^{58}Ni(^{58}Ni,αpγ) 2000Pa38,2001Sp02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 110, 1239 (2009)	1-Feb-2008

2000Pa38: E=210 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$ using JUROSPHERE array containing seven TESSA-type, five NORDBALL-type and 14 EUROGAM-type HPGe detectors, each with a Compton-suppressed shield.

2001Sp02: E=210 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$ using GASP array containing 40 HPGe detectors, each with a Compton-suppressed shield plus an inner calorimeter of 80 BGO detectors.

2001Sp02 show almost the same gamma sequences plus one based on a (13/2$^-$) level. Only the figure is given in their paper without table of γ properties.

All data given below are from 2000Pa38, unless as noted.

^{111}I Levels

E(level)[†]	J$^\pi$	E(level)[†]	J$^\pi$	E(level)[†]	J$^\pi$	E(level)[†]	J$^\pi$
0	5/2$^{(+)}$	3031.1[#] *5*	23/2$^-$	4510.9[@] *6*	(29/2$^+$)	6878.1[@] *7*	(41/2$^+$)
37.2 *3*	7/2$^{(+)}$	3048.9 *5*		4549.3[#] *6*	31/2$^-$	7076.2[‡] *6*	43/2$^-$
618.90 *20*	9/2$^{(+)}$	3444[&]	(23/2$^-$)	5023[&]	(31/2$^-$)	7847.1[@] *12*	(45/2$^+$)
679.8 *3*	11/2$^{(+)}$	3596.9 *11*		5114.1 *15*		8084.7[‡] *6*	(47/2$^-$)
1094.8[#] *3*	11/2$^-$	3778.3[#] *5*	27/2$^-$	5177.4[@] *6*	(33/2$^+$)	8996.1[@] *16*	(49/2$^+$)
1496[&]	(13/2$^-$)	4000.6[@] *5*	25/2$^{(+)}$	5199.2[‡] *6*	35/2$^-$	9156.7[‡] *12*	(51/2$^-$)
1649.9[#] *4*	15/2$^-$	4149[&]	(27/2$^-$)	5397.9[#] *6*	35/2$^-$	10318.7[‡] *16*	(55/2$^-$)
2340.5[#] *4*	19/2$^-$	4159.1 *11*		5968.2[@] *6*	(37/2$^+$)	11507.8[‡] *19*	(59/2$^-$)
2519[&]	(15/2$^-$)	4222.1 *11*		6055.3 *6*		13016.8[‡] *21*	(63/2$^-$)
2988[&]	(19/2$^-$)	4432.7[‡] *6*	31/2$^-$	6246.5[‡] *6*	39/2$^-$		

[†] From least-squares fit to Eγ's.
[‡] Band(A): band based on 31/2$^-$.
[#] Band(B): $\pi h_{11/2}$ band.
[@] Band(C): band based on 25/2$^{(+)}$.
[&] Band(D): band based on (13/2$^-$) Only given by 2001Sp02.

γ(^{111}I)

R=Iγ(measured backward,gated central)/Iγ(measured central, gated backwards).

E$_\gamma$	I$_\gamma$[‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	Comments
191.4 *2*	1	6246.5	39/2$^-$	6055.3			
415.0 *2*	76	1094.8	11/2$^-$	679.8	11/2$^{(+)}$	E1	R=0.97 *5*.
456[†]		3444	(23/2$^-$)	2988	(19/2$^-$)		
469[†]		2988	(19/2$^-$)	2519	(15/2$^-$)		
475.9 *2*	19	1094.8	11/2$^-$	618.90	9/2$^{(+)}$	E1	R=0.66 *5*.
510.3 *2*	18	4510.9	(29/2$^+$)	4000.6	25/2$^{(+)}$		
548[#] *1*		3596.9		3048.9			
555.1 *2*	100	1649.9	15/2$^-$	1094.8	11/2$^-$	E2	R=0.97 *3*.
581.7 *2*	5	618.90	9/2$^{(+)}$	37.2	7/2$^{(+)}$	M1+E2	R=0.72 *9*.
618.9 *2*	14	618.90	9/2$^{(+)}$	0	5/2$^{(+)}$	E2	R=0.98 *7*.
642.5 *2*	71	679.8	11/2$^{(+)}$	37.2	7/2$^{(+)}$	E2	R=1.02 *4*.
654.6 *2*	34	4432.7	31/2$^-$	3778.3	27/2$^-$	E2	R=1.06 *8*.

Continued on next page (footnotes at end of table)

^{58}Ni(^{58}Ni,αpγ) 2000Pa38,2001Sp02 (continued)

$\gamma(^{111}I)$ (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
666.5 *2*	13	5177.4	(33/2$^+$)	4510.9	(29/2$^+$)	E2	R=1.06 *9*.
690.6 *2*	140[@]	2340.5	19/2$^-$	1649.9	15/2$^-$	E2	R=1.01 *3*.
690.6 *2*	140[@]	3031.1	23/2$^-$	2340.5	19/2$^-$	E2	R=1.01 *3*.
705[†]		4149	(27/2$^-$)	3444	(23/2$^-$)		
708.4 *2*	3	3048.9		2340.5	19/2$^-$		
747.2 *2*	26	3778.3	27/2$^-$	3031.1	23/2$^-$	E2	R=0.96 *8*.
766.7 *2*	22	5199.2	35/2$^-$	4432.7	31/2$^-$	E2	R=1.07 *9*.
770.8 *2*	16	4549.3	31/2$^-$	3778.3	27/2$^-$	E2	R=1.11 *10*.
790.8 *2*	11	5968.2	(37/2$^+$)	5177.4	(33/2$^+$)	E2	R=1.03 *10*.
817[†]		1496	(13/2$^-$)	679.8	11/2$^{(+)}$		
829.7 *2*	9	7076.2	43/2$^-$	6246.5	39/2$^-$	E2	R=1.11 *13*.
848.4 *2*	9[&]	5397.9	35/2$^-$	4549.3	31/2$^-$	E2	R=0.97 *12*.
848.4 *2*	9[&]	6246.5	39/2$^-$	5397.9	35/2$^-$	E2	R=0.97 *12*.
856.2 *2*	1	6055.3		5199.2	35/2$^-$		
874[†]		5023	(31/2$^-$)	4149	(27/2$^-$)		
892[#] *1*		5114.1		4222.1			
909.9 *2*	6	6878.1	(41/2$^+$)	5968.2	(37/2$^+$)	E2	R=0.98 *14*.
969[#] *1*		7847.1	(45/2$^+$)	6878.1	(41/2$^+$)		
969.5 *2*	20	4000.6	25/2$^{(+)}$	3031.1	23/2$^-$	E1	R=0.60 *6*.
1008.5 *2*	5	8084.7	(47/2$^-$)	7076.2	43/2$^-$		
1023[†]		2519	(15/2$^-$)	1496	(13/2$^-$)		
1047.4 *2*	12	6246.5	39/2$^-$	5199.2	35/2$^-$	E2	R=1.12 *11*.
1072[#] *1*		9156.7	(51/2$^-$)	8084.7	(47/2$^-$)		
1128[#] *1*		4159.1		3031.1	23/2$^-$		
1149[#] *1*		8996.1	(49/2$^+$)	7847.1	(45/2$^+$)		
1162[#] *1*		10318.7	(55/2$^-$)	9156.7	(51/2$^-$)		
1189[#] *1*		11507.8	(59/2$^-$)	10318.7	(55/2$^-$)		
1191[#] *1*		4222.1		3031.1	23/2$^-$		
1509[#] *1*		13016.8	(63/2$^-$)	11507.8	(59/2$^-$)		

[†] Seen only by 2001Sp02.
[‡] Uncertainties are less than 5%.
[#] From figure 1 of 2000Pa38.
[@] Composite for 690.6 doublet.
[&] Composite for 848.4 doublet.

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Level Scheme

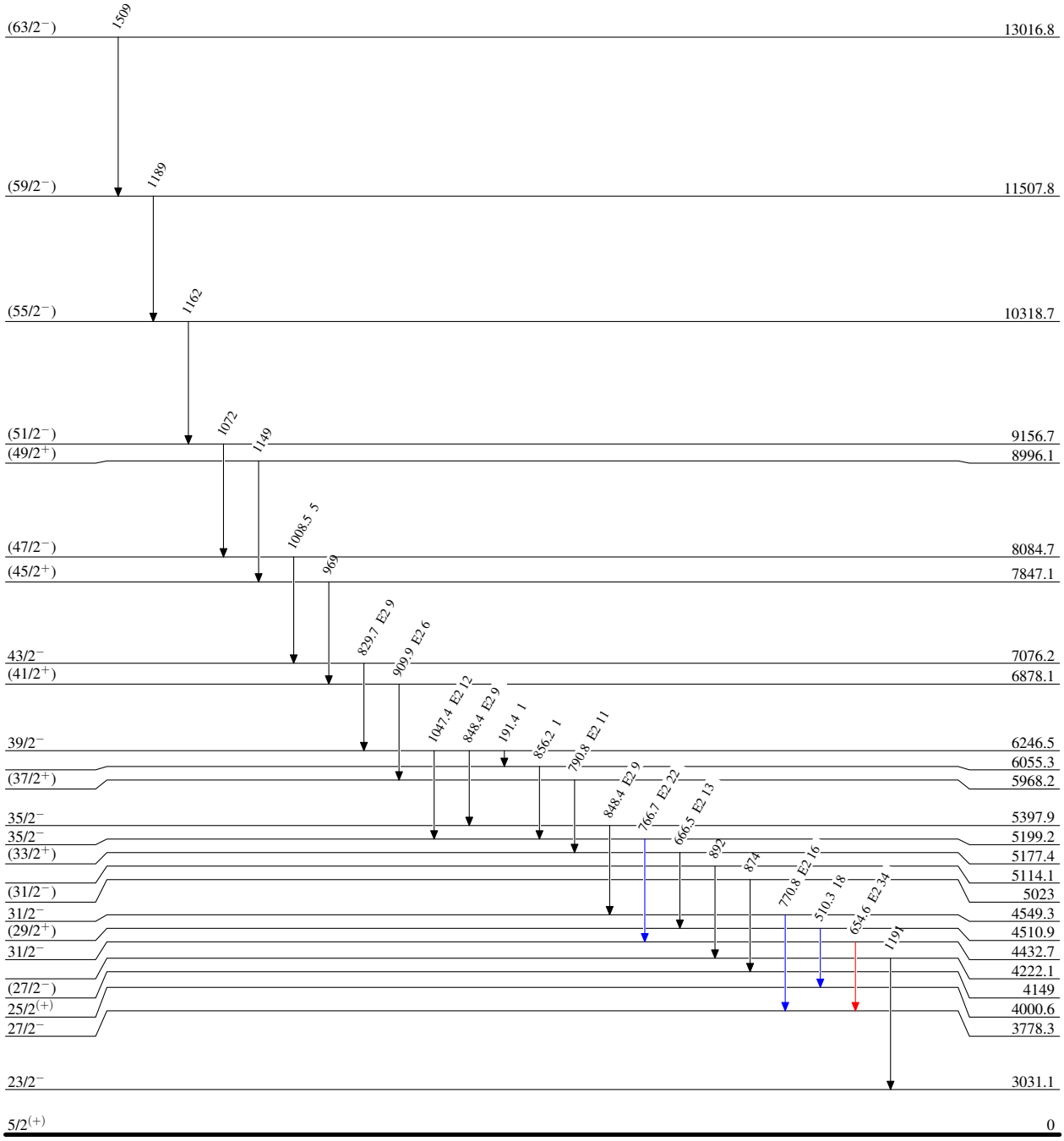
Intensities: Relative I_γ

Legend

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

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

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



$^{111}_{53}I_{58}$

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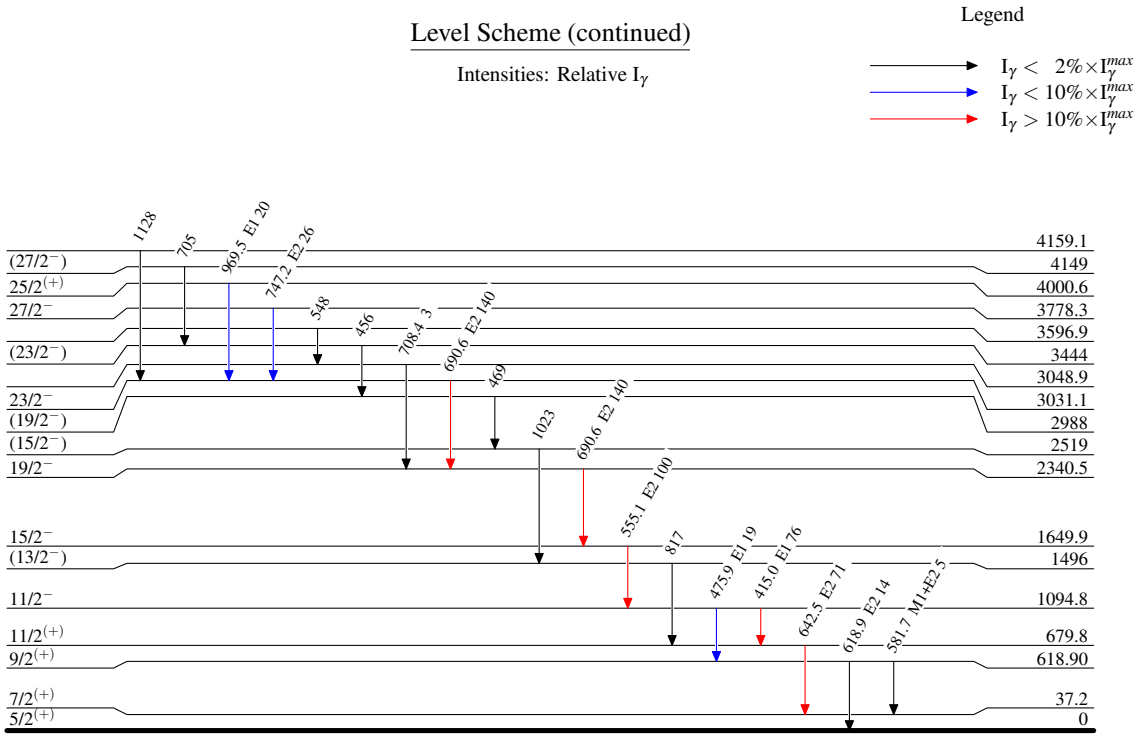
Level Scheme (continued)

Intensities: Relative I_γ



$^{111}_{53}I_{58}$

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