^{173}Yb(^{18}O,4nγ) 2007Zh09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 110, 999 (2009)	1-Nov-2008

Target: Enriched ^{173}Yb; Projectile: ^{18}O, E=78 and 85 MeV; Detector: GEMINI γ-ray detector array consists of 13 HPGe with BGO anti Compton shield; Measured: Eγ, Iγ, x-γ-t and $\gamma\gamma$-t coin, DCO ratios.

^{187}Pt Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]
0.0[c]	3/2$^-$		1839.8[b] 8	23/2$^-$	3039.1[f] 10	33/2
9.3 7	3/2$^-$		1869.6[c] 8	23/2$^-$	3068.5[h] 10	35/2$^-$
25.6[d] 5	5/2$^-$		1896.3[b] 9	25/2$^-$	3075.7[h] 11	33/2
57.2[a] 11	7/2$^-$		1987.7[e] 11	25/2	3116.3 9	
75.0 7	3/2$^-$		2006.5[a] 10	23/2$^-$	3211.3[g] 9	33/2
174.4[&] 8	11/2$^+$	311[i] μs 15	2070.8[d] 8	25/2$^-$	3287.1[a] 12	33/2$^-$
190.6 5	3/2$^-$		2091.5[&] 8	27/2$^+$	3297.4[b] 11	35/2$^-$
203.2[@] 8	13/2$^+$		2120.4[h] 9		3332.5[&] 9	35/2$^+$
204.3[c] 5	7/2$^-$		2142.8[@] 8	29/2$^+$	3414.7[h] 12	35/2
225.7[a] 11	9/2$^-$		2230.8[b] 9	27/2$^-$	3488.5[@] 9	37/2$^+$
305.9[d] 5	9/2$^-$		2263.6[a] 11	25/2$^-$	3506.4 10	
430.7[a] 10	11/2$^-$		2322.7 9	25/2$^-$	3532.1[g] 10	35/2
465.1[&] 8	15/2$^+$		2393.4[c] 9	27/2$^-$	3552.3[b] 11	37/2$^-$
500.3[c] 5	11/2$^-$		2424.8[g] 9	27/2	3573.9[e] 11	
505.0[@] 8	17/2$^+$		2433.6[b] 9	29/2$^-$	3574.9[f] 9	35/2$^+$
650.9[a] 10	13/2$^-$		2482.4[d] 9	29/2$^-$	3598.4 10	37/2$^+$
694.5[d] 6	13/2$^-$		2492.9[a] 11	27/2$^-$	3606.7[d] 12	37/2$^-$
886.8[c] 5	15/2$^-$		2518.5[e] 12	29/2	3613.2[g] 10	35/2
894.4[a] 10	15/2$^-$		2518.9[f] 9	29/2	3617.2[h] 11	39/2$^-$
902.8[&] 8	19/2$^+$		2608.5[h] 10	31/2$^-$	3720.7[h] 12	37/2
928.1[e] 9	17/2		2626.4[g] 9	29/2	3784.5[h] 13	37/2
942.8[@] 8	21/2$^+$		2632.5[h] 10	31/2$^-$	3839.0[f] 11	
1153.1[a] 9	17/2$^-$		2654.0[e] 12	29/2	3847.7[&] 10	(39/2$^+$)
1161.1[d] 6	17/2$^-$		2744.5[&] 9	31/2$^+$	3889.0[b] 12	39/2$^-$
1212.5[g] 9	19/2		2745.1[a] 11	29/2$^-$	3976.5[f] 10	
1349.8[c] 6	19/2$^-$		2781.6[h] 9	31/2$^-$	3992.2[g] 10	37/2
1409.1 8	17/2$^-$		2792.9[b] 9	31/2$^-$	4045.3[@] 11	41/2$^+$
1418.0[e] 9	21/2		2852.0 12		4075.9[h] 13	39/2
1429.9[a] 10	19/2$^-$		2852.4[@] 9	33/2$^+$	4249.8[b] 12	41/2$^-$
1442.7 7	21/2$^-$		2871.1[f] 9	31/2$^+$	4256.0[g] 11	
1452.9[&] 8	23/2$^+$		2900.6[g] 9	31/2	4307.3[d] 13	41/2$^-$
1496.2[@] 8	25/2$^+$		2915.0[c] 11	31/2$^-$	4318.2 11	41/2$^+$
1616.1 9			2942.7[b] 10	33/2$^-$	4554.5[b] 13	43/2$^-$
1657.8[b] 8	21/2$^-$[#]		2996.2[d] 11	33/2$^-$	4723.3[@] 12	45/2$^+$
1691.7[d] 7	21/2$^-$		3013.0[a] 12	31/2$^-$	4986.3[b] 13	45/2$^-$
1716.9[a] 10	21/2$^-$		3017.4[g] 10	31/2	5274.0[b] 14	47/2$^-$
1789.8[g] 9	23/2		3038.8[e] 10	33/2	5510.3[@] 13	49/2$^+$

[†] From a least-squares adjustment to the γ-ray energies.
[‡] Assigned by 2007Zh09 from γ-ray multipolarities and previously known J$^\pi$ of the lower levels.

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^{173}Yb(^{18}O,4nγ) 2007Zh09 (continued)

^{187}Pt Levels (continued)

[#] The DCO ratio=0.96 *9* of the 715γ, feeding the 21/2$^+$ state, indicates that the transition would be a stretched Q transition or a dipole transition that would connect levels with same spin values. Considering the observation of parallel 755.2γ feeding to the 19/2$^+$ state, J$^\pi$=21/2$^-$ is assigned for this level (2007Zh09).
[@] Band 1:configuration=ν I$_{13/2}$: α=1/2$^+$.
[&] Band 1:configuration=ν I$_{13/2}$: α=1/2$^-$.
[a] Band 2:configuration=ν 7/2$^-$[503].
[b] Band 3:configuration=ν i$^2_{13/2}$ ν J(p$_{3/2}$ or f$_{5/2}$.
[c] Band 4:configuration=ν 3/2$^-$[512].
[d] Band 5:configuration=ν 1/2$^-$[521].
[e] Band Structure 1.
[f] Band Structure 2.
[g] Band Structure 3.
[h] Band Structure 4.
[i] From Adopted Levels.

γ(^{187}Pt)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[#]	DCO ratio[‡]	Comments
(56.6)		1896.3	25/2$^-$	1839.8	23/2$^-$			
115.6 *5*	4 *1*	190.6	3/2$^-$	75.0	3/2$^-$			
164.9 *5*	5 *2*	190.6	3/2$^-$	25.6	5/2$^-$			R$_{ADO}$=0.56 *17*.
168.4 *5*	81 *24*	225.7	9/2$^-$	57.2	7/2$^-$	D	0.65 *9*	R$_{ADO}$=0.56 *3*.
178.8 *5*	19 *6*	204.3	7/2$^-$	25.6	5/2$^-$	D	0.67 *10*	R$_{ADO}$=0.61 *7*.
181.3 *5*	18 *5*	190.6	3/2$^-$	9.3	3/2$^-$			
182.0 *2*	142 *21*	1839.8	23/2$^-$	1657.8	21/2$^-$		0.84 *6*	R$_{ADO}$=0.87 *4*.
190.7 *5*	26 *8*	190.6	3/2$^-$	0.0	3/2$^-$		0.96 *16*	R$_{ADO}$=1.4 *7*.
194.5 *5*	13 *4*	500.3	11/2$^-$	305.9	9/2$^-$	D	0.69 *21*	R$_{ADO}$=0.70 *13*.
201.6 *5*	61 *18*	2626.4	29/2	2424.8	27/2		1.49 *20*	R$_{ADO}$=1.62 *12*.
202.6 *5*	14 *4*	2433.6	29/2$^-$	2230.8	27/2$^-$			R$_{ADO}$=1.00 *15*.
204.2 *5*	42 *13*	204.3	7/2$^-$	0.0	3/2$^-$	Q	1.14 *12*	R$_{ADO}$=1.31 *9*.
205.0 *5*	85 *25*	430.7	11/2$^-$	225.7	9/2$^-$	D	0.57 *7*	I$_\gamma$: Iγ(205.0):Iγ(373.5)=100:66(5) from Branching ratio. R$_{ADO}$=0.59 *4*.
207.0 *5*	28 *8*	1616.1		1409.1	17/2$^-$			R$_{ADO}$=1.1 *4*.
220.1 *5*	72 *22*	650.9	13/2$^-$	430.7	11/2$^-$	D	0.61 *6*	I$_\gamma$: Iγ(220.1):Iγ(425.1)=100:125(9) from Branching ratio. R$_{ADO}$=0.61 *7*.
223.7 *5*	31 *9*	1839.8	23/2$^-$	1616.1				
224.0 *5*	42 *13*	2120.4		1896.3	25/2$^-$		0.75 *11*	R$_{ADO}$=0.90 *13*.
225.8 *5*	12 *4*	2744.5	31/2$^+$	2518.9	29/2			
229.2 *5*	3 *1*	2492.9	27/2$^-$	2263.6	25/2$^-$			I$_\gamma$: Iγ(229.2):Iγ(486.6)=100:267(45) from Branching ratio. R$_{ADO}$=0.85 *18*.
238.6 *5*	82 *25*	1896.3	25/2$^-$	1657.8	21/2$^-$	Q	1.13 *13*	R$_{ADO}$=1.30 *11*.
243.5 *5*	41 *12*	894.4	15/2$^-$	650.9	13/2$^-$	D	0.66 *10*	I$_\gamma$: Iγ(243.5):Iγ(463.8)=100:249(20) from Branching ratio. R$_{ADO}$=0.76 *5*.
248.8 *5*	54 *16*	1657.8	21/2$^-$	1409.1	17/2$^-$	Q	1.16 *23*	R$_{ADO}$=1.16 *18*.
252.2 *5*	4 *1*	2745.1	29/2$^-$	2492.9	27/2$^-$			
257.0 *5*	9 *3*	2263.6	25/2$^-$	2006.5	23/2$^-$	D	0.71 *23*	I$_\gamma$: Iγ(257.0):Iγ(546.6)=100:400(44) from Branching ratio. R$_{ADO}$=0.59 *11*.
258.7 *5*	37 *11*	1153.1	17/2$^-$	894.4	15/2$^-$	D	0.43 *13*	I$_\gamma$: Iγ(258.7):Iγ(502.2)=100:276(42) from

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^{173}Yb(^{18}O,4nγ) 2007Zh09 (continued)

$\gamma(^{187}Pt)$ (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	DCO ratio[‡]	Comments
								Branching ratio. R_{ADO}=0.81 *11*.
262.0 *1*	381 *19*	465.1	15/2$^+$	203.2	13/2$^+$	D	0.50 *4*	R_{ADO}=0.52 *15*.
263.8 *5*	45 *13*	4256.0		3992.2	37/2			
264.0 *5*	17 *5*	3116.3		2852.4	33/2$^+$			
264.1 *5*	30 *9*	3839.0		3574.9	35/2$^+$			
267.9 *5*	3 *1*	3013.0	31/2$^-$	2745.1	29/2$^-$			R_{ADO}=0.65 *18*.
274.0 *5*	46 *14*	2900.6	31/2	2626.4	29/2		1.54 *22*	R_{ADO}=1.59 *20*.
276.7 *5*	22 *7*	1429.9	19/2$^-$	1153.1	17/2$^-$	D	0.61 *23*	I_γ: Iγ(276.7):Iγ(535.5)=100:395(38) from Branching ratio. R_{ADO}=0.58 *9*.
280.3 *1*	320 *16*	305.9	9/2$^-$	25.6	5/2$^-$	Q	1.06 *5*	R_{ADO}=1.34 *22*.
281.6 *5*	13 *4*	1442.7	21/2$^-$	1161.1	17/2$^-$	Q	0.94 *13*	R_{ADO}=1.29 *20*.
287.0 *5*	17 *5*	1716.9	21/2$^-$	1429.9	19/2$^-$			I_γ: Iγ(287.0):Iγ(563.8)=100:435(44) from Branching ratio. R_{ADO}=0.70 *14*.
289.6 *5*	10 *3*	2006.5	23/2$^-$	1716.9	21/2$^-$			I_γ: Iγ(289.6):Iγ(576.7)=100:700(81) from Branching ratio. R_{ADO}=0.49 *13*.
290.7 *2*	119 *18*	465.1	15/2$^+$	174.4	11/2$^+$	Q	1.07 *8*	R_{ADO}=1.25 *11*.
294.1 *5*	24 *7*	3075.7	33/2	2781.6	31/2$^-$	D	0.40 *10*	R_{ADO}=0.59 *4*.
294.6 *5*	52 *16*	3039.1	33/2	2744.5	31/2$^+$	D	0.60 *10*	R_{ADO}=0.60 *7*.
296.0 *2*	160 *24*	500.3	11/2$^-$	204.3	7/2$^-$	Q	1.31 *16*	R_{ADO}=1.44 *10*.
301.8 *1*	1000 *50*	505.0	17/2$^+$	203.2	13/2$^+$	Q	1.13 *3*	R_{ADO}=1.23 *3*.
306.0 *5*	8 *2*	3720.7	37/2	3414.7	35/2	D	0.71 *21*	R_{ADO}=0.61 *9*.
310.5 *5*	31 *9*	3211.3	33/2	2900.6	31/2	D	0.68 *12*	R_{ADO}=0.88 *23*.
313.1 *5*	17 *5*	2433.6	29/2$^-$	2120.4				
320.6 *5*	11 *3*	3532.1	35/2	3211.3	33/2			R_{ADO}=0.9 *3*.
334.4 *1*	208 *10*	2230.8	27/2$^-$	1896.3	25/2$^-$	D	0.73 *9*	R_{ADO}=1.02 *8*.
339.0 *5*	16 *5*	3414.7	35/2	3075.7	33/2	D	0.40 *13*	R_{ADO}=0.54 *3*.
348.2 *5*	5 *2*	2781.6	31/2$^-$	2433.6	29/2$^-$			
355.2 *5*	4 *1*	4075.9	39/2	3720.7	37/2	D	0.5 *3*	R_{ADO}=0.53 *22*.
359.1 *5*	4 *1*	2852.0		2492.9	27/2$^-$			
359.3 *5*	10 *3*	3847.7	(39/2$^+$)	3488.5	37/2$^+$			
359.4 *5*	32 *10*	2792.9	31/2$^-$	2433.6	29/2$^-$	D	0.6 *3*	R_{ADO}=0.8 *3*.
369.8 *5*	6 *2*	3784.5	37/2	3414.7	35/2			R_{ADO}=0.36 *14*.
372.2 *5*	8 *3*	3488.5	37/2$^+$	3116.3				
373.5 *5*	56 *17*	430.7	11/2$^-$	57.2	7/2$^-$	Q	1.06 *18*	R_{ADO}=1.24 *23*.
377.8 *5*	38 *11*	2608.5	31/2$^-$	2230.8	27/2$^-$			R_{ADO}=1.11 *8*.
379.0 *5*	53 *16*	3992.2	37/2	3613.2	35/2	D	0.50 *18*	R_{ADO}=0.42 *14*.
379.1 *5*	76 *23*	2070.8	25/2$^-$	1691.7	21/2$^-$	Q	1.10 *9*	R_{ADO}=1.25 *8*.
386.5 *2*	167 *25*	886.8	15/2$^-$	500.3	11/2$^-$	Q	0.92 *12*	R_{ADO}=1.50 *9*.
388.6 *2*	141 *21*	694.5	13/2$^-$	305.9	9/2$^-$	Q	1.11 *12*	R_{ADO}=1.22 *4*.
390.1 *5*	9 *3*	3506.4		3116.3				
390.9 *5*	33 *10*	3017.4	31/2	2626.4	29/2			R_{ADO}=0.80 *21*.
397.6 *2*	100 *15*	902.8	19/2$^+$	505.0	17/2$^+$	D	0.35 *4*	R_{ADO}=0.36 *4*.
400.0 *5*	12 *4*	1896.3	25/2$^-$	1496.2	25/2$^+$			
401.7 *5*	31 *9*	2632.5	31/2$^-$	2230.8	27/2$^-$			R_{ADO}=1.3 *4*.
402.0 *5*	15 *4*	3613.2	35/2	3211.3	33/2			R_{ADO}=0.7 *3*.
411.6 *5*	57 *17*	2482.4	29/2$^-$	2070.8	25/2$^-$	Q	1.07 *12*	R_{ADO}=1.21 *7*.
425.1 *5*	90 *27*	650.9	13/2$^-$	225.7	9/2$^-$	Q	0.93 *7*	R_{ADO}=1.24 *7*.
427.2 *5*	35 *10*	2518.9	29/2	2091.5	27/2$^+$	D	0.71 *25*	R_{ADO}=0.51 *14*.
436.0 *5*	22 *7*	3068.5	35/2$^-$	2632.5	31/2$^-$			R_{ADO}=1.41 *21*.
437.7 *1*	263 *13*	902.8	19/2$^+$	465.1	15/2$^+$	Q	0.94 *7*	R_{ADO}=1.21 *5*.
437.8 *1*	706 *35*	942.8	21/2$^+$	505.0	17/2$^+$	Q	0.93 *5*	R_{ADO}=1.20 *6*.
445.3 *5*	33 *10*	1657.8	21/2$^-$	1212.5	19/2		0.9 *3*	R_{ADO}=1.1 *3*.

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^{173}Yb(^{18}O,4nγ) 2007Zh09 (continued)

$\gamma(^{187}Pt)$ (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	DCO ratio[‡]	Comments
460.0 *5*	24 *7*	3068.5	35/2$^-$	2608.5	31/2$^-$			R_{ADO}=1.18 *11*.
463.0[@] *5*	74[@] *22*	928.1	17/2	465.1	15/2$^+$		0.35 *8*	R_{ADO}=0.45 *6*.
463.0[@] *2*	129[@] *19*	1349.8	19/2$^-$	886.8	15/2$^-$	Q	1.02 *4*	R_{ADO}=1.22 *6*.
463.8 *2*	102 *15*	894.4	15/2$^-$	430.7	11/2$^-$	Q	1.09 *17*	R_{ADO}=1.22 *3*.
466.6 *2*	121 *18*	1161.1	17/2$^-$	694.5	13/2$^-$	Q	1.15 *7*	R_{ADO}=1.22 *4*.
475.8 *5*	20 *6*	2900.6	31/2	2424.8	27/2			R_{ADO}=1.5 *3*.
480.1 *5*	10 *3*	3332.5	35/2$^+$	2852.4	33/2$^+$			
481.4 *5*	4 *1*	2745.1	29/2$^-$	2263.6	25/2$^-$			R_{ADO}=1.15 *16*.
486.6 *5*	8 *2*	2492.9	27/2$^-$	2006.5	23/2$^-$			R_{ADO}=1.4 *3*.
489.9 *5*	36 *11*	1418.0	21/2	928.1	17/2			R_{ADO}=1.4 *4*.
490.0 *5*	67 *20*	1839.8	23/2$^-$	1349.8	19/2$^-$	Q	0.93 *15*	R_{ADO}=1.25 *11*.
502.2 *5*	102 *31*	1153.1	17/2$^-$	650.9	13/2$^-$	Q	1.0 *3*	R_{ADO}=1.20 *14*.
504.5 *5*	54 *16*	3297.4	35/2$^-$	2792.9	31/2$^-$	Q	1.0 *5*	R_{ADO}=1.5 *5*.
504.7 *5*	46 *14*	1657.8	21/2$^-$	1153.1	17/2$^-$			
509.1 *5*	78 *23*	2942.7	33/2$^-$	2433.6	29/2$^-$	Q	1.02 *12*	R_{ADO}=1.29 *13*.
510.0 *5*	50 *15*	1452.9	23/2$^+$	942.8	21/2$^+$	D	0.46 *16*	R_{ADO}=0.41 *7*.
513.8 *5*	40 *12*	2996.2	33/2$^-$	2482.4	29/2$^-$	Q	1.0 *3*	R_{ADO}=1.25 *12*.
515.1 *5*	30 *9*	3847.7	(39/2$^+$)	3332.5	35/2$^+$			
515.2 *5*	60 *18*	1418.0	21/2	902.8	19/2$^+$	D	0.41 *6*	R_{ADO}=0.41 *6*.
519.6 *5*	48 *14*	3038.8	33/2	2518.9	29/2	Q	1.2 *4*	R_{ADO}=1.6 *3*.
519.8 *5*	49 *15*	1869.6	23/2$^-$	1349.8	19/2$^-$	Q	1.08 *13*	R_{ADO}=1.39 *11*.
520.1 *5*	8 *2*	3013.0	31/2$^-$	2492.9	27/2$^-$			R_{ADO}=1.5 *4*.
521.6 *5*	9 *3*	2915.0	31/2$^-$	2393.4	27/2$^-$	Q	0.9 *5*	R_{ADO}=1.2 *4*.
523.8 *5*	26 *8*	2393.4	27/2$^-$	1869.6	23/2$^-$	Q	1.01 *12*	R_{ADO}=1.19 *16*.
530.6 *5*	80 *24*	1691.7	21/2$^-$	1161.1	17/2$^-$	Q	0.96 *9*	R_{ADO}=1.21 *8*.
530.8 *5*	50 *15*	2518.5	29/2	1987.7	25/2	Q	1.17 *20*	R_{ADO}=1.5 *3*.
534.8 *5*	47 *14*	3573.9		3039.1	33/2			
535.5 *5*	87 *26*	1429.9	19/2$^-$	894.4	15/2$^-$	Q	1.16 *21*	R_{ADO}=1.34 *13*.
535.8 *5*	10 *3*	3574.9	35/2$^+$	3038.8	33/2	D	0.4 *9*	R_{ADO}=0.6 *3*.
537.3 *2*	108 *16*	2433.6	29/2$^-$	1896.3	25/2$^-$	Q	0.93 *12*	R_{ADO}=1.19 *18*.
542.0 *5*	4 *1*	3287.1	33/2$^-$	2745.1	29/2$^-$			R_{ADO}=1.3 *5*.
546.6 *5*	36 *11*	2263.6	25/2$^-$	1716.9	21/2$^-$	Q	1.2 *4*	R_{ADO}=1.36 *9*.
548.7 *5*	27 *8*	3617.2	39/2$^-$	3068.5	35/2$^-$			R_{ADO}=1.27 *24*.
550.1 *2*	168 *25*	1452.9	23/2$^+$	902.8	19/2$^+$	Q	1.06 *15*	R_{ADO}=1.30 *10*.
550.7 *5*	15 *4*	2781.6	31/2$^-$	2230.8	27/2$^-$			R_{ADO}=1.4 *4*.
553.4 *1*	362 *18*	1496.2	25/2$^+$	942.8	21/2$^+$	Q	0.97 *5*	R_{ADO}=1.27 *6*.
556.8 *5*	30 *9*	4045.3	41/2$^+$	3488.5	37/2$^+$	Q	1.15 *25*	R_{ADO}=1.34 *17*.
562.1 *5*	55 *16*	2792.9	31/2$^-$	2230.8	27/2$^-$			R_{ADO}=1.5 *3*.
563.8 *5*	74 *22*	1716.9	21/2$^-$	1153.1	17/2$^-$	Q	0.96 *20*	R_{ADO}=1.36 *14*.
569.7 *5*	94 *28*	1987.7	25/2	1418.0	21/2	Q	0.98 *15*	R_{ADO}=1.4 *3*.
576.7 *5*	70 *21*	2006.5	23/2$^-$	1429.9	19/2$^-$	Q	0.92 *17*	R_{ADO}=1.45 *19*.
577.4 *5*	31 *9*	1789.8	23/2	1212.5	19/2			R_{ADO}=1.19 *23*.
585.0 *5*	24 *7*	3211.3	33/2	2626.4	29/2			
587.9 *5*	55 *16*	3332.5	35/2$^+$	2744.5	31/2$^+$	Q	1.00 *19*	R_{ADO}=1.32 *21*.
591.6 *5*	15 *4*	3889.0	39/2$^-$	3297.4	35/2$^-$			R_{ADO}=1.2 *3*.
595.6 *5*	43 *13*	2091.5	27/2$^+$	1496.2	25/2$^+$	D	0.38 *8*	R_{ADO}=0.64 *10*.
595.7 *5*	34 *10*	3613.2	35/2	3017.4	31/2			
601.5 *5*	26 *8*	2744.5	31/2$^+$	2142.8	29/2$^+$			
609.6 *5*	51 *15*	3552.3	37/2$^-$	2942.7	33/2$^-$			R_{ADO}=1.33 *22*.
610.5 *5*	20 *6*	3606.7	37/2$^-$	2996.2	33/2$^-$			R_{ADO}=1.3 *4*.
628.1 *5*	22 *7*	2070.8	25/2$^-$	1442.7	21/2$^-$	Q	0.92 *8*	R_{ADO}=1.17 *12*.
631.0 *5*	18 *5*	2322.7	25/2$^-$	1691.7	21/2$^-$	Q	0.95 *22*	R_{ADO}=1.4 *3*.
631.7 *5*	21 *6*	3532.1	35/2	2900.6	31/2			R_{ADO}=1.29 *19*.
635.0 *2*	103 *15*	2424.8	27/2	1789.8	23/2			R_{ADO}=1.18 *12*.
636.2 *5*	46 *14*	3488.5	37/2$^+$	2852.4	33/2$^+$	Q	0.96 *21*	R_{ADO}=1.19 *12*.

Continued on next page (footnotes at end of table)

^{173}Yb(^{18}O,4nγ) 2007Zh09 (continued)

$\gamma(^{187}Pt)$ (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	DCO ratio‡	Comments
638.6 *2*	177 *27*	2091.5	27/2$^+$	1452.9	23/2$^+$	Q	1.02 *12*	R_{ADO}=1.24 *15*.
644.0 *5*	26 *8*	3976.5		3332.5	35/2$^+$			
645.0 *5*	9 *3*	3720.7	37/2	3075.7	33/2			
646.5 *2*	196 *29*	2142.8	29/2$^+$	1496.2	25/2$^+$	Q	0.94 *9*	R_{ADO}=1.23 *11*.
653.0 *2*	128 *19*	2744.5	31/2$^+$	2091.5	27/2$^+$	Q	1.09 *11*	R_{ADO}=1.24 *7*.
665.5 *5*	8 *2*	4554.5	43/2$^-$	3889.0	39/2$^-$			R_{ADO}=1.33 *25*.
666.3 *5*	31 *9*	2654.0	29/2	1987.7	25/2	Q	1.0 *3*	R_{ADO}=1.3 *3*.
678.0 *5*	16 *5*	4723.3	45/2$^+$	4045.3	41/2$^+$			R_{ADO}=1.3 *3*.
697.5 *5*	20 *6*	4249.8	41/2$^-$	3552.3	37/2$^-$			R_{ADO}=1.5 *7*.
700.6 *5*	8 *2*	4307.3	41/2$^-$	3606.7	37/2$^-$			R_{ADO}=1.4 *4*.
704.0 *5*	22 *7*	3574.9	35/2$^+$	2871.1	31/2$^+$	Q	1.0 *6*	
707.4 *5*	79 *24*	1212.5	19/2	505.0	17/2$^+$		0.30 *6*	R_{ADO}=0.50 *4*.
709.6 *2*	116 *17*	2852.4	33/2$^+$	2142.8	29/2$^+$	Q	0.99 *10*	R_{ADO}=1.19 *8*.
712.5 *5*	13 *4*	3613.2	35/2	2900.6	31/2	Q	1.2 *6*	R_{ADO}=1.3 *5*.
715.0 *2*	158 *24*	1657.8	21/2$^-$	942.8	21/2$^+$		0.94 *8*	R_{ADO}=1.27 *4*.
719.5 *5*	5 *2*	5274.0	47/2$^-$	4554.5	43/2$^-$			R_{ADO}=1.3 *4*.
719.8 *5*	8 *2*	4318.2	41/2$^+$	3598.4	37/2$^+$			R_{ADO}=1.4 *4*.
736.5 *5*	7 *2*	4986.3	45/2$^-$	4249.8	41/2$^-$			
746.0 *5*	26 *8*	3598.4	37/2$^+$	2852.4	33/2$^+$	Q	1.0 *3*	R_{ADO}=1.23 *20*.
755.2 *5*	31 *9*	1657.8	21/2$^-$	902.8	19/2$^+$	D	0.79 *16*	R_{ADO}=0.74 *15*.
779.7 *5*	78 *23*	2871.1	31/2$^+$	2091.5	27/2$^+$	Q	0.89 *15*	R_{ADO}=1.19 *13*.
781.0 *5*	15 *5*	3992.2	37/2	3211.3	33/2			
787.0 *5*	13 *4*	5510.3	49/2$^+$	4723.3	45/2$^+$			R_{ADO}=1.4 *3*.
830.5 *5*	24 *7*	3574.9	35/2$^+$	2744.5	31/2$^+$			
847.0 *5*	87 *26*	1789.8	23/2	942.8	21/2$^+$	D	0.43 *5*	R_{ADO}=0.58 *6*.
904.0 *5*	39 *12*	1409.1	17/2$^-$	505.0	17/2$^+$			
928.5 *5*	62 *19*	2424.8	27/2	1496.2	25/2$^+$	D	0.37 *5*	R_{ADO}=0.48 *6*.
944.0 *5*	18 *5*	1409.1	17/2$^-$	465.1	15/2$^+$			R_{ADO}=0.94 *20*.
973.6 *5*	13 *4*	3116.3		2142.8	29/2$^+$			
1130.2 *5*	11 *3*	2626.4	29/2	1496.2	25/2$^+$	Q	0.87 *21*	R_{ADO}=1.13 *20*.

† In 2007Zh09, ΔE and ΔIγ of the γ-rays quoted as 0.1 to 0.5 keV and 5 to 30%, respectively. Evaluator assigned ΔE=0.5 keV and ΔIγ 30% for Iγ<100; ΔE 0.2 keV and ΔIγ 15% for Iγ 100 to 200; and ΔE 0.1 keV and ΔIγ 5% for Iγ>200 − from a private communication with 2007Zh09.

‡ Detectors at θ_1=±40° and θ_2=90°. Gated on ΔJ=2, stretched quadrupole.

Assigned by the evaluator based on the DCO and ADO ratios. Typical values of DCO ratios are 1.0 and≈0.7 for quadrupole (Q, Δ=2) and dipole (D, Δ=1 or sometimes Δ=0) transitions, respectively. Typical values of R_{ADO} are≈1.3 and≈0.7 for quadrupole and dipole transitions, respectively. Asymmetry ratio R_{ADO} corresponds to 40° and 90° (2007Zh09).

@ Multiply placed with intensity suitably divided.

^{173}Yb(^{18}O,4nγ) 2007Zh09

Level Scheme

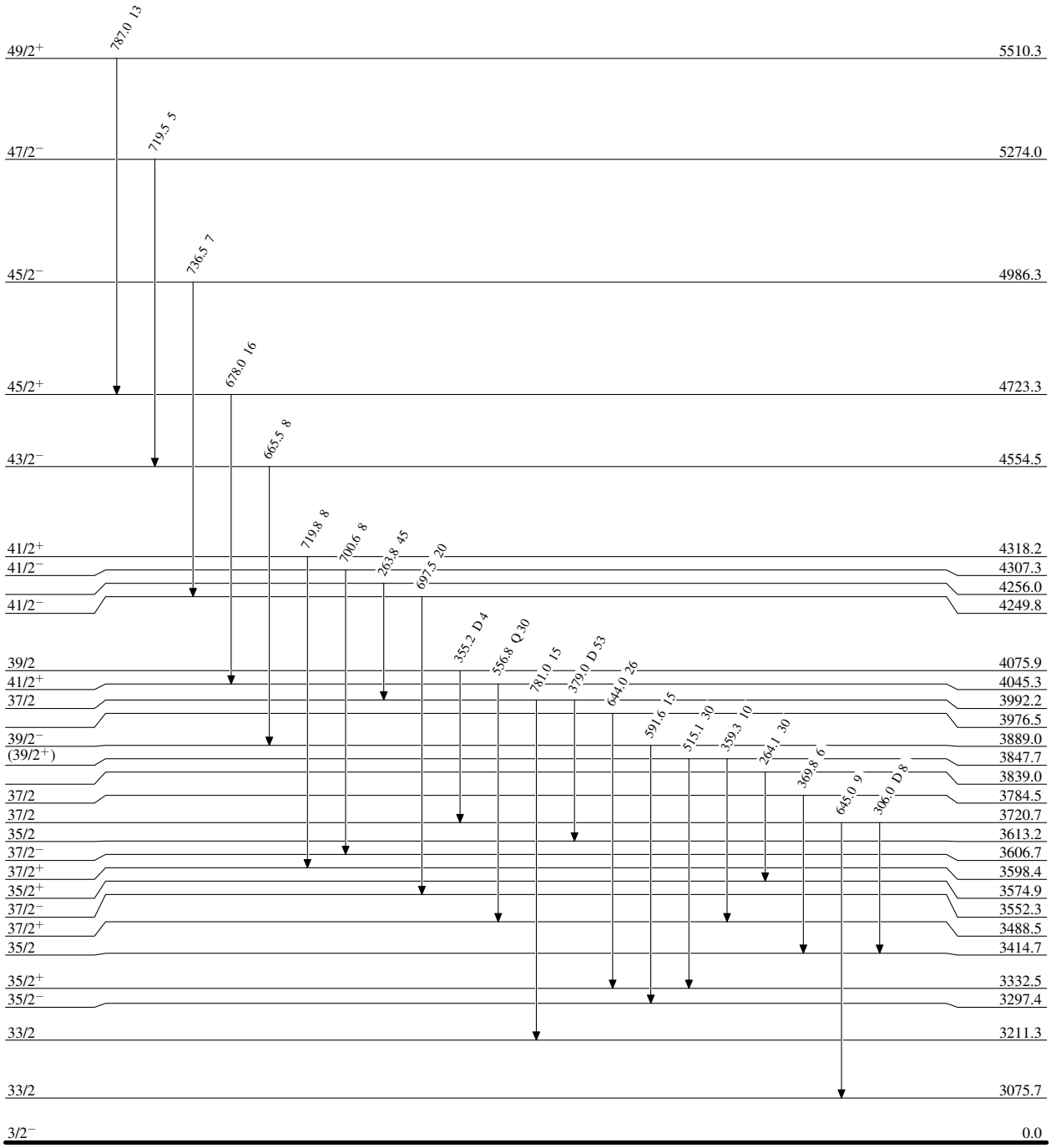
Intensities: Relative I_γ

Legend

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

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

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



$^{187}_{78}Pt_{109}$

^{173}Yb(^{18}O,4nγ) 2007Zh09

Level Scheme (continued)

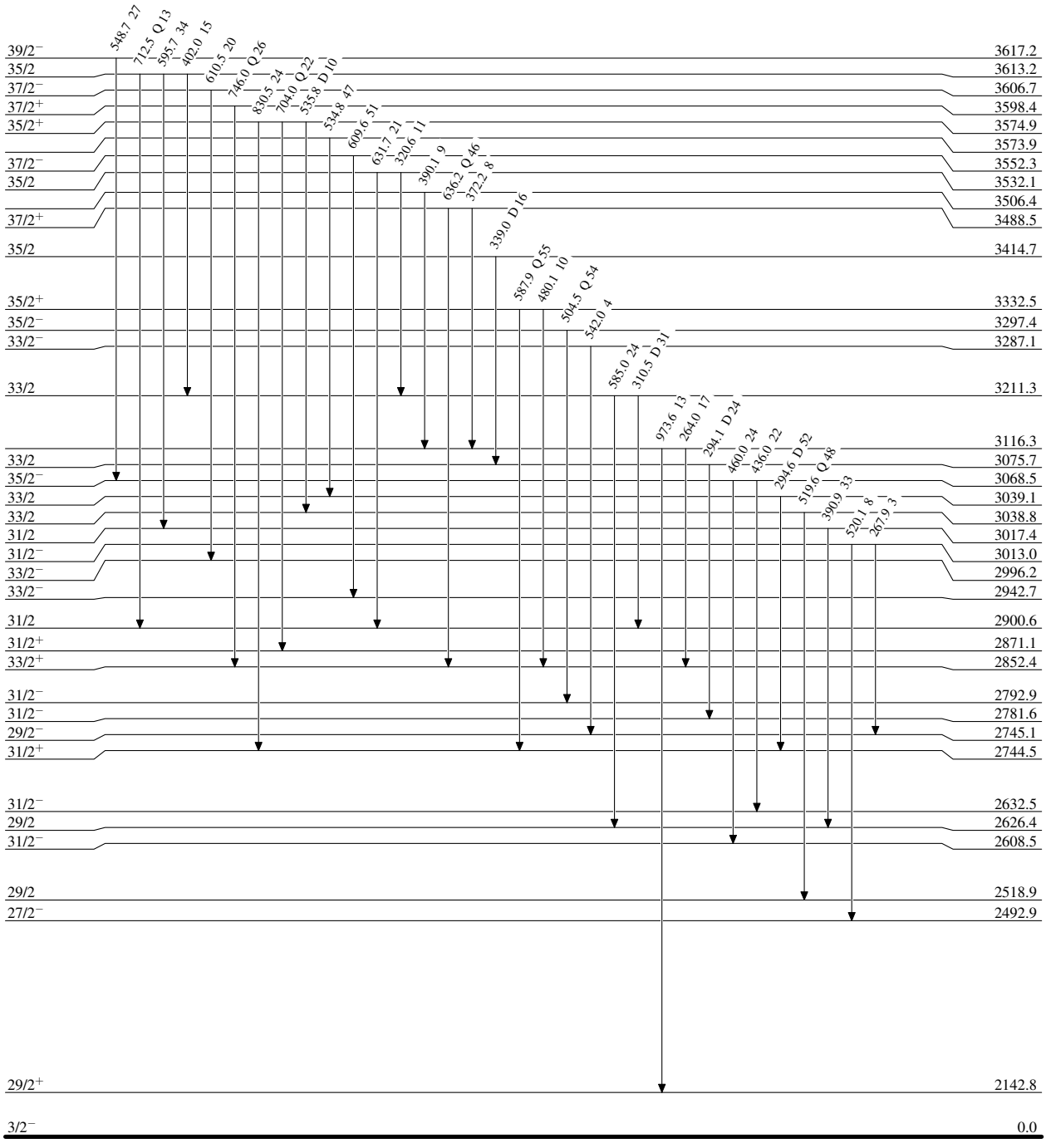
Intensities: Relative I_γ

Legend

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

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

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

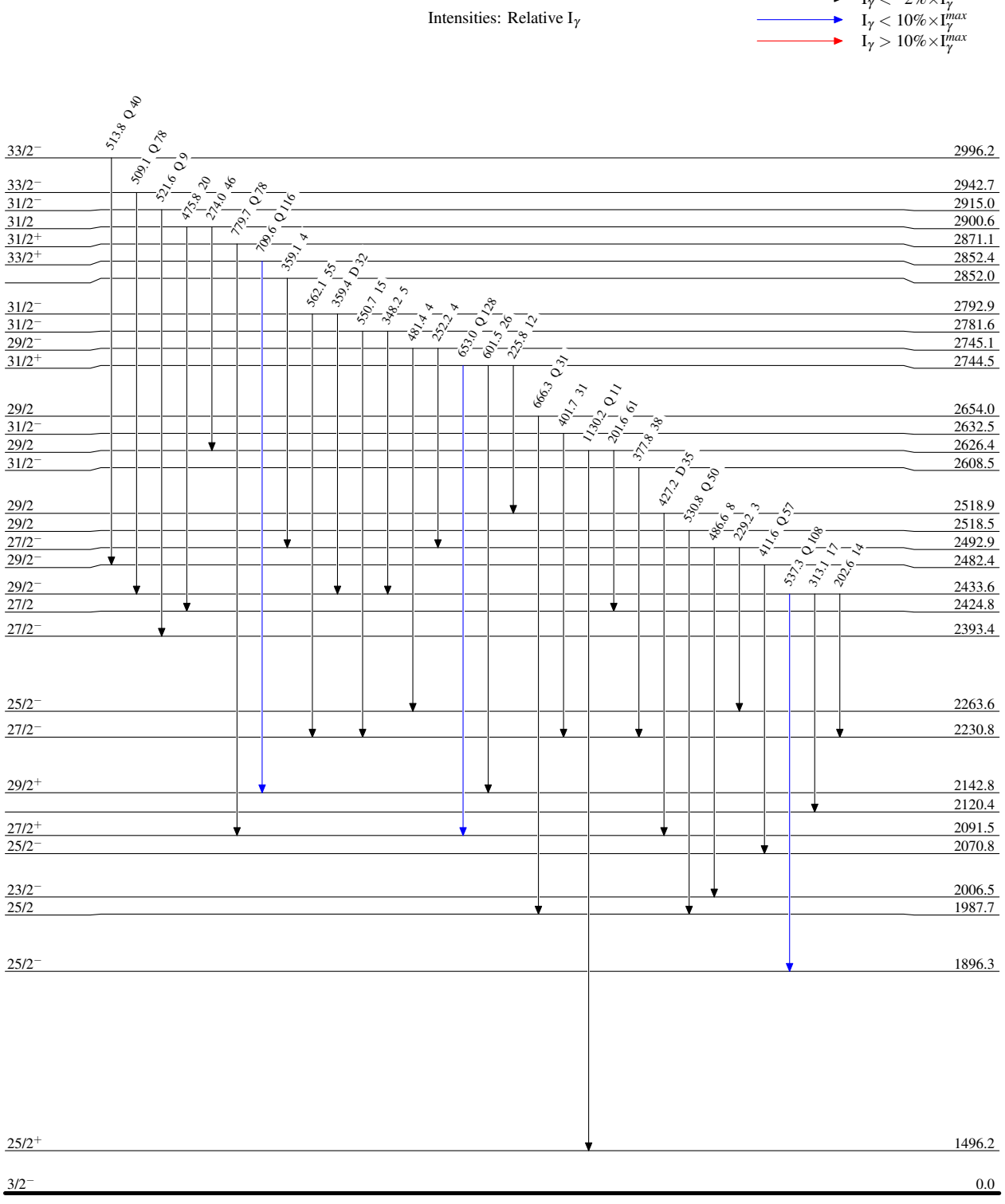


$^{187}_{78}Pt_{109}$

^{173}Yb(^{18}O,4nγ) 2007Zh09

Level Scheme (continued)

Intensities: Relative I_γ



$^{187}_{78}Pt_{109}$

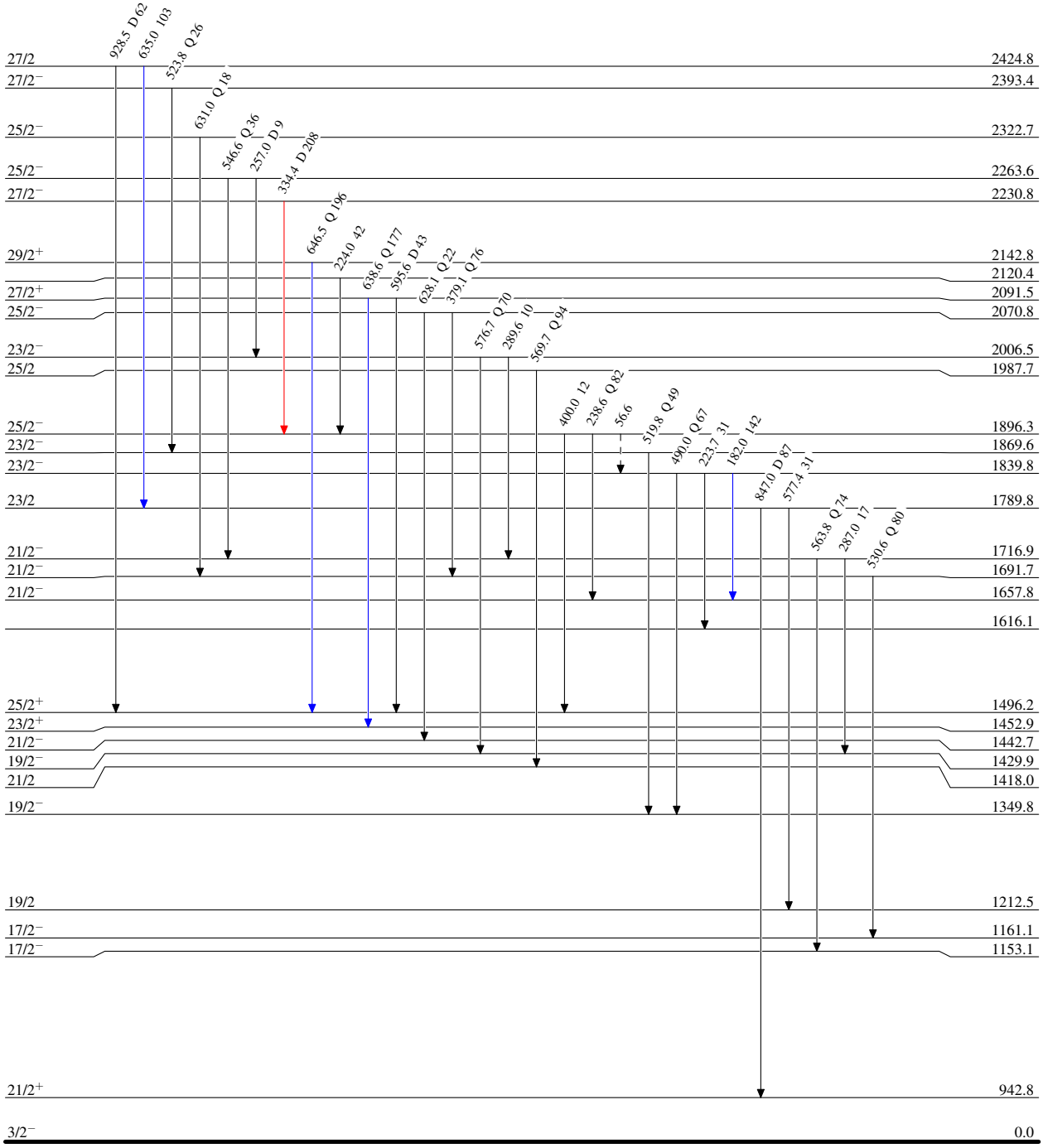
^{173}Yb(^{18}O,4nγ) 2007Zh09

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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



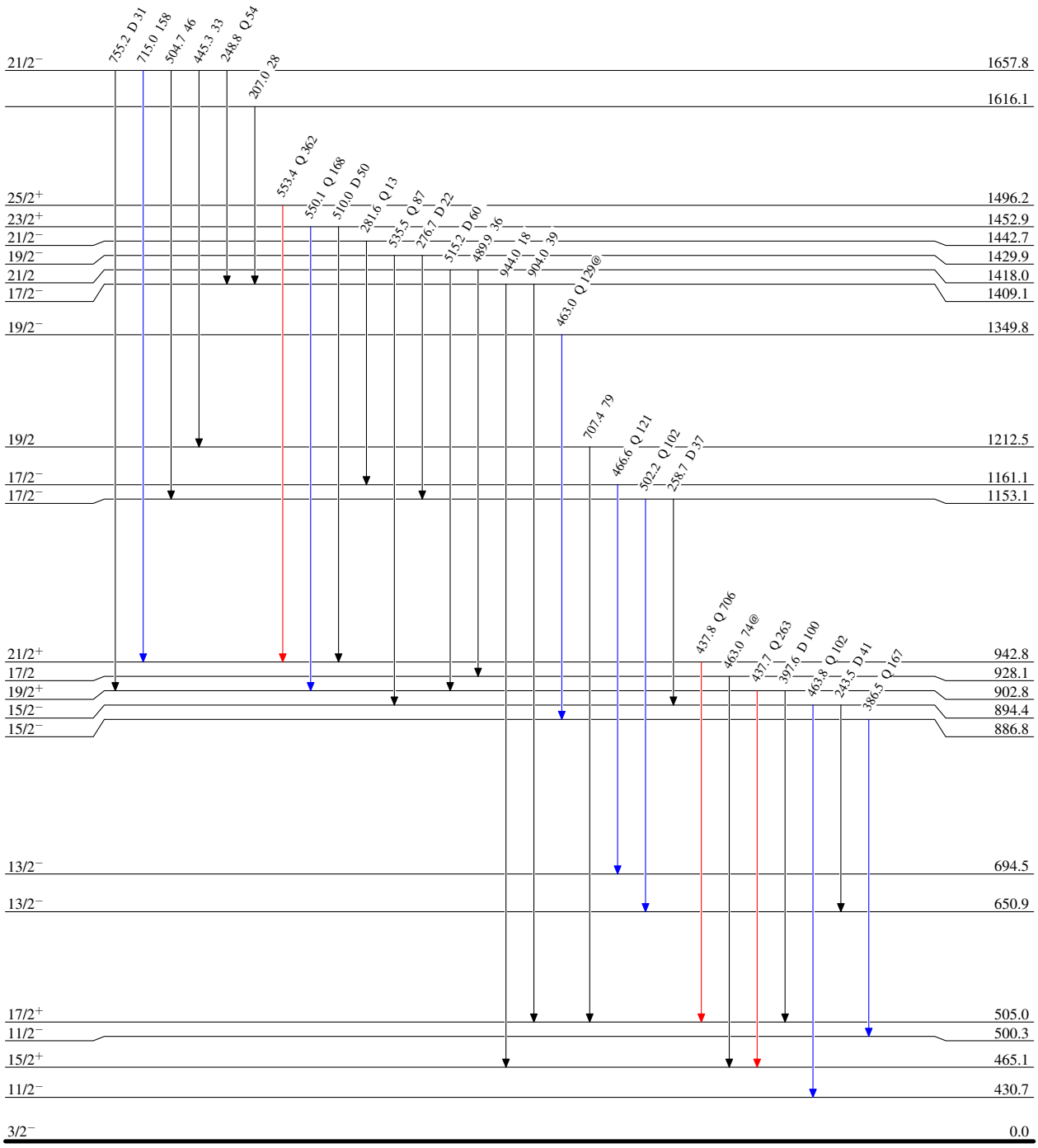
$^{187}_{78}Pt_{109}$

^{173}Yb(^{18}O,4nγ) 2007Zh09

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

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



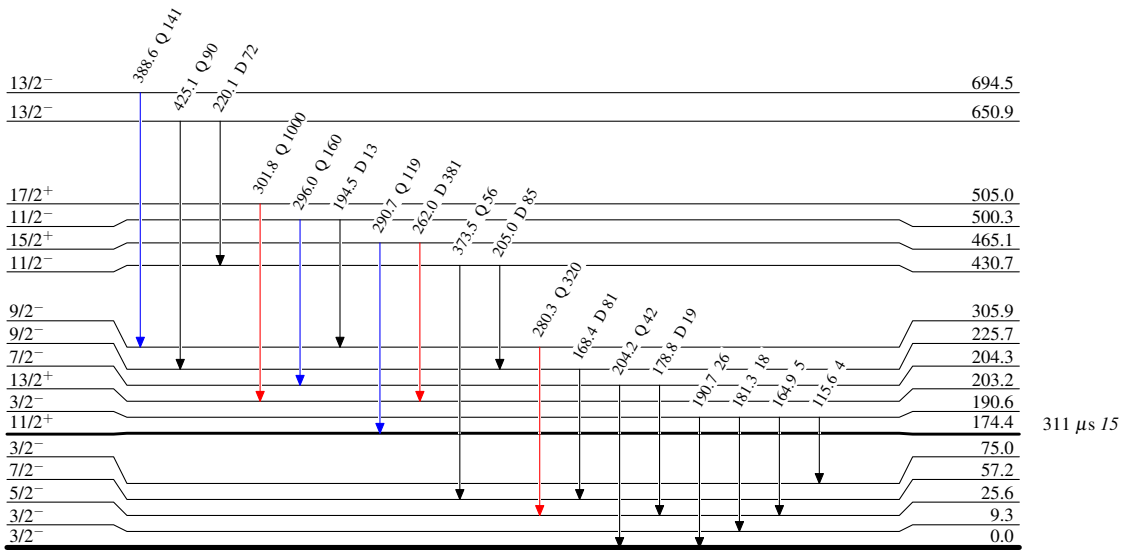
$^{187}_{78}Pt_{109}$

^{173}Yb(^{18}O,4nγ) 2007Zh09

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

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



$^{187}_{78}Pt_{109}$