^{187}Os(n,γ) E=th 1983Fe06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Juutinen, D. J. Hartley	NDS 150, 1 (2018)	1-Feb-2018

1983Fe06: measured Eγ, Iγ, γγ.

2000Bo49 (also 1999Su03,1999Bo14): natural target. Measured Eγ, Iγ for two-quantum γ cascades from γγ coin measurements. A total of about 40 levels (14 of these not in 1983Fe06) in ^{188}Os were proposed from observation of 52 two-quantum cascades (feeding g.s.) adding to 7988.8; 57 cascades (feeding 155 level) adding to 7833.8; and 32 cascades (feeding 633 level) adding to 7355.8. Out of a total of about 140 cascades, 50 cascades were not assigned to any intermediate level in ^{188}Os.

Others: 1979CaZU (also 1982Ka28 from the same group), 1980Ba61 (1978BaYT,1974Ba23 from the same group), 1963Gi14, 1961Ja21.

Additional information 1.

1979CaZU give detailed γ-ray data for secondary transitions up to 2461 keV and for primary transitions from 5526 keV onwards. 1982Ka28 give data for E0 transitions based on ce measurement.

1980Ba61 list the levels only without giving any γ-ray energies and intensities. These levels are probably based on partial data given for transitions above 4674 keV in 1974Ba23 and a revised list given in 1978BaYT which included selected transitions in the lower energy region also.

^{188}Os Levels

1980Ba61 list following additional levels without any details of the populating primary transitions and deexciting transitions: 939.8, 1424.7, 1514.6, 1515.9, 1574, 1622, 1668, 1770.5, 1855, 1975, 1993, 2015, 2228, 2252, 2262, 2300, 2326, 2374.2, 2446, 2488, 2498.8, 2567, 2582, 2607, 2631, 2644, 2880, 2940, 2966, 2974, 3057, 3146, 3169, 3276, 3311, 3359, 3399, 3483, 3568, 3623, 3628, 3650, 3688, 3810, 3837, 3900, 3965, 4026, 4303, 4363, 4508, 4715, 4752, 4813, 4822, 4920, 4934, 5172, 5360, 5485, 5967, 6033. From the available γ-ray data, no firm evidence has been found for any of levels listed above (evaluator). These levels have not been included in the present level scheme.

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0	0^+	1729.5 *2*	2^+	2286.4 *2*	$(1^+,2^+)$	2878.8# *5*	
155.0 *1*	2^+	1765.3 *2*	0^+	2347.8 *2*	$(1)^+$	2892.7 *3*	
477.9 *1*	4^+	1807.6 *2*	2^+	2348.0 *2*	$(2)^-$	2969.8# *11*	
632.9 *1*	2^+	1824.6 *2*	0^+	2366.1 *2*	1,2	3002.8 *3*	
790.3 *1*	3^+	1842.8 *2*	$(2)^+$	2416.1 *2*	$(2^+,3^+)$	3012.2# *9*	
965.3 *2*	4^+	1940.9 *4*	(2^+)	2461.2 *2*	$(1,2^+)$	3030.5 *3*	
1086.2 *2*	0^+	1957.3 *2*	$(1^+,2^+)$	2491.6 *3*	$2^-,3^+$	3070.4 *3*	
1180.7 *2*	5^+	1965.0 *2*	$(2)^+$	2505.3 *3*		3110.0 *3*	
1278.0 *2*	4^+	1966.3 *5*	0^+	2519.6 *2*	1,2	3140.0# *6*	
1304.8 *2*	2^+	2022.8 *2*	$(1,2)^+$	2549.5 *3*	(2^-)	3167.2# *7*	
1413.9 *2*	(3^-)	2068.8 *2*	$(2)^+$	2623.3 *2*	(2^+)	3176.8 *3*	
1457.4 *2*	2^+	2085.8 *2*		2626.5# *22*		3223.5# *9*	
1462.8 *2*	2^-	2098.8 *2*	$(1)^+$	2658.6 *3*		3238.8 *3*	
1477.6 *2*	0^+	2123.2 *2*	$(1^+,2^+)$	2704.0 *2*		3274.5# *8*	
1567.0 *3*		2166.4 *2*	$(2)^+$	2739.9 *4*		3732.0# *8*	
1577# *3*		2193.1# *15*		2765.7 *2*		4507.5# *17*	
1620.4 *2*	2^+	2204.5 *3*	$(2)^+$	2779.2# *12*		(7989.59 *15*)	$0^-,1^-$@
1685.3 *2*	(3^+)	2214.9 *2*	$(1)^+$	2817.8 *2*	(2^+)		
1704.1 *2*	0^+	2255.7# *7*		2866.1 *2*			

† From least-squares fit to Eγ's.
‡ From Adopted Levels.
# Proposed by 2000Bo49 from γγ coin cascades.
@ s-wave neutron capture in ^{187}Os ($J^\pi=1/2^-$).

^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os)

Iγ normalization: from Iγ′s given by 1982Ka28 (the normalization is approximate).

The following cascades (2000Bo49) adding to 7988.8 (feeding g.s.) are not assigned any intermediate level in the level scheme: 7199.6-789.2, 6445.4-1543.4, 6229.0-1759.8, 6102.8-1886.0, 5903.3-2085.5, 5596.6-2392.1, 5254.1-2734.6, 5123.1-2865.7, 5010.6-2978.2, 4984.9-3003.9, 4934.5-3054.2, 4905.9-3082.9, 4879.9-3108.9, 4860.5-3128.3, 4810.4-3178.8, 4675.6-3313.2, 4617.3-3371.5, 4587.6-3401.1, 4421.9-3566.9, 4123.5-3865.3, 4116.2-3872.6.

The following cascades (2000Bo49) adding to 7833.8 (feeding 155-keV level) are not assigned any intermediate level in the level scheme: 6904.4-929.4, 6900.3-933.5, 6259.7-1574.1, 6118.8-1715.0, 6110.3-1723.5, 5700.2-2133.6, 5573.1-2260.7, 5388.8-2445.0, 5346.2-2487.6, 5305.7-2528.1, 5231.9-2601.9, 5216.7-2617.1, 5168.9-2664.9, 5133.9-2699.9, 5118.7-2715.1, 4867.5-2966.3, 4656.1-3177.8, 4465.5-3368.2, 4340.3-3493.4, 4303.5-3530.4, 4038.2-3795.5.

The following cascades (2000Bo49) adding to 7355.8 (feeding 632 level) are not assigned any intermediate level in the level scheme: 6024.4-1331.4, 5679.2-1676.6, 5048.7-2307.1, 4692.8-2663.0, 4746.4-2609.4, 4393.2-2962.6, 4321.3-3034.5, 4267.3-3088.5, 4175.9-3179.9, 3936.0-3419.8.

E_γ	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Mult.	$I_{(\gamma+ce)}$ d	Comments
155.045 *4*	65 *5*	155.0	2^+	0.0	0^+			E_γ: From 1972Sh13. I_γ: 1979CaZU give 45 *5*.
175.0@ *3*	0.240 *14*	965.3	4^+	790.3	3^+			
x204.2# *4*	0.019 *4*							
x216.5# *6*	0.022 *7*							
218.5 *5*	0.050 *2*	1304.8	2^+	1086.2	0^+			
271.8@ *5*	0.040 *2*	1729.5	2^+	1457.4	2^+			
312.1f *3*	0.330f *15*	790.3	3^+	477.9	4^+			I_γ: main placement with the 790 level.
312.1fg *3*	f	1278.0	4^+	965.3	4^+			
323.0 *3*	5.9 *3*	477.9	4^+	155.0	2^+			
332.7 *3*	0.40 *2*	965.3	4^+	632.9	2^+			
347.2‡		1824.6	0^+	1477.6	0^+	E0	0.0015‡ *1*	
383.2# *4*	0.07 *8*	2549.5	(2^-)	2166.4	$(2)^+$			
384.5 *5*	0.060 *3*	1842.8	$(2)^+$	1457.4	2^+			
390.6 *3*	0.150 *6*	1180.7	5^+	790.3	3^+			
x402.9# *6*	0.020 *7*							
448.3f *3*	0.48f *3*	1413.9	(3^-)	965.3	4^+			I_γ: total Iγ=0.58 *3*.
448.3f *3*	0.10f *4*	2068.8	$(2)^+$	1620.4	2^+			
453.3 *3*	0.280 *15*	1086.2	0^+	632.9	2^+			
x463.4 *5*	0.090 *7*							
478.03 *4*	15.3 *7*	632.9	2^+	155.0	2^+			E_γ: From 1972Sh13.
487.5f *3*	1.3f *2*	965.3	4^+	477.9	4^+			I_γ: total Iγ=1.66 *10*.
487.5f *3*	0.36f *22*	1278.0	4^+	790.3	3^+			
x500.0@ *10*	0.240 *14*							Placement with 1462 level (1983Fe06) seems incorrect.
x507.1# *9*	0.18 *5*							
514.6 *3*	0.81 *11*	1304.8	2^+	790.3	3^+			E_γ,I_γ: from 1979CaZU. 1983Fe06 give Eγ=516.0 *10* with no Iγ value.
x523.0 *5*	0.060 *4*							
x534.0@ *5*	0.020 *5*							
538.6 *5*	0.040 *8*	1842.8	$(2)^+$	1304.8	2^+			
x550.4 *5*	0.040 *14*							
x567.0 *3*	0.130 *7*							
x574.1# *5*	0.027 *11*							
581.9e#g *4*	0.045e *7*	2286.4	$(1^+,2^+)$	1704.1	0^+			

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^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os) (continued)

E_γ	I_γ †[d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	$I_{(\gamma+ce)}$ [d]	Comments
581.9[eg] 4	0.045[e] 7	2347.8	$(1)^+$	1765.3	0^+			
601.4 5	0.12 3	2286.4	$(1^+,2^+)$	1685.3	(3^+)			
x605.7 3	0.20 2							
617.7‡		1704.1	0^+	1086.2	0^+	E0	0.00023‡	
623.9 3	1.53 10	1413.9	(3^-)	790.3	3^+			
633.04 10	17.5 11	632.9	2^+	0.0	0^+			E_γ: From 1972Sh13.
634.9 3	11.7 7	790.3	3^+	155.0	2^+			
641.7#g 4	0.10 1	2098.8	$(1)^+$	1457.4	2^+			
646.2[e] 3	0.54[e] 4	1278.0	4^+	632.9	2^+			
646.2[e] 3	0.54[e] 4	2123.2	$(1^+,2^+)$	1477.6	0^+			
652.7# 5	0.05 1	1957.3	$(1^+,2^+)$	1304.8	2^+			
667.5 5	0.090 9	1457.4	2^+	790.3	3^+			
672.4fg 3	f	1304.8	2^+	632.9	2^+			
672.4[f] 3	0.87[f] 6	1462.8	2^-	790.3	3^+			Main placement with the 1463 level.
x684.9@ 5	0.050 5							
x698.4# 4	0.073 15							
703.0 3	0.160 15	1180.7	5^+	477.9	4^+			I_γ: 1979CaZU give 0.040 13.
x708.4# 3	0.13 2							
718.8# 8	0.12 2	1685.3	(3^+)	965.3	4^+			
x726.9# 5	0.10 2							
746.9#g 8	0.17 2	2366.1	1,2	1620.4	2^+			Broad unresolved peak.
763.8 5	0.030 6	1729.5	2^+	965.3	4^+			
776.7 3	0.31 3	1567.0		790.3	3^+			
780.9# 3	0.24 2	1413.9	(3^-)	632.9	2^+			
x786.8# 6	0.040 11							
x789.7# 5	0.110 14							
x793.2 5	0.09 1							Placement with 2099 level (1983Fe06) seems incorrect.
801.2[e] 5	0.090[e] 9	2505.3		1704.1	0^+			
801.2[e] 5	0.090[e] 9	2765.7		1965.0	$(2)^+$			
810.5 3	0.99 8	965.3	4^+	155.0	2^+			
824.3 3	1.26 10	1457.4	2^+	632.9	2^+			
827.0 3	0.81 7	1304.8	2^+	477.9	4^+			
829.4 3	3.2 2	1462.8	2^-	632.9	2^+			
844.6 3	0.53 5	1477.6	0^+	632.9	2^+			
895.4 3	0.32 3	1685.3	(3^+)	790.3	3^+			
x925.4 3	0.20 2							
931.4 3	2.5 2	1086.2	0^+	155.0	2^+			I_γ: 1982Ka28 give 2.63 19.
x934.0 3	0.53 5							
x936.3@ 3	0.39 4							
939.6 3	0.25 2	1729.5	2^+	790.3	3^+			
946.3[b] 6		1577		632.9	2^+			
x951.5# 5	0.090 15							
x957.3# 5	0.070 16							
x961.5# 5	0.040 12							
x967.2# 5	0.070 14							
x971.3# 5	0.070 15							
979.7 5	0.050 7	1457.4	2^+	477.9	4^+			
987.3 3	0.92 8	1620.4	2^+	632.9	2^+			
1000.0 3	0.150 15	1965.0	$(2)^+$	965.3	4^+			

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^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os) (continued)

E_γ	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	$I_{(\gamma+ce)}$ [d]	Comments
1017.7 *3*	0.65 *6*	1807.6	2^+	790.3	3^+			
x1036.6 *5*	0.080 *7*							
1042.0[eg] *3*	[e]	2519.6	1,2	1477.6	0^+			
1042.0[eg] *3*	0.26[e] *2*	2866.1		1824.6	0^+			
x1050.5[@] *5*	0.10 *1*							Placement with 1686 level (1983Fe06) seems incorrect.
x1056.1 *5*	0.050 *6*							
1071.1 *3*	0.39 *4*	1704.1	0^+	632.9	2^+			
x1074.2[#] *5*	0.13 *2*							
1086.5[‡]		1086.2	0^+	0.0	0^+	E0	0.00018[‡] *5*	
1096.3 *3*	0.60 *6*	1729.5	2^+	632.9	2^+			
1132.2 *3*	0.43 *4*	1765.3	0^+	632.9	2^+			
1142.4 *3*	0.40 *4*	1620.4	2^+	477.9	4^+			
x1147.4 *10*	0.31 *3*							
1149.7 *3*	2.6 *2*	1304.8	2^+	155.0	2^+			
1150.5[@] *10*	0.24 *2*	1940.9	(2^+)	790.3	3^+			
x1164.6[#] *5*	0.09 *2*							
1174.3[f] *3*	1.12[f] *10*	1807.6	2^+	632.9	2^+			I_γ: only a small fraction may belong with 1965 level.
1174.3[fg] *3*	[f]	1965.0	$(2)^+$	790.3	3^+			
1192.3 *3*	0.95 *9*	1824.6	0^+	632.9	2^+			
1209.7 *3*	1.76 *16*	1842.8	$(2)^+$	632.9	2^+			
x1228.7 *5*	0.110 *15*							
x1239.4[#] *4*	0.25 *3*							May be the same as 1241.3γ from 1983Fe06.
1241.3 *3*	0.20 *2*	2704.0		1462.8	2^-			
x1286.6[@] *5*	0.16 *2*							
1302.4 *3*	0.25 *2*	1457.4	2^+	155.0	2^+			Placement with 2766 level (1983Fe06) seems incorrect.
1302.4[fg] *3*	[f]	2765.7		1462.8	2^-			
1304.4 *5*	0.51 *5*	1304.8	2^+	0.0	0^+			
1307.9[f] *5*	0.73[f] *7*	1940.9	(2^+)	632.9	2^+			I_γ: Main placement from 1941 level.
1307.9[fg] *5*	<0.1[f]	2098.8	$(1)^+$	790.3	3^+			
x1313.9[#] *5*	0.13 *2*							
1323.0 *3*	1.30 *11*	1477.6	0^+	155.0	2^+			I_γ: 1982Ka28 give 1.38 *10*.
1332.3[f] *3*	1.51[f] *14*	1965.0	$(2)^+$	632.9	2^+			I_γ: main placement from 1965 level.
1332.3[fg] *3*	[f]	2123.2	$(1^+,2^+)$	790.3	3^+			
x1337.2 *3*	0.43 *4*							
x1349.9 *3*	0.24 *2*							
x1385.6 *5*	0.120 *16*							
1402.9 *3*	0.34 *3*	2866.1		1462.8	2^-			
1420.9[b] *12*		1577		155.0	2^+			
1435.7[f] *3*	1.6[f] *2*	2068.8	$(2)^+$	632.9	2^+			I_γ: total Iγ=2.0 *2*.
1435.7[f] *3*	0.4[f] *2*	3002.8		1567.0				
1452.8[g] *3*	0.50 *5*	2085.8		632.9	2^+			
1457.4 *3*	1.53 *13*	1457.4	2^+	0.0	0^+			
x1460.8[@] *3*	0.32 *3*							
x1463.3 *3*	0.41 *4*							
1465.4 *3*	1.07 *9*	1620.4	2^+	155.0	2^+			
1478.0[‡]		1477.6	0^+	0.0	0^+	E0	0.00033[‡] *2*	
x1483.1[#] *5*	0.17 *3*							

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^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os) (continued)

E_γ	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Mult.	$I_{(\gamma+ce)}$ d	Comments
x1506.3@ 10	0.080 4							
1530.3 3	0.39 4	1685.3	(3+)	155.0	2+			
1549.1 3	0.52 5	1704.1	0+	155.0	2+			Iγ: 1982Ka28 give 0.62 5.
1559.5b 7		2193.1		632.9	2+			
1561.6 5	0.21 2	2866.1		1304.8	2+			
1573.2b 11		1577		0.0	0+			
1574.6 3	0.79 6	1729.5	2+	155.0	2+			
x1601.7# 4	0.22 2							
1610.1 3	0.51 5	1765.3	0+	155.0	2+			Iγ: 1982Ka28 give 0.70 7.
1619.1e#c 7	0.18e 3	1620.4	2+	0.0	0+			
1619.1e#c 7	0.18e 3	2255.7		632.9	2+			
1651.2b 7		2286.4	(1+,2+)	632.9	2+			
1652.9 3	0.24 2	1807.6	2+	155.0	2+			
1669.5 3	0.290 15	1824.6	0+	155.0	2+			Iγ: 1982Ka28 give 0.30 4.
1688.6e 3	0.25e 2	1842.8	(2)+	155.0	2+			
1688.6e 3	0.25e 2	2166.4	(2)+	477.9	4+			
1704.2‡		1704.1	0+	0.0	0+	E0	0.0191‡ 2	
1715.6# 5	0.57 6	2348.0	(2)−	632.9	2+			
1765.3‡		1765.3	0+	0.0	0+	E0	0.00059‡	
1786.0 5	0.14 3	1940.9	(2+)	155.0	2+			Iγ: 1979CaZU give 0.34 7.
x1795.1# 5	0.20 4							
1802.1 3	1.37 9	1957.3	(1+,2+)	155.0	2+			
1807.1@ 5	≈0.05	1807.6	2+	0.0	0+			Iγ: from ^{188}Ir ε decay, 1983Fe06 give Iγ(1807γ)=0.220 16.
1810.3@ 5	0.36 3	1965.0	(2)+	155.0	2+	M1+E2+E0		Mult.: α(K)exp=0.109 10 (1982Ka28).
1823.6b 11		2461.2	(1,2+)	632.9	2+			
1825.2‡		1824.6	0+	0.0	0+	E0	0.00062‡ 4	
1853.6 5	0.170 13	2817.8	(2+)	965.3	4+			
1863.3b 6		2022.8	(1,2)+	155.0	2+			
x1865.2 5	0.76 5							Iγ: 1979CaZU give 1.27 10. The placement suggested by 1983Fe06 disagrees with level energy difference.
x1880.6 3	0.41 3							
1888.0 5	0.29 2	2519.6	1,2	632.9	2+			
x1904.3 5	0.28 3							
x1930.9f 3	0.24f 3							
1930.9fg 3	≈0.13f	2085.8		155.0	2+			Iγ: total Iγ=0.37 3.
1939.0 5	0.27 2	2416.1	(2+,3+)	477.9	4+			Iγ: 1979CaZU give 0.59 7.
1943.7 5	0.34 3	2098.8	(1)+	155.0	2+			
1957.7 3	1.26 7	1957.3	(1+,2+)	0.0	0+			
1966.1‡		1966.3	0+	0.0	0+	E0	0.0240‡ 5	
x1971.7 3	0.31 2							
1990.0b 13		2626.5		632.9	2+			
2011.2 3	0.46 3	2166.4	(2)+	155.0	2+			
2022.8 3	1.06 6	2022.8	(1,2)+	0.0	0+			
2026.3b 10		2658.6		632.9	2+			
x2033.0@ 3	0.31 2							
x2035.3c 3	0.41 2							

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^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os) (continued)

E_γ	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π	Comments
2040.1[b] 14		2193.1		155.0	2^+	
2040.7[g] 3	0.51 3	2519.6	1,2	477.9	4^+	
2049.5 3	0.60 4	2204.5	$(2)^+$	155.0	2^+	
2059.7 3	0.240 14	2214.9	$(1)^+$	155.0	2^+	
2069.4 3	0.230 15	2068.8	$(2)^+$	0.0	0^+	
x2084.5 5	0.14 3					
x2096.7[@] 5	0.44 4					
2099.3 5	0.61 4	2098.8	$(1)^+$	0.0	0^+	
2108.0[@c] 3	0.34 3	2739.9		632.9	2^+	
2130.9 3	1.17 7	2286.4	$(1^+,2^+)$	155.0	2^+	
2133.4[@c] 5	0.69 5	2765.7		632.9	2^+	
x2144.9[@] 5	0.52 3					
2145.8 5	0.130 11	2623.3	(2^+)	477.9	4^+	I_γ: 1979CaZU give 0.70 7.
2147.8[b] 17		2779.2		632.9	2^+	
x2155.2[#] 7	0.39 5					
x2165.2[@] 5	0.14 2					Placement with 2167 level (1983Fe06) seems incorrect.
x2171.4[@] 5	0.13 2					
2192.5[f] 3	0.4[f] 1	2347.8	$(1)^+$	155.0	2^+	I_γ: total Iγ=0.59 6.
2192.5[f] 3	0.2[f] 1	2348.0	$(2)^-$	155.0	2^+	
2210.1[b] 13		2366.1	1,2	155.0	2^+	
2214.8[g] 5	0.92 9	2214.9	$(1)^+$	0.0	0^+	γ reported by 1979CaZU and 1978BaYT but not by 1983Fe06. The assignment is considered suspect.
2246.9[c] 5	0.26 2	2878.8		632.9	2^+	
2255.1[@c] 3	0.60 4	2255.7		0.0	0^+	
2260.6 3	2.07 7	2416.1	$(2^+,3^+)$	155.0	2^+	
2261.5[b] 8		2892.7		632.9	2^+	
2286.7 3	1.26 7	2286.4	$(1^+,2^+)$	0.0	0^+	I_γ: 0.61 10 (1979CaZU) agrees better with branching from ^{188}Ir ε decay.
2306.8 3	0.63 4	2461.2	$(1,2^+)$	155.0	2^+	
x2327.1[@] 10	0.110 8					
2336.6 3	0.46 2	2491.6	$2^-,3^+$	155.0	2^+	
2348.4 3	1.07 6	2347.8	$(1)^+$	0.0	0^+	
2350.0[b] 3		2505.3		155.0	2^+	
2365.3[e] 3	0.44[e] 2	2366.1	1,2	0.0	0^+	
2365.3[e] 3	0.44[e] 2	2519.6	1,2	155.0	2^+	
2379.7[b] 14		3012.2		632.9	2^+	
2394.2 5	0.44 2	2549.5	(2^-)	155.0	2^+	
x2407.4[@] 5	0.32 2					
x2442.1 5	0.140 10					
2461.1 3	0.50 4	2461.2	$(1,2^+)$	0.0	0^+	
2464.8[b] 10		2623.3	(2^+)	155.0	2^+	
2474.9[c] 5	0.230 12	2626.5		155.0	2^+	
x2487.6 3	0.66 3					
2504.1[b] 4		2658.6		155.0	2^+	
2505.4 5	1.23 5	2505.3		0.0	0^+	
x2527.8 10	0.170 9					
2544.8[c] 3	0.46 3	3176.8		632.9	2^+	
2551.4[b] 8		2704.0		155.0	2^+	
2553.7 5	0.100 7	3030.5		477.9	4^+	
2582.1[c] 10	0.140 7	2739.9		155.0	2^+	

Continued on next page (footnotes at end of table)

^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os) (continued)

E_γ	I_γ †d	E_i(level)	J_i^π	E_f	J_f^π
2591.4[b] *10*		3223.5		632.9	2+
2606.5 *3*	0.74 *4*	3238.8		632.9	2+
x2611.3 *5*	0.200 *11*				
2623.4 *3*	0.81 *6*	2623.3	(2+)	0.0	0+
2623.7[b] *9*		2779.2		155.0	2+
2626.1[b] *20*		2626.5		0.0	0+
2657.4 *5*	0.27 *3*	2658.6		0.0	0+
2657.4[b] *11*		2817.8	(2+)	155.0	2+
x2667.8 *5*	0.40 *3*				
x2681.5 *3*	0.37 *3*				
x2688.5 *3*	0.37 *3*				
2703.8 *5*	0.17 *2*	2704.0		0.0	0+
x2712.6 *5*	0.150 *16*				
2723.5[b] *6*		2878.8		155.0	2+
2734.1[c] *5*	0.23 *3*	2892.7		155.0	2+
2738.3 *5*	0.87 *5*	2739.9		0.0	0+
x2764.8 *5*	0.32 *2*				
2766.9[b] *13*		2765.7		0.0	0+
2816.1[b] *11*		2969.8		155.0	2+
2817.0 *3*	0.44 *3*	2817.8	(2+)	0.0	0+
x2829.0 *10*	0.080 *8*				
x2831.0 *10*	0.07 *2*				
x2854.3 *5*	0.210 *13*				
2874.3[b] *3*		3030.5		155.0	2+
2879.3[c] *5*	0.26 *3*	2878.8		0.0	0+
2892.7 *5*	0.32 *2*	2892.7		0.0	0+
x2902.0 *5*	0.260 *16*				
2918.5[c] *5*	0.160 *9*	3070.4		155.0	2+
x2942.4 *5*	0.210 *11*				
2968.9[b] *9*		2969.8		0.0	0+
2986.6[c] *5*	0.50 *5*	3140.0		155.0	2+
x2993.1 *3*	0.28 *3*				
3011.9[b] *11*		3012.2		0.0	0+
3012.0[b] *10*		3167.2		155.0	2+
3021.7 *5*	0.76 *6*	3176.8		155.0	2+
3029.3[b] *3*		3030.5		0.0	0+
x3055.0 *3*	0.37 *3*				
x3056.0 *3*	0.311 *11*				
3067.5[b] *10*		3223.5		155.0	2+
3070.7 *3*	0.77 *3*	3070.4		0.0	0+
3084.6[c] *10*	0.120 *10*	3238.8		155.0	2+
3098.7[b] *12*		3732.0		632.9	2+
3110.2 *3*	0.80 *3*	3110.0		0.0	0+
3120.1[c] *3*	0.59 *3*	3274.5		155.0	2+
3139.7[b] *7*		3140.0		0.0	0+
x3154.0[&] *7*	0.9 *2*				
x3158.0 *10*	0.140 *8*				
3168.6[c] *5*	0.41 *3*	3167.2		0.0	0+
3176.6 *5*	0.66 *5*	3176.8		0.0	0+
x3210.0 *3*	0.91 *7*				
x3237.6[&] *9*	0.35				
3275.2[c] *5*	0.37 *3*	3274.5		0.0	0+
x3280.9 *5*	0.29 *3*				
x3318.8 *3*	0.28 *2*				
x3341.6 *5*	0.170 *9*				
x3360.8 *10*	0.140 *7*				
x3362.8 *10*	0.090 *5*				
x3386.5 *3*	0.50 *2*				
x3399.1 *5*	0.25 *2*				
x3406.2 *5*	0.240 *13*				
x3456.2 *10*	0.06 *2*				
x3468[&] *1*	0.7 *2*				
3480.6[b]		(7989.59)	0−,1−	4507.5	
x3483.1 *3*	0.160 *12*				
x3568[&] *1*	0.52 *12*				
3575.5[c] *5*	0.210 *12*	3732.0		155.0	2+
x3726.3 *5*	0.190 *14*				
x3746.9 *5*	0.52 *4*				
x3828.6[&] *8*	0.12				
x3839.4 *5*	0.18 *2*				
x3868.4 *5*	0.36 *2*				
x3965[&] *1*	0.41 *12*				
x4025.0 *5*	0.54 *5*				
x4058.0 *5*	0.25 *2*				
x4095.4 *5*	0.31 *2*				
x4115.9 *5*	0.24 *2*				
x4129.4 *5*	0.31 *2*				
x4175.5 *3*	0.52 *2*				
4256.8[b]		(7989.59)	0−,1−	3732.0	
x4275.1 *5*	0.30 *3*				
x4303.0[&] *8*	0.52 *6*				
x4341.8[&] *8*	0.52 *6*				
4350.2[b] *12*		4507.5		155.0	2+
x4363[&] *1*	0.30 *5*				
4508.6[&c] *8*	0.35 *6*	4507.5		0.0	0+
x4572.8 *5*	0.200 *16*				
x4591.0 *3*	0.59 *3*				
x4657.5 *5*	0.54 *5*				
x4664.6 *5*	0.59 *4*				
x4668.2 *5*	0.38 *4*				
x4673.8 *5*	0.36 *2*				
4716.1[c] *5*	0.69 *6*	(7989.59)	0−,1−	3274.5	
x4736.9[@] *3*	0.250 *11*				
4751.4 *3*	0.73 *3*	(7989.59)	0−,1−	3238.8	
4764.1[@c] *10*	0.19 *3*	(7989.59)	0−,1−	3223.5	
4812.5 *5*	2.75 *10*	(7989.59)	0−,1−	3176.8	
4821.7[&c] *7*	0.81 *6*	(7989.59)	0−,1−	3167.2	
4851.0[c] *5*	0.49 *2*	(7989.59)	0−,1−	3140.0	
4879.7 *3*	0.38 *2*	(7989.59)	0−,1−	3110.0	
4919.5 *3*	1.09 *4*	(7989.59)	0−,1−	3070.4	
x4935.0[&] *9*	0.29 *12*				
4959.5 *3*	0.91 *3*	(7989.59)	0−,1−	3030.5	

Continued on next page (footnotes at end of table)

^{187}Os(n,γ) E=th 1983Fe06 (continued)

γ(^{188}Os) (continued)

E_γ	I_γ †[d]	E_i(level)	J_i^π	E_f	J_f^π
4976.5[b]		(7989.59)	0⁻,1⁻	3012.2	
4986.5 *5*	0.50 *6*	(7989.59)	0⁻,1⁻	3002.8	
x4995.4[@] *10*	0.27 *2*				
5017.4[&c] *7*	0.18 *6*	(7989.59)	0⁻,1⁻	2969.8	
x5023.6[&] *9*	0.18 *4*				
x5049.8 *3*	0.50 *2*				
x5060.4[@] *5*	0.20 *3*				
x5070.5[@] *5*	0.28 *2*				
5096.8 *3*	1.20 *4*	(7989.59)	0⁻,1⁻	2892.7	
5110.9[&c] *7*	0.92 *5*	(7989.59)	0⁻,1⁻	2878.8	
5124.1 *5*	0.42 *3*	(7989.59)	0⁻,1⁻	2866.1	
5171.5 *3*	0.65 *4*	(7989.59)	0⁻,1⁻	2817.8	(2⁺)
5209.0[b] *10*		(7989.59)	0⁻,1⁻	2779.2	
5223.5 *3*	0.63 *4*	(7989.59)	0⁻,1⁻	2765.7	
x5231.1[@] *10*	0.24 *4*				
5248.0 *5*	0.63 *3*	(7989.59)	0⁻,1⁻	2739.9	
x5279.3[@] *3*	0.47 *3*				
5285.6 *3*	0.47 *3*	(7989.59)	0⁻,1⁻	2704.0	
x5309.1[@] *10*	0.080 *14*				
5330.5 *3*	0.46 *2*	(7989.59)	0⁻,1⁻	2658.6	
x5347.0 *5*	0.190 *13*				
5360[&c] *1*	0.29 *6*	(7989.59)	0⁻,1⁻	2626.5	
5366.5 *3*	0.60 *3*	(7989.59)	0⁻,1⁻	2623.3	(2⁺)
x5391.1[@] *5*	0.090 *7*				
5470.1 *3*	0.28 *1*	(7989.59)	0⁻,1⁻	2519.6	1,2
5484.4 *5*	0.89 *3*	(7989.59)	0⁻,1⁻	2505.3	
5498.0[@] *5*	0.21 *2*	(7989.59)	0⁻,1⁻	2491.6	2⁻,3⁺
5529.7 *5*	0.370 *11*	(7989.59)	0⁻,1⁻	2461.2	(1,2⁺)
x5537.9[#g] *10*	<0.08				
5573.2 *3*	2.20 *7*	(7989.59)	0⁻,1⁻	2416.1	(2⁺,3⁺)
5622.7 *3*	0.53 *2*	(7989.59)	0⁻,1⁻	2366.1	1,2
5641.1 *3*	0.71 *3*	(7989.59)	0⁻,1⁻	2347.8	(1)⁺
x5691[&] *1*	0.25 *4*				
5702.9 *3*	1.67 *5*	(7989.59)	0⁻,1⁻	2286.4	(1⁺,2⁺)
5738[ac] *4*	0.26 *9*	(7989.59)	0⁻,1⁻	2255.7	
5774.3 *3*	0.51 *3*	(7989.59)	0⁻,1⁻	2214.9	(1)⁺
5794.6[c] *10*	0.100 *16*	(7989.59)	0⁻,1⁻	2193.1	
5822.5 *5*	0.21 *2*	(7989.59)	0⁻,1⁻	2166.4	(2)⁺
5866.2[@] *5*	0.31 *2*	(7989.59)	0⁻,1⁻	2123.2	(1⁺,2⁺)
5890.9 *5*	0.26 *2*	(7989.59)	0⁻,1⁻	2098.8	(1)⁺
5920.8 *3*	1.49 *5*	(7989.59)	0⁻,1⁻	2068.8	(2)⁺
x5958.1[#g] *10*	<0.09				
5966.7 *3*	0.350 *14*	(7989.59)	0⁻,1⁻	2022.8	(1,2)⁺
6023.2 *5*	0.23 *2*	(7989.59)	0⁻,1⁻	1966.3	0⁺
6032.6 *3*	0.37 *2*	(7989.59)	0⁻,1⁻	1957.3	(1⁺,2⁺)
x6111.3[#] *10*	0.26 *6*				
6147.0 *3*	0.46 *2*	(7989.59)	0⁻,1⁻	1842.8	(2)⁺
6165.7[#g] *10*	<0.09	(7989.59)	0⁻,1⁻	1824.6	0⁺
6181.9 *3*	0.51 *2*	(7989.59)	0⁻,1⁻	1807.6	2⁺
6224.1 *6*	0.21 *2*	(7989.59)	0⁻,1⁻	1765.3	0⁺
x6242.8[#] *10*	0.20 *6*				

Continued on next page (footnotes at end of table)

^{187}Os(n,γ) E=th 1983Fe06 (continued)

$\gamma(^{188}Os)$ (continued)

E_γ	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π	E_γ	I_γ [†d]	E_i(level)	J_i^π	E_f	J_f^π
6258.7[#] *10*	0.15 *6*	(7989.59)	$0^-,1^-$	1729.5	2^+	6712.1[@g] *5*	0.190 *14*	(7989.59)	$0^-,1^-$	1278.0	4^+
6285.6[#g] *10*	<0.09	(7989.59)	$0^-,1^-$	1704.1	0^+	[x]6756.0[@] *5*	0.190 *12*				
6369.0 *3*	0.280 *13*	(7989.59)	$0^-,1^-$	1620.4	2^+	[x]6879.6[@] *5*	0.060 *5*				
6413[b] *3*		(7989.59)	$0^-,1^-$	1577		6903.4 *3*	0.170 *7*	(7989.59)	$0^-,1^-$	1086.2	0^+
6511.5 *3*	0.41 *2*	(7989.59)	$0^-,1^-$	1477.6	0^+	7356.6 *3*	0.59 *2*	(7989.59)	$0^-,1^-$	632.9	2^+
6532.9[#] *10*	0.41 *4*	(7989.59)	$0^-,1^-$	1457.4	2^+	7834.5 *3*	1.09 *3*	(7989.59)	$0^-,1^-$	155.0	2^+
[x]6570.8[@] *10*	0.05 *1*					7989.3 *3*	0.61 *2*	(7989.59)	$0^-,1^-$	0.0	0^+
6683.5 *20*	0.10 *4*	(7989.59)	$0^-,1^-$	1304.8	2^+						

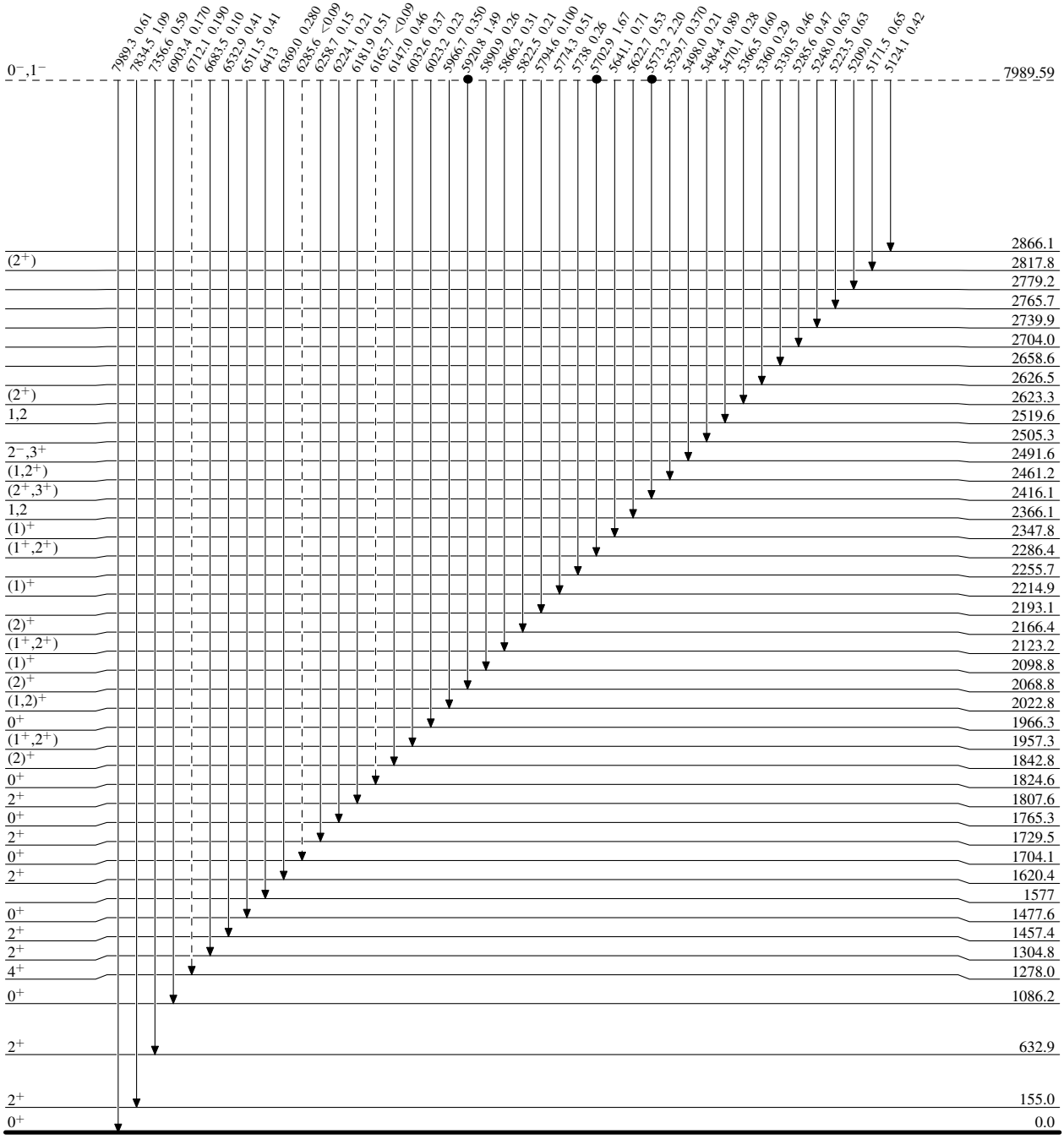
† Per 100 n-captures (the normalization is approximate). For unresolved doublets, intensity divided on the basis of branching ratio taken from ^{188}Re β^- decay and/or ^{188}Ir ε decay.
‡ From ce data (1982Ka28) for E0 transitions. It is assumed that 80% of capture events populate the 155-keV level.
# Reported by 1979CaZU only.
@ Reported by 1983Fe06 only.
& Reported by 1978BaYT only.
a Reported by 1974Ba23 only.
b From 2000Bo49 only, based on observation of two-quantum $\gamma\gamma$ cascades summing to a certain energy.
c Placement from 2000Bo49.
d For intensity per 100 neutron captures, multiply by ≈1.0.
e Multiply placed with undivided intensity.
f Multiply placed with intensity suitably divided.
g Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme

Intensities: Relative I_γ

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)
- Coincidence



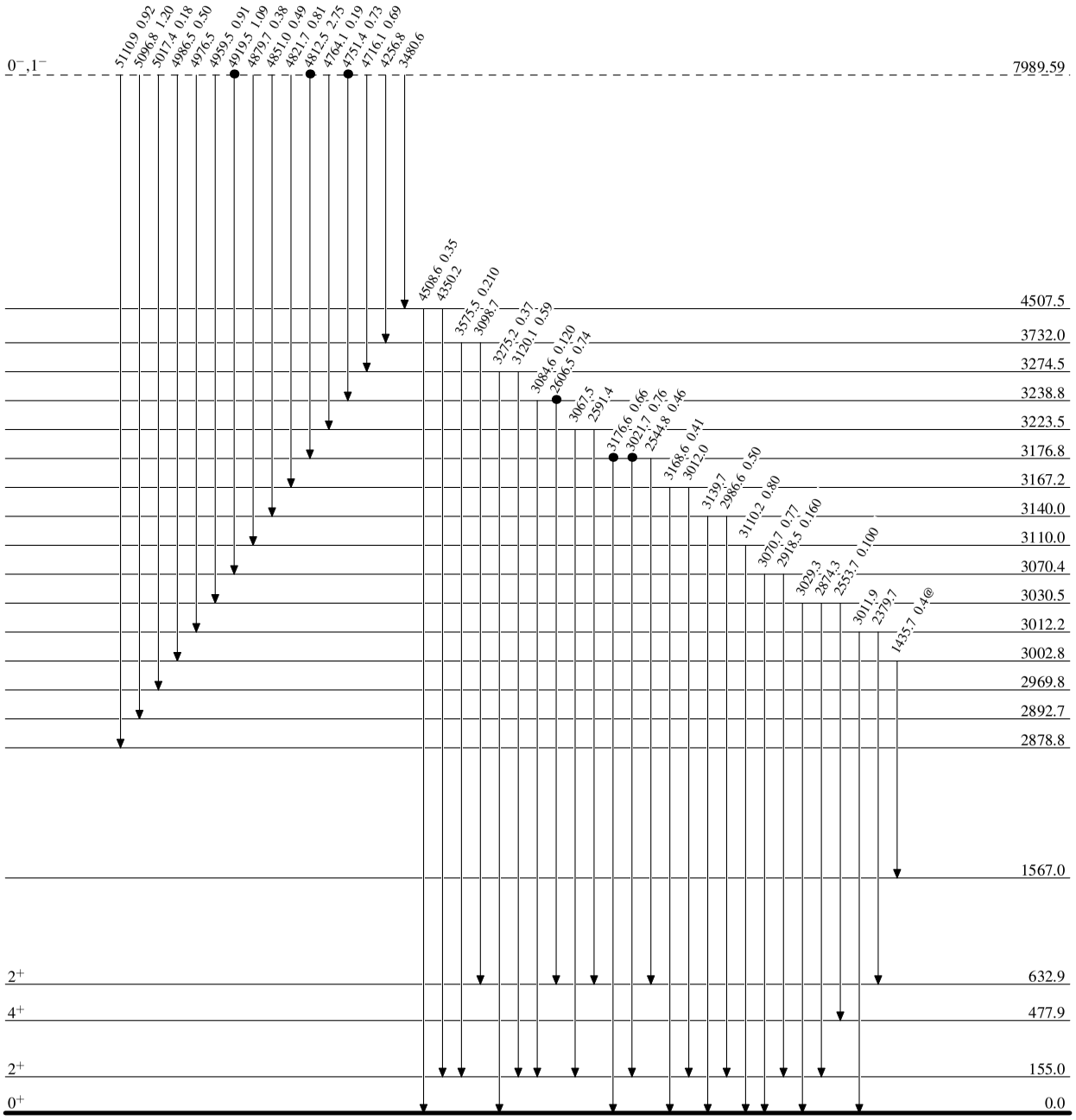
$^{188}_{76}Os_{112}$

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme (continued)

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
Coincidence



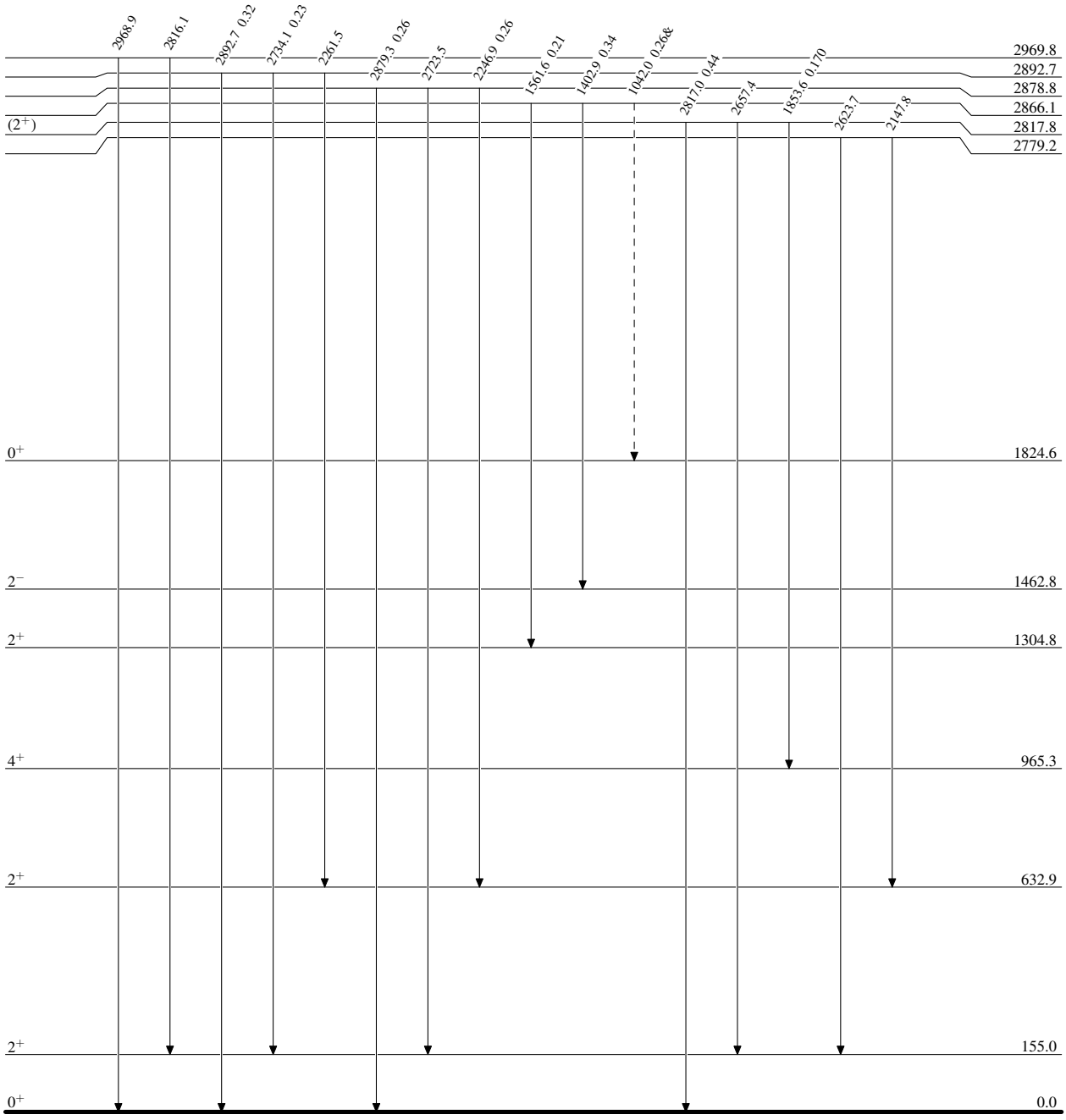
$^{188}_{76}Os_{112}$

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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)



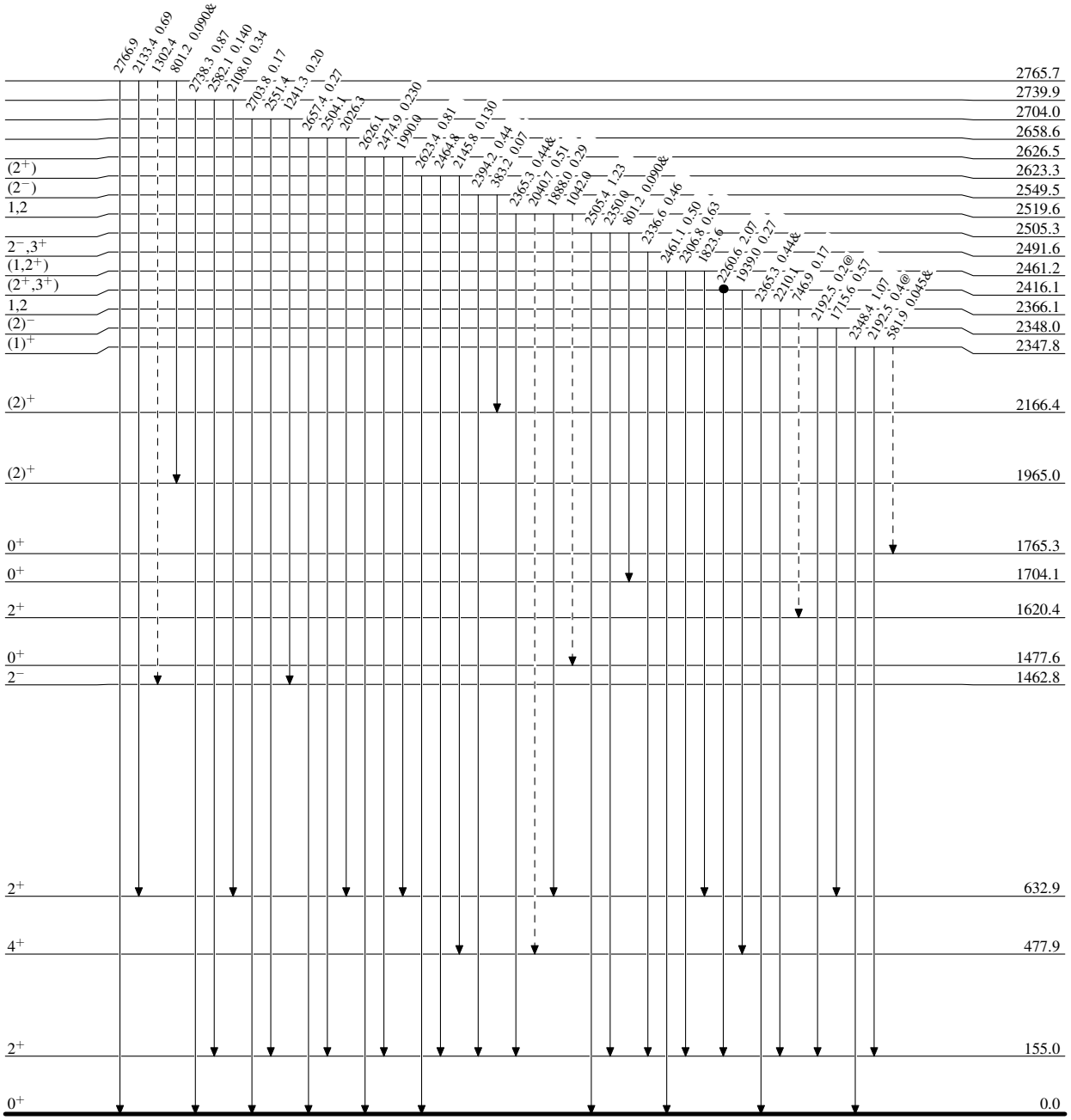
$^{188}_{76}Os_{112}$

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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)
Coincidence



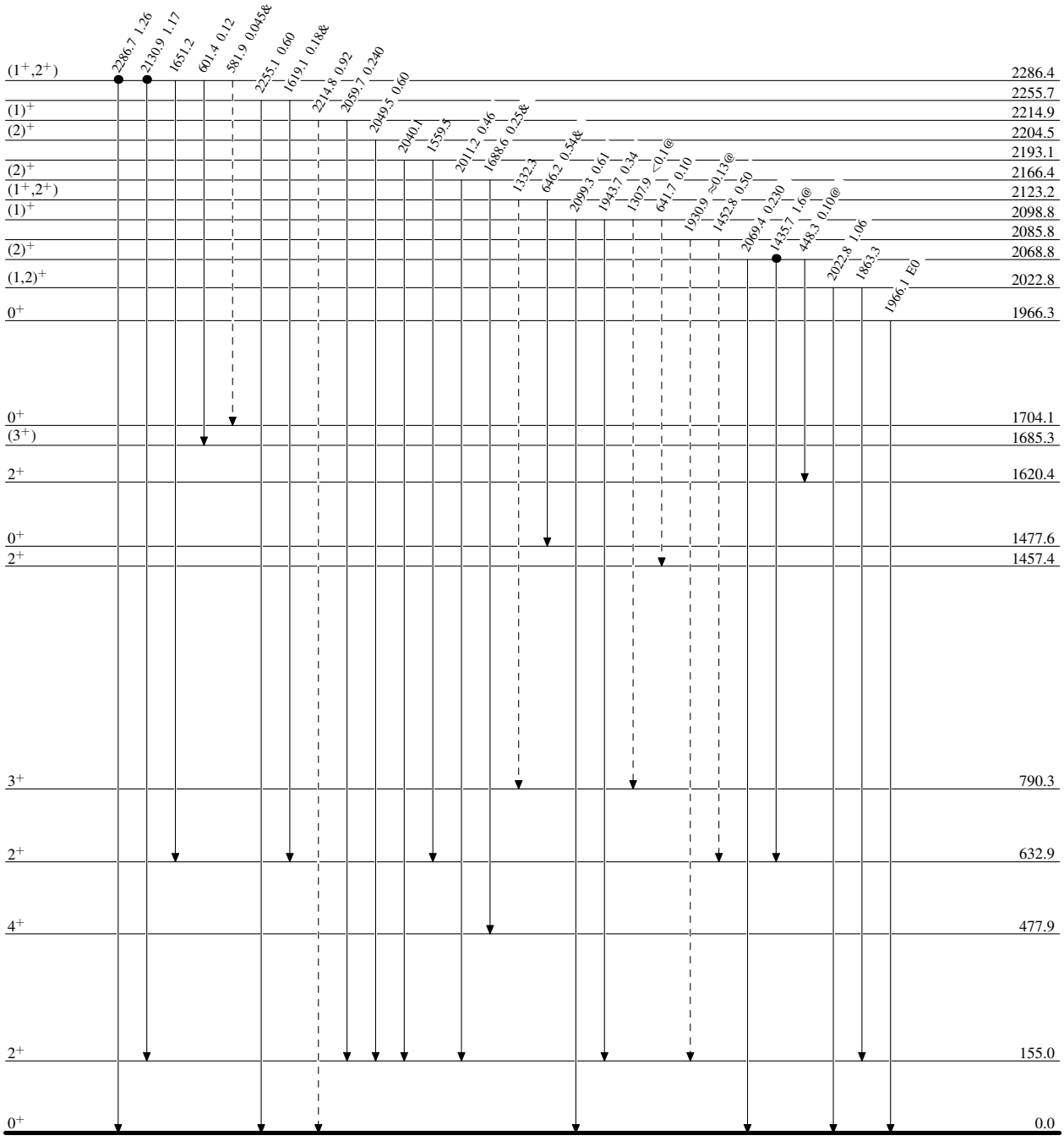
$^{188}_{76}Os_{112}$

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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)
Coincidence



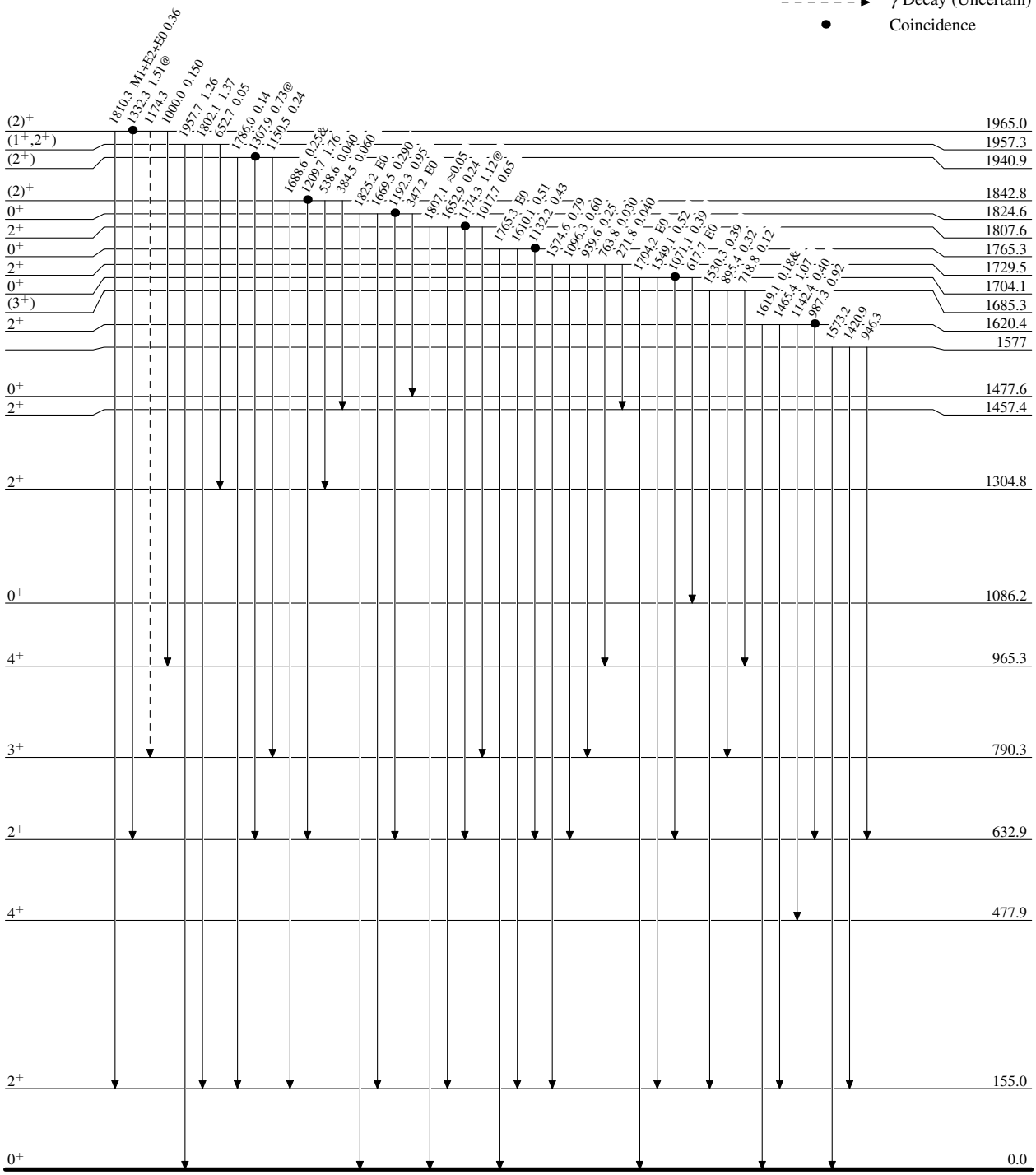
$^{188}_{76}Os_{112}$

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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)
Coincidence



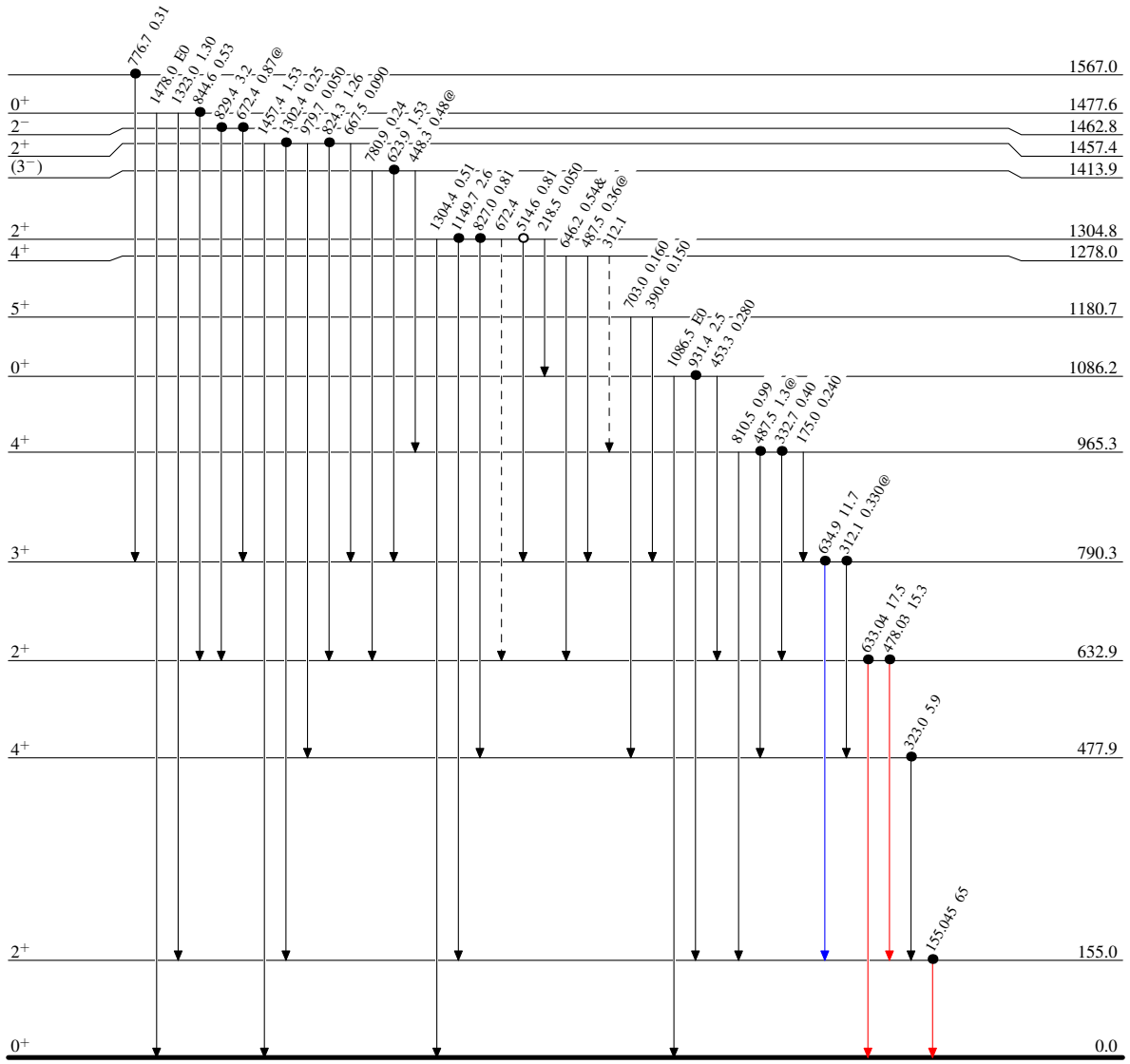
$^{188}_{76}Os_{112}$

^{187}Os(n,γ) E=th 1983Fe06

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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)
- Coincidence
- Coincidence (Uncertain)



$^{188}_{76}Os_{112}$