^{75}As(γ,γ') 1969Mo27,1981Ca10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114, 841 (2013)	30-Jun-2013

1969Mo27: E<8 MeV; measured $\gamma(\theta)$; γ rays from ^{56}Fe(n,γ) resonance scattering and self absorption.

1981Ca10: E≈0.5-1.65 MeV; photons from bremsstrahlung measured $\gamma(\theta)$, self absorption absolute γ transition strength and deduced $T_{1/2}$ by nuclear resonance fluorescence method.

Others:

1978Ca24: E=572.5-1370 keV bremsstrahlung; resonant scattering, self absorption (same group as 1981Ca10).

1970Mo26: measured σ(Eγ), $\gamma(\theta)$. 1969Mo27, 1970Mo26, 1979Mo19 are from the same group.

1967La07 (also 1965La01): γ rays from ^{75}Se ε, resonant scattering, $\gamma(\theta)$ withGe(Li).

1962Me04: γ rays from ^{75}Se ε. Resonance transmission.

Other measurements: 1977Ce02, 1974DaZJ, 1968Al13, 1964Sh23, 1958Me76, 1958La10.

Data are from 1969Mo27, except as noted.

^{75}As Levels

E(level)	J^{π}[†]	$T_{1/2}$[‡]	Comments
0	$3/2^-$		
199	$1/2^-$		
265	$3/2^-$	11.2 ps *3*	$T_{1/2}$: from 1962Me04 and 1967La07. 1962Me04 report $\Gamma(0)=4.03\times10^{-5}$ eV *11* and obtained $T_{1/2}$=10.9 ps *7* using $\Gamma(0)/\Gamma$=0.96. 1967La07 report $\Gamma(0)^2/\Gamma=3.62\times10^{-5}$ eV *20* and use $\Gamma(0)/\Gamma$=0.97 to get $T_{1/2}$=11.9 ps *7*. Our adopted value is $\Gamma(0)/\Gamma$=0.968 *1* giving $T_{1/2}$=11.2 ps *3*.
280	$5/2^-$	279 ps *21*	E(level): from 1967La07. $T_{1/2}$: 1967La07 report $\Gamma(0)^2/\Gamma=1.60\times10^{-6}$ eV *12* and get $T_{1/2}$=279 ps *21* using $\Gamma(0)/\Gamma$=0.99. From our adopted branching, we get $\Gamma=1.68\times10^{-6}$ and thus $T_{1/2}$=270 ps *21*.
404?			
468			
568?			
572.5	$5/2^-$	2.9 ps *3*	
618			
823	$7/2^-$	3.0 ps *3*	
865.5		0.60 ps *5*	
1076.0	$3/2^-$	0.199 ps *13*	
1128.5	$(1/2^+)$	1.02 ps *11*	
1203	$3/2^-$		
1262			
1349.0	$3/2^-$	0.125 ps *22*	
1370.0	$(3/2^-)$	0.15 ps *3*	
1432	$3/2^-$		
1505	$3/2^{(+)}$		
1607	$1/2^-$,$3/2^-$		
1843?			
1872	$3/2^-$		
2064			
2097			
2176	1/2		
2233			
2470?			
2572?			
2596			
2687?			
7646	$1/2^{(+)}$	1.3 fs *4*	$T_{1/2}$: from Γ=0.36 eV *10* and $\Gamma(0)$=0.041 eV *11* given by 1969Mo27. J^{π}: from $\gamma(\theta)$ and transition strengths.

Continued on next page (footnotes at end of table)

^{75}As(γ,γ') 1969Mo27,1981Ca10 (continued)

^{75}As Levels (continued)

† From Adopted Levels.
‡ From 1981Ca10 (nuclear resonance fluorescence technique) based on measurement of $W(\theta)(2J+1)(\Gamma(\gamma_0))^2/\Gamma$, with branching taken from 1978Ab06 in (n,n′γ), and with $W(\theta)$ calculated for the δ values given by 1978Ab06, except for the 823γ, taken as E2, and the 865γ, with $W(\theta)$ taken as 0.99.

$\gamma(^{75}As)$

E_i(level)	J_i^π	E_γ	I_γ†	E_f	J_f^π	Mult.‡	δ‡	Comments
265	3/2−	265#		0	3/2−	D+Q	−0.01 *4*	A_2=0.14 *5* (1967La07).
280	5/2−	280#		0	3/2−	D+Q	−0.42 *8*	A_2=0.92 *12* (1967La07).
572.5	5/2−	572.5@ *10*		0	3/2−			
823	7/2−	823.0@ *10*		0	3/2−			
865.5		865.5@ *10*		0	3/2−			
1076.0	3/2−	1076.0@ *10*		0	3/2−			
1128.5	(1/2+)	1128.5@ *10*		0	3/2−			
1349.0	3/2−	1349.0@ *10*		0	3/2−			
1370.0	(3/2−)	1370.0@ *10*		0	3/2−			
1432	3/2−	1028& *4*		404?				
		1432 *4*		0	3/2−			
2064		1799 *4*		265	3/2−			
2176	1/2	1911 *4*		265	3/2−			
2596		2596&		0	3/2−			
7646	1/2(+)	4959& *4*		2687?				
		5050 *4*	0.5 *2*	2596				
		5074& *4*		2572?				
		5176& *4*		2470?				
		5413 *4*	1.0 *2*	2233				
		5470 *4*	0.9 *2*	2176	1/2			
		5549 *4*	1.8 *4*	2097				
		5582 *4*	0.5 *2*	2064				
		5774 *4*	2.5 *2*	1872	3/2−			
		5803& *4*	0.1 *1*	1843?				
		6039 *4*	1.2 *2*	1607	1/2−,3/2−			
		6141 *4*	1.2 *2*	1505	3/2(+)			
		6214 *4*	7.1 *6*	1432	3/2−			
		6291 *4*	0.9 *2*	1349.0	3/2−			
		6384 *4*	1.4 *3*	1262				
		6443 *4*	2.1 *2*	1203	3/2−			
		6512 *4*	6.8 *5*	1128.5	(1/2+)			
		6570 *4*	5.7 *5*	1076.0	3/2−			
		7028 *4*	2.9 *2*	618				
		7078& *4*		568?				
		7178 *4*	9.7 *8*	468				
		7242& *4*		404?				
		7381 *4*	41 *3*	265	3/2−			
		7447 *4*	1.5 *3*	199	1/2−			
		7646 *4*	11.3 *9*	0	3/2−			

† Photon branching ratios. The authors state that the uncertainties for the strong branches are 8%. The uncertainties for the weak branches are not specified, and have been estimated by the evaluators.

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^{75}As(γ,γ') 1969Mo27,1981Ca10 (continued)

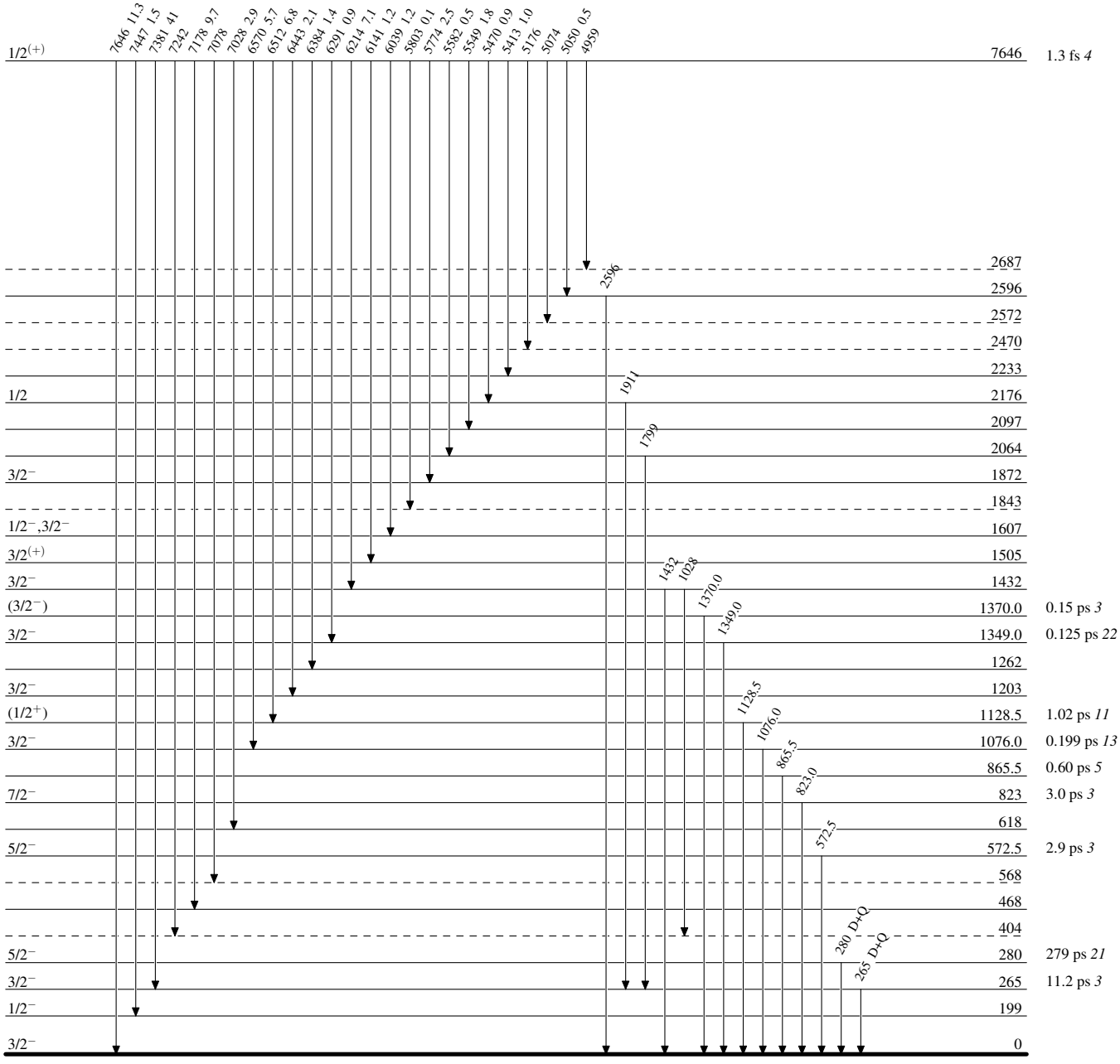
$\gamma(^{75}As)$ (continued)

‡ From $\gamma(\theta)$ in 1967La07.
# From 1967La07.
@ From 1981Ca10. Iγ from 1978Ca24.
& Existence of transition is uncertain.

$^{75}As(\gamma,\gamma')$ 1969Mo27,1981Ca10

Level Scheme

Intensities: % photon branching from each level



$^{75}_{33}As_{42}$