

$^{186}\text{W}(n,\gamma)$ E=2,24 keV:av res 1987Br05

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|---------------|---------------------|------------------------|
| Full Evaluation | M. S. Basunia | NDS 110, 999 (2009) | 1-Nov-2008 |

Other references: 1974Ca18 (24 keV); 2006MuZX (18.8, 171, 219, 288, 511 eV).

Neutron beam resolution ≈ 900 eV at 2 keV and 2.0 keV at 24 keV. Three crystal pair spectrometer positioned 90° to the beam direction. Target purity 96.9% ^{186}W . Level spacing of $1/2^+$ resonances above the neutron resonance energy has been estimated as 125 eV (1974Ca18).

 ^{187}W Levels

| E(level) [†] | J π [#] | Comments |
|-----------------------|-------------------------|--------------------------------------------------------------|
| 0.0 | $1/2^-, 3/2^-$ | |
| 77.5 [‡] 6 | $5/2$ | |
| 146.0 3 | $1/2^-, 3/2^-$ | |
| 205.1 3 | $1/2^-, 3/2^-$ | |
| 762.0 4 | $1/2, 3/2$ | |
| 782.0 4 | $1/2^-, 3/2^-$ | |
| 803.2 6 | $1/2, 3/2$ | |
| 816.1 4 | $1/2^-, 3/2^-$ | |
| 840.1 3 | $1/2^-, 3/2^-$ | |
| 852.6 4 | $1/2, 3/2$ | |
| 860.1 6 | $1/2, 3/2$ | |
| 866.8 3 | $1/2^-, 3/2^-$ | |
| 892.0 3 | $1/2^-, 3/2^-$ | |
| 909.5 6 | $1/2, 3/2$ | |
| 915.5 [‡] 6 | $5/2$ | |
| 979.3 4 | $1/2^-, 3/2^-$ | |
| 989.5 [‡] 6 | $5/2$ | |
| 1018.7 4 | $1/2^-, 3/2^-$ | |
| 1082.6 5 | $1/2, 3/2$ | |
| 1094.6 3 | $1/2^-, 3/2^-$ | |
| 1135.2 3 | $1/2^-, 3/2^-$ | |
| 1139.5 [‡] 6 | $5/2$ | |
| 1217.4 5 | $1/2, 3/2$ | |
| 1272.0 9 | $1/2, 3/2$ | |
| 1313.3 6 | $1/2, 3/2$ | |
| 1330.8 6 | $1/2, 3/2$ | |
| 1347.5 4 | $1/2^-, 3/2^-$ | |
| 1384.5 6 | $1/2, 3/2$ | |
| 1414.8 4 | $1/2^-, 3/2^-$ | |
| 1487.5 3 | $1/2^-, 3/2^-$ | |
| 5469 1 | $1/2, 3/2$ [@] | E(level): From S(n)+2.0 9, where S(n)=5466.54 11 (2003Au03). |
| 5491 2 | $5/2$ | E(level): From S(n)+24 2, where S(n)=5466.54 11 (2003Au03). |

[†] From 2-keV data, except otherwise noted.

[‡] From 24-keV data.

[#] From average resonance capture. All levels with $1/2^-, 3/2^-$ up to 1.5 MeV are populated (>99.9% confidence level). $1/2^+, 3/2^+$ levels are expected to be more weakly populated by a factor of ≈ 6 . No unambiguous $1/2^+, 3/2^+$ level assignments were possible. Levels observed only in the 24-keV data are assigned J=5/2.

[@] s-wave resonance capture dominant at 2 keV and p-wave resonance capture significant at 24 keV.

$^{186}\text{W}(n,\gamma)$ E=2,24 keV:av res **1987Br05** (continued) $\gamma(^{187}\text{W})$

| E_γ^\dagger | $I_\gamma/E_\gamma^{5^\dagger}$ | $E_i(\text{level})$ | J_i^π | E_f | J_f^π | Comments |
|----------------------|---------------------------------|---------------------|-----------|--------|------------------------------------|---------------------------------------------------------------------------------|
| 3981.0 3 | 283 \ddagger 19 | 5469 | 1/2,3/2 | 1487.5 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=91 29. |
| 4053.7 4 | 119 \ddagger 13 | 5469 | 1/2,3/2 | 1414.8 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=152 29. |
| 4084.0 6 | 33 \ddagger 11 | 5469 | 1/2,3/2 | 1384.5 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=122 25. |
| 4121.0 4 | 164 13 | 5469 | 1/2,3/2 | 1347.5 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=80 24. |
| 4137.7 6 | 43 \ddagger 10 | 5469 | 1/2,3/2 | 1330.8 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=109 24 (contains unknown contaminant). |
| 4155.2 6 | 54 10 | 5469 | 1/2,3/2 | 1313.3 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=183 25. |
| 4196.5 9 | 27 11 | 5469 | 1/2,3/2 | 1272.0 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=25 22 (corrected for contaminant). |
| 4251.1 5 | 54 8 | 5469 | 1/2,3/2 | 1217.4 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=134 21 (corrected for contaminant). |
| 4333.3 3 | 156 11 | 5469 | 1/2,3/2 | 1135.2 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=133 23. |
| 4351 [@] CA | 67 22 | 5491 | 5/2 | 1139.5 | 5/2 | |
| 4373.9 4 | 95 9 | 5469 | 1/2,3/2 | 1094.6 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=48 16. |
| 4385.9 5 | 56 8 | 5469 | 1/2,3/2 | 1082.6 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=84 18 (corrected for contaminant). |
| 4449.8 4 | 66 7 | 5469 | 1/2,3/2 | 1018.7 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=50 15. |
| 4489.2 4 | 79 8 | 5469 | 1/2,3/2 | 979.3 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=72 18. |
| 4501 [@] CA | 54 15 | 5491 | 5/2 | 989.5 | 5/2 | |
| 4559.0 6 | 34 6 | 5469 | 1/2,3/2 | 909.5 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=85 14. |
| 4575 [@] CA | 45 13 | 5491 | 5/2 | 915.5 | 5/2 | |
| 4576.5 3 | 146 [#] 9 | 5469 | 1/2,3/2 | 892.0 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=94 14. |
| 4601.7 3 | 181 10 | 5469 | 1/2,3/2 | 866.8 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=135 17. |
| 4608.4 6 | 35 6 | 5469 | 1/2,3/2 | 860.1 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=85 15. |
| 4615.9 4 | 55 6 | 5469 | 1/2,3/2 | 852.6 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=104 14 (corrected for contaminant). |
| 4628.4 3 | 138 8 | 5469 | 1/2,3/2 | 840.1 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=128 16. |
| 4652.4 4 | 65 7 | 5469 | 1/2,3/2 | 816.1 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=92 13 (contains unknown contaminant). |
| 4665.3 6 | 33 5 | 5469 | 1/2,3/2 | 803.2 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=95 16. |
| 4686.5 4 | 84 7 | 5469 | 1/2,3/2 | 782.0 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=212 16 (contains unknown contaminant). |
| 4706.5 4 | 50 5 | 5469 | 1/2,3/2 | 762.0 | 1/2,3/2 | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=81 14 (corrected for contaminant). |
| 5263.4 3 | 235 8 | 5469 | 1/2,3/2 | 205.1 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=283 13. |
| 5322.5 3 | 253 8 | 5469 | 1/2,3/2 | 146.0 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=173 9. |
| 5413 [@] CA | 24 \ddagger 5 | 5491 | 5/2 | 77.5 | 5/2 | |
| 5467.7 3 | 100 4 | 5469 | 1/2,3/2 | 0.0 | 1/2 ⁻ ,3/2 ⁻ | $I_\gamma/E_\gamma^{5^\dagger}$ (24 keV)=100 7. |

[†] From 2-keV data (1987Br05). Reduced transition intensities for 24-keV data are shown in comments.

[‡] Corrected for contribution from contaminant.

[#] Contains contribution from unknown contaminant.

[@] This γ -ray is identified only in 24-keV data. Calculated energy for 24-keV data by the evaluator is given.

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Level Scheme
 Intensities: Relative $I_\gamma/E\gamma^5$

Legend

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

