^{173}Yb(^{16}O,4nγ), ^{174}Yb(^{16}O,5nγ) 1989Pi09,1986PiZU,1975De24

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 619 (2005)	1-Nov-2005

Additional information 1.

1989Pi09: target: enriched ^{173}Yb, projectile: ^{16}O, E=90 MeV. Measured Eγ, Iγ, $\gamma(\theta)$ for θ=10°, 30°, 45°, 60°, and 90°. Detector: an array of five germanium and six Na(I) detectors. See also, 1988Ja10.

1986PiZU: target: ^{174}Yb. Projectile: ^{16}O, E=90 MeV. Measured Eγ, Iγ, $\gamma(\theta)$ for θ=10°, 30°, 45°, 60°, and 90°. Detector: Ge(Li).

1975De24, 1975De39: target: 96% enriched ^{174}Yb. Projectile: ^{16}O, E=75-98 MeV. Measured Eγ, Iγ, $\gamma(\theta)$, excitation functions.

^{185}Pt Levels

E(level)‡	J$^{\pi}$†	$T_{1/2}$	Comments
0.0#	9/2$^+$		
94.9# *3*	11/2$^+$		
103.2& *2*	(1/2$^-$)	33.0 min *8*	E(level),$T_{1/2}$: from Adopted Levels.
200.0& *4*	(5/2$^-$)		
212.1# *3*	13/2$^+$		
310.4@ *3*	7/2$^-$		
373.2# *3*	15/2$^+$		
450.9& *5*	(9/2$^-$)		
486.5@ *4*	9/2$^-$		
530.6# *3*	17/2$^+$		
681.7@ *4*	11/2$^-$		
752.9# *3*	19/2$^+$		
817.1& *6*	(13/2$^-$)		
879.3@ *4*	13/2$^-$		
938.5# *4*	21/2$^+$		
1090.5@ *4*	15/2$^-$		
1214.9# *4*	23/2$^+$		
1273.4& *6*	(17/2$^-$)		
1313.9@ *5*	17/2$^-$		
1417.4# *4*	25/2$^+$		
1552.0@ *5*	19/2$^-$		
1733.0# *4*	27/2$^+$		
1786.4& *7*	(21/2$^-$)		
1805.4@ *5*	21/2$^-$		
1940.4# *5*	29/2$^+$		
2048.8@ *5*	23/2$^-$		
2256.3& *8*	(25/2$^-$)		
2270.9# *5*	31/2$^+$		
2314.4@ *5*	25/2$^-$		
2489.9# *5*	33/2$^+$		
2548.3@ *6*	27/2$^-$		
2726.2& *8*	(29/2$^-$)		
2805.9@ *6*	29/2$^-$		
2833.1# *5*	35/2$^+$		

Continued on next page (footnotes at end of table)

^{173}Yb(^{16}O,4nγ), ^{174}Yb(^{16}O,5nγ) 1989Pi09,1986PiZU,1975De24 (continued)

^{185}Pt Levels (continued)

E(level)‡	Jπ†	E(level)‡	Jπ†	E(level)‡	Jπ†	E(level)‡	Jπ†
3086.8# 5	37/2+	3453.5# 5	39/2+	3872.2?& 9	(37/2−)	4501.1# 6	45/2+
3131.4a 5	(33/2−)	3511.4a 5	(37/2−)	3990.7a 6	(41/2−)	4564.6a 6	(45/2−)
3287.2& 9	(33/2−)	3725.0a 5	(39/2−)	4146.7# 6	43/2+	4902.2a 6	(47/2−)
3294.3a 5	(35/2−)	3755.5# 6	41/2+	4263.2a 6	(43/2−)	4913.6# 6	47/2+

† Based on γ-ray multipolarities, decay patterns, angular distributions, and on rotational structure. See Adopted Levels for adopted J^π assignments.
‡ Deduced by evaluator from a least-squares fit to γ-ray energies, assuming $\Delta E=0.3$ keV for all γ rays.
# 9/2[624] rotational band.
@ 7/2[503] rotational band.
& 1/2[521] rotational band.
a K=(33/2−). Possible three-quasiparticle configuration.

γ(^{185}Pt)

E_γ†	I_γ†	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	δ#	Comments
94.9		94.9	11/2+	0.0	9/2+			E_γ: Eγ=94.7 *3* (1975De24).
96.8		200.0	(5/2−)	103.2	(1/2−)			E_γ: from 1986PiZU.
117.2	19.7 *9*	212.1	13/2+	94.9	11/2+	D+Q	−0.30 *7*	E_γ: Eγ=117.4 *2* (1975De24).
157.4	18.3 *7*	530.6	17/2+	373.2	15/2+	D+Q	−0.28 *6*	E_γ: Eγ=157.6 *3* (1975De24).
161.1	30.1 *21*	373.2	15/2+	212.1	13/2+	D+Q	−0.30 *7*	E_γ: Eγ=161.3 *2* (1975De24).
162.9		3294.3	(35/2−)	3131.4	(33/2−)			
176.1	5.4 *2*	486.5	9/2−	310.4	7/2−			
185.6	12.6 *7*	938.5	21/2+	752.9	19/2+	D+Q	−0.26 *8*	E_γ: Eγ=185.6 *2* (1975De24).
195.2	3.4 *4*	681.7	11/2−	486.5	9/2−			
197.6	2.9 *4*	879.3	13/2−	681.7	11/2−			
202.5	10.0 *4*	1417.4	25/2+	1214.9	23/2+	D+Q	−0.17 *3*	E_γ: Eγ=202.6 *10*, doublet (1975De24).
207.4	7.5 *9*	1940.4	29/2+	1733.0	27/2+	D(+Q)	0.11 *11*	
211.2		1090.5	15/2−	879.3	13/2−			
212.1	10.5 *9*	212.1	13/2+	0.0	9/2+	Q		E_γ: Eγ=211.8 *3* (1975De24).
213.6	5.3 *2*	3725.0	(39/2−)	3511.4	(37/2−)			
217.1	4.7 *3*	3511.4	(37/2−)	3294.3	(35/2−)			
219.0	6.3 *4*	2489.9	33/2+	2270.9	31/2+	D+Q	−0.18 *8*	
222.3	22.1 *6*	752.9	19/2+	530.6	17/2+	D+Q	−0.33 *8*	E_γ: Eγ=222.3 *3* (1975De24).
223.4		1313.9	17/2−	1090.5	15/2−			
233.9		2548.3	27/2−	2314.4	25/2−			
238.1		1552.0	19/2−	1313.9	17/2−			
243.4		2048.8	23/2−	1805.4	21/2−			
250.9	11.0 *4*	450.9	(9/2−)	200.0	(5/2−)	Q		
253.4		1805.4	21/2−	1552.0	19/2−			
253.7	4.3 *2*	3086.8	37/2+	2833.1	35/2+	D+Q	−0.19 *8*	
265.6		2314.4	25/2−	2048.8	23/2−			
265.7	5.3 *3*	3990.7	(41/2−)	3725.0	(39/2−)			
272.5		4263.2	(43/2−)	3990.7	(41/2−)			
276.4	13.7 *5*	1214.9	23/2+	938.5	21/2+	D+Q	−0.36 *10*	E_γ: Eγ=276.4 *6*, doublet (1975De24).
278.3	30 *5*	373.2	15/2+	94.9	11/2+	Q		E_γ: Eγ=278.4 *6* (1975De24).
301.4		4564.6	(45/2−)	4263.2	(43/2−)			
302.0	4.0 *2*	3755.5	41/2+	3453.5	39/2+	D+Q	−0.13 *8*	
310.4‡	20.2 *8*	310.4	7/2−	0.0	9/2+			
315.6	14.0 *17*	1733.0	27/2+	1417.4	25/2+	D+Q	−0.15 *3*	

Continued on next page (footnotes at end of table)

^{173}Yb(^{16}O,4nγ), ^{174}Yb(^{16}O,5nγ) 1989Pi09,1986PiZU,1975De24 (continued)

$\gamma(^{185}Pt)$ (continued)

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	Comments
318.5	52.5 *11*	530.6	17/2$^+$	212.1	13/2$^+$	Q		
330.5	13.3 *9*	2270.9	31/2$^+$	1940.4	29/2$^+$	D+Q	−0.27 *8*	
343.2	10.7 *4*	2833.1	35/2$^+$	2489.9	33/2$^+$	D+Q	−0.19 *8*	
354.4	2.7 *4*	4501.1	45/2$^+$	4146.7	43/2$^+$			
366.2		817.1	(13/2$^-$)	450.9	(9/2$^-$)			
366.7	7.3 *4*	3453.5	39/2$^+$	3086.8	37/2$^+$	D+Q	−0.10 *8*	
371.3	4.0 *1*	681.7	11/2$^-$	310.4	7/2$^-$	Q		
379.7	52.9 *11*	752.9	19/2$^+$	373.2	15/2$^+$	Q		E_γ: Eγ=379.5 *4* (1975De24).
380.0		3511.4	(37/2$^-$)	3131.4	(33/2$^-$)			
391.2	3.8 *4*	4146.7	43/2$^+$	3755.5	41/2$^+$			
392.8	8.2 *3*	879.3	13/2$^-$	486.5	9/2$^-$	Q		
407.9	82.1 *19*	938.5	21/2$^+$	530.6	17/2$^+$	Q		E_γ: Eγ=407.7 *7* (1975De24).
408.8		1090.5	15/2$^-$	681.7	11/2$^-$			
412.5	2.9 *9*	4913.6	47/2$^+$	4501.1	45/2$^+$			
430.7	4.9 *2*	3725.0	(39/2$^-$)	3294.3	(35/2$^-$)	Q		
434.6	9.0 *3*	1313.9	17/2$^-$	879.3	13/2$^-$	Q		
456.3	13.4 *5*	1273.4	(17/2$^-$)	817.1	(13/2$^-$)	Q		
461.5		1552.0	19/2$^-$	1090.5	15/2$^-$			
462.0	57.1 *20*	1214.9	23/2$^+$	752.9	19/2$^+$	Q		E_γ: Eγ=462 *1*, doublet (1975De24).
469.9[@]		2256.3	(25/2$^-$)	1786.4	(21/2$^-$)			
469.9[@]		2726.2	(29/2$^-$)	2256.3	(25/2$^-$)			
478.9	100 *3*	1417.4	25/2$^+$	938.5	21/2$^+$	Q		E_γ: Eγ=478.0 *8*, doublet (1975De24).
479.3		3990.7	(41/2$^-$)	3511.4	(37/2$^-$)			
491.5[@]		1805.4	21/2$^-$	1313.9	17/2$^-$			
491.5[@]		2805.9	29/2$^-$	2314.4	25/2$^-$			
496.8		2048.8	23/2$^-$	1552.0	19/2$^-$			
499.5[@]		2548.3	27/2$^-$	2048.8	23/2$^-$			
509.0		2314.4	25/2$^-$	1805.4	21/2$^-$			
513.0		1786.4	(21/2$^-$)	1273.4	(17/2$^-$)			
518.1	40.2 *12*	1733.0	27/2$^+$	1214.9	23/2$^+$	Q		
[x]522.1 *6*								E_γ: from 1975De24.
523.0	91.7 *24*	1940.4	29/2$^+$	1417.4	25/2$^+$	Q		
537.9	42.9 *14*	2270.9	31/2$^+$	1733.0	27/2$^+$	Q		
538.2		4263.2	(43/2$^-$)	3725.0	(39/2$^-$)			
549.5	50.0 *10*	2489.9	33/2$^+$	1940.4	29/2$^+$	Q		
561.0		3287.2	(33/2$^-$)	2726.2	(29/2$^-$)			
562.2	19.5 *6*	2833.1	35/2$^+$	2270.9	31/2$^+$	Q		
573.9	9.2 *3*	4564.6	(45/2$^-$)	3990.7	(41/2$^-$)	Q		
585.0[&]		3872.2?	(37/2$^-$)	3287.2	(33/2$^-$)			Observed by 1986PiZU only.
596.9	30.2 *9*	3086.8	37/2$^+$	2489.9	33/2$^+$	Q		
620.4	12.6 *5*	3453.5	39/2$^+$	2833.1	35/2$^+$	Q		
638.2		3725.0	(39/2$^-$)	3086.8	37/2$^+$			
639.0		4902.2	(47/2$^-$)	4263.2	(43/2$^-$)			
668.7	11.8 *4*	3755.5	41/2$^+$	3086.8	37/2$^+$	Q		
678.3	6.8 *3*	3511.4	(37/2$^-$)	2833.1	35/2$^+$	D		
693.2	4.5 *5*	4146.7	43/2$^+$	3453.5	39/2$^+$			
745.6	3.9 *4*	4501.1	45/2$^+$	3755.5	41/2$^+$			
766.9	2.2 *4*	4913.6	47/2$^+$	4146.7	43/2$^+$			
804.4	6.9 *3*	3294.3	(35/2$^-$)	2489.9	33/2$^+$	D		
860.5	7.0 *3*	3131.4	(33/2$^-$)	2270.9	31/2$^+$	D		

[†] From ^{173}Yb(^{16}O,4nγ) (1989Pi09).

Continued on next page (footnotes at end of table)

^{173}Yb(^{16}O,4nγ), ^{174}Yb(^{16}O,5nγ) 1989Pi09,1986PiZU,1975De24 (continued)

$\gamma(^{185}Pt)$ (continued)

‡ Composite line.
# From $\gamma(\theta)$ (1989Pi09, 1975De24).
@ Multiply placed.
& Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

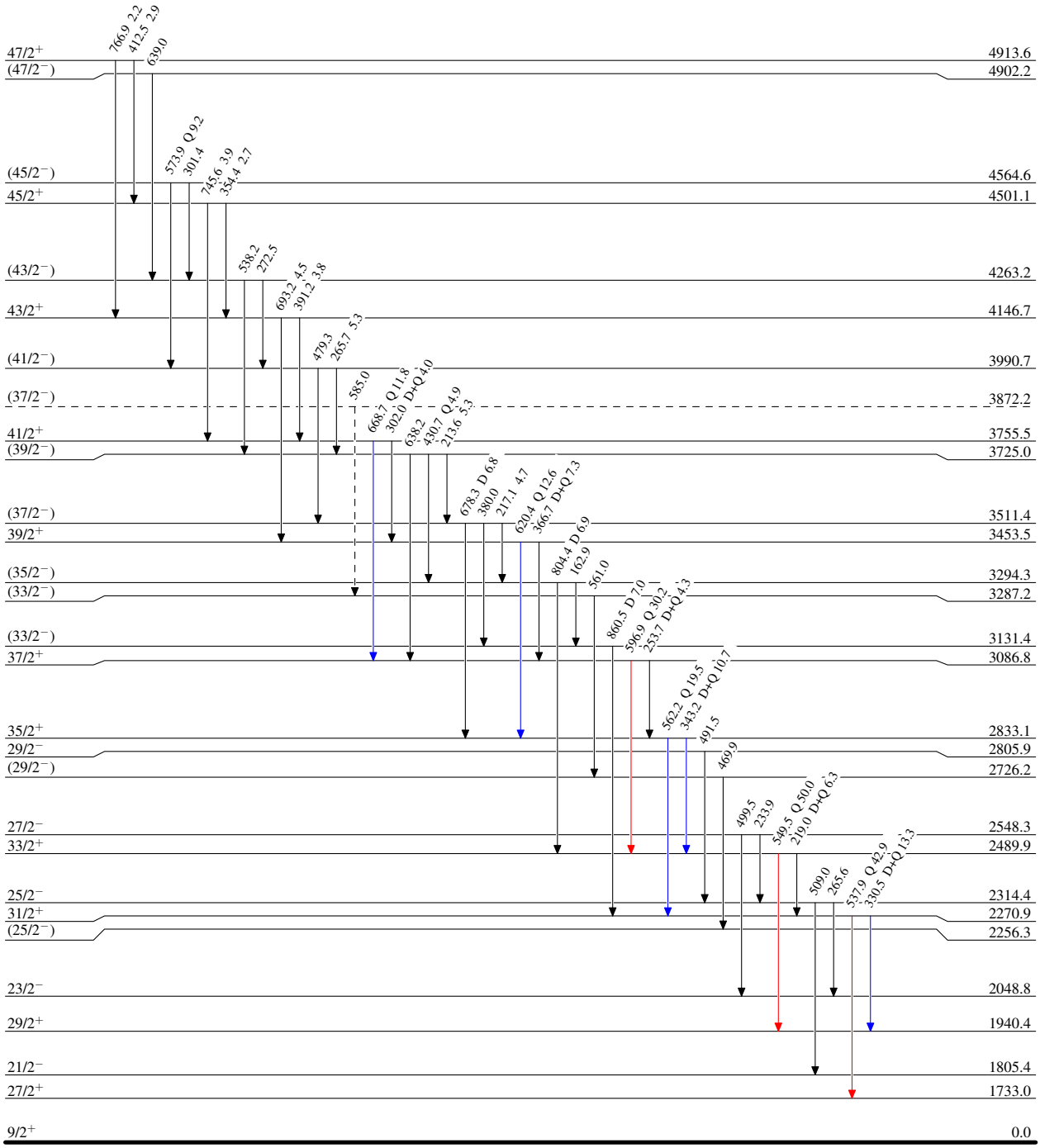
^{173}Yb(^{16}O,4nγ), ^{174}Yb(^{16}O,5nγ) 1989Pi09,1986PiZU,1975De24

Level Scheme

Intensities: Relative I_γ

Legend

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



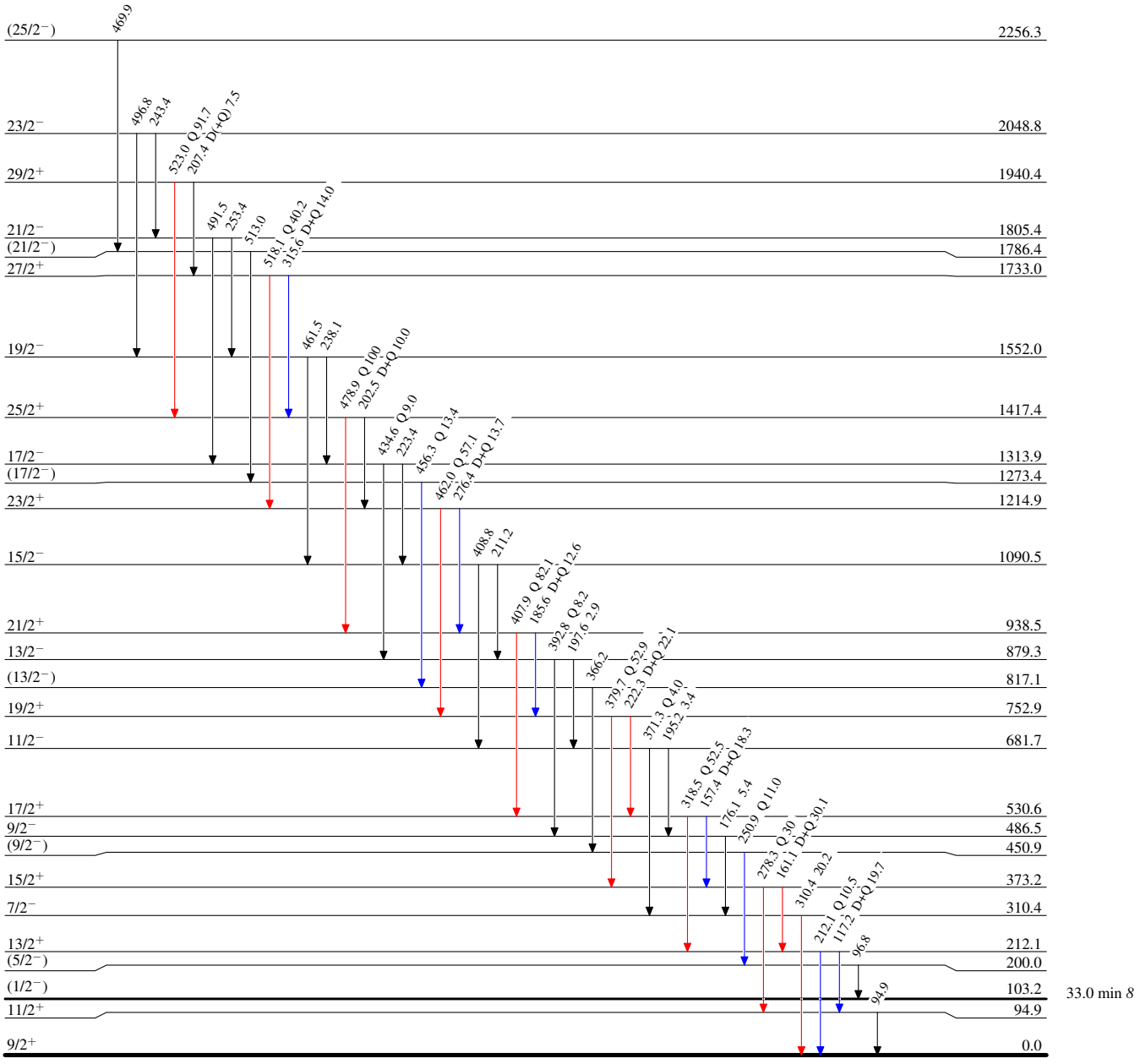
$^{185}_{78}Pt_{107}$

^{173}Yb(^{16}O,4nγ), ^{174}Yb(^{16}O,5nγ) 1989Pi09,1986PiZU,1975De24

Level Scheme (continued)

Intensities: Relative I_γ

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



$^{185}_{78}Pt_{107}$