^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111, 1471 (2010)	1-May-2009

2001St16: E=250 MeV. Measured Eγ, Iγ, $\gamma\gamma$ and $\gamma\gamma(\theta)$(DCO) using GAMMASPHERE array of 83 HPGe detectors coupled with the Microball array of 95 CsI(Tl) charged particle detectors and an array of 15 scintillators for neutron detection.

2003Pe10: ^{58}Ni(^{58}Ni,3pγ) E= 210 MeV. Measured Eγ, Iγ, $\gamma\gamma$ and lifetimes by recoil-distance Doppler-shift using the 4π spectrometer euroball iv.

1993Pa13: ^{58}Ni(^{58}Ni,3p) E= 240 MeV.

Measured: γ, $\gamma\gamma$, Eurogam system.

1995Wa14: ^{58}Ni(^{58}Ni,3p) E= 240 MeV.

Measured: γ, $\gamma\gamma$, Eurogam system, same experiment with new analysis.

Except for lifetime data, all other data are from 2001St16.

^{113}I Levels

Nomenclature for band labels:
[p_1p_2,n_1(n_2n_3)]; where p_1=number of $g_{9/2}$ proton holes; p_2=number of $h_{11/2}$ protons; n_1=number of $h_{11/2}$ neutrons; n_2=number $g_{9/2}$ or $f_{7/2}$ neutrons; n_3=number of $i_{13/2}$ neutrons.

E(level)‡	Jπ†	$T_{1/2}$	E(level)‡	Jπ†	$T_{1/2}$	E(level)‡	Jπ†
0.0	5/2$^+$		4236.4[&] *10*	27/2		8296.2[b] *14*	47/2$^-$
63.6[m] *5*	7/2$^+$		4396.1[a] *9*	27/2$^+$		8347.6 *14*	47/2$^-$
629.4 *4*	9/2$^+$		4497.0[b] *11*	31/2$^-$	1.1 ps *3*	8586.3[l] *15*	51/2$^-$
753.9[m] *6*	11/2$^+$		4630.0[l] *10*	31/2$^-$		8613.6[a] *12*	47/2$^+$
838.2 *6*	9/2$^+$		4630.4[@] *10*	29/2$^+$		8738.6[&] *15*	47/2$^+$
909.3[@] *4*	9/2$^+$		4798.6[j] *20*	29/2$^+$		9229.7[j] *13*	49/2$^+$
1017.9[k] *5*	11/2$^-$	159 ps *36*	5015.4[&] *10*	31/2$^+$		9279.6[@] *16*	49/2$^+$
1269.1[&] *6*	11/2$^+$		5081.6 *10*	31/2$^+$		9496.6[b] *14*	51/2$^-$
1548.7[k] *7*	15/2$^-$	5.0 ps *3*	5211.8[l] *11*	35/2$^-$	1.3 ps *4*	9611.0[l] *16*	55/2$^-$
1614.4[@] *6*	13/2$^+$		5364.3[b] *12*	35/2$^-$		9686.6[a] *13*	51/2$^+$
1616.7[m] *7*	15/2$^+$		5423.5[@] *11*	33/2$^+$		10332.7[j] *14*	53/2$^+$
1986.6[&] *7*	15/2$^+$		5535.4[j] *17*	33/2$^+$		10767.2[b] *15*	55/2$^-$
2186.4[k] *9*	19/2$^-$	1.61 ps *17*	5838.6[&] *11*	35/2$^+$		10834.3[a] *14*	55/2$^+$
2358.7[@] *8*	17/2$^+$		5846.4[a] *10*	35/2$^+$		11066.9[l] *19*	59/2$^-$
2684.9[m] *8*	19/2$^+$		5947.3[l] *12*	39/2$^-$		11510.1[j] *17*	57/2$^+$
2731.2[&] *9*	19/2$^+$		6266.2[b] *13*	39/2$^-$		12083.4[a] *18*	59/2$^+$
2870.3[k] *10*	23/2$^-$	1.86 ps *30*	6278.3[@] *11*	37/2$^+$		12120.1[b] *18*	59/2$^-$
3035.6[b] *10*	23/2$^-$		6354.0[j] *14*	37/2$^+$		12769.5[j] *20*	61/2$^+$
3106.2[@] *10*	21/2$^+$		6688.0[a] *11*	39/2$^+$		12990.5[l] *21*	63/2$^-$
3306.6 *10*	23/2$^-$		6712.1[l] *13*	43/2$^-$		13414.8[a] *20*	63/2$^+$
3480.9[&] *10*	23/2$^+$		6741.4[&] *12*	39/2$^+$		13554.5[b] *24*	63/2$^-$
3568.9[m] *10*	23/2$^+$		7214.6[@] *12*	41/2$^+$		14117.4[j] *22*	65/2$^+$
3696.2[k] *10*	27/2$^-$	0.67 ps *25*	7247.1[j] *13*	41/2$^+$		14841.4[a] *23*	67/2$^+$
3741.1[b] *10*	27/2$^-$		7249.2[b] *14*	43/2$^-$		14993[b] *3*	67/2$^-$
3766.8 *9*	23/2$^+$		7610.0[a] *12*	43/2$^+$		15559.3[j] *24*	69/2$^+$
3792.0 *9*	23/2$^+$		7680.7[l] *14*	47/2$^-$		16366.9[a] *25*	71/2$^+$
3861.1[@] *10*	25/2$^+$		7699.5[&] *13*	43/2$^+$		16436[b] *4*	71/2$^-$
4113.3 *11*	27/2$^-$		8198.4[j] *12*	45/2$^+$		17104[j] *3*	73/2$^+$
4127.9[j] *22*	25/2$^+$		8213.6[@] *14*	45/2$^+$		17990[b] *4*	75/2$^-$

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^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)

^{113}I Levels (continued)

E(level)‡	Jπ†	E(level)‡	Jπ†	E(level)‡	Jπ†
18005[a] 3	75/2+	4737.3+x[d] 20	(69/2−)	3933.8+z[f] 18	(65/2+)
18756[j] 3	77/2+	4773.8+x[c] 24	(69/2−)	5438.3+z[f] 20	(69/2+)
19670[b] 3	79/2−	4913.3+x 20		7101.0+z[f] 23	(73/2+)
19773[a] 3	79/2+	6184.8+x[d] 22	(73/2−)	8970.8+z[f] 25	(77/2+)
20523[j] 3	81/2+	6230.6+x[c] 22	(73/2−)	11090+z[f] 4	(81/2+)
21514[b] 3	83/2−	6344.7+x 23		u[g]	(63/2−)
21688[a] 3	83/2+	7778.2+x[d] 25	(77/2−)	1543.7+u[g] 10	(67/2−)
22419[j] 4	85/2+	7857.7+x[c] 25	(77/2−)	3173.4+u[g] 15	(71/2−)
23498[b] 4	87/2−	9537+x[d] 3	(81/2−)	4915.6+u[g] 18	(75/2−)
23561 4	87/2−	9644+x[c] 3	(81/2−)	6782.5+u[g] 20	(79/2−)
23764[a] 4	87/2+	11540+x[d] 3	(85/2−)	8822+u[g] 3	(83/2−)
24459[j] 4	89/2+	11615+x[c] 3	(85/2−)	11025+u[g] 4	(87/2−)
25743[b] 4	91/2−	13772+x[c] 4	(89/2−)	v[h]	(55/2+)
26005[a] 4	91/2+	13837+x[d] 4	(89/2−)	1360.6+v[h] 10	(59/2+)
26660[j] 4	93/2+	13903+x 4	(89/2−)	2839.0+v[h] 15	(63/2+)
28185[b] 5	(95/2−)#	y[e]	(59/2−)	4418.2+v[h] 18	(67/2+)
28432[a] 5	95/2+	1235.5+y[e] 10	(63/2−)	6102.5+v[h] 20	(71/2+)
29039[j] 4	97/2+	2579.5+y[e] 15	(67/2−)	7873.5+v[h] 23	(75/2+)
31013[a] 5	(99/2)+	4032.9+y[e] 18	(71/2−)	9817.5+v[h] 25	(79/2+)
31621[j] 5	(101/2)+	5624.1+y[e] 20	(75/2−)	11930+v[h] 4	(83/2+)
x[d]	(53/2−)	7355.6+y[e] 23	(79/2−)	w[i]	(77/2−)
11.9+x 15	−	9261.4+y[e] 25	(83/2−)	1680.5+w[i] 10	(81/2−)
992+x[c] 3	(57/2−)	11310+y 4	(87/2−)	3458.7+w[i] 15	(85/2−)
1098.0+x[d] 10	(57/2−)	11375+y[e] 4	(87/2−)	5329.3+w[i] 18	(89/2−)
2176+x[c] 3	(61/2−)	z[f]	(53/2+)	7301.4+w[i] 20	(93/2−)
2218.8+x[d] 15	(61/2−)	19.0+z 15	+	9403+w[i] 3	(97/2−)
3392.5+x[d] 18	(65/2−)	45.5+z 15	+	11659+w[i] 4	(101/2−)
3433+x[c] 3	(65/2−)	1258.0+z[f] 10	(57/2+)	14092+w[i] 4	(105/2−)
3518.7+x 18		2553.1+z[f] 15	(61/2+)		

† Assignments for several bands are based on theoretical calculations.
‡ From least-squares fit to Eγ′s (by evaluators).
# From figure 1 of 2001St16.
@ Band(A): α=+1/2, based on 5/2+, ΔJ=2, [10,0].
& Band(a): α=−1/2, based on 11/2+, ΔJ=2, [10,0].
[a] Band(B): α=−1/2, based on 35/2+, ΔJ=2, [22,4].
[b] Band(b): α=+1/2, based on 31/2−, ΔJ=2, [22,3].
[c] Band(C): Based on (57/2−), ΔJ=2, [22,3].
[d] Band(D): Based on (53/2−), ΔJ=2,[22,3].
[e] Band(E): Based on (59/2−), ΔJ=2, [22,3].
[f] Band(F): Based on (53/2+), ΔJ=2, [21,3].
[g] Band(G): Based on (63/2−), ΔJ=2, [21,4].
[h] Band(H): Based on (55/2+), ΔJ=2, [21,3].
[i] Band(I): Based on (77/2−), ΔJ=2, [22,3(01)].
[j] Band(J): Based on 25/2+, ΔJ=2, [22,4].
[k] Band(K): Based on 11/2−, ΔJ=2, [01,0].

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^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)

^{113}I Levels (continued)

[l] Band(L): Based on 31/2$^-$, ΔJ=2, [01,2].
[m] Band(M): Based on 7/2$^+$, ΔJ=2, [00,0].

$\gamma(^{113}I)$

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
63.6		63.6	7/2$^+$	0.0	5/2$^+$		E_γ: from level energy difference.
165.1 *5*	2.2 *2*	3035.6	23/2$^-$	2870.3	23/2$^-$	M1,E2	DCO=0.86 *8*.
179.8 *5*	4.7 *5*	1017.9	11/2$^-$	838.2	9/2$^+$	E1	B(E1)(W.u.)=1.4×10^{-5} *4* DCO=0.65 *6*.
263.9 *5*	23.9 *9*	1017.9	11/2$^-$	753.9	11/2$^+$	E1	B(E1)(W.u.)=2.3×10^{-5} *6* DCO=1.3 *2*.
271.0 *6*	0.5 *1*	3306.6	23/2$^-$	3035.6	23/2$^-$	M1,E2	
345.4 *5*	6.6 *4*	1614.4	13/2$^+$	1269.1	11/2$^+$	M1,E2	DCO=0.73 *6*.
360.0 *5*	8.4 *6*	1269.1	11/2$^+$	909.3	9/2$^+$	M1,E2	DCO=0.74 *6*.
372.0 *10*	4.1 *12*	1986.6	15/2$^+$	1614.4	13/2$^+$	M1,E2	DCO=0.75 *5*.
372.4 *10*	2.8 *12*	2358.7	17/2$^+$	1986.6	15/2$^+$	M1,E2	DCO=0.75 *5*.
373.0 *10*	2.9 *11*	2731.2	19/2$^+$	2358.7	17/2$^+$	M1,E2	DCO=0.75 *5* for six lines from 372.0 to 375.4.
374.0 *10*	2.3 *11*	3480.9	23/2$^+$	3106.2	21/2$^+$	M1,E2	DCO=0.75 *5* for six lines from 372.0 to 375.4.
375.0 *10*	2.7 *11*	3106.2	21/2$^+$	2731.2	19/2$^+$	M1,E2	DCO=0.75 *5* for six lines from 372.0 to 375.4.
375.4 *10*	2.2 *11*	4236.4	27/2	3861.1	25/2$^+$	M1+E2	DCO=0.75 *5* for six lines from 372.0 to 375.4.
380.0 *10*	3.3 *3*	3861.1	25/2$^+$	3480.9	23/2$^+$	M1,E2	
385.0 *5*	1.7 *2*	5015.4	31/2$^+$	4630.4	29/2$^+$	M1,E2	
388.4 *5*	75 *3*	1017.9	11/2$^-$	629.4	9/2$^+$	E1	B(E1)(W.u.)=2.2×10^{-5} *6* DCO=0.53 *5*, 0.65 *3*.
394.0 *5*	3.2 *2*	4630.4	29/2$^+$	4236.4	27/2	M1,E2	
408.0 *5*	1.9 *2*	5423.5	33/2$^+$	5015.4	31/2$^+$	M1,E2	
415.0 *5*	2.1 *2*	5838.6	35/2$^+$	5423.5	33/2$^+$	M1,E2	
423.3 *10*	0.3 *2*	5846.4	35/2$^+$	5423.5	33/2$^+$	M1,E2	
439.6 *5*	1.6 *2*	6278.3	37/2$^+$	5838.6	35/2$^+$	M1,E2	
463.0 *5*	1.7 *2*	6741.4	39/2$^+$	6278.3	37/2$^+$	M1,E2	
473.0 *10*	1.2 *1*	7214.6	41/2$^+$	6741.4	39/2$^+$	M1,E2	
485.0 *10*	0.7 *1*	7699.5	43/2$^+$	7214.6	41/2$^+$	M1,E2	
505.8 *10*	0.3 *2*	7247.1	41/2$^+$	6741.4	39/2$^+$	M1,E2	
514.0 *10*	0.3 *2*	8213.6	45/2$^+$	7699.5	43/2$^+$	M1,E2	
516.6 *5*	2.5 *2*	4630.0	31/2$^-$	4113.3	27/2$^-$	E2	
525.0 *10*	0.3 *2*	8738.6	47/2$^+$	8213.6	45/2$^+$	M1,E2	
530.8 *5*	100 *3*	1548.7	15/2$^-$	1017.9	11/2$^-$	E2	B(E2)(W.u.)=83 *5*
541.0 *10*	0.2 *2*	9279.6	49/2$^+$	8738.6	47/2$^+$	M1,E2	
565.7 *5*	31.7 *2*	629.4	9/2$^+$	63.6	7/2$^+$	M1,E2	DCO=0.9 *1*.
582.0 *5*	19.8 *8*	5211.8	35/2$^-$	4630.0	31/2$^-$	E2	B(E2)(W.u.)=76 *24* DCO=0.91 *15*, 1.02 *8*.
589.2 *10*	0.4 *1*	8198.4	45/2$^+$	7610.0	43/2$^+$	M1,E2	
604.3 *5*	1.2 *2*	4396.1	27/2$^+$	3792.0	23/2$^+$	E2	
616.0 *10*	0.2 *1*	9229.7	49/2$^+$	8613.6	47/2$^+$	M1,E2	
629.1 *5*	2.1 *3*	4396.1	27/2$^+$	3766.8	23/2$^+$	E2	
629.2 *5*	47.6 *10*	629.4	9/2$^+$	0.0	5/2$^+$	E2	I_γ: uncertainty of 0.1 given by 2001St16 seems too low; increased to 1.0 by compilers. DCO=1.0 *1*.
637.7 *5*	95 *3*	2186.4	19/2$^-$	1548.7	15/2$^-$	E2	B(E2)(W.u.)=103 *11* DCO=0.97 *8*, 0.99 *5*.
670.7 *10*	0.8 *2*	4798.6	29/2$^+$	4127.9	25/2$^+$	E2	
683.6 *5*	78.7 *25*	2870.3	23/2$^-$	2186.4	19/2$^-$	E2	B(E2)(W.u.)=63 *11* DCO=0.94 *10*, 0.97 *5*.
685.6 *5*	2.4 *6*	5081.6	31/2$^+$	4396.1	27/2$^+$	E2	DCO=1.0 *2*.
690.4 *5*	20.0 *2*	753.9	11/2$^+$	63.6	7/2$^+$	E2	DCO=0.98 *4*.

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^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)

γ(^{113}I) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
705.4 *8*	0.7 *2*	1614.4	13/2$^+$	909.3	9/2$^+$	E2	
705.6 *5*	12.9 *9*	3741.1	27/2$^-$	3035.6	23/2$^-$	E2	DCO=1.02 *6*.
714.5 *5*	32.4 *12*	5211.8	35/2$^-$	4497.0	31/2$^-$	E2	B(E2)(W.u.)=45 *14* DCO=1.09 *12*, 0.97 *9*.
717.6 *5*	3.1 *3*	1986.6	15/2$^+$	1269.1	11/2$^+$	E2	
735.5 *5*	52.7 *17*	5947.3	39/2$^-$	5211.8	35/2$^-$	E2	DCO=0.94 *12*, 1.01 *8*.
736.8 *10*	0.8 *6*	5535.4	33/2$^+$	4798.6	29/2$^+$	E2	
744.0 *10*	2.7 *5*	2358.7	17/2$^+$	1614.4	13/2$^+$	E2	DCO=0.95 *8* for 744.0+744.4+747.0.
744.4 *10*	2.8 *6*	2731.2	19/2$^+$	1986.6	15/2$^+$	E2	DCO=0.95 *8* for 744.0+744.4+747.0.
747.0 *10*	2.7 *4*	3106.2	21/2$^+$	2358.7	17/2$^+$	E2	DCO=0.95 *8* for 744.0+744.4+747.0.
750.0 *10*	2.4 *5*	3480.9	23/2$^+$	2731.2	19/2$^+$	E2	
755.0 *10*	1.4 *5*	3861.1	25/2$^+$	3106.2	21/2$^+$	E2	
755.4 *10*	2.4 *7*	4236.4	27/2	3480.9	23/2$^+$	E2	
756.0 *5*	10.7 *7*	4497.0	31/2$^-$	3741.1	27/2$^-$	E2	B(E2)(W.u.)=13 *4*
764.8 *5*	2.3 *4*	5846.4	35/2$^+$	5081.6	31/2$^+$	E2	DCO=1.0 *2*.
764.8 *5*	41.8 *13*	6712.1	43/2$^-$	5947.3	39/2$^-$	E2	DCO=0.93 *14*, 1.03 *10*.
769.0 *10*	1.3 *2*	4630.4	29/2$^+$	3861.1	25/2$^+$	E2	
774.3 *10*	1.7 *2*	838.2	9/2$^+$	63.6	7/2$^+$	M1,E2	
775.0 *10*	1.1 *2*	1614.4	13/2$^+$	838.2	9/2$^+$	E2	
779.0 *10*	2.4 *2*	5015.4	31/2$^+$	4236.4	27/2	E2	
793.0 *10*	1.3 *2*	5423.5	33/2$^+$	4630.4	29/2$^+$	E2	
800.6 *5*	42.7 *14*	4497.0	31/2$^-$	3696.2	27/2$^-$	E2	B(E2)(W.u.)=39 *11* DCO=0.97 *12*, 1.04 *9*.
806.6 *6*	2.6 *4*	4113.3	27/2$^-$	3306.6	23/2$^-$	E2	
818.6 *10*	0.8 *2*	6354.0	37/2$^+$	5535.4	33/2$^+$	E2	
823.0 *10*	1.4 *4*	5838.6	35/2$^+$	5015.4	31/2$^+$	E2	
825.7 *5*	61.8 *20*	3696.2	27/2$^-$	2870.3	23/2$^-$	E2	B(E2)(W.u.)=7.E+1 *3* DCO=0.92 *12*, 1.05 *10*.
831.3 *10*	0.4 *1*	5846.4	35/2$^+$	5015.4	31/2$^+$	E2	
838.0 *10*	1.6 *2*	838.2	9/2$^+$	0.0	5/2$^+$	E2	
841.9 *5*	2.2 *2*	6688.0	39/2$^+$	5846.4	35/2$^+$	E2	
846.0 *5*	2.7 *2*	909.3	9/2$^+$	63.6	7/2$^+$	M1,E2	
848.6 *5*	10.4 *10*	3035.6	23/2$^-$	2186.4	19/2$^-$	E2	DCO=1.01 *6*.
849.1 *10*	0.5 *2*	6688.0	39/2$^+$	5838.6	35/2$^+$	E2	
854.6 *10*	1.3 *1*	6278.3	37/2$^+$	5423.5	33/2$^+$	E2	
862.8 *5*	19.5 *14*	1616.7	15/2$^+$	753.9	11/2$^+$	E2	DCO=1.09 *6*.
867.2 *5*	10.1 *5*	5364.3	35/2$^-$	4497.0	31/2$^-$	E2	DCO=0.93 *9*.
870.9 *6*	2.2 *5*	3741.1	27/2$^-$	2870.3	23/2$^-$	E2	
884.0 *5*	7.5 *4*	3568.9	23/2$^+$	2684.9	19/2$^+$	E2	
889.1 *5*	3.9 *2*	4630.0	31/2$^-$	3741.1	27/2$^-$	E2	
893.1 *5*	0.9 *2*	7247.1	41/2$^+$	6354.0	37/2$^+$	E2	
901.9 *5*	6.7 *3*	6266.2	39/2$^-$	5364.3	35/2$^-$	E2	
902.6 *10*	0.7 *2*	6741.4	39/2$^+$	5838.6	35/2$^+$	E2	DCO=0.97 *9*.
905.6 *5*	21.1 *7*	8586.3	51/2$^-$	7680.7	47/2$^-$	E2	DCO=0.96 *10*.
909.4 *5*	1.6 *2*	909.3	9/2$^+$	0.0	5/2$^+$	E2	
922.1 *5*	3.1 *2*	7610.0	43/2$^+$	6688.0	39/2$^+$	E2	
933.9 *5*	13.4 *7*	4630.0	31/2$^-$	3696.2	27/2$^-$	E2	DCO=0.92 *18*, 1.00 *8*.
936.0 *10*	1.1 *1*	7214.6	41/2$^+$	6278.3	37/2$^+$	E2	
951.3 *5*	1.1 *1*	8198.4	45/2$^+$	7247.1	41/2$^+$	E2	
958.0 *10*	0.3 *2*	7699.5	43/2$^+$	6741.4	39/2$^+$	E2	
968.6 *5*	32.3 *10*	7680.7	47/2$^-$	6712.1	43/2$^-$	E2	DCO=0.97 *14*, 1.08 *10*.
983.0 *5*	5.8 *3*	7249.2	43/2$^-$	6266.2	39/2$^-$	E2	DCO=0.98 *9*.
983.0 *10*	0.2 *1*	8198.4	45/2$^+$	7214.6	41/2$^+$	E2	
984.5 *10*	0.5 *2*	1614.4	13/2$^+$	629.4	9/2$^+$	E2	
999.0 *10*	1.0 *2*	8213.6	45/2$^+$	7214.6	41/2$^+$	E2	
1003.6 *5*	3.1 *2*	8613.6	47/2$^+$	7610.0	43/2$^+$	E2	DCO=1.0 *2*.

Continued on next page (footnotes at end of table)

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)

$\gamma(^{113}I)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
1024.7 *5*	12.0 *4*	9611.0	55/2$^-$	8586.3	51/2$^-$	E2	DCO=1.09 *10*.
1031.3 *5*	1.6 *2*	9229.7	49/2$^+$	8198.4	45/2$^+$	E2	
1039.0 *10*	0.5 *2*	8738.6	47/2$^+$	7699.5	43/2$^+$	E2	
1046.9 *5*	3.0 *2*	8296.2	47/2$^-$	7249.2	43/2$^-$	E2	
1066.0 *10*	0.3 *2*	9279.6	49/2$^+$	8213.6	45/2$^+$	E2	
1068.3 *5*	20.1 *9*	2684.9	19/2$^+$	1616.7	15/2$^+$	E2	DCO=1.03 *6*.
1073.0 *5*	2.8 *2*	9686.6	51/2$^+$	8613.6	47/2$^+$	E2	
1081.7 *5*	2.3 *4*	3766.8	23/2$^+$	2684.9	19/2$^+$	E2	
1086.1 *10*	1.2 *2*	1098.0+x	(57/2$^-$)	11.9+x	$^-$	E2	
1098.0 *10*	1.1 *2*	1098.0+x	(57/2$^-$)	x	(53/2$^-$)	E2	
1098.5 *5*	3.2 *2*	8347.6	47/2$^-$	7249.2	43/2$^-$	E2	
1103.0 *5*	1.6 *2*	10332.7	53/2$^+$	9229.7	49/2$^+$	E2	
1107.3 *5*	1.2 *4*	3792.0	23/2$^+$	2684.9	19/2$^+$	E2	
1120.1 *9*	2.0 *2*	3306.6	23/2$^-$	2186.4	19/2$^-$	E2	
1120.8 *10*	1.7 *4*	2218.8+x	(61/2$^-$)	1098.0+x	(57/2$^-$)	E2	
1147.7 *5*	2.2 *2*	10834.3	55/2$^+$	9686.6	51/2$^+$	E2	
1149.1 *3*	2.4 *2*	9496.6	51/2$^-$	8347.6	47/2$^-$	E2	
1173.7 *10*	1.4 *2*	3392.5+x	(65/2$^-$)	2218.8+x	(61/2$^-$)	E2	
1177.4 *10*	1.8 *2*	11510.1	57/2$^+$	10332.7	53/2$^+$	E2	
1184.1 *10*	0.8 *2*	2176+x	(61/2$^-$)	992+x	(57/2$^-$)	E2	
1200.4 *5*	1.9 *1*	9496.6	51/2$^-$	8296.2	47/2$^-$	E2	
1212.5 *10*	0.5 *1*	1258.0+z	(57/2$^+$)	45.5+z	$^+$	E2	
1235.5 *10*	0.5 *2*	1235.5+y	(63/2$^-$)	y	(59/2$^-$)	E2	
1239.0 *10*	0.3 *1*	1258.0+z	(57/2$^+$)	19.0+z	$^+$	E2	
1249.1 *10*	0.5 *1*	12083.4	59/2$^+$	10834.3	55/2$^+$	E2	
1257.4 *10*	0.7 *2*	3433+x	(65/2$^-$)	2176+x	(61/2$^-$)	E2	
1258.0 *10*	0.3 *1*	1258.0+z	(57/2$^+$)	z	(53/2$^+$)	E2	
1259.4 *10*	1.7 *2*	12769.5	61/2$^+$	11510.1	57/2$^+$	E2	
1270.5 *5*	1.9 *1*	10767.2	55/2$^-$	9496.6	51/2$^-$	E2	
1295.1 *10*	1.0 *1*	2553.1+z	(61/2$^+$)	1258.0+z	(57/2$^+$)	E2	
1299.9 *10*	0.3 *2*	3518.7+x		2218.8+x	(61/2$^-$)		
1331.4 *10*	0.6 *1*	13414.8	63/2$^+$	12083.4	59/2$^+$	E2	
1340.6 *10*	0.6 *1*	4773.8+x	(69/2$^-$)	3433+x	(65/2$^-$)	E2	
1344.0 *10*	0.6 *2*	2579.5+y	(67/2$^-$)	1235.5+y	(63/2$^-$)	E2	
1344.8 *10*	1.3 *2*	4737.3+x	(69/2$^-$)	3392.5+x	(65/2$^-$)	E2	
1347.9 *10*	1.6 *2*	14117.4	65/2$^+$	12769.5	61/2$^+$	E2	
1352.9 *10*	1.5 *2*	12120.1	59/2$^-$	10767.2	55/2$^-$	E2	
1360.6 *10*	0.2 *1*	1360.6+v	(59/2$^+$)	v	(55/2$^+$)	E2	
1380.7 *10*	1.0 *1*	3933.8+z	(65/2$^+$)	2553.1+z	(61/2$^+$)	E2	
1394.6 *10*	0.3 *2*	4913.3+x		3518.7+x			
1410.0 *20*	0.3 *2*	6184.8+x	(73/2$^-$)	4773.8+x	(69/2$^-$)	E2	
1426.6 *10*	0.5 *1*	14841.4	67/2$^+$	13414.8	63/2$^+$	E2	
1431.4 *10*	0.2 *1*	6344.7+x		4913.3+x			
1434.4 *15*	1.3 *2*	13554.5	63/2$^-$	12120.1	59/2$^-$	E2	
1438.5 *15*	1.3 *2*	14993	67/2$^-$	13554.5	63/2$^-$	E2	
1441.9 *10*	1.3 *2*	15559.3	69/2$^+$	14117.4	65/2$^+$	E2	
1443.0 *15*	0.8 *2*	16436	71/2$^-$	14993	67/2$^-$	E2	
1447.8 *10*	1.2 *2*	6184.8+x	(73/2$^-$)	4737.3+x	(69/2$^-$)	E2	
1453.4 *10*	0.5 *1*	4032.9+y	(71/2$^-$)	2579.5+y	(67/2$^-$)	E2	
1455.9 *10*	11.1 *11*	11066.9	59/2$^-$	9611.0	55/2$^-$	E2	
1457.1 *10*	0.6 *1*	6230.6+x	(73/2$^-$)	4773.8+x	(69/2$^-$)	E2	
1478.4 *10*	0.3 *1*	2839.0+v	(63/2$^+$)	1360.6+v	(59/2$^+$)	E2	
1493.0 *10*	0.2 *1*	6230.6+x	(73/2$^-$)	4737.3+x	(69/2$^-$)	E2	
1504.5 *10*	0.9 *1*	5438.3+z	(69/2$^+$)	3933.8+z	(65/2$^+$)	E2	
1525.5 *10*	0.4 *1*	16366.9	71/2$^+$	14841.4	67/2$^+$	E2	
1543.7 *10*	0.3 *1*	1543.7+u	(67/2$^-$)	u	(63/2$^-$)	E2	

Continued on next page (footnotes at end of table)

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)

$\gamma(^{113}I)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
1544.8 *10*	1.2 *2*	17104	$73/2^+$	15559.3	$69/2^+$	E2	
1554.0 *10*	0.8 *2*	17990	$75/2^-$	16436	$71/2^-$	E2	
1579.2 *10*	0.4 *1*	4418.2+v	$(67/2^+)$	2839.0+v	$(63/2^+)$	E2	
1591.2 *10*	0.5 *1*	5624.1+y	$(75/2^-)$	4032.9+y	$(71/2^-)$	E2	
1593.3 *10*	0.9 *2*	7778.2+x	$(77/2^-)$	6184.8+x	$(73/2^-)$	E2	
1627.1 *10*	0.6 *1*	7857.7+x	$(77/2^-)$	6230.6+x	$(73/2^-)$	E2	
1629.6 *10*	0.3 *1*	3173.4+u	$(71/2^-)$	1543.7+u	$(67/2^-)$	E2	
1638.2 *10*	0.4 *1*	18005	$75/2^+$	16366.9	$71/2^+$	E2	
1651.8 *10*	1.1 *2*	18756	$77/2^+$	17104	$73/2^+$	E2	
1662.7 *10*	0.5 *1*	7101.0+z	$(73/2^+)$	5438.3+z	$(69/2^+)$	E2	
1680.4 *10*	0.7 *2*	19670	$79/2^-$	17990	$75/2^-$	E2	
1680.5 *10*	0.2 *1*	1680.5+w	$(81/2^-)$	w	$(77/2^-)$	E2	
1684.3 *10*	0.3 *1*	6102.5+v	$(71/2^+)$	4418.2+v	$(67/2^+)$	E2	
1731.4 *10*	0.4 *1*	7355.6+y	$(79/2^-)$	5624.1+y	$(75/2^-)$	E2	
1742.2 *10*	0.3 *1*	4915.6+u	$(75/2^-)$	3173.4+u	$(71/2^-)$	E2	
1758.4 *10*	0.5 *1*	9537+x	$(81/2^-)$	7778.2+x	$(77/2^-)$	E2	
1766.9 *10*	0.9 *2*	20523	$81/2^+$	18756	$77/2^+$	E2	
1767.7 *10*	0.4 *1*	19773	$79/2^+$	18005	$75/2^+$	E2	
1770.9 *10*	0.3 *1*	7873.5+v	$(75/2^+)$	6102.5+v	$(71/2^+)$	E2	
1778.1 *10*	0.3 *1*	3458.7+w	$(85/2^-)$	1680.5+w	$(81/2^-)$	E2	
1786.4 *10*	0.4 *1*	9644+x	$(81/2^-)$	7857.7+x	$(77/2^-)$	E2	Additional information 1.
1844.2 *10*	0.4 *1*	21514	$83/2^-$	19670	$79/2^-$	E2	
1866.9 *10*	0.3 *1*	6782.5+u	$(79/2^-)$	4915.6+u	$(75/2^-)$	E2	
1869.7 *10*	0.3 *1*	8970.8+z	$(77/2^+)$	7101.0+z	$(73/2^+)$	E2	
1870.6 *10*	0.4 *1*	5329.3+w	$(89/2^-)$	3458.7+w	$(85/2^-)$	E2	
1895.8 *10*	0.6 *2*	22419	$85/2^+$	20523	$81/2^+$	E2	
1905.8 *10*	0.3 *1*	9261.4+y	$(83/2^-)$	7355.6+y	$(79/2^-)$	E2	
1915.3 *10*	0.3 *1*	21688	$83/2^+$	19773	$79/2^+$	E2	
1923.6 *10*	2.1 *3*	12990.5	$63/2^-$	11066.9	$59/2^-$	E2	
1944.0 *10*	0.2 *1*	9817.5+v	$(79/2^+)$	7873.5+v	$(75/2^+)$	E2	
1970.8 *10*	0.3 *1*	11615+x	$(85/2^-)$	9644+x	$(81/2^-)$	E2	Additional information 2.
1972.1 *10*	0.4 *1*	7301.4+w	$(93/2^-)$	5329.3+w	$(89/2^-)$	E2	
1984.1 *10*	0.2 *1*	23498	$87/2^-$	21514	$83/2^-$	E2	
2003.2 *10*	0.2 *1*	11540+x	$(85/2^-)$	9537+x	$(81/2^-)$	E2	
2039.4 *20*	0.3 *1*	8822+u	$(83/2^-)$	6782.5+u	$(79/2^-)$	E2	
2039.9 *10*	0.4 *1*	24459	$89/2^+$	22419	$85/2^+$	E2	
2046.6 *20*	0.2 *1*	23561	$87/2^-$	21514	$83/2^-$	E2	
2049.0 *20*	0.1 *1*	11310+y	$(87/2^-)$	9261.4+y	$(83/2^-)$	E2	
2075.8 *10*	0.2 *1*	23764	$87/2^+$	21688	$83/2^+$	E2	
2101.2 *20*	0.3 *1*	9403+w	$(97/2^-)$	7301.4+w	$(93/2^-)$	E2	
2112.3 *20*	0.1 *1*	11930+v	$(83/2^+)$	9817.5+v	$(79/2^+)$	E2	
2113.1 *20*	0.1 *1*	11375+y	$(87/2^-)$	9261.4+y	$(83/2^-)$	E2	
2118.9 *20*	0.2 *1*	11090+z	$(81/2^+)$	8970.8+z	$(77/2^+)$	E2	
2156.9 *20*	0.2 *2*	13772+x	$(89/2^-)$	11615+x	$(85/2^-)$	E2	
2181.6 *20*	0.1 *1*	25743	$91/2^-$	23561	$87/2^-$	E2	
2201.0 *10*	0.2 *1*	26660	$93/2^+$	24459	$89/2^+$	E2	
2202.9 *20*	0.2 *1*	11025+u	$(87/2^-)$	8822+u	$(83/2^-)$	E2	
2241.2 *20*	0.2 *1*	26005	$91/2^+$	23764	$87/2^+$	E2	
2244.5 *20*	0.1 *1*	25743	$91/2^-$	23498	$87/2^-$	E2	
2256.7 *20*	0.2 *1*	11659+w	$(101/2^-)$	9403+w	$(97/2^-)$	E2	
2296.9 *20*	0.1 *1*	13837+x	$(89/2^-)$	11540+x	$(85/2^-)$	E2	
2363.0 *20*	0.1 *1*	13903+x	$(89/2^-)$	11540+x	$(85/2^-)$	E2	
2379.5 *20*	0.2 *1*	29039	$97/2^+$	26660	$93/2^+$	E2	
2426.6 *20*	0.1 *1*	28432	$95/2^+$	26005	$91/2^+$	E2	
2432.7 *20*	0.1 *1*	14092+w	$(105/2^-)$	11659+w	$(101/2^-)$	E2	

Continued on next page (footnotes at end of table)

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)

$\gamma(^{113}I)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.
2442.2† *20*	0.1 *1*	28185	$(95/2^-)$	25743	$91/2^-$	E2
2581.1† *20*	0.1 *1*	31013	$(99/2)^+$	28432	$95/2^+$	E2
2582.0† *20*	0.2 *1*	31621	$(101/2)^+$	29039	$97/2^+$	E2

† Placement of transition in the level scheme is uncertain.

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

Level Scheme

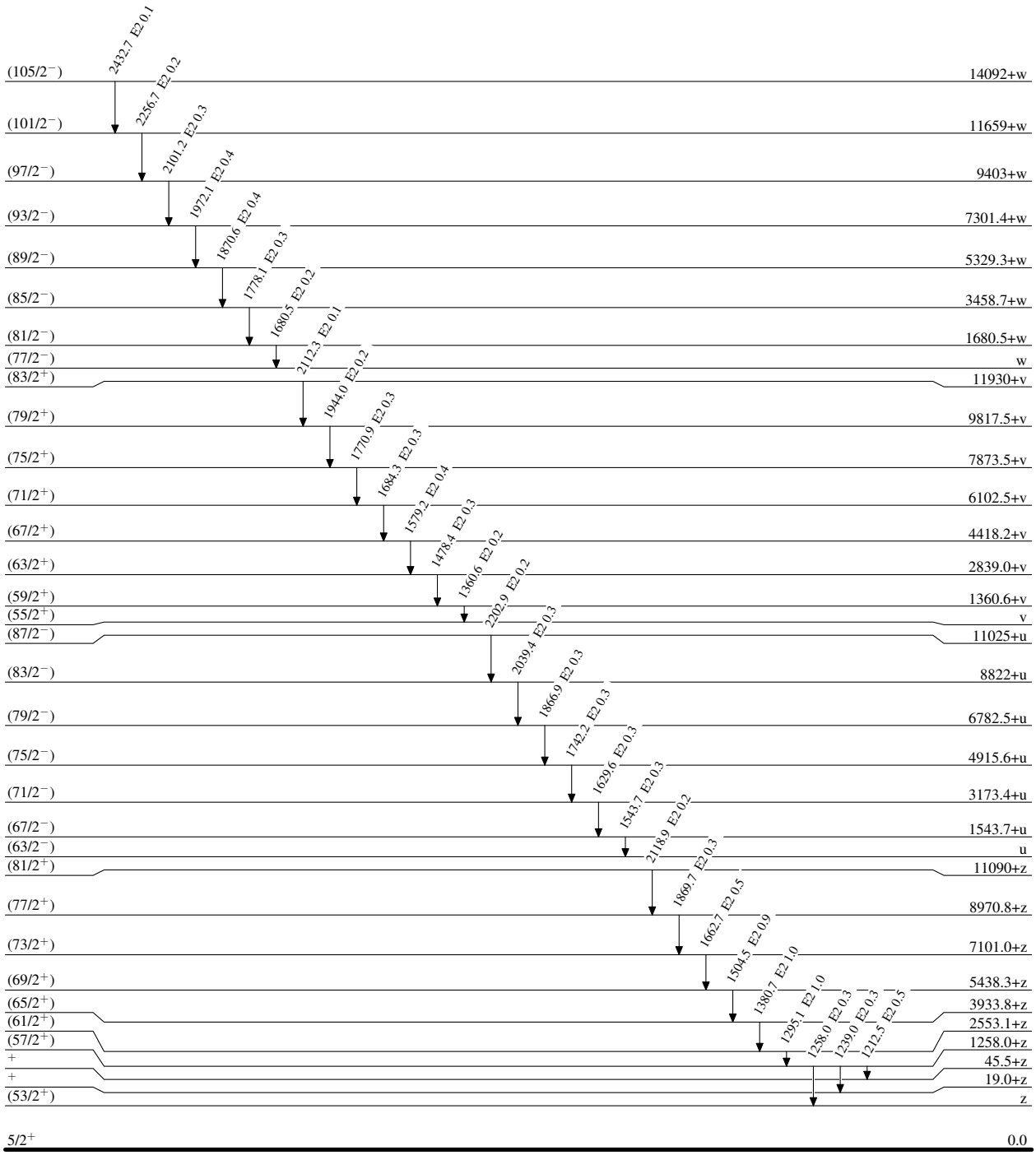
Intensities: Relative I_γ

Legend

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

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

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

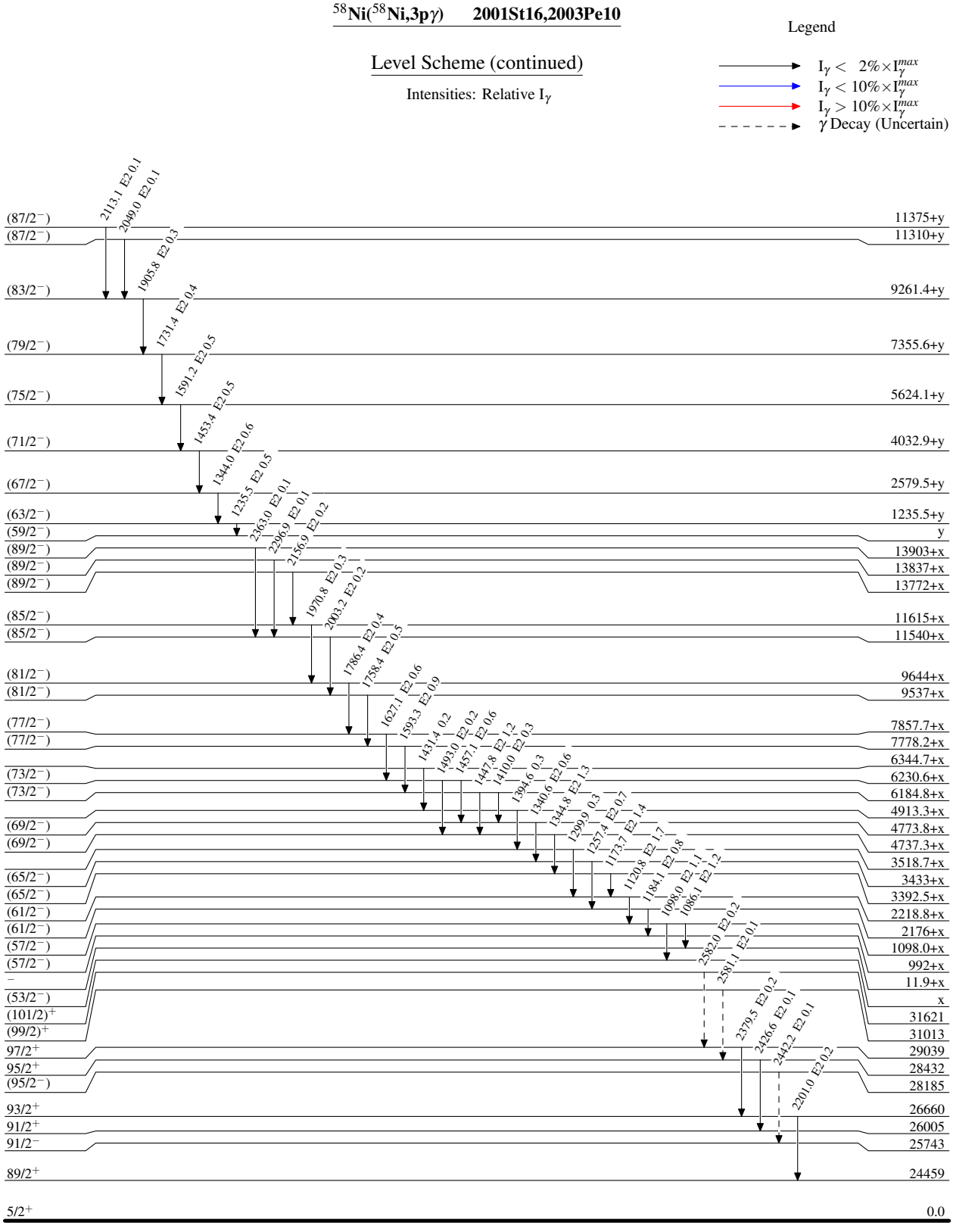


$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

Level Scheme (continued)

Intensities: Relative I_γ



$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

Level Scheme (continued)

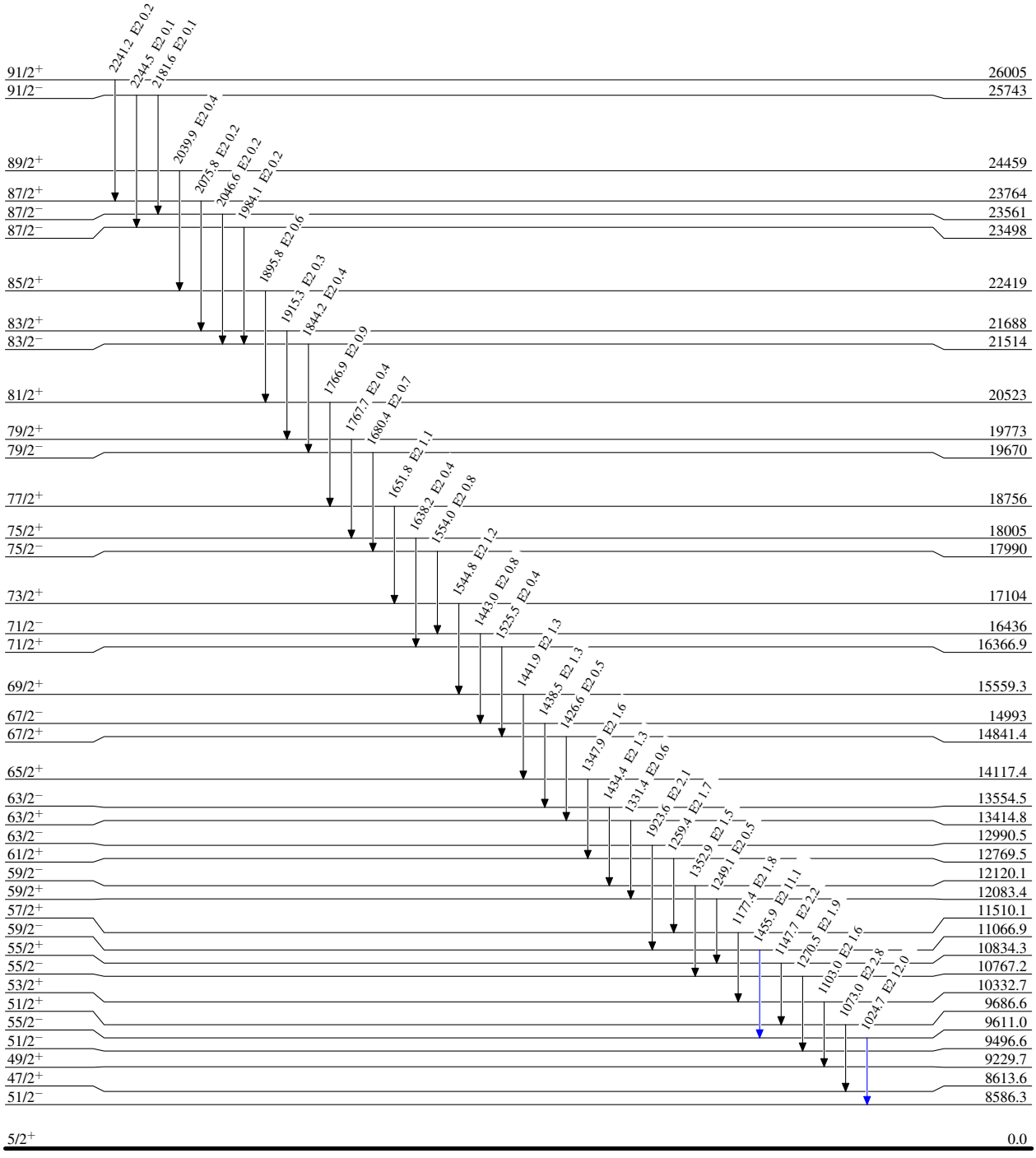
Intensities: Relative I_γ

Legend

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

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

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



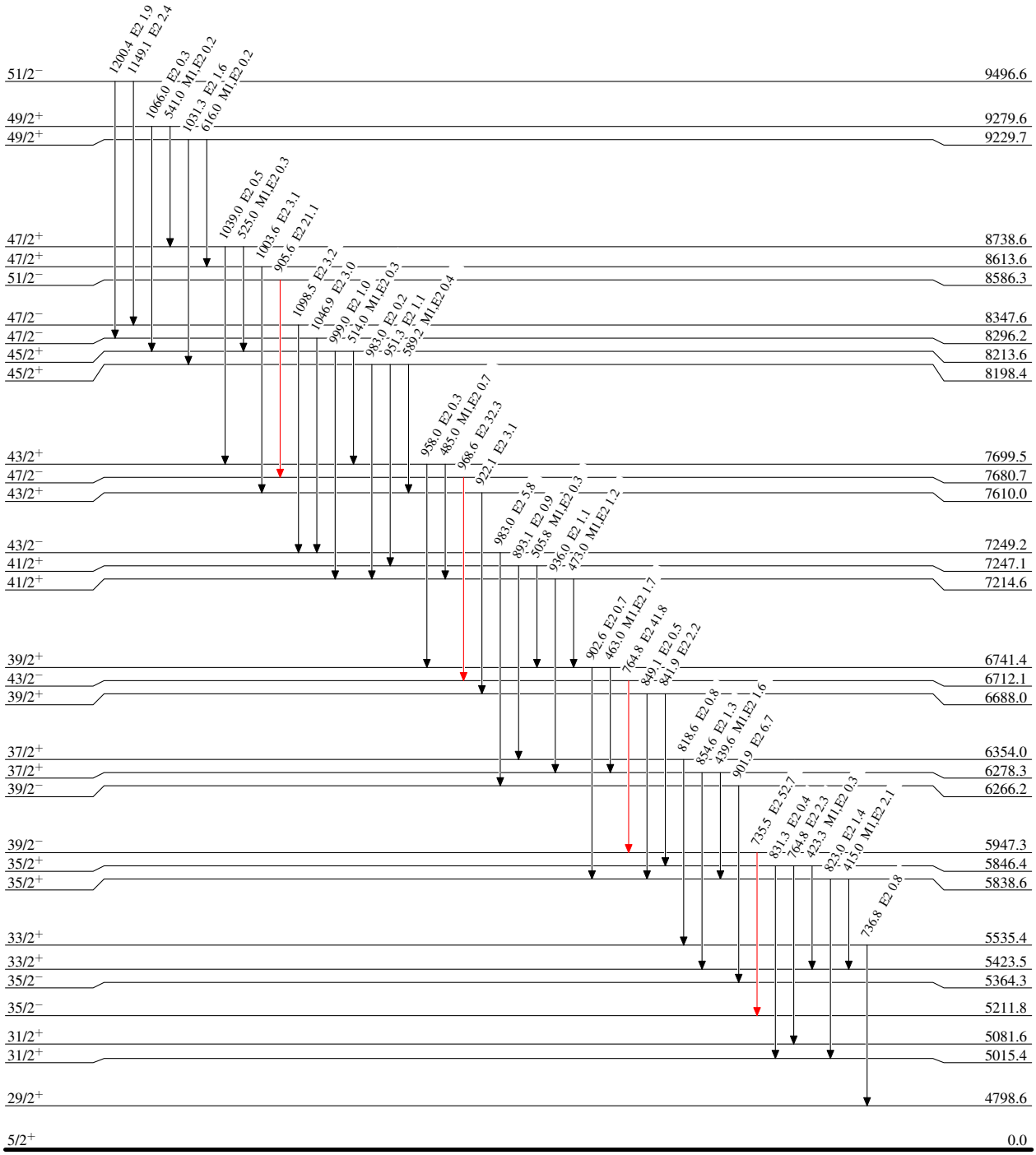
$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

Level Scheme (continued)

Intensities: Relative I_γ

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

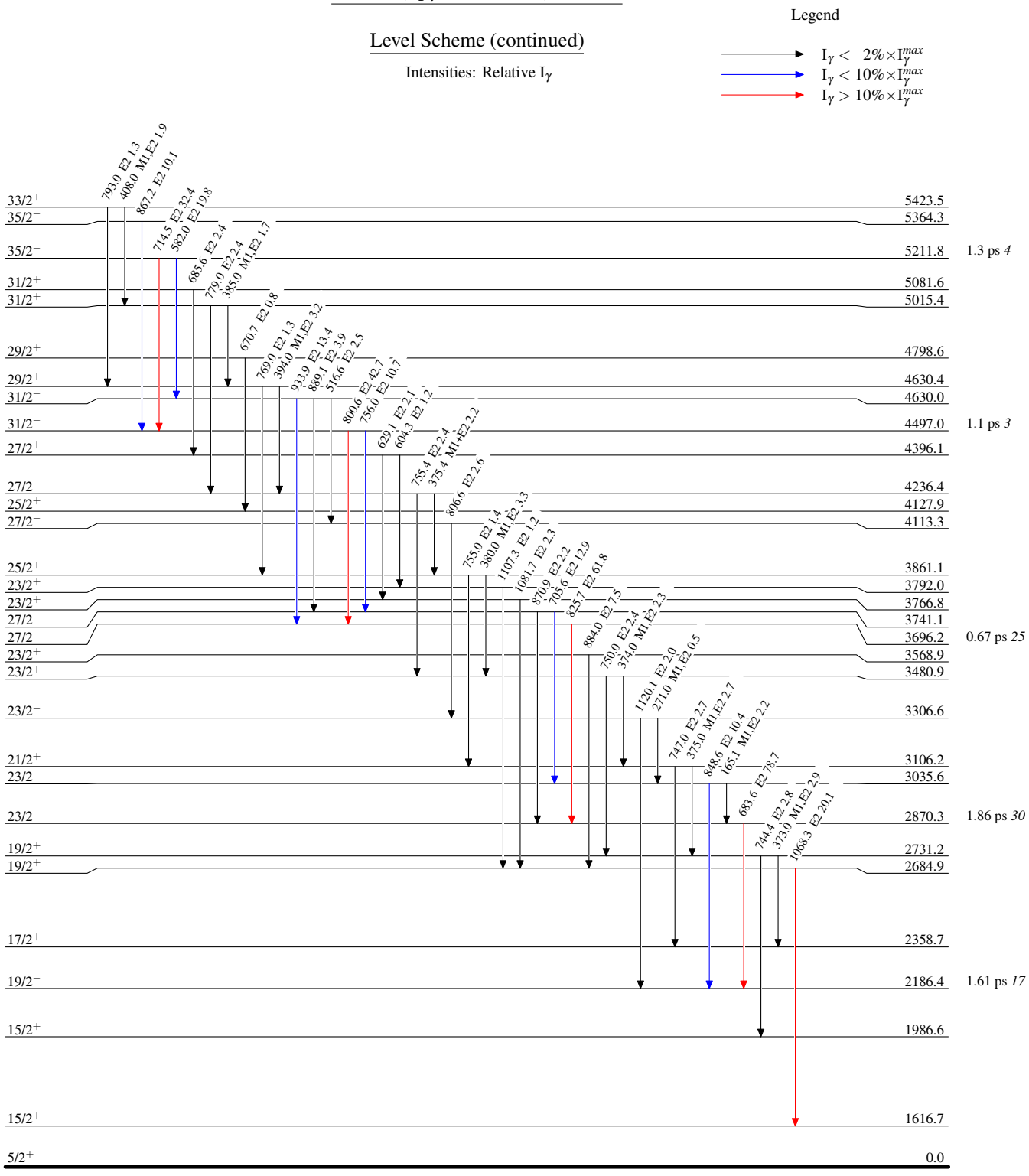


$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

Level Scheme (continued)

Intensities: Relative I_γ

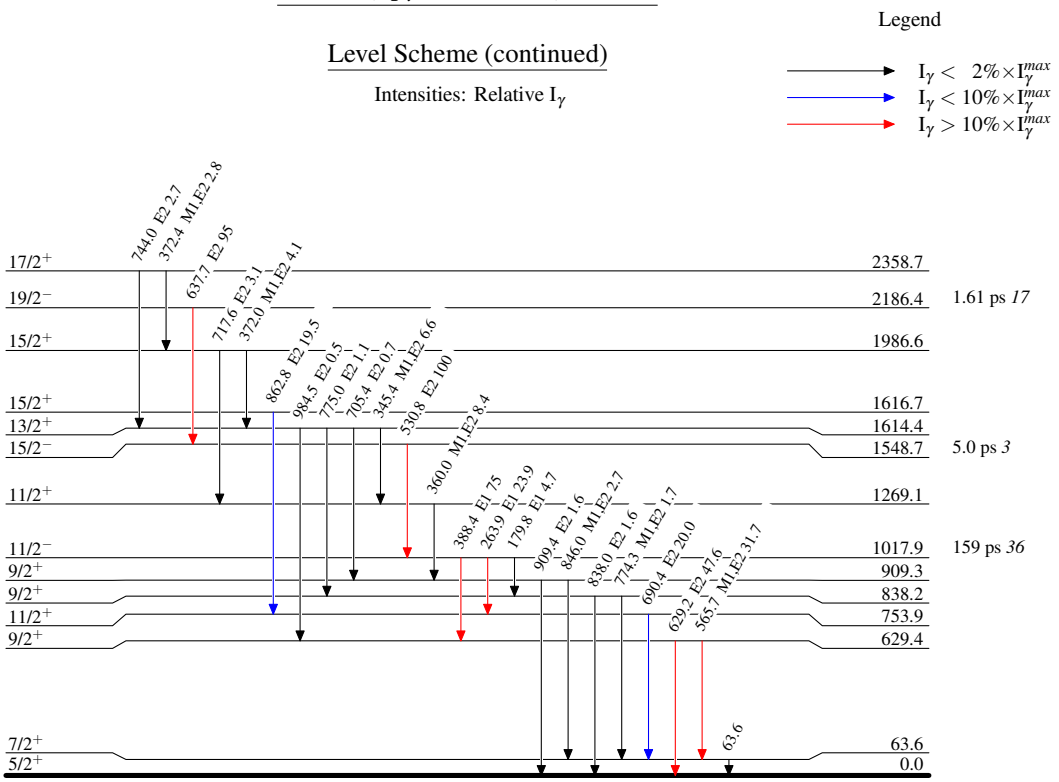


$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10

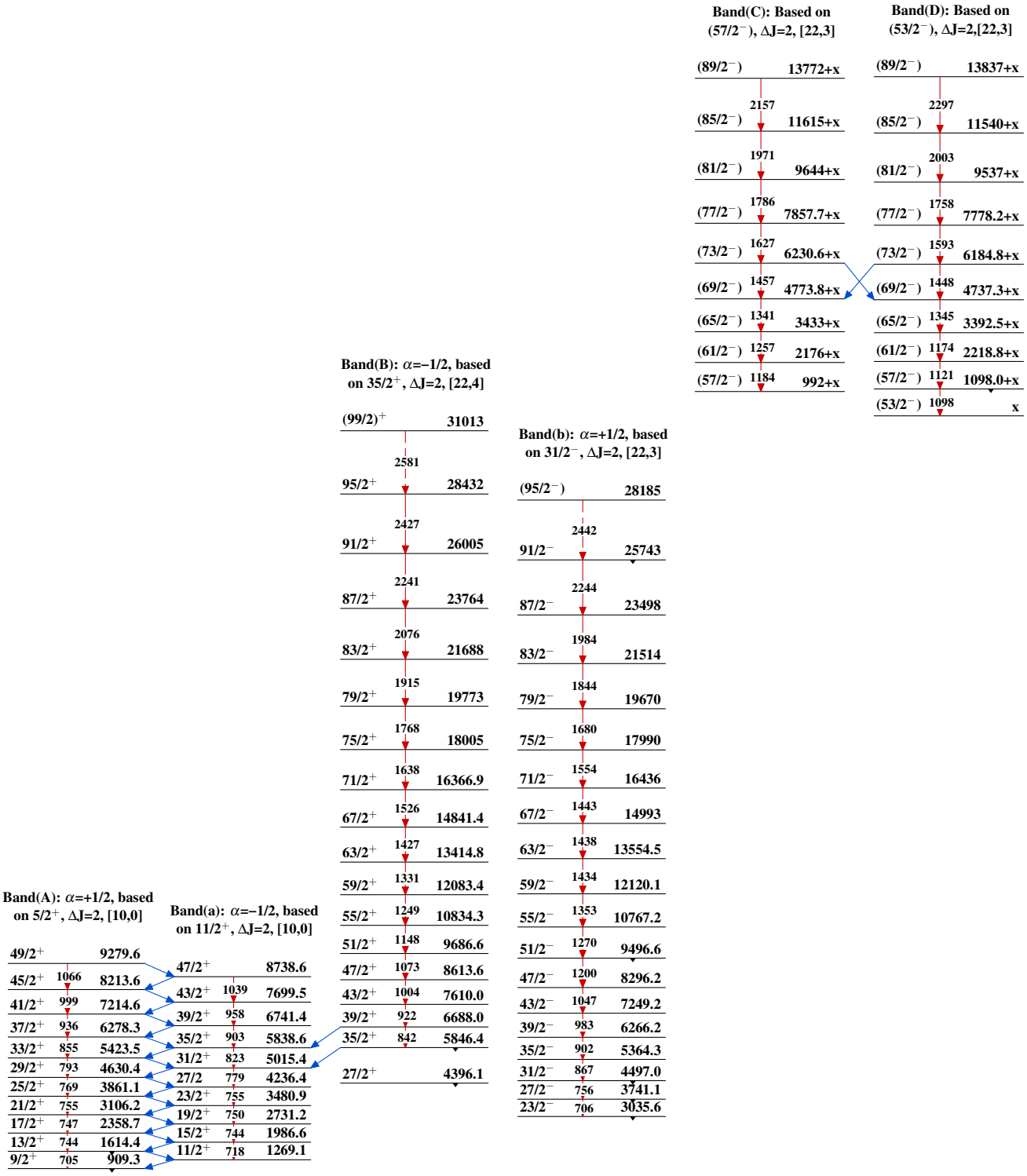
Level Scheme (continued)

Intensities: Relative I_γ



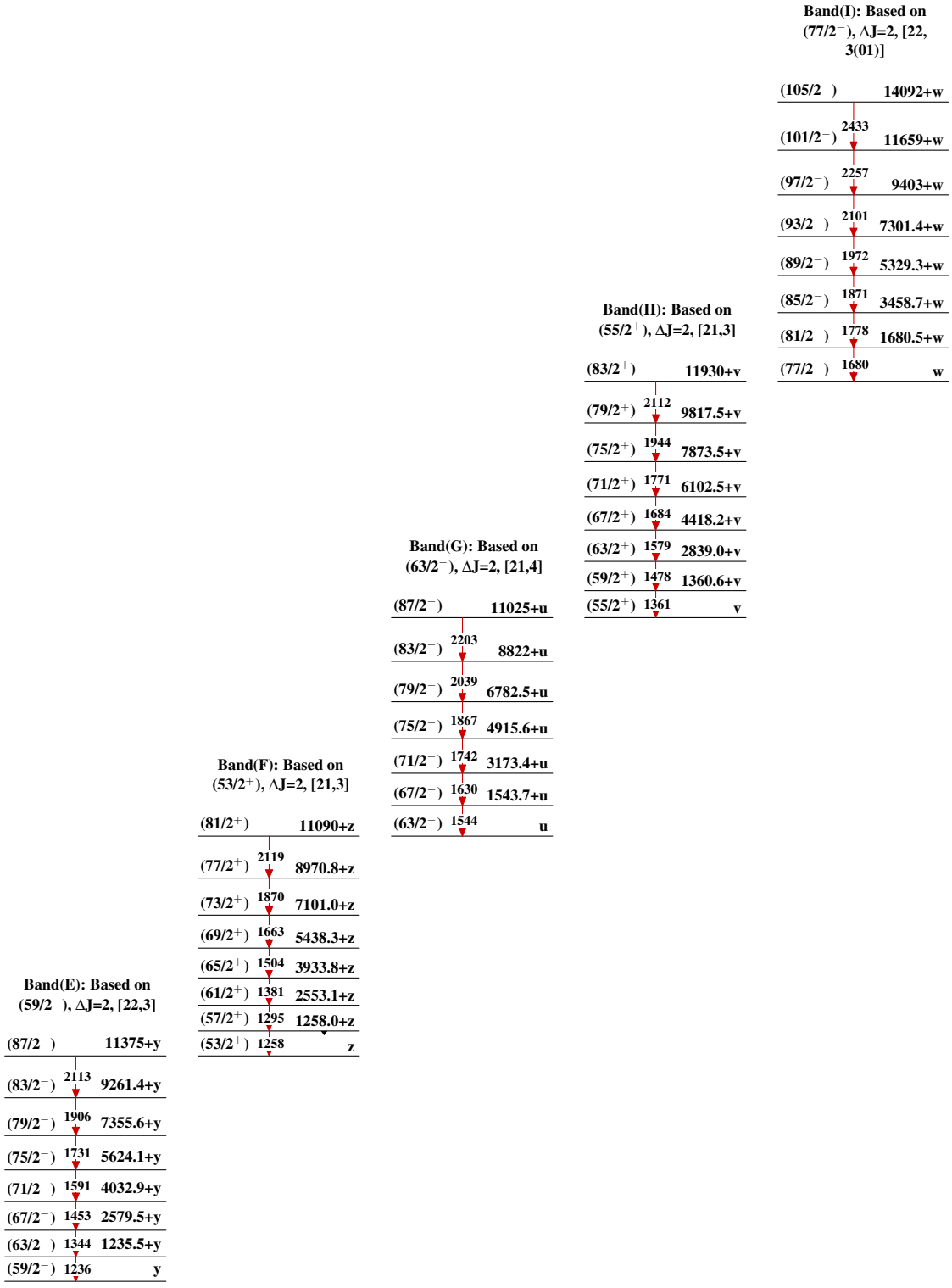
$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10



$^{113}_{53}I_{60}$

^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)



^{58}Ni(^{58}Ni,3pγ) 2001St16,2003Pe10 (continued)