Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

Q(β^-)=−7634.48 *7*; S(n)=13000.3 *22*; S(p)=9589.1 *9*; Q(α)=−8559.2 *5* 2017Wa10
S(2n)=23583 *7*, S(2p)=16347.3 *4* (2017Wa10).
See 1994Wi05, 1993Wi21, 1990Ha13 and 1984KoZH for Q(ε)(^{50}Mn) obtained for studies of super-allowed β decay. These values include atomic corrections.
Other reactions:
1991Wi13: ^{50}Ti(π^+,π^-), E=450 MeV, measured $\sigma(\theta=5^o)$ at LAMPF using Large Acceptance Spectrometer, deduced mass dependence for cross sections for the double-isobaric-analog state.
1973De29: ^{50}Cr(γ,n), E=20.43-22.22 MeV, measured σ by activation. Monochromatic γ rays from H(p,γ); FWHM=122 keV. Related results to the width of dipole state in ^{50}Cr.
Theory references: consult the NSR database (www.nndc.bnl.gov/nsr/) for 142 primary references dealing with various aspects of nuclear structure.
Added in proofs: PRC accepted paper (April 9, 2019) by M.M. Giles et al used in the present evaluation, is now published as Phys. Rev. C 99, 044317 (2019).

^{50}Cr Levels

Isospin (T) From ^{52}Cr(p,t).

Cross Reference (XREF) Flags

A	^{50}V β^- decay (2.65×10^{17} y):?	H	^{48}Ti(^{16}O,^{14}C)	O	^{50}Cr(d,d′)
B	^{50}Mn ε decay (283.19 ms)	I	^{50}V(p,nγ)	P	^{50}Cr(^{3}He,^{3}He′)
C	^{50}Mn ε decay (1.75 min)	J	^{50}Cr(γ,γ'),(pol γ,γ')	Q	^{50}Cr(α,α')
D	^{24}Mg(^{32}S,α2pγ)	K	^{50}Cr(e,e′)	R	^{50}Cr(α,$\alpha'\gamma$)
E	^{28}Si(^{28}Si,α2pγ)	L	^{50}Cr(n,n′γ)	S	^{52}Cr(p,t)
F	^{40}Ca(^{16}O,α2pγ),(^{12}C,2pγ)	M	^{50}Cr(p,p′)	T	^{54}Fe(p,pα)
G	^{48}Ti(^{3}He,n)	N	^{50}Cr(p,p′γ)	U	Coulomb excitation

E(level)[†]	J$^\pi$[#]	T$_{1/2}$[&]	XREF	Comments
0.0[b]	0$^+$	>1.3×10^{18} y	ABCDEFGHIJKLMNOPQRSTU	%2ε=? T=1 XREF: A(?). T$_{1/2}$: from search for double beta decay by 2003Bi05 and 1985No03 who measured $\gamma^\pm$ (HPGe) and deduced a lower limit on T$_{1/2}$ for 0ν and 2ν modes: >1.8×10^{17} y (1985No03), >1.3×10^{18} y (2003Bi05). Other: 1952Fr23. Evaluated rms charge radius: <r^2>$^{1/2}$=3.6588 fm *65* (2013An02). Evaluated δ<r^2>(^{50}Cr,^{52}Cr)=0.099 fm^2 *37* (2013An02).
783.31[b] *10*	2$^+$	9.08 ps *28*	ABCDEFGHIJKLMNOPQRSTU	μ=+1.24 *6* (2000Er06,2014StZZ) Q=−0.36 *7* (1975To06,2016St14) XREF: A(?). J$^\pi$: E2 783.3γ to 0$^+$. T$_{1/2}$: weighted averaged mean lifetime=13.1 ps *4* deduced from experimental values in different methods: mean lifetime τ=13.3 ps *6* (M.M. Giles et al., Phys. Rev. C, accepted April 9, 2019, RDDS in ^{40}Ca(^{12}C,2pγ)); τ=13.0 ps *4* (2017Ar09, RDDS in ^{27}Al(^{28}Si,αpγ), see

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Adopted Levels, Gammas (continued)

^{50}Cr Levels (continued)

E(level)[†]	Jπ[#]	$T_{1/2}$[&]	S	XREF	Comments
					(^{28}Si,α2pγ) dataset); 13.2 ps *4* (2000Er01,2000Er06, DSAM in Coul. ex.); 12.6 ps *21* (1974Br04, RDDS in ^{40}Ca(^{16}O,2pαγ)); 12.1 ps *12* (1973De09, RDDS in ^{40}Ca(^{12}C,2pγ)); 10 ps *2* (1972Ra14, DSAM in Coul. ex.); and the following mean lifetimes deduced by evaluators from B(E2)↑ measurements in Coulomb excitation: 13.5 ps *7* (B(E2)=0.102 *5* in 1975To06); 12.1 ps *11* (B(E2)=0.115 *10* in 1972Ra14); 15.2 ps *17* (B(E2)=0.092 *14* in 1971DaZM); 12.1 ps *13* (B(E2)=0.115 *12* in 1966Mc18,1961Mc18); 9.6 ps *19* (B(E2)=0.15 *3* in 1960An09); and τ=14.9 ps *8* from B(E2)=0.093 *5* in (e,e′) (1983Li02). Omission of seemingly discrepant values of 9.6 ps *19* from 1960An09 and 15.2 ps *17* from 1971DaZM gives the same weighted average. Value is 9.11 ps *+28−20* in 2016Pr01 evaluation. μ: from transient-magnetic fields (TF) in Coul. ex. (2000Er06). Others: +1.28 *22* (1994Pa34, TF in (^{40}Ca,2pγ)); +0.9 *3* (1987Pa28, TF in Coul. ex.); +1.2 *2* (ion implantation PAC, 1977Fa07). Q: reorientation method in Coul. ex. (1975To06).
1881.42[b] *19*	4+	2.20 ps *33*		CDEF HI KLMNOPQRS U	μ=+3.1 *5* (2000Er06,2014StZZ) B(E4)↑=0.000451 (1983Li02) B(E4) from (e,e′). Jπ: stretched E2 1098.1γ to 2+; L(p,t)=4. $T_{1/2}$: unweighted average of 3.4 ps *5* (M.M. Giles et al., Phys. Rev. C, accepted April 9, 2019, RDDS in ^{40}Ca(^{12}C,2pγ)); 1.47 ps *16* (2004Br42, DSAM in ^{28}Si(^{28}Si,α2p)); 1.7 ps *5* (1998Br34, DSAM in ^{28}Si(^{28}Si,α2p)); 2.22 ps *49* (2000Er06,2000Er01, DSAM in Coulomb excitation); 2.22 ps *28* (1973De09, RDDS in ^{40}Ca(^{12}C,2pγ)). Other: <2.8 ps (1974Br04, RDDS). Weighted average is 1.80 ps *26* with reduced χ^2=4.4 as compared to critical χ^2=2.4. μ: from transient-magnetic fields (TF) in Coul. ex. (2000Er06). Other: +1.7 *4* (1994Pa34,TF in (^{40}Ca,2pγ)) is in disagreement.
2924.6 *4*	2+	9.4 fs *14*		HI KLMNOPQ S	Jπ: E2 2924γ to 0+; L(p,t)=2 from 0+. $T_{1/2}$: from DSAM in (p,p′γ).
3161.3 *4*	2+	10.9 fs *16*		k MNOPQ S	XREF: k(3160)M(3156). $T_{1/2}$: from DSAM in (p,p′γ). Jπ: L(α,α′)=L(p,t)=2 from 0+.
3164.06[b] *25*	6+	0.80 ps *23*		CDEF k N R	μ=+3.2 *10* (1994Pa34,2014StZZ) XREF: k(3160). Jπ: from γ(θ,pol) in (^{16}O,α2pγ); stretched E2 1282.5γ to 4+. $T_{1/2}$: weighted average of 0.69 ps *14* from DSAM in ^{28}Si(^{28}Si,α2pγ) (1998Br34) and 1.25 ps 28 from RDDS in (^{12}C,2pγ) (1973De09). μ: from g=0.54 *16* (1994Pa34, TF in (^{40}Ca,2pγ)).
3324.56 *22*	4+	97 fs *25*	0.032	C EF K MNOPQ S	Jπ: L(α,α′)=L(d,d′)=4 from 0+. $T_{1/2}$: from DSAM in (p,p′γ). Other: <0.7 ps from RDM in (^{12}C,2pγ). B(E4)=0.000192 (1983Li02) in (e,e′).

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Adopted Levels, Gammas (continued)

^{50}Cr Levels (continued)

E(level)[†]	Jπ[#]	$T_{1/2}$[&]	XREF	Comments
3594.63 *25*	$2^+,3,4^+$	30 fs *5*	h MNOPQ	XREF: h(3600)M(3587). Jπ: 1713.2γ to 4^+, 2811.2γ to 2^+ can only have mult=D or E2 by RUL. $T_{1/2}$: from DSAM in (p,p′γ).
3611.4 *4*	4^+	6 fs *4*	E h MNOPQ S	XREF: h(3600)M(3602). Jπ: L(p,t)=4 from 0^+. $T_{1/2}$: from DSAM in (p,p′γ).
3628.9 *5*	1^+	0.305 eV *13*	B J MN	Jπ: dipole 3628.7γ to 0^+; σ(θ) in (p,p′) (1989Wi13); expected 1^+ from shell-model predictions (see 1989Wi13). $T_{1/2}$: from Γ_0=0.205 eV *9* in (γ,γ′). Other: 5 fs *3* in (p,p′γ).
3698.2 *5*	2^+	12.8 fs *18*	MNOPQ S	Jπ: L(p,t)=2; M1+E2 2914.8γ to 2^+. L(α,α′)=L(p,p′)=L(^{3}He,^{3}He′)=4 for a 3698 *20* level inconsistent, if it is the same level as seen in other reactions. $T_{1/2}$: from DSAM in (p,p′γ).
3792.1 *4*	(5^+)	9.0 ps *14*	EF MNO	XREF: M(3786). Jπ: $J^\pi=5^+$ from pγ(θ) in (p,p′γ); L(p,p′)=4; and absence of this level in (α,α′). However (4^-) cannot be ruled out as proposed by 1998Br34 from γ(θ) in (^{28}Si,α2pγ). $T_{1/2}$: from RDM in (^{16}O,α2pγ). Other: >73 fs from DSAM in (p,p′γ).
3825.7 *3*	$(6)^+$	<0.7 ps	C EF MNOPqRs	XREF: q(3844)s(3832). Jπ: logft=5.0 from 5^+; angular distribution of the 661.76 keV γ corresponds to ΔI=0 dipole or stretched quadrupole transition. $T_{1/2}$: inconsistent with 3.5 ps *+35−14* (1973De09) from RDM in (^{12}C,2pγ). Other: <1.4 ps from RDDS in 1974Br04 in (^{16}O,α2pγ).
3844.4 *4*	$2^+,3,4^+$	0.22 ps *6*	MNOPq s	XREF: q(3844)s(3832). Jπ: 1962.9γ to 4^+ and 683.4γ to 2^+ can only have mult=D or E2 by RUL. $T_{1/2}$: from DSAM in (p,p′γ).
3850 *20*	0^+		B G	XREF: B(3827). Jπ: L(^{3}He,n)=0.
3875.4 *3*	$(4^+,5,6^+)$	0.62 ps *21*	E MNOPQ	XREF: M(3867). Jπ: γs to 4^+ and 6^+.
3895.4 *10*	0^+	24 ps *+14−10*	H MNOPQ S	Jπ: L(p,t)=0. L(α,α′)=L(d,d′)=L(^{3}He,^{3}He′)=4 for 3898 *20* is inconsistent if it is the same level as in other reactions. $T_{1/2}$: from DSAM in (p,p′γ).
3937.3 *4*	$2^+,3,4^+$	2.2 fs *10*	MNOPQ S	Jπ: 2055.5γ to 4^+ and 3153.7γ to 2^+ can only have mult=D or E2 by RUL. $T_{1/2}$: from DSAM in (p,p′γ).
4040	(0^+)		N	Jπ: σ(θ) in (p,p′) (1989Wi13).
4051.7 *5*	3^-	0.56 ps *11*	MNOPQ S	Jπ: L(α,α′)=L(d,d′)=L(p,p′)=L(^{3}He,^{3}He′)=3 from 0^+. $T_{1/2}$: from DSAM in (p,p′γ). B(E3)(from g.s.)=0.0033 *13* (2002Ki06 evaluation) deduced from β_3 in (α,α′) (1990Ba23).
4068.2 *22*	0^+	6.5 fs *17*	MN S	E(level): 4068.8 *5* from (p,t). Jπ: L(p,t)=0. $T_{1/2}$: from DSAM in (p,p′γ).
4129.9 *5*	$(1,2^+)$	0.18 ps *6*	H MN	XREF: H(4150).

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Adopted Levels, Gammas (continued)

^{50}Cr Levels (continued)

E(level)[†]	J$^{\pi}$[#]	T$_{1/2}$[&]	XREF	Comments
				J$^{\pi}$: 1205.3γ to 2$^+$; possible 4130γ to 0$^+$. T$_{1/2}$: from DSAM in (p,p′γ).
4193.0 *8*	2$^+$		MNOPQ s	XREF: s(4200). J$^{\pi}$: L(α,α')=L(d,d′)=L(p,p′)=L(^{3}He,^{3}He′)=2 from 0$^+$.
4207 *7*			M s	XREF: s(4200).
4282 *7*			M	
4367.2[c] *4*	5$^-$	1.39 ps *35*	EF M OPQ S	J$^{\pi}$: L(p,t)=L(α,α')=L(p,p′)=L(^{3}He,^{3}He′)=5 from 0$^+$.
4523.8 *15*	(4$^+$)		MN	J$^{\pi}$: 1363γ to 6$^+$ and 3740.5γ to 2$^+$.
4546.3 *12*	3$^-$		MNOPQ S	XREF: O(4570)P(4570)Q(4570)S(4540). J$^{\pi}$: L(p,t)=L(α,α')=L(p,p′)=L(^{3}He,^{3}He′)=3 from 0$^+$.
4653.3 *15*			MN	
4676 *7*	2$^+$		M OPQ	XREF: O(4680)P(4680)Q(4680). E(level): from (p,p′). J$^{\pi}$: L(α,α')=L(d,d′)=2.
4700	(1$^+$)		M	J$^{\pi}$: from $\sigma(\theta)$ in (p,p′) (1989Wi13).
4731 *5*	0$^+$		G M S	XREF: G(4740). E(level): weighted average of 4728 *7* from (p,p′) and 4733 *5* from (p,t). J$^{\pi}$: L(p,t)=L(^{3}He,n)=0.
4744.9[b] *4*	8$^+$	0.28 ps *7*	DEF R	μ=+4.3 *7* (1994Pa34,2014StZZ) J$^{\pi}$: ΔJ=2, E2 γ to 6$^+$; spin=2 from $\gamma(\theta)$ in (^{16}O,α2pγ). μ: g=+0.54 *9* from TF in (^{40}Ca,2pγ) (1994Pa34).
4755 *7*			M	
4766 *5*	2$^+$		M OPQ S	E(level): weighted average of 4772 *7* from (p,p′) and 4763 *5* from (p,t). J$^{\pi}$: L(p,t)=L(α,α')=2.
4807 *5*			M S	E(level): weighted average of 4801 *7* from (p,p′) and 4810 *5* from (p,t).
4906 *7*			M	
4924 *7*	(4$^+$)		M opq	XREF: o(4940)p(4940)q(4940). J$^{\pi}$: L(α,α')=L(^{3}He,^{3}He′)=4 for a level at 4940 *20*.
4961 *7*	(4$^+$)		M opq	XREF: o(4940)p(4940)q(4940). J$^{\pi}$: L(α,α')=L(^{3}He,^{3}He′)=4 for a level at 4940 *20*.
4997.1 *4*	1$^{(+)}$	0.140 eV *14*	B J M	J$^{\pi}$: log *ft*=5.9 from 0$^+$; spin=1 from $\gamma(\theta)$ in (γ,γ'). T$_{1/2}$: from Γ_0=0.070 eV *7* in (γ,γ').
5015 *10*			M	
5039 *10*			M s	XREF: s(5040).
5053 *10*			M s	XREF: s(5040).
5078 *10*			M	
5093 *10*			M	
5198 *10*			M	
5207 *10*			M	
5213.4[c] *4*	(6$^-$)	0.42 ps *7*	E	J$^{\pi}$: 846.2γ to 5$^-$ and 1421.1γ to 5$^+$; band assignment.
5233 *10*	4$^+$		M OPQ	L: L(α,α')=L(p,p′)=L(^{3}He,^{3}He′)=4 for a level at 5230 *20*.
5250 *10*			M	
5272 *10*			M	
5297 *10*			M	
5336 *10*			M	
5376 *10*			M	
5429 *10*			M	
5445 *10*			M opq	XREF: o(5450)p(5450)q(5450).
5455 *10*			M opq	XREF: o(5450)p(5450)q(5450).
5548 *10*			M	
5597 *10*			M	
5611 *10*			M	
5623 *10*			M	

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Adopted Levels, Gammas (continued)

^{50}Cr Levels (continued)

E(level)[†]	Jπ[#]	$T_{1/2}$[&]	XREF	Comments
5684 *10*			M	
5731 *10*			g M	XREF: g(5710). Jπ: L(^{3}He,n)=0 for a level at 5710 gives 0^+ for one of the levels at 5731 or 5741.
5741 *10*			g M opq	XREF: g(5710)o(5760)p(5760)q(5760).
5780 *10*			M opq	XREF: o(5760)p(5760)q(5760).
5813 *10*			M	
5835 *10*			M	
5859 *10*			M	
5903 *10*			M	
5931.2 *5*	1^+[a]	0.073 eV *6*	J M	
5944 *10*			M	
5957 *10*			M	
5983 *10*	3^-		M OPQ	XREF: O(5990)P(5990)Q(5990). Jπ: L(α,α′)=L(d,d′)=L(^{3}He,^{3}He′)=3.
5998.0[c] *5*	(7^-)	<0.35 ps	E	Jπ: 784.6γ to (6^-), 1630.9γ to 5^-; band assignment. $T_{1/2}$: effective half-life=0.28 ps *7* from DSAM in (^{28}Si,α2pγ).
6003 *10*			M	
6027[‡] *10*			M	
6032 *10*			M	
6071 *10*			M	
6083 *10*			M	
6116[‡] *10*			M	
6123 *10*			M	
6138 *10*			M opq	XREF: o(6150)p(6150)q(6150).
6175 *10*			M	
6202 *10*			M	
6226[‡] *10*			M	
6230 *10*			M	
6243 *10*			M	
6272 *10*			M	
6305 *10*			M	
6330 *10*			M	
6340.6[b] *5*	10^+	0.76 ps *14*	DEF R	Jπ: ΔJ=2, E2 1595.7γ to 8^+; spin=10 from γ(θ) in (^{16}O,α2pγ); band assignment.
6342 *10*			M	
6376 *10*			M	
6450 *20*	3^-		M OPQ	Jπ: L(α,α′)=L(p,p′)=L(^{3}He,^{3}He′)=L(d,d′)=3.
6650 *20*	3^-		M OPQ	Jπ: L(α,α′)=L(d,d′)=L(^{3}He,^{3}He′)=3.
6754.5 *5*	10^+	0.111 ps *21*	DE	Jπ: ΔJ=2, E2 2009.6γ to 8^+; 414.1γ to 10^+; band assignment.
6790 *20*	3^-		M OPQ	Jπ: L(α,α′)=L(d,d′)=L(^{3}He,^{3}He′)=L(p,p′)=3.
6950.6[d] *5*	11^+	0.49 ps *4*	DEF	Jπ: ΔJ=1, M1 610.2γ to 10^+; spin=11 from γ(θ) in (^{16}O,α2pγ); band assignment.
7340	(1^+)[@]		M	
7360 *20*	3^-		M OPQ	Jπ: L(α,α′)=L(d,d′)=3.
7600.8 *5*	1^+[@a]	0.334 eV *37*	J M	XREF: M(7610).
7613.1[d] *5*	12^+	0.111 ps *10*	DEF	Jπ: ΔJ=1, M1 662.2γ to 11^+; spin=12 from γ(θ) in (^{16}O,α2pγ); band assignment.
7645.7 *5*	1^+[a]	0.118 eV *14*	J	
7.78×10^3	(1^+)[@]		M	
7860 *20*	3^-		M OPQ	Jπ: L(α,α′)=L(d,d′)=L(^{3}He,^{3}He′)=3.
7948.2 *4*	1^+[a]	1.76 eV *10*	J	

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Adopted Levels, Gammas (continued)

^{50}Cr Levels (continued)

E(level)†	Jπ#	$T_{1/2}$&	XREF	Comments
7.98×10³	(1⁺)@		M	
8045.8 5	1⁺a	0.238 eV 26	J	
8121.5 5	1⁺a	0.094 eV 11	J	
8.27×10³	(1⁺)@		M	
8360 50			G	
8425 7	6⁺		S	T=2 Jπ: isobaric analog state from ^{52}Cr(p,t).
8527.6 4	1⁺a	0.85 eV 11	J	
8638?	(1⁺)@		M S	XREF: M(8650).
8680 20	3⁻		G M OPQ	Jπ: L(α,α′)=L(d,d′)=L(^{3}He,^{3}He′)=3.
8748 6	4⁺		S	T=2 Jπ: isobaric analog state from ^{52}Cr(p,t).
8813 6	2⁺		S	T=2 Jπ: isobaric analog state from ^{52}Cr(p,t).
8885.6 5	1⁺a	0.53 eV 5	J	
9007.9 5	1⁺@a	0.286 eV 34	J M	XREF: M(9010).
9208.3 5	1⁺@a	0.37 eV 9	J M	XREF: M(9190).
9327.1b 5	(12⁺)		DE	Jπ: ΔJ=(2), (Q) 2572.6γ to 10⁺ and 1713.8γ to 12⁺; band assignment.
9409.5 5	1⁺@a	0.81 eV 13	J M	XREF: M(9400).
9579.1 5	1⁺@a	0.30 eV 6	J M	XREF: M(9570).
9642.2d 6	13⁺	0.05 ps 2	DE	Jπ: ΔJ=2, E2 2692.0γ to 11⁺; ΔJ=1, D 2028.9γ to 12⁺.
9719.1 5	1⁺@a	1.42 eV 17	J M	XREF: M(9710).
9900 50	2⁺		G M	Jπ: L(^{3}He,n)=2, but 1⁺ in (p,p′).
9914.8d 6	14⁺	0.22 ps 4	DE	Jπ: ΔJ=2, E2 γ to 12⁺; ΔJ=1, D γ to 13⁺.
10.11×10³	(1⁺)@		M	
10.24×10³	(1⁺)@		M	
10.38×10³	(1⁺)@		M	
10500 50	(1⁺)@		G M	XREF: M(10520). E(level): from ^{48}Ti(^{3}He,n).
10750 30	2⁺		G	Jπ: L(^{3}He,n)=2.
10797.5 6	13(+)	<0.62 ps	DE	Jπ: ΔJ=1, D γ to 12⁺.
10.82×10³	(1⁺)@		M	
11013.9 6	13⁺	0.06 ps 1	DE	Jπ: ΔJ=1, D 3400.5γ to 12⁺; ΔJ=2, E2 2204.2 from 15⁺.
11060 50	(1⁺)@		G M	XREF: M(11020).
11.18×10³	(1⁺)@		M	
11.4×10³ 1			G	
11530 50	0⁺		G	Jπ: L(^{3}He,n)=0.
11660	(1⁺)@		M	
11680 20	0⁺		G	E(level): IAS of 3230,(0)⁺ level in ^{50}V from 1975Bo14 in (^{3}He,n). Jπ: L(^{3}He,n)=0.
11.82×10³	(1⁺)@		M	
11870 20	0⁺		G	Jπ: L(^{3}He,n)=0. E(level): IAS of 3462,(0)⁺ level in ^{50}V from 1975Bo14 in (^{3}He,n).
12.30×10³	(1⁺)@		M	E(level): multiplet.
12391.5 6	15(+)		DE	Jπ: ΔJ=1, D 2476.9γ to 14⁺.
12542.0 7	(14⁺)		DE	Jπ: 4927.9γ to 12⁺; 2492.1γ from 16⁺.

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Adopted Levels, Gammas (continued)

^{50}Cr Levels (continued)

E(level)†	Jπ#	$T_{1/2}$&	XREF	Comments
12680 *50*			G	
12790 *50*			G	
12950 *50*			G	
13218.4[d] *6*	15^+	0.021 ps *+7–4*	DE	Jπ: ΔJ=2, E2 3578.7γ to 13^+; ΔJ=1, D 3304.8γ to 14^+.
13222 *6*	0^+		G S	T=3 XREF: S(13220). E(level): from ^{52}Cr(p,t); IAS of 4815,$(0)^+$ level in ^{50}V from 1975Bo14 in (^{3}He,n). Jπ: L(^{3}He,n)=0.
13495.3 *21*			E	
13641.0 *6*	$14^{(+)}$		D	Jπ: ΔJ=1, D 2627.1γ to $13^{(+)}$.
13900 *20*	0^+		G	Jπ: L(^{3}He,n)=0.
13920.8 *12*	$15^{(+)}$	<0.076 ps	DE	Jπ: ΔJ=1, D 4005.8γ to 14^+.
14500 *30*			G	
14570 *30*			G	
14900 *20*	0^+		G	Jπ: L(^{3}He,n)=0.
15034.2[d] *7*	16^+	<0.021 ps	DE	Jπ: ΔJ=2, E2 5121γ to 14^+.
15809.0 *6*	16^+	<0.05 ps	DE	Jπ: ΔJ=2, E2 2168.1γ to 14^+.
16049.4 *7*	$17^{(+)}$		D	Jπ: ΔJ=2, Q 2830.9γ to 15^+.
17669.2 *16*	(16,17)		D	Jπ: 3748.2γ to $15^{(+)}$.
17790.0 *12*	(16,17)		D	Jπ: 5398.2γ to $15^{(+)}$.
17956.6[d] *10*	18^+	<0.07 ps	DE	Jπ: ΔJ=2, E2 2922.3γ to 16^+.

† From a least-squares fit to γ-ray energies for levels connected by γ transitions, unless otherwise noted.
‡ Unresolved doublet; spacing <5 keV.
# From ^{24}Mg(^{32}S,α2pγ), except as noted, based on γ(θ) and γγ(θ) measurements together with band associations from γγ coincidence data.
@ 1^+ from (p,p′) E=201 MeV (1989Wi13), interpreted as spin-flip transition from forward angle cross sections.
& $T_{1/2}$ from DSAM, as given in ^{28}Si(^{28}Si,α2pγ) dataset, width from (γ,γ′), except as noted.
[a] From γ(θ,pol) in (γ,γ′) (2016Pa04).
[b] Band(A): g.s. band.
[c] Seq.(B): γ cascade based on 5^-.
[d] Seq.(C): γ cascade based on 11^+.

Adopted Levels, Gammas (continued)

γ(^{50}Cr)

See (p,p′γ) and ^{50m}Mn β^+ decay for possible but unobserved transitions.

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ[†]	α[&]	Comments
783.31	2$^+$	783.3 *1*	100	0.0	0$^+$	E2			B(E2)(W.u.)=19.3 *6* E_γ: weighted average of 783.3 *1* from ^{50}Mn ε decay (1.75 min), 783.6 *3* from (^{32}S,α2pγ), 783.3 *3* from (^{28}Si,α2pγ), 783.3 *5* from (γ,γ′), 783.4 *2* from (p,p′γ), and 783.3 *2* from (α,α′γ). Others: 778 *2* from (p,nγ) and 783 *1* from (n,n′γ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) in (^{32}S,α2pγ), and RUL.
1881.42	4$^+$	1098.1 *2*	100	783.31	2$^+$	E2			B(E2)(W.u.)=14.7 *+26−19* E_γ: weighted average of 1098.0 *2* from ^{50}Mn ε decay (1.75 min), 1097.9 *3* from (^{32}S,α2pγ), 1098.2 *3* from (^{28}Si,α2pγ), 1097.9 *5* from (^{16}O,α2pγ), 1098.2 *3* from (p,p′γ), and 1098.1 *2* from (α,α′γ). Other: 1107 *3* from (p,nγ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) in (^{32}S,α2pγ), and RUL.
2924.6	2$^+$	2141.5 *4*	100 *5*	783.31	2$^+$	(M1(+E2))	−0.03 *6*		B(M1)(W.u.)=0.22 *+5−4* E_γ: others: 2138 *1* from (n,n′γ), 2140 *5* from (p,nγ). Mult.: D(+Q) from γ(θ) in (p,p′γ); Δπ=no from level scheme.
		2924 *2*	9.0 *24*	0.0	0$^+$	E2			B(E2)(W.u.)=2.1 *+11−8* Mult.: Q from γ(θ) in (p,p′γ) and M2 ruled out by RUL.
3161.3	2$^+$	2378.3 *5*	100	783.31	2$^+$	M1+E2	+0.24 *9*		B(E2)(W.u.)=3.4 *+38−22*; B(M1)(W.u.)=0.142 *+30−24* Mult.,δ: D+Q from pγ(θ) in (p,p′γ); M2 ruled out by RUL.
3164.06	6$^+$	1282.5 *2*	100	1881.42	4$^+$	E2			B(E2)(W.u.)=19 *+8−4* E_γ: weighted average of 1282.4 *3* from ^{50}Mn ε decay (1.75 min), 1282.3 *3* from (^{32}S,α2pγ), 1282.1 *3* from (^{28}Si,α2pγ), 1282.6 *5* from (^{16}O,α2pγ), 1282.7 *7* from (p,p′γ), and 1282.7 *2* from (α,α′γ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) in (^{32}S,α2pγ), and RUL.
3324.56	4$^+$	161[b]	≤3	3164.06	6$^+$	[E2]		0.0674	α(K)=0.0596; α(L)=0.00583 E_γ,I_γ: possible γ from 1.75-min ^{50}Mn decay only.
		1443.3 *2*	100 *7*	1881.42	4$^+$	(M1(+E2))	−0.02 *+16−52*		B(M1)(W.u.)=0.073 *28* E_γ: weighted average of 1443.3 *2* from ^{50}Mn ε decay (1.75 min), 1443.3 *3* from (^{28}Si,α2pγ), 1443.1 *5* from (^{16}O,α2pγ), and 1442.7 *7* from (p,p′γ). Mult.: D(+Q) from γ(θ) in (p,p′γ); Δπ=no from level scheme.
		2541.0 *3*	0.8	783.31	2$^+$	[E2]			B(E2)(W.u.)=0.039 *+30−16* E_γ,I_γ: from (^{28}Si,α2pγ).
3594.63	2$^+$,3,4$^+$	1713.2 *3*	70 *10*	1881.42	4$^+$				

Adopted Levels, Gammas (continued)

γ(^{50}Cr) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ[†]	Comments
3594.63	2$^+$,3,4$^+$	2811.2 *3*	100 *10*	783.31	2$^+$			
3611.4	4$^+$	449[ab] *2*	≈8[a]	3164.06	6$^+$	[E2]		
		449[ab] *2*	≈8[a]	3161.3	2$^+$	[E2]		
		1729.9[a] *3*	100[a] *11*	1881.42	4$^+$			
3628.9	1$^+$	2845.5[@] *6*	49[@] *1*	783.31	2$^+$	[M1][@]		E_γ: weighted average of 2845.0 *5* from (γ,γ′) and 2846.1 *6* from (p,p′γ). I_γ: from (γ,γ′). Others: 50 *5* from ^{50}Mn ε decay, 50 *22* from (p,p′γ).
		3628.7 *7*	100	0.0	0$^+$	M1		E_γ: weighted average of 3628.0 *5* from (γ,γ′) and 3629.3 *5* from (p,p′γ). Mult.: from γ(θ) and polarization asymmetry in (γ,γ′).
3698.2	2$^+$	2914.8 *5*	100	783.31	2$^+$	M1+E2	+0.71 *23*	B(E2)(W.u.)=6.4 *+41−33*; B(M1)(W.u.)=0.046 *+20−14* Mult.,δ: D+Q from pγ(θ) in (p,p′γ); M2 ruled out by RUL.
3792.1	(5$^+$)	467.8 *5*	100 *9*	3324.56	4$^+$	D+Q		E_γ: weighted average of 467.9 *5* from (^{16}O,α2pγ) and 467.7 *8* from (p,p′γ). I_γ: from (p,p′γ) (1968Mo07). Others: 100 *16* from (^{16}O,α2pγ), 100 *11* from 1972Ra14 in (p,p′γ). Mult.: from γ(θ) in (p,p′γ).
		1910.8 *8*	100 *12*	1881.42	4$^+$	(M1+E2)	−0.47 *16*	E_γ: weighted average of 1910.9 *9* from (^{16}O,α2pγ) and 1910.7 *8* from (p,p′γ). I_γ: weighted average of 79 *9* from (p,p′γ) (1968Mo07) and 79 *16* from (^{16}O,α2pγ). Other: 133 *23* from 1972Ra14 in (p,p′γ) is in disagreement. Mult.,δ: D+Q from pγ(θ) in (p,p′γ); RUL forbids M2. But γ(θ) data in (^{28}Si,α2pγ), suggesting pure dipole, is in disagreement with results from (p,p′γ).
3825.7	(6)$^+$	661.6 *3*	100 *4*	3164.06	6$^+$			E_γ: weighted average of 661.5 *3* from ^{50}Mn ε decay (1.75 min), 661.5 *3* from (^{28}Si,α2pγ), 661.7 *5* from (^{16}O,α2pγ), and 661.9 *6* from (α,α′γ). Other: 662 *2* from (p,p′γ). I_γ: from ^{50}Mn β$^+$ decay (1.75 min).
		1944.4 *3*	15.2 *20*	1881.42	4$^+$			E_γ: weighted average of 1944.5 *5* from ^{50}Mn ε decay (1.75 min) and 1944.4 *3* from (^{28}Si,α2pγ). I_γ: from ^{50}Mn β$^+$ decay (1.75 min).
3844.4	2$^+$,3,4$^+$	683.4 *10*	22 *6*	3161.3	2$^+$			
		1962.9 *4*	100 *11*	1881.42	4$^+$			
		3060.9 *6*	50 *11*	783.31	2$^+$			
3875.4	(4$^+$,5,6$^+$)	551.0 *3*	≈33	3324.56	4$^+$			E_γ: from (^{28}Si,α2pγ). Other: 550 *2* from (p,p′γ).
		711.1 *3*	67 *17*	3164.06	6$^+$			E_γ: from (^{28}Si,α2pγ). Other: 711.1 *6* from (p,p′γ).
		1993.8 *37*	100 *33*	1881.42	4$^+$			E_γ: from (^{28}Si,α2pγ). Other: 1993.8 *6* from (p,p′γ).
3895.4	0$^+$	732[ab] *2*	≈5[a]	3161.3	2$^+$	[E2]		B(E2)(W.u.)=0.5 *+15−4*
		3112.0 *10*	100 *40*	783.31	2$^+$	[E2]		B(E2)(W.u.)=0.007 *+6−3* Mult.,δ: δ(J=1)=−0.09 *29*, δ(J=2)=+0.34 *13* from pγ(θ) in (p,p′γ) which suggests D(+Q), but ΔJ^π requires E2 if the parent level is the same one as the 0$^+$,3895 level in (p,t).
3937.3	2$^+$,3,4$^+$	1014.3 *9*	≈17	2924.6	2$^+$			
		2055.5 *4*	100 *17*	1881.42	4$^+$			
		3153.7 *20*	≈83	783.31	2$^+$			

Adopted Levels, Gammas (continued)

γ(^{50}Cr) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	Comments
4051.7	3$^-$	441[ab] *2*	≈5[a]	3611.4	4$^+$	[E1]	B(E1)(W.u.)=2.7×10^{-4} *+34−17*
		458[b] *2*	≈2	3594.63	2$^+$,3,4$^+$		
		890.6 *5*	41 *7*	3161.3	2$^+$	[E1]	B(E1)(W.u.)=0.00027 *+17−10*
		1126.9 *5*	100 *9*	2924.6	2$^+$	[E1]	B(E1)(W.u.)=0.00032 *+12−10*
		3267.4 *14*	45 *16*	783.31	2$^+$	[E1]	B(E1)(W.u.)=5.9×10^{-6} *+43−28*
4068.2	0$^+$	441[ab] *2*	≈7[a]	3628.9	1$^+$		
		3284.8 *22*	100 *25*	783.31	2$^+$	[E2]	
4129.9	(1,2$^+$)	500 *2*	≈2	3628.9	1$^+$		
		1205.3 *4*	38 *6*	2924.6	2$^+$		
		4130[b] *3*	≈100	0.0	0$^+$		
4193.0	2$^+$	494[ab] *2*	≈10[a]	3698.2	2$^+$		
		1268.3 *8*	35 *5*	2924.6	2$^+$		
		3410.1 *20*	40 *10*	783.31	2$^+$		
		4193[b] *3*	≈100	0.0	0$^+$		
4367.2	5$^-$	542[#]	61[#]	3825.7	(6)$^+$		
		575.3[#] *3*	100[#]	3792.1	(5$^+$)		
		755[#]		3611.4	4$^+$		
		1042[#]	34[#]	3324.56	4$^+$		
		1203[#] *1*	37[#]	3164.06	6$^+$		
		2485[#]	32[#]	1881.42	4$^+$		
4523.8	(4$^+$)	732[ab] *2*	≈15[a]	3792.1	(5$^+$)		
		1363[ab] *2*	≈38[a]	3164.06	6$^+$		
		1363[ab] *2*	≈38[a]	3161.3	2$^+$		
		1599 *2*	≈15	2924.6	2$^+$		
		3740.5 *20*	100 *23*	783.31	2$^+$		
4546.3	3$^-$	494[ab] *2*	≈33[a]	4051.7	3$^-$		
		1384.8 *15*	≈100	3161.3	2$^+$		
		1622 *2*	≈67	2924.6	2$^+$		
		2665[b]	≤80	1881.42	4$^+$		
		3763 *3*	83 *33*	783.31	2$^+$		
4653.3		955 *2*	≈33	3698.2	2$^+$		
		1493[b] *2*	≈10	3161.3	2$^+$		
		1730.0[ab] *3*	323[a] *36*	2924.6	2$^+$		
		3870 *2*	100 *29*	783.31	2$^+$		
4744.9	8$^+$	1580.8 *3*	100	3164.06	6$^+$	E2	B(E2)(W.u.)=19 *+6−4* E_γ: weighted average of 1580.5 *3* from (^{32}S,α2pγ), 1580.9 *3* from (^{28}Si,α2pγ), 1581.1 *5* from (^{16}O,α2pγ), and 1581.2 *5* from (α,α′γ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ).

$^{50}_{24}Cr_{26}$-10

Adopted Levels, Gammas (continued)

γ(^{50}Cr) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	Comments
4997.1	$1^{(+)}$	4213.8@ *5*	100@ *10*	783.31	2^+	[M1]@	
		4996.7@ *5*	100@	0.0	0^+	(M1)@	Mult.: from γ(θ) and polarization asymmetry in (γ,γ′).
5213.4	(6^-)	846.2# *3*	100# *10*	4367.2	5^-		
		1388#		3825.7	$(6)^+$		
		1421.1# *3*	80# *7*	3792.1	(5^+)		
5931.2	1^+	5930.8@ *5*	100	0.0	0^+	M1@	Mult.: from γ(θ) and polarization asymmetry in (γ,γ′).
5998.0	(7^-)	784.6# *3*	68# *18*	5213.4	(6^-)		
		1630.9# *3*	100# *18*	4367.2	5^-		
6340.6	10^+	1595.7 *2*	100	4744.9	8^+	E2	B(E2)(W.u.)=6.6 *+15−10* E_γ: weighted average of 1595.2 *3* from (^{32}S,α2pγ), 1595.9 *3* from (^{28}Si,α2pγ), 1595.7 *5* from (^{16}O,α2pγ), and 1596.5 *5* from (α,α′γ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ).
6754.5	10^+	414.1 *5*	15.3 *14*	6340.6	10^+		E_γ: unweighted average of 414.5 *3* from (^{32}S,α2pγ) and 413.6 *3* from (^{28}Si,α2pγ). I_γ: weighted average of 18 *6* from (^{32}S,α2pγ) and 15.2 *14* from (^{28}Si,α2pγ).
		2009.6 *3*	100 *10*	4744.9	8^+	E2	E_γ: weighted average of 2009.3 *3* from (^{32}S,α2pγ) and 2009.8 *3* from (^{28}Si,α2pγ). I_γ: from (^{28}Si,α2pγ). Other: 100 *12* from (^{32}S,α2pγ). Mult.: Q from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ), γγ(ADO) in (^{28}Si,α2pγ); M2 ruled out by RUL.
6950.6	11^+	196.0 *4*	3.0 *3*	6754.5	10^+	(M1)	B(M1)(W.u.)=0.174 *22* E_γ: weighted average of 196.3 *3* from (^{32}S,α2pγ) and 195.6 *3* from (^{28}Si,α2pγ). I_γ: weighted average of 3.4 *11* from (^{32}S,α2pγ) and 3.0 *3* from (^{28}Si,α2pγ). Mult.: D from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ); Δπ=no from level scheme.
		610.2 *3*	100.0 *15*	6340.6	10^+	M1	B(M1)(W.u.)=0.192 *16* E_γ: weighted average of 610.3 *3* from (^{32}S,α2pγ), 610.1 *3* from (^{28}Si,α2pγ), and 609.9 *5* from (^{16}O,α2pγ). I_γ: from (^{28}Si,α2pγ). Others: 100 *11* from (^{16}O,α2pγ), 100 *10* from (^{32}S,α2pγ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ).
7600.8	1^+	7600.2@ *5*	100	0.0	0^+	M1@	
7613.1	12^+	662.2 *3*	100.0 *15*	6950.6	11^+	M1	B(M1)(W.u.)=0.66 *6* E_γ: weighted average of 662.4 *3* from (^{32}S,α2pγ), 662.2 *3* from (^{28}Si,α2pγ), and 661.8 *5* from (^{16}O,α2pγ). I_γ: other: 100 *10* from (^{32}S,α2pγ) and (^{16}O,α2pγ). Mult.: from γ(θ,pol) in (^{16}O,α2pγ), γγ(DCO) and γγ(ADO) from (^{32}S,α2pγ).
		1272.2 *3*	2.9 *3*	6340.6	10^+	[E2]	B(E2)(W.u.)=4.0 *8* E_γ: weighted average of 1272 *1* from (^{32}S,α2pγ) and 1272.2 *3* from (^{28}Si,α2pγ). I_γ: weighted average of 4.3 *15* from (^{32}S,α2pγ) and 2.8 *3* from (^{28}Si,α2pγ). Other: <4.9 from (^{16}O,α2pγ).
7645.7	1^+	7645.1@ *5*	100	0.0	0^+	M1@	
7948.2	1^+	7164.5@ *5*	27@ *2*	783.31	2^+	[M1]	

$^{50}_{24}Cr_{26}$-11

Adopted Levels, Gammas (continued)

γ(^{50}Cr) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	Comments
7948.2	1^+	7947.4@ *5*	100@	0.0	0^+	M1@	
8045.8	1^+	8045.1@ *5*	100	0.0	0^+	M1@	
8121.5	1^+	8120.8@ *5*	100	0.0	0^+	M1@	
8527.6	1^+	7743.1@ *5*	39@ *6*	783.31	2^+	[M1]	
		8527.4@ *5*	100@	0.0	0^+	M1@	
8885.6	1^+	8884.8@ *5*	100	0.0	0^+	M1@	
9007.9	1^+	9007.0@ *5*	100	0.0	0^+	M1@	
9208.3	1^+	9207.4@ *5*	100	0.0	0^+	M1@	
9327.1	(12^+)	1713.8‡ *3*	85‡ *25*	7613.1	12^+		
		2572.6‡ *3*	100‡ *35*	6754.5	10^+	(Q)	
		2987‡ *1*	<50‡	6340.6	10^+		
9409.5	1^+	9408.5@ *5*	100	0.0	0^+	M1@	
9579.1	1^+	9578.1@ *5*	100	0.0	0^+	M1@	
9642.2	13^+	2028.9 *8*	100# *10*	7613.1	12^+	D	E_γ: unweighted average of 2028.1 *3* from (^{32}S,α2pγ) and 2029.7 *3* from (^{28}Si,α2pγ). Mult.: from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ) and (^{28}Si,α2pγ).
		2692.0# *3*	4.8# *10*	6950.6	11^+	E2	B(E2)(W.u.)=0.34 *+40−16* Mult.: Q from γ(ADO) in (^{28}Si,α2pγ); M2 ruled out by RUL.
9719.1	1^+	9718.1@ *5*	100	0.0	0^+	M1@	
9914.8	14^+	273.1 *3*	15# *2*	9642.2	13^+	D	E_γ: weighted average of 273.3 *3* from (^{32}S,α2pγ) and 272.9 *3* from (^{28}Si,α2pγ). I_γ: other: 44 *4* from ^{24}Mg(^{32}S,α2pγ) is in disagreement.
		2302.0 *12*	100# *10*	7613.1	12^+	E2	E_γ: unweighted average of 2300.9 *3* from (^{32}S,α2pγ) and 2303.2 *3* from (^{28}Si,α2pγ). I_γ: also from (^{32}S,α2pγ).
10797.5	$13^{(+)}$	3183.9‡ *3*	100	7613.1	12^+	D	Mult.: from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ) and (^{28}Si,α2pγ).
11013.9	13^+	3400.5‡ *3*	100‡	7613.1	12^+	D	Mult.: from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ), and γγ(ADO) in (^{28}Si,α2pγ).
12391.5	$15^{(+)}$	1593.6‡ *3*	100‡ *14*	10797.5	$13^{(+)}$		
		2476.9‡ *3*	40‡ *9*	9914.8	14^+	D	Mult.: from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ).
12542.0	(14^+)	4927.9‡ *10*	100	7613.1	12^+		
13218.4	15^+	2204.2‡ *3*	100‡ *10*	11013.9	13^+	E2	Mult.: Q from γγ(ADO) in (^{32}S,α2pγ) and γγ(DCO) in (^{28}Si,α2pγ); M2 ruled out by RUL.
		3304.8 *15*	54 *5*	9914.8	14^+	D	E_γ: unweighted average of 3303.3 *3* from (^{32}S,α2pγ) and 3306.3 *3* from (^{28}Si,α2pγ). I_γ: from (^{32}S,α2pγ). Mult.: from γ(DCO) in (^{32}S,α2pγ).
		3578.7 *16*	54 *9*	9642.2	13^+	E2	E_γ: unweighted average of 3577.1 *10* from (^{32}S,α2pγ) and 3580.3 *10* from (^{28}Si,α2pγ). Mult.: Q from γγ(ADO) in (^{28}Si,α2pγ); M2 ruled out by RUL.
13495.3		3853# *2*		9642.2	13^+		
13641.0	$14^{(+)}$	2627.1‡ *3*	100	11013.9	13^+	D	Mult.: from γγ(ADO) in (^{32}S,α2pγ).

$^{50}_{24}Cr_{26}$-12

Adopted Levels, Gammas (continued)

γ(^{50}Cr) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [†]	E_f	J_f^π	Mult.	Comments
13920.8	$15^{(+)}$	4005.8[‡] *10*	100	9914.8	14^+	D	Mult.: from γγ(DCO) and γγ(ADO) in (^{32}S,α2pγ) and (^{28}Si,α2pγ).
15034.2	16^+	1815.8 *4*	30 *5*	13218.4	15^+		E_γ: weighted average of 1815.5 *3* from (^{32}S,α2pγ) and 1816.2 *3* from (^{28}Si,α2pγ). I_γ: weighted average of 29 *5* from (^{32}S,α2pγ) and 33 *7* from (^{28}Si,α2pγ).
		2492.1[‡] *3*	9[‡] *5*	12542.0	(14^+)		
		5121 *2*	100[#] *22*	9914.8	14^+	E2	E_γ: unweighted average of 5119.1 *10* from (^{32}S,α2pγ) and 5123.4 *10* from (^{28}Si,α2pγ). Mult.: Q from γγ(ADO) in (^{32}S,α2pγ) and M2 ruled out by RUL.
15809.0	16^+	2168.1[‡] *3*	38[‡] *11*	13641.0	$14^{(+)}$	E2	Mult.: Q from γγ(ADO) in (^{32}S,α2pγ) and M2 ruled out by RUL.
		2590.5[‡] *3*	100[‡] *22*	13218.4	15^+		
16049.4	$17^{(+)}$	2830.9[‡] *3*	100	13218.4	15^+	Q	Mult.: Q from γγ(ADO) in (^{32}S,α2pγ).
17669.2	(16,17)	3748.2 *10*	100	13920.8	$15^{(+)}$		
17790.0	(16,17)	5398.2 *10*	100	12391.5	$15^{(+)}$		
17956.6	18^+	2922.3 *7*	100	15034.2	16^+	E2	E_γ: unweighted average of 2921.6 *3* from (^{32}S,α2pγ) and 2923.0 *3* from (^{28}Si,α2pγ).

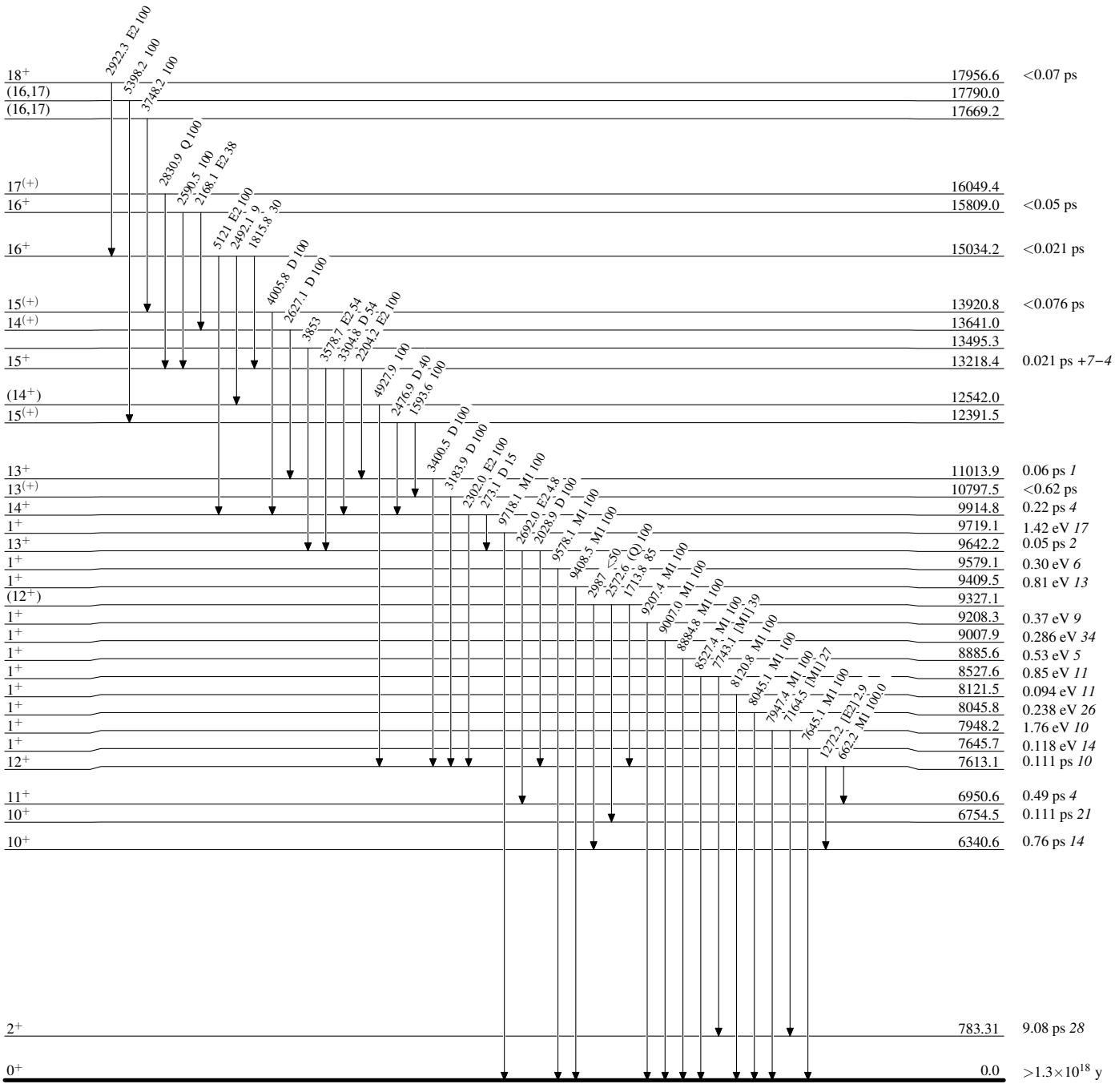
[†] From ^{50}Cr(p,p′γ), except as noted.
[‡] From ^{24}Mg(^{32}S,α2pγ).
[#] From ^{28}Si(^{28}Si,α2pγ).
[@] From (γ,γ′),(pol γ,γ′). Mult. are based on γ(θ,pol) data (2016Pa04).
[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[a] Multiply placed with undivided intensity.
[b] Placement of transition in the level scheme is uncertain.

$^{50}_{24}Cr_{26}$-13

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{50}_{24}Cr_{26}$

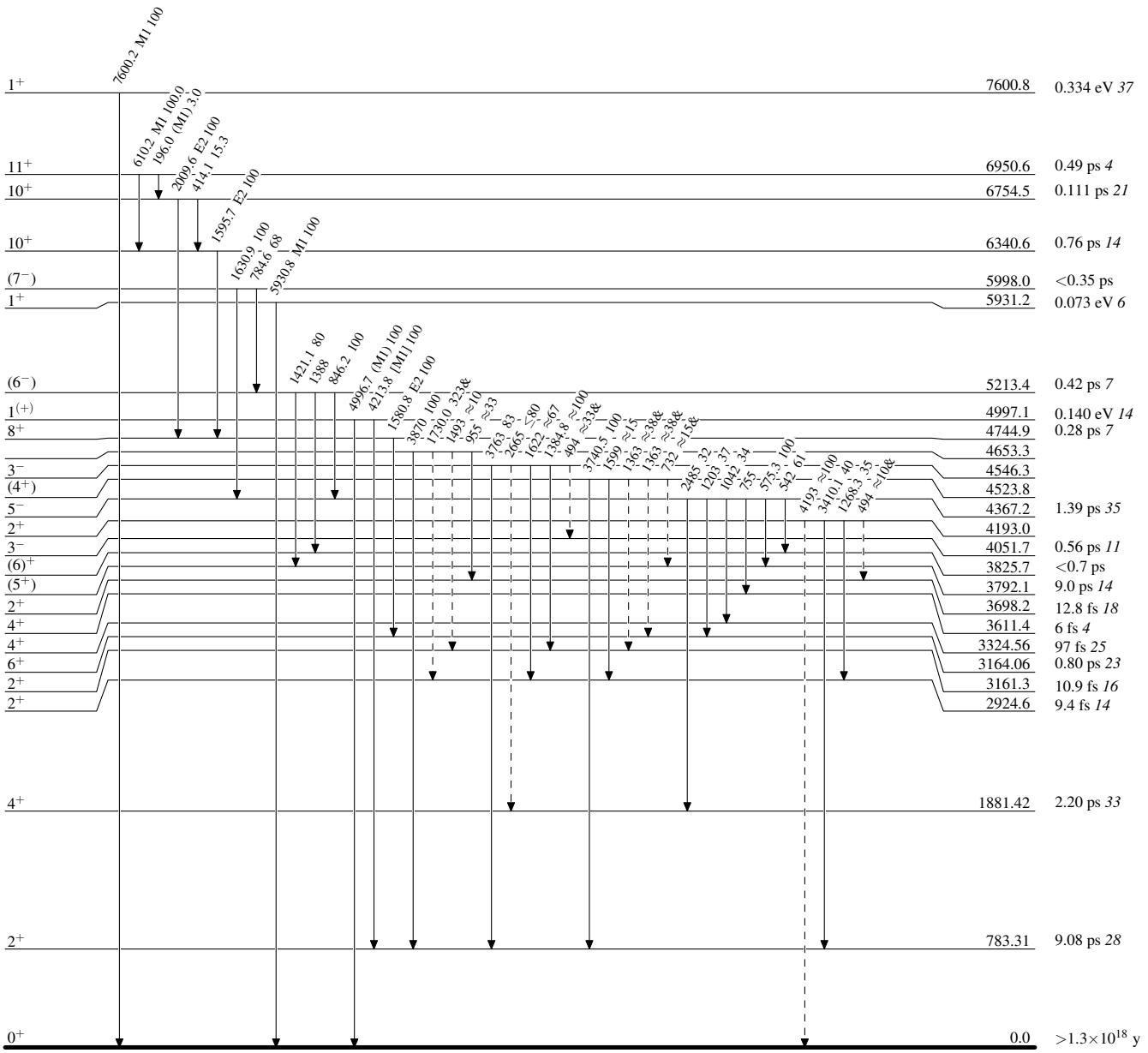
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



$^{50}_{24}Cr_{26}$

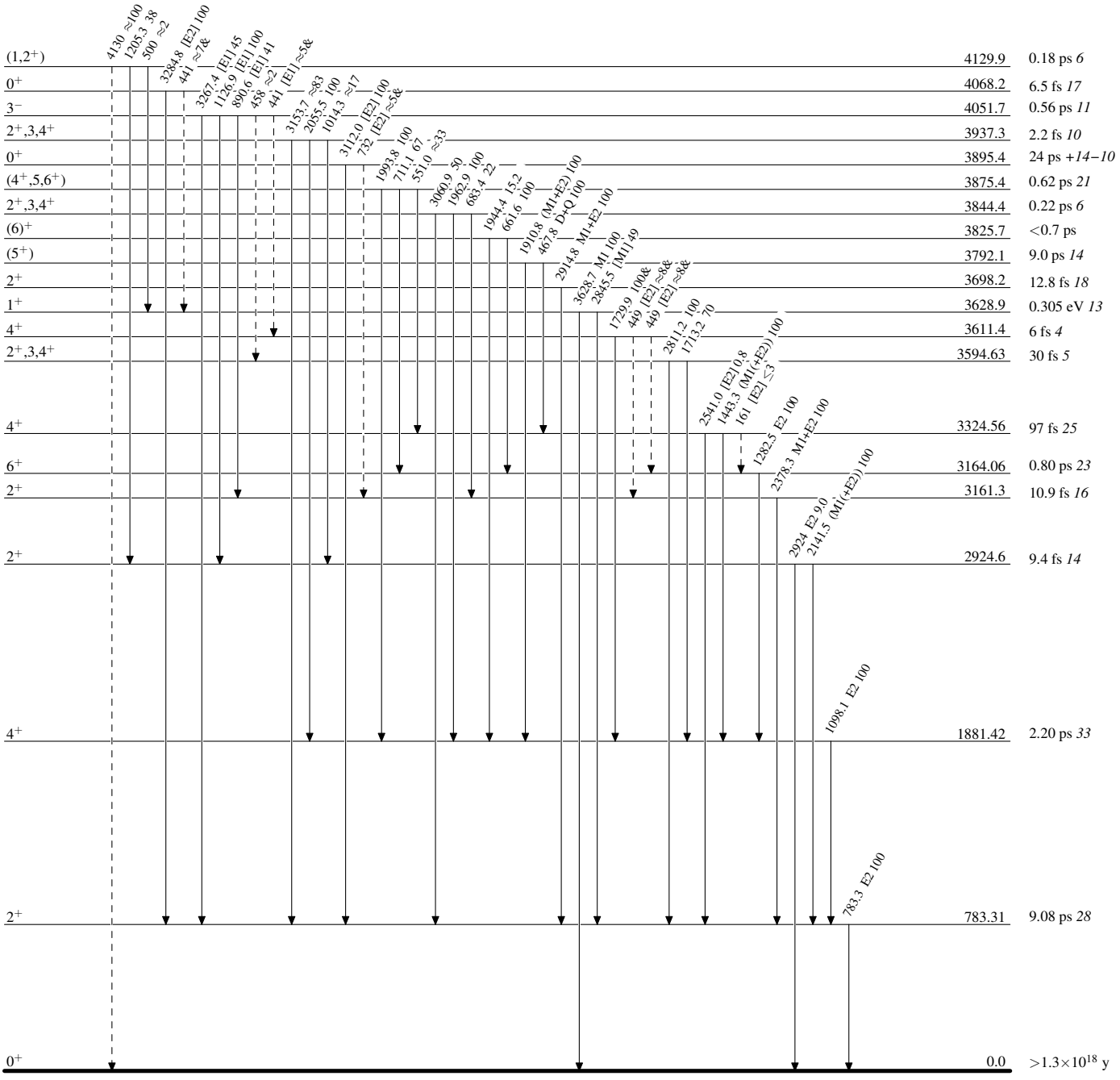
Adopted Levels, Gammas

Legend

Level Scheme (continued)

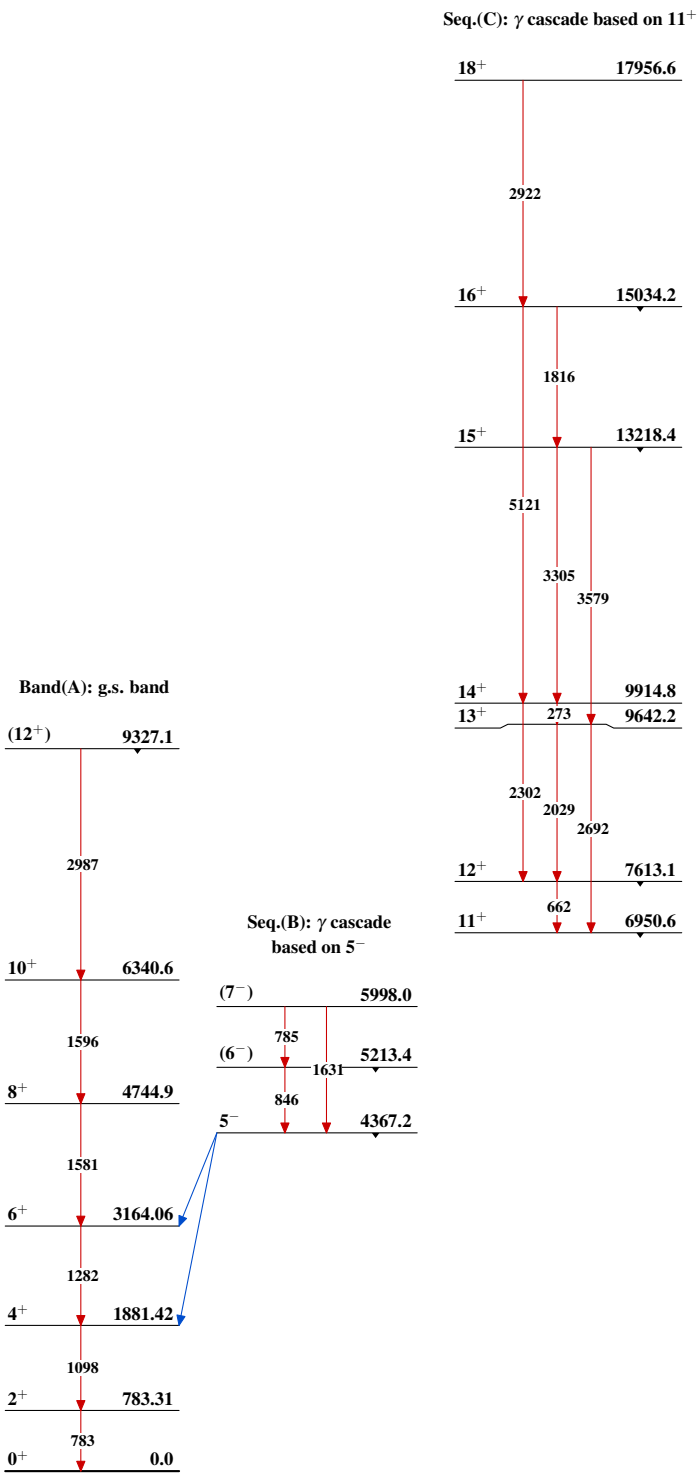
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

– – – – – – ► γ Decay (Uncertain)



$^{50}_{24}Cr_{26}$

Adopted Levels, Gammas



$^{50}_{24}Cr_{26}$