^{136}Ce(p,2nγ) 1985Ko18

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov	NDS 109, 517 (2008)	22-Jan-2008

Includes ^{139}La(α,8nγ).
1985Ko18: ^{136}Ce(p,2nγ) E=16.1-20.0 MeV. Measured Eγ, Iγ, ce, γγ.
1975Wi11: ^{139}La(α,8nγ) E=80-104 MeV. Four γ rays reported at Eγ(Iγ) of 112.0 (10), 204.5 (100), 373.1 (85), 660.3 (65).

^{135}Pr Levels

From γ(t), 1985Ko18 suggest that $T_{1/2}\leq 1.5$ ns for all excited states, except for the isomeric 358 level.

E(level)	Jπ†	$T_{1/2}$	Comments
0.0	$3/2^{(+)}$		
41.40 *6*	$5/2^{(+)}$		
206.01 *8*	$7/2^{(+)}$		
245.43 *6*	$7/2^{(+)}$		
357.99 *8*	$(11/2^{-})$	105 μs *10*	%IT=100 $T_{1/2}$: from 'Adopted Levels'.
493.44 *7*	$7/2^{(+)}$		
517.37 *8*	$9/2^{(+)}$		
543.12 *9*	$7/2^{(-)}$		
591.00 *11*			
688.05 *11*	$(9/2^{+})$		
730.77 *12*	$(15/2^{-})$		
777.44 *9*	$(11/2^{+})$		
799.19 *11*	$9/2^{(-)}$		
951.64 *12*	$(13/2^{-})$		
985.34 *18*	$(9/2^{+})$		
1016.82 *15*			
1089.87 *15*	$(5/2^{+},7/2,9/2^{+})$		
1104.86 *17*			
1160.1 *4*	$(9/2^{-})$		
1181.44 *13*	$(7/2^{+},9/2)$		
1185.10 *13*	$(9/2^{-},11/2^{-})$		
1214.16 *15*	$(7/2^{-},9/2^{-},11/2^{-})$		
1221.5 *4*	$(11/2^{+})$		
1232.2 *4*	$(13/2^{+})$		
1289.54 *22*	$(11/2^{-})$		
1306.6 *3*	$(^{-})$		
1325.2 *3*	$(11/2^{+})$		
1351.7 *8*			
1390.9 *4*	$(19/2^{-})$		
1409.9 *3*			
1433.3 *3*	$(17/2^{-})$		
1460.7 *4*	$(11/2^{+})$		
1477.9 *6*	$(17/2^{-})$		
1505.9 *5*	$(15/2^{+})$		
1507.7 *3*	$(11/2^{+})$		
1531.9 *4*			
1571.0 *6*			
1636.3 *3*	$(13/2^{+})$		
1742.2 *8*			
1765.9 *6*	$(7/2^{-},9/2^{-},11/2^{-})$		
1794.2 *6*			

Continued on next page (footnotes at end of table)

^{136}Ce(p,2nγ) 1985Ko18 (continued)

^{135}Pr Levels (continued)

E(level)	J^{π}†	E(level)	E(level)	E(level)	J^{π}†
1816.0 *4*	(−)	1959.2 *4*	2014.0 *8*	2116.5 *7*	(17/2$^+$)
1904.8 *8*		2002.8 *8*	2104.4 *8*	2155.9 *6*	

† From 'Adopted Levels'.

^{136}Ce(p,2nγ) 1985Ko18 (continued)

γ(^{135}Pr)

E_γ[#]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[‡]	α[d]	Comments
41.43 *8*	48 *5*	41.40	5/2$^{(+)}$	0.0	3/2$^{(+)}$	M1(+E2)[b]	<0.15	3.1 *7*	α(L)=2.5 *5*; α(M)=0.53 *11*; α(N+..)=0.14 *3* α(N)=0.117 *24*; α(O)=0.018 *4*; α(P)=0.001089 *18*
112.56 *8*	8.7 *5*	357.99	(11/2$^-$)	245.43	7/2$^{(+)}$	M2[b]		8.28	α(K)=6.47 *10*; α(L)=1.411 *21*; α(M)=0.313 *5*; α(N+..)=0.0818 *12* α(N)=0.0701 *10*; α(O)=0.01103 *16*; α(P)=0.000709 *11*
164.60 *8*	14 *2*	206.01	7/2$^{(+)}$	41.40	5/2$^{(+)}$	M1+E2	+0.45 *20*	0.327 *8*	α(K)=0.270 *4*; α(L)=0.045 *6*; α(M)=0.0096 *14*; α(N+..)=0.0025 *4* α(N)=0.0021 *3*; α(O)=0.00033 *4*; α(P)=1.99×10^{-5} *8* A_2=+0.12 *1*, A_4=+0.04 *2*. Mult.: α(K)exp=0.25 *7* gives M1,E2.
170.65 *10*	1.1 *2*	688.05	(9/2$^+$)	517.37	9/2$^{(+)}$	D+Q			A_2=+0.13 *3*, A_4=+0.11 *4*.
185.03 *10*	6.6 *7*	543.12	7/2$^{(-)}$	357.99	(11/2$^-$)	(E2)		0.247	α(K)=0.182 *3*; α(L)=0.0509 *8*; α(M)=0.01125 *16*; α(N+..)=0.00282 *4* α(N)=0.00245 *4*; α(O)=0.000356 *5*; α(P)=1.084×10^{-5} *16* Mult.: α(K)exp=0.36 *10* is larger by a factor of≈2 than α(K)(M1) or α(K)(E2). The assignment here is from adopted gammas.
204.02 *10*	100	245.43	7/2$^{(+)}$	41.40	5/2$^{(+)}$	M1		0.1764	α(K)=0.1505 *22*; α(L)=0.0205 *3*; α(M)=0.00431 *6*; α(N+..)=0.001131 *16* α(N)=0.000965 *14*; α(O)=0.0001554 *22*; α(P)=1.150×10^{-5} *17* A_2=−0.03 *3*, A_4=+0.04 *5*. Mult.: α(K)exp=0.11 *3* gives M1,E2; γ(θ) consistent with ΔJ=1, dipole.
206.05 *15*	10[c] *2*	206.01	7/2$^{(+)}$	0.0	3/2$^{(+)}$	E2[b]		0.1717	α(K)=0.1295 *19*; α(L)=0.0331 *5*; α(M)=0.00729 *11*; α(N+..)=0.00183 *3* α(N)=0.001592 *23*; α(O)=0.000233 *4*; α(P)=7.89×10^{-6} *12*
220.89 *10*	0.7 *1*	951.64	(13/2$^-$)	730.77	(15/2$^-$)	M1,E2		0.139 *4*	α(K)=0.113 *9*; α(L)=0.021 *5*; α(M)=0.0045 *11*; α(N+..)=0.00115 *25* α(N)=0.00099 *22*; α(O)=0.00015 *3*; α(P)=7.8×10^{-6} *15* α(K)exp=0.09 *4*.
233.56 *10*	1.9 *2*	1185.10	(9/2$^-$,11/2$^-$)	951.64	(13/2$^-$)				
245.4 *1*	4.5[c] *9*	245.43	7/2$^{(+)}$	0.0	3/2$^{(+)}$	(E2)[b]		0.0963	α(K)=0.0748 *11*; α(L)=0.01686 *24*; α(M)=0.00369 *6*; α(N+..)=0.000932 *14* α(N)=0.000807 *12*; α(O)=0.0001198 *17*; α(P)=4.71×10^{-6} *7* A_2=+0.01 *2*, A_4=−0.05 *4*.
248.0 *1*	0.5 *2*	493.44	7/2$^{(+)}$	245.43	7/2$^{(+)}$				
256.0 *1*	2.1 *4*	799.19	9/2$^{(-)}$	543.12	7/2$^{(-)}$	D(+Q)			A_2=−0.37 *5*, A_4=+0.07 *11*.
260.1 *1*	0.8 *2*	777.44	(11/2$^+$)	517.37	9/2$^{(+)}$				
271.9 *1*	5.8 *5*	517.37	9/2$^{(+)}$	245.43	7/2$^{(+)}$	M1+E2	+0.25 *5*	0.0807	α(K)=0.0686 *11*; α(L)=0.00951 *15*; α(M)=0.00201 *3*; α(N+..)=0.000525 *8*

$^{135}_{59}Pr_{76}$-3

^{136}Ce(p,2nγ) 1985Ko18 (continued)

γ(^{135}Pr) (continued)

E_γ[#]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[‡]	α[d]	Comments
									α(N)=0.000448 *7*; α(O)=7.19×10^{-5} *11*; α(P)=5.19×10^{-6} *9* A_2=+0.07 *1*, A_4=+0.06 *2*. Mult.: α(K)exp=0.046 *14* gives M1+E2, δ>0.75.
287.4 *1*	0.9 *2*	493.44	7/2$^{(+)}$	206.01	7/2$^{(+)}$				
316.6 *1*	1.6 *3*	357.99	(11/2$^-$)	41.40	5/2$^{(+)}$	E3		0.1603	α(K)=0.1082 *16*; α(L)=0.0406 *6*; α(M)=0.00916 *13*; α(N+..)=0.00229 *4* α(N)=0.00200 *3*; α(O)=0.000288 *4*; α(P)=7.32×10^{-6} *11* α(K)exp=0.094 *9*.
345.6 *1*	1.7 *3*	591.00		245.43	7/2$^{(+)}$				
372.8 *1*	18 *2*	730.77	(15/2$^-$)	357.99	(11/2$^-$)	E2		0.0260	α(K)=0.0212 *3*; α(L)=0.00380 *6*; α(M)=0.000818 *12*; α(N+..)=0.000209 *3* α(N)=0.000180 *3*; α(O)=2.76×10^{-5} *4*; α(P)=1.426×10^{-6} *20* A_2=+0.29 *2*, A_4=−0.04 *3*. α(K)exp=0.018 *5* gives δ(E2/M1)>2.
385.8 *1*	2.0 *4*	1185.10	(9/2$^-$,11/2$^-$)	799.19	9/2$^{(-)}$				
404.0 *1*	0.8 *2*	1181.44	(7/2$^+$,9/2)	777.44	(11/2$^+$)				
415.0 *1*	1.1 *2*	1214.16	(7/2$^-$,9/2$^-$,11/2$^-$)	799.19	9/2$^{(-)}$				
425.1 *1*	2.0 *4*	1816.0	($^-$)	1390.9	(19/2$^-$)	M1,E2		0.022 *4*	α(K)=0.018 *4*; α(L)=0.00268 *22*; α(M)=0.00057 *4*; α(N+..)=0.000148 *12* α(N)=0.000127 *10*; α(O)=2.00×10^{-5} *20*; α(P)=1.3×10^{-6} *4* α(K)exp=0.021 *6*.
441.2 *2*	12 *2*	799.19	9/2$^{(-)}$	357.99	(11/2$^-$)	D+Q		0.0234	A_2=−0.34 *2*, A_4=+0.05 *5*. α(K)exp(441.2γ+442.7γ)=0.016 *5*.
442.7 *2*	4 *1*	688.05	(9/2$^+$)	245.43	7/2$^{(+)}$	D(+Q)			A_2=−0.35 *11*, A_4=+0.17 *17*. Mult.: α(K)exp(441.2γ+442.7γ)=0.016 *5* consistent with M1,E2 for doublet; γ(θ) consistent with ΔJ=1 with δ<+0.04, >−0.2 or −5.5 *25*.
449.7[e] *2*	0.30 *9*	1181.44	(7/2$^+$,9/2)	730.77	(15/2$^-$)				Additional information 1. This transition (to (15/2$^-$)) is considered as uncertain (evaluators) due to poor fit in level scheme and improbable ΔJ=3,4.
452.1 *1*	11 *1*	493.44	7/2$^{(+)}$	41.40	5/2$^{(+)}$	M1+E2	+0.4 *1*	0.0208 *6*	α(K)=0.0177 *5*; α(L)=0.00241 *5*; α(M)=0.000508 *9*; α(N+..)=0.0001330 *24* α(N)=0.0001134 *20*; α(O)=1.82×10^{-5} *4*; α(P)=1.33×10^{-6} *4* A_2=+0.16 *5*, A_4=+0.14 *10*. Mult.: α(K)exp=0.016 *3* gives M1,E2. δ=+20 *15* is also possible but less likely.
468.0 *2*	0.4 *1*	985.34	(9/2$^+$)	517.37	9/2$^{(+)}$				
476.0 *1*	21 *2*	517.37	9/2$^{(+)}$	41.40	5/2$^{(+)}$	E2		0.01289	α(K)=0.01069 *15*; α(L)=0.001740 *25*; α(M)=0.000372 *6*; α(N+..)=9.59×10^{-5} *14* α(N)=8.23×10^{-5} *12*; α(O)=1.277×10^{-5} *18*; α(P)=7.40×10^{-7} *11*

$^{135}_{59}Pr_{76}$-4

^{136}Ce(p,2nγ) 1985Ko18 (continued)

γ(^{135}Pr) (continued)

E_γ[#]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[‡]	α[d]	Comments
									A_2=+0.19 *2*, A_4=−0.05 *4*. α(K)exp=0.009 *2*.
481.6 *3*	2.7[a] *5*	1433.3	(17/2$^-$)	951.64	(13/2$^-$)				For 481.6γ+482.2γ: α(K)exp=0.008 *2*; A_2=+0.14 *3*, A_4=+0.08 *5*.
482.2 *3*	1.9[a] *4*	688.05	(9/2$^+$)	206.01	7/2$^{(+)}$				For 481.6γ+482.2γ: α(K)exp=0.008 *2*; A_2=+0.14 *3*, A_4=+0.08 *5*.
490.4 *2*	1.4 *2*	1289.54	(11/2$^-$)	799.19	9/2$^{(-)}$	D+Q	−1.5 *10*		A_2=−0.78 *3*, A_4=+0.20 *6*.
493.4 *1*	3.5 *5*	493.44	7/2$^{(+)}$	0.0	3/2$^{(+)}$	E2		0.01169	α(K)=0.00971 *14*; α(L)=0.001561 *22*; α(M)=0.000333 *5*; α(N+..)=8.60×10^{-5} *12* α(N)=7.38×10^{-5} *11*; α(O)=1.147×10^{-5} *16*; α(P)=6.74×10^{-7} *10* A_2=+0.15 *5*, A_4=−0.01 *7*. Mult.: α(K)exp=0.011 *3* gives δ(E2/M1)>0.5, ΔJ forbids L=1.
499.6 *2*	0.5 *2*	1016.82		517.37	9/2$^{(+)}$				
501.7 *1*	13 *2*	543.12	7/2$^{(-)}$	41.40	5/2$^{(+)}$	E1		0.00373	α(K)=0.00321 *5*; α(L)=0.000414 *6*; α(M)=8.65×10^{-5} *13*; α(N+..)=2.26×10^{-5} *4* α(N)=1.93×10^{-5} *3*; α(O)=3.08×10^{-6} *5*; α(P)=2.21×10^{-7} *4* A_2=−0.18 *3*, A_4=+0.06 *6*. α(K)exp=0.0018 *5*.
523.3 *2*	2.4 *2*	1016.82		493.44	7/2$^{(+)}$				
532.0 *1*	11 *1*	777.44	(11/2$^+$)	245.43	7/2$^{(+)}$	(E2)		0.00954	α(K)=0.00796 *12*; α(L)=0.001249 *18*; α(M)=0.000266 *4*; α(N+..)=6.88×10^{-5} *10* α(N)=5.90×10^{-5} *9*; α(O)=9.20×10^{-6} *13*; α(P)=5.57×10^{-7} *8* A_2=+0.22 *5*, A_4=−0.01 *7*. Mult.: α(K)exp=0.0044 *13* is lower by a factor of≈2 than α(K)(E2). α(K)exp agrees with α(K)(E1), also.
549.5 *2*	3.5 *4*	591.00		41.40	5/2$^{(+)}$				
568.3 *2*	2.0 *2*	1959.2		1390.9	(19/2$^-$)				
572.3 *2*	0.5[c] *1*	1089.87	(5/2$^+$,7/2,9/2$^+$)	517.37	9/2$^{(+)}$				
575.8 *2*	2.0[c] *3*	1306.6	(−)	730.77	(15/2$^-$)	(E2)		0.00776	α(K)=0.00650 *10*; α(L)=0.000995 *14*; α(M)=0.000212 *3*; α(N+..)=5.48×10^{-5} *8* α(N)=4.70×10^{-5} *7*; α(O)=7.35×10^{-6} *11*; α(P)=4.57×10^{-7} *7* α(K)exp=0.0047 *14*.
587.6 *2*	0.7 *2*	1104.86		517.37	9/2$^{(+)}$				
594.0 *2*	8.0 *15*	951.64	(13/2$^-$)	357.99	(11/2$^-$)	M1+E2	−1.5 *10*	0.0083 *19*	α(K)=0.0071 *17*; α(L)=0.00101 *17*; α(M)=0.00021 *4*; α(N+..)=5.6×10^{-5} *9* α(N)=4.8×10^{-5} *8*; α(O)=7.6×10^{-6} *13*; α(P)=5.1×10^{-7} *14* A_2=−0.97 *2*, A_4=+0.17 *3*. Mult.: α(K)exp=0.009 *3* gives M1,E2.
596.6 *2*	1.0 *3*	1089.87	(5/2$^+$,7/2,9/2$^+$)	493.44	7/2$^{(+)}$				
611.0 *3*	1.2 *3*	1104.86		493.44	7/2$^{(+)}$				

$^{135}_{59}Pr_{76}$-5

^{136}Ce(p,2nγ) 1985Ko18 (continued)

γ(^{135}Pr) (continued)

E_γ[#]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[‡]	α[d]	Comments
617.0 *3*	3.4 *6*	1160.1	(9/2$^-$)	543.12	7/2$^{(-)}$	D+Q	−2.0 *15*		A_2=−0.60 *4*, A_4=+0.16 *8*.
[x]630.7 *3*	0.7 *2*								A_2=+0.14 *7*, A_4=+0.15 *10*.
632.5 *3*	0.5 *2*	1409.9		777.44	(11/2$^+$)				
637.4 *3*	1.0 *2*	1325.2	(11/2$^+$)	688.05	(9/2$^+$)	D+Q	−7 *3*		A_2=−0.22 *5*, A_4=+0.21 *9*.
646.7 *3*	1.9[c] *3*	688.05	(9/2$^+$)	41.40	5/2$^{(+)}$				A_2=+0.09 *3*, A_4=+0.04 *4*.
651.0 *3*	3.1 *6*	1636.3	(13/2$^+$)	985.34	(9/2$^+$)	(Q)			A_2=+0.28 *5*, A_4=−0.04 *7*.
660.1 *3*	1.9 *3*	1390.9	(19/2$^-$)	730.77	(15/2$^-$)	(Q)			A_2=+0.35 *8*, A_4=−0.10 *13*.
664.4 *4*	1.0[c] *4*	1181.44	(7/2$^+$,9/2)	517.37	9/2$^{(+)}$				
670.4[&] *5*	1.4 *4*	1214.16	(7/2$^-$,9/2$^-$,11/2$^-$)	543.12	7/2$^{(-)}$				
683.5 *4*	0.5 *2*	1460.7	(11/2$^+$)	777.44	(11/2$^+$)				
687.8 *4*	0.9 *3*	1181.44	(7/2$^+$,9/2)	493.44	7/2$^{(+)}$				A_2=+0.28 *15*, A_4=+0.10 *24*.
702.5 *5*	0.3[a] *1*	1433.3	(17/2$^-$)	730.77	(15/2$^-$)				
704.1 *5*	1.0[a] *3*	1221.5	(11/2$^+$)	517.37	9/2$^{(+)}$	D+Q	+3.3 *27*		A_2=+0.37 *6*, A_4=+0.21 *8*.
708.4 *5*	0.3 *1*	1507.7	(11/2$^+$)	799.19	9/2$^{(-)}$				
714.8 *4*	4.3 *4*	1232.2	(13/2$^+$)	517.37	9/2$^{(+)}$	E2		0.00454	α(K)=0.00383 *6*; α(L)=0.000555 *8*; α(M)=0.0001175 *17*; α(N+..)=3.05×10^{-5} *5* α(N)=2.61×10^{-5} *4*; α(O)=4.13×10^{-6} *6*; α(P)=2.73×10^{-7} *4* A_2=+0.22 *4*, A_4=0.00 *6*. Mult.: α(K)exp=0.0027 *8* is lower by≈30% than α(K)(E2).
721.6 *5*	4.6[a] *10*	1409.9		688.05	(9/2$^+$)				For 721.6γ+722.6γ: α(K)exp=0.0021 *6*; A_2=−0.16 *4*, A_4=+0.04 *6*.
722.6 *5*	2.7[a] *10*	2155.9		1433.3	(17/2$^-$)				For 721.6γ+722.6γ: α(K)exp=0.0021 *6*; A_2=−0.16 *4*, A_4=+0.04 *6*.
728.0 *5*	1.3[a] *5*	1221.5	(11/2$^+$)	493.44	7/2$^{(+)}$				For 728.0γ+728.5γ: α(K)exp=0.0028 *8*; A_2=+0.22 *2*, A_4=−0.05 *3*.
728.5 *5*	4.5[a] *10*	1505.9	(15/2$^+$)	777.44	(11/2$^+$)	(Q)			For 728.0γ+728.5γ: α(K)exp=0.0028 *8*; A_2=+0.22 *2*, A_4=−0.05 *3*.
739.9 *5*	5.3 *8*	985.34	(9/2$^+$)	245.43	7/2$^{(+)}$	M1+E2	−2.0 *15*	0.0046 *14*	α(K)=0.0039 *12*; α(L)=0.00055 *13*; α(M)=0.00012 *3*; α(N+..)=3.0×10^{-5} *7* α(N)=2.6×10^{-5} *6*; α(O)=4.1×10^{-6} *11*; α(P)=2.8×10^{-7} *10* A_2=−0.53 *2*, A_4=+0.11 *4*. Mult.: α(K)exp=0.0042 *13* gives M1,E2.
746.1 *5*	2 *1*	1289.54	(11/2$^-$)	543.12	7/2$^{(-)}$				For 746.1γ+747.1γ: α(K)exp=0.0010 *3*; A_2=−0.40 *4*, A_4=+0.05 *7*.
747.1 *5*	2 *1*	1477.9	(17/2$^-$)	730.77	(15/2$^-$)				For 746.1γ+747.1γ: α(K)exp=0.0010 *3*; A_2=−0.40 *4*, A_4=+0.05 *7*.
771.0 *5*	1.8 *5*	1016.82		245.43	7/2$^{(+)}$				A_2=+0.12 *8*, A_4=−0.01 *12*.
779.2 *5*	3.7 *8*	985.34	(9/2$^+$)	206.01	7/2$^{(+)}$				
807.4 *5*	3.1 *7*	1325.2	(11/2$^+$)	517.37	9/2$^{(+)}$	D+Q			A_2=0.00 *4*, A_4=+0.05 *7*. δ: +0.2 *1* or >30.

^{136}Ce(p,2nγ) 1985Ko18 (continued)

γ(^{135}Pr) (continued)

E_γ[#]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[‡]	Comments
843.7 *5*	0.6[a] *2*	1531.9		688.05	(9/2$^+$)			
858.8 *5*	0.6 *2*	1636.3	(13/2$^+$)	777.44	(11/2$^+$)			
884.3 *5*	0.7 *2*	2116.5	(17/2$^+$)	1232.2	(13/2$^+$)			
899.3 *5*	1.0 *4*	1104.86		206.01	7/2$^{(+)}$			
943.0 *5*	2.6 *5*	1460.7	(11/2$^+$)	517.37	9/2$^{(+)}$	D+Q	+5.1 *44*	A_2=+0.30 *11*, A_4=+0.33 *16*.
966.7 *5*	1.3 *3*	1765.9	(7/2$^-$,9/2$^-$,11/2$^-$)	799.19	9/2$^{(-)}$	D+Q		A_2=−0.62 *18*, A_4=−0.13 *13*.
975.3 *5*	1.9 *4*	1181.44	(7/2$^+$,9/2)	206.01	7/2$^{(+)}$			A_2=−0.04 *1*, A_4=−0.02 *2*.
990.1 *5*	2.6 *5*	1507.7	(11/2$^+$)	517.37	9/2$^{(+)}$	D+Q	+6 *4*	A_2=+0.13 *2*, A_4=+0.11 *3*.
1014.6 *5*	0.2[a] *1*	1507.7	(11/2$^+$)	493.44	7/2$^{(+)}$			
1038.6 *5*	0.6 *2*	1531.9		493.44	7/2$^{(+)}$			
1048.6 *5*	1.9 *5*	1089.87	(5/2$^+$,7/2,9/2$^+$)	41.40	5/2$^{(+)}$			
1063.4 *5*	2.3 *6*	1794.2		730.77	(15/2$^-$)			
1077.6 *8*	1.0 *3*	1571.0		493.44	7/2$^{(+)}$			
1079.6 *8*	1.2 *3*	1325.2	(11/2$^+$)	245.43	7/2$^{(+)}$			
1127.4 *8*	1.9 *5*	1904.8		777.44	(11/2$^+$)			
1145.7 *8*	0.9 *3*	1351.7		206.01	7/2$^{(+)}$			
1224.8 *8*	0.9 *3*	1742.2		517.37	9/2$^{(+)}$			
1272.0 *8*	1.2 *4*	2002.8		730.77	(15/2$^-$)			
1283.2 *8*	1.5 *4*	2014.0		730.77	(15/2$^-$)			
1302.0 *8*	1.1 *3*	1507.7	(11/2$^+$)	206.01	7/2$^{(+)}$			
1325.6 *8*	1.1 *3*	1571.0		245.43	7/2$^{(+)}$			
1373.6 *8*	0.7 *2*	2104.4		730.77	(15/2$^-$)			

[†] From γ(θ) and α(K)exp.
[‡] Estimated (by evaluators) from γ(θ) data.
[#] From 1985Ko18. 1975Wi11 report cascade of four transitions above 41.5-keV level with Eγ(Iγ): 204.5 (100)−112.0 (10)−373.1 (85)−660.3 (65).
[@] From 1985Ko18 at E(p)=19.9 MeV.
[&] Doublet line.
[a] From γγ data.
[b] From 'adopted gammas'.
[c] Composite line, contribution from an impurity is subtracted.
[d] 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.
[e] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

$^{135}_{59}Pr_{76}$-7

^{136}**Ce(p,2nγ) 1985Ko18**

Level Scheme

Intensities: Relative I_γ

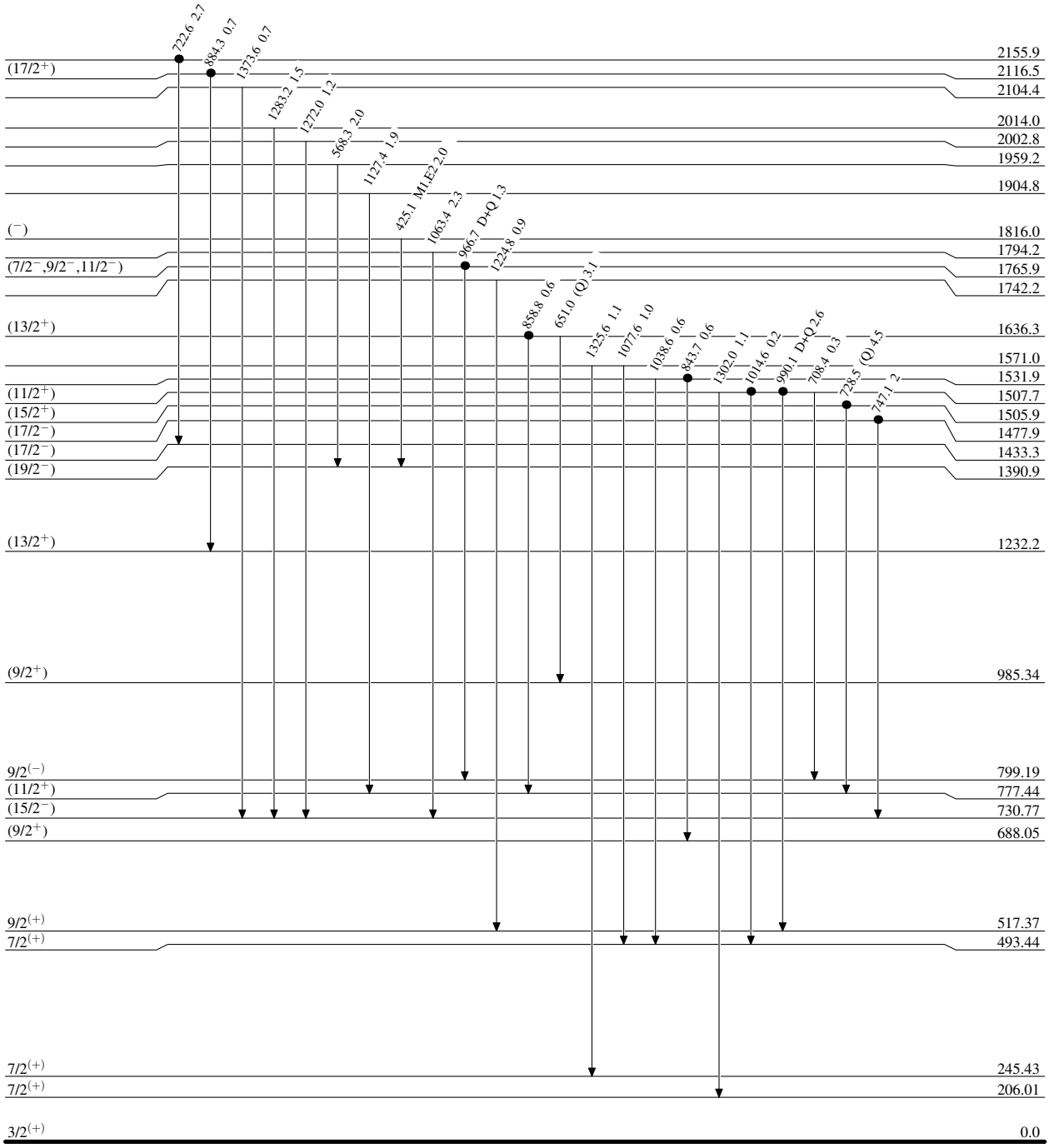
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

Coincidence

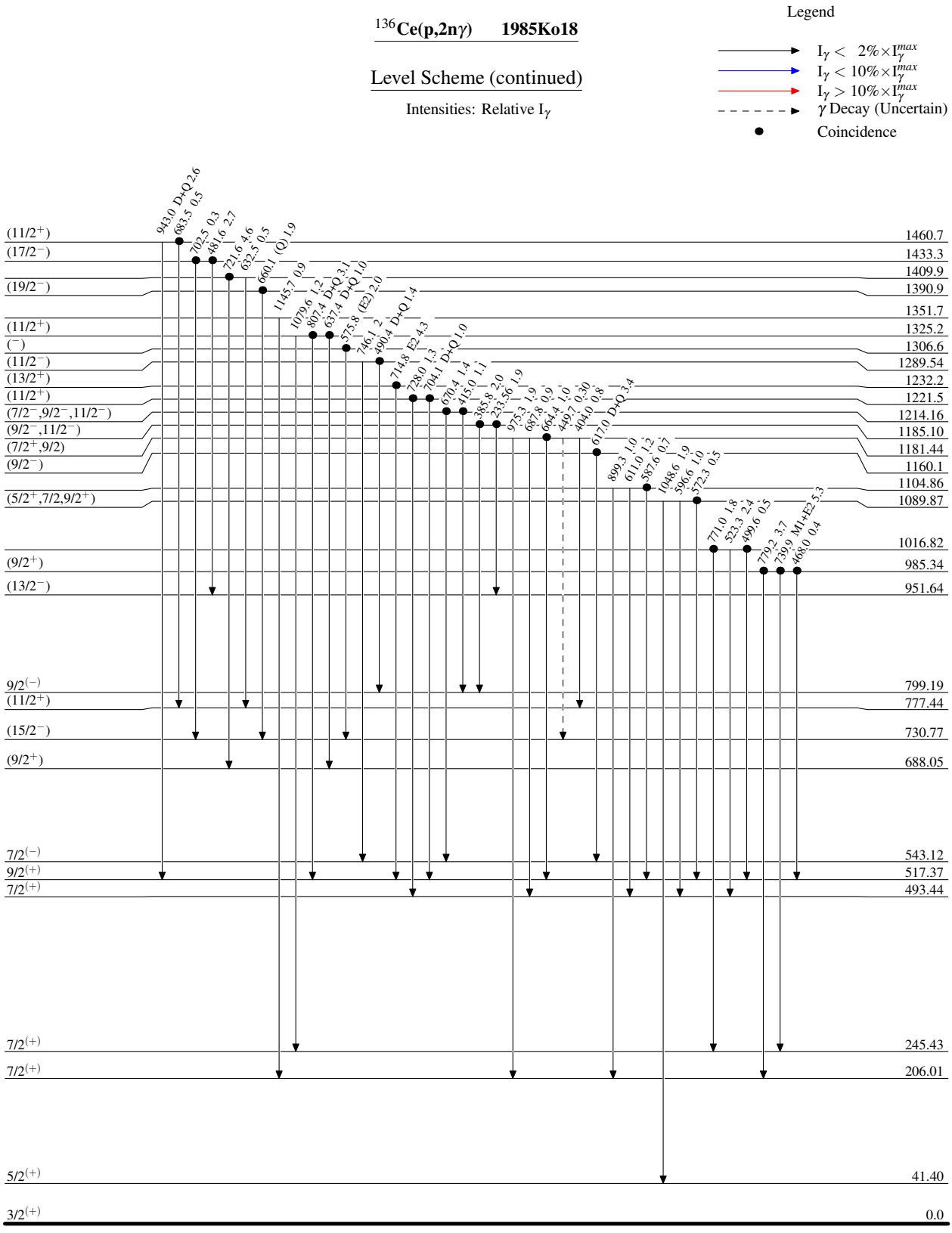


$^{135}_{59}Pr_{76}$

^{136}Ce(p,2nγ) **1985Ko18**

Level Scheme (continued)

Intensities: Relative I_γ

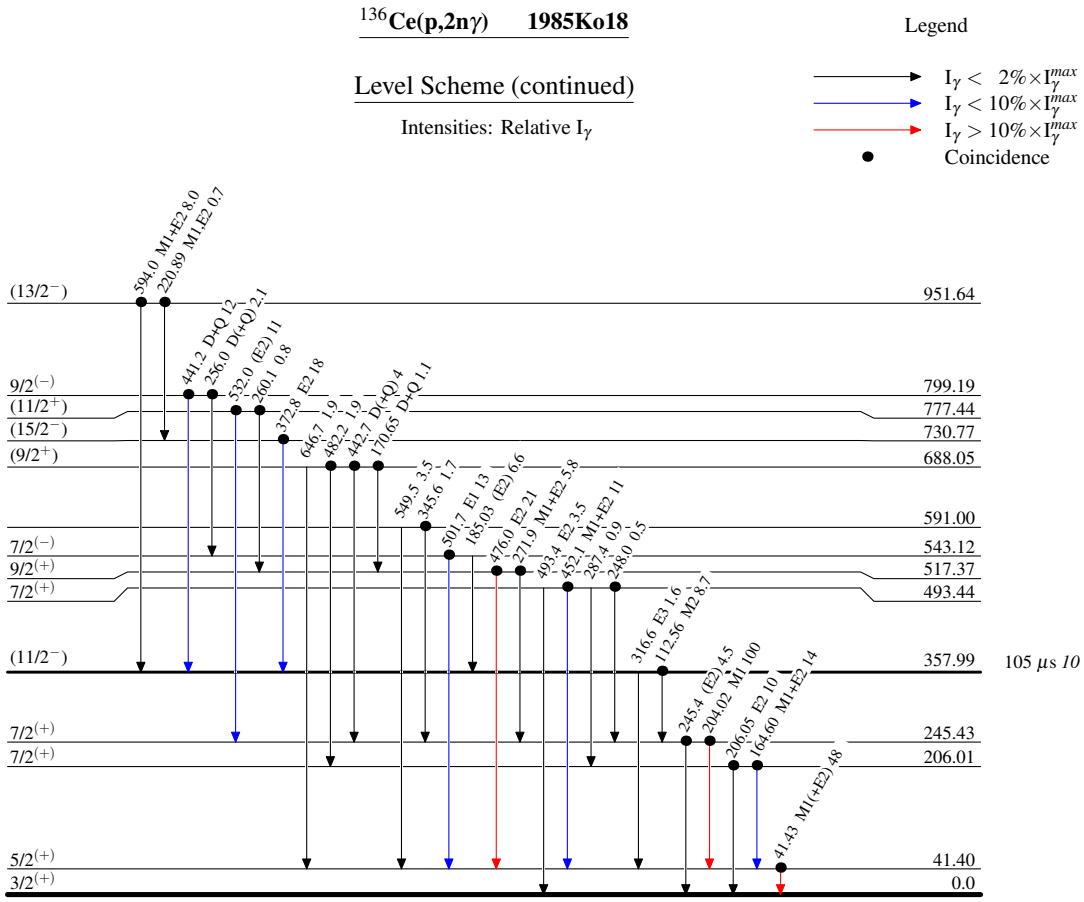


$^{135}_{59}Pr_{76}$

^{136}Ce(p,2nγ) 1985Ko18

Level Scheme (continued)

Intensities: Relative I_γ



$^{135}_{59}Pr_{76}$