Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

Q(β^-)=−2.85×10^3 *5*; S(n)=9107.74 *4*; S(p)=8594.3 *10*; Q(α)=−2032.9 *3* 2017Wa10
S(2n)=16079.70 *11*, S(2p)=15339.0 *3* (2017Wa10).
α: Additional information 1.

^{136}Ba Levels

Cross Reference (XREF) Flags

A	^{136}Cs β^- decay (13.01 d)	G	^{136}Ba(n,n′γ)	M	^{198}Pt(^{136}Xe,Xγ)
B	^{136}La ε decay (9.87 min)	H	^{136}Ba(d,d′),(α,α′)	N	^{135}Ba(d,p)
C	^{136}Ba IT decay	I	Coulomb excitation	O	^{140}Ce(d,^{6}Li)
D	^{135}Ba(n,γ) E=thermal	J	^{136}Ba(γ,γ′),(pol γ,γ′)	P	^{208}Pb(^{136}Xe,Xγ)
E	^{135}Ba(n,γ) E=24.4-463.4 eV res	K	^{138}Ba(p,t),(pol p,t)		
F	^{135}Ba(n,γ) E=2,24 keV: av res	L	^{139}La(^{82}Se,Xγ)		

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0.0[&]	0$^+$	stable	ABCDEFGHIJKLM OP	Δ<r^2>(^{138}Ba,^{136}Ba)=−0.039 *7* (1988We07), other: −0.034 *4* (1999GaZX).
818.522[&] *10*	2$^+$	1.89 ps *3*	ABCDEFGHIJKLMNOP	μ=0.68 *10* (1980Br01); B(E2)↑=0.407 *7* J$^\pi$: E2 818γ to 0$^+$. T$_{1/2}$: deduced by evaluator from B(E2) value and Adopted Gamma properties. B(E2)↑: from Coulomb Excitation. μ: from dynamic field technique (1980Br01). Q: −0.19 *6* (+0.07 *7*) (1986BaZJ,1986Ro15), +0.01 *5* (+0.25 *5*) (1984Be20), or −0.19 *17* (+0.02 *18*) (1972Ke16). Values outside parentheses correspond to constructive interference from 2nd 2$^+$ while those in parentheses correspond to destructive interference.
1550.987 *13*	2$^+$	0.89 ps *29*	ABCDEFGHIJK N	B(E2)↑=0.016 *4* (1985Bu01) T$_{1/2}$: weighted average of 1.08 ps *29* from B(E2) in Coulomb Excitation 0.88 ps *39* from resonance fluorescence in (γ,γ′), 0.77 ps *+24−19* from DSAM in ^{136}Ba(n,n′γ). J$^\pi$: E2 1551γ to 0$^+$. B(E2)↑: from Coulomb Excitation.
1578.969 *22*	0$^+$	>735 fs	B DEFGH N	J$^\pi$: E0 transition to 0$^+$.
1866.611[&] *18*	4$^+$		A CD FGH KLM P	J$^\pi$: E2 1048γ to 2$^+$; band assignment.
2030.535 *18*	7$^-$	0.3084 s *19*	A CD G KLM P	%IT=100 J$^\pi$: E3 164γ to 4$^+$; L(p,t)=7. T$_{1/2}$: from γ(t) in ^{135}Ba(n,γ), E=thermal. Other: 0.37 s *5* (γ(t) in 1965Ru05).
2053.892 *18*	4$^+$	0.87 ps *+84−29*	A D GH LM	J$^\pi$: E2 1235γ to 2$^+$, M1+E2 187γ to 4$^+$.
2080.13 *3*	2$^+$	1.0 ps *+11−4*	B DEFG J N	J$^\pi$: E2 2080γ to 0$^+$. T$_{1/2}$: other: >0.6 ps in (γ,γ′).
2128.869 *14*	2$^+$	50 fs *4*	B DEFGHIJ N	J$^\pi$: E2 2129γ to 0$^+$. T$_{1/2}$: weighted average of 48.5 fs *69* from DSAM in ^{136}Ba(n,n′γ) and 51 fs *4* from (γ,γ′).
2140.237 *18*	5$^-$	1.6 ns *1*	A D G KLM	μ=−1.9 *2* (1979Oh03); Configuration=((ν s$_{1/2}$)$^{-1}$(ν h$_{11/2}$)$^{-1}$) (1987Dr13) J$^\pi$: L(p,t)=5. T$_{1/2}$: from $\gamma\gamma$(t) in ^{136}Cs β^- decay.

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Adopted Levels, Gammas (continued)

^{136}Ba Levels (continued)

E(level)[†]	J$^{\pi}$	T$_{1/2}$[‡]	XREF	Comments
				μ: from IPAC method (1979Oh03).
2141.38 *3*	0$^+$	0.26 ps *+13−7*	B D FGh	J$^{\pi}$: E2 1322.85γ to 2$^+$; J=0 from isotropic $\gamma(\theta)$ in (n,n′γ).
2153.55 *8*	(1,2$^+$)		D h	J$^{\pi}$: 2153.5γ to 0$^+$.
2207.147[&] *18*	6$^+$	3.1 ns *1*	A D G LMN	XREF: N(2182). J$^{\pi}$: E1+M2 177γ to 7$^-$, E2 340.5γ to 4$^+$. T$_{1/2}$: from $\beta\gamma$(t) in ^{136}Cs β^- decay.
2222.709 *19*	(2,1)$^+$	0.63 ps *+44−19*	DEFG J N	J$^{\pi}$: M1+E2 1404γ to 2$^+$, tentative 2223γ to 0$^+$.
2298.69 *4*	(6$^-$)		D G	J$^{\pi}$: D+Q 158γ to 5$^-$, 268γ to 7$^-$.
2315.26 *7*	0$^+$	>0.85 ps	B D FGH	J$^{\pi}$: $\gamma(\theta)$ is isotropic for 1497γ in ^{136}Ba(n,n′γ).
2349.5? *5*			E	
2356.497 *22*	4$^+$	0.51 ps *+52−18*	A D G	J$^{\pi}$: M1(+E2) 302γ to 4$^+$, E2 1538γ to 2$^+$.
2373.761 *18*	5$^+$		A D FG	J$^{\pi}$: M1(+E2) 167γ to 6$^+$, M1+E2 320γ to 4$^+$.
2390.817 *22*	3$^-$	0.21 ps *+8−5*	D G	J$^{\pi}$: E1(+M2) 337γ to 4$^+$, E1+M2 1572γ to 2$^+$.
2392.1 *6*	(1$^+$,2$^+$)		F n	J$^{\pi}$: from analysis of average resonance capture data.
2399.94 *3*	(1)$^+$	118 fs *+28−21*	DEFG n	J$^{\pi}$: (1$^+$,2$^+$) from analysis of average resonance capture data, excitation function in ^{136}Ba(n,n′γ) favors J=1, M1+E2 1581γ to 2$^+$ gives π=+.
2430.936 *22*	3$^+$	0.20 ps *+7−4*	D FG	J$^{\pi}$: average resonance capture data gives J=0 or 3; M1+E2 1612γ to 2$^+$.
2485.13 *5*	2$^+$	146 fs *+35−28*	B D FG J	J$^{\pi}$: E2 2485γ to 0$^+$. T$_{1/2}$: other: >18 fs in (γ,γ′).
2532.653 *23*	3$^-$	76 fs *7*	B DEFGHI	B(E2)↑=0.155 *18* J$^{\pi}$: 0$^-$,3$^-$ from average resonance capture, E1+M2 1714γ to 2$^+$. B(E2)↑: from Coulomb Excitation.
2544.481 *24*	4$^+$	0.44 ps *+56−17*	G	J$^{\pi}$: E2 993γ to 2$^+$.
2562? *10*			K	
2587.08 *3*	(5)$^+$	>0.83 ps	G	J$^{\pi}$: M1+E2 720γ to 4$^+$, J=5 is favored from excitation function in ^{136}Ba(n,n′γ).
2640.80 *4*	(1$^+$)	55 fs *7*	B DEFG K	XREF: E(?). J$^{\pi}$: D+Q 1822γ to 2$^+$, analysis of average resonance capture gives (1$^+$,2$^+$), excitation function in ^{136}Ba(n,n′γ) suggests J^{π}=1$^+$.
2659.65 *5*	(3,4,5)$^+$		G n	J$^{\pi}$: M1+E2 793γ to 4$^+$.
2661.48 *5*	1,2$^+$	73 fs *14*	DEFG n	J$^{\pi}$: D+Q 1843γ to 2$^+$, 2662γ to 0$^+$.
2693.89 *5*	1	120 ps *20*	DEFG J	J$^{\pi}$: D 2694γ to 0$^+$. T$_{1/2}$: weighted average of 104 fs *+35−28* from DSAM in ^{136}Ba(n,n′γ) and 127 ps *20* from (γ,γ′).
2694.43? *4*	5$^+$		D G	J$^{\pi}$: M1+E2 641γ to 4$^+$, D+Q 487γ to 6$^+$.
2773.66 *4*	2$^+$	180 fs *+60−40*	B DEFG J	J$^{\pi}$: E2 2774γ to 0$^+$.
2779.99 *5*	2$^+$	0.28 ps *+37−11*	FG J	J$^{\pi}$: E2 2779.5γ to 0$^+$.
2784.44? *13*	0$^+$	42 fs *+21−14*	E Gh	J$^{\pi}$: isotropic $\gamma(\theta)$ for 1966γ in ^{136}Ba(n,n′γ) gives J=0, π=+ from RUL of 1966γ.
2812.02 *7*	(3$^+$)	0.15 ps *+22−7*	DEFGh	XREF: E(?). J$^{\pi}$: D+Q 1993γ to 2$^+$, $\gamma(\theta)$ in ^{136}Ba(n,n′γ).
2820.18 *10*	(2,3,4$^+$)		G	J$^{\pi}$: 287.4γ to 3$^-$, 389.5γ to 3$^+$, 740.1γ to 2$^+$.
2840.74 *10*	(4$^+$)		G K	J$^{\pi}$: (M1+E2) 974γ to 4$^+$, Q 2022γ to 2$^+$.
2905.0? *5*			EF	
2935.1? *9*	(1,2$^+$)		E G	J$^{\pi}$: 2935γ to 0$^+$.
2946.0? *5*	0$^{(+)}$,1,2,3$^+$[c]		E	
2977.67 *18*		0.11 ps *+16−6*	EFG J	
2985.01 *6*	(2$^+$,3$^+$,4$^+$)	0.11 ps *+19−6*	G	J$^{\pi}$: 1118γ to 4$^+$, 2166γ to 2$^+$.
2994.19[&] *14*	8$^{(+)}$		LM	J$^{\pi}$: Q 787γ to 6$^+$, band assignment.
2995.34 *5*			DE	

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Adopted Levels, Gammas (continued)

^{136}Ba Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
3022.10 *8*	(1,2+)	0.14 ps *+6−4*	DEFG K	XREF: F(3014). Jπ: 3022γ to 0+, L(p,t)=4 is discrepant.
3044.54 *5*	1(−)[@]	20 fs *3*	DEFG J	Jπ: J=1 from γ(126°)/γ(90°) in (γ,γ′). Linear polarization in (pol γ,γ′) slightly favors π=−.
3077.35 *7*	3+	0.11 ps *+8−4*	G	Jπ: M1+E2 2259γ to 2+, D+Q 1211γ to 4+.
3109.59 *9*	2+	0.27 ps *+13−7*	FGH J	Jπ: E2 3109γ to 0+.
3116.08 *6*	2+	101 fs *22*	DE G J	Jπ: E2 3116γ to 0+. $T_{1/2}$: weighted average of 83 fs *+21−14* from DSAM in ^{136}Ba(n,n′γ) and 122 fs *22* from (γ,γ′).
3178.9 *7*	0(+),1,2,3(+)[c]		E	
3212.0? *5*	0(+),1,2,3+[c]		E	
3241.89 *17*		42 fs *+21−14*	G K	XREF: K(3262).
3335.6 *3*			G	
3347.6 *7*	0(+),1,2,3+[c]		E	
3354.5 *3*			G	
3357.19[&] *25*	10(+)	91 ns *2*	LM	$T_{1/2}$: weighted average of 94 ns *10* from γγ(t) in ^{139}La(^{82}Se,Xγ) and 91 ns *2* from γγ(t) in ^{198}Pt(^{136}Xe,Xγ). Jπ: E2 363γ to 8(+); band assignment.
3370.07 *21*	1	18 fs *4*	DE G J	XREF: E(3366.5). Jπ: D 3370γ to 0+. $T_{1/2}$: deduced by evaluator from $\Gamma^2_{\gamma 0}/\Gamma$ in (γ,γ′) assuming $\Gamma_{\gamma 0}$=1.
3378.0? *5*			E	
3435.0 *1*	1−	6.0 fs *13*	DE G J	Jπ: E1 3435γ to 0+. $T_{1/2}$: deduced by evaluator from $\Gamma^2_{\gamma 0}/\Gamma$ in (γ,γ′) assuming $\Gamma_{\gamma 0}$=1.
3505.5 *9*	0(+),1,2,3+[c]		DE h	
3508.7 *3*	(4+)		Gh K	Jπ: L(p,t)=(4).
3526.7 *4*	2+		G J	Jπ: Q 3526γ to 0+, population in (γ,γ′) suggests positive parity.
3542.5 *7*	(0+),1,2,3,4(+)[c]		E	
3550.70? *20*			G	
3559.0? *5*	0(+),1,2,3(+)[c]		E	
3579.5 *7*	0+,1,2,3,4+[c]		E	
3650.0 *5*	(0+),1,2,3,4(+)[c]		E H	
3691.92 *13*	1 to 3		DE	Jπ: 2873γ to 2+, primary γ from 1(+).
3698.5 *7*	(0+),1,2,3,4(+)[c]		E	
3706.1 *6*	(1,2+)		G K	Jπ: 3706γ to 0+.
3706.4 *3*			LM	
3760.3? *11*			F	
3768.9 *3*	1(−),2,3+		DE	Jπ: 1235γ to 3−; primary γ from 1+ res.
3795.34 *15*	(1,2+)		DE G	Jπ: 3795γ to 0+.
3848.5 *5*	0(+),1,2,3+[c]		E	
3850.4?			M	
3852.7? *6*	(1,2+)		fG	Jπ: 3853γ to 0+.
3863.47 *23*	(1,2+)		DEf	Jπ: 3863γ to 0+.
3881.17? *10*	(1,2+)		G J	Jπ: 3881γ to 0+.
3925.6 *3*			DE	
3962.9 *8*			G	
3965.51 *6*	(1,2+)		DE	Jπ: 3965.5γ to 0+.
3979.76 *20*	(1)	21 fs *4*	DE G J	$T_{1/2}$: deduced by evaluator from $\Gamma^2_{\gamma 0}/\Gamma$ in (γ,γ′) assuming $\Gamma_{\gamma 0}$=1.
3992.56 *19*	0(+),1,2,3+[c]		DE	

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Adopted Levels, Gammas (continued)

^{136}Ba Levels (continued)

E(level)[†]	Jπ	XREF	Comments
4008.6 *3*	1,2+	DE	Jπ: 2429.6γ to 0+.
4075? *10*		K	
4137.07 *10*	1	D J	Jπ: D 4137γ to 0+.
4214.9		LM	
4231.17 *20*	1#	J	
4366.78 *20*	1#	J	
4413.28 *10*	(1)#	J	
4475.18 *10*	(1)#	J	
4536.4 *3*	1#	J	
4601.08 *20*	(1)#	J	
4623.7 *3*	1−@	J	
4639.7 *10*	1−@	J	
4697.79 *10*	1−@	J	
4767.69 *10*	1−@	J	
4814.09 *10*	1#	J	
4833.3 *5*		J	
4897.8 *16*	1#	J	
4985.0 *6*	1−@	J	
5040 *3*	1−@	J	
5060.80 *20*	1−@	J	
5065		M	
5076.9 *8*	1−@	J	
5094.5 *7*	1−@	J	
5135.2 *3*	1−@	J	
5216.31 *20*	(1)#	J	
5268.4 *7*	(1)#	J	
5294.31 *10*	1#	J	
5337.81 *20*	1#	J	
5380		M	
5393		M	
5396.5 *7*	(1)#	J	
5418.4 *5*	(1)#	J	
5431.5 *10*	1#	J	
5444.42 *10*	(1)#	J	
5497.6 *7*	1−@	J	
5561.1 *3*	1−@	J	
5585.6 *7*	1−@	J	
5601.22 *10*	1−@	J	
5610.0 *6*	1−@	J	
5647.9 *13*	1−@	J	
5652.2 *10*	1−@	J	
5718 *3*	(1)#	J	
5735.0 *7*		J	
5768.0 *4*	1#	J	
5781.7 *9*	1#	J	
5805.13 *10*	1#	J	
5924.2 *6*	1#	J	

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Adopted Levels, Gammas (continued)

^{136}Ba Levels (continued)

E(level)[†]	Jπ	XREF	E(level)[†]	Jπ	XREF
5965.8 *4*	1−[@]	J	6952.0 *11*	1−[@]	J
5979.24 *20*	1−[@]	J	6982.29 *20*	1−[@]	J
6005.04 *10*	1−[@]	J	6998.5 *7*	1−[@]	J
6035.74 *10*	1−[@]	J	7006.6 *14*	1−[@]	J
6052.94 *20*	1−[@]	J	7018.89 *10*	1−[@]	J
6061.44 *10*	1−[@]	J	7150.60 *10*	(1)[#]	J
6082.55 *10*	1−[@]	J	7251.1 *3*	1−[@]	J
6113.35 *20*	1−[@]	J	7271.6 *5*	1−[@]	J
6161.25 *20*	1−[@]	J	7281.5 *15*	1−[@]	J
6182.35 *20*	1−[@]	J	7298.81 *10*	1−[@]	J
6192.8 *8*	(1)[#]	J	7314.81 *20*	1−[@]	J
6215.7 *5*	(1)[#]	J	7350.2 *14*	1−[@]	J
6231.6 *4*	(1)[#]	J	7364.1 *3*	1−[@]	J
6244.2 *8*	(1)[#]	J	7382.1 *4*	1−[@]	J
6264.75 *20*	(1)[#]	J	7394.4 *9*	1−[@]	J
6289.2 *7*	(1)[#]	J	7402.5 *3*	1−[@]	J
6331.9 *4*	1−[@]	J	7414.9 *13*	1−[@]	J
6344.4 *7*	1−[@]	J	7444.4 *3*	1−[@]	J
6358.2 *7*	1−[@]	J	7472.52 *10*	1−[@]	J
6373.6 *8*	1−[@]	J	7487.5 *4*	1−[@]	J
6391.3 *16*	1−[@]	J	7502.8 *3*	1−[@]	J
6409.9 *19*	1−[@]	J	7519.2 *10*	1−[@]	J
6430.6 *11*	1−[@]	J	7541.0 *6*	1−[@]	J
6449.46 *20*	1−[@]	J	7558.1 *7*	1−[@]	J
6478.17 *10*	1−[@]	J	7572.13 *10*	1−[@]	J
6488.67 *10*	1−[@]	J	7583.5 *8*	1−[@]	J
6528.8 *11*	1−[@]	J	7594.8 *5*	1−[@]	J
6554.3 *8*	1−[@]	J	7604.2 *8*	1[#]	J
6591.8 *3*	1−[@]	J	7625.7 *4*	1[#]	J
6625.27 *10*	1−[@]	J	7662.33 *20*	1[#]	J
6677.3 *3*	1[#]	J	7675.63 *20*	1[#]	J
6693.38 *10*	1[#]	J	7699.0 *3*	1[#]	J
6716.8 *3*	1[#]	J	7747.6 *5*	1[#]	J
6741.9 *3*	1−[@]	J	7769.84 *10*	1[#]	J
6756.58 *20*	1−[@]	J	7788.1 *5*	(1)[#]	J
6767.78 *10*	1−[@]	J	7819.8 *8*	1−[@]	J
6776.78 *10*	1−[@]	J	7848.9 *3*	1−[@]	J
6788.38 *20*	1−[@]	J	7857.9 *12*	1−[@]	J
6830.8 *7*	1−[@]	J	7875.0 *11*	1−[@]	J
6840.3 *8*	1−[@]	J	7895.25 *20*	1−[@]	J
6847.5 *11*	1−[@]	J	7911.3 *4*	1−[@]	J
6859.2 *8*	1−[@]	J	7972.4 *10*	1−[@]	J
6870.4 *10*	1−[@]	J	8006.6 *5*	1−[@]	J
6880.5 *5*	1−[@]	J	8083.5 *3*	1−[@]	J
6895.79 *20*	1−[@]	J	8124.66 *20*	1−[@]	J

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Adopted Levels, Gammas (continued)

^{136}Ba Levels (continued)

E(level)[†]	J$^{\pi}$	XREF	Comments
8144.3 *7*	1^{-}[@]	J	
8171.2 *10*	1^{-}[@]	J	
8184.3 *3*	1^{-}[@]	J	
8227.9 *5*	1^{-}[@]	J	
8250.8 *7*	1^{-}[@]	J	
8280.4 *10*	1^{-}[@]	J	
8315.4 *9*	1^{-}[@]	J	
8339.2 *14*	1^{-}[@]	J	
8359.5 *5*	1^{-}[@]	J	
8389.7 *7*	1^{-}[@]	J	
8404.1 *13*	1^{-}[@]	J	
8611.1 *21*	1^{-}[@]	J	
8825.1 *10*	1^{-}[@]	J	
9049.5 *7*	1^{-}[@]	J	
9077.8 *7*	1^{-}[@]	J	
9107.12 *80*	1^{+}[b]	E	
9107.18 *80*	2$^{(+)}$[b]	E	
9107.20 *80*	1$^{(+)}$,2	E	J$^{\pi}$: J from evaluation of 1981MuZQ. π from assumption that strong primary γ's to the 0^{+} levels are M1.
9107.32 *80*	2$^{(+)}$[b]	E	
9107.38 *80*	2$^{(+)}$[b]	E	
9107.42 *80*	2$^{(+)}$[b]	E	
9107.48 *80*	1$^{(+)}$[a]	E	
9107.51 *80*	2$^{(+)}$[b]	E	
9107.56 *80*	2[b]	DE	
9107.89 *80*	2$^{(+)}$[b]	E	

[†] From a least-squares fit to Eγ, by evaluator.
[‡] From DSAM in ^{136}Ba(n,n$'\gamma$), except where noted.
[#] From $\gamma(\theta)$ in (γ,γ').
[@] From $\gamma(\theta)$ and γ(lin pol) in (γ,γ').
[&] Band(A): g.s. band.
[a] J from evaluation of 1981MuZQ. π from assumption that strong primary γ's to the 0^{+} levels are M1.
[b] J from evaluation of 1981MuZQ. π from assumption that γ to 2532, 3^{-}, is E1.
[c] From γ decay of resonance above neutron separation energy with J=1 to 2.

Adopted Levels, Gammas (continued)

γ(^{136}Ba)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	$I_{(\gamma+ce)}$	Comments
818.522	2^+	818.514[#] *12*	100	0.0	0^+	E2[@]		0.00283		α(K)=0.00242 *4*; α(L)=0.000327 *5*; α(M)=6.75×10^{-5} *10*; α(N)=1.449×10^{-5} *21*; α(O)=2.19×10^{-6} *3* α(P)=1.495×10^{-7} *21* B(E2)(W.u.)=19.6 *4*
1550.987	2^+	732.41 *2*	92 *5*	818.522	2^+	M1+E2	−1.00 *4*	0.00444		α(K)=0.00381 *6*; α(L)=0.000500 *8*; α(M)=0.0001030 *16*; α(N)=2.22×10^{-5} *4*; α(O)=3.38×10^{-6} *6* α(P)=2.41×10^{-7} *4* B(E2)(W.u.)=17 *6*; B(M1)(W.u.)=0.015 *5*
		1550.99 *2*	100 *5*	0.0	0^+	E2		8.37×10^{-4}		α(K)=0.000640 *9*; α(L)=8.03×10^{-5} *12*; α(M)=1.645×10^{-5} *23*; α(N)=3.55×10^{-6} *5*; α(O)=5.43×10^{-7} *8* α(P)=3.98×10^{-8} *6* B(E2)(W.u.)=0.89 *25*
1578.969	0^+	760.45 *2*	100	818.522	2^+	E2		0.00337		α(K)=0.00287 *4*; α(L)=0.000393 *6*; α(M)=8.12×10^{-5} *12*; α(N)=1.742×10^{-5} *25*; α(O)=2.63×10^{-6} *4* α(P)=1.769×10^{-7} *25* B(E2)(W.u.)<73 Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); Δπ=no from level scheme.
		1579.819[e]		0.0	0^+	E0			0.0028 *CA*	ce(K)/(γ+ce)=0.89; ce(L)/(γ+ce)=0.11 $I_{(\gamma+ce)}$: from ^{135}Ba(n,γ), E=thermal. Mult.: from ^{135}Ba(n,γ), E=thermal; ce(K) observed but not γ. B(E0)/B(E2 to 2^+, 818 level)=0.173 *15* (1987PaZS). B(E2 to 2^+, 1551 level)/B(E2 to 2^+, 818 level)≈0 (1987PaZS).
1866.611	4^+	315.5[#g] *5*	0.025[#] *23*	1550.987	2^+	[E2]		0.0385		α(K)=0.0315 *5*; α(L)=0.00559 *9*; α(M)=0.001177 *18*; α(N)=0.000249 *4*; α(O)=3.60×10^{-5} *6* α(P)=1.80×10^{-6} *3* B(E2)(W.u.)=1.4 *+6−5*
		1048.073[#] *20*	100[#] *4*	818.522	2^+	E2		1.64×10^{-3}		α(K)=0.001406 *20*; α(L)=0.000183 *3*; α(M)=3.77×10^{-5} *6*; α(N)=8.11×10^{-6} *12* α(O)=1.234×10^{-6} *18*; α(P)=8.73×10^{-8} *13* B(E2)(W.u.)=14 *6*
2030.535	7^-	163.920[#] *2*	100	1866.611	4^+	E3[@]		2.23		α(K)=1.104 *16*; α(L)=0.881 *13*; α(M)=0.198

$^{136}_{56}Ba_{80}$-7

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									3; α(N)=0.0411 6; α(O)=0.00537 8 α(P)=5.35×10^{-5} 8 B(E3)(W.u.)=0.349 4
2053.892	4$^+$	187.285[#] 6	2.7[#] 3	1866.611	4$^+$	M1+E2[@]	0.8[@] 4	0.188 12	α(K)=0.154 6; α(L)=0.027 6; α(M)=0.0058 12; α(N)=0.00122 24; α(O)=0.00018 3 α(P)=9.2×10^{-6} 3 B(E2)(W.u.)=7.E+2 +5−7; B(M1)(W.u.)=0.06 5 δ: other: 0.8 6 from γ(θ) in ^{136}Ba(n,n′γ). B(E2) value of 700 W.u. exceeds RUL.
		1235.362[#] 23	100[#] 3	818.522	2$^+$	E2[@]		1.17×10^{-3}	α(K)=0.001001 14; α(L)=0.0001281 18; α(M)=2.63×10^{-5} 4; α(N)=5.66×10^{-6} 8 α(O)=8.65×10^{-7} 13; α(P)=6.22×10^{-8} 9 B(E2)(W.u.)=5 3
2080.13	2$^+$	528.96 8	10.6 6	1550.987	2$^+$	M1+E2[c]		0.0099 15	α(K)=0.0085 14; α(L)=0.00116 11; α(M)=0.000240 21; α(N)=5.2×10^{-5} 5; α(O)=7.8×10^{-6} 9 α(P)=5.3×10^{-7} 11
		1261.65 4	100 4	818.522	2$^+$	M1+E2	−1.00 5	1.31×10^{-3} 2	α(K)=0.001115 18; α(L)=0.0001406 22; α(M)=2.88×10^{-5} 5; α(N)=6.22×10^{-6} 10 α(O)=9.54×10^{-7} 15; α(P)=7.04×10^{-8} 12 B(E2)(W.u.)=1.2 +5−12; B(M1)(W.u.)=0.0032 +13−32
		2080.11 7	60.6 21	0.0	0$^+$	E2		7.61×10^{-4}	α(K)=0.000370 6; α(L)=4.56×10^{-5} 7; α(M)=9.33×10^{-6} 13; α(N)=2.01×10^{-6} 3; α(O)=3.09×10^{-7} 5 α(P)=2.30×10^{-8} 4 B(E2)(W.u.)=0.12 +8−6 Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ), M2 excluded by comparison to RUL.
2128.869	2$^+$	1310.34 1	100 4	818.522	2$^+$	M1(+E2)	+0.005 9	1.37×10^{-3}	α(K)=0.001167 17; α(L)=0.0001456 21; α(M)=2.98×10^{-5} 5; α(N)=6.44×10^{-6} 9 α(O)=9.92×10^{-7} 14; α(P)=7.44×10^{-8} 11 B(E2)(W.u.)=0.00117 11; B(M1)(W.u.)=0.130 12
		2128.88 5	50.0 16	0.0	0$^+$	E2		7.67×10^{-4}	α(K)=0.000355 5; α(L)=4.37×10^{-5} 7; α(M)=8.94×10^{-6} 13; α(N)=1.93×10^{-6} 3; α(O)=2.96×10^{-7} 5 α(P)=2.21×10^{-8} 3 B(E2)(W.u.)=2.07 19 Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ), M2 excluded by comparison to RUL.
2140.237	5$^-$	86.36[#] 3	46[#] 6	2053.892	4$^+$	E1[@]		0.341	α(K)=0.291 4; α(L)=0.0401 6; α(M)=0.00823 12; α(N)=0.001743 25; α(O)=0.000254 4 α(P)=1.482×10^{-5} 21 B(E1)(W.u.)=6.7×10^{-5} 11
		109.681[#] 7	3.23[#] 16	2030.535	7$^-$	E2[@]		1.388	α(K)=0.914 13; α(L)=0.373 6; α(M)=0.0814 12; α(N)=0.01691 24; α(O)=0.00225 4 α(P)=4.29×10^{-5} 6

$^{136}_{56}Ba_{80}$-8

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									B(E2)(W.u.)=10.1 *10* δ: δ(M3/E2)<0.05 from β^- decay; however, from RUL one expects δ≤9×10^{-5}.
2140.237	5$^-$	273.646[#] *8*	100[#] *2*	1866.611	4$^+$	E1+M2[@]	0.07[@] *5*	0.016 *3*	α(K)=0.0136 *21*; α(L)=0.0018 *4*; α(M)=0.00037 *8*; α(N)=7.8×10^{-5} *16*; α(O)=1.18×10^{-5} *24* α(P)=8.1×10^{-7} *16* B(E1)(W.u.)=4.5×10^{-6} *4* δ: other: 0.00 *2* from γ(θ) in ^{136}Ba(n,n′γ).
		1321.6[#g] *4*	0.39[#] *16*	818.522	2$^+$	[E3]		0.00198	α(K)=0.001679 *24*; α(L)=0.000230 *4*; α(M)=4.76×10^{-5} *7*; α(N)=1.023×10^{-5} *15* α(O)=1.552×10^{-6} *22*; α(P)=1.072×10^{-7} *15* B(E3)(W.u.)=0.22 *10*
2141.38	0$^+$	1322.85 *3*	100	818.522	2$^+$	E2		1.04×10^{-3}	α(K)=0.000872 *13*; α(L)=0.0001109 *16*; α(M)=2.28×10^{-5} *4*; α(N)=4.90×10^{-6} *7* α(O)=7.49×10^{-7} *11*; α(P)=5.43×10^{-8} *8* B(E2)(W.u.)=13 *+5−4*
		2141.5		0.0	0$^+$	[E0]			Eγ: from ^{136}La ε decay only. B(E0)/B(E2 to 2$^+$, 818 level)=0.125 *15* (1987PaZS). B(E2 to 2$^+$, 1551 level)/B(E2 to 2$^+$, 818 level)≈0 (1987PaZS).
2153.55	(1,2$^+$)	2153.53 *8*	100	0.0	0$^+$				
2207.147	6$^+$	66.881[#] *17*	10.2[#] *4*	2140.237	5$^-$	E1(+M2)[@]	≤0.008	0.689	α(K)=0.584 *9*; α(L)=0.0836 *12*; α(M)=0.01715 *25*; α(N)=0.00362 *6*; α(O)=0.000521 *8* α(P)=2.88×10^{-5} *5* B(E1)(W.u.)=1.05×10^{-5} *5* δ: from comparison to RUL. δ: other: 0.09 *3* from α(L)exp in β^- decay.
		153.246[#] *4*	16.4[#] *11*	2053.892	4$^+$	E2[@]		0.430	α(K)=0.316 *5*; α(L)=0.0896 *13*; α(M)=0.0193 *3*; α(N)=0.00404 *6*; α(O)=0.000552 *8* α(P)=1.589×10^{-5} *23* B(E2)(W.u.)=4.9 *4*
		176.602[#] *4*	29.2[#] *6*	2030.535	7$^-$	E1+M2[@]	0.07[@] *5*	0.053 *12*	α(K)=0.045 *10*; α(L)=0.0062 *17*; α(M)=0.00127 *36*; α(N)=2.71×10^{-4} *77*; α(O)=4.1×10^{-5} *12* α(P)=2.65×10^{-6} *77* B(E1)(W.u.)=2.5×10^{-6} *11* δ: other: −0.01 *2* from γ(θ) in ^{136}Ba(n,n′γ).
		340.547[#] *8*	100[#] *1*	1866.611	4$^+$	E2		0.0304	α(K)=0.0250 *4*; α(L)=0.00429 *6*; α(M)=0.000901

$^{136}_{56}Ba_{80}$-9

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									13; α(N)=0.000191 *3*; α(O)=2.77×10^{-5} *4* α(P)=1.441×10^{-6} *21* B(E2)(W.u.)=0.550 *20*
2222.709	(2,1)$^+$	671.65 *3*	100 *5*	1550.987	2$^+$	M1(+E2)	+0.001 *14*	0.00639	α(K)=0.00551 *8*; α(L)=0.000701 *10*; α(M)=0.0001440 *21*; α(N)=3.11×10^{-5} *5*; α(O)=4.78×10^{-6} *7* α(P)=3.55×10^{-7} *5* B(M1)(W.u.)=0.055 *20*
		1404.21 *2*	99 *4*	818.522	2$^+$	M1+E2	+1.92 *10*	1.00×10^{-3} *2*	α(K)=0.000823 *13*; α(L)=0.0001037 *16*; α(M)=2.13×10^{-5} *4*; α(N)=4.58×10^{-6} *7* α(O)=7.03×10^{-7} *11*; α(P)=5.16×10^{-8} *8* B(E2)(W.u.)=1.5 *+11−6*
		2223[g]	≈9	0.0	0$^+$				
2298.69	(6$^-$)	158.45 *4*	100 *5*	2140.237	5$^-$	D+Q	+0.11 *2*		
		268.3 *3*	1.7 *6*	2030.535	7$^-$				
2315.26	0$^+$	1496.73 *7*	100	818.522	2$^+$	E2		8.71×10^{-4}	α(K)=0.000685 *10*; α(L)=8.62×10^{-5} *12*; α(M)=1.766×10^{-5} *25*; α(N)=3.81×10^{-6} *6*; α(O)=5.83×10^{-7} *9* α(P)=4.26×10^{-8} *6* B(E2)(W.u.)<2.1 Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ).
2356.497	4$^+$	302.37 *8*	31.8 *16*	2053.892	4$^+$	M1(+E2)	+0.3 *+5−3*	0.0472 *13*	α(K)=0.0404 *16*; α(L)=0.0054 *4*; α(M)=0.00112 *9*; α(N)=0.000241 *17*; α(O)=3.68×10^{-5} *18* α(P)=2.61×10^{-6} *20* B(M1)(W.u.)=0.18 *+18−7*
		489.93 *5*	59 *3*	1866.611	4$^+$	M1+E2[c]		0.0121 *18*	α(K)=0.0103 *16*; α(L)=0.00143 *11*; α(M)=0.000296 *20*; α(N)=6.4×10^{-5} *5*; α(O)=9.6×10^{-6} *9* α(P)=6.5×10^{-7} *13*
		805.54 *3*	45 *3*	1550.987	2$^+$	E2		0.00294	α(K)=0.00251 *4*; α(L)=0.000340 *5*; α(M)=7.02×10^{-5} *10*; α(N)=1.508×10^{-5} *22*; α(O)=2.28×10^{-6} *4* α(P)=1.550×10^{-7} *22* B(E2)(W.u.)=15 *8* I_γ: from relative branchings for transitions from the 2356.5 level in (n,n′γ) from 2008Mu19. Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); M2 excluded by comparison to RUL.
		1537.95 *3*	100 *5*	818.522	2$^+$	E2		8.45×10^{-4}	α(K)=0.000650 *10*; α(L)=8.17×10^{-5} *12*; α(M)=1.673×10^{-5} *24*; α(N)=3.61×10^{-6} *5*; α(O)=5.52×10^{-7} *8* α(P)=4.05×10^{-8} *6* B(E2)(W.u.)=1.3 *7*

$^{136}_{56}Ba_{80}$-10

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
2373.761	5^+	166.576[#] *6*	63[#] *3*	2207.147	6^+	M1(+E2)[@]	0.3[@] *3*	0.243 *16*	α(K)=0.205 *8*; α(L)=0.030 *7*; α(M)=0.0062 *15*; α(N)=0.0013 *3*; α(O)=0.00020 *4* α(P)=1.32×10^{-5} *3*
		233.5[#] *4*	8[#] *1*	2140.237	5^-	[E1]		0.0221	α(K)=0.0190 *3*; α(L)=0.00245 *4*; α(M)=0.000503 *8*; α(N)=0.0001076 *16*; α(O)=1.618×10^{-5} *24* α(P)=1.085×10^{-6} *16* E_γ: other: 234.1 *3* in (n,n′γ).
		319.911[#] *8*	50[#] *7*	2053.892	4^+	M1+E2	0.30 *1*	0.0407	α(K)=0.0348 *5*; α(L)=0.00466 *7*; α(M)=0.000961 *14*; α(N)=0.000207 *3*; α(O)=3.16×10^{-5} *5* α(P)=2.25×10^{-6} *4*
		507.188[#] *10*	100[#] *3*	1866.611	4^+	M1+E2[c]	0.70 *1*	0.01164	α(K)=0.00996 *14*; α(L)=0.001337 *19*; α(M)=0.000276 *4*; α(N)=5.93×10^{-5} *9*; α(O)=9.02×10^{-6} *13* α(P)=6.33×10^{-7} *9* E_γ: other: 506.91 *3* in (n,n′γ).
2390.817	3^-	336.75 *12*	18.2 *11*	2053.892	4^+	E1(+M2)	+0.01 *5*	0.0085 *5*	α(K)=0.0073 *5*; α(L)=0.00093 *7*; α(M)=0.000191 *14*; α(N)=4.1×10^{-5} *3*; α(O)=6.2×10^{-6} *5* α(P)=4.3×10^{-7} *3* B(E1)(W.u.)=0.0047 *19*
		839.82 *11*	4.5 *5*	1550.987	2^+				
		1572.29 *2*	100 *4*	818.522	2^+	E1+M2	−0.050 *10*	6.19×10^{-4}	α(K)=0.000300 *5*; α(L)=3.63×10^{-5} *6*; α(M)=7.41×10^{-6} *12*; α(N)=1.599×10^{-6} *24*; α(O)=2.46×10^{-7} *4* α(P)=1.83×10^{-8} *3* B(E1)(W.u.)=0.00025 *10*
2399.94	$(1)^+$	1581.41 *3*	100	818.522	2^+	M1+E2		0.00091 *9*	α(K)=0.00069 *8*; α(L)=8.6×10^{-5} *10*; α(M)=1.77×10^{-5} *19*; α(N)=3.8×10^{-6} *5*; α(O)=5.9×10^{-7} *7* α(P)=4.4×10^{-8} *6*
2430.936	3^+	879.94 *2*	100 *6*	1550.987	2^+	M1+E2	−1.9 *4*	0.00261 *10*	α(K)=0.00224 *9*; α(L)=0.000294 *10*; α(M)=6.06×10^{-5} *19*; α(N)=1.30×10^{-5} *5*; α(O)=1.98×10^{-6} *7* α(P)=1.40×10^{-7} *6* B(E2)(W.u.)=55 *21*
		1612.46 *5*	85 *5*	818.522	2^+	M1+E2	−4.0 *4*	8.18×10^{-4}	α(K)=0.000603 *9*; α(L)=7.54×10^{-5} *11*; α(M)=1.543×10^{-5} *22*; α(N)=3.33×10^{-6} *5*; α(O)=5.10×10^{-7} *8* α(P)=3.76×10^{-8} *6* B(E2)(W.u.)=2.7 *10*
2485.13	2^+	906.8[f g] *2*	≤11[f]	1578.969	0^+	[E2]		0.00224	α(K)=0.00192 *3*; α(L)=0.000256 *4*;

$^{136}_{56}Ba_{80}$-11

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	δ‡	α	Comments
									α(M)=5.27×10^{-5} *8*; α(N)=1.132×10^{-5} *16*; α(O)=1.717×10^{-6} *24* α(P)=1.191×10^{-7} *17* B(E2)(W.u.)=9.8 *+23−19*
2485.13	2$^+$	935[f] *1*	18[f] *16*	1550.987	2$^+$				
		1666.57 *5*	100 *5*	818.522	2$^+$	M1+E2	+0.24 *4*	9.30×10^{-4} *14*	α(K)=0.000680 *10*; α(L)=8.44×10^{-5} *13*; α(M)=1.727×10^{-5} *25*; α(N)=3.73×10^{-6} *6*; α(O)=5.75×10^{-7} *9* α(P)=4.32×10^{-8} *7* B(E2)(W.u.)=0.24 *10*; B(M1)(W.u.)=0.019 *5*
		2485.02 *14*	42 *3*	0.0	0$^+$	E2		8.38×10^{-4}	α(K)=0.000269 *4*; α(L)=3.29×10^{-5} *5*; α(M)=6.73×10^{-6} *10*; α(N)=1.453×10^{-6} *21*; α(O)=2.24×10^{-7} *4* α(P)=1.674×10^{-8} *24* B(E2)(W.u.)=0.24 *+6−5* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ), M2 excluded by comparison to RUL.
2532.653	3$^-$	981.65 *2*	64 *3*	1550.987	2$^+$	E1+M2	+0.11 *2*	0.00086 *3*	α(K)=0.00074 *3*; α(L)=9.2×10^{-5} *4*; α(M)=1.88×10^{-5} *7*; α(N)=4.04×10^{-6} *15*; α(O)=6.20×10^{-7} *23* α(P)=4.56×10^{-8} *17* B(E1)(W.u.)=0.0014 *2*
		1714.20 *6*	100 *6*	818.522	2$^+$	E1+M2	+0.010 *8*	6.77×10^{-4}	α(K)=0.000257 *4*; α(L)=3.11×10^{-5} *5*; α(M)=6.34×10^{-6} *9*; α(N)=1.367×10^{-6} *20*; α(O)=2.10×10^{-7} *3* α(P)=1.572×10^{-8} *22* B(E1)(W.u.)=4.0×10^{-4} *5*; B(M2)(W.u.)=0.064 *7*
2544.481	4$^+$	993.49 *2*	100	1550.987	2$^+$	E2		0.00184	α(K)=0.001576 *22*; α(L)=0.000207 *3*; α(M)=4.26×10^{-5} *6*; α(N)=9.15×10^{-6} *13* α(O)=1.391×10^{-6} *20*; α(P)=9.77×10^{-8} *14* B(E2)(W.u.)=32 *+20−18* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ), M2 excluded by comparison to RUL.
2587.08	(5)$^+$	720.47 *2*	100	1866.611	4$^+$	M1+E2	−0.14 *2*	0.00537	α(K)=0.00463 *7*; α(L)=0.000589 *9*; α(M)=0.0001208 *17*; α(N)=2.61×10^{-5} *4*; α(O)=4.01×10^{-6} *6* α(P)=2.98×10^{-7} *5* B(E2)(W.u.)<2; B(M1)(W.u.)<0.07
2640.80	(1$^+$)	1822.26 *4*	100	818.522	2$^+$	D+Q	0.1 *+50−1*		
2659.65	(3,4,5)$^+$	793.04 *5*	100	1866.611	4$^+$	M1+E2	−0.08 *2*	0.00429	α(K)=0.00370 *6*; α(L)=0.000469 *7*; α(M)=9.61×10^{-5} *14*; α(N)=2.08×10^{-5} *3*; α(O)=3.19×10^{-6} *5* α(P)=2.38×10^{-7} *4*
2661.48	1,2$^+$	1110.50 *5*		1550.987	2$^+$				

$^{136}_{56}Ba_{80}$-12

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
2661.48	1,2$^+$	1842.89 *10*	100 *5*	818.522	2$^+$	D+Q	+0.7 *3*		
		2661.7 *6*	5.1 *8*	0.0	0$^+$				
2693.89	1	1875.29 *7*	18 *8*	818.522	2$^+$	D+Q	−0.8 *+34−7*		
		2693.92 *7*	100 *8*	0.0	0$^+$	D			
2694.43?	5$^+$	487.17 *8*	72 *5*	2207.147	6$^+$	M1+E2[c]		0.0123 *18*	α(K)=0.0105 *16*; α(L)=0.00145 *11*; α(M)=0.000300 *20*; α(N)=6.5×10^{-5} *5*; α(O)=9.7×10^{-6} *9* α(P)=6.6×10^{-7} *13* I$_\gamma$: from relative photon branchings for transitions from the 2694.4 level in (n,n′γ) from 2008Mu19.
		640.57 *4*	100 *5*	2053.892	4$^+$	M1+E2	−0.33 *2*	0.00696	α(K)=0.00599 *9*; α(L)=0.000771 *11*; α(M)=0.0001583 *23*; α(N)=3.42×10^{-5} *5*; α(O)=5.24×10^{-6} *8* α(P)=3.85×10^{-7} *6*
2773.66	2$^+$	1222.2 *6*	28 *3*	1550.987	2$^+$				
		1955.03 *8*	100 *5*	818.522	2$^+$	M1+E2[c]	+0.65 *25*	8.17×10^{-4} *19*	α(K)=0.000466 *14*; α(L)=5.76×10^{-5} *17*; α(M)=1.18×10^{-5} *4*; α(N)=2.54×10^{-6} *8*; α(O)=3.92×10^{-7} *12* α(P)=2.94×10^{-8} *10* B(E2)(W.u.)=0.5 *3*; B(M1)(W.u.)=0.0066 *+22−28*
		2773.66 *4*	45 *3*	0.0	0$^+$	E2		9.16×10^{-4}	α(K)=0.000222 *4*; α(L)=2.71×10^{-5} *4*; α(M)=5.53×10^{-6} *8*; α(N)=1.194×10^{-6} *17*; α(O)=1.84×10^{-7} *3* α(P)=1.381×10^{-8} *20* B(E2)(W.u.)=0.12 *+3−3* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); M2 excluded by comparison to RUL. I$_\gamma$: from 1994Al17 in (n,n′γ). In 2008Mu19, also (n,n′γ) the branching ratio Iγ(2773γ):Iγ(1955γ) is given as 78 *10*: 22 *10*, and no observation of 1222γ is reported.
2779.99	2$^+$	1229.14 *10*	59 *4*	1550.987	2$^+$	M1+E2[c]		0.00138 *20*	α(K)=0.00118 *17*; α(L)=0.000149 *20*; α(M)=3.1×10^{-5} *4*; α(N)=6.6×10^{-6} *9*; α(O)=1.01×10^{-6} *14* α(P)=7.4×10^{-8} *12*
		1961.40 *6*	100 *4*	818.522	2$^+$	M1+E2[c]		0.00080 *5*	α(K)=0.00045 *4*; α(L)=5.5×10^{-5} *5*; α(M)=1.13×10^{-5} *10*; α(N)=2.45×10^{-6} *20*; α(O)=3.8×10^{-7} *4* α(P)=2.8×10^{-8} *3*
		2779.5 *7*	21 *3*	0.0	0$^+$	E2		9.18×10^{-4}	α(K)=0.000221 *4*; α(L)=2.70×10^{-5} *4*; α(M)=5.51×10^{-6} *8*; α(N)=1.189×10^{-6} *17*; α(O)=1.83×10^{-7} *3* α(P)=1.376×10^{-8} *20* B(E2)(W.u.)=0.034 *+22−19* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); M2 excluded by comparison to RUL.
2784.44?	0$^+$	1965.88 *6*	100	818.522	2$^+$	E2		7.53×10^{-4}	α(K)=0.000410 *6*; α(L)=5.07×10^{-5} *8*; α(M)=1.038×10^{-5} *15*; α(N)=2.24×10^{-6} *4*; α(O)=3.44×10^{-7} *5*

$^{136}_{56}Ba_{80}$-13

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
								α(P)=2.55×10^{-8} *4* B(E2)(W.u.)=11 *+6–4* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); M2 excluded by comparison to RUL.
2812.02	(3$^+$)	1993.48 *7*	100	818.522	2$^+$	(M1+E2)	0.00080 *5*	α(K)=0.00043 *4*; α(L)=5.4×10^{-5} *5*; α(M)=1.10×10^{-5} *9*; α(N)=2.37×10^{-6} *19*; α(O)=3.6×10^{-7} *3* α(P)=2.73×10^{-8} *25* Mult.: D+Q from γ(θ) in ^{136}Ba(n,n′γ); nonzero value of δ excludes E1+M2. δ: −2.0 *2* or −0.26 *4* (1994Al17); 2 *1* or 0.3 *1* (2008Mu19), both from γ(θ) in ^{136}Ba(n,n′γ).
2820.18	(2,3,4$^+$)	287.42 *12*	100 *6*	2532.653	3$^-$			
		389.5 *2*	25 *4*	2430.936	3$^+$			
		740.1 *3*	19 *3*	2080.13	2$^+$			
2840.74	(4$^+$)	974.10 *15*	69 *5*	1866.611	4$^+$	(M1+E2)	0.0023 *4*	α(K)=0.0020 *4*; α(L)=0.00025 *4*; α(M)=5.2×10^{-5} *8*; α(N)=1.12×10^{-5} *16*; α(O)=1.7×10^{-6} *3* α(P)=1.24×10^{-7} *23* I_γ: from branching ratio measurements in (n,n′γ) (2008Mu19).
		2022.22 *14*	100 *5*	818.522	2$^+$	(E2)	7.56×10^{-4}	α(K)=0.000390 *6*; α(L)=4.81×10^{-5} *7*; α(M)=9.84×10^{-6} *14*; α(N)=2.12×10^{-6} *3*; α(O)=3.26×10^{-7} *5* α(P)=2.42×10^{-8} *4* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); Δπ=no from level scheme.
2935.1?	(1,2$^+$)	2935.1[g] *9*	100	0.0	0$^+$			
2977.67		2159.13 *18*		818.522	2$^+$			
		2976.7 *6*		0.0	0$^+$			E_γ: from (γ,γ′),(pol γ,γ′).
2985.01	(2$^+$,3$^+$,4$^+$)	1118.40 *6*	100 *4*	1866.611	4$^+$			
		2166.3 *3*	62 *5*	818.522	2$^+$			
2994.19	8$^{(+)}$	787.1[&] *2*	100[&] *4*	2207.147	6$^+$	Q[b]		
		963.6[&] *2*	24[&] *3*	2030.535	7$^-$			I_γ: other: 9.4 *12* in ^{139}La(^{82}Se,Xγ).
3022.10	(1,2$^+$)	1441.9[e] *10*	100[e] *6*	1578.969	0$^+$			
		1469.0[e] *10*		1550.987	2$^+$			
		2203.60 *8*	100 *6*	818.522	2$^+$			E_γ: other: 2201.4 *4* in (n,γ) E=thermal.
		3021.9 *9*	10 *2*	0.0	0$^+$			
3044.54	1$^{(-)}$	1494.1 *6*	29 *4*	1550.987	2$^+$			
		2224.8[eg] *20*		818.522	2$^+$			E_γ: tentative placement as transition only observed in ^{135}Ba(n,γ), E=thermal.
		3044.48 *5*	100 *6*	0.0	0$^+$	D[a]		
3077.35	3$^+$	948.62 *14*	31 *6*	2128.869	2$^+$	M1+E2[c]	0.0024 *4*	α(K)=0.0021 *4*; α(L)=0.00027 *4*; α(M)=5.5×10^{-5} *8*; α(N)=1.19×10^{-5} *17*; α(O)=1.8×10^{-6} *3* α(P)=1.32×10^{-7} *25* I_γ: from branching ratio measurements in (n,n′γ) (2008Mu19). δ: 0.3 *+5–3* or 6.9 *+10–50* from γ(θ) in ^{136}Ba(n,n′γ).

$^{136}_{56}Ba_{80}$-14

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
3077.35	3+	1210.70 *6*	77 *8*	1866.611	4+	M1+E2[c]		0.00142 *21*	α(K)=0.00122 *18*; α(L)=0.000154 *21*; α(M)=3.2×10^{-5} *5*; α(N)=6.8×10^{-6} *9*; α(O)=1.04×10^{-6} *15* α(P)=7.7×10^{-8} *13* I_γ: from branching ratio measurements in (n,n′γ) (2008Mu19). δ: 0.2 *2* or 12 *+1−8* from γ(θ) in ^{136}Ba(n,n′γ).
		2258.76 *9*	100 *11*	818.522	2+	M1+E2	−4.5 *+16−10*	7.91×10^{-4} *12*	α(K)=0.000321 *6*; α(L)=3.94×10^{-5} *7*; α(M)=8.06×10^{-6} *13*; α(N)=1.74×10^{-6} *3*; α(O)=2.68×10^{-7} *5* α(P)=2.00×10^{-8} *4* B(E2)(W.u.)=1.0 *5* I_γ: from branching ratio measurements in (n,n′γ) (2008Mu19). Mult.: D+Q from γ(θ) in ^{136}Ba(n,n′γ), large, non-zero value of delta and RUL exclude E1+M2.
3109.59	2+	2291.13 *12*	22 *6*	818.522	2+	M1+E2[c]		0.00082 *4*	α(K)=0.000330 *20*; α(L)=4.06×10^{-5} *25*; α(M)=8.3×10^{-6} *5*; α(N)=1.79×10^{-6} *11*; α(O)=2.76×10^{-7} *18* α(P)=2.07×10^{-8} *15* I_γ: from branching ratio measurements in (n,n′γ) (2008Mu19). δ: +4 *+4−1* or −0.13 *14* (1994Al17); 3 *+6−1* or 0.04 *+25−20* (2008Mu19), both from γ(θ) in ^{136}Ba(n,n′γ).
		3109.43 *14*	100 *16*	0.0	0+	E2		1.02×10^{-3}	α(K)=0.000183 *3*; α(L)=2.22×10^{-5} *4*; α(M)=4.52×10^{-6} *7*; α(N)=9.77×10^{-7} *14*; α(O)=1.505×10^{-7} *21* α(P)=1.134×10^{-8} *16* B(E2)(W.u.)=0.14 *+5−5* I_γ: from branching ratio measurements in (n,n′γ) (2008Mu19). Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); M2 excluded by comparison to RUL.
3116.08	2+	2297.4 *4*	2.0 *16*	818.522	2+				
		3116.04 *6*	100 *7*	0.0	0+	E2		1.02×10^{-3}	α(K)=0.000182 *3*; α(L)=2.21×10^{-5} *3*; α(M)=4.51×10^{-6} *7*; α(N)=9.73×10^{-7} *14*; α(O)=1.499×10^{-7} *21* α(P)=1.130×10^{-8} *16* B(E2)(W.u.)=0.45 *11* Mult.: Q from γ(θ) in ^{136}Ba(n,n′γ); M2 excluded by comparison to RUL.
3241.89		1690.6[g] *3*	69 *5*	1550.987	2+				
		2423.34 *13*	100 *8*	818.522	2+				
3335.6		2517.1 *3*	100	818.522	2+				
3354.5		2536.0 *3*	100	818.522	2+				

$^{136}_{56}Ba_{80}$-15

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
3357.19	$10^{(+)}$	363.0[&] *2*	100	2994.19	$8^{(+)}$	E2	0.0250	α(K)=0.0206 *3*; α(L)=0.00345 *5*; α(M)=0.000724 *11*; α(N)=0.0001539 *22*; α(O)=2.24×10^{-5} *4* α(P)=1.199×10^{-6} *17* B(E2)(W.u.)=0.0232 *6* Mult.: Q from R(DCO) in ^{139}La(^{82}Se,Xγ), M2 excluded by comparison to RUL.
3370.07	1	3370.03 *21*	100	0.0	0^+	D[a]		
3435.0	1^-	3435.0 *1*	100	0.0	0^+	E1[a]	1.52×10^{-3}	α(K)=9.00×10^{-5} *13*; α(L)=1.073×10^{-5} *15*; α(M)=2.19×10^{-6} *3*; α(N)=4.72×10^{-7} *7*; α(O)=7.27×10^{-8} *11* α(P)=5.50×10^{-9} *8* B(E1)(W.u.)=0.00105 *20* E_γ: from (γ,γ′),(pol γ,γ′).
3505.5	$0^{(+)}$,1,2,3$^+$	1955.19 *17*	100	1550.987	2^+			E_γ: from ^{135}Ba(n,γ) E=thermal.
3508.7	(4^+)	1428.7 *4*	64 *10*	2080.13	2^+			
		2690.1 *4*	100 *9*	818.522	2^+			
3526.7	2^+	2709.0 *8*	68 *10*	818.522	2^+			
		3526.4 *4*	100 *11*	0.0	0^+	Q		
3550.70?		1999.7[g] *2*	100	1550.987	2^+			E_γ: multiply placed in ^{136}Ba(n,n′γ) as from the 3551-keV level or a 3866-keV level.
3691.92	1 to 3	2873.36[e] *13*	100	818.522	2^+			
3706.1	$(1,2^+)$	3706.0 *6*	100	0.0	0^+			
3706.4		349.2 *2*	100	3357.19	$10^{(+)}$			E_γ: from ^{139}La(^{82}Se,Xγ).
3768.9	$1^{(-)}$,2,3$^+$	747.3[e] *3*	85[e] *30*	3022.10	$(1,2^+)$			
		1234.9[e]	≤100[e]	2532.653	3^-			
3795.34	$(1,2^+)$	2244.8 *4*	25 *8*	1550.987	2^+			
		2976.5 *4*	100 *11*	818.522	2^+			
		3795.24[e] *18*	3[e] *1*	0.0	0^+			E_γ: not observed in ^{136}Ba(n,n′γ).
3850.4?		144[&g]	100[&]	3706.4				
3852.7?	$(1,2^+)$	3852.6[g] *6*	100	0.0	0^+			
3863.47	$(1,2^+)$	3863.41[e] *23*	100	0.0	0^+			
3881.17?	$(1,2^+)$	3064.3 *4*		818.522	2^+			
		3881.0[d] *1*		0.0	0^+			
3925.6		157.8[eg] *5*	100[e] *19*	3768.9	$1^{(-)}$,2,3$^+$			
		880.3[e] *3*	22[e] *8*	3044.54	$1^{(-)}$			
		1798.4[e] *7*	44[e] *19*	2128.869	2^+			
3962.9		3144.3 *8*	100	818.522	2^+			
3965.51	$(1,2^+)$	3965.28[e] *6*	100	0.0	0^+			
3979.76	(1)	3979.7[d] *2*	100	0.0	0^+	(D)[a]		
3992.56	$0^{(+)}$,1,2,3$^+$	2441.55[e] *19*	100	1550.987	2^+			
4008.6	$1,2^+$	2429.6[e] *3*	100	1578.969	0^+			
4137.07	1	4137.0[d] *1*	100	0.0	0^+	D[a]		

$^{136}_{56}Ba_{80}$-16

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α	Comments
4214.9		508.9 *1*	100	3706.4				E_γ: from ^{139}La(^{82}Se,Xγ).
4231.17	1	4231.1[d] *2*	100	0.0	0^+	D[a]		
4366.78	1	4366.7[d] *2*	100	0.0	0^+	D[a]		
4413.28	(1)	4413.2[d] *1*	100	0.0	0^+	(D)[a]		
4475.18	(1)	4475.1[d] *1*	100	0.0	0^+	(D)[a]		
4536.4	1	4536.3[d] *3*	100	0.0	0^+	D[a]		
4601.08	(1)	4601.0[d] *2*	100	0.0	0^+	(D)[a]		
4623.7	1^-	4623.6[d] *3*	100	0.0	0^+	E1[a]	0.00195	α(K)=6.00×10^{-5} *9*; α(L)=7.13×10^{-6} *10*; α(M)=1.451×10^{-6} *21*; α(N)=3.13×10^{-7} *5*; α(O)=4.83×10^{-8} *7* α(P)=3.66×10^{-9} *6*
4639.7	1^-	4639.6[d] *10*	100	0.0	0^+	E1[a]	0.00196	α(K)=5.97×10^{-5} *9*; α(L)=7.10×10^{-6} *10*; α(M)=1.445×10^{-6} *21*; α(N)=3.12×10^{-7} *5*; α(O)=4.81×10^{-8} *7* α(P)=3.64×10^{-9} *6*
4697.79	1^-	4697.7[d] *1*	100	0.0	0^+	E1[a]	0.00198	α(K)=5.87×10^{-5} *9*; α(L)=6.98×10^{-6} *10*; α(M)=1.421×10^{-6} *20*; α(N)=3.07×10^{-7} *5*; α(O)=4.73×10^{-8} *7* α(P)=3.58×10^{-9} *5*
4767.69	1^-	4767.6[d] *1*	100	0.0	0^+	E1[a]	0.00200	α(K)=5.76×10^{-5} *8*; α(L)=6.84×10^{-6} *10*; α(M)=1.393×10^{-6} *20*; α(N)=3.01×10^{-7} *5*; α(O)=4.64×10^{-8} *7* α(P)=3.51×10^{-9} *5*
4814.09	1	4814.0[d] *1*	100	0.0	0^+	D[a]		
4833.3		4833.2[d] *5*	100	0.0	0^+			
4897.8	1	4897.7[d] *16*	100	0.0	0^+	D[a]		
4985.0	1^-	4984.9[d] *6*	100	0.0	0^+	E1[a]	0.00206	α(K)=5.43×10^{-5} *8*; α(L)=6.45×10^{-6} *9*; α(M)=1.313×10^{-6} *19*; α(N)=2.83×10^{-7} *4*; α(O)=4.37×10^{-8} *7* α(P)=3.31×10^{-9} *5*
5040	1^-	5039.5[d] *29*	100	0.0	0^+	E1[a]	0.00208	α(K)=5.35×10^{-5} *8*; α(L)=6.36×10^{-6} *9*; α(M)=1.294×10^{-6} *19*; α(N)=2.79×10^{-7} *4*; α(O)=4.31×10^{-8} *6* α(P)=3.27×10^{-9} *5*
5060.80	1^-	5060.7[d] *2*	100	0.0	0^+	E1[a]	0.00208	α(K)=5.32×10^{-5} *8*; α(L)=6.32×10^{-6} *9*; α(M)=1.287×10^{-6} *18*; α(N)=2.78×10^{-7} *4*; α(O)=4.28×10^{-8} *6* α(P)=3.25×10^{-9} *5*
5065		849[&]	100[&] *5*	4214.9				
		1215[&]	75[&] *7*	3850.4?				
5076.9	1^-	5076.8[d] *8*	100	0.0	0^+	E1[a]	0.00209	α(K)=5.30×10^{-5} *8*; α(L)=6.30×10^{-6} *9*; α(M)=1.282×10^{-6} *18*; α(N)=2.77×10^{-7} *4*; α(O)=4.27×10^{-8} *6* α(P)=3.23×10^{-9} *5*
5094.5	1^-	5094.4[d] *7*	100	0.0	0^+	E1[a]	0.00209	α(K)=5.28×10^{-5} *8*; α(L)=6.27×10^{-6} *9*; α(M)=1.276×10^{-6} *18*; α(N)=2.75×10^{-7} *4*;

$^{136}_{56}Ba_{80}$-17

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α	Comments
								α(O)=4.25×10^{-8} *6* α(P)=3.22×10^{-9} *5*
5135.2	1$^-$	5135.1[d] *3*	100	0.0	0$^+$	E1[a]	0.00211	α(K)=5.22×10^{-5} *8*; α(L)=6.20×10^{-6} *9*; α(M)=1.262×10^{-6} *18*; α(N)=2.73×10^{-7} *4*; α(O)=4.20×10^{-8} *6* α(P)=3.19×10^{-9} *5*
5216.31	(1)	5216.2[d] *2*	100	0.0	0$^+$	(D)[a]		
5268.4	(1)	5268.3[d] *7*	100	0.0	0$^+$	(D)[a]		
5294.31	1	5294.2[d] *1*	100	0.0	0$^+$	D[a]		
5337.81	1	5337.7[d] *2*	100	0.0	0$^+$	D[a]		
5380		1164[&]	100[&]	4214.9				
5393		328[&]	100[&]	5065				
5396.5	(1)	5396.4[d] *7*	100	0.0	0$^+$	(D)[a]		
5418.4	(1)	5418.3[d] *5*	100	0.0	0$^+$	(D)[a]		
5431.5	1	5431.4[d] *10*	100	0.0	0$^+$	D[a]		
5444.42	(1)	5444.3[d] *1*	100	0.0	0$^+$	(D)[a]		
5497.6	1$^-$	5497.5[d] *7*	100	0.0	0$^+$	E1[a]	0.00221	α(K)=4.78×10^{-5} *7*; α(L)=5.67×10^{-6} *8*; α(M)=1.155×10^{-6} *17*; α(N)=2.49×10^{-7} *4*; α(O)=3.84×10^{-8} *6* α(P)=2.92×10^{-9} *4*
5561.1	1$^-$	5561.0[d] *3*	100	0.0	0$^+$	E1[a]	0.00223	α(K)=4.71×10^{-5} *7*; α(L)=5.59×10^{-6} *8*; α(M)=1.138×10^{-6} *16*; α(N)=2.46×10^{-7} *4*; α(O)=3.79×10^{-8} *6* α(P)=2.87×10^{-9} *4*
5585.6	1$^-$	5585.5[d] *7*	100	0.0	0$^+$	E1[a]	0.00224	α(K)=4.68×10^{-5} *7*; α(L)=5.56×10^{-6} *8*; α(M)=1.131×10^{-6} *16*; α(N)=2.44×10^{-7} *4*; α(O)=3.76×10^{-8} *6* α(P)=2.86×10^{-9} *4*
5601.22	1$^-$	5601.1[d] *1*	100	0.0	0$^+$	E1[a]	0.00224	α(K)=4.67×10^{-5} *7*; α(L)=5.54×10^{-6} *8*; α(M)=1.127×10^{-6} *16*; α(N)=2.43×10^{-7} *4*; α(O)=3.75×10^{-8} *6* α(P)=2.85×10^{-9} *4*
5610.0	1$^-$	5609.9[d] *6*	100	0.0	0$^+$	E1[a]	0.00224	α(K)=4.66×10^{-5} *7*; α(L)=5.53×10^{-6} *8*; α(M)=1.125×10^{-6} *16*; α(N)=2.43×10^{-7} *4*; α(O)=3.74×10^{-8} *6* α(P)=2.84×10^{-9} *4*
5647.9	1$^-$	5647.8[d] *13*	100	0.0	0$^+$	E1[a]	0.00225	α(K)=4.62×10^{-5} *7*; α(L)=5.48×10^{-6} *8*; α(M)=1.115×10^{-6} *16*; α(N)=2.41×10^{-7} *4*; α(O)=3.71×10^{-8} *6* α(P)=2.82×10^{-9} *4*
5652.2	1$^-$	5652.1[d] *10*	100	0.0	0$^+$	E1[a]	0.00225	α(K)=4.61×10^{-5} *7*; α(L)=5.47×10^{-6} *8*; α(M)=1.114×10^{-6} *16*; α(N)=2.40×10^{-7} *4*; α(O)=3.71×10^{-8} *6* α(P)=2.81×10^{-9} *4*
5718	(1)	5718[d] *3*	100	0.0	0$^+$	(D)[a]		

$^{136}_{56}Ba_{80}$-18

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α	Comments
5735.0		5734.9[d] *7*	100	0.0	0^+			
5768.0	1	5767.9[d] *4*	100	0.0	0^+			
5781.7	1	5781.6[d] *9*	100	0.0	0^+	D[a]		
5805.13	1	5805.0[d] *1*	100	0.0	0^+	D[a]		
5924.2	1	5924.1[d] *6*	100	0.0	0^+	D[a]		
5965.8	1^-	5965.7[d] *4*	100	0.0	0^+	E1[a]	0.00234	α(K)=4.31×10^{-5} *6*; α(L)=5.10×10^{-6} *8*; α(M)=1.039×10^{-6} *15*; α(N)=2.24×10^{-7} *4*; α(O)=3.46×10^{-8} *5* α(P)=2.62×10^{-9} *4*
5979.24	1^-	5979.1[d] *2*	100	0.0	0^+	E1[a]	0.00234	α(K)=4.29×10^{-5} *6*; α(L)=5.09×10^{-6} *8*; α(M)=1.036×10^{-6} *15*; α(N)=2.24×10^{-7} *4*; α(O)=3.45×10^{-8} *5* α(P)=2.62×10^{-9} *4*
6005.04	1^-	6004.9[d] *1*	100	0.0	0^+	E1[a]		
6035.74	1^-	6035.6[d] *1*	100	0.0	0^+	E1[a]		
6052.94	1^-	6052.8[d] *2*	100	0.0	0^+	E1[a]		
6061.44	1^-	6061.3[d] *1*	100	0.0	0^+	E1[a]		
6082.55	1^-	6082.4[d] *1*	100	0.0	0^+	E1[a]		
6113.35	1^-	6113.2[d] *2*	100	0.0	0^+	E1[a]		
6161.25	1^-	6161.1[d] *2*	100	0.0	0^+	E1[a]		
6182.35	1^-	6182.2[d] *2*	100	0.0	0^+	E1[a]		
6192.8	(1)	6192.6[d] *8*	100	0.0	0^+	(D)[a]		
6215.7	(1)	6215.5[d] *5*	100	0.0	0^+	(D)[a]		
6231.6	(1)	6231.4[d] *4*	100	0.0	0^+	(D)[a]		
6244.2	(1)	6244.0[d] *8*	100	0.0	0^+	(D)[a]		
6264.75	(1)	6264.6[d] *2*	100	0.0	0^+	(D)[a]		
6289.2	(1)	6289.0[d] *7*	100	0.0	0^+	(D)[a]		
6331.9	1^-	6331.7[d] *4*	100	0.0	0^+	E1[a]		
6344.4	1^-	6344.2[d] *7*	100	0.0	0^+	E1[a]		
6358.2	1^-	6358.0[d] *7*	100	0.0	0^+	E1[a]		
6373.6	1^-	6373.4[d] *8*	100	0.0	0^+	E1[a]		
6391.3	1^-	6391.1[d] *16*	100	0.0	0^+	E1[a]		
6409.9	1^-	6409.7[d] *19*	100	0.0	0^+	E1[a]		
6430.6	1^-	6430.4[d] *11*	100	0.0	0^+	E1[a]		
6449.46	1^-	6449.3[d] *2*	100	0.0	0^+	E1[a]		
6478.17	1^-	6478.0[d] *1*	100	0.0	0^+	E1[a]		
6488.67	1^-	6488.5[d] *1*	100	0.0	0^+	E1[a]		

$^{136}_{56}Ba_{80}$-19

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡
6528.8	1⁻	6528.6[d] *11*	100	0.0	0⁺	E1[a]
6554.3	1⁻	6554.1[d] *8*	100	0.0	0⁺	E1[a]
6591.8	1⁻	6591.6[d] *3*	100	0.0	0⁺	E1[a]
6625.27	1⁻	6625.1[d] *1*	100	0.0	0⁺	E1[a]
6677.3	1	6677.1[d] *3*	100	0.0	0⁺	D[a]
6693.38	1	6693.2[d] *1*	100	0.0	0⁺	D[a]
6716.8	1	6716.6[d] *3*	100	0.0	0⁺	D[a]
6741.9	1⁻	6741.7[d] *3*	100	0.0	0⁺	E1[a]
6756.58	1⁻	6756.4[d] *2*	100	0.0	0⁺	E1[a]
6767.78	1⁻	6767.6[d] *1*	100	0.0	0⁺	E1[a]
6776.78	1⁻	6776.6[d] *1*	100	0.0	0⁺	E1[a]
6788.38	1⁻	6788.2[d] *2*	100	0.0	0⁺	E1[a]
6830.8	1⁻	6830.6[d] *7*	100	0.0	0⁺	E1[a]
6840.3	1⁻	6840.1[d] *8*	100	0.0	0⁺	E1[a]
6847.5	1⁻	6847.3[d] *11*	100	0.0	0⁺	E1[a]
6859.2	1⁻	6859.0[d] *8*	100	0.0	0⁺	E1[a]
6870.4	1⁻	6870.2[d] *10*	100	0.0	0⁺	E1[a]
6880.5	1⁻	6880.3[d] *5*	100	0.0	0⁺	E1[a]
6895.79	1⁻	6895.6[d] *2*	100	0.0	0⁺	E1[a]
6952.0	1⁻	6951.8[d] *11*	100	0.0	0⁺	E1[a]
6982.29	1⁻	6982.1[d] *2*	100	0.0	0⁺	E1[a]
6998.5	1⁻	6998.3[d] *7*	100	0.0	0⁺	E1[a]
7006.6	1⁻	7006.4[d] *14*	100	0.0	0⁺	E1[a]
7018.89	1⁻	7018.7[d] *1*	100	0.0	0⁺	E1[a]
7150.60	(1)	7150.4[d] *1*	100	0.0	0⁺	(D)[a]
7251.1	1⁻	7250.9[d] *3*	100	0.0	0⁺	E1[a]
7271.6	1⁻	7271.4[d] *5*	100	0.0	0⁺	E1[a]
7281.5	1⁻	7281.3[d] *15*	100	0.0	0⁺	E1[a]
7298.81	1⁻	7298.6[d] *1*	100	0.0	0⁺	E1[a]
7314.81	1⁻	7314.6[d] *2*	100	0.0	0⁺	E1[a]
7350.2	1⁻	7350.0[d] *14*	100	0.0	0⁺	E1[a]
7364.1	1⁻	7363.9[d] *3*	100	0.0	0⁺	E1[a]
7382.1	1⁻	7381.9[d] *4*	100	0.0	0⁺	E1[a]
7394.4	1⁻	7394.2[d] *9*	100	0.0	0⁺	E1[a]
7402.5	1⁻	7402.3[d] *3*	100	0.0	0⁺	E1[a]
7414.9	1⁻	7414.7[d] *13*	100	0.0	0⁺	E1[a]
7444.4	1⁻	7444.2[d] *3*	100	0.0	0⁺	E1[a]
7472.52	1⁻	7472.3[d] *1*	100	0.0	0⁺	E1[a]
7487.5	1⁻	7487.3[d] *4*	100	0.0	0⁺	E1[a]
7502.8	1⁻	7502.6[d] *3*	100	0.0	0⁺	E1[a]
7519.2	1⁻	7519.0[d] *10*	100	0.0	0⁺	E1[a]
7541.0	1⁻	7540.8[d] *6*	100	0.0	0⁺	E1[a]
7558.1	1⁻	7557.9[d] *7*	100	0.0	0⁺	E1[a]
7572.13	1⁻	7571.9[d] *1*	100	0.0	0⁺	E1[a]
7583.5	1⁻	7583.3[d] *8*	100	0.0	0⁺	E1[a]
7594.8	1⁻	7594.6[d] *5*	100	0.0	0⁺	E1[a]
7604.2	1	7604.0[d] *8*	100	0.0	0⁺	D[a]
7625.7	1	7625.5[d] *4*	100	0.0	0⁺	D[a]
7662.33	1	7662.1[d] *2*	100	0.0	0⁺	D[a]
7675.63	1	7675.4[d] *2*	100	0.0	0⁺	D[a]
7699.0	1	7698.8[d] *3*	100	0.0	0⁺	D[a]
7747.6	1	7747.4[d] *5*	100	0.0	0⁺	D[a]
7769.84	1	7769.6[d] *1*	100	0.0	0⁺	D[a]
7788.1	(1)	7787.9[d] *5*	100	0.0	0⁺	(D)[a]
7819.8	1⁻	7819.6[d] *8*	100	0.0	0⁺	E1[a]
7848.9	1⁻	7848.7[d] *3*	100	0.0	0⁺	E1[a]
7857.9	1⁻	7857.7[d] *12*	100	0.0	0⁺	E1[a]
7875.0	1⁻	7874.8[d] *11*	100	0.0	0⁺	E1[a]
7895.25	1⁻	7895.0[d] *2*	100	0.0	0⁺	E1[a]
7911.3	1⁻	7911.1[d] *4*	100	0.0	0⁺	E1[a]
7972.4	1⁻	7972.1[d] *10*	100	0.0	0⁺	E1[a]
8006.6	1⁻	8006.3[d] *5*	100	0.0	0⁺	E1[a]
8083.5	1⁻	8083.2[d] *3*	100	0.0	0⁺	E1[a]
8124.66	1⁻	8124.4[d] *2*	100	0.0	0⁺	E1[a]
8144.3	1⁻	8144.0[d] *7*	100	0.0	0⁺	E1[a]
8171.2	1⁻	8170.9[d] *10*	100	0.0	0⁺	E1[a]
8184.3	1⁻	8184.0[d] *3*	100	0.0	0⁺	E1[a]
8227.9	1⁻	8227.6[d] *5*	100	0.0	0⁺	E1[a]
8250.8	1⁻	8250.5[d] *7*	100	0.0	0⁺	E1[a]
8280.4	1⁻	8280.1[d] *10*	100	0.0	0⁺	E1[a]

$^{136}_{56}Ba_{80}$-20

Adopted Levels, Gammas (continued)

γ(^{136}Ba) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡
8315.4	1⁻	8315.1[d] *9*	100	0.0	0⁺	E1[a]
8339.2	1⁻	8338.9[d] *14*	100	0.0	0⁺	E1[a]
8359.5	1⁻	8359.2[d] *5*	100	0.0	0⁺	E1[a]
8389.7	1⁻	8389.4[d] *7*	100	0.0	0⁺	E1[a]
8404.1	1⁻	8403.8[d] *13*	100	0.0	0⁺	E1[a]
8611.1	1⁻	8610.8[d] *21*	100	0.0	0⁺	E1[a]
8825.1	1⁻	8824.8[d] *10*	100	0.0	0⁺	E1[a]
9049.5	1⁻	9049.2[d] *7*	100	0.0	0⁺	E1[a]
9077.8	1⁻	9077.5[d] *7*	100	0.0	0⁺	E1[a]

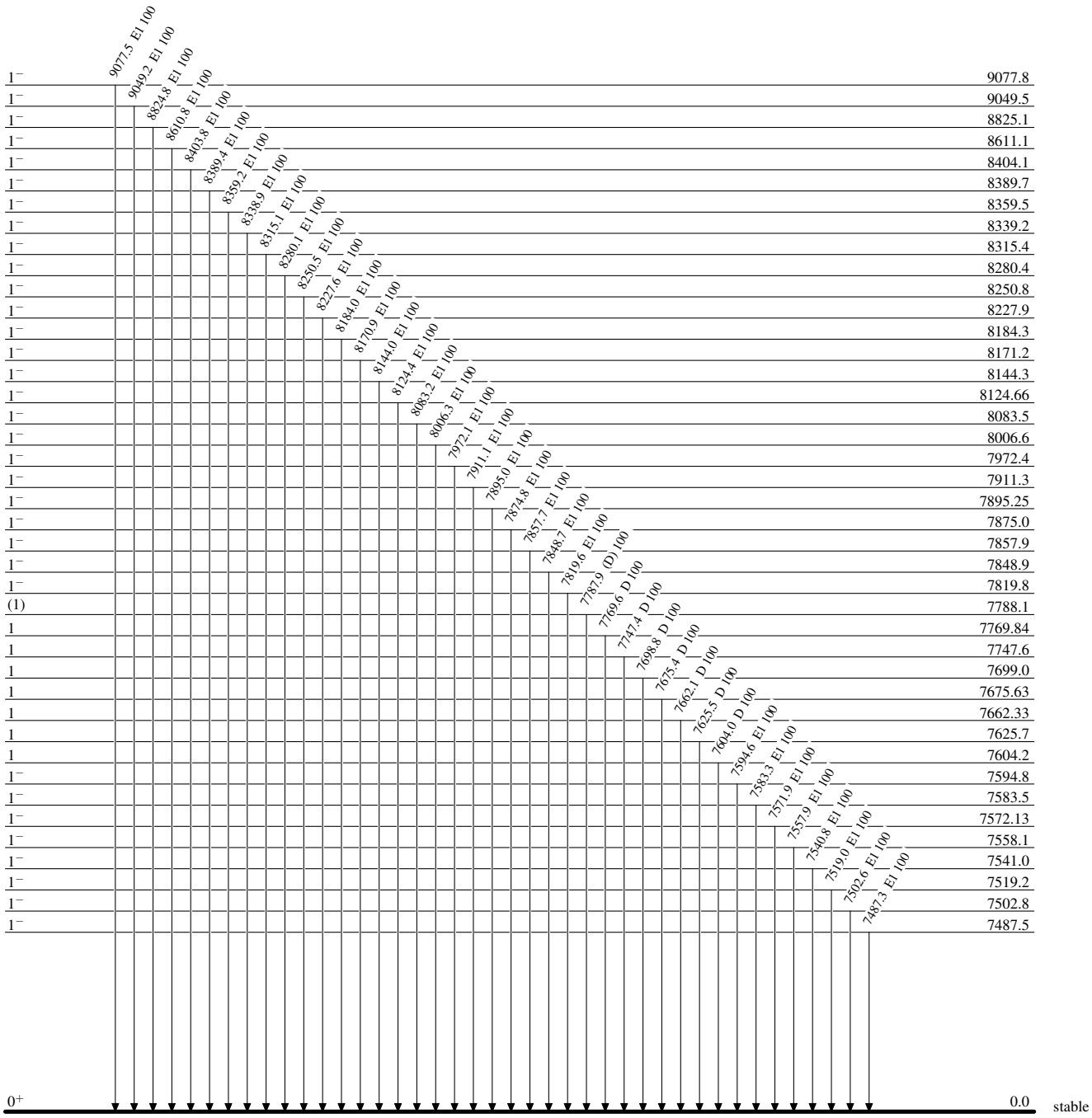
† From ^{136}Ba(n,n′γ), except where noted.
‡ From γ(θ) and γ(lin pol) in (n,n′γ), except as noted.
# From ^{136}Cs β^- decay (13.16 d).
@ From α(K)exp and K/L ratios in ^{136}Cs β^- decay (13.16 d).
& From ^{198}Pt(^{136}Xe,Xγ).
[a] From γ(θ) and γ(lin pol) in (γ,γ′).
[b] From R(DCO) in ^{139}La(^{82}Se,Xγ).
[c] D+Q from γ(θ) in (n,n′γ); Δπ=no from level scheme.
[d] From (γ,γ′).
[e] From ^{135}Ba(n,γ), E=thermal.
[f] From ^{136}La ε decay (9.87 min).
[g] Placement of transition in the level scheme is uncertain.

$^{136}_{56}Ba_{80}$-21

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

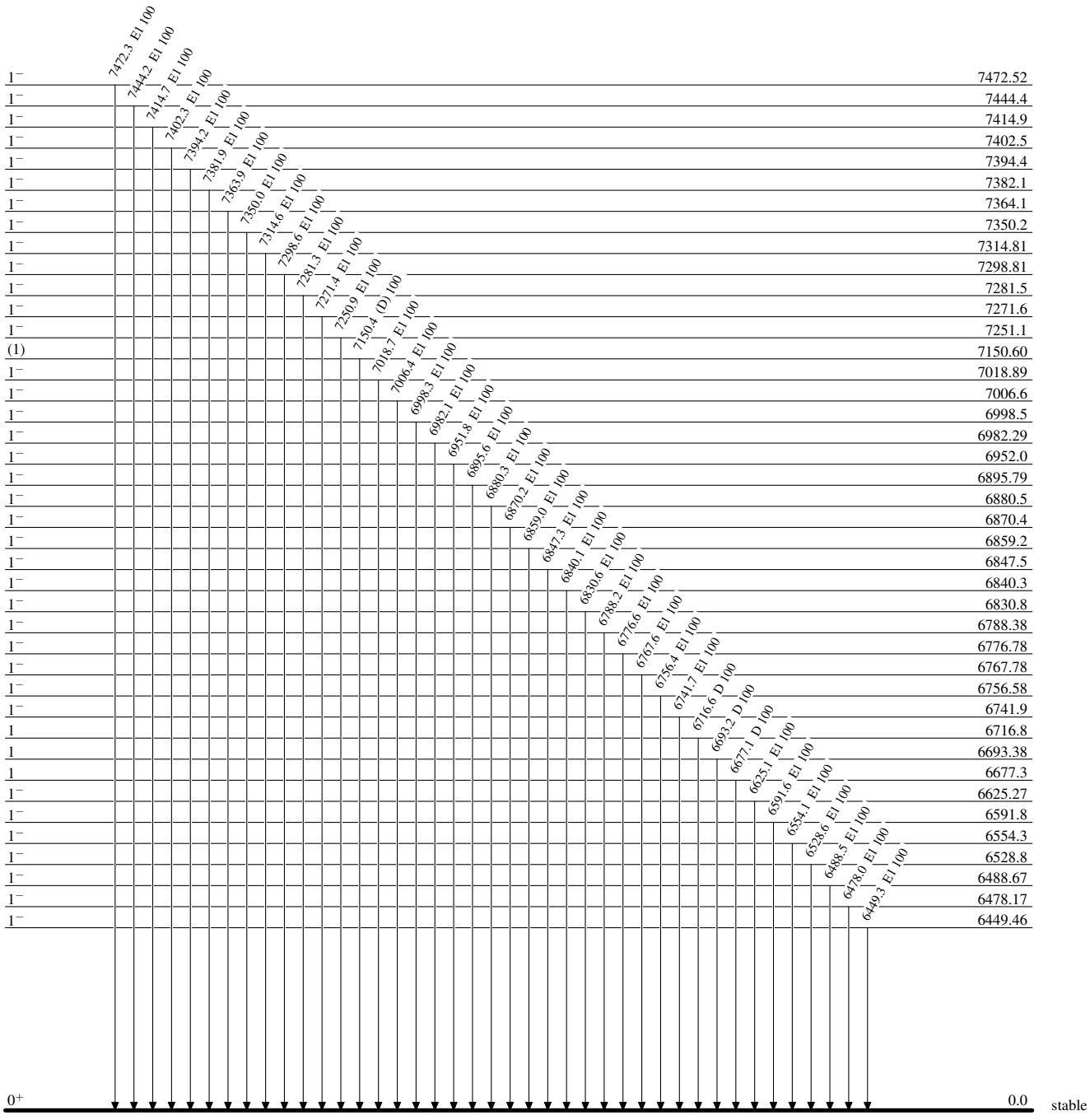


$^{136}_{56}Ba_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



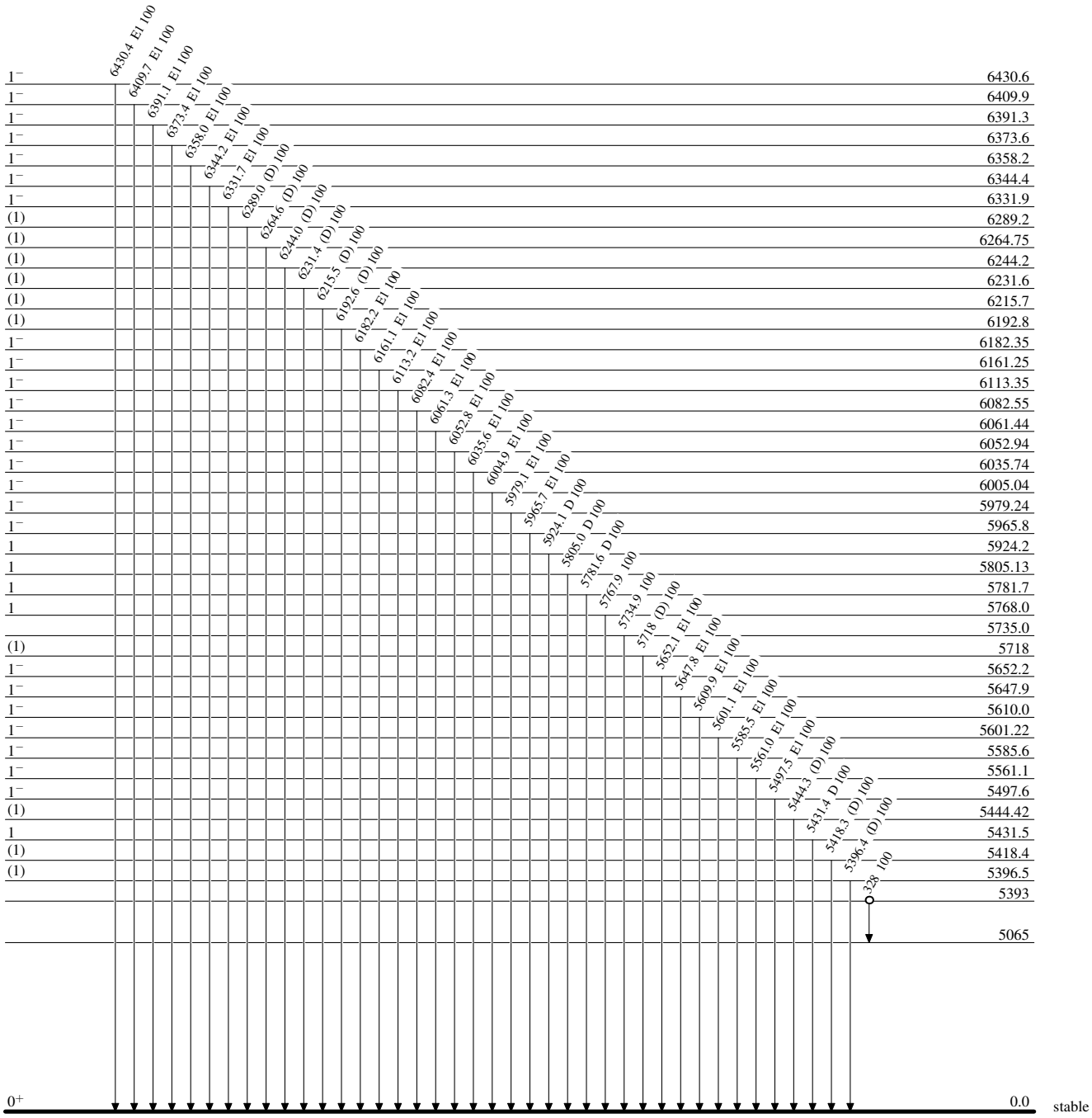
$^{136}_{56}Ba_{80}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend
- ● Coincidence
- ○ Coincidence (Uncertain)



$^{136}_{56}Ba_{80}$

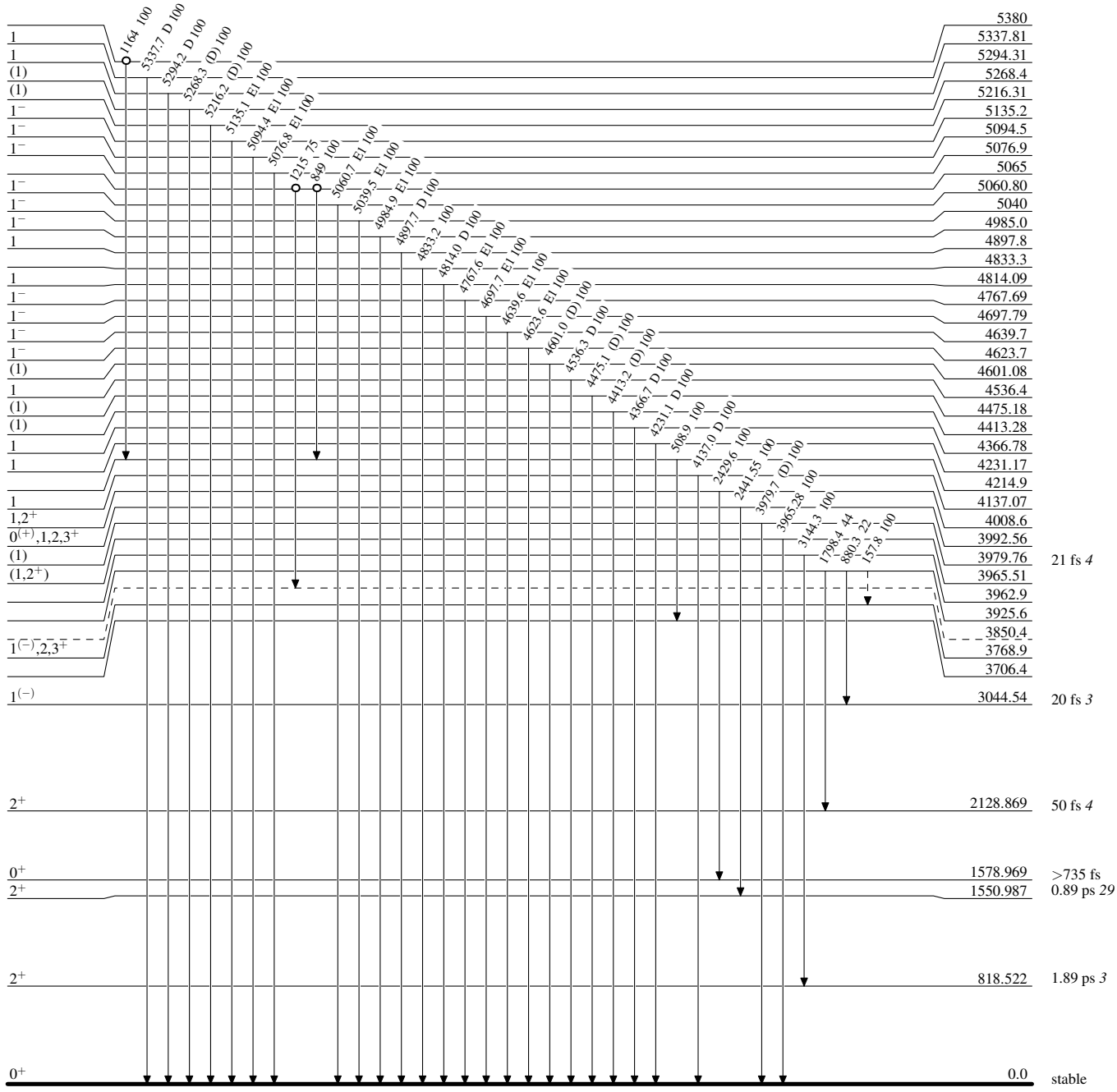
Legend

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)
Coincidence
Coincidence (Uncertain)



$^{136}_{56}Ba_{80}$

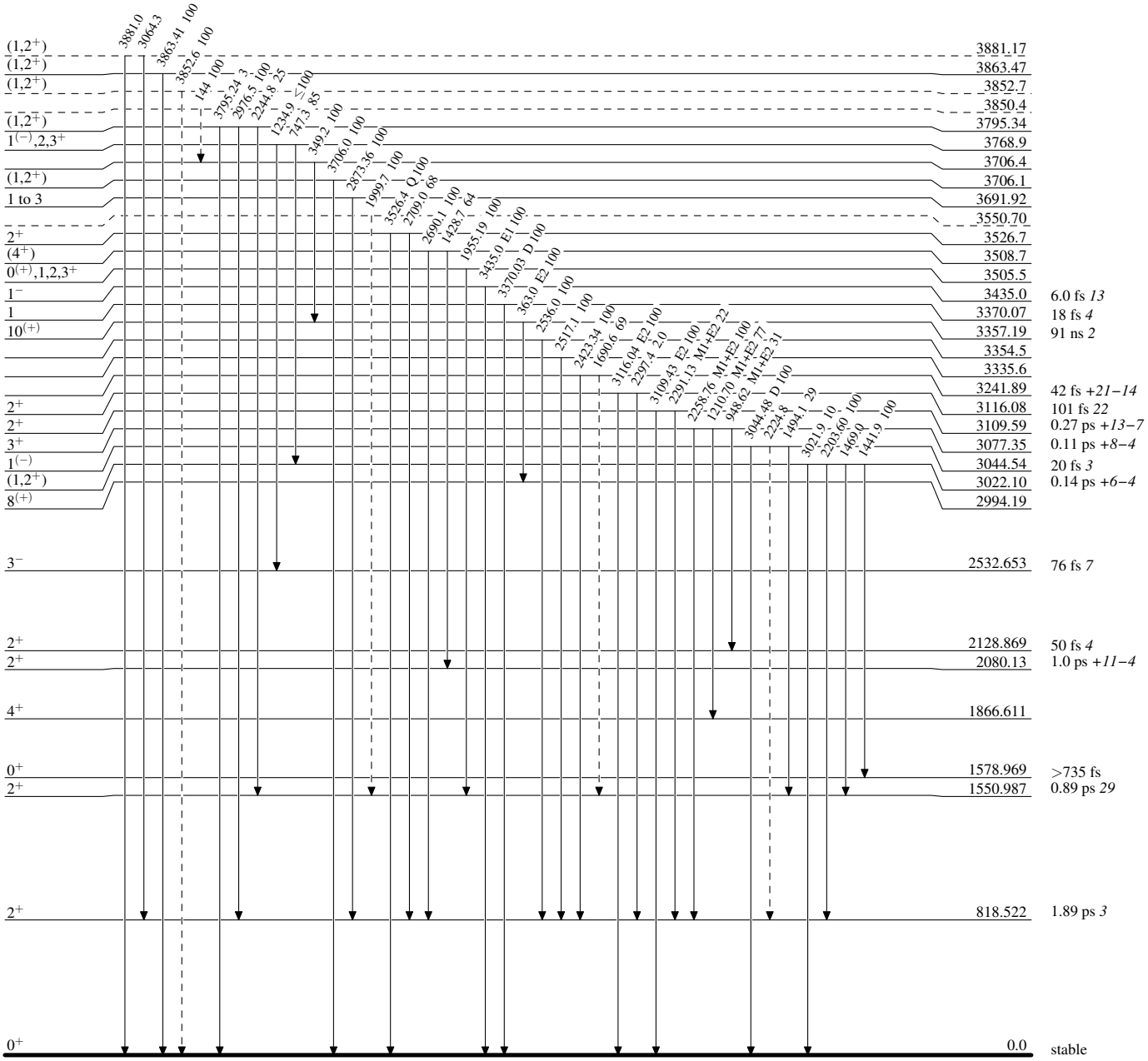
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{136}_{56}Ba_{80}$

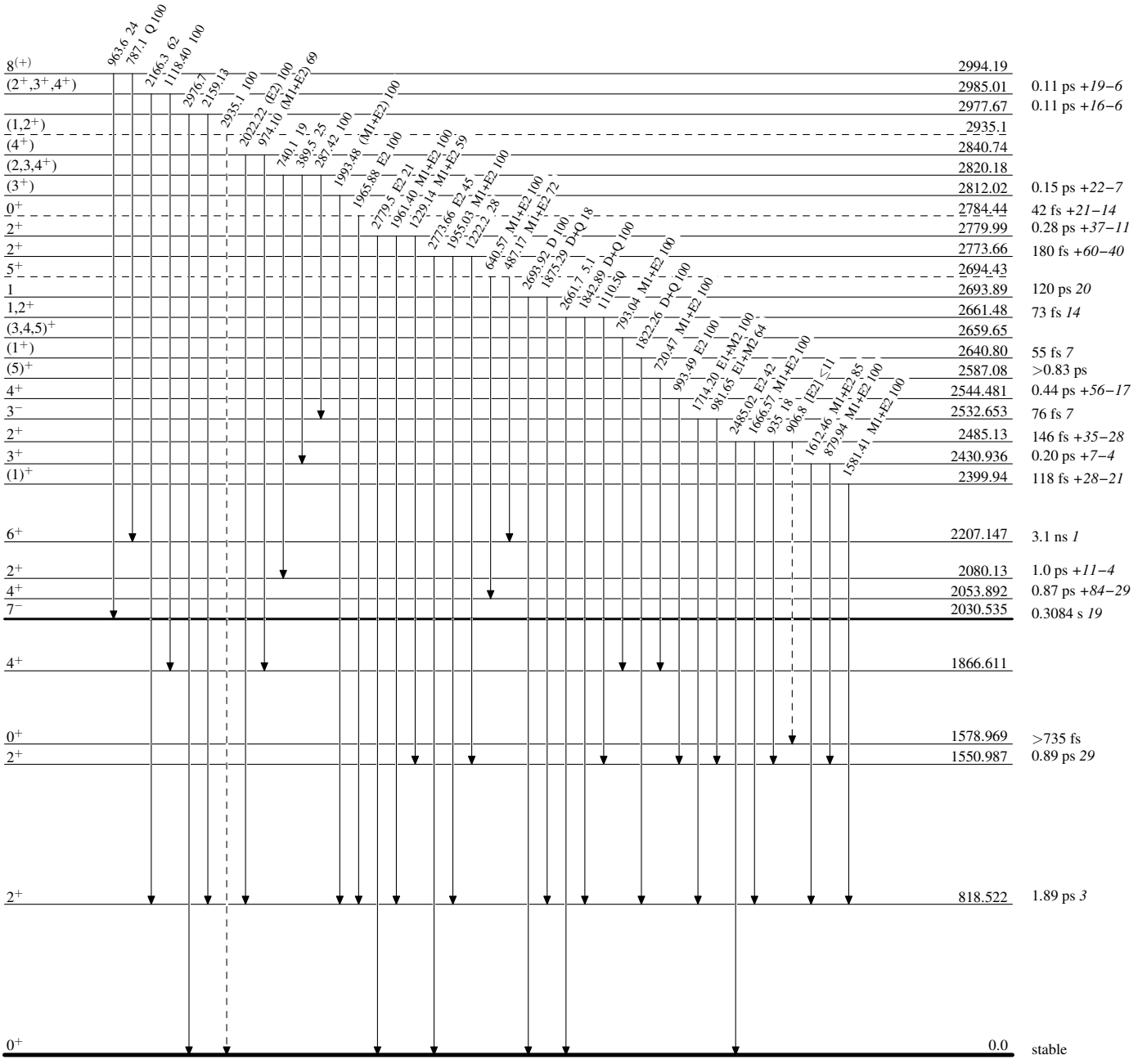
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{136}_{56}Ba_{80}$

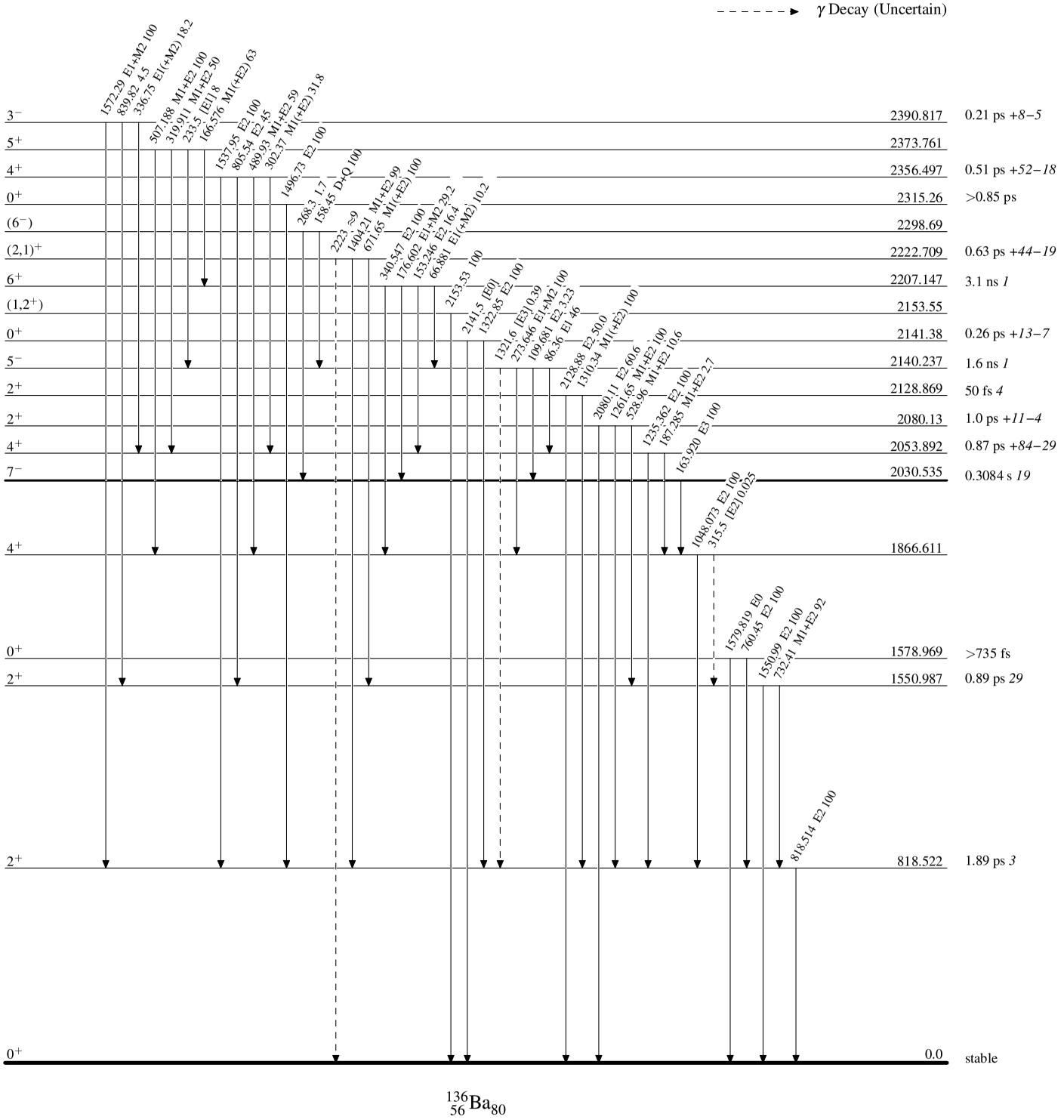
Adopted Levels, Gammas

Legend

Level Scheme (continued)

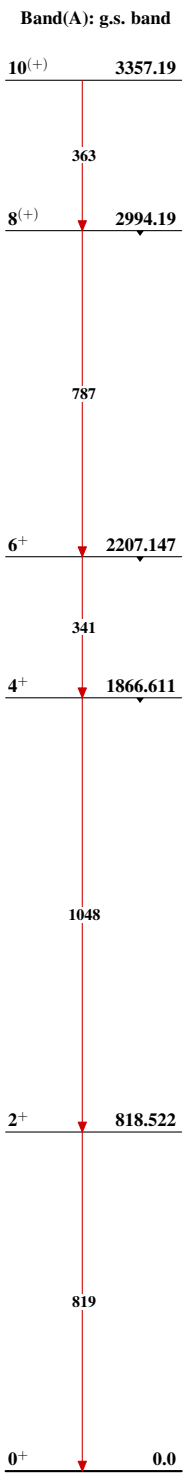
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{136}_{56}Ba_{80}$

Adopted Levels, Gammas



$^{136}_{56}Ba_{80}$