Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huang Xiaolong, J. K. Tuli	NDS 106,159 (2005)	1-Apr-2005

Q(β^-)=−1001.2 *12*; S(n)=7052.32 *22*; S(p)=8911.0 *11*; Q(α)=−4792.7 *8* 2012Wa38
Note: Current evaluation has used the following Q record −1000.8 127052.33 *228911*.1 *10*−4792.8 *8* 2003Au03.

^{67}Zn Levels

Cross Reference (XREF) Flags

A	^{67}Cu β^- decay	G	^{68}Zn(d,t), (pol d,t)	M	^{67}Zn(d,d′)
B	^{67}Ga ε decay	H	^{66}Zn(pol n,γ) E=th	N	^{67}Zn(p,p′), ^{67}Zn(p,p′γ)
C	^{64}Ni(α,nγ)	I	Coulomb excitation	O	^{67}Zn(γ,γ′)
D	^{66}Zn(d,p)	J	^{65}Cu(^{3}He,p)	P	^{65}Cu(α,pnγ)
E	^{67}Zn(n,n′γ)	K	^{68}Zn(p,d)		
F	^{68}Zn(^{3}He,α)	L	^{67}Zn(α,α′)		

E(level)[†]	J$^\pi$	$T_{1/2}$[‡]	XREF	Comments
0.0	5/2$^-$	stable	ABCDEFGHIJKLMNOP	μ=+0.875479 *9* (1967Sp04,2001StZZ) Q=+0.150 *15* (1969La05,2001StZZ) J=5/2 from optical spectroscopy (1976Fu06); π=− from L(d,p)=3.
93.312 *5*	1/2$^-$	9.07 μs *4*	ABCDEFGHI K NO	μ=+0.587 *11* (1988Ik02,2001StZZ) $T_{1/2}$: weighted average of 9.34 μs *20*(1998At04),9.01 μs *3*(1996Hw03), 9.1 μs *4*(1975Ro25),9.20 μs *7*(1973Le18),9.15 μs *5*(1972Le37). J=1/2 from circular polarization data in polarized neutron capture; π=− from L(d,p)=1.
184.579 *6*	3/2$^-$#	1.04 ns *2*	ABCDEFGHI K N	μ=+0.50 *6* (1969Bo41,2002StZZ) $T_{1/2}$: delayed coin in ^{67}Ga ε decay; other: 1.01 ns *10* from Coulomb excitation.
393.531 *7*	3/2$^-$#	>2.4 ps	ABCDEFGHI K MN	$T_{1/2}$: other: <100 ps from ^{67}Ga ε decay.
604.48 *5*	9/2$^+$#	333 ns *14*	CDEFG K M P	μ=−1.097 *9* (1973Be56,2001StZZ); Q=0.60 *6* (1976Ch37,2001StZZ)
814.77 *5*	7/2$^-$@	2.0 ps *+14−7*	C E I	
870.91 *20*	3/2$^{(-)}$		D FG IJK M	XREF: D(884)G(888). J=3/2,5/2,7/2 from $\gamma(\theta)$ in Coulomb excitation; π=(−) from L(p,d)=(1).
887.701 *8*	5/2$^-$@	1.6 ps *+8−2*	BC E I L N	
979.84 *5*	5/2$^+$@	1.5 ps *+6−3*	CDE G	
990 *20*	(1/2$^-$,3/2$^-$)		F JK	E(level): average of 980 *20* from (^{3}He,α) and 995 *20* from (^{3}He,p). J$^\pi$: L(p,d)=(1) at 1000 *30*.
1060 *20*			F	
1142.81 *6*	1/2$^-$	0.42 ps *12*	CDEFGH JKLMN	J=1/2 from $\gamma(\theta)$ in (α,nγ); π=− from L(d,p)=1.
1363.59 *6*	5/2$^-$	0.18 ps *6*	CDEFG J	$T_{1/2}$: other: 0.38 ps *+24−10* from ^{67}Zn(n,n′γ). J=5/2 from $\gamma(\theta)$ in (α,nγ); π=− from M1 to 3/2$^-$.
1407 *5*			D	
1446.09 *9*	3/2$^-$	0.5 ps *+4−1*	CDE G	J$^\pi$: from $\gamma(\theta)$ in (α,nγ) and L(d,p)=1.
1517.14 *18*	9/2$^-$@	0.21 ps *6*	CDE	$T_{1/2}$: others: 0.28 ps *+19−10* from (n,n′γ); 0.49 ps *+7−6* (1978Ku05) in (α,nγ).
1543.50 *9*	3/2$^-$	0.19 ps *5*	CDE G J	$T_{1/2}$: other: 1.04 ps *50* in (n,n′γ). J=3/2 from $\gamma(\theta)$ in (α,nγ); π=− from M1 to 5/2$^-$.

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Adopted Levels, Gammas (continued)

^{67}Zn Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
1603.68 *10*	$7/2^+$ [@]	0.42 ps *+21−7*	CDE K M	$T_{1/2}$: other: 0.31 ps *+14−9* from (n,n′γ).
1640.11 *17*	$13/2^+$ [@]	0.83 ps *+4−3*	C E L N	
1643 *2*			D H	
1656.71 *6*	$7/2^-$	0.42 ps *+2−1*	C EF J	$T_{1/2}$: others: 0.43 ps *+28−14* from (n,n′γ); 0.20 ps *5* from (α,nγ). J=7/2 from γ(θ) in (α,nγ); π=− from E2 to $3/2^-$.
1677.53 *7*	$1/2^+$ [#]	0.15 ps *4*	CDE G	
1686.81 *10*	3/2,5/2	0.24 ps *8*	C E K	Jπ: from γ(θ) in (α,nγ).
1732.65 *15*	$11/2^+$ [@]	0.48 ps *+10−7*	C E	$T_{1/2}$: other: 0.41 ps *+15−7* from (n,n′γ).
1780.24 *16*			CD	
1783.16 *10*	$(3/2,5/2)^+$ [@]	0.29 ps *+7−6*	C E j	
1800.50 *11*	$7/2^-$ [@]	0.12 ps *4*	C EF j	$T_{1/2}$: other: 0.59 ps *+21−14* from (n,n′γ).
1802 *2*	$(1/2^+)$		D G	Jπ: L(d,p)=(0).
1807.89 *14*	$9/2^+$ [@]	>0.7 ps	C E	
1842.81 *18*	$3/2^-$ [@]	0.17 ps *8*	CD G	
1875.42 *12*	$5/2^-$	0.13 ps *4*	CDEF JK	$T_{1/2}$: other: 0.69 ps *35* from (n,n′γ). J=5/2 from γ(θ) and linear polarization data in (α,nγ); π=− from M1 to $7/2^-$.
2027.19 *13*	$7/2^+$	1.2 ps *+4−5*	CDE	J=7/2 from M1 to 5/2 and 9/2; π=+ from M1 to $5/2^+$.
2065.36 *13*	3/2,5/2,$7/2^-$	2.4 ps *+21−11*	C E	Jπ: from γ transitions to $5/2^+$, $5/2^-$, and $3/2^-$.
2083.12 *17*	$1/2^-$,3/2,$5/2^-$	30 fs *8*	C E j	Jπ: from γ transitions to $1/2^-$, $3/2^-$ and $5/2^-$.
2092.61 *20*		55 fs *21*	C E j	$T_{1/2}$: other: 28 fs *12* from (n,n′γ).
2101.81 *14*			CDE G	$T_{1/2}$: 0.14 ps *13* from (n,n′γ); >2 ps from (α,nγ).
2110	$(3/2^+,5/2^+)$		F	Jπ: L(^{3}He,α)=(2).
2136.73 *9*	$9/2^{(-)}$	0.9 ps *+12−3*	C E k	Jπ: from γ(θ) and yield in (α,nγ).
2158.5 *4*		40 fs *14*	C E jk	
2175.29 *19*			CDE G jk	
2242.81 *24*	$1/2^{(+)}$,3/2,$5/2^-$	45 fs *7*	CDE G	$T_{1/2}$: weighted average of 43 fs *11* from (α,nγ) and 46 fs *10* from (n,n′γ); the uncertainty on the (n,n′γ) value has been increased by a factor of 10 by the evaluator. Jπ: from γ transitions to $1/2^-$ and $3/2^-$; π=(+) from L(d,t)=(0).
2272.9 *3*	$3/2^+$,$5/2^+$	0.33 fs *+14−11*	CDEFG JK	Jπ: L(d,p)=2.
2399 *4*	$3/2^+$,$5/2^+$		D	Jπ: L(d,p)=2.
2408.9 *3*	$1/2^+$		CDEF	Jπ: L(d,p)=0 for 2418 *8* level.
2428.1 *4*			C J	
2434.93 *17*	$11/2^-$	0.30 ps *+21−8*	C E J	J=11/2 from γ(θ) in (α,nγ); π=− from E2 to $7/2^-$.
2451.81 *20*	$13/2^+$	0.8 ps *+6−3*	C E	J=13/2 from γ(θ) in (α,nγ); π=+ from M1 to $13/2^+$.
2487 *3*	$(7/2^+,9/2^+)$		DE M	Jπ: L(d,p)=(4).
2503.52 *21*	$11/2^+$	0.38 ps *+10−8*	C E	J=11/2 from γ(θ) in (α,nγ); π=+ from M1 to $13/2^+$.
2511.4 *7*			C EF	
2554.5 *7*	$1/2^-$,$3/2^-$		CDE J	Jπ: L(d,p)=1.
2579 *1*	$7/2^+$,$9/2^+$		D F	Jπ: L(d,p)=4.
2599.6 *10*	$3/2^+$,$5/2^+$		CDE	Jπ: L(d,p)=2 for 2608 *2* level.
2642 *3*	$3/2^+$,$5/2^+$		D	Jπ: L(d,p)=2.
2732.2 *3*	$11/2^-$	0.41 ps *+12−8*	CDEF	J=11/2 from γ(θ) in (α,nγ); π=− from M1 to $9/2^-$.
2753 *2*			D	
2794 *2*	$3/2^+$,$5/2^+$		D J m	Jπ: L(d,p)=2.
2847 *3*	$1/2^+$		D JK m	Jπ: L(d,p)=0.
2883 *12*			D F	
2926.5 *5*	$(15/2^+)$		C	Jπ: $15/2^+$ from γ(θ) and yield function data in (α,nγ), though some data favor a tentative $17/2^+$.

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Adopted Levels, Gammas (continued)

^{67}Zn Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
2928.40 *17*			E j	
2937.3 *5*			CD j	
2998 *12*			D	
3029.8 *3*	(11/2$^+$,15/2$^+$)[&]		C	
3057 *7*			D J	
3065.7 *5*	13/2$^-$	0.28 ps *2*	C	J=13/2 from $\gamma(\theta)$ and yield function in (α,nγ); π=− from E2 to 9/2$^-$.
3091 *12*			D	
3119 *12*			D	
3153 *12*			D j	
3195.6 *4*			C j	
3228 *2*	3/2$^+$,5/2$^+$		D	Jπ: L(d,p)=2.
3291 *5*	1/2$^+$		D	Jπ: L(d,p)=0.
3326 *12*			D	
3350			F	
3386 *2*	1/2$^+$		D	Jπ: L(d,p)=0.
3429 *12*			D	
3468 *3*	3/2$^+$, 5/2$^+$		D	Jπ: L(d,p)=2.
3473.4 *11*	(11/2$^-$,13/2$^-$)[&]		C	
3487.4 *4*		<40 fs	C	
3490.0 *6*			C	
3490.7 *6*			C	
3534 *2*	3/2$^+$,5/2$^+$		D	Jπ: L(d,p)=2.
3557 *5*	1/2$^+$		D	Jπ: L(d,p)=0.
3599 *3*	1/2$^+$		D	Jπ: L(d,p)=0.
3637 *2*			D	
3642 *4*			D	
3679 *20*			F J	Jπ: L(^{3}He,p)=0; for a level at 3690 L(^{3}He,α)=3.
3696.7 *6*			C F	Jπ: L(^{3}He,α)=3 for a level at 3690.
3699 *3*	3/2$^+$,5/2$^+$		D	Jπ: L(d,p)=2.
3764 *3*	1/2$^+$		D	Jπ: L(d,p)=0.
3785 *20*			J	
3819 *3*			D k	
3832 *3*			D k	
3857 *2*	1/2$^+$		D	Jπ: L(d,p)=0.
3880			F	
3907 *4*			D	
3929.2 *6*			C	
3946 *2*			D	
3981 *2*			D	
4024 *3*			D F	
4074 *2*	1/2$^+$		D	Jπ: L(d,p)=0.
4115 *5*			D F	
4135 *5*			D	
4186 *3*	3/2$^+$,5/2$^+$		D F	Jπ: L(d,p)=2.
4219.9 *6*			C	
4225 *4*			D F	
4257 *4*	3/2$^+$,5/2$^+$		D	Jπ: L(d,p)=2.
4286 *4*			D	
4307 *4*	3/2$^+$,5/2$^+$		D	Jπ: L(d,p)=2.
4315 *20*	(5/2$^-$,7/2$^-$)		F J	Jπ: L(^{3}He,α)=(3).
4368 *3*			D	
4388 *3*	3/2$^+$,5/2$^+$		D	Jπ: L(d,p)=2.
4419 *4*	3/2$^+$,5/2$^+$		D F J	Jπ: L(d,p)=2.
4457 *5*			D	

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Adopted Levels, Gammas (continued)

^{67}Zn Levels (continued)

E(level)[†]	J^π	XREF	Comments
4480	$(5/2^-,7/2^-)$	F	J^π: L(^{3}He,α)=(3).
4500 *3*	$3/2^+$, $5/2^+$	D	J^π: L(d,p)=2.
4556 *6*	$(5/2^-,7/2^-)$	D F J	J^π: L(^{3}He,α)=(3).
4593 *8*		D	
4630.0 *8*	$(21/2^+)$[&]	C	
4660 *30*	$(5/2^-,7/2^-)$	D F	J^π: L(^{3}He,α)=(3).
4684.0 *7*	$(21/2^-)$[&]	C	
4770 *30*		D F	
5010 *30*		D F	
5070 *20*		F J	
5150 *30*		D	
5210 *20*		J	
5340 *30*		D	
9020?		F	
9280		F	
11470		F	

[†] From a least-squares fit to the Eγ data.
[‡] From DSAM in ^{64}Ni(α,nγ), except where noted otherwise.
[#] From vector analyzing power data in ^{68}Zn(pol d,t) reaction.
[@] From $\gamma(\theta)$ and γ polarization data in ^{64}Ni(α,nγ).
[&] From $\gamma(\theta)$ and yield in ^{64}Ni(α,nγ).

Adopted Levels, Gammas (continued)

γ(^{67}Zn)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.	δ[c]	α[‡]	Comments
93.312	1/2⁻	93.311[‡] *5*	100	0.0	5/2⁻	E2		0.873	α(K)=0.751; α(L)=0.0920 B(E2)(W.u.)=0.287 *11* Mult.: Q from ΔJ; E2 from RUL.
184.579	3/2⁻	91.266[‡] *5*	14.5[d] *3*	93.312	1/2⁻	M1+E2[&]	+0.06 *5*	0.083 *8*	α(K)=0.073 *7*; α(L)=0.0076 *8* B(M1)(W.u.)=0.00342 *13* δ: from γ(θ) in Coul. ex.
		184.577[‡] *10*	100[d] *2*	0.0	5/2⁻	M1+E2[a]	0.38 *8*	0.019 *3*	α(K)=0.0158 *11*; α(L)=0.00165 *12* B(M1)(W.u.)=0.00257 *11*; B(E2)(W.u.)=14 *3* δ: from ce data in ^{67}Ga ε decay.
393.531	3/2⁻	208.951[‡] *10*	14.0[d] *4*	184.579	3/2⁻	M1+E2[a]	−0.034 *21*	0.00913 *6*	α(K)=0.00804 *6*; α(L)=0.00082 δ: from γ(θ) in ^{67}Ga ε decay.
		300.219[‡] *10*	100[d] *2*	93.312	1/2⁻	M1+E2[a]	−0.18 *1*		
		393.529[‡] *10*	28.0[d] *1*	0.0	5/2⁻	M1+E2[a]	0.043 *10*		δ: =−0.17 *8* or −2.4 *3* from γ(θ) in (α,nγ).
604.48	9/2⁺	604.48 *5*	100	0.0	5/2⁻	M2+E3	<0.54		B(M2)(W.u.)=0.054; B(E3)(W.u.)=105 Mult.: from α(K)exp in (α,nγ). B(M2)(W.u.) and B(E3)(W.u.) calculated for δ=0.54. δ: from RUL; 1.4 *+23−6* from α(K)exp.
814.77	7/2⁻	421.6 *2*	0.74[e] *8*	393.531	3/2⁻				
		630.28 *10*	5.4[e] *2*	184.579	3/2⁻	E2[b]			B(E2)(W.u.)=9 *7*
		814.88 *7*	100[e] *3*	0.0	5/2⁻	M1+E2[b]	+5.5 *5*		B(M1)(W.u.)=0.0006 *5*; B(E2)(W.u.)=4.E+1 *4*
870.91	3/2(⁻)	870.9 *2*	100	0.0	5/2⁻				
887.701	5/2⁻	494.169[‡] *15*	51 *4*	393.531	3/2⁻	M1+E2[b]	0.14 *3*		B(M1)(W.u.)=0.028 *15*; B(E2)(W.u.)=3.6 *24*
		703.110[‡] *15*	10 *4*	184.579	3/2⁻				B(M1)(W.u.)=0.0010 *7*; B(E2)(W.u.)=3.1 *20* δ: −0.09 *28* or +8.0 *18* from γ(θ) in ^{67}Ga ε decay. Mult.: (M1+E2), from γ(θ) in ^{67}Ga ε decay and ΔJ^π.
		794.386[‡] *15*	43 *4*	93.312	1/2⁻	E2(+M3)[b]	0.04 *4*		B(E2)(W.u.)=15 *8*
		887.693[‡] *15*	100 *4*	0.0	5/2⁻	M1+E2[b]	+0.96 *9*		B(M1)(W.u.)=0.005 *3*; B(E2)(W.u.)=9 *5*
979.84	5/2⁺	374.9 *4*	6[f] *1*	604.48	9/2⁺	E2+M3[&]	−0.8 *3*	0.015 *5*	α(K)=0.013 *5*; α(L)=0.0014 *5* B(E2)(W.u.)=7.E+1 *4*; B(M3)(W.u.)=2.4×10^9 *16*
		586.29 *7*	100[f] *12*	393.531	3/2⁻	E1(+M2)[b]	0.00 *1*		B(E1)(W.u.)=0.0009 *4*
		979.86 *8*	48[f] *5*	0.0	5/2⁻	E1(+M2)[b]	−0.03 *3*		B(E1)(W.u.)=9.E−5 *4*
1142.81	1/2⁻	749.30 *8*	98 *4*	393.531	3/2⁻				
		958.20 *10*	100 *4*	184.579	3/2⁻				
		1142.85 *12*	20 *2*	0.0	5/2⁻	E2[&]			B(E2)(W.u.)=3.9 *12*
1363.59	5/2⁻	475.5 *2*	22 *3*	887.701	5/2⁻	M1+E2[&]	−0.37 *5*		B(M1)(W.u.)=0.08 *3*; B(E2)(W.u.)=7.E+1 *4*
		970.03 *10*	100 *8*	393.531	3/2⁻	M1+E2[b]	−0.31 *6*		B(M1)(W.u.)=0.043 *15*; B(E2)(W.u.)=7 *4*

Adopted Levels, Gammas (continued)

γ(^{67}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.	δ[c]	Comments
1363.59	5/2$^-$	1179.10 *15*	73 *8*	184.579	3/2$^-$	(M1(+E2))[@]	−0.2 *2*	B(M1)(W.u.)=0.019 *7*
		1270.0 *5*	12 *1*	93.312	1/2$^-$			
		1363.65 *10*	76 *11*	0.0	5/2$^-$	M1+E2[&]	+2.0 *5*	B(M1)(W.u.)=0.0026 *14*; B(E2)(W.u.)=9 *4*
1446.09	3/2$^-$	558.3 *2*	20	887.701	5/2$^-$			
		1052.0 *5*	7	393.531	3/2$^-$			
		1261.7 *2*	<53	184.579	3/2$^-$			
		1352.6 *2*	100	93.312	1/2$^-$			
		1446.20 *15*	42	0.0	5/2$^-$			
1517.14	9/2$^-$	702.3 *4*	9 *3*	814.77	7/2$^-$			
		1517.15 *20*	100 *3*	0.0	5/2$^-$	E2(+M3)[b]	−0.01 *2*	B(E2)(W.u.)=19 *6*
1543.50	3/2$^-$	1149.8 *2*	8	393.531	3/2$^-$			
		1358.7 *2*	58	184.579	3/2$^-$			
		1450.4 *2*	18	93.312	1/2$^-$			E_γ: from ^{67}Zn(n,n′γ).
		1543.51 *15*	100	0.0	5/2$^-$	M1+E2[&]	+0.20 *8*	B(M1)(W.u.)=0.016; B(E2)(W.u.)=0.4
1603.68	7/2$^+$	623.8 *2*	18	979.84	5/2$^+$	M1(+E2)[b]	+0.07 *+4−10*	B(M1)(W.u.)=0.033; B(E2)(W.u.)=0.7
		999.20 *10*	100	604.48	9/2$^+$	M1+E2[b]	−0.28 *3*	B(M1)(W.u.)=0.041 *21*; B(E2)(W.u.)=5 *3*
1640.11	13/2$^+$	1035.8 *2*	100	604.48	9/2$^+$	E2(+M3)[b]	−0.02 *2*	B(E2)(W.u.)=35.4 *17*
1656.71	7/2$^-$	768.94 *6*	100[f] *12*	887.701	5/2$^-$	M1(+E2)[b]	0.01 *2*	B(M1)(W.u.)=0.047 *13*
		1262.9 *3*	<116	393.531	3/2$^-$			
		1472.44 *15*	27[f] *3*	184.579	3/2$^-$	E2[&]		B(E2)(W.u.)=1.3 *4*
		1657.2 *3*	62[f] *8*	0.0	5/2$^-$			
1677.53	1/2$^+$	863.61 *12*	56	814.77	7/2$^-$			E_γ: from ^{67}Zn(n,n′γ).
		1283.55 *15*	100	393.531	3/2$^-$			
		1492.7 *3*	9	184.579	3/2$^-$			
		1583.82 *10*	73	93.312	1/2$^-$			
1686.81	3/2,5/2	1293.24 *10*	100 *13*	393.531	3/2$^-$			
		1502.0 *3*	68 *13*	184.579	3/2$^-$			
		1687.6 *4*	95 *13*	0.0	5/2$^-$			
1732.65	11/2$^+$	1128.20 *15*	100	604.48	9/2$^+$	M1+E2[b]	+0.80 *15*	B(M1)(W.u.)=0.019 *5*; B(E2)(W.u.)=16 *5*
1780.24		892.6[h] *3*	<29	887.701	5/2$^-$			
		965.46 *15*	100	814.77	7/2$^-$			
		1595.0[h] *3*	67	184.579	3/2$^-$			
1783.16	(3/2,5/2)$^+$	803.20 *15*	100	979.84	5/2$^+$			
		1389.3 *2*	65	393.531	3/2$^-$			
		1598.3 *3*	30	184.579	3/2$^-$			
		1690.5 *2*	7456[f]	93.312	1/2$^-$			
		1783.1 *3*	73	0.0	5/2$^-$			E_γ: 1781.1 *3* in ^{67}Zn(n,n′γ); increased by 2 to allow for shift in energy scale.

Adopted Levels, Gammas (continued)

γ(^{67}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.	δ[c]	Comments
1800.50	7/2$^-$	912.6 *2*	87 *10*	887.701	5/2$^-$	(M1(+E2))[b]	0.1 *1*	B(M1)(W.u.)=0.065 *24*
		1407.3 *3*	58 *10*	393.531	3/2$^-$			
		1616.0 *2*	77 *10*	184.579	3/2$^-$			
		1800.4 *2*	100 *10*	0.0	5/2$^-$	M1+E2[&]	−0.38 *8*	B(M1)(W.u.)=0.009 *3*; B(E2)(W.u.)=0.6 *3*
1807.89	9/2$^+$	828.0 *2*	24	979.84	5/2$^+$			
		992.8 *5*	22	814.77	7/2$^-$			
		1203.5 *2*	100	604.48	9/2$^+$	M1+E2[b]	+3 *+2−1*	B(M1)(W.u.)<0.0020; B(E2)(W.u.)<10
		1808.5[h] *3*	51	0.0	5/2$^-$			
1842.81	3/2$^-$	700.2 *8*	≈19	1142.81	1/2$^-$			
		955.0 *4*	10	887.701	5/2$^-$			
		1449.5 *3*	56	393.531	3/2$^-$			δ: +0.04 *9* or −3.7 *10* from γ(θ) in (α,nγ) for (M1+E2),
		1658.0 *3*	100	184.579	3/2$^-$			
		1749.5 *5*	8	93.312	1/2$^-$			
1875.42	5/2$^-$	511.2 *5*		1363.59	5/2$^-$			
		1060.54 *15*	100 *3*	814.77	7/2$^-$	M1+E2[&]	−0.2 *1*	B(M1)(W.u.)=0.11 *4*; B(E2)(W.u.)=6 *7*
		1482.15 *20*	27 *3*	393.531	3/2$^-$	M1+E2[&]	−0.8 *2*	B(M1)(W.u.)=0.007 *3*; B(E2)(W.u.)=3.1 *14*
		1781.7[h] *5*		93.312	1/2$^-$			
2027.19	7/2$^+$	1047.3 *2*	100	979.84	5/2$^+$	M1+E2[&]	+0.84 *20*	B(M1)(W.u.)=0.0037; B(E2)(W.u.)=3.8
		1422.7 *3*	50	604.48	9/2$^+$	(M1(+E2))[@]	−0.04 *4*	B(M1)(W.u.)=0.0013
		2027.2 *2*	100	0.0	5/2$^-$			
2065.36	3/2,5/2,7/2$^-$	1085.8 *3*	10	979.84	5/2$^+$			
		1672.0 *2*	100	393.531	3/2$^-$			
		2065.0 *2*	5	0.0	5/2$^-$			
2083.12	1/2$^-$,3/2,5/2$^-$	1690.4	100[f]	393.531	3/2$^-$			
		1898.5 *3*	63[f] *7*	184.579	3/2$^-$			
		1989.3 *3*	52[f] *6*	93.312	1/2$^-$			
		2083.5 *3*	39[f] *5*	0.0	5/2$^-$			
2092.61		1908.0 *2*	100	184.579	3/2$^-$			
2101.81		738.3 *2*	18	1363.59	5/2$^-$			
		1214.1 *4*	100	887.701	5/2$^-$			
		1287.0[g] *3*	<140[g]	814.77	7/2$^-$			
		2101.6 *3*	35	0.0	5/2$^-$			
2136.73	9/2$^{(-)}$	1321.89 *8*	100 *12*	814.77	7/2$^-$	(M1+E2)[@]	−0.8 *2*	B(M1)(W.u.)=0.006 *8*; B(E2)(W.u.)=3 *5*
		2137.4 *3*	17 *2*	0.0	5/2$^-$			
2158.5		1973.9 *4*	100	184.579	3/2$^-$			
2175.29		1196.1 *4*	100	979.84	5/2$^+$			
		1287.4[g] *3*	<230[g]	887.701	5/2$^-$			
		1781.7 *4*		393.531	3/2$^-$			

$^{67}_{30}Zn_{37}$-7

Adopted Levels, Gammas (continued)

γ(^{67}Zn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.	δ[c]	Comments
2175.29		1990.2[g] *5*	<195[g]	184.579	3/2⁻			
2242.81	1/2(+),3/2,5/2⁻	1100.1 *4*	33	1142.81	1/2⁻			
		1849.2 *3*	100	393.531	3/2⁻			
2272.9	3/2⁺,5/2⁺	669.2[h] *2*		1603.68	7/2⁺			
		1879.3 *3*		393.531	3/2⁻			
2408.9	1/2⁺	1265.7[h] *6*		1142.81	1/2⁻			
		2015.8 *4*		393.531	3/2⁻			
		2223.8 *4*		184.579	3/2⁻			
2428.1		2034.5 *4*	100	393.531	3/2⁻			
2434.93	11/2⁻	1292.3 *2*	36 *4*	1142.81	1/2⁻			E_γ: 1294.1 *2* in ^{67}Zn(n,n′γ); subtracted 1.8 to shift the energy scale.
		1547.2 *9*	36 *6*	887.701	5/2⁻			E_γ: 1549.0 *9* in ^{67}Zn(n,n′γ); subtracted 1.8 to shift the energy scale.
		1619.7 *3*	100 *12*	814.77	7/2⁻	E2(+M3)[&]	+0.18 *+11−18*	B(E2)(W.u.)=6 *5*
2451.81	13/2⁺	719.3 *2*	54	1732.65	11/2⁺	M1+E2[&]	+0.57 *7*	
		1846.9 *3*	<100	604.48	9/2⁺			E_γ: probably a doublet.
2503.52	11/2⁺	863.5 *2*	100	1640.11	13/2⁺			B(M1)(W.u.)=0.030 *8*; B(E2)(W.u.)=64 *17* δ: −0.36 *7* or −2.7 *6* from (α,nγ) for M1+E2,
		1898.8 *3*	49	604.48	9/2⁺			
2511.4		1697 *1*		814.77	7/2⁻			
		2511 *1*		0.0	5/2⁻			
2554.5	1/2⁻,3/2⁻	2369.9 *8*		184.579	3/2⁻			
		2554.5 *10*		0.0	5/2⁻			
2599.6	3/2⁺,5/2⁺	2415 *1*		184.579	3/2⁻			
2732.2	11/2⁻	1215.0 *2*	100	1517.14	9/2⁻			B(M1)(W.u.)=0.015 *5*; B(E2)(W.u.)=16 *5* δ: −0.17 *10* or −2.5 *+6−10* from (α,nγ) for M1+E2,
2926.5	(15/2⁺)	1286.4 *4*	100	1640.11	13/2⁺			
2928.40		1384.4 *5*	100[f]	1543.50	3/2⁻			
		1482.33 *15*	72[f] *15*	1446.09	3/2⁻			
2937.3		1204.6 *4*	100	1732.65	11/2⁺			
3029.8	(11/2⁺,15/2⁺)	1296.9 *4*	100 *7*	1732.65	11/2⁺			
		1389.9 *4*	82 *7*	1640.11	13/2⁺			
3065.7	13/2⁻	1548.6 *5*	100	1517.14	9/2⁻	E2(+M3)[&]	+0.09 *9*	B(E2)(W.u.)=13.9 *11*
3195.6		743.8 *3*	100	2451.81	13/2⁺			
3473.4	(11/2⁻,13/2⁻)	407.7 *9*	100	3065.7	13/2⁻			
3487.4		1847.2 *3*	100	1640.11	13/2⁺			
3490.0		563.5 *3*	100	2926.5	(15/2⁺)			
3490.7		1038.0 *10*	25	2451.81	13/2⁺			
		1850.9 *6*	100	1640.11	13/2⁺			

$^{67}_{30}Zn_{37}$-8

Adopted Levels, Gammas (continued)

γ(^{67}Zn) (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
3696.7		1244.9 *5*	100	2451.81	13/2$^+$	4630.0	(21/2$^+$)	1703.5 *6*	100	2926.5	(15/2$^+$)
3929.2		440.6 *14*	11 *6*	3490.7		4684.0	(21/2$^-$)	464.2 *6*	49 *4*	4219.9	
		863.6 *5*	100 *6*	3065.7	13/2$^-$			754.6 *8*	100 *4*	3929.2	
4219.9		1293.5 *5*	100	2926.5	(15/2$^+$)						

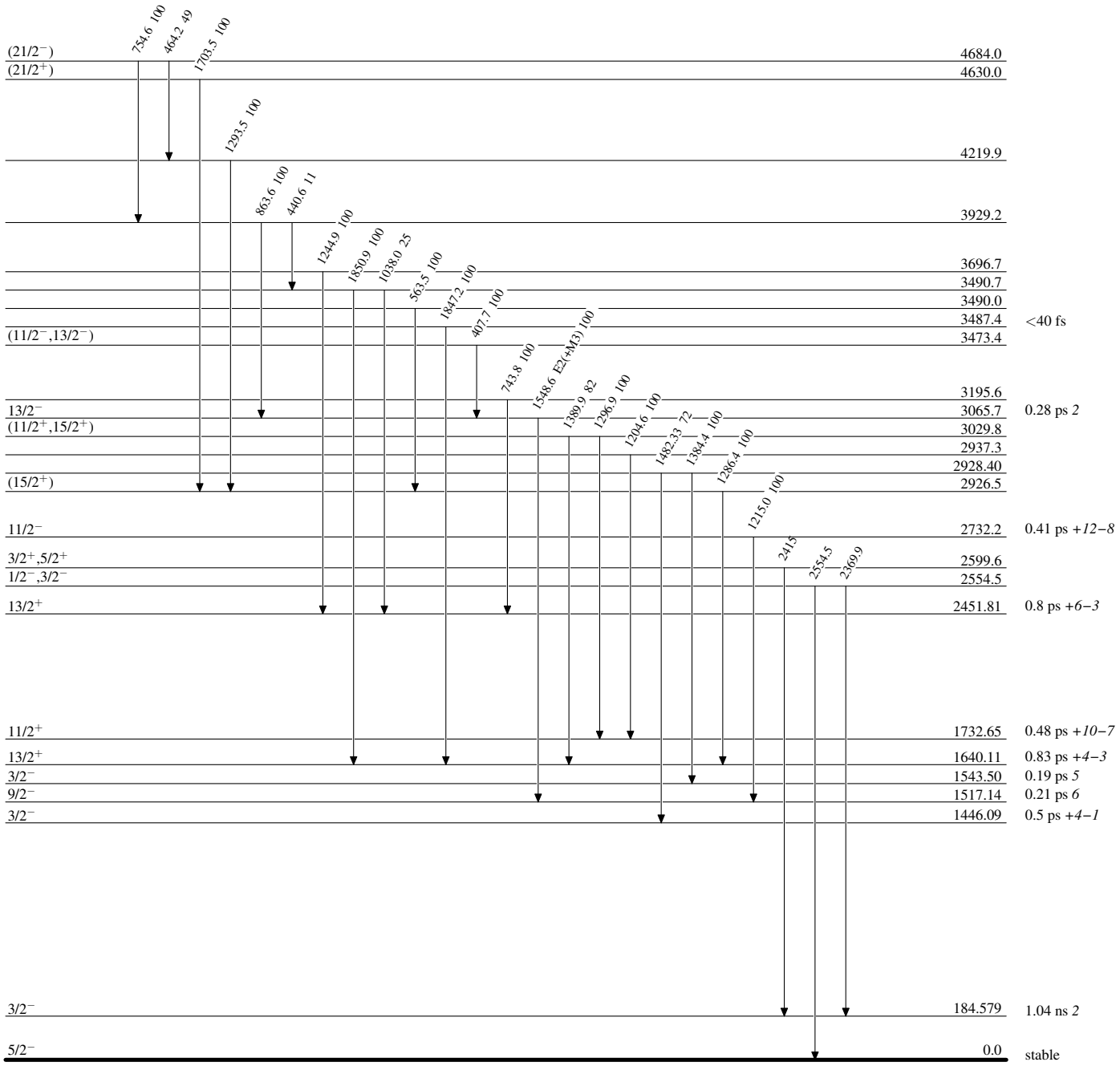
† From ^{64}Ni(α,nγ), except where noted otherwise.
‡ From ^{67}Ga ε decay.
# Relative branchings from each level at 90° to the beam, from (α,nγ), except where noted otherwise.
@ From $\gamma(\theta)$ in ^{64}Ni(α,nγ) and ΔJ^π.
& From $\gamma(\theta)$ in ^{64}Ni(α,nγ) and RUL.
[a] From ce data in ^{67}Ga ε decay.
[b] From $\gamma(\theta)$ and γ polarization data in ^{64}Ni(α,nγ).
[c] From ^{64}Ni(α,nγ), except where noted otherwise.
[d] Relative branchings from ^{67}Ga ε decay.
[e] Relative branchings from $\gamma(\theta)$ in Coul. ex.
[f] Relative branchings from ^{67}Zn(n,n$'\gamma$).
[g] Multiply placed with undivided intensity.
[h] Placement of transition in the level scheme is uncertain.

$^{67}_{30}Zn_{37}$-9

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

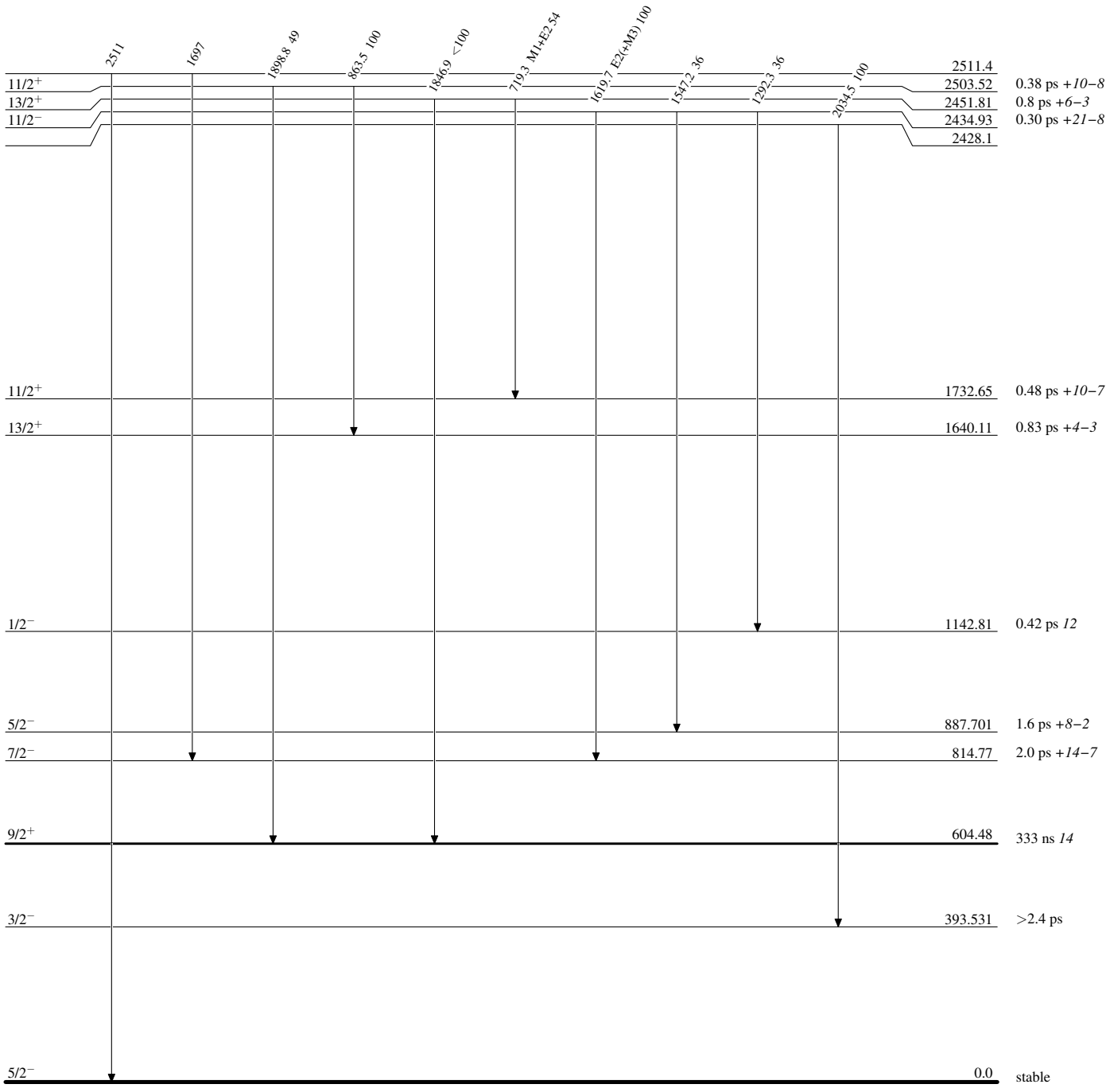


$^{67}_{30}Zn_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{67}_{30}Zn_{37}$

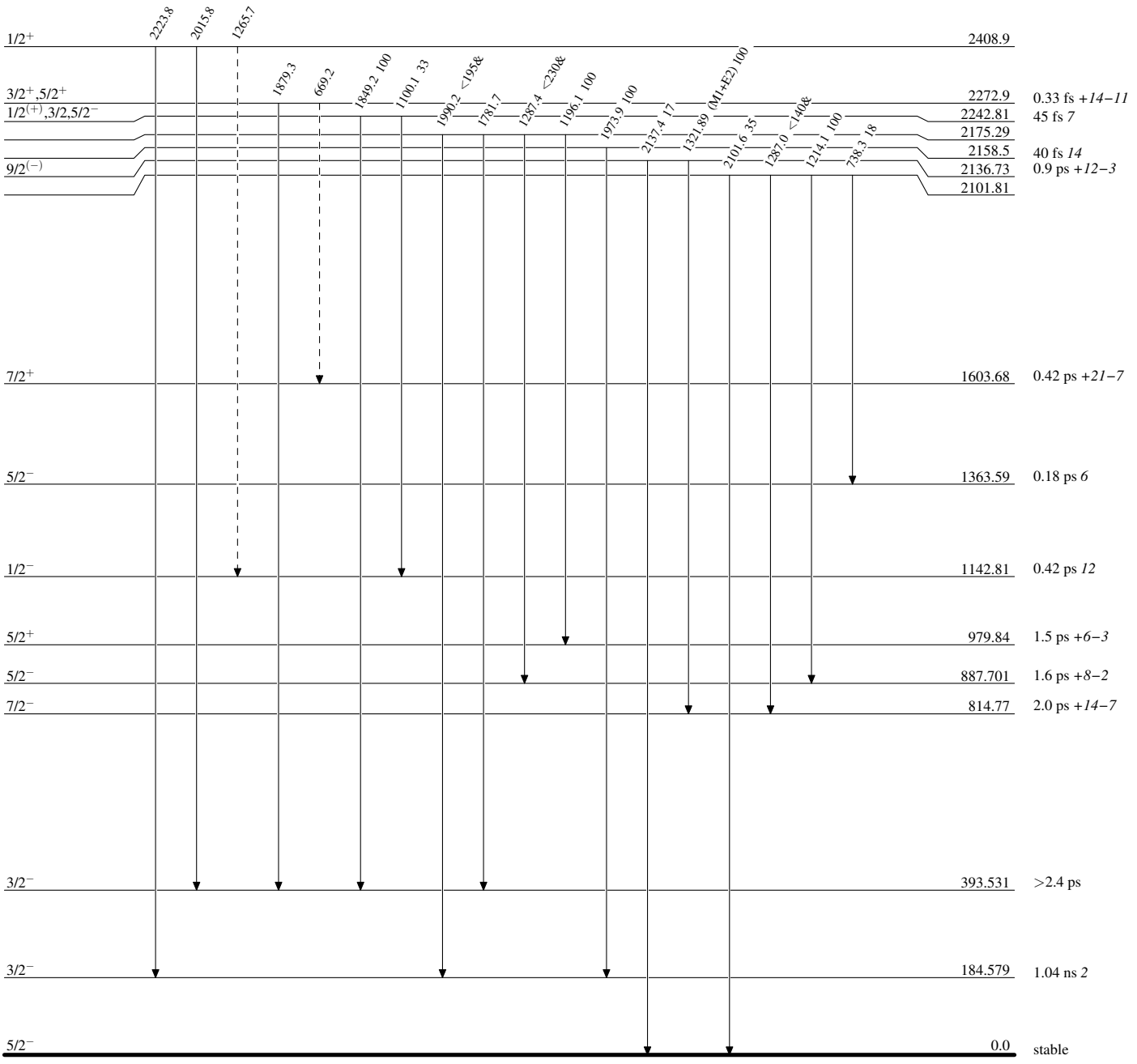
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

– – – – – – ► γ Decay (Uncertain)



$^{67}_{30}Zn_{37}$

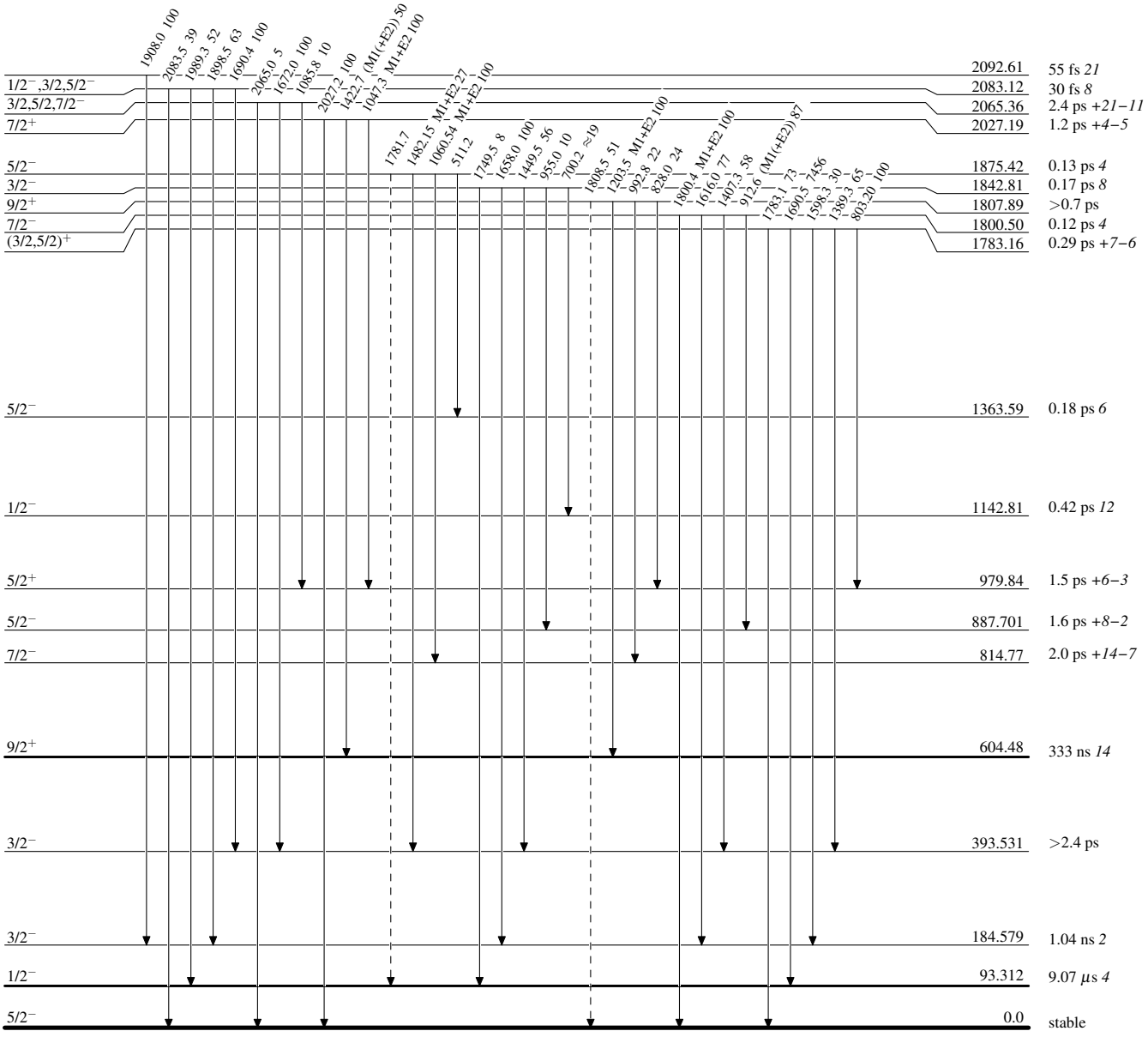
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

- - - - - - ► γ Decay (Uncertain)



$^{67}_{30}Zn_{37}$

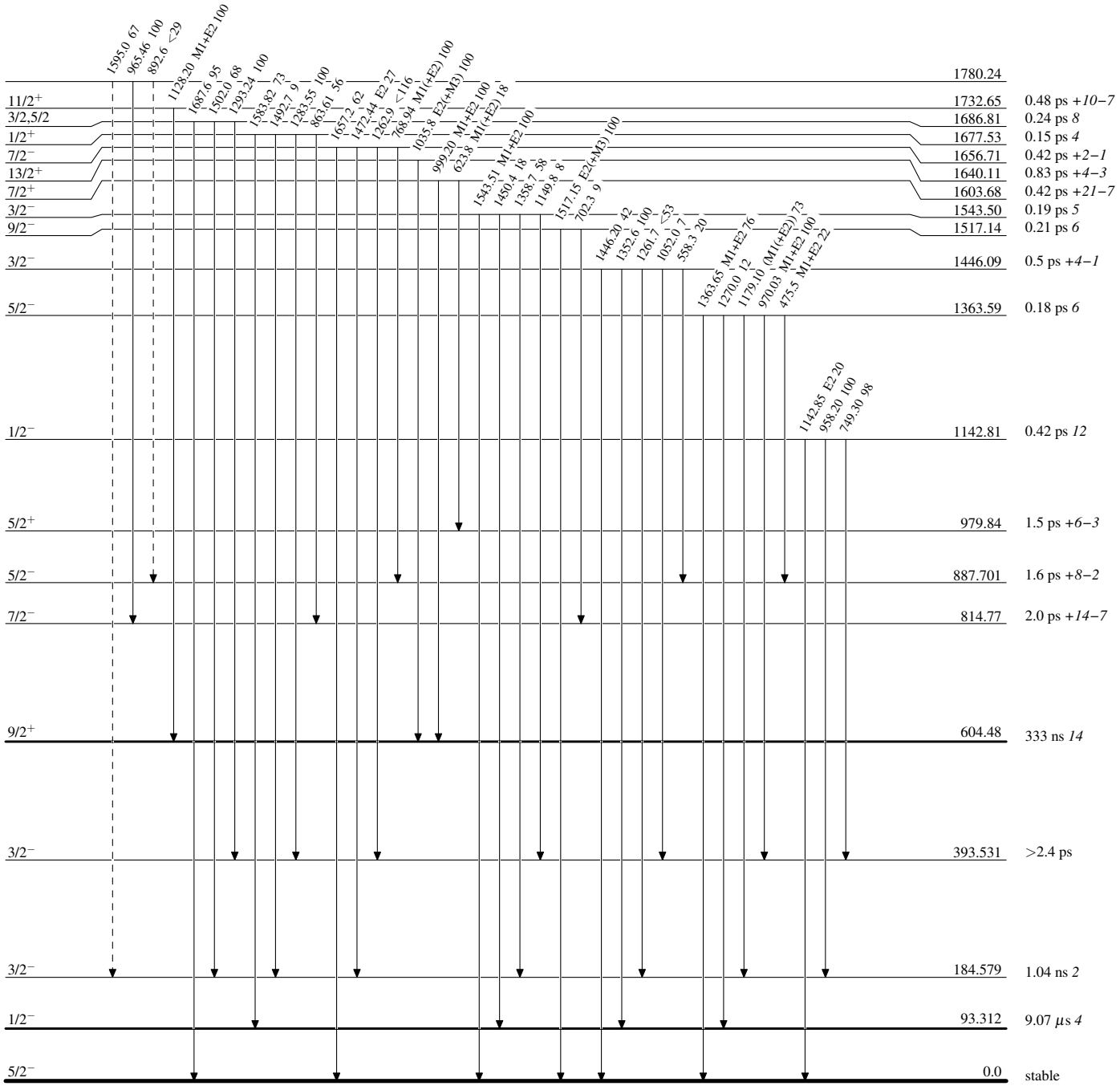
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)

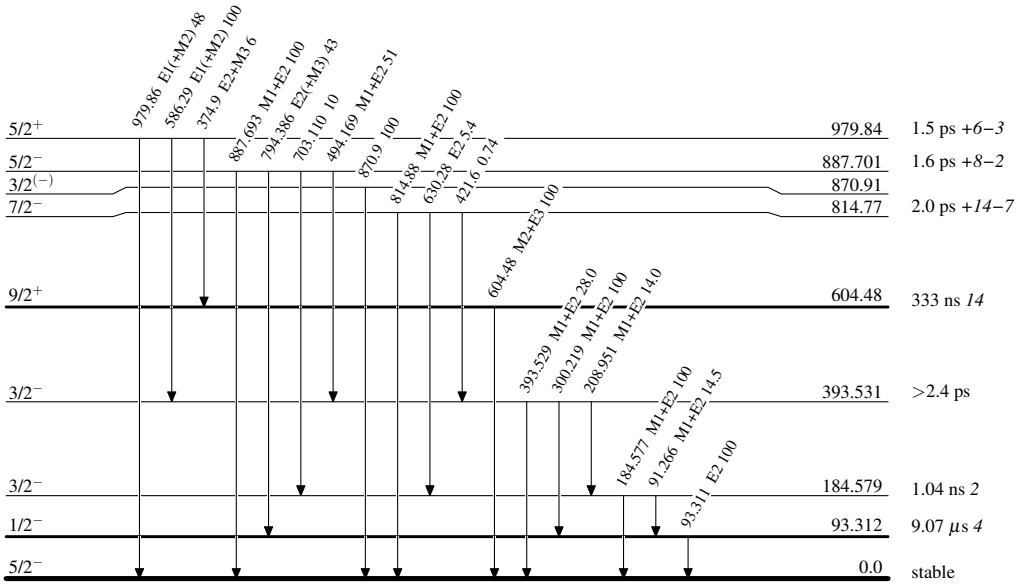


$^{67}_{30}Zn_{37}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{67}_{30}Zn_{37}$