^{186}W(^{18}O,7nγ):SD 2001Pr06,2000Bu28,1996Hi13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong, Zhou Chunmei	NDS 104, 283 (2005)	1-Jan-2002

Additional information 1.

2001Pr06,2000Bu28: ^{186}W(^{18}O,7nγ) E=117 MeV. Measured Eγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO) using EUROBALL IV array consisting of 239 Ge detectors (30 tapered Ge detectors, 26 CLOVERS, 15 CLUSTERS) and inner ball of 210 BGO crystals. Deduced SD bands and interconnecting transitions. Four additional SD bands deduced by 2001Pr06.

1996Hi13 (also 1997Hi07): ^{186}W(^{18}O,7nγ) E=110 MeV. Measured Eγ, Iγ, $\gamma\gamma\gamma$ using EUROGAM array of 54 HPGe detectors. Deduced SD bands.

^{197}Pb Levels

E(level)	J^{π}[†]	Comments
z[#]	J≈(9/2$^-$)	Additional information 2.
56.8+z[‡] *10*	J+1	
123.0+z[#] *5*	J+2	
199.4+z[‡] *9*	J+3	
286.7+z[#] *7*	J+4	
383.1+z[‡] *8*	J+5	
491.3+z[#] *8*	J+6	
607.1+z[‡] *9*	J+7	
736.3+z[#] *9*	J+8	
871.1+z[‡] *9*	J+9	
1022.8+z[#] *9*	J+10	
1175.4+z[‡] *10*	J+11	
1350.1+z[#] *10*	J+12	
1519.6+z[‡] *11*	J+13	
1718.7+z[#] *11*	J+14	
1903.5+z[‡] *12*	J+15	
2128.4+z[#] *12*	J+16	
2326.8+z[‡] *13*	J+17	
2579.4+z[#] *13*	J+18	
2789.4+z[‡] *14*	J+19	
3071.3+z[#] *14*	J+20	
3290.6+z[‡] *15*	J+21	
3603.8+z[#] *15*	J+22	
3831.0+z[‡] *16*	J+23	
4176.5+z[#] *16*	J+24	
4409.6+z[‡] *17*	J+25	
4789.8+z[#] *17*	J+26	
5026.5+z[‡] *17*	J+27	
5442.6+z[#] *18*	J+28	
5681.0+z[‡] *18*	J+29	
6134.7+z[#] *19*	J+30	
6373.2+z[‡] *19*	J+31	
6865.9+z[#] *20*	J+32	
7103.0+z[‡] *21*	J+33	

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^{186}W(^{18}O,7nγ):SD 2001Pr06,2000Bu28,1996Hi13 (continued)

^{197}Pb Levels (continued)

E(level)	J$^{\pi}$†	E(level)	J$^{\pi}$†	E(level)	J$^{\pi}$†
7635.4+z[#] *22*	J+34	785.3+v[&] *9*	J2+6	4230.4+w?[a] *20*	J3+20
7869.8+z[‡] *22*	J+35	1125.9+v[&] *10*	J2+8	4867.1+w?[a] *21*	J3+22
8442.6+z[#] *23*	J+36	1506.6+v[&] *12*	J2+10	5537.2+w?[a] *21*	J3+24
8672.9+z[‡] *24*	J+37	1926.0+v[&] *13*	J2+12	6238.7+w?[a] *23*	J3+26
u[@]	J1≈(17/2)	2384.6+v[&] *14*	J2+14	6971.5+w?[a] *24*	J3+28
200.1+u[@] *8*	J1+2	2882.4+v[&] *15*	J2+16	s?[b]	J4≈(17/2)
440.9+u[@] *12*	J1+4	3418.0+v[&] *15*	J2+18	215.8+s?[b] *5*	J4+2
722.2+u[@] *13*	J1+6	3991.4+v[&] *16*	J2+20	475.4+s?[b] *7*	J4+4
1043.4+u[@] *15*	J1+8	4601.8+v[&] *17*	J2+22	778.0+s?[b] *9*	J4+6
1404.8+u[@] *16*	J1+10	5249.9+v[&] *18*	J2+24	1122.6+s?[b] *10*	J4+8
1805.9+u[@] *17*	J1+12	5934.0+v[&] *19*	J2+26	1508.9+s?[b] *12*	J4+10
2246.4+u[@] *18*	J1+14	6654.5+v[&] *21*	J2+28	1934.6+s?[b] *13*	J4+12
2725.7+u[@] *19*	J1+16	w?[a]	J3≈(19/2)	2401.5+s?[b] *14*	J4+14
3243.8+u[@] *21*	J1+18	237.5+w?[a] *7*	J3+2	2907.6+s?[b] *15*	J4+16
3800.8+u[@] *22*	J1+20	517.2+w?[a] *10*	J3+4	3453.7+s?[b] *16*	J4+18
4395.1+u[@] *23*	J1+22	839.7+w?[a] *11*	J3+6	4036.9+s?[b] *17*	J4+20
5026.4+u[@] *24*	J1+24	1204.2+w?[a] *13*	J3+8	4656.5+s?[b] *18*	J4+22
5695+u[@] *3*	J1+26	1609.9+w?[a] *14*	J3+10	5311.5+s?[b] *18*	J4+24
6399+u[@] *3*	J1+28	2055.7+w?[a] *16*	J3+12	5999.0+s?[b] *20*	J4+26
v[&]	J2≈(19/2)	2541.4+w?[a] *17*	J3+14	6716.7+s?[b] *22*	J4+28
221.8+v[&] *5*	J2+2	3066.5+w?[a] *18*	J3+16		
483.6+v[&] *7*	J2+4	3629.7+w?[a] *19*	J3+18		

† Estimated spin of the first SD state of each band from 2001Pr06 using the procedure of 1992Wa05. J of SD band 1 and 2 from ΔJ deduced from R(DCO) (2000Bu28). Other assignment proposed by 2001Pr06.

‡ Band(A): SD band 1 (1996Hi13,2000Bu28,2001Pr06). Configuration=$\nu j_{15/2}$5/2[752], α=−1/2 (2000Bu28). Population intensity ≈0.2% of ^{197}Pb reaction channel (2000Bu28).

Band(a): SD band 2 (1996Hi13,2000Bu28,2001Pr06). Configuration=$\nu j_{15/2}$5/2[752], α=+1/2 (2000Bu28). Population intensity 0.1% of ^{197}Pb reaction channel (2001Pr06).

@ Band(B): SD band 3 (2001Pr06), α=+1/2. Population intensity=27% *2* of SD BAND 1, or 0.054% of reaction channel.

& Band(b): SD band 4 (2001Pr06), α=−1/2. SD BAND 3 and SD BAND 4 bands are possible signature partners. Population intensity=27% *2* of SD BAND 1, or 0.054% of reaction channel.

a Band(C): SD band 5 (2001Pr06). Population intensity=9% *2* of SD BAND 1, or 0.018% of reaction channel. Very weak band, tentatively assigned to ^{197}Pb.

b Band(c): SD band 6 (2001Pr06). SD BAND 5 and SD BAND 6 bands are possible signature partners. Population intensity=9% *2* of SD BAND 1, or 0.018% of reaction channel. Very weak band, tentatively assigned to ^{197}Pb.

γ(^{197}Pb)

R(DCO) values are from 2000Bu28.

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^{186}W(^{18}O,7nγ):SD 2001Pr06,2000Bu28,1996Hi13 (continued)

$\gamma(^{197}Pb)$ (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	$I_{(\gamma+ce)}$ [&]	Comments
96.4[@‡] *4*	383.1+z	J+5	286.7+z	J+4			
108.5[‡] *4*	491.3+z	J+6	383.1+z	J+5	(D)		R(DCO)=0.8 *3*.
115.8[‡] *5*	607.1+z	J+7	491.3+z	J+6	(D)		R(DCO)=0.65 *21*.
123.0[@‡b] *5*	123.0+z	J+2	z	J≈(9/2$^-$)			
129.0[‡] *4*	736.3+z	J+8	607.1+z	J+7	(D)		R(DCO)=0.8 *3*.
134.8[@‡] *5*	871.1+z	J+9	736.3+z	J+8			
142.6[@‡b] *5*	199.4+z	J+3	56.8+z	J+1			
151.9[#‡] *6*	1022.8+z	J+10	871.1+z	J+9			
152.6[#‡] *6*	1175.4+z	J+11	1022.8+z	J+10			
163.7[‡] *5*	286.7+z	J+4	123.0+z	J+2	Q		R(DCO)=0.99 *28*.
174.6[@‡] *5*	1350.1+z	J+12	1175.4+z	J+11			
183.7[‡] *4*	383.1+z	J+5	199.4+z	J+3	Q	0.54 *10*	R(DCO)=1.10 *14*.
200.1 *8*	200.1+u	J1+2	u	J1≈(17/2)			
204.6[‡] *4*	491.3+z	J+6	286.7+z	J+4	Q	0.71 *8*	R(DCO)=1.06 *20*.
215.8[b] *5*	215.8+s?	J4+2	s?	J4≈(17/2)			
221.8 *5*	221.8+v	J2+2	v	J2≈(19/2)			
223.8[‡] *5*	607.1+z	J+7	383.1+z	J+5	Q	0.94 *8*	R(DCO)=1.10 *13*.
237.5[b] *7*	237.5+w?	J3+2	w?	J3≈(19/2)			
240.8 *8*	440.9+u	J1+4	200.1+u	J1+2			
245.2[‡] *5*	736.3+z	J+8	491.3+z	J+6	Q	0.95 *9*	R(DCO)=1.09 *13*.
259.6[b] *5*	475.4+s?	J4+4	215.8+s?	J4+2			
261.8 *5*	483.6+v	J2+4	221.8+v	J2+2			
264.0[‡] *5*	871.1+z	J+9	607.1+z	J+7	Q	0.95 *9*	R(DCO)=1.13 *17*.
279.7[b] *6*	517.2+w?	J3+4	237.5+w?	J3+2			
281.3 *6*	722.2+u	J1+6	440.9+u	J1+4			
286.4[‡] *5*	1022.8+z	J+10	736.3+z	J+8	Q	0.89 *6*	R(DCO)=1.06 *12*.
301.7 *5*	785.3+v	J2+6	483.6+v	J2+4			
302.6[b] *5*	778.0+s?	J4+6	475.4+s?	J4+4			
304.3[‡] *5*	1175.4+z	J+11	871.1+z	J+9	Q	0.96 *6*	R(DCO)=1.08 *12*.
321.2 *6*	1043.4+u	J1+8	722.2+u	J1+6			
322.5[b] *6*	839.7+w?	J3+6	517.2+w?	J3+4			
327.3[‡] *5*	1350.1+z	J+12	1022.8+z	J+10	Q	1.00 *6*	R(DCO)=1.02 *12*.
340.6 *5*	1125.9+v	J2+8	785.3+v	J2+6			
344.2[‡] *5*	1519.6+z	J+13	1175.4+z	J+11	Q	0.95 *6*	R(DCO)=1.00 *11*.
344.6[b] *5*	1122.6+s?	J4+8	778.0+s?	J4+6			
361.4 *6*	1404.8+u	J1+10	1043.4+u	J1+8			
364.5[b] *6*	1204.2+w?	J3+8	839.7+w?	J3+6			
368.6[‡] *5*	1718.7+z	J+14	1350.1+z	J+12	Q	0.57 *5*	R(DCO)=1.15 *9*.
380.7 *5*	1506.6+v	J2+10	1125.9+v	J2+8			
383.9[‡] *5*	1903.5+z	J+15	1519.6+z	J+13	Q	0.91 *7*	R(DCO)=1.04 *15*.
386.3[b] *5*	1508.9+s?	J4+10	1122.6+s?	J4+8			
401.1 *6*	1805.9+u	J1+12	1404.8+u	J1+10			
405.7[b] *6*	1609.9+w?	J3+10	1204.2+w?	J3+8			
409.7[‡] *5*	2128.4+z	J+16	1718.7+z	J+14	Q	0.47 *5*	R(DCO)=0.97 *15*.
419.4 *5*	1926.0+v	J2+12	1506.6+v	J2+10			
423.3[‡] *5*	2326.8+z	J+17	1903.5+z	J+15	Q	1.00 *7*	R(DCO)=1.08 *15*.
425.7[b] *5*	1934.6+s?	J4+12	1508.9+s?	J4+10			
440.5 *7*	2246.4+u	J1+14	1805.9+u	J1+12			

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$^{186}W(^{18}O,7n\gamma)$:SD 2001Pr06,2000Bu28,1996Hi13 (continued)

$\gamma(^{197}Pb)$ (continued)

E_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	$I_{(\gamma+ce)}$[&]	Comments
445.8[b] *6*	2055.7+w?	J3+12	1609.9+w?	J3+10			
451.0[‡] *5*	2579.4+z	J+18	2128.4+z	J+16	Q	0.24 *4*	R(DCO)=0.98 *16*.
458.6 *5*	2384.6+v	J2+14	1926.0+v	J2+12			
462.6[‡] *5*	2789.4+z	J+19	2326.8+z	J+17	Q	0.84 *6*	R(DCO)=1.2 *3*.
466.9[b] *6*	2401.5+s?	J4+14	1934.6+s?	J4+12			
479.3 *6*	2725.7+u	J1+16	2246.4+u	J1+14			
485.7[b] *6*	2541.4+w?	J3+14	2055.7+w?	J3+12			
491.9[‡] *5*	3071.3+z	J+20	2579.4+z	J+18	Q	0.31 *5*	R(DCO)=1.01 *18*.
497.8 *5*	2882.4+v	J2+16	2384.6+v	J2+14			
501.2[‡] *5*	3290.6+z	J+21	2789.4+z	J+19	Q	0.71 *5*	R(DCO)=0.94 *15*.
506.2[b] *6*	2907.6+s?	J4+16	2401.5+s?	J4+14			
518.1 *7*	3243.8+u	J1+18	2725.7+u	J1+16			
525.1[b] *6*	3066.5+w?	J3+16	2541.4+w?	J3+14			
532.5[‡] *5*	3603.8+z	J+22	3071.3+z	J+20	Q	0.25 *4*	R(DCO)=1.06 *23*.
535.6 *5*	3418.0+v	J2+18	2882.4+v	J2+16			
540.4[‡] *5*	3831.0+z	J+23	3290.6+z	J+21	Q	0.65 *4*	R(DCO)=1.02 *15*.
546.1[b] *5*	3453.7+s?	J4+18	2907.6+s?	J4+16			
557.0 *8*	3800.8+u	J1+20	3243.8+u	J1+18			
563.2[b] *6*	3629.7+w?	J3+18	3066.5+w?	J3+16			
572.7[‡] *5*	4176.5+z	J+24	3603.8+z	J+22	Q	0.24 *4*	R(DCO)=1.10 *25*.
573.4 *5*	3991.4+v	J2+20	3418.0+v	J2+18			
578.6[‡] *5*	4409.6+z	J+25	3831.0+z	J+23	Q	0.64 *4*	R(DCO)=1.03 *15*.
583.2[b] *5*	4036.9+s?	J4+20	3453.7+s?	J4+18			
594.3 *7*	4395.1+u	J1+22	3800.8+u	J1+20			
600.7[b] *6*	4230.4+w?	J3+20	3629.7+w?	J3+18			
610.4 *5*	4601.8+v	J2+22	3991.4+v	J2+20			
613.3[‡] *6*	4789.8+z	J+26	4176.5+z	J+24	Q	0.33 *4*	R(DCO)=0.99 *21*.
616.9[‡] *5*	5026.5+z	J+27	4409.6+z	J+25	Q	0.54 *4*	R(DCO)=1.06 *20*.
619.6[b] *5*	4656.5+s?	J4+22	4036.9+s?	J4+20			
631.3 *7*	5026.4+u	J1+24	4395.1+u	J1+22			
636.7[b] *6*	4867.1+w?	J3+22	4230.4+w?	J3+20			
648.1 *5*	5249.9+v	J2+24	4601.8+v	J2+22			
652.8[‡] *6*	5442.6+z	J+28	4789.8+z	J+26	Q	0.26 *4*	R(DCO)=1.02 *25*.
654.5[‡] *6*	5681.0+z	J+29	5026.5+z	J+27	Q	0.46 *4*	R(DCO)=1.10 *24*.
655.0[b] *5*	5311.5+s?	J4+24	4656.5+s?	J4+22			
668.3 *8*	5695+u	J1+26	5026.4+u	J1+24			
670.1[b] *6*	5537.2+w?	J3+24	4867.1+w?	J3+22			
684.1 *6*	5934.0+v	J2+26	5249.9+v	J2+24			
687.5[b] *7*	5999.0+s?	J4+26	5311.5+s?	J4+24			
692.1[‡] *6*	6134.7+z	J+30	5442.6+z	J+28	Q	0.12 *2*	R(DCO)=1.02 *24*.
692.2[@‡] *6*	6373.2+z	J+31	5681.0+z	J+29		0.35 *4*	
701.5[b] *7*	6238.7+w?	J3+26	5537.2+w?	J3+24			
704.7 *13*	6399+u	J1+28	5695+u	J1+26			
717.7 *9*	6716.7+s?	J4+28	5999.0+s?	J4+26			
720.5 *10*	6654.5+v	J2+28	5934.0+v	J2+26			
729.8[@‡] *7*	7103.0+z	J+33	6373.2+z	J+31		0.24 *3*	
731.2[@‡] *7*	6865.9+z	J+32	6134.7+z	J+30		0.09 *5*	
732.8 *9*	6971.5+w?	J3+28	6238.7+w?	J3+26			

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^{186}W(^{18}O,7nγ):SD 2001Pr06,2000Bu28,1996Hi13 (continued)

γ(^{197}Pb) (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	$I_{(\gamma+ce)}$ [&]
766.8 [@‡] *8*	7869.8+z	J+35	7103.0+z	J+33	0.14 *2*
769.5 [@‡] *8*	7635.4+z	J+34	6865.9+z	J+32	0.06 *4*
803.1 [@‡] *10*	8672.9+z	J+37	7869.8+z	J+35	0.10 *2*
807.2 [@‡] *8*	8442.6+z	J+36	7635.4+z	J+34	0.15 *4*

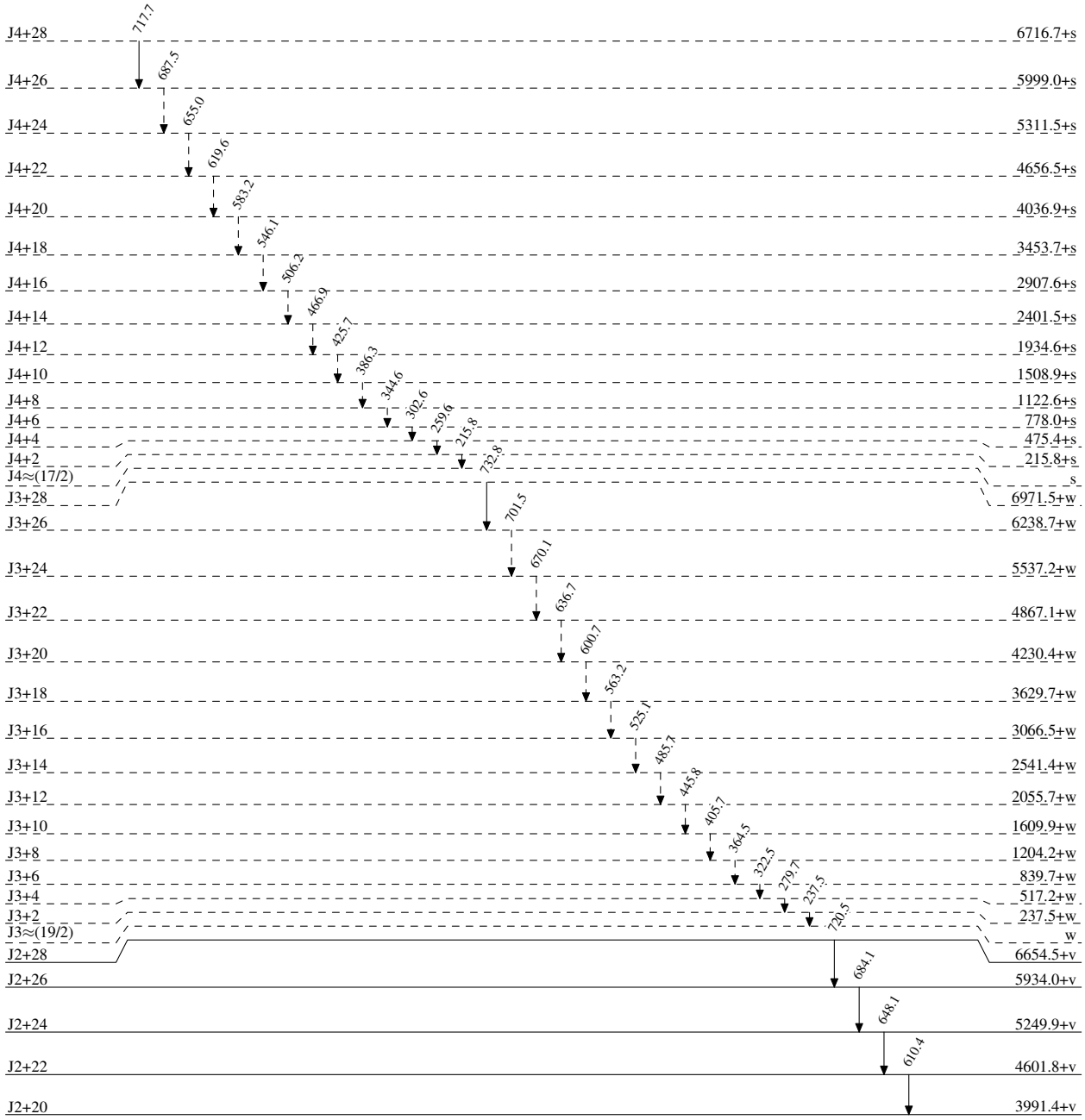
† From 2001Pr06,except as noted.
‡ From 2000Bu28.Values are also available from 1996Hi13.
# Contaminated line.
@ Very weak line (2000Bu28).
& Relative intensity within each SD band, values are from Figure 1 of 1996Hi13.
a Mult=Q (likely to be E2) is from ΔJ=2 implied from R(DCO), and mult=D is from ΔJ=1 implied by R(DCO).
b Placement of transition in the level scheme is uncertain.

Legend

$^{186}W(^{18}O,7n\gamma)$:SD 2001Pr06,2000Bu28,1996Hi13

Level Scheme

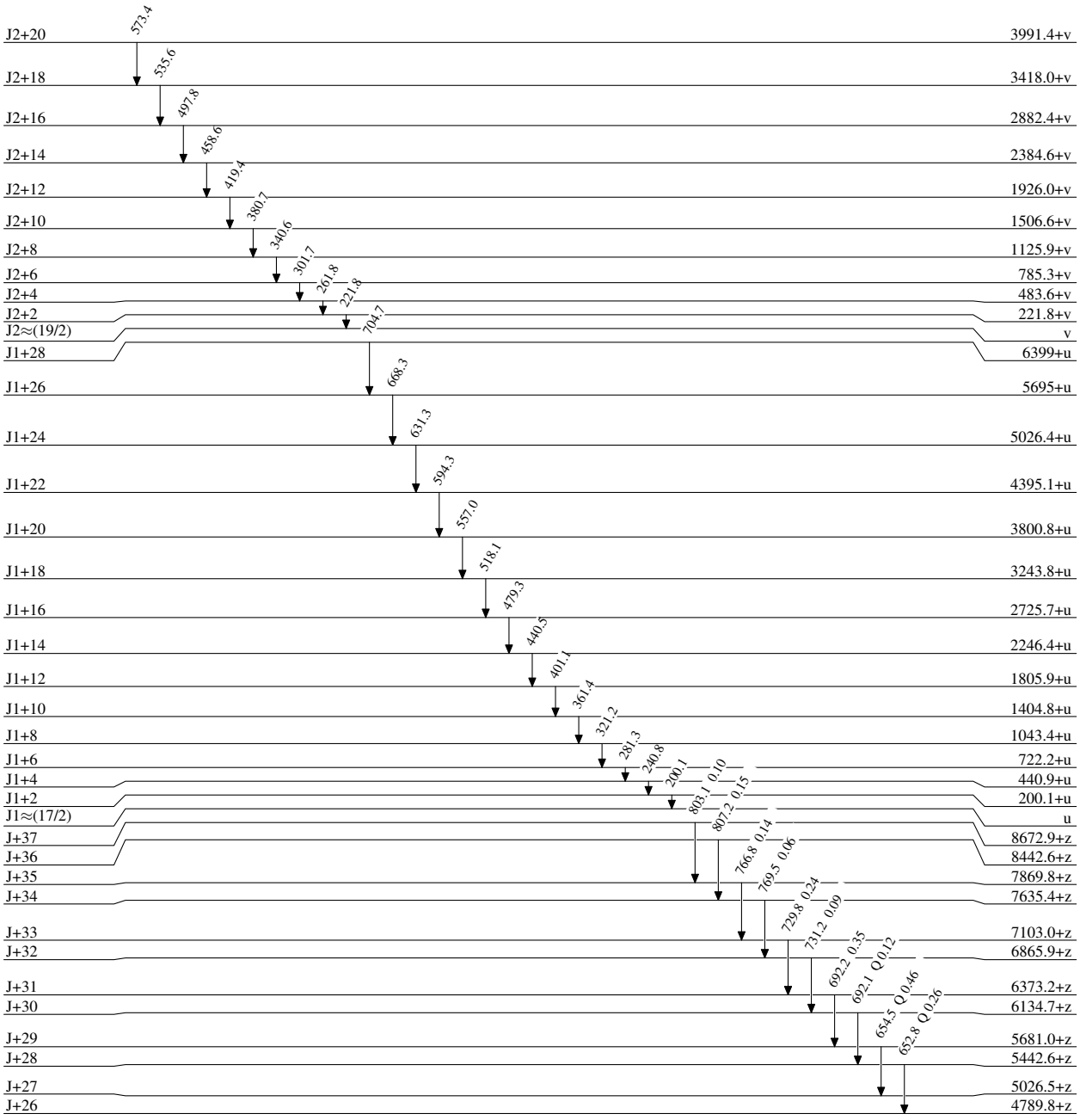
γ Decay (Uncertain)



$^{197}_{82}Pb_{115}$

$^{186}W(^{18}O,7n\gamma)$:SD 2001Pr06,2000Bu28,1996Hi13

Level Scheme (continued)



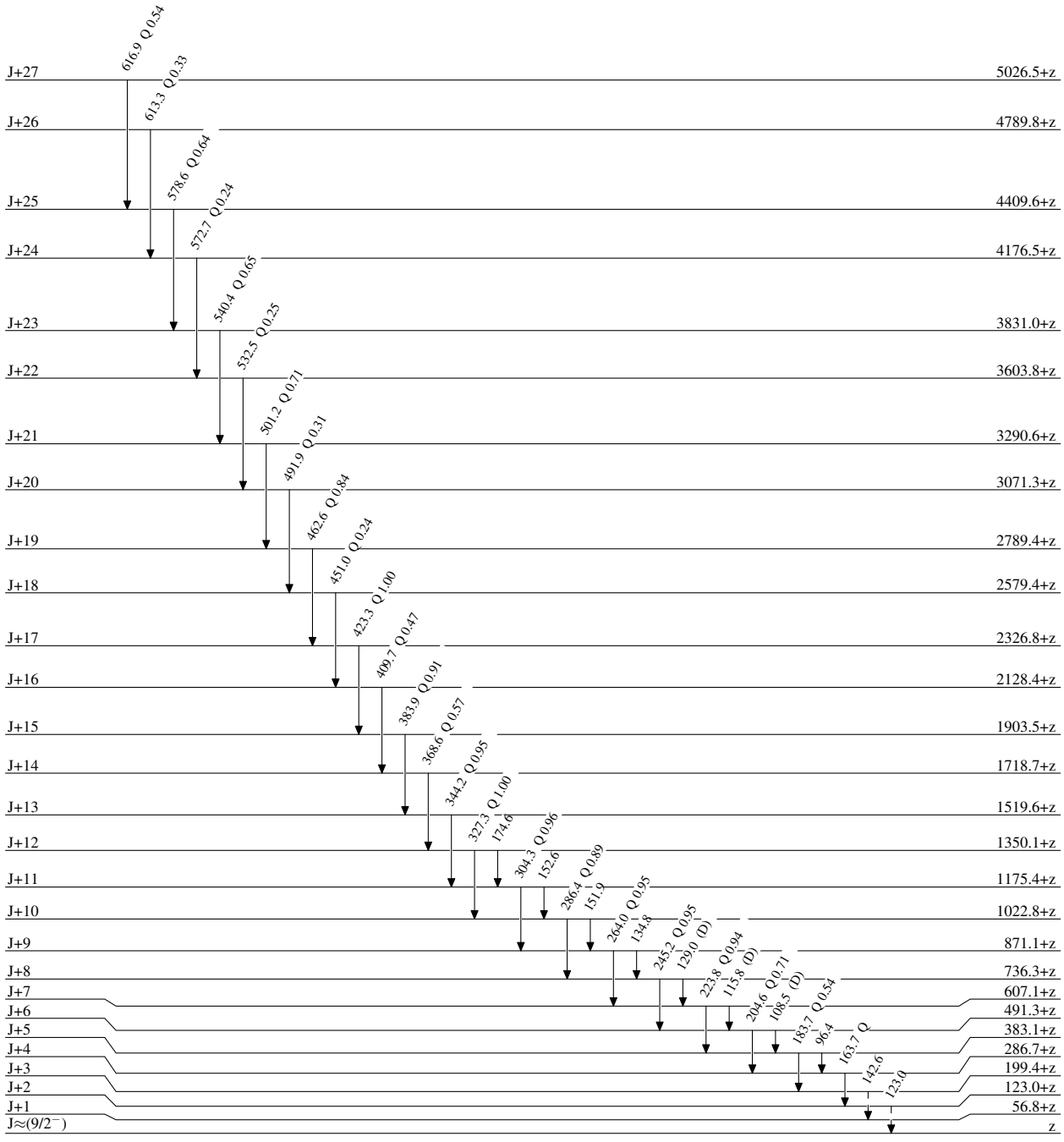
$^{197}_{82}Pb_{115}$

Legend

$^{186}W(^{18}O,7n\gamma)$:SD 2001Pr06,2000Bu28,1996Hi13

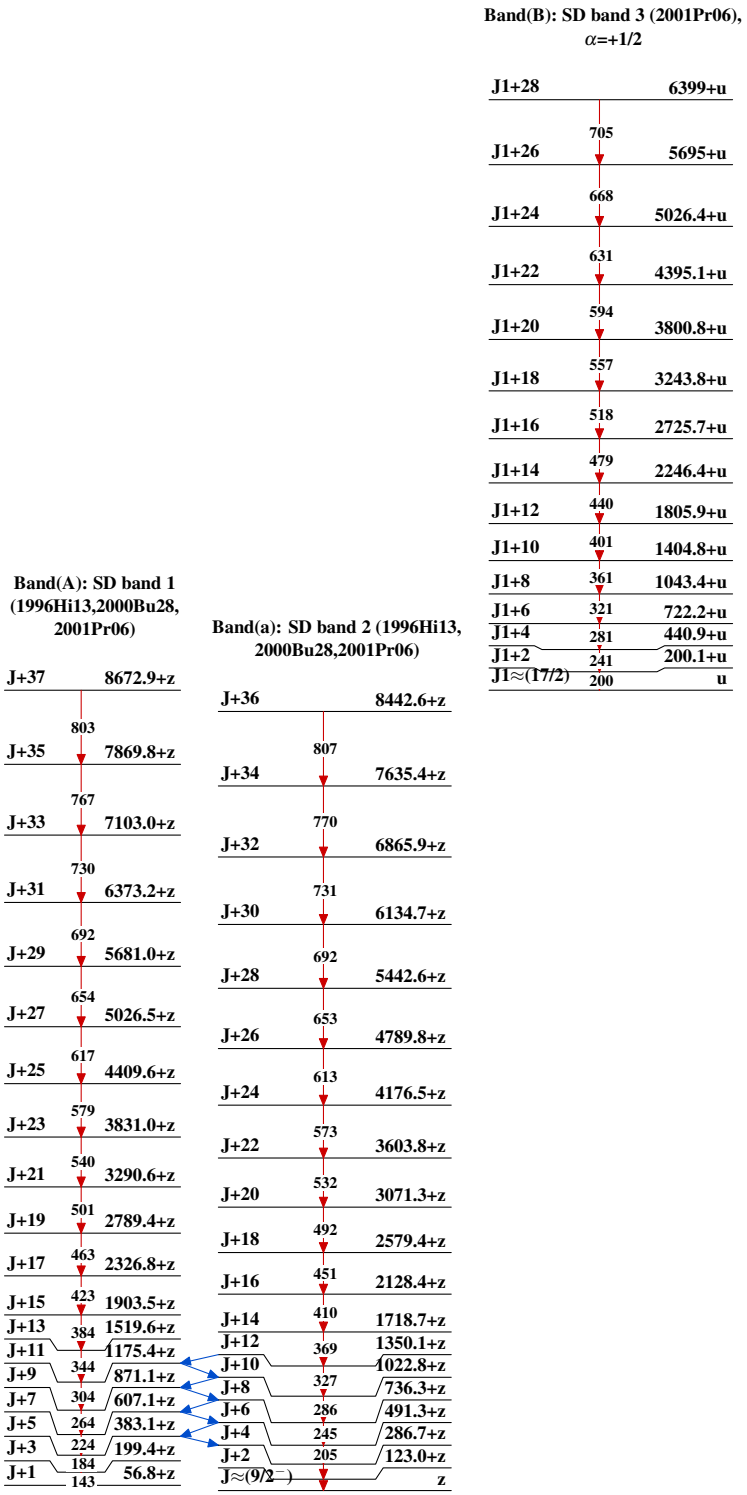
Level Scheme (continued)

- - - - - - ► γ Decay (Uncertain)



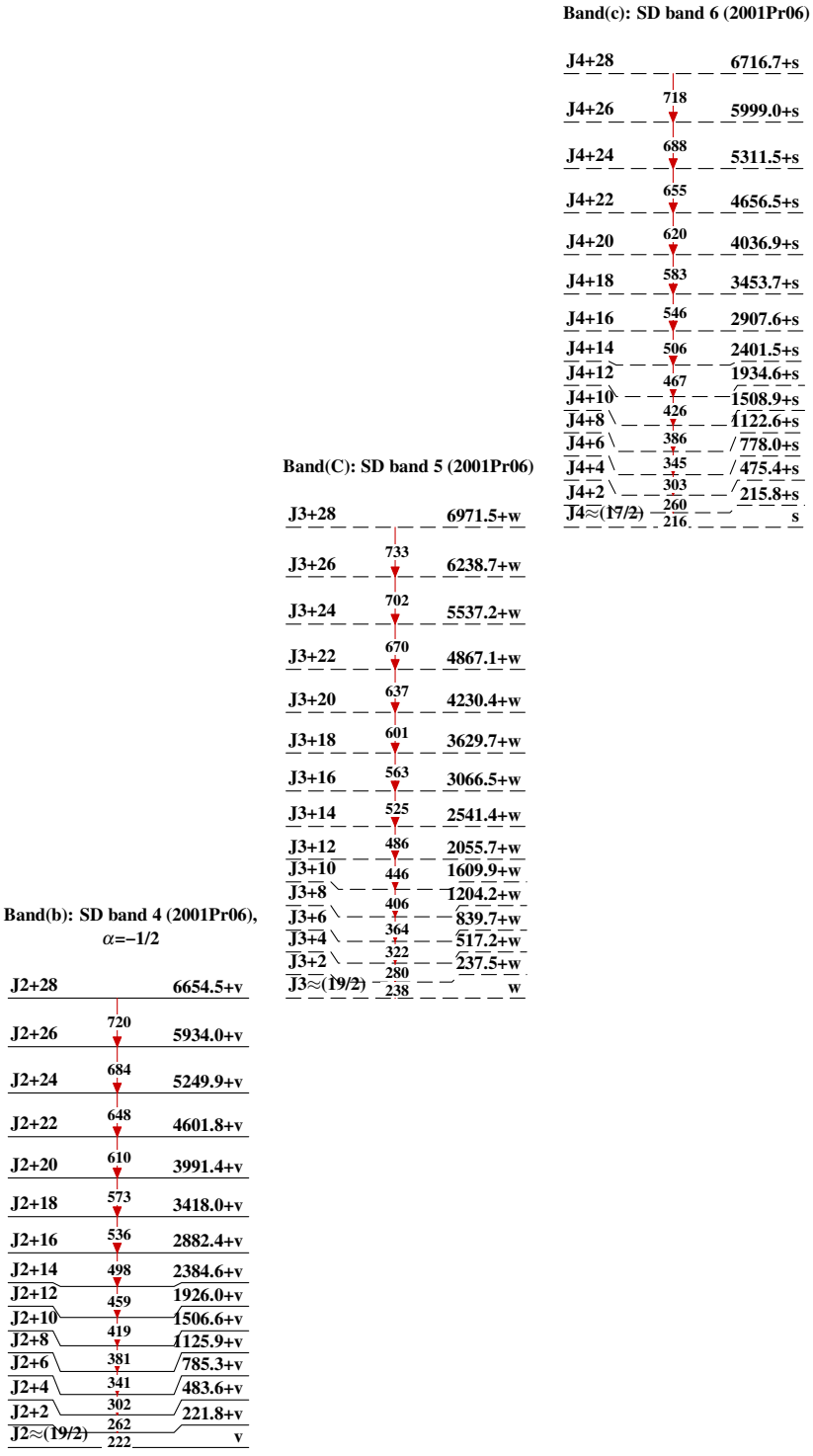
$^{197}_{82}Pb_{115}$

$^{186}W(^{18}O,7n\gamma)$:SD 2001Pr06,2000Bu28,1996Hi13



$^{197}_{82}Pb_{115}$

$^{186}W(^{18}O,7n\gamma)$:SD 2001Pr06,2000Bu28,1996Hi13 (continued)



$^{197}_{82}Pb_{115}$