Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 125, 201 (2015)	31-Dec-2014

Q(β^-)=−4593 *20*; S(n)=8859 *9*; S(p)=7899 *7*; Q(α)=−4780 *8* 2012Wa38
S(2n)=21412 *8*; S(2p)=13681 *7* (2012Wa38).
Additional information 1.
α: Additional information 2.

^{83}Sr Levels

Cross Reference (XREF) Flags

A	^{83}Y ε decay (7.08 min)	E	^{68}Zn(^{19}F,p3nγ)	I	^{84}Sr(d,t)
B	^{83}Y ε decay (2.85 min)	F	^{74}Ge(^{12}C,3nγ)	J	(HI,xnγ):SD
C	^{83}Sr IT decay	G	^{80}Kr(α,nγ),^{82}Kr(α,3nγ)		
D	^{58}Ni(^{29}Si,4pγ)	H	^{84}Sr(^{3}He,α)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0	7/2$^+$	32.41 h *3*	ABCDEFG	%ε+%β^+=100 Q=+0.781 *67*; μ=−0.829 *2* J$^\pi$: J=7/2 from collinear fast-beam spectroscopy (1987Bu11,1990Li28). π from E3 259γ from 1/2$^-$. T$_{1/2}$: from 1982Gr07. Others: 32.4 h *2* (1964Do02), 31.4 h (1972Ch13), 32.9 h (1961Ku08). μ: from collinear fast-beam LASER spectroscopy (1990Bu12, 2011StZZ), relative to μ=−1.092828 *65* for ^{87}Sr, Others: μ=−0.8286 *12*, (CFBLS, 1990Li28); μ=−0.8298 *3* (LASER induced fluorescence spectroscopy in thermal atomic beam, 1987An02). Q: from collinear fast-beam LASER spectroscopy (1990Bu12, 2011StZZ), relative to Q=0.335 *20* for ^{87}Sr. Others: Q=0.823 *50* (LASER induced fluorescence spectroscopy in thermal atomic beam, 1987An02); Q=+0.761 *12* (re-evaluation of 1990Bu12 result with theoretical calculations by 2002Ma09).
35.47[b] *6*	9/2$^+$	<15 ns	A DEFGHI	XREF: H(X)I(X). T$_{1/2}$: from pulsed beam measurement reported as a private communication in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ). J$^\pi$: M1 35.5γ to 7/2$^+$, L(^{3}He,α)=L(d,t)=4, DWBA analysis of $\sigma(\theta)$ in (d,t).
259.15 *9*	1/2$^-$	4.95 s *12*	ABC E GHI	%IT=100 μ=+0.581 *4* XREF: H(X+233)I(X+250). J$^\pi$: J=1/2 from collinear fast-beam laser spectroscopy (1987Bu11,1990Li28), π from L(^{3}He,α)=1. T$_{1/2}$: from 1972Tu07. μ: from collinear fast-beam LASER spectroscopy (1990Bh03, 2011StZZ), relative to μ=−1.09282 *65* for ^{87}Sr. Other: μ=0.5809 *12* (CFBLS, 1990Li28).
489.92 *8*	(7/2$^-$)		A HI	XREF: H(X+487)I(X+470). J$^\pi$: L(d,t)=L(^{3}He,α)=3, 454γ to 9/2$^+$.
545.4 *3*			A	
650.81 *14*	(3/2$^+$,5/2$^-$)		A	J$^\pi$: 392γ to 1/2$^-$, 721γ from (7/2$^+$).
681.11 *22*	(3/2$^-$)		AB HI	XREF: H(X+649)I(X+680). J$^\pi$: log *ft*=5.3 from 3/2$^-$ parent, L(d,t)=L(^{3}He,α)=1.
717.53 *8*	(7/2,9/2)		A	J$^\pi$: log *ft*=6.7 from 9/2$^+$ parent, 228γ to (7/2$^-$), 718γ to 7/2$^+$.

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Adopted Levels, Gammas (continued)

^{83}Sr Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
753.72 *15*	(5/2$^-$)		AB E	Jπ: log *ft*=5.7 from 3/2$^-$ parent; log *ft*=5.2 from 9/2$^+$ to 1371-keV level and 618γ between these levels suggests J^π(754)=(5/2$^-$) and J^π(1371)=(7/2$^+$).
790.83 *17*			A H	XREF: H(X+768).
800.41 *10*	11/2$^+$	3.7 ps *+35−14*	A DEFG	Jπ: E2 800γ to 7/2$^+$, γ(θ) in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ).
835.2 *6*			E	
846.3 *3*	(7/2,9/2$^-$)		A	Jπ: log *ft*=7.8 (log $f^{1u}t$=9.1) from 9/2$^+$ parent, 195γ to (3/2$^+$,5/2$^-$).
894.15 *11*	11/2$^+$	1.6 ps *6*	A DEFG	Jπ: M1+E2 859γ to 9/2$^+$; γ(θ) and excitation function in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ). $T_{1/2}$: given as a range with 1.0 ps < $T_{1/2}$ < 2.1 ps.
910.5[b] *5*	13/2$^+$	3.5[@] ps *2*	DEFG	Jπ: E2 875γ to 9/2$^+$, excitation function in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ), band assignment. $T_{1/2}$: other: 2.6 ps *10* from DSAM in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ).
951.77 *8*	(5/2$^+$,7/2$^-$)		A h	XREF: h(X+928). Jπ: 271γ to (3/2$^-$), 917γ to 9/2$^+$.
962.79 *7*	(7/2,9/2,11/2$^+$)		A h	XREF: h(X+928). Jπ: log *ft*=6.5 from 9/2$^+$ parent, 963γ to 7/2$^+$.
1092.8 *3*			A	
1098.06 *11*			A	
1140.71 *25*			A	
1233.40 *11*	(7/2,9/2)		A hi	XREF: h(X+1206)i(X+1230). Jπ: log *ft*=6.3 from 9/2$^+$ parent, 744γ to (7/2$^-$), 1233γ to 7/2$^+$.
1239.19 *19*	(7/2,9/2,11/2$^+$)		A hi	XREF: h(X+1206)i(X+1230). Jπ: log *ft*=6.7 from 9/2$^+$ parent, 1239γ to 7/2$^+$.
1365.9 *3*	(7/2,9/2)		A	Jπ: log *ft*=7.0 from 9/2$^+$ parent, 876γ to (7/2$^-$), 1366γ to 7/2$^+$.
1371.98 *6*	(7/2$^+$)		A	Jπ: see comment on 754-keV level.
1434.12 *19*	(7/2,9/2)		A HI	XREF: H(X+1375)I(X+1410). Jπ: log *ft*=6.9 from 9/2$^+$ parent, 944γ to (7/2$^-$), 1434γ to 7/2$^+$.
1447.8 *8*	(9/2$^-$)		E	Jπ: 694γ to (5/2$^-$), 659γ from (13/2$^-$).
1498.83 *15*	(7/2,9/2)		A	Jπ: log *ft*=6.2 from 9/2$^+$ parent, 547γ to (5/2$^+$,7/2$^-$), 1499γ to 7/2$^+$.
1574.7 *8*	(9/2)$^+$		EFG	Jπ: M1+E2 680γ to 11/2$^+$, excitation function in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ). However, (13/2$^-$) is assigned in ^{68}Zn(^{19}F,p3nγ).
1590.0 *8*			E	
1604.8 *4*	(7/2,9/2)		A	Jπ: log *ft*=7.1 from 9/2$^+$ parent, 1115γ to (7/2$^-$), 1605γ to 7/2$^+$.
1745.4 *8*	(7/2,9/2,11/2$^+$)		A	Jπ: log *ft*=7.2 from 9/2$^+$ parent, 1745γ to 7/2$^+$.
1752.6 *4*	(7/2,9/2,11/2$^+$)		A HI	XREF: H(X+1740)I(X+1750). Jπ: log *ft*=6.7 from 9/2$^+$ parent, 1753γ to 7/2$^+$.
1856.8 *5*	15/2$^+$		DEFG	Jπ: M1+E2 946γ to 13/2$^+$, excitation function in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ).
1882.50 *23*	(7/2,9/2)		A	Jπ: log *ft*=6.4 from 9/2$^+$ parent, 1392γ to (7/2$^-$), 1882γ to 7/2$^+$.
1915.4 *3*	(7/2,9/2$^-$)		A h	XREF: h(X+1903). Jπ: log *ft*=6.1 from 9/2$^+$ parent, 1264γ to (3/2$^+$,5/2$^-$), 1916γ to 7/2$^+$.
1964.1 *4*	(7/2,9/2)		A h	XREF: h(X+1903). Jπ: log *ft*=6.6 from 9/2$^+$ parent, 1474γ to (7/2$^-$), 1965γ to 7/2$^+$.
1987.6[b] *8*	17/2$^+$	0.8 ps *2*	DEFG	$T_{1/2}$: weighted average of 0.7 ps *2* from RDDM in ^{74}Ge(^{12}C,3nγ) and 1.0 ps *3* from DSAM in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ). Jπ: E2 1077γ to 13/2$^+$, band assignment.
2017.0 *5*	(7/2,9/2)		A H	XREF: H(X+1963). Jπ: log *ft*=6.7 from 9/2$^+$ parent, 1527γ to (7/2$^-$), 2017γ to 7/2$^+$.
2044.8 *6*	(13/2$^-$)		DE	Jπ: 1244γ to 11/2$^+$, 598γ from 17/2$^-$.

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Adopted Levels, Gammas (continued)

^{83}Sr Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
2074.0 *8*	(7/2,9/2)		A	Jπ: log *ft*=6.9 from 9/2+ parent, 1584γ to (7/2−), 2074γ to 7/2+.
2089.7 *8*	(7/2,9/2,11/2+)		A	Jπ: log *ft*=6.9 from 9/2+ parent, 2090γ to 7/2+.
2106.8 *5*	(13/2−)		DEFG	Jπ: D 1213γ to 11/2+, 536γ from 17/2−.
2373.2 *6*	(7/2,9/2,11/2+)		A	Jπ: log *ft*=6.5 from 9/2+ parent, 1001γ to (7/2+).
2539.3 *6*	(15/2)		DE	Jπ: 433γ to (13/2−), 1629γ to 13/2+, assumption of increasing spin in (HI,xn) reactions.
2643.0[a] *6*	(17/2−)		DE	Jπ: 598γ to (13/2−), similar to 3 quasi-particle Jπ=17/2− bandheads in ^{81}Kr and ^{83}Rb.
2847.6 *8*	(17/2−)		E	Jπ: 308γ to (15/2), 199γ from (19/2−).
2905.2 *3*	(7/2+,9/2+,11/2+)		A	Jπ: log *ft*=5.2 from 9/2+ parent.
2943.9 *8*	(7/2+,9/2+,11/2+)		A	Jπ: log *ft*=5.6 from 9/2+ parent.
3009.2 *9*	(19/2+)		E	Jπ: 1022γ to 17/2+, 1152γ to 15/2+.
3046.5[a] *9*	(19/2−)		DE	Jπ: 404γ to (17/2−), band assignment.
3116.8[b] *11*	21/2+	<0.7 ps	DEFG	$T_{1/2}$: from RDDM in ^{74}Ge(^{12}C,3nγ). Jπ: E2 1129γ to 17/2+, band assignment.
3349.9 *11*	(21/2+)		E	Jπ: 1362γ to 17/2+, 294γ from 23/2+.
3469.8[a] *11*	(21/2−)		DE	Jπ: 424γ to (19/2−), band assignment.
3525.7 *9*	(21/2−)		DE	Jπ: 480γ to (19/2−), 882γ to (17/2−).
3644.3[c] *12*	23/2+	8.7 ps *4*	DEFG	Jπ: M1+E2 528γ to 21/2+, excitation function in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ). $T_{1/2}$: from RDDM in ^{74}Ge(^{12}C,3nγ).
4043.8[a] *12*	(23/2−)		DE	Jπ: 573γ to (21/2−), band assignment.
4168.8[b] *13*	25/2+		DE	Jπ: 525γ to 23/2+, 1052γ to 21/2+, band assignment.
4195.4 *10*	(23/2−)		DE	Jπ: 726γ to (21/2−), 1148γ to (19/2−).
4396.7 *13*	(25/2+)		E	Jπ: 752γ to 23/2+, 1280γ to 21/2+.
4633.7 *11*	(25/2−)		DE	Jπ: 590γ to (23/2−), 1108γ to (21/2−).
4753.3[c] *13*	27/2+		DE	Jπ: 585γ to 25/2+, 1109γ to 23/2+, band assignment.
4948.2? *13*	(−)		E	Jπ: from 1990DoZT, based on feeding and decay pattern from and to only negative parity levels.
5091.8 *14*	(27/2+)		E	Jπ: 695γ to (25/2+).
5208.6[a] *12*	(27/2−)		DE	Jπ: 575γ to (25/2−), 1164γ to (23/2−), band assignment.
5380.0[b] *14*	29/2+		DE	Jπ: 627γ to 27/2+, 1211γ to 25/2+, band assignment.
5394.6 *12*	(−)		E	Jπ: from 1990DoZT, based on decay pattern to only negative parity levels.
5612.9 *14*	(29/2+)		E	Jπ: 860γ to 27/2+, possible 1216γ to (25/2+).
5856.6 *13*	(29/2−)		DE	Jπ: 647γ to (27/2−), 1224γ to (25/2−).
6205.8[c] *14*	31/2+		DE	Jπ: 826γ to 29/2+, 1452γ to 27/2+, band assignment.
6428.6[a] *16*	(31/2−)		DE	Jπ: 1220γ to (27/2−), band assignment.
6753.9[b] *15*	33/2+		DE	Jπ: 548γ to 31/2+, 1374γ to 29/2+, band assignment.
7102.9? *17*			E	
7235.7? *17*			E	
7740.0[a] *18*	(35/2−)		DE	Jπ: 1312γ to (31/2−), band assignment.
7771.6 *19*			D	
7798.0 *18*			D	
7806.8[&] *18*	(35/2−)		D	Jπ: 1378γ to (31/2−).
7854.8[c] *16*	35/2+		D	Jπ: 1649γ to 31/2+, band assignment.
8120.8[b] *16*	37/2+		DE	Jπ: 266γ to 35/2+, 1367γ to 33/2+, band assignment.
9190.0 *21*			D	
9277.4[a] *18*	(39/2−)		DE	Jπ: 1538γ to (35/2−), band assignment.
9290.4[&] *18*	(39/2−)		D	Jπ: 1484γ to (35/2−), band assignment.
9352.6 *21*			D	
9468.6 *21*			D	
9650.9[b] *19*	41/2+		DE	Jπ: 1530γ to 37/2+, band assignment.

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Adopted Levels, Gammas (continued)

^{83}Sr Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
9782.8[c] *19*	39/2+	D	Jπ: 1928γ to 35/2+, band assignment.
10860.4[&] *20*	(43/2−)	D	Jπ: 1570γ to (39/2−), band assignment.
10952.4[a] *20*	(43/2−)	D	Jπ: 1675γ to (39/2−), band assignment.
11104.6 *23*		D	
11462.9[b] *22*	45/2+	DE	Jπ: 1812γ to 41/2+, band assignment.
11857.9 *22*		D	
12567.4[&] *20*	(47/2−)	D	Jπ: 1707γ to (43/2−), band assignment.
12847.5[a] *22*	(47/2−)	D	Jπ: 1895γ to (43/2−), band assignment.
13426.9[b] *24*	49/2+	D	Jπ: 1964γ to 45/2+, band assignment.
14131.9 *24*		D	
14296.9 *24*		D	
14344.5[&] *23*	(51/2−)	D	Jπ: 1777γ to (47/2−), band assignment.
14899.5[a] *24*	(51/2−)	D	Jπ: 2052γ to (47/2−), band assignment.
15540 *3*		D	
15756[b] *3*	53/2+	D	Jπ: 2329γ to 49/2+, band assignment.
16224 *3*		D	
16612.5[&] *25*	(55/2−)	D	Jπ: 2268γ to (51/2−), band assignment.
18116 *3*		D	
19437[&] *3*	(59/2−)	D	Jπ: 2824γ to (55/2−), band assignment.
x[d]	J≈(41/2)	J	Jπ: ≈(41/2) estimated (1995Ba26,1995La21,2003Le08) (within one unit of spin) from depopulation into the highest spin states (45/2+,39/2−) of normal-deformed bands in ^{83}Sr (see 1995La21 and 1992WiZU for normal high-spin states above 23/2). E(level): 13.0 MeV *15* (1995La21). Additional information 3.
x+1305.0[d] *10*	J+2	J	
x+2766.0[d] *14*	J+4	J	
x+4379.0[d] *17*	J+6	J	
x+6141.1[d] *20*	J+8	J	
x+8053.1[d] *22*	J+10	J	
x+10113.1[d] *24*	J+12	J	
x+12318[d] *3*	J+14	J	
x+14665[d] *3*	J+16	J	
x+17156[d] *3*	J+18	J	
x+19802?[d] *3*	J+20	J	

[†] From a least-squares fit to Eγ, by evaluator. An uncertainty of ΔEγ=1 keV is assumed when not explicitly given.
[‡] For levels populated in (HI,xn) reactions, J^{π} assignments include the assumption of increasing spin with increasing excitation energy, except where noted.
[#] From DSAM in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ), except where noted.
[@] From RDDM in ^{74}Ge(^{12}C,3nγ).
[&] Band(A): Rotational band based on 7807-keV, (35/2−) level.
[a] Band(B): Rotational band based on 2643-keV, (17/2−) level.
[b] Band(C): Rotational band based on 35.5-keV, 9/2+ level.
[c] Band(D): Rotational band based on 3644-keV, 23/2+ level.
[d] Band(E): SD band (2003Le08,1995Ba26,1995La21). Q(transition)=3.60 *+20−18* (2003Le08), 3.5 *+8−6* (1997De51, reanalyzed data

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Adopted Levels, Gammas (continued)

^{83}Sr Levels (continued)

of 1995La21). Configuration=$\nu 5^1 \pi 5^0$ (2003Le08); $\nu 5^3 \pi 5^1$; π=+, α=+1/2; $\beta_2 \approx 0.57$, $\gamma \approx 0°$ (from experimental values of moments of inertia,1995La21). Percent population=1.36 (2003Le08), 1.4 *5* (1995Ba26).

Adopted Levels, Gammas (continued)

γ(^{83}Sr)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[a]	δ[a]	α	Comments
35.47	9/2$^+$	35.5 *1*	100	0.0	7/2$^+$	M1[‡]		3.13	α(K)=2.75 *5*; α(L)=0.320 *6*; α(M)=0.0539 *9*; α(N)=0.00670 *11*; α(O)=0.000420 *7* B(M1)(W.u.)>0.0078
259.15	1/2$^-$	259.1 *1*	100	0.0	7/2$^+$	E3		0.1416	α(K)=0.1192 *17*; α(L)=0.0188 *3*; α(M)=0.00319 *5*; α(N)=0.000373 *6*; α(O)=1.636×10^{-5} *23* B(E3)(W.u.)=0.00670 *17* Mult.: from α(K)exp in ^{83}Sr IT decay.
489.92	(7/2$^-$)	454.4 *2*	43.3 *11*	35.47	9/2$^+$				
		489.9[b] *2*	100.0[b] *22*	0.0	7/2$^+$				
545.4		545.4 *3*	100	0.0	7/2$^+$				
650.81	(3/2$^+$,5/2$^-$)	391.6 *2*	100	259.15	1/2$^-$				
681.11	(3/2$^-$)	421.8 *3*	100	259.15	1/2$^-$				
717.53	(7/2,9/2)	227.5 *2*	9.1 *10*	489.92	(7/2$^-$)				
		682.1 *1*	100 *5*	35.47	9/2$^+$				
		717.6 *2*	36.5 *15*	0.0	7/2$^+$				
753.72	(5/2$^-$)	494.5 *2*	100	259.15	1/2$^-$				
790.83		790.8 *2*	100	0.0	7/2$^+$				
800.41	11/2$^+$	764.9 *6*	80 *10*	35.47	9/2$^+$				I_γ: other: 47 in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ).
		800.4 *1*	100 *6*	0.0	7/2$^+$	E2		9.93×10^{-4}	α(K)=0.000878 *13*; α(L)=9.67×10^{-5} *14*; α(M)=1.623×10^{-5} *23*; α(N)=2.03×10^{-6} *3* α(O)=1.296×10^{-7} *19* B(E2)(W.u.)=12 *+7−6*
835.2		800[@]		35.47	9/2$^+$				
		835[@]		0.0	7/2$^+$				
846.3	(7/2,9/2$^-$)	195.4 *4*	100	650.81	(3/2$^+$,5/2$^-$)				
894.15	11/2$^+$	858.7 *1*	100 *4*	35.47	9/2$^+$	M1+E2	−0.83 *13*	7.99×10^{-4}	α(K)=0.000708 *11*; α(L)=7.69×10^{-5} *12*; α(M)=1.292×10^{-5} *21*; α(N)=1.621×10^{-6} *25* α(O)=1.055×10^{-7} *16* B(E2)(W.u.)=14 *6*; B(M1)(W.u.)=0.012 *5* δ: other: −0.78 *30* from ^{74}Ge(^{12}C,3nγ).
		893.9 *4*	3.5 *8*	0.0	7/2$^+$	[E2]		7.55×10^{-4}	α(K)=0.000668 *10*; α(L)=7.32×10^{-5} *11*; α(M)=1.228×10^{-5} *18*; α(N)=1.537×10^{-6} *22* α(O)=9.88×10^{-8} *14* B(E2)(W.u.)=1.0 *5*
910.5	13/2$^+$	875.0[&]	100	35.47	9/2$^+$	E2		7.96×10^{-4}	α(K)=0.000704 *10*; α(L)=7.72×10^{-5} *11*; α(M)=1.295×10^{-5} *19*; α(N)=1.621×10^{-6} *23* α(O)=1.040×10^{-7} *15* B(E2)(W.u.)=14.6 *9*
951.77	(5/2$^+$,7/2$^-$)	234.4 *3*	3.2 *6*	717.53	(7/2,9/2)				
		270.5 *3*	3.9 *5*	681.11	(3/2$^-$)				
		916.5 *5*	4.2 *10*	35.47	9/2$^+$				

Adopted Levels, Gammas (continued)

γ(^{83}Sr) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.[a]	δ[a]	α	Comments
951.77	(5/2$^+$,7/2$^-$)	951.8 *1*	100 *5*	0.0	7/2$^+$				
962.79	(7/2,9/2,11/2$^+$)	245.3 *4*	7.2 *22*	717.53	(7/2,9/2)				
		927.3 *1*	100 *5*	35.47	9/2$^+$				
		962.8 *1*	61 *4*	0.0	7/2$^+$				
1092.8		603.0 *3*	100 *20*	489.92	(7/2$^-$)				
		1092.4 *6*	100 *30*	0.0	7/2$^+$				
1098.06		1062.6 *1*	100 *33*	35.47	9/2$^+$				
		1097.2 *8*	80 *40*	0.0	7/2$^+$				
1140.71		489.9[b] *2*	100[b]	650.81	(3/2$^+$,5/2$^-$)				
1233.40	(7/2,9/2)	743.5 *1*	100 *5*	489.92	(7/2$^-$)				
		1197.9 *2*	30 *3*	35.47	9/2$^+$				
		1233.3 *6*	5.1 *10*	0.0	7/2$^+$				
1239.19	(7/2,9/2,11/2$^+$)	1203.6 *5*	12.1 *22*	35.47	9/2$^+$				
		1239.2 *2*	100 *4*	0.0	7/2$^+$				
1365.9	(7/2,9/2)	875.8 *3*	100 *17*	489.92	(7/2$^-$)				
		1366.4 *6*	34 *10*	0.0	7/2$^+$				
1371.98	(7/2$^+$)	138.8 *4*	1.6 *2*	1233.40	(7/2,9/2)				
		409.3 *4*	1.1 *2*	962.79	(7/2,9/2,11/2$^+$)				
		420.3 *3*	29.2 *20*	951.77	(5/2$^+$,7/2$^-$)				
		525.6 *4*	1.2 *3*	846.3	(7/2,9/2$^-$)				
		581.1 *3*	2.3 *3*	790.83					
		618.2 *2*	9.7 *7*	753.72	(5/2$^-$)				
		654.5 *2*	3.1 *3*	717.53	(7/2,9/2)				
		721.2 *2*	16.8 *7*	650.81	(3/2$^+$,5/2$^-$)				
		827		545.4					
		882.1 *1*	100.0 *25*	489.92	(7/2$^-$)				
		1336.5 *1*	49.0 *20*	35.47	9/2$^+$				
		1371.9 *1*	16.0 *8*	0.0	7/2$^+$				
1434.12	(7/2,9/2)	943.6 *5*	26 *8*	489.92	(7/2$^-$)				
		1434.2 *2*	100 *9*	0.0	7/2$^+$				
1447.8	(9/2$^-$)	694[@]	100	753.72	(5/2$^-$)				
1498.83	(7/2,9/2)	547.1 *3*	62 *12*	951.77	(5/2$^+$,7/2$^-$)				
		1463.4 *3*	100 *12*	35.47	9/2$^+$				
		1498.8 *2*	93 *8*	0.0	7/2$^+$				
1574.7	(9/2)$^+$	679.9[&]	100	894.15	11/2$^+$	M1+E2	+1.9 *4*	0.00147 *3*	α(K)=0.00130 *3*; α(L)=0.000144 *3*; α(M)=2.42×10^{-5} *5*; α(N)=3.02×10^{-6} *7*; α(O)=1.92×10^{-7} *4* δ: other: +1.1 *+5−10* in ^{74}Ge(^{12}C,3nγ).
1590.0		755[@]	100	835.2					
1604.8	(7/2,9/2)	1115.0 *5*	100 *30*	489.92	(7/2$^-$)				
		1604.6 *8*	72 *20*	0.0	7/2$^+$				
1745.4	(7/2,9/2,11/2$^+$)	1710.0 *15*	56 *28*	35.47	9/2$^+$				

$^{83}_{38}Sr_{45}$-7

Adopted Levels, Gammas (continued)

γ(^{83}Sr) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.[a]	δ[a]	α	Comments
1745.4	(7/2,9/2,11/2$^+$)	1745.3 *9*	100 *29*	0.0	7/2$^+$				
1752.6	(7/2,9/2,11/2$^+$)	1717.0 *8*	22 *7*	35.47	9/2$^+$				
		1752.6 *4*	100 *16*	0.0	7/2$^+$				
1856.8	15/2$^+$	945.9&		910.5	13/2$^+$	M1+E2	+0.9 *6*	6.43×10^{-4} *14*	α(K)=0.000570 *12*; α(L)=6.18×10^{-5} *16*; α(M)=1.04×10^{-5} *3*; α(N)=1.30×10^{-6} *3*; α(O)=8.49×10^{-8} *15* δ: from γ(θ) in ^{74}Ge(^{12}C,3nγ). Mult.: D+Q from γ(θ) in ^{74}Ge(^{12}C,3nγ) and ^{80}Kr(α,nγ),^{82}Kr(α,3nγ), non-zero value of δ makes E1+M2 unlikely.
		963#		894.15	11/2$^+$				
		1056#		800.41	11/2$^+$				
1882.50	(7/2,9/2)	931.5 *5*	68 *18*	951.77	(5/2$^+$,7/2$^-$)				
		1392.4 *3*	100 *9*	489.92	(7/2$^-$)				
		1846.8 *5*	55 *14*	35.47	9/2$^+$				
		1882.2 *8*	32 *14*	0.0	7/2$^+$				
1915.4	(7/2,9/2$^-$)	1264.3 *4*	36 *6*	650.81	(3/2$^+$,5/2$^-$)				
		1879.8 *7*	48 *10*	35.47	9/2$^+$				
		1915.7 *4*	100 *12*	0.0	7/2$^+$				
1964.1	(7/2,9/2)	1473.8 *6*	87 *16*	489.92	(7/2$^-$)				
		1928 *2*	32 *16*	35.47	9/2$^+$				
		1964.5 *6*	100 *16*	0.0	7/2$^+$				
1987.6	17/2$^+$	1077.1&	100	910.5	13/2$^+$	E2		4.88×10^{-4}	α(K)=0.000432 *6*; α(L)=4.70×10^{-5} *7*; α(M)=7.88×10^{-6} *11*; α(N)=9.89×10^{-7} *14*; α(O)=6.41×10^{-8} *9* B(E2)(W.u.)=23 *6*
2017.0	(7/2,9/2)	1527.2 *10*	34 *10*	489.92	(7/2$^-$)				
		2016.9 *6*	100 *16*	0.0	7/2$^+$				
2044.8	(13/2$^-$)	1134#		910.5	13/2$^+$				
		1151#		894.15	11/2$^+$				
		1244#		800.41	11/2$^+$				
2074.0	(7/2,9/2)	1584.3 *10*	70 *30*	489.92	(7/2$^-$)				
		2073.6 *12*	100 *40*	0.0	7/2$^+$				
2089.7	(7/2,9/2,11/2$^+$)	2054.1 *12*	100 *30*	35.47	9/2$^+$				
		2089.8 *10*	60 *30*	0.0	7/2$^+$				
2106.8	(13/2$^-$)	517@		1590.0					
		659@		1447.8	(9/2$^-$)				
		1197@		910.5	13/2$^+$				
		1213.3&		894.15	11/2$^+$	(E1)		2.26×10^{-4}	α(K)=0.0001545 *22*; α(L)=1.646×10^{-5} *23*;

$^{83}_{38}Sr_{45}$-8

Adopted Levels, Gammas (continued)

γ(^{83}Sr) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.[a]	α	Comments
								α(M)=2.76×10^{-6} *4*; α(N)=3.47×10^{-7} *5*; α(O)=2.28×10^{-8} *4* Mult.: D from γ(θ) in ^{74}Ge(^{12}C,3nγ), Δπ=yes from level scheme.
2373.2	(7/2,9/2,11/2$^+$)	1001.2 *6*	100	1371.98	(7/2$^+$)			
2539.3	(15/2)	433[#]		2106.8	(13/2$^-$)			
		964[@c]		1574.7	(9/2)$^+$			
		1629[#]		910.5	13/2$^+$			
2643.0	(17/2$^-$)	104[#]		2539.3	(15/2)			
		537[#]		2106.8	(13/2$^-$)			
		598[#]		2044.8	(13/2$^-$)			
		655[#]		1987.6	17/2$^+$			
		786[#]		1856.8	15/2$^+$			
2847.6	(17/2$^-$)	205[@]		2643.0	(17/2$^-$)			
		308[@]		2539.3	(15/2)			
2905.2	(7/2$^+$,9/2$^+$,11/2$^+$)	1407.1 *10*	15 *4*	1498.83	(7/2,9/2)			
		1532.2 *10*	9 *4*	1371.98	(7/2$^+$)			
		1942.3 *10*	13 *4*	962.79	(7/2,9/2,11/2$^+$)			
		2011.1 *5*	56 *9*	894.15	11/2$^+$			
		2104.9 *8*	29 *5*	800.41	11/2$^+$			
		2187 *1*	15 *6*	717.53	(7/2,9/2)			
		2869.6 *15*	20 *6*	35.47	9/2$^+$			
		2905.3 *9*	100 *12*	0.0	7/2$^+$			
2943.9	(7/2$^+$,9/2$^+$,11/2$^+$)	2049.0 *15*	17 *8*	894.15	11/2$^+$			
		2909 *2*	16 *8*	35.47	9/2$^+$			
		2944.0 *10*	100 *12*	0.0	7/2$^+$			
3009.2	(19/2$^+$)	1022[@]		1987.6	17/2$^+$			
		1152[@]		1856.8	15/2$^+$			
3046.5	(19/2$^-$)	199[@]		2847.6	(17/2$^-$)			
		404[#]		2643.0	(17/2$^-$)			
3116.8	21/2$^+$	1129.4[&]	100	1987.6	17/2$^+$	E2	4.41×10^{-4}	α(K)=0.000389 *6*; α(L)=4.22×10^{-5} *6*; α(M)=7.08×10^{-6} *10*; α(N)=8.88×10^{-7} *13*; α(O)=5.77×10^{-8} *8* B(E2)(W.u.)>20 Mult.: Q from γ(θ) in ^{74}Ge(^{12}C,3nγ) and ^{80}Kr(α,nγ),^{82}Kr(α,3nγ), M2 excluded by comparison to RUL.
3349.9	(21/2$^+$)	233[@]		3116.8	21/2$^+$			
		1362[@]		1987.6	17/2$^+$			
3469.8	(21/2$^-$)	424[#]	100	3046.5	(19/2$^-$)			

$^{83}_{38}Sr_{45}$-9

Adopted Levels, Gammas (continued)

γ(^{83}Sr) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[a]	δ[a]	α	Comments
3525.7	(21/2⁻)	480[#]		3046.5	(19/2⁻)				
		882[#]		2643.0	(17/2⁻)				
3644.3	23/2⁺	294[#]		3349.9	(21/2⁺)				
		527.9[&]		3116.8	21/2⁺	M1+E2	−0.14 *4*	0.00233	α(K)=0.00206 *3*; α(L)=0.000225 *4*; α(M)=3.78×10^{-5} *6*; α(N)=4.75×10^{-6} *7*; α(O)=3.10×10^{-7} *5* Mult.: D+Q from γ(θ) in ^{74}Ge(^{12}C,3nγ) and ^{80}Kr(α,nγ),^{82}Kr(α,3nγ); E1+M2 excluded by comparison to RUL. δ: from γ(θ) in ^{74}Ge(^{12}C,3nγ).
4043.8	(23/2⁻)	573[#]	100	3469.8	(21/2⁻)				
4168.8	25/2⁺	525[#]		3644.3	23/2⁺				
		1052[#]		3116.8	21/2⁺				
4195.4	(23/2⁻)	670[#]		3525.7	(21/2⁻)				
		726[#]		3469.8	(21/2⁻)				
		1148[#]		3046.5	(19/2⁻)				
4396.7	(25/2⁺)	752[@]		3644.3	23/2⁺				
		1280[@]		3116.8	21/2⁺				
4633.7	(25/2⁻)	590[#]		4043.8	(23/2⁻)				
		1108[#]		3525.7	(21/2⁻)				
		1165[@c]		3469.8	(21/2⁻)				
4753.3	27/2⁺	585[#]		4168.8	25/2⁺				
		1109[#]		3644.3	23/2⁺				
4948.2?	(⁻)	904[@]		4043.8	(23/2⁻)				
5091.8	(27/2⁺)	695[@]		4396.7	(25/2⁺)				
5208.6	(27/2⁻)	260[@]		4948.2?	(⁻)				
		575[#]		4633.7	(25/2⁻)				
		1164[#]		4043.8	(23/2⁻)				
5380.0	29/2⁺	627[#]		4753.3	27/2⁺				
		1211[#]		4168.8	25/2⁺				
5394.6	(⁻)	1199[@]		4195.4	(23/2⁻)				
		1351[@]		4043.8	(23/2⁻)				
5612.9	(29/2⁺)	521[@]		5091.8	(27/2⁺)				
		860[@]		4753.3	27/2⁺				
		1216[@c]		4396.7	(25/2⁺)				
5856.6	(29/2⁻)	647[#]		5208.6	(27/2⁻)				
		1224[#]		4633.7	(25/2⁻)				E_γ: other: 1220 in ^{68}Zn(^{19}F,p3nγ).
6205.8	31/2⁺	593[@]		5612.9	(29/2⁺)				

$^{83}_{38}Sr_{45}$-10

Adopted Levels, Gammas (continued)

γ(^{83}Sr) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π
6205.8	31/2$^+$	826[#]		5380.0	29/2$^+$
		1114[@ c]		5091.8	(27/2$^+$)
		1452[#]		4753.3	27/2$^+$
6428.6	(31/2$^-$)	1220[#]	100	5208.6	(27/2$^-$)
6753.9	33/2$^+$	548[#]		6205.8	31/2$^+$
		1374[#]		5380.0	29/2$^+$
7102.9?		1490[@ c]	100	5612.9	(29/2$^+$)
7235.7?		1379[@ c]	100	5856.6	(29/2$^-$)
7740.0	(35/2$^-$)	1312[#]	100	6428.6	(31/2$^-$)
7771.6		1343[#]	100	6428.6	(31/2$^-$)
7798.0		1369[#]	100	6428.6	(31/2$^-$)
7806.8	(35/2$^-$)	1378[#]	100	6428.6	(31/2$^-$)
7854.8	35/2$^+$	1649[#]	100	6205.8	31/2$^+$
8120.8	37/2$^+$	266[#]		7854.8	35/2$^+$
		1367[#]		6753.9	33/2$^+$
9190.0		1392[#]	100	7798.0	
9277.4	(39/2$^-$)	1470[#]		7806.8	(35/2$^-$)
		1538[#]		7740.0	(35/2$^-$)
9290.4	(39/2$^-$)	1484[#]		7806.8	(35/2$^-$)
		1492[#]		7798.0	
9352.6		1581[#]	100	7771.6	
9468.6		1697[#]	100	7771.6	
9650.9	41/2$^+$	1530[#]	100	8120.8	37/2$^+$
9782.8	39/2$^+$	1928[#]	100	7854.8	35/2$^+$
10860.4	(43/2$^-$)	1570[#]	100	9290.4	(39/2$^-$)
10952.4	(43/2$^-$)	1675[#]	100	9277.4	(39/2$^-$)
11104.6		1752[#]	100	9352.6	
11462.9	45/2$^+$	1812[#]		9650.9	41/2$^+$
11857.9		2207[#]	100	9650.9	41/2$^+$
12567.4	(47/2$^-$)	1615[#]		10952.4	(43/2$^-$)
		1707[#]		10860.4	(43/2$^-$)
12847.5	(47/2$^-$)	1895[#]	100	10952.4	(43/2$^-$)
13426.9	49/2$^+$	1964[#]	100	11462.9	45/2$^+$
14131.9		2274[#]	100	11857.9	
14296.9		2834[#]	100	11462.9	45/2$^+$
14344.5	(51/2$^-$)	1777[#]	100	12567.4	(47/2$^-$)
14899.5	(51/2$^-$)	2052[#]	100	12847.5	(47/2$^-$)
15540		2113[#]	100	13426.9	49/2$^+$
15756	53/2$^+$	2329[#]	100	13426.9	49/2$^+$
16224		2797[#]	100	13426.9	49/2$^+$
16612.5	(55/2$^-$)	2268[#]	100	14344.5	(51/2$^-$)
18116		2576[#]	100	15540	
19437	(59/2$^-$)	2824[#]	100	16612.5	(55/2$^-$)
x+1305.0	J+2	1306 *1*	100	x	J≈(41/2)
x+2766.0	J+4	1461 *1*	100	x+1305.0	J+2
x+4379.0	J+6	1613 *1*	100	x+2766.0	J+4
x+6141.1	J+8	1762 *1*	100	x+4379.0	J+6
x+8053.1	J+10	1912 *1*	100	x+6141.1	J+8
x+10113.1	J+12	2060 *1*	100	x+8053.1	J+10
x+12318	J+14	2205 *1*	100	x+10113.1	J+12
x+14665	J+16	2347 *1*	100	x+12318	J+14
x+17156	J+18	2491 *1*	100	x+14665	J+16
x+19802?	J+20	2646[c]	100	x+17156	J+18

[†] From ^{83}Y ε decay (7.08 min), except where noted.
[‡] From ce data in ^{83}Y ε decay (7.08 min).
[#] From ^{58}Ni(^{29}Si,4pγ).
[@] From ^{68}Zn(^{19}F,p3nγ).
[&] From ^{80}Kr(α,nγ),^{82}Kr(α,3nγ).
[a] From γ(θ) and linear polarization measurements in ^{80}Kr(α,nγ),^{82}Kr(α,3nγ), except where noted.

$^{83}_{38}Sr_{45}$-11

γ(^{83}Sr) (continued)

[b] Multiply placed with intensity suitably divided.
[c] Placement of transition in the level scheme is uncertain.

$^{83}_{38}Sr_{45}$-12

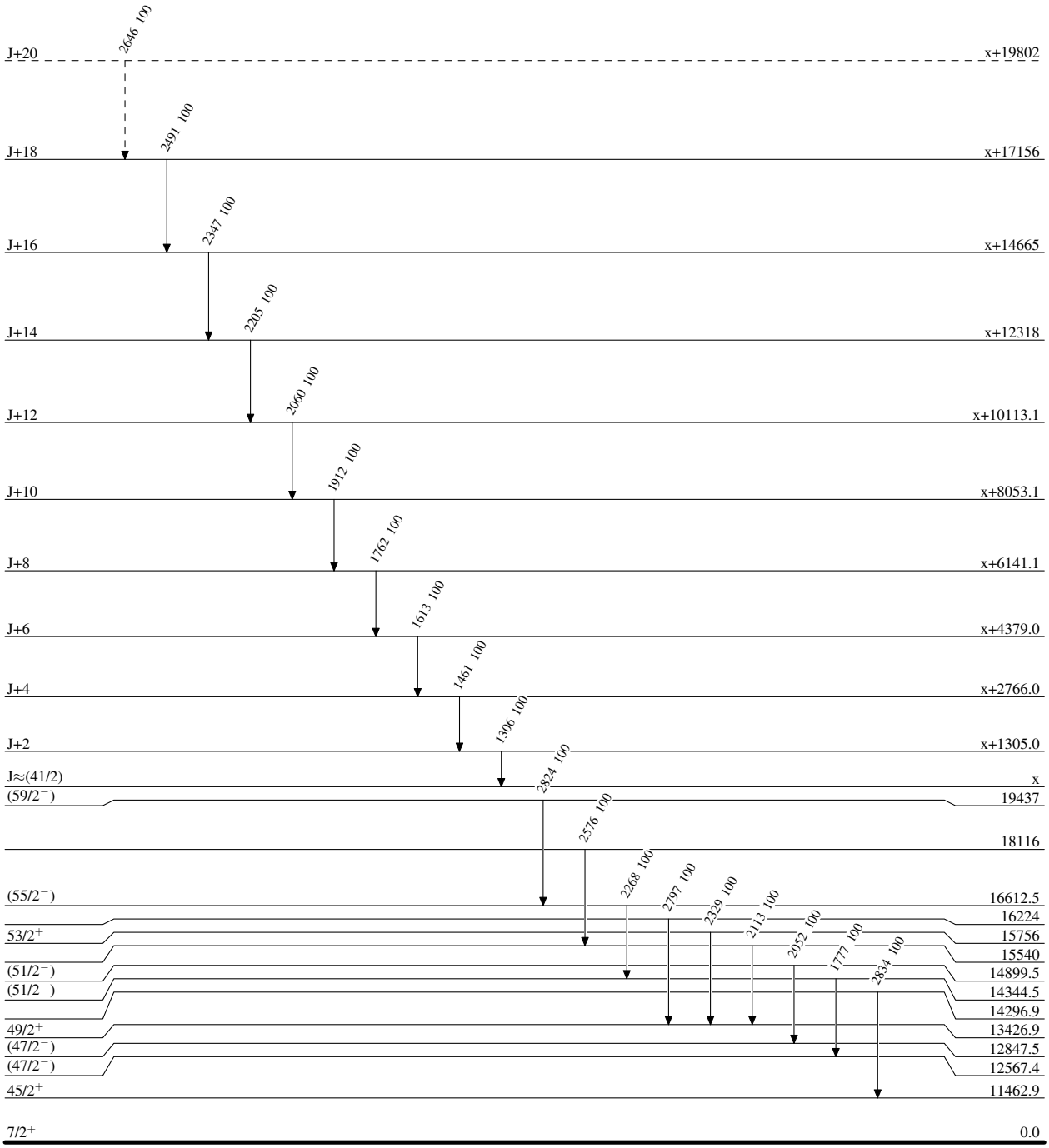
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)

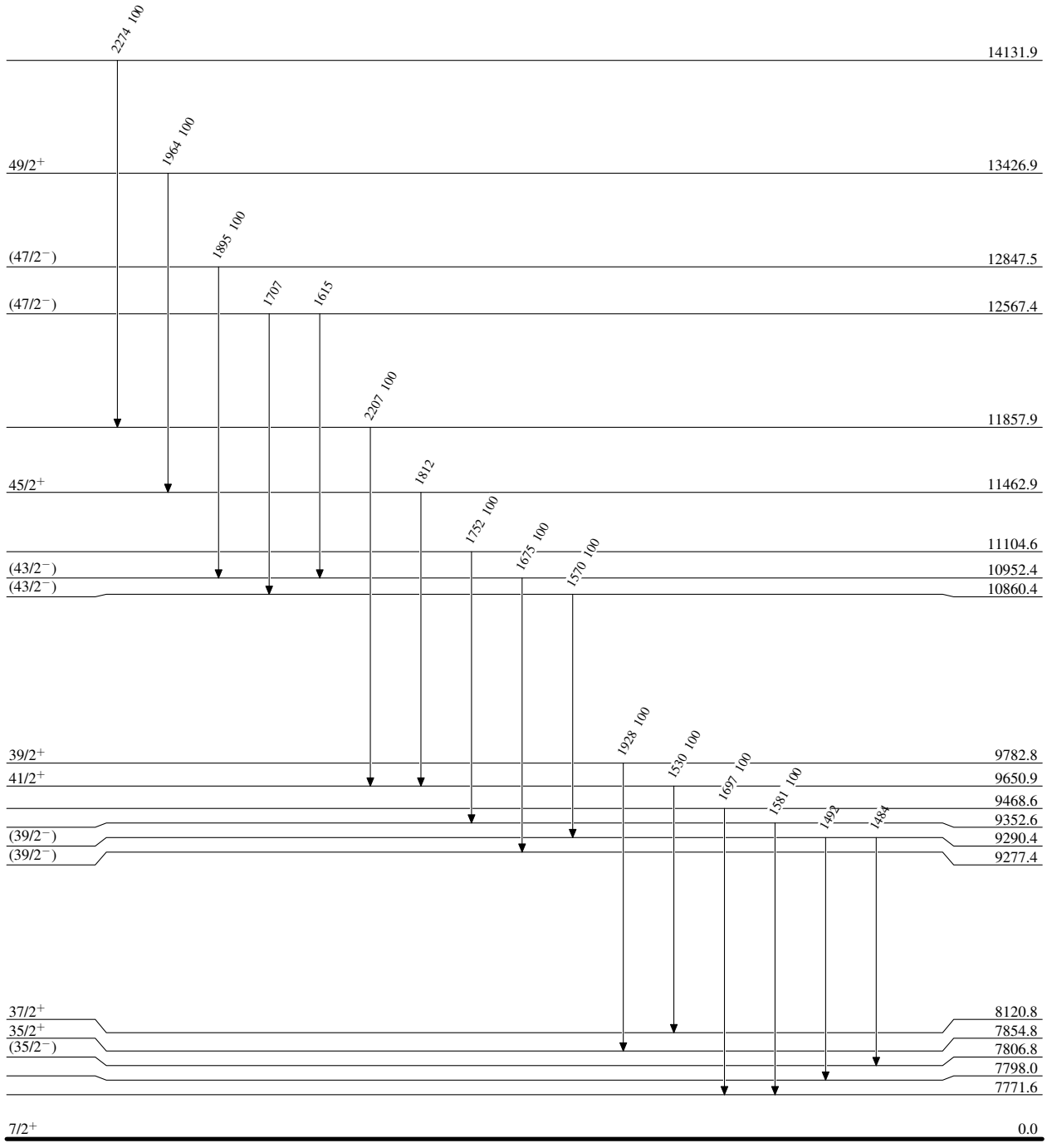


$^{83}_{38}Sr_{45}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{83}_{38}Sr_{45}$

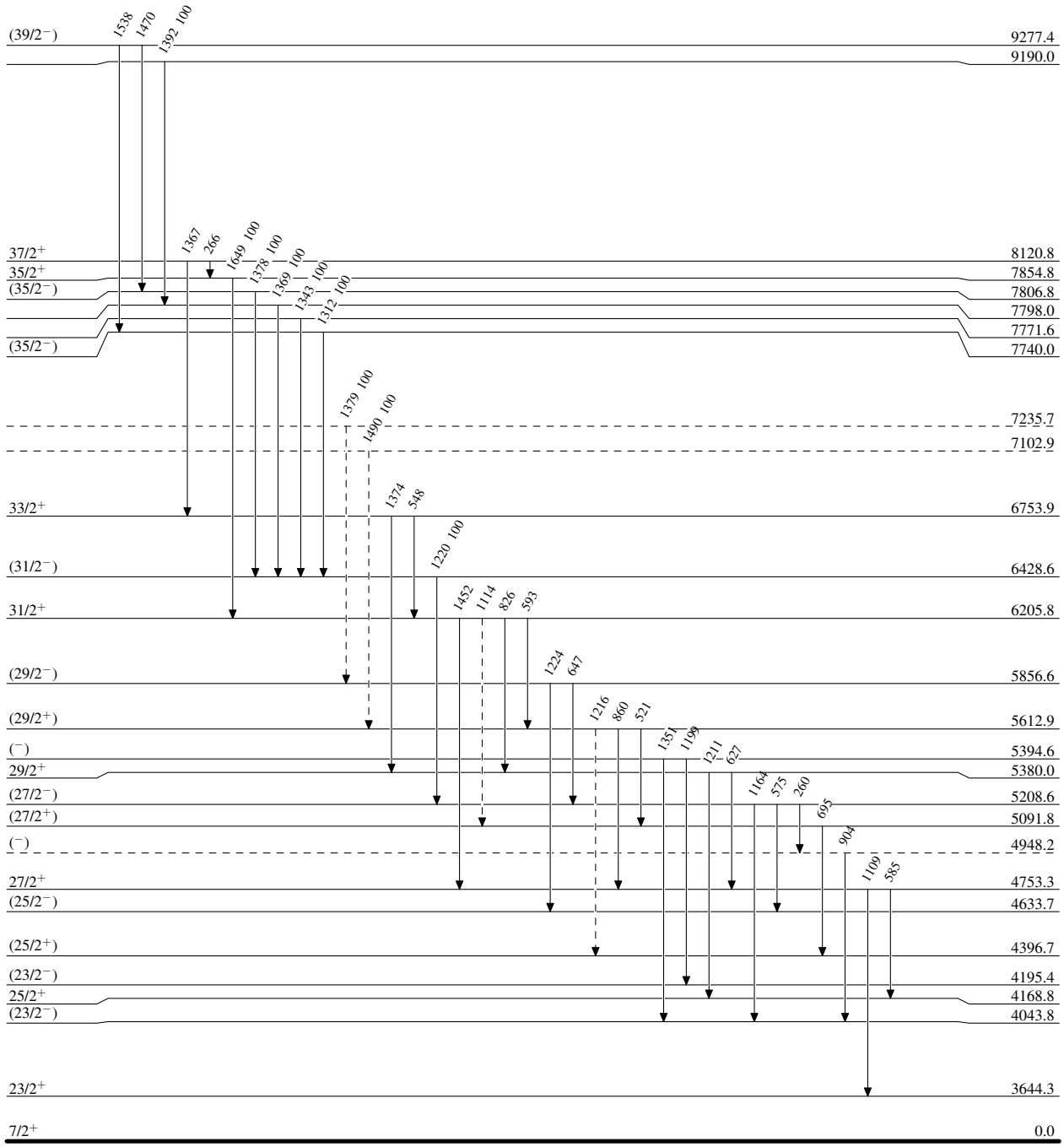
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{83}_{38}Sr_{45}$

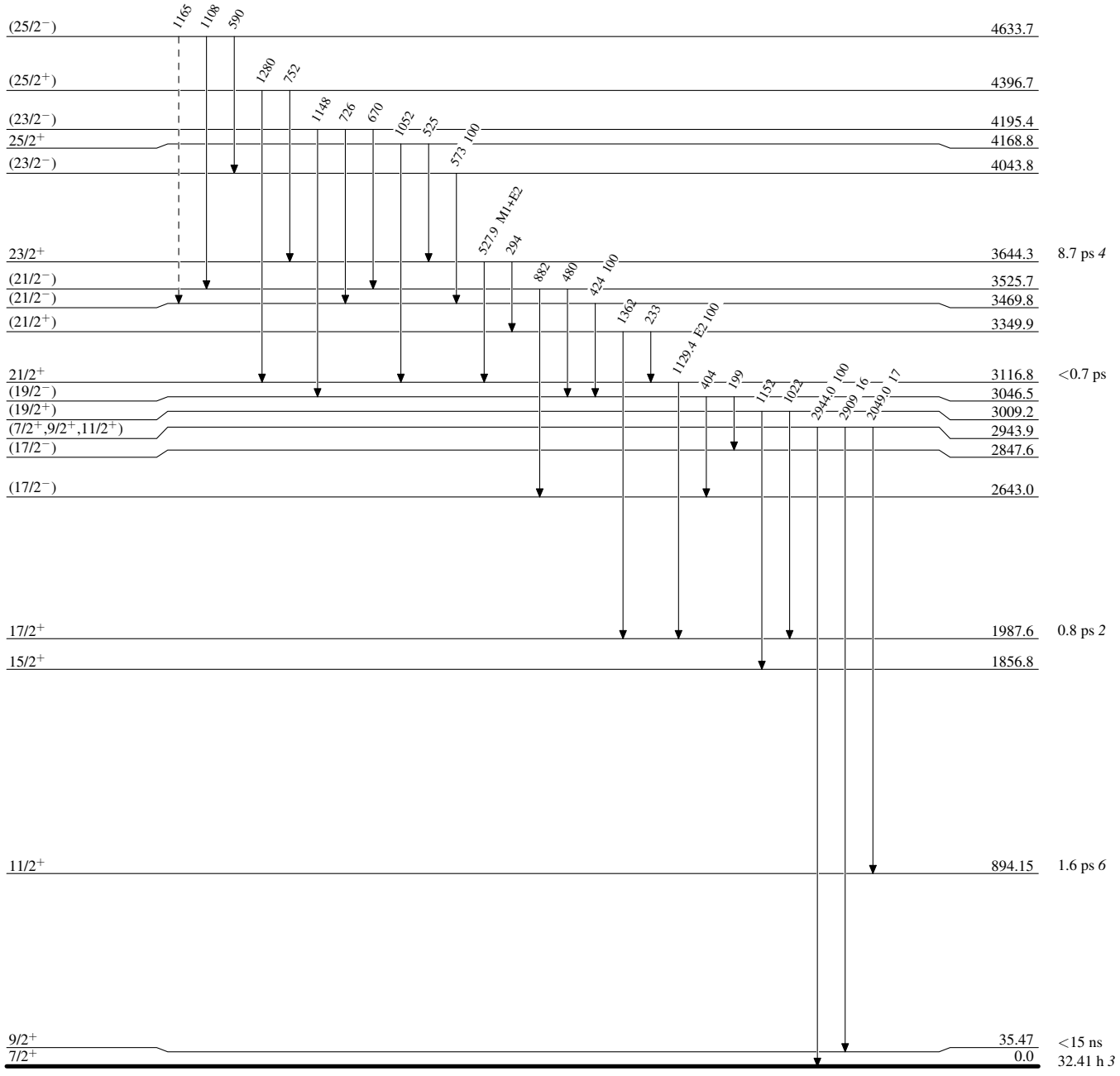
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{83}_{38}Sr_{45}$

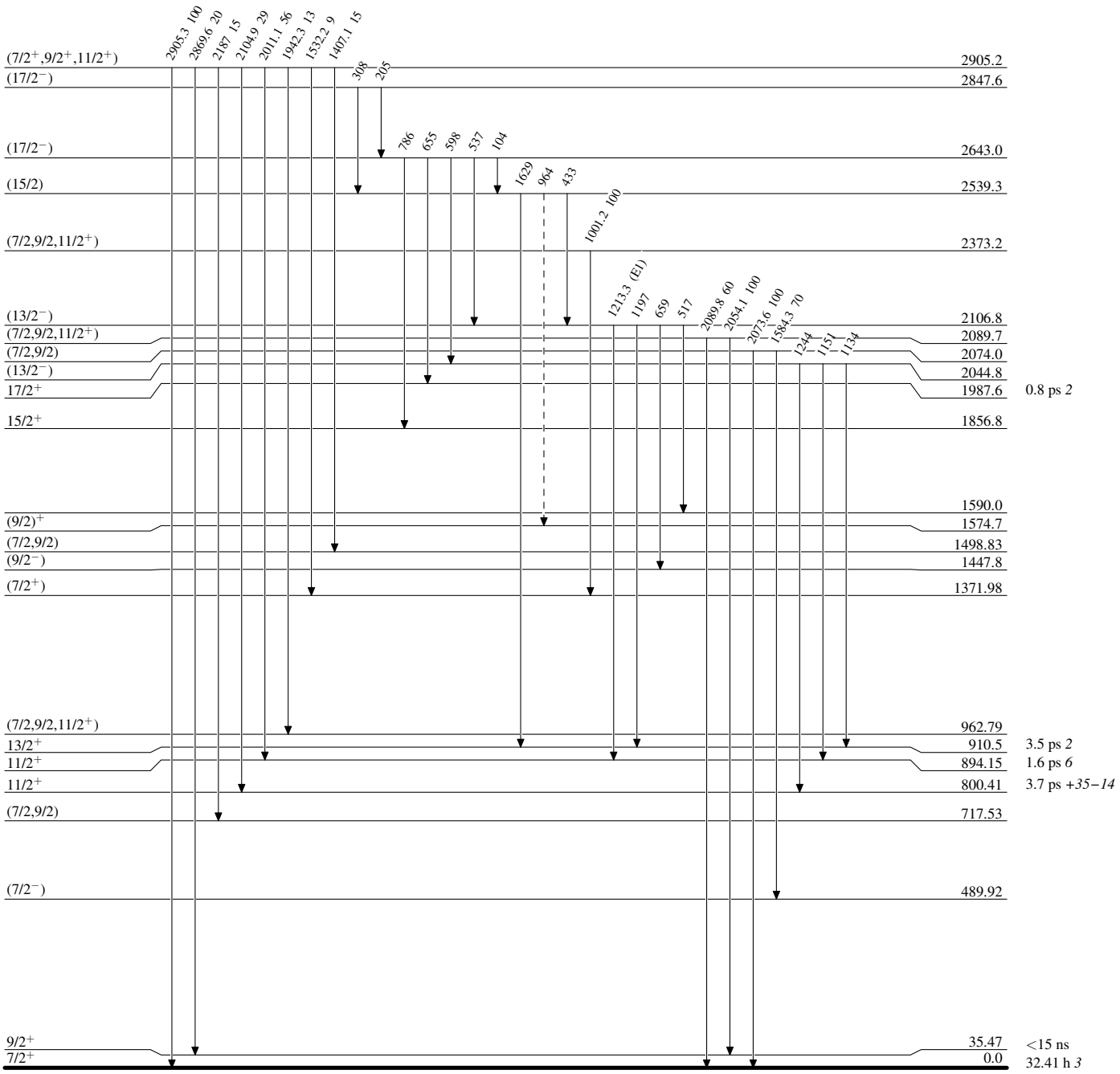
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

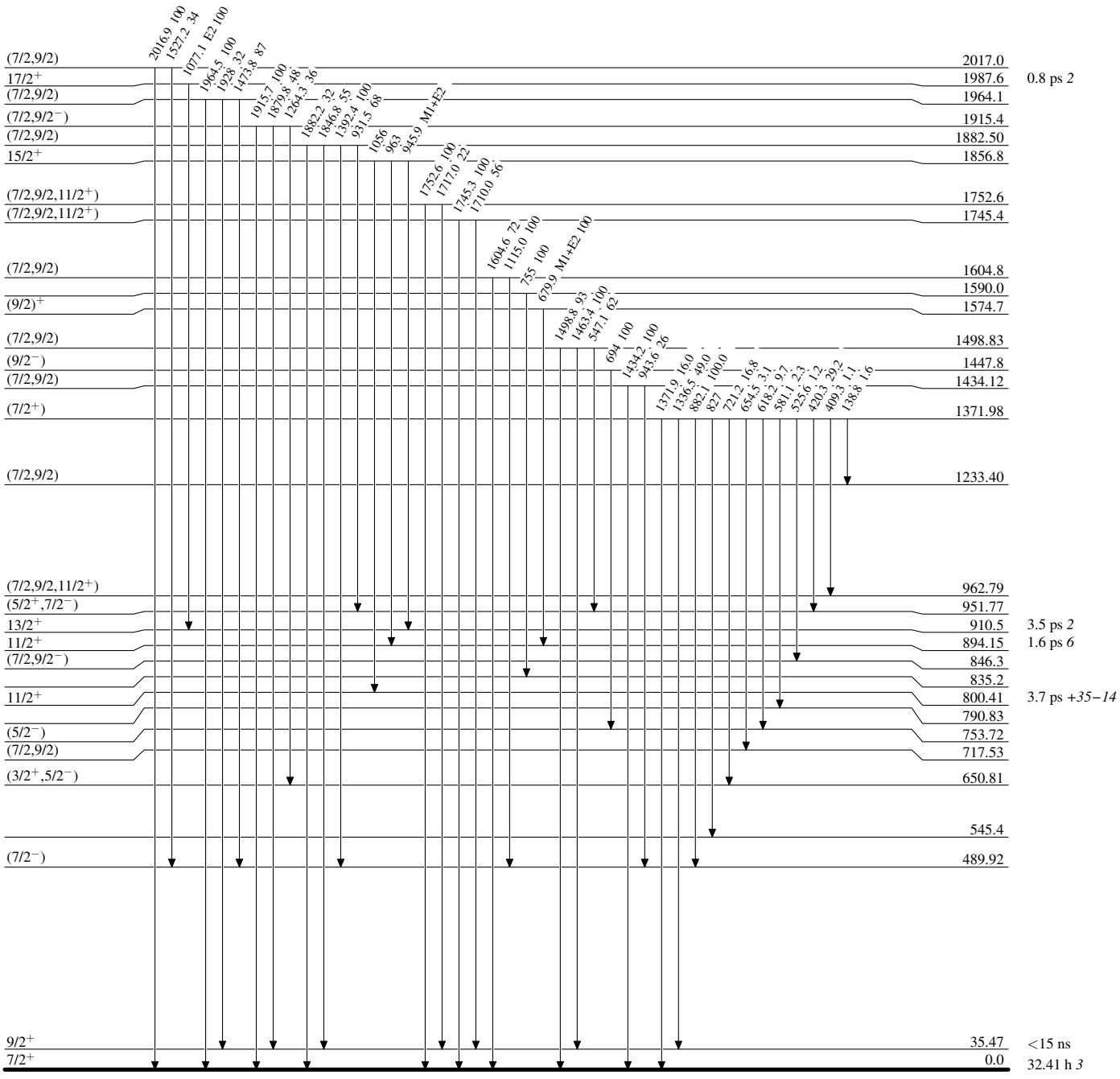


$^{83}_{38}Sr_{45}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

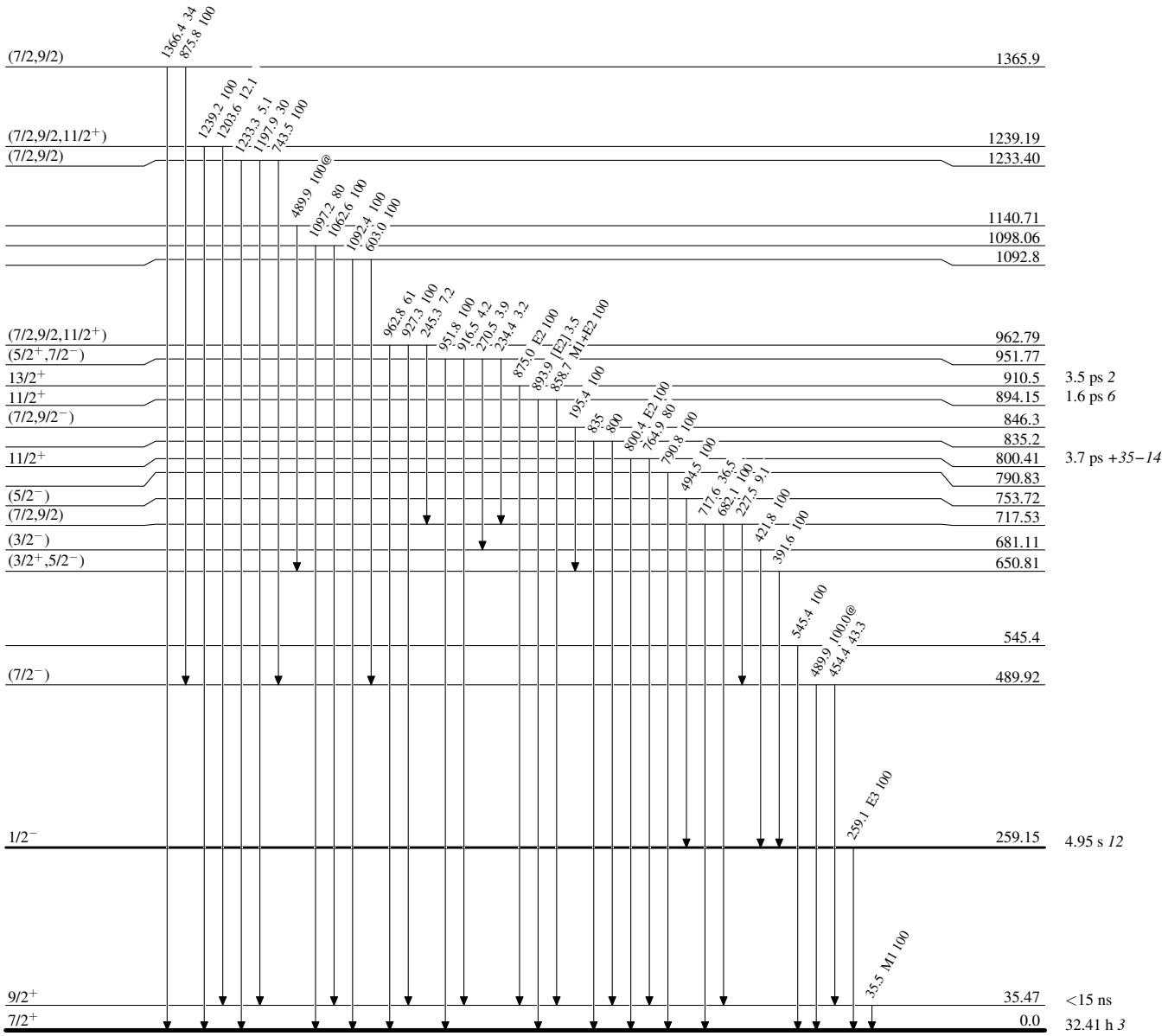


$^{83}_{38}Sr_{45}$

Adopted Levels, Gammas

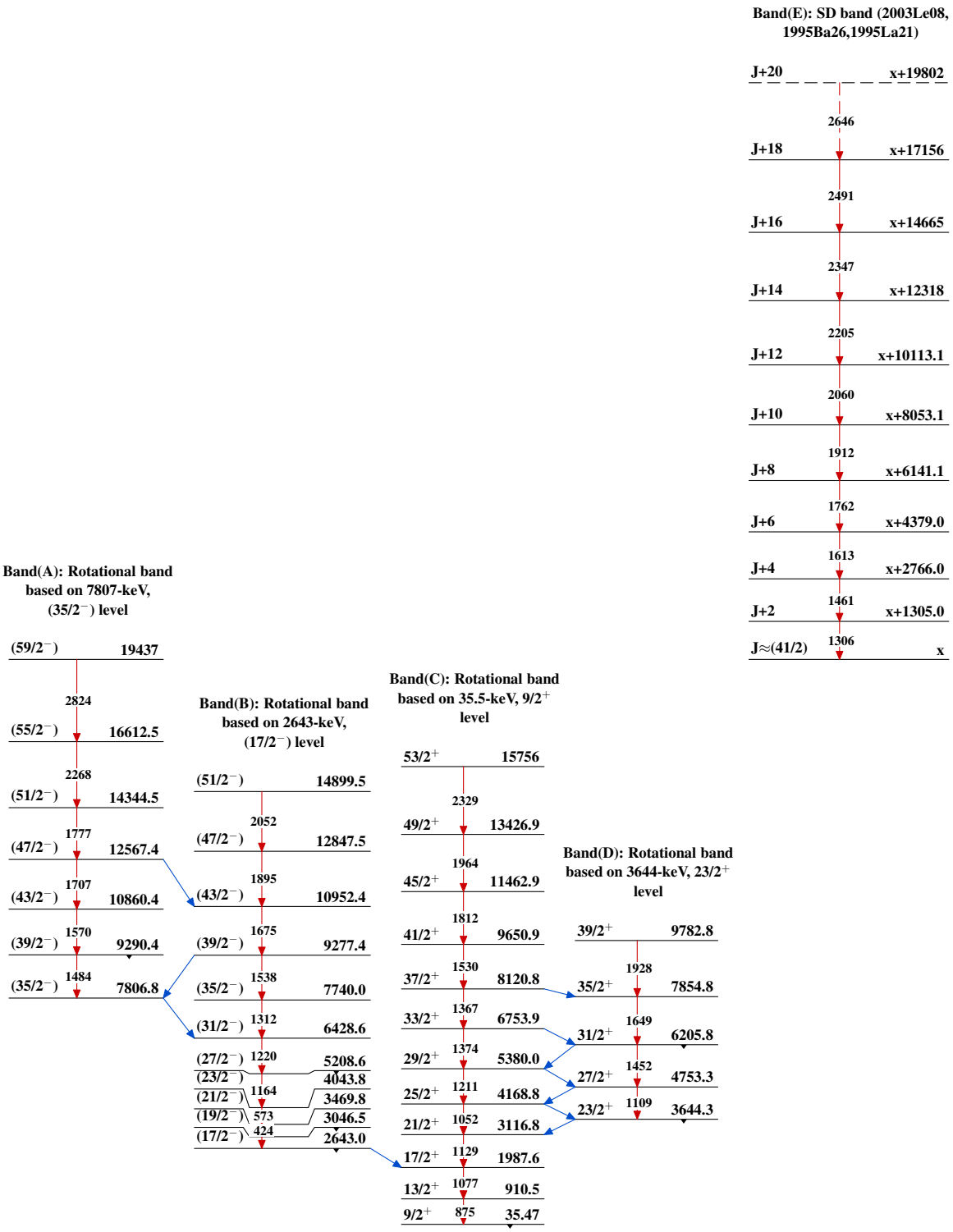
Level Scheme (continued)

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



$^{83}_{38}Sr_{45}$

Adopted Levels, Gammas



$^{83}_{38}Sr_{45}$