

$^{74}\text{Ge}(\alpha, \alpha')$ **1987Sc31**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Ameenah R. Farhan		NDS 107, 1923 (2006)	30-Apr-2006

E=31.5 MeV.

[1987Sc31](#): measured $\sigma(\theta)$, FWHM=15-20 keV, DWBA calculations.

Others:

[1989Ro12](#): E=36 MeV, measured $\sigma(\theta)$, FWHM $\approx$ 20 keV, different model calculations: (coupled-channels, vibrational, asymmetric rotational).

[1988Ba70](#): E=25 MeV, measured $\sigma(\theta)$, coupled-channels calculations.

Data are from [1987Sc31](#), unless otherwise stated.

 ^{74}Ge Levels

E(level)	L	Comments
0		
595	2@	Reported by 1989Ro12 and 1988Ba70 only.
1203 <i>10</i>	2@	
1459	4@	Reported by 1989Ro12 only.
1483 <i>10</i>	0@	
2543 <i>10</i>	3	
2573 <i>10</i>	(4)	L(p,p')=(3).
2674 <i>10</i>	4	
2695 <i>10</i>	(1)	L(p,p')=(2+3).
2836 <i>10</i>	(3+5)	L(p,p')=4 and L(p,t)=2.
2936 <i>10</i>	(3+5)	L(p,p')=(5) and L(p,t)=2.
2969 <i>10</i>	(5)	
2999 <i>10</i>	2	
3020 <i>10</i>		
3047 <i>10</i>	4	
3068 [#] <i>10</i>	4	
3102 <i>10</i>	5	
3139 <i>10</i>	3	
3172 <i>10</i>	3	
3195 <i>10</i>	2	
3217 <i>10</i>	4	
3326 <i>10</i>	4	
3356 <i>10</i>	(5)	
3380 <i>10</i>	3	
3479 [†] <i>10</i>		
3499 [†] <i>10</i>		
3519 [‡] <i>10</i>		
3583 [†] <i>10</i>		
3611 <i>10</i>	(0)	
3629 <i>10</i>	(6)	L(p,p')=(5) and L(p,t)=(7).
3647 <i>10</i>	1	
3685 <i>10</i>	3	
3711 <i>10</i>		
3733 <i>10</i>	(4)	L(p,p')=3.
3745 <i>10</i>	(2)	
3777 <i>10</i>		
3810 <i>10</i>	3	L(p,p')=(2).
3836 <i>10</i>	(3+5)	L(p,p')=4.
3853 [‡] <i>10</i>		
3876 <i>10</i>	3	L(p,p')=2.

Continued on next page (footnotes at end of table)

 $^{74}\text{Ge}(\alpha,\alpha')$ [1987Sc31](#) (continued)

 ^{74}Ge Levels (continued)

E(level)	L	Comments
3948 <i>10</i>	(3+5)	L(p,p')=4.
3963 <i>10</i>	3	
3999 <i>10</i>	5	
4008 <i>10</i>		
4025 <i>10</i>	5	
4043 [†] <i>10</i>		
4083 <i>10</i>	4	

[†] Multiplet.

[‡] Weak peak. Not seen at all angles.

L=4 strength is probably due to ^{70}Ge and ^{72}Ge impurities ([1987Sc31](#)). This level is not adopted by the evaluators.

@ [1989Ro12](#) state that $\sigma(\theta)$ for low lying levels are best fit by the anharmonic vibrational model with the 0_2^+ , 2_2^+ , and 4_1^+ levels taken to be admixtures of one-phonon and two-phonon states.