Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113,715 (2012)	31-May-2011

Q(β^-)=−5275 *12*; S(n)=8601 *4*; S(p)=5664 *24*; Q(α)=7.×10[1] *3* 2012Wa38
Note: Current evaluation has used the following Q record −5275 118601 4 *5649* 2573 28 2011AuZZ.
Q(β^-): Q(β^-)=5281 *12*, S(p)=5655 *25*, Q(α)=44 *26* (2003Au03).
Population of isomer with respect to g.s. in the decay of GDR in ^{144}Sm(γ,n) is 0.047, compared with theory (2000Ts01). Others: 2000Ma35, 1996Ga43, 1996Be32, 1995Ma78, 1989TrZS.
Other reactions:
(γ,n), (γ,p), (γ,α) reactions. Measured Eγ, Iγ, Yields (2010Na12).
^{144}Sm(γ,n), measured Eγ, Iγ, yields (2008Na05).
^{143}Sm, measured mass (2004Ge18).
^{144}Sm(n,2n) E≈14 MeV. Measured isomer production σ (2003Re17, 2001Sa27).
^{144}Sm(γ,n), measured activation yields, isomer ratios (2001Be69).

^{143}Eu β^+ decay, measured Eγ, Iγ, deduce probability for isomer production (2001Be69). Value does not agree with result from 1974Ke07.

^{143}Sm Levels

Cross Reference (XREF) Flags

A	^{143}Sm IT decay (66 s)	E	^{142}Nd(α,3nγ)	I	^{144}Sm(^{13}C,^{14}C) E=66.72 MeV
B	^{143}Sm IT decay (30 ms)	F	^{144}Sm(p,d),(pol p,d)	J	^{130}Te(^{20}Ne,7nγ)
C	^{143}Eu ε decay	G	^{144}Sm(d,t)		
D	^{142}Nd(^{3}He,2nγ), ^{143}Nd(^{3}He,3nγ)	H	^{144}Sm(^{3}He,α)		

E(level)[†‡]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	3/2$^+$	8.75 min *6*	ABCDEFGHIJ	%ε+%β^+=100 μ=+1.01 *2* (1992Le09,1988Al41,1989Ra17,2011StZZ) Q=+0.41 *21* (1992Le09,1988Al41,1989Ra17,2011StZZ) J$^\pi$: L=2 in (p,d), atomic beam (1972Ek05). T$_{1/2}$: Unweighted average of 8.85 min *5* (1972De23), 8.83 min *1* (1968Bl13), 8.65 min *25* (1967Go06), 8.84 min *2* (1966Ma15), 8.57 min *8* (1968Bo25). Other: 8.6 min *2* (1993Al03). Δ<r^2>(^{143}Sm,^{144}Sm)=−0.043 *4* (1999GaZX).
107.690 *10*	1/2$^+$	800 ps *50*	CD FGHI	J$^\pi$: L=0 in (p,d). T$_{1/2}$: from ε decay (1980Ab10).
753.99 *16*	11/2$^-$	66 s *2*	ABCDEFGHIJ	%IT=99.76 *5*; %ε+%β^+=0.24 *5* J$^\pi$: L=5 in (p,d); value of T$_{1/2}$ is typical for M4 754γ ray; whereas if J$^\pi$=9/2$^-$, B(E3)(W.u.)=9.9×10^{-8} would be unreasonably small. T$_{1/2}$: weighted average: 67 s *2* (1969Ja02), 67 s *3* (1967Go06), 65 s *3* (1963Al05), 64 s *3* (1960Ko02).
1107.35 *9*	5/2$^+$		CD FGHI	J$^\pi$: L=2 in (p,d); J=5/2 from (pol p,d) (1971Ch07).
1310.50 *19*	7/2$^-$		CD FG	J$^\pi$: L=3 in (p,d), γ ray to 11/2$^-$.
1369.26 *16*	7/2$^+$		CD FGH	J$^\pi$: L=4 in (p,d), γ ray to 3/2$^+$.
1536.91 *12*	(5/2)$^+$		CD FGH	J$^\pi$: L=2 in (p,d), γ ray to 3/2$^+$ is much stronger than to 1/2$^+$.
1566.04 *13*	(3/2)$^+$		C G	J$^\pi$: L=2 in (d,t); γ ray to 1/2$^+$ is the strongest.
1658.8 *4*			CD G	
1715.06 *12*	(3/2)$^+$		CD FGH	J$^\pi$: L=2 in (p,d); γ ray to 1/2$^+$ is the strongest.
1747.6 *10*			D	
1877.3 *11*			D FGH	XREF: F(1870).
1891.1 *11*			D g	
1912.66 *12*	(3/2)$^+$		C	J$^\pi$: log *ft*=5.6 via 5/2$^+$ parent, strong γ rays to 1/2$^+$,3/2$^+$.

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Adopted Levels, Gammas (continued)

^{143}Sm Levels (continued)

E(level)[†‡]	Jπ	$T_{1/2}$	XREF	Comments
1930 *5*	3/2+,5/2+		FGH	Jπ: L=2 in (p,d). E(level): may be identical with 1943 level in (d,t).
1958 *10*	+		G	Jπ: L=2+(4).
1990 *5*	1/2+		FGH	XREF: G(1999). Jπ: L=0 in (p,d).
2070.31 *15*	5/2+,3/2+		C FGH	Jπ: L=2 in (p,d).
2102.47 *18*	(7/2+)		C	Jπ: log *ft*=6.2 via 5/2+ parent, γ rays to 3/2+,7/2+, no γ ray to 1/2+.
2133 *10*	(5/2+,3/2+)		G	Jπ: L=(2) in (d,t).
2167.34 *25*	7/2+		C FGH	Jπ: L=4 in (p,d); γ ray to 3/2+.
2207 *10*	5/2+,3/2+		G	Jπ: L=2 in (d,t).
2228.07 *22*	(5/2)+		C G	Jπ: L=2 in (d,t), no γ ray to 1/2+.
2270.74 *22*	7/2+		C FGH	Jπ: L=4 in (p,d), γ ray to 3/2+.
2284.0 *11*			D	
2294	(7/2−,5/2−)		G	Jπ: L=(3) in (d,t).
2327.3 *8*	13/2(−)		B DE GH J	Jπ: γ ray to 11/2− is ΔJ=1, D; E1 γ ray from 15/2(+).
2329.1 *8*			B D	
2395.9 *10*			D	
2410.71? *24*	(3/2+,5/2+)		C G	Jπ: L(d,t)=(2).
2450 *10*	11/2−,9/2−		FGH	Jπ: L=5 in (p,d).
2450.9 *13*			D	
2459.0 *8*	13/2(+)		B DE J	Jπ: γ ray to 11/2− is ΔJ=1, D; π from (1983KoZU).
2505			G	
2509.4 *6*	15/2(+)		B DE J	Jπ: 182γ ray to 13/2(−) is ΔJ=1, E1; I(1755γ ray to 11/2−)/I(182γ ray E1)=0.07 is compatible with M2 for 1755γ ray.
2558.12? *22*			C	
2585.8 *8*	17/2(+)		B DE J	Jπ: γ ray to 15/2(+) is ΔJ=1 M1, yield.
2586	7/2+,9/2+		F	Jπ: L=4 in (p,d).
2587.52 *22*	5/2+,3/2		C	Jπ: γ ray to 1/2+; log *ft*=6.8 via 5/2+ parent.
2602 *10*	11/2−,9/2−		GH	Jπ: L=5 in (^{3}He,α).
2662 *10*	(3/2+,5/2+)		FG	Doublet with L=4 and 2 in (p,d). Jπ: L(d,t)=(2).
2685.86 *19*	(5/2)+		C GH	Jπ: L=2 in (^{3}He,α), L=(4) in (d,t).
2767 *10*			FG	Jπ: doublet with L=4 and 2 in (p,d). E(level): 2787 in (d,t).
2793.8[a] *13*	23/2(−)	30 ms *3*	B DE J	%IT=100 $T_{1/2}$: from 1969Ne04 (IT decay). Jπ: γ ray to 17/2(+) is E3, no γ ray to J<17/2.
2842.1 *6*			C FG	L: doublet with L=4 and 2 in (p,d).
2874 *10*			FG	L: doublet with L=4 and 2 in (p,d).
2885.9? *3*	(7/2−,9/2+)		C	Jπ: γ to 11/2− and 5/2+.
2905	7/2+,9/2+		GH	Jπ: L=4 in (d,t).
2970 *10*	5/2+,3/2+		FG	Jπ: L=2 in (p,d).
3031.2 *6*	7/2+		C FG	Jπ: L=4 in (d,t), (p,d); γ to 3/2+; second level of possible doublet has L=2 in (d,t),(p,d).
3060.7 *13*	7/2+,9/2+		D H	Jπ: L=4 in (^{3}He,α).
3066	1/2+		G	Jπ: L=0 in (d,t).
3085 *15*			F	L: doublet with L=4 and 5 in (p,d).
3088.3 *16*			D	
3118.7 *12*			D	
3136 *15*	3/2+,5/2+		F	Jπ: L=2 in (p,d).
3145 *15*	11/2−,9/2−		H	Jπ: L=5 in (^{3}He,α).
3154.0 *6*	5/2+,3/2+		C G	Jπ: L=2 in (d,t), no γ ray to 1/2+.
3180 *10*	3/2+,5/2+		FG	Jπ: L=2 in (p,d),(d,t).
3207 *15*	+		GH	Jπ: L=4 in (^{3}He,α); L=2 in (d,t).
3245 *15*	3/2+,5/2+		F	Jπ: L=2 in (p,d).

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Adopted Levels, Gammas (continued)

^{143}Sm Levels (continued)

E(level)[†‡]	Jπ	XREF	Comments
3275.4 *19*		D	
3297 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
3299.0 *19*		D	
3324.85? *25*	(7/2−)	C	Jπ: γ ray to 11/2−, log *ft*=6.7 via 5/2+ parent.
3360 *15*		F	
3407 *15*	11/2−,9/2−	H	Jπ: L=5 in (^{3}He,α).
3474 *15*	7/2+,9/2+	F	Jπ: L=4 in (p,d).
3518 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
3540 *15*		F	
3594 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
3598.9 *17*	27/2(−)	E J	Jπ: γ to 23/2(−) is ΔJ=2, Q.
3625 *15*		F	
3717 *15*		F	
3719.9 *19*		E	
3722.4 *17*	(25/2−)	E J	Jπ: γ ray to 23/2(−) is ΔJ=1, D; γ ray from 27/2− is (M1).
3780 *15*		H	
3867 *15*	7/2+,9/2+	F	Jπ: L=4 in (p,d).
3889.4 *19*	27/2	E J	Jπ: γ ray to (25/2−) is ΔJ=1, D.
3940 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
3970.0 *18*	25/2−	J	
4075 *15*	3/2+,5/2+	F	Jπ: L=2 in (p,d).
4136 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
4195.3 *19*	(29/2−)	E J	Jπ: γ ray to 27/2 is ΔJ=1, D; γ ray from 31/2+ is E1.
4272 *15*	3/2+,5/2+	F	Jπ: L=2 in (p,d).
4347 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
4357.9 *21*	29/2−	J	
4367.5 *19*		E	
4470 *15*		F	L: doublet with L=4 and 2 in (p,d).
4544 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
4561.2 *20*		J	
4648.0[a] *18*	27/2−	J	
4755 *15*	3/2+,5/2+	F	Jπ: L=2 in (p,d).
4769 *15*	7/2+,9/2+	H	Jπ: L=4 in (^{3}He,α).
5278.1 *20*	31/2+	J	
5450.2[&] *20*	31/2+	J	
5653.2[a] *20*	31/2−	J	
5685.0[&] *21*	33/2+	J	
5835.1 *22*	35/2+	J	
5896.3[a] *21*	33/2−	J	
5913.3[&] *22*	35/2+	J	
6082.1 *22*		J	
6593.2 *21*	(35/2−)	J	
6623.3 *23*	37/2+	J	
6710.2 *23*	39/2+	J	
6759.5[&] *21*	37/2+	J	
6956.4 *22*	(37/2+)	J	
7026.2[a] *21*	35/2−	J	
7087.3 *23*		J	
7197.3[@] *24*	(39/2+)	J	
7354.6[&] *23*	(39/2+)	J	
7390.1[a] *23*	37/2−	J	
7516.1[a] *24*	(39/2−)	J	

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Adopted Levels, Gammas (continued)

^{143}Sm Levels (continued)

E(level)[†‡]	Jπ	XREF	E(level)[†‡]	Jπ	XREF
7580.3[@] *24*	(43/2$^+$)	J	9191[#] *3*	(47/2$^-$)	J
7597.6[&] *24*	(41/2$^+$)	J	9635[#] *3*	(49/2$^-$)	J
7873[@] *3*	(45/2$^+$)	J	10213[#] *3*	(51/2$^-$)	J
8197.4[a] *24*	(41/2$^-$)	J	10815[#] *4*	(53/2$^-$)	J
8362[@] *3*	(47/2$^+$)	J	11542[#] *4*	(55/2$^-$)	J
8611.7[#] *24*	(43/2$^-$)	J	12248[#] *4*	(57/2$^-$)	J
8851[#] *3*	(45/2$^-$)	J			

† From least-squares fit for levels connected by gammas,ΔE=1 keV is assumed where uncertainty is not given.
‡ Rotational band sequences are from 2006Ra10.
# Band(A): Possible Magnetic-rotational dipole band.
@ Band(B): γ-ray sequence #1.
& Band(C): γ-ray sequence #2.
a Band(D): γ-ray sequence #3.

Adopted Levels, Gammas (continued)

$\gamma(^{143}Sm)$

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.‡	δ	α†	Comments
107.690	$1/2^+$	107.69 *1*	100	0.0	$3/2^+$	M1+(E2)	≤0.14	1.371	α(K)=1.157 *17*; α(L)=0.169 *6*; α(M)=0.0364 *12*; α(N+..)=0.0095 *3* α(N)=0.0082 *3*; α(O)=0.00123 *4*; α(P)=7.36×10^{-5} *11*
753.99	$11/2^-$	754.0 *2*	100	0.0	$3/2^+$	(M4)		0.1071	α(K)=0.0858 *12*; α(L)=0.01660 *24*; α(M)=0.00371 *6*; α(N+..)=0.000972 *14* α(N)=0.000842 *12*; α(O)=0.0001230 *18*; α(P)=6.69×10^{-6} *10* Mult.: from $T_{1/2}$ and J^π data.
1107.35	$5/2^+$	999.6 *2*	7.3 *3*	107.690	$1/2^+$				
		1107.3 *2*	100	0.0	$3/2^+$				
1310.50	$7/2^-$	203.1 *2*	100 *16*	1107.35	$5/2^+$				
		556.6 *3*	47 *11*	753.99	$11/2^-$				
1369.26	$7/2^+$	1369.1 *2*	100	0.0	$3/2^+$				
1536.91	$(5/2)^+$	429.6 *2*	3.5 *5*	1107.35	$5/2^+$				
		1429.3 *2*	10.7 *7*	107.690	$1/2^+$				
		1536.8 *2*	100 *3*	0.0	$3/2^+$				
1566.04	$(3/2)^+$	458.4 *3*	3.7 *13*	1107.35	$5/2^+$				
		1458.4 *2*	100 *4*	107.690	$1/2^+$				
		1566.1 *2*	52 *2*	0.0	$3/2^+$				
1658.8		551.4 *3*	100	1107.35	$5/2^+$				
1715.06	$(3/2)^+$	607.6 *2*	26 *2*	1107.35	$5/2^+$				
		1607.3 *2*	100 *4*	107.690	$1/2^+$				
		1715.2 *2*	17 *2*	0.0	$3/2^+$				
1747.6		210.7	100	1536.91	$(5/2)^+$				
1877.3		508	100	1369.26	$7/2^+$				
1891.1		580.6	100	1310.50	$7/2^-$				
1912.66	$(3/2)^+$	805.3 *2*	47 *2*	1107.35	$5/2^+$				
		1804.9 *2*	78 *4*	107.690	$1/2^+$				
		1912.7 *2*	100 *5*	0.0	$3/2^+$				
2070.31	$5/2^+,3/2^+$	1962.6 *2*	46 *3*	107.690	$1/2^+$				
		2070.3 *2*	100 *6*	0.0	$3/2^+$				
2102.47	$(7/2^+)$	733.1 *3*	6.7 *16*	1369.26	$7/2^+$				
		2102.5 *2*	100 *5*	0.0	$3/2^+$				
2167.34	$7/2^+$	798.1 *4*	100 *30*	1369.26	$7/2^+$				
		2167.3 *3*	70 *7*	0.0	$3/2^+$				
2228.07	$(5/2)^+$	691.2 *3*	14 *4*	1536.91	$(5/2)^+$				
		2228.0 *3*	100 *11*	0.0	$3/2^+$				
2270.74	$7/2^+$	1163.3 *3*	23 *7*	1107.35	$5/2^+$				
		2270.8 *3*	100 *13*	0.0	$3/2^+$				
2284.0		973.5	100	1310.50	$7/2^-$				
2327.3	$13/2^{(-)}$	1573.4	100	753.99	$11/2^-$	D			
2329.1		1575	100	753.99	$11/2^-$				
2395.9		66.6		2329.1					

$^{143}_{62}Sm_{81}$-5

Adopted Levels, Gammas (continued)

γ(^{143}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.‡	α†	Comments
2395.9		68.8		2327.3	$13/2^{(-)}$			
2410.71?	$(3/2^+,5/2^+)$	2303.0 *3*	100 *13*	107.690	$1/2^+$			
		2410.7 *4*	51 *9*	0.0	$3/2^+$			
2450.9		121.8	100	2329.1				
2459.0	$13/2^{(+)}$	1705.5	100	753.99	$11/2^-$	D		
2509.4	$15/2^{(+)}$	51		2459.0	$13/2^{(+)}$			
		180.3		2329.1				
		182.0	100 *2*	2327.3	$13/2^{(-)}$	E1	0.0544	α(K)=0.0462 *7*; α(L)=0.00644 *9*; α(M)=0.001376 *20*; α(N+..)=0.000356 *5* α(N)=0.000309 *5*; α(O)=4.47×10^{-5} *7*; α(P)=2.42×10^{-6} *4*
		1755.0	≈6.5	753.99	$11/2^-$			
2558.12?		2450.6 *3*	100 *13*	107.690	$1/2^+$			
		2557.9 *3*	98 *13*	0.0	$3/2^+$			
2585.8	$17/2^{(+)}$	76.5	100 *27*	2509.4	$15/2^{(+)}$	M1	3.65	α(K)=3.09 *5*; α(L)=0.440 *7*; α(M)=0.0947 *14*; α(N+..)=0.0249 *4* α(N)=0.0215 *3*; α(O)=0.00321 *5*; α(P)=0.000198 *3*
		1831.7	74 *14*	753.99	$11/2^-$			
2587.52	$5/2^+,3/2$	2479.9 *3*	100 *9*	107.690	$1/2^+$			
		2587.4 *3*	57 *5*	0.0	$3/2^+$			
2685.86	$(5/2)^+$	1578.5 *3*	85 *19*	1107.35	$5/2^+$			
		2578.2 *4*	28 *11*	107.690	$1/2^+$			
		2685.8 *3*	100 *13*	0.0	$3/2^+$			
2793.8	$23/2^{(-)}$	208.0	100	2585.8	$17/2^{(+)}$	E3	1.017	α(K)=0.478 *7*; α(L)=0.416 *6*; α(M)=0.0985 *14*; α(N+..)=0.0245 *4* α(N)=0.0217 *3*; α(O)=0.00276 *4*; α(P)=2.48×10^{-5} *4*
2842.1		2842.1 *6*	100	0.0	$3/2^+$			
2885.9?	$(7/2^-,9/2^+)$	1779.1 *4*	73 *31*	1107.35	$5/2^+$			
		2131.5 *3*	100 *13*	753.99	$11/2^-$			
3031.2	$7/2^+$	3031.2 *6*	100	0.0	$3/2^+$			
3060.7	$7/2^+,9/2^+$	733.4	100	2327.3	$13/2^{(-)}$			
3088.3		637.4	100	2450.9				
3118.7		609.3	100	2509.4	$15/2^{(+)}$			
3154.0	$5/2^+,3/2^+$	3154.0 *6*	100	0.0	$3/2^+$			
3275.4		187.1	100	3088.3				
3299.0		210.7	100	3088.3				
3324.85?	$(7/2^-)$	1955.3 *3*	100 *31*	1369.26	$7/2^+$			
		2571.1 *3*	28 *6*	753.99	$11/2^-$			
3598.9	$27/2^{(-)}$	805.1	100	2793.8	$23/2^{(-)}$	Q		
3719.9		121.0	100	3598.9	$27/2^{(-)}$	D		
3722.4	$(25/2^-)$	928.6	100	2793.8	$23/2^{(-)}$	D		
3889.4	27/2	167.1	100	3722.4	$(25/2^-)$	D		
3970.0	$25/2^-$	1176# *1*	100	2793.8	$23/2^{(-)}$	(M1)	0.00269 *4*	α(K)=0.00230 *4*; α(L)=0.000304 *5*; α(M)=6.49×10^{-5} *10*; α(N+..)=2.07×10^{-5} *3*

$^{143}_{62}Sm_{81}$-6

Adopted Levels, Gammas (continued)

γ(^{143}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.‡	α†	Comments
								α(K)=0.00230 *4*; α(L)=0.000304 *5*; α(M)=6.49×10^{-5} *10*; α(N+..)=2.07×10^{-5} *3* α(N)=1.473×10^{-5} *21*; α(O)=2.22×10^{-6} *4*; α(P)=1.420×10^{-7} *20*; α(IPF)=3.66×10^{-6} *10*
4195.3	(29/2$^-$)	306.0	100	3889.4	27/2	D		
4357.9	29/2$^-$	469# *1*	100	3889.4	27/2			
4367.5		172.3	100 *12*	4195.3	(29/2$^-$)	D		
		645.0	56 *12*	3722.4	(25/2$^-$)			
4561.2		366# *1*		4195.3	(29/2$^-$)			
		961# *1*		3598.9	27/2$^{(-)}$			
4648.0	27/2$^-$	87# *1*		4561.2				
		678# *1*		3970.0	25/2$^-$	(M1)	0.01007	α(K)=0.00860 *13*; α(L)=0.001158 *17*; α(M)=0.000248 *4*; α(N+..)=6.51×10^{-5} *10* α(N)=5.62×10^{-5} *9*; α(O)=8.45×10^{-6} *13*; α(P)=5.35×10^{-7} *8*
		926# *1*	100	3722.4	(25/2$^-$)	(M1)	0.00473 *7*	α(K)=0.00404 *6*; α(L)=0.000539 *8*; α(M)=0.0001151 *17*; α(N+..)=3.03×10^{-5} *5* α(N)=2.61×10^{-5} *4*; α(O)=3.93×10^{-6} *6*; α(P)=2.50×10^{-7} *4*
		1854# *1*		2793.8	23/2$^{(-)}$	(E2)	0.000960 *14*	α(K)=0.000634 *9*; α(L)=8.30×10^{-5} *12*; α(M)=1.768×10^{-5} *25*; α(N+..)=0.000226 α(N)=4.00×10^{-6} *6*; α(O)=6.01×10^{-7} *9*; α(P)=3.78×10^{-8} *6*; α(IPF)=0.000221 *4*
5278.1	31/2$^+$	920# *1*	54 *3*	4357.9	29/2$^-$	E1	0.001208 *18*	α(K)=0.001038 *15*; α(L)=0.0001339 *19*; α(M)=2.85×10^{-5} *4*; α(N+..)=7.46×10^{-6} α(N)=6.43×10^{-6} *10*; α(O)=9.63×10^{-7} *14*; α(P)=6.00×10^{-8} *9*
		1083# *1*	100 *6*	4195.3	(29/2$^-$)	E1	0.000890 *13*	α(K)=0.000765 *11*; α(L)=9.81×10^{-5} *14*; α(M)=2.08×10^{-5} *3*; α(N+..)=5.46×10^{-6} *8* α(N)=4.71×10^{-6} *7*; α(O)=7.06×10^{-7} *10*; α(P)=4.44×10^{-8} *7*
5450.2	31/2$^+$	172# *1*	100 *3*	5278.1	31/2$^+$	M1	0.366 *8*	α(K)=0.310 *7*; α(L)=0.0436 *10*; α(M)=0.00937 *21*; α(N+..)=0.00246 *6* α(N)=0.00212 *5*; α(O)=0.000318 *7*; α(P)=1.98×10^{-5} *5*
		1255# *1*	100 *6*	4195.3	(29/2$^-$)	E1	0.000734 *11*	α(K)=0.000587 *9*; α(L)=7.48×10^{-5} *11*; α(M)=1.588×10^{-5} *23*; α(N+..)=5.58×10^{-5} *1* α(N)=3.59×10^{-6} *5*; α(O)=5.39×10^{-7} *8*; α(P)=3.41×10^{-8} *5*; α(IPF)=5.16×10^{-5} *9*
5653.2	31/2$^-$	1005# *1*	100	4648.0	27/2$^-$	E2	0.00246 *4*	α(K)=0.00209 *3*; α(L)=0.000294 *5*; α(M)=6.31×10^{-5} *9*; α(N+..)=1.649×10^{-5} *24* α(N)=1.425×10^{-5} *21*; α(O)=2.11×10^{-6} *3*; α(P)=1.240×10^{-7} *18*
5685.0	33/2$^+$	235# *1*	100	5450.2	31/2$^+$	M1	0.156 *3*	α(K)=0.1321 *24*; α(L)=0.0184 *4*; α(M)=0.00395 *8*; α(N+..)=0.001040 *19* α(N)=0.000897 *17*; α(O)=0.0001346 *25*; α(P)=8.38×10^{-6} *16*
5835.1	35/2$^+$	150# *1*	100	5685.0	33/2$^+$	M1+E2	0.546 *18*	α(K)=0.41 *5*; α(L)=0.11 *5*; α(M)=0.024 *11*; α(N+..)=0.0061 *25* α(N)=0.0053 *23*; α(O)=0.0007 *3*; α(P)=2.3×10^{-5} *6*

$^{143}_{62}Sm_{81}$-7

Adopted Levels, Gammas (continued)

γ(^{143}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.‡	α†	Comments
5896.3	33/2$^-$	243# *1*	100	5653.2	31/2$^-$	M1	0.142 *3*	α(K)=0.1207 *22*; α(L)=0.0168 *3*; α(M)=0.00361 *7*; α(N+..)=0.000949 *17* α(N)=0.000818 *15*; α(O)=0.0001228 *22*; α(P)=7.65×10^{-6} *14*
5913.3	35/2$^+$	228# *1*	100	5685.0	33/2$^+$	M1+E2	0.152 *17*	α(K)=0.122 *22*; α(L)=0.024 *4*; α(M)=0.0052 *10*; α(N+..)=0.00134 *21* α(N)=0.00117 *20*; α(O)=0.000164 *19*; α(P)=7.1×10^{-6} *20*
6082.1		397# *1*	100	5685.0	33/2$^+$			
6593.2	(35/2$^-$)	940# *1*	100	5653.2	31/2$^-$	(E2)	0.00284 *4*	α(K)=0.00240 *4*; α(L)=0.000342 *5*; α(M)=7.36×10^{-5} *11*; α(N+..)=1.92×10^{-5} *3* α(N)=1.662×10^{-5} *24*; α(O)=2.46×10^{-6} *4*; α(P)=1.425×10^{-7} *21*
6623.3	37/2$^+$	710# *1*	100	5913.3	35/2$^+$	M1	0.00899 *13*	α(K)=0.00768 *11*; α(L)=0.001033 *15*; α(M)=0.000221 *4*; α(N+..)=5.81×10^{-5} *9* α(N)=5.01×10^{-5} *8*; α(O)=7.54×10^{-6} *11*; α(P)=4.78×10^{-7} *7*
6710.2	39/2$^+$	797# *1*	35 *6*	5913.3	35/2$^+$	(E2)	0.00408 *6*	α(K)=0.00344 *5*; α(L)=0.000508 *8*; α(M)=0.0001095 *16*; α(N+..)=2.85×10^{-5} *4* α(N)=2.47×10^{-5} *4*; α(O)=3.63×10^{-6} *6*; α(P)=2.03×10^{-7} *3*
		875# *1*	100 *6*	5835.1	35/2$^+$	E2	0.00331 *5*	α(K)=0.00280 *4*; α(L)=0.000405 *6*; α(M)=8.72×10^{-5} *13*; α(N+..)=2.27×10^{-5} *4* α(N)=1.97×10^{-5} *3*; α(O)=2.90×10^{-6} *5*; α(P)=1.659×10^{-7} *24*
6759.5	37/2$^+$	846# *1*		5913.3	35/2$^+$	M1+E2	0.0047 *12*	α(K)=0.0040 *10*; α(L)=0.00056 *12*; α(M)=0.000119 *25*; α(N+..)=3.1×10^{-5} *7* α(N)=2.7×10^{-5} *6*; α(O)=4.0×10^{-6} *9*; α(P)=2.4×10^{-7} *7*
		863# *1*		5896.3	33/2$^-$	(M2)	0.01458	α(K)=0.01232 *18*; α(L)=0.00178 *3*; α(M)=0.000383 *6*; α(N+..)=0.0001009 *15* α(N)=8.70×10^{-5} *13*; α(O)=1.306×10^{-5} *19*; α(P)=8.10×10^{-7} *12*
		1075# *1*		5685.0	33/2$^+$	(E2)	0.00214 *3*	α(K)=0.00182 *3*; α(L)=0.000253 *4*; α(M)=5.42×10^{-5} *8*; α(N+..)=1.418×10^{-5} *20* α(N)=1.226×10^{-5} *18*; α(O)=1.82×10^{-6} *3*; α(P)=1.080×10^{-7} *16*
6956.4	(37/2$^+$)	197# *1*		6759.5	37/2$^+$			
		1043# *1*		5913.3	35/2$^+$	(M1)	0.00356 *5*	α(K)=0.00305 *5*; α(L)=0.000405 *6*; α(M)=8.64×10^{-5} *13*; α(N+..)=2.27×10^{-5} *4* α(N)=1.96×10^{-5} *3*; α(O)=2.95×10^{-6} *5*; α(P)=1.88×10^{-7} *3*
7026.2	35/2$^-$	433# *1*		6593.2	(35/2$^-$)			
		944# *1*		6082.1				
		1130# *1*		5896.3	33/2$^-$	M1+E2	0.0024 *6*	α(K)=0.0021 *5*; α(L)=0.00028 *6*; α(M)=6.0×10^{-5} *12*; α(N+..)=1.7×10^{-5} *3* α(N)=1.4×10^{-5} *3*; α(O)=2.0×10^{-6} *4*; α(P)=1.3×10^{-7} *3*; α(IPF)=9.7×10^{-7} *5*
7087.3		1174# *1*	100	5913.3	35/2$^+$			
7197.3	(39/2$^+$)	574# *1*	100	6623.3	37/2$^+$	(M1+E2)	0.012 *4*	α(K)=0.010 *3*; α(L)=0.0015 *3*; α(M)=0.00032 *6*; α(N+..)=8.3×10^{-5} *16* α(N)=7.2×10^{-5} *14*; α(O)=1.07×10^{-5} *22*; α(P)=6.2×10^{-7} *19*
7354.6	(39/2$^+$)	595# *1*	100	6759.5	37/2$^+$	(M1+E2)	0.011 *3*	α(K)=0.009 *3*; α(L)=0.0013 *3*; α(M)=0.00029 *6*; α(N+..)=7.6×10^{-5} *15* α(N)=6.6×10^{-5} *13*; α(O)=9.7×10^{-6} *20*; α(P)=5.7×10^{-7} *18*
7390.1	37/2$^-$	364# *1*	100	7026.2	35/2$^-$	M1+E2	0.040 *9*	α(K)=0.033 *9*; α(L)=0.0053 *4*; α(M)=0.00116 *7*; α(N+..)=0.000301 *22* α(N)=0.000261 *17*; α(O)=3.8×10^{-5} *4*; α(P)=2.0×10^{-6} *7*
7516.1	(39/2$^-$)	126# *1*	100	7390.1	37/2$^-$			

Adopted Levels, Gammas (continued)

γ(^{143}Sm) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.‡	α†	Comments
7580.3	(43/2$^+$)	383# *1*		7197.3	(39/2$^+$)	(E2)	0.0270 *5*	α(K)=0.0216 *4*; α(L)=0.00417 *7*; α(M)=0.000921 *16*; α(N+..)=0.000236 *4* α(N)=0.000206 *4*; α(O)=2.89×10^{-5} *5*; α(P)=1.207×10^{-6} *19*
		493# *1*		7087.3				
7597.6	(41/2$^+$)	243# *1*	100	7354.6	(39/2$^+$)	(M1)	0.142 *3*	α(K)=0.1207 *22*; α(L)=0.0168 *3*; α(M)=0.00361 *7*; α(N+..)=0.000949 *17* α(N)=0.000818 *15*; α(O)=0.0001228 *22*; α(P)=7.65×10^{-6} *14*
7873	(45/2$^+$)	293# *1*	100	7580.3	(43/2$^+$)	(M1)	0.0861 *15*	α(K)=0.0732 *13*; α(L)=0.01014 *17*; α(M)=0.00218 *4*; α(N+..)=0.000572 *10* α(N)=0.000493 *9*; α(O)=7.41×10^{-5} *13*; α(P)=4.63×10^{-6} *8*
8197.4	(41/2$^-$)	681# *1*	100	7516.1	(39/2$^-$)	(M1)	0.00996 *15*	α(K)=0.00850 *13*; α(L)=0.001146 *17*; α(M)=0.000245 *4*; α(N+..)=6.44×10^{-5} *10* α(N)=5.55×10^{-5} *8*; α(O)=8.36×10^{-6} *12*; α(P)=5.30×10^{-7} *8*
8362	(47/2$^+$)	489# *1*	100	7873	(45/2$^+$)			
8611.7	(43/2$^-$)	414# *1*		8197.4	(41/2$^-$)	(M1)	0.0348	α(K)=0.0297 *5*; α(L)=0.00407 *7*; α(M)=0.000871 *14*; α(N+..)=0.000229 *4* α(N)=0.000198 *3*; α(O)=2.97×10^{-5} *5*; α(P)=1.87×10^{-6} *3*
		1014# *1*	44 *4*	7597.6	(41/2$^+$)	E1	0.001005 *15*	α(K)=0.000864 *13*; α(L)=0.0001110 *16*; α(M)=2.36×10^{-5} *4*; α(N+..)=6.18×10^{-6} α(N)=5.33×10^{-6} *8*; α(O)=7.99×10^{-7} *12*; α(P)=5.00×10^{-8} *7*
		1096# *1*	100 *24*	7516.1	(39/2$^-$)	E2	0.00205 *3*	α(K)=0.001746 *25*; α(L)=0.000242 *4*; α(M)=5.20×10^{-5} *8*; α(N+..)=1.359×10^{-5} *20* α(N)=1.174×10^{-5} *17*; α(O)=1.744×10^{-6} *25*; α(P)=1.039×10^{-7} *15*
8851	(45/2$^-$)	239# *1*	100	8611.7	(43/2$^-$)	M1	0.149 *3*	α(K)=0.1262 *23*; α(L)=0.0176 *4*; α(M)=0.00378 *7*; α(N+..)=0.000993 *18* α(N)=0.000856 *16*; α(O)=0.0001285 *24*; α(P)=8.00×10^{-6} *15*
9191	(47/2$^-$)	340# *1*	100	8851	(45/2$^-$)	M1	0.0581 *10*	α(K)=0.0495 *8*; α(L)=0.00682 *11*; α(M)=0.001462 *24*; α(N+..)=0.000385 *7* α(N)=0.000332 *6*; α(O)=4.98×10^{-5} *8*; α(P)=3.12×10^{-6} *5*
9635	(49/2$^-$)	444# *1*	100	9191	(47/2$^-$)	M1	0.0291	α(K)=0.0248 *4*; α(L)=0.00339 *6*; α(M)=0.000726 *11*; α(N+..)=0.000191 *3* α(N)=0.000165 *3*; α(O)=2.48×10^{-5} *4*; α(P)=1.557×10^{-6} *24*
10213	(51/2$^-$)	578# *1*	100	9635	(49/2$^-$)	M1	0.01495	α(K)=0.01276 *19*; α(L)=0.00173 *3*; α(M)=0.000370 *6*; α(N+..)=9.73×10^{-5} *15* α(N)=8.38×10^{-5} *13*; α(O)=1.261×10^{-5} *19*; α(P)=7.97×10^{-7} *12*
10815	(53/2$^-$)	602# *1*	100	10213	(51/2$^-$)	M1	0.01351	α(K)=0.01153 *17*; α(L)=0.001560 *23*; α(M)=0.000334 *5*; α(N+..)=8.78×10^{-5} *13* α(N)=7.57×10^{-5} *11*; α(O)=1.138×10^{-5} *17*; α(P)=7.20×10^{-7} *11*
11542	(55/2$^-$)	727# *1*	100	10815	(53/2$^-$)	M1	0.00848 *13*	α(K)=0.00725 *11*; α(L)=0.000974 *14*; α(M)=0.000208 *3*; α(N+..)=5.48×10^{-5} *8* α(N)=4.72×10^{-5} *7*; α(O)=7.11×10^{-6} *11*; α(P)=4.51×10^{-7} *7*
12248	(57/2$^-$)	706# *1*	100	11542	(55/2$^-$)	(M1)	0.00912 *14*	α(K)=0.00779 *12*; α(L)=0.001048 *16*; α(M)=0.000224 *4*;

$^{143}_{62}Sm_{81}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{143}Sm)$ (continued)

E_i(level)	E_γ	Comments
		α(N+..)=5.89×10^{-5} *9* α(N)=5.08×10^{-5} *8*; α(O)=7.64×10^{-6} *11*; α(P)=4.85×10^{-7} *7*

† Additional information 1.

‡ From $\gamma(\theta)$ in (α,3nγ) and DCO in (^{20}Ne,7nγ), except for 107.7γ which is from K/(L+M+)=5.7 in ^{143}Eu ε decay, for 76.5γ and 182.0γ which are from I(γ+ce) balance in (α,3nγ), IT decay (30 ms), and for 208.0γ which is from K/L+M+=0.91 in IT decay (30 ms).

From ^{130}Te(^{20}Ne,7nγ).

$^{143}_{62}Sm_{81}$-10

Adopted Levels, Gammas

Level Scheme

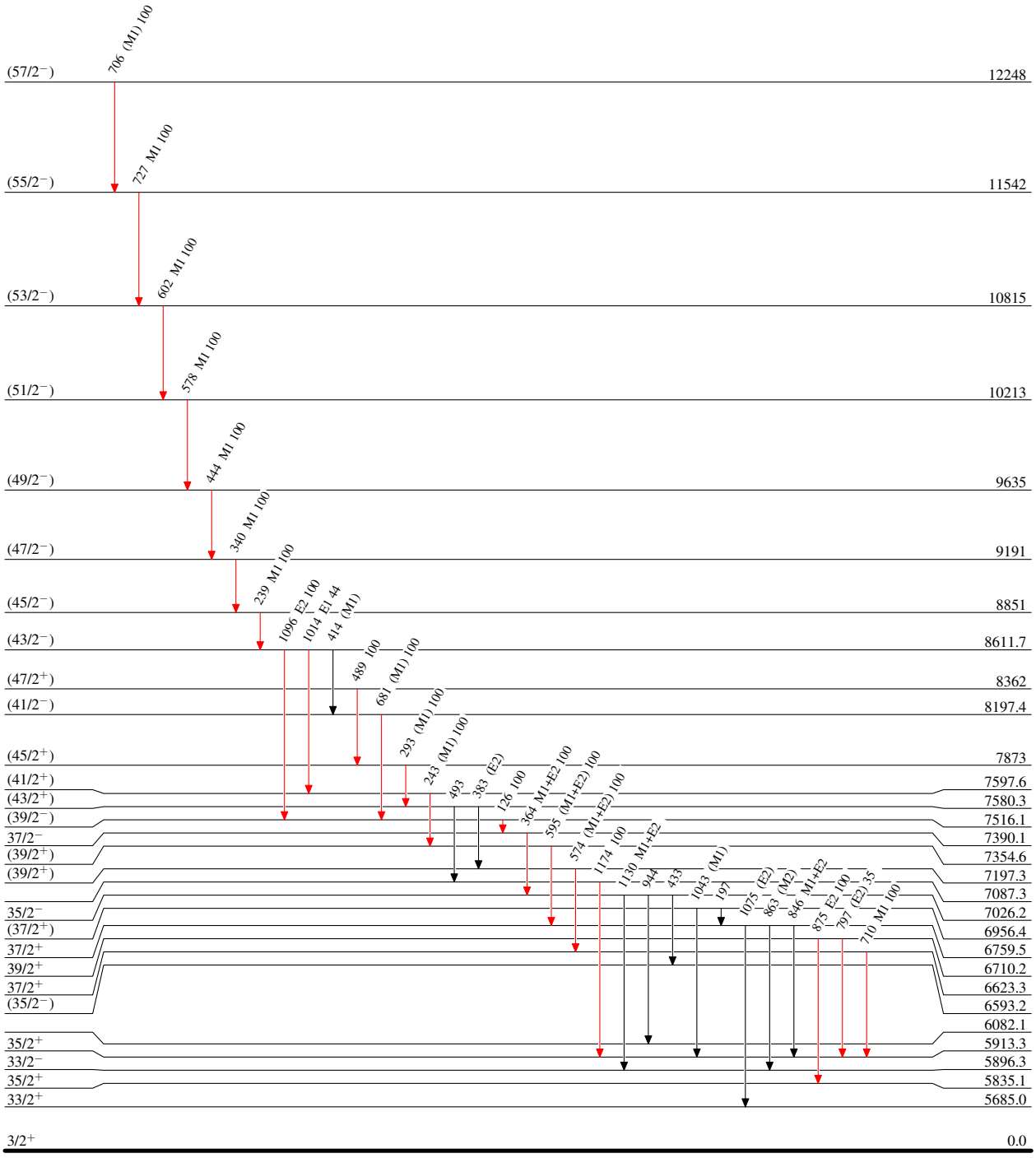
Intensities: Type not specified

Legend

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

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

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

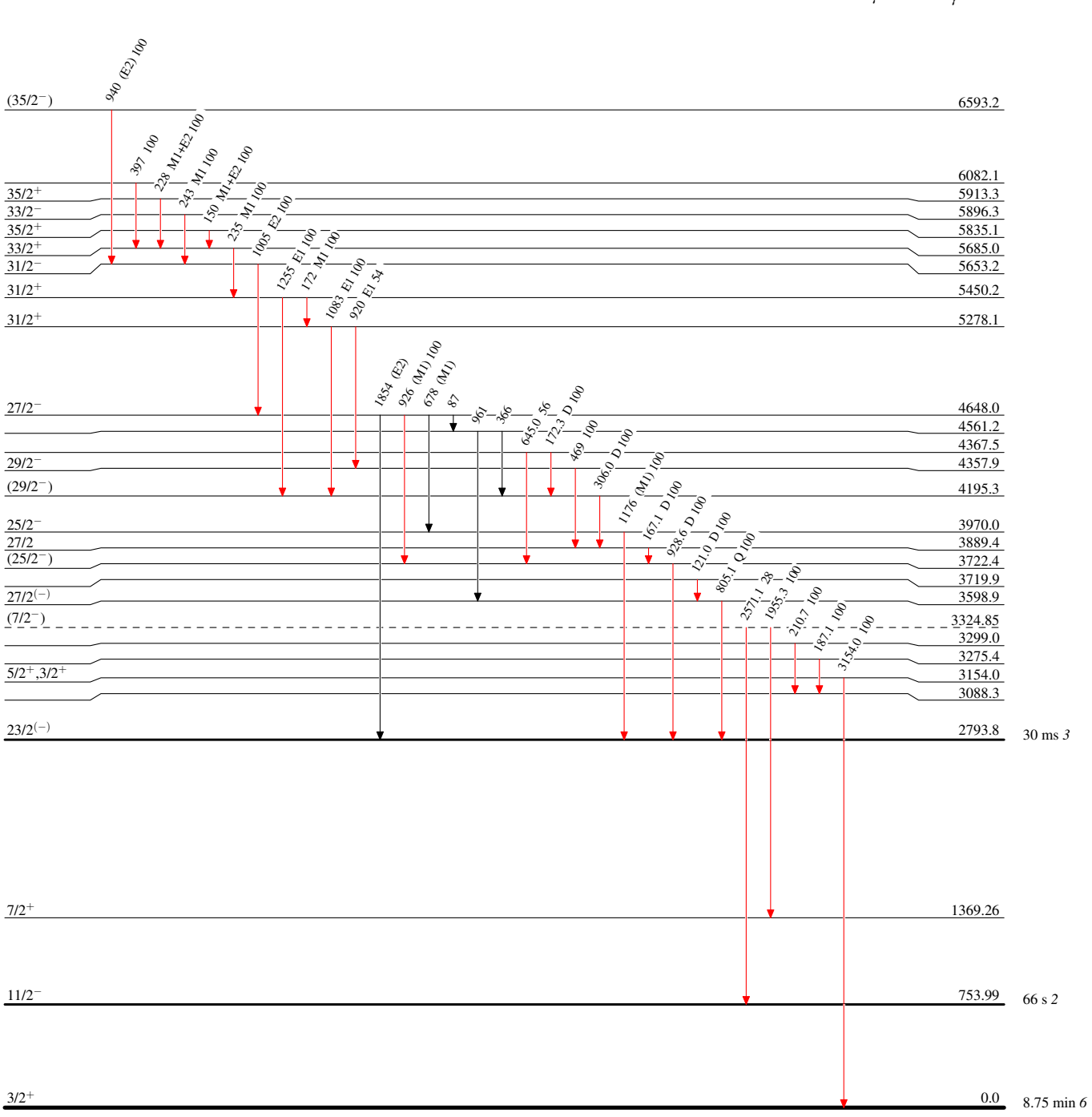


$^{143}_{62}Sm_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

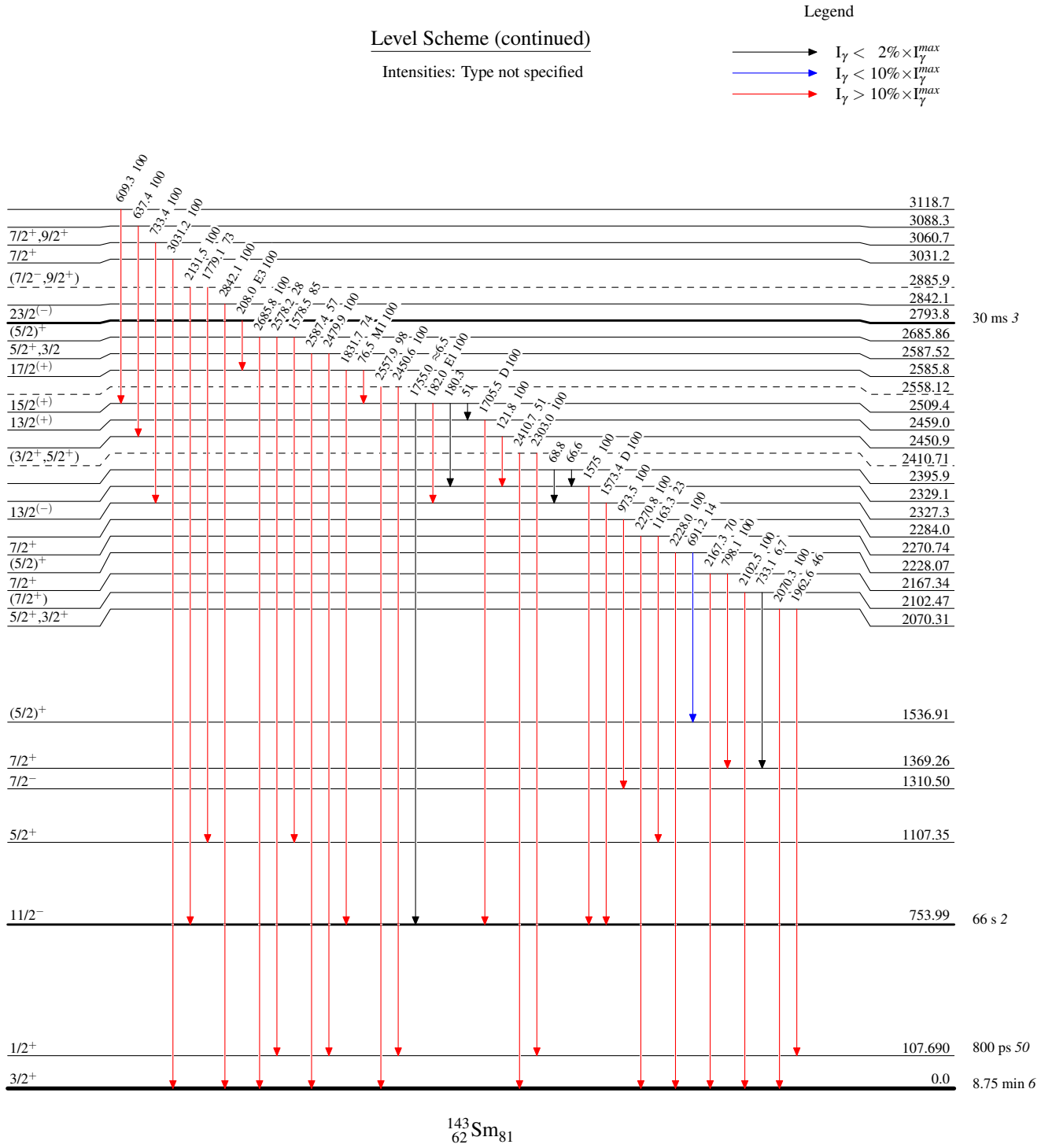


$^{143}_{62}Sm_{81}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

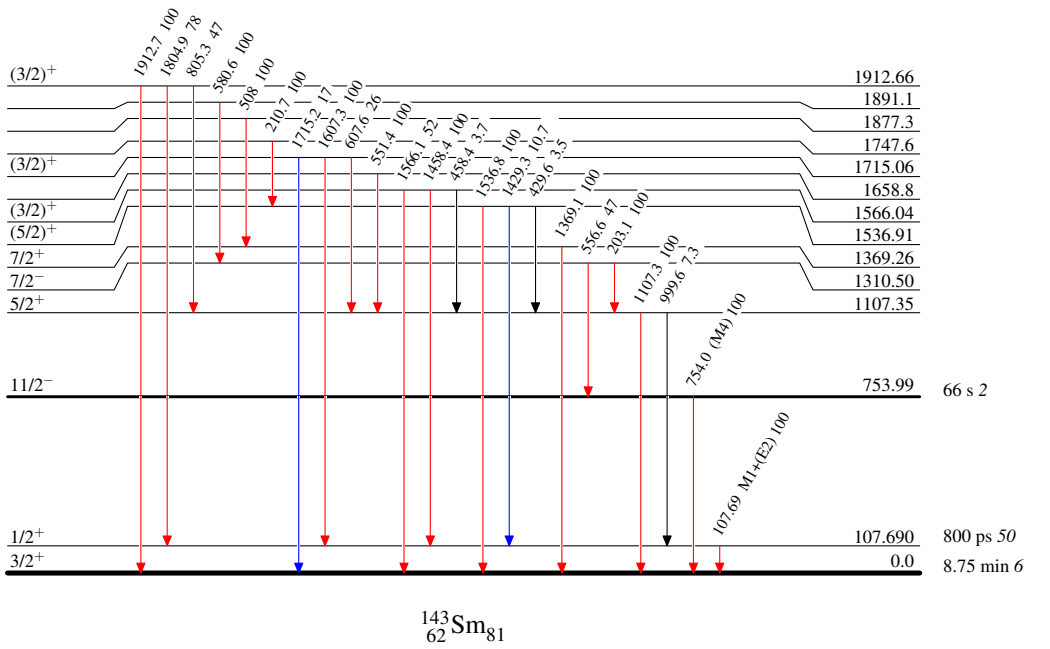


$^{143}_{62}Sm_{81}$

Adopted Levels, Gammas

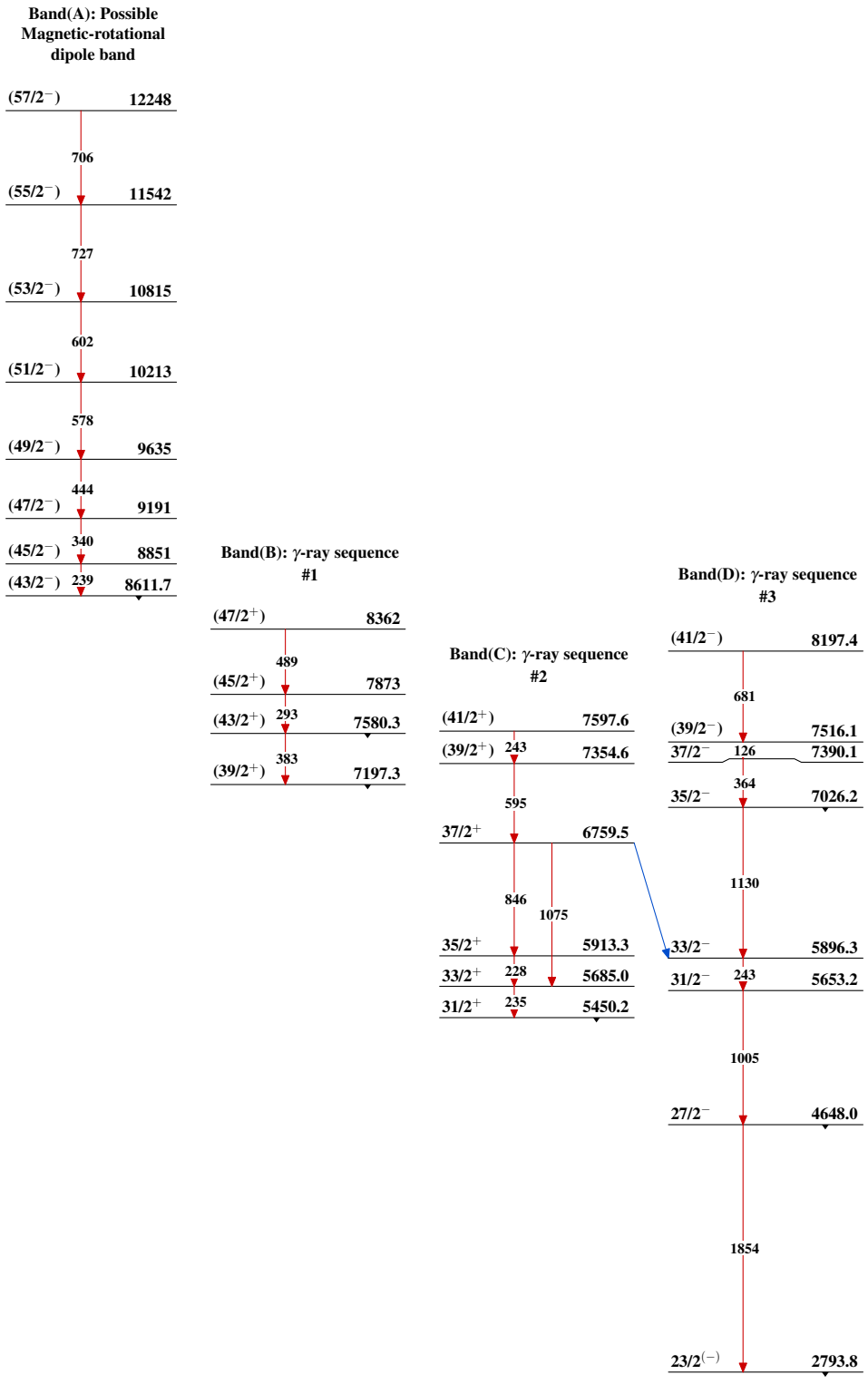
Level Scheme (continued)

Intensities: Type not specified



$^{143}_{62}Sm_{81}$

Adopted Levels, Gammas



$^{143}_{62}Sm_{81}$