

⁶⁴Ni(⁶⁴Ni,3nγ) **2005Mb05,2005Ma84**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

2005Mb05,2005Ma84: E-255, 261 MeV. Measured E_γ, I_γ, γγ, γγ(θ), γγ(lin pol).

All data are from **2005Mb05**. The two papers are by the same group.

XUNDL data set compiled by B. Singh (McMaster), December 20, 2005, is consulted.

Octupole correlations deduced through the observation of interband E1 transitions.

¹²⁵Ba Levels

E(level)	J ^π	E(level)	J ^π	E(level)	J ^π	E(level)	J ^π
0+x [†] &	(5/2 ⁺)	639+x [‡]	(11/2 ⁺)	1901+x [#]	(21/2 ⁻)	2943+x [†]	(25/2 ⁺)
68+x [@]	(7/2 ⁻)	751+x [@]	(15/2 ⁻)	1970+x [‡]	(19/2 ⁺)	3223+x [‡]	(27/2 ⁺)
166+x [#]	(9/2 ⁻)	931+x [†]	(13/2 ⁺)	2086+x [@]	(23/2 ⁻)	3555+x [†]	(29/2 ⁺)
169+x [‡]	(7/2 ⁺)	1163+x [#]	(17/2 ⁻)	2350+x [†]	(21/2 ⁺)	3693+x [#]	(29/2 ⁻)
300+x [@]	(11/2 ⁻)	1253+x [‡]	(15/2 ⁺)	2679+x [‡]	(23/2 ⁺)	3770+x [@]	(31/2 ⁻)
385+x [†]	(9/2 ⁺)	1355+x [@]	(19/2 ⁻)	2748+x [#]	(25/2 ⁻)	3874+x [‡]	(31/2 ⁺)
573+x [#]	(13/2 ⁻)	1603+x [†]	(17/2 ⁺)	2912+x [@]	(27/2 ⁻)		

[†] Band(A): 5/2⁺ band, α=+1/2.

[‡] Band(a): 7/2⁺ band, α=-1/2.

[#] Band(B): 9/2⁺ band, α=+1/2.

[@] Band(b): 7/2⁻ band, α=-1/2.

& x≈20 keV from systematics.

γ(¹²⁵Ba)

E _γ	E _i (level)	J _i ^π	E _f	J _f ^π	E _γ	E _i (level)	J _i ^π	E _f	J _f ^π	Mult. [†]
68	68+x	(7/2 ⁻)	0+x	(5/2 ⁺)	406	573+x	(13/2 ⁻)	166+x	(9/2 ⁻)	
99	166+x	(9/2 ⁻)	68+x	(7/2 ⁻)	412	1163+x	(17/2 ⁻)	751+x	(15/2 ⁻)	
134	300+x	(11/2 ⁻)	166+x	(9/2 ⁻)	451	751+x	(15/2 ⁻)	300+x	(11/2 ⁻)	
163	2912+x	(27/2 ⁻)	2748+x	(25/2 ⁻)	471	639+x	(11/2 ⁺)	169+x	(7/2 ⁺)	
169	169+x	(7/2 ⁺)	0+x	(5/2 ⁺)	475 [#]	3223+x	(27/2 ⁺)	2748+x	(25/2 ⁻)	
178	751+x	(15/2 ⁻)	573+x	(13/2 ⁻)	544	3223+x	(27/2 ⁺)	2679+x	(23/2 ⁺)	
184	2086+x	(23/2 ⁻)	1901+x	(21/2 ⁻)	546	931+x	(13/2 ⁺)	385+x	(9/2 ⁺)	
192	1355+x	(19/2 ⁻)	1163+x	(17/2 ⁻)	546	1901+x	(21/2 ⁻)	1355+x	(19/2 ⁻)	
216	385+x	(9/2 ⁺)	169+x	(7/2 ⁺)	590	1163+x	(17/2 ⁻)	573+x	(13/2 ⁻)	
233	300+x	(11/2 ⁻)	68+x	(7/2 ⁻)	593	2943+x	(25/2 ⁺)	2350+x	(21/2 ⁺)	
254	639+x	(11/2 ⁺)	385+x	(9/2 ⁺)	604	1355+x	(19/2 ⁻)	751+x	(15/2 ⁻)	
264	2943+x	(25/2 ⁺)	2679+x	(23/2 ⁺)	612	3555+x	(29/2 ⁺)	2943+x	(25/2 ⁺)	
272	573+x	(13/2 ⁻)	300+x	(11/2 ⁻)	614	1253+x	(15/2 ⁺)	639+x	(11/2 ⁺)	
280	3223+x	(27/2 ⁺)	2943+x	(25/2 ⁺)	631	931+x	(13/2 ⁺)	300+x	(11/2 ⁻)	(E1)
292	931+x	(13/2 ⁺)	639+x	(11/2 ⁺)	651	3874+x	(31/2 ⁺)	3223+x	(27/2 ⁺)	
319	3874+x	(31/2 ⁺)	3555+x	(29/2 ⁺)	662	2748+x	(25/2 ⁻)	2086+x	(23/2 ⁻)	
322	1253+x	(15/2 ⁺)	931+x	(13/2 ⁺)	672	1603+x	(17/2 ⁺)	931+x	(13/2 ⁺)	
328	2679+x	(23/2 ⁺)	2350+x	(21/2 ⁺)	680	1253+x	(15/2 ⁺)	573+x	(13/2 ⁻)	(E1)
332	3555+x	(29/2 ⁺)	3223+x	(27/2 ⁺)	708	2679+x	(23/2 ⁺)	1970+x	(19/2 ⁺)	
350	1603+x	(17/2 ⁺)	1253+x	(15/2 ⁺)	717	1970+x	(19/2 ⁺)	1253+x	(15/2 ⁺)	
367	1970+x	(19/2 ⁺)	1603+x	(17/2 ⁺)	731	2086+x	(23/2 ⁻)	1355+x	(19/2 ⁻)	
380	2350+x	(21/2 ⁺)	1970+x	(19/2 ⁺)	738	1901+x	(21/2 ⁻)	1163+x	(17/2 ⁻)	
385	385+x	(9/2 ⁺)	0+x	(5/2 ⁺)	747	2350+x	(21/2 ⁺)	1603+x	(17/2 ⁺)	

Continued on next page (footnotes at end of table)

$^{64}\text{Ni}(^{64}\text{Ni},3n\gamma)$ **2005Mb05,2005Ma84 (continued)** $\gamma(^{125}\text{Ba})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]
777	2679+x	(23/2 ⁺)	1901+x	(21/2 ⁻)	E1 [‡]	857	2943+x	(25/2 ⁺)	2086+x	(23/2 ⁻)	
807	1970+x	(19/2 ⁺)	1163+x	(17/2 ⁻)	(E1)	858	3770+x	(31/2 ⁻)	2912+x	(27/2 ⁻)	
826	2912+x	(27/2 ⁻)	2086+x	(23/2 ⁻)		946	3693+x	(29/2 ⁻)	2748+x	(25/2 ⁻)	
846	2748+x	(25/2 ⁻)	1901+x	(21/2 ⁻)		996	2350+x	(21/2 ⁺)	1355+x	(19/2 ⁻)	(E1)
852	1603+x	(17/2 ⁺)	751+x	(15/2 ⁻)	(E1)						

[†] From $\gamma\gamma(\theta)$ and $\gamma\gamma(\text{lin pol})$, but the asymmetric values and the coefficients of angular correlation are not given excepting 777 keV transition.

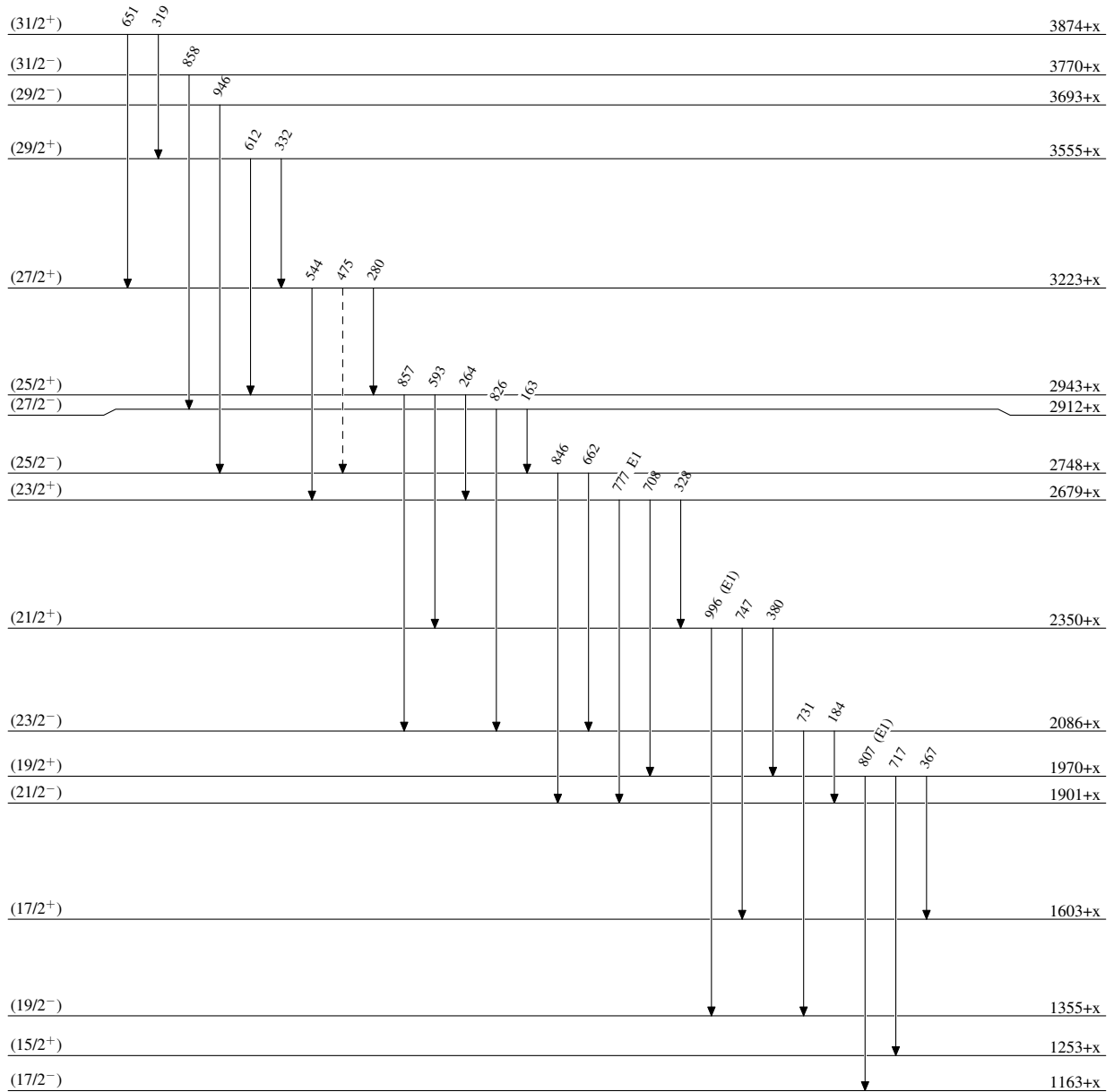
[‡] $\Delta J=1, E1$ from asymmetry parameter and polarization coefficient= $+0.03$ 3; $A_2=-0.27$ 2, $A_4=+0.00$ 3 from angular distribution.

[#] Placement of transition in the level scheme is uncertain.

$^{64}\text{Ni}(^{64}\text{Ni},3n\gamma)$ 2005Mb05,2005Ma84

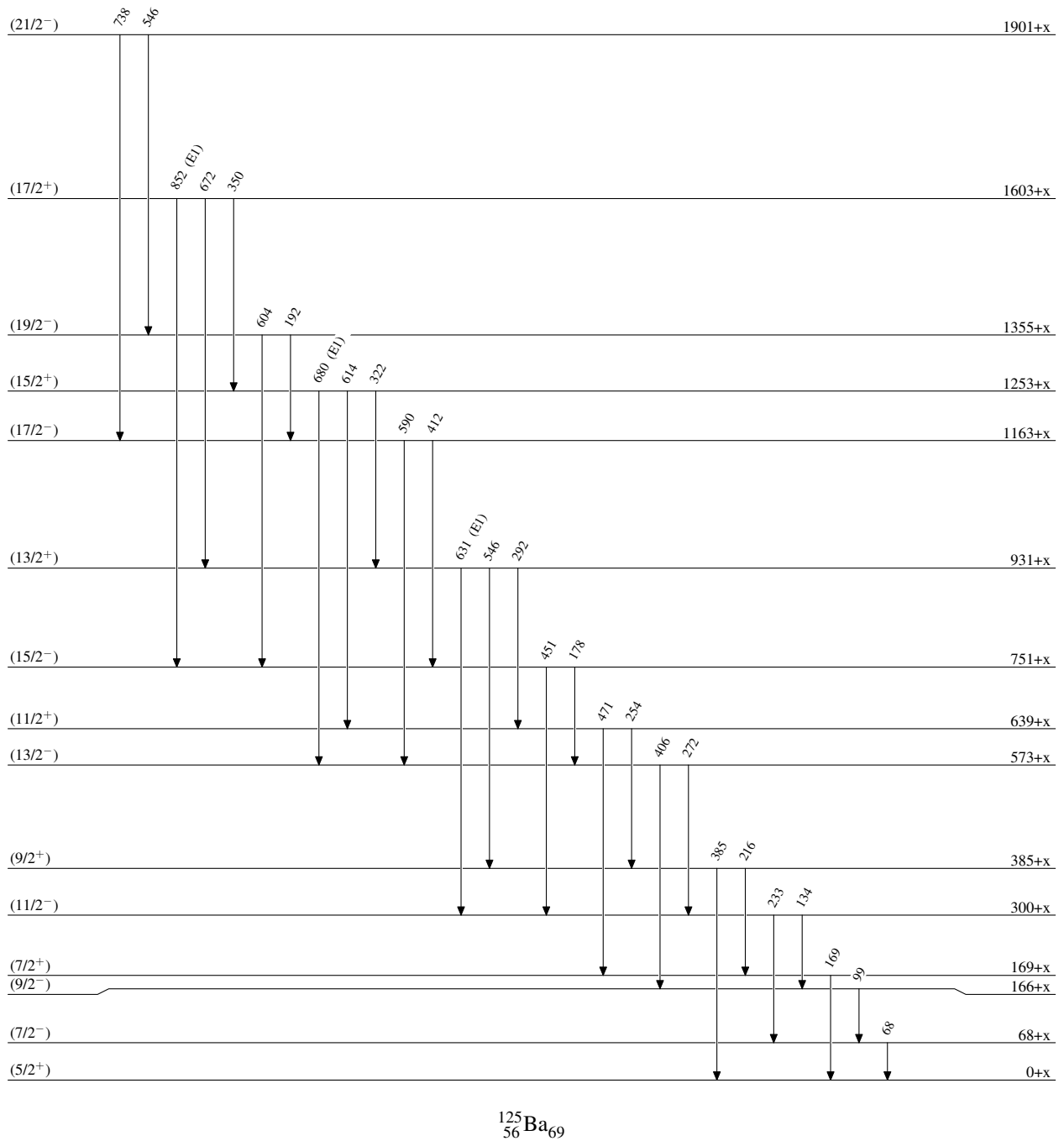
Legend

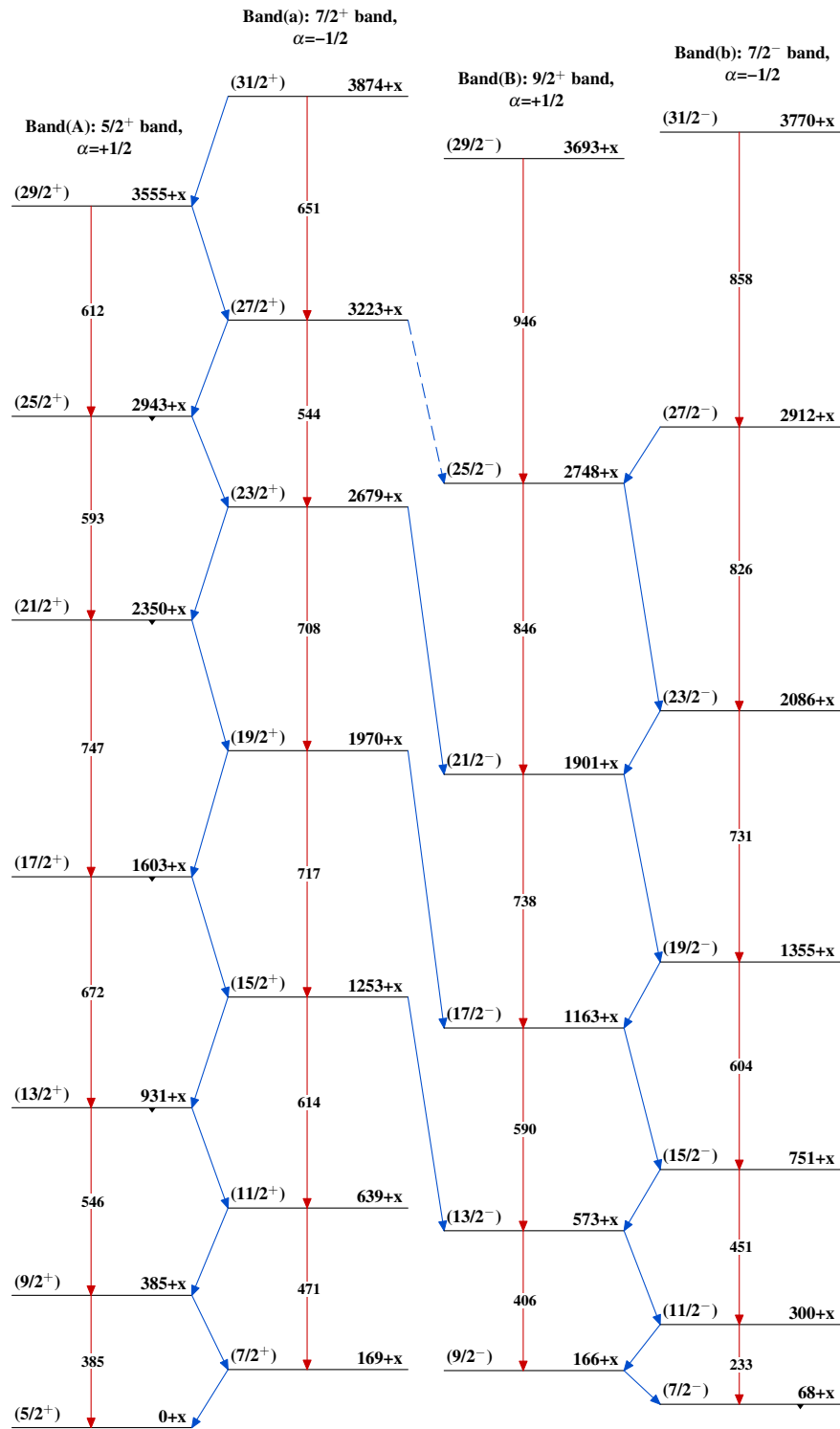
Level Scheme

-----> γ Decay (Uncertain) $^{125}_{56}\text{Ba}_{69}$

$^{64}\text{Ni}(^{64}\text{Ni},3n\gamma)$ 2005Mb05,2005Ma84

Level Scheme (continued)

 $^{125}_{56}\text{Ba}_{69}$

$^{64}\text{Ni}(^{64}\text{Ni},3n\gamma)$ 2005Mb05,2005Ma84 $^{125}_{56}\text{Ba}_{69}$