Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Ameenah R. Farhan	NDS 107,1923 (2006)	30-Apr-2006

Q(β^-)=−2562.4 *17*; S(n)=10196.24 *6*; S(p)=11012.1 *17*; Q(α)=−6282.6 *20* 2012Wa38
Note: Current evaluation has used the following Q record −2562.5 1710196.22 *6* 11012.123 −6282.725 2003Au03.
Giant-dipole resonance work (photonuclear reactions) has been reported by 1976Ca06, 1975Mc06, 1973McZP, 1973Mc15.
Nuclear structure calculations: 2004Br44.
Additional information 1.
Mass measurements: 1993Hy02, 1985El01, 1977De20, 1976De21, 1964Ba03, 1963Ri07.

^{74}Ge Levels

Levels populated in reactions with XREF=Y:
^{74}Ge(^{6}Li,^{6}Li),(^{6}Li,^{6}Li′): 0, 596.
^{74}Ge(^{16}O,^{16}O′),(^{18}O,^{18}O′): 0, 596, 1200.
^{75}As(n,d): 0, 596, 1200, 1470, 2200.
^{77}Se(n,α) E=th: 0, 596.

Cross Reference (XREF) Flags

A	^{74}Ga β^- decay (8.12 min)	K	^{73}Ge(n,γ) E=290-318 eV	U	^{75}As(d,^{3}He)
B	^{74}As ε decay (17.77 d)	L	^{73}Ge(n,γ) E=332-367 eV	V	^{76}Ge(p,t)
C	^{70}Zn(^{6}Li,d)	M	^{73}Ge(n,γ) E=380-426 eV	W	^{78}Se(d,^{6}Li)
D	^{71}Ga(α,p)	N	^{73}Ge(d,p)	X	^{192}Os(^{82}Se,Xγ)
E	^{72}Ge(t,p)	O	^{74}Ge(γ,γ'),(pol γ,γ')	Y	^{74}Ge(^{6}Li,^{6}Li),(^{6}Li,^{6}Li′)
F	^{72}Ge(α,^{2}He)	P	^{74}Ge(n,n′γ)	Z	^{74}Ge(^{16}O,^{16}O′),(^{18}O,^{18}O′)
G	^{73}Ge(n,γ) E=th	Q	^{74}Ge(p,p′),(pol p,p′)	Others:	
H	^{73}Ge(n,γ) E=102.6 eV	R	^{74}Ge(pol d,d′)	AA	^{75}As(n,d)
I	^{73}Ge(n,γ) E=224 eV	S	^{74}Ge(α,α')	AB	^{77}Se(n,α) E=th
J	^{73}Ge(n,γ) E=240 eV	T	Coulomb excitation		

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
0.0[j]	0^+	stable	ABCDEFGHIJKLMNOPQRSTUVWXYZ	XREF: Others: AA, AB $<r^2>^{1/2}$=4.0744 fm *12* (2004An14).
595.850[j] *6*	2^+	12.41 ps *9*	AB DEFGHI MNOPQRSTUVWXYZ	XREF: Others: AA, AB μ=+0.87 *4* (1984Pa20,1989Ra17) Q=−0.19 *2* (2000To12) μ: transient−field PAC (1984Pa20). Others: +0.70 *4* (1987La20), +0.70 *24* (1977Fa07). See also 2005St24 compilation. Q: reorientation effect in Coul. ex. (2000To12). Other: −0.25 *6* (1980Le16,1989Ra17). See also 2005St24 compilation. β_2=0.290, 0.298 from (^{16}O,^{16}O′) (1979Fe03,1976Co04). β_2(from (pol d,d′))=0.28 (1978Sz08), 0.197 *10* (1985Se05). β_2(from (p,p′))=0.29 (1982Ta16). β_2(from (pol p,p′))=0.208 *10* (1985Se05), 0.27 *1* (1986MoZR). Jπ: L=2 in (t,p), (p,p′), (d,d′), (α,α') and (d,^{6}Li). $T_{1/2}$ from B(E2) in Coul. ex. Others: 11.8 ps *+11−10* (DSA method in (n,n′γ)) (1988DoZU), 13 ps *2* from (γ,γ') (1956Me13). 2001Ra27 adopted 12.50 ps *25*.

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
1204.205 *7*	2^+	5.4 ps *8*	AB E GH K OPQRSTUVW Z	XREF: Others: AA, AB μ=+0.82 *24* (1984Pa20,1989Ra17) Q=+0.26 *6* (2000To12) μ: transient-field PAC (1984Pa20). See also 2005St24 compilation. β_2=0.07 from (p,p′) (1982Ta16). Jπ: L=2 in (t,p), (p,p′), (d,d′), (α,α′), (p,t) and (d,^{6}Li). $T_{1/2}$ from DSA method in (n,n′γ). Other: 5.9 ps *9* from B(E2)′s in Coul. ex.
1463.759[j] *8*	4^+	1.53 ps *10*	AB DEfGHI KLMN PQRSTUVWX	Jπ: L=4 in (p,p′), (d,d′) and (α,α′). $T_{1/2}$ from B(E2) in Coul. ex. β_4=0.02 from (p,p′) (1982Ta16), −0.015 *15* from (pol p,p′) (1986MoZR).
1482.81 *4*	0^+	6 ps *+15−3*	ABCDEfG OPQ ST VW	Jπ: $\gamma\gamma(\theta)$ in ^{74}As ε decay and (γ,γ′). L=0 in (t,p), (^{6}Li,d) and (α,α′). $T_{1/2}$ from B(E2) in Coul. ex.
1697.140 *8*	$(3)^+$		AB E GHI L PQ UV	XREF: E(?). Jπ: L(d,^{3}He)=(1+3) and $\gamma(\theta)$ of 493γ and 1101γ in (n,n′γ).
1724.954 *14*	(0^+)		G R	Jπ: L(d,d′)=(0) for E=1720 *20*.
1913 *14*	0^+		E N	XREF: N(?). Jπ: L(t,p)=0.
2165 *4*	(1^-)		E Q V	Jπ: L(p,t)=1 and L(p,p′)=(1). L(t,p)=0 inconsistent with $J^\pi=(1^-)$.
2165.259 *8*	$(3,4)^+$		A GHI LM PQ U	Jπ: γ to 2^+ and strong primary γ from 4^+, 5^+. The L=3 group in (d,^{3}He) at 2168 *10* probably corresponds to this level rather than to the 2165 level of $J^\pi=(1^-)$. L(p,p′)=(1) for a doublet E=2165 *5*, the second component is probably L=4.
2197.933 *24*	2^+		AB E G I OPQR UV	XREF: Others: AA Jπ: γ′s to 0^+ and 4^+, L=2 in (t,p), (p,p′) and (p,t). L=(4) for a 2210 group in (d,d′) inconsistent with $J^\pi=2^+$.
2227.77 *10*	0^+		E G OPQ U	XREF: Others: AA Jπ: $\gamma\gamma(\theta)$ in (γ,γ′) and L(t,p)=0.
2300			C	
2403.5 *4*	1[&]	0.0004 eV *1*	O	
2490? *5*			N	
2536.310 *13*	3^-	0.24[@] ps *+14−10*	A E GH KLMN PQRS V	β_3=0.16 ((p,p′),1982Ta16), 0.15 *1* ((pol p,p′),1986MoZR). B(E3)(p,p′)=0.020 *7* (2002Ki06,evaluation). Jπ: L=3 in (t,p), (p,p′), (d,d′) and (α,α′).
2569.329[j] *14*	(6^+)		G IJ P X	Jπ: yrast population in (^{82}Se,x).
2572 *5*	4^+		E N Q S V	XREF: E(?). Jπ: L(p,t)=4; L(α,α′)=(4). L(p,p′)=(3) inconsistent with $J^\pi=4^+$, but assignment perturbed by ^{70}Ge impurity.
2600.32 *9*	$(1,2,3)^+$	0.31[@] ps *+12−10*	E G OPQ VW	XREF: W(?). Jπ: L=2 in (p,p′). L=(0) for 2610 in (t,p) and L=(1) for 2605 in (p,t) inconsistent

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
				with $J^\pi=2^+$.
2669.62 *4*	4^+		E G I N PQRS V	Jπ: L=4 in (t,p), (p,p′) and (α,α′).
2690.6 *3*	1&	0.0015 eV *3*	O	
2693.68 *4*	(3,4^+)	0.052@ ps *+24−16*	A e GHI K n Pq s v	XREF: e(?). Jπ: γ's to 2^+ and primaries from thermal capture and from two $J^\pi=4^+$ neutron resonances gives $J^\pi=3,4^+$. If L(p,p′)=(2+3) for E=2690 *5* corresponds to this level, then $J^\pi=(3^-)$. L(α,α′)=(1) for E=2695 *10* inconsistent with $J^\pi=3,4^+$.
2696.918 *10*	(2^+)		e G n Pq s v	XREF: e(?). Jπ: γ to 4^+ and no feeding from thermal capture and from any of the five neutron resonances studied. L(α,α′)=(1) for E=2695 *10* inconsistent with $J^\pi=2^+$.
2711 *6*	(4^+)		EF	Jπ: L(t,p)=(4).
2750.61 *23*	0^+		C E PQ	Jπ: L(t,p)=0.
2828.507 *11*	4^+		GHIJ LM PQ	Jπ: L(p,p′)=4.
2833.41 *15*	(2^+)	0.009@ ps *+4−3*	e Pqr uv	E(level): it appears that 2833 and 2836 are two different levels the first populated in (n,n′γ) and the second in (n,γ) E=th, although, existence of a doublet near this energy does not seem definitive. The γ rays in both reactions proceed to the same final levels but are about 3 keV different in energy. Also the branching ratios are different in the two reactions. Jπ: L=2 in (t,p) and (p,t) for a probable doublet. L(p,p′)=4 for a doublet E=2833 *5*, the second component is probably L=2.
2835.923 *24*	(2^+)		e G qr uv	E(level),Jπ: see comment for 2833 level.
2842 *5*	(3^- & 5^-)		N S	Jπ: L(α,α′)=(3+5) and L(d,p)=1.
2856.04 *25*	0^+		E PQ UV	XREF: E(?). Jπ: L(p,t)=0.
2878.14 *17*	(5^-)		PQ	Jπ: L(p,p′)=(5).
2925.45 *9*	(3,4^+)		G P	Jπ: γ to 2^+, possible γ to $(3)^+$ and primary from thermal capture.
2935.475 *12*	3^-		E GHI KLMn P s u	Jπ: L(d,p)=1 and γ to 4^+. L(d,^{3}He)=1+3 and L(α,α′)=(3+5).
2936.8	(5^-)		n PQ s u	Jπ: L(p,p′)=(5), L(d,p)=1, L(d,^{3}He)=1+3 and L(α,α′)=(3+5).
2938.7 *2*	2^+	0.26@ ps *+15−7*	P V	Jπ: L(p,t)=2.
2949.48 *10*	(3^-)		A E G P r	Jπ: log *ft*=5.7 from (3^-) and γ to 2^+. L(d,d′)=(3). L(t,p)=4 inconsistent with J^π.
2961.0 *2*	(5^-)		PQrS	Jπ: L(α,α′)=(5).
2973.472 *13*	(3)		A GH KL PQ	Jπ: γ to 0^+, primaries from thermal capture and from two $J^\pi=4^+$ neutron resonances.
2999.2	2^+		OPQ S U	Jπ: γ from 1^- in (γ,γ′) and L=2 in (p,p′), (α,α′).

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
3017 *3*	2^+		E Q S UV	Jπ: L=2 in (t,p), (p,t) and L=(2) in (p,p′). L=1(+3) in (d,^{3}He).
3032.8 *2*	1&	0.0112 eV *6*	O	
3034.00 *3*	(3,4^+)	0.059@ ps *+10−7*	A G I K M P	Jπ: γ′s to 2^+ and primaries from thermal capture and from $J^\pi=4^+$ neutron resonance.
3048.564 *24*	4^+		E GH PQ S V	Jπ: L=4 in (t,p), (p,p′), (p,t) and (α,α′).
3060.1 *5*	(2^+ to 6^+)		H K M P	Jπ: primary γ from 4^+.
3081.321 *15*	(3^+)	0.21@ ps *+7−5*	A GHI KLM PQR UV	Jπ: L=1+3 in (d,^{3}He), L=(3,4) in (d,d′), γ to 4^+ and primaries from thermal capture and from $J^\pi=4^+$ neutron resonance. In (p,p′), either the L=(5) assignment for a 3081 group is incorrect or there is a different level near this energy.
3092.2 *2*	$1^{(+)}$&	0.0104 eV *11*	O	
3104.506 *19*	5^-		E GHIJ LM PQ S	Jπ: L=5 in (t,p) and (α,α′).
3118.0 *5*	3^-,4^-,5^-,6^-		N P	Jπ: L(d,p)=1.
3139.32 *22*			P	
3140.30 *4*	3^-		A E GHI K PQRS V	Jπ: L=3 in (t,p), (p,p′) and (α,α′).
3175.47 *3*	3^-	0.097@ ps *+35−28*	A GH PQ S U	Jπ: L=3 in (α,α′) and (p,p′).
3199.5	2^+	0.024 ps *+8−4*	PQ S UV	Jπ: L=2 in (α,α′), (p,t) and (p,p′).
3211.8? *7*			A	
3224.680 *13*	4^+		E G Q S UV	L(p,t)=2+5 unresolved doublet. Jπ: L=4 in (t,p), (α,α′) and (p,p′).
3242 *5*	$\leq 9^+$		N	Jπ: L(d,p)=4.
3271.51 *5*	(2^+)		GHI KL Q	Jπ: γ to 4^+, possible γ to 0^+.
3276.3 *2*	1&	0.0013 eV *4*	O	
3293 *5*	3^-,4^-,5^-,6^-		N	Jπ: L(d,p)=1.
3315.72 *3*	4^+		G S U	Jπ: L(α,α′)=4.
3342.94 *7*	(3^-,4^+)		A Q V	Jπ: L(p,t)=3 for E=3342 *10* and L(p,p′)=4 for E=3342 *4*.
3356 *3*	0^+		E	Jπ: L(t,p)=0.
3358.517 *22*	(2^+,3,4^+)[b]		G L	
3360 *4*	5^-		Q S V	Jπ: L(p,t)=5.
3372.4 *5*	2^+,3^+,4^+,5^+,6^+		G IJ MN	Jπ: L(d,p)=2 and primaries from 4^+,5^+.
3381.74 *5*	3^-		A GH Q S uV	Jπ: L=3 in (p,p′), (α,α′) and (p,t).
3392.618 *18*	2^+		E G K M Qr uV	E(level): E(p,p′)=3401 *5*, E(p,t)=3400 *10*. Jπ: L=2 in (t,p), (p,t) and (p,p′).
3409.931 *25*	(3,4^+)		GHI r U	Jπ: possible γ′s to 4^+, (2^+) and primaries from thermal capture and from $J^\pi=4^+$ neutron resonance.
3423.8 *6*	(2 to 6)[a]		G I M	
3436.3 *9*	(2 to 6)[a]		E G J	Jπ: L=(0,1) in (t,p) inconsistent with J=2 to 6. The level in (t,p) may be different.
3478.37 *3*	$(2,3)^+$		A GHI L Q S UV	E(level): E(p,t)=3490. Jπ: L=1+3 in (d,^{3}He) and γ to 4^+.
3501.4 *10*	4		E LMn QrS V	Jπ: L=4 in (p,p′) and (p,t).

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
3515.441 *13*	(3,4$^+$)		GHI K n rS	Jπ: γ′s to (2$^+$), (4$^+$) and primaries from thermal capture and from two J^π=4$^+$ neutron resonances. If same as L=3 in (d,p) then J^π=(3$^-$). If same as L=(4) in (d,d′) then J^π=(4$^+$).
3557.9 *3*	1$^{(-)}$[&]	0.050 eV *8*	O	
3566.75 *8*	(2$^+$,3,4$^+$)		A	Jπ: γ to 2$^+$ and log *ft*=7.3 from (3$^-$).
3578.93 *3*	2$^+$		E G Q S UV	Jπ: L=2 in (t,p) and (p,t).
3603? *5*			N	
3617 *7*	0$^+$		C Q S V	Jπ: L=0 in (p,t) and (α,α′).
3629 *7*	(6$^+$)		F Q S V	XREF: F(3590). Jπ: L=(6) in (α,α′), L=7,6 in (p,t) and L=6+8 or 6+7 in (α,^{2}He). L(p,p′)=(5) inconsistent with J^π.
3639.5? *2*			A	
3642 *2*	(4$^+$)		E	Jπ: L(t,p)=(4).
3647[d] *10*	1$^-$		a q S	Jπ: L(α,α′)=1.
3647[de] *10*	2$^+$		a g q V	Jπ: L(p,t)=2.
3647.9 *7*	1$^+$[&]	0.028 eV *6*	O	
3654.4[e] *11*	(4$^+$,5$^+$)		g L N	Jπ: L(d,p)=(0).
3681[j] *1*	(8$^+$)		X	Jπ: yrast cascade in (^{82}Se,X).
3683 *4*	5$^-$		E v	Jπ: L(t,p)=5.
3685.42 *12*	(2 to 5$^+$)		G q v	Jπ: γ to (3$^+$) and primary from thermal capture. If same as L=4 in (p,p′) then J^π=4$^+$.
3691.79 *4*	3$^-$		G q S v	Jπ: L(α,α′)=3. L(p,p′)=4 inconsistent with J^π.
3696.59 *9*	(3,4)[c]		A H JKL n s v	Jπ: log *ft*=6.6 from (3$^-$). Feeding from 4$^+$ and 5$^+$ resonances.
3700 *10*	(0$^+$)		Q	Jπ: L(p,p′)=(0).
3707.20 *14*	(3,4,5)[c]		G IJ n s v	Jπ: γ to 3$^-$ and primaries from thermal capture and from 4$^+$ and 5$^+$ resonances.
3716.7 *4*	(1$^-$,2$^+$)[c]		A n s v	Jπ: γ′s to 0$^+$, (3$^-$).
3720.79 *5*	(3,4$^+$)		A G n	Jπ: log *ft*=6.3 from (3$^-$) and primary from thermal capture.
3733 *7*	4$^+$		E n Q S	Jπ: L(t,p)=4. L(p,p′)=3 is not consistent with J^π.
3743.348 *23*	(3$^-$,4$^+$)		G n	Jπ: γ to 5$^-$ and possible γ to (3,4$^+$).
3748 *5*	2$^+$		n Q S V	Jπ: L=2 in (p,t) and (p,p′).
3771.74 *5*	(2$^+$,3,4$^+$)[b]		GH L	
3778 *5*	0$^+$		E Q S V	Jπ: L=0 in (t,p) and (p,t).
3783.41 *5*	(2$^+$,3,4$^+$)[b]		G	
3790.90 *8*	(3,4$^+$)		G I	Jπ: γ to (2$^+$) and primaries from thermal capture and from J^π=4$^+$,5$^+$ neutron resonances.
3806.772 *23*	3$^-$		GH S	Jπ: L(α,α′)=3.
3807.03 *11*			A	
3828.23[f] *10*	(1$^-$ to 4$^+$)[f]		A	Jπ: γ′s to 2$^+$ and 3$^-$.
3832.23[f] *5*	(2$^+$,3,4$^+$)[bf]		G	
3835.27[f] *4*	(2$^+$,3,4$^+$)[bf]		GHI KL	
3853 *10*			S	
3870	(6$^+$,7$^-$,8$^+$)		F	Jπ: L(α,^{2}He)=6+7 or 6+8 for 3590+3870.
3874.17 *4*	2$^+$		E G Q V	Jπ: γ to 3$^-$; L(p,t)=2; L(p,p′)=(2) assuming the same levels are populated in (p,t), (p,p′) and (n,γ) E=th.

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
3874.9 *3*	1$^+$[&]	0.099 eV *18*	O	
3876[h] *10*	3$^-$		S	Jπ: L(α,α′)=3.
3889.69 *3*	(2$^+$,3,4$^+$)		G	Jπ: γ to 4$^+$.
3895.01 *6*	(2,3,4$^+$)		A	Jπ: γ′s to 2$^+$, (3)$^+$ and (3$^-$,4$^+$).
3897.98 *4*	(2$^+$ to 6$^+$)		G	Jπ: possible γ to 4$^+$.
3916 *5*	0$^+$		E Q V	Jπ: L=0 in (t,p), (p,t).
3932.98[g] *4*	(1$^+$,2,3,4$^+$)[g]		G	Jπ: γ to (2$^+$,3,4$^+$).
3941.09[g] *16*	(2$^+$,3$^-$)[g]		G	Jπ: γ′s to (3)$^+$ and (4)$^+$.
3949.80[g] *10*	(2$^+$,3,4$^+$)[bg]		A	
3958.03 *20*	3$^-$		GHI L S	Jπ: L(α,α′)=3.
3975.86 *9*	(2$^+$)		G	Jπ: γ′s to 0$^+$, (3$^+$), (3$^-$).
3976.23 *9*	(2,3,4$^+$)		A	Jπ: γ′s to 2$^+$, (3)$^+$ and log *ft*=6.0 from (3$^-$).
3995.05 *10*	(2$^+$,3,4$^+$)		A	Jπ: γ to 2$^+$ and log *ft* 6.7 from (3$^-$).
3995.83 *6*	(2$^+$)		GHI n	Jπ: γ′s to 0$^+$, 2$^+$ and 4$^+$.
3999 *10*	5$^-$		n S	Jπ: L(α,α′)=5.
4006.8 *4*	1[&]	0.044 eV *6*	O	
4008 *10*	(0$^+$)		Q S	Jπ: L(p,p′)=(0).
4022.94 *7*	2$^+$		E G	Jπ: L(t,p)=2.
4024 *7*	5$^-$		Q S V	Jπ: L=5 in (α,α′) and (p,t).
4030.1 *5*	(2$^+$,3,4$^+$)[b]		G L	
4045.43 *4*			G S	XREF: G(?).
4064.66 *3*	(2 to 5)[a]		G	Jπ: γ to 3.
4069 *5*	3$^-$,4$^-$,5$^-$,6$^-$		N	Jπ: L(d,p)=1.
4083 *10*	(0$^+$)		Q	Jπ: L(p,p′)=(0).
4084.9 *5*	1$^+$[&]	0.060 eV *8*	O	
4085 *10*	4$^+$		E Q S V	Jπ: L=4 in (α,α′). σ(θ) for (p,t) and (t,p) peaks can′T$_{1/2}$ be fit by a single L value.
4093 *10*	(5$^-$)		G Q	E(level): E=4094.02 *4* for a tentative level in (n,γ). Jπ: L(p,p′)=(5).
4119 *5*	3$^-$,4$^-$,5$^-$,6$^-$		G N	E(level): E=4114.16 *4* for a tentative level in (n,γ). Jπ: L(d,p)=1.
4130	(7$^-$,8$^+$)		F	Jπ: L(α,^{2}He)=(7,8).
4138 *10*	2$^+$		G Q V	E(level): E=4137.27 *6* for a tentative level in (n,γ). Jπ: L(p,t)=2.
4144.48?[i] *10*			G	
4155.25?[i] *13*			G	
4164 *10*	2$^+$		Q V	Jπ: L(p,t)=2.
4171.5 *3*	1[&]		O	
4174 *4*	3$^-$		E N Q	Jπ: L(t,p)=3 and L(d,p)=1.
4191.32?[i] *5*			G	
4201.55 *8*	2$^+$		A E Q V	Jπ: L(t,p)=2.
4202.94?[i] *5*			G	
4204.67 *16*	(2$^+$ to 5$^-$)		G KL	Jπ: γ′s to 4$^+$ and 3$^-$.
4217.30 *5*	(2$^+$,3,4$^+$)[b]		G	
4222.9 *3*	(2$^+$,3$^+$,4$^+$)		A	Jπ: log *ft*=7.1 from (3$^-$).
4224.9 *8*	1$^-$[&]	0.090 eV *10*	O	
4234.77 *6*	(3,4$^+$)		GH L	E(level): this level may be the same as 4235.33 seen in. Jπ: primary γ′s from thermal capture and from J^π=4$^+$ neutron resonance.

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
4235.33 *13*	$(2,3,4)^+$		A N Q	Jπ: γ to 2^+ and L(d,p)=2.
4239 *10*	0^+		G V	E(level): E=4238.19 *6* for a tentative level in (n,γ). Jπ: L(p,t)=0.
4273 *10*	(0^+)		Q V	Jπ: L(p,t)=(0).
4276.4?[i] *3*			G	
4290 *7*	2^+		E G V	E(level): E=4292.28 *6* for a tentative level in (n,γ). Jπ: L=2 in (t,p) and (p,t).
4305.8 *13*	1[&]	0.047 eV *7*	O	
4320 *10*	4^+		E Q V	Jπ: L=4 in (p,t) and L=(4) in (t,p).
4339.67 *5*	(2^+)		G	Jπ: γ to 0^+.
4342.6 *3*	1[&]		O	
4344.25?[i] *5*			G	
4353 *5*	4^+		E N Q	Jπ: L(t,p)=4.
4367.2 *5*	$(1^-$ to $5^-)$		A	Jπ: γ to (3^-).
4368.15 *7*	(2^+)		G q	Jπ: γ to 0^+.
4387 *5*	2^+		E N q V	Jπ: L=2 in (p,t), L=(2) in (t,p) and (d,p).
4408.58 *10*	(4^+)[a]		G V	Jπ: L(p,t)=0,4.
4413.54 *10*	2^+		E G N	Jπ: L=2 in (t,p) and (d,p).
4439.98 *5*	$(2,3,4)$[a]		G	Jπ: γ to (2^+).
4442.18 *5*	$(2^+,3,4^+)$[b]		G	
4477.49 *6*	$(0^+$ to $4^+)$		A	Jπ: γ to 2^+.
4493 *7*	4^+		E N V	Jπ: L=4 in (t,p) and (p,t).
4527.89 *4*	(2^+)		G	Jπ: γ to 0^+.
4535 *10*	0^+		V	Jπ: L(p,t)=0.
4538 *10*	2^+		E	Jπ: L(t,p)=2.
4544 *5*	$4^+,5^+$		N	Jπ: L(d,p)=0.
4586 *9*	4^+		E	Jπ: L(t,p)=4.
4591 *10*	2^+		V	Jπ: L(p,t)=2.
4594 *5*	$3^-,4^-,5^-,6^-$		N	Jπ: L(d,p)=1.
4611.42 *16*	$(2^-,3^-,4^-)$		A	Jπ: log *ft*=5.7 from (3^-).
4630.43 *7*	(2^+)		E G N V	Jπ: L(p,t)=(2).
4664 *10*	4^+		V	Jπ: L(p,t)=4.
4685 *6*	(0^+)		E V	Jπ: L(p,t)=(0).
4698.29 *13*	$(2^-,3^-,4^-)$		A	Jπ: log *ft*=5.0 from (3^-).
4731 *5*	$4^+,5^+$		N	Jπ: L(d,p)=0.
4767 *11*	$(0^+,1^-)$		E	Jπ: L(t,p)=(0,1).
4824 *5*	$4^+,5^+$		N	Jπ: L(d,p)=0.
4840.92 *13*	(2^+)		G	Jπ: γ to 0^+.
4853 *8*	$(0^+,2^+)$		E	Jπ: L(t,p)=(0+2).
4874 *5*			N	
4920 *10*	(2^+)		V	Jπ: L(p,t)=(2).
4951 *10*	(2^+)		V	Jπ: L(p,t)=(2).
4972.55 *9*	(2^+)		G	Jπ: γ to 0^+.
4981 *5*			N	
5021 *10*	(2^+)		V	Jπ: L(p,t)=(2).
5062 *5*	$4^+,5^+$		N	Jπ: L(d,p)=0.
5107.82?[i] *5*			G	
5131.45 *8*	(2 to 6)[a]		G	
5147 *5*	$4^+,5^+$		N V	Jπ: L(d,p)=0. L(p,t)=5 is reported by 1972IsZV for E=5313; however, in the work of 1977Gu12, the 5148 peak is not fit by any single L value.
5288.5			G	Jπ: $(2^+,3^+)$ proposed by 2000PoZV in (n,γ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
5323 *5*	$4^+,5^+$		N	Jπ: L(d,p)=0.
5352 *10*			V	
5434.8 *5*	1^-&	0.40 eV *3*	O	
5435.76?i *7*			G N	XREF: N(5440).
5485.1 *12*	1&	0.075 eV *11*	O	
5493.1 *10*	1&	0.087 eV *17*	O	
5510.3			G	Jπ: $(3^-,4^-)$ proposed by 2000PoZV in (n,γ).
5514.8 *8*	1&	0.23 eV *4*	O	
5580 *10*	(0^+)		V	Jπ: L(p,t)=(0).
5617 *5*			N	
5717 *5*			N	
5743.7 *10*	1&	0.110 eV *13*	O	
5758.76?i *4*			G	
5766.7 *4*	$1^{(+)}$&	0.167 eV *26*	O	
5787 *5*			N	
5850 *5*			N	
5926.86?i *6*			G N	XREF: N(5930).
5934.16?i *9*			G	
6017.4 *24*	1^-&	0.120 eV *15*	NO	XREF: N(?). Γ from 1970Mo26.
6190?			N	
6200	$(6^+,8^+)$		F	Jπ: L(α,^{2}He)=(6,8).
6330?	$(4^+,5^+)$		N	Jπ: L(d,p)=(0).
6445.1 *11*	1&	0.39 eV *11*	O	
6477.9 *6*	1^-&	0.226 eV *21*	O	
6530?			N	
6650.3 *3*	1^-&	0.92 eV *7*	O	
6660.5 *5*	1^-&	0.337 eV *20*	O	
6680?			N	
6732.7 *8*	1^+&	0.29 eV *3*	O	
6862.00?i *7*			G	
6942.6 *6*	1^-&	0.35 eV *3*	O	
6992.70?i *6*			G	
7150.8 *16*	1^-&	0.58 eV *9*	O	
7173.18?i *4*			G	
7264.6 *6*	1^-&	0.81 eV *3*	O	
7275.90?i *4*			G	
7359.39?i *9*			G	
7379.9 *10*	1&	0.25 eV *4*	O	
7445.3 *11*	1&		O	
7493.60?i *6*			G	
7506.7 *10*	$1^{(-)}$&	0.40 eV *3*	O	
7550.7 *7*	1^-&	0.80 eV *11*	O	
7578.96?i *5*			G	
7616.0 *8*	1&		O	
7621.77?i *7*			G	
7652.1 *6*	1^-&	1.51 eV *12*	O	
7702.02?i *5*			G	

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Adopted Levels, Gammas (continued)

^{74}Ge Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF
7882.23?[i] *4*			G
7980.64?[i] *6*			G
8219.0 *8*	1[&]	0.36 eV *5*	0
8250.2 *8*	1[&]	0.33 eV *8*	0
8361.1 *12*	1[&]	0.88 eV *18*	0
8375.70?[i] *8*			G
8440.13?[i] *9*			G
8560.09?[i] *6*			G
8873.33?[i] *7*			G
8928.00?[i] *8*			G
9004.38?[i] *6*			G
9133.79?[i] *8*			G
9457.91?[i] *5*			G

[†] In (p,p′), level energies above 3600 are too high by 10-30 keV, the evaluators have considered this deviation in establishing the level correspondences. See (n,γ) E=th for many additional levels that are considered as tentative. The 2630 and 3050 groups in (α,^{2}He) cannot be associated uniquely with any of the levels here due to the poor resolution in this reaction and high level density in this energy region.

[‡] When arguments are based on L values in particle-transfer reactions, L(d,p) is from 9/2^{+} ^{73}Ge target; and L(d,^{3}He) is from 3/2^{-} ^{75}As target.

[#] Γ are from (γ,γ′).

[@] From (n,n′γ).

[&] From γγ(θ) and γ(pol) in (γ,γ′),(pol γ,γ′).

[a] Primary γ from 4^{+},5^{+}.

[b] γ′s to 2^{+} and 4^{+}.

[c] L(p,t)=(2) for E=3607 *10*.

[d] E=3639.77 *10* with probable J^{π}=1,2^{+} is reported in β^{-} decay.

[e] E=3651.93 *3* with probable J^{π}=1^{+},2,3,4,5^{+} is reported in (n,γ) E=th.

[f] L=2 for E(t,p)=3824 *5*, L=(2) for E(p,p′)=3825 *10*, L=4 for E(p,p′)=3849 *10*, L=3+5 for E(α,α′)=3836 *10*, L=1+3 for E(d,^{3}He)=3837 *10* and L=1 for E(d,p)=3841 *5* probably correspond to any of these levels.

[g] L=2 for E(t,p)=3953 *8*, L=4 for E(p,p′)=3966 *10*, L=(3+5) for E(α,α′)=3948 *10*, L=3 for E(p,t)=3935 *3* and L=3 for E(p,t)=3950 *3* probably correspond to any of these levels.

[h] E=3874.17 *4* is reported in (n,γ), and probably corresponds to either the 3874 or 3876 levels.

[i] For γ rays from this level see ^{73}Ge(n,γ) E=th.

[j] Band(A): g.s. band.

Adopted Levels, Gammas (continued)

γ(^{74}Ge)

Gammas are known mainly from ^{74}Ga β^- decay and ^{73}Ge(n,γ) E=thermal. Low energy γ′s are from curved-crystal spectrometer data in (n,γ). See (n,γ) E=th for many additional γ rays from tentative levels.

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	δ	Comments
595.850	2+	595.847 *6*	100	0.0	0+	E2		B(E2)(W.u.)=33.0 *4* Mult.: from γ(pol,θ).
1204.205	2+	608.353 *5*	100 *1*	595.850	2+	E2+M1	+3.4 *4*	B(M1)(W.u.)=0.00099 *15*; B(E2)(W.u.)=43 *6* δ: from γγ(θ) in ^{74}As ε decay. Other: +2.2 *3* from (n,n′γ).
		1204.208 *12*	46 *3*	0.0	0+	E2		B(E2)(W.u.)=0.71 *11*
1463.759	4+	867.898 *6*	100	595.850	2+	E2		B(E2)(W.u.)=41 *3*
1482.81	0+	887.19 *7*	100	595.850	2+	E2		B(E2)(W.u.)=9 *+9−6*
		1482.6		0.0	0+	E0		From ce data (1983Pa10). $I_{(\gamma+ce)}$: <0.006 from ^{74}As ε decay. q_K^2(E0/E2)<0.12, X(E0/E2)<0.052, ρ^2(E0)>0.032 (2005Ki02, evaluation).
1697.140	(3)+	233.395 *12*	2.1 *2*	1463.759	4+			
		492.936 *6*	58 *1*	1204.205	2+	(M1+E2)	+1.3 *4*	δ: from γ(θ) in (n,n′γ) (1970Ch15). Other: 2.0 *+3−6* or 0.75 *+15−6* (1987Do14). Mult.: D+Q from γ(θ). ΔJ$^\pi$=no from placement in level scheme.
		1101.267 *12*	100 *1*	595.850	2+	(M1+E2)	+0.34 *5*	δ: from γ(θ) in (n,n′γ) (1970Ch15). Other: 0.47 *5* (1987Do14). Mult.: D+Q from γ(θ). ΔJ$^\pi$=no from placement in level scheme.
1724.954	(0+)	520.744 *12*	100	1204.205	2+			
2165.259	(3,4)+	468.11 *3*	6.5 *3*	1697.140	(3)+			
		701.487 *6*	42.7 *3*	1463.759	4+			
		961.055 *10*	100 *1*	1204.205	2+	(M1(+E2))	0.01 *1*	δ: from γ(θ) in (n,n′γ) (1987Do14). Mult.: D+Q from γ(θ). ΔJ$^\pi$=no from placement in level scheme.
2197.933	2+	715.17 *3*	35 *2*	1482.81	0+			
		734.17 *4*	25 *4*	1463.759	4+			
		993.67 *6*	100 *5*	1204.205	2+	(E2+M1)	−2.8 *2*	δ: γγ(θ) in ^{74}As ε. Mult from ΔJ$^\pi$. Mult.: D+Q from γ(θ). ΔJ$^\pi$=no from placement in level scheme.
		1602.0 *2*	45 *4*	595.850	2+			
		2197.95 *8*	82 *10*	0.0	0+			
2227.77	0+	1021.9 *1*	38	1204.205	2+			
		1631.89 *12*	100	595.850	2+			
2403.5	1	2403.5 *4*		0.0	0+			
2536.310	3−	839.152 *14*	2.8 *3*	1697.140	(3)+			
		1332.12 *7*	31 *2*	1204.205	2+			
		1940.53 *15*	100 *2*	595.850	2+	(E1(+M2))	+0.02 *2*	δ: from γ(θ) in (n,n′γ) (1987Do14). Mult.: D+Q from γ(θ). ΔJ$^\pi$=yes from placement in level scheme.
2569.329	(6+)	1105.562 *12*	100	1463.759	4+			
2600.32	(1,2,3)+	2004.45 *9*	100 *9*	595.850	2+			
2669.62	4+	972.38 *5*	22 *1*	1697.140	(3)+			

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Adopted Levels, Gammas (continued)

γ(^{74}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
2669.62	4^+	1205.88 *9*	74 *9*	1463.759	4^+
		2073.85 *7*	100 *10*	595.850	2^+
2690.6	1	2690.6 *3*		0.0	0^+
2693.68	$(3,4^+)$	1489.35 *5*	100 *2*	1204.205	2^+
		2098.00 *7*	31 *3*	595.850	2^+
2696.918	(2^+)	531.650 *9*	8.3 *2*	2165.259	$(3,4)^+$
		999.781 *12*	100 *1*	1697.140	$(3)^+$
		1233.23 *15*	6.0 *6*	1463.759	4^+
2750.61	0^+	1546.4 *3*	100 *15*	1204.205	2^+
		2154.6 *3*	100 *15*	595.850	2^+
2828.507	4^+	663.19 *6*	1.2 *1*	2165.259	$(3,4)^+$
		1131.360 *9*	100 *2*	1697.140	$(3)^+$
2833.41	(2^+)	667.8 *3*	35 *3*	2165.259	$(3,4)^+$
		1135.9 *2*	20 *3*	1697.140	$(3)^+$
		2237.9 *2*	100 *4*	595.850	2^+
2835.923	(2^+)	670.59 *7*	5.8 *6*	2165.259	$(3,4)^+$
		1138.79 *6*	100 *6*	1697.140	$(3)^+$
		2240.1 *3*	23 *3*	595.850	2^+
2856.04	0^+	1651.8 *3*	100 *20*	1204.205	2^+
		2260.0 *4*	100 *20*	595.850	2^+
2878.14	(5^-)	712.8 *2*	100 *13*	2165.259	$(3,4)^+$
		1414.4 *2*	67 *13*	1463.759	4^+
2925.45	$(3,4^+)$	1228.29 *9*	100 *4*	1697.140	$(3)^+$
		1721.3 *2*	19 *1*	1204.205	2^+
2935.475	3^-	399.08 *3*	0.42 *3*	2536.310	3^-
		770.212 *12*	14.0 *2*	2165.259	$(3,4)^+$
		1471.72 *3*	100 *1*	1463.759	4^+
2938.7	2^+	2342.8 *2*	100	595.850	2^+
2949.48	(3^-)	784.3[#] *2*	1.5 *2*	2165.259	$(3,4)^+$
		1744.9 *2*	10.8 *3*	1204.205	2^+
		2353.46 *19*	100 *3*	595.850	2^+
2961.0	(5^-)	1756.7 *2*	100	1204.205	2^+
2973.472	(3)	437.20[‡] *3*	0.8 *1*	2536.310	3^-
		808.23[‡] *2*	33 *1*	2165.259	$(3,4)^+$
		1509.66 *9*	100 *2*	1463.759	4^+
		2973.1[‡] *4*	2.5 *3*	0.0	0^+
2999.2	2^+	777[@] *4*		2227.77	0^+
		1794.3 *1*	30 *5*	1204.205	2^+
		2402.7 *1*	100 *8*	595.850	2^+
		2999 *1*	25 *5*	0.0	0^+
3032.8	1	1828.6		1204.205	2^+
		3032.8 *2*		0.0	0^+
3034.00	$(3,4^+)$	497.62 *10*	51 *5*	2536.310	3^-
		1337.18[#c] *10*	<85	1697.140	$(3)^+$
		1570.26 *10*	51 *2*	1463.759	4^+
		1829.86 *10*	100 *3*	1204.205	2^+
		2438.45[#] *14*	14 *2*	595.850	2^+
3048.564	4^+	850.64 *5*	33 *1*	2197.933	2^+
		883.25 *3*	100 *3*	2165.259	$(3,4)^+$
		1844.62 *10*	100 *10*	1204.205	2^+
		3048.5 *4*	9 *2*	0.0	0^+
3060.1	$(2^+$ to $6^+)$	1596 *1*	100	1463.759	4^+
3081.321	(3^+)	545.01[‡] *1*	11.8 *3*	2536.310	3^-
		916.07[‡] *5*	20 *1*	2165.259	$(3,4)^+$
		1384.11[‡] *8*	57 *3*	1697.140	$(3)^+$
		1617.64 *8*	100 *4*	1463.759	4^+
3092.2	$1^{(+)}$	1888.0		1204.205	2^+
		3092.2 *2*		0.0	0^+
3104.506	5^-	939.23 *2*	100 *2*	2165.259	$(3,4)^+$
		1640.8 *1*	47 *3*	1463.759	4^+
3118.0	$3^-,4^-,5^-,6^-$	182.4 *2*	100 *5*	2935.475	3^-
		1654.1 *2*	12 *2*	1463.759	4^+
3139.32		1675.6 *2*	100	1463.759	4^+
3140.30	3^-	604.21 *10*	100 *7*	2536.310	3^-
		942.47 *7*	45 *2*	2197.933	2^+
		975.1 *3*	9.4 *10*	2165.259	$(3,4)^+$
		1443.38[dc] *7*	<125[d]	1697.140	$(3)^+$
		1676.77 *14*	25 *1*	1463.759	4^+
3175.47	3^-	141.52[‡] *3*	21 *6*	3034.00	$(3,4^+)$
		481.7[‡&e] *1*	56 *12*	2693.68	$(3,4^+)$
		639.10[#] *10*	65 *4*	2536.310	3^-
		1478.2 *3*	24 *3*	1697.140	$(3)^+$
		1971.0 *2*	16 *4*	1204.205	2^+
		2580.07[a] *10*	100 *5*	595.850	2^+
3199.5	2^+	663.2 *2*	100 *10*	2536.310	3^-
		2603.6 *2*	100 *10*	595.850	2^+
3211.8?		2616.67[e] *9*		595.850	2^+
		3211.11[de] *11*	[d]	0.0	0^+
3224.680	4^+	251.22 *1*	34 *1*	2973.472	(3)
		289.19 *1*	100 *2*	2935.475	3^-

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Adopted Levels, Gammas (continued)

γ(^{74}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
3224.680	4^+	396.18 *3*	26 *2*	2828.507	4^+
3271.51	(2^+)	1043.6 *3*	8 *2*	2227.77	0^+
		1546.7 *4*	4 *1*	1724.954	(0^+)
		1807.5 *1*	100 *10*	1463.759	4^+
3276.3	1	3276.3 *2*		0.0	0^+
3315.72	4^+	746.40 *4*	13 *1*	2569.329	(6^+)
		1150.43 *4*	100 *3*	2165.259	$(3,4)^+$
3342.94	$(3^-,4^+)$	1177.42 *18*	29 *3*	2165.259	$(3,4)^+$
		2138.62 *10*	100 *5*	1204.205	2^+
		2747.13 *10*	100 *6*	595.850	2^+
3358.517	$(2^+,3,4^+)$	530.01 *2*	100 *4*	2828.507	4^+
		1160.5 *2*	98 *10*	2197.933	2^+
3381.74	3^-	2785.83 *5*	100	595.850	2^+
3392.618	2^+	311.32 *3*	16 *1*	3081.321	(3^+)
		556.68 *3*	7.5 *6*	2835.923	(2^+)
		695.69 *2*	30.0 *6*	2696.918	(2^+)
		1227.2 *2*	100 *1*	2165.259	$(3,4)^+$
3409.931	$(3,4^+)$	574.03 *4*	5.1 *4*	2835.923	(2^+)
		581.47 *4*	3.1 *6*	2828.507	4^+
		712.99 *5*	7.4 *4*	2696.918	(2^+)
		1712.96 *12*	100 *6*	1697.140	$(3)^+$
		1945.9 *2*	16 *2*	1463.759	4^+
3478.37	$(2,3)^+$	302.98 *3*	10 *2*	3175.47	3^-
		429.73‡ *5*	8 *2*	3048.564	4^+
		444.2# *5*	4 *2*	3034.00	$(3,4^+)$
		942.15‡ *10*	7 *3*	2536.310	3^-
		1312.81 *11*	51 *4*	2165.259	$(3,4)^+$
		2014.50 *6*	100 *5*	1463.759	4^+
3515.441	$(3,4^+)$	541.96 *1*	76 *2*	2973.472	(3)
		579.97 *1*	96 *2*	2935.475	3^-
		679.4 *1*	8 *2*	2835.923	(2^+)
		686.90 *6*	9 *1*	2828.507	4^+
		1350.19 *12*	100 *7*	2165.259	$(3,4)^+$
3557.9	$1^{(-)}$	2962.1		595.850	2^+
		3557.9 *3*		0.0	0^+
3566.75	$(2^+,3,4^+)$	2362.36 *13*	15 *2*	1204.205	2^+
		2970.92 *10*	100 *4*	595.850	2^+
3578.93	2^+	643.44 *3*	64 *3*	2935.475	3^-
		2115.5 *4*	51 *6*	1463.759	4^+
		3578.9 *2*	100 *6*	0.0	0^+
3639.5?		3043.6[e] *4*	100 *20*	595.850	2^+
3639.5?		3639.45[de] *13*	<160[d]	0.0	0^+
3647.9	1^+	3647.9 *7*		0.0	0^+
3681	(8^+)	1112		2569.329	(6^+)
3685.42	(2 to 5^+)	604.10 *12*	100	3081.321	(3^+)
3691.79	3^-	657.84 *4*	5.2 *3*	3034.00	$(3,4^+)$
		756.24 *9*	4.6 *5*	2935.475	3^-
		1022.05 *10*	10 *2*	2669.62	4^+
3696.59	(3,4)	521.0 *5*	19 *4*	3175.47	3^-
		1160.33 *10*	100 *7*	2536.310	3^-
		1999.3 *2*	64 *6*	1697.140	$(3)^+$
		2231.9 *5*	16 *15*	1463.759	4^+
3707.20	(3,4,5)	1170.88 *14*	100	2536.310	3^-
3716.7	$(1^-,2^+)$	540.9 *5*	100 *18*	3175.47	3^-
		3717.1 *7*	18 *6*	0.0	0^+
3720.79	$(3,4^+)$	545.5# *5*	3.7 *11*	3175.47	3^-
		1184.4# *2*	16 *2*	2536.310	3^-
		2023.6 *3*	30 *7*	1697.140	$(3)^+$
		2257.0 *1*	100 *3*	1463.759	4^+
3743.348	$(3^-,4^+)$	472.04 *16*	32 *10*	3271.51	(2^+)
		567.92 *7*	8 *3*	3175.47	3^-
		638.83 *2*	100 *3*	3104.506	5^-
3771.74	$(2^+,3,4^+)$	723.21 *5*	7.7 *7*	3048.564	4^+
		1573.75 *9*	100 *4*	2197.933	2^+
		2307.5 *6*	3.6 *7*	1463.759	4^+
		2567.4 *1*	24 *3*	1204.205	2^+
3783.41	$(2^+,3,4^+)$	467.68 *6*	43 *10*	3315.72	4^+
		2579.15[b] *8*	100	1204.205	2^+
3790.90	$(3,4^+)$	519.47 *9*	5.4 *14*	3271.51	(2^+)
		1254.47 *10*	100 *3*	2536.310	3^-
3806.772	3^-	291.33 *2*	24 *3*	3515.441	$(3,4^+)$
		2342.89 *12*	75 *1*	1463.759	4^+
		3210.94 *8*	100 *4*	595.850	2^+
3807.03		2109.8[e] *6*		1697.140	$(3)^+$
		3211.11[d] *11*	[d]	595.850	2^+
3828.23	(1^- to 4^+)	484.9 *3*	100 *5*	3342.94	$(3^-,4^+)$
		652.5 *5*	6 *3*	3175.47	3^-
		1134.5 *3*	36 *4*	2693.68	$(3,4^+)$
		1630.7 *10*	9 *8*	2197.933	2^+
		2131.5 *4*	19 *1*	1697.140	$(3)^+$
		2625.3[e] *4*	7 *1*	1204.205	2^+
		3232.34 *11*	56 *7*	595.850	2^+

$^{74}_{32}Ge_{42}$-12

Adopted Levels, Gammas (continued)

γ(^{74}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
3832.23	$(2^+,3,4^+)$	560.68 *3*	13 *1*	3271.51	(2^+)
		692.46[c] *8*	10 *2*	3140.30	3^-
		996.1 *3*	24 *7*	2835.923	(2^+)
		1003.5 *2*	55 *14*	2828.507	4^+
		2368.17 *9*	100 *10*	1463.759	4^+
3835.27	$(2^+,3,4^+)$	476.75 *5*	23 *6*	3358.517	$(2^+,3,4^+)$
		786.8 *3*	13 *2*	3048.564	4^+
		2630.96 *20*	24 *3*	1204.205	2^+
		3239.35 *7*	100 *4*	595.850	2^+
3874.17	2^+	182.40 *2*	6.1 *5*	3691.79	3^-
		1338.05 *8*	100 *10*	2536.310	3^-
3874.9	1^+	3874.9 *3*		0.0	0^+
3889.69	$(2^+,3,4^+)$	146.33 *3*	17 *4*	3743.348	$(3^-,4^+)$
		841.1 *2*	100 *8*	3048.564	4^+
3895.01	$(2,3,4^+)$	551.8 *5*	11 *3*	3342.94	$(3^-,4^+)$
		1357.9[c] *2*	32 *3*	2536.310	3^-
		2197.95 *10*	33 *3*	1697.140	$(3)^+$
		2690.96 *9*	100 *3*	1204.205	2^+
		3298.93 *10*	35 *4*	595.850	2^+
		3895.0[e] *4*	4 *1*	0.0	0^+
3897.98	$(2^+$ to $6^+)$	419.61 *2*	100	3478.37	$(2,3)^+$
3932.98	$(1^+,2,3,4^+)$	189.63 *3*	6 *1*	3743.348	$(3^-,4^+)$
		212.17 *5*	9 *2*	3720.79	$(3,4^+)$
		1236.12 *17*	100 *18*	2696.918	(2^+)
		1767.7 *7*	13 *1*	2165.259	$(3,4)^+$
3941.09	$(2^+,3^-)$	1112.6 *2*	100 *13*	2828.507	4^+
		1776.1 *4*	99 *10*	2165.259	$(3,4)^+$
		2243.7 *3*	32 *3*	1697.140	$(3)^+$
3949.80	$(2^+,3,4^+)$	471.1 *5*	55 *7*	3478.37	$(2,3)^+$
		809.3 *3*	42 *9*	3140.30	3^-
		999.9 *2*	37 *13*	2949.48	(3^-)
		2486.3 *4*	11 *6*	1463.759	4^+
		3354.03 *12*	100 *8*	595.850	2^+
3958.03	3^-	1261.1 *2*	100	2696.918	(2^+)
3975.86	(2^+)	1282.1 *3*	100 *15*	2693.68	$(3,4^+)$
		2278.7 *1*	12 *2*	1697.140	$(3)^+$
		2771.6 *3*	65 *6*	1204.205	2^+
		3975.7 *2*	50 *4*	0.0	0^+
3976.23	$(2,3,4^+)$	2279.05 *9*	100 *4*	1697.140	$(3)^+$
		2771.8 *4*	4.7 *8*	1204.205	2^+
3995.05	$(2^+,3,4^+)$	2790.79 *10*	100 *9*	1204.205	2^+
3995.05	$(2^+,3,4^+)$	3992.4[e] *10*	7 *2*	0.0	0^+
3995.83	(2^+)	212.40[‡] *7*	6 *2*	3783.41	$(2^+,3,4^+)$
		2532.03[‡] *7*	100 *10*	1463.759	4^+
		2790.4[c] *4*	11 *1*	1204.205	2^+
		3996.1 *2*	21 *2*	0.0	0^+
4006.8	1	4006.8 *4*		0.0	0^+
4022.94	2^+	443.94 *12*	22 *6*	3578.93	2^+
		1087.56 *10*	100 *10*	2935.475	3^-
		3426.95 *11*	57 *3*	595.850	2^+
4030.1	$(2^+,3,4^+)$	1460.8 *6*	100 *29*	2569.329	(6^+)
		3434.2 *6*	12 *4*	595.850	2^+
4064.66	(2 to 5)	174.96 *1*	17 *3*	3889.69	$(2^+,3,4^+)$
		654.79 *4*	46 *2*	3409.931	$(3,4^+)$
		2601.0 *2*	100 *13*	1463.759	4^+
4084.9	1^+	4084.9 *5*		0.0	0^+
4171.5	1	4171.5 *3*		0.0	0^+
4201.55	2^+	504.7 *5*	15 *4*	3696.59	(3,4)
		1024.6[c] *5*	21 *4*	3175.47	3^-
		2004.6[c] *2*	76 *7*	2197.933	2^+
		2036.2 *4*	25 *6*	2165.259	$(3,4)^+$
		2504.2 *2*	100 *11*	1697.140	$(3)^+$
		2737.86 *16*	15 *2*	1463.759	4^+
		2997.2 *5*	15 *2*	1204.205	2^+
		3605.35 *12*	55 *7*	595.850	2^+
4204.67	$(2^+$ to $5^-)$	159.28 *3*	40 *9*	4045.43	
		933.4 *4*	74 *32*	3271.51	(2^+)
		1269.2 *2*	100 *13*	2935.475	3^-
		1534.9 *3*	32 *6*	2669.62	4^+
4217.30	$(2^+,3,4^+)$	1136.0 *3*	24 *5*	3081.321	(3^+)
		1381.6 *2*	28 *4*	2835.923	(2^+)
		2019.1 *2*	64 *9*	2197.933	2^+
		2753.62 *12*	100 *9*	1463.759	4^+
4222.9	$(2^+,3^+,4^+)$	3018.8 *4*	100 *15*	1204.205	2^+
		3626.7 *4*	50 *22*	595.850	2^+
4224.9	1^-	4224.9 *8*		0.0	0^+
4235.33	$(2,3,4)^+$	258.8 *5*	67 *17*	3976.23	$(2,3,4^+)$
		3030.3 *5*	100 *28*	1204.205	2^+
		3639.45[d] *13*	<44[d]	595.850	2^+
4305.8	1	4305.8 *13*		0.0	0^+
4339.67	(2^+)	122.37 *2*	6.5 *13*	4217.30	$(2^+,3,4^+)$
		618.90 *8*	4.8 *11*	3720.79	$(3,4^+)$

$^{74}_{32}Ge_{42}$-13

Adopted Levels, Gammas (continued)

γ(^{74}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
4339.67	(2$^+$)	648.2 *2*	4.8 *11*	3691.79	3$^-$
		1258.37 *8*	100 *4*	3081.321	(3$^+$)
		1739.2 *6*	67 *16*	2600.32	(1,2,3)$^+$
		2111.9 *2*	20 *2*	2227.77	0$^+$
4342.6	1	4342.6 *3*		0.0	0$^+$
4367.2	(1$^-$ to 5$^-$)	1024.3 *5*	100 *20*	3342.94	(3$^-$,4$^+$)
		1417.6 *7*	80 *7*	2949.48	(3$^-$)
4368.15	(2$^+$)	1009.64 *8*	47 *10*	3358.517	(2$^+$,3,4$^+$)
		1263.6 *3*	100 *13*	3104.506	5$^-$
		1394.8 *5*	27 *7*	2973.472	(3)
		1539.58 *10*	32 *3*	2828.507	4$^+$
		2202.4 *7*	8 *2*	2165.259	(3,4)$^+$
		4368.4 *5*	5.7 *10*	0.0	0$^+$
4413.54	2$^+$	606.87[d] *13*	100[d] *24*	3806.772	3$^-$
		2716.2 *2*	11 *1*	1697.140	(3)$^+$
		2949.6 *2*	22 *3*	1463.759	4$^+$
4439.98	(2,3,4)	100.31 *1*	16 *4*	4339.67	(2$^+$)
		1058.0 *3*	24 *5*	3381.74	3$^-$
		1839.9 *4*	45 *5*	2600.32	(1,2,3)$^+$
		2742.9 *2*	100 *10*	1697.140	(3)$^+$
4442.18	(2$^+$,3,4$^+$)	606.87[d] *13*	100[d] *24*	3835.27	(2$^+$,3,4$^+$)
		750.37 *5*	10 *1*	3691.79	3$^-$
		1049.50[d] *9*	21[d] *2*	3392.618	2$^+$
		1303.0[dc] *3*	15[d] *2*	3140.30	3$^-$
		1393.3[d] *3*	16[d] *3*	3048.564	4$^+$
		1872.82 *13*	38 *3*	2569.329	(6$^+$)
4477.49	(0$^+$ to 4$^+$)	999.9[c] *2*		3478.37	(2,3)$^+$
		1134.5 *3*		3342.94	(3$^-$,4$^+$)
		1337.18 *10*		3140.30	3$^-$
		1443.38[d] *7*	[d]	3034.00	(3,4$^+$)
		3274.1 *12*		1204.205	2$^+$
4527.89	(2$^+$)	784.55 *3*	100 *2*	3743.348	(3$^-$,4$^+$)
		1049.50[d] *9*	71[d] *6*	3478.37	(2,3)$^+$
		1303.0[d] *3*	49[d] *6*	3224.680	4$^+$
		1958.1 *4*	16 *3*	2569.329	(6$^+$)
		2362.7 *4*	24 *3*	2165.259	(3,4)$^+$
		3044.8 *2*	47 *5*	1482.81	0$^+$
		3064.5 *9*	8 *3*	1463.759	4$^+$
4611.42	(2$^-$,3$^-$,4$^-$)	1471.7 *2*	72 *8*	3140.30	3$^-$
4611.42	(2$^-$,3$^-$,4$^-$)	2074.14[c] *25*	100 *14*	2536.310	3$^-$
4630.43	(2$^+$)	516.27 *12*	100 *33*	4119	3$^-$,4$^-$,5$^-$,6$^-$
		2094.0 *2*	9 *1*	2536.310	3$^-$
		2905.23 *9*	23 *2*	1724.954	(0$^+$)
		4034.70 *10*	16 *1*	595.850	2$^+$
		4630.6 *7*	1.7 *6*	0.0	0$^+$
4698.29	(2$^-$,3$^-$,4$^-$)	1131.52 *14*	100 *6*	3566.75	(2$^+$,3,4$^+$)
		2004.6 *2*	57 *6*	2693.68	(3,4$^+$)
4840.92	(2$^+$)	685.66 *3*	21 *1*	4155.25?	
		966.7 *2*	48 *9*	3874.17	2$^+$
		1482.5 *4*	100 *19*	3358.517	(2$^+$,3,4$^+$)
		1735.9[dc] *9*	90[d] *24*	3104.506	5$^-$
		2171.3 *2*	8.6 *3*	2669.62	4$^+$
		2675.9 *4*	14 *3*	2165.259	(3,4)$^+$
		3377.0 *2*	40 *3*	1463.759	4$^+$
		4245.0 *5*	32 *6*	595.850	2$^+$
		4840.9 *9*	71 *3*	0.0	0$^+$
4972.55	(2$^+$)	1200.9[d] *2*	100[d] *33*	3771.74	(2$^+$,3,4$^+$)
		1393.3[d] *3*	13[d] *2*	3578.93	2$^+$
		2037.03 *11*	38 *3*	2935.475	3$^-$
		3275.5 *3*	6 *1*	1697.140	(3)$^+$
		3489.9 *3*	10 *2*	1482.81	0$^+$
		4972.0 *4*	20 *2*	0.0	0$^+$
5131.45	(2 to 6)	691.48 *8*	10 *3*	4439.98	(2,3,4)
		1735.9[d] *9*	100[d] *26*	3392.618	2$^+$
		2082.3 *6*	15 *3*	3048.564	4$^+$
		2562.13 *13*	95 *8*	2569.329	(6$^+$)
		2965.9 *3*	33 *4*	2165.259	(3,4)$^+$
		3668.0 *4*	37 *6*	1463.759	4$^+$
5434.8	1$^-$	5434.8 *5*		0.0	0$^+$
5485.1	1	5485.1 *12*		0.0	0$^+$
5493.1	1	5493.1 *10*		0.0	0$^+$
5514.8	1	5514.8 *8*		0.0	0$^+$
5743.7	1	5743.7 *10*		0.0	0$^+$
5766.7	1$^{(+)}$	5766.7 *4*		0.0	0$^+$
6017.4	1$^-$	3017 *4*	4.9 *25*	2999.2	2$^+$
		3418 *4*	2.4 *12*	2600.32	(1,2,3)$^+$
		3789 *4*	9.8 *24*	2227.77	0$^+$
		3818 *4*	22.0 *24*	2197.933	2$^+$

$^{74}_{32}Ge_{42}$-14

Adopted Levels, Gammas (continued)

γ(^{74}Ge) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]
6017.4	1⁻	4301[e] *4*		1724.954	(0⁺)	
		4532 *4*	14.6 *24*	1482.81	0⁺	
		4812 *4*	39 *5*	1204.205	2⁺	
		5422 *4*	100 *10*	595.850	2⁺	E1
		6018 *4*	46 *5*	0.0	0⁺	E1
6445.1	1	6445.1 *11*		0.0	0⁺	
6477.9	1⁻	6477.9 *6*		0.0	0⁺	
6650.3	1⁻	6650.3 *3*		0.0	0⁺	
6660.5	1⁻	6660.5 *5*		0.0	0⁺	
6732.7	1⁺	6732.7 *8*		0.0	0⁺	
6942.6	1⁻	6942.6 *6*		0.0	0⁺	
7150.8	1⁻	7150.8 *16*		0.0	0⁺	
7264.6	1⁻	7264.6 *6*		0.0	0⁺	
7379.9	1	7379.9 *10*		0.0	0⁺	
7445.3	1	7445.3 *11*		0.0	0⁺	
7506.7	1(−)	7506.7 *10*		0.0	0⁺	
7550.7	1⁻	7550.7 *7*		0.0	0⁺	
7616.0	1	7616.0 *8*		0.0	0⁺	
7652.1	1⁻	7652.1 *6*		0.0	0⁺	
8219.0	1	8219.0 *8*		0.0	0⁺	
8250.2	1	8250.2 *8*		0.0	0⁺	
8361.1	1	8361.1 *12*		0.0	0⁺	

[†] From measured $T_{1/2}$ of levels and RUL of Weisskopf estimates for transitions of E2 or M2 multipolarity.
[‡] Reported in (n,γ) E=th only.
[#] Reported in ^{74}Ga β^- only.
[@] Reported in (γ,γ′) only.
[&] Placement in (n,γ) uncertain since no γ seen in ^{74}Ga β^-.
[a] Poor energy fit. Possible a doublet. See 3783 level.
[b] Most probably a doublet. The second component belongs with the 3175 level.
[c] Poor energy fit.
[d] Multiply placed with undivided intensity.
[e] Placement of transition in the level scheme is uncertain.

$^{74}_{32}Ge_{42}$-15

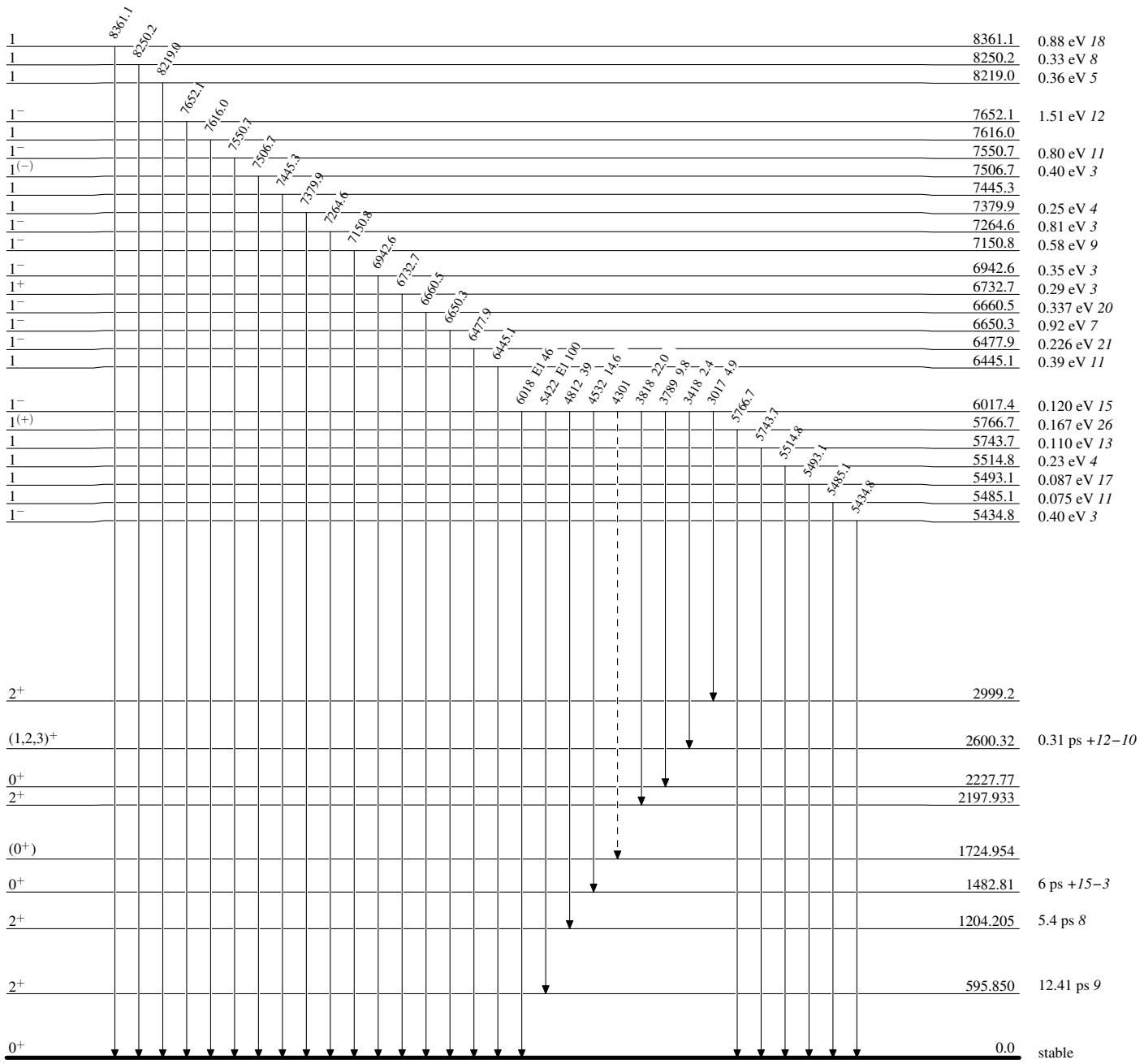
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

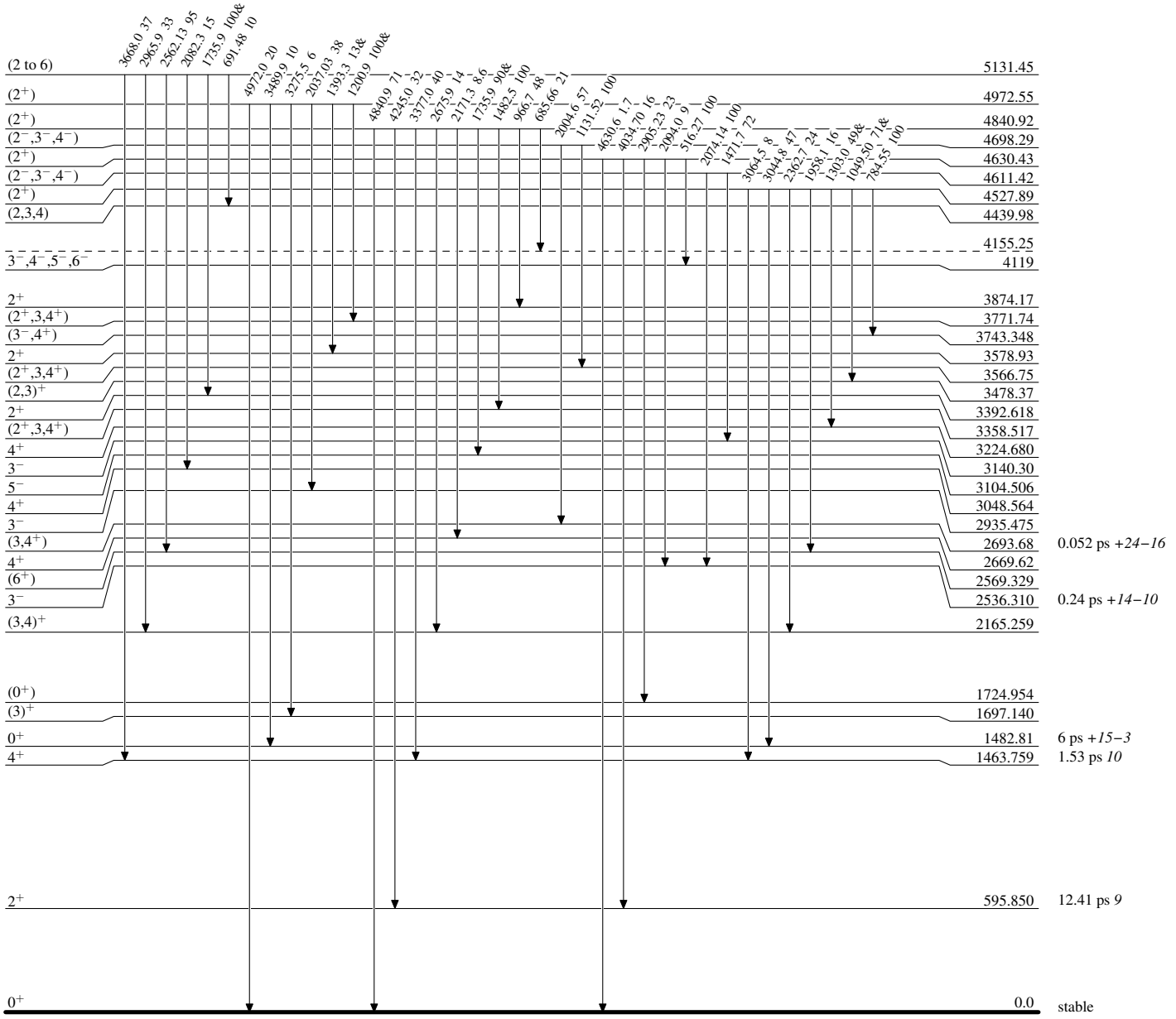


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

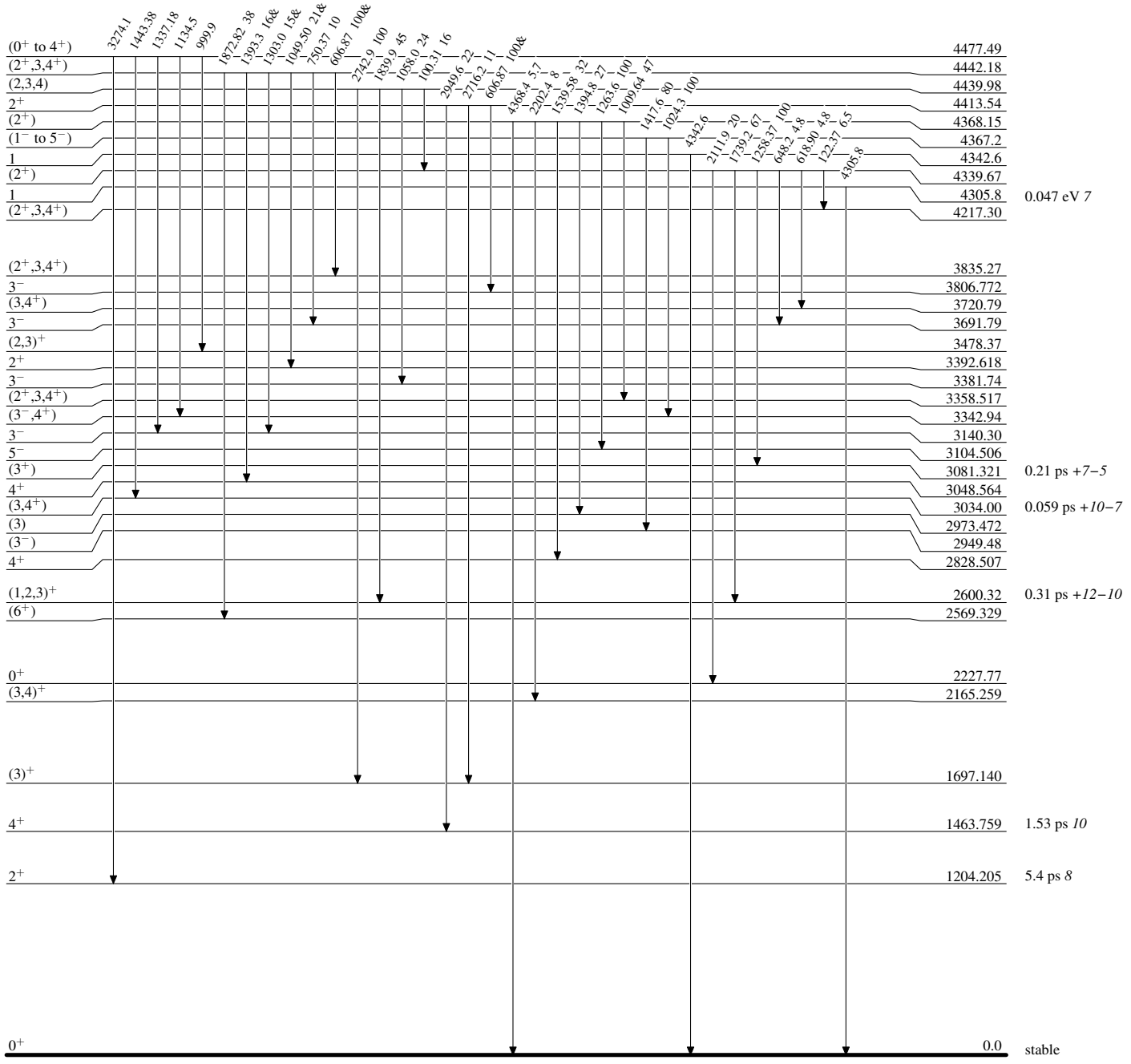


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

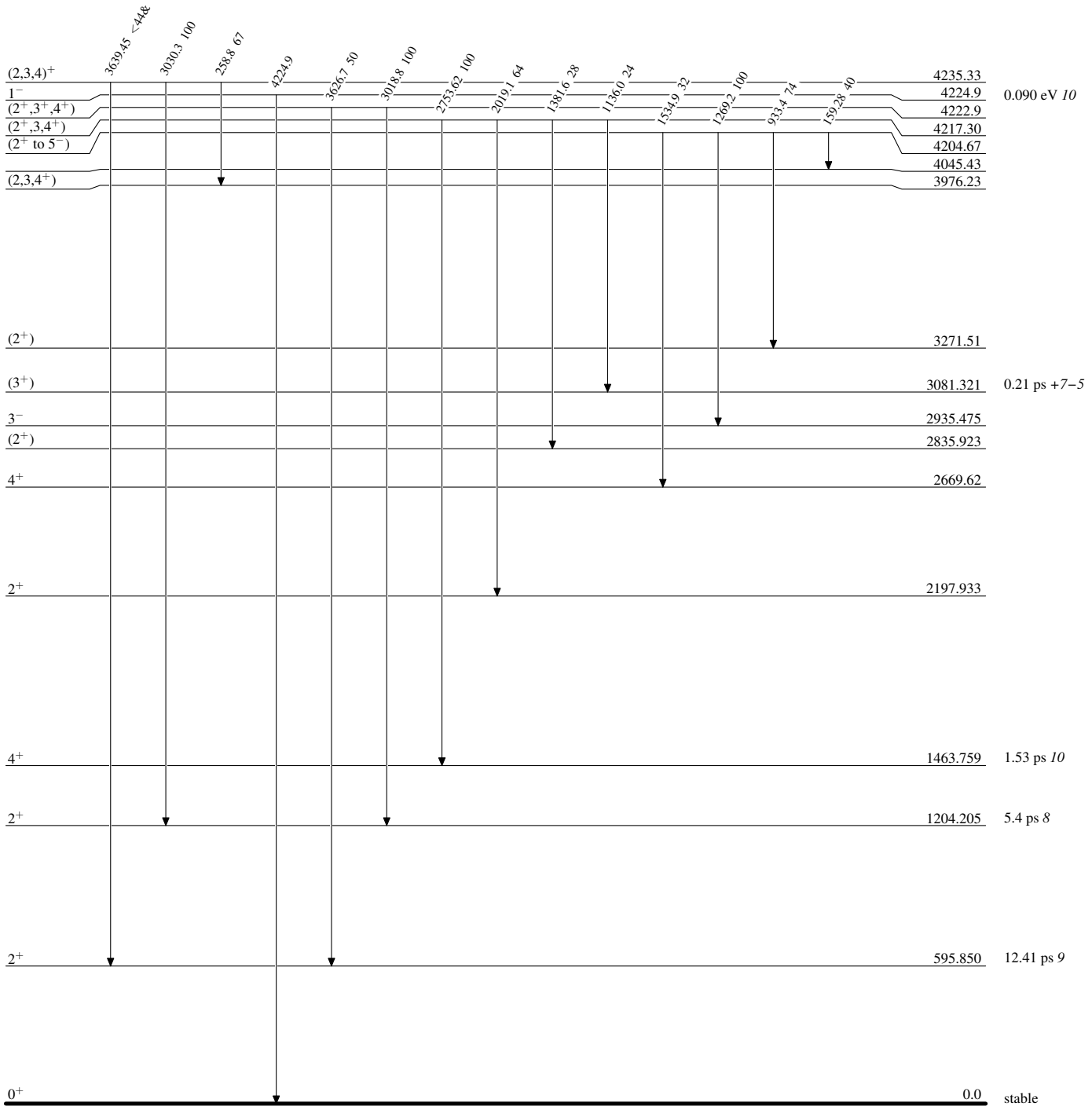


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

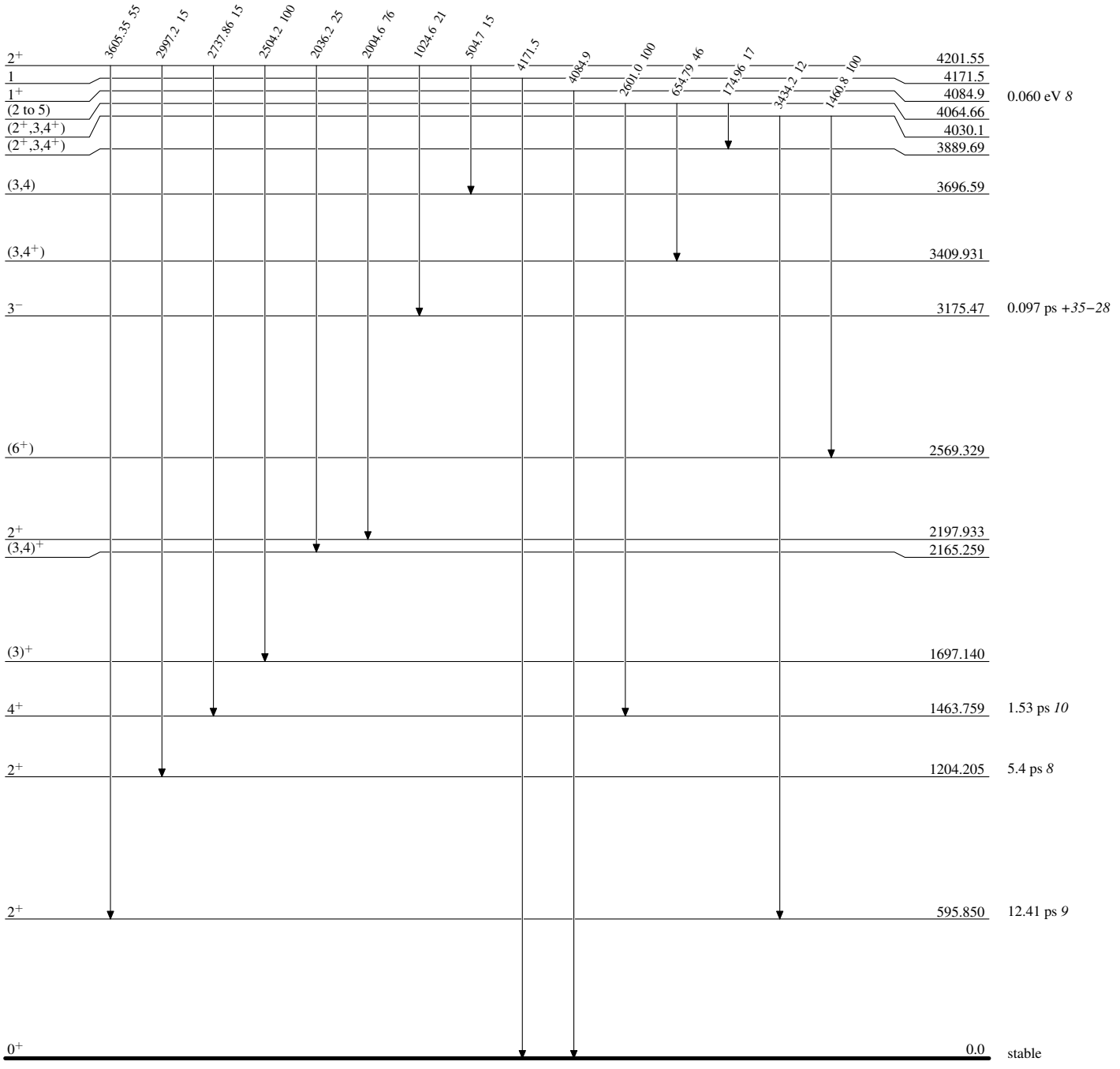


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

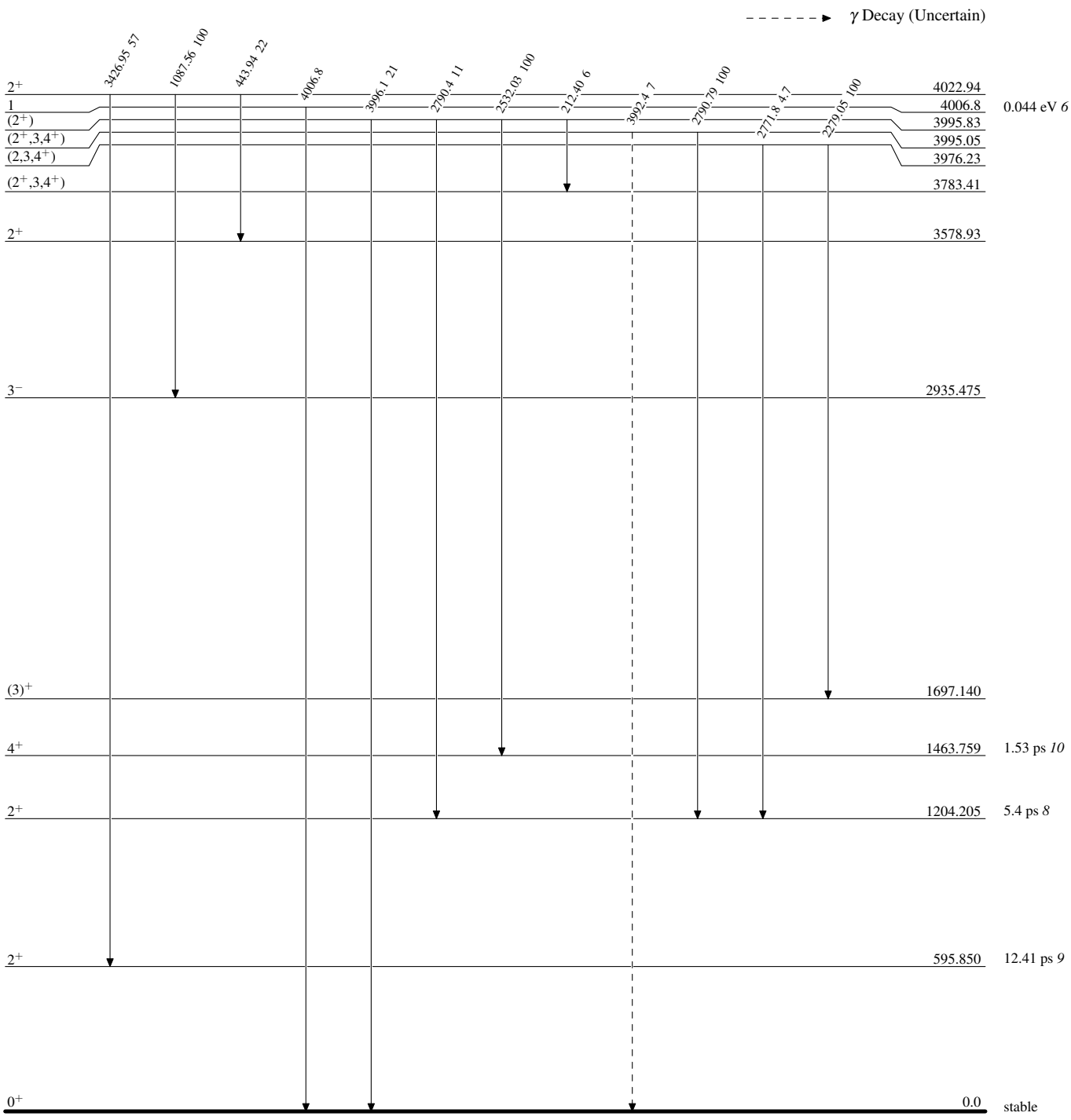


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

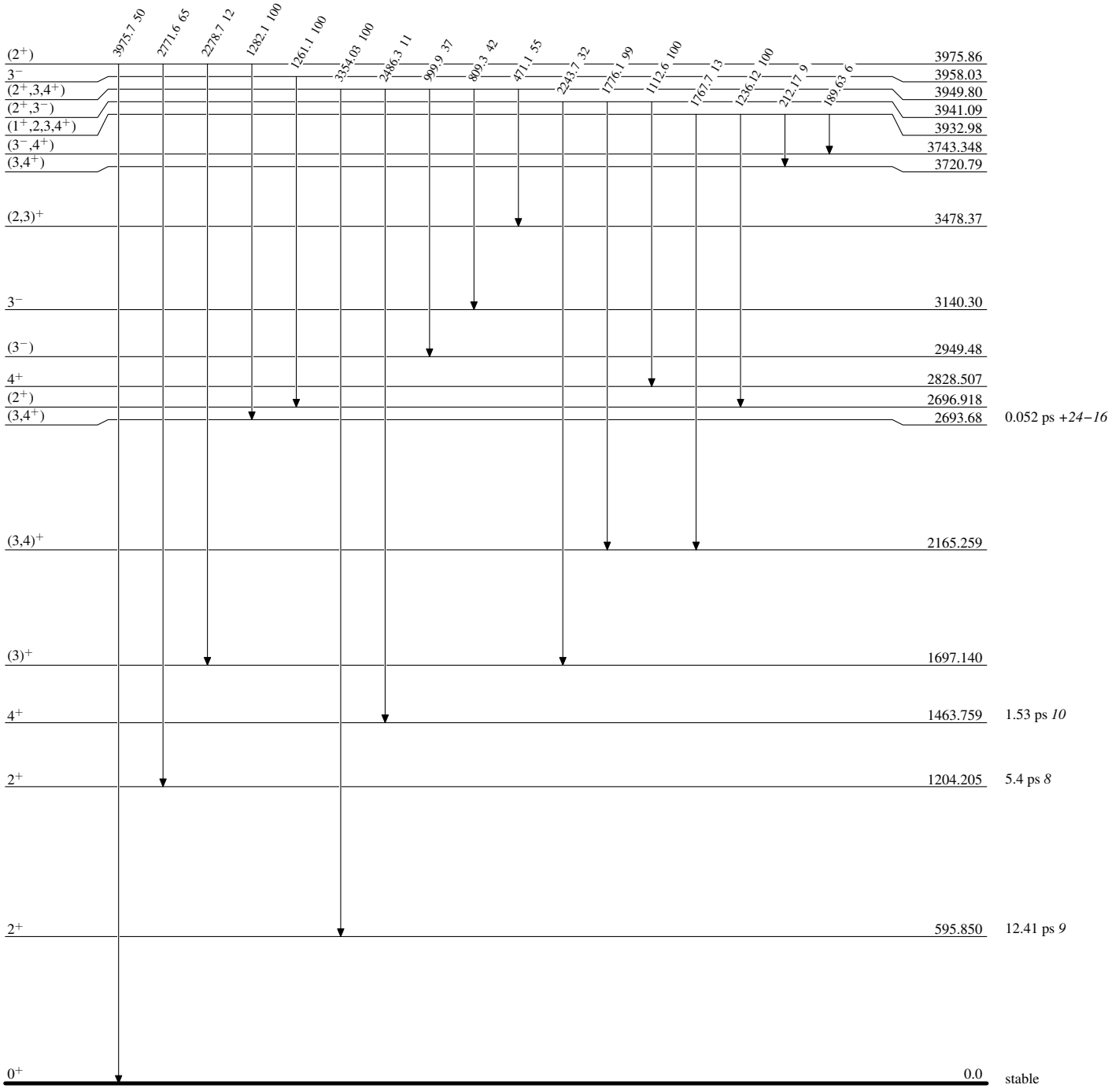


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

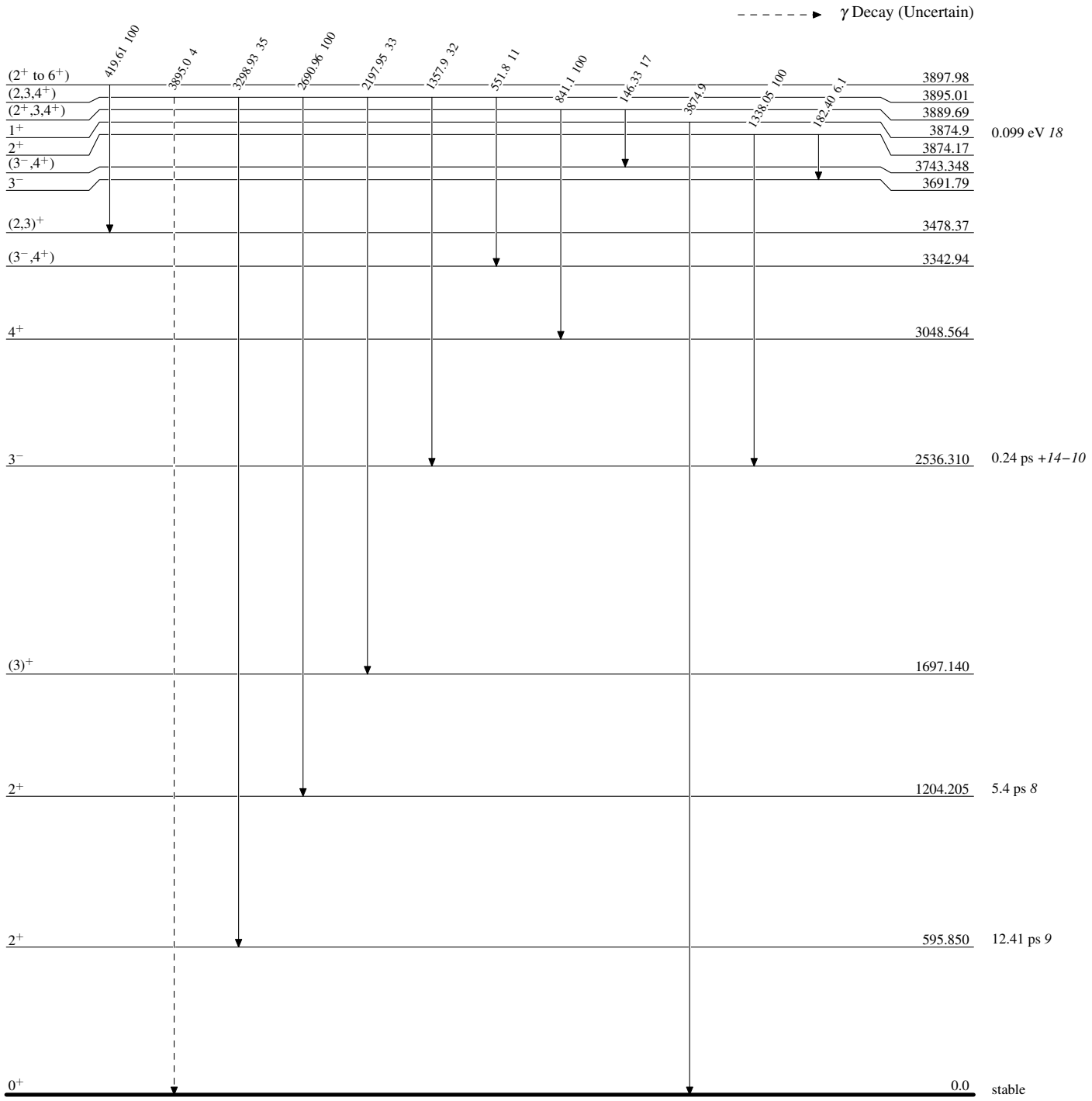


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

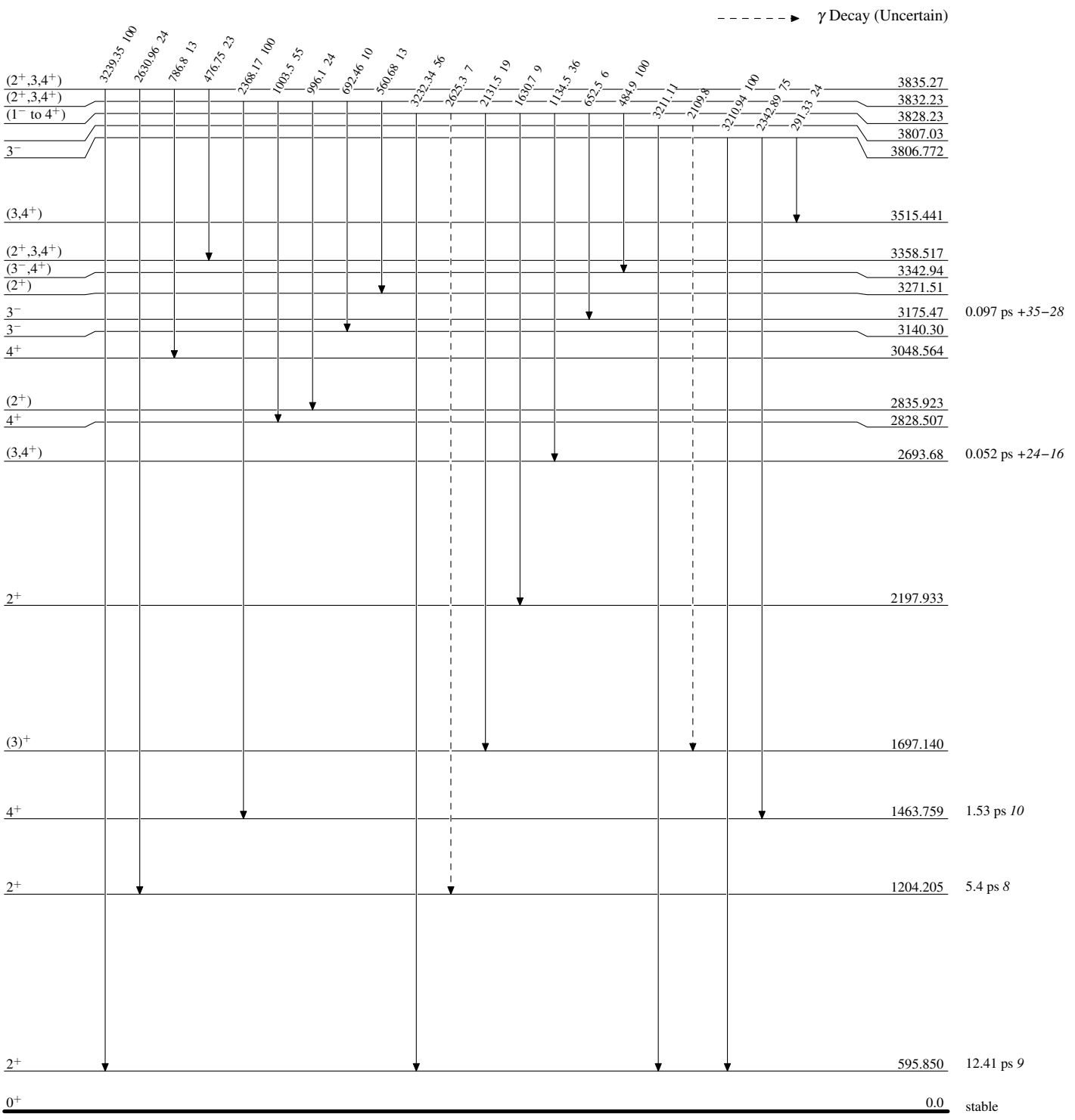


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

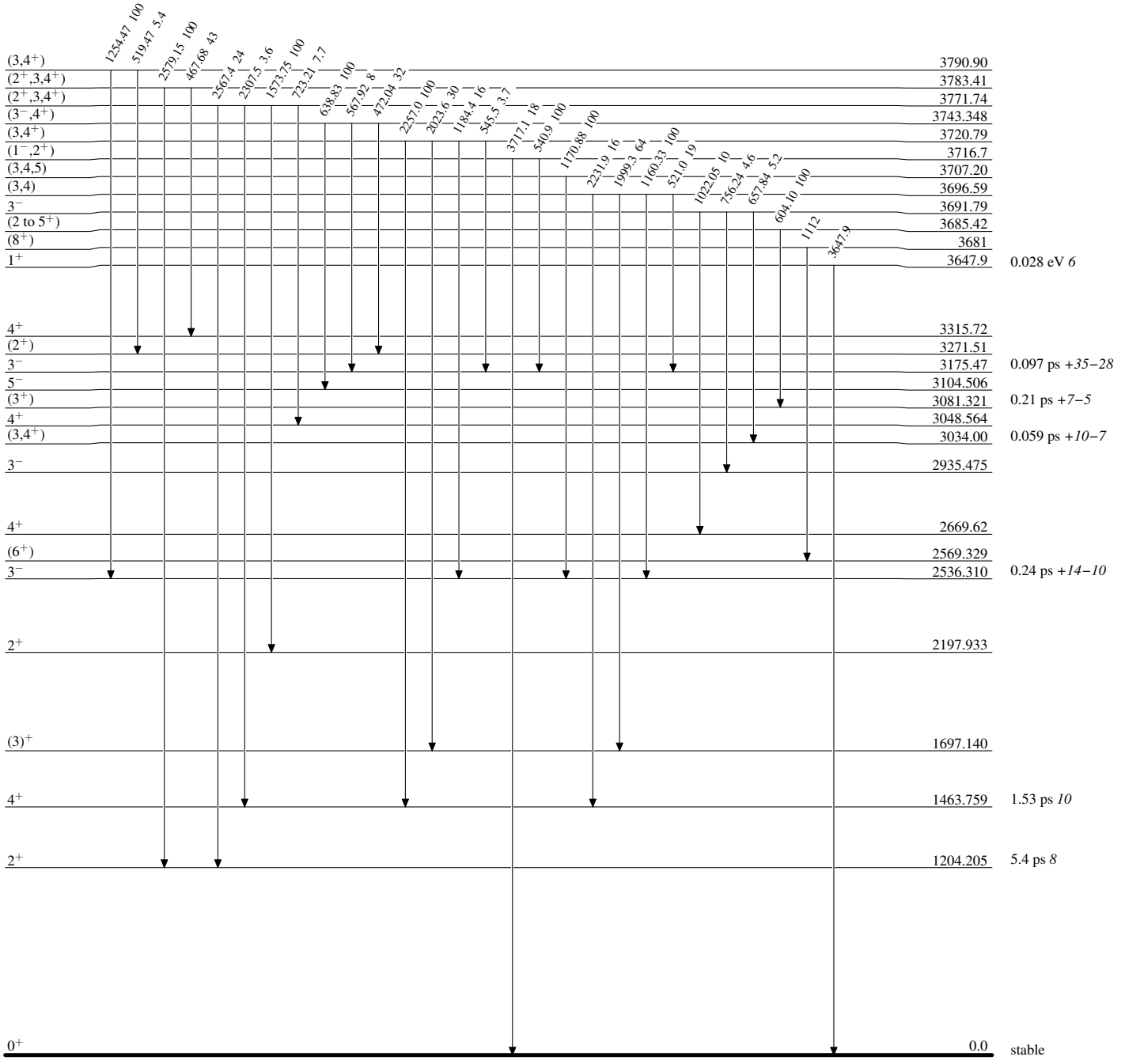
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



$^{74}_{32}Ge_{42}$

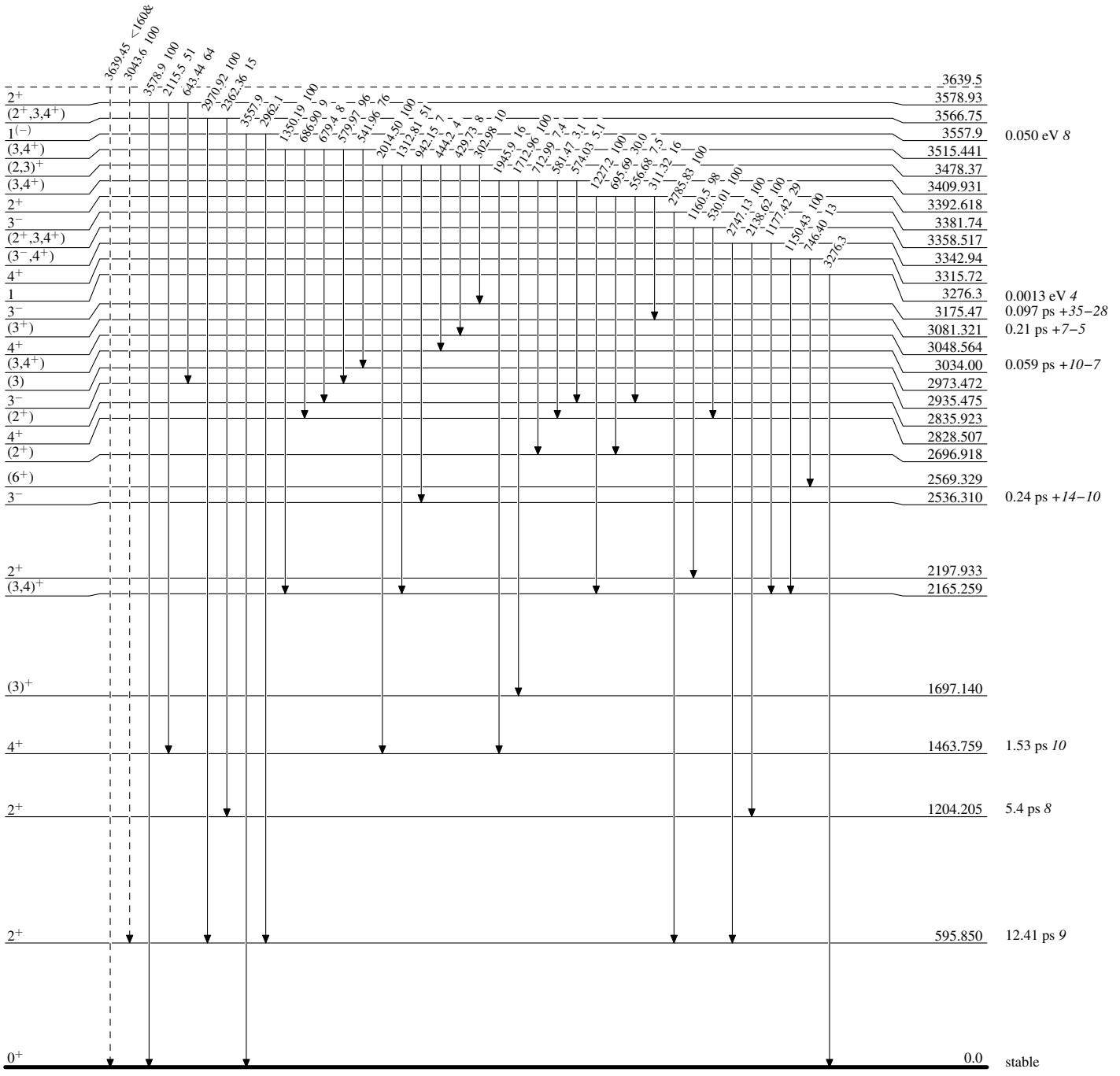
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

– – – – – – ► γ Decay (Uncertain)



$^{74}_{32}Ge_{42}$

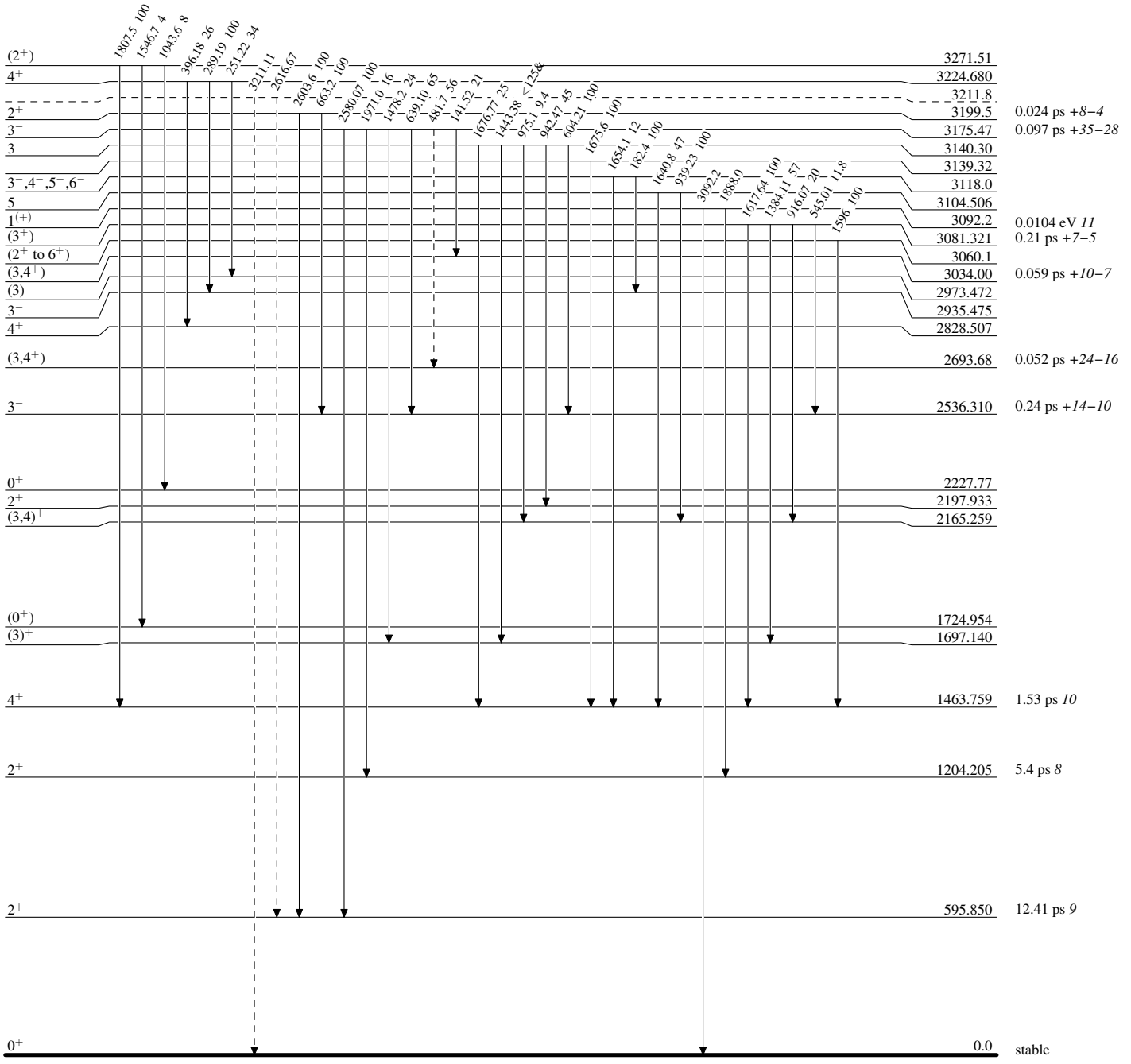
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

- - - - - - ► γ Decay (Uncertain)

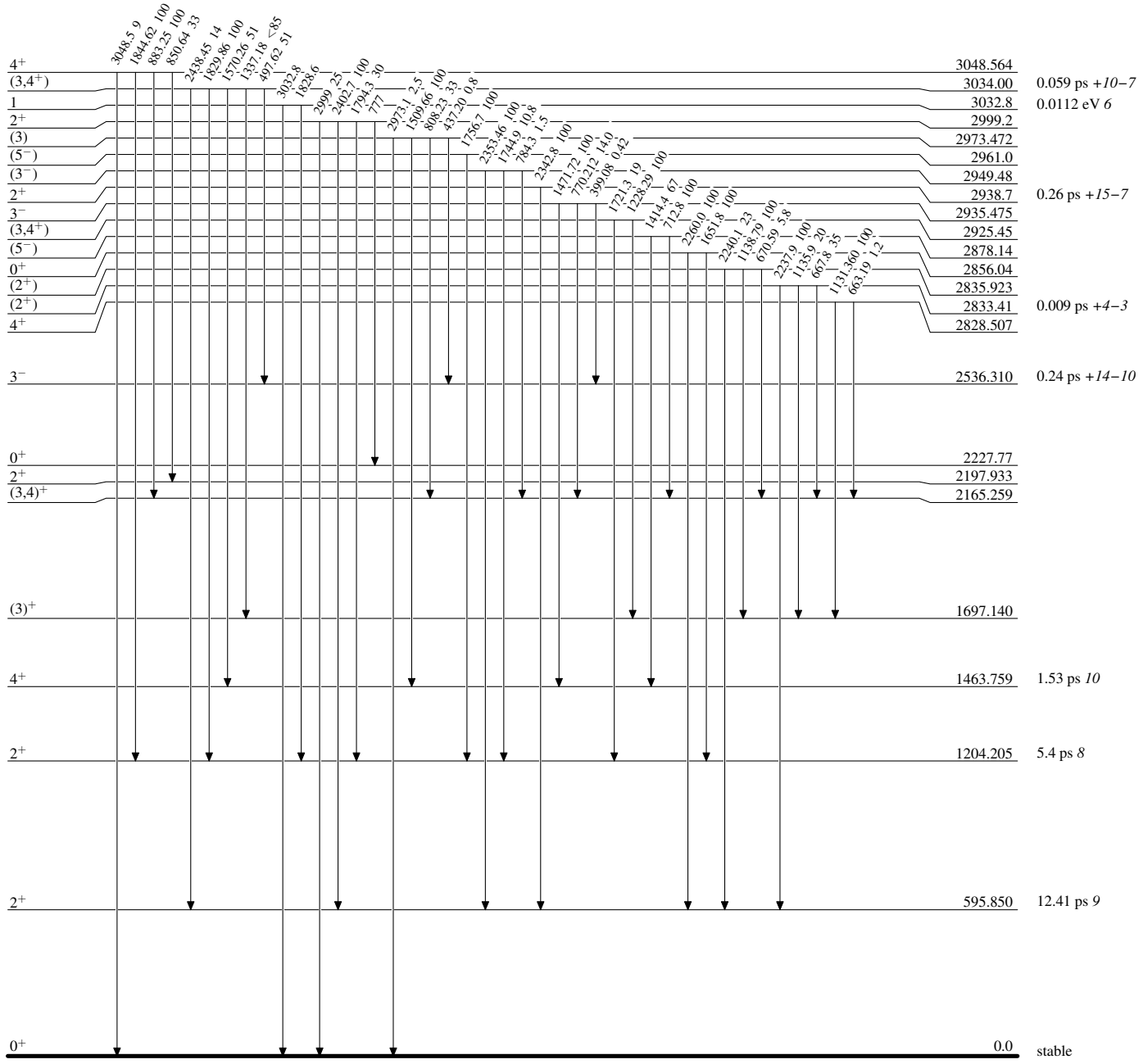


$^{74}_{32}Ge_{42}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

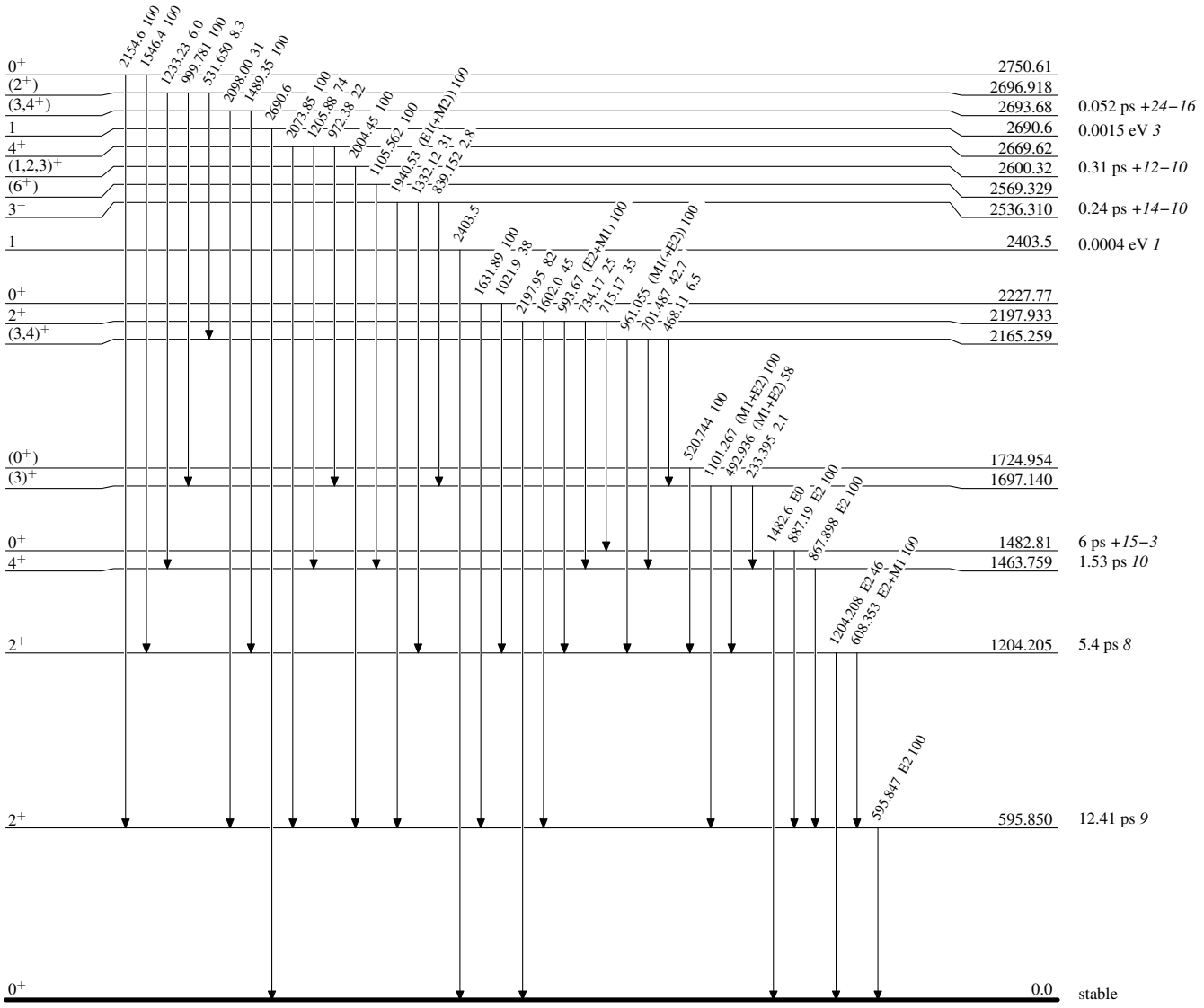


$^{74}_{32}Ge_{42}$

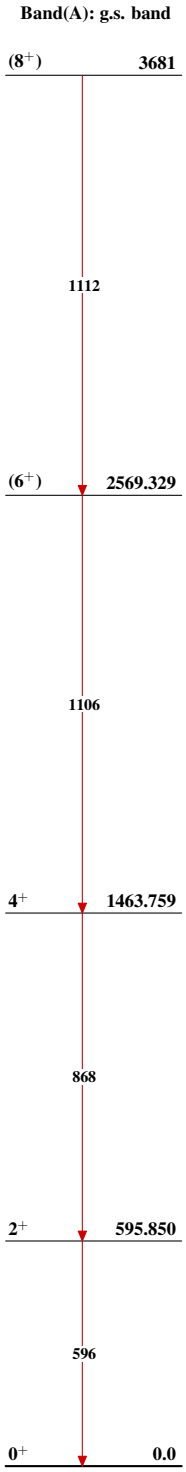
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



Adopted Levels, Gammas



$^{74}_{32}Ge_{42}$