

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 187,1 (2023)	12-Oct-2022

Q(β⁻)=2501 4; S(n)=6689 4; S(p)=6951 9; Q(α)=1191 4 2021Wa16
 S(2n)=11850 4, S(2p)=16807 5 (2021Wa16).
 Activation cross sections: 1998Ko59, 1989Ba89.

¹⁴¹La Levels

Cross Reference (XREF) Flags

- A ¹⁴¹Ba β⁻ decay
- B ¹⁴²Ce(μ⁻,nγ)

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
0.0	7/2 ⁽⁺⁾	3.92 h 3	AB	%β ⁻ =100 J ^π : 7/2,9/2 for ¹⁴¹ La g.s. from log ft=7.3 to 7/2 and log ft=7.8 to 9/2 states of ¹⁴¹ Ce daughter, and 1/2,3/2,5/2 for the 190.3 first excited state of ¹⁴¹ La from log ft=7.6 from 3/2 ⁻ of ¹⁴¹ Ba parent. M1(+E2) γ from 190.3 to g.s. selects uniquely 7/2 for g.s. and 5/3 for 190.3, with Δπ=no. π=(+) from πg _{7/2} configuration for ¹⁴¹ La g.s., also 7/2 ⁺ for g.s. of ¹³⁹ La and ¹³⁷ La. T _{1/2} : from 1981Ge04. Others: 4.03 h 4 (1972Eh02), 3.90 h 5 (1962Fr04), 3.87 h 4 (1960Al33).
190.329 5	5/2 ⁽⁺⁾	1.27 ns +6-10	AB	J ^π : see J ^π argument for ¹⁴¹ La g.s. T _{1/2} : from 1970Be43 (βγ coin).
304.190 4	5/2 ⁽⁺⁾		AB	J ^π : γ to 7/2 ⁽⁺⁾ g.s. is M1+E2 and M1+E2 γ from 3/2 ⁽⁺⁾ , 467 level.
467.281 11	3/2 ⁽⁺⁾		AB	J ^π : γ to 5/2 ⁽⁺⁾ , 190 level is M1+E2 and γ to 7/2 ⁽⁺⁾ g.s. is E2.
580.11 7	1/2 ⁽⁺⁾		A	J ^π : γ to 3/2 ⁽⁺⁾ , 467 level is M1+E2 and γ to 5/2 ⁽⁺⁾ 190 level is E2.
647.864 20	3/2 ⁽⁺⁾		AB	J ^π : γ to 5/2 ⁽⁺⁾ , 190 level is M1+E2 and γ to 7/2 ⁽⁺⁾ g.s. is E2.
685.35 9	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾		A	J ^π : γ to 5/2 ⁽⁺⁾ , 304 level is M1+E2; 7/2 ⁽⁺⁾ less likely from γ from 1/2 ⁽⁺⁾ , 1873 level.
826.37 8	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾		A	J ^π : 1/2,3/2,5/2 from log ft=8.2 from 3/2 ⁻ parent; 3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾ ,7/2 ⁽⁺⁾ from M1+E2 γ to 5/2 ⁽⁺⁾ , 304 level.
831.62 6	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾		A	J ^π : M1+E2 γ's to 5/2 ⁽⁺⁾ , 190 and 3/2 ⁽⁺⁾ , 467 levels respectively.
929.38 6	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾		A	J ^π : M1+E2 γ's to 5/2 ⁽⁺⁾ , 190 and 3/2 ⁽⁺⁾ , 467 levels respectively.
991.93 8	3/2 ⁽⁻⁾		A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ from (E1) γ to 5/2 ⁽⁺⁾ , 190 level and γ to 3/2 ⁽⁺⁾ ; 5/2 ⁽⁻⁾ less likely from no γ to 1/2 ⁽⁺⁾ .
1039.43 8	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾		A	J ^π : 3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾ ,7/2 ⁽⁺⁾ from M1+(E2) γ to 5/2 ⁽⁺⁾ , 467 level; 7/2 ⁽⁺⁾ less likely from no γ to 1/2 ⁽⁺⁾ .
1066.51 7	3/2 ⁽⁻⁾		A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ from (E1) γ to 5/2 ⁽⁺⁾ , 190 level; 5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 486 level.
1171.93 7	1/2 ⁽⁺⁾		A	J ^π : γ to 3/2 ⁽⁺⁾ , 648 level is M1+E2 and γ to 5/2 ⁽⁺⁾ , 190 level is E2.
1188.90 13			A	
1426.31 7	3/2 ⁽⁻⁾		A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ from (E1) γ to 5/2 ⁽⁺⁾ , 190 level; 5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 648 level.
1501.51 8	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾		A	J ^π : M1+(E2) γ to 5/2 ⁽⁺⁾ , 304 level and M1+E2 γ to 3/2 ⁽⁺⁾ , 1034 level.
1547.62 16	1/2 ⁽⁺⁾		A	J ^π : E2 γ to 5/2 ⁽⁺⁾ , 190 level and no γ to 7/2 ⁽⁺⁾ , g.s.
1551.39 12			A	
1565.94 23			A	
1605.47 15			A	
1628.11 7	3/2 ⁽⁻⁾		A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ from M1+E2 γ to 3/2 ⁽⁻⁾ , 1067 level and (E1) γ to

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

¹⁴¹La Levels (continued)

E(level) [†]	J ^π [‡]	XREF	Comments
1716.43 13	1/2 ⁽⁺⁾ ,3/2,5/2 ⁽⁺⁾	A	5/2 ⁽⁺⁾ , 304 level; 5/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 1172 level.
1740.67 8	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾	A	J ^π : γ's to 1/2 ⁽⁺⁾ , 580 level and 5/2 ⁽⁺⁾ , 190 level.
1844.21 9	3/2 ⁽⁻⁾	A	J ^π : M1+E2 γ to 5/2 ⁽⁺⁾ , 304 level and M1(+E2) γ to 3/2 ⁽⁺⁾ , 467 level.
1872.54 7	1/2 ⁽⁺⁾	A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ from (E1) γ to 5/2 ⁽⁺⁾ , 190 level; 5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 580 level.
1925.95 7	3/2 ⁽⁻⁾	A	J ^π : E2 γ to 5/2 ⁽⁺⁾ , 190 level and M1+E2 γ to 3/2 ⁽⁺⁾ , 467 level.
2180.32 10	3/2 ⁽⁻⁾	A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ from (E1) γ's to 3/2 ⁽⁺⁾ , 648 level and 5/2 ⁽⁺⁾ , 648 level, respectively; 5/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 580 level.
2216.51 9	1/2 ⁽⁺⁾	A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ from (E1) γ's to 3/2 ⁽⁺⁾ , 467 level and 5/2 ⁽⁺⁾ , 190 level, respectively; 5/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 580 level.
2327.16 10	3/2 ⁽⁻⁾	A	J ^π : 1/2,3/2,5/2 from log ft=6.8 from 3/2 ⁻ parent; 1/2 ⁽⁺⁾ from E2 γ's to 5/2 ⁽⁺⁾ , 190 level.
2345.2 3		A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ from (E1) γ's to 5/2 ⁽⁺⁾ , 190 level; 5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 1172 level.
2375.79 10	3/2 ⁽⁻⁾ ,1/2 ⁽⁻⁾	A	J ^π : 1/2 ⁽⁻⁾ ,3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ from M1+E2 γ's to 3/2 ⁽⁻⁾ , 1067 level; 5/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 580 level.
2385.62 9	3/2 ⁽⁻⁾	A	J ^π : 3/2 ⁽⁻⁾ ,5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ from (E1) γ's to 5/2 ⁽⁺⁾ , 1067 level; 5/2 ⁽⁻⁾ ,7/2 ⁽⁻⁾ less likely from γ to 1/2 ⁽⁺⁾ , 1172 level.
2468.69 7	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾	A	J ^π : 1/2,3/2,5/2 from log ft=6.2 from 3/2 ⁻ parent; 3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾ ,7/2 ⁽⁺⁾ from M1+E2 γ's to 5/2 ⁽⁺⁾ , 304 level.
2485.7 3		A	
2700.32 13	1/2 ⁽⁺⁾ ,3/2,5/2 ⁽⁺⁾	A	J ^π : 1/2,3/2,5/2 from log ft=6.9 from 3/2 ⁻ parent; 1/2 ⁽⁺⁾ ,3/2,5/2 ⁽⁺⁾ from γ's to 5/2 ⁽⁺⁾ , 190 level and 1/2 ⁽⁺⁾ , 580 level.
2772.40 16	1/2 ⁽⁺⁾ ,3/2,5/2	A	J ^π : 1/2,3/2,5/2 from log ft=7.0 from 3/2 ⁻ parent; 1/2 ⁽⁺⁾ ,3/2,5/2 from γ's to 5/2 ⁽⁺⁾ , 304 level.
2808.4 3	1/2,3/2,5/2 ⁽⁺⁾	A	J ^π : 1/2,3/2,5/2 from log ft=7.3 from 3/2 ⁻ parent; 1/2,3/2,5/2 ⁽⁺⁾ from γ's to 1/2 ⁽⁺⁾ , 580 level.
2955.9 3	1/2 ⁽⁺⁾ ,3/2,5/2	A	J ^π : 1/2,3/2,5/2 from log ft=7.0 from 3/2 ⁻ parent; 1/2 ⁽⁺⁾ ,3/2,5/2 from γ's to 5/2 ⁽⁺⁾ , 190 level.

[†] From least-squares fit to Eγ's.

[‡] From transition multipolarities and log ft in ¹⁴¹Ba β⁻ decay dataset.

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$

All data are from β^- decay.

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	$\delta\ddagger\#$	α^\dagger	Comments
190.329	5/2 ⁽⁺⁾	190.328 5	100	0.0	7/2 ⁽⁺⁾	M1(+E2)	0.007 11	0.1788 25	B(M1)(W.u.)=0.00213 +19-10 $\alpha(\text{K})=0.1530$ 21; $\alpha(\text{L})=0.02048$ 29; $\alpha(\text{M})=0.00425$ 6 $\alpha(\text{N})=0.000935$ 13; $\alpha(\text{O})=0.0001521$ 21; $\alpha(\text{P})=1.188\times 10^{-5}$ 17
304.190	5/2 ⁽⁺⁾	114.10 22	0.417 9	190.329	5/2 ⁽⁺⁾	M1+E2	0.8 2	0.94 6	$\alpha(\text{K})=0.705$ 25; $\alpha(\text{L})=0.184$ 32; $\alpha(\text{M})=0.040$ 7 $\alpha(\text{N})=0.0086$ 15; $\alpha(\text{O})=0.00128$ 21; $\alpha(\text{P})=4.77\times 10^{-5}$ 9
		304.190 4	100.0 19	0.0	7/2 ⁽⁺⁾	M1+E2	-0.44 8	0.0500 8	$\alpha(\text{K})=0.0425$ 7; $\alpha(\text{L})=0.00593$ 10; $\alpha(\text{M})=0.001236$ 21 $\alpha(\text{N})=0.000271$ 5; $\alpha(\text{O})=4.37\times 10^{-5}$ 7; $\alpha(\text{P})=3.22\times 10^{-6}$ 7
467.281	3/2 ⁽⁺⁾	163.26 20	1.88 5	304.190	5/2 ⁽⁺⁾	M1+E2	0.035 13	0.273 4	$\alpha(\text{K})=0.2331$ 34; $\alpha(\text{L})=0.0314$ 5; $\alpha(\text{M})=0.00652$ 9 $\alpha(\text{N})=0.001432$ 21; $\alpha(\text{O})=0.0002330$ 34; $\alpha(\text{P})=1.812\times 10^{-5}$ 26
		276.95 1	100.0 21	190.329	5/2 ⁽⁺⁾	M1+E2	0.448 12	0.0645 9	$\alpha(\text{K})=0.0547$ 8; $\alpha(\text{L})=0.00775$ 11; $\alpha(\text{M})=0.001617$ 23 $\alpha(\text{N})=0.000354$ 5; $\alpha(\text{O})=5.69\times 10^{-5}$ 8; $\alpha(\text{P})=4.13\times 10^{-6}$ 6
		467.22 20	23.7 6	0.0	7/2 ⁽⁺⁾	E2		0.01245 17	$\alpha(\text{K})=0.01039$ 15; $\alpha(\text{L})=0.001629$ 23; $\alpha(\text{M})=0.000343$ 5 $\alpha(\text{N})=7.46\times 10^{-5}$ 10; $\alpha(\text{O})=1.172\times 10^{-5}$ 16; $\alpha(\text{P})=7.32\times 10^{-7}$ 10
580.11	1/2 ⁽⁺⁾	113.14 21	56.9 16	467.281	3/2 ⁽⁺⁾	M1+E2	-0.16 11	0.774 25	$\alpha(\text{K})=0.655$ 13; $\alpha(\text{L})=0.095$ 11; $\alpha(\text{M})=0.0198$ 26 $\alpha(\text{N})=0.0043$ 5; $\alpha(\text{O})=0.00070$ 7; $\alpha(\text{P})=5.06\times 10^{-5}$ 8
		389.74 20	100.0 23	190.329	5/2 ⁽⁺⁾	E2		0.02101 30	$\alpha(\text{K})=0.01734$ 24; $\alpha(\text{L})=0.00290$ 4; $\alpha(\text{M})=0.000613$ 9 $\alpha(\text{N})=0.0001329$ 19; $\alpha(\text{O})=2.069\times 10^{-5}$ 29; $\alpha(\text{P})=1.200\times 10^{-6}$ 17
647.864	3/2 ⁽⁺⁾	67.52@ 32 180.81 21	<0.015 3.61 9	580.11 467.281	1/2 ⁽⁺⁾ 3/2 ⁽⁺⁾	M1+E2	-0.8 6	0.223 16	$\alpha(\text{K})=0.181$ 5; $\alpha(\text{L})=0.033$ 9; $\alpha(\text{M})=0.0071$ 20 $\alpha(\text{N})=0.0015$ 4; $\alpha(\text{O})=0.00024$ 6; $\alpha(\text{P})=1.28\times 10^{-5}$ 8
		343.67 2	100.0 21	304.190	5/2 ⁽⁺⁾	M1+E2	0.026 2	0.0371 5	$\alpha(\text{K})=0.0318$ 4; $\alpha(\text{L})=0.00418$ 6; $\alpha(\text{M})=0.000867$ 12 $\alpha(\text{N})=0.0001907$ 27; $\alpha(\text{O})=3.11\times 10^{-5}$ 4; $\alpha(\text{P})=2.450\times 10^{-6}$ 34 E_γ : from 1979Bo26. Other: 343.68 20 (2022Ru06). Mult.: $\alpha(\text{K})_{\text{exp}}=0.022$ 3 (1979Pr01).
		457.51 20	33.1 6	190.329	5/2 ⁽⁺⁾	M1+E2	0.75 6	0.01619 29	$\alpha(\text{K})=0.01378$ 25; $\alpha(\text{L})=0.001905$ 28; $\alpha(\text{M})=0.000397$ 6 $\alpha(\text{N})=8.69\times 10^{-5}$ 13; $\alpha(\text{O})=1.400\times 10^{-5}$ 22; $\alpha(\text{P})=1.032\times 10^{-6}$ 21 Mult.: $\alpha(\text{K})_{\text{exp}}=0.015$ 3 (1979Pr01).
		647.78 21	37.6 9	0.0	7/2 ⁽⁺⁾	E2		0.00523 7	$\alpha(\text{K})=0.00443$ 6; $\alpha(\text{L})=0.000636$ 9; $\alpha(\text{M})=0.0001327$ 19 $\alpha(\text{N})=2.90\times 10^{-5}$ 4; $\alpha(\text{O})=4.62\times 10^{-6}$ 6; $\alpha(\text{P})=3.20\times 10^{-7}$ 4

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. #	$\delta^{\ddagger\#}$	α^\dagger	Comments
685.35	3/2(+), 5/2(+)	381.20 21	32.1 10	304.190	5/2(+)	M1+E2	-0.21 2	0.0281 4	$\alpha(\text{K})=0.02412$ 34; $\alpha(\text{L})=0.00319$ 4; $\alpha(\text{M})=0.000662$ 9 $\alpha(\text{N})=0.0001455$ 20; $\alpha(\text{O})=2.367\times 10^{-5}$ 33; $\alpha(\text{P})=1.849\times 10^{-6}$ 26
826.37	5/2(+), 3/2(+)	685.35 22	100.0 27	0.0	7/2(+)	M1+E2	0.16 3	0.01271 18	$\alpha(\text{K})=0.01092$ 16; $\alpha(\text{L})=0.001420$ 20; $\alpha(\text{M})=0.000294$ 4 $\alpha(\text{N})=6.46\times 10^{-5}$ 9; $\alpha(\text{O})=1.055\times 10^{-5}$ 15; $\alpha(\text{P})=8.34\times 10^{-7}$ 12
		522.74 20	100.0 25	304.190	5/2(+)				
831.62	3/2(+), 5/2(+)	635.91 20	43.5 13	190.329	5/2(+)	M1+E2	-3.1 16	0.0057 5	$\alpha(\text{K})=0.0048$ 5; $\alpha(\text{L})=0.00069$ 5; $\alpha(\text{M})=0.000144$ 9 $\alpha(\text{N})=3.14\times 10^{-5}$ 20; $\alpha(\text{O})=5.0\times 10^{-6}$ 4; $\alpha(\text{P})=3.5\times 10^{-7}$ 4
		826.55 21	67.1 19	0.0	7/2(+)	M1+E2	0.11 9	0.0318 5	$\alpha(\text{K})=0.0273$ 4; $\alpha(\text{L})=0.00359$ 5; $\alpha(\text{M})=0.000745$ 11 $\alpha(\text{N})=0.0001638$ 23; $\alpha(\text{O})=2.67\times 10^{-5}$ 4; $\alpha(\text{P})=2.099\times 10^{-6}$ 34
		146.4 2	1.10 8	685.35	3/2(+), 5/2(+)				
		364.32 21	38.4 8	467.281	3/2(+)				
527.33 20	22.5 6	304.190	5/2(+)	M1+E2	-1.3 2				
929.38	5/2(+), 3/2(+)	641.19 20	22.6 6	190.329	5/2(+)	M1+E2	0.08 7	0.00773 11	$\alpha(\text{K})=0.00665$ 10; $\alpha(\text{L})=0.000857$ 12; $\alpha(\text{M})=0.0001773$ 26 $\alpha(\text{N})=3.90\times 10^{-5}$ 6; $\alpha(\text{O})=6.37\times 10^{-6}$ 9; $\alpha(\text{P})=5.07\times 10^{-7}$ 8
		831.46 20	100.0 22	0.0	7/2(+)	M1+E2	0.025 11	0.01742 24	$\alpha(\text{K})=0.01497$ 21; $\alpha(\text{L})=0.001948$ 27; $\alpha(\text{M})=0.000404$ 6 $\alpha(\text{N})=8.87\times 10^{-5}$ 12; $\alpha(\text{O})=1.448\times 10^{-5}$ 20; $\alpha(\text{P})=1.147\times 10^{-6}$ 16
		281.60 21	2.43 9	647.864	3/2(+)				
		349.28 20	6.73 18	580.11	1/2(+)				
		462.06 20	100.0 18	467.281	3/2(+)				
625.08 20	68.1 18	304.190	5/2(+)	M1+E2	0.51 1				
738.95 22	86.7 18	190.329	5/2(+)	M1+E2	0.75 5	0.00489 9	$\alpha(\text{K})=0.00419$ 8; $\alpha(\text{L})=0.000550$ 9;		

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. #	$\delta^{\ddagger\#}$	α^\dagger	Comments
									$\alpha(\text{M})=0.0001140$ 19 $\alpha(\text{N})=2.50\times 10^{-5}$ 4; $\alpha(\text{O})=4.07\times 10^{-6}$ 7; $\alpha(\text{P})=3.15\times 10^{-7}$ 6
929.38	5/2(+),3/2(+)	929.48 24	14.2 3	0.0	7/2(+)				
991.93	3/2(-)	160.51 23	26.7 15	831.62	3/2(+),5/2(+)				
		165.87 25	20.7 11	826.37	5/2(+),3/2(+)				
		687.42 21	100 3	304.190	5/2(+)	(E1)		1.69×10^{-3} 2	$\alpha(\text{K})=0.001464$ 21; $\alpha(\text{L})=0.0001834$ 26; $\alpha(\text{M})=3.78\times 10^{-5}$ 5 $\alpha(\text{N})=8.28\times 10^{-6}$ 12; $\alpha(\text{O})=1.346\times 10^{-6}$ 19; $\alpha(\text{P})=1.044\times 10^{-7}$ 15
		801.47 22	97 3	190.329	5/2(+)	(E1)		1.24×10^{-3} 2	$\alpha(\text{K})=0.001068$ 15; $\alpha(\text{L})=0.0001330$ 19; $\alpha(\text{M})=2.74\times 10^{-5}$ 4 $\alpha(\text{N})=6.01\times 10^{-6}$ 8; $\alpha(\text{O})=9.78\times 10^{-7}$ 14; $\alpha(\text{P})=7.64\times 10^{-8}$ 11
1039.43	5/2(+),3/2(+)	213.28 24	5.8 8	826.37	5/2(+),3/2(+)				
		353.94 24	4.2 3	685.35	3/2(+),5/2(+)				
		572.10 21	100 3	467.281	3/2(+)	M1(+E2)	0.01 2	0.01024 14	$\alpha(\text{K})=0.00881$ 12; $\alpha(\text{L})=0.001138$ 16; $\alpha(\text{M})=0.0002355$ 33 $\alpha(\text{N})=5.18\times 10^{-5}$ 7; $\alpha(\text{O})=8.46\times 10^{-6}$ 12; $\alpha(\text{P})=6.73\times 10^{-7}$ 9
		735.07 21	2.9 3	304.190	5/2(+)				
		1039.48 23	24.8 7	0.0	7/2(+)				
1066.51	3/2(-)	235.01 22	1.40 7	831.62	3/2(+),5/2(+)				
		418.60 21	1.81 7	647.864	3/2(+)				
		486.35 22	2.08 8	580.11	1/2(+)				
		599.14 22	7.77 22	467.281	3/2(+)				
		762.23 21	5.69 18	304.190	5/2(+)	(E1)		1.37×10^{-3} 2	$\alpha(\text{K})=0.001182$ 17; $\alpha(\text{L})=0.0001475$ 21; $\alpha(\text{M})=3.04\times 10^{-5}$ 4 $\alpha(\text{N})=6.66\times 10^{-6}$ 9; $\alpha(\text{O})=1.084\times 10^{-6}$ 15; $\alpha(\text{P})=8.45\times 10^{-8}$ 12
		876.09 20	100 3	190.329	5/2(+)	(E1)		1.04×10^{-3} 1	$\alpha(\text{K})=0.000895$ 13; $\alpha(\text{L})=0.0001112$ 16; $\alpha(\text{M})=2.288\times 10^{-5}$ 32 $\alpha(\text{N})=5.02\times 10^{-6}$ 7; $\alpha(\text{O})=8.17\times 10^{-7}$ 11; $\alpha(\text{P})=6.42\times 10^{-8}$ 9
1171.93	1/2(+)	242.67 21	11.0 5	929.38	5/2(+),3/2(+)				
		523.98 20	64.3 19	647.864	3/2(+)	M1+E2	-0.6 2	0.0118 5	$\alpha(\text{K})=0.0101$ 4; $\alpha(\text{L})=0.00135$ 4; $\alpha(\text{M})=0.000280$ 8 $\alpha(\text{N})=6.14\times 10^{-5}$ 17; $\alpha(\text{O})=9.96\times 10^{-6}$ 31; $\alpha(\text{P})=7.6\times 10^{-7}$ 4

Adopted Levels, Gammas (continued) $\gamma(^{141}\text{La})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	$\delta^{\ddagger\#}$	α^\dagger	Comments
1171.93	1/2 ⁽⁺⁾	704.59 21	46.8 13	467.281	3/2 ⁽⁺⁾	M1+E2	-0.38 2	0.00593 9	$\alpha(\text{K})=0.00510$ 7; $\alpha(\text{L})=0.000660$ 9; $\alpha(\text{M})=0.0001365$ 20 $\alpha(\text{N})=3.00\times 10^{-5}$ 4; $\alpha(\text{O})=4.89\times 10^{-6}$ 7; $\alpha(\text{P})=3.86\times 10^{-7}$ 6
		867.66 21	20.3 6	304.190	5/2 ⁽⁺⁾	E2		0.00261 4	$\alpha(\text{K})=0.002232$ 31; $\alpha(\text{L})=0.000302$ 4; $\alpha(\text{M})=6.28\times 10^{-5}$ 9 $\alpha(\text{N})=1.376\times 10^{-5}$ 19; $\alpha(\text{O})=2.216\times 10^{-6}$ 31; $\alpha(\text{P})=1.629\times 10^{-7}$ 23
		981.52 20	100 3	190.329	5/2 ⁽⁺⁾	E2		1.99×10^{-3} 3	$\alpha(\text{K})=0.001704$ 24; $\alpha(\text{L})=0.0002266$ 32; $\alpha(\text{M})=4.70\times 10^{-5}$ 7 $\alpha(\text{N})=1.030\times 10^{-5}$ 14; $\alpha(\text{O})=1.664\times 10^{-6}$ 23; $\alpha(\text{P})=1.247\times 10^{-7}$ 17
1188.90		259.53 20	7.3 5	929.38	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾				
		608.71 20	100 3	580.11	1/2 ⁽⁺⁾				
1426.31	3/2 ⁽⁻⁾	254.45 20	8.6 8	1171.93	1/2 ⁽⁺⁾				
		359.82 20	10.4 8	1066.51	3/2 ⁽⁻⁾				
		496.87 20	27.1 19	929.38	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾				
		594.63 20	28.3 15	831.62	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾				
		741.06 24	13.4 8	685.35	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾				
		778.36 21	90 3	647.864	3/2 ⁽⁺⁾				
		846.21 23	52 8	580.11	1/2 ⁽⁺⁾				
		959.05 23	33.1 19	467.281	3/2 ⁽⁺⁾				
		1122.13 20	13.0 11	304.190	5/2 ⁽⁺⁾				
		1235.96 20	100 4	190.329	5/2 ⁽⁺⁾	(E1)		5.91×10^{-4} 8	$\alpha(\text{K})=0.000471$ 7; $\alpha(\text{L})=5.79\times 10^{-5}$ 8; $\alpha(\text{M})=1.190\times 10^{-5}$ 17 $\alpha(\text{N})=2.61\times 10^{-6}$ 4; $\alpha(\text{O})=4.27\times 10^{-7}$ 6; $\alpha(\text{P})=3.39\times 10^{-8}$ 5; $\alpha(\text{IPF})=4.66\times 10^{-5}$ 7
1501.51	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾	462.23 22	0.84 3	1039.43	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾				
		509.63 20	1.72 7	991.93	3/2 ⁽⁻⁾				$\alpha(\text{N})=1.615\times 10^{-5}$ 23; $\alpha(\text{O})=2.61\times 10^{-6}$ 4; $\alpha(\text{P})=1.993\times 10^{-7}$ 28
		669.89 21	3.57 12	831.62	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾				
		675.26 21	5.67 21	826.37	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾				
		815.96 26	0.217 21	685.35	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾				
		1034.24 21	7.32 21	467.281	3/2 ⁽⁺⁾	M1+E2	0.8 5	0.00221 22	$\alpha(\text{K})=0.00191$ 19; $\alpha(\text{L})=0.000245$ 22; $\alpha(\text{M})=5.1\times 10^{-5}$ 5 $\alpha(\text{N})=1.11\times 10^{-5}$ 10; $\alpha(\text{O})=1.81\times 10^{-6}$ 17; $\alpha(\text{P})=1.43\times 10^{-7}$ 16
		1197.28 22	100.0 21	304.190	5/2 ⁽⁺⁾	M1+E2	-0.24 2	1.76×10^{-3} 3	$\alpha(\text{K})=0.001515$ 22; $\alpha(\text{L})=0.0001915$ 27;

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	$\delta^{\ddagger\#}$	α^\dagger	Comments
1501.51	5/2(+),3/2(+)	1310.73 20	17.2 4	190.329	5/2(+)	M1+E2	0.14 6	1.47×10 ⁻³ 2	$\alpha(\text{M})=3.95\times 10^{-5}$ 6 $\alpha(\text{N})=8.69\times 10^{-6}$ 12; $\alpha(\text{O})=1.422\times 10^{-6}$ 20; $\alpha(\text{P})=1.143\times 10^{-7}$ 16; $\alpha(\text{IPF})=5.76\times 10^{-6}$ 8 $\alpha(\text{K})=0.001247$ 18; $\alpha(\text{L})=0.0001570$ 23; $\alpha(\text{M})=3.24\times 10^{-5}$ 5 $\alpha(\text{N})=7.13\times 10^{-6}$ 11; $\alpha(\text{O})=1.167\times 10^{-6}$ 17; $\alpha(\text{P})=9.40\times 10^{-8}$ 14; $\alpha(\text{IPF})=2.326\times 10^{-5}$ 33
1547.62	1/2(+)	1501.79 26 721.2 3 1080.32 28 1357.33 22	7.36 18 16.7 17 8.0 7 100 4	0.0 826.37 467.281 190.329	7/2(+) 5/2(+),3/2(+) 3/2(+) 5/2(+)	E2		1.05×10 ⁻³ 2	$\alpha(\text{K})=0.000876$ 12; $\alpha(\text{L})=0.0001122$ 16; $\alpha(\text{M})=2.317\times 10^{-5}$ 32 $\alpha(\text{N})=5.09\times 10^{-6}$ 7; $\alpha(\text{O})=8.27\times 10^{-7}$ 12; $\alpha(\text{P})=6.43\times 10^{-8}$ 9; $\alpha(\text{IPF})=3.43\times 10^{-5}$ 5
1551.39		1361.32 20	100	190.329	5/2(+)				
1565.94		880.58 21	100	685.35	3/2(+),5/2(+)				
1605.47		773.83 29 957.61 26 1301.29 22	30.2 24 18.3 18 100 4	831.62 647.864 304.190	3/2(+),5/2(+) 3/2(+) 5/2(+)				
1628.11	3/2(-)	456.48 22 561.48 21	8.5 4 11.0 4	1171.93 1066.51	1/2(+) 3/2(-)	M1+E2	-0.8 5	0.0095 10	$\alpha(\text{K})=0.0081$ 9; $\alpha(\text{L})=0.00110$ 8; $\alpha(\text{M})=0.000228$ 15 $\alpha(\text{N})=4.99\times 10^{-5}$ 35; $\alpha(\text{O})=8.1\times 10^{-6}$ 6; $\alpha(\text{P})=6.1\times 10^{-7}$ 8
		588.81 22 698.61 21	3.11 16 37.1 12	1039.43 929.38	5/2(+),3/2(+) 5/2(+),3/2(+)	(E1)		1.64×10 ⁻³ 2	$\alpha(\text{K})=0.001415$ 20; $\alpha(\text{L})=0.0001772$ 25; $\alpha(\text{M})=3.65\times 10^{-5}$ 5 $\alpha(\text{N})=8.00\times 10^{-6}$ 11; $\alpha(\text{O})=1.300\times 10^{-6}$ 18; $\alpha(\text{P})=1.010\times 10^{-7}$ 14
		796.36 25 980.16 22 1160.72 21	2.59 16 6.5 3 100.0 24	831.62 647.864 467.281	3/2(+),5/2(+) 3/2(+) 3/2(+)	(E1)		6.23×10 ⁻⁴ 9	$\alpha(\text{K})=0.000528$ 7; $\alpha(\text{L})=6.49\times 10^{-5}$ 9; $\alpha(\text{M})=1.335\times 10^{-5}$ 19 $\alpha(\text{N})=2.93\times 10^{-6}$ 4; $\alpha(\text{O})=4.78\times 10^{-7}$ 7; $\alpha(\text{P})=3.80\times 10^{-8}$ 5; $\alpha(\text{IPF})=1.409\times 10^{-5}$ 21
		1323.92 20	82.1 20	304.190	5/2(+)	(E1)		5.76×10 ⁻⁴ 8	$\alpha(\text{K})=0.000418$ 6; $\alpha(\text{L})=5.12\times 10^{-5}$ 7;

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	$\delta^{\#\#}$	α^\dagger	Comments
									$\alpha(\text{M})=1.052\times 10^{-5}$ 15 $\alpha(\text{N})=2.311\times 10^{-6}$ 32; $\alpha(\text{O})=3.77\times 10^{-7}$ 5; $\alpha(\text{P})=3.01\times 10^{-8}$ 4; $\alpha(\text{IPF})=9.38\times 10^{-5}$ 13
1628.11	$3/2^{(-)}$	1437.75 21	11.6 4	190.329	$5/2^{(+)}$	(E1)		5.90×10^{-4} 8	$\alpha(\text{K})=0.000362$ 5; $\alpha(\text{L})=4.43\times 10^{-5}$ 6; $\alpha(\text{M})=9.10\times 10^{-6}$ 13 $\alpha(\text{N})=2.000\times 10^{-6}$ 28; $\alpha(\text{O})=3.27\times 10^{-7}$ 5; $\alpha(\text{P})=2.61\times 10^{-8}$ 4; $\alpha(\text{IPF})=0.0001719$ 24
1716.43	$1/2^{(+)}, 3/2, 5/2^{(+)}$	884.83 20 1136.24 24 1526.14 20	100 6 85 5 37 3	831.62 580.11 190.329	$3/2^{(+)}, 5/2^{(+)}$ $1/2^{(+)}$ $5/2^{(+)}$				
1740.67	$5/2^{(+)}, 3/2^{(+)}$	748.72 20 909.01 21 1055.23 23 1092.76 22 1273.43 21	3.31 21 17.7 7 8.1 4 10.8 5 76.6 21	991.93 831.62 685.35 647.864 467.281	$3/2^{(-)}$ $3/2^{(+)}, 5/2^{(+)}$ $3/2^{(+)}, 5/2^{(+)}$ $3/2^{(+)}$ $3/2^{(+)}$	M1(+E2)	0.02 2	1.57×10^{-3} 2	$\alpha(\text{K})=0.001337$ 19; $\alpha(\text{L})=0.0001685$ 24; $\alpha(\text{M})=3.48\times 10^{-5}$ 5 $\alpha(\text{N})=7.65\times 10^{-6}$ 11; $\alpha(\text{O})=1.252\times 10^{-6}$ 18; $\alpha(\text{P})=1.009\times 10^{-7}$ 14; $\alpha(\text{IPF})=1.643\times 10^{-5}$ 23
		1436.47 20	100.0 21	304.190	$5/2^{(+)}$	M1+E2	-0.24 6	1.22×10^{-3} 2	$\alpha(\text{K})=0.001008$ 16; $\alpha(\text{L})=0.0001267$ 19; $\alpha(\text{M})=2.61\times 10^{-5}$ 4 $\alpha(\text{N})=5.75\times 10^{-6}$ 9; $\alpha(\text{O})=9.41\times 10^{-7}$ 15; $\alpha(\text{P})=7.58\times 10^{-8}$ 12; $\alpha(\text{IPF})=5.70\times 10^{-5}$ 8
		1550.45 21	39.7 13	190.329	$5/2^{(+)}$	M1+E2	-1.3 5	0.00096 5	$\alpha(\text{K})=0.00075$ 5; $\alpha(\text{L})=9.4\times 10^{-5}$ 5; $\alpha(\text{M})=1.94\times 10^{-5}$ 11 $\alpha(\text{N})=4.26\times 10^{-6}$ 25; $\alpha(\text{O})=7.0\times 10^{-7}$ 4; $\alpha(\text{P})=5.5\times 10^{-8}$ 4; $\alpha(\text{IPF})=9.64\times 10^{-5}$ 14
1844.21	$3/2^{(-)}$	1740.67 20 655.21 23 804.60 22 1012.48 21 1264.69 20	42.7 12 2.11 12 5.8 5 15.7 7 100.0 24	0.0 1188.90 1039.43 831.62 580.11	$7/2^{(+)}$ $5/2^{(+)}, 3/2^{(+)}$ $3/2^{(+)}, 5/2^{(+)}$ $1/2^{(+)}$				

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)																	
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	$\delta^{\ddagger\#}$	α^\ddagger	Comments								
1844.21	3/2 ⁽⁻⁾	1376.86 21	90.1 24	467.281	3/2 ⁽⁺⁾	(E1)		6.64×10 ⁻⁴ 9	$\alpha(\text{K})=0.000287$ 4; $\alpha(\text{L})=3.49\times 10^{-5}$ 5; $\alpha(\text{M})=7.18\times 10^{-6}$ 10 $\alpha(\text{N})=1.577\times 10^{-6}$ 22; $\alpha(\text{O})=2.58\times 10^{-7}$ 4; $\alpha(\text{P})=2.067\times 10^{-8}$ 29; $\alpha(\text{IPF})=0.000333$ 5								
		1539.80 23	5.50 24	304.190	5/2 ⁽⁺⁾												
		1653.83 20	83.0 18	190.329	5/2 ⁽⁺⁾												
1872.54	1/2 ⁽⁺⁾	321.39 20	0.76 4	1551.39		M1+E2	-0.25 2	1.27×10 ⁻³ 2	$\alpha(\text{K})=0.001057$ 15; $\alpha(\text{L})=0.0001329$ 19; $\alpha(\text{M})=2.74\times 10^{-5}$ 4 $\alpha(\text{N})=6.03\times 10^{-6}$ 9; $\alpha(\text{O})=9.87\times 10^{-7}$ 14; $\alpha(\text{P})=7.95\times 10^{-8}$ 11; $\alpha(\text{IPF})=4.74\times 10^{-5}$ 7								
		700.50 22	9.1 4	1171.93	1/2 ⁽⁺⁾												
		805.91 21	6.4 3	1066.51	3/2 ⁽⁻⁾												
		833.06 21	11.96 19	1039.43	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾												
		880.63 21	14.3 6	991.93	3/2 ⁽⁻⁾												
		943.07 20	63.0 19	929.38	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾												
		1046.18 21	26.4 11	826.37	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾												
		1187.35 26	1.43 11	685.35	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾												
		1224.60 20	33.2 8	647.864	3/2 ⁽⁺⁾												
		1405.25 20	21.3 7	467.281	3/2 ⁽⁺⁾												
1568.41 21		17.6 5	304.190	5/2 ⁽⁺⁾	E2			8.70×10 ⁻⁴ 12	$\alpha(\text{K})=0.000662$ 9; $\alpha(\text{L})=8.38\times 10^{-5}$ 12; $\alpha(\text{M})=1.729\times 10^{-5}$ 24 $\alpha(\text{N})=3.80\times 10^{-6}$ 5; $\alpha(\text{O})=6.18\times 10^{-7}$ 9; $\alpha(\text{P})=4.86\times 10^{-8}$ 7; $\alpha(\text{IPF})=0.0001027$ 14								
										1682.19 20	100 3	190.329	5/2 ⁽⁺⁾	E2		8.20×10 ⁻⁴ 11	$\alpha(\text{K})=0.000580$ 8; $\alpha(\text{L})=7.30\times 10^{-5}$ 10; $\alpha(\text{M})=1.505\times 10^{-5}$ 21 $\alpha(\text{N})=3.31\times 10^{-6}$ 5; $\alpha(\text{O})=5.39\times 10^{-7}$ 8; $\alpha(\text{P})=4.26\times 10^{-8}$ 6; $\alpha(\text{IPF})=0.0001486$ 21
996.51 22	20.7 9	929.38	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾														
1094.36 21	25.7 10	831.62	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾														
1277.98 20	100.0 21	647.864	3/2 ⁽⁺⁾														
1345.83 21	25.1 9	580.11	1/2 ⁽⁺⁾	(E1)			5.95×10 ⁻⁴ 8	$\alpha(\text{K})=0.000354$ 5; $\alpha(\text{L})=4.32\times 10^{-5}$ 6; $\alpha(\text{M})=8.88\times 10^{-6}$ 12									
1458.48 21	99 3	467.281	3/2 ⁽⁺⁾														

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	α^\dagger	Comments
								$\alpha(\text{K})=0.000354$ 5; $\alpha(\text{L})=4.32\times 10^{-5}$ 6; $\alpha(\text{M})=8.88\times 10^{-6}$ 12 $\alpha(\text{N})=1.952\times 10^{-6}$ 27; $\alpha(\text{O})=3.19\times 10^{-7}$ 4; $\alpha(\text{P})=2.55\times 10^{-8}$ 4; $\alpha(\text{IPF})=0.0001870$ 26
1925.95	3/2 ⁽⁻⁾	1621.74 22 1735.69 21	8.9 4 24.2 9	304.190 190.329	5/2 ⁽⁺⁾ 5/2 ⁽⁺⁾	(E1)	7.01×10^{-4} 10	$\alpha(\text{K})=0.000265$ 4; $\alpha(\text{L})=3.22\times 10^{-5}$ 5; $\alpha(\text{M})=6.62\times 10^{-6}$ 9 $\alpha(\text{N})=1.455\times 10^{-6}$ 20; $\alpha(\text{O})=2.378\times 10^{-7}$ 33; $\alpha(\text{P})=1.910\times 10^{-8}$ 27; $\alpha(\text{IPF})=0.000395$ 6
2180.32	3/2 ⁽⁻⁾	1008.45 24 1532.45 25 1600.19 24 1712.98 21	23.9 16 13.1 8 29.1 16 100 3	1171.93 647.864 580.11 467.281	1/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ 1/2 ⁽⁺⁾ 3/2 ⁽⁺⁾	(E1)	6.90×10^{-4} 10	$\alpha(\text{K})=0.000271$ 4; $\alpha(\text{L})=3.30\times 10^{-5}$ 5; $\alpha(\text{M})=6.77\times 10^{-6}$ 9 $\alpha(\text{N})=1.487\times 10^{-6}$ 21; $\alpha(\text{O})=2.431\times 10^{-7}$ 34; $\alpha(\text{P})=1.951\times 10^{-8}$ 27; $\alpha(\text{IPF})=0.000378$ 5
		1876.12 24 1989.97 21	15.4 13 97 3	304.190 190.329	5/2 ⁽⁺⁾ 5/2 ⁽⁺⁾	(E1)	8.29×10^{-4} 12	$\alpha(\text{K})=0.0002128$ 30; $\alpha(\text{L})=2.58\times 10^{-5}$ 4; $\alpha(\text{M})=5.30\times 10^{-6}$ 7 $\alpha(\text{N})=1.165\times 10^{-6}$ 16; $\alpha(\text{O})=1.905\times 10^{-7}$ 27; $\alpha(\text{P})=1.534\times 10^{-8}$ 21; $\alpha(\text{IPF})=0.000583$ 8
2216.51	1/2 ⁽⁺⁾	1176.91 20 1385.03 25 1390.35 26 1568.7 2 1748.73 22 1912.40 21	9.60 25 5.5 4 14.2 13 17.7 8 1.50 25 37.3 13	1039.43 831.62 826.37 647.864 467.281 304.190	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾ 5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ 5/2 ⁽⁺⁾	E2	7.81×10^{-4} 11	$\alpha(\text{K})=0.000457$ 6; $\alpha(\text{L})=5.70\times 10^{-5}$ 8; $\alpha(\text{M})=1.175\times 10^{-5}$ 16 $\alpha(\text{N})=2.58\times 10^{-6}$ 4; $\alpha(\text{O})=4.21\times 10^{-7}$ 6; $\alpha(\text{P})=3.35\times 10^{-8}$ 5; $\alpha(\text{IPF})=0.0002524$ 35
		2026.38 21	100 3	190.329	5/2 ⁽⁺⁾	E2	7.82×10^{-4} 11	$\alpha(\text{K})=0.000411$ 6; $\alpha(\text{L})=5.11\times 10^{-5}$ 7; $\alpha(\text{M})=1.053\times 10^{-5}$ 15 $\alpha(\text{N})=2.314\times 10^{-6}$ 32; $\alpha(\text{O})=3.78\times 10^{-7}$ 5; $\alpha(\text{P})=3.01\times 10^{-8}$ 4; $\alpha(\text{IPF})=0.000307$ 4
2327.16	3/2 ⁽⁻⁾	1155.07 20 1494.95 32 1679.28 24 1859.89 22 2023.39 22 2136.81 20	31.5 22 9.4 17 38.1 22 92 4 3.3 6 100 4	1171.93 831.62 647.864 467.281 304.190 190.329	1/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ 3/2 ⁽⁺⁾ 5/2 ⁽⁺⁾ 5/2 ⁽⁺⁾	(E1)	9.05×10^{-4} 13	$\alpha(\text{K})=0.0001904$ 27; $\alpha(\text{L})=2.306\times 10^{-5}$ 32; $\alpha(\text{M})=4.73\times 10^{-6}$ 7 $\alpha(\text{N})=1.041\times 10^{-6}$ 15; $\alpha(\text{O})=1.702\times 10^{-7}$ 24; $\alpha(\text{P})=1.373\times 10^{-8}$ 19; $\alpha(\text{IPF})=0.000686$ 10
2345.2		2041.03 27	100	304.190	5/2 ⁽⁺⁾			

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)																																																																																																																						
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.#	$\delta^{\ddagger\#}$	α^\dagger	Comments																																																																																																													
2375.79	$3/2^{(-)}, 1/2^{(-)}$	449.7 2	5.7 5	1925.95	$3/2^{(-)}$	M1+E2	0.6 3	0.00138 7	$\alpha(\text{K})=0.00117 6; \alpha(\text{L})=0.000148 7;$ $\alpha(\text{M})=3.06\times 10^{-5} 15$ $\alpha(\text{N})=6.73\times 10^{-6} 32; \alpha(\text{O})=1.10\times 10^{-6} 5;$ $\alpha(\text{P})=8.8\times 10^{-8} 5; \alpha(\text{IPF})=2.304\times 10^{-5} 33$																																																																																																													
		1309.23 21	49.3 17	1066.51	$3/2^{(-)}$					2385.62	$3/2^{(-)}$	1446.48 20	20.0 11	929.38	$5/2^{(+)}, 3/2^{(+)}$	(E1)		$9.36\times 10^{-4} 13$	$\alpha(\text{K})=0.0001826 26; \alpha(\text{L})=2.210\times 10^{-5} 31;$ $\alpha(\text{M})=4.54\times 10^{-6} 6$ $\alpha(\text{N})=9.97\times 10^{-7} 14; \alpha(\text{O})=1.632\times 10^{-7} 23;$ $\alpha(\text{P})=1.317\times 10^{-8} 18; \alpha(\text{IPF})=0.000725 10$	1727.99 20	18.4 9	647.864	$3/2^{(+)}$	1795.71 21	100 3	580.11	$1/2^{(+)}$	1213.57 20	23.3 19	1171.93	$1/2^{(+)}$	1456.21 20	100 5	929.38	$5/2^{(+)}, 3/2^{(+)}$	1805.48 37	2.8 3	580.11	$1/2^{(+)}$	1918.38 20	49.8 23	467.281	$3/2^{(+)}$	2081.35 22	17.2 14	304.190	$5/2^{(+)}$	2195.4 2	83 33	190.329	$5/2^{(+)}$	2468.69	$5/2^{(+)}, 3/2^{(+)}$	542.5 2	21.4 14	1925.95	$3/2^{(-)}$	M1+E2	-0.34 18	$8.68\times 10^{-4} 15$	$\alpha(\text{K})=0.000414 8; \alpha(\text{L})=5.15\times 10^{-5} 10;$ $\alpha(\text{M})=1.060\times 10^{-5} 22$ $\alpha(\text{N})=2.33\times 10^{-6} 5; \alpha(\text{O})=3.82\times 10^{-7} 8;$ $\alpha(\text{P})=3.09\times 10^{-8} 7; \alpha(\text{IPF})=0.000389 6$	840.5 2	24.6 9	1628.11	$3/2^{(-)}$	917.32 20	12.6 7	1551.39		967.05 20	12.2 7	1501.51	$5/2^{(+)}, 3/2^{(+)}$	1296.72 21	6.1 7	1171.93	$1/2^{(+)}$	1476.62 21	5.6 7	991.93	$3/2^{(-)}$	1539.40 20	17.8 14	929.38	$5/2^{(+)}, 3/2^{(+)}$	1642.39 25	26.1 18	826.37	$5/2^{(+)}, 3/2^{(+)}$	1820.86 20	37.8 16	647.864	$3/2^{(+)}$	2001.8 5	1.35 23	467.281	$3/2^{(+)}$	2164.51 21	82.4 27	304.190	$5/2^{(+)}$	2485.7		2278.46 20	42.3 16	190.329	$5/2^{(+)}$					2468.86 21	100.0 25	0.0	$7/2^{(+)}$	1654.21 38	100 14	831.62
2385.62	$3/2^{(-)}$	1446.48 20	20.0 11	929.38	$5/2^{(+)}, 3/2^{(+)}$	(E1)		$9.36\times 10^{-4} 13$				$\alpha(\text{K})=0.0001826 26; \alpha(\text{L})=2.210\times 10^{-5} 31;$ $\alpha(\text{M})=4.54\times 10^{-6} 6$ $\alpha(\text{N})=9.97\times 10^{-7} 14; \alpha(\text{O})=1.632\times 10^{-7} 23;$ $\alpha(\text{P})=1.317\times 10^{-8} 18; \alpha(\text{IPF})=0.000725 10$																																																																																																										
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		1918.38 20	49.8 23	467.281	$3/2^{(+)}$																																																																																																																	
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2468.69	$5/2^{(+)}, 3/2^{(+)}$	542.5 2	21.4 14	1925.95	$3/2^{(-)}$	M1+E2	-0.34 18	$8.68\times 10^{-4} 15$	$\alpha(\text{K})=0.000414 8; \alpha(\text{L})=5.15\times 10^{-5} 10;$ $\alpha(\text{M})=1.060\times 10^{-5} 22$ $\alpha(\text{N})=2.33\times 10^{-6} 5; \alpha(\text{O})=3.82\times 10^{-7} 8;$ $\alpha(\text{P})=3.09\times 10^{-8} 7; \alpha(\text{IPF})=0.000389 6$																																																																																																													
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		2001.8 5	1.35 23	467.281	$3/2^{(+)}$																																																																																																																	
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		2485.7		2278.46 20	42.3 16				190.329	$5/2^{(+)}$																																																																																																												
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2181.32 36	21 7			304.190	$5/2^{(+)}$																																																																																																																	

Adopted Levels, Gammas (continued)

$\gamma(^{141}\text{La})$ (continued)

<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>
2700.32	1/2 ⁽⁺⁾ ,3/2,5/2 ⁽⁺⁾	1770.77 36	75 11	929.38	5/2 ⁽⁺⁾ ,3/2 ⁽⁺⁾
		1868.38 33	54 7	831.62	3/2 ⁽⁺⁾ ,5/2 ⁽⁺⁾
		2052.14 39	50 4	647.864	3/2 ⁽⁺⁾
		2120.04 29	100 7	580.11	1/2 ⁽⁺⁾
		2396.68 22	14 4	304.190	5/2 ⁽⁺⁾
		2509.49 35	43 4	190.329	5/2 ⁽⁺⁾
2772.40	1/2 ⁽⁺⁾ ,3/2,5/2	2124.4 4	24 3	647.864	3/2 ⁽⁺⁾
		2304.41 27	100 8	467.281	3/2 ⁽⁺⁾
		2468.68 22	11 3	304.190	5/2 ⁽⁺⁾
2808.4	1/2,3/2,5/2 ⁽⁺⁾	2160.9 4	50 8	647.864	3/2 ⁽⁺⁾
		2228.04 32	100 17	580.11	1/2 ⁽⁺⁾
2955.9	1/2 ⁽⁺⁾ ,3/2,5/2	2308.02 45	100 33	647.864	3/2 ⁽⁺⁾
		2651.7 5	100 33	304.190	5/2 ⁽⁺⁾
		2765.6 5	67 33	190.329	5/2 ⁽⁺⁾

[†] [Additional information 1.](#)

[‡] [Additional information 2.](#)

[#] From ¹⁴¹Ba β⁻ decay from measured γγ(θ) ([2022Ru06](#)), combined with measured α(K)exp's ([1979Pr01](#), [1970Be43](#)). [2022Ru06](#) adopted E2 for Q transitions (all stretched) and M1+E2 for D+Q transitions with significant Q mixing. For pure dipoles, [2022Ru06](#) adopted mostly E1 transitions, based on other theoretical or β decay arguments, which were adopted as tentative by the evaluator.

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

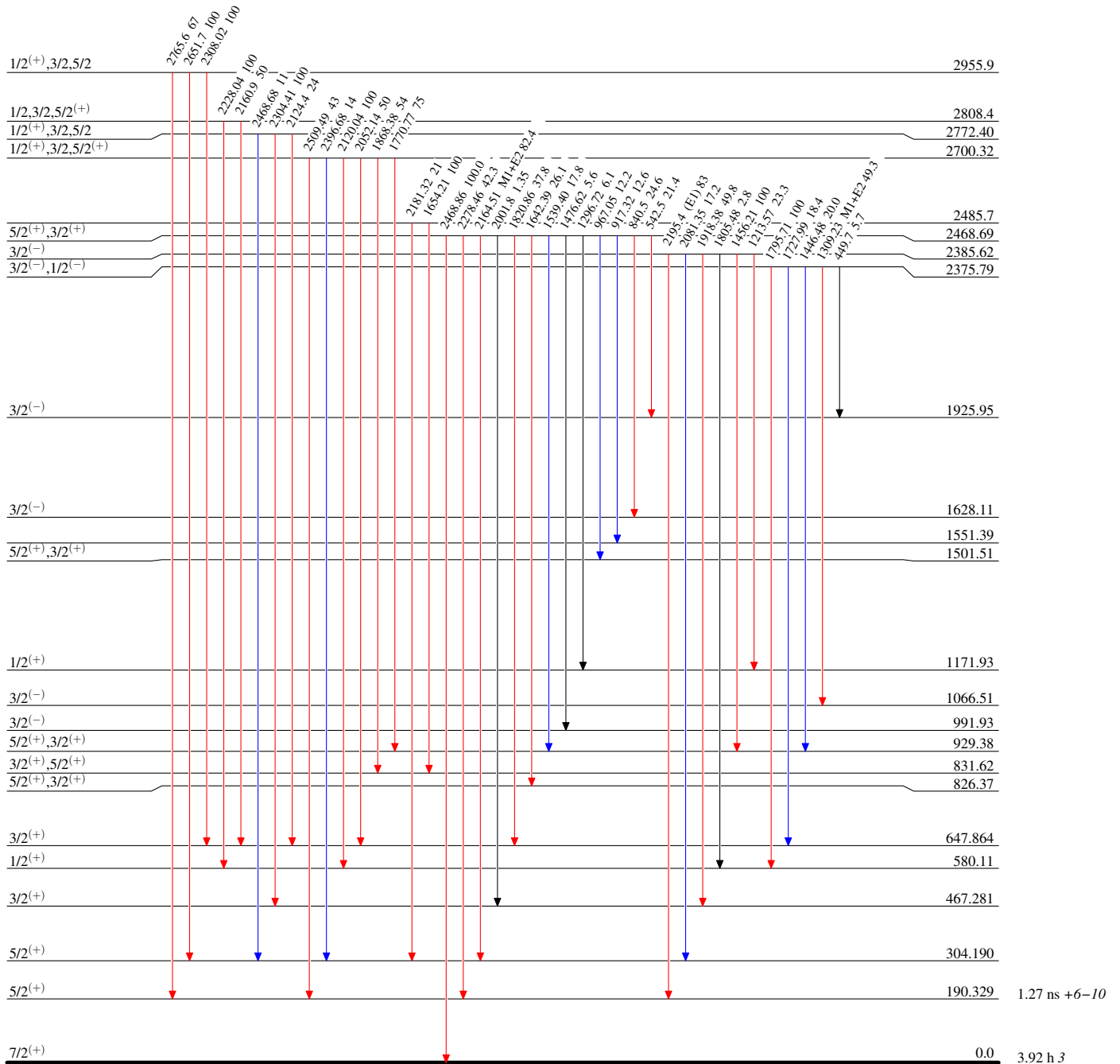
Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



¹⁴¹₅₇La₈₄

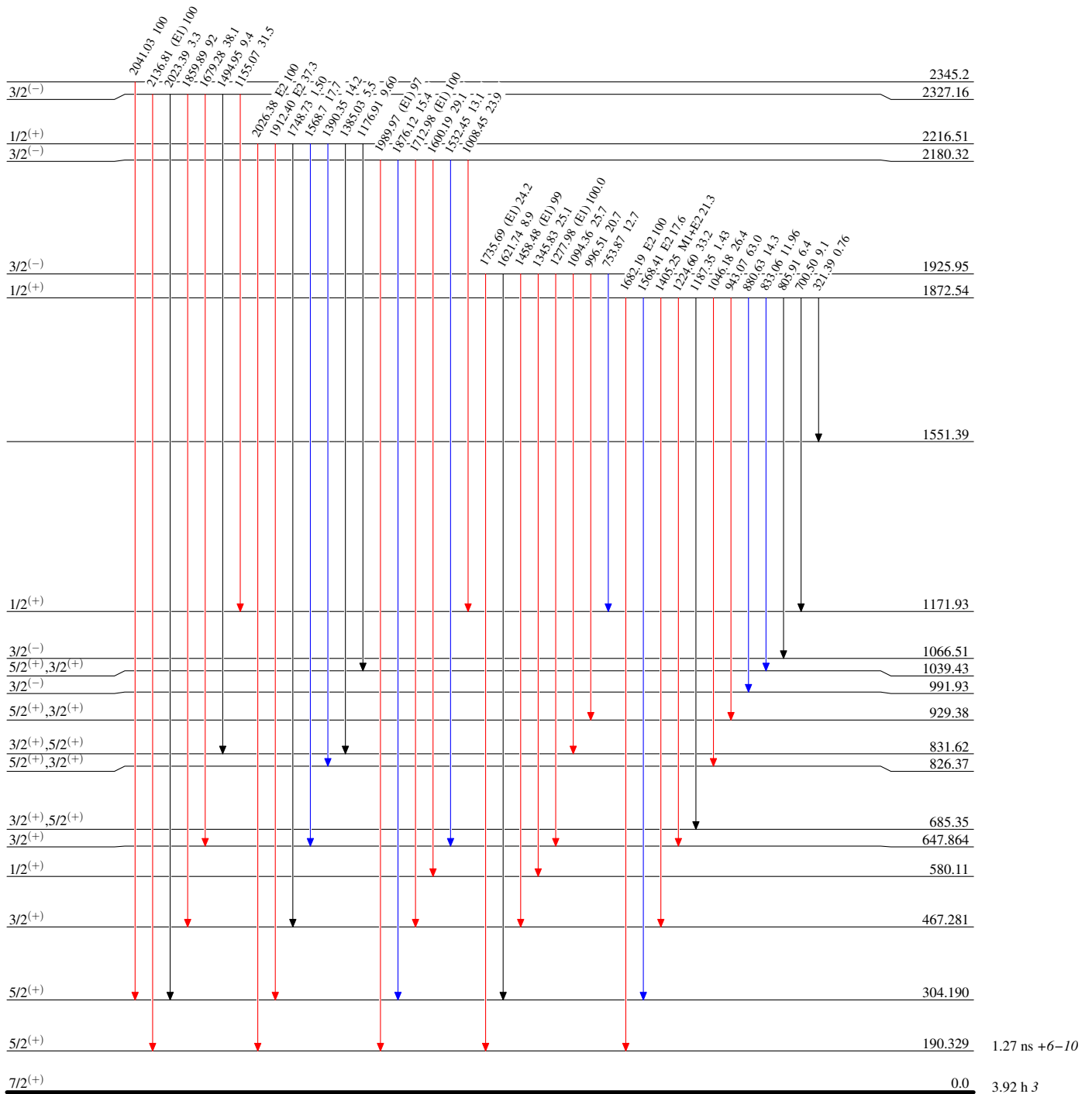
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



¹⁴¹₅₇La₈₄

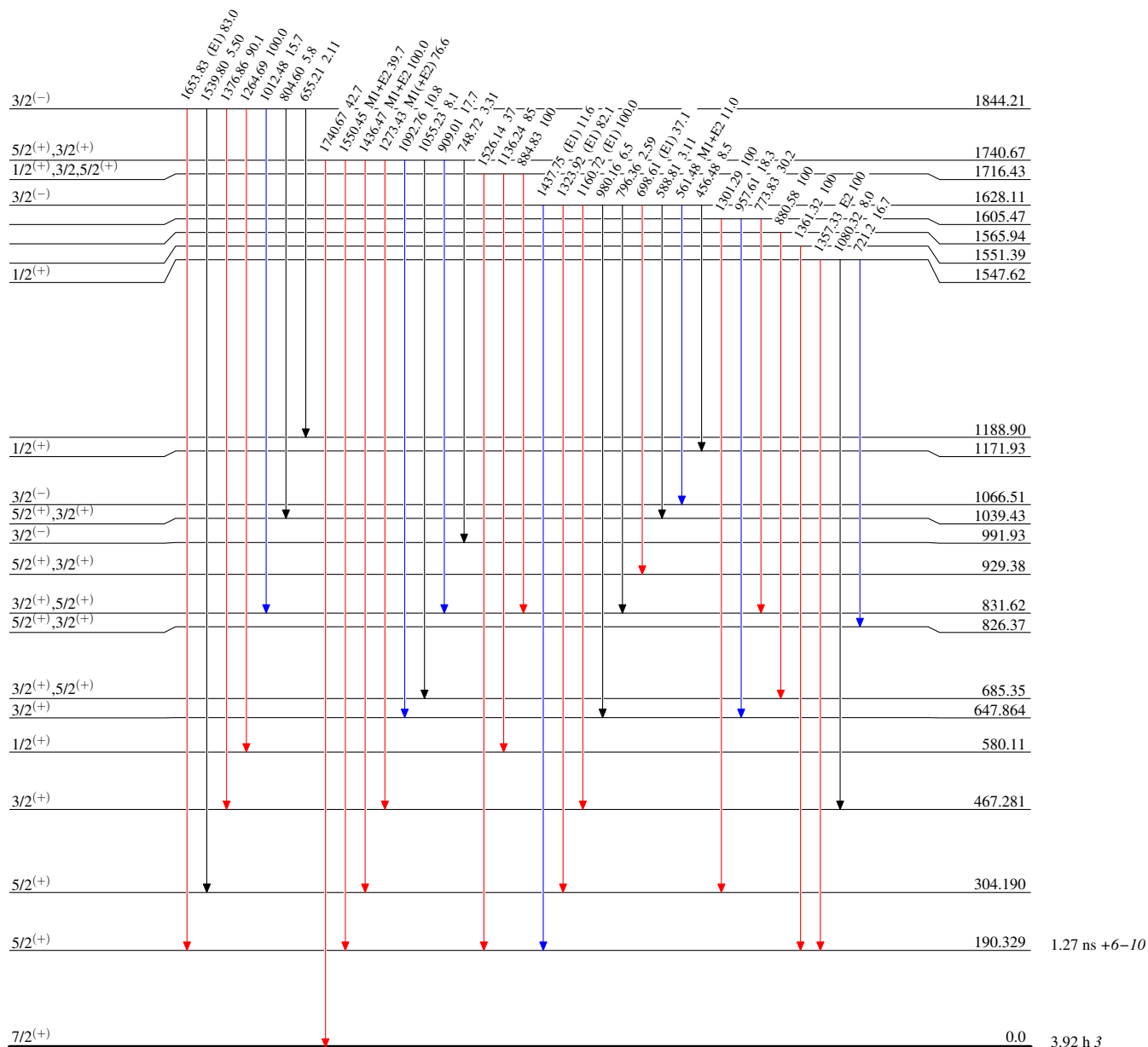
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



¹⁴¹₅₇La₈₄

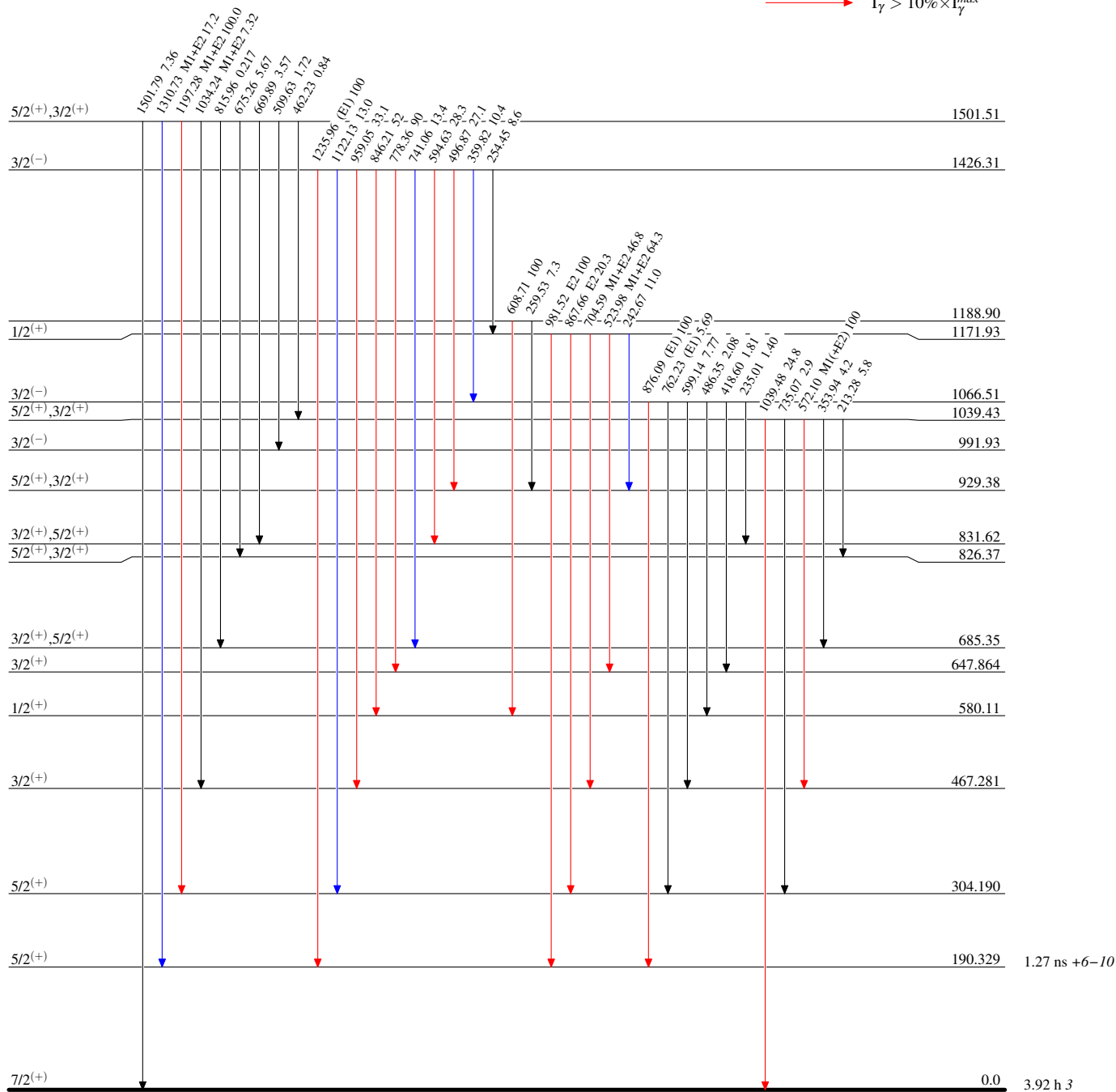
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}



¹⁴¹₅₇La₈₄

