^{24}Mg(^{24}Mg,αpγ) 2007Ch40

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen[#]	NDS 126, 1 (2015)	31-Mar-2015

2007Ch40: E=94 MeV beam from Berkeley 88-in cyclotron. Measured Eγ, Iγ, γγ, γ(θ), γγ(θ)(DCO) using Gammasphere with 102 Compton-suppressed HPGe detectors. Particles detected with an array of 95 CsI(T1) detectors with a 65% efficiency for detection of α particles and 50% for protons.

A similar experiment was done by 2007Ch40 using the reaction ^{28}Si(^{20}Ne,αpγ). The γ-ray energies and angular distribution/correlation coefficients are averages from the two experiments. These coefficients are listed only with this dataset.

^{43}Sc Levels

E(level)[†]	J$^{\pi}$[#]	T$_{1/2}$
0.0[@]	7/2$^-$	
152.25[b] *11*	3/2$^+$	438[‡] μs *7*
845.42 *20*	5/2$^-$	
880.97[c] *10*	5/2$^+$	
1337.85[b] *9*	7/2$^+$	
1408.38[&] *16*	7/2$^-$	
1830.62[@] *9*	11/2$^-$	
1932.83[c] *10*	9/2$^+$	
2554.07[b] *10*	11/2$^+$	
2635.72[&] *12*	11/2$^-$	
2988.74[@] *11*	15/2$^-$	
3124.32[@] *13*	19/2$^-$	470[‡] ns *4*
3142.46[c] *11*	13/2$^+$	
3293.5 *5*	7/2$^-$	
3756.04[b] *11*	15/2$^+$	
3960.31[&] *11*	15/2$^-$	
4301.5 *5*		
4383.67 *23*	17/2$^{(-)}$	
5232.02[c] *13*	17/2$^+$	
5519.53[b] *12*	19/2$^+$	
5793.95 *23*		
6067.70[&] *12*	19/2$^-$	
6173.53[a] *14*	19/2$^+$	
6284.04[c] *14*	21/2$^+$	
6431.60[b] *13*	23/2$^+$	
6818.98 *15*	(21/2$^+$)	
7107.43[a] *13*	23/2$^+$	
7118.4 *10*		
7273.1 *10*		
7359.77[c] *14*	25/2$^+$	
8010.6 *4*		
8434.56 *17*	23/2$^-$	
8555.89[&] *14*	23/2$^-$	
8703.53 *15*	25/2$^{(+)}$	
8832.32[b] *16*	27/2$^+$	
9219.2 *4*	(21/2$^-$)	
9579.35 *18*	(27/2$^+$)	
9995.34 *16*	25/2$^{(-)}$	
10084.85 *14*	27/2$^-$	
10179.1 *6*		
10437.43[a] *22*	(25/2$^+$)	
10613.82 *17*	(27/2$^-$)	
10856.86 *16*	(27/2$^-$)	
11252.6 *10*	25/2$^+$	
11355.67[&] *22*	27/2$^-$	
11661.3 *5*		
11807.67 *17*	29/2$^{(-)}$	
11921.6 *5*	25/2$^{(+)}$	
12053.72 *16*	29/2$^{(-)}$	
12073.76 *18*	(29/2$^-$)	
12615.45 *16*	(31/2)$^-$	
12704.2 *10*		
12804.7 *4*		
13045.3[a] *3*	(29/2$^+$)	
13117.20 *18*	(31/2$^-$)	
13123.1 *6*		
13584.6 *11*	(29/2$^+$)	
14406.61 *17*	(33/2$^-$)	
14452.1 *4*	(29/2$^+$)	
14561.4[&] *3*	31/2$^-$	
14916.7 *5*	31/2	
15911.6[a] *3*	(33/2$^+$)	
16704.3 *11*		
16708.9 *11*		
16711.5 *11*		
17769.8 *5*	(35/2)	
17922.0 *5*	(31/2$^+$)	
18197.0[&] *11*	35/2$^-$	
18767.7 *5*	(37/2)	
19210.5[a] *4*	(37/2$^+$)	

[†] From least-squares fit to Eγ data. The normalized χ^2=5.8 for the uncertainties as quoted by 2007Ch40. This value is much larger than the critical χ^2=1.5. The uncertainties of the following ten γ-rays were increased by a factor of 2 or 3 to get an acceptable

Continued on next page (footnotes at end of table)

^{24}Mg(^{24}Mg,αpγ) 2007Ch40 (continued)

^{43}Sc Levels (continued)

fit with normalized χ^2=2.5: 287.9, 860.4, 1157.5, 1595.2, 2177.8, 2369.6, 2418.3, 2598.0, 2725.6, 6081.0. It should be that the uncertainties for level energies quoted in Table V of 2007Ch40 are much larger than those given here.

‡ From Adopted Levels.

\# From 2007Ch40 based on multipolarities deduced from γ(θ) and γγ(θ)(DCO) data, and band associations.

@ Band(A): γ sequence based on g.s.

& Band(B): γ sequence based on 7/2⁻.

a Band(C): γ sequence based on 19/2⁺.

b Band(D): γ sequence based on 3/2⁺.

c Band(E): γ sequence based on 5/2⁺.

γ(^{43}Sc)

The DCO values are for ≈90° (range of 69.8°−110.2°) and forward/ backward angles (50.1°−129.9° range). The gates are on ΔJ=2, quadrupole or ΔJ=0, dipole transitions, unless otherwise stated. Expected values for ΔJ=1, dipole gate are: 1.6 for ΔJ=2, quadrupole or ΔJ=0, dipole; 1.0 for ΔJ=1, dipole; 0.5 to 1.9 for ΔJ=1, dipole+quadrupole; 1.1 to 1.7 for ΔJ=0, dipole+quadrupole. Expected values for ΔJ=2, quadrupole gate are: 1.0 for ΔJ=2, quadrupole or ΔJ=0, dipole; 0.6 for ΔJ=1, dipole; 0.3 to 1.2 for ΔJ=1, dipole+quadrupole; 0.6 to 1.1 for ΔJ=0, dipole+quadrupole.

E_γ †	I_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.‡	Comments
135.5 *1*	1.73 *8*	3124.32	19/2⁻	2988.74	15/2⁻		
252.3 *1*	2.04 *9*	7359.77	25/2⁺	7107.43	23/2⁺		
287.9# *1*	1.81 *7*	5519.53	19/2⁺	5232.02	17/2⁺	D	A_2=−0.43 *12*; A_4=+0.09 *17*
288.4 *1*	0.60 *5*	7107.43	23/2⁺	6818.98	(21/2⁺)		
456.7 *1*	3.72 *16*	1337.85	7/2⁺	880.97	5/2⁺		
562.9 *2*	0.45 *6*	1408.38	7/2⁻	845.42	5/2⁻		
588.2 *1*	3.02 *11*	3142.46	13/2⁺	2554.07	11/2⁺		
595.1 *1*	10.8 *3*	1932.83	9/2⁺	1337.85	7/2⁺		
613.5 *1*	32.4 *10*	3756.04	15/2⁺	3142.46	13/2⁺	D	A_2=−0.42 *8*; A_4=+0.06 *10*
621.3 *1*	5.94 *21*	2554.07	11/2⁺	1932.83	9/2⁺	D	A_2=−0.43 *8*; A_4=−0.01 *10*
645.4 *1*	2.19 *11*	6818.98	(21/2⁺)	6173.53	19/2⁺		
653.9 *2*	1.08 *9*	6173.53	19/2⁺	5519.53	19/2⁺		
675.9 *1*	7.3 *3*	7107.43	23/2⁺	6431.60	23/2⁺	D	DCO=1.06 *4*; A_2=+0.54 *7*; A_4=+0.21 *10*
728.7 *1*	49.1 *16*	880.97	5/2⁺	152.25	3/2⁺	D	A_2=−0.35 *5*; A_4=+0.13 *6*
764.3 *1*	2.23 *15*	6284.04	21/2⁺	5519.53	19/2⁺	D	DCO=0.70 *23*
766.9 *2*	0.91 *7*	3756.04	15/2⁺	2988.74	15/2⁻	D	DCO=0.73 *12*
771.6 *4*	0.42 *9*	10856.86	(27/2⁻)	10084.85	27/2⁻		
804.4 *3*	0.76 *10*	2635.72	11/2⁻	1830.62	11/2⁻	D	DCO=0.49 *14*
823.3 *1*	4.86 *20*	7107.43	23/2⁺	6284.04	21/2⁺	D	DCO=0.60 *15*
845.3 *3*	0.48 *7*	845.42	5/2⁻	0.0	7/2⁻		
860.4@ *2*	0.64 *6*	10856.86	(27/2⁻)	9995.34	25/2⁽⁻⁾	D	DCO=0.43 *10*
880.5 *2*	1.95 *12*	880.97	5/2⁺	0.0	7/2⁻		
912.0 *1*	100 *3*	6431.60	23/2⁺	5519.53	19/2⁺	Q	DCO=1.01 *2*; A_2=+0.37 *3*; A_4=+0.03 *4*
928.2 *1*	76.2 *24*	7359.77	25/2⁺	6431.60	23/2⁺	D	DCO=0.68 *1*; A_2=−0.18 *3*; A_4=+0.10 *4*
933.0 *5*	0.90 *11*	7107.43	23/2⁺	6173.53	19/2⁺		
941.4 *1*	1.82 *8*	6173.53	19/2⁺	5232.02	17/2⁺		
951.0 *3*	1.20 *8*	11807.67	29/2⁽⁻⁾	10856.86	(27/2⁻)	D	DCO=0.70 *11*
971.5 *1*	2.28 *10*	3960.31	15/2⁻	2988.74	15/2⁻	D	DCO=1.01 *18*
997.9 *1*	0.65 *4*	18767.7	(37/2)	17769.8	(35/2)	D	DCO=0.65 *17*
1043.6 *1*	0.95 *17*	13117.20	(31/2⁻)	12073.76	(29/2⁻)	D	DCO=0.64 *15*
1051.9 *1*	29.4 *9*	1932.83	9/2⁺	880.97	5/2⁺	Q	A_2=+0.25 *5*; A_4=−0.07 *7*
1052.9 *4*	0.25 *6*	6284.04	21/2⁺	5232.02	17/2⁺		
1075.6 *3*	0.56 *8*	7359.77	25/2⁺	6284.04	21/2⁺		

Continued on next page (footnotes at end of table)

^{24}Mg(^{24}Mg,αpγ) 2007Ch40 (continued)

γ(^{43}Sc) (continued)

E_γ[†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
1157.5[@] 1	15.2 5	2988.74	15/2⁻	1830.62	11/2⁻	Q	DCO=1.05 5; A_2=+0.38 6; A_4=−0.02 8
1185.6 1	9.1 4	1337.85	7/2⁺	152.25	3/2⁺	Q	A_2=+0.41 5; A_4=−0.08 7
1202.1 1	6.32 22	3756.04	15/2⁺	2554.07	11/2⁺		
1209.7 1	31.0 10	3142.46	13/2⁺	1932.83	9/2⁺	Q	A_2=+0.27 3; A_4=+0.08 5
1216.1 1	4.60 20	2554.07	11/2⁺	1337.85	7/2⁺		
1227.1 3	1.90 25	2635.72	11/2⁻	1408.38	7/2⁻		
1289.2 3	0.44 7	14406.61	(33/2⁻)	13117.20	(31/2⁻)		
1324.5 1	2.52 13	3960.31	15/2⁻	2635.72	11/2⁻	Q	DCO=0.96 10
1338.0 1	2.41 13	1337.85	7/2⁺	0.0	7/2⁻	D	DCO=1.03 11
1360.6 4	0.52 10	3293.5	7/2⁻	1932.83	9/2⁺		
1381.2 1	3.37 14	10084.85	27/2⁻	8703.53	25/2$^{(+)}$	D	DCO=0.47 3
1394.9 2	1.43 11	4383.67	17/2$^{(-)}$	2988.74	15/2⁻	D	DCO=0.54 5
1408.3 2	2.1 5	1408.38	7/2⁻	0.0	7/2⁻	D	DCO=1.19 23
1439.5 1	2.02 11	9995.34	25/2$^{(-)}$	8555.89	23/2⁻	D	DCO=0.66 4
1440.7 2	0.75 4	19210.5	(37/2⁺)	17769.8	(35/2)		
1460.1 1	2.26 14	12073.76	(29/2⁻)	10613.82	(27/2⁻)	D[a]	DCO=1.05 15
1472.5 1	36.1 11	8832.32	27/2⁺	7359.77	25/2⁺	D	DCO=0.73 3; A_2=−0.15 3; A_4=+0.10 4
1476.0 1	5.54 21	5232.02	17/2⁺	3756.04	15/2⁺		
1529.0 1	4.57 18	10084.85	27/2⁻	8555.89	23/2⁻	Q	DCO=1.19 8
1586.9 3	0.64 6	6818.98	(21/2⁺)	5232.02	17/2⁺		
1595.2[#] 3	0.95 9	8703.53	25/2$^{(+)}$	7107.43	23/2⁺		
1650.3 1	8.3 3	10084.85	27/2⁻	8434.56	23/2⁻	Q	DCO=0.94 7; A_2=+0.33 6; A_4=+0.06 8
1724.8 2	1.47 11	8832.32	27/2⁺	7107.43	23/2⁺		
1757.9 7	1.62 11	12615.45	(31/2)⁻	10856.86	(27/2⁻)		
1763.3 1	23.0 7	5519.53	19/2⁺	3756.04	15/2⁺	Q	A_2=+0.50 10; A_4=−0.04 10
1791.2 1	4.80 20	14406.61	(33/2⁻)	12615.45	(31/2)⁻	D	DCO=0.47 7; A_2=−0.52 13; A_4=−0.17 18
1830.5 1	37.7 24	1830.62	11/2⁻	0.0	7/2⁻	Q	DCO=1.04 3; A_2=+0.36 3; A_4=−0.01 4
1833.6 2	1.90 18	5793.95		3960.31	15/2⁻		
1968.8 1	4.89 24	12053.72	29/2$^{(-)}$	10084.85	27/2⁻	D	DCO=0.92 12; A_2=−0.14 9; A_4=+0.06 12
2058.7 2	1.51 9	12053.72	29/2$^{(-)}$	9995.34	25/2$^{(-)}$		
2107.3 1	15.1 5	6067.70	19/2⁻	3960.31	15/2⁻	Q	DCO=0.96 3; A_2=+0.37 4; A_4=−0.08 6
2129.7 1	14.5 5	3960.31	15/2⁻	1830.62	11/2⁻	Q	DCO=1.03 4; A_2=+0.32 4; A_4=−0.14 5
2177.8[#] 6	0.32 6	10613.82	(27/2⁻)	8434.56	23/2⁻	Q[&]	DCO=1.1 4
2190.8 3	0.60 6	12804.7		10613.82	(27/2⁻)		
2219.2 2	1.28 11	9579.35	(27/2⁺)	7359.77	25/2⁺		
2228.0 2	1.78 11	11807.67	29/2$^{(-)}$	9579.35	(27/2⁺)		
2271.8 1	8.0 3	8703.53	25/2$^{(+)}$	6431.60	23/2⁺	D	DCO=0.54 5; A_2=−0.31 16; A_4=−0.22 21
2353.2 3	1.42 10	14406.61	(33/2⁻)	12053.72	29/2$^{(-)}$	Q[&]	DCO=1.0 4
2368.6 5	0.54 9	4301.5		1932.83	9/2⁺		
2369.6[@] 4	1.26 9	8434.56	23/2⁻	6067.70	19/2⁻		
2394.9 1	79.4 25	5519.53	19/2⁺	3124.32	19/2⁻	D	DCO=1.02 1; A_2=+0.40 1; A_4=+0.01 2
2418.3[#] 2	1.93 10	6173.53	19/2⁺	3756.04	15/2⁺		
2488.2 1	13.3 4	8555.89	23/2⁻	6067.70	19/2⁻	Q	DCO=1.14 7; A_2=+0.15 5; A_4=−0.18 7
2491.0 3	2.17 18	8010.6		5519.53	19/2⁺		
2503.1 1	3.00 14	13117.20	(31/2⁻)	10613.82	(27/2⁻)	Q[a]	DCO=1.73 20
2508.0 3	0.71 9	14561.4	31/2⁻	12053.72	29/2$^{(-)}$		
2530.4 1	2.45 12	14452.1	(29/2⁺)	11921.6	25/2$^{(+)}$		
2530.6 1	10.6 4	12615.45	(31/2)⁻	10084.85	27/2⁻	Q	DCO=1.3 3; A_2=+0.18 6; A_4=−0.33 8
2598.0[@] 1	2.33 11	14406.61	(33/2⁻)	11807.67	29/2$^{(-)}$	(Q)	A_2=+0.41 24; A_4=+0.4 3
2607.8 2	1.11 6	13045.3	(29/2⁺)	10437.43	(25/2⁺)		
2636.0 3	2.3 4	2635.72	11/2⁻	0.0	7/2⁻		
2644.5 5	1.23 8	14452.1	(29/2⁺)	11807.67	29/2$^{(-)}$		
2725.6[#] 2	2.36 11	10084.85	27/2⁻	7359.77	25/2⁺	D	DCO=0.68 14

Continued on next page (footnotes at end of table)

^{24}Mg(^{24}Mg,αpγ) 2007Ch40 (continued)

γ(^{43}Sc) (continued)

E_γ[†]	I_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	Comments
2799.5 *2*	2.53 *12*	11355.67	27/2⁻	8555.89	23/2⁻	Q	DCO=0.99 *10*
2852.9 *1*	2.57 *11*	17769.8	(35/2)	14916.7	31/2	(Q)	A_2=+0.10 *18*; A_4=−0.4 *3*
2866.3 *2*	2.89 *13*	15911.6	(33/2⁺)	13045.3	(29/2⁺)		
2887.4 *6*	1.10 *9*	9995.34	25/2⁽⁻⁾	7107.43	23/2⁺		
2920.2 *10*	0.25 *6*	11355.67	27/2⁻	8434.56	23/2⁻		
2975.2 *1*	5.66 *20*	11807.67	29/2⁽⁻⁾	8832.32	27/2⁺	D[&]	DCO=0.71 *5*; A_2=−0.35 *12*; A_4=+0.10 *16*
3038.1 *5*	1.04 *10*	13123.1		10084.85	27/2⁻		
3048.6 *8*	0.63 *15*	6173.53	19/2⁺	3124.32	19/2⁻		
3071.6 *5*	0.57 *8*	10179.1		7107.43	23/2⁺		
3079.0 *1*	4.76 *18*	6067.70	19/2⁻	2988.74	15/2⁻	Q	DCO=1.07 *5*; A_2=+0.16 *6*; A_4=−0.27 *8*
3105.3 *4*	0.58 *5*	11661.3		8555.89	23/2⁻		
3124.2 *3*	0.64 *5*	16708.9		13584.6	(29/2⁺)		
3147.7 *2*	2.43 *15*	9579.35	(27/2⁺)	6431.60	23/2⁺		
3151.4 *3*	1.62 *9*	9219.2	(21/2⁻)	6067.70	19/2⁻	(D)[&]	DCO=1.14 *15*
3159.8 *2*	8.2 *8*	6284.04	21/2⁺	3124.32	19/2⁻	D[a]	DCO=0.91 *8*
3205.3 *3*	1.69 *11*	14561.4	31/2⁻	11355.67	27/2⁻	Q[&]	DCO=1.11 *16*
3253.9 *1*	8.2 *3*	10613.82	(27/2⁻)	7359.77	25/2⁺	D	DCO=0.55 *3*; A_2=−0.15 *4*; A_4=−0.08 *6*
3296.0 *4*	1.01 *7*	15911.6	(33/2⁺)	12615.45	(31/2)⁻		
3298.8 *3*	1.09 *7*	19210.5	(37/2⁺)	15911.6	(33/2⁺)		
3307.6 *2*	8.5 *3*	6431.60	23/2⁺	3124.32	19/2⁻	[M2]	
3329.9 *2*	1.71 *10*	10437.43	(25/2⁺)	7107.43	23/2⁺		
3362.2 *10*	0.26 *7*	7118.4		3756.04	15/2⁺		
3469.8 *2*	1.70 *9*	17922.0	(31/2⁺)	14452.1	(29/2⁺)	(D)	DCO=0.77 *10*
3497.0 *1*	4.54 *18*	10856.86	(27/2⁻)	7359.77	25/2⁺	D	DCO=0.59 *6*; A_2=−0.04 *6*; A_4=−0.03 *8*
3516.9 *5*	0.48 *5*	7273.1		3756.04	15/2⁺		
3586.9 *5*	0.54 *6*	16704.3		13117.20	(31/2⁻)		
3635.4 *3*	0.98 *6*	18197.0	35/2⁻	14561.4	31/2⁻	Q[&]	DCO=1.2 *3*
3892.6 *3*	2.67 *13*	11252.6	25/2⁺	7359.77	25/2⁺		
3906.6 *5*	0.76 *6*	16711.5		12804.7			
3972.5 *2*	1.37 *7*	12804.7		8832.32	27/2⁺		
3997.1 *3*	1.34 *8*	11355.67	27/2⁻	7359.77	25/2⁺		
4148.1 *8*	0.16 *3*	12704.2		8555.89	23/2⁻		
4213.0 *3*	1.71 *8*	13045.3	(29/2⁺)	8832.32	27/2⁺	D[&]	DCO=0.76 *17*
4341.7 *3*	1.25 *7*	13045.3	(29/2⁺)	8703.53	25/2⁽⁺⁾		
4560.5 *3*	1.76 *8*	11921.6	25/2⁽⁺⁾	7359.77	25/2⁺	D	DCO=1.02 *8*
4752.0 *3*	1.23 *7*	13584.6	(29/2⁺)	8832.32	27/2⁺	D[&]	DCO=0.48 *9*; A_2=−0.28 *21*; A_4=+0.2 *3*
5310.5 *1*	10.7 *12*	8434.56	23/2⁻	3124.32	19/2⁻	Q[&]	DCO=1.42 *22*; A_2=+0.19 *9*; A_4=−0.08 *12*
5489.0 *3*	2.43 *11*	11921.6	25/2⁽⁺⁾	6431.60	23/2⁺	D	DCO=0.84 *11*
5620.1 *5*	1.82 *8*	14452.1	(29/2⁺)	8832.32	27/2⁺		
5684.9 *4*	1.47 *8*	13045.3	(29/2⁺)	7359.77	25/2⁺		
6081.0[#] *3*	4.05 *14*	14916.7	31/2	8832.32	27/2⁺	Q	DCO=1.19 *12*; A_2=+0.44 *5*; A_4=−0.21 *7*

[†] The quoted uncertainties are statistical only. Above 3.5 MeV (maximum range of calibration curve), systematic uncertainties can be 1-2 keV.

[‡] 2007Ch40 assign multipolarities for most of the transitions, many based only on J^π assignments. The evaluators assign mult=D for ΔJ=0,1 M1 or E1 and Q for ΔJ=2, Q transitions for which supporting angular distribution/correlation data are available. Dipole transitions with expected M1 character may include E2 component.

[#] Poor fit in the level scheme. The uncertainty is increased by a factor of 2 for fitting purposes.

[@] Poor fit in the level scheme. The uncertainty is increased by a factor of 3 for fitting purposes.

[&] DCO value corresponds to an alternative DCO-like analysis (1989Kr01).

[a] DCO value corresponds to gate on ΔJ=1, stretched dipole transition.

^{24}Mg(^{24}Mg,$\alpha p\gamma$) 2007Ch40

Legend

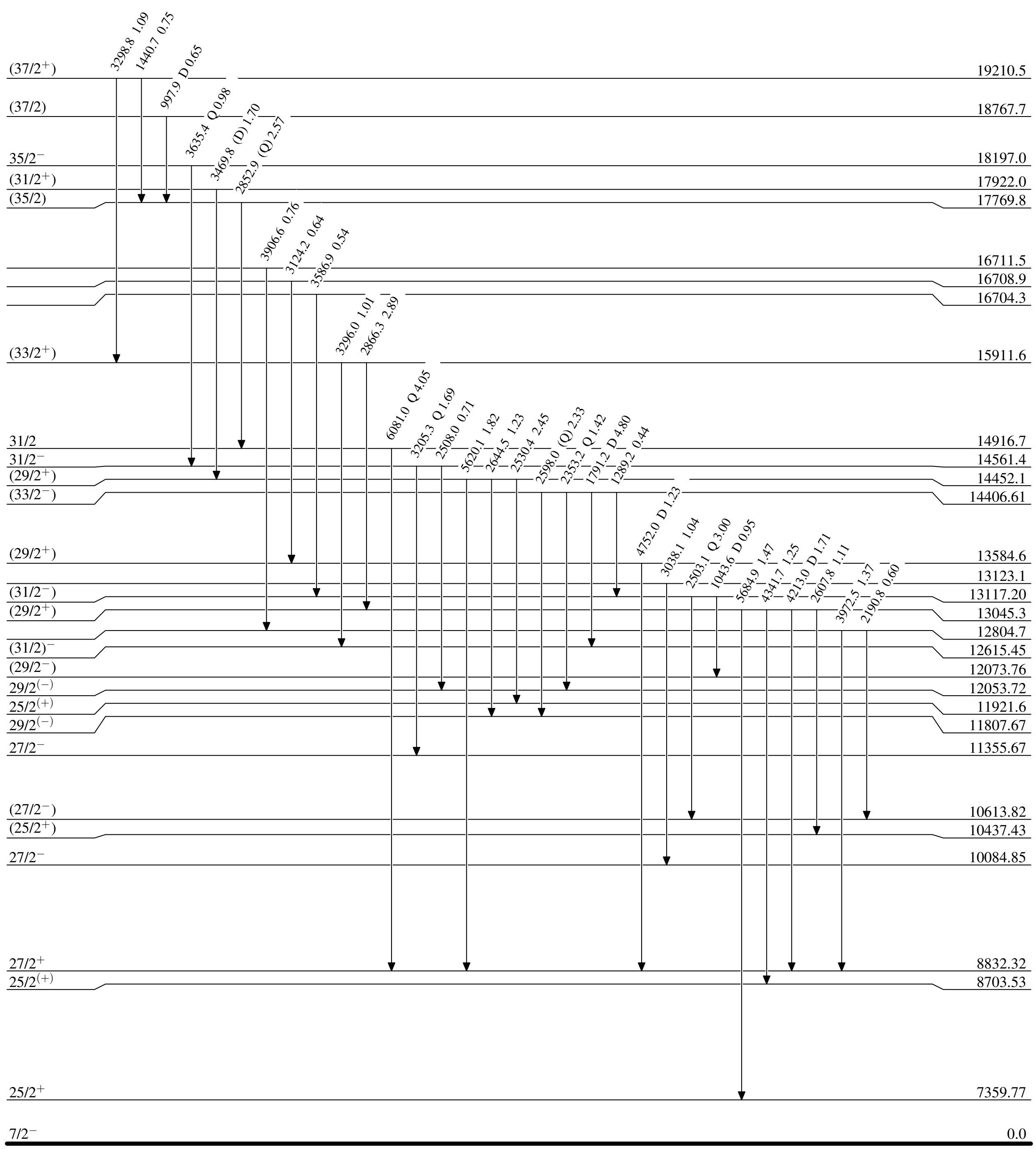
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

Level Scheme

Intensities: Relative I_γ



$^{43}_{21}Sc_{22}$

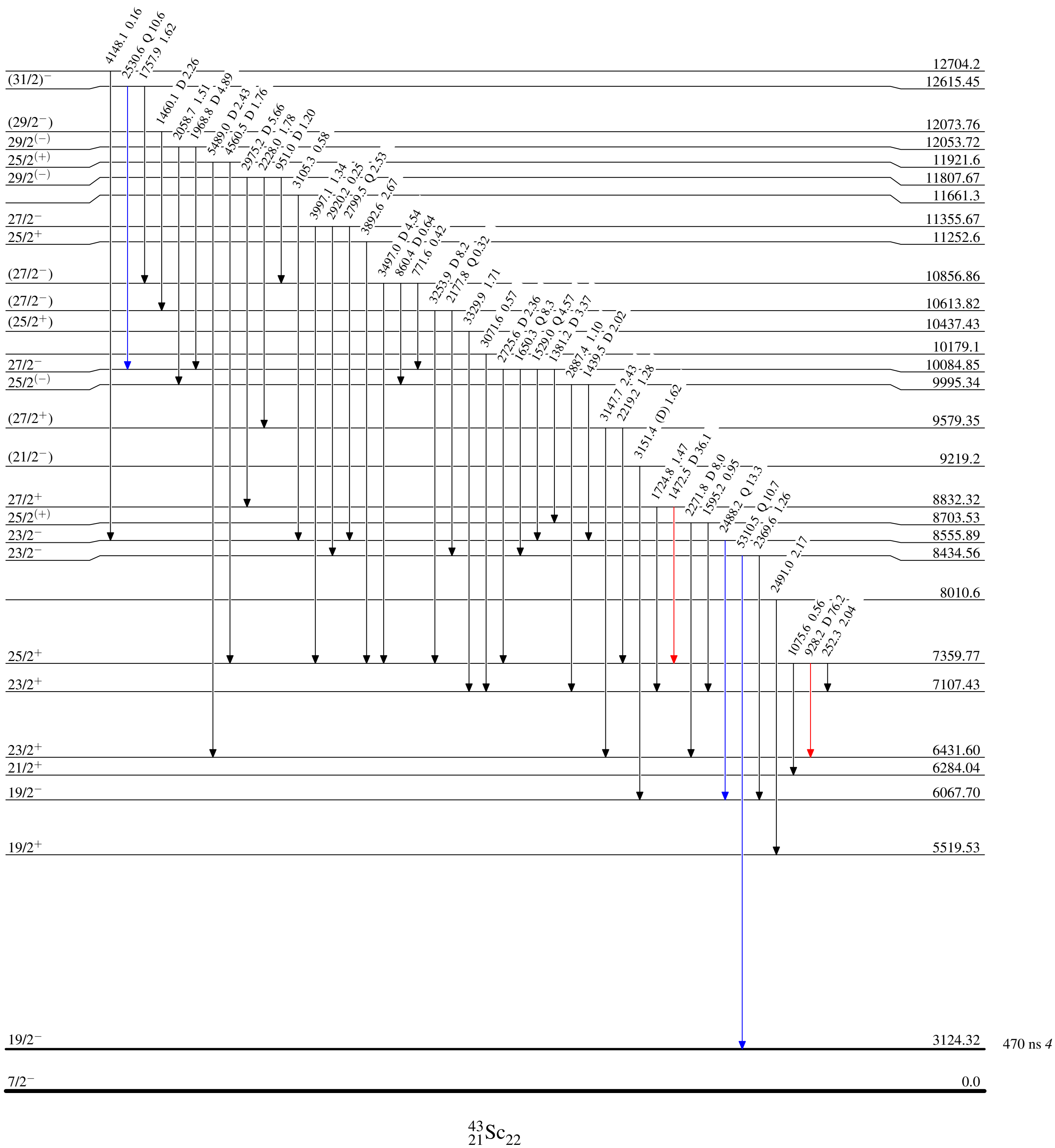
^{24}Mg(^{24}Mg,αpγ) 2007Ch40

Level Scheme (continued)

Intensities: Relative I_γ

Legend

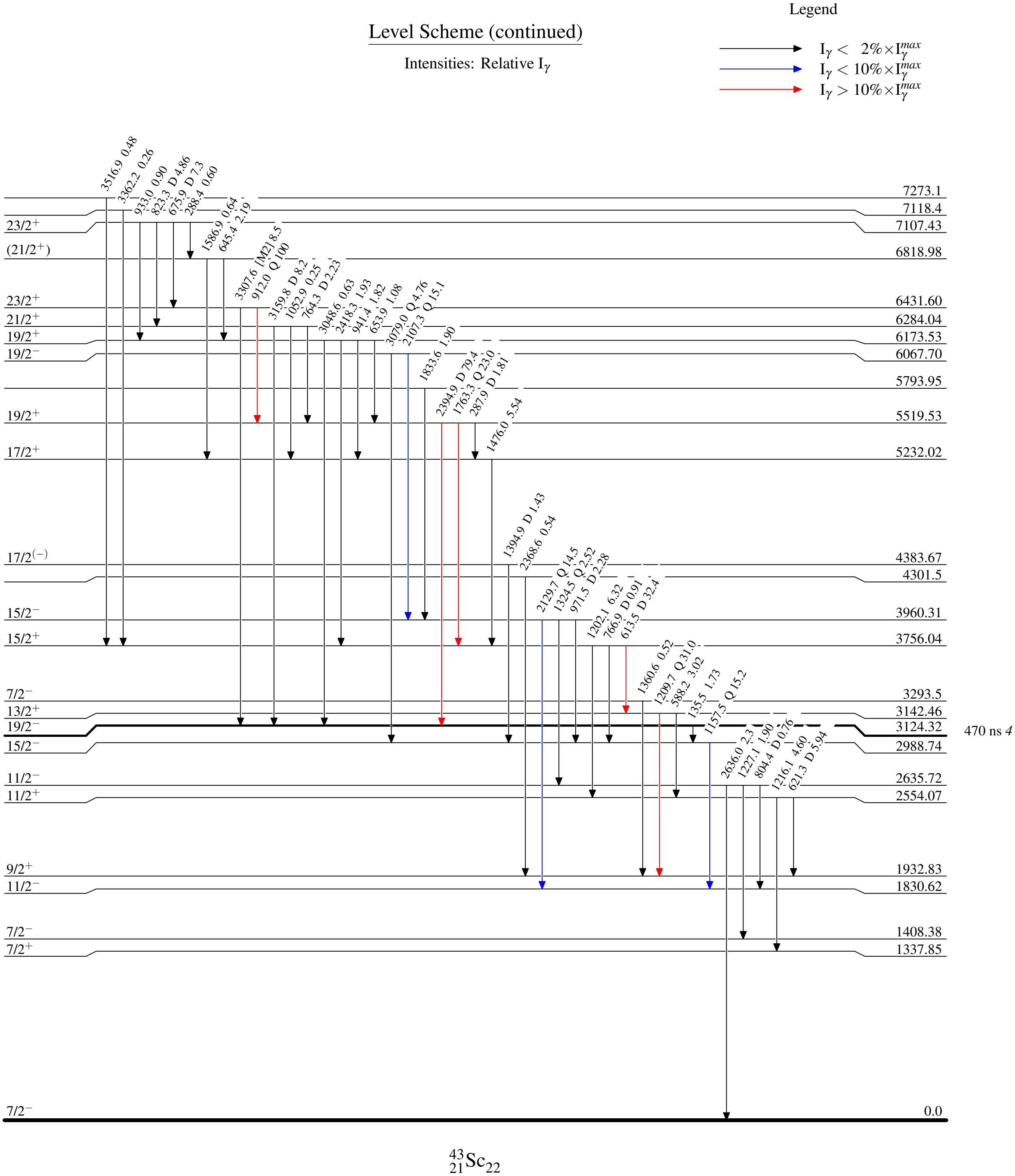
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



$^{24}Mg(^{24}Mg,\alpha p\gamma)$ 2007Ch40

Level Scheme (continued)

Intensities: Relative I_γ



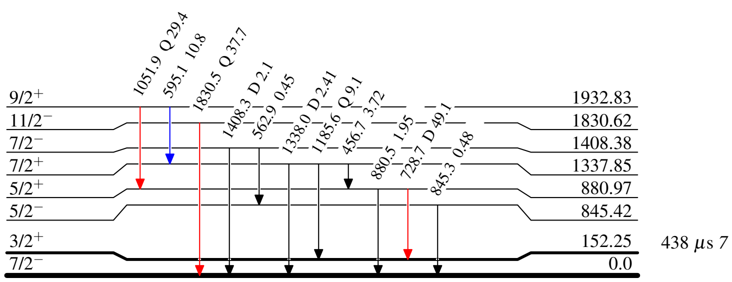
$^{24}Mg(^{24}Mg,\alpha p\gamma)$ 2007Ch40

Level Scheme (continued)

Intensities: Relative I_γ

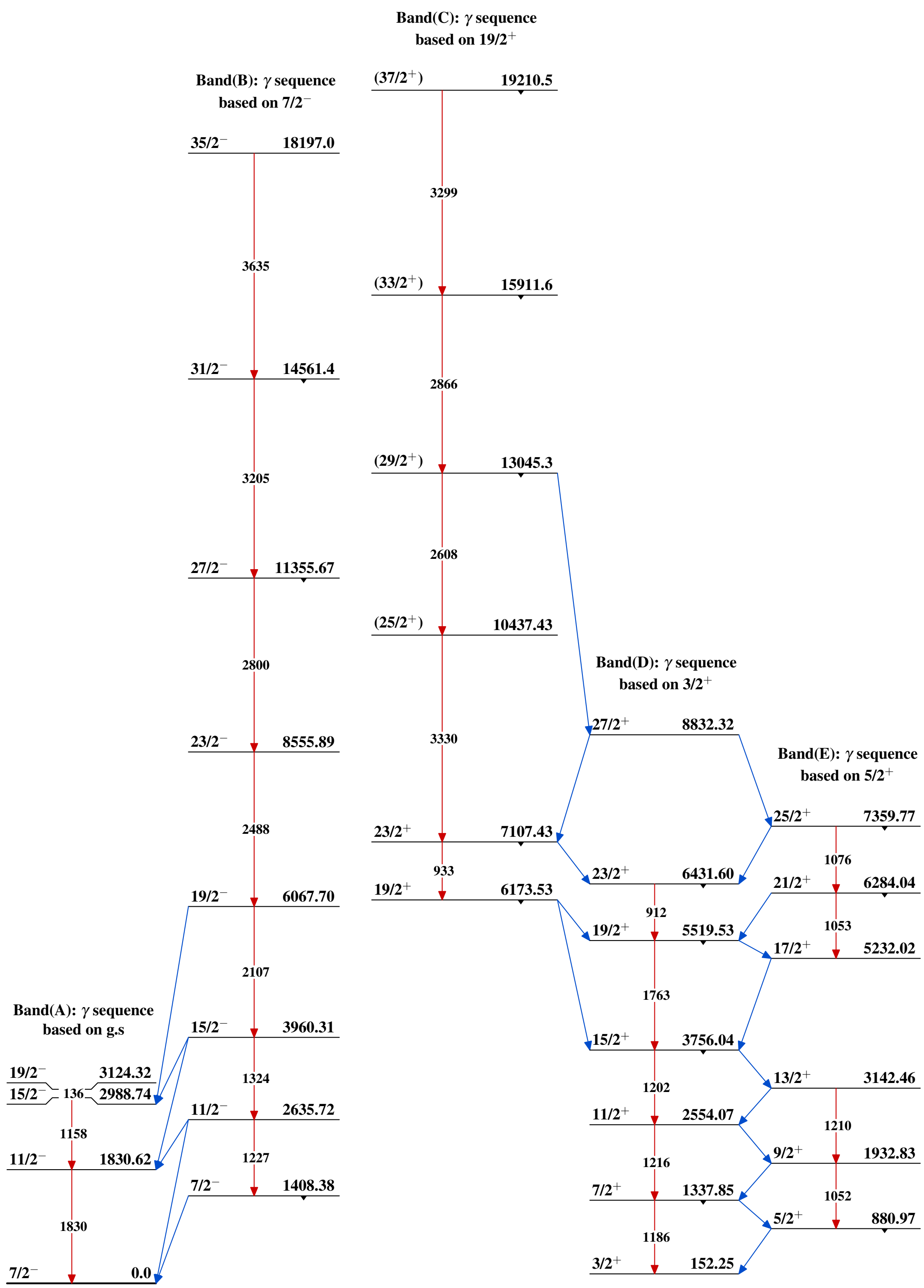
Legend

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



$^{43}_{21}Sc_{22}$

$^{24}Mg(^{24}Mg,\alpha p\gamma)$ 2007Ch40



$^{43}_{21}Sc_{22}$