Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 176, 1 (2021)	1-May-2021

Q(β^-)=−12450 *SY*; S(n)=11970 *SY*; S(p)=2.18×10^3 *15*; Q(α)=6066 *5* 2021Wa16
ΔQ(β^-)=340, ΔS(n)=340 (syst,2021Wa16).
S(2n)=21780 *340* (syst), S(2p)=1800 *150*, Q(εp)=6230 *150* (2021Wa16).
Additional information 1.
All the data on the excited states of ^{160}W are from the fusion-evaporation reaction study of 2001Ke09.

^{160}W Levels

Cross Reference (XREF) Flags

- A ^{161}Re p decay (0.44 ms)
- B ^{161}Re p decay (14.7 ms)
- C ^{164}Os α decay
- D ^{106}Cd(^{58}Ni,2p2nγ)

E(level)	J$^\pi$ †	T$_{1/2}$	XREF	Comments
0.0‡	0$^+$	91 ms *5*	ABCD	%α=87 *8*; %ε+%β^+=13 *8* %α: from 1996Pa01, from correlation of causally related events in the decay of recoil nuclei imbedded in a double-sided silicon strip detector located in the focal plane of a recoil mass separator. T$_{1/2}$: from α(t) (1996Pa01). Other: 81 ms *15* (1981Ho10).
609.9‡ *2*	2$^+$		D	
1264.6‡ *3*	4$^+$		D	
1880.8‡ *4*	6$^+$		D	
2228.3‡ *4*	8$^+$		D	
2899.0?‡ *5*	(10$^+$)		D	
2946.4 *5*	10$^+$		D	
3168.5# *5*	11$^{(-)}$		D	
3523.2?‡ *5*	(12$^+$)		D	
4022.0?# *6*	(13$^-$)		D	
4218.8?‡ *6*	(14$^+$)		D	
4735.1?# *7*	(15$^-$)		D	
4861.1?‡ *6*	(16$^+$)		D	

† Adopted from ^{106}Cd(^{58}Ni,2p2nγ) dataset.
‡ Band(A): sequence of positive-parity yrast states.
# Band(B): sequence of probable negative-parity states.

Adopted Levels, Gammas (continued)

$\gamma(^{160}W)$

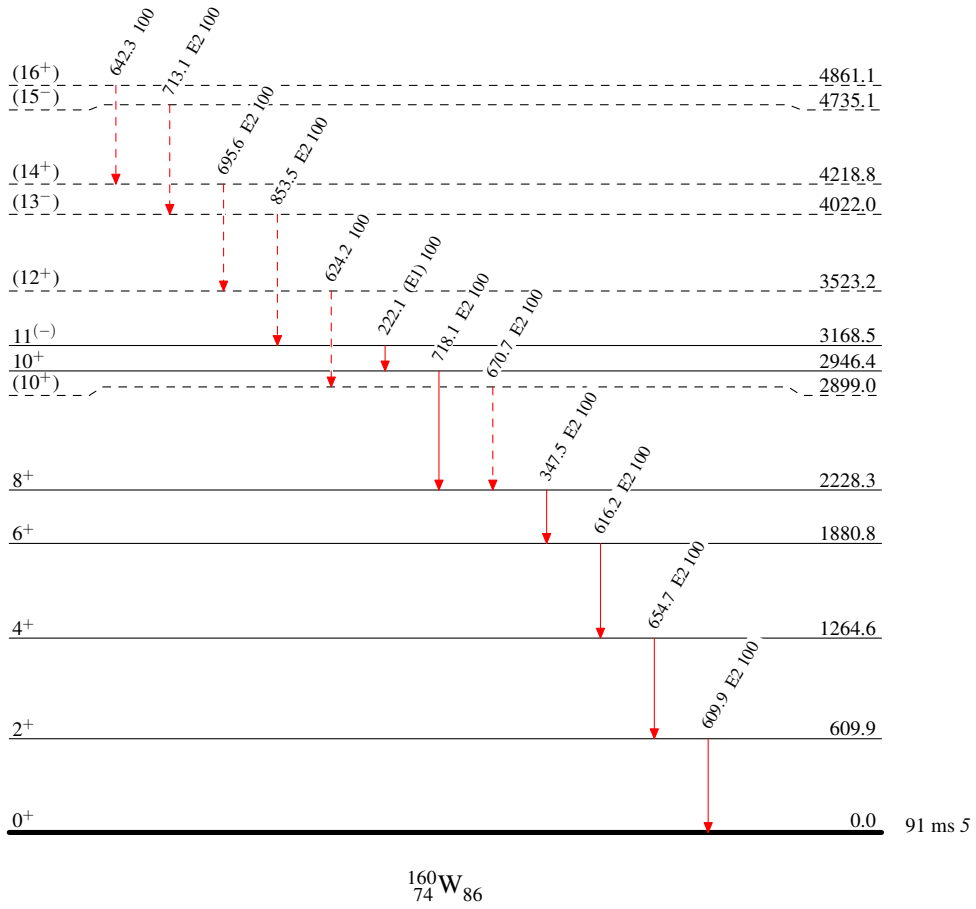
E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α[‡]	Comments
609.9	2^+	609.9 *2*	100	0.0	0^+	E2	0.01303	α(K)=0.01025 *15*; α(L)=0.00214 *3*; α(M)=0.000501 *7* α(N)=0.0001197 *17*; α(O)=1.85×10^{-5} *3*; α(P)=9.46×10^{-7} *14*
1264.6	4^+	654.7 *2*	100	609.9	2^+	E2	0.01108	α(K)=0.00879 *13*; α(L)=0.001760 *25*; α(M)=0.000411 *6* α(N)=9.84×10^{-5} *14*; α(O)=1.530×10^{-5} *22*; α(P)=8.13×10^{-7} *12*
1880.8	6^+	616.2 *2*	100	1264.6	4^+	E2	0.01272	α(K)=0.01002 *14*; α(L)=0.00208 *3*; α(M)=0.000487 *7* α(N)=0.0001163 *17*; α(O)=1.80×10^{-5} *3*; α(P)=9.25×10^{-7} *13*
2228.3	8^+	347.5 *2*	100	1880.8	6^+	E2	0.0554	α(K)=0.0390 *6*; α(L)=0.01254 *18*; α(M)=0.00304 *5* α(N)=0.000722 *11*; α(O)=0.0001063 *15*; α(P)=3.42×10^{-6} *5*
2899.0?	(10^+)	670.7[#] *2*	100	2228.3	8^+	E2	0.01049	α(K)=0.00835 *12*; α(L)=0.001651 *24*; α(M)=0.000385 *6* α(N)=9.21×10^{-5} *13*; α(O)=1.435×10^{-5} *21*; α(P)=7.73×10^{-7} *11*
2946.4	10^+	718.1 *2*	100	2228.3	8^+	E2	0.00901	α(K)=0.00722 *11*; α(L)=0.001381 *20*; α(M)=0.000321 *5* α(N)=7.69×10^{-5} *11*; α(O)=1.203×10^{-5} *17*; α(P)=6.70×10^{-7} *10*
3168.5	$11^{(-)}$	222.1 *2*	100	2946.4	10^+	(E1)	0.0480	α(K)=0.0399 *6*; α(L)=0.00630 *9*; α(M)=0.001429 *21* α(N)=0.000340 *5*; α(O)=5.34×10^{-5} *8*; α(P)=3.17×10^{-6} *5* Mult.: stretched D γ from asymmetry ratio, (E1) based on theoretical arguments implying unique parity orbitals $\nu i_{13/2}$ and $\pi h_{11/2}$ and systematics of even-even nuclei in this mass region having a similar decay pattern: 11^- level at about 3 MeV exitation energy decaying to 10^+ level of the g.s. band by E1 transition. For example for ^{156}Er, ^{158}Er, ^{158}Yb, ^{158}Hf, ^{160}Hf, ^{162}W and ^{164}W nuclei having this pattern no 11^+ level was found, except for ^{156}Er where this level is placed at more than 600 keV above 11^- level.
3523.2?	(12^+)	624.2[#] *2*	100	2899.0?	(10^+)			Unresolved doublet.
4022.0?	(13^-)	853.5[#] *3*	100	3168.5	$11^{(-)}$	E2	0.00623	α(K)=0.00507 *8*; α(L)=0.000899 *13*; α(M)=0.000207 *3* α(N)=4.97×10^{-5} *7*; α(O)=7.87×10^{-6} *11*; α(P)=4.71×10^{-7} *7*
4218.8?	(14^+)	695.6[#] *2*	100	3523.2?	(12^+)	E2	0.00967	α(K)=0.00772 *11*; α(L)=0.001500 *21*; α(M)=0.000349 *5* α(N)=8.36×10^{-5} *12*; α(O)=1.305×10^{-5} *19*; α(P)=7.16×10^{-7} *10*
4735.1?	(15^-)	713.1[#] *4*	100	4022.0?	(13^-)	E2	0.00915	α(K)=0.00733 *11*; α(L)=0.001406 *20*; α(M)=0.000327 *5* α(N)=7.83×10^{-5} *11*; α(O)=1.225×10^{-5} *18*; α(P)=6.79×10^{-7} *10*
4861.1?	(16^+)	642.3[#] *3*	100	4218.8?	(14^+)			Unresolved doublet.

[†] Adopted from ^{106}Cd(^{58}Ni,2p2nγ) dataset.
[‡] Additional information 2.
[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

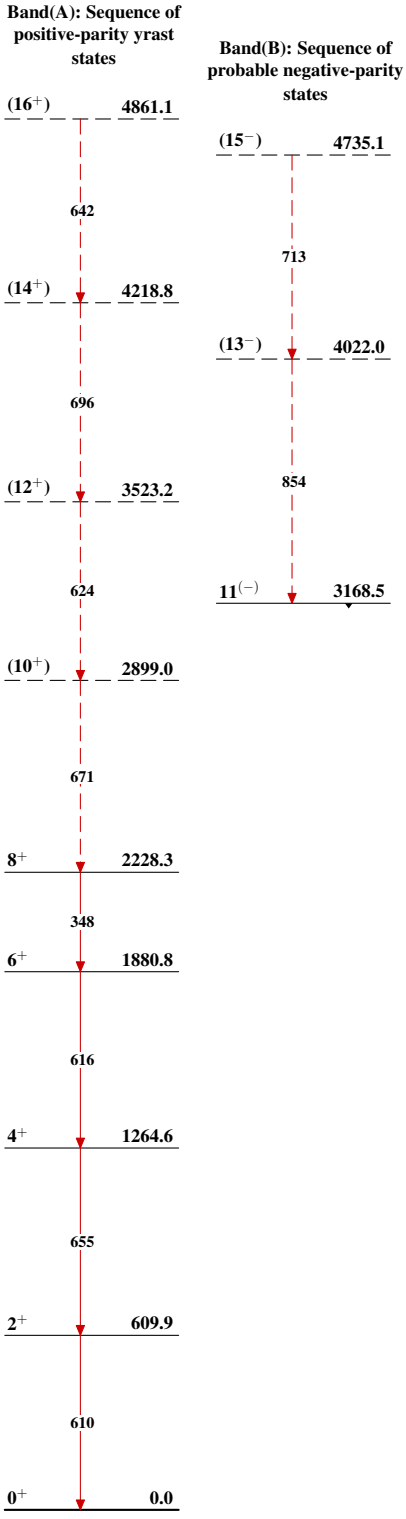
Level Scheme

Intensities: Type not specified



$^{160}_{74}W_{86}$

Adopted Levels, Gammas



$^{160}_{74}W_{86}$