Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

Q(β^-)=−3430 *40*; S(n)=7130 *40*; S(p)=5630 *40*; Q(α)=3290 *40* 2017Wa10

^{177}W Levels

Cross Reference (XREF) Flags

A ^{177}Re ε decay
B ^{177}Hf(α,4nγ)
C ^{164}Dy(^{18}O,5nγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[#]	1/2$^-$	132.4 min *20*	ABC	%ε+%β^+=100 J$^\pi$: Strong ε+β^+ feeding to the 1/2$^-$, 1/2$^+$ and 3/2$^-$ levels in ^{177}Ta; *J*$^\pi$ systematics and proposed configuration; band assignment. T$_{1/2}$: Weighted average of 135 min *3* (1963Sa14), 130 min *3* (1950Wi67) and 132 min *6* (1963Ra14). configuration: *K*$^\pi$=1/2$^-$, ν1/2[521] Nilsson configuration. Based on the observed decoupled character of the band, alignment properties, g$_K$-g$_R$ values, and configuration systematics.
79.49[#] *8*	3/2$^-$		ABC	J$^\pi$: 79.3γ M1+E2 to the 1/2$^-$ level; band assignment.
94.98[#] *8*	5/2$^-$		ABC	J$^\pi$: 94.9γ E2 to the 1/2$^-$ level; band assignment.
101.23[@] *8*	5/2$^-$	38 ns *8*	ABC	J$^\pi$: 101.2γ to 1/2$^-$; *J*$^\pi$ systematics and proposed configuration; band assignment. T$_{1/2}$: From $\gamma\gamma$(t) (1997Sh36) in ^{164}Dy(^{18}O,5nγ)) using a spectrum produced by gating on the 84.7γ, 435.3γ and 477.6γ above the 5/2$^-$ bandhead, and the 94.9γ below the 5/2$^-$ bandhead. configuration: *K*$^\pi$=5/2$^-$, ν5/2[512] Nilsson configuration. Supported by the observed in-band properties, such as alignment, g$_K$-g$_R$ values, and systematics of similar structures in neighboring nuclei. The decrease of the g$_K$-g$_R$ values with spin implies a significant mixing with the ν7/2[514] configuration.
135.26[a] *11*	7/2$^-$		ABC	J$^\pi$: 33.9γ M1+E2 to the 5/2$^-$ level; *J*$^\pi$ systematics and proposed configuration; band assignment. configuration: *K*$^\pi$=7/2$^-$, ν7/2[514] Nilsson configuration. Supported by the observed in-band properties, such as alignment, g$_K$-g$_R$ values, and systematics of similar structures in neighboring nuclei. The increase of the g$_K$-g$_R$ values with spin implies a significant mixing with the ν5/2[512] configuration.
185.31[&] *17*	7/2$^+$	13 ns *3*	ABC	J$^\pi$: 84.8γ E1 to the 5/2$^-$ level; *J*$^\pi$ systematics and proposed configuration; band assignment. T$_{1/2}$: From $\gamma\gamma$(t) in ^{164}Dy(^{18}O,5nγ) (1997Sh36) using a spectrum produced by gating on the 220.4γ, 362.1γ and 455.0γ above the 7/2$^+$ bandhead, and the 84.8γ below the 7/2$^+$ bandhead. configuration: *K*$^\pi$=7/2$^+$, ν7/2[633] (i$_{13/2}$) Nilsson configuration. Supported by the observed in-band properties, such as alignment, g$_K$-g$_R$ values, and systematics of similar structures in neighboring nuclei. The assignment is consistent with the measured E1 transition strength for 84.8γ, and systematics of similar transitions in neighboring nuclei.
202.56[@] *10*	7/2$^-$		A C	J$^\pi$: 202.8γ M1+E2 to the 5/2$^-$ level; band assignment.
210.84[&] *16*	9/2$^+$		BC	J$^\pi$: 149.5γ E2 from 13/2$^+$; band assignment.
252.33[a] *10*	9/2$^-$		A C	J$^\pi$: 117.2γ M1+E2 to the 7/2$^-$ level; 151.0γ to 5/2$^-$; band assignment.
273.94[&] *15*	11/2$^+$		BC	XREF: B(283). J$^\pi$: 63.2γ to 9/2$^+$, 88.0γ to 7/2$^+$; band assignment.

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Adopted Levels, Gammas (continued)

^{177}W Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
276.68[#] *11*	7/2⁻		A C	Jπ: 197.2γ E2 to the 3/2⁻ level, 181.5γ to 5/2⁻; band assignment.
304.96[#] *11*	9/2⁻		A C	Jπ: 210.0γ E2 to the 5/2⁻ level; band assignment.
332.90[@] *10*	9/2⁻		C	Jπ: 130.7γ M1+E2 to the 7/2⁻ level; 231.5γ E2 to the 5/2⁻ level; band assignment.
360.44[&] *15*	13/2⁺		BC	XREF: B(369). Jπ: 86.9γ M1+E2 to the 11/2⁺ level; 149.5γ E2 to the 9/2⁺ level; band assignment.
391.61[a] *11*	11/2⁻		C	Jπ: 139.6γ M1+E2 to the 9/2⁻ level; 256.3γ E2 to the 7/2⁻ level; band assignment.
490.60[@] *11*	11/2⁻		C	Jπ: 157.8γ M1+E2 to the 9/2⁻ level; 288.0γ E2 to the 7/2⁻ level; band assignment.
494.47[&] *15*	15/2⁺		BC	XREF: B(503). Jπ: 134.3γ M1+E2 to the 13/2⁺ level; 220.4γ E2 to the 11/2⁺ level; band assignment.
551.86[a] *11*	13/2⁻		C	Jπ: 160.2γ M1+E2 to the 11/2⁻ level; 299.5γ E2 to the 9/2⁻ level; band assignment.
578.42[#] *12*	11/2⁻		C	Jπ: 301.7γ E2 to the 7/2⁻ level, 273.4γ to the 9/2⁻ level; band assignment.
620.72[#] *14*	13/2⁻		C	Jπ: 315.8γ E2 to the 9/2⁻ level; band assignment.
622.27[&] *15*	17/2⁺		BC	XREF: B(631). Jπ: 127.9γ M1+E2 to the 15/2⁺ level; 261.8γ E2 to the 13/2⁺ level; band assignment.
673.70[@] *11*	13/2⁻		C	Jπ: 183.0γ M1+E2 to the 11/2⁻ level; 340.6γ E2 to the 9/2⁻ level; band assignment.
731.74[a] *11*	15/2⁻		C	Jπ: 180.0γ M1+E2 to the 13/2⁻ level; 340.0γ E2 to the 11/2⁻ level; band assignment.
803.0? *5*	(7/2⁻)		A	Jπ: 708.1γ to the 5/2⁻ level, 723.4γ to the 3/2⁻ level; non-observation of γ to the 1/2⁻ level.
833.42[&] *15*	19/2⁺		BC	XREF: B(842). Jπ: 211.2γ M1+E2 to the 17/2⁺ level; 338.9γ E2 to the 15/2⁺ level; band assignment.
881.07[@] *11*	15/2⁻		C	Jπ: 207.3γ M1+E2 to the 13/2⁻ level; 390.4γ E2 to the 11/2⁻ level; band assignment.
928.71[a] *12*	17/2⁻		C	Jπ: 197.1γ M1+E2 to the 15/2⁻ level; 376.8γ E2 to the 13/2⁻ level; band assignment.
971.08[#] *13*	15/2⁻		C	Jπ: 392.6γ E2 to the 11/2⁻ level, 350.5γ to the 13/2⁻ level; band assignment.
984.43[&] *14*	21/2⁺		BC	XREF: B(993). Jπ: 151.1γ M1+E2 to the 19/2⁺ level; 362.1γ E2 to the 17/2⁺ level; band assignment.
1029.32[#] *16*	17/2⁻		C	Jπ: 408.6γ E2 to the 13/2⁻ level; band assignment.
1109.02[@] *12*	17/2⁻		C	Jπ: 435.3γ E2 to the 13/2⁻ level, 228.3γ to the 15/2⁻ level; band assignment.
1143.16[a] *12*	19/2⁻		C	Jπ: 214.5γ M1+E2 to the 17/2⁻ level; 411.3γ E2 to the 15/2⁻ level; band assignment.
1278.64[&] *14*	23/2⁺		BC	XREF: B(1288). Jπ: 294.3γ M1+E2 to the 21/2⁺ level; 445.2γ E2 to the 19/2⁺ level; band assignment.
1358.71[@] *12*	19/2⁻		C	Jπ: 477.6γ E2 to the 15/2⁻ level; 249.7γ to the 17/2⁻ level; band assignment.
1370.39[a] *12*	21/2⁻		C	Jπ: 227.1γ M1+E2 to the 19/2⁻ level; 441.6γ E2 to the 21/2⁻ level; band assignment.
1438.00[#] *14*	19/2⁻		C	Jπ: 408.7γ to the 17/2⁻ leve;, 466.9γ E2 to the 15/2⁻ level; band assignment.
1439.31[&] *14*	25/2⁺		BC	XREF: B(1448). Jπ: 160.7γ M1+E2 to the 23/2⁺ level; 455.0γ E2 to the 21/2⁺ level; band assignment.
1514.72[#] *19*	21/2⁻		C	Jπ: 485.4γ E2 to the 17/2⁻ level; band assignment.
1614.81[a] *12*	23/2⁻		C	Jπ: 244.6γ M1+E2 to the 21/2⁻ level; 471.7γ E2 to the 19/2⁻ level; band assignment.
1621.72[@] *13*	21/2⁻		C	Jπ: 262.7γ to the 19/2⁻ level, 512.8γ E2 from DCO ratios to the 17/2⁻ level; band assignment.
1645.60[b] *15*	19/2⁺	≤1 ns	C	Jπ: 812.1γ M1, ΔJ=0 to the 19/2⁺ level, 1023.4γ M1, ΔJ=1 to the 17/2⁺ level; 1151.2γ E2 to the 15/2⁺ level; band assignment. configuration: $K^{\pi}=19/2^{+}$, ν^{3}(5/2[512],7/2[514],7/2[633]). Supported by the observed in-band properties, such as alignment and g_K-g_R values.
1730.07[h] *14*			C	
1789.98[b] *16*	21/2⁺		C	Jπ: 144.3γ to the 19/2⁺ level; band assignment.
1816.70[&] *14*	27/2⁺		BC	XREF: B(1826). Jπ: 377.6γ M1+E2 to the 25/2⁺ level; 538.1γ E2 to the 23/2⁺ level; band assignment.
1867.12[a] *13*	25/2⁻		C	Jπ: 252.4γ M1+E2 to the 23/2⁻ level; 496.8γ E2 to the 21/2⁻ level; band assignment.
1899.85[@] *13*	23/2⁻		C	Jπ: 541.1γ E2 to the 19/2⁻ level; band assignment.

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Adopted Levels, Gammas (continued)

^{177}W Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
1908.88[h] *14*			C	
1954.42[#] *14*	23/2⁻		C	Jπ: 516.4γ E2 to the 19/2⁻ level; band assignment.
1977.45[b] *16*	23/2⁺		C	Jπ: 187.5γ to the 21/2⁺ level, 331.8γ to the 19/2⁺ level; band assignment.
1979.43[&] *14*	29/2⁺		BC	XREF: B(1988). Jπ: 162.7γ M1+E2 to the 27/2⁺ level; 540.1γ E2 to the 25/2⁺ level; band assignment.
2032.16 *17*			C	
2058.82[#] *22*	25/2⁻		C	Jπ: 544.1γ E2 to the 21/2⁻ level; band assignment.
2140.79[a] *13*	27/2⁻		C	Jπ: 273.9γ M1+E2 to the 25/2⁻ level; 525.9γ E2 to the 23/2⁻ level; band assignment.
2148.51[e] *16*	(21/2⁺)		C	Jπ: 358.5γ (ΔJ=0) and 502.8γ (ΔJ=) M1 to the 21/2⁺ and 19/2⁺ levels, respectively; band assignment. configuration: Possibly a mixture between the $K^{\pi}=21/2^{+}$ $\nu 5/2[512]\otimes\pi^2(7/2[404],9/2[514])$ and $\nu 7/2[514]\otimes\pi^2(5/2[402],9/2[514])$ configurations. Supported by the observed in-band properties, such as alignment and g_K-g_R values.
2148.88[h] *13*			C	
2175.89[@] *14*	25/2⁻		C	Jπ: 554.1γ E2 to the 21/2⁻ level; band assignment.
2194.96[b] *16*	25/2⁺		C	Jπ: 217.5γ to the 23/2⁺ level, 404.9γ E2 to the 21/2⁺ level; band assignment.
2285.98[i] *17*			C	
2330.11[e] *18*	(23/2⁺)		C	Jπ: 181.6γ to the (21/2⁺) level; band assignment.
2384.44[@] *12*	27/2⁻		C	Jπ: 484.5γ E2 to the 23/2⁻ level; band assignment.
2413.88[a] *14*	29/2⁻		C	Jπ: 273.1γ M1+E2 to the 27/2⁻ level; 546.6γ E2 to the 25/2⁻ level; band assignment.
2433.32[&] *15*	31/2⁺		BC	XREF: B(2440). Jπ: 453.8γ to the 29/2⁺ level, 616.8γ E2 to the 27/2⁺ level; band assignment.
2436.35[b] *16*	27/2⁺		C	Jπ: 241.4γ to the 25/2⁺ level, 458.9γ to the 23/2⁺ level; band assignment.
2487.19[i] *19*			C	
2524.02[#] *17*	27/2⁻		C	Jπ: 569.6γ E2 to the 23/2⁻ level; band assignment.
2558.01[e] *18*	(25/2⁺)		C	Jπ: 227.9γ to the (23/2⁺) level, 409.5γ to the (21/2⁺) level; band assignment.
2593.12[&] *16*	33/2⁺		BC	XREF: B(2600). Jπ: 159.4γ to the 31/2⁺ level, 613.6γ E2 to the 29/2⁺ level; band assignment.
2633.02[#] *24*	29/2⁻		C	Jπ: 574.2γ E2 to the 25/2⁻ level; band assignment.
2656.96[@] *14*	29/2⁻		C	Jπ: 481.0γ E2 to the 25/2⁻ level; band assignment.
2697.87[b] *17*	(29/2⁺)		C	Jπ: 261.7γ to the 27/2⁺ level, 502.8γ to the 25/2⁺ level; band assignment.
2718.38[a] *14*	31/2⁻		C	Jπ: 304.0γ to the 29/2⁻ level, 577.7γ E2 to the 27/2⁻ level; band assignment.
2725.03[i] *20*			C	
2821.62[e] *19*	(27/2⁺)		C	Jπ: 263.6γ to the (25/2⁺) level, 491.5γ to the (23/2⁺) level; band assignment.
2841.00[@] *14*	31/2⁻		C	Jπ: 456.5γ E2 to the 27/2⁻ level; band assignment.
2974.72[b] *18*	31/2⁺		C	Jπ: 276.0γ to the 29/2⁺ level, 538.3γ to the 27/2⁺ level; band assignment.
2981.39[i] *21*			C	
3007.38[a] *15*	33/2⁻		C	Jπ: 288.5γ to the 31/2⁻ level, 593.9γ E2 to the 29/2⁻ level; band assignment.
3102.0[#] *11*	31/2⁻		C	Jπ: 578.0γ to the 27/2⁻ level; band assignment.
3109.66[e] *20*	(29/2⁺)		C	Jπ: 288.0γ to the (27/2⁺) level, 551.7γ to the (25/2⁺) level; band assignment.
3113.60[@] *16*	33/2⁻		C	Jπ: 456.7γ E2 to the 29/2⁻ level; band assignment.
3114.02[&] *17*	35/2⁺		C	Jπ: 520.8γ to the 33/2⁺ level, 680.8γ E2 to the 31/2⁺ level; band assignment.
3172.1[#] *3*	33/2⁻		C	Jπ: 539.1γ E2 to the 29/2⁻ level; band assignment.
3203.04[c] *16*	29/2⁺	≤1 ns	C	Jπ: 1223.7γ M1 to the 27/2⁺ level, 1008.1γ to the 25/2⁺ level, 1223.7γ (ΔJ=0) to the 29/2⁺ level; band assignment. configuration: $K^{\pi}=29/2^{+}$, $\nu^3(5/2[512],7/2[514],7/2[633])\otimes\pi^2(1/2[541],9/2[514])$. The assignment is supported by the observed in-band properties, such as alignment

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Adopted Levels, Gammas (continued)

^{177}W Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				and g_K-g_R values.
3264.73[&] *19*	37/2+		C	Jπ: 671.6γ E2 to the 33/2+ level; band assignment.
3270.79[b] *18*	33/2+		C	Jπ: 296.0γ to the 31/2+ level, 573.0γ to the 29/2+ level; band assignment.
3276.41[i] *21*			C	
3326.15[@] *15*	35/2−		C	Jπ: 485.1γ E2 to the 31/2− level; band assignment.
3346.74[c] *19*	31/2+		C	Jπ: 143.7γ to the 29/2+ level; band assignment.
3348.03[a] *17*	35/2−		C	Jπ: 340.4γ to the 33/2− level, 629.7γ E2 to the 31/2− level; band assignment.
3419.94[e] *20*	(31/2+)		C	Jπ: 310.3γ to the (29/2+) level, 598.3γ to the (27/2+) level; band assignment.
3431.32[f] *22*	(31/2+)	9 ns *2*	C	Jπ: 321.6γ M1 to the (29/2+) level; 610.2γ E2 to the (27/2+) level; band assignment. configuration: K^π=31/2+, ν^3(5/2[512],7/2[514],7/2[633])⊗ π^2(5/2[402],7/2[404]). Supported by the observed in-band properties, such as alignment and g_K-g_R values.
3517.39[c] *21*	33/2+		C	Jπ: 170.8γ to the 31/2+ level, 314.0γ to the 29/2+ level; band assignment.
3568.82[b] *21*	(35/2+)		C	Jπ: 594.1γ to the 31/2+ level; band assignment.
3592.31[i] *24*			C	
3614.34[@] *16*	37/2−		C	Jπ: 500.8γ E2 to the 33/2− level; band assignment.
3639.12[g] *24*	(33/2+)		C	Jπ: 207.8γ (M1+E2) to the (31/2+) level; band assignment. configuration: K=33/2+, ν^3(5/2[512],7/2[514],9/2[624])⊗ π^2(5/2[402],7/2[404]). Supported by the observed in-band properties, such as alignment and g_K-g_R values.
3655.13[a] *17*	37/2−		C	Jπ: 307.3γ to the 35/2− level, 647.7γ E2 to the 33/2− level; band assignment.
3705.54[f] *24*	(33/2+)		C	Jπ: 274.3γ to the (31/2+) level; band assignment.
3724.64[c] *22*	35/2+		C	Jπ: 207.5γ to the 33/2+ level, 377.3γ E2 to the 31/2+ level; band assignment.
3725.7[#] *3*	37/2−		C	Jπ: 553.6γ E2 to the 33/2− level; band assignment.
3745.15[e] *21*	(33/2+)		C	Jπ: 325.2γ to the (31/2+) level, 635.3γ to the (29/2+) level; band assignment.
3844.93[&] *19*	39/2+		C	Jπ: 730.9γ E2 to the 35/2+ level; band assignment.
3875.25[@] *18*	39/2−		C	Jπ: 549.1γ E2 to the 35/2− level; band assignment.
3889.30[b] *21*	(37/2+)		C	Jπ: 618.5γ to the 33/2+ level; band assignment.
3931.5[g] *3*	(35/2+)		C	Jπ: 292.4γ to the (33/2+) level; band assignment.
3966.18[c] *22*	37/2+		C	Jπ: 241.6γ to the 35/2+ level, 448.7γ to the 33/2+ level; band assignment.
3975.03[&] *22*	41/2+		C	Jπ: 710.3γ E2 to the 37/2+ level; band assignment.
4013.39[f] *25*	(35/2+)		C	Jπ: 307.8γ to the (33/2+) level, 581.4γ to the (31/2+) level; band assignment.
4022.63[a] *19*	(39/2−)		C	Jπ: 367.3γ to the 37/2− level, 674.6γ to the 35/2− level; band assignment.
4194.64[@] *19*	41/2−		C	Jπ: 580.3γ E2 to the 37/2− level; band assignment.
4239.00[c] *22*	39/2+		C	Jπ: 272.8γ to the 37/2+ level, 514.4γ to the 35/2+ level; band assignment.
4256.5[g] *3*	(37/2+)		C	Jπ: 325.0γ to the (35/2+) level; band assignment.
4323.8[#] *4*	(41/2−)		C	Jπ: 598.1γ to the 37/2− level; band assignment.
4324.14[a] *20*	(41/2−)		C	Jπ: 669.0γ to the 37/2− level; band assignment.
4344.02[f] *25*	(37/2+)		C	Jπ: 330.5γ to the (35/2+) level, 638.6γ to the (33/2+) level; band assignment.
4496.45[@] *21*	43/2−		C	Jπ: 621.2γ E2 to the 39/2− level; band assignment.
4535.49[c] *24*	41/2+		C	Jπ: 296.5γ to the 39/2+ level, 569.2γ to the 37/2+ level; band assignment.
4574.89[d] *23*	(41/2+)		C	Jπ: 608.7γ E2 from DCO ratios to the 37/2+ level; band assignment. configuration: K^π=41/2+, ν^3(5/2[512],7/2[514],7/2[633])⊗ π^4(1/2[541],5/2[402],7/2[404],9/2[514]). Supported by the observed in-band properties, such as alignment and g_K-g_R values.
4591.8 *3*			C	
4602.7[g] *3*	(39/2+)		C	Jπ: 346.2γ to the (37/2+) level, 671γ to the (35/2+) level; band assignment.
4613.73[&] *22*	(43/2+)		C	Jπ: 768.8γ to the 39/2+ level; band assignment.
4691.7[f] *3*	(39/2+)		C	Jπ: 347.8γ to the (37/2+) level, 678.3γ to the (35/2+) level; band assignment.
4708.43[&] *24*	45/2+		C	Jπ: 733.4γ E2 to the 41/2+ level; band assignment.

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Adopted Levels, Gammas (continued)

^{177}W Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
4741.43[a] 22	(43/2⁻)	C	Jπ: 718.8γ to the (39/2⁻) level; band assignment.
4800.39[d] 25	(43/2⁺)	C	Jπ: 225.5γ to the (41/2⁺) level; band assignment.
4845.65[@] 21	45/2⁻	C	Jπ: 651.0γ E2 to the 41/2⁻ level; band assignment.
4855.1[c]	(43/2⁺)	C	Jπ: 320γ to the 41/2⁺ level, 616γ to the 39/2⁺ level; band assignment.
4894.3 3		C	
4963.6[g] 3	(41/2⁺)	C	Jπ: 360.9γ to the (39/2⁺) level; band assignment.
5019.04[a] 22	(45/2⁻)	C	Jπ: 694.9γ to the (41/2⁻) level; band assignment.
5052.6[f] 3	(41/2⁺)	C	Jπ: 361.2γ to the (39/2⁺) level, 708.4γ to the (37/2⁺) level; band assignment.
5063.3[d] 3	(45/2⁺)	C	Jπ: 262.9γ to the (43/2⁺) level; band assignment.
5190.85[@] 23	(47/2⁻)	C	Jπ: 694.4γ to the 43/2⁻ level; band assignment.
5229.9 3		C	
5333.1[g] 4	(43/2⁺)	C	Jπ: 369.5γ to the (41/2⁺) level, 730γ to the (39/2⁺) level; band assignment.
5365.7[d] 3	(47/2⁺)	C	Jπ: 302.4γ to the (45/2⁺) level; band assignment.
5410.8[&] 5	(47/2⁺)	C	Jπ: 797.1γ to the (43/2⁺) level; band assignment.
5423.8[f] 4	(43/2⁺)	C	Jπ: 370.6γ to the (41/2⁺) level, 732.7γ to the (39/2⁺) level; band assignment.
5473.9[&] 3	(49/2⁺)	C	Jπ: 765.5γ to the 45/2⁺ level; band assignment.
5501.4[a] 11	(47/2⁻)	C	Jπ: 760.0γ to the (43/2⁻) level; band assignment.
5566.25[@] 24	(49/2⁻)	C	Jπ: 720.6γ to the 45/2⁻ level; band assignment.
5703.7[d] 4	(49/2⁺)	C	Jπ: 338.0γ to the (47/2⁺) level, 640γ to the (45/2⁺) level; band assignment.
5709.3[g] 4	(45/2⁺)	C	Jπ: 376.2γ to the (43/2⁺) level; band assignment.
5771.0[a] 11	(49/2⁻)	C	Jπ: 752.0γ to the (45/2⁻) level; band assignment.
5805.8[f] 5	(45/2⁺)	C	Jπ: 753.2γ to the (41/2⁺) level; band assignment.
5953.7[@] 3	(51/2⁻)	C	Jπ: 762.8γ to the (47/2⁻) level; band assignment.
6069.6[d] 4	(51/2⁺)	C	Jπ: 365.9γ to the (49/2⁺) level, 704γ to the (47/2⁺) level; band assignment.
6093.1?[g]	(47/2⁺)	C	Jπ: 384γ to the (45/2⁺) level; band assignment.
6196.1[f] 7	(47/2⁺)	C	Jπ: 772.3γ to the (43/2⁺) level; band assignment.
6232.1[&] 12	(51/2⁺)	C	Jπ: 821.3γ to the (47/2⁺) level; band assignment.
6299.2[&] 5	(53/2⁺)	C	Jπ: 825.3γ to the (49/2⁺) level; band assignment.
6353.0[@] 5	(53/2⁻)	C	Jπ: 786.8γ to the (49/2⁻) level; band assignment.
6460.8[d] 5	(53/2⁺)	C	Jπ: 391.3γ to the (51/2⁺) level, 757γ to the (49/2⁺) level; band assignment.
6597.4[f] 8	(49/2⁺)	C	Jπ: 791.6γ to the (45/2⁺) level; band assignment.
6780.6?[@]	(55/2⁻)	C	Jπ: 827.0γ to the (51/2⁻) level; band assignment.
6872.2[d] 5	(55/2⁺)	C	Jπ: 411.4γ to the (53/2⁺) level, 802γ to the (51/2⁺) level; band assignment.
7160.1?[&]	(57/2⁺)	C	Jπ: 861.0γ to the (53/2⁺) level; band assignment.
7204.7?[@]	(57/2⁻)	C	Jπ: 851.5γ to the (53/2⁻) level; band assignment.

[†] From least-squares fit to Eγ.

[‡] From the deduced γ-ray transition multipolarities, based on the measured DCO ratios, electron-conversion coefficients, the apparent band structures with both cascade (ΔJ=1) and crossover (ΔJ=2) transitions, and the decay patterns.

[#] Band(A): ν1/2[521] rotational band.

[@] Band(B): ν5/2[512] rotational band.

[&] Band(C): ν7/2[633] Coriolis-mixed ($i_{13/2}$) rotational band.

[a] Band(D): ν7/2[514] rotational band.

[b] Band(E): $K^\pi=19/2^+$ band. configuration= ν^3(5/2[512],7/2[514],7/2[633]).

[c] Band(F): $K^\pi=29/2^+$ band. configuration=ν^3(5/2[512],7/2[514],7/2[633])⊗ π^2(1/2[541],9/2[514]).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{177}W Levels (continued)

[d] Band(G): $K^{\pi}=(41/2^{+})$ band. configuration=ν^3(5/2[512],7/2[514],7/2[633])⊗ π^4(1/2[541],5/2[402],7/2[404],9/2[514]).
[e] Band(H): $K^{\pi}=(21/2^{+})$ band. Possibly a mixture between the configuration=ν5/2[512]⊗π^2(7/2[404],9/2[514]) and configuration=ν7/2[514]⊗π^2(5/2[402],9/2[514]).
[f] Band(I): $K^{\pi}=(31/2^{+})$ band. configuration=ν^3(5/2[512],7/2[514],7/2[633])⊗ π^2(5/2[402],7/2[404]).
[g] Band(J): $K^{\pi}=(33/2^{+})$ band. configuration=ν^3(5/2[512],7/2[514],9/2[624])⊗ π^2(5/2[402],7/2[404]).
[h] Band(K): Side band.
[i] Band(L): Side band.

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$

Mixing ratios values given in the Comments section are from $^{164}Dy(^{18}O,5n\gamma)$. They were deduced by the evaluator from the branching ratios and the rotational model, and by assuming a pure K.

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[@]	α[#]	Comments
79.49	3/2$^-$	79.65[‡] *12*	100	0.0	1/2$^-$	M1+E2	1.0 *5*	9.5 *3*	α(K)=4.3 *20*; α(L)=3.9 *17*; α(M)=1.0 *5* α(N)=0.23 *10*; α(O)=0.033 *13*; α(P)=0.00045 *20* Mult.,δ: From ce(L1+L2)exp:ce(L3)exp=520 *40*/360 *80* (2000Ro41). Others: ce(L1)exp:ce(L2)exp:ce(L3)exp=≈24:100:96 (1975El07) and DCO=0.83 *11* (1997Sh36).
94.98	5/2$^-$	(15.49 *11*)		79.49	3/2$^-$				E_γ: From level energy differences. Not observed, but required by the coincidence relationships.
		94.9 *1*	100	0.0	1/2$^-$	E2		4.82	α(K)=0.956 *14*; α(L)=2.93 *5*; α(M)=0.740 *11* α(N)=0.174 *3*; α(O)=0.0238 *4*; α(P)=8.00×10^{-5} *12* Mult.: From ce(K)exp:ce(L2)exp:ce(L3)exp=53:100:83 (1975El07) in ^{177}Re ε decay. The uncertainty in the Ice values is 20 %; DCO=1.1 *1*.
101.23	5/2$^-$	(6.25 *11*)	2.4 *3*	94.98	5/2$^-$	[M1]		6.7×10^2 *4*	B(M1)(W.u.)=0.00101 *+32−21* α(M)=5.2×10^2 *3* α(N)=125 *7*; α(O)=20.4 *12*; α(P)=1.44 *8* E_γ: From level energy differences. Not observed, but required by the coincidence relationships. I_γ: From I(γ+ce) intensity ratio in $^{164}Dy(^{18}O,5n\gamma)$ (1997Sh36) and the assumed Mult. and α.
		(21.74 *11*)	49 *5*	79.49	3/2$^-$	[M1]		71.8 *15*	B(M1)(W.u.)=4.9×10^{-4} *+13−9* α(L)=55.5 *12*; α(M)=12.7 *3* α(N)=3.05 *7*; α(O)=0.497 *11*; α(P)=0.0352 *8* E_γ: From level energy differences. Not observed, but required by the coincidence relationships. I_γ: From I(γ+ce) intensity ratio in $^{164}Dy(^{18}O,5n\gamma)$ (1997Sh36) and the assumed Mult. and α.
		101.2 *1*	100 *14*	0.0	1/2$^-$	[E2]		3.72	α(K)=0.862 *13*; α(L)=2.17 *4*; α(M)=0.548 *8* α(N)=0.1291 *19*; α(O)=0.0177 *3*; α(P)=6.90×10^{-5} *10* B(E2)(W.u.)=0.42 *+13−9* I_γ: From I(γ+ce) intensity ratio in $^{164}Dy(^{18}O,5n\gamma)$ (1997Sh36) and the assumed Mult. and α.
135.26	7/2$^-$	33.9[‡] *2*	100	101.23	5/2$^-$	M1+E2		19.3 *5*	α(L)=14.9 *4*; α(M)=3.40 *8* α(N)=0.818 *19*; α(O)=0.133 *3*; α(P)=0.00945 *22* Mult.: From ce(L1)exp:ce(L2)exp:ce(L3)exp=100:≈18:≈13 (1975El07) in ^{177}Re ε decay. The uncertainty in the Ice values is 20 %.
185.31	7/2$^+$	49.8[‡] *2*	10.9 *7*	135.26	7/2$^-$	[E1]		0.472 *9*	α(L)=0.365 *7*; α(M)=0.0840 *15* α(N)=0.0196 *4*; α(O)=0.00280 *5*; α(P)=0.0001122 *19* B(E1)(W.u.)=8.4×10^{-6} *+26−17*

$^{177}_{74}W_{103}$-7

Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
185.31	7/2$^+$	84.3[‡] *2*	100 *5*	101.23	5/2$^-$	E1	0.581	B(E1)(W.u.)=1.58×10^{-5} *+48−30* α(K)=0.470 *8*; α(L)=0.0856 *14*; α(M)=0.0196 *3* α(N)=0.00461 *8*; α(O)=0.000688 *11*; α(P)=3.28×10^{-5} *5* Mult.: from α(K)exp≈ 0.40 *11* (1975El07 in ^{177}Re ε decay; DCO=0.59 *5*.
202.56	7/2$^-$	101.6 *1*	100	101.23	5/2$^-$	M1+E2	4.54	α(K)=3.76 *6*; α(L)=0.600 *9*; α(M)=0.1366 *20* α(N)=0.0329 *5*; α(O)=0.00536 *8*; α(P)=0.000381 *6* Mult.: DCO=0.44 *6*.
252.33	9/2$^-$	117.2 *1*	100 *5*	135.26	7/2$^-$	M1+E2	3.01	α(K)=2.50 *4*; α(L)=0.397 *6*; α(M)=0.0905 *13* α(N)=0.0218 *3*; α(O)=0.00356 *5*; α(P)=0.000253 *4* Mult.: DCO=0.32 *3*.
		151.0 *1*	26.9 *15*	101.23	5/2$^-$	[E2]	0.820	α(K)=0.353 *5*; α(L)=0.354 *5*; α(M)=0.0888 *13* α(N)=0.0210 *3*; α(O)=0.00291 *5*; α(P)=2.67×10^{-5} *4*
273.94	11/2$^+$	63.2 *1*	100 *8*	210.84	9/2$^+$	[M1+E2]	3.08	α(L)=2.38 *4*; α(M)=0.543 *8* α(N)=0.1308 *20*; α(O)=0.0213 *4*; α(P)=0.001513 *23* δ: 1.19 *14*, assuming K=7/2.
		88.0 *10*	65 *4*	185.31	7/2$^+$	[E2]	6.6 *4*	α(K)=1.051 *20*; α(L)=4.17 *24*; α(M)=1.05 *6* α(N)=0.248 *15*; α(O)=0.0339 *20*; α(P)=9.5×10^{-5} *3*
276.68	7/2$^-$	181.5 *2*	14.1 *13*	94.98	5/2$^-$	[M1+E2]	0.874	α(K)=0.726 *11*; α(L)=0.1147 *17*; α(M)=0.0261 *4* α(N)=0.00629 *9*; α(O)=0.001026 *15*; α(P)=7.31×10^{-5} *11* δ: 1.05 *13*, assuming K=1/2.
		197.2 *1*	100 *7*	79.49	3/2$^-$	E2	0.323	α(K)=0.1753 *25*; α(L)=0.1124 *16*; α(M)=0.0280 *4* α(N)=0.00662 *10*; α(O)=0.000932 *14*; α(P)=1.383×10^{-5} *20* Mult.: From ce(K)exp:ce(L1+L2)exp:ce(L3)exp=100:50:29 (1975El07) in ^{177}Re ε decay. The uncertainty in the Ice values is 20 %. DCO=0.93 *8*.
304.96	9/2$^-$	210.0 *1*	100	94.98	5/2$^-$	E2	0.262	α(K)=0.1480 *21*; α(L)=0.0866 *13*; α(M)=0.0215 *3* α(N)=0.00509 *8*; α(O)=0.000720 *11*; α(P)=1.183×10^{-5} *17* Mult.: From α(K)exp= 0.14 *4* (1975El07) in ^{177}Re ε decay. DCO=0.95 *8*.
332.90	9/2$^-$	130.7 *1*	100 *12*	202.56	7/2$^-$	M1+E2	2.21 *4*	α(K)=1.83 *3*; α(L)=0.291 *5*; α(M)=0.0662 *10* α(N)=0.01595 *23*; α(O)=0.00260 *4*; α(P)=0.000185 *3* Mult.: DCO=0.41 *7*. δ: 0.33 *3*, assuming K=5/2.
		197.6 *1*	43 *5*	135.26	7/2$^-$	[M1]	0.689	α(K)=0.573 *8*; α(L)=0.0903 *13*; α(M)=0.0206 *3* α(N)=0.00495 *7*; α(O)=0.000808 *12*; α(P)=5.76×10^{-5} *9*
		231.5 *1*	55 *7*	101.23	5/2$^-$	E2	0.190	α(K)=0.1138 *16*; α(L)=0.0583 *9*; α(M)=0.01441 *21* α(N)=0.00341 *5*; α(O)=0.000486 *7*; α(P)=9.28×10^{-6} *13* Mult.: DCO=1.1 *2*.
360.44	13/2$^+$	86.9 *1*	100 *5*	273.94	11/2$^+$	M1+E2	7.11 *11*	α(K)=5.89 *9*; α(L)=0.942 *14*; α(M)=0.215 *3* α(N)=0.0517 *8*; α(O)=0.00843 *13*; α(P)=0.000599 *9* Mult.: DCO=0.31 *3*. δ: 0.34 *1*, assuming K=7/2.
		149.5 *1*	71 *3*	210.84	9/2$^+$	E2	0.850	α(K)=0.362 *6*; α(L)=0.370 *6*; α(M)=0.0928 *14* α(N)=0.0219 *4*; α(O)=0.00304 *5*; α(P)=2.74×10^{-5} *4* Mult.: DCO=0.89 *11*.

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Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
391.61	11/2$^-$	117.0 *2*	8.1 *7*	273.94	11/2$^+$	[E1]	0.250	α(K)=0.205 *3*; α(L)=0.0349 *6*; α(M)=0.00794 *12* α(N)=0.00188 *3*; α(O)=0.000287 *5*; α(P)=1.492×10^{-5} *22*
		139.6 *1*	54 *3*	252.33	9/2$^-$	M1+E2	1.83	α(K)=1.520 *22*; α(L)=0.241 *4*; α(M)=0.0549 *8* α(N)=0.01322 *19*; α(O)=0.00216 *3*; α(P)=0.0001534 *22* Mult.: DCO=0.30 *3*. δ: 0.85 *5*, assuming K=7/2.
		189.0 *1*	11.2 *7*	202.56	7/2$^-$	[E2]	0.373	α(K)=0.196 *3*; α(L)=0.1344 *19*; α(M)=0.0335 *5* α(N)=0.00792 *12*; α(O)=0.001113 *16*; α(P)=1.537×10^{-5} *22*
		256.3 *1*	100 *5*	135.26	7/2$^-$	E2	0.1377	α(K)=0.0866 *13*; α(L)=0.0389 *6*; α(M)=0.00958 *14* α(N)=0.00227 *4*; α(O)=0.000326 *5*; α(P)=7.20×10^{-6} *11* Mult.: DCO=1.0 *1*.
490.60	11/2$^-$	157.8 *1*	51 *3*	332.90	9/2$^-$	M1+E2	1.295	α(K)=1.075 *16*; α(L)=0.1702 *24*; α(M)=0.0387 *6* α(N)=0.00933 *14*; α(O)=0.001522 *22*; α(P)=0.0001083 *16* Mult.: DCO=0.39 *5*. δ: 0.39 *2*, assuming K=5/2.
		238.0 *1*	79 *5*	252.33	9/2$^-$	[M1]	0.412	α(K)=0.343 *5*; α(L)=0.0538 *8*; α(M)=0.01225 *18* α(N)=0.00295 *5*; α(O)=0.000482 *7*; α(P)=3.44×10^{-5} *5*
		288.0 *1*	100 *6*	202.56	7/2$^-$	E2	0.0961	α(K)=0.0635 *9*; α(L)=0.0249 *4*; α(M)=0.00609 *9* α(N)=0.001445 *21*; α(O)=0.000209 *3*; α(P)=5.40×10^{-6} *8* Mult.: DCO=0.90 *9*.
		356[&]	9.6 *19*	135.26	7/2$^-$	[E2]	0.0517	α(K)=0.0366 *6*; α(L)=0.01152 *17*; α(M)=0.00279 *4* α(N)=0.000662 *10*; α(O)=9.78×10^{-5} *14*; α(P)=3.23×10^{-6} *5*
494.47	15/2$^+$	134.3 *1*	75 *3*	360.44	13/2$^+$	M1+E2	2.04	α(K)=1.696 *24*; α(L)=0.269 *4*; α(M)=0.0613 *9* α(N)=0.01476 *21*; α(O)=0.00241 *4*; α(P)=0.0001712 *25* Mult.: DCO=0.32 *3*. δ: 0.42 *2*, assuming K=7/2.
		220.4 *1*	100 *4*	273.94	11/2$^+$	E2	0.223	α(K)=0.1299 *19*; α(L)=0.0711 *10*; α(M)=0.01761 *25* α(N)=0.00417 *6*; α(O)=0.000592 *9*; α(P)=1.049×10^{-5} *15* Mult.: DCO=1.0 *1*.
551.86	13/2$^-$	160.2 *1*	30.6 *15*	391.61	11/2$^-$	M1+E2	1.241	α(K)=1.030 *15*; α(L)=0.1631 *23*; α(M)=0.0371 *6* α(N)=0.00894 *13*; α(O)=0.001459 *21*; α(P)=0.0001038 *15* Mult.: DCO=0.31 *3*. δ: 0.67 *3*, assuming K=7/2.
		192.0 *3*	2.3 *3*	360.44	13/2$^+$	[E1]	0.0695	α(K)=0.0576 *9*; α(L)=0.00921 *14*; α(M)=0.00209 *3* α(N)=0.000498 *8*; α(O)=7.77×10^{-5} *12*; α(P)=4.50×10^{-6} *7*
		219.2 *1*	4.4 *3*	332.90	9/2$^-$	[E2]	0.227	α(K)=0.1318 *19*; α(L)=0.0727 *11*; α(M)=0.0180 *3* α(N)=0.00426 *6*; α(O)=0.000605 *9*; α(P)=1.063×10^{-5} *15*
		299.5 *1*	100 *5*	252.33	9/2$^-$	E2	0.0854	α(K)=0.0572 *8*; α(L)=0.0215 *3*; α(M)=0.00525 *8* α(N)=0.001246 *18*; α(O)=0.000181 *3*; α(P)=4.90×10^{-6} *7* Mult.: DCO=1.0 *1*.
578.42	11/2$^-$	273.4 *2*	8.3 *4*	304.96	9/2$^-$	[M1+E2]	0.282	α(K)=0.235 *4*; α(L)=0.0367 *6*; α(M)=0.00835 *12* α(N)=0.00201 *3*; α(O)=0.000329 *5*; α(P)=2.35×10^{-5} *4* δ: 0.63 *6*, assuming K=1/2.

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Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
578.42	11/2$^-$	301.7 *1*	100 *5*	276.68	7/2$^-$	E2	0.0836	α(K)=0.0562 *8*; α(L)=0.0209 *3*; α(M)=0.00510 *8* α(N)=0.001212 *17*; α(O)=0.0001763 *25*; α(P)=4.82×10^{-6} *7* Mult.: DCO=1.0 *1*.
620.72	13/2$^-$	315.8 *1*	100	304.96	9/2$^-$	E2	0.0730	α(K)=0.0498 *7*; α(L)=0.01768 *25*; α(M)=0.00430 *6* α(N)=0.001022 *15*; α(O)=0.0001493 *21*; α(P)=4.31×10^{-6} *6* Mult.: DCO=1.0 *1*.
622.27	17/2$^+$	127.9 *1*	33.5 *15*	494.47	15/2$^+$	M1+E2	2.35	α(K)=1.95 *3*; α(L)=0.309 *5*; α(M)=0.0705 *10* α(N)=0.01697 *24*; α(O)=0.00277 *4*; α(P)=0.000197 *3* Mult.: DCO=0.36 *3*. δ: 0.29 *1*, assuming K=7/2.
		261.8 *1*	100 *4*	360.44	13/2$^+$	E2	0.1288	α(K)=0.0818 *12*; α(L)=0.0358 *5*; α(M)=0.00881 *13* α(N)=0.00209 *3*; α(O)=0.000300 *5*; α(P)=6.83×10^{-6} *10* Mult.: DCO=1.0 *1*.
673.70	13/2$^-$	183.0 *1*	40.7 *23*	490.60	11/2$^-$	M1+E2	0.854	α(K)=0.709 *10*; α(L)=0.1120 *16*; α(M)=0.0255 *4* α(N)=0.00614 *9*; α(O)=0.001002 *15*; α(P)=7.14×10^{-5} *10* Mult.: DCO=0.90 *17*. δ: 0.32 *1*, assuming K=5/2.
		282.3 *1*	38.8 *19*	391.61	11/2$^-$	[M1]	0.258	α(K)=0.215 *3*; α(L)=0.0337 *5*; α(M)=0.00765 *11* α(N)=0.00184 *3*; α(O)=0.000301 *5*; α(P)=2.15×10^{-5} *3*
		340.6 *1*	100 *5*	332.90	9/2$^-$	E2	0.0586	α(K)=0.0410 *6*; α(L)=0.01346 *19*; α(M)=0.00326 *5* α(N)=0.000776 *11*; α(O)=0.0001140 *16*; α(P)=3.59×10^{-6} *5* Mult.: DCO=0.94 *10*.
		421	1.9 *14*	252.33	9/2$^-$	[E2]	0.0327	α(K)=0.0241 *4*; α(L)=0.00653 *10*; α(M)=0.001564 *22* α(N)=0.000373 *6*; α(O)=5.58×10^{-5} *8*; α(P)=2.17×10^{-6} *3*
731.74	15/2$^-$	180.0 *1*	24.7 *12*	551.86	13/2$^-$	M1+E2	0.895	α(K)=0.743 *11*; α(L)=0.1174 *17*; α(M)=0.0267 *4* α(N)=0.00644 *9*; α(O)=0.001050 *15*; α(P)=7.48×10^{-5} *11* Mult.: DCO=0.49 *4*. δ: 0.54 *2*, assuming K=7/2.
		241.0 *2*	2.9 *3*	490.60	11/2$^-$	[E2]	0.1673	α(K)=0.1021 *15*; α(L)=0.0496 *8*; α(M)=0.01224 *18* α(N)=0.00290 *5*; α(O)=0.000414 *6*; α(P)=8.39×10^{-6} *12*
		340.0 *1*	100 *4*	391.61	11/2$^-$	E2	0.0589	α(K)=0.0412 *6*; α(L)=0.01355 *19*; α(M)=0.00328 *5* α(N)=0.000781 *11*; α(O)=0.0001148 *17*; α(P)=3.60×10^{-6} *5* Mult.: DCO=1.0 *1*.
803.0?	(7/2$^-$)	708.1[‡&] *6*	100 *20*	94.98	5/2$^-$			I_γ: From ^{177}Re ε decay.
		723.4[‡&] *6*	83 *17*	79.49	3/2$^-$			I_γ: From ^{177}Re ε decay.
833.42	19/2$^+$	211.2 *1*	30.6 *13*	622.27	17/2$^+$	M1+E2	0.573	α(K)=0.476 *7*; α(L)=0.0750 *11*; α(M)=0.01707 *24* α(N)=0.00411 *6*; α(O)=0.000671 *10*; α(P)=4.78×10^{-5} *7* Mult.: DCO=0.41 *4*. δ: 0.52 *2*, assuming K=7/2.
		338.9 *1*	100 *4*	494.47	15/2$^+$	E2	0.0595	α(K)=0.0415 *6*; α(L)=0.01370 *20*; α(M)=0.00332 *5* α(N)=0.000790 *11*; α(O)=0.0001161 *17*; α(P)=3.63×10^{-6} *5* Mult.: DCO=1.0 *1*.

$^{177}_{74}W_{103}$-10

Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
881.07	15/2$^-$	207.3 *1*	17.7 *12*	673.70	13/2$^-$	M1+E2	0.604	α(K)=0.501 *7*; α(L)=0.0790 *12*; α(M)=0.0180 *3* α(N)=0.00433 *6*; α(O)=0.000707 *10*; α(P)=5.04×10^{-5} *7* Mult.: DCO=0.63 *8*. δ: 0.40 *2*, assuming K=5/2.
		329.4 *1*	24.3 *12*	551.86	13/2$^-$	[M1]	0.1703	α(K)=0.1418 *20*; α(L)=0.0221 *3*; α(M)=0.00502 *7* α(N)=0.001210 *17*; α(O)=0.000198 *3*; α(P)=1.415×10^{-5} *20*
		390.4 *1*	100 *5*	490.60	11/2$^-$	E2	0.0400	α(K)=0.0291 *4*; α(L)=0.00839 *12*; α(M)=0.00202 *3* α(N)=0.000480 *7*; α(O)=7.15×10^{-5} *10*; α(P)=2.59×10^{-6} *4* Mult.: DCO=0.96 *9*.
		490	2.5 *8*	391.61	11/2$^-$	[E2]	0.0221	α(K)=0.01681 *24*; α(L)=0.00404 *6*; α(M)=0.000959 *14* α(N)=0.000229 *4*; α(O)=3.48×10^{-5} *5*; α(P)=1.533×10^{-6} *22*
928.71	17/2$^-$	197.0 *1*	19.8 *9*	731.74	15/2$^-$	M1+E2	0.695	α(K)=0.578 *9*; α(L)=0.0911 *13*; α(M)=0.0207 *3* α(N)=0.00500 *7*; α(O)=0.000815 *12*; α(P)=5.81×10^{-5} *9* Mult.: DCO=0.57 *5*. δ: 0.48 *2*, assuming K=7/2.
		376.8 *1*	100 *4*	551.86	13/2$^-$	E2	0.0441	α(K)=0.0317 *5*; α(L)=0.00947 *14*; α(M)=0.00228 *4* α(N)=0.000543 *8*; α(O)=8.05×10^{-5} *12*; α(P)=2.82×10^{-6} *4* Mult.: DCO=0.95 *8*.
971.08	15/2$^-$	350.5 *2*	8.4 *8*	620.72	13/2$^-$	[M1+E2]	0.1442	α(K)=0.1201 *17*; α(L)=0.0187 *3*; α(M)=0.00425 *6* α(N)=0.001023 *15*; α(O)=0.0001671 *24*; α(P)=1.197×10^{-5} *17* δ: 0.39 *2*, assuming K=1/2.
		392.6 *1*	100 *5*	578.42	11/2$^-$	E2	0.0394	α(K)=0.0287 *4*; α(L)=0.00823 *12*; α(M)=0.00198 *3* α(N)=0.000471 *7*; α(O)=7.02×10^{-5} *10*; α(P)=2.56×10^{-6} *4* Mult.: DCO=1.0 *1*.
984.43	21/2$^+$	151.1 *1*	10.1 *4*	833.42	19/2$^+$	M1+E2	1.463	α(K)=1.215 *18*; α(L)=0.192 *3*; α(M)=0.0438 *7* α(N)=0.01055 *15*; α(O)=0.001722 *25*; α(P)=0.0001225 *18* Mult.: DCO=0.37 *4*. δ: 0.27 *1*, assuming K=7/2.
		362.1 *1*	100 *4*	622.27	17/2$^+$	E2	0.0493	α(K)=0.0351 *5*; α(L)=0.01086 *16*; α(M)=0.00262 *4* α(N)=0.000624 *9*; α(O)=9.22×10^{-5} *13*; α(P)=3.10×10^{-6} *5* Mult.: DCO=1.0 *1*.
1029.32	17/2$^-$	408.6 *1*	100	620.72	13/2$^-$	E2	0.0354	α(K)=0.0260 *4*; α(L)=0.00721 *11*; α(M)=0.001729 *25* α(N)=0.000412 *6*; α(O)=6.15×10^{-5} *9*; α(P)=2.33×10^{-6} *4* Mult.: DCO=0.96 *8*.
1109.02	17/2$^-$	228.3 *2*	3.7 *5*	881.07	15/2$^-$	[M1+E2]	0.462	α(K)=0.384 *6*; α(L)=0.0604 *9*; α(M)=0.01375 *20* α(N)=0.00331 *5*; α(O)=0.000540 *8*; α(P)=3.85×10^{-5} *6* δ: 0.91 *10*, assuming K=5/2.
		377.3 *1*	23.5 *14*	731.74	15/2$^-$	[M1]	0.1185	α(K)=0.0987 *14*; α(L)=0.01533 *22*; α(M)=0.00348 *5* α(N)=0.000839 *12*; α(O)=0.0001370 *20*; α(P)=9.82×10^{-6} *14*
		435.3 *1*	100 *5*	673.70	13/2$^-$	E2	0.0299	α(K)=0.0223 *4*; α(L)=0.00586 *9*; α(M)=0.001401 *20* α(N)=0.000334 *5*; α(O)=5.02×10^{-5} *7*; α(P)=2.01×10^{-6} *3* Mult.: DCO=0.91 *11*.
		557	2.3 *9*	551.86	13/2$^-$	[E2]	0.01613	α(K)=0.01254 *18*; α(L)=0.00276 *4*; α(M)=0.000651 *10* α(N)=0.0001554 *22*; α(O)=2.39×10^{-5} *4*; α(P)=1.152×10^{-6} *17*

$^{177}_{74}W_{103}$-11

Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.†	α#	Comments
1143.16	19/2$^-$	214.5 *1*	15.8 *8*	928.71	17/2$^-$	M1+E2	0.549	α(K)=0.456 *7*; α(L)=0.0718 *11*; α(M)=0.01635 *23* α(N)=0.00394 *6*; α(O)=0.000643 *9*; α(P)=4.58×10^{-5} *7* Mult.: DCO=0.34 *3*. δ: 0.45 *2*, assuming K=7/2.
		411.3 *1*	100 *4*	731.74	15/2$^-$	E2	0.0348	α(K)=0.0256 *4*; α(L)=0.00705 *10*; α(M)=0.001691 *24* α(N)=0.000403 *6*; α(O)=6.02×10^{-5} *9*; α(P)=2.29×10^{-6} *4* Mult.: DCO=0.95 *8*.
1278.64	23/2$^+$	294.3 *1*	17.3 *8*	984.43	21/2$^+$	M1+E2	0.231	α(K)=0.192 *3*; α(L)=0.0300 *5*; α(M)=0.00683 *10* α(N)=0.001645 *23*; α(O)=0.000269 *4*; α(P)=1.92×10^{-5} *3* Mult.: DCO=0.20 *6*. δ: 0.69 *3*, assuming K=7/2.
		445.2 *1*	100 *4*	833.42	19/2$^+$	E2	0.0282	α(K)=0.0211 *3*; α(L)=0.00545 *8*; α(M)=0.001302 *19* α(N)=0.000310 *5*; α(O)=4.67×10^{-5} *7*; α(P)=1.91×10^{-6} *3* Mult.: DCO=0.96 *8*.
1358.71	19/2$^-$	249.7 *3*	3.5 *4*	1109.02	17/2$^-$	[M1+E2]	0.361 *6*	α(K)=0.300 *5*; α(L)=0.0471 *7*; α(M)=0.01072 *16* α(N)=0.00258 *4*; α(O)=0.000422 *6*; α(P)=3.01×10^{-5} *5* δ: 0.76 *7*, assuming K=5/2.
		430.0 *1*	13.0 *9*	928.71	17/2$^-$	[M1]	0.0838	α(K)=0.0699 *10*; α(L)=0.01081 *16*; α(M)=0.00245 *4* α(N)=0.000591 *9*; α(O)=9.66×10^{-5} *14*; α(P)=6.93×10^{-6} *10*
		477.6 *1*	100 *5*	881.07	15/2$^-$	E2	0.0236	α(K)=0.0179 *3*; α(L)=0.00437 *7*; α(M)=0.001040 *15* α(N)=0.000248 *4*; α(O)=3.76×10^{-5} *6*; α(P)=1.624×10^{-6} *23* Mult.: DCO=0.89 *6*.
1370.39	21/2$^-$	227.1 *1*	13.9 *7*	1143.16	19/2$^-$	M1+E2	0.469	α(K)=0.390 *6*; α(L)=0.0613 *9*; α(M)=0.01395 *20* α(N)=0.00336 *5*; α(O)=0.000548 *8*; α(P)=3.91×10^{-5} *6* Mult.: DCO=0.35 *6*. δ: 0.41 *2*, assuming K=7/2.
		441.6 *1*	100 *4*	928.71	17/2$^-$	E2	0.0288	α(K)=0.0215 *3*; α(L)=0.00560 *8*; α(M)=0.001337 *19* α(N)=0.000319 *5*; α(O)=4.79×10^{-5} *7*; α(P)=1.94×10^{-6} *3* Mult.: DCO=0.93 *8*.
1438.00	19/2$^-$	408.7 *3*	5.7 *5*	1029.32	17/2$^-$	[M1+E2]	0.0959	α(K)=0.0799 *12*; α(L)=0.01237 *18*; α(M)=0.00281 *4* α(N)=0.000677 *10*; α(O)=0.0001106 *16*; α(P)=7.94×10^{-6} *12* δ: 0.35 *2*, assuming K=1/2.
		466.9 *1*	100 *4*	971.08	15/2$^-$	E2	0.0249	α(K)=0.0188 *3*; α(L)=0.00469 *7*; α(M)=0.001117 *16* α(N)=0.000266 *4*; α(O)=4.03×10^{-5} *6*; α(P)=1.710×10^{-6} *24* Mult.: DCO=0.98 *9*.
1439.31	25/2$^+$	160.7 *1*	4.1 *2*	1278.64	23/2$^+$	M1+E2	1.230	α(K)=1.021 *15*; α(L)=0.1616 *23*; α(M)=0.0368 *6* α(N)=0.00886 *13*; α(O)=0.001446 *21*; α(P)=0.0001029 *15* Mult.: DCO=0.36 *9*. δ: 0.23 *1*, assuming K=7/2.
		455.0 *1*	100	984.43	21/2$^+$	E2	0.0267	α(K)=0.0200 *3*; α(L)=0.00509 *8*; α(M)=0.001213 *17*

$^{177}_{74}W_{103}$-12

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=0.000289 *4*; α(O)=4.36×10^{-5} *7*; α(P)=1.81×10^{-6} *3* Mult.: DCO=0.86 *7*.
1514.72	21/2$^-$	485.4 *1*	100	1029.32	17/2$^-$	E2	0.0226	α(K)=0.01719 *24*; α(L)=0.00416 *6*; α(M)=0.000988 *14* α(N)=0.000236 *4*; α(O)=3.58×10^{-5} *5*; α(P)=1.566×10^{-6} *22* Mult.: DCO=0.86 *7*. The value overlaps with that for the 484.5 and 485.1 keV γ rays. See 1997Sh36 in ^{164}Dy(^{18}O,5nγ)) for details.
1614.81	23/2$^-$	244.6 *1*	13.4 *6*	1370.39	21/2$^-$	M1+E2	0.382	α(K)=0.318 *5*; α(L)=0.0499 *7*; α(M)=0.01135 *16* α(N)=0.00274 *4*; α(O)=0.000446 *7*; α(P)=3.19×10^{-5} *5* Mult.: DCO=0.35 *4*. δ: 0.37 *1*, assuming K=7/2.
		471.7 *1*	100 *4*	1143.16	19/2$^-$	E2	0.0243	α(K)=0.0184 *3*; α(L)=0.00454 *7*; α(M)=0.001081 *16* α(N)=0.000258 *4*; α(O)=3.90×10^{-5} *6*; α(P)=1.671×10^{-6} *24* Mult.: DCO=0.91 *8*.
1621.72	21/2$^-$	262.7 *10*	3.9 *5*	1358.71	19/2$^-$	[M1+E2]	0.314 *6*	α(K)=0.261 *5*; α(L)=0.0410 *8*; α(M)=0.00932 *17* α(N)=0.00225 *4*; α(O)=0.000367 *7*; α(P)=2.62×10^{-5} *5* δ: 0.55 *5*, assuming K=5/2.
		478.4 *1*	10.8 *10*	1143.16	19/2$^-$	[M1]	0.0634	α(K)=0.0528 *8*; α(L)=0.00814 *12*; α(M)=0.00185 *3* α(N)=0.000445 *7*; α(O)=7.28×10^{-5} *11*; α(P)=5.23×10^{-6} *8*
		512.8 *1*	100 *4*	1109.02	17/2$^-$	E2	0.0197	α(K)=0.01513 *22*; α(L)=0.00352 *5*; α(M)=0.000834 *12* α(N)=0.000199 *3*; α(O)=3.03×10^{-5} *5*; α(P)=1.384×10^{-6} *20* Mult.: DCO=0.97 *11*.
1645.60	19/2$^+$	661.0 *1*	23.6 *14*	984.43	21/2$^+$	[M1]	0.0275	α(K)=0.0230 *4*; α(L)=0.00350 *5*; α(M)=0.000794 *12* α(N)=0.000191 *3*; α(O)=3.13×10^{-5} *5*; α(P)=2.26×10^{-6} *4*
		812.1 *1*	100 *5*	833.42	19/2$^+$	(M1)	0.01629	α(K)=0.01363 *19*; α(L)=0.00206 *3*; α(M)=0.000467 *7* α(N)=0.0001126 *16*; α(O)=1.84×10^{-5} *3*; α(P)=1.335×10^{-6} *19* Mult.: DCO=1.0 *1*.
		1023.4 *1*	58 *3*	622.27	17/2$^+$	(M1)	0.00913	α(K)=0.00764 *11*; α(L)=0.001149 *16*; α(M)=0.000260 *4* α(N)=6.26×10^{-5} *9*; α(O)=1.026×10^{-5} *15*; α(P)=7.46×10^{-7} *11* Mult.: DCO=0.49 *10*.
		1151.2 *1*	58 *3*	494.47	15/2$^+$	E2	0.00341	α(K)=0.00282 *4*; α(L)=0.000456 *7*; α(M)=0.0001041 *15* α(N)=2.50×10^{-5} *4*; α(O)=4.01×10^{-6} *6*; α(P)=2.62×10^{-7} *4*; α(IPF)=1.319×10^{-6} *19* Mult.: DCO=1.1 *2*.
1730.07		586.8 *1*	100	1143.16	19/2$^-$			
1789.98	21/2$^+$	144.3 *1*	100	1645.60	19/2$^+$	[M1+E2]	1.667	α(K)=1.384 *20*; α(L)=0.219 *4*; α(M)=0.0499 *7* α(N)=0.01203 *17*; α(O)=0.00196 *3*; α(P)=0.0001396 *20* δ: −1.1<δ<−0.79 from the DCO ratios of the 404.9γ deduced when gated on the 144.3γ (1997Sh36) in ^{164}Dy(^{18}O,5nγ).
1816.70	27/2$^+$	377.6 *1*	13.1 *8*	1439.31	25/2$^+$	M1+E2	0.1182	α(K)=0.0985 *14*; α(L)=0.01529 *22*; α(M)=0.00347 *5* α(N)=0.000837 *12*; α(O)=0.0001367 *20*; α(P)=9.80×10^{-6} *14* Mult.: DCO=0.55 *7*. δ: 0.81 *5*, assuming K=7/2.

$^{177}_{74}W_{103}$-13

Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.†	α#	Comments
1816.70	27/2$^+$	538.1 *1*	100 *4*	1278.64	23/2$^+$	E2	0.01753	α(K)=0.01355 *19*; α(L)=0.00305 *5*; α(M)=0.000721 *10* α(N)=0.0001721 *25*; α(O)=2.63×10^{-5} *4*; α(P)=1.243×10^{-6} *18* Mult.: DCO=0.93 *8*.
1867.12	25/2$^-$	252.4 *1*	10.3 *5*	1614.81	23/2$^-$	M1+E2	0.351	α(K)=0.292 *4*; α(L)=0.0458 *7*; α(M)=0.01041 *15* α(N)=0.00251 *4*; α(O)=0.000409 *6*; α(P)=2.92×10^{-5} *5* Mult.: DCO=0.49 *4*. δ: 0.37 *1*, assuming K=7/2.
		496.8 *1*	100 *4*	1370.39	21/2$^-$	E2	0.0213	α(K)=0.01628 *23*; α(L)=0.00387 *6*; α(M)=0.000919 *13* α(N)=0.000219 *3*; α(O)=3.33×10^{-5} *5*; α(P)=1.486×10^{-6} *21* Mult.: DCO=0.95 *8*.
1899.85	23/2$^-$	529.4 *1*	11.8 *12*	1370.39	21/2$^-$	[M1]	0.0487	α(K)=0.0406 *6*; α(L)=0.00624 *9*; α(M)=0.001416 *20* α(N)=0.000341 *5*; α(O)=5.58×10^{-5} *8*; α(P)=4.01×10^{-6} *6*
		541.1 *1*	100 *5*	1358.71	19/2$^-$	E2	0.01729	α(K)=0.01338 *19*; α(L)=0.00300 *5*; α(M)=0.000709 *10* α(N)=0.0001693 *24*; α(O)=2.59×10^{-5} *4*; α(P)=1.228×10^{-6} *18* Mult.: DCO=0.99 *9*.
1908.88		538.1 *1*	100	1370.39	21/2$^-$			
1954.42	23/2$^-$	516.4 *1*	100	1438.00	19/2$^-$	E2	0.0194	α(K)=0.01489 *21*; α(L)=0.00345 *5*; α(M)=0.000816 *12* α(N)=0.000195 *3*; α(O)=2.97×10^{-5} *5*; α(P)=1.362×10^{-6} *19* Mult.: DCO=0.95 *8*.
1977.45	23/2$^+$	187.5 *1*	100 *5*	1789.98	21/2$^+$	[M1+E2]	0.798	α(K)=0.663 *10*; α(L)=0.1047 *15*; α(M)=0.0238 *4* α(N)=0.00574 *8*; α(O)=0.000936 *14*; α(P)=6.67×10^{-5} *10* δ: 0.91 *6*, assuming K=19/2.
		331.8 *1*	49.6 *24*	1645.60	19/2$^+$	[E2]	0.0632	α(K)=0.0439 *7*; α(L)=0.01478 *21*; α(M)=0.00359 *5* α(N)=0.000853 *12*; α(O)=0.0001251 *18*; α(P)=3.82×10^{-6} *6*
1979.43	29/2$^+$	162.7 *1*	2.28 *13*	1816.70	27/2$^+$	M1+E2	1.188	α(K)=0.986 *14*; α(L)=0.1561 *22*; α(M)=0.0355 *5* α(N)=0.00856 *12*; α(O)=0.001396 *20*; α(P)=9.94×10^{-5} *14* Mult.: DCO=0.49 *26*. δ: 0.17 *1*, assuming K=7/2.
		540.1 *1*	100 *4*	1439.31	25/2$^+$	E2	0.01737	α(K)=0.01344 *19*; α(L)=0.00302 *5*; α(M)=0.000713 *10* α(N)=0.0001702 *24*; α(O)=2.61×10^{-5} *4*; α(P)=1.233×10^{-6} *18* Mult.: DCO=0.92 *8*.
2032.16		386.7 *1*	100	1645.60	19/2$^+$			
2058.82	25/2$^-$	544.1 *1*	100	1514.72	21/2$^-$	E2	0.01706	α(K)=0.01322 *19*; α(L)=0.00295 *5*; α(M)=0.000697 *10* α(N)=0.0001665 *24*; α(O)=2.55×10^{-5} *4*; α(P)=1.213×10^{-6} *17* Mult.: DCO=1.0 *8*.
2140.79	27/2$^-$	273.9 *1*	13.6 *7*	1867.12	25/2$^-$	M1+E2	0.281	α(K)=0.233 *4*; α(L)=0.0366 *6*; α(M)=0.00831 *12* α(N)=0.00200 *3*; α(O)=0.000327 *5*; α(P)=2.34×10^{-5} *4* Mult.: DCO=0.54 *5*. The value overlaps with that for the 273.1 keV γ-ray. See 1997Sh36 in ^{164}Dy(^{18}O,5nγ) for details. δ: 0.31 *1*, assuming K=7/2.
		525.9 *1*	100 *4*	1614.81	23/2$^-$	E2	0.0185	α(K)=0.01428 *20*; α(L)=0.00327 *5*; α(M)=0.000772 *11* α(N)=0.000184 *3*; α(O)=2.82×10^{-5} *4*; α(P)=1.308×10^{-6} *19* Mult.: DCO=0.90 *8*.

$^{177}_{74}W_{103}$-14

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
2148.51	(21/2$^+$)	116.5 *1*	13 *3*	2032.16				
		358.5 *1*	53 *6*	1789.98	21/2$^+$	(M1)	0.1358	α(K)=0.1131 *16*; α(L)=0.01758 *25*; α(M)=0.00400 *6* α(N)=0.000962 *14*; α(O)=0.0001572 *22*; α(P)=1.126×10^{-5} *16* Mult.: DCO=1.7 *2*. Deduced by gating on the 181.6γ, 227.9γ and 288.0γ, ΔJ=1 M1+E2 transitions.
		502.8 *1*	100 *9*	1645.60	19/2$^+$	(M1)	0.0556	α(K)=0.0464 *7*; α(L)=0.00714 *10*; α(M)=0.001621 *23* α(N)=0.000390 *6*; α(O)=6.38×10^{-5} *9*; α(P)=4.59×10^{-6} *7* Mult.: DCO=0.98 *8*. Deduced by gating on the 181.6γ, 227.9γ and 288.0γ, ΔJ=1 M1+E2 transitions.
2148.88		239.6 *1*	19.1 *12*	1908.88				
		418.7 *1*	23.8 *12*	1730.07				
		534.3 *1*	100 *5*	1614.81	23/2$^-$			
		778.7 *10*	1 *2*	1370.39	21/2$^-$			
		1006.0 *1*	39.3 *24*	1143.16	19/2$^-$			
2175.89	25/2$^-$	554.1 *1*	100 *5*	1621.72	21/2$^-$	E2	0.01633	α(K)=0.01268 *18*; α(L)=0.00280 *4*; α(M)=0.000661 *10* α(N)=0.0001578 *23*; α(O)=2.42×10^{-5} *4*; α(P)=1.166×10^{-6} *17* Mult.: DCO=1.1 *1*.
		561.1 *2*	9.1 *14*	1614.81	23/2$^-$	[M1]	0.0419	α(K)=0.0349 *5*; α(L)=0.00536 *8*; α(M)=0.001215 *17* α(N)=0.000293 *5*; α(O)=4.79×10^{-5} *7*; α(P)=3.45×10^{-6} *5*
		897.3 *10*	5 *3*	1278.64	23/2$^+$	[E1]	0.00218	α(K)=0.00185 *3*; α(L)=0.000263 *4*; α(M)=5.91×10^{-5} *9* α(N)=1.419×10^{-5} *20*; α(O)=2.30×10^{-6} *4*; α(P)=1.616×10^{-7} *23*
2194.96	25/2$^+$	217.5 *1*	68 *3*	1977.45	23/2$^+$	[M1+E2]	0.528	α(K)=0.439 *7*; α(L)=0.0691 *10*; α(M)=0.01573 *23* α(N)=0.00379 *6*; α(O)=0.000618 *9*; α(P)=4.41×10^{-5} *7* δ: 1.00 *7*, assuming K=19/2.
		404.9 *1*	100 *5*	1789.98	21/2$^+$	E2	0.0363	α(K)=0.0266 *4*; α(L)=0.00743 *11*; α(M)=0.00178 *3* α(N)=0.000424 *6*; α(O)=6.34×10^{-5} *9*; α(P)=2.38×10^{-6} *4* Mult.: DCO=3.7 *4*. Deduced by gating on the 144.3γ, ΔJ=1 M1+E2 transition.
2285.98		137.1 *1*	100	2148.88		M1	1.93	α(K)=1.600 *23*; α(L)=0.254 *4*; α(M)=0.0578 *9* α(N)=0.01392 *20*; α(O)=0.00227 *4*; α(P)=0.0001615 *23* Mult.: α(exp)=1.8 *3* from intensity balance consideration in 1997Sh36.
2330.11	(23/2$^+$)	181.6 *1*	100	2148.51	(21/2$^+$)	[M1+E2]	0.873	α(K)=0.725 *11*; α(L)=0.1145 *17*; α(M)=0.0261 *4* α(N)=0.00628 *9*; α(O)=0.001024 *15*; α(P)=7.29×10^{-5} *11*
2384.44	27/2$^-$	430.0 *1*	31.5 *14*	1954.42	23/2$^-$	[E2]	0.0309	α(K)=0.0229 *4*; α(L)=0.00610 *9*; α(M)=0.001459 *21* α(N)=0.000347 *5*; α(O)=5.22×10^{-5} *8*; α(P)=2.07×10^{-6} *3*
		484.5 *1*	100 *5*	1899.85	23/2$^-$	(E2)	0.0227	α(K)=0.01726 *25*; α(L)=0.00418 *6*; α(M)=0.000994 *14* α(N)=0.000237 *4*; α(O)=3.60×10^{-5} *5*; α(P)=1.572×10^{-6} *22* Mult.: DCO=0.86 *7*. The value overlaps with that for the 485.1 and 485.4 keV γ-rays. See 1997Sh36 for details.
		517.4 *1*	21 *3*	1867.12	25/2$^-$	[M1]	0.0517	α(K)=0.0431 *6*; α(L)=0.00663 *10*; α(M)=0.001504 *21* α(N)=0.000362 *5*; α(O)=5.92×10^{-5} *9*; α(P)=4.26×10^{-6} *6*
		945.1 *1*	32 *3*	1439.31	25/2$^+$	[E1]	0.00198	α(K)=0.001675 *24*; α(L)=0.000238 *4*; α(M)=5.35×10^{-5} *8* α(N)=1.284×10^{-5} *18*; α(O)=2.09×10^{-6} *3*; α(P)=1.469×10^{-7} *21*

$^{177}_{74}W_{103}$-15

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
2413.88	29/2$^-$	273.1 *1*	11.0 *7*	2140.79	27/2$^-$	M1+E2	0.283	α(K)=0.235 *4*; α(L)=0.0368 *6*; α(M)=0.00838 *12* α(N)=0.00202 *3*; α(O)=0.000330 *5*; α(P)=2.35×10^{-5} *4* Mult.: DCO=0.54 *5*. The value overlaps with that for the 273.9 keV γ-ray. See 1997Sh36 for details. δ: 0.28 *1*, assuming K=7/2.
		546.6 *1*	100 *4*	1867.12	25/2$^-$	E2	0.01687	α(K)=0.01308 *19*; α(L)=0.00292 *4*; α(M)=0.000688 *10* α(N)=0.0001643 *23*; α(O)=2.52×10^{-5} *4*; α(P)=1.201×10^{-6} *17* Mult.: DCO=0.94 *8*.
2433.32	31/2$^+$	453.8 *1*	8.1 *6*	1979.43	29/2$^+$	[M1+E2]	0.0728	α(K)=0.0607 *9*; α(L)=0.00937 *14*; α(M)=0.00213 *3* α(N)=0.000512 *8*; α(O)=8.37×10^{-5} *12*; α(P)=6.01×10^{-6} *9* δ: 1.23 *13*, assuming K=7/2.
		616.8 *1*	100 *4*	1816.70	27/2$^+$	E2	0.01269	α(K)=0.01000 *14*; α(L)=0.00207 *3*; α(M)=0.000485 *7* α(N)=0.0001160 *17*; α(O)=1.80×10^{-5} *3*; α(P)=9.23×10^{-7} *13* Mult.: DCO=0.98 *9*.
2436.35	27/2$^+$	241.4 *1*	37 *2*	2194.96	25/2$^+$	[M1+E2]	0.396	α(K)=0.330 *5*; α(L)=0.0518 *8*; α(M)=0.01178 *17* α(N)=0.00284 *4*; α(O)=0.000463 *7*; α(P)=3.30×10^{-5} *5* δ: 1.09 *10*, assuming K=19/2.
		458.9 *1*	100 *5*	1977.45	23/2$^+$	[E2]	0.0261	α(K)=0.0196 *3*; α(L)=0.00495 *7*; α(M)=0.001180 *17* α(N)=0.000281 *4*; α(O)=4.25×10^{-5} *6*; α(P)=1.779×10^{-6} *25*
2487.19		201.2 *1*	100	2285.98		[M1+E2]	0.656	α(K)=0.545 *8*; α(L)=0.0859 *12*; α(M)=0.0195 *3* α(N)=0.00471 *7*; α(O)=0.000768 *11*; α(P)=5.48×10^{-5} *8*
2524.02	27/2$^-$	569.6 *1*	100	1954.42	23/2$^-$	E2	0.01529	α(K)=0.01192 *17*; α(L)=0.00259 *4*; α(M)=0.000609 *9* α(N)=0.0001456 *21*; α(O)=2.24×10^{-5} *4*; α(P)=1.097×10^{-6} *16* Mult.: DCO=1.1 *2*.
2558.01	(25/2$^+$)	227.9 *1*	100 *5*	2330.11	(23/2$^+$)	[M1+E2]	0.464	α(K)=0.386 *6*; α(L)=0.0607 *9*; α(M)=0.01381 *20* α(N)=0.00333 *5*; α(O)=0.000543 *8*; α(P)=3.87×10^{-5} *6* δ: 0.27 *6*, assuming K=21/2.
		409.5 *1*	7 *4*	2148.51	(21/2$^+$)	[E2]	0.0352	α(K)=0.0258 *4*; α(L)=0.00715 *10*; α(M)=0.001716 *24* α(N)=0.000409 *6*; α(O)=6.11×10^{-5} *9*; α(P)=2.32×10^{-6} *4*
2593.12	33/2$^+$	159.4 *10*	0.68 *23*	2433.32	31/2$^+$	[M1+E2]	1.26 *3*	α(K)=1.045 *24*; α(L)=0.165 *4*; α(M)=0.0377 *9* α(N)=0.00907 *21*; α(O)=0.00148 *4*; α(P)=0.0001053 *24* δ: 0.19 *3*, assuming K=7/2.
		613.6 *1*	100 *4*	1979.43	29/2$^+$	E2	0.01284	α(K)=0.01012 *15*; α(L)=0.00210 *3*; α(M)=0.000492 *7* α(N)=0.0001177 *17*; α(O)=1.82×10^{-5} *3*; α(P)=9.34×10^{-7} *13* Mult.: DCO=0.95 *8*.
2633.02	29/2$^-$	574.2 *1*	100	2058.82	25/2$^-$	E2	0.01500	α(K)=0.01171 *17*; α(L)=0.00253 *4*; α(M)=0.000595 *9* α(N)=0.0001422 *20*; α(O)=2.19×10^{-5} *3*; α(P)=1.078×10^{-6} *15* Mult.: DCO=1.0 *1*.
2656.96	29/2$^-$	481.0 *1*	100 *6*	2175.89	25/2$^-$	E2	0.0231	α(K)=0.01756 *25*; α(L)=0.00428 *6*; α(M)=0.001017 *15* α(N)=0.000242 *4*; α(O)=3.68×10^{-5} *6*; α(P)=1.598×10^{-6} *23* Mult.: DCO=1.1 *1*.
		516.2 *1*	24 *3*	2140.79	27/2$^-$	[M1]	0.0520	α(K)=0.0434 *6*; α(L)=0.00667 *10*; α(M)=0.001513 *22* α(N)=0.000364 *6*; α(O)=5.96×10^{-5} *9*; α(P)=4.29×10^{-6} *6*

$^{177}_{74}W_{103}$-16

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
2656.96	29/2$^-$	840.6 *2*	37 *3*	1816.70	27/2$^+$	[E1]	0.00247	α(K)=0.00209 *3*; α(L)=0.000299 *5*; α(M)=6.72×10^{-5} *10* α(N)=1.611×10^{-5} *23*; α(O)=2.61×10^{-6} *4*; α(P)=1.82×10^{-7} *3*
2697.87	(29/2$^+$)	261.7 *1*	33.3 *20*	2436.35	27/2$^+$	[M1+E2]	0.318	α(K)=0.264 *4*; α(L)=0.0414 *6*; α(M)=0.00942 *14* α(N)=0.00227 *4*; α(O)=0.000371 *6*; α(P)=2.65×10^{-5} *4* δ: 0.83 *5*, assuming K=19/2.
		502.8 *1*	100 *5*	2194.96	25/2$^+$	[E2]	0.0207	α(K)=0.01583 *23*; α(L)=0.00374 *6*; α(M)=0.000886 *13* α(N)=0.000211 *3*; α(O)=3.22×10^{-5} *5*; α(P)=1.446×10^{-6} *21*
2718.38	31/2$^-$	304.0 *1*	13.8 *11*	2413.88	29/2$^-$	[M1+E2]	0.211	α(K)=0.1760 *25*; α(L)=0.0275 *4*; α(M)=0.00625 *9* α(N)=0.001505 *22*; α(O)=0.000246 *4*; α(P)=1.758×10^{-5} *25* δ: 0.27 *1*, assuming K=7/2.
		577.7 *1*	100 *4*	2140.79	27/2$^-$	E2	0.01479	α(K)=0.01155 *17*; α(L)=0.00249 *4*; α(M)=0.000585 *9* α(N)=0.0001397 *20*; α(O)=2.15×10^{-5} *3*; α(P)=1.064×10^{-6} *15* Mult.: DCO=0.94 *8*.
2725.03		237.9 *1*	100 *7*	2487.19		[M1+E2]	0.413	α(K)=0.343 *5*; α(L)=0.0539 *8*; α(M)=0.01226 *18* α(N)=0.00295 *5*; α(O)=0.000482 *7*; α(P)=3.44×10^{-5} *5*
		439.1 *2*	20 *4*	2285.98		[E2]	0.0292	α(K)=0.0218 *3*; α(L)=0.00570 *8*; α(M)=0.001362 *20* α(N)=0.000324 *5*; α(O)=4.88×10^{-5} *7*; α(P)=1.97×10^{-6} *3*
2821.62	(27/2$^+$)	263.6 *1*	100 *5*	2558.01	(25/2$^+$)	[M1+E2]	0.312	α(K)=0.259 *4*; α(L)=0.0406 *6*; α(M)=0.00924 *13* α(N)=0.00222 *4*; α(O)=0.000363 *5*; α(P)=2.59×10^{-5} *4* δ: 0.17 *2*, assuming K=21/2.
		491.5 *1*	7.7 *15*	2330.11	(23/2$^+$)	[E2]	0.0219	α(K)=0.01669 *24*; α(L)=0.00400 *6*; α(M)=0.000950 *14* α(N)=0.000227 *4*; α(O)=3.44×10^{-5} *5*; α(P)=1.522×10^{-6} *22*
2841.00	31/2$^-$	427.0 *2*	10.5 *18*	2413.88	29/2$^-$	[M1]	0.0854	α(K)=0.0712 *10*; α(L)=0.01101 *16*; α(M)=0.00250 *4* α(N)=0.000602 *9*; α(O)=9.84×10^{-5} *14*; α(P)=7.06×10^{-6} *10*
		456.5 *1*	100 *7*	2384.44	27/2$^-$	E2	0.0264	α(K)=0.0199 *3*; α(L)=0.00504 *7*; α(M)=0.001200 *17* α(N)=0.000286 *4*; α(O)=4.32×10^{-5} *6*; α(P)=1.80×10^{-6} *3* Mult.: DCO=0.88 *11*.
		701	5.3 *18*	2140.79	27/2$^-$	[E2]	0.00951	α(K)=0.00760 *11*; α(L)=0.001470 *21*; α(M)=0.000342 *5* α(N)=8.19×10^{-5} *12*; α(O)=1.280×10^{-5} *18*; α(P)=7.04×10^{-7} *10*
		861.6 *1*	26.3 *18*	1979.43	29/2$^+$	[E1]	0.00236	α(K)=0.00199 *3*; α(L)=0.000285 *4*; α(M)=6.40×10^{-5} *9* α(N)=1.535×10^{-5} *22*; α(O)=2.49×10^{-6} *4*; α(P)=1.742×10^{-7} *25*
2974.72	31/2$^+$	276.0[&] *3*	≈29	2697.87	(29/2$^+$)	[M1+E2]	0.275	α(K)=0.229 *4*; α(L)=0.0358 *6*; α(M)=0.00814 *12* α(N)=0.00196 *3*; α(O)=0.000320 *5*; α(P)=2.29×10^{-5} *4* δ: δ≈0.70, assuming K=19/2.
		538.3 *1*	100 *6*	2436.35	27/2$^+$	[E2]	0.01751	α(K)=0.01354 *19*; α(L)=0.00305 *5*; α(M)=0.000720 *10* α(N)=0.0001719 *24*; α(O)=2.63×10^{-5} *4*; α(P)=1.242×10^{-6} *18*
2981.39		256.3 *1*	100 *7*	2725.03		[M1+E2]	0.336	α(K)=0.280 *4*; α(L)=0.0439 *7*; α(M)=0.00998 *14* α(N)=0.00240 *4*; α(O)=0.000392 *6*; α(P)=2.80×10^{-5} *4*
		493.9 *2*	79 *7*	2487.19		[E2]	0.0216	α(K)=0.01650 *24*; α(L)=0.00394 *6*; α(M)=0.000936 *14* α(N)=0.000223 *4*; α(O)=3.39×10^{-5} *5*; α(P)=1.505×10^{-6} *22*
3007.38	33/2$^-$	288.5 *1*	10 *1*	2718.38	31/2$^-$	[M1+E2]	0.244	α(K)=0.203 *3*; α(L)=0.0317 *5*; α(M)=0.00721 *11*

$^{177}_{74}W_{103}$-17

Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=0.001737 *25*; α(O)=0.000284 *4*; α(P)=2.03×10^{-5} *3* δ: 0.24 *1*, assuming K=7/2.
3007.38	33/2$^-$	351[&]	11 *5*	2656.96	29/2$^-$	[E2]	0.0538	α(K)=0.0380 *6*; α(L)=0.01210 *17*; α(M)=0.00293 *5* α(N)=0.000696 *10*; α(O)=0.0001027 *15*; α(P)=3.34×10^{-6} *5*
		593.9 *1*	100 *5*	2413.88	29/2$^-$	E2	0.01386	α(K)=0.01087 *16*; α(L)=0.00230 *4*; α(M)=0.000540 *8* α(N)=0.0001291 *18*; α(O)=1.99×10^{-5} *3*; α(P)=1.002×10^{-6} *14* Mult.: DCO=0.88 *8*.
3102.0	31/2$^-$	578.0 *10*	100	2524.02	27/2$^-$	[E2]	0.01477	α(K)=0.01154 *17*; α(L)=0.00248 *4*; α(M)=0.000584 *9* α(N)=0.0001395 *21*; α(O)=2.15×10^{-5} *4*; α(P)=1.063×10^{-6} *16*
3109.66	(29/2$^+$)	288.0 *1*	100 *4*	2821.62	(27/2$^+$)	[M1+E2]	0.245	α(K)=0.204 *3*; α(L)=0.0319 *5*; α(M)=0.00724 *11* α(N)=0.001745 *25*; α(O)=0.000285 *4*; α(P)=2.04×10^{-5} *3* δ: 0.15 *3*, assuming K=21/2.
		551.7 *2*	10 *6*	2558.01	(25/2$^+$)	[E2]	0.01650	α(K)=0.01281 *18*; α(L)=0.00284 *4*; α(M)=0.000669 *10* α(N)=0.0001598 *23*; α(O)=2.45×10^{-5} *4*; α(P)=1.177×10^{-6} *17*
3113.60	33/2$^-$	456.7 *1*	100 *7*	2656.96	29/2$^-$	(E2)	0.0264	α(K)=0.0198 *3*; α(L)=0.00503 *7*; α(M)=0.001199 *17* α(N)=0.000286 *4*; α(O)=4.31×10^{-5} *6*; α(P)=1.80×10^{-6} *3* Mult.: DCO=0.80 *8*.
		680.1 *10*	22 *4*	2433.32	31/2$^+$	[E1]	0.00374	α(K)=0.00315 *5*; α(L)=0.000457 *7*; α(M)=0.0001029 *15* α(N)=2.47×10^{-5} *4*; α(O)=3.99×10^{-6} *6*; α(P)=2.73×10^{-7} *4*
		700	14.6 *18*	2413.88	29/2$^-$	[E2]	0.00954	α(K)=0.00762 *11*; α(L)=0.001475 *21*; α(M)=0.000344 *5* α(N)=8.22×10^{-5} *12*; α(O)=1.284×10^{-5} *18*; α(P)=7.06×10^{-7} *10*
3114.02	35/2$^+$	520.8 *1*	13.3 *13*	2593.12	33/2$^+$	[M1+E2]	0.0508	α(K)=0.0424 *6*; α(L)=0.00651 *10*; α(M)=0.001478 *21* α(N)=0.000356 *5*; α(O)=5.82×10^{-5} *9*; α(P)=4.19×10^{-6} *6* δ: 0.72 *6*, assuming K=7/2.
		680.8 *1*	100 *5*	2433.32	31/2$^+$	E2	0.01014	α(K)=0.00808 *12*; α(L)=0.001587 *23*; α(M)=0.000370 *6* α(N)=8.85×10^{-5} *13*; α(O)=1.380×10^{-5} *20*; α(P)=7.49×10^{-7} *11* Mult.: DCO=1.2 *1*.
3172.1	33/2$^-$	539.1 *1*	100	2633.02	29/2$^-$	E2	0.01745	α(K)=0.01350 *19*; α(L)=0.00304 *5*; α(M)=0.000717 *10* α(N)=0.0001711 *24*; α(O)=2.62×10^{-5} *4*; α(P)=1.238×10^{-6} *18* Mult.: DCO=1.2 *1*.
3203.04	29/2$^+$	766.6 *1*	13.6 *10*	2436.35	27/2$^+$	[M1]	0.0188	α(K)=0.01576 *22*; α(L)=0.00239 *4*; α(M)=0.000542 *8* α(N)=0.0001305 *19*; α(O)=2.14×10^{-5} *3*; α(P)=1.546×10^{-6} *22*
		1008.1 *2*	11.7 *10*	2194.96	25/2$^+$	[E2]	0.00443	α(K)=0.00364 *6*; α(L)=0.000611 *9*; α(M)=0.0001401 *20* α(N)=3.36×10^{-5} *5*; α(O)=5.36×10^{-6} *8*; α(P)=3.38×10^{-7} *5*
		1223.7 *1*	100 *5*	1979.43	29/2$^+$	(M1)	0.00587	α(K)=0.00491 *7*; α(L)=0.000734 *11*; α(M)=0.0001660 *24* α(N)=4.00×10^{-5} *6*; α(O)=6.55×10^{-6} *10*; α(P)=4.78×10^{-7} *7*; α(IPF)=9.84×10^{-6} *14* Mult.: DCO=1.0 *1*.
		1386	15.5 *10*	1816.70	27/2$^+$	[M1]	0.00436	α(K)=0.00362 *5*; α(L)=0.000539 *8*; α(M)=0.0001218 *17* α(N)=2.93×10^{-5} *5*; α(O)=4.81×10^{-6} *7*; α(P)=3.51×10^{-7} *5*; α(IPF)=4.97×10^{-5} *7*
		1764	≈1	1439.31	25/2$^+$	[E2]	1.69×10^{-3}	α(K)=0.001277 *18*; α(L)=0.000191 *3*; α(M)=4.31×10^{-5} *6*

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Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=1.035×10^{-5} *15*; α(O)=1.682×10^{-6} *24*; α(P)=1.179×10^{-7} *17*; α(IPF)=0.0001693 *24*
3264.73	37/2$^+$	671.6 *1*	100	2593.12	33/2$^+$	E2	0.01046	α(K)=0.00832 *12*; α(L)=0.001645 *23*; α(M)=0.000384 *6* α(N)=9.18×10^{-5} *13*; α(O)=1.430×10^{-5} *20*; α(P)=7.70×10^{-7} *11* Mult.: DCO=0.92 *8*.
3270.79	33/2$^+$	296.0 *1*	21.6 *20*	2974.72	31/2$^+$	[M1+E2]	0.227	α(K)=0.189 *3*; α(L)=0.0296 *5*; α(M)=0.00672 *10* α(N)=0.001619 *23*; α(O)=0.000264 *4*; α(P)=1.89×10^{-5} *3* δ: 0.78 *7*, assuming K=19/2.
		573.0 *1*	100 *6*	2697.87	(29/2$^+$)	[E2]	0.01508	α(K)=0.01177 *17*; α(L)=0.00255 *4*; α(M)=0.000599 *9* α(N)=0.0001431 *20*; α(O)=2.20×10^{-5} *3*; α(P)=1.083×10^{-6} *16*
3276.41		294.9 *1*	73 *5*	2981.39		[M1+E2]	0.230	α(K)=0.191 *3*; α(L)=0.0299 *5*; α(M)=0.00679 *10* α(N)=0.001636 *23*; α(O)=0.000267 *4*; α(P)=1.91×10^{-5} *3*
		551.5 *1*	100 *9*	2725.03		[E2]	0.01652	α(K)=0.01282 *18*; α(L)=0.00284 *4*; α(M)=0.000670 *10* α(N)=0.0001600 *23*; α(O)=2.45×10^{-5} *4*; α(P)=1.178×10^{-6} *17*
3326.15	35/2$^-$	485.1 *1*	100 *6*	2841.00	31/2$^-$	(E2)	0.0226	α(K)=0.01721 *25*; α(L)=0.00417 *6*; α(M)=0.000990 *14* α(N)=0.000236 *4*; α(O)=3.58×10^{-5} *5*; α(P)=1.568×10^{-6} *22* Mult.: DCO=0.86 *7*. The value overlaps with that for the 484.5 and 485.4 keV γ-rays. See 1997Sh36 for details.
		607.8 *1*	60 *4*	2718.38	31/2$^-$	[E2]	0.01313	α(K)=0.01033 *15*; α(L)=0.00216 *3*; α(M)=0.000506 *7* α(N)=0.0001209 *17*; α(O)=1.87×10^{-5} *3*; α(P)=9.53×10^{-7} *14*
		733.5 *10*	24 *3*	2593.12	33/2$^+$	[E1]	0.00322	α(K)=0.00271 *4*; α(L)=0.000392 *6*; α(M)=8.82×10^{-5} *13* α(N)=2.11×10^{-5} *3*; α(O)=3.42×10^{-6} *5*; α(P)=2.36×10^{-7} *4*
3346.74	31/2$^+$	143.7 *1*	100	3203.04	29/2$^+$	[M1+E2]	1.687	α(K)=1.400 *20*; α(L)=0.222 *4*; α(M)=0.0505 *8* α(N)=0.01217 *18*; α(O)=0.00199 *3*; α(P)=0.0001413 *20* δ: 0.4<δ<1.0 or 1.0<δ<2.7 from the DCO ratios of the 377.3γ deduced when gated on the 143.7γ (1997Sh36).
3348.03	35/2$^-$	340.4 *10*	18 *3*	3007.38	33/2$^-$	[M1+E2]	0.156 *3*	α(K)=0.1299 *21*; α(L)=0.0202 *4*; α(M)=0.00460 *8* α(N)=0.001107 *18*; α(O)=0.000181 *3*; α(P)=1.295×10^{-5} *21* δ: 0.22 *2*, assuming K=7/2.
		507[&]	<10	2841.00	31/2$^-$	[E2]	0.0203	α(K)=0.01553 *22*; α(L)=0.00364 *6*; α(M)=0.000863 *12* α(N)=0.000206 *3*; α(O)=3.14×10^{-5} *5*; α(P)=1.419×10^{-6} *20*
		629.7 *1*	100 *6*	2718.38	31/2$^-$	E2	0.01210	α(K)=0.00956 *14*; α(L)=0.00196 *3*; α(M)=0.000458 *7* α(N)=0.0001095 *16*; α(O)=1.698×10^{-5} *24*; α(P)=8.83×10^{-7} *13* Mult.: DCO=0.95 *9*.
3419.94	(31/2$^+$)	310.3 *1*	100 *50*	3109.66	(29/2$^+$)	[M1+E2]	0.200	α(K)=0.1665 *24*; α(L)=0.0260 *4*; α(M)=0.00591 *9* α(N)=0.001423 *20*; α(O)=0.000232 *4*; α(P)=1.663×10^{-5} *24* δ: 0.31 *14*, assuming K=21/2.
		598.3 *1*	58 *33*	2821.62	(27/2$^+$)	[E2]	0.01362	α(K)=0.01069 *15*; α(L)=0.00225 *4*; α(M)=0.000529 *8* α(N)=0.0001264 *18*; α(O)=1.95×10^{-5} *3*; α(P)=9.86×10^{-7} *14*
3431.32	(31/2$^+$)	321.6 *1*	100 *5*	3109.66	(29/2$^+$)	(M1)	0.182	B(M1)(W.u.)=5.7×10^{-5} *+17−10* α(K)=0.1512 *22*; α(L)=0.0236 *4*; α(M)=0.00536 *8*

$^{177}_{74}W_{103}$-19

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=0.001291 *19*; α(O)=0.000211 *3*; α(P)=1.509×10^{-5} *22* Mult.: DCO=1.1 *1*. Deduced by gating on the 227.9γ and/or 288.0γ, ΔJ=1 M1+E2 transitions.
3431.32	(31/2$^+$)	610.2 *3*	10.5 *18*	2821.62	(27/2$^+$)	E2	0.01301	α(K)=0.01024 *15*; α(L)=0.00213 *3*; α(M)=0.000500 *7* α(N)=0.0001196 *17*; α(O)=1.85×10^{-5} *3*; α(P)=9.45×10^{-7} *14* B(E2)(W.u.)=0.00103 *+35−24* Mult.: DCO=1.8 *3*. Deduced by gating on the 227.9γ and/or 288.0γ, ΔJ=1 M1+E2 transitions.
3517.39	33/2$^+$	170.8 *1*	100 *5*	3346.74	31/2$^+$	[M1+E2]	1.036	α(K)=0.860 *13*; α(L)=0.1361 *20*; α(M)=0.0310 *5* α(N)=0.00746 *11*; α(O)=0.001217 *18*; α(P)=8.67×10^{-5} *13* δ: δ<0.42, assuming K=29/2.
		314.0 *10*	<12	3203.04	29/2$^+$	[E2]	0.0742 *13*	α(K)=0.0506 *9*; α(L)=0.0181 *4*; α(M)=0.00440 *8* α(N)=0.001044 *20*; α(O)=0.000152 *3*; α(P)=4.37×10^{-6} *7*
3568.82	(35/2$^+$)	594.1 *1*	100	2974.72	31/2$^+$	[E2]	0.01385	α(K)=0.01086 *16*; α(L)=0.00230 *4*; α(M)=0.000540 *8* α(N)=0.0001290 *18*; α(O)=1.99×10^{-5} *3*; α(P)=1.001×10^{-6} *14*
3592.31		315.9 *1*	100	3276.41		[M1+E2]	0.191	α(K)=0.1587 *23*; α(L)=0.0248 *4*; α(M)=0.00563 *8* α(N)=0.001356 *19*; α(O)=0.000221 *4*; α(P)=1.584×10^{-5} *23*
3614.34	37/2$^-$	500.8 *1*	79 *6*	3113.60	33/2$^-$	(E2)	0.0209	α(K)=0.01598 *23*; α(L)=0.00378 *6*; α(M)=0.000897 *13* α(N)=0.000214 *3*; α(O)=3.26×10^{-5} *5*; α(P)=1.459×10^{-6} *21* Mult.: DCO=0.80 *12*.
		606.9 *1*	100 *6*	3007.38	33/2$^-$	[E2]	0.01318	α(K)=0.01036 *15*; α(L)=0.00217 *3*; α(M)=0.000508 *8* α(N)=0.0001214 *17*; α(O)=1.88×10^{-5} *3*; α(P)=9.56×10^{-7} *14*
3639.12	(33/2$^+$)	207.8 *1*	100	3431.32	(31/2$^+$)	(M1+E2)	0.600	α(K)=0.498 *7*; α(L)=0.0785 *11*; α(M)=0.0179 *3* α(N)=0.00430 *6*; α(O)=0.000702 *10*; α(P)=5.01×10^{-5} *7* Mult.: α(exp)=0.4 *4* from intensity balance consideration in 1997Sh36.
3655.13	37/2$^-$	307.3 *2*	8.7 *15*	3348.03	35/2$^-$	[M1+E2]	0.205	α(K)=0.1709 *25*; α(L)=0.0267 *4*; α(M)=0.00607 *9* α(N)=0.001462 *21*; α(O)=0.000239 *4*; α(P)=1.707×10^{-5} *24* δ: 0.21 *2*, assuming K=7/2.
		542[&]	≈3	3113.60	33/2$^-$	[E2]	0.01722	α(K)=0.01333 *19*; α(L)=0.00299 *5*; α(M)=0.000705 *10* α(N)=0.0001684 *24*; α(O)=2.58×10^{-5} *4*; α(P)=1.224×10^{-6} *18*
		647.7 *1*	100 *4*	3007.38	33/2$^-$	(E2)	0.01135	α(K)=0.00899 *13*; α(L)=0.00181 *3*; α(M)=0.000424 *6* α(N)=0.0001013 *15*; α(O)=1.574×10^{-5} *22*; α(P)=8.32×10^{-7} *12* Mult.: DCO=0.80 *12*.
3705.54	(33/2$^+$)	274.3 *1*	100	3431.32	(31/2$^+$)	[M1+E2]	0.279	α(K)=0.232 *4*; α(L)=0.0364 *6*; α(M)=0.00828 *12* α(N)=0.00199 *3*; α(O)=0.000326 *5*; α(P)=2.33×10^{-5} *4*
3724.64	35/2$^+$	207.5 *1*	100 *5*	3517.39	33/2$^+$	[M1+E2]	0.602	α(K)=0.500 *7*; α(L)=0.0788 *11*; α(M)=0.0179 *3* α(N)=0.00432 *6*; α(O)=0.000705 *10*; α(P)=5.03×10^{-5} *7* δ: 0.28 *7*, assuming K=29/2.
		377.3 *2*	12 *7*	3346.74	31/2$^+$	E2	0.0440	α(K)=0.0316 *5*; α(L)=0.00942 *14*; α(M)=0.00227 *4* α(N)=0.000540 *8*; α(O)=8.02×10^{-5} *12*; α(P)=2.81×10^{-6} *4* Mult.: DCO=0.90 *12*. Deduced by gating on the 143.7γ, ΔJ=1 M1+E2 transition.

$^{177}_{74}W_{103}$-20

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
3725.7	37/2$^-$	553.6 *1*	100	3172.1	33/2$^-$	E2	0.01637	α(K)=0.01271 *18*; α(L)=0.00281 *4*; α(M)=0.000663 *10* α(N)=0.0001582 *23*; α(O)=2.43×10^{-5} *4*; α(P)=1.168×10^{-6} *17* Mult.: DCO=1.2 *1*.
3745.15	(33/2$^+$)	325.2 *1*	100 *55*	3419.94	(31/2$^+$)	[M1+E2]	0.1763	α(K)=0.1468 *21*; α(L)=0.0229 *4*; α(M)=0.00520 *8* α(N)=0.001253 *18*; α(O)=0.000205 *3*; α(P)=1.464×10^{-5} *21* δ: 0.20 *9*, assuming K=21/2.
		635.5 *1*	36 *18*	3109.66	(29/2$^+$)	[E2]	0.01185	α(K)=0.00937 *14*; α(L)=0.00191 *3*; α(M)=0.000446 *7* α(N)=0.0001068 *15*; α(O)=1.656×10^{-5} *24*; α(P)=8.66×10^{-7} *13*
3844.93	39/2$^+$	730.9 *1*	100	3114.02	35/2$^+$	E2	0.00867	α(K)=0.00696 *10*; α(L)=0.001320 *19*; α(M)=0.000307 *5* α(N)=7.34×10^{-5} *11*; α(O)=1.150×10^{-5} *17*; α(P)=6.46×10^{-7} *9* Mult.: DCO=1.1 *1*.
3875.25	39/2$^-$	527.3 *10*	5.0 *25*	3348.03	35/2$^-$	[E2]	0.0184	α(K)=0.01419 *21*; α(L)=0.00324 *5*; α(M)=0.000766 *12* α(N)=0.000183 *3*; α(O)=2.79×10^{-5} *5*; α(P)=1.300×10^{-6} *19*
		549.1 *1*	100 *5*	3326.15	35/2$^-$	E2	0.01669	α(K)=0.01295 *19*; α(L)=0.00288 *4*; α(M)=0.000679 *10* α(N)=0.0001621 *23*; α(O)=2.49×10^{-5} *4*; α(P)=1.189×10^{-6} *17* Mult.: DCO=0.97 *14*.
3889.30	(37/2$^+$)	618.5 *1*	100	3270.79	33/2$^+$	[E2]	0.01261	α(K)=0.00994 *14*; α(L)=0.00205 *3*; α(M)=0.000482 *7* α(N)=0.0001151 *17*; α(O)=1.782×10^{-5} *25*; α(P)=9.18×10^{-7} *13*
3931.5	(35/2$^+$)	292.4 *1*	100	3639.12	(33/2$^+$)	[M1+E2]	0.235	α(K)=0.195 *3*; α(L)=0.0306 *5*; α(M)=0.00695 *10* α(N)=0.001674 *24*; α(O)=0.000273 *4*; α(P)=1.95×10^{-5} *3*
3966.18	37/2$^+$	241.6 *1*	100 *5*	3724.64	35/2$^+$	[M1+E2]	0.395	α(K)=0.329 *5*; α(L)=0.0516 *8*; α(M)=0.01175 *17* α(N)=0.00283 *4*; α(O)=0.000462 *7*; α(P)=3.30×10^{-5} *5* δ: 0.29 *3*, assuming K=29/2.
		448.7 *1*	22 *4*	3517.39	33/2$^+$	[E2]	0.0276	α(K)=0.0207 *3*; α(L)=0.00532 *8*; α(M)=0.001269 *18* α(N)=0.000302 *5*; α(O)=4.56×10^{-5} *7*; α(P)=1.87×10^{-6} *3*
3975.03	41/2$^+$	710.3 *1*	100	3264.73	37/2$^+$	E2	0.00923	α(K)=0.00739 *11*; α(L)=0.001420 *20*; α(M)=0.000330 *5* α(N)=7.91×10^{-5} *11*; α(O)=1.237×10^{-5} *18*; α(P)=6.85×10^{-7} *10* Mult.: DCO=0.92 *23*.
4013.39	(35/2$^+$)	307.8 *1*	100 *5*	3705.54	(33/2$^+$)	[M1+E2]	0.204	α(K)=0.1702 *24*; α(L)=0.0266 *4*; α(M)=0.00604 *9* α(N)=0.001455 *21*; α(O)=0.000238 *4*; α(P)=1.700×10^{-5} *24* δ: 0.59 *5*, assuming K=31/2.
		581.4 *3*	23 *3*	3431.32	(31/2$^+$)	[E2]	0.01457	α(K)=0.01139 *16*; α(L)=0.00244 *4*; α(M)=0.000574 *8* α(N)=0.0001372 *20*; α(O)=2.11×10^{-5} *3*; α(P)=1.049×10^{-6} *15*
4022.63	(39/2$^-$)	367.3[&] *10*	11.1 *22*	3655.13	37/2$^-$	[M1+E2]	0.1273 *20*	α(K)=0.1060 *17*; α(L)=0.0165 *3*; α(M)=0.00374 *6* α(N)=0.000902 *15*; α(O)=0.0001473 *24*; α(P)=1.055×10^{-5} *17* δ: 0.25 *3*, assuming K=7/2.
		674.6 *1*	100 *7*	3348.03	35/2$^-$	[E2]	0.01035	α(K)=0.00824 *12*; α(L)=0.001625 *23*; α(M)=0.000379 *6* α(N)=9.07×10^{-5} *13*; α(O)=1.414×10^{-5} *20*; α(P)=7.63×10^{-7} *11*
		696	16 *4*	3326.15	35/2$^-$	[E2]	0.00966	α(K)=0.00771 *11*; α(L)=0.001497 *21*; α(M)=0.000349 *5* α(N)=8.35×10^{-5} *12*; α(O)=1.303×10^{-5} *19*; α(P)=7.15×10^{-7} *10*
4194.64	41/2$^-$	580.3 *1*	100	3614.34	37/2$^-$	(E2)	0.01463	α(K)=0.01144 *16*; α(L)=0.00246 *4*; α(M)=0.000577 *8*

$^{177}_{74}W_{103}$-21

Adopted Levels, Gammas (continued)

γ(^{177}W) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.†	α#	Comments
								α(N)=0.0001380 *20*; α(O)=2.13×10^{-5} *3*; α(P)=1.054×10^{-6} *15* Mult.: DCO=1.4 *2*.
4239.00	39/2$^+$	272.8 *1*	100 *4*	3966.18	37/2$^+$	[M1+E2]	0.284	α(K)=0.236 *4*; α(L)=0.0370 *6*; α(M)=0.00841 *12* α(N)=0.00202 *3*; α(O)=0.000331 *5*; α(P)=2.36×10^{-5} *4* δ: 0.38 *2*, assuming K=29/2.
		514.4 *1*	50 *4*	3724.64	35/2$^+$	[E2]	0.0196	α(K)=0.01502 *21*; α(L)=0.00349 *5*; α(M)=0.000826 *12* α(N)=0.000197 *3*; α(O)=3.01×10^{-5} *5*; α(P)=1.374×10^{-6} *20*
4256.5	(37/2$^+$)	325.0 *1*	100	3931.5	(35/2$^+$)	[M1+E2]	0.1766	α(K)=0.1470 *21*; α(L)=0.0229 *4*; α(M)=0.00521 *8* α(N)=0.001255 *18*; α(O)=0.000205 *3*; α(P)=1.467×10^{-5} *21*
4323.8	(41/2$^-$)	598.1 *2*	100	3725.7	37/2$^-$	[E2]	0.01363	α(K)=0.01070 *15*; α(L)=0.00226 *4*; α(M)=0.000529 *8* α(N)=0.0001265 *18*; α(O)=1.95×10^{-5} *3*; α(P)=9.87×10^{-7} *14*
4324.14	(41/2$^-$)	669.0 *1*	100	3655.13	37/2$^-$	[E2]	0.01055	α(K)=0.00839 *12*; α(L)=0.001662 *24*; α(M)=0.000388 *6* α(N)=9.28×10^{-5} *13*; α(O)=1.445×10^{-5} *21*; α(P)=7.77×10^{-7} *11*
4344.02	(37/2$^+$)	330.5 *1*	100 *5*	4013.39	(35/2$^+$)	[M1+E2]	0.1688	α(K)=0.1405 *20*; α(L)=0.0219 *3*; α(M)=0.00498 *7* α(N)=0.001199 *17*; α(O)=0.000196 *3*; α(P)=1.402×10^{-5} *20* δ: 0.62 *4*, assuming K=31/2.
		638.6 *1*	56 *5*	3705.54	(33/2$^+$)	[E2]	0.01172	α(K)=0.00927 *13*; α(L)=0.00188 *3*; α(M)=0.000441 *7* α(N)=0.0001053 *15*; α(O)=1.635×10^{-5} *23*; α(P)=8.57×10^{-7} *12*
4496.45	43/2$^-$	621.2 *1*	100	3875.25	39/2$^-$	E2	0.01249	α(K)=0.00985 *14*; α(L)=0.00203 *3*; α(M)=0.000476 *7* α(N)=0.0001137 *16*; α(O)=1.761×10^{-5} *25*; α(P)=9.09×10^{-7} *13* Mult.: DCO=0.86 *8*.
4535.49	41/2$^+$	296.5 *1*	100	4239.00	39/2$^+$	[M1+E2]	0.226	α(K)=0.188 *3*; α(L)=0.0294 *5*; α(M)=0.00669 *10* α(N)=0.001612 *23*; α(O)=0.000263 *4*; α(P)=1.88×10^{-5} *3* δ: δ≈0.33, assuming K=29/2.
		569.2 *3*	57 *14*	3966.18	37/2$^+$	[E2]	0.01532	α(K)=0.01194 *17*; α(L)=0.00259 *4*; α(M)=0.000611 *9* α(N)=0.0001459 *21*; α(O)=2.24×10^{-5} *4*; α(P)=1.099×10^{-6} *16*
4574.89	(41/2$^+$)	335.9 *1*	55 *3*	4239.00	39/2$^+$	[M1]	0.1616	α(K)=0.1346 *19*; α(L)=0.0210 *3*; α(M)=0.00476 *7* α(N)=0.001148 *16*; α(O)=0.000187 *3*; α(P)=1.342×10^{-5} *19*
		608.7 *1*	100 *6*	3966.18	37/2$^+$	E2	0.01309	α(K)=0.01029 *15*; α(L)=0.00215 *3*; α(M)=0.000504 *7* α(N)=0.0001204 *17*; α(O)=1.86×10^{-5} *3*; α(P)=9.50×10^{-7} *14*
4591.8		247.8 *1*	100	4344.02	(37/2$^+$)			
4602.7	(39/2$^+$)	346.2 *1*	100 *10*	4256.5	(37/2$^+$)	[M1+E2]	0.1491	α(K)=0.1241 *18*; α(L)=0.0193 *3*; α(M)=0.00439 *7* α(N)=0.001058 *15*; α(O)=0.0001728 *25*; α(P)=1.237×10^{-5} *18* δ: 0.95 *17*, assuming K=33/2.
		671	90 *14*	3931.5	(35/2$^+$)	[E2]	0.01048	α(K)=0.00834 *12*; α(L)=0.001649 *23*; α(M)=0.000385 *6* α(N)=9.20×10^{-5} *13*; α(O)=1.434×10^{-5} *20*; α(P)=7.72×10^{-7} *11*
4613.73	(43/2$^+$)	768.8 *1*	100	3844.93	39/2$^+$	[E2]	0.00777	α(K)=0.00627 *9*; α(L)=0.001161 *17*; α(M)=0.000269 *4* α(N)=6.45×10^{-5} *9*; α(O)=1.014×10^{-5} *15*; α(P)=5.82×10^{-7} *9*
4691.7	(39/2$^+$)	347.8 *1*	100 *6*	4344.02	(37/2$^+$)	[M1+E2]	0.1472	α(K)=0.1226 *18*; α(L)=0.0191 *3*; α(M)=0.00434 *6* α(N)=0.001044 *15*; α(O)=0.0001706 *24*; α(P)=1.222×10^{-5} *18* δ: 0.58 *4*, assuming K=31/2.

$^{177}_{74}W_{103}$-22

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
4691.7	(39/2$^+$)	678.3 *1*	81 *6*	4013.39	(35/2$^+$)	[E2]	0.01023	α(K)=0.00815 *12*; α(L)=0.001602 *23*; α(M)=0.000374 *6* α(N)=8.94×10^{-5} *13*; α(O)=1.394×10^{-5} *20*; α(P)=7.54×10^{-7} *11*
4708.43	45/2$^+$	733.4 *1*	100 *2*	3975.03	41/2$^+$	E2	0.00861	α(K)=0.00691 *10*; α(L)=0.001308 *19*; α(M)=0.000304 *5* α(N)=7.28×10^{-5} *11*; α(O)=1.140×10^{-5} *16*; α(P)=6.41×10^{-7} *9* Mult.: DCO=0.87 *16*.
4741.43	(43/2$^-$)	718.8 *1*	100	4022.63	(39/2$^-$)	[E2]	0.00900	α(K)=0.00721 *10*; α(L)=0.001377 *20*; α(M)=0.000320 *5* α(N)=7.67×10^{-5} *11*; α(O)=1.200×10^{-5} *17*; α(P)=6.68×10^{-7} *10*
4800.39	(43/2$^+$)	225.5 *1*	100	4574.89	(41/2$^+$)	[M1+E2]	0.478	α(K)=0.397 *6*; α(L)=0.0625 *9*; α(M)=0.01422 *20* α(N)=0.00343 *5*; α(O)=0.000559 *8*; α(P)=3.99×10^{-5} *6*
4845.65	45/2$^-$	651.0 *1*	100	4194.64	41/2$^-$	E2	0.01122	α(K)=0.00890 *13*; α(L)=0.00179 *3*; α(M)=0.000418 *6* α(N)=9.99×10^{-5} *14*; α(O)=1.553×10^{-5} *22*; α(P)=8.23×10^{-7} *12*
4855.1	(43/2$^+$)	320[&]		4535.49	41/2$^+$			
		616[&]		4239.00	39/2$^+$			
4894.3		302.5 *1*	100	4591.8				
4963.6	(41/2$^+$)	360.9 *1*	100	4602.7	(39/2$^+$)	[M1+E2]	0.1334	α(K)=0.1111 *16*; α(L)=0.01727 *25*; α(M)=0.00392 *6* α(N)=0.000945 *14*; α(O)=0.0001544 *22*; α(P)=1.106×10^{-5} *16*
5019.04	(45/2$^-$)	694.9 *1*	100	4324.14	(41/2$^-$)	[E2]	0.00969	α(K)=0.00774 *11*; α(L)=0.001504 *21*; α(M)=0.000350 *5* α(N)=8.38×10^{-5} *12*; α(O)=1.309×10^{-5} *19*; α(P)=7.17×10^{-7} *10*
5052.6	(41/2$^+$)	361.2 *2*	46 *15*	4691.7	(39/2$^+$)	[M1+E2]	0.1331	α(K)=0.1108 *16*; α(L)=0.01723 *25*; α(M)=0.00392 *6* α(N)=0.000943 *14*; α(O)=0.0001541 *22*; α(P)=1.104×10^{-5} *16* δ: 0.95 *39*, assuming K=31/2.
		708.4 *1*	100 *15*	4344.02	(37/2$^+$)	[E2]	0.00929	α(K)=0.00743 *11*; α(L)=0.001430 *20*; α(M)=0.000333 *5* α(N)=7.97×10^{-5} *12*; α(O)=1.245×10^{-5} *18*; α(P)=6.89×10^{-7} *10*
5063.3	(45/2$^+$)	262.9 *1*	100	4800.39	(43/2$^+$)	[M1+E2]	0.314	α(K)=0.261 *4*; α(L)=0.0409 *6*; α(M)=0.00930 *13* α(N)=0.00224 *4*; α(O)=0.000366 *6*; α(P)=2.61×10^{-5} *4*
5190.85	(47/2$^-$)	694.4 *1*	100	4496.45	43/2$^-$	[E2]	0.00971	α(K)=0.00775 *11*; α(L)=0.001506 *21*; α(M)=0.000351 *5* α(N)=8.40×10^{-5} *12*; α(O)=1.311×10^{-5} *19*; α(P)=7.18×10^{-7} *10*
5229.9		335.6 *1*	100	4894.3				
5333.1	(43/2$^+$)	369.5 *1*	100 *11*	4963.6	(41/2$^+$)	[M1+E2]	0.1253	α(K)=0.1043 *15*; α(L)=0.01621 *23*; α(M)=0.00368 *6* α(N)=0.000887 *13*; α(O)=0.0001449 *21*; α(P)=1.039×10^{-5} *15* δ: 0.54 *11*, assuming K=33/2.
		730	99 *33*	4602.7	(39/2$^+$)	[E2]	0.00870	α(K)=0.00698 *10*; α(L)=0.001324 *19*; α(M)=0.000308 *5* α(N)=7.36×10^{-5} *11*; α(O)=1.154×10^{-5} *17*; α(P)=6.47×10^{-7} *9*
5365.7	(47/2$^+$)	302.4 *1*	100	5063.3	(45/2$^+$)	[M1+E2]	0.215	α(K)=0.178 *3*; α(L)=0.0279 *4*; α(M)=0.00634 *9* α(N)=0.001527 *22*; α(O)=0.000249 *4*; α(P)=1.78×10^{-5} *3*
5410.8	(47/2$^+$)	797.1 *4*	100	4613.73	(43/2$^+$)	[E2]	0.00720	α(K)=0.00582 *9*; α(L)=0.001062 *15*; α(M)=0.000246 *4* α(N)=5.89×10^{-5} *9*; α(O)=9.27×10^{-6} *13*; α(P)=5.40×10^{-7} *8*
5423.8	(43/2$^+$)	370.6 *3*	67 *11*	5052.6	(41/2$^+$)	[M1+E2]	0.1243	α(K)=0.1035 *15*; α(L)=0.01608 *23*; α(M)=0.00365 *6* α(N)=0.000880 *13*; α(O)=0.0001438 *21*; α(P)=1.030×10^{-5} *15* δ: 0.57 *8*, assuming K=31/2.
		732.7 *3*	100 *11*	4691.7	(39/2$^+$)	[E2]	0.00863	α(K)=0.00693 *10*; α(L)=0.001311 *19*; α(M)=0.000305 *5* α(N)=7.29×10^{-5} *11*; α(O)=1.143×10^{-5} *16*; α(P)=6.42×10^{-7} *9*

$^{177}_{74}W_{103}$-23

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
5473.9	(49/2$^+$)	765.5 *2*	100	4708.43	45/2$^+$	[E2]	0.00785	α(K)=0.00632 *9*; α(L)=0.001174 *17*; α(M)=0.000272 *4* α(N)=6.52×10^{-5} *10*; α(O)=1.024×10^{-5} *15*; α(P)=5.87×10^{-7} *9*
5501.4	(47/2$^-$)	760.0 *10*	100	4741.43	(43/2$^-$)	[E2]	0.00797	α(K)=0.00642 *10*; α(L)=0.001195 *18*; α(M)=0.000277 *4* α(N)=6.64×10^{-5} *10*; α(O)=1.043×10^{-5} *15*; α(P)=5.96×10^{-7} *9*
5566.25	(49/2$^-$)	720.6 *1*	100	4845.65	45/2$^-$	[E2]	0.00895	α(K)=0.00717 *10*; α(L)=0.001368 *20*; α(M)=0.000318 *5* α(N)=7.62×10^{-5} *11*; α(O)=1.192×10^{-5} *17*; α(P)=6.65×10^{-7} *10*
5703.7	(49/2$^+$)	338.0 *2*	100 *56*	5365.7	(47/2$^+$)	[M1+E2]	0.1590	α(K)=0.1323 *19*; α(L)=0.0206 *3*; α(M)=0.00468 *7* α(N)=0.001128 *16*; α(O)=0.000184 *3*; α(P)=1.320×10^{-5} *19* δ: δ≈0.44, assuming K=41/2.
		640	≈33	5063.3	(45/2$^+$)	[E2]	0.01166	α(K)=0.00923 *13*; α(L)=0.00187 *3*; α(M)=0.000438 *7* α(N)=0.0001047 *15*; α(O)=1.625×10^{-5} *23*; α(P)=8.53×10^{-7} *12*
5709.3	(45/2$^+$)	376.2 *1*	100	5333.1	(43/2$^+$)	[M1+E2]	0.1194	α(K)=0.0995 *14*; α(L)=0.01545 *22*; α(M)=0.00351 *5* α(N)=0.000845 *12*; α(O)=0.0001381 *20*; α(P)=9.90×10^{-6} *14*
5771.0	(49/2$^-$)	752.0 *10*	100	5019.04	(45/2$^-$)	[E2]	0.00815	α(K)=0.00656 *10*; α(L)=0.001228 *18*; α(M)=0.000285 *5* α(N)=6.82×10^{-5} *10*; α(O)=1.071×10^{-5} *16*; α(P)=6.09×10^{-7} *9*
5805.8	(45/2$^+$)	753.2 *4*	100	5052.6	(41/2$^+$)			
5953.7	(51/2$^-$)	762.8 *2*	100	5190.85	(47/2$^-$)	[E2]	0.00791	α(K)=0.00637 *9*; α(L)=0.001184 *17*; α(M)=0.000275 *4* α(N)=6.58×10^{-5} *10*; α(O)=1.033×10^{-5} *15*; α(P)=5.91×10^{-7} *9*
6069.6	(51/2$^+$)	365.9 *1*	100 *50*	5703.7	(49/2$^+$)	[M1+E2]	0.1286	α(K)=0.1071 *15*; α(L)=0.01664 *24*; α(M)=0.00378 *6* α(N)=0.000911 *13*; α(O)=0.0001488 *21*; α(P)=1.066×10^{-5} *15* δ: δ≈0.45, assuming K=41/2.
		704	≈50	5365.7	(47/2$^+$)	[E2]	0.00942	α(K)=0.00753 *11*; α(L)=0.001453 *21*; α(M)=0.000338 *5* α(N)=8.10×10^{-5} *12*; α(O)=1.266×10^{-5} *18*; α(P)=6.98×10^{-7} *10*
6093.1?	(47/2$^+$)	384[&]	100	5709.3	(45/2$^+$)	[M1+E2]	0.1131	α(K)=0.0942 *14*; α(L)=0.01462 *21*; α(M)=0.00332 *5* α(N)=0.000800 *12*; α(O)=0.0001307 *19*; α(P)=9.37×10^{-6} *14*
6196.1	(47/2$^+$)	772.3 *6*	100	5423.8	(43/2$^+$)			
6232.1	(51/2$^+$)	821.3 *11*	100	5410.8	(47/2$^+$)	[E2]	0.00675	α(K)=0.00548 *8*; α(L)=0.000987 *15*; α(M)=0.000228 *4* α(N)=5.46×10^{-5} *8*; α(O)=8.62×10^{-6} *13*; α(P)=5.08×10^{-7} *8*
6299.2	(53/2$^+$)	825.3 *4*	100	5473.9	(49/2$^+$)	[E2]	0.00669	α(K)=0.00542 *8*; α(L)=0.000975 *14*; α(M)=0.000225 *4* α(N)=5.40×10^{-5} *8*; α(O)=8.52×10^{-6} *12*; α(P)=5.03×10^{-7} *7*
6353.0	(53/2$^-$)	786.8 *4*	100	5566.25	(49/2$^-$)	[E2]	0.00740	α(K)=0.00598 *9*; α(L)=0.001096 *16*; α(M)=0.000254 *4* α(N)=6.08×10^{-5} *9*; α(O)=9.57×10^{-6} *14*; α(P)=5.55×10^{-7} *8*
6460.8	(53/2$^+$)	391.3 *3*	100 *50*	6069.6	(51/2$^+$)	[M1+E2]	0.1076 *16*	α(K)=0.0896 *13*; α(L)=0.01390 *20*; α(M)=0.00316 *5* α(N)=0.000761 *11*; α(O)=0.0001243 *18*; α(P)=8.91×10^{-6} *13* δ: δ≈0.26, assuming K=41/2.
		757	≈25	5703.7	(49/2$^+$)	[E2]	0.00804	α(K)=0.00647 *9*; α(L)=0.001207 *17*; α(M)=0.000280 *4* α(N)=6.71×10^{-5} *10*; α(O)=1.053×10^{-5} *15*; α(P)=6.00×10^{-7} *9*
6597.4	(49/2$^+$)	791.6 *6*	100	5805.8	(45/2$^+$)			
6780.6?	(55/2$^-$)	827.0[&] *10*	100	5953.7	(51/2$^-$)			
6872.2	(55/2$^+$)	411.4 *2*	100 *50*	6460.8	(53/2$^+$)	[M1+E2]	0.0942	α(K)=0.0785 *11*; α(L)=0.01216 *17*; α(M)=0.00276 *4* α(N)=0.000665 *10*; α(O)=0.0001087 *16*; α(P)=7.80×10^{-6} *11* δ: δ≈0.33, assuming K=41/2.

$^{177}_{74}W_{103}$-24

Adopted Levels, Gammas (continued)

$\gamma(^{177}W)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
6872.2	(55/2$^+$)	802	≈25	6069.6	(51/2$^+$)	[E2]	0.00710	α(K)=0.00575 *8*; α(L)=0.001046 *15*; α(M)=0.000242 *4* α(N)=5.80×10^{-5} *9*; α(O)=9.14×10^{-6} *13*; α(P)=5.34×10^{-7} *8*
7160.1?	(57/2$^+$)	861.0[&] *13*	100	6299.2	(53/2$^+$)	[E2]	0.00612	α(K)=0.00498 *8*; α(L)=0.000880 *13*; α(M)=0.000203 *3* α(N)=4.87×10^{-5} *7*; α(O)=7.70×10^{-6} *12*; α(P)=4.62×10^{-7} *7*
7204.7?	(57/2$^-$)	851.5[&] *2*	100	6353.0	(53/2$^-$)			

[†] From ^{164}Dy(^{18}O,5nγ), unless otherwise stated. The quoted DCO values are from 1997Sh36, deduced by gating on ΔJ=2, E2 transition, unless otherwise stated. A DCO value of near unity would indicate a stretched E2 transition, albeit ΔJ=0, J to J assignment is also possible. A DCO value of 0.3-0.6 would indicate a ΔJ=1 transition.

[‡] From ^{177}Re ε decay.

[#] Additional information 1.

[@] If No value given it was assumed δ=0.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.

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

$^{177}_{74}W_{103}$-25

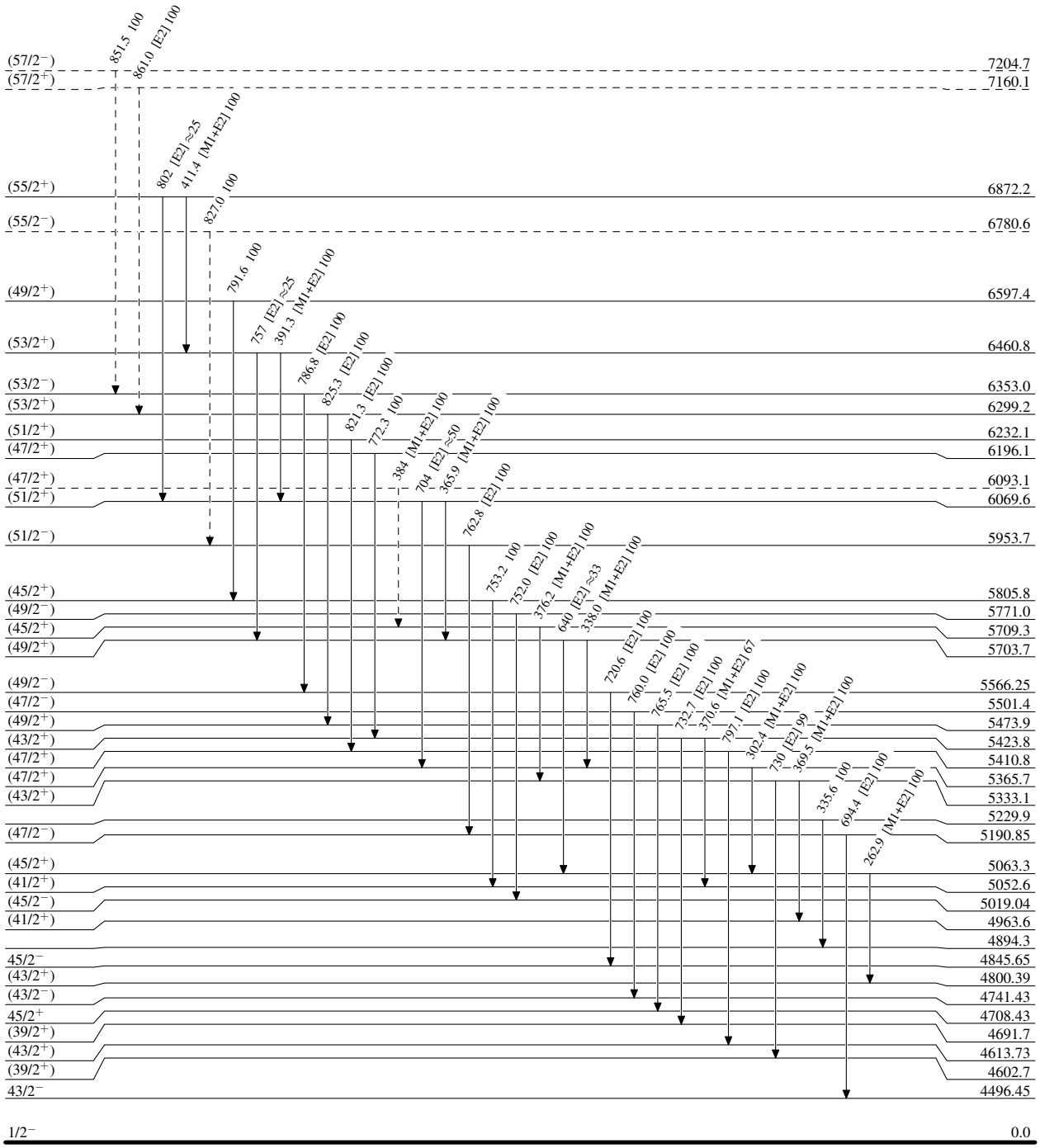
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{177}_{74}W_{103}$

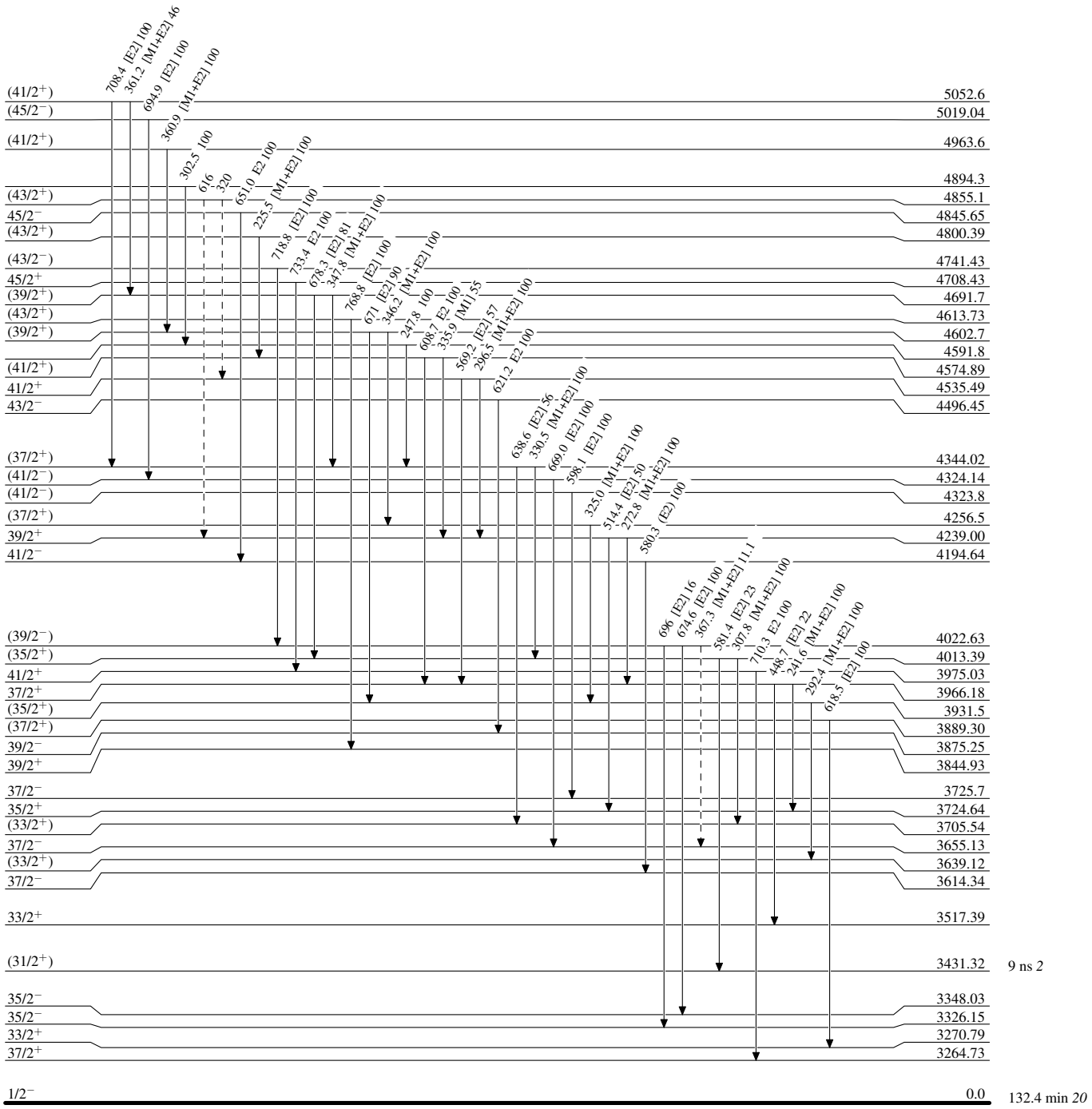
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{177}_{74}W_{103}$

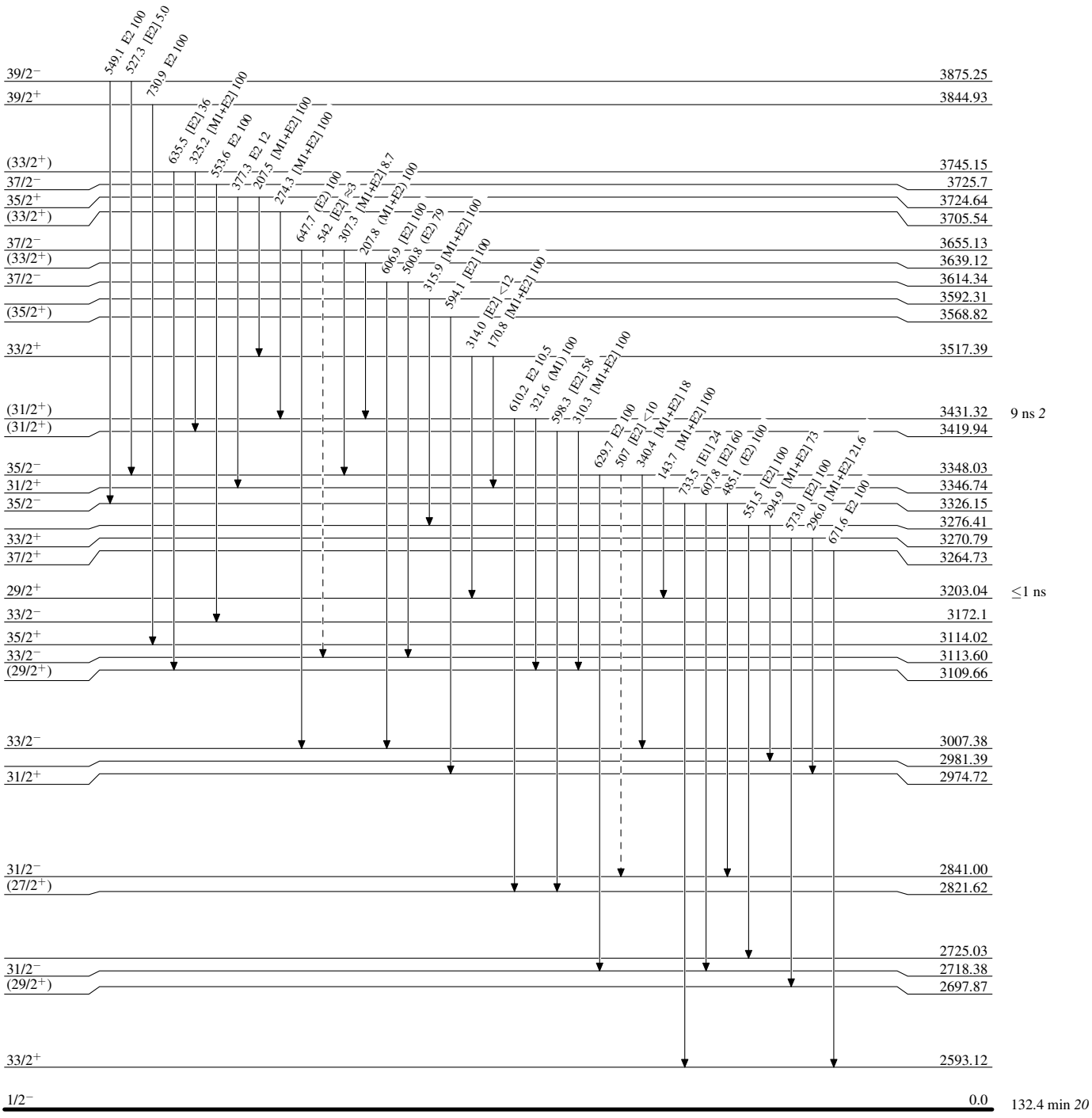
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{177}_{74}W_{103}$

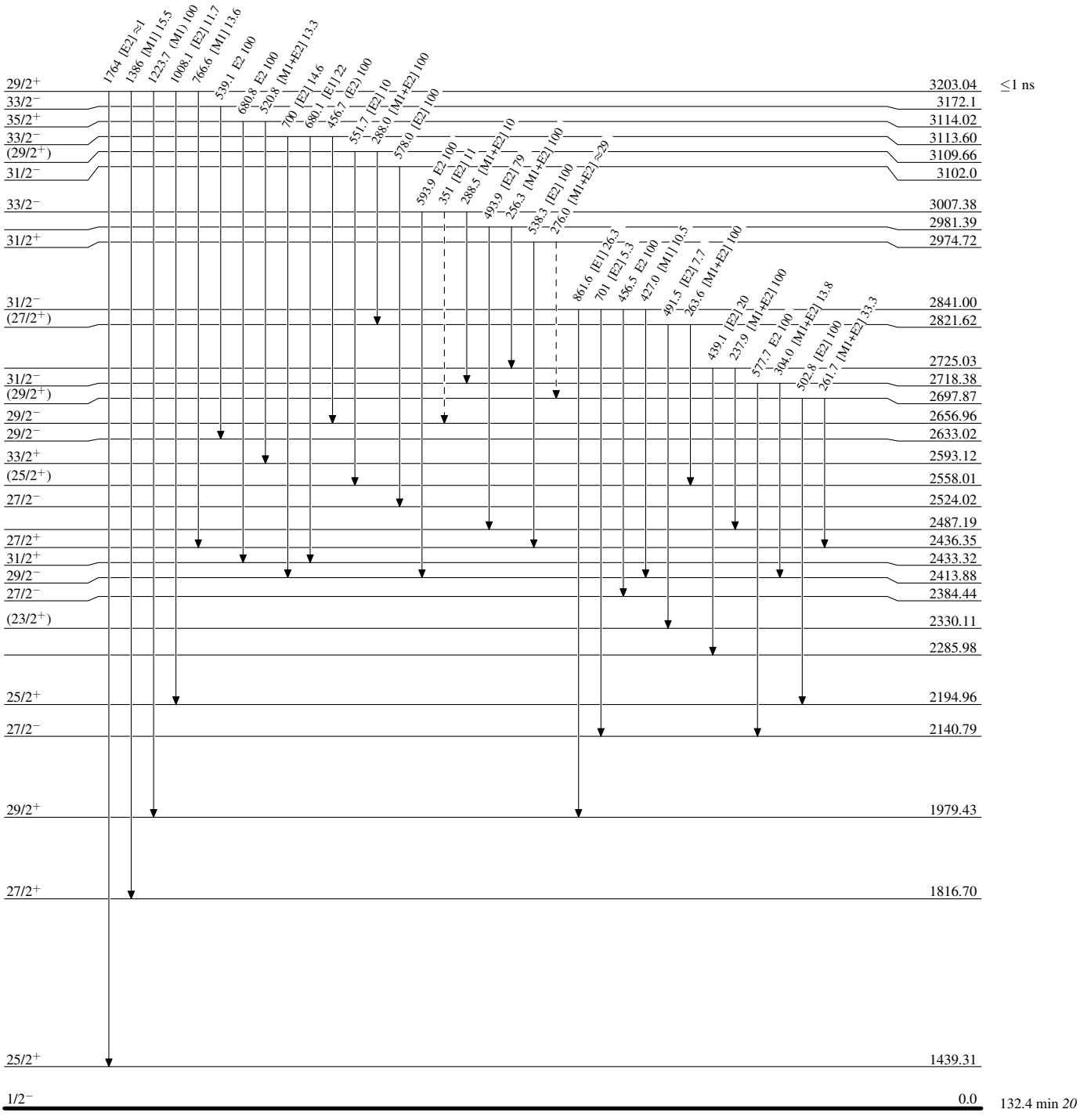
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)

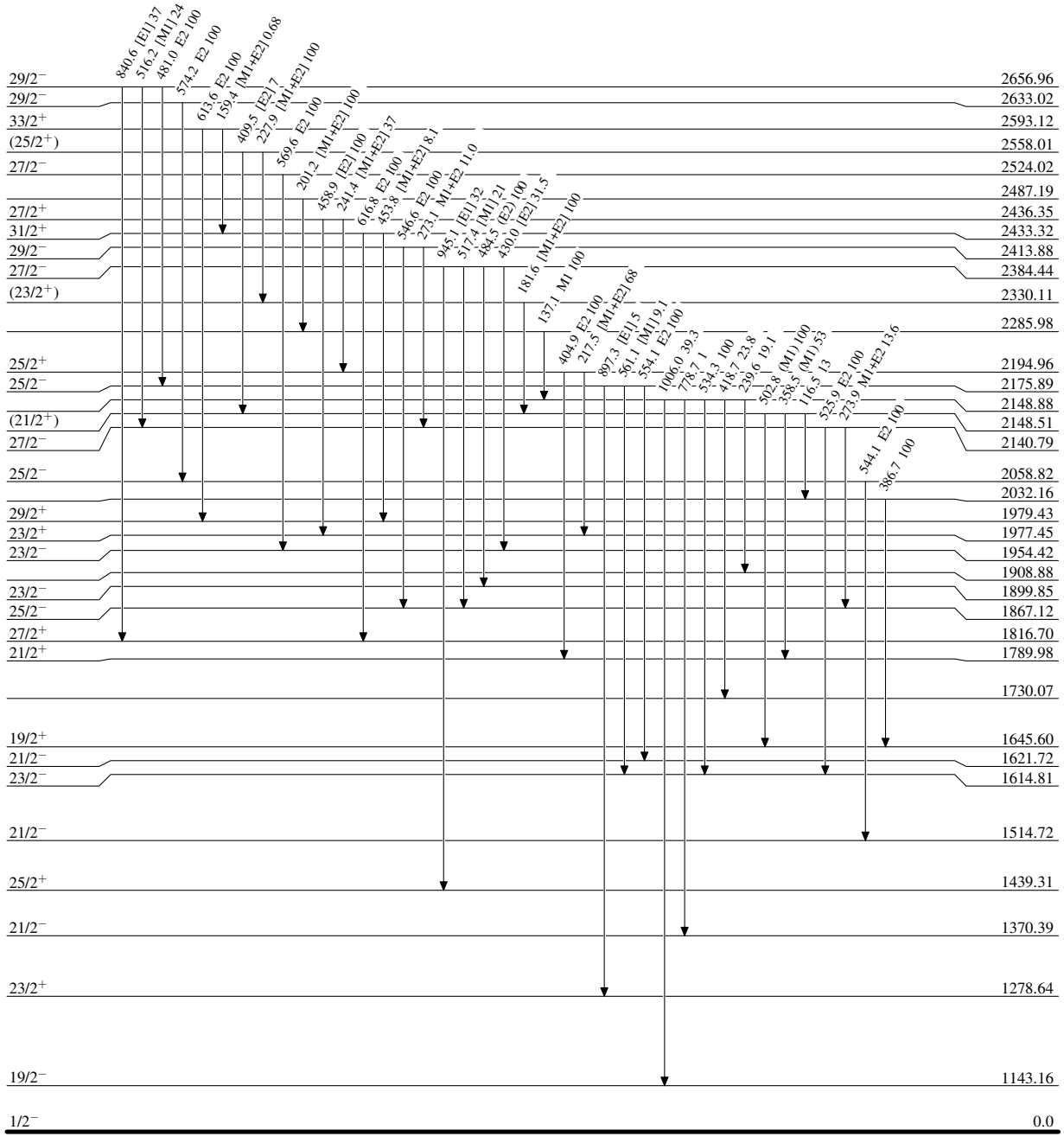


$^{177}_{74}W_{103}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

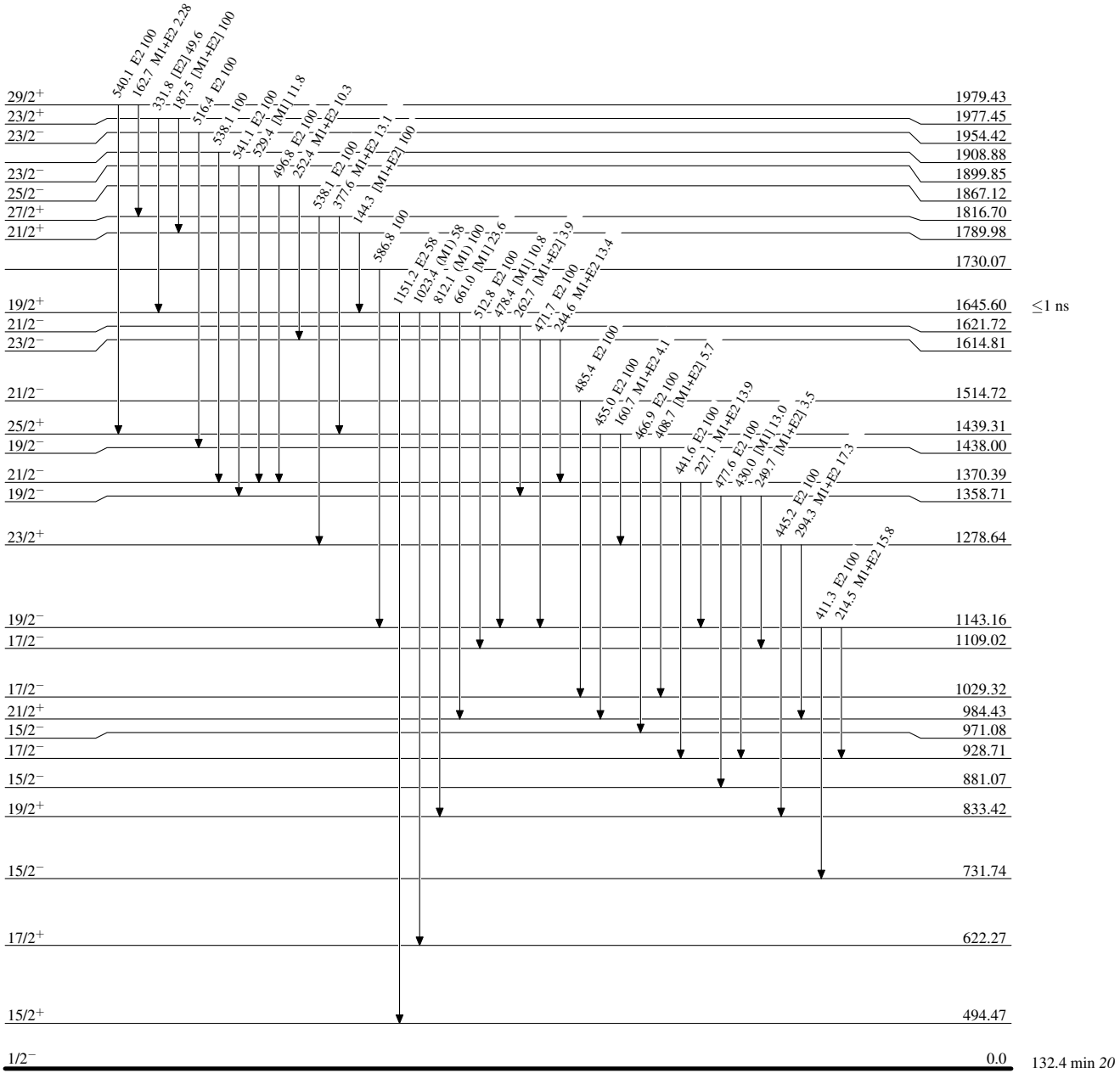


$^{177}_{74}W_{103}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{177}_{74}W_{103}$

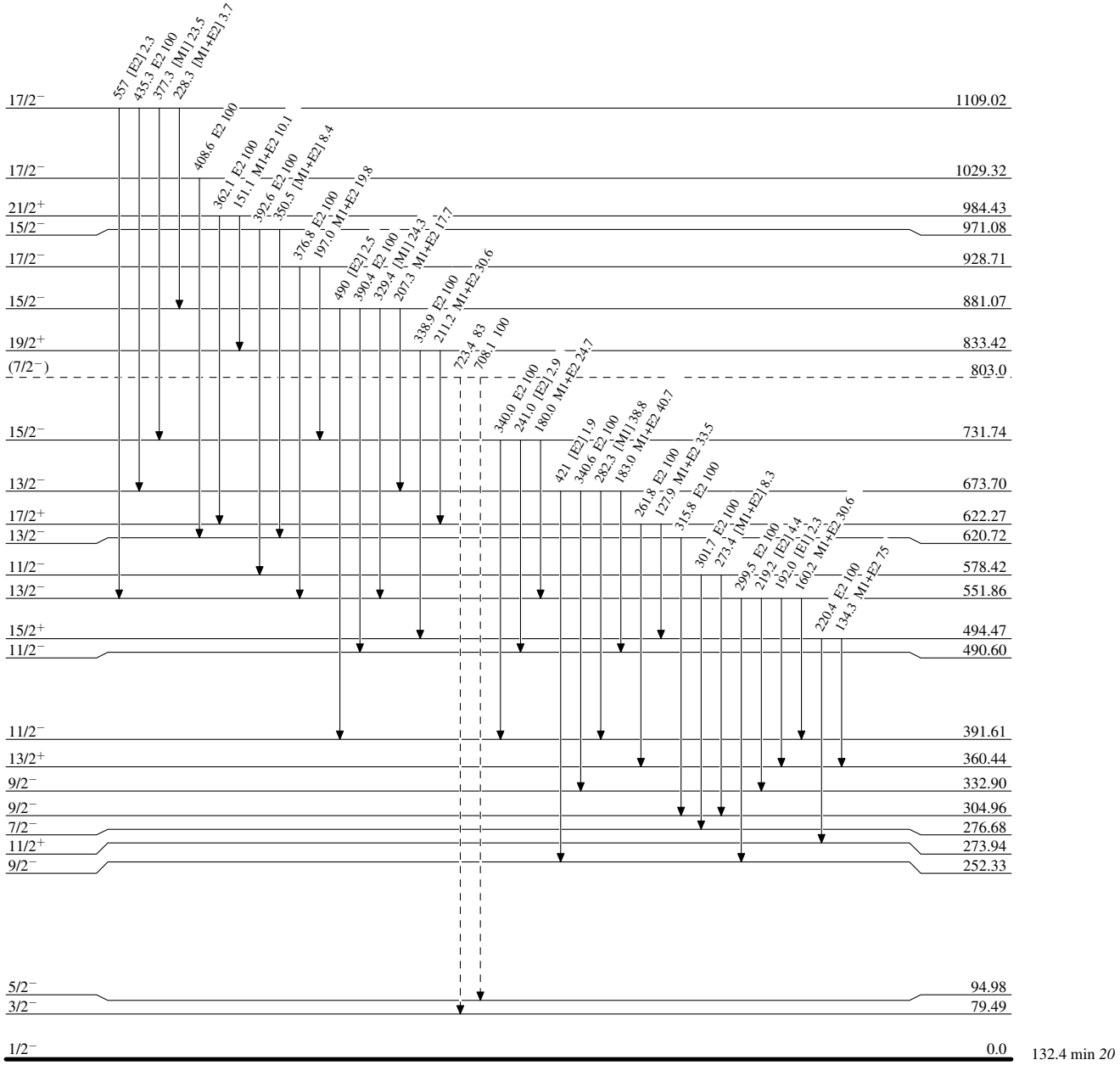
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{177}_{74}W_{103}$

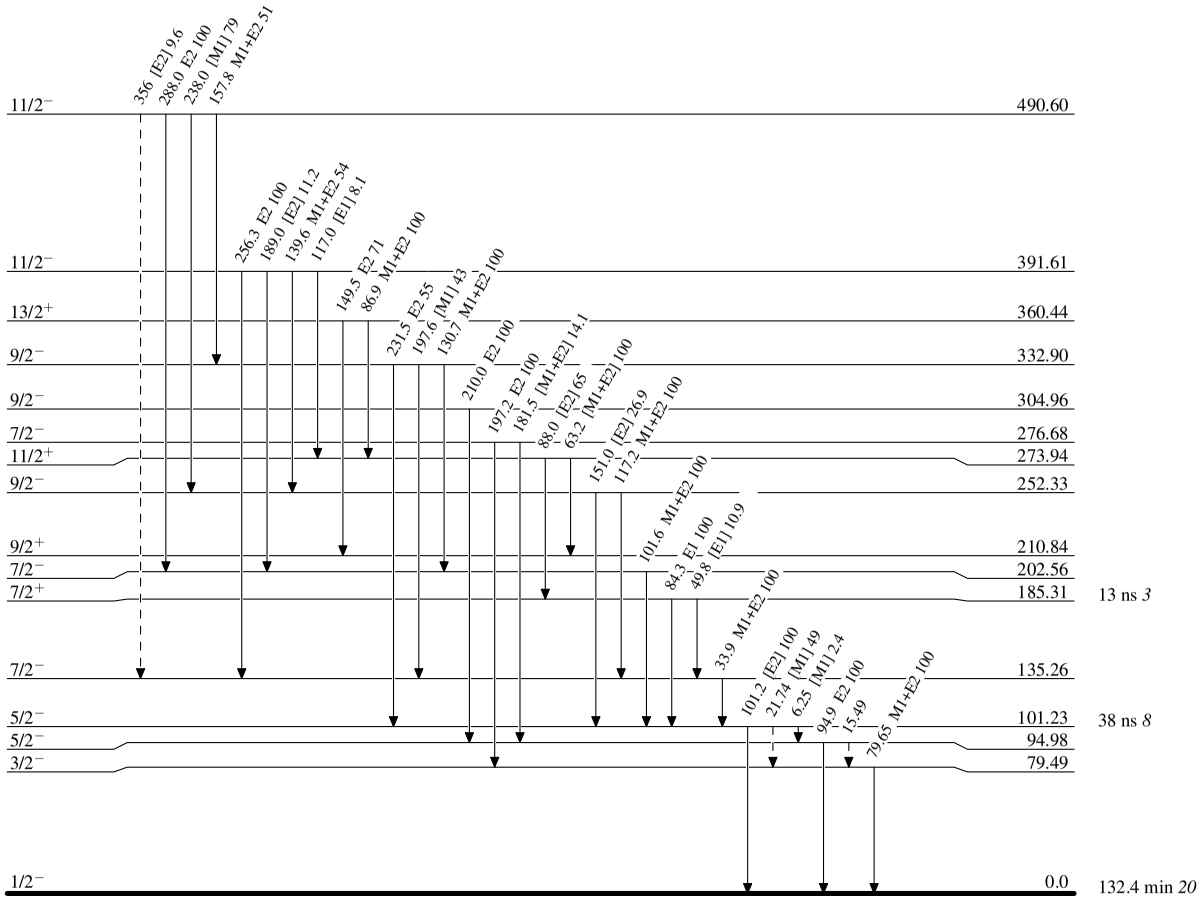
Adopted Levels, Gammas

Legend

Level Scheme (continued)

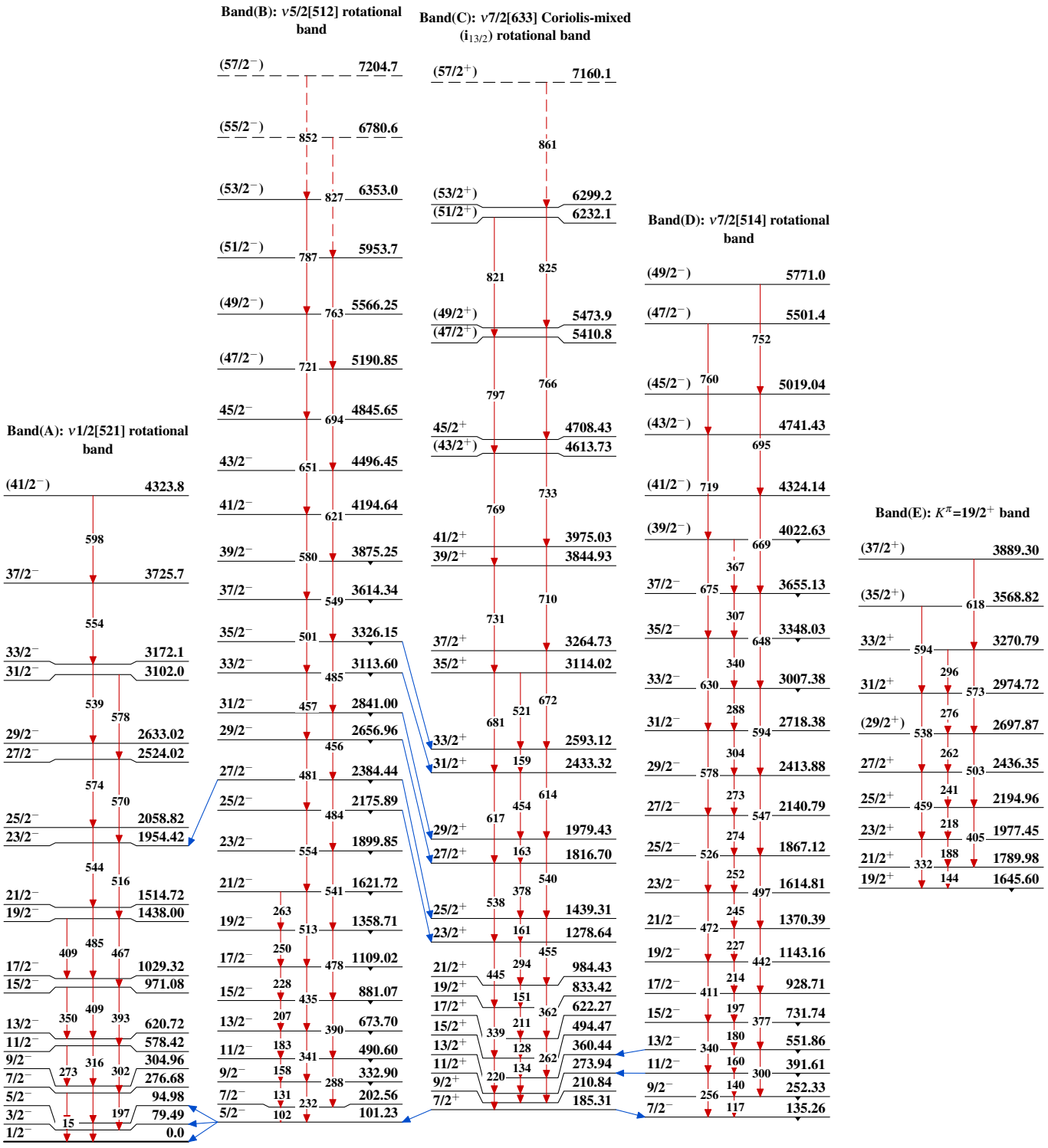
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



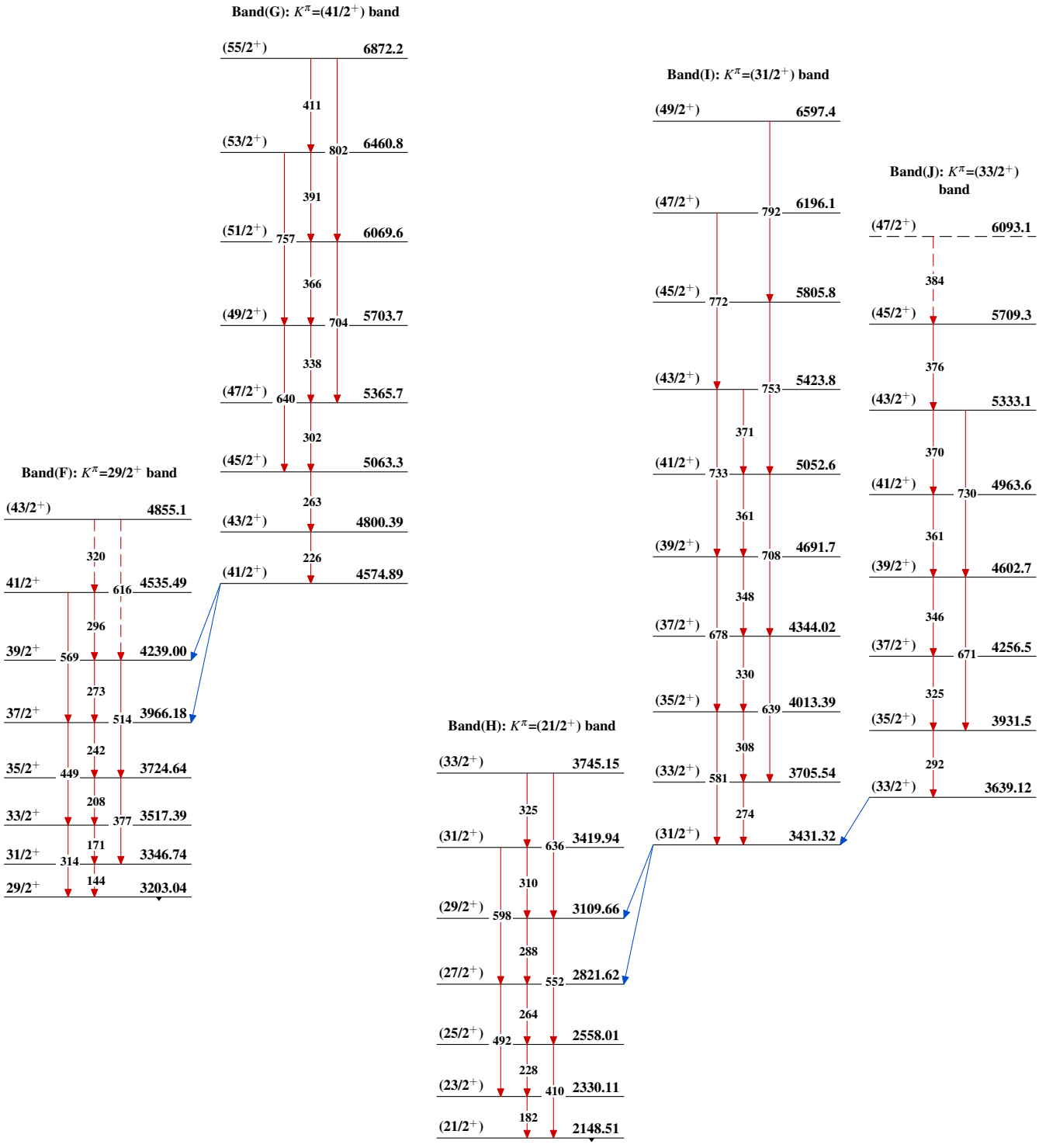
$^{177}_{74}W_{103}$

Adopted Levels, Gammas



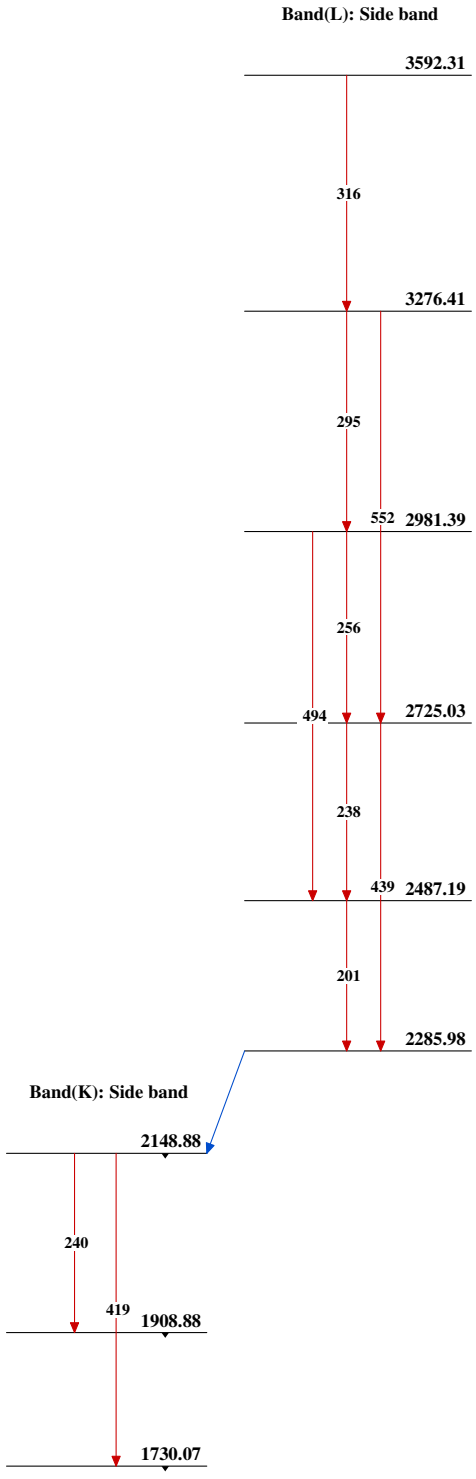
$^{177}_{74}W_{103}$

Adopted Levels, Gammas (continued)



$^{177}_{74}W_{103}$

Adopted Levels, Gammas (continued)



$^{177}_{74}W_{103}$