Fermilab

TM-662
2060.000

DOUBLE-HORN NEUTRINO PRODUCTION WITH A TEST TARGET

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May 11, 1976

During the run of Experiment #53A, the standard target configuration failed. A substitute Al_2O_3 target was placed one (1) foot upstream of the standard target position. This note presents a comparison of the Neutrino Flux distribution for the test target position and the standard target position with double horns.

A table is presented for the target test data, as well as a graph of the $\pi+$, K+ and sum ($\pi+$ and K+) distributions. An additional figure is presented comparing the test target data with the standard target position.

For distribution of present Fermilab Neutrino Systems, refer to FN-292.

(38) NEUTRINO FLUX ; 400 GEV PROTONS ON AL/ 2*HORN FOCUS PI+/K+ TARGET TEST
NEUTRINO FLUX/GEV/10000 INCIDENT PROTONS/SQ METRE

		PI+	K+	ADD
5.00	TOTAL **	0.6031E-02**	0.1589E-04**	0.6046E-02
10.00	TOTAL **	0.2479E-01**	0.6138E-04**	0.2485E-01
15.00	TOTAL **	0.3984E-01**	0.1828E-03**	0.4002E-01
20.00	TOTAL **	0.4182E-01**	0.3192E-03**	0.4213E-01
25.00	TOTAL **	0.3636E-01**	0.4267E-03**	0.3678E-01
30.00	TOTAL **	0.3107E-01**	0.5661E-03**	0.3163E-01
35.00	TOTAL **	0.2566E-01**	0.6905E-03**	0.2635E-01
40.00	TOTAL **	0.1904E-01**	0.7977E-03**	0.1983E-01
45.00	TOTAL **	0.1308E-01**	0.9235E-03**	0.1400E-01
50.00	TOTAL **	0.9020E-02**	0.1008E-02**	0.1003E-01
55.00	TOTAL **	0.6606E-02**	0.1079E-02**	0.7684E-02
60.00	TOTAL **	0.4555E-02**	0.1055E-02**	0.5610E-02
65.00	TOTAL **	0.3190E-02**	0.1112E-02**	0.4303E-02
70.00	TOTAL **	0.2244E-02**	0.1030E-02**	0.3274E-02
75.00	TOTAL **	0.1653E-02**	0.1048E-02**	0.2701E-02
80.00	TOTAL **	0.1256E-02**	0.1050E-02**	0.2307E-02
85.00	TOTAL **	0.9341E-03**	0.1078E-02**	0.2012E-02
90.00	TOTAL **	0.6886E-03**	0.1080E-02**	0.1768E-02
95.00	TOTAL **	0.5045E-03**	0.1143E-02**	0.1647E-02
100.00	TOTAL **	0.3839E-03**	0.1183E-02**	0.1567E-02
105.00	TOTAL **	0.2819E-03**	0.1097E-02**	0.1379E-02
110.00	TOTAL **	0.2064E-03**	0.9592E-03**	0.1166E-02
115.00	TOTAL **	0.1525E-03**	0.7485E-03**	0.9010E-03
120.00	TOTAL **	0.1132E-03**	0.7419E-03**	0.8552E-03
125.00	TOTAL **	0.8391E-04**	0.7699E-03**	0.8538E-03
130.00	TOTAL **	0.6182E-04**	0.7697E-03**	0.8316E-03
135.00	TOTAL **	0.4511E-04**	0.7207E-03**	0.7659E-03
140.00	TOTAL **	0.3243E-04**	0.6882E-03**	0.7206E-03
145.00	TOTAL **	0.2283E-04**	0.6302E-03**	0.6530E-03
150.00	TOTAL **	0.1560E-04**	0.5517E-03**	0.5674E-03
155.00	TOTAL **	0.1005E-04**	0.4866E-03**	0.4966E-03
160.00	TOTAL **	0.5931E-05**	0.4419E-03**	0.4478E-03
165.00	TOTAL **	0.3001E-05**	0.4003E-03**	0.4033E-03
170.00	TOTAL **	0.0000E+00**	0.3669E-03**	0.3669E-03
175.00	TOTAL **	0.0000E+00**	0.3374E-03**	0.3374E-03
180.00	TOTAL **	0.0000E+00**	0.3105E-03**	0.3105E-03
185.00	TOTAL **	0.0000E+00**	0.2863E-03**	0.2863E-03
190.00	TOTAL **	0.0000E+00**	0.2655E-03**	0.2655E-03
195.00	TOTAL **	0.0000E+00**	0.2446E-03**	0.2446E-03
200.00	TOTAL **	0.0000E+00**	0.2240E-03**	0.2240E-03
205.00	TOTAL **	0.0000E+00**	0.2026E-03**	0.2026E-03
210.00	TOTAL **	0.0000E+00**	0.1803E-03**	0.1803E-03
215.00	TOTAL **	0.0000E+00**	0.1625E-03**	0.1625E-03
220.00	TOTAL **	0.0000E+00**	0.1478E-03**	0.1478E-03
225.00	TOTAL **	0.0000E+00**	0.1322E-03**	0.1322E-03
230.00	TOTAL **	0.0000E+00**	0.1168E-03**	0.1168E-03
235.00	TOTAL **	0.0000E+00**	0.1039E-03**	0.1039E-03
240.00	TOTAL **	0.0000E+00**	0.9145E-04**	0.9145E-04
245.00	TOTAL **	0.0000E+00**	0.8121E-04**	0.8121E-04
250.00	TOTAL **	0.0000E+00**	0.7168E-04**	0.7168E-04
255.00	TOTAL **	0.0000E+00**	0.6342E-04**	0.6342E-04
260.00	TOTAL **	0.0000E+00**	0.5590E-04**	0.5590E-04
265.00	TOTAL **	0.0000E+00**	0.4932E-04**	0.4932E-04
270.00	TOTAL **	0.0000E+00**	0.4358E-04**	0.4358E-04
275.00	TOTAL **	0.0000E+00**	0.3865E-04**	0.3865E-04
280.00	TOTAL **	0.0000E+00**	0.3427E-04**	0.3427E-04
285.00	TOTAL **	0.0000E+00**	0.3033E-04**	0.3033E-04

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290.00   TOTAL **   0.0000E+00**   0.2687E-04**   0.2687E-04
295.20   TOTAL **   0.0000E+00**   0.2371E-04**   0.2371E-04
300.00   TOTAL **   0.0000E+00**   0.2088E-04**   0.2088E-04
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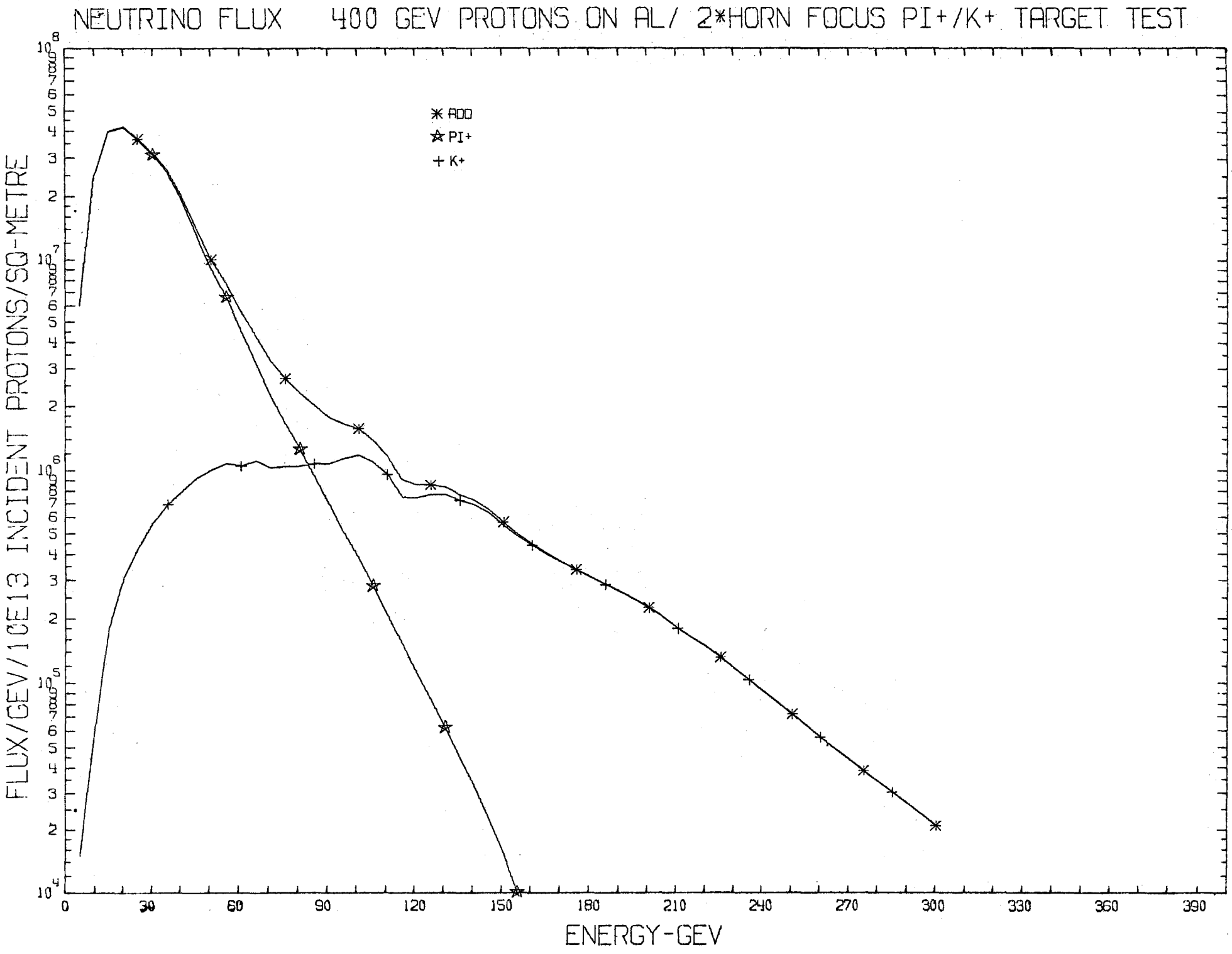
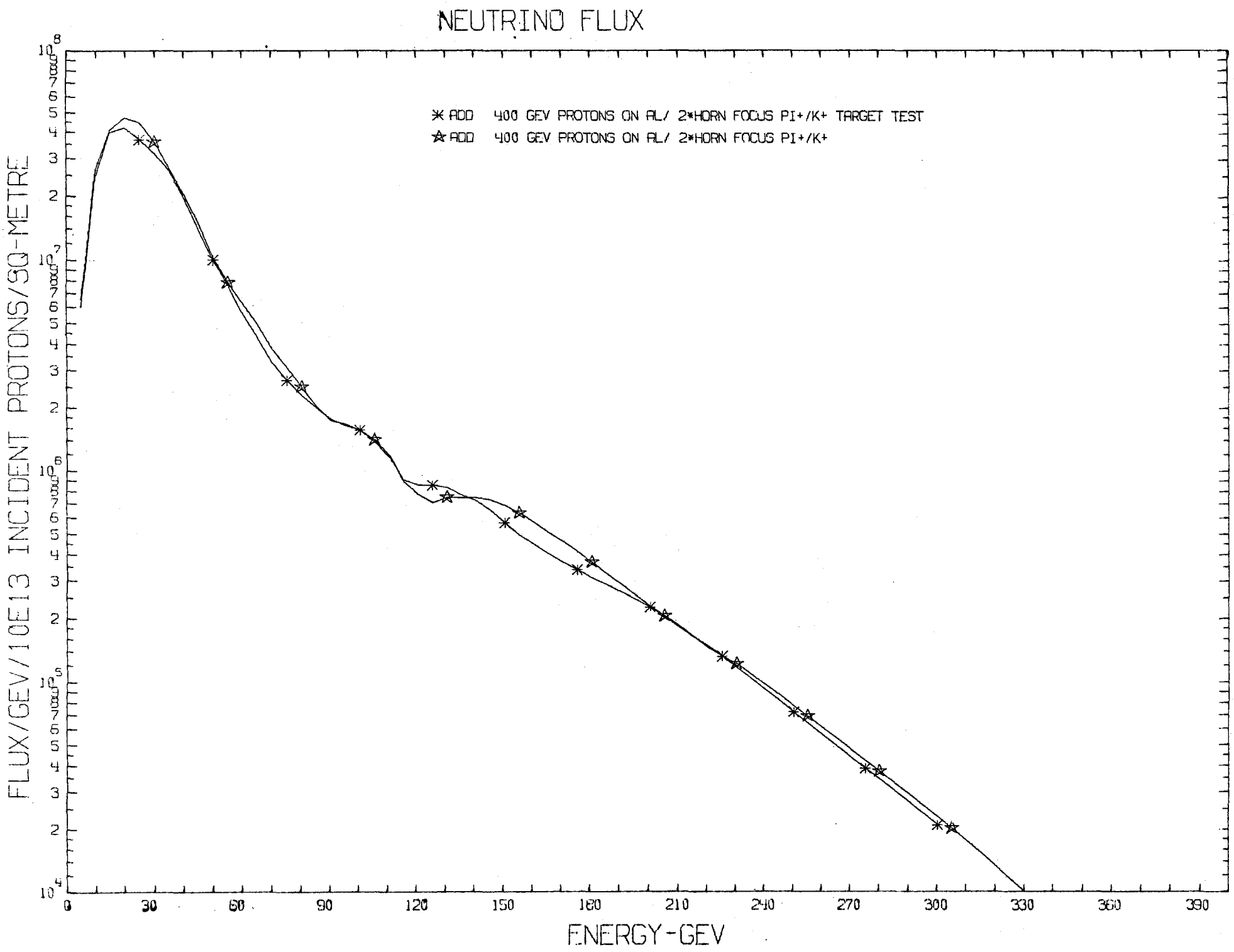

NEUTRINO FLUX 400 GEV PROTONS ON AL/ 2*HORN FOCUS PI+/K+ TARGET TEST
ADD
PI+
K+
FLUX/GEV/10E13 INCIDENT PROTONS/SQ-METRE
ENERGY-GEV
0
30
60
90
120
150
180
210
240
270
300
330
360
390


NEUTRINO FLUX
ADD 400 GEV PROTONS ON AL/ 2*HORN FOCUS PI+/K+ TARGET TEST
ADD 400 GEV PROTONS ON AL/ 2*HORN FOCUS PI+/K+
FLUX/GEV/10E13 INCIDENT PROTONS/SQ-METRE
ENERGY-GEV
0
30
60
90
120
150
180
210
240
270
300
330
360
390