

$^{106}\text{Cd}(^{60}\text{Ni},\text{p}2\text{n}\gamma)$ 2015Da03

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	10-Jun-2015

2015Da03: $\text{E}(^{60}\text{Ni})=270$ MeV from K=130 cyclotron at JYFL facility. Measured $\text{E}\gamma$, $\text{I}\gamma$, $\text{E}\alpha$, fusion products recoiling out of the target, $\gamma(\theta)$, (recoil) $\alpha\gamma\gamma$ -coin, $\alpha\gamma\gamma$ -coin. Gamma rays were detected using JUROGAM array of 43 Compton-suppressed HPGe detectors. Reaction residues recoiling out of the target were separated from the primary beam using the gas-filled recoil separator RITU, and collected in the GREAT spectrometer for particle identification based on TOF and energy loss information. Recoil-decay tagging (RDT) method. Deduced levels, J, π , bands, configurations. [2008JoZX](#) is an earlier report from the same laboratory who reported $\pi\text{h}_{11/2}$ band up to $23/2^-$, but with some differences in the placement of γ rays above the $19/2^-$ level. [2008JoZX](#) is a previous report from authors of [2015Da03](#).

 ^{163}Re Levels

$\text{E}(\text{level})^\dagger$	J^π	$\text{T}_{1/2}$	Comments
115 ‡ 4	(11/2 $^-$)	214 ms 5	$\% \alpha = 66$ 4; $\% \varepsilon + \% \beta^+ = 34$ 4 Additional information 1 . $\text{E}(\text{level}), \text{J}^\pi, \text{T}_{1/2}$: from Adopted Levels. Decay modes from Adopted Levels.
581.0 $^\#$ 8	(13/2 $^-$)		
692.0 ‡ 8	(15/2 $^-$)		
1218.0 $^\#$ 10	(17/2 $^-$)		
1380.0 ‡ 11	(19/2 $^-$)		
1534.0 10			
1802.0 13			
1828.0 13			
1886.0 $^\#$ 12	(21/2 $^-$)		
1951.0 15			
2069.0 15			
2113.0 ‡ 13	(23/2 $^-$)		
2172.0 $@$ 13			
2187.0 15			
2269.0 $@$ 13			
2402.0 15			
2461.0 $@$ 14			
2676.0 18			
2845.0 $@$ 15			
3276.0 $@$ 18			
$\text{x}^\&$			
227.0+x $^\&$ 10			
478.0+x $^\&$ 15			
738.0+x $^\&$ 18			
1087.0+x $^\&$ 20			

† From least-squares fit to $\text{E}\gamma$ data, assuming 1 keV uncertainty for each γ ray.

‡ Band(A): $\pi\text{h}_{11/2}$ band, $\alpha = -1/2$.

$^\#$ Band(a): $\pi\text{h}_{11/2}$ band, $\alpha = +1/2$.

$@$ Band(B): Possible 3-qp band.

$^\&$ Band(C): Possible 3-qp band.

$^{106}\text{Cd}(^{60}\text{Ni,p2n}\gamma)$ **2015Da03 (continued)** $\gamma(^{163}\text{Re})$

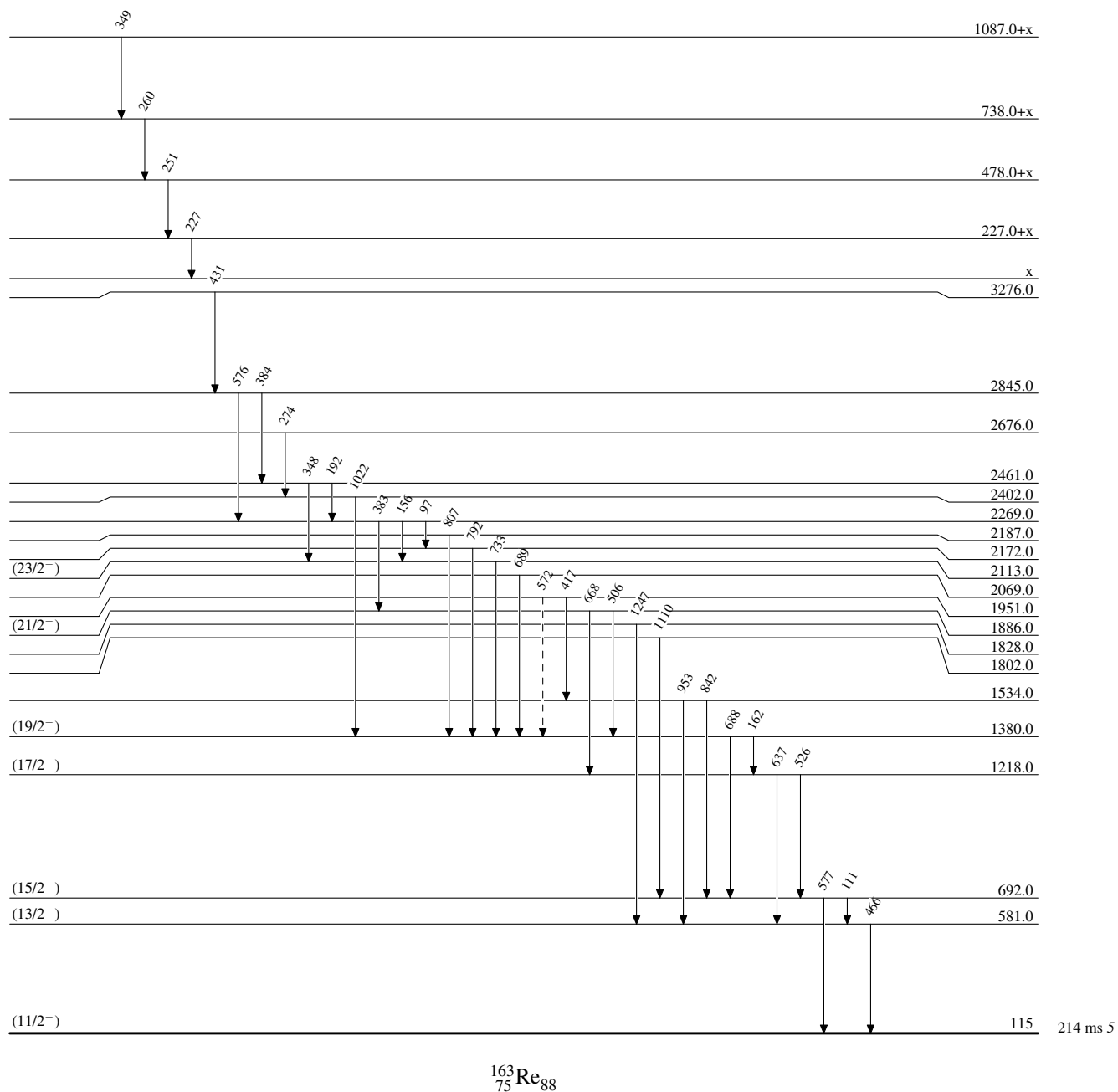
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
97	2269.0		2172.0		526 [‡]	1218.0	(17/2 ⁻)	692.0	(15/2 ⁻)
111 [‡]	692.0	(15/2 ⁻)	581.0	(13/2 ⁻)	572 [#]	1951.0		1380.0	(19/2 ⁻)
156	2269.0		2113.0	(23/2 ⁻)	576	2845.0		2269.0	
162	1380.0	(19/2 ⁻)	1218.0	(17/2 ⁻)	577 [†]	692.0	(15/2 ⁻)	115	(11/2 ⁻)
192	2461.0		2269.0		637 [‡]	1218.0	(17/2 ⁻)	581.0	(13/2 ⁻)
227	227.0+x		x		668	1886.0	(21/2 ⁻)	1218.0	(17/2 ⁻)
251	478.0+x		227.0+x		688 [†]	1380.0	(19/2 ⁻)	692.0	(15/2 ⁻)
260	738.0+x		478.0+x		689	2069.0		1380.0	(19/2 ⁻)
274	2676.0		2402.0		733 [†]	2113.0	(23/2 ⁻)	1380.0	(19/2 ⁻)
348	2461.0		2113.0	(23/2 ⁻)	792 [‡]	2172.0		1380.0	(19/2 ⁻)
349	1087.0+x		738.0+x		807 [‡]	2187.0		1380.0	(19/2 ⁻)
383	2269.0		1886.0	(21/2 ⁻)	842	1534.0		692.0	(15/2 ⁻)
384	2845.0		2461.0		953	1534.0		581.0	(13/2 ⁻)
417	1951.0		1534.0		1022	2402.0		1380.0	(19/2 ⁻)
431	3276.0		2845.0		1110	1802.0		692.0	(15/2 ⁻)
466 [‡]	581.0	(13/2 ⁻)	115	(11/2 ⁻)	1247	1828.0		581.0	(13/2 ⁻)
506	1886.0	(21/2 ⁻)	1380.0	(19/2 ⁻)					

[†] Strong γ ray.[‡] Medium intensity γ ray.[#] Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme

-----► γ Decay (Uncertain)


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