Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 113,1735 (2012)	1-Mar-2012

Q(β^-)=−8084 *3*; S(n)=12392 *5*; S(p)=7388.9 *23*; Q(α)=−3399.9 *20* 2012Wa38
Note: Current evaluation has used the following Q record −8084 3 *12392* 5 *7388.9* *23* −3400.0 *20* 2011AuZZ.
S(2n)=21514 *3*, S(2p)=12657.7 *21* (2011AuZZ).
α: Additional information 1.

^{68}Ge Levels

Cross Reference (XREF) Flags

A	^{68}As ε decay (151.6 s)	E	^{12}C(^{64}Zn,^{8}Beγ)
B	^{69}Se εp decay (27.4 s)	F	^{64}Zn(^{6}Li,d)
C	^{70}Ge(p,t)	G	^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,p2nγ)
D	^{66}Zn(^{12}C,^{10}Be)	H	(HI,xnγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0[@]	0$^+$	270.93 d *13*	ABCDEFGH	%ε=100 T$_{1/2}$: weighted average of 270.82 d *27* (1981Wa26) and 270.99 d *19* (1994Sc44). Others: 228 d *6* (Rudstam thesis, Uppsala University, Sweden) and 275 d *20* (1956Cr29).
1015.81[@] *8*	2$^+$	2.08 ps *11*	ABCDE GH	μ=+1.1 *3* J$^\pi$: L(p,t)=2. μ: from transient field method (2011StZZ,2005Le19). T$_{1/2}$: weighted average of 2.15 ps *14* from DSAM in ^{12}C(^{64}Zn,^{8}Beγ) and 1.98 ps *17* from DSAM and RDM in ^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,p2nγ). Others: 2.1 ps *7* (1981De03), 3.5 ps *+21−14* (1977Mo20), and 1.4 ps *7* (1977Gu08) all from DSAM/RDM in ^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,p2nγ).
1754.5[&] *4*	0$^+$		A Cd GH	J$^\pi$: L(p,t)=0.
1777.42[a] *10*	2$^+$	1.80 ps *14*	A CdE GH	T$_{1/2}$: from DSAM in ^{12}C(^{64}Zn,^{8}Beγ). Others: >3.5 ps (1982Pa03), 3.5 ps *+21−14* (1977Mo20), and 4.2 ps *7* (1977Gu08) from ^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,p2nγ). J$^\pi$: E2 1777γ to 0$^+$ g.s.
2267.83[@] *11*	4$^+$	0.87 ps *10*	A CDE GH	J$^\pi$: L(p,t)=4. T$_{1/2}$: weighted average of 0.90 ps *14* from ^{12}C(^{64}Zn,^{8}Beγ) and 0.83 ps *14* from ^{64}Zn(^{7}Li,p2nγ).
2428.59[a] *12*	3$^+$	2.1 ps *7*	A E GH	J$^\pi$: J=3 from $\gamma(\theta)$, $\gamma\gamma(\theta)$(DCO), π from 651γ to 2$^+$.
2457.15[&] *13*	2$^+$	1.3 ps *4*	A E GH	T$_{1/2}$: from DSAM in ^{12}C(^{64}Zn,^{8}Beγ). J$^\pi$: 190γ to 4$^+$, 2457γ to 0$^+$.
2617 *3*	0$^+$		C	J$^\pi$: L(p,t)=0.
2648.67[b] *11*	3$^-$	2.1 ps *+14−7*	A CDE GH	J$^\pi$: L(p,t)=3; J=3 from $\gamma(\theta)$ and $\gamma\gamma(\theta)$(DCO).
2831.86[a] *11*	4$^+$	0.8 ps *+7−3*	A C E GH	J$^\pi$: L(p,t)=4.
2900.2[c] *7*	(4$^-$)		H	
2947.1 *5*	2$^+$		A C G	XREF: C(2942). J$^\pi$: L(p,t)=2.
3023.1 *5*	2$^+$		A C	J$^\pi$: L(p,t)=2.
3040.73 *23*	(4)$^+$		A d GH	J$^\pi$: J=(4) from $\gamma(\theta)$, M1+E2 612γ to 3$^+$.
3061.87 *11*	(3$^-$)		Cd GH	J$^\pi$: 2046γ to 2$^+$, 587γ from 5$^-$; L(p,t)=(3).
3087.5 *4*	2$^{(+)}$		A G	J$^\pi$: γ's to 0$^+$, log *ft*=6.7 from ^{68}As ε decay (J$^\pi$=3$^+$).
3182.26[&] *11*	4$^+$		C GH	J$^\pi$: L(p,t)=4; E2 1405γ to 2$^+$.
3204 *3*	0$^+$		C	J$^\pi$: L(p,t)=0.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{68}Ge Levels (continued)

E(level)[†]	Jπ[‡]	T$_{1/2}$[#]	XREF	Comments
3287.8 *7*	2$^{(+)}$		A	Jπ: 3288γ to 0$^+$; log *ft*=7.0 from ^{68}As ε decay (*J*π=3$^+$).
3400.3 *4*	2$^+$		A C G	Jπ: γ's to 0$^+$; log *ft*=6.2 from ^{68}As ε decay (*J*π=3$^+$).
3417.0 *4*			A	
3474.7 *10*			A	E(level): log *ft*=6.2 from ^{68}As ε decay (*J*π=3$^+$) suggests this is a distinct level from the 0$^+$ 3476 *3*.
3476 *3*	0$^+$		C F	Jπ: L(p,t)=L(^{6}Li,d)=0.
3509.67 *12*	4$^-$		H	
3522.1 *10*	2$^+$		A C	Jπ: L(p,t)=2.
3581.98[b] *12*	5$^-$	1.2 ps *4*	C GH	E(level): doublet suggested by L(p,t)=(5+1). Jπ: E2 933γ to 3$^-$, E2 472γ from 7$^-$.
3604 *3*	4$^+$		C	Jπ: L(p,t)=4.
3649.05[d] *11*	5$^-$	0.4 ps *+3−1*	Cd GH	Jπ: E2 1000γ to 3$^-$, E2 405γ from 7$^-$; L(p,t)=(4) discrepant.
3675.34[a] *14*	5$^+$		d GH	Jπ: 1247γ to 3$^+$, band member.
3695.94[@] *12*	6$^+$	0.49 ps *14*	GH	Jπ: J=6 from γ(θ), DCO and yield function; E2 1428γ to 6$^+$.
3735 *3*	(2$^+$)		C	Jπ: L(p,t)=(2).
3809.3 *10*	2$^+$		A C	Jπ: L(p,t)=2.
3882.95[c] *12*	6$^-$	132 ps *35*	GH	μ=0.53 *11* μ: from recoil into gas perturbed angular correlations (2011StZZ,1986Ba64). Relative to g=0.44 *2* for the 596 2+ state in ^{74}Ge. Jπ: J=6 from γ(θ), DCO and yield function; M1(+E2) 234γ to 5$^-$.
4021 *3*	4$^+$		C	Jπ: L(p,t)=4.
4037 *3*	(2$^+$)		C	Jπ: L(p,t)=(2).
4053.72[d] *11*	7$^-$	118 ps *21*	CD GH	μ=0.78 *12* Jπ: L(p,t)=(7); J=7 from γ(θ), DCO and yield function. μ: from recoil into gas perturbed angular correlations (2011StZZ,1986Ba64). Relative to g=0.44 *2* for the 596 2+ state in ^{74}Ge.
4078 *3*	0$^+$		C	Jπ: L(p,t)=0.
4144.07[&] *11*	6$^+$		C H	Jπ: 962γ to 4$^+$, band member.
4238.5 *10*	(2$^+$)		A C	Jπ: L(p,t)=(2).
4322 *3*	2$^+$		C	Jπ: L(p,t)=2.
4358 *3*	0$^+$		C	Jπ: L(p,t)=0.
4453.89[b] *13*	7$^-$	0.97 ps *21*	C GH	Jπ: J=7 from γ(θ), DCO and yield function; M1+E2 400γ to 7$^-$. L(p,t)=(6) discrepant (but the fit is poor).
4567.5 *10*	(2$^+$)		A C	Jπ: L(p,t)=(2).
4614 *3*	(3$^-$)		C	Jπ: L(p,t)=(3).
4659.46 *13*	7$^-$	0.3 ps *1*	CD GH	T$_{1/2}$: the B(E2)(606γ) exceeds RUL by a factor of ≈3, suggesting that the T$_{1/2}$ value may be too small.
4736 *3*	0$^+$		C	Jπ: L(p,t)=0.
4789 *3*	0$^+$		C	Jπ: L(p,t)=0.
4836.97[@] *12*	8$^+$	1.04 ps *21*	D GH	μ=+0.8 *3* μ: from transient field method (2011StZZ,1986Ba64); measured relative to a theoretical value of g=0.4 for the 3696, 6$^+$ state in ^{68}Ge. Jπ: J=8 from γ(θ), DCO and yield function; E2 1141γ to 6$^+$.
4857 *10*			C	
4877.7 *10*			A C	
4957.40[c] *15*	8$^-$	0.9 ps *+4−2*	GH	Jπ: J=8 from γ(θ), DCO and yield function; E2 1074γ to 6$^-$.
4999?		>0.35 ps	G	
5049.58[e] *12*	8$^+$	0.49 ps *+21−14*	GH	μ=−2.2 *10* μ: from transient field method (2011StZZ,1986Ba64); measured relative to a theoretical value of g=0.4 for the 3696, 6$^+$ state in ^{68}Ge. Jπ: J=8 from γ(θ), DCO and yield function; E2 1354γ to 6$^+$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{68}Ge Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
5074 *10*			C	
5148.69 *13*	(8⁻)	1.2 ps *3*	D GH	
5217 *10*			C	
5266.6[a] *10*	7⁺		H	Jπ: 1591γ to 5⁺, band member.
5330.11[d] *13*	9⁻	0.69 ps *+21−14*	GH	Jπ: J=9 from γ(θ), DCO and yield function; E2 1276γ to 7⁻.
5366.08[&] *13*	8⁺	0.83 ps *+28−21*	GH	Jπ: J=8 from γ(θ), DCO and yield function; E2 1670γ to 6⁺.
5560 *50*			D	
5678.02[b] *13*	9⁻	0.5 ps *2*	GH	Jπ: J=9 from γ(θ), DCO and yield function; E2 1224γ to 7⁻.
5821.61 *14*	9⁻	0.8 ps *4*	GH	
5873.98 *23*	9⁺	1.5 ps *+10−6*	GH	
5961.49[@] *14*	10⁺	0.76 ps *+21−14*	GH	Jπ: J=10 from γ(θ), DCO and yield function; E2 1124γ to 8⁺.
6214.89[e] *14*	10⁺	<0.7 ps	GH	Jπ: J=10 from γ(θ), DCO and yield function; E2 1165γ to 8⁺.
6300 *50*	(8⁺)		D	Jπ: from crude shell-model calculations (1990Bo27). Configuration:$(\pi g_{9/2})^2_{8+}$ (1990Bo27).
6420.36[c] *25*	10⁻		H	
6556.52 *14*	(10)⁻		H	
6595.71[&] *16*	10⁺		H	Jπ: 1230γ to 8⁺, band member.
6663.81 *24*	10⁺		H	
6671.10? *16*			H	
6960 *50*	(6⁺)		D	Jπ: from crude shell-model calculations (1990Bo27). Configuration:$(\pi g_{9/2}\pi d_{5/2})_{6+}$ (1990Bo27).
7044.83[d] *16*	11⁻	1.0 ps *+4−3*	GH	Jπ: J=11 from γ(θ), DCO and yield function; E2 1715γ to 9⁻.
7145.30[b] *16*	11⁻		GH	Jπ: J=11 from γ(θ), DCO and yield function; E2 1467γ to 9⁻.
7242.1? *10*	(10⁺)	0.7 ps *+7−4*	G	Jπ: (E2) 1876 γ to 8⁺.
7251.12 *13*	11⁻		H	
7320.1? *10*	(12⁺)		H	
7371.21[@] *15*	12⁺	0.7 ps *+14−3*	GH	Jπ: J=12 from γ(θ), DCO and yield function; E2 1410γ to 10⁺.
7495.95 *16*	(11⁻)		H	
7516.89[e] *14*	12⁺		H	
7532.5[f] *10*	12⁺		H	
7559.38[g] *14*	12⁺	0.8 ps *+6−4*	GH	Jπ: J=12 from γ(θ), DCO and yield function; E2 1344γ to 10⁺.
7761.85 *14*	12⁺		H	
7881.5? *10*			H	
8043.38[l] *16*	13⁺		H	
8171.94 *14*	13⁻		H	Jπ: J=13 from γ(θ); E2 921γ to 11⁻.
8621.5? *10*			H	
8660.57[g] *15*	14⁺		H	
8663.3? *10*			H	
8781.4? *10*			H	
8790.26[h] *17*	15⁻		H	Jπ: J=15 from γ(θ); E2 618γ to 13⁻.
8868.18 *19*	14⁻		H	
8930.9? *10*	(14⁺)		H	
9012.1[e] *6*	14⁺		H	
9112.5 *6*	14⁺		H	
9170.0[@] *5*	14⁺	0.4 ps *2*	GH	Jπ: J=12 from γ(θ); E2 1798γ to 12⁺.
9386.56 *17*	15(⁻)		H	
9418.9[f] *14*	14⁺		H	
9563.9[j] *8*	15(⁻)		H	
9605.7[l] *7*	15⁺		H	
10024.58? *18*			H	
10126.6 *8*	16(⁻)		H	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{68}Ge Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF
10217.53[g] 24	16^{+}	H
10295.51[h] 25	17$^{(-)}$	H
10493.4 6	16$^{(-)}$	H
10664.0[e] 7	16^{+}	H
10665.6 6	17$^{(-)}$	H
10688.8? 10		H
10896.0 7	16^{+}	H
10897.0? 12		H
10927.0[j] 5	17$^{(-)}$	H
10957.9 7	16^{+}	H
10988.1 6	16^{+}	H
10989.8[l] 12	17^{+}	H
10990.0[@] 11	16^{+}	H
11085.6[f] 17	16^{+}	H
11406.4? 10		H
11417.4 17	16^{+}	H
11542.7? 19	(17^{+})	H
11793.4? 13		H
11794.2? 10	(19^{-})	H
11832.2 10	(20^{-})	H
11994.4[g] 6	18^{+}	H
12136.9[h] 3	19$^{(-)}$	H
12165.0 8	(19^{-})	H
12246.0[e] 6	18^{+}	H
12262.5[i] 8	(18^{-})	H
12363.4[j] 7	(19^{-})	H
12501.8? 12		H
12535.8? 10		H
12641.7 17	(18^{+})	H
12652.3 13	(18^{-})	H
12719.4[f] 19	18^{+}	H
12779.1? 12		H
12817.2[l] 16	19^{+}	H
12884.1? 12		H
13104.3? 10		H
13265.3? 10		H
13617.4? 12		H
13751.3? 10		H
13953.0[e] 12	20^{+}	H
13991.0? 12		H
14085.5[i] 7	(20^{-})	H
14116.5[g] 12	20^{+}	H
14360.9? 10		H
14401.9[h] 10	21$^{(-)}$	H
14426.6? 16	(21)	H
14485.6[j] 8	(21^{-})	H
14504.9[l] 19	21^{+}	H
14560.4 6	(21)	H
15562.8[g] 15	22^{+}	H
15835.1[e] 15	22^{+}	H
16130.5[i] 12	22$^{(-)}$	H

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{68}Ge Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
16733.9[l] *21*	23^{+}	H	
17360.5? *21*		H	
17496.0[h] *14*	23$^{(-)}$	H	
18022.1[e] *18*	24^{+}	H	
18132.5[i] *16*	24$^{(-)}$	H	
18274.1 *18*		H	
19785.0[l] *23*	25^{+}	H	
20356.6[i] *19*	26$^{(-)}$	H	
20821.2[e] *21*	26^{+}	H	
22958.6[i] *21*	28$^{(-)}$	H	
x[k]	(14)	H	Additional information 2.
1575.0+x?[k] *6*	(16)	H	Additional information 3.
1620.0+x[k] *10*	(16)	H	
3425.0+x[k] *12*	(18)	H	
5440.1+x[k] *16*	(20)	H	
7677.1+x[k] *19*	(22)	H	
10126.2+x[k] *21*	(24)	H	
12815.2+x[k] *23*	(26)	H	

[†] From a least squares fit to Eγ's for levels connected by γ's; ΔE=0.3 keV assumed when not given.

[‡] Unless noted otherwise, from ^{40}Ca(^{32}S,4pγ) in (HI,xnγ) by 2001Wa02. Based on a DCO analysis (no explicit values given) and the assumption that levels decaying predominantly to negative parity levels have themselves negative parity. The 3649 *5-*, 3883 *6-*, and 4054 *7-* J^{π} assignments are taken from previous measurements.

[#] From DSAM and RDM in ^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,2nγ)..., except where noted.

[@] Band(A): Yrast band.

[&] Band(B): Band based on 0^{+}, 1755 level. 2001Wa02 and 1996Ch34 differ in the assignment of the 10^{+} member of this band, 1996Ch34 assign the 6671 level, while 2001Wa02 assign the 6597 level. The latter is adopted here.

[a] Band(C): γ band (2001Wa02).

[b] Band(D): Two ν quasiparticle band. One rotationally-aligned quasiparticle in $g_{9/2}$ and one deformation-aligned quasiparticle in $p_{1/2}$, $p_{3/2}$, or $f_{5/2}$ (2001Wa02).

[c] Band(E): Even-spin signature partner of Band d (1981De03,2001Wa02).

[d] Band(F): Two π quasiparticle band. One rotationally-aligned quasiparticle in $g_{9/2}$ and one deformation-aligned quasiparticle in $p_{1/2}$, $p_{3/2}$, or $f_{5/2}$ (2001Wa02).

[e] Band(G): Band based on 8^{+} 5050 level. Proposed configuration of $\pi(g_{9/2})^2(f_{5/2},p_{3/2})^2$ and $\nu(g_{9/2})^2(f_{5/2},p_{3/2})^6$ (2001Wa02).

[f] Band(H): Side-band based on 12^{+} 7533 level.

[g] Band(I): Side-band based on 12^{+} 7560 level.

[h] Band(J): Octupole band based on 15^{-} 8790 level. Proposed configuration of $\pi(g_{9/2})^1(f_{5/2},p_{3/2})^3$ and $\nu(g_{9/2})^2(f_{5/2},p_{3/2})^6$ (2001Wa02).

[i] Band(K): Octupole band based on (18^{-}) 12263 level. Proposed configuration of $\pi(g_{9/2})^2(f_{5/2},p_{3/2})^2$ and $\nu(g_{9/2})^3(f_{5/2},p_{3/2})^5$ (2001Wa02).

[j] Band(L): Octupole band built on the 15^{-} 9564 level.

[k] Band(M): Super-deformed band (2001Wa02). Percent population=0.2%.

[l] Band(N): Band based on 13^{+} 8043 level. Proposed configuration of $\pi(g_{9/2})^1(f_{5/2},p_{3/2})^3$ and $\nu(g_{9/2})^3(f_{5/2},p_{3/2})^5$ (2001Wa02).

Adopted Levels, Gammas (continued)

γ(^{68}Ge)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
1015.81	2+	1015.74 *4*	100	0	0+	E2		0.000341 *5*	α(K)=0.000305 *5*; α(L)=3.12×10^{-5} *5*; α(M)=4.66×10^{-6} *7*; α(N+..)=3.04×10^{-7} *5* B(E2)(W.u.)=15.3 *8* E_γ: from ^{64}Zn(^{7}Li,p2nγ). Mult.: from γ(lin pol) in (HI,xnγ).
1754.5	0+	738.4[@] *5*	100[@]	1015.81	2+	E2		0.000760 *11*	α(K)=0.000679 *10*; α(L)=7.03×10^{-5} *10*; α(M)=1.048×10^{-5} *15*; α(N+..)=6.78×10^{-7} Mult.: from γγ(θ)(DCO) in ^{58}Ni(^{12}C,2pγ) (1981De03).
1777.42	2+	761.6[@] *1*	100[@] *5*	1015.81	2+	M1+E2	−0.15 *3*	0.000552 *8*	α(K)=0.000494 *7*; α(L)=5.05×10^{-5} *8*; α(M)=7.54×10^{-6} *11*; α(N+..)=4.97×10^{-7} *7* B(E2)(W.u.)=1.0 *5*; B(M1)(W.u.)=0.0169 *18* δ: Others: −0.49 *7* from γ(θ) in ^{48}Ca(^{32}S,4pγ), −0.09 *2* from γ(θ) in ^{63}Cu(^{7}Li,2nγ), −6 *+2−5* or −0.65 *10* from γ(θ) in ^{64}Zn(^{7}Li,p2nγ), and −0.18 *+20−10* from γ(θ) in ^{66}Zn(α,2nγ).
		1777.3[@] *2*	60[@] *4*	0	0+	E2[#]		0.000310 *5*	α(K)=9.36×10^{-5} *14*; α(L)=9.48×10^{-6} *14*; α(M)=1.415×10^{-6} *20* α(N+..)=0.000205 *3* B(E2)(W.u.)=0.40 *5* I_γ: Others: 63 *3* in ^{58}Ni(^{12}C,2pγ) and 44.2 *16* in (HI,xnγ).
2267.83	4+	1252.0 *1*	100	1015.81	2+	E2[#]		0.000230 *4*	α(K)=0.000190 *3*; α(L)=1.94×10^{-5} *3*; α(M)=2.89×10^{-6} *4*; α(N+..)=1.79×10^{-5} *3* B(E2)(W.u.)=12.8 *15* δ: δ(M3/E2)=0.0 *1* from γ(θ) in ^{66}Zn(α,2nγ).
2428.59	3+	651.2[@] *3*	100[@] *5*	1777.42	2+	M1+E2	+0.06 *2*	0.000772 *11*	α(K)=0.000690 *10*; α(L)=7.07×10^{-5} *10*; α(M)=1.056×10^{-5} *15*; α(N+..)=6.96×10^{-7} B(E2)(W.u.)=0.34 *+28−24*; B(M1)(W.u.)=0.026 *+13−7* δ: Others: +0.11 *2* from γ(θ) in ^{48}Ca(^{32}S,4pγ), −0.02 *2* from γ(θ) in ^{63}Cu(^{7}Li,2nγ), and −0.15 *+10−50* from γ(θ) in ^{66}Zn(α,2nγ).
		1413.3[@] *5*	47.6[@] *24*	1015.81	2+	M1+E2	+0.16 *8*	0.000200 *3*	α(K)=0.0001396 *20*; α(L)=1.415×10^{-5} *20*; α(M)=2.11×10^{-6} *3* α(N+..)=4.42×10^{-5} *8* B(E2)(W.u.)=0.023 *+31−19*; B(M1)(W.u.)=0.0012 *+6−3* I_γ: Others: 36.6 *19* in ^{58}Ni(^{12}C,2pγ) and 6.9 *15* in (HI,xnγ).
2457.15	2+	190.3 *10*	47 *3*	2267.83	4+	[E2]		0.0669 *17*	α(K)=0.0592 *15*; α(L)=0.00669 *17*; α(M)=0.000992 *25*; α(N+..)=5.81×10^{-5} *14* B(E2)(W.u.)=2.5×10^{4} *8*
		702.2 *10*	28.7 *18*	1754.5	0+	[E2]		0.000871 *13*	α(K)=0.000778 *12*; α(L)=8.06×10^{-5} *12*; α(M)=1.203×10^{-5} *18*; α(N+..)=7.77×10^{-7} B(E2)(W.u.)=22 *7* I_γ: Other: 69 *8* in ^{68}As ε decay (151.6 s).

$^{68}_{32}Ge_{36}$-6

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
2457.15	2+	1441.0 *10*	22 *3*	1015.81	2+				
		2457.1 *2*	100 *7*	0	0+	[E2]		0.000591 *9*	α(K)=5.21×10^{-5} *8*; α(L)=5.26×10^{-6} *8*; α(M)=7.85×10^{-7} *11*; α(N+..)=0.000533 *8* B(E2)(W.u.)=0.15 *5*
2648.67	3−	871.2 *2*	5.27 *24*	1777.42	2+	[E1]		0.000201 *3*	α(K)=0.000180 *3*; α(L)=1.82×10^{-5} *3*; α(M)=2.72×10^{-6} *4*; α(N+..)=1.781×10^{-7} *25* B(E1)(W.u.)=1.5×10^{-5} *+7−6* I_γ: Other: 15 *4* in ^{58}Ni(^{12}C,2pγ).
		1632.8 *2*	100 *4*	1015.81	2+	E1+M2	+0.09 *3*	0.000423 *6*	α(K)=5.91×10^{-5} *13*; α(L)=5.96×10^{-6} *13*; α(M)=8.90×10^{-7} *19*; α(N+..)=5.86×10^{-8} *13* B(E1)(W.u.)=4.2×10^{-5} *+20−17*; B(M2)(W.u.)=0.6 *5* δ: Others: −0.05 *3* from γ(θ) in ^{48}Ca(^{32}S,4pγ), +0.01 *2* from γ(θ) in ^{63}Cu(^{7}Li,2nγ), −0.11 *9* from γ(θ) in ^{64}Zn(^{7}Li,p2nγ), and −0.16 *+20−50* from γ(θ) in ^{66}Zn(α,2nγ).
2831.86	4+	403.8 *10*	2.5 *3*	2428.59	3+				
		564.0 *10*	6.8 *6*	2267.83	4+				
		1054.4 *2*	100 *3*	1777.42	2+	E2		0.000312 *5*	α(K)=0.000279 *4*; α(L)=2.86×10^{-5} *4*; α(M)=4.27×10^{-6} *6*; α(N+..)=2.79×10^{-7} *4* B(E2)(W.u.)=24 *+14−10* Mult.: from γγ(θ)(DCO).
		1816.1 *2*	30.1 *11*	1015.81	2+	E2		0.000323 *5*	α(K)=8.98×10^{-5} *13*; α(L)=9.10×10^{-6} *13*; α(M)=1.358×10^{-6} *19* α(N+..)=0.000223 *4* B(E2)(W.u.)=0.47 *+28−22* I_γ: Others: 33 *3* in ^{58}Ni(^{12}C,2pγ) and 78 *9* in ^{68}As ε decay (151.6 s).
2900.2	(4−)	251.5 *10*	100	2648.67	3−				
2947.1	2+	1169.7[@] *5*	100[@]	1777.42	2+				
3023.1	2+	1245.1[@] *10*	13.0[@] *22*	1777.42	2+				
		2007.4[@] *5*	100[@] *9*	1015.81	2+				
3040.73	(4)+	612.0[@] *3*	100[@] *6*	2428.59	3+	M1+E2	+0.24 *4*	0.000906 *15*	α(K)=0.000810 *13*; α(L)=8.31×10^{-5} *14*; α(M)=1.242×10^{-5} *21*; α(N+..)=8.16×10^{-7}
		1263.4[@] *3*	53[@] *3*	1777.42	2+				
		2025.3[@] *10*	5.6[@] *8*	1015.81	2+				
3061.87	(3−)	230.0 *1*	17 *28*	2831.86	4+				
		413.2[&] *1*		2648.67	3−				
		633.3 *1*	17 *28*	2428.59	3+				
		794.0 *2*	100 *28*	2267.83	4+				
		2046.0 *2*	78 *28*	1015.81	2+				

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
3087.5	2(+)	1309.6[@] *10*	47[@] *7*	1777.42	2+				
		1332.8[@] *5*	100[@] *7*	1754.5	0+				
		2071.8[@] *10*	27[@] *7*	1015.81	2+				
		3088.3[@] *10*	87[@] *7*	0	0+				
3182.26	4+	725.1 *1*	59.8 *22*	2457.15	2+				
		915.0 *10*	21.2 *11*	2267.83	4+				
		1404.8 *2*	100 *4*	1777.42	2+	E2		0.000221 *3*	α(K)=0.0001492 *21*; α(L)=1.517×10^{-5} *22*; α(M)=2.26×10^{-6} *4* α(N+..)=5.47×10^{-5} *8*
		2166.4 *2*	27.4 *12*	1015.81	2+				
3287.8	2(+)	2271.3[@] *10*	100[@] *10*	1015.81	2+				
		3288.4[@] *10*	40[@] *10*	0	0+				
3400.3	2+	1622.5[@] *5*	100[@] *6*	1777.42	2+				
		1645.9[@] *10*	24.1[@] *19*	1754.5	0+				
		2384.6[@] *10*	22.2[@] *19*	1015.81	2+				
		3401.3[@] *10*	5.6[@] *19*	0	0+				
3417.0		988.3[@] *5*	59[@] *5*	2428.59	3+				
		1639.9[@] *7*	100[@] *5*	1777.42	2+				
3474.7		2458.8[@] *10*	100[@]	1015.81	2+				
3509.67	4−	861.0 *1*	63 *4*	2648.67	3−				
		1081.1 *1*	100 *5*	2428.59	3+				
3522.1	2+	2506.2[@] *10*	100[@]	1015.81	2+				
3581.98	5−	520.1[&] *1*		3061.87	(3−)				
		750.1 *2*	13.4 *4*	2831.86	4+				
		933.3 *2*	22.2 *7*	2648.67	3−	E2		0.000418 *6*	α(K)=0.000373 *6*; α(L)=3.83×10^{-5} *6*; α(M)=5.72×10^{-6} *8*; α(N+..)=3.73×10^{-7} *6* B(E2)(W.u.)=6.6 *23*
		1314.1 *2*	100 *3*	2267.83	4+	E1+M2	+0.04 *3*	0.000218 *3*	α(K)=8.35×10^{-5} *15*; α(L)=8.44×10^{-6} *15*; α(M)=1.259×10^{-6} *22*; α(N+..)=0.0001244 B(E1)(W.u.)=0.00011 *4*; B(M2)(W.u.)=0.5 *+8−5* δ: Others: −0.08 *3* from γ(θ) in ^{48}Ca(^{32}S,4pγ), +0.06 *2* from γ(θ) in ^{63}Cu(^{7}Li,2nγ), and −0.15 *+10−50* from γ(θ) in ^{66}Zn(α,2nγ). Mult.: E1 from γ(lin pol) in ^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,p2nγ).
3649.05	5−	587.2 *1*	8.5 *15*	3061.87	(3−)				
		817.2 *1*	2.6 *15*	2831.86	4+				
		1000.4 *1*	12.8 *4*	2648.67	3−	E2		0.000353 *5*	α(K)=0.000316 *5*; α(L)=3.24×10^{-5} *5*; α(M)=4.83×10^{-6} *7*;

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									α(N+..)=3.15×10^{-7} *5* B(E2)(W.u.)=8.8 *+23−67*
3649.05	5$^-$	1381.2 *1*	100 *3*	2267.83	4$^+$	E1+M2	+0.04 *2*	0.000253 *4*	α(K)=7.67×10^{-5} *12*; α(L)=7.75×10^{-6} *12*; α(M)=1.156×10^{-6} *18*; α(N+..)=0.0001676 B(E1)(W.u.)=0.00031 *+7−14*; B(M2)(W.u.)=1.2 *+16−11* δ: Others: +0.01 *2* from γ(θ) in ^{48}Ca(^{32}S,4pγ), −0.01 *2* from γ(θ) in ^{63}Cu(^{7}Li,2nγ), and −0.02 *+2−15* from γ(θ) in ^{66}Zn(α,2nγ). Mult.: E1 from γ(lin pol) in ^{58}Ni(^{12}C,2pγ),^{64}Zn(^{7}Li,p2nγ).
3675.34	5$^+$	843.2 *10*	28.5 *21*	2831.86	4$^+$				
		1246.7 *2*	100 *6*	2428.59	3$^+$				
3695.94	6$^+$	1428.1 *1*	100	2267.83	4$^+$	E2		0.000223 *4*	α(K)=0.0001442 *21*; α(L)=1.466×10^{-5} *21*; α(M)=2.19×10^{-6} *3* α(N+..)=6.16×10^{-5} *9* B(E2)(W.u.)=12 *4* δ: δ(M3/E2)=−0.1 *1* from γ(θ) in ^{66}Zn(α,2nγ).
3809.3	2$^+$	2793.4[@] *10*	100[@]	1015.81	2$^+$				
3882.95	6$^-$	207.6 *1*	1.0 *16*	3675.34	5$^+$				
		233.9 *1*	100 *3*	3649.05	5$^-$	M1(+E2)	0.01 *2*	0.00860 *13*	α(K)=0.00767 *11*; α(L)=0.000803 *12*; α(M)=0.0001201 *17*; α(N+..)=7.84×10^{-6} B(E2)(W.u.)=0.04 *+15−4*; B(M1)(W.u.)=0.012 *4* Mult.,δ: from γ(θ) in ^{63}Cu(^{7}Li,2nγ). Others: +0.07 *1* from γ(θ) in ^{40}Ca(^{32}S,4pγ) and 0.00 *+2−20* from γ(θ) in ^{66}Zn(α,2nγ).
		373.3 *1*	1.44 *5*	3509.67	4$^-$				
		982.7[&] *10*	1.33 *5*	2900.2	(4$^-$)				
4053.72	7$^-$	170.7 *1*	100 *3*	3882.95	6$^-$	M1+E2	+0.04 *2*	0.0193 *4*	α(K)=0.0172 *3*; α(L)=0.00182 *3*; α(M)=0.000272 *5*; α(N+..)=1.77×10^{-5} *3* B(E2)(W.u.)=1.6 *+17−16*; B(M1)(W.u.)=0.019 *4* δ: Others: +0.07 *1* from γ(θ) in ^{40}Ca(^{32}S,4pγ) and +0.05 *1* from γ(θ) in ^{66}Zn(α,2nγ).
		357.8 *1*	25.5 *8*	3695.94	6$^+$	E1		0.0017 *7*	α(K)=0.0015 *6*; α(L)=0.00016 *7*; α(M)=2.4×10^{-5} *10*; α(N+..)=1.5×10^{-6} *7* B(E1)(W.u.)=9.8×10^{-6} *18* Mult.: from γ(θ) in ^{66}Zn(α,2nγ). δ: δ(M2/E1)=−0.07 *+10−20*.
		404.7 *1*	26.8 *8*	3649.05	5$^-$	E2		0.00463 *7*	α(K)=0.00412 *6*; α(L)=0.000438 *7*; α(M)=6.52×10^{-5} *10*; α(N+..)=4.10×10^{-6} *6* B(E2)(W.u.)=3.7 *7* δ: δ(M3/E2)=0.0 *+3−1* from γ(θ) in ^{66}Zn(α,2nγ). I_γ: Other: 31.7 *16* in ^{58}Ni(^{12}C,2pγ).
		471.7 *1*	40.1 *14*	3581.98	5$^-$	E2		0.00282 *4*	α(K)=0.00252 *4*; α(L)=0.000265 *4*; α(M)=3.95×10^{-5} *6*;

$^{68}_{32}Ge_{36}$-9

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	δ ‡	α	Comments
									α(N+..)=2.51×10^{-6} *4* B(E2)(W.u.)=2.6 *5* δ: δ(M3/E2)=−0.07 *10* from γ(θ) in ^{66}Zn(α,2nγ). I_γ: Other: 52 *3* in ^{58}Ni(^{12}C,2pγ).
4144.07	6$^+$	448.2 *10*	6.4 *5*	3695.94	6$^+$				
		961.8 *1*	100 *3*	3182.26	4$^+$				
		1312.2 *1*	39.7 *15*	2831.86	4$^+$				
		1876.2 *1*	73.7 *24*	2267.83	4$^+$				
4238.5	(2$^+$)	3222.6@ *10*	100@	1015.81	2$^+$				
4453.89	7$^-$	400.1 *1*	100 *3*	4053.72	7$^-$	M1+E2	+0.5 *2*	0.0028 *4*	α(K)=0.0025 *3*; α(L)=0.00026 *4*; α(M)=3.9×10^{-5} *5*; α(N+..)=2.5×10^{-6} *3* B(E2)(W.u.)=4.E+2 *3*; B(M1)(W.u.)=0.17 *5*
		570.9 *2*	24.6 *8*	3882.95	6$^-$				
		804.9 *10*	9 *6*	3649.05	5$^-$				
		871.9 *2*	32.3 *10*	3581.98	5$^-$				I_γ: Other: 18 *5* in ^{58}Ni(^{12}C,2pγ).
4567.5	(2$^+$)	3551.6@ *10*	100@	1015.81	2$^+$				
4659.46	7$^-$	205.5 *1*		4453.89	7$^-$				
		605.7 *3*	100 *3*	4053.72	7$^-$	E2		0.001322 *19*	α(K)=0.001180 *17*; α(L)=0.0001230 *18*; α(M)=1.83×10^{-5} *3* α(N+..)=1.178×10^{-6} B(E2)(W.u.)=1.2×10^3 *+6−3*
		776.6 *1*	20.2 *7*	3882.95	6$^-$				
4836.97	8$^+$	692.9 *1*	5.69 *19*	4144.07	6$^+$				
		783.3 *2*	18.2 *6*	4053.72	7$^-$				I_γ: Other:13.2 *10* in ^{58}Ni(^{12}C,2pγ).
		1141.0 *2*	100 *3*	3695.94	6$^+$	E2		0.000264 *4*	α(K)=0.000233 *4*; α(L)=2.38×10^{-5} *4*; α(M)=3.56×10^{-6} *5*; α(N+..)=2.73×10^{-6} *4* B(E2)(W.u.)=14 *3* δ: δ(M3/E2)=0.0 *1* from γ(θ) in ^{66}Zn(α,2nγ).
4877.7		2229.0@ *10*	100@	2648.67	3$^-$				
4957.40	8$^-$	903.7 *2*	41 *11*	4053.72	7$^-$				I_γ: Other:14.7 *21* in ^{58}Ni(^{12}C,2pγ).
		1074.4 *10*	100 *3*	3882.95	6$^-$	E2		0.000299 *5*	α(K)=0.000267 *4*; α(L)=2.74×10^{-5} *4*; α(M)=4.08×10^{-6} *6*; α(N+..)=2.67×10^{-7} *4* B(E2)(W.u.)=19 *+5−9*
4999?		1303.0	100	3695.94	6$^+$				E_γ,I_γ: from ^{58}Ni(^{12}C,2pγ).
5049.58	8$^+$	212.6 *1*	3.32 *12*	4836.97	8$^+$				
		905.5 *1*	20.6 *7*	4144.07	6$^+$				
		995.9 *10*	7.2 *3*	4053.72	7$^-$				
		1353.6 *2*	100 *3*	3695.94	6$^+$	E2		0.000221 *3*	α(K)=0.0001611 *23*; α(L)=1.640×10^{-5} *23*; α(M)=2.45×10^{-6} *4* α(N+..)=4.11×10^{-5} *6* B(E2)(W.u.)=12 *+4−5*

$^{68}_{32}Ge_{36}$-10

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
5148.69	(8$^-$)	489.1 *10*	7.4 *3*	4659.46	7$^-$			
		695.4[&]		4453.89	7$^-$			
		1095.0 *2*	100 *3*	4053.72	7$^-$			
		1265.7 *1*	15.7 *7*	3882.95	6$^-$			
5266.6	7$^+$	1591.2 *10*	100	3675.34	5$^+$			
5330.11	9$^-$	1276.4 *1*	100	4053.72	7$^-$	E2	0.000227 *4*	α(K)=0.000183 *3*; α(L)=1.86×10^{-5} *3*; α(M)=2.78×10^{-6} *4*; α(N+..)=2.30×10^{-5} *4* B(E2)(W.u.)=15 *+3−5*
5366.08	8$^+$	316.5 *1*	11.5 *7*	5049.58	8$^+$			
		1222.0 *1*	70 *27*	4144.07	6$^+$			
		1670.1 *2*	100 *4*	3695.94	6$^+$	E2	0.000275 *4*	α(K)=0.0001055 *15*; α(L)=1.070×10^{-5} *15*; α(M)=1.597×10^{-6} *23* α(N)=1.051×10^{-7} *15* B(E2)(W.u.)=1.8 *+6−7*
5678.02	9$^-$	347.9 *1*	14.0 *4*	5330.11	9$^-$			
		720.6 *1*	14.7 *5*	4957.40	8$^-$			
		1224.1 *2*	100 *3*	4453.89	7$^-$	E2	0.000236 *4*	α(K)=0.000200 *3*; α(L)=2.04×10^{-5} *3*; α(M)=3.04×10^{-6} *5*; α(N)=1.99×10^{-7} *3* α(N+..)=1.262×10^{-5} *18* B(E2)(W.u.)=19 *8*
		1624.3 *2*	4 *4*	4053.72	7$^-$			
5821.61	9$^-$	491.5 *2*	66.6 *20*	5330.11	9$^-$			I$_\gamma$: Other: 36 *4* in ^{58}Ni(^{12}C,2pγ).
		672.9 *1*	34.4 *10*	5148.69	(8$^-$)			
		985.1 *10*	24 *10*	4836.97	8$^+$			
		1162.9 *10*	100 *3*	4659.46	7$^-$			
5873.98	9$^+$	1037.0 *2*	100	4836.97	8$^+$			
5961.49	10$^+$	631.4 *2*	5.43 *17*	5330.11	9$^-$			
		1124.5 *2*	100 *3*	4836.97	8$^+$	E2	0.000271 *4*	α(K)=0.000241 *4*; α(L)=2.46×10^{-5} *4*; α(M)=3.68×10^{-6} *6*; α(N)=2.41×10^{-7} *4* α(N+..)=1.85×10^{-6} *3* B(E2)(W.u.)=24 *+5−7* δ: 0.0 *1* from γ(θ) in ^{66}Zn(α,2nγ) (1977Mo20).
6214.89	10$^+$	848.5 *10*	3.24 *14*	5366.08	8$^+$			
		1165.3 *2*	100 *3*	5049.58	8$^+$	E2	0.000253 *4*	α(K)=0.000223 *4*; α(L)=2.27×10^{-5} *4*; α(M)=3.39×10^{-6} *5*; α(N)=2.22×10^{-7} *4* α(N+..)=4.62×10^{-6} *7* B(E2)(W.u.)>19
		1377.9 *1*	18.7 *6*	4836.97	8$^+$			
6420.36	10$^-$	1463.0 *2*	100	4957.40	8$^-$			
6556.52	(10)$^-$	1226.4[&] *1*		5330.11	9$^-$			
		1407.8 *1*	100	5148.69	(8$^-$)			
6595.71	10$^+$	1229.6 *1*	100 *3*	5366.08	8$^+$			
		1759.4[@] *10*	28 *28*	4836.97	8$^+$			
6663.81	10$^+$	789.82 *7*	100	5873.98	9$^+$			

$^{68}_{32}Ge_{36}$-11

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
6671.10?		1305.0[&] *1*	100	5366.08	8^+			
7044.83	11^-	1714.7 *2*	100	5330.11	9^-	E2	0.000289 *4*	α(K)=0.0001003 *14*; α(L)=1.016×10^{-5} *15*; α(M)=1.517×10^{-6} *22* α(N)=9.99×10^{-8} *14* B(E2)(W.u.)=2.3 *+7−10*
7145.30	11^-	588.0[@] *10*	2.82 *13*	6556.52	$(10)^-$			
		1467.2 *2*	100 *4*	5678.02	9^-	E2	0.000227 *4*	α(K)=0.0001364 *20*; α(L)=1.387×10^{-5} *20*; α(M)=2.07×10^{-6} *3* α(N+..)=7.43×10^{-5} *1*
7242.1?	(10^+)	1876.0[&]	100	5366.08	8^+	(E2)	0.000345 *5*	α(K)=8.45×10^{-5} *12*; α(L)=8.56×10^{-6} *12*; α(M)=1.277×10^{-6} *18* α(N+..)=0.000251 *4* B(E2)(W.u.)=2.1 *+12−21* E_γ,I_γ: from ^{58}Ni(^{12}C,2pγ).
7251.12	11^-	694.6 *1*	13.5 *5*	6556.52	$(10)^-$			
		1289.6 *1*	38 *5*	5961.49	10^+			
		1429.5 *1*	100 *3*	5821.61	9^-			
		1573.1 *3*	50.4 *15*	5678.02	9^-			
		1921.0 *2*	5.08 *19*	5330.11	9^-			
7371.21	12^+	1409.7 *2*	100	5961.49	10^+	E2	0.000221 *4*	α(K)=0.0001481 *21*; α(L)=1.506×10^{-5} *21*; α(M)=2.25×10^{-6} *4* α(N+..)=5.61×10^{-5} *8* B(E2)(W.u.)=9 *+18−7*
7495.95	(11^-)	1077.1 *10*	28.7 *15*	6420.36	10^-			
		1817.9 *2*	100 *3*	5678.02	9^-			
7516.89	12^+	1302.0 *1*	100	6214.89	10^+			
7532.5	12^+	1571.0 *10*	100	5961.49	10^+			
7559.38	12^+	963.1 *10*	5.86 *21*	6595.71	10^+			
		1344.4 *2*	100 *3*	6214.89	10^+	E2	0.000221 *3*	α(K)=0.0001635 *23*; α(L)=1.664×10^{-5} *24*; α(M)=2.48×10^{-6} *4* α(N+..)=3.88×10^{-5} *6* B(E2)(W.u.)=8 *+9−3*
		1597.9 *2*	18.1 *5*	5961.49	10^+			
7761.85	12^+	202.5 *1*	20.4 *7*	7559.38	12^+			
		245.0 *1*	9.2 *4*	7516.89	12^+			
		1800.4 *2*	100 *3*	5961.49	10^+			
7881.5?		1920.0[&] *10*	100	5961.49	10^+			
8043.38	13^+	281.5 *1*	18.4 *7*	7761.85	12^+			
		672.2 *1*	100 *3*	7371.21	12^+			
		723.3 *10*	40 *11*	7320.1?	(12^+)			
8171.94	13^-	410.5 *2*	3.27 *11*	7761.85	12^+			
		612.5[&] *1*		7559.38	12^+			
		655.0 *1*	6.70 *19*	7516.89	12^+			
		676.0 *1*	3.24 *11*	7495.95	(11^-)			

$^{68}_{32}Ge_{36}$-12

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
8171.94	13$^-$	800.7 *1*	13.7 *4*	7371.21	12$^+$			
		920.8 *1*	100 *3*	7251.12	11$^-$	E2	0.000432 *6*	α(K)=0.000386 *6*; α(L)=3.96×10^{-5} *6*; α(M)=5.91×10^{-6} *9*; α(N)=3.85×10^{-7} *6* α(N+..)=3.85×10^{-7} *6* Mult.: from γ(θ) and γ(lin pol) in (HI,xnγ).
		1026.6 *1*	39.6 *14*	7145.30	11$^-$			
		1127.1 *1*	22.8 *7*	7044.83	11$^-$			
8621.5?		1062.1[&] *10*	100	7559.38	12$^+$			
8660.57	14$^+$	898.7 *1*	25.0 *8*	7761.85	12$^+$			
		1101.2 *1*	100 *3*	7559.38	12$^+$			
		1143.7 *1*	45.6 *14*	7516.89	12$^+$			
8663.3?		1618.5[&] *10*	100	7044.83	11$^-$			
8781.4?		1736.5[&] *10*	100	7044.83	11$^-$			
8790.26	15$^-$	618.3 *1*	100	8171.94	13$^-$	E2	0.001246 *18*	α(K)=0.001112 *16*; α(L)=0.0001158 *17*; α(M)=1.726×10^{-5} *25* α(N)=1.110×10^{-6} *16* Mult.: from γ(θ) in ^{40}Ca(^{32}S,4pγ).
8868.18	14$^-$	696.0 *10*	100 *3*	8171.94	13$^-$			
		824.8 *1*	48.8 *18*	8043.38	13$^+$			
8930.9?	(14$^+$)	1559.7[&]	100	7371.21	12$^+$			
9012.1	14$^+$	1452.6[@] *10*	14.5 *5*	7559.38	12$^+$			
		1495.2[@] *10*	100 *3*	7516.89	12$^+$			
9112.5	14$^+$	1068.8 *10*	100 *4*	8043.38	13$^+$			
		1595.0 *10*	47.6 *21*	7516.89	12$^+$			
9170.0	14$^+$	1410.0[&]		7761.85	12$^+$			
		1798.1 *10*	100	7371.21	12$^+$	E2	0.000317 *5*	α(K)=9.16×10^{-5} *13*; α(L)=9.27×10^{-6} *13*; α(M)=1.384×10^{-6} *20* α(N+..)=0.000215 *3* B(E2)(W.u.)=4.6 *23*
9386.56	15$^{(-)}$	596.1 *10*	20.0 *6*	8790.26	15$^-$			
		1214.6 *1*	100 *4*	8171.94	13$^-$			
9418.9	14$^+$	1886.4 *10*	100	7532.5	12$^+$			
9563.9	15$^{(-)}$	904.0 *10*	100	8660.57	14$^+$			
9605.7	15$^+$	945.4 *10*	73.6 *23*	8660.57	14$^+$			
		1562.1 *10*	100 *3*	8043.38	13$^+$			
10024.58?		854.4[&] *10*	100	9170.0	14$^+$			
		1364.0[&] *1*		8660.57	14$^+$			
10126.6	16$^{(-)}$	1336.7 *10*	100	8790.26	15$^-$			
10217.53	16$^+$	1425.8 *10*	14.7 *6*	8790.26	15$^-$			
		1557.0 *2*	100 *3*	8660.57	14$^+$			

$^{68}_{32}Ge_{36}$-13

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π
10295.51	$17^{(-)}$	908.5 *10*	5.17 *17*	9386.56	$15^{(-)}$
		1505.2 *2*	100 *3*	8790.26	15^-
10493.4	$16^{(-)}$	1106.4 *10*	40.4 *18*	9386.56	$15^{(-)}$
		1625.7 *10*	70.8 *23*	8868.18	14^-
		1702.9 *10*	100 *4*	8790.26	15^-
10664.0	16^+	1651.7[@] *10*	100	9012.1	14^+
10665.6	$17^{(-)}$	369.2 *10*	16.0 *6*	10295.51	$17^{(-)}$
		1278.8 *10*	100 *3*	9386.56	$15^{(-)}$
10688.8?		1898.5[&] *10*	100	8790.26	15^-
10896.0	16^+	1727.3 *10*	100 *4*	9170.0	14^+
		2105.8 *10*	93 *4*	8790.26	15^-
10897.0?		1884.8[&] *10*	100	9012.1	14^+
10927.0	$17^{(-)}$	631.4 *10*	9.1 *7*	10295.51	$17^{(-)}$
		800.8 *10*	50.0 *16*	10126.6	$16^{(-)}$
		1363.8 *10*	99 *3*	9563.9	$15^{(-)}$
		1540.4 *10*	100 *3*	9386.56	$15^{(-)}$
		2136.2 *10*	53 *26*	8790.26	15^-
10957.9	16^+	1845.0 *10*	100	9112.5	14^+
10988.1	16^+	1875.2 *10*	94 *3*	9112.5	14^+
		1975.8 *10*	100 *4*	9012.1	14^+
		2328.1 *10*	42.5 *20*	8660.57	14^+
10989.8	17^+	1384.0 *10*	100	9605.7	15^+
10990.0	16^+	1820.0 *10*	100	9170.0	14^+
11085.6	16^+	1666.0 *10*	100	9418.9	14^+
11406.4?		2616.1[&] *10*	100	8790.26	15^-
11417.4	16^+	1999.0 *10*	100	9418.9	14^+
11793.4?		1666.8[&] *10*	100	10126.6	$16^{(-)}$
11794.2?	(19^-)	1498.7 *10*	100	10295.51	$17^{(-)}$
11832.2	(20^-)	1536.7 *10*	100	10295.51	$17^{(-)}$
11994.4	18^+	1006.4 *10*	36.0 *10*	10988.1	16^+
		1036.3 *10*	14.4 *6*	10957.9	16^+
		1330.5 *10*	15.6 *6*	10664.0	16^+
		1776.9 *10*	100 *11*	10217.53	16^+
12136.9	$19^{(-)}$	1470.0 *10*	32.0 *10*	10665.6	$17^{(-)}$
		1841.32 *4*	100 *3*	10295.51	$17^{(-)}$
12165.0	(19^-)	1870.0 *10*	100	10295.51	$17^{(-)}$
12246.0	18^+	1287.8 *10*	57 *3*	10957.9	16^+
		1351.3 *10*	65.3 *20*	10896.0	16^+
		1581.9 *10*	100 *3*	10664.0	16^+
12246.0	18^+	1949.5 *10*	38.4 *14*	10295.51	$17^{(-)}$
12262.5	(18^-)	1967.0 *10*	100	10295.51	$17^{(-)}$
12363.4	(19^-)	1436.7 *10*	100 *3*	10927.0	$17^{(-)}$
		2067.4 *10*	54 *18*	10295.51	$17^{(-)}$
12501.8?		1837.8[&] *10*	100	10664.0	16^+
12535.8?		2318.2[&] *10*	100	10217.53	16^+
12641.7	(18^+)	1224.9 *10*	1.0×10^2 *17*	11417.4	16^+
		1555.5 *10*	1.0×10^2 *17*	11085.6	16^+
12652.3	(18^-)	2525.6 *10*	100	10126.6	$16^{(-)}$
12719.4	18^+	1633.8 *10*	100	11085.6	16^+
12779.1?		2115.1[&] *10*	100	10664.0	16^+
12817.2	19^+	1274.5 *10*	100 *16*	11542.7?	(17^+)
		1827.4 *10*	81 *16*	10989.8	17^+
12884.1?		2220.1[&] *10*	100	10664.0	16^+
13104.3?		2808.7[&] *10*	100	10295.51	$17^{(-)}$
13265.3?		2969.7[&] *10*	100	10295.51	$17^{(-)}$
13617.4?		1623.0[&] *10*	100	11994.4	18^+
13751.3?		3455.7[&] *10*	100	10295.51	$17^{(-)}$
13953.0	20^+	1707.0 *10*	100	12246.0	18^+
13991.0?		1996.6[&] *10*	100	11994.4	18^+
14085.5	(20^-)	1823.0 *10*	40 *50*	12262.5	(18^-)
		1921.0 *10*	20.7 *10*	12165.0	(19^-)
		1948.0 *10*	100 *3*	12136.9	$19^{(-)}$
14116.5	20^+	2122.0 *10*	100	11994.4	18^+
14360.9?		2224.0[&] *10*	100	12136.9	$19^{(-)}$
14401.9	$21^{(-)}$	2265.0 *10*	100	12136.9	$19^{(-)}$
14485.6	(21^-)	2122.1 *10*	100 *23*	12363.4	(19^-)
		2348.7 *10*	27 *23*	12136.9	$19^{(-)}$
14504.9	21^+	1687.7 *10*	100	12817.2	19^+
15562.8	22^+	1446.3 *10*	100	14116.5	20^+
15835.1	22^+	1882.0 *10*	100	13953.0	20^+
16130.5	$22^{(-)}$	1703.9 *10*	39.0 *14*	14426.6?	(21)
		2045.0 *10*	100 *3*	14085.5	(20^-)
16733.9	23^+	2229.0 *10*	100	14504.9	21^+
17360.5?		2855.5[&] *10*	100	14504.9	21^+
17496.0	$23^{(-)}$	3094.0 *10*	100	14401.9	$21^{(-)}$
18022.1	24^+	2187.0 *10*	100	15835.1	22^+
18132.5	$24^{(-)}$	2002.0 *10*	100	16130.5	$22^{(-)}$
18274.1		2439.0 *10*	100	15835.1	22^+

$^{68}_{32}Ge_{36}$-14

Adopted Levels, Gammas (continued)

γ(^{68}Ge) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
19785.0	25^+	3051.0 *10*	100	16733.9	23^+	3425.0+x	(18)	1850.0& *10*		1575.0+x?	(16)
20356.6	$26^{(-)}$	2224.0 *10*	100	18132.5	$24^{(-)}$	5440.1+x	(20)	2015.0 *10*	100	3425.0+x	(18)
20821.2	26^+	2799.0 *10*	100	18022.1	24^+	7677.1+x	(22)	2237.0 *10*	100	5440.1+x	(20)
22958.6	$28^{(-)}$	2602.0 *10*	100	20356.6	$26^{(-)}$	10126.2+x	(24)	2449.0 *10*	100	7677.1+x	(22)
1620.0+x	(16)	1620.0 *10*	100	x	(14)	12815.2+x	(26)	2689.0 *10*	100	10126.2+x	(24)
3425.0+x	(18)	1805.0 *10*		1620.0+x	(16)						

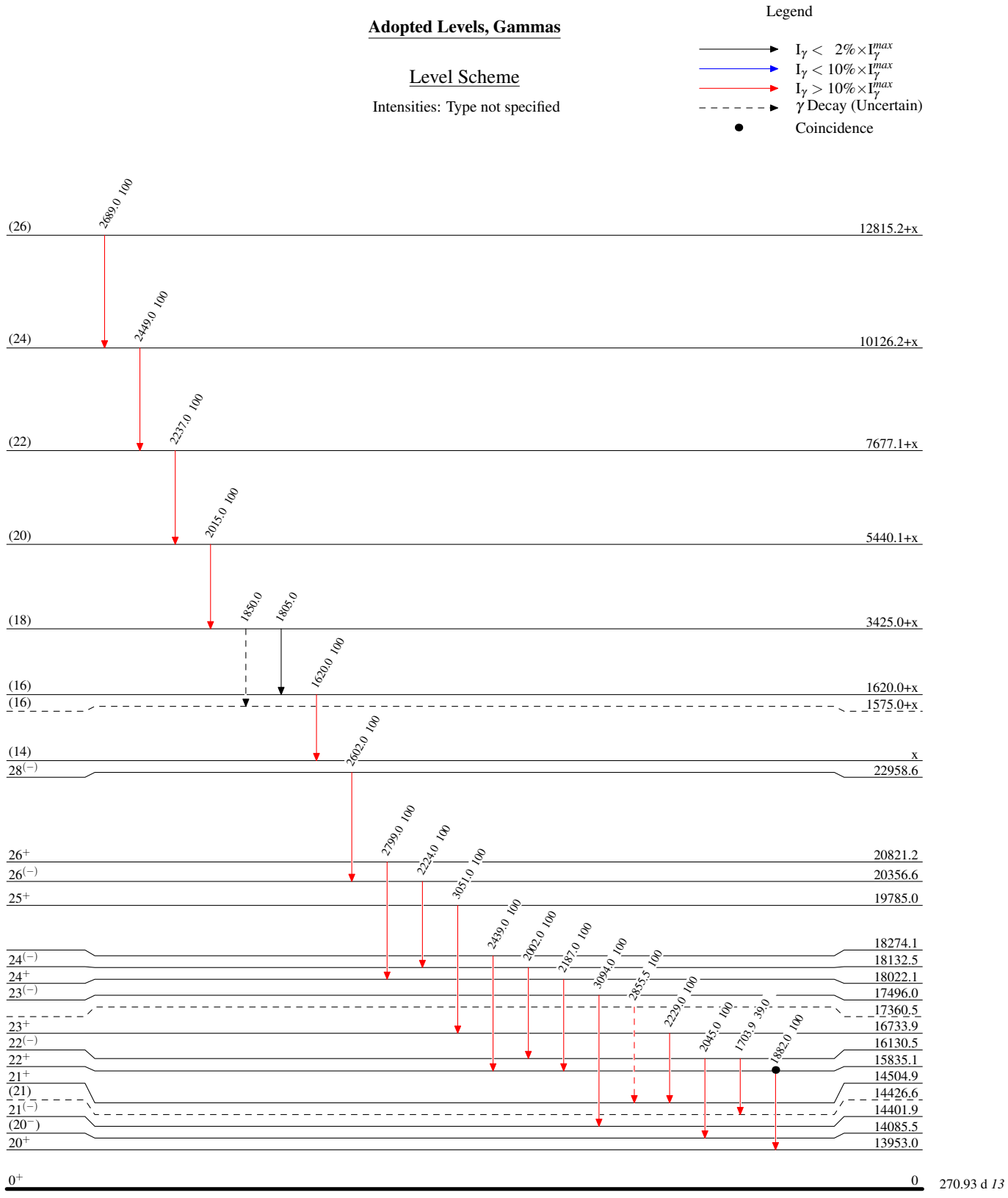
† From (HI,xnγ), except where noted.
‡ From γ(θ) in ^{58}Ni(^{12}C,2pγ) (1981De03), except where noted.
# From γ linear polarization in ^{63}Cu(^{7}Li,2nγ) (1981De03).
@ From ^{68}As ε decay (151.6 s).
& Placement of transition in the level scheme is uncertain.

$^{68}_{32}Ge_{36}$-15

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

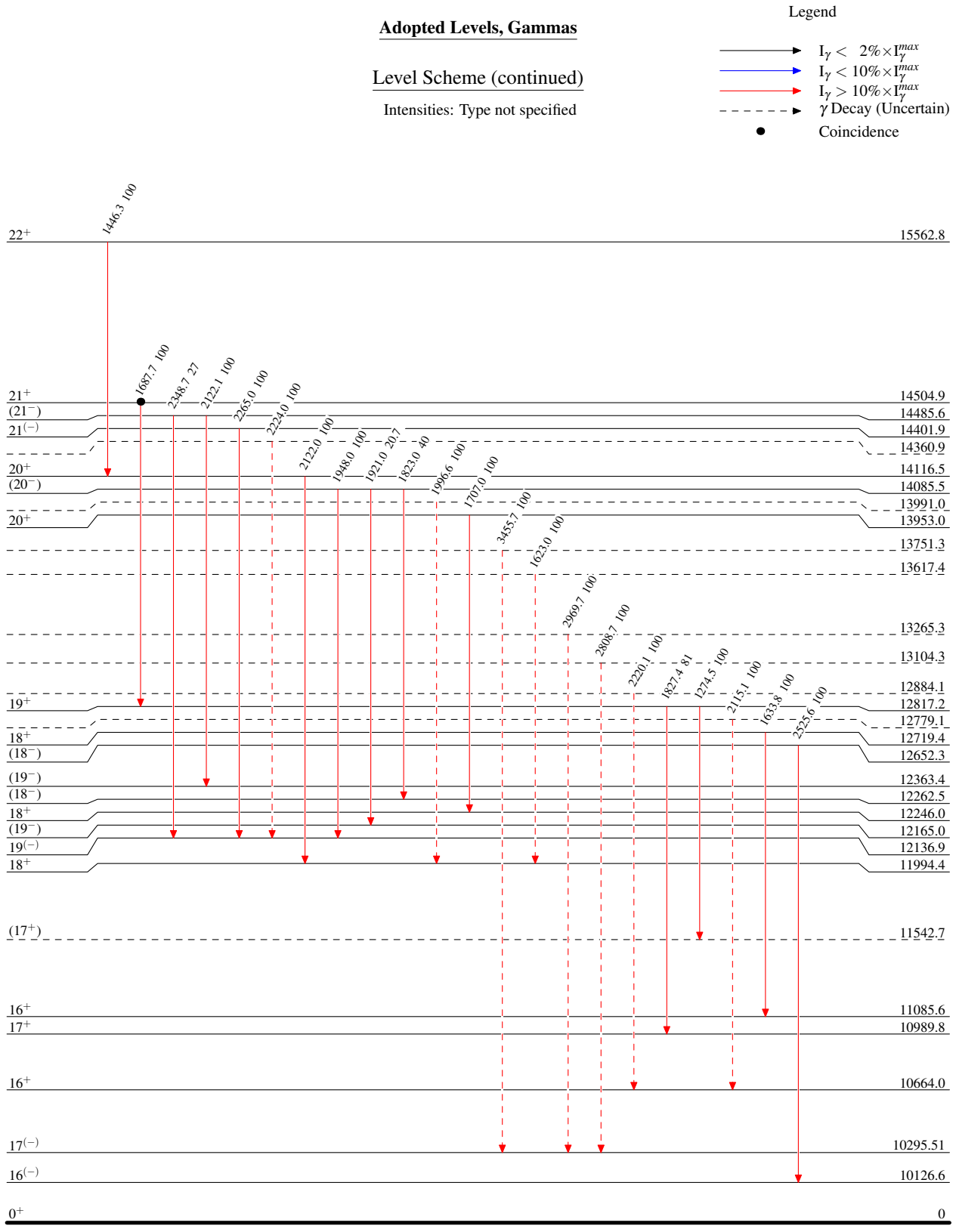


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

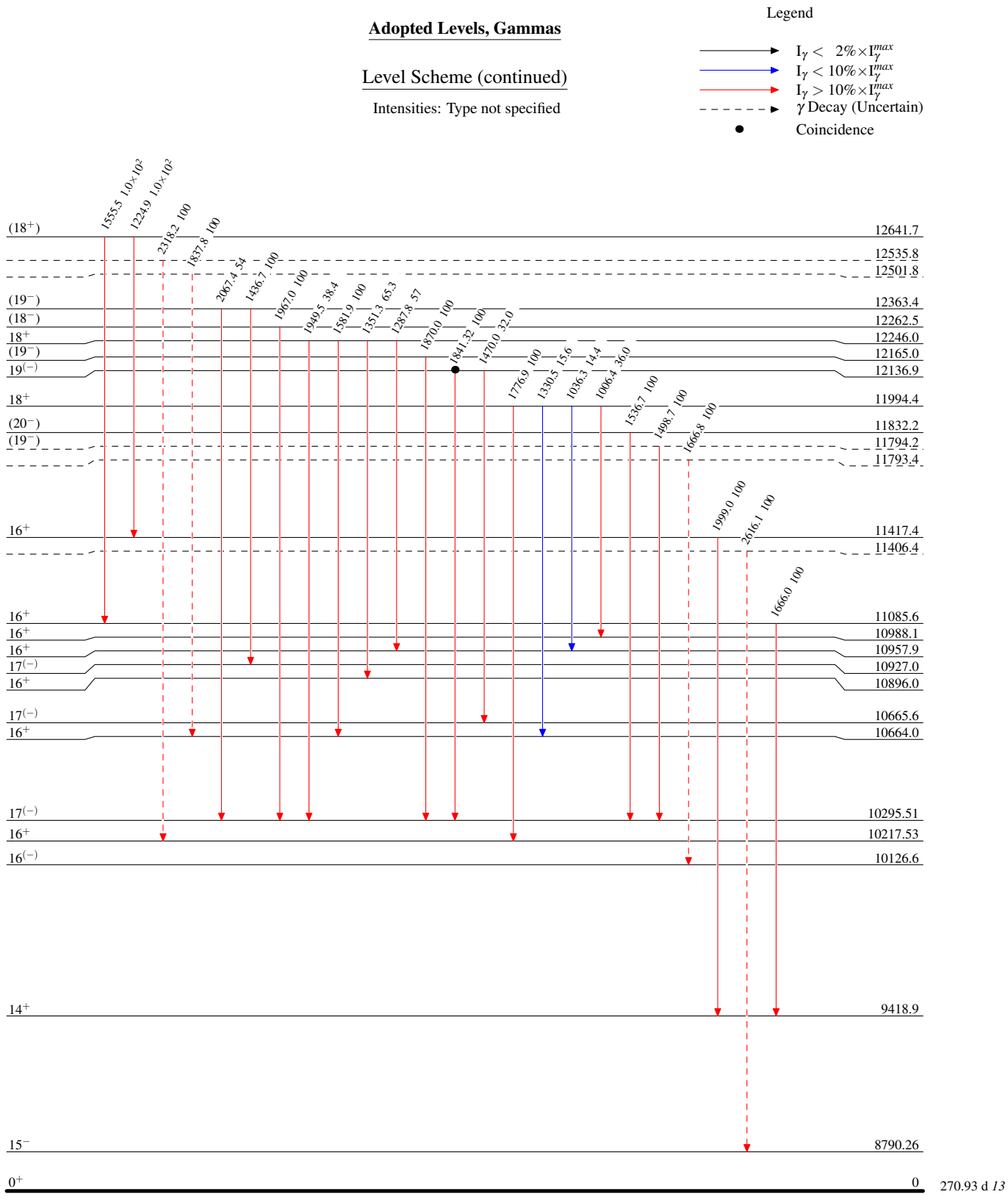


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

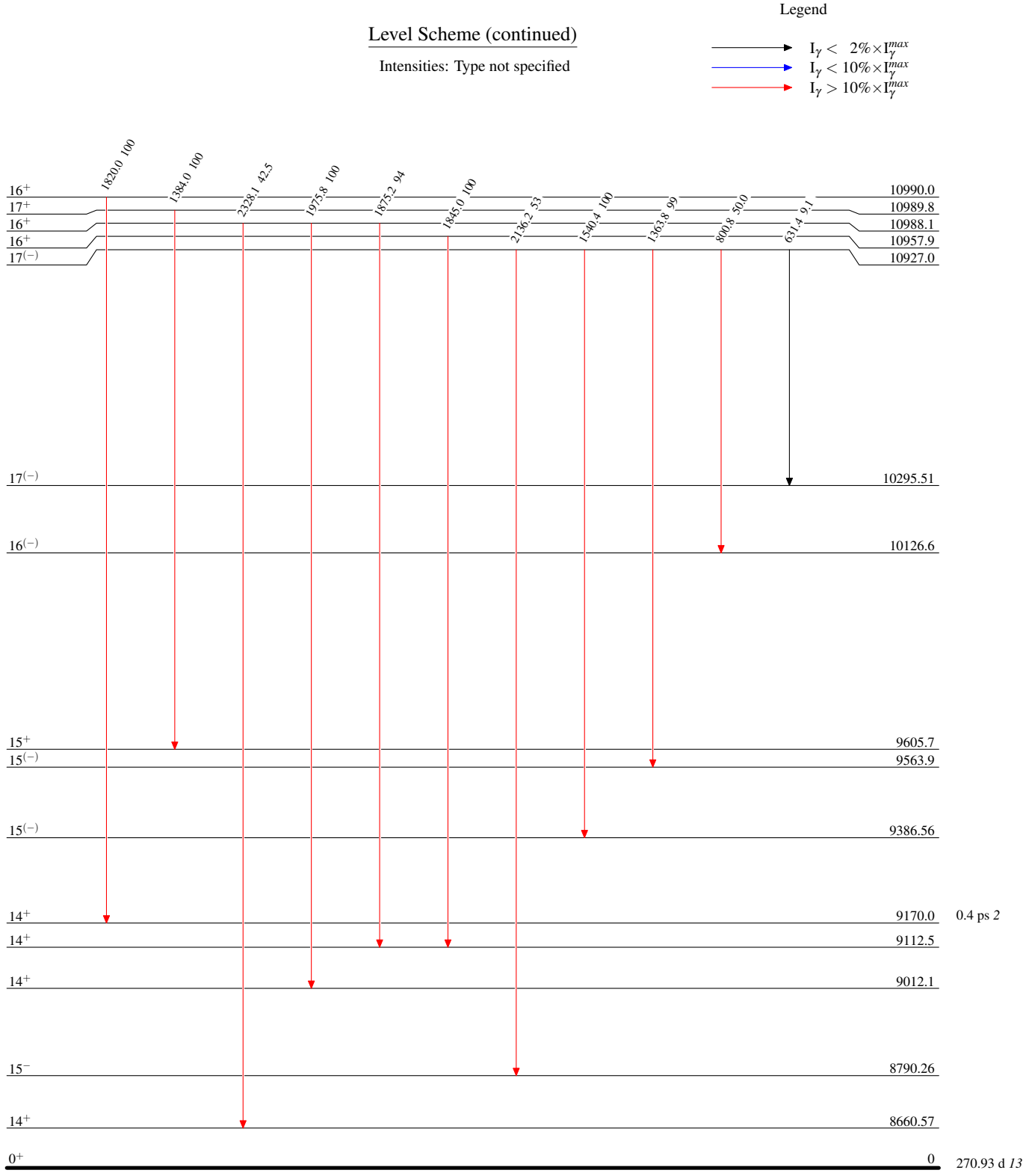


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

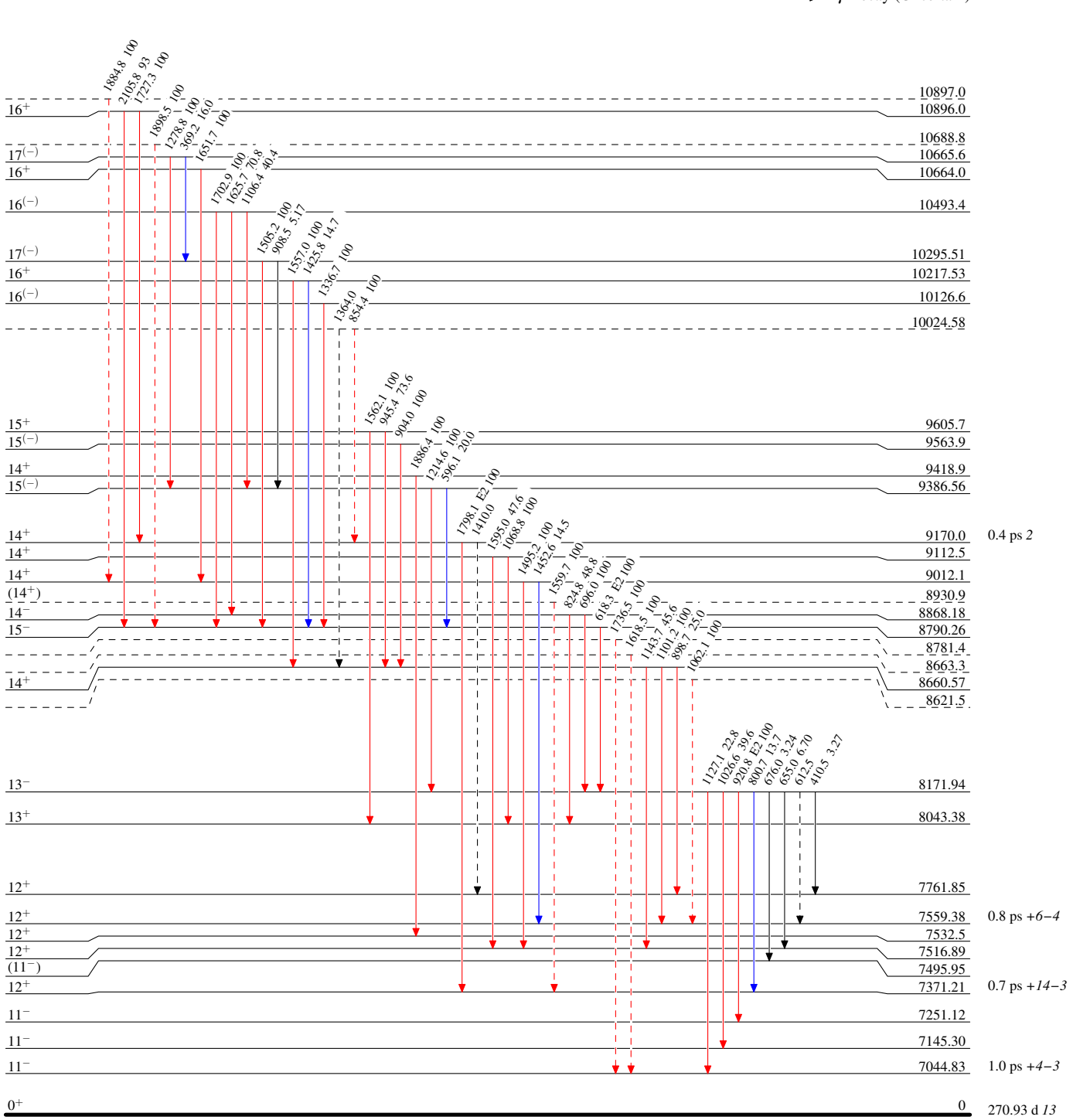


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

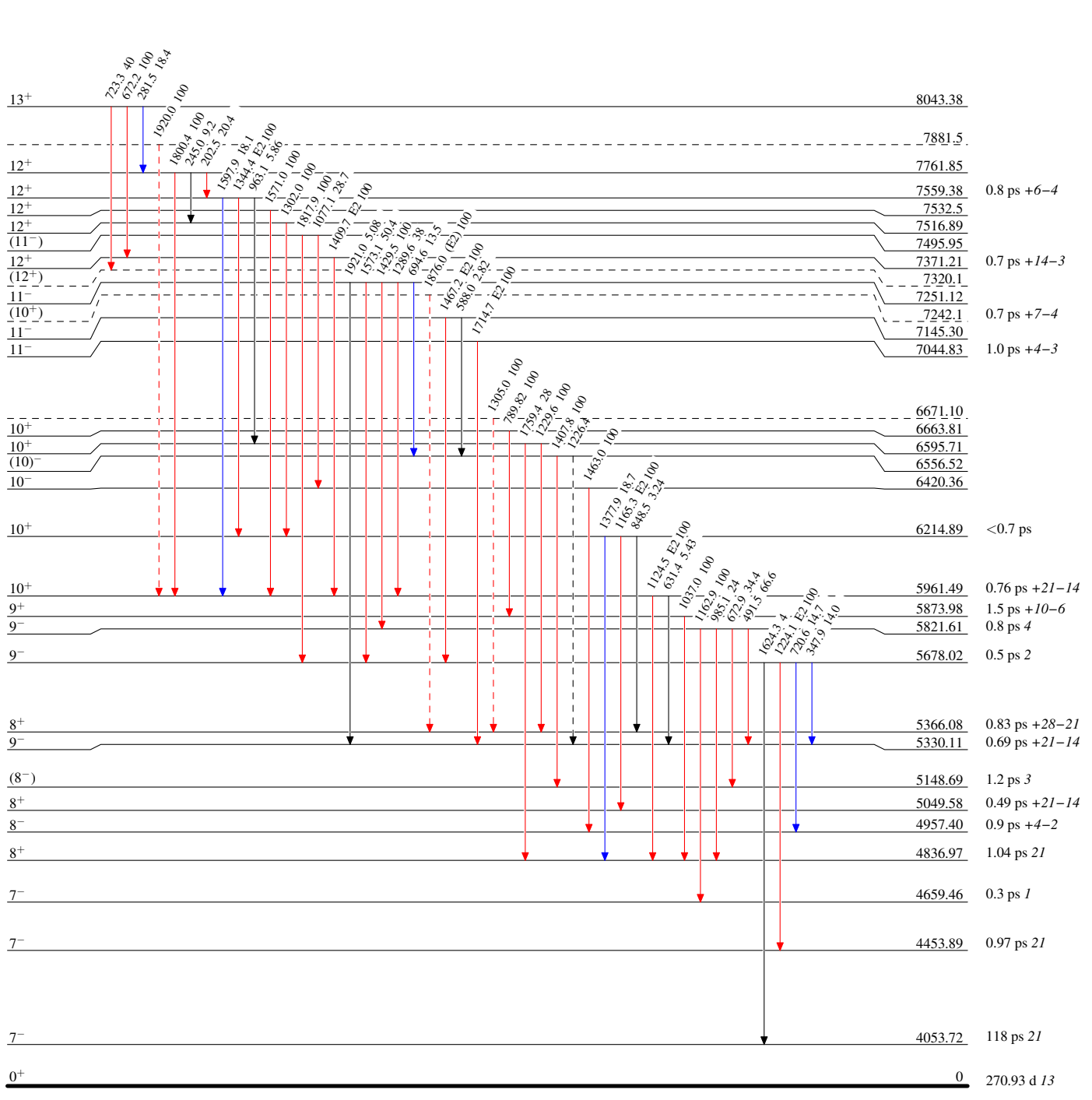


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

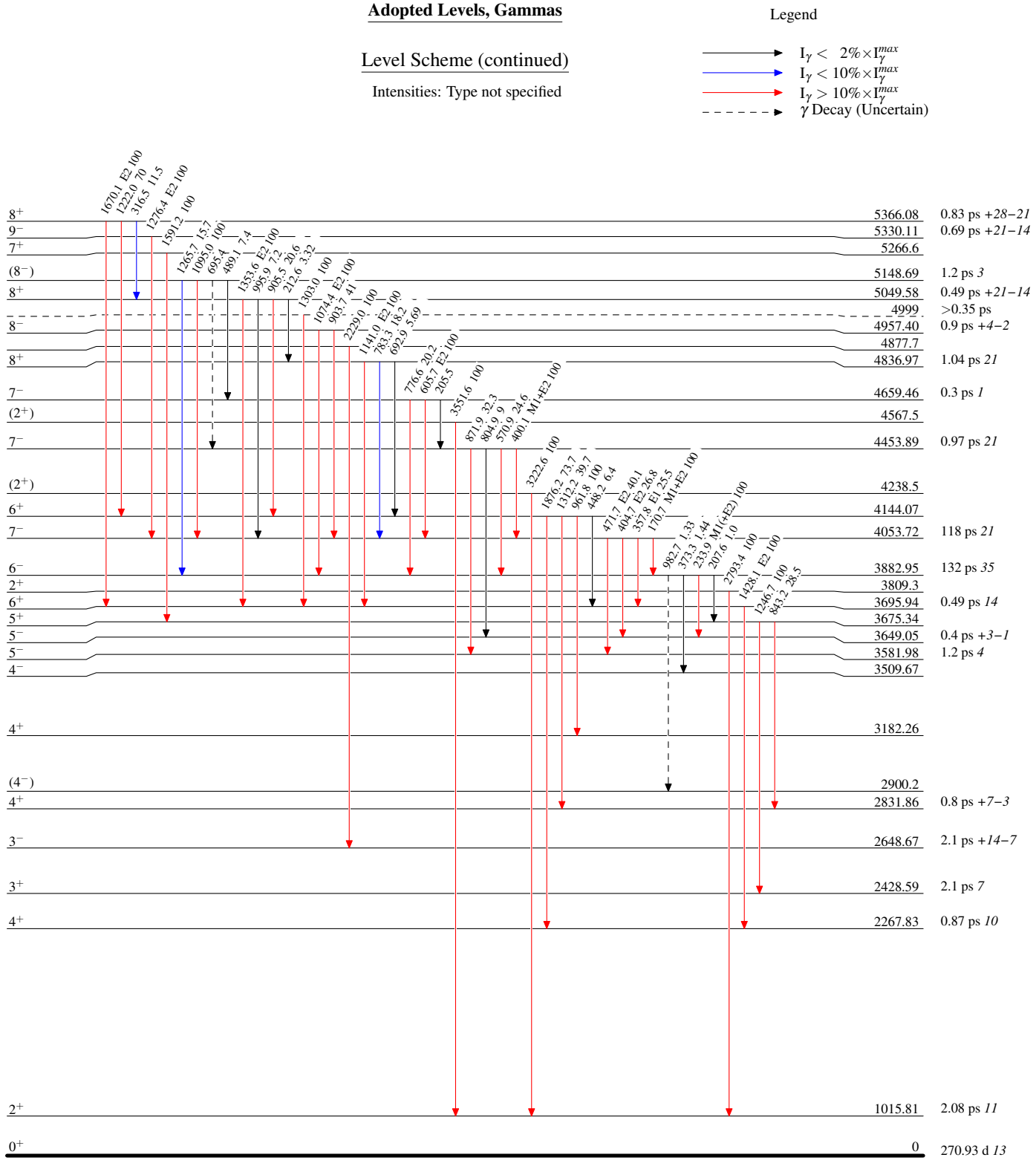


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

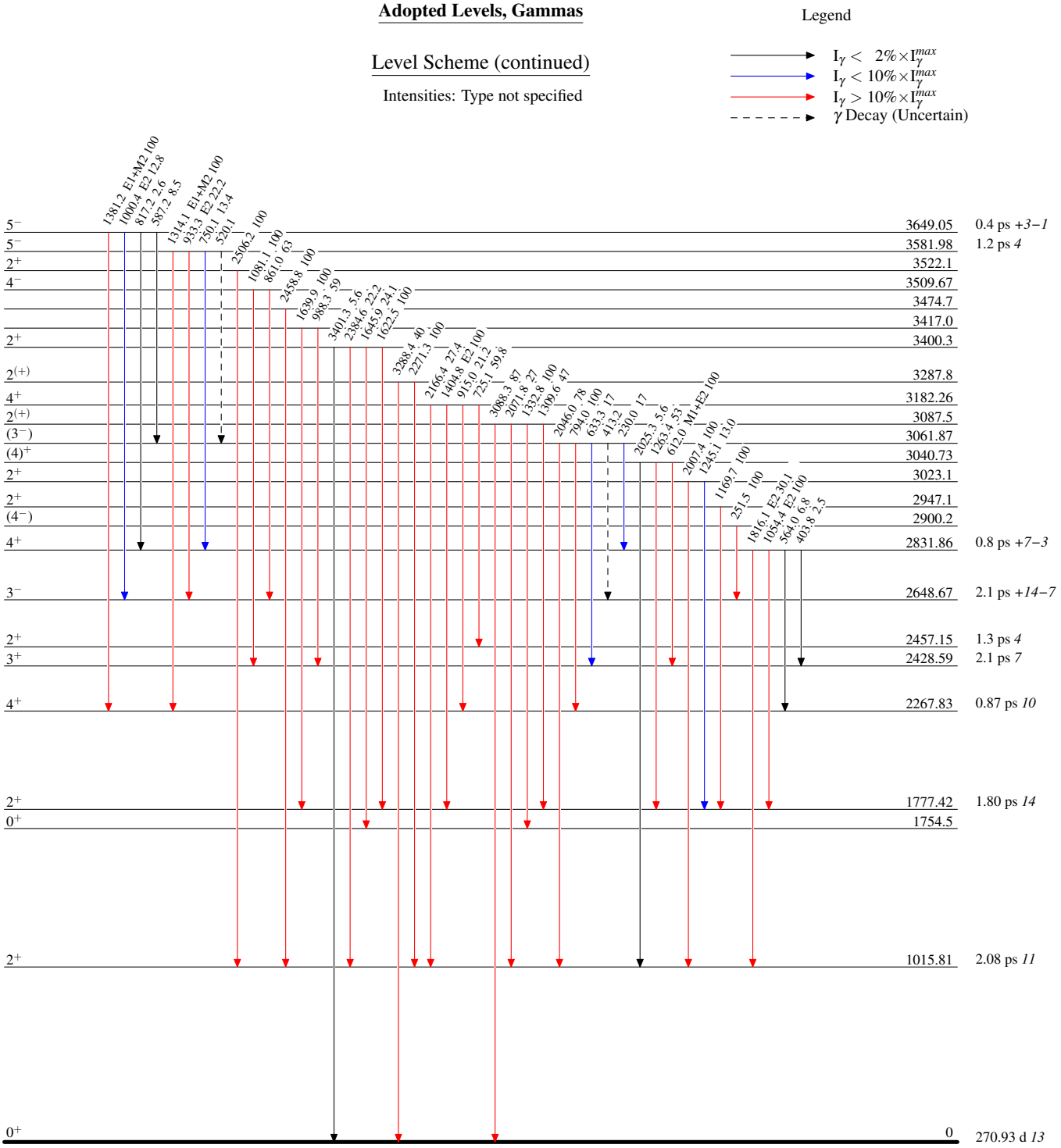


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

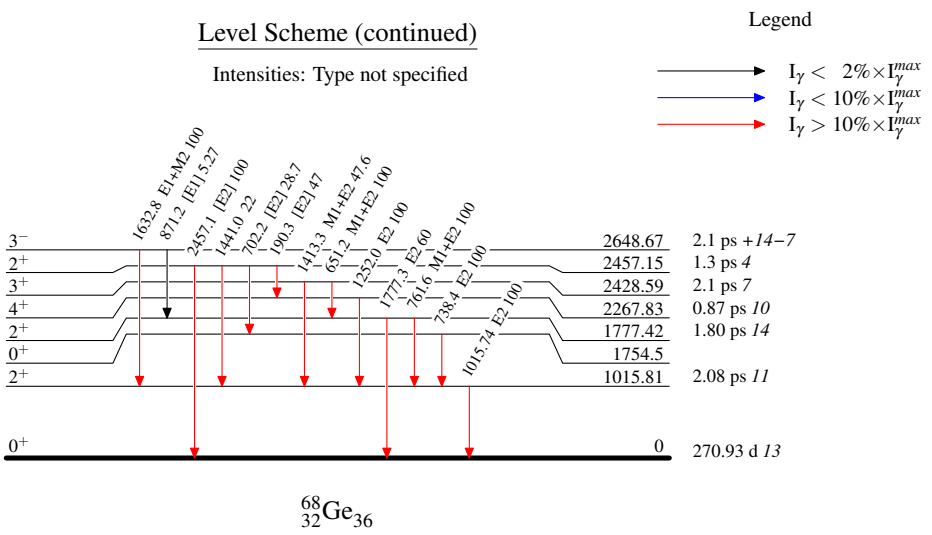


$^{68}_{32}Ge_{36}$

Adopted Levels, Gammas

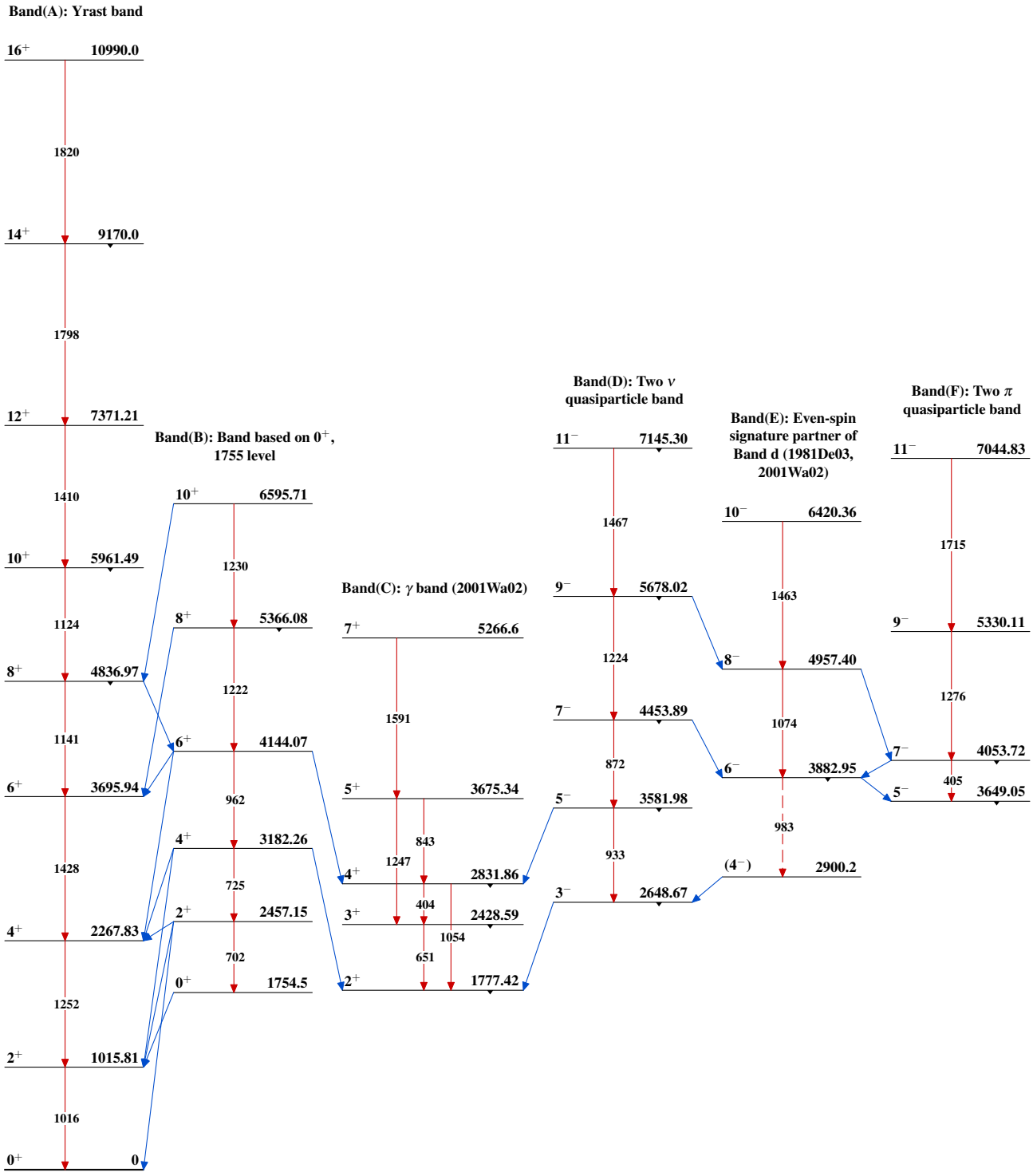
Level Scheme (continued)

Intensities: Type not specified

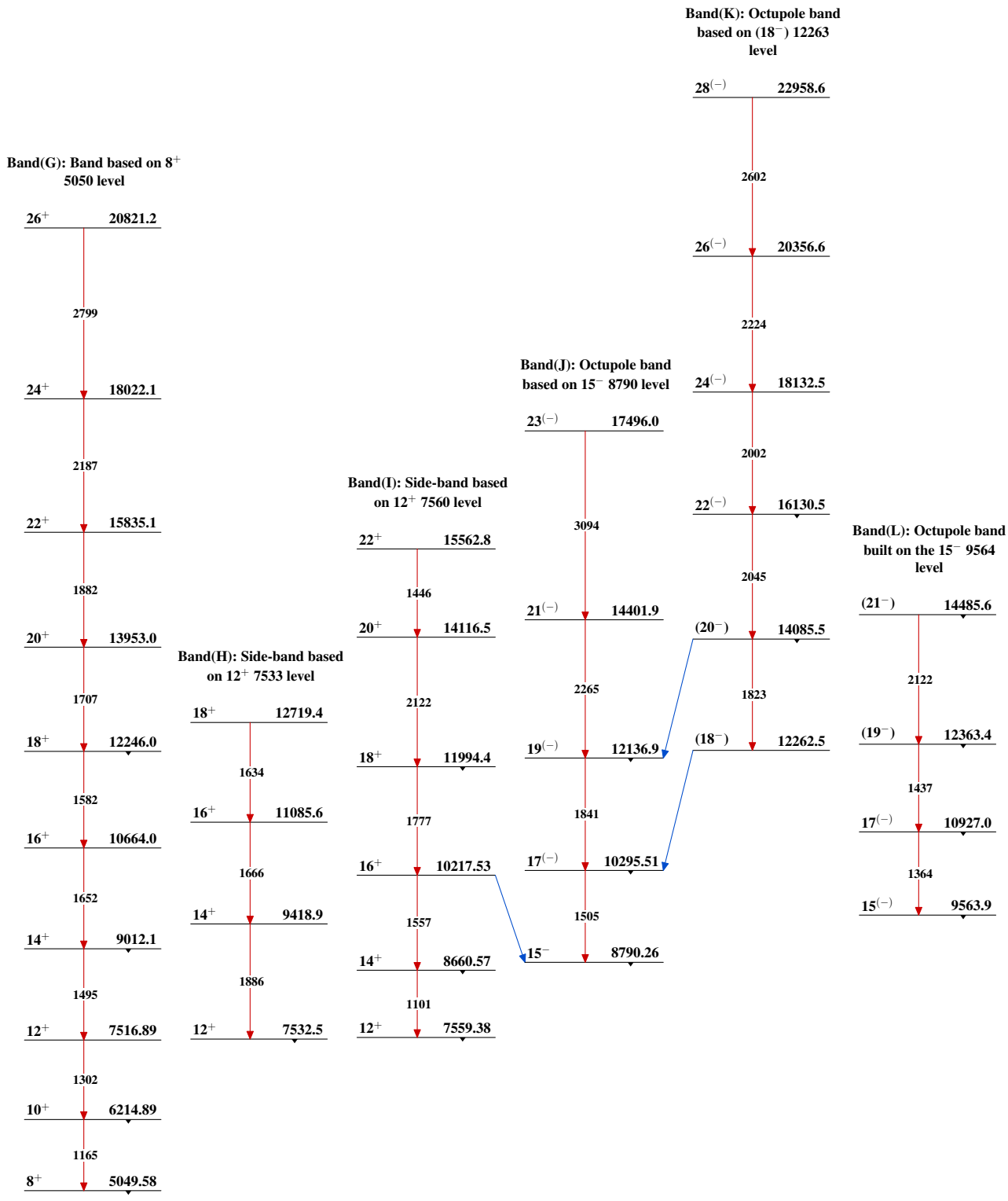


$^{68}_{32}Ge_{36}$

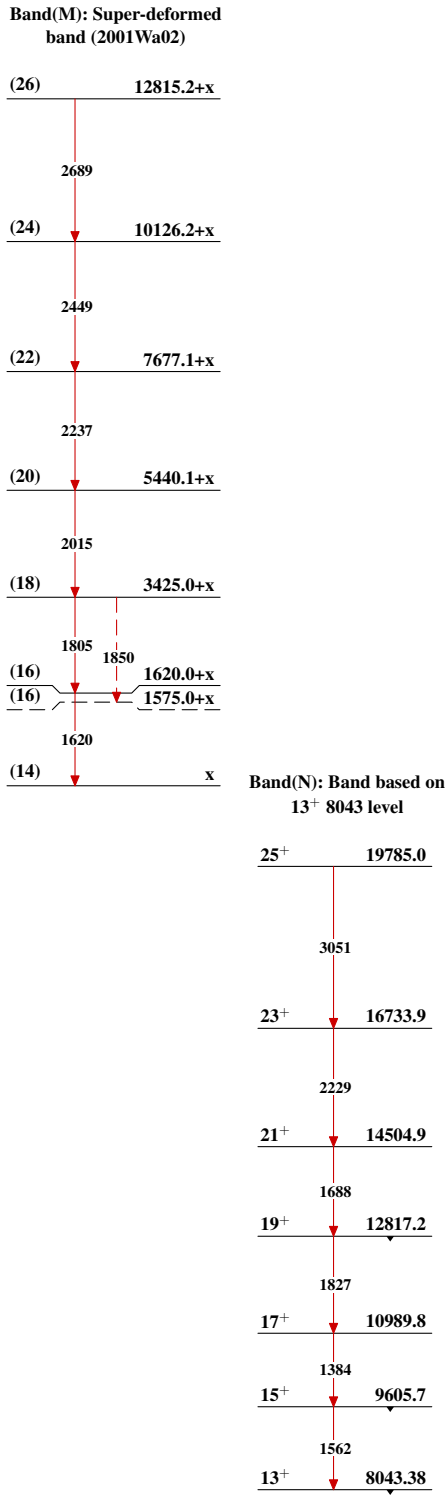
Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{68}_{32}Ge_{36}$