

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 191,1 (2023)	22-Aug-2023

$Q(\beta^-) = -5120$ 40; $S(n) = 7680$ 40; $S(p) = 4740$ 40; $Q(\alpha) = 3400$ 30 [2021Wa16](#)

$S(2n) = 17970$ 40, $S(2p) = 7750$ 40, $Q(\epsilon p) = 837$ 29, $Q(\epsilon) = 4030$ 50 ([2021Wa16](#)).

[2000Ra23](#): mass measurement by Schottky mass spectrometry.

Theory references for band structures: [2019Mi12](#), [2015Gu19](#), [2011Gu18](#), [1994Fe14](#), [1992Ha23](#), [1989Ja06](#), [1987Sh14](#).

[Additional information 1](#).

 ^{167}Hf Levels

Band structures are from [1999Cr01](#) and [1999Sm13](#). The $\nu 5/2[523]$ and $\nu i_{13/2}$ bands, with both signatures, were first established by [1977JoZQ](#).

Cross Reference (XREF) Flags

- A** ^{167}Ta ϵ decay (80 s)
B $^{146}\text{Nd}(^{26}\text{Mg}, 5n\gamma)$
C $^{155}\text{Gd}(^{16}\text{O}, 4n\gamma)$

E(level) [†]	J^π [‡]	$T_{1/2}$	XREF	Comments
0.0 [#]	(5/2 ⁻)	2.05 min 5	ABC	$\% \epsilon + \% \beta^+ = 100$ J^π : $\nu 5/2[523]$ bandhead assignment consistent with J^π for ^{165}Yb and ^{163}Er isotones. $T_{1/2}$: from γ -decay curves, weighted average of 2.05 min 8 (123 s 5) (1989Br19) and 2.05 min 5 (1973Me09). Other values: 2.4 min 3 (1970At01), 1.9 min 2 (1969Ar23), XREF: A(?).
92.1 [@] 4	(7/2 ⁻)		ABC	
145.0 ^{&} 5	(13/2 ⁺)		BC	
188.6 ^a 6	(11/2 ⁺)		BC	
207.2 [#] 3	(9/2 ⁻)		BC	
349.6 ^{&} 5	(17/2 ⁺)		BC	
355.3 [@] 4	(11/2 ⁻)		BC	
401.7 ^a 5	(15/2 ⁺)		BC	
504.6 [#] 3	(13/2 ⁻)		BC	
692.6 ^{&} 5	(21/2 ⁺)		BC	
706.5 [@] 4	(15/2 ⁻)		BC	
767.2 ^a 4	(19/2 ⁺)		BC	
883.7 [#] 3	(17/2 ⁻)		BC	
1120.8 [@] 5	(19/2 ⁻)		BC	
1151.5 ^{&} 5	(25/2 ⁺)		BC	
1253.5 ^a 4	(23/2 ⁺)		BC	
1323.9 [#] 4	(21/2 ⁻)		BC	
1561.4 ^e 5	(23/2 ⁻)		BC	
1618.2 ^f 6	(25/2 ⁺)		C	
1704.6 ^{&} 5	(29/2 ⁺)		BC	
1797.2 [#] 4	(25/2 ⁻)		BC	
1832.0 ^a 4	(27/2 ⁺)		BC	
1995.3 ^e 5	(27/2 ⁻)		BC	

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Adopted Levels, Gammas (continued) ^{167}Hf Levels (continued)

E(level) [†]	J ^π [‡]	XREF	E(level) [†]	J ^π [‡]	XREF	E(level) [†]	J ^π [‡]	XREF
2148.1 ^f 6	(29/2 ⁺)	C	3666.0 ^g 5	(41/2 ⁺)	BC	5921.1 ^g 6	(53/2 ⁺)	BC
2244.8 ^b 4	(29/2 ⁻)	BC	3787.9 ^b 4	(41/2 ⁻)	BC	5927.5 ^b 5	(53/2 ⁻)	BC
2289.5 ^d 6	(27/2 ⁻)	BC	3872.1 ^{&} 5	(41/2 ⁺)	BC	6249.9 ^{&} 7	(53/2 ⁺)	BC
2331.7 ^{&} 5	(33/2 ⁺)	BC	3874.8 ^d 7	(39/2 ⁻)	BC	6458.0 ^e 7	(55/2 ⁻)	B
2339.1 ^c 5	(29/2 ⁻)	BC	3921.7 ^a 6	(39/2 ⁺)	BC	6765.7 ^b 6	(57/2 ⁻)	BC
2441.6 ^e 5	(31/2 ⁻)	BC	4103.5 ^c 7	(41/2 ⁻)	BC	6836.0 ^g 7	(57/2 ⁺)	B
2479.4 ^a 4	(31/2 ⁺)	BC	4141.7 ^e 5	(43/2 ⁻)	BC	7103.9 ^{&} 12	(57/2 ⁺)	B
2695.3 ^b 4	(33/2 ⁻)	BC	4333.9 ^g 5	(45/2 ⁺)	BC	7354.7 ^e 7	(59/2 ⁻)	B
2757.8 ^f 6	(33/2 ⁺)	C	4437.5 ^b 4	(45/2 ⁻)	BC	7667.5 ^b 6	(61/2 ⁻)	B
2769.4 ^d 6	(31/2 ⁻)	BC	4525.7 ^d 8	(43/2 ⁻)	BC	7806.3 ^g 7	(61/2 ⁺)	B
2810.3 6	(33/2 ⁺)	BC	4627.0 ^{&} 5	(45/2 ⁺)	BC	8013.9 ^{&} 16	(61/2 ⁺)	B
2869.0 ^c 6	(33/2 ⁻)	BC	4672.3 ^a 8	(43/2 ⁺)	BC	8314.4 ^e 9	(63/2 ⁻)	B
2937.5 ^e 5	(35/2 ⁻)	BC	4822.0 ^c 8	(45/2 ⁻)	BC	8630.5 ^b 8	(65/2 ⁻)	B
3005.2 ^{&} 5	(37/2 ⁺)	BC	4851.0 ^e 5	(47/2 ⁻)	BC	8810.4 ^g 9	(65/2 ⁺)	B
3179.8 ^a 5	(35/2 ⁺)	BC	5082.8 ^g 5	(49/2 ⁺)	BC	9644.3 ^b 10	(69/2 ⁻)	B
3206.8 ^b 4	(37/2 ⁻)	BC	5151.6 ^b 4	(49/2 ⁻)	BC	9837.7 ^g 10	(69/2 ⁺)	B
3260.0 5	(37/2 ⁺)	BC	5237.3 ^d 10	(47/2 ⁻)	BC	10687.5 ^b 11	(73/2 ⁻)	B
3288.0 ^d 7	(35/2 ⁻)	BC	5429.5 ^{&} 6	(49/2 ⁺)	BC	10876.7 ^{?g} 15	(73/2 ⁺)	B
3416.6 ^f 8	(37/2 ⁺)	C	5490.4 ^{?a} 10	(47/2 ⁺)	B	11939.7 ^{?g} 18	(77/2 ⁺)	B
3452.8 ^c 7	(37/2 ⁻)	BC	5598.8 ^c 9	(49/2 ⁻)	BC			
3502.5 ^e 5	(39/2 ⁻)	BC	5623.9 ^e 6	(51/2 ⁻)	BC			

[†] From a least-squares fit to E γ data. Reduced $\chi^2=1.07$.

[‡] Assignments for all the excited states are from ($^{26}\text{Mg}, 5n\gamma$), based on multipolarities from measured DCO ratios and $\gamma(\theta)$ data for a few transitions, deduced band structure. These assignments are supported by total routhian plus cranked shell-model calculations by 1999Cr01 and 1999Sm13.

Band(A): $\nu 5/2[523], \alpha=+1/2$. Band from 1999Sm13 and 1999Cr01.

@ Band(a): $5/2[523], \alpha=-1/2$. Band from 1999Sm13 and 1999Cr01. See comment for $\nu 5/2[523] \otimes \nu 5/2[642]^2, \alpha=-1/2$ band concerning J=23/2, 27/2 states.

& Band(B): $\nu 5/2[642], \alpha=+1/2$. Band from 1999Cr01 and 1999Sm13. Probably undergoes $\nu 7/2[633]^2$ crossing around $\hbar\omega=0.4$ MeV, to a three-quasineutron structure at the highest spins.

^a Band(b): $\nu 5/2[642], \alpha=-1/2$. Band from 1999Cr01 and 1999Sm13. Configuration changes to three-quasineutron structure at the highest spins following ($\nu 5/2[642] \otimes \nu 7/2[633]$) crossing at $\hbar\omega \approx 0.38$ MeV.

^b Band(C): $\nu 5/2[523] \otimes \nu 5/2[642]^2, \alpha=+1/2$. Band from 1999Cr01 and 1999Sm13.

^c Band(D): $\nu 3/2[521] \otimes \nu 5/2[642]^2, \alpha=+1/2$. Band from 1999Cr01. $3/2[521]$ band not observed at frequencies below the first neutron alignment.

^d Band(d): $\nu 3/2[521] \otimes \nu 5/2[642]^2, \alpha=-1/2$. Band from 1999Cr01. $3/2[521]$ band not observed at frequencies below the first neutron alignment.

^e Band(E): $\nu 5/2[523] \otimes \nu 5/2[642]^2, \alpha=-1/2$. Band from 1999Sm13 and 1999Cr01, with the difference that 1999Cr01 assigned the J=23/2 and 27/2 states to the $\nu 5/2[523], \alpha=-1/2$ band, instead.

^f Band(F): $\pi=+, \alpha=-1/2$ band. Band from 1999Cr01. Weak sideband decaying into $\nu 5/2[642]$ bands, observed in ($^{16}\text{O}, 4n\gamma$) only.

^g Band(G): $\nu 7/2[633] \otimes \nu 5/2[642]^2, \alpha=+1/2$. Band from 1999Cr01 and 1999Sm13. Yrast structure for J $\geq 41/2$. Probably becomes a five quasiparticle structure at highest spins after alignment of ($h_{11/2}^2$) or ($\pi h_{11/2} \otimes \pi h_{9/2}$) proton pair.

Adopted Levels, Gammas (continued)

$\gamma(^{167}\text{Hf})$								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult.#	$\alpha^@$	Comments
92.1	(7/2 ⁻)	92.3 5	100	0.0 (5/2 ⁻)				
207.2	(9/2 ⁻)	115.4 5	17 6	92.1 (7/2 ⁻)	D			I_γ : unweighted average of 22.7 23 in (²⁶ Mg,5 γ) and 11.1 16 in (¹⁶ O,4 γ).
		207.1 3	100 5	0.0 (5/2 ⁻)	(E2)		0.256	
349.6	(17/2 ⁺)	204.6 1	100	145.0 (13/2 ⁺)	(E2)		0.265	
355.3	(11/2 ⁻)	148.3 [‡] 5	9 [‡] 5	207.2 (9/2 ⁻)				
		263.0 [‡] 5	100 [‡] 9	92.1 (7/2 ⁻)	(E2)		0.119 2	
401.7	(15/2 ⁺)	213.1 [‡] 3	100 [‡] 4	188.6 (11/2 ⁺)	(E2)		0.233	
		256.8 3	78.8 23	145.0 (13/2 ⁺)	D			I_γ : weighted average of 79.6 23 in (²⁶ Mg,5 γ) and 73.5 60 in (¹⁶ O,4 γ).
504.6	(13/2 ⁻)	149.6 [‡] 5	2.5 [‡] 5	355.3 (11/2 ⁻)				
		297.4 [‡] 1	100 [‡] 3	207.2 (9/2 ⁻)	(E2)		0.081	
692.6	(21/2 ⁺)	343.0 1	100	349.6 (17/2 ⁺)	(E2)		0.053	
706.5	(15/2 ⁻)	202		504.6 (13/2 ⁻)				
		351.0 3	100 3	355.3 (11/2 ⁻)	(E2)		0.050	
767.2	(19/2 ⁺)	365.5 1	100 3	401.7 (15/2 ⁺)	(E2)		0.0446	
		417.6 3	33 3	349.6 (17/2 ⁺)	D			I_γ : unweighted average of 30.7 14 in (²⁶ Mg,5 γ) and 36.1 12 in (¹⁶ O,4 γ).
883.7	(17/2 ⁻)	177		706.5 (15/2 ⁻)				
		379.2 1	100 3	504.6 (13/2 ⁻)	(E2)		0.0402	
1120.8	(19/2 ⁻)	237		883.7 (17/2 ⁻)				
		414.2 3	100 3	706.5 (15/2 ⁻)	(E2)		0.0316	
1151.5	(25/2 ⁺)	458.8 1	100	692.6 (21/2 ⁺)	(E2)		0.0241	
1253.5	(23/2 ⁺)	486.3 1	100 3	767.2 (19/2 ⁺)	(E2)			
		561.3 5	21 5	692.6 (21/2 ⁺)	D			I_γ : unweighted average of 15.9 6 in (²⁶ Mg,5 γ), and 25.7 9 in (¹⁶ O,4 γ).
1323.9	(21/2 ⁻)	203		1120.8 (19/2 ⁻)				
		440.2 1	100 3	883.7 (17/2 ⁻)	(E2)		0.0269	
1561.4	(23/2 ⁻)	440.5 3	87 13	1120.8 (19/2 ⁻)	(E2)		0.0268	I_γ : unweighted average of 100 4 in (²⁶ Mg,5 γ), and 73.5 20 in (¹⁶ O,4 γ).
		868.9 3	100 4	692.6 (21/2 ⁺)	D			
1618.2	(25/2 ⁺)	925.6 [‡] 5	100 [‡]	692.6 (21/2 ⁺)				
1704.6	(29/2 ⁺)	553.1 1	100	1151.5 (25/2 ⁺)	(E2)			
1797.2	(25/2 ⁻)	473.3 1	100 3	1323.9 (21/2 ⁻)	(E2)		0.0222	
		543.5 5	18 3	1253.5 (23/2 ⁺)	D			I_γ : unweighted average of 15.2 4 in (²⁶ Mg,5 γ), and 21.3 8 in (¹⁶ O,4 γ).
1832.0	(27/2 ⁺)	578.6 1	100 4	1253.5 (23/2 ⁺)	(E2)			
		679.8 3	21 4	1151.5 (25/2 ⁺)	D			I_γ : unweighted average of 25.2 9 in (²⁶ Mg,5 γ), and 17.0 6 in (¹⁶ O,4 γ).
								E_γ : level-energy difference=680.5.
1995.3	(27/2 ⁻)	434.0 3	46 4	1561.4 (23/2 ⁻)	(E2)		0.0279	I_γ : unweighted average of 42.3 16 in (²⁶ Mg,5 γ), and 50.4 17 in (¹⁶ O,4 γ).
		843.9 1	100 3	1151.5 (25/2 ⁺)	D			
2148.1	(29/2 ⁺)	530.0 [‡] 5	65 [‡] 5	1618.2 (25/2 ⁺)	(Q)			
		996.6 [‡] 5	100 [‡] 5	1151.5 (25/2 ⁺)	(Q)			
2244.8	(29/2 ⁻)	412.8 3	30 3	1832.0 (27/2 ⁺)	D			I_γ : unweighted average of 32.9 10 in (²⁶ Mg,5 γ), and 26.8 8 in (¹⁶ O,4 γ).
		447.6 1	100 3	1797.2 (25/2 ⁻)	(E2)		0.0257	
2289.5	(27/2 ⁻)	727.9 5	94 7	1561.4 (23/2 ⁻)	(E2)			I_γ : weighted average of 87 7 in (²⁶ Mg,5 γ), and 100 7 in (¹⁶ O,4 γ).
		1137.3 5	100 7	1151.5 (25/2 ⁺)	(D)			
2331.7	(33/2 ⁺)	627.0 1	100	1704.6 (29/2 ⁺)	(E2)			

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Adopted Levels, Gammas (continued)

$\gamma(^{167}\text{Hf})$ (continued)								
$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult.#	$\alpha^@$	Comments
2339.1	(29/2 ⁻)	541.9 3	100	1797.2	(25/2 ⁻)	(E2)		
2441.6	(31/2 ⁻)	446.4 [‡] 1	100 3	1995.3	(27/2 ⁻)	(E2)	0.0259	
		737.0 [‡] 1	97 3	1704.6	(29/2 ⁺)	D		I_γ : weighted average of 94 3 in (²⁶ Mg,5n γ), and 100 3 in (¹⁶ O,4n γ).
2479.4	(31/2 ⁺)	647.4 [‡] 1	100 3	1832.0	(27/2 ⁺)	(E2)		
		775.7 [‡] 5	18.6 [‡] 9	1704.6	(29/2 ⁺)			
2695.3	(33/2 ⁻)	450.5 1	100	2244.8	(29/2 ⁻)	(E2)	0.0253	
2757.8	(33/2 ⁺)	609.7 [‡] 5	100 [‡] 4	2148.1	(29/2 ⁺)			
		1053.2 [‡] 5	64 [‡] 4	1704.6	(29/2 ⁺)			
2769.4	(31/2 ⁻)	479.1 5	100 4	2289.5	(27/2 ⁻)	(E2)	0.0216	
		775.0 [‡] 5	82 [‡] 4	1995.3	(27/2 ⁻)			I_γ : $I_\gamma=170$ 7 in (²⁶ Mg,5n γ) is discrepant, as this intensity could be for sum of the two γ rays: 775.0 and 775.7, the latter reported only in (¹⁶ O,4n γ).
2810.3	(33/2 ⁺)	1105.9 [‡] 5	100 [‡]	1704.6	(29/2 ⁺)			Mult.: DCO in (¹⁶ O,xn γ) implies $\Delta J=0,1$ transition, but γ placed by 1999Cr01 as $\Delta J=2$ transition.
2869.0	(33/2 ⁻)	529.9 3	100	2339.1	(29/2 ⁻)	(E2)		
2937.5	(35/2 ⁻)	495.9 1	100 3	2441.6	(31/2 ⁻)	(E2)	0.0198	
		605.4 3	31.9 13	2331.7	(33/2 ⁺)	D		I_γ : weighted average of 31.6 13 in (²⁶ Mg,5n γ), 32.2 14 in (¹⁶ O,4n γ).
3005.2	(37/2 ⁺)	673.5 1	100	2331.7	(33/2 ⁺)	(E2)		
3179.8	(35/2 ⁺)	700.4 3	100	2479.4	(31/2 ⁺)	(E2)		
3206.8	(37/2 ⁻)	511.5 1	100	2695.3	(33/2 ⁻)	(E2)		
3260.0	(37/2 ⁺)	449.9 [‡] 5	21.7 [‡] 22	2810.3	(33/2 ⁺)			
		928.2 [‡] 3	100 4	2331.7	(33/2 ⁺)	(E2)		
3288.0	(35/2 ⁻)	518.6 3	100	2769.4	(31/2 ⁻)	(E2)		
3416.6	(37/2 ⁺)	658.8 [‡] 5	100 [‡]	2757.8	(33/2 ⁺)			
3452.8	(37/2 ⁻)	583.8 3	100	2869.0	(33/2 ⁻)	(E2)		
3502.5	(39/2 ⁻)	565.0 1	100	2937.5	(35/2 ⁻)	(E2)		
3666.0	(41/2 ⁺)	660.9 1	100	3005.2	(37/2 ⁺)	(E2)		
3787.9	(41/2 ⁻)	581.1 1	100	3206.8	(37/2 ⁻)	(E2)		
3872.1	(41/2 ⁺)	612.1 3	47 4	3260.0	(37/2 ⁺)	(Q)		I_γ : unweighted average of 42.9 14 in (²⁶ Mg,5n γ) and 50.0 20 in (¹⁶ O,4n γ).
		866.9 3	100 3	3005.2	(37/2 ⁺)	(E2)		
3874.8	(39/2 ⁻)	586.8 [‡] 3	100	3288.0	(35/2 ⁻)	(Q)		
3921.7	(39/2 ⁺)	741.8 3	100	3179.8	(35/2 ⁺)			
4103.5	(41/2 ⁻)	650.7 3	100	3452.8	(37/2 ⁻)	(E2)		
4141.7	(43/2 ⁻)	639.2 1	100	3502.5	(39/2 ⁻)	(E2)		
4333.9	(45/2 ⁺)	667.8 1	100	3666.0	(41/2 ⁺)	(E2)		
4437.5	(45/2 ⁻)	649.6 1	100	3787.9	(41/2 ⁻)	(E2)		
4525.7	(43/2 ⁻)	650.9 3	100	3874.8	(39/2 ⁻)	(E2)		
4627.0	(45/2 ⁺)	754.7 3	100 4	3872.1	(41/2 ⁺)	(E2)		
		961.1 3	35 8	3666.0	(41/2 ⁺)			I_γ : unweighted average of 42.3 26 in (²⁶ Mg,5n γ) and 26.8 25 in (¹⁶ O,4n γ).
4672.3	(43/2 ⁺)	750.6 5	100	3921.7	(39/2 ⁺)			
4822.0	(45/2 ⁻)	718.5 3	100	4103.5	(41/2 ⁻)	(E2)		
4851.0	(47/2 ⁻)	709.3 1	100	4141.7	(43/2 ⁻)	(E2)		
5082.8	(49/2 ⁺)	748.9 1	100	4333.9	(45/2 ⁺)	(E2)		
5151.6	(49/2 ⁻)	714.1 1	100	4437.5	(45/2 ⁻)	(E2)		
5237.3	(47/2 ⁻)	711.6 5	100	4525.7	(43/2 ⁻)	(E2)		
5429.5	(49/2 ⁺)	802.6 3	100 3	4627.0	(45/2 ⁺)	(E2)		

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Adopted Levels, Gammas (continued) $\gamma(^{167}\text{Hf})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	Mult. [#]
5429.5	(49/2 ⁺)	1095		4333.9	(45/2 ⁺)	
5490.4?	(47/2 ⁺)	818.1 & 5	100	4672.3	(43/2 ⁺)	
5598.8	(49/2 ⁻)	776.8 5	100	4822.0	(45/2 ⁻)	(E2)
5623.9	(51/2 ⁻)	772.9 3	100	4851.0	(47/2 ⁻)	(E2)
5921.1	(53/2 ⁺)	838.3 3	100	5082.8	(49/2 ⁺)	(Q)
5927.5	(53/2 ⁻)	775.9 1	100	5151.6	(49/2 ⁻)	(E2)
6249.9	(53/2 ⁺)	820.4 3	100	5429.5	(49/2 ⁺)	(E2)
6458.0	(55/2 ⁻)	834.1 3	100	5623.9	(51/2 ⁻)	(E2)
6765.7	(57/2 ⁻)	838.2 3	100	5927.5	(53/2 ⁻)	(Q)
6836.0	(57/2 ⁺)	914.9 3	100	5921.1	(53/2 ⁺)	(E2)
7103.9	(57/2 ⁺)	854		6249.9	(53/2 ⁺)	
7354.7	(59/2 ⁻)	896.7 3	100	6458.0	(55/2 ⁻)	(E2)
7667.5	(61/2 ⁻)	901.8 3	100	6765.7	(57/2 ⁻)	(Q)
7806.3	(61/2 ⁺)	970.3 3	100	6836.0	(57/2 ⁺)	(Q)
8013.9	(61/2 ⁺)	910		7103.9	(57/2 ⁺)	
8314.4	(63/2 ⁻)	959.7 5	100	7354.7	(59/2 ⁻)	(Q)
8630.5	(65/2 ⁻)	963.0 5	100	7667.5	(61/2 ⁻)	
8810.4	(65/2 ⁺)	1004.1 5	100	7806.3	(61/2 ⁺)	(Q)
9644.3	(69/2 ⁻)	1013.8 5	100	8630.5	(65/2 ⁻)	
9837.7	(69/2 ⁺)	1027.3 5	100	8810.4	(65/2 ⁺)	
10687.5	(73/2 ⁻)	1043.2 5	100	9644.3	(69/2 ⁻)	
10876.7?	(73/2 ⁺)	1039 &		9837.7	(69/2 ⁺)	
11939.7?	(77/2 ⁺)	1063 &		10876.7?	(73/2 ⁺)	

[†] From ($^{26}\text{Mg}, 5n\gamma$) (1999Cr01), except as noted.[‡] From ($^{16}\text{O}, 4n\gamma$) (1999Cr01).[#] Based on $\gamma(\theta)$ and/or DCO ratios in ($^{26}\text{Mg}, 5n\gamma$) and ($^{16}\text{O}, 4n\gamma$). The in-band stretched quadrupole in-band transitions listed with mult=Q in the datasets have been assigned here as (E2), as mult=M2 is highly unlikely for such transitions. Those with mult=(Q) or (D) in individual datasets, have been assigned as such, since definite assignment could not be made from available DCO data in 1999Cr01.[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

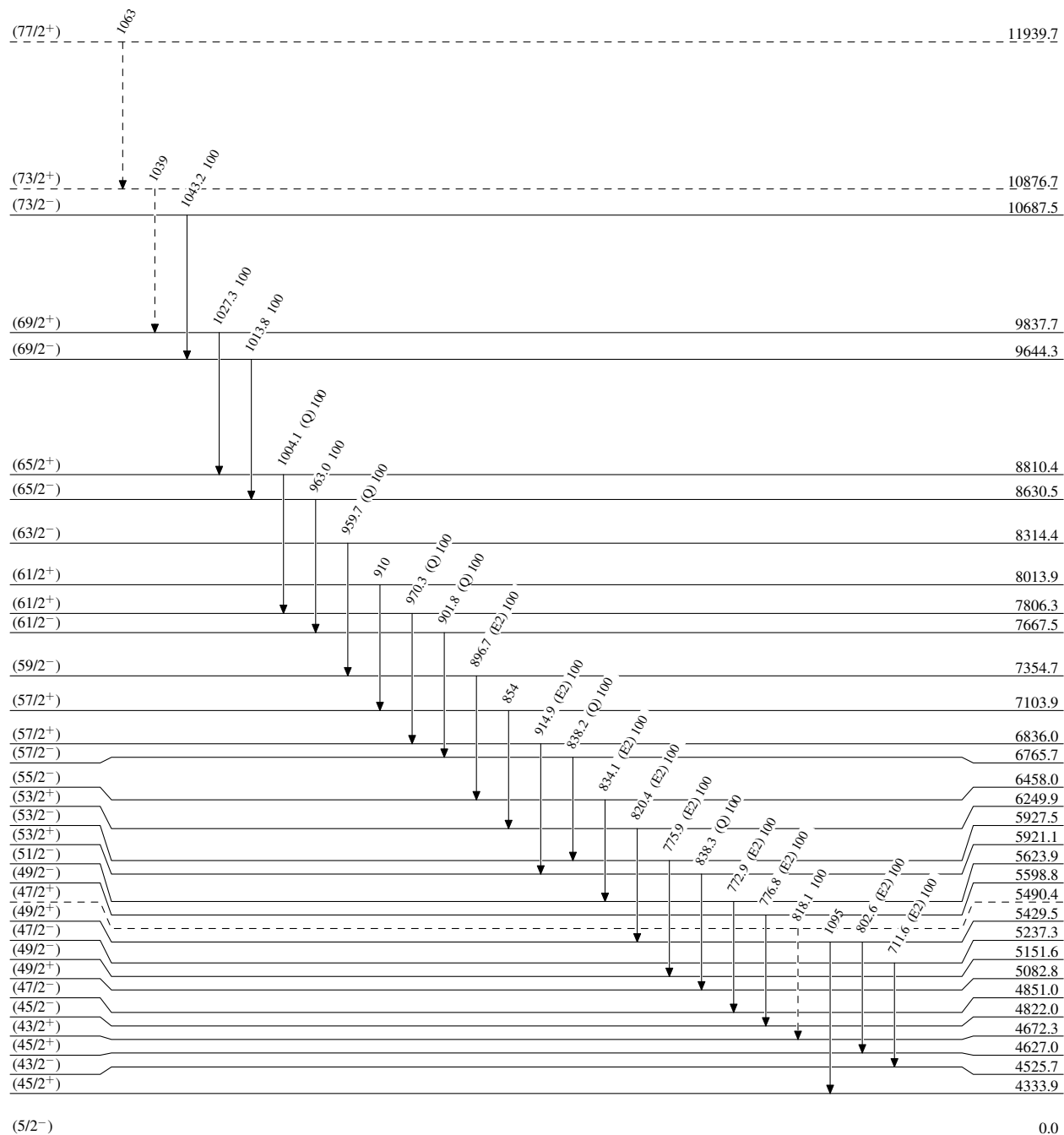
& Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

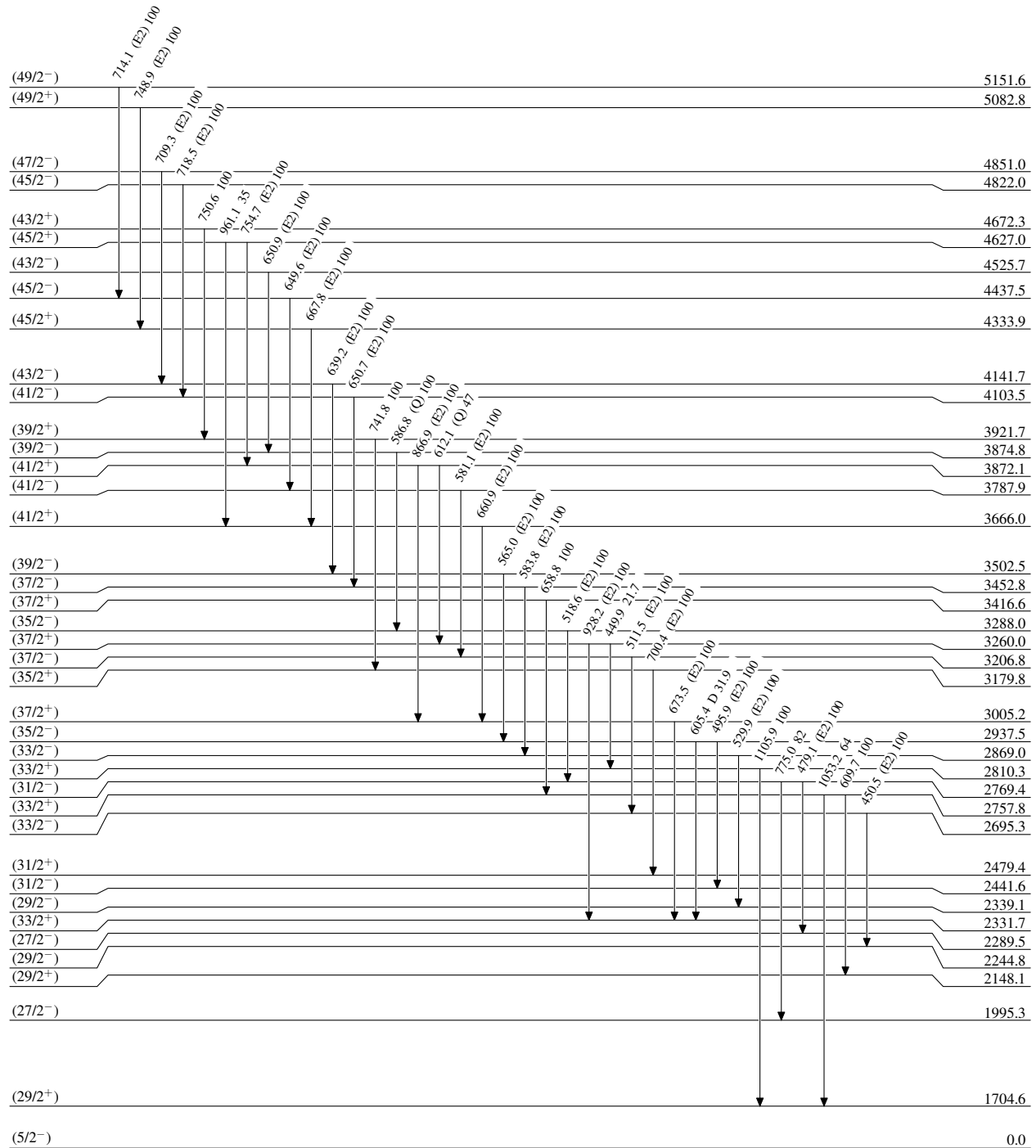
-----► γ Decay (Uncertain)

2.05 min 5

 $^{167}_{72}\text{Hf}_{95}$

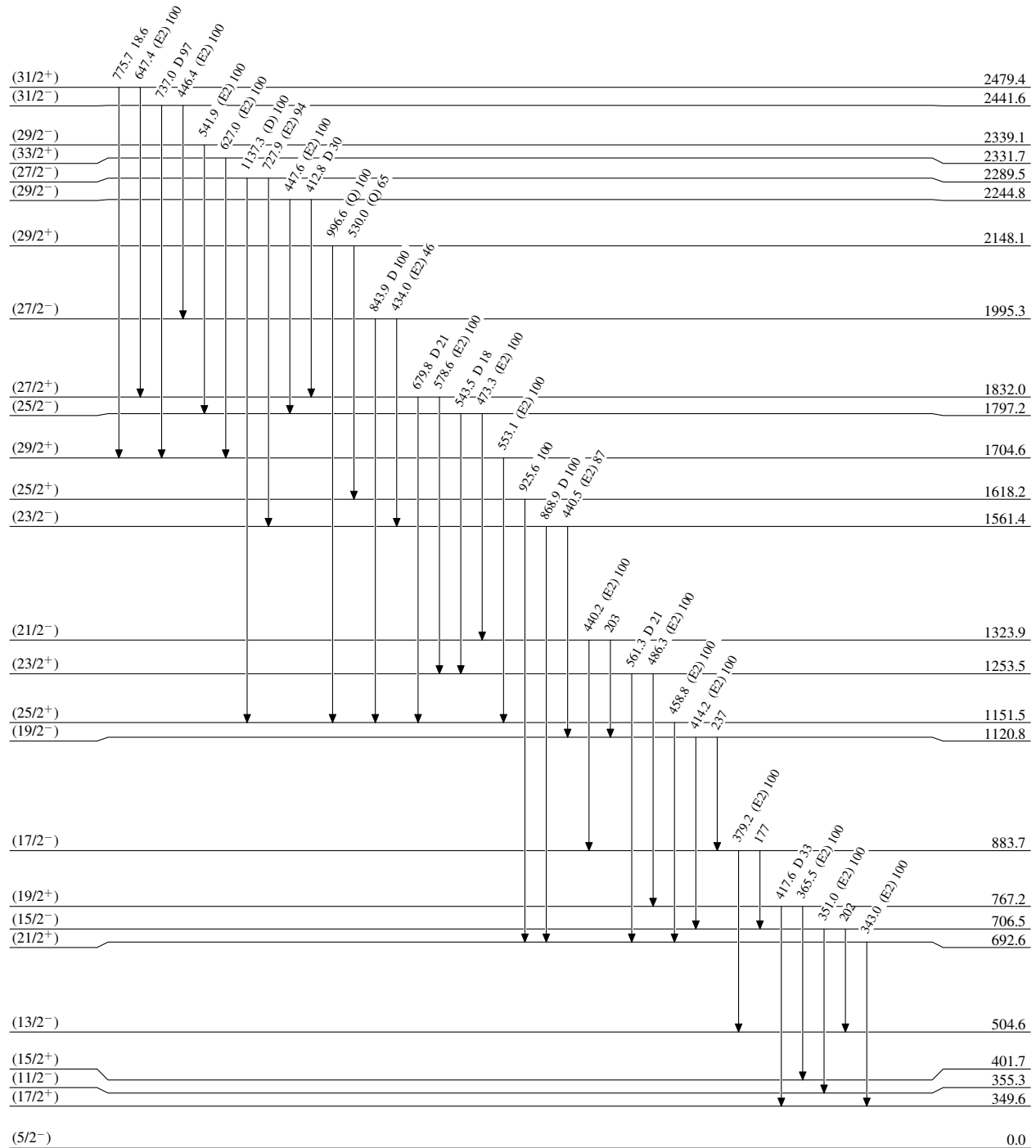
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



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

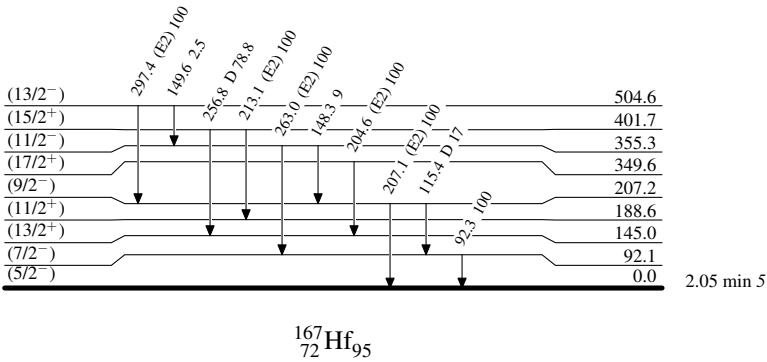
Intensities: Relative photon branching from each level

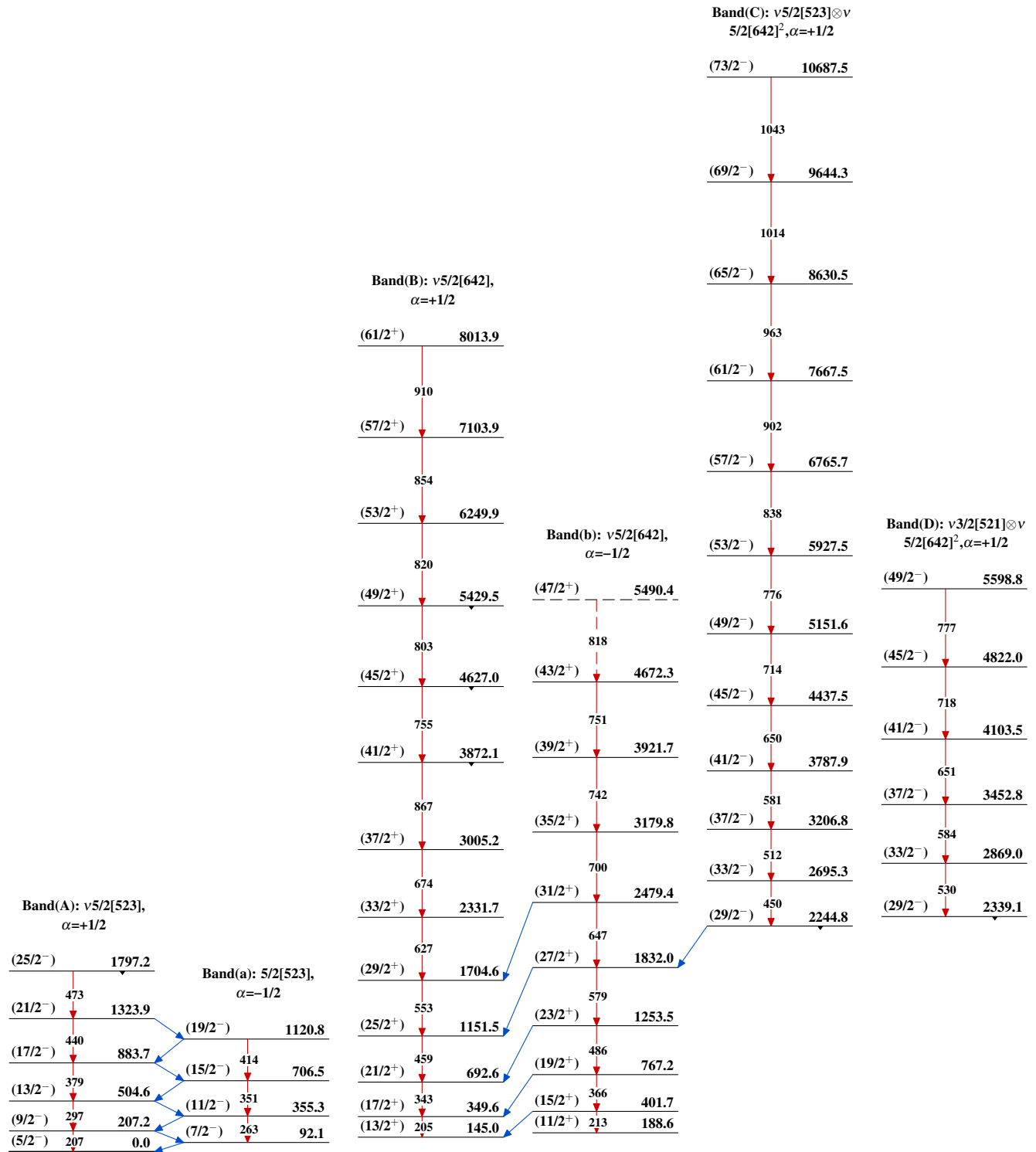


Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Adopted Levels, Gammas (continued)