^{141}Pr(γ,γ') 2007Sc18

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 187,1 (2023)	12-Oct-2022

2007Sc18: E(end-point)=4.1 MeV Bremsstrahlung beam from the DYNAMITRON accelerator. Measured Eγ, Iγ using three HPGe detectors. One of the detectors was additionally surrounded by a BGO anti-Compton shield.
E(γ)=6115 *2* (1991BeZX).
E(γ)=6111, 6115, 7188, 7256, 8883 (1971Pa01).
E(γ)=7632 (1968Mo06,1969Mo11).
E(γ)=6877, 7256, 7632, 7915 (1972Wo21,1974Wo05).
E(γ)=2800-3600 (1993Vo05).
Measured: γ', $\gamma\gamma'(\theta)$ (1969Mo11,1971Pa01,1970Mo26,1972Wo21) directional polarization (1972Wo21,1970Mo26,1969Mo11,1968Mo06).

^{141}Pr Levels

Given in the comments are gΓ_0 values from 2007Sc18, where g is the statistical factor, and Γ_0 is the ground-state Γ (in eV). For ΔJ=1 the reduced transition strengths for both M1 and E1 are reported by 2007Sc18.

E(level)	J$^\pi$[†]	I$_{S,0}$ (eV b)[‡]	Comments
0.0	5/2$^+$		
145.4	7/2$^+$		
1118	11/2$^-$		
1127	3/2$^+$	4.0 *6*	B(M1)↑=0.083 *13* gΓ_0=1.37×10^{-3} *21*.
1293	(5/2)$^+$	2.1 *4*	B(M1)↑=0.060 *7* gΓ_0=1.49×10^{-3} *19*.
1436	3/2$^+$	1.4 *5*	B(M1)↑=0.051 *7* gΓ_0=1.76×10^{-3} *25*.
1451	(7/2)$^+$		J$^\pi$: from $\gamma(\theta)$ for γ from 5/2$^+$ resonance 7632.
1457.9 *5*	9/2$^+$		
1491.9 *15*			
1513? *6*			
1521	9/2$^+$	5.5 *7*	B(E2)↑=0.057 *7* gΓ_0=0.0037 *4*.
1559		1.0 *3*	B(E1)↑=0.16×10^{-5} *5*; B(M1)↑=0.014 *4* gΓ_0=0.63×10^{-3} *20*.
1579	5/2$^-$	1.1 *3*	gΓ_0=0.0023 *5*.
1597? *8*			
1608	(3/2)$^+$	32 *4*	B(M1)↑=0.44 *5* gΓ_0=21.3×10^{-3} *23*.
1651	(9/2$^+$)	4.6 *6*	B(E2)↑=0.040 *4* gΓ_0=0.0039 *4*.
1666?			
1786	(5/2$^+$)	1.4 *3*	B(M1)↑=0.029 *4* gΓ_0=1.88×10^{-3} *25*.
1810.9 *15*			
1816		1.0 *3*	B(M1)↑=0.013 *3*; B(E1)↑=0.14×10^{-5} *4* gΓ_0=0.89×10^{-3} *24*.
1842	(7/2$^+$)	0.9 *3*	B(M1)↑=0.018 *4* gΓ_0=0.0013 *3*.
1849		1.3 *3*	B(M1)↑=0.015 *4*; B(E1)↑=0.17×10^{-5} *4* gΓ_0=0.0011 *3*.
1913.9 *15*			

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^{141}Pr(γ,γ') 2007Sc18 (continued)

^{141}Pr Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$	$I_{S,0}$ (eV b)[‡]	Comments
1946 *6*				
1981	($3/2^+$)		0.83 *23*	B(M1)↑=0.009 *3* $g\Gamma_0$=0.84×10^{-3} *23*.
2006 *2*				
2016				
2106	($5/2^-$)		1.0 *3*	B(E1)↑=0.38×10^{-5} *5* $g\Gamma_0$=0.0037 *5*.
2135	($7/2^-$)		0.88 *23*	B(E1)↑=0.18×10^{-5} *3* $g\Gamma_0$=0.0018 *3*.
2235	3/2			J^{π}: $\gamma(\theta)$ for γ from $5/2^+$ resonance 7632.
2248	($5/2^-$)		1.7 *3*	B(E1)↑=0.19×10^{-5} *3* $g\Gamma_0$=0.0023 *4*.
2270			1.3 *3*	B(M1)↑=0.013 *3*; B(E1)↑=0.14×10^{-5} *3* $g\Gamma_0$=0.0017 *4*.
2296			0.67 *19*	B(M1)↑=0.007 *2*; B(E1)↑=0.07×10^{-5} *2* $g\Gamma_0$=0.0009 *3*.
2309.3 *6*	(5/2,7/2)			
2339.9 *6*				
2354 *1*	($9/2^+$)		0.83 *20*	$g\Gamma_0$=0.0012 *3*.
2453	($5/2^-$)		17.7 *22*	B(E1)↑=1.80×10^{-5} *22* $g\Gamma_0$=0.028 *3*.
2480?				
2524	($3/2^+$)			
2564	($7/2^-$)		2.6 *4*	B(E1)↑=0.39×10^{-5} *4* $g\Gamma_0$=0.0069 *8*.
2582			1.8 *3*	B(M1)↑=0.025 *3*; B(E1)↑=0.27×10^{-5} *4* $g\Gamma_0$=0.0049 *6*.
2586	($7/2^-$)		0.84 *21*	B(E1)↑=0.08×10^{-5} *2* $g\Gamma_0$=0.0015 *4*.
2602	($5/2^-$,$7/2^-$)		8.1 *10*	B(E1)↑=0.94×10^{-5} *10* $g\Gamma_0$=17.3×10^{-3} *19*.
2625 *2*	($5/2^+$,$7/2^+$)			
2646			0.68 *16*	B(M1)↑=0.013 *2*; B(E1)↑=0.14×10^{-5} *2* $g\Gamma_0$=0.0027 *5*.
2692[#]	–		1.27 *22*	B(E1)↑=0.12×10^{-5} *2*; B(M1)↑=0.011 *2* $g\Gamma_0$=0.0024 *4*.
2700?				
2722	($3/2^+$)		0.68 *17*	B(M1)↑=0.006 *1* $g\Gamma_0$=0.0013 eV *3*.
2786			0.87 *25*	B(M1)↑=0.007 *2*; B(E1)↑=0.08×10^{-5} *2* $g\Gamma_0$=0.0018 eV *5*.
2805			0.85 *19*	B(M1)↑=0.007 *2*; B(E1)↑=0.08×10^{-5} *2* $g\Gamma_0$=0.0017 *4*.
2837[#]	($5/2^-$,$7/2^-$)		2.3 *3*	B(E1)↑=0.33×10^{-5} *4* $g\Gamma_0$=0.0078 *9*.
2846[@]	($3/2^-$)[&]	0.01 eV	1.15 *19*	B(E1)↑=0.10×10^{-5} *2* $g\Gamma_0$=0.0024 *4*.
2954			0.70 *23*	B(M1)↑=0.005 *2*; B(E1)↑=0.06×10^{-5} *2* $g\Gamma_0$=0.0016 *5*.
2982[#]	($5/2^-$,$7/2^-$)		7.9 *23*	B(E1)↑=0.87×10^{-5} *19* $g\Gamma_0$=0.0024 eV *5*.
3016	($5/2^-$)		0.93 *18*	B(E1)↑=0.08×10^{-5} *2*

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^{141}Pr(γ,γ′) 2007Sc18 (continued)

^{141}Pr Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$	$I_{S,0}$ (eV b)[‡]	Comments
				$g\Gamma_0$=0.0022 *4*.
3057[#]			1.13 *26*	B(E1)↑=0.09×10^{-5} *2*; B(M1)↑=0.008 *2* $g\Gamma_0$=0.0028 *6*.
3073	(3/2$^+$)		0.84 *17*	B(M1)↑=0.006 *1* $g\Gamma_0$=0.0021 *4*.
3083[@]	(5/2)[&]	0.02 eV	4.5 *6*	$g\Gamma_0$=12.5×10^{-3} *15*.
3127[#]			8.8 *11*	B(M1)↑=0.129 *20*; B(E1)↑=1.42×10^{-5} *23* $g\Gamma_0$=0.046 *7*.
3155		0.0069 eV *9*	1.9 *3*	B(M1)↑=0.019 *2*; B(E1)↑=0.21×10^{-5} *3* $g\Gamma_0$=0.0069 *9*.
3203[#]	(−)		5.3 *7*	$g\Gamma_0$=16.4×10^{-3} *20*.
3206			2.0 *4*	B(M1)↑=0.014 *3*; B(E1)↑=0.15×10^{-5} *3* $g\Gamma_0$=5.3×10^{-3} *11*.
3255			0.89 *18*	B(M1)↑=0.006 *1*; B(E1)↑=0.07×10^{-5} *1* $g\Gamma_0$=0.0025 *5*.
3272[#]			4.5 *6*	B(E1)↑=1.12×10^{-5} *10*; B(M1)↑=0.101 *9* $g\Gamma_0$=0.041 *4*.
3294			1.8 *3*	B(M1)↑=0.012 *2*; B(E1)↑=0.13×10^{-5} *2* $g\Gamma_0$=0.0050 *8*.
3324			4.1 *5*	B(M1)↑=0.075 *7*; B(E1)↑=0.83×10^{-5} *8* $g\Gamma_0$=0.032 *3*.
3338			0.87 *18*	B(M1)↑=0.006 *1*; B(E1)↑=0.07×10^{-5} *1* $g\Gamma_0$=0.0025 *5*.
3346			1.8 *5*	B(M1)↑=0.012 *3*; B(E1)↑=0.14×10^{-5} *3* $g\Gamma_0$=5.4×10^{-3} *13*.
3349[#@]	(7/2)[&]	0.05 eV	2.4 *4*	B(E1)↑=0.64×10^{-5} *7*; B(M1)↑=0.058 *6* $g\Gamma_0$=0.025 *3*.
3370			10.4 *13*	B(M1)↑=0.069 *8*; B(E1)↑=0.77×10^{-5} *9* $g\Gamma_0$=0.031 *4*.
3376			14.7 *18*	B(M1)↑=0.098 *12*; B(E1)↑=1.08×10^{-5} *13* $g\Gamma_0$=0.044 *5*.
3417[#]			1.9 *3*	B(M1)↑=0.048 *5*; B(E1)↑=0.53×10^{-5} *5* $g\Gamma_0$=22.0×10^{-3} *3*. $g\Gamma_0$=6.6×10^{-3} *17* for alternative assignment. $I_{S,0}$ (eV b): 2.2 *6* for alternative assignment.
3427			3.3 *5*	B(M1)↑=0.030 *3*; B(E1)↑=0.33×10^{-5} *4* $g\Gamma_0$=14.0×10^{-3} ev16.
3449			0.79 *20*	B(M1)↑=0.005 *1*; B(E1)↑=0.06×10^{-5} *1* $g\Gamma_0$=0.0024 *6*.
3495[#]			2.3 *3*	B(M1)↑=0.032 *4*; B(E1)↑=0.35×10^{-5} *5* $g\Gamma_0$=15.8×10^{-3} *22*. $I_{S,0}$ (eV b): 2.0 *6* for alternative assignments. $T_{1/2}$: 0.0064 eV *18* for alternative assignment.
3508			1.33 *24*	B(M1)↑=0.009 *2*; B(E1)↑=0.09×10^{-5} *2* $g\Gamma_0$=0.0043 *8*.
3581			1.8 *3*	B(M1)↑=0.011 *2*; B(E1)↑=0.12×10^{-5} *2* $g\Gamma_0$=0.0059 *10*.
3643			2.3 *3*	B(M1)↑=0.014 *2*; B(E1)↑=0.15×10^{-5} *2* $g\Gamma_0$=7.8×10^{-3} *12*.
3659			0.84 *22*	B(M1)↑=0.005 *1*; B(E1)↑=0.06×10^{-5} *1* $g\Gamma_0$=0.0029 *8*.

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^{141}Pr(γ,γ') 2007Sc18 (continued)

^{141}Pr Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$	$I_{S,0}$ (eV b)[‡]	Comments
3706			1.9 *3*	B(M1)↑=0.012 *2*; B(E1)↑=0.13×10^{-5} *2* gΓ_0=6.8×10^{-3} *12*.
3761			0.73 *25*	B(M1)↑=0.004 *1*; B(E1)↑=0.05×10^{-5} *2* gΓ_0=0.0027 *9*.
3773			1.0 *3*	B(M1)↑=0.006 *2*; B(E1)↑=0.07×10^{-5} *2* gΓ_0=3.7×10^{-3} *10*.
3791			1.5 *3*	B(M1)↑=0.009 *2*; B(E1)↑=0.10×10^{-5} *2* gΓ_0=5.6×10^{-3} *13*.
3812			2.1 *4*	B(M1)↑=0.012 *2*; B(E1)↑=0.14×10^{-5} *3* gΓ_0=7.9×10^{-3} *15*.
3829			1.7 *4*	B(M1)↑=0.010 *2*; B(E1)↑=0.11×10^{-5} *2* gΓ_0=6.4×10^{-3} *14*.
3879			1.8 *4*	B(M1)↑=0.019 *4*; B(E1)↑=0.21×10^{-5} *4* gΓ_0=12.9×10^{-3} *25*.
3913			1.7 *5*	B(M1)↑=0.010 *3*; B(E1)↑=0.11×10^{-5} *3* gΓ_0=6.8×10^{-3} *21*.
6115	7/2$^{(+)}$	0.052 eV *10*		J^{π}: $\gamma(\theta)$ for γ's to 5/2$^+$ and 7/2$^+$, γ to 3/2$^+$. $\Gamma_{\gamma 0}/\Gamma_{\gamma}$=0.47 *10* (1991BeZX), $\Gamma_{\gamma 0}$=0.030 eV *10* (1991BeZX).
6877	7/2$^+$[&]			$\Gamma(\gamma_0)$=0.085 eV *35* (1979Mo19).
7188	5/2			J^{π}: $\gamma(\theta)$ for γ's to 5/2$^+$,3/2$^+$,7/2$^+$.
7256	5/2$^-$[&]	0.29 eV *3*		Γ from (1972Wo21,1979Mo19).
7632	5/2$^+$[&]	0.090 eV *+40−10*		J^{π}: $\gamma(\theta)$ for γ's to 5/2$^+$ g.s. and 7/2$^+$, γ to 5/2$^+$ is E1. $T_{1/2}$: Γ from 1979Mo19. Other: 0.133 eV *23* (1969Mo11).
7915	5/2$^+$[&]	0.007 eV *3*		Γ from 1979Mo19.
8883	(5/2,7/2)			

[†] Adopted values.
[‡] Integrated scattering cross section.
[#] According to 2007Sc18 alternative assignment possible for γ transition(s) connected with the level.
[@] Weighted mean energy for the dipole excitation E=3.277 MeV, Γ(0)=240 meV *+210−150*. Configuration=(2$^+\otimes$3$^-\otimes$d5/2) (1993Vo05).
[&] From $\gamma(\theta)$ and directional polarization.

γ(^{141}Pr)

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}
1127	3/2$^+$	982	3	145.4	7/2$^+$	1608	(3/2)$^+$	1608	100	0.0	5/2$^+$
		1127	97[&] *15*	0.0	5/2$^+$	1651	(9/2$^+$)	533	10[&]	1118	11/2$^-$
1293	(5/2)$^+$	1148	40	145.4	7/2$^+$			1506	7[&]	145.4	7/2$^+$
		1293	60[&] *7*	0.0	5/2$^+$			1651	83[&] *9*	0.0	5/2$^+$
1436	3/2$^+$	1291	56	145.4	7/2$^+$	1786	(5/2$^+$)	1641	37	145.4	7/2$^+$
		1436	44[&] *6*	0.0	5/2$^+$			1786	63[&] *8*	0.0	5/2$^+$
1521	9/2$^+$	403	2[&]	1118	11/2$^-$	1816		1816	100	0.0	5/2$^+$
		1376	10[&]	145.4	7/2$^+$	1842	(7/2$^+$)	1697	39 *12*	145.4	7/2$^+$
		1521	88[&] *10*	0.0	5/2$^+$			1842	61[&] *12*	0.0	5/2$^+$
1559		1559	100	0.0	5/2$^+$	1849		1849	100	0.0	5/2$^+$
1579	5/2$^-$	1434	70	145.4	7/2$^+$	1981	(3/2$^+$)	1981	100	0.0	5/2$^+$
		1579	30 *12*	0.0	5/2$^+$	2106	(5/2$^-$)	1961	68 *10*	145.4	7/2$^+$

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^{141}Pr(γ,γ′) 2007Sc18 (continued)

γ(^{141}Pr) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	Comments
2106	(5/2⁻)	2106	32& *10*	0.0	5/2⁺	
2135	(7/2⁻)	1990	42 *9*	145.4	7/2⁺	
		2135	58& *9*	0.0	5/2⁺	
2248	(5/2⁻)	2248	100	0.0	5/2⁺	
2270		2270	100	0.0	5/2⁺	
2296		2296	100	0.0	5/2⁺	
2354	(9/2⁺)	2354	100	0.0	5/2⁺	
2453	(5/2⁻)	2453	100	0.0	5/2⁺	
2564	(7/2⁻)	2419	36 *15*	145.4	7/2⁺	
		2564	64 *15*	0.0	5/2⁺	
2582		2437	36 *17*	145.4	7/2⁺	
		2582	64 *17*	0.0	5/2⁺	
2586	(7/2⁻)	2586	100	0.0	5/2⁺	
2602	(5/2⁻,7/2⁻)	2457	18 *18*	145.4	7/2⁺	
		2602	82 *18*	0.0	5/2⁺	
2646		2501	55 *16*	145.4	7/2⁺	
		2646	45 *16*	0.0	5/2⁺	
2692	⁻	2692[a]	100	0.0	5/2⁺	
2722	(3/2⁺)	2722	100	0.0	5/2⁺	
2786		2786	100	0.0	5/2⁺	
2805		2805	100	0.0	5/2⁺	
2837	(5/2⁻,7/2⁻)	2692[a]	39 *13*	145.4	7/2⁺	
		2837	61 *13*	0.0	5/2⁺	I_γ: other: 100 for alternate placements of γ rays.
2846	(3/2⁻)	2846	100	0.0	5/2⁺	
2954		2954	100	0.0	5/2⁺	
2982	(5/2⁻,7/2⁻)	2837#	25 *24*	145.4	7/2⁺	
		2982[a]	75 *24*	0.0	5/2⁺	
3016	(5/2⁻)	3016	100	0.0	5/2⁺	
3057		3057[a]	100	0.0	5/2⁺	
3073	(3/2⁺)	3073	100	0.0	5/2⁺	
3083	(5/2)	2938	<49	145.4	7/2⁺	
		3083	88 *32*	0.0	5/2⁺	
3127		2982[a] *2*	51 *15*	145.4	7/2⁺	
		3127[a]	49 *15*	0.0	5/2⁺	I_γ: other 100 for alternate placements of γ-rays.
3155		3010	30 *21*	145.4	7/2⁺	
		3155	70 *21*	0.0	5/2⁺	
3203	(⁻)	3058[a]	14 *22*	145.4	7/2⁺	
		3203[a#]	86 *22*	0.0	5/2⁺	I_γ: other: 100 for alternate placements of γ rays.
3206		3206	100	0.0	5/2⁺	
3255		3255	100	0.0	5/2⁺	
3272		3127[a]	70 *5*	145.4	7/2⁺	
		3272[a#]	30 *5*	0.0	5/2⁺	I_γ: other: 100 for alternate placements of γ rays.
3294		3294	100	0.0	5/2⁺	
3324		3179	63 *7*	145.4	7/2⁺	
		3324	37 *7*	0.0	5/2⁺	
3338		3338	100	0.0	5/2⁺	
3346		3346	100	0.0	5/2⁺	
3349	(7/2)	3203[a]	73 *6*	145.4	7/2⁺	
		3349[a#]	27 *6*	0.0	5/2⁺	I_γ: 100 for alternate placements of γ rays.
3370		3370	100	0.0	5/2⁺	
3376		3376	100	0.0	5/2⁺	
3417		3272[a]	74 *5*	145.4	7/2⁺	
		3417#	26 *5*	0.0	5/2⁺	B(E1)=0.53×10^{-5} *5*, B(M1)=0.048 *5* or B(E1)=0.16×10^{-5} *4*,

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^{141}Pr(γ,γ′) 2007Sc18 (continued)

γ(^{141}Pr) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	Comments
							B(M1)=0.014 *4*, depending on alternative placements of γ rays.
							I_γ: other: 100 for alternate placements of γ-rays.
3427		3282	29 *16*	145.4	$7/2^+$		
		3427	71 *16*	0.0	$5/2^+$		
3449		3449	100	0.0	$5/2^+$		
3495		3349[a]	54 *12*	145.4	$7/2^+$		
		3495[#]	46 *12*	0.0	$5/2^+$		B(E1)=0.35×10^{-5} *5*, B(M1)=0.032 *4* or B(E1)=0.14×10^{-5} *4*; B(M1)=0.013 *4*, depending on alternative placements of γ rays.
							I_γ: other: 100 for alternate placements of γ-rays.
3508		3508	100	0.0	$5/2^+$		
3581		3581	100	0.0	$5/2^+$		
3643		3643	100	0.0	$5/2^+$		
3659		3659	100	0.0	$5/2^+$		
3706		3706	100	0.0	$5/2^+$		
3761		3761	100	0.0	$5/2^+$		
3773		3773	100	0.0	$5/2^+$		
3791		3791	100	0.0	$5/2^+$		
3812		3812	100	0.0	$5/2^+$		
3829		3829	100	0.0	$5/2^+$		
3879		3734	45	145.4	$7/2^+$		
		3879	55 *22*	0.0	$5/2^+$		
3913		3913	100	0.0	$5/2^+$		
6115	$7/2^{(+)}$	3490	4.5 *6*	2625	$(5/2^+,7/2^+)$		
		3775	2.7 *7*	2339.9			
		3806	2.5 *5*	2309.3	(5/2,7/2)		
		4109	2.0 *10*	2006			
		4201[@]	3[@]	1913.9			
		4447[@]	8[@]	1666?			
		4511	2.4 *8*	1608	$(3/2)^+$		I_γ: 11 (1991BeZX).
		4537[@]	2[@]	1579	$5/2^-$		
		4623[@]	6[@]	1491.9			
		4657	15.7 *19*	1457.9	$9/2^+$		
		4822	2.4 *7*	1293	$(5/2)^+$		I_γ: 11 (1991BeZX).
		5970	47.3 *7*	145.4	$7/2^+$		
		6115	100.0 *9*	0.0	$5/2^+$		
6877	$7/2^+$	5066		1810.9			
		5094		1786	$(5/2^+)$		
		5227		1651	$(9/2^+)$		
		5299		1579	$5/2^-$		
		5357		1521	$9/2^+$		
		5422		1457.9	$9/2^+$		
		6732		145.4	$7/2^+$		
		6877		0.0	$5/2^+$	M1	$\Gamma(\gamma_0)$=0.017 eV *9* (1972Wo21,1979Mo19).
7188	5/2	6066	4.3 *22*	1118	$11/2^-$		
		7042	14.1 *23*	145.4	$7/2^+$		
		7188	100.0 *32*	0.0	$5/2^+$		
7256	$5/2^-$	5590	10.2 *40*	1666?			
		5659	6.6 *40*	1597?			
		5823	<8.7	1436	$3/2^+$		
		6124	10.1 *51*	1127	$3/2^+$		
		7111	64.9 *57*	145.4	$7/2^+$		
		7256	100.0 *79*	0.0	$5/2^+$	E1	$\Gamma(\gamma_0)$=0.11 eV *1* (1972Wo21,1979Mo19).

Continued on next page (footnotes at end of table)

^{141}Pr(γ,γ′) 2007Sc18 (continued)

γ(^{141}Pr) (continued)

E_i(level)	J_i^π	E_γ	I_γ [†]	E_f	J_f^π	Mult. [‡]	Comments
7632	5/2$^+$	4841 *4*	1.5 *2*	2786			
		4932[b] *4*		2700?			
		5043 *4*	0.5	2586	(7/2$^-$)		
		5066 *4*	0.5	2564	(7/2$^-$)		
		5108 *4*	1.5 *2*	2524	(3/2$^+$)		
		5158[b] *4*		2480?			
		5284 *4*	1.5 *2*	2354	(9/2$^+$)		
		5360 *4*	1	2270			
		5397 *4*	8	2235	3/2		
		5616 *4*	0.5	2016			
		5785 *4*	2.5 *3*	1842	(7/2$^+$)		
		5982[b] *4*		1651	(9/2$^+$)		
		6050 *4*	1.5 *2*	1579	5/2$^-$		
		6120[b] *4*		1513?			
		6181 *4*	9 *1*	1451	(7/2)$^+$		
		6195 *4*	7.5 *1*	1436	3/2$^+$		
		6339 *4*	0.5	1293	(5/2)$^+$		
		6502 *4*	8.5 *1*	1127	3/2$^+$		
		7487 *4*	7.5 *1*	145.4	7/2$^+$		
		7632 *4*	48 *5*	0.0	5/2$^+$	M1	$\Gamma(\gamma_0)$=0.036 eV *8* (1979Mo19).
7915	5/2$^+$	7915	100	0.0	5/2$^+$	M1	$\Gamma(\gamma_0)$=0.002 eV *1* (1979Mo19).
8883	(5/2,7/2)	6937	24.2 *63*	1946			
		7036	9.5 *56*	1849			
		7228	18.0 *57*	1651	(9/2$^+$)		
		7370	12.3 *54*	1513?			
		7588	4 *3*	1293	(5/2)$^+$		
		8735	14.9 *44*	145.4	7/2$^+$		
		8883	100.0 *75*	0.0	5/2$^+$		

[†] Relative photon branching from each level. The evaluator assumes transitions to mainly the ground state and the first excited state at 145.4 keV, when branching ratios are deduced from Γ_0/Γ values in 2007Sc18.

[‡] From $\gamma(\theta)$ and directional polarization.

[#] According to 2007Sc18 alternative assignment is possible.

[@] From 1991BeZX.

[&] 2007Sc18 state that Γ_0/Γ is from 2001Tu02, same data as in Adopted Levels, Gammas for ^{141}Pr in ENSDF database, but the evaluator notes that some values and uncertainties are different.

[a] Multiply placed.

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

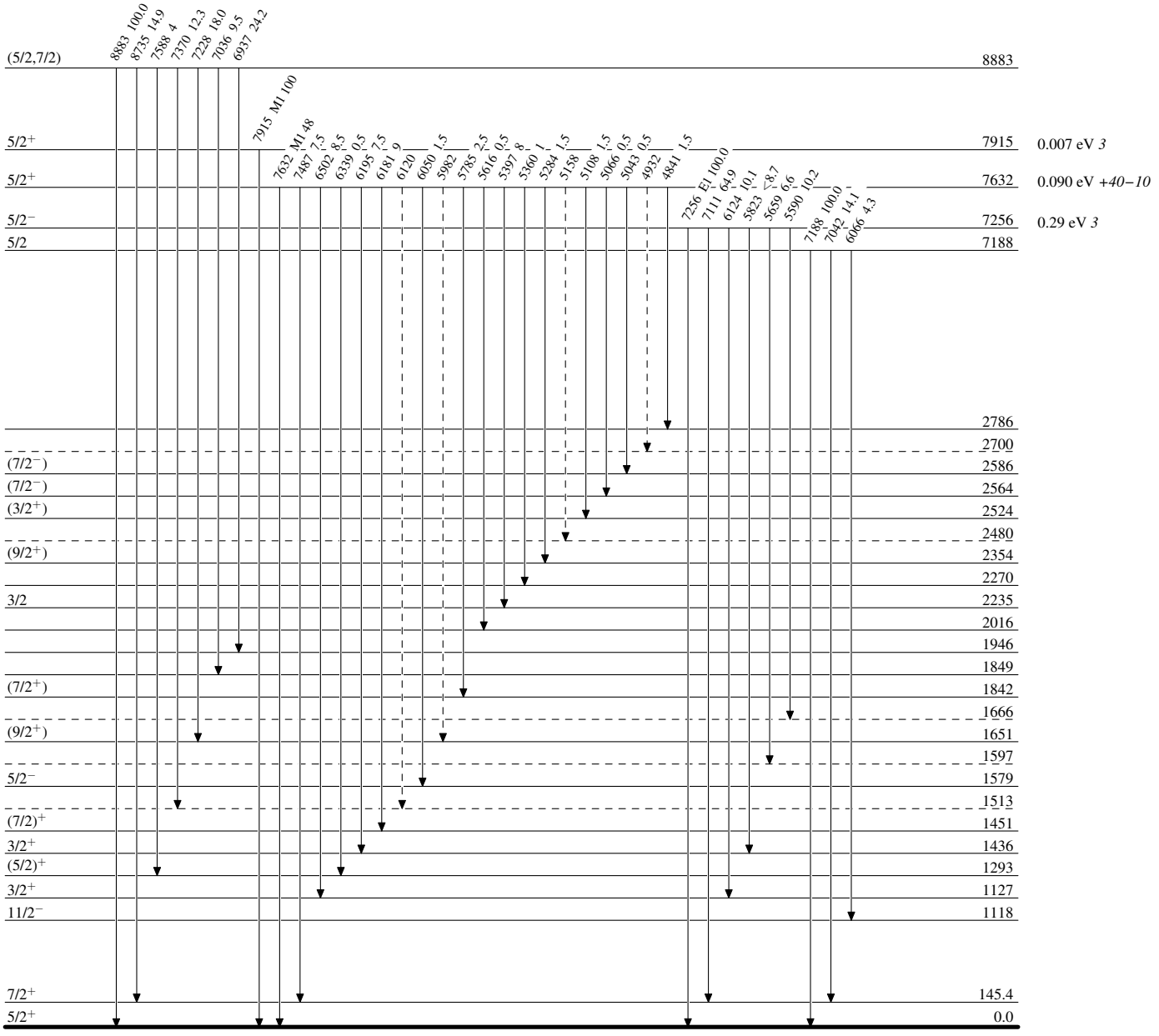
^{141}Pr(γ,γ') 2007Sc18

Legend

Level Scheme

Intensities: % photon branching from each level

γ Decay (Uncertain)

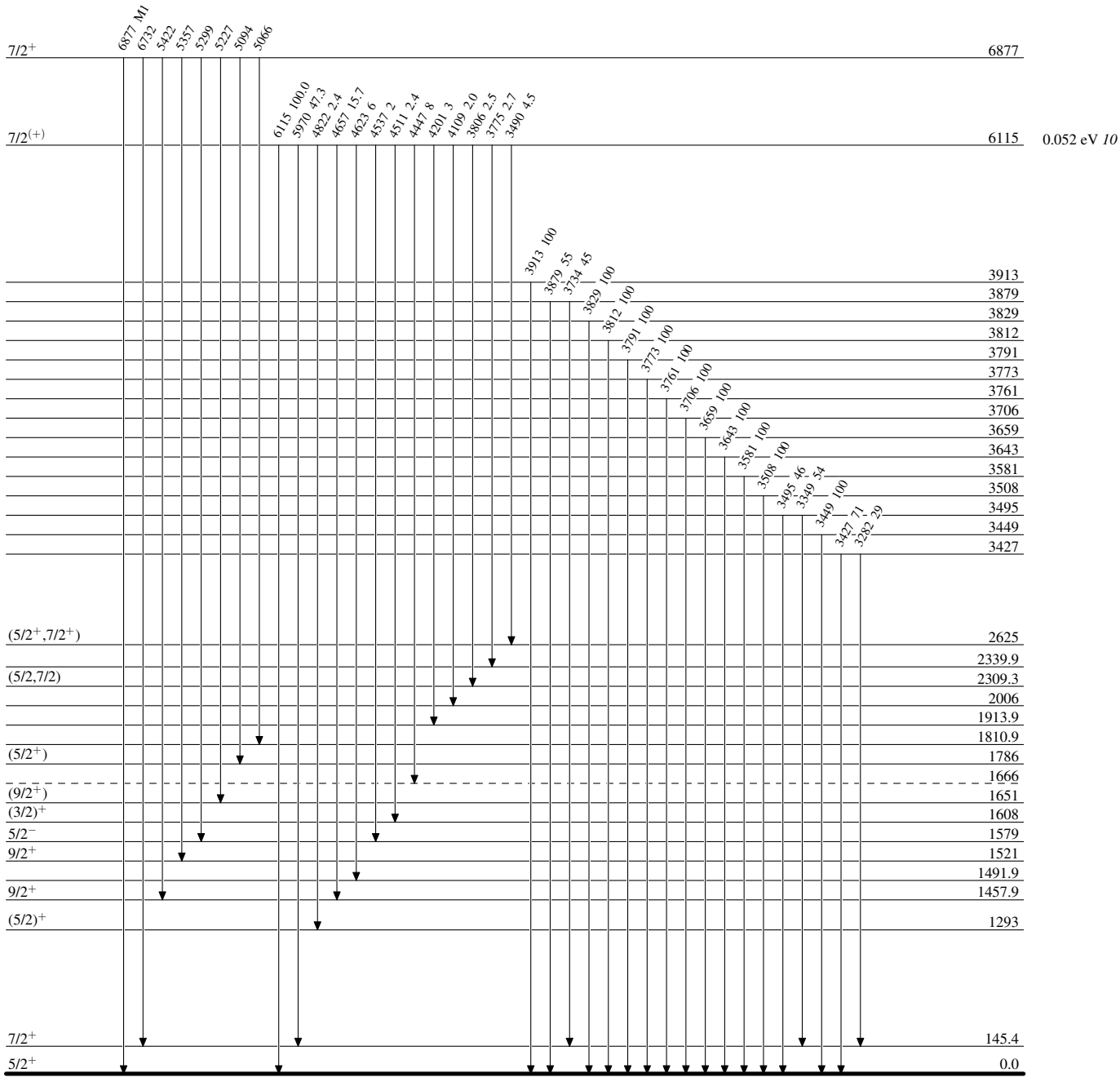


$^{141}_{59}Pr_{82}$

^{141}Pr(γ,γ′) 2007Sc18

Level Scheme (continued)

Intensities: % photon branching from each level

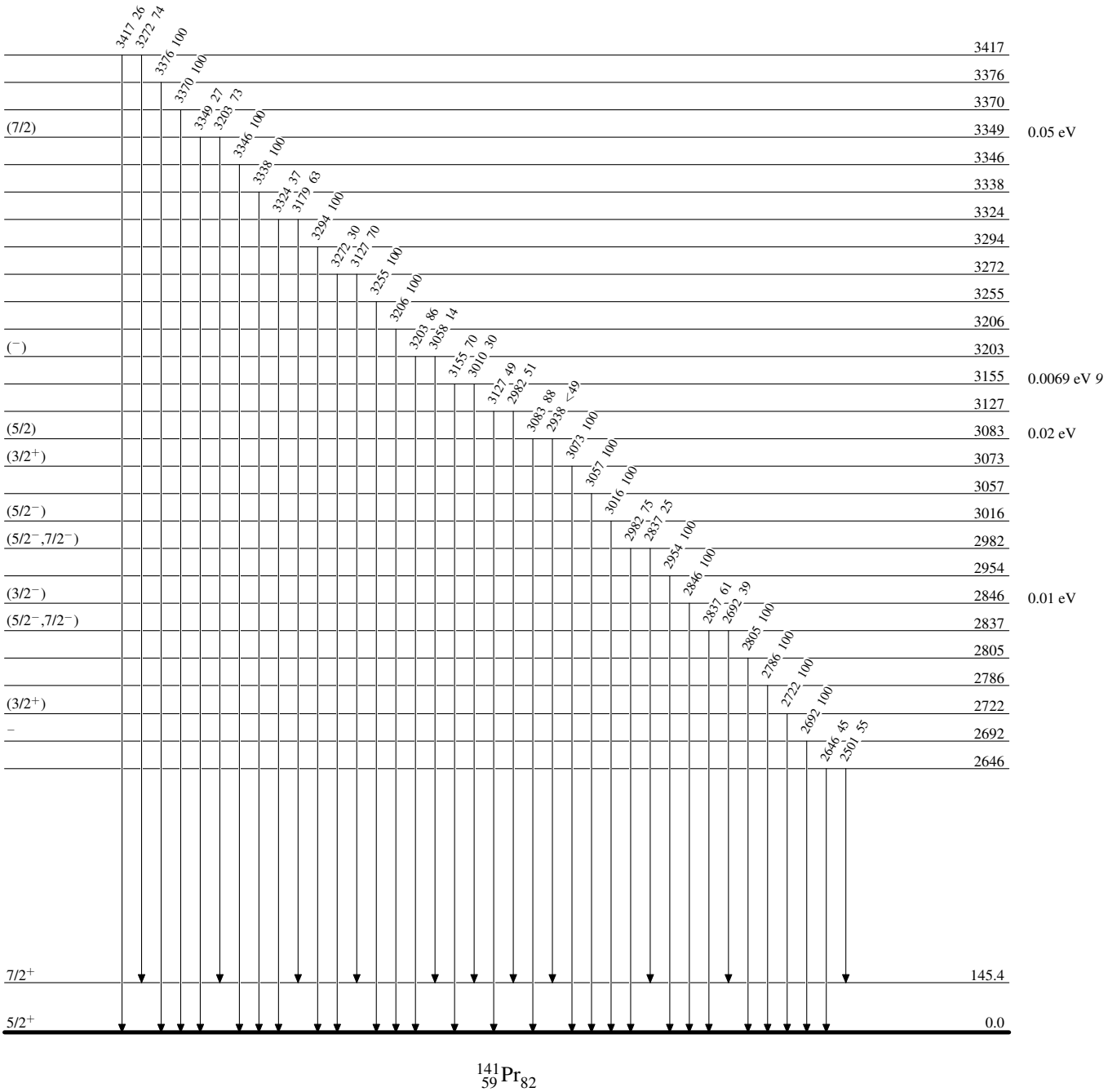


$^{141}_{59}Pr_{82}$

^{141}Pr(γ,γ′) 2007Sc18

Level Scheme (continued)

Intensities: % photon branching from each level

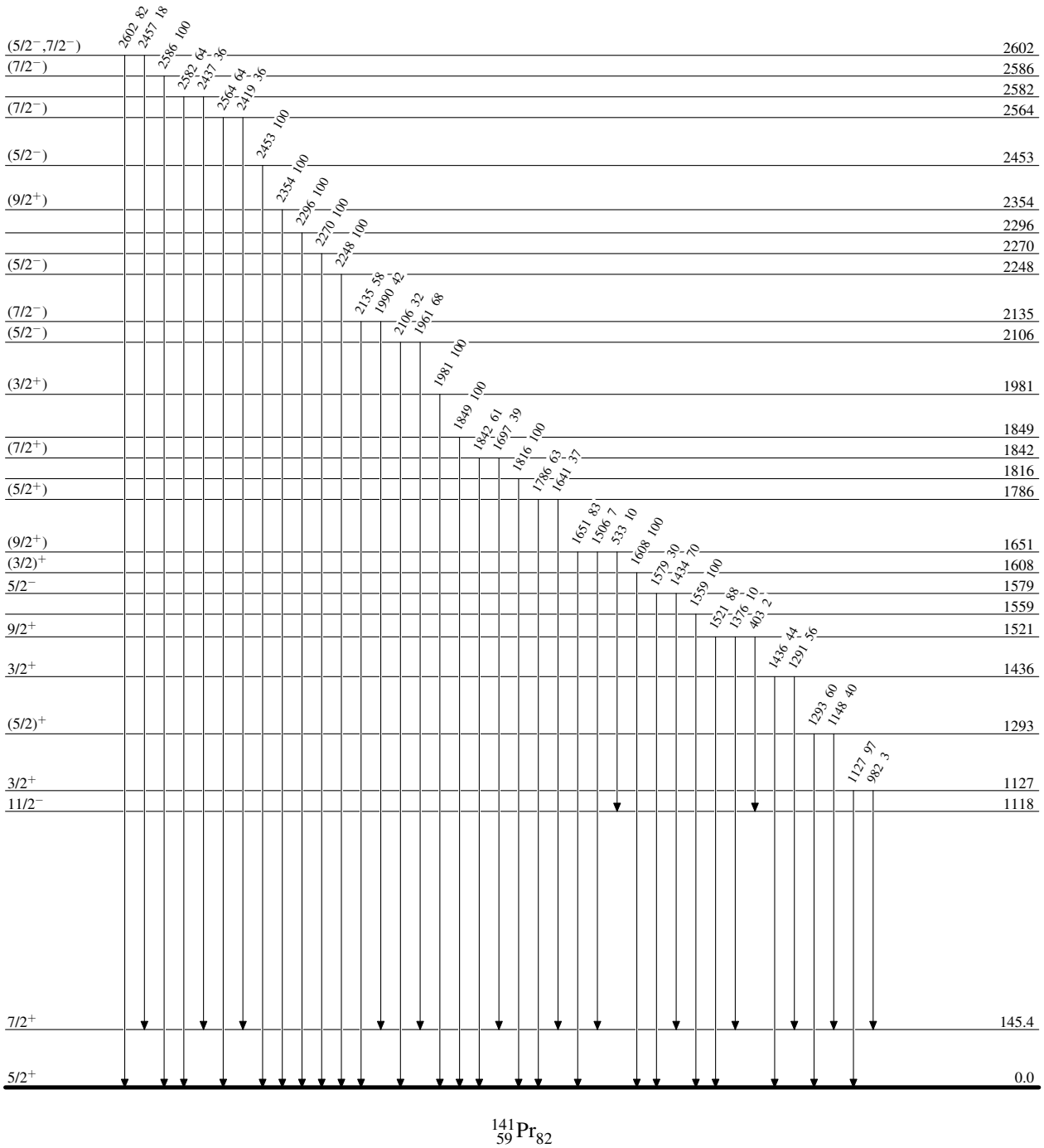


$^{141}_{59}Pr_{82}$

^{141}Pr(γ,γ′) 2007Sc18

Level Scheme (continued)

Intensities: % photon branching from each level



$^{141}_{59}Pr_{82}$