Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 111,1093 (2010)	3-Mar-2009

Q(β^-)=251.8 *16*; S(n)=8952.4 *15*; S(p)=14110 *3*; Q(α)=−9553 *4* 2012Wa38
Note: Current evaluation has used the following Q record 251.9 16 *8951.9 1514125* 13-9531 15 2009AuZZ,2003Au03.

^{66}Ni Levels

Configuration: Listed configurations are those expected in this region, and were used in DWBA analysis of (α,^{2}He) data.

Cross Reference (XREF) Flags

A	^{66}Co β^- decay	D	^{64}Ni(α,^{2}He)
B	^{64}Ni(t,p)	E	(HI,xnγ)
C	^{68}Zn(^{14}C,^{16}O)		

E(level)†	J$^\pi$@	T$_{1/2}$	XREF	Comments
0	0$^+$	54.6 h *3*	ABCDE	%β^-=100 Configuration=(ν f$_{5/2}$0$^+$) T$_{1/2}$: from ^{66}Ni β^- decay, weighted average of 55.1 h *10* (1956Jo20), 54.8 h *3* (1956Kj07), and 53.5 h *7* (1956Ru45).
1424.8‡ *10*	2$^+$	0.8 ps *2*	ABC E	T$_{1/2}$: Deduced by evaluators from B(E2)↑=600 *200* (2002So03).
2445‡ *1*	0$^+$		AB	
2664 *10*	(0$^+$)		B	
2670.8‡ *13*	(3$^+$)		A E	J$^\pi$: from log *ft*=4.2 for β^- decay from (3$^+$).
2916‡ *1*	2$^+$		AB	
2965 *10*	0$^+$		B	
3185.44# *15*	(4$^+$)		B E	
3230.6 *3*	2$^+$		AB	XREF: B(3219). J$^\pi$: From log *ft*=4.9 for β^- decay from (3$^+$).
3370.9# *4*	3$^-$		B E	
3390 *50*	(5$^-$)		D	Configuration=((ν p$_{1/2}$)(ν g$_{9/2}$))5$^-$ J$^\pi$: L(α,^{2}He)=(5).
3541.34# *18*			B E	J$^\pi$: (4$^+$) from L(t,p)=(4) disagrees with (5$^-$) yrast state in (HI,xnγ) suggested from analogy with ^{64}Ni.
3599.3# *6*	(6$^-$)&	4.3 ns *4*	B E	T$_{1/2}$: from (HI,xnγ) (1994Pa20).
3646 *10*			B	
3678 *10*	3$^-$		B	
3725.2# *6*			B E	
3746 *10*	2$^+$		B	
3782 *10*			B	
4028 *10*			B d	
4070.4# *7*			B dE	
4089.4# *6*	7$^-$		B dE	Configuration=((ν f$_{5/2}$)(ν g$_{9/2}$))7$^-$ J$^\pi$: L(α,^{2}He)=7 for a level at 4050 *50*.
4125 *10*	(4$^+$)		B	
4407 *10*			B	
4500 *10*			B	
4655 *10*			B	
4696 *10*			B	
4738 *10*			B d	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{66}Ni Levels (continued)

E(level)[†]	J$^{\pi}$[@]	XREF	Comments
4760 *50*	(5$^-$)	d	Configuration=((ν $f_{5/2}$)(ν $d_{5/2}$))5$^-$ J$^{\pi}$: L(α,^{2}He)=(5). At the largest angle measured, this level could not be separated clearly from the 5170 level with a dominant configuration=(ν $g_{9/2}$)$^{+2}_{8+}$.
4796 *10*		B d	
4919 *10*		B	
4967 *10*		B	
5109 *10*		B	
5157 *10*		B d	
5174.9[#] *7*	(8)$^+$	dE	Configuration=((ν $G_{9/2}$)$^{+2}_{8+}$+(ν $G_{9/2}$)(ν $d_{5/2}$)6$^+$) J$^{\pi}$: L(α,^{2}He)=8+6 for an unresolved doublet at 5170 *50*; (8$^+$) in (HI,xnγ).
5192 *10*		B d	
5237 *10*		B	
5260 *10*		B	
5327 *10*		B	
5368 *10*		B	
5503 *10*		B	
5584 *10*		B	
5612 *10*		B	
5660 *10*		B	
5745 *10*		B	
5787 *10*		B	
5836 *10*		B	
5885 *10*		B	
6004 *10*		B	
6027 *10*		B	
6074 *10*		B	
6122 *10*		B	
6166 *10*		B	
6217 *10*		B	
6267 *10*		B	
6304 *10*		B	
6339 *10*		B	
6384 *10*		B	
6457 *10*		B	
6525 *10*		B	
6556 *10*		B	
6579.8[#] *9*	(10$^+$)[&]	E	
6600 *10*		B	
6665 *10*		B	
6730 *10*		B	

[†] From ^{64}Ni(t,p), except as stated.
[‡] From ^{66}Co β$^-$ decay.
[#] From (HI,xnγ).
[@] From deduced L values in ^{64}Ni(t,p) with the assumption that the spins of the transferred neutrons couple to S=0, except as stated otherwise.
[&] From (HI,xnγ) based on level systematics and shell model calculations.

Adopted Levels, Gammas (continued)

$\gamma(^{66}Ni)$

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π
1424.8	2^+	1424.8 *10*	100	0	0^+	3599.3	(6^-)	58.0 *5*	100	3541.34	
2445	0^+	1020# *1*	100	1424.8	2^+	3725.2		354.3 *5*	100	3370.9	3^-
2670.8	(3^+)	1246.0 *9*	100	1424.8	2^+	4070.4		471.1 *4*	100	3599.3	(6^-)
2916	2^+	471.3 *6*	100	2445	0^+	4089.4	7^-	490.1 *2*	100	3599.3	(6^-)
3185.44	(4^+)	1760.3 *1*	100	1424.8	2^+	5174.9	$(8)^+$	1085.5 *3*	100	4089.4	7^-
3370.9	3^-	1945.8 *3*	100	1424.8	2^+	6579.8	(10^+)	1404.8 *6*	100	5174.9	$(8)^+$
3541.34		355.9 *1*	100	3185.44	(4^+)						

† From ^{66}Co β^- decay and (HI,xnγ).
‡ Relative photon branching from each level.
# Placement of transition in the level scheme is uncertain.

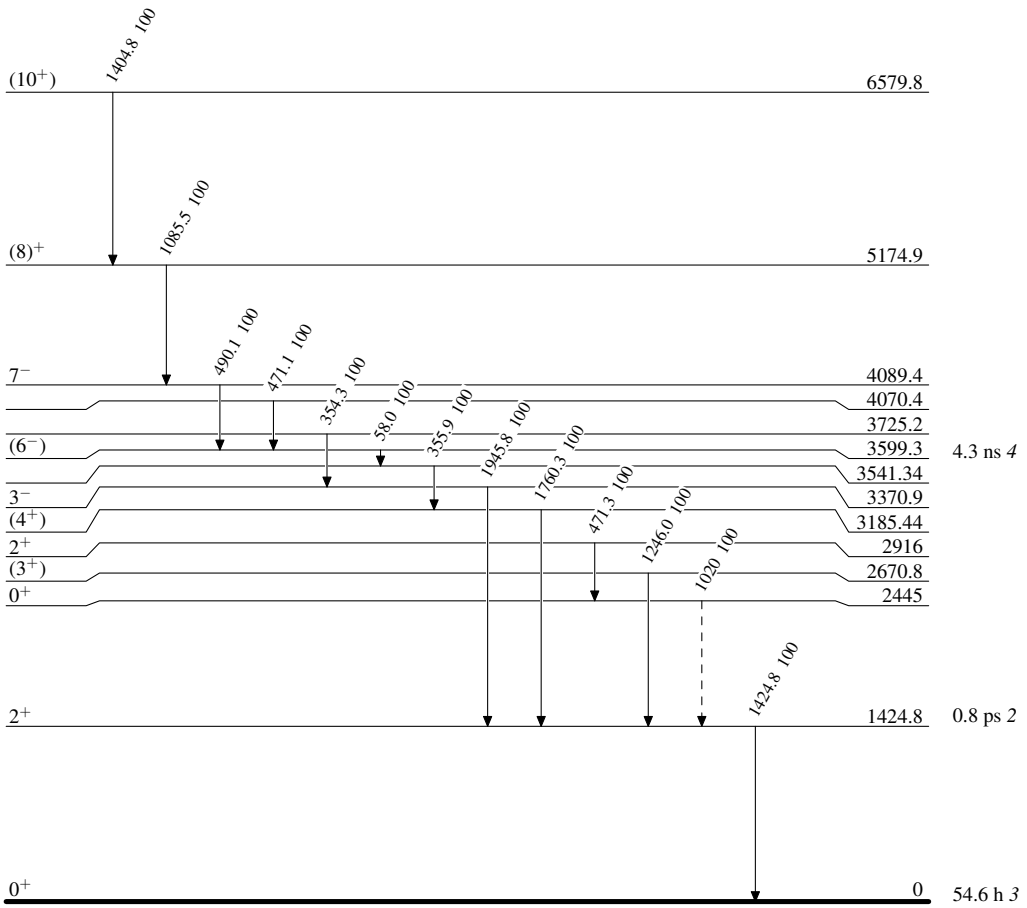
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{66}_{28}Ni_{38}$