Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 124, 1 (2015)	30-Nov-2014

Q(β^-)=−12810 *SY*; S(n)=14672 *16*; S(p)=5120 *6*; Q(α)=−2590 *SY* 2012Wa38
ΔQ(β-)=300, ΔQ(α)=200 (syst, 2012Wa38).
S(2n)=25750 *400* (syst), S(2p)=7268 *7*, Q(εp)=1775 *7* (2012Wa38).
First half-life measurement of ^{86}Mo isotope was made by 1994Sh07 in ^{54}Fe(^{35}Cl,p2nγ),E=103 MeV; ^{58}Ni(^{32}S,2p2nγ),E=120 MeV reactions and identified by (x ray)γ and $\beta\gamma$ coincidences and cross-bombardment. First identification of ^{86}Mo was by 1991Gr18 in in-beam γ-ray studies using ^{40}Ca(^{50}Cr,2p2nγ),E=170 MeV; and ^{58}Ni(^{32}S,2p2nγ),E=110 MeV reactions and employing recoil-γ and $\gamma\gamma$ coincidence techniques.
Additional information 1.

^{86}Mo Levels

Cross Reference (XREF) Flags

- A ^{86}Tc ε decay (55 ms)
- B ^{58}Ni(^{32}S,2p2nγ)
- C ^{58}Ni(^{36}Ar,2$\alpha\gamma$)

E(level)	J$^\pi$[†]	$T_{1/2}$	XREF	Comments
0.0[‡]	0^+	19.1 s *3*	ABC	%ε+%β^+=100 $T_{1/2}$: from weighted average of values obtained from decay curves for γ rays, x rays and conversion electrons (2005Ka39). Other: 19.6 s *11* (1994Sh07) is in good agreement but less precise.
566.6[‡] *4*	(2^+)		BC	
1140.9[&] *5*	(2^+)		C	
1327.5[‡] *7*	(4^+)		BC	
1587.1[&] *5*	(3^+)		C	
1923.4 *5*	(4^+)		C	
2128.6?[#] *20*			B	
2260.0[‡] *9*	(6^+)		BC	
2372.8[&] *6*	(5^+)		C	
2717.9[#] *10*	(5^-)		B	
2959.6[@] *11*	(6^-)		B	
3232.7[‡] *11*	(8^+)		B	
3306.6[#] *11*	(7^-)		B	
3589.0 *14*			B	
3748.6[@] *15*	(8^-)		B	
4153.3[‡] *13*	(10^+)		B	
4186.5[#] *12*	(9^-)		B	
4450.0? *16*			B	
4660.6[@] *18*	(10^-)		B	
5166.3[‡] *17*	(12^+)		B	
5255.5[#] *16*	(11^-)		B	
5686.6[@] *21*	(12^-)		B	
6194.6[‡] *19*	(14^+)		B	
6272.5[#] *19*	(13^-)		B	
6384.0 *19*	(14^+)		B	

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Adopted Levels, Gammas (continued)

^{86}Mo Levels (continued)

E(level)	Jπ†	XREF	E(level)	Jπ†	XREF	E(level)	Jπ†	XREF
6410.5 *19*	(13⁻)	B	7841?@ *4*	(16⁻)	B	10989‡ *4*	(22⁺)	B
6758@ *3*	(14⁻)	B	7974.1? *21*		B	12766?‡ *4*	(24⁺)	B
6874.2 *19*	(15⁺)	B	8178.9‡ *22*	(18⁺)	B			
7114.9‡ *20*	(16⁺)	B	9465.9‡ *24*	(20⁺)	B			

† Based on $\gamma\gamma(\theta)$(DCO) data, band structures and systematics.
‡ Band(A): g.s. band.
# Band(B): Band based on (5⁻).
@ Band(C): Band based on (6⁻).
& Band(D): Band based on (2⁺).

γ(^{86}Mo)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Comments
566.6	(2⁺)	566.6 *4*	100	0.0	0⁺	
1140.9	(2⁺)	574.3 *1*	100	566.6	(2⁺)	
1327.5	(4⁺)	760.9 *5*	100	566.6	(2⁺)	
1587.1	(3⁺)	446.2 *2*	100	1140.9	(2⁺)	
1923.4	(4⁺)	782.5 *3*	100	1140.9	(2⁺)	E_γ: 782.5γ and 785.7γ form a doublet (2007An21).
2128.6?		1562† *2*	100	566.6	(2⁺)	
2260.0	(6⁺)	932.6 *6*	100	1327.5	(4⁺)	
2372.8	(5⁺)	785.7 *3*	100	1587.1	(3⁺)	E_γ: 782.5γ and 785.7γ form a doublet (2007An21).
2717.9	(5⁻)	1390 *1*	100	1327.5	(4⁺)	
2959.6	(6⁻)	241.7 *4*	100	2717.9	(5⁻)	
3232.7	(8⁺)	972.7 *7*	100	2260.0	(6⁺)	
3306.6	(7⁻)	347.1 *5*	60 *10*	2959.6	(6⁻)	
		588.5 *6*	100 *20*	2717.9	(5⁻)	
		1047 *1*	50 *20*	2260.0	(6⁺)	
3589.0		1329 *1*	100	2260.0	(6⁺)	
3748.6	(8⁻)	789 *1*	100	2959.6	(6⁻)	
4153.3	(10⁺)	920.6 *7*	100	3232.7	(8⁺)	
4186.5	(9⁻)	879.9 *6*	100	3306.6	(7⁻)	
4450.0?		861† *1*	100	3589.0		
4660.6	(10⁻)	912 *1*	100	3748.6	(8⁻)	
5166.3	(12⁺)	1013 *1*	100	4153.3	(10⁺)	
5255.5	(11⁻)	1069 *1*	100	4186.5	(9⁻)	
5686.6	(12⁻)	1026 *1*	100	4660.6	(10⁻)	
6194.6	(14⁺)	1028 *1*	100	5166.3	(12⁺)	
6272.5	(13⁻)	1017 *1*	100	5255.5	(11⁻)	
6384.0	(14⁺)	1218 *1*	100	5166.3	(12⁺)	
6410.5	(13⁻)	1155 *1*	100	5255.5	(11⁻)	
6758	(14⁻)	1071 *2*	100	5686.6	(12⁻)	
6874.2	(15⁺)	490.3 *5*	100 *22*	6384.0	(14⁺)	
		679† *1*	22 *11*	6194.6	(14⁺)	
7114.9	(16⁺)	241 *1*	29 *6*	6874.2	(15⁺)	
		920 *1*	100 *18*	6194.6	(14⁺)	
7841?	(16⁻)	1083† *2*	100	6758	(14⁻)	
7974.1?		1100† *1*	100	6874.2	(15⁺)	
8178.9	(18⁺)	1064 *1*	100	7114.9	(16⁺)	

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Adopted Levels, Gammas (continued)

γ(^{86}Mo) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
9465.9	(20$^+$)	1287 *1*	100	8178.9	(18$^+$)
10989	(22$^+$)	1523 *2*	100	9465.9	(20$^+$)
12766?	(24$^+$)	1777† *2*	100	10989	(22$^+$)

† Placement of transition in the level scheme is uncertain.

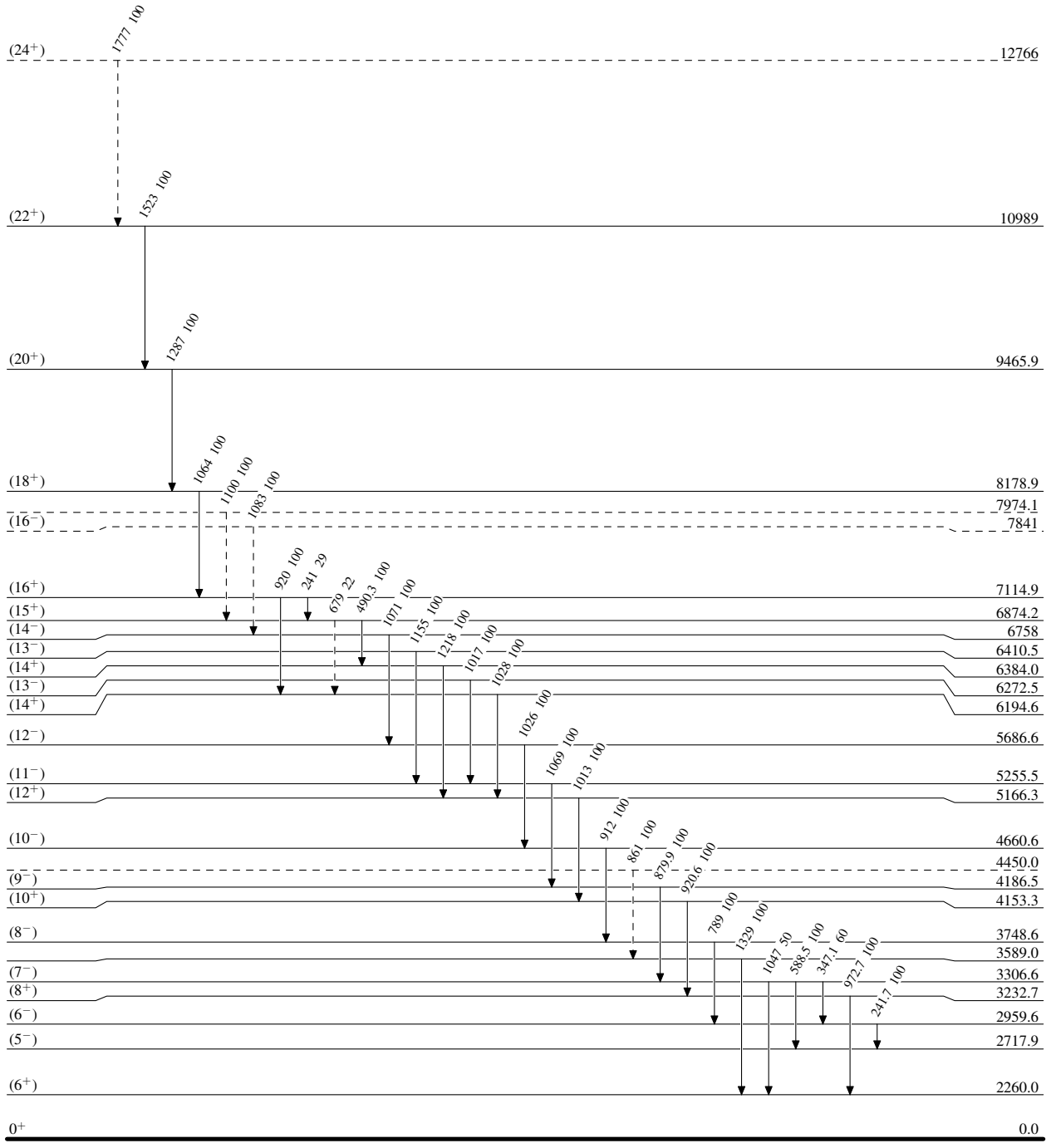
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{86}_{42}Mo_{44}$

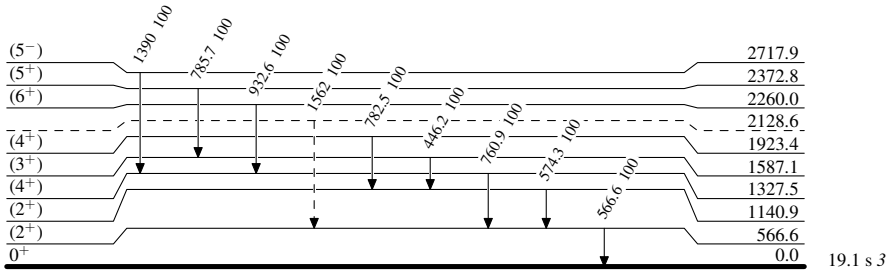
Adopted Levels, Gammas

Legend

Level Scheme (continued)

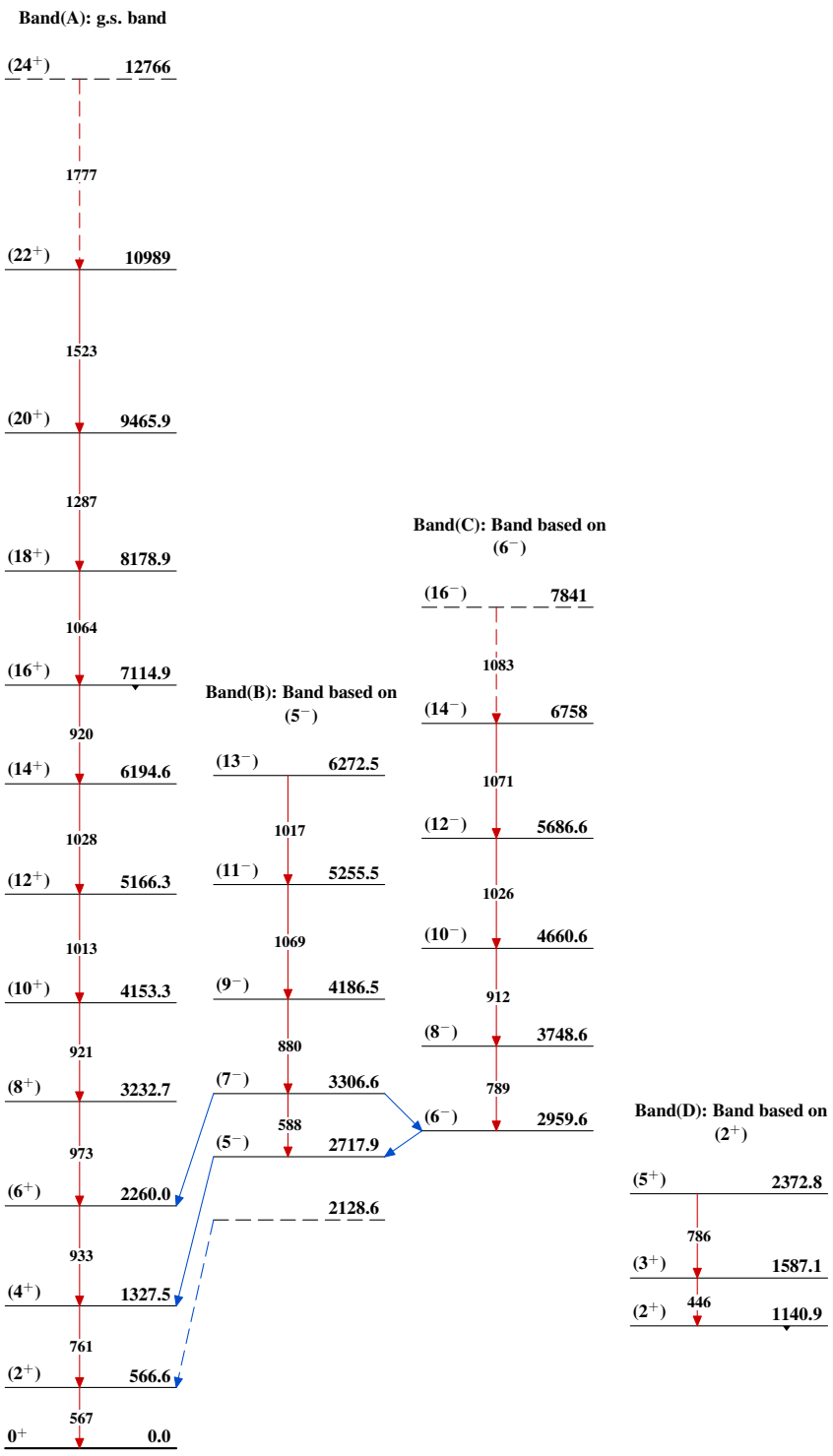
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{86}_{42}Mo_{44}$

Adopted Levels, Gammas



$^{86}_{42}Mo_{44}$