

$^{186}\text{W}(^{11}\text{B},6\text{n}\gamma):\text{SD}$ [1997Sc22,1993Vo04](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 195,368 (2024)	1-Dec-2023

[1997Sc22](#) (also [1993Vo04,1996Lo07](#)): E=84, 86 MeV; enrichment not given (target 99.79% enriched ^{186}W ([2006KuZW](#))).

Measured γ , $\gamma\gamma$ coin using EUROGAM II array of 30 large Compton-suppressed Ge detectors and 24 ‘clover’ type Ge detectors.

Deduced SD bands.

[2002Si26](#) for a review of superdeformed bands.

 ^{191}Au Levels

E(level)	J^π	Comments
$x^{\dagger}$	$J\approx(19/2)$	J^π : from 1993Vo04 , based on the least-squares fit to formulas connecting $E\gamma$'s and J^π 's according to the formalism given by 1990Dr08 and 1992Be25 .
186.8+x [†] 3	J+2	
415.7+x [†] 6	J+4	
686.6+x [†] 7	J+6	
998.6+x [†] 7	J+8	
1350.8+x [†] 7	J+10	
1742.3+x [†] 7	J+12	
2172.1+x [†] 8	J+14	
2639.9+x [†] 8	J+16	
3144.7+x [†] 8	J+18	
3685.6+x [†] 9	J+20	
4262.0+x [†] 9	J+22	
4873.0+x [†] 10	J+24	
5518.0+x [†] 10	J+26	
6195.7+x [†] 10	J+28	
6906.1+x [†] 11	J+30	
7648.7+x [†] 11	J+32	
8422.9+x [†] 12	J+34	
9229.1+x [†] 13	J+36	
10066.1+x [†] 14	J+38	
10935.1+x [†] 15	J+40	
$y^{\ddagger}$	$J1\approx(35/2)$	J^π : From spin fits. Alignments indicated by the slopes of the theoretical Routhians require 39/2 (1997Sc22).
397.8+y [‡] 5	J1+2	
834.8+y [‡] 7	J1+4	
1310.4+y [‡] 9	J1+6	
1823.1+y [‡] 10	J1+8	
2372.3+y [‡] 12	J1+10	
2956.7+y [‡] 13	J1+12	
3574.6+y [‡] 14	J1+14	
4226.6+y [‡] 15	J1+16	
4910.6+y [‡] 15	J1+18	
5626.1+y [‡] 16	J1+20	
6372.1+y [‡] 17	J1+22	
$z^{\#}$	$J2\approx(33/2)$	J^π : From spin fits. Alignments indicated by the slopes of the theoretical Routhians require 37/2

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$^{186}\text{W}(^{11}\text{B},6n\gamma):\text{SD}$ [1997Sc22,1993Vo04](#) (continued) ^{191}Au Levels (continued)

E(level)	J^π	Comments
		(1997Sc22).
382.7+z [#] 5	J2+2	
803.4+z [#] 7	J2+4	
1262.0+z [#] 9	J2+6	
1757.7+z [#] 10	J2+8	
2289.2+z [#] 12	J2+10	
2856.0+z [#] 13	J2+12	
3456.6+z [#] 14	J2+14	
4091.1+z [#] 15	J2+16	
4757.8+z [#] 15	J2+18	
5457.0+z [#] 16	J2+20	
6187.5+z [#] 17	J2+22	
6948.5+z [#] 18	J2+24	
7738.5+z [#] 18	J2+26	

[†] Band(A): Yrast SD-1 band ([1997Sc22,1993Vo04](#)). Percent population=0.17 ([1997Sc22](#)), 0.15 ([1993Vo04](#)). The saturation of dynamical moment of inertia indicates blocking effect due, possibly, to 3/2[651], $\alpha=+1/2$ proton. This band is identical to the SD band in ^{192}Hg (E_γ 's in this band are at the quarter-point energies of those in the ^{192}Hg SD band).

[‡] Band(B): SD-2 band ([1997Sc22](#)). Population intensity=40% of SD-1 band or 0.07% of reaction channel. SD-2 and SD-3 bands are interpreted as signature partners.

[#] Band(C): SD-3 band ([1997Sc22](#)). Population intensity=40% of SD-1 band or 0.07% of reaction channel. SD-2 and SD-3 bands are interpreted as signature partners.

 $\gamma(^{191}\text{Au})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	$I_{(\gamma+ce)}^\dagger$	Comments
186.8 3	186.8+x	J+2	x	$J\approx(19/2)$		
228.9 5	415.7+x	J+4	186.8+x	J+2	0.45 15	E_γ : Uncertainty assigned by the evaluator. $\Delta(E_\gamma)=1.5$ keV quoted by 1997Sc22 seems in error in view of the uncertainties (0.2 to 0.5 keV) of other gamma rays in the band.
270.9 2	686.6+x	J+6	415.7+x	J+4	0.62 20	
312.0 2	998.6+x	J+8	686.6+x	J+6	0.87 15	
352.2 2	1350.8+x	J+10	998.6+x	J+8	1.04 15	
382.7 5	382.7+z	J2+2	z	$J2\approx(33/2)$		
391.5 2	1742.3+x	J+12	1350.8+x	J+10	1.00 15	
397.8 5	397.8+y	J1+2	y	$J1\approx(35/2)$		
420.7 5	803.4+z	J2+4	382.7+z	J2+2		
429.8 2	2172.1+x	J+14	1742.3+x	J+12		
437.0 5	834.8+y	J1+4	397.8+y	J1+2		
458.6 5	1262.0+z	J2+6	803.4+z	J2+4		
467.8 2	2639.9+x	J+16	2172.1+x	J+14	0.86 15	
475.6 5	1310.4+y	J1+6	834.8+y	J1+4		
495.7 5	1757.7+z	J2+8	1262.0+z	J2+6		
504.8 2	3144.7+x	J+18	2639.9+x	J+16	0.83 20	
512.7 5	1823.1+y	J1+8	1310.4+y	J1+6		
531.5 5	2289.2+z	J2+10	1757.7+z	J2+8		
540.9 2	3685.6+x	J+20	3144.7+x	J+18	0.69 15	
549.2 5	2372.3+y	J1+10	1823.1+y	J1+8		
566.8 5	2856.0+z	J2+12	2289.2+z	J2+10		

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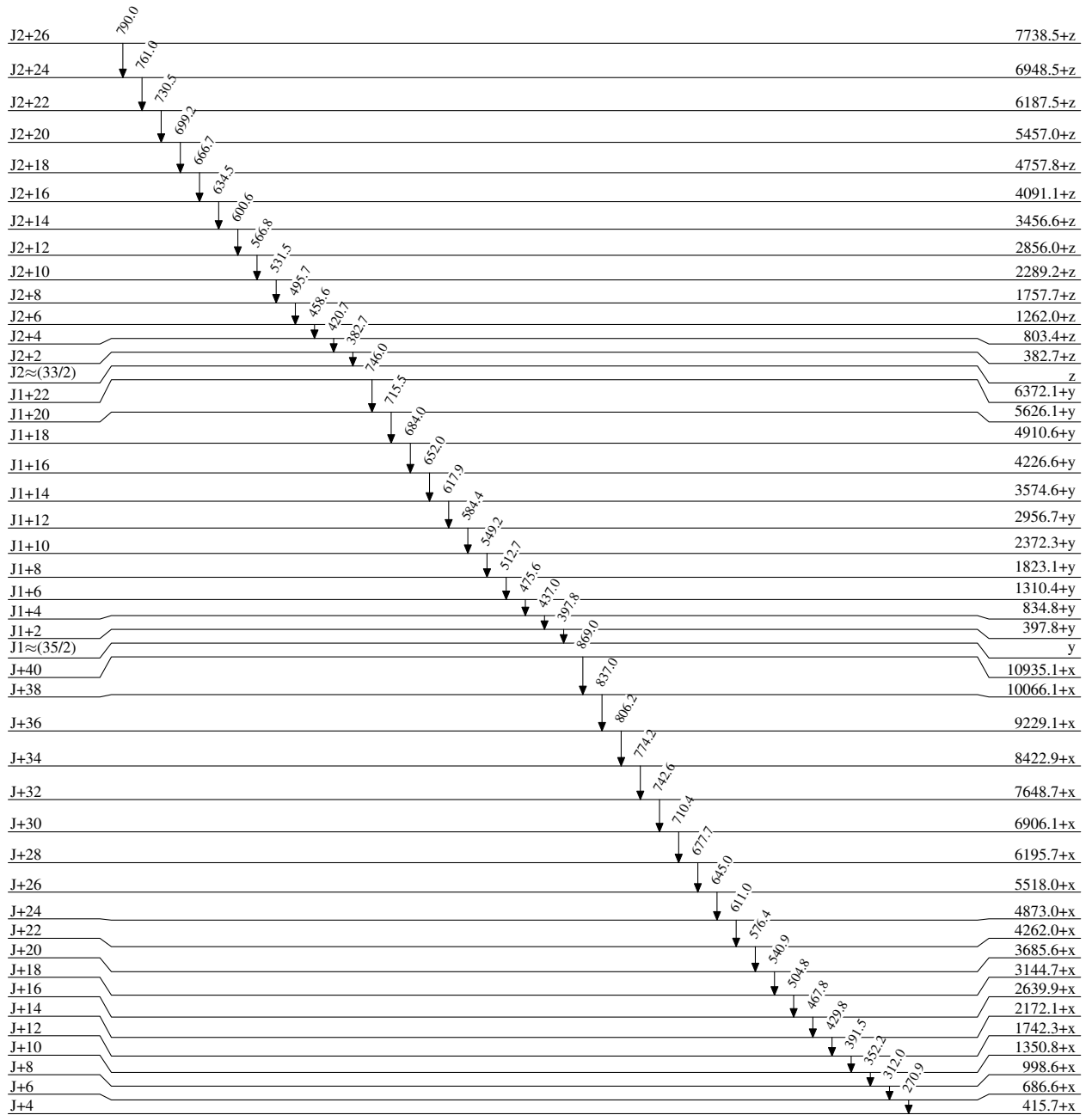
$^{186}\text{W}(^{11}\text{B},6n\gamma):\text{SD}$ [1997Sc22,1993Vo04](#) (continued) $\gamma(^{191}\text{Au})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	$I_{(\gamma+ce)}^\dagger$
576.4 3	4262.0+x	J+22	3685.6+x	J+20	0.52 15
584.4 5	2956.7+y	J1+12	2372.3+y	J1+10	
600.6 5	3456.6+z	J2+14	2856.0+z	J2+12	
611.0 3	4873.0+x	J+24	4262.0+x	J+22	0.66 20
617.9 5	3574.6+y	J1+14	2956.7+y	J1+12	
634.5 5	4091.1+z	J2+16	3456.6+z	J2+14	
645.0 3	5518.0+x	J+26	4873.0+x	J+24	0.53 15
652.0 5	4226.6+y	J1+16	3574.6+y	J1+14	
666.7 5	4757.8+z	J2+18	4091.1+z	J2+16	
677.7 3	6195.7+x	J+28	5518.0+x	J+26	0.54 15
684.0 5	4910.6+y	J1+18	4226.6+y	J1+16	
699.2 5	5457.0+z	J2+20	4757.8+z	J2+18	
710.4 3	6906.1+x	J+30	6195.7+x	J+28	
715.5 5	5626.1+y	J1+20	4910.6+y	J1+18	
730.5 5	6187.5+z	J2+22	5457.0+z	J2+20	
742.6 3	7648.7+x	J+32	6906.1+x	J+30	
746.0 5	6372.1+y	J1+22	5626.1+y	J1+20	
761.0 5	6948.5+z	J2+24	6187.5+z	J2+22	
774.2 4	8422.9+x	J+34	7648.7+x	J+32	
790.0 5	7738.5+z	J2+26	6948.5+z	J2+24	
806.2 4	9229.1+x	J+36	8422.9+x	J+34	
837.0 5	10066.1+x	J+38	9229.1+x	J+36	
869.0 5	10935.1+x	J+40	10066.1+x	J+38	

[†] Relative values (from [1993Vo04](#)) within the band normalized to 1.0 for the 391.5 γ , and read from a graph by evaluator.

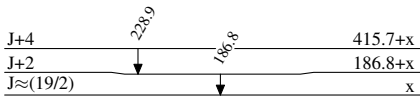
$^{186}\text{W}(^{11}\text{B},6n\gamma):\text{SD}$ 1997Sc22,1993Vo04

Level Scheme



$^{186}\text{W}(^{11}\text{B},6\text{n}\gamma):\text{SD}$ **1997Sc22,1993Vo04**

Level Scheme (continued)



$^{191}_{79}\text{Au}_{112}$

$^{186}\text{W}(^{11}\text{B},6\text{n}\gamma):\text{SD}$ 1997Sc22,1993Vo04

		Band(B): SD-2 band (1997Sc22)	
	J1+22	6372.1+y	
	J1+20	746	5626.1+y
	J1+18	716	4910.6+y
	J1+16	684	4226.6+y
	J1+14	652	3574.6+y
	J1+12	618	2956.7+y
	J1+10	584	2372.3+y
	J1+8	549	1823.1+y
	J1+6	513	1310.4+y
	J1+4	476	834.8+y
	J1+2	437	397.8+y
	J1≈(35/2)	398	y
Band(A): Yrast SD-1 band (1997Sc22,1993Vo04)			
J+40	10935.1+x		
	869		
J+38	10066.1+x		
	837		
J+36	9229.1+x		
	806		
J+34	8422.9+x		
	774		
J+32	7648.7+x		
	743		
J+30	6906.1+x		
	710		
J+28	6195.7+x		
	678		
J+26	5518.0+x		
	645		
J+24	4873.0+x		
	611		
J+22	4262.0+x		
	576		
J+20	3685.6+x		
	541		
J+18	3144.7+x		
	505		
J+16	2639.9+x		
	468		
J+14	2172.1+x		
	430		
J+12	1742.3+x		
	392		
J+10	1350.8+x		
	352		
J+8	998.6+x		
	312		
J+6	686.6+x		
	271		
J+4	415.7+x		
	229		
J+2	186.8+x		
J≈(19/2)	187		x

$^{186}\text{W}(^{11}\text{B},6\text{n}\gamma):\text{SD}$ 1997Sc22,1993Vo04 (continued)

