Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 109,787 (2008)	30-Apr-2007

Q(β^-)=−3451.4 *4*; S(n)=9298.09 *19*; S(p)=9213.1 *11*; Q(α)=−8454.5 *9* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=−3451.8 *4*; S(n)=9298.23 *20*; S(p)=9213.0 *11*; Q(α)=−8455.5 *9* 2003Au03
Additional information 1.
Other reaction: ^{54}Fe(α,2pnγ), see 1985Zh06.

^{55}Fe Levels

Cross Reference (XREF) Flags

A	^{55}Co ε decay	I	^{55}Mn(p,n)	Q	^{58}Ni(n,$\alpha\gamma$)
B	(HI,xnγ)	J	^{55}Mn(p,nγ)	R	^{59}Co(μ^-,4nγ)
C	^{52}Cr(α,nγ)	K	^{56}Fe(^{3}He,α)	S	^{60}Ni(p,Xγ)
D	^{54}Fe(n,γ),(pol n,γ) E=thermal	L	^{57}Fe(p,t)	T	Ni(π,Xγ)
E	^{54}Fe(n,γ) E=res	M	^{56}Fe(n,2nγ)	U	Ni(K$^-$,xnypγ)
F	^{54}Fe(d,p),(pol d,p)	N	^{56}Fe(p,d),(pol p,d)	V	^{54}Fe(^{13}C,^{12}C),(^{18}O,^{17}O)
G	^{54}Fe(d,pγ)	O	^{56}Fe(d,t),(pol d,t)	W	^{55}Mn(p,n) IAR
H	^{54}Fe(α,^{3}He)	P	^{54}Fe(t,d)	X	^{54}Fe(^{7}Li,^{6}Li)

E(level)[†]	J$^\pi$	T$_{1/2}$[#]	XREF	Comments
0.0	3/2$^-$	2.744 y *9*	ABCDEFGHIJKLMNOPQRSTUV X	%ε=100 J$^\pi$: L(d,p)=1 and L(p,t)=2 from 1/2$^-$. T$_{1/2}$: Limitation of relative statistical weight (LWM): 2.752 y *4* (2006Va13), 2.748 y *6* (2000Sc20), 2.724 y *8* (1998Ka30), 2.729 y *16* (1994Mo36), 2.763 y *5* (1982HoZZ), 2.677 y *19* (1982La25), 2.739 y *4* (1980Ho17), and 2.685 y *10* (1968An01). Others: 2.84 y *3* (1950Br76), 2.60 y *2* (1956Sc87), and 2.41 y *12* (1965EvZX).
411.42 *21*	1/2$^-$	6 ps *+6−3*	A CDEFGHIJKLMNOPQRSTUV X	XREF: I(437). J$^\pi$: L(p,t)=0 from 1/2$^-$. T$_{1/2}$: from (d,pγ), DSAM.
931.29 *13*	5/2$^-$	8 ps *3*	ABCDEFGHIJKLMNOPQ STU X	μ=+2.7 *12* (1978LeZA) XREF: I(936)P(941). J$^\pi$: L(d,p)=3, E2 γ to 1/2$^-$. T$_{1/2}$: from (d,pγ), DSAM. Others: <8.3 ps (HI,xnγ), 9.3 ps *28* (α,nγ), RDM.
1316.54 *13*	7/2$^-$	2.1[&] ps *+14−7*	ABCD FGHIJKLMNO Q ST	μ=+2 *2* (1978LeZA) XREF: G(1320)H(1320)L(1310)N(1320). J$^\pi$: L(d,p)=3 and L(p,t)=4 from 1/2$^-$. T$_{1/2}$: RDM. Others: 0.63 ps *+63−21* (p,nγ), DSAM; 1.4 ps *+14−4* (α,nγ), DSAM; 10 ps *2* (d,pγ), DSAM.
1408.45 *14*	7/2$^-$	37.9[&] ps *17*	ABC FGHIJKLMNO T	μ=−2.2 *5* (1978LeZA) XREF: H(1430)J(1414)K(1411). J$^\pi$: L(d,p)=3 and L(p,t)=4 from 1/2$^-$. T$_{1/2}$: RDM. Others: 48 ps *5* (α,nγ), RDM; 28 ps *+28−14* (d,pγ), DSAM; 34 ps *7* (p,nγ), direct-timing method.
1918.3 *5*	1/2$^-$	12 fs *4*	DEFG J L P	XREF: L(1920). J$^\pi$: L(p,t)=0 from 1/2$^-$. T$_{1/2}$: other: 17 fs *6* (p,nγ).

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Adopted Levels, Gammas (continued)

^{55}Fe Levels (continued)

E(level)[†]	J$^\pi$	T$_{1/2}$[#]	XREF	Comments
2015	1/2$^-$,3/2$^-$		H O	XREF: O(2000). E(level): from (d,t). J$^\pi$: L(d,t)=1.
2051.7 *4*	3/2$^-$	7.6 fs *21*	CDEFG J L P	XREF: C(2047)G(2050)L(2050). J$^\pi$: L(d,p)=1 and L(p,t)=2 from 1/2$^-$. T$_{1/2}$: other: 21 fs *6* (p,nγ).
2144.0 *3*	5/2$^-$	38[@] fs *+11−8*	A F HIJK N X	XREF: H(2140)K(2100). J$^\pi$: L(d,p)=3 and analyzing power, see 1980Ta05.
2211.87 *24*	9/2$^-$	0.76[&] ps *21*	ABC F J LM	XREF: F(2218). J$^\pi$: L(p,t)=4 from 1/2$^-$ and 803$\gamma(\theta)$ in (d,pγ). T$_{1/2}$: other: 0.33 ps *+16−21* (p,nγ), DSAM.
2255.5? *10*			B	
2301.06 *21*	(9/2)	0.6[@] ps *+5−2*	ABC F H J M	XREF: F(2307). J$^\pi$: (M1) γ to 7/2$^-$, L(α,^{3}He)=4.
2470.2 *6*	3/2$^-$	15 fs *3*	DEFGH J L OP X	XREF: H(2480). J$^\pi$: L(d,p)=1 and L(p,t)=2 from 1/2$^-$. T$_{1/2}$: other: 13 fs *7* (p,nγ).
2490 *10*	5/2$^-$,7/2$^-$		G O x	XREF: O(2500)x(2470). J$^\pi$: L(d,t)=3.
2539.11 *21*	11/2$^-$	9.3[&] ps *13*	BC F J M	XREF: F(2546). J$^\pi$: J=9/2,11/2 from 1223$\gamma(\theta)$ in (p,nγ); π=− from E2 γ to 7/2$^-$. T$_{1/2}$: RDM. Other: >0.40 ps (p,nγ), DSAM.
2577.7 *4*	5/2$^-$	46[@] fs *6*	A F J	XREF: F(2585). J$^\pi$: 2578$\gamma(\theta)$ isotropic in (p,nγ) restricts J≤5/2; L(d,p)=3 consistency with $\gamma(\theta)$.
2600	(7/2$^+$,9/2$^+$)		H K	J$^\pi$: L(^{3}He,α)=(4).
2813.8 *3*	13/2$^-$	10.0[&] ps *21*	BC F H M	XREF: F(2818)H(2820)M(2817). J$^\pi$: π from M1(+E2) transition to 2539(11/2$^-$); J from 265$\gamma(\theta)$ in (α,nγ). T$_{1/2}$: RDM.
2872.3 *2*	5/2$^-$,7/2$^-$	19[@] fs *6*	A D F JK N	XREF: F(2880)K(2880)N(2900). J$^\pi$: L(^{3}He,α)=3.
2938.9 *4*	7/2$^-$	29[@] fs *+9−8*	A F HIJK N	XREF: H(2930)I(2960)K(2946). J$^\pi$: from analyzing power in (p,d); L(p,d)=3.
2982.1 *4*	11/2$^{(-)}$		C	J$^\pi$: based on $\sigma(\theta)$ analyses and linear polarization in (α,nγ).
2984.4 *4*	9/2$^-$		B F J	XREF: F(2987). J$^\pi$: M1+E2 γ to 7/2$^-$.
3028.5 *7*	3/2$^-$	15 fs *8*	DEF J	XREF: F(3035). J$^\pi$: from analyzing power for L(d,p)=1, see 1972Ko41. T$_{1/2}$: other: 10 fs *6* (p,nγ).
3072.0 *4*	11/2$^-$	>0.7[&] ps	BC L	J$^\pi$: J from $\gamma(\theta)$ of 259γ and 533γ in (α,nγ); π from M1+E2 γ to 13/2$^-$.
3076 *3*	11/2,(9/2)	0.44[@] ps *+21−11*	F H J	XREF: H(3080). J$^\pi$: 1668$\gamma(\theta)$ in (p,nγ).
3108.7 *3*	5/2$^-$,7/2$^-$		A F	XREF: F(3119). J$^\pi$: log *ft*=5.67 from 7/2$^-$ ^{55}Co, γ to 3/2$^-$ g.s. rules out J^π=9/2$^-$.
3285		8 fs *7*	D	
3311 *10*	5/2$^-$,7/2$^-$		F HI K	XREF: H(3330)I(3340)K(3327). J$^\pi$: L(^{3}He,α)=3.
3362 *10*			F I	XREF: I(3340).

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Adopted Levels, Gammas (continued)

^{55}Fe Levels (continued)

E(level)†	J^π	$T_{1/2}$#	XREF	Comments
3419.0 *4*	15/2⁻	0.07& ps *2*	BC F	XREF: F(3431). J^π: J from 605$\gamma(\theta)$ in (α,nγ) and Γ of deexciting γ's; π from M1+E2 γ to 13/2⁻.
3456.9 *5*	13/2⁻	>0.6& ps	BC F	XREF: F(3469). J^π: π from M1+E2 γ to 11/2⁻; J from 918$\gamma(\theta)$ in (α,nγ).
3552.3 *8*	3/2⁻	<3.5 fs	DEFGHI K	XREF: F(3559)G(3556)K(3579). J^π: from $\sigma(\theta)$ and analyzing power for L(d,p)=1, see 1980Za05.
3599 *10*	1/2⁻		EF KL	XREF: K(3610). J^π: L(p,t)=0 from 1/2⁻.
3660.8 *11*			B F	
3709 *10*	1/2⁻,3/2⁻		F K	XREF: K(3713). J^π: L(^{3}He,α)=1.
3722 *10*			F I	XREF: I(3760).
3790.3 *8*	1/2⁻	<11 fs	DEFG I L	XREF: F(3800)I(3760)L(3770). J^π: L(p,t)=0 from 1/2⁻.
3800.6 *10*	3/2⁻		FG	J^π: J from p$\gamma(\theta)$ in (d,pγ); π from L(d,p)=1.
3814 *10*	7/2⁺,9/2⁺		FGH X	XREF: H(3800). J^π: L(α,^{3}He)=4.
3815 *15*	5/2⁻,7/2⁻		K	J^π: L(^{3}He,α)=3.
3860 *10*	7/2⁺,9/2⁺		F I K	XREF: I(3870)K(3880). J^π: L(d,p)=4.
3901.3 *8*	(13/2⁻)		BC	J^π: M1+E2 γ to 11/2$^{(-)}$.
3906.7 *8*	3/2⁻	<3.5 fs	DEF KL	XREF: F(3916)K(3920)L(3890). J^π: L(d,p)=1 and L(p,t)=2 from 1/2⁻.
3960 *10*			F K	XREF: K(4000).
4028 *10*			F I	XREF: I(4040).
4057 *10*	5/2⁻,7/2⁻		F	J^π: L(d,p)=3.
4110 *10*			F	
4123 *10*			F K	XREF: K(4140).
4273 *10*	1/2⁺		F K	XREF: K(4270). J^π: L(^{3}He,α)=0.
4372 *10*			F	
4387 *10*			F	
4450 *20*	1/2⁺		E K N	XREF: K(4458). J^π: L((p,d)=0.
4463 *10*	5/2⁺		F X	XREF: X(4400). J^π: from analyzing power for L((d,p)=2, see 1972Ko41.
4495.1 *7*	1/2⁻	3.5 fs *21*	DEF	XREF: F(4507). E(level): from (n,γ) E=th. J^π: from polarization function in (n,γ) E=th and L(d,p)=1.
4538 *10*	(1/2⁻,3/2⁻)		EF	J^π: L(d,p)=(1).
4636 *10*			F K	XREF: K(4650).
4658 *10*	5/2⁻,7/2⁻		F K	XREF: K(4663). J^π: L(^{3}He,α)=3.
4673 *10*			F	
4708.3 *7*	5/2⁺	4.2 fs *28*	DEF	J^π: from analyzing power for L(d,p)=2, see 1972Ko41.
4751 *10*			F	
4790 *10*			F K	XREF: K(4809).
4824 *10*	3/2⁺		F N	XREF: N(4830). J^π: L(p,d)=2, analyzing power in (p,d).
4849 *10*			F	
4866.6 *21*			D	
4877 *10*	3/2⁺,5/2⁺		F K	XREF: K(4881).

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Adopted Levels, Gammas (continued)

^{55}Fe Levels (continued)

E(level)[†]	J^π	$T_{1/2}$[#]	XREF	Comments
				J^π: L(^{3}He,α)=2.
4948 *10*			F	
4990 *10*			F	
4999 *10*			F	
5041 *10*			F	
5078 *10*			F	
5099.6 *6*	(19/2$^-$)	22.4[&] ps *8*	B	J^π: in (HI,xnγ), 1974Po14 compared the energies of the yrast levels they observed with those of the higher spin states calculated by 1971Ho33. The experimental results indicated J(5099 level)>17/2; the 1681γ would then correspond to a weak E2 transition to 3419 level (J^π: 15/2$^-$).
5118 *3*	1/2$^-$,3/2$^-$	6 fs *4*	DEF	XREF: F(5124). J^π: L(d,p)=1.
5185 *10*			F	
5208 *10*	5/2$^-$,7/2$^-$		F K	XREF: K(5215). J^π: L(^{3}He,α)=3.
5237 *10*			F	
5286 *10*	5/2$^-$,7/2$^-$		F K	XREF: K(5277). J^π: L(^{3}He,α)=3.
5306 *10*			F	
5326 *10*			F	
5363 *10*			F	
5.37×10^3			F	
5394 *10*	3/2$^+$,5/2$^+$		F	J^π: L(d,p)=2.
5396 *15*	5/2$^-$,7/2$^-$		K	J^π: L(^{3}He,α)=3.
5435 *10*			F	
5445 *10*	5/2$^-$,7/2$^-$		F K	J^π: L(^{3}He,α)=3.
5476.8 *23*		>0.7[&] ps	B F	XREF: F(5480).
5497 *10*			F	
5542 *10*			F	
5556 *10*			F	
5564 *10*	3/2$^+$,5/2$^+$		F	J^π: L(d,p)=3.
5599 *10*			F	
5634 *10*			F	
5668 *15*	5/2$^-$,7/2$^-$		K	J^π: L(^{3}He,α)=3.
5687 *10*	1/2$^+$		F	J^π: L(d,p)=0.
5745 *10*			F	
5775 *10*	1/2$^-$		EF	J^π: from analyzing power for L(d,p)=1, see 1972Ko41.
5817 *10*			F	
5839 *10*			F	
5872 *10*			F	
5900 *10*	3/2$^+$,5/2$^+$		F	J^π: L(d,p)=2.
5933 *10*			F	
5947 *10*			B F	
5955 *10*	(1/2$^+$)		F	J^π: L(d,p)=(0).
5989 *10*			F	
6053 *15*	5/2$^-$,7/2$^-$		K	J^π: L(^{3}He,α)=3.
6059 *10*	3/2$^+$,5/2$^+$		F	J^π: L(d,p)=2.
6090 *10*			F	
6159 *15*	5/2$^-$,7/2$^-$		K	J^π: L(^{3}He,α)=3.
6167 *10*	3/2$^+$,5/2$^+$		F	J^π: L(d,p)=2.
6229 *10*			F	
6237 *10*			F	
6282 *10*	1/2$^+$		F	J^π: L(d,p)=0.
6319 *10*	5/2$^-$,7/2$^-$		F K	XREF: K(6323).

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Adopted Levels, Gammas (continued)

^{55}Fe Levels (continued)

E(level)[†]	J^{π}	$T_{1/2}$[#]	XREF	Comments
				J^{π}: L(^{3}He,α)=3.
6348 *10*			F	
6374 *10*			F K	
6387 *10*			F	
6410 *10*			F	
6425 *10*			F	
6456 *10*			F	
6495 *10*	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.
6528.6 *12*	$(21/2^-)$	<0.7[&] ps	B F	XREF: F(6524). J^{π}: in (HI,xnγ), 1974Po14 compared the energies of the yrast levels they observed with those of higher spin states calculated by 1971Ho33. Combining $T_{1/2}$ and $\sigma(\theta)$ information, 1974Po14 made this tentative J assignment. M1+E2 γ to $(19/2^-)$.
6579 *10*			F	
6596 *10*			F	
6610 *10*			F	
6628 *10*	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.
6654 *10*			F	
6670 *10*			F	
6745 *10*			F	
6776 *10*	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.
6826 *10*			F	
6846 *10*			F	
6857 *10*			F	
6874 *10*			F	
6916 *10*	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.
6962 *10*	$1/2^+$		F	J^{π}: L(d,p)=0.
6980 *10*			F	
7008 *10*			F	
7030 *10*			F	
7054 *10*			F	
7070 *10*			F	
7092 *10*			F	
7105 *10*			F	
7126 *10*			F	
7149 *10*			F	
7178 *10*			F	
7215 *10*			F	
7235 *10*			F	
7252 *10*	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.
7270 *10*			F	
7310 *10*			F	
7360 *10*			F	
7369 *10*	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.
7382 *10*			F K	
7419 *10*	$+$		F	J^{π}: L(d,p)=2+(0).
7.45×10^3?			F	
7480	$5/2^-,7/2^-$		F K	XREF: F(7470). J^{π}: L(^{3}He,α)=3.
7510 *30*	$(^-)$		KL	XREF: K(7520). J^{π}: L(p,t)=(2+4) from $1/2^-$.
7606.2 *13*	(23/2)		B	J^{π}: from 1078$\gamma(\theta)$ and cascade with 1429γ in (HI,xnγ).
7610	$(5/2^-)$		L N	J^{π}: L(p,t)=(2+4) from $1/2^-$, L(p,d)=3. Probable isobaric analog of ^{55}Mn g.s. $(5/2^-)$ in (p,t).
7614	$3/2^+,5/2^+$		F	J^{π}: L(d,p)=2.

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Adopted Levels, Gammas (continued)

^{55}Fe Levels (continued)

E(level)[†]	J$^{\pi}$	XREF	Comments
7625 *15*	5/2$^-$,7/2$^-$	K	J$^{\pi}$: L(^{3}He,α)=3.
7730 *30*	(7/2)$^-$	KL	E(level): from (p,t). J$^{\pi}$: L(p,t)=2+4 from 1/2$^-$; L(^{3}He,α)=3, probable isobaric analog of 7/2$^-$ 126 in ^{55}Mn.
7780 *50*	7/2$^-$	N	J$^{\pi}$: L(p,d)=3, analyzing power in (p,d). Probable analog of ^{55}Mn 126 (7/2$^-$).
7808	+	F	J$^{\pi}$: L(d,p)=2+(0).
7853	3/2$^+$,5/2$^+$	F	J$^{\pi}$: L(d,p)=2.
7918.9 *13*	23/2	B	J$^{\pi}$: E2 γ from 25/2 in (HI,xnγ).
7938		F	
8028	3/2$^+$,5/2$^+$	F	J$^{\pi}$: L(d,p)=2.
8130	(3/2$^+$,5/2$^+$)	F	J$^{\pi}$: L(d,p)=(2).
8180	(3/2$^+$,5/2$^+$)	F	J$^{\pi}$: L(d,p)=(2).
8264	3/2$^+$,5/2$^+$	F	J$^{\pi}$: L(d,p)=2.
8420 *15*		F K	XREF: F(8400).
8527 *15*	3/2$^+$,5/2$^+$	F K	XREF: F(8514). J$^{\pi}$: L(d,p)=2.
8560	(1/2$^+$)	F	J$^{\pi}$: L(d,p)=(0).
8796	3/2$^+$,5/2$^+$	F	J$^{\pi}$: L(d,p)=2.
8843	1/2$^+$	F	J$^{\pi}$: L(d,p)=0.
8892 *15*	3/2$^+$,5/2$^+$	K	J$^{\pi}$: L(^{3}He,α)=2.
8910	1/2$^+$	F	J$^{\pi}$: L(d,p)=0.
8987.7 *18*	25/2[‡]	B	
9007	3/2$^+$,5/2$^+$	F	J$^{\pi}$: L(d,p)=2.
9115 *15*	1/2$^-$,3/2$^-$	K	J$^{\pi}$: L(^{3}He,α)=1.
9305.3 *16*	25/2[‡]	B	
9908	27/2[‡]	B	
10242.7 *21*	27/2[‡]	B	
10727.7 *12*		W	E(level): from (p,n) IAR.

† Levels connected by gammas are from least-squares fit; others from (d,p),(pol d,p), except as noted.
‡ Based on $\gamma(\theta)$ and $\gamma\gamma$-angular correlation from oriented nuclei method (1989Sa47).
# From DSAM in (n,γ) E=th, except as noted.
@ From DSAM in (p,nγ).
& From (HI,xnγ).

$\gamma(^{55}Fe)$

Unplaced γ's are from (n,γ) E=th.
See ^{55}Co ε decay for experimental K, L+M conversion coefficients.

E_i(level)	J_i^π	E_γ[†]	I_γ[d]	E_f	J_f^π	Mult.[f]	δ[g]	α[i]	Comments
411.42	1/2⁻	411.9 *3*	100 *6*	0.0	3/2⁻	M1(+E2)	−0.09 *9*		α(K)=0.00096 *4* α(K)exp=0.0013 *4*(1966Fi06) B(M1)(W.u.)=(0.05 *5*); B(E2)(W.u.)=(5 *+12−5*) E_γ: weighted average of values from ^{55}Co ε decay, (p,nγ), and (n,2nγ). Mult.: from ΔJ^π, recommended upper limits, and α(K)exp. δ: from α(K)exp.
931.29	5/2⁻	520.3[@] *4*	2 *1*	411.42	1/2⁻	E2			α(K)=0.00109; α(L)=0.00011 α(K)exp=0.00135 *50*(1966Fi06) B(E2)(W.u.)=3.0 *19*
		931.3 *2*	100 *1*	0.0	3/2⁻	M1+E2	+0.34 *4*		α(K)exp=0.000164 *18* (1966Fi06) B(M1)(W.u.)=0.0030 *12*; B(E2)(W.u.)=0.8 *4* E_γ: weighted average of values from ^{55}Co decay, (α,nγ), (p,nγ), (n,2nγ), and (HI,xnγ). δ: weighted average of +0.32 *2* (α,nγ) and +0.40 *3* (^{55}Co decay). Other: ±0.4 *2* (HI,xnγ).
1316.54	7/2⁻	385.3[a] *2*	7.6[‡] *5*	931.29	5/2⁻	M1(+E2)	−0.07 *3*		α(K)=0.00111; α(L)=0.00011 α(K)exp=0.00085 *7* (1966Fi06) B(M1)(W.u.)=(0.013 *9*); B(E2)(W.u.)=(0.9 *+10−9*) δ: other: +0.01 *+1−2* (HI,xnγ).
		1316.4[a] *2*	100[‡] *14*	0.0	3/2⁻	E2			α(K)exp=0.000090 *14* (1966Fi06) B(E2)(W.u.)=5 *4*
1408.45	7/2⁻	91.9[‡] *2*	5.7[‡] *4*	1316.54	7/2⁻	[M1,E2]		0.37 *33*	α(K)exp>0.017 (1966Fi06)
		477.2[‡] *2*	100[‡] *7*	931.29	5/2⁻	M1(+E2)	−0.07 *4*		α(K)exp=0.00084 *9* (1966Fi06) B(M1)(W.u.)=(0.0028 *3*); B(E2)(W.u.)=(0.12 *+15−12*) δ: other: +0.13 *4* (HI,xnγ).
		1408.4[a] *2*	84[‡] *4*	0.0	3/2⁻	E2			α(K)exp=0.000073 *5* (1966Fi06) B(E2)(W.u.)=0.095 *6* Mult.: based on the study of 1408γ distribution following decay from polarized and aligned ^{55}Co.
1918.3	1/2⁻	1507.3[#] *7*	47 *4*	411.42	1/2⁻				
		1917.9[#] *7*	100 *4*	0.0	3/2⁻				
2051.7	3/2⁻	1640.4[c] *7*	100 *3*	411.42	1/2⁻				
		2051.2[c] *6*	30 *3*	0.0	3/2⁻				
2144.0	5/2⁻	827.2[@] *4*	84 *12*	1316.54	7/2⁻				
		1213.0[@] *4*	100 *9*	931.29	5/2⁻				

$^{55}_{26}Fe_{29}$-7

γ(^{55}Fe) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[d]	E_f	J^π_f	Mult.[f]	δ[g]	Comments
2144.0	5/2⁻	1732.9[c] *6*	7 *2*	411.42	1/2⁻			
		2143.5[@] *6*	42 *5*	0.0	3/2⁻			
2211.87	9/2⁻	803.4[a] *2*	100 *1*	1408.45	7/2⁻	M1+E2	−0.21 *2*	α(K)exp=0.00022 *4* (1966Fi06) B(M1)(W.u.)=0.052 *15*; B(E2)(W.u.)=7.3 *25* δ: other: −0.21 +*28*−*20* or −2.15 +*75*−*85* (p,nγ), −0.13 *8* (HI,xnγ).
		895[c] *3*	2 *1*	1316.54	7/2⁻			
		1280[c] *3*	<2	931.29	5/2⁻			
2255.5?		847[jk] *1*	100	1408.45	7/2⁻			Eγ: in (HI,xnγ), 1981Fr08 indicate that the 847γ, which is known as the transition to g.s. in ^{56}Fe, could not be attributed to their coincidence spectra.
2301.06	(9/2)	892.6[c] *12*	<2.2	1408.45	7/2⁻			
		984.6[‡] *3*	9 *2*	1316.54	7/2⁻	(M1)		B(M1)(W.u.)=0.003 *3* Mult.: from (HI,xnγ); based on ΔJ=1 and assumed δ=0.
		1369.7[a] *2*	100 *2*	931.29	5/2⁻	(E2)		α(K)exp=0.000089 *14* (1966Fi06) B(E2)(W.u.)=14 *12*
2470.2	3/2⁻	2052 *3*	51[e] *3*	411.42	1/2⁻			
		2469.9[#] *8*	100[e] *48*	0.0	3/2⁻			
2490	5/2⁻,7/2⁻	2490 *10*		0.0	3/2⁻			Eγ: from (d,pγ).
2539.11	11/2⁻	238.1[&] *2*	5.3 *4*	2301.06	(9/2)	M1(+E2)	0.00 *2*	α(K)=0.00347; α(L)=0.00034 B(M1)(W.u.)=(0.0088 *15*) δ: other: −0.02 *2* (HI,xnγ). Iγ: from (HI,xnγ).
		328[b]	1.0 *2*	2211.87	9/2⁻	M1+E2	−0.20[h] *2*	B(M1)(W.u.)=0.00065 *16*; B(E2)(W.u.)=0.50 *16*
		1222.5[&] *2*	100 *1*	1316.54	7/2⁻	E2		B(E2)(W.u.)=1.69 *24* Iγ: from (HI,xnγ).
2577.7	5/2⁻	1261.1[c] *7*	4 *2*	1316.54	7/2⁻			
		1646.3[c] *6*	7 *2*	931.29	5/2⁻			
		2166.0[c] *6*	8 *2*	411.42	1/2⁻			
		2578.0[@] *6*	100 *2*	0.0	3/2⁻			
2813.8	13/2⁻	274.8[&] *12*	100	2539.11	11/2⁻	M1(+E2)	−0.02 *2*	α(K)=0.00246; α(L)=0.00024 B(M1)(W.u.)=(0.106 *23*); B(E2)(W.u.)=(1.2 +*24*−*2*) δ: other: +0.05 +*3*−*2* (HI,xnγ).
2872.3	5/2⁻,7/2⁻	1556.0[‡] *4*	36[‡] *8*	1316.54	7/2⁻			
		1940.6[‡] *4*	12[‡] *5*	931.29	5/2⁻			
		2872.4[‡] *6*	100[‡] *5*	0.0	3/2⁻			
2938.9	7/2⁻	1622.3[‡] *4*	82 *7*	1316.54	7/2⁻			
		2938.9[‡] *5*	100 *9*	0.0	3/2⁻			
2982.1	11/2$^{(-)}$	770.9 *3*	100	2211.87	9/2⁻	M1+E2	−0.16 +*3*−*2*	Eγ,Mult.: from (α,nγ).
2984.4	9/2⁻	772.2[b] *3*		2211.87	9/2⁻			

$^{55}_{26}Fe_{29}$-8

$\gamma(^{55}Fe)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[d]	E_f	J^π_f	Mult.[f]	δ[g]	Comments
2984.4	9/2⁻	1576[c] 3		1408.45	7/2⁻	M1+E2		I_γ: Iγ=100 in (p,nγ). δ: −0.85 +230−70 in (p,nγ) (1971Ro01).
		2053[c] 3		931.29	5/2⁻			I_γ: Iγ<10% in (p,nγ).
		2984[c] 3		0.0	3/2⁻			
3028.5	3/2⁻	1618.9[c] 23	<1.6	1408.45	7/2⁻			
		2616.7[#] 15	55 11	411.42	1/2⁻			
		3027.7[#] 15	100 9	0.0	3/2⁻			
3072.0	11/2⁻	259.2[b] 5	20	2813.8	13/2⁻	M1(+E2)	−0.03 +6−3	α(K)=0.00286 4; α(L)=0.000278 4 B(M1)(W.u.)<0.31; B(E2)(W.u.)<43 ΔE: Estimated by evaluator. I_γ: from (α,nγ). δ: other: +0.79 +40−1 (HI,xnγ).
		532.3 2	100	2539.11	11/2⁻	M1+E2	+0.25[h] +5−6	B(M1)(W.u.)<0.17; B(E2)(W.u.)<1.0×10² E_γ,I_γ: from (α,nγ).
3076	11/2,(9/2)	1668[c] 3	100	1408.45	7/2⁻	D+Q		δ: 0.00 19 or δ<−3.7 if J(3076)=11/2; +5.65>δ>+0.36 if J(3076)=9/2 (p,nγ).
3108.7	5/2⁻,7/2⁻	1792.1[‡] 3	27.8[‡] 4	1316.54	7/2⁻			
		2177.6[‡] 6	100[‡] 13	931.29	5/2⁻			
		3108.3[‡] 6	1.8[‡] 8	0.0	3/2⁻			
3285		2873		411.42	1/2⁻			
3419.0	15/2⁻	605.2[&] 2	100	2813.8	13/2⁻	M1+E2	+0.07 1	B(M1)(W.u.)=1.4 4; B(E2)(W.u.)=39 16 δ: other: −0.01 +1−3 (HI,xnγ).
3456.9	13/2⁻	917.8[j&] 4	100	2539.11	11/2⁻	M1(+E2)	0.00 4	B(M1)(W.u.)<0.048 I_γ: from (HI,xnγ).
3552.3	3/2⁻	3552 3	100	0.0	3/2⁻			
3660.8		847[jk] 1	100	2813.8	13/2⁻			E_γ: in (HI,xnγ), 1981Fr08 indicate that 847γ, which is known as the transition to g.s. in ^{56}Fe, could not be attributed to their coincidence spectra. Same as 847γ above.
3790.3	1/2⁻	1738 20		2051.7	3/2⁻			E_γ: from (d,pγ).
		1872 2	45[e] 23	1918.3	1/2⁻			
		3380 20	82[e] 39	411.42	1/2⁻			
		3792 4	100[e] 50	0.0	3/2⁻			
3800.6	3/2⁻	2484 1	100	1316.54	7/2⁻			E_γ: from (d,pγ).
3901.3	(13/2⁻)	917.8[j&] 7	100	2982.1	11/2⁽⁻⁾	M1+E2	−2.1 +5−10	I_γ: from (HI,xnγ).
3906.7	3/2⁻	3906 5	100	0.0	3/2⁻			
4495.1	1/2⁻	4495 5	100	0.0	3/2⁻			
4708.3	5/2⁺	2791 5	39[e] 22	1918.3	1/2⁻			
		4707 3	<100[e]	0.0	3/2⁻			
4866.6		4455 2	100	411.42	1/2⁻			
5099.6	(19/2⁻)	1680.6[b] 4	100	3419.0	15/2⁻	(E2)		B(E2)(W.u.)=0.152 6

$^{55}_{26}Fe_{29}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{55}Fe)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[d]	E_f	J^π_f	Mult.[f]	δ[g]	Comments
5118	$1/2^-,3/2^-$	4707 *3*	100[e]	411.42	$1/2^-$			
5476.8		1816.0[b] *20*	100	3660.8				
6528.6	$(21/2^-)$	1429.0[b] *10*	100	5099.6	$(19/2^-)$	M1+E2	−0.13[h] *+6−7*	
7606.2	(23/2)	1077.6[b] *5*	100	6528.6	$(21/2^-)$	M1+E2	−0.03[h] *2*	E_γ: ΔE is estimated by evaluator.
7918.9	23/2	1390.3[b] *5*	100	6528.6	$(21/2^-)$			E_γ: ΔE is estimated by evaluator.
8987.7	25/2	1382[b]	100	7606.2	(23/2)			
9305.3	25/2	1388[b]		7918.9	23/2			
		1700[b]		7606.2	(23/2)	E2		
10242.7	27/2	1255[b]	100	8987.7	25/2			

[†] From (n,γ) E=th, except as noted.
[‡] From ^{55}Co decay.
[#] Weighted average of values from (n,γ) E=th and (p,nγ).
[@] Weighted average of values from ^{55}Co decay and (p,nγ).
[&] Weighted average of values from (HI,xnγ) and (α,nγ).
[a] Weighted average of values from ^{55}Co decay, (α,nγ), and (HI,xnγ).
[b] From (HI,xnγ).
[c] From (p,nγ).
[d] Photon branching ratios from each state; from (p,nγ), except as noted.
[e] From (n,γ) E=th.
[f] Based on $\gamma(\theta)$ or experimental conversion coefficients from ^{55}Co ε decay, except as noted.
[g] From $\gamma(\theta)$ in (α,nγ), except as noted. Phase convention of 1970Kr03.
[h] From (HI,xnγ).
[i] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[j] Multiply placed.
[k] Placement of transition in the level scheme is uncertain.

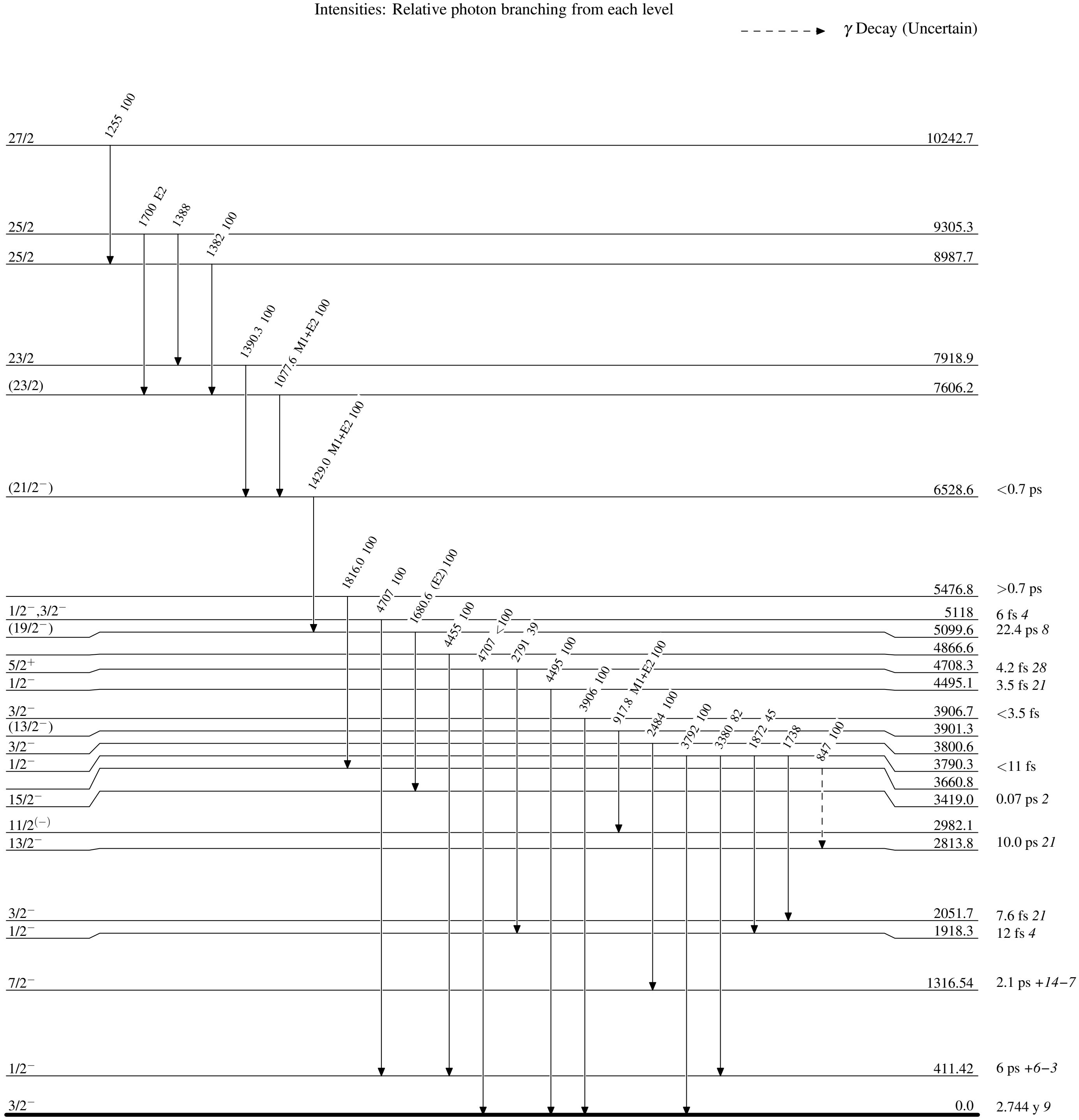
$^{55}_{26}Fe_{29}$-10

Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level



$^{55}_{26}Fe_{29}$

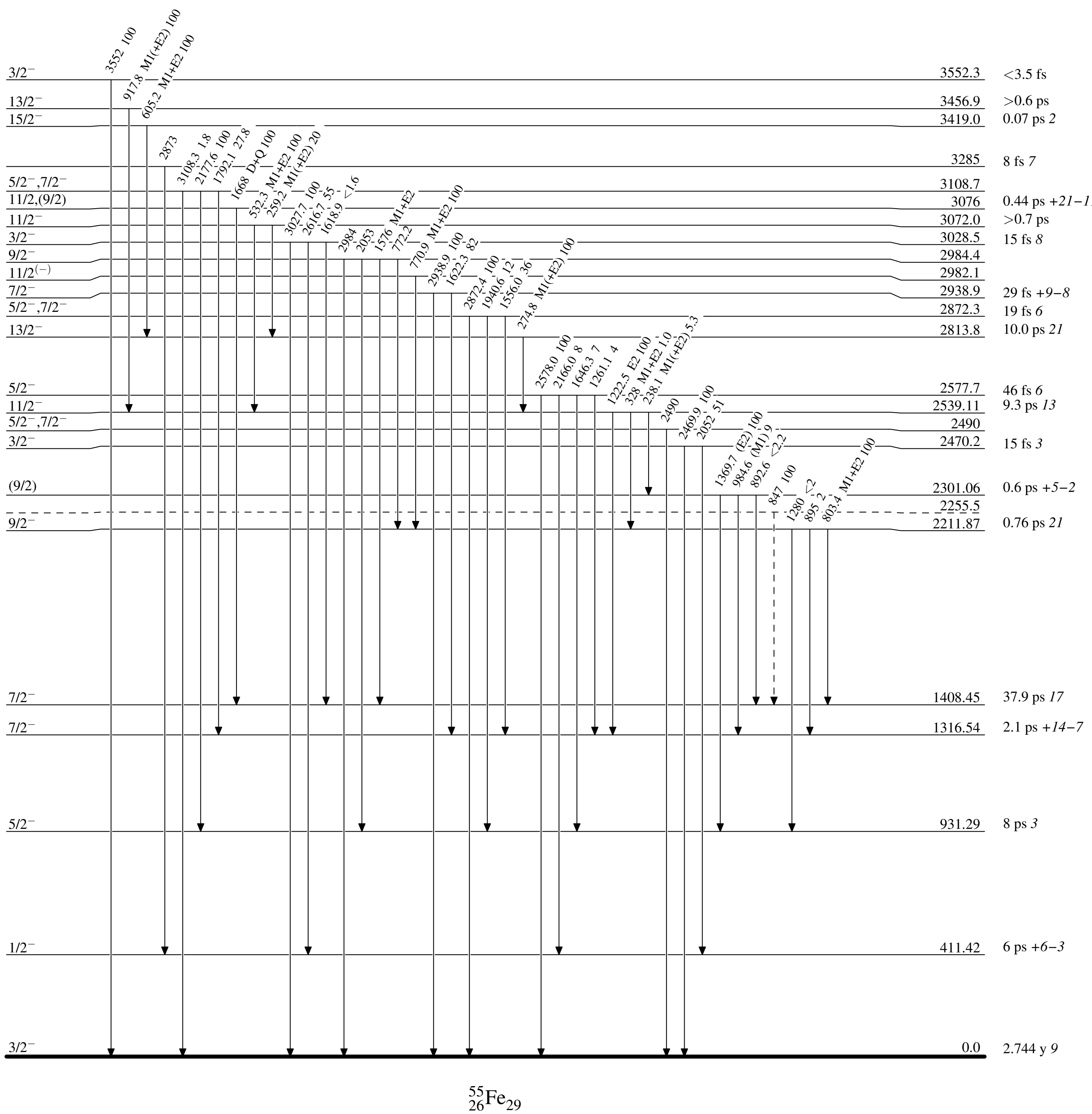
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

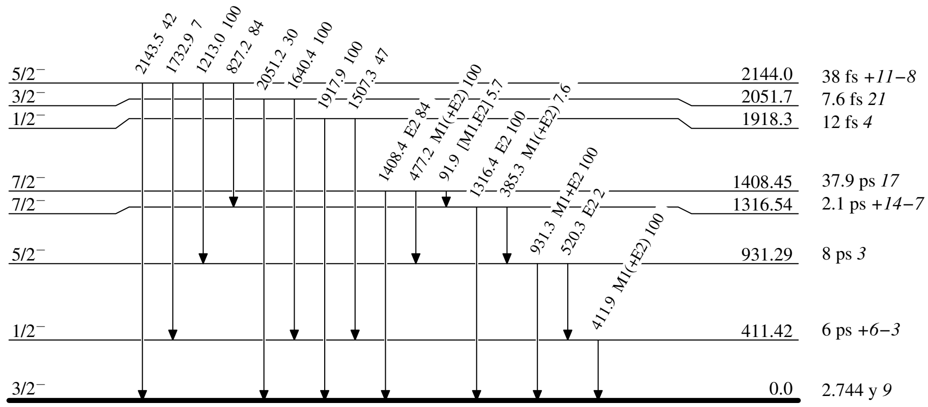
γ Decay (Uncertain)



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{55}_{26}Fe_{29}$