-0.010$ 65 $11697.00+/-108.15$ $139540.25$ $11561.73+/-28.22$ $1.012+/-0.010$ 75 $9083.00+/-95.30$ $148597.59$ $9057.34+/-22.22$ $1.003+/-0.011$ 85 $3587.00+/-59.89$ $152077.36$ $3479.77+/-10.63$ $1.031+/-0.017$	-55	681.00+/- 26.10	) 778.39	764.50+/- 8.29	0.891+/-0.035				
-35 $11958.00+/-109.35$ $18144.98$ $12208.11+/ 39.12$ $0.980+/-0.009$ $-25$ $18339.00+/-135.42$ $36509.24$ $18364.26+/ 49.51$ $0.999+/-0.008$ $-15$ $19432.00+/-139.40$ $55692.37$ $19183.13+/ 49.16$ $1.013+/-0.008$ $-5$ $15943.00+/-126.27$ $71314.02$ $15621.66+/ 40.98$ $1.021+/-0.009$ $5$ $11251.00+/-106.07$ $82336.81$ $11022.79+/ 26.07$ $1.021+/-0.010$ $15$ $9596.00+/ 97.96$ $91792.54$ $9455.72+/ 20.31$ $1.015+/-0.011$ $25$ $8948.00+/ 94.59$ $100691.23$ $8898.69+/ 18.63$ $1.006+/-0.011$ $35$ $8865.00+/ 94.15$ $109292.10$ $8600.87+/ 18.63$ $1.031+/-0.011$ $45$ $8790.00+/ 93.75$ $118116.60$ $8824.50+/ 18.87$ $0.996+/-0.011$ $55$ $9895.00+/ 99.47$ $127978.52$ $9861.92+/ 23.26$ $1.003+/-0.010$ $65$ $11697.00+/-108.15$ $139540.25$ $11561.73+/ 28.22$ $1.012+/-0.010$ $75$ $9083.00+/ 95.30$ $148597.59$ $9057.34+/ 22.22$ $1.003+/-0.011$ $85$ $3587.00+/ 59.89$ $152077.36$ $3479.77+/ 10.63$ $1.031+/-0.017$	-45	4930.00+/- 70.23	5936.87	5158.48+/- 24.48	0.956+/-0.014				
-25 $18339.00+/-135.42$ $36509.24$ $18364.26+/-49.51$ $0.999+/-0.008$ $-15$ $19432.00+/-139.40$ $55692.37$ $19183.13+/-49.16$ $1.013+/-0.008$ $-5$ $15943.00+/-126.27$ $71314.02$ $15621.66+/-40.98$ $1.021+/-0.009$ $5$ $11251.00+/-106.07$ $82336.81$ $11022.79+/-26.07$ $1.021+/-0.010$ $15$ $9596.00+/-97.96$ $91792.54$ $9455.72+/-20.31$ $1.015+/-0.011$ $25$ $8948.00+/-94.59$ $100691.23$ $8898.69+/-18.63$ $1.006+/-0.011$ $35$ $8865.00+/-94.15$ $109292.10$ $8600.87+/-17.96$ $1.031+/-0.011$ $45$ $8790.00+/-93.75$ $118116.60$ $8824.50+/-18.87$ $0.996+/-0.011$ $55$ $9895.00+/-99.47$ $127978.52$ $9861.92+/-23.26$ $1.003+/-0.010$ $65$ $11697.00+/-108.15$ $139540.25$ $11561.73+/-28.22$ $1.012+/-0.010$ $75$ $9083.00+/-95.30$ $148597.59$ $9057.34+/-22.22$ $1.003+/-0.011$ $85$ $3587.00+/-59.89$ $152077.36$ $3479.77+/-10.63$ $1.031+/-0.017$	-35	11958.00+/-109.35	18144.98	12208.11+/- 39.12	0.980+/-0.009				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-25	18339.00+/-135.42	36509.24	18364.26+/- 49.51	0.999+/-0.008				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-15	19432.00+/-139.40	55692.37	19183.13+/- 49.16	1.013+/-0.008				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-5	15943.00+/-126.2	/ /1314.02	15621.66 + / - 40.98	1.021+/-0.009				
15 $9396.00+/-97.96$ $91/92.94$ $9455.72+/-20.31$ $1.015+/-0.011$ 25 $8948.00+/-94.59$ $100691.23$ $8898.69+/-18.63$ $1.006+/-0.011$ 35 $8865.00+/-94.15$ $109292.10$ $8600.87+/-17.96$ $1.031+/-0.011$ 45 $8790.00+/-93.75$ $118116.60$ $8824.50+/-18.87$ $0.996+/-0.011$ 55 $9895.00+/-99.47$ $127978.52$ $9861.92+/-23.26$ $1.003+/-0.010$ 65 $11697.00+/-108.15$ $139540.25$ $11561.73+/-28.22$ $1.012+/-0.010$ 75 $9083.00+/-95.30$ $148597.59$ $9057.34+/-22.22$ $1.003+/-0.011$ 85 $3587.00+/-59.89$ $152077.36$ $3479.77+/-10.63$ $1.031+/-0.017$	5	11251.00+/-106.07		11022./9+/-20.07	1.021 + / -0.010				
25       0940.00+/-       94.59       100091.25       0098.09+/-       18.05       1.000+/-0.011         35       8865.00+/-       94.15       109292.10       8600.87+/-       17.96       1.031+/-0.011         45       8790.00+/-       93.75       118116.60       8824.50+/-       18.87       0.996+/-0.011         55       9895.00+/-       99.47       127978.52       9861.92+/-       23.26       1.003+/-0.010         65       11697.00+/-108.15       139540.25       11561.73+/-       28.22       1.012+/-0.010         75       9083.00+/-       95.30       148597.59       9057.34+/-       22.22       1.003+/-0.011         85       3587.00+/-       59.89       152077.36       3479.77+/-       10.63       1.031+/-0.017	72 72	9049 00. / 04 T	> Y1/Y2.04	3400.72+7-20.31	1.010+/-0.011				
45 $8790.00+/ 93.75$ $118116.60$ $8824.50+/ 18.87$ $0.996+/-0.011$ $55$ $9895.00+/ 99.47$ $127978.52$ $9861.92+/ 23.26$ $1.003+/-0.010$ $65$ $11697.00+/-108.15$ $139540.25$ $11561.73+/ 28.22$ $1.012+/-0.010$ $75$ $9083.00+/ 95.30$ $148597.59$ $9057.34+/ 22.22$ $1.003+/-0.011$ $85$ $3587.00+/ 59.89$ $152077.36$ $3479.77+/ 10.63$ $1.031+/-0.017$	20 25	9965 00 + 7 94.55	100091.23	0070.07+/- 10.03 8600 97±/- 17 04	1 021+/-0.011				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	30	8700 001/- 94.13	112116 60	8874 501/- 10 97	0.001+/-0.011				
65       11697.00+/-108.15       139540.25       11561.73+/-       28.22       1.012+/-0.010         75       9083.00+/-       95.30       148597.59       9057.34+/-       22.22       1.003+/-0.011         85       3587.00+/-       59.89       152077.36       3479.77+/-       10.63       1.031+/-0.017	40	9895 nn+/- 00 /	127078 52	9861 977/- 72 76	1 003+/-0.011				
759083.00+/-95.30148597.599057.34+/-22.22 $1.003+/-0.011$ 853587.00+/-59.89152077.363479.77+/-10.63 $1.031+/-0.017$	55	11697 00-/-109 19	139540 25	11561 73 + / - 29.20	1 012+/-0 010				
85 3587.00+/- 59.89 152077.36 3479.77+/- 10.63 1.031+/-0.017	75	9083.00+/- 95 30	148597.59	9057.34+/- 22.22	1.003 + / - 0.011				
	85	3587.00+/- 59.89	152077.36	3479.77+/- 10.63	1.031+/-0.017				

# Table-1

#### Summary of fe values of experiments

<e< th=""><th>Ishw&gt;(EeV)</th><th>fe</th><th>err</th><th>events</th></e<>	Ishw>(EeV)	fe	err	events			
*** uncut	***						
HP	1.361	0.032	0.032	7320			
	2.628	0.084	0.060	2443			
	5.437	0.204	0.104	706			
	10.861	0.100	0.176	249			
	22.125	0.316	0.240	99			
	63.789	-0.644	0.324	66			
SUGER	11.04	0.364	0.192	183			
	22.08	0.100	0.292	114			
	54.93	0.332	0.272	84			
YAKUTSK	17.43	0.368	0.184	233			
17-1	27 06	0.24	0.40				
Ranch	27.90	-0.24	0.40	44			
Akeno	0.018	0.006	0.017				
	0.058	0.024	0.036				
	0.135	0.000	0.025				
	0.234	0.006	0.041				
	0.407	-0.060	0.020				
	0.741	-0.018	0.027				
	1.315	0.006	0.030				
	2.410	-0.072	0.081				
	4.236	0.163	0.111				
	7.621	0.121	0.216				
	17.22	0.195	0.148				
Kinki	0.003	0.014	0.007	298395 evs			
*** centr	æ ***						
SUGER	10.88	0.272	0.252	115			
	21.58	0.244	0.352	75			
,	54.35	-0.076	0.340	51			
YAKUTSK	17.30	0.452	0.264	57			
Kinki	0.003	0.011	0.0103	109066 evs			
*** anti-centre ***							
SUGER	11.33	0.636	0.260	68			
	22.97	-0.692	0.468	39			
	55.77	0.792	0.440	33			
YAKUTSK	17.47	0.468	0.224	176			
Kinki	0.003	0.016	0.010	189329			

Table-2



Energy dependence of the galactic plane enhancement factor

Fig.-1