Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 191,1 (2023)	22-Aug-2023

Q(β^-)=−4060 *50*; S(n)=9580 *50*; S(p)=3220 *40*; Q(α)=2780 *40* 2021Wa16
Q(ε)=3060 *40*, S(2n)=17230 *50*, S(2p)=9170 *40* (2021Wa16).
1998Ge13: hyperfine structure and isotope shift measurements.
Theoretical calculations for triaxial band structures in ^{167}Lu: 2020Ka05, 2020Ra01, 2018Ra21, 2017Ra25, 2016Ka23, 2012Ka22, 2012Li41, 2010Su27, 2009Ya18, 2008Ta14, 2006Ta11, 2004Be53, 2004Ha21, 2004Ma21, 1999Li39.
Other theory references for structure: 23 references retrieved from the NSR database are listed in this dataset as 'document' records.
Additional information 1.

^{167}Lu Levels

Nomenclature for quasiparticle orbitals (2015Ro27):
a: $\pi g_{7/2}$, 7/2[404],α=+1/2.
b: $\pi g_{7/2}$, 7/2[404],α=−1/2.
c: $\pi d_{3/2}$, 1/2[411],α=+1/2.
d: $\pi d_{3/2}$, 1/2[411],α=−1/2.
e: $\pi h_{11/2}$, 9/2[514],α=+1/2.
f: $\pi h_{11/2}$, 9/2[514],α=−1/2.
g: $\pi h_{9/2}$, 1/2[541],α=+1/2.
h: $\pi h_{9/2}$, 1/2[541],α=−1/2.
i: $\pi d_{5/2}$, 5/2[402],α=+1/2.
j: $\pi d_{5/2}$, 5/2[402],α=−1/2.
m: $\pi i_{13/2}$, 1/2[660],α=+1/2.
A: $\nu i_{13/2}$, 5/2[642],α=+1/2.
B: $\nu i_{13/2}$, 5/2[642],α=−1/2.
C: $\nu i_{13/2}$, 3/2[651],α=+1/2.
D: $\nu i_{13/2}$, 3/2[651],α=−1/2.
E: $\nu f_{7/2}$, 5/2[523],α=+1/2.
F: $\nu f_{7/2}$, 5/2[523],α=−1/2.
G: $\nu h_{9/2}$, 3/2[521],α=+1/2.
H: $\nu h_{9/2}$, 3/2[521],α=−1/2.
Band assignments are from 2015Ro27.

Cross Reference (XREF) Flags

A	^{167}Hf ε decay (2.05 min)	D	^{169}Tm(^{3}He,5nγ),(α,6nγ)
B	^{123}Sb(^{48}Ca,4nγ) E=203 MeV	E	^{170}Yb(p,4nγ)
C	^{123}Sb(^{48}Ca,4nγ) E=206 MeV		

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[&]	7/2$^+$	51.46 min *15*	ABCDE	%ε+%β^+=100 μ=+2.318 *4* (1998Ge13,2019StZV) Q=3.275 *24* (1998Ge13,2016St14,2021StZZ) δ<r^2>(^{170}Lu,^{167}Lu)=−0.269 fm^2 (1998Ge13); 10% systematic uncertainty. J$^\pi$: spin from atomic beam (1972Ek01). Parity from agreement between measured μ and that expected for configuration=π7/2[404], band assignment supported by π7/2[404] g.s. band structure in A=169-177, odd-A Lu nuclei. $T_{1/2}$: weighted average of 51.46 min *15* (2022Ma25, evaluators' weighted average of four measurements: 51.66 min *28*, 51.18 min *43*, 51.19 min *24*, and 51.54 min *15*

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Adopted Levels, Gammas (continued)

^{167}Lu Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	XREF	Comments
				from decay curves for 176.2-keV γ from the decay of ^{167}Yb, with the decays of ^{167}Lu and ^{167}Yb being in transient equilibrium, and using two reactions, each reaction at two beam energies); and 51.5 min *10* (1976Me06, from decay curve of 239γ, followed for 8 hours). Other measurements: 53 min (1972Ek01), 55 min *5* (1960Ba32,1960Ba30), 55 min (1960Bo29), 54 min (1960Bu27), 54 min (1959Ha09), 55 min *3* (1958Ar59). μ,Q: from collinear fast-beam laser spectroscopy (1998Ge13). Value of μ=+2.325 *4* in 1998Ge13 is re-evaluated by 2019StZV.
33.7[e] *4*	1/2$^+$	≥1 min	B DE	%ε+%β^+=?; %IT=? μ=−0.0996 *13* (1998Ge13,2019StZV) δ<r^2>(^{170}Lu,^{167}Lu)=−0.291 fm^2 (1998Ge13); 10% systematic uncertainty. J$^{\pi}$,μ: spin and μ from collinear fast beam laser spectroscopy (1998Ge13). Parity based on proximity of μ to −0.05 expected for π1/2[411] orbital, as compared to ≈+0.7 for the only other nearby π1/2[541]. Value of μ=−0.0999 *13* in 1998Ge13 is re-evaluated by 2019StZV. T$_{1/2}$: estimated by 1998Ge13, based on known rare-earth diffusion time from Ta spallation target and on their observation that J=1/2 line intensity (cf. J=7/2 g.s. line intensity) did not appear to have been reduced due to decay during diffusion out of the target.
48.6[f] *4*	3/2$^+$		BCDE	
67.1[i] *4*	(5/2$^+$)		BCDE	
136.3[r] *4*	(1/2$^-$)		BCDE	
140.0[@] *2*	9/2$^+$		ABCDE	
155.9[r] *4*	(5/2$^-$)		BCDE	
178.3[e] *4*	5/2$^+$		B	
184.5[j] *4*	(7/2$^+$)		BCDE	
218.4[f] *4*	7/2$^+$		BC	
258.7[s] *4*	(3/2$^-$)		B DE	
267.6[r] *4*	(9/2$^-$)		BCDE	
305.3[&] *2*	11/2$^+$		BCDE	
315.28 *9*	(7/2)$^-$		A	J$^{\pi}$: E1 γ to 7/2$^+$; tentative π7/2[523] bandhead assignment from B(E1)(315.2γ)/B(E1)(175.4γ)(exp)=2.9 *5*, compared to 3.5 from Alaga rule, where B(E1)=Iγ/Eγ^3.
329.5[i] *4*	(9/2$^+$)		BCDE	
331.9[m] *2*	(9/2$^-$)		BCDE	
432.8[e] *4*	9/2$^+$		B	
433.6[n] *2*	(11/2$^-$)		BCDE	
435.4[s] *4*	(7/2$^-$)		B DE	
479.9[r] *4*	(13/2$^-$)	81.3 ps *+73−81*	BCDE	T$_{1/2}$: from RDDS (2019Ro13), listed in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV. Transition quadrupole moment Q(t)=7.3 eb *7* (2019Ro13).
494.2[@] *2*	13/2$^+$		BCDE	
499.0[j] *4*	(11/2$^+$)		BCDE	
507.8[f] *4*	11/2$^+$		BC	
576.9[m] *2*	(13/2$^-$)		BCDE	
692.8[s] *4*	(11/2$^-$)		B DE	
693.9[i] *4*	(13/2$^+$)		BCDE	
704.2[&] *2*	15/2$^+$		BCDE	
744.09[n] *20*	(15/2$^-$)		BCDE	
783.7[e] *4*	13/2$^+$		B	
794.5[r] *4*	(17/2$^-$)	12.1 ps *+15−13*	BCDE	T$_{1/2}$: from RDDS (2019Ro13), listed in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV.

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Adopted Levels, Gammas (continued)

^{167}Lu Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	XREF	Comments
				Transition quadrupole moment Q(t)=6.9 eb *8* (2019Ro13).
887.3[f] *4*	15/2$^+$		BC	
916.2[j] *4*	(15/2$^+$)		BCDE	
934.2[@] *2*	17/2$^+$		BCDE	
947.7[m] *2*	(17/2$^-$)		BCDE	
1034.4[s] *4*	(15/2$^-$)		B DE	
1141.4[i] *4*	(17/2$^+$)		BC	
1159.4[n] *2*	(19/2$^-$)		BCDE	
1181.0[&] *2*	19/2$^+$		BCDE	
1205.3[r] *4*	(21/2$^-$)	3.19 ps *+56−28*	BCDE	$T_{1/2}$: from RDDS (2019Ro13), listed in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV. Transition quadrupole moment Q(t)=6.8 eb *+6−12* (2019Ro13).
1217.1[e] *4*	17/2$^+$		B	
1346.5[f] *4*	19/2$^+$		BC	
1406.6[j] *4*	(19/2$^+$)		BC	
1411.5[m] *2*	(21/2$^-$)		BCDE	
1444.4[@] *2*	21/2$^+$		BCDE	
1458.9[s] *4*	(19/2$^-$)		B DE	
1649.9[i] *4*	(21/2$^+$)		BC	
1655.8[n] *3*	(23/2$^-$)		BCDE	
1677.0[u] *3*	(17/2$^-$)		B	
1703.3[r] *4*	(25/2$^-$)	1.18 ps *+28−14*	BCDE	$T_{1/2}$: from RDDS (2019Ro13), listed in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV. Transition quadrupole moment Q(t)=6.8 eb *15* (2019Ro13).
1716.7[e] *4*	21/2$^+$		B	
1720.1[&] *2*	23/2$^+$		BCDE	
1789.1[v] *3*	(19/2$^-$)		B	
1856.7[f] *4*	23/2$^+$		BC	
1940.5[u] *2*	(21/2$^-$)		B	
1947.3[m] *3*	(25/2$^-$)		BCDE	
1954.7[j] *4*	(23/2$^+$)		BC	
1959.7[s] *4*	(23/2$^-$)		B	
1964.0 *8*	(21/2$^+$)		B	
2008.1[@] *3*	25/2$^+$		BCDE	
2100.3[v] *2*	(23/2$^-$)		B	
2165.0[t] *4*	(21/2$^-$)		B	
2187.1[i] *4*	(25/2$^+$)		BC	
2214.9[n] *3*	(27/2$^-$)		BCDE	
2260.7[e] *4*	25/2$^+$		B	
2278.0[r] *4*	(29/2$^-$)	<0.5 ps	BCDE	$T_{1/2}$: from RDDS (2019Ro13), listed in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV. Transition quadrupole moment Q(t)>7.1 eb.
2278.5[k] *5*	(25/2$^+$)		B	
2285.55[u] *23*	(25/2$^-$)		B	
2299.3[&] *3*	27/2$^+$		BCDE	
2350.0 *4*	(25/2$^+$)		B	
2378.8[w] *3*	(25/2$^-$)		B	
2398.1[f] *4*	27/2$^+$		BC	
2483.5[t] *4*	(25/2$^-$)		B	
2491.0[v] *3*	(27/2$^-$)		B	
2506.5[j] *4*	(27/2$^+$)		B	
2508.8[b] *3*	(25/2$^+$)		B	

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Adopted Levels, Gammas (continued)

^{167}Lu Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
2526.6[s] 4	(27/2−)	B	3770.0[t] 4	(37/2−)	B	5125.6[l] 5	(43/2+)	B
2531.7[m] 3	(29/2−)	BCDE	3774.0[n] 4	(39/2−)	BC	5142.3[r] 4	(45/2−)	BC
2580.6[@] 3	29/2+	BCDE	3778.6[u] 4	(37/2−)	B	5160.4[b] 6	(45/2+)	B
2665.3 4	(27/2+)	B	3812.6[&] 3	39/2+	BC	5184.7[w] 5	(45/2−)	B
2694.6[i] 4	(29/2+)	B	3814.8[k] 4	(37/2+)	B	5230.4[o] 6	(J1+2)	B
2697.0[c] 4	(27/2+)	B	3892.5[b] 5	(37/2+)	B	5230.8[#] 5	(45/2+)	B
2715.7[u] 3	(29/2−)	B	3948.7[w] 4	(37/2−)	B	5265.1[f] 4	47/2+	B
2728.4[#] 3	(29/2+)	B	3957.9[f] 4	39/2+	B	5279.4[h] 4	(47/2+)	B
2749.3[k] 4	(29/2+)	B	3972.4[#] 4	(37/2+)	B	5349.0[m] 4	(49/2−)	BC
2776.7[e] 4	29/2+	B	3974.1[l] 4	(35/2+)	B	5369.5[v] 4	(47/2−)	B
2800.4[n] 3	(31/2−)	BC	3978.9[j] 4	(39/2+)	B	5442.6[@] 4	49/2+	BC
2822.8[&] 3	31/2+	BC	4045.5[m] 4	(41/2−)	BC	5486.4[c] 5	(47/2+)	B
2883.7[w] 4	(29/2−)	B	4078.1[v] 4	(39/2−)	B	5491.2[s] 5	(47/2−)	B
2893.0[b] 4	(29/2+)	B	4096.0[@] 4	41/2+	BC	5540.1[x] 5	(47/2−)	B
2894.4[t] 4	(29/2−)	B	4193.1[c] 4	(39/2+)	B	5586.5[i] 4	(49/2+)	B
2918.5[r] 4	(33/2−)	BCDE	4205.9[i] 4	(41/2+)	B	5625.1[a] 5	(47/2+)	B
2938.9[f] 4	31/2+	B	4222.8[a] 4	(39/2+)	B	5630.7[g] 4	(49/2+)	B
2958.8[v] 3	(31/2−)	B	4224.9 4	(39/2−)	B	5638.0[t] 4	(49/2−)	BC
2958.9[j] 4	(31/2+)	B	4244.6[x] 4	(39/2−)	B	5705.4[n] 4	(51/2−)	BC
3014.6[a] 4	(31/2+)	BC	4266.1[s] 4	(39/2−)	B	5714.6[u] 4	(49/2−)	B
3043.7[@] 3	33/2+	BC	4306.1[t] 4	(41/2−)	BC	5778.0[k] 5	(49/2+)	B
3069.9[m] 3	(33/2−)	BC	4307.7[e] 4	(41/2+)	B	5783.7[l] 5	(47/2+)	B
3121.2[c] 4	(31/2+)	B	4339.2[n] 4	(43/2−)	BC	5833.2[&] 4	51/2+	BC
3133.7[i] 4	(33/2+)	B	4373.5[r] 4	(41/2−)	BC	5859.6[w] 5	(49/2−)	B
3138.4[s] 4	(31/2−)	B	4385.9[u] 4	(41/2−)	B	5873.9[b] 6	(49/2+)	B
3210.8[e] 4	33/2+	B	4417.0[&] 4	43/2+	BC	5894.8[#] 6	(49/2+)	B
3217.3[u] 3	(33/2−)	B	4421.6[k] 4	(41/2+)	B	5907.4[r] 6	(49/2−)	BC
3254.3[k] 4	(33/2+)	B	4496.0[b] 5	(41/2+)	B	5912.9[o] 6	(J1+4)	B
3285.1[&] 3	35/2+	BC	4521.2[l] 4	(39/2+)	B	5982.1[h] 4	(51/2+)	B
3288.7[n] 4	(35/2−)	BC	4544.8[w] 4	(41/2−)	B	6015.4[f] 4	51/2+	B
3293.9[t] 4	(33/2−)	B	4554.1[o] 5	J1	B	6077.5[v] 4	(51/2−)	B
3322.3[#] 3	(33/2+)	B	4578.1[f] 4	43/2+	B	6116.9[m] 5	(53/2−)	BC
3356.9[b] 4	(33/2+)	B	4594.8[#] 4	(41/2+)	B	6202.5[c] 5	(51/2+)	B
3413.9[f] 4	35/2+	B	4597.4[j] 4	(43/2+)	B	6206.0[s] 5	(51/2−)	B
3417.8 4	(35/2+)	B	4655.9[m] 4	(45/2−)	BC	6212.7[@] 4	53/2+	BC
3418.1[w] 4	(33/2−)	B	4704.8[v] 4	(43/2−)	B	6242.3[x] 5	(51/2−)	B
3437.3[j] 4	(35/2+)	B	4734.9[@] 4	45/2+	BC	6332.7[g] 4	(53/2+)	B
3477.5 5	(35/2−)	B	4815.5[c] 4	(43/2+)	B	6388.3[i] 4	(53/2+)	B
3491.7[v] 3	(35/2−)	B	4838.6[s] 4	(43/2−)	B	6397.5[t] 5	(53/2−)	BC
3523.1[m] 4	(37/2−)	BC	4861.3[i] 4	(45/2+)	B	6405.7[a] 5	(51/2+)	B
3531.9[@] 3	37/2+	BC	4880.8[x] 4	(43/2−)	B	6447.7[u] 4	(53/2−)	B
3589.4[a] 4	(35/2+)	B	4898.4[a] 4	(43/2+)	B	6490.5[n] 5	(55/2−)	BC
3613.7[r] 4	(37/2−)	BC	4941.9[t] 4	(45/2−)	BC	6494.8[l] 5	(51/2+)	B
3625.8[c] 4	(35/2+)	B	4954.7[g] 4	(45/2+)	B	6529.6[k] 5	(53/2+)	B
3628.5[i] 4	(37/2+)	B	4985.9[n] 4	(47/2−)	BC	6592.6[w] 5	(53/2−)	B
3678.3[x] 4	(35/2−)	B	5030.7[u] 4	(45/2−)	B	6599.8[#] 7	(53/2+)	B
3721.3[e] 4	37/2+	B	5076.2[k] 5	(45/2+)	B	6628.3[b] 7	(53/2+)	B
3729.7[s] 4	(35/2−)	B	5093.0[&] 4	47/2+	BC	6631.2[&] 4	(55/2+)	BC

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Adopted Levels, Gammas (continued)

^{167}Lu Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
6634.0[r] 8	(53/2−)	B	8455.8[h] 5	(63/2+)	B	10846.4[l] 12	(71/2+)	B
6659.3[o] 7	(J1+6)	B	8549.5[v] 5	(63/2−)	B	10947.3[m] 6	(73/2−)	B
6661.9[d] 7	(53/2+)	B	8600.0[f] 6	63/2+	B	10957.6[i] 6	(73/2+)	B
6726.6[h] 4	(55/2+)	B	8644.5[s] 6	(63/2−)	B	11027.2[t] 7	(73/2−)	B
6820.1[f] 5	55/2+	B	8646.7[c] 8	(63/2+)	B	11030.9[g] 5	(73/2+)	B
6839.2[v] 4	(55/2−)	B	8711.3[x] 6	(63/2−)	B	11037.0[u] 7	(73/2−)	B
6953.1[m] 5	(57/2−)	BC	8749.0[@] 5	65/2+	BC	11084.1[w] 7	(73/2−)	B
6965.7[c] 6	(55/2+)	B	8824.2[m] 5	(65/2−)	B	11084.4[k] 10	(73/2+)	B
6969.2[s] 5	(55/2−)	B	8924.8[g] 5	(65/2+)	B	11151.7[r] 14	(73/2−)	B
7001.3[x] 5	(55/2−)	B	8946.0[l] 9	(63/2+)	B	11194.1[o] 13	(J1+16)	B
7036.1[@] 4	57/2+	BC	9003.6[a] 6	(63/2+)	B	11219.4[b] 13	(73/2+)	B
7100.9[g] 4	(57/2+)	B	9014.0[t] 5	(65/2−)	BC	11265.3[n] 6	(75/2−)	B
7215.0[t] 5	(57/2−)	BC	9016.0[u] 6	(65/2−)	B	11321.9[&] 8	75/2+	B
7235.0[a] 5	(55/2+)	B	9037.8[i] 5	(65/2+)	B	11558.9[v] 10	(75/2−)	B
7239.8[u] 4	(57/2−)	B	9109.0[k] 6	(65/2+)	B	11571.4[f] 11	(75/2+)	B
7241.7[i] 4	(57/2+)	B	9120.5[w] 6	(65/2−)	B	11587.9[c] 12	(75/2+)	B
7259.8[l] 6	(55/2+)	B	9173.2[r] 12	(65/2−)	B	11594.4[h] 10	(75/2+)	B
7328.3[k] 5	(57/2+)	B	9192.6[n] 5	(67/2−)	BC	11601.2[s] 10	(75/2−)	B
7334.8[n] 5	(59/2−)	BC	9210.5[b] 10	(65/2+)	B	11690.5[@] 6	77/2+	B
7374.9[#] 8	(57/2+)	B	9232.4[o] 11	(J1+12)	B	11878.7[l] 13	(75/2+)	B
7383.6[w] 5	(57/2−)	B	9269.9[&] 5	67/2+	BC	12011.6[i] 8	(77/2+)	B
7403.0[d] 7	(57/2+)	B	9442.9[h] 7	(67/2+)	B	12049.5[m] 6	(77/2−)	B
7410.6[r] 9	(57/2−)	B	9498.2[v] 7	(67/2−)	B	12127.2[t] 7	(77/2−)	B
7449.8[b] 8	(57/2+)	B	9542.1[f] 8	67/2+	B	12139.2[u] 7	(77/2−)	B
7461.2[o] 8	(J1+8)	B	9568.2[s] 6	(67/2−)	B	12154.7[w] 7	(77/2−)	B
7471.1[&] 4	59/2+	BC	9571.4[c] 9	(67/2+)	B	12160.3[k] 11	(77/2+)	B
7543.2[h] 4	(59/2+)	B	9657.3[x] 6	(67/2−)	B	12168.0[g] 8	(77/2+)	B
7662.6[v] 5	(59/2−)	B	9674.1[@] 5	69/2+	B	12209.6[r] 15	(77/2−)	B
7684.8[f] 5	59/2+	B	9858.3[m] 6	(69/2−)	B	12377.2[n] 6	(79/2−)	B
7775.7[c] 6	(59/2+)	B	9869.0[l] 11	(67/2+)	B	12440.4[&] 9	79/2+	B
7779.5[s] 6	(59/2−)	B	9946.8[g] 5	(69/2+)	B	12657.0[v] 12	(79/2−)	B
7824.3[x] 6	(59/2−)	B	9969.6[i] 5	(69/2+)	B	12686.9[c] 13	(79/2+)	B
7855.3[m] 5	(61/2−)	BC	9993.8[t] 6	(69/2−)	B	12697.3[s] 11	(79/2−)	B
7877.1[@] 4	61/2+	BC	9997.0[u] 6	(69/2−)	B	12780.9[@] 8	81/2+	B
7967.8[g] 4	(61/2+)	B	10068.0[k] 8	(69/2+)	B	12962.7[l] 14	(79/2+)	B
8075.8[l] 8	(59/2+)	B	10070.9[w] 7	(69/2−)	B	13131.7[i] 9	(81/2+)	B
8087.5[t] 5	(61/2−)	BC	10144.7[r] 13	(69/2−)	B	13157.8[m] 8	(81/2−)	B
8095.9[u] 5	(61/2−)	B	10185.0[o] 12	(J1+14)	B	13278.2[t] 8	(81/2−)	B
8099.4[a] 6	(59/2+)	B	10193.0[b] 12	(69/2+)	B	13290.8[w] 9	(81/2−)	B
8143.6[i] 5	(61/2+)	B	10202.9[n] 6	(71/2−)	BC	13291.0[u] 9	(81/2−)	B
8182.9[k] 5	(61/2+)	B	10263.6[&] 6	71/2+	BC	13295.4[k] 12	(81/2+)	B
8227.4[w] 6	(61/2−)	B	10489.1[h] 9	(71/2+)	B	13537.3[n] 8	(83/2−)	B
8228.9[d] 7	(61/2+)	B	10504.1[v] 9	(71/2−)	B	13611.0[&] 10	83/2+	B
8236.2[n] 5	(63/2−)	BC	10531.4[f] 9	71/2+	B	13795.4[v] 13	(83/2−)	B
8255.7[r] 11	(61/2−)	B	10551.3[c] 11	(71/2+)	B	13813.3[s] 12	(83/2−)	B
8299.2[b] 9	(61/2+)	B	10553.1[s] 8	(71/2−)	B	13851.1[c] 14	(83/2+)	B
8320.4[o] 10	(J1+10)	B	10654.4[@] 5	73/2+	B	13921.7[@] 9	85/2+	B
8342.4[&] 5	63/2+	BC	10655.3[x] 7	(71/2−)	B	14111.9[l] 15	(83/2+)	B

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Adopted Levels, Gammas (continued)

^{167}Lu Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
14299.7[m] *10*	(85/2⁻)	B	16681.2[m] *12*	(93/2⁻)	B	8872.9+x[q] *15*	(J2+18)	B
14315.0[i] *11*	(85/2⁺)	B	17048.1?[k] *15*	(93/2⁺)	B	10136.9+x[q] *16*	(J2+20)	B
14466.4[t] *9*	(85/2⁻)	B	17229.8[n] *12*	(95/2⁻)	B	11446.2+x[q] *17*	(J2+22)	B
14487.8[k] *13*	(85/2⁺)	B	17323.4[&] *14*	(95/2⁺)	B	12802.3+x[q] *18*	(J2+24)	B
14737.5[n] *10*	(87/2⁻)	B	17617.9[@] *13*	(97/2⁺)	B	y[p]	J3	B
14823.3[&] *12*	87/2⁺	B	17943.3?[m] *13*	(97/2⁻)	B	807.0+y[p] *5*	(J3+2)	B
14965.0[v] *14*	(87/2⁻)	B	x[q]	J2	B	1670.1+y[p] *7*	(J3+4)	B
15108.1[@] *11*	89/2⁺	B	768.0+x[q] *5*	(J2+2)	B	2588.4+y[p] *9*	(J3+6)	B
15312.0[l] *16*	(87/2⁺)	B	1582.8+x[q] *7*	(J2+4)	B	3562.9+y[p] *10*	(J3+8)	B
15472.8[m] *11*	(89/2⁻)	B	2459.0+x[q] *9*	(J2+6)	B	4593.0+y[p] *12*	(J3+10)	B
15558.2[i] *12*	(89/2⁺)	B	3389.0+x[q] *10*	(J2+8)	B	5682.3+y[p] *13*	(J3+12)	B
15735.0[k] *14*	(89/2⁺)	B	4373.7+x[q] *12*	(J2+10)	B	6830.5+y[p] *14*	(J3+14)	B
15968.5[n] *11*	(91/2⁻)	B	5413.2+x[q] *13*	(J2+12)	B	8040.5+y[p] *15*	(J3+16)	B
16067.3[&] *13*	(91/2⁺)	B	6509.4+x[q] *14*	(J2+14)	B	9310.7+y[p] *15*	(J3+18)	B
16339.3[@] *12*	93/2⁺	B	7662.5+x[q] *15*	(J2+16)	B			

† From a least-squares adjustment of Eγ values.

‡ From multipolarities deduced from DCO ratios in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV, detailed band structures, Nilsson assignments, and comparison with theoretical cranked shell model (CSM) calculations. All the assignments are as proposed in the work of 2015Ro27. Exceptions are noted.

Band(A): π5/2[402] band,α=+1/2. Configuration=iBC → iBCAD; BC crossing at ħω=0.32 MeV, followed by AD crossing. This band appears to be a continuation of α=+1/2 signature of band (I). This band interacts with band (D) at 49/2⁺; energy separation=21.0 keV.

@ Band(B): π7/2[404] band,α=+1/2. Configuration=a → aAB → aABCD; AB crossing at ħω=0.26 MeV, and CD crossing at ħω=0.42 MeV. This band interacts with band (J) at 57/2⁺; energy separation=65.8 keV.

& Band(b): π7/2[404] band,α=−1/2. Configuration=b → bAB → bABCD → bABCD(ef or fg); AB crossing at ħω=0.26 MeV, CD crossing at ħω=0.42 MeV and ef or fg proton crossing at ħω=0.62 MeV.

a Band(C): γ-vibrational band. Possible γ-vibrational band built on π1/2[411] orbital. This band interacts with band (d) at 39/2⁺; energy separation=29.6 keV.

b Band(D): 3-qp, eAF band,α=+1/2. Configuration=eAF → eAFBC; BC crossing at ħω≈0.32 MeV. This band interacts with band (E) at 53/2⁺; energy separation=33.9 keV. This band interacts with band (G) at 49/2⁺; energy separation=21.0 keV.

c Band(d): 3-qp, fAF band,α=−1/2. Configuration=fAF → fAFBC; BC crossing at ħω≈0.32 MeV. This positive-parity band was previously assigned in 2005Am02, incorrectly, as a triaxial strongly deformed (TSD-3) band with a negative parity. This band interacts with band (F) at 39/2⁺; energy separation=29.6 keV.

d Band(E): Possible 5-qp band, cBCAD,α=+1/2. This band interacts with band (K) at 61/2⁺; energy separation=45.9 keV. This band interacts with band (D) at 53/2⁺; energy separation=33.9 keV.

e Band(F): π1/2[411] band,α=+1/2. Configuration=c → cAB; AB crossing at ħω=0.27 MeV.

f Band(f): π1/2[411] band,α=−1/2. Configuration=d → dAB → dABCD; AB crossing at ħω=0.27 MeV, and CD crossing at ħω=0.46 MeV. This band interacts with band (i) at 31/2⁺; energy separation=20.0 keV. This band interacts with band (j) at 47/2⁺; energy separation=14.2 keV.

g Band(G): 5-qp band, aABCD,α=+1/2. Configuration=aABCD → aAB, Landau-Zener crossing with band (A) at J=57/2. This band interacts with band (A) at 57/2⁺; energy separation=65.8 keV. This band interacts with band (I) at 49/2⁺; energy separation=45.2 keV.

h Band(g): 5-qp band, bABCD,α=−1/2. Configuration=bABCD → bAB, Landau-Zener crossing with band (a) at J=59/2. This band interacts with band (h) at 47/2⁺; energy separation=14.2 keV.

i Band(H): π5/2[402] band,α=+1/2. Configuration=i → iAB → iABCD; AB crossing at ħω=0.25 MeV, and CD crossing at ħω=0.46 MeV. This band interacts with band (J) at 49/2⁺; energy separation=45.2 keV. This band interacts with band (K) at

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Adopted Levels, Gammas (continued)

^{167}Lu Levels (continued)

61/2$^+$; energy separation=39.3 keV.

[j] Band(h): π5/2[402] band,α=−1/2. Configuration=j → jAB; AB crossing at $\hbar\omega$=0.25 MeV. This band interacts with band (h) at 31/2$^+$; energy separation=20.0 keV.

[k] Band(I): TSD-1, 0-phonon band,α=+1/2. Triaxial strongly−deformed band (TSD) associated with π1/2[660] orbital. This band interacts with band (E) at 61/2$^+$; energy separation=45.9 keV. This band interacts with band (I) at 61/2$^+$; energy separation=39.3 keV. Q(transition)=6.9 *3* (2005Gu28, preliminary value). The uncertainty does not include systematic error of ≈10-15% due to stopping power. Population≈8% relative to yrast band. Note that 1998Ya04 proposed a cascade of eight transitions (904-854-804-753-705-653-601-551) in an SD band connected via 547 and 561 transitions to normal bands. The connecting transitions given by 2003Am01 are different from those in 1998Ya04. Corresponding spins are also higher by two units in 2003Am01 than those proposed by 1998Ya04.

[l] Band(J): TSD-2, 1-phonon band,α=−1/2. Triaxial strongly-deformed (TSD) band associated with π1/2[660] orbital. Population ≈2% relative to yrast band (2003Am01,2005Am02).

[m] Band(K): π9/2[514] band,α=+1/2. Configuration=e → eAB → eABfg; AB crossing at $\hbar\omega$=0.26 MeV, and fg crossing at $\hbar\omega$=0.55 MeV.

[n] Band(k): π9/2[514] band,α=−1/2. Configuration=f → fAB → fABCD → fABCDEF; AB crossing at $\hbar\omega$=0.26 MeV, Cd crossing at $\hbar\omega$=0.35-0.55 MeV, and ef crossing at $\hbar\omega$=0.6 MeV.

[o] Band(L): 3-qp, eBC band. Configuration=eBC → eBCAD; AD crossing at $\hbar\omega$=0.35-0.50 MeV.

[p] Band(M): Possible triaxial strongly-deformed band.

[q] Band(N): Possible triaxial strongly-deformed band.

[r] Band(O): π1/2[541] band,α=+1/2. Configuration=g → gBCAD; BCAD crossing at $\hbar\omega$=0.38 MeV. This band interacts with band (B) at 41/2$^-$; energy separation=12.4 keV.

[s] Band(o): π1/2[541] band,α=−1/2. Configuration=h → hAB → hABCD → hABCD(proton orbital); AB crossing at $\hbar\omega$=0.29 MeV, CD crossing at $\hbar\omega$=0.4-0.5 MeV and possible crossing at $\hbar\omega$=0.55 MeV due to proton orbitals. This band interacts with band (c) at 39/2$^-$; energy separation=21.5 keV.

[t] Band(P): 3-qp, gAB band,α=+1/2. Configuration=gAB → gAB(CD/EF) → gAB(CD/EF)ef; CD/EF crossing at $\hbar\omega$=0.4-0.5 MeV and ef crossing at $\hbar\omega$≈0.57 MeV. This band interacts with band (B) at 65/2$^-$; energy separation=1.3 keV.

[u] Band(Q): 3-qp, aAE band,α=+1/2. Configuration=aAE → aAEBC → aAEBC(ef); BC crossing at $\hbar\omega$=0.32 MeV and possible ef crossing at $\hbar\omega$≈0.5 MeV. This band interacts with band (M) at 41/2$^-$; energy separation=12.4 keV. This band interacts with band (N) at 65/2$^-$; energy separation=1.3 keV.

[v] Band(q): 3-qp, bAE band,α=−1/2. Configuration=bAE → bAEBC; BC crossing at $\hbar\omega$=0.32 MeV.

[w] Band(R): 3-qp, aAF band,α=+1/2. Configuration=aAF → aAFBC; BC crossing at $\hbar\omega$≈0.32 MeV.

[x] Band(r): 3-qp, bAF band,α=−1/2. Configuration=bAF → bAFBC; BC crossing at $\hbar\omega$≈0.32 MeV. This band interacts with band (m) at 39/2$^-$; energy separation=21.5 keV.

γ(^{167}Lu)

E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$_f^\pi$	Mult.[‡]	α[#]	Comments
136.3	(1/2$^-$)	87.7 *2*		48.6	3/2$^+$			
		102.6 *2*	100 *20*	33.7	1/2$^+$	D		Mult.: ΔJ=0 transition.
140.0	9/2$^+$	140.0 *2*	100	0.0	7/2$^+$	[M1+E2]	1.18 *23*	
155.9	(5/2$^-$)	107.3 *2*	100	48.6	3/2$^+$	D		
178.3	5/2$^+$	129.7 *2*		48.6	3/2$^+$			
		144.6 *2*		33.7	1/2$^+$			
184.5	(7/2$^+$)	117.4 *2*		67.1	(5/2$^+$)	D+Q		
218.4	7/2$^+$	169.8 *2*		48.6	3/2$^+$	Q		
258.7	(3/2$^-$)	225.0 *2*	100	33.7	1/2$^+$			
267.6	(9/2$^-$)	111.7 *2*	100	155.9	(5/2$^-$)			
305.3	11/2$^+$	165.3 *2*	85 *8*	140.0	9/2$^+$			
		305.3 *2*	100 *8*	0.0	7/2$^+$	(E2)		
315.28	(7/2)$^-$	175.4 *2*	6 *1*	140.0	9/2$^+$	[E1]	0.0803 *12*	E$_\gamma$,I$_\gamma$: from ^{167}Hf ε decay.
		315.24 *10*	100	0.0	7/2$^+$	E1	0.0183 *3*	E$_\gamma$,I$_\gamma$,Mult.: from ^{167}Hf ε decay, multipolarity based on ce data.

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
329.5	(9/2$^+$)	145.0 *2*	100 *17*	184.5	(7/2$^+$)	D+Q		
		262.4 *2*	13.9 *26*	67.1	(5/2$^+$)	Q		
331.9	(9/2$^-$)	191.7 *2*	79 *16*	140.0	9/2$^+$			
		331.9 *2*	100 *15*	0.0	7/2$^+$			
432.8	9/2$^+$	214.5 *2*	100 *11*	218.4	7/2$^+$	D+Q		
		248.3 *2*	35 *5*	184.5	(7/2$^+$)	D+Q		
		254.5 *2*	98 *11*	178.3	5/2$^+$	Q		
433.6	(11/2$^-$)	101.5 *2*	31 *6*	331.9	(9/2$^-$)			
		293.6 *2*	100 *20*	140.0	9/2$^+$			
435.4	(7/2$^-$)	167.7 *2*	23 *7*	267.6	(9/2$^-$)			
		176.7 *2*	9.1 *18*	258.7	(3/2$^-$)	Q		
		279.4 *2*	100 *20*	155.9	(5/2$^-$)			
479.9	(13/2$^-$)	212.3 *2*	100	267.6	(9/2$^-$)	E2	0.228 *4*	B(E2)(W.u.)=241 *+26−20*
494.2	13/2$^+$	188.9 *2*	38 *4*	305.3	11/2$^+$			
		354.1 *2*	100 *9*	140.0	9/2$^+$	(E2)		
499.0	(11/2$^+$)	169.4 *2*	100 *8*	329.5	(9/2$^+$)	D+Q		
		314.5 *2*	52 *5*	184.5	(7/2$^+$)	Q		
507.8	11/2$^+$	178.2 *2*	54 *6*	329.5	(9/2$^+$)	D+Q		
		289.4 *2*	100 *10*	218.4	7/2$^+$	Q		
576.9	(13/2$^-$)	143.4 *2*	100 *6*	433.6	(11/2$^-$)			
		245.1 *2*	32 *6*	331.9	(9/2$^-$)			
692.8	(11/2$^-$)	213.0 *5*	8.0 *23*	479.9	(13/2$^-$)			
		257.4 *2*	73 *15*	435.4	(7/2$^-$)	Q		
		425.2 *2*	100 *21*	267.6	(9/2$^-$)			
693.9	(13/2$^+$)	186.0 *2*	61 *6*	507.8	11/2$^+$	D		
		194.8 *2*	45 *4*	499.0	(11/2$^+$)	D+Q		
		364.6 *2*	100 *10*	329.5	(9/2$^+$)	E2		
704.2	15/2$^+$	210.3 *2*	29.0 *27*	494.2	13/2$^+$			
		399.0 *2*	100 *8*	305.3	11/2$^+$	(E2)		
744.09	(15/2$^-$)	167.3 *2*	100 *9*	576.9	(13/2$^-$)			
		310.4 *2*	52 *4*	433.6	(11/2$^-$)			
783.7	13/2$^+$	276.0 *2*	11.1 *16*	507.8	11/2$^+$	D		
		284.5 *2*	32 *4*	499.0	(11/2$^+$)	D		
		351.0 *2*	100 *10*	432.8	9/2$^+$	Q		
794.5	(17/2$^-$)	314.5 *2*	100	479.9	(13/2$^-$)	E2	0.0665 *10*	B(E2)(W.u.)=261 *30*
887.3	15/2$^+$	193.5 *5*	5.2 *6*	693.9	(13/2$^+$)	D		
		379.2 *2*	100 *10*	507.8	11/2$^+$	Q		
		388.3 *2*	95 *23*	499.0	(11/2$^+$)	Q		
		406.5 *5*	≤1.7	479.9	(13/2$^-$)			
916.2	(15/2$^+$)	222.4 *2*	100 *8*	693.9	(13/2$^+$)	D+Q		
		408.4 *2*	80 *8*	507.8	11/2$^+$	Q		
		417.4 *2*	67 *6*	499.0	(11/2$^+$)	Q		
934.2	17/2$^+$	230.0 *2*	22.5 *32*	704.2	15/2$^+$	(M1+E2)		
		439.7 *2*	100 *13*	494.2	13/2$^+$	E2		
947.7	(17/2$^-$)	203.6 *2*	100 *6*	744.09	(15/2$^-$)			
		370.8 *2*	68 *6*	576.9	(13/2$^-$)			
1034.4	(15/2$^-$)	341.6 *2*	100 *9*	692.8	(11/2$^-$)	Q		
		554.6 *2*	35.3 *30*	479.9	(13/2$^-$)	D		
1141.4	(17/2$^+$)	225.3 *2*	62.4 *28*	916.2	(15/2$^+$)	D		
		254.0 *2*	12.8 *9*	887.3	15/2$^+$	D+Q		
		447.5 *2*	100 *7*	693.9	(13/2$^+$)	Q		
1159.4	(19/2$^-$)	211.7 *2*	96 *7*	947.7	(17/2$^-$)			
		415.3 *2*	100 *6*	744.09	(15/2$^-$)			
1181.0	19/2$^+$	246.6 *2*	≤31	934.2	17/2$^+$			
		477.0 *2*	100 *8*	704.2	15/2$^+$			

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α #	Comments
1205.3	(21/2$^-$)	410.8 *2*	100	794.5	(17/2$^-$)	E2	0.0311 *5*	B(E2)(W.u.)=269 *+26−41*
1217.1	17/2$^+$	301.0 *2*	6.5 *12*	916.2	(15/2$^+$)	D		
		329.8 *2*	26.0 *30*	887.3	15/2$^+$	D		
		433.3 *5*	100 *12*	783.7	13/2$^+$	Q		
1346.5	19/2$^+$	205.3 *5*	2.2 *5*	1141.4	(17/2$^+$)	D+Q		
		459.0 *2*	100 *25*	887.3	15/2$^+$	Q		
1406.6	(19/2$^+$)	189.5 *2*	11.8 *8*	1217.1	17/2$^+$	D+Q		
		265.2 *2*	29.1 *16*	1141.4	(17/2$^+$)	D+Q		
		490.4 *2*	100 *4*	916.2	(15/2$^+$)	Q		
1411.5	(21/2$^-$)	252.1 *2*	93 *8*	1159.4	(19/2$^-$)			
		463.8 *2*	100 *6*	947.7	(17/2$^-$)			
1444.4	21/2$^+$	263.6 *2*	14.3 *11*	1181.0	19/2$^+$			
		510.2 *2*	100 *8*	934.2	17/2$^+$	(E2)		
1458.9	(19/2$^-$)	424.6 *2*	100 *12*	1034.4	(15/2$^-$)	Q		
		664.5 *2*	33.3 *15*	794.5	(17/2$^-$)	D		
1649.9	(21/2$^+$)	243.4 *2*	35.5 *27*	1406.6	(19/2$^+$)	D+Q		
		508.7 *5*	100 *20*	1141.4	(17/2$^+$)	Q		
1655.8	(23/2$^-$)	244.4 *2*	66 *6*	1411.5	(21/2$^-$)			
		496.4 *2*	100 *6*	1159.4	(19/2$^-$)			
1703.3	(25/2$^-$)	498.2 *2*	100	1205.3	(21/2$^-$)	E2	0.0187 *3*	B(E2)(W.u.)=281 *+38−53*
1716.7	21/2$^+$	310.0 *2*	58 *6*	1406.6	(19/2$^+$)	D+Q		
		370.1 *2*	13.5 *13*	1346.5	19/2$^+$	D+Q		
		499.8 *2*	100 *10*	1217.1	17/2$^+$	Q		
1720.1	23/2$^+$	275.8 *2*	15.7 *14*	1444.4	21/2$^+$			
		539.0 *2*	100 *8*	1181.0	19/2$^+$	E2		
1789.1	(19/2$^-$)	855.0 *2*	100	934.2	17/2$^+$			
1856.7	23/2$^+$	510.0 *2*	100 *19*	1346.5	19/2$^+$	Q		
		651.5 *2*	8.1 *19*	1205.3	(21/2$^-$)			
1940.5	(21/2$^-$)	263.5 *2*	100 *12*	1677.0	(17/2$^-$)			
		759.4 *2*	40.0 *32*	1181.0	19/2$^+$			
		781.0 *2*	42 *4*	1159.4	(19/2$^-$)			
1947.3	(25/2$^-$)	291.6 *2*	59 *4*	1655.8	(23/2$^-$)			
		535.9 *2*	100 *6*	1411.5	(21/2$^-$)			
1954.7	(23/2$^+$)	238.0 *5*	7.8 *10*	1716.7	21/2$^+$	D+Q		
		304.9 *2*	27.5 *10*	1649.9	(21/2$^+$)	D+Q		
		548.0 *2*	100 *7*	1406.6	(19/2$^+$)	Q		
1959.7	(23/2$^-$)	501.1 *2*	100 *20*	1458.9	(19/2$^-$)	Q		
		754.1 *2*	33.8 *13*	1205.3	(21/2$^-$)			
1964.0	(21/2$^+$)	505 *1*		1458.9	(19/2$^-$)			
2008.1	25/2$^+$	288.3 *2*	17.0 *14*	1720.1	23/2$^+$			
		563.6 *2*	100 *9*	1444.4	21/2$^+$			
2100.3	(23/2$^-$)	159.7 *2*	10.4 *7*	1940.5	(21/2$^-$)			
		311.2 *2*	26.4 *14*	1789.1	(19/2$^-$)			
		655.9 *2*	100 *5*	1444.4	21/2$^+$	D		
2165.0	(21/2$^-$)	1370.0 *5*	100	794.5	(17/2$^-$)			
2187.1	(25/2$^+$)	232.3 *2*	24.0 *30*	1954.7	(23/2$^+$)	D+Q		
		537.3 *2*	100 *20*	1649.9	(21/2$^+$)	Q		
2214.9	(27/2$^-$)	267.6 *2*	30 *5*	1947.3	(25/2$^-$)			
		558.9 *2*	100 *6*	1655.8	(23/2$^-$)			
2260.7	25/2$^+$	306.0 *2*	57 *7*	1954.7	(23/2$^+$)	D+Q		
		544.0 *2*	100 *25*	1716.7	21/2$^+$	Q		
2278.0	(29/2$^-$)	574.7 *2*	100	1703.3	(25/2$^-$)	E2	0.01318 *19*	B(E2)(W.u.)>326
2278.5	(25/2$^+$)	562.0 *5*	100	1716.7	21/2$^+$	Q		DCO for 562.0+562.3.
2285.55	(25/2$^-$)	185.3 *2*	55 *5*	2100.3	(23/2$^-$)	D+Q		
		345.0 *2*	100 *9*	1940.5	(21/2$^-$)			

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
2285.55	(25/2$^-$)	565.4 *2*	86 *8*	1720.1	23/2$^+$	D	
2299.3	27/2$^+$	291.2 *2*	13.0 *13*	2008.1	25/2$^+$		
		579.2 *2*	100 *8*	1720.1	23/2$^+$	(E2)	
2350.0	(25/2$^+$)	386 *1*		1964.0	(21/2$^+$)		
2378.8	(25/2$^-$)	658.7 *2*	100	1720.1	23/2$^+$	D	
2398.1	27/2$^+$	541.2[@] *5*	100[@] *19*	1856.7	23/2$^+$	Q	
		694.7 *2*	8.6 *22*	1703.3	(25/2$^-$)		
2483.5	(25/2$^-$)	318.4 *2*	100 *13*	2165.0	(21/2$^-$)	Q	
		1278.1 *2*	94 *13*	1205.3	(21/2$^-$)	Q	
2491.0	(27/2$^-$)	205.4 *2*	36.2 *29*	2285.55	(25/2$^-$)	D+Q	
		390.7 *2*	100 *8*	2100.3	(23/2$^-$)	Q	
		483.0 *2*	21.0 *19*	2008.1	25/2$^+$	D	
2506.5	(27/2$^+$)	245.8 *2*	40 *4*	2260.7	25/2$^+$	D	
		319.4 *2*	16.7 *28*	2187.1	(25/2$^+$)	D	
		551.7 *2*	100 *20*	1954.7	(23/2$^+$)	Q	
2508.8	(25/2$^+$)	853.0 *2*	100	1655.8	(23/2$^-$)	D	
2526.6	(27/2$^-$)	566.8 *2*	100 *20*	1959.7	(23/2$^-$)	Q	
		823.4 *2*	29.1 *12*	1703.3	(25/2$^-$)		
2531.7	(29/2$^-$)	316.4 *2*	66 *10*	2214.9	(27/2$^-$)		
		584.4 *2*	100 *13*	1947.3	(25/2$^-$)		
2580.6	29/2$^+$	281.0 *2*	19.0 *30*	2299.3	27/2$^+$		
		572.6 *2*	100 *8*	2008.1	25/2$^+$	(E2)	
2665.3	(27/2$^+$)	808.5 *2*	77 *16*	1856.7	23/2$^+$		
		962.0 *2*	100 *31*	1703.3	(25/2$^-$)		Mult.: δ(Q/D)=−1.9 *+11−200* or −0.5 *+5−8* (2005Am02) from DCO ratio, which is not listed by the authors.
2694.6	(29/2$^+$)	188.2 *2*	49 *4*	2506.5	(27/2$^+$)	D+Q	
		508.0 *5*	100 *20*	2187.1	(25/2$^+$)	Q	
2697.0	(27/2$^+$)	993.7 *2*	100	1703.3	(25/2$^-$)		
2715.7	(29/2$^-$)	224.7 *2*	23 *4*	2491.0	(27/2$^-$)	D+Q	
		430.1 *2*	100 *11*	2285.55	(25/2$^-$)	Q	
2728.4	(29/2$^+$)	720.2 *2*	100	2008.1	25/2$^+$	Q	
2749.3	(29/2$^+$)	242.9 *5*	41 *14*	2506.5	(27/2$^+$)	D+Q	
		351.0 *2*	45 *14*	2398.1	27/2$^+$	D+Q	
		399.3 *2*	77 *14*	2350.0	(25/2$^+$)		
		471.0 *5*	≤14	2278.5	(25/2$^+$)		
		488.6 *2*	100 *18*	2260.7	25/2$^+$	Q	
		562.3 *2*	91 *14*	2187.1	(25/2$^+$)	Q	
2776.7	29/2$^+$	270.2 *2*	44 *5*	2506.5	(27/2$^+$)		
		516.0 *2*	100 *20*	2260.7	25/2$^+$		
2800.4	(31/2$^-$)	268.4 *2*	73 *13*	2531.7	(29/2$^-$)		
		585.8 *2*	100 *11*	2214.9	(27/2$^-$)		
2822.8	31/2$^+$	242.1 *2*	30.2 *30*	2580.6	29/2$^+$		
		523.8 *2*	100 *8*	2299.3	27/2$^+$		
2883.7	(29/2$^-$)	504.9 *2*	100	2378.8	(25/2$^-$)	Q	
2893.0	(29/2$^+$)	384.3 *2*	100 *9*	2508.8	(25/2$^+$)	Q	
		632.2 *5*	36 *9*	2260.7	25/2$^+$		
		705.8 *5*	36 *9*	2187.1	(25/2$^+$)		
2894.4	(29/2$^-$)	410.8 *2*	≈100	2483.5	(25/2$^-$)	Q	
		1191.1 *2*	18.8 *25*	1703.3	(25/2$^-$)	Q	
2918.5	(33/2$^-$)	640.9 *2*	100	2278.0	(29/2$^-$)	Q	
2938.9	31/2$^+$	162.2 *5*	≤3.3	2776.7	29/2$^+$		
		541.2[@] *5*	100[@] *20*	2398.1	27/2$^+$	Q	
		660.9 *5*	10.0 *33*	2278.0	(29/2$^-$)		
2958.8	(31/2$^-$)	243.1 *2*	15.7 *29*	2715.7	(29/2$^-$)	D+Q	

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	Comments
2958.8	(31/2$^-$)	467.8 *2*	100 *16*	2491.0	(27/2$^-$)	Q	
2958.9	(31/2$^+$)	264.1 *2*	100 *11*	2694.6	(29/2$^+$)	D+Q	
		452.3 *2*	86 *6*	2506.5	(27/2$^+$)	Q	
3014.6	(31/2$^+$)	616.6 *2*	100 *25*	2398.1	27/2$^+$		
		736.4 *2*	31 *6*	2278.0	(29/2$^-$)	D	
3043.7	33/2$^+$	221.1 *2*	30.9 *25*	2822.8	31/2$^+$	(M1+E2)	
		463.0 *2*	100 *14*	2580.6	29/2$^+$	E2	
3069.9	(33/2$^-$)	269.6 *2*	100 *16*	2800.4	(31/2$^-$)		
		538.2 *2*	68 *5*	2531.7	(29/2$^-$)		
3121.2	(31/2$^+$)	424.0 *5*	18 *4*	2697.0	(27/2$^+$)		
		455.8 *2*	100 *29*	2665.3	(27/2$^+$)	Q	
		723.1 *5*	≤11	2398.1	27/2$^+$		
		843.1 *5*	25 *4*	2278.0	(29/2$^-$)		
3133.7	(33/2$^+$)	174.9 *2*	18.3 *18*	2958.8	(31/2$^-$)	D	
		439.0 *2*	100 *11*	2694.6	(29/2$^+$)	Q	
3138.4	(31/2$^-$)	612.0 *2*	100 *9*	2526.6	(27/2$^-$)	Q	
		860.4 *2*	27.8 *19*	2278.0	(29/2$^-$)		
3210.8	33/2$^+$	272.0 *5*	11.1 *19*	2938.9	31/2$^+$		
		434.0 *5*	100 *24*	2776.7	29/2$^+$		
3217.3	(33/2$^-$)	258.5 *5*	13 *4*	2958.8	(31/2$^-$)	D+Q	
		501.6 *2*	100 *20*	2715.7	(29/2$^-$)	Q	
3254.3	(33/2$^+$)	504.7 *2*	100 *12*	2749.3	(29/2$^+$)	E2	
		559.8 *2*	71 *10*	2694.6	(29/2$^+$)	Q	
3285.1	35/2$^+$	241.2 *2*	59 *7*	3043.7	33/2$^+$		
		462.3 *2*	100 *21*	2822.8	31/2$^+$		
3288.7	(35/2$^-$)	218.8 *2*	100 *6*	3069.9	(33/2$^-$)		
		488.3 *2*	91 *6*	2800.4	(31/2$^-$)		
3293.9	(33/2$^-$)	399.4 *2*	100 *21*	2894.4	(29/2$^-$)	Q	
		1016.0 *2*	16 *4*	2278.0	(29/2$^-$)		
3322.3	(33/2$^+$)	593.9 *2*	79 *17*	2728.4	(29/2$^+$)	Q	
		741.8 *2*	100 *21*	2580.6	29/2$^+$	Q	
3356.9	(33/2$^+$)	235.4 *5*	≤38	3121.2	(31/2$^+$)		
		464.1 *5*	100 *13*	2893.0	(29/2$^+$)	Q	
3413.9	35/2$^+$	203.1 *2*	27.9 *30*	3210.8	33/2$^+$		
		475.0 *2*	100 *10*	2938.9	31/2$^+$	Q	
3417.8	(35/2$^+$)	478.9 *2*	100	2938.9	31/2$^+$		
3418.1	(33/2$^-$)	534.4 *2*	100	2883.7	(29/2$^-$)	Q	
3437.3	(35/2$^+$)	226.6 *5*	10.3 *17*	3210.8	33/2$^+$		
		303.6 *2*	32.8 *35*	3133.7	(33/2$^+$)	D	
		478.4 *2*	100 *9*	2958.8	(31/2$^-$)	Q	
3477.5	(35/2$^-$)	677.0 *5*	100	2800.4	(31/2$^-$)		
3491.7	(35/2$^-$)	274.3 *5*	14 *7*	3217.3	(33/2$^-$)	D+Q	
		532.8 *2*	100 *29*	2958.8	(31/2$^-$)	Q	
3523.1	(37/2$^-$)	234.4 *2*	100 *6*	3288.7	(35/2$^-$)		
		453.1 *2*	70 *5*	3069.9	(33/2$^-$)		
3531.9	37/2$^+$	246.6 *2*	≤60	3285.1	35/2$^+$		
		488.4 *2*	100 *8*	3043.7	33/2$^+$	E2	
3589.4	(35/2$^+$)	574.8 *2*	29 *4*	3014.6	(31/2$^+$)		
		650.4 *2*	44 *12*	2938.9	31/2$^+$		
		670.8 *2*	100 *23*	2918.5	(33/2$^-$)	D	
3613.7	(37/2$^-$)	695.8 *2*	100	2918.5	(33/2$^-$)	E2	E_γ: somewhat poor fit, level-energy difference=695.2.
3625.8	(35/2$^+$)	269.1 *5*	11.4 *29*	3356.9	(33/2$^+$)		
		504.6 *2*	100 *12*	3121.2	(31/2$^+$)	Q	
3628.5	(37/2$^+$)	191.2 *2*	10.7 *20*	3437.3	(35/2$^+$)	D+Q	
		214.6 *2*	11.7 *20*	3413.9	35/2$^+$		

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]
3628.5	(37/2$^+$)	494.8 *2*	100 *10*	3133.7	(33/2$^+$)	Q
3678.3	(35/2$^-$)	260.0 *5*	100	3418.1	(33/2$^-$)	
3721.3	37/2$^+$	307.4 *2*	33.3 *35*	3413.9	35/2$^+$	
		510.4 *2*	100 *25*	3210.8	33/2$^+$	
3729.7	(35/2$^-$)	591.3 *2*	100	3138.4	(31/2$^-$)	Q
3770.0	(37/2$^-$)	476.0 *2*	100 *20*	3293.9	(33/2$^-$)	Q
		851.3 *2*	29.7 *31*	2918.5	(33/2$^-$)	Q
3774.0	(39/2$^-$)	251.0 *2*	100 *10*	3523.1	(37/2$^-$)	
		485.3 *2*	94 *7*	3288.7	(35/2$^-$)	
3778.6	(37/2$^-$)	287.0 *5*	15 *5*	3491.7	(35/2$^-$)	D+Q
		561.3 *2*	100 *35*	3217.3	(33/2$^-$)	Q
3812.6	39/2$^+$	280.7 *2*	23 *4*	3531.9	37/2$^+$	
		527.5 *2*	100 *8*	3285.1	35/2$^+$	
3814.8	(37/2$^+$)	560.6 *2*	100	3254.3	(33/2$^+$)	E2
3892.5	(37/2$^+$)	266.6 *5*	≤38	3625.8	(35/2$^+$)	
		535.3 *5*	100 *13*	3356.9	(33/2$^+$)	Q
3948.7	(37/2$^-$)	270.4 *2*	43 *12*	3678.3	(35/2$^-$)	D
		530.6 *2*	100 *20*	3418.1	(33/2$^-$)	Q
3957.9	39/2$^+$	544.0 *2*	100	3413.9	35/2$^+$	Q
3972.4	(37/2$^+$)	650.1 *2*	100	3322.3	(33/2$^+$)	Q
3974.1	(35/2$^+$)	719.8 *2*		3254.3	(33/2$^+$)	D
3978.9	(39/2$^+$)	350.4 *2*	36 *7*	3628.5	(37/2$^+$)	
		541.6 *2*	100 *21*	3437.3	(35/2$^+$)	
		561.1 *2*	45 *9*	3417.8	(35/2$^+$)	
4045.5	(41/2$^-$)	271.7 *2*	100 *7*	3774.0	(39/2$^-$)	
		522.4 *2*	100 *7*	3523.1	(37/2$^-$)	
4078.1	(39/2$^-$)	299.4 *5*	15.8 *35*	3778.6	(37/2$^-$)	D+Q
		586.4 *2*	100 *37*	3491.7	(35/2$^-$)	Q
4096.0	41/2$^+$	283.6 *2*	25.5 *27*	3812.6	39/2$^+$	
		563.9 *2*	100 *16*	3531.9	37/2$^+$	E2
4193.1	(39/2$^+$)	300.0 *5*	18 *4*	3892.5	(37/2$^+$)	
		567.4 *2*	100 *7*	3625.8	(35/2$^+$)	E2
		603.6 *5*	31 *4*	3589.4	(35/2$^+$)	
4205.9	(41/2$^+$)	226.9 *5*	3.2 *11*	3978.9	(39/2$^+$)	
		577.3 *2*	100 *11*	3628.5	(37/2$^+$)	Q
4222.8	(39/2$^+$)	597.0 *2*	17 *5*	3625.8	(35/2$^+$)	
		609.4 *2*	16 *5*	3613.7	(37/2$^-$)	D
		633.2 *2*	100 *25*	3589.4	(35/2$^+$)	
4224.9	(39/2$^-$)	747.3 *5*	100	3477.5	(35/2$^-$)	
4244.6	(39/2$^-$)	295.7 *5*	17 *4*	3948.7	(37/2$^-$)	
		566.3 *2*	100 *26*	3678.3	(35/2$^-$)	
4266.1	(39/2$^-$)	536.4 *2*	100	3729.7	(35/2$^-$)	Q
4306.1	(41/2$^-$)	536.0 *2*	57 *8*	3770.0	(37/2$^-$)	
		692.6 *2*	100 *18*	3613.7	(37/2$^-$)	Q
4307.7	(41/2$^+$)	586.4 *2*	100	3721.3	37/2$^+$	
4339.2	(43/2$^-$)	293.9 *2*	87 *10*	4045.5	(41/2$^-$)	
		565.2 *2*	100 *7*	3774.0	(39/2$^-$)	
4373.5	(41/2$^-$)	603.3 *2*	11.5 *23*	3770.0	(37/2$^-$)	Q
		760.0 *2*	100 *11*	3613.7	(37/2$^-$)	Q
4385.9	(41/2$^-$)	307.9 *5*	13 *4*	4078.1	(39/2$^-$)	D+Q
		607.3 *2*	100 *40*	3778.6	(37/2$^-$)	Q
		772.0 *5*	≤5.7	3613.7	(37/2$^-$)	
4417.0	43/2$^+$	321.0 *2*	≤13.4	4096.0	41/2$^+$	D
		604.4 *2*	100 *9*	3812.6	39/2$^+$	Q
4421.6	(41/2$^+$)	606.8 *2*	100	3814.8	(37/2$^+$)	E2

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	Comments
4496.0	(41/2$^+$)	603.5 *2*	100	3892.5	(37/2$^+$)	Q	
4521.2	(39/2$^+$)	547.0 *2*	100 *17*	3974.1	(35/2$^+$)	Q	
		706.1 *5*	44 *11*	3814.8	(37/2$^+$)	D+Q	δ(Q/D)=−3.1 *+11−34* or −0.26 *16* from DCO (2003Am01); authors support larger δ value in comparison to similar transitions of known mixing ratio in SD band of ^{163}Lu. Note that 2003Am01 did list DCO value. DCO in 2015Ro27 seems consistent with ΔJ=1, dipole.
4544.8	(41/2$^-$)	300.3 *5*	12.5 *31*	4244.6	(39/2$^-$)		
		596.0 *2*	100 *25*	3948.7	(37/2$^-$)		
4554.1	J1	329.2 *2*	100	4224.9	(39/2$^-$)		
4578.1	43/2$^+$	620.2 *2*	100	3957.9	39/2$^+$	Q	
4594.8	(41/2$^+$)	622.4 *2*	100	3972.4	(37/2$^+$)	Q	
4597.4	(43/2$^+$)	391.3 *5*	33 *10*	4205.9	(41/2$^+$)		
		618.6 *2*	100 *38*	3978.9	(39/2$^+$)	Q	
4655.9	(45/2$^-$)	316.9 *2*	66 *11*	4339.2	(43/2$^-$)		
		610.2 *2*	100 *7*	4045.5	(41/2$^-$)		
4704.8	(43/2$^-$)	318.8 *5*	11.4 *23*	4385.9	(41/2$^-$)	D+Q	
		626.6 *2*	100 *39*	4078.1	(39/2$^-$)	Q	
4734.9	45/2$^+$	317.7 *2*	≤18.4	4417.0	43/2$^+$	D	
		639.1 *2*	100 *9*	4096.0	41/2$^+$	E2	
4815.5	(43/2$^+$)	319.7 *5*	≤11.5	4496.0	(41/2$^+$)		
		622.4 *2*	100 *8*	4193.1	(39/2$^+$)	E2	
4838.6	(43/2$^-$)	572.6 *2*	100 *10*	4266.1	(39/2$^-$)	Q	
		594.0 *2*	41 *4*	4244.6	(39/2$^-$)	(Q)	
		613.7 *2*	29 *4*	4224.9	(39/2$^-$)		
4861.3	(45/2$^+$)	264.0 *2*	11.1 *22*	4597.4	(43/2$^+$)		
		655.3 *2*	100 *10*	4205.9	(41/2$^+$)	Q	
4880.8	(43/2$^-$)	335.9 *5*	31 *10*	4544.8	(41/2$^-$)		
		636.2 *2*	100 *28*	4244.6	(39/2$^-$)		
4898.4	(43/2$^+$)	524.9 *5*	10.8 *27*	4373.5	(41/2$^-$)	D	
		675.5 *2*	100 *26*	4222.8	(39/2$^+$)	Q	
4941.9	(45/2$^-$)	568.4 *2*	12.8 *28*	4373.5	(41/2$^-$)		
		635.9 *2*	100 *9*	4306.1	(41/2$^-$)	E2	
4954.7	(45/2$^+$)	647.0 *2*	100	4307.7	(41/2$^+$)	Q	
4985.9	(47/2$^-$)	330.0 *2*	76 *7*	4655.9	(45/2$^-$)		
		646.7 *2*	100 *8*	4339.2	(43/2$^-$)		
5030.7	(45/2$^-$)	326.2 *5*	≤7.9	4704.8	(43/2$^-$)	D+Q	
		644.7 *2*	100 *40*	4385.9	(41/2$^-$)	Q	
		657.0 *5*	24 *11*	4373.5	(41/2$^-$)		
5076.2	(45/2$^+$)	654.6 *2*	100	4421.6	(41/2$^+$)	E2	
5093.0	47/2$^+$	358.1 *2*	≤14.0	4734.9	45/2$^+$	D+Q	
		676.0 *2*	100 *9*	4417.0	43/2$^+$	Q	
5125.6	(43/2$^+$)	604.3 *2*	100 *22*	4521.2	(39/2$^+$)		
		704.2 *5*	36 *14*	4421.6	(41/2$^+$)		
5142.3	(45/2$^-$)	768.8 *5*	33 *8*	4373.5	(41/2$^-$)	Q	
		836.2 *2*	100 *8*	4306.1	(41/2$^-$)	Q	
5160.4	(45/2$^+$)	664.4 *5*	100	4496.0	(41/2$^+$)	Q	
5184.7	(45/2$^-$)	304.1 *5*	15 *6*	4880.8	(43/2$^-$)		
		640.0 *2*	100 *27*	4544.8	(41/2$^-$)	Q	
5230.4	(J1+2)	676.2 *5*	100	4554.1	J1		
5230.8	(45/2$^+$)	636.0 *2*	100	4594.8	(41/2$^+$)	Q	
5265.1	47/2$^+$	687.0 *2*	100	4578.1	43/2$^+$	Q	
5279.4	(47/2$^+$)	418.0 *5*	≤10.3	4861.3	(45/2$^+$)		
		682.0 *2*	100 *10*	4597.4	(43/2$^+$)	Q	

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
5349.0	(49/2$^-$)	363.0 *2*	52 *10*	4985.9	(47/2$^-$)		
		693.0 *2*	100 *14*	4655.9	(45/2$^-$)	(E2)	
5369.5	(47/2$^-$)	338.4 *5*	17 *15*	5030.7	(45/2$^-$)	D+Q	
		664.6 *2*	100 *42*	4704.8	(43/2$^-$)	Q	
5442.6	49/2$^+$	349.6 *2*	22.0 *24*	5093.0	47/2$^+$	D	
		707.6 *2*	100 *9*	4734.9	45/2$^+$	E2	
5486.4	(47/2$^+$)	670.9 *2*	100	4815.5	(43/2$^+$)	E2	
5491.2	(47/2$^-$)	652.6 *2*	100	4838.6	(43/2$^-$)	Q	
5540.1	(47/2$^-$)	355.5 *5*	25 *7*	5184.7	(45/2$^-$)		
		659.3 *2*	100 *25*	4880.8	(43/2$^-$)		
5586.5	(49/2$^+$)	307.2 *5*	11.9 *17*	5279.4	(47/2$^+$)		
		725.2 *2*	100 *10*	4861.3	(45/2$^+$)	Q	
5625.1	(47/2$^+$)	726.7 *2*	100	4898.4	(43/2$^+$)	Q	
5630.7	(49/2$^+$)	676.0 *2*	100	4954.7	(45/2$^+$)	Q	
5638.0	(49/2$^-$)	696.2 *2*	100	4941.9	(45/2$^-$)	E2	
5705.4	(51/2$^-$)	356.4 *2*	47 *4*	5349.0	(49/2$^-$)		
		719.6 *2*	100 *13*	4985.9	(47/2$^-$)		
5714.6	(49/2$^-$)	345.0 *2*	31 *28*	5369.5	(47/2$^-$)		
		684.0 *2*	100 *50*	5030.7	(45/2$^-$)	Q	
5778.0	(49/2$^+$)	701.8 *2*	100	5076.2	(45/2$^+$)	E2	
5783.7	(47/2$^+$)	658.1 *2*	100 *20*	5125.6	(43/2$^+$)	(Q)	
		707.7 *5*	40 *10*	5076.2	(45/2$^+$)		δ(Q/D)=−5.1 *+16−25* or −0.07 *7* from DCO (2003Am01); authors support larger δ value in comparison to similar transitions of known mixing ratio in SD band of ^{163}Lu. Note that DCO value was not listed by 2003Am01.
5833.2	51/2$^+$	390.7 *2*	19.1 *27*	5442.6	49/2$^+$	D	
		740.3 *2*	100 *12*	5093.0	47/2$^+$	E2	
5859.6	(49/2$^-$)	319.4 *5*	≤7.9	5540.1	(47/2$^-$)		
		674.9 *2*	100 *26*	5184.7	(45/2$^-$)	Q	
5873.9	(49/2$^+$)	713.6 *5*	100	5160.4	(45/2$^+$)	Q	
5894.8	(49/2$^+$)	664.1 *5*	100	5230.8	(45/2$^+$)	Q	
5907.4	(49/2$^-$)	765.1 *5*	100	5142.3	(45/2$^-$)	Q	
5912.9	(J1+4)	682.5 *2*	100	5230.4	(J1+2)		
5982.1	(51/2$^+$)	351.4 *2*	100 *22*	5630.7	(49/2$^+$)		
		395.6 *5*	12.5 *31*	5586.5	(49/2$^+$)		
		702.8 *2*	63 *6*	5279.4	(47/2$^+$)	Q	
		717.0 *2*	63 *6*	5265.1	47/2$^+$		
6015.4	51/2$^+$	735.6 *5*	39 *6*	5279.4	(47/2$^+$)		
		750.4 *2*	100 *11*	5265.1	47/2$^+$	Q	
6077.5	(51/2$^-$)	362.8 *5*	28 *13*	5714.6	(49/2$^-$)		
		707.9 *2*	100 *44*	5369.5	(47/2$^-$)	Q	
6116.9	(53/2$^-$)	411.8 *2*	33 *4*	5705.4	(51/2$^-$)		
		767.9 *2*	100 *9*	5349.0	(49/2$^-$)		
6202.5	(51/2$^+$)	716.1 *2*	100	5486.4	(47/2$^+$)	Q	
6206.0	(51/2$^-$)	714.8 *2*	100	5491.2	(47/2$^-$)	Q	
6212.7	53/2$^+$	379.5 *2*	11.8 *31*	5833.2	51/2$^+$	D	
		770.0 *2*	100 *9*	5442.6	49/2$^+$	E2	
6242.3	(51/2$^-$)	382.5 *5*	≤10.0	5859.6	(49/2$^-$)		
		702.1 *2*	100 *27*	5540.1	(47/2$^-$)		
6332.7	(53/2$^+$)	350.6 *5*	19 *4*	5982.1	(51/2$^+$)		
		702.0 *2*	100 *13*	5630.7	(49/2$^+$)	Q	
		746.4 *5*	≤6.4	5586.5	(49/2$^+$)		
		890.0 *2*	32 *4*	5442.6	49/2$^+$		
6388.3	(53/2$^+$)	757.6 *2*	32.4 *30*	5630.7	(49/2$^+$)		

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	Comments
6388.3	(53/2$^+$)	801.8 *2*	100 *9*	5586.5	(49/2$^+$)	Q	
6397.5	(53/2$^-$)	759.6 *2*	100	5638.0	(49/2$^-$)	E2	
6405.7	(51/2$^+$)	780.6 *2*	100	5625.1	(47/2$^+$)	Q	
6447.7	(53/2$^-$)	370.0 *5*	17 *9*	6077.5	(51/2$^-$)		
		733.1 *2*	100 *39*	5714.6	(49/2$^-$)	Q	
6490.5	(55/2$^-$)	373.8 *2*	32 *4*	6116.9	(53/2$^-$)		
		784.8 *2*	100 *8*	5705.4	(51/2$^-$)		
6494.8	(51/2$^+$)	710.8 *5*	100 *14*	5783.7	(47/2$^+$)	Q	
		717.0 *5*	57 *14*	5778.0	(49/2$^+$)		δ(Q/D)=−3.9 *+27−84* or −0.35 *65* from DCO (2003Am01); authors support larger δ value in comparison to similar transitions of known mixing ratio in SD band of ^{163}Lu. Note that DCO value was not listed by 2003Am01.
6529.6	(53/2$^+$)	751.6 *2*	100	5778.0	(49/2$^+$)	E2	
6592.6	(53/2$^-$)	350.1 *5*	≤8.1	6242.3	(51/2$^-$)		
		733.0 *2*	100 *24*	5859.6	(49/2$^-$)	Q	
6599.8	(53/2$^+$)	705.0 *5*	≤100	5894.8	(49/2$^+$)	Q	
		725.8 *5*	≤100	5873.9	(49/2$^+$)		
6628.3	(53/2$^+$)	754.4 *5*	100	5873.9	(49/2$^+$)	Q	
6631.2	(55/2$^+$)	418.2 *2*	16.8 *20*	6212.7	53/2$^+$	D	
		798.3 *2*	100 *11*	5833.2	51/2$^+$	Q	
6634.0	(53/2$^-$)	726.6 *5*	100	5907.4	(49/2$^-$)	Q	
6659.3	(J1+6)	746.4 *5*	100 *23*	5912.9	(J1+4)		
		752.0 *5*	23	5907.4	(49/2$^-$)		
6661.9	(53/2$^+$)	788.0 *5*	100	5873.9	(49/2$^+$)		
6726.6	(55/2$^+$)	393.9 *5*	40 *13*	6332.7	(53/2$^+$)		
		744.4 *2*	100 *13*	5982.1	(51/2$^+$)	Q	
6820.1	55/2$^+$	804.7 *2*	100	6015.4	51/2$^+$	Q	
6839.2	(55/2$^-$)	392.0 *5*	28 *12*	6447.7	(53/2$^-$)		
		761.6 *2*	100 *44*	6077.5	(51/2$^-$)	Q	
6953.1	(57/2$^-$)	462.7 *2*	86 *10*	6490.5	(55/2$^-$)		
		836.2 *2*	100 *10*	6116.9	(53/2$^-$)		
6965.7	(55/2$^+$)	763.2 *2*	100	6202.5	(51/2$^+$)	Q	
6969.2	(55/2$^-$)	763.2 *2*	100	6206.0	(51/2$^-$)	Q	
7001.3	(55/2$^-$)	408.7 *5*	≤9.4	6592.6	(53/2$^-$)		
		759.0 *2*	100 *25*	6242.3	(51/2$^-$)	Q	
7036.1	57/2$^+$	404.8 *2*	30 *12*	6631.2	(55/2$^+$)	D	
		823.4 *2*	100 *36*	6212.7	53/2$^+$	Q	
7100.9	(57/2$^+$)	374.2 *5*	15 *4*	6726.6	(55/2$^+$)		
		768.1 *2*	100 *13*	6332.7	(53/2$^+$)	Q	
		888.4 *2*	38 *15*	6212.7	53/2$^+$		
7215.0	(57/2$^-$)	817.6 *2*	100	6397.5	(53/2$^-$)	E2	
7235.0	(55/2$^+$)	829.3 *2*	100	6405.7	(51/2$^+$)	Q	
7239.8	(57/2$^-$)	400.7 *5*	29 *12*	6839.2	(55/2$^-$)		
		792.1 *2*	100 *41*	6447.7	(53/2$^-$)	Q	
7241.7	(57/2$^+$)	853.5 *2*	100	6388.3	(53/2$^+$)	Q	
7259.8	(55/2$^+$)	730.3 *5*	≤50	6529.6	(53/2$^+$)		
		765.0 *5*	100 *33*	6494.8	(51/2$^+$)	Q	
7328.3	(57/2$^+$)	798.7 *2*	100	6529.6	(53/2$^+$)	E2	
7334.8	(59/2$^-$)	381.7 *2*	29.7 *27*	6953.1	(57/2$^-$)		
		844.4 *2*	100 *11*	6490.5	(55/2$^-$)		
7374.9	(57/2$^+$)	775.1 *5*	100	6599.8	(53/2$^+$)	Q	
7383.6	(57/2$^-$)	791.0 *2*	100	6592.6	(53/2$^-$)	Q	
7403.0	(57/2$^+$)	741.0& *5*	≤100	6661.9	(53/2$^+$)		
		774.9 *5*	≤100	6628.3	(53/2$^+$)	Q	

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Adopted Levels, Gammas (continued)

$\gamma(^{167}Lu)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]
7410.6	(57/2⁻)	776.6 *5*	100	6634.0	(53/2⁻)	Q
7449.8	(57/2⁺)	788.0 *5*	≤75	6661.9	(53/2⁺)	
		821.4 *5*	100 *25*	6628.3	(53/2⁺)	Q
7461.2	(J1+8)	801.9 *5*	100	6659.3	(J1+6)	
7471.1	59/2⁺	434.7 *5*	14.8 *33*	7036.1	57/2⁺	D
		744.6 *5*	8.2 *16*	6726.6	(55/2⁺)	
		840.0 *2*	100 *13*	6631.2	(55/2⁺)	Q
7543.2	(59/2⁺)	816.6 *2*	100 *17*	6726.6	(55/2⁺)	Q
		912.0 *5*	75 *17*	6631.2	(55/2⁺)	
7662.6	(59/2⁻)	423.0 *5*	≤17.7	7239.8	(57/2⁻)	
		823.3 *2*	100 *47*	6839.2	(55/2⁻)	Q
7684.8	59/2⁺	864.7 *2*	100	6820.1	55/2⁺	Q
7775.7	(59/2⁺)	810.0 *2*	100	6965.7	(55/2⁺)	Q
7779.5	(59/2⁻)	810.3 *2*	100	6969.2	(55/2⁻)	Q
7824.3	(59/2⁻)	823.0 *2*	100	7001.3	(55/2⁻)	Q
7855.3	(61/2⁻)	520.4 *2*	11.2 *34*	7334.8	(59/2⁻)	D+Q
		902.1 *2*	100 *10*	6953.1	(57/2⁻)	Q
7877.1	61/2⁺	776.2 *2*	31 *12*	7100.9	(57/2⁺)	
		841.0 *2*	100 *35*	7036.1	57/2⁺	Q
7967.8	(61/2⁺)	866.9 *2*	100 *13*	7100.9	(57/2⁺)	Q
		931.7 *2*	44 *10*	7036.1	57/2⁺	Q
8075.8	(59/2⁺)	816.0 *5*	100	7259.8	(55/2⁺)	Q
8087.5	(61/2⁻)	872.6 *2*	100	7215.0	(57/2⁻)	Q
8095.9	(61/2⁻)	855.9 *2*	100	7239.8	(57/2⁻)	Q
8099.4	(59/2⁺)	864.4 *2*	100	7235.0	(55/2⁺)	
8143.6	(61/2⁺)	815.2 *5*	≤25	7328.3	(57/2⁺)	Q
		901.9 *2*	100 *8*	7241.7	(57/2⁺)	Q
8182.9	(61/2⁺)	854.5 *2*	100 *23*	7328.3	(57/2⁺)	
		941.2 *5*	≤23	7241.7	(57/2⁺)	Q
8227.4	(61/2⁻)	843.8 *2*	100	7383.6	(57/2⁻)	Q
8228.9	(61/2⁺)	826.0 *5*	100	7403.0	(57/2⁺)	
8236.2	(63/2⁻)	381.0 *2*	26.7 *33*	7855.3	(61/2⁻)	D
		901.4 *2*	100 *12*	7334.8	(59/2⁻)	Q
8255.7	(61/2⁻)	845.1 *5*	100	7410.6	(57/2⁻)	Q
8299.2	(61/2⁺)	849.4 *5*	100	7449.8	(57/2⁺)	
8320.4	(J1+10)	859.2 *5*	100	7461.2	(J1+8)	
8342.4	63/2⁺	871.3 *2*	100	7471.1	59/2⁺	Q
8455.8	(63/2⁺)	912.6 *2*	100	7543.2	(59/2⁺)	Q
8549.5	(63/2⁻)	886.9 *2*	100	7662.6	(59/2⁻)	Q
8600.0	63/2⁺	915.2 *2*	100	7684.8	59/2⁺	Q
8644.5	(63/2⁻)	865.0 *2*	100	7779.5	(59/2⁻)	Q
8646.7	(63/2⁺)	871.0 *5*	100	7775.7	(59/2⁺)	Q
8711.3	(63/2⁻)	887.0 *2*	100	7824.3	(59/2⁻)	Q
8749.0	65/2⁺	871.9 *2*	100	7877.1	61/2⁺	Q
8824.2	(65/2⁻)	588.0 *2*	27 *4*	8236.2	(63/2⁻)	
		968.9 *2*	100 *11*	7855.3	(61/2⁻)	Q
8924.8	(65/2⁺)	957.0 *2*	100	7967.8	(61/2⁺)	Q
8946.0	(63/2⁺)	870.1 *5*	100	8075.8	(59/2⁺)	Q
9003.6	(63/2⁺)	904.2 *2*	100	8099.4	(59/2⁺)	
9014.0	(65/2⁻)	926.6 *2*	100	8087.5	(61/2⁻)	Q
9016.0	(65/2⁻)	919.5 *5*	100	8095.9	(61/2⁻)	Q
9037.8	(65/2⁺)	854.9 *5*	60 *20*	8182.9	(61/2⁺)	Q
		894.2 *2*	100 *10*	8143.6	(61/2⁺)	Q
9109.0	(65/2⁺)	880.1 *5*	44 *22*	8228.9	(61/2⁺)	
		926.0 *5*	100 *22*	8182.9	(61/2⁺)	Q

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Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]
9120.5	(65/2$^-$)	893.1 *2*	100	8227.4	(61/2$^-$)	
9173.2	(65/2$^-$)	917.5 *5*	100	8255.7	(61/2$^-$)	
9192.6	(67/2$^-$)	368.4 *2*	27 *4*	8824.2	(65/2$^-$)	D
		956.4 *2*	100 *11*	8236.2	(63/2$^-$)	Q
9210.5	(65/2$^+$)	911.3 *5*	100	8299.2	(61/2$^+$)	
9232.4	(J1+12)	912.0 *5*	100	8320.4	(J1+10)	
9269.9	67/2$^+$	927.5 *2*	100	8342.4	63/2$^+$	Q
9442.9	(67/2$^+$)	987.1 *5*	100	8455.8	(63/2$^+$)	Q
9498.2	(67/2$^-$)	948.7 *5*	100	8549.5	(63/2$^-$)	Q
9542.1	67/2$^+$	942.1 *5*	100	8600.0	63/2$^+$	Q
9568.2	(67/2$^-$)	923.7 *2*	100	8644.5	(63/2$^-$)	Q
9571.4	(67/2$^+$)	924.7 *5*	100	8646.7	(63/2$^+$)	Q
9657.3	(67/2$^-$)	946.0 *2*	100	8711.3	(63/2$^-$)	
9674.1	69/2$^+$	925.1 *2*	100	8749.0	65/2$^+$	Q
9858.3	(69/2$^-$)	1034.1 *2*	100	8824.2	(65/2$^-$)	Q
9869.0	(67/2$^+$)	923.0 *5*	100	8946.0	(63/2$^+$)	Q
9946.8	(69/2$^+$)	1022.0 *2*	100	8924.8	(65/2$^+$)	Q
9969.6	(69/2$^+$)	931.8 *2*	100	9037.8	(65/2$^+$)	Q
9993.8	(69/2$^-$)	976.9 *5*	≤12.5	9016.0	(65/2$^-$)	
		980.0 *2*	100 *25*	9014.0	(65/2$^-$)	Q
9997.0	(69/2$^-$)	981.1 *5*	≤100	9016.0	(65/2$^-$)	Q
		982.5 *5*	≤100	9014.0	(65/2$^-$)	
10068.0	(69/2$^+$)	959.0 *5*	100	9109.0	(65/2$^+$)	Q
10070.9	(69/2$^-$)	950.4 *2*	100	9120.5	(65/2$^-$)	
10144.7	(69/2$^-$)	971.5 *5*	100	9173.2	(65/2$^-$)	
10185.0	(J1+14)	952.6 *5*	100	9232.4	(J1+12)	
10193.0	(69/2$^+$)	982.5 *5*	100	9210.5	(65/2$^+$)	
10202.9	(71/2$^-$)	1010.3 *2*	100	9192.6	(67/2$^-$)	Q
10263.6	71/2$^+$	993.7 *2*	100	9269.9	67/2$^+$	Q
10489.1	(71/2$^+$)	1046.2 *5*	100	9442.9	(67/2$^+$)	(Q)
10504.1	(71/2$^-$)	1005.9 *5*	100	9498.2	(67/2$^-$)	Q
10531.4	71/2$^+$	989.3 *5*	100	9542.1	67/2$^+$	Q
10551.3	(71/2$^+$)	979.9 *5*	100	9571.4	(67/2$^+$)	Q
10553.1	(71/2$^-$)	984.9 *5*	100	9568.2	(67/2$^-$)	
10654.4	73/2$^+$	980.3 *2*	100	9674.1	69/2$^+$	Q
10655.3	(71/2$^-$)	998.0 *2*	100	9657.3	(67/2$^-$)	
10846.4	(71/2$^+$)	977.4 *5*	100	9869.0	(67/2$^+$)	
10947.3	(73/2$^-$)	1089.0 *2*	100	9858.3	(69/2$^-$)	Q
10957.6	(73/2$^+$)	988.0 *2*	100	9969.6	(69/2$^+$)	Q
11027.2	(73/2$^-$)	1033.9 *5*	100	9993.8	(69/2$^-$)	Q
11030.9	(73/2$^+$)	1084.1 *2*	100	9946.8	(69/2$^+$)	
11037.0	(73/2$^-$)	1039.5 *5*	100	9997.0	(69/2$^-$)	Q
11084.1	(73/2$^-$)	1013.2 *2*	100	10070.9	(69/2$^-$)	
11084.4	(73/2$^+$)	1016.4 *5*	100	10068.0	(69/2$^+$)	Q
11151.7	(73/2$^-$)	1007.0 *5*	100	10144.7	(69/2$^-$)	
11194.1	(J1+16)	1009.1 *5*	100	10185.0	(J1+14)	
11219.4	(73/2$^+$)	1026.4 *5*	100	10193.0	(69/2$^+$)	
11265.3	(75/2$^-$)	1062.4 *2*	100	10202.9	(71/2$^-$)	Q
11321.9	75/2$^+$	1058.3 *5*	100	10263.6	71/2$^+$	Q
11558.9	(75/2$^-$)	1054.8 *5*	100	10504.1	(71/2$^-$)	Q
11571.4	(75/2$^+$)	1040.0 *5*	100	10531.4	71/2$^+$	
11587.9	(75/2$^+$)	1036.6 *5*	100	10551.3	(71/2$^+$)	Q
11594.4	(75/2$^+$)	1105.3 *5*	100	10489.1	(71/2$^+$)	Q
11601.2	(75/2$^-$)	1048.1 *5*	100	10553.1	(71/2$^-$)	
11690.5	77/2$^+$	1036.1 *2*	100	10654.4	73/2$^+$	Q

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{167}Lu)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]
11878.7	(75/2$^+$)	1032.3 *5*	100	10846.4	(71/2$^+$)	
12011.6	(77/2$^+$)	1054.0 *5*	100	10957.6	(73/2$^+$)	Q
12049.5	(77/2$^-$)	1102.2 *2*	100	10947.3	(73/2$^-$)	Q
12127.2	(77/2$^-$)	1090.1 *5*	≤100	11037.0	(73/2$^-$)	
		1100.1 *5*	≤100	11027.2	(73/2$^-$)	
12139.2	(77/2$^-$)	1102.0 *5*	≤100	11037.0	(73/2$^-$)	Q
		1112.3 *5*	≤100	11027.2	(73/2$^-$)	
12154.7	(77/2$^-$)	1070.6 *2*	100	11084.1	(73/2$^-$)	
12160.3	(77/2$^+$)	1075.9 *5*	100	11084.4	(73/2$^+$)	Q
12168.0	(77/2$^+$)	1137.1 *5*	100	11030.9	(73/2$^+$)	
12209.6	(77/2$^-$)	1057.9[&] *5*	100	11151.7	(73/2$^-$)	
12377.2	(79/2$^-$)	1111.9 *2*	100	11265.3	(75/2$^-$)	Q
12440.4	79/2$^+$	1118.4 *5*	100	11321.9	75/2$^+$	Q
12657.0	(79/2$^-$)	1098.1 *5*	100	11558.9	(75/2$^-$)	Q
12686.9	(79/2$^+$)	1099.0 *5*	100	11587.9	(75/2$^+$)	
12697.3	(79/2$^-$)	1096.1 *5*	100	11601.2	(75/2$^-$)	
12780.9	81/2$^+$	1090.4 *5*	100	11690.5	77/2$^+$	Q
12962.7	(79/2$^+$)	1084.0 *5*	100	11878.7	(75/2$^+$)	
13131.7	(81/2$^+$)	1120.1 *5*	100	12011.6	(77/2$^+$)	Q
13157.8	(81/2$^-$)	1108.3 *5*	100	12049.5	(77/2$^-$)	Q
13278.2	(81/2$^-$)	1139.1[&] *5*	≤100	12139.2	(77/2$^-$)	
		1150.9 *5*	≤100	12127.2	(77/2$^-$)	
13290.8	(81/2$^-$)	1136.1 *5*	100	12154.7	(77/2$^-$)	
13291.0	(81/2$^-$)	1151.8[&] *5*	100	12139.2	(77/2$^-$)	
13295.4	(81/2$^+$)	1135.1 *5*	100	12160.3	(77/2$^+$)	
13537.3	(83/2$^-$)	1160.1 *5*	100	12377.2	(79/2$^-$)	Q
13611.0	83/2$^+$	1170.6 *5*	100	12440.4	79/2$^+$	Q
13795.4	(83/2$^-$)	1138.4 *5*	100	12657.0	(79/2$^-$)	
13813.3	(83/2$^-$)	1115.9 *5*	100	12697.3	(79/2$^-$)	
13851.1	(83/2$^+$)	1164.1 *5*	100	12686.9	(79/2$^+$)	
13921.7	85/2$^+$	1140.8 *5*	100	12780.9	81/2$^+$	Q
14111.9	(83/2$^+$)	1149.2 *5*	100	12962.7	(79/2$^+$)	
14299.7	(85/2$^-$)	1141.9 *5*	100	13157.8	(81/2$^-$)	
14315.0	(85/2$^+$)	1183.3 *5*	100	13131.7	(81/2$^+$)	Q
14466.4	(85/2$^-$)	1188.2 *5*	100	13278.2	(81/2$^-$)	
14487.8	(85/2$^+$)	1192.4 *5*	100	13295.4	(81/2$^+$)	
14737.5	(87/2$^-$)	1200.2 *5*	100	13537.3	(83/2$^-$)	Q
14823.3	87/2$^+$	1212.3 *5*	100	13611.0	83/2$^+$	Q
14965.0	(87/2$^-$)	1169.6 *5*	100	13795.4	(83/2$^-$)	
15108.1	89/2$^+$	1186.4 *5*	100	13921.7	85/2$^+$	Q
15312.0	(87/2$^+$)	1200.1 *5*	100	14111.9	(83/2$^+$)	
15472.8	(89/2$^-$)	1173.1 *5*	100	14299.7	(85/2$^-$)	
15558.2	(89/2$^+$)	1243.2 *5*	100	14315.0	(85/2$^+$)	
15735.0	(89/2$^+$)	1247.2 *5*	100	14487.8	(85/2$^+$)	
15968.5	(91/2$^-$)	1231.0 *5*	100	14737.5	(87/2$^-$)	
16067.3	(91/2$^+$)	1244.0 *5*	100	14823.3	87/2$^+$	
16339.3	93/2$^+$	1231.2 *5*	100	15108.1	89/2$^+$	Q
16681.2	(93/2$^-$)	1208.4 *5*	100	15472.8	(89/2$^-$)	
17048.1?	(93/2$^+$)	1313.1[&] *5*	100	15735.0	(89/2$^+$)	
17229.8	(95/2$^-$)	1261.3 *5*	100	15968.5	(91/2$^-$)	
17323.4	(95/2$^+$)	1256.1 *5*	100	16067.3	(91/2$^+$)	
17617.9	(97/2$^+$)	1278.6 *5*	100	16339.3	93/2$^+$	
17943.3?	(97/2$^-$)	1262.1[&] *5*	100	16681.2	(93/2$^-$)	
768.0+x	(J2+2)	768.0 *5*	100	x	J2	(Q)

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

γ(^{167}Lu) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]
1582.8+x	(J2+4)	814.8 *5*	100	768.0+x	(J2+2)	Q
2459.0+x	(J2+6)	876.2 *5*	100	1582.8+x	(J2+4)	Q
3389.0+x	(J2+8)	930.0 *5*	100	2459.0+x	(J2+6)	Q
4373.7+x	(J2+10)	984.7 *5*	100	3389.0+x	(J2+8)	Q
5413.2+x	(J2+12)	1039.5 *5*	100	4373.7+x	(J2+10)	Q
6509.4+x	(J2+14)	1096.2 *5*	100	5413.2+x	(J2+12)	Q
7662.5+x	(J2+16)	1153.1 *5*	100	6509.4+x	(J2+14)	Q
8872.9+x	(J2+18)	1210.4 *5*	100	7662.5+x	(J2+16)	Q
10136.9+x	(J2+20)	1264.0 *5*	100	8872.9+x	(J2+18)	Q
11446.2+x	(J2+22)	1309.3 *5*	100	10136.9+x	(J2+20)	Q
12802.3+x	(J2+24)	1356.1 *5*	100	11446.2+x	(J2+22)	
807.0+y	(J3+2)	807.0 *5*	100	y	J3	
1670.1+y	(J3+4)	863.1 *5*	100	807.0+y	(J3+2)	
2588.4+y	(J3+6)	918.3 *5*	100	1670.1+y	(J3+4)	
3562.9+y	(J3+8)	974.5 *5*	100	2588.4+y	(J3+6)	
4593.0+y	(J3+10)	1030.1 *5*	100	3562.9+y	(J3+8)	
5682.3+y	(J3+12)	1089.3 *5*	100	4593.0+y	(J3+10)	
6830.5+y	(J3+14)	1148.2 *5*	100	5682.3+y	(J3+12)	
8040.5+y	(J3+16)	1210.0 *5*	100	6830.5+y	(J3+14)	
9310.7+y	(J3+18)	1270.2 *5*	100	8040.5+y	(J3+16)	

† From ^{123}Sb(^{48}Ca,4nγ) E=203 MeV, unless otherwise noted.

‡ Assignments are based on DCO data in ^{123}Sb(^{48}Ca,4nγ) E=203 MeV. Multipolarity of Q indicates ΔJ=2, quadrupole (E2), mult=D indicates ΔJ=1, dipole (E1 or M1), and mult=D+Q indicates ΔJ=1, dipole+quadrupole (M1+E2). Mult=E2 or (E2) assignments are from DCO ratio, internal conversion coefficient, and RUL (for E2 and M2) when level half-life is listed.

Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

@ Multiply placed with intensity suitably divided.

& Placement of transition in the level scheme is uncertain.

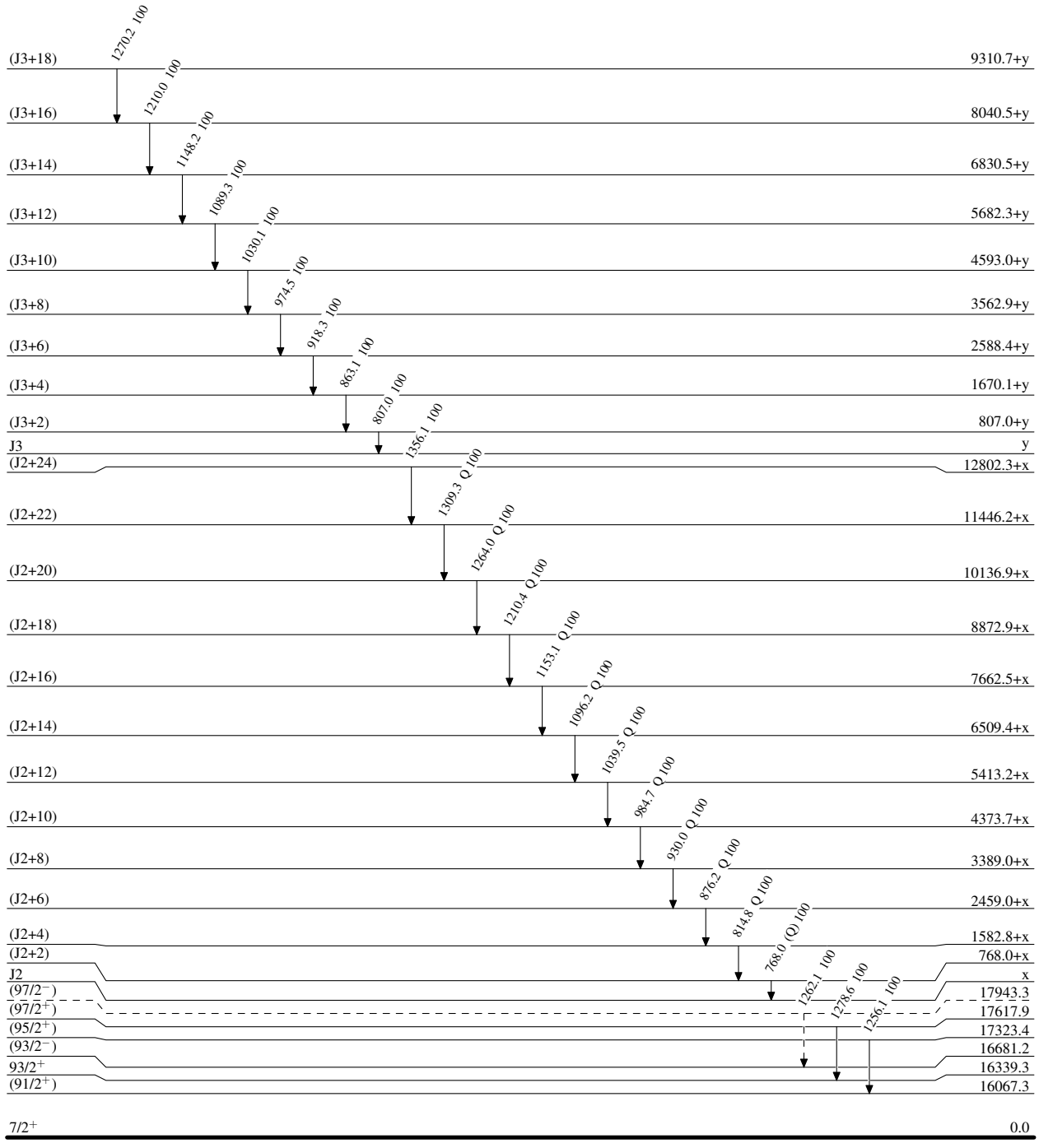
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{167}_{71}Lu_{96}$

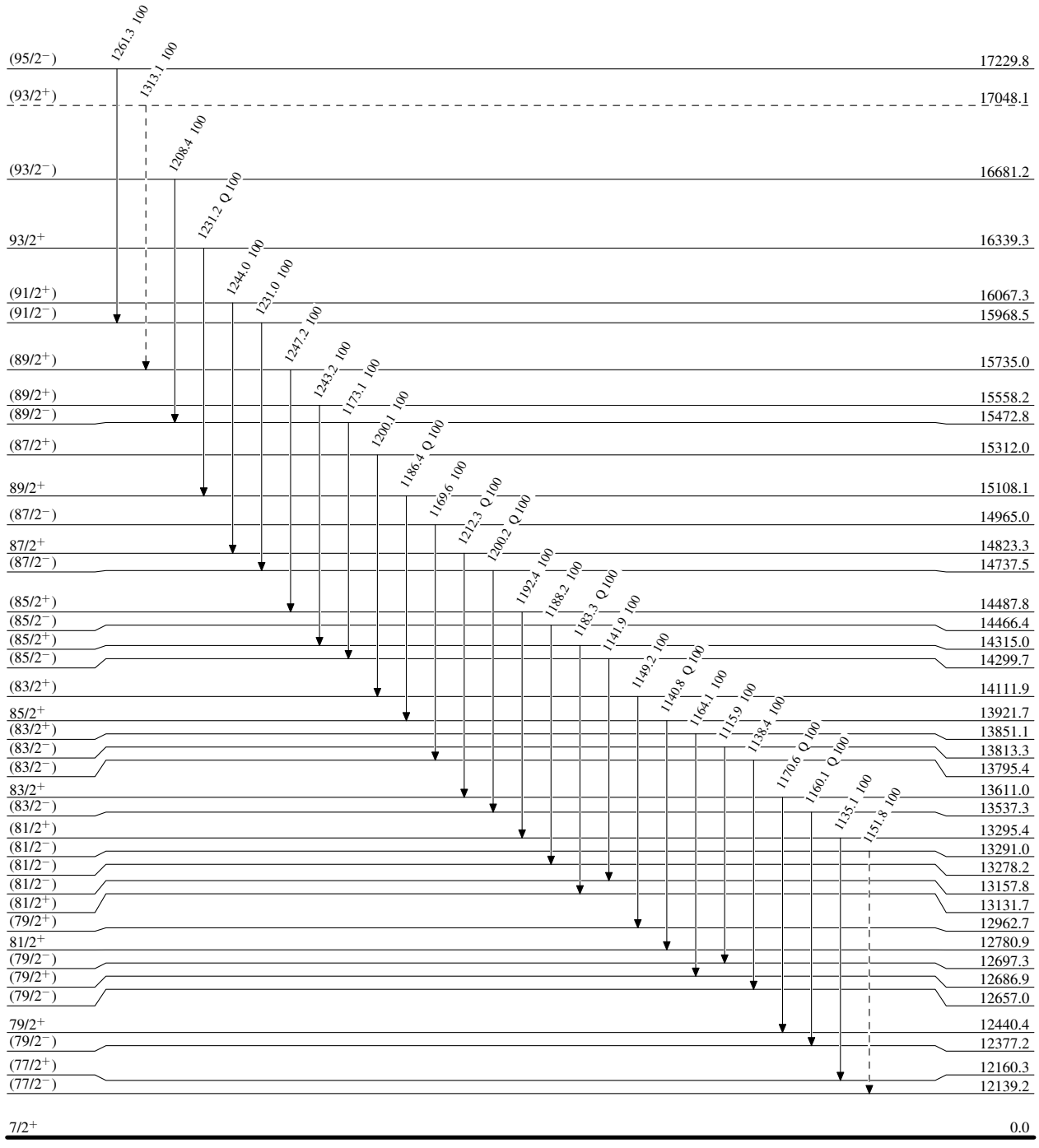
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



51.46 min *15*

$^{167}_{71}Lu_{96}$

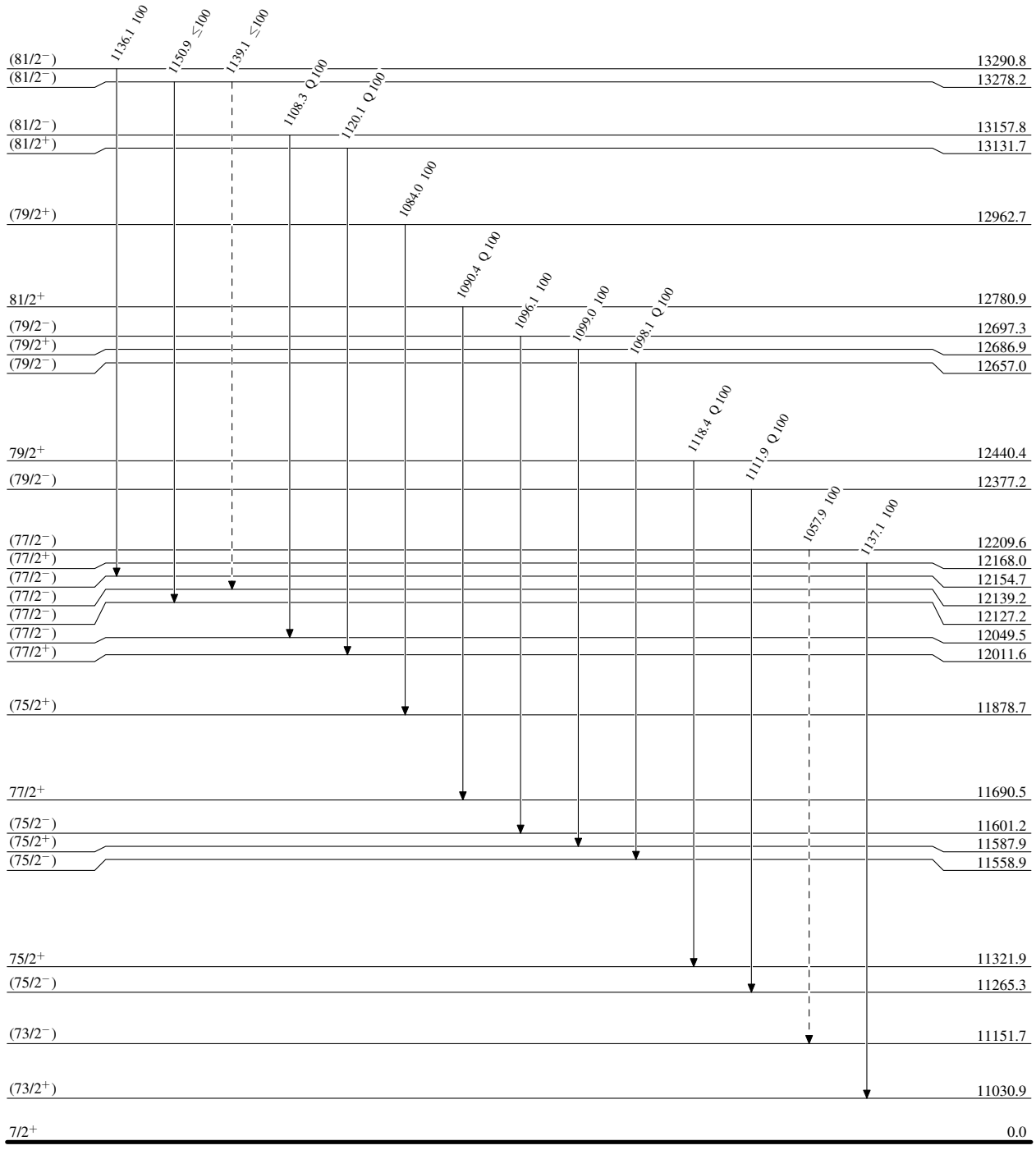
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

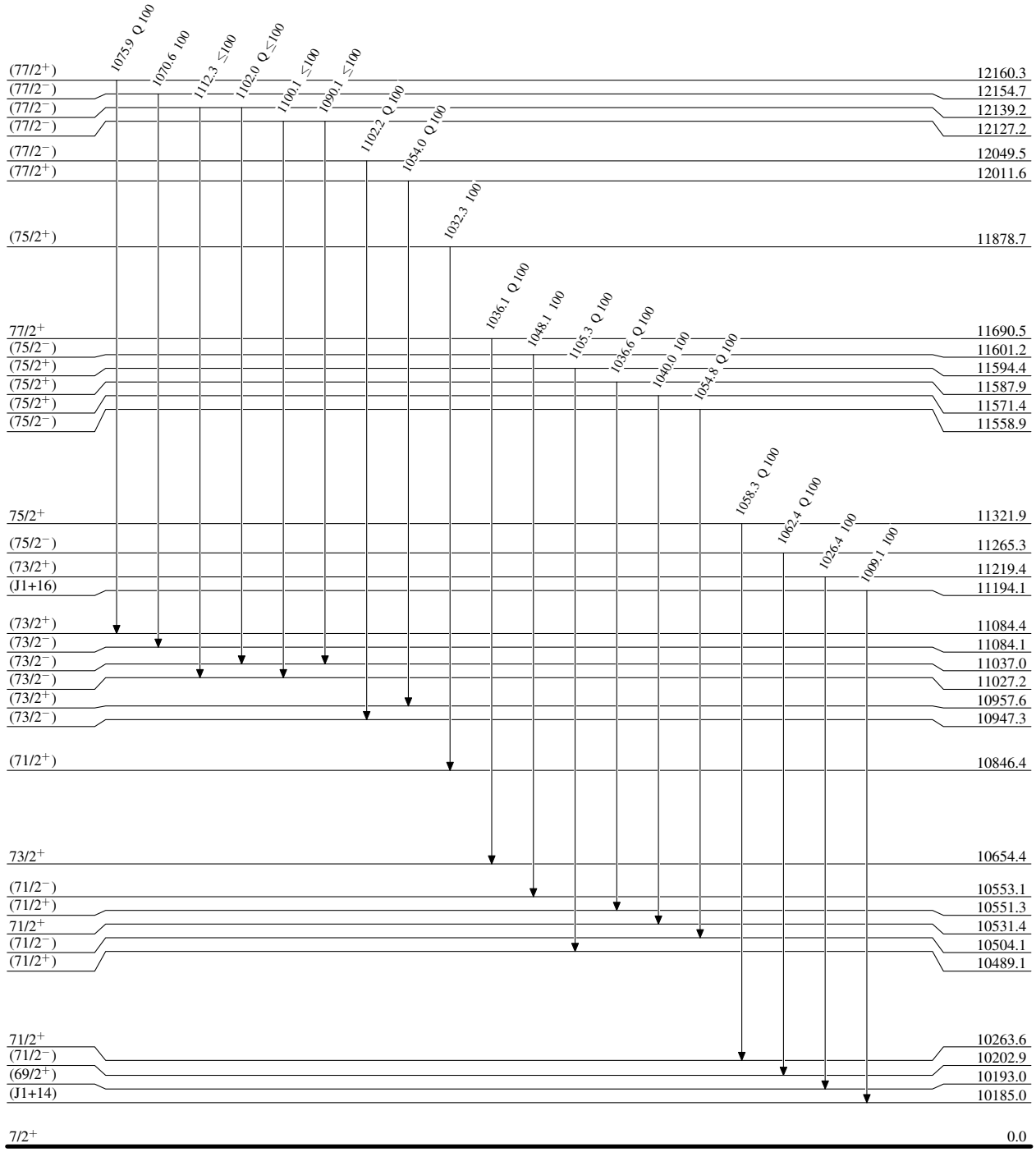


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

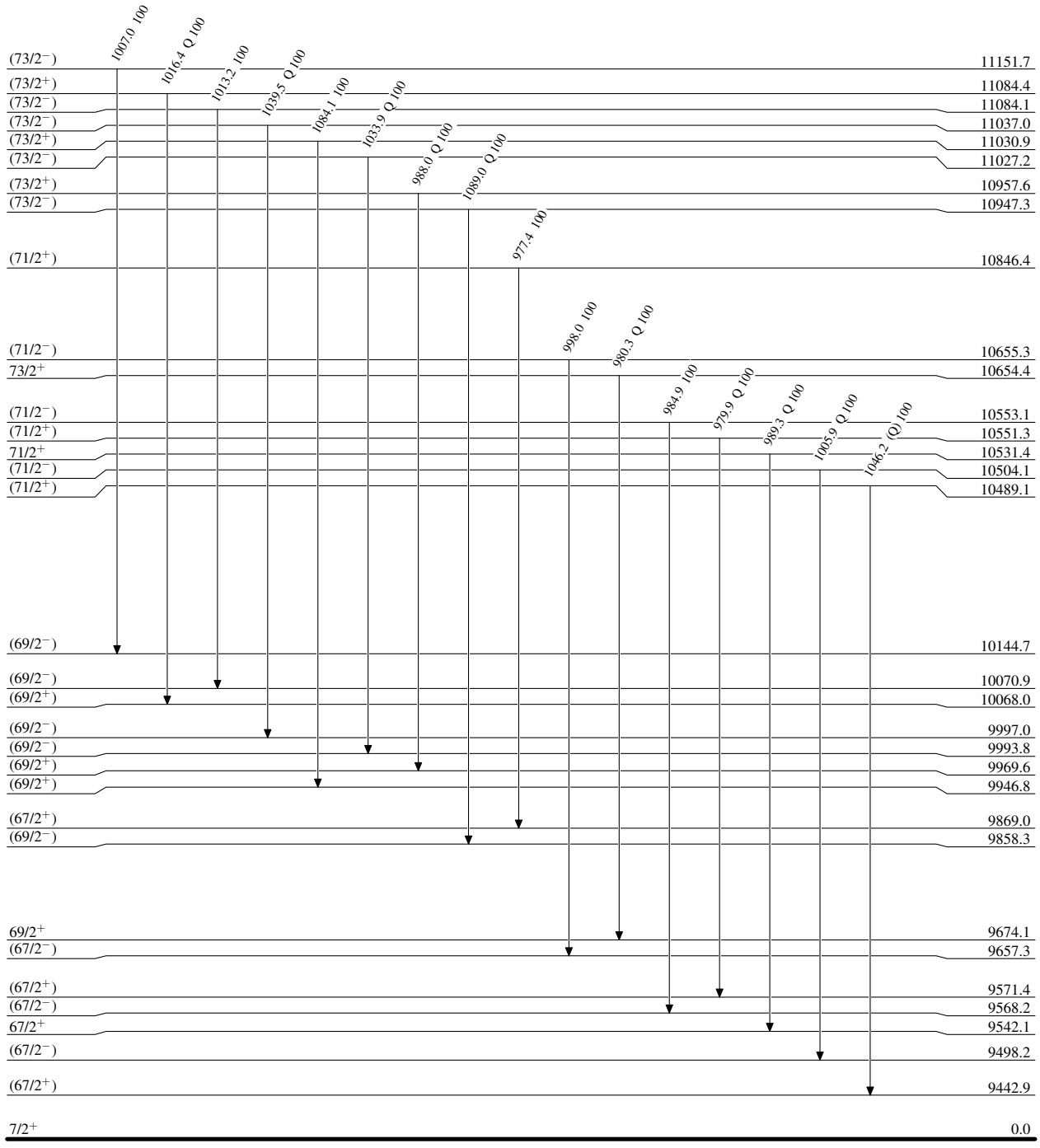


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

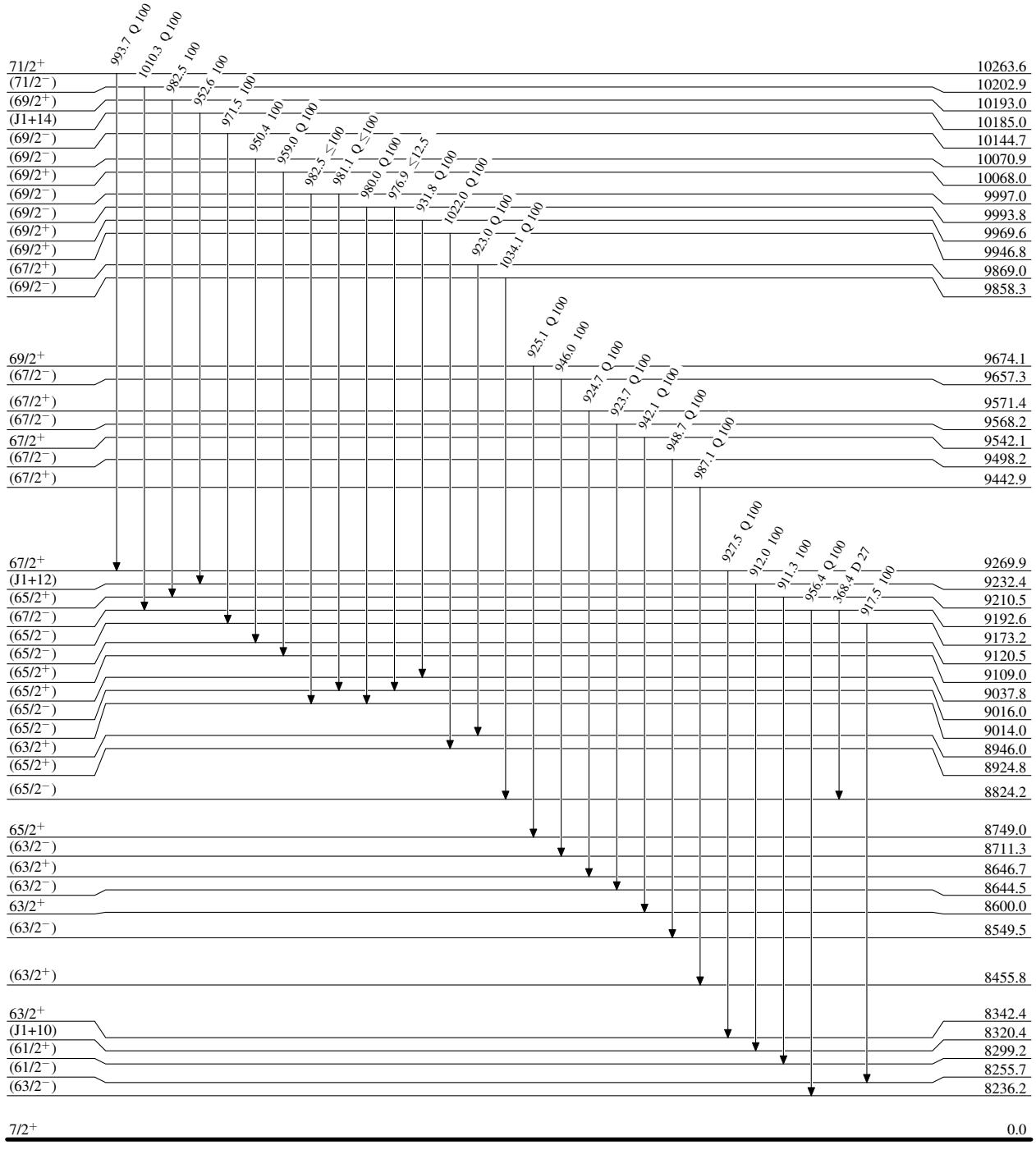


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

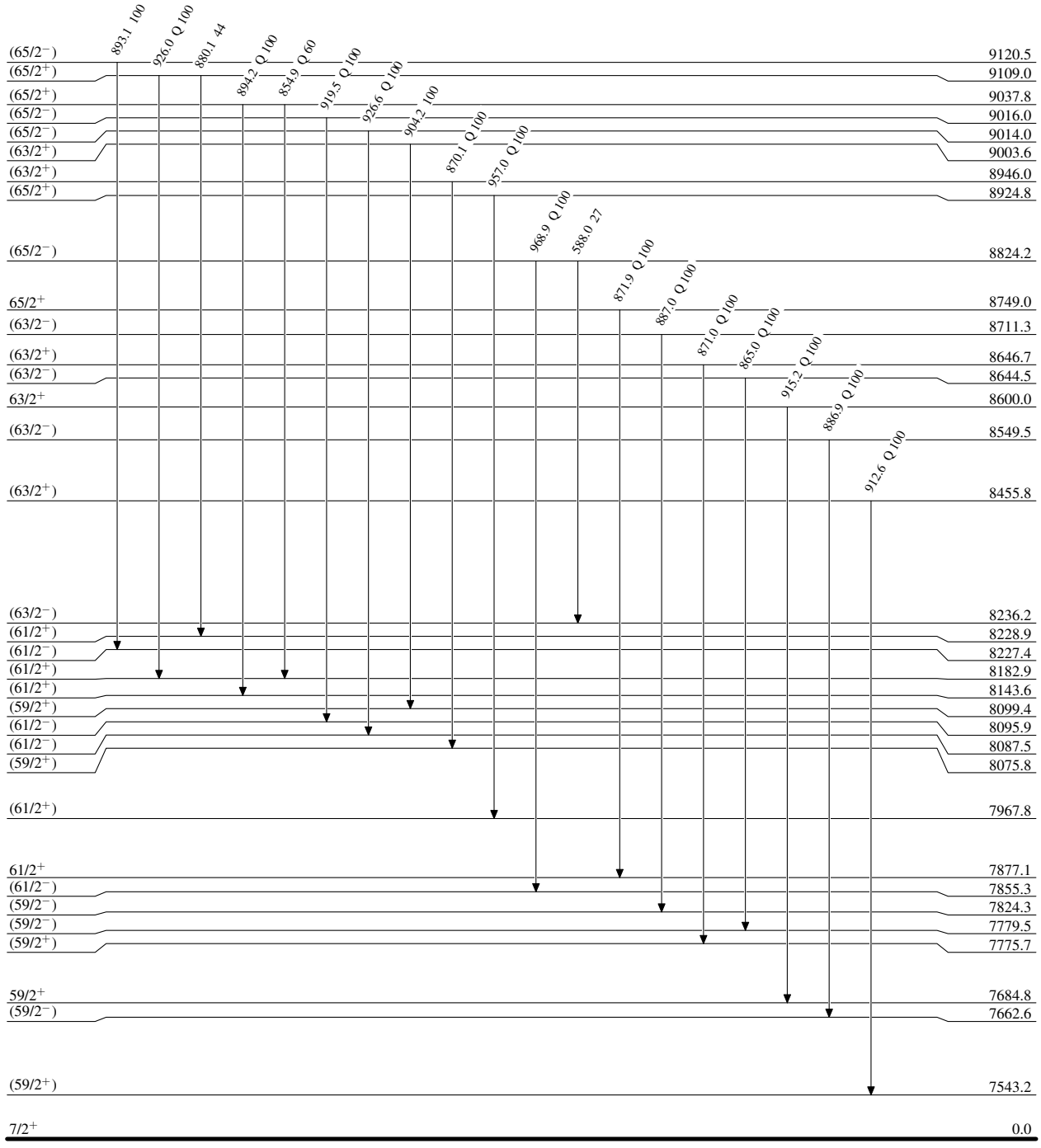


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

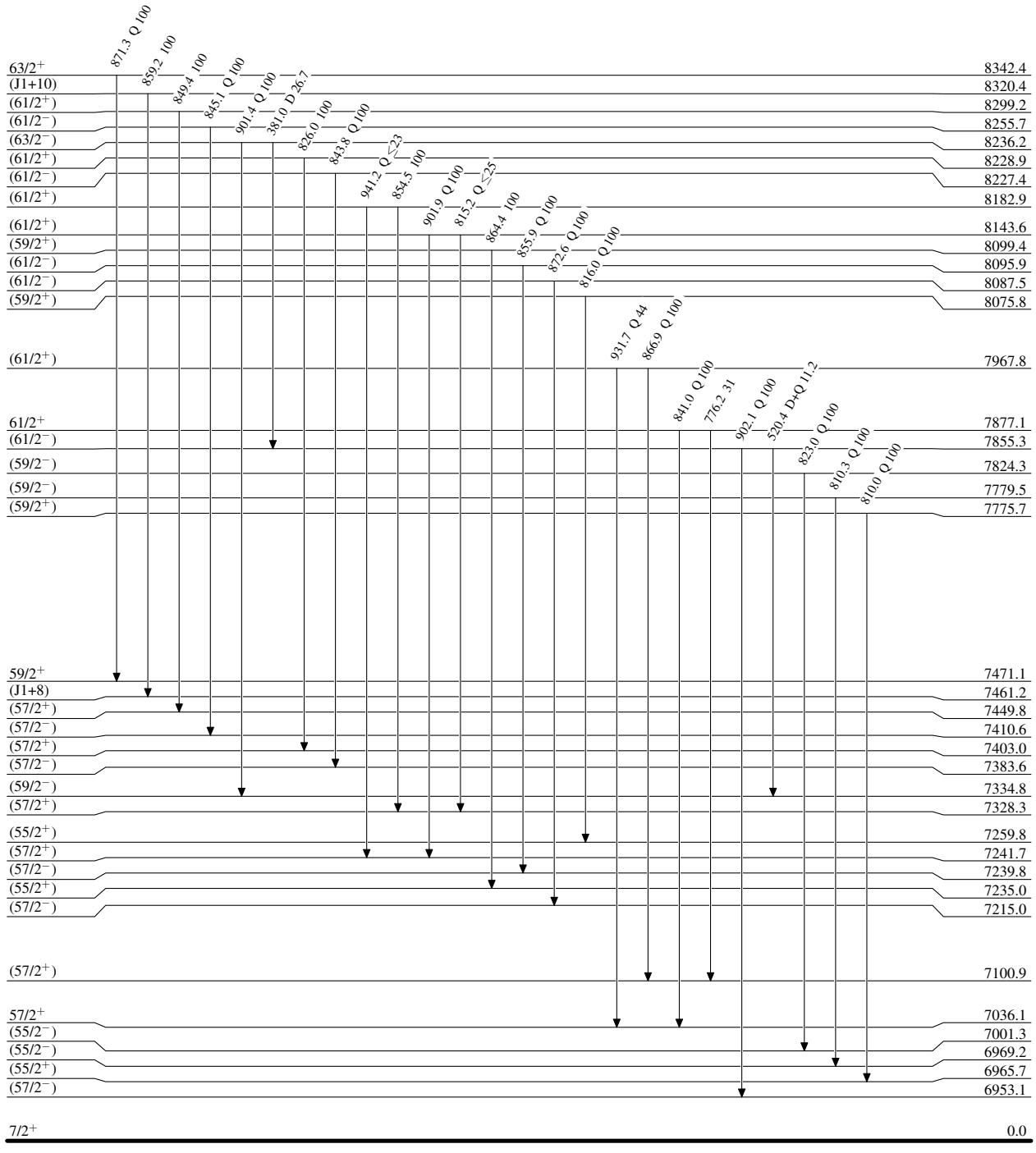


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{167}_{71}Lu_{96}$

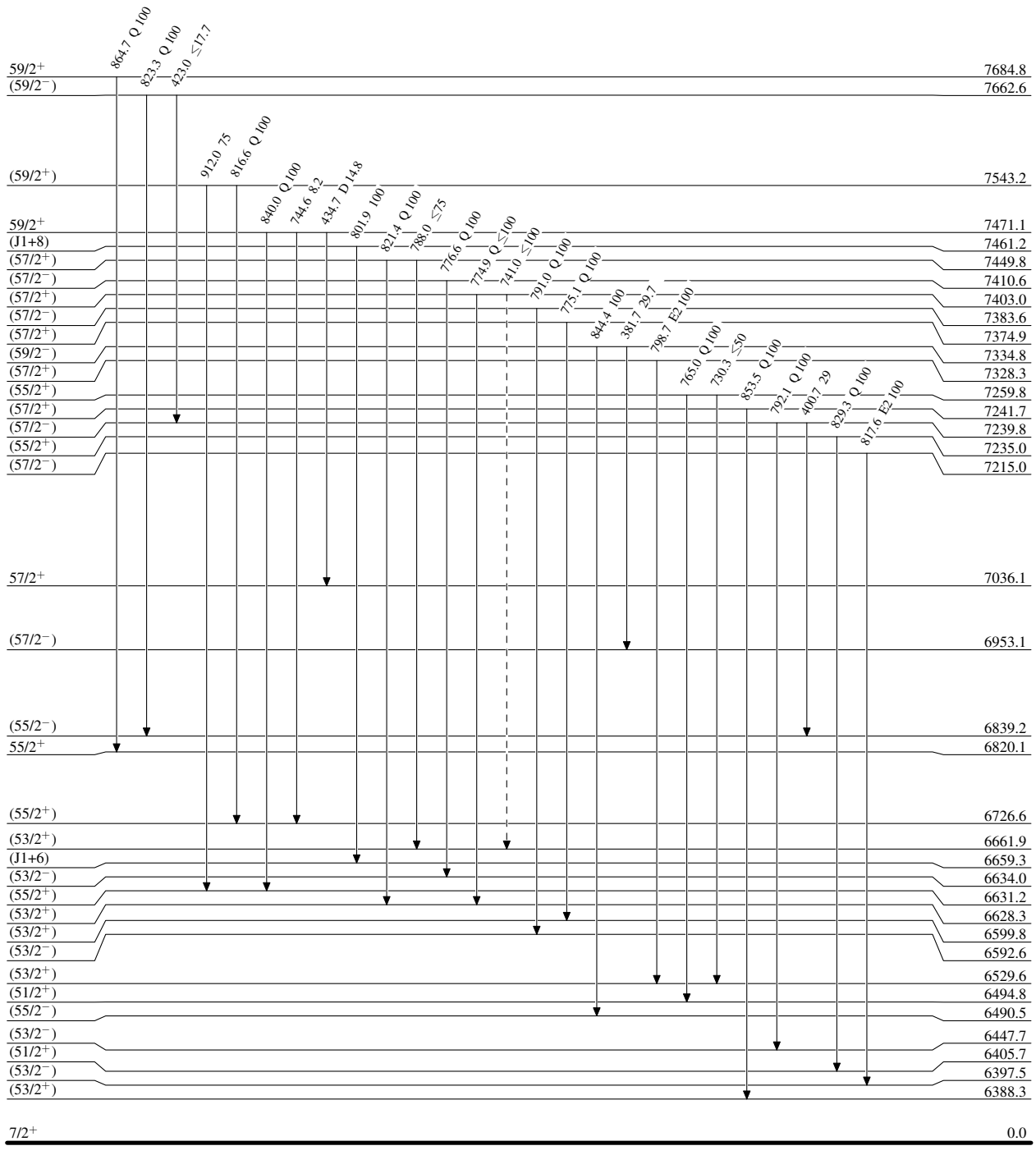
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

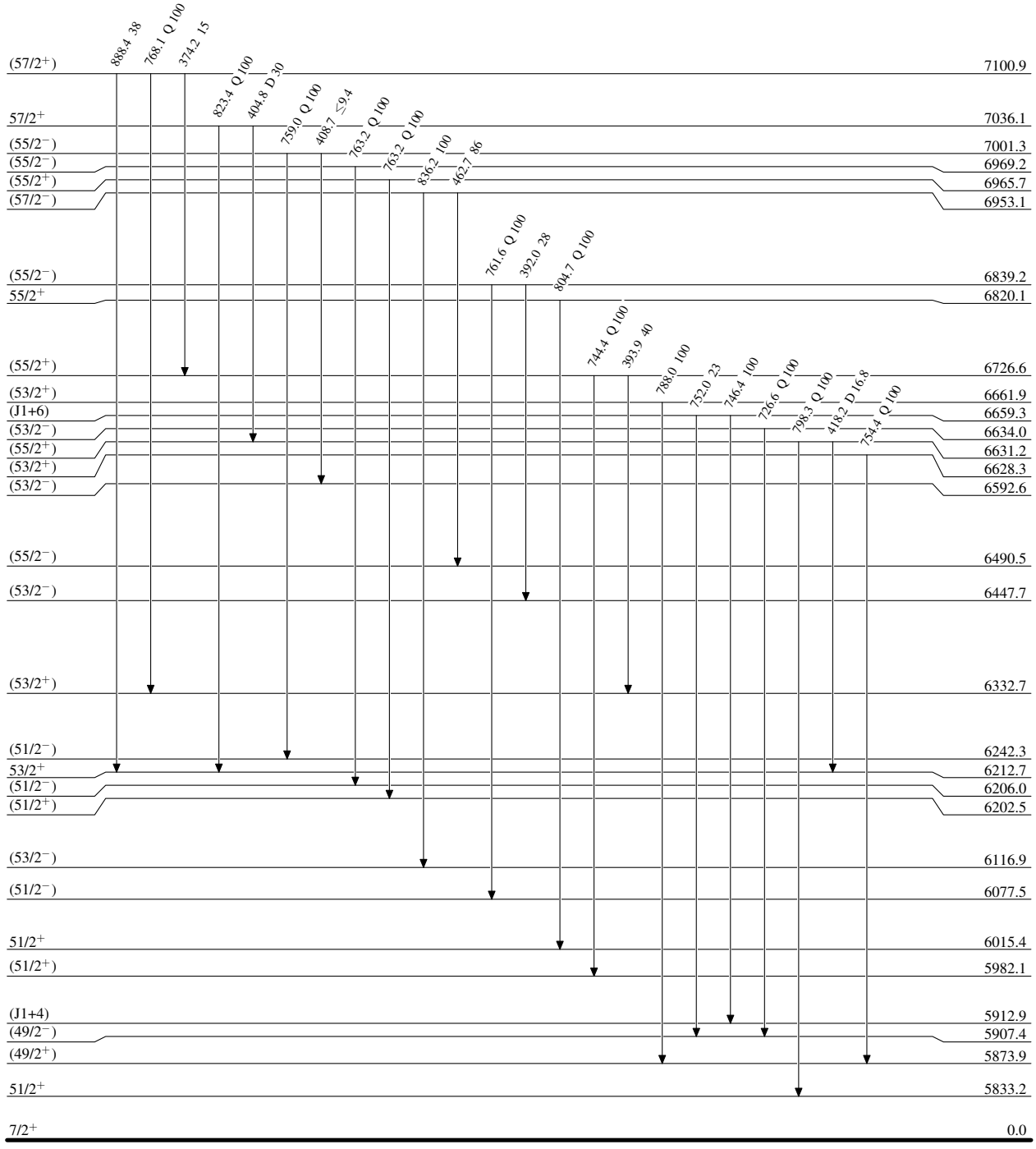


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

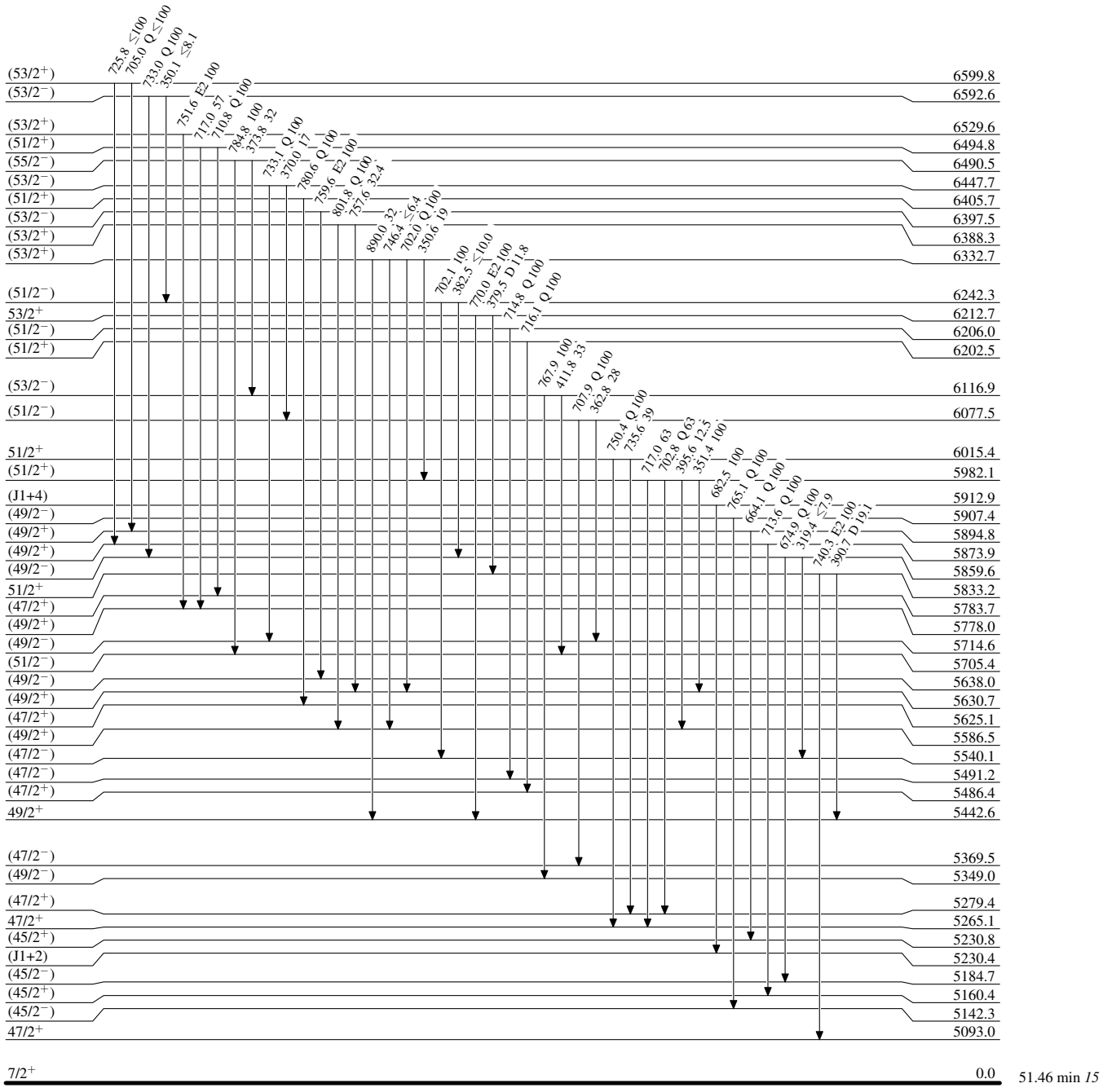


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

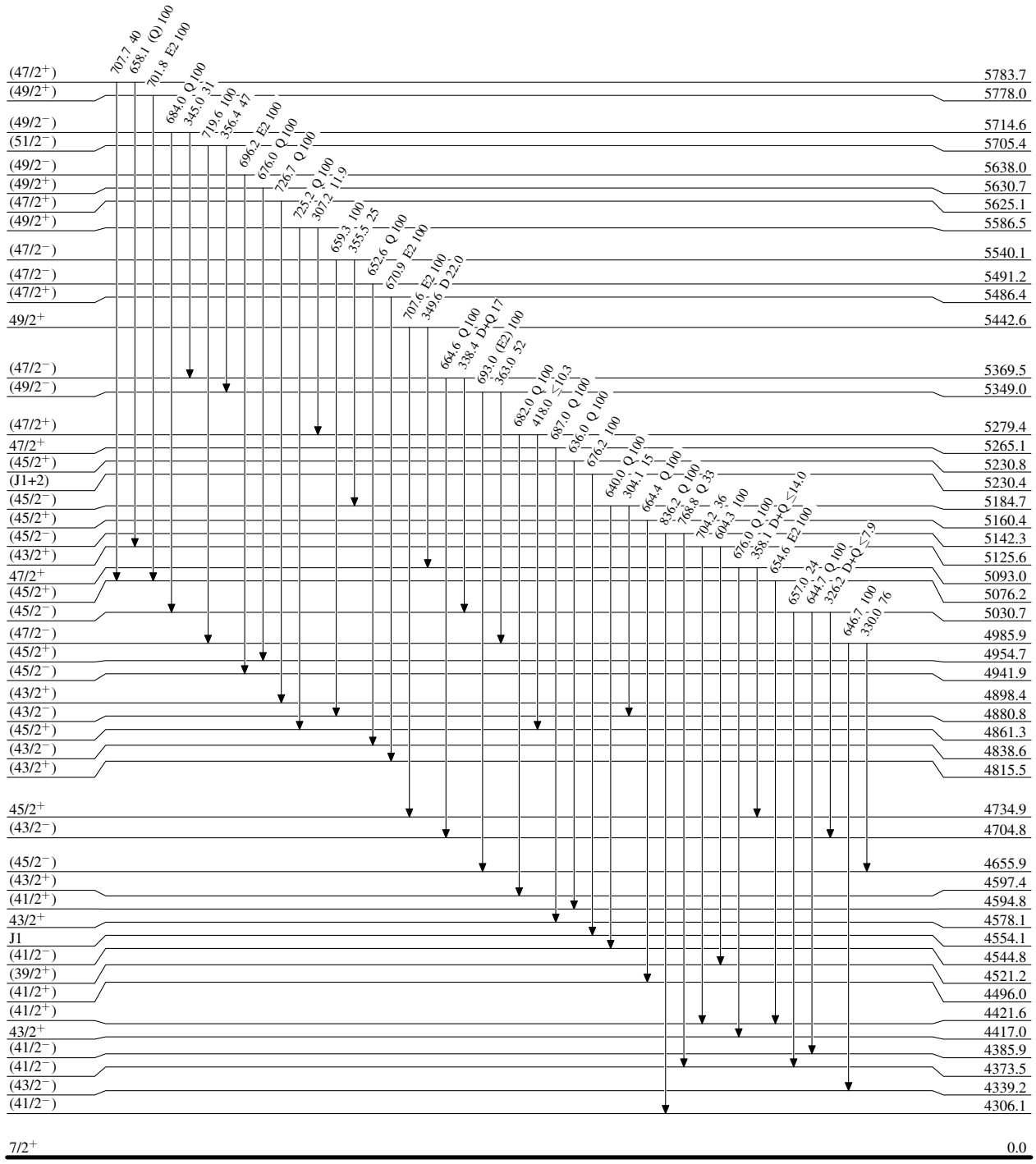


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

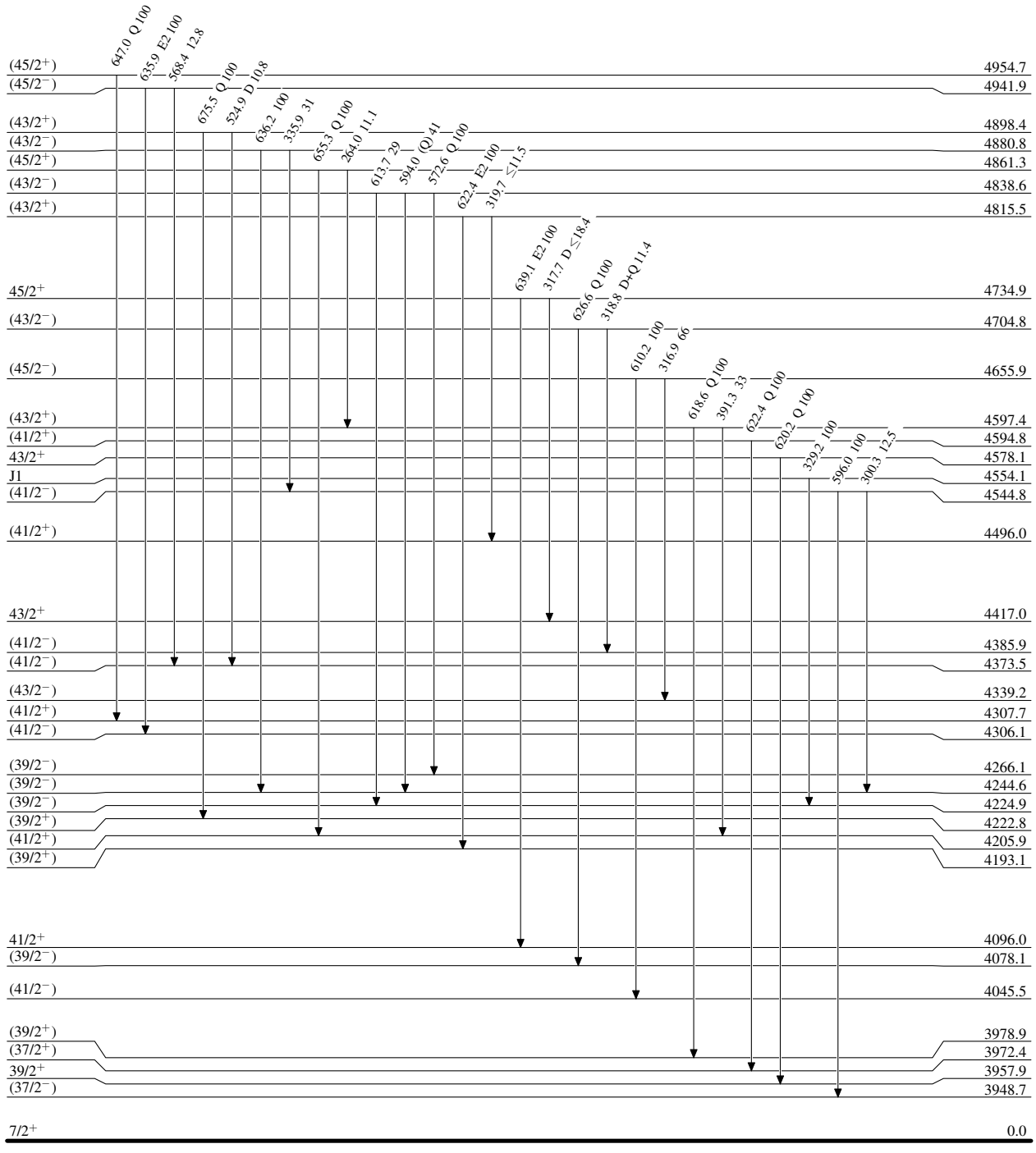


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

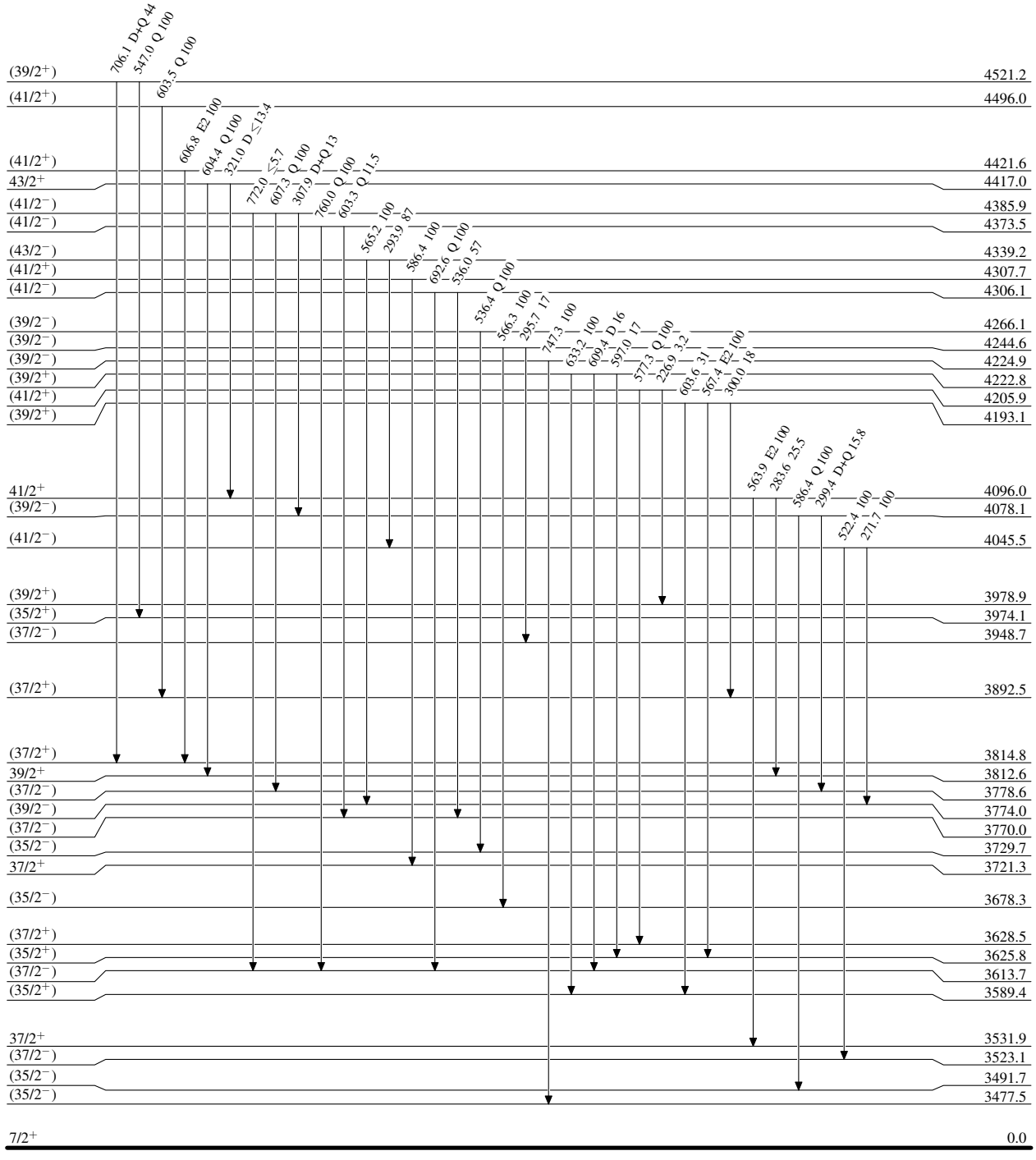


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



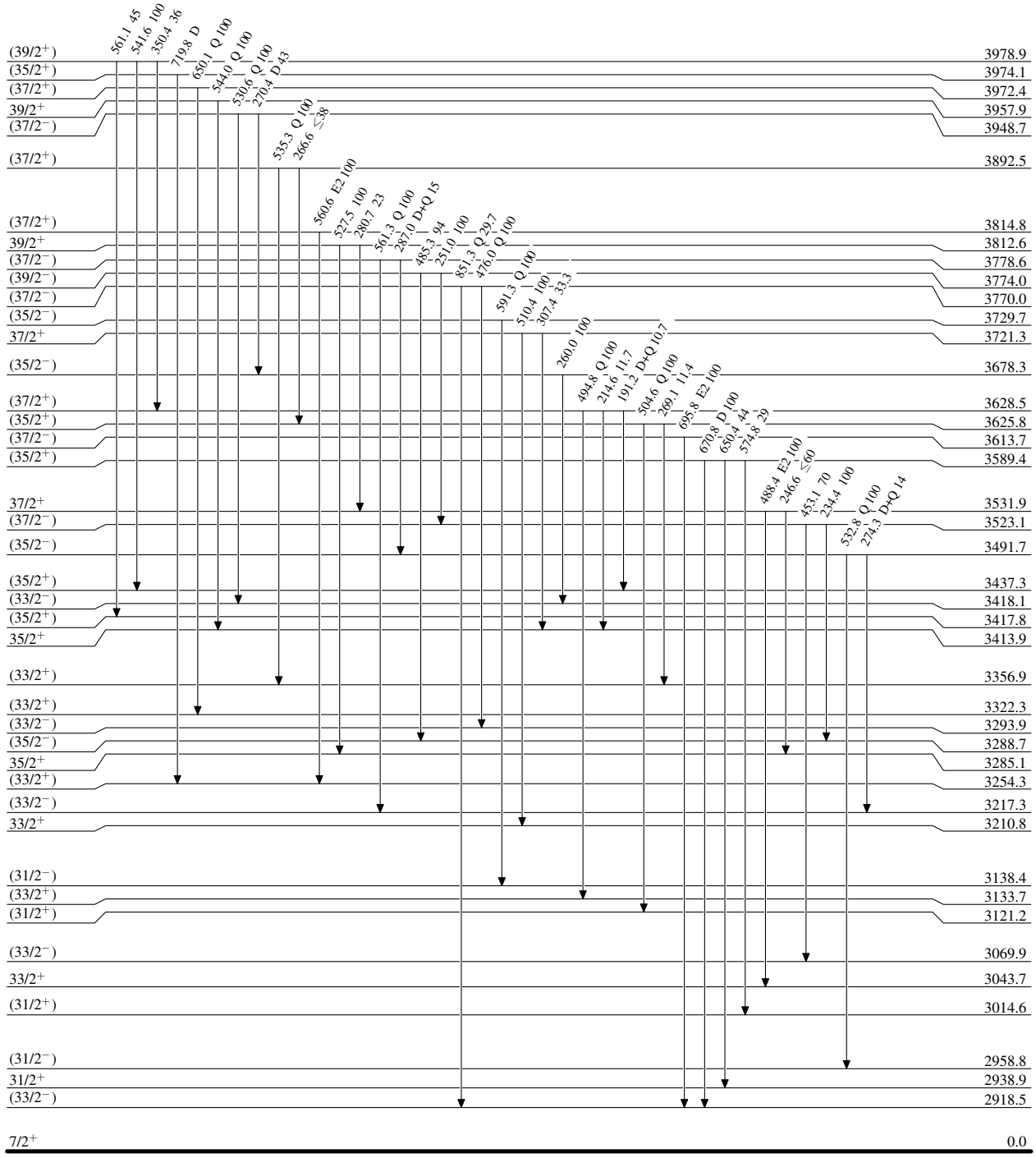
51.46 min *15*

$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

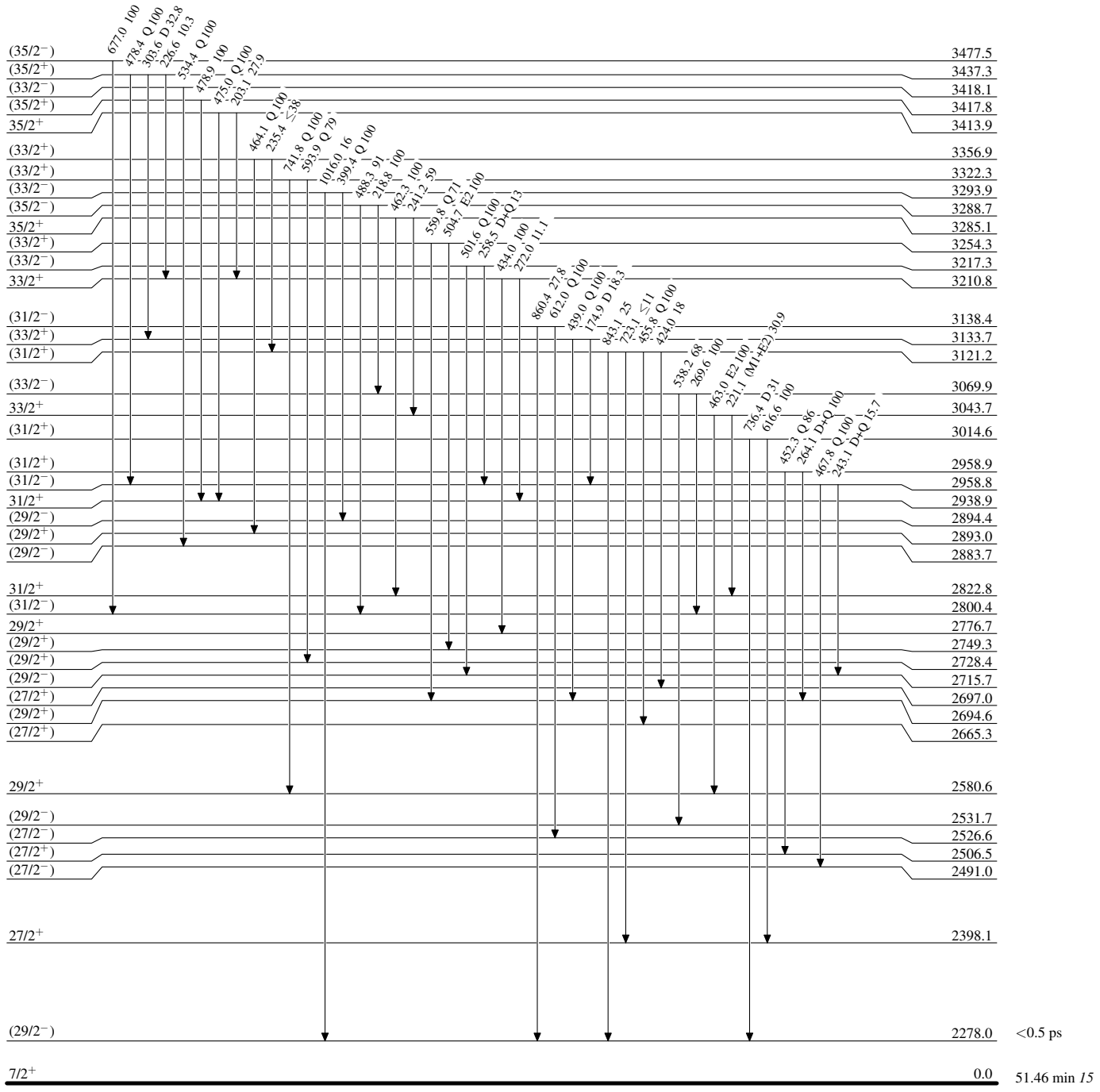


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

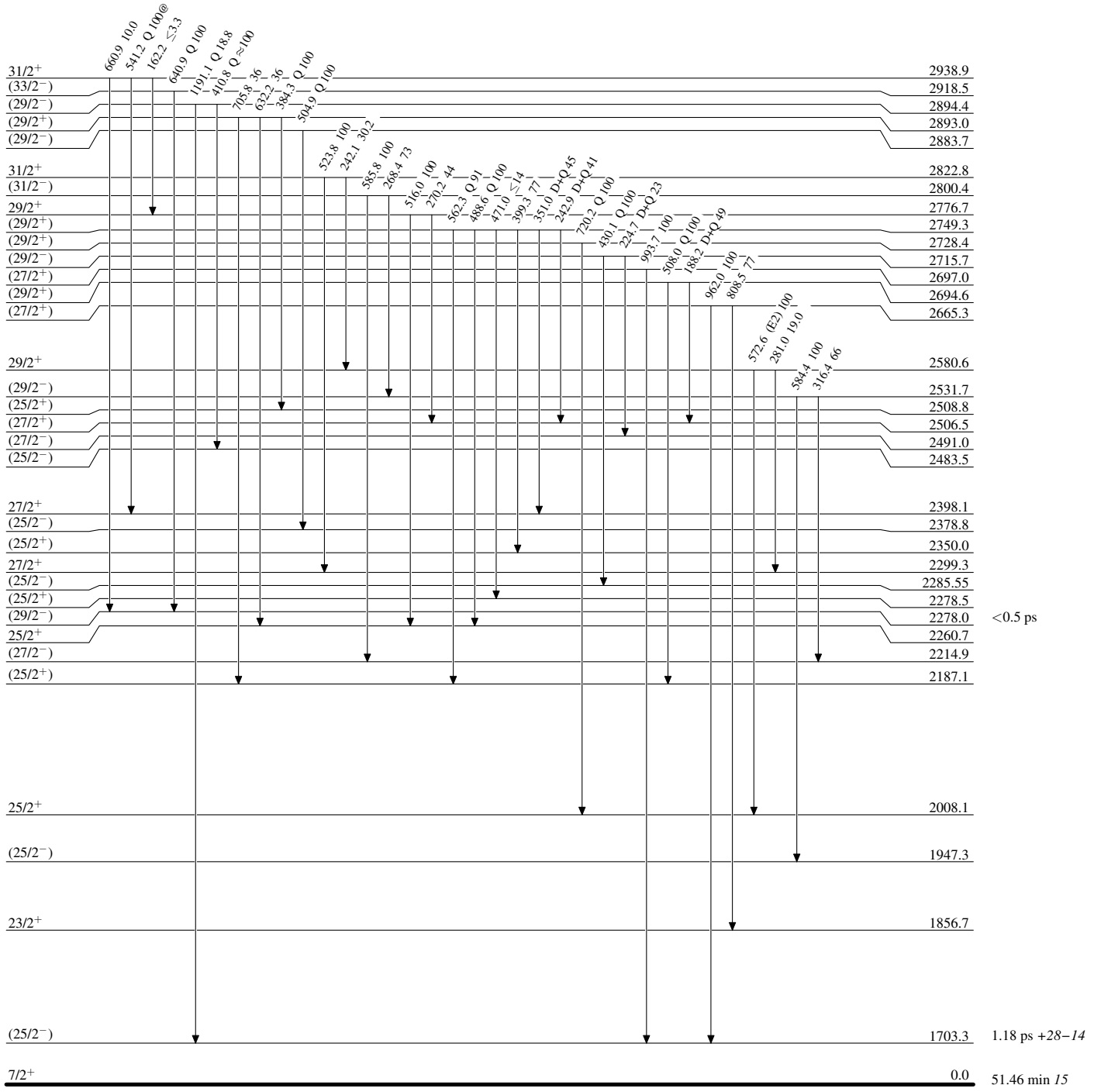


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

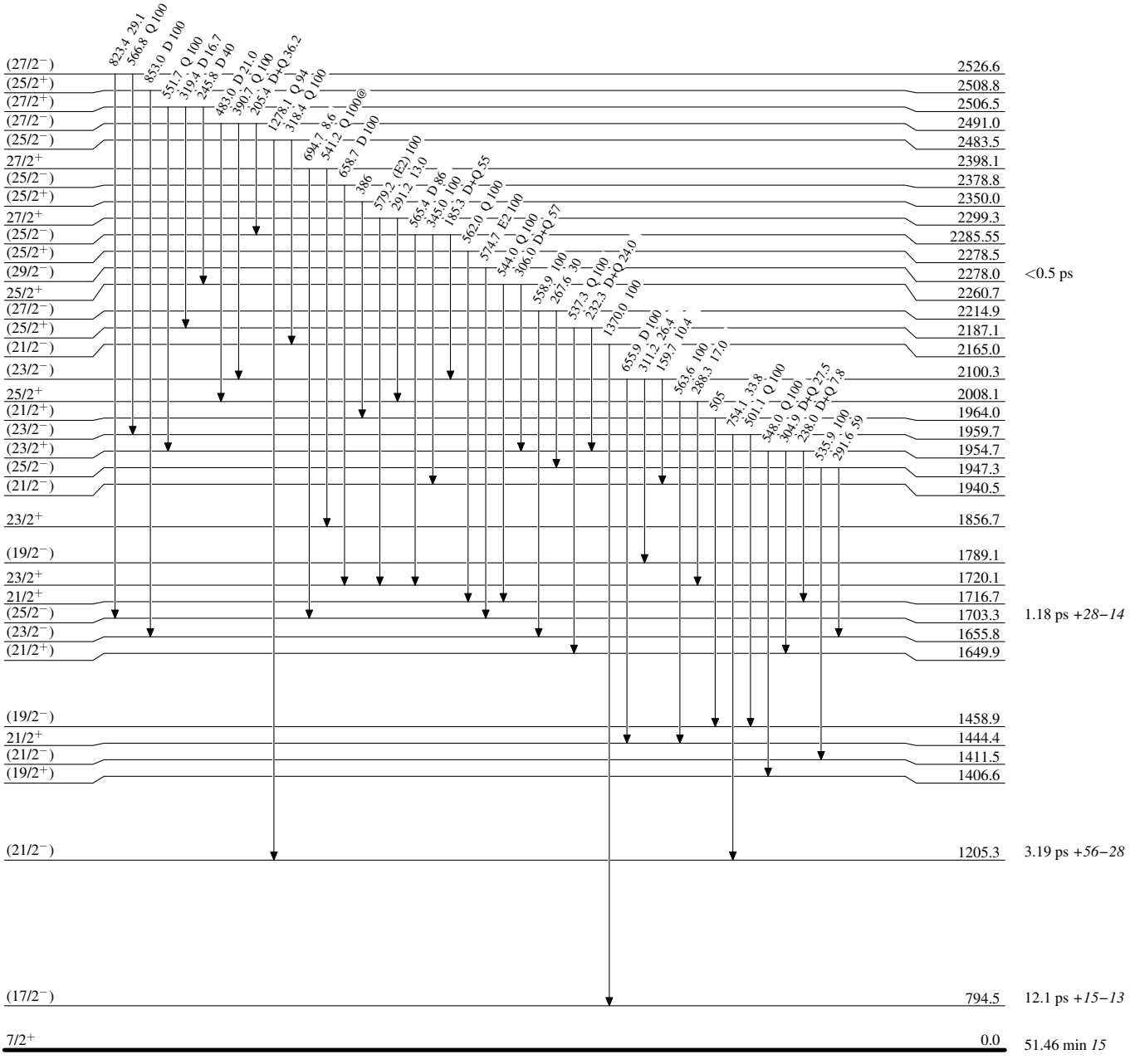


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

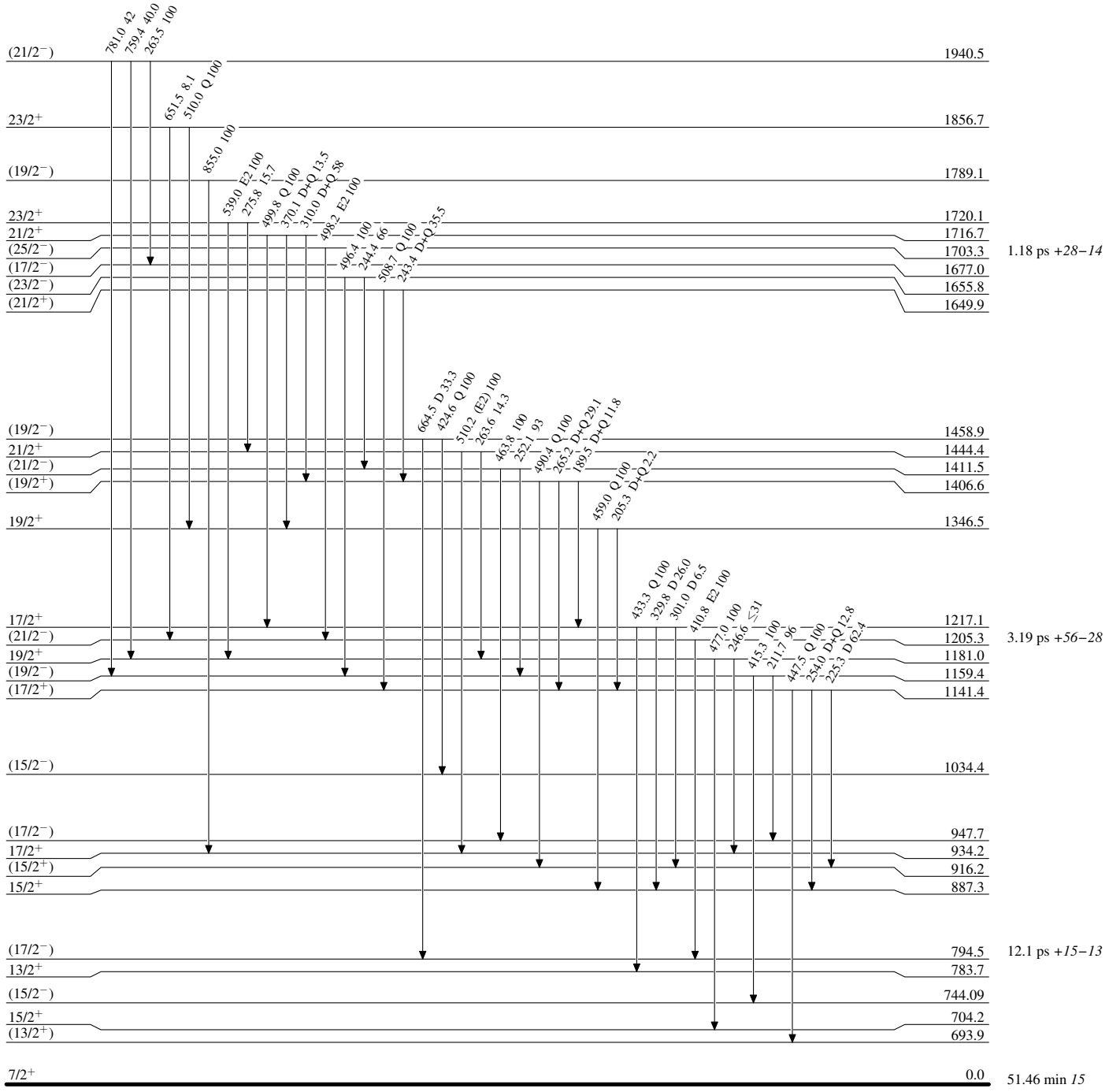


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

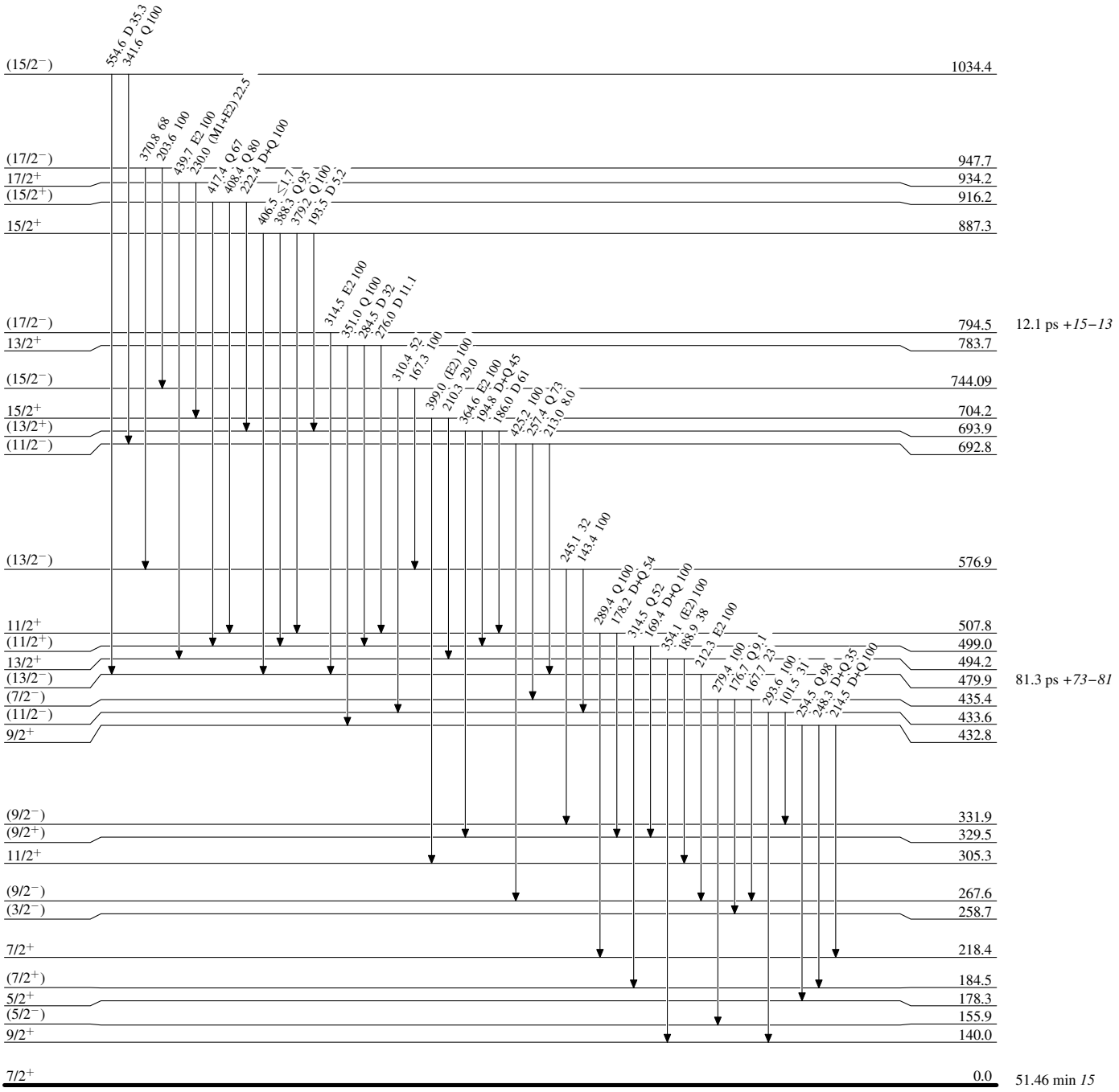


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

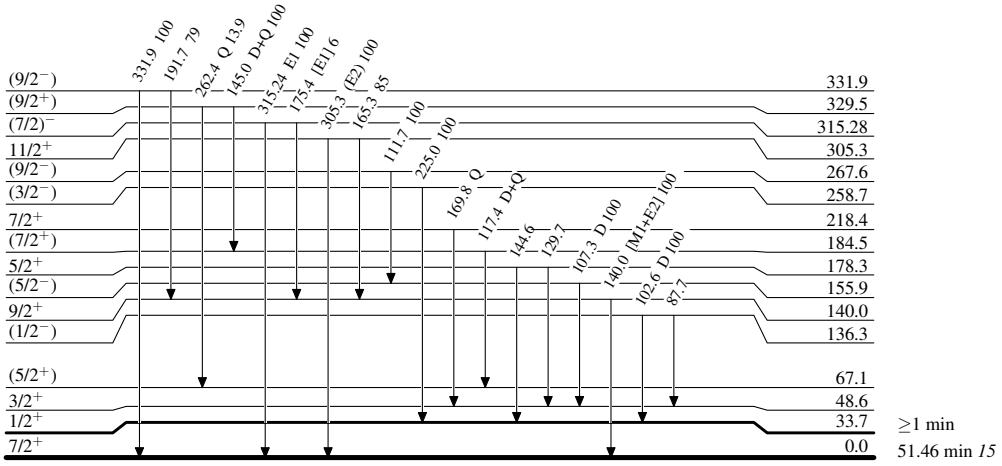


$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas

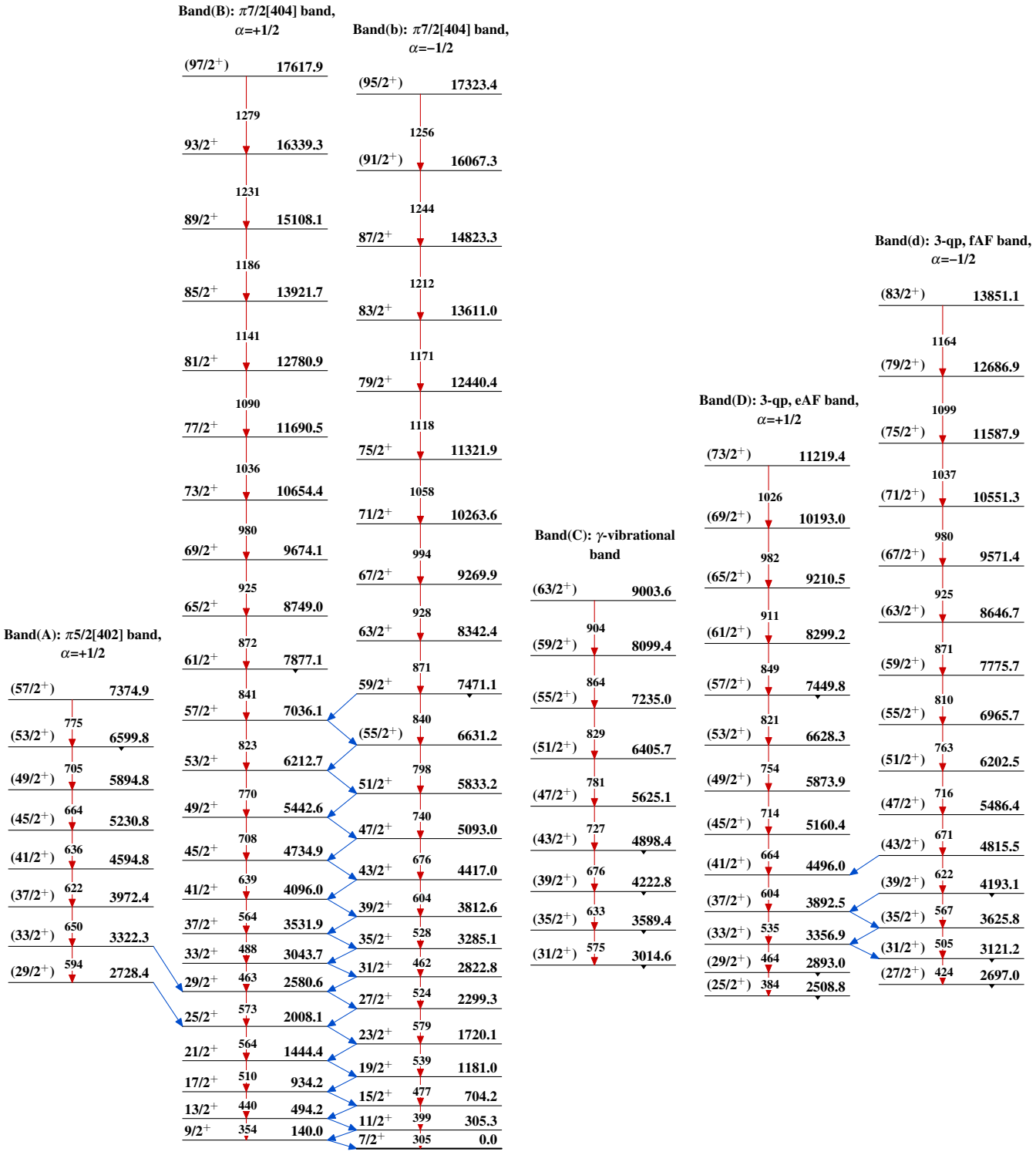
Level Scheme (continued)

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided



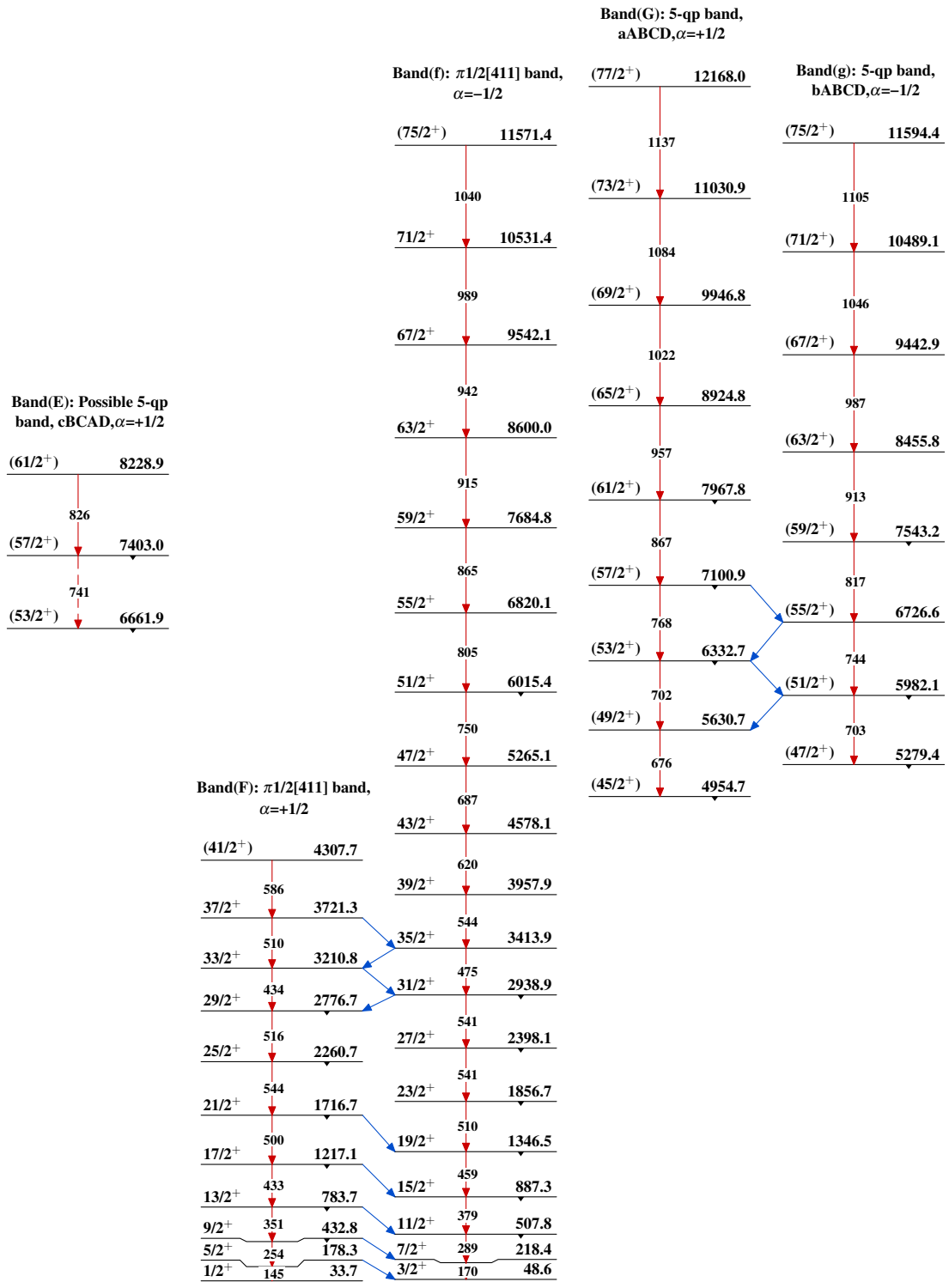
$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas



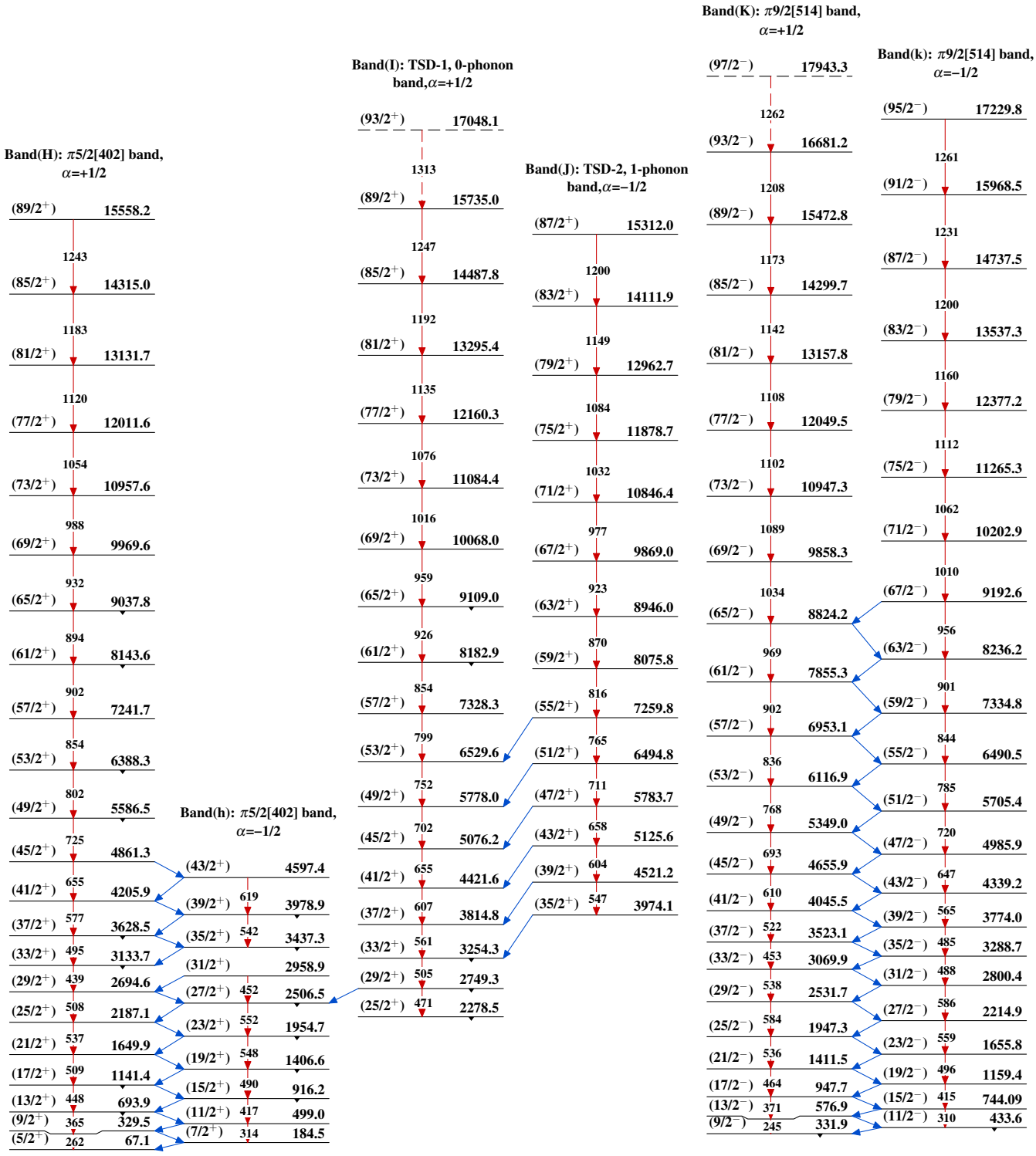
$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas (continued)



$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas (continued)



$^{167}_{71}Lu_{96}$

Adopted Levels, Gammas (continued)

Band(M): Possible triaxial strongly-deformed band

(J3+18)		9310.7+y
(J3+16)	1270	8040.5+y
(J3+14)	1210	6830.5+y
(J3+12)	1148	5682.3+y
(J3+10)	1089	4593.0+y
(J3+8)	1030	3562.9+y
(J3+6)	974	2588.4+y
(J3+4)	918	1670.1+y
(J3+2)	863	807.0+y
J3	807	y

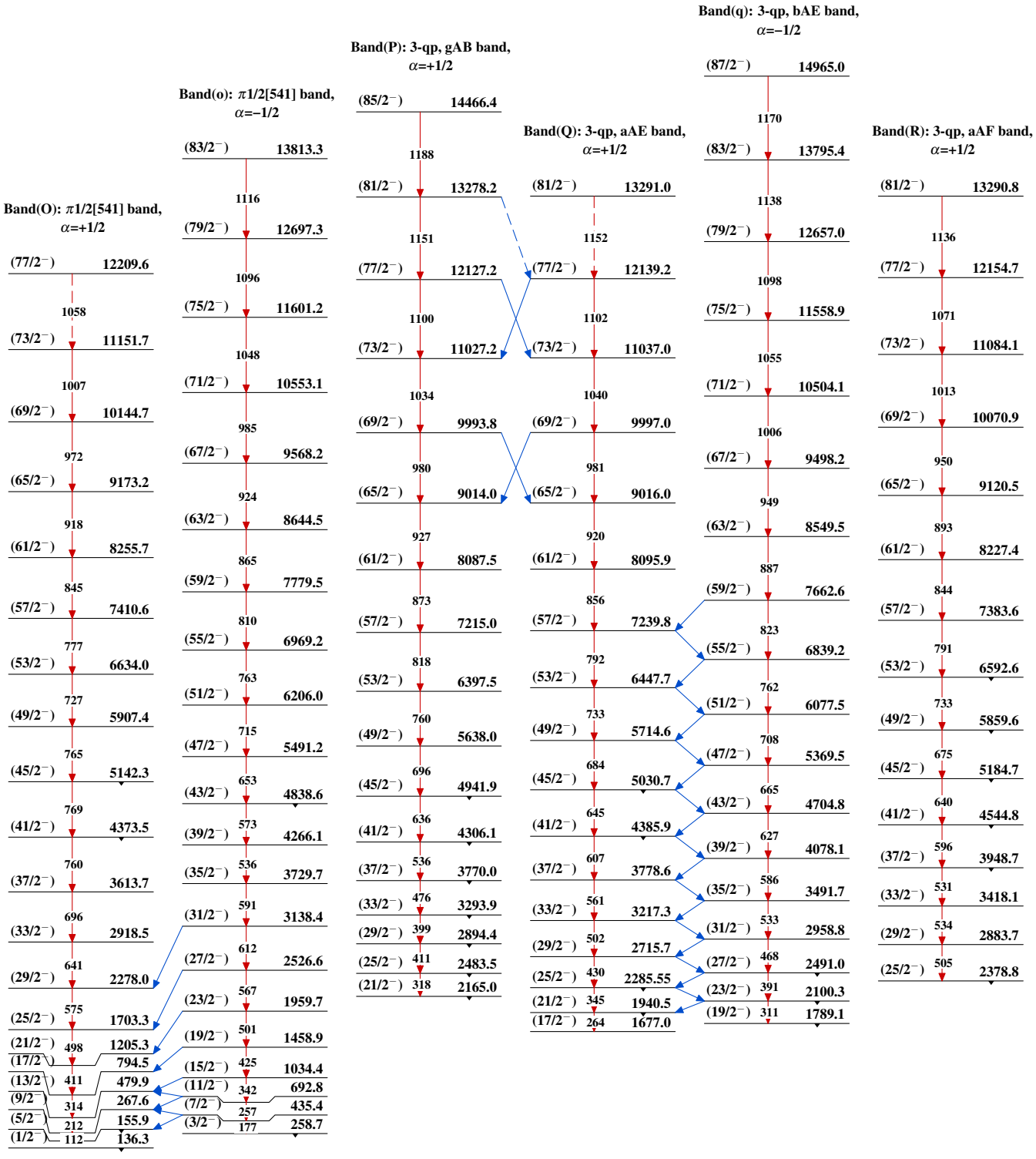
Band(N): Possible triaxial strongly-deformed band

(J2+24)		12802.3+x
(J2+22)	1356	11446.2+x
(J2+20)	1309	10136.9+x
(J2+18)	1264	8872.9+x
(J2+16)	1210	7662.5+x
(J2+14)	1153	6509.4+x
(J2+12)	1096	5413.2+x
(J2+10)	1040	4373.7+x
(J2+8)	985	3389.0+x
(J2+6)	930	2459.0+x
(J2+4)	876	1582.8+x
(J2+2)	815	768.0+x
J2	768	x

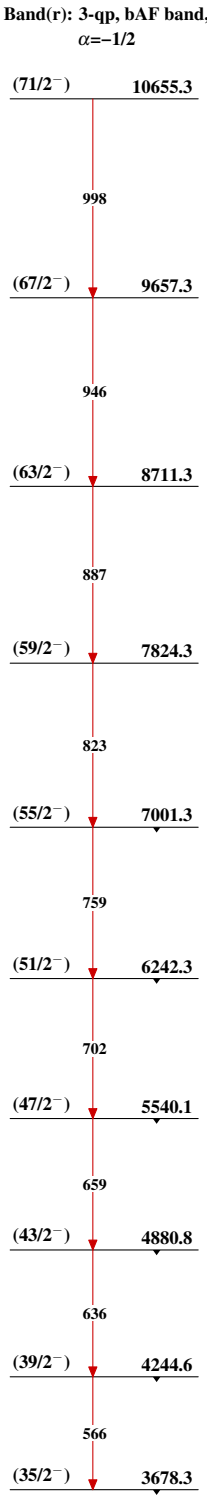
Band(L): 3-qp, eBC band

(J1+16)		11194.1
(J1+14)	1009	10185.0
(J1+12)	953	9232.4
(J1+10)	912	8320.4
(J1+8)	859	7461.2
(J1+6)	802	6659.3
(J1+4)	746	5912.9
(J1+2)	682	5230.4
J1	676	4554.1

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{167}_{71}Lu_{96}$