^{27}Al(n,γ) E=thermal 1982Sc14,1990Is05,1990Ku22

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 114, 1189 (2013)	1-Apr-2013

Others: 2007ChZX, 1980De19, 1970Bo12, 1969Ha09, 1961Du05.
1982Sc14: Measured Eγ, Iγ with Ge(Li), curved crystal spectrometer, and pair spectrometer.
1990Is05: Measured Eγ, Iγ using a pair spectrometer consisting of a HPGe detector surrounded by a quadrisected NaI(Tl) annulus.
1990Ku22: ^{27}Al(n,γ), E=thermal; measured Eγ, Iγ. Deduced $T_{1/2}$ of ^{28}Al levels by Doppler Shift Attenuation Method.

^{28}Al Levels

E(level)†	J$^{\pi}$‡	$T_{1/2}$#	Comments
0.0	3$^+$	2.245 min *2*	$T_{1/2}$: From Adopted Levels.
30.6383 *7*	2$^+$	2.07 ns *5*	$T_{1/2}$: Others: 2.29 ns *21* (1961Du05), 2.15 ns *6* (1970Bo12).
972.40 *3*	0$^+$		
1013.631 *8*	3$^+$		
1372.963 *19*	1$^+$		
1620.32 *4*	1$^+$		
1622.903 *19*	2$^+$	58 fs *16*	
2138.920 *9*	2$^+$	3 fs *2*	
2201.43 *3*	1$^+$		
2271.768 *16*	4$^+$		
2486.175 *20*	2$^+$		
2565.69 *7*	1,2,3$^+$		E(level): This level is regarded as non-existing by the reviewer of the ^{27}Al(n,γ) spectrum of 1982Sc14. Please see Table 28d in 1998En04.
2582.05 *19*	5$^+$		
2656.08 *3*	4$^+$		
2987.57 *8*	(1,3)$^+$		
3296.387 *13*	3$^+$		
3347.190 *13*	2$^+$		
3465.292 *7*	4$^-$	76 fs *28*	
3591.449 *7*	3$^-$	25 fs *5*	
3670.77 *4*	3$^+$		
3709.220 *11*	(2,3)$^+$		
3875.781 *8*	2$^-$	8 fs *3*	
3900.996 *23*	(1,3,5)$^+$		
3935.584 *12*	2$^+$		
4244.41 *9*	2$^+$		
4461.91 *8*	(2,4)$^+$		
4596.51 *3*	1$^+$		J$^{\pi}$: 3$^+$ in Adopted Levels.
4691.099 *5*	3$^-$	2.1 fs *10*	
4764.925 *10*	2$^-$	3 fs *1*	
4903.575 *6*	2$^-$		
5015.384 *18*	3$^+$		
5134.839 *7*	3$^-$	<2 fs	
5176.96 *5*	(1$^+$,2,3$^+$)		
5344.73 *8*	(1$^+$ to 5$^+$)		E(level): This level is introduced by the reviewer of the ^{27}Al(n,γ) spectrum of 1982Sc14. Please see Table 28d in 1998En04.
5377.81 *4*	(1$^+$ to 4$^+$)		
5442.277 *7*	2$^-$	5 fs *4*	
5741.115 *13*	(1 to 4$^+$)		
5797.547 *17*	2$^-$		
5860.78 *3*	(2,3)$^+$		
6019.607 *25*	(1$^+$ to 4$^+$)		
6198.874 *12*	(2$^+$ to 4$^+$)	<9 fs	
6316.797 *9*	2$^+$		
6419.86 *7*	(1,2)$^+$		

Continued on next page (footnotes at end of table)

^{27}Al(n,γ) E=thermal 1982Sc14,1990Is05,1990Ku22 (continued)

^{28}Al Levels (continued)

E(level)†	J$^{\pi}$‡	Comments
6441.448 *11*	(3$^+$,4)	
6623.07 *4*	(1$^+$ to 4$^+$)	
6651.17 *5*	(0$^+$ to 3$^+$)	
6756.67 *5*	(2$^+$,3)	
6893.700 *20*	(2$^+$,3)	
7176.48 *5*	(1$^+$ to 3$^+$)	
7269.49 *6*	(2$^+$ to 4$^+$)	
7725.10 *6*	2$^+$,3$^+$	E(level): from 2012WA38. Observed deexcitation intensity is 92% of g.s. feeding.

† From a least-squares fit to γ-ray energies, except otherwise noted. In the least-squares fit, 1283.54γ, 3678.15γ, and 1975.2γ from 2656-, 3709-, and 5442-keV levels; 1720.0γ and 4001.7γ from 5015-keV level and 5522.96γ, 6101.4γ, and 6752.3γ from 7725-keV level are ignored because of their higher contribution to the Chi-squared value.

‡ Assignments from 1982Sc14, based on γ-ray decay.

From 1990Ku22, using the Doppler Shift Attenuation Method.

γ(^{28}Al)

Iγ normalization: normalized assuming Iγ(g.s.)=100.

E_γ[†]	I_γ[ad]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[c]	δ[c]	α[e]	Comments
30.6382 *7*	27.9 *CA*	30.6383	2^+	0.0	3^+	M1+E2	+0.001 *6*	0.0641	
400.58 *3*	0.63 *7*	1372.963	1^+	972.40	0^+	M1			
455.68 *18*	0.29 *7*	7725.10	$2^+,3^+$	7269.49	(2^+ to 4^+)				
548.70 *13*	0.23 *3*	7725.10	$2^+,3^+$	7176.48	(1^+ to 3^+)				
647.9 *12*	0.07 *4*	1620.32	1^+	972.40	0^+	M1			
831.45 *4*	1.3 *2*	7725.10	$2^+,3^+$	6893.700	(2^+,3)				
865.88 *15*	0.54 *7*	2486.175	2^+	1620.32	1^+				
941.79 *6*	1.3 *1*	972.40	0^+	30.6383	2^+	E2			
945.1 *5*	0.24 *7*	2565.69	$1,2,3^+$	1620.32	1^+				
968.71 *15*	0.42 *6*	7725.10	$2^+,3^+$	6756.67	(2^+,3)				
983.018 *16*	4.4 *5*	1013.631	3^+	30.6383	2^+	M1+E2	+0.13 *5*		
1013.676 *21*	2.7 *3*	1013.631	3^+	0.0	3^+	(M1)			
1073.87 *11*	0.57 *7*	7725.10	$2^+,3^+$	6651.17	(0^+ to 3^+)				
1101.8 *4*	0.7 *2*	7725.10	$2^+,3^+$	6623.07	(1^+ to 4^+)				
1125.54 *21*	0.38 *7*	2138.920	2^+	1013.631	3^+				
1173.4 *3*	0.39 *9*	4764.925	2^-	3591.449	3^-				
1193.64 *10*	0.6 *1*	3465.292	4^-	2271.768	4^+				
1283.54 *7*	1.1 *1*	2656.08	4^+	1372.963	1^+				E_γ: not adopted, γ ray transition from 4^+ to 1^+.
1283.54[f] *7*	1.1[f] *1*	7725.10	$2^+,3^+$	6441.448	(3^+,4)				
1304.8 *3*	0.19 *5*	7725.10	$2^+,3^+$	6419.86	$(1,2)^+$				
1342.30 *11*	1.0 *1*	1372.963	1^+	30.6383	2^+	M1+E2	−0.14 *9*		
1364.99 *20*	0.38 *6*	2987.57	$(1,3)^+$	1622.903	2^+				
1373.3 *5*	0.15 *8*	1372.963	1^+	0.0	3^+	E2			
1408.30 *6*	3.1 *3*	7725.10	$2^+,3^+$	6316.797	2^+				
(1437.40)	0.27 *6*	3709.220	$(2,3)^+$	2271.768	4^+				
1526.17 *11*	1.8 *2*	7725.10	$2^+,3^+$	6198.874	(2^+ to 4^+)				
(1570.24)	0.19 *6*	3709.220	$(2,3)^+$	2138.920	2^+				
1589.72 *8*	1.6 *2*	1620.32	1^+	30.6383	2^+	M1+E2	+0.18 *9*		
1592.29 *12*	0.36 *5*	1622.903	2^+	30.6383	2^+				
1622.87 *6*	4.6 *5*	1622.903	2^+	0.0	3^+				
1642.35 *10*	0.30 *5*	2656.08	4^+	1013.631	3^+	(M1)			
1673.43 *11*	0.23 *3*	3296.387	3^+	1622.903	2^+				
1705.38 *8*	0.39 *5*	7725.10	$2^+,3^+$	6019.607	(1^+ to 4^+)				
1720.0[f‡] *3*	0.08[f] *5*	5015.384	3^+	3296.387	3^+				
1720.0[f‡] *3*	0.08[f] *5*	6316.797	2^+	4596.51	1^+				
1720.0[f‡] *3*	0.08[f] *5*	6623.07	(1^+ to 4^+)	4903.575	2^-				
1864.59 *22*	0.46 *7*	7725.10	$2^+,3^+$	5860.78	$(2,3)^+$				
1927.87 *16*	1.2 *2*	7725.10	$2^+,3^+$	5797.547	2^-				

γ(^{28}Al) (continued)

E_γ[†]	I_γ[ad]	E_i(level)	J^π_i	E_f	J^π_f
[x]1963.68 *20*	0.05 *1*				
1968.35 *12*	0.10 *1*	3591.449	3^-	1622.903	2^+
1975.2[f] *5*	0.025[f] *8*	2987.57	$(1,3)^+$	1013.631	3^+
1975.2[f] *5*	0.025[f] *8*	3347.190	2^+	1372.963	1^+
1975.2[f‡] *5*	0.025[f] *8*	4461.91	$(2,4)^+$	2486.175	2^+
1975.2[f‡] *5*	0.025[f] *8*	5442.277	2^-	3465.292	4^-
1983.99 *20*	1.1 *1*	7725.10	$2^+,3^+$	5741.115	(1 to 4^+)
2047.70 *23*	0.07 *1*	3670.77	3^+	1622.903	2^+
2108.24 *4*	2.8 *1*	2138.920	2^+	30.6383	2^+
2128.81 *7*	0.34 *2*	6893.700	$(2^+,3)$	4764.925	2^-
2138.828 *18*	2.2 *1*	2138.920	2^+	0.0	3^+
2170.70 *3*	0.45 *3*	2201.43	1^+	30.6383	2^+
2247.21[‡] *23*	0.040 *6*	4903.575	2^-	2656.08	4^+
2255.42 *5*	0.55 *4*	3875.781	2^-	1620.32	1^+
2271.650 *23*	2.1 *1*	2271.768	4^+	0.0	3^+
2276.7[f] *11*	0.04[f] *3*	3900.996	$(1,3,5)^+$	1622.903	2^+
2276.7[f‡] *11*	0.04[f] *3*	4764.925	2^-	2486.175	2^+
2276.7[f‡] *11*	0.04[f] *3*	5741.115	(1 to 4^+)	3465.292	4^-
[x]2279.1 *7*	0.08 *3*				
2282.773 *14*	4.7 *2*	7725.10	$2^+,3^+$	5442.277	2^-
[x]2299.94 *10*	0.12 *1*				
2313.3[‡] *3*	0.035 *6*	3935.584	2^+	1622.903	2^+
2347.38 *10*	0.16 *1*	7725.10	$2^+,3^+$	5377.81	(1^+ to 4^+)
[x]2380.34 *5*	0.21 *1*				
[x]2384.3 *3*	0.034 *6*				
2419.36 *8*	0.14 *1*	4691.099	3^-	2271.768	4^+
2451.48 *4*	0.39 *2*	3465.292	4^-	1013.631	3^+
2455.8 *3*	0.036 *7*	2486.175	2^+	30.6383	2^+
2486.09 *7*	0.18 *1*	2486.175	2^+	0.0	3^+
2502.85 *7*	0.16 *1*	3875.781	2^-	1372.963	1^+
2534.62 *12*	0.084 *8*	2565.69	$1,2,3^+$	30.6383	2^+
2548.08 *8*	0.15 *1*	7725.10	$2^+,3^+$	5176.96	$(1^+,2,3^+)$
2552.07 *12*	0.094 *8*	4691.099	3^-	2138.920	2^+
2563.51 *23*	0.10 *1*	4764.925	2^-	2201.43	1^+
[x]2567.8 *3*	0.70 *1*				
2577.725 *21*	2.2 *1*	3591.449	3^-	1013.631	3^+
2582.2 *5*	0.05 *1*	2582.05	5^+	0.0	3^+
2590.244 *14*	4.05[b] *14*	7725.10	$2^+,3^+$	5134.839	3^-
2625.903 *16*	1.37 *7*	4764.925	2^-	2138.920	2^+
[x]2656.34 *7*	0.16 *1*				
2691.0 *3*	0.029 *6*	5176.96	$(1^+,2,3^+)$	2486.175	2^+

$\gamma(^{28}$Al) (continued)

E_γ[†]	I_γ[ad]	E_i(level)	J_i^π	E_f	J_f^π	Comments
2709.665 *20*	0.69 *4*	7725.10	2+,3+	5015.384	3+	
[x]2717.4 *4*	0.021 *5*					
2724.6 *5*	0.021 *6*	6316.797	2+	3591.449	3−	
[x]2728.27 *5*	0.27 *1*					
[x]2733.64 *3*	0.38 *2*					
2743.74 *19*	0.045 *6*	5015.384	3+	2271.768	4+	
2821.461 *16*	3.9 *2*	7725.10	2+,3+	4903.575	2−	
2862.24 *22*	0.038 *6*	3875.781	2−	1013.631	3+	
2876.29 *8*	0.116 *8*	5442.277	2−	2565.69	1,2,3+	E_γ: This γ ray is feeding 2566 keV level. Which is revised as non-existing. So the γ ray is not adopted.
2881.2 *3*	0.027 *5*	6756.67	(2+,3)	3875.781	2−	
2887.22 *4*	0.23 *1*	3900.996	(1,3,5)+	1013.631	3+	
[x]2893.87 *17*	0.049 *6*					
2902.7 *7*	0.011 *5*	3875.781	2−	972.40	0+	I_γ: Not measured (1982Sc14).
2921.84 *3*	0.28 *1*	3935.584	2+	1013.631	3+	
2954.88[#] *19*	0.23 *3*	6419.86	(1,2)+	3465.292	4−	
2974.0 *3*	0.024 *3*	4596.51	1+	1622.903	2+	
2987.69 *17*	0.32 *4*	2987.57	(1,3)+	0.0	3+	
3016.7 *7*	0.06 *2*	6893.700	(2+,3)	3875.781	2−	
3020.3 *7*	0.07 *2*	6316.797	2+	3296.387	3+	
3023.8 *8*	0.05 *2*	7269.49	(2+ to 4+)	4244.41	2+	
3033.893 *13*	8.7[b] *3*	7725.10	2+,3+	4691.099	3−	
[x]3053.6 *4*	0.021 *5*					
3068.16 *10*	0.081 *6*	4691.099	3−	1622.903	2+	
[x]3075.65 *9*	0.083 *6*					
3128.51 *4*	0.24 *1*	7725.10	2+,3+	4596.51	1+	
[x]3142.22 *6*	0.16 *1*					
[x]3191.20 *12*	0.048 *3*					
[x]3208.27 *7*	0.092 *6*					
3222.83 *12*	0.049 *3*	6893.700	(2+,3)	3670.77	3+	
3230.68 *20*	0.027 *3*	4244.41	2+	1013.631	3+	
3254.9 *3*	0.022 *3*	5741.115	(1 to 4+)	2486.175	2+	
3263.18 *16*	0.10 *1*	7725.10	2+,3+	4461.91	(2,4)+	
3265.49 *4*	0.42 *3*	3296.387	3+	30.6383	2+	
3303.150 *13*	1.14 *6*	5442.277	2−	2138.920	2+	
3316.5 *3*	0.025 *3*	3347.190	2+	30.6383	2+	
3346.978 *18*	0.50 *3*	3347.190	2+	0.0	3+	
[x]3375.08 *24*	0.026 *3*					
3392.00 *10*	0.57 *3*	4764.925	2−	1372.963	1+	
3409.2 *3*	0.023 *3*	6756.67	(2+,3)	3347.190	2+	
3448.03 *23*	0.032 *5*	4461.91	(2,4)+	1013.631	3+	
3465.067 *10*	7.06[b] *24*	3465.292	4−	0.0	3+	
[x]3472.3 *3*	0.06 *1*					

$^{28}_{13}Al_{15}$-5

γ(^{28}Al) (continued)

E_γ[†]	I_γ[ad]	E_i(level)	J^π_i	E_f	J^π_f	Comments
3480.77 16	0.12 1	7725.10	$2^+,3^+$	4244.41	2^+	
3560.547 19	0.93 5	3591.449	3^-	30.6383	2^+	
[x]3569.9 3	0.036 6					
3591.211 11	4.70[b] 14	3591.449	3^-	0.0	3^+	
3598.66 12	0.15 1	7269.49	$(2^+$ to $4^+)$	3670.77	3^+	
3623.74[@] 7	0.086 6	4596.51	1^+	972.40	0^+	
3634.8[‡] 6	0.010 3	6623.07	$(1^+$ to $4^+)$	2987.57	$(1,3)^+$	
3639.88 9	0.073 5	3670.77	3^+	30.6383	2^+	
3659.08 9	0.064 5	5860.78	$(2,3)^+$	2201.43	1^+	
[x]3671.22 8	0.070 5					
3678.15 5	0.31 2	3709.220	$(2,3)^+$	30.6383	2^+	
[x]3702.22 7	0.078 5					
3708.976 16	0.45 2	3709.220	$(2,3)^+$	0.0	3^+	
3721.52 22	0.030 3	5860.78	$(2,3)^+$	2138.920	2^+	
[x]3725.1 3	0.024 3					
3750.83[f] 18	0.035[f] 3	4764.925	2^-	1013.631	3^+	
3750.83[f] 18	0.035[f] 3	6316.797	2^+	2565.69	$1,2,3^+$	E_γ: This γ ray is feeding 2566 keV level. Which is revised as non-existing. So the γ ray is not adopted.
3754.70 15	0.043 3	5377.81	$(1^+$ to $4^+)$	1622.903	2^+	
3768.6 4	0.013 2	6756.67	$(2^+,3)$	2987.57	$(1,3)^+$	
3789.331 14	0.87 4	7725.10	$2^+,3^+$	3935.584	2^+	
3803.7 5	0.011 3	5176.96	$(1^+,2,3^+)$	1372.963	1^+	
3820.9 4	0.033 8	5442.277	2^-	1620.32	1^+	
3823.90 3	0.56 3	7725.10	$2^+,3^+$	3900.996	$(1,3,5)^+$	
3849.108 10	3.1 2	7725.10	$2^+,3^+$	3875.781	2^-	
3859.47 24	0.046 6	6441.448	$(3^+,4)$	2582.05	5^+	
[x]3865.7 4	0.027 6					
3875.480 11	2.7 1	3875.781	2^-	0.0	3^+	
[x]3881.8 4	0.027 6					
3889.73 6	0.23 1	4903.575	2^-	1013.631	3^+	
3900.65 7	0.23 1	3900.996	$(1,3,5)^+$	0.0	3^+	
3904.76 8	0.20 1	3935.584	2^+	30.6383	2^+	
3926.86 24	0.023 3	6198.874	$(2^+$ to $4^+)$	2271.768	4^+	
3935.276 23	0.33 2	3935.584	2^+	0.0	3^+	
[x]3949.8 4	0.014 2					
4001.70 5	0.135 8	5015.384	3^+	1013.631	3^+	
4015.664 14	0.73 4	7725.10	$2^+,3^+$	3709.220	$(2,3)^+$	
[x]4023.21 5	0.138 8					
4045.00 23	0.023 2	6316.797	2^+	2271.768	4^+	
4054.04 5	0.143 8	7725.10	$2^+,3^+$	3670.77	3^+	
4059.78 19	0.030 3	6198.874	$(2^+$ to $4^+)$	2138.920	2^+	
4068.99 4	0.157 8	5442.277	2^-	1372.963	1^+	

$^{28}_{13}$Al$_{15}$-6

γ(^{28}Al) (continued)

E_γ[†]	I_γ[ad]	E_i(level)	J^π_i	E_f	J^π_f
4085.1[@] 5	0.008 2	6651.17	$(0^+$ to $3^+)$	2565.69	$1,2,3^+$
4101.7 5	0.016 5	6756.67	$(2^+,3)$	2656.08	4^+
4119.9[f] 4	0.040[f] 8	5134.839	3^-	1013.631	3^+
4119.9[f] 4	0.040[f] 8	5741.115	(1 to 4^+)	1620.32	1^+
[x]4125.09 22	0.088 9				
4133.408 8	6.95[b] 21	7725.10	$2^+,3^+$	3591.449	3^-
4162.4[f] 5	0.019[f] 5	5134.839	3^-	972.40	0^+
4162.4[f] 5	0.019[f] 5	5176.96	$(1^+,2,3^+)$	1013.631	3^+
4169.38 6	0.122 7	6441.448	$(3^+,4)$	2271.768	4^+
[x]4175.96 23	0.030 3				
[x]4185.23 10	0.064 5				
4213.49 11	0.056 3	4244.41	2^+	30.6383	2^+
4218.04 22	0.027 3	6419.86	$(1,2)^+$	2201.43	1^+
4237.43[f] 10	0.060[f] 5	5860.78	$(2,3)^+$	1622.903	2^+
4237.43[f] 10	0.060[f] 5	6893.700	$(2^+,3)$	2656.08	4^+
4259.539 8	6.90[b] 21	7725.10	$2^+,3^+$	3465.292	4^-
4270.1 3	0.054 7	6756.67	$(2^+,3)$	2486.175	2^+
4280.37 10	0.17 1	6419.86	$(1,2)^+$	2138.920	2^+
[x]4330.75 12	0.052 3				
4330.75[&] 12	0.052 3	5344.73	$(1^+$ to $5^+)$	1013.631	3^+
4377.625 16	0.43 2	7725.10	$2^+,3^+$	3347.190	2^+
[x]4384.1 4	0.010 2				
4396.40 6	0.058 3	6019.607	$(1^+$ to $4^+)$	1622.903	2^+
4424.24 3	0.36 2	5797.547	2^-	1372.963	1^+
4428.410 13	0.81 4	7725.10	$2^+,3^+$	3296.387	3^+
[x]4447.27 19	0.019 2				
4461.60 10	0.042 3	4461.91	$(2,4)^+$	0.0	3^+
4484.53 6	0.071 5	6756.67	$(2^+,3)$	2271.768	4^+
4511.86 5	0.084 5	6651.17	$(0^+$ to $3^+)$	2138.920	2^+
4565.67 15	0.027 2	4596.51	1^+	30.6383	2^+
4575.557 21	0.30 2	6198.874	$(2^+$ to $4^+)$	1622.903	2^+
[x]4582.21 11	0.041 3				
4596.14 4	0.124 7	4596.51	1^+	0.0	3^+
4613.2 4	0.016 2	7269.49	$(2^+$ to $4^+)$	2656.08	4^+
[x]4617.77 12	0.082 6				
4621.47 5	0.19 1	6893.700	$(2^+,3)$	2271.768	4^+
4660.039 8	2.60[b] 7	4691.099	3^-	30.6383	2^+
4690.677 7	4.70[b] 14	4691.099	3^-	0.0	3^+
4733.847 12	5.5 3	4764.925	2^-	30.6383	2^+
4737.40 9	0.45 2	7725.10	$2^+,3^+$	2987.57	$(1,3)^+$
4754.24 4	0.38 2	6893.700	$(2^+,3)$	2138.920	2^+
4764.45 3	0.91 5	4764.925	2^-	0.0	3^+
[x]4769.61 15	0.113 9				
4783.0 5	0.011 3	5797.547	2^-	1013.631	3^+
[x]4812.54 17	0.031 2				
[x]4868.80 9	0.058 3				
4903.115 6	3.20[b] 14	4903.575	2^-	0.0	3^+
[x]4965.8 4	0.009 1				
4984.30 4	0.113 6	5015.384	3^+	30.6383	2^+
[x]4996.64 7	0.064 3				
5005.45 9	0.048 3	6019.607	$(1^+$ to $4^+)$	1013.631	3^+
5016.5[‡] 12	0.003 1	5015.384	3^+	0.0	3^+
[x]5031.5 17	0.017 1				
5068.58 3	0.173 9	7725.10	$2^+,3^+$	2656.08	4^+
5103.718 15	0.39 2	5134.839	3^-	30.6383	2^+
5130.40 15	0.107 9	7269.49	$(2^+$ to $4^+)$	2138.920	2^+
5134.342 9	3.04[b] 9	5134.839	3^-	0.0	3^+
5141.8 4	0.015 2	7725.10	$2^+,3^+$	2582.05	5^+
5176.44 6	0.070 3	5176.96	$(1^+,2,3^+)$	0.0	3^+
5184.99 13	0.030 2	6198.874	$(2^+$ to $4^+)$	1013.631	3^+
[x]5203.54 21	0.017 1				
[x]5209.30 24	0.022 2				
[x]5213.4 5	0.009 2				
[x]5228.4 4	0.008 1				
5238.481 20	0.26 1	7725.10	$2^+,3^+$	2486.175	2^+
[x]5269.91 6	0.057 3				
5277.56 16	0.021 1	6651.17	$(0^+$ to $3^+)$	1372.963	1^+
5302.650 14	0.47 2	6316.797	2^+	1013.631	3^+
[x]5315.14 12	0.031 2				
5344.24 17	0.017 1	6316.797	2^+	972.40	0^+
5377.27 4	0.080 5	5377.81	$(1^+$ to $4^+)$	0.0	3^+
5411.069 8	2.0 1	5442.277	2^-	30.6383	2^+
5427.19 7	0.087 5	6441.448	$(3^+,4)$	1013.631	3^+
5441.9 3	0.015 2	5442.277	2^-	0.0	3^+
5446.88[#] 15	0.035 2	6419.86	$(1,2)^+$	972.40	0^+
5452.77 3	0.168 9	7725.10	$2^+,3^+$	2271.768	4^+
[x]5459.39 18	0.021 2				
5522.96 6	0.064 3	7725.10	$2^+,3^+$	2201.43	1^+
[x]5564.6 5	0.007 1				
5585.54 5	1.10 5	7725.10	$2^+,3^+$	2138.920	2^+

γ(^{28}Al) (continued)

E_γ [†]	I_γ [ad]	E_i(level)	J^π_i	E_f	J^π_f
[x]5594.7 4	0.009 1				
5709.852 13	0.56 3	5741.115	(1 to 4^+)	30.6383	2^+
[x]5719.14 16	0.022 2				
[x]5729.6 4	0.008 1				
[x]5748.2 4	0.002 2				
[x]5760.57 24	0.023 2				
5766.250 22	0.38 2	5797.547	2^-	30.6383	2^+
5796.94 4	0.124 7	5797.547	2^-	0.0	3^+
5802.76 10	0.035 2	7176.48	(1^+ to 3^+)	1372.963	1^+
5829.89 24	0.013 1	5860.78	$(2,3)^+$	30.6383	2^+
5860.13 3	0.155 8	5860.78	$(2,3)^+$	0.0	3^+
5879.03 24	0.026 2	6893.700	(2^+,3)	1013.631	3^+
[x]5882.6 6	0.009 2				
[x]5923.42 7	0.043 2				
[x]5969.54 15	0.023 2				
5988.32 15	0.023 2	6019.607	(1^+ to 4^+)	30.6383	2^+
6018.88 3	0.187 9	6019.607	(1^+ to 4^+)	0.0	3^+
6101.40 5	2.65[b] 7	7725.10	2^+,3^+	1622.903	2^+
[x]6109.6 7	0.010 2				
[x]6121.3 5	0.011 2				
6161.8 3	0.013 2	7176.48	(1^+ to 3^+)	1013.631	3^+
6198.138 12	0.69[b] 2	6198.874	(2^+ to 4^+)	0.0	3^+
[x]6210.8 3	0.013 1				
6255.05 23	0.014 1	7269.49	(2^+ to 4^+)	1013.631	3^+
[x]6289.6 8	0.003 1				
6316.017 10	2.0 1	6316.797	2^+	0.0	3^+
[x]6329.5 8	0.008 2				
6351.36 4	0.109 6	7725.10	2^+,3^+	1372.963	1^+
[x]6390.2 5	0.008 1				
6420.0 5	0.006 1	6419.86	$(1,2)^+$	0.0	3^+
6440.648 11	0.69[b] 2	6441.448	(3^+,4)	0.0	3^+
[x]6449.5 5	0.007 1				
[x]6459.69 22	0.016 1				
6591.61 4	0.164 9	6623.07	(1^+ to 4^+)	30.6383	2^+
6619.59 14	0.24 2	6651.17	(0^+ to 3^+)	30.6383	2^+
6621.79 18	0.19 2	6623.07	(1^+ to 4^+)	0.0	3^+
[x]6628.4 5	0.011 2				
6710.702 15	0.90 5	7725.10	2^+,3^+	1013.631	3^+
6725.15 8	0.086 5	6756.67	(2^+,3)	30.6383	2^+
6752.32[g] 12	0.058 3	7725.10	2^+,3^+	972.40	0^+
[x]6800.7 3	0.022 2				
[x]6823.03 11	0.055 3				
6862.22 4	0.173 9	6893.700	(2^+,3)	30.6383	2^+

$^{28}_{13}$Al$_{15}$-8

$\gamma(^{28}Al)$ (continued)

E_γ[†]	I_γ[ad]	E_i(level)	J^π_i	E_f	J^π_f	Comments
[x]6894.27 *17*	0.031 *2*					
[x]6936.97 *5*	0.124 *7*					
[x]7135.24 *12*	0.054 *3*					
7175.53 *5*	0.133 *7*	7176.48	(1^+ to 3^+)	0.0	3^+	
7237.68 *8*	0.087 *5*	7269.49	(2^+ to 4^+)	30.6383	2^+	
7268.44 *14*	0.038 *2*	7269.49	(2^+ to 4^+)	0.0	3^+	
[x]7342.25 *11*	0.060 *3*					
[x]7377.0 *3*	0.021 *2*					
[x]7407.73 *11*	0.065 *5*					
7693.398 *11*	3.45[b] *14*	7725.10	2^+,3^+	30.6383	2^+	
7724.034 *7*	26.8 *1*	7725.10	2^+,3^+	0.0	3^+	I_γ: 29.5 *7* in 1990Is05.

† From 1982Sc14. Only statistical uncertainty is given. In order to obtain total uncertainty 8 or 11 ppm has to be added in quadrature below or above 2.2 MeV, respectively.

‡ Doubtful γ ray and not adopted.

\# The decay to the 972 keV *0+* level and to the 3465 keV *4* level is unlikely. Therefore, one of the transitions might be placed by chance.

@ This γ ray is discarded by the reviewer of the ^{27}Al(n,γ) spectrum of 1982Sc14. Please see Table 28d in 1998En04.

& This γ ray is added by the reviewer of the ^{27}Al(n,γ) spectrum of 1982Sc14. Please see Table 28d in 1998En04.

a From 1982Sc14, except otherwise noted. Reported Iγ of γ-ray transitions in 1990Is05 is in good agreement with the data in 1982Sc14, except for the 7724 keV transition.

b Weighted average of data from 1982Sc14 and 1990Is05.

c From Adopted Gammas.

d Intensity per 100 neutron captures.

e Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

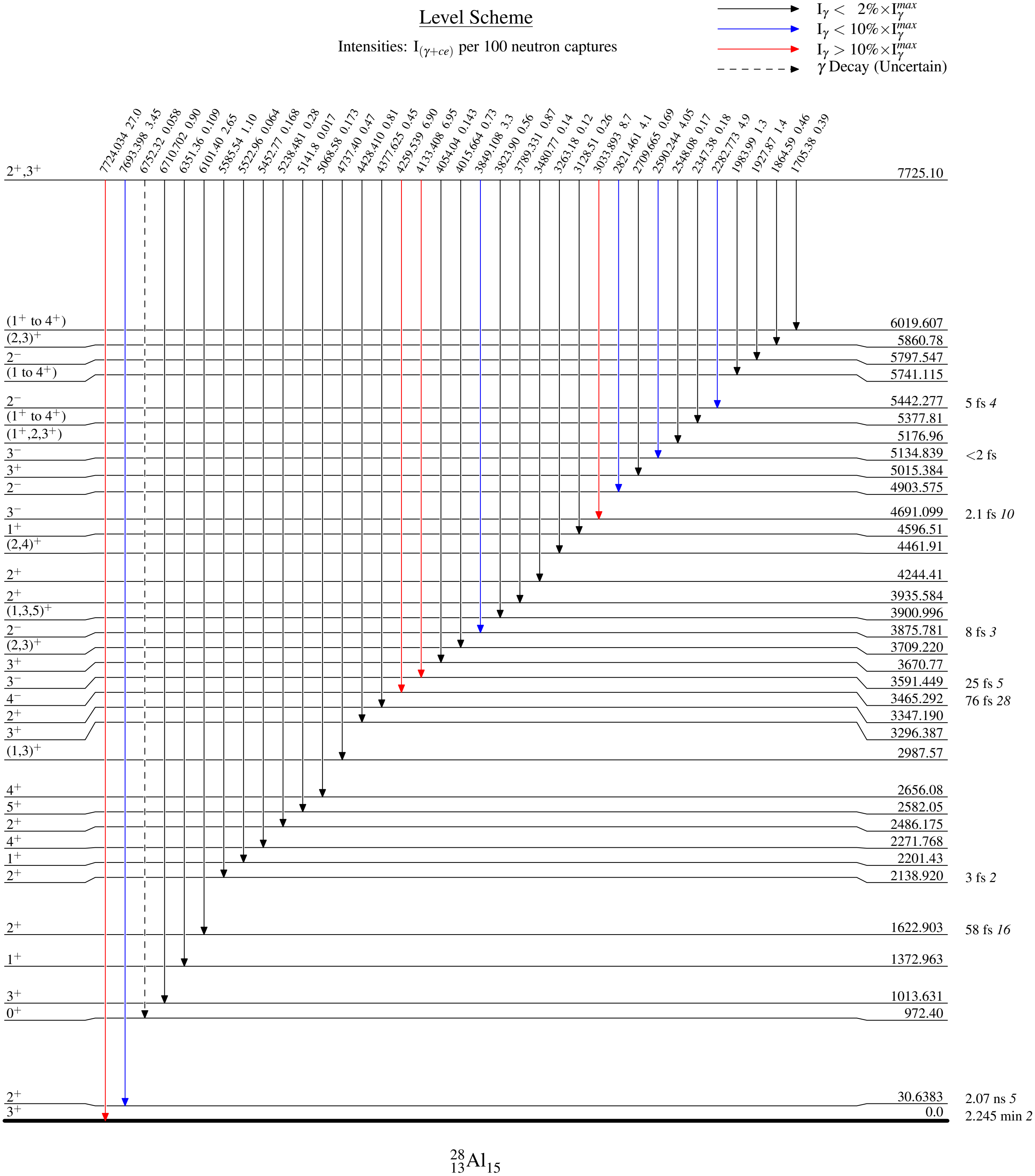
f Multiply placed with undivided intensity.

g Placement of transition in the level scheme is uncertain.

x γ ray not placed in level scheme.

$^{28}_{13}Al_{15}$-9

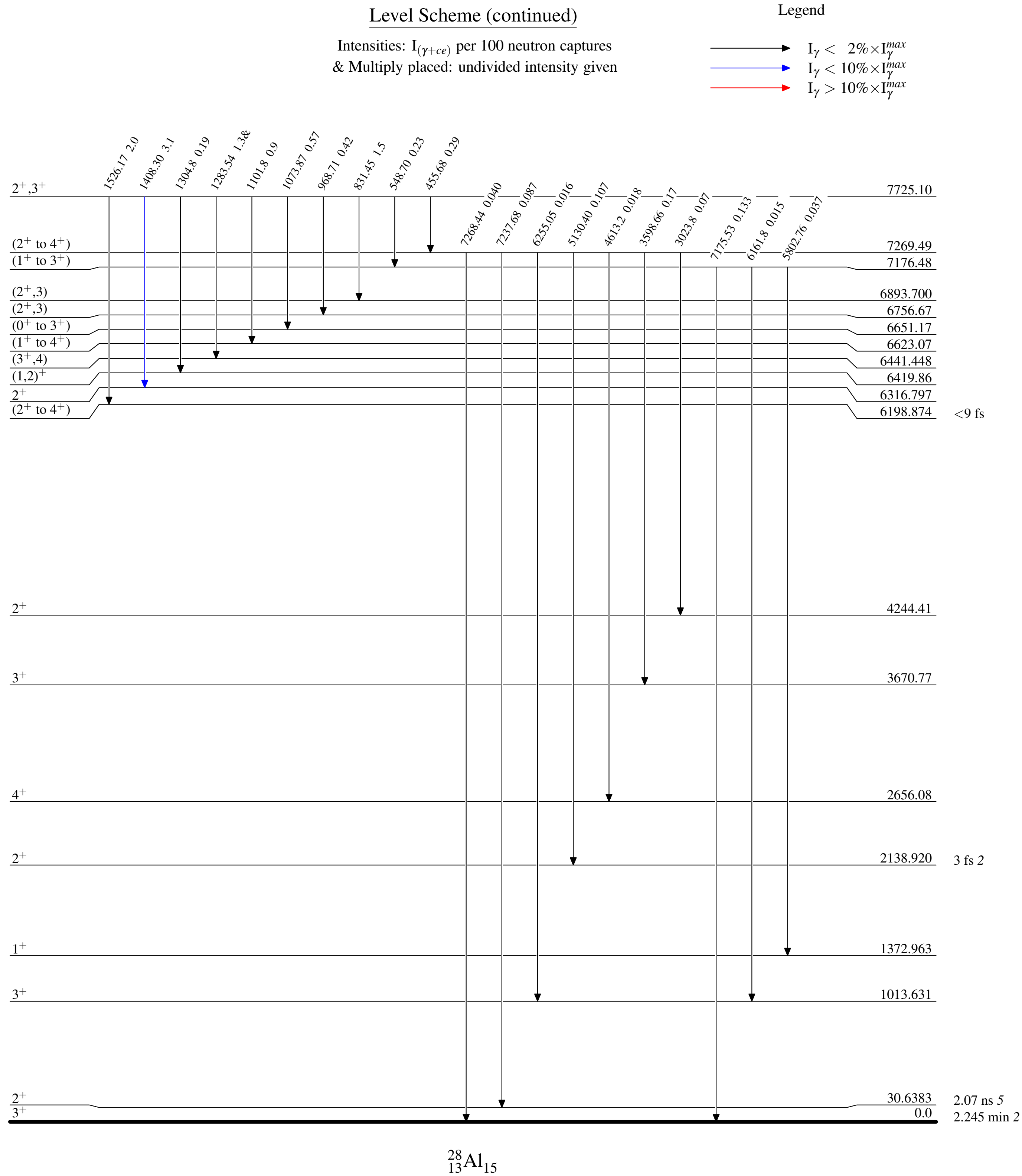
$^{27}Al(n,\gamma)$ E=thermal 1982Sc14,1990Is05,1990Ku22



^{27}Al(n,γ) E=thermal 1982Sc14,1990Is05,1990Ku22

Level Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 neutron captures
& Multiply placed: undivided intensity given



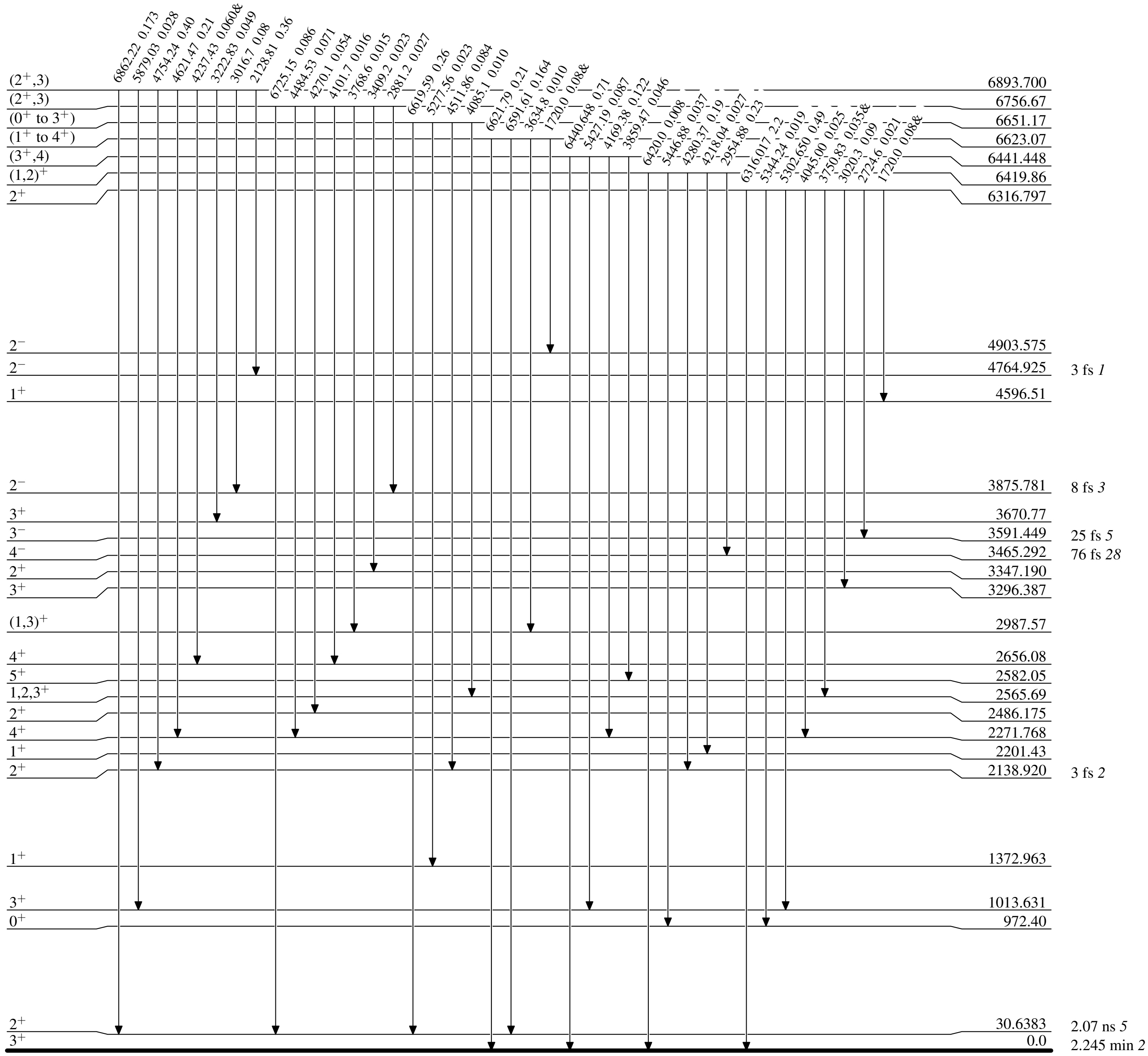
^{27}Al(n,γ) E=thermal 1982Sc14,1990Is05,1990Ku22

Level Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 neutron captures
& Multiply placed: undivided intensity given

Legend

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



$^{28}_{13}Al_{15}$

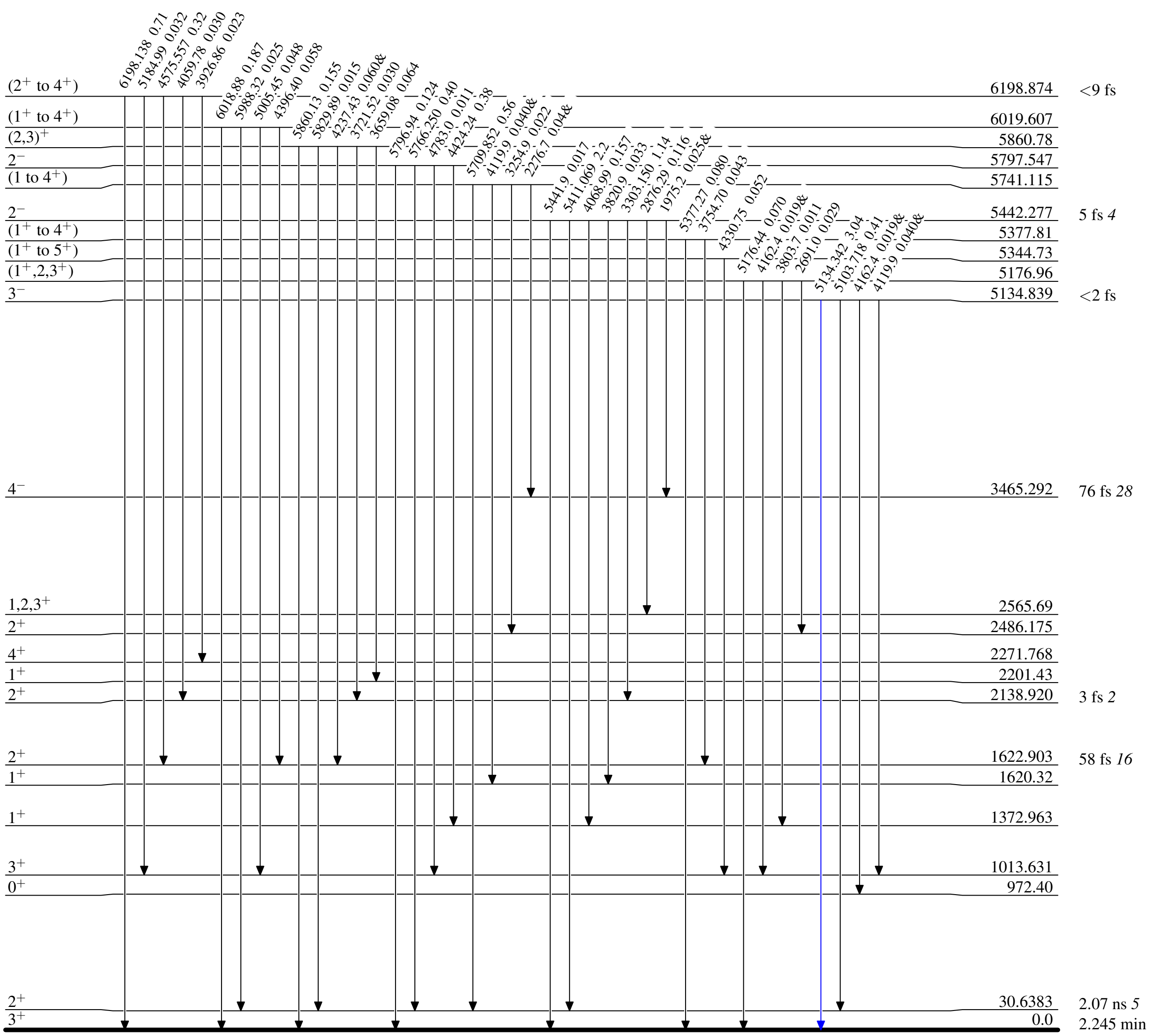
^{27}Al(n,γ) E=thermal 1982Sc14,1990Is05,1990Ku22

Level Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 neutron captures
& Multiply placed: undivided intensity given

Legend

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

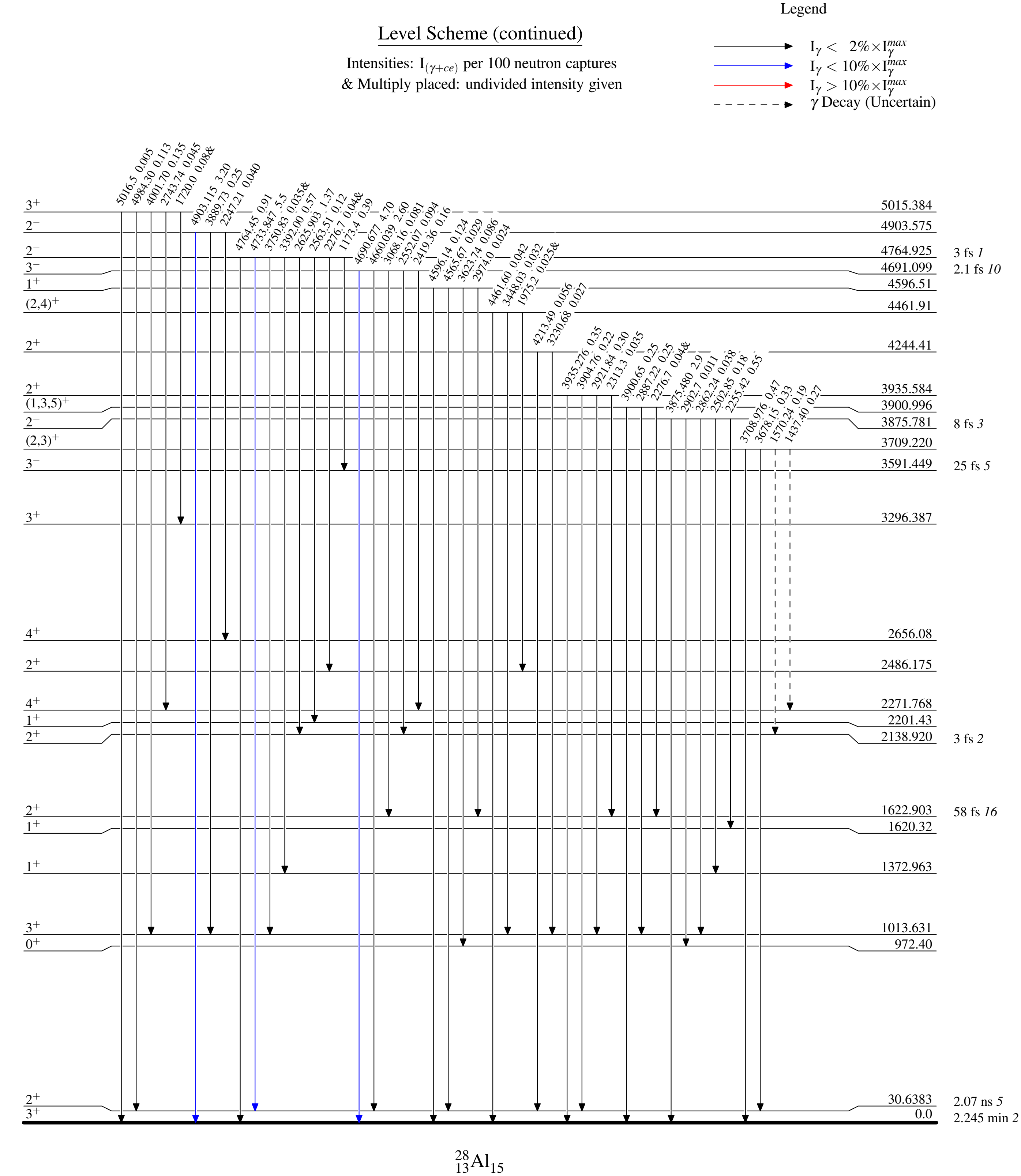


$^{28}_{13}Al_{15}$

$^{27}Al(n,\gamma)$ E=thermal 1982Sc14,1990Is05,1990Ku22

Level Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 neutron captures
& Multiply placed: undivided intensity given



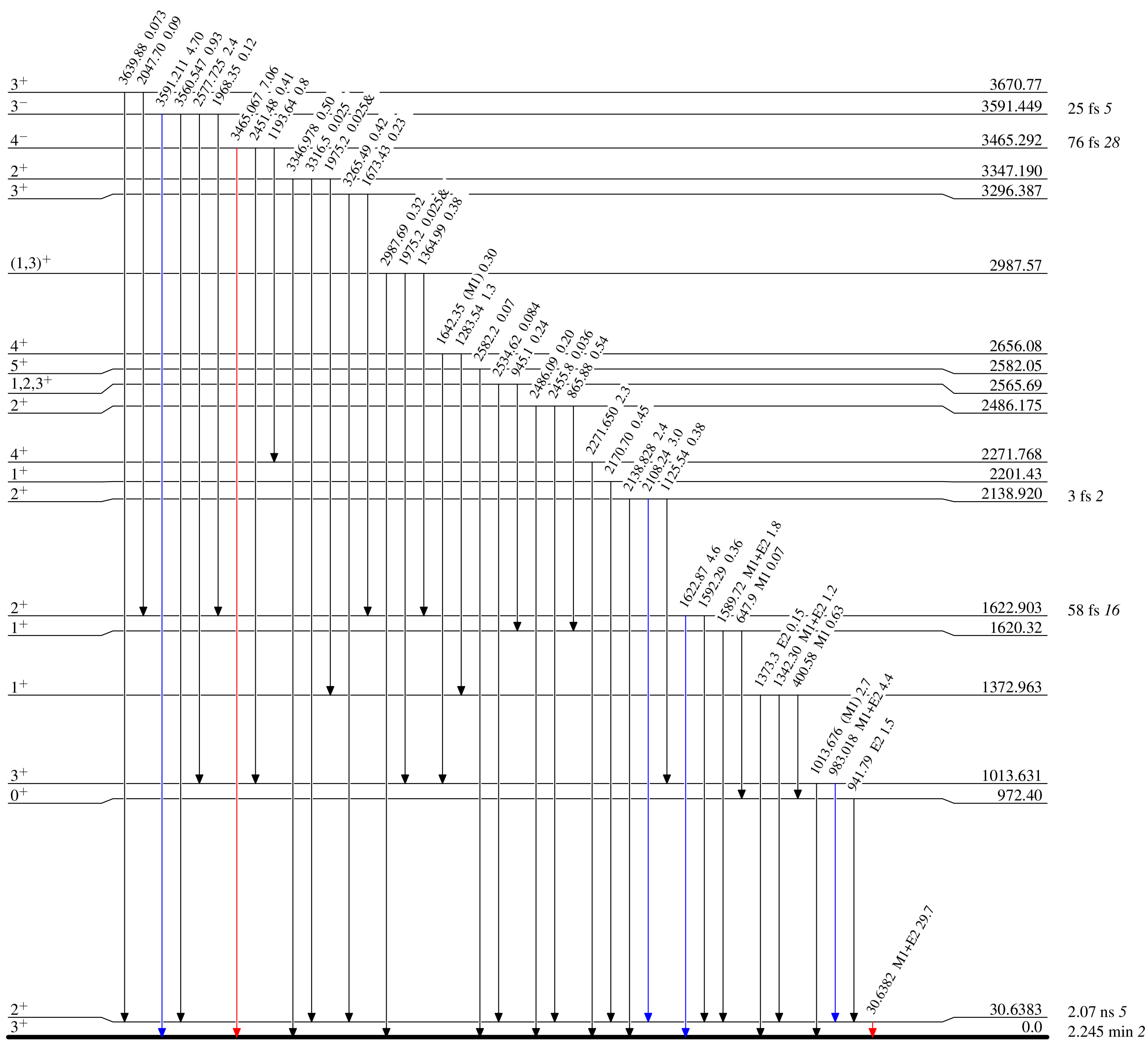
^{27}Al(n,γ) E=thermal 1982Sc14,1990Is05,1990Ku22

Level Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 neutron captures
& Multiply placed: undivided intensity given

Legend

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



$^{28}_{13}Al_{15}$