

⁶²Ni(³He,p) 1997Ba60

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 178, 41 (2021).	12-Nov-2021

1997Ba60: E=18 MeV. Measured $\sigma(\theta)$ from 5° to 80° (c.m.), enriched target, multichannel magnetic spectrograph. FWHM \approx 37 keV. DWBA analysis of $\sigma(\theta)$ to deduce L transfers.

Others (measured cross sections and deduced reaction mechanism):

1980Le15: E=8, 10 MeV.

1974Ch42, 1975Ch03: E=25.6 MeV, $\sigma(\theta)$.

1968Yo02, 1967YoZZ: E=13 MeV. Measured $\sigma(\theta)$. Levels in ⁶⁴Cu deduced, but no details are available.

Additional information 1.

⁶⁴Cu Levels

$J^\pi=0^+,1^+$ for L=0; $0^-,1^-,2^-$ for L=1; $1^+,2^+,3^+$ for L=2; $2^-,3^-,4^-$ for L=3; $3^+,4^+,5^+$ for L=4; $4^-,5^-,6^-$ for L=5; 1^+ for L=0+2; 3^+ for L=2+4; 2^- for L=1+3.

E(level)	L#	d σ /d Ω (maximum) (μ b/sr) ^b	E(level)	L#	d σ /d Ω (maximum) (μ b/sr) ^b
0	0+2	40.4	2679 10	2	22.1
160 10	2	14.2 ^c	2718 10	2	14.4
278 10	2	6.2 ^d	2762 10	1	11.5
362 10	2	16.4 ^e	2801 10	0 [†]	8.5
574 10	4	10.0 ^f	2827 10	0 [†]	10.6
608 10	2	10.2 ^g	2875 10	2	15.7
663 10	0+2	4.6	2907 10	(0+2)	16.7
745 10	2+4	45.0	2990 10	3	15.1
878 10	2	4.9	3066 10	1(+3)	10.0
927 10	0+2	106.5	3130 10	2	28.2
1241 10	0	14.6	3189 10	2	23.9
1299 10	0	120.4	3231 10	2	20.0
1320 10	2	21.5	3265 10	2	9.7
1359 10	2	8.6	3302 10	4	9.2
1440 10	2	18.4	3397 10	1	41.2
1509 10	1	13.6	3472 10	2&	16.4
1551 10	2	37.3	3513 10	2&	13.7
1602 10	4	19.0	3607 10	1	25.7
1689 10	2	213.0	3686 10	2 ^a	12.3
1741 10	2 [@]	32.4	3713 10	2 ^a	17.7
1775 10	2 [@]	9.5	3767 [‡] 10	2 [‡]	97.0 [‡]
1853 10	2	9.5	3802 [‡] 10	2 [‡]	97.0 [‡]
1907 10	2(+0)	47.3	3902 10	1	60.3
1952 10	0	6.1	3973 10	2	29.5
2047 10	2	27.3	4028 10	2	51.8
2092 10	2	10.4	4137 10	1	45.4
2146 10	2	5.2	4257 10	3	17.1
2246 10	2	20.0	4316 10	5	29.0
2290 10	2	29.6	4430 10	5	27.0
2323 10	2	36.5	4571 10	5	24.0
2369 10	2	9.4	5043 10	3	35.0
2414 10	2	8.4	5320 10	3	32.0
2455 10	0	26.5	6821 10	0	483.3 ^h
2515 10	2	42.0	7339 10	0(+2)	28.0
2608 10	2	16.0	8188 10	2	281.9

Continued on next page (footnotes at end of table)

 $^{62}\text{Ni}(^3\text{He,p})$ **1997Ba60** (continued) ^{64}Cu Levels (continued)

† For composite 2801+2827; L=0 is possibly for the stronger (2827) group.

‡ For composite 3767+3802. There may be more than two levels near this energy.

From comparison of measured $\sigma(\theta)$ with DWBA calculations.

@ For composite 1741+1775; L=2 is likely to be mainly for the stronger (1741) group.

& For composite 3472+3513. Since the individual cross sections are about the same, L=2 is expected for both the groups.

^a For composite 3686+3713. Since the individual cross sections are about the same, L=2 is expected for both the groups.

^b **1997Ba60** also list cross sections, averaged over 5° to 80°.

^c $\sigma(\text{expt})/\sigma(\text{DWBA})=1.9$ 3.

^d $\sigma(\text{expt})/\sigma(\text{DWBA})=0.17$ 2.

^e $\sigma(\text{expt})/\sigma(\text{DWBA})=2.7$ 8.

^f $\sigma(\text{expt})/\sigma(\text{DWBA})=0.27$ 3.

^g $\sigma(\text{expt})/\sigma(\text{DWBA})=0.22$ 3.

^h $\sigma(\text{expt})/\sigma(\text{DWBA})=0.94$ 3.