^{47}Sc β^- decay 1986Re12,1974HeYW,1956Gr12

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows	NDS 108,923 (2007)	20-Feb-2007

Parent: ^{47}Sc: E=0.0; $J^\pi=7/2^-$; $T_{1/2}$=3.3492 d *6*; Q(β^-)=600.3 *19*; %β^- decay=100

^{47}Sc-Q(β^-): from 2003Au03.

1986Re12 measured %Iγ(159γ) (NaI,Ge(Li)), Eβ's and %Iβ (β spectrometer), and ce's (Si(Li)).

All data are from 1986Re12, except as noted. Coincidences shown on the drawing are from 1968Ba33 (4$\pi\beta\gamma$; pc,NaI). Others: see 1986Re12.

^{47}Ti Levels

E(level)	J^π[†]	$T_{1/2}$
0.0	$5/2^-$	stable
159.381 *15*	$7/2^-$	

[†] From the Adopted Levels.

β^- radiations

See 1987Mi18 for calculations of > matrix elements.

E(decay)[†]	E(level)	Iβ^-[‡#]	Log *ft*	Comments
439.0 *13*	159.381	68.4 *6*	5.28 *1*	av Eβ=142.6 *7*
600.3 *14*	0.0	31.6 *6*	6.10 *1*	av Eβ=203.9 *8*

[†] Weighted averages of 600.5 *19* and 439.0 *16* (1986Re12) and 600 *2* and 439 *2* (1956Gr12. β spectrometer).

[‡] Absolute intensities. Authors' weighted averages of 67.4 *14* and 32.6 *14* (β spectrometer) and 68.6 *6* and 31.4 *6* (from %Iγ(159γ) assuming α(159γ)=0.0045 *3*) (1986Re12).

[#] Absolute intensity per 100 decays.

$\gamma(^{47}Ti)$

α(exp) from α(K)exp=0.00406 *21* (1986Re12) and K/L+≈10 (1953Co44). Other: 0.0036 *9* from I(ce)/Iβ(439) (1953Ch16. S); 0.00618 *13* (theory).

E_γ[†]	I_γ[‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	Comments
159.381 *15*	68.3 *4*	159.381	$7/2^-$	0.0	$5/2^-$	M1+E2	−0.099 *9*	α(K)exp=0.00406 *21*; ce(K)=0.277 *14* (1986Re12); α(exp)=0.0045 *3* K/(L+M+N)≈10 (1953Co44); α(L)exp≈0.000406 *21* α(M)exp=5.19×10^{-5} *31*; α(N)exp=2.78×10^{-6} *17* α(K)exp: Anomalous with theory: α(K)=0.00560 *12*. K/L+ Visual inspection of photographic spectrometer. 1986Re12 also obtained K/L+≈10. K/L+=9.6 *10* (theory). α(L)exp: From α(K)exp and K/L+. α(L)=0.000512 *11* (theory). Additional information 1.

[†] From 1972GeZG and 1974HeYW.

Continued on next page (footnotes at end of table)

^{47}Sc β^- decay 1986Re12,1974HeYW,1956Gr12 (continued)

$\gamma(^{47}Ti)$ (continued)

‡ Absolute intensity. Authors′ weighted average based on individual values of 67.8 *5* and 67.1 *8* (HPGe), 68.7 *4* (NaI), and 68.9 *7* (1986Re12).
# From the Adopted Gammas.
@ Absolute intensity per 100 decays.

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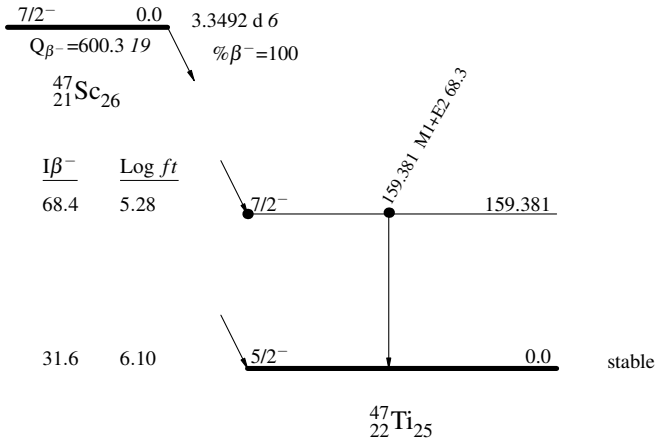
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



Legend

● Coincidence