Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110,1745 (2009)	31-Dec-2008

Q(β^-)=−2322 *5*; S(n)=9219.64 *5*; S(p)=10051 *24*; Q(α)=−3413.0 *12* 2012Wa38
Note: Current evaluation has used the following Q record −2323 5 *9219.74 5* 10051 24-3411.2 *16* 2003Au03.

^{102}Ru Levels

All band assignments from ^{96}Zr(^{13}C,α3nγ) (2005So09).

Cross Reference (XREF) Flags

A	^{102}Tc β^- decay (4.35 min)	G	^{101}Ru(n,γ) E=resonance	M	^{162}Dy(^{36}S,F)
B	^{102}Rh ε decay (207.3 d)	H	^{101}Ru(d,p)	N	^{96}Zr(^{9}Be,3nγ)
C	^{102}Rh ε decay (3.742 y)	I	^{102}Ru(d,d′)	O	^{96}Zr(^{10}B,p3nγ)
D	^{100}Mo(^{3}He,n)	J	Coulomb excitation	P	^{96}Zr(^{13}C,α3nγ)
E	^{100}Mo(α,2nγ)	K	^{100}Mo(^{7}Li,p4nγ),(^{7}Li,d3nγ),		
F	^{101}Ru(n,γ) E=thermal	L	^{100}Mo(^{12}C,^{10}Be)		

E(level)[†]	J$^\pi$[@]	T$_{1/2}$[‡]	XREF	Comments
0[&]	0$^+$	stable	ABCDEFGHIJKLMNOP	<r^2>$^{1/2}$=4.4818 fm *20* (2004An14, evaluation).
475.0962[&] *10*	2$^+$	18.4 ps *3*	ABC EFGHIJKLMNOP	Q=−0.64 *5*; μ=+0.71 *6* β_2= 0.2404 *14*(2001Ra27) E(level): From Budapest data for (n,γ). Q: From coulomb excitation, other value: −0.33 *4* (1998Hi01) Others: 1980La01, 1979Bo28. μ: From IPAC (1989Ra17), recalculated for T$_{1/2}$. J$^\pi$: E2 γ to 0$^+$ (α,2nγ). T$_{1/2}$: From B(E2) evaluation (2001Ra27) (207-d ^{102}Rh ε decay).
943.69 *5*	0$^+$	25 ps *4*	B FG J	q^2_K(E0/E2)=0.175 *15*, X(E0/E2)=0.0142 *12*, ρ^2(E0)=0.014 *3* (2005Ki02, evaluation). J$^\pi$: E0 γ to 0$^+$ (^{102}Rh ε decay (207 d)).
1103.047[g] *13*	2$^+$	4.0 ps *5*	ABC EFG IJ O	E(level): From Budapest data for (n,γ). J$^\pi$: E2+M1 to 2$^+$; $\gamma\gamma(\theta)$ in ^{102}Rh ε decay (2.9 y).
1106.43[&] *3*	4$^+$	3.0[#] ps *5*	ABC EFG JK MNOP	J$^\pi$: $\gamma(\theta)$, γ(pol), excit in (α,2nγ).
1521.600[h] *22*	3$^+$		ABC FG O	E(level): From Budapest data for (n,γ). J$^\pi$: E2+M1 γ to 2$^+$; $\gamma\gamma(\theta)$ in ^{102}Rh ε decay (2.9 y).
1580.56 *4*	2$^+$		B FG	J$^\pi$: E2+M1 γ to 2$^+$; $\gamma\gamma(\theta)$ in ^{102}Rh ε decay (207 d) rules out J=1; γ′s to 0$^+$ rule out J=3.
1603.37 *18*	(3,4$^+$)		A F	J$^\pi$: from log *ft*=5.5 from (4,5) and γ to 2$^+$.
1799.08[g] *4*	4$^+$		A C FG K O	J$^\pi$: γ′s to 2$^+$,4$^+$.
1837.25 *7*	0$^+$		B G	J$^\pi$: J=0 from $\gamma\gamma(\theta)$ in ^{102}Rh ε decay (207 d); positive parity from E2 γ to 2$^+$.
1873.25[&] *7*	6$^+$	1.1[#] ps *4*	C EFG K MNOP	J$^\pi$: $\gamma(\theta)$, γ(pol), excit in (α,2nγ) and band structure in (^{7}Li,(p,d,t)xn).
1968.01 *16*	(0)$^+$		F	J$^\pi$: (0,1,2)$^+$ from log *ft*=5.5 from 1$^+$. 0$^+$ favored from absence of γ′s to other 0$^+$ states.
2036.73 *9*	2$^+$		B FG	J$^\pi$: E2+M1 γ to 2$^+$; $\gamma\gamma(\theta)$ in ^{102}Rh ε decay (207 d).
2043.393[a] *25*	3$^-$		B FG IJ L P	B(E3)↑=0.065 *10* E(level): From Budapest data for (n,γ). B(E3)↑: From Coul. ex., (d,d′). J$^\pi$: L(d,d′)=3.

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Adopted Levels, Gammas (continued)

^{102}Ru Levels (continued)

E(level)†	Jπ@	$T_{1/2}$‡	XREF	Comments
2152.74 *6*			E	
2190.0 *14*			G	
2219.03[h] *9*	5^+		A C FG O	Jπ: E2+M1 γ to 4^+; γγ(θ) in ^{102}Rh ε decay (2.9 y) consistent with J=3 or 5; log *ft* rules out J=3.
2240.78 *12*			FG	
2261.09 *5*	2^-		B FG	Jπ: γγ(θ) results from ^{102}Rh ε decay (207 d) consistent with J=2, not with J=1 or J=3; strong population of this level from the 3^+ 42-eV resonance in ^{101}Ru(n,γ). Jπ: parity from E1 to π=+ states.
2302.70 *11*	(4)		G I	E(level): from (n,γ). Jπ: combining the results of 1974Ri03 and 1982Co15 J^π=(4) is suggested by 1982Co15.
2367.3 *7*	(3^-)		E G I K	E(level): from (n,γ). Jπ: L(d,d′) probably 3, although L=4 cannot be excluded.
2373.05[a] *20*	5^-		P	
2385.7 *11*			G I	
2420.0 *4*	$(3,4^+)$		A FG	Jπ: from log *ft*=6.6 from (4,5) and γ to 2^+.
2441.8 *3*	$(3,4^+)$		A	Jπ: from log *ft*=6.2 from (4,5) and γ to 2^+.
2460 *5*			I	
2467.389 *25*			EFG	E(level): From Budapest data for (n,γ).
2567 *5*			I	
2586.5[g] *4*	6^+		O	
2591.79 *5*			FG	
2614.74 *12*	$(3,4^+)$		A F	Jπ: log *ft*=6.4 from (4,5) and γ to 2^+.
2649.93[b] *23*	6^-		E G I K P	
2676.1 *10*	$(0,1,2)^+$		F	Jπ: log *ft*=5.7 from 1^+.
2700.5 *5*	$(3,4^+)$		A E G I K O	Jπ: log *ft*=5.8 from (4,5) and γ to 2^+.
2706.1[&] *3*	8^+	0.9[#] ps *3*	MN P	
2706.45[a] *25*	(7^-)		E K P	
2711.15 *6*			G	E(level): from (n,γ).
2719.2 *4*	$(3,4^+)$		A	Jπ: log *ft*=5.2 from (4,5) and γ to 2^+.
2789.84 *6*			G	E(level): from (n,γ).
2800.97 *9*			G	E(level): from (n,γ).
2814.4 *3*	$(3,4^+)$		A	Jπ: log *ft*=5.8 from (4,5) and γ to 2^+.
2822.9 *11*			G	
2877.5 *13*			G	
2899.0 *14*			G	
2909.1 *10*	$(0,1,2)^+$			Jπ: log *ft*=5.5 from 1^+.
2913.7 *7*	$(3,4^+)$		A	Jπ: log *ft*=5.5 from (4,5) and γ to 2^+.
2936.6[c] *4*	(7^-)		P	Jπ: parentheses used as no strong arguments are given.
2942.0[b] *3*	(8^-)		E K P	
2944.75 *4*			F	
2946.1 *6*			G	
2956.4 *17*			G	
2967.0 *13*			G	
3010.3 *7*	$(3,4^+)$		A	Jπ: log *ft*=6.0 from (4,5) and γ to 2^+.
3035.4[h] *4*	7^+		FG O	
3056.73 *6*			FG	E(level): from (n,γ).
3085.6 *18*			G	
3138.5[a] *4*	(9^-)		K P	
3157.1 *21*			G	
3234.2 *11*			G	
3244.7 *14*			G	
3328.2[d] *5*	(8^-)		P	

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Adopted Levels, Gammas (continued)

^{102}Ru Levels (continued)

E(level)[†]	Jπ[@]	$T_{1/2}$[‡]	XREF	E(level)[†]	Jπ[@]	$T_{1/2}$[‡]	XREF
3347.2 *26*			G	4179.8 *13*			G
3388.6 *13*			E G	4183.7[c] *5*	(11$^-$)		P
3394.9[g] *6*	(8$^+$)		O	4294.7[g] *8*	(10$^+$)		O
3434.2[&] *4*	10$^+$	1.7[#] ps *6*	E K MNOP	4365.1[b] *5*	(12$^-$)		P
3450.4 *11*			G	4615			K
3456.7[c] *4*	(9$^-$)		P	4710.9[a] *7*	(13$^-$)		K P
3468.9 *15*			G	4720.1[e] *5*	(12)$^+$		P
3537.9[b] *4*	(10$^-$)		K P	4754.6[h] *8*	(11$^+$)		O
3549.1 *15*			G	4808.4[&] *7*	14$^+$	0.9[#] ps *3*	E K MN P
3576.7 *14*			G	4839.8[d] *9*	(12$^-$)		P
3680.1 *13*			G	5069.9[c] *6*	(13$^-$)		P
3688.6 *12*			G	5370.4[b] *6*	(14$^-$)		P
3699.6 *13*			G	5678.4[e] *6*	(14)$^+$		P
3718.4 *11*			G	5724.6[&] *8*	16$^+$		E K N P
3733.0 *22*			G	5757.6[a] *8*	(15$^-$)		P
3741.3 *11*			G	5766.6[d] *11*	(14$^-$)		P
3749.3 *13*			G	6058.3[c] *8*	(15$^-$)		P
3758.5 *10*			G	6080.8[f] *8*	(14$^+$)		P
3772			K	6507.2[b] *7*	(16$^-$)		P
3782.1 *11*			G	6725.4[d] *12*	(16$^-$)		P
3791.3 *13*			G	6790.4[&] *8*	18$^+$		N P
3819.6[a] *5*	(11$^-$)		G K P	6918.0[a] *9*	(17$^-$)		P
3840.9 *12*			G	7000.5[f] *8*	(16$^+$)		P
3858.9[e] *5*	(10)$^+$		P	7118.3[c] *9*	(17$^-$)		P
3875.7 *16*			G	7750.4[b] *8*	(18$^-$)		P
3885.6 *11*			G	7998.3[&] *9*	20$^+$		N P
3916.7[h] *6*	9$^+$		O	8053.6[f] *8*	(18$^+$)		P
3937.0 *13*			G	8125.9[a] *10*	(19$^-$)		P
3972.9 *14*			G	8247.0[c] *10*	(19$^-$)		P
4013.0[d] *7*	(10$^-$)		P	9037.3[b] *11*	(20$^-$)		P
4033.5 *14*			G	9219.52 *10*			F
4055.6[&] *5*	12$^+$	2.5[#] ps *7*	E K MN P	9248.7[f] *9*	(20$^+$)		P
4066.2 *13*			G	9304.5[&] *10*	22$^+$		P
4081.0 *13*			G	9370.5[a] *11*	(21$^-$)		P
4087.9 *13*			G	9509.7[c] *11*	(21$^-$)		P
4113.9 *22*			G	10681.1[a] *12*	(23$^-$)		P
4125.3 *14*			G	10708.3[&] *11*	24$^+$		P
4179.1 *15*			G	12221.6?[&] *13*	(26$^+$)		P

[†] Unless noted otherwise, from adopted gammas using a least-squares procedure.

[‡] Unless noted otherwise, from Coulomb excitation.

[#] From ^{100}Mo(α,2nγ).

[@] Unless noted otherwise, from $\gamma\gamma$, charged particle-γ coin, $\gamma\gamma(\theta)$(DCO), $\gamma\gamma$(lin pol) and observed band structure in ^{96}Zr(^{13}C,α3nγ) (2005So09).

[&] Band(A): Yrast band. Predominantly $\nu h^2_{11/2}$ above the first crossing at $\hbar\omega\approx$0.4 MeV.

[a] Band(B): Band 2. $\nu(h_{11/2}(d_{5/2},g_{7/2}))$; α=1. Vibration structure below 9$^-$, rotational above this spin. Bandhead at 2045 keV.

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Adopted Levels, Gammas (continued)

^{102}Ru Levels (continued)

[b] Band(b): Band 3. $\nu(h_{11/2}(d_{5/2},g_{7/2}))$; α=0.
[c] Band(C): Band 4. $\nu(h_{11/2}(d_{5/2},g_{7/2}))$; α=1. Bandhead at 2936 keV.
[d] Band(c): Band 5. $\nu(h_{11/2}(d_{5/2},g_{7/2}))$; α=0.
[e] Band(D): Band based on 10^+. γ-vibration $\otimes$ $\nu h^2_{11/2}$ (?).
[f] Band(E): Band based on (14^+). β-vibration $\otimes$ $\nu h^2_{11/2}$ (?).
[g] Band(F): quasi-γ band, even spin (2005La07).
[h] Band(f): quasi-γ band, odd spin (2005La07).

Adopted Levels, Gammas (continued)

$\gamma(^{102}Ru)$

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[&]	Comments
475.0962	2^+	475.095 *1*	100	0	0^+	E2		B(E2)(W.u.)=44.6 *7* E_γ: From Budapest data for (n,γ). B(E2)(W.u.): From Coul. ex. Mult.: from (α,2nγ).
943.69	0^+	468.64 *9*	100	475.0962	2^+	E2		B(E2)(W.u.)=35 *6* B(E2)(W.u.): From Coul. ex.
		943.48		0	0^+	E0		Observed in 207-d ^{102}Rh ε decay. $I_{(\gamma+ce)}$: Ice(944γ)/Iγ(468γ)=0.00095 *18*.
1103.047	2^+	627.974 *12*	100 *3*	475.0962	2^+	E2(+M1)+E0	−60 *20*	B(M1)(W.u.)=(4.E−6 *3*); B(E2)(W.u.)=(32 *5*) E_γ: From Budapest data for (n,γ). B(E2)(W.u.): From Coul. ex.
		1103.03 *3*	59 *3*	0	0^+	E2		B(E2)(W.u.)=1.14 *15* B(E2)(W.u.): From Coul. ex.
1106.43	4^+	631.25 *3*	100	475.0962	2^+	E2[@]		B(E2)(W.u.)=66 *11* B(E2)(W.u.): From Coul. ex. Mult.: from (α,2nγ).
1521.600	3^+	415.24 *3*	6.3 *6*	1106.43	4^+			
		418.48 *3*	31.8 *22*	1103.047	2^+	E2+M1	−7.2 *10*	
		1046.498 *2*	100 *4*	475.0962	2^+	E2+M1	−5.7 *3*	δ: from 1989Hi12.
1580.56	2^+	636.83 *4*	60 *4*	943.69	0^+			
		1105.36 *7*	100 *7*	475.0962	2^+	E2+M1	+0.25 *3*	
		1580.64 *16*	14 *3*	0	0^+			
1603.37	$(3,4^+)$	497.14 *19*	100 *14*	1106.43	4^+			
		1127.5 *3*	20 *1*	475.0962	2^+			
1799.08	4^+	692.25 *6*	59 *5*	1106.43	4^+			
		696.50 *6*	100 *14*	1103.047	2^+			
		1323.3 *3*	16 *3*	475.0962	2^+			
1837.25	0^+	256.8 *4*	5.3 *24*	1580.56	2^+			
		733.93 *8*	27 *5*	1103.047	2^+			
		1362.06 *19*	100 *11*	475.0962	2^+	E2		
1873.25	6^+	766.83 *4*	100	1106.43	4^+	E2[@]		B(E2)(W.u.)=68 *25* Mult.: from (α,2nγ).
1968.01	$(0)^+$	865.96 *16*	100	1103.047	2^+			
2036.73	2^+	456.26 *13*	81 *12*	1580.56	2^+			
		930.5 *2*	27 *10*	1106.43	4^+			
		1561.48 *17*	100 *16*	475.0962	2^+	E2+M1+E0	−1.9 *4*	
		2037.0 *2*	27 *12*	0	0^+			
2043.393	3^-	463.1[a]		1580.56	2^+			
		940.30 *3*	86 *8*	1103.047	2^+			
		1568.39 *4*	100 *9*	475.0962	2^+	E1[@]		

$^{102}_{44}Ru_{58}$-5

Adopted Levels, Gammas (continued)

γ(^{102}Ru) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	δ[&]	Comments
2152.74		1047.3[a]	100	1106.43	4^+			
2219.03	5^+	345.89 *12*	1.98 *23*	1873.25	6^+			
		420.40 *15*	7.2 *6*	1799.08	4^+			
		697.42 *9*	100 *4*	1521.600	3^+	E2		
		1112.82 *8*	39 *3*	1106.43	4^+	E2+M1	−1.1 +*6*−*9*	
2261.09	2^-	216.9 *3*	1.7 *17*	2043.393	3^-			
		680.64 *4*	83 *11*	1580.56	2^+	E1		
		739.50 *7*	100 *10*	1521.600	3^+	E1+M2	−0.1 *1*	
		1158.11 *5*	100 *7*	1103.047	2^+	E1		
		1786.4 *4*	71 *10*	475.0962	2^+			
		2261.3 *4*	3 *3*	0	0^+			
2302.70	(4)	1197.2[a]	100	1106.43	4^+			
2373.05	5^-	328.1 *4*	2.4 *8*	2043.393	3^-	Q[@]		
		498.4 *4*	3.2 *8*	1873.25	6^+			
		1266.2 *5*	100 *6*	1106.43	4^+	E1[@]		
2420.0	$(3,4^+)$	1318 *3*	59 *12*	1103.047	2^+			
		1944.9 *4*	100 *6*	475.0962	2^+			
2441.8	$(3,4^+)$	920.2 *9*	20 *3*	1521.600	3^+			
		1338.6 *3*	100 *4*	1103.047	2^+			
		1967 *3*	35.4 *21*	475.0962	2^+			
2467.389		1992.02 *10*	100	475.0962	2^+			
2586.5	6^+	712.4 *5*	<56	1873.25	6^+			
		786.8 *4*	100 *11*	1799.08	4^+			
2591.79		548.44 *5*	100	2043.393	3^-			
2614.74	$(3,4^+)$	1511.68 *14*	54 *4*	1103.047	2^+			
		2140.00 *25*	100 *5*	475.0962	2^+			
2649.93	6^-	276.8 *3*	33 *3*	2373.05	5^-	D[@]		
		775.4 *3*	100 *11*	1873.25	6^+	E1[@]		
2676.1	$(0,1,2)^+$	2201.2 *3*	100	475.0962	2^+			
2700.5	$(3,4^+)$	1179.2 *6*	10.7 *15*	1521.600	3^+			
		1596.2 *8*	48 *3*	1103.047	2^+			
		2225.7 *15*	100 *4*	475.0962	2^+			
2706.1	8^+	831.4 *3*	100	1873.25	6^+	E2[@]		B(E2)(W.u.)=56 *19* E_γ: forms together with Eγ=831.0 in single spectra an unresolved doublet.
2706.45	(7^-)	333.6 *5*	14 *3*	2373.05	5^-	E2[@]		
		831.4 *3*	100 *5*	1873.25	6^+	E1[@]		
2719.2	$(3,4^+)$	1197.6 *5*	49 *6*	1521.600	3^+			
		1615.3 *7*	100 *4*	1103.047	2^+			
		2244.7 *15*	77 *3*	475.0962	2^+			
2814.4	$(3,4^+)$	1292.5 *3*	100 *10*	1521.600	3^+			

$^{102}_{44}Ru_{58}$-6

Adopted Levels, Gammas (continued)

γ(^{102}Ru) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	Comments
2814.4	(3,4$^+$)	1711.2 *15*	66 *4*	1103.047	2$^+$		
		2340.0 *15*	12.8 *16*	475.0962	2$^+$		
2909.1	(0,1,2)$^+$	2434 *1*	100	475.0962	2$^+$		
2913.7	(3,4$^+$)	1810.7 *10*	100 *4*	1103.047	2$^+$		
		2438.4 *10*	79 *3*	475.0962	2$^+$		
2936.6	(7$^-$)	563.9 *4*	100 *17*	2373.05	5$^-$	Q[@]	
		1061.9 *9*	33 *8*	1873.25	6$^+$		
2942.0	(8$^-$)	235.4 *3*	58 *4*	2706.45	(7$^-$)	D[@]	
		292.3 *5*	100 *6*	2649.93	6$^-$	E2[@]	
3010.3	(3,4$^+$)	1488.1 *10*	41.1 *21*	1521.600	3$^+$		
		1907.3 *10*	100 *8*	1103.047	2$^+$		
		2536 *3*	30.2 *21*	475.0962	2$^+$		
3035.4	7$^+$	815.1 *4*	100 *12*	2219.03	5$^+$		
		1161.5 *5*	<40	1873.25	6$^+$		
3138.5	(9$^-$)	196.6 *5*	0.9 *5*	2942.0	(8$^-$)		
		432.0 *3*	100 *6*	2706.45	(7$^-$)	E2[@]	
3328.2	(8$^-$)	386.3 *4*	100 *13*	2942.0	(8$^-$)	M1+E2[@]	Mult.: No δ from ^{96}Zr(^{13}C,α3nγ) (2005So09).
		621.4 *9*	38 *13*	2706.45	(7$^-$)		
3394.9	(8$^+$)	808.4 *5*	100	2586.5	6$^+$		
3434.2	10$^+$	728.1 *3*	100	2706.1	8$^+$	E2[@]	B(E2)(W.u.)=57 *21*
3456.7	(9$^-$)	514.6 *4*	100 *13*	2942.0	(8$^-$)		
		520.4 *4*	44 *6*	2936.6	(7$^-$)	Q[@]	
		750.2 *8*	25 *6*	2706.45	(7$^-$)		
3537.9	(10$^-$)	399.4 *4*	16 *2*	3138.5	(9$^-$)	M1+E2[@]	Mult.: No δ from ^{96}Zr(^{13}C,α3nγ) (2005So09).
		595.9 *3*	100 *5*	2942.0	(8$^-$)	E2[@]	
3772		830.0 *3*	100	2942.0	(8$^-$)		
3819.6	(11$^-$)	680.9 *5*	100	3138.5	(9$^-$)	E2[@]	
3858.9	(10)$^+$	424.6 *4*	65 *10*	3434.2	10$^+$	M1+E2[@]	Mult.: No δ from ^{96}Zr(^{13}C,α3nγ) (2005So09).
		1152.7 *4*	100 *10*	2706.1	8$^+$	E2[@]	
3916.7	9$^+$	881.3 *4*	100	3035.4	7$^+$		
4013.0	(10$^-$)	684.8 *5*	100	3328.2	(8$^-$)	Q[@]	
4055.6	12$^+$	621.4 *3*	100	3434.2	10$^+$		
4183.7	(11$^-$)	645.6 *5*	35 *4*	3537.9	(10$^-$)	M1+E2[@]	Mult.: No δ from ^{96}Zr(^{13}C,α3nγ) (2005So09).
		727.1 *4*	100 *7*	3456.7	(9$^-$)	Q[@]	
4294.7	(10$^+$)	899.8 *5*	100	3394.9	(8$^+$)		
4365.1	(12$^-$)	545.4 *4*	7.8 *13*	3819.6	(11$^-$)		
		827.2 *3*	100 *7*	3537.9	(10$^-$)	E2	
4615		843.0 *5*	100	3772			

$^{102}_{44}Ru_{58}$-7

Adopted Levels, Gammas (continued)

γ(^{102}Ru) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	Comments
4710.9	(13$^-$)	891.3 *5*	100	3819.6	(11$^-$)		
4720.1	(12)$^+$	664.6 *4*	55 *9*	4055.6	12$^+$	M1+E2[@]	Mult.: No δ from ^{96}Zr(^{13}C,α3nγ) (2005So09).
		860.8 *5*	55 *9*	3858.9	(10)$^+$	Q[@]	
		1286.1 *4*	100 *9*	3434.2	10$^+$	Q[@]	
4754.6	(11$^+$)	837.9 *5*	100	3916.7	9$^+$		
4808.4	14$^+$	752.8 *5*	100	4055.6	12$^+$	E2[@]	B(E2)(W.u.)=9.E+1 *3*
4839.8	(12$^-$)	826.8 *5*	100	4013.0	(10$^-$)		
5069.9	(13$^-$)	886.2 *4*	100	4183.7	(11$^-$)	Q[@]	
5370.4	(14$^-$)	1005.3 *3*	100	4365.1	(12$^-$)	E2[@]	
5678.4	(14)$^+$	958.4 *5*	100 *11*	4720.1	(12)$^+$	Q[@]	
		1622.7 *5*	22 *11*	4055.6	12$^+$		
5724.6	16$^+$	916.3 *3*	100	4808.4	14$^+$	E2[@]	
5757.6	(15$^-$)	1046.7 *3*	100	4710.9	(13$^-$)	E2[@]	
5766.6	(14$^-$)	926.8 *7*	100	4839.8	(12$^-$)		
6058.3	(15$^-$)	988.4 *4*	100	5069.9	(13$^-$)	E2[@]	
6080.8	(14$^+$)	1272.3 *4*	100	4808.4	14$^+$		
6507.2	(16$^-$)	1136.8 *4*	100	5370.4	(14$^-$)	E2[@]	
6725.4	(16$^-$)	958.8 *5*	100	5766.6	(14$^-$)		
6790.4	18$^+$	1065.8 *3*	100	5724.6	16$^+$	E2[@]	
6918.0	(17$^-$)	1160.4 *4*	100	5757.6	(15$^-$)	E2[@]	
7000.5	(16$^+$)	919.6 *5*	22 *11*	6080.8	(14$^+$)		
		1276.0 *4*	100 *22*	5724.6	16$^+$	M1+E2[@]	Mult.: No δ from ^{96}Zr(^{13}C,α3nγ) (2005So09).
7118.3	(17$^-$)	1060.0 *4*	100	6058.3	(15$^-$)	Q[@]	
7750.4	(18$^-$)	1243.2 *4*	100	6507.2	(16$^-$)	Q[@]	
7998.3	20$^+$	1207.9 *4*	100	6790.4	18$^+$	E2[@]	
8053.6	(18$^+$)	1053.0 *4*	75 *25*	7000.5	(16$^+$)	Q[@]	
		1263.2 *4*	100 *25*	6790.4	18$^+$		
8125.9	(19$^-$)	1207.9 *4*	100	6918.0	(17$^-$)	E2[@]	
8247.0	(19$^-$)	1128.7 *4*	100	7118.3	(17$^-$)	Q[@]	
9037.3	(20$^-$)	1286.9 *8*	100	7750.4	(18$^-$)		
9219.52		6161.9 *6*	3.4 *14*	3056.73			
		6185.5 *4*	7.5 *17*	3035.4	7$^+$		
		6274.2 *3*	18 *3*	2944.75			
		6607.5 *7*	5.4 *18*	2614.74	(3,4$^+$)		
		6626.84 *14*	100 *10*	2591.79			
		6751.4 *4*	86 *15*	2467.389			

$^{102}_{44}Ru_{58}$-8

Adopted Levels, Gammas (continued)

γ(^{102}Ru) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]
9219.52		6957.8 *5*	9.0 *18*	2261.09	2^-	
		6978.08 *18*	44 *5*	2240.78		
		7176.6 *5*	13.2 *25*	2043.393	3^-	
		7697.2 *6*	4.7 *18*	1521.600	3^+	
		8112.7 *4*	7.4 *12*	1106.43	4^+	
9248.7	(20^+)	1195.1 *4*	100 *50*	8053.6	(18^+)	Q[@]
		1250.3 *5*	100 *50*	7998.3	20^+	
9304.5	22^+	1306.2 *4*	100	7998.3	20^+	E2[@]
9370.5	(21^-)	1244.6 *4*	100	8125.9	(19^-)	Q[@]
9509.7	(21^-)	1262.7 *6*	100	8247.0	(19^-)	
10681.1	(23^-)	1310.6 *6*	100	9370.5	(21^-)	
10708.3	24^+	1403.8 *4*	100	9304.5	22^+	Q[@]
12221.6?	(26^+)	1512.4[a] *7*	100	10708.3	24^+	

[†] Unless noted otherwise, weighted averages of data from ^{102}Tc β^- decay, ^{102}Rh β^- decay, ^{100}Mo(α,2nγ) ^{101}Ru(n,γ) and different (HI,xnγ) experiments if available.

[‡] Branchings from each level are weighted averages of data from ^{102}Tc β^- decay, ^{102}Rh β^- decay,^{101}Ru(n,γ) ^{100}Mo(α,2nγ) and other (HI,xnγ) reactions if available.

[#] From ^{102}Rh ε decay, unless noted otherwise.

[@] From ^{96}Zr(^{13}C,α3nγ) and/or ^{100}Mo(α,2nγ).

[&] From ^{102}Rh ε decay.

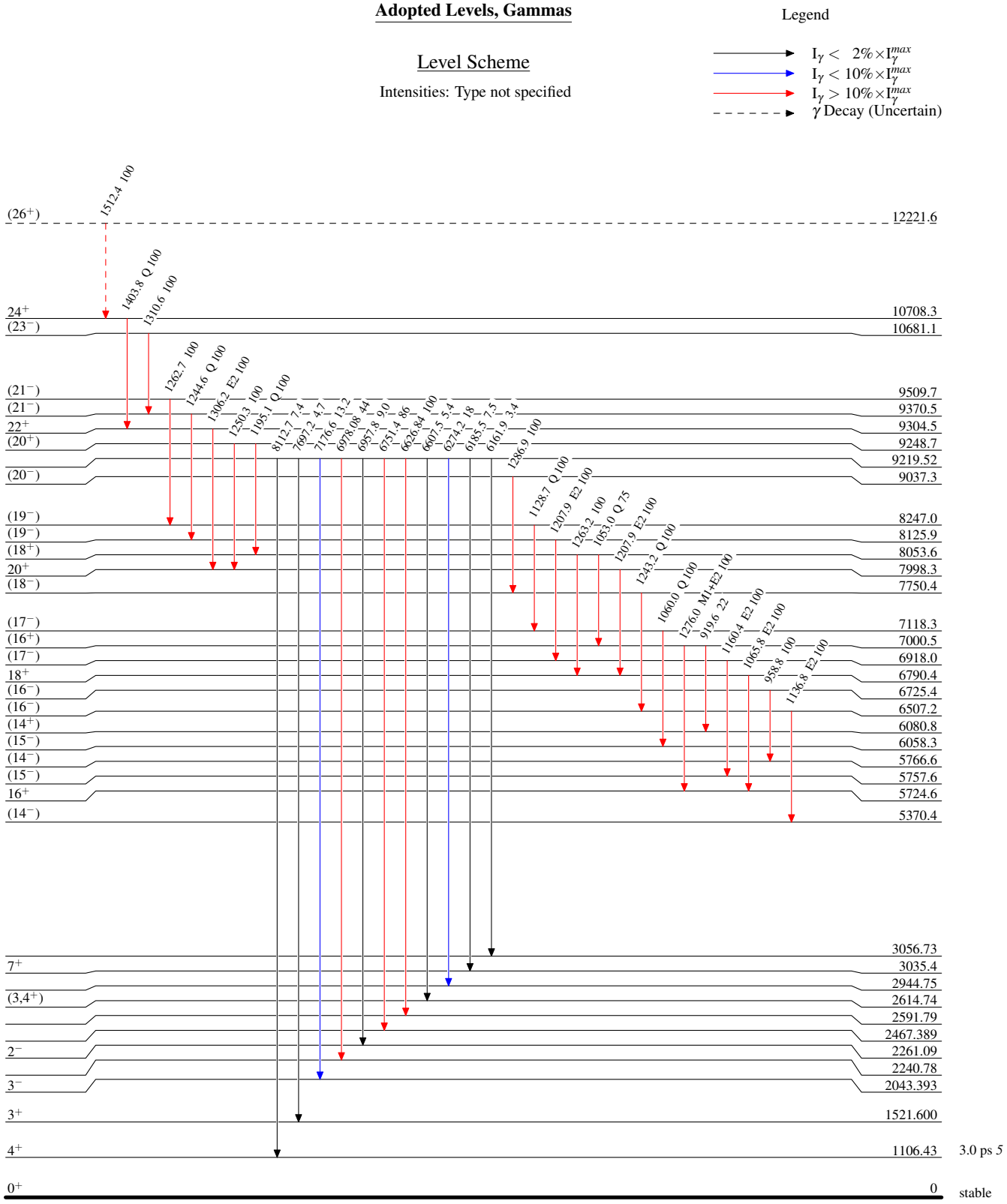
[a] Placement of transition in the level scheme is uncertain.

$^{102}_{44}Ru_{58}$-9

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

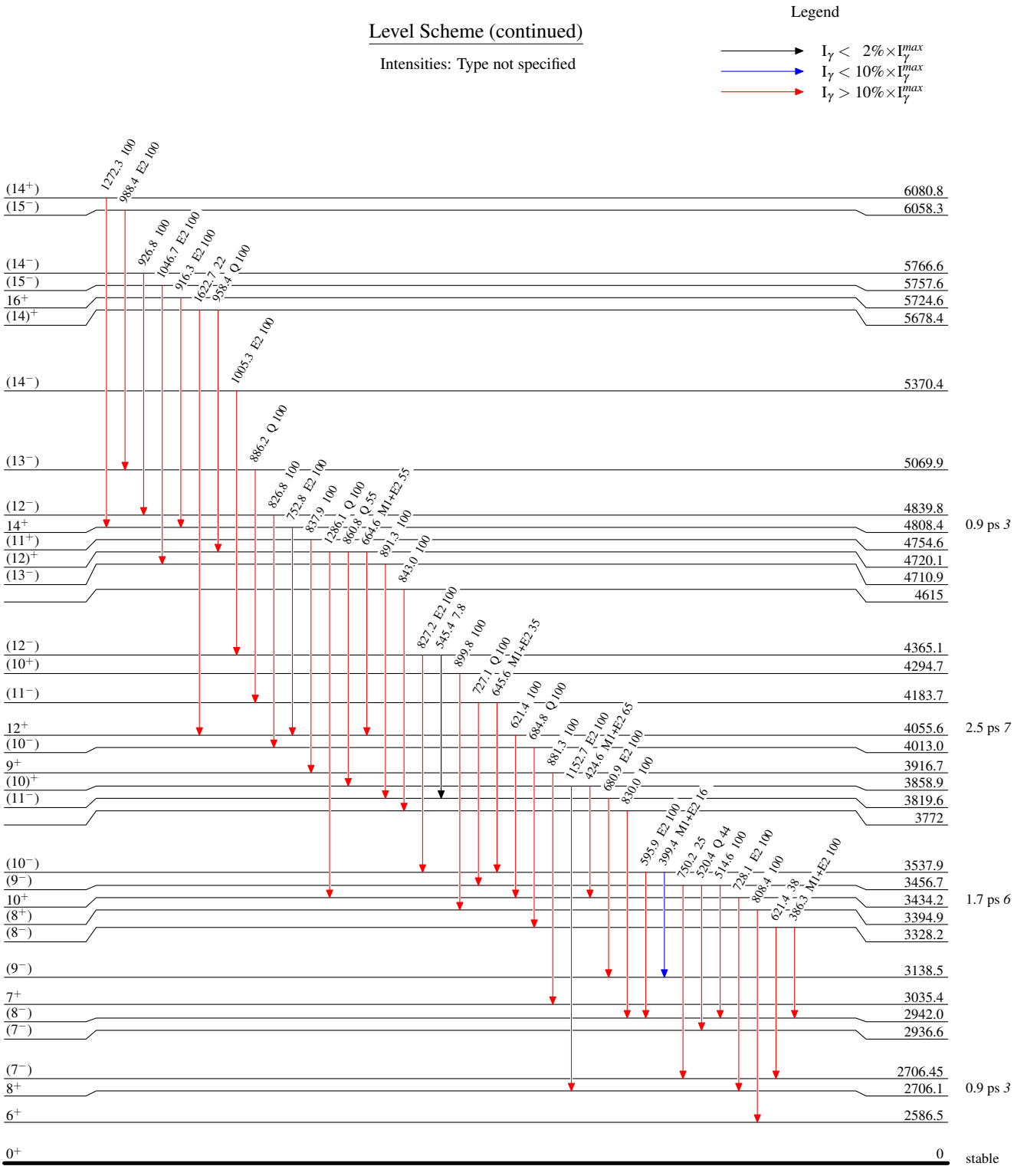


$^{102}_{44}Ru_{58}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

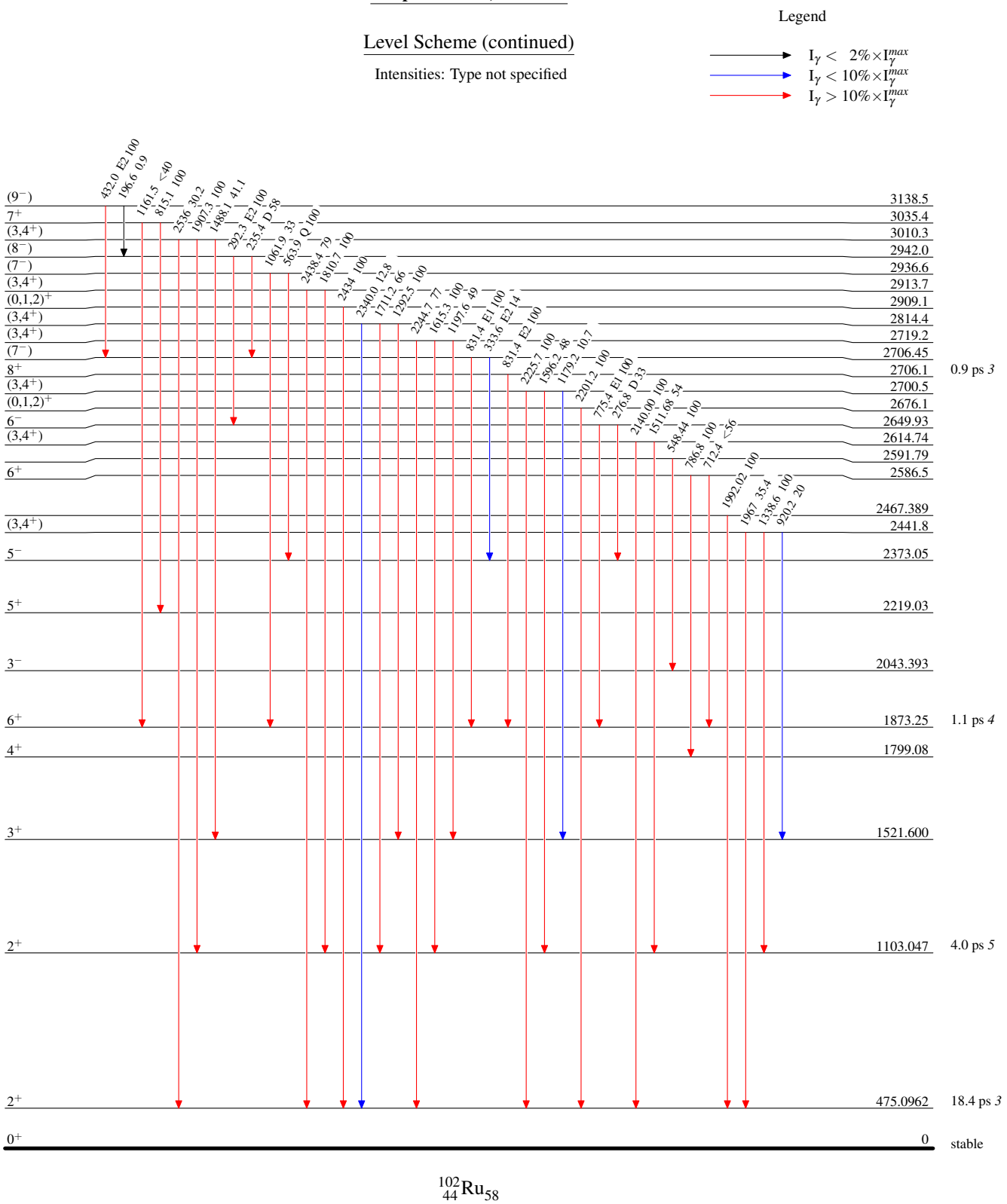


$^{102}_{44}Ru_{58}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

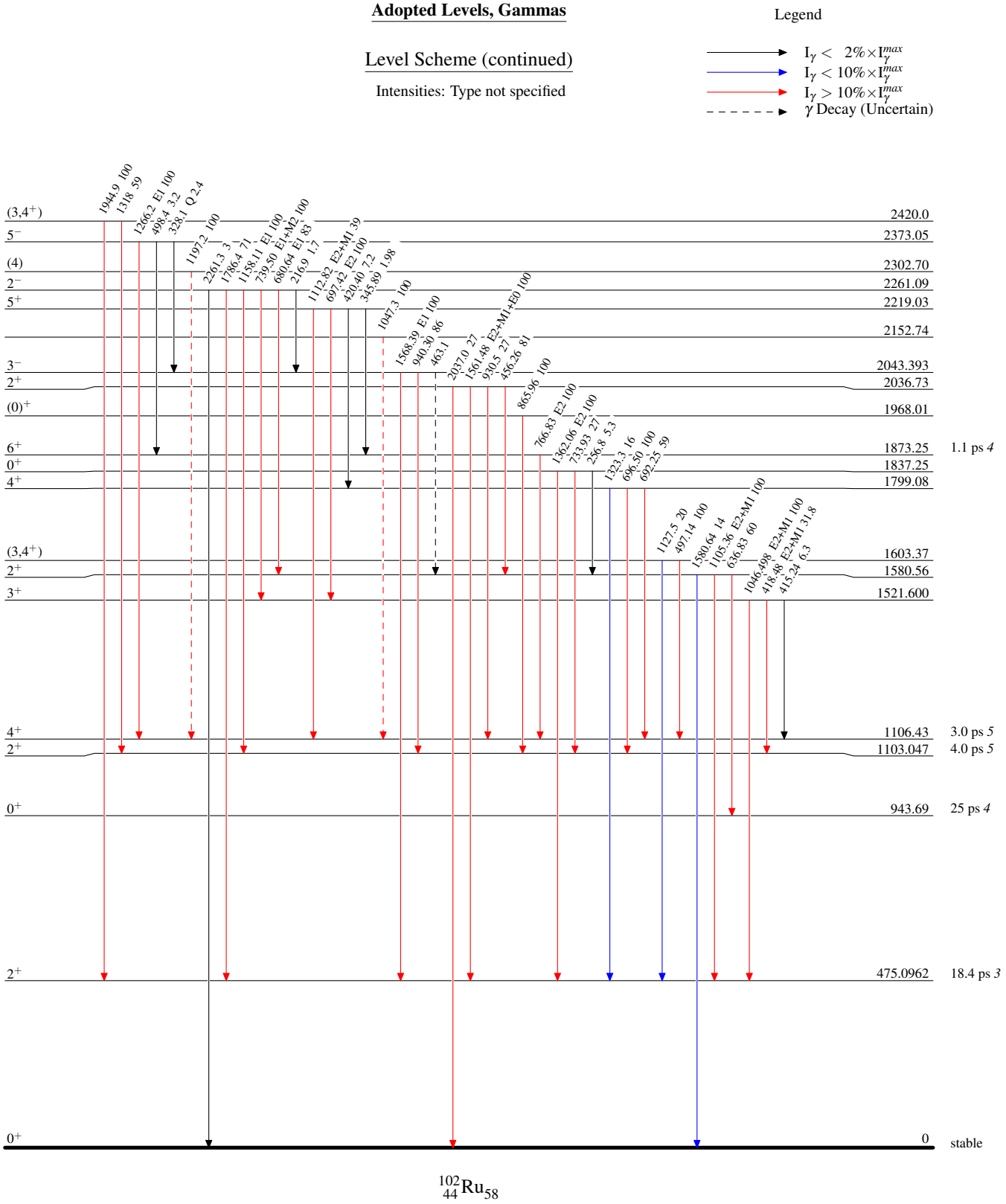


$^{102}_{44}Ru_{58}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

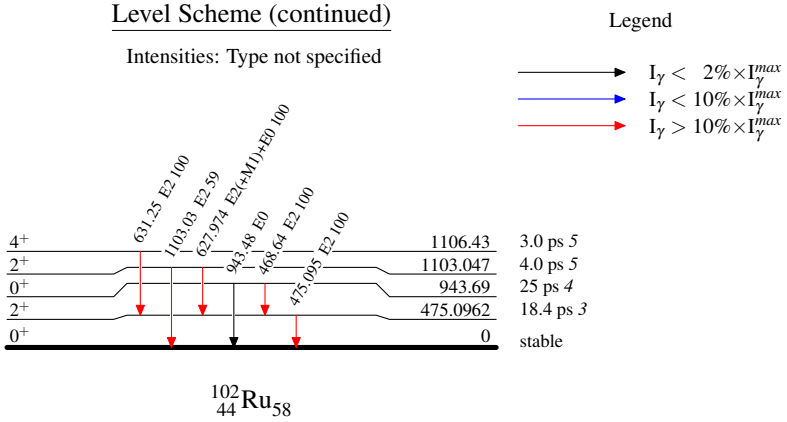


$^{102}_{44}Ru_{58}$

Adopted Levels, Gammas

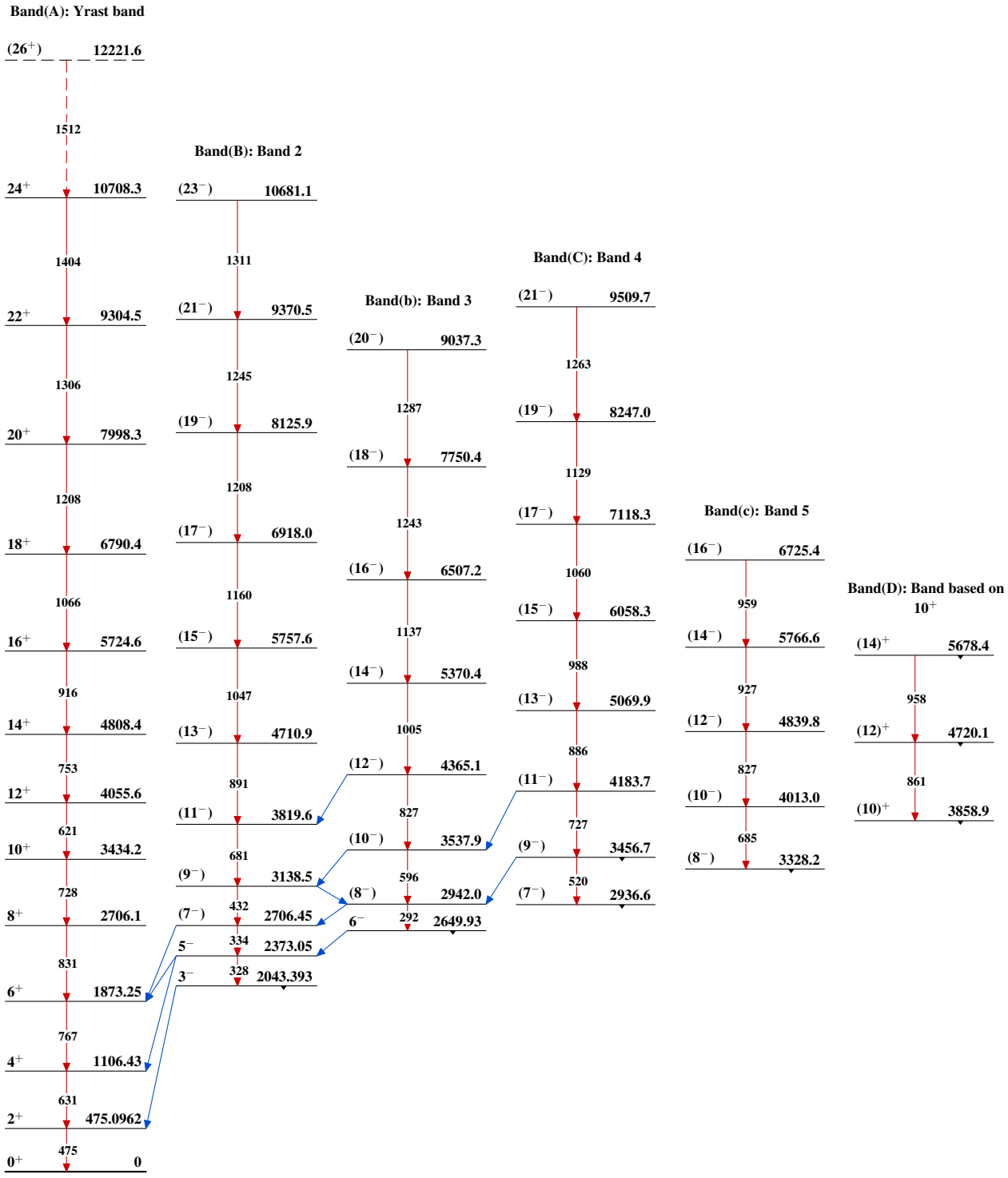
Level Scheme (continued)

Intensities: Type not specified

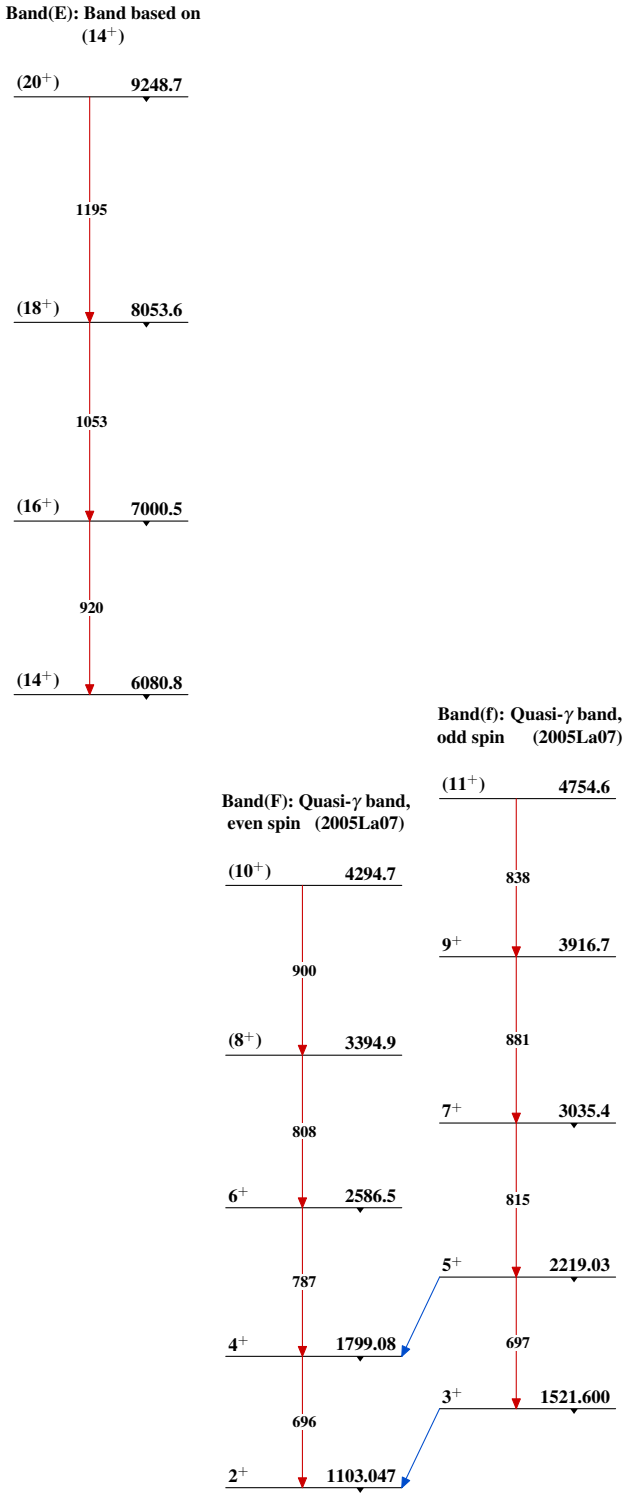


$^{102}_{44}Ru_{58}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



$^{102}_{44}Ru_{58}$