Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 124, 1 (2015)	30-Nov-2014

Q(β^-)=1776.2 *11*; S(n)=8651.0 *2*; S(p)=8555.7 *20*; Q(α)=−7674.6 *13* 2012Wa38
S(2n)=19130.7 *22*, S(2p)=19542 *26* (2012Wa38).
^{86}Rb first produced by 1937Sn02, later confirmed by 1941He02. A 1-min isomer identified by 1951Fl17.
Mass measurement: 1994Ot01 (Penning-Trap method).
Additional information 1.

^{86}Rb Levels

There are 290 neutron resonances known from E(n)(lab)=175.6 eV to 19.08 keV, corresponding to excitation energy range of 8651.2 to 8669.9 keV. See ^{85}Rb(n,γ):resonances dataset for energies and resonance parameters taken from 2006MuZX. Original source of these are 1984Oh05 (E(n)<18.5 keV), 1973Mu20 (E(n)=18-28 keV).

Low-lying negative-parity states are expected to be members of the $\pi 2p^{-1}_{3/2}\otimes\nu 1g^{-1}_{9/2}$ and $\pi 1f^{-1}_{5/2}\otimes\nu 1g^{-1}_{9/2}$ multiplets. Since ^{87}Rb g.s. configuration=$\pi 2p^{-1}_{3/2}\otimes\pi 1f^{+6}_{5/2}$ and ^{85}Rb g.s. configuration=$\pi 2p^{+4}_{3/2}\otimes\pi 1f^{-1}_{5/2}$, the first multiplet is expected to be strongly populated in ^{87}Rb(^{3}He,α) and ^{87}Rb(d,t) reactions, whereas the second multiplet is expected to be populated in ^{85}Rb(d,p). States belonging to the first multiplet have been identified with reasonable certainty and are in agreement with shell-model calculations (1969Da15), whereas the members of the second multiplet cannot be identified unambiguously. For further remarks see 1969Da15, 1972Ho44, 1972Ko37, 1977HeYQ, and 1975Du02 (for configuration mixing effects).

Cross Reference (XREF) Flags

A	^{86}Rb IT decay (1.017 min)	E	^{85}Rb(n,n),(n,γ):resonances	I	^{87}Rb(γ,n)
B	^{82}Se(^{7}Li,3nγ)	F	^{85}Rb(d,p)	J	^{87}Sr(d,^{3}He)
C	^{84}Kr(^{3}He,p)	G	^{87}Rb(d,t)	K	^{88}Sr(d,α)
D	^{85}Rb(n,γ) E=thermal	H	^{87}Rb(^{3}He,α)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0	2$^-$	18.642 d *18*	ABCD FG IJK	%β^-=99.9948 *5*; %ε=0.0052 *5* (1968Al02) μ=−1.6977 *16* (1981Th04,2014StZZ) Q=+0.23 *6* (1981Th04,2013StZZ,2014StZZ) RMS charge radius $<r^2>^{1/2}$=4.2025 fm *23* (2013An02). J$^\pi$: spin from atomic beam (1953Be19); parity from L(d,p)=4 from 5/2$^-$. Dominant configuration=$\pi 1f^{-1}_{5/2}\otimes\nu 1g^{-1}_{9/2}$. T$_{1/2}$: weighted average of 18.631 d *18* (1981Mi10), 18.82 d *11* (1972Em01), 18.61 d *4* (1971Ba28), 18.82 d *11* (1967Gl05), 18.68 d *7* (1957Wr37), 18.64 d *4* (1955Ni09), 18.66 d *3* (1955Em20). Others: 18.7 d *5* (1958Ro62), 19.5 d (1948Za02), 19.5 d (1941He02), 18 d (1937Sn02). μ: atomic-beam LASER spectroscopy (1981Th04). Others: −1.6920 *14* (atomic beam magnetic resonance, 1961Br16), 1.70 *1* (atomic beam magnetic resonance, 1953Be19). Q: atomic beam LASER spectroscopy (1981Th04, measured value of +0.193 *32* reevaluated by 2013StZZ). Other: +0.20 *3* (Optical double resonance and Optical level crossing methods (1973Ac02).
488.2 *4*	1$^+$	2.4 ps *3*	BCD FGH K	J$^\pi$: L(d,α)=0+2. Probable 1$^+$ member of configuration=$\pi 2p^{-1}_{3/2}\otimes\nu 2p^{-1}_{1/2}$ doublet. T$_{1/2}$: from DSAM in (p,nγ) (1982Fa12).
556.05 *18*	6$^-$	1.017 min *3*	AB D fgh jk	%IT=100; %β^-<0.3 (1969Sc10) μ=+1.8150 *10* (1981Th04,2014StZZ) Q=+0.45 *14* (1981Th04,2013StZZ,2014StZZ) J$^\pi$: spin from atomic beam (1981Th04); parity from L(d,α)=3+5 for 556+557 doublet. Probable 6$^-$ member of configuration=$\pi 2p^{-1}_{3/2}\otimes\nu 1g^{-1}_{9/2}$ multiplet.

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Adopted Levels, Gammas (continued)

^{86}Rb Levels (continued)

E(level)†	Jπ‡	XREF	Comments
			T$_{1/2}$: from 1967Yu01. Others: 1.020 min *17* (1969Sc10), 1.02 min *3* (1953Sc39), 1.06 min *2* (1951Fl17). μ: atomic beam LASER spectroscopy (1981Th04). Q: atomic beam LASER spectroscopy (1981Th04, measured value of +0.369 *95* reevaluated by 2013StZZ).
557.0 *3*	(3)$^-$	D fgh jk	J$^\pi$: primary γ from 2$^-$,3$^-$. γ to 2$^-$. L(d,α)=3+5 for the unresolved doublet. Probable 3$^-$ member of configuration=$\pi 2p_{3/2}^{-1}\otimes\nu 1g_{9/2}^{-1}$ multiplet. Assignment supported by shell-model calculations (1969Da15).
780.3 *3*	(7)$^-$	B D F JK	J$^\pi$: L(d,p)=4 from 5/2$^-$; ΔJ=1 γ to 6$^-$.
873.2 *4*	3$^-$,4$^-$	D FGH JK	J$^\pi$: L(d,^{3}He)=1 from 9/2$^+$; L(d,α)=3. Probable mixture of two configurations=$\pi 2p_{3/2}^{-1}\otimes\nu 1g_{9/2}^{-1}$ and $\pi 1f_{5/2}^{-1}\otimes\nu 1g_{9/2}^{-1}$ (1972Ko37,1975Du02).
978.7 *5*	3$^-$,4$^-$	D FGH JK	J$^\pi$: L(d,^{3}He)=1 from 9/2$^+$; L(d,α)=3. Probable configuration=$\pi 2p_{3/2}^{-1}\otimes\nu 1g_{9/2}^{-1}$.
1027.2 *4*	1$^+$,2$^+$,3$^+$	CD FGH K	J$^\pi$: L(d,p)=1 from 5/2$^-$; L(d,t)=1 from 3/2$^-$. Possible 2$^+$ member of configuration=$\pi 2p_{3/2}^{-1}\otimes\nu 2p_{1/2}^{-1}$ doublet.
1032.7 *5*	(3,4)$^-$	D J	J$^\pi$: L(d,^{3}He)=1 from 9/2$^+$; probable γ to 2$^-$.
1092.8 *4*	(5)$^-$	D FGHIJK	J$^\pi$: L(d,p)=(4+2) from 5/2$^-$; L(d,t)=4 from 3/2$^-$; γ to 6$^-$. From (γ,n) J≥5. Probable configuration=$\pi 2p_{3/2}^{-1}\otimes\nu 1g_{9/2}^{-1}$.
1105.6 *5*	(2,3)$^+$	D G K	J$^\pi$: L(d,t)=3+1 from 3/2$^-$; γ to 2$^-$; 89.6γ between 1196 level (J$^\pi$=3$^-$ to 6$^-$ from L(d,^{3}He)=1+3 from 9/2$^+$) further limits J$^\pi$(1105.6) to 2$^+$,3$^+$ and J$^\pi$(1196) to 3$^-$,4$^-$.
1122 *2*	(≤3)$^+$	G	J$^\pi$: L(d,t)=1 from 3/2$^-$.
1156 *2*	(0)$^+$	G	J$^\pi$: strongly excited in (d,t) with L(d,t)=1 from 3/2$^-$. Possible 0$^+$ member of configuration=$\pi 2p_{3/2}^{-1}\otimes\nu 2p_{3/2}^{-1}$ multiplet.
1196.4 *5*	(3,4)$^-$	D FG JK	J$^\pi$: L(d,^{3}He)=1+3 from 9/2$^+$. See J$^\pi$ comment for 1105.6 level.
1248.0 *11*	4$^-$	D FG IJK	J$^\pi$: L(d,α)=5. γ to 6$^-$. From (γ,n) J≤4.
1305.1 *4*	3$^+$	D G K	J$^\pi$: primary γ from 2$^-$,3$^-$; L(d,t)=1 from 3/2$^-$; strong γ to 2$^-$.
1309 *3*		D F	E(level): from (d,p). J$^\pi$: possible configuration=$\pi 1f_{5/2}^{-1}\otimes\nu 1g_{9/2}^{-1}$ for 6$^-$ state.
1389.4 *5*	(3)$^+$	CD FG K	J$^\pi$: primary γ from 2$^-$,3$^-$; L(d,t)=1 from 3/2$^-$; L(d,α)=4. The 1390 group reported in (^{3}He,p) with L=0 may be a different level.
1412 *2*	4$^-$,5$^-$,6$^-$	C Gh JK	J$^\pi$: L(d,α)=5.
1439.0 *5*	3$^-$,4$^-$	CD FGh JK	J$^\pi$: primary γ from 2$^-$,3$^-$; L(d,α)=3, L(d,^{3}He)=1 from 9/2$^+$.
1470.8 *6*	(2,3)$^+$	D FG	J$^\pi$: primary γ from 2$^-$,3$^-$; L(d,t)=1 from 3/2$^-$; γ to (3$^-$). Possible 2$^+$ member of configuration=$\pi 2p_{3/2}^{-1}\otimes\nu 2p_{3/2}^{-1}$.
1501.7 *10*	(3)$^+$	D FG I K	J$^\pi$: L(d,t)=1 from 3/2$^-$; L(d,α)=(4,5).
1550 *2*	4$^-$,5$^-$,6$^-$	FG JK	J$^\pi$: L(d,α)=5.
1558.5 *3*	(7$^+$)	B	J$^\pi$: ΔJ=0 γ to (7)$^-$; ΔJ=1 γ to 6$^-$.
1666.8 *4*	(1,2,3)$^+$	D GH K	J$^\pi$: L(d,t)=1 from 3/2$^-$; L(d,α)=(2).
1683.7 *3*	(8$^+$)	B	J$^\pi$: ΔJ=1, M1 γ to (7$^+$).
1709.2 *11*	(1,2,3)$^+$	CD FG JK	J$^\pi$: L(d,t)=1 from 3/2$^-$; L(d,α)=(2); primary γ from 2$^-$,3$^-$.
1738 *3*	($^-$)	F J	J$^\pi$: L(d,^{3}He)=(1) from 9/2$^+$.
1761 *2*	(1)$^+$	G K	J$^\pi$: L(d,t)=1 from 3/2$^-$; L(d,α)=(0).
1820.0 *6*	(3$^+$,4,5$^-$)	D F i K	XREF: i(1850). J$^\pi$: primary γ from 2$^-$,3$^-$; L(d,α)=(4,5).
1889.3 *10*	1$^+$,2$^+$,3$^+$	D G i K	XREF: i(1850). J$^\pi$: L(d,α)=2.
1901 *4*		F	
1917.1 *15*		cD g k	J$^\pi$: primary γ from 2$^-$,3$^-$; L(^{3}He,p)=(1+3) for a 1921 group corresponds to 1917 and/or 1926 levels.
1926.1 *18*		cD Fg k	J$^\pi$: primary γ from 2$^-$,3$^-$. See also comment for 1917 level.
1953.1 *16*		D	J$^\pi$: primary γ from 2$^-$,3$^-$.
2024.9 *24*		F K	
2093 *3*	1$^+$	C F	J$^\pi$: L(^{3}He,p)=0+2.
2130.0 *10*	($^-$)	D H K	J$^\pi$: L(^{3}He,α)=(4) from 3/2$^-$.
2149.7 *10*	(1,2,3)$^+$	CD K	J$^\pi$: L(d,α)=2.
2179.7 *6*	(1$^+$,2$^+$,3$^+$)	CD F	XREF: C(2173).

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Adopted Levels, Gammas (continued)

^{86}Rb Levels (continued)

E(level)†	J^{π}‡	$T_{1/2}$#	XREF	Comments
				J^{π}: L(^{3}He,p)=(2).
2255 *3*	(5$^+$,6$^+$,7$^+$)		K	J^{π}: L(d,α)=(6).
2265.9 *7*			D K	J^{π}: primary γ from 2$^-$,3$^-$.
2282 *4*			F	
2298.9 *6*			CD K	J^{π}: primary γ from 2$^-$,3$^-$.
2331.8 *18*			D F	J^{π}: primary γ from 2$^-$,3$^-$.
2352.5 *10*			D	J^{π}: primary γ from 2$^-$,3$^-$.
2369 *4*			F	
2403.4 *19*			D K	J^{π}: primary γ from 2$^-$,3$^-$.
2416.5 *4*	(9$^+$)	0.28 ps *7*	B K	J^{π}: ΔJ=1 γ to (8$^+$).
2437 *4*			F	
2462.2 *6*			CD K	J^{π}: primary γ from 2$^-$,3$^-$.
2475.7 *10*			D	J^{π}: primary γ from 2$^-$,3$^-$.
2508.2 *9*	(3$^+$)		CD K	XREF: K(2498). J^{π}: primary γ from 2$^-$,3$^-$; L(^{3}He,p)=(2+4); L(d,α)=(4).
2534 *4*	(1,2,3)$^+$		K	J^{π}: L(d,α)=2.
2570.4 *10*			D	J^{π}: primary γ from 2$^-$,3$^-$.
2585.7 *10*			D	J^{π}: primary γ from 2$^-$,3$^-$.
2598.1 *10*	1$^+$		CD K	J^{π}: L(d,α)=0.
2671.0 *5*	(1,2,3)$^+$		CD	J^{π}: L(^{3}He,p)=2.
2719.0 *7*			D	
2765.5 *5*			D K	
2810.4 *9*			D	
2827.9? *20*			CD	J^{π}: L(^{3}He,p)=(2,3).
2850.4 *7*			D	
2890.1 *5*			CD	J^{π}: L=3 for a tentative level in (^{3}He,p).
2951 *4*	1$^+$		K	J^{π}: L(d,α)=0.
2992 *5*	(2$^-$)		C	J^{π}: L(^{3}He,p)=(1+3).
3113 *5*	1$^+$		C	J^{π}: L(^{3}He,p)=0+2.
3137.5 *4*	(9$^+$)	0.55 ps *14*	B	J^{π}: ΔJ=1, M1 γ from (10$^+$).
3205 *5*	1$^+$		C	J^{π}: L(^{3}He,p)=0(+2).
3242 *5*	(0$^-$,1$^-$,2$^-$)		C	J^{π}: L(^{3}He,p)=(1).
3271 *5*			K	
3282.0 *4*	(10$^+$)	0.69 ps *14*	B	J^{π}: (E2) γ to (8$^+$); D γ to (9$^+$).
3319 *10*	1$^+$		C K	J^{π}: L(^{3}He,p)=0+2.
3411.9 *4*	(11$^+$)	5.5 ps *14*	B	J^{π}: ΔJ=1, M1 γ to (10$^+$).
3445 *5*	(1)		C	J^{π}: L(^{3}He,p)=(1,0+2).
3510 *5*	(1$^+$)		C	J^{π}: L(^{3}He,p)=(0+2).
3578.4 *4*	(10$^+$)	0.28 ps *+7−14*	B	J^{π}: γ rays to (8$^+$) and (9$^+$).
3707 *5*			C	J^{π}: L(^{3}He,p)=(2,1+3).
3743.4 *4*	(12$^+$)	1.32 ps *14*	B	J^{π}: ΔJ=1, M1 γ to (11$^+$).
3763 *7*	(1,2,3)$^+$		C	J^{π}: L(^{3}He,p)=2.
3824 *5*			C	J^{π}: L(^{3}He,p)=(1,0+2).
3866.1 *5*	(11$^+$)	1.25 ps *35*	B	J^{π}: ΔJ=1 γ to (10$^+$).
3896 *6*	(1$^+$)		C	J^{π}: L(^{3}He,p)=(0+2).
4078 *5*	(2$^-$)		C	J^{π}: L(^{3}He,p)=(1+3).
4221 *5*	1$^+$		C	J^{π}: L(^{3}He,p)=0+2.
4266 *8*	(1,2,3)$^+$		C	J^{π}: L(^{3}He,p)=2.
4548 *5*	(1,2,3)$^+$		C	J^{π}: L(^{3}He,p)=2.
4717.1 *5*	(13$^+$)	0.08 ps *+4−5*	B	J^{π}: ΔJ=1 γ to (12$^+$).
5293.6 *5*	(12$^-$)	0.35 ps *+7−14*	B	J^{π}: ΔJ=1 γ to (11$^+$).
5557.4 *5*	(13$^-$)	0.76 ps *+14−21*	B	J^{π}: ΔJ=1 γ to (12$^-$).
6113.6 *6*	(14$^-$)	0.28 ps *+7−14*	B	J^{π}: ΔJ=1 γ to (13$^-$).
6455.8 *6*	(14$^+$)	0.035 ps *+42−28*	B	J^{π}: ΔJ=(1) γ to (13$^+$).
6799.6 *6*	(15$^-$)	0.21 ps *+7−14*	B	J^{π}: dipole γ to (14$^-$).
7413.1 *7*	(15)	0.42 ps *+7−14*	B	J^{π}: ΔJ=1 γ to (14$^+$).

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Adopted Levels, Gammas (continued)

^{86}Rb Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
7860.1 *7*	(16)	0.69 ps +*14*−*21*	B	Jπ: ΔJ=1 γ to (15).
(8651.0 *10*)	2⁻,3⁻		D	

† From least-squares fit to Eγ values wherever possible. See (^{3}He,p) for some additional tentative levels and associated L-transfers.
‡ Primary γ from 2⁻,3⁻ limits Jπ to 0⁻ to 5⁻. For high-spin states, positive parity is from systematics while negative parity is from a comparison with shell-model calculations.
# From DSAM in ^{82}Se(^{7}Li,3nγ), except as noted otherwise.

γ(^{86}Rb)

E_i(level)	J^π_i	Eγ†	Iγ†	E_f	J^π_f	Mult.‡	α#	Comments
488.2	1⁺	487.9 *5*	100	0.0	2⁻	[E1]		B(E1)(W.u.)=0.0012 *2*
556.05	6⁻	556.07 *18*	100	0.0	2⁻	(E4)	0.0183	B(E4)(W.u.)=1.455 *6* α(K)=0.01577 *23*; α(L)=0.00216 *3*; α(M)=0.000359 *5*; α(N+..)=4.00×10⁻⁵ *6* α(N)=3.87×10⁻⁵ *6*; α(O)=1.353×10⁻⁶ *19* Eγ: from ^{86}Rb IT decay. Mult.: E4 or (M3) from α(K)exp and α(exp) measured in IT decay (1969Sc10); M3 ruled out by ΔJ.
557.0	(3)⁻	557.0 *5*	100	0.0	2⁻			
780.3	(7)⁻	224.3 *1*	100	556.05	6⁻	D+Q		
873.2	3⁻,4⁻	315.9 *5*	4 *1*	557.0	(3)⁻			
		873.2 *5*	100 *27*	0.0	2⁻			
978.7	3⁻,4⁻	421.5 *5*	100	557.0	(3)⁻			
1027.2	1⁺,2⁺,3⁺	538.9 *5*	41 *13*	488.2	1⁺			
		1026.9 *5*	100 *24*	0.0	2⁻			
1032.7	(3,4)⁻	1032.8@ *5*	100	0.0	2⁻			
1092.8	(5)⁻	114.1 *5*	42 *13*	978.7	3⁻,4⁻			
		536.7 *5*	100 *32*	556.05	6⁻			
1105.6	(2,3)⁺	232.4 *10*	4 *2*	873.2	3⁻,4⁻			
		1105.7 *10*	100 *32*	0.0	2⁻			
1196.4	(3,4)⁻	89.6 *15*	40 *20*	1105.6	(2,3)⁺			
		323.1 *5*	100 *40*	873.2	3⁻,4⁻			
		639.4 *5*	<580	557.0	(3)⁻			Eγ: probable double placement (see (n,γ)).
1248.0	4⁻	691.9 *10*	100	556.05	6⁻			
1305.1	3⁺	198.8 *10*	<14	1105.6	(2,3)⁺			
		525.2@ *10*	8 *4*	780.3	(7)⁻	[M4]		Eγ: transition to (7)⁻ with implied multipolarity of M4 is considered highly suspect.
		748.6 *10*	12 *4*	557.0	(3)⁻			
		817.3 *15*	14 *4*	488.2	1⁺			
		1305.4 *5*	100 *31*	0.0	2⁻			
1309		530.0@ *10*	100	780.3	(7)⁻			
1389.4	(3)⁺	85.9 *15*	60 *25*	1305.1	3⁺			
		284.4 *10*	15 *5*	1105.6	(2,3)⁺			
		361.8 *5*	<70	1027.2	1⁺,2⁺,3⁺			Eγ: probable double placement. See (n,γ).
		1390.2 *10*	100 *25*	0.0	2⁻			

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Adopted Levels, Gammas (continued)

$\gamma(^{86}Rb)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
1439.0	3⁻,4⁻	564.9 *10*	43 *14*	873.2	3⁻,4⁻			
		882.0 *5*	100 *36*	557.0	(3)⁻			
		1440.0 *10*	71 *21*	0.0	2⁻			
1470.8	(2,3)⁺	165.7[@] *5*	100 *25*	1305.1	3⁺			
		913.8 *10*	95 *25*	557.0	(3)⁻			
1501.7	(3)⁺	945.6 *10*	100	557.0	(3)⁻			
1558.5	(7⁺)	778.1 *3*	100 *10*	780.3	(7)⁻	D		
		1002.4 *3*	19 *2*	556.05	6⁻	D		
1683.7	(8⁺)	125.2 *1*	100 *10*	1558.5	(7⁺)	M1	0.0783	α(K)=0.0691 *10*; α(L)=0.00777 *11*; α(M)=0.001286 *19*; α(N+..)=0.0001513 *22* α(N)=0.0001452 *21*; α(O)=6.17×10⁻⁶ *9*
		903.6 *3*	10 *1*	780.3	(7)⁻	D		
2416.5	(9⁺)	732.8 *1*	100	1683.7	(8⁺)	D		
3137.5	(9⁺)	1453.7 *3*	100	1683.7	(8⁺)			
3282.0	(10⁺)	144.4 *3*	14 *2*	3137.5	(9⁺)	M1	0.0534	B(M1)(W.u.)=0.73 *19* α(K)=0.0471 *7*; α(L)=0.00528 *8*; α(M)=0.000873 *14*; α(N+..)=0.0001028 *16* α(N)=9.86×10⁻⁵ *15*; α(O)=4.20×10⁻⁶ *7*
		865.4 *3*	89 *11*	2416.5	(9⁺)	D		
		1598.2 *3*	100 *11*	1683.7	(8⁺)	(E2)		B(E2)(W.u.)=1.7 *5*
3411.9	(11⁺)	129.9 *1*	100 *9*	3282.0	(10⁺)	M1	0.0709	B(M1)(W.u.)=1.7 *5* α(K)=0.0626 *9*; α(L)=0.00703 *10*; α(M)=0.001163 *17*; α(N+..)=0.0001369 *20* α(N)=0.0001313 *19*; α(O)=5.58×10⁻⁶ *8*
		995.4 *3*	7 *1*	2416.5	(9⁺)	[E2]		B(E2)(W.u.)=0.31 *+11−7*
3578.4	(10⁺)	1161.8 *3*	100 *10*	2416.5	(9⁺)	D		
		1894.7 *3*	24 *4*	1683.7	(8⁺)	[E2]		B(E2)(W.u.)=0.7 *+7−2*
3743.4	(12⁺)	331.5 *1*	100	3411.9	(11⁺)	M1	0.00634 *9*	B(M1)(W.u.)=0.46 *5* α=0.00634 *9*; α(K)=0.00561 *8*; α(L)=0.000613 *9*; α(M)=0.0001013 *15*; α(N+..)=1.198×10⁻⁵ *17* α(N)=1.148×10⁻⁵ *16*; α(O)=4.96×10⁻⁷ *7*
3866.1	(11⁺)	287.7 *3*	100	3578.4	(10⁺)	D		Mult.: RUL marginally favors M1 over E1.
4717.1	(13⁺)	973.7 *3*	100	3743.4	(12⁺)	D		
5293.6	(12⁻)	1427.5 *3*	9 *1*	3866.1	(11⁺)			
		1881.7 *3*	100 *16*	3411.9	(11⁺)	D		
5557.4	(13⁻)	263.8 *3*	100 *15*	5293.6	(12⁻)	D		Mult.: RUL marginally favors M1 over E1.
		1814.1 *3*	90 *13*	3743.4	(12⁺)	D		
6113.6	(14⁻)	556.2 *3*	100	5557.4	(13⁻)	D		
6455.8	(14⁺)	1738.7 *3*	100	4717.1	(13⁺)	(D)		
6799.6	(15⁻)	685.9 *3*	100	6113.6	(14⁻)	D		
7413.1	(15)	957.3 *3*	100	6455.8	(14⁺)	D		
7860.1	(16)	447.0 *3*	100	7413.1	(15)	D		
(8651.0)	2⁻,3⁻	5760.7 *5*	47 *12*	2890.1				
		5800.4 *7*	16 *5*	2850.4				
		5823.2[@] *20*	1.5 *5*	2827.9?				
		5840.8 *9*	7.3 *34*	2810.4				
		5885.7 *5*	20 *5*	2765.5				
		5932.3 *7*	5.9 *20*	2719.0				
		5980.2 *5*	35 *7*	2671.0	(1,2,3)⁺			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{86}Rb)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f
(8651.0)	$2^-,3^-$	6052.9 *8*	13 *3*	2598.1	1^+
		6064.5 *5*	41 *7*	2585.7	
		6081.9 *12*	5.4 *20*	2570.4	
		6142.7 *8*	8.8 *25*	2508.2	(3^+)
		6173.3 *15*	5.9 *20*	2475.7	
		6188.7 *5*	33 *7*	2462.2	
		6247.5 *18*	3.4 *15*	2403.4	
		6297.7 *15*	4.4 *15*	2352.5	
		6319.1 *17*	3.4 *15*	2331.8	
		6352.0 *5*	19 *5*	2298.9	
		6385.0 *6*	21 *5*	2265.9	
		6471.2 *5*	33 *8*	2179.7	$(1^+,2^+,3^+)$
		6503.2 *7*	16 *4*	2149.7	$(1,2,3)^+$
		6520.3 *5*	57 *12*	2130.0	$(^-)$
		6697.8 *15*	9.3 *25*	1953.1	
		6724.8 *17*	8.3 *20*	1926.1	
		6735.5 *25*	5.4 *20*	1917.1	
		6759.4 *15*	8.3 *25*	1889.3	$1^+,2^+,3^+$
		6831.4 *5*	54 *12*	1820.0	$(3^+,4,5^-)$
		6943.0 *7*	9.8 *25*	1709.2	$(1,2,3)^+$
		7180.7 *10*	5.4 *20*	1470.8	$(2,3)^+$
		7211.8 *6*	15 *3*	1439.0	$3^-,4^-$
		7261.2 *6*	12 *3*	1389.4	$(3)^+$
		7345.8 *5*	54 *12*	1305.1	3^+
		7455.3 *10*	6.3 *20*	1196.4	$(3,4)^-$
		7544.0 *7*	12 *3*	1105.6	$(2,3)^+$
		7623.9 *4*	100 *20*	1027.2	$1^+,2^+,3^+$
		7672.2 *9*	5.9 *20*	978.7	$3^-,4^-$
		7776.1 *20*	2.0 *10*	873.2	$3^-,4^-$
		8093.8 *5*	15 *5*	557.0	$(3)^-$
		8161.5 *15*	3.9 *15*	488.2	1^+
		8650.7 *7*	17 *4*	0.0	2^-

† From (n,γ) and (^{7}Li,3nγ). In (n,γ), several tentative placements of secondary transitions are not shown here. See (n,γ) dataset for details.

‡ From $\gamma(\theta)$, $\gamma\gamma(\theta)$(DCO) and γ(lin pol) in (^{7}Li,3nγ).

Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

@ Placement of transition in the level scheme is uncertain.

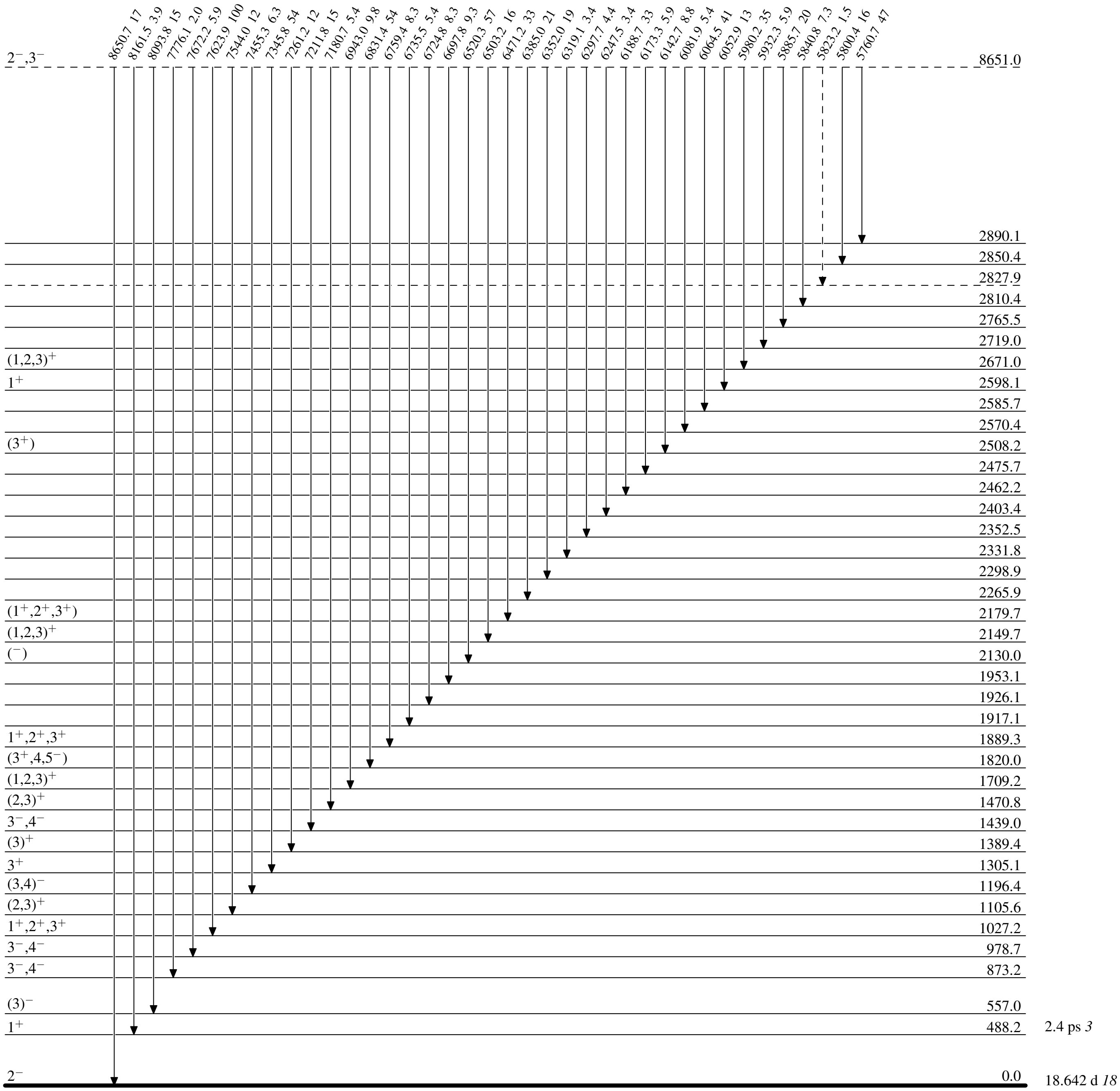
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{86}_{37}Rb_{49}$

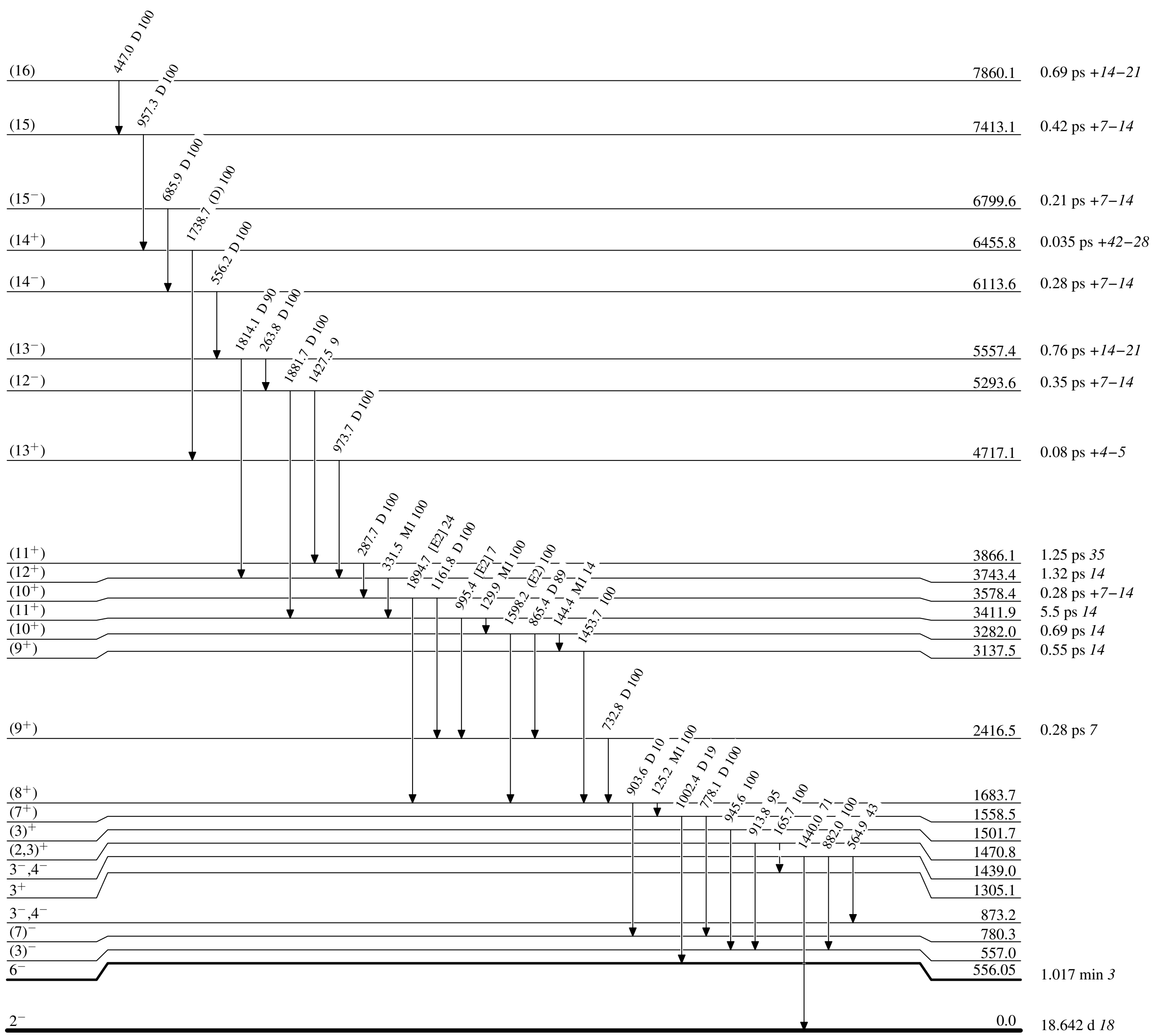
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

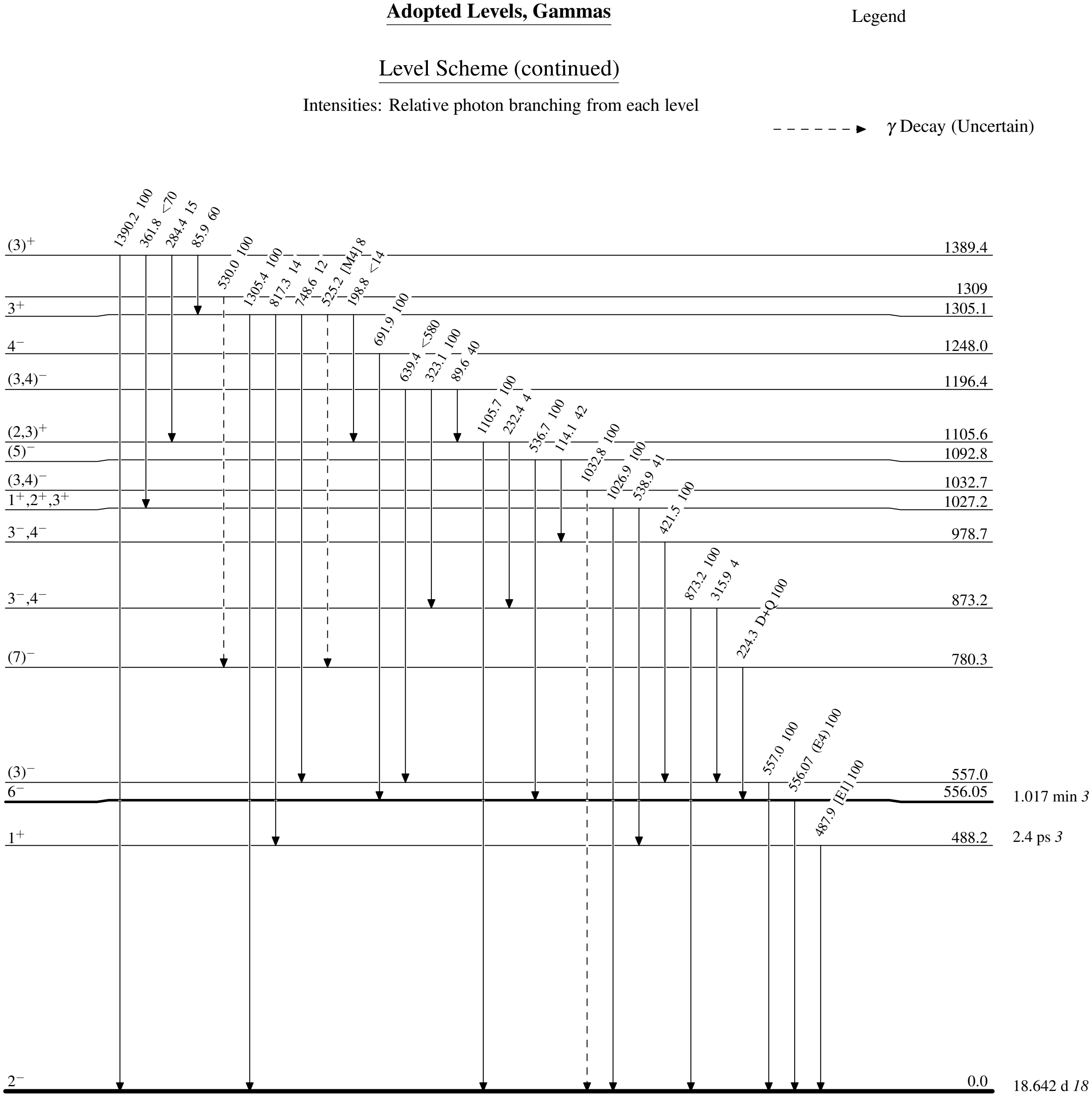


$^{86}_{37}Rb_{49}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{86}_{37}Rb_{49}$