^{88}Y β^+ decay 1974Ar12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan and A. A. Sonzogni	NDS 115, 135 (2014)	1-Nov-2013

Parent: ^{88}Y: E=0.0; $J^\pi=4^-$; $T_{1/2}$=106.627 d *21*; Q(β^+)=3622.6 *15*; %β^+ decay=100.0

1980Yo05: Precision measurement of Iγ using Ge(Li) detector.

1979Gr01,1978He21: Precision measurements of Eγ applying cascade crossover relations and using Ge(Li) detector.

1974Ar12: ^{88}Y activity from ^{88}Sr(d,2n). Measured Eγ, Iγ using Ge(Li) detector.

Others: 1973Sc40, 1971He20, 1970Ke06, 1968Gu05, 1968Le03, 1966Sa08.

Conversion electrons: 1971Al06, 1966Ha07, 1952Me50.

β^+ spectrum: 1963Rh01.

Internal pair creation: 1971Al06.

Fluorescence yield: 1973Ba58.

Search for monoenergetic positron lines: 1979An36.

α: Additional information 1.

^{88}Sr Levels

E(level)‡	J^π†	$T_{1/2}$	Comments
0.0	0^+	stable	
1836.083 *12*	2^+		Iβ^+=0.20% *1*; spectrum has first-unique forbidden shape (1963Rh01).
2734.130 *12*	3^-		
3218.6 *9*	2^+		
3584.7 *8*	5^-		

† From the Adopted Levels.

‡ From a least-squares fit to Eγ by evaluators.

ε,β^+ radiations

E(decay)	E(level)	Iβ^+†	Iε†	Log *ft*	I($\varepsilon+\beta^+$)†	Comments
(37.9 *17*)	3584.7		0.066 *13*	6.89 *11*	0.066 *13*	εK=0.721 *14*; εL=0.225 *11*; εM+=0.054 *3*
(404.0 *18*)	3218.6		0.028 *6*	9.45[1u] *10*	0.028 *6*	εK=0.8521 *2*; εL=0.1209 *2*; εM+=0.02702 *3*
(888.5 *15*)	2734.130		94.4 *3*	6.8517 *21*	94.4 *3*	εK=0.8726; εL=0.1046; εM+=0.02286
(1786.5 *15*)	1836.083	0.21 *2*	5.3 *4*	9.80[1u] *4*	5.5 *4*	av Eβ=359.49 *67*; εK=0.8393 *3*; εL=0.10085 *4*; εM+=0.022060 *8*

† Absolute intensity per 100 decays.

^{88}Y β^+ decay 1974Ar12 (continued)

$\gamma(^{88}Sr)$

Iγ normalization: From ΣI(γ+ce)(to g.s.)=100. Ground state branch is expected to be negligible (ΔJ=4).

E_γ[†]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ	α	Comments
850.6 *8*	0.066 *13*	3584.7	5^-	2734.130	3^-	E2		0.000853 *13*	α=0.000853 *13*; α(K)=0.000754 *11*; α(L)=8.28×10^{-5} *12*; α(M)=1.390×10^{-5} *20* α(O)=1.114×10^{-7} *16*; α(N+..)=1.85×10^{-6}
898.042[@] *3*	94.4[&] *3*	2734.130	3^-	1836.083	2^+	E1(+M2)	−0.002 *9*	0.000307 *5*	α(exp)=0.00032 *3*; α(K)exp=0.00029 *2* α=0.000307 *5*; α(K)=0.000273 *4*; α(L)=2.92×10^{-5} *4*; α(M)=4.89×10^{-6} *7*; α(N)=6.14×10^{-7} *9* α(O)=4.02×10^{-8} *6*; α(N+..)=6.55×10^{-7} *10* α(exp): Weighted average of 0.00028 *3* (1971Al06) and 0.000345 *24* (1966Ha07). α(K)exp: Weighted average of 0.00025 *3* (1971Al06), 0.000309 (1966Ha07) and 0.00034 *7* (1952Me50). α(K)exp/α(L+...)exp=7.0 *5* (1966Ha07), 8.0 *2* (1971Al06). K/L(E1)=9.3. ce(K)/(γ+ce)(exp)=0.874 *15* (1966Ha07). Mult.: from α(K)exp. δ: from weighted average of A_2 and A_4 values measured by γγ(θ) in 1973He22, 1968Ha36, 1968Lu13, and 1953St25. I_γ: Others: 92.0 *7* (1974Ar12), 94.9 *5* (1973Sc40).
1382.2 *10*	0.021 *6*	3218.6	2^+	1836.083	2^+	(M1+E2)	+0.04 *2*	0.000325 *5*	α=0.000325 *5*; α(K)=0.000255 *4*; α(L)=2.73×10^{-5} *4*; α(M)=4.58×10^{-6} *7*; α(N)=5.77×10^{-7} *9* α(O)=3.82×10^{-8} *6*; α(N+..)=3.84×10^{-5} *6* Mult.,δ: from adopted gammas.
1836.063[#] *12*	100.0 *3*	1836.083	2^+	0.0	0^+	E2		0.000393 *6*	α(exp)=0.000140 *16*; α(K)exp=0.000124 *16* α=0.000393 *6*; α(K)=0.0001449 *21*; α(L)=1.550×10^{-5} *22*; α(M)=2.60×10^{-6} *4* α(O)=2.15×10^{-8} *3*; α(N+..)=0.000230 α(exp), α(K)exp from 1971Al06. α(K)exp/α(L+...)exp=7.8 *3* (1971Al06). Internal pair creation coefficient 0.00023 *3* (1971Al06).
2734.0 *5*	0.72 *7*	2734.130	3^-	0.0	0^+	[E3]		0.000564 *8*	α=0.000564 *8*; α(K)=0.0001099 *16*; α(L)=1.176×10^{-5} *17*; α(M)=1.97×10^{-6} *3* α(O)=1.639×10^{-8} *23*; α(N+..)=0.000440 Internal pair creation coefficient 0.00033 *5* (1971Al06).
3219.7 *20*	0.0071 *20*	3218.6	2^+	0.0	0^+	E2		0.000931 *13*	α=0.000931 *13*; α(K)=5.44×10^{-5} *8*; α(L)=5.77×10^{-6} *8*; α(M)=9.67×10^{-7} *14*; α(N)=1.219×10^{-7} *18* α(O)=8.08×10^{-9} *12*; α(N+..)=0.000870 *13*

$^{88}_{38}Sr_{50}$-2

$\gamma(^{88}$Sr) (continued)

† From 1974Ar12, except as noted.
‡ From the Adopted Gammas.
# From 1979Gr01.
@ From 1978He21.
& From 1980Yo05.
[a] For absolute intensity per 100 decays, multiply by 0.9924 *7*.

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Decay Scheme

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