

¹³⁰Te(¹¹B,5n γ) [2005Bh06](#),[2005Zh16](#)

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

[2005Bh06](#): E(¹¹B)=52 MeV. Measured E γ , I γ , $\gamma\gamma$ coincidences, $\gamma\gamma(\theta)$, $\gamma\gamma$ (IPDCO) using eight Compton-suppressed Clover HPGe detectors.

[2005Zh16](#): E(¹¹B)=60 MeV. Measured E γ , I γ , $\gamma\gamma$ coincidences, $\gamma\gamma(\theta)$ and excitation function using 14 Compton-suppressed HPGe detectors.

¹³⁶La Levels

The level schemes proposed by [2005Bh06](#) and [2005Zh16](#) are in overall agreement. The main difference is in the placement of a 408 γ in the proposed $\pi h_{11/2} \otimes \nu h_{11/2}$, 9⁺ band. [2005Bh06](#) placement is as a cross-over, $\Delta J=2$ transition related to the 148.6 γ -258.5 γ cascade whereas [2005Zh16](#) placement is as a $\Delta J=0$ interband transition in cascade with the 258.5 γ . The evaluator adopts the placement of [2005Bh06](#), as it was confirmed in the ¹²⁴Sn(¹⁷N,5n) reaction. This difference results in all higher-lying 9⁺ band members and side-bands built upon the 9⁺ band being shifted upward 148-keV in excitation energy in [2005Zh16](#), relative to [2005Bh06](#). Additional differences between [2005Bh06](#) and [2005Zh16](#) are indicated in the comments.

E(level) [†]	J ^{π}	Comments
0.0 ^c	1 ⁺	
21.80 ^c 20	(2) ⁺	
44.3 3	(3) ⁺	
171.8 ^c 3	(3) ⁺	
211.40 20	(2)	
259.3? 4	(7) ⁻	E(level): Energy of isomer was tentatively fixed in 2005Bh06 on the basis of a very weak 87.5 transition.
270.3 4	3 ⁻	
341.8 ^b 4	(8) ⁻	
539.8 4	(8) ⁻	
562.8 [#] 3	(3)	
800.6 5	9 ⁻	J ^{π} : From figure 8 of 2005Bh06 ; 10 ⁻ listed in authors' table 1 seems a misprint.
983.3 [#] 3	(4)	
1023.8 ^b 5	(10) ⁻	
1125.1 @ 5	(9) ⁺	
1281.3 @ 5	(10) ⁺	
1521.9 5	(10) ⁻	
1687.6 @ 5	(11) ⁺	
1728.5 [#] 3	(5)	
1875.3 5	(10) ⁺	
2112.8 @ 5	(12) ⁺	
2113.8 ^b 5	(12) ⁻	
2371.4 @ 5	(13) ⁺	
2372.5 5	(13) ⁻	
2465.6? 5	(13) ⁺	
2520.7 @ 5	(14) ⁺	E(level): in ¹²⁴ Sn(¹⁷ N,5n γ), this level is identified as isomeric and the structure is proposed to change (see dataset).
2548.6 6	(14) ⁻	
2579.9 & 5	(12) ⁻	
2614.0 ^b 5	(13) ⁻	
2767.8 [#] 4	(6)	
2790.4 & 5	13 ⁻	J ^{π} : From figure 8 of 2005Bh06 ; 3 ⁻ listed in authors' table 1 is a misprint.

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$^{130}\text{Te}(^{11}\text{B},5n\gamma)$ **2005Bh06,2005Zh16** (continued) ^{136}La Levels (continued)

E(level) [†]	J π [‡]	Comments
2810.6 7	(12,13,14)	
2891.9 [#] 4	(7)	
2920.8 6		
2970.5 ^b 6	(14 ⁻)	
2990.2 [#] 5	(8)	
3070.2 ^{&} 5	(14 ⁻)	E(level): ordering of the 279.8 γ -335.3 γ cascade is reversed in 2005Bh06 and 2005Zh16 ; evaluator adopts the ordering from the latter. Ordering given by 2005Bh06 would result in an intermediate level at an energy of 3126 keV.
3117.0 [@] 5	(15 ⁺)	
3225.5 [#] 5	(9)	
3314.0 ^a 5	(14 ⁺)	
3392.5 6	(14,15 ⁻)	
3405.5 ^{&} 6	(15 ⁻)	
3686.2 ^a 6	(15 ⁺)	E(level): ordering of the 372.2 γ -176.1 γ cascade is reversed in 2005Bh06 and 2005Zh16 ; evaluator adopts the ordering from the former. Ordering given by 2005Zh16 would result in an intermediate level at an energy of 3490 keV.
3734.7 [@] 5	(16 ⁺)	
3822.5 ^b 6	(15 ⁻ ,16 ⁻)	
3843.6 ^{&} 8	(16 ⁻)	
3862.3 ^a 6	(16 ⁺)	
4147.2 [@] 6	(17 ⁺)	E(level): ordering of the 412 γ -483 γ cascade is reversed in 2005Bh06 and 2005Zh16 ; evaluator adopts the ordering from the latter. Ordering given by 2005Bh06 would result in an intermediate level at an energy of 4217 keV.
4393.3 ^{&} 8	17 ⁻	
4401.3 ^a 6	(17 ⁺)	
4630.6 [@] 6	(18 ⁺)	
5074.9 ^{&} 9	(18 ⁻)	
5082.3 8		
5227.6 [@] 8	(19 ⁺)	E(level): the 19 ⁺ member of the $\pi h_{11/2} \otimes \nu h_{9/2}$ band is identified at 4869.9 keV in $^{124}\text{Sn}(^{17}\text{N},5n\gamma)$ reaction, which is adopted by the evaluator.
5909.9 ^{&} 11	(19 ⁻)	

[†] From a least-squares fit to $E\gamma$, by evaluator.

[‡] From the Adopted Levels. Differences with [2005Zh16](#) and [2005Bh06](#) are indicated in the comments.

[#] Band(A): band based on 3⁻ level.

[@] Band(B): $\pi h_{11/2} \otimes \nu h_{11/2}$, 9⁺ band.

[&] Band(C): Band based on 12⁻ level. [2005Zh16](#) propose oblate structure with $\pi h_{11/2} \otimes \nu (g_{7/2} h_{11/2}^2)$ configuration.

^a Band(D): Band based on 14⁺ level. [2005Zh16](#) propose oblate structure with $\pi g_{7/2} \otimes \nu (g_{7/2}^2 d_{5/2} h_{11/2}^2)$ configuration.

^b Band(E): Possible $\pi 1/2[431] \otimes \nu h_{11/2}$, 8⁻ band.

^c Band(F): $\pi d_{5/2} \otimes \nu d_{3/2}$, 1⁺ band.

¹³⁰Te(¹¹B,5n γ) [2005Bh06,2005Zh16](#) (continued)

$\gamma(^{136}\text{La})$

R(asym) and R(IPDCO) values: from e-mail reply of Feb 17, 2005 from one of the authors, S. K. Basu to XUNDL compilers.

R(asym)=I _{γ 1} at 90°, gated by γ_2 at 60° / I _{γ 1} at 30°, gated by γ_2 at 60°; the ratio is independent of the multipolarity of the gating γ -ray transition, detected at 60°, and it need not be of pure $\Delta J=2$ or $\Delta J=1$ character. Typical values of R(asym) for pure $\Delta J=2$ and $\Delta J=1$ transitions are 0.6 and 1.45, respectively. A positive value of R(IPDCO) indicates an electric transition whereas a negative coincides with a magnetic transition. Near zero values are considered to be of mixed electric/magnetic character.

R(DCO) ratios were measured in [2005Zh16](#) from a matrix where detectors near 90° with respect to the beam were sorted against detectors at 45°, 55°, 125°, and 135°. The expected ratios are larger than 1.0 for $\Delta J=1$ transitions and less than 0.9 for $\Delta J=2$ transitions.

Gamma rays at 665.9 (I γ =1.1 2) and 1004.0 (tentative) observed in [2005Zh16](#) are omitted here as they were not confirmed in [2005Bh06](#) and relate to the placement of the 408 γ (see general comment on levels above) by [2005Zh16](#) which is not adopted here.

E γ [†]	I γ [‡]	E _i (level)	J π _i	E _f	J π _f	Mult. [#]	I γ ^a	Comments
21.8 2		21.80	(2) ⁺	0.0	1 ⁺			E γ : From the Adopted Levels.
22.5 2		44.3	(3) ⁺	21.80	(2) ⁺			E γ : From the Adopted Levels.
82.3 2	9.0 18	341.8	(8) ⁻	259.3?	(7) ⁻	E2+M1		Mult.: R(asym)=0.31 9, R(IPDCO)=-0.11 27 (2005Bh06).
87.5 ^b 2		259.3?	(7) ⁻	171.8	(3) ⁺	[M4]		
98.3 2	5.7@ 11	2990.2	(8)	2891.9	(7)			
98.5 2	2.4@ 5	270.3	3 ⁻	171.8	(3) ⁺			
124.1 2	9.3@ 19	2891.9	(7)	2767.8	(6)	D		Mult.: R(asym)=1.09 23 (2005Bh06).
127.5 2	7.1@ 14	171.8	(3) ⁺	44.3	(3) ⁺			
149.0 2	0.87 17	2520.7	(14) ⁺	2371.4	(13) ⁺	D	1.2 2	Mult.: R(asym)=1.9 5 (2005Bh06), R(DCO)=1.56 20 (2005Zh16).
156.1 2	23 3	1281.3	(10) ⁺	1125.1	(9) ⁺	M1	86.2 8	Mult.: R(asym)=1.35 18, R(IPDCO)=-0.09 12 (2005Bh06). Other: D+Q from R(DCO)=1.19 6 (2005Zh16).
176.1 2	0.45 9	2548.6	(14) ⁻	2372.5	(13) ⁻	M1+E2	4.5 3	Mult.: R(asym)=0.8 3, R(IPDCO)=+0.4 3 (2005Bh06). Other: D+Q from R(DCO)=1.14 10 (2005Zh16).
176.1 2	1.0 2	3862.3	(16) ⁺	3686.2	(15) ⁺			
210.6 2	1.6 3	2790.4	13 ⁻	2579.9	(12) ⁻	M1	0.6 1	Mult.: R(asym)=0.97 21, R(IPDCO)=+0.06 19 (2005Bh06). Other: D+Q from R(DCO)=1.47 30 (2005Zh16).
211.4 2	24@ 3	211.40	(2)	0.0	1 ⁺	D		Mult.: R(asym)=1.5 5 (2005Bh06).
235.3 2	5.4@ 11	3225.5	(9)	2990.2	(8)	(M1)		Mult.: R(asym)=1.1 4, R(IPDCO)=-0.0 5 (2005Bh06).
258.5 2	4.7 9	2371.4	(13) ⁺	2112.8	(12) ⁺	D+Q	17.1 7	E γ : Initial level energy for this transition taken from figure 8 of 2005Bh06 ; 2372.3 listed in authors' table 1 seems a misprint. Mult.: R(DCO)=1.27 9 (2005Zh16).
258.7 2	2.1 4	2372.5	(13) ⁻	2113.8	(12) ⁻			E γ : Initial level energy for this transition taken from figure 8 of 2005Bh06 ; 2371.5 listed in authors' table 1 seems a misprint.
279.8 2	1.5 3	3070.2	(14) ⁻	2790.4	13 ⁻	M1	14.7 6	Mult.: R(asym)=1.8 3, R(IPDCO)=-0.32 15 (2005Bh06). Other: D from R(DCO)=1.13 8 (2005Zh16).
								E γ : placement from 2005Zh16 . Ordering of the 279.8 γ -335.3 γ cascade is reversed in 2005Bh06 .
280.7 2	62 12	539.8	(8) ⁻	259.3?	(7) ⁻	M1	100	Mult.: R(asym)=1.7 2, R(IPDCO)=-0.02 2 (2005Bh06). Other: E1 is assigned from R(DCO)=1.09 4 in 2005Zh16 .
324.4 2	4.2 8	1125.1	(9) ⁺	800.6	9 ⁻		8.7 5	

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¹³⁰Te(¹¹B,5n γ) **2005Bh06,2005Zh16** (continued)

$\gamma(^{136}\text{La})$ (continued)

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$I\gamma'^a$	Comments
335.3 2	3.0 6	3405.5	(15 ⁻)	3070.2	(14 ⁻)	M1		Mult.: R(asym)=1.7 3, R(IPDCO)=-0.8 3 (2005Bh06). Other: D from R(DCO)=1.10 9 (2005Zh16). E γ : placement from 2005Zh16. Ordering of the 279.8 γ -335.3 γ cascade is reversed in 2005Bh06.
351.4 2	100@ 20	562.8	(3)	211.40	(2)	E1		Mult.: R(asym)=2.3 5, R(IPDCO)=+0.29 13 (2005Bh06).
352.8 ^b 2	0.3 1	2465.6?	(13 ⁺)	2112.8	(12 ⁺)			
356.6 2	0.9 2	2970.5	(14 ⁻)	2614.0	(13 ⁻)	M1		Mult.: R(asym)=1.2 3, R(IPDCO)=+0.16 21 (2005Bh06).
372.2 2	0.38 8	2920.8		2548.6	(14 ⁻)			
372.2 2	1.1 2	3686.2	(15 ⁺)	3314.0	(14 ⁺)	D+Q	3.0 2	Mult.: R(DCO)=1.26 13 (2005Zh16).
406.3 2	48 5	1687.6	(11 ⁺)	1281.3	(10 ⁺)	M1+E2	70.4 8	Mult.: R(asym)=1.43 19, R(IPDCO)=0 (2005Bh06). Other: D+Q from R(DCO)=1.09 6 (2005Zh16).
408.1 2	4.1 8	2520.7	(14 ⁺)	2112.8	(12 ⁺)		16.2 7	Mult.: D+Q from R(DCO)=1.09 8 in 2005Zh16 is in disagreement with adopted placement as $\Delta J=2$ transition.
412.4 2	0.7 1	4147.2	(17 ⁺)	3734.7	(16 ⁺)	M1+E2	2.4 2	Mult.: R(asym)=1.4 7 (2005Bh06), R(IPDCO)=-0.3 2 (2005Bh06). Other: D from R(DCO)=1.06 12 (2005Zh16). E γ : placement from 2005Zh16. The ordering of 412 γ -483 γ cascade is reversed in 2005Bh06.
420.4 2	9.6@ 19	983.3	(4)	562.8	(3)			
425.3 2	19 2	2112.8	(12 ⁺)	1687.6	(11 ⁺)	M1+E2	46.5 7	Mult.: R(asym)=1.77 24, R(IPDCO)=0 (2005Bh06).
429.9 2	1.9 4	3822.5	(15 ⁻ ,16 ⁻)	3392.5	(14,15 ⁻)			
438.1& 5		3843.6	(16 ⁻)	3405.5	(15 ⁻)	D+Q	3.1 2	Mult.: R(DCO)=1.13 9 (2005Zh16).
439.1& 5		2810.6	(12,13,14)	2371.4	(13 ⁺)	D	4.8 3	Mult.: R(DCO)=1.28 10 2005Zh16.
458.5 2	11.3 11	800.6	9 ⁻	341.8	(8 ⁻)	D	14.3 6	Mult.: R(DCO)=1.14 8 (2005Zh16).
480.0 2		1281.3	(10 ⁺)	800.6	9 ⁻		0.9 2	
483.4 2	0.8 2	4630.6	(18 ⁺)	4147.2	(17 ⁺)	D	2.1 3	Mult.: R(DCO)=1.23 20 (2005Zh16). E γ : placement from 2005Zh16. The ordering of 412 γ -483 γ cascade is reversed in 2005Bh06.
498.3 2	5.3 11	1521.9	(10 ⁻)	1023.8	(10 ⁻)	M1	11.2 5	Mult.: R(asym)=1.8 4, R(IPDCO)=-0.05 6 (2005Bh06). Other: D+Q from R(DCO)=1.42 9 (2005Zh16).
500.2 2	2.4 5	2614.0	(13 ⁻)	2113.8	(12 ⁻)			
503.1& 5		3314.0	(14 ⁺)	2810.6	(12,13,14)		2.0 2	
539.0 2	0.6 1	4401.3	(17 ⁺)	3862.3	(16 ⁺)		2.1 2	
549.7 2	1.4 3	4393.3	17 ⁻	3843.6	(16 ⁻)	D	1.4 2	Mult.: R(DCO)=1.18 19 (2005Zh16).
585.5 2	35 4	1125.1	(9 ⁺)	539.8	(8 ⁻)	E1	91.3 9	Mult.: R(asym)=1.4 2, R(IPDCO)=+0.05 3 (2005Bh06). Other: D from R(DCO)=1.19 5 (2005Zh16).
592.0 2	0.1	2113.8	(12 ⁻)	1521.9	(10 ⁻)			
596.3 2	2.4 5	3117.0	(15 ⁺)	2520.7	(14 ⁺)	M1	4.5 2	Mult.: R(asym)=1.58 25,

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¹³⁰Te(¹¹B,5n γ) **2005Bh06,2005Zh16** (continued)

γ (¹³⁶La) (continued)

E_γ [†]	I_γ [‡]	E_i (level)	J_i^π	E_f	J_f^π	Mult.#	$I\gamma'^a$	Comments
								R(IPDCO)=+0.06 5 (2005Bh06). Other: D from R(DCO)=1.12 9 (2005Zh16).
597.0& 5		5227.6	(19 ⁺)	4630.6	(18 ⁺)		1.5 2	
617.5 2	0.5 1	3734.7	(16 ⁺)	3117.0	(15 ⁺)	D+Q	3.1 3	Mult.: R(DCO)=1.09 11 (2005Zh16).
677.6 2	3.3 7	2790.4	13 ⁻	2112.8	(12 ⁺)	D	17.3 7	Mult.: R(DCO)=1.28 8 (2005Zh16).
681.0& 5		5082.3		4401.3	(17 ⁺)		1.0 2	
681.6& 5		5074.9	(18 ⁻)	4393.3	17 ⁻		1.1 2	E_γ : from Table 1 of 2005Zh16, 681.0 in Figure 1 of 2005Zh16.
682.1 2	27 5	1023.8	(10 ⁻)	341.8	(8 ⁻)	E2		Mult.: R(asym)=0.6 1, R(IPDCO)=+0.19 6 (2005Bh06). Other: Q from R(DCO)=0.78 5 (2005Zh16).
683.8 2	10.8 11	2371.4	(13 ⁺)	1687.6	(11 ⁺)	Q	19.4 6	Mult.: R(DCO)=0.79 6 (2005Zh16).
720.0& 5		1521.9	(10 ⁻)	800.6	9 ⁻		2.8 3	
745.1 2	5.3@ 11	1728.5	(5)	983.3	(4)			
750.2 2	1.5 3	1875.3	(10 ⁺)	1125.1	(9 ⁺)	M1+E2		Mult.: R(asym)=1.4 6, R(IPDCO)=-0.1 1 (2005Bh06).
778.5 2	0.96 19	3392.5	(14,15 ⁻)	2614.0	(13 ⁻)		<0.5	
831.5 2	1.9 4	2112.8	(12 ⁺)	1281.3	(10 ⁺)	Q	10.1 4	Mult.: R(DCO)=0.81 8 (2005Zh16).
835.0& 5		5909.9	(19 ⁻)	5074.9	(18 ⁻)		1.0 2	
852.0 2	0.1	3822.5	(15 ⁻ ,16 ⁻)	2970.5	(14 ⁻)			
892.3 2	1.0 2	2579.9	(12 ⁻)	1687.6	(11 ⁺)		2.5 2	
896.4& 5		4630.6	(18 ⁺)	3734.7	(16 ⁺)		0.6 2	
942.6 2	1.2 2	3314.0	(14 ⁺)	2371.4	(13 ⁺)	M1	3.0 3	Mult.: R(asym)=1.1 4, R(IPDCO)=-0.2 1 (2005Bh06). Other: Q from R(DCO)=0.88 11 (2005Zh16).
1030.4& 5		4147.2	(17 ⁺)	3117.0	(15 ⁺)		0.9 3	
1039.3 2	13.2@ 13	2767.8	(6)	1728.5	(5)			
1058.0 2	1.5 3	2579.9	(12 ⁻)	1521.9	(10 ⁻)	E2	4.4 3	Mult.: R(asym)=0.39 26, R(IPDCO)=+0.24 11 (2005Bh06).
1089.9 2	7.0 14	2113.8	(12 ⁻)	1023.8	(10 ⁻)	E2		Mult.: R(asym)=0.57 11, R(IPDCO)=+0.19 (2005Bh06).
1090.2&b 5		2112.8	(12 ⁺)	1023.8	(10 ⁻)		35.7 2	Mult.: D from R(DCO)=1.14 7 in 2005Zh16 is in disagreement with $\Delta J=2$ transition from Adopted Levels. E_γ : placement from 2005Zh16, however, this would result in a strong M2 transition as thus, is not included in the Adopted Gammas.
1091.0&b 5		2614.0	(13 ⁻)	1521.9	(10 ⁻)		7.5 5	E_γ : proposed by 2005Zh16, however, as this would result in a $\Delta J=3$, $\Delta\pi$ =no transition, the transition is not included in the Adopted Gammas.
1165.8 2	28@ 3	1728.5	(5)	562.8	(3)			
1214.1 2	0.2	3734.7	(16 ⁺)	2520.7	(14 ⁺)	Q	1.4 2	Mult.: R(asym)=0.86 22 (2005Bh06), R(DCO)=0.82 15 (2005Zh16).

[†] From 2005Bh06, except where noted. Authors state a general uncertainty of 0.1-0.2 keV. Evaluator assigns an uncertainty of 0.2 keV to all transitions.

[‡] Estimated from prompt spectra and normalized to 100 for the total combined intensity of the 682.1 γ , 458.5 γ and 280.7 γ , except where noted. From a general statement by 2005Bh06 that overall uncertainty is 10% for strong transitions and 15-20% for weak

$^{130}\text{Te}(^{11}\text{B},5n\gamma)$ **2005Bh06,2005Zh16** (continued)

$\gamma(^{136}\text{La})$ (continued)

transitions, evaluator assigns a 10% uncertainty for $I_\gamma > 10$ and 20% uncertainty for $I_\gamma < 10$.

From R(asym) and R(IPDCO) in [2005Bh06](#) and R(DCO) in [2005Zh16](#), as indicated in the comments.

@ Estimated from prompt spectra and normalized to 100 for the intensity of the 351.4 γ . From a general statement by [2005Bh06](#) that overall uncertainty is 10% for strong transitions and 15-20% for weak transitions, evaluator assigns a 10% uncertainty for $I_\gamma > 10$ and 20% uncertainty for $I_\gamma < 10$.

& From [2005Zh16](#). Authors make a general statement that uncertainties are less than 0.5 keV. Evaluator assigns 0.5 keV uncertainty to all transitions.

^a From [2005Zh16](#), normalized to $I_\gamma(280\gamma)=100$.

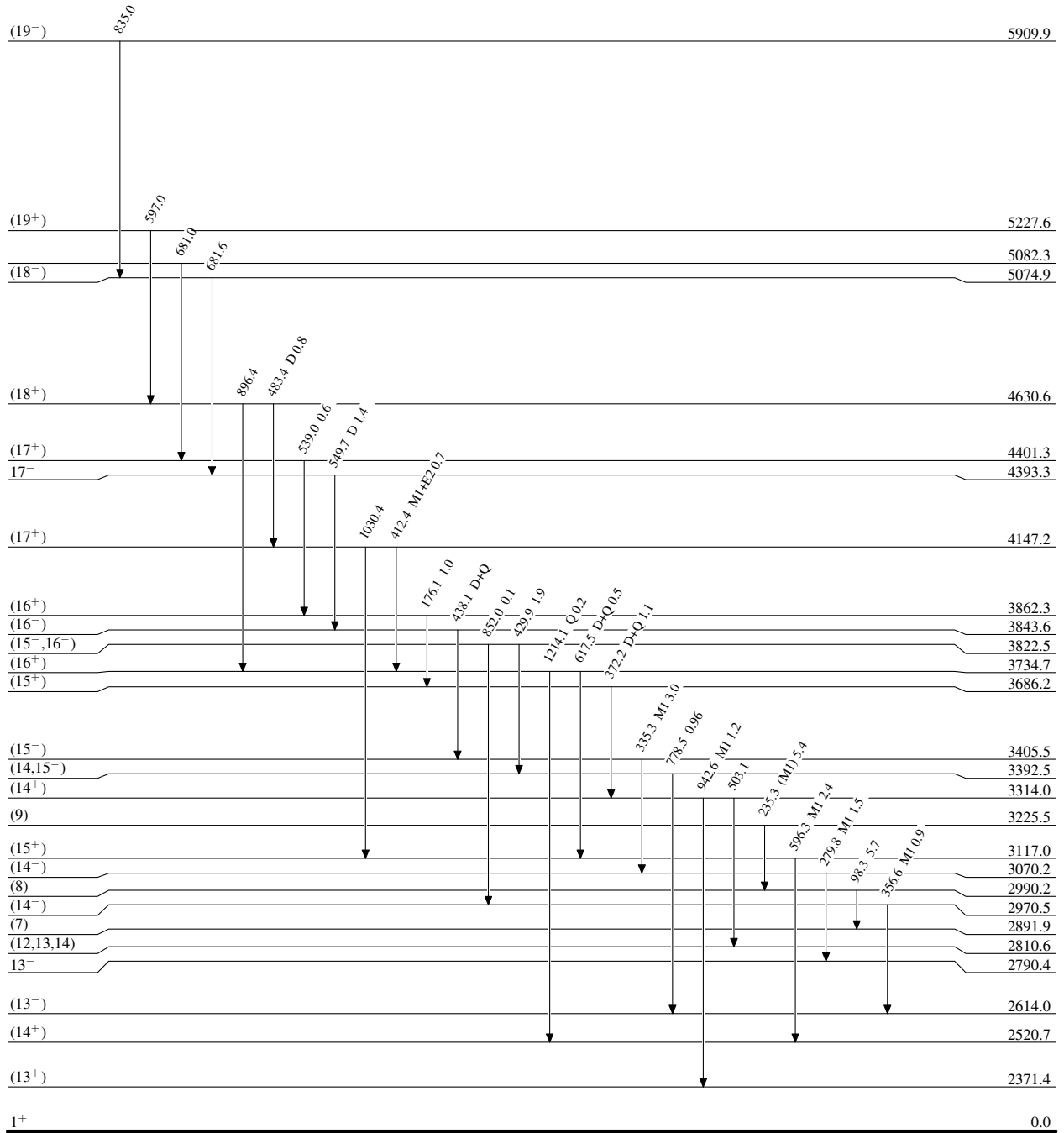
^b Placement of transition in the level scheme is uncertain.

$^{130}\text{Te}(^{11}\text{B},5n\gamma)$ 2005Bh06,2005Zh16

Level Scheme
Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



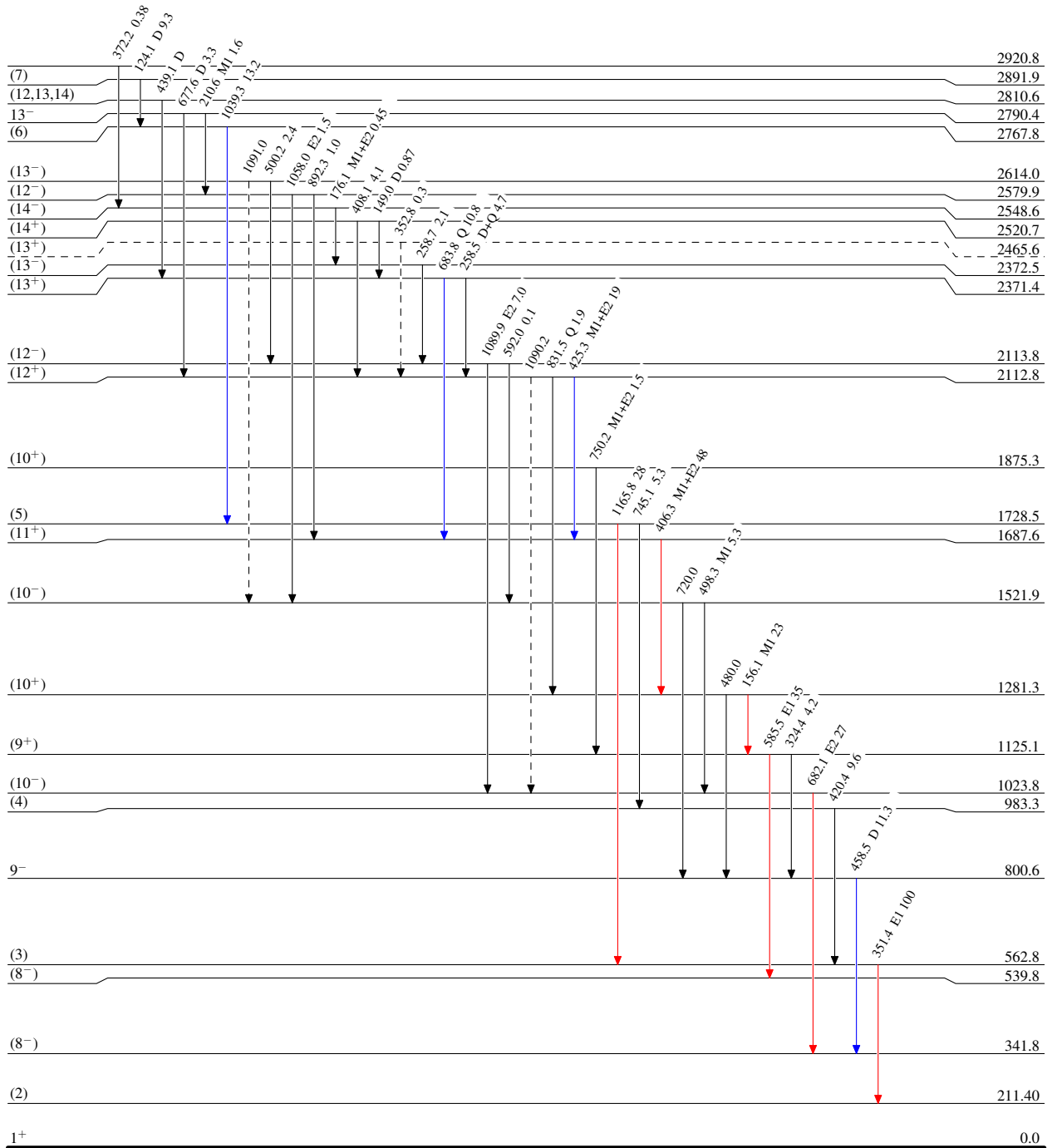
¹³⁰Te(11B,5nγ) 2005Bh06,2005Zh16

Legend

Level Scheme (continued)

Intensities: Relative I_γ

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}
- - - - - γ Decay (Uncertain)



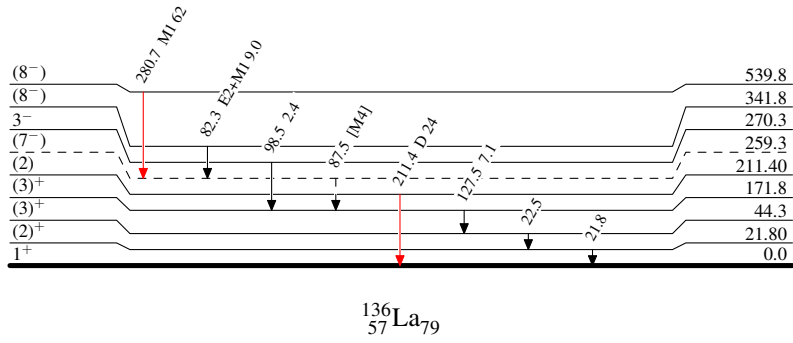
¹³⁰Te(11B,5nγ) 2005Bh06,2005Zh16

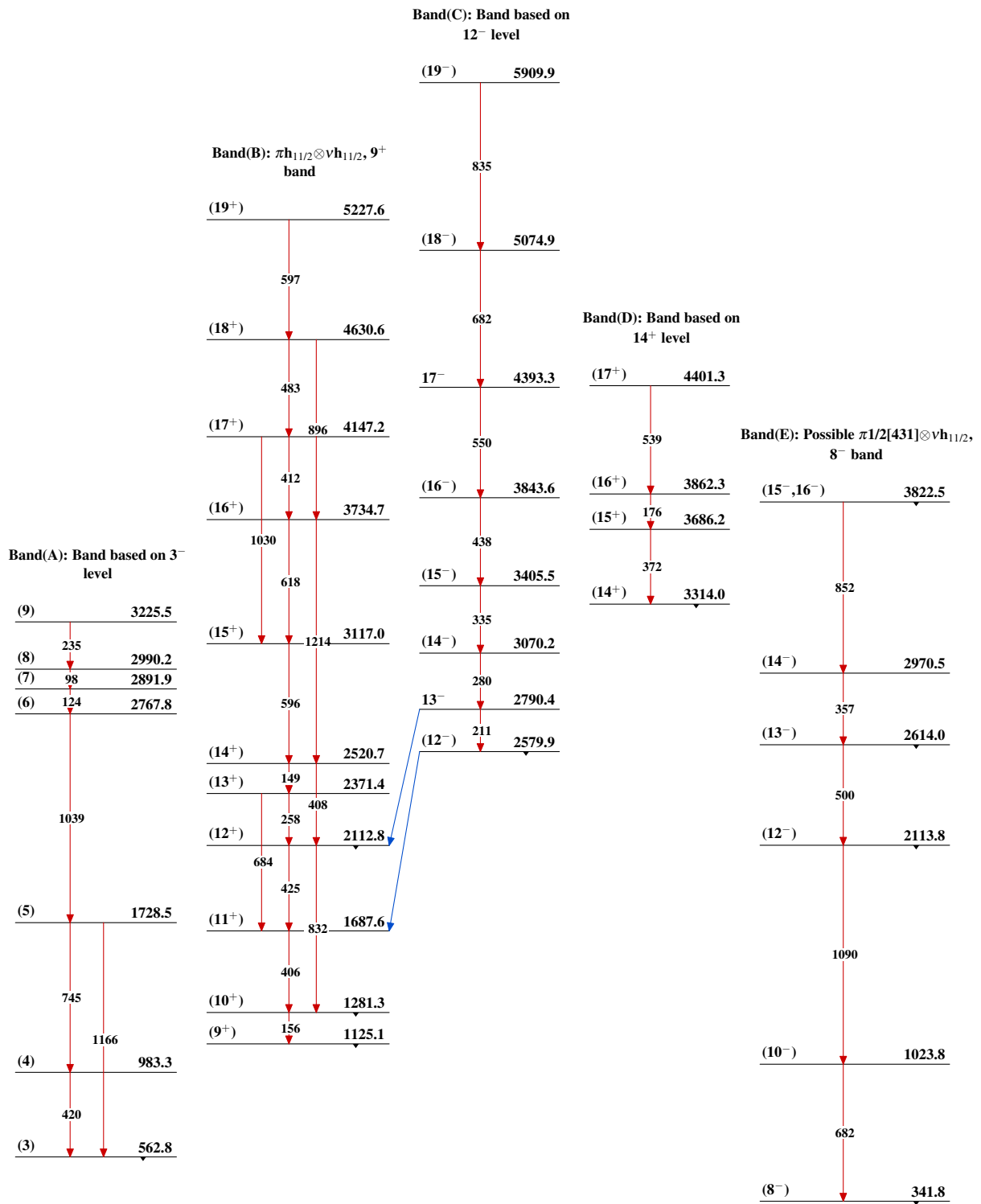
Legend

Level Scheme (continued)

Intensities: Relative I_γ

- ▶ I_γ < 2% × I_γ^{max}
- ▶ I_γ < 10% × I_γ^{max}
- ▶ I_γ > 10% × I_γ^{max}
- - -▶ γ Decay (Uncertain)

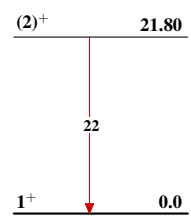


$^{130}\text{Te}(^{11}\text{B},5n\gamma)$ 2005Bh06,2005Zh16 $^{136}_{57}\text{La}_{79}$

$^{130}\text{Te}(^{11}\text{B},5n\gamma)$ 2005Bh06,2005Zh16 (continued)

Band(F): $\pi d_{5/2} \otimes \nu d_{3/2}$,
1⁺ band

(3)⁺ 171.8

 $^{136}_{57}\text{La}_{79}$