

Adopted Levels, Gammas

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

S(n)=12990 *syst*; S(p)=-1059 3; Q(α)=3650 *syst* 2021Wa16
 ΔS(n)=200, ΔQ(α)=300 (*syst*,2021Wa16).
 S(2n)=24530 200 (*syst*), S(2p)=1432 10, Q(εp)=7975 9 (2021Wa16).

¹⁴⁷Tm Levels

Cross Reference (XREF) Flags

- A ⁹²Mo(⁵⁸Ni,p2n)
- B ⁵⁸Ni(⁹²Mo,p2nγ),

E(level) [†]	J ^π [‡]	T _{1/2}	XREF	Comments
0.0 [#]	11/2 ⁻	0.58 s 3	AB	%p=15 5 (1993To02); %ε+%β ⁺ =85 5 (1993To02) J ^π : based on p decay to ¹⁴⁶ Er g.s. in (⁵⁸ Ni,p2n): L(p)=5 from π(h _{11/2}) and comparison of T _{1/2} (p, calc) to T _{1/2} (p, exp). T _{1/2} : weighted average of 560 ms 40 (1995Ho26), 580 ms 70 (1993Se04) and 640 ms 60 (1993To02). E(p)=1051 keV 3, Q(p)=1071 keV 3 in (⁵⁸ Ni,p2n); Q(p) includes screening correction.
68 [@] 6	3/2 ⁺	0.36 ms 4	AB	%p=100 (1993To02) E(level): from energy difference in Q(p)'s in (⁵⁸ Ni,p2n). J ^π : based on p decay to ¹⁴⁶ Er g.s. in (⁵⁸ Ni,p2n): L(p)=2 from π(d _{3/2}) and comparison of T _{1/2} (p, calc) to T _{1/2} (p, exp). T _{1/2} : from 1993Se04 (⁵⁸ Ni(⁹² Mo,p2nγ), ⁹² Mo(⁵⁸ Ni,p2nγ) dataset). E(p)=1119 keV 5, Q(p)=1139 keV 5 in (⁵⁸ Ni,p2n); Q(p) includes screening correction. σ≈5 μb in (⁵⁸ Ni,p2n) (1993Se04).
463.70 [#] 20	(15/2 ⁻)		B	
543.4 ^{&} 3	(13/2 ⁻)		B	
655? [@] 6	(5/2 ⁺)		B	
1081.8? ^{&} 5	(17/2 ⁻)		B	
1127.5 [#] 5	(19/2 ⁻)		B	
1776.9? ^{&} 11	(21/2 ⁻)		B	
1934.9 [#] 6	(23/2 ⁻)		B	
2565.6 [#] 7			B	
3009.2 [#] 12			B	
3375.6 16			B	
3523.5 [#] 13			B	

[†] From least-squares fit to Eγ's assuming ΔEγ=1.0 keV when not given (evaluator, see similar comment in ⁵⁸Ni(⁹²Mo,p2nγ), ⁹²Mo(⁵⁸Ni,p2nγ) dataset).

[‡] From ⁵⁸Ni(⁹²Mo,p2nγ), ⁹²Mo(⁵⁸Ni,p2nγ) dataset, except where noted. The assignments are based on the γ energy and the intensity pattern expected for band members, supported by shell model calculations and comparisons with neighboring nuclei.

Band(A): 11/2⁻ πh_{11/2} band.

@ Band(B): 3/2⁺ πd_{3/2} band.

& Band(C): (13/2⁻) band.

Adopted Levels, Gammas (continued) $\gamma(^{147}\text{Tm})$

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π
463.70	(15/2 ⁻)	463.7 2	100	0.0	11/2 ⁻	1934.9	(23/2 ⁻)	807.4 3	100	1127.5	(19/2 ⁻)
543.4	(13/2 ⁻)	543.4 3	100	0.0	11/2 ⁻	2565.6		630.7 3	100	1934.9	(23/2 ⁻)
655?	(5/2 ⁺)	587.1 [‡] 8	100	68	3/2 ⁺	3009.2		443.6 10	100	2565.6	
1081.8?	(17/2 ⁻)	538.4 [‡] 3	100	543.4	(13/2 ⁻)	3375.6		366.4 10	100	3009.2	
1127.5	(19/2 ⁻)	663.8 4	100	463.70	(15/2 ⁻)	3523.5		514.3 3	100	3009.2	
1776.9?	(21/2 ⁻)	695.1 [‡] 10	100	1081.8?	(17/2 ⁻)						

[†] From $^{58}\text{Ni}(^{92}\text{Mo},\text{p}2\text{n}\gamma)$, $^{92}\text{Mo}(^{58}\text{Ni},\text{p}2\text{n}\gamma)$ dataset.

[‡] Placement of transition in the level scheme is uncertain.

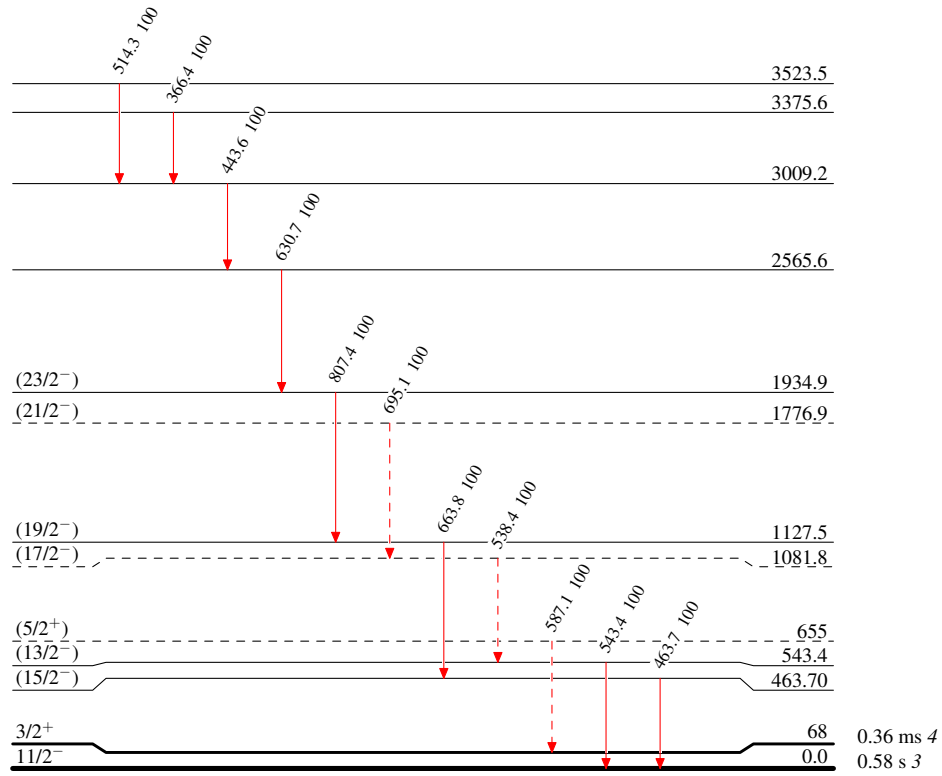
Adopted Levels, Gammas

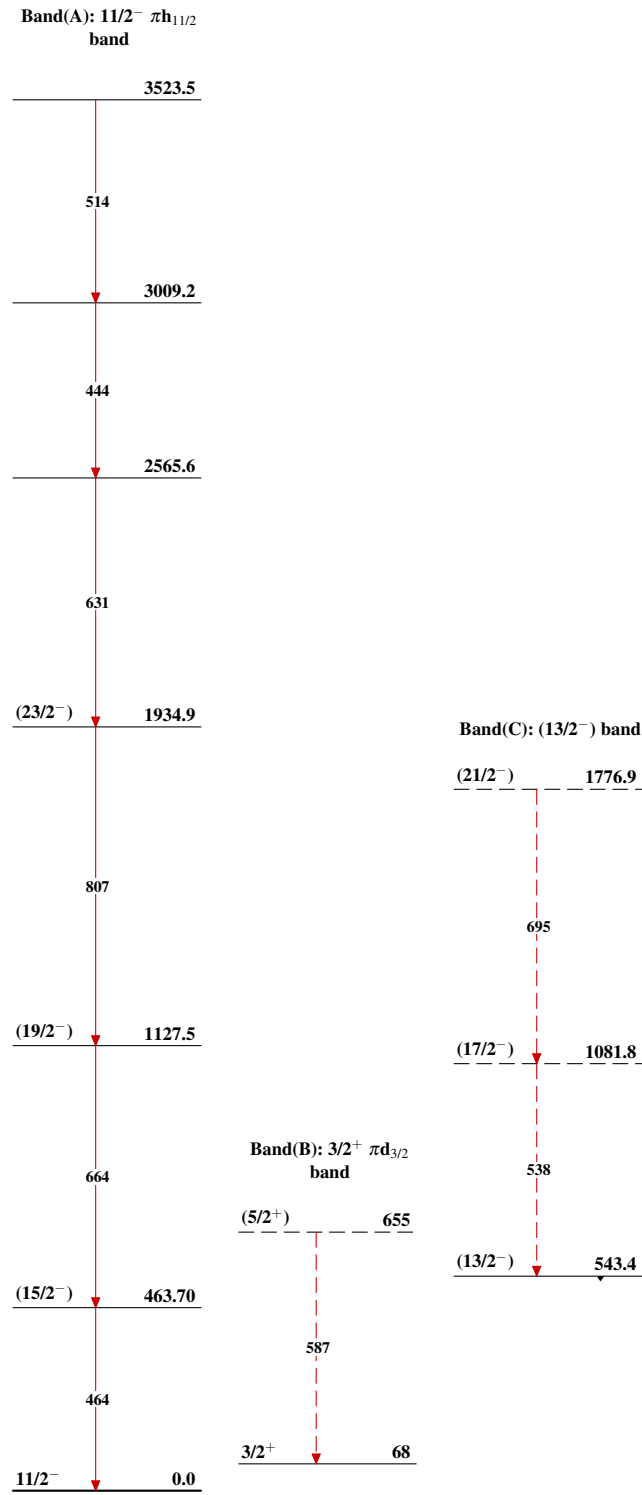
Legend

Level Scheme

Intensities: Type not specified

- ▶ $I_\gamma < 2\% \times I_\gamma^{max}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{max}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{max}$
- - - -▶ γ Decay (Uncertain)

 $^{147}_{69}\text{Tm}_{78}$

Adopted Levels, Gammas $^{147}_{69}\text{Tm}_{78}$