$^{150}Sm(^{40}Ar,4n\gamma)$ 2011Sc07,2014Ga02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183, 1 (2022)	1-Mar-2022

Adapted/edited the XUNDL dataset Compiled by: B. Singh (McMaster) Feb. 11, 2014.

2011Sc07: E=188 MeV. Target thickness=500 $\mu g/cm^2$, Measured γ(ce) coincident spectrum. Electrons emitted after the recoiling nuclei left the target. SAGE spectrometer consisting of JUROGAM HPGe detector array (with 12 four-fold segmented Clover detectors, and 10 Eurogam phase-I detectors). The electron spectrometer consisted of a solenoid magnet and a Si detector. Experiments performed at the accelerator facility of University of Jyvaskyla. Confirmed E2 multipolarity of yrast transitions from measured K- and L-shell conversion electron ratios.

2014Ga04: E=195 MeV. Target thickness not given. Measured level lifetimes by RDDS method using Gammasphere array and Cologne plunger device. Experiments performed at the ATLAS-ANL facility. They compare their data with two-state mixing model calculations. Gamma data taken from 1993Ma02 (^{36}S,4nγ).

Selected level scheme used is from Adopted Levels.

^{186}Hg Levels

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	Comments
0.0	0^+		
405.3[@]	2^+	16.6 ps *21*	Q(transition)=3.9 *2* (2014Ga04).
621.1[&]	2^+		
807.7[&]	4^+	3.9 ps *14*	Q(transition)=6.6 *12* (2014Ga04).
1080.5[@]	4^+		
1164.5[&]	6^+	6.31 ps *28*	Q(transition)=6.82 *15* (2014Ga04).
1588.8[&]	8^+	3.12 ps *21*	Q(transition)=6.2 *2* (2014Ga04).
1678.0[@]	6^+		
2077.7[&]	10^+	1.32 ps *14*	Q(transition)=6.7 *4* (2014Ga04).
2155.5[@]	(8^+)		
2619.7[&]	12^+		
2636.3[@]	(10^+)		
2833.3	10^+		
3088.8[a]	11^-		
3201.3[&]	14^+		
3470.6[a]	13^-		
3812.3[&]	16^+		
3827.3[a]	(15^-)		

† From least-squares fit to Eγ, assuming same uncertainty for all Eγ.

‡ From Adopted Levels. 2014Ga04 list spin-parity from the literature.

\# From recoil distance Doppler-shift (RDDS) method (2014Ga04). Quoted uncertainties include statistical and systematic.

@ Band(A): The g.s., oblate band. (2014Ga04).

& Band(B): $K^{\pi}=0^+$, prolate band. (2014Ga04).

a Band(C): Band based on 11^-. (2014Ga04).

^{150}Sm(^{40}Ar,4nγ) 2011Sc07,2014Ga02 (continued)

$\gamma(^{186}Hg)$

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	α@	Comments
186.4	807.7	4^+	621.1	2^+	(E2)	0.498	α(K)=0.200 *3*; α(L)=0.223 *4*; α(M)=0.0577 *9* α(N)=0.01433 *22*; α(O)=0.00242 *4*; α(P)=2.50×10^{-5} *4*
215.53	621.1	2^+	405.3	2^+	E0+M1+E2		α(K)exp=4.9 *13*; α(L)exp=1.03 *26* (2011Sc07) Mult.: from α(K)exp and α(L)exp.
255.5	3088.8	11^-	2833.3	10^+			
356.7‡	1164.5	6^+	807.7	4^+	E2	0.0647	K/L=2.6 *9* α(K)=0.0418 *6*; α(L)=0.01733 *25*; α(M)=0.00435 *6* α(N)=0.001084 *16*; α(O)=0.000189 *3*; α(P)=5.45×10^{-6} *8*
356.7	3827.3	(15^-)	3470.6	13^-			
381.8	3470.6	13^-	3088.8	11^-			
402.6‡	807.7	4^+	405.3	2^+	E2	0.0466	α(K)=0.0315 *5*; α(L)=0.01139 *16*; α(M)=0.00284 *4* α(N)=0.000707 *10*; α(O)=0.0001243 *18*; α(P)=4.15×10^{-6} *6* K/L=3.0 *20* (2011Sc07)
405.3‡	405.3	2^+	0.0	0^+	E2	0.0458	K/L=2.6 *17* (2011Sc07) α(K)=0.0311 *5*; α(L)=0.01113 *16*; α(M)=0.00277 *4* α(N)=0.000691 *10*; α(O)=0.0001215 *17*; α(P)=4.09×10^{-6} *6*
424.2‡	1588.8	8^+	1164.5	6^+	E2	0.0407	K/L=3.1 *18* (2011Sc07) α(K)=0.0280 *4*; α(L)=0.00956 *14*; α(M)=0.00237 *4* α(N)=0.000592 *9*; α(O)=0.0001044 *15*; α(P)=3.70×10^{-6} *6*
452.6	3088.8	11^-	2636.3	(10^+)			
477.6	2155.5	(8^+)	1678.0	6^+			
480.8	2636.3	(10^+)	2155.5	(8^+)			
488.9‡	2077.7	10^+	1588.8	8^+	E2	0.0284	K/L=5.1 *31* (2011Sc07) α(K)=0.0205 *3*; α(L)=0.00606 *9*; α(M)=0.001492 *21* α(N)=0.000372 *6*; α(O)=6.62×10^{-5} *10*; α(P)=2.71×10^{-6} *4*
542.0	2619.7	12^+	2077.7	10^+			
581.6	3201.3	14^+	2619.7	12^+			
597.52	1678.0	6^+	1080.5	4^+			
611.0	3812.3	16^+	3201.3	14^+			
675.30	1080.5	4^+	405.3	2^+			
755.6	2833.3	10^+	2077.7	10^+			
1011.1	3088.8	11^-	2077.7	10^+			
1244.5	2833.3	10^+	1588.8	8^+			

† From Adopted Gammas, except otherwise noted.
‡ From 2011Sc07.
# From measured K/L ratios (2011Sc07).
@ Additional information 1.

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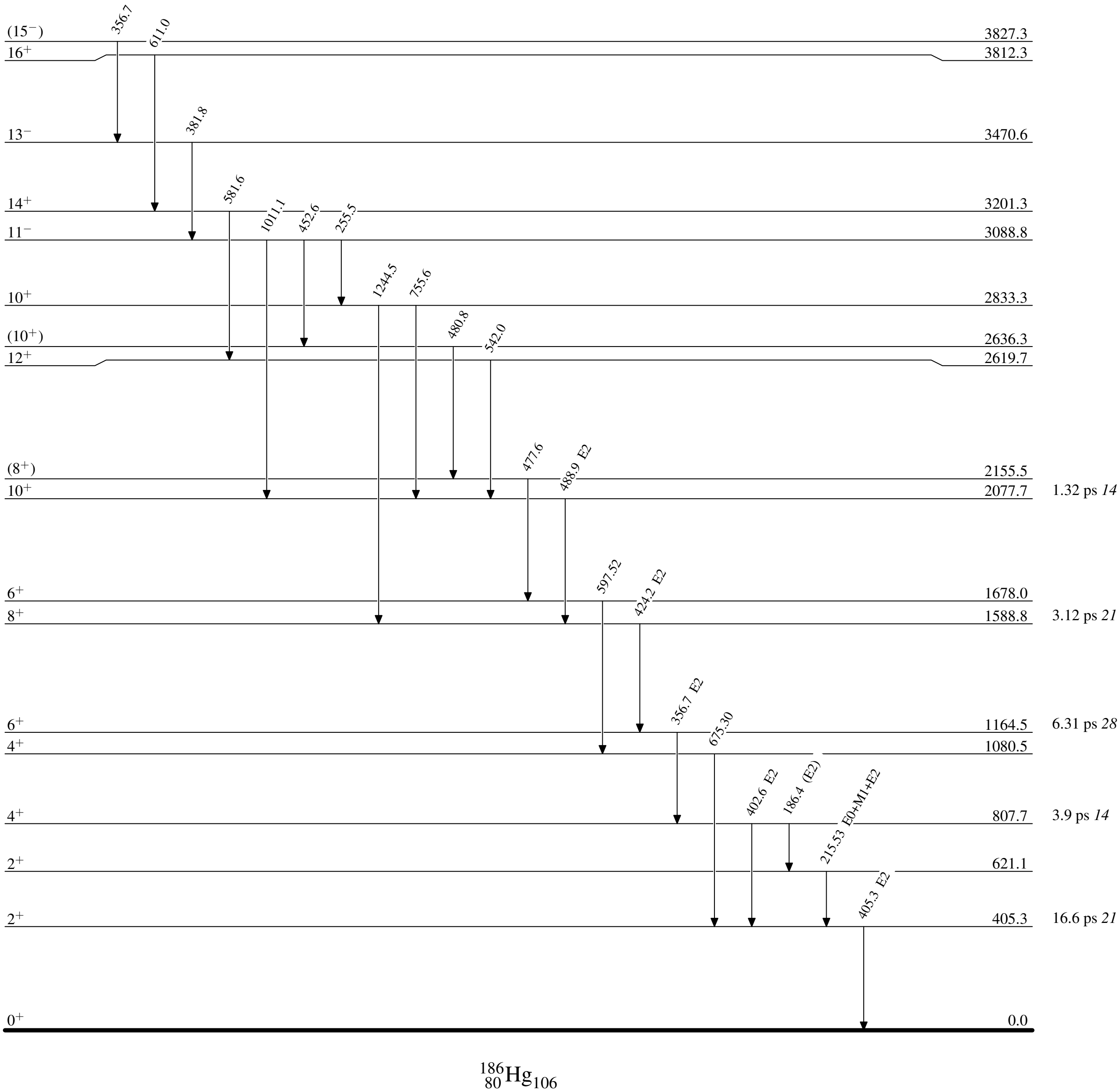
Level Scheme



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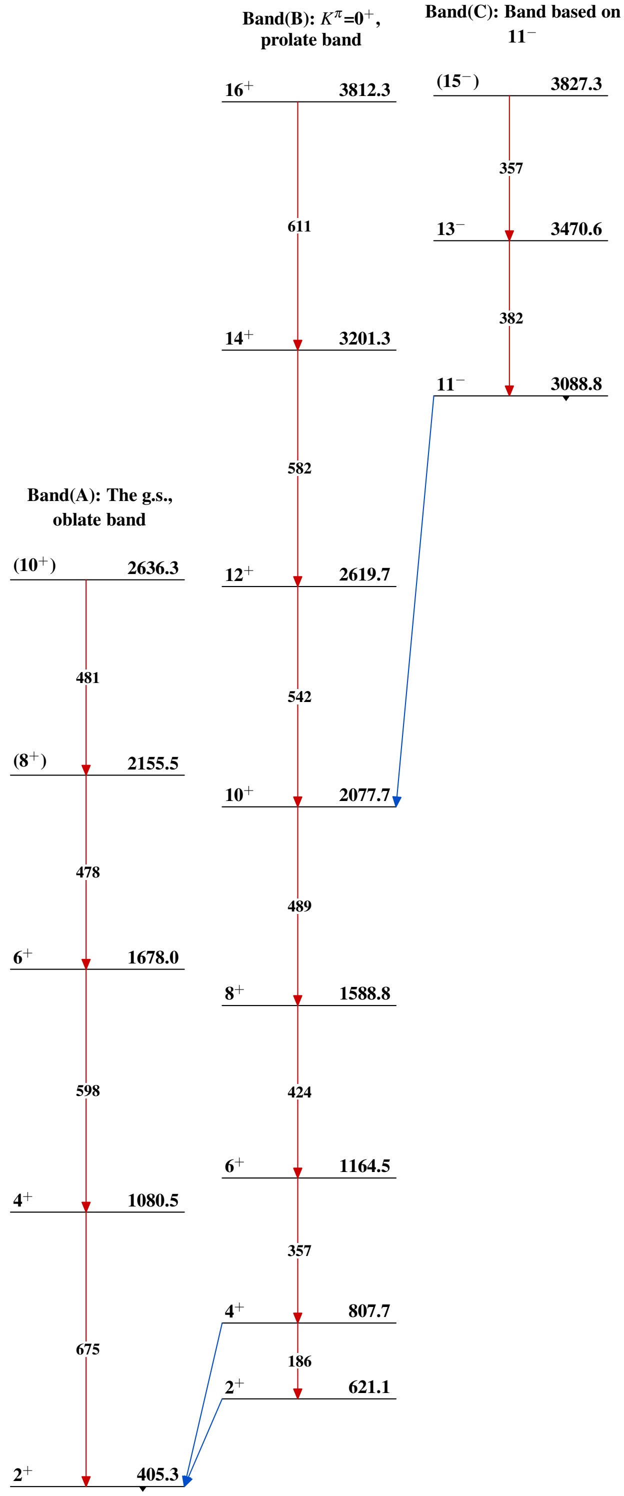

$^{186}_{80}Hg_{106}$