

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 151, 1 (2018)	1-Apr-2018

Q(β⁻)=1565.0 4; S(n)=6581.01 11; S(p)=12126 3; Q(α)=-7980.0 4 [2017Wa10](#)

Other reactions:

⁵⁹Co(n,p): [1963Mo13](#) (E=14.8 MeV), [1993Al21](#) (E=198 MeV), [1999Ca29](#), [2001La12](#).

[2006St07](#): Measured ⁵⁹Fe angular distribution – produced by bombarding 381-GeV ²⁸Si on Au target.

⁵⁹Fe Levels

Cross Reference (XREF) Flags

A	⁵⁹ Mn β ⁻ decay	F	⁵⁸ Fe(n,γ) E=res
B	¹³ C(⁴⁸ Ca,2nγ)	G	⁵⁸ Fe(d,p), (pol d,p)
C	⁴⁸ Ca(¹⁵ N,3npy), (¹⁸ O,3nαγ)	H	⁵⁸ Fe(d,pγ)
D	⁵⁷ Fe(t,p)	I	⁶⁰ Ni(¹⁴ C, ¹⁵ O)
E	⁵⁸ Fe(n,γ), (pol n,γ) E=thermal		

E(level) [†]	J ^π	T _{1/2} [#]	XREF	Comments
0.0	3/2 ⁻	44.490 d 9	ABCDEFGHI	%β ⁻ =100 μ=-0.3358 4 μ: from β-NMR on oriented nuclei (1996Oh02). Other: 0.29 3 from low-temperature nuclear orientation (1976Kr10 , 2014StZZ). J ^π : 3/2 from atomic beam (1965Do11); L(d,p)=1. T _{1/2} : Weighted average of 44.472 d 8 (1997Ma75), 44.508 d 16 (Updated NIST value in 2014Un01 – earlier value 44.507 d 7 in 2002Un02 and 1992Un01 superseding 1982HoZJ), 44.530 d 21 (1983Wa26) and 44.496 d 7 (1980Ho17). Others: 1960Su10 (46.5 d 10), 1959Pi43 (45.60 d 8), 1958Ke26 (44.56 d 3), 1960Fu03 , 1957Wr37 , 1956Ru45 , 1953To17 , 1951Sc56 .
287.023 19	1/2 ⁻		A DEFGH	J ^π : (pol d,p), L(d,p)=1.
472.87 9	5/2 ⁻		ABCDEFGHI	J ^π : (pol d,p), L(d,p)=3.
568.81 20	(3/2 ⁻)		E g	E(level),J ^π : Proposed by 2017FiZZ on the basis of population by a primary γ-ray from the 1/2 ⁺ capture state consistent with J=1/2,3/2 and inconsistent with (5/2) ⁻ assigned to the 570.85-keV level. L-1,3 in (d,p) for doublet.
570.87 4	(5/2) ⁻		ABCDEFGHI	J ^π : L(t,p)=2; D+Q γ from 7/2 ⁻ .
613.05 16			E G	
642.8 3			E G	
726.43 4	3/2 ⁻		A DEFGHI	J ^π : (pol d,p), L(d,p)=1.
1023.14 @ 7	7/2 ⁻		ABCD FG	J ^π : L(d,p)=3; L(t,p)=4 for 1/2 ⁻ target.
1077.80 12	1/2 ⁻ ,3/2 ⁻		A E G	J ^π : L(d,p)=1.
1162.09 4	3/2 ⁻		A DEFG	J ^π : L(d,p)=1; J ≠ 1/2 from (pol n,γ).
1211.32 11	1/2 ⁻		DEFGHI	J ^π : (pol d,p), L(d,p)=1.
1517.23 & 15	9/2 ⁺	145 ps 25	BCD G	J ^π : L(d,p)=4; L(t,p)=5 for 1/2 ⁻ target.
1569.90 8	5/2 ⁻		A DE G	J ^π : L(d,p)=3; L(t,p)=2. Inconsistent with primary γ from 1/2 ⁺ in (n,γ) E=thermal, but primary Eγ is 2 keV lower, so γ may be misplaced.
1599.09 13	(9/2 ⁻)		B	J ^π : 1126.2γ Q to 5/2 ⁻ .
1648 ‡ 10	5/2 ⁺		D G I	J ^π : (pol d,p), L(d,p)=2.
1749.88 15	3/2 ⁻ ,5/2 ⁻		A DEFG	J ^π : L(t,p)=2.
1918.91 5	3/2,5/2 ⁺		A DEFG I	J ^π : J ≠ 1/2 from (pol n,γ); primary γ from 1/2 ⁺ in (n,γ) E=thermal.
1937.1 13			B	
1961.97 6	1/2 ⁻		A DEFG	J ^π : L(t,p)=0 for 1/2 ⁻ target.

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Adopted Levels, Gammas (continued) ^{59}Fe Levels (continued)

E(level) [†]	J ^π	T _{1/2} [#]	XREF	Comments
2161.9 9	1/2,3/2,5/2 ⁺		E G	J ^π : primary γ from 1/2 ⁺ in (n,γ) E=thermal.
2277.9 4			E G	
2312.19& 21	(13/2 ⁺)	4.7 ps 6	BC	J ^π : (E2) γ to 9/2 ⁺ .
2322.4 6	1/2,3/2,5/2 ⁺		E G	J ^π : primary γ from 1/2 ⁺ in (n,γ) E=thermal.
2348.2 4	(1/2,3/2,5/2 ⁻)		E	E(level): must differ from (7/2) ⁻ level excited in (d,p); otherwise, mult(1137γ) to 1/2 ⁻ would be M3 and transition could not compete with the [E2] 2349γ observed in β ⁻ decay.
2349.0 9	(7/2) ⁻		A G	J ^π : γ to 1/2 ⁻ . J ^π : L(d,p)=3, (pol d,p) for E=2345 10 level. See comment on 2348 level.
2390 10			G	
2415.04@ 17	(11/2 ⁻)		B	J ^π : 1391.9γ Q to 7/2 ⁻ . Band member.
2447.28 6	(3/2)		A E G	J ^π : primary γ from 1/2 ⁺ in (n,γ) E=thermal; J ≠ 1/2 from (pol n,γ); strong 2160γ to 1/2 ⁻ 287.
2484.03 24	(13/2 ⁺)		B	J ^π : 966.7γ to 9/2 ⁺ .
2493.8 4	7/2 ⁻		DE	J ^π : L(t,p)=(4) for 1/2 ⁻ target. 2494.3γ to 3/2 ⁻ and 610.7γ from 3/2 ⁻ at 3104.4 keV.
2569.9 6	3/2 ⁻		DE	J ^π : L(t,p)=2: primary γ from 1/2 ⁺ in (n,γ) E=thermal.
2735 10			G	
2756.9 7	1/2,3/2,5/2 ⁺		DE G	J ^π : primary γ from 1/2 ⁺ in (n,γ) E=thermal.
2810.18 16	1/2 ⁻		DE G	J ^π : L(t,p)=0 for 1/2 ⁻ target; L(d,p)=1.
2856 [‡] 10	1/2 ⁻		D G	J ^π : L(t,p)=0 for 1/2 ⁻ target; L(d,p)=1.
2947 [‡] 10	3/2 ⁻ ,5/2 ⁻		D G	J ^π : L(t,p)=2.
2990? 10			G	
3020? 10			G	
3052.1 4	(13/2,15/2)		B	J ^π : γ to (13/2 ⁺).
3070.6 4	3/2 ⁻		DE G	J ^π : L(t,p)=2 for 1/2 ⁻ target; primary γ from 1/2 ⁺ in (n,γ) E=thermal.
3104.4 3	3/2 ⁻		DE G	J ^π : L(t,p)=2 for 1/2 ⁻ target; primary γ from 1/2 ⁺ in (n,γ) E=thermal.
3159.67 16	3/2 ⁻		DE G	J ^π : L(t,p)=2 for 1/2 ⁻ target; primary γ from 1/2 ⁺ in (n,γ) E=thermal.
3179.60 20	(13/2 ⁻)		B G	XREF: G(3169). J ^π : 1580.7γ Q to (9/2 ⁻).
3194 10			G	
≈3225	1/2 ⁺ ,3/2 ⁺		D	J ^π : L(t,p)=1 for 1/2 ⁻ target.
3239.6 3	1/2,3/2,5/2 ⁺		E G	J ^π : primary γ from 1/2 ⁺ in (n,γ) E=thermal.
3280 [‡] 10	3/2 ⁻ ,5/2 ⁻		D G	J ^π : L(t,p)=2+(4) for 1/2 ⁻ target.
3311 10			G	
3384.3 7	3/2 ⁻		DE G	J ^π : L(t,p)=2 for 1/2 ⁻ target; primary γ from 1/2 ⁺ in (n,γ) E=thermal.
3429.68@ 19	(15/2 ⁻)		B	J ^π : 1014.6γ Q to (11/2 ⁻). Band member.
3452 10			G	
≈3543	3/2 ⁻ ,5/2 ⁻		D	J ^π : L(t,p)=2 for J ^π =1/2 ⁻ target.
3558.88 ^a 23	(15/2 ⁺)	>0.4 ps	BC	J ^π : 1246.7γ to (13/2 ⁺). Band assignment.
3565 10			G	
3600 10			G	
3639 10			G	
3668 10			G	
3734 10			G	
3738.61& 23	(17/2 ⁺)	<0.3 ps	BC	J ^π : 1426.4γ Q to (13/2 ⁺). Band member. (15/2) in (¹⁵ N,3npγ), (¹⁸ O,3nαγ). T _{1/2} : 2008Ho05 also noted lifetime for this level is markedly shorter than the stopping time of ⁵⁹ Fe in ²³⁸ U.
3824 10			G	
3872 10			G	
3921 10			G	
3989 10			G	

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Adopted Levels, Gammas (continued) ^{59}Fe Levels (continued)

E(level) [†]	J ^π	XREF	Comments
4045 10		G	
4083 10		G	
4124 10		G	
4141.9 6		B	
4159 10		G	
4181 10		G	
4224 10		G	
4273.3 4	(17/2 ⁺)	B G	XREF: G(4277). J ^π : γ to (13/2 ⁺), (15/2 ⁺).
4329.9 12		B	
4377 10		G	
4409 10		G	
4423 10		G	
4516 10		G	
4541 10		G	
4580 10		G	
4629 10		G	
4650 10		G	
4660 10		G	
4686 10		G	
4770? 10		G	
4830? 10		G	
4870.5 [@] 4	(19/2 ⁻)	B G	J ^π : 1440.8γ Q to (15/2 ⁻). Band member.
4978.5 ^a 3	(19/2 ⁺)	B	J ^π : 1419.9γ to (15/2 ⁺), 1240.2γ to (17/2 ⁺).
5542.94 ^{&} 25	(21/2 ⁺)	B	J ^π : 1804.3γ Q to (17/2 ⁺). Band member.
5895.5 24		B	
6024.3 11		B	
6923.8 [@] 4	(23/2 ⁻)	B	J ^π : 2053.3γ Q to (19/2 ⁻). Band member.
7030.8 ^a 4	(23/2 ⁺)	B	J ^π : 2052.2γ Q to (19/2 ⁺). Band member.
7233.7 8		B	
7671.8 ^{&} 5	(25/2 ⁺)	B	J ^π : 2128.8γ to (21/2 ⁺). Band member.
7764.8 14		B	
7928.8 [@] 5	(27/2 ⁻)	B	J ^π : 1005.0γ Q to (23/2 ⁻). Band member.
8553.2 14		B	
9545.1 ^a 16	(27/2 ⁺)	B	J ^π : 2514.3γ to (23/2 ⁺). Band member.
10026.0 [@] 9	(31/2 ⁻)	B	J ^π : 2097.1γ to (27/2 ⁻). Band member.
10203.6 ^{&} 14	(29/2 ⁺)	B	J ^π : 2514.3γ to (25/2 ⁺). Band member.
12637 [@] 4	(35/2 ⁻)	B	J ^π : 2611γ to (31/2 ⁻). Band member.
12915.6 ^{&} 21	(33/2 ⁺)	B	J ^π : 2711.9γ to (29/2 ⁺). Band member.
14353 [@] 4	(39/2 ⁻)	B	J ^π : 1715.6γ to (35/2 ⁻). Band member.

[†] From least-squares fitting of γ-ray energies for levels with depopulating γ. Uncertainty doubled for 280.4γ and 1062.1γ from 568.81- and 2810-keV levels, respectively, and obtained $\chi^2=2.1$. $\chi^2=2.8$ without uncertainty increase, $\chi^2_{\text{crit}}=1.7$.

[‡] From (d,p), (pol d,p).

From $^{48}\text{Ca}(^{15}\text{N},3\text{n}\gamma)$, ($^{18}\text{O},3\text{n}\alpha\gamma$) recoil distance or DSA (1977Wa10), except as noted.

@ Band(A): Band based on 7/2⁻.

& Band(B): Band based on 9/2⁺.

^a Band(C): Band based on 15/2⁺.

Adopted Levels, Gammas (continued)

$\gamma(^{59}\text{Fe})$								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. ^b	α^d	Comments
287.023	1/2 ⁻	287.03 2	100	0.0	3/2 ⁻	[M1,E2]	0.0058 34	$\alpha(\text{K})=0.0052$ 30; $\alpha(\text{L})=5.1\times 10^{-4}$ 30; $\alpha(\text{M})=7.0\times 10^{-5}$ 41 $\alpha(\text{N})=3.1\times 10^{-6}$ 18
472.87	5/2 ⁻	472.83 10	100	0.0	3/2 ⁻	D(+Q) ^c		E_γ : Weighted average of data from β^- decay, (¹⁵ N,3np γ), (¹⁸ O,3n $\alpha\gamma$) and (⁴⁸ Ca,2n γ). $\delta(\text{D,Q})=-0.02$ 4 or -3.8 6 in (¹⁸ O,3n $\alpha\gamma$).
568.81	(3/2 ⁻)	280.4 3	69 22	287.023	1/2 ⁻			
		568.98 21	100 2	0.0	3/2 ⁻			
570.87	(5/2 ⁻)	570.87 4	100	0.0	3/2 ⁻	D+Q ^c		$\delta(\text{D,Q})=+0.15$ to $+2.1$ in (¹⁸ O,3n $\alpha\gamma$).
613.05		613.1 3	100	0.0	3/2 ⁻			
642.8		642.9 3	100	0.0	3/2 ⁻			
726.43	3/2 ⁻	439.43 4	3.71 20	287.023	1/2 ⁻			
		726.6 [#] 5	100 4	0.0	3/2 ⁻			
1023.14	7/2 ⁻	452.36 ^{&} 7	79 [@] 3	570.87	(5/2 ⁻)	D+Q ^c		$\delta(\text{D,Q})=+0.19$ to $+2.0$ from (¹⁸ O,3n $\alpha\gamma$).
		550.0 [@] 5	4.8 [@] 3	472.87	5/2 ⁻			E_γ : Unweighted average of data from (¹⁵ N,3np γ), (¹⁸ O,3n $\alpha\gamma$) and (⁴⁸ Ca,2n γ).
		1022.74 ^a 15	100 [@] 4	0.0	3/2 ⁻			
1077.80	1/2 ⁻ ,3/2 ⁻	465.0 2	100	613.05				
1162.09	3/2 ⁻	591.20 3	100 4	570.87	(5/2 ⁻)			
		689.0 [#] 3	3.4 6	472.87	5/2 ⁻			
		875.10 [#] 7	29.2 3	287.023	1/2 ⁻			
		1162.17 8	14.7 12	0.0	3/2 ⁻			
1211.32	1/2 ⁻	1211.24 11	100	0.0	3/2 ⁻			
1517.23	9/2 ⁺	494.09 [‡] 13	100	1023.14	7/2 ⁻	(E1)	4.09 $\times 10^{-4}$	B(E1)(W.u.)= 2.6×10^{-5} 4 $\alpha(\text{K})=0.000369$ 6; $\alpha(\text{L})=3.51\times 10^{-5}$ 5; $\alpha(\text{M})=4.83\times 10^{-6}$ 7 $\alpha(\text{N})=2.22\times 10^{-7}$ 4
1569.90	5/2 ⁻	1569.88 8	100	0.0	3/2 ⁻			
1599.09	(9/2 ⁻)	1029.1 [@] 21	4.3 [@] 14	570.87	(5/2 ⁻)			
		1126.2 [@] 1	100 [@] 5	472.87	5/2 ⁻	Q		
1749.88	3/2 ⁻ ,5/2 ⁻	537.4 7	50 25	1211.32	1/2 ⁻			
		1749.5 3	100 13	0.0	3/2 ⁻			
1918.91	3/2,5/2 ⁺	756.92 12	4.4 5	1162.09	3/2 ⁻			
		841.24 12	13.5 11	1077.80	1/2 ⁻ ,3/2 ⁻			
		1192.50 5	12.8 7	726.43	3/2 ⁻			
		1918.71 8	100 3	0.0	3/2 ⁻			
1937.1		1366.2 [@] 13	100	570.87	(5/2 ⁻)			
1961.97	1/2 ⁻	1235.54 4	100 4	726.43	3/2 ⁻			
		1348.4 3	10 3	613.05				
		1961.92 18	36 8	0.0	3/2 ⁻			

Adopted Levels, Gammas (continued)

γ(⁵⁹Fe) (continued)

E _i (level)	J ^π _i	E _γ [†]	I _γ [†]	E _f	J ^π _f	Mult. ^b	α ^d	Comments
2161.9	1/2,3/2,5/2 ⁺	1548.8 8	100	613.05				
2277.9		1551.7 10	100 50	726.43	3/2 ⁻			
		2279.3 8	83 33	0.0	3/2 ⁻			
2312.19	(13/2 ⁺)	795.00 [‡] 15	100 [‡]	1517.23	9/2 ⁺	(E2)	3.50×10 ⁻⁴	B(E2)(W.u.)=28 4 α(K)=0.000315 5; α(L)=3.02×10 ⁻⁵ 5; α(M)=4.16×10 ⁻⁶ 6 α(N)=1.91×10 ⁻⁷ 3
2322.4	1/2,3/2,5/2 ⁺	2322.4 6	100	0.0	3/2 ⁻			
2348.2	(1/2,3/2,5/2 ⁻)	1136.9 3	100	1211.32	1/2 ⁻			
2349.0	(7/2 ⁻)	2348.9 9	100	0.0	3/2 ⁻			E _γ : from ⁵⁹ Mn β ⁻ decay.
2415.04	(11/2 ⁻)	815.7 [@] 3	14.6 [@] 13	1599.09	(9/2 ⁻)			
		1391.9 [@] 2	100 [@] 6	1023.14	7/2 ⁻	Q		
2447.28	(3/2)	697.19 16	18.2 22	1749.88	3/2 ⁻ ,5/2 ⁻			
		1719.9 7	31 6	726.43	3/2 ⁻			
		2160.20 6	100 3	287.023	1/2 ⁻			
		2447.8 2	10.8 9	0.0	3/2 ⁻			
2484.03	(13/2 ⁺)	966.7 [@] 2	100	1517.23	9/2 ⁺			
2493.8	7/2 ⁻	2494.3 8	100	0.0	3/2 ⁻			
2569.9	3/2 ⁻	1956.8 5	100	613.05				
2756.9	1/2,3/2,5/2 ⁺	1544.8 9	100	1211.32	1/2 ⁻			
2810.18	1/2 ⁻	1062.1 5	17 5	1749.88	3/2 ⁻ ,5/2 ⁻			
		1598.79 16	100 7	1211.32	1/2 ⁻			
		1730.3 8	19 7	1077.80	1/2 ⁻ ,3/2 ⁻			
		2084.0 3	32 3	726.43	3/2 ⁻			
3052.1	(13/2,15/2)	568.0 [@] 3	100	2484.03	(13/2 ⁺)			
3070.6	3/2 ⁻	2428.6 10	60 20	642.8				
		3070.4 4	100 30	0.0	3/2 ⁻			
3104.4	3/2 ⁻	610.7 2	100 14	2493.8	7/2 ⁻			
		826.9 4	20 6	2277.9				
		2533.2 3	69 6	570.87	(5/2 ⁻)			
3159.67	3/2 ⁻	2872.57 15	100	287.023	1/2 ⁻			
3179.60	(13/2 ⁻)	1580.7 [@] 3	100	1599.09	(9/2 ⁻)	Q		
3239.6	1/2,3/2,5/2 ⁺	3239.5 3	100	0.0	3/2 ⁻			
3384.3	3/2 ⁻	627.3 3	100 20	2756.9	1/2,3/2,5/2 ⁺			
		3097.9 9	70 20	287.023	1/2 ⁻			
3429.68	(15/2 ⁻)	250.1 [@] 1	30.1 [@] 14	3179.60	(13/2 ⁻)	D		
		1014.6 [@] 1	100 [@] 5	2415.04	(11/2 ⁻)	Q		
3558.88	(15/2 ⁺)	1246.7 [@] 1	100	2312.19	(13/2 ⁺)			E _γ : Other value 1247.4 6 - (¹⁵ N,3npγ), (¹⁸ O,3nαγ).
3738.61	(17/2 ⁺)	1426.4 [@] 1	100	2312.19	(13/2 ⁺)	(E2)	1.50×10 ⁻⁴	α(K)=7.97×10 ⁻⁵ 12; α(L)=7.56×10 ⁻⁶ 11; α(M)=1.042×10 ⁻⁶ 15 α(N)=4.84×10 ⁻⁸ 7; α(IPF)=6.20×10 ⁻⁵ 9

Adopted Levels, Gammas (continued)

<u>$\gamma(^{59}\text{Fe})$ (continued)</u>							
<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ^\dagger</u>	<u>I_γ^\dagger</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.^b</u>	<u>Comments</u>
							B(E2)(W.u.)>23 E _γ : Other value 1425.5 6 - (¹⁵ N,3npγ), (¹⁸ O,3nαγ). Mult.: Other: (D) in (¹⁵ N,3npγ), (¹⁸ O,3nαγ).
4141.9		962.3@ 5	100	3179.60	(13/2 ⁻)		
4273.3	(17/2 ⁺)	714.8@ 4	37@ 5	3558.88	(15/2 ⁺)		
		1221.0@ 5	47@ 5	3052.1	(13/2,15/2)		
		1788.7@ 6	100@ 10	2484.03	(13/2 ⁺)		
4329.9		2017.7@ 11	100	2312.19	(13/2 ⁺)		
4870.5	(19/2 ⁻)	1440.8@ 3	100	3429.68	(15/2 ⁻)	Q	
4978.5	(19/2 ⁺)	1240.2@ 8	20@ 3	3738.61	(17/2 ⁺)		
		1419.6@ 2	100@ 6	3558.88	(15/2 ⁺)		
5542.94	(21/2 ⁺)	1270.2@ 14	3.6@ 12	4273.3	(17/2 ⁺)		
		1804.3@ 1	100@ 40	3738.61	(17/2 ⁺)	Q	
5895.5		1565.6@ 21	100	4329.9			
6024.3		2285.6@ 10	100	3738.61	(17/2 ⁺)		
6923.8	(23/2 ⁻)	2053.3@ 1	100	4870.5	(19/2 ⁻)	Q	
7030.8	(23/2 ⁺)	2052.2@ 1	100	4978.5	(19/2 ⁺)	Q	
7233.7		1690.7@ 7	100	5542.94	(21/2 ⁺)		
7671.8	(25/2 ⁺)	2128.8@ 4	100	5542.94	(21/2 ⁺)		
7764.8		2221.8@ 13	100	5542.94	(21/2 ⁺)		
7928.8	(27/2 ⁻)	1005.0@ 2	100	6923.8	(23/2 ⁻)	Q	
8553.2		1319.5@ 11	100	7233.7			
9545.1	(27/2 ⁺)	2514.3@ 15	100	7030.8	(23/2 ⁺)		
10026.0	(31/2 ⁻)	2097.1@ 7	100	7928.8	(27/2 ⁻)		
10203.6	(29/2 ⁺)	2531.8@ 13	100	7671.8	(25/2 ⁺)		
12637	(35/2 ⁻)	2611@ 3	100	10026.0	(31/2 ⁻)		
12915.6	(33/2 ⁺)	2711.9@ 15	100	10203.6	(29/2 ⁺)		
14353	(39/2 ⁻)	1715.6@ 22	100	12637	(35/2 ⁻)		

† From ⁵⁸Fe(n,γ), (pol n,γ) E=thermal, except as noted.

‡ From (¹⁵N,3npγ), (¹⁸O,3nαγ).

Weighted average from β⁻ decay and (n,γ) E=thermal.

@ From (⁴⁸Ca,2nγ).

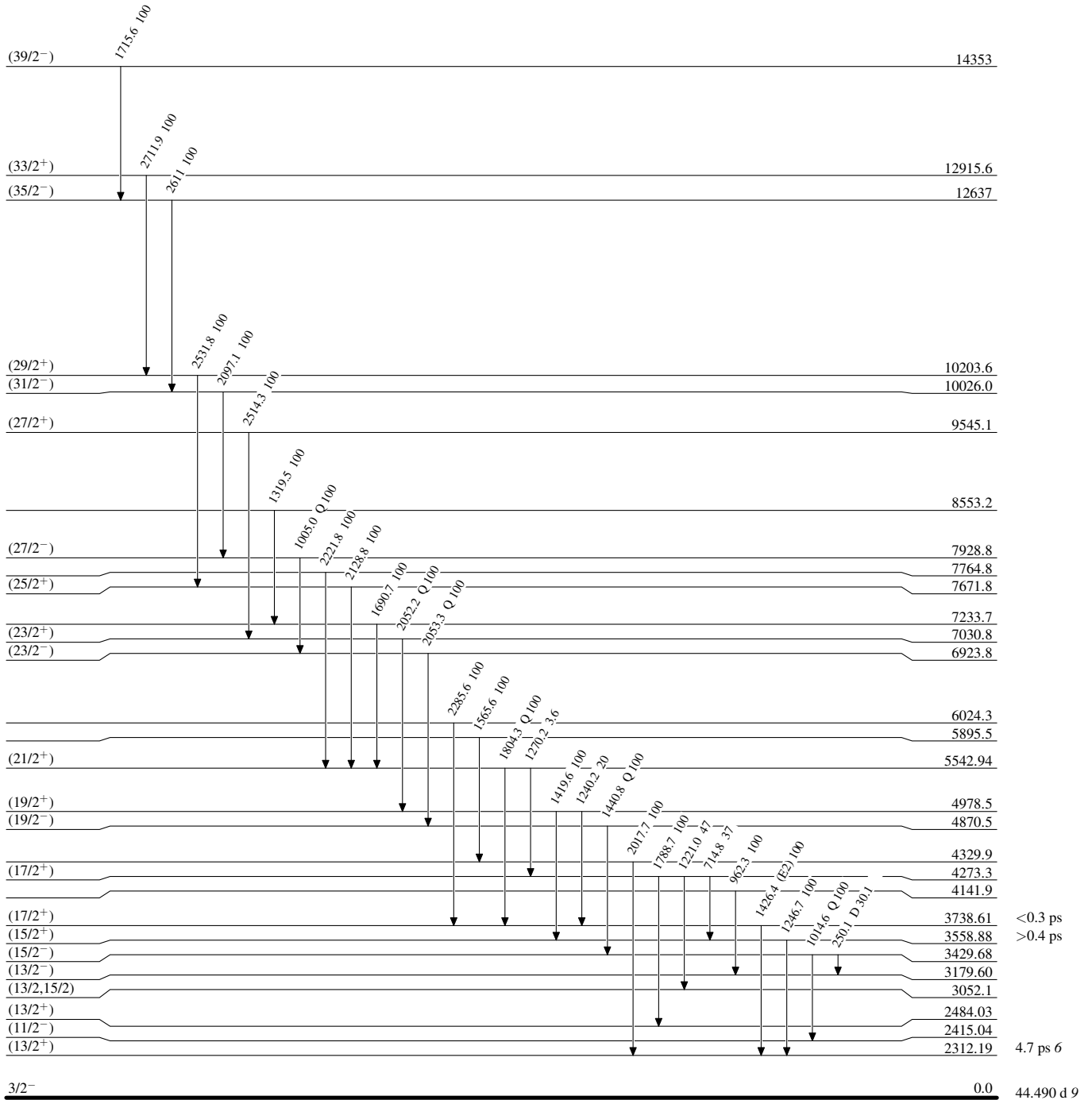
& Weighted ave. of data from (⁴⁸Ca,2nγ) and (¹⁵N,3npγ), (¹⁸O,3nαγ).

Adopted Levels, Gammas (continued) $\gamma(^{59}\text{Fe})$ (continued)

- ^a Weighted ave. of data from ($^{48}\text{Ca}, 2n\gamma$), ($^{15}\text{N}, 3np\gamma$), ($^{18}\text{O}, 3n\alpha\gamma$), ^{59}Mn β^- decay.
^b From ($^{48}\text{Ca}, 2n\gamma$), except otherwise noted.
^c From $\gamma(\theta)$ in ($^{18}\text{O}, 3n\alpha\gamma$) or ($^{15}\text{N}, 3np\gamma$).
^d [Additional information 1](#).

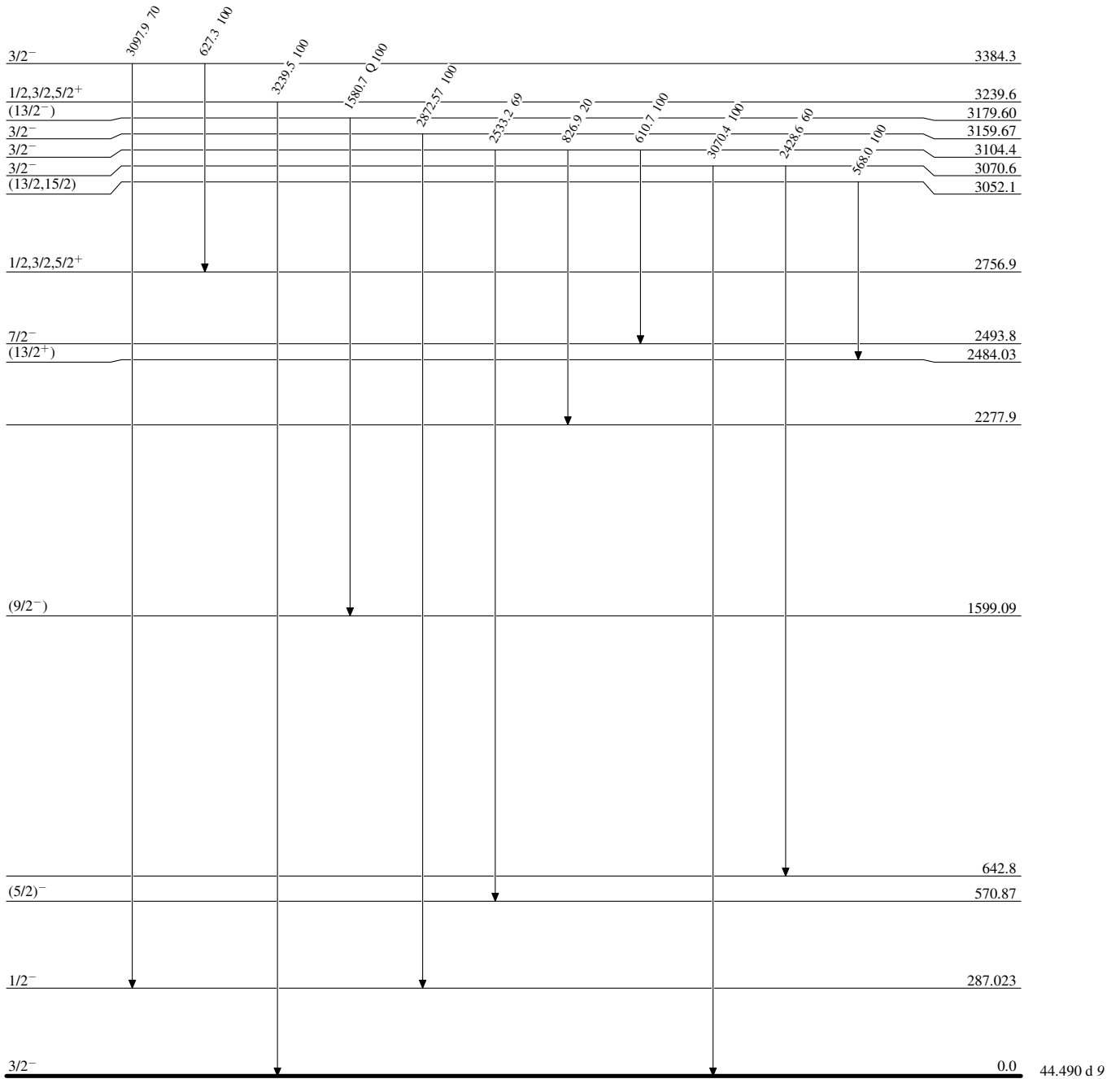
Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

 $^{59}\text{Fe}_{33}$

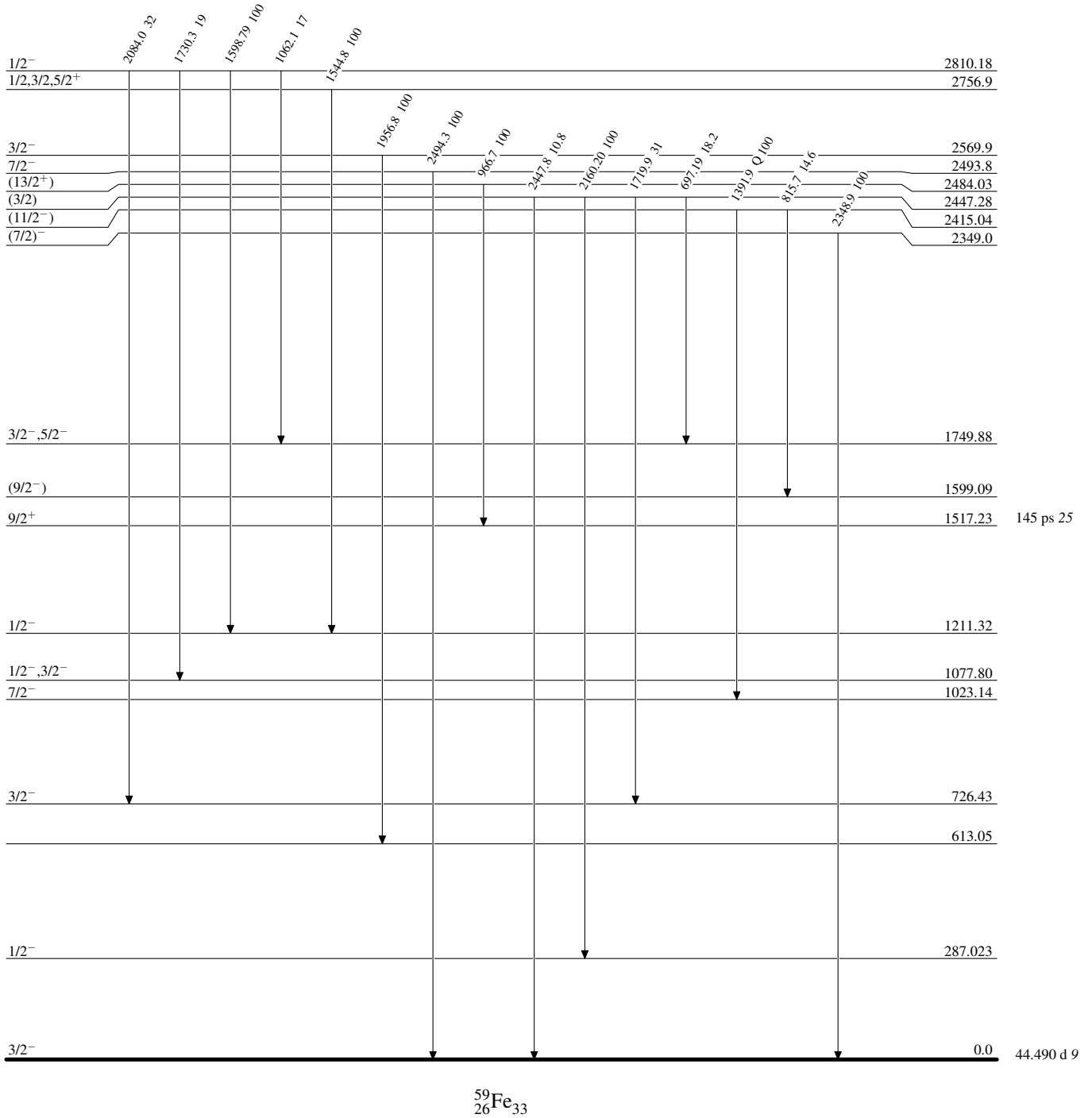
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level

 $^{59}\text{Fe}_{33}$

Adopted Levels, Gammas**Level Scheme (continued)**

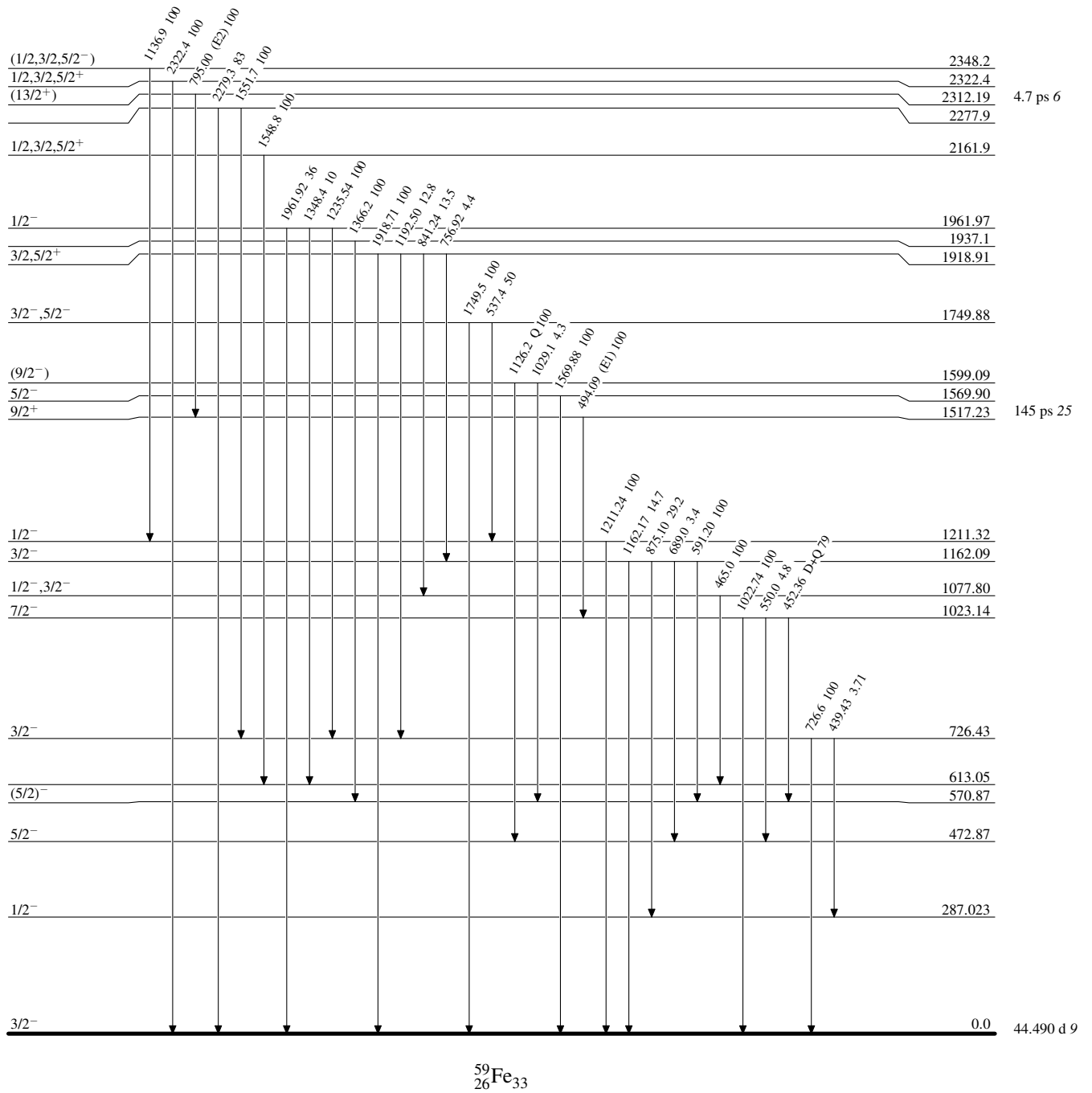
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

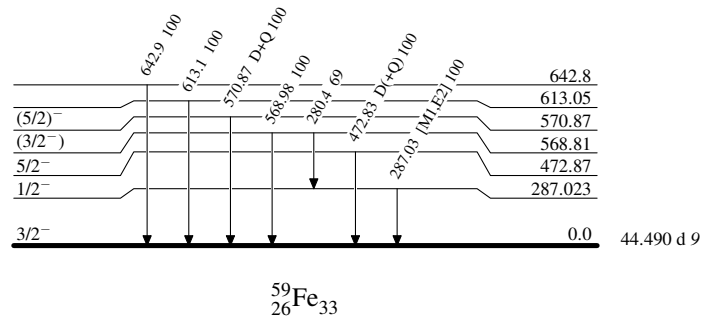
Level Scheme (continued)

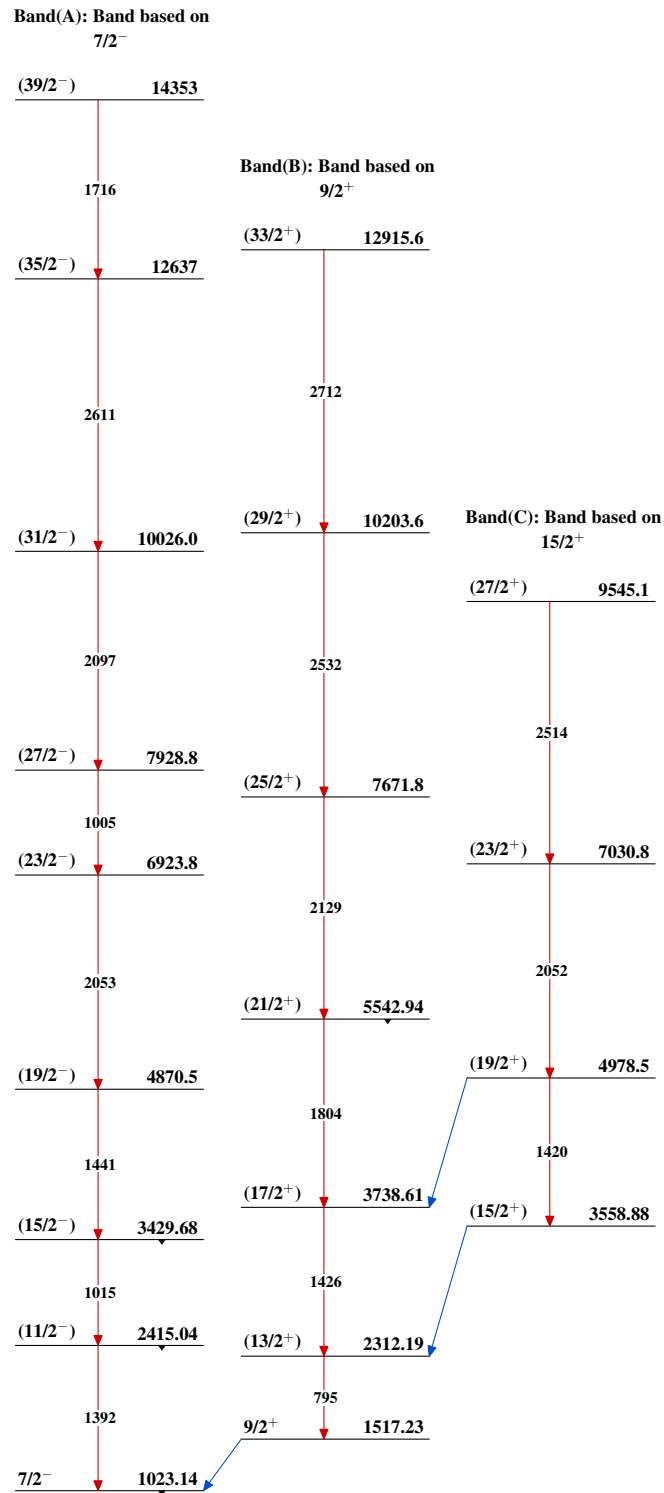
Intensities: Relative photon branching from each level



Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



Adopted Levels, Gammas $^{59}_{26}\text{Fe}_{33}$