^{24}Mg(α,pγ) 1988Li31

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 112,1875 (2011)	30-Nov-2010

Others: 1987Ca09, 1974Ro24, 1971Ca38.

1988Li31: Enriched 99.9% ^{24}Mg target; Projectile: α, E=14.2, 15, 15.6 MeV; γ-rays measured with two Ge(Li) detectors, and protons using a ΔE-E telescope of surface barrier detectors; measured proton spectra, Eγ, Iγ, pγ-coin. Also includes data from ^{26}Mg(p,γ), 97% enriched target, two Ge(Li) detectors, most of the reported γ-ray data in 1988Li31 are from P-γ coincidence measurements.

^{27}Al Levels

E(level)†	E(level)†	E(level)†	E(level)†
0	5667	7071	8043
844	5750	7174	8066
1014	5827	7226	8097
2211	5961	7280	8136
2735	6081	7289	8181
2981	6115	7400	8287
3004	6159	7413	8324
3680	6283	7442	8376
3956	6465	7477	8396
4056	6477	7549	8442
4410	6512	7577	8491
4510	6533	7659	8521
4581	6605	7677	8537
4812	6650	7679	8586
5156	6713	7721	8674
5247	6765	7798	8692
5418	6776	7805	8804
5433	6820	7900	8952
5438	6948	7948	9050
5500	6992	7997	9058
5552	6996	8037	

† From level scheme (Fig. 3) in 1988Li31.

γ(^{27}Al)

E_i(level)	E_γ†	I_γ	E_f	E_i(level)	E_γ†	I_γ	E_f	E_i(level)	E_γ†	I_γ	E_f
844	844	100	0	3956	1221	9 *2*	2735	4581	4581	69 *1*	0
1014	170	3	844		2942	5 *2*	1014	4812	1831	7	2981
	1014	97	0		3112	6 *1*	844		2601	17 *1*	2211
2211	2211	100	0		3956	78 *7*	0		3798	44 *1*	1014
2735	1721	79 *1*	1014	4056	3042	12 *3*	1014		4812	32 *1*	0
	1891	2	844		3212	88 *3*	844	5156	1100	4 *1*	4056
	2735	19 *1*	0	4410	1429	6 *3*	2981		2175	3 *1*	2981
2981	1967	2	1014		1675	3 *2*	2735		4142	20 *5*	1014
	2137	1	844		2199	5 *1*	2211		5156	74 *6*	0
	2981	97 *1*	0		3396	34 *6*	1014	5247	1291	5 *1*	3956
3004	793	14 *1*	2211		4410	52 *7*	0		2266	2 *1*	2981
	3004	86 *1*	0	4510	1506	23 *1*	3004		2512	5 *2*	2735
3680	2666	35 *4*	1014		2299	77 *1*	2211		3036	16 *2*	2211
	2836	63 *4*	844	4581	1846	9 *1*	2735		4233	69 *5*	1014
	3680	2 *1*	0		2370	19 *1*	2211		5247	3 *1*	0
3956	975	2 *1*	2981		3567	3	1014	5418	2683	8 *1*	2735

Continued on next page (footnotes at end of table)

^{24}Mg(α,pγ) 1988Li31 (continued)

$\gamma(^{27}Al)$ (continued)

E_i(level)	E_γ[†]	I_γ	E_f	E_i(level)	E_γ[†]	I_γ	E_f	E_i(level)	E_γ[†]	I_γ	E_f
5418	3207	87 *3*	2211	6477	6477	64 *2*	0	7280	7280	100[‡]	0
	5418	6 *2*	0	6512	2002	51 *7*	4510	7289	2779	100	4510
5433	2428	43 *7*	3004		3508	29 *6*	3004	7400	687	5 *1*	6713
	3221	15 *3*	2211		4301	20 *7*	2211		888	1	6512
	5433	42 *10*	0	6533	1100	3 *1*	5433		1900	13 *2*	5500
5438	2457	11 *5*	2981		1952	14 *3*	4581		2819	34 *4*	4581
	2703	13 *5*	2735		3529	15 *4*	3004		2890	11 *2*	4510
	5438	77 *8*	0		3798	15 *3*	2735		4396	35 *4*	3004
5500	990	4 *1*	4510		4322	35 *6*	2211	7413	5202	24 *3*	2211
	2496	76 *4*	3004		6533	18 *4*	0		7413	76 *3*	0
	3289	20 *3*	2211	6605	2925	29 *6*	3680	7442	1942	26 *3*	5500
5552	2571	6 *1*	2981		3624	13 *4*	2981		2932	8 *2*	4510
	2817	3 *1*	2735		5761	44 *8*	844		4438	66 *4*	3004
	3341	6 *1*	2211		6605	15 *7*	0	7477	4473	9 *5*	3004
	4538	10 *1*	1014	6650	1212	7 *3*	5438		5266	41 *7*	2211
	5552	75 *2*	0		3669	10 *4*	2981		7477	50 *7*	0
5667	1157	11 *4*	4510		5636	29 *9*	1014	7549	7549		0
	2663	55 *7*	3004		6650	55 *10*	0	7577	1750	7 *3*	5827
	5667	34 *7*	0	6713	2132	10 *1*	4581		3167	4 *2*	4410
5750	1794	5 *2*	3956		3709	71 *3*	3004		4596	20 *4*	2981
	2070	13 *2*	3680		3978	5 *1*	2735		6563	23 *4*	1014
	2769	28 *3*	2981		4502	14 *1*	2211		7577	46 *6*	0
	4736	18 *3*	1014	6765	2184	9 *1*	4581	7659	2159	5 *3*	5500
	4906	36 *4*	844		2809	9 *1*	3956		3078	15 *4*	4581
5827	1871	2	3956		3784	36 *3*	2981		3149	23 *5*	4510
	2147	15 *4*	3680		4030	22 *2*	2735		4655	28 *5*	3004
	4813	70 *7*	1014		5751	19 *1*	1014		5448	29 *5*	2211
	5827	13 *5*	0		6765	5	0	7677	7677	100	0
5961	1149	3 *1*	4812	6776	2366	9 *4*	4410	7679	4675	15 *3*	3004
	1551	2 *1*	4410		3096	8 *3*	3680		4944	21 *4*	2735
	2957	5 *2*	3004		3794	40 *10*	2981		5468	20 *5*	2211
	3226	31 *3*	2735		5932	20 *9*	844		7679	44 *7*	0
	3750	39 *4*	2211		6776	23 *8*	0	7721	4740	89 *1*	2981
	5961	19 *3*	0	6820	6820	100	0		5510	11 *1*	2211
6081	2125	7 *3*	3956	6948	1448	13 *2*	5500	7798	2360	78 *5*	5438
	5067	24 *2*	1014		1530	2 *1*	5418		7798	22 *5*	0
	6081	69 *4*	0		3944	64 *5*	3004	7805	3224	25 *5*	4581
6115	959	6 *3*	5156		4737	20 *4*	2211		3295	15 *4*	4510
	3134	11 *6*	2981	6992	4781	59 *14*	2211		5594	60 *6*	2211
	3904	22 *8*	2211		6992	41 *14*	0	7900	5164	66 *10*	2735
	5101	61 *11*	1014	6996	391	4 *2*	6605		7900	34 *10*	0
6159	3424	3 *2*	2735		1840	7 *4*	5156	7948	2448	3 *1*	5500
	5145	9 *2*	1014		3040	12 *7*	3956		2530	8 *2*	5418
	5315	81 *5*	844		6152	77 *11*	844		3438	46 *4*	4510
	6159	7 *2*	0	7071	6057	80 *10*	1014		4944	44 *4*	3004
6283	865	2 *1*	5418		6227	20 *10*	844	7997	4993	37 *5*	3004
	1873	4 *2*	4410	7174	1741	17 *8*	5433		5786	63 *5*	2211
	3279	8 *5*	3004		2593	31 *13*	4581	8037	3456	7 *3*	4581
	4072	41 *7*	2211		2664	16 *8*	4510		5826	12 *4*	2211
	6283	45 *7*	0		4170	28 *15*	3004		8037	80 *6*	0
6465	3484	9 *4*	2981		4963	9 *3*	2211	8043	2610	24 *7*	5433
	5451	23 *8*	1014	7226	1265	1	5961		5039	37 *8*	3004
	6465	68 *9*	0		1808	2 *1*	5418		8043	39 *8*	0
6477	2067	1	4410		2645	5 *1*	4581	8066	8066	100[#]	0
	3742	20 *1*	2735		4222	20 *2*	3004	8097	2347		5750
	4266	12 *1*	2211		5015	72 *3*	2211		3516		4581

Continued on next page (footnotes at end of table)

^{24}Mg(α,pγ) 1988Li31 (continued)

$\gamma(^{27}Al)$ (continued)

E_i(level)	E_γ †	I_γ	E_f	E_i(level)	E_γ †	I_γ	E_f	E_i(level)	E_γ †	I_γ	E_f
8097	5116		2981	8287	6076	24 *3*	2211	8586	6375	82 *6*	2211
	7083		1014	8324	7310	100	1014		8586	18 *6*	0
8136	7122	43 *16*	1014	8396	1884	8 *3*	6512	8674	4093	21 *5*	4581
	8136	57 *16*	0		2896	14 *3*	5500		6463	61 *7*	2211
8181	7337	80 *11*	844		3886	56 *6*	4510		8674	18 *4*	0
	8181	20 *11*	0		5392	22 *4*	3004	8692	1744	16 *5*	6948
8287	2620	6 *2*	5667	8442	5438	47 *9*	3004		4182	84 *5*	4510
	2849	16 *2*	5438		8442	53 *9*	0	8952	8952	100	0
	2869	20 *3*	5418	8521	7507	100	1014				
	5283	34 *4*	3004	8537	5802	100	2735				

† Deduced by the evaluator from level energy differences. γ-rays are implied in the level scheme, but their energies are not listed in 1988Li31.

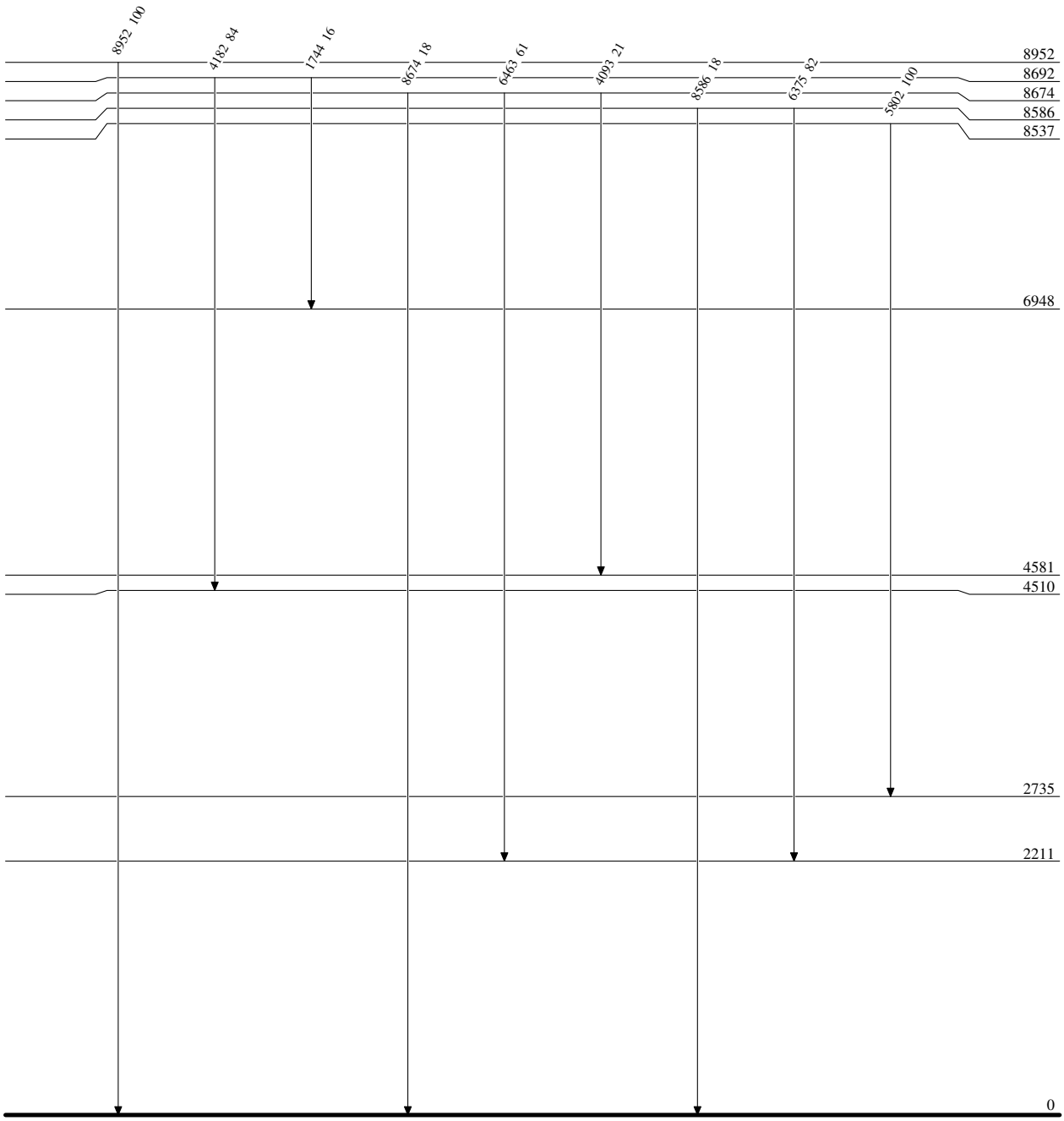
‡ 26 *5* in 1988Li31 and no other γ-ray was indicated from this level.

40 *10* in 1988Li31 and no other γ-ray was indicated from this level.

^{24}Mg(α,pγ) **1988Li31**

Level Scheme

Intensities: % photon branching from each level

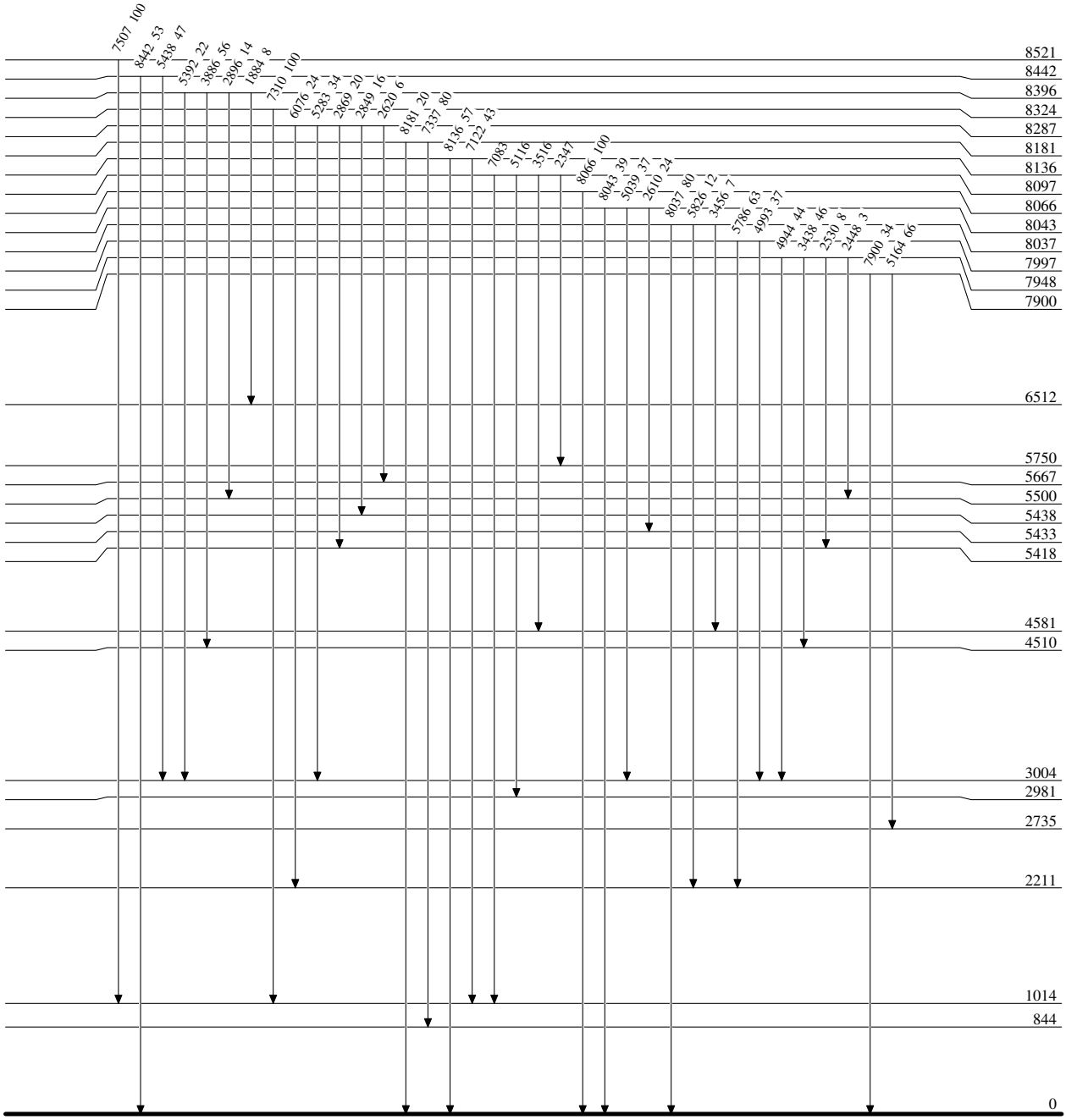


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level

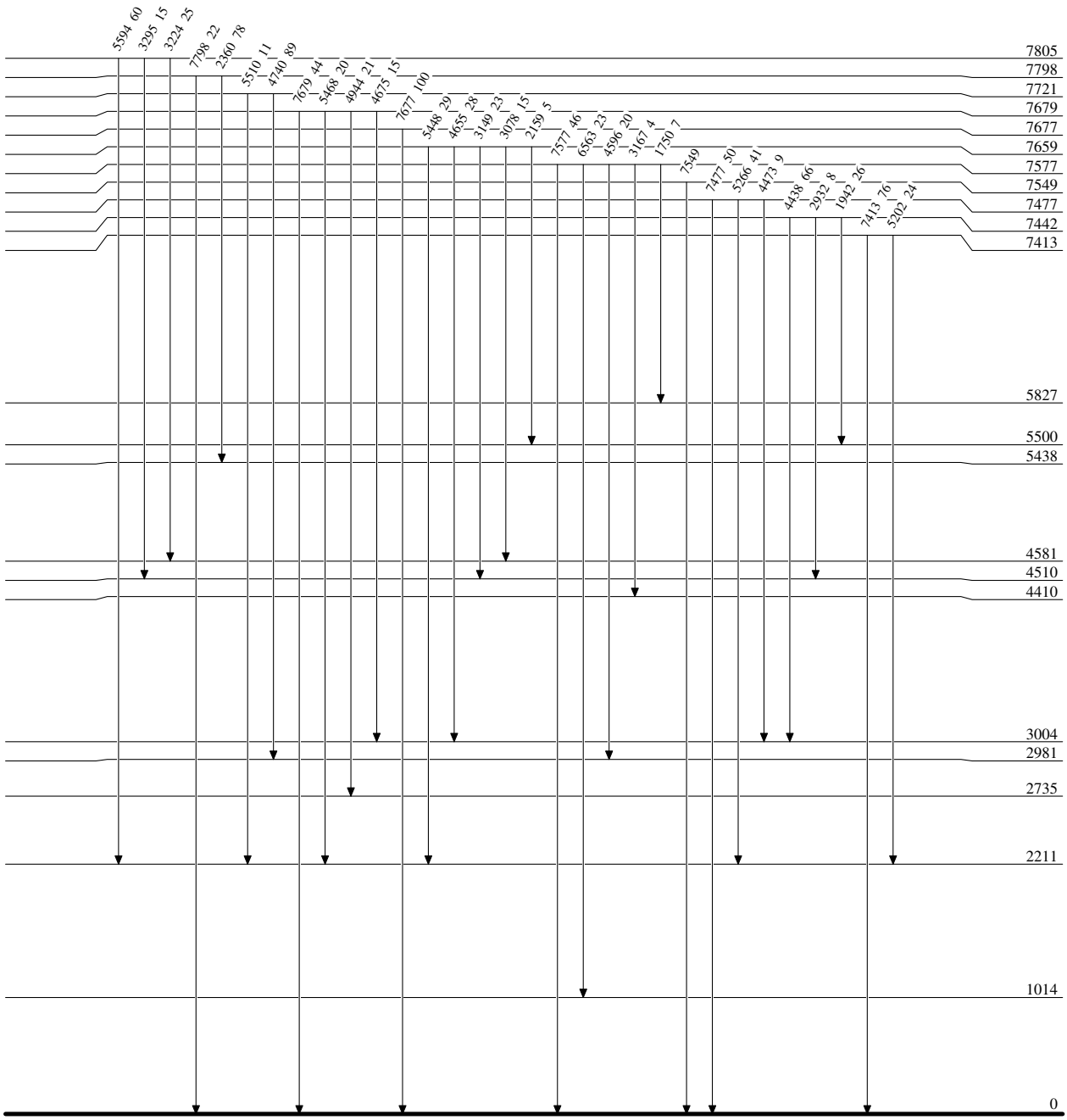


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level

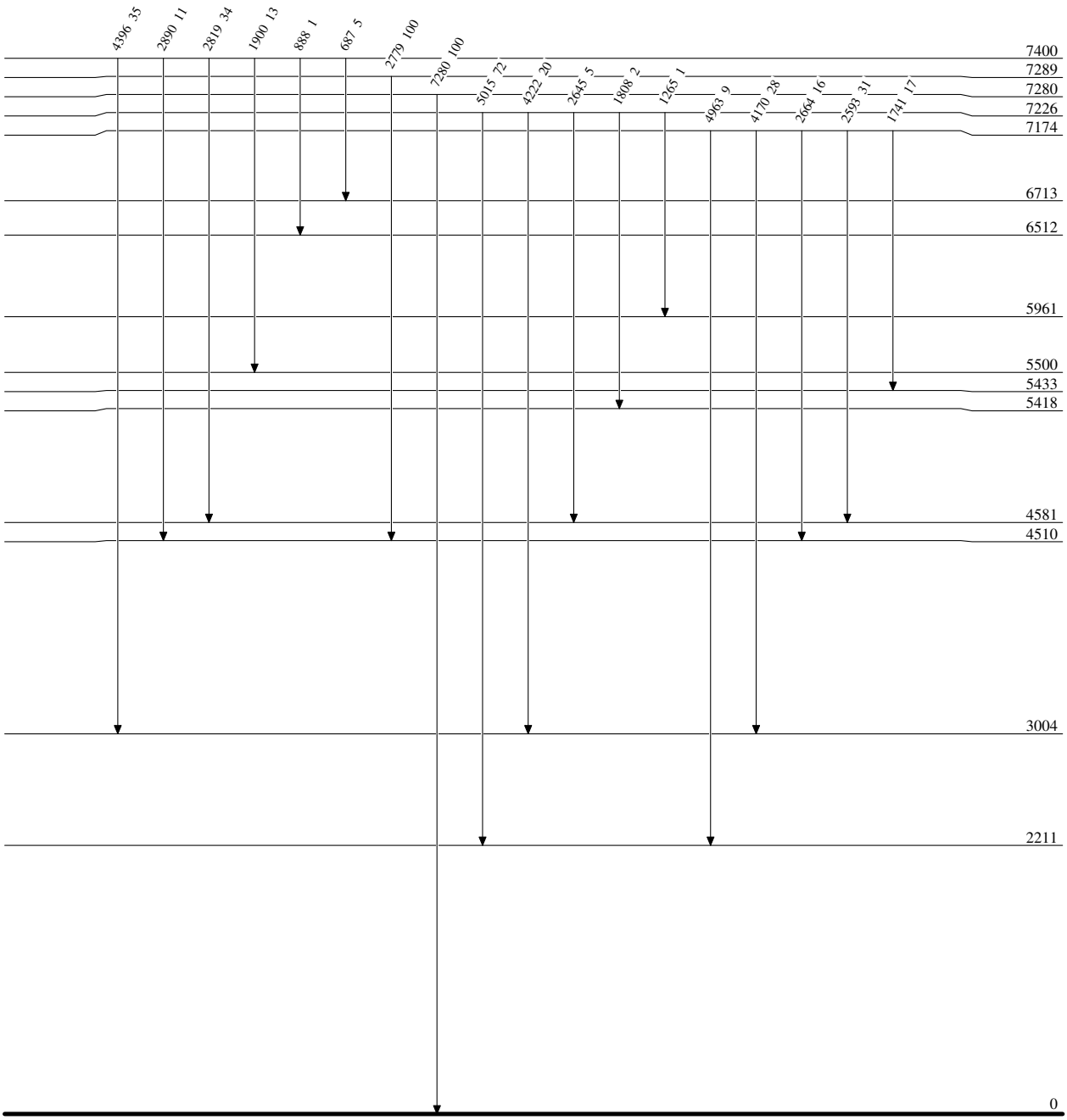


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level

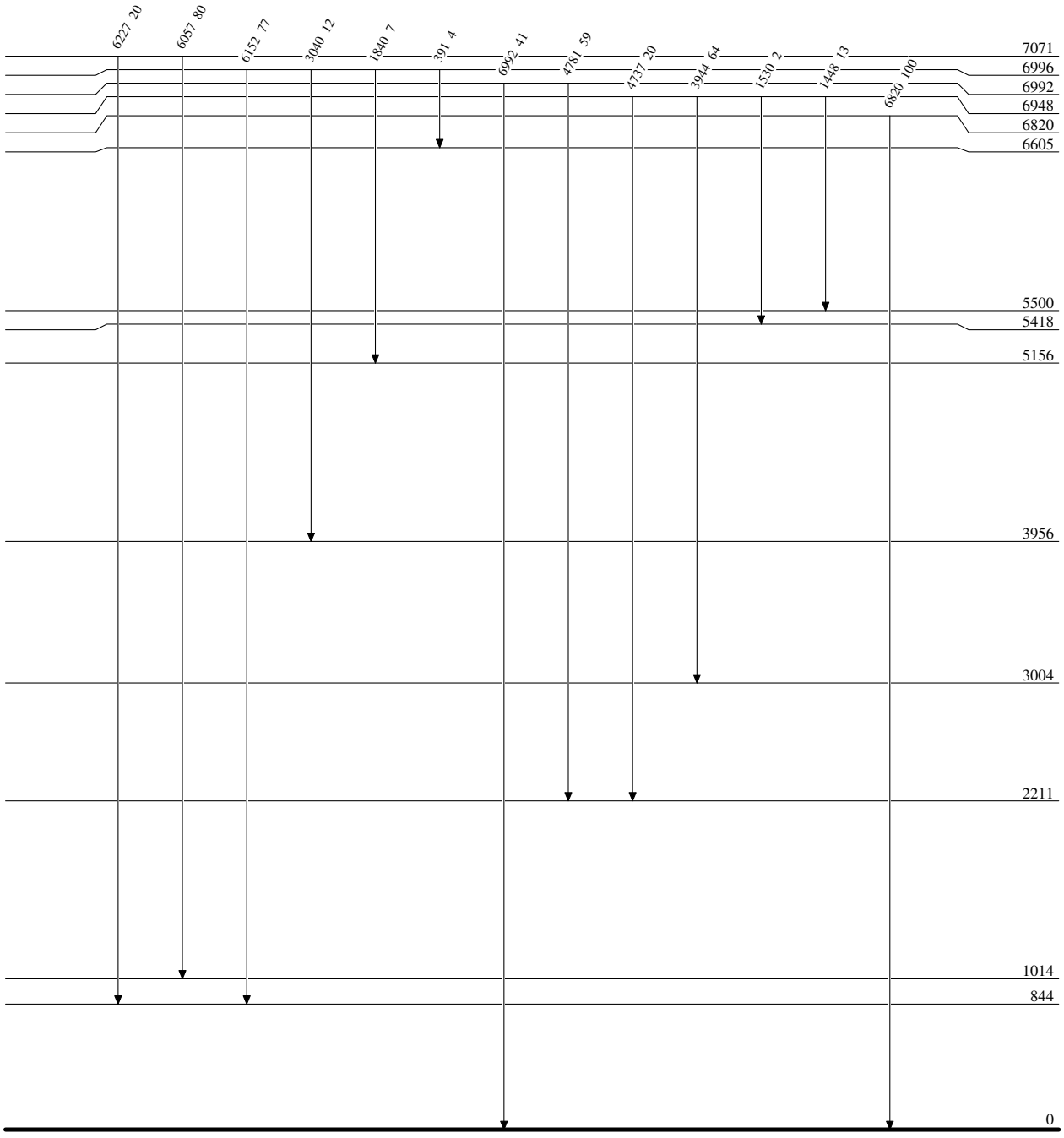


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level

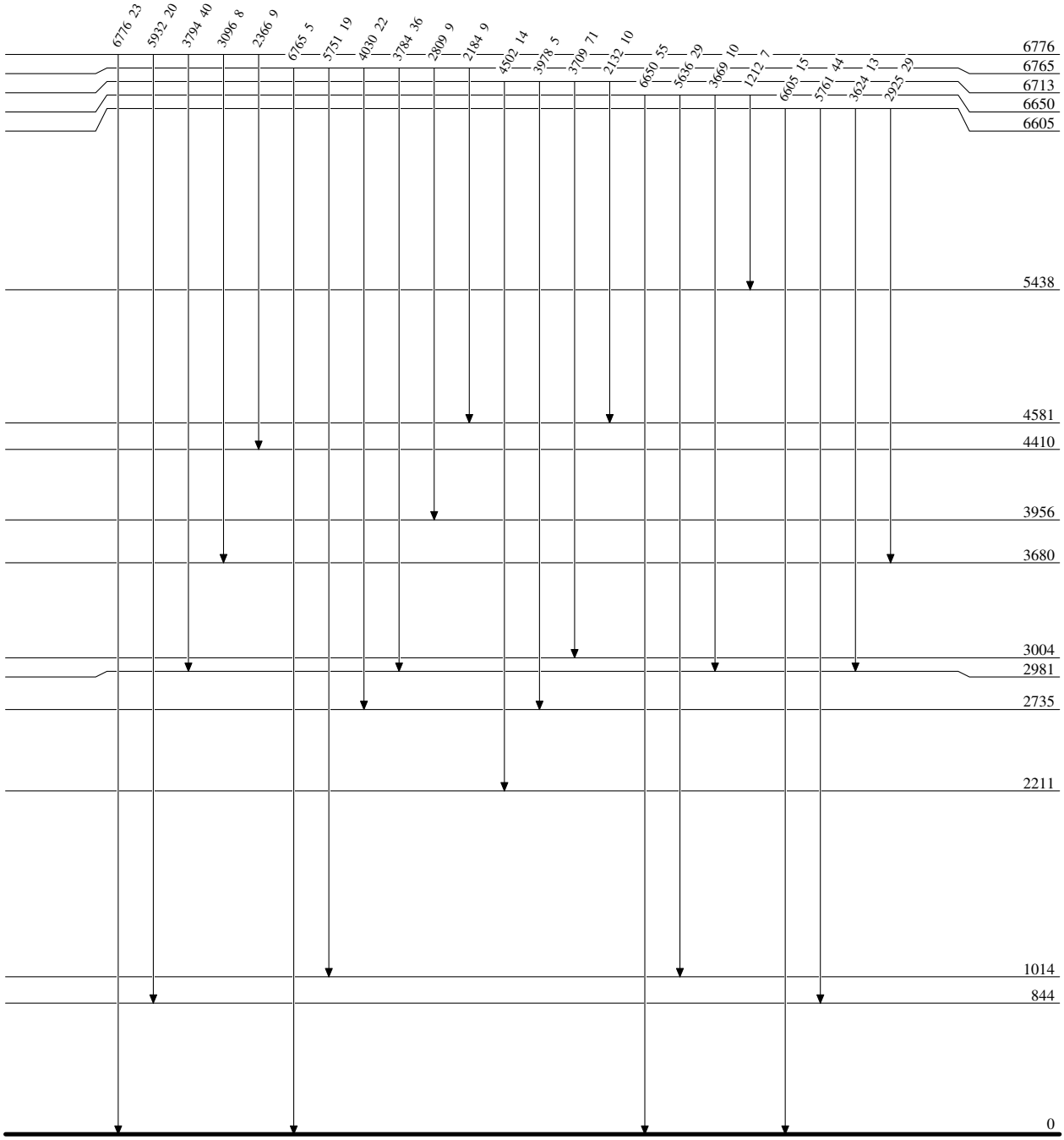


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level

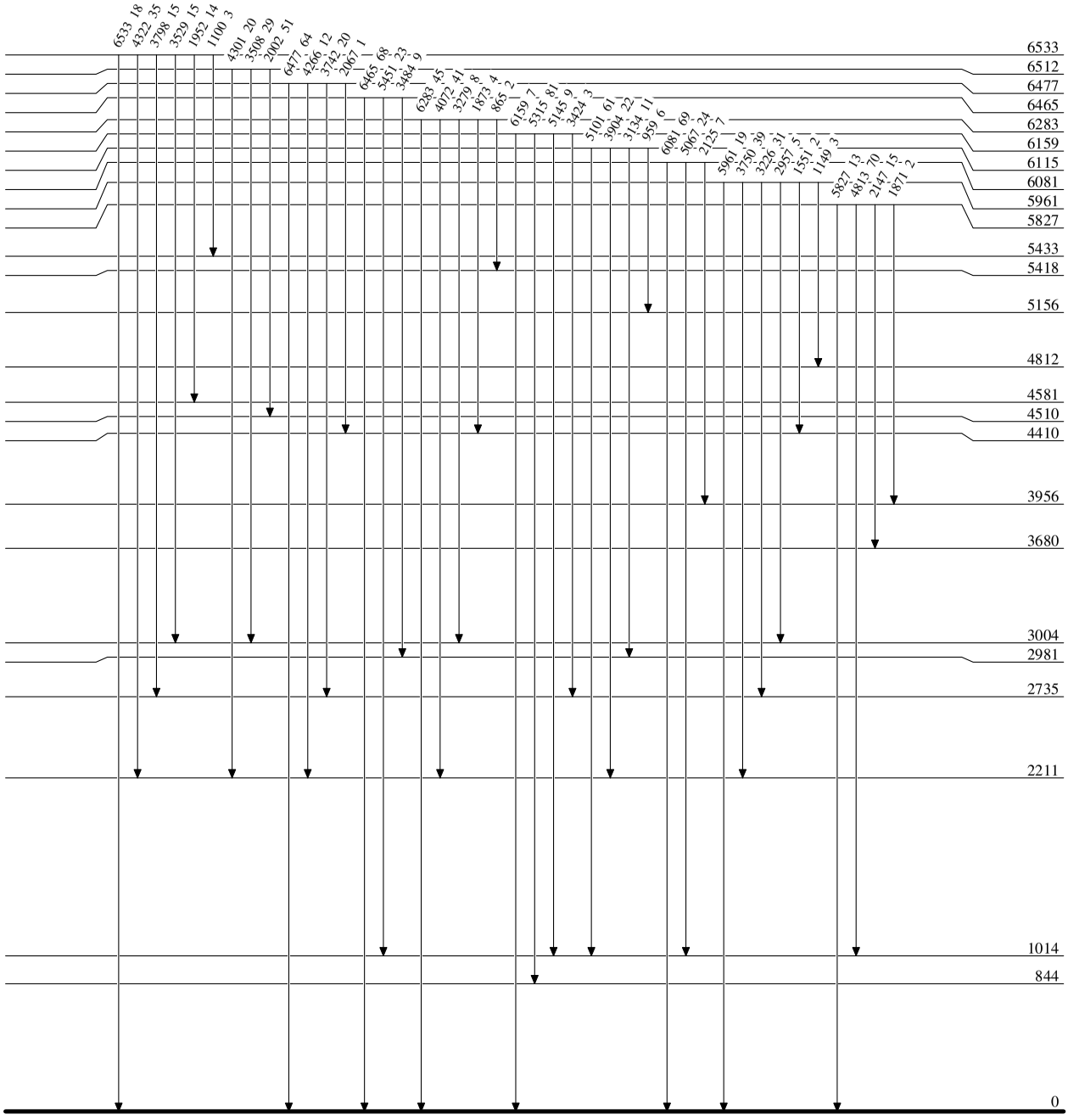


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) 1988Li31

Level Scheme (continued)

Intensities: % photon branching from each level

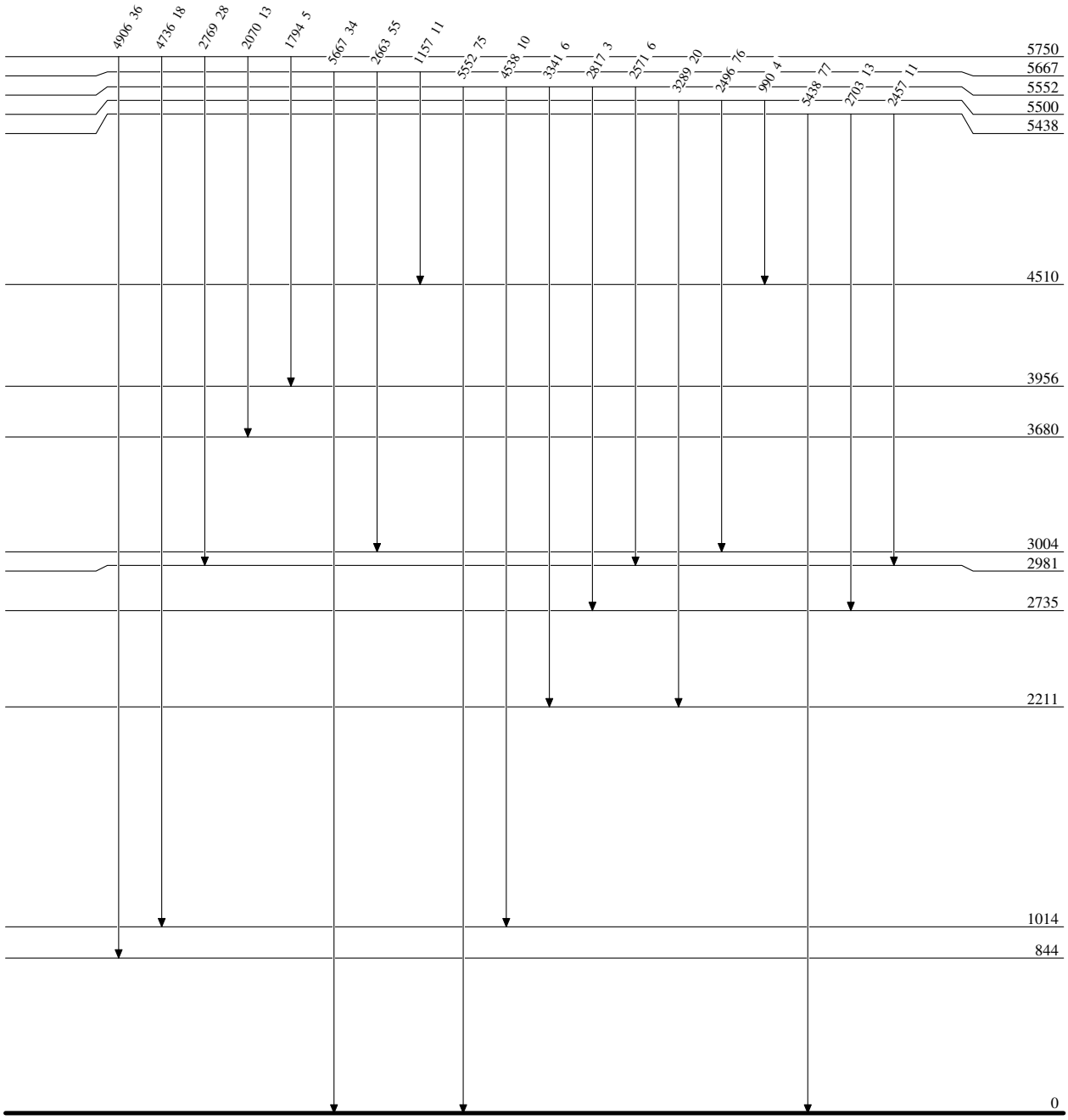


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level

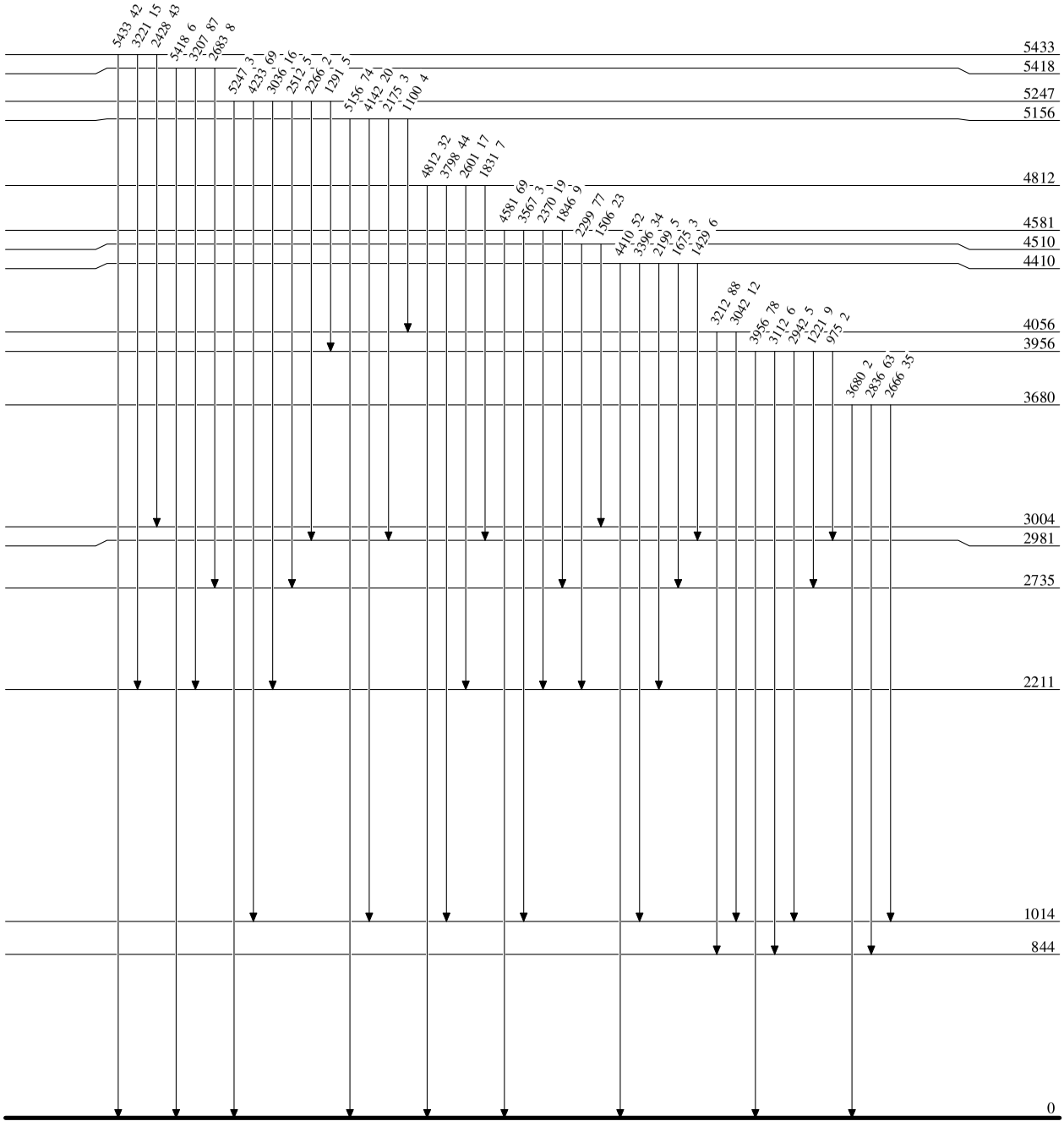


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) 1988Li31

Level Scheme (continued)

Intensities: % photon branching from each level

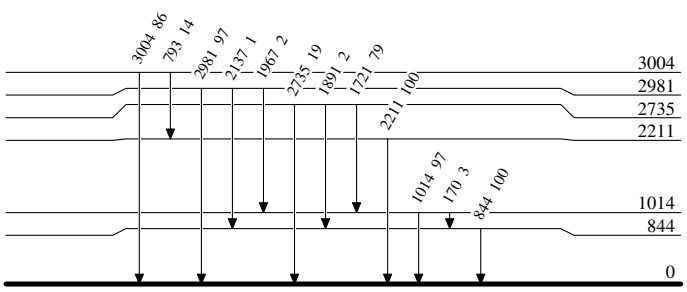


$^{27}_{13}Al_{14}$

^{24}Mg(α,pγ) **1988Li31**

Level Scheme (continued)

Intensities: % photon branching from each level



$^{27}_{13}Al_{14}$