

$^{139}\text{La}(^{11}\text{B},\alpha 2\text{n}\gamma)$ 1995Ba07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93, 599 (2001)	1-Dec-2000

E=45 MeV, measured E_γ , I_γ , $\gamma\gamma(\theta)$. GASP array of 40 Compton-suppressed Ge detectors with an inner filter of 80 BGO scintillators. Level scheme as given by authors.

 ^{144}Nd Levels

E(level) [‡]	J ^π [†]	E(level) [‡]	J ^π [†]	E(level) [‡]	J ^π [†]	E(level) [‡]	J ^π [†]
0 [#]	0 ⁺	2710.3 [#]	8 ⁺	3803.3	(10)	4461.6	12 ⁺
697.0 [#]	2 ⁺	2876.8		3829.4 [@]	11 ⁻	4624.3 ^{&}	13 ⁻
1315.0 [#]	4 ⁺	2903.3 [@]	9 ⁻	3910.6	10 ⁺	4742.4	13 ⁻
1511.0 [@]	3 ⁻	2972.7	8 ⁺	3962.3 [#]		4938.4	14
1792.0 [#]	6 ⁺	3233.7		4045.5	11 ⁺	5240.3 ^{&}	15 ⁻
2094.0 [@]	5 ⁻	3396.7 ^{&}	9 ⁻	4065.9 ^{&}	11 ⁻	5378.4	(14 ⁺)
2218.8	6 ⁺	3486.6	9 ⁺	4353.3			
2613.1 [@]	7 ⁻	3672.5	10 ⁺	4354.4 ^a	12 ⁺		

[†] Author's values, based on $\gamma(\theta)$.

[‡] From least-squares fit to E_γ .

[#] Band(A): Ground-state band.

[@] Band(B): Octupole band.

[&] Band(C): $\Delta J=2$, 9⁻ band.

^a Proposed as a collective double-octupole-phonon excitation based on the similarity to ^{148}Gd decay scheme.

 $\gamma(^{144}\text{Nd})$

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.
97	2710.3	8 ⁺	2613.1	7 ⁻		477	1792.0	6 ⁺	1315.0	4 ⁺	
108 [‡]	4461.6	12 ⁺	4353.3			493	3396.7	9 ⁻	2903.3	9 ⁻	
163	4624.3	13 ⁻	4461.6	12 ⁺		514	3486.6	9 ⁺	2972.7	8 ⁺	
186	3672.5	10 ⁺	3486.6	9 ⁺		514	3910.6	10 ⁺	3396.7	9 ⁻	
193	2903.3	9 ⁻	2710.3	8 ⁺		519	2613.1	7 ⁻	2094.0	5 ⁻	
196	4938.4	14	4742.4	13 ⁻		525	4354.4	12 ⁺	3829.4	11 ⁻	D
253	3486.6	9 ⁺	3233.7			551	4461.6	12 ⁺	3910.6	10 ⁺	
270	4624.3	13 ⁻	4354.4	12 ⁺	D	558	4624.3	13 ⁻	4065.9	11 ⁻	
276	3672.5	10 ⁺	3396.7	9 ⁻		559	4045.5	11 ⁺	3486.6	9 ⁺	
281	4742.4	13 ⁻	4461.6	12 ⁺		583	2094.0	5 ⁻	1511.0	3 ⁻	
290	2903.3	9 ⁻	2613.1	7 ⁻		616	5240.3	15 ⁻	4624.3	13 ⁻	
302	2094.0	5 ⁻	1792.0	6 ⁺		618	1315.0	4 ⁺	697.0	2 ⁺	
302	5240.3	15 ⁻	4938.4	14		621	3233.7		2613.1	7 ⁻	
309	4354.4	12 ⁺	4045.5	11 ⁺	D	658	2876.8		2218.8	6 ⁺	
314	4938.4	14	4624.3	13 ⁻		669	4065.9	11 ⁻	3396.7	9 ⁻	
330	3233.7		2903.3	9 ⁻		686	3396.7	9 ⁻	2710.3	8 ⁺	
357	3233.7		2876.8			697	697.0	2 ⁺	0	0 ⁺	
373	4045.5	11 ⁺	3672.5	10 ⁺		700	3672.5	10 ⁺	2972.7	8 ⁺	
393	4065.9	11 ⁻	3672.5	10 ⁺		754	2972.7	8 ⁺	2218.8	6 ⁺	
396	4461.6	12 ⁺	4065.9	11 ⁻		779	2094.0	5 ⁻	1315.0	4 ⁺	
416	4461.6	12 ⁺	4045.5	11 ⁺		814	1511.0	3 ⁻	697.0	2 ⁺	
424	3396.7	9 ⁻	2972.7	8 ⁺		821	2613.1	7 ⁻	1792.0	6 ⁺	
427	2218.8	6 ⁺	1792.0	6 ⁺		900	3803.3	(10)	2903.3	9 ⁻	

Continued on next page (footnotes at end of table)

 $^{139}\text{La}(^{11}\text{B},\alpha 2\text{n}\gamma)$ **1995Ba07 (continued)**

 $\gamma(^{144}\text{Nd})$ (continued)

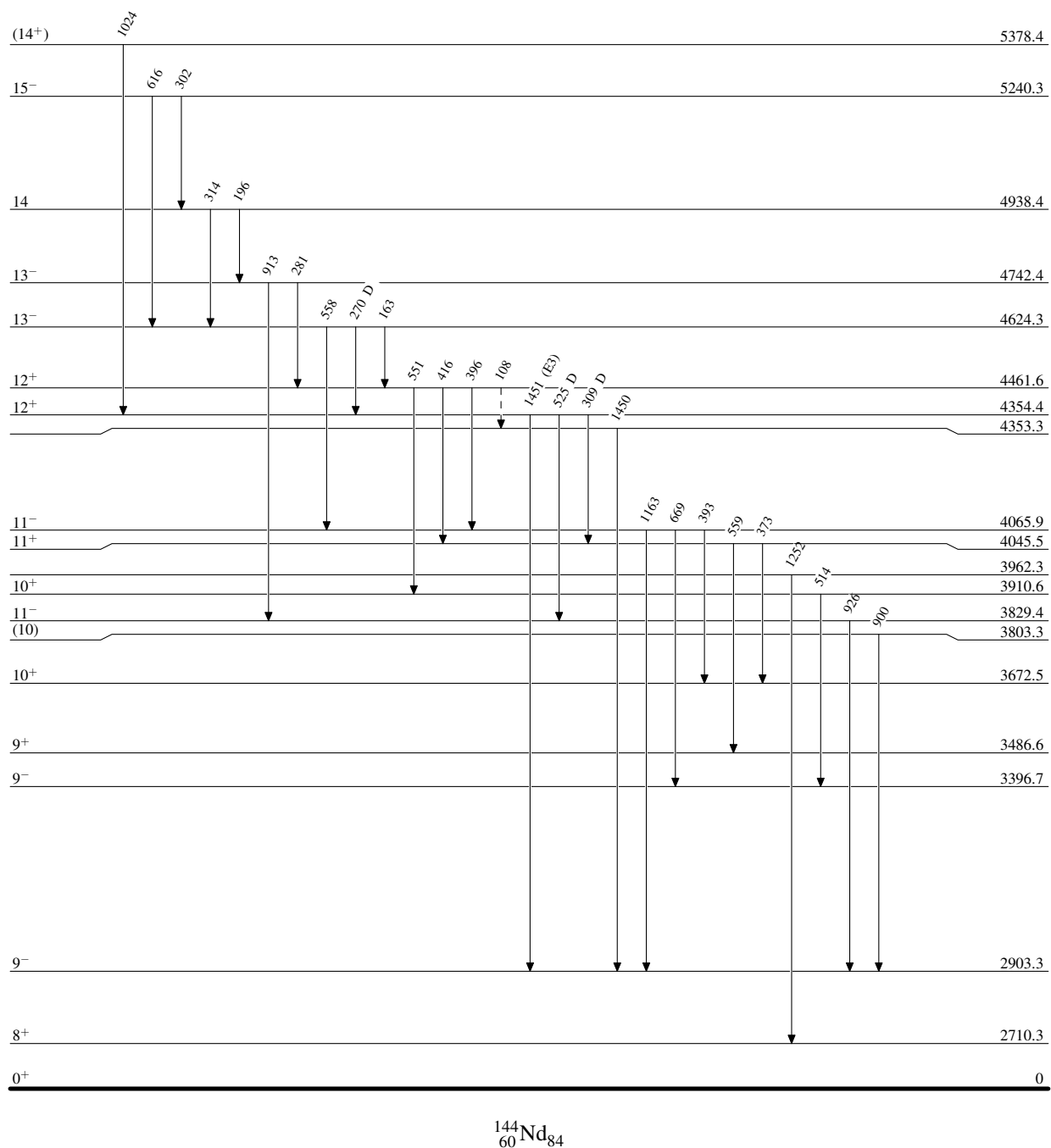
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.
913	4742.4	13^-	3829.4	11^-	1181	2972.7	8^+	1792.0	6^+	
918	2710.3	8^+	1792.0	6^+	1252	3962.3		2710.3	8^+	
926	3829.4	11^-	2903.3	9^-	1450	4353.3		2903.3	9^-	
1024	5378.4	(14^+)	4354.4	12^+	1451 [†]	4354.4	12^+	2903.3	9^-	(E3)
1163	4065.9	11^-	2903.3	9^-						

[†] Branching ratio estimated to be 0.02, such a large value favors an E3 multipolarity.

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

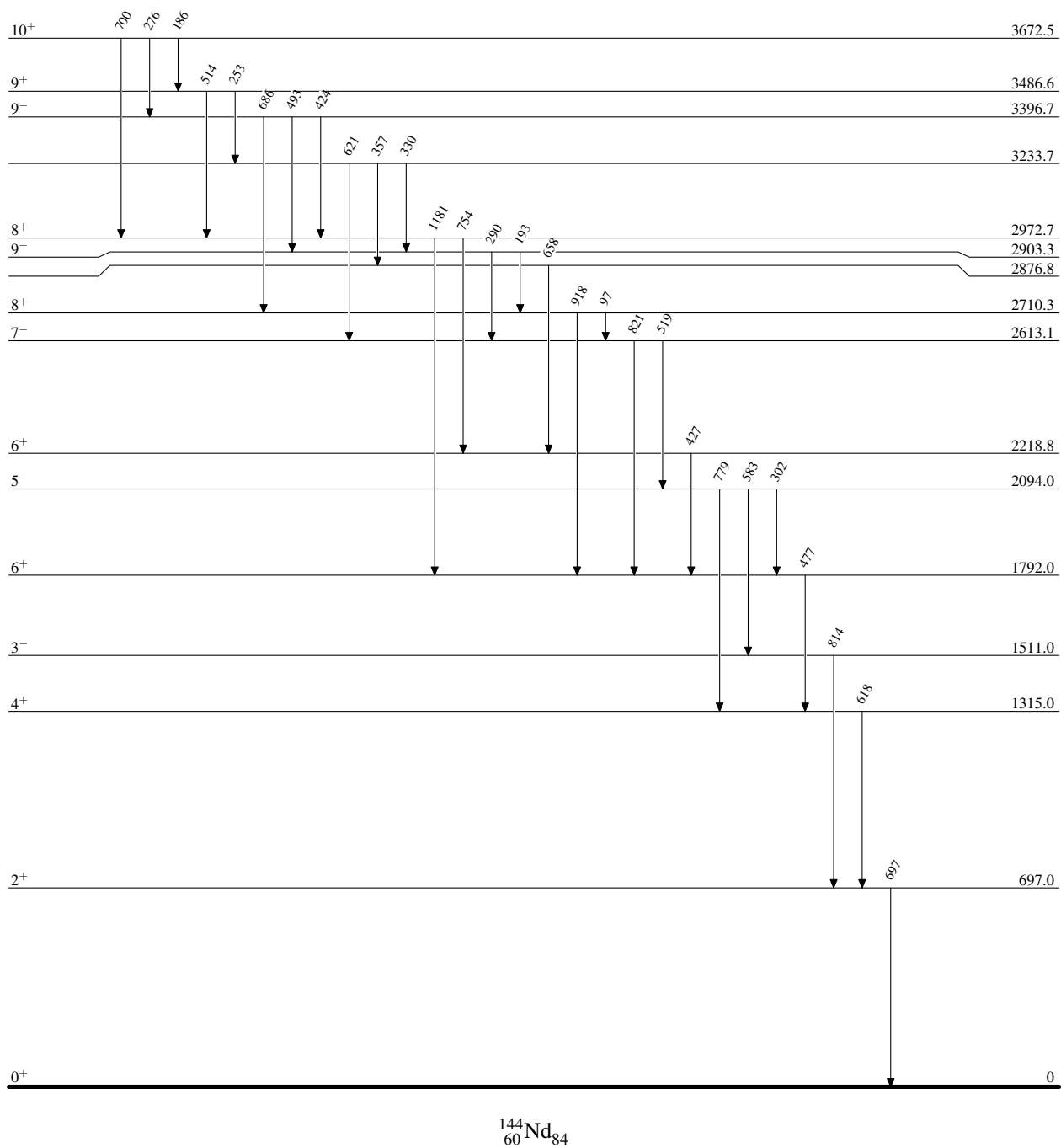
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Legend

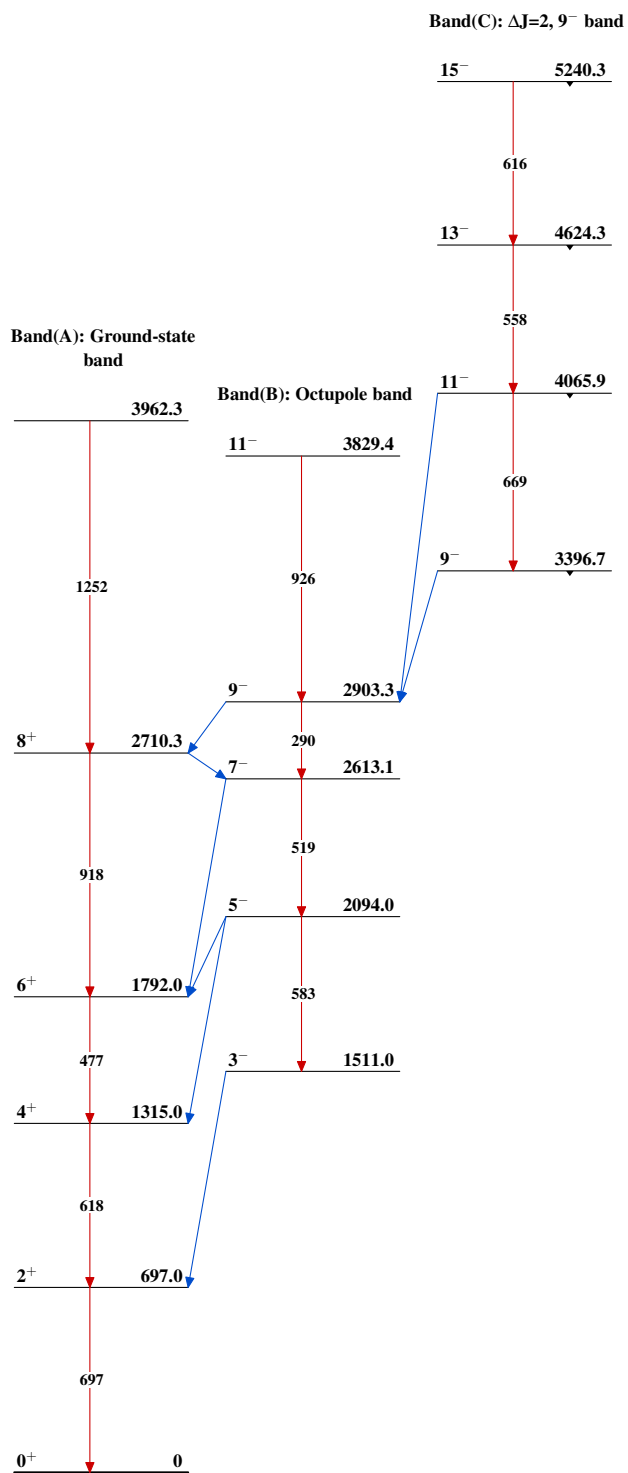
Level Scheme-----► γ Decay (Uncertain) $^{144}_{60}\text{Nd}_{84}$

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Level Scheme (continued)



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$^{144}_{60}\text{Nd}_{84}$