		Туре	Autho	History or Citation			Literature Cutoff Date			
		Full Evaluation	E. A. Mcc	utchan N	DS 125, 201	(2015)	31-Dec-2014			
$Q(\beta^{-}) = -2273 6;$ S(2n)=19757 5; α : Additional info	S(n)=1095 S(2p)=156 formation 1	54 4; S(p)=5769.3 73 3 (2012Wa38) 1.	25; $Q(\alpha) = -3$	5427 3 2	2012Wa38					
				⁸³ R	b Levels					
			C	ross Referen	nce (XREF)	Flags				
		A B C D	 ⁸³Sr ε decay ⁶⁸Zn(¹⁸O,p2) ⁷⁶Ge(¹¹B,4n⁻) ⁸⁰Se(⁶Li,3nγ) 	nγ) γ), ⁷⁶ Ge(¹⁰ B ')	$E = {}^{80}Kr(\alpha,p) \\ F = {}^{82}Kr(p,\gamma), {}^{83}Kr(p,n\gamma) \\ {}^{76}Ge({}^{10}B,3n\gamma) = G = {}^{82}Kr({}^{3}He,d) \\ H = {}^{82}Kr(p,p') IAR$					
E(level) [†]	J^{π}	T _{1/2} ‡	XREF				Comments			
0.0	5/2-	86.2 d <i>1</i>	ABCDeFg	%ε = 100 Q = +0.196 μ: from At relative t Q: from At polarizat (1973Ac J ^π : J=5/2 f experime T _{1/2} : 86.2 (1976Gi $\delta < r^2 > ^{83,87}$	22; μ =+1.42 tomic Beam 1 to μ =+2.7518 tomic Beam tion correction c02). from atomic 1 ental μ with d <i>I</i> is report 14), 85.7 d <i>I</i> Rb=0.0512 f	249 8 Laser Sp 818 2 for Laser Sp n. Other beam (19 Schmidt ed by 19 3 (19731 m ² 15 (1	ectroscopy (1981Th04,2011StZZ), value r^{87} Rb. ectroscopy (1981Th04); value includes : +0.27 5 in optical double resonance 076Fu06). π =- from comparison of values. 72Br37 and 2000Hu20. Others: 86.0 d 4 _102). 981Th04).			
5.2357 [@] 8	3/2-	71.5 ns 8	A CDeFg	J ^π : M1 5.2 5.24). T _{1/2} : from	2γ to $5/2^-$, Land to $5/2^-$, Land to γ	=1 comp Sr ε deca	onent of $L(^{3}He,d)=3+1$ doublet (g.s. +			
42.0780 ^{<i>a</i>} 20	9/2+	>0.3 ms	ABCDEFG	J^{π} : M2 42; T _{1/2} : from	γ to 5/2 ⁻ , L(n RUL of B(N-7.8 ms.7 for	3 He,d)= 4 M2)(W.u.	1/4.) ≤ 1 . 1968Et01 report an unpublished value			
99.36 7	3/2-		A DE G	of $T_{1/2}=7.8 \text{ ms } 7$ for this level. J^{π} : $L(^{3}\text{He,d})=1$ limits J^{π} to $1/2^{-},3/2^{-}$; 1649.5 γ from 1748 level, which decays also to $9/2^{+}$ and $9/2^{-}$, excludes $1/2^{-}$. $T_{1/2}$: $T_{1/2}<150$ ps from delayed coincidence (1973Br32) in ⁸³ Sr ε decay is inconsistent with δ for the 94.11 γ since B(E2)(W.u.) would be >300. 1968Et01 report an unpublished value of $T_{1/2}=1.2$ ns for the 94.11 γ ,						
389.42 6	3/2-	8 ps <i>3</i>	A D F	J^{π} : 3/2 from 389 γ to $T_{1/2}$: from	om excitation $5/2^-$. n DSAM in ⁸²	function 2 Kr(p, γ),	in ⁸⁰ Se(⁶ Li,3n γ), π =– from E2(+M1) ⁸³ Kr(p,n γ). Other: <130 ps from delayed			
423.612 16	5/2+	74 ps +21-14	A D Fg	coincide XREF: g(4 J^{π} : E2 381 $T_{1/2}$: from coincide E(level): th the 423	ence in ⁶³ Sr ε 439). 1.5 γ to 9/2 ⁺ , 1 DSAM in ⁸² ence in ⁸³ Sr ε he 439 level and 44(c decay. E1 418γ ²Kr(p,γ), c decay. seen in (⁻ c) level. 	to $3/2^-$. ⁸³ Kr(p,n γ). Other: <150 ps from delayed ³ He,d) with L=1+2 is likely a doublet of			
440	(3/2 ⁻)		Eg	XREF: g(4 E(level): fr	439). rom (α,p). Tl	he 439 le	evel seen in $({}^{3}\text{He,d})$ with L=1+2 is likely a			

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⁸³Rb Levels (continued)

E(level) [†]	\mathbf{J}^{π}	$T_{1/2}^{\ddagger}$	XREF	Comments				
				doublet of the 423 level and the 440 level. J ^{π} : J-dependence of (α ,p), L(³ He,d)=1 component of the L=1+2				
466 7 4			۵	doublet.				
564.59 5	(3/2 ⁻ ,5/2,7/2 ⁻)	1.0 ps +8-4	A D F	J^{π} : 559 γ to 3/2 ⁻ , 172.5 γ from 7/2 ⁻ . T ₁ /2: from DSAM in ⁸² Kr(p. γ). ⁸³ Kr(p. η).				
737.14 [@] 3	7/2-	10.4 [#] ps 69	A CD	J^{π} : E2 732y to 3/2 ⁻ , 695y to 9/2 ⁺ .				
793.63 ^a 8	13/2+	$4.2^{\#}$ ps 7	ABCD	J^{π} : E2 752 γ to 9/2 ⁺ ; band assignment.				
804.77 <i>3</i>	(7/2)+	0.76 ps <i>14</i>	A CD F	J ^{π} : E2(+M1) 382 γ to 5/2 ⁺ , E2(+M1) 763 γ to 9/2 ⁺ , 805 γ to 5/2 ⁻ gives J ^{π} =5/2 ⁺ ,7/2 ⁺ ; excitation function in ⁸⁰ Se(⁶ Li,3n γ) is consistent with J=7/2. T ₁ /2 ⁻ others: <60 ps from delay coincidence in ⁸³ Sr ε decay. <1.0				
				ps from DSAM in 82 Kr(p, γ), 83 Kr(p, $\eta\gamma$).				
821.62 15	$(3/2)^{-}$		A E G	XREF: $E(823)G(834)$.				
853 98 11	$(3/2^{-} 5/2 7/2^{-})$		А	J^{-1} : L("He,d)=1, J-dependence of (α ,p). I^{π} : log $f_{t}=8.8$ from $I^{\pi}=7/2^{+}$ parent 849γ to $3/2^{-}$				
908.00 11	$(3/2, 5/2, 7/2^{-})$		A	J^{π} : 484.5 γ to 5/2 ⁺ , 903 γ to 3/2 ⁻ , 908 γ to 5/2 ⁻ .				
1010.34 14	$(3/2^-, 5/2, 7/2^-)$		Α	J ^{π} : log ft=8.5 from $J^{\pi}=7/2^+$ parent, 1005 γ to 3/2 ⁻ .				
1035.14 10	$(3/2^{-}, 5/2, 7/2^{-})$		Α	J^{π} : 298 γ to 7/2 ⁻ , 646 γ to 3/2 ⁻ .				
1037.92 12	$11/2^+$	0.55 ps 21	ABCD	J ^{π} : M1+E2 245 γ to 13/2 ⁺ , M1+E2 995 γ to 9/2 ⁺ .				
1083.19 8	$(7/2^+ 0/2^+)$	21 ps 7	A A CDE C	YDEE : C(1116)				
1090.55 8	(7/2 ,9/2)	2.1 ps /	A CDE G	I^{π} : I (³ He d)=4. I-dependence of (α p)				
1102 66 2 13	9/2-	0.83 ps 21		I^{π} : E2 1102v to 5/2 ⁻ : band assignment				
1202.04 6	$(5/2,7/2,9/2)^+$	0.05 ps 21	A	J^{π} : M1.E2 778 γ to 5/2 ⁺ , 1160 γ to 9/2 ⁺ .				
1242.90 4	$(5/2)^+$		A	J^{π} : M1(+E2) 438 γ to (7/2) ⁺ , 1238 γ to 3/2 ⁻ .				
1277.5 4	$(3/2^{-}, 5/2, 7/2^{-})$		Α	J^{π} : log ft=8.6 from $J^{\pi}=7/2^+$ parent, 888 γ to $3/2^-$.				
1296.07 10	$(5/2,7/2^{-})$		Α	log ft=7.7 from $J^{\pi} = 7/2^+$ parent, 907 γ to 3/2 ⁻ .				
1343	$(3/2, 5/2)^{-}$		EG	E(level): average of 1340 keV (α ,p) and 1345 keV (³ He,d).				
1266 1 4	(7/2 + 0/2)			J ⁿ : L(³ He,d)=3+1, J dependence of (α,p) .				
1374.6.6	(1/2,9/2)		A	$\log ji = 7.7$ from $j = 7/2$ parent, 528γ to $11/2$.				
1424.6 3			Â					
1586.9 7	(9/2,13/2)	1.9 ps 6	CD	J^{π} : D+Q 549 γ to 11/2 ⁺ , excitation function in ⁸⁰ Se(⁶ Li,3n γ) favors the lower spin.				
1597.68 10	$(5/2,7/2^{-})$		Α	J^{π} : log ft=7.5 from $7/2^+$ parent, 1208 γ to 3/2 ⁻ .				
1606.2 5	$(3/2, 5/2, 7/2^{-})$		Α	J^{π} : log ft=7.9 from $J^{\pi}=7/2^+$ parent, 1601 γ to 3/2 ⁻ .				
1614.8 4	$(5/2^+, 7/2, 9/2^+)$		A	J^{π} : 1191 γ to 5/2 ⁺ , 1573 γ to 9/2 ⁺ .				
1629?	$3/2^+, 5/2^+$		G	J^{π} : L(³ He,d)=2.				
1695.45 <i>13</i>	$(3/2, 3/2, 7/2)^+$		A E G	$J : \log \beta I = 1.7$ from $J = 1/2$ parent, 8287 to $(3/2)$. XREF: G(1702).				
1740 33 8	$(5/2^+, 7/2)$		٨	J^{π} : L(³ He,d)=4, 658 γ to 11/2 ⁺ , 1272 γ to 5/2 ⁺ .				
1749.550	(3/2, 7/2)	0 60 - 14	A	J : 15207 to 5/2 , 17077 to 9/2 , 17497 to 5/2 .				
1753.04 - 10	11/2	1.09 ps 14	CD CD	J^{*} : E2 1016 γ to $1/2^{\circ}$, band assignment.				
1798.56 8	$(5/2)^+$	1.1 19 0	A E G	XREF: G(1811).				
				J ^{π} : log <i>ft</i> =6.6 from J^{π} =7/2 ⁺ parent, 1757 γ to 9/2 ⁺ , 1793 γ to 3/2 ⁻ , L(³ He,d)=2.				
1889.21 ^{<i>a</i>} 12	$17/2^{+}$	1.05 ps 12	BCD	J^{π} : E2 1095.5 γ to 13/2 ⁺ .				
1916.41 <i>19</i>	$(5/2,7/2^{-})$		A E G	XREF: E(1926).				
1040 (6.10	15/0+	1.05 (0)	D.(D)	J ^{<i>n</i>} : log $ft=7.4$ from $J^{n}=7/2^{+}$ parent, 1911 γ to $3/2^{-}$.				
1942.66 12	15/2	1.25 ps 42	RCD	J [*] : 15/2 from excitation and $\gamma(\theta)$ in ⁶⁰ Se(⁶ L1,3n γ), π from 905 γ to 11/2 ⁺ .				
1952.04 6	5/2+		Α	J^{π} : log <i>ft</i> =5.3 from 7/2 ⁺ parent, 1563 γ to 3/2 ⁻ .				

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⁸³Rb Levels (continued)

E(level) [†]	\mathbf{J}^{π}	$T_{1/2}^{\ddagger}$	XREF	Comments
2036.5 5 2057.23 10	$(5/2,7/2^-)$ $(7/2^+,9/2)$		A A g	J^{π} : log ft=7.1 from 7/2 ⁺ parent, 1647 γ to 3/2 ⁻ . J^{π} : log ft=6.6 from 7/2 ⁺ parent, 1019 γ to 11/2 ⁺ . J^{π} =7/2 ⁺ ,9/2 ⁺ from (³ He,d) if the L=4 component of the L(³ He,d)=1+4 doublet at 2062 keV is the same as the 2057 keV level
2062? 2067.3 ^c 3	1/2 ⁻ ,3/2 ⁻ 11/2 ⁻		g C	J^{π} : L(³ He,d)=1 component of the L(³ He,d)=1+4 doublet. J^{π} : (M1) 247 γ from 13/2 ⁻ , 966 γ to 9/2 ⁻ , 2025 γ to 9/2 ⁺ , band assignment.
2073.5 4	13/2-	0.55 ps 14	CD	J^{π} : (M1) 340 γ from 15/2 ⁻ , (13/2) from excitation function in 80 Se(⁶ Li.3n γ).
2089.90 8	$(5/2^+, 7/2^+)$		A E	XREF: E(2083). J^{π} : log $ft=5.8$ from $7/2^+$ parent, 2090 γ to $5/2^-$.
2095.0 6	(5/2 ⁺ ,7/2,9/2)		Α	J^{π} : log <i>ft</i> =7.0 from 7/2 ⁺ parent, 2053 γ to 9/2 ⁺ .
2101.72 ^{&} 14 2134.86 11	13/2 ⁻ (5/2 ⁺ ,7/2)	1.18 ps 28	CD A	J^{π} : E2 999 γ to 9/2 ⁻ ; band assignment. J^{π} : log <i>ft</i> =6.0 from 7/2 ⁺ parent, 1711 γ to 5/2 ⁺ , 2092 γ to 9/2 ⁺ , 2135 γ to 5/2 ⁻
2189.72 14	9/2+		A	J^{π} : log $ft=5.1$ from $7/2^+$ parent, 1396 γ to $13/2^+$.
2206.24 23	(13/2)		CD	J^{π} : (11/2,13/2) from excitation function in ⁸⁰ Se(⁶ Li,3n\gamma), D 208 γ from 15/2 ⁻ , D 1168.5 γ to 11/2 ⁺ .
2310.0 10	10/0-		D	
2313.54° <i>13</i>	13/2	0.69 ps 21	CD	J^* : E2 1210.5 γ to 9/2, assumption of increasing spin in (HI,xn) reactions
2318.17 19	$(17/2^+)$	1.4 ps 7	BCD	J^{π} : 1525 γ to 13/2 ⁺ , 542 γ from 21/2 ⁺ .
2334	1/2+,3/2+,5/2+		EG	E(level): average of 2327 keV in (α,p) and 2341 keV in $({}^{3}\text{He,d})$. J ^{π} : L $({}^{3}\text{He,d})$ =0+2 (doublet).
2413.75 ^c 12 2442? 2568?	15/2-	4.2 [#] ns 21	CD E E	J ^{π} : E2 660 γ to 11/2 ⁻ , band assignment.
2576.44 [@] 21 2584?	15/2 ⁻ 3/2 ⁺ ,5/2 ⁺	0.62 ps 14	CD G	J^{π} : E2 823 γ to 11/2 ⁻ , band assignment. J^{π} : L(³ He,d)=2.
2595.89 ^c 13	17/2-	70 [#] ps <i>35</i>	CD	J ^{π} : D(+Q) 182 γ to 15/2 ⁻ , 964 γ from 21/2 ⁻ .
2691?	$1/2^{+}$		G	J^{π} : L(³ He,d)=0.
2699.50 [@] 13	$17/2^{-}$		CD	J^{π} : M1 286 γ to 15/2 ⁻ , band assignment.
2772.42 ^d 20 2782?	17/2-		CD E	J^{π} : D+Q 359 γ to 15/2 ⁻ , 787 γ from 21/2 ⁻ .
2859.67 ^{<i>a</i>} 25	21/2+	1.45 ps 14	BCD	J^{π} : E2 970 γ to 17/2 ⁺ , band assignment.
2906	$(5/2)^+$		EG	E(level): average of 2904 keV (³ He,d) and 2907 keV (α ,p).
2957.84 ^c 15 3016.1 5	19/2-	6.9 ps +69-35	CD C	J^{π} : M1+E2 362 γ to 17/2 ⁻ , band assignment.
3059	$1/2^{+}$		G	J^{π} : L(³ He,d)=0.
3139.2 6	(19/2)		C	J ^{π} : D+Q 543.5 γ to 17/2 ⁻ , assumption of increasing spin in (HI,xn) reactions.
3147	3/2+,5/2+		G	J^{π} : L(³ He,d)=2.
3194.98 19	19/2-	<0.90 ps	BC	J^{π} : D 1305 γ to 17/2 ⁺ , 939 γ from 23/2 ⁻ .
3242	1/2',3/2',5/2' 21/2 ⁺	<0.90 ps	G BC	J [*] : L(³ He,d)=0+2 (doublet). I ^{π} : F2 1440 5 α to 17/2 ⁺ assumption of increasing spin in
5529.11 19	21/2	(0.90 ps	DC	(HI,xn) reactions.
3362.95 [°] 17	$21/2^{-}$	1.9 ps 5	CD	J ^{π} : M1+E2 405 γ to 19/2 ⁻ , band assignment.
3421	$(5/2)^+$		EG	E(level): from (α, p) and $({}^{3}\text{He}, d)$.
				J ^{<i>n</i>} : L('He,d)=0+2 (doublet), J dependence of (α,p) .
3440.27 ^{<i>a</i>} 19	21/2-		C	J ^{<i>a</i>} : E2 668 γ to 17/2 ⁻ , band assignment.
3559.30 18	21/2-	0.24 ps +14-10	CD	J^{π} : D+Q 601 γ to 19/2 ⁻ , E2 1127 γ from 25/2 ⁻ .

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⁸³Rb Levels (continued)

E(level) [†]	\mathbf{J}^{π}	$T_{1/2}^{\ddagger}$	XRI	EF	Comments
3601.06 ^e 20	21/2-	0.28 ps 6	С		J^{π} : M1 643 γ to 19/2 ⁻ .
3616	$1/2^+, 3/2^+, 5/2^+$	1		G	J^{π} : L(³ He,d)=0+2 (doublet).
3726.78 ^a 25	23/2+	0.17 ps 6	BCD		J^{π} : M1 867 γ to 21/2 ⁺ , band assignment.
3765.5 <i>3</i>	$(21/2^+)$		С		J^{π} : 1448 γ to (17/2 ⁺), D 400 γ from 23/2 ⁻ .
3783?	$1/2^+, 3/2^+, 5/2^+$			G	J^{π} : L(³ He,d)=0+2 (doublet).
3915?	$1/2^+, 3/2^+, 5/2^+$			G	J^{π} : L(³ He,d)=0+2 (doublet).
3992.2 ^f 3	$25/2^+$	0.67 ps 6	BC		J^{π} : E2 1132 γ to 21/2 ⁺ , M1 265 γ to 23/2 ⁺ .
4084.55 ^e 20	23/2-	0.229 ps 21	С		J^{π} : M1 483.5 γ to 21/2 ⁻ , band assignment.
4129.6 4			С		
4134.65 22	23/2-		C		J^{π} : E2 939 γ to 19/2 ⁻ , M1 534 γ to 21/2 ⁻ , band assignment.
4163.9 3	23/2-		BC		J^{*} : EI 2/2 γ from 25/2 ⁺ , 9/0 γ to 19/2 ⁻ ,
4400.8 10 $4435 37^{a} 23$	25/2+	0.31 ps 10	BC BC		I^{π} . M1 708 5y to $23/2^+$ band assignment
4455.57 25	$(25/2^{\pm})$	0.31 ps 10	DC		π_{1} 1602to 21/2 ⁺ M1+E2 724to 22/2 ⁺
$4401.1^{\circ} 4$	(23/2)	0.29 ps o	БС		J : $1003\gamma \ 10 \ 21/2$, $101+E2 \ 734\gamma \ 10 \ 23/2$. I^{π} : E2 1270v to 21/2 band assignment
$4696.27\frac{d}{10}$	25/2	0.270 ps 55	c		$\overline{\Lambda}$, E2 12/59 to 21/2, band assignment.
4715.1 4	23/2	0.55 ps 4	c		$J : EZ 1240\gamma$ to $21/2$, band assignment.
4963.5 ^b 3	$(27/2^{+})$		BC		J^{π} : M1 503 γ to (25/2 ⁺), band assignment.
5050.9 7	(С		· · ···· · ··· / ··· (·/-), · ····· · ····· g·······
5216.2 ^{<i>a</i>} 3	$(27/2^+)$		BC		J^{π} : 781 γ to 25/2 ⁺ , band assignment.
5316.1 ^{<i>f</i>} 3	29/2+	0.236 ps 35	BC		J^{π} : E2 1324 γ to 25/2 ⁺ , band assignment.
5349.4 ^c 3	27/2-		С		J^{π} : E2 1215 γ to 23/2 ⁻ , band assignment.
5421.8 14	$(25/2^{-})$		С		
5448.1 ^e 3	$(27/2^{-})$	0.035 ps 14	C		J^{π} : (M1) 806 γ to 25/2 ⁻ , 1363 γ to 23/2 ⁻ , band assignment.
5577.2025	$(20/2^{+})$	<0.40 mg			M_{\star} M1 702 α to $(27/2^{+})$ hand assignment
5000.9° 5	$(29/2^{+})$	<0.40 ps	ВС		J^{T} . Wi 703γ to $(27/2^{-1})$, band assignment.
5869.1° 3	29/2	0.39 ps 6	C		J [*] : E2 1183 γ to 25/2 , band assignment.
5970.0° 5 6088.0.6	29/2	0.512 ps 55	C		$J : EZ 1529\gamma$ to $Z5/Z$, band assignment.
6249.9 7			c		
6356.5 <mark>8</mark> 5	$(29/2^{-})$		C		J^{π} : 1670 γ to 25/2 ⁻ , D+Q 577 γ from (31/2 ⁻), band assignment.
6423.3 7			С		
6438.2 ^b 4	$(31/2^+)$		С		J^{π} : 1474 γ to (27/2 ⁺), band assignment.
6470.3 5	$(31/2^+)$		С		J^{π} : M1 697 γ from 33/2 ⁺ , 803 γ to 29/2 ⁺ .
6556.9 [°] 4	$(31/2^{-})$		С		J^{π} : 1207 γ to 27/2 ⁻ , band assignment.
6668.8 5			BC		
6687.8 ^e 4	$(31/2^{-})$	0.111 ps 21	C		J^{π} : 717 γ to 29/2 ⁻ , 1239.5 γ to (27/2 ⁻), band assignment.
6912.2 8			C		
6913.1 ^J 5	$(33/2^{+})$	0.125 ps 14	BC		J^{π} : 159'/ γ to 29/2 ⁺ , band assignment.
0933.73	(31/2)	0.10	C		J^{T} : 514 γ from (35/2), band assignment.
7068.0 ^{cr} 4	33/2	0.19 ps 6	C		J^{*} : E2 1199 γ to 29/2 , band assignment.
7167.30 4	$(33/2^+)$	0.0(0.01	C		J^{π} : 729 γ to (31/2 ⁺), 1501 γ to 29/2 ⁺ , band assignment.
7372.3° 5	(33/2)	0.062 ps 21	C		J^{π} : 684 γ to (31/2), 1402 γ to 29/2, band assignment.
7633 2 8	(33/2)		C		J^{**} 438 γ from (35/2), band assignment.
7055.2 8 7906 1 <u>8</u> 4	$(35/2^{-})$		c		I^{π} · 1349 5y to (31/2 ⁻) D 514y from 37/2 ⁻
8032.6 [°] 5	$(35/2^{-})$		c		J^{π} : 1476v to (31/2 ⁻), band assignment.
8094.3 ^e 6	$(35/2^{-})$	0.17 ps 6	č		J^{π} : 721 γ to (33/2 ⁻), 1407 γ to (31/2 ⁻), band assignment.
8193.5 <mark>b</mark> 5	$(35/2^+)$	1	C		J^{π} : 1027 γ to (33/2 ⁺), 1754 γ to (31/2 ⁺), band assignment.
8419 5 ^d 5	37/2-		c		I^{π} : E2 1351 γ to 33/2 ⁻ hand assignment
8671.9 ^e 6	(37/2 ⁻)	0.166 ps 28	c		J^{π} : D 577 γ to (35/2 ⁻), 1300 γ to (33/2 ⁻), band assignment.

⁸³Rb Levels (continued)

E(level) [†]	J^{π}	XREF	Comments
8837.5 ^{<i>f</i>} 8	$(37/2^+)$	BC	J^{π} : 1924 γ to (33/2 ⁺), band assignment.
8962.4 9		С	
9341.2 ^e 6	$(39/2^{-})$	С	J^{π} : 669 γ to (37/2 ⁻), 1247 γ to (35/2 ⁻), band assignment.
9633.6 [°] 8	$(39/2^{-})$	С	J^{π} : 1601 γ to (35/2 ⁻), band assignment.
9910.2 <mark>d</mark> 6	$41/2^{-}$	С	J^{π} : E2 1491 γ to 37/2 ⁻ , band assignment.
11714.9 <mark>d</mark> 9	$(45/2^{-})$	С	J^{π} : 1805 γ to 41/2 ⁻ , band assignment.
13926.3 ^d 12	$(49/2^{-})$	С	J^{π} : 2211 γ to (45/2 ⁻), band assignment.

[†] From a least-squares fit to $E\gamma$, by evaluator, except where noted.

[‡] From Doppler Shift Attenuation Method (DSAM) in ⁷⁶Ge(¹¹B,4n γ),⁷⁶Ge(¹⁰B,3n γ), except where noted. [#] From Recoil Distance Doppler-shift Method (RDDM) in ⁷⁶Ge(¹¹B,4n γ),⁷⁶Ge(¹⁰B,3n γ).

[@] Band(A): Band based on $3/2^-$.

& Band(B): Band based on 5/2⁻.

^{*a*} Band(C): Band based on $9/2^+$.

^b Band(D): $\Delta J=1$ band based on (25/2⁺).

^c Band(E): Band based on $11/2^-$. $\Delta J=1$ up to $23/2^-$, $\Delta J=2$ above this spin.

^d Band(F): Band based on $17/2^{-}$.

^e Band(G): $\Delta J=1$ band based on $21/2^{-}$.

^f Band(H): Band based on $25/2^+$.

^g Band(I): Band based on $(29/2^{-})$.

						Adopted Le	vels, Gammas	(continued)	
							$\gamma(^{83}\text{Rb})$		
E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	\mathbf{J}_f^{π}	Mult. [‡]	δ^{\ddagger}	α	Comments
5.2357	3/2-	5.2357 [#] 8	100#	0.0	5/2-	M1+E2 [@]	2.6×10 ⁻⁵ 2	100 6	$\alpha(L)=84 5; \ \alpha(M)=13.9 8; \ \alpha(N)=1.55 9; \\ \alpha(O)=0.064 4 \\ B(M1)(W \mu)=0.0213 17$
42.0780	9/2+	42.078 [#] 2	100 [#]	0.0	5/2-	M2 [@]		38.7 8	$\alpha(K)=31.8$ 7; $\alpha(L)=5.77$ 12; $\alpha(M)=0.985$ 21; $\alpha(N)=0.1071$ 22; $\alpha(O)=0.00388$ 8
99.36	3/2-	94.11 [#] 10	100 [#]	5.2357	3/2-	M1+E2@	0.29 [@] 5	0.25 3	$ \alpha(K)=0.218\ 23; \ \alpha(L)=0.028\ 4; \ \alpha(M)=0.0047\ 7; \alpha(N)=0.00051\ 7; \ \alpha(O)=1.83\times10^{-5}\ 17 $ Mult.: $\alpha(K)exp=0.22\ 2\ from\ ^{83}Sr\ \varepsilon\ decay$ suggests multipolarity is a mixture of M1 and E2. However, B(E2)(W.u.)>1.5×10 ³ is deduced from T _{1/2} <150 ps (1973Br32) and δ. Therefore, 1973Br32 exclude any E2 component. If T _{1/2} ≈1.2 ns (see comment with 99-keV level), B(M1)(W.u.) and B(E2)(W.u.) are in agreement with M1+E2 multipolarity.
389.42	3/2-	290.04 [#] 10	24# 4	99.36	3/2-	M1+E2@	1.3 [@] +8-6	0.016 4	$\begin{aligned} &\alpha(K) = 0.014 \ 3; \ \alpha(L) = 0.0016 \ 4; \ \alpha(M) = 0.00027 \\ &7; \ \alpha(N) = 3.0 \times 10^{-5} \ 7; \ \alpha(O) = 1.19 \times 10^{-6} \ 24 \\ &B(E2)(W.u.) = 1.9 \times 10^{2} \ 12; \ B(M1)(W.u.) = 0.008 \ 7 \\ &I_{\gamma}: \ from \ ^{83}Sr \ \varepsilon \ decay. \ However, \ I_{\gamma} = 96 \ 3 \ from \\ &(^{6}Li, 3n_{\gamma}). \ Evaluator \ adopts \ the \ first \ value, \\ since \ B(E2)(W.u.) > 300 \ if \ I_{\gamma} > 38. \end{aligned}$
		384.18 [#] 389.37 [#] 10	3.4 [#] 4 100 [#] 5	5.2357 0.0	3/2 ⁻ 5/2 ⁻	E2(+M1) [@]	4.3 [@] 25	0.0074 6	α (K)=0.0065 6; α (L)=0.00074 7; α (M)=0.000122 <i>11</i> ; α (N)=1.36×10 ⁻⁵ <i>12</i> ; α (O)=5.5×10 ⁻⁷ 5 B(F2)(Wu)=15 6; B(M1)(Wu)=0.034 <i>13</i> ;
423.612	5/2+	381.53 [#] 3	100 [#] 4	42.0780	9/2+	E2 [@]		0.00806	$\begin{aligned} \alpha(\mathbf{K}) &= 0.00710 \ 10; \ \alpha(\mathbf{L}) &= 0.00813 \ 12; \\ \alpha(\mathbf{M}) &= 0.0001340 \ 19; \ \alpha(\mathbf{N}) &= 1.489 \times 10^{-5} \ 21 \\ \alpha(\mathbf{O}) &= 5.98 \times 10^{-7} \ 9 \\ \mathbf{B}(\mathbf{E2})(\mathbf{W}.\mathbf{u}.) &= 31 \ +7-7 \end{aligned}$
		418.37 [#] 3	30.0 [#] 10	5.2357	3/2-	E1 [@]		1.64×10 ⁻³	$\alpha(K)=0.001452 \ 21; \ \alpha(L)=0.0001557 \ 22; \alpha(M)=2.56\times10^{-5} \ 4; \ \alpha(N)=2.90\times10^{-6} \ 4 \alpha(O)=1.238\times10^{-7} \ 18 B(E1)(W.u.)=1.4\times10^{-5} \ +3-4$
		423.63 [#] 3	10.3 [#] 4	0.0	5/2-	E1 [@]		1.58×10 ⁻³	$\alpha(K)=0.001406\ 20;\ \alpha(L)=0.0001508\ 22;\alpha(M)=2.48\times10^{-5}\ 4;\ \alpha(N)=2.81\times10^{-6}\ 4\alpha(O)=1.200\times10^{-7}\ 17B(E1)(Wu)=4\ 6\times10^{-6}\ +11-10$
466.7		461.82	100	5.2357	3/2-				D(D1)(11.0)-1.0/10 111 10

 $^{83}_{37}$ Rb $_{46}$ -6

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Adopted Levels,	Gammas	(continued)
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$\gamma(^{83}\text{Rb})$ (continued)

E_i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	${ m J}_f^\pi$	Mult. [‡]	δ^{\ddagger}	α	Comments
564.59	(3/2 ⁻ ,5/2,7/2 ⁻)	559.35 [#] 10 564.45 [#] 20	$100^{\#} 4$ $40^{\#} 4$	5.2357 0.0	3/2 ⁻ 5/2 ⁻				
/3/.14	1/2	695.06 [#] 4	6.8" / 2.18 [#] 23	42.0780	(3/2 ,3/2,1/2) 9/2 ⁺	[E1]		4.88×10 ⁻⁴	α (K)=0.000433 6; α (L)=4.61×10 ⁻⁵ 7; α (M)=7.59×10 ⁻⁶ 11; α (N)=8.61×10 ⁻⁷ 12; α (O)=3.72×10 ⁻⁸ 6 B(E1)(W,u)=1.6×10 ⁻⁶ 11
		731.95 [#] 10	34 [#] 3	5.2357	3/2-	E2&		1.16×10 ⁻³	$\alpha(K)=0.001029 \ 15;$ $\alpha(L)=0.0001126 \ 16;$ $\alpha(M)=1.86\times10^{-5} \ 3;$ $\alpha(N)=2.09\times10^{-6} \ 3;$ $\alpha(O)=8.87\times10^{-8} \ 13$ B(E2)(W.u.)=2.9 \ 20
		737.13 [#] 10	100 [#] 3	0.0	5/2-	M1+E2 ^a	+0.82 18	1.05×10 ⁻³ 2	$\begin{aligned} &\alpha(\mathbf{K}) = 0.000928 \ 20; \\ &\alpha(\mathbf{L}) = 0.0001004 \ 24; \\ &\alpha(\mathbf{M}) = 1.66 \times 10^{-5} \ 4; \\ &\alpha(\mathbf{N}) = 1.88 \times 10^{-6} \ 5; \\ &\alpha(\mathbf{O}) = 8.09 \times 10^{-8} \ 17 \\ &\mathbf{B}(\mathbf{E}2)(\mathbf{W}.\mathbf{u}.) = 3.3 \ 22; \\ &\mathbf{B}(\mathbf{M}1)(\mathbf{W}.\mathbf{u}.) = 0.0022 \ 15 \end{aligned}$
793.63	13/2+	751.7 1	100	42.0780	9/2+	E2 ^{&}		1.08×10 ⁻³	$\alpha(K)=0.000959 \ 14;$ $\alpha(L)=0.0001049 \ 15;$ $\alpha(M)=1.729\times10^{-5} \ 25;$ $\alpha(N)=1.95\times10^{-6} \ 3$ $\alpha(O)=8.28\times10^{-8} \ 12$ $B(E2)(W.u.)=26 \ 5$
804.77	(7/2)+	381.17 [#] 3	6.7 [#] 7	423.612	5/2+	E2(+M1) [@]	≥2.9 [@]	0.00790 22	$\alpha(K)=0.00696 \ 20; \\ \alpha(L)=0.000796 \ 23; \\ \alpha(M)=0.000131 \ 4; \\ \alpha(N)=1.46\times10^{-5} \ 5; \\ \alpha(O)=5.87\times10^{-7} \ 16 \\ B(E2)(W.u.)=28 \ 6 \\ \end{array}$
		762.65 [#] 10	100 [#] 5	42.0780	9/2+	E2(+M1) [@]	≥2.0 [@]	1.03×10 ⁻³ 2	$\begin{aligned} &\alpha(\mathrm{K}) = 0.000913 \ 18; \\ &\alpha(\mathrm{L}) = 9.95 \times 10^{-5} \ 20; \\ &\alpha(\mathrm{M}) = 1.64 \times 10^{-5} \ 4; \\ &\alpha(\mathrm{N}) = 1.85 \times 10^{-6} \ 4; \end{aligned}$

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				I	Adopted Levels, (Gammas (co	ntinued)	
					$\gamma(^{83}\text{Rb})$	(continued)		
E _i (level)	J^{π}_i	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	\mathbf{J}_f^{π}	Mult. [‡]	α	Comments
804 77	(7/2)+	804.65 [#] .15	0.31# 3	0.0	5/27	[E1]	3 57×10 ⁻⁴	$\begin{array}{l} \alpha(\text{O}) = 7.89 \times 10^{-8} \ 14 \\ \text{B(E2)(W.u.)} = 25 \ 5 \\ \delta: \ \text{others:} \ 1.6 \le \delta \le 16 \ \text{from } \gamma \gamma(\theta) \ \text{in} \ ^{83}\text{Sr} \ \varepsilon \\ \text{decay,} \ +0.4 \ +4-2 \ \text{from } \gamma(\theta) \ \text{in} \\ \ ^{76}\text{Ge}(^{11}\text{B},4n\gamma), ^{76}\text{Ge}(^{10}\text{B},3n\gamma). \\ \alpha(\text{K}) = 0.000317 \ 5: \ \alpha(\text{L}) = 3.37 \times 10^{-5} \ 5: \end{array}$
004.77	(1/2)	004.05 15	0.51 5	0.0	5/2	[121]	5.57×10	$\alpha(\mathbf{N}) = 0.000317 \ 9, \ \alpha(\mathbf{L}) = 0.37 \times 10^{-5} \ 9, \ \alpha(\mathbf{M}) = 5.54 \times 10^{-6} \ 8; \ \alpha(\mathbf{N}) = 6.29 \times 10^{-7} \ 9; \ \alpha(\mathbf{O}) = 2.73 \times 10^{-8} \ 4 \ \mathbf{B}(\mathbf{E1})(\mathbf{W}.\mathbf{u}.\mathbf{u}) = 2.6 \times 10^{-6} \ 6 \ \mathbf{K}$
821.62	(3/2)-	722.28 [#]	26 [#] 3	99.36	3/2-			
		816.34 [#]	100 ^{#} 12	5.2357	3/2-			
		821.59 [#]	13.5 [#] 12	0.0	5/2-			
853.98	$(3/2^{-}, 5/2, 7/2^{-})$	289.53 [#]	20 [#] 3	564.59	(3/2 ⁻ ,5/2,7/2 ⁻)			
		754.56 [#]	16.9 [#] 17	99.36	3/2-			
		848.66 [#]	100 [#] 10	5.2357	3/2-			
		853.98 [#]	46 [#] 5	0.0	5/2-			
908.00	$(3/2, 5/2, 7/2^{-})$	343.4 [#]	4.2 [#] 4	564.59	$(3/2^-, 5/2, 7/2^-)$			
		440.85 [#]	5.8 <mark>#</mark> 6	466.7				
		484.5 <mark>#</mark>	2.8 [#] 3	423.612	5/2+			
		518.5 [#]	15.3 [#] 14	389.42	3/2-			
		808.7 [#] 3	24 [#] 3	99.36	3/2-			
		902.64 [#]	25 # 3	5.2357	3/2-			
		907.94 [#]	100 [#] 10	0.0	5/2-			
1010.34	$(3/2^{-}, 5/2, 7/2^{-})$	445.69 [#]	45 [#] 5	564.59	$(3/2^-, 5/2, 7/2^-)$			
		$1005.1^{\#}_{\#}^{2}$	72 <mark>#</mark> 8	5.2357	3/2-			
		1010.35 [#] 20	100 [#] 15	0.0	5/2-			
1035.14	$(3/2^{-}, 5/2, 7/2^{-})$	298.02#	51" 6	737.14	7/2-			
		470.69#	14.4# 17	564.59	$(3/2^{-}, 5/2, 7/2^{-})$			
		568.00"	7.2 [#] 11	466.7	T (0)			
		611.4"	11.1 # 11	423.612	5/2+			
		645.8 [#] 2	100^{-11}	389.42	3/2-			
		935.8 [#] 4	29 " 3	99.36	3/2-			
		1029.63	6.1" 6	5.2357	3/2-			
1037 02	11/2+	1035.04"	72" 11 26 3 11	0.0 793.63	5/2 13/2 ⁺	M1⊥F2a	0 025 12	$\alpha(\mathbf{K}) = 0.022 11 \cdot \alpha(\mathbf{I}) = 0.0026 13 \cdot \alpha(\mathbf{M}) = 0.00043$
1037.92	11/2	243.0 2	20.3 11	175.05	1.5/2	14117122	0.025 12	$22; \alpha(N)=4.7\times10^{-5} 23; \alpha(O)=1.8\times10^{-6} 8$ I _γ : other: 9.3 9 from ⁸³ Sr ε decay.
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⁸³₃₇Rb₄₆-8

	Adopted Levels, Gammas (continued)											
					$\gamma(^{83}\text{Rb})$	(continued)						
E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	J_f^π	Mult. [‡]	δ^{\ddagger}	α	Comments			
1037.92	11/2+	995.2 3	100 4	42.0780	9/2+	M1+E2	-0.8 +3-7	5.26×10 ⁻⁴ 11	$\begin{aligned} \alpha(K) = 0.000466 \ 10; \\ \alpha(L) = 5.00 \times 10^{-5} \ 12; \\ \alpha(M) = 8.24 \times 10^{-6} \ 20; \\ \alpha(N) = 9.36 \times 10^{-7} \ 21; \\ \alpha(O) = 4.07 \times 10^{-8} \ 8 \\ B(E2)(W.u.) = 15 \ 6; \\ B(M1)(W.u.) = 0.020 \ 8 \\ Mult.: \ D+Q \ from \ \gamma(\theta) \ in \\ ^{76}Ge(^{11}B, 4n\gamma), ^{76}Ge(^{10}B, \\ 3n\gamma), \ E1+M2 \ is \ excluded \ by \ comparison \ to \ RUL. \end{aligned}$			
1083.19 1096.53	(7/2+,9/2+)	659.53 [#] 291.61 [#] 673.04 [#]	$100^{\#}$ 12.1 [#] 13 10.3 [#] 11	423.612 804.77 423.612	5/2 ⁺ (7/2) ⁺ 5/2 ⁺							
1102.66	9/2-	1054.45 [#] 10 366.0 3	100 # 6 18.6 5	42.0780 737.14	9/2 ⁺ 7/2 ⁻							
		1102.4 2	100 3	0.0	5/2-	E2 ^{&}		4.30×10 ⁻⁴	$\alpha(K)=0.000381 6;$ $\alpha(L)=4.09\times10^{-5} 6;$ $\alpha(M)=6.74\times10^{-6} 10;$ $\alpha(N)=7.64\times10^{-7} 11;$ $\alpha(O)=3.30\times10^{-8} 5$ B(E2)(W.u.)=16 5			
1202.04	(5/2,7/2,9/2)+	637.39 [#] 737.3 [#]	0.89 [#] 9 0.30 [#] 3	564.59 466.7	(3/2 ⁻ ,5/2,7/2 ⁻)							
		778.44 [#] 10	100 [#] 5	423.612	5/2+	M1,E2 [@]		0.00093 6	$\alpha(K)=0.00083 \ 6;$ $\alpha(L)=8.9\times10^{-5} \ 7;$ $\alpha(M)=1.47\times10^{-5} \ 11;$ $\alpha(N)=1.67\times10^{-6} \ 12;$ $\alpha(O)=7.2\times10^{-8} \ 4$			
1242 90	(5/2)+	1159.97 [#] 10 1201.94 [#] 15 159.75 [#] 10	77 [#] 3 6.4 [#] 6 14.1 [#] 17	42.0780 0.0 1083.19	9/2 ⁺ 5/2 ⁻							
1212.90	(3/2)	438.16 [#] 10	100 [#] 5	804.77	(7/2)+	M1(+E2) [@]	≤0.4 [@]	0.00337 15	$\alpha(K)=0.00298 \ 13;\alpha(L)=0.000325 \ 15;\alpha(M)=5.37\times10^{-5} \ 25;\alpha(N)=6.1\times10^{-6} \ 3;\alpha(O)=2.62\times10^{-7} \ 10$			
		678.31 [#] <i>3</i> 775.77 [#]	5.3 [#] 6 0.72 [#] 7	564.59 466.7	(3/2 ⁻ ,5/2,7/2 ⁻)							

	Adopted Levels, Gammas (continued)								
E_i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	${\sf J}_f^\pi$	Mult. [‡]	δ^{\ddagger}	α	Comments
1242.90	(5/2)+	819.29 [#] 10	97 [#] 3	423.612	5/2+	M1,E2 [@]		0.00082 5	α (K)=0.00073 4; α (L)=7.9×10 ⁻⁵ 5; α (M)=1.30×10 ⁻⁵ 8; α (N)=1.48×10 ⁻⁶ 9; α (O)=6.4×10 ⁻⁸ 3
		853.42 [#] 10 1200.75 [#]	$6.9^{\#} 7$ $4.8^{\#} 7$	389.42 42.0780	3/2 ⁻ 9/2 ⁺				
		1237.72^{*} 13 1242.87 [#] 15	$93^{\#}5$	5.2557 0.0	3/2 5/2 ⁻				
1277.5	$(3/2^{-}, 5/2, 7/2^{-})$	713.00 [#]	17.3 [#] 15	564.59	$(3/2^-, 5/2, 7/2^-)$				
		887.90 [#]	38 [#] 4	389.42	3/2-				
		1272.39 [#]	46 [#] 5	5.2357	3/2-				
		1277.49 [#]	100 [#] 11	0.0	5/2-				
1296.07	$(5/2,7/2^{-})$	906.55 [#]	66 [#] 7	389.42	3/2-				
1266.1	$(7/0^{+}, 0/0)$	$1296.06^{\#}$ 10	100 [#] 4	0.0	$5/2^{-}$				
1300.1	$(1/2^{+},9/2)$	269.5" 228.4#	8.3" 8 4.2# 4	1096.53	$(1/2^{+}, 9/2^{+})$				
		528.4 561.22#	$4.2 \ 4$ 15 2 [#] 17	804.77	$(7/2)^+$				
		1323 78 [#]	$100^{\#} 10$	42 0780	(1/2) $9/2^+$				
1374.6		907.6 [#]	$72^{\#} 7$	466.7	7/2				
		1275.34#	100 [#] 10	99.36	3/2-				
1424.6		630.9 [#] 3	67 [#] 7	793.63	13/2+				
		1382.73 [#]	100 [#] 15	42.0780	9/2+				
1586.9	(9/2,13/2)	549.0	78 6	1037.92	11/2+	D+Q	-0.3 1		
1507 (0	(5/0.7/0-)	1544.8	100.6	42.0780	9/2 ⁺				
1597.68	(5/2,7/2)	395.62" 702.07#	$100^{"} 10$ $57^{\#} 10$	1202.04 804.77	$(5/2, 1/2, 9/2)^+$				
		192.97 1174 08 [#] 15	81 [#] 10	604.77 423.612	(1/2) $5/2^+$				
		1208.17	30 3	389.42	3/2-				
		1592.31 [#]	19 [#] 3	5.2357	3/2-				
		1597.64 [#] 15	53 [#] 4	0.0	5/2-				
1606.2	$(3/2, 5/2, 7/2^{-})$	1506.91#	11.0 [#] 10	99.36	3/2-				
		1600.97 [#]	100 [#] 10	5.2357	3/2-				
		1606.07"	$4.0^{+}5$	0.0	5/2-				
1614.8	$(5/2^+, 1/2, 9/2^+)$	371.9 [#]	6.3" 6	1242.90	(5/2) ⁺				
		877.63" 1050.24 [#]	26'' 3	/3/.14	1/2				
		1050.24"	100" 13	304.39	(3/2,3/2,1/2)				

From ENSDF

 $^{83}_{37}$ Rb₄₆-10

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				Ad	opted Levels, Ga	<mark>mmas</mark> (con	tinued)		
					$\gamma(^{83}\text{Rb})$ (co	ontinued)			
E_i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	J_f^π	Mult. [‡]	δ^{\ddagger}	α	Comments
1614.8	(5/2 ⁺ ,7/2,9/2 ⁺)	1191.10 [#] 1572.70 [#]	4.4 [#] 6 13.4 [#] 14	423.612 42.0780	5/2 ⁺ 9/2 ⁺				
1649.4	(3/2 ⁻ ,5/2,7/2 ⁻)	639.13 [#] 795.34 [#] 827.81 [#] 1084.76 [#] 1649.40 [#]	59 [#] 6 88 [#] 9 17.4 [#] 23 47 [#] 5 100 [#] 12	1010.34 853.98 821.62 564.59 0.0	$(3/2^{-},5/2,7/2^{-})$ $(3/2^{-},5/2,7/2^{-})$ $(3/2)^{-}$ $(3/2^{-},5/2,7/2^{-})$ $5/2^{-}$				
1695.45	(7/2,9/2)+	270.8 [#] 493.45 [#] 599.12 [#] 657.68 [#] 890.8 [#] 3 1271.81 [#] 1653.31 [#] 15	$\begin{array}{c} 6.7^{\#} \ 7 \\ 33^{\#} \ 4 \\ 4.0^{\#} \ 4 \\ 71^{\#} \ 9 \\ 100^{\#} \ 11 \\ 51^{\#} \ 7 \\ 56.2^{\#} \ 22 \end{array}$	1424.6 1202.04 1096.53 1037.92 804.77 423.612 42.0780	$(5/2,7/2,9/2)^+$ $(7/2^+,9/2^+)$ $11/2^+$ $(7/2)^+$ $5/2^+$ $9/2^+$				
1749.33	(5/2 ⁺ ,7/2)	506.4 [#] 547.3 [#] 652.81 [#] 10 944.56 [#] 10 1184.54 [#] 1325.62 [#] 1707.15 [#] 1749.25 [#] 25	59 [#] 7 6.8 [#] 7 64 [#] 7 100 [#] 9 4.1 [#] 5 58 [#] 6 17.5 [#] 14 20 7 [#] 23	1242.90 1202.04 1096.53 804.77 564.59 423.612 42.0780 0.0	$(5/2)^+$ $(5/2,7/2,9/2)^+$ $(7/2^+,9/2^+)$ $(7/2)^+$ $(3/2^-,5/2,7/2^-)$ $5/2^+$ $9/2^+$ $5/2^-$				
1753.64	11/2-	651.2 <i>5</i> 1016.4 <i>3</i>	23.6 6 100 <i>3</i>	1102.66 737.14	9/2- 7/2-	E2 ^{&}		5.16×10 ⁻⁴	$\begin{aligned} &\alpha(\mathrm{K}) = 0.000458 \ 7; \ \alpha(\mathrm{L}) = 4.94 \times 10^{-5} \ 7; \\ &\alpha(\mathrm{M}) = 8.14 \times 10^{-6} \ 12; \ \alpha(\mathrm{N}) = 9.22 \times 10^{-7} \\ &13; \ \alpha(\mathrm{O}) = 3.97 \times 10^{-8} \ 6 \\ &\mathrm{B}(\mathrm{E2})(\mathrm{W.u.}) = 28 \ 6 \end{aligned}$
1780.4 1798.56	(5/2)+	986.6 1738.5 ^f 555.63 [#]	100 8 121 14 $2.25^{\#} 25$	793.63 42.0780 1242.90	13/2 ⁺ 9/2 ⁺ (5/2) ⁺				
		993.78 [#]	28.1" 1/ 100 [#] 17	804.77	(7/2)+	M1+E2	3.4 22	5.42×10 ⁻⁴ 12	α(K)=0.000480 11; α(L)=5.18×10-5 13; α(M)=8.54×10-6 21; α(N)=9.67×10-7 23; α(O)=4.17×10-8 8 Mult.: D+Q from γγ(θ) in 83Sr ε decay, Δπ=no from level scheme. δ: from γγ(θ) in 83Se ε decay.

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					Adopted Level	s, Gammas	(continue	ed)	
					γ ⁽⁸³ R	b) (continue	ed)		
E_i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_{f}	\mathbf{J}_{f}^{π}	Mult. [‡]	δ^{\ddagger}	α	Comments
1798.56	(5/2)+	1233.94 [#] 1374.97 [#] 15 1756.5 [#] 2 1793.23 [#] 1798.55 [#] 15	5.6 [#] 6 15.0 [#] 17 6.3 [#] 5 3.2 [#] 5 8.4 [#] 8	564.59 423.612 42.0780 5.2357 0.0	(3/2 ⁻ ,5/2,7/2 ⁻) 5/2 ⁺ 9/2 ⁺ 3/2 ⁻ 5/2 ⁻				
1889.21	17/2+	1095.5 <i>1</i>	100	793.63	13/2+	E2 ^{&}		4.35×10 ⁻⁴	$\begin{aligned} &\alpha(\text{K}) = 0.000386 \ 6; \ \alpha(\text{L}) = 4.15 \times 10^{-5} \ 6; \\ &\alpha(\text{M}) = 6.84 \times 10^{-6} \ 10; \ \alpha(\text{N}) = 7.75 \times 10^{-7} \ 11; \\ &\alpha(\text{O}) = 3.35 \times 10^{-8} \ 5 \\ &\text{B}(\text{E2})(\text{W.u.}) = 15.9 \ 19 \end{aligned}$
1916.41	(5/2,7/2 ⁻)	1492.78 [#] 1911.15 [#] 20 1916.4 [#]	58 [#] 6 100 [#] 9 8.9 [#] 9	423.612 5.2357 0.0	5/2+ 3/2 ⁻ 5/2 ⁻				
1942.66	15/2+	904.8 <i>3</i>	16.6 5	1037.92	11/2+	[E2]		6.80×10 ⁻⁴	$\alpha(K)=0.000602 \ 9; \ \alpha(L)=6.53\times10^{-5} \ 10; \\ \alpha(M)=1.076\times10^{-5} \ 15; \ \alpha(N)=1.217\times10^{-6} \ 17; \\ \alpha(O)=5.21\times10^{-8} \ 8 \\ B(E2)(W.u.)=4.9 \ 17 \\ L_{\gamma}: \ other; \ 33 \ 3 \ in \ ^{80}Se(^{6}Li, \ 3n\gamma).$
		1149.0 <i>1</i>	100 <i>3</i>	793.63	13/2+	M1 ^b		3.84×10 ⁻⁴	$\alpha(K)=0.000339 5; \alpha(L)=3.61\times10^{-5} 5; \alpha(M)=5.95\times10^{-6} 9; \alpha(N)=6.78\times10^{-7} 10; \alpha(O)=2.97\times10^{-8} 5 B(M1)(W,u,)=0.010 4$
1952.04	5/2+	$153.55^{\#}$ $345.80^{\#}$ $354.32^{\#}$ $577.18^{\#}$ $674.41^{\#}$ $709.1^{\#} 4$ $749.96^{\#}$ $868.6^{\#} 4$ $916.91^{\#} 10$ $941.94^{\#}$ $1044.03^{\#} 10$ $1098.05^{\#} 10$ $1130.41^{\#} 15$ $1147.33^{\#} 10$	$0.72^{\#} 7$ $0.50^{\#} 5$ $3.3^{\#} 3$ $0.50^{\#} 5$ $2.7^{\#} 3$ $0.90^{\#} 8$ $2.3^{\#} 3$ $1.05^{\#} 10$ $7.8^{\#} 8$ $0.52^{\#} 5$ $19.5^{\#} 17$ $14.5^{\#} 5$ $2.33^{\#} 17$ $71.3^{\#} 18$	1798.56 1606.2 1597.68 1374.6 1277.5 1242.90 1202.04 1083.19 1035.14 1010.34 908.00 853.98 821.62 804.77	$(5/2)^{+}$ $(3/2,5/2,7/2^{-})$ $(5/2,7/2^{-})$ $(3/2^{-},5/2,7/2^{-})$ $(5/2)^{+}$ $(5/2,7/2,9/2)^{+}$ $(3/2^{-},5/2,7/2^{-})$ $(3/2^{-},5/2,7/2^{-})$ $(3/2^{-},5/2,7/2^{-})$ $(3/2^{-},5/2,7/2^{-})$ $(3/2^{-},5/2,7/2^{-})$ $(3/2)^{-}$ $(7/2)^{+}$	M1+E2	4.7 24	3.95×10 ⁻⁴	$\begin{aligned} &\alpha(\text{K}) = 0.000348 \ 5; \ \alpha(\text{L}) = 3.73 \times 10^{-5} \ 6; \\ &\alpha(\text{M}) = 6.15 \times 10^{-6} \ 9; \ \alpha(\text{N}) = 6.98 \times 10^{-7} \ 10; \\ &\alpha(\text{O}) = 3.02 \times 10^{-8} \ 5 \end{aligned}$

L

 $^{83}_{37}$ Rb $_{46}$ -12

					Adopted Levels,	Gammas	(continued)	
					$\gamma(^{83}\text{Rb})$	(continue	<u>d)</u>	
E _i (level)	J_i^π	${\rm E_{\gamma}}^{\dagger}$	I_{γ}^{\dagger}	E_f	J_f^π	Mult.‡	α	Comments
								Mult.: D+Q from $\gamma\gamma(\theta)$ in ⁸³ Sr ε decay, $\Delta\pi$ =no from level scheme. δ : from $\gamma\gamma(\theta)$ in ⁸³ Sr ε decay.
1952.04	5/2+	1214.88 [#] 15 1387.38 [#] 1528.33 [#] 15 1562.51 [#] 15 1946.66 [#] 1952.06 [#] 15	14.2 [#] 8 1.42 [#] 15 5.50 [#] 25 100 [#] 3 1.08 [#] 10 45.0 [#] 17	737.14 564.59 423.612 389.42 5.2357 0.0	7/2 ⁻ (3/2 ⁻ ,5/2,7/2 ⁻) 5/2 ⁺ 3/2 ⁻ 3/2 ⁻ 5/2 ⁻			
2036.5	(5/2,7/2 ⁻)	1231.85 [#] 1612.70 [#] 1647.21 [#] 2030.99 [#]	$10.0^{\#} 10 \\ 43^{\#} 5 \\ 100^{\#} 10 \\ 15.0^{\#} 15$	804.77 423.612 389.42 5.2357	(7/2) ⁺ 5/2 ⁺ 3/2 ⁻ 3/2 ⁻			
2057.23	(7/2 ⁺ ,9/2)	1019.45 [#] 15 1252.45 [#] 20 1319.84 [#] 2014.98 [#] 15	100 [#] 11 27 [#] 4 7.2 [#] 11 79 [#] 6	1037.92 804.77 737.14 42.0780	11/2 ⁺ (7/2) ⁺ 7/2 ⁻ 9/2 ⁺			
2067.3	11/2-	965.8 5 2025.1 6	100 4 38 4	1102.66 42.0780	9/2 ⁻ 9/2 ⁺			
2073.5	13/2-	1036.0 6	100	1037.92	11/2+	E1	2.16×10 ⁻⁴	α(K)=0.000192 3; α(L)=2.03×10-5 3; α(M)=3.34×10-6 5; α(N)=3.80×10-7 6; α(O)=1.654×10-8 24 B(E1)(W.u.)=0.00058 15 Mult.: D from γ(θ) in 80Se(6Li,3nγ), Δπ=yes from level scheme. δ: -9 +3-13 from 76Ge(11B,4nγ), 76Ge(10B,3nγ) would result in too large a B(M2) strength, assuming E1+M2 multipolarity for the transition as derived from the level scheme.
2089.90	(5/2+,7/2+)	394.47 [#] 723.72 [#] 812.32 [#] 846.87 [#] 993.22 [#] 1285.02 [#] 1352.46 [#] 1525.22 [#] 1666.20 [#] 15	$\begin{array}{c} 6.5^{\#} \ 7 \\ 4.0^{\#} \ 5 \\ 5.3^{\#} \ 5 \\ 48^{\#} \ 5 \\ 43^{\#} \ 5 \\ 75^{\#} \ 8 \\ 8.5^{\#} \ 10 \\ 1.25^{\#} \ 13 \\ 70^{\#} \ 5 \end{array}$	1695.45 1366.1 1277.5 1242.90 1096.53 804.77 737.14 564.59 423.612	$(7/2,9/2)^+$ $(7/2^+,9/2)$ $(3/2^-,5/2,7/2^-)$ $(5/2)^+$ $(7/2^+,9/2^+)$ $(7/2)^+$ $7/2^-$ $(3/2^-,5/2,7/2^-)$ $5/2^+$			

 $^{83}_{37}$ Rb $_{46}$ -13

From ENSDF

 $^{83}_{37}$ Rb $_{46}$ -13

				A	dopted Levels, (Gammas (continued)	
					$\gamma(^{83}\text{Rb})$	(continued	<u>l)</u>	
E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	${ m J}_f^\pi$	Mult. [‡]	α	Comments
2089.90	(5/2+,7/2+)	2047.81 [#] 15 2089.94 [#] 15	$80^{\#} 3$ $100^{\#} 5$	42.0780 0.0	9/2 ⁺ 5/2 ⁻			
2095.0	(5/2 ⁺ ,7/2,9/2)	892.96 [#] 1290.23 [#] 2052.93 [#]	100 [#] 10 33 [#] 4 58 [#] 13	1202.04 804.77 42.0780	$(5/2,7/2,9/2)^+$ $(7/2)^+$ $9/2^+$			
2101.72	13/2-	348.4 4	12.2 7	1753.64	11/2-	M1 ^b	0.00561	α (K)=0.00497 7; α (L)=0.000542 8; α (M)=8.96×10 ⁻⁵ 13; α (N)=1.016×10 ⁻⁵ 15; α (O)=4.39×10 ⁻⁷ 7 B(M1)(W.u.)=0.048 12
		998.9 <i>3</i>	100 3	1102.66	9/2-	E2 ^{&}	5.37×10 ⁻⁴	$\alpha(K)=0.000476\ 7;\ \alpha(L)=5.14\times10^{-5}\ 8;$ $\alpha(M)=8.48\times10^{-6}\ 12;\ \alpha(N)=9.60\times10^{-7}\ 14;$ $\alpha(O)=4.13\times10^{-8}\ 6$ B(E2)(W.u.)=20 5
2134.86	$(5/2^+, 7/2)$	537.12 [#]	11.3 [#] 13	1597.68	(5/2,7/2 ⁻)			
		768.90 [#]	8.7 [#] 10	1366.1	$(7/2^+, 9/2)$			
		838.78" 1028.22#	6.0^{-1}	1296.07	(5/2, 1/2)			
		1038.23^{**}	100 ¹⁰ 10 8 7 [#] 10	1090.33 804 77	$(7/2^{+}, 9/2^{+})$			
		1330.05 1307 56 [#]	8.7 10 13.7 # 13	004.77 737 14	(1/2)			
		1397.50 1711 15 [#] 20	13.7 13 $37\frac{#}{3}$	127.14	7/2 5/2 ⁺			
		2092 46 [#]	$1.67^{\#} 17$	42 0780	9/2 ⁺			
		2092.40 2134 89 [#] 15	$31.0^{\#}23$	0.0	5/2-			
2189 72	$9/2^{+}$	494 1 [#]	8 9 [#] 9	1695 45	$(7/2, 9/2)^+$			
2109.72	7/2	764 82 [#]	$34^{\#}4$	1424 6	(1/2,2/2)			
		987.60 [#]	5.7# 5	1202.04	$(5/2,7/2,9/2)^+$			
		1086.67 [#]	17.5 [#] 18	1102.66	9/2-			
		1151.97#	$3.0^{\#} 4$	1037.92	$11/2^+$			
		1384.83#	61 [#] 7	804.77	$(7/2)^+$			
		1395.96 [#]	5.5# 5	793.63	$13/2^+$			
		1452.50 [#]	4.8 [#] 13	737.14	7/2-			
		1765.84 [#]	10.5 [#] 11	423.612	5/2 ⁺			
		2147.64 [#] 15	100 [#] 7	42.0780	9/2 ⁺			
2206.24	(13/2)	1168.5 3	100	1037.92	$\frac{1}{11/2^{+}}$	D ^d		
2310.0	× • • •	1272.1 ^c	100 ^C	1037.92	11/2+	Q^d		
2313.54	13/2-	211.2 3	9.7 14	2101.72	13/2-	-		
		246.6 3	36.1 14	2067.3	11/2-	(M1)	0.01324	$\alpha(K)=0.01171 \ 17; \ \alpha(L)=0.001291 \ 19;$

L

	Adopted Levels, Gammas (continued)												
							$\gamma(^{83}\text{Rb})$ (continued)					
E_i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	J_f^π	Mult. [‡]	δ^{\ddagger}	α	Comments				
2313.54	$13/2^{-}$	559.8 2	100 3	1753.64	$11/2^{-}$								
		1210.5 3	100 30	1102.66	9/2-	E2 ^{&}		3.59×10 ⁻⁴	$\alpha(K)=0.000310 5; \alpha(L)=3.32\times10^{-5} 5; \alpha(M)=5.47\times10^{-6} 8; \alpha(N)=6.21\times10^{-7} 9; \alpha(O)=2.69\times10^{-8} 4$ B(E2)(W.u.)=5.1 23				
		1275.6 5	41.7 <i>14</i>	1037.92	11/2+	[E1]		2.42×10 ⁻⁴	$\alpha(K)=0.0001313 \ 19; \ \alpha(L)=1.386 \times 10^{-5} \ 20; \ \alpha(M)=2.28 \times 10^{-6} \ 4; \ \alpha(N)=2.59 \times 10^{-7} \ 4 \ \alpha(O)=1.133 \times 10^{-8} \ 16 \ B(E1)(W.u.)=3.6 \times 10^{-5} \ 12 \ I_{\gamma}: \ other: \ 27 \ 3 \ in \ ^{80}Se(^{6}Li,3n\gamma).$				
2318.17	$(17/2^+)$	428.4	47.1 20	1889.21	$17/2^{+}$								
		1524.7 2	100 4	793.63	13/2+	[E2]		3.10×10 ⁻⁴	$\alpha(K)=0.000192 \ 3; \ \alpha(L)=2.04\times10^{-5} \ 3; \ \alpha(M)=3.37\times10^{-6} \ 5; \\ \alpha(N)=3.83\times10^{-7} \ 6; \ \alpha(O)=1.668\times10^{-8} \ 24 \\ B(E2)(W.u.)=1.6 \ 8 $				
2413.75	15/2-	100.1 <i>1</i>	100 3	2313.54	13/2-	M1(+E2)	+0.01 4	0.144 3	α(K)=0.1273 25; α(L)=0.0144 4; α(M)=0.00238 6; α(N)=0.000269 6; α(O)=1.138×10-5 21 B(E2)(W.u.)=0.018 9; B(M1)(W.u.)=0.0015 8 Mult.: D(+Q) from R(DCO) in 76Ge(11B,4nγ),76Ge(10B,3nγ), Δπ=no from level scheme.				
		207.7 3	13.2 7	2206.24	(13/2)	(D)							
		312.1 <i>I</i>	77 3	2101.72	13/2-	M1 ^b		0.00735	α (K)=0.00650 <i>10</i> ; α (L)=0.000712 <i>10</i> ; α (M)=0.0001176 <i>17</i> ; α (N)=1.334×10 ⁻⁵ <i>19</i> α (O)=5.75×10 ⁻⁷ <i>8</i> B(M1)(Wn)=4 2×10 ⁻⁵ <i>21</i>				
		340.5 5	11.2 7	2073.5	13/2-	(M1)		0.00593	α(K)=0.00525 8; α(L)=0.000574 9; α(M)=9.48×10-5 14; α(N)=1.075×10-5 16; α(O)=4.64×10-7 7 B(M1)(W.u.)=4.7×10-6 24 Mult.: (D) from R(DCO) in 76Ge(11B,4nγ),76Ge(10B,3nγ), Δπ=no from level scheme.				
		471.0 <i>4</i>	9.2 7	1942.66	15/2+	[E1]		1.21×10 ⁻³	$\alpha(K)=0.001077 \ 16; \ \alpha(L)=0.0001153 \ 17; \ \alpha(M)=1.90\times10^{-5}$ $3; \ \alpha(N)=2.15\times10^{-6} \ 3; \ \alpha(O)=9.21\times10^{-8} \ 13$ B(E1)(W.u.)=2.3×10 ⁻⁸ \ 12				
		660.2 3	27.6 7	1753.64	11/2-	E2 ^{&}		1.53×10^{-3}	α (K)=0.001357 <i>19</i> ; α (L)=0.0001494 <i>21</i> ; α (M)=2.46×10 ⁻⁵ <i>4</i> ; α (N)=2.77×10 ⁻⁶ <i>4</i>				

From ENSDF

L

$\gamma(^{83}\text{Rb})$ (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	$\mathbf{E}_f \qquad \mathbf{J}_f^{\pi}$	Mult. [‡]	δ^{\ddagger}	α	Comments
2413.75	15/2-	1620.2 2	66.4 20	793.63 13/2+	E1+M2	+0.02 1	4.42×10 ⁻⁴	$\begin{aligned} \alpha(\text{O}) &= 1.168 \times 10^{-7} \ 17 \\ \text{B(E2)(W.u.)} &= 0.0043 \ 22 \\ \alpha(\text{K}) &= 8.79 \times 10^{-5} \ 13; \ \alpha(\text{L}) &= 9.25 \times 10^{-6} \ 13; \ \alpha(\text{M}) &= 1.524 \times 10^{-6} \\ 22; \ \alpha(\text{N}) &= 1.734 \times 10^{-7} \ 25 \\ \alpha(\text{O}) &= 7.59 \times 10^{-9} \ 11 \\ \text{B(E1)(W.u.)} &= 4.3 \times 10^{-9} \ 21; \ \text{B(M2)(W.u.)} &= 3.0 \times 10^{-6} \ 15 \\ \text{Mult.: D+Q from R(DCO) in } \ ^{76}\text{Ge}(^{11}\text{B},4n\gamma), \ ^{76}\text{Ge}(^{10}\text{B},3n\gamma), \\ \Lambda^{\pi} &= \text{ves from level scheme.} \end{aligned}$
2576.44	15/2-	263.2 4	44.8 17	2313.54 13/2-	M1 ^b		0.01123	$\alpha(K)=0.00994 \ 15; \ \alpha(L)=0.001094 \ 16; \ \alpha(M)=0.000181 \ 3; \ \alpha(N)=2.05\times10^{-5} \ 3; \ \alpha(O)=8.81\times10^{-7} \ 13 \ B(M1)(W.u.)=0.60 \ 14$
		822.6 5	100 3	1753.64 11/2-	E2 ^{&}		8.60×10 ⁻⁴	$\alpha(K)=0.000762 \ 11; \ \alpha(L)=8.29\times10^{-5} \ 12; \ \alpha(M)=1.367\times10^{-5} \ 20; \ \alpha(N)=1.544\times10^{-6} \ 22 \ \alpha(O)=6.59\times10^{-8} \ 10 \ P(E)(W_{\rm e}) \ 79 \ 19 \ 10 \ P(E)(W_{\rm e}) \ 79 \ 19 \ 10 \ P(E)(W_{\rm e}) \ 79 \ 19 \ 10 \ P(E)(W_{\rm e}) \ 79 \ 19 \ 10 \ P(E)(W_{\rm e}) \ 79 \ 19 \ 10 \ P(E)(W_{\rm e}) \ 79 \ 19 \ 10 \ P(E)(W_{\rm e}) \ 79 \ 10 \ P(E)(W_{\rm e}) \ 70 \ 10 \ P(E)(W_{\rm e}) \ 70 \ P(E)(W_{\rm e}) \ P(E)(W$
2595.89	17/2-	181.9 <i>1</i>	100 3	2413.75 15/2-	M1(+E2)	+0.01 2	0.0290 5	
		653.2 2	31.1 9	1942.66 15/2+	E1+M2	+0.05 4	5.67×10 ⁻⁴ 19	$\alpha(K) = 0.00504 \ 17; \ \alpha(L) = 5.37 \times 10^{-5} \ 19; \ \alpha(M) = 8.8 \times 10^{-6} \ 3; \alpha(N) = 1.00 \times 10^{-6} \ 4; \ \alpha(O) = 4.33 \times 10^{-8} \ 15 B(E1)(W.u.) = 4.3 \times 10^{-6} \ 21; \ B(M2)(W.u.) = 0.12 \ 6 Mult.: D+Q from R(DCO) in \ ^{76}Ge(^{11}B,4n\gamma),^{76}Ge(^{10}B,3n\gamma), \Delta\pi = yes from level scheme.$
2699.50	17/2-	103.3 <i>1</i>	42.1 18	2595.89 17/2-	M1 ^b		0.1324	α (K)=0.1167 <i>17</i> ; α (L)=0.01320 <i>19</i> ; α (M)=0.00218 <i>4</i> ; α (N)=0.000246 <i>4</i> ; α (O)=1.043×10 ⁻⁵ <i>15</i>
		123.1 2	100 4	2576.44 15/2-	M1+E2 ^{<i>a</i>}		0.27 19	α (K)=0.23 <i>16</i> ; α (L)=0.032 <i>24</i> ; α (M)=0.005 <i>4</i> ; α (N)=0.0006 <i>4</i> ; α (O)=1.8×10 ⁻⁵ <i>12</i>
		286.0 1	82.5 18	2413.75 15/2-	M1 ^b		0.00912	$\alpha(K)=0.00807 \ 12; \ \alpha(L)=0.000886 \ 13; \ \alpha(M)=0.0001464 \ 21; \ \alpha(N)=1.659\times10^{-5} \ 24 \ \alpha(O)=7.15\times10^{-7} \ 10 \ L_{\odot} \ other: \ 27 \ 1 \ 12 \ in \ ^{80}Se(^{6}Li \ 3n\chi)$
2772.42	17/2-	598.2 ^{<i>f</i>} 176.5 2	26 <i>4</i> 27.1 <i>21</i>	2101.72 13/2 ⁻ 2595.89 17/2 ⁻	(M1)		0.0314	$\alpha(K)=0.0277 \ 4; \ \alpha(L)=0.00309 \ 5; \ \alpha(M)=0.000510 \ 8; \alpha(N)=5.77\times10^{-5} \ 9; \ \alpha(O)=2.47\times10^{-6} \ 4 Mult.: (D) from R(DCO) in \ ^{76}Ge(^{11}B,4n\gamma), ^{76}Ge(^{10}B,3n\gamma),$
		358.7 4	100 4	2413.75 15/2-	M1+E2 ^{<i>a</i>}		0.0076 24	$\Delta \pi$ =no from level scheme. $\alpha(K)=0.0067 \ 21; \ \alpha(L)=0.00075 \ 25; \ \alpha(M)=0.00012 \ 4; \ \alpha(N)=1.4\times10^{-5} \ 5; \ \alpha(O)=5.7\times10^{-7} \ 16$

	Adopted Levels, Gammas (continued)											
						<u> </u>	(⁸³ Rb) (cont	inued)				
E _i (level)	\mathbf{J}_i^{π}	${\rm E_{\gamma}}^{\dagger}$	I_{γ}^{\dagger}	E_f	J_f^π	Mult. [‡]	δ^{\ddagger}	α	Comments			
2859.67	21/2+	542.3 8	1.19 <i>17</i>	2318.17	(17/2 ⁺)	[E2]		0.00269	$ \begin{array}{l} \alpha(\mathrm{K}) = 0.00238 \ 4; \ \alpha(\mathrm{L}) = 0.000265 \ 4; \ \alpha(\mathrm{M}) = 4.36 \times 10^{-5} \\ 7; \ \alpha(\mathrm{N}) = 4.89 \times 10^{-6} \ 8; \ \alpha(\mathrm{O}) = 2.03 \times 10^{-7} \ 3 \\ \mathrm{B}(\mathrm{E2})(\mathrm{W.u.}) = 4.5 \ 8 \end{array} $			
		969.9 <i>15</i>	100 3	1889.21	17/2+	E2 ^{&}		5.76×10 ⁻⁴	α (K)=0.000510 8; α (L)=5.52×10 ⁻⁵ 8; α (M)=9.09×10 ⁻⁶ 14; α (N)=1.029×10 ⁻⁶ 15; α (O)=4.42×10 ⁻⁸ 7 B(E2)(W.u.)=20.9 22			
2957.84	19/2-	258.3 1	31.2 8	2699.50	17/2-	M1+E2 ^{<i>a</i>}	-0.20 6	0.0125 5	α (K)=0.0110 5; α (L)=0.00123 6; α (M)=0.000203 9; α (N)=2.29×10 ⁻⁵ 10; α (O)=9.7×10 ⁻⁷ 4 B(E2)(W.u.)=30 +30-24; B(M1)(W.u.)=0.042 +42-22			
		362.2	100 3	2595.89	17/2-	M1+E2	-0.02 1	0.00511	α (K)=0.00452 7; α (L)=0.000493 7; α (M)=8.15×10 ⁻⁵ 12; α (N)=9.24×10 ⁻⁶ 13; α (O)=4.00×10 ⁻⁷ 6 B(M1)(W.u.)=0.05 +5-3 Mult.: D+Q from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), M1+E2 from assumed band structure.			
3016.1		420.3 6	100	2595.89	17/2-							
3139.2	(19/2)	366.4 <i>10</i> 543 5 <i>10</i>		2772.42	$17/2^{-}$ $17/2^{-}$	D+O						
3194.98	19/2-	237.2 3	13.2 <i>13</i>	2957.84	19/2-	(M1)		0.01461	α(K)=0.01292 19; α(L)=0.001427 21; α(M)=0.000236 4; α(N)=2.67×10-5 4; α(O)=1.147×10-6 17 B(M1)(W.u.)>0.10 Mult.: (D) from R(DCO) in 76Ge(11B,4nγ),76Ge(10B,3nγ), Δπ=no from level scheme.			
		599.5 5	68 <i>3</i>	2595.89	$17/2^{-}$							
		877.5 ^f 10	50 25	2318.17	(17/2 ⁺)	[E1]		2.99×10 ⁻⁴	$\alpha(K)=0.000265 \ 4; \ \alpha(L)=2.82\times10^{-5} \ 4; \ \alpha(M)=4.63\times10^{-6} \ 7; \ \alpha(N)=5.26\times10^{-7} \ 8; \ \alpha(O)=2.29\times10^{-8} \ 4 \ B(E1)(W.u.)>0.00013 \ I_{\gamma}; \ from \ ^{68}Zn(^{18}O,p2n\gamma).$			
		1305.2 3	100 3	1889.21	17/2+	E1		2.56×10 ⁻⁴				
3329.71	21/2+	470.5 4	16.8 9	2859.67	21/2+	(M1)		0.00274	α (K)=0.00242 4; α (L)=0.000263 4; α (M)=4.33×10 ⁻⁵ 7; α (N)=4.92×10 ⁻⁶ 7; α (O)=2.14×10 ⁻⁷ 3 B(M1)(W.u.)>0.029			

 $^{83}_{37}$ Rb $_{46}$ -17

L

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							Adopted	Levels, Gan	nmas (continu	1ed)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$								γ(⁸³ Rb) (co	ntinued)	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	J_f^{π}	Mult. [‡]	δ^{\ddagger}	α	Comments
$\begin{array}{cccccccccccccccccccccccccccccccccccc$										Mult.: (D) from R(DCO) in 76 Ge(11 B,4n γ), 76 Ge(10 B,3n γ), $\Delta \pi$ =no from level scheme.
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3329.71	21/2+	1011.2 5	18.7 9	2318.17	(17/2 ⁺)	[E2]		5.22×10 ⁻⁴	α (K)=0.000463 7; α (L)=5.00×10 ⁻⁵ 7; α (M)=8.23×10 ⁻⁶ 12; α (N)=9.33×10 ⁻⁷ 14; α (O)=4.01×10 ⁻⁸ 6 B(E2)(W,u)>3.8
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			1440.5 2	100 <i>3</i>	1889.21	17/2+	E2 ^{&}		3.07×10 ⁻⁴	$\alpha(K)=0.000215 \ 3; \ \alpha(L)=2.30\times10^{-5} \ 4; \ \alpha(M)=3.78\times10^{-6} \ 6; \ \alpha(N)=4.30\times10^{-7} \ 6; \ \alpha(O)=1.87\times10^{-8} \ 3 \ B(E2)(W.u.)>3.5$
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3362.95	$21/2^{-}$	223.5 ^{<i>f</i>}		3139.2	(19/2)				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			405.1 <i>I</i>	100.0 4	2957.84	19/2-	M1+E2	-0.03 1	0.00390	$\alpha(K)=0.00346\ 5;\ \alpha(L)=0.000376\ 6;\ \alpha(M)=6.20\times10^{-5}\ 9;\ \alpha(N)=7.04\times10^{-6}\ 10;\ \alpha(O)=3.05\times10^{-7}\ 5$ B(E2)(W.u.)=1.1 8; B(M1)(W.u.)=0.16 5 Mult.: D+Q from R(DCO) in $^{76}\text{Ge}(^{11}\text{B},4n\gamma),^{76}\text{Ge}(^{10}\text{B},3n\gamma),\ M1+E2$ from assumed band structure.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			663.3 ^e 5	6.7 ^e 4	2699.50	17/2-	[E2]		1.51×10 ⁻³	α (K)=0.001340 <i>19</i> ; α (L)=0.0001475 <i>21</i> ; α (M)=2.43×10 ⁻⁵ 4; α (N)=2.74×10 ⁻⁶ <i>4</i> α (O)=1.153×10 ⁻⁷ <i>17</i> B(E2)(W,u)=6.7 <i>19</i>
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3440.27	21/2-	668.0 <i>5</i>	18.9 7	2772.42	17/2-	E2		1.49×10 ⁻³	$\alpha(K)=0.001314 \ 19; \ \alpha(L)=0.0001446 \ 21; \ \alpha(M)=2.38\times10^{-5} 4; \ \alpha(N)=2.68\times10^{-6} \ 4 \alpha(O)=1.131\times10^{-7} \ 16 Mult.: Q from R(DCO) in 76Ge(11B,4n\gamma),76Ge(10B,3n\gamma), E2 from assumed band structure.$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			741.1 5	12.8 7	2699.50	$17/2^{-}$				-
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			844.5 2	100 3	2595.89	17/2-	E2		8.05×10 ⁻⁴	α(K)=0.000713 I0; α(L)=7.76×10-5 I1; α(M)=1.278×10-5 I8; α(N)=1.445×10-6 21 α(O)=6.17×10-8 9 Mult.: Q from R(DCO) in 76Ge(11B,4nγ),76Ge(10B,3nγ), Δπ=no from level scheme.
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3536.9 3559.30	21/2-	1218.6 5 196.5 2 543.4 8	100 11.0 6 7.7 6	2318.17 3362.95 3016.1	(17/2 ⁺) 21/2 ⁻				
699.8 ^{<i>f</i>} 10 2859.67 21/2 ⁺ [E1] 4.80×10 ⁻⁴ α (K)=0.000427 7; α (L)=4.54×10 ⁻⁵ 7; α (M)=7.48×10 ⁻⁶			601.3 2	100 3	2957.84	19/2-	M1+E2 ^{<i>a</i>}	-0.03 2	1.55×10 ⁻³	α (K)=0.001377 20; α (L)=0.0001483 21; α (M)=2.45×10 ⁻⁵ 4; α (N)=2.78×10 ⁻⁶ 4 α (O)=1.211×10 ⁻⁷ 17 B(M1)(W.u.)=0.34 +20-15
			699.8 ^f 10		2859.67	21/2+	[E1]		4.80×10^{-4}	$\alpha(K)=0.000427$ 7; $\alpha(L)=4.54\times10^{-5}$ 7; $\alpha(M)=7.48\times10^{-6}$

 $^{83}_{37}$ Rb₄₆-18

L

$\gamma(^{83}\text{Rb})$ (continued)

E_i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	\mathbf{J}_f^{π}	Mult. [‡]	α	Comments
3559.30	21/2-	786.6 6	3.9 6	2772.42	17/2-	[E2]	9.64×10 ⁻⁴	$ \begin{array}{l} \alpha(\mathrm{K}) = 0.000853 \ 12; \ \alpha(\mathrm{L}) = 9.31 \times 10^{-5} \ 14; \ \alpha(\mathrm{M}) = 1.534 \times 10^{-5} \ 22; \\ \alpha(\mathrm{N}) = 1.732 \times 10^{-6} \ 25 \\ \alpha(\mathrm{O}) = 7.37 \times 10^{-8} \ 11 \\ \mathrm{B}(\mathrm{E2})(\mathrm{W.u.}) = 12 \ +8-4 \end{array} $
		963.7 ^{<i>f</i>} 10		2595.89	17/2-	[E2]	5.85×10^{-4}	α (K)=0.000518 8; α (L)=5.60×10 ⁻⁵ 8; α (M)=9.23×10 ⁻⁶ 14; α (N)=1.045×10 ⁻⁶ 15; α (O)=4.49×10 ⁻⁸ 7
3601.06	$21/2^{-}$	238.1 2	15.2 10	3362.95	$21/2^{-}$			
		643.3 3	100 3	2957.84	19/2-	M1 ^b	1.33×10 ⁻³	$\begin{aligned} &\alpha(\text{K}) = 0.001182 \ 17; \ \alpha(\text{L}) = 0.0001271 \ 18; \ \alpha(\text{M}) = 2.10 \times 10^{-5} \ 3; \\ &\alpha(\text{N}) = 2.38 \times 10^{-6} \ 4 \\ &\alpha(\text{O}) = 1.040 \times 10^{-7} \ 15 \\ &\text{B}(\text{M}1)(\text{W.u.}) = 0.26 \ 6 \end{aligned}$
3726.78	23/2+	396.9 4	12.3 3	3329.71	21/2+	M1 ^b	0.00409	α (K)=0.00363 6; α (L)=0.000395 6; α (M)=6.51×10 ⁻⁵ 10; α (N)=7.39×10 ⁻⁶ 11; α (O)=3.20×10 ⁻⁷ 5 B(M1)(W.u.)=0.23 8
		867.0 2	100 3	2859.67	21/2+	M1	6.91×10 ⁻⁴	$\begin{aligned} &\alpha(K) = 0.000613 \ 9; \ \alpha(L) = 6.56 \times 10^{-5} \ 10; \ \alpha(M) = 1.082 \times 10^{-5} \ 16; \\ &\alpha(N) = 1.231 \times 10^{-6} \ 18; \ \alpha(O) = 5.38 \times 10^{-8} \ 8\\ &B(M1)(W.u.) = 0.18 \ 7\\ &Mult.: \ D \ from \ R(DCO) \ in \ ^{76}Ge(^{11}B,4n\gamma), ^{76}Ge(^{10}B,3n\gamma), \ M1 \ from assumed band structure. \end{aligned}$
3765.5	$(21/2^+)$	437.0 4	86 14	3329.71	21/2+	M1 ^b	0.00326	α (K)=0.00288 4; α (L)=0.000313 5; α (M)=5.17×10 ⁻⁵ 8; α (N)=5.87×10 ⁻⁶ 9; α (O)=2.54×10 ⁻⁷ 4
		1448.2 5	100 14	2318.17	$(17/2^+)$,		
3992.2	25/2+	265.4 2	30.8 9	3726.78	23/2+	M1 ^b	0.01100	$\alpha(K)=0.00973$ 14; $\alpha(L)=0.001071$ 16; $\alpha(M)=0.000177$ 3; $\alpha(N)=2.00\times10^{-5}$ 3; $\alpha(O)=8.63\times10^{-7}$ 13 B(M1)(W,u,)=0.41 4
		1132.4 <i>I</i>	100 3	2859.67	21/2+	E2 ^{&}	4.06×10 ⁻⁴	$\alpha(K)=0.000358 5; \alpha(L)=3.85\times10^{-5} 6; \alpha(M)=6.35\times10^{-6} 9; \alpha(N)=7.20\times10^{-7} 10; \alpha(O)=3.11\times10^{-8} 5$ B(E2)(W,u)=16.1 16
4084.55	23/2-	483.5 1	49.4 12	3601.06	21/2-	M1	0.00257	$\alpha(K)=0.00227 \ 4; \ \alpha(L)=0.000246 \ 4; \ \alpha(M)=4.06\times10^{-5} \ 6; \ \alpha(N)=4.61\times10^{-6} \ 7; \ \alpha(O)=2.00\times10^{-7} \ 3$ B(M1)(W.u.)=0.28 3 Mult.: D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n\gamma), ⁷⁶ Ge(¹⁰ B,3n\gamma), M1 from assumed band structure.
4120.4		721.5 2	100 4	3362.95	21/2-	M1 ^b	1.03×10 ⁻³	$\alpha(K)=0.000915 \ l3; \ \alpha(L)=9.82\times10^{-5} \ l4; \ \alpha(M)=1.620\times10^{-5} \ 23; \\ \alpha(N)=1.84\times10^{-6} \ 3; \ \alpha(O)=8.04\times10^{-8} \ l2 \\ B(M1)(W.u.)=0.171 \ l8$
4129.0	22/2-	1209.9 3	100	2839.67	21/2	M1b	0.00204	$a(W) = 0.00181.2$, $a(U) = 0.000105.2$, $a(M) = 2.22 \times 10^{-5}.5$
4134.05	23/2	333.0 ð	41 3	3001.06	21/2	WI I	0.00204	$\alpha(\mathbf{K})=0.00181$ 5; $\alpha(\mathbf{L})=0.000195$ 5; $\alpha(\mathbf{M})=3.22\times10^{-5}$ 5; $\alpha(\mathbf{N})=3.66\times10^{-6}$ 6; $\alpha(\mathbf{O})=1.593\times10^{-7}$ 23
		576.8 <i>5</i> 771.9 <i>4</i>	31 <i>3</i> 51 <i>5</i>	3559.30 3362.95	21/2 ⁻ 21/2 ⁻			

						Adopted Lo	evels, Gammas	s (continued)
						<u>γ(</u>	⁸³ Rb) (continu	ed)
E _i (level)	\mathbf{J}_i^{π}	${\rm E_{\gamma}}^{\dagger}$	I_{γ}^{\dagger}	E_f	J_f^π	Mult. [‡]	α	Comments
4134.65	23/2-	939.4 2	100 3	3194.98	19/2-	E2	6.21×10 ⁻⁴	$\alpha(K)=0.000551 \ 8; \ \alpha(L)=5.96\times10^{-5} \ 9; \ \alpha(M)=9.82\times10^{-6} \ 14; \\ \alpha(N)=1.111\times10^{-6} \ 16; \ \alpha(O)=4.77\times10^{-8} \ 7 \\ Mult : 0 \ from P(DCO) \ in \ {}^{76}Go({}^{10}P \ 4ma) \ {}^{76}Go({}^{10}P \ 4ma) \\ \alpha(DCO) = 0 \ 10^{-6} \ 10$
4163.9	23/2-	400.3 4	23.7 17	3765.5	(21/2+)	E1	0.00183	Mult.: Q from R(DCO) in Ge(-B,4hγ), Ge(-B,5hγ), assumed E2. α (K)=0.001627 24; α (L)=0.0001746 25; α (M)=2.87×10 ⁻⁵ 4; α (N)=3.25×10 ⁻⁶ 5 α (O)=1.386×10 ⁻⁷ 20
		834.0 5	42.4 17	3329.71	21/2+			Mult.: D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), $\Delta \pi$ =yes from level scheme.
1106.0		969.8 5 1304.0 ^f 10	100 3	3194.98 2859.67	19/2 ⁻ 21/2 ⁺			
4406.8 4435.37	25/2+	847.5 10 272.0 2	100 13.8 7	3559.30 4163.9	21/2 23/2 ⁻	E1	0.00521	α (K)=0.00462 7; α (L)=0.000498 7; α (M)=8.18×10 ⁻⁵ 12; α (N)=9.21×10 ⁻⁶ 13; α (O)=3.88×10 ⁻⁷ 6 B(E1)(W.u.)=0.0050 17
		442.0.4	477	2002.2	25/2+	(1)	0.00215	Mult.: D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), $\Delta \pi$ =yes from level scheme.
		445.0 4	4./ /	3992.2	25/2	(M1)	0.00313	$\alpha(\mathbf{N})=0.00279$ 4; $\alpha(\mathbf{L})=0.000303$ 5; $\alpha(\mathbf{M})=3.00\times10^{-7}$ 7; $\alpha(\mathbf{N})=5.68\times10^{-6}$ 8; $\alpha(\mathbf{O})=2.46\times10^{-7}$ 4 $\mathbf{B}(\mathbf{M}1)(\mathbf{W}.\mathbf{u}.)=0.025$ 9 Mult.: (D) from R(DCO) in 76 Ge(11 B,4n γ), 76 Ge(10 B,3n γ),
		708.5 2	100 3	3726.78	23/2+	M1	1.07×10 ⁻³	$\Delta \pi$ =no from level scheme. $\alpha(K)=0.000953 \ 14; \ \alpha(L)=0.0001023 \ 15; \ \alpha(M)=1.687\times 10^{-5} \ 24; \ \alpha(N)=1.92\times 10^{-6} \ 3$
								$\alpha(O) = 8.37 \times 10^{-8}$ 12 B(M1)(W.u.)=0.13 5 Mult : D from R(DCO) in ⁷⁶ Ge(¹¹ B 4ny), ⁷⁶ Ge(¹⁰ B 3ny), M1
		1104.5 5	24.8 7	3329.71	21/2+	[E2]	4.28×10 ⁻⁴	from assumed band structure. $\alpha(K)=0.000379 \ 6; \ \alpha(L)=4.07\times10^{-5} \ 6; \ \alpha(M)=6.71\times10^{-6} \ 10; \ \alpha(N)=7.61\times10^{-7} \ 11: \ \alpha(Q)=3.29\times10^{-8} \ 5$
		1576.1 6	12.4 7	2859.67	21/2+	[E2]	3.17×10 ⁻⁴	B(E2)(W.u.)=83 $\alpha(K)=0.0001803; \alpha(L)=1.91\times10^{-5}3; \alpha(M)=3.15\times10^{-6}5;$ $\alpha(K)=2.58\times10^{-7}5; \alpha(M)=1.562\times10^{-8}22$
4461.1	$(25/2^+)$	734.0 6	100 33	3726.78	23/2+	M1+E2 ^{<i>a</i>}	0.00107 9	$\begin{array}{l} B(E2)(W.u.)=0.69\ 23\\ \alpha(K)=0.00095\ 8;\ \alpha(L)=0.000103\ 9;\ \alpha(M)=1.70\times10^{-5}\ 15; \end{array}$
		1602.9 4	31.0 14	2859.67	21/2+	[E2]	3.22×10^{-4}	$\alpha(N)=1.93\times10^{-6} \ 16; \ \alpha(O)=8.3\times10^{-8} \ 6$ $\alpha(K)=0.0001740 \ 25; \ \alpha(L)=1.85\times10^{-5} \ 3; \ \alpha(M)=3.05\times10^{-6} \ 5;$ $\alpha(N)=3.46\times10^{-7} \ 5; \ \alpha(O)=1.511\times10^{-8} \ 22$
4641.94	25/2-	557.4 4	100 3	4084.55	23/2-	M1+E2 ^{<i>a</i>}	0.0022 4	B(E2)(W.u.)=2.0 8 $\alpha(K)=0.0019 3; \alpha(L)=0.00021 4; \alpha(M)=3.5\times10^{-5} 6;$ $\alpha(N)=3.9\times10^{-6} 6; \alpha(O)=1.66\times10^{-7} 22$

$\gamma(^{83}\text{Rb})$ (continued)

E _i (level)	\mathbf{J}_i^{π}	${\rm E_{\gamma}}^{\dagger}$	I_{γ}^{\dagger}	\mathbf{E}_{f}	\mathbf{J}_f^{π}	Mult. [‡]	α	Comments
4641.94	25/2-	1082.7 4	30.4 14	3559.30	21/2-	[E2]	4.47×10 ⁻⁴	$ \frac{\alpha(K)=0.000396\ 6;\ \alpha(L)=4.26\times10^{-5}\ 6;\ \alpha(M)=7.03\times10^{-6}\ 10;}{\alpha(N)=7.96\times10^{-7}\ 12;\ \alpha(O)=3.44\times10^{-8}\ 5} $ B(E2)(W.u.)=9.1 13
		1278.8 2	87 <i>3</i>	3362.95	21/2-	E2 ^{&}	3.33×10 ⁻⁴	α (K)=0.000276 4; α (L)=2.95×10 ⁻⁵ 5; α (M)=4.86×10 ⁻⁶ 7; α (N)=5.51×10 ⁻⁷ 8; α (O)=2.39×10 ⁻⁸ 4 B(E2)(W,u)=11.4 16
4686.27	$25/2^{-}$	606.2 50	37.8 11	4084.55	$23/2^{-}$			
		1126.9 <i>1</i>	88.9 22	3559.30	21/2-	E2 ^{&}	4.10×10 ⁻⁴	α (K)=0.000362 5; α (L)=3.89×10 ⁻⁵ 6; α (M)=6.42×10 ⁻⁶ 9; α (N)=7.27×10 ⁻⁷ 11; α (O)=3.14×10 ⁻⁸ 5 B(E2)(W.u.)=17.2 22
		1246.2 2	100 3	3440.27	21/2-	E2 ^{&}	3.44×10 ⁻⁴	α (K)=0.000291 4; α (L)=3.12×10 ⁻⁵ 5; α (M)=5.14×10 ⁻⁶ 8; α (N)=5.83×10 ⁻⁷ 9; α (O)=2.53×10 ⁻⁸ 4 B(E2)(W,u)=11.7 15
4715.1		1178.1 <i>5</i> 1385.5 <i>4</i>	15 <i>3</i> 100 <i>3</i>	3536.9 3329.71	21/2+			
4963.5	(27/2+)	502.9 8	37.8 12	4461.1	(25/2+)	M1	0.00234	α (K)=0.00208 3; α (L)=0.000224 4; α (M)=3.70×10 ⁻⁵ 6; α (N)=4.21×10 ⁻⁶ 6; α (O)=1.83×10 ⁻⁷ 3 Mult.: D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), M1 from assumed hand structure
		528.2 4	19.5 <i>12</i>	4435.37	25/2+	M1	0.00209	$\alpha(\text{K})=0.00185 \ 3; \ \alpha(\text{L})=0.000200 \ 3; \ \alpha(\text{M})=3.30\times10^{-5} \ 5; \ \alpha(\text{N})=3.75\times10^{-6} \ 6; \ \alpha(\text{O})=1.631\times10^{-7} \ 23$ Mult.: D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n\gamma), ⁷⁶ Ge(¹⁰ B,3n\gamma), $\Delta \pi$ = no from layal scheme
		971.1 2	100 4	3992.2	$25/2^+$			$\Delta t = 10$ from lever scheme.
		1235.7^{f} 10	<12	3726.78	$23/2^+$			
5050.9		1058.7 6	100	3992.2	$\frac{25}{2^+}$			
5216.2	$(27/2^+)$	756.3 4	31.5 14	4461.1	$(25/2^+)$			
		780.5 5	100 3	4435.37	$25/2^+$			
50161	20/2+	1223.5 5	17.8 14	3992.2	25/21	a ca b	0.00545	
5316.1	29/21	352.6 3	37.9 11	4963.5	(27/21)	MI	0.00545	$\alpha(K)=0.004837; \alpha(L)=0.0005278; \alpha(M)=8.70\times10^{-9}13; \alpha(N)=9.86\times10^{-6}14; \alpha(O)=4.26\times10^{-7}6$ B(M1)(W,u,)=0.589
		1323.8 <i>3</i>	100 3	3992.2	25/2+	E2 ^{&}	3.22×10 ⁻⁴	$\alpha(K)=0.000256 \ 4; \ \alpha(L)=2.74\times10^{-5} \ 4; \ \alpha(M)=4.51\times10^{-6} \ 7; \alpha(N)=5.12\times10^{-7} \ 8; \ \alpha(O)=2.22\times10^{-8} \ 4 B(E2)(W.u.)=20 \ 3$
5349.4	$27/2^{-}$	663.3 ^e 5	9.1 ^e 15	4686.27	$25/2^{-}$			· · · · ·
		707.6 6	16.7 15	4641.94	$25/2^{-}$			
		1214.8 <i>3</i>	100 30	4134.65	23/2-	E2	3.57×10 ⁻⁴	$\alpha(\mathbf{K})=0.000307 \ 5; \ \alpha(\mathbf{L})=3.30\times10^{-5} \ 5; \ \alpha(\mathbf{M})=5.43\times10^{-6} \ 8; \\ \alpha(\mathbf{N})=6.16\times10^{-7} \ 9; \ \alpha(\mathbf{O})=2.67\times10^{-8} \ 4$
								Mult.: Q from R(DCO) in ⁷⁰ Ge(¹¹ B,4nγ), ⁷⁰ Ge(¹⁰ B,3nγ), E2 from assumed band structure.

						Adopted I	Levels, Gamm	as (continued)
						2	(⁸³ Rb) (contir	nued)
E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	${ m J}_f^\pi$	Mult. [‡]	α	Comments
5421.8	$(25/2^{-})$	1015.0 10	100.2	4406.8	25/2-	$(\mathbf{M}1)$	<u>8 08×10-4</u>	$a(W) = 0.000717 + 10$, $a(W) = 7.68 \times 10^{-5} + 11$, $a(W) = 1.267 \times 10^{-5} + 19$.
J446.1	(21/2)	800.5 5	100 5	4041.94	23/2	(1411)	8.08×10	$\alpha(N)=0.00071770, \alpha(L)=7.08\times10^{-7}17, \alpha(M)=1.207\times10^{-7}78, \alpha(N)=1.441\times10^{-6} 21$ $\alpha(O)=6.30\times10^{-8} 9$ B(M1)(W.u.)=1.0 5 Multis (D) from P(DCO) in ⁷⁶ Ce(¹¹ R 4m) ⁷⁶ Ce(¹⁰ R 2m)
								(M1) from assumed band structure.
		1363.0 5	17 3	4084.55	23/2-	[E2]	3.14×10 ⁻⁴	α (K)=0.000241 4; α (L)=2.57×10 ⁻⁵ 4; α (M)=4.24×10 ⁻⁶ 6; α (N)=4.82×10 ⁻⁷ 7; α (O)=2.09×10 ⁻⁸ 3 B(E2)(W,u)=23 11
5577.20		935.0 2	44 4	4641.94	25/2-			
5666.0	(20/2+)	1142.4 3	100 4	4435.37	$25/2^+$	N <i>ub</i>	0.00202	(II) 0.000(0.4 (I) 0.000000.4 (D.D. 4.70, 10 ⁻⁵ .7
5666.9	(29/2 ')	451.1 3	84.8 22	5216.2	(27/21)	MI	0.00302	$\alpha(K)=0.00268 4; \alpha(L)=0.000290 4; \alpha(M)=4.79\times10^{-5} 7; \alpha(N)=5.44\times10^{-6} 8; \alpha(O)=2.36\times10^{-7} 4$ B(M1)(W.u.)>0.18
		703.2 3	100.0 22	4963.5	(27/2 ⁺)	M1	1.09×10 ⁻³	α (K)=0.000969 <i>14</i> ; α (L)=0.0001040 <i>15</i> ; α (M)=1.716×10 ⁻⁵ <i>24</i> ; α (N)=1.95×10 ⁻⁶ <i>3</i> α (O)=8.52×10 ⁻⁸ <i>12</i> B(M1)(W.u.)>0.055 Mult.: D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), M1 from assumed hand structure
		1232.0 6	100 30	4435.37	25/2+	[E2]	3.49×10 ⁻⁴	$\alpha(K)=0.000298 5; \alpha(L)=3.20\times10^{-5} 5; \alpha(M)=5.27\times10^{-6} 8; \alpha(N)=5.98\times10^{-7} 9; \alpha(O)=2.59\times10^{-8} 4$ B(E2)(Wu)>8.1
5869.1	29/2-	520.0 4	10.6 11	5349.4	27/2-			
		1182.7 2	100 3	4686.27	25/2-	E2 ^{&}	3.73×10 ⁻⁴	α (K)=0.000326 5; α (L)=3.50×10 ⁻⁵ 5; α (M)=5.76×10 ⁻⁶ 8; α (N)=6.53×10 ⁻⁷ 10; α (O)=2.83×10 ⁻⁸ 4 B(E2)(W.u.)=26 5
5970.6	29/2-	522.5 4	51 2	5448.1	$(27/2^{-})$			
		1328.7 3	100 4	4641.94	25/2-	E2 ^{&}	3.21×10 ⁻⁴	$\alpha(K)=0.000254 \ 4; \ \alpha(L)=2.72\times10^{-5} \ 4; \ \alpha(M)=4.48\times10^{-6} \ 7; \alpha(N)=5.08\times10^{-7} \ 8; \ \alpha(O)=2.21\times10^{-8} \ 3 B(E2)(W.u.)=13.5 \ 17$
6088.0		1372.8 5	100	4715.1				
6249.9	$(20/2^{-})$	1033.7 6	100	5216.2	$(27/2^+)$			
6423.3	(29/2)	1670.4 5	100	4080.27	$\frac{25}{2}$ $(27/2^+)$			
6438.2	(31/2 ⁺)	771.4 4	100 8	5666.9	$(29/2^+)$	M1+E2 ^{<i>a</i>}	0.00095 7	α (K)=0.00084 6; α (L)=9.1×10 ⁻⁵ 7; α (M)=1.51×10 ⁻⁵ 12; α (N)=1.71×10 ⁻⁶ 12; α (O)=7.3×10 ⁻⁸ 5
(150.0	(01 /0±)	1474.3 4	30 2	4963.5	$(27/2^+)$			
6470.3 6556.9	$(31/2^{+})$ $(31/2^{-})$	803.4 <i>4</i> 688.4 <i>8</i> 1207.3 <i>5</i>	100 34 2 100 <i>30</i>	5666.9 5869.1 5349.4	(29/2 ⁺) 29/2 ⁻ 27/2 ⁻			

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$\gamma(^{83}\text{Rb})$ (continued)

E_i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\dagger}	E_f	J_f^{π}	Mult. [‡]	α	Comments
6668.8		1351.9 ^{<i>f</i>} 6	56 6	5316.1	29/2+			
		1706.0 6	100 6	4963.5	$(27/2^+)$			
6687.8	$(31/2^{-})$	717.2 3	100 4	5970.6	29/2-			
		1239.5 7	7.7 19	5448.1	(27/2 ⁻)	[E2]	3.47×10^{-4}	$\alpha(K)=0.000294 \ 5; \ \alpha(L)=3.15\times10^{-5} \ 5; \ \alpha(M)=5.20\times10^{-6} \ 8; \\ \alpha(N)=5.90\times10^{-7} \ 9; \ \alpha(O)=2.56\times10^{-8} \ 4 \\ B(E2)(W,u)=5.8 \ 19$
6912.2		1696.0 7	100	5216.2	$(27/2^+)$			
6913.1	$(33/2^+)$	243.9 ^f	<25	6668.8				
		1597.0 4	100 20	5316.1	29/2+	[E2]	3.21×10 ⁻⁴	α (K)=0.0001753 25; α (L)=1.86×10 ⁻⁵ 3; α (M)=3.07×10 ⁻⁶ 5; α (N)=3.49×10 ⁻⁷ 5; α (O)=1.522×10 ⁻⁸ 22 B(E2)(W.u.)=18 6
6933.7	(31/2 ⁻)	577.3 4	100	6356.5	(29/2 ⁻)	M1+E2 ^{<i>a</i>}	0.0020 3	α (K)=0.00174 24; α (L)=0.00019 3; α (M)=3.2×10 ⁻⁵ 5; α (N)=3.6×10 ⁻⁶ 5; α (O)=1.51×10 ⁻⁷ 19
7068.0	33/2-	1198.8 <i>3</i>	100	5869.1	29/2-	E2 ^{&}	3.65×10 ⁻⁴	α (K)=0.000316 5; α (L)=3.39×10 ⁻⁵ 5; α (M)=5.59×10 ⁻⁶ 8; α (N)=6.34×10 ⁻⁷ 9; α (O)=2.75×10 ⁻⁸ 4 B(E2)(W.u.)=56 18
7167.3	(33/2+)	697.1 5	71 5	6470.3	(31/2 ⁺)	М1 ^{<i>b</i>}	1.11×10 ⁻³	$\alpha(K)=0.000988 \ 14; \ \alpha(L)=0.0001061 \ 15; \ \alpha(M)=1.750\times 10^{-5} \ 25; \ \alpha(N)=1.99\times 10^{-6} \ 3 \ \alpha(O)=8.68\times 10^{-8} \ 13$
		729.2 6	100 5	6438.2	$(31/2^+)$			
		1500.7 4	86 5	5666.9	$(29/2^+)$			
7372.3	$(33/2^{-})$	684.2 5	100 4	6687.8	$(31/2^{-})$			
		1402.1 7	50 4	5970.6	29/2-	[E2]	3.09×10 ⁻⁴	$\alpha(K)=0.000227 \ 4; \ \alpha(L)=2.43\times10^{-5} \ 4; \ \alpha(M)=4.00\times10^{-6} \ 6; \\ \alpha(N)=4.54\times10^{-7} \ 7; \ \alpha(O)=1.98\times10^{-8} \ 3 \\ B(E2)(W.u.)=26 \ 10$
7447.3	$(33/2^{-})$	513.7 5	100 6	6933.7	$(31/2^{-})$			
		890.0 4	94 6	6556.9	$(31/2^{-})$			
7633.2	(25/2-)	1545.2 5	100	6088.0	(22/2-)			
/906.1	(35/2)	458.4 5	17.0 21	7069.0	(33/2)			$M = (D) (D = D (D = CO) + \frac{76}{76} (11 D + 1) \frac{76}{76} (10 D + 1)$
		838.1 3	100 4	/068.0	33/2	(M1)		Mult.: (D) from R(DCO) in "Ge("B,4n γ), "Ge("B,3n γ), $\Delta \pi$ =no from level scheme.
80226	(25/2-)	1349.5 4	42.6 21	6556.9	(31/2)			
8052.0	(55/2)	383.5 J 1476 0 5	70 10	/44/.5 6556.0	(33/2) $(31/2^{-})$			
8094.3	$(35/2^{-})$	721.0.5	100.5	7372.3	$(31/2^{-})$ $(33/2^{-})$			
007113	(33/2)	1406.5 6	27.5	6687.8	$(33/2^{-})$	[E2]	3.09×10^{-4}	$\alpha(K) = 0.000226.4; \ \alpha(L) = 2.41 \times 10^{-5}.4; \ \alpha(M) = 3.97 \times 10^{-6}.6;$
		110012-0	2, 3	5557.0	(01/2)	[22]	2107/10	$\alpha(N) = 4.51 \times 10^{-7} 7; \alpha(O) = 1.96 \times 10^{-8} 3$ B(E2)(W.u.)=6.0 24
8193.5	$(35/2^+)$	1026.8 5	100 8	7167.3	$(33/2^+)$			
		1754.3 6	75 8	6438.2	$(31/2^+)$			
8419.5	37/2-	387.0 4	34 <i>3</i>	8032.6	$(35/2^{-})$			

$\gamma(^{83}\text{Rb})$ (continued)

E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\dagger}	\mathbf{E}_{f}	J_f^π	Mult. [‡]	α	Comments
8419.5	37/2-	513.6 8	93 <i>3</i>	7906.1	(35/2 ⁻)	M1 ^b	0.00223	$\alpha(K)=0.00198 \ 3; \ \alpha(L)=0.000214 \ 3; \ \alpha(M)=3.53\times10^{-5} \ 6; \ \alpha(N)=4.00\times10^{-6}$ 6: $\alpha(\Omega)=1.74\times10^{-7} \ 3$
		1351.3 5	100 3	7068.0	33/2-	E2	3.16×10 ⁻⁴	$\alpha(K)=0.000245 \ 4; \ \alpha(L)=2.62\times10^{-5} \ 4; \ \alpha(M)=4.32\times10^{-6} \ 6; \ \alpha(N)=4.90\times10^{-7} \ 7; \ \alpha(O)=2.13\times10^{-8} \ 3$ Mult.: Q from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), E2 from assumed band structure.
8671.9	(37/2 ⁻)	576.9 4	100 4	8094.3	(35/2 ⁻)	M1 ^b	1.71×10 ⁻³	$\alpha(K)=0.001513\ 22;\ \alpha(L)=0.0001631\ 23;\ \alpha(M)=2.69\times10^{-5}\ 4;\alpha(N)=3.06\times10^{-6}\ 5\alpha(O)=1.331\times10^{-7}\ 19B(M1)(Wu)=0.57\ 11$
		1300.4 5	21 4	7372.3	(33/2 ⁻)	[E2]	3.27×10 ⁻⁴	$\alpha(K)=0.000266 \ 4; \ \alpha(L)=2.84\times10^{-5} \ 4; \ \alpha(M)=4.69\times10^{-6} \ 7; \\ \alpha(N)=5.32\times10^{-7} \ 8; \ \alpha(O)=2.31\times10^{-8} \ 4 \\ B(E2)(W,u)=7.4 \ 20$
8837.5	$(37/2^+)$	1924.4 6	100	6913.1	$(33/2^+)$			
8962.4		2049.3 8	100	6913.1	$(33/2^+)$			
9341.2	$(39/2^{-})$	669.0 <i>6</i>	100 11	8671.9	$(37/2^{-})$			
		1247.1 <i>4</i>	21 11	8094.3	$(35/2^{-})$			
9633.6	$(39/2^{-})$	1601.0 6	100	8032.6	$(35/2^{-})$			
9910.2	41/2-	1490.7 <i>4</i>	100	8419.5	37/2-	E2	3.07×10 ⁻⁴	α (K)=0.000201 3; α (L)=2.14×10 ⁻⁵ 3; α (M)=3.53×10 ⁻⁶ 5; α (N)=4.01×10 ⁻⁷ 6; α (O)=1.745×10 ⁻⁸ 25 Mult.: Q from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), E2 from assumed band structure.
11714.9	$(45/2^{-})$	1804.6 7	100	9910.2	$41/2^{-}$			
13926.3	$(49/2^{-})$	2211.4 8	100	11714.9	$(45/2^{-})$			
[†] From ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), except where noted. [‡] From R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), except where noted. [#] From ⁸³ Se ε decay. [@] From ce data in ⁸³ Se ε decay. ^{&} Q from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), M2 excluded by comparison to RUL. ^a D+Q from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), $\Delta\pi$ =no from level scheme. ^b D from R(DCO) in ⁷⁶ Ge(¹¹ B,4n γ), ⁷⁶ Ge(¹⁰ B,3n γ), $\Delta\pi$ =no from level scheme. ^c Errom ⁸⁰ Sa(⁶ Li 3m)								

^c From ⁸⁰Se(⁶Li,3nγ).
^d From γ(θ) in ⁸⁰Se(⁶Li,3nγ).
^e Multiply placed with intensity suitably divided.
^f Placement of transition in the level scheme is uncertain.

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From ENSDF



⁸³₃₇Rb₄₆

Level Scheme (continued)

Intensities: Relative photon branching from each level @ Multiply placed: intensity suitably divided

γ Decay (Uncertain)

Legend

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+ 1033.> 100 6249.9 8 132.81 8 25 6088.0 8 1326 -528 2 20 29/2 0.312 ps 35 5970.6 28 0.00 29/2 5869.1 0.39 ps 6 Â 22 12320 00,7 7 \$ 3 <0.40 ps $(29/2^+)$ 5666.9 Ð. 5577.20 0 10150 200 200 200 $\frac{(27/2^-)}{(25/2^-)}$ 5448.1 0.035 ps 14 3/0.9 3/0.9 ر میں میں 5421.8 2 3.9 ¥ 27/2 5349.4 $\frac{29/2^+}{(27/2^+)}$ 5316.1 0.236 ps 35 <u>0;</u> 5216.2 1058. > 1005 1002 1375 8 5050.9 $(27/2^+)$ 4963.5 1240 - 128 1 15 1240 - 15 1260 - 100 - 15 232889 - 100 - 15 33889 - 15 112, 10 246, 15 Ś ړ 1385.5 , Z AZ. ļ 4 8 4715.1 ⊥ ▼ 25/2 4686.27 0.33 ps 4 ____ ¥ 0.270 ps 35 1005 234.0 F Ľ 4641.94 1901 1.576.1 T T 220 $(25/2^+)$ 2007 0.29 ps 8 4461.1 $25/2^+$ 0.31 ps 10 4435.37 $\left|\begin{array}{c} 1_{3}0_{4}\\ 9_{9}0_{4}\\ 9_{9}0_{4}\\ 40_{3}4_{2}\\ 40_{3}4_{2}\\ 12_{3}\\ 21_{2}\\ 23_{2}\\ 12_{3}\\ 21_{2}\\ 23_{2}\\$ 4406.8 T I I 23/2 4163.9 23/2 4134.65 ¥ ¥ 23/2 0.229 ps 21 4084.55 T T. 25/2 3992.2 0.67 ps 6 1 1 $(21/2^+)$ 3765.5 ¥ 0.17 ps 6 23/2+ 3726.78 _____ 1 21/2 3559.30 0.24 ps +14-10 ¥ 3536.9 21/2 3440.27 1.9 ps 5 21/2 3362.95 $21/2^+$ V × 3329.71 <0.90 ps 19/2-3194.98 <0.90 ps 21/2+ 2859.67 1.45 ps 14 5/2-0.0 86.2 d 1 $^{83}_{37} Rb_{46}$



 $^{83}_{37}$ Rb₄₆



Level Scheme (continued)

Intensities: Relative photon branching from each level @ Multiply placed: intensity suitably divided



 $^{83}_{37}$ Rb₄₆

Level Scheme (continued)

Intensities: Relative photon branching from each level @ Multiply placed: intensity suitably divided



⁸³₃₇Rb₄₆













From ENSDF

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level @ Multiply placed: intensity suitably divided

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 $^{83}_{37}$ Rb₄₆-33



 $^{83}_{37}\text{Rb}_{46}$

Adopted Levels, Gammas (continued)



 $^{83}_{37}\text{Rb}_{46}$