^{110}Pd(^{30}Si,p3nγ) 1996Pe12

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

1996Pe12: E(^{30}Si)=125 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$, $\gamma\gamma(\theta)$(DCO), γ(t), $\gamma(\theta$,H,t) using GASP array of 40 Ge detectors and 80 BGO inner-ball detectors. Includes ^{122}Sn(^{19}F,5nγ) E(^{19}F)=84 MeV and ^{136}Ce(p,nγ) E(p)=14 MeV.

1993Ba42: ^{122}Sn(^{19}F,5nγ) E=76-88 MeV. Measured Eγ, Iγ, $\gamma(\theta)$ γ(t) using HPGe detectors; deduced g factor with TDPAD technique.

Earlier works: 1992Ol03, 1987Dr12.

^{136}Pr Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	Comments
0.0	2^{+}		
40.20 *15*	2^{+}		
130.70 *15*	3^{+}		
174.60 *21*	4^{-}		
184.50 *15*	1^{+}		
338.50 *15*	4^{+}		
351.90 *16*			
547.90 *16*	4^{+}		
594.70 *22*	6^{+}	91 ns *1*	g=+0.570 (1993Ba42) T$_{1/2}$: weighted average of 90 ns *4* (1996Pe12, from 131γ(t), 44γ(t) and 47γ(t)), 92 ns *1* (1992Ol03, from $\gamma\gamma$(t)) and 90 ns *2* (1993Ba42, from 131γ(t) and 417γ(t)). Other: 102 ns *7* (1987Dr12). g: from TDPAD (1993Ba42). Other: 1996Pe12 state that they confirm the g-factor measurement of 1993Ba42, but no value provided.
804.1 *3*	7^{+}		
1048.9 *3*	8^{+}		
1116.1 *3*	7		
1184.9[b] *4*	9^{+}		
1316.4 *4*	8^{+}		
1346.5 *3*	8^{+}		
1551.5[b] *4*	10^{+}		
1803.0 *4*	10^{+}		
1837.6[@] *4*	10^{+}		
1911.8[b] *4*	11^{+}		
2102.1 *4*	9$^{(-)}$		
2152.8 *4*	11$^{(+)}$		
2222.8 *4*	10^{+}		
2235.5 *4*	10^{+}		
2265.8 *4*	10^{+}		
2332.5 *4*	10^{+}		
2382.1[b] *4*	12^{+}		
2445.0 *4*	11		
2465.9[e] *4*	11$^{(-)}$		
2528.7[@] *5*	12^{+}		
2569.2 *4*	12$^{(+)}$		
2636.8 *4*	12$^{(+)}$		
2680.5 *4*	12$^{(+)}$		
2779.3[e] *4*	12$^{(-)}$		
2818.9[b] *5*	13^{+}		
2846.9[a] *5*	13$^{(+)}$		
2919.8 *4*	13$^{(+)}$		

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^{110}Pd(^{30}Si,p3nγ) 1996Pe12 (continued)

^{136}Pr Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
3009.9[e] 4	13(−)	3998.8[#] 7	15	4958.9[b] 6	17+	6075.0[a] 9	(20+)
3065.7 5	14+	4098.4[c] 5	16(+)	4990.5[d] 5	18	6113.1[b] 7	(19+)
3122.7[@] 5	14+	4173.2[e] 5	16(−)	5030.6[c] 5	18(+)	6427.0[e] 7	21(−)
3237.0[c] 4	14(+)	4210.3[d] 5	16	5085.7 6	(18)	6444.6[d] 6	21
3314.4[a] 5	(14+)	4241.6[a] 6	16(+)	5143.6[&] 12	(19+)	6469.6[#] 10	(21)
3340.7[b] 5	14+	4289.1 5	(16)	5175.1[a] 8	(18+)	6470.9[@] 9	(22+)
3414.8[e] 5	14(−)	4355.6[&] 7	(17+)	5323.8[e] 6	19(−)	6548.3[c] 9	(21+)
3593.7[c] 5	15(+)	4411.9[b] 5	16+	5371.2[@] 8	(20+)	6975.0[d] 6	(22)
3677.7[e] 5	15(−)	4435.6[c] 5	17(+)	5394.5[#] 9	19	7020.7[e] 7	22(−)
3729.0[d] 4	14	4472.8[@] 6	(18+)	5422.1[c] 7	19(+)	7114.7[a] 10	(22+)
3783.8[@] 5	(16+)	4530.1[e] 6	17(−)	5430.5[d] 6	19	7562.0[d] 6	(23)
3802.1[&] 7	(15+)	4544.1[#] 7	17	5847.5[e] 7	20(−)	7728.0[@] 14	(24+)
3860.8[b] 5	15+	4581.2[d] 5	17	5934.3[d] 6	20	7751.7[#] 14	(23)
3936.7[d] 4	15	4884.3[e] 6	18(−)	6065.8[c] 7	20(+)	7824.3[c] 13	(23+)

† From a least-squares fit to Eγ, by evaluator.
‡ As given by 1996Pe12 from γ multipolarities, γ(θ), DCO ratios and supported by IBM calculations.
[#] Band(A): $\pi h_{11/2}\nu 1/2[530]$.
[@] Band(B): $\pi 5/2[413]\nu 1/2[660]$.
[&] Band(C): $\pi g_{7/2}$ (unfavored)$\nu s_{1/2}\nu h^2_{11/2}$.
[a] Band(D): $\pi g_{7/2}\nu s_{1/2}\nu h^2_{11/2}$.
[b] Band(E): $\pi h_{11/2}\nu h_{11/2}$.
[c] Band(F): $\pi h_{11/2}(\alpha=+1/2)\nu h_{11/2}$.
[d] Band(G): $\pi 5/2[413]\nu 9/2[514]\pi h^2_{11/2}$.
[e] Band(H): $\pi 11/2[505]\nu 1/2[400]\nu h^2_{11/2}$.

γ(^{136}Pr)

R(DCO) ratios from 1996Pe12 and from gating on a stretched Q transition, except where noted. Typical values are 1.0 if the gating and observed transitions are stretched and have the same multipolarity, ≈2.0 for stretched quadrupole if gating on a stretched dipole, ≈0.5 for a stretched dipole when gating on a stretched quadrupole, and ≈2.00 for a ΔJ=0 dipole when gating on a stretched dipole.

E_γ†	E_i(level)	J^π_i	E_f	J^π_f	Mult.	Iγ(delayed)#	Comments
40.2 2	40.20	2+	0.0	2+			Iγ(delayed): Unresolved from the Pr and Ce x-rays.
43.9 2	174.60	4−	130.70	3+	E1	2.9 3	Mult.: experimental intensity ratio for the 43.9γ and 46.8γ, corrected for branching, is best reproduced assuming E1 for the former and E2 for the latter.
46.8 2	594.70	6+	547.90	4+	E2	2.9 3	Mult.: experimental intensity ratio for the 43.9γ and 46.8γ, corrected for branching, is best reproduced assuming E1 for the former and E2 for the latter.
130.7 2	130.70	3+	0.0	2+	M1	70.4 70	Mult.: A_2=−0.285 18, A_4≈0 (1993Ba42). Mult.: D from γ(θ), M1 from Iγ(417γ)/Iγ(131γ)=1.51 5, compared to theoretical values of 1.10 and 1.57 for E1 and M1 multipolarities, respectively (1993Ba42).

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^{110}Pd(^{30}Si,p3nγ) 1996Pe12 (continued)

γ(^{136}Pr) (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	Iγ(delayed)[#]	Comments
133.4[@] 2	1.7[@] 1	2235.5	10$^+$	2102.1	9$^{(-)}$	D		Mult.: R(DCO)=0.53 5.
133.4[@] 2	4.1[@] 2	2465.9	11$^{(-)}$	2332.5	10$^+$			
136.0 2	21.0 4	1184.9	9$^+$	1048.9	8$^+$	D		Mult.: A_2=−0.29 4, A_4=−0.03 7 (1996Pe12). Mult.: R(DCO)=0.84 4.
144.3 2		184.50	1$^+$	40.20	2$^+$	D(+Q)	2.9 3	Mult.: A_2=−0.32 10, A_4≈0 (1996Pe12).
167.4 2		351.90		184.50	1$^+$		1.3 2	
184.5 2		184.50	1$^+$	0.0	2$^+$		0.8 2	
196.0 2		547.90	4$^+$	351.90			2.2 5	
200.1 2	7.3 6	2465.9	11$^{(-)}$	2265.8	10$^+$	D		Mult.: R(DCO)=0.82 7 for dipole gated.
207.8 2		338.50	4$^+$	130.70	3$^+$		0.7 2	
207.8 2	9.9 4	3936.7	15	3729.0	14	D		Mult.: R(DCO)=1.23 6 for dipole gated.
209.4 2		547.90	4$^+$	338.50	4$^+$	D+Q	6.0 6	Mult.: A_2=−0.31 17, A_4=−0.19 7 (1996Pe12). Mult.: large A_4 value indicates ΔJ=0 transition.
209.4 2	63.7 38	804.1	7$^+$	594.70	6$^+$	D		Mult.: A_2=−0.40 2, A_4=−0.02 4 (1996Pe12). Mult.: R(DCO)=0.75 3 dipole gated.
209.4 2	9.4 10	2445.0	11	2235.5	10$^+$	D		Mult.: R(DCO)=0.76 8.
230.3 2	3.6 5	1346.5	8$^+$	1116.1	7			
230.5 2	5.1 8	2465.9	11$^{(-)}$	2235.5	10$^+$			
230.6 2	33.5 20	3009.9	13$^{(-)}$	2779.3	12$^{(-)}$	D		Mult.: A_2=−0.36 3, A_4=−0.02 5 (1996Pe12). Mult.: R(DCO)=0.88 14 for dipole gated.
239.4 2	9.9 6	2919.8	13$^{(+)}$	2680.5	12$^{(+)}$			
241.0 2	7.7 11	4530.1	17$^{(-)}$	4289.1	(16)			
243.1 2	5.7 3	2465.9	11$^{(-)}$	2222.8	10$^+$			
244.8 2	64.5 7	1048.9	8$^+$	804.1	7$^+$	D		Mult.: A_2=−0.24 2, A_4=+0.02 4 (1996Pe12). Mult.: R(DCO)=0.75 4.
262.9 2	25.7 5	3677.7	15$^{(-)}$	3414.8	14$^{(-)}$	D		Mult.: A_2=−0.43 7, A_4=−0.01 10 (1996Pe12).
273.6 2	12.5 3	4210.3	16	3936.7	15	D		Mult.: R(DCO)=0.82 4 for dipole gated.
283.0 2	4.5 2	2919.8	13$^{(+)}$	2636.8	12$^{(+)}$	D		Mult.: R(DCO)=1.10 8 for dipole gated.
^{x}311.7 2								
311.7 2		351.90		40.20	2$^+$		1.9 2	E_γ,I_γ: The 311.7γ is indicated as a doublet transition in 1996Pe12; it is unplaced in their Table 1, but placed as a transition depopulating the 351.9-keV level in Figure 1.
313.5 2	24.4 2	2779.3	12$^{(-)}$	2465.9	11$^{(-)}$	D		A_2=−0.17 5, A_4=+0.05 7 (1996Pe12). Mult.: R(DCO)=0.70 20.
317.1 2	20.0 2	3237.0	14$^{(+)}$	2919.8	13$^{(+)}$	D		Mult.: R(DCO)=0.60 8.
334.2 2	8.6 2	2779.3	12$^{(-)}$	2445.0	11	D		A_2=−0.72 8, A_4=+0.15 12 (1996Pe12). Mult.: R(DCO)=0.65 6.
337.2 2	5.8 2	4435.6	17$^{(+)}$	4098.4	16$^{(+)}$	D		Mult.: R(DCO)=1.01 5 for dipole gated.
338.5 2		338.50	4$^+$	0.0	2$^+$	Q	4.9 5	Mult.: A_2=+0.29 14, A_4≈0 (1996Pe12).
350.0 2	3.9 6	2152.8	11$^{(+)}$	1803.0	10$^+$	D		Mult.: R(DCO)=0.50 3.
350.6 2	9.0 14	2919.8	13$^{(+)}$	2569.2	12$^{(+)}$	D		Mult.: R(DCO)=1.01 3 for dipole gated.
354.2 2	14.0 3	4884.3	18$^{(-)}$	4530.1	17$^{(-)}$	D		Mult.: R(DCO)=0.98 5 for dipole gated.
356.7 2	17.1 15	3593.7	15$^{(+)}$	3237.0	14$^{(+)}$	D		Mult.: R(DCO)=0.48 2.
357.0 2	8.9 4	4530.1	17$^{(-)}$	4173.2	16$^{(-)}$			
360.2 2	17.2 3	1911.8	11$^+$	1551.5	10$^+$	D		Mult.: R(DCO)=0.46 3.
366.5 2	35.9 4	1551.5	10$^+$	1184.9	9$^+$	D		Mult.: A_2=−0.46 3, A_4=+0.03 5 (1996Pe12). Mult.: R(DCO)=0.51 4.
370.8 2	11.3 2	4581.2	17	4210.3	16	D		Mult.: R(DCO)=0.58 5.
404.9 2	27.6 3	3414.8	14$^{(-)}$	3009.9	13$^{(-)}$	D		Mult.: R(DCO)=0.54 5.

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^{110}Pd(^{30}Si,p3nγ) 1996Pe12 (continued)

γ(^{136}Pr) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	δ	Iγ(delayed) [#]	Comments
409.2 *2*	11.9 *4*	4990.5	18	4581.2	17	D			Mult.: R(DCO)=0.43 *5*.
416.5 *2*	12.4 *10*	2569.2	$12^{(+)}$	2152.8	$11^{(+)}$	Q			Mult.: R(DCO)=1.01 *4*.
417.2 *2*		547.90	4^+	130.70	3^+	D+Q	+0.11 *1*	100 *10*	Mult.,δ: from 1993Ba42. Non-zero value of δ favors M1+E2 assignment (1993Ba42). Mult.: A_2=−0.091 *7*, A_4≈0 (1993Ba42).
420.1 *2*		594.70	6^+	174.60	4^-	Q		8.8 *9*	Mult.: A_2=+0.25 *10*, A_4≈0 (1996Pe12).
436.8 *2*	6.4 *5*	2818.9	13^+	2382.1	12^+	D			Mult.: R(DCO)=0.42 *11*.
439.5 *2*	11.3 *3*	5323.8	$19^{(-)}$	4884.3	$18^{(-)}$				
440.0 *2*	10.6 *8*	5430.5	19	4990.5	18	D			Mult.: R(DCO)=0.96 *6* for dipole gated.
464.7 *2*	3.0 *3*	2846.9	$13^{(+)}$	2382.1	12^+	D			Mult.: R(DCO)=1.4 *5* for dipole gated.
467.5 *2*	3.6 *7*	3314.4	(14^+)	2846.9	$13^{(+)}$	D			Mult.: R(DCO)=1.20 *15* for dipole gated.
470.4 *2*	12.4 *4*	2382.1	12^+	1911.8	11^+	D			Mult.: A_2=−0.44 *11*, A_4=+0.27 *15* (1996Pe12). Mult.: R(DCO)=0.72 *4*.
483.9 *2*	7.9 *3*	2636.8	$12^{(+)}$	2152.8	$11^{(+)}$	D			Mult.: R(DCO)=0.80 *6* for dipole gated.
495.5 *2*	15.0 *3*	4173.2	$16^{(-)}$	3677.7	$15^{(-)}$	D			Mult.: R(DCO)=0.85 *10* for dipole gated.
503.7 *2*	7.7 *6*	5934.3	20	5430.5	19	D			Mult.: R(DCO)=1.15 *7* for dipole gated.
504.7 *2*	6.2 *4*	4098.4	$16^{(+)}$	3593.7	$15^{(+)}$	D			Mult.: R(DCO)=1.09 *6* for dipole gated.
510.3 *2*	5.9 *5*	6444.6	21	5934.3	20	D			Mult.: R(DCO)=1.18 *8* for dipole gated.
520.1 *2*	2.6 *4*	3860.8	15^+	3340.7	14^+				
521.4 *2*	4.4 *4*	1116.1	7	594.70	6^+	D			Mult.: R(DCO)=0.52 *7*.
521.8 *2*	3.2 *7*	3340.7	14^+	2818.9	13^+	D			Mult.: R(DCO)=0.54 *6*.
523.7 *2*	6.8 *3*	5847.5	$20^{(-)}$	5323.8	$19^{(-)}$	D			Mult.: R(DCO)=0.70 *30* for dipole gated.
527.7 *2*	2.9 *4*	2680.5	$12^{(+)}$	2152.8	$11^{(+)}$	D			Mult.: R(DCO)=0.89 *25* for dipole gated.
530.4 *2*	3.7 *5*	6975.0	(22)	6444.6	21				
539 *1*	<1	2919.8	$13^{(+)}$	2382.1	12^+				
545.3 *2*	2.9 *3*	4544.1	17	3998.8	15	Q			Mult.: R(DCO)=2.30 *21* for dipole gated.
547.0 *2*	1.3 *1*	4958.9	17^+	4411.9	16^+				
551.1 *2*	1.8 *2*	4411.9	16^+	3860.8	15^+				
553.5 *2*	3.9 *4*	4355.6	(17^+)	3802.1	(15^+)				
579.5 *2*	3.4 *3*	6427.0	$21^{(-)}$	5847.5	$20^{(-)}$	D			Mult.: R(DCO)=1.26 *30* for dipole gated.
587.0 *2*	1.4 *3*	7562.0	(23)	6975.0	(22)				
593.7 *2*	1.2 *2*	7020.7	$22^{(-)}$	6427.0	$21^{(-)}$				
594.0 *2*	7.8 *13*	3122.7	14^+	2528.7	12^+	Q			Mult.: R(DCO)=1.03 *6*.
595.0 *2*	1.8 *3*	5030.6	$18^{(+)}$	4435.6	$17^{(+)}$				
601.4 *2*	20.0 *24*	2152.8	$11^{(+)}$	1551.5	10^+	D			Mult.: A_2=−0.31 *5*, A_4=+0.22 *8* (1996Pe12). Mult.: R(DCO)=0.97 *4* for dipole gated.
611.3 *2*	10.7 *6*	4289.1	(16)	3677.7	$15^{(-)}$				

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^{110}Pd(^{30}Si,p3nγ) 1996Pe12 (continued)

γ(^{136}Pr) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
617 *1*	<1	2528.7	12+	1911.8	11+		
618.2 *2*	6.2 *6*	1803.0	10+	1184.9	9+	D	Mult.: A_2=−0.76 *19*, A_4=+0.14 *33* (1996Pe12).
650.1 *2*	7.7 *7*	5085.7	(18)	4435.6	17(+)	D	Mult.: R(DCO)=1.37 *23* for dipole gated.
652.7 *2*	4.1 *3*	1837.6	10+	1184.9	9+	D	Mult.: R(DCO)=0.53 *11*.
657.2 *2*	3.2 *3*	2569.2	12(+)	1911.8	11+		
661.1 *2*	5.9 *9*	3783.8	(16+)	3122.7	14+		
683.6 *2*	3.8 *7*	3065.7	14+	2382.1	12+	Q	Mult.: R(DCO)=2.20 *24* for dipole gated.
689.0 *2*	6.0 *6*	4472.8	(18+)	3783.8	(16+)	Q	Mult.: R(DCO)=1.22 *8*.
691.1 *2*	8.5 *8*	2528.7	12+	1837.6	10+	Q	Mult.: R(DCO)=1.85 *16* for diple gated.
699.6 *2*	5.0 *4*	3936.7	15	3237.0	14(+)	D	Mult.: R(DCO)=0.99 *7* for dipole gated.
719.0 *5*	3.3 *3*	3729.0	14	3009.9	13(−)	D	Mult.: R(DCO)=0.91 *12* for dipole gated.
721.7 *5*	23.1 *5*	1316.4	8+	594.70	6+	Q	Mult.: A_2=+0.27 *4*, A_4=−0.10 *5* (1996Pe12). Mult.: R(DCO)=0.99 *4*.
726.6 *5*	18.1 *20*	1911.8	11+	1184.9	9+	Q	Mult.: A_2=+0.09 *4*, A_4=−0.17 *6* (1996Pe12). Mult.: R(DCO)=2.5 *4* for dipole gated.
751.8 *5*	8.8 *4*	1346.5	8+	594.70	6+	Q	Mult.: R(DCO)=0.93 *8*.
754.4 *5*	5.7 *3*	1803.0	10+	1048.9	8+	Q	A_2=+0.35 *9*, A_4=+0.15 *12* (1996Pe12). Mult.: R(DCO)=0.45 *10* for dipole gated is inconsistent with Q multipolarity and perhaps is typo.
768.5 *5*	1.7 *2*	2680.5	12(+)	1911.8	11+		
780.5 *5*	2.4 *2*	4990.5	18	4210.3	16		
785.9 *5*	2.0 *2*	2102.1	9(−)	1316.4	8+	D	Mult.: R(DCO)=0.53 *6*.
788 *1*	<1	5143.6	(19+)	4355.6	(17+)		
788.9 *5*	7.1 *3*	1837.6	10+	1048.9	8+	Q	Mult.: R(DCO)=1.3 *3*.
810.0 *5*	1.8 *2*	3729.0	14	2919.8	13(+)	D	Mult.: R(DCO)=1.4 *3* for dipole gated.
830.4 *5*	3.3 *4*	2382.1	12+	1551.5	10+	Q	Mult.: R(DCO)=2.04 *5* for dipole gated.
841.7 *5*	10.2 *7*	4435.6	17(+)	3593.7	15(+)	Q	Mult.: R(DCO)=2.00 *6* for dipole gated.
849.3 *5*	5.2 *5*	5430.5	19	4581.2	17	Q	Mult.: R(DCO)=1.94 *23* for dipole gated.
850.4 *5*	2.0 *4*	5394.5	19	4544.1	17	Q	Mult.: R(DCO)=1.00 *7*.
861.4 *5*	5.6 *4*	4098.4	16(+)	3237.0	14(+)	Q	Mult.: R(DCO)=1.88 *17* for dipole gated.
876.1 *5*	3.3 *6*	3998.8	15	3122.7	14+	D	Mult.: R(DCO)=0.65 *11*.
877.5 *5*	4.8 *10*	2680.5	12(+)	1803.0	10+	Q	Mult.: R(DCO)=1.20 *13*.
898.4 *5*	1.3 *3*	5371.2	(20+)	4472.8	(18+)		
899.9 *5*	2.8 *2*	6075.0	(20+)	5175.1	(18+)	Q	Mult.: R(DCO)=1.05 *10*.
901.0 *5*	1.4 *2*	4241.6	16(+)	3340.7	14+		
906.3 *5*	5.9 *4*	2222.8	10+	1316.4	8+	Q	Mult.: R(DCO)=0.90 *5*.
907.1 *5*	12.4 *12*	2818.9	13+	1911.8	11+	Q	Mult.: A_2=+0.36 *5*, A_4=−0.16 *6* (1996Pe12). Mult.: R(DCO)=1.05 *6*.
919.0 *5*	8.5 *7*	2235.5	10+	1316.4	8+	Q	Mult.: R(DCO)=1.06 *14*.
919.3 *5*	48.0 *34*	2265.8	10+	1346.5	8+	Q	Mult.: A_2=+0.32 *8*, A_4=−0.14 *11* (1996Pe12). Mult.: R(DCO)=1.02 *4*.
927.2 *5*	2.3 *2*	4241.6	16(+)	3314.4	(14+)		
932.2 *5*	1.4 *2*	3314.4	(14+)	2382.1	12+		
932.3 *5*	2.4 *3*	5030.6	18(+)	4098.4	16(+)		
933.5 *5*	2.0 *2*	5175.1	(18+)	4241.6	16(+)		
935.3 *5*	2.1 *2*	2846.9	13(+)	1911.8	11+		
943.9 *5*	3.2 *3*	5934.3	20	4990.5	18	Q	Mult.: R(DCO)=2.30 *17* for dipole gated.
955.2 *5*	2.1 *3*	3802.1	(15+)	2846.9	13(+)	Q	Mult.: R(DCO)=1.68 *23* for dipole gated.
958.2 *5*	3.0 *5*	3340.7	14+	2382.1	12+	Q	Mult.: R(DCO)=1.92 *19* for dipole gated.
985.9 *5*	5.4 *6*	2332.5	10+	1346.5	8+	Q	Mult.: A_2=+0.41 *13*, A_4=−0.05 *17* (1996Pe12).
986.5 *5*	4.6 *6*	5422.1	19(+)	4435.6	17(+)	Q	Mult.: R(DCO)=1.88 *20* for dipole gated.
1014.2 *2*	4.6 *4*	6444.6	21	5430.5	19		
1035.2 *5*	1.6 *2*	6065.8	20(+)	5030.6	18(+)		
1039.7 *5*	3.1 *4*	7114.7	(22+)	6075.0	(20+)		

Continued on next page (footnotes at end of table)

^{110}Pd(^{30}Si,p3nγ) 1996Pe12 (continued)

γ(^{136}Pr) (continued)

E_γ †	I_γ ‡	E_i(level)	J^π_i	E_f	J^π_f	Mult.	Comments
1040.0 *5*	1.9 *3*	6975.0	(22)	5934.3	20		
1042.1 *5*	7.5 *4*	3860.8	15^+	2818.9	13^+	Q	Mult.: R(DCO)=1.85 *19* for dipole gated.
1071.5 *5*	1.9 *3*	4411.9	16^+	3340.7	14^+		
1075.1 *5*	1.3 *3*	6469.6	(21)	5394.5	19		
1098.0 *5*	2.8 *3*	4958.9	17^+	3860.8	15^+		
1099.7 *5*	1.3 *2*	6470.9	(22^+)	5371.2	(20^+)		
1117.8 *5*	2.0 *3*	7562.0	(23)	6444.6	21		
1126.2 *5*	2.0 *3*	6548.3	(21^+)	5422.1	$19^{(+)}$		
1154.2 *5*	1.3 *2*	6113.1	(19^+)	4958.9	17^+		
1257 *1*	<1	7728.0	(24^+)	6470.9	(22^+)		
1276 *1*	<1	7824.3	(23^+)	6548.3	(21^+)		
1282 *1*	<1	7751.7	(23)	6469.6	(21)		

† Uncertainties from private communication with author (2001PeZY).

‡ From prompt and prompt-delayed $\gamma\gamma$ coin data.

\# From the decay of 92 ns isomer, obtained from delayed spectrum with pulsed beam in (p,nγ) and (^{19}F,5nγ) reactions. Evaluator has assigned 10% uncertainty to Iγ based on general statement from 1996Pe12. Those Iγ's with >10% are given explicitly by 1996Pe12.

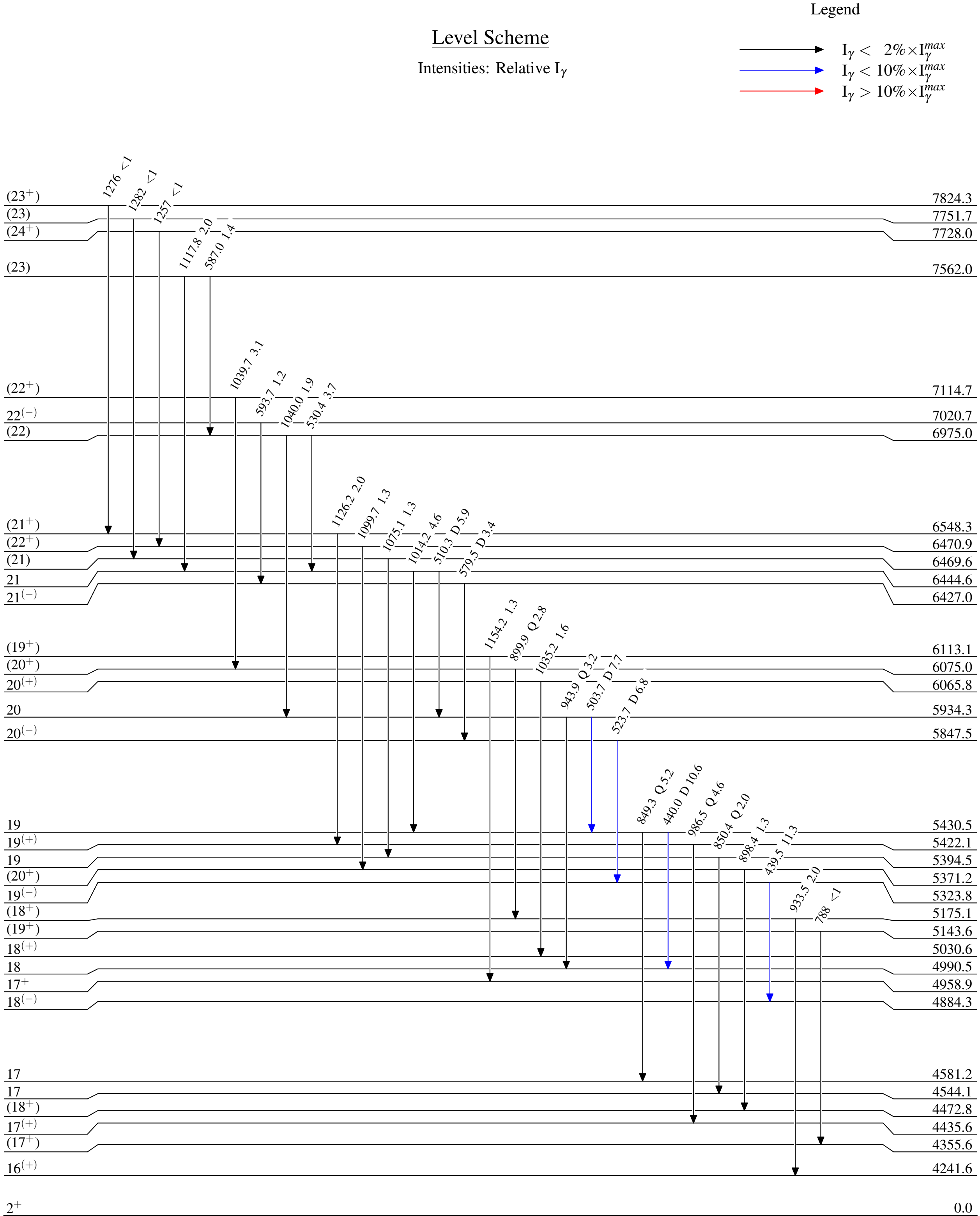
@ Multiply placed with intensity suitably divided.

^{x} γ ray not placed in level scheme.

^{110}Pd(^{30}Si,p3nγ) 1996Pe12

Level Scheme

Intensities: Relative I_γ



$^{136}_{59}Pr_{77}$

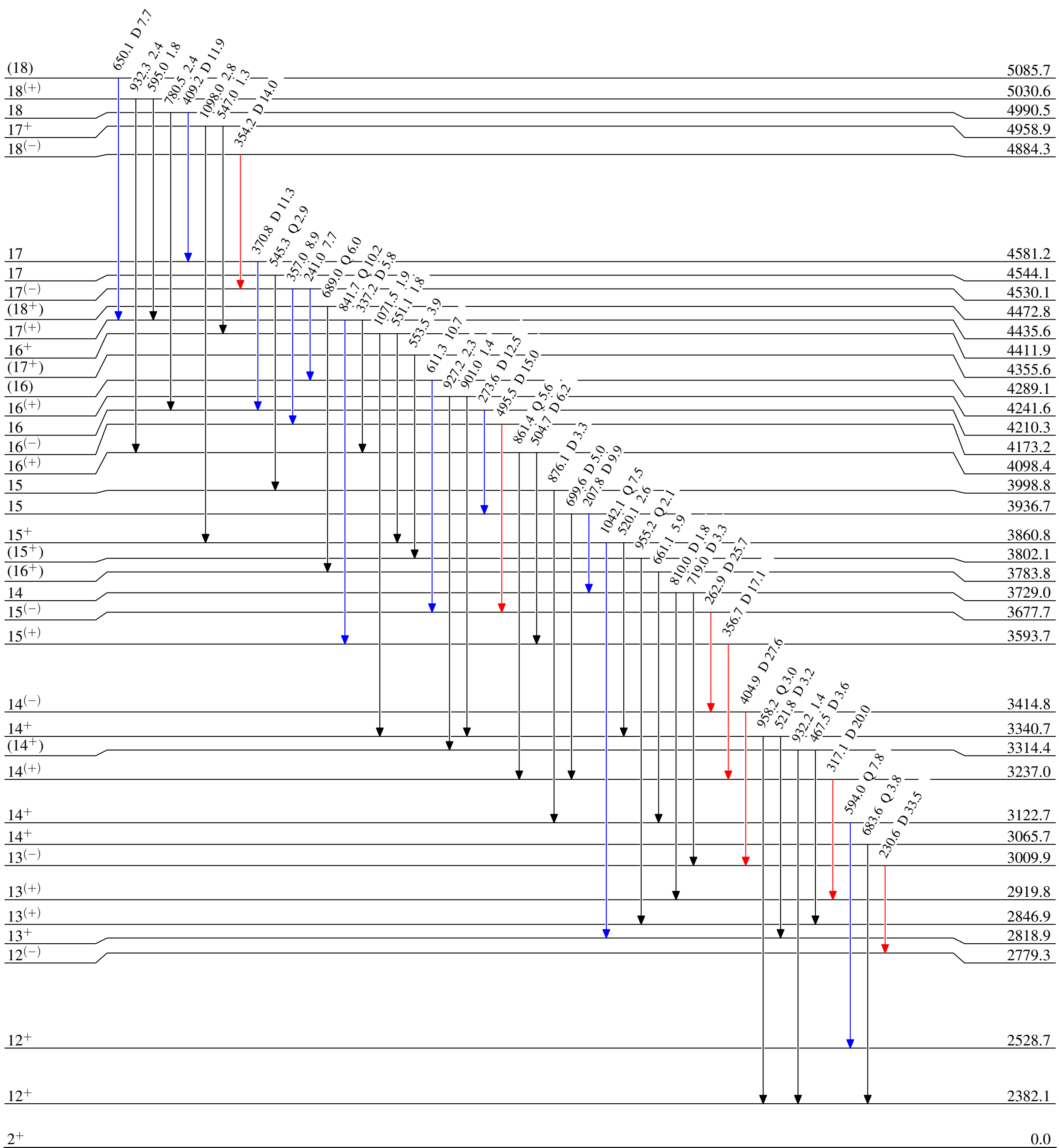
$^{110}Pd(^{30}Si,p3n\gamma)$ 1996Pe12

Level Scheme (continued)

Intensities: Relative I_γ

Legend

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



$^{136}_{59}Pr_{77}$

$^{110}Pd(^{30}Si,p3n\gamma)$ 1996Pe12

Level Scheme (continued)

Intensities: Relative I_γ

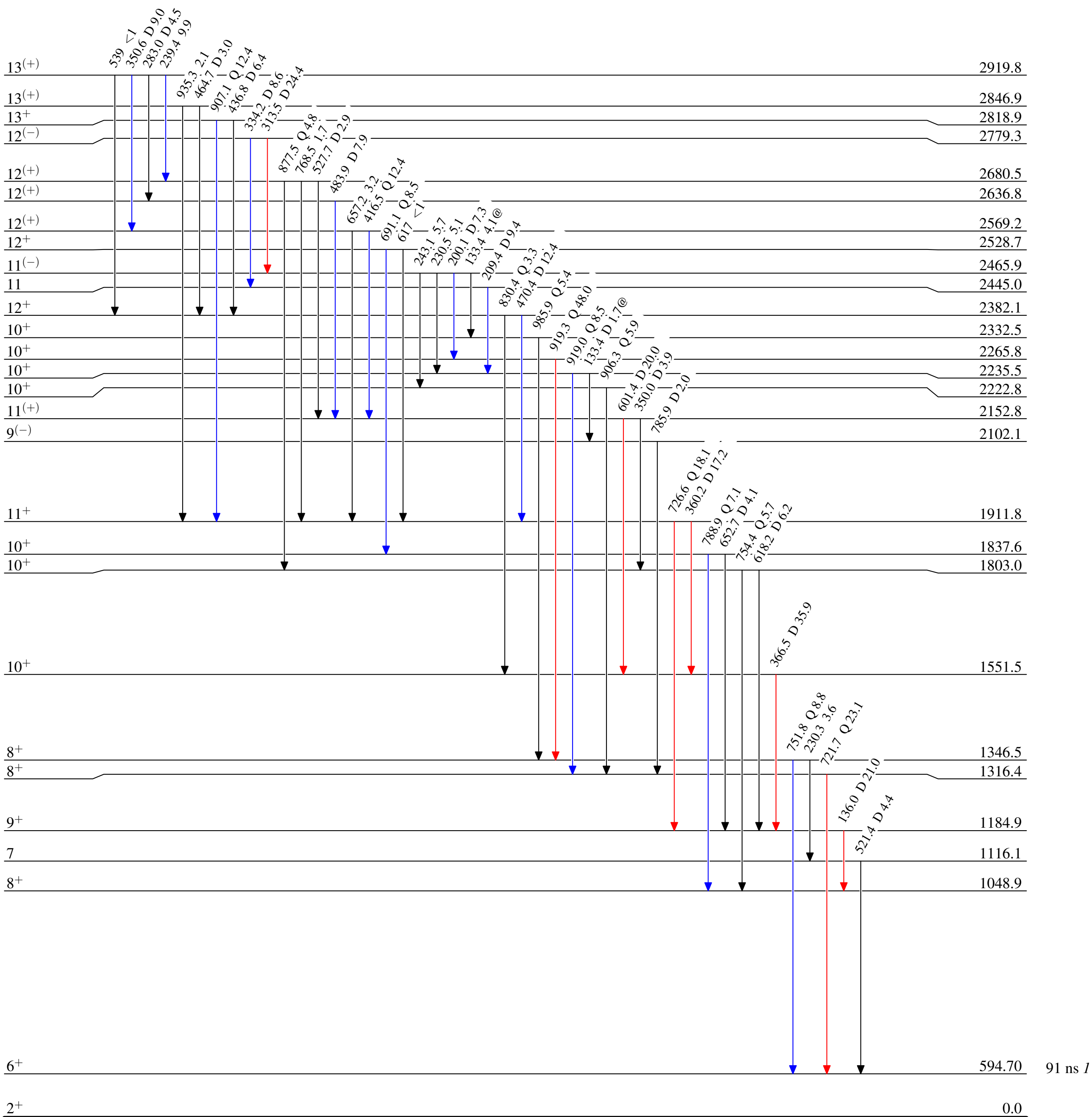
@ Multiply placed: intensity suitably divided

Legend

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

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

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



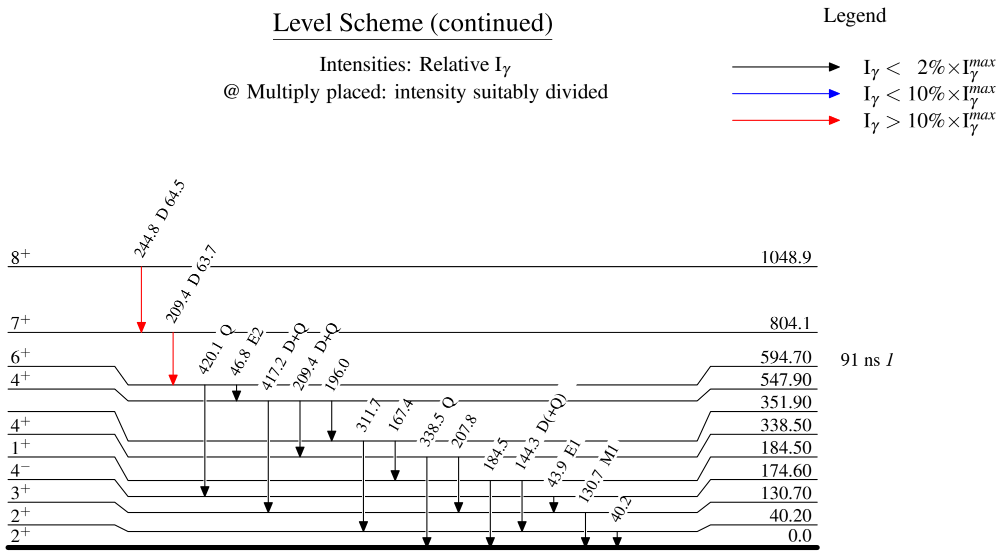
$^{136}_{59}Pr_{77}$

$^{110}Pd(^{30}Si,p3n\gamma)$ 1996Pe12

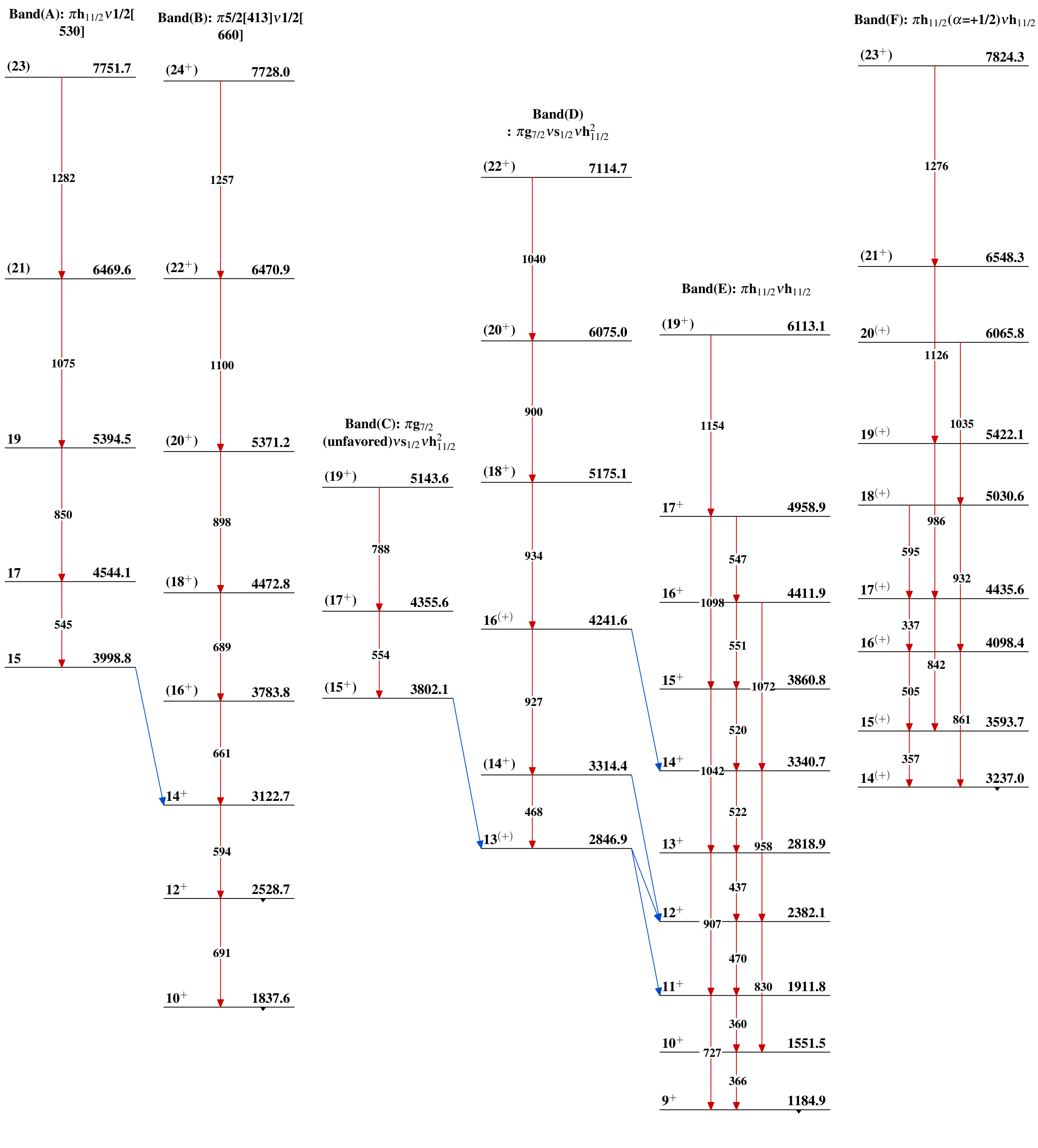
Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided

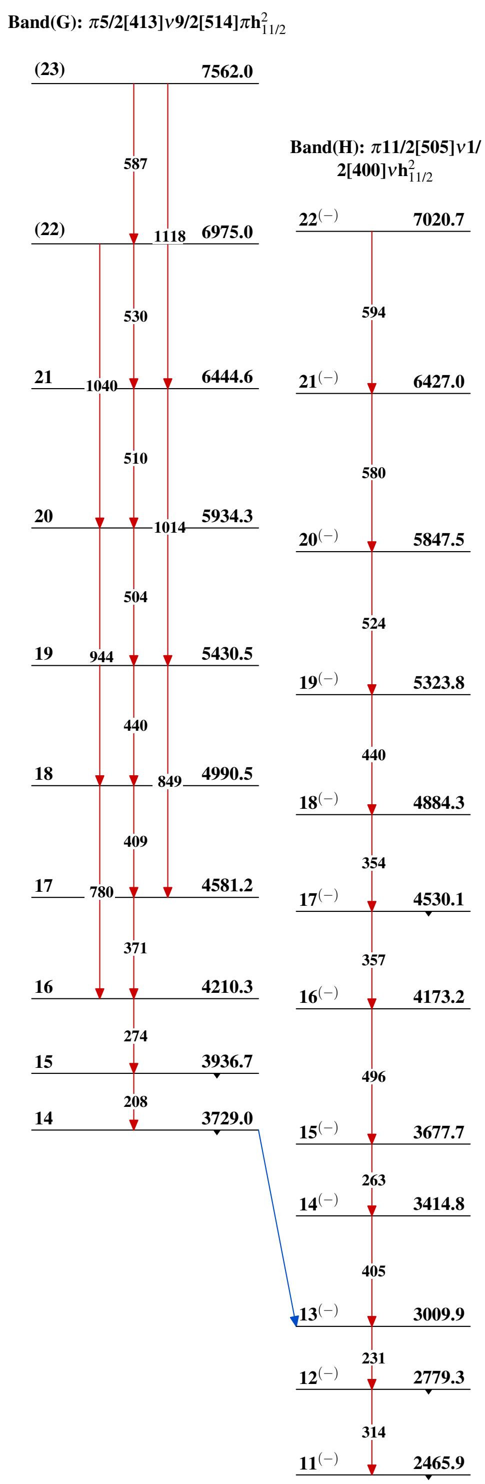


$^{110}Pd(^{30}Si,p3n\gamma)$ 1996Pe12



$^{136}_{59}Pr_{77}$

$^{110}Pd(^{30}Si,p3n\gamma)$ 1996Pe12 (continued)



$^{136}_{59}Pr_{77}$