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Adopted Levels, Gammas

		Tupe		History Author Citation Literature Cutoff Date								
		Full Evalua	ation Je	an Blachot NDS 109.1383 (2008) 1-Mar-2008								
$Q(\beta^-)=1509 \ 13; \ S(n)=8573 \ 14; \ S(p)=7830 \ 14; \ Q(\alpha)=-4687 \ 16 2012Wa38$ Note: Current evaluation has used the following Q record 1504 12 8573 14 7830 14-4691 16 2003Au03.												
	¹⁰⁷ Rh Levels											
	Cross Reference (XREF) Flags											
	A 107 Ru β^- decay B 108 Pd(d, 3 He) C 108 Pd(pol t, α) D 176 Yb(28 Si,F γ)											
E(level) [†]	J^{π}	T _{1/2}	XREF	Comments								
0.0	7/2+	21.7 min 4	ABCD	$%β^{-}=100$ T _{1/2} : av: 23.0 min 5 (1955Ba19), 21.7 min 4 (1962Pi02), 20.5 min 5 (1969WiZX) 303γ-decay curve. Others: 1943Bo03, 1955Ne03, 1969WiZX. J ^π : L(d, ³ He)=4, J ^π =9/2 ⁺ ruled out from analyzing power in (pol t,α).								
194.048 [‡] 25	9/2+		ABCD	J^{π} : $J^{\pi}=7/2^+, 9/2^+$ from L=4 in (d, ³ He) and $J^{\pi}=7/2^+$ ruled out by analyzing power data in (pol t. α).								
268.36 [@] 4	1/2-	>10 µs	ABCD	T _{1/2} : from $\gamma\gamma$ (t) in ¹⁰⁷ Ru β^- decay (1986Ka43). J ^{π} : J ^{π} =1/2 ⁻ ,3/2 ⁻ from L=1 in (d, ³ He) and J ^{π} =3/2 ⁻ ruled out by analyzing power data in (pol t α)								
374.278 ^{<i>a</i>} 25	(3/2+)	15 ns 2	Α	T _{1/2} : from $\gamma\gamma(t)$ in ¹⁰⁷ Ru β^- decay (1986Ka43). J ^{π} : in (d, ³ He) state at 386 keV is weakly excited with L=(1,2). Not observed in (pol t, α). log ft>7.5; strong γ transition (E2) to $J^{\pi}=7/2^+$ ground state and weak γ transition (E1) to 1/2 ⁻ level together with an intense 10-keV (M1) γ feeding this level suggest $J^{\pi}=(3/2^+)$. This could be a possible candidate for the theoretically predicted $J^{\pi}=3/2^+$ intruder state. This state should only be excited work of the state and $J^{\pi}=3/2^+$ intruder state.								
384.82 4	(1/2+)		AB	XREF: B(386). J^{π} : in (d, ³ He) a state at 386 keV is weakly excited with L=(1,2). Not observed in (t, α). Strong 10.54-keV (E2) γ transition to (3/2 ⁺) points to similar character of both states. Could be the theoretically predicted $J^{\pi}=1/2^+$ intruder state. The absence of a measurable β branch to this level is in agreement with the J^{π} (1/2 ⁺) encience.								
405.80 3	(3/2+)		A	J^{π} : γ transitions to $7/2^+$ and $1/2^-$ states suggest $3/2^+$ or $5/2^-$. $J^{\pi}=5/2^-$ is less probable because this would imply that the 31.5 and 405.8 γ rays are both E1 transitions which are known to be strongly hindered in this mass region								
462.601 25	5/2+		ABC	XREF: B(468). J^{π} : $J^{\pi}=3/2^+$, $5/2^+$ from L=2 in (d, ³ He) and L=(2) in (pol t, α). $J^{\pi}=3/2^+$ ruled out by analyzing power data in (pol t, α).								
485.66 [@] 6	3/2-		ABCD	XREF: B(489). J^{π} : $J^{\pi}=1/2^{-}$ and $3/2^{-}$ from L=1 in (d, ³ He) and L=(1) in (pol t, α). $J^{\pi}=1/2^{-}$ ruled out by analyzing power data in (pol t, α).								
543.84 [@] 6	(5/2-)		AB D	XREF: B(545). J^{π} : L=(1+3) from (d, ³ He). Not observed in (pol t, α). log <i>fi</i> =8.1 for the corresponding β transition points to a first-forbidden transition. J^{π} =3/2 ⁻ ,5/2 ⁻ are the most probable J^{π} values suggested from γ decay pattern.								
559.96 [‡] 6 568.90 ^a 3	$(11/2^+)$ $(7/2^+)$		A D A D	J^{π} : γ 's to $9/2^+$ and $7/2^+$. J^{π} : (M1) γ to $5/2^+$, (M1) to $9/2^+$.								

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¹⁰⁷Rh Levels (continued)

E(level) [†]	J^{π}	XREF	Comments
576 5	$(3/2^+, 5/2^+)$	В	J^{π} : L=(2) (d, ³ He).
588.92 4	$(3/2^+, 5/2^+)$	Α	J^{π} : (M1) γ to (3/2 ⁺), (E2) γ to (1/2 ⁺).
680.00 ^b 5	$(11/2^+)$	A D	
683.10 <i>3</i>	$(7/2^+)$	AB	XREF: B(685).
752 55 0	2/2-	ADC	J^{A} : (M1) γ to $5/2^{+}$, γ to $9/2^{+}$.
152.55 9	5/2	ABC	AREF: B(755). J^{π} : from L=1 in (d, ³ He) and L=1 in (pol t, α). $J^{\pi}=1/2^{-}$ ruled out by analyzing power data in (pol t, α).
771.1 [‡] 6	$(13/2^+)$	D	
877.75 10	5/2-	ABC	J^{π} : from L=3 in (d, ³ He) and L=3 in (pol t, α). $J^{\pi}=7/2^{-}$ ruled out by analyzing power data in (pol t, α).
911.99 4		AC	XREF: C(914).
932 5	$3/2^+, 5/2^+$	В	J^{π} : L=2 (d, ³ He).
935.9 ^{<i>u</i>} 10	$(11/2^+)$	D	
948.12.0	$(0/2^{+})$	A	
974 44 11	$(3/2^{-})$ $(3/2^{-})$ $(3/2^{-})$	AC	XREF: C(969)
1005.2	()/2 ,)/2 ,//2)	n c	J^{π} : from the log <i>ft</i> =8.2 value a negative parity for this level seems to be favored. γ decay to negative parity levels.
1005 3	9/21	BC	XREF: B(1001)C(1006). I^{π} : DWBA analysis I -4 (d ³ He), 7/2 ⁺ ruled out by (pol t α)
$1006.6^{@}$ 0	$(0/2^{-})$	л	J . DWDA analysis, $L=4$ (d, HC). HZ function of (point, a).
1000.0 9	$(3/2^{-})$ $(3/2^{-})$	Δ	I^{π_1} level must be different from those observed in ¹⁰⁸ Pd at 1006 keV and at 1001 keV
1024 10	(3/2,3/2)		with L=4 in ¹⁰⁸ Pd(d, ³ He) γ 's to $3/2^-$ and $5/2^-$ and forbidden log ft .
1024 <i>10</i> 1041.950 <i>25</i>	$(5/2^+, 7/2^+)$	A	J ^{π} : from log <i>ft</i> =5.9 the corresponding β transition seems to be allowed which implies $J^{\pi}=3/2^+, 5/2^+, 7/2^+$ for this level. $J^{\pi}=3/2^+$ is excluded but $J^{\pi}=5/2^+$ is not.
1078 10		В	
1166.0 ^b 10	$(13/2^+)$	D	
1251 6	5/2-,7/2-	BC	XREF: B(1249)C(1252). J^{π} : L=3 (d, ³ He).
1255.1 [‡] 7	$(15/2^+)$	D	
1272.202 24	5/2+,7/2+	Α	J^{π} : π =+ from allowed β transition with log ft =5.9. $3/2^+$ excluded from γ to $9/2^+$ state.
1306.43 <i>3</i>	$(5/2^+, 7/2^+)$	A	J^{π} : the relatively low value for the log <i>ft</i> value, namely 6.1, suggests an allowed β transition. A γ to the 9/2 ⁺ state again excludes 3/2 ⁺ .
1334 10	$(1/2^-, 3/2^-)$	BC	XREF: B(1334)C(1341).
1350 10		D	J^{n} : L=(1) (d, He).
1339 10	1/2-3/2-	AR AR	I^{π} , I – 1 (d ³ He)
1460.9 ^{<i>a</i>} 15	$(15/2^+)$	D	$J : L^{-1}(\mathbf{u}, \mathbf{n}\mathbf{c}).$
1509.1 \$ 9	$(17/2^+)$	D	
1545 6	1/2 ⁻ ,3/2 ⁻	BC	XREF: $B(1540)C(1548)$.
1569 10		в	$J : L=I(d, He), D W BA gives 5/2 : 5/2 III (poi t, \alpha).$
$1583 0^{b} 13$	$(15/2^+)$	ت م	
$1610.4^{@}$ 10	$(13/2^{-})$	ע ח	
1639.07 5	$(13/2^{-})$ $(1/2^{-},3/2^{-})$	A	XREF: A(1632).
1665 6	1/2-,3/2-	BC	XREF: B(1660)C(1669).
			J^{π} : L=1(d, ³ He).
1689 <i>10</i>	1/2-,3/2-	В	J^{π} : L=1(d, ³ He).
1706 6	(5/2,9/2)+	BC	XREF: B(1713)C(1701). J^{π} : from (pol t, α).

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¹⁰⁷Rh Levels (continued)

1863.10 6 $(5/2^+,7/2^+)$ AF: the relatively low value for the log f value, namely 6.2, suggests an allowed β transition. A v to the 9/2 ⁺ state excludes 3/2 ⁺ . Level at 1871 keV observed in (d. ³ He) with L=(1, are very probably not the same level at observed in β decay.1867 6 $(3/2^-)$ BCKREF: R(1871)(C1865). F ⁺ : L=(3) (d. ³ He), 3/2 ⁻ in (pol t.a). F ⁺ : L=(3) (d. ³ He), 3/2 ⁻ in (pol t.a). F ⁺ : L=(3) (d. ³ He), 3/2 ⁻ in (pol t.a). F ⁺ : L=(3) (d. ³ He), 3/2 ⁻ in (pol t.a). F ⁺ : L=(3) (d. ³ He), 3/2 ⁻ in (pol t.a). F ⁺ : L=(3) (d. ³ He).2033.013(17,2 ⁺)D2035.17/2 ⁻ BC2035.110(9/2 ⁺)D2055.28(3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺)A7 ⁺ : L=1 (d. ³ He), analyzing power in (pol t.a) rules out 3/2 ⁻ . F ⁺ : L=1 (d. ³ He). F ⁺ : L=1 (d. ³ He).F: the relatively low value for the log f value, namely 6.0, suggests an allowed β transition. From the y decay pattern 3/2 ⁺ cannot be excluded.2115.42 <i>II</i> PAF [±] : L=(3) (d. ³ He).2115.42 <i>II</i> PAF [±] from the log fr value, namely 5.9, an allowed β transition is most likely. A γ to the 9/2 ⁺ state again excludes 3/2 ⁺ .2117.98 <i>I</i> P1011/2 ⁻ PD2217.09AF [±] from the log fr value, namely 5.9, an allowed β transition is most likely. A γ to transition.2217.10 PBF [±] : L=(1) (d. ³ He).2217.299I [*] : L=(4) (d. ³ He).2231.08 <i>IA</i> (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺)A7 [±] : L=(1) (d. ³ He).231.08 <i>IA</i> (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺)A </th <th>E(level)[†]</th> <th>\mathbf{J}^{π}</th> <th>XREF</th> <th>Comments</th>	E(level) [†]	\mathbf{J}^{π}	XREF	Comments
1867 6 (3/2 ⁻) BC NREF: B(1871)C(1865). <i>μ</i> ² (1 + 2) (4 ³ He), 3/2 ⁻ in (pol Lα). 1930 10 5/2 ⁻ , 7/2 ⁻ BC XREF: B(1871)C(1865). <i>μ</i> ² : 1 = (3) (4 ³ He), 3/2 ⁻ in (pol Lα). 2020.51 11 A J ² : no J ³ suggestion. log fr=6.6. In (d. ³ He) L=1 at 2032 keV. In (pol Lα) L=3 at 2037 keV. 2033 0 ^b 13 (17/2 ⁺) D D 2055 1 [‡] 10 (19/2 ⁺) D 2055 4 [±] 10 (19/2 ⁺) D 2055 4 [±] 10 (19/2 ⁺) D 2055 4 [±] 10 (19/2 ⁺) D 2115.42 11 A F: the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. From the y decay pattern 3/2 [*] cannot be excluded. 2115.42 11 A F: 1 = (3) (d. ³ He). 2136 10 (5/2 ⁻ , 7/2 ⁻) B 2141.14 ^k 10 (15/2 ⁻) D 2136 10 (5/2 ⁻ , 7/2 ⁺) A 2249.68 7 (5/2,7/2) ⁺ A 177.98 J ² : trom the log ft value, namely 5.9, an allowed β transition is most likely. A y to the 9/2 [*] state again excludes 3/2 ⁺ . 2301.6 ⁶ 12 (172 ⁻) D D 2303.9 J ⁴ (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺	1863.10 6	(5/2+,7/2+)	A	J^{π} : the relatively low value for the log <i>ft</i> value, namely 6.2, suggests an allowed β transition. A γ to the 9/2 ⁺ state excludes 3/2 ⁺ . Level at 1871 keV observed in (d, ³ He) with L=(3) and level at 1865 keV in (pol t, α) with L=1, are very probably not the same lavel as observed in β decay.
1930 10 5/2 - 7/2 BC XREF: C(193). 1930 10 5/2 - 7/2 BC XREF: C(193). 1930 10 5/2 - 7/2 BC XREF: C(193). 1930 10 (17/2 ⁺) D D 2033.0 ^b 13 (17/2 ⁺) D D 2035 6 1/2 BC XREF: C(192) D 2053.1 [‡] 10 (19/2 ⁺) D D F: 1=1 (d, ³ He), analyzing power in (pol t.a) rules out 3/2 . 2053.1 [‡] 10 (19/2 ⁺) D D F: 1=1 (d, ³ He), analyzing power in (pol t.a) rules out 3/2 . 2054.20 8 (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺) A D ⁺ : 1=1 (d, ³ He), analyzing power in (pol t.a) rules out 3/2 . 2115.42 11 A F: terelatively low value for the log ft value, namely 6.0, suggests an allowed β transition. F: 1=(3) (d, ³ He). 2141.14 ⁶ 10 (15/2) D D ⁺ : 1=(3) (d, ³ He). 2141.14 ⁶ 10 (15/2) D D 2207.68 17 A P ⁺ : 1=(3) (d, ³ He). 2217.2 ^k 9 (17/2) D 2301.3 ⁶ 12 (17/2) D 2301.3 ⁶ 12 (17/2)	1867 6	(3/2 ⁻)	BC	XREF: B(1871)C(1865). $\mathbb{W}_{v} = (2) (d^{3})(2) = i\pi (red t c)$
202.051 <i>A P</i> : no <i>Tⁿ</i> suggestion. log ft=6.6. In (d. ³ He) L=1 at 2032 keV. In (pol t, a) L=3 at 2033 keV. 203.30 <i>P</i> : no <i>Tⁿ</i> suggestion. log ft=6.6. In (d. ³ He) L=1 at 2032 keV. In (pol t, a) L=3 at 2037 keV. 205.51 <i>P</i> : no <i>Tⁿ</i> suggestion. log ft=6.6. In (d. ³ He) L=1 at 2032 keV. In (pol t, a) L=3 at 2037 keV. 205.51 <i>P</i> : l=1 (d. ³ He), analyzing power in (pol t, a) rules out 3/2 ⁻⁺ . 205.42 0 (19/2 ⁺) <i>P</i> 205.42 0 (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺) <i>A</i> 2115.42 <i>II A P</i> ⁺ : the relatively low value for the log <i>ft</i> value, namely 6.0, suggests an allowed <i>β</i> 2115.42 <i>II A P</i> ⁺ : L=(3) (d. ³ He). 214.1.4 ^k (0 2115.40 (19/2 ⁺) <i>D P</i> ⁺ : L=(3) (d. ³ He). 214.1.4 ^k (0 2136.10 (5/2 ⁻ , 7/2 ⁻) <i>D P</i> ⁺ : L=(3) (d. ³ He). 214.1.4 ^k (0 2207.28 (17/2 ⁻) <i>D P</i> ⁺ : L=(3) (d. ³ He). 214.1.4 ^k (0 2219.10 <i>B P</i> ⁺ : L(4) ³ He)=(1,3). 230.3.9 <i>I</i> ⁴ (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺) <i>A</i> 233.08 <i>I</i> (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺) <i>A P</i> [*] : L=(1) (d. ³ He). 234.1 ^k (2/2 ⁺) <i>P</i> <t< td=""><td>1930 10</td><td>5/2-,7/2-</td><td>BC</td><td>$X = -3/(d, He), 5/2 = in (port, \alpha).$ $X = -2 (d^{3}H_{2})$</td></t<>	1930 10	5/2-,7/2-	BC	$X = -3/(d, He), 5/2 = in (port, \alpha).$ $X = -2 (d^{3}H_{2})$
2033.0 0 $^{1/2^{-1}}$ D 2035 $^{1/2^{-1}}$ D T : L=1 (d. ³ He), analyzing power in (pol t, α) rules out $^{3/2^{-1}}$.2053.1 1 $^{1/2}$ P : the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. From the γ decay pattern $^{3/2^{+1}}$ cannot be excluded.2115.42 $^{1/1}$ A 2117.97 $^{1/8}$ $^{1/9^{-1}}$ D 2136 10 $^{5/2^{-7}}$ D 2141.18 10 $^{15/2^{-7}}$ D 2177.98 R R : E(2199)C(2201).2207.68 T A 229.68 7 $^{5/2^{-7}/2^{-7}}$ D 229.10 R R : from the log ft value, namely 5.9, an allowed β transition is most likely. A γ to the 9/2" state again excludes $^{3/2"}$.2217.28 Q $^{17/2^{-7}}$ D 2303.39 14 $^{3/2"}$, $^{5/2^{+7}}$ A 233.39 14 $^{3/2"}$, $^{5/2^{+7}}$ A 2343.10 $^{1/2^{-7}}$, 2D D 235.11 11 $^{21/2^{-7}}$ D 248.34 12 $^{19/2^{-7}}$ D 248.34 12 $^{19/2^{-7}}$ D 248.34 12 $^{19/2^{-7}}$ D 248.34 12 $^{19/2^{-7}}$ D 248.34 12 $^{23/2^{-7}$ D 248.34 12 $^{23/2^{-7}$ D 248.34 12	2020.51 11		A	J. L=5 (d, He). J^{π} : no J^{π} suggestion. log <i>ft</i> =6.6. In (d, ³ He) L=1 at 2032 keV. In (pol t, α) L=3 at 2037 keV.
2035 6 $1/2^{-1}$ BC XREF: B(2033)C(2037). 2055.1 [‡] 10 (19/2 ⁺) D 2054.20 8 $(3/2^+, 5/2^+, 7/2^+)$ A P*: the relatively low value for the log ft value, namely 6.0, suggests an allowed β 2115.42 11 A Imanifue for the log ft value, namely 6.0, suggests an allowed β 2115.42 11 A P*: the relatively low value for the log ft value, namely 6.0, suggests an allowed β 2117.48 (19/2 ⁺) D D 2177.98 16 A P*: the relatively low value for the log ft value, namely 5.9, an allowed β transition is most likely. A γ to the 9/2' state again excludes 3/2 ⁺ . 2199.6 BC XREF: B(2199)C(2201). 2207.68 17 A J [#] : L=((3, ³ He)=(1,3). 2031.3 [@] 12 (17/2 ⁻) D 2301.3 [@] 12 (17/2 ⁻) D 2330.13 [@] 12 (3/2 ⁺ , 5/2 ⁺ , 7/2 ⁺) A 2343 10 (1/2 ⁻ , 3/2 ⁻) B J [#] : L=(1) (d, ³ He). 2343 10 (1/2 ⁻ , 3/2 ⁻) B J [#] : L=(1) (d, ³ He). 2487 10 B J [#] : L=(1) (d, ³ He). D 2487 10 B J [#] : L=(1) (d, ³ He). D <td< td=""><td>2033.0^b 13</td><td>$(17/2^+)$</td><td>D</td><td></td></td<>	2033.0 ^b 13	$(17/2^+)$	D	
2053,1 $\frac{1}{2}$ (0 (19/2*) D J ^T : the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. From the γ decay pattern 3/2* cannot be excluded. 2115,42 11 A J ^T : the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. From the γ decay pattern 3/2* cannot be excluded. 2115,42 11 A J ^T : the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. From the γ decay pattern 3/2* cannot be excluded. 2115,42 11 A J ^T : L=(3) (d, ³ He). 2141,16 10 (5/2-7,72) B 2141,16 10 (15/2-7) D 217.78 16 A 2249.68 7 (5/2,7/2) ⁺ A 7 ^T : from the log ft value, namely 5.9, an allowed β transition is most likely. A γ to the 9/2* state again excludes 3/2*. 2277.2 ^{&} 9 (17/2 ⁻) D 2301.3 [@] 12 (17/2 ⁻) D 2331.08 14 (3/2*5/2*,7/2*) A 2343 10 (1/2 ⁻ ,3/2 ⁻) B 245.11 (21/2 ⁺) D 2469 10 J ^T : L=(4) (d, ³ He). 2475.12 ⁺ D 2485.16 ^I (21/2 ⁻) D 2486.16 ^{II} (23/2 ⁺)	2035 6	1/2-	BC	XREF: B(2033)C(2037). J ^{π} : L=1 (d, ³ He), analyzing power in (pol t, α) rules out 3/2 ⁻ .
2054.20 8 $(3/2^+, 5/2^+, 7/2^+)$ A J^{r} : the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. From the γ decay pattern $3/2^+$ cannot be excluded. 2115.42 11 A 2117.94 18 $(9/2^+)$ D 2136 10 $(5/2^-,7/2^-)$ B J^r : L=(3) (d_1^3 He). 2141.1(k 10 $(15/2^-)$ D 2177.98 16 A 2249.68 7 $(5/2,7/2^-)$ A 2249.68 7 $(5/2,7/2^-)$ D 2201.10 B J^r : L(d_1^3 He)=(1,3). 2301.39 14 $(3/2^+, 5/2^+, 7/2^+)$ A $3201.3^{(0)}$ 12 $(1/2^-, 3/2^-)$ D 2387 10 B J^r : L=(1) (d_1^3 He). 2387 10 B J^r : L=(4) (d_1^3 He). 2349.10 $(1/2^-, 3/2^-)$ B J^r : L=(4) (d_1^3 He). 2387 10 B J^r : L=(1/2) (d_1^3 He). 2 2469.03 ξ^k 16 $(21/2^-)$ D J^r : the relatively low value for the log ft value, namely 6.1, suggests an allowed β transition. 2460.3 ξ^k 16 $(21/2^-)$ D J^r : L=(1/2) (d_1^3 He). 2373.94 20	2053.1 [‡] 10	$(19/2^+)$	D	
2115.42 /1 A 2117.9 ⁶ /8 (19/2 ⁺) D 2136 /0 (5/2 ⁻ ,7/2 ⁻) B J ⁷ : L=(3) (d. ³ He). 2141.1 ⁶ /0 (15/2 ⁻) D 217.98 /6 BC XREF: B(2199)C(2201). 2207.68 /7 A 2249.68 7 (5/2,7/2) ⁺ A J ⁷ : from the log ft value, namely 5.9, an allowed β transition is most likely. A γ to the 9/2 ⁺ state again excludes 3/2 ⁺ . 2277.2 ⁶ 9 (17/2 ⁻) D J ⁷ : L(d. ³ He)=(1,3). 2301.3 ⁶ /2 (17/2 ⁻) D J ⁷ : the relatively low value for the log ft value, namely 6.0, suggests an allowed β transition. 2331.08 /4 (3/2 ⁺ , 5/2 ⁺) A J ⁷ : L=(1) (d. ³ He). 2343.10 (1/2 ⁻ , 3/2 ⁻) B J ⁷ : L=(1) (d. ³ He). 2348.1 [‡] /1 (21/2 ⁺) D J ⁷ : L=(1) (d. ³ He). 2488.3 ⁶ /2 (19/2 ⁻) D J ⁷ : L=(4) (d. ³ He). 2480.3 ⁶ /16 (21/2 ⁻) D J ⁷ : L=(4) (d. ³ He). 2660.3 ⁶ /16 (21/2 ⁻) D J ⁷ : L=(4) (d. ³ He). 277.9 ⁶ /27 D J ⁷ : L=(4) (d. ³ He). J ⁷ : L=(4) (d. ³ He). 2660.3 ⁶ /	2054.20 8	$(3/2^+, 5/2^+, 7/2^+)$	A	J^{π} : the relatively low value for the log <i>ft</i> value, namely 6.0, suggests an allowed β transition. From the γ decay pattern $3/2^+$ cannot be excluded.
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3311.3 <mark>&</mark> 21	(25/2 ⁻)	D	
$3709.3^{\&} 24$ (27/2 ⁻) D $3802.1^{\#} 21$ (29/2 ⁺) D	3434.1 [#] 19	$(27/2^+)$	D	
$3802.1^{\#} 21 (29/2^+) \qquad D$	3709.3 ^{&} 24	$(27/2^{-})$	D	
	3802.1 [#] 21	$(29/2^+)$	D	

[†] Level energy from least-squares adjustment.

¹⁰⁷Rh Levels (continued)

- [‡] Band(A): Band #1, based on $7/2^+$ g.s.. [#] Band(B): Band #2, based on $(23/2^+)$. [@] Band(C): Band #3, based on $(1/2^-)$. Possibly $\pi 1/2[301]$. [&] Band(D): Band #4, based on $(15/2^-)$. Possible configuration= $\pi g_{9/2}\nu h_{11/2}\nu (g_{7/2}/d_{5/2})$.
- ^{*a*} Band(E): Band #5, based on $(3/2^+)$. Possibly $\pi 1/2[431]$.
- ^b Band(F): Band #6, based on $(11/2^+)$.

$\gamma(^{107}\text{Rh})$

E _i (level) J_i^{π}	E_{γ}^{\dagger}	I_{γ} [‡]	E_f	\mathbf{J}_{f}^{π}	Mult.	α #	$I_{(\gamma+ce)}$	Comments
194.048	$9/2^{+}$	194.05 5	100 11	0.0	$7/2^{+}$				
268.36	1/2-	268.36 5	100	0.0	7/2+	(E3)	0.1727		B(E3)(W.u.)<1520
									B(E3)(W.u.): from RUL one expects $T_{1/2}>152 \ \mu s$.
374.278	$(3/2^+)$	105.92 5	8.7 7	268.36	$1/2^{-}$	(E1)	0.1239		$B(E1)(W.u.) = 1.3 \times 10^{-6} 3$
		374.28 5	100 14	0.0	7/2+	(E2)	0.01371		B(E2)(W.u.)=0.16 2
384.82	$(1/2^+)$	(10.54 6)		374.278	$(3/2^+)$			207 70	E_{γ} : not observed, energy from the level energy differences.
		116.45 5	100 10	268.36	1/2-				
405.80	$(3/2^+)$	(31.52 4)	100.0	3/4.2/8	$(3/2^+)$			3.0 15	E_{γ} : not observed, energy from the level energy differences.
462 601	5 /O+	405.80 5	100 8	0.0	$\frac{1}{2}$				
462.601	5/21	50.81 5	9.4 5	405.80	$(3/2^+)$				
		88.3 I	0.01	3/4.2/8	$(3/2^{+})$				
		208.3 3 462.61.5	95	194.048	9/2 7/2+				
485.66	3/2-	217 30 5	100 0	268.36	$1/2^{-}$				
543.84	$(5/2^{-})$	58 18 5	6120	485.66	$\frac{1}{2}$				
010101	(3/2)	275.48.5	100.8	268.36	$1/2^{-}$				
559.96	$(11/2^+)$	365.9 1	100 7	194.048	$9/2^+$				
		560.0	17 3	0.0	$7/2^{+}$				
568.90	$(7/2^+)$	106.3 <i>1</i>	4.0 6	462.601	5/2+				
		194.64 5	100 20	374.278	$(3/2^+)$				
		374.9 <i>1</i>	93. 20	194.048	9/2+				
		568.89 <i>5</i>	53 4	0.0	7/2+				
588.92	$(3/2^+, 5/2^+)$	183.1 <i>1</i>	12.6 15	405.80	$(3/2^+)$				
		204.09 5	100 7	384.82	$(1/2^+)$				
		214.66 5	63 5	374.278	$(3/2^+)$				
(00.00	(11/0+)	588.9 1	19 3	0.0	$1/2^{+}$				
680.00	$(11/2^+)$ $(7/2^+)$	485.95 5	100	194.048	9/2 ' 5/2+				
085.10	$(1/2^{+})$	220.49 5	40.4	402.001	$\frac{3}{2^+}$				
		683 11 5	40 4	0.0	9/2 7/2+				
752.55	3/2-	266.8.2	13 5	485.66	$3/2^{-}$				
152.55	5/2	484.2 1	100.9	268.36	$1/2^{-}$				
771.1	$(13/2^+)$	211 1		559.96	$(11/2^+)$				
		577 1		194.048	9/2+				
877.75	5/2-	333.9 1	100 12	543.84	$(5/2^{-})$				
		392.1 5	41 17	485.66	3/2-				
		609.4 2	58 58	268.36	$1/2^{-}$				
911.99		718.0 5	33	194.048	9/2+				
		912.0 <i>1</i>	100 4	0.0	7/2+				
935.9	$(11/2^+)$	367 1	100	568.90	$(7/2^+)$				
948.12		265.0 1	173	683.10	$(7/2^{+})$				

From ENSDF

$\gamma(^{107}\text{Rh})$ (continued)

E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	\mathbf{J}_f^π
948.12		948.1 <i>1</i>	100 9	0.0	7/2+
953.48	$(9/2^+)$	364.5 1	56 12	588.92	$(3/2^+, 5/2^+)$
		384.5 5	66	568.90	$(7/2^+)$
		759.5 1	100	194.048	$9/2^{+}$
974.44	$(3/2^{-}, 5/2^{-}, 7/2^{-})$	430.6 1	100 9	543.84	$(5/2^{-})$
		488.7 5	189	485.66	3/2-
1006.6	$(9/2^{-})$	463 1	100	543.84	$(5/2^{-})$
1009.76	$(3/2^{-}, 5/2^{-})$	257.2 1	100 13	752.55	3/2-
		524.1 <i>I</i>	37 12	485.66	3/2-
1041.950	$(5/2^+, 7/2^+)$	93.8 <i>1</i>	0.4 1	948.12	
		358.8 2	62	683.10	$(7/2^+)$
		579.36 5	46 2	462.601	5/2+
		636.10 5	4.5 3	405.80	$(3/2^+)$
		847.93 <i>5</i>	100 5	194.048	$9/2^{+}$
		1041.95 5	48 2	0.0	7/2+
1166.0	$(13/2^+)$	486 <i>1</i>	100	680.00	$(11/2^+)$
1255.1	$(15/2^+)$	484 1		771.1	$(13/2^+)$
		695 <i>1</i>		559.96	$(11/2^+)$
1272.202	5/2+,7/2+	230.26 5	5.2 4	1041.950	$(5/2^+, 7/2^+)$
		360.22 5	25.6 14	911.99	
		592.2 1	5.6 4	680.00	$(11/2^+)$
		683.3 <i>3</i>	4.1 20	588.92	$(3/2^+, 5/2^+)$
		703.30 5	37.5 20	568.90	$(7/2^+)$
		712.3 <i>I</i>	1.6 2	559.96	$(11/2^+)$
		809.57 <i>5</i>	15.8 10	462.601	5/2+
		866.5 1	2.7 2	405.80	$(3/2^+)$
		897.9 <i>1</i>	29.1 16	374.278	$(3/2^+)$
		1078.12 5	30.8 18	194.048	9/2+
1005 10		12/2.20 5	100	0.0	7/2+
1306.43	$(5/2^+, 7/2^+)$	358.5 5	12.6	948.12	
		394.41 5	43.5 23	911.99	(11/2+)
		626.4 1	10 11	680.00	$(11/2^{+})$
		/1/.5 /	20.5 17	588.92	$(3/2^+, 5/2^+)$
		131.55 5	100 0	568.90	$(1/2^{+})$
		/46.4 1	2.9.5	559.96	$(11/2^{+})$
		843.9 I	024 766	402.001	$\frac{3}{2}$
		932.1 I 1112 4 I	/00	3/4.2/8	$(3/2^{+})$
		1112.4 1	17.01/	194.048	9/2 7/2+
1206 26	1/2-2/2-	1300.43 3	100	0.0	1/2* 5/2+
1380.30	1/2 ,3/2	924.0 3	2.0 11	402.001	$\frac{3}{2}$
		980.0 <i>I</i>	100 12	405.80	$(3/2^{+})$
		1380.3 1	40 ð	0.0	1/2

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$\gamma(^{107}\text{Rh})$ (continued)

E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	\mathbf{J}_f^{π}
1460.9	$(15/2^+)$	525 1	100	935.9	$(11/2^+)$
1509.1	$(17/2^+)$	254 1		1255.1	$(15/2^+)$
		738 <i>1</i>		771.1	$(13/2^+)$
1583.0	$(15/2^+)$	417 <i>I</i>		1166.0	$(13/2^+)$
1610.4	$(13/2^{-})$	604 <i>1</i>		1006.6	$(9/2^{-})$
1639.07	$(1/2^{-}, 3/2^{-})$	252.70 5	56 5	1386.36	$1/2^{-}, 3/2^{-}$
		597.1 <i>I</i>	14.3 25	1041.950	$(5/2^+, 7/2^+)$
		690.9 2	28 5	948.12	
		727.1 <i>1</i>	30.7 25	911.99	
		956.0 2	31 5	683.10	$(7/2^+)$
		1050.3 2	21 5	588.92	$(3/2^+, 5/2^+)$
		1176.5 2	28 5	462.601	5/2+
		1445.0 <i>1</i>	100 8	194.048	9/2+
		1639.0 2	26 5	0.0	7/2+
1863.10	$(5/2^+, 7/2^+)$	476.8 <i>1</i>	42 5	1386.36	1/2-,3/2-
		821.1 <i>I</i>	86 12	1041.950	$(5/2^+, 7/2^+)$
		951.2 <i>I</i>	65 12	911.99	
		1294.0 5	14 9	568.90	$(7/2^+)$
		1669.0 2	53 5	194.048	9/2+
		1863.0 <i>1</i>	100 9	0.0	7/2+
2020.51		1067.0 2	448 5	953.48	$(9/2^+)$
		1558.0 2	100 11	462.601	5/2+
		1826.5 <i>3</i>	33 11	194.048	9/2+
		2020.4 2	38 5	0.0	7/2+
2033.0	$(17/2^+)$	450 <i>1</i>		1583.0	$(15/2^+)$
		867 <i>1</i>		1166.0	$(13/2^+)$
2053.1	$(19/2^+)$	544 1		1509.1	$(17/2^+)$
		798 1		1255.1	$(15/2^+)$
2054.20	$(3/2^+, 5/2^+, 7/2^+)$	1106.0 5	10.5	948.12	
		1142.2 1	26.3	911.99	5/0+
		1591.6 1	100 6	462.601	5/2'
2115 42		1648.4 3	1/6	405.80	$(3/2^+)$
2115.42		1161.9 2	22.4	953.48	$(9/2^+)$
2117.0	$(10/2^{+})$	1167.37	100 11	948.12	(15/0+)
2117.9	$(19/2^{+})$ $(15/2^{-})$	03/1	100	1400.9	$(13/2^{+})$ $(12/2^{+})$
2141.1	(15/2)	15/01	57 14	//1.1 599.02	$(15/2^{+})$
21/1.98		1309.13	J/ 14 14 7	JOO.92 105 66	(3/2, 3/2)
		1092.3 3	14 /	403.00	$\frac{3}{2}$
2207 60		1/12.12	100 IJ 82 IK	403.80 107.070	(3/2)
2207.08		2013.3 3	05 IU 100 8	194.048	>/∠ 7/2+
2240.69	$(5/2,7/2)^+$	1206.3.2	38 5	0.0	$(0/2^+)$
2249.00	(J/2, I/2)	1290.3 2	20 2	933.40	(2/2)

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$\gamma(^{107}\text{Rh})$ (continued)

E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	\mathbf{E}_{f}	J_f^π	E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	\mathbf{J}_f^π
2249.68	$(5/2,7/2)^+$	1566.7 2	100 8	683.10	$(7/2^+)$	2358.1	$(21/2^+)$	849 1		1509.1	$(17/2^+)$
		2055.5 1	51 5	194.048	$9/2^{+}$	2428.3	$(19/2^{-})$	127 <i>I</i>		2301.3	$(17/2^{-})$
		2249.7 1	32 2	0.0	7/2+			151 <i>I</i>		2277.2	$(17/2^{-})$
2277.2	$(17/2^{-})$	136 <i>1</i>		2141.1	$(15/2^{-})$	2510.00	$(5/2^+, 7/2^+)$	2316.0 2	100 22	194.048	9/2+
		667 1		1610.4	$(13/2^{-})$			2509.9 2	78 11	0.0	$7/2^{+}$
		1022 <i>1</i>		1255.1	$(15/2^+)$	2660.3	$(21/2^{-})$	232 1	100	2428.3	$(19/2^{-})$
2301.3	$(17/2^{-})$	691 <i>1</i>	100	1610.4	$(13/2^{-})$	2846.1	$(23/2^+)$	488 1		2358.1	$(21/2^+)$
2303.39	$(3/2^+, 5/2^+)$	1293.7 5	18 12	1009.76	$(3/2^{-}, 5/2^{-})$			793 <i>1</i>		2053.1	$(19/2^+)$
		1425.6 <i>3</i>	50 12	877.75	5/2-	2873.9	$(23/2^+)$	756 <i>1</i>	100		
		1817.7 <i>3</i>	25 6	485.66	3/2-	2962.3	$(23/2^{-})$	302 1	100	2660.3	$(21/2^{-})$
		1897.6 2	100 13	405.80	$(3/2^+)$	3135.1	$(25/2^+)$	289 <i>1</i>	100	2846.1	$(23/2^+)$
		1929.0 5	87 <i>43</i>	374.278	$(3/2^+)$	3311.3	$(25/2^{-})$	349 <i>1</i>	100	2962.3	$(23/2^{-})$
2331.08	$(3/2^+, 5/2^+, 7/2^+)$	1648.0 5	52 26	683.10	$(7/2^+)$	3434.1	$(27/2^+)$	299 <i>1</i>	100	3135.1	$(25/2^+)$
		1868.5 2	52 10	462.601	5/2+	3709.3	$(27/2^{-})$	398 <i>1</i>	100	3311.3	$(25/2^{-})$
		2331.0 2	100 11	0.0	7/2+	3802.1	$(29/2^+)$	368 1	100	3434.1	$(27/2^+)$
2358.1	$(21/2^+)$	305 1		2053.1	$(19/2^+)$						

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[†] From ¹⁰⁷Ru β^- decay. [‡] Relative photon branching from each level. [#] 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.

 $^{107}_{45}\mathrm{Rh}_{62}\text{-}8$





 $^{107}_{\ 45}\mathrm{Rh}_{62}$



 $^{107}_{\ 45}\mathrm{Rh}_{62}$



 $^{107}_{45} \mathrm{Rh}_{62}$



 $^{107}_{\ 45} \rm Rh_{62}$



 $^{107}_{45} \mathrm{Rh}_{62}$



 $^{107}_{\ 45}\mathrm{Rh}_{62}$



 $^{107}_{45} \mathrm{Rh}_{62}$