Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 110,2689 (2009)	31-Mar-2007

Q(β^-)=−1.303×10^4 *3*; S(n)=1.674×10^4 *syst*; S(p)=1615 *7*; Q(α)=−7447 *11* 2012Wa38
Note: Current evaluation has used the following Q record −13280 SY16800 SY1602 19-7454 30 2003Au03.
ΔQ(β^-): syst=160.
ΔS(n): syst=68.

^{53}Co Levels

Cross Reference (XREF) Flags

A ^{53}Ni ε decay
B (HI,xnγ)

E(level)	J$^\pi$[†]	T$_{1/2}$	XREF	Comments
0.0	(7/2$^-$)	240 ms *9*	AB	%ε+%β^+=100 (2003Au02) J$^\pi$: syst for Z=27 nuclei, shell model. T$_{1/2}$: from 2002Lo13. Others: 240 ms *20* (1989Ho13, see also 1985EsZZ,1986EsZX), 262 ms *25* (1973Ko10).
1327.0[‡] *9*	(9/2$^-$)		B	
2367.0[‡] *9*	(11/2$^-$)		B	
3197 *29*	(19/2$^-$)	247 ms *12*	B	%ε+%β^+≈98.5; %p≈1.5 (1997Au04) T$_{1/2}$: from 1972Ce01. Others: 242 ms *15* (1970Ce04), 260 ms *20* (1976Vi02). E(level): From 2003Au02. Possible IAS of ^{53}Fe(19/2$^-$,3041 keV). J$^\pi$: log *ft*≈3.6 for β^+ to 19/2$^-$ IAS in ^{53}Fe. Proton decay to ^{52}Fe(g.s.) with E(p)=1570 keV *30* (1970Ce04), 1590 keV *30* (1976Vi02). Proton branching estimated to be ≈1.5% from comparison of measured and calculated σ for ^{54}Fe(p,2n) (1972Ce01).
3261.1[‡] *13*	(13/2$^-$)		B	
3581.1[‡] *17*	(15/2$^-$)		B	
4115.1[‡] *20*	(17/2$^-$)		B	
4390	(7/2$^-$)		A	E(level),J$^\pi$: IAS of ^{53}Fe(7/2$^-$,4250 keV). Proton decay observed. E(p)(c.m)=1940 *50*, I(p)≈0.45 per decay.

[†] From mirror symmetry (with ^{53}Fe) arguments and similarity of spectra.
[‡] Band(A): $\nu(f_{7/2})^{-2}\pi(f_{7/2})^{-1}$.

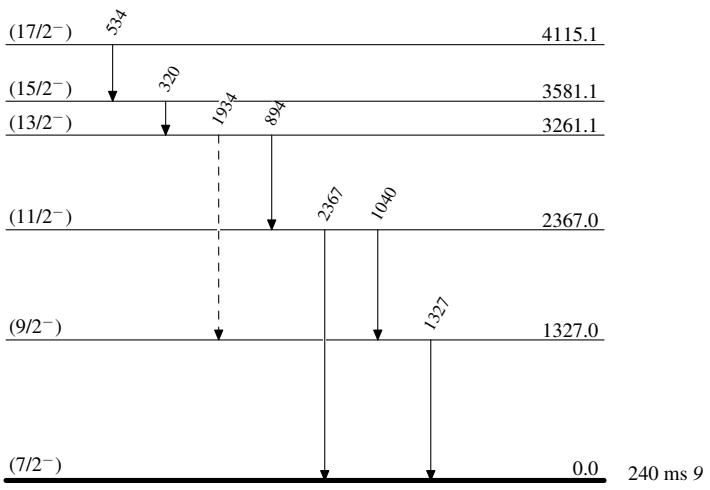
$\gamma(^{53}Co)$

E$_i$(level)	J$_i^\pi$	E$_\gamma$	E$_f$	J$_f^\pi$
1327.0	(9/2$^-$)	1327	0.0	(7/2$^-$)
2367.0	(11/2$^-$)	1040	1327.0	(9/2$^-$)
		2367	0.0	(7/2$^-$)
3261.1	(13/2$^-$)	894	2367.0	(11/2$^-$)
		1934[†]	1327.0	(9/2$^-$)
3581.1	(15/2$^-$)	320	3261.1	(13/2$^-$)
4115.1	(17/2$^-$)	534	3581.1	(15/2$^-$)

[†] Placement of transition in the level scheme is uncertain.

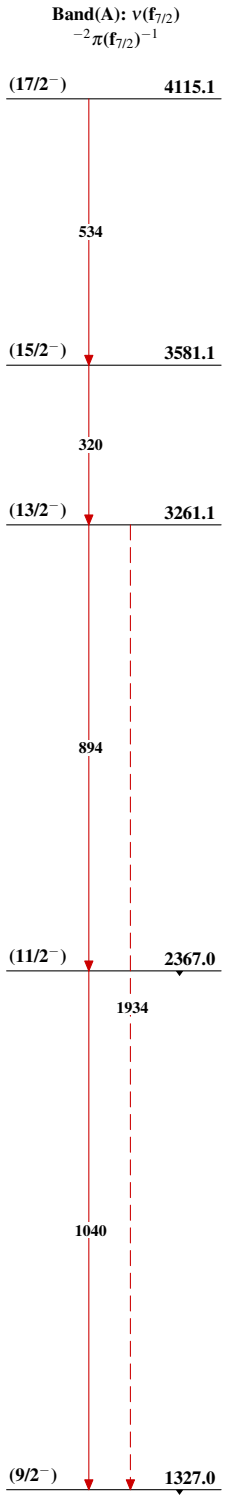
Adopted Levels, Gammas

Level Scheme



$^{53}_{27}Co_{26}$

Adopted Levels, Gammas



$^{53}_{27}Co_{26}$