Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 114, 1293 (2013)	1-Sep-2013

Q(β^-)=−12520 *SY*; S(n)=14910 *SY*; S(p)=1200 *SY*; Q(α)=−3530 *SY* 2012Wa38
ΔQ(β-)=640, ΔS(n)=570, ΔS(p)=400, ΔQ(α)=400 (2012Wa38).
Q(εp)=4640 *400* (2012Wa38; syst).
Production: Ni(^{106}Cd,x), E(^{106}Cd)=60 MeV/nucleon (1994He28; see also 1995Mo26 and 1995He39). ^{54}Fe(^{40}Ca,p2nγ), E=130 MeV (2005Ma55). ^{58}Ni(^{36}Ar,P2N), E=121 MeV (2004De40).

^{91}Rh Levels

Cross Reference (XREF) Flags

A ^{54}Fe(^{40}Ca,p2nγ)
B ^{9}Be(^{112}Sn,Xγ)

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0@	(9/2$^+$)	1.47# s *22*	AB	%ε+%β^+=100; %β^+p=1.3 *5* (2012Lo08) J$^\pi$: 9/2$^+$ favored from systematics (2004De40). However, 2012Au07 propose 7/2$^+$, also attributed to systematics.
172.9& *4*	(1/2$^-$)	1.46 s *11*	A	%IT=?; %ε+%β^+=? J$^\pi$: level possibly analogous to β-decaying 1/2$^-$ isomeric states in the ^{89}Tc and ^{87}Nb isotones. $T_{1/2}$: from 2004De40.
792.1& *3*	(5/2$^-$)		A	E(level): order of 500γ-619γ cascade not established so an alternative value of E=683 is possible. J$^\pi$: band assignment.
840.41@ *10*	(13/2$^+$)		A	J$^\pi$: band assignment.
1292.07& *24*	(9/2$^-$)		A	J$^\pi$: band assignment.
1787.01@ *23*	(17/2$^+$)		A	J$^\pi$: band assignment.
1905.45& *24*	(13/2$^-$)		A	J$^\pi$: band assignment.
2277.7& *4*	(17/2$^-$)		A	J$^\pi$: band assignment.
2568.3 *4*			A	
2655.4@ *3*	(21/2$^+$)		A	J$^\pi$: band assignment.
2873.5 *5*			A	E(level): order of 439γ-305γ cascade not established so an alternative value of E=3007 is possible.
3102.6@ *4*	(25/2$^+$)		A	J$^\pi$: band assignment.
3114.2& *4*			A	
3133.9 *5*			A	
3312.3 *6*			A	
4135.9@ *5*	(29/2$^+$)		A	J$^\pi$: band assignment.
5218.5@ *5*			A	J$^\pi$: possibly (33/2$^+$) as shown in table I of 2005Ma55 for level fed by 665γ.
5883.6@ *6*			A	
7019.6@ *7*			A	

† From least-squares fit to Eγ.
‡ Tentative values based on π=+ and π=− sequences observed In (^{40}Ca,p2nγ) (2005Ma55) and consistent with authors' spherical shell-model calculations In (π 2p$_{1/2}$,1g$_{9/2}$) model space.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{91}Rh Levels (continued)

Weighted mean from 890γ(t) and 973γ(t) following ^{91}Rh ε decay (2004De40). Measured using a macrocycle of a beam-on period followed by a beam-off period, with on/off times tailored to suit the expected half-life of the isotope of interest. A time-to-digital converter was started at the beginning of each macrocycle to provide the time of each triggered event relative to the start. others: 1.7 s *2* (2001Ki13); also, 1994He28 note that the observation of ^{91}Rh in their study implies a mean life in excess of the≈150 ns flight time through the fragment separator.

@ Band(A): π=+ g.s. band.

& Band(B): π=− sequence. Based on presumed 1/2$^-$ isomer.

$\gamma(^{91}Rh)$

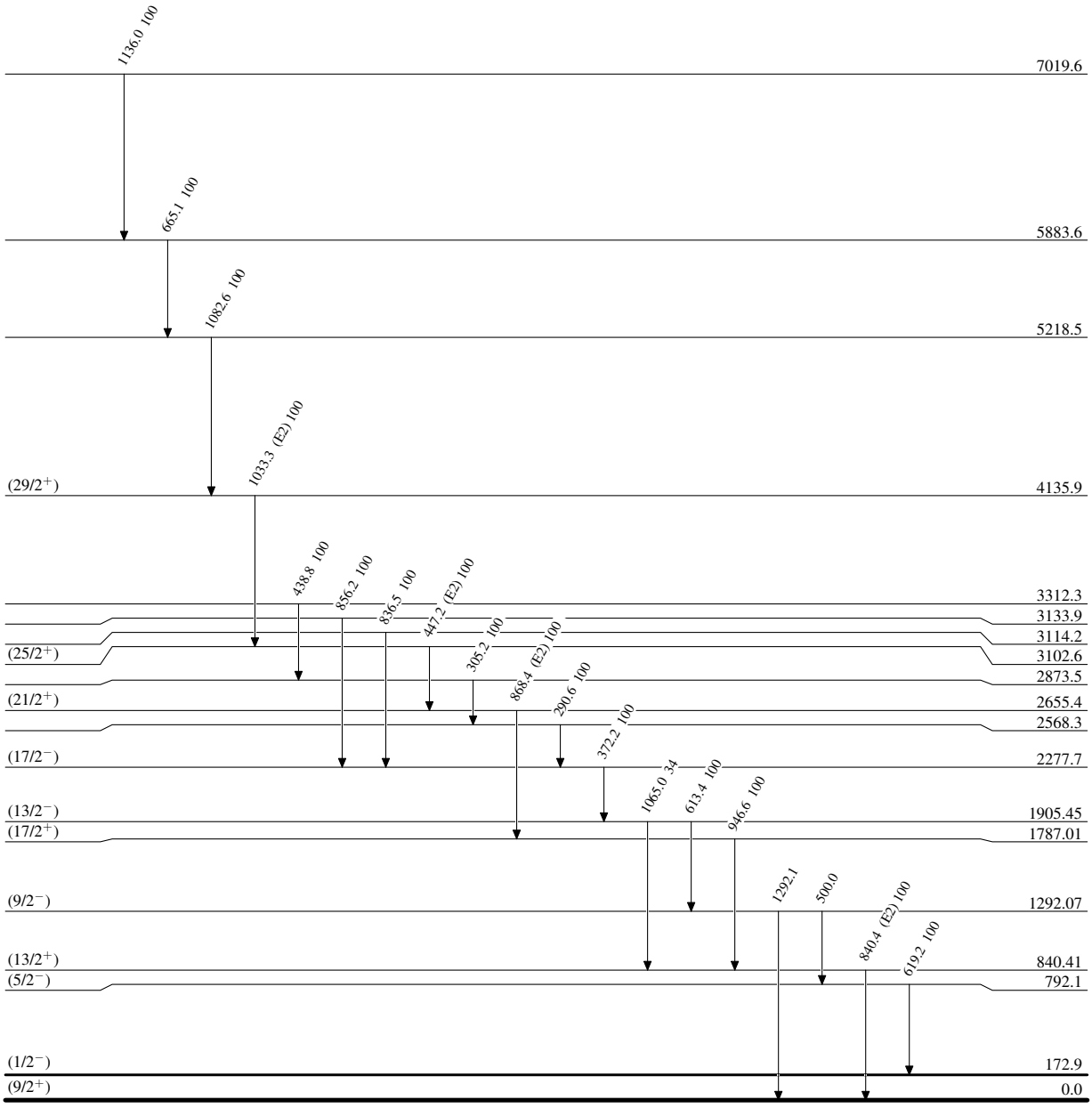
E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.†
792.1	(5/2$^-$)	619.2 *2*	100	172.9	(1/2$^-$)	
840.41	(13/2$^+$)	840.4 *1*	100	0.0	(9/2$^+$)	(E2)
1292.07	(9/2$^-$)	500.0 *2*		792.1	(5/2$^-$)	
		1292.1 *3*		0.0	(9/2$^+$)	
1787.01	(17/2$^+$)	946.6 *2*	100	840.41	(13/2$^+$)	
1905.45	(13/2$^-$)	613.4 *2*	100 *20*	1292.07	(9/2$^-$)	
		1065.0 *3*	34 *11*	840.41	(13/2$^+$)	
2277.7	(17/2$^-$)	372.2 *2*	100	1905.45	(13/2$^-$)	
2568.3		290.6 *2*	100	2277.7	(17/2$^-$)	
2655.4	(21/2$^+$)	868.4 *2*	100	1787.01	(17/2$^+$)	(E2)
2873.5		305.2 *2*	100	2568.3		
3102.6	(25/2$^+$)	447.2 *1*	100	2655.4	(21/2$^+$)	(E2)
3114.2		836.5 *2*	100	2277.7	(17/2$^-$)	
3133.9		856.2 *3*	100	2277.7	(17/2$^-$)	
3312.3		438.8 *3*	100	2873.5		
4135.9	(29/2$^+$)	1033.3 *3*	100	3102.6	(25/2$^+$)	(E2)
5218.5		1082.6 *2*	100	4135.9	(29/2$^+$)	
5883.6		665.1 *3*	100	5218.5		
7019.6		1136.0 *4*	100	5883.6		

† From ^{54}Fe(^{40}Ca,p2nγ). mult based on angular distributions from oriented states; the evaluator has assigned $\Delta\pi$=(No) for Q transitions In the g.s. band.

Adopted Levels, Gammas

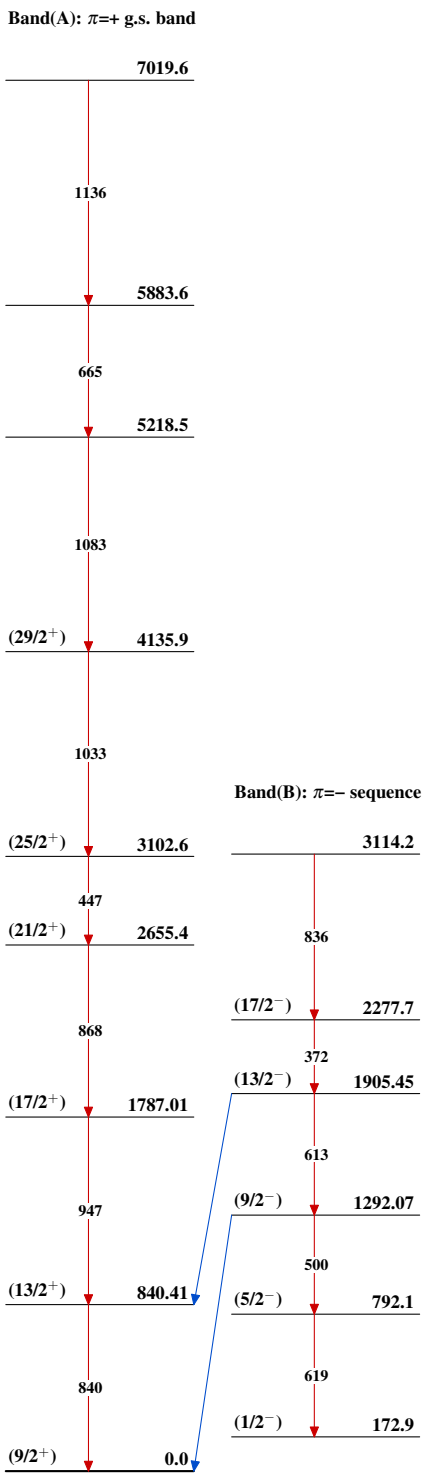
Level Scheme

Intensities: Relative photon branching from each level



$^{91}_{45}Rh_{46}$

Adopted Levels, Gammas



$^{91}_{45}Rh_{46}$