Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93,599 (2001)	1-Dec-2000

Q(β^-)=−6346 *11*; S(n)=10520.1 *24*; S(p)=6294 *3*; Q(α)=−1.4×10^2 *3* 2012Wa38

Note: Current evaluation has used the following Q record −6315 17 *10520.024 6295* 3 *76* 19 1995Au04.

Theory and calculations: The following is a partial list of references, for complete list see recent references (published every four months in Nuclear Data Sheets) or NSR WWW database: 1997Ho05, 1996La03, 1995Pi12, 1994Lo09, 1991Ga17, 1988Wi19, 1987Ar05, 1987Du04, 1987Ic01, 1987Sa03, 1987Va10, 1986An10, 1986Fr08, 1986Ma32, 1986Si05, 1985Ar16, 1985Vo15, 1985Ze01, 1984Ab01, 1984Do01, 1984Fr14, 1984Ja11.

Giant resonance studies: 1999Yo01, 1992Zi02, 1989Bo13, 1987Va10, 1986Ad02, 1986Di13, 1986MaZO, 1986Si05, 1984Bu43.

Isotope shift, $\Delta<r^2>$: 1999GaZX, 1997Ko33, 1995Be19, 1994Ji08, 1993Ba55, 1992Le09, 1990En01, 1990Wa25, 1988Ga17.

^{144}Sm Levels

Cross Reference (XREF) Flags

A	^{144}Eu ε decay	E	^{146}Sm(p,t)	I	(HI,xnγ)
B	^{144}Sm(γ,γ')	F	Coulomb excitation	J	^{144}Sm(p,p$'\gamma$)
C	^{144}Sm(n,n$'\gamma$)	G	^{142}Nd(α,2nγ),^{144}Nd(α,4nγ)	K	^{142}Nd(α,2nγ)
D	^{144}Sm(p,p$'$)	H	^{142}Nd(^{16}O,^{14}C)		

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0.0	0$^+$	stable	ABCDEFGHI	
1660.027 *10*	2$^+$	84.4 fs *25*	ABCDEFGHIJK	μ=+1.52 *22* (1991Ba38) T$_{1/2}$: from adopted B(E2)=0.266 *8* (1987Ra01). Others: 0.38 ps *+21−10* (1993Ga16), 89 fs *21* ^{144}Sm(γ,γ'). J$^\pi$: E2 γ to 0$^+$ g.s.
1810.172 *25*	3$^-$	25 ps *4*	CDEFGHIJK	T$_{1/2}$: from 1996Wi07. Other: >0.62 ps (1993Ga16). J$^\pi$: E1 γ to 2$^+$.
2120? *7*			B	
2167? *7*			B	
2190.891 *25*	4$^+$	>0.14 ps	CDE GHI K	J$^\pi$: E1 γ to 3$^-$ and E2 γ to 2$^+$.
2323.60 *8*	6$^+$	880 ns *25*	CDE G I K	T$_{1/2}$: from 1972Ko42. Other: 890 ns *60* (1973BaXQ). J$^\pi$: E2 γ to 4$^+$.
2423.208 *24*	2$^+$	37 fs *+5−4*	ABCDE K	J$^\pi$: E2 γ to 0$^+$ g.s. T$_{1/2}$: from 1993Ga16. Other: 29 fs *4* in (γ,γ').
2477.651 *23*	0$^+$	>1.2 ps	ABCDE G	J$^\pi$: from $\sigma(\theta)$ in (p,p$'$).
2587.78 *3*	4$^+$	>0.12 ps	CD G	J$^\pi$: from $\sigma(\theta)$ in (p,p$'$).
2644.695 *14*	1$^{(+)}$	0.19 ps *+6−4*	CD K	
2660.691 *14*	2$^{(+)}$	0.5 ps *+5−2*	CD K	
2688.394 *14*	3$^{(+)}$	0.5 ps *+9−2*	CD K	
2707.04 *11*	(5$^+$)	>36 fs	CD G	
2729			E	
2799.65 *3*	2$^+$	69 fs *14*	BCDE K	J$^\pi$: E2 γ to 0$^+$ g.s. T$_{1/2}$: from 1993Ga16. Other: 96 fs *19* in (γ,γ').
2804	(2)		E	
2822.52 *4*	0$^+$	>0.76 ps	CD	J$^\pi$: E2 γ to 2$^+$ and $\sigma(\theta)$ in (p,p$'$).
2825.71 *3*	(5$^-$)	>0.51 ps	CDE GH K	
2827	0		EF H	
2883.008 *21*	(4$^+$)	0.4 ps *+8−2*	BCDE G	
2976? *9*			B	
3019.316 *21*	4$^+$	0.4 ps *+5−1*	CDE K	J$^\pi$: M3+E2 γ to 2$^+$ and from $\sigma(\theta)$ in (p,p$'$).
3079.34 *15*	(5,6$^+$,7)	>7 ps	CD K	
3118.63 *4*	(3,4$^-$)	0.24 ps *+17−8*	CD G	

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Adopted Levels, Gammas (continued)

^{144}Sm Levels (continued)

E(level)†	Jπ	$T_{1/2}$‡	XREF	Comments
3124.07 *7*	7^-	>55 fs	CD G I K	Jπ: E1 γ to 6^+.
3134.17 *5*	0^+	0.14 ps *+16–6*	CD	Jπ: E2 γ to 2^+ and σ(θ) in (p,p′).
3142			E	
3195.77 *4*	$(3,4^+,5^-)$	0.06 ps *+3–2*	CD K	
3205			E	
3225.54 *22*	1^-	2.0 fs *7*	BCD J	$T_{1/2}$: weighted average of 7.6 fs *21* (1993Ga16) and 1.94 fs *26* (1996Wi07). Jπ: E1 γ to 0^+ g.s.
3240			H	
3266.19 *8*	$(4^+,6)$	>15 fs	CD K	
3307.90 *4*	$(2^+,3)$	40 fs *+10–8*	C	
3307.97 *4*	$(2,3^-,4^-)$	0.08 ps *+4–2*	CD K	
3308.27 *10*	(6^+)	>38 fs	CD	
3318	(2^+)		E	
3343.57 *5*	(3,4,5,6)	>190 fs	CD	
3360.67 *4*	3^-	0.26 ps *+20–8*	CD G	Jπ: M2+E1 γ to 2^+.
3376.8 *7*	8^-	1.54 ns *17*	DE G I K	$T_{1/2}$: weighted average of 1.6 ns *2* (1986Ko25) and 1.4 ns *3* (1979PeZS). Jπ: M1 γ to 7^-.
3391.05 *3*	(2^-)	32 fs *+6–5*	CD	
3404.60 *4*	$(2^+,3^-)$	0.16 ps *+12–6*	CD K	
3413.827 *21*	2^+	53 fs *+9–7*	CD	Jπ: E2 γ to 0^+ g.s.
3426	(2^+)		E	
3444	(7^-)		D K	
3460.8 *7*	9^-	0.5 ns *2*	D G I K	$T_{1/2}$: from 1986Ko25. Jπ: E2 γ to 7^-.
3469	(5^-)		D K	
3481			E	
3493.96 *4*	(4^+)	0.01 ps *+3–2*	CD G	
3519.5 *8*	(8^-)		G I	
3523.56 *4*	$(2^+,4)$	62 fs *+12–10*	CD K	
3529.48 *4*	(3^-)	30 fs *+8–6*	CD	
3535	(6^-)		K	
3544			B E	
3559.63 *5*	2^+	27 fs *+6–5*	CD	Jπ: E2 γ to 0^+ g.s.
3564.19 *5*	(3^-)	32 fs *+12–9*	CD	
3579 *5*			E	
3596.78 *8*	(4^-)	0.10 ps *+10–3*	CD K	
3626.65 *5*	(2,3,4,5)	44 fs *+23–14*	CD	
3647.07 *5*	(4^+)	0.12 ps *+9–4*	CD	
3661			E	
3668.68 *3*	5^-	25 fs *+26–13*	CD K	
3688.59 *5*	$(3^+,4^+)$	21 fs *+4–3*	CDE	
3698	$7^{(-)}$		K	
3708 *5*			E	
3714.38 *6*	$(1^+,2^+,3)$	12 fs *+5–3*	CD	
3722.70 *5*	$(2^+,3^+,4^+)$	5.5 fs *+23–21*	CD	
3724	(8^-)		K	
3731.93 *5*	$(2^+,3^+,4^+)$	15 fs *3*	BCD	
3740.10 *5*	(1,2,3,4)	0.10 ps *+5–3*	CDE	
3778.46 *9*	(3^-)	13 fs *+8–6*	CD	
3786.30 *18*	(2,4)	0.2 ps *+5–1*	CD	
3817.93 *15*	$1^{(-)}$	10 fs *+7–6*	BCD	
3823.39 *6*	$(0^+,1,2,3)$	24 fs *+8–6*	CD	
3846.20 *11*	(4^-)		CD	
3855.97 *10*	$(2^-,3^-,4^-)$	32 fs *+20–12*	CD	

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Adopted Levels, Gammas (continued)

^{144}Sm Levels (continued)

E(level)†	Jπ	$T_{1/2}$‡	XREF	Comments
3867.89 *11*	5^-	0.08 ps *+11−3*	CD	Jπ: M2+E1 γ to 4^+.
3877.90 *6*	$(1^+,2^+,3)$	40 fs *+16−11*	CD	
3884.86 *20*	$(1,2^+)$	8 fs *+11−7*	CD	
3886.77 *8*	$5^{(+)}$	28 fs *+21−12*	CD	
3890.52 *17*	(1^-)	<5.9 fs	BCD	
3906.987 *20*	$1^{(+)}$	19 fs *+14−9*	BCD	
3913.98 *8*	(3,4)	23 fs *+16−10*	CD	
3939.88 *12*	(5^-)	0.04 ps *+6−2*	CD	
3949.40 *6*	(3,4,5)	34 fs *+12−8*	CD	
3965.67 *19*	$1^{(+)}$	<5 fs	BCD	
3983	(3^-)		D	
3985.96 *21*	2^+	33 fs *+25−14*	CD	Jπ: E2 γ to 0^+ g.s.
3986.00 *6*	(3^+)	21 fs *+8−6*	C	
4072.08 *14*	(2,3,4)	0.03 ps *+4−2*	C	
4082.84 *19*		0.03 ps *+5−2*	CD	
4124.1 *3*	$1^{(-)}$	11 fs *+18−10*	C	
4157.37 *18*		<24 fs	CD	
4210			H	
4262.1 *20*	1		B	
4410.8 *10*			I	
4427.7 *10*			I	
4674.8 *14*			I	
4700.8 *8*	(10^-)		G I	
4758.7 *9*	(10^-)		G I	
4907.8 *10*	(11^-)		G I	
4960.8 *9*	(11^-)		G I	
5015 *5*	(1)		B	
5015.8 *13*			I	
5077.6 *13*	(12^-)			
5103.1 *10*	1,2		B	
5150.8 *9*	(12^-)	<0.3 ns	G I	$T_{1/2}$: from 1986Ko25.
5151 *3*	(1)		B	
5340			H	
5350.8 *10*	(12^-)		I	
5360.8 *10*	(13^-)		G I	
5520.8 *9*	(13^-)		G I	
5720.7 *10*	(14^-)		G I	
5769.8 *14*			I	
5855.8 *14*	(13^+)		I	
6004.8 *14*	(14^+)		I	
6061.8 *17*	(14^+)		I	
6126.7 *11*	(14^+)		G I	
6301.2 *11*	(14^+)		G I	
6315.8 *17*			I	
6411.9 *11*	(15^+)		G I	
6431.6 *12*	(14^+)		I	
6651.4 *11*	(15^+)		G I	
6771.7 *12*			I	
6792.3 *11*			I	
6824.2 *11*	(16^+)		G I	
7000.7 *14*			I	
7160.7 *18*			I	
7237.7 *12*			I	
7397.7 *15*			I	
7524.7 *13*			I	
7572.8 *12*			I	

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Adopted Levels, Gammas (continued)

^{144}Sm Levels (continued)

E(level)[†]	J^π	$T_{1/2}$[‡]	XREF	Comments
7604.7 *20*			I	
7650			H	
7660.5 *11*			I	
7690.9 *11*			I	
7870.7 *16*			I	
7910.5 *12*			I	
7938.4 *14*			I	
7950.1 *13*			I	
8084.5 *14*			I	
8282.4 *14*			I	
8325.7 *19*	(18)		I	
8426.1 *16*			I	
8626.8 *15*			I	
8997.9 *14*	1		B	J^π: D γ to 0^+ g.s.
9000			H	
9232.8 *16*		2.6 ns *5*	I	$T_{1/2}$: from 1998Je05. Possible configuration relative to ^{146}Gd: [π ($h^2_{11/2}$ ($d^{-4}_{5/2}$)$_0$), ν($f_{7/2}i_{13/2}$($d^{-2}_{3/2}$)$_0$)]$_{20-}$ (1998Je05).
9312.1 *16*			I	
9419.9 *17*			I	
9441.8 *18*			I	
9589.9 *18*			I	
9985.8 *20*			I	
10036.0 *17*			I	
10583.8 *18*			I	
10698.0 *18*			I	
10935.4 *19*			I	
11000			H	
11719.4 *21*			I	
11768.4 *21*			I	
11903.4 *24*			I	
12284.4 *24*			I	
12739 *3*			I	

[†] From least-squares fit to Eγ if γ information is available.
[‡] From 1993Ga16, unless indicated otherwise.

Adopted Levels, Gammas (continued)

γ(^{144}Sm)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ†	α‡	Comments
1660.027	2^+	1660.01 *1*	100	0.0	0^+	E2			B(E2)(W.u.)=11.9 *4* E_γ: weighted average of 1993Ga16 and 1976Ke01 values.
1810.172	3^-	150.21 *10*	100.0 *2*	1660.027	2^+	E1		0.092	B(E1)(W.u.)=0.0025 *4* α(K)=0.0777 *24*; α(L)=0.0110 *4*; α(M)=0.00233 *7*; α(N+..)=0.00065 *2* E_γ,I_γ: weighted average of 1993Ga16 and 1996Wi07 values.
		1810.3 *3*	7.0 *6*	0.0	0^+				E_γ,I_γ: weighted average of 1993Ga16 and 1996Wi07 values.
2190.891	4^+	380.66 *7*	100.0 *13*	1810.172	3^-	E1		0.00818	B(E1)(W.u.)<0.020 α(K)=0.00699 *21*; α(L)=0.00094 *3*; α(M)=0.00020 *1* E_γ,I_γ: from 1993Ga16.
		530.76 *5*	58.7 *7*	1660.027	2^+	E2		0.0111	B(E2)(W.u.)<7.9×10^2 α(K)=0.0090 *3*; α(L)=0.00152 *5* E_γ,I_γ: from 1993Ga16.
2323.60	6^+	132.6 *1*	100.0	2190.891	4^+	E2		0.86	B(E2)(W.u.)=0.188 *6* α(K)=0.531 *16*; α(L)=0.257 *8*; α(M)=0.0587 *18*; α(N+..)=0.0161 *5* E_γ: from 1993Ga16.
2423.208	2^+	763.11 *4*	5.1 *3*	1660.027	2^+	E2+M1		0.0061 *16*	α(K)=0.0052 *14*; α(L)=0.00072 *16*
		2423.24 *3*	100.0 *3*	0.0	0^+	E2			B(E2)(W.u.)=3.9 *6*
2477.651	0^+	817.62 *2*	100	1660.027	2^+				
		2477.8 *20*	0	0.0	0^+	(E0)			
2587.78	4^+	396.91 *7*	100.0 *9*	2190.891	4^+				
		777.59 *2*	22.6 *5*	1810.172	3^-				
2644.695	$1^{(+)}$	984.66 *1*	100.0 *14*	1660.027	2^+	E2+M1		0.0034 *8*	α(K)=0.0029 *7*; α(L)=0.00039 *9*
		2644.78 *6*	20.6 *8*	0.0	0^+	M1			B(M1)(W.u.)=0.0011 *4*
2660.691	$2^{(+)}$	237.62 *11*	6.5 *4*	2423.208	2^+	E2+M1	−0.1 *+4−3*	0.153 *7*	B(M1)(W.u.)=0.19 *19*; B(E2)(W.u.)=2.E+1 *+16−2* α(K)=0.130 *6*; α(L)=0.0182 *10*; α(M)=0.0039 *3*; α(N+..)=0.00109 *5*
		850.41 *7*	5.0 *6*	1810.172	3^-	M2+E1		0.008 *7*	α(K)=0.007 *6*; α(L)=0.0010 *9*
		1000.66 *1*	100.0 *9*	1660.027	2^+	E2+M1		0.0033 *8*	α(K)=0.0028 *7*; α(L)=0.00038 *8*
2688.394	$3^{(+)}$	497.56 *5*	100 *5*	2190.891	4^+	E2+M1	+0.09 *+7−6*	0.0221 *2*	B(M1)(W.u.)=0.2 *+4−2*; B(E2)(W.u.)=4 *+9−4* α(K)=0.0188 *1*; α(L)=0.00257 *1*; α(M)=0.00055; α(N+..)=0.00015
		1028.36 *1*	75 *1*	1660.027	2^+	E2+M1		0.0031 *7*	α(K)=0.0026 *6*; α(L)=0.00035 *8*
2707.04	(5^+)	383.44 *7*	100	2323.60	6^+				
2799.65	2^+	2799.62 *3*	100	0.0	0^+	E2			B(E2)(W.u.)=1.06 *22* E_γ: from 1993Ga16.
2822.52	0^+	1162.49 *3*	100	1660.027	2^+			0.00183	α(K)=0.00155 *5*; α(L)=0.00021 *1*
2825.71	(5^-)	1015.53 *1*	100	1810.172	3^-				E_γ: from 1993Ga16. Other: 1014.4 (1979PeZS).
2883.008	(4^+)	1072.85 *5*	66 *2*	1810.172	3^-	M2+E1	−0.07 *+7−9*	0.00095 *11*	B(E1)(W.u.)=0.0002 *+4−2*; B(M2)(W.u.)=4 *+11−4* α(K)=0.00081 *13*; α(L)=0.00010 *1*
		1222.97 *2*	100 *2*	1660.027	2^+	M3+E2	−0.12 *+12−14*	0.0018 *4*	α(K)=0.0015 *4*; α(L)=0.00021 *5*

$^{144}_{62}Sm_{82}$-5

Adopted Levels, Gammas (continued)

γ(^{144}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ†	α‡	Comments
									B(E2)(W.u.)=7 *+14−7*; B(M3)(W.u.)=5.E+5 *+13−5* Additional information 1.
3019.316	4^+	828.31 *4*	14.3 *6*	2190.891	4^+	E2+M1		0.0050 *13*	α(K)=0.0043 *11*; α(L)=0.00059 *13*
		1209.10 *6*	12.3 *6*	1810.172	3^-	M2+E1	+0.05 *11*	0.00075 *12*	B(E1)(W.u.)=3.E−5 *+5−3*; B(M2)(W.u.)=0.3 *+18−3* α(K)=0.00064 *11*
		1359.31 *2*	100 *3*	1660.027	2^+	M3+E2	−0.09 *+15−17*	0.0014 *4*	α(K)=0.0012 *4*; α(L)=0.00016 *4* B(E2)(W.u.)=5 *+7−5*; B(M3)(W.u.)=2.E+5 *+6−2* Additional information 2.
3079.34	$(5,6^+,7)$	372.3 *1*	100	2707.04	(5^+)				
3118.63	$(3,4^-)$	1308.44 *2*	100	1810.172	3^-				
3124.07	7^-	800.42 *7*	100	2323.60	6^+	E1		0.00159	B(E1)(W.u.)<0.0087 α(K)=0.00136 *4*; α(L)=0.00018 *1* E_γ: from 1993Ga16.
3134.17	0^+	1474.13 *4*	100	1660.027	2^+	E2		0.00115	B(E2)(W.u.)=13 *+15−13* α(K)=0.00097 *3*; α(L)=0.00013
3195.77	$(3,4^+,5^-)$	1004.87 *3*	100	2190.891	4^+				
3225.54	1^-	1414.9 *5*	1.5 *3*	1810.172	3^-				Branching and Eγ from 1996Wi07.
		1565.8 *4*	1.9 *3*	1660.027	2^+				Branching and Eγ from 1996Wi07.
		3225.5 *3*	100	0.0	0^+	E1			B(E1)(W.u.)=0.0035 *13* Branching and Eγ from 1996Wi07.
3266.19	$(4^+,6)$	440.48 *7*	100	2825.71	(5^-)				
3307.90	$(2^+,3)$	1647.86 *3*	100	1660.027	2^+				
3307.97	$(2,3^-,4^-)$	1497.79 *3*	100	1810.172	3^-				
3308.27	(6^+)	482.56 *9*	100	2825.71	(5^-)				
3343.57	(3,4,5,6)	755.79 *4*	100	2587.78	4^+				
3360.67	3^-	1700.63 *3*	100	1660.027	2^+	M2+E1	−0.04 *+9−10*		B(E1)(W.u.)=0.00019 *15*; B(M2)(W.u.)=0.5 *+23−5*
3376.8	8^-	253	100	3124.07	7^-	M1		0.129	B(M1)(W.u.)=0.00078 *9* α(K)=0.110 *4*; α(L)=0.0153 *5*; α(M)=0.00326 *10*; α(N+..)=0.00092 *3* E_γ: from 1994Ot02, Iγ from 1979PeZS.
3391.05	(2^-)	1580.87 *4*	49.5 *19*	1810.172	3^-	E2+M1	+1.2 *+15−6*		B(M1)(W.u.)=0.02 *+4−2*; B(E2)(W.u.)=8 *+9−8*
		1731.01 *3*	100 *6*	1660.027	2^+	M2+E1	−0.1 *+5−4*		B(E1)(W.u.)=0.00098 *22*; B(M2)(W.u.)=2.E+1 *+15−2*
3404.60	$(2^+,3^-)$	1213.71 *3*	100 *3*	2190.891	4^+				
		1744.51 *8*	33.7 *22*	1660.027	2^+				
3413.827	2^+	1603.46 *11*	16.2 *21*	1810.172	3^-	M2+E1			
		1753.80 *2*	100.0 *21*	1660.027	2^+	E2+M1	−1.4 *+6−17*		B(M1)(W.u.)=0.013 *8*; B(E2)(W.u.)=4.7 *16*
		3413.69 *6*	85 *4*	0.0	0^+	E2			B(E2)(W.u.)=0.22 *4*
3460.8	9^-	84	100	3376.8	8^-	(M1)		2.84	B(M1)(W.u.)=0.018 *8* α(K)=2.40 *8*; α(L)=0.341 *11*; α(M)=0.0729 *22*; α(N+..)=0.0208 *7* E_γ: from 1994Ot02, M and Iγ from 1979PeZS.

$^{144}_{62}Sm_{82}$-6

Adopted Levels, Gammas (continued)

γ(^{144}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ†	α‡	Comments
3460.8	9⁻	337	25	3124.07	7⁻	E2		0.0395	B(E2)(W.u.)=0.35 *15* α(K)=0.0313 *10*; α(L)=0.00648 *20*; α(M)=0.00143 *5*; α(N+..)=0.00039 *1* E_γ: from 1994Ot02, M and Iγ from 1979PeZS.
3493.96	(4⁺)	1683.77 *3*	100	1810.172	3⁻	M2+E1	−0.22 *+13−18*		B(E1)(W.u.)=0.005 *+15−5*; B(M2)(W.u.)=4.E+2 *+13−4*
3519.5	(8⁻)	395	100	3124.07	7⁻	M1		0.0400	α(K)=0.0340 *11*; α(L)=0.00467 *14*; α(M)=0.00100 *3*; α(N+..)=0.00028 *1* E_γ: from 1994Ot02, M from 1979PeZS.
3523.56	(2⁺,4)	1713.37 *3*	100	1810.172	3⁻	M2+E1	+0.20 *+12−9*		B(E1)(W.u.)=0.00076 *16*; B(M2)(W.u.)=5.E+1 *+6−5*
3529.48	(3⁻)	1719.32 *6*	59 *3*	1810.172	3⁻	E2+M1			B(M1)(W.u.)=0.05 *4*; B(E2)(W.u.)=1 *+8−1*
		1869.42 *5*	100.0 *4*	1660.027	2⁺	M2+E1	−0.11 *9*		B(E1)(W.u.)=0.00078 *21*; B(M2)(W.u.)=12 *+21−12*
3559.63	2⁺	1899.59 *5*	70 *4*	1660.027	2⁺	E2+M1			
		3559.59 *8*	100 *3*	0.0	0⁺	E2			B(E2)(W.u.)=0.48 *11*
3564.19	(3⁻)	1904.15 *5*	100	1660.027	2⁺	M2+E1	+0.08 *13*		B(E1)(W.u.)=0.0011 *5*; B(M2)(W.u.)=1.E+1 *+3−1*
3596.78	(4⁻)	770.74 *17*	47 *3*	2825.71	(5⁻)	E2+M1		0.0060 *16*	α(K)=0.0051 *14*; α(L)=0.00070 *16*
		1786.67 *8*	100 *3*	1810.172	3⁻	E2+M1			
3626.65	(2,3,4,5)	502.54 *7*	24 *2*	3124.07	7⁻				
		1435.77 *4*	100 *7*	2190.891	4⁺				
3647.07	(4⁺)	1987.03 *4*	100	1660.027	2⁺	M3+E2	−0.2 *+2−3*		B(E2)(W.u.)=3.3 *25*; B(M3)(W.u.)=2.E+5 *+5−2*
3668.68	5⁻	1477.5 *1*	100 *10*	2190.891	4⁺	M2+E1	+0.11 *16*	0.00055 *18*	B(E1)(W.u.)=0.0019 *+20−19*; B(M2)(W.u.)=5.E+1 *+15−5* α(K)=0.00047 *15*
		1858.49 *2*	60 *10*	1810.172	3⁻	M3+E2			
3688.59	(3⁺,4⁺)	2028.55 *4*	100	1660.027	2⁺				
3714.38	(1⁺,2⁺,3)	2054.34 *6*	100	1660.027	2⁺				
3722.70	(2⁺,3⁺,4⁺)	2062.65 *4*	100	1660.027	2⁺				
3731.93	(2⁺,3⁺,4⁺)	2071.89 *4*	100	1660.027	2⁺				
3740.10	(1,2,3,4)	1929.90 *5*	100 *5*	1810.172	3⁻				
		2080.07 *8*	77 *4*	1660.027	2⁺				
3778.46	(3⁻)	2118.42 *9*	100	1660.027	2⁺	(M2+)E1	−0.04 *12*		B(E1)(W.u.)=0.0020 *13*; B(M2)(W.u.)=3 *+20−3*
3786.30	(2,4)	1976.11 *17*	100	1810.172	3⁻				
3817.93	1⁽⁻⁾	3817.88 *15*	100	0.0	0⁺	E1			B(E1)(W.u.)=0.0004 *3*
3823.39	(0⁺,1,2,3)	2163.35 *6*	100	1660.027	2⁺				
3846.20	(4⁻)	2036.0 *1*	100	1810.172	3⁻				
3855.97	(2⁻,3⁻,4⁻)	2045.78 *9*	100	1810.172	3⁻				
3867.89	5⁻	2057.7 *1*	100	1810.172	3⁻	M3+E2			
3877.90	(1⁺,2⁺,3)	2217.86 *6*	100	1660.027	2⁺				B(E1)(W.u.)=0.00056 *23*; B(M2)(W.u.)=1 *+4−1*
3884.86	(1,2⁺)	3884.8 *2*	100	0.0	0⁺				
3886.77	5⁽⁺⁾	1563.07 *19*	44 *6*	2323.60	6⁺	E2+M1			
		1695.88 *8*	100 *9*	2190.891	4⁺	E2+M1			
3890.52	(1⁻)	3890.46 *17*	100	0.0	0⁺	E1			B(E1)(W.u.)>0.00071

$^{144}_{62}Sm_{82}$-7

Adopted Levels, Gammas (continued)

γ(^{144}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ†	α‡	Comments
3906.987	$1^{(+)}$	3906.93 *2*	100	0.0	0^+	(M1)			B(M1)(W.u.)=0.019 *15*
3913.98	(3,4)	1723.2 *1*	100 *8*	2190.891	4^+				
		2253.8 *1*	77 *8*	1660.027	2^+				
3939.88	(5^-)	1748.98 *11*	100	2190.891	4^+	(M2+)E1	−0.03 *+16−14*		B(E1)(W.u.)=0.0011 *+18−11*; B(M2)(W.u.)=2 *+14−2*
3949.40	(3,4,5)	1758.50 *5*	100	2190.891	4^+				
3965.67	$1^{(+)}$	3965.61 *19*	100	0.0	0^+	(M1)			B(M1)(W.u.)>0.071 E_γ: from 1993Ga16.
3985.96	2^+	3985.90 *21*	100	0.0	0^+	E2			B(E2)(W.u.)=0.4 *3*
3986.00	(3^+)	1795.09 *5*	100 *4*	2190.891	4^+	E2+M1			
		2325.97 *12*	72 *4*	1660.027	2^+	E2+M1	−0.5 *+2−9*		B(M1)(W.u.)=0.028 *12*; B(E2)(W.u.)=0.7 *6*
4072.08	(2,3,4)	1881.18 *15*	100 *10*	2190.891	4^+				
		2412.0 *3*	41 *10*	1660.027	2^+				
4082.84		1891.94 *18*	100	2190.891	4^+				
4124.1	$1^{(-)}$	4124.0 *3*	100	0.0	0^+	(E1)			B(E1)(W.u.)=0.0003 *+6−3*
4157.37		1966.46 *17*	100	2190.891	4^+				
4262.1	1	4262 *2*	100	0.0	0^+	D			
4410.8		1034		3376.8	8^-				
4427.7		908		3519.5	(8^-)				
4674.8		264		4410.8					
4700.8	(10^-)	1181		3519.5	(8^-)				γ observed by 1994Ot02 only.
		1240		3460.8	9^-				E_γ: from 1994Ot02.
		1324		3376.8	8^-				E_γ: from 1994Ot02.
4758.7	(10^-)	348		4410.8					γ observed by 1994Ot02 only.
		1239		3519.5	(8^-)				γ observed by 1994Ot02 only.
		1382		3376.8	8^-				E_γ: from 1994Ot02.
4907.8	(11^-)	1447		3460.8	9^-				E_γ: from 1994Ot02.
4960.8	(11^-)	533		4427.7					γ observed by 1994Ot02 only.
		1500		3460.8	9^-				E_γ: from 1994Ot02.
5015	(1)	5015 *5*		0.0	0^+	(D)			
5015.8		315		4700.8	(10^-)				
5077.6	(12^-)	169.8	100	4907.8	(11^-)				
5103.1	1,2	5103		0.0	0^+	D,Q			
5150.8	(12^-)	190		4960.8	(11^-)	M1		0.282	α(K)=0.240 *8*; α(L)=0.0336 *10*; α(M)=0.00715 *22*; α(N+..)=0.00203 *6* E_γ: from 1994Ot02, M from 1979PeZS.
		243		4907.8	(11^-)	M1		0.144	α(K)=0.122 *4*; α(L)=0.0171 *6*; α(M)=0.00364 *11*; α(N+..)=0.00102 *3* E_γ: from 1994Ot02, M from 1979PeZS.
		392		4758.7	(10^-)	E2		0.0253	α(K)=0.0203 *6*; α(L)=0.00388 *12*; α(M)=0.00085 *3*; α(N+..)=0.00023 *1* E_γ: from 1994Ot02, M from 1979PeZS.
		450		4700.8	(10^-)	E2		0.0171	α(K)=0.0139 *5*; α(L)=0.00249 *8*; α(M)=0.00055 *2*; α(N+..)=0.00015 *1* E_γ: from 1994Ot02, M from 1979PeZS.

$^{144}_{62}Sm_{82}$-8

Adopted Levels, Gammas (continued)

γ(^{144}Sm) (continued)

E_i(level)	J_i^π	E_γ	E_f	J_f^π	Mult.	α[‡]	Comments
5151	(1)	5151 *3*	0.0	0^+	(D)		
5350.8	(12^-)	443	4907.8	(11^-)			
		650	4700.8	(10^-)			
5360.8	(13^-)	210	5150.8	(12^-)	M1	0.214	α(K)=0.182 *6*; α(L)=0.0255 *8*; α(M)=0.00543 *17*; α(N+..)=0.00154 *5*
		400	4960.8	(11^-)			γ observed by 1994Ot02 only.
5520.8	(13^-)	160. *1*	5360.8	(13^-)			γ not observed by 1994Ot02.
		170	5350.8	(12^-)			γ observed by 1994Ot02 only.
		370	5150.8	(12^-)	M1	0.0474	α(K)=0.0403 *13*; α(L)=0.00554 *17*; α(M)=0.00118 *4*; α(N+..)=0.00033 *1* E_γ: from 1994Ot02, M from 1979PeZS.
		443. *3*	5077.6	(12^-)	M1	0.0298	α(K)=0.0254 *8*; α(L)=0.00347 *11*; α(M)=0.00074 *2*; α(N+..)=0.00020 *1* γ not observed by 1994Ot02.
		560	4960.8	(11^-)			γ observed by 1994Ot02 only.
5720.7	(14^-)	200	5520.8	(13^-)	M1	0.245	α(K)=0.208 *7*; α(L)=0.0292 *9*; α(M)=0.00621 *19*; α(N+..)=0.00176 *6* E_γ: from 1994Ot02, M from 1979PeZS.
		360	5360.8	(13^-)	M1	0.0509	α(K)=0.0433 *13*; α(L)=0.00596 *18*; α(M)=0.00127 *4*; α(N+..)=0.00035 *1* E_γ: from 1994Ot02, M from 1979PeZS.
		570	5150.8	(12^-)	E2	0.0092	α(K)=0.00756 *23*; α(L)=0.00124 *4* E_γ: from 1994Ot02, M from 1979PeZS.
5769.8		409	5360.8	(13^-)			
5855.8	(13^+)	505	5350.8	(12^-)			
6004.8	(14^+)	644	5360.8	(13^-)			
6061.8	(14^+)	292	5769.8				
6126.7	(14^+)	766	5360.8	(13^-)	E1	0.00174	α(K)=0.00148 *5*; α(L)=0.00019 *1* E_γ: from 1994Ot02, M from 1979PeZS.
6301.2	(14^+)	940	5360.8	(13^-)			E_γ: from 1994Ot02.
6315.8		311	6004.8	(14^+)			
6411.9	(15^+)	111	6301.2	(14^+)			E_γ: from 1994Ot02.
		285	6126.7	(14^+)			E_γ: from 1994Ot02, observed by 1994Ot02 only.
		691	5720.7	(14^-)			E_γ: from 1994Ot02.
6431.6	(14^+)	1071	5360.8	(13^-)			
6651.4	(15^+)	350	6301.2	(14^+)			E_γ: from 1994Ot02, observed by 1994Ot02 only.
		525	6126.7	(14^+)			E_γ: from 1994Ot02, observed by 1994Ot02 only.
		931	5720.7	(14^-)			E_γ: from 1994Ot02.
6771.7		1051	5720.7	(14^-)			
6792.3		141	6651.4	(15^+)			
		361	6431.6	(14^+)			
		491	6301.2	(14^+)			
6824.2	(16^+)	173	6651.4	(15^+)			E_γ: from 1994Ot02.
		412	6411.9	(15^+)			E_γ: from 1994Ot02.
		523	6301.2	(14^+)			E_γ: from 1994Ot02, observed by 1994Ot02 only.
7000.7		1280	5720.7	(14^-)			
7160.7		160	7000.7				

$^{144}_{62}Sm_{82}$-9

Adopted Levels, Gammas (continued)

γ(^{144}Sm) (continued)

E_i(level)	J_i^π	E_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.
7237.7		466	6771.7		8626.8		677		7950.1		
		826	6411.9	(15^+)	8997.9	1	5264# *8*	10 *5*	3731.93	$(2^+,3^+,4^+)$	
7397.7		1271	6126.7	(14^+)			5452# *8*	17 *9*	3544		
7524.7		1093	6431.6	(14^+)			6022# *8*	28 *7*	2976?		
7572.8		1852	5720.7	(14^-)			6116# *8*	9 *5*	2883.008	(4^+)	
7604.7		444	7160.7				6199 *3*	24 *7*	2799.65	2^+	D
7660.5		889	6771.7				6520 *3*	91 *8*	2477.651	0^+	D
		1009	6651.4	(15^+)			6574 *3*	58 *7*	2423.208	2^+	D
		1229	6431.6	(14^+)			6831# *6*	19 *2*	2167?		D
		1359	6301.2	(14^+)			6878# *6*	20 *5*	2120?		
		1534	6126.7	(14^+)			7337 *3*	70 *6*	1660.027	2^+	D
7690.9		118	7572.8				8998 *3*	100 *7*	0.0	0^+	D
		166	7524.7		9232.8		950		8282.4		
		867	6824.2	(16^+)	9312.1		1030		8282.4		
		899	6792.3		9419.9		108		9312.1		
		919	6771.7				187		9232.8		
		1390	6301.2	(14^+)	9441.8		815		8626.8		
		1564	6126.7	(14^+)	9589.9		357		9232.8		
7870.7		633	7237.7		9985.8		544		9441.8		
7910.5		220	7690.9		10036.0		616		9419.9		
		250	7660.5				724		9312.1		
		673	7237.7		10583.8		1164		9419.9		
		1086	6824.2	(16^+)	10698.0		114		10583.8		
		1118	6792.3				662		10036.0		
7938.4		1146	6792.3				1108		9589.9		
7950.1		1126	6824.2	(16^+)	10935.4		237		10698.0		
		1158	6792.3				352		10583.8		
8084.5		1260	6824.2	(16^+)	11719.4		784		10935.4		
8282.4		344	7938.4		11768.4		833		10935.4		
		372	7910.5		11903.4		135		11768.4		
8325.7	(18)	455	7870.7		12284.4		565		11719.4		
8426.1		476	7950.1		12739		455		12284.4		
8626.8		542	8084.5								

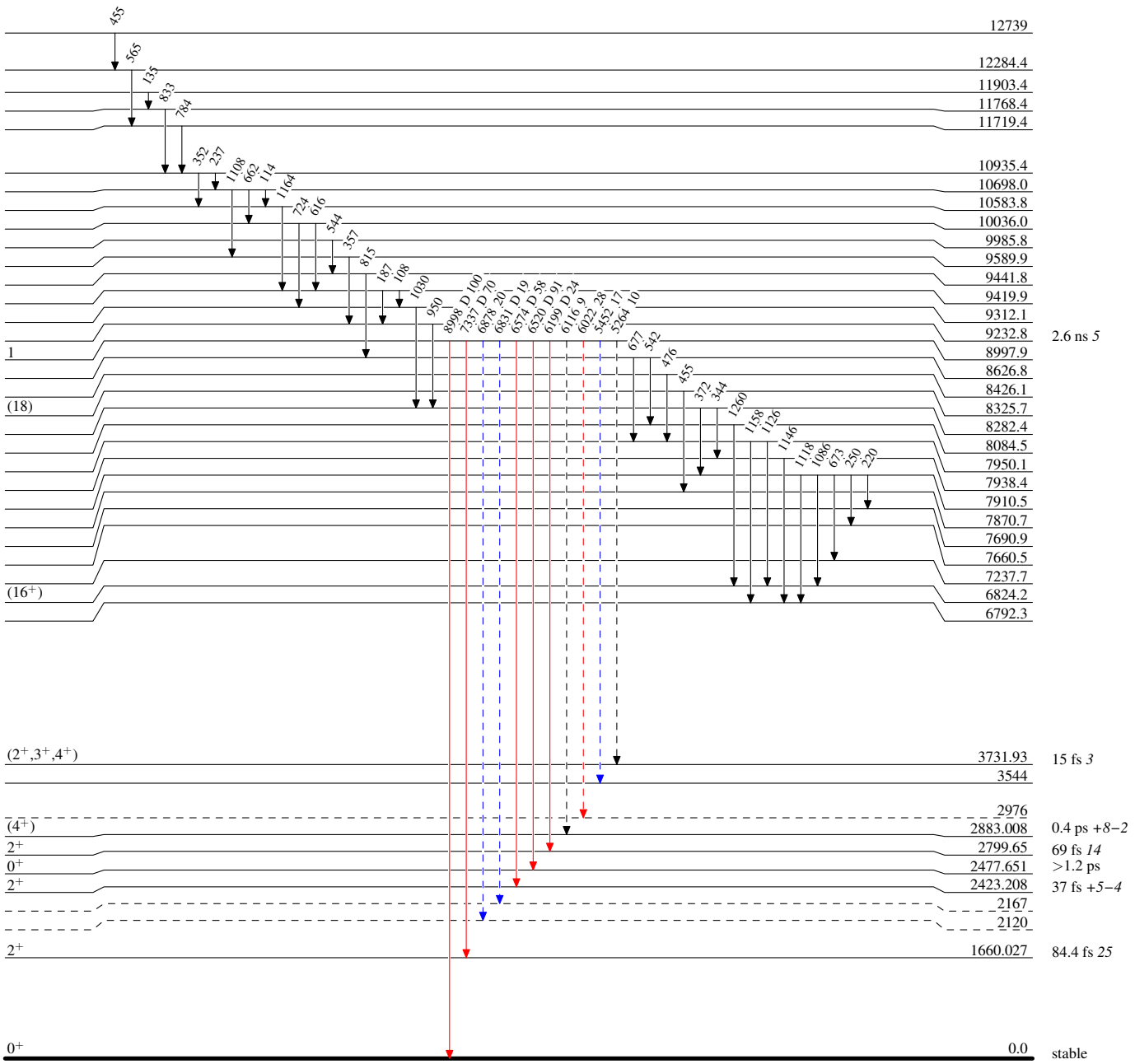
† From 1993Ga16, unless indicated otherwise.
‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
# Placement of transition in the level scheme is uncertain.

$^{144}_{62}Sm_{82}$-10

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

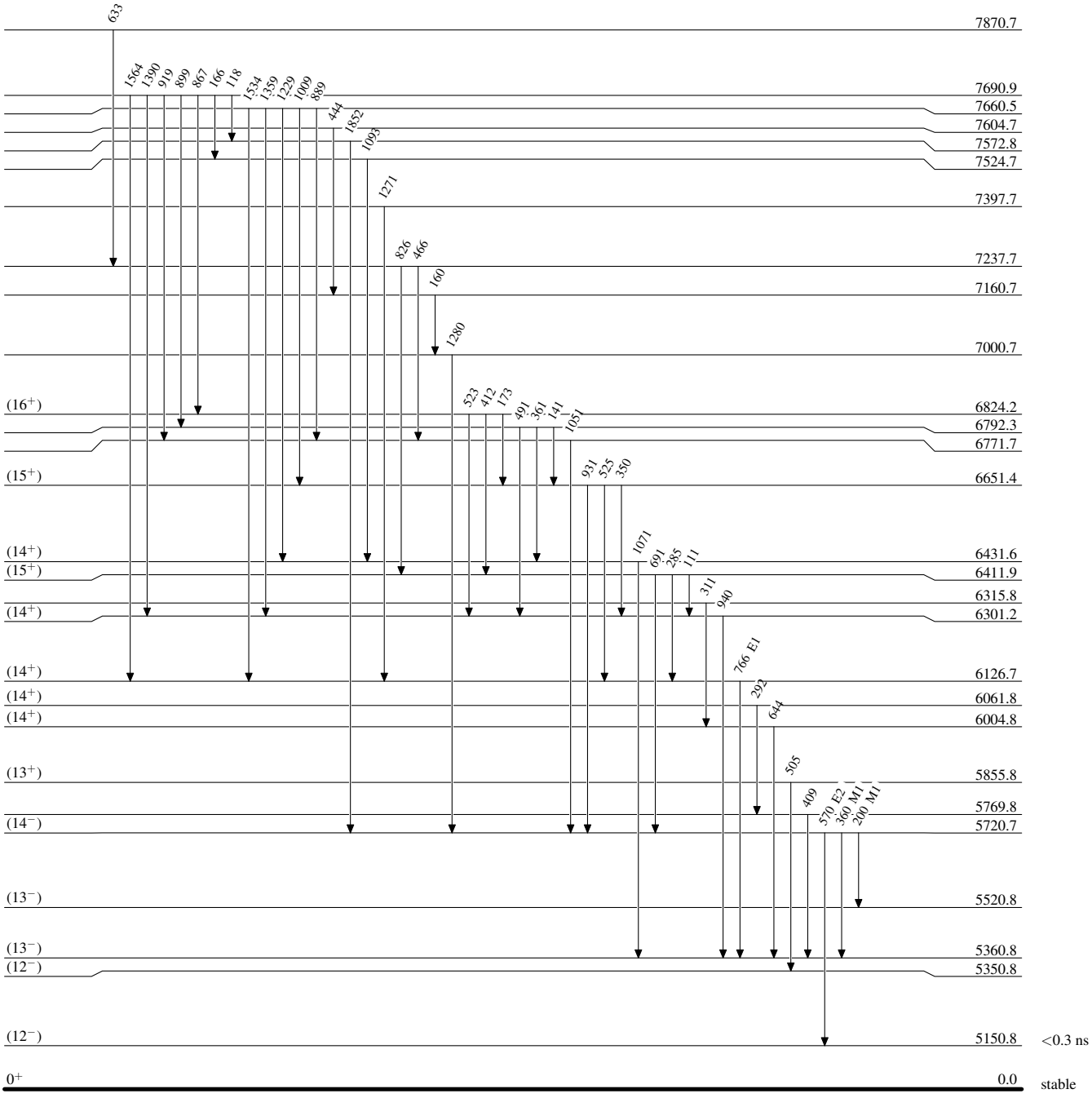


$^{144}_{62}Sm_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

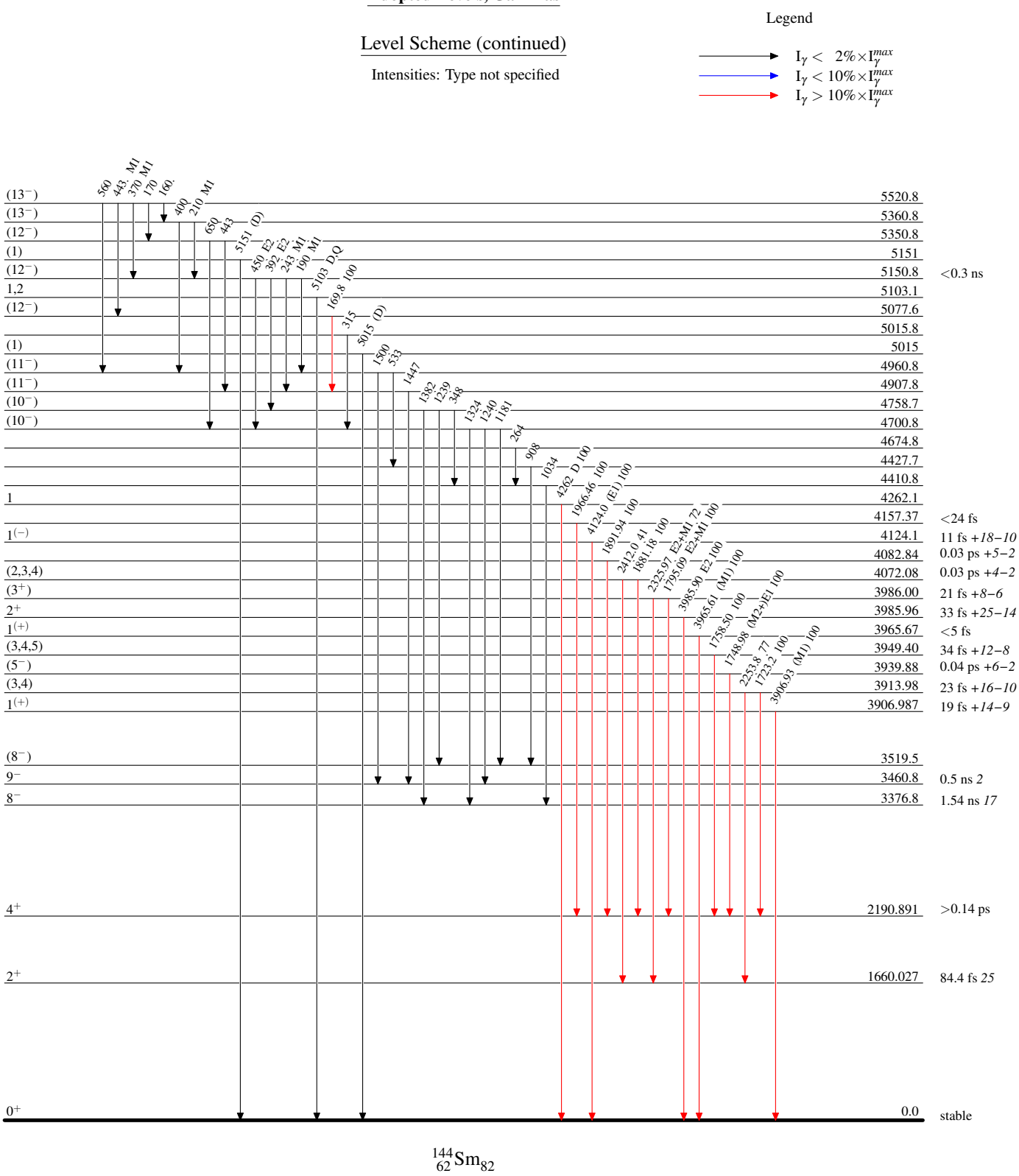


$^{144}_{62}Sm_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

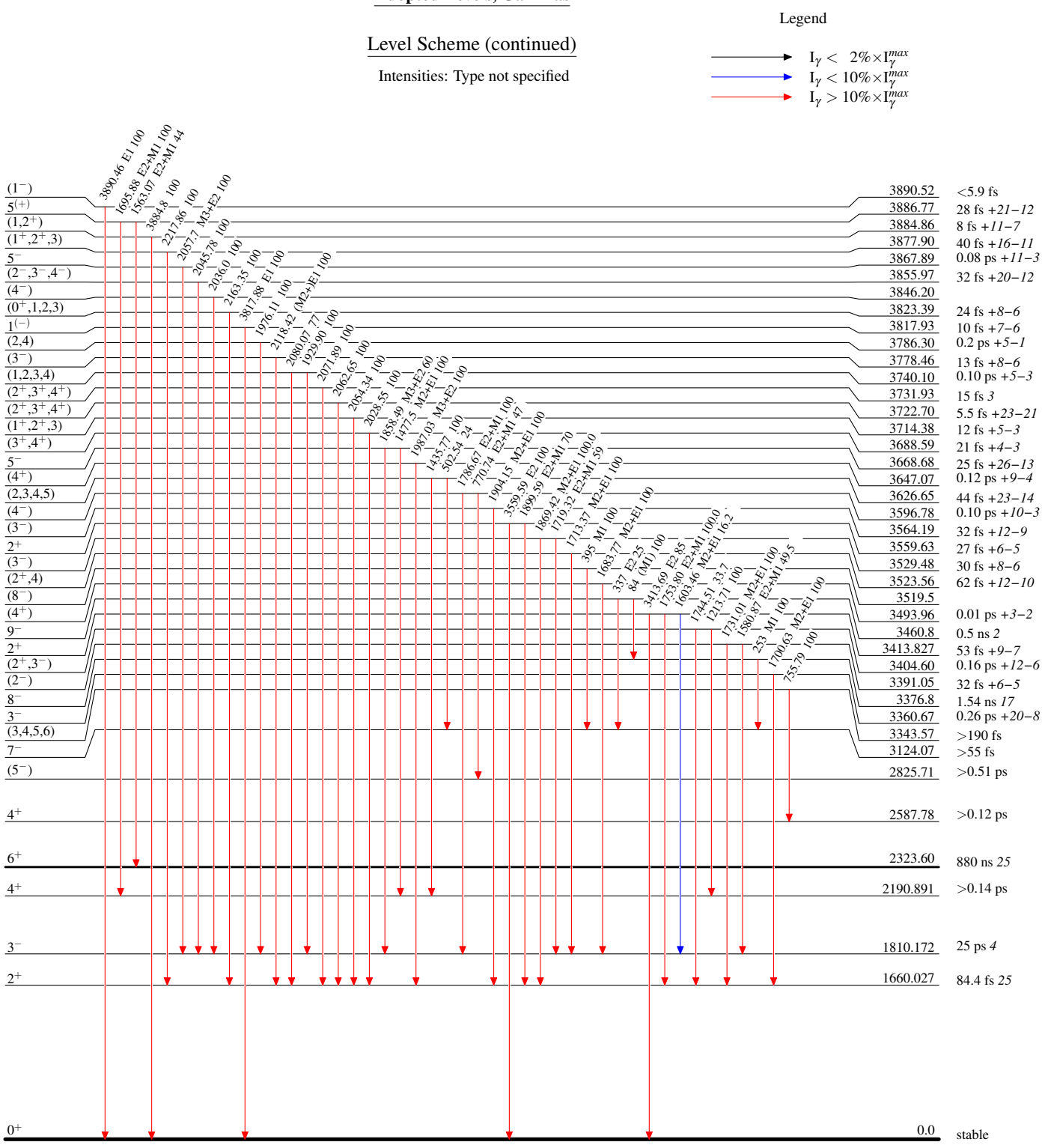


$^{144}_{62}Sm_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{144}_{62}Sm_{82}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified