Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. K. Tuli, E. Browne	NDS 157, 260 (2019)	1-Mar-2019

Q(β^-)=−178 *7*; S(n)=8802 *6*; S(p)=5781 *3*; Q(α)=−5161 *5* 2017Wa10
Production of isomer: 1997Bl02.
Theory:
2011Ku12: Signature splitting and signature inversion.
2006Pe12: Calculated magnetic rotational band parameters.
2006Pe30: calculated level properties.
2004Sh18: Calculated band levels, signature inversion.
1975Fu11: Theoretical investigation of isomeric shifts.
1970Pe22: Levels are discussed within the shell model.
Isotopic shift measured by 1981Th04.

^{82}Rb Levels

Cross Reference (XREF) Flags

A ^{82}Sr ε decay
B ^{79}Br(α,nγ)
C ^{81}Br(α,3nγ)
D (HI,xnγ)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	XREF	Comments
0	1$^+$	1.2575 min *2*	ABCD	%ε+%β^+=100 μ=+0.5545083 *11* (2014StZZ); Q=+0.23 *10* (2016St14) J$^\pi$: J=1 from atomic beam (1981Th04). log *ft*=4.8 from 0$^+$. $T_{1/2}$: from 1987Wo01. Others: 1.273 min *2* (1978Gr17), 1.25 min *3* (1953Li27), 1.27 min *8* (1953Kr10). μ: LASER induced optical pumping of thermal atomic beam with and without rf resonance (1986Du16); value relative to μ=2.751816 *2* for ^{87}Rb(g.s.) and subject to hyperfine anomaly correction, high-resolution LASER spectroscopy on atomic beam (1981Th04). Other value: +0.554 *6* (1978Ek04), radiative detection of optical pumping, recalculated (1989Ra17). Q: Revised from +0.19 *7* (1981Th04), laser induced optical pumping of thermal atomic beam, polarization correction included.
69.0 *15*	5$^-$	6.472 h *6*	BCD	%ε+%β^+=100; %IT<0.33 μ=+1.5100082 *2* (2014StZZ) Q=+1.2 *3* (2016St14) J$^\pi$: J=5 from atomic beam (1981Th04). log *ft*=4.9 to 4$^-$. $T_{1/2}$: from 1982Gr07. Other: 6.2 h *5* (1967Vr07). μ: Atomic beam (1957Hu75,1976Fu04); value relative to μ=2.751816 *2* for ^{87}Rb(g.s.) and subject to hyperfine anomaly correction. Other values: +1.5133 *24* from high-resolution LASER spectroscopy on atomic beam (1981Th04); +1.51 *2* from recalculation of atomic beam data (1978Ek04). Q: Revised from +1.01 *12* (1981Th04), LASER induced optical pumping of thermal atomic beam, Sternheimer correction included. %IT: If B(M4)(W.u.)<30 (RUL). See 1991Ko24 for production of ^{82}Rb via the ^{82}Kr(p,n) process at a low energy cyclotron.
88.9 *9*	(2$^-$)	1.66 ns *14*	B	J$^\pi$: From systematics of neighboring ^{84,86}Rb, where 2$^-$ is the g.s. (1991Do05). $T_{1/2}$: from 1991Do05.
189.6 *12*	3$^{(-)}$	0.21 ns *14*	B	
192.2[a] *16*	6$^+$[&]	12.3 ns *6*	BCD	μ=+4.02 *5* (2014StZZ)

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Adopted Levels, Gammas (continued)

^{82}Rb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
				μ,$T_{1/2}$ from γ(θ,H,t) (1996Io01). Isomer produced In ^{79}Br(^{4}He,N), ^{81}Br(^{3}He,2n). Other $T_{1/2}$=13.9 ns *21* (1991Do05) In (α,nγ). Jπ: on the basis of g measurement Configuration=((π $g_{9/2}$)(ν $g_{9/2}$)^3) is suggested (1999Io01).
210.0 *16*			D	
225.7 *12*	(2)	0.28 ns *14*	B	
244.6 *12*	(3^-)[@]	0.35 ns *14*	B	
256.2[a] *16*	$7^{(+)}$[&]	<5 ns	BCD	$T_{1/2}$: from (α,3nγ).
266.9 *9*	(2^+)		B	
302.0[a] *16*	$8^{(+)}$[&]	<5 ns	BCD	$T_{1/2}$: from (α,3nγ).
310.2 *13*	(4^-)[@]		B	
340.4 *12*	(3)		B	
394.2[d] *15*	(6^-)		B D	
439.9 *15*	(5^-)[@]		B	
484.9 *15*	6^-		B D	Jπ: from γ(θ) and linear polarization of the decay γ, and systematics consideration. Configuration=((π $p_{3/2}$)(ν $g_{9/2}$)) (1999DO02).
534.0 *17*	(4)		B	
539.3 *16*	(6)		D	
576.1 *16*	(5)		D	
609.1 *15*	(5)		B	
617.8 *16*			B	
661.4 *15*	(5,6)		B	
691.5 *15*	(7^-)		B D	Jπ: Configuration=((π $f_{5/2}$)(ν $g_{9/2}$)).
705.2 *16*	(6)		D	
734.9 *16*	(7)		B D	
772.6 *16*			D	
864.5[b] *16*	$9^{(+)}$[&]	0.19 ps *5*	BCD	
899.7 *16*	(7)		D	
1025.8 *16*	(8^+)		D	
1085.1 *16*	(8^-)		D	
1211.6 *16*	(9^+)		D	
1282.3[a] *16*	(10^+)[&]	0.68 ps *6*	BCD	
1357.3[d] *16*	(8^-)		D	
1704.3 *16*	$10^{(+)}$		D	
1734.0 *16*	(9^-)		D	
1844.3 *16*	(9^-)		D	
1903.3[b] *16*	$11^{(+)}$	<0.38 ps	CD	
1963.6 *16*	$10^{(+)}$		D	
2291.7 *16*	$11^{(+)}$		D	
2395.8[d] *16*	(10^-)		D	
2552.6[a] *16*	$12^{(+)}$	<0.62 ps	D	
2618.3[c] *16*	(11^-)		D	Jπ: suggested As a 4-quasiparticle state with Configuration=((π $g_{9/2}$)^2(π $p_{3/2}$)(π $f_{5/2}$)(ν $g_{9/2}$)) (1999DO02).
2710.7 *16*	(11^-)		D	
2961.4 *16*			D	
3028.9[c] *16*	(12^-)	0.40 ps *9*	D	μ=+13 *3* (2014StZZ) μ: from g-factor (2010Yu03), tf.
3043.0 *18*			D	
3184.7[b] *16*	$13^{(+)}$		D	
3501.7[c] *16*	(13^-)	0.41 ps *8*	D	μ=+13 *3* (2014StZZ) μ: from g-factor (2010Yu03), tf.
3520.5 *17*			D	

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Adopted Levels, Gammas (continued)

^{82}Rb Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	XREF	Comments
3651.0 *18*	(13$^-$)		D	
3670.8 *16*			D	
4017.1[a] *17*	14$^{(+)}$		D	
4049.1[c] *16*	(14$^-$)	0.24 ps *5*	D	μ=+12 *3* (2014StZZ) μ: from g-factor (2010Yu03), tf.
4532.2[b] *17*	(15$^+$)		D	
4717.6[c] *16*	(15$^-$)	<0.69 ps	D	μ=+12 *3* (2014StZZ) μ: from g-factor (2010Yu03), tf.
5486.0[c] *17*	(16$^-$)		D	
5590.8[a] *17*	(16$^+$)		D	
6013.7[b] *17*	(17$^+$)		D	

[†] From least-squares fit to Eγ.
[‡] Assignment from (HI,xnγ), based on DCO ratios and band assignments or from (α,xnγ) based on $\gamma(\theta)$, excit, and γ mult, except as noted otherwise.
[#] Short $T_{1/2}$ (ps) are from DSA in (HI,xnγ), others are from γ(t) in ^{79}Br(α,nγ), unless given otherwise.
[@] From $\gamma(\theta)$ of decay γ and excitation functions in (α,xnγ) (1991Do05).
[&] Spin from dipole γ cascade in (HI,xnγ); positive parity from systematics, except for the 6$^+$ state, where π is determined by E1 γ to 5$^-$.
[a] Band(A): π=+, α=0. The two π=+ bands, along with the 6$^+$, 7$^+$ levels form the π=+ yrast sequence. The two bands are signature partners.
[b] Band(B): π=+, α=1. The two π=+ bands, along with the 6$^+$, 7$^+$ levels form the π=+ yrast sequence. The two bands are signature partners.
[c] Band(C): magnetic-rotational band.
[d] Band(D): π=− band.

γ(^{82}Rb)

E_i(level)	J_i^{π}	E_{γ}[†]	I_{γ}[#]	E_f	J_f^{π}	Mult.[@]	α[&]	Comments
88.9	(2$^-$)	88.9	100	0	1$^+$	(E1)	0.1356	α(K)=0.1200 *17*; α(L)=0.01318 *19*; α(M)=0.00216 *3* α(N)=0.000238 *4*; α(O)=9.39×10^{-6} *14* B(E1)(W.u.)=0.000271 *25* Mult.: RUL and systematics of 2$^-$ to 1$^+$ transitions In ^{78,80}Br (1991Do05).
189.6	3$^{(-)}$	100.7	100	88.9	(2$^-$)			
192.2	6$^+$	123.2 *3*	100	69.0	5$^-$	E1	0.0517 *9*	B(E1)(W.u.)=1.48×10^{-5} *8* α(K)=0.0458 *8*; α(L)=0.00499 *8*; α(M)=0.000817 *13* α(N)=9.09×10^{-5} *15*; α(O)=3.68×10^{-6} *6* Mult.: Mult from $\gamma(\theta)$ and excitation functions; parity from linear polarization in (α,nγ).
210.0		(17.8 *2*)		192.2	6$^+$			
225.7	(2)	136.8	100	88.9	(2$^-$)			
244.6	(3$^-$)	155.6	100	88.9	(2$^-$)			
256.2	7$^{(+)}$	64.5 *3*	100	192.2	6$^+$	D		Mult.: expected M1 (1999Do02).
266.9	(2$^+$)	178.0		88.9	(2$^-$)			
		266.9		0	1$^+$			
302.0	8$^{(+)}$	45.9 *3*	100	256.2	7$^{(+)}$	D		Mult.: expected M1 (1999Do02).
310.2	(4$^-$)	65.5		244.6	(3$^-$)			

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Adopted Levels, Gammas (continued)

$\gamma(^{82}Rb)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ #	E_f	J_f^π	Mult. @	α &	Comments
310.2	(4⁻)	120.6		189.6	3⁽⁻⁾			
		242.0		69.0	5⁻			
340.4	(3)	114.8		225.7	(2)			
		251.3		88.9	(2⁻)			
394.2	(6⁻)	325.2 *1*	100	69.0	5⁻			
439.9	(5⁻)	130.2		310.2	(4⁻)			
		370.2		69.0	5⁻			
484.9	6⁻	415.7 *1*	100	69.0	5⁻			
534.0	(4)	139.6		394.2	(6⁻)			
		465.2‡		69.0	5⁻			
539.3	(6)	283.0 *2*	100	256.2	7⁽⁺⁾			
576.1	(5)	383.9 *2*	100	192.2	6⁺			
609.1	(5)	168.9‡		439.9	(5⁻)			
		299.1		310.2	(4⁻)			
617.8		277.4	100	340.4	(3)			
661.4	(5,6)	221.3		439.9	(5⁻)			
		351.3‡		310.2	(4⁻)			
691.5	(7⁻)	206.6 *1*	100 *10*	484.9	6⁻	M1+E2	0.044 *24*	α(K)=0.039 *21*; α(L)=0.0047 *27*; α(M)=7.7×10⁻⁴ *44* α(N)=8.5×10⁻⁵ *47*; α(O)=3.2×10⁻⁶ *16*
		296.8 *3*	14 *5*	394.2	(6⁻)	(M1+E2)	0.0136 *53*	α(K)=0.0119 *46*; α(L)=0.00137 *57*; α(M)=2.27×10⁻⁴ *94* α(N)=2.5×10⁻⁵ *10*; α(O)=1.01×10⁻⁶ *36*
		435.2 *3*	10 *5*	256.2	7⁽⁺⁾	(E1)	1.48×10⁻³	α(K)=0.001313 *19*; α(L)=0.0001408 *20*; α(M)=2.32×10⁻⁵ *4* α(N)=2.62×10⁻⁶ *4*; α(O)=1.121×10⁻⁷ *16*
		499.2 *3*	10 *5*	192.2	6⁺	E1	1.05×10⁻³	α(K)=0.000933 *14*; α(L)=9.98×10⁻⁵ *14*; α(M)=1.643×10⁻⁵ *24* α(N)=1.86×10⁻⁶ *3*; α(O)=7.99×10⁻⁸ *12*
		622.5‡ *3*	≈5	69.0	5⁻	(E2)	0.00181	α(K)=0.001598 *23*; α(L)=0.0001765 *25*; α(M)=2.91×10⁻⁵ *4* α(N)=3.27×10⁻⁶ *5*; α(O)=1.372×10⁻⁷ *20*
705.2	(6)	129.0 *3*	≈50	576.1	(5)			
		495.1 *3*	≈100	210.0				
734.9	(7)	433.1 *3*	67 *33*	302.0	8⁽⁺⁾			
		542.6 *2*	100 *33*	192.2	6⁺			
772.6		233.3 *3*	100	539.3	(6)			
864.5	9⁽⁺⁾	562.6 *1*	100	302.0	8⁽⁺⁾	M1	0.00181	α(K)=0.001602 *23*; α(L)=0.0001728 *25*; α(M)=2.85×10⁻⁵ *4* α(N)=3.24×10⁻⁶ *5*; α(O)=1.410×10⁻⁷ *20* B(M1)(W.u.)=0.65 *17*
899.7	(7)	194.4 *3*	67 *33*	705.2	(6)			
		707.5 *3*	100 *33*	192.2	6⁺			
1025.8	(8⁺)	125.9 *3*	43 *14*	899.7	(7)			
		833.6 *3*	100 *14*	192.2	6⁺	(E2)	8.32×10⁻⁴	α(K)=0.000737 *11*; α(L)=8.02×10⁻⁵ *12*; α(M)=1.321×10⁻⁵ *19* α(N)=1.493×10⁻⁶ *21*; α(O)=6.37×10⁻⁸ *9*
1085.1	(8⁻)	393.8 *2*	100 *20*	691.5	(7⁻)	M1+E2	0.0057 *16*	α(K)=0.0051 *14*; α(L)=5.7×10⁻⁴ *17*; α(M)=9.3×10⁻⁵ *28* α(N)=1.05×10⁻⁵ *30*; α(O)=4.3×10⁻⁷ *11*
		600.9 *5*	80 *20*	484.9	6⁻	(E2)	0.00200	α(K)=0.00177 *3*; α(L)=0.000195 *3*; α(M)=3.22×10⁻⁵ *5* α(N)=3.62×10⁻⁶ *6*; α(O)=1.514×10⁻⁷ *22*

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Adopted Levels, Gammas (continued)

$\gamma(^{82}Rb)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[@]	α[&]	Comments
								Mult.: from level placement; M1+E2 from DCO ratio.
1211.6	(9$^+$)	186.0 *2*	33 *17*	1025.8	(8$^+$)	(M1+E2)	0.063 *36*	α(K)=0.055 *32*; α(L)=0.0068 *42*; α(M)=0.00112 *68* α(N)=1.22×10^{-4} *73*; α(O)=4.5×10^{-6} *24*
		955.3 *3*	100 *17*	256.2	7$^{(+)}$	(E2)	5.97×10^{-4}	α(K)=0.000529 *8*; α(L)=5.72×10^{-5} *8*; α(M)=9.43×10^{-6} *14* α(N)=1.067×10^{-6} *15*; α(O)=4.58×10^{-8} *7*
1282.3	(10$^+$)	417.7 *2*	13 *3*	864.5	9$^{(+)}$	M1	0.00362	α(K)=0.00321 *5*; α(L)=0.000349 *5*; α(M)=5.76×10^{-5} *8* α(N)=6.54×10^{-6} *10*; α(O)=2.83×10^{-7} *4* B(M1)(W.u.)=0.051 *13*
		980.4 *1*	100 *6*	302.0	8$^{(+)}$	E2	5.61×10^{-4}	α(K)=0.000498 *7*; α(L)=5.38×10^{-5} *8*; α(M)=8.86×10^{-6} *13* α(N)=1.003×10^{-6} *14*; α(O)=4.31×10^{-8} *6* B(E2)(W.u.)=38 *5*
1357.3	(8$^-$)	666[a] *1*	≈6	691.5	(7$^-$)			
		963.0 *2*	100 *11*	394.2	(6$^-$)	E2	5.86×10^{-4}	α(K)=0.000519 *8*; α(L)=5.61×10^{-5} *8*; α(M)=9.25×10^{-6} *13* α(N)=1.047×10^{-6} *15*; α(O)=4.50×10^{-8} *7*
		1055.2 *5*	11 *6*	302.0	8$^{(+)}$	(E1)	2.08×10^{-4}	α(K)=0.000185 *3*; α(L)=1.96×10^{-5} *3*; α(M)=3.23×10^{-6} *5* α(N)=3.67×10^{-7} *6*; α(O)=1.598×10^{-8} *23*
1704.3	10$^{(+)}$	839.5 *2*	100	864.5	9$^{(+)}$	M1+E2	0.00078 *4*	α(K)=0.00069 *4*; α(L)=7.5×10^{-5} *5*; α(M)=1.23×10^{-5} *7* α(N)=1.39×10^{-6} *8*; α(O)=6.0×10^{-8} *3*
1734.0	(9$^-$)	1041.8 *4*	100	691.5	(7$^-$)	(E2)	4.88×10^{-4}	α(K)=0.000432 *6*; α(L)=4.66×10^{-5} *7*; α(M)=7.68×10^{-6} *11* α(N)=8.70×10^{-7} *13*; α(O)=3.75×10^{-8} *6*
1844.3	(9$^-$)	109.8 *2*	20 *13*	1734.0	(9$^-$)			
		759.7 *3*	100 *14*	1085.1	(8$^-$)	(M1)	9.21×10^{-4}	α(K)=0.000817 *12*; α(L)=8.76×10^{-5} *13*; α(M)=1.445×10^{-5} *21* α(N)=1.643×10^{-6} *23*; α(O)=7.18×10^{-8} *10*
		1543 *1*	29 *14*	302.0	8$^{(+)}$	(E1)	3.88×10^{-4}	α(K)=9.51×10^{-5} *14*; α(L)=1.001×10^{-5} *14*; α(M)=1.649×10^{-6} *24* α(N)=1.88×10^{-7} *3*; α(O)=8.21×10^{-9} *12*; α(IPF)=0.000281 *4*
1903.3	11$^{(+)}$	620.9 *2*	100 *8*	1282.3	(10$^+$)	M1+E2	0.00163 *19*	α(K)=0.00144 *17*; α(L)=0.000158 *21*; α(M)=2.6×10^{-5} *4* α(N)=2.9×10^{-6} *4*; α(O)=1.25×10^{-7} *13*
		1038.4 *3*	42 *8*	864.5	9$^{(+)}$	E2	4.91×10^{-4}	α(K)=0.000436 *7*; α(L)=4.70×10^{-5} *7*; α(M)=7.74×10^{-6} *11* α(N)=8.77×10^{-7} *13*; α(O)=3.78×10^{-8} *6* B(E2)(W.u.)>17

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Adopted Levels, Gammas (continued)

$\gamma(^{82}Rb)$ (continued)

E_i(level)	J^π_i	E_γ [†]	I_γ [#]	E_f	J^π_f	Mult. [@]	α [&]	Comments
1963.6	10$^{(+)}$	1099.0 *2*	100	864.5	9$^{(+)}$	(M1+E2)	4.25×10^{-4} *9*	α(K)=0.000377 *8*; α(L)=4.04×10^{-5} *10*; α(M)=6.66×10^{-6} *16* α(N)=7.57×10^{-7} *17*; α(O)=3.29×10^{-8} *6*
2291.7	11$^{(+)}$	587.7 *3*	100	1704.3	10$^{(+)}$	M1+E2	0.00188 *25*	α(K)=0.00167 *22*; α(L)=0.00018 *3*; α(M)=3.0×10^{-5} *5* α(N)=3.4×10^{-6} *5*; α(O)=1.44×10^{-7} *17*
2395.8	(10$^-$)	662.6 *5*	40 *3*	1734.0	(9$^-$)			
		1038.6 *4*	100 *12*	1357.3	(8$^-$)	E2	4.91×10^{-4}	α(K)=0.000435 *7*; α(L)=4.69×10^{-5} *7*; α(M)=7.74×10^{-6} *11* α(N)=8.76×10^{-7} *13*; α(O)=3.78×10^{-8} *6*
2552.6	12$^{(+)}$	261.1 *3*	≈8	2291.7	11$^{(+)}$	(M1)	0.01146	α(K)=0.01014 *15*; α(L)=0.001116 *16*; α(M)=0.000184 *3* α(N)=2.09×10^{-5} *3*; α(O)=8.99×10^{-7} *13* B(M1)(W.u.)>0.14
		649.5[a] *4*	<8	1903.3	11$^{(+)}$	(M1)	1.30×10^{-3}	α(K)=0.001157 *17*; α(L)=0.0001244 *18*; α(M)=2.05×10^{-5} *3* α(N)=2.33×10^{-6} *4*; α(O)=1.017×10^{-7} *15* B(M1)(W.u.)>0.0046
		1270.2 *3*	100 *17*	1282.3	(10$^+$)	E2	3.36×10^{-4}	α(K)=0.000279 *4*; α(L)=2.99×10^{-5} *5*; α(M)=4.93×10^{-6} *7* α(N)=5.59×10^{-7} *8*; α(O)=2.43×10^{-8} *4*; α(IPF)=2.09×10^{-5} *3* B(E2)(W.u.)>12
2618.3	(11$^-$)	222.4 *2*	100 *17*	2395.8	(10$^-$)	(M1+E2)	0.035 *18*	α(K)=0.030 *16*; α(L)=0.0036 *20*; α(M)=6.0×10^{-4} *32* α(N)=6.6×10^{-5} *35*; α(O)=2.5×10^{-6} *12*
		773.0 *3*	100 *17*	1844.3	(9$^-$)	(E2)	1.01×10^{-3}	α(K)=0.000892 *13*; α(L)=9.74×10^{-5} *14*; α(M)=1.606×10^{-5} *23* α(N)=1.81×10^{-6} *3*; α(O)=7.71×10^{-8} *11*
		885.1 *3*	50 *17*	1734.0	(9$^-$)	(E2)	7.17×10^{-4}	α(K)=0.000635 *9*; α(L)=6.89×10^{-5} *10*; α(M)=1.136×10^{-5} *16* α(N)=1.285×10^{-6} *18*; α(O)=5.50×10^{-8} *8*
		913.9 *3*	50 *17*	1704.3	10$^{(+)}$	(E1)	2.75×10^{-4}	α(K)=0.000245 *4*; α(L)=2.59×10^{-5} *4*; α(M)=4.27×10^{-6} *6* α(N)=4.85×10^{-7} *7*; α(O)=2.11×10^{-8} *3*
2710.7	(11$^-$)	865.6 *5*	68 *8*	1844.3	(9$^-$)			
		977.1 *3*	100 *25*	1734.0	(9$^-$)	(E2)	5.66×10^{-4}	α(K)=0.000502 *7*; α(L)=5.42×10^{-5} *8*; α(M)=8.93×10^{-6} *13* α(N)=1.011×10^{-6} *15*; α(O)=4.35×10^{-8} *6*
2961.4		1058.1 *4*	100	1903.3	11$^{(+)}$			
3028.9	(12$^-$)	318.0 *3*	≈7	2710.7	(11$^-$)	(M1)	0.00702	α(K)=0.00621 *9*; α(L)=0.000680 *10*; α(M)=0.0001123 *16* α(N)=1.273×10^{-5} *18*; α(O)=5.49×10^{-7} *8*

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{82}Rb)$ (continued)

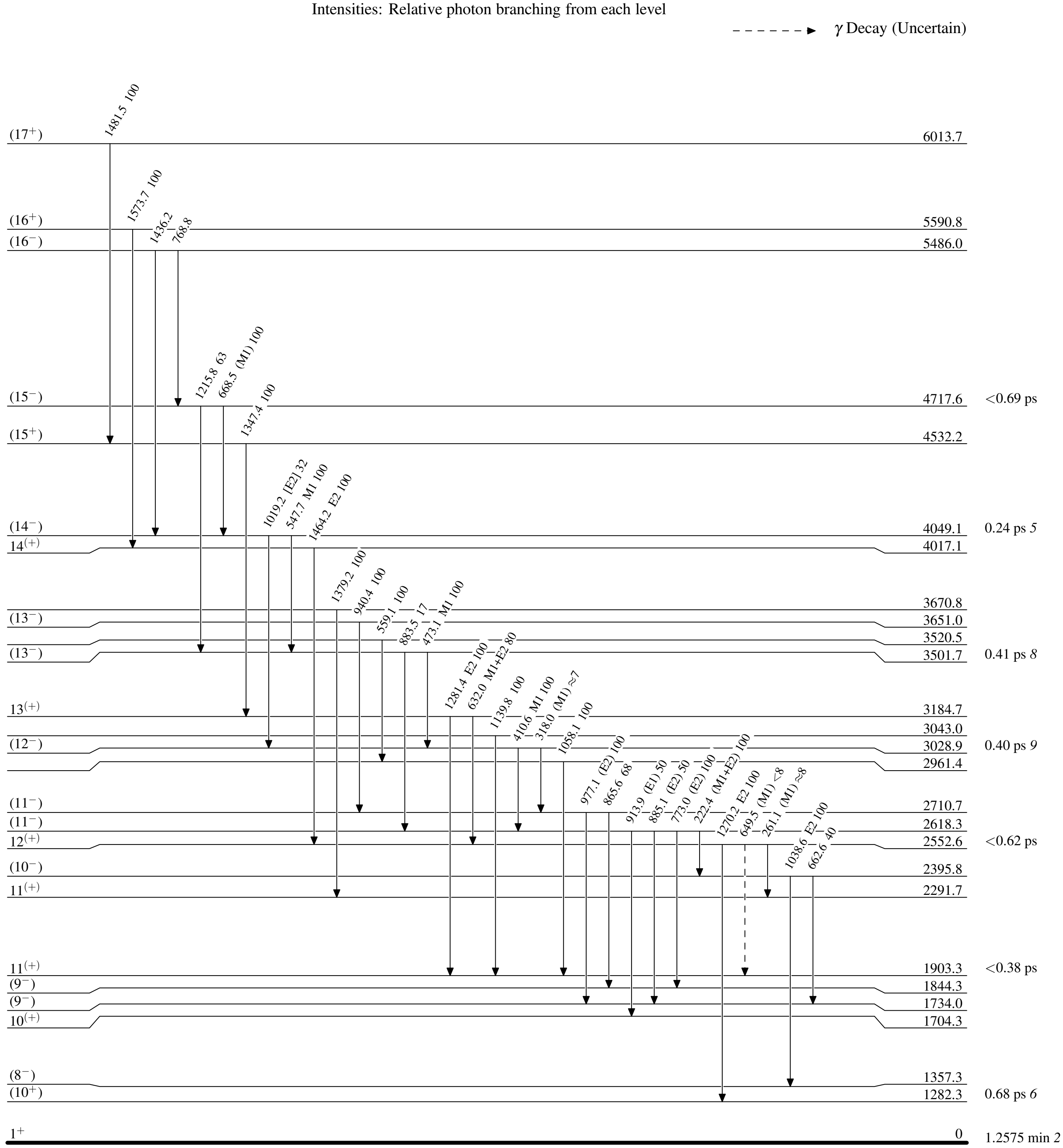
E_i(level)	J_i^π	E_γ †	I_γ #	E_f	J_f^π	Mult. @	α &	Comments
3028.9	(12⁻)	410.6 *2*	100 *15*	2618.3	(11⁻)	M1	0.00378	α(K)=0.00334 *5*; α(L)=0.000364 *6*; α(M)=6.00×10^{-5} *9* α(N)=6.81×10^{-6} *10*; α(O)=2.95×10^{-7} *5* B(M1)(W.u.)=0.74 *23*
3043.0		1139.8 *9*	100	1903.3	11$^{(+)}$			
3184.7	13$^{(+)}$	632.0 *3*	80 *20*	2552.6	12$^{(+)}$	M1+E2	0.00156 *18*	α(K)=0.00138 *16*; α(L)=0.000151 *19*; α(M)=2.5×10^{-5} *3* α(N)=2.8×10^{-6} *4*; α(O)=1.20×10^{-7} *12*
		1281.4 *4*	100 *20*	1903.3	11$^{(+)}$	E2	3.32×10^{-4}	α(K)=0.000274 *4*; α(L)=2.94×10^{-5} *5*; α(M)=4.84×10^{-6} *7* α(N)=5.49×10^{-7} *8*; α(O)=2.38×10^{-8} *4*; α(IPF)=2.33×10^{-5} *4*
3501.7	(13⁻)	473.1 *2*	100 *18*	3028.9	(12⁻)	M1	0.00270	α(K)=0.00239 *4*; α(L)=0.000259 *4*; α(M)=4.28×10^{-5} *6* α(N)=4.86×10^{-6} *7*; α(O)=2.11×10^{-7} *3* B(M1)(W.u.)=0.43 *14*
		883.5 *9*	17 *2*	2618.3	(11⁻)			
3520.5		559.1 *3*	100	2961.4				
3651.0	(13⁻)	940.4 *8*	100	2710.7	(11⁻)			
3670.8		1379.2 *1*	100	2291.7	11$^{(+)}$			
4017.1	14$^{(+)}$	1464.2 *5*	100	2552.6	12$^{(+)}$	E2	3.06×10^{-4}	α(K)=0.000208 *3*; α(L)=2.22×10^{-5} *4*; α(M)=3.66×10^{-6} *6* α(N)=4.15×10^{-7} *6*; α(O)=1.81×10^{-8} *3*; α(IPF)=7.19×10^{-5} *11*
4049.1	(14⁻)	547.7 *3*	100 *25*	3501.7	(13⁻)	M1	0.00192	α(K)=0.001704 *24*; α(L)=0.000184 *3*; α(M)=3.03×10^{-5} *5* α(N)=3.45×10^{-6} *5*; α(O)=1.500×10^{-7} *21* B(M1)(W.u.)=0.42 *16*
		1019.2 *6*	32 *3*	3028.9	(12⁻)	[E2]	5.13×10^{-4}	α(K)=0.000455 *7*; α(L)=4.90×10^{-5} *7*; α(M)=8.08×10^{-6} *12* α(N)=9.16×10^{-7} *13*; α(O)=3.94×10^{-8} *6* B(E2)(W.u.)=25 *8*
4532.2	(15⁺)	1347.4 *6*	100	3184.7	13$^{(+)}$			
4717.6	(15⁻)	668.5 *4*	100 *6*	4049.1	(14⁻)	(M1)	1.22×10^{-3}	α(K)=0.001085 *16*; α(L)=0.0001166 *17*; α(M)=1.92×10^{-5} *3* α(N)=2.19×10^{-6} *3*; α(O)=9.53×10^{-8} *14* B(M1)(W.u.)>0.065
		1215.8 *5*	63 *4*	3501.7	(13⁻)			
5486.0	(16⁻)	768.8 *5*		4717.6	(15⁻)			
		1436.2 *6*		4049.1	(14⁻)			
5590.8	(16⁺)	1573.7 *1*	100	4017.1	14$^{(+)}$			
6013.7	(17⁺)	1481.5 *1*	100	4532.2	(15⁺)			

† Eγ with uncertainties are from (HI,xnγ) or (α,3nγ), others are from (α,nγ).
‡ Weak transition.
\# From (HI,xnγ) or (α,nγ).
@ Mostly from (HI,xnγ). See (α,nγ) for some mult from $\gamma(\theta)$ and excitation functions and parity from linear polarization.
& Additional information 1.
[a] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



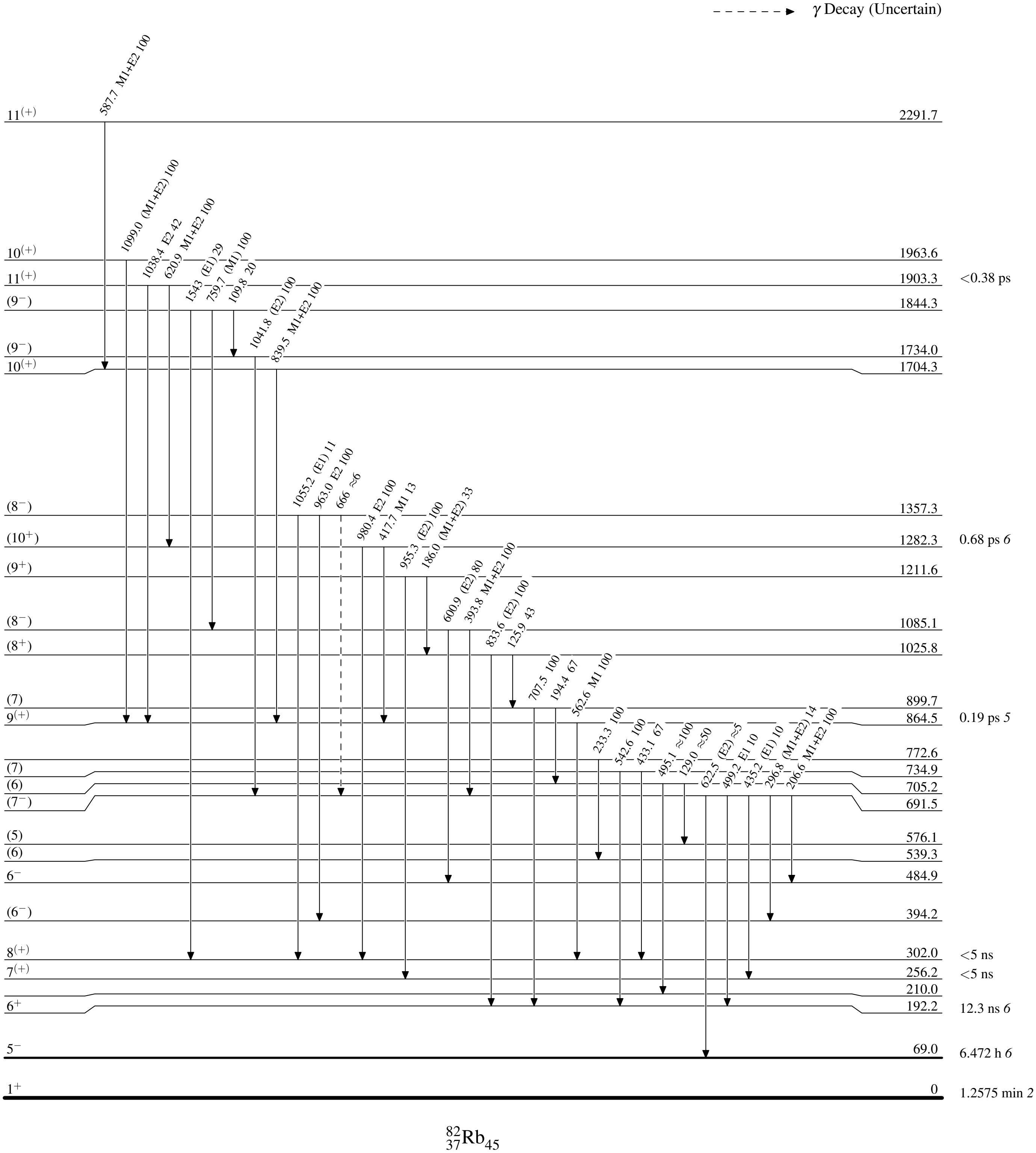
$^{82}_{37}Rb_{45}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



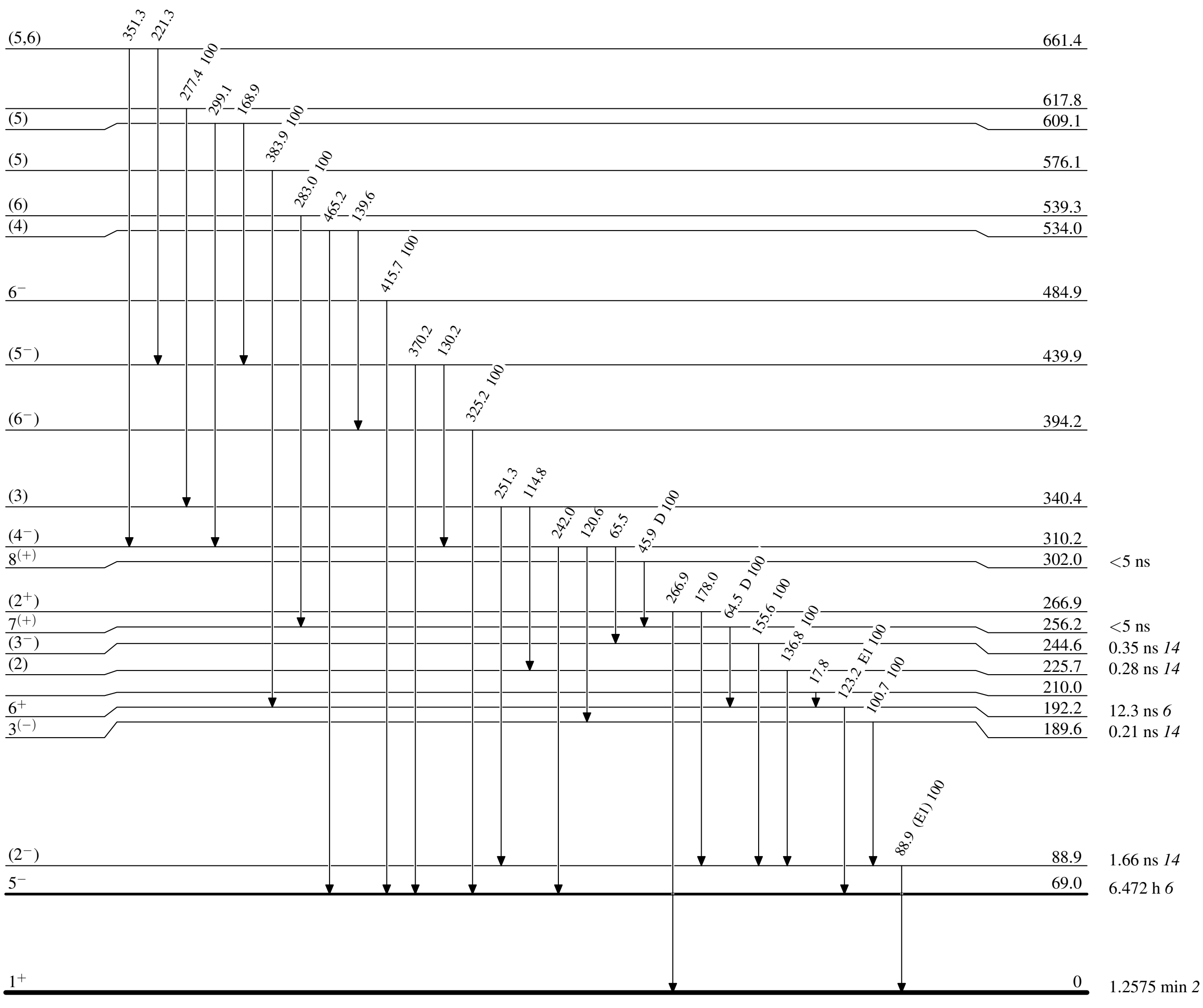
Adopted Levels, Gammas

Legend

Level Scheme (continued)

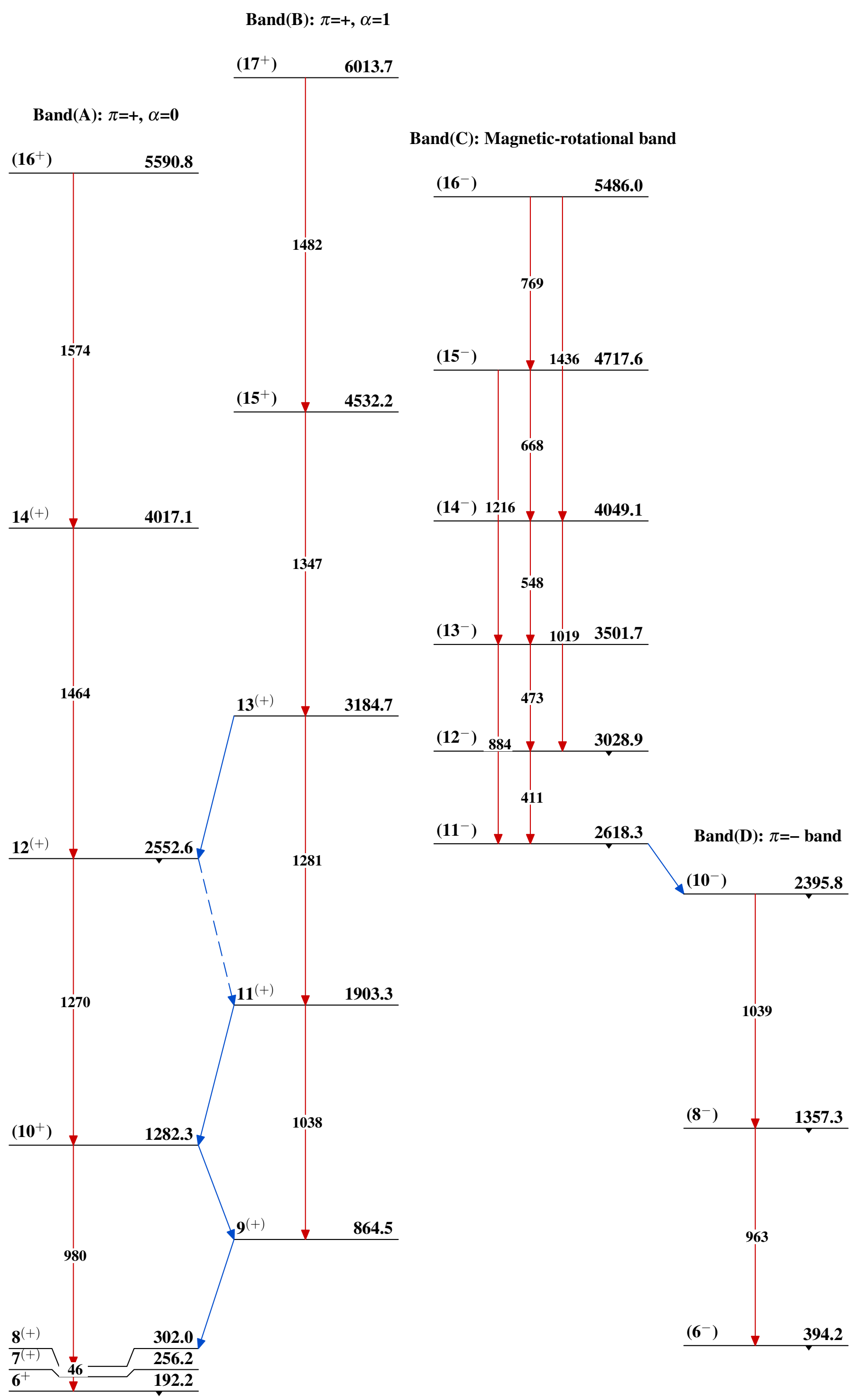
Intensities: Relative photon branching from each level

- - - - - ► γ Decay (Uncertain)



$^{82}_{37}Rb_{45}$

Adopted Levels, Gammas



$^{82}_{37}Rb_{45}$