^{172}Yb(^{11}B,4nγ) 1972Le04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 110, 265 (2009)	15-Nov-2008

1972Le04: (^{11}B,4nγ), E=53 MeV; target: 98% enriched ^{172}Yb. Measured Eγ, Iγ at θ=90°; $\gamma\gamma$ fast-slow coin; excit. Detector:Ge(Li). Coin resolving time≈15 ns.

^{179}Re Levels

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0.0#	5/2$^+$		
0+x&	9/2$^-$		E(level): x=87.54 *23* from Adopted Levels.
65.3@ *3*	5/2$^-$	95 μs *25*	$T_{1/2}$: from 1972Le04.
65.3+y@	9/2$^-$		E(level): y=50.29 keV from Adopted Levels.
123.8# *1*	7/2$^+$		
165.5+x& *10*	11/2$^-$		
234.0+y@ *10*	13/2$^-$		
278.6# *10*	9/2$^+$		
359.8+x& *10*	13/2$^-$		
464.7# *11*	11/2$^+$		
519.8+y@ *11*	17/2$^-$		
577.6+x& *10*	15/2$^-$		
675.9# *11*	13/2$^+$		
818.9+x& *10*	17/2$^-$		
911.8+y@ *11*	21/2$^-$		
912.9# *11*	15/2$^+$		
1076.7+x& *10*	(19/2$^-$)		
1165.5# *11*	17/2$^+$		
1353.6+x& *10*	21/2$^-$		
1395.4+y@ *11*	25/2$^-$		
1435.7# *11*	19/2$^+$		
1954.8+y@ *11*	29/2$^-$		

† From least-squares fit to Eγ.
‡ Authors′ values, based on deduced band structure and analogy with ^{177}Re. also, $\gamma(\theta)$ for transitions In the 1/2[541] band, when measurable, were consistent with stretched Q.
# Band(A): 5/2[402] g.s. band.
@ Band(B): 1/2[541] band, α=+1/2.
& Band(C): 9/2[514] band.

$\gamma(^{179}Re)$

Eγ†	Iγ†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α‡	Comments
65.3 *3*	78 *25*	65.3	5/2$^-$	0.0	5/2$^+$	(E1)	0.231 *5*	Mult.: since relatively little direct feeding to levels At the bottom of a band would Be expected In this reaction, Ti(65.3γ) should Be comparable to Ti(169γ)=118 *6*; if so, α(exp)(65.3γ)≈0.5, compared with α(E1)=0.23, α(M1)=3.08 and α(E2)=24.8, thus favoring mult=E1.

Continued on next page (footnotes at end of table)

^{172}Yb(^{11}B,4nγ) 1972Le04 (continued)

γ(^{179}Re) (continued)

E_γ [†]	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α [‡]
123.8 *1*	41 *5*	123.8	$7/2^+$	0.0	$5/2^+$		
155.6 *1*	43 *5*	278.6	$9/2^+$	123.8	$7/2^+$		
165.5 *1*	100 *4*	165.5+x	$11/2^-$	0+x	$9/2^-$		
168.7 *1*	75 *4*	234.0+y	$13/2^-$	65.3+y	$9/2^-$	[E2]	0.575
186.1 *2*	31 *3*	464.7	$11/2^+$	278.6	$9/2^+$		
194.3 *1*	106 *6*	359.8+x	$13/2^-$	165.5+x	$11/2^-$		
211.1 *3*	28 *8*	675.9	$13/2^+$	464.7	$11/2^+$		
217.8 *1*	69 *7*	577.6+x	$15/2^-$	359.8+x	$13/2^-$		
237.1 *3*	25 *3*	912.9	$15/2^+$	675.9	$13/2^+$		
241.4 *2*	47 *5*	818.9+x	$17/2^-$	577.6+x	$15/2^-$		
252.7 *3*	12 *3*	1165.5	$17/2^+$	912.9	$15/2^+$		
257.8 *2*	22 *2*	1076.7+x	$(19/2^-)$	818.9+x	$17/2^-$		
270.2 *4*	9 *2*	1435.7	$19/2^+$	1165.5	$17/2^+$		
277.0 *2*	23 *4*	1353.6+x	$21/2^-$	1076.7+x	$(19/2^-)$		
285.8 *1*	69 *10*	519.8+y	$17/2^-$	234.0+y	$13/2^-$		
392.0 *1*	47 *8*	911.8+y	$21/2^-$	519.8+y	$17/2^-$		
397.4 *3*	13 *3*	675.9	$13/2^+$	278.6	$9/2^+$		
411.9 *3*	29 *6*	577.6+x	$15/2^-$	165.5+x	$11/2^-$		
448.2 *2*	18 *3*	912.9	$15/2^+$	464.7	$11/2^+$		
459.2 *3*	14 *3*	818.9+x	$17/2^-$	359.8+x	$13/2^-$		
483.6 *2*	32 *5*	1395.4+y	$25/2^-$	911.8+y	$21/2^-$		
489.5 *2*	15 *3*	1165.5	$17/2^+$	675.9	$13/2^+$		
499.0 *3*	22 *4*	1076.7+x	$(19/2^-)$	577.6+x	$15/2^-$		
522.7 *4*	13 *3*	1435.7	$19/2^+$	912.9	$15/2^+$		
534.5 *4*	13 *3*	1353.6+x	$21/2^-$	818.9+x	$17/2^-$		
559.4 *3*	25 *5*	1954.8+y	$29/2^-$	1395.4+y	$25/2^-$		

[†] From (^{11}B,4nγ) (1972Le04), except As noted.

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Level Scheme

Intensities: Relative I_γ

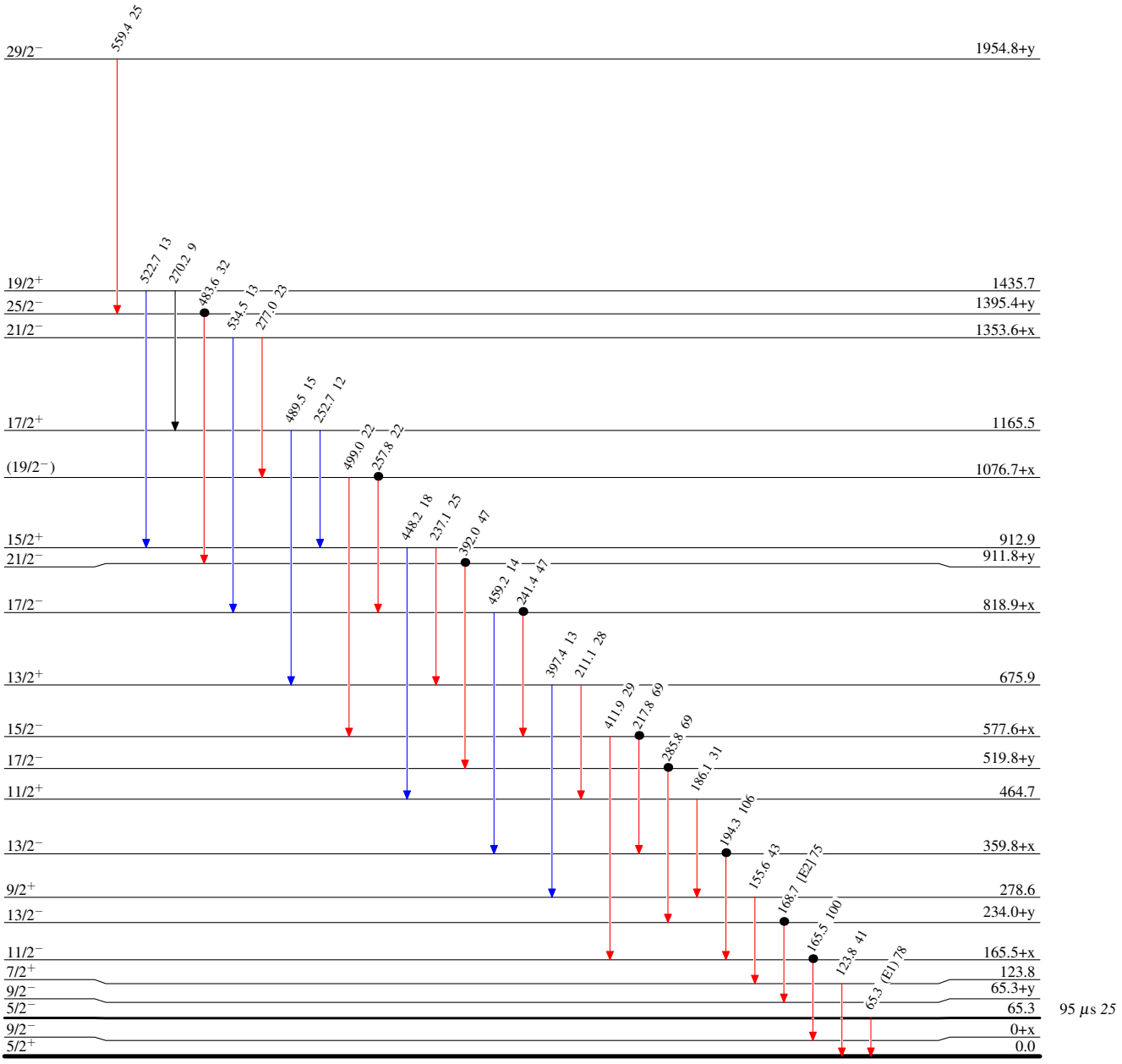
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

Coincidence



$^{179}_{75}Re_{104}$

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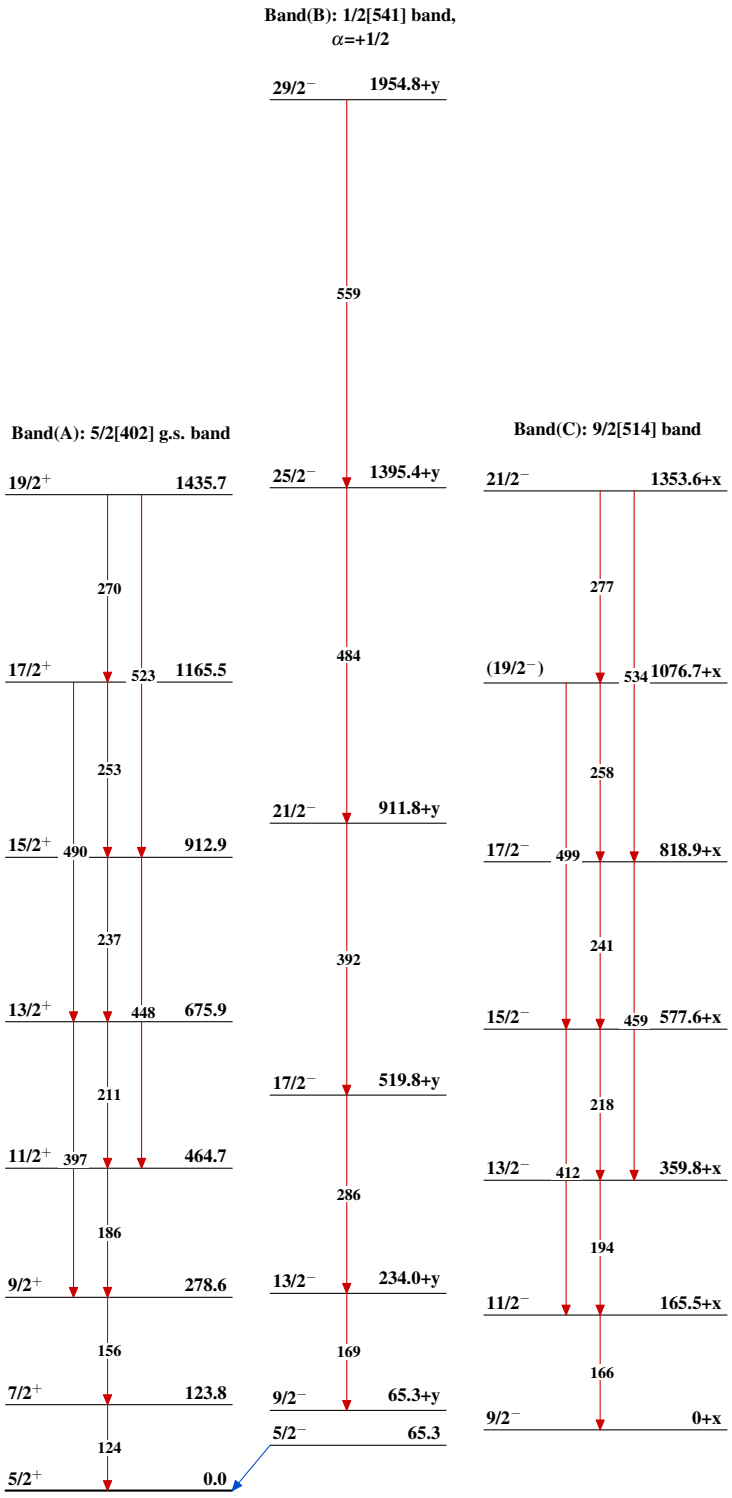

$^{179}_{75}Re_{104}$