Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 143, 1 (2017)	31-Mar-2017

Q(β^-)=−6310 *50*; S(n)=7710 *50*; S(p)=3610 *60*; Q(α)=5010 *60* 2017Wa10

^{193}Pb Levels

The main features for the adopted level scheme are from 1996Du18 (^{30}Si,5nγ), for the lower part of the scheme, including the nomenclature of the magnetic dipole bands. Differences with other sources, specially 1996Ba54 (^{24}Mg,5nγ), are noted where appropriate. See the (HI,xnγ):SD dataset for sources for the superdeformed bands. For a discussion of the configurations, magnetic dipole bands, and band systematics in Pb nuclei, see 1996Ba54 and 1996Du18 (^{30}Si,5nγ).

Proposed new spin-parity assignments for 2213.8+x (J^π=23/2$^+$), 2426.7+x (J^π=25/2$^+$), and 2584.8+x (J^π=27/2$^+$) by 2011Ba02 (^{28}Si,5nγ) would result 1$\hbar$ lower spin assignments for most of the excited levels proposed in (^{30}Si,5nγ) and (^{16}O,5nγ).

Cross Reference (XREF) Flags

A	^{193}Bi ε decay	E	^{170}Er(^{28}Si,5nγ)
B	^{197}Po α decay (53.6 s)	F	^{174}Yb(^{24}Mg,5nγ)
C	^{197}Po α decay (25.8 s)	G	^{182}W(^{16}O,5nγ)
D	^{168}Er(^{30}Si,5nγ)	H	(HI,xnγ):SD

E(level)†	J^π‡	$T_{1/2}$#	XREF	Comments
0.0	(3/2$^-$)		B	%ε+%β^+=? Decay not observed. J^π: From shell model. Available low-spin configurations for N=111 are 2f5/2, 3p3/2 and 3p1/2; 3/2$^-$ is the g.s. in ^{191}Pb, ^{197}Pb and also in ^{193}Hg and ^{193}Po. RMS charge radius: 5.4298 fm *22* (2004An14).
0.0+x	(13/2$^+$)	5.8 min *2*	CDEFG	%ε+%β^+=100 μ=−1.150 *7*; Q=+0.195 *10* E(level): Level energy 130 keV *80* in 2017Au03 from systematics. J^π: From shell calculations − configuration $\nu i_{13/2}$. This high-J isomer is confirmed in ^{197}Pb, ^{199}Pb, ^{201}Pb, ^{203}Pb; also in ^{199}Po, ^{201}Po, ^{203}Po. $T_{1/2}$: from 1976Ha25. Other values: 5.0 min *6*, 5.8 min *3* (both from 1974Ne16). IT and α decay not observed. μ,Q: from collinear fast atom beam laser spectroscopy (2014StZZ,1991Du07). Isotope shift: $\Delta<r^2>$ = −0.747 fm^2 *8* relative to ^{208}Pb (1991Du07). Other: −0.746 fm^2 *12* (1989MeZZ).
757+x	(13/2$^+$)		C	J^π: Suggested in 2002Va13, based on the low hindrance factor for the 5622 keV α ray feeding this level from 13/2$^+$ state in ^{197}Po α decay.
881.6 +x *2*	(17/2$^+$)		DEFG	J^π: E2 γ to (13/2$^+$) level.
1022.1+x *3*	(15/2$^+$)		DEFG	J^π: (M1+E2) γ to (13/2$^+$) level.
1401.8+x *3*	(21/2$^+$)		DEFG	J^π: E2 γ to (17/2$^+$) level.
1519.4+x *11*	(19/2$^+$)		D	J^π: (E2) γ to (15/2$^+$).
1550.2+x *3*	(19/2$^+$)		DEFG	J^π: E2 γ to (15/2$^+$) level, E2+M1 γ to (17/2$^+$) level.
1585.9+x *4*	(21/2$^-$)	20.5 ns *4*	DEFG	μ=−0.62 *12*; Q=0.22 *2* μ: From 2014StZZ, 2004Io01: Time Dependent Perturbed Angular Distribution (TDPAD) method. Q: From 2014StZZ, 2004Ba31): TDPAD method. J^π: E1+M2 γ to (21/2$^+$) level.

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Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
				$T_{1/2}$: From 2004Io01 – (^{28}Si,5nγ). Other: 22 ns *2* (1991La07) -(^{16}O,5nγ).
1994.8+x *4*	(25/2$^+$)		DEFG	Jπ: E2 γ to (21/2$^+$) level.
2058.9+x *5*	(23/2$^-$)		DEF	Jπ: D γ to (21/2$^-$) level.
2141.4+x *4*	(23/2$^+$)		DEFG	Jπ: E2 γ to (19/2$^+$) level, M1+E2 γ to (21/2$^+$) level.
2142.1+x *5*	(25/2$^-$)		DEFG	Jπ: E2 γ to (21/2$^-$) level.
2172.6+x *6*	(23/2$^+$)		D	
2213.8+x *4*	(25/2$^+$)		DEFG	Jπ: Conflicting spin assignment (23/2$^+$) in 2011Ba02 (^{28}Si,5nγ), based on 811.9γ (M1+E2) to (21/2$^+$) level. 1991La07 – (^{16}O,5nγ) proposes 25/2$^+$ with 811.9γ E2 from α_K(exp) to (21/2$^+$). Proposed (23/2$^+$) assignment requires adjustment of many higher level spin assignments of (^{30}Si,5nγ) and other (HI,xnγ) datasets. Evaluator keeps (25/2$^+$) for consistent links with higher excited levels.
2322.2+x *5*	(27/2$^-$)	5.3 ns *6*	DEFG	Q≤0.5 (2011Ba02) Jπ: E2+M1 γ to (25/2$^-$) level. $T_{1/2}$: From 2011Ba02 (^{28}Si,5nγ).
2404.9+x *9*			F	
2426.7+x *4*	(27/2$^+$)		DEFG	Jπ: Conflicting J^π assignment: (25/2$^+$) by 2011Ba02 (^{28}Si,5nγ). (27/2$^+$) in (^{30}Si,5nγ), (^{24}Mg,5nγ), and (^{16}O,5nγ). Proposed (25/2$^+$) assignment requires adjustment of many higher level spin assignments of (^{30}Si,5nγ) and other (HI,xnγ) datasets. Evaluator keeps (27/2$^+$) for consistent links with higher excited levels.
2524.9+x *4*	(27/2$^+$)		D F	Jπ: γ to (23/2$^+$).
2526.9+x *4*	(29/2$^+$)		DEFG	Jπ: E2 γ to (25/2$^+$) level.
2584.8+x[&] *5*	(29/2$^-$)	9.4 ns *5*	DEFG	μ=9.2 *4* Q=2.6 *3* μ: From 2011Ba02, 2014StZZ – Time Dependent Perturbed Angular Distribution (TDPAD) method. Other value: +9.9 *4* from g=0.68 *3* (1997Ch33). 2011Ba02 (^{28}Si,5nγ) also reanalyzed 1997Ch33 data and reproduce the g value for revised spin-parity of (27/2$^-$). Q: From 2011Ba02, 2014StZZ: TDPAD method. Supercedes their earlier value 2.84 *26* in 2004Ba31. Jπ: 2011Ba02 (^{28}Si,5nγ) propose (27/2$^-$). E1 γ to (27/2$^+$) level. $T_{1/2}$: From 2011Ba02 (^{28}Si,5nγ). Other values: 9.4 ns *7* (1991La07), 8 ns *2* from Recoil Shadow Anisotropy Method (2001Gu31), and 11 ns *2* (1997Ch33).
2612.5+x *5*	(33/2$^+$)	180 ns *15*	DEFG	μ=2.82 *15*; Q=0.45 *4* E(level): 2742 keV *80* in 2017Au03 from systematics. μ: From 2014StZZ, 2004Io01: Time Dependent Perturbed Angular Distribution (TDPAD) method. Q: From 2014StZZ, 2004Ba31: TDPAD method. Jπ: (E2) γ to (29/2$^+$) level. $T_{1/2}$: From 2004Io01 (^{28}Si,5nγ). Other: 104 ns *+370−34* (2003Gl05,2004Gl04); 135 ns *+25−15* (1991La07).
2653.6+x *5*	(27/2$^-$)		D F	
2672.2+x *6*	(29/2$^+$)		D F	Jπ: Q γ to (25/2$^+$) level.
2686.9+x[&] *6*	(31/2$^-$)		D F	Jπ: γ to (27/2$^-$).
2707.2+x *6*	(29/2$^-$)		D F	Jπ: Q γ to (25/2$^-$) level.
2769.4+x[e] *5*	(29/2$^+$)		D F	Jπ: γ to (25/2$^+$).
2939.2+x[&] *7*	(33/2$^-$)	2.2 ps *6*	DEF	Jπ: (M1) γ to (31/2$^-$) level. $T_{1/2}$: From measured mean lifetime of 3.2 ps *8* (2005Gl09 – (^{28}Si,5nγ)).
2994.6+x[f] *6*	(31/2$^-$)		D F	Jπ: Q γ to (27/2$^-$) level.
3080.2+x *6*	(29/2$^+$)		D F	Jπ: d γ to (29/2$^+$) level.
3128.6+x *6*	(31/2$^-$)		D F	Jπ: Q γ to (27/2$^-$) level.
3133.4+x[e] *5*	(31/2$^+$)		D F	Jπ: (M1) γ to (29/2$^+$) level.

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Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
3249.9+x *8*	(31/2⁻)		D F	Jπ: γ to (29/2⁻) level.
3260.7+x *7*	(31/2⁻)		D	Jπ: γ to (27/2⁻) level.
3282.1+x *7*	(33/2⁺)		D	Jπ: Q γ to (29/2⁺) level.
3320.7+x[&] *7*	(35/2⁻)	≤0.7 ps	DEF	Jπ: (M1) γ to (33/2⁻) level. $T_{1/2}$: From measured lifetime of ≤1 ps (2005Gl09 – (^{28}Si,5nγ)).
3376.4+x *6*	(31/2⁺)		D F	Jπ: Q γ to (27/2⁺) level.
3414.8+x *6*	(33/2⁺)		D F	Jπ: Q γ to (29/2⁺) level.
3418.8+x *7*			D F	Jπ: (33/2⁻) in 1996Du18 – (^{30}Si,5nγ) as 834γ feeding 29/2⁻ state at 2584+x, however, adopted spin-parity is (27/2⁻) for the feeding state.
3541.6+x[f] *8*	(35/2⁻)		D F	Jπ: Q γ to (31/2⁻) level.
3542.8+x[e] *6*	(33/2⁺)		D F	Jπ: D γ to (31/2⁺) level.
3607.0+x *12*			F	
3640.3+x *8*	(37/2⁻)		D F	Jπ: D to (33/2⁻) level.
3673.0+x *7*	(33/2⁺)		D	Jπ: Q to (29/2⁺) level.
3702.2+x *6*	(33/2⁺)		D	Jπ: γ to (29/2⁺) level.
3722.3+x[&] *7*	(37/2⁻)		D F	Jπ: Q γ to (33/2⁻) level, d γ to (35/2⁻) level.
3741.8+x *9*	(35/2⁻)		D F	Jπ: Q γ to (31/2⁻) level.
3772.1+x *6*	(35/2⁺)		D F	Jπ: Q γ to (31/2⁺) level.
3822.5+x *9*	(35/2⁺)		D	
3839.5+x *6*	(33/2⁺)		D F	Jπ: Q γ to (29/2⁺) level.
3860.0+x *10*			F	
3906.6+x *8*	(35/2⁻)		D	Jπ: D γ to (33/2⁻) level.
3924.8+x[e] *6*	(35/2⁺)		D F	Jπ: Q γ to (31/2⁺) level.
3987.5+x *10*			F	
3991.7+x *7*	(35/2⁺)		D	Jπ: γ to (33/2⁺) level.
3997.1+x *6*	(37/2⁺)		D F	Jπ: (Q) γ to (33/2⁺) level.
4003.5+x *6*	(35/2⁺)		D F	Jπ: D γ to (33/2⁺) level.
4055.9+x *9*	(39/2⁻)		D F	Jπ: (D) γ to (37/2⁻) level.
4063.1+x *8*	(37/2⁻)		D	Jπ: γ to (35/2⁻) level.
4116.5+x *10*	(37/2⁺)		D F	Jπ: Q γ to (33/2⁺) level.
4136.1+x[&] *7*	(39/2⁻)		D F	Jπ: D γ to (37/2⁻) level.
4149.4+x *6*	(37/2⁺)		D F	Jπ: D γ to (35/2⁺) level.
4167.2+x *8*	(39/2⁻)		D F	Jπ: D γ to (37/2⁻) level.
4180.3+x[f] *10*	(39/2⁻)		D F	Jπ: Q γ to (35/2⁻) level.
4191.4+x *7*	(39/2⁺)		D	Jπ: Q γ to (35/2⁺) level.
4210.9+x *6*	(37/2⁺)		D F	
4239.2+x *13*			F	
4271.1+x *8*	(39/2⁻)		D	Jπ: D γ to (37/2⁻) level.
4298.0+x[c] *7*	(39/2⁺)		D F	Jπ: D γ to (37/2⁺) level.
4313.4+x[e] *7*	(37/2⁺)		D	Jπ: γ to (33/2⁺) level.
4360.8+x *11*	(37/2⁺)		D	Jπ: γ to (33/2⁺) level.
4388.1+x[c] *7*	(41/2⁺)		D	Jπ: D γ to (39/2⁺) level.
4399.2+x *11*	(39/2⁻)		D F	Jπ: Q γ to (35/2⁻) level.
4435.2+x *11*	(39/2⁻)		D F	Jπ: Q γ to (35/2⁻) level.
4445.5+x *6*	(39/2⁺)		D	Jπ: γ to (37/2⁺) level.
4470.6+x[&] *8*	(41/2⁻)		D F	Jπ: D γ to (39/2⁻) level.
4493.6+x			F	E(level): In the level scheme in (^{24}Mg,5nγ) 1996Ba54. this is the the level feeding by 232γ in dipole band 2 and depopulating by 197γ. However, a comparable 196.9γ placed from 4388+x level.
4532.8+x *8*	(41/2⁻)		D	Jπ: D γ to (39/2⁻) level.
4537.0+x[c] *7*	(43/2⁺)		D	Jπ: D γ to (41/2⁺) level.
4538.8+x *10*	(41/2⁻)		D F	Jπ: D γ to (39/2⁻) level.
4564.6+x *9*	(39/2⁺)		D	Jπ: γ to (37/2⁺) level.
4577.2+x *7*	(41/2⁺)		D F	Jπ: D γ to (39/2⁺) level.

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Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
4591.3+x *8*	(41/2$^-$)		D F	Jπ: D γ to (39/2$^-$) level.
4634.9+x *12*			F	
4661.8+x *11*			D	
4760.6+x *11*	(41/2$^+$)		D F	Jπ: Q γ to (37/2$^+$) level.
4769.0+x[c] *8*	(45/2$^+$)		D	Jπ: D γ to (43/2$^+$) level.
4784.2+x *7*	(41/2$^+$)		D	Jπ: γ to (39/2$^+$) level.
4828.1+x[&] *8*	(43/2$^-$)		D F	Jπ: D γ to (41/2$^-$) level.
4861.6+x *8*	(43/2$^-$)		D	Jπ: D γ to (41/-) level.
4893.1+x[f] *12*	(43/2$^-$)		D F	Jπ: Q γ to (39/2$^-$).
4917.0+x *8*	(43/2$^-$)		D	Jπ: γ to (43/2$^+$) level.
4945.1+x[d] *8*	(43/2$^+$)		D F	Jπ: D γ to (41/2$^+$) level.
5033.3+x *9*	(43/2$^-$)		D F	Jπ: D γ to (41/2$^-$) level.
5060.6+x[c] *9*	(47/2$^+$)	0.23[@] ps *3*	D F	Jπ: D γ to (45/2$^+$) level. $T_{1/2}$: From mean lifetime of 0.33 ps *4* (1998Cl06).
5092.8+x[a] *8*	(45/2$^-$)		D	Jπ: D γ to (43/2$^-$) level.
5165.8+x *12*	(43/2$^-$)		D F	Jπ: Q γ to (39/2$^-$) level.
5169.4+x[d] *9*	(45/2$^+$)		D F	Jπ: D+Q γ to (43/2$^+$) level.
5182.0+x *8*	(45/2$^-$)		D F	
5218.4+x[&] *9*	(45/2$^-$)		D	Jπ: D γ to (43/2$^-$) level.
5281.1+x *15*	(43/2$^-$)		D	Jπ: γ to (39/2$^-$) level.
5331.9+x[a] *8*	(47/2$^-$)		D F	XREF: F(239.1+Y). Jπ: D γ to (45/2$^-$) level.
5425.8+x[c] *9*	(49/2$^+$)	0.16[@] ps *+3−2*	D	Jπ: D γ to (47/2$^+$). $T_{1/2}$: From mean lifetime of 0.23 ps *+4−3* (1998Cl06).
5436.9+x[d] *9*	(47/2$^+$)		D	Jπ: D γ to (45/2$^+$) level.
5439.8+x *10*	(45/2$^-$)		D	Jπ: D γ to (43/2$^-$) level.
5501.7+x *9*	(47/2$^-$)		D	Jπ: D γ to (45/2$^-$) level.
5597.5+x[a] *9*	(49/2$^-$)		D F	XREF: F(504.2+Y). Jπ: D γ to (47/2$^-$) level.
5668.3+x *15*	(45/2$^-$)		D	Jπ: γ to (41/2$^-$) level.
5763.1+x[d]	(49/2$^+$)		D	Jπ: D γ to (47/2$^+$) level.
5802.2+x *11*	(47/2$^-$)		D	Jπ: γ to (45/2$^-$) level.
5815.4+x[c] *9*	(51/2$^+$)	0.15[@] ps *3*	D	Jπ: D γ to (49/2$^+$). $T_{1/2}$: From mean lifetime of 0.21 ps *+4−5* (1998Cl06).
5825.3+x[b] *9*	(49/2$^-$)		D	Jπ: D γ to (47/2$^-$) level.
5927.0+x[a] *9*	(51/2$^-$)		D F	XREF: F(833.6+Y). Jπ: D+Q γ to (49/2$^-$) level.
6001.5+x[b] *10*	(51/2$^-$)		D	Jπ: D+Q γ to (49/2$^-$) level.
6145.5+x[d] *11*	(51/2$^+$)		D	Jπ: D+Q γ to (49/2$^+$) level.
6231.4+x[c] *10*	(53/2$^+$)	0.17[@] ps *2*	D	Jπ: (M1) γ to (51/2$^+$) level. $T_{1/2}$: From mean lifetime of 0.25 ps *3* (1998Cl06).
6285.2+x[b] *10*	(53/2$^-$)		D	Jπ: D γ to (51/2$^-$) level.
6302.6+x[a] *10*	(53/2$^-$)		D F	XREF: F(1208.5+Y). Jπ: D+Q γ to (51/2$^-$) level.
6597.1+x[b] *11*	(55/2$^-$)		D	Jπ: D γ to (53/2$^-$) level.
6657.6+x[c] *10*	(55/2$^+$)		D	Jπ: γ to (51/2$^+$) and (53/2$^+$) levels.
6715.5+x[a] *11*	(55/2$^-$)		D	Jπ: γ to (53/2$^-$) level.
6927.5+x[b] *11*	(57/2$^-$)		D	Jπ: D+Q γ to (55/2$^-$) level.
7090.3+x[c] *11*	(57/2$^+$)		D	
7154.7+x[a] *12*	(57/2$^-$)		D	Jπ: D γ to (55/2$^-$) level.
7312.0+x[b] *12*	(59/2$^-$)		D	Jπ: D γ to (57/2$^-$) level.

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Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
7516+x?[c]	(59/2+)	D	Jπ: γ to (57/2+) level.
7713.5+x[b] 13	(61/2−)	D	Jπ: γ to (59/2−) level.
7932+x?[c]	(61/2+)	D	Jπ: γ to (59/2+) level.
y[g]	J	H	Jπ: ≈(23/2). E(level): 4217 relative to the 13/2+ isomer was suggested by 1996Pe20 on the basis of a tentative 2222γ (Iγ=0.042 *20*) to 1995+x level. But this transition has not been confirmed in the work of 1999Ro21 using a larger detector array.
277.0+y[g] 3	J+2	H	2282γ (Iγ=0.035 *20*) and 2352γ (Iγ=0.034 *20*) proposed by 1996Du05 as linking transitions to normal-deformed states have not been confirmed by 1999Ro21 using a larger detector array, thus these γ rays together with a 2222γ (1996Du05) have been omitted here.
594.3+y[g] 5	J+4	H	
951.6+y[g] 6	J+6	H	
1349.1+y[g] 6	J+8	H	
1786.9+y[g] 7	J+10	H	
2264.3+y[g] 8	J+12	H	
2781.6+y[g] 9	J+14	H	
3337.7+y[g] 9	J+16	H	
3932.5+y[g] 10	J+18	H	
4565.9+y[g] 11	J+20	H	
5237.7+y[g] 13	J+22	H	
5945.9+y?[g] 15	J+24	H	
z[h]	J1	H	Jπ: ≈(17/2).
190.2+z[h] 5	J1+2	H	
422.8+z[h] 6	J1+4	H	
698.0+z[h] 7	J1+6	H	
1015.9+z[h] 8	J1+8	H	
1376.8+z[h] 8	J1+10	H	
1780.3+z[h] 9	J1+12	H	
2226.2+z[h] 9	J1+14	H	
2714.4+z[h] 10	J1+16	H	
3242.4+z[h] 11	J1+18	H	
3812.2+z[h] 13	J1+20	H	
4422.7+z[h] 15	J1+22	H	
5072.7+z[h] 16	J1+24	H	
5762.5+z?[h] 18	J1+26	H	
u[i]	J2	H	Jπ: ≈(21/2).
251.5+u[i] 6	J2+2	H	
543.0+u[i] 7	J2+4	H	
875.4+u[i] 8	J2+6	H	
1247.5+u[i] 8	J2+8	H	
1659.4+u[i] 9	J2+10	H	
2110.0+u[i] 9	J2+12	H	
2598.9+u[i] 10	J2+14	H	
3125.5+u[i] 11	J2+16	H	
3688.9+u[i] 11	J2+18	H	
4288.8+u[i] 13	J2+20	H	
4925.8+u[i] 14	J2+22	H	
5598.0+u[i] 15	J2+24	H	

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Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
6307.2+u[i] 16	J2+26	H	
v[j]	J3	H	J$^{\pi}$: ≈(23/2).
273.0+v?[j] 7	J3+2	H	
586.4+v[j] 10	J3+4	H	
939.5+v[j] 10	J3+6	H	
1331.4+v[j] 11	J3+8	H	
1761.4+v[j] 11	J3+10	H	
2228.5+v[j] 12	J3+12	H	
2732.4+v[j] 13	J3+14	H	
3271.9+v[j] 13	J3+16	H	
3847.0+v[j] 14	J3+18	H	
4457.0+v[j] 15	J3+20	H	
5101.5+v[j] 16	J3+22	H	
5777.9+v[j] 17	J3+24	H	
6485.1+v[j] 19	J3+26	H	
w[k]	J4	H	J$^{\pi}$: ≈(17/2).
100.5+w[l] 8	J4+1	H	
213.2+w[k] 4	J4+2	H	
335.1+w[l] 6	J4+3	H	
467.9+w[k] 7	J4+4	H	
610.6+w[l] 7	J4+5	H	
763.9+w[k] 7	J4+6	H	
926.8+w[l] 8	J4+7	H	
1099.9+w[k] 8	J4+8	H	
1282.6+w[l] 8	J4+9	H	
1475.2+w[k] 9	J4+10	H	
1677.0+w[l] 9	J4+11	H	
1888.7+w[k] 9	J4+12	H	
2109.8+w[l] 9	J4+13	H	
2340.0+w[k] 10	J4+14	H	
2580.4+w[l] 10	J4+15	H	
2828.5+w[k] 12	J4+16	H	
3087.8+w[l] 11	J4+17	H	
3355.0+w[k] 13	J4+18	H	
3631.3+w[l] 12	J4+19	H	
3917.2+w[k] 14	J4+20	H	
4211.0+w[l] 13	J4+21	H	
4513.4+w[k] 16	J4+22	H	
4825.6+w[l] 15	J4+23	H	
5144.7+w[k] 18	J4+24	H	
5475.1+w[l] 16	J4+25	H	
5811.5+w[k] 20	J4+26	H	
6159.1+w[l] 17	J4+27	H	
6512.0+w[k] 22	J4+28	H	
6877.0+w[l] 18	J4+29	H	
s[m]	J5	H	
260.6+s[m] 7	J5+2	H	
560.4+s[m] 10	J5+4	H	

Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
900.5+s[m] *10*	J5+6	H	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF	E(level)†	Jπ‡	XREF
1279.4+s^{m} *12*	J5+8	H	603.2+t^{n} *9*	J6+4	H	212.9+a^{o} *5*	J7+2	H
1696.6+s^{m} *13*	J5+10	H	964.1+t^{n} *10*	J6+6	H	468.7+a^{o} *7*	J7+4	H
2150.6+s^{m} *14*	J5+12	H	1362.6+t^{n} *11*	J6+8	H	766.0+a^{o} *10*	J7+6	H
2641.7+s^{m} *15*	J5+14	H	1798.5+t^{n} *12*	J6+10	H	1102.5+a^{o} *11*	J7+8	H
3167.8+s^{m} *15*	J5+16	H	2270.8+t^{n} *14*	J6+12	H	1478.3+a^{o} *13*	J7+10	H
3729.1+s^{m} *16*	J5+18	H	2778.9+t^{n} *15*	J6+14	H	1894.2+a^{o} *13*	J7+12	H
4325.5+s^{m} *17*	J5+20	H	3322.1+t^{n} *16*	J6+16	H	2349.7+a^{o} *14*	J7+14	H
4956.6+s^{m} *19*	J5+22	H	3900.1+t^{n} *17*	J6+18	H	2845.3+a^{o} *15*	J7+16	H
5620.8+s^{m} *20*	J5+24	H	4512.1+t^{n} *18*	J6+20	H	3380.7+a^{o} *17*	J7+18	H
t^{n}	J6	H	5158.9+t^{n} *19*	J6+22	H	3956.0+a^{o} *19*	J7+20	H
281.8+t^{n} *6*	J6+2	H	a^{o}	J7	H			

† From least squares fit to Eγ as calculated in (HI,xnγ) from 1996Du18 and (HI,xnγ):SD reactions. Note that there is a, somewhat erratic, trend towards lower γ-ray energies in 1996Ba54 (^{24}Mg,5nγ). These add up and tend to reduce the level energies by up to ≈45 keV (see the dataset).

‡ From (HI,xnγ) or (HI,xnγ):SD, except for g.s. and the 0+x level. The assignments are based on multipolarities of deexciting transitions (from α(K)exp and γ(θ) measurements), assumption of increasing J with increasing E, and band structure. Specific arguments are listed in comments. For SD bands, the assignments are based on band structure and γ anisotropy, the lowest level spin in each band having been estimated using the spin-fit method.

From γγ(t) or γ(t) in (HI,xnγ), except as noted.

@ From mean lifetime in 1998Cl06, deduced from fitting of Doppler broadened γ-ray peaks. Value listed in comments section.

& Band(A): Magnetic dipole band 1. (1996Du18). This band is the same as Band 1a in 1996Ba54. Note that from a systematic study of $^{191-199}$Pb isotopes, 1998Fo02 conclude that members of this band in ^{193}Pb are 1ħ higher compared to all the other isotopes.

a Band(B): Magnetic dipole band 1a. (1996Du18). This band is the analogue of Band 1b in 1996Ba54.

b Band(C): Magnetic dipole band 1b. (1996Du18). None of the transitions in this band are observed in 1996Ba54.

c Band(D): Magnetic dipole band 2. (1996Du18). This band is almost the same as Band 2 in 1996Ba54. There is a significant difference however in the energies for the levels of this band, because in 1996Ba54 a single 197-keV γ ray connects the final level of the 232-keV transition with the 4297-keV bandhead. Instead, 1996Du18 place a sequence of two γ rays (90 keV and 149 keV) in its place, thereby shifting the Band 2 levels upwards by ≈45 keV, as compared to those shown in 1996Ba54. This modified scheme also implies a change in the proposed spin sequences for the levels in this band.

d Band(E): Magnetic dipole band 3. (1996Du18). With a single exception (224-keV γ) the transitions in this group are not observed in 1996Ba54.

e Band(F): Magnetic dipole band 4. (1996Ba54). The transitions in this group are not assigned to a band in 1996Du18.

f Band(G): Band 5.

g Band(H): SD-1 band. (1999Ro21,1995Hu01,1996Du05,1996Pe20). Configuration=ν3/2[761] α=−1/2. From (^{24}Mg,5nγ); band intensity relative to total ^{193}Pb channel is 0.5%. Q(intrinsic)=17.3 +*7*−*6* (1998Va18). See footnote to SD-2 Band regarding relationship between these two SD bands.

h Band(I): SD-2 band. (1999Ro21,1995Hu01,1996Du05). Configuration=ν3/2[761] α=+1/2. From (^{24}Mg,5nγ); band intensity relative to total ^{193}Pb channel is 0.3% (1995Hu01). Band intensity relative to SD-1 band=50% (1996Du05), 38% *8* (1999Ro21). SD-1 and SD-2 represent favored and unfavored signature components (with a large observed splitting) of the low-K, 3/2[761], N=7 neutron orbital (from (^{24}Mg,5nγ)).

i Band(J): SD-3 band. (1999Ro21,1995Hu01,1996Du05). Configuration=ν3/2[642] α=+1/2. From (^{24}Mg,5nγ); band intensity relative to total ^{193}Pb channel is 0.25% (1995Hu01). Band intensity relative to SD-1 band=50% (1996Du05), 46% *9* (1999Ro21) See footnote to SD-4 Band regarding relationship between these two SD bands.

j Band(K): SD-4 band. (1999Ro21,1995Hu01,1996Du05). Configuration=ν3/2[642] α=−1/2. From (^{24}Mg,5nγ); band intensity relative to total ^{193}Pb channel is 0.25% (1995Hu01). Band intensity relative to SD-1 band=50% (1996Du05), 23% *5* (1999Ro21).

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Adopted Levels, Gammas (continued)

^{193}Pb Levels (continued)

SD-3 and SD-4 are interpreted as signature partners (no signature splitting) based on a high K, 3/2[642] neutron orbital. The 5/2[512] neutron orbital suggested by 1995Hu01 is not supported by calculations and experimental comparisons of 1996Du05 and 1999Ro21.

[k] Band(L): SD-5 band. (1999Ro21,1995Hu01,1996Du05). Configuration=ν9/2[624] α=+1/2. From (^{24}Mg,5nγ); band intensity relative to total ^{193}Pb channel is 0.2% (1995Hu01). Band intensity relative to SD-1 band=30% (1996Du05), 15% *3* (1999Ro21) See footnote to SD-6 Band regarding relationship between these two SD bands.

[l] Band(M): SD-6 band. (1999Ro21,1995Hu01,1996Du05). Configuration=ν9/2[624] α=−1/2. From (^{24}Mg,5nγ); band intensity relative to total ^{193}Pb channel is 0.2% (1995Hu01). Band intensity relative to SD-1 band=30% (1996Du05), 20% *4* (1999Ro21). SD-5 and SD-6 are interpreted as signature partners (no signature splitting) based on a high K, 9/2[624] neutron orbital. From dipole interband transitions, 1996Du05 deduce B(M1)/B(E2)=0.15 *4*. g_K=−0.39 *12* (1996Du05), −0.27 *9* (1999Ro21) from M1/E2 branching ratios, using Θ_0=18.4 and K=9/2.

[m] Band(N): SD-7 band. (1999Ro21). Band intensity relative to SD-1 band=17% *3* (1999Ro21). SD-7 and SD-8 are proposed as signature partners with configuration=ν5/2[512].

[n] Band(O): SD-8 band. (1999Ro21). Band intensity relative to SD-1 band=14% *3* (1999Ro21). SD-7 and SD-8 are proposed as signature partners with configuration=ν5/2[512].

[o] Band(P): SD-9 band. (1999Ro21). Band intensity relative to SD-1 band=5% *1* (1999Ro21). Configuration=$\nu 7_3$ intruder orbital.

Adopted Levels, Gammas (continued)

$\gamma(^{193}Pb)$

It should be noted that there are sharp discrepancies between the intensities reported among the (HI,xnγ) datasets. Of these, 1996Du18 and 1991La07 provide total intensity values, while 1996Ba54 lists γ intensities. It is not clear whether these differences are due to varying measurement conditions, or, possibly more likely, to the diversity in the high-lying levels populated by the various reaction channels used. For the adopted values the data from 1996Du18 have been used, where the Iγ values have been calculated by the evaluator using the experimental conversion coefficients from 1991La07, where available. Else, total conversion coefficients have been used, based on the multipolarities provided either by the authors, or estimated on the basis of DCO ratios, angular distribution coefficients, membership in various band structures, or assumed from ΔJ^{π} values, if no other information was available.

E_i(level)	J_i^{π}	E_γ[†]	I_γ[@]	E_f	J_f^{π}	Mult.[b]	δ[b]	α[f]	Comments
757+x	(13/2$^+$)	757 *1*	100	0.0+x	(13/2$^+$)				E_γ: From ^{197}Po α decay (25.8 s).
881.6 +x	(17/2$^+$)	881.6 *2*	100	0.0+x	(13/2$^+$)	E2		0.00854	α(K)=0.00672 *10*; α(L)=0.001387 *20*; α(M)=0.000332 *5* α(N)=8.42×10^{-5} *12*; α(O)=1.637×10^{-5} *23*; α(P)=1.537×10^{-6} *22*
1022.1+x	(15/2$^+$)	1022.3 *3*	100	0.0+x	(13/2$^+$)	(M1+E2)		0.0116 *53*	α(K)=0.0095 *44*; α(L)=0.00163 *65*; α(M)=3.8×10^{-4} *15* α(N)=9.7×10^{-5} *38*; α(O)=1.93×10^{-5} *77*; α(P)=2.01×10^{-6} *89*
1401.8+x	(21/2$^+$)	520.1 *2*	100	881.6 +x	(17/2$^+$)	E2		0.0267	α(K)=0.0191 *3*; α(L)=0.00575 *8*; α(M)=0.001426 *20* α(N)=0.000361 *5*; α(O)=6.84×10^{-5} *10*; α(P)=5.43×10^{-6} *8*
1519.4+x	(19/2$^+$)	497.3 *5*	100	1022.1+x	(15/2$^+$)	E2		0.0298	α(K)=0.0210 *3*; α(L)=0.00660 *10*; α(M)=0.001642 *24* α(N)=0.000416 *6*; α(O)=7.85×10^{-5} *12*; α(P)=6.11×10^{-6} *9*
1550.2+x	(19/2$^+$)	527.8 *3*	61 *10*	1022.1+x	(15/2$^+$)	E2		0.0258	E_γ: 1991La07 (^{16}O,5nγ) list a comparable γ, Eγ=497.7 *4* keV, but unplaced. α(K)=0.0185 *3*; α(L)=0.00550 *8*; α(M)=0.001363 *20* α(N)=0.000345 *5*; α(O)=6.54×10^{-5} *10*; α(P)=5.22×10^{-6} *8*
		668.2 *3*	100 *10*	881.6 +x	(17/2$^+$)	E2+M1	1.8 *+9−5*	0.023 *5*	I_γ: Other: 100 *19* (^{24}Mg,5nγ). α(K)=0.019 *4*; α(L)=0.0038 *6*; α(M)=0.00090 *13* α(N)=0.00023 *4*; α(O)=4.5×10^{-5} *7*; α(P)=4.3×10^{-6} *8*
1585.9+x	(21/2$^-$)	(66.5)		1519.4+x	(19/2$^+$)				I_γ: Other: 88 *17* (^{24}Mg,5nγ).
		184.0 *4*	100	1401.8+x	(21/2$^+$)	E1+M2	0.049 *+15−20*	0.116 *15*	α(K)=0.092 *11*; α(L)=0.018 *3*; α(M)=0.0043 *8* α(N)=0.00110 *20*; α(O)=0.00021 *4*; α(P)=1.9×10^{-5} *4* B(E1)(W.u.)=1.42×10^{-6} *5*; B(M2)(W.u.)=0.5 *3*
1994.8+x	(25/2$^+$)	593.1 *4*	100	1401.8+x	(21/2$^+$)	E2(+M3)	0.16 *3*	0.030 *5*	α(K)=0.022 *3*; α(L)=0.0060 *9*; α(M)=0.00148 *21* α(N)=0.00038 *6*; α(O)=7.2×10^{-5} *11*; α(P)=6.4×10^{-6} *10*

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Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [@]	E_f	J_f^π	Mult. [b]	δ [b]	α [f]	Comments
2058.9+x	(23/2$^-$)	472.7 *5*	100	1585.9+x	(21/2$^-$)	D [c]			
2141.4+x	(23/2$^+$)	591.1 *4*	90 *21*	1550.2+x	(19/2$^+$)	E2		0.0199	α(K)=0.01468 *21*; α(L)=0.00395 *6*; α(M)=0.000969 *14* α(N)=0.000245 *4*; α(O)=4.68×10^{-5} *7*; α(P)=3.90×10^{-6} *6* I_γ: Other: 100 *20* (^{24}Mg,5nγ).
		739.7 *3*	100 *17*	1401.8+x	(21/2$^+$)	M1+E2	0.63 *17*	0.031 *3*	α(K)=0.0254 *25*; α(L)=0.0044 *4*; α(M)=0.00103 *8* α(N)=0.000262 *21*; α(O)=5.2×10^{-5} *5*; α(P)=5.5×10^{-6} *5* I_γ: Other: 63 *13* (^{24}Mg,5nγ).
2142.1+x	(25/2$^-$)	556.0 *4*	100	1585.9+x	(21/2$^-$)	(E2)		0.0229	α(K)=0.01664 *24*; α(L)=0.00471 *7*; α(M)=0.001163 *17* α(N)=0.000294 *5*; α(O)=5.60×10^{-5} *8*; α(P)=4.56×10^{-6} *7*
2172.6+x	(23/2$^+$)	622.3 *6*	100	1550.2+x	(19/2$^+$)				
2213.8+x	(25/2$^+$)	(40.9)		2172.6+x	(23/2$^+$)				
		72.7 *10*		2141.4+x	(23/2$^+$)	(M1+E2)	0.21 *+4−3*	5.3 *5*	α(L)=4.0 *4*; α(M)=0.97 *9* α(N)=0.247 *22*; α(O)=0.048 *4*; α(P)=0.00444 *22* E_γ: From (^{24}Mg,5nγ).
		219.0 *3*	43 *10*	1994.8+x	(25/2$^+$)	(M1)		1.016	α(K)=0.830 *12*; α(L)=0.1425 *21*; α(M)=0.0334 *5* α(N)=0.00849 *13*; α(O)=0.001692 *25*; α(P)=0.000181 *3* I_γ: From (^{24}Mg,5nγ). Other: 32 *14* (^{16}O,5nγ). Mult.: α_K(exp)=1.14 *13*, α_{L12}(exp)=0.11 *6*; Theory: α_K(M1)=0.829. Additional information 1.
		811.9 *6*	100 *19*	1401.8+x	(21/2$^+$)	(E2)		0.01009	α(K)=0.00786 *11*; α(L)=0.001695 *24*; α(M)=0.000408 *6* α(N)=0.0001034 *15*; α(O)=2.00×10^{-5} *3*; α(P)=1.84×10^{-6} *3* I_γ: From (^{24}Mg,5nγ). Mult.: From α_K(exp)=0.0038 *28* in 1991La07 (^{16}O,5nγ); theory: α_K(E2)=0.00785. (M1+E2) in 2011Ba02 (^{28}Si,5nγ). See level comments.
2322.2+x	(27/2$^-$)	180.0 *3*	100[&] *6*	2142.1+x	(25/2$^-$)	E2+M1	4 *+5−1*	0.69 *6*	α(K)=0.29 *6*; α(L)=0.300 *6*; α(M)=0.0784 *16* α(N)=0.0198 *4*; α(O)=0.00358 *7*; α(P)=0.000182 *8* B(M1)(W.u.)=2.2×10^{-5} *+52−22*; B(E2)(W.u.)=4.2 *9*
		263.1 *3*	18[&] *6*	2058.9+x	(23/2$^-$)	[E2]		0.1727	α(K)=0.0885 *13*; α(L)=0.0630 *10*; α(M)=0.01627 *24* α(N)=0.00411 *6*; α(O)=0.000751 *11*; α(P)=4.30×10^{-5} *7* B(E2)(W.u.)=0.12 *5*
2404.9+x		819.0 *3*	100	1585.9+x	(21/2$^-$)				E_γ: From (^{24}Mg,5nγ).
2426.7+x	(27/2$^+$)	212.9 *3*	100[a] *15*	2213.8+x	(25/2$^+$)	M1		1.100	α(K)=0.898 *13*; α(L)=0.1543 *23*; α(M)=0.0362 *6* α(N)=0.00919 *14*; α(O)=0.00183 *3*; α(P)=0.000196 *3* Mult.: From (^{24}Mg,5nγ).
		431.9 *4*	7.4[a] *30*	1994.8+x	(25/2$^+$)	D+Q			Mult.: From (^{24}Mg,5nγ).
2524.9+x	(27/2$^+$)	98.2 *3*	22[a] *8*	2426.7+x	(27/2$^+$)				
		311.1 *3*	100[a] *19*	2213.8+x	(25/2$^+$)				
2526.9+x	(29/2$^+$)	204.6 *3*	8 *7*	2322.2+x	(27/2$^-$)	E1+M2	0.63 *14*	1.71 *53*	α(K)=1.25 *38*; α(L)=0.35 *11*; α(M)=0.087 *27* α(N)=0.0224 *70*; α(O)=0.0044 *14*; α(P)=4.3×10^{-4} *14*

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Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	δ[b]	α[f]	Comments
2526.9+x	(29/2$^+$)	532.4 *3*	100 *6*	1994.8+x	(25/2$^+$)	E2(+M3)	0.14 *+5−7*	0.0370 *95*	α(K)=0.0267 *69*; α(L)=0.0078 *20*; α(M)=0.00193 *50* α(N)=4.9×10^{-4} *13*; α(O)=9.4×10^{-5} *25*; α(P)=8.0×10^{-6} *24*
2584.8+x	(29/2$^-$)	158.1 *3*	100	2426.7+x	(27/2$^+$)	E1		0.1396	α(K)=0.1127 *17*; α(L)=0.0206 *3*; α(M)=0.00484 *8* α(N)=0.001215 *18*; α(O)=0.000232 *4*; α(P)=1.95×10^{-5} *3* B(E1)(W.u.)=4.8×10^{-6} *3* Mult.: α_{L12}(exp)=0.0077 *71* (1991La07); theory: α_{L12}=0.0170.
2612.5+x	(33/2$^+$)	85.6 *3*	100	2526.9+x	(29/2$^+$)	(E2)		12.1 *3*	B(E2)(W.u.)=0.79 *8* α(L)=8.98 *20*; α(M)=2.37 *6* α(N)=0.598 *13*; α(O)=0.1064 *24*; α(P)=0.00402 *9*
2653.6+x	(27/2$^-$)	331.3 *6*	19[a] *12*	2322.2+x	(27/2$^-$)				E_γ: From (^{24}Mg,5nγ) − 1996Ba54.
		595.0 *6*	100[a] *50*	2058.9+x	(23/2$^-$)				
2672.2+x	(29/2$^+$)	677.6 *7*	100	1994.8+x	(25/2$^+$)	Q[c]			
2686.9+x	(31/2$^-$)	102.1 *3*	100	2584.8+x	(29/2$^-$)				
2707.2+x	(29/2$^-$)	301.6[g] *5*	25[a] *8*	2404.9+x					E_γ,I_γ: Only in (^{24}Mg,5nγ) − 1996Ba54.
		385.0 *4*	21[a] *10*	2322.2+x	(27/2$^-$)			[d]	
		565.0 *6*	100[a] *26*	2142.1+x	(25/2$^-$)	Q			Mult.: From DCO ratio in (^{24}Mg,5nγ). See comment for this γ in the dataset.
2769.4+x	(29/2$^+$)	342.7 *3*	100	2426.7+x	(27/2$^+$)				
2939.2+x	(33/2$^-$)	252.3 *3*	100	2686.9+x	(31/2$^-$)	(M1)[c]		0.686	α(K)=0.561 *8*; α(L)=0.0961 *14*; α(M)=0.0225 *4* α(N)=0.00572 *9*; α(O)=0.001140 *17*; α(P)=0.0001219 *18* B(M1)(W.u.)=0.37 *10* Mult.: From (^{30}Si,5nγ) and RUL. B(M1)=1.1 *2* μ_N^2 (2005Gl09 (^{28}Si,5nγ)). 1991La07 show a 253.6 keV γ deexciting their level at 3220 keV. This level is not established by later publications.
2994.6+x	(31/2$^-$)	341.0 *3*	28[a] *9*	2653.6+x	(27/2$^-$)			[e]	
		672.6 *7*	100[a] *26*	2322.2+x	(27/2$^-$)	Q[c]			
3080.2+x	(29/2$^+$)	555.4 *6*	100	2524.9+x	(27/2$^+$)	D[c]			
3128.6+x	(31/2$^-$)	421.4 *4*	50[a] *15*	2707.2+x	(29/2$^-$)			[d]	
		806.4 *8*	100[a] *25*	2322.2+x	(27/2$^-$)	Q[c]			
3133.4+x	(31/2$^+$)	364.0 *4*	100[&] *6*	2769.4+x	(29/2$^+$)	(M1)		0.252	α(K)=0.206 *3*; α(L)=0.0351 *5*; α(M)=0.00821 *12* α(N)=0.00209 *3*; α(O)=0.000416 *6*; α(P)=4.45×10^{-5} *7*
		461.5 *5*	9[&] *3*	2672.2+x	(29/2$^+$)			0.135[d]	
		706.7 *7*	26[&] *3*	2426.7+x	(27/2$^+$)			[e]	
3249.9+x	(31/2$^-$)	542.7 *5*	100	2707.2+x	(29/2$^-$)				
3260.7+x	(31/2$^-$)	675.8 *7*	100	2584.8+x	(29/2$^-$)				
3282.1+x	(33/2$^+$)	609.9 *6*	100[&] *25*	2672.2+x	(29/2$^+$)	Q[c]			
		755.1 *8*	83[&] *17*	2526.9+x	(29/2$^+$)	Q			
3320.7+x	(35/2$^-$)	381.5 *4*	100[a] *21*	2939.2+x	(33/2$^-$)	(M1)		0.222	α(K)=0.182 *3*; α(L)=0.0309 *5*; α(M)=0.00722 *11*

$^{193}_{82}Pb_{111}$-12

Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [@]	E_f	J_f^π	Mult. [b]	α [f]	Comments
								α(N)=0.00184 *3*; α(O)=0.000366 *6*; α(P)=3.92×10^{-5} *6* B(M1)(W.u.)>0.43 Mult.: From (^{30}Si,5nγ) and RUL. 2005Gl09 (^{28}Si,5nγ) estimate B(M1)≥1.4 μ_N^2. 1991La07 show a 381.7 keV γ deexciting their level at 2967 keV. This level is not confirmed in the newer references.
3320.7+x	(35/2$^-$)	633.8 *6*	7.6[a] *27*	2686.9+x	(31/2$^-$)	[E2]	0.01703	α(K)=0.01276 *18*; α(L)=0.00324 *5*; α(M)=0.000793 *12* α(N)=0.000201 *3*; α(O)=3.85×10^{-5} *6*; α(P)=3.29×10^{-6} *5* B(E2)(W.u.)>6.9
3376.4+x	(31/2$^+$)	296.3 *3*	31[a] *9*	3080.2+x	(29/2$^+$)	D[c]		
		851.7 *9*	100 *38*	2524.9+x	(27/2$^+$)	Q[c]		I_γ: From I(γ+ce) in (^{30}Si,5nγ) − α=0.00915 for (E2). Other: 100 *38* (^{24}Mg,5nγ).
3414.8+x	(33/2$^+$)	742.3 *7*	100	2672.2+x	(29/2$^+$)	Q[c]		
3418.8+x		158.0 *3*	13[&] *6*	3260.7+x	(31/2$^-$)			
		834.0 *8*	100[&] *31*	2584.8+x	(29/2$^-$)			
3541.6+x	(35/2$^-$)	547.0 *5*	100	2994.6+x	(31/2$^-$)	Q[c]		
3542.8+x	(33/2$^+$)	409.5 *4*	100[a] *23*	3133.4+x	(31/2$^+$)	D[c]		
		773.5 *8*	68[a] *18*	2769.4+x	(29/2$^+$)			I_γ: Other value: 15 *6* (^{30}Si,5nγ) can be obtained from total intensity assuming 409.5γ as (E2).
3607.0+x		996.5 *6*	100	2612.5+x	(33/2$^+$)			E_γ: From (^{24}Mg,5nγ) − γ ray seen only by 1996Ba54 (^{24}Mg,5nγ).
3640.3+x	(37/2$^-$)	319.6 *3*	100	3320.7+x	(35/2$^-$)	D[c]		
3673.0+x	(33/2$^+$)	1145.2 *11*	100	2526.9+x	(29/2$^+$)	Q[c]		
3702.2+x	(33/2$^+$)	1030.1 *10*	50[&] *50*	2672.2+x	(29/2$^+$)			
		1174.9 *10*	100[&] *50*	2526.9+x	(29/2$^+$)			
3722.3+x	(37/2$^-$)	401.6 *4*	100[a] *22*	3320.7+x	(35/2$^-$)	D[c]		
		783.1 *8*	25[a] *6*	2939.2+x	(33/2$^-$)	Q[c]		
3741.8+x	(35/2$^-$)	613.2 *6*	100	3128.6+x	(31/2$^-$)	Q[c]		
3772.1+x	(35/2$^+$)	395.8 *4*	100	3376.4+x	(31/2$^+$)	Q[c]		
3822.5+x	(35/2$^+$)	540.4 *5*	100	3282.1+x	(33/2$^+$)			
3839.5+x	(33/2$^+$)	462.9 *5*	100[a] *25*	3376.4+x	(31/2$^+$)	D[c]		
		759.4 *8*	18[a] *7*	3080.2+x	(29/2$^+$)	Q[c]		
3860.0+x		447.6 *6*	100	3414.8+x	(33/2$^+$)			E_γ: From (^{24}Mg,5nγ) 1996Ba54.
3906.6+x	(35/2$^-$)	487.8 *5*	100	3418.8+x		D	*e*	
3924.8+x	(35/2$^+$)	382.0 *4*	100[&] *17*	3542.8+x	(33/2$^+$)	D[c]		
		510.2 *5*	23[&] *9*	3414.8+x	(33/2$^+$)		*d*	
		791.5 *8*	40[&] *10*	3133.4+x	(31/2$^+$)	Q[c]		
3987.5+x		739.5 *5*	100	3249.9+x	(31/2$^-$)			E_γ: From (^{24}Mg,5nγ).
3991.7+x	(35/2$^+$)	448.9 *4*	100	3542.8+x	(33/2$^+$)			
3997.1+x	(37/2$^+$)	294.8 *3*	16[&] *8*	3702.2+x	(33/2$^+$)	(Q)[c]		
		324.0 *3*	16[&] *8*	3673.0+x	(33/2$^+$)			

$^{193}_{82}Pb_{111}$-13

Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	Comments
3997.1+x	(37/2$^+$)	581.8 *6*	100[&] *36*	3414.8+x	(33/2$^+$)	(Q)	E_γ: 1996Ba54 (^{24}Mg,5nγ) place a 581.4-keV transition as deexciting their level at 4441 keV. This level has no analogue in the scheme of 1996Du18 (^{30}Si,5nγ).
4003.5+x	(35/2$^+$)	164.0 *3*	100[&] *11*	3839.5+x	(33/2$^+$)	D[c]	
		461.2 *5*	20[&] *8*	3542.8+x	(33/2$^+$)		
4055.9+x	(39/2$^-$)	415.6 *4*	100	3640.3+x	(37/2$^-$)	(D)[c]	
4063.1+x	(37/2$^-$)	156.5 *3*	100	3906.6+x	(35/2$^-$)		
4116.5+x	(37/2$^+$)	701.7 *7*	100	3414.8+x	(33/2$^+$)	Q[c]	
4136.1+x	(39/2$^-$)	413.8 *4*	100[a] *24*	3722.3+x	(37/2$^-$)	D[c]	
		815.4 *8*	44[a] *13*	3320.7+x	(35/2$^-$)		
4149.4+x	(37/2$^+$)	146.0 *3*	100[&] *13*	4003.5+x	(35/2$^+$)	D[c]	
		377.3 *4*	33[&] *16*	3772.1+x	(35/2$^+$)		
4167.2+x	(39/2$^-$)	444.9 *4*	100[a] *32*	3722.3+x	(37/2$^-$)	D[c]	
		846.5 *8*	32[a] *15*	3320.7+x	(35/2$^-$)		
4180.3+x	(39/2$^-$)	638.7 *6*	100	3541.6+x	(35/2$^-$)	Q[c]	
4191.4+x	(39/2$^+$)	419.6 *4*	100	3772.1+x	(35/2$^+$)	Q[c]	
4210.9+x	(37/2$^+$)	438.7 *4*	100	3772.1+x	(35/2$^+$)	D[c]	
4239.2+x		632.2 *6*	100	3607.0+x			E_γ: From (^{24}Mg,5nγ).
4271.1+x	(39/2$^-$)	208.0 *3*	100	4063.1+x	(37/2$^-$)	D[c]	
4298.0+x	(39/2$^+$)	148.4 *3*	100	4149.4+x	(37/2$^+$)	D[c]	
4313.4+x	(37/2$^+$)	388.7 *4*	100[&] *40*	3924.8+x	(35/2$^+$)		
		770.2 *8*	40[&] *50*	3542.8+x	(33/2$^+$)		
4360.8+x	(37/2$^+$)	946.0 *9*	100	3414.8+x	(33/2$^+$)		
4388.1+x	(41/2$^+$)	90.0 *3*		4298.0+x	(39/2$^+$)		
		196.9 *3*	100[&] *23*	4191.4+x	(39/2$^+$)	D[c]	
4399.2+x	(39/2$^-$)	657.4 *7*	100	3741.8+x	(35/2$^-$)	Q[c]	
4435.2+x	(39/2$^-$)	693.4 *7*	100	3741.8+x	(35/2$^-$)	Q[c]	
4445.5+x	(39/2$^+$)	234.5 *3*	46[&] *12*	4210.9+x	(37/2$^+$)		
		296.4 *3*	32[&] *16*	4149.4+x	(37/2$^+$)		
		448.1 *4*	100[&] *27*	3997.1+x	(37/2$^+$)		
4470.6+x	(41/2$^-$)	303.4 *3*	29[a] *11*	4167.2+x	(39/2$^-$)	D[c]	
		334.5 *3*	100[a] *26*	4136.1+x	(39/2$^-$)	D[c]	
		748.3 *7*	14[a] *6*	3722.3+x	(37/2$^-$)		
4532.8+x	(41/2$^-$)	261.7 *5*	100[&] *36*	4271.1+x	(39/2$^-$)	D	
		396.6 *4*	68[&] *50*	4136.1+x	(39/2$^-$)		
4537.0+x	(43/2$^+$)	148.9 *3*	100	4388.1+x	(41/2$^+$)	D[c]	
4538.8+x	(41/2$^-$)	482.9 *5*	100	4055.9+x	(39/2$^-$)	D[c]	
4564.6+x	(39/2$^+$)	567.5 *6*	100	3997.1+x	(37/2$^+$)		
4577.2+x	(41/2$^+$)	279.2 *3*	100	4298.0+x	(39/2$^+$)	D[c]	
4591.3+x	(41/2$^-$)	424.1 *4*	100[a] *38*	4167.2+x	(39/2$^-$)	D[c]	

$^{193}_{82}Pb_{111}$-14

Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	α[f]	Comments
4591.3+x	(41/2⁻)	455.3 *5*	54[a] *31*	4136.1+x	(39/2⁻)			
		869.1 *9*	92[a] *38*	3722.3+x	(37/2⁻)			
4634.9+x		647.5 *5*	100	3987.5+x				E_γ: From (^{24}Mg,5nγ) 1996Ba54.
4661.8+x		545.3 *5*	100	4116.5+x	(37/2⁺)			
4760.6+x	(41/2⁺)	644.1 *6*	100	4116.5+x	(37/2⁺)	Q[c]		
4769.0+x	(45/2⁺)	232.0[‡] *3*	100	4537.0+x	(43/2⁺)	D[c]		
4784.2+x	(41/2⁺)	338.7 *3*	100	4445.5+x	(39/2⁺)			
4828.1+x	(43/2⁻)	295.2 *3*	15 *10*	4532.8+x	(41/2⁻)	D[c]		
		357.7 *4*	100 *22*	4470.6+x	(41/2⁻)	D[c]		
		692.3 *7*	7 *7*	4136.1+x	(39/2⁻)			
4861.6+x	(43/2⁻)	328.8 *3*	91 *46*	4532.8+x	(41/2⁻)			
		390.8 *4*	100 *76*	4470.6+x	(41/2⁻)	D[c]		
4893.1+x	(43/2⁻)	712.8 *7*	100	4180.3+x	(39/2⁻)	Q[c]		
4917.0+x	(43/2⁻)	325.7 *3*	100	4591.3+x	(41/2⁻)			
4945.1+x	(43/2⁺)	367.9 *4*	100	4577.2+x	(41/2⁺)	D[c]		
5033.3+x	(43/2⁻)	442.0 *4*	100	4591.3+x	(41/2⁻)	D[c]		
5060.6+x	(47/2⁺)	291.6[‡] *3*	100	4769.0+x	(45/2⁺)	D[c]		B(M1)=5.27 *64* from 1998Cl06.
5092.8+x	(45/2⁻)	175.9 *3*	13[&] *13*	4917.0+x	(43/2⁻)	D[c]		
		231.1 *3*	100[&] *40*	4861.6+x	(43/2⁻)	D[c]		
		264.8 *3*	35[&] *22*	4828.1+x	(43/2⁻)		*d*	
5165.8+x	(43/2⁻)	730.6 *7*	100[a] *40*	4435.2+x	(39/2⁻)	Q[c]		
		766.6 *8*	53[a] *27*	4399.2+x	(39/2⁻)			
5169.4+x	(45/2⁺)	224.3 *3*	100	4945.1+x	(43/2⁺)	D+Q[c]		
5182.0+x	(45/2⁻)	353.7 *4*	100[a] *43*	4828.1+x	(43/2⁻)	D[c]		
		711.7 *7*	29[a] *14*	4470.6+x	(41/2⁻)			
5218.4+x	(45/2⁻)	390.3 *4*	100	4828.1+x	(43/2⁻)	D[c]		
5281.1+x	(43/2⁻)	1225.2 *12*	100	4055.9+x	(39/2⁻)			
5331.9+x	(47/2⁻)	239.1[#] *3*	100	5092.8+x	(45/2⁻)	D[c]		
5425.8+x	(49/2⁺)	365.2[‡] *4*	100[&] *9*	5060.6+x	(47/2⁺)	(M1)[c]	0.250	α(K)=0.205 *3*; α(L)=0.0348 *5*; α(M)=0.00813 *12* α(N)=0.00207 *3*; α(O)=0.000412 *6*; α(P)=4.41×10^{-5} *7* B(M1)(W.u.)=2.0 *+4−5*
		656.8 *7*	13.1[&] *44*	4769.0+x	(45/2⁺)	[E2][c]	0.01576	α(K)=0.01188 *17*; α(L)=0.00294 *5*; α(M)=0.000717 *11* α(N)=0.000182 *3*; α(O)=3.48×10^{-5} *5*; α(P)=3.01×10^{-6} *5* B(E2)(W.u.)=41 *+16−17*
5436.9+x	(47/2⁺)	267.5 *3*	100	5169.4+x	(45/2⁺)	D		
5439.8+x	(45/2⁻)	406.5 *4*	100	5033.3+x	(43/2⁻)	D[c]		
5501.7+x	(47/2⁻)	319.7 *3*	100	5182.0+x	(45/2⁻)	D[c]		
5597.5+x	(49/2⁻)	265.6[#] *3*	100	5331.9+x	(47/2⁻)	D[c]		
5668.3+x	(45/2⁻)	1129.5 *11*	100	4538.8+x	(41/2⁻)			
5763.1+x	(49/2⁺)	326.2 *3*	100	5436.9+x	(47/2⁺)	D[c]		
5802.2+x	(47/2⁻)	362.4 *4*	100	5439.8+x	(45/2⁻)			

$^{193}_{82}Pb_{111}$-15

Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.[b]	α[f]	Comments
5815.4+x	(51/2$^+$)	389.6[‡] *4*	100[&] *10*	5425.8+x	(49/2$^+$)	(M1)[c]	0.210	α(K)=0.1719 *25*; α(L)=0.0292 *5*; α(M)=0.00682 *10* α(N)=0.001734 *25*; α(O)=0.000346 *5*; α(P)=3.70×10^{-5} *6* B(M1)(W.u.)=1.7 *5* Mult.: From (^{30}Si,5nγ) and RUL. B(M1)=4.01 *+95−76* from 1998Cl06.
		754.7 *8*	24[&] *6*	5060.6+x	(47/2$^+$)	[E2]	0.01173	α(K)=0.00905 *13*; α(L)=0.00204 *3*; α(M)=0.000493 *7* α(N)=0.0001248 *18*; α(O)=2.41×10^{-5} *4*; α(P)=2.18×10^{-6} *3* B(E2)(W.u.)=38 *13*
5825.3+x	(49/2$^-$)	323.6 *3*	100	5501.7+x	(47/2$^-$)	D[c]		
5927.0+x	(51/2$^-$)	329.5[#] *3*	100	5597.5+x	(49/2$^-$)	D+Q[c]		
6001.5+x	(51/2$^-$)	176.3 *3*	100	5825.3+x	(49/2$^-$)	D+Q[c]		
6145.5+x	(51/2$^+$)	382.4 *4*	100	5763.1+x	(49/2$^+$)	D+Q[c]		
6231.4+x	(53/2$^+$)	416.1[‡] *4*	100[&] *13*	5815.4+x	(51/2$^+$)	(M1)[c]	0.176	α(K)=0.1442 *21*; α(L)=0.0244 *4*; α(M)=0.00571 *9* α(N)=0.001451 *21*; α(O)=0.000289 *5*; α(P)=3.10×10^{-5} *5* B(M1)(W.u.)=1.4 *4* Mult.: From (^{30}Si,5nγ) and RUL.
		805.6 *8*	7.3[&] *37*	5425.8+x	(49/2$^+$)	[E2]	0.01025	α(K)=0.00798 *12*; α(L)=0.001728 *25*; α(M)=0.000416 *6* α(N)=0.0001054 *15*; α(O)=2.04×10^{-5} *3*; α(P)=1.88×10^{-6} *3* B(E2)(W.u.)=9 *5*
6285.2+x	(53/2$^-$)	283.7 *3*	100	6001.5+x	(51/2$^-$)	D[c]		
6302.6+x	(53/2$^-$)	375.6[#] *4*	100	5927.0+x	(51/2$^-$)	D+Q[c]		
6597.1+x	(55/2$^-$)	311.9 *3*	100	6285.2+x	(53/2$^-$)	D[c]		
6657.6+x	(55/2$^+$)	426.1[‡] *4*	100[&] *16*	6231.4+x	(53/2$^+$)			
		842.2 *8*	29[&] *10*	5815.4+x	(51/2$^+$)			
6715.5+x	(55/2$^-$)	412.9 *4*	100	6302.6+x	(53/2$^-$)			
6927.5+x	(57/2$^-$)	330.4 *3*	100	6597.1+x	(55/2$^-$)	D+Q[c]		
7090.3+x	(57/2$^+$)	432.7[‡] *4*	100[&] *33*	6657.6+x	(55/2$^+$)			
		858.8 *9*	19[&] *19*	6231.4+x	(53/2$^+$)			
7154.7+x	(57/2$^-$)	439.2 *4*	100	6715.5+x	(55/2$^-$)	D[c]		
7312.0+x	(59/2$^-$)	384.5 *4*	100	6927.5+x	(57/2$^-$)	D[c]		
7516+x?	(59/2$^+$)	426.1[g] *10*	100	7090.3+x	(57/2$^+$)			
7713.5+x	(61/2$^-$)	401.5 *4*	100	7312.0+x	(59/2$^-$)			
7932+x?	(61/2$^+$)	416.1[g] *10*	100	7516+x?	(59/2$^+$)			
277.0+y	J+2	277.0 *3*	100	y	J			
594.3+y	J+4	317.3 *3*	100	277.0+y	J+2			
951.6+y	J+6	357.3 *3*	100	594.3+y	J+4			
1349.1+y	J+8	397.5 *3*	100	951.6+y	J+6			
1786.9+y	J+10	437.8 *3*	100	1349.1+y	J+8			
2264.3+y	J+12	477.4 *3*	100	1786.9+y	J+10			
2781.6+y	J+14	517.3 *4*	100	2264.3+y	J+12			
3337.7+y	J+16	556.1 *3*	100	2781.6+y	J+14			

$^{193}_{82}Pb_{111}$-16

Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ †	I_γ @	E_f	J_f^π	$I_{(\gamma+ce)}$	Comments
3932.5+y	J+18	594.8 *4*	100	3337.7+y	J+16		
4565.9+y	J+20	633.4 *5*	100	3932.5+y	J+18		
5237.7+y	J+22	671.8 *6*	100	4565.9+y	J+20		
5945.9+y?	J+24	708.2[g] *8*		5237.7+y	J+22	0.05 *4*	SD band transition from 1996Du05, not confirmed by 1999Ro21.
190.2+z	J1+2	190.2 *5*	100	z	J1		
422.8+z	J1+4	232.6 *3*	100	190.2+z	J1+2		
698.0+z	J1+6	275.2 *3*	100	422.8+z	J1+4		
1015.9+z	J1+8	317.9 *3*	100	698.0+z	J1+6		
1376.8+z	J1+10	360.9 *3*	100	1015.9+z	J1+8		
1780.3+z	J1+12	403.5 *3*	100	1376.8+z	J1+10		
2226.2+z	J1+14	445.9 *3*	100	1780.3+z	J1+12		
2714.4+z	J1+16	488.2 *4*	100	2226.2+z	J1+14		
3242.4+z	J1+18	528.0 *5*	100	2714.4+z	J1+16		
3812.2+z	J1+20	569.8 *6*	100	3242.4+z	J1+18		
4422.7+z	J1+22	610.5 *7*	100	3812.2+z	J1+20		
5072.7+z	J1+24	650.0 *7*	100	4422.7+z	J1+22		
5762.5+z?	J1+26	689.8[g] *8*	100	5072.7+z	J1+24		SD band transition from 1996Du05, not confirmed by 1999Ro21.
251.5+u	J2+2	251.5 *6*	100	u	J2		
543.0+u	J2+4	291.5 *3*	100	251.5+u	J2+2		
875.4+u	J2+6	332.4 *3*	100	543.0+u	J2+4		
1247.5+u	J2+8	372.1 *3*	100	875.4+u	J2+6		
1659.4+u	J2+10	411.9 *3*	100	1247.5+u	J2+8		
2110.0+u	J2+12	450.6 *3*	100	1659.4+u	J2+10		
2598.9+u	J2+14	488.9 *3*	100	2110.0+u	J2+12		
3125.5+u	J2+16	526.6 *4*	100	2598.9+u	J2+14		
3688.9+u	J2+18	563.4 *4*	100	3125.5+u	J2+16		
4288.8+u	J2+20	599.9 *5*	100	3688.9+u	J2+18		
4925.8+u	J2+22	637.0 *5*	100	4288.8+u	J2+20		
5598.0+u	J2+24	672.2 *6*	100	4925.8+u	J2+22		
6307.2+u	J2+26	709.2 *7*	100	5598.0+u	J2+24		E_γ: 709.3 *6* (1996Du05) was assigned to SD-4 band.
273.0+v?	J3+2	273.0[g] *7*	100	v	J3		SD band transition from 1996Du05, not confirmed by 1999Ro21.
586.4+v	J3+4	313.4 *6*	100	273.0+v?	J3+2		
939.5+v	J3+6	353.1 *4*	100	586.4+v	J3+4		
1331.4+v	J3+8	391.9 *3*	100	939.5+v	J3+6		
1761.4+v	J3+10	430.0 *3*	100	1331.4+v	J3+8		
2228.5+v	J3+12	467.1 *4*	100	1761.4+v	J3+10		
2732.4+v	J3+14	503.9 *4*		2228.5+v	J3+12	1.00 *10*	
3271.9+v	J3+16	539.5 *4*		2732.4+v	J3+14	1.02 *10*	
3847.0+v	J3+18	575.1 *3*		3271.9+v	J3+16	0.82 *8*	
4457.0+v	J3+20	610.0 *5*		3847.0+v	J3+18	0.66 *7*	
5101.5+v	J3+22	644.5 *6*		4457.0+v	J3+20	0.31 *7*	
5777.9+v	J3+24	676.4 *6*		5101.5+v	J3+22	0.20 *7*	
6485.1+v	J3+26	707.2 *8*		5777.9+v	J3+24	0.07 *7*	E_γ: 707.3 *6* (1996Du05) was assigned to SD-3 band.
100.5+w	J4+1	101[g]		w	J4		

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Adopted Levels, Gammas (continued)

γ(^{193}Pb) (continued)

E_i(level)	J_i^π	E_γ †	E_f	J_f^π	$I_{(\gamma+ce)}$	E_i(level)	J_i^π	E_γ †	E_f	J_f^π	$I_{(\gamma+ce)}$
213.2+w	J4+2	112[g]	100.5+w	J4+1		5811.5+w	J4+26	666.8 *9*	5144.7+w	J4+24	0.18 *9*
		213.2 *4*	w	J4	0.53 *10*	6159.1+w	J4+27	684.0 *6*	5475.1+w	J4+25	0.13 *7*
335.1+w	J4+3	122.0 *5*	213.2+w	J4+2		6512.0+w	J4+28	700.5 *8*	5811.5+w	J4+26	0.18 *9*
		234.6 *5*	100.5+w	J4+1	0.13 *7*	6877.0+w	J4+29	717.9 *7*	6159.1+w	J4+27	0.07 *7*
467.9+w	J4+4	132.9 *5*	335.1+w	J4+3		260.6+s	J5+2	260.6 *7*	s	J5	0.24 *4*
		254.6 *7*	213.2+w	J4+2	0.72 *11*	560.4+s	J5+4	299.8 *6*	260.6+s	J5+2	0.51 *7*
610.6+w	J4+5	142.5 *5*	467.9+w	J4+4		900.5+s	J5+6	340.1 *4*	560.4+s	J5+4	0.52 *7*
		275.5 *5*	335.1+w	J4+3	0.35 *7*	1279.4+s	J5+8	378.9 *5*	900.5+s	J5+6	0.63 *10*
763.9+w	J4+6	153.2 *5*	610.6+w	J4+5		1696.6+s	J5+10	417.2 *5*	1279.4+s	J5+8	1.00 *18*
		296.2 *5*	467.9+w	J4+4	0.71 *14*	2150.6+s	J5+12	454.0 *5*	1696.6+s	J5+10	0.69 *11*
926.8+w	J4+7	163.0 *5*	763.9+w	J4+6		2641.7+s	J5+14	491.1 *5*	2150.6+s	J5+12	0.54 *11*
		316.2 *5*	610.6+w	J4+5	0.45 *7*	3167.8+s	J5+16	526.1 *5*	2641.7+s	J5+14	0.82 *12*
1099.9+w	J4+8	172.8 *5*	926.8+w	J4+7		3729.1+s	J5+18	561.3 *5*	3167.8+s	J5+16	0.80 *12*
		336.1 *4*	763.9+w	J4+6	0.91 *10*	4325.5+s	J5+20	596.4 *6*	3729.1+s	J5+18	0.65 *12*
1282.6+w	J4+9	182.7 *5*	1099.9+w	J4+8		4956.6+s	J5+22	631.1 *7*	4325.5+s	J5+20	0.44 *10*
		355.9 *5*	926.8+w	J4+7	0.87 *8*	5620.8+s	J5+24	664.2 *7*	4956.6+s	J5+22	0.35 *10*
1475.2+w	J4+10	193.0 *5*	1282.6+w	J4+9		281.8+t	J6+2	281.8 *6*	t	J6	0.15 *2*
		375.1 *5*	1099.9+w	J4+8	0.92 *10*	603.2+t	J6+4	321.5 *6*	281.8+t	J6+2	0.43 *7*
1677.0+w	J4+11	201.9 *5*	1475.2+w	J4+10		964.1+t	J6+6	360.9 *5*	603.2+t	J6+4	0.62 *11*
		394.4 *5*	1282.6+w	J4+9	0.95 *9*	1362.6+t	J6+8	398.5 *5*	964.1+t	J6+6	1.00 *17*
1888.7+w	J4+12	211.7 *5*	1677.0+w	J4+11		1798.5+t	J6+10	435.9 *4*	1362.6+t	J6+8	0.58 *11*
		413.5 *5*	1475.2+w	J4+10	1.04 *14*	2270.8+t	J6+12	472.3 *6*	1798.5+t	J6+10	0.51 *7*
2109.8+w	J4+13	221.0 *5*	1888.7+w	J4+12		2778.9+t	J6+14	508.1 *6*	2270.8+t	J6+12	0.58 *8*
		432.8 *4*	1677.0+w	J4+11	1.02 *10*	3322.1+t	J6+16	543.2 *6*	2778.9+t	J6+14	0.36 *7*
2340.0+w	J4+14	231[g]	2109.8+w	J4+13		3900.1+t	J6+18	578.0 *5*	3322.1+t	J6+16	0.67 *8*
		451.2 *5*	1888.7+w	J4+12	0.89 *10*	4512.1+t	J6+20	612.0 *6*	3900.1+t	J6+18	0.29 *5*
2580.4+w	J4+15	470.6 *4*	2109.8+w	J4+13	0.90 *9*	5158.9+t	J6+22	646.8 *7*	4512.1+t	J6+20	0.43 *7*
2828.5+w	J4+16	488.6 *5*	2340.0+w	J4+14	0.73 *10*	212.9+a	J7+2	212.9 *5*	a	J7	0.40 *5*
3087.8+w	J4+17	507.4 *4*	2580.4+w	J4+15	0.83 *9*	468.7+a	J7+4	255.8 *5*	212.9+a	J7+2	1.00 *12*
3355.0+w	J4+18	526.5 *5*	2828.5+w	J4+16	0.95 *16*	766.0+a	J7+6	297.3 *6*	468.7+a	J7+4	0.36 *5*
3631.3+w	J4+19	543.5 *5*	3087.8+w	J4+17	0.75 *7*	1102.5+a	J7+8	336.6 *6*	766.0+a	J7+6	0.54 *7*
3917.2+w	J4+20	562.2 *6*	3355.0+w	J4+18	0.71 *13*	1478.3+a	J7+10	375.8 *5*	1102.5+a	J7+8	0.63 *7*
4211.0+w	J4+21	579.7 *5*	3631.3+w	J4+19	0.44 *7*	1894.2+a	J7+12	415.9 *4*	1478.3+a	J7+10	0.62 *7*
4513.4+w	J4+22	596.2 *7*	3917.2+w	J4+20	0.35 *10*	2349.7+a	J7+14	455.5 *4*	1894.2+a	J7+12	0.60 *5*
4825.6+w	J4+23	614.6 *7*	4211.0+w	J4+21	0.35 *7*	2845.3+a	J7+16	495.6 *6*	2349.7+a	J7+14	0.40 *7*
5144.7+w	J4+24	631.3 *8*	4513.4+w	J4+22	0.43 *10*	3380.7+a	J7+18	535.4 *7*	2845.3+a	J7+16	0.29 *5*
5475.1+w	J4+25	649.5 *5*	4825.6+w	J4+23	0.25 *7*	3956.0+a	J7+20	575.3 *8*	3380.7+a	J7+18	0.12 *4*

† From (^{30}Si,5nγ) and (HI,xnγ):SD data, except where noted.

‡ Magnetic dipole band 2 transition, common to both 1996Du18 (^{30}Si,5nγ) and 1996Ba54 (^{24}Mg,5nγ), but the latter reference shows the band levels shifted by ≈45 keV, relative to those given in 1996Du18, with respect to the 4297-keV bandhead (see notes in the respective datasets).

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Adopted Levels, Gammas (continued)

$\gamma(^{193}Pb)$ (continued)

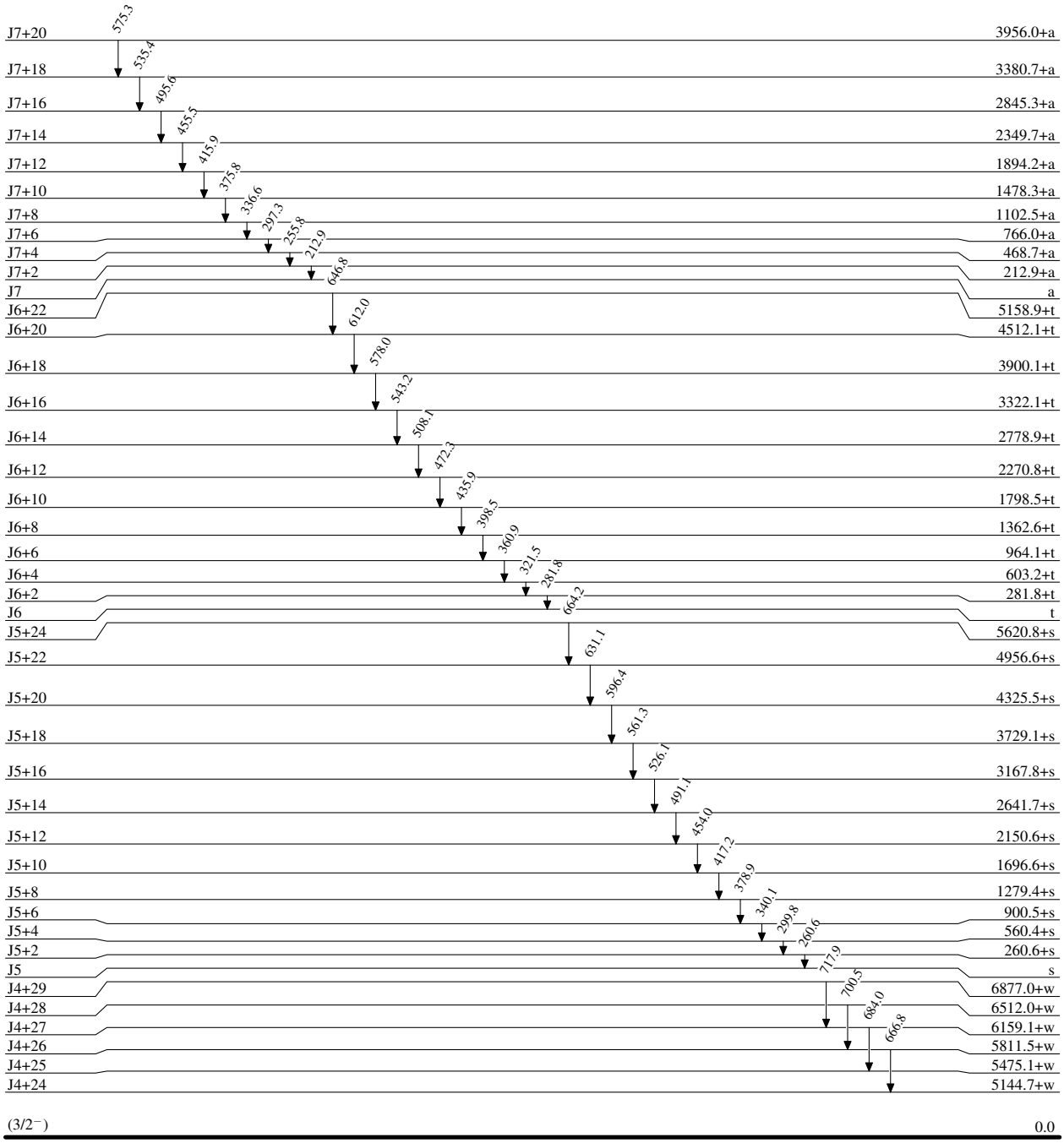
[#] γ ray also observed and placed in dipole band 1a by 1996Ba54 (called Band 1b in the reference), but are unable to establish the level energies because they do not observe the transitions linking the members of this dipole cascade to lower lying levels.
[@] Photon branching for each level from (^{16}O,5nγ), except otherwise noted. For SD bands, the values are relative transition intensities within each band.
[&] From (^{30}Si,5nγ).
[a] From (^{24}Mg,5nγ).
[b] From (^{16}O,5nγ) – 1991La07, except otherwise noted.
[c] From (^{30}Si,5nγ).
[d] Internal conversion coefficient calculated assuming an [M1] multipolarity.
[e] Internal conversion coefficient calculated assuming an [E2] multipolarity.
[f] Additional information 2.
[g] Placement of transition in the level scheme is uncertain.

$^{193}_{82}Pb_{111}$-19

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{193}_{82}Pb_{111}$

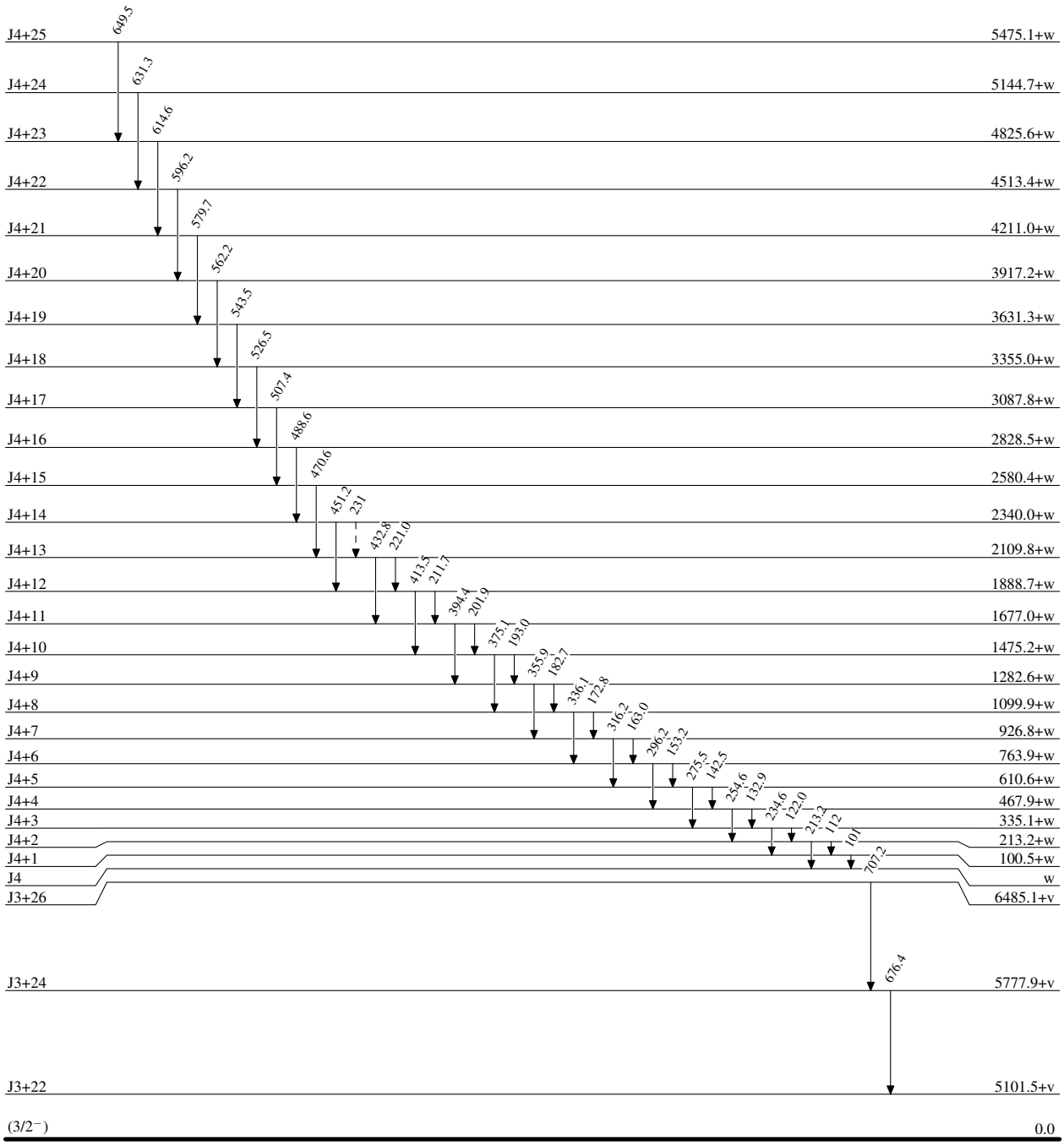
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{193}_{82}Pb_{111}$

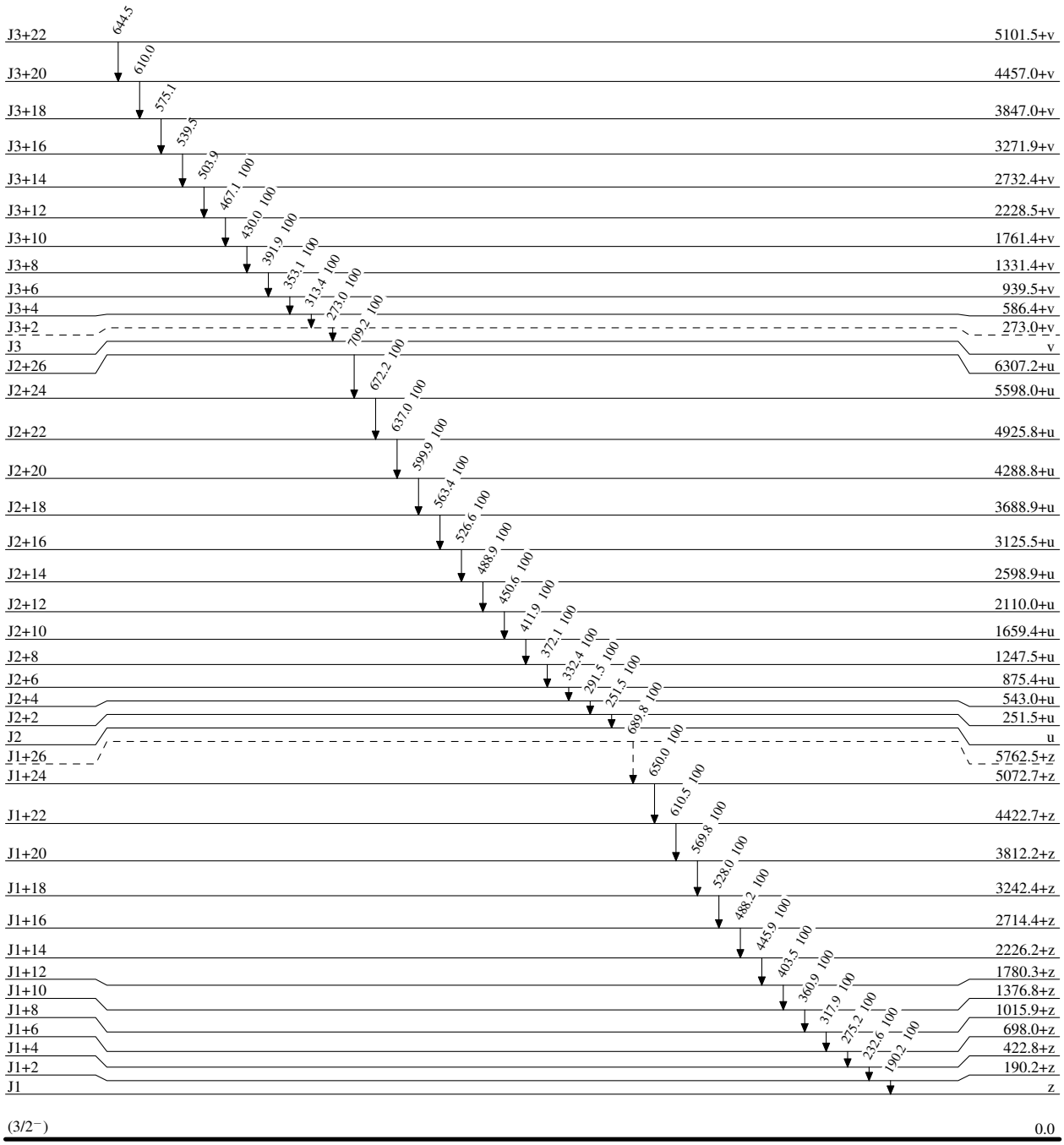
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{193}_{82}Pb_{111}$

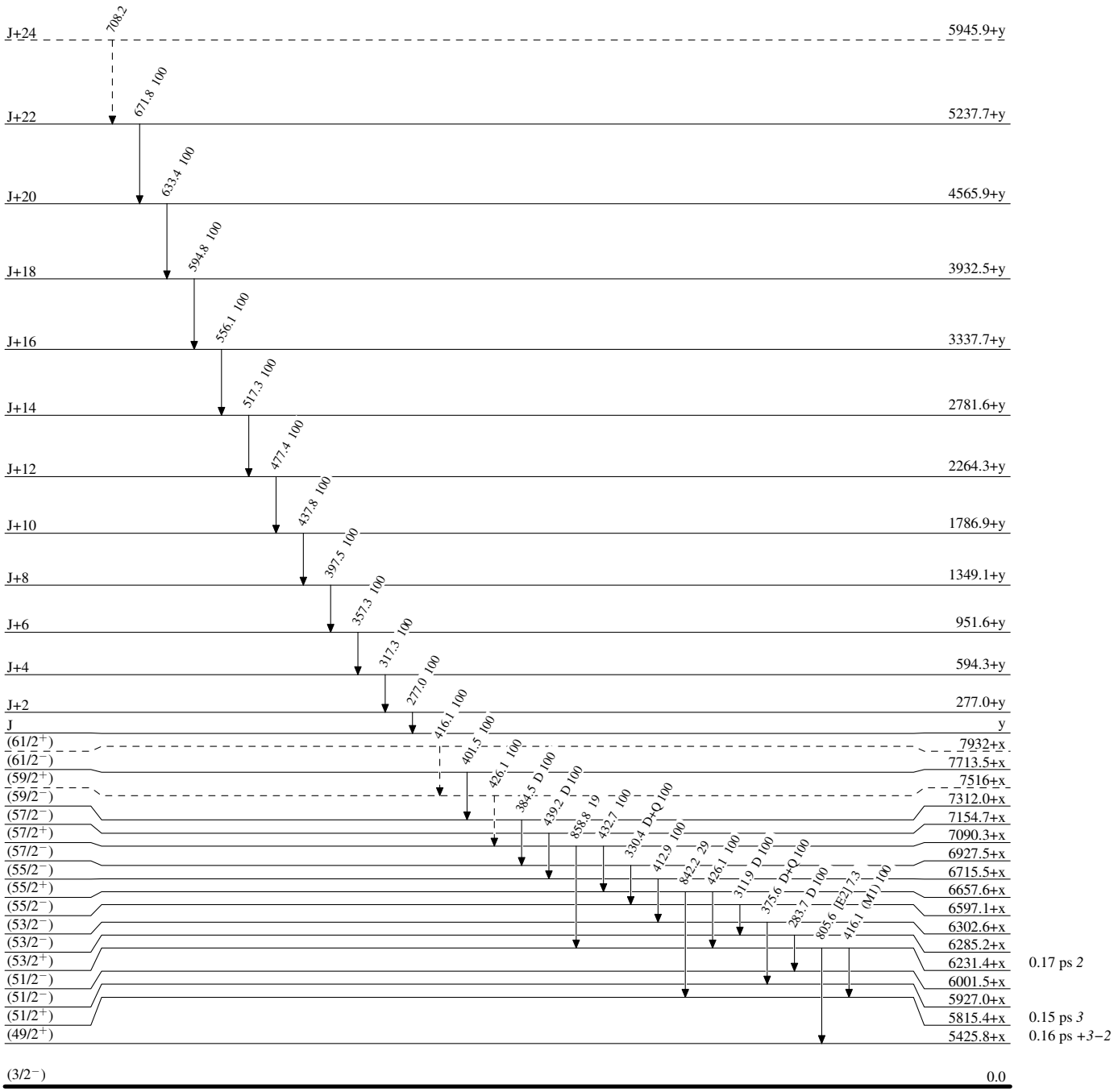
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

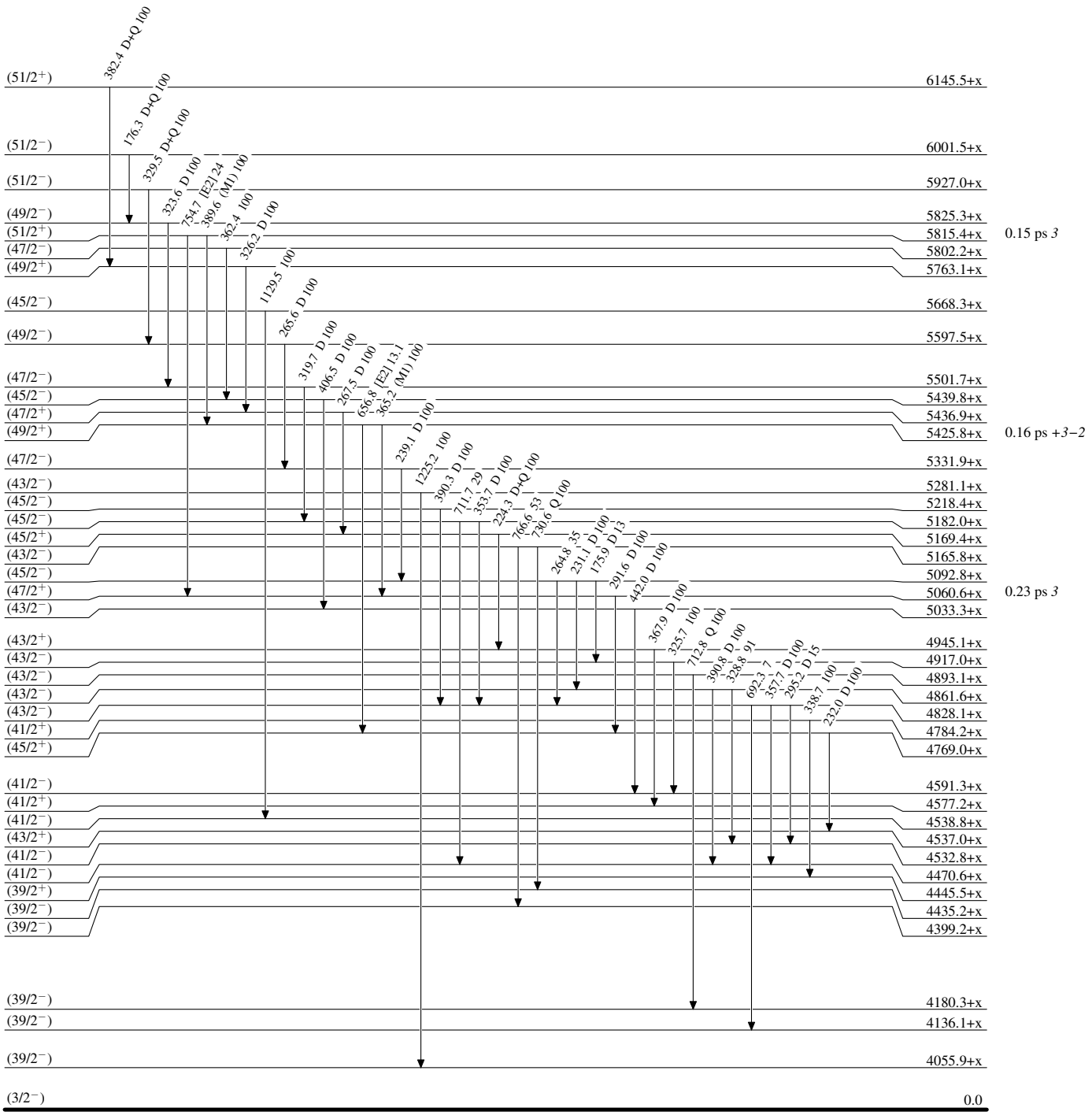


$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

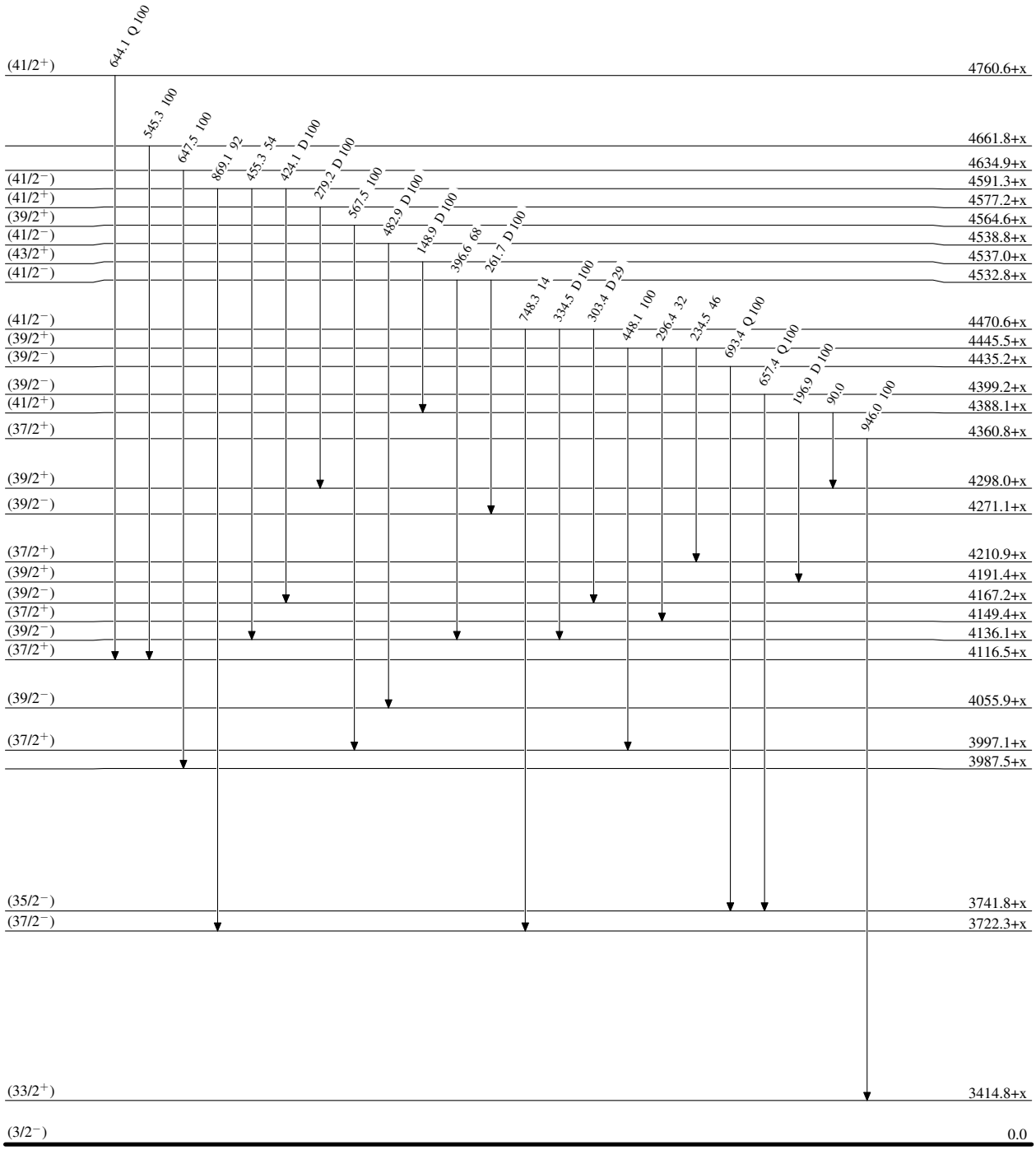


$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

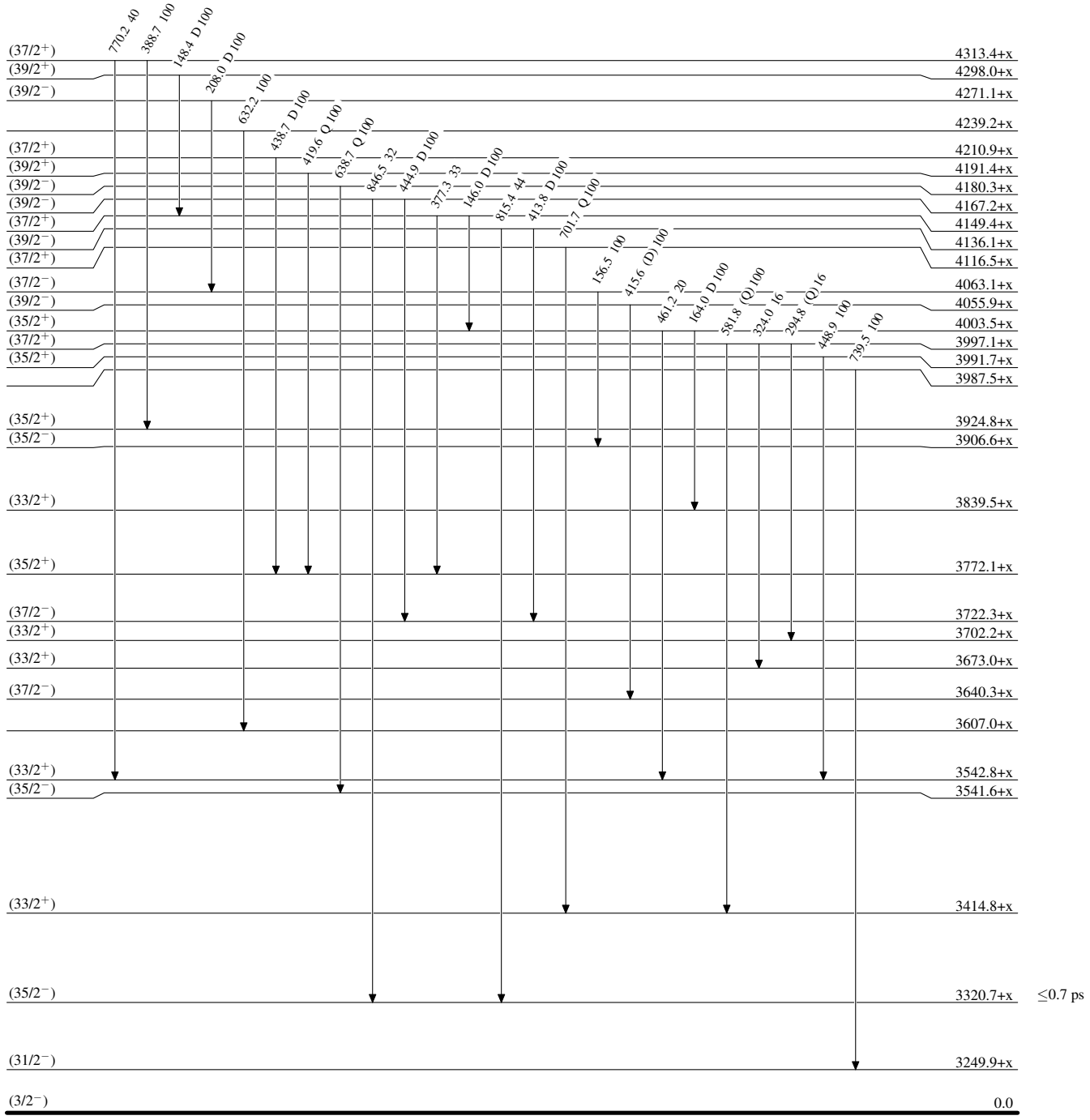


$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{193}_{82}Pb_{111}$

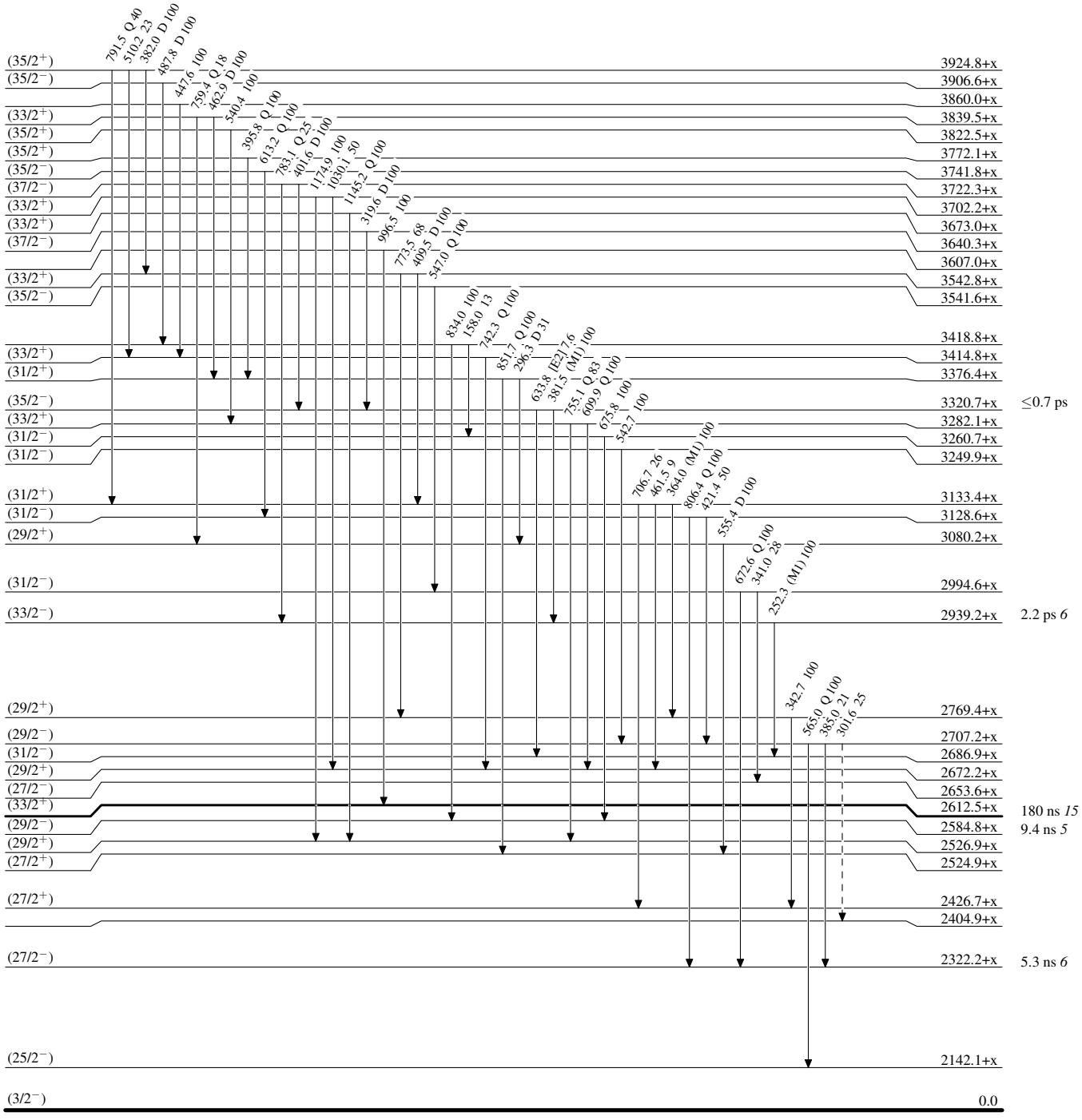
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{193}_{82}Pb_{111}$

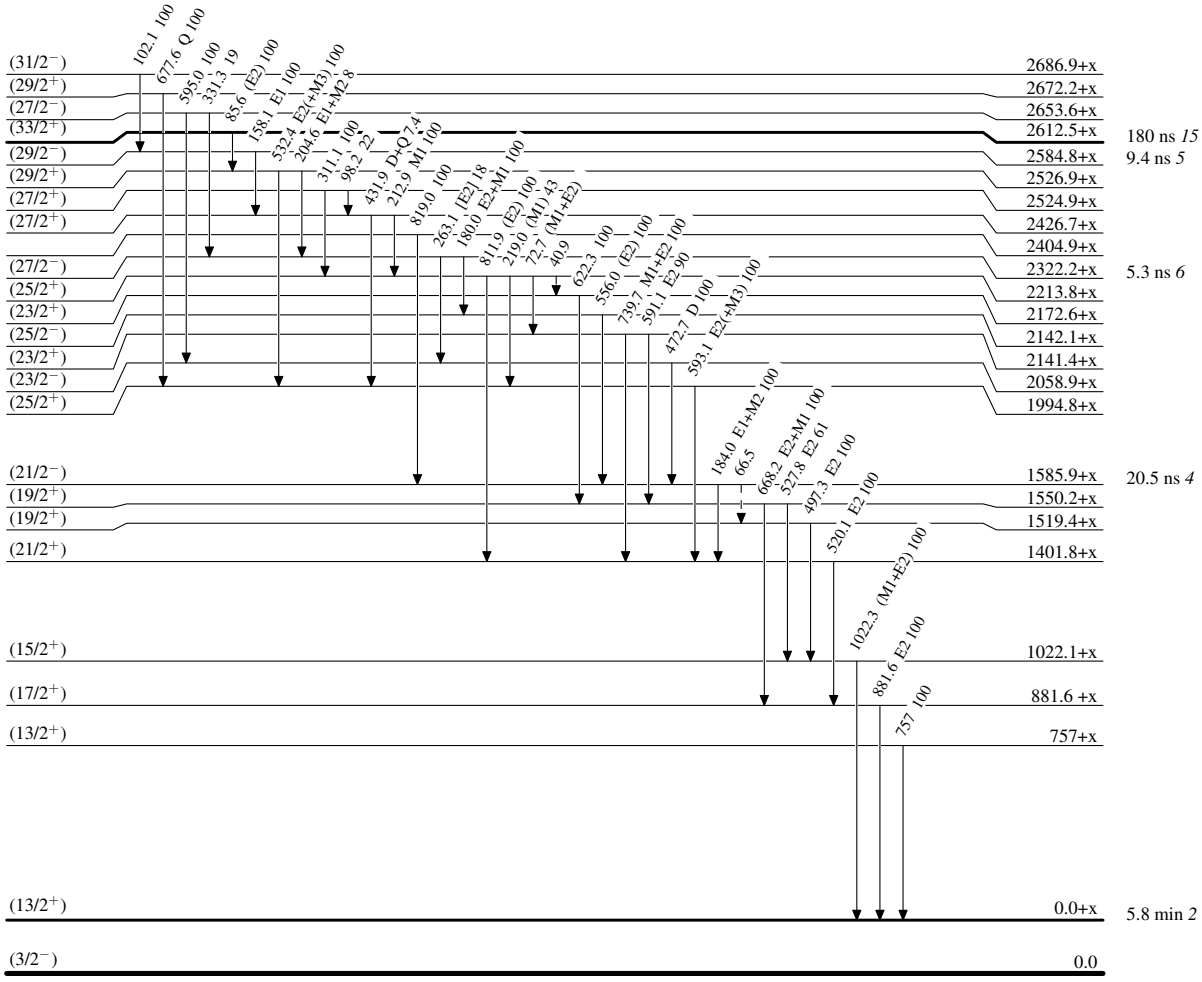
Adopted Levels, Gammas

Legend

Level Scheme (continued)

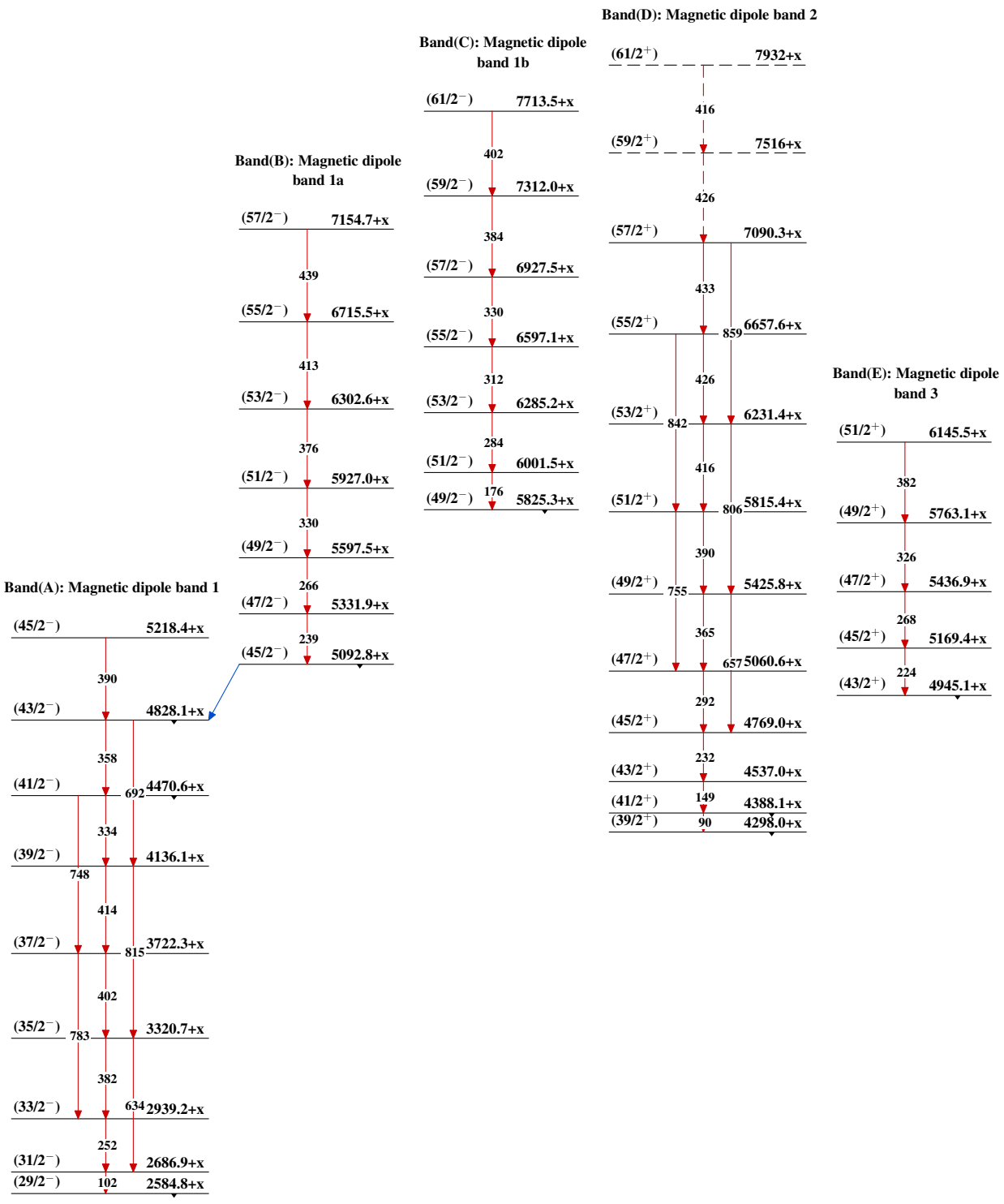
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



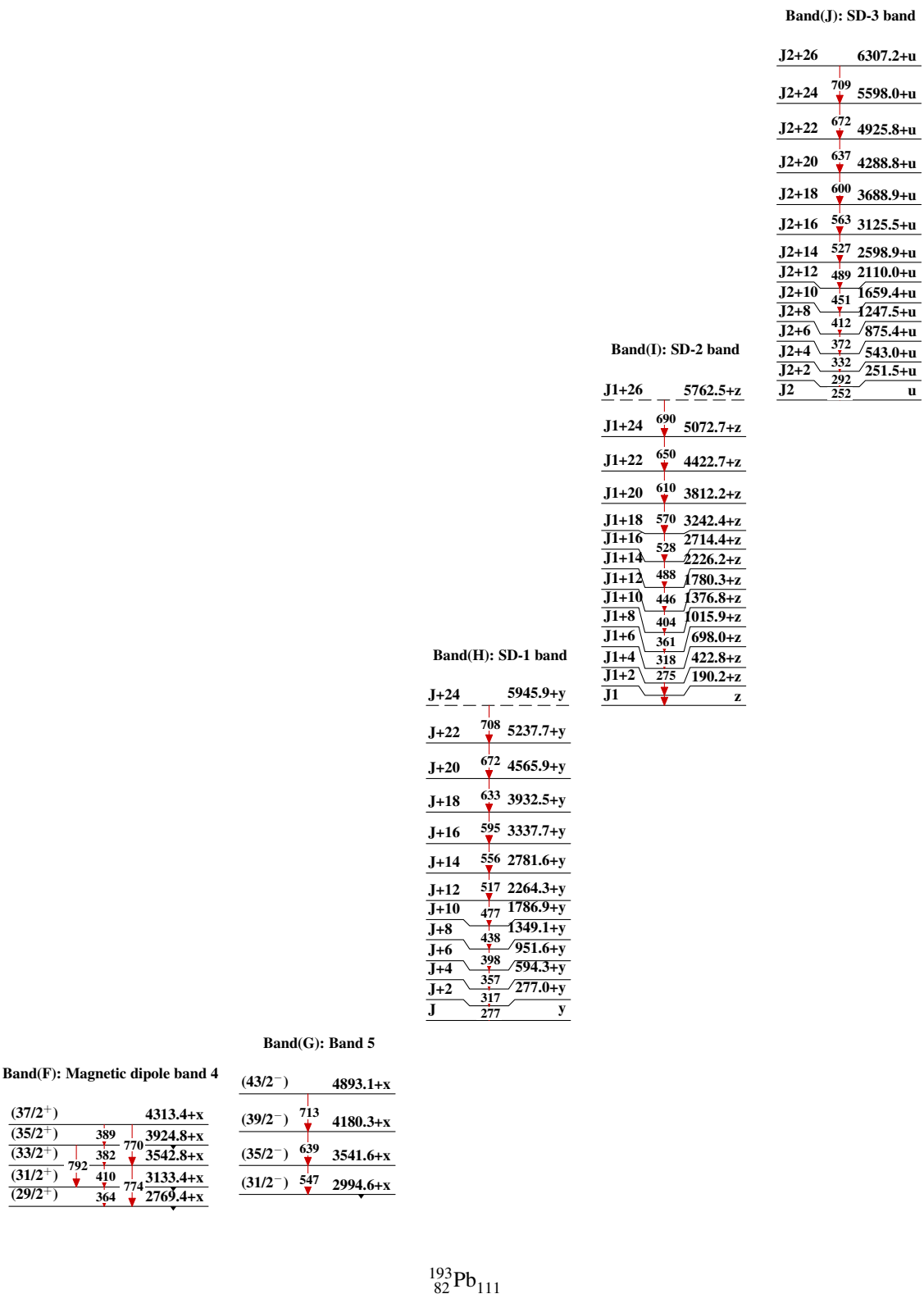
$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas



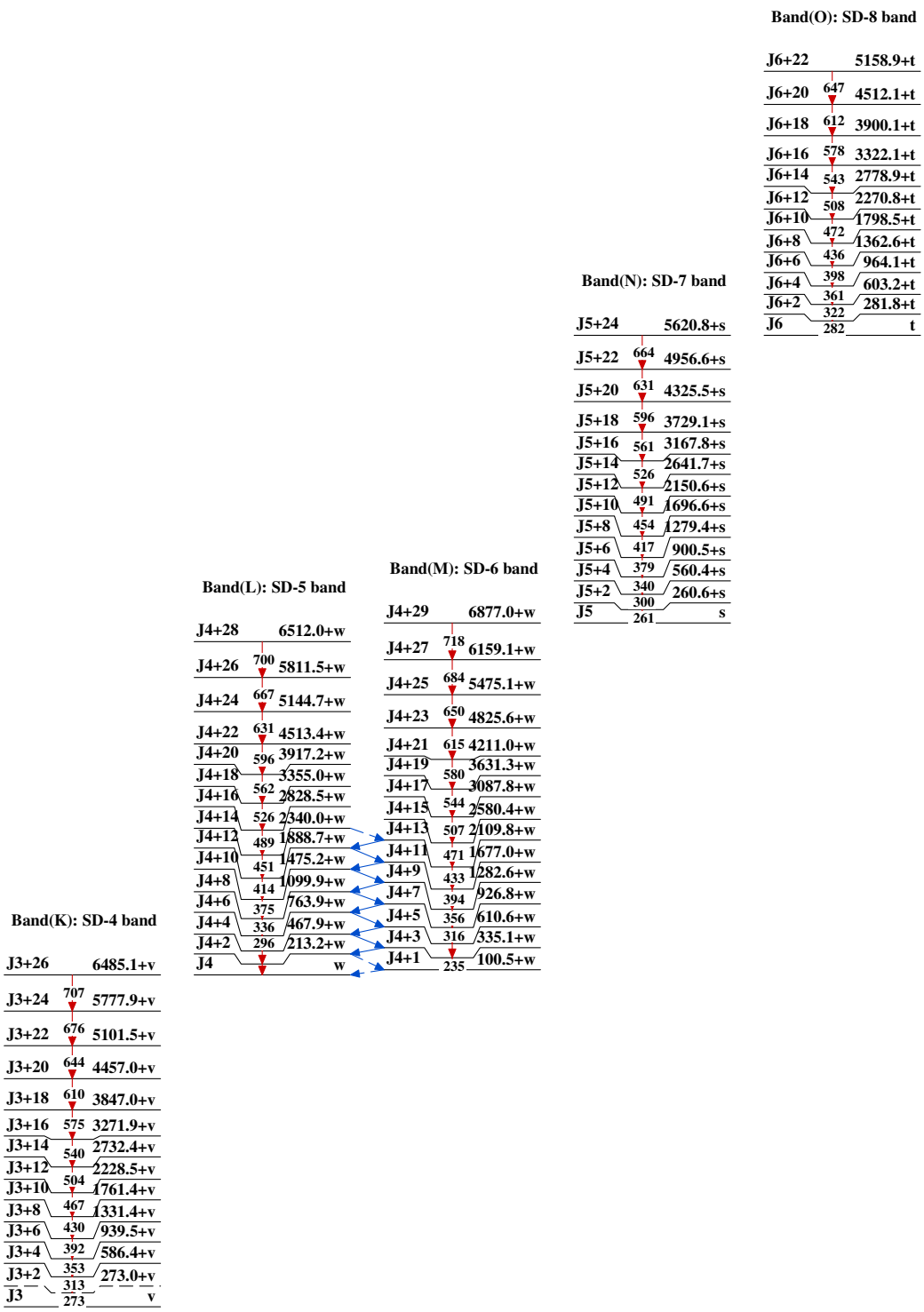
$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas (continued)



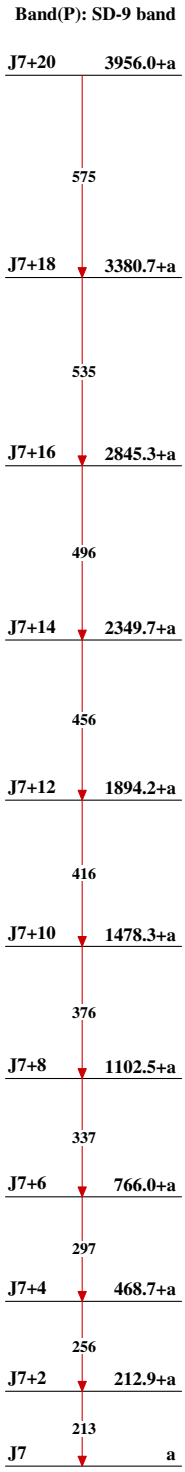
$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas (continued)



$^{193}_{82}Pb_{111}$

Adopted Levels, Gammas (continued)



$^{193}_{82}Pb_{111}$