^{138}Ba(α,$\alpha'\gamma$) 2009En03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

2009En03: E=136 MeV α beam with a current of 0.9 pnA was produced the AGOR cyclotron at KVI, Germany. Target was natural barium (71.7% in ^{138}Ba, self-supporting) with a thickness of 7.0 mg/cm^2. Ions were detected with the light EUROSUPERNOVA comprised of two drift chambers and two scintillator planes and γ rays were detected by seven HPGe detectors. Measured particle energy, Eγ, Iγ, α-γ coin, $\alpha\gamma(\theta)$. Deduced levels, J, π.

^{138}Ba Levels

E(level)	J$^\pi$†	dσ/dΩ (mb/sr)	E(level)	J$^\pi$†	dσ/dΩ (mb/sr)	E(level)	J$^\pi$†	dσ/dΩ (mb/sr)
0.0	0$^+$		5511.3 *10*	1$^-$	0.706 *23*	5963.5 *6*	1$^-$	0.104 *9*
4535.1 *6*	1$^-$	0.080 *7*	5644.6 *5*	1$^-$	0.428 *18*	6192.9 *5*	1$^-$	0.096 *9*
4854.7 *14*	1$^-$	0.165 *10*	5655.3 *7*	1$^-$	0.217 *13*	6410.1 *6*	1$^-$	0.209 *14*
5145.4 *6*	1$^-$	0.261 *13*	5694.5 *7*	1$^-$	0.089 *8*	6612.7 *6*	1$^-$	0.178 *13*
5390.7 *6*	1$^-$	0.128 *10*	5815.0 *7*	1$^-$	0.125 *10*	6862.0 *6*	1$^-$	0.110 *10*
5475.7 *6*	1$^-$	0.195 *12*	5873.6 *6*	1$^-$	0.183 *12*			

† From $\alpha\gamma(\theta)$ (2009En03).

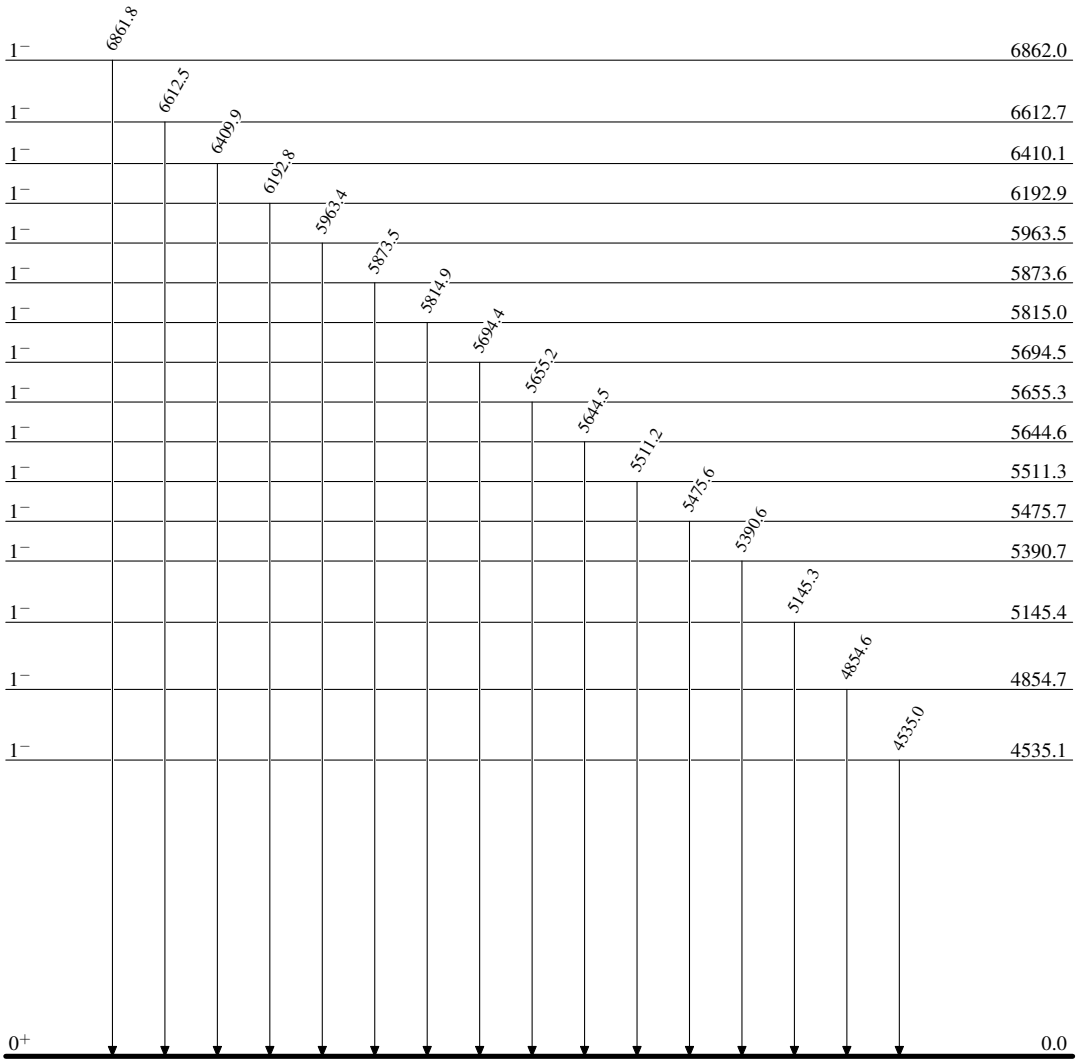
γ(^{138}Ba)

E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
4535.0 *6*	4535.1	1$^-$	0.0	0$^+$	5644.5 *5*	5644.6	1$^-$	0.0	0$^+$	6192.8 *5*	6192.9	1$^-$	0.0	0$^+$
4854.6 *6*	4854.7	1$^-$	0.0	0$^+$	5655.2 *7*	5655.3	1$^-$	0.0	0$^+$	6409.9 *6*	6410.1	1$^-$	0.0	0$^+$
5145.3 *6*	5145.4	1$^-$	0.0	0$^+$	5694.4 *7*	5694.5	1$^-$	0.0	0$^+$	6612.5 *6*	6612.7	1$^-$	0.0	0$^+$
5390.6 *6*	5390.7	1$^-$	0.0	0$^+$	5814.9 *7*	5815.0	1$^-$	0.0	0$^+$	6861.8 *6*	6862.0	1$^-$	0.0	0$^+$
5475.6 *6*	5475.7	1$^-$	0.0	0$^+$	5873.5 *6*	5873.6	1$^-$	0.0	0$^+$					
5511.2 *10*	5511.3	1$^-$	0.0	0$^+$	5963.4 *6*	5963.5	1$^-$	0.0	0$^+$					

† From level-energy, decorrected by evaluator for recoil correction.

^{138}Ba(α,$\alpha'\gamma$) **2009En03**

Level Scheme



$^{138}_{56}Ba_{82}$