

$^{62}\text{Ni}(\text{p},\text{p}'\gamma)$ 1969Be20,1972Va01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alan L. Nichols, Balraj Singh, Jagdish K. Tuli		NDS 113, 973 (2012)	15-Apr-2012

1969Be20: E=12 MeV, p singles (FWHM=20 keV), $\text{p}\gamma$ coincidences with NaI for γ rays, DWBA.

1969Be48: E=7.87 MeV, properties of 2300 level.

1972Va01: E=4.8 MeV, Ge(Li), properties of 2300 level.

1976Kr16: E $\leq$ 3 MeV, $\sigma(2^+)$.

1978KoZY: E=7-26 MeV, $\sigma(2^+)$.

1981Pa10: E=6.9 MeV, $\text{I}\gamma$, $\text{E}\gamma$, Ice, $\text{p}\gamma$ coincidence, Ge(Li) detectors, magnetic plus Si(Li) conversion electron spectrometers.

Other: 1966Ba23.

 ^{62}Ni Levels

E(level) [#]	J ^{π}	T _{1/2} [‡]	L	Comments
0.0	0 ⁺			
1172.8@	2 ⁺		2	
2048.4&	0 ⁺			2048.4 keV E0 transition with B(E0 to g.s.)/B(E2 to 1173)=0.028 5 from ce(K)(2048 γ)/ce(K)(876 γ)=0.084 11 (1981Pa10). Monopole strength reported by 1981Pa10, but adopted T _{1/2} corresponds to 2301 and not 2048 level.
2301.6@	2 ⁺	0.76 ps +28-19	2	
2330	4 ⁺		4	
2891.1&	0 ⁺	>3.1 ps		
3050	2 ⁺			
3155	2 ⁺			
3260				
3460	1 to 4 ⁺			
3510	2 ⁺			
3740	3 ⁻		3	
3850	0 ⁺ , 1 ⁺ , 2 ⁺			
3960	+			
3980				
4040	+			
4130				
4140				
4300				
4400				
4440				
4500				
4610				
4640				
4700				
4770				
4780				
4850				
4870				
5000	1 ⁺ , 2 ⁺			
5060				
5130				
5220				
5280				
5340				
5420	(4 ⁺)			
6320				
7170				

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$^{62}\text{Ni}(\text{p},\text{p}'\gamma)$ **1969Be20,1972Va01** (continued) ^{62}Ni Levels (continued)E(level)[#]7600
7700
8200[†] From Adopted Levels.[‡] **1969Be48**, by DSA.[#] Taken from Fig. 6 of **1969Be20**, except where noted.[@] From **1972Va01**.[&] From **1981Pa10**. $\gamma(^{62}\text{Ni})$

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π	Mult.	δ^a	Comments
1172.8	2 ⁺	1170		0.0	0 ⁺			
2048.4	0 ⁺	875.6 ^{&}		1172.8	2 ⁺	[E2]		
2301.6	2 ⁺	1128.8 [#]	55.5 [#] 3	1172.8	2 ⁺	M1+E2	+3.19 11	B(M1)(W.u.)=0.0010 +3-4; B(E2)(W.u.)=14 +4-6 δ : others: +1.7 +9-5 or +0.07 18 (1969Be48); +3.0 +7-20 (1976Ca31 , $\gamma\gamma(\theta)$ in ^{62}Cu ε decay).
		2301.6 [#]	44.5 [#] 3	0.0	0 ⁺			
2330	4 ⁺	1160		1172.8	2 ⁺			
2891.1	0 ⁺	1718.3 ^{&}		1172.8	2 ⁺			
3050	2 ⁺	750	70	2301.6	2 ⁺			
		1880	30	1172.8	2 ⁺			
3155	2 ⁺	855	33	2301.6	2 ⁺			
		1985	33	1172.8	2 ⁺			
		3155	33	0.0	0 ⁺			
3260		369		2891.1	0 ⁺			
		2090		1172.8	2 ⁺			
3460	1 to 4 ⁺	2290		1172.8	2 ⁺			
3510	2 ⁺	1210 ^{@b}		2301.6	2 ⁺			
		2340		1172.8	2 ⁺			
3740	3 ⁻	1440	50	2301.6	2 ⁺			
		2570	50	1172.8	2 ⁺			
3850	0 ⁺ , 1 ⁺ , 2 ⁺	3850		0.0	0 ⁺			
3960	+	2790		1172.8	2 ⁺			
3980		1680		2301.6	2 ⁺			
4040	+	885		3155	2 ⁺			
		1740		2301.6	2 ⁺			
4130		1830		2301.6	2 ⁺			
4140		1810		2330	4 ⁺			
4300		3130		1172.8	2 ⁺			
4400		3230		1172.8	2 ⁺			
4440		2140		2301.6	2 ⁺			
4500		2200		2301.6	2 ⁺			
4610		2562		2048.4	0 ⁺			
4640		3470		1172.8	2 ⁺			
4700		1545		3155	2 ⁺			
4770		2440	50	2330	4 ⁺			
		3600	50	1172.8	2 ⁺			

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$^{62}\text{Ni}(\text{p},\text{p}'\gamma)$ 1969Be20,1972Va01 (continued) $\gamma(^{62}\text{Ni})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	E_f	J_f^π
5000	$1^+, 2^+$	2109	2891.1	0^+	6320		6320		0.0	0^+
		3830	1172.8	2^+	7170		6000	50	1172.8	2^+
		5000	0.0	0^+			7170	50	0.0	0^+
5280		2980	2301.6	2^+	7600		7600		0.0	0^+
6320		3060	3260		7700		7700		0.0	0^+
		5150	1172.8	2^+	8200		8200		0.0	0^+

† Deduced by the evaluator from level scheme of 1969Be20, except as noted.

‡ % branching from each level (1969Be20), except as noted.

From 1972Va01.

@ Not from 3518 level seen in $^{61}\text{Ni}(\text{n},\gamma)$; perhaps same as 1221 γ that deexcites level at 3522 keV.

& From 1981Pa10.

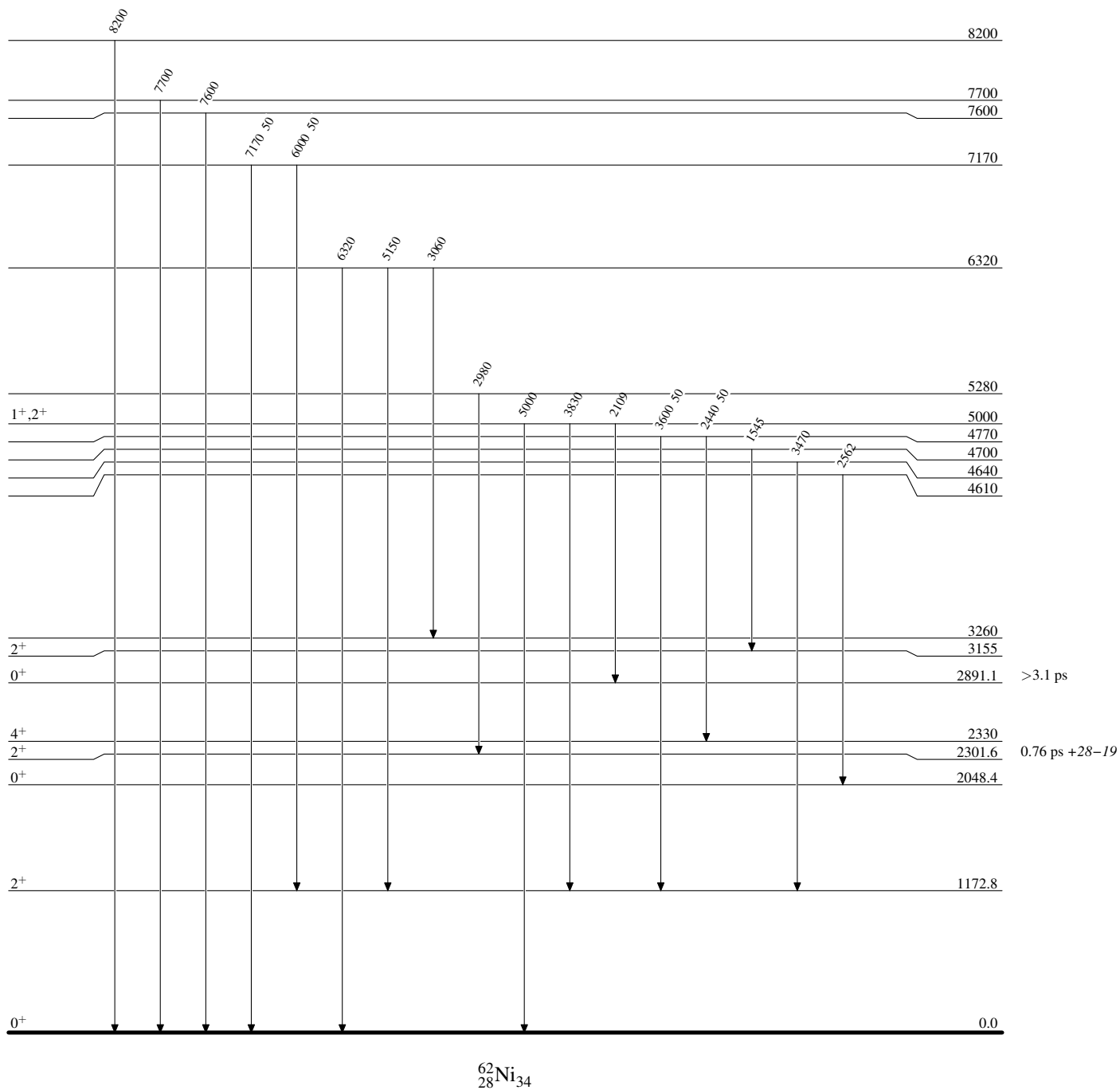
^a From $\gamma\gamma$ angular correlation (1972Va01).

^b Placement of transition in the level scheme is uncertain.

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Level Scheme

Intensities: % photon branching from each level



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Legend

Level Scheme (continued)

Intensities: % photon branching from each level

- - - - - $\rightarrow$ γ Decay (Uncertain)
• Coincidence
