^{238}U(^{82}Se,Xγ) 2007Bu35

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 112, 1163 (2011)	15-Dec-2010

Includes ^{208}Pb(^{90}Zr,Xγ) and ^{192}Os(^{82}Se,Xγ) reactions.
^{238}U(^{82}Se,Xγ), E(^{82}Se)=505 MeV and ^{208}Pb(^{90}Zr,Xγ), E(^{90}Zr)=590 MeV: PRISMA spectrometer for detection and identification of projectile-like ions; CLARA γ-detector array; measured Eγ, Iγ, recoil-γ coin, $\gamma\gamma$ coin.
^{192}Os(^{82}Se,Xγ), E(^{82}Se)=470 MeV: GASP γ-detector array; measured Eγ, Iγ, $\gamma\gamma$ coin, angular distribution from oriented nuclei ratios R(-ado).
Data were taken primarily from the ^{238}U(^{82}Se,xγ) reaction.

^{93}Y Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	Comments
0.0	1/2$^-$		
590.2	3/2$^-$[#]		
758.7[@]	9/2$^+$[#]	0.82 s *4*	%IT=100 T$_{1/2}$: from Adopted Levels.
1550.4[@] *2*	(13/2$^+$)		
2622.8[@] *4*	(15/2$^+$)		
3345.4[@] *5*	(19/2$^+$)		
3636.8[@] *5*	(21/2$^+$)		
4314.0[@] *6*			

[†] From least-squares fit to Eγ.
[‡] Authors' values, except As noted; based on measured R$_{ADO}$ and comparison of observed level energies and electromagnetic transition probabilities with those calculated using the shell model with the 'gwb' model space (4 valence proton- and 6 valence neutron-orbitals).
[#] 2007Bu35 favor 9/2$^+$ for 959 level based on their shell-model calculations; this would preclude the 1/2$^-$ option from L(d,^{3}He)=1 for the 590 level.
[@] Band(A): γ cascade.

γ(^{93}Y)

E$_\gamma$	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	Comments
168.5[#]		758.7	9/2$^+$	590.2	3/2$^-$		
291.4 *2*	31 *6*	3636.8	(21/2$^+$)	3345.4	(19/2$^+$)	D	Mult.: R$_{ado}$=0.77 *7*.
590.2[#]		590.2	3/2$^-$	0.0	1/2$^-$		
677.2 *3*	24 *8*	4314.0		3636.8	(21/2$^+$)	(Q)	Mult.: R$_{ado}$=1.16 *27*.
722.6 *3*	44 *8*	3345.4	(19/2$^+$)	2622.8	(15/2$^+$)	Q	Mult.: R$_{ado}$=1.50 *19*.
791.7 *2*	100 *8*	1550.4	(13/2$^+$)	758.7	9/2$^+$	Q	Mult.: R$_{ado}$=1.16 *12*.
1072.4 *3*	81 *14*	2622.8	(15/2$^+$)	1550.4	(13/2$^+$)	(D)	Mult.: R$_{ado}$=0.93 *19*.

[†] Relative Iγ from ^{238}U(^{82}Se,xγ).
[‡] Authors' assignments based on measured R$_{ado}$= [Iγ(35°+145°)]/Iγ(90°). Typical values are 1.3 for ΔJ=2, Q (or ΔJ=1, D) and 0.7 for ΔJ=1, pure D transitions.
[#] Rounded value from Adopted Gammas. γ not reported by 2007Bu35, but must Be present As a result of population of the 759 level.

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Level Scheme

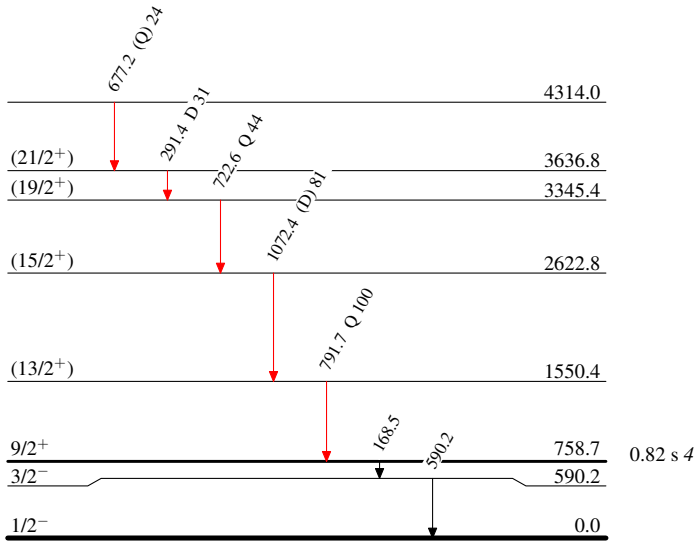
Intensities: Relative Iγ from ^{238}U(^{82}Se,xγ)

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

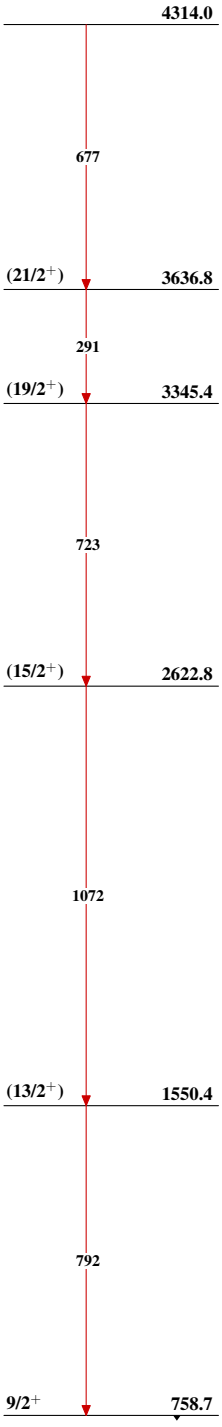
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{93}_{39}Y_{54}$

^{238}U(^{82}Se,Xγ) 2007Bu35

Band(A): γ cascade



$^{93}_{39}Y_{54}$