^{144}Sm(^{6}Li,3nγ) 1995Co12,1983St07,1981Na10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	N. Nica and B. Singh	NDS 181, 1 (2022)	9-Mar-2022

1995Co12: E=29 MeV. Measured γ, ce, $\gamma\gamma$.
1983St07: E=22-32 MeV. Measured Eγ, Iγ, I(ce), $\gamma(\theta)$.
1981Na10: E=30 MeV. Measured Eγ, Iγ, $\gamma\gamma$, γ-x-rays, $\gamma(\theta)$, I(ce), $T_{1/2}$ limits.
1980Kh06: E=32, 34, 36 MeV. Measured Eγ, Iγ, $\gamma(\theta)$, $\gamma\gamma$, $\gamma\gamma$(t), I(ce).
1979Br28: ^{151}Eu(α,8nγ), E=68-110 MeV. Measured Eγ, Iγ, I(ce).
1973Bo13: ^{151}(^{3}He,7nγ), E=40-70 MeV at Texas A&M cyclotron. Measured Eγ, Iγ, $T_{1/2}$.

^{147}Tb Levels

E(level)†	J$^{\pi}$‡	$T_{1/2}$	Comments
0.0	$1/2^+$	1.64 h *3*	$T_{1/2}$: from Adopted Levels.
50.6	$11/2^-$	1.83 min *6*	$T_{1/2}$: from 1973Bo13. Additional information 1.
253.4	$3/2^+$	<1.3 ns	$T_{1/2}$: from 1981Na10.
354.2	$5/2^+$	<2 ns	$T_{1/2}$: from 1981Na10.
719.3	$7/2^+$	<1.3 ns	$T_{1/2}$: from 1981Na10.
1313.0	$(7/2)^-$		
1316.4	$15/2^+$	3.9 ns *4*	$T_{1/2}$: from 1983St07.
1329.6	$7/2^+$		
1404.5	$5/2^+$		
1413.3	$5/2^-$		
1438.3	$11/2^+$		
1487.5	$9/2^+$		
1601.2	$13/2^+$		
1618.8	$5/2^-$		
1659.6	$(9/2)^-$		
1759.2	$3/2^+$		
1760.6	$(9/2)^-$		
1774.6	$(9/2)^-$		
1965.2	(5/2)		
1971.6	$7/2^+$		
1987.9	$15/2^-$		
1996.8	5/2		
2046.0	(9/2)		
2068.3	$7/2^{(+)}$		
2088.5	$17/2^+$		
2157.6	$(13/2)^-$		
2179.9	$11/2^+$		
2219.0	$(7/2^+)$		
2221.1	$(9/2)^+$		
2230.7	$5/2^{(+)}$		
2243.9	5/2		
2374.4	(5/2)		
2507.4	9/2		
2567.6	$17/2^-$		
2576.0	$19/2^-$		

† No uncertainties are available for the E_γ input. The E(level) values are from a least-squares fit to the E_γ data with the assumption that the uncertainties are the same for all the E_γ's.
‡ From 1995Co12, based on γ multipolarities and identification of particle⊗phonon configurations (from theory).

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$\gamma(^{147}Tb)$

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ	Comments
100.6		2088.5	$17/2^+$	1987.9	$15/2^-$			
100.8		354.2	$5/2^+$	253.4	$3/2^+$	M1[@]		α(exp)=230 *180* (1981Na10) I_γ: 23 *3*. Mult.: A_2=−0.09 *2*, A_4=−0.02 *2* (1981Na10).
157.9		1487.5	$9/2^+$	1329.6	$7/2^+$			
163.0		1601.2	$13/2^+$	1438.3	$11/2^+$			
174.5		1487.5	$9/2^+$	1313.0	$(7/2)^-$			
253.4		253.4	$3/2^+$	0.0	$1/2^+$	M1[@]		I_γ: 100. Mult.: A_2=−0.15 *1*, A_4=0.01 *1* (1981Na10).
284.8		1601.2	$13/2^+$	1316.4	$15/2^+$			
354.2		354.2	$5/2^+$	0.0	$1/2^+$			
365.2		719.3	$7/2^+$	354.2	$5/2^+$	M1[@]		α(K)exp=0.042 *8* (1981Na10) I_γ: 33 *4*. Mult.: A_2=−0.03 *2*, A_4=0.01 *2* (1981Na10).
466.0		719.3	$7/2^+$	253.4	$3/2^+$			
487.4		2088.5	$17/2^+$	1601.2	$13/2^+$			
487.5		2576.0	$19/2^-$	2088.5	$17/2^+$			
588.1		2576.0	$19/2^-$	1987.9	$15/2^-$	(E2)		
610.4		1329.6	$7/2^+$	719.3	$7/2^+$			
671.5		1987.9	$15/2^-$	1316.4	$15/2^+$			
716.5		2046.0	(9/2)	1329.6	$7/2^+$			
768.0		1487.5	$9/2^+$	719.3	$7/2^+$			
772.1	41 *4*	2088.5	$17/2^+$	1316.4	$15/2^+$	M1[&]		
975.5		1329.6	$7/2^+$	354.2	$5/2^+$	(E2)		
1050.4		1404.5	$5/2^+$	354.2	$5/2^+$	(M1)		
1076.2		1329.6	$7/2^+$	253.4	$3/2^+$			
1133.4		1487.5	$9/2^+$	354.2	$5/2^+$			
1151.1		1404.5	$5/2^+$	253.4	$3/2^+$	(M1)		
1159.9		1413.3	$5/2^-$	253.4	$3/2^+$	(E1)		
1251.2		2567.6	$17/2^-$	1316.4	$15/2^+$	(E1)		
1262.4		1313.0	$(7/2)^-$	50.6	$11/2^-$	(E2)		
1264.5		1618.8	$5/2^-$	354.2	$5/2^+$			
1265.8	100	1316.4	$15/2^+$	50.6	$11/2^-$	M2+E3[&]	2.2 *5*	Mult.: from 1983St07. δ: from α(K)exp in 1979Br28.
1277.4		1996.8	5/2	719.3	$7/2^+$			
1365.5		1618.8	$5/2^-$	253.4	$3/2^+$	(E1)		
1387.8		1438.3	$11/2^+$	50.6	$11/2^-$	(E1)		
1405.0		1759.2	$3/2^+$	354.2	$5/2^+$	(M1,E2)		
1436.9		1487.5	$9/2^+$	50.6	$11/2^-$	(E1)		
1460.5		2179.9	$11/2^+$	719.3	$7/2^+$	(E2)		
1499.6		2219.0	$(7/2^+)$	719.3	$7/2^+$	(M1)		
1501.7		2221.1	$(9/2)^+$	719.3	$7/2^+$	(M1)		
1505.9		1759.2	$3/2^+$	253.4	$3/2^+$	(M1)		
1511.4		2230.7	$5/2^{(+)}$	719.3	$7/2^+$			
1550.6		1601.2	$13/2^+$	50.6	$11/2^-$	(E1)		
1609.0		1659.6	$(9/2)^-$	50.6	$11/2^-$	(M1)		
1611.0		1965.2	(5/2)	354.2	$5/2^+$			
1617.4		1971.6	$7/2^+$	354.2	$5/2^+$	(M1)		
1642.7		1996.8	5/2	354.2	$5/2^+$			
1655.0		2374.4	(5/2)	719.3	$7/2^+$			
1710.0		1760.6	$(9/2)^-$	50.6	$11/2^-$	(M1)		
1714.1		2068.3	$7/2^{(+)}$	354.2	$5/2^+$			
1724		1774.6	$(9/2)^-$	50.6	$11/2^-$	(M1,E2)		
1743.5		1996.8	5/2	253.4	$3/2^+$			

Continued on next page (footnotes at end of table)

^{144}Sm(^{6}Li,3nγ) 1995Co12,1983St07,1981Na10 (continued)

$\gamma(^{147}Tb)$ (continued)

E_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	E_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
1759.2	1759.2	$3/2^+$	0.0	$1/2^+$	(M1,E2)	1990.5	2243.9	5/2	253.4	$3/2^+$
1788.0	2507.4	9/2	719.3	$7/2^+$		1995.3	2046.0	(9/2)	50.6	$11/2^-$
1937.2	1987.9	$15/2^-$	50.6	$11/2^-$		2107.0	2157.6	$(13/2)^-$	50.6	$11/2^-$
1977.2	2230.7	$5/2^{(+)}$	253.4	$3/2^+$						

[†] From 1995Co12.
[‡] Relative intensities from 1983St07 (their level scheme indicates that many Iγ's were measured, which were not reported); Iγ values in comments are from 1981Na10.
[#] Measured by 1995Co12 (no details given, probably from ce measurements).
[@] Measured by 1981Na10 from α(K)exp and $\gamma(\theta)$, and by 1995Co12.
[&] Measured by 1983St07 from α(K)exp and $\gamma(\theta)$, and by 1995Co12.

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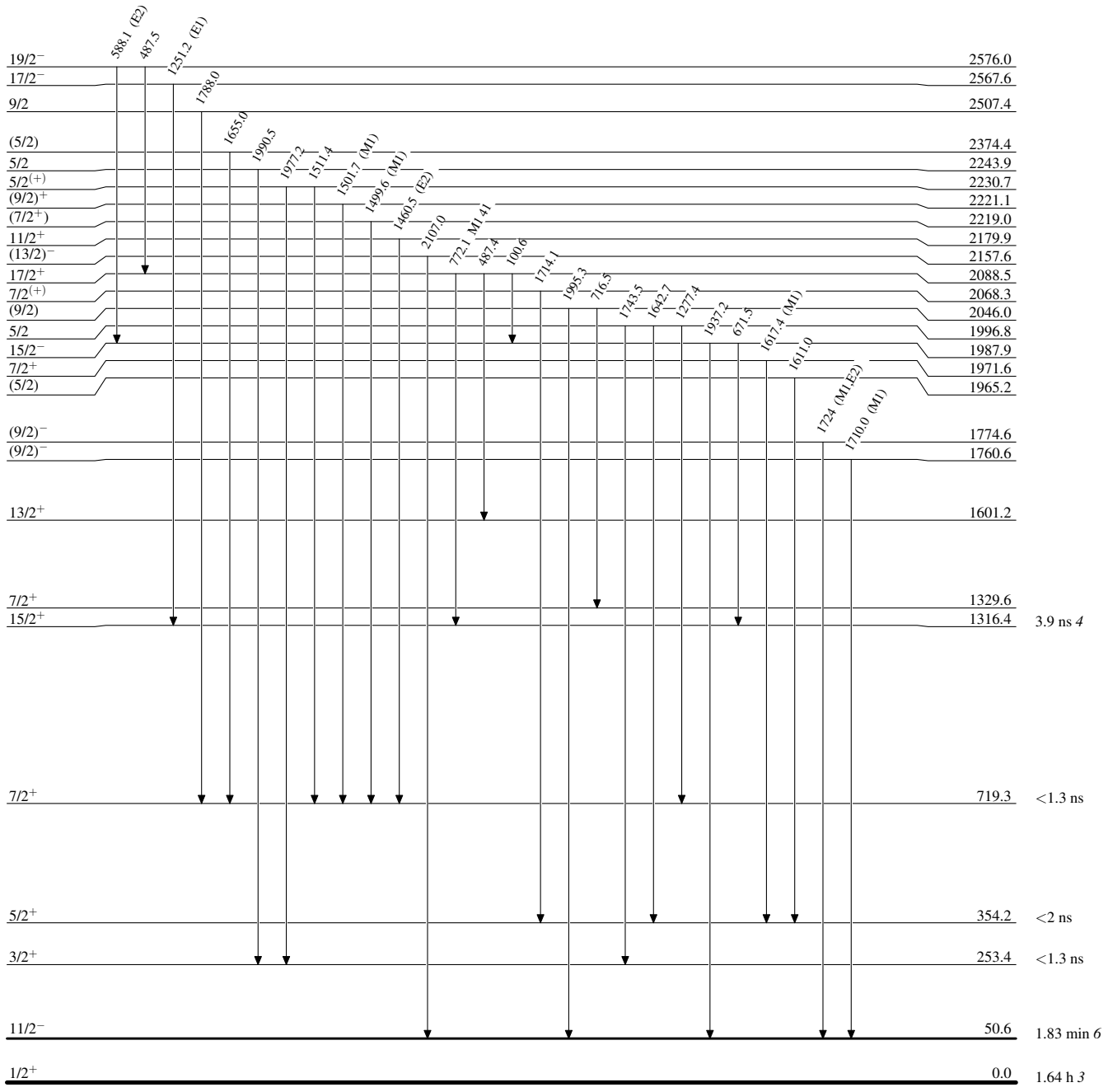
Level Scheme

Intensities: Relative I_γ



$^{147}_{65}Tb_{82}$

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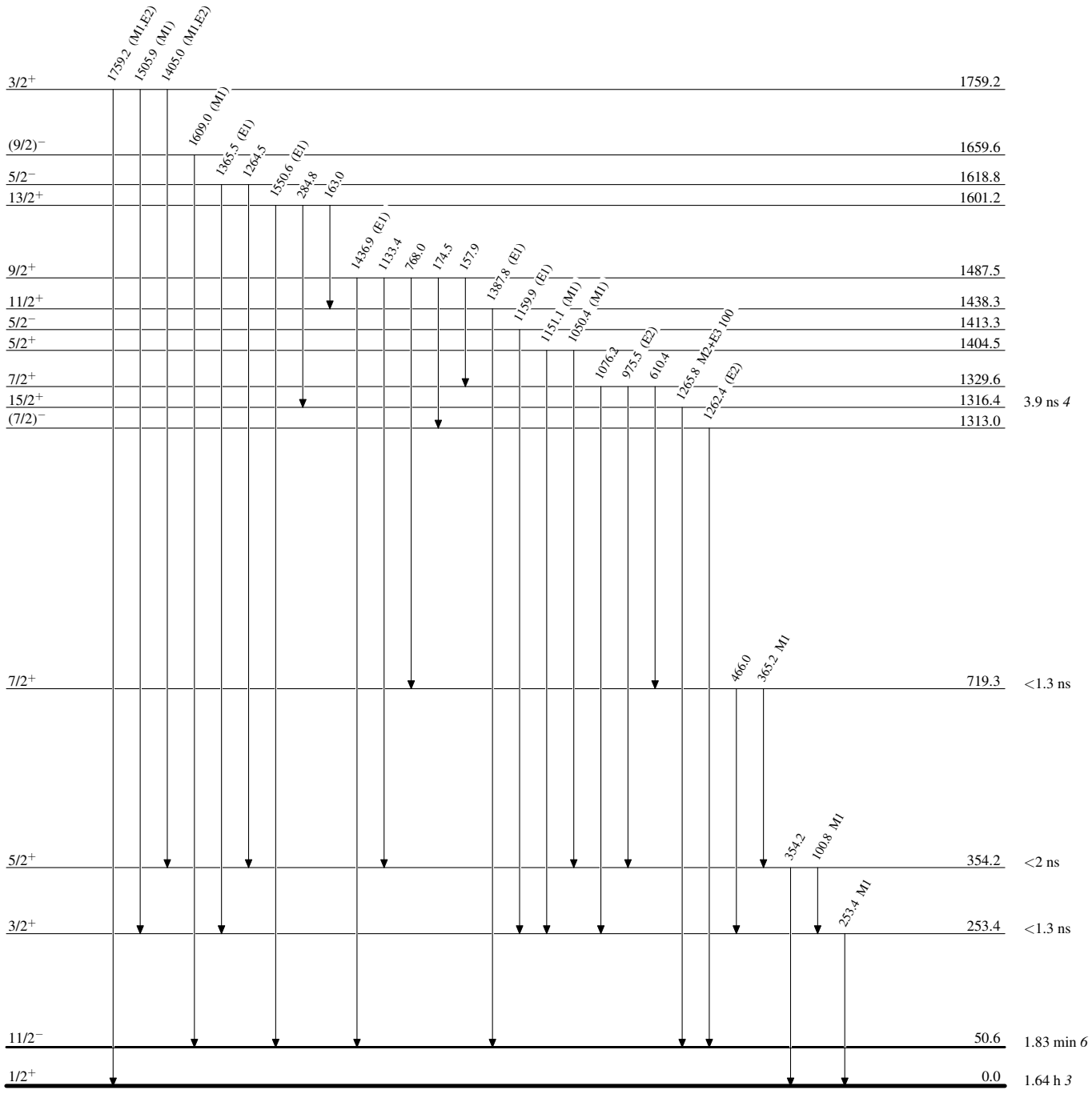
Level Scheme (continued)

Intensities: Relative I_γ



$^{147}_{65}Tb_{82}$