

$^{122}\text{Sn}(^{14}\text{N},4n\gamma) E=60 \text{ MeV}$ [2003Ku12](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. A. Rodionov and S. Sakharov, Balraj Singh		NDS 104, 497 (2005)	10-Feb-2005

Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, $\gamma\gamma(\theta)$ using eight Compton-suppressed HPGe detectors and a 14-element BGO multiplicity filter.

 ^{132}La Levels

E(level) [‡]	J ^π [†]	T _{1/2}	Comments
0 ^b	2 ⁻		
135.5 ^b 5	3 ⁽⁻⁾		
188.20 ^a 11	6 ⁻	24.3 min 5	Additional information 1. E(level),J ^π ,T _{1/2} : from Adopted Levels.
232.0 ^b 5	4 ⁽⁻⁾		
358.0 ^a 3	7 ⁻		
361.5 ^b 4	5 ⁽⁻⁾		
391.2 3	7 ⁻		
508.4 4	6 ⁺		J ^π : from Adopted Levels; 2003Ku12 give 6 ⁽⁻⁾ .
522.3 ^{&} 3	6 ⁽⁻⁾		
585.0 ^a 4	8 ⁽⁻⁾		
603.5 ^b 6	6 ⁽⁻⁾		
623.2 5	8 ⁽⁻⁾		
670.0 3	7 ⁺		
708.8 5	8 ⁺		
752.1 ^{&} 4	7 ⁽⁻⁾		
775.6 5	7 ⁽⁻⁾		
775.8 [#] 8	9 ⁺		
873.2 ^a 4	9 ⁽⁻⁾		
936.9 [#] 9	10 ⁺		
1019.2 7	(9 ⁻)		
1165.9 ^{&} 5	9 ⁽⁻⁾		
1230.1 [#] 9	11 ⁺		
1253.6 5	10 ⁽⁻⁾		
1283.2 ^a 5	10 ⁽⁻⁾		
1524.0 [#] 9	12 ⁺		
1558.7 [@] 9	11 ⁺		
1572.2 ^a 6	11 ⁽⁻⁾		
1722.9 ^{&} 7	11 ⁽⁻⁾		
1916.2 [#] 9	13 ⁺		
1919.4 [@] 9	12 ⁺		
2083.6 7			
2100.2 ^a 7	(12 ⁻)		
2170.9 ^{&} 9	12 ⁽⁻⁾		
2173.6 10	14 ⁺		E(level): this level is not supported by 2004Gr06 who propose a reversed ordering of the 991-258 cascade, defining a level At 2906.8 instead of that At 2173.6.
2298.3 [@] 9	13 ⁺		
2301.7 [#] 10	14 ⁺		
2390.9 ^{&} 9	13 ⁽⁻⁾		
2413.2 ^a 8	(13 ⁻)		
2701.7 [@] 10	14 ⁺		
2754.2 [#] 10	15 ⁺		

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$^{122}\text{Sn}(^{14}\text{N},4n\gamma) E=60 \text{ MeV}$ **2003Ku12** (continued) ^{132}La Levels (continued)

E(level) [‡]	J ^π [†]	E(level) [‡]	J ^π [†]	E(level) [‡]	J ^π [†]
2774.9 <i>10</i>	13 ⁽⁻⁾	3163.9 <i>10</i>	16 ⁺	3712.7 [#] <i>11</i>	17 ⁺
2910.9 ^{&} <i>10</i>	14 ⁽⁻⁾	3207.2 [#] <i>10</i>	16 ⁺	4035.9 ^{&} <i>12</i>	17 ⁽⁻⁾
3160.9 ^{&} <i>10</i>	15 ⁽⁻⁾	3388.2 ^a <i>9</i>	(15 ⁻)	4202.2 [#] <i>11</i>	18 ⁺
				4758.7 [#] <i>12</i>	19 ⁺

[†] As proposed by **2003Ku12**.[‡] From least-squares fit to E γ 's.[#] Band(A): $\pi h_{11/2} \nu h_{11/2}$.[@] Band(B): Band based on 11⁺.[&] Band(C): Band based on 6⁽⁻⁾.^a Band(D): $\pi g_{7/2} \nu h_{11/2}$.^b Band(E): γ sequence based on g.s.. $\gamma(^{132}\text{La})$

E γ	E _i (level)	J ^π _i	E _f	J ^π _f	E γ	E _i (level)	J ^π _i	E _f	J ^π _f
(38)	708.8	8 ⁺	670.0	7 ⁺	379.0 <i>5</i>	2298.3	13 ⁺	1919.4	12 ⁺
67.0 <i>5</i>	775.8	9 ⁺	708.8	8 ⁺	380.0 <i>5</i>	1253.6	10 ⁽⁻⁾	873.2	9 ⁽⁻⁾
96.0 <i>5</i>	232.0	4 ⁽⁻⁾	135.5	3 ⁽⁻⁾	385.0 <i>5</i>	2301.7	14 ⁺	1916.2	13 ⁺
129.0 <i>5</i>	361.5	5 ⁽⁻⁾	232.0	4 ⁽⁻⁾	390.0 <i>5</i>	1165.9	9 ⁽⁻⁾	775.6	7 ⁽⁻⁾
131.0 <i>5</i>	522.3	6 ⁽⁻⁾	391.2	7 ⁻	393.0 <i>5</i>	1916.2	13 ⁺	1524.0	12 ⁺
135.0 <i>5</i>	135.5	3 ⁽⁻⁾	0	2 ⁻	396.0 <i>5</i>	1019.2	(9 ⁻)	623.2	8 ⁽⁻⁾
150.0 <i>5</i>	508.4	6 ⁺	358.0	7 ⁻	397.0 <i>5</i>	585.0	8 ⁽⁻⁾	188.20	6 ⁻
160.0 <i>5</i>	522.3	6 ⁽⁻⁾	361.5	5 ⁽⁻⁾	404.0 <i>5</i>	2701.7	14 ⁺	2298.3	13 ⁺
161.0 [‡] <i>5</i>	670.0	7 ⁺	508.4	6 ⁺	410.0 <i>5</i>	1283.2	10 ⁽⁻⁾	873.2	9 ⁽⁻⁾
161.0 [‡] <i>5</i>	936.9	10 ⁺	775.8	9 ⁺	414.0 <i>5</i>	1165.9	9 ⁽⁻⁾	752.1	7 ⁽⁻⁾
165.0 <i>5</i>	522.3	6 ⁽⁻⁾	358.0	7 ⁻	448.0 <i>5</i>	2170.9	12 ⁽⁻⁾	1722.9	11 ⁽⁻⁾
170.0 <i>5</i>	358.0	7 ⁻	188.20	6 ⁻	452.0 <i>5</i>	2754.2	15 ⁺	2301.7	14 ⁺
173.0 <i>5</i>	361.5	5 ⁽⁻⁾	188.20	6 ⁻	453.0 <i>5</i>	3207.2	16 ⁺	2754.2	15 ⁺
203.0 <i>5</i>	391.2	7 ⁻	188.20	6 ⁻	482.0 <i>5</i>	670.0	7 ⁺	188.20	6 ⁻
227.0 <i>5</i>	585.0	8 ⁽⁻⁾	358.0	7 ⁻	505.0 <i>5</i>	3712.7	17 ⁺	3207.2	16 ⁺
230.0 <i>5</i>	752.1	7 ⁽⁻⁾	522.3	6 ⁽⁻⁾	515.0 <i>5</i>	873.2	9 ⁽⁻⁾	358.0	7 ⁻
232.0 <i>5</i>	623.2	8 ⁽⁻⁾	391.2	7 ⁻	520.0 <i>5</i>	2910.9	14 ⁽⁻⁾	2390.9	13 ⁽⁻⁾
242.0 <i>5</i>	603.5	6 ⁽⁻⁾	361.5	5 ⁽⁻⁾	557.0 <i>5</i>	1722.9	11 ⁽⁻⁾	1165.9	9 ⁽⁻⁾
250.0 <i>5</i>	873.2	9 ⁽⁻⁾	623.2	8 ⁽⁻⁾	564.0 <i>5</i>	752.1	7 ⁽⁻⁾	188.20	6 ⁻
253.0 <i>5</i>	775.6	7 ⁽⁻⁾	522.3	6 ⁽⁻⁾	587.0 <i>5</i>	1524.0	12 ⁺	936.9	10 ⁺
258.0 [†] <i>5</i>	2173.6	14 ⁺	1916.2	13 ⁺	604.0 <i>5</i>	2774.9	13 ⁽⁻⁾	2170.9	12 ⁽⁻⁾
279.0 <i>5</i>	670.0	7 ⁺	391.2	7 ⁻	622.0 <i>5</i>	1558.7	11 ⁺	936.9	10 ⁺
288.0 <i>5</i>	873.2	9 ⁽⁻⁾	585.0	8 ⁽⁻⁾	660.0 <i>5</i>	1283.2	10 ⁽⁻⁾	623.2	8 ⁽⁻⁾
289.0 <i>5</i>	1572.2	11 ⁽⁻⁾	1283.2	10 ⁽⁻⁾	668.0 <i>5</i>	2390.9	13 ⁽⁻⁾	1722.9	11 ⁽⁻⁾
293.0 <i>5</i>	1230.1	11 ⁺	936.9	10 ⁺	669.0 <i>5</i>	1253.6	10 ⁽⁻⁾	585.0	8 ⁽⁻⁾
294.0 <i>5</i>	1524.0	12 ⁺	1230.1	11 ⁺	686.0 <i>5</i>	1916.2	13 ⁺	1230.1	11 ⁺
312.0 <i>5</i>	670.0	7 ⁺	358.0	7 ⁻	689.0 <i>5</i>	1919.4	12 ⁺	1230.1	11 ⁺
320.0 <i>5</i>	508.4	6 ⁺	188.20	6 ⁻	699.0 <i>5</i>	1572.2	11 ⁽⁻⁾	873.2	9 ⁽⁻⁾
334.0 <i>5</i>	522.3	6 ⁽⁻⁾	188.20	6 ⁻	770.0 <i>5</i>	3160.9	15 ⁽⁻⁾	2390.9	13 ⁽⁻⁾
351.0 <i>5</i>	708.8	8 ⁺	358.0	7 ⁻	774.0 <i>5</i>	2298.3	13 ⁺	1524.0	12 ⁺
361.0 <i>5</i>	1919.4	12 ⁺	1558.7	11 ⁺	777.0 <i>5</i>	2301.7	14 ⁺	1524.0	12 ⁺

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$^{122}\text{Sn}(^{14}\text{N},4n\gamma) E=60 \text{ MeV}$ **2003Ku12 (continued)** $\gamma(^{132}\text{La})$ (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
783.0 5	1558.7	11 ⁺	775.8	9 ⁺	875.0 5	4035.9	17 ⁽⁻⁾	3160.9	15 ⁽⁻⁾
785.0 5	2701.7	14 ⁺	1916.2	13 ⁺	905.0 5	3207.2	16 ⁺	2301.7	14 ⁺
817.0 5	2100.2	(12 ⁻)	1283.2	10 ⁽⁻⁾	959.0 5	3712.7	17 ⁺	2754.2	15 ⁺
830.0 [#] 5	2083.6		1253.6	10 ⁽⁻⁾	975.0 5	3388.2	(15 ⁻)	2413.2	(13 ⁻)
839.0 5	2754.2	15 ⁺	1916.2	13 ⁺	991.0 [†] 5	3163.9	16 ⁺	2173.6	14 ⁺
841.0 5	2413.2	(13 ⁻)	1572.2	11 ⁽⁻⁾	995.0 5	4202.2	18 ⁺	3207.2	16 ⁺
865.0 5	3163.9	16 ⁺	2298.3	13 ⁺	1046.0 5	4758.7	19 ⁺	3712.7	17 ⁺

[†] 991-258 cascade is reversed In [2004Gr06](#).

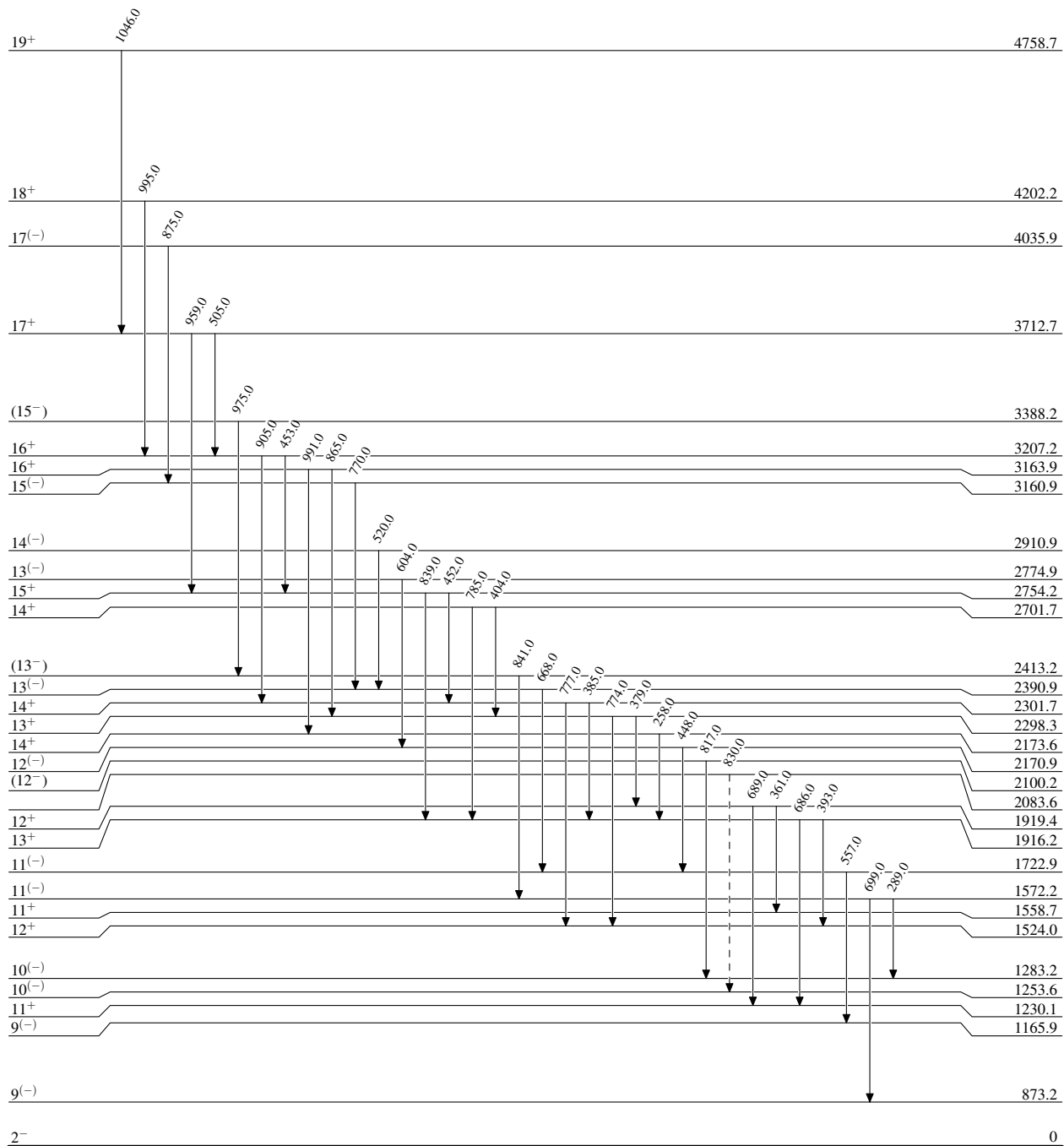
[‡] Multiply placed.

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

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Legend

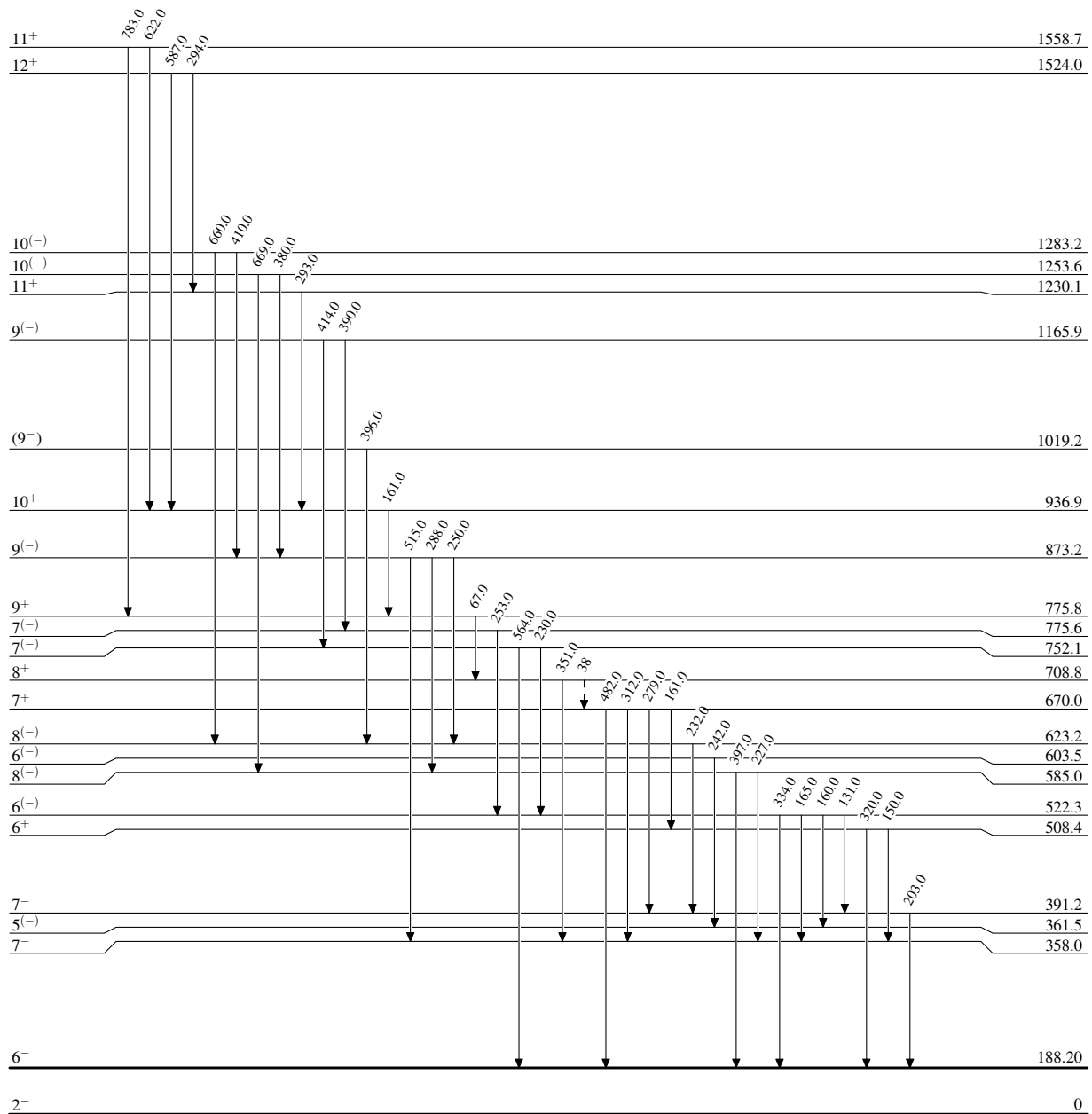
Level Scheme

-----► γ Decay (Uncertain) $^{132}_{57}\text{La}_{75}$

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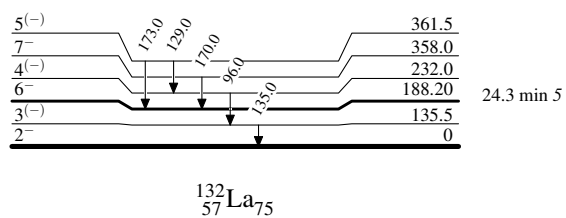
Legend

Level Scheme (continued)

-----► γ Decay (Uncertain) $^{132}_{57}\text{La}_{75}$

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Level Scheme (continued)



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