^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh	NDS 121, 143 (2014)	31-May-2014

2009Si08: ^{122}Sn(^{11}B,4nγ) E=60 MeV, enriched thick target, 12 Compton-suppressed HPGe detectors plus 14 BGO multiplicity filter; measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO); deduced levels, J, π, bands.

2009Zh20: ^{122}Sn(^{11}B,4nγ) E=55,60 MeV, enriched thick target, 14 Compton-suppressed HPGe detectors; measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO); deduced levels, J, π, bands. Gamma-ray intensities and DCO ratios are not listed in the paper.

2010Wa01: ^{124}Sn(^{11}B,6nγ) E=65 MeV, 14 Compton-suppressed HPGe detectors; measured lifetimes by Doppler-shift attenuation method; deduced transition quadrupole moments.

The level scheme and the most data are from 2009Si08, except when stated otherwise.

^{129}Cs Levels

E(level)[†]	J$^\pi$	T$_{1/2}$[#]	Comments
0.0	1/2$^+$	32.06[@] h *6*	
6.55[e] *5*	5/2$^+$	72[@] ns *6*	
188.8[d] *3*	7/2$^+$	2.26[@] ns *6*	
209.5[‡c] *4*	5/2$^+$		
426.4[e] *3*	9/2$^+$		
575.4[f] *3*	11/2$^-$	0.718 μs *21*	%IT=100 T$_{1/2}$: from Adopted Levels.
604.0[b] *4*	7/2$^+$		The γ-ray branching ratios differ significantly from those in Adopted dataset taken from ^{129}Ba ε decay.
647.7[d] *4*	11/2$^+$		
690.6[c] *4*	9/2$^+$		The γ-ray branching ratios differ significantly from those in Adopted dataset taken from ^{129}Ba ε decay.
1023.3[f] *5*	15/2$^-$		
1032.7[e] *4*	13/2$^+$		
1150.4[g] *6*	13/2$^-$		
1231.8[b] *5*	11/2$^+$		
1278.7[d] *4*	15/2$^+$	0.53 ps *+12−11*	Q(transition)=6.0 *+8−6*.
1339.7[c] *5*	13/2$^+$		
1627.6[f] *6*	19/2$^-$	1.64 ps *+53−35*	Q(transition)=3.6 *+5−4*.
1691.6[g] *6*	17/2$^-$		
1718.2[‡i] *8*	(15/2$^-$)		E(level),J$^\pi$: assumed by the evaluators.
1792.7[e] *5*	17/2$^+$		
1890.6[b] *5*	15/2$^+$		
2046.9[d] *5*	19/2$^+$	0.30 ps *+12−8*	Q(transition)=4.7 *+8−7*.
2122.9[c] *5*	17/2$^+$		
2214.5[i] *6*	19/2$^-$		
2319.4[g] *6*	21/2$^-$		
2395.7[f] *6*	23/2$^-$	0.49 ps *+15−14*	Q(transition)=3.6 *+7−5*.
2500.3 *6*	19/2$^+$		
2632.7[e] *6*	21/2$^+$	0.15 ps *+4−6*	Q(transition)=5.2 *+13−6*.
2666.8[b] *6*	19/2$^+$		
2676.7[&] *5*	19/2$^+$		
2812.7[a] *6*	21/2$^+$		
2842.6[i] *7*	23/2$^-$		
2907.6[d] *6*	23/2$^+$	0.15 ps *+10−7*	Q(transition)=5.0 *+14−13*.
2942.3[j] *6*	21/2$^+$		

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^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)

^{129}Cs Levels (continued)

E(level)[†]	J$^{\pi}$	T$_{1/2}$[#]	Comments
2952.2[c] 6	21/2$^+$		
2980.9[‡] 11	(21/2$^+$)		
3042.9[&] 6	23/2$^+$		
3095.7[g] 7	25/2$^-$		
3156.9[j] 6	23/2$^+$		
3235.7[f] 7	27/2$^-$	0.33 ps *10*	Q(transition)=3.5 *+7−5*.
3291.0 9	25/2$^+$		
3296.4[e] 9	25/2$^+$	<0.18 ps	Q(transition)>8.6.
3406.9[a] 7	25/2$^+$		
3418.8[j] 7	25/2$^+$		
3517.9[h] 8	25/2$^-$		
3590.7[‡i] 8	(27/2$^-$)		
3681.7[j] 7	27/2$^+$		
3684.1? 7	(27/2$^-$)		This level was suggested only by 2009Si08. The depopulating two strong γ rays (589.1 and 1289.3) have the same energies within the experimental uncertainty as the corresponding γ rays from the next level and feed the same levels. The 840.0 keV γ is probably weak with no intensity given. The existence of the level is not discussed in 2009Si08. Evaluators do not see enough evidence for the existence of this level.
3685.1[h] 7	27/2$^-$		
3729.1[d] 9	27/2$^+$	<0.11 ps	Q(transition)>6.4.
3732.6 8	(27/2$^+$)		
3734.9[&] 7	27/2$^+$		
3809.7[c] 7	25/2$^+$		
3919.2 9	(25/2$^+$)		
3924.3[g] 8	29/2$^-$		
3949.0[e] 11	29/2$^+$		
3993.2[j] 8	29/2$^+$		
4026.6[h] 9	29/2$^{(-)}$		
4114.6[f] 8	31/2$^-$	0.139 ps *+49−28*	Q(transition)=4.7 *+6−7*.
4131.1[a] 8	29/2$^+$		
4198.5 12	29/2$^{(+)}$		
4366.5[j] 8	31/2$^+$		
4420.2[h] 10	31/2$^{(-)}$		
4436.2[d] 12	31/2$^+$		
4445.2[‡i] 10	(31/2)		
4599.7[&] 8	31/2$^+$		
4764.3[g] 9	33/2$^-$		
4899.6[h] 12	33/2$^{(-)}$		
5025.8 9	(33/2$^+$)		In 2009Zh20 this level is proposed as the 33/2$^+$ member of band B. In 2009Si08 it is the 5068.0 keV level. The configurations of these levels are not firmly determined, both can belong to band B. In this evaluation the suggestion of 2009Si08 is accepted tentatively.
5032.5[f] 9	35/2$^-$	<0.40 ps	Q(transition)>2.5.
5068.0[a] 9	33/2$^+$		
5212.1[j] 11	(35/2$^+$)		
5281.5[d] 13	35/2$^+$		
5401.7[h] 14	35/2$^{(-)}$		
5548.0[&] 10	35/2$^+$		
5567.8[‡] 11	(35/2$^+$)		In 2009Zh20 this level is proposed as the 35/2$^+$ member of band A. In 2009Si08 it

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^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)

^{129}Cs Levels (continued)

E(level)[†]	J$^{\pi}$	Comments
		is the 5548.0 keV level. The configurations of these levels are not firmly determined, both can belong to band A. In this evaluation the suggestion of 2009Si08 is accepted tentatively.
5692.2[g] *9*	(37/2$^-$)	
5989.5[f] *9*	39/2$^-$	
6051.8[‡] *15*		In 2009Zh20 this level is proposed as the 37/2$^+$ member of band B. In this evaluation the suggestion of 2009Si08 has been accepted tentatively for the highest-spin states of this band. See the comments in levels 5025.8 keV and 5567.8 keV.
6200.0[j] *13*	(39/2$^+$)	
6270.5[‡d] *17*	(39/2$^+$)	
7000.7[f] *12*	43/2$^-$	
7379.5[‡d] *20*	(43/2$^+$)	
8099.4[f] *14*	(47/2$^-$)	

[†] From least-squares fit to Eγ data.
[‡] Level from 2009Zh20.
[#] From 2010Wa01, unless otherwise noted.
[@] From Adopted Levels.
[&] Band(A): Possible 3-qp band,α=−1/2. Possible configuration=$\pi h_{11/2}\otimes\nu h_{11/2}\otimes\ \nu(g_{7/2}/s_{1/2}/d_{3/2})$.
[a] Band(a): Possible 3-qp band,α=+1/2. Possible configuration=$\pi h_{11/2}\otimes\nu h_{11/2}\otimes\ \nu(g_{7/2}/s_{1/2}/d_{3/2})$.
[b] Band(B): $\pi g_{7/2}+\gamma$ vibration.
[c] Band(C): $\pi g_{7/2}$,α=+1/2. Favored signature partner, band crossing due to $h_{11/2}$ proton pair at $\hbar\omega$=0.41 MeV.
[d] Band(c): $\pi g_{7/2}$,α=−1/2. Unfavored signature partner, band crossing due to $h_{11/2}$ proton pair at $\hbar\omega$=0.37 MeV.
[e] Band(D): $\pi d_{5/2}$,α=+1/2. Favored signature partner, band crossing due to $h_{11/2}$ proton pair at $\hbar\omega$=0.37 MeV.
[f] Band(E): $\pi h_{11/2}$,α=−1/2. Favored signature partner, band crossing due to $h_{11/2}$ neutron pair at $\hbar\omega$=0.43 MeV.
[g] Band(e): $\pi h_{11/2}$,α=+1/2. Unfavored signature partner, band crossing due to $h_{11/2}$ neutron pair at $\hbar\omega$=0.41 MeV.
[h] Band(F): Possible magnetic-rotational band. Possible configuration=$\pi h_{11/2}\otimes\nu h^2_{11/2}$.
[i] Band(G): $\pi h_{11/2}+\gamma$ vibration. The γ vibration refers to that of a triaxial core.
[j] Band(H): Possible 3-qp, ΔJ=1 band. Possible configuration=$\pi h_{11/2}\otimes\nu h_{11/2}\otimes\ \nu(g_{7/2}/s_{1/2}/d_{3/2})$.

γ(^{129}Cs)

The DCO ratios were deduced from coincidence spectra with gates on transitions of known ΔJ=2 quadrupole multipolarity (2009Si08). Expected ratios are 1.0 for ΔJ=2, quadrupole and ≈0.6 for ΔJ=1, dipole transitions.

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	α[@]	Comments
6.55 *5*		6.55	5/2$^+$	0.0	1/2$^+$			
136.5 *7*	0.84 *8*	2812.7	21/2$^+$	2676.7	19/2$^+$	[M1+E2]	0.50 *13*	α(K)=0.39 *7*; α(L)=0.09 *5*; α(M)=0.019 *11* α(N)=0.0039 *21*; α(O)=0.00049 *23*; α(P)=1.30×10^{-5} *5*
145.3 *7*	3.3 *4*	2812.7	21/2$^+$	2666.8	19/2$^+$	(M1+E2)	0.41 *10*	DCO=0.62 *12* α(K)=0.32 *5*; α(L)=0.07 *4*; α(M)=0.015 *8* α(N)=0.0030 *15*; α(O)=0.00038 *17*; α(P)=1.08×10^{-5} *4*
149.1 *4*	65 *6*	575.4	11/2$^-$	426.4	9/2$^+$	(E1)	0.0722 *12*	DCO=0.64 *5* α(K)=0.0620 *10*; α(L)=0.00810 *13*; α(M)=0.00165 *3*

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^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)

$\gamma(^{129}Cs)$ (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[@]	Comments
								α(N)=0.000344 *6*; α(O)=4.65×10^{-5} *8*; α(P)=2.03×10^{-6} *4*
166.0 *7*	0.23 *4*	2666.8	19/2$^+$	2500.3	19/2$^+$			
167.1 *7*	2.9 *4*	3685.1	27/2$^-$	3517.9	25/2$^-$	(M1+E2)	0.26 *5*	DCO=0.58 *12* α(K)=0.21 *3*; α(L)=0.041 *18*; α(M)=0.009 *4* α(N)=0.0018 *8*; α(O)=0.00023 *9*; α(P)=7.20×10^{-6} *14*
177.5 *7*	0.11 *2*	2676.7	19/2$^+$	2500.3	19/2$^+$			
182.3 *4*	109 *8*	188.8	7/2$^+$	6.55	5/2$^+$	(M1+E2)	0.20 *3*	DCO=0.62 *5* α(K)=0.160 *17*; α(L)=0.030 *12*; α(M)=0.0063 *25* α(N)=0.0013 *5*; α(O)=0.00017 *6*; α(P)=5.59×10^{-6} *12*
202.8 *7*	5.1 *5*	209.5	5/2$^+$	6.55	5/2$^+$	(M1+E2)	0.142 *17*	DCO=0.54 *8* α(K)=0.116 *9*; α(L)=0.021 *7*; α(M)=0.0043 *15* α(N)=0.0009 *3*; α(O)=0.00012 *4*; α(P)=4.10×10^{-6} *15* DCO value contradicts 5/2$^+$ to 5/2$^+$ assignment (evaluators).
205.5 *7*	1.11 *14*	3156.9	23/2$^+$	2952.2	21/2$^+$	(M1+E2)	0.137 *16*	DCO=0.52 *11* α(K)=0.112 *8*; α(L)=0.020 *6*; α(M)=0.0041 *14* α(N)=0.0009 *3*; α(O)=0.00011 *3*; α(P)=3.95×10^{-6} *16*
214.5 *7*	0.62 *7*	3156.9	23/2$^+$	2942.3	21/2$^+$	(M1+E2)	0.120 *12*	DCO=0.52 *14* α(K)=0.098 *6*; α(L)=0.017 *5*; α(M)=0.0035 *11* α(N)=0.00074 *21*; α(O)=9.6×10^{-5} *23*; α(P)=3.49×10^{-6} *16*
230.3 *7*	3.2 *4*	3042.9	23/2$^+$	2812.7	21/2$^+$	(M1+E2)	0.096 *8*	DCO=0.54 *11* α(K)=0.080 *4*; α(L)=0.013 *4*; α(M)=0.0028 *8* α(N)=0.00058 *15*; α(O)=7.6×10^{-5} *16*; α(P)=2.85×10^{-6} *17*
237.6 *7*	4.7 *5*	426.4	9/2$^+$	188.8	7/2$^+$	(M1+E2)	0.088 *6*	DCO=0.52 *11* α(K)=0.0727 *23*; α(L)=0.012 *3*; α(M)=0.0025 *6* α(N)=0.00052 *12*; α(O)=6.9×10^{-5} *13*; α(P)=2.60×10^{-6} *17*
262.1 *7*	0.37 *10*	3418.8	25/2$^+$	3156.9	23/2$^+$	(M1+E2)	0.0654 *23*	DCO=0.54 *14* α(K)=0.0545 *9*; α(L)=0.0087 *16*; α(M)=0.0018 *4* α(N)=0.00038 *7*; α(O)=5.0×10^{-5} *7*; α(P)=1.97×10^{-6} *16* DCO value for 262.1γ+262.8γ.
262.8 *7*	0.83 *20*	3681.7	27/2$^+$	3418.8	25/2$^+$			
263.9 *7*	1.18 *15*	690.6	9/2$^+$	426.4	9/2$^+$			
265.5 *7*	0.27 *5*	2942.3	21/2$^+$	2676.7	19/2$^+$			
306.0[#]		4420.2	31/2$^{(-)}$	4114.6	31/2$^-$			
311.7 *7*	0.80 *14*	3993.2	29/2$^+$	3681.7	27/2$^+$			
327.9 *7*	0.22 *4*	3734.9	27/2$^+$	3406.9	25/2$^+$	(M1+E2)	0.0341 *14*	DCO=0.54 *15*
341.3 *7*	5.6 *5*	4026.6	29/2$^{(-)}$	3685.1	27/2$^-$	(M1+E2)	0.0304 *15*	DCO=0.62 *10*

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^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)

γ(^{129}Cs) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[@]	Comments
354.5[#]		3590.7	(27/2$^-$)	3235.7	27/2$^-$			
363.6 *7*	2.2 *3*	3406.9	25/2$^+$	3042.9	23/2$^+$	(M1+E2)	0.0254 *17*	DCO=0.59 *12*
366.5 *7*	0.25 *4*	3042.9	23/2$^+$	2676.7	19/2$^+$			
373.5 *7*	0.65 *8*	4366.5	31/2$^+$	3993.2	29/2$^+$			
375.5 *7*	0.14 *3*	3418.8	25/2$^+$	3042.9	23/2$^+$			
384.9 *7*	3.9 *4*	1032.7	13/2$^+$	647.7	11/2$^+$	D+Q		DCO=0.62 *10*
386.4 *4*	45 *4*	575.4	11/2$^-$	188.8	7/2$^+$	[M2]	0.0864	DCO=0.62 *5* α(K)=0.0729 *11*; α(L)=0.01076 *16*; α(M)=0.00223 *4* α(N)=0.000472 *7*; α(O)=6.53×10^{-5} *10*; α(P)=3.12×10^{-6} *5* The DCO value contradicts with the multipolarity assignment.
393.5 *7*	3.8 *4*	4420.2	31/2$^{(-)}$	4026.6	29/2$^{(-)}$	(M1+E2)	0.0204 *17*	DCO=0.52 *14*
394.6 *7*	0.81 *14*	604.0	7/2$^+$	209.5	5/2$^+$			
395.7 *7*	0.31 *6*	4131.1	29/2$^+$	3734.9	27/2$^+$	(M1+E2)	0.0201 *17*	DCO=0.52 *14*
400.0[#]		4131.1	29/2$^+$	3729.1	27/2$^+$			
415.3 *7*	0.35 *5*	604.0	7/2$^+$	188.8	7/2$^+$			
419.7 *4*	88 *5*	426.4	9/2$^+$	6.55	5/2$^+$			
422.5		3517.9	25/2$^-$	3095.7	25/2$^-$			
425[#]		5025.8	(33/2$^+$)	4599.7	31/2$^+$			
446		2842.6	23/2$^-$	2395.7	23/2$^-$			
447.9 *4*	100 *4*	1023.3	15/2$^-$	575.4	11/2$^-$			
449.5 *7*	8.5 *8*	3685.1	27/2$^-$	3235.7	27/2$^-$	D+Q		DCO=0.82 *16*
459.2 *4*	57 *3*	647.7	11/2$^+$	188.8	7/2$^+$			
468.5[&] *7*	0.19[&] *4*	4599.7	31/2$^+$	4131.1	29/2$^+$	D+Q		DCO=0.58 *14* DCO value for 468.5 doublet.
468.5[&] *7*	0.10[&] *3*	5068.0	33/2$^+$	4599.7	31/2$^+$			
469.4 *7*	1.33 *18*	4198.5	29/2$^{(+)}$	3729.1	27/2$^+$	D		DCO=0.62 *16*
479.4 *7*	3.7 *5*	4899.6	33/2$^{(-)}$	4420.2	31/2$^{(-)}$	D+Q		DCO=0.45 *14*
479.7 *7*	0.22 *4*	5548.0	35/2$^+$	5068.0	33/2$^+$			DCO=0.45 *14*
481.0 *4*	15.2 *9*	690.6	9/2$^+$	209.5	5/2$^+$			
484[#]		6051.8		5567.8	(35/2$^+$)			
496 *1*		2214.5	19/2$^-$	1718.2	(15/2$^-$)			
501.6 *7*	1.58 *16*	690.6	9/2$^+$	188.8	7/2$^+$			
502.1 *7*	2.8 *4*	5401.7	35/2$^{(-)}$	4899.6	33/2$^{(-)}$	D+Q		DCO=0.65 *12*
514.0 *7*	0.39 *7*	1792.7	17/2$^+$	1278.7	15/2$^+$			
522.8[&] *7*	9.1[&] *7*	2214.5	19/2$^-$	1691.6	17/2$^-$	D+Q		DCO=0.52 *8* DCO value for 522.8 doublet.
522.8[&] *7*	4.2[&] *4*	2842.6	23/2$^-$	2319.4	21/2$^-$			
524.5 *7*	0.47 *8*	3681.7	27/2$^+$	3156.9	23/2$^+$			
541.5[a] *7*		1691.6	17/2$^-$	1150.4	13/2$^-$			
542.5[#]		5567.8	(35/2$^+$)	5025.8	(33/2$^+$)			
569.2 *7*		575.4	11/2$^-$	6.55	5/2$^+$	[E3]	0.0175	
574.5 *7*	0.12 *2*	3993.2	29/2$^+$	3418.8	25/2$^+$			
575.3 *7*	4.1 *4*	1150.4	13/2$^-$	575.4	11/2$^-$			
586.8 *7*	0.38 *6*	2632.7	21/2$^+$	2046.9	19/2$^+$			
587 *1*		2214.5	19/2$^-$	1627.6	19/2$^-$			
589.1[a] *7*	5.2 *5*	3684.1?	(27/2$^-$)	3095.7	25/2$^-$	D+Q		DCO=0.47 *9* DCO value for 589.1γ+589.5γ.
589.5 *7*	1.7 *2*	3685.1	27/2$^-$	3095.7	25/2$^-$	D+Q		DCO=0.47 *9* DCO value for 589.1γ+589.5γ.
594.5 *7*	0.10 *2*	3406.9	25/2$^+$	2812.7	21/2$^+$			

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^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)

γ(^{129}Cs) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
597.5 *7*	2.5 *3*	604.0	7/2$^+$	6.55	5/2$^+$		
604.3 *4*	93 *5*	1627.6	19/2$^-$	1023.3	15/2$^-$	E2	DCO=1.05 *8*
606.1 *4*	28.9 *16*	1032.7	13/2$^+$	426.4	9/2$^+$	Q	DCO=0.92 *10*
627.8 *4*	15.2 *8*	2319.4	21/2$^-$	1691.6	17/2$^-$	Q	DCO=0.98 *12* DCO value for 627.8γ+628.0γ.
628.0[&] *7*	2.5[&] *3*	1231.8	11/2$^+$	604.0	7/2$^+$		
628.0[&] *7*	2.2[&] *3*	2842.6	23/2$^-$	2214.5	19/2$^-$		
631.3 *4*	27.1 *16*	1278.7	15/2$^+$	647.7	11/2$^+$	E2	DCO=1.12 *9*
648.9 *4*	14.1 *8*	1339.7	13/2$^+$	690.6	9/2$^+$	Q	DCO=0.95 *9*
650.6 *7*	4.3 *5*	4764.3	33/2$^-$	4114.6	31/2$^-$	D+Q	DCO=0.68 *11*
652.6 *7*	2.9 *4*	3949.0	29/2$^+$	3296.4	25/2$^+$	Q	DCO=0.94 *17*
658.3 *7*	3.2 *4*	3291.0	25/2$^+$	2632.7	21/2$^+$	Q	DCO=0.92 *16*
659.0 *7*	2.3 *3*	1890.6	15/2$^+$	1231.8	11/2$^+$	Q	DCO=0.94 *17*
659.2 *7*	2.5 *3*	5692.2	(37/2$^-$)	5032.5	35/2$^-$		
663.7 *7*	4.5 *5*	3296.4	25/2$^+$	2632.7	21/2$^+$	E2	DCO=0.92 *17*
668.0 *4*	12.8 *8*	1691.6	17/2$^-$	1023.3	15/2$^-$	D+Q	DCO=0.54 *5*
684.6 *7*	0.95 *15*	4366.5	31/2$^+$	3681.7	27/2$^+$	Q	DCO=0.92 *22*
688.2 *7*	8.0 *7*	3924.3	29/2$^-$	3235.7	27/2$^-$	D+Q	DCO=0.45 *8*
690.5 *7*	0.37 *6*	3732.6	(27/2$^+$)	3042.9	23/2$^+$		
692.1 *4*	16.4 *10*	2319.4	21/2$^-$	1627.6	19/2$^-$	D+Q	DCO=0.46 *5*
692.5[&] *7*	2.2[&] *2*	1339.7	13/2$^+$	647.7	11/2$^+$	D+Q	DCO=0.62 *14*
692.5[&] *7*	0.25[&] *4*	3734.9	27/2$^+$	3042.9	23/2$^+$		DCO=0.62 *14*
699.9 *7*	9.8 *9*	3095.7	25/2$^-$	2395.7	23/2$^-$	D+Q	DCO=0.43 *7*
707.1 *7*	3.5 *4*	4436.2	31/2$^+$	3729.1	27/2$^+$	Q	DCO=0.92 *16*
724.3 *7*	0.12 *2*	4131.1	29/2$^+$	3406.9	25/2$^+$		
748.5[#]		3590.7	(27/2$^-$)	2842.6	23/2$^-$		
759.8 *4*	18.2 *14*	1792.7	17/2$^+$	1032.7	13/2$^+$	Q	DCO=0.97 *9*
768.2 *4*	72 *5*	2395.7	23/2$^-$	1627.6	19/2$^-$	E2	DCO=1.12 *10*
768.3 *4*	20.3 *12*	2046.9	19/2$^+$	1278.7	15/2$^+$	E2	DCO=1.02 *12*
774.5 *7*	1.00 *17*	3681.7	27/2$^+$	2907.6	23/2$^+$		
775.9 *7*	2.3 *3*	2666.8	19/2$^+$	1890.6	15/2$^+$	Q	DCO=0.96 *18*
776.5 *4*	13.1 *10*	3095.7	25/2$^-$	2319.4	21/2$^-$	Q	DCO=0.92 *14*
783.1 *4*	13.9 *9*	2122.9	17/2$^+$	1339.7	13/2$^+$	Q	DCO=0.96 *14*
786.5 *7*	0.89 *17*	2676.7	19/2$^+$	1890.6	15/2$^+$	Q	DCO=1.12 *19*
805.5 *7*	1.5 *2*	1231.8	11/2$^+$	426.4	9/2$^+$		
821.5 *7*	5.4 *6*	3729.1	27/2$^+$	2907.6	23/2$^+$	E2	DCO=0.92 *17*
825.0[#]		3734.9	27/2$^+$	2907.6	23/2$^+$		
828.7 *7*	5.6 *6*	3924.3	29/2$^-$	3095.7	25/2$^-$	Q	DCO=0.98 *16*
829.3 *7*	6.1 *6*	2952.2	21/2$^+$	2122.9	17/2$^+$	Q	DCO=0.92 *17*
839.6 *7*	2.4 *3*	4764.3	33/2$^-$	3924.3	29/2$^-$		
839.7 *4*	17.6 *14*	2632.7	21/2$^+$	1792.7	17/2$^+$	E2	DCO=1.02 *15* B(E2)(W.u.)=2.3×10^2 *+10−7*
840.0[a] *7*		3684.1?	(27/2$^-$)	2842.6	23/2$^-$		
840.1 *4*	58 *3*	3235.7	27/2$^-$	2395.7	23/2$^-$	E2	DCO=0.98 *10*
844.6[a] *7*		2122.9	17/2$^+$	1278.7	15/2$^+$		E_γ: from figure 1 of 2009Si08, not listed in authors' table I.
845.3 *7*	2.3 *3*	5281.5	35/2$^+$	4436.2	31/2$^+$	Q	DCO=0.92 *18*
845.6 *7*	0.82 *12*	5212.1	(35/2$^+$)	4366.5	31/2$^+$		
854[#]		4445.2	(31/2)	3590.7	(27/2$^-$)		
857.2 *7*	1.7 *3*	3809.7	25/2$^+$	2952.2	21/2$^+$	Q	DCO=1.14 *24*
858[#]		2980.9	(21/2$^+$)	2122.9	17/2$^+$		
860.6 *4*	12.9 *10*	2907.6	23/2$^+$	2046.9	19/2$^+$	E2	DCO=0.94 *14*
864.5 *7*	0.10 *2*	4599.7	31/2$^+$	3734.9	27/2$^+$		

Continued on next page (footnotes at end of table)

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)

γ(^{129}Cs) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
879.0 *4*	29.9 *16*	4114.6	31/2$^-$	3235.7	27/2$^-$	E2	DCO=0.91 *9*
895.3 *7*	0.32 *6*	2942.3	21/2$^+$	2046.9	19/2$^+$	D+Q	DCO=0.58 *14*
895.5 *7*	0.17 *3*	5025.8	(33/2$^+$)	4131.1	29/2$^+$		
902.5 *7*	0.38 *7*	3809.7	25/2$^+$	2907.6	23/2$^+$		
905.5 *7*	0.72 *12*	2952.2	21/2$^+$	2046.9	19/2$^+$		
917.7 *4*	14.5 *9*	5032.5	35/2$^-$	4114.6	31/2$^-$	E2	DCO=1.05 *12*
928.5 *7*		5692.2	(37/2$^-$)	4764.3	33/2$^-$		
936.5 *7*	0.10 *2*	5068.0	33/2$^+$	4131.1	29/2$^+$		
948.5 *7*	0.10 *2*	5548.0	35/2$^+$	4599.7	31/2$^+$		
957.0 *4*	11.7 *8*	5989.5	39/2$^-$	5032.5	35/2$^-$	Q	DCO=0.94 *12*
967.5[#]		5567.8	(35/2$^+$)	4599.7	31/2$^+$		
987.9 *7*	0.75 *12*	6200.0	(39/2$^+$)	5212.1	(35/2$^+$)		
989.0[#]		6270.5	(39/2$^+$)	5281.5	35/2$^+$		
1011.2 *7*	5.2 *5*	7000.7	43/2$^-$	5989.5	39/2$^-$	Q	DCO=1.12 *16*
1011.6 *7*	4.2 *4*	3919.2	(25/2$^+$)	2907.6	23/2$^+$	D	DCO=0.52 *8*
1020.5 *7*	6.7 *6*	2812.7	21/2$^+$	1792.7	17/2$^+$	Q	DCO=0.98 *17*
1098.7 *7*	2.1 *2*	8099.4	(47/2$^-$)	7000.7	43/2$^-$		
1109.0[#]		7379.5	(43/2$^+$)	6270.5	(39/2$^+$)		
1109.4 *7*	3.4 *4*	3156.9	23/2$^+$	2046.9	19/2$^+$	Q	DCO=0.98 *20*
1122.0 *7*	4.7 *4*	3517.9	25/2$^-$	2395.7	23/2$^-$	D+Q	DCO=0.62 *9*
1142.5[#]		1718.2	(15/2$^-$)	575.4	11/2$^-$		
1191.5 *7*	6.0 *5*	2214.5	19/2$^-$	1023.3	15/2$^-$	Q	DCO=0.94 *18*
1194.5[#]		3590.7	(27/2$^-$)	2395.7	23/2$^-$		
1210[#]		4445.2	(31/2)	3235.7	27/2$^-$		
1214.3 *7*	5.6 *4*	2842.6	23/2$^-$	1627.6	19/2$^-$	Q	DCO=0.89 *16*
1222.3 *7*	1.4 *2*	2500.3	19/2$^+$	1278.7	15/2$^+$	Q	DCO=0.88 *24*
1242.9 *7*	1.4 *2*	1890.6	15/2$^+$	647.7	11/2$^+$	Q	DCO=0.92 *20*
1289.1 *7*	5.5 *4*	3685.1	27/2$^-$	2395.7	23/2$^-$	Q	DCO=0.92 *17* DCO value for 1289.1γ+1289.3γ.
1289.3[a] *7*	4.3 *4*	3684.1?	(27/2$^-$)	2395.7	23/2$^-$	Q	DCO=0.92 *17* DCO value for 1289.1γ+1289.3γ.
1388.4 *7*	1.4 *2*	2666.8	19/2$^+$	1278.7	15/2$^+$	Q	DCO=1.12 *19*
1396.0[#]		2676.7	19/2$^+$	1278.7	15/2$^+$		

[†] From 2009Si08, unless otherwise stated. Energy uncertainties are assigned as 0.4 keV for transitions with I$\gamma\geq$10 and 0.7 keV for transitions with Iγ<10, based on a general comment in 2009Si08.

[‡] From DCO data and RUL. Below Eγ=500 keV or so, RUL is used assuming level half-life is less than 10 ns or so. Otherwise in all ΔJ=2 cases mult=Q, and for ΔJ=0 or 1, mult=D+Q are assigned.

[#] γ reported by 2009Zh20.

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

[&] Multiply placed with intensity suitably divided.

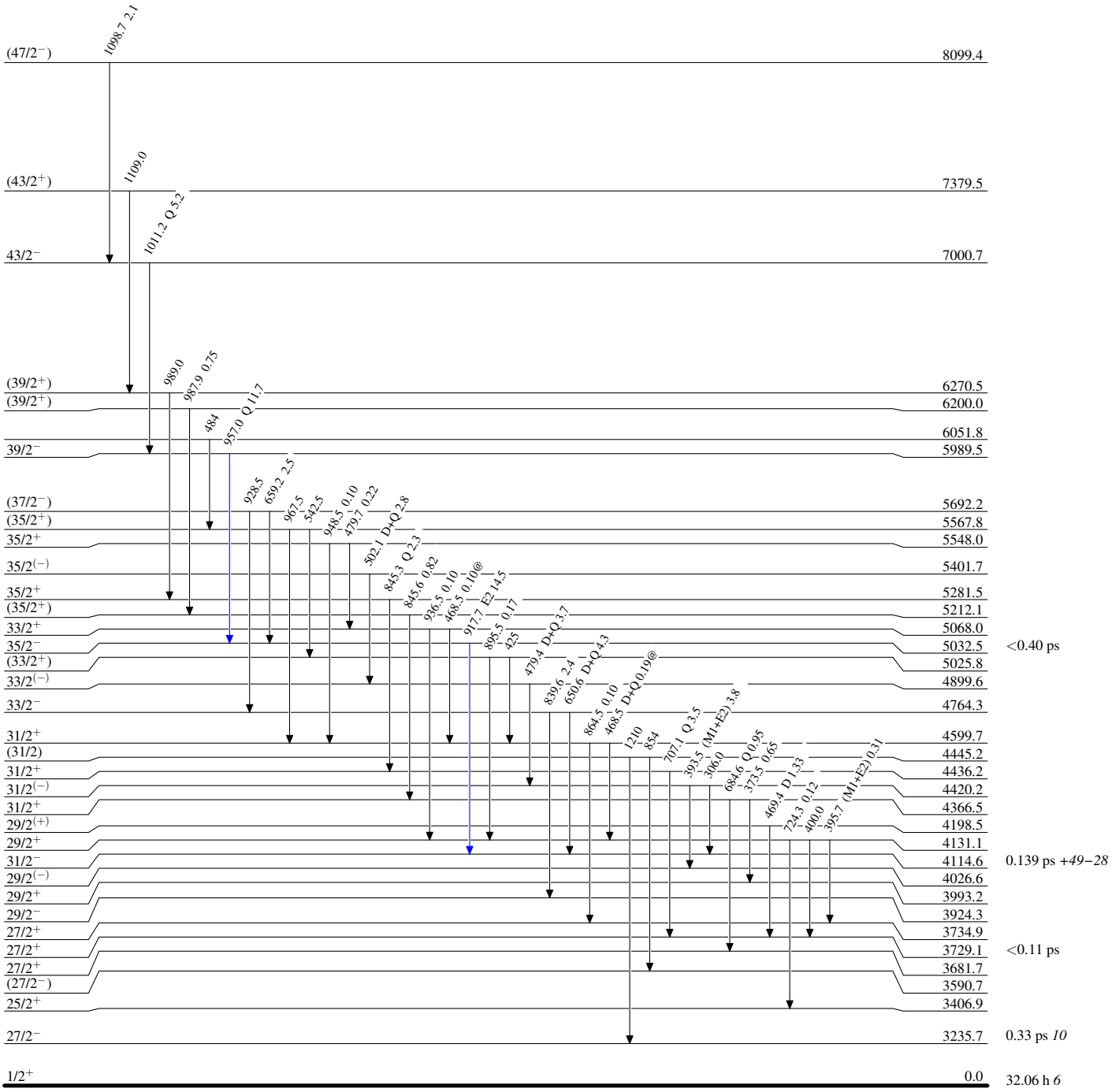
[a] Placement of transition in the level scheme is uncertain.

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01

Level Scheme

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



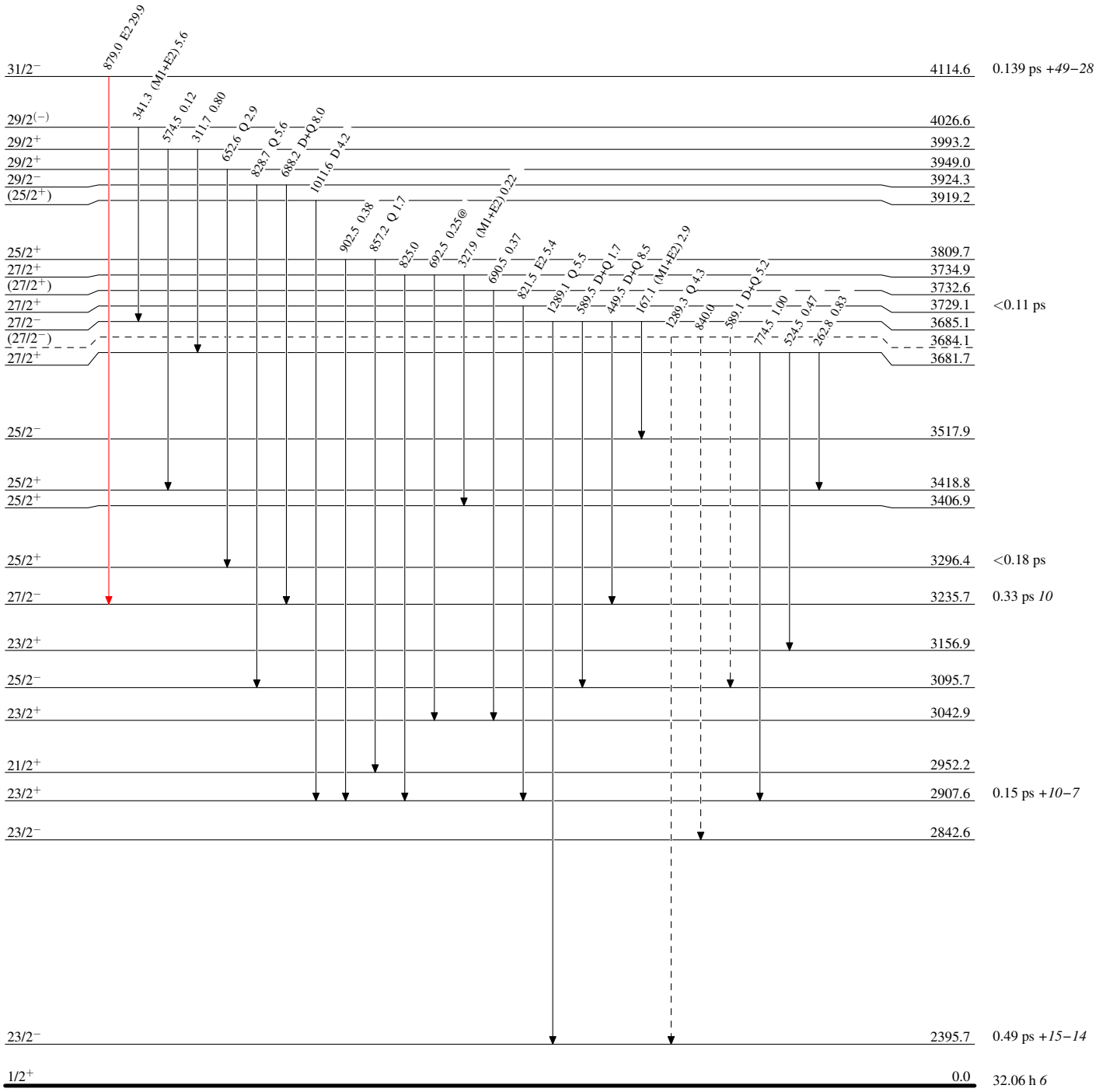
$^{129}_{55}Cs_{74}$

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



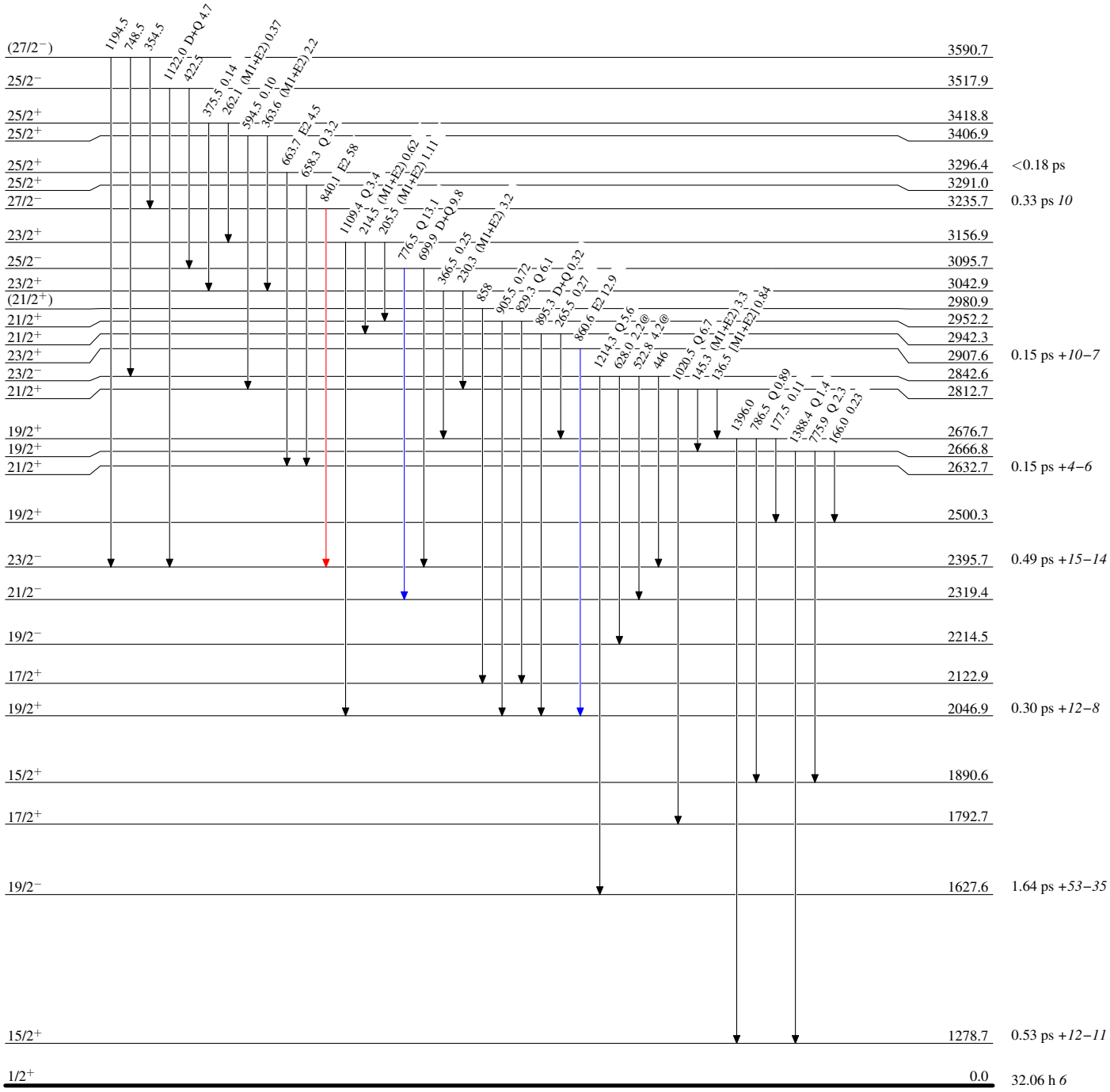
$^{129}_{55}Cs_{74}$

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



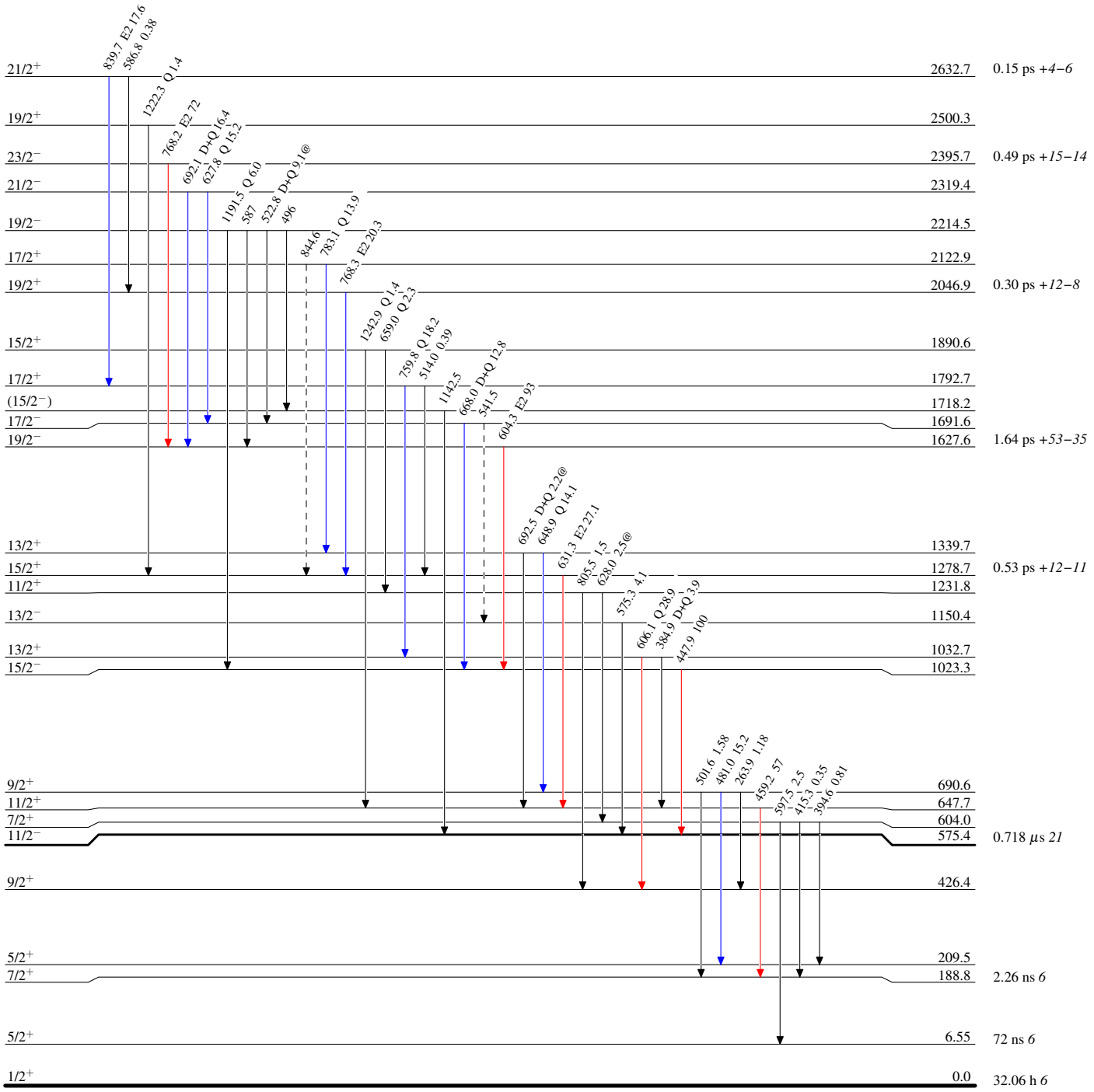
$^{129}_{55}Cs_{74}$

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{129}_{55}Cs_{74}$

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01

Level Scheme (continued)

Intensities: Relative I_γ

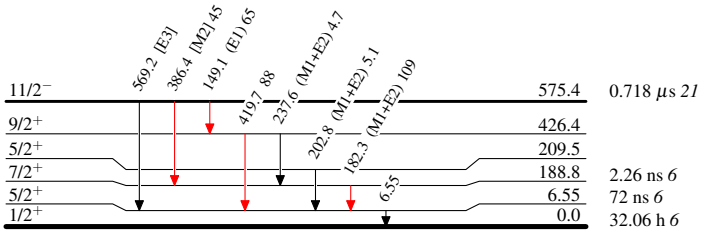
@ Multiply placed: intensity suitably divided

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

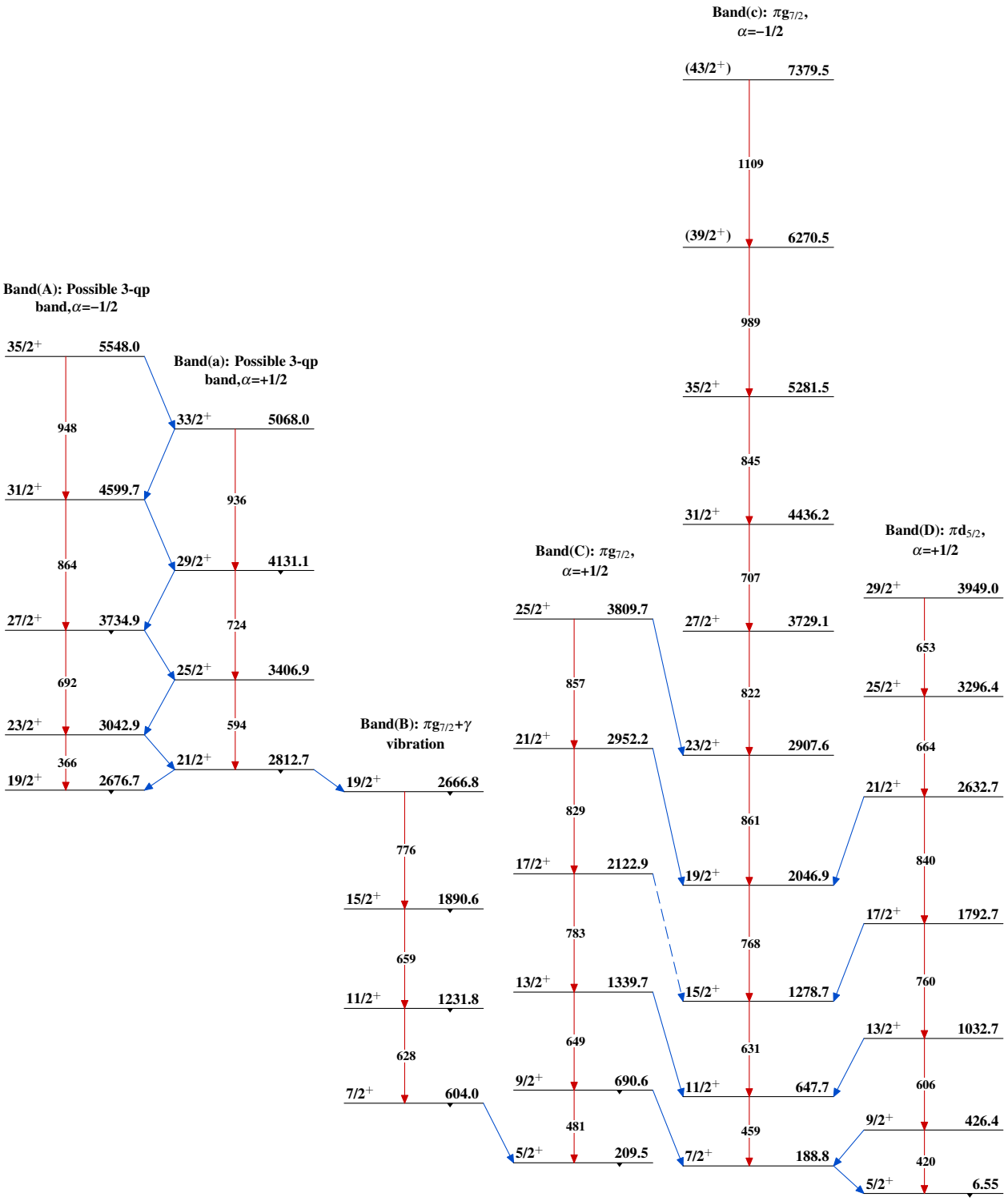
$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{129}_{55}Cs_{74}$

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01



$^{129}_{55}Cs_{74}$

^{122}Sn(^{11}B,4nγ),^{124}Sn(^{11}B,6nγ) 2009Si08,2009Zh20,2010Wa01 (continued)