

**(HI,xnγ) 1992Th06,1984Dr02,1983Dr08**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

Others: 1986Bi11.

The level scheme and all data are from <sup>142</sup>Nd(<sup>30</sup>Si,4nγ) (1992Th06), except where noted. An earlier (and substantially less complete) level scheme (1983Dr08) is in perfect agreement with results from 1992Th06.

1992Th06: <sup>142</sup>Nd(<sup>30</sup>Si,4nγ), E(<sup>30</sup>Si)=165 MeV, evaporation-residue separation; 98% target enrichment; detector array with 29 Compton-suppressed germanium detectors; θ=37°, 63°, 79°, 101°, 117°, 143°; measured Eγ, Iγ, γγ and γγγ coin, DCO ratios (Iγ(37°)/Iγ(79°)); used pairing-self-consistent cranked shell model to interpret level structure.

1983Dr08: <sup>148</sup>Sm(<sup>24</sup>Mg,4nγ), E(<sup>24</sup>Mg)=120-133 MeV; measured Eγ, Iγ, excit (120-130 MeV; compton-suppressed spectrometer), γγ coin, γ(θ) (6 angles, θ=0°-90°; Ge detector, multiplicity filter). Some additional data were obtained using a <sup>28</sup>Si beam and <sup>147</sup>Sm target.

1984Dr02: <sup>141</sup>Pr(<sup>31</sup>P,4nγ), E(<sup>31</sup>P)=158 MeV; two intrinsic Ge detectors At 0° and 30°; multiplicity filter (6 NaI crystals); measured T<sub>1/2</sub> using recoil distance method (12-17 distances).

1986Bi11: <sup>110</sup>Pd(<sup>61</sup>Ni,3nγ), E(<sup>61</sup>Ni)=255 MeV; see <sup>168</sup>W Adopted Levels for magnetic moments measured by these authors.

<sup>168</sup>W Levels

E(level) <sup>†</sup>	J <sup>π‡</sup>	T <sub>1/2</sub> <sup>#</sup>	Comments
0.0@	0 <sup>+</sup>		
199.1@ 5	2 <sup>+</sup>	213 ps 10	
562.3@ 7	4 <sup>+</sup>	12 ps 3	
1042.3@ 8	6 <sup>+</sup>	<7 ps	
1537.3& 9	5 <sup>-</sup>		
1578.4 <sup>a</sup> 11	(4 <sup>-</sup> ,5 <sup>-</sup> )		
1600.7@ 11	8 <sup>+</sup>	<2.1 ps	
1835.1& 10	7 <sup>-</sup>	>3.1 ps	T <sub>1/2</sub> : measurement possibly affected by contaminant.
1916.4 <sup>a</sup> 10	(6 <sup>-</sup> )		
2202.6@ 12	10 <sup>+</sup>	0.69 ps 14	T <sub>1/2</sub> : obtained with a feeding time of 2.8 ps.
2213.2& 11	9 <sup>-</sup>	<12 ps	T <sub>1/2</sub> : measurement possibly affected by contaminant.
2319.1 <sup>a</sup> 11	(8 <sup>-</sup> )		
2582.1 <sup>b</sup> 13	(10 <sup>+</sup> )	>104 ps	
2621.3 <sup>a</sup> 12	(10 <sup>-</sup> )		
2629.0& 13	11 <sup>-</sup>	5.2 ps 3	
2722.7 <sup>b</sup> 13	12 <sup>+</sup>	60.6 ps 23	
2817.6@ 16	12 <sup>+</sup>		
2968.1 <sup>a</sup> 14	(12 <sup>-</sup> )		
3010.5 <sup>b</sup> 14	14 <sup>+</sup>	26.5 ps 10	
3073.8& 16	13 <sup>-</sup>	3.7 ps 3	
3420.1@ 19	(14 <sup>+</sup> )		
3446.6 <sup>a</sup> 17	(14 <sup>-</sup> )		
3447.1 <sup>b</sup> 15	16 <sup>+</sup>	3.5 ps 4	
3577.2& 19	15 <sup>-</sup>	1.5 ps 4	
4003.6@ 21	(16 <sup>+</sup> )		
4012.1 <sup>b</sup> 16	18 <sup>+</sup>	1.04 ps 21	T <sub>1/2</sub> : obtained with a feeding time of 2.3 ps.
4029.5 <sup>a</sup> 18	(16 <sup>-</sup> )		
4131.0& 21	17 <sup>-</sup>	0.8 ps 4	T <sub>1/2</sub> : obtained with a feeding time of 1.7 ps.
4570.8@ 24	(18 <sup>+</sup> )		
4588.3 <sup>a</sup> 20	(18 <sup>-</sup> )		

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(HI,xn $\gamma$ ) **1992Th06,1984Dr02,1983Dr08 (continued)**

<sup>168</sup>W Levels (continued)

E(level) <sup>†</sup>	J $\pi$ <sup>‡</sup>	E(level) <sup>†</sup>	J $\pi$ <sup>‡</sup>	E(level) <sup>†</sup>	J $\pi$ <sup>‡</sup>	E(level) <sup>†</sup>	J $\pi$ <sup>‡</sup>
4683.4 <sup>b</sup> 19	20 <sup>+</sup>	5915 <sup>&amp;</sup> 3	23 <sup>-</sup>	7403? <sup>@</sup> 3	(26 <sup>+</sup> )	9790 <sup>a</sup> 3	(32 <sup>-</sup> )
4703.4 <sup>&amp;</sup> 24	19 <sup>-</sup>	6246.3 <sup>b</sup> 23	24 <sup>+</sup>	7898 <sup>a</sup> 3	(28 <sup>-</sup> )	10109 <sup>&amp;</sup> 4	(33 <sup>-</sup> )
5098.1 <sup>a</sup> 23	(20 <sup>-</sup> )	6309 <sup>a</sup> 3	(24 <sup>-</sup> )	7920 <sup>b</sup> 3	28 <sup>+</sup>	10653 <sup>b</sup> 3	(34 <sup>+</sup> )
5175 <sup>@</sup> 3	(20 <sup>+</sup> )	6586 <sup>@</sup> 3	(24 <sup>+</sup> )	8223 <sup>&amp;</sup> 3	29 <sup>-</sup>	10813? <sup>a</sup> 4	(34 <sup>-</sup> )
5288 <sup>&amp;</sup> 3	21 <sup>-</sup>	6607 <sup>&amp;</sup> 3	25 <sup>-</sup>	8788 <sup>b</sup> 3	30 <sup>+</sup>	11128 <sup>&amp;</sup> 4	(35 <sup>-</sup> )
5437.7 <sup>b</sup> 21	22 <sup>+</sup>	7058 <sup>a</sup> 3	(26 <sup>-</sup> )	8816 <sup>a</sup> 3	(30 <sup>-</sup> )		
5658.7 <sup>a</sup> 25	(22 <sup>-</sup> )	7078 <sup>b</sup> 3	26 <sup>+</sup>	9138 <sup>&amp;</sup> 3	31 <sup>-</sup>		
5843 <sup>@</sup> 3	(22 <sup>+</sup> )	7377 <sup>&amp;</sup> 3	27 <sup>-</sup>	9697 <sup>b</sup> 3	(32 <sup>+</sup> )		

<sup>†</sup> From least-squares fit to E $\gamma$ .

<sup>‡</sup> From fits of coincident stretched E2 (and interband E1) transitions into interconnected bands consistent with the cranked shell model. The analysis depended on additional multipolarities, which were implied, but not stated, from I $\gamma$ (37 $^\circ$ )/I $\gamma$ (79 $^\circ$ ) ratios in 1992Th06 ( $\approx 1$  for stretched Q,  $\approx 0.6$  for stretched dipole ( $\delta$  small)). See <sup>168</sup>W Adopted Levels for evaluator's assignments.

# Recoil-distance measurements in <sup>141</sup>Pr(<sup>31</sup>P,4n $\gamma$ ) (1984Dr02).

@ Band(A): K $\pi$ =0<sup>+</sup>,  $\alpha$ =0 g.s. band.

& Band(B):  $\pi$ =(-),  $\alpha$ =1 side band.

<sup>a</sup> Band(C):  $\pi$ =(-),  $\alpha$ =0 side band.

<sup>b</sup> Band(D):  $\pi$ =+,  $\alpha$ =0 band 2. Becomes yrast for J $\geq 12$ .

$\gamma$ (<sup>168</sup>W)

E $\gamma$ <sup>†</sup>	I $\gamma$ <sup>‡</sup>	E <sub>i</sub> (level)	J $\pi$ <sub>i</sub>	E <sub>f</sub>	J $\pi$ <sub>f</sub>	Mult. <sup>#</sup>	$\alpha$ <sup>&amp;</sup>	Comments
140.5 10	2.6 6	2722.7	12 <sup>+</sup>	2582.1 (10 <sup>+</sup> )				Mult.: DCO=0.7 4 (1992Th06).
199.1 5	88 5	199.1	2 <sup>+</sup>	0.0 0 <sup>+</sup>	E2 <sup>@</sup>	0.313 6		Mult.: DCO=0.72 3 (1992Th06). A <sub>2</sub> =+0.250 10, A <sub>4</sub> =-0.04 2 (1983Dr08).
234.3 10	4.3 6	1835.1	7 <sup>-</sup>	1600.7 8 <sup>+</sup>	D			Mult.: DCO=0.63 8 (1992Th06). A <sub>2</sub> =-0.34 10 (1983Dr08).
287.8 5	40.6 10	3010.5	14 <sup>+</sup>	2722.7 12 <sup>+</sup>	E2 <sup>@</sup>	0.0963 15		Mult.: DCO=0.96 4 (1992Th06). A <sub>2</sub> =+0.298 14, A <sub>4</sub> =-0.121 17 (1983Dr08).
297.9 10	9.9 6	1835.1	7 <sup>-</sup>	1537.3 5 <sup>-</sup>	Q			Mult.: DCO=0.78 8 (1992Th06). A <sub>2</sub> =+0.25 3, A <sub>4</sub> =-0.13 3 (1983Dr08).
302.2 10	4.8 5	2621.3	(10 <sup>-</sup> )	2319.1 (8 <sup>-</sup> )				Mult.: DCO=0.92 15 (1992Th06).
337.8 10	3.5 6	1916.4	(6 <sup>-</sup> )	1578.4 (4 <sup>-</sup> ,5 <sup>-</sup> )				Mult.: DCO=0.8 3 (1992Th06).
339.1 10	3.5 6	2968.1	(12 <sup>-</sup> )	2629.0 11 <sup>-</sup>				I $\gamma$ : combined value for 337.8 $\gamma$ and 339.1 $\gamma$ . Mult.: DCO=0.8 3 (1992Th06).
346.7 10	13.6 8	2968.1	(12 <sup>-</sup> )	2621.3 (10 <sup>-</sup> )				I $\gamma$ : undivided; see comment with 337.8 $\gamma$ . Mult.: DCO=0.84 6 (1992Th06). A <sub>2</sub> =+0.26 3, A <sub>4</sub> =-0.05 4 (1983Dr08).
363.2 5	100.0 24	562.3	4 <sup>+</sup>	199.1 2 <sup>+</sup>	E2 <sup>@</sup>	0.0489		Mult.: DCO=0.76 2 (1992Th06). A <sub>2</sub> =+0.301 11, A <sub>4</sub> =-0.078 15 (1983Dr08).
378.0 10	33.1 15	2213.2	9 <sup>-</sup>	1835.1 7 <sup>-</sup>	E2 <sup>@</sup>	0.0437		Mult.: DCO=0.88 4 (1992Th06). A <sub>2</sub> =+0.34 3, A <sub>4</sub> =-0.05 4 (1983Dr08) for unresolved doublet.
379.3 10	33.1 15	1916.4	(6 <sup>-</sup> )	1537.3 5 <sup>-</sup>				I $\gamma$ : combined value for 378.0 $\gamma$ and 379.3 $\gamma$ . Mult.: DCO=0.97 23 (1992Th06).
379.4 10	3.5 13	2582.1	(10 <sup>+</sup> )	2202.6 10 <sup>+</sup>				I $\gamma$ : undivided; see comment with 378.0 $\gamma$ . Mult.: DCO=0.61 19 (1992Th06). I $\gamma$ : from coincidence data.

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(HI,xny) **1992Th06,1984Dr02,1983Dr08 (continued)**

γ(<sup>168</sup>W) (continued)

<u>E<sub>γ</sub><sup>†</sup></u>	<u>I<sub>γ</sub><sup>‡</sup></u>	<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>#</sup></u>	<u>α<sup>&amp;</sup></u>	<u>Comments</u>
402.6 10	4.1 5	2319.1	(8 <sup>-</sup> )	1916.4 (6 <sup>-</sup> )				Mult.: DCO=0.92 15 (1992Th06).
408.2 10	7.5 5	2621.3	(10 <sup>-</sup> )	2213.2 9 <sup>-</sup>				Mult.: DCO=0.92 9 (1992Th06). A <sub>2</sub> =+0.54 5 (1983Dr08).
415.8 10	27.8 7	2629.0	11 <sup>-</sup>	2213.2 9 <sup>-</sup>		E2 <sup>@</sup>	0.0338 6	Mult.: DCO=0.90 5 (1992Th06). A <sub>2</sub> =+0.316 14, A <sub>4</sub> =-0.119 15 (1983Dr08).
426.4 10	2.8 10	2629.0	11 <sup>-</sup>	2202.6 10 <sup>+</sup>				Mult.: DCO=1.00 27 (1992Th06).
436.6 5	41.4 13	3447.1	16 <sup>+</sup>	3010.5 14 <sup>+</sup>		E2 <sup>@</sup>	0.0297	Mult.: DCO=1.11 8 (1992Th06). A <sub>2</sub> =+0.321 15, A <sub>4</sub> =-0.081 19 (1983Dr08).
444.8 10	25.7 18	3073.8	13 <sup>-</sup>	2629.0 11 <sup>-</sup>		E2 <sup>@</sup>	0.0283 5	Mult.: DCO=0.96 8 (1992Th06). A <sub>2</sub> =+0.295 24, A <sub>4</sub> =-0.057 29 (1983Dr08).
478.5 10	15 3	3446.6	(14 <sup>-</sup> )	2968.1 (12 <sup>-</sup> )				Mult.: DCO=0.82 22 (1992Th06). A <sub>2</sub> =+0.21 7 (1983Dr08).
480.0 5	99.3 25	1042.3	6 <sup>+</sup>	562.3 4 <sup>+</sup>		E2 <sup>@</sup>	0.0233	Mult.: DCO=0.89 5 (1992Th06). A <sub>2</sub> =+0.301 13, A <sub>4</sub> =-0.108 16 (1983Dr08).
484.0 10	<3.6	2319.1	(8 <sup>-</sup> )	1835.1 7 <sup>-</sup>				Mult.: DCO=1.6 5 (1992Th06).
495.1 10	6.7 9	1537.3	5 <sup>-</sup>	1042.3 6 <sup>+</sup>		D		Mult.: DCO=0.61 10 (1992Th06). A <sub>2</sub> =-0.18 8 (1983Dr08).
503.4 10	26.1 12	3577.2	15 <sup>-</sup>	3073.8 13 <sup>-</sup>		E2 <sup>@</sup>	0.0206	Mult.: DCO=1.17 7 (1992Th06). A <sub>2</sub> =+0.36 4, A <sub>4</sub> =-0.07 4 (1983Dr08).
509.8 10	12.5 11	5098.1	(20 <sup>-</sup> )	4588.3 (18 <sup>-</sup> )				Mult.: DCO=0.70 10 (1992Th06).
520.1 5	41 4	2722.7	12 <sup>+</sup>	2202.6 10 <sup>+</sup>		E2 <sup>@</sup>	0.0190	Mult.: DCO=0.94 5 (1992Th06). A <sub>2</sub> =+0.310 13, A <sub>4</sub> =-0.072 15 (1983Dr08).
553.8 10	24.9 9	4131.0	17 <sup>-</sup>	3577.2 15 <sup>-</sup>		E2 <sup>@</sup>	0.01635	Mult.: DCO=1.08 8 (1992Th06). A <sub>2</sub> =+0.31 5, A <sub>4</sub> =-0.09 5 (1983Dr08).
558.4 10	93 3	1600.7	8 <sup>+</sup>	1042.3 6 <sup>+</sup>		E2 <sup>@</sup>	0.01603	Mult.: DCO=0.97 5 (1992Th06). A <sub>2</sub> =+0.337 20, A <sub>4</sub> =-0.120 23 (1983Dr08). I <sub>γ</sub> : combined value for 558.4γ, 558.8γ, and 560.6γ.
558.8 10	93 3	4588.3	(18 <sup>-</sup> )	4029.5 (16 <sup>-</sup> )				Mult.: DCO=0.97 13 (1992Th06). I <sub>γ</sub> : undivided; see comment with 558.4γ.
560.6 10	93 3	5658.7	(22 <sup>-</sup> )	5098.1 (20 <sup>-</sup> )				Mult.: DCO=1.0 4 (1992Th06). I <sub>γ</sub> : undivided; see comment with 558.4γ.
565.0 5	42.0 13	4012.1	18 <sup>+</sup>	3447.1 16 <sup>+</sup>		E2 <sup>@</sup>	0.01559	Mult.: DCO=0.99 9 (1992Th06). A <sub>2</sub> =+0.307 20, A <sub>4</sub> =-0.075 20 (1983Dr08) for doublet.
567.2 10	≈6.5	4570.8	(18 <sup>+</sup> )	4003.6 (16 <sup>+</sup> )				Mult.: DCO=0.7 3 (1992Th06).
572.4 10	23.7 13	4703.4	19 <sup>-</sup>	4131.0 17 <sup>-</sup>		Q		Mult.: DCO=1.09 9 (1992Th06). A <sub>2</sub> =+0.27 3, A <sub>4</sub> =-0.08 4 (1983Dr08).
582.4 10	14.8 23	4029.5	(16 <sup>-</sup> )	3446.6 (14 <sup>-</sup> )				Mult.: DCO=0.87 19 (1992Th06). A <sub>2</sub> =+0.21 5, A <sub>4</sub> =-0.03 5 (1983Dr08).
583.5 10	≈7.5	4003.6	(16 <sup>+</sup> )	3420.1 (14 <sup>+</sup> )				I <sub>γ</sub> : from coincidence data.
584.9 10	23.0 15	5288	21 <sup>-</sup>	4703.4 19 <sup>-</sup>		Q		Mult.: DCO=1.12 10 (1992Th06). A <sub>2</sub> =+0.20 3, A <sub>4</sub> =-0.12 3 (1983Dr08).
<sup>x</sup> 594.8 10	4.0 8							Mult.: DCO=0.91 20 (1992Th06).
<sup>x</sup> 598.2 10	6.1 8							Mult.: DCO=0.8 4 (1992Th06).
601.9 10	64.9 25	2202.6	10 <sup>+</sup>	1600.7 8 <sup>+</sup>		E2 <sup>@</sup>	0.01343	Mult.: DCO=0.90 5 (1992Th06). A <sub>2</sub> =+0.314 12, A <sub>4</sub> =-0.082 15 (1983Dr08) for unresolved doublet. I <sub>γ</sub> : combined value for 601.9γ, 602.5γ, and 603.8γ.
602.5 10	64.9 25	3420.1	(14 <sup>+</sup> )	2817.6 12 <sup>+</sup>				I <sub>γ</sub> : undivided; see comment with 601.9γ.
603.8 10	64.9 25	5175	(20 <sup>+</sup> )	4570.8 (18 <sup>+</sup> )				I <sub>γ</sub> : undivided; see comment with 601.9γ.
612.5 10	9.5 25	2213.2	9 <sup>-</sup>	1600.7 8 <sup>+</sup>		D(+Q)		Mult.: DCO=0.70 9 (1992Th06). A <sub>2</sub> =-0.23 2, A <sub>4</sub> =-0.04 3 (1983Dr08).

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**(HI,xn $\gamma$ )  $^{168}\text{Th06,1984Dr02,1983Dr08}$  (continued)** $\gamma(^{168}\text{W})$  (continued)

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. #	Comments
615.0 10	10.9 10	2817.6	12 <sup>+</sup>	2202.6	10 <sup>+</sup>		Mult.: DCO=0.93 15 (1992Th06). $A_2=+0.33$ 3, $A_4=-0.09$ 4 (1983Dr08).
626.3 10	18.6 15	5915	23 <sup>-</sup>	5288	21 <sup>-</sup>	Q	Mult.: DCO=1.13 9 (1992Th06). $A_2=+0.35$ 6, $A_4=-0.09$ 7 (1983Dr08).
<sup>x</sup> 645.7 10	5.0 11						Mult.: DCO=1.3 3 (1992Th06).
650.0 10	10.6 7	6309	(24 <sup>-</sup> )	5658.7	(22 <sup>-</sup> )		Mult.: DCO=1.03 18 (1992Th06).
<sup>x</sup> 661.4 10	2.2 6						Mult.: DCO=0.9 4 (1992Th06); $A_2=+0.08$ 8 (1983Dr08).
<sup>x</sup> 664.0 10	5.4 14						Mult.: DCO=0.9 4 (1992Th06).
668.6 10	$\approx 5.0$	5843	(22 <sup>+</sup> )	5175	(20 <sup>+</sup> )		
671.3 10	28.5 12	4683.4	20 <sup>+</sup>	4012.1	18 <sup>+</sup>	Q	Mult.: DCO=1.10 7 (1992Th06). $A_2=+0.27$ 3, $A_4=-0.10$ 3 (1983Dr08).
692.9 10	15 4	6607	25 <sup>-</sup>	5915	23 <sup>-</sup>	Q	Mult.: DCO=1.08 9 (1992Th06). $A_2=+0.19$ 7 (1983Dr08).
<sup>x</sup> 694.5 10	4.8 25						
<sup>x</sup> 717.7 10	2.7 6						
<sup>x</sup> 724.0 10	3.0 10						
<sup>x</sup> 726.3 10	3.6 11						
742.7 10	3.6 6	6586	(24 <sup>+</sup> )	5843	(22 <sup>+</sup> )		
748.9 10	7.4 8	7058	(26 <sup>-</sup> )	6309	(24 <sup>-</sup> )		Mult.: DCO=1.18 22 (1992Th06).
754.3 10	24.1 9	5437.7	22 <sup>+</sup>	4683.4	20 <sup>+</sup>	Q	Mult.: DCO=1.03 8 (1992Th06). $A_2=+0.39$ 4, $A_4=-0.13$ 5 (1983Dr08).
769.6 10	9.9 8	7377	27 <sup>-</sup>	6607	25 <sup>-</sup>	Q	Mult.: DCO=1.06 11 (1992Th06). $A_2=+0.4$ 2 (1983Dr08).
793.0 10	23.7 13	1835.1	7 <sup>-</sup>	1042.3	6 <sup>+</sup>	D	Mult.: DCO=0.61 9 (1992Th06). $A_2=-0.315$ 18, $A_4=+0.025$ 19 (1983Dr08).
808.6 10	17.8 15	6246.3	24 <sup>+</sup>	5437.7	22 <sup>+</sup>	Q	Mult.: DCO=1.09 10 (1992Th06). $A_2=+0.26$ 6, $A_4=-0.07$ 6 (1983Dr08).
817.0 <sup>a</sup> 10	3.0 6	7403?	(26 <sup>+</sup> )	6586	(24 <sup>+</sup> )		
<sup>x</sup> 818.8 10	2.5 10						Mult.: DCO=1.3 4 (1992Th06).
<sup>x</sup> 827.5 10	3.0 10						
831.6 10	11.2 7	7078	26 <sup>+</sup>	6246.3	24 <sup>+</sup>		Mult.: DCO=1.42 18 (1992Th06); high for expected $\Delta J=2$ G. $A_2=+0.41$ 2 (1983Dr08).
840.6 10	6.6 13	7898	(28 <sup>-</sup> )	7058	(26 <sup>-</sup> )		Mult.: DCO=0.72 16 (1992Th06).
842.5 10	8.0 18	7920	28 <sup>+</sup>	7078	26 <sup>+</sup>		Mult.: DCO=1.11 25 (1992Th06).
846.2 10	7.7 15	8223	29 <sup>-</sup>	7377	27 <sup>-</sup>		Mult.: DCO=0.90 13 (1992Th06).
867.7 10	6.8 7	8788	30 <sup>+</sup>	7920	28 <sup>+</sup>		Mult.: DCO=1.4 3 (1992Th06).
874.2 10	2.9 6	1916.4	(6 <sup>-</sup> )	1042.3	6 <sup>+</sup>		
908.6 10	3.1 7	9697	(32 <sup>+</sup> )	8788	30 <sup>+</sup>		Mult.: DCO=1.1 5 (1992Th06).
914.5 10	4.5 15	9138	31 <sup>-</sup>	8223	29 <sup>-</sup>	(Q)	Mult.: DCO=1.22 24 (1992Th06).
917.7 10	3.0 8	8816	(30 <sup>-</sup> )	7898	(28 <sup>-</sup> )		Mult.: DCO=1.2 5 (1992Th06).
956.8 10	1.5 5	10653	(34 <sup>+</sup> )	9697	(32 <sup>+</sup> )		
971.2 10	2.0 6	10109	(33 <sup>-</sup> )	9138	31 <sup>-</sup>		Mult.: DCO=1.3 7 (1992Th06).
974.6 10	6.2 10	9790	(32 <sup>-</sup> )	8816	(30 <sup>-</sup> )		$I_\gamma$ : combined value for 974.6 $\gamma$ and 975.0 $\gamma$ .
975.0 10	6.2 10	1537.3	5 <sup>-</sup>	562.3	4 <sup>+</sup>	D(+Q)	Mult.: DCO=0.8 3 (1992Th06). $A_2=-0.29$ 7, $A_4=+0.04$ 7 (1983Dr08).
							$I_\gamma$ : undivided; see comment with 974.6 $\gamma$ .
981.3 10	2.4 7	2582.1	(10 <sup>+</sup> )	1600.7	8 <sup>+</sup>		
<sup>x</sup> 997.2 10	2.1 7						
1015.9 10	0.9 4	1578.4	(4 <sup>-</sup> ,5 <sup>-</sup> )	562.3	4 <sup>+</sup>		
1019.3 10	1.5 6	11128	(35 <sup>-</sup> )	10109	(33 <sup>-</sup> )		$I_\gamma$ : from coincidence data.
<sup>x</sup> 1020.0 10	1.3 5						
1023.0 <sup>a</sup> 10	0.8 3	10813?	(34 <sup>-</sup> )	9790	(32 <sup>-</sup> )		$I_\gamma$ : from coincidence data.

<sup>†</sup>  $\Delta E=0.5$  keV, except for multiplets ( $\Delta E=1$  keV) and weak peaks ( $\Delta E=1$  keV). Evaluator assumed weak peaks to be those with

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**(HI,xn $\gamma$ ) 1992Th06,1984Dr02,1983Dr08 (continued)**

$\gamma({}^{168}\text{W})$  (continued)

$I_{\gamma} \leq 30$ .

‡ Arbitrary units; relative to  $I_{\gamma}(363.2\gamma)=100.0$  (1992Th06). See 1983Dr08 for relative  $I_{\gamma}$  for  $E({}^{24}\text{Mg})=130$  MeV.

# From DCO ratio (1992Th06) and/or  $\gamma(\theta)$  (1983Dr08).

@ Stretched Q from  $\gamma(\theta)$  and/or DCO; not M2 from RUL.

& Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on  $\gamma$ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

<sup>a</sup> Placement of transition in the level scheme is uncertain.

<sup>x</sup>  $\gamma$  ray not placed in level scheme.

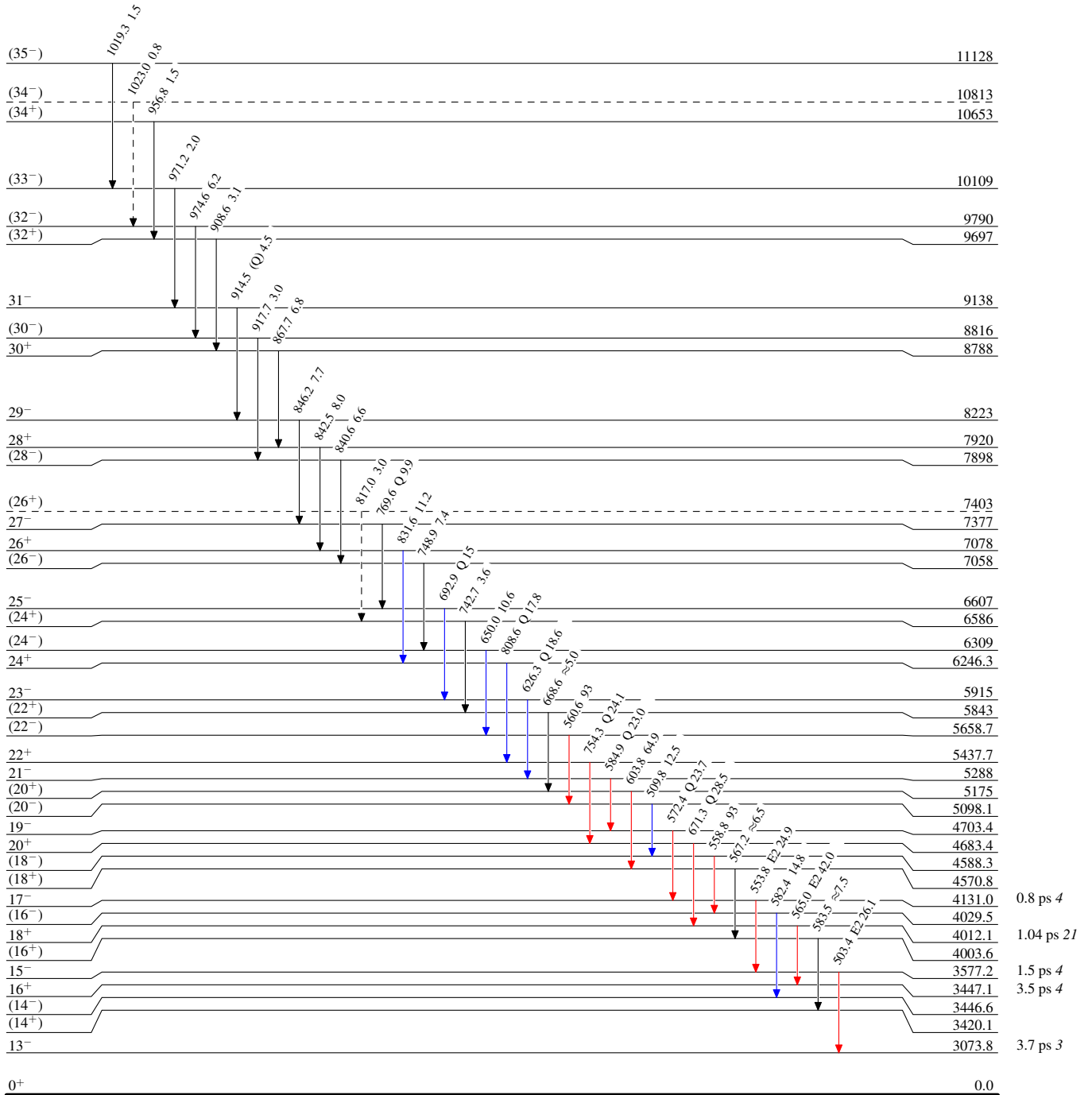
(HI,xn $\gamma$ ) 1992Th06,1984Dr02,1983Dr08

Legend

Level Scheme

Intensities: Relative I $\gamma$  for <sup>142</sup>Nd(<sup>30</sup>Si,4n $\gamma$ ), E(<sup>30</sup>Si)=165 MeV.

- I $\gamma$  < 2%  $\times$  I $\gamma^{max}$
- I $\gamma$  < 10%  $\times$  I $\gamma^{max}$
- I $\gamma$  > 10%  $\times$  I $\gamma^{max}$
- - -  $\gamma$  Decay (Uncertain)



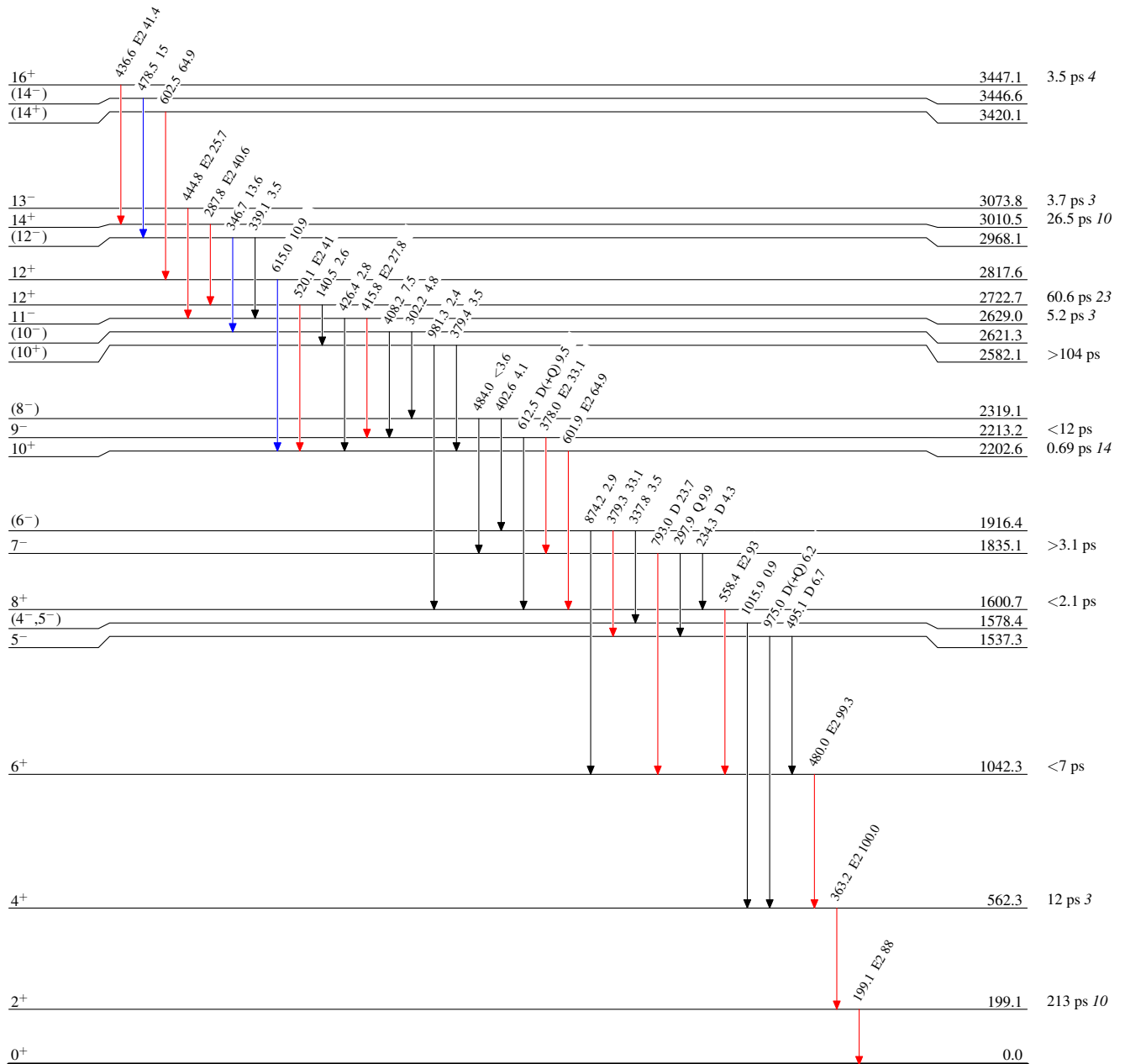
**(HI,xn $\gamma$ ) 1992Th06,1984Dr02,1983Dr08**

**Level Scheme (continued)**

Intensities: Relative I $\gamma$  for <sup>142</sup>Nd(<sup>30</sup>Si,4n $\gamma$ ), E(<sup>30</sup>Si)=165 MeV.

**Legend**

- I $\gamma$  < 2% × I $\gamma$ <sup>max</sup>
- I $\gamma$  < 10% × I $\gamma$ <sup>max</sup>
- I $\gamma$  > 10% × I $\gamma$ <sup>max</sup>



**(HI,xn $\gamma$ ) 1992Th06,1984Dr02,1983Dr08**