

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

Q(β^-)=-1116 16; S(n)=8004 14; S(p)=4504 11; Q(α)=-340 23 2017Wa10

S(2n)=17936 16, S(2p)=11670 50, Q(β^+)=4437 10 (2017Wa10).

First identification of ¹³⁸Pr nuclide by 1951St03 for an isomeric state and by 1966Gr15 for the ground state.

Other Reactions:

Nd(p,X): 2015Ya19, 2014Le18, 2012Le02. Measured σ .

¹⁴⁰Ce(p,3n): 2000Ze01. Measured σ .

Pr(p,X): 2006St20, 2005VeZZ. Measured σ .

¹⁶⁵Ho(¹⁴N,x): 1997YoZT. Measured residuals recoil momenta.

Theoretical calculations:

1996Pr08: calculated levels, B(λ) ratios, γ branching ratios.

¹³⁸Pr Levels

Cross Reference (XREF) Flags

- A ¹³⁸Nd ϵ decay
- B ¹²⁸Te(¹⁴N,4n γ)

E(level) [†]	J π [‡]	T _{1/2}	XREF	Comments
0.0	1 ⁺	1.45 min 5	A	% ϵ +% β^+ =100 J π : strong direct feeding log ft=5.1 from 0 ⁺ . T _{1/2} : weighted average of 1.45 min 5 from 1974BaZU, 1.50 min 15 from 1966Gr15 and 1.44 min 8 from 1971Ju01. Configuration= $\pi d_{5/2}^3 \otimes v d_{3/2}^1$ (1970Ho28). J π : 194.21 γ M1 to 1 ⁺ . J π : 199.50 γ M1+E2 to 1 ⁺ . J π : 325.76 γ M1+E2 to 1 ⁺ ; direct feeding log ft=6.3 from 0 ⁺ . J π : 132.73 γ M1+E2 to $\pi=+$ level, 326.9 γ to 1 ⁺ , 214.13 γ M1(+E2) from 1 ⁺ . % ϵ +% β^+ =100 E(level): from E(β^+)=1650 20 (1964Fu08) to 2129 level in ¹³⁸ Ce and Q(g.s.)=4437 10 (2017Wa10: AME2016). J π : atomic beam (1972Ek04), direct feeding log ft=5.6 to 7 ⁻ . Possible configuration= $\pi h_{11/2} \otimes v d_{3/2}$ (2005Ga14). T _{1/2} : weighted average of 2.00 h 8 (1951St03), 2.10 h 5 (1958Da13), 2.18 h 7 (1964Fu08), 2.20 h 7 (1970Ho28), 2.02 h 1 (1971Ju01).
194.22 5	0 ⁺ , 1 ⁺ , 2 ⁺		A	
199.52 4	0 ⁺ , 1 ⁺ , 2 ⁺		A	
325.73 4	1 ⁺		A	
326.96 6	0 ⁺ , 1 ⁺ , 2 ⁺		A	
364 23	7 ⁻	2.03 h 2	B	
382.8	(8)		B	
389.6 4	(0,1,2) ⁺		A	J π : 62.6 γ M1+E2 to $\pi=+$; 284.3 γ M1+E2 from (1) ⁺ .
505.9 4	(1) ⁺		A	J π : 116.3 γ M1+E2 to $\pi=+$; possible direct feeding log ft=7.4 from 0 ⁺ .
541.11 5	1 ⁺		A	J π : 541.0 γ M1 to 1 ⁺ ; direct feeding log ft=6.6 from 0 ⁺ .
563.1	(8 ⁻)		B	J π : Possible configuration= $\pi d_{5/2} \otimes v h_{11/2}$ (2005Ga14).
623.6 11	(1) ⁺		A	J π : 234 γ M1+E2 to $\pi=+$; possible direct feeding log ft=8.0 from 0 ⁺ .
673.9 7	(1) ⁺		A	J π : 168 γ M1+E2 to (1) ⁺ ; possible direct feeding log ft=7.5 from 0 ⁺ .
696.3 4	(8 ⁻)		B	
718.0? 7	(0 ⁻ , 1 ⁻ , 2 ⁻)		A	J π : 178.5 γ (E1) to 1 ⁺ .
912.5 ^e 4	(9 ⁺)		B	
1075.5 4	(8 ⁻)		B	
1078.1 [#] 4	(9 ⁺)		B	J π : assigned by 2007Li12 based on excitation energy systematics of $\pi h_{11/2} \otimes v h_{11/2}$ bands in the neighboring odd-odd nuclei.
1214.2 [@] 6	(10 ⁺)		B	
1327.6 5	(10 ⁻)		B	
1434.4 5	(10 ⁻)		B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{138}Pr Levels (continued)

E(level) [†]	J^π [‡]	XREF	E(level) [†]	J^π [‡]	XREF	E(level) [†]	J^π [‡]	XREF
1599.4 ^e 5	(11 ⁺)	B	3390.9 ^{&} 7	(15 ⁺)	B	4481.1 ^b 8	(17 ⁺)	B
1616.4 [#] 6	(11 ⁺)	B	3400.3 6	(14 ⁻)	B	4561.8 ^c 9	(18 ⁺)	B
1938.3 6	(11 ⁺)	B	3510.3 ^e 8	(15 ⁺)	B	4798.1 8	(17)	B
2013.2 [@] 6	(12 ⁺)	B	3545.2 ^a 7	(15 ⁺)	B	4821.2 8	(17)	B
2420.7 6	(12 ⁺)	B	3552.2 [#] 8	(15 ⁺)	B	4893.0 ^b 9	(18 ⁺)	B
2559.2 [#] 6	(13 ⁺)	B	3552.7 8	(15 ⁻)	B	4947.8 ^c 11	(19 ⁺)	B
2610.8 ^{&} 6	(12 ⁺)	B	3773.0 ^b 6	(14 ⁺)	B	4981.6 ^d 8	(18 ⁻)	B
2640.3 ^e 6	(13 ⁺)	B	3775.5 ^{&} 8	(16 ⁺)	B	5082.7 ^a 12	(18 ⁺)	B
2689.2 6	(13 ⁺)	B	3832.9 7	(14)	B	5229.7 ^d 9	(19 ⁻)	B
2798.0 ^{&} 6	(13 ⁺)	B	3920.1 8	(16 ⁻)	B	5406.4 ^c 12	(20 ⁺)	B
2878.2 6	(14 ⁺)	B	3935.2 ^a 9	(16 ⁺)	B	5420.5 ^b 11	(19 ⁺)	B
2905.2 [@] 6	(14 ⁺)	B	3965.6 ^b 6	(15 ⁺)	B	5466.0 11	(19 ⁺)	B
2981.9 7	(13 ⁺)	B	4108.5 8	(15)	B	5596.4 ^d 11	(20 ⁻)	B
3000.7 8	(13 ⁺)	B	4186.9 ^b 7	(16 ⁺)	B	5898.2 ^c 13	(21 ⁺)	B
3049.7 ^{&} 6	(14 ⁺)	B	4188.2 [@] 5	(16 ⁺)	B	6040.4 ^d 12	(21 ⁻)	B
3248.2 ^a 7	(14 ⁺)	B	4315.5 ^{&} 9	(17 ⁺)	B	6108.4 ^b 12	(20 ⁺)	B
3294.0 7	(15 ⁺)	B	4434.7 ^a 10	(17 ⁺)	B	6591.4 ^d 8	(22 ⁻)	B
3357.5 7	(14 ⁺)	B	4444.5 8	(16)	B			

[†] From least-squares fit to γ -ray energies. Where uncertainty is unknown, $\Delta E_\gamma=0.5$ keV is assumed for values with decimal point and $\Delta E_\gamma=1$ keV for others.

[‡] For high-spin levels seen in $^{128}\text{Te}(^{14}\text{N},4n\gamma)$, J^π values are based on measured DCO values, γ -ray intensity patterns, systematics of neighboring nuclei and band assignments(2007Li12), unless otherwise noted.

[#] Band(A): $\pi h_{11/2} \otimes \nu h_{11/2}$, $\alpha=1$. Favored signature partner. Band crossing at $\hbar\omega \approx 0.36$ MeV.

[@] Band(a): $\pi h_{11/2} \otimes \nu h_{11/2}$, $\alpha=0$. Unfavored signature partner. Band crossing at $\hbar\omega \approx 0.36$ MeV.

[&] Band(B): $\pi g_{7/2} \otimes \nu(d_{3/2} h_{11/2}^2)$, oblate (?).

^a Band(C): $\pi d_{5/2} \otimes \nu(d_{3/2} h_{11/2}^2)$, oblate (?).

^b Band(D): $\pi h_{11/2} \otimes \nu h_{11/2}^3$, oblate (?).

^c Band(E): Possible 6-quasiparticle, oblate band. Configuration= $\pi(g_{7/2} d_{5/2}^2) \otimes \nu(d_{3/2} h_{11/2}^2)$ (?).

^d Band(F): Possible 6-quasiparticle, oblate band. Configuration= $\pi(d_{5/2} g_{7/2} h_{11/2}) \otimes \nu(d_{3/2} h_{11/2}^2)$ (?).

^e Band(G): Band based on 912.5,(9⁺) level.

Adopted Levels, Gammas (continued)

E _i (level)	J _i ^π	E _γ [†]	I _γ [†]	E _f	J _f ^π	Mult. [‡]	γ(¹³⁸ Pr)		Comments
							δ [‡]	α [#]	
194.22	0 ⁺ ,1 ⁺ ,2 ⁺	194.21 5	100	0.0	1 ⁺	M1		0.202	α(K)=0.1721 25; α(L)=0.0235 4; α(M)=0.00494 7 α(N)=0.001105 16; α(O)=0.0001780 25; α(P)=1.316×10 ⁻⁵ 19
199.52	0 ⁺ ,1 ⁺ ,2 ⁺	199.50 5	100	0.0	1 ⁺	M1+E2	0.29 8	0.188	α(K)=0.1586 24; α(L)=0.0230 8; α(M)=0.00487 18 α(N)=0.00109 4; α(O)=0.000173 5; α(P)=1.195×10 ⁻⁵ 23
325.73	1 ⁺	126.14 5	3.8 5	199.52	0 ⁺ ,1 ⁺ ,2 ⁺	M1+E2	0.87 10	0.782 19	α(K)=0.585 9; α(L)=0.154 11; α(M)=0.0339 24 α(N)=0.0074 6; α(O)=0.00109 7; α(P)=3.92×10 ⁻⁵ 9
		131.59 [@] 325.76 5	100 3	194.22	0 ⁺ ,1 ⁺ ,2 ⁺ 0.0 1 ⁺	M1+E2	0.44 11	0.0487 11	α(K)=0.0413 10; α(L)=0.00584 9; α(M)=0.001233 19 α(N)=0.000275 4; α(O)=4.39×10 ⁻⁵ 7; α(P)=3.09×10 ⁻⁶ 10
326.96	0 ⁺ ,1 ⁺ ,2 ⁺	127.33 [@]		199.52	0 ⁺ ,1 ⁺ ,2 ⁺	M1+E2		0.78 13	α(K)=0.572 18; α(L)=0.16 9; α(M)=0.035 20 α(N)=0.008 5; α(O)=0.0011 6; α(P)=3.7×10 ⁻⁵ 6
		132.73 5	100 12	194.22	0 ⁺ ,1 ⁺ ,2 ⁺	M1+E2	0.33 7	0.600 12	α(K)=0.496 7; α(L)=0.081 6; α(M)=0.0174 13 α(N)=0.0039 3; α(O)=0.00060 4; α(P)=3.70×10 ⁻⁵ 7
382.8	(8)	326.9 6 (18.7)	14 4	0.0	1 ⁺				γ ray presumably below detection threshold.
389.6	(0,1,2) ⁺	62.6 4		364	7 ⁻				α(K)=4.22 10; α(L)=1.3 3; α(M)=0.28 7 α(N)=0.061 15; α(O)=0.0089 21; α(P)=0.000313 10
		190.3 [@] 195.8 [@] 116.3 2	100	199.52	0 ⁺ ,1 ⁺ ,2 ⁺ 194.22 0 ⁺ ,1 ⁺ ,2 ⁺ 389.6 (0,1,2) ⁺	M1+E2	0.22 3	0.861 14	α(K)=0.720 11; α(L)=0.111 4; α(M)=0.0236 9 α(N)=0.00525 19; α(O)=0.00083 3; α(P)=5.45×10 ⁻⁵ 9
505.9	(1) ⁺			389.6	(0,1,2) ⁺	M1+E2			
541.11	1 ⁺	151.77 [@] 214.13 6	17 5	389.6	(0,1,2) ⁺	M1(+E2)		0.153 3	α(K)=0.123 9; α(L)=0.023 6; α(M)=0.0050 13 α(N)=0.0011 3; α(O)=0.00017 4; α(P)=8.6×10 ⁻⁶ 16
		215.31 6	70 8	325.73	1 ⁺	M1+E2		0.150 3	α(K)=0.121 9; α(L)=0.023 6; α(M)=0.0049 12 α(N)=0.0011 3; α(O)=0.00017 4; α(P)=8.4×10 ⁻⁶ 15
		341.65 5	100 10	199.52	0 ⁺ ,1 ⁺ ,2 ⁺	M1+E2		0.039 6	α(K)=0.033 6; α(L)=0.00511 8; α(M)=0.001089 21 α(N)=0.000242 4; α(O)=3.79×10 ⁻⁵ 11; α(P)=2.4×10 ⁻⁶ 6
		541.0 3	10 3	0.0	1 ⁺	M1		0.01385	α(K)=0.01187 17; α(L)=0.001566 22; α(M)=0.000329 5 α(N)=7.35×10 ⁻⁵ 11; α(O)=1.188×10 ⁻⁵ 17; α(P)=8.93×10 ⁻⁷ 13
563.1	(8 ⁻)	199.0	100	364	7 ⁻	D+Q			
623.6	(1) ⁺	234 1	100	389.6	(0,1,2) ⁺	M1+E2		0.117 5	α(K)=0.095 9; α(L)=0.017 3; α(M)=0.0037 8 α(N)=0.00082 16; α(O)=0.000125 19; α(P)=6.7×10 ⁻⁶ 13
673.9	(1) ⁺	168 1	38 13	505.9	(1) ⁺	M1+E2		0.322 23	α(K)=0.252 8; α(L)=0.055 21; α(M)=0.012 5 α(N)=0.0026 10; α(O)=0.00040 13; α(P)=1.7×10 ⁻⁵ 3
		284.3 7	100 31	389.6	(0,1,2) ⁺	M1+E2		0.066 7	α(K)=0.055 8; α(L)=0.0090 8; α(M)=0.00194 19 α(N)=0.00043 4; α(O)=6.7×10 ⁻⁵ 4; α(P)=3.9×10 ⁻⁶ 9
696.3	(8 ⁻)	133.1 332.1	22 3 100 5	563.1	(8 ⁻)				
718.0?	(0 ⁻ ,1 ⁻ ,2 ⁻)	178.5 10		364	7 ⁻	D+Q			
				541.11	1 ⁺	(E1)		0.0513 11	α(K)=0.0439 10; α(L)=0.00592 13; α(M)=0.00124 3 α(N)=0.000275 6; α(O)=4.31×10 ⁻⁵ 9; α(P)=2.80×10 ⁻⁶ 6

Adopted Levels, Gammas (continued)

$\gamma(^{138}\text{Pr})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]
718.0?	(0 ⁻ , 1 ⁻ , 2 ⁻)	389.5 [@]		326.96	0 ⁺ , 1 ⁺ , 2 ⁺		2905.2	(14 ⁺)	892.0	100 22	2013.2	(12 ⁺)	
912.5	(9 ⁺)	216.3	100 8	696.3	(8 ⁻)	D+Q	2981.9	(13 ⁺)	561.2	100	2420.7	(12 ⁺)	
		349.4	55 6	563.1	(8 ⁻)	D	3000.7	(13 ⁺)	580.0		2420.7	(12 ⁺)	
1075.5	(8 ⁻)	378.8	100 22	696.3	(8 ⁻)		3049.7	(14 ⁺)	251.7	100 10	2798.0	(13 ⁺)	D+Q
		711.9	79 22	364	7 ⁻	D+Q			490.5	23 5	2559.2	(13 ⁺)	D+Q
1078.1	(9 ⁺)	165.6	4.5 5	912.5	(9 ⁺)		3248.2	(14 ⁺)	1235.0	100	2013.2	(12 ⁺)	Q
		515.0	100 3	563.1	(8 ⁻)	D	3294.0	(15 ⁺)	388.8	13 7	2905.2	(14 ⁺)	
		695.3	55.2 26	382.8	(8)	D(+Q)			415.8	100 20	2878.2	(14 ⁺)	
1214.2	(10 ⁺)	136.0	100	1078.1	(9 ⁺)	D+Q	3357.5	(14 ⁺)	375.6	100 40	2981.9	(13 ⁺)	
1327.6	(10 ⁻)	251.8	100 16	1075.5	(8 ⁻)		3390.9	(15 ⁺)	341.2	100 10	3049.7	(14 ⁺)	D+Q
		764.7	21 11	563.1	(8 ⁻)				485.7	22 6	2905.2	(14 ⁺)	
1434.4	(10 ⁻)	359.2	14 4	1075.5	(8 ⁻)		3400.3	(14 ⁻)	495.0	65 15	2905.2	(14 ⁺)	
		738.0	100 17	696.3	(8 ⁻)				760.0	100 25	2640.3	(13 ⁺)	D+Q
1599.4	(11 ⁺)	165.2	40 5	1434.4	(10 ⁻)		3510.3	(15 ⁺)	870.0	100	2640.3	(13 ⁺)	Q
		271.6	27 4	1327.6	(10 ⁻)	D+Q	3545.2	(15 ⁺)	297.0	100	3248.2	(14 ⁺)	D+Q
		686.9	100 11	912.5	(9 ⁺)	Q	3552.2	(15 ⁺)	647.0	100	2905.2	(14 ⁺)	
1616.4	(11 ⁺)	402.2	100	1214.2	(10 ⁺)	D+Q	3552.7	(15 ⁻)	152.5	100	3400.3	(14 ⁻)	(D+Q)
1938.3	(11 ⁺)	321.9	42 7	1616.4	(11 ⁺)		3773.0	(14 ⁺)	415.5	13 7	3357.5	(14 ⁺)	
		724.1	100 16	1214.2	(10 ⁺)				723.3	100 27	3049.7	(14 ⁺)	
		860.1	20 7	1078.1	(9 ⁺)				975.0	80 27	2798.0	(13 ⁺)	
2013.2	(12 ⁺)	396.8	100 5	1616.4	(11 ⁺)	D+Q			1213.8	53 27	2559.2	(13 ⁺)	
		799.0	27 3	1214.2	(10 ⁺)	Q	3775.5	(16 ⁺)	384.6	100	3390.9	(15 ⁺)	D+Q
2420.7	(12 ⁺)	804.3	100 43	1616.4	(11 ⁺)		3832.9	(14)	783.2 [@]	100 53	3049.7	(14 ⁺)	
		1206.5	57 43	1214.2	(10 ⁺)				1273.7	47 20	2559.2	(13 ⁺)	
2559.2	(13 ⁺)	546.0	100 7	2013.2	(12 ⁺)	D+Q	3920.1	(16 ⁻)	367.4	100	3552.7	(15 ⁻)	D+Q
		942.8 [@]	14 3	1616.4	(11 ⁺)		3935.2	(16 ⁺)	390.0	100 19	3545.2	(15 ⁺)	
2610.8	(12 ⁺)	597.6 [@]	100 12	2013.2	(12 ⁺)	D+Q	3965.6	(15 ⁺)	192.6	56 8	3773.0	(14 ⁺)	D+Q
		672.5	34 7	1938.3	(11 ⁺)				420.4		3545.2	(15 ⁺)	
		994.4	88 14	1616.4	(11 ⁺)	D+Q			608.1	4 4	3357.5	(14 ⁺)	
		1396.6	61 14	1214.2	(10 ⁺)				717.4		3248.2	(14 ⁺)	
2640.3	(13 ⁺)	1041.0	100	1599.4	(11 ⁺)	Q			915.9	100 24	3049.7	(14 ⁺)	
2689.2	(13 ⁺)	676.0	100 11	2013.2	(12 ⁺)	D+Q	4108.5	(15)	275.6	100	3832.9	(14)	
		1072.8	12 5	1616.4	(11 ⁺)		4186.9	(16 ⁺)	221.3	100 18	3965.6	(15 ⁺)	D+Q
2798.0	(13 ⁺)	187.2	43 5	2610.8	(12 ⁺)	D+Q			796.0	47 18	3390.9	(15 ⁺)	
		238.8	4.9 12	2559.2	(13 ⁺)		4188.2?	(16 ⁺)	1283.0 [@]	100 75	2905.2	(14 ⁺)	
		377.3	3.7 12	2420.7	(12 ⁺)		4315.5	(17 ⁺)	540.0	100	3775.5	(16 ⁺)	D+Q
		784.8	100 11	2013.2	(12 ⁺)	D+Q	4434.7	(17 ⁺)	499.5	100	3935.2	(16 ⁺)	
		1181.6	2.5 25	1616.4	(11 ⁺)		4444.5	(16)	336.0	100	4108.5	(15)	(D+Q)
2878.2	(14 ⁺)	189.0	100 13	2689.2	(13 ⁺)		4481.1	(17 ⁺)	294.2	100	4186.9	(16 ⁺)	D+Q
		319.0	58 13	2559.2	(13 ⁺)	D+Q	4561.8	(18 ⁺)	246.3	35 12	4315.5	(17 ⁺)	
		865.0	38 13	2013.2	(12 ⁺)				786.3	100 24	3775.5	(16 ⁺)	Q
2905.2	(14 ⁺)	216.0	37 8	2689.2	(13 ⁺)	D+Q	4798.1	(17)	353.6	100	4444.5	(16)	D(+Q)
		346.0	67 11	2559.2	(13 ⁺)	D+Q	4821.2	(17)	376.7	54 15	4444.5	(16)	

Adopted Levels, Gammas (continued)

$\gamma(^{138}\text{Pr})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]
4821.2	(17)	901.1	100 3/1	3920.1	(16 ⁻)		5406.4	(20 ⁺)	458.6	100	4947.8	(19 ⁺)	D+Q
4893.0	(18 ⁺)	411.9	100	4481.1	(17 ⁺)	D+Q	5420.5	(19 ⁺)	527.5	100	4893.0	(18 ⁺)	D+Q
4947.8	(19 ⁺)	386.0	100	4561.8	(18 ⁺)		5466.0	(19 ⁺)	573.0	100	4893.0	(18 ⁺)	
4981.6	(18 ⁻)	160.4	71 29	4821.2	(17)	D(+Q)	5596.4	(20 ⁻)	366.7	100	5229.7	(19 ⁻)	D+Q
		183.5	86 29	4798.1	(17)	D(+Q)	5898.2	(21 ⁺)	491.8	100	5406.4	(20 ⁺)	
		500.5	100 29	4481.1	(17 ⁺)		6040.4	(21 ⁻)	444.0	100	5596.4	(20 ⁻)	D+Q
5082.7	(18 ⁺)	648.0	100	4434.7	(17 ⁺)		6108.4	(20 ⁺)	687.9	100	5420.5	(19 ⁺)	
5229.7	(19 ⁻)	248.1	100	4981.6	(18 ⁻)	D+Q	6591.4	(22 ⁻)	551.0 [@]	100	6040.4	(21 ⁻)	

[†] From ¹³⁸Nd ϵ decay for transitions from low-spin levels and ¹²⁸Te(¹⁴N,4n γ) for transitions from high-spin levels. $\Delta E_\gamma=0.5$ keV is assumed for latter when unknown for fitting purpose.

[‡] From ce data in ¹³⁸Nd ϵ decay for levels up to 718 and from $\gamma\gamma(\theta)$ (DCO) and band structures in (¹⁴N,4n γ) above that, unless otherwise noted.

[Additional information 1.](#)

@ Placement of transition in the level scheme is uncertain.

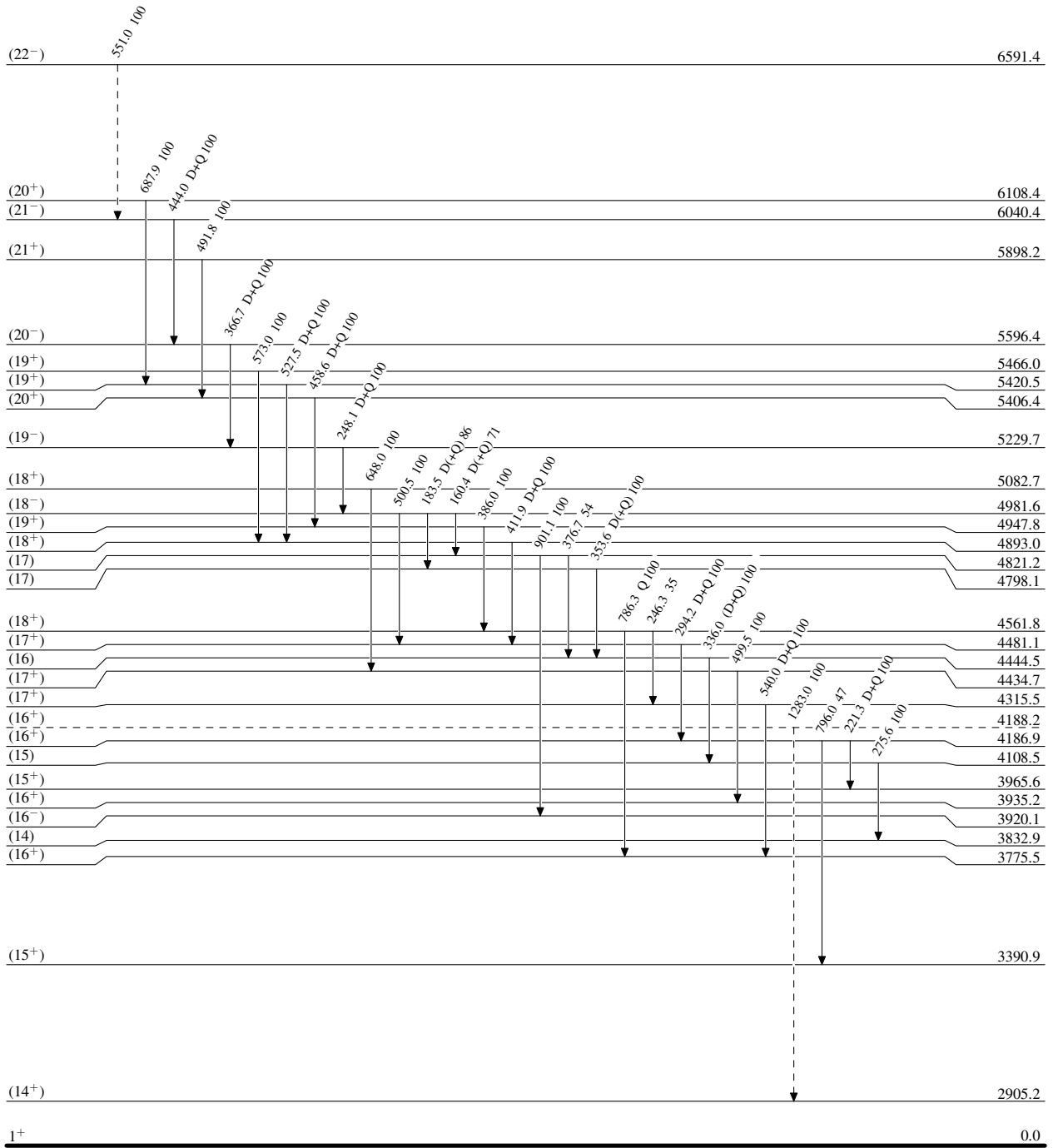
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----▶ γ Decay (Uncertain)



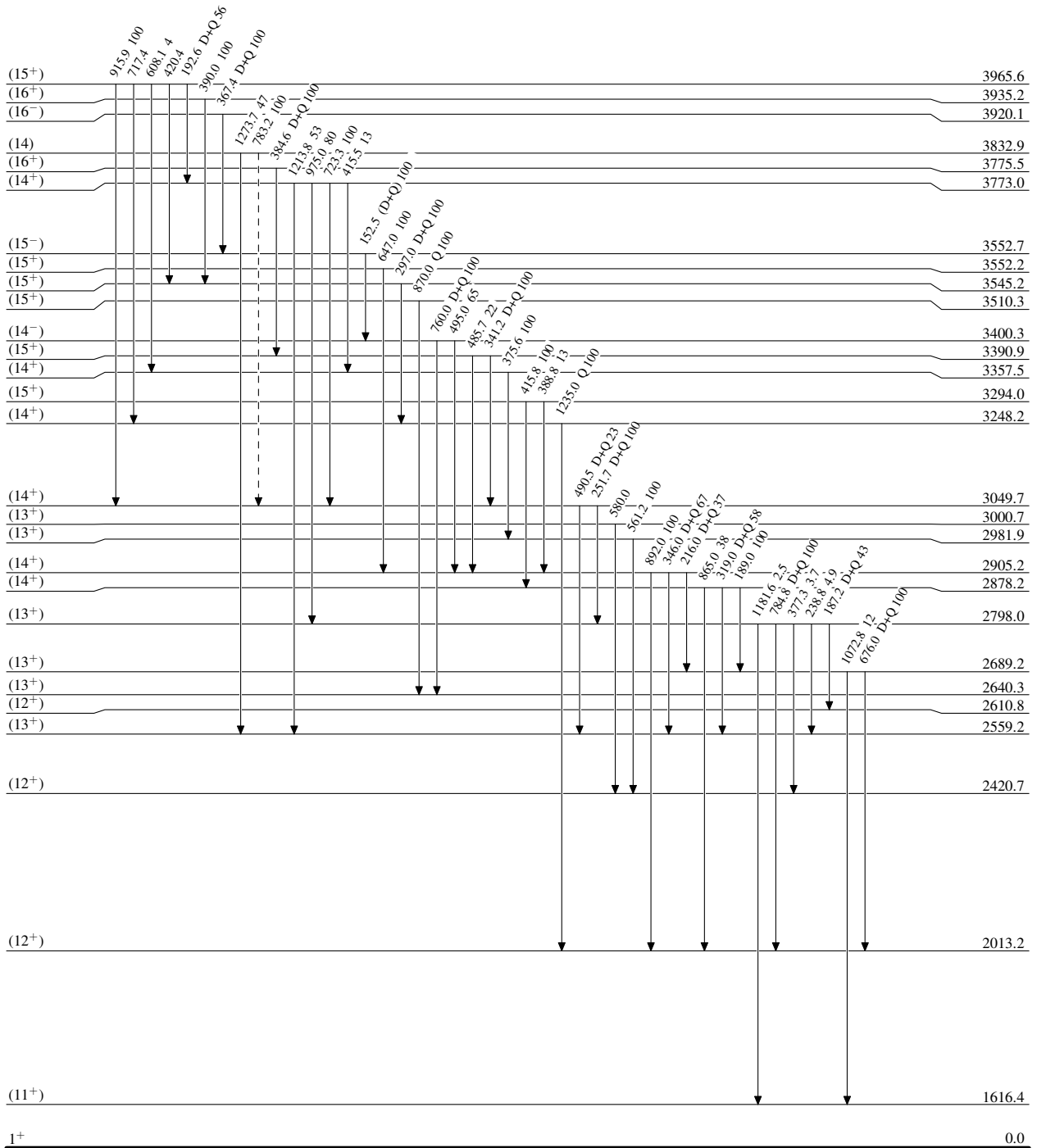
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----> γ Decay (Uncertain)



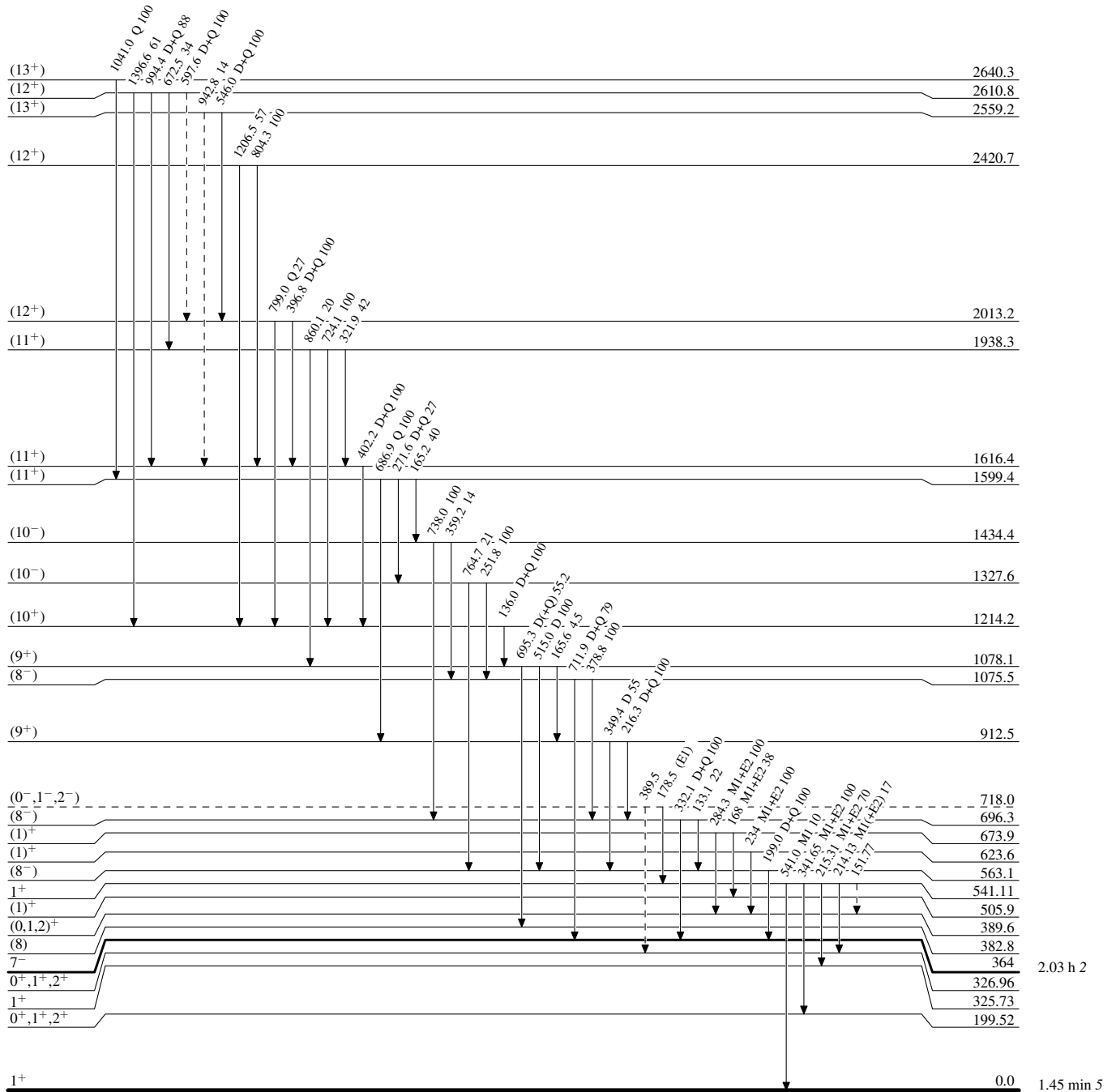
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)



¹³⁸Pr₇₉

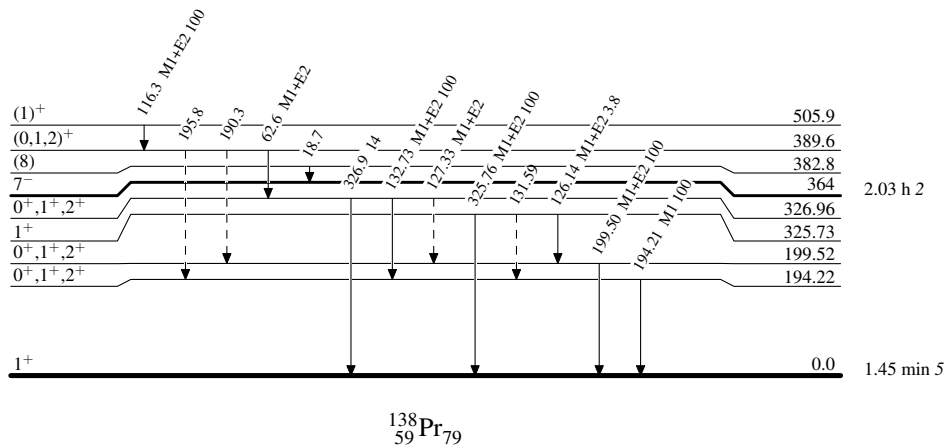
Adopted Levels, Gammas

Legend

Level Scheme (continued)

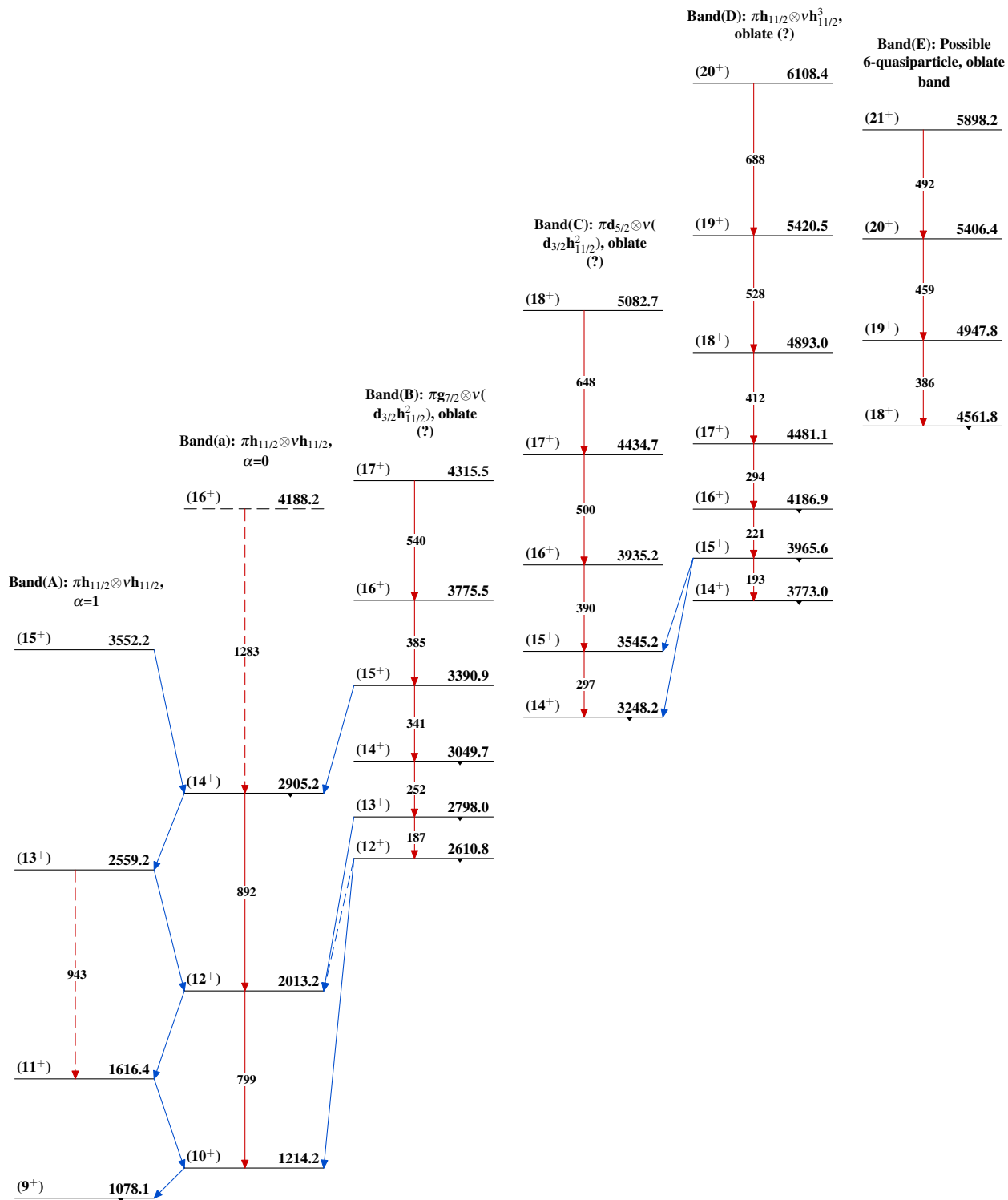
Intensities: Relative photon branching from each level

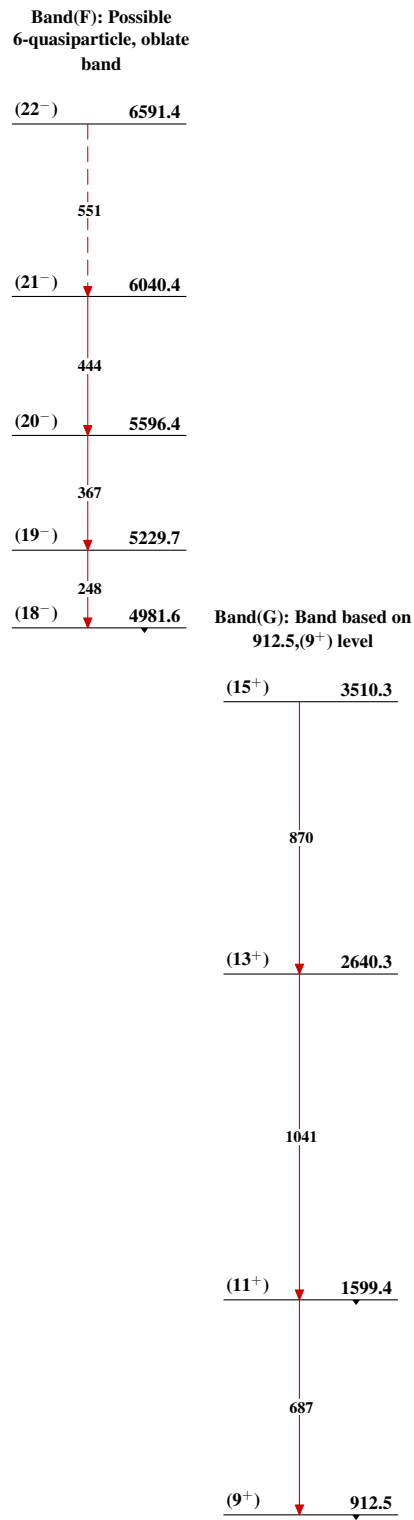
-----► γ Decay (Uncertain)



$^{138}\text{Pr}_{79}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued) $^{138}\text{Pr}_{79}$