

$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. Ohya	NDS 111, 1619 (2010)	20-Jan-2009

1996Pa11: $^{116}\text{Cd}(^9\text{Be},4n\gamma)$ E=37.8 MeV; 6 Ge + 14 BGO Compton suppressed spectrometer; γ singles, $\gamma\gamma$ -coincidence, DCO; deduced band structure.

 ^{121}Te Levels

E(level) [†]	J π [‡]	T _{1/2}	Comments
0.0	1/2 ⁺		
212.63 ^d 17	3/2 ⁺		
293.98 [@] 3	11/2 ⁻	164.2 d 8	Additional information 1. T _{1/2} : from Adopted Levels.
438.58 [@] 10	(9/2) ⁻		
443.9 ^c 4	7/2 ⁺		
475.7 ^d 3	(5/2) ⁺		
532.8 3	(5/2) ⁺		J π : 3/2 ⁺ in Adopted Levels.
595.3 ^b 3	(5/2) ⁺		
683.8 ^d 4	(7/2) ⁺		
831.5 ^c 5	(9/2) ⁺		
888.8 ^b 4	(7/2) ⁺		
926.0 [@] 3	(15/2) ⁻		
975.33 [@] 25	(13/2) ⁻		
1019.0 ^d 4	(9/2) ⁺		
1081.3 ^c 5	(11/2) ⁺		
1172.4 ^b 4	(9/2) ⁺		
1177.7 [#] 3	(11/2) ⁻		
1208.9 ^d 5	(11/2) ⁺		
1420.5 ^c 6	(13/2) ⁺		
1473.4 ^b 5	(11/2) ⁺		
1600.0 [@] 4	(17/2) ⁻		
1608.0 ^d 5	(13/2) ⁺		
1654.8 [@] 4	(19/2) ⁻		
1713.1 ^c 6	(15/2) ⁺		
1789.2 ^b 5	(13/2) ⁺		
1807.4 ^d 5	(15/2) ⁺		
1823.6 4	(17/2) ⁻		
1994.4 [#] 4	(15/2) ⁻		
2016.7 [@] 4	(21/2) ⁻		
2071.6 ^c 6	(17/2) ⁺		
2119.1 ^b 6	(15/2) ⁺		
2333.2 [@] 4	(23/2) ⁻		
2396.7 ^d 7	(17/2) ⁺		
2422.5 6	(21/2) ⁻		
2471.0 ^c 7	(19/2) ⁺		
2583.2 ^d 7	(19/2) ⁺		
2679.8 ^a 4	(19/2) ⁻		
2717.9 [@] 4	(23/2) ⁻		Band assignment to the band 2 is from $^{114}\text{Cd}(^{11}\text{B},p3n\gamma)$ (1996Si24).
2854.7 [#] 4	(19/2) ⁻		

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$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ **1996Pa11** (continued) ^{121}Te Levels (continued)

E(level) [†]	J^π [‡]	Comments
2916.2 ^c 7	(21/2 ⁺)	
2937.4 ^a 5	(21/2 ⁻)	
2954.0 ^{&} 5	(23/2,25/2)	$J^\pi=25/2^-$ was proposed in this reaction (1996Pa11), this assignment disagrees with $J^\pi=23/2^{(+)}$ given in $^{114}\text{Cd}(^{11}\text{B},p3n\gamma)$ (1996Si24,1995Si28).
2997.1 6	(21/2)	
3073.5 7	(25/2 ⁻)	
3138.1 [@] 5	(25/2 ⁻)	
3229.5 ^d 8	(21/2 ⁺)	
3255.4 ^a 5	(23/2 ⁻)	
3321.7 6	(23/2)	
3322.0 ^c 8	(23/2 ⁺)	
3389.7 ^d 8	(23/2 ⁺)	
3403.5 [@] 5	(27/2 ⁻)	
3424.5 [#] 5	(23/2 ⁻)	
3443.7 7		
3595.5 7		
3643.0 ^a 6	(25/2 ⁻)	
3656.4 6	(27/2 ⁻)	
3672.7 ^{&} 5	(27/2,29/2)	$J^\pi=29/2^-$ was proposed in this reaction (1996Pa11), this assignment disagrees with $J^\pi=27/2^{(+)}$ given in $^{114}\text{Cd}(^{11}\text{B},p3n\gamma)$ (1996Si24,1995Si28).
3780.4 ^c 8	(25/2 ⁺)	
3835.3 ^{&} 6		
3938.6 6		
4083.5 ^a 6	(27/2 ⁻)	
4148.0 ^c 9	(27/2 ⁺)	
4188.7 [#] 6	(27/2 ⁻)	
4241.0 [@] 6	(29/2 ⁻)	
4375.0 [@] 6	(31/2 ⁻)	
4413.7 ^{&} 6	(31/2)	$J^\pi=31/2^-$ was proposed in this reaction (1996Pa11), this assignment disagrees with $J^\pi=31/2^{(+)}$ given in $^{114}\text{Cd}(^{11}\text{B},p3n\gamma)$ (1996Si24,1995Si28).
4444.4 7		
4788.3 [@] 6	(33/2 ⁻)	
4900.9 7	(33/2)	
5015.1 ^{&} 7		
5023.1 ^{&} 7	(35/2)	
5182.6 [@] 6	(35/2 ⁻)	
5282.9 8		
5312.1 7		
5506.1 7		
5537.2 [@] 7	(39/2 ⁻)	
5693.1 [@] 7		

[†] The evaluator recalculated E(levels) of the negative-parity band by assuming a bandhead energy of 293.98 keV.

[‡] From rotational band based on shell model configurations; band structures evidenced from M1, M1+E2(D(+Q)) cascades, and E2(Q) cross over transitions, and total routhian analysis studies in **1996Pa11**.

Band(A): γ vibrational band on $1h_{11/2}$.

@ Band(B): built on $1h_{11/2}$.

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 $^{116}\text{Cd}(^9\text{Be},4n\gamma)$ **1996Pa11** (continued) ^{121}Te Levels (continued)

& Band(C): 3quasi-particle configuration. $\pi=-$ in $^{116}\text{Cd}(^9\text{Be},4n\gamma)$, whereas $\pi=(+)$ in $^{114}\text{Cd}(^{11}\text{B},p3n\gamma)$ with different spin sequence.

^a Band(D): Built on $(19/2^-)$ level. Possible 3quasi-particle configuration.

^b Band(E): built on $2d_{5/2}$.

^c Band(F): built on $1g_{7/2}$.

^d Band(G): built on $2d_{3/2}$.

$\gamma(^{121}\text{Te})$

DCO(C)=I(35° - 90°)/I(90° - 35°) from sum spectra gated by 631.7 γ and 729.0 γ Q transitions.
 DCO(D)=I(35° - 90°)/I(90° - 35°) from sum spectra gated by 536.7 γ , 416.6 γ and 1121.4 γ Q transitions sum gate.
 DCO(E)=I(35° - 90°)/I(90° - 35°) from sum spectra gated by 475.3 γ and 543.3 γ Q transitions.
 DCO(F)=I(35° - 90°)/I(90° - 35°) from sum spectra gated by 471.0 γ and 525.1 γ Q transitions.
 DCO(G): adopted from ¹¹⁹Sb(α ,2n γ).
 DCO(I)=I(35° - 90°)/I(90° - 35°) from sum spectra gated by 588.9 γ and 651.0 γ Q transitions, adopted from ¹¹⁰Pd(¹⁸O, α 3n γ).

E_γ ‡	I_γ †	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	δ #	α^b	Comments
122.4 2	0.14 1	5023.1	(35/2)	4900.9	(33/2)				
145.1 2	3.5 4	438.58	(9/2) ⁻	293.98	11/2 ⁻	M1+E2 &	-0.29 10	0.256 13	$\alpha(K)=0.218$ 9; $\alpha(L)=0.031$ 4; $\alpha(M)=0.0063$ 7; $\alpha(N+..)=0.00136$ 14 $\alpha(N)=0.00123$ 13; $\alpha(O)=0.000128$ 11 Mult.: DCO(D)=0.58 2. E γ : Value given by 1996Pa11 is 0.5 keV higher than other data: 144.5 in ¹¹⁴ Cd(¹¹ B,p3n γ), 144.6 1 in ¹¹⁹ Sn(α ,2n γ), ¹²¹ Sb(d,2n γ). Mult.: DCO(E)=0.60 4.
189.9 2	0.43 4	1208.9	(11/2 ⁺)	1019.0	(9/2 ⁺)	D(+Q)			
199.4 2	0.14 2	1807.4	(15/2 ⁺)	1608.0	(13/2 ⁺)				
208.2 2	1.70 17	683.8	(7/2 ⁺)	475.7	(5/2 ⁺)	M1(+E2)		0.110 21	$\alpha(K)=0.091$ 15; $\alpha(L)=0.015$ 6; $\alpha(M)=0.0030$ 11; $\alpha(N+..)=0.00065$ 22 $\alpha(N)=0.00059$ 20; $\alpha(O)=5.8\times 10^{-5}$ 16 Mult.: DCO(C)=0.72 3, no parity change between initial and final state.
212.6 2	33 3	212.63	3/2 ⁺	0.0	1/2 ⁺	M1+E2 &	+0.226 8	0.0864	$\alpha(K)=0.0743$ 11; $\alpha(L)=0.00977$ 15; $\alpha(M)=0.00195$ 3; $\alpha(N+..)=0.000427$ 7 $\alpha(N)=0.000385$ 6; $\alpha(O)=4.14\times 10^{-5}$ 6 Mult.: DCO(F)=0.63 1.
225.2 2	0.12 1	5537.2	(39/2 ⁻)	5312.1					
231.3 2	15.6 16	443.9	7/2 ⁺	212.63	3/2 ⁺	E2 &		0.0913	$\alpha(K)=0.0745$ 11; $\alpha(L)=0.01346$ 20; $\alpha(M)=0.00274$ 4; $\alpha(N+..)=0.000578$ 9 $\alpha(N)=0.000527$ 8; $\alpha(O)=5.04\times 10^{-5}$ 8 Mult.: DCO(G)=0.68 2, adopted from 1979Ha47 where angular distribution and linear polarization measurement were performed.
249.9 2	0.14 2	1081.3	(11/2 ⁺)	831.5	(9/2 ⁺)				
257.7 2	3.2 3	2937.4	(21/2 ⁻)	2679.8	(19/2 ⁻)	D(+Q)			Mult.: DCO(C)=0.60 3.
263.5 2	2.15 22	475.7	(5/2 ⁺)	212.63	3/2 ⁺	M1(+E2)		0.053 6	$\alpha(K)=0.045$ 4; $\alpha(L)=0.0068$ 16; $\alpha(M)=0.0014$ 4; $\alpha(N+..)=0.00029$ 7 $\alpha(N)=0.00027$ 6; $\alpha(O)=2.7\times 10^{-5}$ 5 Mult.: DCO(C)=0.75 4, no parity change between initial and final state.

¹¹⁶Cd(⁹Be,4n γ) **1996Pa11** (continued)

$\gamma(^{121}\text{Te})$ (continued)

E_γ ‡	I_γ †	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	$\delta^\#$	α^b	Comments
265.7 2	0.40 4	3938.6		3672.7	(27/2,29/2)				
265.8 2	8.2 8	3403.5	(27/2 ⁻)	3138.1	(25/2 ⁻)	D(+Q)			Mult.: DCO(C)=0.43 3.
273.8 2	0.18 2	3595.5		3321.7	(23/2)				
283.8 2	0.49 5	1172.4	(9/2 ⁺)	888.8	(7/2 ⁺)				
292.8 2	0.37 4	1713.1	(15/2 ⁺)	1420.5	(13/2 ⁺)	D(+Q)			Mult.: DCO(I)=0.39 3, adopted from 1995BI21 .
293.6 2	1.52 15	888.8	(7/2 ⁺)	595.3	(5/2 ⁺)				
300.9 2	0.28 3	1473.4	(11/2 ⁺)	1172.4	(9/2 ⁺)				
316.0 2	0.36 4	1789.2	(13/2 ⁺)	1473.4	(11/2 ⁺)				
316.4 2	19.8 20	2333.2	(23/2 ⁻)	2016.7	(21/2 ⁻)	D(+Q)			Mult.: DCO(C)=0.43 1.
318.1 2	2.31 23	3255.4	(23/2 ⁻)	2937.4	(21/2 ⁻)				
319.9 2	0.29 3	532.8	(5/2 ⁺)	212.63	3/2 ⁺				
330.4 2	0.10 1	2119.1	(15/2 ⁺)	1789.2	(13/2 ⁺)				
339.4 2	0.40 4	1420.5	(13/2 ⁺)	1081.3	(11/2 ⁺)	D(+Q)			Mult.: DCO(G)=0.28 2, adopted from 1979Ha47 where angular distribution and linear polarization measurement were performed.
354.6 2	1.06 11	5537.2	(39/2 ⁻)	5182.6	(35/2 ⁻)	Q ^a			Mult.: DCO(C)=0.89 5.
358.7 2	0.36 4	2071.6	(17/2 ⁺)	1713.1	(15/2 ⁺)	D(+Q)			Mult.: DCO(G)=0.39 4, adopted from 1979Ha47 where angular distribution and linear polarization measurement were performed.
361.9 2	49 5	2016.7	(21/2 ⁻)	1654.8	(19/2 ⁻)	D(+Q)			Mult.: DCO(C)=0.33 1.
374.1 2	0.71 7	4788.3	(33/2 ⁻)	4413.7	(31/2)				
382.5 2	2.92 30	595.3	(5/2 ⁺)	212.63	3/2 ⁺				
384.8 2	1.48 15	2717.9	(23/2 ⁻)	2333.2	(23/2 ⁻)	D(+Q)			Mult.: DCO(C)=0.74 4.
387.5 2	1.41 14	3643.0	(25/2 ⁻)	3255.4	(23/2 ⁻)				
387.6 2	2.57 26	831.5	(9/2 ⁺)	443.9	7/2 ⁺	M1+E2 &	-4.6 6	0.01725	$\alpha(K)=0.01457$ 21; $\alpha(L)=0.00216$ 3; $\alpha(M)=0.000434$ 7; $\alpha(N+..)=9.32\times 10^{-5}$ 14 $\alpha(N)=8.46\times 10^{-5}$ 12; $\alpha(O)=8.60\times 10^{-6}$ 13 Mult.: DCO(I)=0.47 2, adopted from 1995BI21 . Mult.: DCO(C)=0.43 2.
393.9 2	1.34 14	5182.6	(35/2 ⁻)	4788.3	(33/2 ⁻)	D(+Q)			
399.5 2	0.11 1	2471.0	(19/2 ⁺)	2071.6	(17/2 ⁺)				
416.6 2	10.3 10	2016.7	(21/2 ⁻)	1600.0	(17/2 ⁻)	Q			Mult.: DCO(D)=1.06 5.
419.9 2	2.11 21	3138.1	(25/2 ⁻)	2717.9	(23/2 ⁻)	D(+Q)			Mult.: DCO(C)=0.56 3.
440.4 2	0.67 7	4083.5	(27/2 ⁻)	3643.0	(25/2 ⁻)				
445.0 2	0.12 1	888.8	(7/2 ⁺)	443.9	7/2 ⁺				
446.6 2	0.39 4	3443.7		2997.1	(21/2)				
471.0 2	10.1 10	683.8	(7/2 ⁺)	212.63	3/2 ⁺	E2		0.00967 14	$\alpha=0.00967$ 14; $\alpha(K)=0.00822$ 12; $\alpha(L)=0.001166$ 17; $\alpha(M)=0.000234$ 4; $\alpha(N+..)=5.05\times 10^{-5}$ 7 $\alpha(N)=4.58\times 10^{-5}$ 7; $\alpha(O)=4.72\times 10^{-6}$ 7 Mult.: DCO(F)=1.00 2, no parity change between initial and final state.
475.4 2	8.6 9	475.7	(5/2 ⁺)	0.0	1/2 ⁺	(E2) &		0.00942 14	$\alpha=0.00942$ 14; $\alpha(K)=0.00801$ 12; $\alpha(L)=0.001133$ 16; $\alpha(M)=0.000228$ 4; $\alpha(N+..)=4.91\times 10^{-5}$ 7

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¹¹⁶Cd(⁹Be,4n γ) **1996Pa11** (continued)

$\gamma(^{121}\text{Te})$ (continued)

E_γ ‡	I_γ †	E_i (level)	J_i^π	E_f	J_f^π	Mult. @	α^b	Comments
								$\alpha(N)=4.45\times 10^{-5}$ 7; $\alpha(O)=4.59\times 10^{-6}$ 7
487.4 2	1.05 11	4900.9	(33/2)	4413.7	(31/2)	D(+Q)		Mult.: DCO(E)=0.98 2.
510.5 2	0.76 8	5693.1		5182.6	(35/2 ⁻)			Mult.: DCO(C)=0.43 3.
525.1 2	10.1 10	1208.9	(11/2 ⁺)	683.8	(7/2 ⁺)	Q		Mult.: DCO(F)=1.01 2.
533.1 2	0.79 8	532.8	(5/2) ⁺	0.0	1/2 ⁺			
533.3 2	1.16 12	3672.7	(27/2,29/2)	3138.1	(25/2 ⁻)			
536.7 2	3.6 4	975.33	(13/2) ⁻	438.58	(9/2) ⁻	(E2)&	0.00670 10	$\alpha=0.00670$ 10; $\alpha(K)=0.00572$ 8; $\alpha(L)=0.000788$ 11; $\alpha(M)=0.0001580$ 23; $\alpha(N+..)=3.42\times 10^{-5}$ 5
								$\alpha(N)=3.09\times 10^{-5}$ 5; $\alpha(O)=3.22\times 10^{-6}$ 5
543.3 2	5.4 5	1019.0	(9/2 ⁺)	475.7	(5/2) ⁺	Q		Mult.: DCO(D)=0.94 5.
547.6 2	1.87 19	4788.3	(33/2 ⁻)	4241.0	(29/2 ⁻)	Q		Mult.: DCO(E)=1.00 2.
570.1 2	1.49 15	3424.5	(23/2 ⁻)	2854.7	(19/2 ⁻)			Mult.: DCO(D)=1.11 8.
575.4 2	0.28 3	3255.4	(23/2 ⁻)	2679.8	(19/2 ⁻)			
584.4 2	0.47 5	1473.4	(11/2 ⁺)	888.8	(7/2 ⁺)			
588.9 2	2.65 27	1420.5	(13/2 ⁺)	831.5	(9/2) ⁺	(E2)&	0.00521 8	$\alpha=0.00521$ 8; $\alpha(K)=0.00446$ 7; $\alpha(L)=0.000604$ 9; $\alpha(M)=0.0001209$ 17; $\alpha(N+..)=2.62\times 10^{-5}$ 4
								$\alpha(N)=2.37\times 10^{-5}$ 4; $\alpha(O)=2.49\times 10^{-6}$ 4
589.0 2	3.0 3	1608.0	(13/2 ⁺)	1019.0	(9/2) ⁺	Q		Mult.: DCO(I)=1.00 2, adopted from 1995B121 .
595.4 2	1.78 18	595.3	(5/2) ⁺	0.0	1/2 ⁺			Mult.: DCO(E)=1.02 2.
598.6 2	9.1 9	1807.4	(15/2 ⁺)	1208.9	(11/2 ⁺)	Q		Mult.: DCO(F)=1.05 2.
598.9 2	3.7 4	2422.5	(21/2 ⁻)	1823.6	(17/2 ⁻)			
601.4 2	1.70 17	5015.1		4413.7	(31/2)			
609.2 2	2.32 23	5023.1	(35/2)	4413.7	(31/2)			
617.0 2	2.25 23	1789.2	(13/2 ⁺)	1172.4	(9/2) ⁺			
621.3 2	2.32 23	2954.0	(23/2,25/2)	2333.2	(23/2) ⁻			
624.5 2	11.5 12	1600.0	(17/2 ⁻)	975.33	(13/2) ⁻	Q		Mult.: DCO(D)=1.03 3.
631.7 2	118 12	926.0	(15/2) ⁻	293.98	11/2 ⁻	E2&	0.00433 6	$\alpha=0.00433$ 6; $\alpha(K)=0.00372$ 6; $\alpha(L)=0.000497$ 7; $\alpha(M)=9.93\times 10^{-5}$ 14; $\alpha(N+..)=2.15\times 10^{-5}$ 3
								$\alpha(N)=1.95\times 10^{-5}$ 3; $\alpha(O)=2.05\times 10^{-6}$ 3
631.7 2	4.5 5	1713.1	(15/2 ⁺)	1081.3	(11/2 ⁺)	Q		Mult.: DCO(C)=1.00 1.
								Mult.: DCO(G)=1.06 3, adopted from 1979Ha47 where angular distribution and linear polarization measurement were performed.
637.4 2	3.8 4	1081.3	(11/2 ⁺)	443.9	7/2 ⁺	Q		Mult.: DCO(G)=1.10 5, adopted from 1979Ha47 where angular distribution and linear polarization measurement were performed.
645.3 2	0.26 3	2119.1	(15/2 ⁺)	1473.4	(11/2 ⁺)			
651.0 2	1.74 17	2071.6	(17/2 ⁺)	1420.5	(13/2 ⁺)	Q		Mult.: DCO(I)=1.02 2, adopted from 1995B121 .
651.0 2	0.55 6	3073.5	(25/2 ⁻)	2422.5	(21/2 ⁻)			
674.1 2	15.3 15	1600.0	(17/2 ⁻)	926.0	(15/2) ⁻	D(+Q)		Mult.: DCO(C)=0.20 1.
678.2 2	10.5 11	2333.2	(23/2) ⁻	1654.8	(19/2) ⁻	Q		Mult.: DCO(C)=1.01 2.

¹¹⁶Cd(⁹Be,4n γ) **1996Pa11** (continued)

γ (¹²¹Te) (continued)

E_γ [‡]	I_γ [†]	E_i (level)	J_i^π	E_f	J_f^π	Mult. [@]	α^b	Comments
681.4 2	15.3 15	975.33	(13/2) ⁻	293.98	11/2 ⁻	M1+E2 ^{&}	0.0040 5	$\alpha=0.0040$ 5; $\alpha(K)=0.0035$ 4; $\alpha(L)=0.00044$ 4; $\alpha(M)=8.8\times 10^{-5}$ 7; $\alpha(N+..)=1.92\times 10^{-5}$ 16 $\alpha(N)=1.73\times 10^{-5}$ 15; $\alpha(O)=1.86\times 10^{-6}$ 19 Mult.: DCO(D)=0.35 2. Mult.: DCO(C)=0.33 2.
700.9 2	2.57 26	2717.9	(23/2) ⁻	2016.7	(21/2) ⁻	D(+Q)		Mult.: DCO(C)=0.94 3.
705.7 2	0.55 6	3643.0	(25/2) ⁻	2937.4	(21/2) ⁻			
719.4 2	8.2 8	3672.7	(27/2,29/2)	2954.0	(23/2,25/2)	Q		
729.0 2	101 10	1654.8	(19/2) ⁻	926.0	(15/2) ⁻	E2 ^{&}	0.00302 5	$\alpha=0.00302$ 5; $\alpha(K)=0.00260$ 4; $\alpha(L)=0.000339$ 5; $\alpha(M)=6.77\times 10^{-5}$ 10; $\alpha(N+..)=1.472\times 10^{-5}$ 21 $\alpha(N)=1.331\times 10^{-5}$ 19; $\alpha(O)=1.414\times 10^{-6}$ 20 Mult.: DCO(C)=1.01 1.
739.2 2	3.8 4	1177.7	(11/2) ⁻	438.58	(9/2) ⁻			
740.5 2	5.0 5	4413.7	(31/2)	3672.7	(27/2,29/2)	D(+Q)		Mult.: DCO(C)=0.67 3.
757.9 2	1.41 14	2471.0	(19/2 ⁺)	1713.1	(15/2 ⁺)	Q		Mult.: DCO(G)=0.93 4, adopted from 1979Ha47 where angular distribution and linear polarization measurement were performed.
764.2 2	0.58 6	4188.7	(27/2) ⁻	3424.5	(23/2) ⁻			
775.8 2	2.18 22	2583.2	(19/2 ⁺)	1807.4	(15/2 ⁺)	Q		Mult.: DCO(F)=0.97 4.
788.7 2	1.44 14	2396.7	(17/2 ⁺)	1608.0	(13/2 ⁺)	Q		Mult.: DCO(E)=1.08 4.
804.7 2	2.7 3	3138.1	(25/2) ⁻	2333.2	(23/2) ⁻	D(+Q)		Mult.: DCO(C)=0.34 2.
806.4 2	0.48 5	3389.7	(23/2 ⁺)	2583.2	(19/2 ⁺)	Q		Mult.: DCO(F)=0.95 5.
807.7 2	0.29 3	5182.6	(35/2) ⁻	4375.0	(31/2) ⁻	Q		Mult.: DCO(C)=1.04 5.
817.0 2	2.82 28	1994.4	(15/2) ⁻	1177.7	(11/2) ⁻			
826.0 2	0.12 1	4148.0	(27/2 ⁺)	3322.0	(23/2 ⁺)			
828.2 2	0.20 2	4083.5	(27/2) ⁻	3255.4	(23/2) ⁻			
832.8 2	0.12 1	3229.5	(21/2 ⁺)	2396.7	(17/2 ⁺)			
838.5 2	1.91 19	5282.9		4444.4				
844.6 2	1.58 16	2916.2	(21/2 ⁺)	2071.6	(17/2 ⁺)	Q		Mult.: DCO(I)=0.96 3, adopted from 1995BI21 .
848.4 2	2.9 3	1823.6	(17/2) ⁻	975.33	(13/2) ⁻	(Q)		Mult.: DCO(C)=0.91 5.
849.5 2	0.95 10	4788.3	(33/2) ⁻	3938.6				
851.0 2	0.74 7	3322.0	(23/2 ⁺)	2471.0	(19/2 ⁺)	Q		Mult.: DCO(G)=0.94 5.
856.2 2	1.53 15	2679.8	(19/2) ⁻	1823.6	(17/2) ⁻			
860.3 2	0.75 8	2854.7	(19/2) ⁻	1994.4	(15/2) ⁻			
864.2 2	0.27 3	3780.4	(25/2 ⁺)	2916.2	(21/2 ⁺)	Q		Mult.: DCO(I)=1.02 5, adopted from 1995BI21 .
881.3 2	1.27 13	3835.3		2954.0	(23/2,25/2)			
883.9 2	2.10 21	1177.7	(11/2) ⁻	293.98	11/2 ⁻			
897.3 2	3.7 4	1823.6	(17/2) ⁻	926.0	(15/2) ⁻	D(+Q)		Mult.: DCO(C)=0.82 5.
937.1 2	0.13 1	5312.1		4375.0	(31/2) ⁻			
937.4 2	9.5 10	2954.0	(23/2,25/2)	2016.7	(21/2) ⁻	Q		Mult.: DCO(C)=0.94 3.
971.9 2	1.65 17	4375.0	(31/2) ⁻	3403.5	(27/2) ⁻	Q		Mult.: DCO(C)=0.97 4.
1025.0 2	0.97 10	2679.8	(19/2) ⁻	1654.8	(19/2) ⁻			
1040.9 2	0.87 9	4444.4		3403.5	(27/2) ⁻			
1063.1 2	6.1 6	2717.9	(23/2) ⁻	1654.8	(19/2) ⁻	Q		Mult.: DCO(C)=0.93 4.
1068.0 2	1.99 20	1994.4	(15/2) ⁻	926.0	(15/2) ⁻	D(+Q)		Mult.: DCO(C)=0.81 5.

$\gamma(^{121}\text{Te})$ (continued)

E_γ [‡]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [@]	Comments
1070.2 2	8.3 8	3403.5	(27/2 ⁻)	2333.2	(23/2 ⁻)	Q	Mult.: DCO(C)=0.96 5.
1079.9 2	1.58 16	2679.8	(19/2 ⁻)	1600.0	(17/2 ⁻)	D(+Q)	Mult.: DCO(C)=0.63 5.
1091.1 2	2.63 26	3424.5	(23/2 ⁻)	2333.2	(23/2 ⁻)	D(+Q)	Mult.: DCO(C)=0.67 5.
1103.2 2	2.7 3	4241.0	(29/2 ⁻)	3138.1	(25/2 ⁻)	Q	Mult.: DCO(C)=0.97 4.
1121.4 2	13.9 14	3138.1	(25/2 ⁻)	2016.7	(21/2 ⁻)	Q	Mult.: DCO(D)=1.01 4.
1131.1 2	0.46 5	5506.1		4375.0	(31/2 ⁻)		
1200.1 2	0.61 6	2854.7	(19/2 ⁻)	1654.8	(19/2 ⁻)		
1304.9 2	0.35 4	3321.7	(23/2)	2016.7	(21/2 ⁻)	D	Mult.: DCO(C)=0.47 6.
1323.2 2	0.93 9	3656.4	(27/2 ⁻)	2333.2	(23/2 ⁻)	Q	Mult.: DCO(C)=1.11 9.
1342.2 2	1.53 15	2997.1	(21/2)	1654.8	(19/2 ⁻)	D	Mult.: DCO(C)=0.50 6.

[†] From [1996Pa11](#).

[‡] From [1996Pa11](#). A comparison with energies from ε decay show that the authors' values are too high by about 0.4 keV. When used in adopted gammas, these energies are lowered by 0.4 keV. [1996Pa11](#) report 577.0 γ from 1172.4 level. However, it is assigned to ^{119}Te by [1979Ha47](#).

From Adopted Levels.

@ From the DCO ratio, except where noted otherwise.

& From $^{119}\text{Sn}(\alpha,2n\gamma)$, $^{121}\text{Sb}(d,2n\gamma)$.

^a From [1995Si28](#).

^b 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.

∞

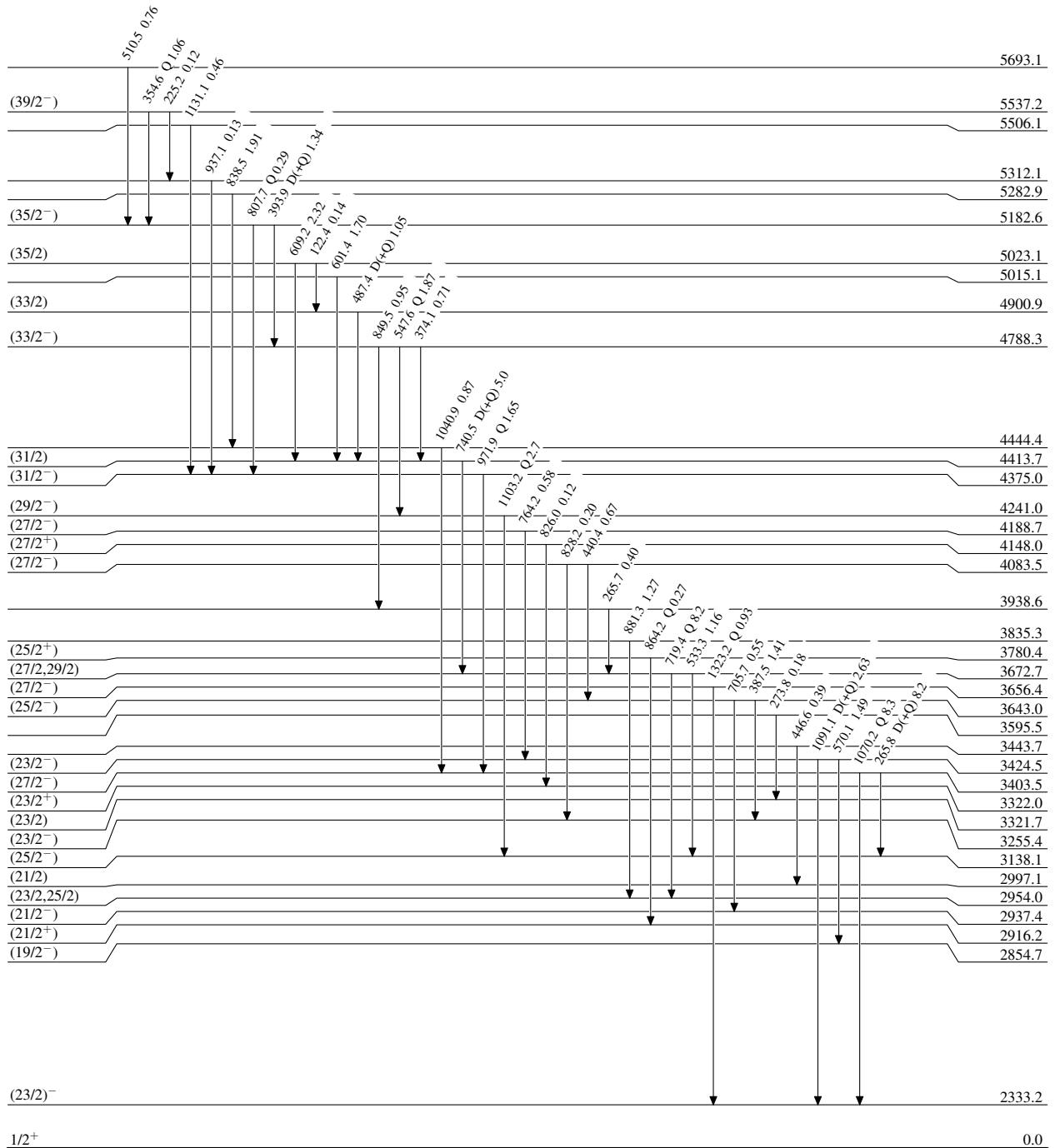
$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11

Level Scheme

Intensities: Relative I_γ

Legend

- \longrightarrow $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 \longrightarrow $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 \longrightarrow $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

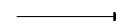




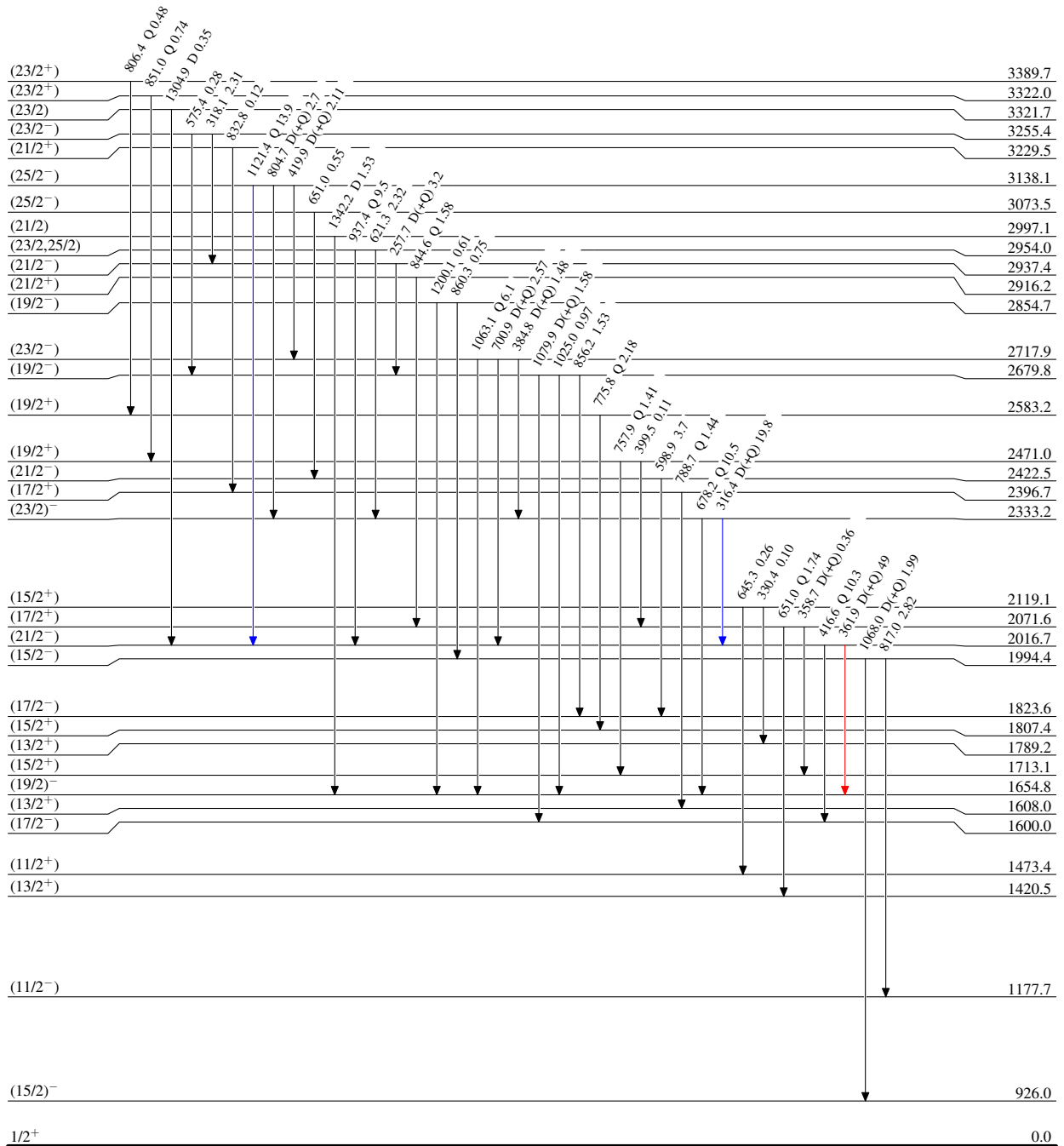
$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11

Level Scheme (continued)

Intensities: Relative I_γ

Legend

-  $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 $I_\gamma > 10\% \times I_\gamma^{\text{max}}$



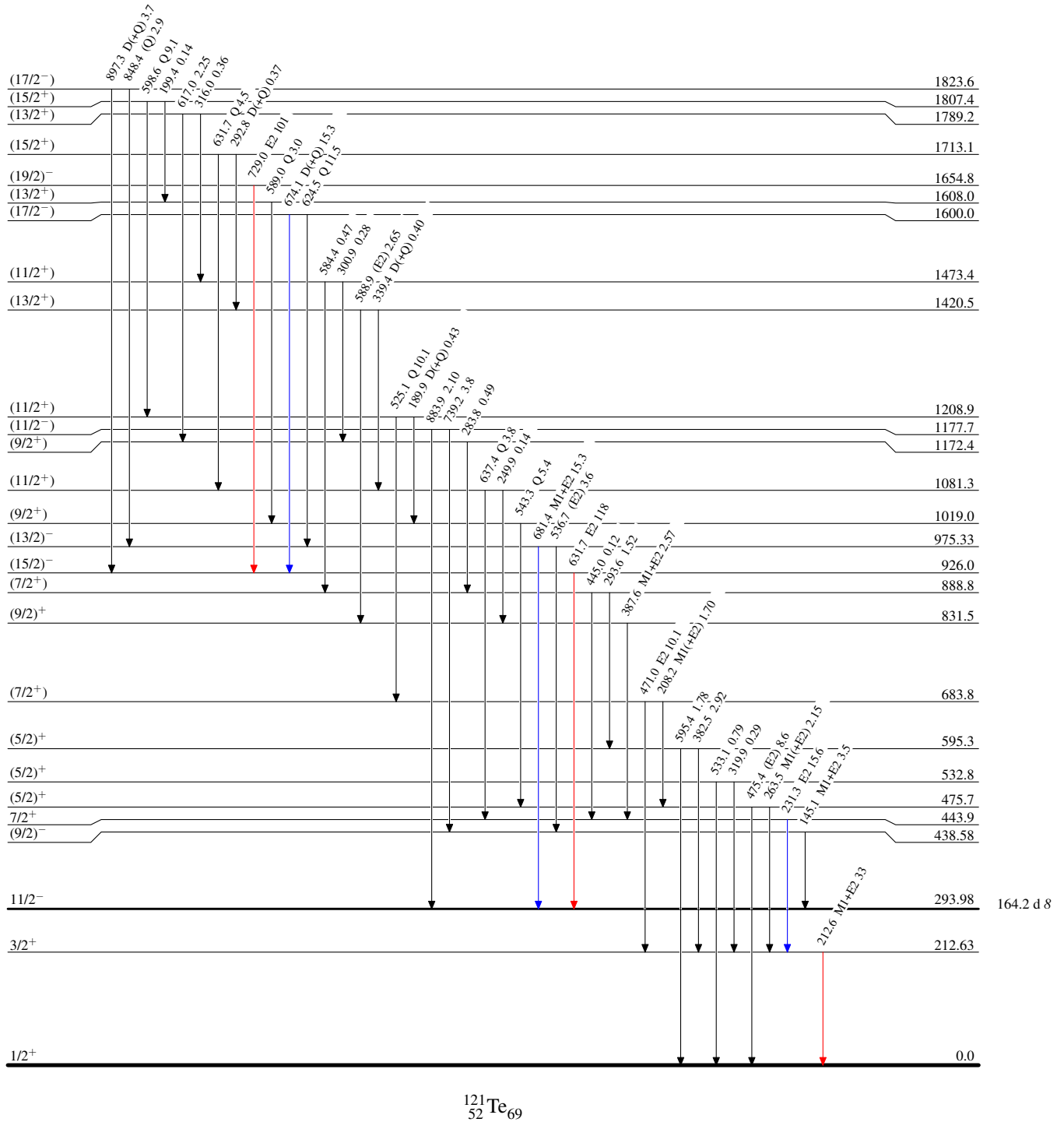
$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11

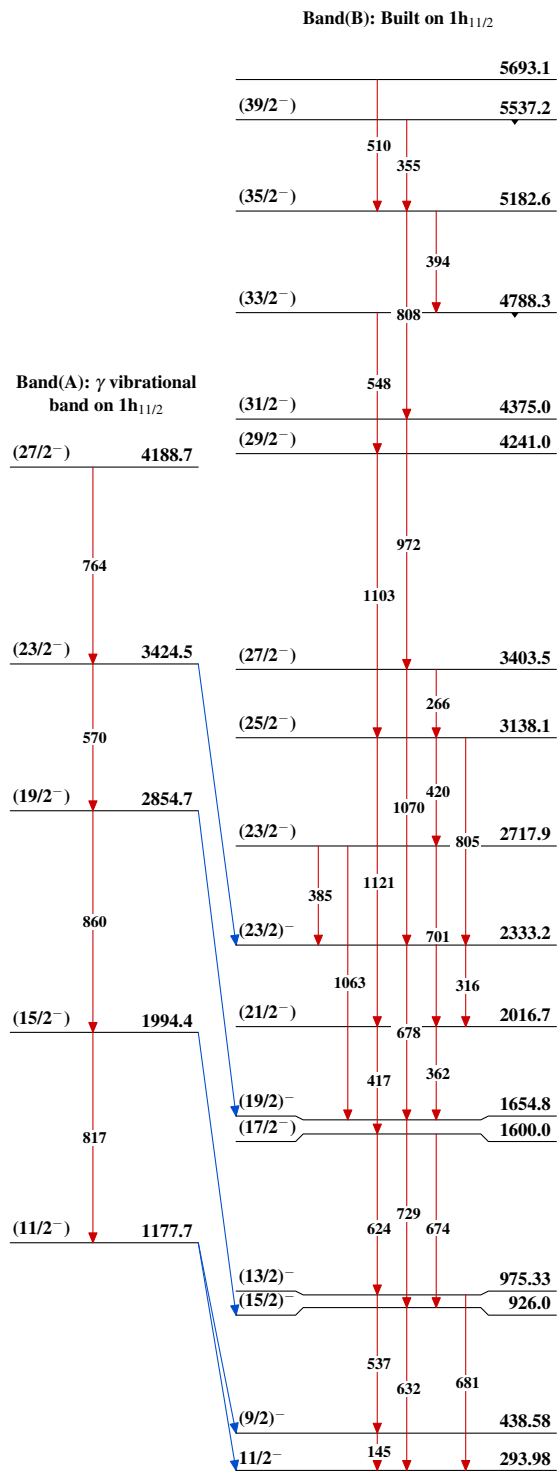
Level Scheme (continued)

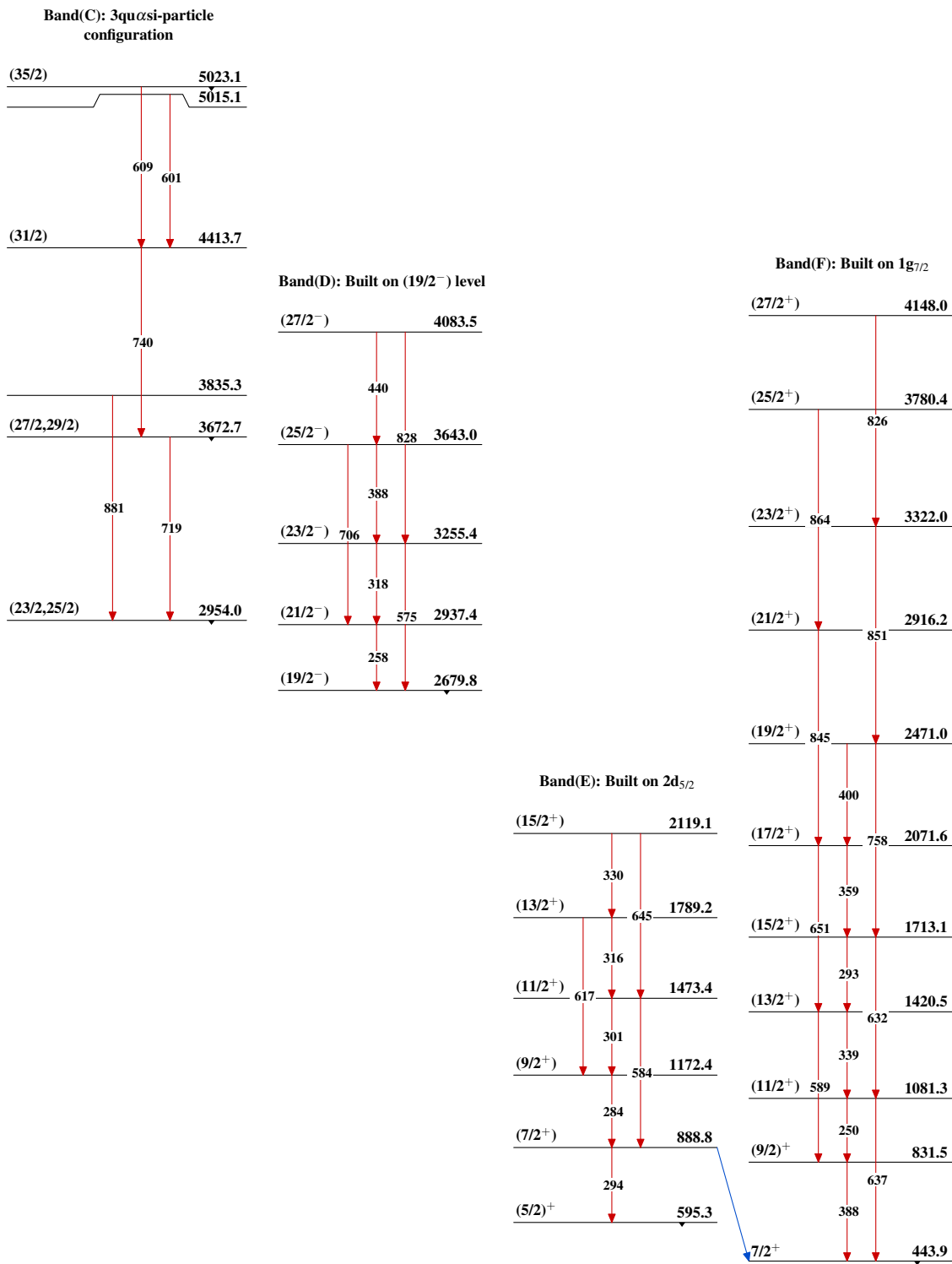
Intensities: Relative I_γ

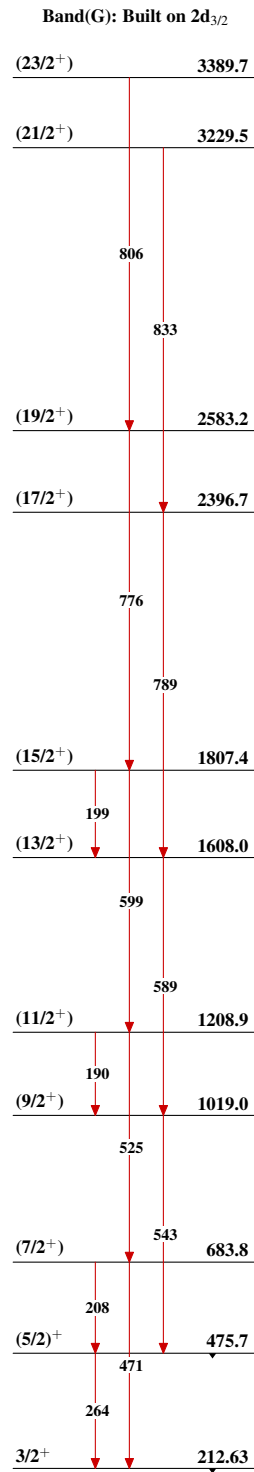
Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

 $^{121}_{52}\text{Te}_{69}$

$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11

$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11 (continued) $^{121}_{52}\text{Te}_{69}$

$^{116}\text{Cd}(^9\text{Be},4n\gamma)$ 1996Pa11 (continued) $^{121}_{52}\text{Te}_{69}$