

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows ^a	NDS 109,1879 (2008)	14-Jul-2008

Q(β^-)=-1.289×10⁴ 3; S(n)=1.638×10⁴ 17; S(p)=2104 13; Q(α)=-8181 13 2012Wa38

Note: Current evaluation has used the following Q record -16895 731.636E4 11 2085 25-7630 160 2003Au03,2007Do17.

Q(β^-): From 2007Do17 (see β^+ decay for experimental details). Other: 13.03 MeV 15 (2003Au03. Systematics).

⁴⁹Mn Levels

Cross Reference (XREF) Flags

A	⁴⁹ Fe β^+ decay: partial	D	²⁴ Mg(²⁸ Si,p2n γ) E=87 MeV
B	⁵⁰ Co β^+ p decay: partial	E	⁵⁴ Fe(p, ⁶ He), ⁴⁰ Ca(¹² C,t)
C	¹² C(⁴⁰ Ca,2n γ)		

E(level) [†]	J $^{\pi}$ [‡]	T _{1/2}	XREF	Comments
0.0 [#]	5/2 ⁻	382 ms 7	ABCDE	% ϵ +% β^+ =100 T=1/2 J $^{\pi}$,T: from super-allowed decay to ⁴⁹ Cr g.s. T _{1/2} : weighted av of 381.7 ms 74 (1988HaZB, β^+ 's; Δ E/E scin telescope, tape transport, ms) and 384 ms 17 (1980Ha12. g+(t); on-line isotope separator; tape-transport system. Measured for 5 to 6 T _{1/2} 's. High background).
261.38 [@] 13	7/2 ⁽⁻⁾		ABCDE	
1059.18 [#] 24	9/2 ⁽⁻⁾		ABCD	
1541.31 [@] 25	11/2 ⁽⁻⁾		ABCD	
2481.3 [#] 4	13/2 ⁽⁻⁾		A CD	
3189.3 [@] 7	15/2 ⁽⁻⁾		CD	
3959 50	(5/2 ⁻)		A	%p=100 J $^{\pi}$: proposed J $^{\pi}$ in β^+ decay.
4250.3 [#] 8	17/2 ⁽⁻⁾		CD	
4381 17	(7/2 ⁻ ,5/2 ⁻)&		A	%p=100
4446.3 [@] 10	19/2 ⁽⁻⁾		CD	
4814 39	(7/2 ⁻)		A	%p=100 T=(3/2) J $^{\pi}$,T: from proton decay to ⁴⁸ Cr 2 ⁺ state and systematics of T _z =-3/2 β^+ -delayed proton emitters.
6056.4 [@] 14	(23/2 ⁻)&		CD	
8080.4 [@] 17	(27/2 ⁻)&		D	
10724.5 [@] 20	(31/2 ⁻)&		D	

[†] From least-squares fit to E γ 's assuming Δ E(γ)=1 keV when not given.

[‡] From recoil- γ (θ) in (⁴⁰Ca,2n γ) and mirror symmetry with ⁴⁹Cr, except as noted.

Band(A): K $^{\pi}$ =5/2⁻ band, α =-1/2 (1997OI03).

@ Band(B): K $^{\pi}$ =5/2⁻ band, α =+1/2 (1997OI03).

& Mirror symmetry with ⁴⁹Cr. ⁴⁹Cr J $^{\pi}$'s based on analysis of 1997OI03 in ²⁴Mg(²⁸Si,2pn γ).

Adopted Levels, Gammas (continued)
 $\gamma(^{49}\text{Mn})$

 All data are from ($^{40}\text{Ca},2\text{np}\gamma$), except as noted.

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult. [†]
261.38	7/2 ⁽⁻⁾	261.40 [#] 13	100	0.0	5/2 ⁻	D [‡]
1059.18	9/2 ⁽⁻⁾	798.28 [#] 25	100 [@] 15	261.38	7/2 ⁽⁻⁾	D [‡]
		1058.7 ^{@a} 7	8.9 [@] 15	0.0	5/2 ⁻	
1541.31	11/2 ⁽⁻⁾	482.19 ^b 9	100 [@]	1059.18	9/2 ⁽⁻⁾	D [‡]
		1278.8 ^b 4	98 [@]	261.38	7/2 ⁽⁻⁾	(Q) ^{&}
2481.3	13/2 ⁽⁻⁾	940.0 2	100	1541.31	11/2 ⁽⁻⁾	D [‡]
		1422 1	20	1059.18	9/2 ⁽⁻⁾	(Q) ^{&}
3189.3	15/2 ⁽⁻⁾	708 1	100	2481.3	13/2 ⁽⁻⁾	D [‡]
		1647 1	68	1541.31	11/2 ⁽⁻⁾	(Q) ^{&}
4250.3	17/2 ⁽⁻⁾	1060 1	100	3189.3	15/2 ⁽⁻⁾	D [‡]
		1770 1	53	2481.3	13/2 ⁽⁻⁾	(Q) ^{&}
4446.3	19/2 ⁽⁻⁾	196 1	12	4250.3	17/2 ⁽⁻⁾	D [‡]
		1257 1	100	3189.3	15/2 ⁽⁻⁾	(Q) ^{&}
6056.4	(23/2 ⁻)	1610 1	100	4446.3	19/2 ⁽⁻⁾	(Q) ^{&}
8080.4	(27/2 ⁻)	2024 ^c		6056.4	(23/2 ⁻)	
10724.5	(31/2 ⁻)	2644 ^c		8080.4	(27/2 ⁻)	

[†] From recoil- $\gamma(\theta)$.

[‡] Stretched dipole ($\Delta J=1$) transition.

[#] Weighted av. (ext.) of 261.5 keV 1 from β^+ decay, 261.4 keV 2 from β^+ p decay, and 261.0 keV 2 from ($^{40}\text{Ca},2\text{np}\gamma$) and of 797.1 keV 1 from β^+ decay, 797.3 keV 3 from β^+ p decay, and 798.0 keV 2 from ($^{40}\text{Ca},2\text{np}\gamma$), respectively.

[@] From β^+ p decay.

[&] Stretched quadrupole ($\Delta J=2$) or $\Delta J=0$ dipole transition. $\Delta J=2$ from level scheme.

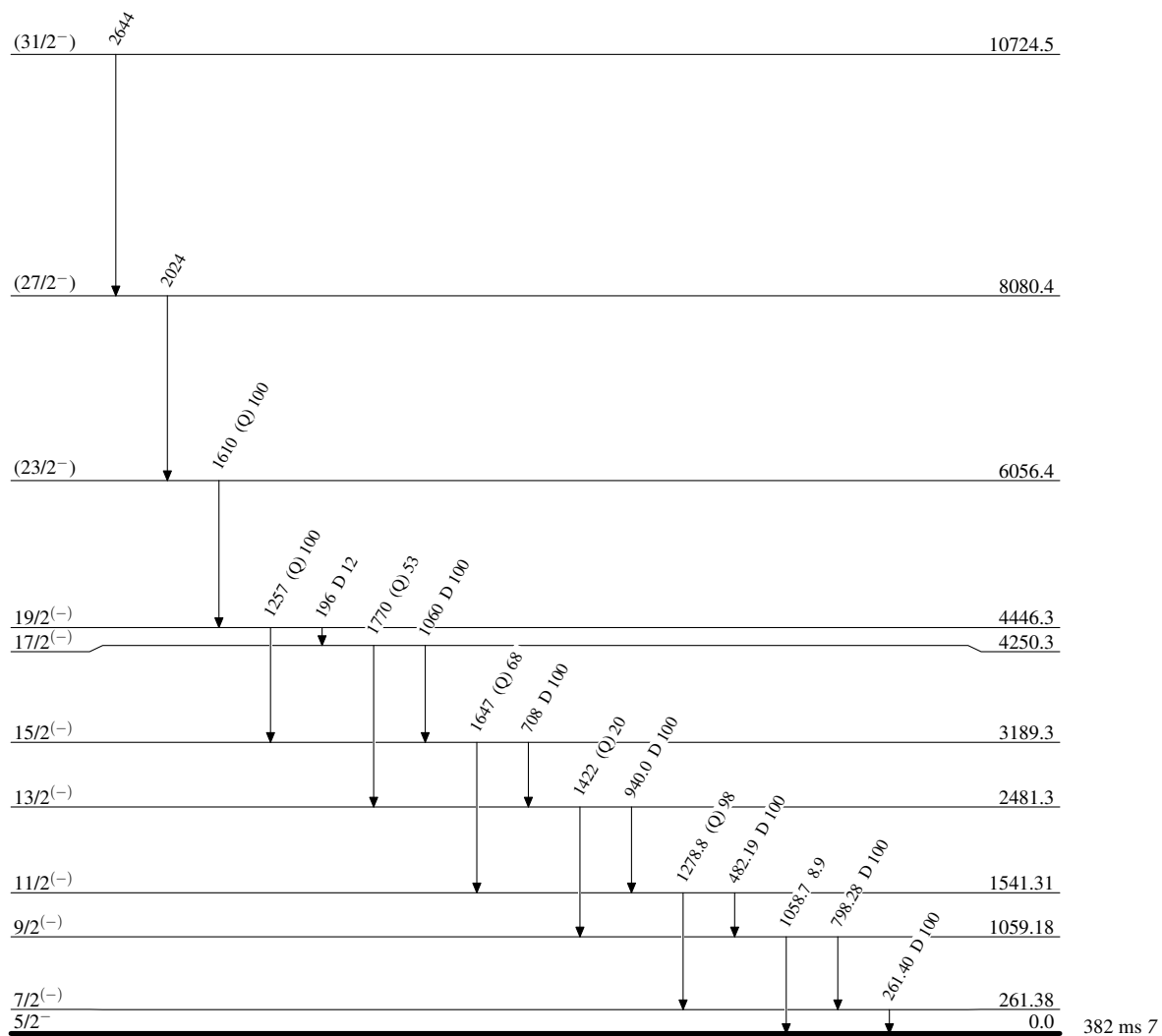
^a Existence of 1059 γ confirmed in ($^{28}\text{Si},\text{p}2\text{n}\gamma$).

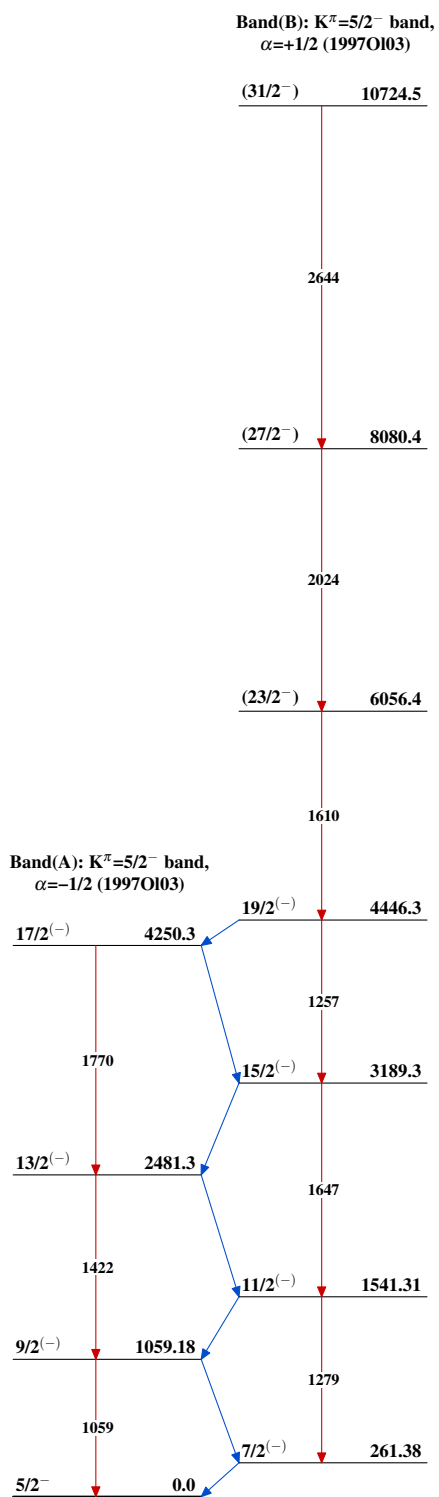
^b Weighted av. (int.) of 481.9 keV 5 from β^+ decay, 482.2 keV 1 from β^+ p decay, and 482.2 keV 2 from ($^{40}\text{Ca},2\text{np}\gamma$) and of 1278.7 keV 6 from β^+ decay, 1278.4 keV 7 from β^+ p decay, and 1280 keV 1 from ($^{40}\text{Ca},2\text{np}\gamma$), respectively.

^c From ($^{28}\text{Si},\text{p}2\text{n}\gamma$).

Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

 $^{49}_{25}\text{Mn}_{24}$

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