

¹⁷⁶Yb(¹¹B,5n γ) **1999Ko03**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 130, 21 (2015)	15-Jul-2015

Additional information 1.

1999Ko03: E=70 MeV. Measured E γ , I γ , $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) using Pitt-FSU array of eight Compton-suppressed Ge detectors, two two-fold segmented CLOVER detectors and a planar LEPS detector.

¹⁸²Re Levels

E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	T _{1/2}	E(level) [†]	J π [‡]
0.0 ^{&}	7 ⁺	2256.5 ^e 17	16 ⁻	82 [#] ns I	3788.8 ^e 19	20 ⁻
154.0 [@] 8	8 ⁺	2295.7 [@] 15	16 ⁺		3822.3 [@] 19	20 ⁺
339.0 ^{&} 8	9 ⁺	2524.4 ^a 17	(16 ⁺)		4112.6 ^d 20	21 ⁻
443.0 ^d 13	9 ⁻	2575.9 ^d 18	17 ⁻		4116.4 ^b 22	(21 ⁺)
551.1 [@] 10	10 ⁺	2614.4 ^f 17	17 ⁻		4190.2 ^{&} 20	21 ⁺
625.0 ^c 15	10 ⁻	2650.0 ^{&} 15	17 ⁺		4206.5 ^f 20	21 ⁻
788.7 ^{&} 11	11 ⁺	2804.4 ^b 19	(17 ⁺)		4507.6 ^c 21	22 ⁻
834.1 ^d 15	11 ⁻	2931.0 ^c 19	18 ⁻		4632.8 ^e 21	(22 ⁻)
1048.9 [@] 12	12 ⁺	2990.5 ^e 18	18 ⁻		4649.3 [@] 22	22 ⁺
1068.7 ^c 16	12 ⁻	3025.3 [@] 16	18 ⁺		4942.6 ^d 23	(23 ⁻)
1327.7 ^d 17	13 ⁻	3098.5 ^a 19	(18 ⁺)		5013.2 ^{&} 22	23 ⁺
1330.8 ^{&} 13	13 ⁺	3312.8 ^d 19	19 ⁻		5076.5 ^f 22	(23 ⁻)
1608.9 ^c 16	14 ⁻	3382.3 ^f 18	19 ⁻		5352.6 ^c 23	(24 ⁻)
1633.8 [@] 13	14 ⁺	3400.2 ^{&} 17	19 ⁺		5488.3 [@] 24	(24 ⁺)
1912.0 ^d 17	15 ⁻	3419.4 ^b 20	(19 ⁺)		5530.8 ^e 24	(24 ⁻)
1954.8 ^{&} 14	15 ⁺	3694.5 ^c 20	20 ⁻		5858.2 ^{&} 24	(25 ⁺)
2233.0 ^c 18	16 ⁻	3759.5 ^a 21	(20 ⁺)			

[†] From least-squares fit to E γ data, assuming 1 keV uncertainty for each γ ray.

[‡] As proposed by 1999Ko03 based on previous assignments for low-lying levels from 1984Si01 and further extension of bands. The assignments in Adopted Levels are the same, except that many are in parentheses there due to lack of strong supporting arguments.

[#] From $\gamma(t)$ (1988Ja02).

[@] Band(A): K π =7⁺, α =0. Configuration= π 5/2[402] \otimes ν 9/2[624].

[&] Band(a): K π =7⁺, α =1. Configuration= π 5/2[402] \otimes ν 9/2[624].

^a Band(B): K π =(16⁺), α =0. Configuration= π 9/2[514] \otimes ν ³(7/2[503],7/2[633],9/2[624]).

^b Band(b): K π =(16⁺), α =1. Configuration= π 9/2[514] \otimes ν ³(7/2[503],7/2[633],9/2[624]).

^c Band(C): K π =9⁻, α =0. Configuration= π 9/2[514] \otimes ν 9/2[624].

^d Band(c): K π =9⁻, α =1. Configuration= π 9/2[514] \otimes ν 9/2[624].

^e Band(D): K π =16⁻, α =0. Configuration= π 9/2[514] \otimes ν ³(7/2[514],7/2[503],9/2[624]).

^f Band(d): K π =16⁻, α =1. Configuration= π 9/2[514] \otimes ν ³(7/2[514],7/2[503],9/2[624]).

$^{176}\text{Yb}(^{11}\text{B},5n\gamma)$ **1999Ko03** (continued) $\gamma(^{182}\text{Re})$ DCO values correspond to gate on $\Delta J=2$, E2 transition.

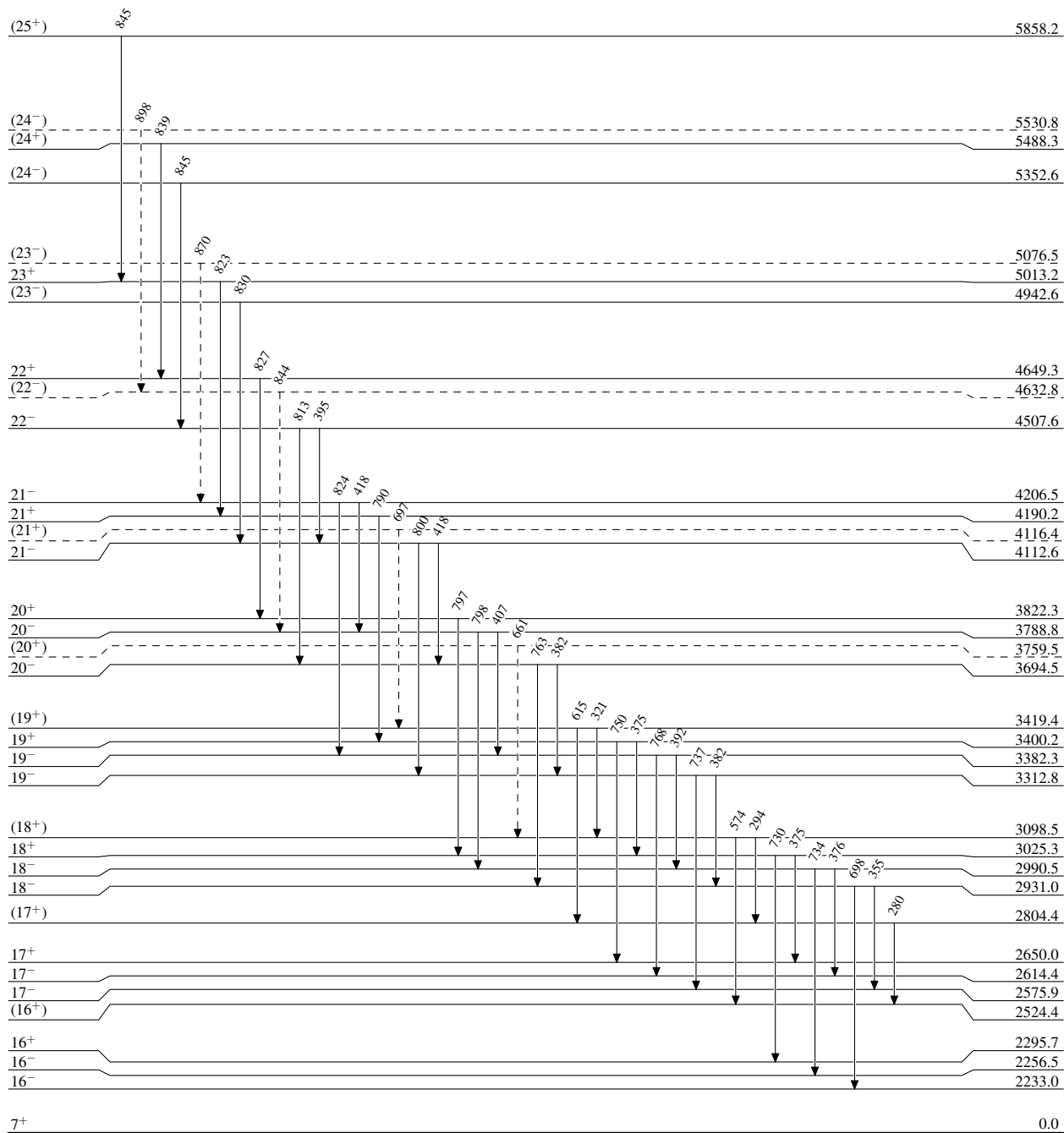
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
154	154.0	8 ⁺	0.0	7 ⁺	450	788.7	11 ⁺	339.0	9 ⁺
182	625.0	10 ⁻	443.0	9 ⁻	493	1327.7	13 ⁻	834.1	11 ⁻
185	339.0	9 ⁺	154.0	8 ⁺	498	1048.9	12 ⁺	551.1	10 ⁺
209	834.1	11 ⁻	625.0	10 ⁻	540.2	1608.9	14 ⁻	1068.7	12 ⁻
212	551.1	10 ⁺	339.0	9 ⁺	542	1330.8	13 ⁺	788.7	11 ⁺
235	1068.7	12 ⁻	834.1	11 ⁻	574	3098.5	(18 ⁺)	2524.4	(16 ⁺)
237	788.7	11 ⁺	551.1	10 ⁺	584	1912.0	15 ⁻	1327.7	13 ⁻
259	1327.7	13 ⁻	1068.7	12 ⁻	585	1633.8	14 ⁺	1048.9	12 ⁺
260	1048.9	12 ⁺	788.7	11 ⁺	615	3419.4	(19 ⁺)	2804.4	(17 ⁺)
267.9	2524.4	(16 ⁺)	2256.5	16 ⁻	624	1954.8	15 ⁺	1330.8	13 ⁺
280	2804.4	(17 ⁺)	2524.4	(16 ⁺)	624	2233.0	16 ⁻	1608.9	14 ⁻
281	1608.9	14 ⁻	1327.7	13 ⁻	647.7	2256.5	16 ⁻	1608.9	14 ⁻
282	1330.8	13 ⁺	1048.9	12 ⁺	661 [†]	3759.5?	(20 ⁺)	3098.5	(18 ⁺)
289	443.0	9 ⁻	154.0	8 ⁺	662	2295.7	16 ⁺	1633.8	14 ⁺
294	3098.5	(18 ⁺)	2804.4	(17 ⁺)	664	2575.9	17 ⁻	1912.0	15 ⁻
303	1633.8	14 ⁺	1330.8	13 ⁺	695	2650.0	17 ⁺	1954.8	15 ⁺
303	1912.0	15 ⁻	1608.9	14 ⁻	697 [†]	4116.4?	(21 ⁺)	3419.4	(19 ⁺)
321	1954.8	15 ⁺	1633.8	14 ⁺	698	2931.0	18 ⁻	2233.0	16 ⁻
321	2233.0	16 ⁻	1912.0	15 ⁻	730	3025.3	18 ⁺	2295.7	16 ⁺
321	3419.4	(19 ⁺)	3098.5	(18 ⁺)	734	2990.5	18 ⁻	2256.5	16 ⁻
339	339.0	9 ⁺	0.0	7 ⁺	737	3312.8	19 ⁻	2575.9	17 ⁻
341	2295.7	16 ⁺	1954.8	15 ⁺	750	3400.2	19 ⁺	2650.0	17 ⁺
343	2575.9	17 ⁻	2233.0	16 ⁻	763	3694.5	20 ⁻	2931.0	18 ⁻
344.5	2256.5	16 ⁻	1912.0	15 ⁻	768	3382.3	19 ⁻	2614.4	17 ⁻
354	2650.0	17 ⁺	2295.7	16 ⁺	790	4190.2	21 ⁺	3400.2	19 ⁺
355	2931.0	18 ⁻	2575.9	17 ⁻	797	3822.3	20 ⁺	3025.3	18 ⁺
357.8	2614.4	17 ⁻	2256.5	16 ⁻	798	3788.8	20 ⁻	2990.5	18 ⁻
375	3025.3	18 ⁺	2650.0	17 ⁺	800	4112.6	21 ⁻	3312.8	19 ⁻
375	3400.2	19 ⁺	3025.3	18 ⁺	813	4507.6	22 ⁻	3694.5	20 ⁻
376	2990.5	18 ⁻	2614.4	17 ⁻	823	5013.2	23 ⁺	4190.2	21 ⁺
382	3312.8	19 ⁻	2931.0	18 ⁻	824	4206.5	21 ⁻	3382.3	19 ⁻
382	3694.5	20 ⁻	3312.8	19 ⁻	827	4649.3	22 ⁺	3822.3	20 ⁺
391	834.1	11 ⁻	443.0	9 ⁻	830	4942.6	(23 ⁻)	4112.6	21 ⁻
392	3382.3	19 ⁻	2990.5	18 ⁻	839	5488.3	(24 ⁺)	4649.3	22 ⁺
395	4507.6	22 ⁻	4112.6	21 ⁻	844 [†]	4632.8?	(22 ⁻)	3788.8	20 ⁻
397	551.1	10 ⁺	154.0	8 ⁺	845	5352.6	(24 ⁻)	4507.6	22 ⁻
407	3788.8	20 ⁻	3382.3	19 ⁻	845	5858.2	(25 ⁺)	5013.2	23 ⁺
418	4112.6	21 ⁻	3694.5	20 ⁻	870 [†]	5076.5?	(23 ⁻)	4206.5	21 ⁻
418	4206.5	21 ⁻	3788.8	20 ⁻	898 [†]	5530.8?	(24 ⁻)	4632.8?	(22 ⁻)
444	1068.7	12 ⁻	625.0	10 ⁻					

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

$^{176}\text{Yb}(^{11}\text{B}, 5n\gamma)$ 1999Ko03

Legend

Level Scheme

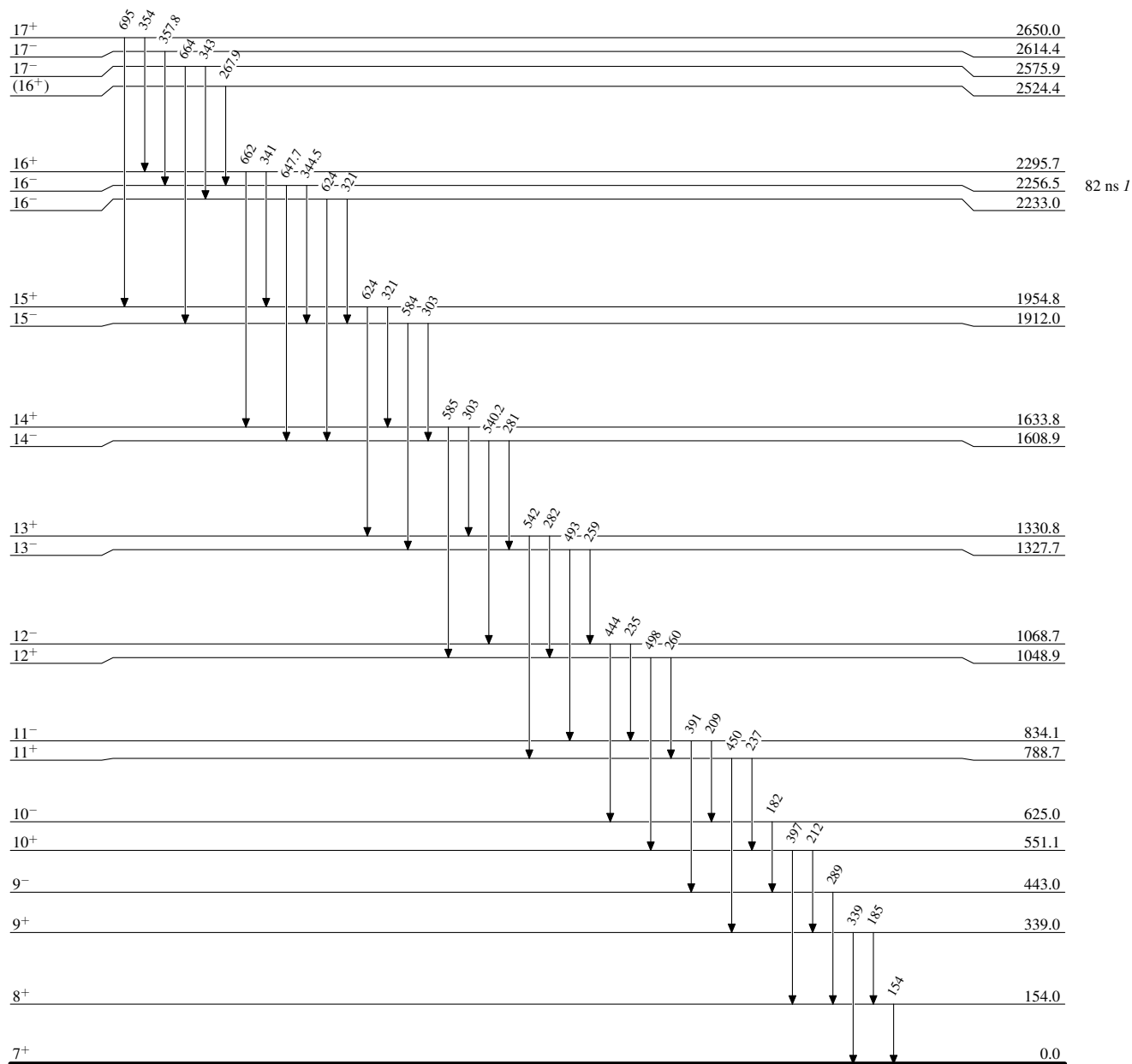
-----> γ Decay (Uncertain)

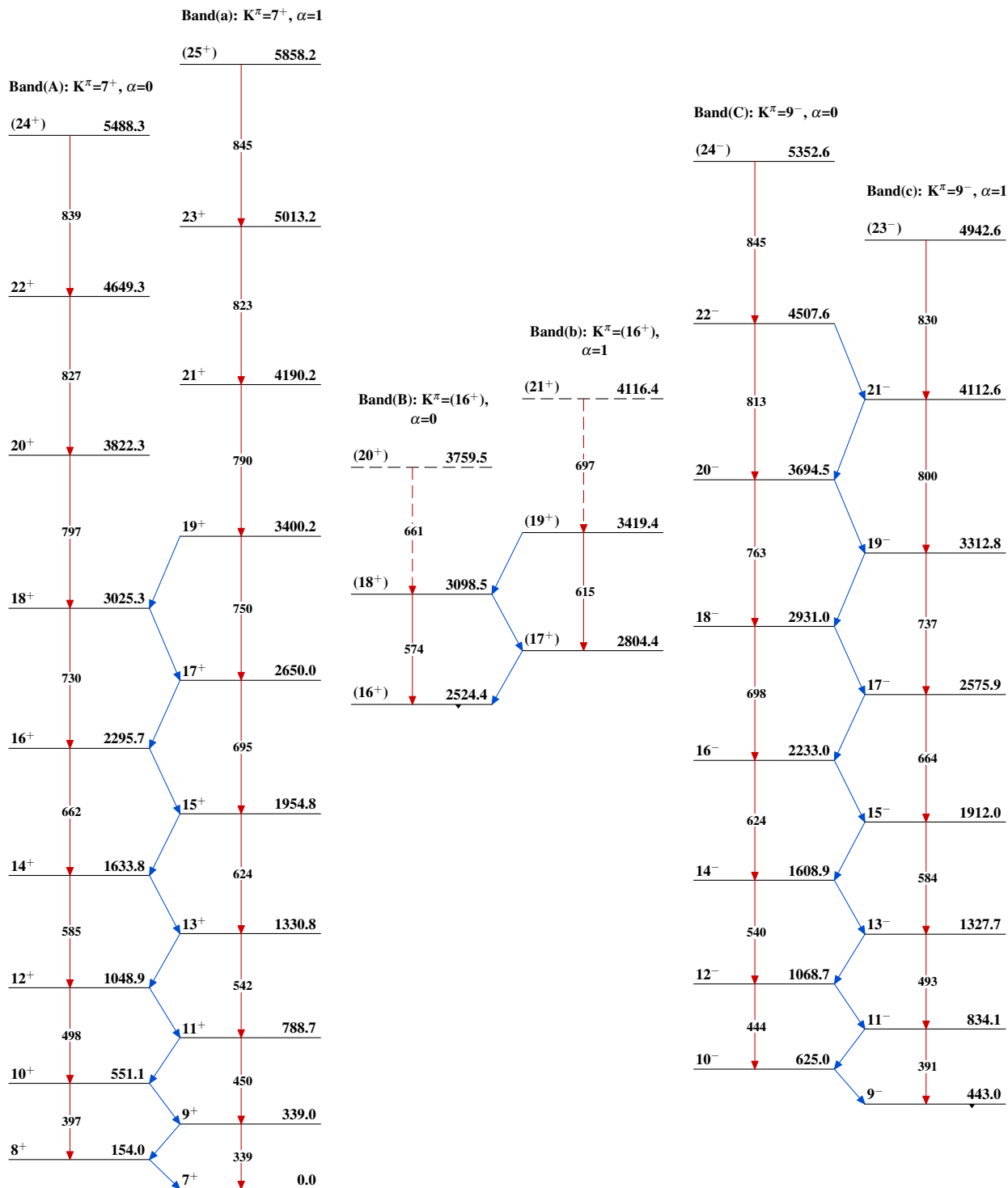
82 ns /

 $^{182}_{75}\text{Re}_{107}$

$^{176}\text{Yb}(^{11}\text{B},5n\gamma)$ 1999Ko03

Level Scheme (continued)

 $^{182}_{75}\text{Re}_{107}$

$^{176}\text{Yb}(^{11}\text{B}, 5n\gamma)$ 1999Ko03

$^{176}\text{Yb}(^{11}\text{B},5\text{n}\gamma)$ 1999Ko03 (continued)