Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,1807 (2010)	15-Jun-2010

Q(β^-)=-1.127×10^4 *8*; S(n)=1.156×10^4 *8*; S(p)=2.43×10^3 *syst*; Q(α)=5816 *3* 2012Wa38
Note: Current evaluation has used the following Q record −11250 SY11560 70 *2440* syst 5818 3 2003Au03,2009AuZZ.
Q(α): Consistent with new Eα=5681 *5* datum (2004GoZZ) which implies Q(α)=5816 *5*.
ΔQ(β)=150, ΔS(p)=50 (2003Au03, 2009AuZZ).
Identification: 1982En03 observed ^{168}Os as the α daughter of ^{172}Pt; this assignment was confirmed through cross-bombardments, excitation functions and α-energy systematics (1978Ca11,1978Sc26,1982De11,1984Sc06).
See 1983Al09, 1984Al36, and 1984HaZD for analyses of mass and proton-stability data for ^{168}Os.

^{168}Os Levels

Cross Reference (XREF) Flags

A ^{172}Pt α decay
B ^{112}Sn(^{58}Ni,2pγ),

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0.0#	0+	2.1 s *1*	AB	%ε+%β+=57 *4*; %α=43 *4* J$^\pi$: even-even nucleus ground state. T$_{1/2}$: from α decay. Weighted average of 1.9 s *1* (1978Ca11), 2.0 s and 2.4 s *2* (1978Sc26), 2.2 s *1* (1982En03), 2.0 s *2* (1984Sc06), 2.1 s *6* (1995Hi02), 2.1 s *1* (1996Pa01), 2.6 s *2* (2004GoZZ). %α: weighted average of 49 *3* from matching of ^{172}Pt-^{168}Os velocity distributions following recoil-mass selection of the evaporation residues formed by neutron emission from ^{176}Pt (4n) (1982En03), 40 *3* from (1996Pa01) and 36 *4* (2004GoZZ).
341.20# *20*	2+		B	
857.3# *3*	4+		B	
1469.6@ *4*	(3−)		B	
1499.1# *4*	6+		B	
1736.8@ *4*	(5−)		B	J$^\pi$: D 880γ to 4+ 857; 238γ to 6+ 1499; band assignment.
2154.1@ *4*	(7−)		B	
2222.7# *4*	8+		B	
2298.6& *9*	(8−)		B	
2589.4@ *5*	(9−)		B	
2730.5& *6*	(10−)		B	
2937.8@ *5*	(11−)		B	
2982.7# *5*	10+		B	
3128.8& *6*	(12−)		B	
3363.7@ *5*	(13−)		B	
3365.1# *5*	(12+)		B	
3693.9& *6*	(14−)		B	
3730.5# *5*	(14+)		B	
3942.6@ *6*	(15−)		B	
4261.4# *6*	(16+)		B	
4382.1& *8*	(16−)		B	
4633.5@ *8*	(17−)		B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{168}Os Levels (continued)

E(level)†	Jπ‡	XREF
4886.7# *6*	(18+)	B
5158.4& *13*	(18−)	B

† From least-squares fit to Eγ.
‡ From ^{112}Sn(^{58}Ni,2pγ), based on observed band structure and configuration assignments deduced from comparison of experimental Routhians and alignments with cranked shell-model calculations, except as noted.
# Band(A): g.s. band. Becomes AB band (aligned ν $i^2_{13/2}$) for $J^\pi \geq 12^+$. Alignment gain=11.8ħ at ħω=0.28 MeV.
@ Band(B): AE, α=1 band. Orbital A is (ν $i_{13/2}$), α=+1/2; orbital E is (ν $h_{9/2}$ or $f_{7/2}$), α=+1/2. Alignment=9.9ħ at ħω=0.28 MeV.
& Band(C): AF, α=0 band. Orbital A is (ν $i_{13/2}$), α=+1/2; orbital F is (ν $h_{9/2}$ or $f_{7/2}$), α=−1/2. Alignment=9.1ħ at ħω=0.28 MeV.

γ(^{168}Os)

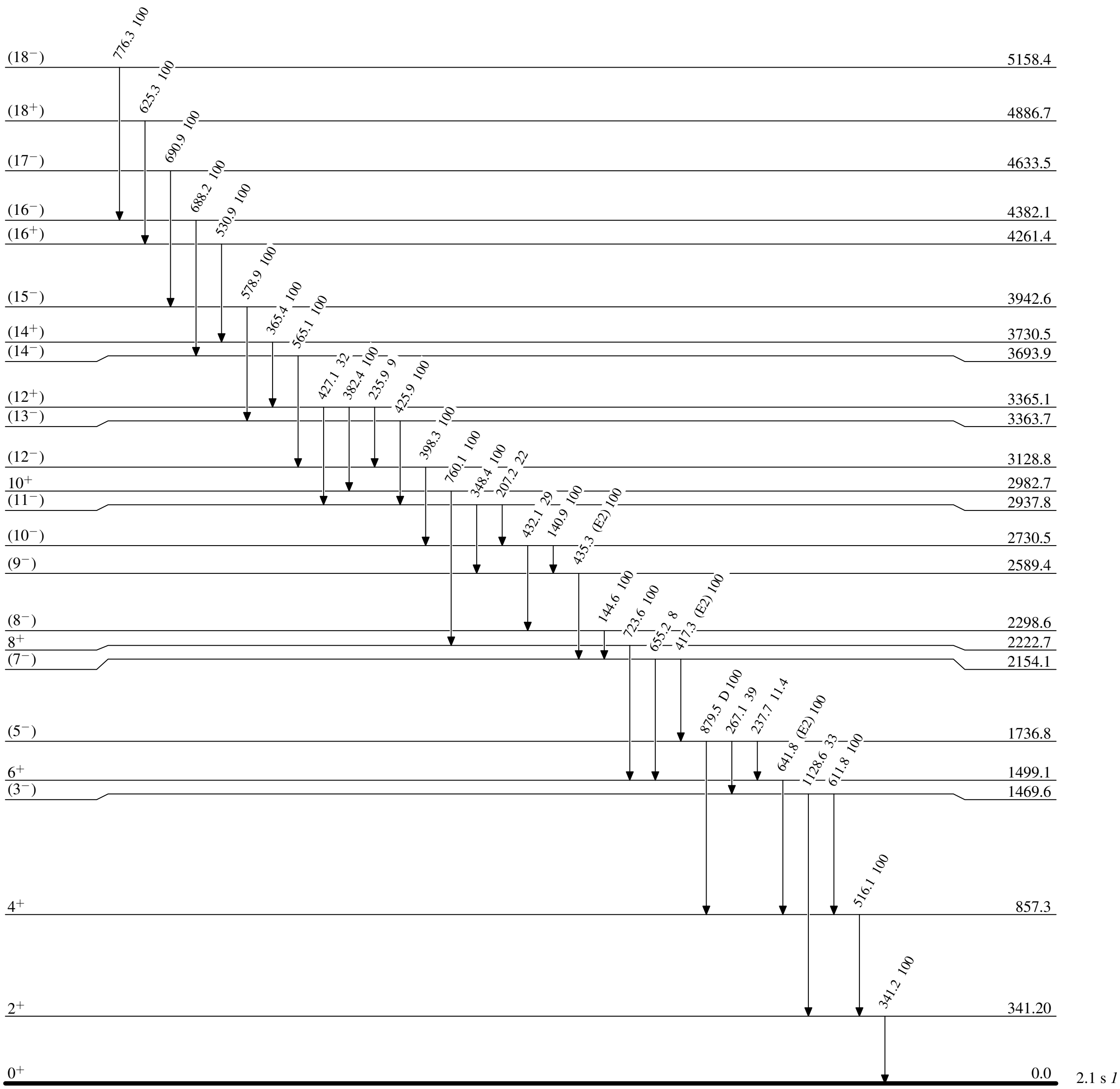
E_i(level)	J^π_i	Eγ†	Iγ†	E_f	J^π_f	Mult.‡	α#
341.20	2+	341.2 *2*	100	0.0	0+		
857.3	4+	516.1 *2*	100	341.20	2+		
1469.6	(3−)	611.8 *5*	100 *22*	857.3	4+		
		1128.6 *10*	33 *4*	341.20	2+		
1499.1	6+	641.8 *2*	100 *3*	857.3	4+	(E2)	0.01265
1736.8	(5−)	237.7 *10*	11.4 *18*	1499.1	6+		
		267.1 *2*	39 *9*	1469.6	(3−)		
		879.5 *2*	100 *11*	857.3	4+	D	
2154.1	(7−)	417.3 *2*	100 *8*	1736.8	(5−)	(E2)	0.0361
		655.2 *10*	8 *3*	1499.1	6+		
2222.7	8+	723.6 *2*	100	1499.1	6+		
2298.6	(8−)	144.6 *10*	100	2154.1	(7−)		
2589.4	(9−)	435.3 *2*	100	2154.1	(7−)	(E2)	0.0324
2730.5	(10−)	140.9 *5*	100 *12*	2589.4	(9−)		
		432.1 *10*	29 *13*	2298.6	(8−)		
2937.8	(11−)	207.2 *10*	22 *9*	2730.5	(10−)		
		348.4 *2*	100 *11*	2589.4	(9−)		
2982.7	10+	760.1 *2*	100	2222.7	8+		
3128.8	(12−)	398.3 *2*	100	2730.5	(10−)		
3363.7	(13−)	425.9 *2*	100	2937.8	(11−)		
3365.1	(12+)	235.9 *10*	9 *3*	3128.8	(12−)		
		382.4 *2*	100 *12*	2982.7	10+		
		427.1 *10*	32 *12*	2937.8	(11−)		
3693.9	(14−)	565.1 *2*	100	3128.8	(12−)		
3730.5	(14+)	365.4 *2*	100	3365.1	(12+)		
3942.6	(15−)	578.9 *2*	100	3363.7	(13−)		
4261.4	(16+)	530.9 *2*	100	3730.5	(14+)		
4382.1	(16−)	688.2 *5*	100	3693.9	(14−)		
4633.5	(17−)	690.9 *5*	100	3942.6	(15−)		
4886.7	(18+)	625.3 *2*	100	4261.4	(16+)		
5158.4	(18−)	776.3 *10*	100	4382.1	(16−)		

† From ^{112}Sn(^{58}Ni,2pγ).
‡ From γ asymmetry ratio in ^{112}Sn(^{58}Ni,2pγ), assigning Δπ=(no) to intraband transitions.
# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

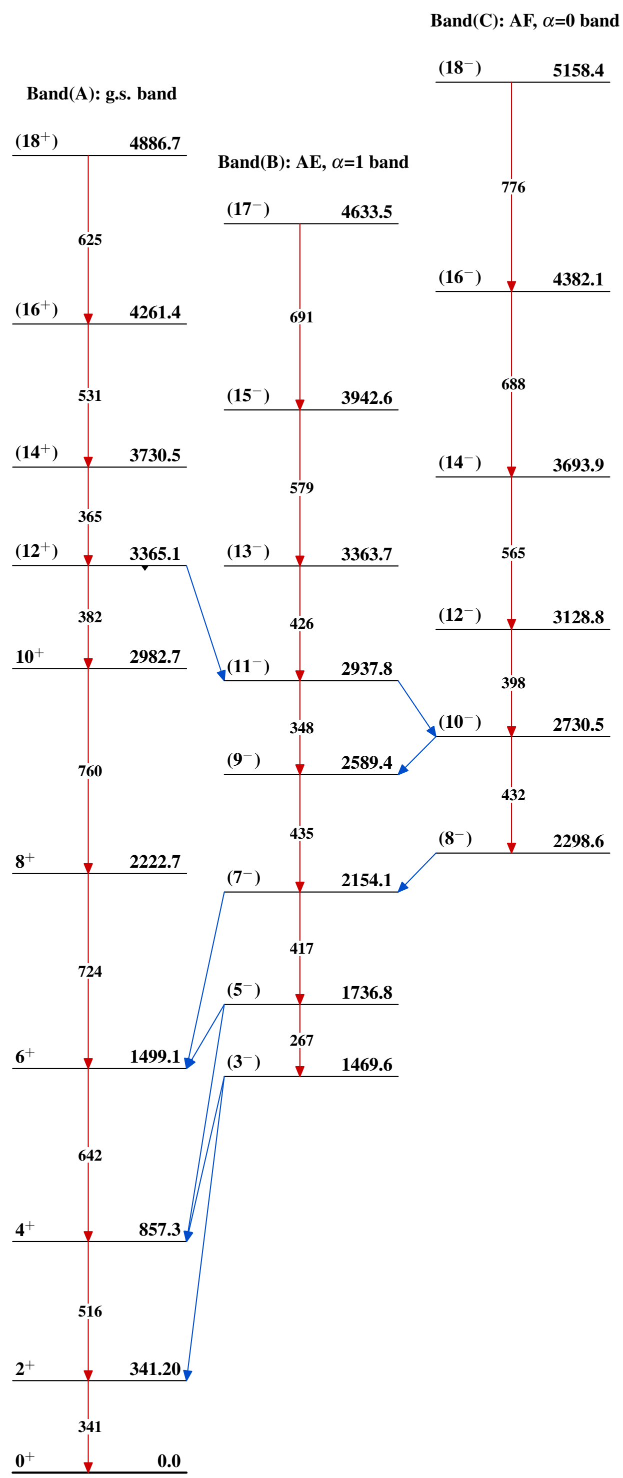
Level Scheme

Intensities: Relative photon branching from each level



$^{168}_{76}Os_{92}$

Adopted Levels, Gammas



$^{168}_{76}Os_{92}$