^{48}Ca(^{15}N,3npγ), (^{18}O,3n$\alpha\gamma$) 1977Wa10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 151, 1 (2018)	1-Apr-2018

E=25-55 MeV. Enriched targets (99.9%), Ge(Li). Measured $\gamma(\theta)$, Iγ, $\gamma\gamma$ coin, Eγ, $T_{1/2}$ from DSAM and recoil-distance method (1977Wa10).

^{59}Fe Levels

E(level)	J^π[†]	$T_{1/2}$[‡]	Comments
0.0	$3/2^-$[@]		
472.70 *10*	$5/2^-$[@]		
570.83 *11*	$(5/2^-)$		J^π: direct feeding of level is stronger than would be expected if J^π were $3/2^-$.
1023.13 *12*	$7/2^-$		
1517.22 *18*	$9/2^+$	145[#] ps *25*	
2312.22 *23*	$(13/2^+)$	4.7[#] ps *6*	
3559.6? *6*		>0.4 ps	E(level): 3559.6 *6* or 4985.2 *9* depending on whether 1247γ feeds 3737 or 2312 level. Placement of 1247γ is confirmed in 2007De56.
3737.7 *6*	(15/2)	<0.3 ps	

[†] As given by 1977Wa10 based on $\gamma(\theta)$ and direct feeding intensities, except as noted.
[‡] From DSAM except as noted.
[#] From recoil-distance method.
[@] From Adopted Levels.

$\gamma(^{59}Fe)$

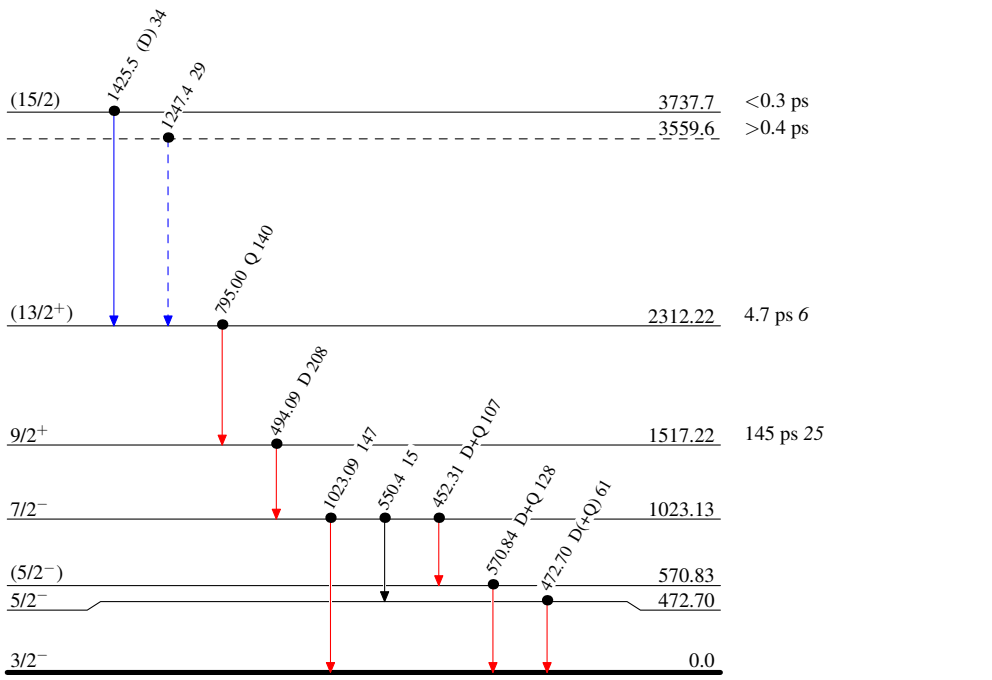
Eγ[†]	Iγ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
452.31 *11*	107	1023.13	$7/2^-$	570.83	$(5/2^-)$	D+Q	A_2=−0.63 *2*. Branching=40% 3. δ: +0.19 to +2.0.
472.70 *10*	61	472.70	$5/2^-$	0.0	$3/2^-$	D(+Q)	A_2=−0.25 *5*. δ: −0.02 *4* or −3.8 *6*.
494.09 *13*	208	1517.22	$9/2^+$	1023.13	$7/2^-$	D	A_2=−0.29 *3*.
550.4[@]	15	1023.13	$7/2^-$	472.70	$5/2^-$		Eγ: From level energy difference. Branching: 5% 2.
570.84 *13*	128	570.83	$(5/2^-)$	0.0	$3/2^-$	D+Q	A_2=−0.56 *2*. δ: +0.15 to +2.1.
795.00 *15*	140	2312.22	$(13/2^+)$	1517.22	$9/2^+$	Q	A_2=+0.25 *3*.
1023.09 *17*	147	1023.13	$7/2^-$	0.0	$3/2^-$		A_2=+0.09 *6*. Branching=55% 3.
1247.4[&] *6*	29	3559.6?		2312.22	$(13/2^+)$		
[x]1391.5 *3*	21						Eγ: Placed from 2414.8 keV level − see Adopted Gammas.
1425.5 *6*	34	3737.7	(15/2)	2312.22	$(13/2^+)$	(D)	A_2=−0.20 *17* (from (^{15}N,3npγ)).
[x]1790[@] *2*							Eγ: Placed from 2472.8 keV level (1788.7γ) − see Adopted Gammas.

[†] Listed values are authors′ average from the two reactions.
[‡] Relative photon intensity from (^{18}O,3n$\alpha\gamma$) at 45 MeV; % photon branching from 1023 level is given in comments.
[#] From $\gamma(\theta)$; alignment deduced assuming δ=0 for 494γ and 795γ.
[@] Observed in $\gamma\gamma$ coin only.
[&] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

^{48}Ca(^{15}N,3npγ), (^{18}O,3nαγ) 1977Wa10

Level Scheme

Intensities: Relative Iγ from (^{18}O,3nαγ), E=45 MeV



$^{59}_{26}Fe_{33}$