^{164}Dy(^{18}O,5nγ) 1997Sh36

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

1997Sh36: Produced using the ^{164}Dy(^{18}O,5nγ) reaction. Projectiles: ^{18}O, E=83 MeV. Targets: ^{164}Dy, 2.0 mg/cm^2 thick with 11 mg/cm^2 thick lead backing, sufficient to stop the recoil nuclei. Detectors: twenty HPGe Compton-suppressed detectors and two low energy photon detectors, 60 element BaF_2 multiplicity filter. Measured: Eγ, Iγ, $\gamma\gamma$(t), $\gamma\gamma$(fold), $\gamma\gamma$ coin, $\gamma\gamma\gamma$ coin and $\gamma\gamma(\theta)$. Deduced: level scheme, DCO ratios, lifetimes and transition multipolarities.

^{177}W Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[‡]	Comments
0.0[#]	1/2$^-$	132.4 min *20*	
79.32[#] *9*	3/2$^-$		
94.91[#] *9*	5/2$^-$		
101.17[@] *10*	5/2$^-$	38 ns *8*	$T_{1/2}$: From $\gamma\gamma$(t) (1997Sh36) 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.
135.18[a] *12*	7/2$^-$		
185.96[&] *14*	7/2$^+$	13 ns *3*	$T_{1/2}$: From $\gamma\gamma$(t) (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.
202.50[@] *12*	7/2$^-$		
210.78[&] *17*	9/2$^+$		
252.26[a] *11*	9/2$^-$		
273.88[&] *16*	11/2$^+$		
276.55[#] *11*	7/2$^-$		
304.87[#] *12*	9/2$^-$		
332.83[@] *11*	9/2$^-$		
360.37[&] *16*	13/2$^+$		
391.54[a] *12*	11/2$^-$		
490.53[@] *12*	11/2$^-$		
494.41[&] *15*	15/2$^+$		
551.79[a] *12*	13/2$^-$		
578.31[#] *12*	11/2$^-$		
620.63[#] *14*	13/2$^-$		
622.21[&] *15*	17/2$^+$		
673.63[@] *12*	13/2$^-$		
731.68[a] *12*	15/2$^-$		
833.36[&] *15*	19/2$^+$		
881.00[@] *12*	15/2$^-$		
928.64[a] *12*	17/2$^-$		
970.98[#] *13*	15/2$^-$		
984.36[&] *15*	21/2$^+$		
1029.23[#] *16*	17/2$^-$		
1108.95[@] *13*	17/2$^-$		
1143.09[a] *13*	19/2$^-$		
1278.57[&] *15*	23/2$^+$		
1358.64[@] *13*	19/2$^-$		
1370.32[a] *13*	21/2$^-$		
1437.91[#] *14*	19/2$^-$		

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

^{177}W Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[‡]	Comments
1439.24[&] *14*	25/2$^+$		
1514.63[#] *19*	21/2$^-$		
1614.74[a] *13*	23/2$^-$		
1621.65[@] *14*	21/2$^-$		
1645.53[b] *15*	19/2$^+$	≤1 ns	T$_{1/2}$: From $\gamma\gamma$(t) (1997Sh36).
1730.00[h] *15*			
1789.91[b] *16*	21/2$^+$		
1816.64[&] *15*	27/2$^+$		
1867.05[a] *13*	25/2$^-$		
1899.78[@] *13*	23/2$^-$		
1908.82[h] *15*			
1954.34[#] *14*	23/2$^-$		
1977.38[b] *16*	23/2$^+$		
1979.36[&] *15*	29/2$^+$		
2032.09 *17*			
2058.73[#] *22*	25/2$^-$		
2140.72[a] *14*	27/2$^-$		
2148.45[e] *17*	(21/2$^+$)		
2148.81[h] *14*			
2175.82[@] *15*	25/2$^-$		
2194.90[b] *17*	25/2$^+$		
2285.91[i] *17*			
2330.05[e] *18*	(23/2$^+$)		
2384.37[@] *13*	27/2$^-$		
2413.80[a] *14*	29/2$^-$		
2433.25[&] *16*	31/2$^+$		
2436.27[b] *17*	27/2$^+$		
2487.12[i] *19*			
2523.94[#] *17*	27/2$^-$		
2557.94[e] *18*	(25/2$^+$)		
2593.05[&] *17*	33/2$^+$		
2632.93[#] *24*	29/2$^-$		
2656.89[@] *15*	29/2$^-$		
2697.82[b] *18*	(29/2$^+$)		
2718.31[a] *14*	31/2$^-$		
2724.96[i] *20*			
2821.55[e] *19*	(27/2$^+$)		
2840.93[@] *14*	31/2$^-$		
2974.60[b] *18*	31/2$^+$		
2981.32[i] *22*			
3007.31[a] *15*	33/2$^-$		
3101.9[#] *11*	31/2$^-$		
3109.60[e] *20*	(29/2$^+$)		
3113.53[@] *16*	33/2$^-$		
3113.96[&] *17*	35/2$^+$		
3172.0[#] *3*	33/2$^-$		
3202.97[c] *16*	29/2$^+$	≤1 ns	T$_{1/2}$: From $\gamma\gamma$(t) (1997Sh36).

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

^{177}W Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[‡]	Comments
3264.66[&] *20*	37/2$^+$		
3270.71[b] *19*	33/2$^+$		
3276.34[i] *22*			
3326.08[@] *15*	35/2$^-$		
3346.67[c] *19*	31/2$^+$		
3347.96[a] *17*	35/2$^-$		
3419.88[e] *21*	(31/2$^+$)		
3431.25[f] *22*	(31/2$^+$)	9 ns *2*	T$_{1/2}$: From $\gamma\gamma$(t) (1997Sh36) using a spectrum produced by gating on the 274.3γ above the (31/2$^+$) bandhead, and the 227.9γ, 288.0γ and 321.6γ below the (31/2$^+$) bandhead.
3517.32[c] *21*	33/2$^+$		
3568.70[b] *21*	(35/2$^+$)		
3592.24[i] *24*			
3614.27[@] *16*	37/2$^-$		
3639.05[g] *24*	(33/2$^+$)		
3655.07[a] *17*	37/2$^-$		
3705.48[f] *24*	(33/2$^+$)		
3724.57[c] *22*	35/2$^+$		
3725.6[#] *3*	37/2$^-$		
3745.09[e] *21*	(33/2$^+$)		
3844.86[&] *20*	39/2$^+$		
3875.18[@] *18*	39/2$^-$		
3889.21[b] *21*	(37/2$^+$)		
3931.5[g] *3*	(35/2$^+$)		
3966.11[c] *22*	37/2$^+$		
3974.96[&] *22*	41/2$^+$		
4013.33[f] *25*	(35/2$^+$)		
4022.55[a] *20*	(39/2$^-$)		
4194.57[@] *19*	41/2$^-$		
4238.93[c] *23*	39/2$^+$		
4256.5[g] *3*	(37/2$^+$)		
4323.7[#] *4*	(41/2$^-$)		
4324.07[a] *20*	(41/2$^-$)		
4343.9[f] *3*	(37/2$^+$)		
4496.38[@] *21*	43/2$^-$		
4535.42[c] *25*	41/2$^+$		
4574.82[d] *23*	(41/2$^+$)		
4591.7 *3*			
4602.6[g] *3*	(39/2$^+$)		
4613.66[&] *22*	(43/2$^+$)		
4691.6[f] *3*	(39/2$^+$)		
4708.36[&] *24*	45/2$^+$		
4741.35[a] *22*	(43/2$^-$)		
4800.3[d] *3*	(43/2$^+$)		
4845.58[@] *22*	45/2$^-$		
4855.1[c]	(43/2$^+$)		
4894.2 *3*			
4963.5[g] *4*	(41/2$^+$)		
5018.97[a] *23*	(45/2$^-$)		

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

^{177}W Levels (continued)

E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]	E(level)[†]	Jπ[‡]
5052.7[f] *3*	(41/2+)	5423.8[f] *4*	(43/2+)	5805.9[f] *5*	(45/2+)	6353.0[@] *5*	(53/2−)
5063.2[d] *3*	(45/2+)	5473.9[&] *4*	(49/2+)	5953.6[@] *3*	(51/2−)	6460.7[d] *5*	(53/2+)
5190.78[@] *23*	(47/2−)	5501.4[a] *11*	(47/2−)	6069.5[d] *4*	(51/2+)	6597.5[f] *8*	(49/2+)
5229.8 *3*		5566.18[@] *24*	(49/2−)	6093.1?[g]	(47/2+)	6780.6?[@]	(55/2−)
5333.0[g] *4*	(43/2+)	5703.6[d] *4*	(49/2+)	6196.1[f] *7*	(47/2+)	6872.1[d] *5*	(55/2+)
5365.6[d] *3*	(47/2+)	5709.2[g] *4*	(45/2+)	6232.1[&] *12*	(51/2+)	7160.1?[&]	(57/2+)
5410.8[&] *5*	(47/2+)	5771.0[a] *11*	(49/2−)	6299.2[&] *5*	(53/2+)	7204.7?[@]	(57/2−)

† From a least-squares fit to Eγ.
‡ From Adopted Levels, unless otherwise stated.
# Band(A): ν1/2[521] rotational band. The assignment is supported by the observed in-band properties, such as the decoupled character of the band, rotational alignment, and systematics of similar structures in neighboring nuclei.
@ Band(B): ν5/2[512] rotational band. The assignment is 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.
& Band(C): ν7/2[633] Coriolis-mixed ($i_{13/2}$) rotational band. The assignment is supported by the observed in-band properties, such as alignment, g_K-g_R values, and systematics of similar structures in neighboring nuclei.
a Band(D): ν7/2[514] rotational band. The assignment is 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.
b Band(E): K^π=19/2+ band. configuration= ν^3(5/2[512],7/2[514],7/2[633]). The assignment is supported by the observed in-band properties, such as alignment and g_K-g_R values.
c Band(F): K^π=29/2+ band. configuration=ν^3(5/2[512],7/2[514],7/2[633])⊗ π^2(1/2[541],9/2[514]). The assignment is supported by the observed in-band properties, such as alignment and g_K-g_R values.
d Band(G): K^π=(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]). The assignment is supported by the observed in-band properties, such as alignment and g_K-g_R values.
e Band(H): K^π=(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]). The assignment is supported by the observed in-band properties, such as alignment and g_K-g_R values.
f Band(I): K^π=(31/2+) band. configuration=ν^3(5/2[512],7/2[514],7/2[633])⊗ π^2(5/2[402],7/2[404]). The assignment is supported by the observed in-band properties, such as alignment and g_K-g_R values.
g Band(J): K^π=(33/2+) band. configuration=ν^3(5/2[512],7/2[514],9/2[624])⊗ p^2(5/2[402],7/2[404]). The assignment is supported by the observed in-band properties, such as alignment and g_K-g_R values.
h Band(K): Side band.
i Band(L): Side band.

γ(^{177}W)

Mixing ratios values presented in the Comments section are deduced by the evaluator from the branching ratios and the rotational model, and by assuming a pure K.

Eγ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
(6.26 *14*)	101.17	5/2−	94.91	5/2−	[M1][#]	Eγ: From level energy differences. Not observed directly, but required by the coincidence relationships.
(21.85 *14*)	101.17	5/2−	79.32	3/2−	[M1][#]	Eγ: From level energy differences.

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

E_γ†	I_γ†	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	Comments
(34.01 *16*)		135.18	7/2⁻	101.17	5/2⁻	M1+E2	E_γ: From level energy differences. Not observed directly, but required by the coincidence relationships.
50.78 *18*	240 *16*	185.96	7/2⁺	135.18	7/2⁻	[E1]	E_γ: From level energy differences.
63.2 *1*	308 *25*	273.88	11/2⁺	210.78	9/2⁺	[M1+E2]	δ: 1.19 *14*, assuming K=7/2.
79.3 *1*		79.32	3/2⁻	0.0	1/2⁻	M1+E2	Mult.: DCO=0.83 *11*.
84.8 *1*	22×10^2 *1*	185.96	7/2⁺	101.17	5/2⁻	E1	Mult.: DCO=0.59 *5*.
86.9 *1*	203 *10*	360.37	13/2⁺	273.88	11/2⁺	M1+E2	Mult.: DCO=0.31 *3*. δ: 0.34 *1*, assuming K=7/2.
88.0 *10*	201 *11*	273.88	11/2⁺	185.96	7/2⁺	[E2]	
94.9 *1*		94.91	5/2⁻	0.0	1/2⁻	E2	Mult.: DCO=1.1 *1*.
101.2 *1*		101.17	5/2⁻	0.0	1/2⁻	[E2]	
101.6 *1*	151 *28*	202.50	7/2⁻	101.17	5/2⁻	M1+E2	Mult.: DCO=0.44 *6*.
116.5 *1*	4 *1*	2148.45	(21/2⁺)	2032.09			
117.0 *2*	37 *3*	391.54	11/2⁻	273.88	11/2⁺	[E1]	
117.2 *1*	271 *14*	252.26	9/2⁻	135.18	7/2⁻	M1+E2	Mult.: DCO=0.32 *3*.
127.9 *1*	272 *12*	622.21	17/2⁺	494.41	15/2⁺	M1+E2	Mult.: DCO=0.36 *3*. δ: 0.29 *1*, assuming K=7/2.
130.7 *1*	58 *7*	332.83	9/2⁻	202.50	7/2⁻	M1+E2	Mult.: DCO=0.41 *7*. δ: 0.33 *3*, assuming K=5/2.
134.3 *1*	439 *19*	494.41	15/2⁺	360.37	13/2⁺	M1+E2	Mult.: DCO=0.32 *3*. δ: 0.42 *2*, assuming K=7/2.
137.1 *1*	55 *3*	2285.91		2148.81		M1#	Mult.: α(exp)=1.8 *3* from intensity balance consideration (1997Sh36). α(E1)=0.17, α(E2)=1.18, α(M1)=1.98.
139.6 *1*	247 *13*	391.54	11/2⁻	252.26	9/2⁻	M1+E2	Mult.: DCO=0.30 *3*. δ: 0.85 *5*, assuming K=7/2.
143.7 *1*	42 *2*	3346.67	31/2⁺	3202.97	29/2⁺	[M1+E2]	δ: 0.4<δ<1.0 or 1.0<δ<2.7 from DCO=0.90 *12* for 377.3γ deduced when gated on the 143.7γ.
144.3 *1*	157 *7*	1789.91	21/2⁺	1645.53	19/2⁺	[M1+E2]	δ: −1.1<δ<−0.79 from DCO=3.7 *4* for 404.9γ deduced when gated on the 144.3γ.
149.5 *1*	145 *7*	360.37	13/2⁺	210.78	9/2⁺	E2	Mult.: DCO=0.89 *11*.
151.0 *1*	73 *4*	252.26	9/2⁻	101.17	5/2⁻	[E2]	
151.1 *1*	115 *5*	984.36	21/2⁺	833.36	19/2⁺	M1+E2	Mult.: DCO=0.37 *4*. δ: 0.27 *1*, assuming K=7/2.
157.8 *1*	79 *4*	490.53	11/2⁻	332.83	9/2⁻	M1+E2	Mult.: DCO=0.39 *5*. δ: 0.39 *2*, assuming K=5/2.
159.4 *10*	3 *1*	2593.05	33/2⁺	2433.25	31/2⁺	[M1+E2]	δ: 0.19 *3*, assuming K=7/2.
160.2 *1*	189 *9*	551.79	13/2⁻	391.54	11/2⁻	M1+E2	Mult.: DCO=0.31 *3*. δ: 0.67 *3*, assuming K=7/2.
160.7 *1*	41 *2*	1439.24	25/2⁺	1278.57	23/2⁺	M1+E2	Mult.: DCO=0.36 *9*. δ: 0.23 *1*, assuming K=7/2.
162.7 *1*	17 *1*	1979.36	29/2⁺	1816.64	27/2⁺	M1+E2	Mult.: DCO=0.49 *26*. δ: 0.17 *1*, assuming K=7/2.
170.8 *1*	57 *3*	3517.32	33/2⁺	3346.67	31/2⁺	[M1+E2]	δ: δ<0.42, assuming K=29/2.
180.0 *1*	168 *8*	731.68	15/2⁻	551.79	13/2⁻	M1+E2	Mult.: DCO=0.49 *4*. δ: 0.54 *2*, assuming K=7/2.
181.5 *2*	42 *4*	276.55	7/2⁻	94.91	5/2⁻	[M1+E2]	δ: 1.05 *13*, assuming K=1/2.
181.6 *1*	63 *3*	2330.05	(23/2⁺)	2148.45	(21/2⁺)	[M1+E2]	
183.0 *1*	87 *5*	673.63	13/2⁻	490.53	11/2⁻	M1+E2	Mult.: DCO=0.90 *17*. δ: 0.32 *1*, assuming K=5/2.
187.5 *1*	125 *6*	1977.38	23/2⁺	1789.91	21/2⁺	[M1+E2]	δ: 0.91 *6*, assuming K=19/2.
189.0 *1*	51 *3*	391.54	11/2⁻	202.50	7/2⁻	[E2]	
192.0 *3*	14 *2*	551.79	13/2⁻	360.37	13/2⁺	[E1]	
197.0 *1*	133 *6*	928.64	17/2⁻	731.68	15/2⁻	M1+E2	Mult.: DCO=0.57 *5*. δ: 0.48 *2*, assuming K=7/2.

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

E_γ †	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult.‡	Comments
197.2 *1*	299 *22*	276.55	7/2⁻	79.32	3/2⁻	E2	Mult.: DCO=0.93 *8*.
197.6 *1*	25 *3*	332.83	9/2⁻	135.18	7/2⁻	[M1]#	
201.2 *1*	71 *3*	2487.12		2285.91		[M1+E2]	
207.3 *1*	43 *3*	881.00	15/2⁻	673.63	13/2⁻	M1+E2	Mult.: DCO=0.63 *8*. δ: 0.40 *2*, assuming K=5/2.
207.5 *1*	59 *3*	3724.57	35/2⁺	3517.32	33/2⁺	[M1+E2]	δ: 0.28 *7*, assuming K=29/2.
207.8 *1*	65 *4*	3639.05	(33/2⁺)	3431.25	(31/2⁺)	(M1+E2)	Mult.: α(exp)=0.4 *4* from intensity balance consideration (1997Sh36). α(E1)=0.06, α(E2)=0.27, α(M1)=0.62.
210.0 *1*	476 *25*	304.87	9/2⁻	94.91	5/2⁻	E2	Mult.: DCO=0.95 *8*.
211.2 *1*	297 *13*	833.36	19/2⁺	622.21	17/2⁺	M1+E2	Mult.: DCO=0.41 *4*. δ: 0.52 *2*, assuming K=7/2.
214.5 *1*	100 *5*	1143.09	19/2⁻	928.64	17/2⁻	M1+E2	Mult.: DCO=0.34 *3*. δ: 0.45 *2*, assuming K=7/2.
217.5 *1*	69 *3*	2194.90	25/2⁺	1977.38	23/2⁺	[M1+E2]	δ: 1.00 *7*, assuming K=19/2.
219.2 *1*	27 *2*	551.79	13/2⁻	332.83	9/2⁻	[E2]	
220.4 *1*	588 *26*	494.41	15/2⁺	273.88	11/2⁺	E2	Mult.: DCO=1.0 *1*.
225.5 *1*	26 *1*	4800.3	(43/2⁺)	4574.82	(41/2⁺)	[M1+E2]	
227.1 *1*	80 *4*	1370.32	21/2⁻	1143.09	19/2⁻	M1+E2	Mult.: DCO=0.35 *6*. δ: 0.41 *2*, assuming K=7/2.
227.9 *1*	56 *3*	2557.94	(25/2⁺)	2330.05	(23/2⁺)	[M1+E2]	δ: 0.27 *6*, assuming K=21/2.
228.3 *2*	8 *1*	1108.95	17/2⁻	881.00	15/2⁻	[M1+E2]	δ: 0.91 *10*, assuming K=5/2.
231.5 *1*	32 *4*	332.83	9/2⁻	101.17	5/2⁻	E2	Mult.: DCO=1.1 *2*.
237.9 *1*	55 *4*	2724.96		2487.12		[M1+E2]	
238.0 *1*	124 *8*	490.53	11/2⁻	252.26	9/2⁻	[M1]#	
239.6 *1*	16 *1*	2148.81		1908.82			
241.0 *2*	20 *2*	731.68	15/2⁻	490.53	11/2⁻	[E2]	
241.4 *1*	46 *3*	2436.27	27/2⁺	2194.90	25/2⁺	[M1+E2]	δ: 1.09 *10*, assuming K=19/2.
241.6 *1*	55 *3*	3966.11	37/2⁺	3724.57	35/2⁺	[M1+E2]	δ: 0.29 *3*, assuming K=29/2.
244.6 *1*	68 *3*	1614.74	23/2⁻	1370.32	21/2⁻	M1+E2	Mult.: DCO=0.35 *4*. δ: 0.37 *1*, assuming K=7/2.
247.8 *1*	37 *3*	4591.7		4343.9	(37/2⁺)		
249.7 *3*	8 *1*	1358.64	19/2⁻	1108.95	17/2⁻	[M1+E2]	δ: 0.76 *7*, assuming K=5/2.
252.4 *1*	45 *2*	1867.05	25/2⁻	1614.74	23/2⁻	M1+E2	Mult.: DCO=0.49 *4*. δ: 0.37 *1*, assuming K=7/2.
256.3 *1*	457 *24*	391.54	11/2⁻	135.18	7/2⁻	E2	Mult.: DCO=1.0 *1*.
256.3 *1*	28 *2*	2981.32		2724.96		[M1+E2]	
261.7 *1*	33 *2*	2697.82	(29/2⁺)	2436.27	27/2⁺	[M1+E2]	δ: 0.83 *5*, assuming K=19/2.
261.8 *1*	812 *35*	622.21	17/2⁺	360.37	13/2⁺	E2	Mult.: DCO=1.0 *1*.
262.7 *10*	9 *1*	1621.65	21/2⁻	1358.64	19/2⁻	[M1+E2]	δ: 0.55 *4*, assuming K=5/2.
262.9 *1*	17 *1*	5063.2	(45/2⁺)	4800.3	(43/2⁺)	[M1+E2]	
263.6 *1*	65 *3*	2821.55	(27/2⁺)	2557.94	(25/2⁺)	[M1+E2]	δ: 0.17 *2*, assuming K=21/2.
272.8 *1*	24 *1*	4238.93	39/2⁺	3966.11	37/2⁺	[M1+E2]	δ: 0.38 *2*, assuming K=29/2.
273.1 *1*	31 *2*	2413.80	29/2⁻	2140.72	27/2⁻	M1+E2	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.
273.4 *2*	21 *1*	578.31	11/2⁻	304.87	9/2⁻	[M1+E2]	δ: 0.63 *3*, assuming K=1/2.
273.9 *1*	40 *2*	2140.72	27/2⁻	1867.05	25/2⁻	M1+E2	Mult.: DCO=0.54 *5*. The value overlaps with that for the 273.1 keV γ-ray. See 1997Sh36 for details. δ: 0.31 *1*, assuming K=7/2.
274.3 *1*	97 *5*	3705.48	(33/2⁺)	3431.25	(31/2⁺)	[M1+E2]	
276.0 *3*	≈15	2974.60	31/2⁺	2697.82	(29/2⁺)	[M1+E2]	δ: δ≈0.70, assuming K=19/2.
282.3 *1*	83 *4*	673.63	13/2⁻	391.54	11/2⁻	[M1]#	
288.0 *1*	156 *9*	490.53	11/2⁻	202.50	7/2⁻	E2	Mult.: DCO=0.90 *9*.
288.0 *1*	69 *3*	3109.60	(29/2⁺)	2821.55	(27/2⁺)	[M1+E2]	δ: 0.15 *3*, assuming K=21/2.

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

E_γ [†]	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
288.5 *1*	17 *2*	3007.31	33/2⁻	2718.31	31/2⁻	[M1+E2]	δ: 0.24 *1*, assuming K=7/2.
292.4 *1*	63 *3*	3931.5	(35/2⁺)	3639.05	(33/2⁺)	[M1+E2]	
294.3 *1*	124 *6*	1278.57	23/2⁺	984.36	21/2⁺	M1+E2	Mult.: DCO=0.20 *6*. δ: 0.69 *3*, assuming K=7/2.
294.9 *1*	16 *1*	3276.34		2981.32		[M1+E2]	
296.0 *1*	11 *1*	3270.71	33/2⁺	2974.60	31/2⁺	[M1+E2]	δ: 0.78 *7*, assuming K=19/2.
296.5 *1*	≈7	4535.42	41/2⁺	4238.93	39/2⁺	[M1+E2]	δ: δ≈0.33, assuming K=29/2.
299.5 *1*	617 *28*	551.79	13/2⁻	252.26	9/2⁻	E2	Mult.: DCO=1.0 *1*.
301.7 *1*	253 *12*	578.31	11/2⁻	276.55	7/2⁻	E2	Mult.: DCO=1.0 *1*.
302.4 *1*	18 *1*	5365.6	(47/2⁺)	5063.2	(45/2⁺)	[M1+E2]	
302.5 *1*	33 *2*	4894.2		4591.7			
304.0 *1*	25 *2*	2718.31	31/2⁻	2413.80	29/2⁻	[M1+E2]	δ: 0.27 *1*, assuming K=7/2.
307.3 *2*	6 *1*	3655.07	37/2⁻	3347.96	35/2⁻	[M1+E2]	δ: 0.21 *2*, assuming K=19/2.
307.8 *1*	66 *3*	4013.33	(35/2⁺)	3705.48	(33/2⁺)	[M1+E2]	δ: 0.59 *5*, assuming K=31/2.
310.3 *1*	12 *6*	3419.88	(31/2⁺)	3109.60	(29/2⁺)	[M1+E2]	δ: 0.31 *14*, assuming K=21/2.
314.0 *10*	<7	3517.32	33/2⁺	3202.97	29/2⁺	[E2]	
315.8 *1*	444 *19*	620.63	13/2⁻	304.87	9/2⁻	E2	Mult.: DCO=1.0 *1*.
315.9 *1*	14 *1*	3592.24		3276.34		[M1+E2]	
320 [@]		4855.1	(43/2⁺)	4535.42	41/2⁺		
321.6 *1*	57 *3*	3431.25	(31/2⁺)	3109.60	(29/2⁺)	M1 [#]	Mult.: DCO=1.1 *1*. Deduced by gating on the 227.9γ and/or 288.0γ, ΔJ=1 M1+E2 transitions.
325.0 *1*	44 *3*	4256.5	(37/2⁺)	3931.5	(35/2⁺)	[M1+E2]	
325.2 *1*	11 *6*	3745.09	(33/2⁺)	3419.88	(31/2⁺)	[M1+E2]	δ: 0.20 *9*, assuming K=21/2.
329.4 *1*	59 *3*	881.00	15/2⁻	551.79	13/2⁻	[M1] [#]	
330.5 *1*	41 *2*	4343.9	(37/2⁺)	4013.33	(35/2⁺)	[M1+E2]	δ: 0.62 *4*, assuming K=31/2.
331.8 *1*	62 *3*	1977.38	23/2⁺	1645.53	19/2⁺	[E2]	
335.6 *1*	14 *2*	5229.8		4894.2			
335.9 *1*	18 *1*	4574.82	(41/2⁺)	4238.93	39/2⁺	[M1] [#]	
338.0 *2*	9 *5*	5703.6	(49/2⁺)	5365.6	(47/2⁺)	[M1+E2]	δ: δ≈0.44, assuming K=41/2.
338.9 *1*	970 *42*	833.36	19/2⁺	494.41	15/2⁺	E2	Mult.: DCO=1.0 *1*.
340.0 *1*	681 *30*	731.68	15/2⁻	391.54	11/2⁻	E2	Mult.: DCO=1.0 *1*.
340.4 *10*	13 *2*	3347.96	35/2⁻	3007.31	33/2⁻	[M1+E2]	δ: 0.22 *2*, assuming K=7/2..
340.6 *1*	214 *11*	673.63	13/2⁻	332.83	9/2⁻	E2	Mult.: DCO=0.94 *10*.
346.2 *1*	21 *2*	4602.6	(39/2⁺)	4256.5	(37/2⁺)	[M1+E2]	δ: 0.95 *17*, assuming K=33/2.
347.8 *1*	31 *2*	4691.6	(39/2⁺)	4343.9	(37/2⁺)	[M1+E2]	δ: 0.58 *4*, assuming K=31/2.
350.5 *2*	20 *2*	970.98	15/2⁻	620.63	13/2⁻	[M1+E2]	δ: 0.39 *2*, assuming K=1/2.
351 [@]	19 *3*	3007.31	33/2⁻	2656.89	29/2⁻	[E2]	
356 [@]	15 *3*	490.53	11/2⁻	135.18	7/2⁻	[E2]	
358.5 *1*	17 *2*	2148.45	(21/2⁺)	1789.91	21/2⁺	M1 [#]	Mult.: DCO=1.7 *2*. Deduced by gating on the 181.6γ, 227.9γ and 288.0γ, ΔJ=1 M1+E2 transitions.
360.9 *1*	13 *2*	4963.5	(41/2⁺)	4602.6	(39/2⁺)	[M1+E2]	
361.2 *2*	6 *2*	5052.7	(41/2⁺)	4691.6	(39/2⁺)	[M1+E2]	δ: 0.95 *39*, assuming K=31/2.
362.1 *1*	1134 *49*	984.36	21/2⁺	622.21	17/2⁺	E2	Mult.: DCO=1.0 *1*.
365.9 *1*	6 *3*	6069.5	(51/2⁺)	5703.6	(49/2⁺)	[M1+E2]	δ: δ≈0.45, assuming K=41/2.
367.3 [@] *10*	5 *1*	4022.55	(39/2⁻)	3655.07	37/2⁻	[M1+E2]	δ: 0.25 *3*, assuming K=7/2.
369.5 *1*	9 *1*	5333.0	(43/2⁺)	4963.5	(41/2⁺)	[M1+E2]	δ: 0.54 *11*, assuming K=33/2.
370.6 *3*	6 *1*	5423.8	(43/2⁺)	5052.7	(41/2⁺)	[M1+E2]	δ: 0.57 *8*, assuming K=31/2.
376.2 *1*	6 *3*	5709.2	(45/2⁺)	5333.0	(43/2⁺)	[M1+E2]	
376.8 *1*	673 *29*	928.64	17/2⁻	551.79	13/2⁻	E2	Mult.: DCO=0.95 *8*.
377.3 *1*	51 *3*	1108.95	17/2⁻	731.68	15/2⁻	[M1] [#]	
377.3 *2*	7 *4*	3724.57	35/2⁺	3346.67	31/2⁺	E2	Mult.: DCO=0.90 *12*. Deduced by gating on the 143.7γ, ΔJ=1 M1+E2 transition.
377.6 *1*	66 *4*	1816.64	27/2⁺	1439.24	25/2⁺	M1+E2	Mult.: DCO=0.55 *7*. δ: 0.81 *5*, assuming K=7/2.

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

E_γ†	I_γ†	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	Comments
384@	2 *1*	6093.1?	(47/2+)	5709.2	(45/2+)	[M1+E2]	
386.7 *1*	14 *2*	2032.09		1645.53	19/2+		
390.4 *1*	243 *12*	881.00	15/2−	490.53	11/2−	E2	Mult.: DCO=0.96 *9*.
391.3 *3*	4 *2*	6460.7	(53/2+)	6069.5	(51/2+)	[M1+E2]	δ: $\delta\approx$0.26, assuming K=41/2.
392.6 *1*	239 *11*	970.98	15/2−	578.31	11/2−	E2	Mult.: DCO=1.0 *1*.
404.9 *1*	101 *5*	2194.90	25/2+	1789.91	21/2+	E2	Mult.: DCO=3.7 *4*. Deduced by gating on the 144.3γ, ΔJ=1 M1+E2 transition.
408.6 *1*	400 *17*	1029.23	17/2−	620.63	13/2−	E2	Mult.: DCO=0.96 *8*.
408.7 *3*	12 *1*	1437.91	19/2−	1029.23	17/2−	[M1+E2]	δ: 0.35 *2*, assuming K=1/2.
409.5 *1*	4 *2*	2557.94	(25/2+)	2148.45	(21/2+)	[E2]	
411.3 *1*	634 *28*	1143.09	19/2−	731.68	15/2−	E2	Mult.: DCO=0.95 *8*.
411.4 *2*	2 *1*	6872.1	(55/2+)	6460.7	(53/2+)	[M1+E2]	δ: $\delta\approx$0.33, assuming K=41/2.
418.7 *1*	20 *1*	2148.81		1730.00			
421	4 *3*	673.63	13/2−	252.26	9/2−	[E2]	
427.0 *2*	6 *1*	2840.93	31/2−	2413.80	29/2−	[M1]#	
430.0 *1*	30 *2*	1358.64	19/2−	928.64	17/2−	[M1]#	
430.0 *1*	23 *1*	2384.37	27/2−	1954.34	23/2−	[E2]	
435.3 *1*	217 *10*	1108.95	17/2−	673.63	13/2−	E2	Mult.: DCO=0.91 *11*.
439.1 *2*	11 *2*	2724.96		2285.91		[E2]	
441.6 *1*	576 *25*	1370.32	21/2−	928.64	17/2−	E2	Mult.: DCO=0.93 *8*.
445.2 *1*	717 *31*	1278.57	23/2+	833.36	19/2+	E2	Mult.: DCO=0.96 *8*.
448.7 *1*	12 *2*	3966.11	37/2+	3517.32	33/2+	[E2]	
453.8 *1*	29 *2*	2433.25	31/2+	1979.36	29/2+	[M1+E2]	δ: 1.23 *13*, assuming K=7/2.
455.0 *1*	1000	1439.24	25/2+	984.36	21/2+	E2	Mult.: DCO=0.85 *7*.
456.5 *1*	57 *4*	2840.93	31/2−	2384.37	27/2−	E2	Mult.: DCO=0.88 *11*.
456.7 *1*	55 *4*	3113.53	33/2−	2656.89	29/2−	E2	Mult.: DCO=0.80 *8*.
458.9 *1*	126 *6*	2436.27	27/2+	1977.38	23/2+	[E2]	
466.9 *1*	212 *9*	1437.91	19/2−	970.98	15/2−	E2	Mult.: DCO=0.98 *9*.
471.7 *1*	507 *22*	1614.74	23/2−	1143.09	19/2−	E2	Mult.: DCO=0.91 *8*.
477.6 *1*	231 *11*	1358.64	19/2−	881.00	15/2−	E2	Mult.: DCO=0.89 *6*.
478.4 *1*	22 *2*	1621.65	21/2−	1143.09	19/2−	[M1]#	
481.0 *1*	70 *4*	2656.89	29/2−	2175.82	25/2−	E2	Mult.: DCO=1.1 *1*.
484.5 *1*	73 *4*	2384.37	27/2−	1899.78	23/2−	E2	Mult.: DCO=0.86 *7*. The value overlaps with that for the 485.1 and 485.4 keV γ-rays. See 1997Sh36 for details.
485.1 *1*	70 *4*	3326.08	35/2−	2840.93	31/2−	E2	Mult.: DCO=0.86 *7*. The value overlaps with that for the 484.5 and 485.4 keV γ-rays. See 1997Sh36 for details.
485.4 *1*	320 *14*	1514.63	21/2−	1029.23	17/2−	E2	Mult.: DCO=0.86 *7*. The value overlaps with that for the 484.5 and 485.1 keV γ-rays. See 1997Sh36 for details.
490	6 *2*	881.00	15/2−	391.54	11/2−	[E2]	
491.5 *1*	5 *1*	2821.55	(27/2+)	2330.05	(23/2+)	[E2]	
493.9 *2*	22 *2*	2981.32		2487.12		[E2]	
496.8 *1*	435 *19*	1867.05	25/2−	1370.32	21/2−	E2	Mult.: DCO=0.95 *8*.
500.8 *1*	41 *3*	3614.27	37/2−	3113.53	33/2−	E2	Mult.: DCO=0.80 *12*.
502.8 *1*	32 *3*	2148.45	(21/2+)	1645.53	19/2+	M1#	Mult.: DCO=0.98 *8*. Deduced by gating on the 181.6γ, 227.9γ and 288.0γ, ΔJ=1 M1+E2 transitions.
502.8 *1*	99 *5*	2697.82	(29/2+)	2194.90	25/2+	[E2]	
507@	<7	3347.96	35/2−	2840.93	31/2−	[E2]	
512.8 *1*	203 *9*	1621.65	21/2−	1108.95	17/2−	E2	Mult.: DCO=0.97 *11*.
514.4 *1*	12 *1*	4238.93	39/2+	3724.57	35/2+	[E2]	

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^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

E_γ [†]	I_γ [†]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [‡]	Comments
516.2 *1*	17 *2*	2656.89	29/2−	2140.72	27/2−	[M1] [#]	
516.4 *1*	109 *5*	1954.34	23/2−	1437.91	19/2−	E2	Mult.: DCO=0.95 *8*.
517.4 *1*	15 *2*	2384.37	27/2−	1867.05	25/2−	[M1] [#]	
520.8 *1*	20 *2*	3113.96	35/2+	2593.05	33/2+	[M1+E2]	δ: 0.72 *6*, assuming K=7/2.
525.9 *1*	294 *13*	2140.72	27/2−	1614.74	23/2−	E2	Mult.: DCO=0.90 *8*.
527.3 *10*	4 *2*	3875.18	39/2−	3347.96	35/2−	[E2]	
529.4 *1*	20 *2*	1899.78	23/2−	1370.32	21/2−	[M1] [#]	
534.3 *1*	84 *4*	2148.81		1614.74	23/2−		
538.1 *1*	505 *22*	1816.64	27/2+	1278.57	23/2+	E2	Mult.: DCO=0.93 *8*.
538.1 *1*	22 *3*	1908.82		1370.32	21/2−		
538.3 *1*	51 *3*	2974.60	31/2+	2436.27	27/2+	[E2]	
539.1 *1*	47 *3*	3172.0	33/2−	2632.93	29/2−	E2	Mult.: DCO=1.2 *1*.
540.1 *1*	746 *32*	1979.36	29/2+	1439.24	25/2+	E2	Mult.: DCO=0.92 *8*.
541.1 *1*	169 *8*	1899.78	23/2−	1358.64	19/2−	E2	Mult.: DCO=0.99 *9*.
542 [@]	≈2	3655.07	37/2−	3113.53	33/2−	[E2]	
544.1 *1*	253 *11*	2058.73	25/2−	1514.63	21/2−	E2	Mult.: DCO=1.0 *8*.
546.6 *1*	283 *12*	2413.80	29/2−	1867.05	25/2−	E2	Mult.: DCO=0.94 *8*.
549.1 *1*	80 *4*	3875.18	39/2−	3326.08	35/2−	E2	Mult.: DCO=0.97 *14*.
551.5 *1*	22 *2*	3276.34		2724.96		[E2]	
551.7 *2*	7 *4*	3109.60	(29/2+)	2557.94	(25/2+)	[E2]	
553.6 *1*	22 *1*	3725.6	37/2−	3172.0	33/2−	E2	Mult.: DCO=1.2 *1*.
554.1 *1*	143 *7*	2175.82	25/2−	1621.65	21/2−	E2	Mult.: DCO=1.1 *1*.
557	5 *2*	1108.95	17/2−	551.79	13/2−	[E2]	
561.1 *2*	13 *2*	2175.82	25/2−	1614.74	23/2−	[M1] [#]	
569.2 *3*	4 *1*	4535.42	41/2+	3966.11	37/2+	[E2]	
569.6 *1*	40 *2*	2523.94	27/2−	1954.34	23/2−	E2	Mult.: DCO=1.1 *2*.
573.0 *1*	51 *3*	3270.71	33/2+	2697.82	(29/2+)	[E2]	
574.2 *1*	136 *6*	2632.93	29/2−	2058.73	25/2−	E2	Mult.: DCO=1.0 *1*.
577.7 *1*	181 *8*	2718.31	31/2−	2140.72	27/2−	E2	Mult.: DCO=0.94 *8*.
578.0 *10*	2 *2*	3101.9	31/2−	2523.94	27/2−	[E2]	
580.3 *1*	58 *3*	4194.57	41/2−	3614.27	37/2−	E2	Mult.: DCO=1.4 *2*.
581.4 *3*	15 *2*	4013.33	(35/2+)	3431.25	(31/2+)	[E2]	
586.8 *1*	27 *3*	1730.00		1143.09	19/2−		
593.9 *1*	171 *8*	3007.31	33/2−	2413.80	29/2−	E2	Mult.: DCO=0.88 *8*.
594.1 *1*	33 *2*	3568.70	(35/2+)	2974.60	31/2+	[E2]	
598.1 *2*	17 *1*	4323.7	(41/2−)	3725.6	37/2−	[E2]	
598.3 *1*	7 *4*	3419.88	(31/2+)	2821.55	(27/2+)	[E2]	
606.9 *1*	52 *3*	3614.27	37/2−	3007.31	33/2−	[E2]	
607.8 *1*	42 *3*	3326.08	35/2−	2718.31	31/2−	[E2]	
608.7 *1*	33 *2*	4574.82	(41/2+)	3966.11	37/2+	E2	Mult.: DCO=2.0 *2*. Deduced by gating on the 143.7γ and 170.8γ, ΔJ=1 M1+E2 transitions.
610.2 *3*	8 *1*	3431.25	(31/2+)	2821.55	(27/2+)	E2	Mult.: DCO=1.8 *3*. Deduced by gating on the 227.9γ and/or 288.0γ, ΔJ=1 M1+E2 transitions.
613.6 *1*	440 *19*	2593.05	33/2+	1979.36	29/2+	E2	Mult.: DCO=0.95 *8*.
616 [@]		4855.1	(43/2+)	4238.93	39/2+		
616.8 *1*	359 *16*	2433.25	31/2+	1816.64	27/2+	E2	Mult.: DCO=0.98 *9*.
618.5 *1*	26 *2*	3889.21	(37/2+)	3270.71	33/2+	[E2]	
621.2 *1*	51 *3*	4496.38	43/2−	3875.18	39/2−	E2	Mult.: DCO=0.86 *8*.
629.7 *1*	72 *4*	3347.96	35/2−	2718.31	31/2−	E2	Mult.: DCO=0.95 *9*.
635.5 *1*	4 *2*	3745.09	(33/2+)	3109.60	(29/2+)	[E2]	
638.6 *1*	23 *2*	4343.9	(37/2+)	3705.48	(33/2+)	[E2]	
640	≈3	5703.6	(49/2+)	5063.2	(45/2+)	[E2]	
647.7 *1*	69 *3*	3655.07	37/2−	3007.31	33/2−	E2	Mult.: DCO=0.80 *12*.
651.0 *1*	38 *2*	4845.58	45/2−	4194.57	41/2−	E2	Mult.: DCO=1.1 *3*.

Continued on next page (footnotes at end of table)

^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

E_γ[†]	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	Comments
661.0 *1*	50 *3*	1645.53	19/2+	984.36	21/2+	[M1][#]	
669.0 *1*	24 *2*	4324.07	(41/2−)	3655.07	37/2−	[E2]	
671	19 *3*	4602.6	(39/2+)	3931.5	(35/2+)	[E2]	
671.6 *1*	206 *9*	3264.66	37/2+	2593.05	33/2+	E2	Mult.: DCO=0.92 *8*.
674.6 *1*	45 *3*	4022.55	(39/2−)	3347.96	35/2−	[E2]	
678.3 *1*	25 *2*	4691.6	(39/2+)	4013.33	(35/2+)	[E2]	
680.1 *10*	12 *2*	3113.53	33/2−	2433.25	31/2+	[E1]	
680.8 *1*	150 *7*	3113.96	35/2+	2433.25	31/2+	E2	Mult.: DCO=1.2 *1*.
694.4 *1*	23 *2*	5190.78	(47/2−)	4496.38	43/2−	[E2]	
694.9 *1*	16 *1*	5018.97	(45/2−)	4324.07	(41/2−)	[E2]	
696	7 *2*	4022.55	(39/2−)	3326.08	35/2−	[E2]	
700	8 *1*	3113.53	33/2−	2413.80	29/2−	[E2]	
701	3 *1*	2840.93	31/2−	2140.72	27/2−	[E2]	
704	≈3	6069.5	(51/2+)	5365.6	(47/2+)	[E2]	
708.4 *2*	13 *2*	5052.7	(41/2+)	4343.9	(37/2+)	[E2]	
710.3 *1*	88 *4*	3974.96	41/2+	3264.66	37/2+	E2	Mult.: DCO=0.92 *23*.
718.8 *1*	24 *2*	4741.35	(43/2−)	4022.55	(39/2−)	[E2]	
720.6 *1*	15 *1*	5566.18	(49/2−)	4845.58	45/2−	[E2]	
730	9 *3*	5333.0	(43/2+)	4602.6	(39/2+)	[E2]	
730.9 *1*	74 *4*	3844.86	39/2+	3113.96	35/2+	E2	Mult.: DCO=1.1 *1*.
732.7 *3*	9 *1*	5423.8	(43/2+)	4691.6	(39/2+)	[E2]	
733.4 *1*	31 *2*	4708.36	45/2+	3974.96	41/2+	E2	Mult.: DCO=0.87 *16*.
733.5 *10*	17 *2*	3326.08	35/2−	2593.05	33/2+	[E1]	
752.0 *10*	5 *1*	5771.0	(49/2−)	5018.97	(45/2−)	[E2]	
753.2 *4*	8 *1*	5805.9	(45/2+)	5052.7	(41/2+)		
757	≈1	6460.7	(53/2+)	5703.6	(49/2+)	[E2]	
760.0 *10*	7 *1*	5501.4	(47/2−)	4741.35	(43/2−)	[E2]	
762.8 *2*	8 *1*	5953.6	(51/2−)	5190.78	(47/2−)	[E2]	
765.5 *2*	11 *1*	5473.9	(49/2+)	4708.36	45/2+	[E2]	
766.6 *1*	14 *1*	3202.97	29/2+	2436.27	27/2+	[M1][#]	
768.8 *1*	23 *2*	4613.66	(43/2+)	3844.86	39/2+	[E2]	
772.3 *6*	4 *1*	6196.1	(47/2+)	5423.8	(43/2+)		
778.7 *10*	1 *2*	2148.81		1370.32	21/2−		
786.8 *4*	4 *1*	6353.0	(53/2−)	5566.18	(49/2−)	[E2]	
791.6 *6*	3 *1*	6597.5	(49/2+)	5805.9	(45/2+)		
797.1 *4*	7 *1*	5410.8	(47/2+)	4613.66	(43/2+)	[E2]	
802	≈1	6872.1	(55/2+)	6069.5	(51/2+)	[E2]	
812.1 *1*	212 *10*	1645.53	19/2+	833.36	19/2+	M1[#]	Mult.: DCO=1.0 *1*.
821.3 *11*	5 *1*	6232.1	(51/2+)	5410.8	(47/2+)	[E2]	
825.3 *4*	5 *1*	6299.2	(53/2+)	5473.9	(49/2+)	[E2]	
827.0[@] *10*	2 *1*	6780.6?	(55/2−)	5953.6	(51/2−)		
840.6 *2*	26 *2*	2656.89	29/2−	1816.64	27/2+	[E1]	
851.5[@] *2*	3 *1*	7204.7?	(57/2−)	6353.0	(53/2−)		
861.0[@] *13*	3 *1*	7160.1?	(57/2+)	6299.2	(53/2+)	[E2]	
861.6 *1*	15 *1*	2840.93	31/2−	1979.36	29/2+	[E1]	
897.3 *10*	7 *4*	2175.82	25/2−	1278.57	23/2+	[E1]	
945.1 *1*	23 *2*	2384.37	27/2−	1439.24	25/2+	[E1]	
1006.0 *1*	33 *2*	2148.81		1143.09	19/2−		
1008.1 *2*	12 *1*	3202.97	29/2+	2194.90	25/2+	[E2]	
1023.4 *1*	122 *6*	1645.53	19/2+	622.21	17/2+	M1[#]	Mult.: DCO=0.49 *10*.
1151.2 *1*	123 *6*	1645.53	19/2+	494.41	15/2+	E2	Mult.: DCO=1.1 *2*.
1223.7 *1*	103 *5*	3202.97	29/2+	1979.36	29/2+	M1[#]	Mult.: DCO=1.0 *1*.

Continued on next page (footnotes at end of table)

^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)

γ(^{177}W) (continued)

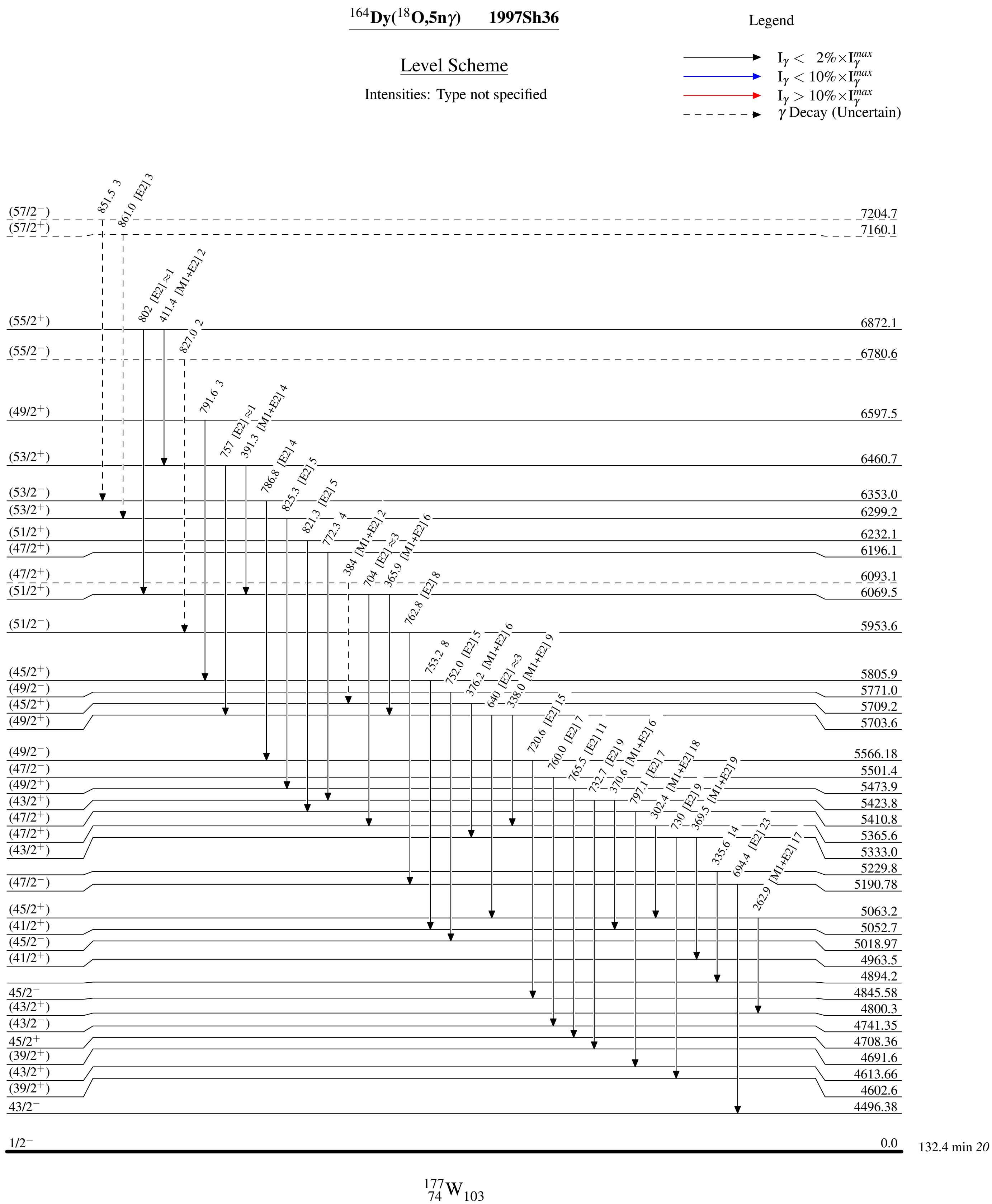
E_γ †	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult. ‡
1386	16 *1*	3202.97	29/2+	1816.64	27/2+	[M1] #
1764	≈1	3202.97	29/2+	1439.24	25/2+	[E2]

† From 1997Sh36. Intensities were normalized to Iγ(455.0γ)=1000.

‡ Based on the measured DCO ratios, total electron conversion coefficients from intensity balances considerations, the apparent band structures with both cascade (ΔJ=1) and crossover (ΔJ=2) transitions, and the assigned configurations, unless otherwise stated. DCO ratios are 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.

E2 admixtures could be expected.

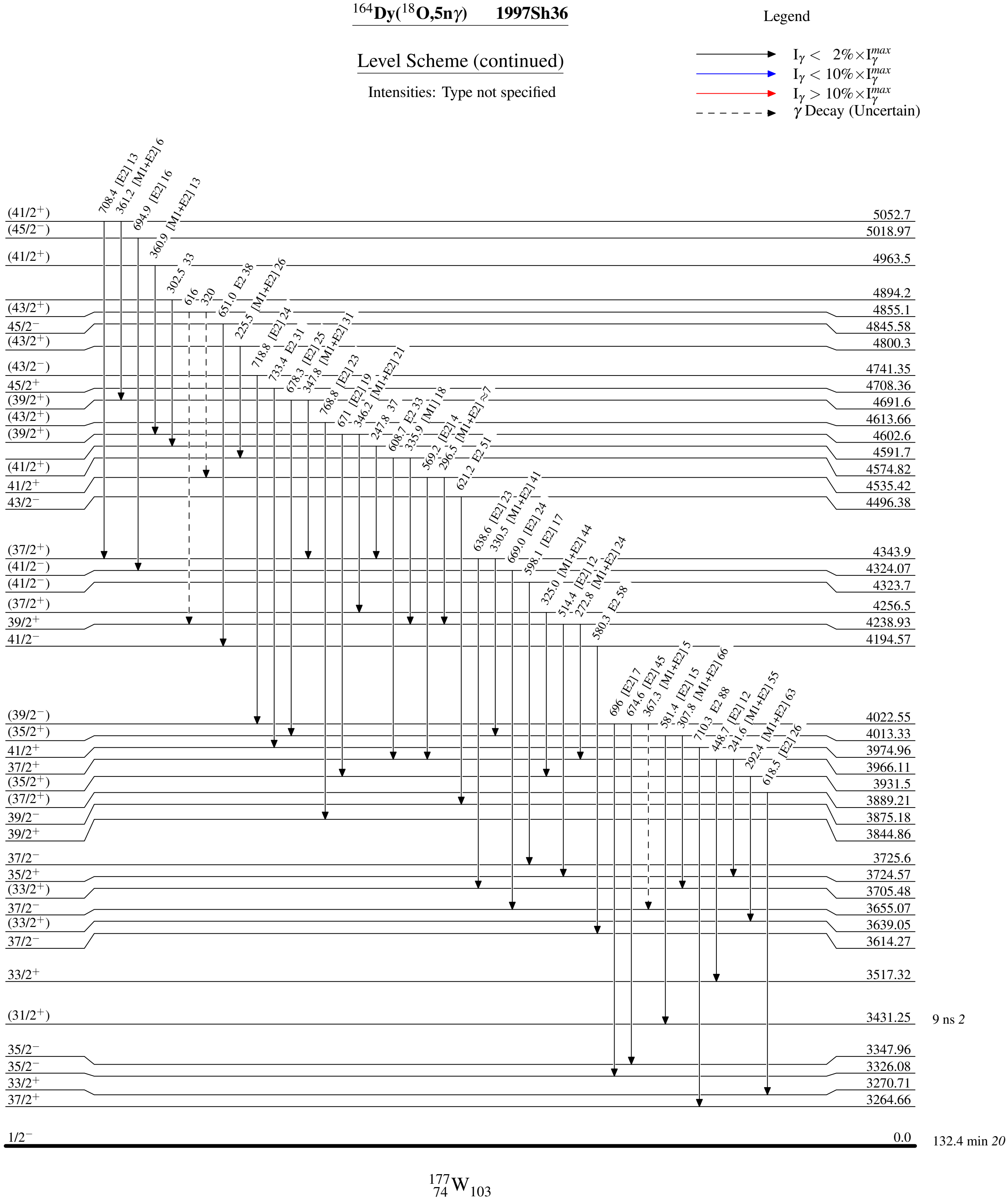
@ Placement of transition in the level scheme is uncertain.


^{164}Dy(^{18}O,5nγ) 1997Sh36
Level Scheme
Intensities: Type not specified
Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)
(57/2⁻) 7204.7
(57/2⁺) 7160.1
(55/2⁺) 6872.1
(55/2⁻) 6780.6
(49/2⁺) 6597.5
(53/2⁺) 6460.7
(53/2⁻) 6353.0
(53/2⁺) 6299.2
(51/2⁺) 6232.1
(47/2⁺) 6196.1
(47/2⁺) 6093.1
(51/2⁺) 6069.5
(51/2⁻) 5953.6
(45/2⁺) 5805.9
(49/2⁻) 5771.0
(45/2⁺) 5709.2
(49/2⁺) 5703.6
(49/2⁻) 5566.18
(47/2⁻) 5501.4
(49/2⁺) 5473.9
(43/2⁺) 5423.8
(47/2⁺) 5410.8
(47/2⁺) 5365.6
(43/2⁺) 5333.0
5229.8
(47/2⁻) 5190.78
(45/2⁺) 5063.2
(41/2⁺) 5052.7
(45/2⁻) 5018.97
(41/2⁺) 4963.5
4894.2
45/2⁻ 4845.58
(43/2⁺) 4800.3
(43/2⁻) 4741.35
45/2⁺ 4708.36
(39/2⁺) 4691.6
(43/2⁺) 4613.66
(39/2⁺) 4602.6
43/2⁻ 4496.38
1/2⁻ 0.0 132.4 min 20
851.5 3
861.0 [E2] 3
802 [E2] ≈1
411.4 [M1+E2] 2
827.0 2
791.6 3
757 [E2] ≈1
391.3 [M1+E2] 4
786.8 [E2] 4
825.3 [E2] 5
821.3 [E2] 5
772.3 4
384 [M1+E2] 2
704 [E2] ≈3
365.9 [M1+E2] 6
762.8 [E2] 8
753.2 8
752.0 [E2] 5
376.2 [M1+E2] 6
640 [E2] ≈3
338.0 [M1+E2] 9
720.6 [E2] 15
760.0 [E2] 7
765.5 [E2] 11
732.7 [E2] 9
370.6 [M1+E2] 6
797.1 [E2] 7
302.4 [M1+E2] 18
730 [E2] 9
369.5 [M1+E2] 9
335.6 14
694.4 [E2] 23
262.9 [M1+E2] 17
$^{177}_{74}W_{103}$

^{164}Dy(^{18}O,5nγ) 1997Sh36

Level Scheme (continued)

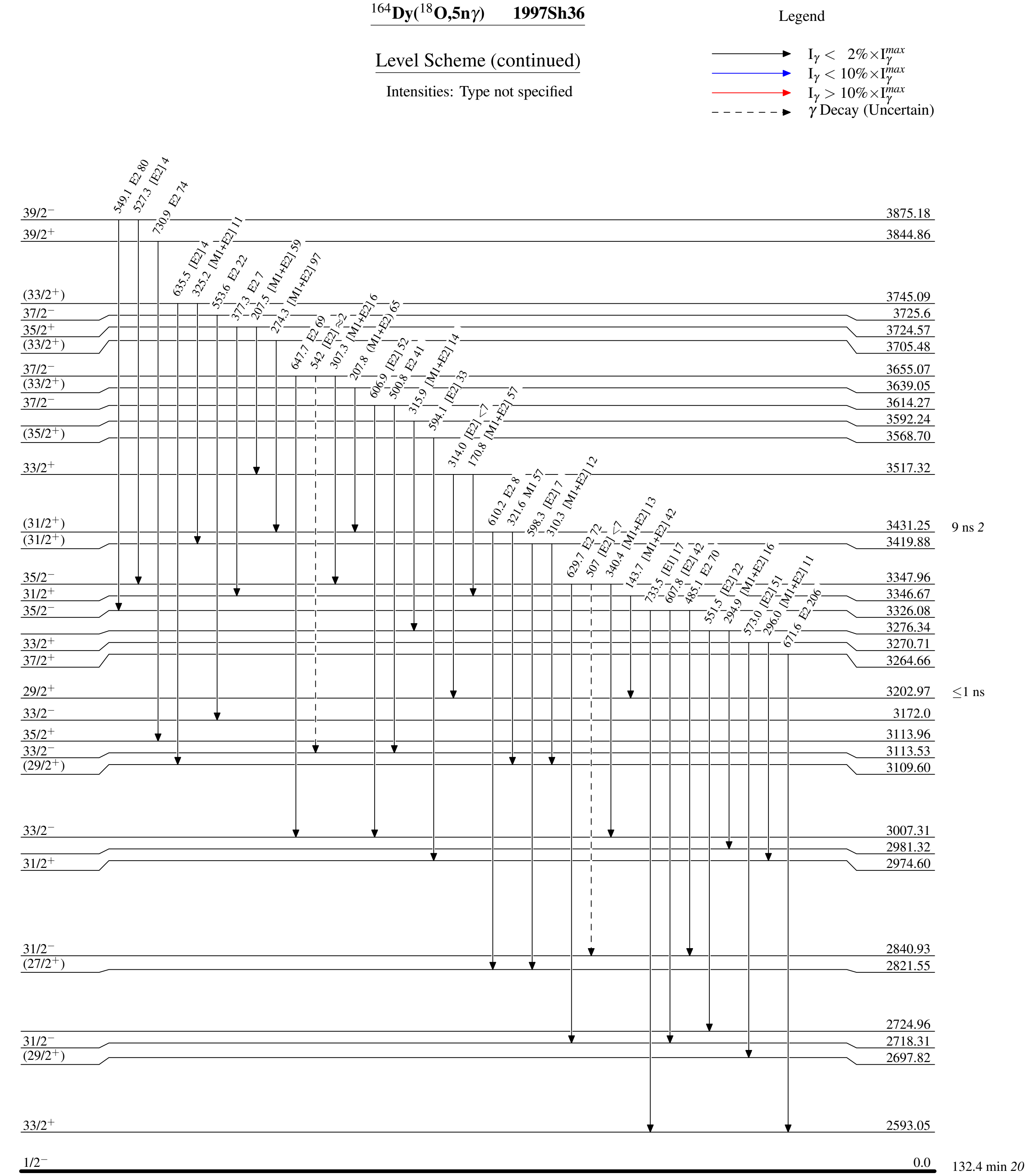
Intensities: Type not specified



^{164}Dy(^{18}O,5nγ) 1997Sh36

Level Scheme (continued)

Intensities: Type not specified

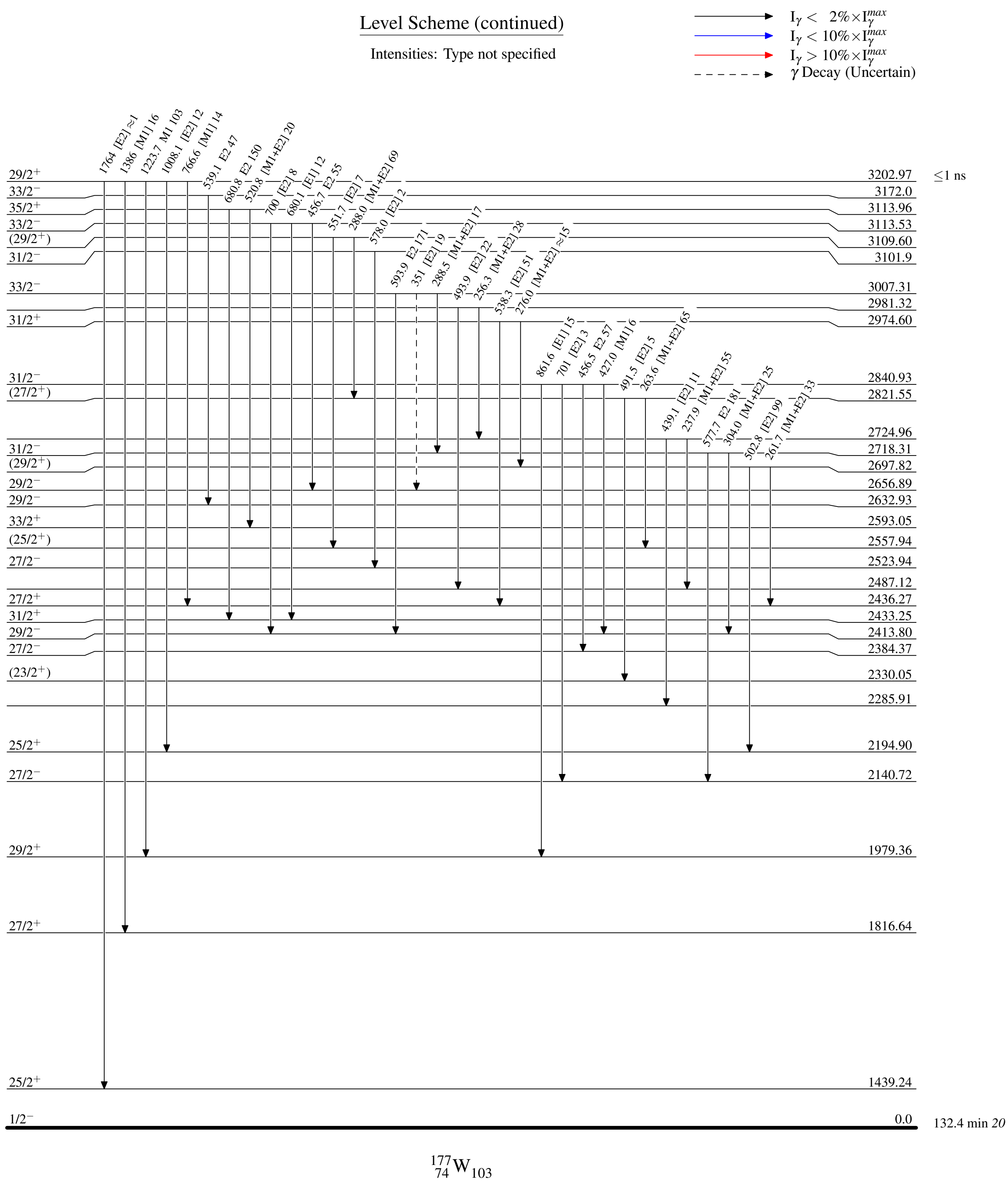


$^{177}_{74}W_{103}$

^{164}Dy(^{18}O,5nγ) 1997Sh36

Level Scheme (continued)

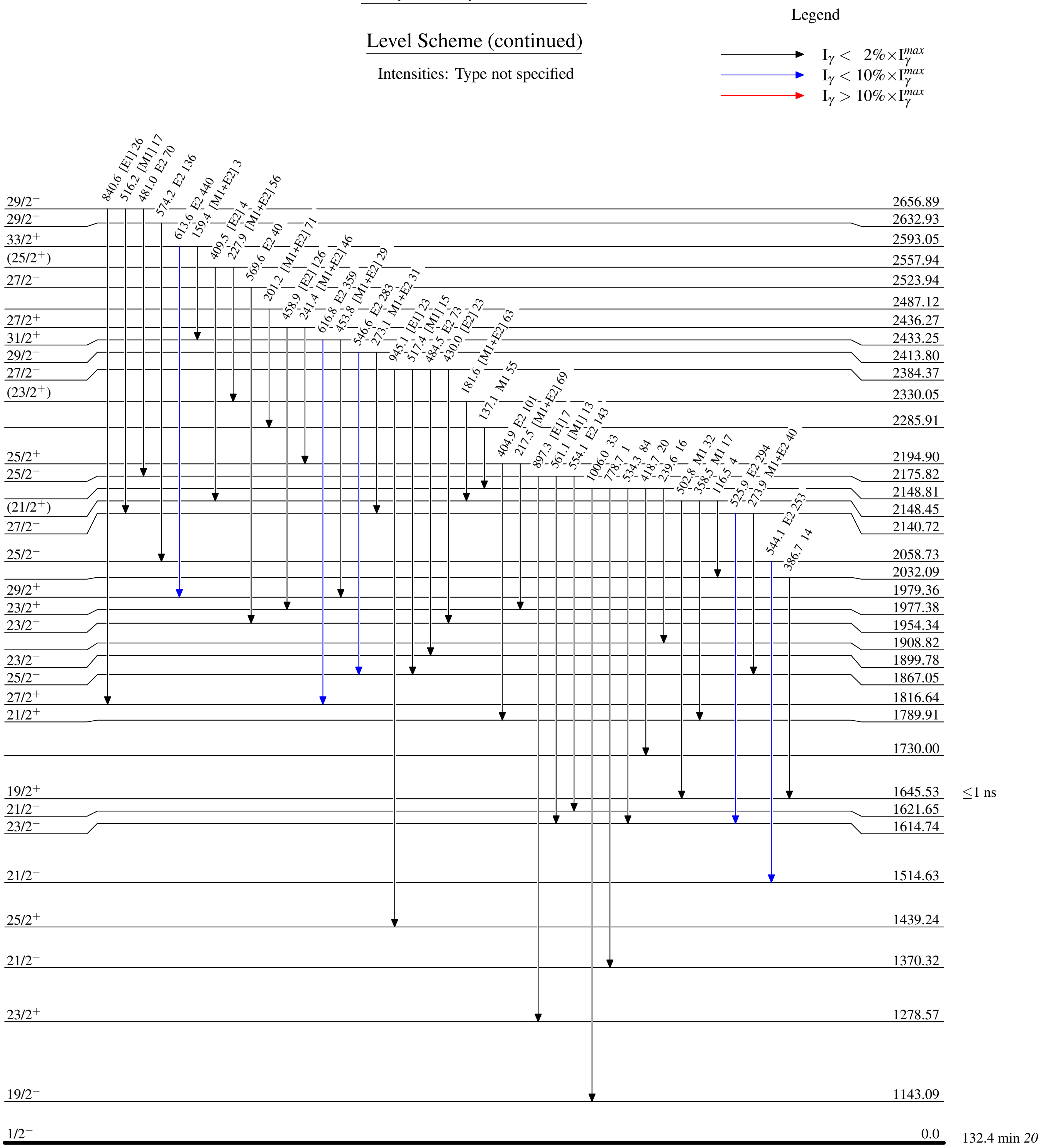
Intensities: Type not specified



^{164}Dy(^{18}O,5nγ) 1997Sh36

Level Scheme (continued)

Intensities: Type not specified

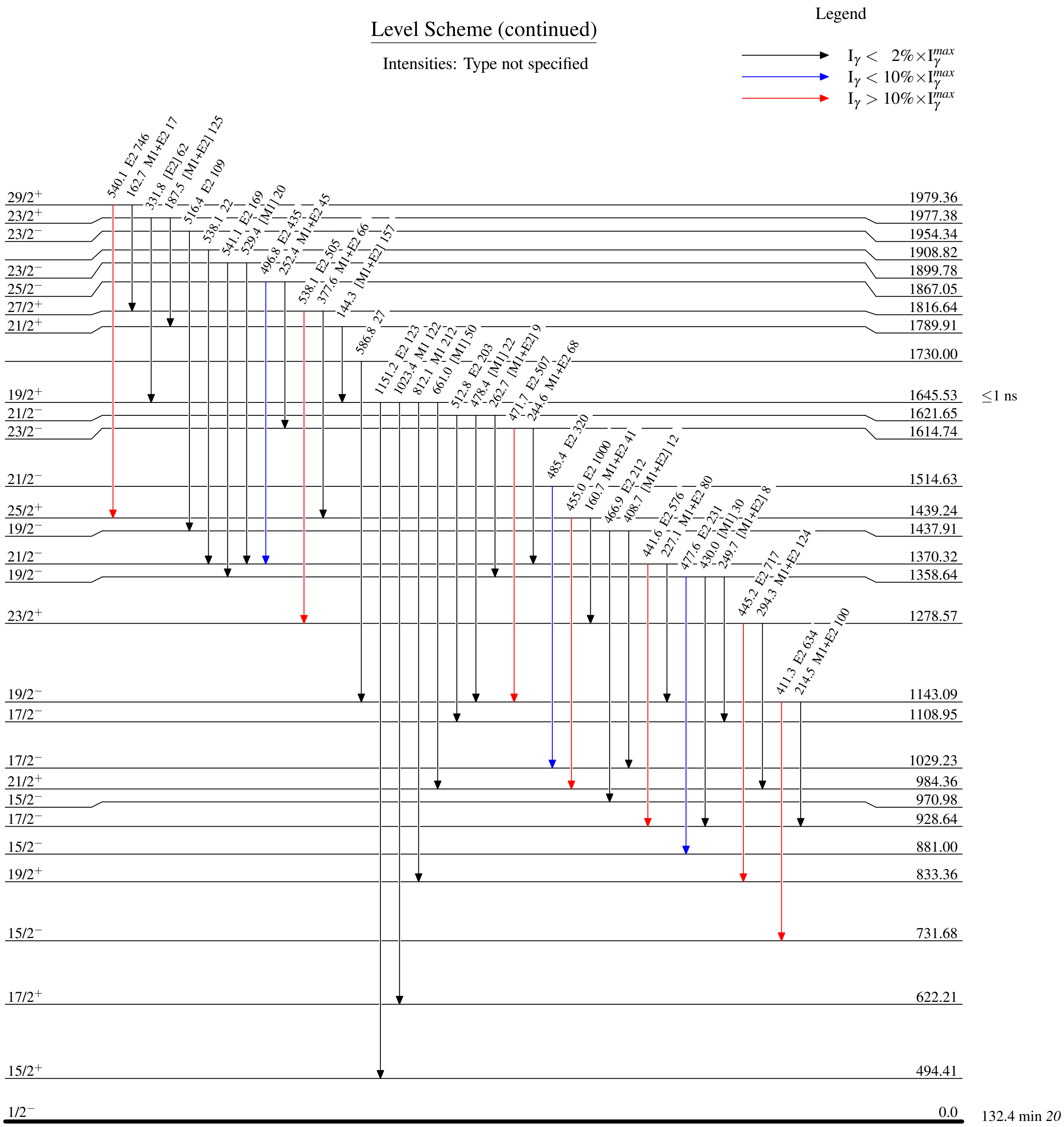


$^{177}_{74}W_{103}$

$^{164}Dy(^{18}O,5n\gamma)$ 1997Sh36

Level Scheme (continued)

Intensities: Type not specified

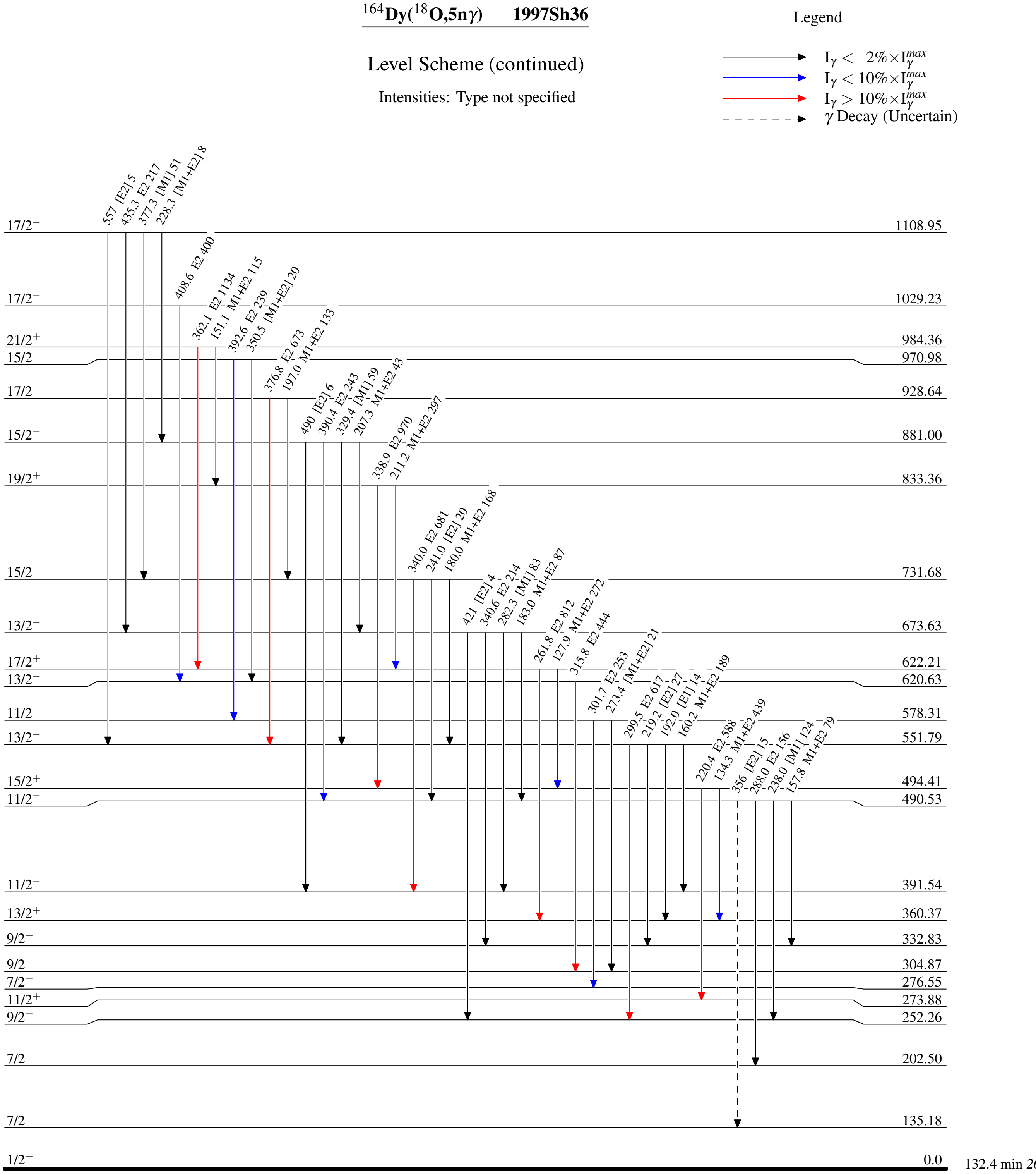


$^{177}_{74}W_{103}$

^{164}Dy(^{18}O,5nγ) 1997Sh36

Level Scheme (continued)

Intensities: Type not specified

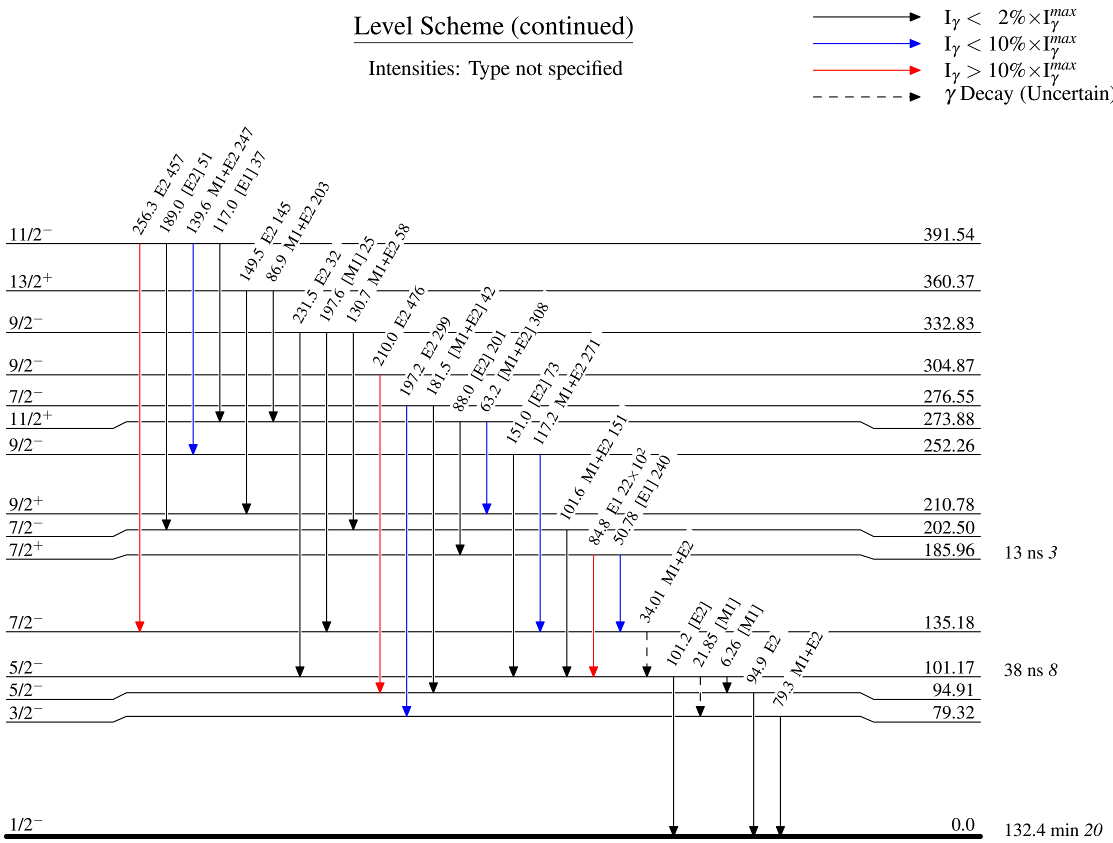


$^{177}_{74}W_{103}$

^{164}Dy(^{18}O,5nγ) 1997Sh36

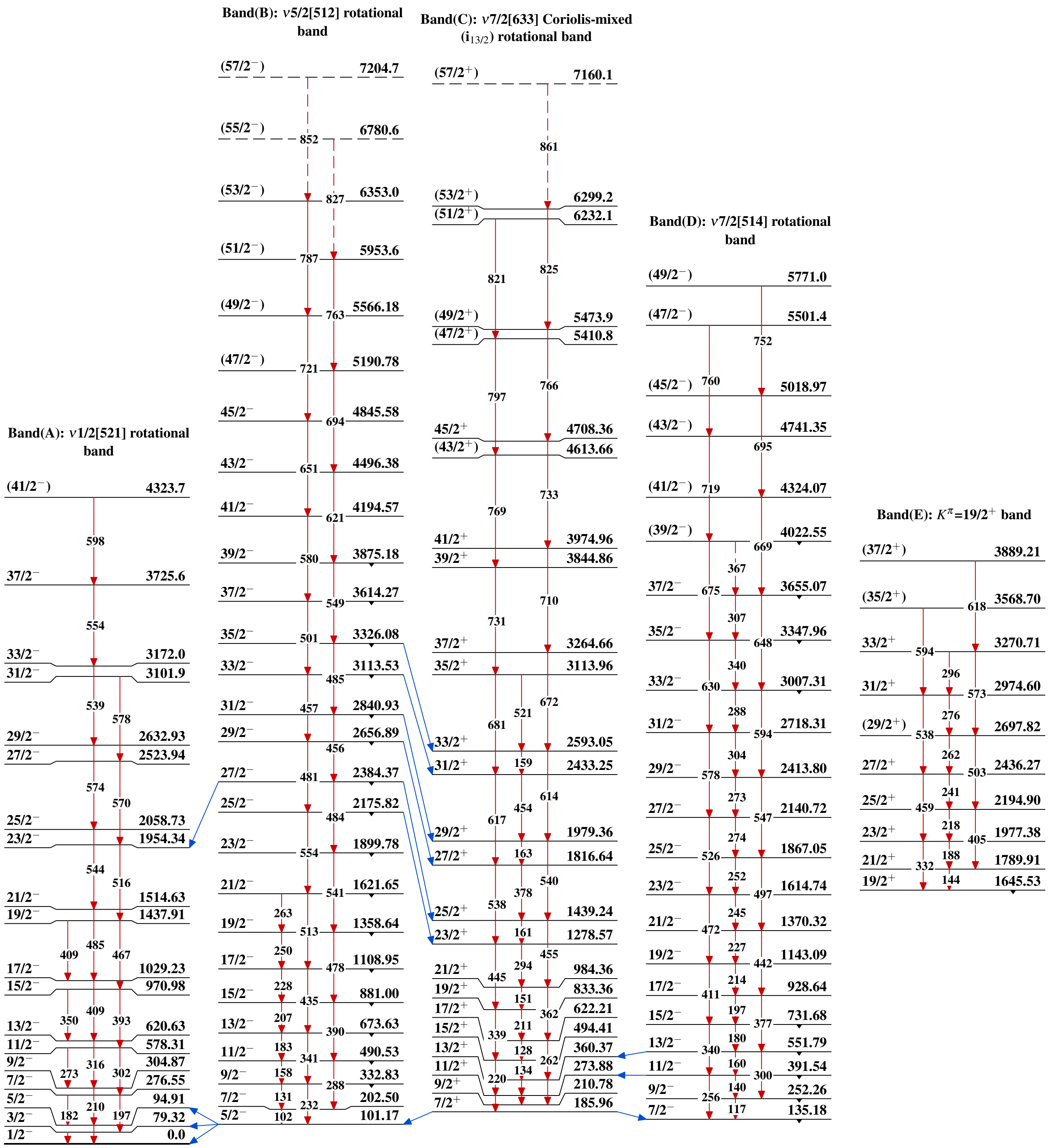
Level Scheme (continued)

Intensities: Type not specified



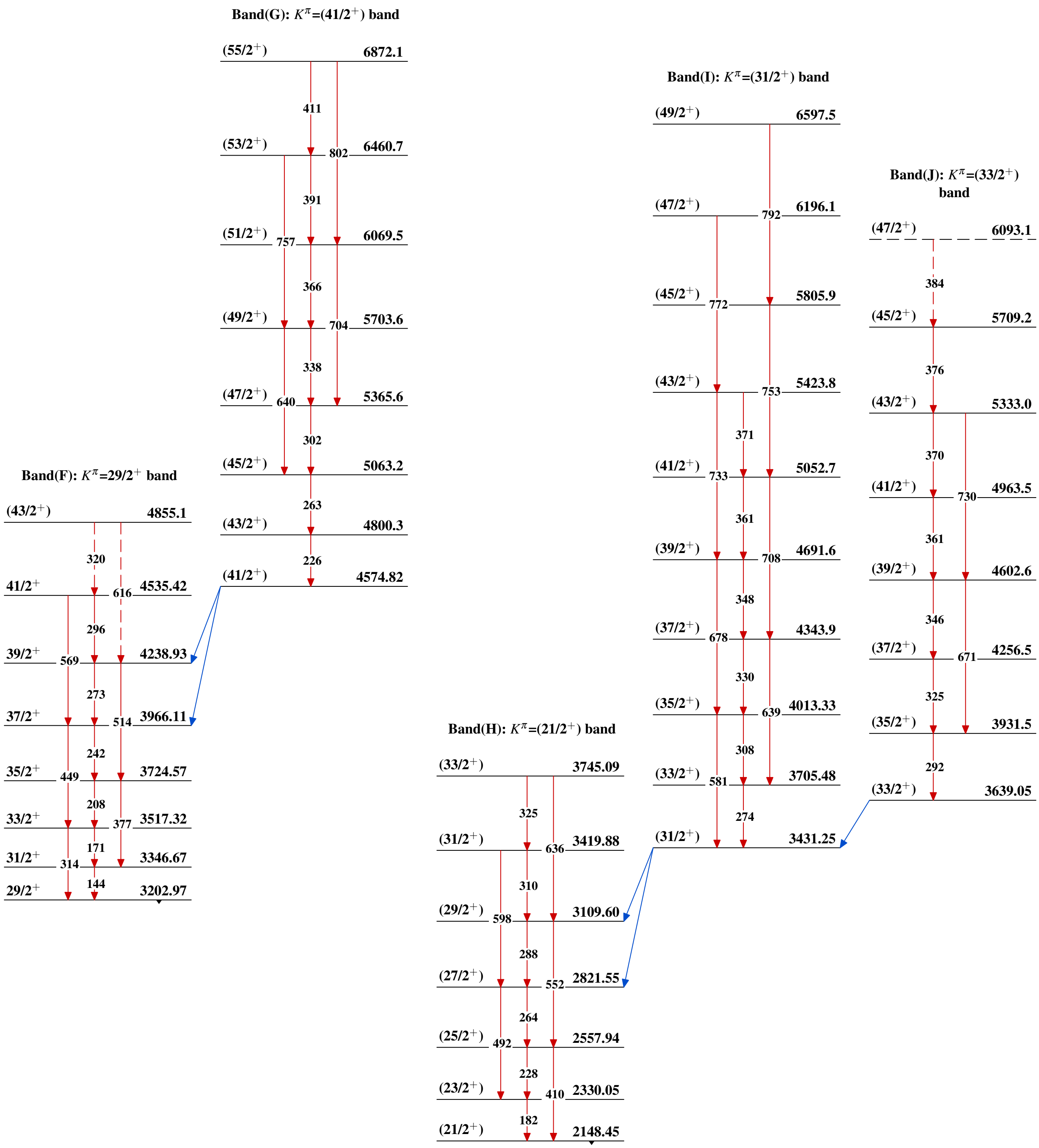
$^{177}_{74}W_{103}$

$^{164}Dy(^{18}O,5n\gamma)$ 1997Sh36



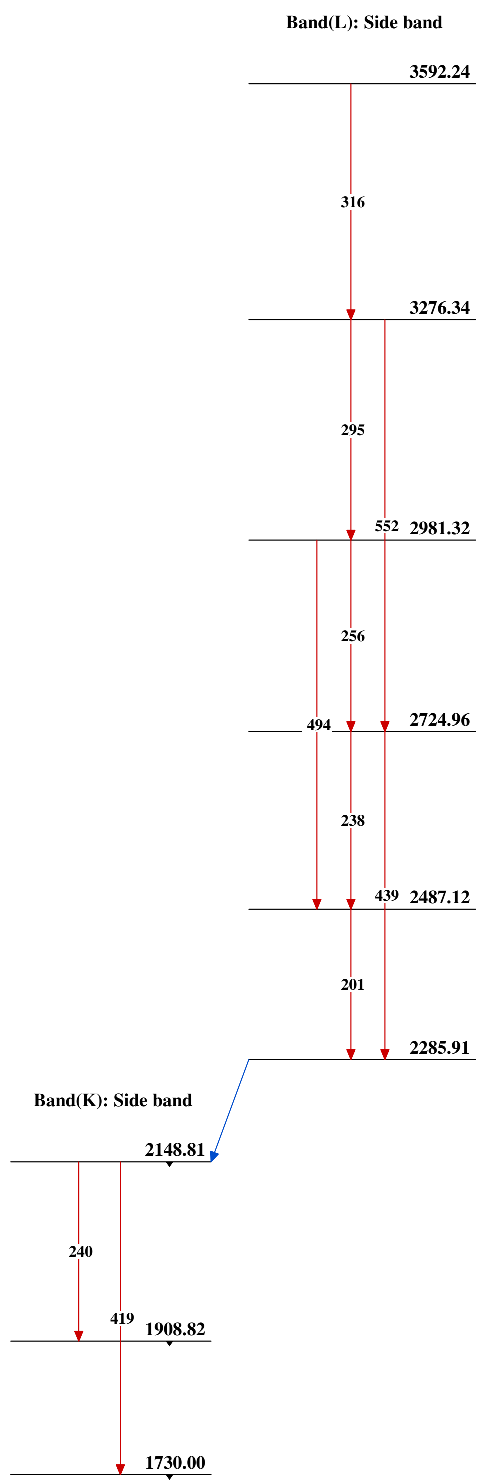
$^{177}_{74}W_{103}$

^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)



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

^{164}Dy(^{18}O,5nγ) 1997Sh36 (continued)



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