(HI,xnγ) 2000Ap03,1981Fr08,1977Be27

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huo Su, Yang Dong	NDS 112, 1513 (2011)	29-Oct-2009

2000Ap03: ^{48}Ca(^{13}C,5nγ), E=65 keV; measured Eγ, Iγ, γγ, and γγ(θ) using 8Π spectrometer.
1981Fr08: ^{46}Ti(^{13}C,2pnγ), E=49,55 MeV; measured Eγ, Iγ(θ), γγ-coin and excitation functions with Ge(Li).
1981Ke05: ^{48}Ti(^{12}C,2n2pγ), E=39 MeV; measured Eγ, Iγ, RDM.
1982Mo17: ^{51}V(^{7}Li,2nγ), E=10-20 MeV; measured Eγ.
1977Be27: ^{50}Cr(^{12}C,2pαγ), E=26-58 MeV; ^{54}Fe(α,2pγ), E=12-24 MeV; measured σ(e,eγ), γγ-coin, σ(E,Eγ,θ), and DSA with Ge(Li).
1974Po15: ^{51}V(^{7}Li,2nγ), E=25 MeV; measured γγ-coin, RDM, DSA, and γ(θ). Measured tensor analyzing power with polarized beam (1982Mo17).
All data are from 2000Ap03, except As noted.

^{56}Fe Levels

E(level)†	Jπ#	$T_{1/2}$‡	Comments
0.0[b]	0+		
846.9[b] 3	2+	5.5 ps 9	$T_{1/2}$: from RDM (1974Po15).
2085.4[b] 5	4+	0.66 ps +24−14	$T_{1/2}$: other: >0.90 ps in RDM and DSA (1974Po15).
3122.4 6	4+	0.13 ps 6	
3389.6[b] 5	6+&	2.9 ps 2	$T_{1/2}$: from RDM (1981Ke05). Others: >0.69 ps in RDM and DSA (1974Po15), 2.7 ps +28−12 in DSA (1977Be27).
3756.5[d] 5	6+&	0.14 ps 3	$T_{1/2}$: from DSA (1977Be27). Other: 2.4 ps 8 in DSA and RDM (1974Po15).
4702.5[c] 6	7+&	0.09 ps 3	
5184.3[d] 6	8(+)@		
5256.2[b] 6	8+&	0.31 ps +12−6	
5629.1[c] 6	8+		Jπ: from excitation function and γ(θ) in ^{54}Fe(α,2pγ) (1976Sa18).
6116.2 8	(9)[a]		
6850.9[c] 6	9(+)@		
7085.1 13	(11)[a]		
7177.2?[b] 16	(10+)@		
7503.6[d] 6	9(+)@		
7820.6[c] 6	10(+)@		
8414.8[e] 7	(10+)@		
8679.9[c] 7	11(+)@		
9344.7[d] 7	(11+)@		
9378.2[e] 7	(11+)@		
10094.4[c] 7	(12+)@		
10563.1[e] 8	(12+)@		
10898.9[d] 10	(13+)@		
11964?[e] 3	(13+)@		

† From Eγ and scheme using least-squares adjustment procedure.
‡ From DSA (1977Be27), except as noted.
# From Adopted Levels, except as noted.
@ From γγ-coin AND γ(θ) (2000Ap03).
& From γ(θ) and lifetime of relevant γ-ray (1977Be27).
a From shell model and yrast band (1981Fr08).

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^{56}Fe Levels (continued)

[b] Band(A): sequence based on g.s..
[c] Band(B): sequence based on $7^{(+)}$.
[d] Band(C): sequence based on $6^{(+)}$.
[e] Band(D): sequence based on (10^+).

γ(^{56}Fe)

R=Iγ(γ_1 at 37°,γ_2 at 79°)/ Iγ(γ_1 at 79°,γ_2 at 37°) (2000Ap03).

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	δ	Comments
265.1 *3*	14 *1*	8679.9	$11^{(+)}$	8414.8	(10^+)			
267.1[b] *4*	0.21 *9*	3389.6	6^+	3122.4	4^+			
366.9 *3*	21 *1*	3756.5	6^+	3389.6	6^+			
846.9 *3*	100.0 *17*	846.9	2^+	0.0	0^+	E2		B(E2)↓=0.195 *6* (1974Po15) B(E2)(W.u.)=19 *3* R=0.90 *2* (2000Ap03). A_2=+0.15 *2*, A_4=−0.06 *4* (1974Po15). A_2=+0.30 *3*, A_4=−0.06 *4* (1977Be27).
859.2 *3*	86 *4*	8679.9	$11^{(+)}$	7820.6	$10^{(+)}$			R=0.56 *20* (2000Ap03).
860.0[@] *5*	100[#]	6116.2	(9)	5256.2	8^+			
926.6 *3*	99 *5*	5629.1	8^+	4702.5	7^+			R=0.74 *5* (2000Ap03).
946.4 *3*	15 *1*	4702.5	7^+	3756.5	6^+			
963.4 *3*	100 *6*	9378.2	(11^+)	8414.8	(10^+)			
968.9[&]	100[#]	7085.1	(11)	6116.2	(9)			
969.6 *3*	62 *4*	7820.6	$10^{(+)}$	6850.9	$9^{(+)}$			R=0.76 *9* (2000Ap03).
1037.0 *4*	100 *10*	3122.4	4^+	2085.4	4^+	D+Q		δ: −0.16 *11* or +1.26 *26* (1977Be27). A_2=+0.22 *3*, A_4=−0.04 *4* (1977Be27).
1184.9 *3*	100 *6*	10563.1	(12^+)	9378.2	(11^+)			
1221.7 *3*	100 *5*	6850.9	$9^{(+)}$	5629.1	8^+			R=0.77 *10* (2000Ap03).
1238.5 *3*	100 *5*	2085.4	4^+	846.9	2^+	E2		B(E2)↓=0.28 *11* (1974Po15) B(E2)(W.u.)=23 *+5−23* R=1.17 *2* (2000Ap03). A_2=+0.20 *2*, A_4=−0.06 *2* (1974Po15). A_2=+0.32 *3*, A_4=−0.03 *3* (1977Be27).
1303.9 *3*	100 *5*	3389.6	6^+	2085.4	4^+	E2		B(E2)↓<0.22 (1974Po15) B(E2)(W.u.)=4.1 *4* A_2=+0.23 *3*, A_4=−0.08 *3* (1974Po15). A_2=+0.32 *3*, A_4=−0.06 *3* (1977Be27). R=1.12 *2* (2000Ap03).
1312.5 *3*	85 *4*	4702.5	7^+	3389.6	6^+	D+Q	−0.08[@] *8*	A_2=−0.10 *2*, A_4=−0.05 *6* (1977Be27). R=0.78 *4* (2000Ap03).
1401[b] *3*	100 *7*	11964?	(13^+)	10563.1	(12^+)			
1414.5 *3*	100 *5*	10094.4	(12^+)	8679.9	$11^{(+)}$			
1427.8 *3*	100 *5*	5184.3	$8^{(+)}$	3756.5	6^+			
1499.5 *3*	28 *1*	5256.2	8^+	3756.5	6^+	E2		B(E2)(W.u.)=5.3 *+11−21* A_2=0.27 *4*, A_4=−0.04 *6* (1977Be27).
1554.2 *7*	100 *15*	10898.9	(13^+)	9344.7	(11^+)			
1595.0 *4*	82 *5*	6850.9	$9^{(+)}$	5256.2	8^+			R=0.67 *18* (2000Ap03).
1671.3 *3*	82 *4*	3756.5	6^+	2085.4	4^+	E2		B(E2)(W.u.)=19 *5* A_2=−0.14 *6*, A_4=−0.01 *6* (1974Po15). A_2=0.32 *3*, A_4=−0.02 *3* (1977Be27). R=1.09 *10* (2000Ap03).

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γ(^{56}Fe) (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	Comments
1841.1 *3*	100 *7*	9344.7	(11^+)	7503.6	$9^{(+)}$		
1866.8 *3*	72 *4*	5256.2	8^+	3389.6	6^+	E2	B(E2)(W.u.)=4.6 *+10−18* A_2=0.27 *4*, A_4=−0.10 *4* (1977Be27). R=0.84 *7* (2000Ap03).
1920.9 *15*	100 *23*	7177.2?	(10^+)	5256.2	8^+		
2240 *3*	1 *1*	5629.1	8^+	3389.6	6^+		
2247.1 *7*	14 *2*	7503.6	$9^{(+)}$	5256.2	8^+		
2319.3 *3*	86 *4*	7503.6	$9^{(+)}$	5184.3	$8^{(+)}$		R=0.55 *15* (2000Ap03).
2564.4 *4*	14 *2*	7820.6	$10^{(+)}$	5256.2	8^+		
2785.7 *4*	86 *6*	8414.8	(10^+)	5629.1	8^+		
3158.2 *14*	14 *2*	8414.8	(10^+)	5256.2	8^+		

† From 1974Po15, except as noted.
‡ % photon branching from each level.
# % photon branching from each level, from 1981Fr08.
@ From 1977Be27.
& From 1981Fr08.
[a] From γ(θ) (1977Be27,1974Po15). The Q transitions are stretched quadrupole and are assumed by the evaluator to be E2.
[b] Placement of transition in the level scheme is uncertain.

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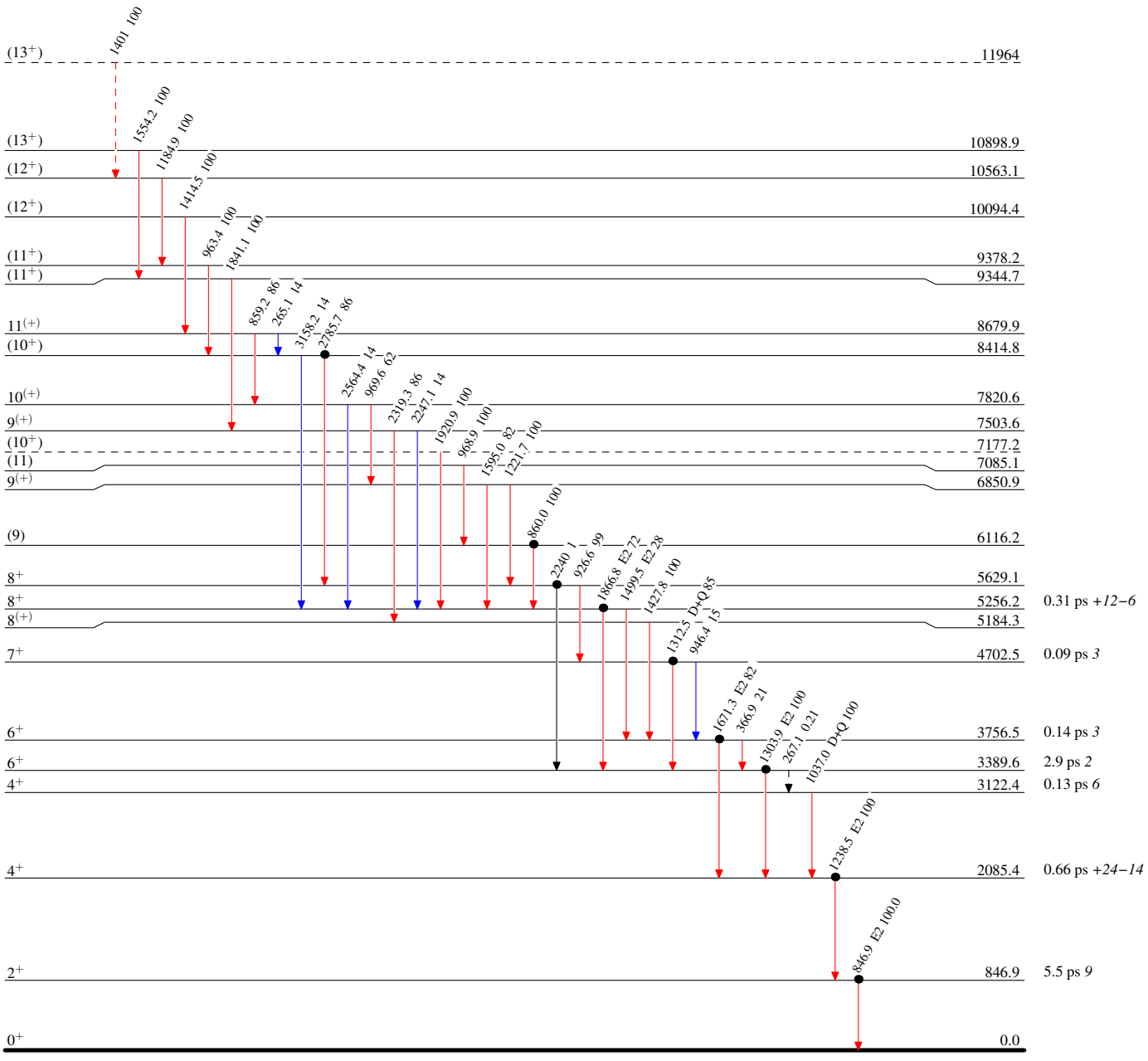
Level Scheme

Intensities: Relative I_γ

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence



$^{56}_{26}Fe_{30}$

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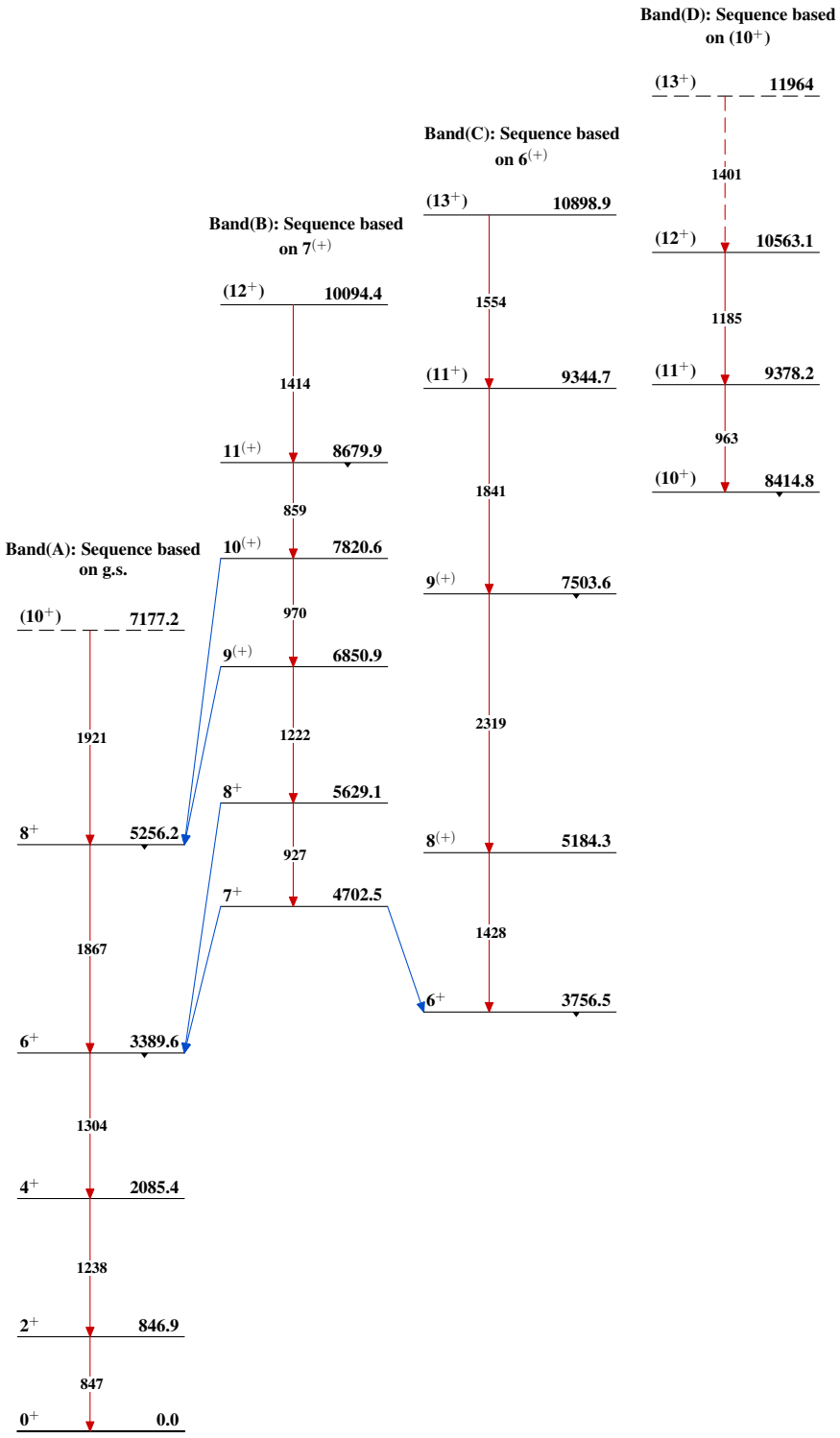

$^{56}_{26}Fe_{30}$