

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. Ohya	NDS 111,1619 (2010)	20-Jan-2009

Q(β^-)=-5379 14; S(n)=8380 16; S(p)=6017 19; Q(α)=190 17 [2012Wa38](#)
 Note: Current evaluation has used the following Q record -5372 18 8372 16 6011 19 199 17 [2009AuZZ](#).
 Mass measurement: [1996Os04](#): Mass excess =-82.55 4 MeV.

¹²¹Xe Levels

Cross Reference (XREF) Flags

A	¹²¹ Cs ϵ decay (155 s)	D	⁹⁶ Zr(³⁰ Si,5n γ)
B	¹²¹ Cs ϵ decay (122 s)	E	¹⁰⁹ Ag(¹⁶ O,p3n γ)
C	¹¹² Cd(¹² C,3n γ)		

E(level) ^g	J π ^h	T _{1/2}	XREF	Comments
0.0 [†]	5/2 ⁽⁺⁾	40.1 min 20	ABCDE	% ϵ +% β^+ =100 μ =-0.701 3; Q=+1.33 5 μ and Q from CFBLs (1990NeZY), reevaluated by 2005St24 . Other: μ =-0.653 (NO/S) (2005St24). T _{1/2} : from 1972Mu03 . Others: 38.8 min 20 (1965An05), 40 min 2 (1952Dr18), 34.0 min 25 (1965Bu03), 38.8 min 6 (1969Bu07). J π : log ft \leq 5.7 from 3/2 ⁽⁺⁾ , M1+E2 γ from the 179.55 level, and log ft<6.0 from 9/2 ⁽⁺⁾ give J π =5/2 ⁽⁺⁾ and 7/2 ⁽⁺⁾ for the g.s. and 179.55 levels, respectively.
153.99 ^f 11	(1/2 ⁺)	80 ns 15	ABC E	J π : E2 γ to 5/2 ⁽⁺⁾ ; M1+E2 γ from (3/2 ⁺); Proposed as the band head of a 1/2 ⁺ band. T _{1/2} : from γ (t) in (¹² C,3n γ).
179.55 [†] 9	7/2 ⁽⁺⁾		ABCDE	J π : see g.s.
196.06 [#] 13	7/2 ⁽⁻⁾	6.8 ns 13	ABCDE	J π : E1 γ to 5/2 ⁽⁺⁾ ; log ft \leq 6.3 from 9/2 ⁽⁺⁾ . T _{1/2} : unweighted average of 5.5 ns 5 (¹¹² Cd(¹² C,3n γ)) and 8 ns 2 (¹²¹ Cs ϵ + β^+ decay (155 s, 122 s)).
234.67 [#] 21	7/2 ⁽⁻⁾ ,9/2 ⁽⁻⁾		BCDE	J π : M1+E2 γ to 7/2 ⁽⁻⁾ ; log ft \leq 6.3 from 9/2 ⁽⁺⁾ .
239.81 [‡] 12	(3/2 ⁺)		ABCDE	J π : M1+E2 γ to 5/2 ⁽⁺⁾ ; configuration=2d _{3/2} .
264.72 [#] 14	(11/2 ⁻)	6 ns 1	BCDE	T _{1/2} : from γ (t) in ¹¹² Cd(¹² C,3n γ).
355.75 15	(5/2 ⁻)		A	J π : M1 γ to 7/2 ⁽⁻⁾ , E1 γ to 5/2 ⁽⁺⁾ ; log ft \leq 6.7 from 3/2 ⁽⁺⁾ .
414.29 [†] 10	(9/2 ⁺)		BCDE	
427.16 13	(3/2 ⁺ ,5/2 ⁺)		AB	J π : (M1) γ to 5/2 ⁽⁺⁾ ; log ft \leq 6.7 from 3/2 ⁽⁺⁾ .
449.89 ^f 11	(5/2 ⁺)		AB E	J π : M1 γ to 7/2 ⁽⁺⁾ , (E2) γ to (1/2 ⁺).
459.59 14	(7/2 ⁺)		B	J π : M1+(E2) γ to 5/2 ⁽⁺⁾ ; log ft=5.8 from 9/2 ⁽⁺⁾ .
476.16 24	(7/2,9/2,11/2) ⁽⁻⁾		B	J π : M1,E2 γ to 7/2 ⁽⁻⁾ ; log ft=6.8 from 9/2 ⁽⁺⁾ .
497.2 5			A	
553.07 15			A	
560.83 [‡] 16	(7/2 ⁺)		BCDE	
592.7 4			B	
608.4 4			B	
619.92 16			A	
646.16 24			B	
657.90 [#] 15	(13/2 ⁻)		BCDE	
661.10 15			A	
661.1 4			AB	
667.76 24			B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{121}Xe Levels (continued)

E(level) ^g	J ^π ^h	XREF	Comments
670.49 [†] 10	(11/2 ⁺)	BCDE	
682.40 18		A	
687.02 [#] 15	(15/2 ⁻)	CDE	
696.52 14		A	
706.19 12	(7/2 ⁺)	B	J ^π : (M1) γ to (3/2 ⁺ ,5/2 ⁺); log ft=6.2 from 9/2 ⁽⁺⁾ .
734.58 19	(7/2 ⁺ ,9/2 ⁺)	B	J ^π : γ to 5/2 ⁺ ,log ft=6.5 from 9/2 ⁽⁺⁾ .
737.50 21		A	
776.3 10		C	
815.6 10		C	
861.06 24		B	
881.19 ^f 23	(9/2 ⁺)	B E	
897.2 4		B	
900.02 23		B	
910.28 18		B	
942.4 ^e 13	(13/2 ⁻)	C E	
946.3 4		A	
963.29 [†] 11	(13/2 ⁺)	CDE	
978.4 4		B	
998.78 17		B	
1021.42 [‡] 22	(11/2 ⁺)	BCDE	
1117.6 4		A	
1149.5 4		B	
1247.1 6		B	
1261.6 4		B	
1264.92 [#] 15	(17/2 ⁻)	CDE	
1274.00 [#] 16	(19/2 ⁻)	CDE	
1281.52 [†] 13	(15/2 ⁺)	CDE	
1299.61 16		B	
1310.1 ^b 3	(15/2 ⁻)	CDE	
1343.5 3		B	
1419.8 3		B	
1445.9 ^f 11	(13/2 ⁺)	E	
1534.4 ^e 8	(17/2 ⁻)	E	
1590.01 [‡] 24	(15/2 ⁺)	CDE	
1596.3 5		B	
1618.39 [†] 15	(17/2 ⁺)	CDE	
1937.3 ^b 3	(19/2 ⁻)	DE	
1986.01 [†] 16	(19/2 ⁺)	CDE	
1995.86 [#] 17	(23/2 ⁻)	CDE	
2015.44 [#] 16	(21/2 ⁻)	CDE	
2098.2 ^f 15	(17/2 ⁺)	E	
2244.2 ^e 8	(21/2 ⁻)	E	
2245.00 [‡] 23	(19/2 ⁺)	CDE	
2271.1 8	(19/2 ⁺)	DE	
2355.82 [†] 17	(21/2 ⁺)	CDE	
2534.26 [@] 23	(19/2 ⁺)	DE	
2582.9 11	(21/2 ⁺)	E	
2623.33 [@] 20	(21/2 ⁺)	DE	
2700.3 ^b 3	(23/2 ⁻)	DE	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{121}Xe Levels (continued)

E(level) ^g	J ^π ^h	XREF	E(level) ^g	J ^π ^h	XREF	E(level) ^g	J ^π ^h	XREF
2748.05 [†] 19	(23/2 ⁺)	CDE	4355.5 ^a 3	(29/2 ⁻)	D	6873.5 [#] 10	(43/2 ⁻)	D
2779.71 [@] 19	(23/2 ⁺)	DE	4383.0 [@] 4	(33/2 ⁺)	DE	6926.9 ^a 5	(41/2 ⁻)	D
2819.59 [‡] 18	(23/2 ⁺)	DE	4497.4 ^{&} 3	(33/2 ⁺)	DE	7184.6 ^{&} 3	(45/2 ⁺)	D
2833.70 [#] 20	(27/2 ⁻)	CDE	4734.1 ^a 6	(31/2 ⁻)	D	7353.0 ^a 8	(43/2 ⁻)	D
2881.92 [#] 23	(25/2 ⁻)	CDE	4754.0 [#] 8	(35/2 ⁻)	CDE	7363.5 ^{&} 3	(45/2 ⁺)	DE
2947.2 [‡] 11	(23/2 ⁺)	E	4837.0 [#] 6	(33/2 ⁻)	DE	7927.5 ^{&} 4	(47/2 ⁺)	D
2994.62 [@] 22	(25/2 ⁺)	DE	4841.9 [@] 3	(35/2 ⁺)	D	7943.4 ^a 5	(45/2 ⁻)	D
3062.3 ^e 8	(25/2 ⁻)	E	4900.6 ^{&} 3	(35/2 ⁺)	DE	8340.5 ^{&} 4	(49/2 ⁺)	D
3101.75 [†] 19	(25/2 ⁺)	CDE	5102.1 ^a 4	(33/2 ⁻)	D	8983.8 ^a 5	(49/2 ⁻)	D
3151.8 [†] 11	(25/2 ⁺)	E	5310.8 [#] 8	(33/2 ⁻)	D	9015.5 ^{&} 4	(51/2 ⁺)	D
3267.68 [@] 21	(27/2 ⁺)	CDE	5336.8 [@] 4	(37/2 ⁺)	DE	9149.5 ^{&} 4	(53/2 ⁺)	D
3272.31 ^{&} 20	(27/2 ⁺)	CDE	5372.3 ^{&} 3	(37/2 ⁺)	DE	9858.7 ^a 4	(53/2 ⁻)	D
3549.5 ^b 4	(27/2 ⁻)	D	5500.8 ^a 7	(35/2 ⁻)	D	9869.8 ^{&} 5	(55/2 ⁺)	D
3553.9 ^b 11	(27/2 ⁻)	E	5742.7 [#] 12	(37/2 ⁻)	E	10647.6 ^a 5	(57/2 ⁻)	D
3591.6 [@] 3	(29/2 ⁺)	DE	5783.6 [#] 9	(39/2 ⁻)	D	10900.6 5	(57/2 ⁺)	D
3699.3 [‡] 15	(27/2 ⁺)	E	5839.6 [@] 4	(39/2 ⁺)	D	11145.4 ^d 5	(55/2)	D
3719.2 ^{&} 4	(29/2 ⁺)	DE	5853.1 ^{&} 3	(39/2 ⁺)	DE	12012.2 ^d 6		D
3764.5 [#] 3	(31/2 ⁻)	CDE	5855.0 [@] 12	(39/2 ⁺)	E	12168.1 ^c 5	(59/2 ⁺)	D
3837.0 [#] 4	(29/2 ⁻)	DE	5978.7 ^a 5	(37/2 ⁻)	D	12787.4 ^d 7		D
3958.9 ^e 13	(29/2 ⁻)	E	6343.7 ^{&} 3	(41/2 ⁺)	DE	12789.9 ^c 6	(63/2 ⁺)	D
3965.17 [@] 25	(31/2 ⁺)	DE	6377.4 ^a 7	(39/2 ⁻)	D	13651.4 ^c 6	(67/2 ⁺)	D
4039.32 ^{&} 25	(31/2 ⁺)	DE	6857.8 ^{&} 3	(43/2 ⁺)	DE			

[†] Band(A): normal band on 2d_{5/2}.

[‡] Band(B): decoupled band on 2d_{3/2}.

[#] Band(C): band based on 1h_{11/2}.

[@] Band(D): Band based on 19/2⁺. possible configuration is 2d_{5/2} + (1h_{11/2})².

[&] Band(E): band based on 27/2⁺.

^a Band(F): band based on 29/2⁻.

^b Band(G): band based on 15/2⁻.

^c Band(H): band on 12168-keV level.

^d Band(I): band on 11145-keV level.

^e Band(J): band based on 13/2⁻.

^f Band(K): band based on 1/2⁺.

^g E(levels) are based on a least-squares fit to E(γ's).

^h From shell model configurations and band structures evidenced from M1, M1+E2(D(+Q)) cascades, and E2(Q) cross over transitions in ¹¹²Cd(¹²C,3nγ) and ⁹⁶Zr(³⁰Si,5nγ) and band systematics in ¹⁰⁹Ag(¹⁶O,p3nγ), except as noted.

Adopted Levels, Gammas (continued)

$\gamma(^{121}\text{Xe})$

RI(I,H,J) Intensity derived from coincidence data in $^{112}\text{Cd}(^{12}\text{C},3n\gamma)$.

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult.‡	δ^\ddagger	$\alpha\&$	Comments
153.99	(1/2 ⁺)	153.9 2	100 3	0.0	5/2 ⁽⁺⁾	E2		0.397	B(E2)(W.u.)=1.6 3 $\alpha(\text{K})=0.301$ 5; $\alpha(\text{L})=0.0766$ 12; $\alpha(\text{M})=0.01615$ 25; $\alpha(\text{N}+..)=0.00357$ 6 $\alpha(\text{N})=0.00323$ 5; $\alpha(\text{O})=0.000344$ 6
179.55	7/2 ⁽⁺⁾	179.4 2	100.0 17	0.0	5/2 ⁽⁺⁾	M1+E2		0.20 4	$\alpha(\text{K})=0.160$ 22; $\alpha(\text{L})=0.030$ 12; $\alpha(\text{M})=0.0061$ 25; $\alpha(\text{N}+..)=0.0014$ 6 $\alpha(\text{N})=0.0012$ 5; $\alpha(\text{O})=0.00014$ 5
196.06	7/2 ⁽⁻⁾	196.0 2	100 2	0.0	5/2 ⁽⁺⁾	E1		0.0325	$\alpha(\text{K})=0.0281$ 4; $\alpha(\text{L})=0.00358$ 6; $\alpha(\text{M})=0.000723$ 11; $\alpha(\text{N}+..)=0.0001662$ 24 $\alpha(\text{N})=0.0001482$ 22; $\alpha(\text{O})=1.80\times 10^{-5}$ 3 B(E1)(W.u.)= 5.2×10^{-6} 10
234.67	7/2 ⁽⁻⁾ ,9/2 ⁽⁻⁾	38.4 3	100 4	196.06	7/2 ⁽⁻⁾	M1+E2	0.15 3	14.2 6	$\alpha(\text{K})=11.2$ 3; $\alpha(\text{L})=2.4$ 4; $\alpha(\text{M})=0.50$ 9; $\alpha(\text{N}+..)=0.113$ 18 $\alpha(\text{N})=0.101$ 17; $\alpha(\text{O})=0.0114$ 16
		55.1 3	12 8	179.55	7/2 ⁽⁺⁾	[E1]		1.096 23	$\alpha(\text{K})=0.930$ 19; $\alpha(\text{L})=0.133$ 3; $\alpha(\text{M})=0.0269$ 6; $\alpha(\text{N}+..)=0.00603$ 13 $\alpha(\text{N})=0.00541$ 12; $\alpha(\text{O})=0.000618$ 13
239.81	(3/2 ⁺)	85.9 3	27 2	153.99	(1/2 ⁺)	M1+E2		2.2 10	$\alpha(\text{K})=1.5$ 5; $\alpha(\text{L})=0.5$ 4; $\alpha(\text{M})=0.12$ 9; $\alpha(\text{N}+..)=0.025$ 19 $\alpha(\text{N})=0.023$ 17; $\alpha(\text{O})=0.0024$ 17
		239.6 2	100 6	0.0	5/2 ⁽⁺⁾	M1+E2		0.081 7	$\alpha(\text{K})=0.067$ 4; $\alpha(\text{L})=0.011$ 3; $\alpha(\text{M})=0.0022$ 6; $\alpha(\text{N}+..)=0.00051$ 12 $\alpha(\text{N})=0.00045$ 11; $\alpha(\text{O})=5.3\times 10^{-5}$ 10
264.72	(11/2 ⁻)	30.3		234.67	7/2 ⁽⁻⁾ ,9/2 ⁽⁻⁾				
		68.7 1	100 9	196.06	7/2 ⁽⁻⁾	E2		6.95	$\alpha(\text{K})=3.63$ 6; $\alpha(\text{L})=2.63$ 4; $\alpha(\text{M})=0.567$ 9; $\alpha(\text{N}+..)=0.1223$ 19 $\alpha(\text{N})=0.1114$ 18; $\alpha(\text{O})=0.01090$ 17 B(E2)(W.u.)= 2.2×10^2 5
355.75	(5/2 ⁻)	159.7 2	71 4	196.06	7/2 ⁽⁻⁾	M1		0.221	$\alpha(\text{K})=0.190$ 3; $\alpha(\text{L})=0.0249$ 4; $\alpha(\text{M})=0.00505$ 8; $\alpha(\text{N}+..)=0.001175$ 17 $\alpha(\text{N})=0.001044$ 15; $\alpha(\text{O})=0.0001305$ 19
		355.9 2	100 6	0.0	5/2 ⁽⁺⁾	E1		0.00672 10	$\alpha(\text{K})=0.00581$ 9; $\alpha(\text{L})=0.000726$ 11; $\alpha(\text{M})=0.0001464$ 21; $\alpha(\text{N}+..)=3.39\times 10^{-5}$ 5 $\alpha(\text{N})=3.02\times 10^{-5}$ 5; $\alpha(\text{O})=3.72\times 10^{-6}$ 6
414.29	(9/2 ⁺)	234.5 2	100 6	179.55	7/2 ⁽⁺⁾	M1+E2		0.086 8	$\alpha(\text{K})=0.071$ 5; $\alpha(\text{L})=0.012$ 3; $\alpha(\text{M})=0.0024$ 7; $\alpha(\text{N}+..)=0.00054$ 14 $\alpha(\text{N})=0.00049$ 13; $\alpha(\text{O})=5.7\times 10^{-5}$ 12
		414.6 2	46 6	0.0	5/2 ⁽⁺⁾	E2		0.01538	$\alpha(\text{K})=0.01291$ 19; $\alpha(\text{L})=0.00197$ 3; $\alpha(\text{M})=0.000405$ 6;

Adopted Levels, Gammas (continued)

$\gamma(^{121}\text{Xe})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]	$\alpha^\&$	Comments
427.16	(3/2 ⁺ ,5/2 ⁺)	273.2 3 427.1 2	4.6 10 100 7	153.99 0.0	(1/2 ⁺) 5/2 ⁽⁺⁾	(M1,E2)	0.0153 13	$\alpha(\text{N+..})=9.24\times 10^{-5}$ 13 $\alpha(\text{N})=8.26\times 10^{-5}$ 12; $\alpha(\text{O})=9.77\times 10^{-6}$ 14 $\alpha(\text{K})=0.0130$ 12; $\alpha(\text{L})=0.00180$ 3; $\alpha(\text{M})=0.000367$ 6; $\alpha(\text{N+..})=8.47\times 10^{-5}$ 14 $\alpha(\text{N})=7.55\times 10^{-5}$ 12; $\alpha(\text{O})=9.2\times 10^{-6}$ 4
449.89	(5/2 ⁺)	210.1 2 270.2 2	44 4 100 7	239.81 179.55	(3/2 ⁺) 7/2 ⁽⁺⁾	M1	0.0536	$\alpha(\text{K})=0.0461$ 7; $\alpha(\text{L})=0.00595$ 9; $\alpha(\text{M})=0.001206$ 17; $\alpha(\text{N+..})=0.000281$ 4 $\alpha(\text{N})=0.000250$ 4; $\alpha(\text{O})=3.13\times 10^{-5}$ 5 $\alpha(\text{K})=0.0360$ 5; $\alpha(\text{L})=0.00619$ 9; $\alpha(\text{M})=0.001282$ 19; $\alpha(\text{N+..})=0.000290$ 5 $\alpha(\text{N})=0.000260$ 4; $\alpha(\text{O})=2.98\times 10^{-5}$ 5
459.59	(7/2 ⁺)	450.1 ^a 2 280.1 ^a 2	20 ^a 6 26 ^a 4	0.0 179.55	5/2 ⁽⁺⁾ 7/2 ⁽⁺⁾	M1	0.0487	$\alpha(\text{K})=0.0420$ 6; $\alpha(\text{L})=0.00541$ 8; $\alpha(\text{M})=0.001096$ 16; $\alpha(\text{N+..})=0.000255$ 4 $\alpha(\text{N})=0.000227$ 4; $\alpha(\text{O})=2.84\times 10^{-5}$ 4 $\alpha(\text{K})=0.0107$ 12; $\alpha(\text{L})=0.00146$ 5; $\alpha(\text{M})=0.000298$ 8; $\alpha(\text{N+..})=6.88\times 10^{-5}$ 23 $\alpha(\text{N})=6.13\times 10^{-5}$ 19; $\alpha(\text{O})=7.5\times 10^{-6}$ 4 $\alpha(\text{K})=0.0424$ 8; $\alpha(\text{L})=0.0065$ 11; $\alpha(\text{M})=0.00133$ 24; $\alpha(\text{N+..})=0.00030$ 5 $\alpha(\text{N})=0.00027$ 5; $\alpha(\text{O})=3.2\times 10^{-5}$ 4
476.16	(7/2,9/2,11/2) ⁽⁻⁾	280.1 ^a 2	100 ^a 17	196.06	7/2 ⁽⁻⁾	M1,E2	0.0505 19	$\alpha(\text{K})=0.0424$ 8; $\alpha(\text{L})=0.0065$ 11; $\alpha(\text{M})=0.00133$ 24; $\alpha(\text{N+..})=0.00030$ 5 $\alpha(\text{N})=0.00027$ 5; $\alpha(\text{O})=3.2\times 10^{-5}$ 4
497.2		343.2 4	100 22	153.99	(1/2 ⁺)			
553.07		373.8 3	31 6	179.55	7/2 ⁽⁺⁾			
		398.8 3	39 6	153.99	(1/2 ⁺)			
560.83	(7/2 ⁺)	553.0 3 111.0 3	100 14 17 2	0.0 449.89	5/2 ⁽⁺⁾ (5/2 ⁺)	M1	0.610 10	$\alpha(\text{K})=0.524$ 9; $\alpha(\text{L})=0.0691$ 11; $\alpha(\text{M})=0.01403$ 23; $\alpha(\text{N+..})=0.00327$ 6 $\alpha(\text{N})=0.00290$ 5; $\alpha(\text{O})=0.000362$ 6 $\alpha(\text{K})=0.0279$ 4; $\alpha(\text{L})=0.00465$ 7; $\alpha(\text{M})=0.000960$ 14; $\alpha(\text{N+..})=0.000218$ 4 $\alpha(\text{N})=0.000195$ 3; $\alpha(\text{O})=2.25\times 10^{-5}$ 4
		320.9 3	100 10	239.81	(3/2 ⁺)	(E2)	0.0337	
592.7		381.2 3	25 3	179.55	7/2 ⁽⁺⁾			
608.4		396.6 3	100 14	196.06	7/2 ⁽⁻⁾			
619.92		412.3 3	100 24	196.06	7/2 ⁽⁻⁾			
		380.1 3	24 6	239.81	(3/2 ⁺)			
		466.0 3	35 9	153.99	(1/2 ⁺)			
646.16		619.9 2 450.1 ^a 2	100 15 100 ^a 8	0.0 196.06	5/2 ⁽⁺⁾ 7/2 ⁽⁻⁾			

Adopted Levels, Gammas (continued)

$\gamma(^{121}\text{Xe})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]	$\alpha\&$	Comments
657.90	(13/2 ⁻)	393.2 ^a 1	100 ^a 8	264.72	(11/2 ⁻)	D(+Q)		
		422.8 4	87 8	234.67	7/2 ⁽⁻⁾ , 9/2 ⁽⁻⁾	(Q)		
661.10		108.0 2	57 9	553.07		M1	0.660	$\alpha(\text{K})=0.566$ 9; $\alpha(\text{L})=0.0747$ 12; $\alpha(\text{M})=0.01517$ 23; $\alpha(\text{N}+..)=0.00353$ 6 $\alpha(\text{N})=0.00314$ 5; $\alpha(\text{O})=0.000392$ 6
		481.6 3	57 11	179.55	7/2 ⁽⁺⁾			
		661.1 2	100 11	0.0	5/2 ⁽⁺⁾			
661.1		465.0 3	100 25	196.06	7/2 ⁽⁻⁾			
667.76		471.7 2	100 17	196.06	7/2 ⁽⁻⁾			
670.49	(11/2 ⁺)	256.2 1	73 8	414.29	(9/2 ⁺)	M1+E2	0.066 5	$\alpha(\text{K})=0.0550$ 21; $\alpha(\text{L})=0.0086$ 18; $\alpha(\text{M})=0.0018$ 4; $\alpha(\text{N}+..)=0.00041$ 9 $\alpha(\text{N})=0.00036$ 8; $\alpha(\text{O})=4.3\times 10^{-5}$ 7
		490.9 1	100 14	179.55	7/2 ⁽⁺⁾	Q		
682.40		326.8 2	73 20	355.75	(5/2 ⁻)			
		486.1 3	100 40	196.06	7/2 ⁽⁻⁾			
		682.3 3	47 20	0.0	5/2 ⁽⁺⁾			
687.02	(15/2 ⁻)	422.3 1	100 8	264.72	(11/2 ⁻)	Q		
696.52		456.6 ^a 3	100 ^a 14	239.81	(3/2 ⁺)			
		542.6 2	86 14	153.99	(1/2 ⁺)			
		696.5 2	86 19	0.0	5/2 ⁽⁺⁾			
706.19	(7/2 ⁺)	247.0 3	20 4	459.59	(7/2 ⁺)	(M1,E2)	0.073 6	$\alpha(\text{K})=0.061$ 3; $\alpha(\text{L})=0.0098$ 22; $\alpha(\text{M})=0.0020$ 5; $\alpha(\text{N}+..)=0.00046$ 10 $\alpha(\text{N})=0.00041$ 10; $\alpha(\text{O})=4.8\times 10^{-5}$ 9
		278.9 3	93 19	427.16	(3/2 ⁺ , 5/2 ⁺)			
		291.7 2	19 4	414.29	(9/2 ⁺)			
		526.7 2	89 1	179.55	7/2 ⁽⁺⁾	M1,E2	0.0088 11	$\alpha(\text{K})=0.0075$ 10; $\alpha(\text{L})=0.00101$ 7; $\alpha(\text{M})=0.000204$ 12; $\alpha(\text{N}+..)=4.7\times 10^{-5}$ 3 $\alpha(\text{N})=4.2\times 10^{-5}$ 3; $\alpha(\text{O})=5.2\times 10^{-6}$ 5
		706.2 2	100 13	0.0	5/2 ⁽⁺⁾			
734.58	(7/2 ⁺ , 9/2 ⁺)	320.4 3	54 22	414.29	(9/2 ⁺)	(M1,E2)	0.0341 6	$\alpha(\text{K})=0.0288$ 9; $\alpha(\text{L})=0.0042$ 5; $\alpha(\text{M})=0.00087$ 10; $\alpha(\text{N}+..)=0.000199$ 20 $\alpha(\text{N})=0.000178$ 19; $\alpha(\text{O})=2.13\times 10^{-5}$ 14
		555.0 3	100 11	179.55	7/2 ⁽⁺⁾			
		734.5 ^a 3	44 ^a 13	0.0	5/2 ⁽⁺⁾			
737.50		497.6 2	100 17	239.81	(3/2 ⁺)			
		558.3 4	35 21	179.55	7/2 ⁽⁺⁾			
776.3		362 1	100 50	414.29	(9/2 ⁺)			
815.6		636 [@] 1	100 43	179.55	7/2 ⁽⁺⁾			
861.06		665.0 2	100 19	196.06	7/2 ⁽⁻⁾			

Adopted Levels, Gammas (continued)

$\gamma(^{121}\text{Xe})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]
881.19	(9/2 ⁺)	431.3 2	100 18	449.89	(5/2 ⁺)	
897.2		701.1 3	100 38	196.06	7/2 ⁽⁻⁾	
900.02		486.1 3	46 23	414.29	(9/2 ⁺)	
		720.1 3	100 23	179.55	7/2 ⁽⁺⁾	
910.28		730.8 2	82 18	179.55	7/2 ⁽⁺⁾	
		910.1 3	100 18	0.0	5/2 ⁽⁺⁾	
942.4	(13/2 ⁻)	677.6 ^b 4	100 20	264.72	(11/2 ⁻)	D(+Q)
946.3		393.2 ^a 3	100 ^a 43	553.07		
963.29	(13/2 ⁺)	292.8 1	35 5	670.49	(11/2 ⁺)	D(+Q)
		549.0 1	100 16	414.29	(9/2 ⁺)	Q
978.4		417.6 3	100 20	560.83	(7/2 ⁺)	
998.78		548.8 3	32 8	449.89	(5/2 ⁺)	
		571.6 2	100 16	427.16	(3/2 ⁺ , 5/2 ⁺)	
		584.6 3	44 8	414.29	(9/2 ⁺)	
1021.42	(11/2 ⁺)	460.7 2	100 21	560.83	(7/2 ⁺)	(Q)
1117.6		456.6 ^a 5	100 ^a 40	661.10		
		564.5 5	80 30	553.07		
1149.5		734.5 ^a 10	100 ^a 30	414.29	(9/2 ⁺)	
		970.0 4	70 25	179.55	7/2 ⁽⁺⁾	
1247.1		686.3 5	100 38	560.83	(7/2 ⁺)	
1261.6		1065.5 3	100 14	196.06	7/2 ⁽⁻⁾	
1264.92	(17/2 ⁻)	577.9 1	100 12	687.02	(15/2 ⁻)	D(+Q)
		607.0 1	42 6	657.90	(13/2 ⁻)	Q
1274.00	(19/2 ⁻)	587.0 1	100 7	687.02	(15/2 ⁻)	Q
1281.52	(15/2 ⁺)	318.2 [#] 2	33 6	963.29	(13/2 ⁺)	D(+Q)
		611.0 1	100 13	670.49	(11/2 ⁺)	Q
		623.7 10	19 5	657.90	(13/2 ⁻)	(D)
1299.61		738.4 3	100 19	560.83	(7/2 ⁺)	
		872.5 3	54 8	427.16	(3/2 ⁺ , 5/2 ⁺)	
		885.7 3	54 8	414.29	(9/2 ⁺)	
		1103.6 4	65 12	196.06	7/2 ⁽⁻⁾	
		1120.0 4	54 8	179.55	7/2 ⁽⁺⁾	
		1299.4 5	31 8	0.0	5/2 ⁽⁺⁾	
1310.1	(15/2 ⁻)	623.0	40	687.02	(15/2 ⁻)	
		652.4 3	100 19	657.90	(13/2 ⁻)	
1343.5		1163.9 3	100 27	179.55	7/2 ⁽⁺⁾	
		1343.7 5	47 20	0.0	5/2 ⁽⁺⁾	
1419.8		1005.2 3	100 27	414.29	(9/2 ⁺)	
		1240.9 4	55 18	179.55	7/2 ⁽⁺⁾	
1445.9	(13/2 ⁺)	564.7	100	881.19	(9/2 ⁺)	

7

Adopted Levels, Gammas (continued)

$\gamma(^{121}\text{Xe})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]
1534.4	(17/2 ⁻)	592.0	100	942.4	(13/2 ⁻)		2947.2	(23/2 ⁺)	702.2	100	2245.00	(19/2 ⁺)	
		847.3	100	687.02	(15/2 ⁻)		2994.62	(25/2 ⁺)	214.4 2	100 14	2779.71	(23/2 ⁺)	D(+Q)
1590.01	(15/2 ⁺)	568.7 2	100 25	1021.42	(11/2 ⁺)	(Q)			370.5 3	43 7	2623.33	(21/2 ⁺)	Q
1596.3		1035.5 4	100 44	560.83	(7/2 ⁺)				996.4		1995.86	(23/2 ⁻)	
1618.39	(17/2 ⁺)	336.9 2	30 10	1281.52	(15/2 ⁺)	D(+Q)	3062.3	(25/2 ⁻)	818.1	100	2244.2	(21/2 ⁻)	
		655.1 2	100 25	963.29	(13/2 ⁺)	Q			1066.5	25	1995.86	(23/2 ⁻)	
1937.3	(19/2 ⁻)	627.3 3	100 20	1310.1	(15/2 ⁻)		3101.75	(25/2 ⁺)	352.4 2	14 7	2748.05	(23/2 ⁺)	
		672.2 3	80 20	1264.92	(17/2 ⁻)				746.2 2	43 7	2355.82	(21/2 ⁺)	
1986.01	(19/2 ⁺)	367.3 2	25 5	1618.39	(17/2 ⁺)	D(+Q)			1106.3 2	100 14	1995.86	(23/2 ⁻)	(D)
		704.3 [#] 2	<100	1281.52	(15/2 ⁺)	Q	3151.8	(25/2 ⁺)	796.0		2355.82	(21/2 ⁺)	
		721.2 10	10 5	1264.92	(17/2 ⁻)		3267.68	(27/2 ⁺)	272.2 2	39 6	2994.62	(25/2 ⁺)	D(+Q)
1995.86	(23/2 ⁻)	721.9 1	100 11	1274.00	(19/2 ⁻)	Q			486.7 2	100 11	2779.71	(23/2 ⁺)	Q
2015.44	(21/2 ⁻)	741.4 2	29 7	1274.00	(19/2 ⁻)	D(+Q)			522.4 2	22 6			
		750.5 [#] 1	100 15	1264.92	(17/2 ⁻)	(Q)	3272.31	(27/2 ⁺)	170.0 2	74 10	3101.75	(25/2 ⁺)	D(+Q)
2098.2	(17/2 ⁺)	652.3	100	1445.9	(13/2 ⁺)				390.3 3	16 5	2881.92	(25/2 ⁻)	D(+Q)
2244.2	(21/2 ⁻)	709.7	100	1534.4	(17/2 ⁻)				452.9 2	100 10	2819.59	(23/2 ⁺)	Q
		970.2	50	1274.00	(19/2 ⁻)		3549.5	(27/2 ⁻)	849.2 3	100 14	2700.3	(23/2 ⁻)	
2245.00	(19/2 ⁺)	655.1 2	100 25	1590.01	(15/2 ⁺)	Q	3553.9	(27/2 ⁻)	853.6	100	2700.3	(23/2 ⁻)	
2271.1	(19/2 ⁺)	1006.2 10	100 20	1264.92	(17/2 ⁻)		3591.6	(29/2 ⁺)	324.8 10	16 5	3267.68	(27/2 ⁺)	D(+Q)
2355.82	(21/2 ⁺)	370.6 4	20 10	1986.01	(19/2 ⁺)				596.9 2	100 10	2994.62	(25/2 ⁺)	Q
		737.8 2	100 10	1618.39	(17/2 ⁺)	Q	3699.3	(27/2 ⁺)	752.1	100	2947.2	(23/2 ⁺)	
		1082.7 2	60 10	1274.00	(19/2 ⁻)		3719.2	(29/2 ⁺)	446.4 10	100 11	3272.31	(27/2 ⁺)	D(+Q)
2534.26	(19/2 ⁺)	1260.0 2	100 17	1274.00	(19/2 ⁻)	(D)			616.0		3101.75	(25/2 ⁺)	
2582.9	(21/2 ⁺)	1308.9		1274.00	(19/2 ⁻)		3764.5	(31/2 ⁻)	930.8 2	100 22	2833.70	(27/2 ⁻)	Q
2623.33	(21/2 ⁺)	88.6 3	60 20	2534.26	(19/2 ⁺)	D(+Q)	3837.0	(29/2 ⁻)	955.1 3	100 10	2881.92	(25/2 ⁻)	Q
		1348.6 2	100 20	1274.00	(19/2 ⁻)	D			1002.8 7	40 10	2833.70	(27/2 ⁻)	
2700.3	(23/2 ⁻)	684.9 4	75 20	2015.44	(21/2 ⁻)		3958.9	(29/2 ⁻)	896.6	100	3062.3	(25/2 ⁻)	
		763.1 3	100 20	1937.3	(19/2 ⁻)		3965.17	(31/2 ⁺)	373.3 3	13 4	3591.6	(29/2 ⁺)	
2748.05	(23/2 ⁺)	393.4 2	67 17	2355.82	(21/2 ⁺)				698.1 2	100 9	3267.68	(27/2 ⁺)	Q
		763.2 [#] 4	100 17	1986.01	(19/2 ⁺)	(Q)	4039.32	(31/2 ⁺)	320.0 10	3 3	3719.2	(29/2 ⁺)	
2779.71	(23/2 ⁺)	155.8 2	5 5	2623.33	(21/2 ⁺)	D(+Q)			766.6 2	100 12	3272.31	(27/2 ⁺)	Q
		244.6 10	23 7	2534.26	(19/2 ⁺)		4355.5	(29/2 ⁻)	590.9 3	75 25	3764.5	(31/2 ⁻)	D(+Q)
		763.1 10	62 7	2015.44	(21/2 ⁻)	D			806.1 4	50 25	3549.5	(27/2 ⁻)	
		792.6 2	100 7	1986.01	(19/2 ⁺)	Q			1521.6 4	100 25	2833.70	(27/2 ⁻)	(D)
2819.59	(23/2 ⁺)	548.5 10	56 11	2271.1	(19/2 ⁺)		4383.0	(33/2 ⁺)	791.5 3	100 8	3591.6	(29/2 ⁺)	Q
		574.7 2	33 11	2245.00	(19/2 ⁺)	Q	4497.4	(33/2 ⁺)	458.0 2	100 11	4039.32	(31/2 ⁺)	D(+Q)
		804.1 2	100 11	2015.44	(21/2 ⁻)	D			778.0 3	78 11	3719.2	(29/2 ⁺)	Q
		833.7 2	78 11	1986.01	(19/2 ⁺)	(Q)	4734.1	(31/2 ⁻)	378.6 10	50 50	4355.5	(29/2 ⁻)	
2833.70	(27/2 ⁻)	837.8 1	100 15	1995.86	(23/2 ⁻)	Q			897.0 10	100 50	3837.0	(29/2 ⁻)	
2881.92	(25/2 ⁻)	866.5 3	100 33	2015.44	(21/2 ⁻)	(Q)	4754.0	(35/2 ⁻)	989.5 7	100 40	3764.5	(31/2 ⁻)	Q
		886.0 3	45 10	1995.86	(23/2 ⁻)		4837.0	(33/2 ⁻)	1000.0 4	100 20	3837.0	(29/2 ⁻)	

8

Adopted Levels, Gammas (continued)

$\gamma(^{121}\text{Xe})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ	E_f	J_f^π	Mult. [‡]
4841.9	(35/2 ⁺)	459.0 4	13 4	4383.0	(33/2 ⁺)		6926.9	(41/2 ⁻)	948.1 2	100 12	5978.7	(37/2 ⁻)	Q
		877.2 2	100 9	3965.17	(31/2 ⁺)	(Q)	7184.6	(45/2 ⁺)	326.7 2	58 8	6857.8	(43/2 ⁺)	D(+Q)
4900.6	(35/2 ⁺)	403.0 10	4 4	4497.4	(33/2 ⁺)				841.0 2	100 8	6343.7	(41/2 ⁺)	
		861.0 2	100 12	4039.32	(31/2 ⁺)	Q	7353.0	(43/2 ⁻)	426.1 10	100 25	6926.9	(41/2 ⁻)	
5102.1	(33/2 ⁻)	367.9 10	22 11	4734.1	(31/2 ⁻)	D(+Q)			975.5 10	100 25	6377.4	(39/2 ⁻)	
		746.5 2	100 11	4355.5	(29/2 ⁻)	Q	7363.5	(45/2 ⁺)	505.8 2	64 9	6857.8	(43/2 ⁺)	
5310.8	(33/2 ⁻)	1546.0 10	<100	3764.5	(31/2 ⁻)	(D)			1019.6 3	100 9	6343.7	(41/2 ⁺)	(Q)
5336.8	(37/2 ⁺)	954.0 4	100 20	4383.0	(33/2 ⁺)		7927.5	(47/2 ⁺)	563.9 3	50 8	7363.5	(45/2 ⁺)	D(+Q)
5372.3	(37/2 ⁺)	471.6 2	63 6	4900.6	(35/2 ⁺)	D(+Q)			1069.8 3	100 8	6857.8	(43/2 ⁺)	Q
		874.7 2	100 12	4497.4	(33/2 ⁺)		7943.4	(45/2 ⁻)	590.3 10	19 5	7353.0	(43/2 ⁻)	D(+Q)
5500.8	(35/2 ⁻)	398.6 10	80 20	5102.1	(33/2 ⁻)	D(+Q)			1016.4 2	100 10	6926.9	(41/2 ⁻)	(Q)
		766.5 10	100 20	4734.1	(31/2 ⁻)		8340.5	(49/2 ⁺)	412.8 3	46 8	7927.5	(47/2 ⁺)	D(+Q)
5742.7	(37/2 ⁻)	905.7	100	4837.0	(33/2 ⁻)				977.2 3	92 8	7363.5	(45/2 ⁺)	(Q)
5783.6	(39/2 ⁻)	1029.5 4	100 33	4754.0	(35/2 ⁻)				1155.9 2	100 8	7184.6	(45/2 ⁺)	(Q)
5839.6	(39/2 ⁺)	997.8 3	100 14	4841.9	(35/2 ⁺)	Q	8983.8	(49/2 ⁻)	1040.3 2	100 8	7943.4	(45/2 ⁻)	Q
5853.1	(39/2 ⁺)	480.1 5	7 7	5372.3	(37/2 ⁺)		9015.5	(51/2 ⁺)	675.2 4	57 14	8340.5	(49/2 ⁺)	D(+Q)
		516.5 4	14 7	5336.8	(37/2 ⁺)				1088.1 5	100 14	7927.5	(47/2 ⁺)	(Q)
		952.2 2	79 7	4900.6	(35/2 ⁺)	Q	9149.5	(53/2 ⁺)	134.4 5	6 6	9015.5	(51/2 ⁺)	
		1011.7 2	100 14	4841.9	(35/2 ⁺)	Q			809.1 2	100 14	8340.5	(49/2 ⁺)	Q
5855.0	(39/2 ⁺)	1018.0		4837.0	(33/2 ⁻)		9858.7	(53/2 ⁻)	709.3 3	64 7	9149.5	(53/2 ⁺)	D(+Q)
5978.7	(37/2 ⁻)	477.7 10	33 17	5500.8	(35/2 ⁻)	D(+Q)			874.6 4	100 14	8983.8	(49/2 ⁻)	(Q)
		667.7 10	67 17	5310.8	(33/2 ⁻)	Q	9869.8	(55/2 ⁺)	720.3 10	70 10	9149.5	(53/2 ⁺)	
		876.4 4	100 17	5102.1	(33/2 ⁻)				854.4 3	100 10	9015.5	(51/2 ⁺)	(Q)
6343.7	(41/2 ⁺)	490.7 2	35 6	5853.1	(39/2 ⁺)		10647.6	(57/2 ⁻)	788.9 2	100 13	9858.7	(53/2 ⁻)	Q
		971.3 2	100 12	5372.3	(37/2 ⁺)	(Q)	10900.6	(57/2 ⁺)	1030.8 3	100 20	9869.8	(55/2 ⁺)	D(+Q)
6377.4	(39/2 ⁻)	398.7 10	33 33	5978.7	(37/2 ⁻)		11145.4	(55/2)	1286.7 3	100 8	9858.7	(53/2 ⁻)	D(+Q)
		876.4 10	100 33	5500.8	(35/2 ⁻)		12012.2		866.8 3	100 14	11145.4	(55/2)	
6857.8	(43/2 ⁺)	513.6 4	30 5	6343.7	(41/2 ⁺)	D(+Q)	12168.1	(59/2 ⁺)	1267.5 3	100 17	10900.6	(57/2 ⁺)	(D)
		1004.8 2	100 10	5853.1	(39/2 ⁺)	(Q)			1520.4 4	100 17	10647.6	(57/2 ⁻)	D(+Q)
		1018.2 4	40 5	5839.6	(39/2 ⁺)	Q	12787.4		775.2 4	100 17	12012.2		
6873.5	(43/2 ⁻)	1089.9 5	100 50	5783.6	(39/2 ⁻)		12789.9	(63/2 ⁺)	621.8 2	100 8	12168.1	(59/2 ⁺)	Q
6926.9	(41/2 ⁻)	549.4 10	22 6	6377.4	(39/2 ⁻)		13651.4	(67/2 ⁺)	861.5 2	100 12	12789.9	(63/2 ⁺)	

[†] From ¹²¹Xe $\varepsilon+\beta^+$ decay if observed; Others from ¹¹²Cd(¹²C,3n γ), ⁹⁶Zr(³⁰Si,5n γ) and ¹⁰⁹Ag(¹⁶O,p3n γ).

[‡] From α in ¹²¹Cs $\varepsilon+\beta^+$ decay (155 s, 122 s) and from $\gamma(\theta)$ in ¹¹²Cd(¹²C,3n γ) and DCO in ⁹⁶Zr(³⁰Si,5n γ).

Composite peak in ¹¹²Cd(¹²C,3n γ).

@ Energy is derived from coincidence data in ¹¹²Cd(¹²C,3n γ).

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

Adopted Levels, Gammas (continued) $\gamma(^{121}\text{Xe})$ (continued)

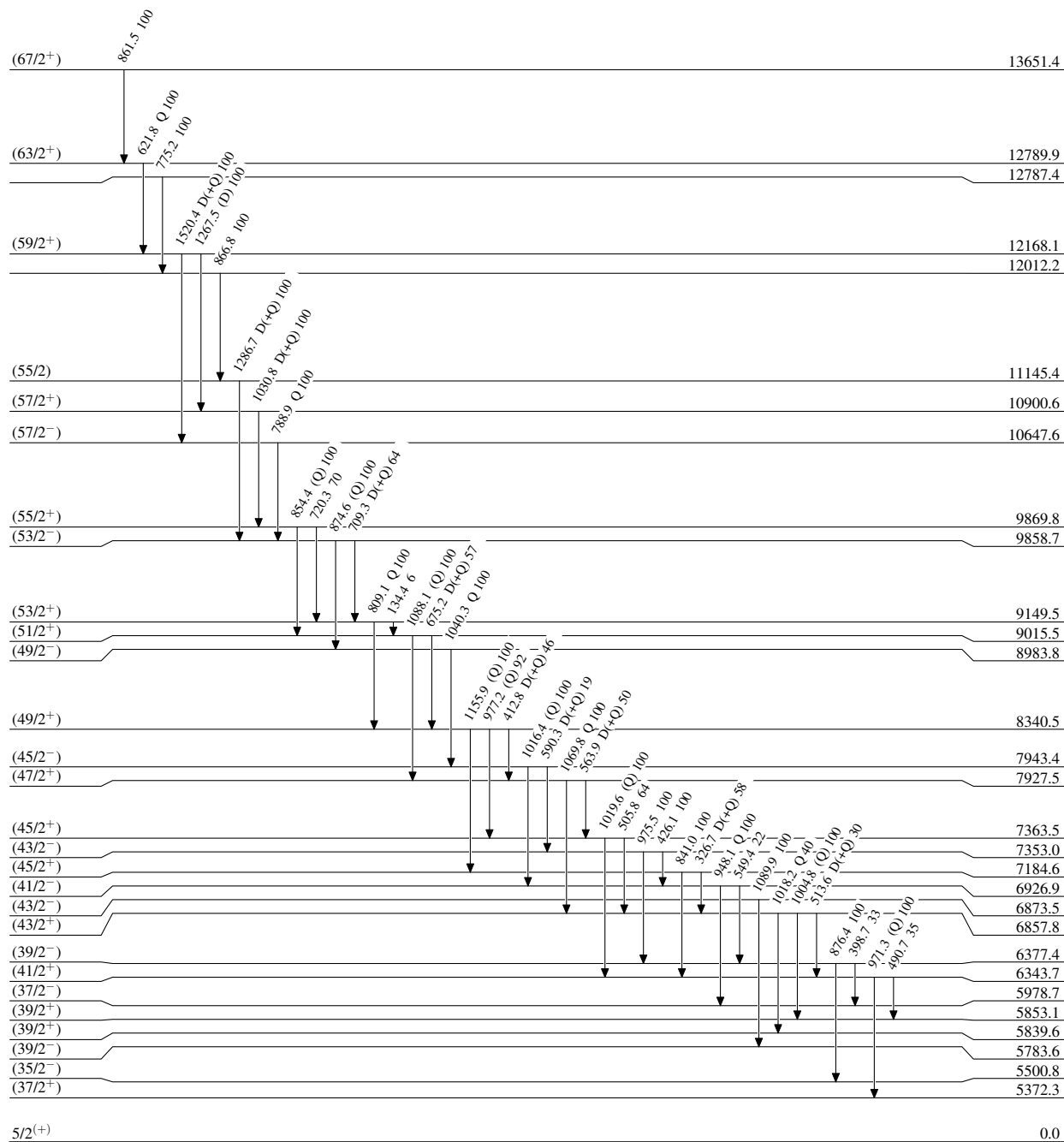
^a Multiply placed with intensity suitably divided.

^b Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

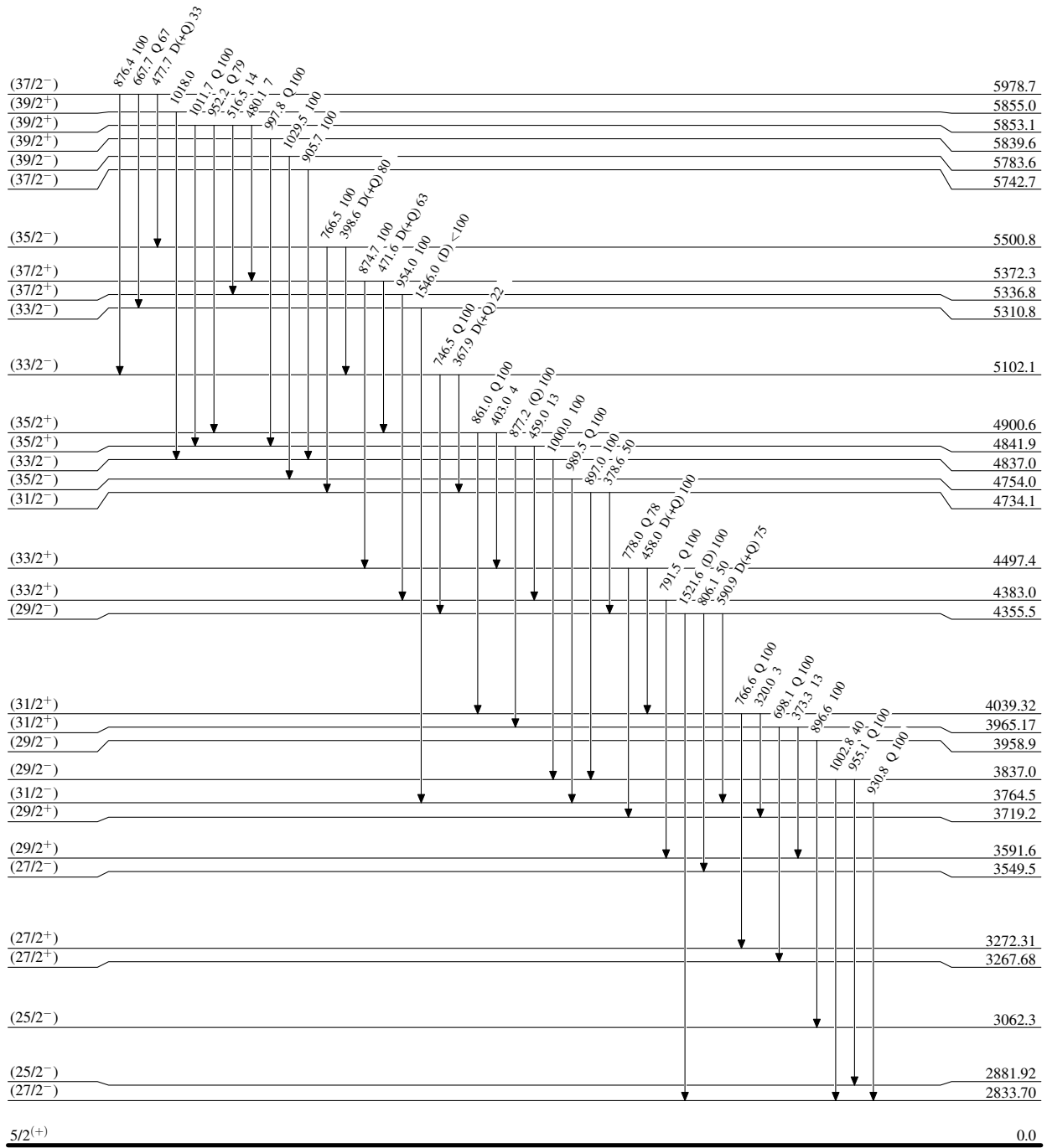


40.1 min 20

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

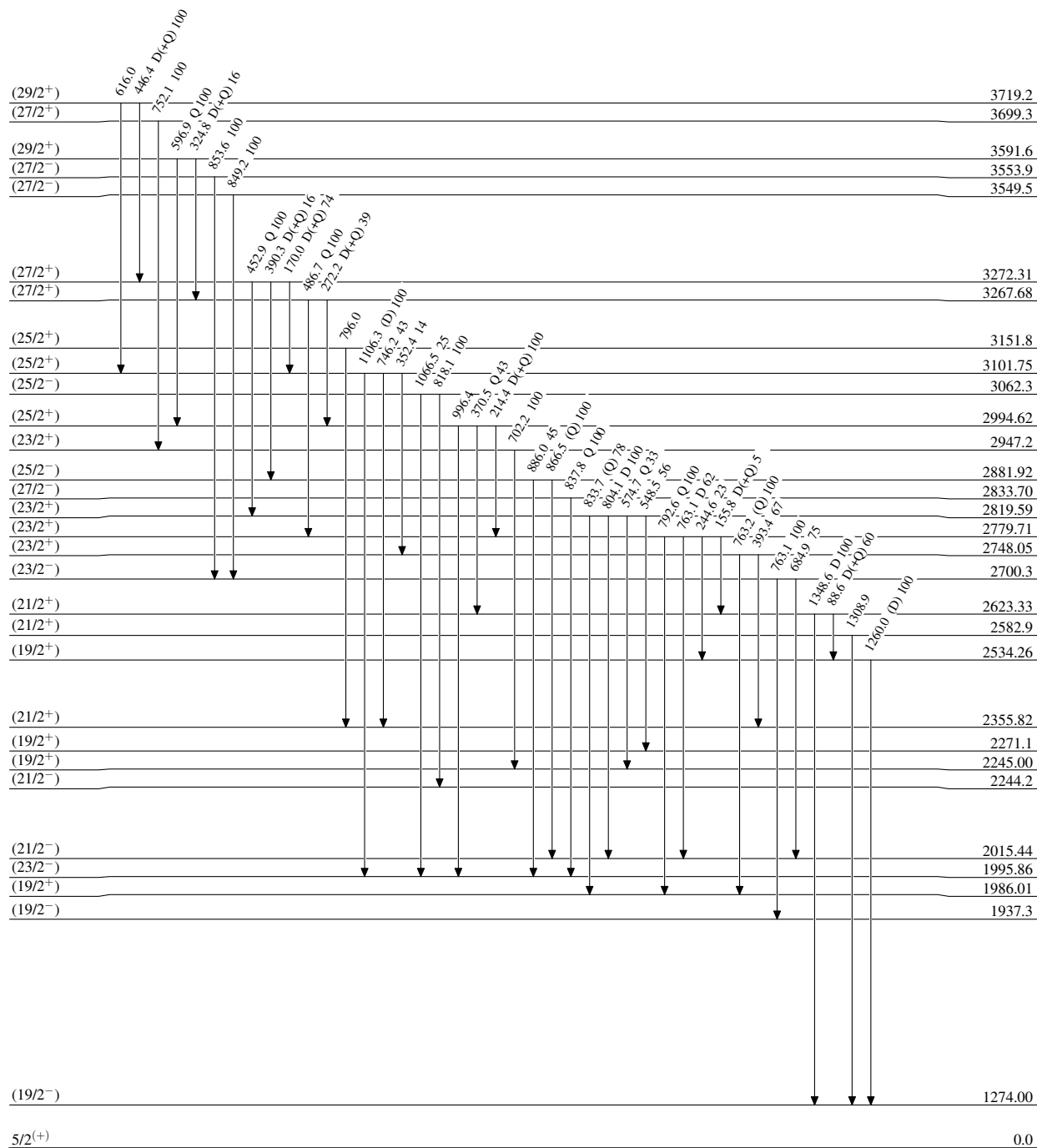


40.1 min 20

Adopted Levels, Gammas

Level Scheme (continued)

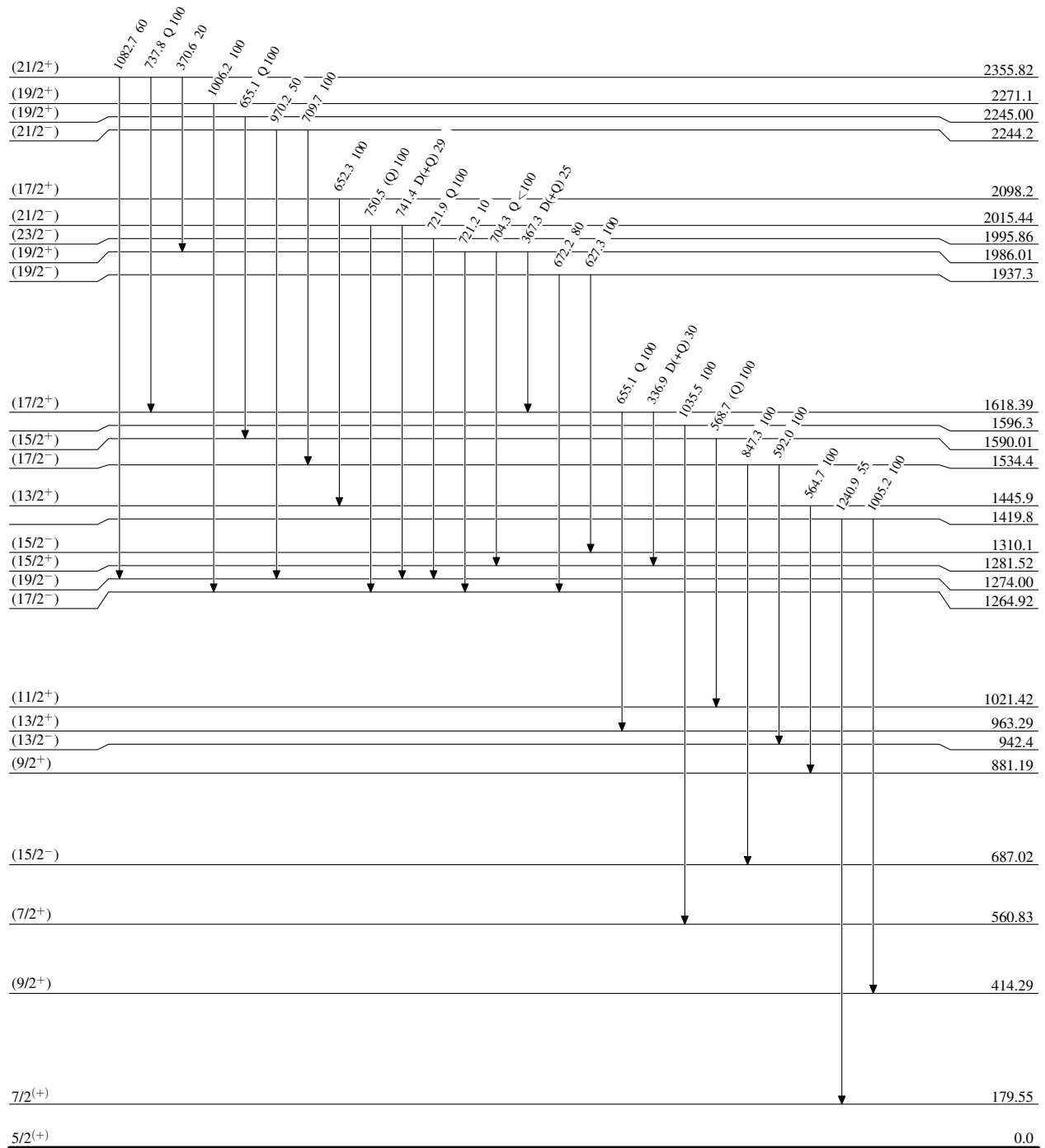
Intensities: Relative photon branching from each level



40.1 min 20

Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level



40.1 min 20

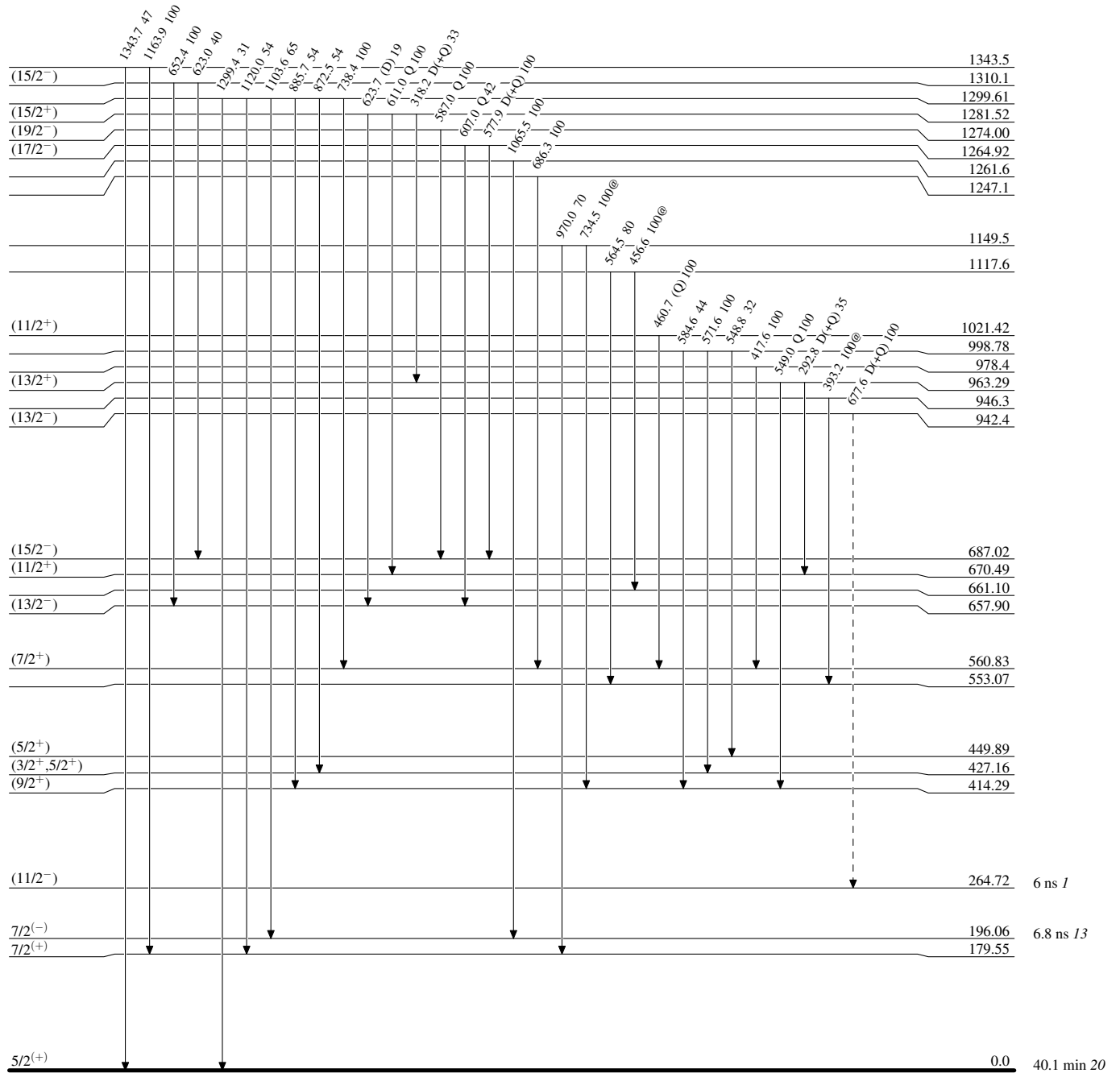
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

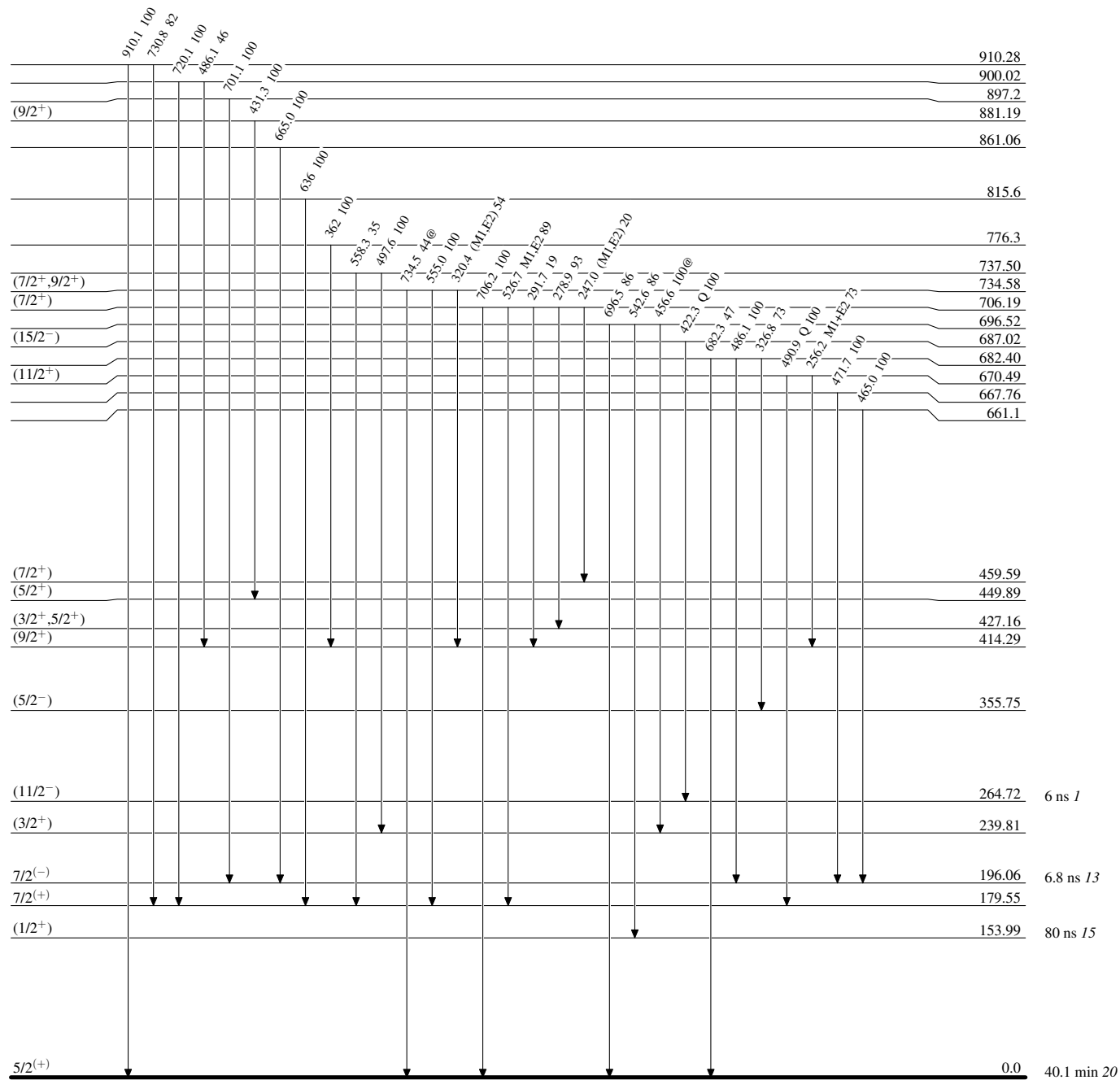
-----► γ Decay (Uncertain)

 $^{121}_{54}\text{Xe}_{67}$

Adopted Levels, Gammas

Level Scheme (continued)

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

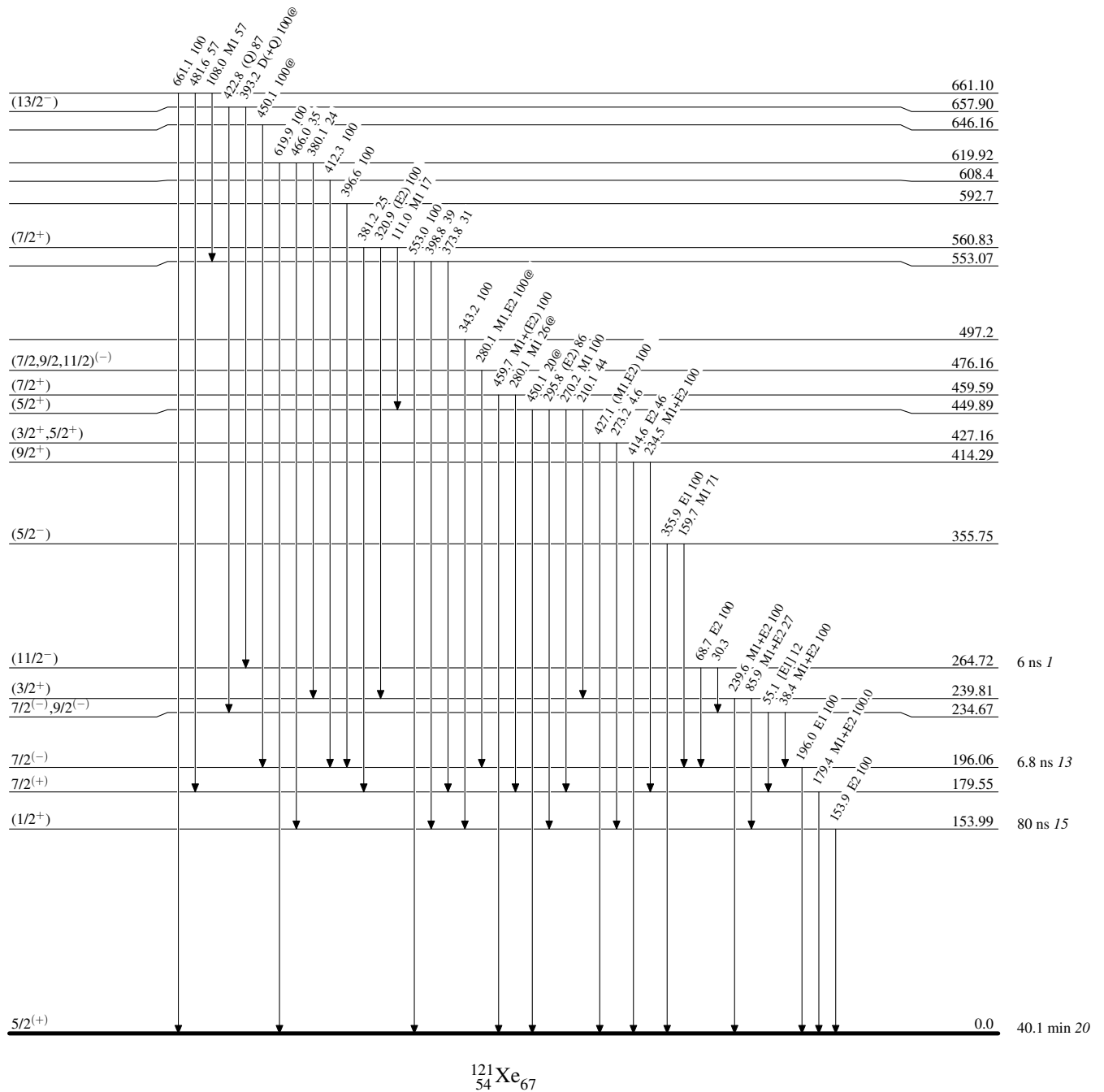


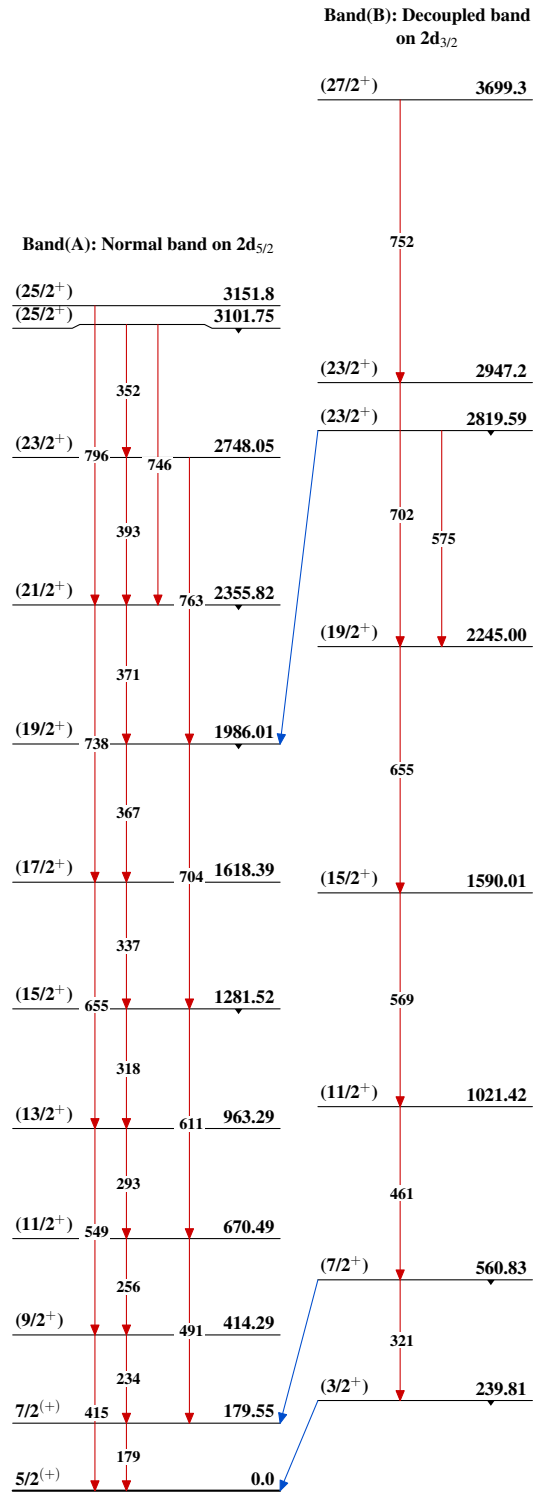
$^{121}_{54}\text{Xe}_{67}$

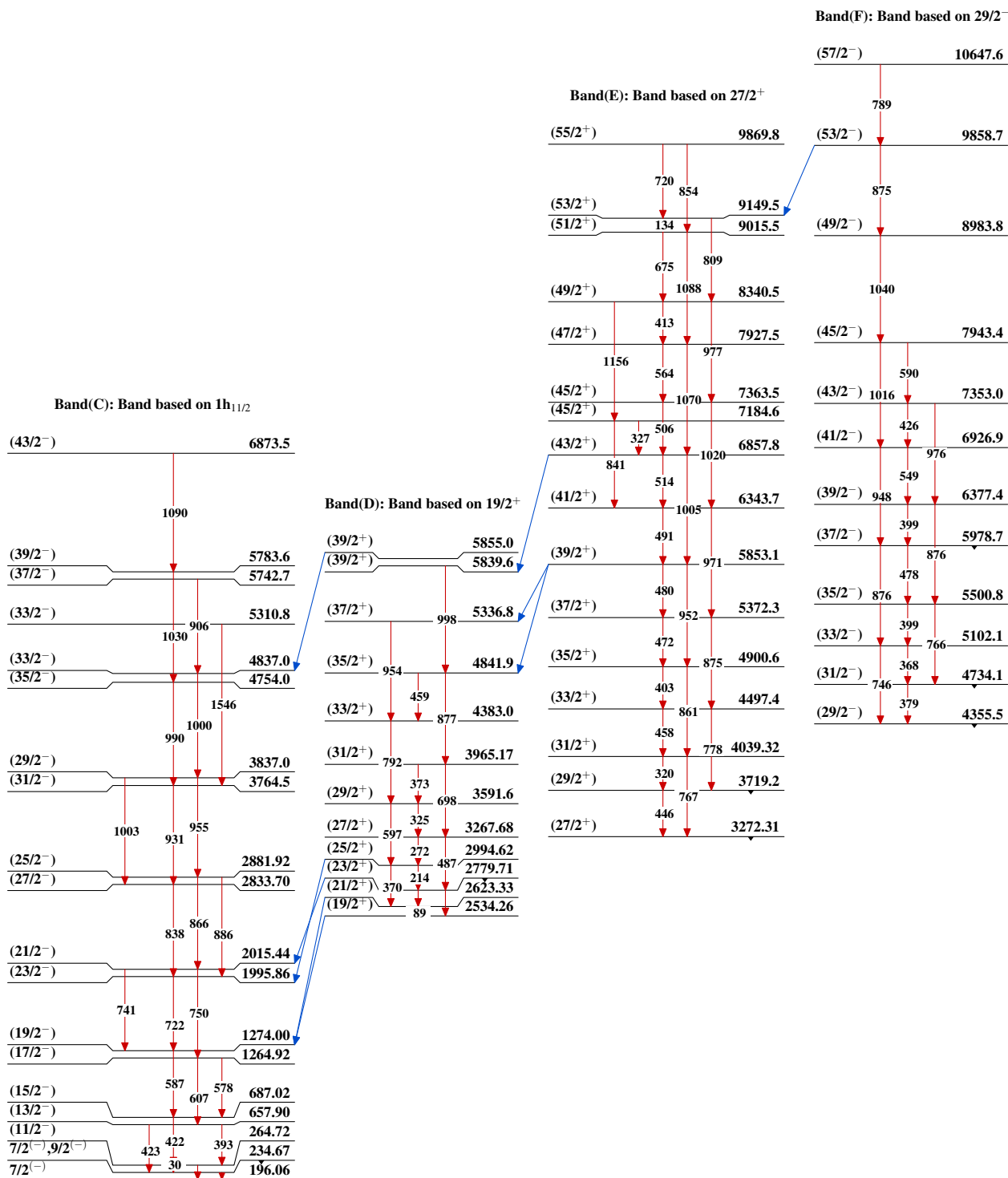
Adopted Levels, GammasLevel Scheme (continued)

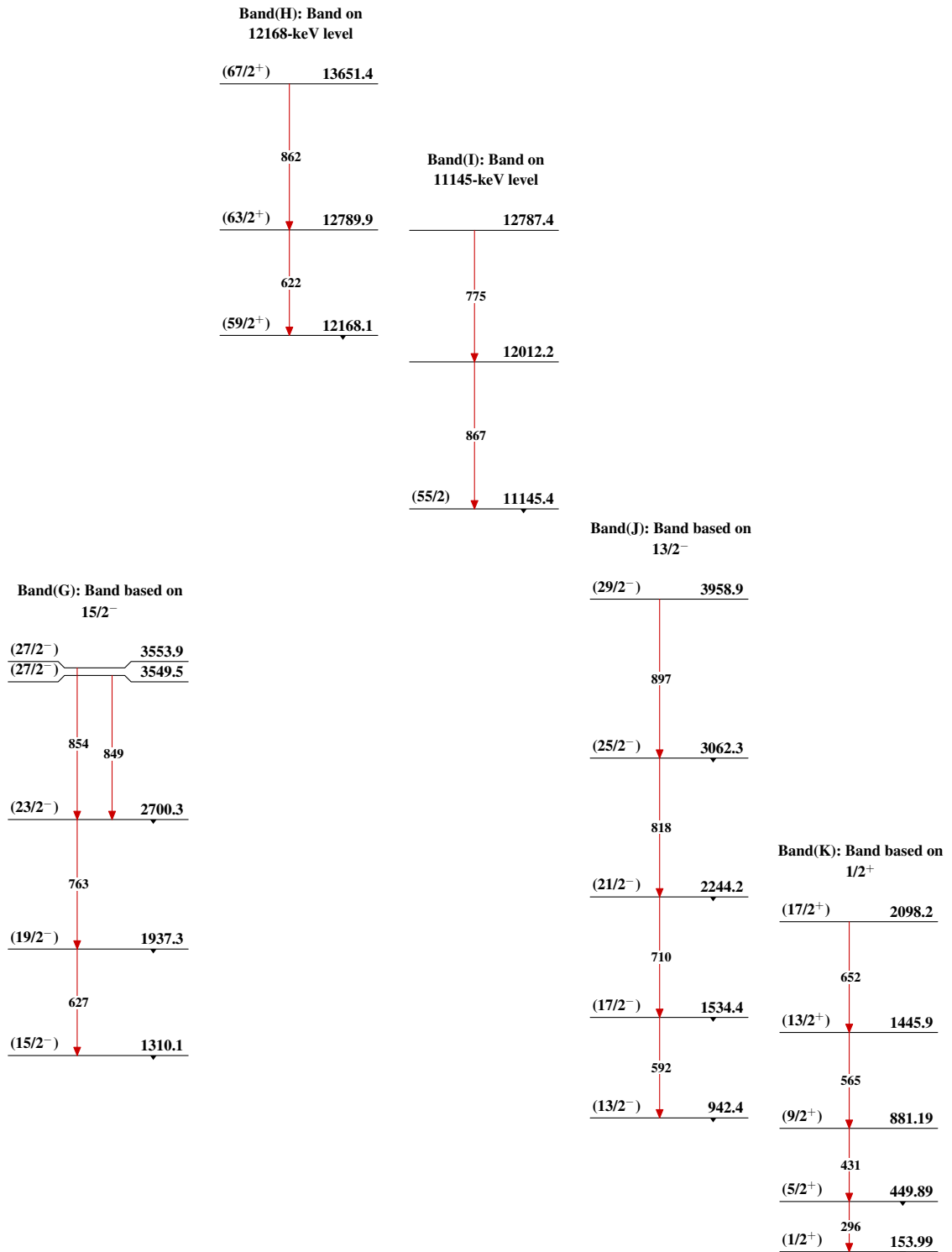
Intensities: Relative photon branching from each level

@ Multiply placed: intensity suitably divided

 $^{121}_{54}\text{Xe}_{67}$

Adopted Levels, Gammas $^{121}_{54}\text{Xe}_{67}$

Adopted Levels, Gammas (continued)

Adopted Levels, Gammas (continued) $^{121}_{54}\text{Xe}_{67}$