^{197}Au(p,d),(pol d,t) 2004Wi08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong	NDS 108, 1093 (2007)	1-Jan-2006

^{197}Au(p,d)^{196}Au: E=26 MeV. Measured E(deuteron) with a focal plane detector consisting of an array of single-wire proportional detectors with an additional cathode readout structure, followed by a plastic scintillator for particle identification. Outgoing deuterons were momentum seperated by the Q3D magnetic spectrograph which had a solid angle of acceptance of 11 msr. FWHM<4 keV at a scattering angle of 25°.

^{197}Au(pol d,t)^{196}Au: E=25 MeV. Measured E(triton) with the same experimental setup as was used in the (p,d) reaction. Angular distributions and cross sections were obtained from triton spectra at 13 scattering angles, from 8° to 48°, with 3° increments. The deuteron beam was polarized so as to obtain information on quantum numbers and transfer strengths. FWHM=7 keV. DWBA analysis performed. $\sigma(\theta)$ and $A_y(\theta)$ plots for (d,t) can be found in the on-line appendix given in 2004Wi08.

J^π(^{197}Au g.s.)=3/2$^+$.

^{196}Au Levels

E(level)†	J^π#	L&	Comments
0.0	2^-	1+3	S: 0.243 *3* for L=1, $p_{1/2}$; 0.150 *10* for L=3, $f_{5/2}$; 0.034 *6* for L=3, $f_{7/2}$. The $p_{1/2}$ component is dominant. L: $p_{1/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
6.0 *7*	$1^-,2^-$	1+3	S: 0.012 *7* for L=1, $p_{1/2}$; 0.063 *7* for L=1, $p_{3/2}$; 0.026 *15* for L=3, $f_{5/2}$. The $p_{3/2}$ component is dominant. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, ($f_{7/2}$) from $a_y(\theta)$ in (pol d,t). J^π: 2004Wi08 favor the 1^- spin-parity assignment to this level as a spin-parity of 2^- would imply that the $f_{7/2}$ transfer has a strength too weak to be identified.
42.1 *6*	$0^-,1^-,2^-,3^-$	1	S: 0.0168 *4* for L=1, $p_{3/2}$; (0.0072 *8*) for L=3, $f_{7/2}$. L: $p_{3/2}$ from $a_y(\theta)$ in (pol d,t).
84.7 *6*	$5^+,6^+,7^+,8^+$	6	S: 0.778 *3* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
162.4 *6*	$2^-,3^-$	1+3	S: 0.052 *9* for L=1, $p_{3/2}$; 0.593 *21* for L=3, $f_{5/2}$; 0.130 *22* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
166.5 *6*	$1^-,2^-$	1+3	S: 0.238 *13* for L=1, $p_{1/2}$; 0.270 *9* for L=1, $p_{3/2}$; 0.16 *3* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
197.8 *6*	$1^-,2^-$	1+3	S: 0.028 *3* for L=1, $p_{1/2}$; 0.0316 *24* for L=1, $p_{3/2}$; 0.0498 *6* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, ($f_{7/2}$) from $a_y(\theta)$ in (pol d,t).
212.9 *6*	$1^-,2^-,3^-,4^-$	3	S: 0.562 *3* for L=3, $f_{5/2}$. L: $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
233.5 *6*	$3^-,4^-$	(1)+3+(5)	S: (0.0012 *12*) for L=1, $p_{3/2}$; 0.166 *6* for L=3, $f_{5/2}$; 0.009 *4* for L=3, $f_{7/2}$; 0.05 *4* for L=5, $h_{9/2}$. J^π: If L=1+3+5, then $J^\pi=3^-$ (compilers′ note). L: ($p_{3/2}$), $f_{5/2}$, $f_{7/2}$, ($h_{9/2}$) from $a_y(\theta)$ in (pol d,t).
252.5 *6*	$1^-,2^-$	1+3	S: 0.031 *7* for L=1, $p_{1/2}$; 0.036 *5* for L=1, $p_{3/2}$; 0.0234 *14* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
257.9 *6*	$1^-,2^-,3^-,4^-$	3	S: 0.0121 *12* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
287.4 *6*	$2^-,3^-$	1+3	S: 0.0164 *12* for L=1, $p_{3/2}$; 0.0084 *3* for L=3, $f_{5/2}$; 0.042 *4* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
298.3 *6*	$0^-,1^-,2^-$	1	S: (0.004 *3*) for L=1, $p_{1/2}$; 0.007 *3* for L=1, $p_{3/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t); no $f_{5/2}$, $f_{7/2}$ strengths in table IV of 2004Wi08.
307.3 *6*	2^-	1+3	S: 0.017 *6* for L=1, $p_{1/2}$; 0.031 *6* for L=1, $p_{3/2}$; 0.116 *12* for L=3, $f_{5/2}$; 0.059 *9* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
323.4 *6*	$1^-,2^-,3^-$	1+3	S: 0.0148 *20* for L=1, $p_{3/2}$; 0.020 *5* for L=3, $f_{5/2}$. L: ($p_{1/2}$), $p_{3/2}$, $f_{5/2}$, ($f_{7/2}$) from $a_y(\theta)$ in (pol d,t); no $p_{1/2}$, $f_{7/2}$ strengths in table IV of 2004Wi08.

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^{197}Au(p,d),(pol d,t) 2004Wi08 (continued)

^{196}Au Levels (continued)

E(level)†	Jπ#	L&	Comments
348.1‡ *6*	$1^-,2^-$	1+3	S: 0.0028 *7* for L=1, $p_{1/2}$; 0.0030 *5* for L=1, $p_{3/2}$; 0.0119 *12* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $i_{13/2}$ from $a_y(\theta)$ in (pol d,t) for doublet.
348.1‡ *6*	$5^+,6^+,7^+,8^+$	6	S: 0.187 *1* for L=6, $i_{13/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $i_{13/2}$ from $a_y(\theta)$ in (pol d,t) for doublet.
355.4 *6*	$0^-,1^-,2^-,3^-$	1+3	S: 0.0140 *12* for L=1, $p_{3/2}$; (0.0040 *24*) for L=3, $f_{7/2}$. L: ($p_{1/2}$), $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
369.7 *6*	$5^+,6^+,7^+,8^+$	6	S: 0.066 *2* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
375.0 *6*	$2^-,3^-$	1+3	S: 0.192 *3* for L=1, $p_{3/2}$; 0.127 *7* for L=3, $f_{5/2}$; 0.112 *7* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
387.5 *7*	$0^-,1^-,2^-,3^-$	1	S: 0.0032 *4* for L=1, $p_{3/2}$. L: $p_{3/2}$, ($f_{5/2}$) from $a_y(\theta)$ in (pol d,t).
399.2 *6*	$5^+,6^+,7^+,8^+$	6	S: 0.032 *2* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
402.5 *6*	$2^-,3^-,4^-$	3	S: 0.073 *5* for L=3, $f_{5/2}$; 0.015 *3* for L=3, $f_{7/2}$. L: $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
407.4 *7*	$2^-,3^-$	1+3	S: 0.0091 *10* for L=1, $p_{3/2}$; 0.011 *3* for L=3, $f_{5/2}$; 0.004 *3* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
413.0 *6*	2^-	1+3	S: 0.0033 *9* for L=1, $p_{1/2}$; 0.035 *3* for L=3, $f_{5/2}$; 0.0033 *19* for L=3, $f_{7/2}$. L: $p_{1/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
420.1 *6*	$5^+,6^+,7^+,8^+$	6	S: 0.146 *2* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
455.6 *6*	2^-	1+3	S: 0.0034 *6* for L=1, $p_{1/2}$; 0.0076 *8* for L=1, $p_{3/2}$; 0.0128 *8* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
465.5 *7*	2^-	1+3	S: 0.0012 *4* for L=1, $p_{1/2}$; 0.0008 *4* for L=1, $p_{3/2}$; 0.0096 *8* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
479.8 *6*	2^-	1+3	S: 0.0022 *6* for L=1, $p_{1/2}$; 0.0008 *4* for L=1, $p_{3/2}$; 0.0224 *8* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
490.6 *6*	3^-	1+3+5	S: 0.0112 *4* for L=1, $p_{3/2}$; 0.0240 *12* for L=3, $f_{5/2}$; 0.170 *14* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
502.1 *6*	$5^+,6^+,7^+,8^+$	6	S: 0.0211 *6* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
519.8 *6*	$1^-,2^-,3^-,4^-$	(1)+3	S: (0.0008 *4*) for L=1, $p_{3/2}$; 0.0678 *12* for L=3, $f_{5/2}$. L: ($p_{3/2}$), $f_{5/2}$, ($f_{7/2}$) from $a_y(\theta)$ in (pol d,t).
541.0 *6*	$1^-,2^-$	1+3	S: 0.0012 *8* for L=1, $p_{1/2}$; 0.0084 *8* for L=1, $p_{3/2}$; 0.0066 *24* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
550.8 *7*	$3^+,4^+,5^+,6^+$	4	S: 0.0043 *1* for L=4, $g_{9/2}$. L: $g_{9/2}$ from $a_y(\theta)$ in (pol d,t).
564.1 *6*	2^-	1+3	S: 0.018 *3* for L=1, $p_{1/2}$; 0.0048 *24* for L=1, $p_{3/2}$; 0.022 *6* for L=3, $f_{5/2}$; 0.026 *5* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
569.9 *6*	$3^-,4^-$	1+3+5	S: (0.0040 *14*) for L=1, $p_{3/2}$; 0.013 *4* for L=3, $f_{5/2}$; 0.030 *4* for L=3, $f_{7/2}$; 0.12 *3* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
586.7 *6*	$5^+,6^+,7^+,8^+$	6	S: 0.1305 *9* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
596.9 *7*	$5^+,6^+$	4+6	S: 0.0090 *9* for L=4, $g_{9/2}$; 0.0067 *10* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
624.8 *6*	$3^-,4^-,5^-$	3+5	S: (0.0036 *12*) for L=3, $f_{5/2}$; 0.0232 *8* for L=3, $f_{7/2}$; 0.051 *9* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
635.9 *6*	2^-	1+3	S: 0.0040 *14* for L=1, $p_{1/2}$; 0.0084 *12* for L=1, $p_{3/2}$; 0.029 *4* for L=3, $f_{5/2}$; 0.029 *4* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
645.0 *7*	$5^+,6^+$	4+6	S: 0.0083 *5* for L=4, $g_{9/2}$; 0.0108 *17* for L=6, $i_{13/2}$. L: $g_{9/2}$, $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
650.3 *7*	$2^-,3^-$	1+3	S: 0.0160 *4* for L=1, $p_{3/2}$; 0.0144 *24* for L=3, $f_{5/2}$; 0.0056 *24* for L=3, $f_{7/2}$.

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^{197}Au(p,d),(pol d,t) 2004Wi08 (continued)

^{196}Au Levels (continued)

E(level)[†]	Jπ[#]	L[&]	Comments
			L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
667.4 *6*	3^-	1+3+5	S: 0.0072 *4* for L=1, $p_{3/2}$; 0.0060 *18* for L=3, $f_{5/2}$; 0.0168 *8* for L=3, $f_{7/2}$; 0.058 *10* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
679.2 *6*	$2^-,3^-,4^-$	3	S: 0.0144 *18* for L=3, $f_{5/2}$; 0.0512 *16* for L=3, $f_{7/2}$. L: $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
688.2 *7*	2^-	1+3	S: 0.0026 *6* for L=1, $p_{1/2}$; 0.0120 *8* for L=3, $f_{7/2}$. L: $p_{1/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
701.6 *7*	$2^-,3^-,4^-$	1,3	S: (0.0012 *4*) for L=1, $p_{3/2}$; 0.0144 *18* for L=3, $f_{5/2}$; 0.0064 *16* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
707.9 *7*	2^-	1+3	S: 0.0057 *15* for L=1, $p_{1/2}$; 0.0027 *14* for L=1, $p_{3/2}$; 0.010 *4* for L=3, $f_{5/2}$; 0.017 *3* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
716.3 *8*	$1^-,2^-,3^-,4^-$	3	S: 0.0138 *6* for L=3, $f_{5/2}$. L: $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
721.3 *7*	$2^-,3^-$	1+3	S: 0.0056 *16* for L=1, $p_{3/2}$; 0.008 *5* for L=3, $f_{5/2}$; 0.005 *4* for L=3, $f_{7/2}$. L: ($p_{1/2}$), $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
734.3 *7*	$1^-,2^-,3^-$	1+3	S: 0.0176 *4* for L=1, $p_{3/2}$; 0.0072 *12* for L=3, $f_{5/2}$. L: $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
746.4 *7*	$3^-,4^-,5^-$	1+3+5	S: (0.0048 *4*) for L=1, $p_{3/2}$; 0.0816 *16* for L=3, $f_{7/2}$; 0.096 *12* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
761.1 *10*	[@]		
769.1 *8*	$2^-,3^-,4^-$	3	S: 0.0036 *12* for L=3, $f_{5/2}$; 0.0024 *8* for L=3, $f_{7/2}$. L: $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
785.7 *6*	2^-	1+3	S: 0.0114 *10* for L=1, $p_{1/2}$; 0.0024 *8* for L=1, $p_{3/2}$; 0.0048 *24* for L=3, $f_{5/2}$; 0.0160 *16* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
798.9 *6*	$3^-,4^-,5^-$	3+5	S: 0.0296 *8* for L=3, $f_{7/2}$; 0.032 *8* for L=5, $h_{9/2}$. L: $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
806.8 *7*	$1^-,2^-,3^-$	1+3	S: 0.0084 *4* for L=1, $p_{3/2}$; 0.0084 *12* for L=3, $f_{5/2}$. L: $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
815.3 *6*	$3^-,4^-$	1+3+5	S: (0.0020 *4*) for L=1, $p_{3/2}$; 0.0078 *12* for L=3, $f_{5/2}$; 0.0160 *8* for L=3, $f_{7/2}$; 0.052 *9* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
841.3 *7*	$5^+,6^+,7^+,8^+$	6	S: 0.0266 *5* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
850.0 *6*	$3^-,4^-,5^-$	1+3+5	S: (0.0012 *4*) for L=1, $p_{3/2}$; 0.0704 *24* for L=3, $f_{7/2}$; 0.104 *20* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
855.2 *7*	$2^-,3^-,4^-$	3	S: 0.011 *3* for L=3, $f_{5/2}$; 0.0200 *24* for L=3, $f_{7/2}$. L: $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
881.8 *7*	3^-	1+3+5	S: 0.0092 *4* for L=1, $p_{3/2}$; 0.0240 *16* for L=3, $f_{7/2}$; 0.133 *14* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
892.1 *7*	3^-	1+3+5	S: 0.0196 *4* for L=1, $p_{3/2}$; 0.0084 *24* for L=3, $f_{5/2}$; 0.0080 *16* for L=3, $f_{7/2}$; 0.085 *15* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
901.0 *7*	$3^-,4^-,5^-$	1+3+5	S: (0.0032 *8*) for L=1, $p_{3/2}$; 0.0248 *16* for L=3, $f_{7/2}$; 0.039 *15* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
907.5 *7*	$2^-,3^-,4^-$	(1)+3	S: (0.0006 *4*) for (L=1, $p_{1/2}$); 0.0084 *24* for L=3, $f_{5/2}$; 0.0064 *16* for L=3, $f_{7/2}$. L: ($p_{1/2}$), $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
921.9 *7*	$3^-,4^-,5^-$	(1)+3+5	S: (0.0004 *1*) for L=1, $p_{3/2}$; 0.0120 *8* for L=3, $f_{7/2}$; 0.04 *1* for L=5, $h_{9/2}$. L: ($p_{3/2}$), ($f_{5/2}$), $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
938.2 *7*	$3^-,4^-,5^-$	1+3+5	S: 0.0064 *4* for L=1, $p_{3/2}$; 0.0648 *16* for L=3, $f_{7/2}$; 0.16 *2* for L=5, $h_{9/2}$. L: $p_{3/2}$, ($f_{5/2}$), $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
950.0 *7*	$2^-,3^-,4^-$	3+5	S: 0.0096 *18* for L=3, $f_{5/2}$; 0.0120 *8* for L=3, $f_{7/2}$; (0.02 *1*) for L=5, $h_{9/2}$. L: $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
958.7 *7*	$0^-,1^-,2^-,3^-$	1+3+5	S: 0.0096 *4* for L=1, $p_{3/2}$; (0.0018 *12*) for L=3, $f_{5/2}$; (0.02 *1*) for L=5, $h_{9/2}$.

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^{197}Au(p,d),(pol d,t) 2004Wi08 (continued)

^{196}Au Levels (continued)

E(level)[†]	J$^{\pi}$[#]	L[&]	Comments
			L: $p_{3/2}$, $f_{5/2}$, ($f_{7/2}$), ($h_{9/2}$) from $a_y(\theta)$ in (pol d,t).
967.9 *8*	$2^-,3^-,4^-,5^-$	3+5	S: 0.0072 *8* for L=3, $f_{7/2}$; (0.01 *1*) for L=5, $h_{9/2}$. L: $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
973.9 *7*	$2^-,3^-,4^-,5^-$	1+3	S: (0.0020 *12*) for L=1, $p_{3/2}$; (0.004 *3*) for L=3, $f_{5/2}$; 0.0368 *24* for L=3, $f_{7/2}$. L: ($p_{1/2}$), $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
985.7 *7*	$2^-,3^-,4^-,5^-$	1+3	S: (0.0012 *6*) for L=1, $p_{1/2}$; (0.004 *3*) for L=3, $f_{5/2}$; 0.0104 *24* for L=3, $f_{7/2}$. L: $p_{1/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
990.7 *7*	3^-	1+3+5	S: 0.0052 *8* for L=1, $p_{3/2}$; 0.264 *3* for L=3, $f_{7/2}$; 0.33 *3* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1005.4 *8*	$5^+,6^+,7^+,8^+$	6	S: 0.016 *7* for L=6, $i_{13/2}$. L: $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
1017.9 *7*	$1^-,2^-,3^-$	1+3	S: (0.0010 *8*) for L=1, $p_{1/2}$; 0.0116 *8* for L=1, $p_{3/2}$; 0.0120 *12* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
1024.9 *7*	$2^-,3^-,4^-,5^-$	3+5	S: 0.0432 *8* for L=3, $f_{7/2}$; (0.03 *2*) for L=5, $h_{9/2}$. L: $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1045.0 *8*	2^-	1+3	S: 0.0046 *10* for L=1, $p_{1/2}$; 0.0048 *12* for L=1, $p_{3/2}$; 0.0042 *24* for L=3, $f_{5/2}$; 0.0120 *24* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1057.9 *8*	$2^-,3^-,4^-$	3	S: 0.0204 *18* for L=3, $f_{5/2}$; 0.0032 *16* for L=3, $f_{7/2}$. L: ($p_{3/2}$), $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1066.1 *9*	$2^-,3^-$	1+3	S: 0.0004 *1* for L=1, $p_{3/2}$; 0.0016 *8* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1070.6 *8*	$2^-,3^-,4^-,5^-$	3	S: 0.0040 *8* for L=3, $f_{7/2}$. L: ($f_{5/2}$), $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1083.7 *9*	$2^-,3^-,4^-,5^-$	3	S: 0.0040 *8* for L=3, $f_{7/2}$. L: ($p_{3/2}$), $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1088.6 *8*	$2^-,3^-,4^-,5^-$	1+3	S: (0.0048 *6*) for L=1, $p_{1/2}$; 0.2048 *24* for L=3, $f_{7/2}$. L: $p_{1/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1095.8 *8*	$2^-,3^-$	1+3	S: 0.0108 *4* for L=1, $p_{3/2}$; 0.0304 *24* for L=3, $f_{7/2}$. L: ($p_{1/2}$), ($p_{3/2}$), $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
1112.0 *8*	$2^-,3^-$	1+3	S: 0.0088 *16* for L=1, $p_{3/2}$; 0.002 *4* for L=3, $f_{5/2}$; 0.006 *3* for L=3, $f_{7/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1121.5 *8*	3^-	1+3+5	S: 0.0220 *8* L=1, $p_{3/2}$; 0.0176 *24* for L=3, $f_{7/2}$; 0.21 *3* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1129.7 *9*	$2^-,3^-$	1+3	S: 0.004 *3* for L=1, $p_{3/2}$; 0.007 *7* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1137.1 *9*	$2^-,3^-$	1+3	S: 0.0040 *20* for L=1, $p_{3/2}$; 0.013 *5* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, ($f_{5/2}$), $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1144.0 *8*	$5^+,6^+$	4+6	S: 0.0025 *3* for L=4, $g_{9/2}$; 0.018 *4* for L=6, $i_{13/2}$. L: $g_{9/2}$, $i_{13/2}$ from $a_y(\theta)$ in (pol d,t).
1149.2 *9*	$1^-,2^-,3^-$	1+3	S: 0.0108 *16* for L=1, $p_{3/2}$; 0.015 *3* for L=3, $f_{5/2}$. L: ($p_{1/2}$), $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
1166.3 *9*	3^-	1+3+5	S: 0.0036 *4* for L=1, $p_{3/2}$; 0.0042 *24* for L=3, $f_{5/2}$; 0.0072 *16* for L=3, $f_{7/2}$; 0.03 *2* for L=5, $h_{9/2}$. L: ($p_{1/2}$), $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
1175.4[‡] *8*	$2^-,3^-,4^-$	3	S: 0.0020 *17* for L=3, $f_{5/2}$; 0.0060 *16* for L=3, $f_{7/2}$. L: $f_{5/2}$, $f_{7/2}$, $i_{13/2}$ from $a_y(\theta)$ in (pol d,t) for doublet; $f_{3/2}$ listed in figure 12 of accompanying appendix seems a misprint.
1175.4[‡] *8*	$5^+,6^+,7^+,8^+$	6	S: 0.0158 *10* for L=6, $i_{13/2}$. L: $f_{5/2}$, $f_{7/2}$, $i_{13/2}$ from $a_y(\theta)$ in (pol d,t) for doublet; $f_{3/2}$ listed in figure 12 of accompanying appendix seems a misprint.
1189.6 *9*	3^-	1+3+5	S: 0.060 *2* for L=1, $p_{3/2}$; 0.058 *8* for L=3, $f_{7/2}$; 0.38 *6* for L=5, $h_{9/2}$. L: $p_{3/2}$, ($f_{5/2}$), $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1198.5 *10*	$1^-,2^-,3^-$	1+3	S: 0.0092 *12* for L=1, $p_{3/2}$; 0.007 *5* for L=3, $f_{5/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1202.4 *10*	[@]		

Continued on next page (footnotes at end of table)

^{197}Au(p,d),(pol d,t) 2004Wi08 (continued)

^{196}Au Levels (continued)

E(level)†	J^π#	L&	Comments
1207.2 *10*	$2^-,3^-,4^-,5^-$	3	S: 0.032 *3* for L=3, $f_{7/2}$. L: ($p_{3/2}$), ($f_{5/2}$), $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1223.2 *10*	3^-	1+3+5	S: 0.0200 *4* for L=1, $p_{3/2}$; 0.012 *4* for L=3, $f_{5/2}$; 0.0128 *24* for L=3, $f_{7/2}$; 0.05 *3* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1230.9 *10*	@		
1236.6 *11*	3^-	1+3+5	S: 0.0044 *4* for L=1, $p_{3/2}$; 0.0072 *16* for L=3, $f_{7/2}$; 0.05 *2* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1244.2 *12*	@		
1248.2 *11*	$2^-,3^-$	1+3	S: (0.004 *3*) for L=1, $p_{1/2}$; 0.0164 *24* for L=1, $p_{3/2}$; 0.018 *7* for L=3, $f_{5/2}$; 0.082 *6* for L=3, $f_{7/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1270.2 *11*	3^-	1+3+5	S: 0.0148 *4* for L=1, $p_{3/2}$; 0.005 *3* for L=3, $f_{5/2}$; 0.0056 *24* for L=3, $f_{7/2}$; 0.07 *2* for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1280.0 *12*	2^-	1+3	S: 0.0016 *12* for L=1, $p_{1/2}$; 0.0048 *24* for L=3, $f_{7/2}$. L: $p_{1/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1296.8 *13*	$3^-,4^-,5^-$	3+5	S: 0.1160 *24* for L=3, $f_{7/2}$; L: ($p_{3/2}$), $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t) 0.13 *3* for L=5, $h_{9/2}$.
1310.2 *13*	$2^-,3^-,4^-$	3	S: 0.0030 *18* for L=3, $f_{5/2}$; 0.0192 *16* for L=3, $f_{7/2}$. L: ($p_{3/2}$), $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1318.3 *13*	$3^-,4^-$	3+5	S: 0.0102 *18* for L=3, $f_{5/2}$; 0.0024 *16* for L=3, $f_{7/2}$; 0.06 *2* for L=5, $h_{9/2}$. L: $f_{5/2}$, $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1324.6 *13*	$1^-,2^-$	1+3	S: 0.0014 *10* for L=1, $p_{1/2}$; 0.0092 *8* for L=1, $p_{3/2}$; 0.0066 *18* for L=3, $f_{5/2}$. L: $p_{1/2}$, $p_{3/2}$, $f_{5/2}$ from $a_y(\theta)$ in (pol d,t).
1331.8 *13*	$3^-,4^-,5^-$	(1)+3+5	S: (0.0012 *4*) for L=1, $p_{3/2}$; 0.0328 *16* for L=3, $f_{7/2}$; 0.06 *2* for L=5, $h_{9/2}$. L: ($p_{3/2}$), $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1341.7 *14*	$2^-,3^-,4^-,5^-$	(1)+3+5	S: (0.0009 *3*) for L=1, $p_{3/2}$; 0.009 *3* for L=3, $f_{7/2}$; (0.02 *1*) for L=5, $h_{9/2}$. L: ($p_{3/2}$), $f_{7/2}$, $h_{9/2}$ from $a_y(\theta)$ in (pol d,t).
1346.8 *14*	$2^-,3^-,4^-$	1+3	S: (0.0008 *4*) for L=1, $p_{3/2}$; 0.009 *3* for L=3, $f_{5/2}$; 0.0192 *24* for L=3, $f_{7/2}$; (0.03 *2*) for L=5, $h_{9/2}$. L: $p_{3/2}$, $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1354.6 *14*	$2^-,3^-,4^-,5^-$	3	S: 0.028 *4* for L=3, $f_{7/2}$. L: $p_{1/2}$, ($p_{3/2}$), $f_{5/2}$, $f_{7/2}$ from $a_y(\theta)$ in (pol d,t).
1359.1 *14*	$2^-,3^-$	1+3	S: 0.0060 *4* for L=1, $p_{3/2}$; 0.010 *4* for L=3, $f_{5/2}$; 0.050 *3* for L=3, $f_{7/2}$. L: $\sigma(\theta)$, $a_y(\theta)$ not shown for this level in figure 14 of accompanying on-line appendix.

† Level-energies are from the (p,d) reaction in 2004Wi08.
‡ Unresolved doublet of closely lying states of negative and positive parity.
# Suggested by authors on basis of spectroscopic strengths and DWBA in (pol d,t).
@ No spin-parity assignment or spectroscopic information is given for this level in 2004Wi08 as it was not observed in the ^{197}Au(pol d,t)^{196}Au reaction (2004Wi08).
& From DWBA analysis of $\sigma(\theta)$ and $a_y(\theta)$ plots in accompanying online appendix of the paper in 2004Wi08.