(HI,xnγ) 1984Pi11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. Abriola(a), A. A. Sonzogni	NDS 109, 2501 (2008)	1-Apr-2008

^{94}Mo(α,2nγ) E=30 MeV (1971Le19).
^{93}Nb(^{6}Li,3nγ) E=24 MeV (1983Wa06).
^{90}Zr(^{12}C,α2nγ) E=56 MeV (1978Lu02), 71 MeV (1984Pi11).
^{70}Ge(^{32}S,α2pγ) E=130 MeV (1984Pi11).
^{66}Zn(^{35}Cl,αpγ) E=165 MeV (1984Pi11).
^{60}Ni(^{40}Ca,4pγ) E=140 MeV (1984Pi11).
Measured: γ, γγ, excit (1984Pi11,1983Wa06,1978Lu02,1971Le19), γ(θ) (1984Pi11,1978Lu02,1971Le19).
1971Le19 reported many weak γ′s not presented in other papers, for details see 1971Le19.
Decay scheme is from 1984Pi11, except for the 2461, 2793 and 3889 levels that were observed only by 1983Wa06. For a far more comprehensive high-spin data set see ^{65}Cu(^{36}S,p4nγ).

^{96}Ru Levels

E(level)[@]	Jπ[†]	Comments
0.0[‡]	0+	
832.51[‡] *9*	2+	
1517.86[‡] *15*	4+	
2149.50[‡] *18*	6+	
2461.1[&] *5*	(4+)	
2588.12[#] *19*	5−	
2793.3?[&] *5*	(4+)	
2891.3 *4*	6+	
2950.05[‡] *22*	8+	
3291.1[#] *3*	7−	
3816.77[‡] *24*	10+	
3889.0?[&] *6*		
3950.7[#] *3*	9−	
4261.7? *5*	(8,12)	
4417.6[‡] *3*	12+	
4533.7 *4*	10−	
4598.5 *7*		
4798.1[#] *4*	11(−)	
4865.3? *5*	(10,14)	
5273.6? *6*	(9,13)	
5533.3? *4*	(11−)	
5679.8[‡] *3*	14+	
5750.5[#] *5*	13−	
5993.9? *5*	(9,13)	
6278.8 *5*	14(−)	E(level): An additional gamma ray, with E=745.5 *4*, Mg=d, and A_2=−0.05 *4*, A_4=−0.06 *6*, was observed from this level. In the Adopted Levels, this gamma feeds the 5532.7 (13+) level, which was not reported by 1984Pi11.
6440.5[‡] *3*	16+	
8203.3[‡] *5*	(18+)	

[†] Adopted values.
[‡] Band(A): g.s. Cascade.

Continued on next page (footnotes at end of table)

(HI,xnγ) 1984Pi11 (continued)

^{96}Ru Levels (continued)

Band(B): 5⁻ Cascade.
@ From least-squares fit to Eγ.
& Observed only in ^{93}Nb(^{6}Li,3nγ) (1983Wa06).

γ(^{96}Ru)

E_γ ‡	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	Comments
336.8 *5*		4598.5		4261.7?	(8,12)		E_γ: from 1983Wa06, 1971Le19; not seen in 1984Pi11. Mult.: A_2=+0.05 *9*, A_4=−0.11 *16* (1971Le19).
444.9 *4*		4261.7?	(8,12)	3816.77	10^+		Mult.: A_2=+0.36 *13*, A_4=−0.09 *23*.
447.7 *4*		4865.3?	(10,14)	4417.6	12^+		Mult.: A_2=−0.20 *6*, A_4=+0.01 *9*.
475.5 *4*		5273.6?	(9,13)	4798.1	$11^{(-)}$		Mult.: A_2=+0.03 *4*, A_4=+0.03 *6*.
528.3 *3*		6278.8	$14^{(-)}$	5750.5	13^-	D	Iγ=3.2 *17* in ^{60}Ni(^{40}Ca,4pγ) at E(^{40}Ca)=140 MeV. Mult.: A_2=−0.32 *10*, A_4=−0.06 *15*.
582.99 *14*		4533.7	10^-	3950.7	9^-	D	Mult.: A_2=−0.21 *7*, A_4=+0.05 *10*.
597.9 *5*	20 *6*	3889.0?		3291.1	7^-		
600.86 *10*	39.9 *6*	4417.6	12^+	3816.77	10^+	Q	Mult.: A_2=+0.24 *4*, A_4=−0.12 *6*.
631.64 *10*	69.4 *5*	2149.50	6^+	1517.86	4^+	Q	I_γ: includes some Iγ from ^{96}Rh β^+ decay. Mult.: A_2=+0.227 *6*, A_4=−0.09 *3*.
643.8 *5*	23 *4*	2793.3?	(4^+)	2149.50	6^+		
659.61 *11*	23.3 *6*	3950.7	9^-	3291.1	7^-	Q	Mult.: A_2=+0.33 *3*, A_4=−0.11 *4*.
685.34 *12*		1517.86	4^+	832.51	2^+	Q	Mult.: A_2=+0.145 *13*, A_4=−0.091 *21*.
702.95 *25*		3291.1	7^-	2588.12	5^-	Q	Mult.: A_2=+0.146 *24*, A_4=−0.07 *4*.
741.8 *3*	13.7 *14*	2891.3	6^+	2149.50	6^+	D+Q	Mult.: A_2=−0.25 *14*, A_4=+0.08 *21*.
760.68 *17*	23.6 *7*	6440.5	16^+	5679.8	14^+	Q	Mult.: A_2=+0.29 *3*, A_4=−0.14 *5*.
800.55 *13*	44.0 *3*	2950.05	8^+	2149.50	6^+	Q	Mult.: A_2=+0.303 *13*, A_4=−0.148 *21*.
832.51 *9*	100.0	832.51	2^+	0.0	0^+	Q	I_γ: includes some Iγ from ^{96}Rh β^+decay. Mult.: A_2=+0.194 *9*, A_4=−0.079 *15*.
847.38 *25*		4798.1	$11^{(-)}$	3950.7	9^-		Mult.: A_2=−0.23 *8*, A_4=−0.27 *12*.
866.71 *10*	40.5 *4*	3816.77	10^+	2950.05	8^+	Q	Mult.: A_2=+0.299 *17*, A_4=−0.14 *3*.
943.2@ *5*	42 *8*	2461.1	(4^+)	1517.86	4^+		
952.3 *4*		5750.5	13^-	4798.1	$11^{(-)}$	Q	Mult.: A_2=+0.32 *6*, A_4=−0.11 *10*.
999.7 *3*		5533.3?	(11^-)	4533.7	10^-	Q	Mult.: A_2=+0.16 *5*, A_4=+0.00 *7*.
1070.26 *12*	24.7 *8*	2588.12	5^-	1517.86	4^+	D	Mult.: A_2=−0.16 *6*, A_4=−0.21 *10*.
1195.8 *3*		5993.9?	(9,13)	4798.1	$11^{(-)}$		Mult.: A_2=+0.41 *8*, A_4=−0.08 *12*.
1262.17 *11*	29.2 *10*	5679.8	14^+	4417.6	12^+	Q	Mult.: A_2=+0.33 *3*, A_4=−0.12 *5*.
1762.8 *4*	4.0 *23*	8203.3	(18^+)	6440.5	16^+	(Q)	Mult.: A_2=+0.21 *6*, A_4=+0.09 *9*.

† From ^{66}Zn(^{35}Cl,αpγ) at E(^{35}Cl)=165 MeV.
‡ From 1984Pi11.
# Examples of A_2, A_4 from different reactions were presented in 1984Pi11.
@ Placement of transition in the level scheme is uncertain.

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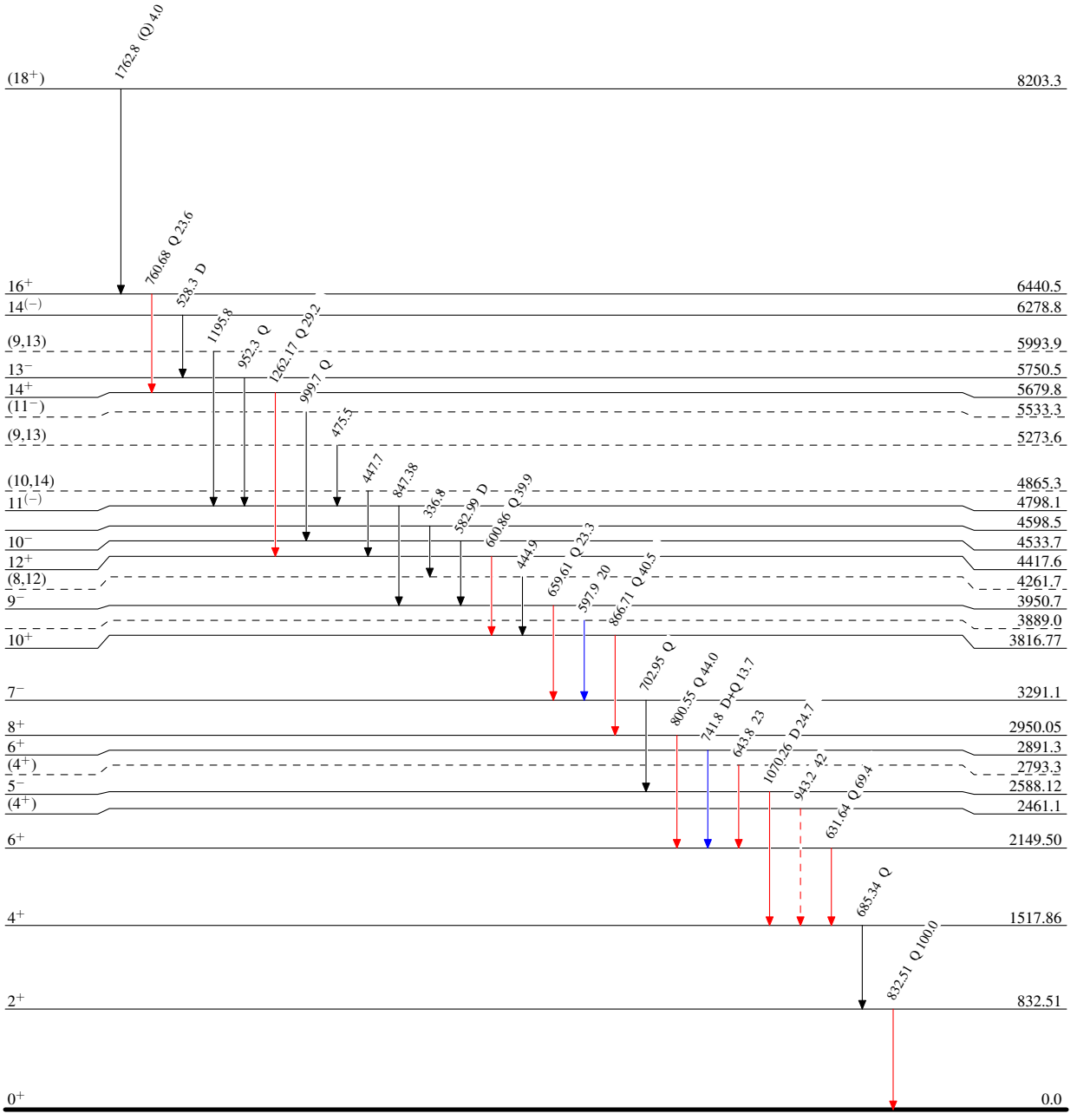
Level Scheme

Intensities: Type not specified

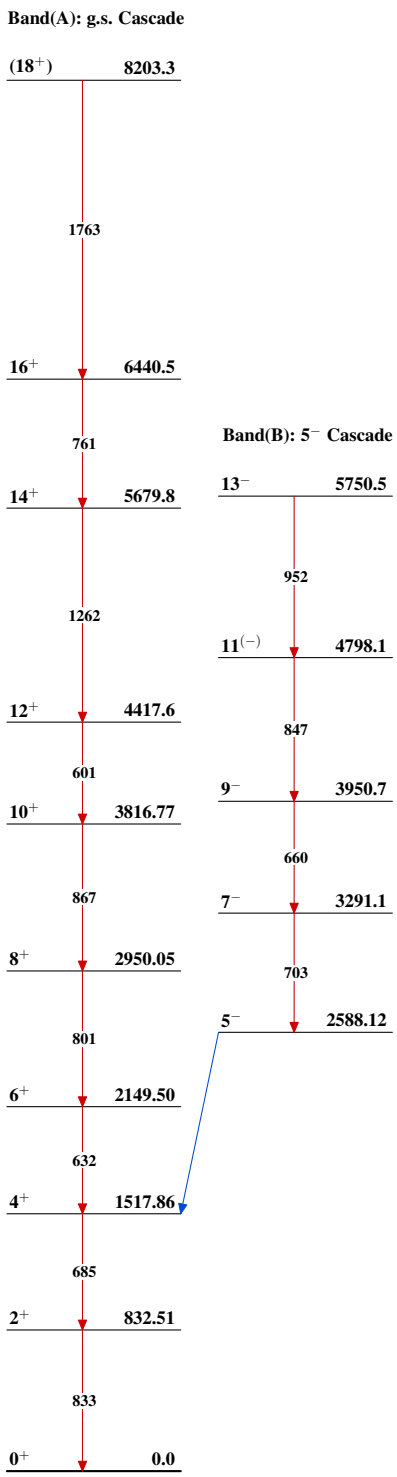
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{96}_{44}Ru_{52}$

(HI,xnγ) 1984Pi11



$^{96}_{44}Ru_{52}$