^{186}W(γ,γ') 1993He15,1981Sc10,1971Mo26

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183, 1 (2022)	1-Mar-2022

Other: 1974Wo05.
Eγ=6418−keV monoenergetic γ beam from Ti(n,γ) (1981Sc10,1974Wo05,1971Mo26).
Bremsstrahlung with 3.5 MeV endpoint energy (1993He15).
1971Mo26: measured Eγ, beam-$\gamma(\theta)$, γ linear polarization.
1974Wo05: measured beam-$\gamma(\theta)$, γ linear polarization, self absorption.
1981Sc10: measured Eγ, Iγ, resonance fluorescence.
1993He15: measured Eγ, Iγ, beam-$\gamma(\theta)$, resonance fluorescence; used branching ratios to distinguish between K=0 and K=1 for many levels.

^{186}W Levels

Scattering cross sections I_s are listed in comments along with reduced g.s. transition width Γ_0^{red}(meV)=Γ_0(meV)/E(MeV)^3.

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	S[@&]	Comments
0	0$^+$			
123[#]	2$^+$[#]			
738[#]	2$^+$[#]			
2557 *1*	1		0.43 *10*	K=1 based on R_{exp}. I_s=8.8 *8* and Γ_{red}=0.41 *5* (1993He15).
2864 *1*	1		1.17 *25*	I_s=5.2 *8* and Γ_{red}=0.32 *6* (1993He15).
3036 *1*	1		0.74 *27*	K=(1) based on R_{exp}. I_s=6.7 *10* and Γ_{red}=0.32 *7* (1993He15).
3056 *1*	(1)		2.09 *51*	K=(0) based on R_{exp}. I_s=3.9 *8* and Γ_{red}=0.32 *9* (1993He15).
3068 *1*	(1)		1.35 *59*	I_s=2.6 *8* and Γ_{red}=0.16 *7* (1993He15).
3172 *1*	1		0.64 *11*	K=1 based on R_{exp}. I_s=15.2 *19* and Γ_{red}=0.65 *9* (1993He15).
3318 *1*	1		1.42 *28*	K=(0) based on R_{exp}. I_s=12.3 *29* and Γ_{red}=0.73 *19* (1993He15).
3364 *1*	1		1.87 *34*	K=0 based on R_{exp}. I_s=14.5 *44* and Γ_{red}=1.00 *32* (1993He15).
3379 *1*	1		0.53 *9*	K=1 based on R_{exp}. I_s=35 *11* and Γ_{red}=1.32 *42* (1993He15).
3394 *1*	1		0.61 *27*	K=1 based on R_{exp}. I_s=11.6 *46* and Γ_{red}=0.46 *19* (1993He15).
3428 *1*	1			I_s=11.3 *63* and Γ_{red}=0.29 *16* (1993He15).
3477 *1*	1			K=(1) based on R_{exp}. I_s=39 *39* and Γ_{red}=1.5 *15* (1993He15).
6418	1$^-$	0.0075 eV *9*		J$^\pi$: from beam-$\gamma(\theta)$ and polarization of 6418γ (1974Wo05). Γ from Γ_0/Γ=0.32 *4* and Γ_0=2.4 meV (1981Sc10); the uncertainty reflects only the uncertainty in Iγ. If additional (as yet unobserved) gammas were to deexcite this level, Γ would increase (so $T_{1/2}$ would decrease). Other value: 0.046 eV *35* (1971Mo26).

[†] From Eγ for g.s. transition, except as noted.
[‡] From 1993He15, based on measured beam-$\gamma(\theta)$, except where otherwise noted.
[#] From Adopted Levels.
[@] Label=R_{exp}.
[&] $R_{exp}=\Gamma_2/\Gamma_0[(E(1\rightarrow 2)/(E(1\rightarrow 0)]^3$. The R.H.S. in 1993He15 as $\Gamma_1/\Gamma_0[(E(1\rightarrow 0)/(E(1\rightarrow 2)]^3$ appears to be a typo. K=1 and 0 are expected for R_{exp}=0.5 and 2.0 respectively. K values are listed in comments section.

^{186}W(γ,γ′) 1993He15,1981Sc10,1971Mo26 (continued)

γ(^{186}W)

E_i(level)	J_i^π	E_γ [†]	I_γ [#]	E_f	J_f^π	Mult.[‡]	δ	Comments
2557	1	2434	37 *9*	123	2^+			
		2557 *1*	100	0	0^+			
2864	1	2741	102 *22*	123	2^+			
		2864 *1*	100	0	0^+			
3036	1	2913	65 *24*	123	2^+			
		3036 *1*	100	0	0^+			
3056	(1)	2933	185 *45*	123	2^+			
		3056 *1*	100	0	0^+			
3068	(1)	2945	120 *52*	123	2^+			
		3068 *1*	100	0	0^+			
3172	1	3049	57 *10*	123	2^+			
		3172 *1*	100	0	0^+			
3318	1	3195	127 *25*	123	2^+			
		3318 *1*	100	0	0^+			
3364	1	3241	167 *30*	123	2^+			
		3364 *1*	100	0	0^+			
3379	1	3256	47 *8*	123	2^+			
		3379 *1*	100	0	0^+			
3394	1	3271	55 *24*	123	2^+			
		3394 *1*	100	0	0^+			
3428	1	3428 *1*		0	0^+			
3477	1	3477 *1*		0	0^+			
6418	1^-	5678[@]	10[@] *6*	738	2^+			
		6295[@]	206[@] *40*	123	2^+	E1+M2	−0.095 *23*	δ: Deduced by evaluators from A_2=−0.011 *14* (1971Mo26) for 6418(excitation γ)−6295(scattered γ)(θ); alternative solution (−2.47 *+15−17*) disfavored by RUL. Mult.: from 1971Mo26.
		6418[@]	100[@]	0	0^+	E1		A_2=+0.49 *5* (1974Wo05). Mult.: from 1974Wo05.

[†] From 1993He15 if ΔE_γ is stated; values with no stated uncertainties are from level energy differences, unless noted otherwise.
[‡] From beam-γ(θ) and linear polarization.
[#] Relative photon branching based on measured $\Gamma_{\gamma 1}/\Gamma_{\gamma 0}$ (1993He15), except where otherwise noted.
[@] From 1981Sc10.

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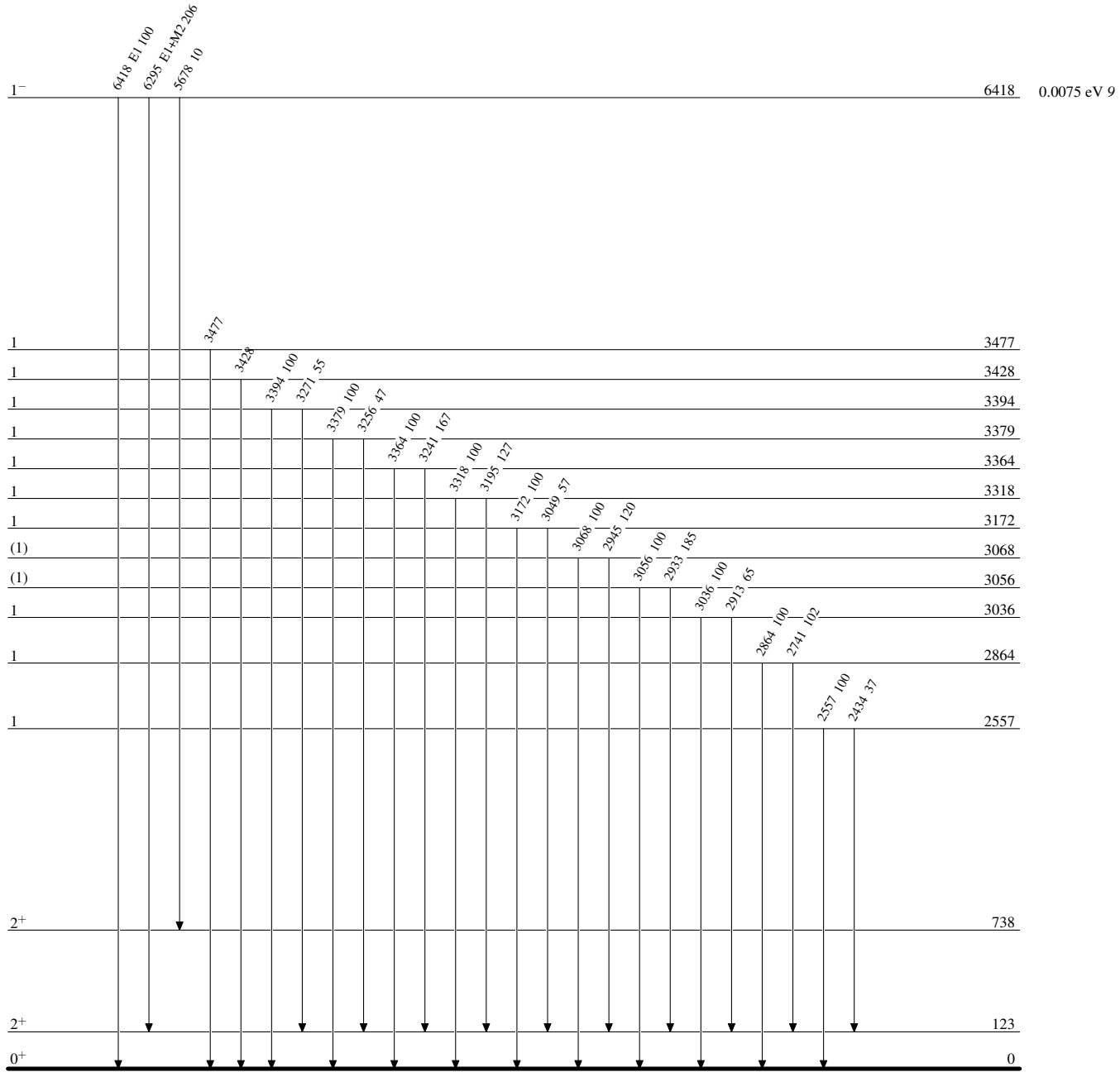
Level Scheme

Intensities: Relative photon branching from each level



$^{186}_{74}W_{112}$