^{171}Yb(n,γ) E=2 keV 1975Gr32

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 75,199 (1995)	31-May-1995

$J^\pi(^{171}Yb\ g.s.)=1/2^-$.
Enriched (95.9%) target. Measured G.
S(n)=8020.1 keV *5* (1975Gr32).

^{172}Yb Levels

E(level)	J^π†	E(level)	J^π†	E(level)	E(level)	J^π†
0.0	0^+	2293.4 *10*	$(0^-,1^-,2^-)$	2721.0 *8*	3155.9 *7*	
79 *1*	2^+	2306.0 *10*	$(0^-,1^-,2^-)$‡	2732.7 *6*	3170.8 *7*	
260 *1*	4^+	2312.9 *4*	(2^+)	2748.0 *8*	3251.6 *11*	
1043 *1*	0^+	2328.2 *5*	(2^+)	2765.8 *4*	3258.4 *8*	
1118 *1*	2^+	2342.7 *5*	$(0^+,1^+,2^+)$‡	2777.5 *4*	3283.6 *6*	
1155 *1*	1^-	2352.6 *8*	$(0^-,1^-,2^-)$‡	2788.1 *5*	3300.6 *13*	
1171 *1*	3^+	2358.7 *6*	$(0^-,1^-,2^-)$‡	2795.9 *5*	3309.1 *10*	
1198.7 *4*	2^-	2369.2? *8*	$(0^-,1^-,2^-)$‡	2807.9 *11*	3332.6 *5*	
1221 *1*	3^-	2375.3 *5*	$(1^+,2)$‡	2820.3 *5*	3359.9 *6*	
1330 *1*	4^-	2388.2 *4*	$(1^+,2^+)$	2833.7 *6*	3366.3 *7*	
1405 *1*	0^+	2404.4 *8*	$(0^-,1^-,2^-)$‡	2845.3 *4*	3382.9 *5*	
1466.1 *3*	2^+	2439.2 *8*	$(0^-,1^-,2^-)$‡	2860.2 *13*	3404.6 *6*	
1476.8 *3*	2^+	2444.8 *9*	$(0^-,1^-,2^-)$‡	2864.6 *6*	3437.0 *7*	
1549.0	3^+	2463.8 *7*	$(0^-,1^-,2^-)$‡	2873.3 *4*	3495.2 *6*	
1600.5 *4*	1^-	2480.5 *4*	$(1^+,2^+)$	2881.0 *6*	3542.8 *11*	
1608.7 *3*	2^+	2488.7 *5*		2888.8 *5*	3555.6 *7*	
1757.9 *8*	$(2)^-$	2504.4 *5*		2904.2 *10*	3571.2 *9*	
1794.3 *3*	0^+	2515.1 *4*		2916.4 *13*	3585.6 *6*	
1849.1 *3*	2^+	2523.4 *5*		2941.7 *5*	3607.6 *7*	
1894.1 *4*	0^+	2534.2 *4*		2959.5 *6*	3620.8 *6*	
1956.8 *3*	2^+	2546.7 *6*		2967.7 *7*	3777.0 *6*	
2010.2 *3*	1^+	2559.7 *5*		2985.3 *5*	3829.1 *7*	
2047.5 *3*	$(2)^+$	2567.6 *5*		2991.7 *6*	3880.5 *7*	
2076.7 *7*	$(1)^-$	2575.7 *4*		3002.8 *6*	3901.6 *8*	
2102.9? *10*	1^-	2585.1 *5*		3012.7 *6*	3907.6 *6*	
2115.8 *8*	$(0^-,1^-,2^-)$‡	2608.5 *7*		3020.5 *6*	3915.9 *6*	
2160.7 *8*	$(0^-,1^-,2^-)$‡	2650.0 *4*		3036.9 *5*	3927.8 *6*	
2176.7 *12*	$(1)^-$	2668.4 *6*		3058.0 *13*	S(n)+2@	$0^-,1^-$#
2194.5 *3*	(1^+)	2676.1 *25*		3098.2 *5*		
2214.4 *11*	(1^-)	2702.6 *5*		3106.3 *6*		
2227.8 *4*	2^+	2713.6 *7*		3121.6 *5*		

† Generally from Adopted Levels, unless otherwise stated. For levels with no assignments given, primary γ from $0^-,1^-$ resonance states gives J=0,1,2.
‡ Primary γ from $0^-,1^-$ resonance states. Parity is from (E1) or (M1) transition assigned on the basis of reduced intensity.
# s-wave capture in $1/2^-$.
@ Neutron-capture state.

^{171}Yb(n,γ) E=2 keV 1975Gr32 (continued)

$\gamma(^{172}Yb)$

Iγ normalization: this factor gives intensities per 100 neutron captures (1975Gr32).

E_γ	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Comments
855[#]	204[#]	2076.7	$(1)^-$	1221	3^-	I_γ: 855γ+857γ.
855[#]	204[#]	2404.4	$(0^-,1^-,2^-)$	1549.0	3^+	
857	204	1118	2^+	260	4^+	
911	101	1171	3^+	260	4^+	
961	351	1221	3^-	260	4^+	I_γ: 961γ+964γ.
964	351	1043	0^+	79	2^+	
1039	211	1118	2^+	79	2^+	
1070	476	1330	4^-	260	4^+	I_γ: 1070γ+1076γ.
1076	476	1155	1^-	79	2^+	
1093	423	1171	3^+	79	2^+	
1117	500	1118	2^+	0.0	0^+	I_γ: 1117γ+1119γ.
1119	500	1198.7	2^-	79	2^+	
1143	114	1221	3^-	79	2^+	
[x]1152	86					I_γ: 1152γ+1155γ.
1155	86	1155	1^-	0.0	0^+	
1387	177	1466.1	2^+	79	2^+	
1397	167	1476.8	2^+	79	2^+	
1521	205	1600.5	1^-	79	2^+	
1529	101	1608.7	2^+	79	2^+	
1599	136	1600.5	1^-	0.0	0^+	
1608	65	1608.7	2^+	0.0	0^+	
1715	59	1794.3	0^+	79	2^+	
1931	86	2010.2	1^+	79	2^+	
1968[#]	107[#]	2047.5	$(2)^+$	79	2^+	
1968[#]	107[#]	2227.8	2^+	260	4^+	
2010	76	2010.2	1^+	0.0	0^+	
[x]2019	88					I_γ: 2019γ+2024γ.
2024	88	2102.9?	1^-	79	2^+	
2135	63	2214.4	(1^-)	79	2^+	
2326	77	2404.4	$(0^-,1^-,2^-)$	79	2^+	
2401	25	2480.5	$(1^+,2^+)$	79	2^+	
4094.1 *7*	14 *3*	S(n)+2	$0^-,1^-$	3927.8		
4105.9 *7*	10.1 *20*	S(n)+2	$0^-,1^-$	3915.9		
4114.2 *7*	14 *3*	S(n)+2	$0^-,1^-$	3907.6		
4120.2 *7*	14 *3*	S(n)+2	$0^-,1^-$	3901.6		
4141.4 *8*	8.5 *21*	S(n)+2	$0^-,1^-$	3880.5		
4192.8 *8*	12 *3*	S(n)+2	$0^-,1^-$	3829.1		
4244.9 *7*	10 *3*	S(n)+2	$0^-,1^-$	3777.0		
4401.0 *7*	8.7 *22*	S(n)+2	$0^-,1^-$	3620.8		
4414.3 *8*	7.3 *18*	S(n)+2	$0^-,1^-$	3607.6		
4436.2 *7*	8.7 *22*	S(n)+2	$0^-,1^-$	3585.6		
4450.6 *10*	6.2 *16*	S(n)+2	$0^-,1^-$	3571.2		
4466.3 *8*	7.6 *19*	S(n)+2	$0^-,1^-$	3555.6		
4479.1 *12*	4.6 *14*	S(n)+2	$0^-,1^-$	3542.8		
4526.6 *7*	8.1 *20*	S(n)+2	$0^-,1^-$	3495.2		
4584.8 *8*	6.8 *17*	S(n)+2	$0^-,1^-$	3437.0		
4617.3 *6*	8.4 *21*	S(n)+2	$0^-,1^-$	3404.6		
4639.0 *6*	10.4 *21*	S(n)+2	$0^-,1^-$	3382.9		
4655.6 *8*	7.5 *23*	S(n)+2	$0^-,1^-$	3366.3		
4661.9 *7*	10.0 *20*	S(n)+2	$0^-,1^-$	3359.9		
4689.3 *6*	16 *3*	S(n)+2	$0^-,1^-$	3332.6		

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^{171}Yb(n,γ) E=2 keV 1975Gr32 (continued)

$\gamma(^{172}Yb)$ (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]
4712.7 *11*	5.8 *23*	S(n)+2	$0^-,1^-$	3309.1		
4721.2 *13*	4.3 *17*	S(n)+2	$0^-,1^-$	3300.6		
4738.3 *6*	11.4 *23*	S(n)+2	$0^-,1^-$	3283.6		
4763.5 *9*	10.5 *21*	S(n)+2	$0^-,1^-$	3258.4		
4770.3 *12*	7.0 *21*	S(n)+2	$0^-,1^-$	3251.6		
4851.1 *7*	8.0 *20*	S(n)+2	$0^-,1^-$	3170.8		
4865.9 *8*	7.2 *14*	S(n)+2	$0^-,1^-$	3155.9		
4900.3 *6*	8.5 *17*	S(n)+2	$0^-,1^-$	3121.6		
4915.6 *6*	6.3 *16*	S(n)+2	$0^-,1^-$	3106.3		
4923.6 *6*	13 *3*	S(n)+2	$0^-,1^-$	3098.2		
4963.9 *13*	4.8 *14*	S(n)+2	$0^-,1^-$	3058.0		
4984.9 *6*	15 *3*	S(n)+2	$0^-,1^-$	3036.9		
5001.4 *7*	8.4 *17*	S(n)+2	$0^-,1^-$	3020.5		
5009.2 *7*	7.2 *14*	S(n)+2	$0^-,1^-$	3012.7		
5019.0 *6*	9.6 *19*	S(n)+2	$0^-,1^-$	3002.8		
5030.1 *7*	7.3 *15*	S(n)+2	$0^-,1^-$	2991.7		
5036.5 *6*	9.3 *19*	S(n)+2	$0^-,1^-$	2985.3		
5054.2 *8*	6.9 *17*	S(n)+2	$0^-,1^-$	2967.7		
5062.3 *7*	5.9 *15*	S(n)+2	$0^-,1^-$	2959.5		
5080.1 *6*	8.7 *17*	S(n)+2	$0^-,1^-$	2941.7		
5105.5 *13*	2.7 *8*	S(n)+2	$0^-,1^-$	2916.4		
5117.7 *11*	3.7 *11*	S(n)+2	$0^-,1^-$	2904.2		
5133.0 *7*	7.7 *15*	S(n)+2	$0^-,1^-$	2888.8		
5140.8 *7*	6.1 *12*	S(n)+2	$0^-,1^-$	2881.0		
5148.5 *7*	11.5 *17*	S(n)+2	$0^-,1^-$	2873.3		
5157.2 *8*	8.9 *22*	S(n)+2	$0^-,1^-$	2864.6		
5161.7 *14*	3.7 *15*	S(n)+2	$0^-,1^-$	2860.2		
5176.6 *7*	13.0 *20*	S(n)+2	$0^-,1^-$	2845.3		
5188.2 *7*	17 *3*	S(n)+2	$0^-,1^-$	2833.7		
5201.6 *6*	6.0 *15*	S(n)+2	$0^-,1^-$	2820.3		
5213.9 *11*	3.1 *12*	S(n)+2	$0^-,1^-$	2807.9		
5226.0 *6*	9.5 *14*	S(n)+2	$0^-,1^-$	2795.9		
5233.8 *6*	14.1 *21*	S(n)+2	$0^-,1^-$	2788.1		
5244.3 *6*	10.9 *16*	S(n)+2	$0^-,1^-$	2777.5		
5256.1 *6*	11.9 *18*	S(n)+2	$0^-,1^-$	2765.8		
5273.9 *9*	3.3 *8*	S(n)+2	$0^-,1^-$	2748.0		
5289.2 *7*	6.9 *14*	S(n)+2	$0^-,1^-$	2732.7		
5300.9 *8*	5.0 *13*	S(n)+2	$0^-,1^-$	2721.0		
5308.2 *8*	5.4 *14*	S(n)+2	$0^-,1^-$	2713.6		
5319.2 *7*	11.9 *18*	S(n)+2	$0^-,1^-$	2702.6		
5345.7 *25*	1.6 *8*	S(n)+2	$0^-,1^-$	2676.1		
5353.5 *7*	6.3 *13*	S(n)+2	$0^-,1^-$	2668.4		
5371.9 *7*	10.3 *15*	S(n)+2	$0^-,1^-$	2650.0		
5413.4 *8*	3.5 *9*	S(n)+2	$0^-,1^-$	2608.5		
5436.8 *7*	5.7 *11*	S(n)+2	$0^-,1^-$	2585.1		
5446.2 *6*	13.0 *20*	S(n)+2	$0^-,1^-$	2575.7		
5454.2 *7*	8.2 *16*	S(n)+2	$0^-,1^-$	2567.6		
5462.2 *7*	11.6 *17*	S(n)+2	$0^-,1^-$	2559.7		
5475.2 *7*	4.4 *9*	S(n)+2	$0^-,1^-$	2546.7		
5487.6 *6*	10.8 *16*	S(n)+2	$0^-,1^-$	2534.2		
5498.5 *7*	9.3 *14*	S(n)+2	$0^-,1^-$	2523.4		
5506.8 *6*	11.4 *17*	S(n)+2	$0^-,1^-$	2515.1		
5517.5 *7*	8.0 *12*	S(n)+2	$0^-,1^-$	2504.4		
5533.2 *7*	6.5 *10*	S(n)+2	$0^-,1^-$	2488.7		
5541.3 *6*	9.4 *14*	S(n)+2	$0^-,1^-$	2480.5	$(1^+,2^+)$	(E1)
5558.0 *7*	4.8 *10*	S(n)+2	$0^-,1^-$	2463.8	$(0^-,1^-,2^-)$	(M1)

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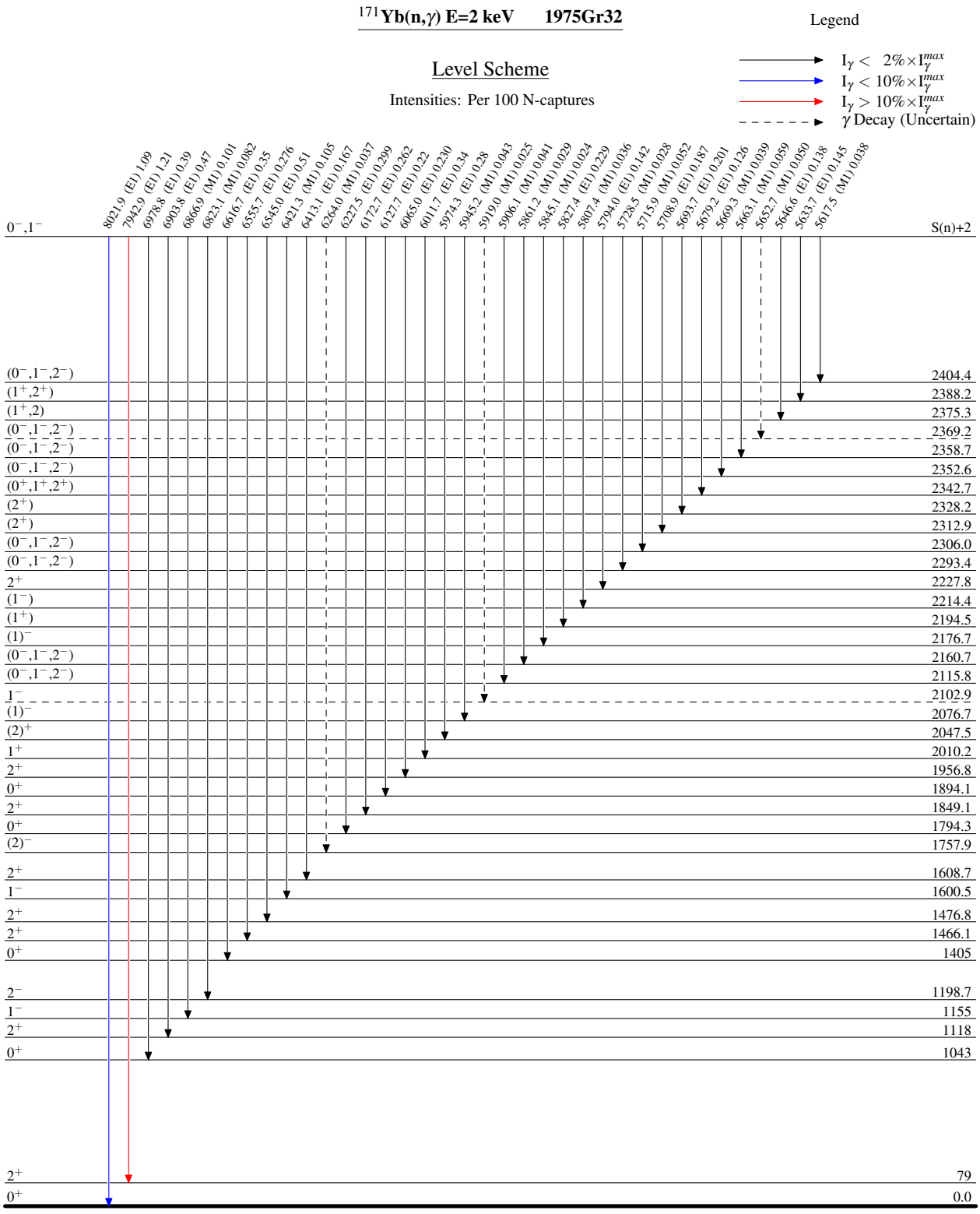
^{171}Yb(n,γ) E=2 keV 1975Gr32 (continued)

$\gamma(^{172}Yb)$ (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]
5577.0 *10*	5.5 *14*	S(n)+2	$0^-,1^-$	2444.8	$(0^-,1^-,2^-)$	(M1)
5582.7 *9*	7.2 *14*	S(n)+2	$0^-,1^-$	2439.2	$(0^-,1^-,2^-)$	(M1)
5617.5 *9*	3.5 *9*	S(n)+2	$0^-,1^-$	2404.4	$(0^-,1^-,2^-)$	(M1)
5633.7 *5*	13.3 *16*	S(n)+2	$0^-,1^-$	2388.2	$(1^+,2^+)$	(E1)
5646.6 *6*	12.7 *19*	S(n)+2	$0^-,1^-$	2375.3	$(1^+,2)$	(E1)
5652.7[@] *10*	4.6 *12*	S(n)+2	$0^-,1^-$	2369.2?	$(0^-,1^-,2^-)$	(M1)
5663.1 *8*	5.4 *14*	S(n)+2	$0^-,1^-$	2358.7	$(0^-,1^-,2^-)$	(M1)
5669.3 *9*	3.6 *9*	S(n)+2	$0^-,1^-$	2352.6	$(0^-,1^-,2^-)$	(M1)
5679.2 *6*	11.6 *14*	S(n)+2	$0^-,1^-$	2342.7	$(0^+,1^+,2^+)$	(E1)
5693.7 *6*	18.4 *22*	S(n)+2	$0^-,1^-$	2328.2	(2^+)	(E1)
5708.9 *5*	17.2 *21*	S(n)+2	$0^-,1^-$	2312.9	(2^+)	(E1)
5715.9 *11*	4.8 *14*	S(n)+2	$0^-,1^-$	2306.0	$(0^-,1^-,2^-)$	(M1)
5728.5 *12*	2.6 *8*	S(n)+2	$0^-,1^-$	2293.4	$(0^-,1^-,2^-)$	(M1)
5794.0 *5*	13.0 *16*	S(n)+2	$0^-,1^-$	2227.8	2^+	(E1)
5807.4 *12*	3.3 *10*	S(n)+2	$0^-,1^-$	2214.4	(1^-)	(M1)
5827.4 *5*	21.0 *21*	S(n)+2	$0^-,1^-$	2194.5	(1^+)	(E1)
5845.1 *13*	2.2 *7*	S(n)+2	$0^-,1^-$	2176.7	$(1)^-$	(M1)
5861.2 *10*	2.7 *7*	S(n)+2	$0^-,1^-$	2160.7	$(0^-,1^-,2^-)$	(M1)
5906.1 *9*	3.8 *10*	S(n)+2	$0^-,1^-$	2115.8	$(0^-,1^-,2^-)$	(M1)
5919.0[@] *10*	2.3 *13*	S(n)+2	$0^-,1^-$	2102.9?	1^-	(M1)
5945.2 *8*	3.9 *8*	S(n)+2	$0^-,1^-$	2076.7	$(1)^-$	(M1)
5974.3 *5*	26 *3*	S(n)+2	$0^-,1^-$	2047.5	$(2)^+$	(E1)
6011.7 *5*	31 *3*	S(n)+2	$0^-,1^-$	2010.2	1^+	(E1)
6065.0 *5*	21.1 *21*	S(n)+2	$0^-,1^-$	1956.8	2^+	(E1)
6127.7 *5*	20 *4*	S(n)+2	$0^-,1^-$	1894.1	0^+	(E1)
6172.7 *5*	24.0 *17*	S(n)+2	$0^-,1^-$	1849.1	2^+	(E1)
6227.5 *5*	27.4 *19*	S(n)+2	$0^-,1^-$	1794.3	0^+	(E1)
6264.0[@] *9*	3.4 *9*	S(n)+2	$0^-,1^-$	1757.9	$(2)^-$	(M1)
6413.1 *5*	15.3 *15*	S(n)+2	$0^-,1^-$	1608.7	2^+	(E1)
6421.3 *5*	9.6 *10*	S(n)+2	$0^-,1^-$	1600.5	1^-	(M1)
6545.0 *5*	47 *3*	S(n)+2	$0^-,1^-$	1476.8	2^+	(E1)
6555.7 *5*	25.3 *18*	S(n)+2	$0^-,1^-$	1466.1	2^+	(E1)
6616.7 *5*	32.3 *23*	S(n)+2	$0^-,1^-$	1405	0^+	(E1)
6823.1 *6*	7.5 *8*	S(n)+2	$0^-,1^-$	1198.7	2^-	(M1)
6866.9 *6*	9.3 *9*	S(n)+2	$0^-,1^-$	1155	1^-	(M1)
6903.8 *5*	43 *3*	S(n)+2	$0^-,1^-$	1118	2^+	(E1)
6978.8 *5*	35.6 *25*	S(n)+2	$0^-,1^-$	1043	0^+	(E1)
7942.9 *6*	111 *6*	S(n)+2	$0^-,1^-$	79	2^+	(E1)
8021.9 *6*	100	S(n)+2	$0^-,1^-$	0.0	0^+	(E1)

[†] From reduced transition intensities $I\gamma/E\gamma^5$.
[‡] For intensity per 100 neutron captures, multiply by 0.0109.
[#] Multiply placed with undivided intensity.
[@] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

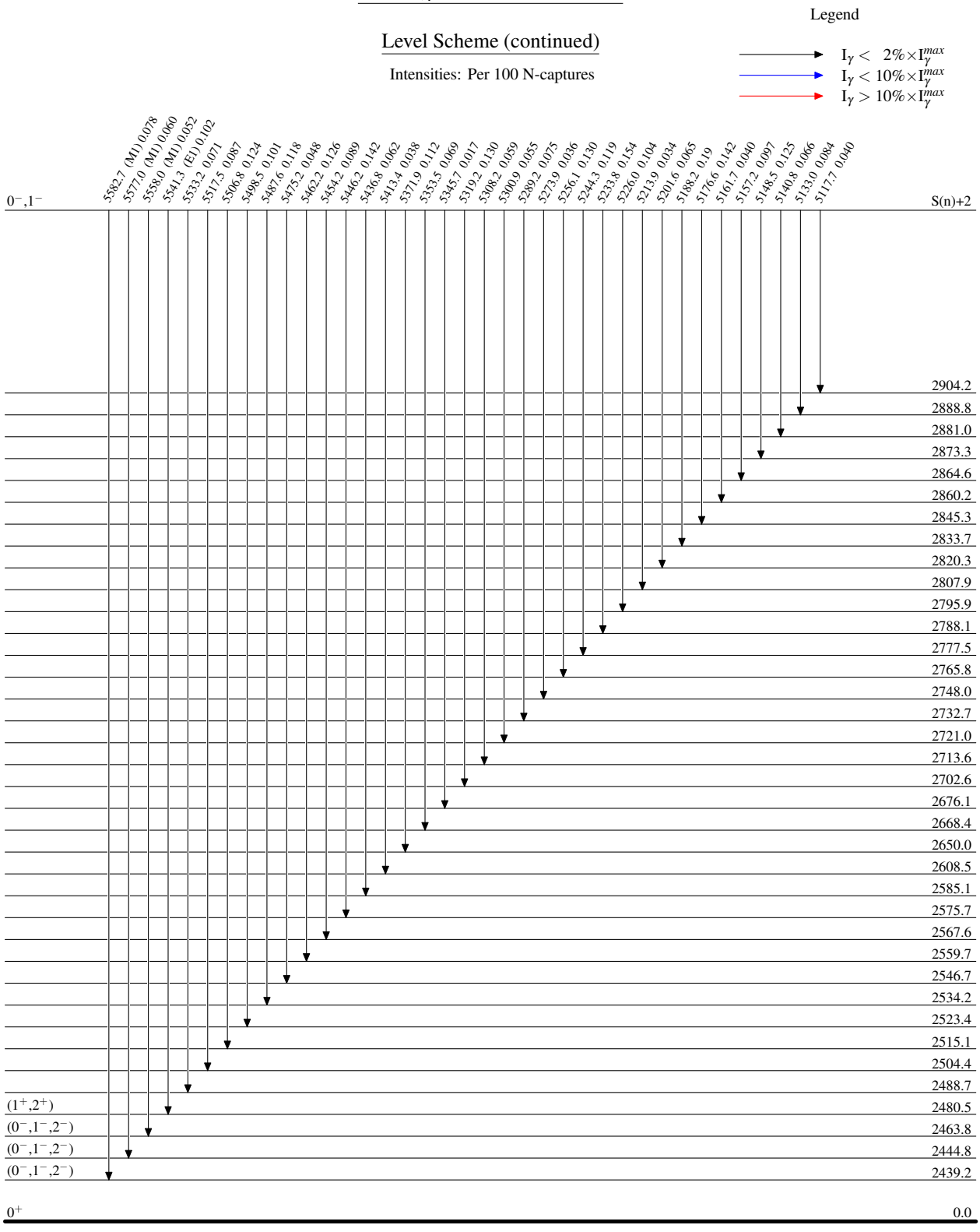

^{171}Yb(n,γ) E=2 keV 1975Gr32
Level Scheme
Intensities: Per 100 N-captures
Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)
8021.9 (E1) 1.09
7942.9 (E1) 1.21
6978.8 (E1) 0.39
6903.8 (E1) 0.47
6866.9 (M1) 0.101
6823.1 (M1) 0.082
6616.7 (E1) 0.35
6555.7 (E1) 0.276
6545.0 (E1) 0.51
6421.3 (M1) 0.105
6413.1 (E1) 0.167
6264.0 (M1) 0.037
6227.5 (E1) 0.299
6172.7 (E1) 0.262
6127.7 (E1) 0.22
6065.0 (E1) 0.230
6011.7 (E1) 0.34
5974.3 (E1) 0.28
5945.2 (M1) 0.043
5919.0 (M1) 0.025
5906.1 (M1) 0.041
5861.2 (M1) 0.029
5845.1 (M1) 0.024
5827.4 (E1) 0.229
5807.4 (M1) 0.036
5794.0 (E1) 0.142
5728.5 (M1) 0.028
5715.9 (M1) 0.052
5708.9 (E1) 0.187
5693.7 (E1) 0.201
5679.2 (E1) 0.126
5669.3 (M1) 0.039
5663.1 (M1) 0.059
5652.7 (M1) 0.050
5646.6 (E1) 0.138
5633.7 (E1) 0.145
5617.5 (M1) 0.038
0⁻,1⁻
S(n)+2
(0⁻,1⁻,2⁻) 2404.4
(1⁺,2⁺) 2388.2
(1⁺,2) 2375.3
(0⁻,1⁻,2⁻) 2369.2
(0⁻,1⁻,2⁻) 2358.7
(0⁻,1⁻,2⁻) 2352.6
(0⁺,1⁺,2⁺) 2342.7
(2⁺) 2328.2
(2⁺) 2312.9
(0⁻,1⁻,2⁻) 2306.0
(0⁻,1⁻,2⁻) 2293.4
2⁺ 2227.8
(1⁻) 2214.4
(1⁺) 2194.5
(1)⁻ 2176.7
(0⁻,1⁻,2⁻) 2160.7
(0⁻,1⁻,2⁻) 2115.8
1⁻ 2102.9
(1)⁻ 2076.7
(2)⁺ 2047.5
1⁺ 2010.2
2⁺ 1956.8
0⁺ 1894.1
2⁺ 1849.1
0⁺ 1794.3
(2)⁻ 1757.9
2⁺ 1608.7
1⁻ 1600.5
2⁺ 1476.8
2⁺ 1466.1
0⁺ 1405
2⁻ 1198.7
1⁻ 1155
2⁺ 1118
0⁺ 1043
2⁺ 79
0⁺ 0.0

$^{172}_{70}Yb_{102}$

^{171}Yb(n,γ) E=2 keV 1975Gr32

Level Scheme (continued)

Intensities: Per 100 N-captures

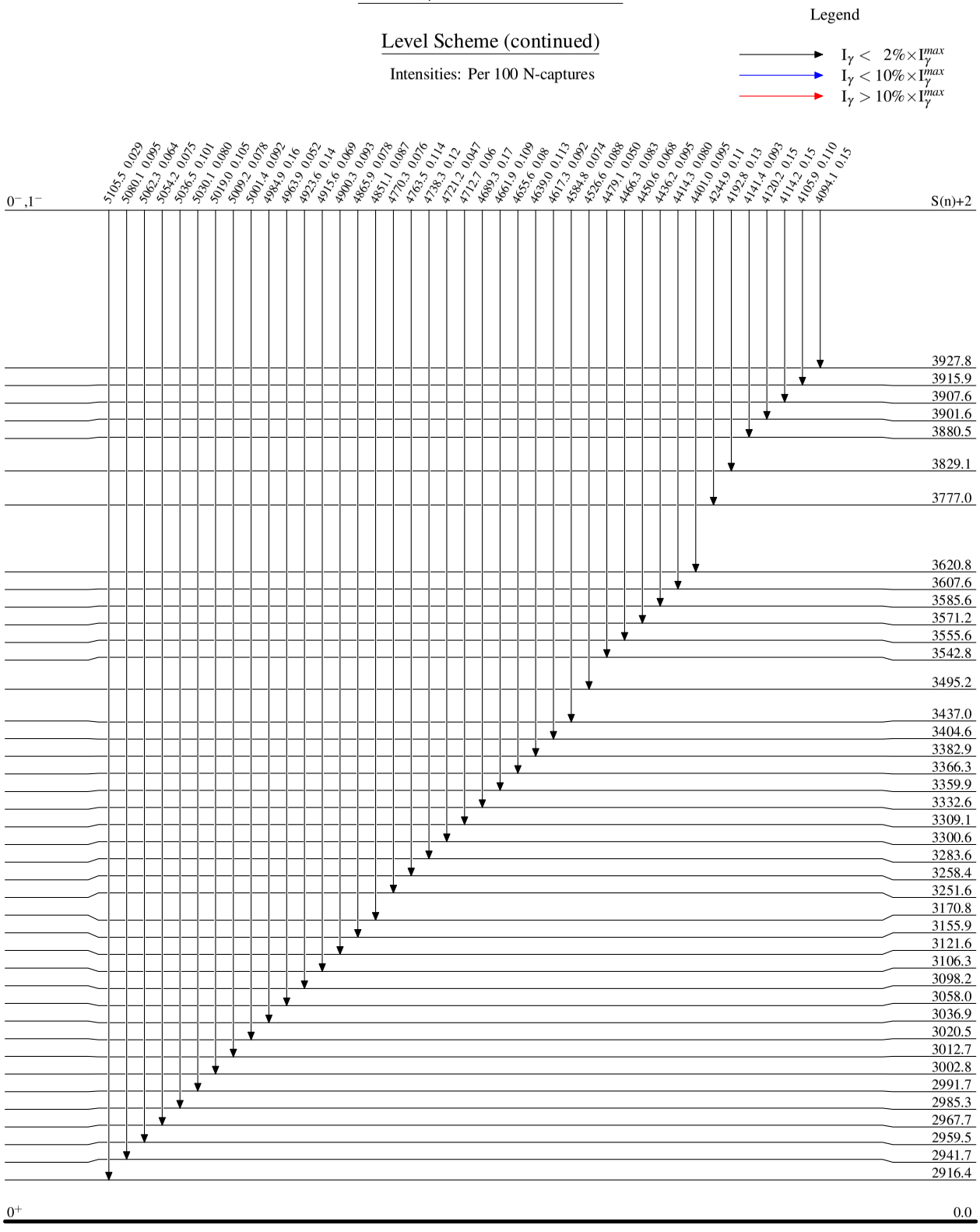


$^{172}_{70}Yb_{102}$

^{171}Yb(n,γ) E=2 keV 1975Gr32

Level Scheme (continued)

Intensities: Per 100 N-captures



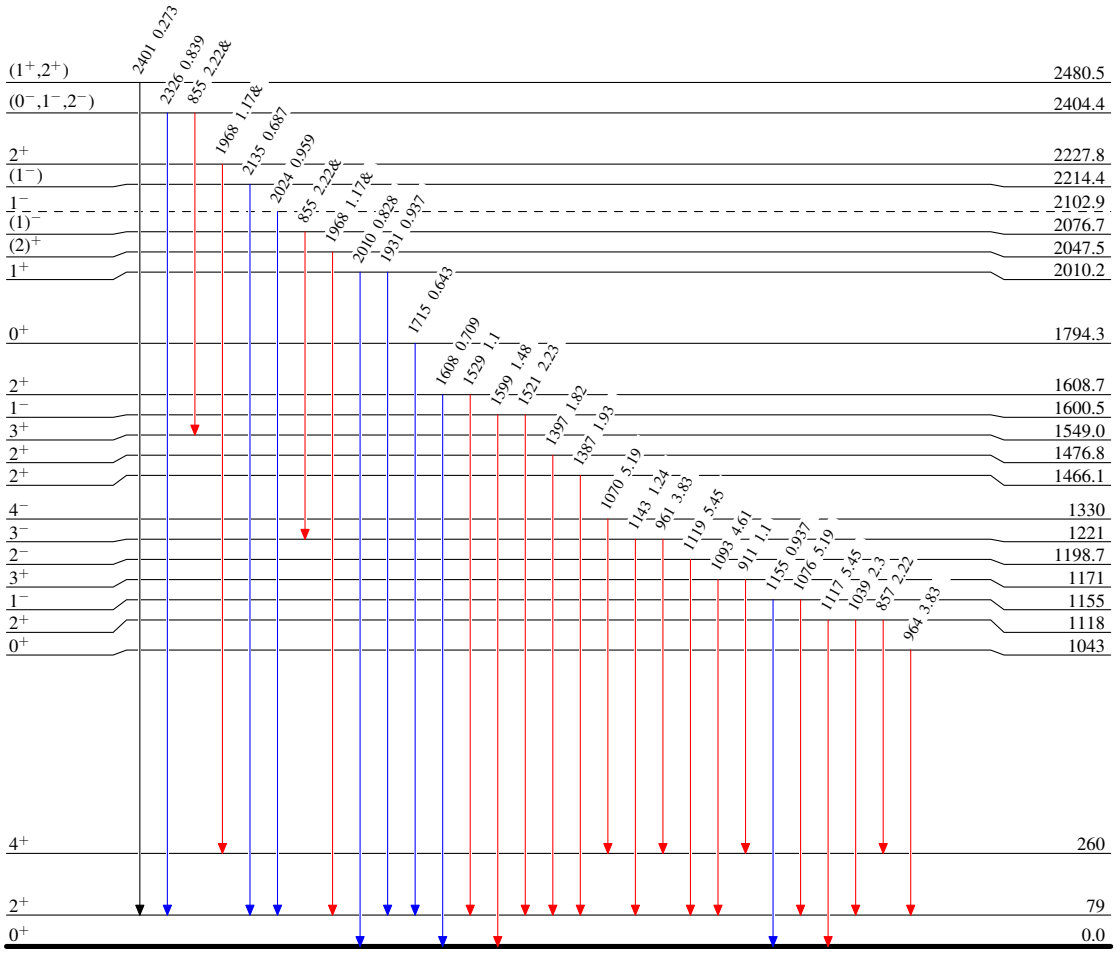
$^{172}_{70}Yb_{102}$

^{171}Yb(n,γ) E=2 keV 1975Gr32

Level Scheme (continued)

Intensities: Per 100 N-captures
& Multiply placed: undivided intensity given

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



$^{172}_{70}Yb_{102}$