Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. Tamura	NDS 108,455 (2007)	30-Sep-2006

Q(β^-)=−7.21×10^3 *4*; S(n)=10945 *16*; S(p)=6392 *13*; Q(α)=−83 *22* 2012Wa38
Note: Current evaluation has used the following Q record −7220 3010954 166357 15-59 18 2003Au03.

^{122}Xe Levels

Cross Reference (XREF) Flags

A	^{122}Cs ε decay (21.18 s)	D	^{96}Zr(^{30}Si,4nγ)
B	^{122}Cs ε decay (3.70 min)	E	^{122}Te(α,4nγ)
C	^{122}Te(^{3}He,3nγ),^{110}Pd(^{16}O,4nγ)		

E(level)[†‡]	J$^\pi$[#]	T$_{1/2}$[@]	XREF	Comments
0.0[&]	0$^+$	20.1 h *1*	ABCDE	%ε=100 Nuclear rms charge radius=4.7555 fm *61* (2004An14). T$_{1/2}$: from 1965An05. Others: 20 h *1* (1952Dr18), 19.5 h (1952Ti25), 19.0 h *5* (1954Ma75), 18.5 h *5* (1960Mo09).
331.28[&] *7*	2$^+$	49.3 ps *20*	ABCDE	B(E2)↑=1.40 *6* (2001Ra27) J$^\pi$: stretched E2 γ to 0$^+$.
828.53[&] *11*	4$^+$	4.50 ps *21*	ABCDE	J$^\pi$: stretched E2 γ to 2$^+$.
843.13[d] *9*	(2$^+$)		ABCDE	J$^\pi$: stretched (E2) γ from (4)$^+$ member of γ band.
1149.18 *21*	0$^+$		A	J$^\pi$: J(1149):J(331):J(0)=0:2:0 sequence is established in (331.1γ)(817.9γ)(θ) in ^{122}Cs β^+ decay (21.18 s) (1979Si11); M2 character for 817.9 keV is unlikely rather than E2 character.
1214.34[d] *10*	(3)$^+$		ABCD	J$^\pi$: (M1+E2) γ to 4$^+$, M1+E2 γ to 2$^+$.
1402.71[d] *14*	(4)$^+$		BCD	J$^\pi$: M1+E2 γ to 4$^+$, stretched (E2) γ to (2$^+$) member of γ band.
1467.05[&] *14*	6$^+$	1.4 ps *5*	BCDE	J$^\pi$: stretched E2 γ to 4$^+$.
1495.01 *20*	2$^+$		A	J$^\pi$: γ's to 0$^+$ and 4$^+$; log *ft*=6.7 from 1$^+$.
1716.36 *23*	1,2		A	J$^\pi$: γ to 2$^+$; log *ft*=6.5 from 1$^+$.
1774.50[d] *14*	(5)$^+$		BCD	J$^\pi$: (M1+E2) γ to 4$^+$, stretched E2 γ to (3)$^+$, γ to 6$^+$.
1882.3 *3*			A	
2056.66[d] *17*	(6)$^+$		BCD	J$^\pi$: (M1) γ to 6$^+$, stretched E2 γ to (4)$^+$.
2065.54 *24*	2$^+$		A	J$^\pi$: γ's to 2$^+$, 3$^+$ and 4$^+$; log *ft*=6.3 from 1$^+$.
2217.69[&] *16*	8$^+$	0.8 ps *4*	BCDE	J$^\pi$: stretched E2 γ to 6$^+$.
2264.4 *5*	0$^+$,1,2		A	J$^\pi$: γ to 2$^+$, log *ft*=6.5 from 1$^+$.
2343.1 *4*	2$^+$		A	J$^\pi$: γ's to 0$^+$ and 4$^+$.
2458.98[d] *19*	(7)$^+$		BCD	J$^\pi$: stretched E2 γ to (5)$^+$; log *ft*=6.4 from 8$^{(-)}$.
2530.7 *3*	0$^+$,1,2		A	J$^\pi$: γ to 2$^+$, log *ft*=6.0 from 1$^+$.
2564.88[h] *21*	(7)$^-$	0.55 ps *28*	BCD	J$^\pi$: E1 γ to 6$^+$.
2642.3 *3*	1,2		A	J$^\pi$: γ's to 0$^+$, 3$^+$ and (2)$^+$, log *ft*=6.3 from 1$^+$.
2795.12[d] *19*	(8$^+$)		CD	J$^\pi$: stretched E2 γ to (6$^+$).
2847.2 *3*	7,8$^+$		B	J$^\pi$: γ to (6)$^+$, log *ft*=6.3 from 8$^{(-)}$.
2873.18 *20*	(7)$^-$		BCD	E(level): decay pattern of this level is different for 3.70-min Cs β^+ decay and ^{122}Te(^{3}He,3nγ),^{110}Pd(^{16}O,4nγ). J$^\pi$: E1 γ to 6$^+$, D γ to 8$^+$; log *ft*=6.1 from 8$^{(-)}$.
3008.8[k] *4*	(8$^-$)		CD	J$^\pi$: (M1+E2) γ to (7)$^-$, γ to 8$^+$.
3030.7 *5*			B	
3033.30[h] *21*	(9)$^-$	1.5 ps *14*	CD	J$^\pi$: E1+M2 γ to 8$^+$, stretched E2 γ to (7)$^-$.
3039.88[&] *18*	10$^+$	0.34 ps *14*	CDE	J$^\pi$: stretched E2 γ to 8$^+$.
3072.6 *5*			B	

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Adopted Levels, Gammas (continued)

^{122}Xe Levels (continued)

E(level)[†‡]	Jπ[#]	$T_{1/2}$[@]	XREF	Comments
3216.1[d] *3*	(9^+)		CD	Jπ: stretched Q γ to $(7)^+$.
3242.9[l] *3*	$(9)^-$		CD	Jπ: E1 γ to 8^+.
3468.9 *3*	$(10)^+$		C	Jπ: γ to 8^+.
3562.2[k] *4*	(10^-)		CD	Jπ: stretched E2 γ to (8^-).
3598.7[m] *3*	(10^-)		CD	Jπ: (D) γ to $(9)^-$.
3608.52[d] *20*	(10^+)		CD	Jπ: γ to (8^+) member of quasi-γ band.
3682.15[h] *22*	$(11)^-$	1.0 ps *2*	CD	Jπ: stretched E2 γ to $(9)^-$, D+Q γ to 10^+.
3747.9 *15*			D	
3820.10[a] *20*	(12^+)		CDE	Jπ: stretched Q γ to 10^+.
3843.9[l] *4*	(11^-)		CD	Jπ: stretched Q γ to $(9)^-$.
3883.1 *3*	(12^+)		C	Jπ: γ to 10^+.
3961.5[d] *6*	(11^+)		CD	Jπ: (Q) γ to (9^+) member of quasi-γ band.
4151.4[e] *3*	(12^+)		CD	Jπ: stretched Q γ to 10^+.
4240.2[k] *5*	(12^-)		CD	Jπ: (Q) γ to $(10)^-$.
4275.8[m] *7*	(12^-)		CD	Jπ: stretched Q γ to (10^-).
4412.0[d] *4*	(12^+)		CD	Jπ: stretched Q γ to (10^+).
4439.4[h] *3*	$(13)^-$	0.48 ps *14*	CD	Jπ: E2 γ to $(11)^-$.
4514.9 *11*			D	
4563.9[a] *3*	(14^+)		CD	Jπ: stretched Q γ to (12^+).
4576.1[l] *4*	(13^-)		CD	Jπ: stretched Q γ to (11^-).
4715.0[d] *8*	(13^+)		CD	Jπ: γ to (11^+) member of quasi-γ band.
4827.2[f] *3*	(12^+)		CD	Jπ: Q γ to 12^+.
5004.5[f] *3*	(13^+)		CD	Jπ: D(+Q) γ to (12^+).
5032.3[k] *6*	(14^-)		CD	Jπ: γ to (12^-).
5044.9[m] *7*	(14^-)		CD	Jπ: γ to (12^-).
5059.0[e] *3*	(14^+)		CD	Jπ: (Q) γ to (12^+).
5184.9[d] *4*	(14^+)		CD	Jπ: Q γ to (12^+) member of quasi-γ band.
5209.7[h] *4*	(15^-)		CD	Jπ: stretched Q γ to $(13)^-$.
5236.1[f] *3*	(14^+)		CD	Jπ: (D) γ to (13^+).
5407.0[a] *4*	(16^+)		CD	Jπ: (Q) γ to $(14)^+$.
5408.1[l] *5*	(15^-)		CD	Jπ: stretched Q γ to (13^-).
5530.9[f] *3*	(15^+)		CD	Jπ: D(+Q) γ to (14^+).
5552.6[d] *9*	(15^+)		C	Jπ: γ to (13^+).
5848.7[m] *6*	(16^-)		D	Jπ: Q γ to (14^-).
5850.5 *5*	(15)		D	Jπ: D(+Q) γ to (14^+).
5855.2 *5*	(15)		D	Jπ: γ to (14^+).
5884.1[f] *4*	(16^+)		CD	Jπ: D(+Q) γ to (15^+).
5906.8[e] *3*	(16^+)		CD	Jπ: stretched Q γ to (14^+).
5917.4[k] *6*	(16^-)		CD	Jπ: stretched Q γ to (14^-).
6048.2[h] *4*	(17^-)		CD	Jπ: stretched Q γ to (15^-).
6124.7[g] *5*	(16^+)		D	Jπ: see comment for 7806.1 level.
6289.6[f] *4*	(17^+)		CD	Jπ: D(+Q) γ to (16^+).
6304.9[l] *5*	(17^-)		CD	Jπ: stretched Q γ to (15^-).
6370.1[a] *4*	(18^+)		CD	Jπ: stretched Q γ to (16^+).
6535.6[g] *6*	(17^+)		D	Jπ: D(+Q) γ to (16^+).
6693.0[m] *5*	(18^-)		D	Jπ: γ's to (16^-) and (17^-).
6742.7[f] *4*	(18^+)		CD	Jπ: γ's to (16^+) and (17^+).
6786.5[e] *4*	(18^+)		CD	Jπ: stretched Q γ to (16^+).

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Adopted Levels, Gammas (continued)

^{122}Xe Levels (continued)

E(level)[†‡]	Jπ[#]	XREF	Comments
6865.7[k] 7	(18⁻)	D	Jπ: γ to (16⁻).
6940.3[h] 5	(19⁻)	CD	Jπ: stretched Q γ to (17)⁻, D(+Q) γ to (18⁻).
6962.2[g] 5	(18⁺)	D	Jπ: γ's to (16⁺) and (17⁺).
7244.5[l] 7	(19⁻)	D	Jπ: γ to (17⁻).
7387.9[g] 6	(19⁺)	D	Jπ: (Q) γ to (17⁺).
7453.1[b] 5	(20⁺)	CD	Jπ: stretched Q γ to (18⁺).
7577.1[m] 5	(20⁻)	D	Jπ: (Q) γ to (18⁻), γ to (19⁻).
7766.7[e] 4	(20⁺)	CD	Jπ: stretched Q γ to (18⁺).
7805.7[g] 5	(20⁺)	D	E(level): 843γ and 1020γ from this level establish the position of this level together with the cascade relations associated with the 6125 and 5851 levels. Jπ: γ's to (18⁺).
7861.8[k] 8	(20⁻)	D	Jπ: γ to (18⁻).
7883.0[h] 5	(21⁻)	CD	Jπ: stretched Q γ to (19)⁻, D(Q) γ to (20⁻).
8240.1[l] 8	(21⁻)	D	Jπ: (Q) γ to (19⁻).
8256.1[g] 6	(21⁺)	D	Jπ: (Q) γ to (19⁺), D(Q) γ to (20⁺).
8511.5[m] 5	(22⁻)	D	Jπ: stretched Q γ to (20⁻), D(+Q) γ to (21⁻).
8639.7[b] 5	(22⁺)	CD	Jπ: Q γ to (20⁺).
8653.1[c] 5	(22⁺)	CD	Jπ: stretched Q γ to (20⁺).
8788.1[e] 7	(22⁺)	CD	Jπ: Q γ to (20⁺).
8801.3[g] 8	(22⁺)	D	Jπ: D(+Q) γ to (21⁺).
8889.7[k] 9	(22⁻)	D	Jπ: γ to (20⁻).
8977.1[h] 5	(23⁻)	CD	Jπ: stretched Q γ to (21)⁻, D(+Q) γ to (22⁻).
9172.0[b] 5	(23⁺)	CD	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{15+} \otimes [\nu(h_{11/2})^4]_{8+}$. Jπ: D(+Q) γ to (22⁺).
9306.0[l] 9	(23⁻)	D	Jπ: (Q) γ to (21⁻).
9542.6[e] 8	(24⁺)	CD	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+} \otimes [\nu(h_{11/2})^4]_{8+}$. Jπ: Q γ to (22⁺).
9594.0[m] 7	(24⁻)	D	Jπ: stretched Q γ to (22⁻).
9738.1[b] 6	(24⁺)	D	Jπ: D(+Q) γ to (23⁺).
9875.2[c] 7	(24⁺)	D	Jπ: (Q) γ to (22⁺).
10002.2[i] 6	(25⁻)	CD	Jπ: stretched Q γ to (23⁻). Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^1(g_{7/2}+d_{5/2})^3]_{9-} \otimes [\nu(h_{11/2})^4]_{16+}$.
10198.7[b] 6	(25⁺)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{15+} \otimes [\nu(h_{11/2})^4(g_{7/2}+d_{5/2})^{-1}(s_{1/2})^1]_{10+}$. Jπ: D(+Q) γ to (24⁺).
10251.2[j] 5	(25⁻)	D	Jπ: stretched Q γ to (23⁻).
10465.9[l] 10	(25⁻)	D	Jπ: γ to (23⁻).
10570.6[e] 10	(26⁺)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{15+} \otimes [\nu(h_{11/2})^4(g_{7/2}+d_{5/2})^{-1}(s_{1/2})^1]_{11+}$. Jπ: γ to (24⁺).
10659.6[i] 7	(27⁻)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+} \otimes [\nu(h_{11/2})^5(g_{7/2}+d_{5/2})^{-1}]_{11-}$. Jπ: stretched Q γ to (25⁻).
10788.0[b] 7	(26⁺)	D	Jπ: γ's to (24⁺) and (25⁺).
10819.7[m] 8	(26⁻)	D	Jπ: γ to (24⁻).
10829.7 12		D	
10944.6[e] 10	(28⁺)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration=

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Adopted Levels, Gammas (continued)

^{122}Xe Levels (continued)

E(level)[†‡]	Jπ[#]	XREF	Comments
			$[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^4(g_{7/2}+d_{5/2})^{-1}(s_{1/2})^1]_{12+}$. Jπ: stretched Q γ to (26⁺).
11240.8[b] *7*	(27⁺)	D	Jπ: γ's to (25⁺) and (26⁺).
11530.4[j] *6*	(27⁻)	D	Jπ: stretched Q γ to (25⁻).
11827.4 *11*	(29)	D	Jπ: γ to (28⁺).
11925.8[b] *13*	(28⁺)	D	Jπ: γ to (27⁺).
12068.4[i] *7*	(29⁻)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^5(g_{7/2}+d_{5/2})^{-1}_{13-}$. Jπ: stretched Q γ to (27⁻).
12069.8[m] *9*	(28⁻)	D	Jπ: stretched Q γ to (26⁻).
12131.9[e] *11*	(30⁺)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^4(g_{7/2}+d_{5/2})^{-2}(s_{1/2})^1\ (d_{3/2})^1]_{14+}$. Jπ: stretched Q γ to (28⁺).
12297.4[j] *7*	(29⁻)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^5(g_{7/2}+d_{5/2})^{-1}]_{13-}$. Jπ: (D) γ to (29⁻), γ to (27⁻).
12309.8[b] *9*	(29⁺)	D	Jπ: γ to (27⁺).
12443.8[b] *16*		D	
12649.0[i] *7*	(30⁻)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^5(g_{7/2}+d_{5/2})^{-1}]_{14-}$. Jπ: D(+Q) γ to (29⁻).
13339.2[i] *8*	(31⁻)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^3(d_{3/2})^1)_{15-}$. Jπ: D(+Q) γ to (30⁻).
13472.9[e] *11*	(32⁺)	D	Possible admixture of non-collective state is suggested in 1994Ti01: configuration= $[\pi(h_{11/2})^2(g_{7/2}+d_{5/2})^2]_{16+}$ ⊗$[\nu(h_{11/2})^4]_{16+}$. Jπ: γ to (30⁺).

† Combined fit to levels, gammas adopted from ^{122}Cs β⁺ decay (21.18 s), ^{122}Cs β⁺ decay (3.70 min), ^{122}Te(^{3}He,3nγ) and ^{110}Pd(^{16}O,4nγ), ^{96}Zr(^{30}Si,4nγ) and ^{122}Te(α,4nγ).

‡ Hyperdeformed band (E=1440 keV *82* or *122*, J up to 34:56) in ^{122}Xe is suggested from ^{64}Ni(^{64}Ni,2n)^{126}Ba, followed by delayed α emission (2005Ny02).

Spin and parity values were deduced from log *ft* and mult. from ^{122}Cs β⁺ decay (21.18 s, 3.70 min) and in-beam reactions. For the levels populated in the in-beam reactions, band structures with ΔJ=2 or ΔJ=1 successively increasing spin sequences are assumed.

@ From Doppler-shift attenuation in ^{122}Te(α,4nγ) and ^{122}Te(^{3}He,3nγ), ^{110}Pd(^{16}O,4nγ), unless otherwise noted.

& Band(A): g.s. band, (π,α)=(+,0).

a Band(B): S-band, (π,α)=(+,0).

b Band(C): band 1, A branch above S-band (6370 keV).

c Band(D): band 2, B branch above S-band (6370 keV).

d Band(E): quasi-γ band ΔJ=1 band.

e Band(F): band 3, (π,α)=(+,0).

f Band(G): Band 4, ΔJ=1 band; 1994Ti01 and 1997Se06 assumed π=−, but it was changed to π=+ in accordance with 2003Mo27 on the basis of Q transitions connecting to g.s. band and γ band.

g Band(H): band 5, non-collective high-spin state, π=+.

h Band(I): band 6, (π,α)=(-,−1).

i Band(J): band 7, A branch above band 6 (8977 keV).

j Band(K): band 8, B branch above band 6 (8977 keV).

k Band(L): band 9, (π,α)=(-,0).

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Adopted Levels, Gammas (continued)

^{122}Xe Levels (continued)

[l] Band(M): band 10, (π,α)=(-,−1).
[m] Band(N): band 11, (π,α)=(-,0).

Adopted Levels, Gammas (continued)

γ(^{122}Xe)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult. @	δ @	α &	Comments
331.28	2^+	331.26 *7*	100	0.0	0^+	E2		0.0307	B(E2)(W.u.)=78 *4*
828.53	4^+	497.2 *1*	100	331.28	2^+	E2		0.0180	B(E2)(W.u.)=114 *6*
843.13	(2^+)	512.0 *1*	100 *16*	331.28	2^+				
		843.2 *2*	45 *8*	0.0	0^+				
1149.18	0^+	817.9 *2*	100	331.28	2^+	Q			
1214.34	$(3)^+$	371.4 *1*	35 *6*	843.13	(2^+)	(M1)			
		385.7 *2*	11.1 *23*	828.53	4^+	(M1+E2)			I_γ: weighted average of 0.18 *7* (3.70 min), 0.18 *7* (21.18 s) and 0.09 *3* in ^{122}Te(^{3}He,3nγ).
		882.9 *1*	100 *18*	331.28	2^+	M1+E2	−3 *+1−3*		
1402.71	$(4)^+$	559.6 *2*	61 *28*	843.13	(2^+)	(E2)			
		574.2 *2*	100 *12*	828.53	4^+	M1+E2	>1.9		
1467.05	6^+	638.5 *1*	100	828.53	4^+	E2			B(E2)(W.u.)=1.1×10^2 *4*
1495.01	2^+	666.5 *3*	46 *8*	828.53	4^+				
		1163.6 *4*	61 *10*	331.28	2^+				
		1495.5 *4*	100 *15*	0.0	0^+				
1716.36	1,2	873.1 *3*	24.7 *27*	843.13	(2^+)				
		1385.2 *3*	100 *14*	331.28	2^+				
1774.50	$(5)^+$	307.6 *3*	12.3 *15*	1467.05	6^+	[M1,E2]			
		371.7 *2*	9 *5*	1402.71	$(4)^+$	(M1)			
		560.2 *2*	100 *15*	1214.34	$(3)^+$	E2			
		946.0 *2*	36 *5*	828.53	4^+	(M1+E2)	+0.9 *+20−4*		
1882.3		1038.9 *4*	100 *19*	843.13	(2^+)				
		1550.9 *7*	40 *8*	331.28	2^+				
2056.66	$(6)^+$	589.4 *2*	28 *5*	1467.05	6^+	(M1)			
		654.1 *2*	100 *19*	1402.71	$(4)^+$	E2			
		1228.1 *6*	10 *5*	828.53	4^+				
2065.54	2^+	851.1 *4*	13 *5*	1214.34	$(3)^+$				
		1222.5 *5*	33 *9*	843.13	(2^+)				
		1236.8 *5*	31 *9*	828.53	4^+				
		1734.4 *4*	100 *18*	331.28	2^+				
2217.69	8^+	750.7 *1*	100	1467.05	6^+	E2			B(E2)(W.u.)=8.E+1 *5*
2264.4	0^+,1,2	1421.5 *7*	14 *6*	843.13	(2^+)				
		1933.0 *5*	100 *14*	331.28	2^+				
2343.1	2^+	1194.0 *7*	6 *4*	1149.18	0^+				
		1515.0 *6*	34 *5*	828.53	4^+				
		2011.3 *6*	100 *16*	331.28	2^+				
2458.98	$(7)^+$	684.5 *2*	100 *8*	1774.50	$(5)^+$	E2			
		991.9 *3*	42 *8*	1467.05	6^+				
2530.7	0^+,1,2	648.2 *3*	50 *8*	1882.3					
		1035.9 *3*	100 *17*	1495.01	2^+				
		2199.1 *7*	92 *17*	331.28	2^+				

$^{122}_{54}Xe_{68}$-6

Adopted Levels, Gammas (continued)

γ(^{122}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[&]	Comments
2564.88	$(7)^-$	1097.7 *2*	100	1467.05	6^+	E1		B(E1)(W.u.)=0.00038 *20*
2642.3	1,2	760.0 *5*	9 *5*	1882.3				
		1428.2 *5*	43 *16*	1214.34	$(3)^+$			
		1799.0 *4*	100 *16*	843.13	(2^+)			
2795.12	(8^+)	336.2 *3*	#	2458.98	$(7)^+$			
		577.5 *3*	#	2217.69	8^+			
		738.4 *2*	100 *5*	2056.66	$(6)^+$	E2		
2847.2	$7,8^+$	790.5 *3*	47 *8*	2056.66	$(6)^+$			
		1380.1 *5*	100 *26*	1467.05	6^+			
2873.18	$(7)^-$	655.7 *2*	61 *10*	2217.69	8^+	D		
		1406.0 *2*	100 *21*	1467.05	6^+	E1		
3008.8	(8^-)	135.8 *3*	58 *10*	2873.18	$(7)^-$	(M1+E2)		
		790.3 *6*	100 *13*	2217.69	8^+			
3030.7		813.0 *4*	100	2217.69	8^+			
3033.30	$(9)^-$	468.3 *2*	27 *3*	2564.88	$(7)^-$	E2	0.0108	B(E2)(W.u.)=1.0×10^2 *10*
		815.7 *2*	100 *8*	2217.69	8^+	E1+M2		
3039.88	10^+	822.2 *1*	100	2217.69	8^+	E2		B(E2)(W.u.)=1.2×10^2 *5*
3072.6		1298.1 *4*	100	1774.50	$(5)^+$			
3216.1	(9^+)	421.0 *3*	#	2795.12	(8^+)			
		757.1 *5*	100 *10*	2458.98	$(7)^+$	Q		
3242.9	$(9)^-$	1025.2 *2*	100	2217.69	8^+	E1		
3468.9	$(10)^+$	1251.2 *3*	100	2217.69	8^+			
3562.2	(10^-)	553.4 *2*	100	3008.8	(8^-)	E2		
3598.7	(10^-)	565.4 *2*	100	3033.30	$(9)^-$	(D)		
3608.52	(10^+)	568.7 *3*	#	3039.88	10^+			
		813.4 *1*	100 *10*	2795.12	(8^+)			
3682.15	$(11)^-$	642.3 *2*	24 *3*	3039.88	10^+	D+Q		
		648.8 *2*	100 *8*	3033.30	$(9)^-$	E2		B(E2)(W.u.)=110 *25*
3820.10	(12^+)	780.2 *1*	100 *7*	3039.88	10^+	Q		
3843.9	(11^-)	601.0 *2*	100	3242.9	$(9)^-$	Q		
3883.1	(12^+)	843.3 *3*	100	3039.88	10^+			
3961.5	(11^+)	745.4 *5*	100	3216.1	(9^+)	(Q)		
4151.4	(12^+)	682.5 *3*	#	3468.9	$(10)^+$			
		1111.6 *4*	100 *16*	3039.88	10^+	Q		
4240.2	(12^-)	678.0[a] *2*	100[a]	3562.2	(10^-)	(Q)		
4275.8	(12^-)	678.0[a]	100[a]	3598.7	(10^-)	Q		
4412.0	(12^+)	803.5 *3*	100	3608.52	(10^+)	Q		
4439.4	$(13)^-$	619 *1*	#	3820.10	(12^+)			
		757.2 *2*	100 *3*	3682.15	$(11)^-$	E2		B(E2)(W.u.)=1.3×10^2 *4*
4514.9		767 *1*	100	3747.9				

$^{122}_{54}Xe_{68}$-7

Adopted Levels, Gammas (continued)

$\gamma(^{122}Xe)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult. @
4563.9	(14^+)	743.7 *2*	100	3820.10	(12^+)	Q
4576.1	(13^-)	732.2 *2*	100	3843.9	(11^-)	Q
4715.0	(13^+)	753.5 *5*	100	3961.5	(11^+)	
4827.2	(12^+)	675.6 *5*	#	4151.4	(12^+)	Q
		944.1 *3*	#	3883.1	(12^+)	Q
		1007.2 *5*	100 *12*	3820.10	(12^+)	Q
		1218.7 *3*	#	3608.52	(10^+)	Q
5004.5	(13^+)	177.3 *1*	100	4827.2	(12^+)	D(+Q)
5032.3	(14^-)	792.1 *3*	100	4240.2	(12^-)	
5044.9	(14^-)	769.1 *2*	100 *9*	4275.8	(12^-)	
5059.0	(14^+)	907.6 *2*	100 *5*	4151.4	(12^+)	
		1239.0 *3*	88 *5*	3820.10	(12^+)	(Q)
5184.9	(14^+)	670 *1*	47 *3*	4514.9		
		773.0 *3*	100 *6*	4412.0	(12^+)	
5209.7	(15^-)	770.3 *2*	100	4439.4	$(13)^-$	Q
5236.1	(14^+)	231.6 *1*	100	5004.5	(13^+)	(D)
5407.0	(16^+)	843.0 *2*	100	4563.9	(14^+)	(Q)
5408.1	(15^-)	832.0 *2*	100	4576.1	(13^-)	
5530.9	(15^+)	294.8 *1*	100 *7*	5236.1	(14^+)	D(+Q)
		526.1 *3*	0.2	5004.5	(13^+)	
5552.6	(15^+)	837.6 *3*	100#	4715.0	(13^+)	
5848.7	(16^-)	803.9 *4*	100	5044.9	(14^-)	Q
5850.5	(15)	614.5 *5*	100	5236.1	(14^+)	D(+Q)
5855.2	(15)	619.1 *5*	100	5236.1	(14^+)	
5884.1	(16^+)	353.3 *1*	100	5530.9	(15^+)	D(+Q)
		648.1 *5*	#	5236.1	(14^+)	
5906.8	(16^+)	722.1 *5*	32 *4*	5184.9	(14^+)	Q
		847.9 *2*	100 *4*	5059.0	(14^+)	
		1342.6 *4*	8 *2*	4563.9	(14^+)	(Q)
5917.4	(16^-)	885.1 *2*	100	5032.3	(14^-)	Q
6048.2	(17^-)	838.4 *2*	100	5209.7	(15^-)	Q
6124.7	(16^+)	269.5 *5*	42 *4*	5855.2	(15)	D(+Q)
		274.2 *1*	100 *4*	5850.5	(15)	D(+Q)
6289.6	(17^+)	405.5 *1*	42 *5*	5884.1	(16^+)	D(+Q)
		758.4 *2*	100 *10*	5530.9	(15^+)	
6304.9	(17^-)	896.8 *2*	100	5408.1	(15^-)	Q
6370.1	(18^+)	963.1 *2*	100	5407.0	(16^+)	Q
6535.6	(17^+)	410.9 *5*	100	6124.7	(16^+)	D(+Q)
6693.0	(18^-)	644.6 *4*	100 *30*	6048.2	(17^-)	
		844.5 *4*	#	5848.7	(16^-)	
6742.7	(18^+)	452.7 *2*	100 *17*	6289.6	(17^+)	
		858.7 *1*	#	5884.1	(16^+)	
6786.5	(18^+)	879.7 *2*	100	5906.8	(16^+)	Q
6865.7	(18^-)	948.3 *4*	100	5917.4	(16^-)	
6940.3	(19^-)	246.9 *4*	16.4 *7*	6693.0	(18^-)	D(+Q)
		892.2 *2*	100	6048.2	(17^-)	Q
6962.2	(18^+)	426.6 *5*	<100	6535.6	(17^+)	
		837.5 *5*	100	6124.7	(16^+)	
7244.5	(19^-)	939.6 *4*	100	6304.9	(17^-)	
7387.9	(19^+)	425.6 *5*	<73	6962.2	(18^+)	
		852.5 *5*	100 *9*	6535.6	(17^+)	(Q)
7453.1	(20^+)	1082.9 *3*	100	6370.1	(18^+)	Q
7577.1	(20^-)	636.4 *4*	#	6940.3	(19^-)	
		884.3 *4*	100 *9*	6693.0	(18^-)	(Q)
7766.7	(20^+)	980.2 *1*	100	6786.5	(18^+)	Q
7805.7	(20^+)	843.4 *5*	#	6962.2	(18^+)	
		1020 *1*	#	6786.5	(18^+)	
7861.8	(20^-)	996.1 *4*	100	6865.7	(18^-)	
7883.0	(21^-)	305.8 *4*	13.2 *8*	7577.1	(20^-)	D(+Q)
		942.7 *1*	100 *11*	6940.3	(19^-)	Q
8240.1	(21^-)	995.6 *4*	100	7244.5	(19^-)	(Q)
8256.1	(21^+)	450.4 *5*	100 *7*	7805.7	(20^+)	D(+Q)
		868.3 *5*	62 *9*	7387.9	(19^+)	(Q)
8511.5	(22^-)	628.2 *4*	15.2 *11*	7883.0	(21^-)	D(+Q)
		934.3 *4*	100 *5*	7577.1	(20^-)	Q
8639.7	(22^+)	834.1 *4*	100 *4*	7805.7	(20^+)	(Q)
		1186.4 *4*	≤34	7453.1	(20^+)	Q
8653.1	(22^+)	1200.0 *2*	100	7453.1	(20^+)	Q
8788.1	(22^+)	1021.4 *5*	100	7766.7	(20^+)	Q
8801.3	(22^+)	545.2 *5*	100	8256.1	(21^+)	D(+Q)
8889.7	(22^-)	1027.9 *3*	100	7861.8	(20^-)	
8977.1	(23^-)	465.1 *4*	20 *3*	8511.5	(22^-)	D(+Q)
		1094.2 *2*	100 *15*	7883.0	(21^-)	Q
9172.0	(23^+)	532.3 *1*	100 *7*	8639.7	(22^+)	D(+Q)
		915.9 *5*	32 *4*	8256.1	(21^+)	
9306.0	(23^-)	1065.9 *4*	100	8240.1	(21^-)	(Q)
9542.6	(24^+)	754.5 *5*	100	8788.1	(22^+)	Q
9594.0	(24^-)	1082.4 *4*	100	8511.5	(22^-)	Q
9738.1	(24^+)	566.1 *2*	100	9172.0	(23^+)	D(+Q)
9875.2	(24^+)	1222.1 *4*	100	8653.1	(22^+)	(Q)

$^{122}_{54}Xe_{68}$-8

Adopted Levels, Gammas (continued)

γ(^{122}Xe) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult. @
10002.2	(25$^-$)	1025.0 *4*	100	8977.1	(23$^-$)	Q
10198.7	(25$^+$)	460.5 *5*	57 *17*	9738.1	(24$^+$)	D(+Q)
		1026.7 *5*	100 *21*	9172.0	(23$^+$)	
10251.2	(25$^-$)	1274.1 *1*	100	8977.1	(23$^-$)	Q
10465.9	(25$^-$)	1159.9 *4*	100	9306.0	(23$^-$)	
10570.6	(26$^+$)	1028.0 *5*	100	9542.6	(24$^+$)	
10659.6	(27$^-$)	657.3 *4*	100	10002.2	(25$^-$)	Q
10788.0	(26$^+$)	589.3 *5*	82 *16*	10198.7	(25$^+$)	
		1050.0 *5*	100 *16*	9738.1	(24$^+$)	
10819.7	(26$^-$)	1225.7 *4*	100	9594.0	(24$^-$)	
10829.7		631 *1*	100	10198.7	(25$^+$)	
10944.6	(28$^+$)	374.0 *2*	100	10570.6	(26$^+$)	Q
11240.8	(27$^+$)	452.8 *5*	<75	10788.0	(26$^+$)	
		1042.1 *5*	100 *5*	10198.7	(25$^+$)	
11530.4	(27$^-$)	1279.3 *4*	100	10251.2	(25$^-$)	Q
11827.4	(29)	882.7 *5*	100	10944.6	(28$^+$)	
11925.8	(28$^+$)	685 *1*	100	11240.8	(27$^+$)	
12068.4	(29$^-$)	1408.8 *1*	100	10659.6	(27$^-$)	Q
12069.8	(28$^-$)	1250.1 *4*	100	10819.7	(26$^-$)	Q
12131.9	(30$^+$)	304.5 *4*	26 *4*	11827.4	(29)	
		1187.3 *4*	100	10944.6	(28$^+$)	Q
12297.4	(29$^-$)	228.8 *4*	51 *11*	12068.4	(29$^-$)	(D)
		767.1 *4*	100 *22*	11530.4	(27$^-$)	
12309.8	(29$^+$)	1069.0 *5*	100	11240.8	(27$^+$)	
12443.8		518 *1*	100	11925.8	(28$^+$)	
12649.0	(30$^-$)	351.4 *4*	51 *2*	12297.4	(29$^-$)	D(+Q)
		580.7 *4*	100 *2*	12068.4	(29$^-$)	D(+Q)
13339.2	(31$^-$)	690.2 *4*	100	12649.0	(30$^-$)	D(+Q)
13472.9	(32$^+$)	1341.0 *4*	100	12131.9	(30$^+$)	

† Weighted average of all available Eγ data from ^{122}Cs β^+ decay (21.18 s, 3.70 min), ^{122}Te(^{3}He,3nγ), ^{110}Pd(^{16}O,4nγ), ^{109}Ag(^{16}O,p2nγ), and ^{96}Zr(^{30}Si,4nγ) and ^{122}Te(α,4nγ).

‡ Weighted average of all available Iγ data from ^{122}Cs β^+ decay (21.18 s, 3.70 min), ^{122}Te(^{3}He,3nγ), ^{110}Pd(^{16}O,4nγ), ^{109}Ag(^{16}O,p2nγ), and ^{96}Zr(^{30}Si,4nγ) and ^{122}Te(α,4nγ).

No Iγ data available in neither ^{96}Zr(^{30}Si,4nγ), ^{122}Te(^{3}He,3nγ), ^{110}Pd(^{16}O,4nγ) nor ^{109}Ag(^{16}O,4nγ).

@ From α(exp) in ^{122}Te(^{3}He,3nγ) and ^{110}Pd(^{16}O,4nγ), multi. from $\gamma(\theta)$ in ^{122}Te(^{3}He,3nγ) and ^{110}Pd(^{16}O,4nγ), and ^{122}Te(α,4nγ), and DCO ratio in ^{96}Zr(^{30}Si,4nγ) and RUL.

& 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.

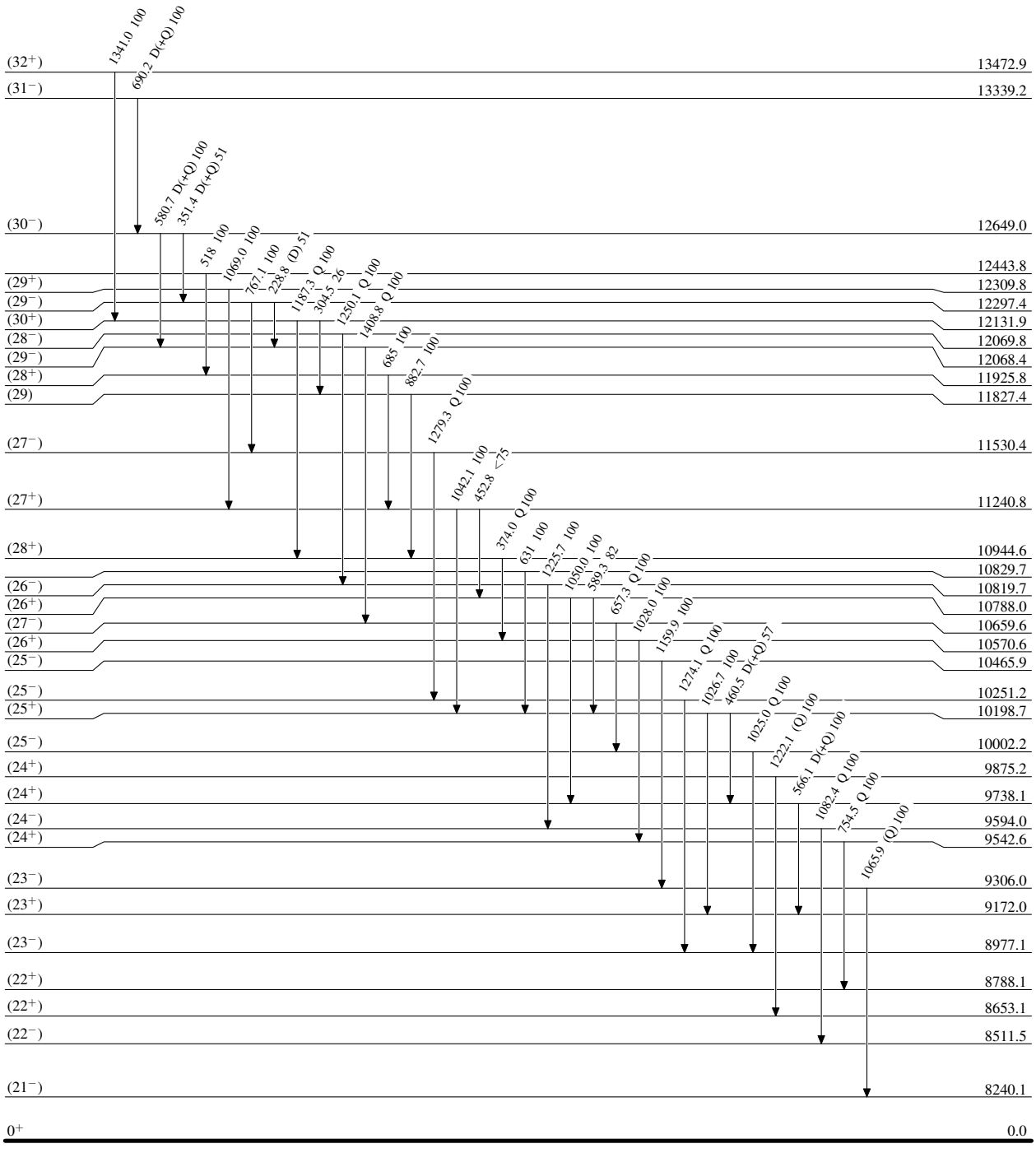
a Multiply placed with undivided intensity.

$^{122}_{54}Xe_{68}$-9

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

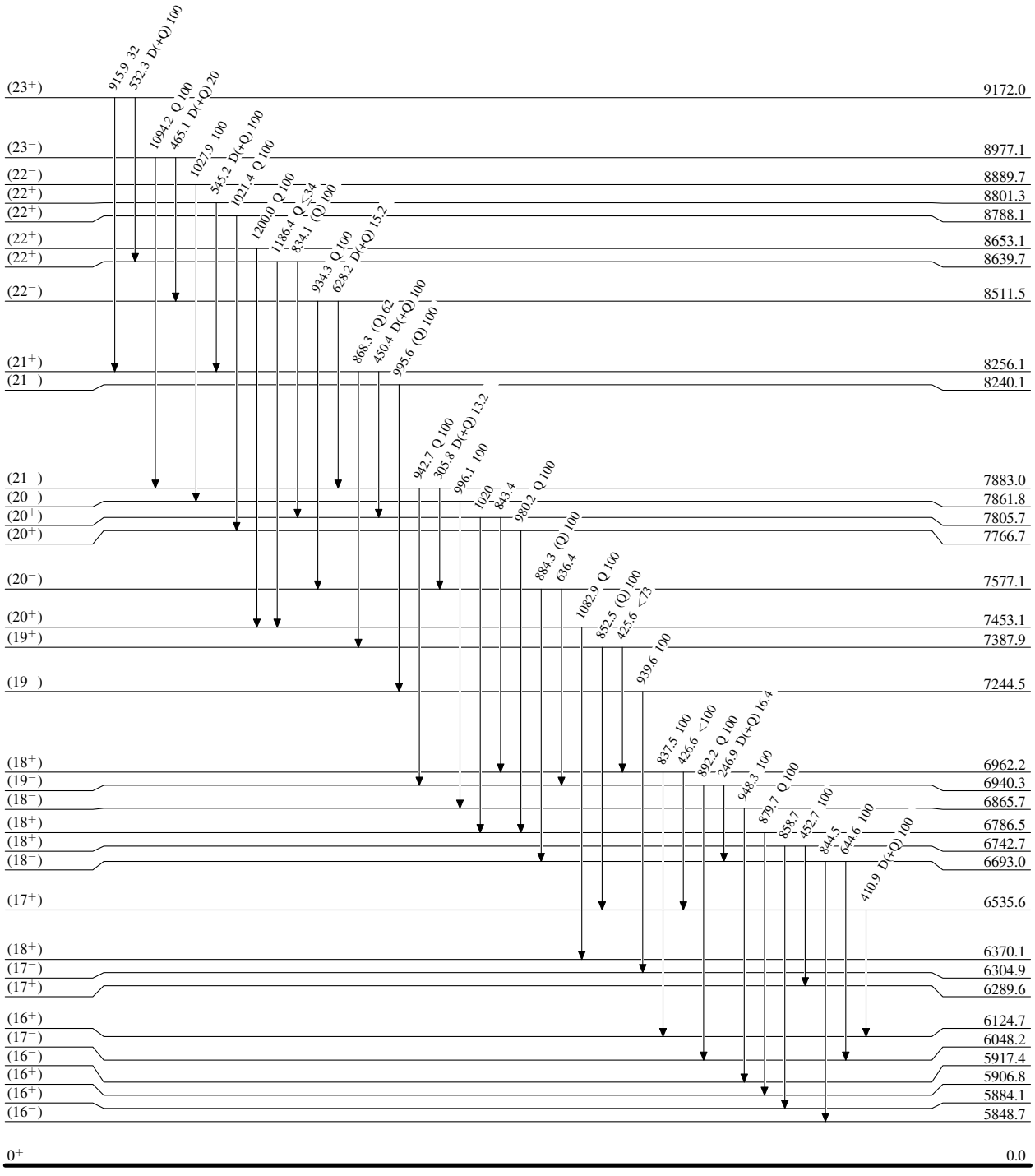


$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

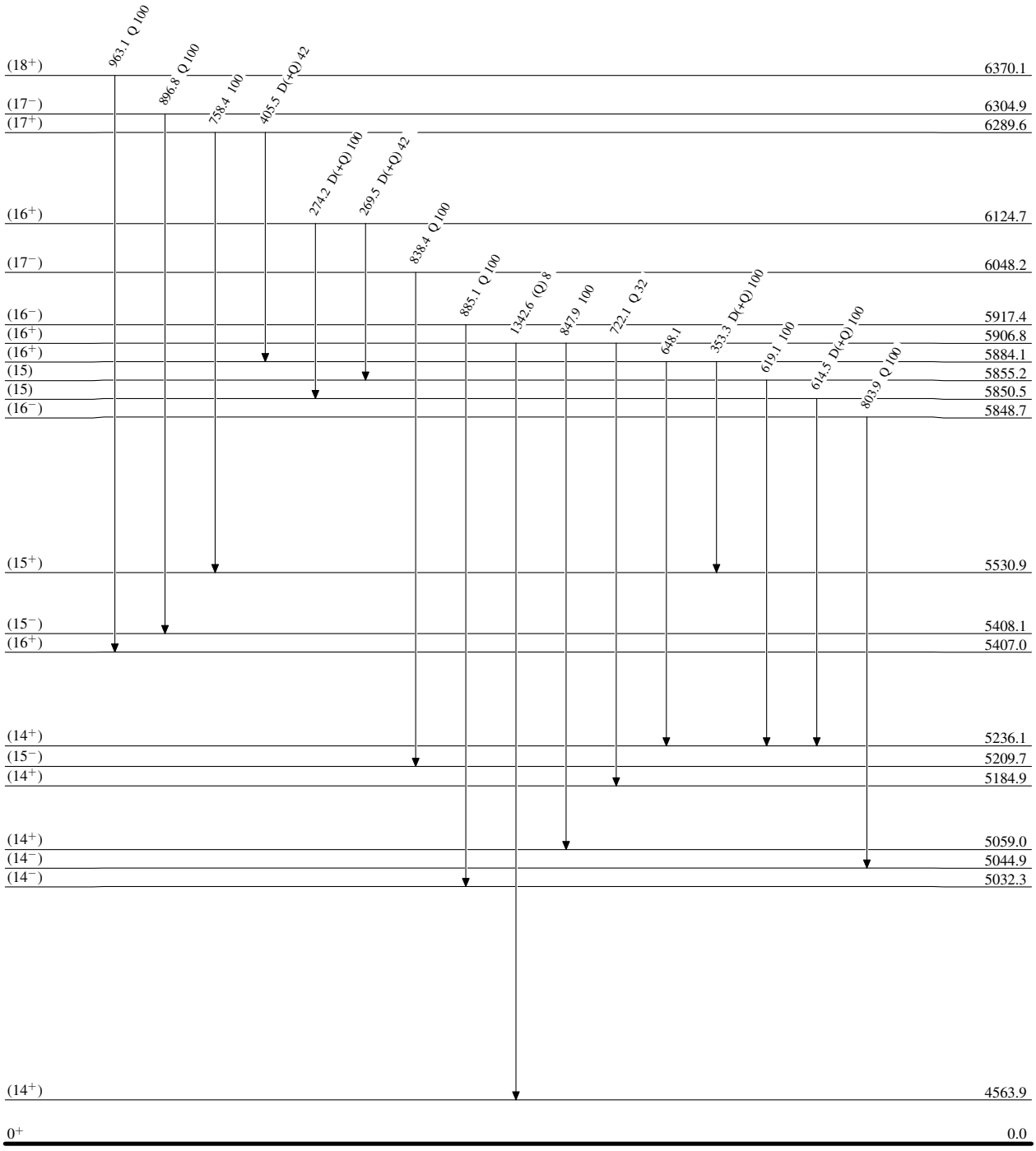


$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

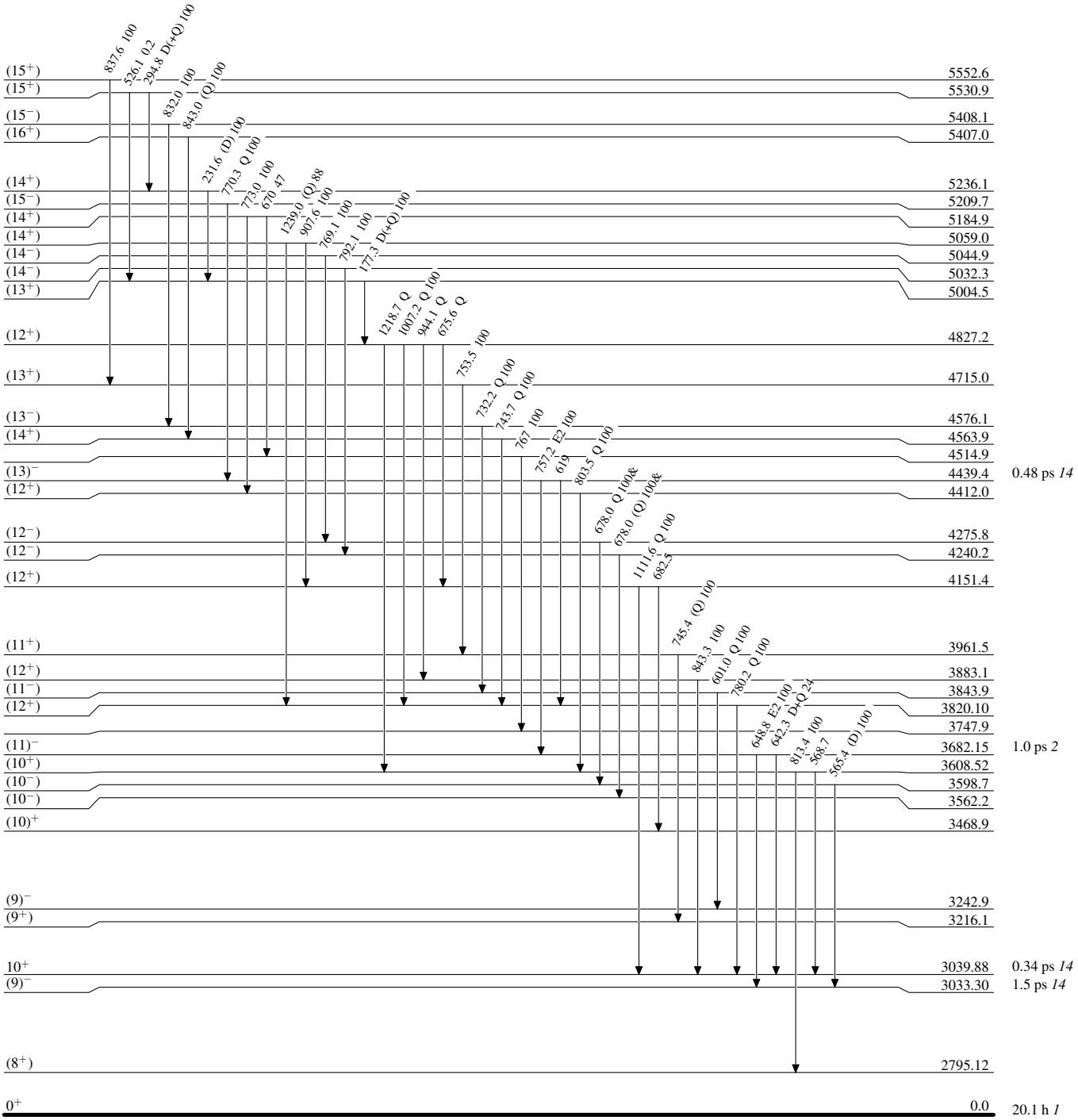


$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

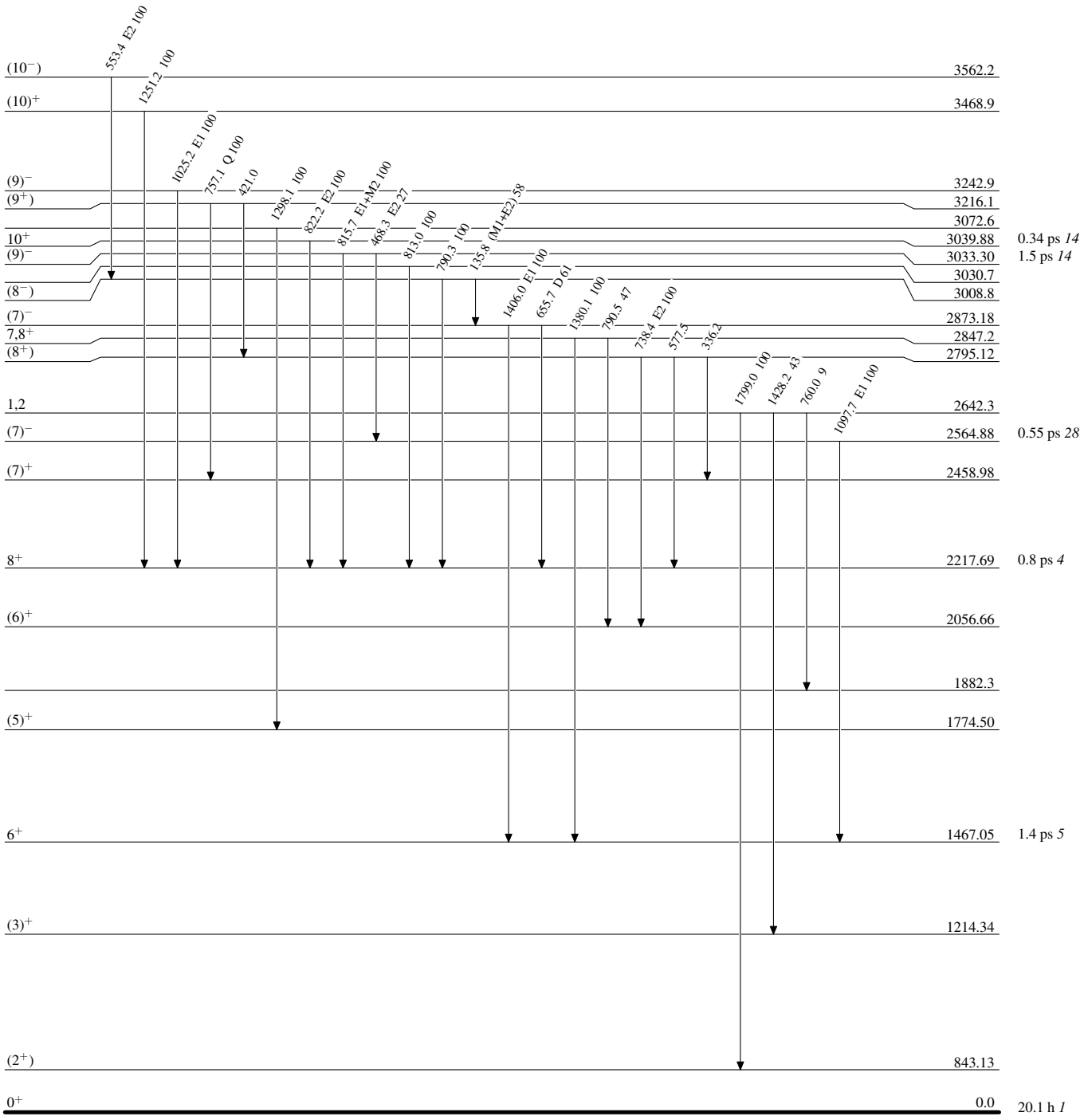


$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

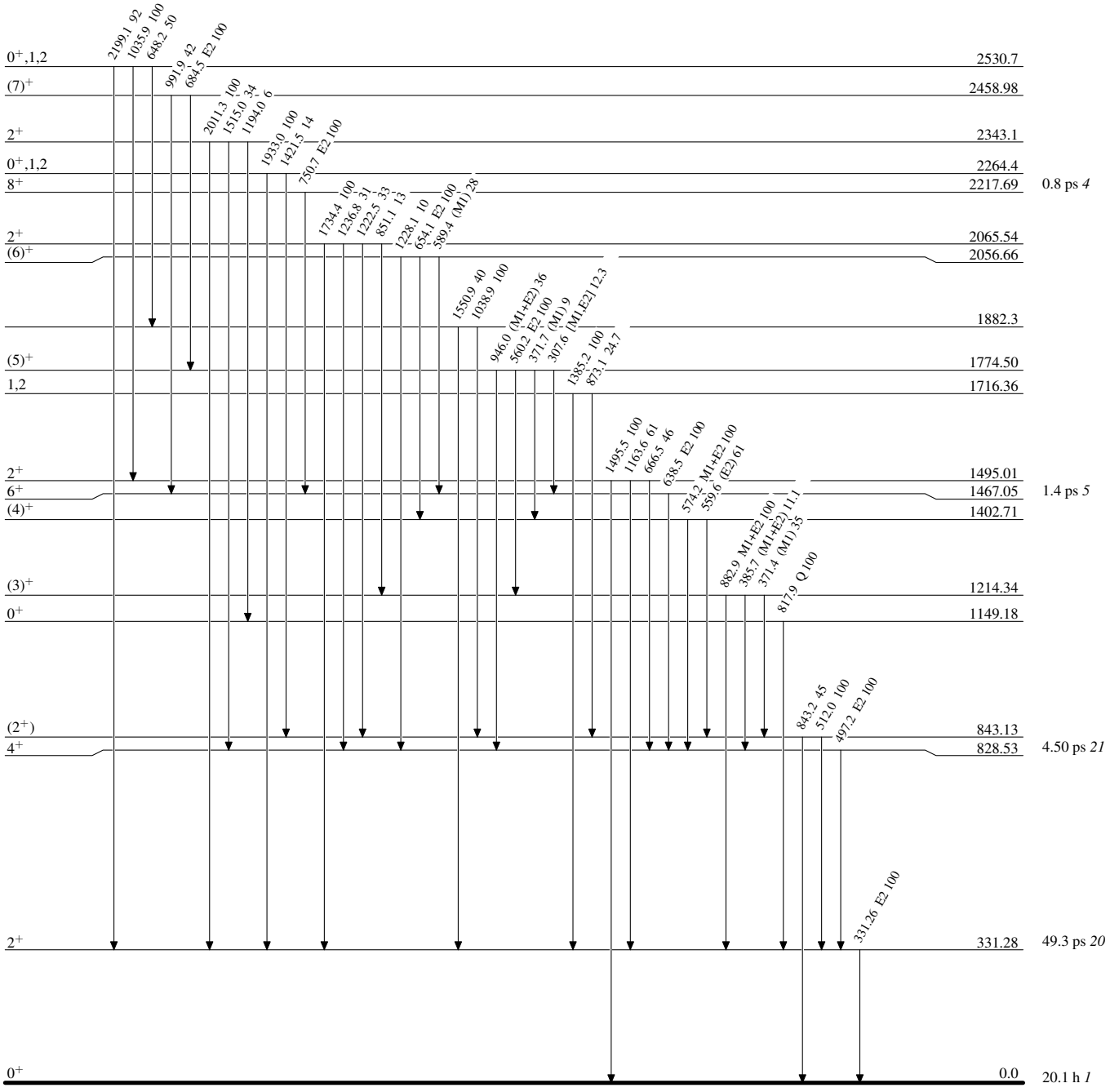


$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas

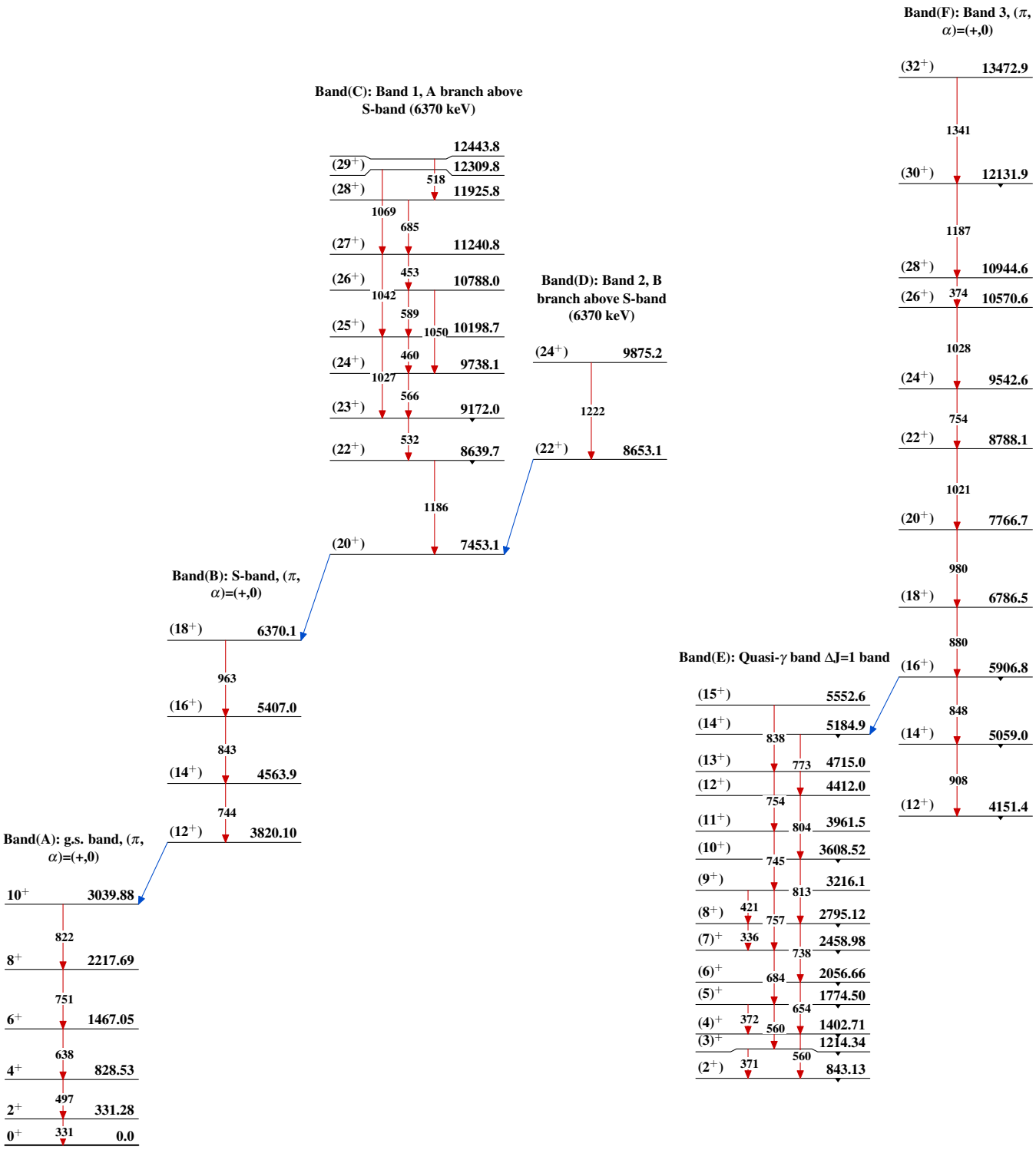
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

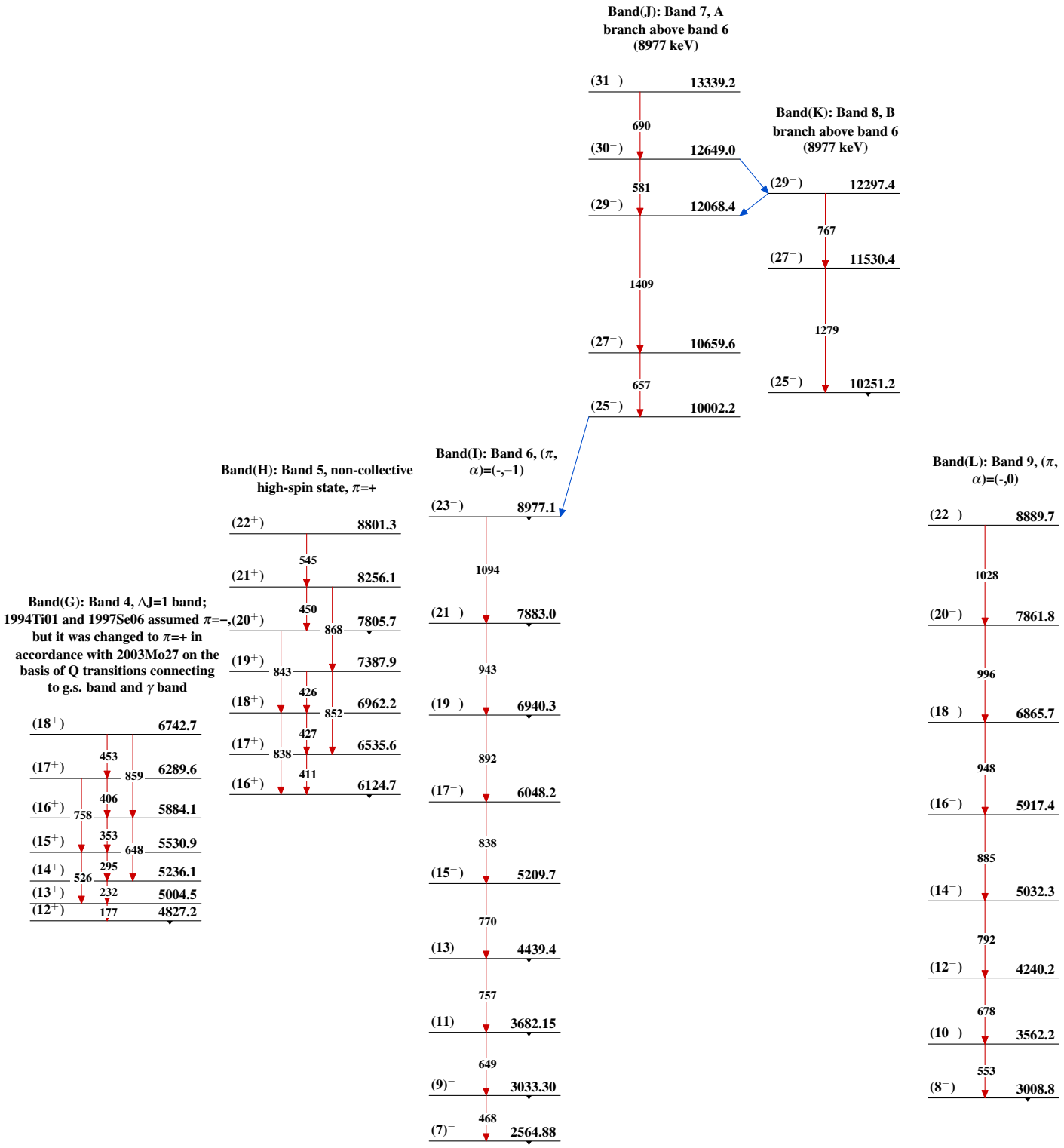


$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas

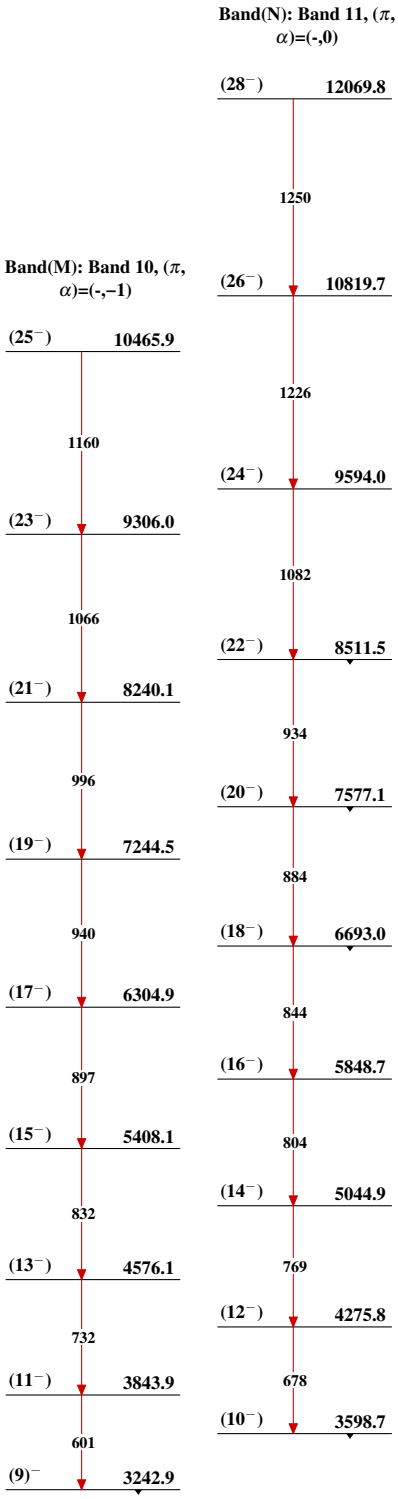


Adopted Levels, Gammas (continued)



$^{122}_{54}Xe_{68}$

Adopted Levels, Gammas (continued)



$^{122}_{54}Xe_{68}$