Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113, 515 (2012)	1-Jan-2012

Q(β^-)=1440 *9*; S(n)=7971 *10*; S(p)=12012 *10*; Q(α)=−5845 *12* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=1440 *9*; S(n)=7971 *10*; S(p)=12012 *10*; Q(α)=−5846 *12* 2011AuZZ

^{114}Pd Levels

Cross Reference (XREF) Flags

A ^{252}Cf SF decay
B ^{114}Rh β^- decay (1.85 s):J=(7$^-$)
C ^{114}Rh β^- decay (1.85 s):J=1$^+$
D (HI,xnγ)
E Coulomb excitation

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0[†]	0$^+$	2.42 min *6*	ABCD	%β^-=100 T$_{1/2}$: weighted average of 2.4 min *1* (1958Al90), 2.45 min *10* (1975BrYN), 2.42 min *15* (1988Ay02).
332.61[†] *10*	2$^+$	82 ps *14*	ABCD	μ=0.44 *22* (2011StZY,2007StZZ) J$^\pi$: E2 γ to g.s. T$_{1/2}$: from RDDS method (2008De30). The older value 0.20 ns *6*(1974JaYY) from $\gamma\gamma$(t) in ^{252}Cf SF decay seems too high.
694.62[&] *15*	2$^+$		BCD	J$^\pi$: γ's to 0$^+$ and 2$^+$ Band head of the γ band.
852.37[†] *16*	4$^+$		ABCD	J$^\pi$: γ to 2$^+$, no γ to g.s. and g.s. band with ΔJ=2.
872.0 *3*	(0$^+$)		BC	J$^\pi$: γ to 2$^+$ and syst.
1011.65[&] *16*	(3$^+$)		AB D	J$^\pi$: γ band.
1115.56 *21*	(0$^+$)		BC	J$^\pi$: from syst.
1319.89[&] *17*	(4$^+$)		AB D	J$^\pi$: γ band.
1391.92 *20*	2$^+$		BC	
1500.51[†] *18*	(6$^+$)		AB D	J$^\pi$: γ to 4$^+$ and and g.s. band with ΔJ=2.
1630.69[&] *17*	(5$^+$)		AB D	J$^\pi$: γ band.
1638.72 *21*	(3$^-$,4$^+$)		B	
1983.71[&] *22*	(6$^+$)		AB D	J$^\pi$: γ band.
2065.16[‡] *19*	(4$^-$)		AB	
2090.33 *22*	(4$^-$,5$^+$)		B	J$^\pi$: γ band.
2184.00[#] *19*	(5$^-$)		AB D	J$^\pi$: Band Head based on 5$^-$ with γ to 6$^+$ and 4$^+$.
2215.7[†] *4*	8$^+$		AB D	J$^\pi$: γ to 6$^+$ and and g.s. band with ΔJ=2.
2290.0[&] *3*	(7$^+$)		AB D	
2316.1 *3*			B	
2349.67 *22*	(5$^-$,6$^+$)		B	
2398.5 *4*			B	
2446.7 *3*	(6$^+$)		B	
2520.17[‡] *19*	(6$^-$)		AB	
2562.8 *5*	(6$^+$)		B	
2598.42[#] *23*	(7$^-$)		A D	J$^\pi$: Band based on 5$^-$ with ΔJ=2.
2611.3 *3*	(6$^+$)		B	
2623.27 *18*	(6$^-$)		AB	
2654.7[&] *10*	(8$^+$)		A D	J$^\pi$: γ band.
2687.7 *3*			AB	
2738.5 *3*			B	

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Adopted Levels, Gammas (continued)

^{114}Pd Levels (continued)

E(level)	J^π	XREF	Comments
2752.0 *4*	(6,7$^-$)	B	
2789.36 *24*		AB	
2792.8 *4*		B	
2821.6 *4*		B	
2853.2 *4*		B	
2859.7† *4*	10$^+$	A D	J^π: γ to 8$^+$ and and g.s. band with ΔJ=2.
2892.3 *4*		B	
2905.7& *5*	(9$^+$)	A D	J^π: γ band.
2927.5 *4*		B	
2953.4 *4*	(6$^-$)	B	
2997.4 *3*		B	
3047.6‡ *5*	(8$^-$)	A	
3055.4 *5*		B	
3064.40 *23*	(6,7)$^-$	B	
3078.3 *3*	(6,7)	B	
3099.2 *4*	(6,7$^+$)	B	
3104.4# *4*	(9$^-$)	A D	J^π: Band based on 5$^-$ with ΔJ=2.
3128.30 *21*	(6$^-$)	AB	
3138.78 *23*	(6$^-$)	AB	
3161.9 *4*		B	
3237.1@ *6*	(9$^-$)	A	
3337.8& *11*	(10$^+$)	A D	J^π: γ band.
3423.9 *4*		B	
3443.2† *5*	12$^+$	A D	J^π: γ to 10$^+$ and and g.s. band with ΔJ=2.
3503.9& *6*	(11$^+$)	A D	J^π: γ band.
3737.8# *5*	(11$^-$)	A D	J^π: Band based on 5$^-$ with ΔJ=2.
3859.6@ *8*	(11$^-$)	A	
4147.3† *7*	(14$^+$)	A D	J^π: γ to 12$^+$ and and g.s. band with ΔJ=2.
4205.7& *8*	(13$^+$)	A	J^π: γ band.
4472.6# *6*	(13$^-$)	A D	J^π: Band based on 5$^-$ with ΔJ=2.
4599.2@ *9*	(13$^-$)	A	
5011.6† *8*	(16$^+$)	A D	J^π: γ to 14$^+$ and and g.s. band with ΔJ=2.
5255.7# *7*	(15$^-$)	D	J^π: Band based on 5$^-$ with ΔJ=2.

† Band(A): g.s. band.
‡ Band(B): band based on (4$^-$).
# Band(C): band based on (5$^-$).
@ Band(D): band based on (9$^-$).
& Band(E): γ band.

γ(^{114}Pd)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.	α‡	Comments
332.61	2$^+$	332.6 *1*	100	0	0$^+$	E2	0.0211	B(E2)(W.u.)=21 *7* Mult.: from ^{114}Rh decay.
694.62	2$^+$	362.0 *2*	100 *3*	332.61	2$^+$			
		694.7 *3*	66 *3*	0	0$^+$			
852.37	4$^+$	519.8 *2*	100	332.61	2$^+$			
872.0	(0$^+$)	539.4 *3*	100	332.61	2$^+$			

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Adopted Levels, Gammas (continued)

$\gamma(^{114}Pd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π
1011.65	(3^+)	159.4 *3*	0.10 *5*	852.37	4^+
		317.0 *2*	84.5 *25*	694.62	2^+
		679.0 *2*	100 *3*	332.61	2^+
1115.56	(0^+)	782.9 *2*	100	332.61	2^+
1319.89	(4^+)	467.4 *2*	33 *8*	852.37	4^+
		625.3 *2*	100 *12*	694.62	2^+
1391.92	2^+	276.2 *4*	11 *3*	1115.56	(0^+)
		539.6 *2*	28 *6*	852.37	4^+
		697.3 *3*	100	694.62	2^+
1500.51	(6^+)	648.1 *2*	100	852.37	4^+
1630.69	(5^+)	310.7 *2*	3.0 *20*	1319.89	(4^+)
		619.0 *2*	100 *12*	1011.65	(3^+)
		778.4 *3*	5.0 *10*	852.37	4^+
1638.72	$(3^-,4^+)$	627.1 *3*	94 *19*	1011.65	(3^+)
		944.2 *3*	100 *19*	694.62	2^+
1983.71	(6^+)	483.0 *4*	12 *3*	1500.51	(6^+)
		663.8 *3*	100	1319.89	(4^+)
2065.16	(4^-)	426.5[§] *5*	0.030 *20*	1638.72	$(3^-,4^+)$
		1053.5 *2*	100 *8*	1011.65	(3^+)
		1213.1 *4*	12.7 *10*	852.37	4^+
2090.33	$(4^-,5^+)$	451.7 *3*	71 *21*	1638.72	$(3^-,4^+)$
		459.8[§] *4*	29 *14*	1630.69	(5^+)
		770.7 *4*	64 *14*	1319.89	(4^+)
		1078.7 *4*	100 *21*	1011.65	(3^+)
2184.00	(5^-)	863.7 *4*	7 *3*	1319.89	(4^+)
		1331.6 *2*	100	852.37	4^+
2215.7	8^+	715.3 *4*	100	1500.51	(6^+)
2290.0	(7^+)	659.3 *2*	100	1630.69	(5^+)
2316.1		1463.8 *3*	100	852.37	4^+
2349.67	$(5^-,6^+)$	711.0 *4*	50 *14*	1638.72	$(3^-,4^+)$
		718.9[§] *4*	21 *14*	1630.69	(5^+)
		848.9 *4*	36 *21*	1500.51	(6^+)
		1029.9 *4*	100 *21*	1319.89	(4^+)
2398.5		898.0 *4*	100	1500.51	(6^+)
2446.7	(6^+)	1594.3 *4*	100	852.37	4^+
2520.17	(6^-)	336.0 *3*	33 *11*	2184.00	(5^-)
		455.0 *3*	31 *8*	2065.16	(4^-)
		889.4 *2*	100 *12*	1630.69	(5^+)
		1019.7 *3*	28 *6*	1500.51	(6^+)
		1508 *3*	35 *17*	1011.65	(3^+)
2562.8	(6^+)	1242.9 *5*	100	1319.89	(4^+)
2598.42	(7^-)	414.2 *3*	21 *3*	2184.00	(5^-)
		1097.9 *2*	100 *15*	1500.51	(6^+)
2611.3	(6^+)	1758.9 *3*	100	852.37	4^+
2623.27	(6^-)	103.2 *2*	6.3 *12*	2520.17	(6^-)
		273.4 *3*	4.4 *9*	2349.67	$(5^-,6^+)$
		439.5 *3*	3 *3*	2184.00	(5^-)
		558.2 *2*	29 *6*	2065.16	(4^-)
		639.5 *3*	3.0 *10*	1983.71	(6^+)
		992.6 *2*	100 *6*	1630.69	(5^+)
		1122.6 *2*	27 *4*	1500.51	(6^+)
2654.7	(8^+)	671 *1*	100	1983.71	(6^+)
2687.7		503.7 *4*	40 *5*	2184.00	(5^-)

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Adopted Levels, Gammas (continued)

γ(^{114}Pd) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
2687.7		1056.7 *5*	100 *10*	1630.69	(5^+)
		1187.3 *3*	100 *10*	1500.51	(6^+)
2738.5		1238.0 *3*	100	1500.51	(6^+)
2752.0	$(6,7^-)$	568.0 *3*	100	2184.00	(5^-)
2789.36		166.4 *3*	15 *5*	2623.27	(6^-)
		605.0 *3*	13 *4*	2184.00	(5^-)
		1288.9 *3*	100	1500.51	(6^+)
2792.8		1292.3 *3*	100	1500.51	(6^+)
2821.6		1321.1 *3*	100	1500.51	(6^+)
2853.2		1352.7 *3*	100	1500.51	(6^+)
2859.7	10^+	644.1 *3*	100	2215.7	8^+
2892.3		372.1 *3*	100	2520.17	(6^-)
2905.7	(9^+)	615.7 *4*	100	2290.0	(7^+)
2927.5		407.3 *3*	100	2520.17	(6^-)
2953.4	(6^-)	888.2 *4*	100	2065.16	(4^-)
2997.4		550.5 *4*	63 *25*	2446.7	(6^+)
		907.7 *4*	1.0×10^2 *5*	2090.33	$(4^-,5^+)$
		1012.9§ *5*	38 *13*	1983.71	(6^+)
3047.6	(8^-)	527.4§ *5*	100	2520.17	(6^-)
3055.4		705.7 *4*	100	2349.67	$(5^-,6^+)$
3064.40	$(6,7)^-$	441.0 *3*	76 *16*	2623.27	(6^-)
		544.0 *3*	100 *20*	2520.17	(6^-)
		618.2 *5*	20 *8*	2446.7	(6^+)
		1080.9 *3*	24 *12*	1983.71	(6^+)
		1563.8 *4*	24 *12*	1500.51	(6^+)
3078.3	(6,7)	557.8 *4*	23 *9*	2520.17	(6^-)
		1577.9 *3*	100 *23*	1500.51	(6^+)
3099.2	$(6,7^+)$	1468.6 *4*	1.0×10^2 *3*	1630.69	(5^+)
		1598.6 *5*	50 *21*	1500.51	(6^+)
3104.4	(9^-)	505.8 *4*	1.0×10^2 *3*	2598.42	(7^-)
		888.7 *4*	58 *10*	2215.7	8^+
3128.30	(6^-)	504.9 *4*	15 *5*	2623.27	(6^-)
		608.0 *3*	28 *3*	2520.17	(6^-)
		681.2§ *5*	10.0 *20*	2446.7	(6^+)
		812.3 *3*	18 *3*	2316.1	
		944.5 *3*	60 *15*	2184.00	(5^-)
		1144.6 *5*	15 *3*	1983.71	(6^+)
		1497.6 *5*		1630.69	(5^+)
		1627.8 *3*	1.0×10^2 *3*	1500.51	(6^+)
3138.78	(6^-)	400.2 *3*	26 *13*	2738.5	
		540.1§ *4*	9 *4*	2598.42	(7^-)
		789.2 *3*	48 *13*	2349.67	$(5^-,6^+)$
		1048.4 *4*	70 *22*	2090.33	$(4^-,5^+)$
		1508.0 *4*	100 *22*	1630.69	(5^+)
		1638.5 *4*	43 *13*	1500.51	(6^+)
3161.9		1661.4 *4*	100	1500.51	(6^+)
3237.1	(9^-)	1021.4 *5*	100	2215.7	8^+
3337.8	(10^+)	683.1 *4*	100	2654.7	(8^+)
3423.9		1923.4 *4*	100	1500.51	(6^+)
3443.2	12^+	583.5 *3*	100	2859.7	10^+
3503.9	(11^+)	598.2 *4*	100	2905.7	(9^+)
3737.8	(11^-)	633.2 *4*	100 *25*	3104.4	(9^-)
		878.3 *4*	19 *6*	2859.7	10^+

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Adopted Levels, Gammas (continued)

$\gamma(^{114}Pd)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π
3859.6	(11^-)	622.5 *5*	100	3237.1	(9^-)	4599.2	(13^-)	739.6 *5*	100	3859.6	(11^-)
4147.3	(14^+)	704.1 *4*	100	3443.2	12^+	5011.6	(16^+)	864.3[§] *4*	100	4147.3	(14^+)
4205.7	(13^+)	701.8 *5*	100	3503.9	(11^+)	5255.7	(15^-)	783.1 *4*	100	4472.6	(13^-)
4472.6	(13^-)	734.8 *4*	100	3737.8	(11^-)						

[†] From ^{114}Rh β^- decay.

[‡] 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.

[§] Placement of transition in the level scheme is uncertain.

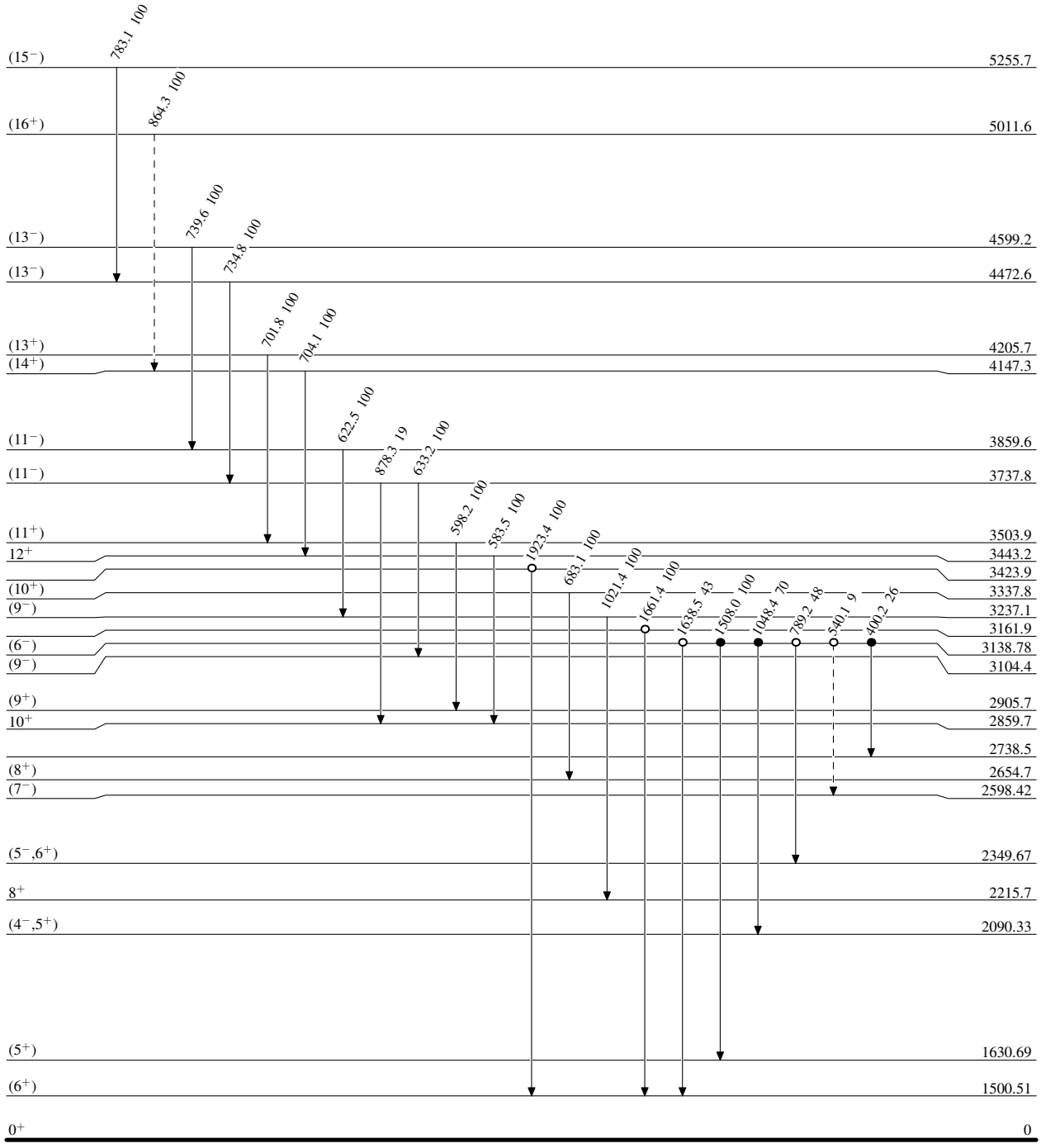
Legend

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)
Coincidence
Coincidence (Uncertain)



$^{114}_{46}Pd_{68}$

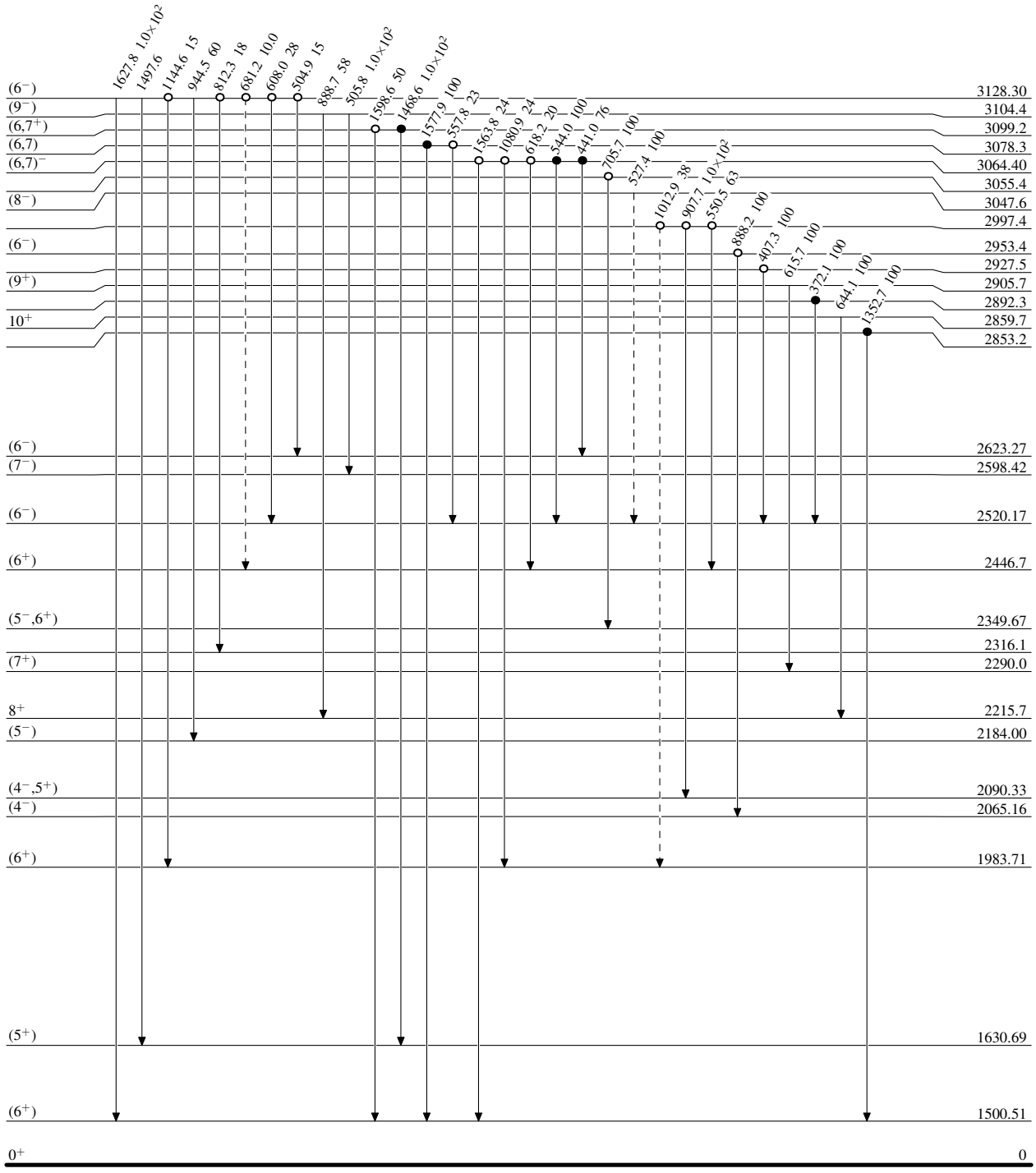
Legend

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)
Coincidence
Coincidence (Uncertain)



$^{114}_{46}Pd_{68}$

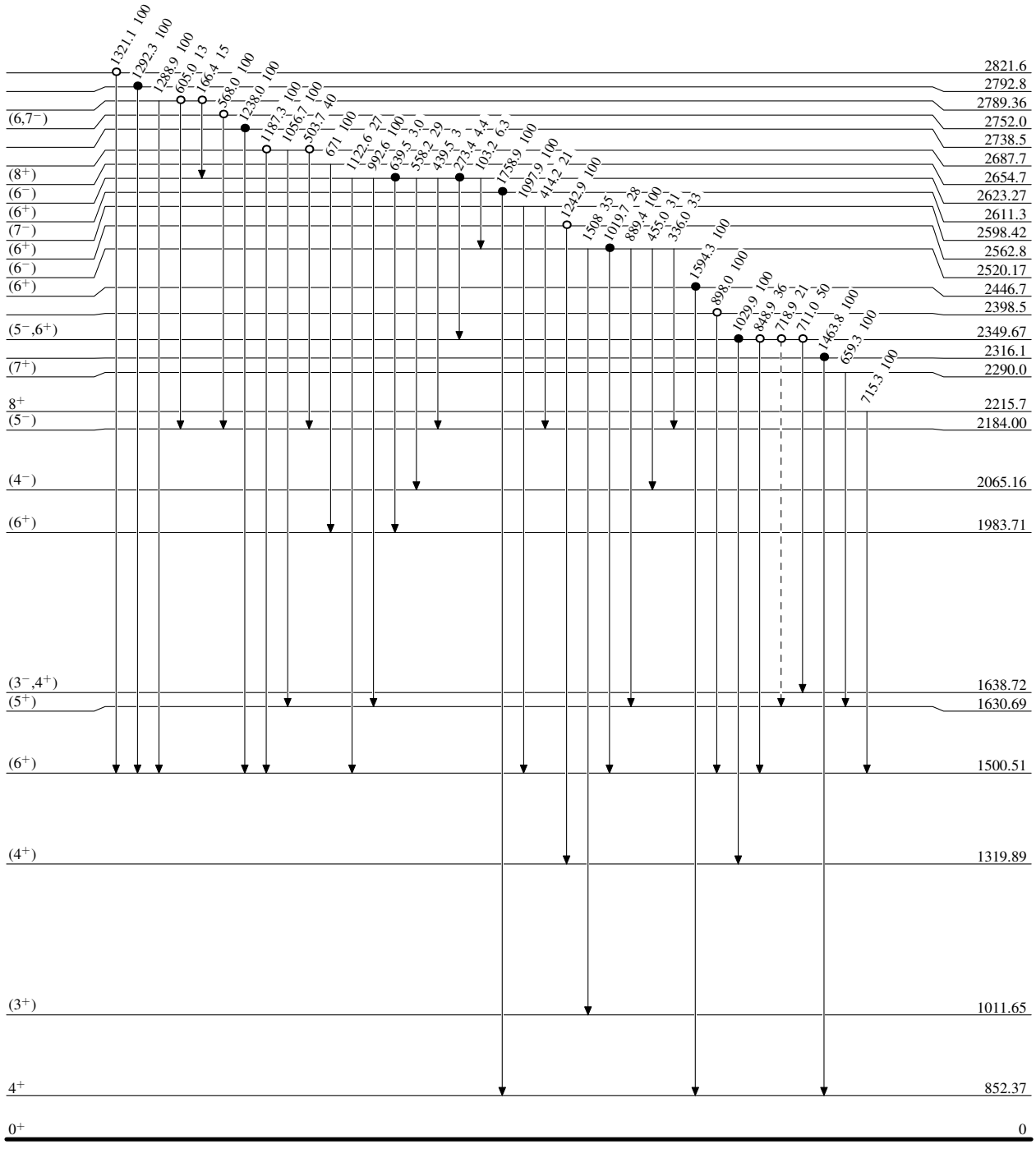
Legend

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)
● Coincidence
○ Coincidence (Uncertain)



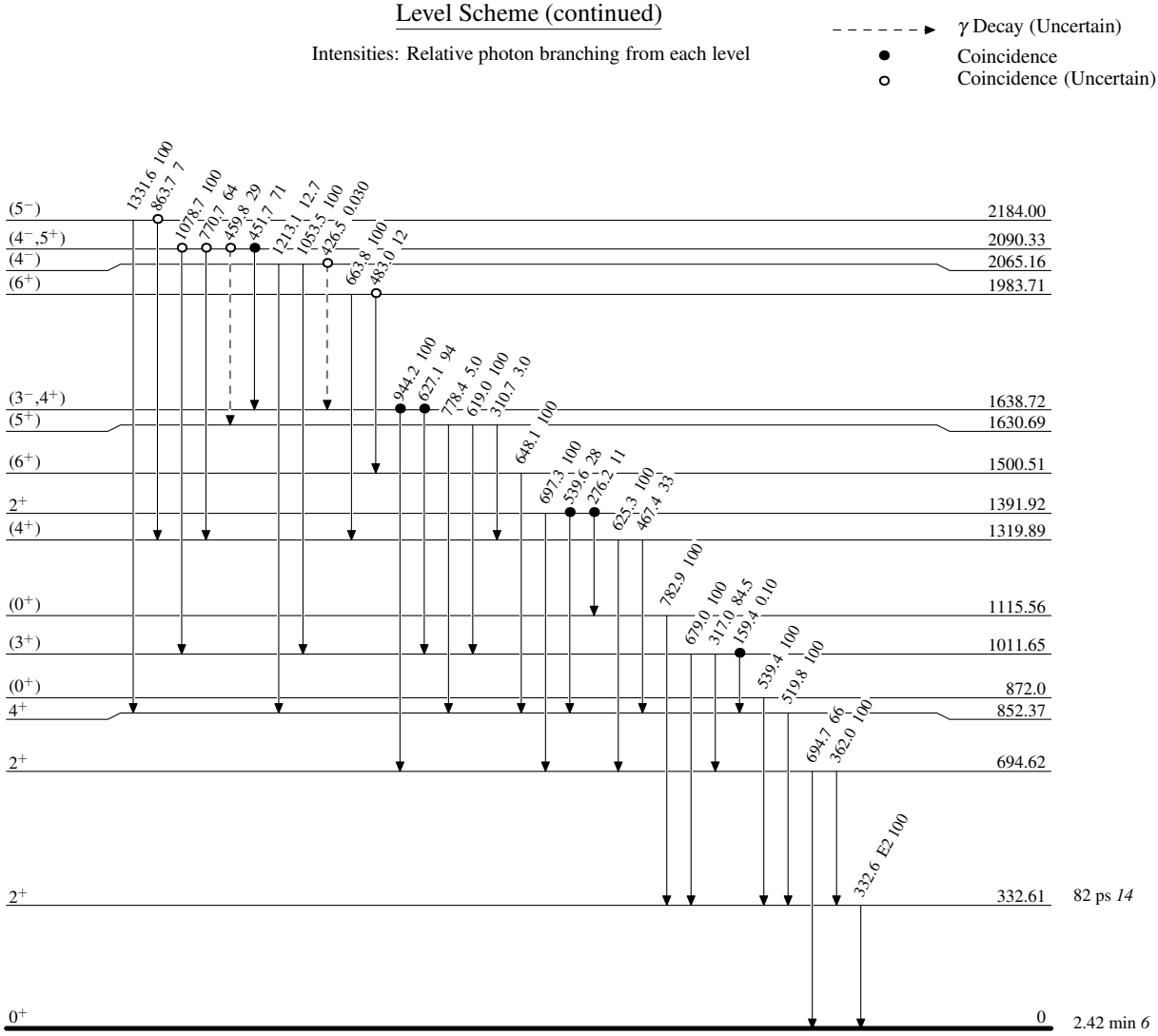
$^{114}_{46}Pd_{68}$

Legend

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{114}_{46}Pd_{68}$

Adopted Levels, Gammas