Coulomb excitation 1967Ro14,1977An32

History

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

1967Ro14: ^{75}As($\alpha,\alpha'\gamma$) E=3.5-8.1 MeV. ^{75}As(^{16}O,^{16}Oγ) E=36-38 MeV; measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$.
1977An32: ^{75}As($\alpha,\alpha'\gamma$), E=8.3 MeV; ^{75}As(^{12}C,^{12}C$'\gamma$), E=29 MeV; ^{75}As(^{14}N,^{14}N$'\gamma$) E=35 MeV; ^{75}As(^{16}O,^{16}Oγ), E=38-42 MeV; measured Coulomb excitation.
1969Sh12: ^{75}As($\alpha,\alpha'\gamma$), E≈3.5 MeV. Data for 190 and 280 levels.
1967Im01: ^{75}As(^{14}N,^{14}N$'\gamma$), E=11.5 MeV; measured γ data for 190, 265 and 280 levels.
Others: 1962Ka04, 1962It01, 1962Ri09, 1958Du80, 1956Te26.
Data are from 1967Ro14, unless otherwise stated.

^{75}As Levels

E(level)	J$^\pi$[†]	T$_{1/2}$	Comments
0.0	3/2$^-$		
198.59 *10*	1/2$^-$	0.9 ns *2*	B(E2)↑=0.0158 *11* B(E2): weighted average of 0.0161 *14* (1967Ro14), 0.0153 *16* (1977An32). T$_{1/2}$: from 1969Sh12 (pulsed-beam technique).
264.55 *25*	3/2$^-$	11.2 ps *3*	B(E2)↑=0.0050 *4* B(E2): weighted average of 0.0047 *5* (1967Ro14), 0.0058 *8* (1977An32). T$_{1/2}$: see Adopted Levels.
279.60 *22*	5/2$^-$	0.30 ns *6*	B(E2)↑=0.047 *4* B(E2): weighted average of 0.045 *4*, 0.054 *7* (1977An32). J$^\pi$: $\gamma(\theta)$ of 280γ in 1967Ro14 determine uniquely J=5/2. T$_{1/2}$: from pulsed-beam γ(t) (1969Sh12). From measured B(E2), T$_{1/2}$=0.22 ns *9*.
400.6 *7*	5/2$^+$		E(level): may be excited by E1 or E3 transitions or by γ rays from higher levels.
468.9 *4*	1/2$^-$		B(E2)↑=0.0033 *3* B(E2): weighted average of 0.0033 *3* (1967Ro14), 0.0035 *5* (1977An32).
572.33 *21*	5/2$^-$	2.4 ps *6*	B(E2)↑=0.073 *7* B(E2): weighted average of 0.073 *7* (1967Ro14), 0.074 *9* (1977An32). J$^\pi$: $\gamma(\theta)$ measurements of 1967Ro14 support J=5/2. T$_{1/2}$: from B(E2) and δ(572γ)=0.39 *5* (1967Ro14) and Adopted branching.
617.8 *5*	1/2$^-$,3/2$^-$		B(E2)↑=0.011 *3* B(E2): weighted average of 0.0011 *3* (1967Ro14), 0.0010 *5* (1977An32).
821.78 *22*	7/2$^-$	2.46 ps *19*	B(E2)↑=0.105 *8* B(E2): weighted average of 0.107 *10* (1967Ro14), 0.102 *14* (1977An32). T$_{1/2}$: from B(E2) (1967Ro14) and Adopted branching.
864.8 *10*			B(E2)↑=0.0021 *5* (1977An32)
1064.3 *10*	3/2$^-$		B(E2)↑: 0.0024 *4* listed in 1976AnZJ, but is not given by the authors in their published work 1977An32.
1075.6 *10*	3/2$^-$		B(E2)↑=0.0014 *3* (1977An32)

[†] From Adopted Levels.

Coulomb excitation **1967Ro14,1977An32 (continued)**

$\gamma(^{75}As)$

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[a]	Comments
198.59	$1/2^-$	198.6 *1*	100	0.0	$3/2^-$	M1+E2	0.425 *18*	0.0218 *6*	α(K)=0.0193 *6*; α(L)=0.00212 *7*; α(M)=0.000323 *10*; α(N)=2.39×10^{-5} *7* δ: from Adopted $T_{1/2}$ and B(E2).
264.55	$3/2^-$	66.0 *10*	2.2[&]	198.59	$1/2^-$				
		264.7 *3*	97.8[&]	0.0	$3/2^-$	M1+E2	0.0362 *15*	0.00712 *11*	α=0.00712 *11*; α(K)=0.00634 *9*; α(L)=0.000670 *10*; α(M)=0.0001022 *15*; α(N)=7.77×10^{-6} *1* δ: from the Adopted $T_{1/2}$ and B(E2). I_γ: from 1977An32.
279.60	$5/2^-$	279.6 *3*	100	0.0	$3/2^-$	M1+E2	−0.50 *+8−19*	0.0085 *15*	α=0.0085 *15*; α(K)=0.0076 *13*; α(L)=0.00081 *15*; α(M)=0.000124 *22*; α(N)=9.3×10^{-6} *16* A_2=−0.195 *11*. δ: other: −1.1 *2* (1967Ro14), but δ=−0.50 agrees better with 0.60 *5* from Adopted $T_{1/2}$ and B(E2) values.
400.6	$5/2^+$	119.7 *11*	31 *10*	279.60	$5/2^-$				
		136.7 *8*	69 *10*	264.55	$3/2^-$				
468.9	$1/2^-$	189.6[#]	<1	279.60	$5/2^-$				
		204.3[#]	<1	264.55	$3/2^-$				
		269.9[b] *13*	3 *2*	198.59	$1/2^-$				
		468.8 *4*	97 *2*	0.0	$3/2^-$				A_2=−0.095 *8*.
572.33	$5/2^-$	292.6 *4*	1.0 *2*	279.60	$5/2^-$				
		308.0 *7*	0.4 *1*	264.55	$3/2^-$				
		374.8[b] *7*	0.5 *2*	198.59	$1/2^-$				
		572.3 *3*	98.1 *3*	0.0	$3/2^-$	(M1+E2)	+0.39 *5*	0.001218 *24*	α=0.001218 *24*; α(K)=0.001087 *22*; α(L)=0.0001131 *23*; α(M)=1.72×10^{-5} *4*; α(N)=1.31×10^{-6} A_2=+0.064 *14*.
617.8	$1/2^-$,$3/2^-$	353.5[@] *10*	8[@]	264.55	$3/2^-$				
		419.6 *9*	68 *14*	198.59	$1/2^-$				
		617.4 *7*	32 *14*	0.0	$3/2^-$				
821.78	$7/2^-$	249.4 *3*	5.5 *8*	572.33	$5/2^-$				
		542.4 *4*	8.2 *9*	279.60	$5/2^-$				
		557.8[b] *9*	0.6 *2*	264.55	$3/2^-$				
		821.7 *3*	85.7 *13*	0.0	$3/2^-$				A_2=+0.221 *21*.
864.8		864.8[@] *10*	97[@]	0.0	$3/2^-$				
1064.3	$3/2^-$	1064.3[@] *10*	9[@]	0.0	$3/2^-$				
1075.6	$3/2^-$	1075.6[@] *10*	100[@]	0.0	$3/2^-$				

[†] Photon branching ratios.
[‡] From $\gamma(\theta)$, except for the δ values of 198.6γ and 264.7γ.

$^{75}_{33}As_{42}$-2

Coulomb excitation **1967Ro14,1977An32** **(continued)**

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

[#] Transition not seen. Eγ from level energy difference.
[@] From 1977An32. ΔE=1 keV assumed.
[&] From 1977An32.
[a] Additional information 1.
[b] Placement of transition in the level scheme is uncertain.

$^{75}_{33}As_{42}$-3

Coulomb excitation 1967Ro14,1977An32

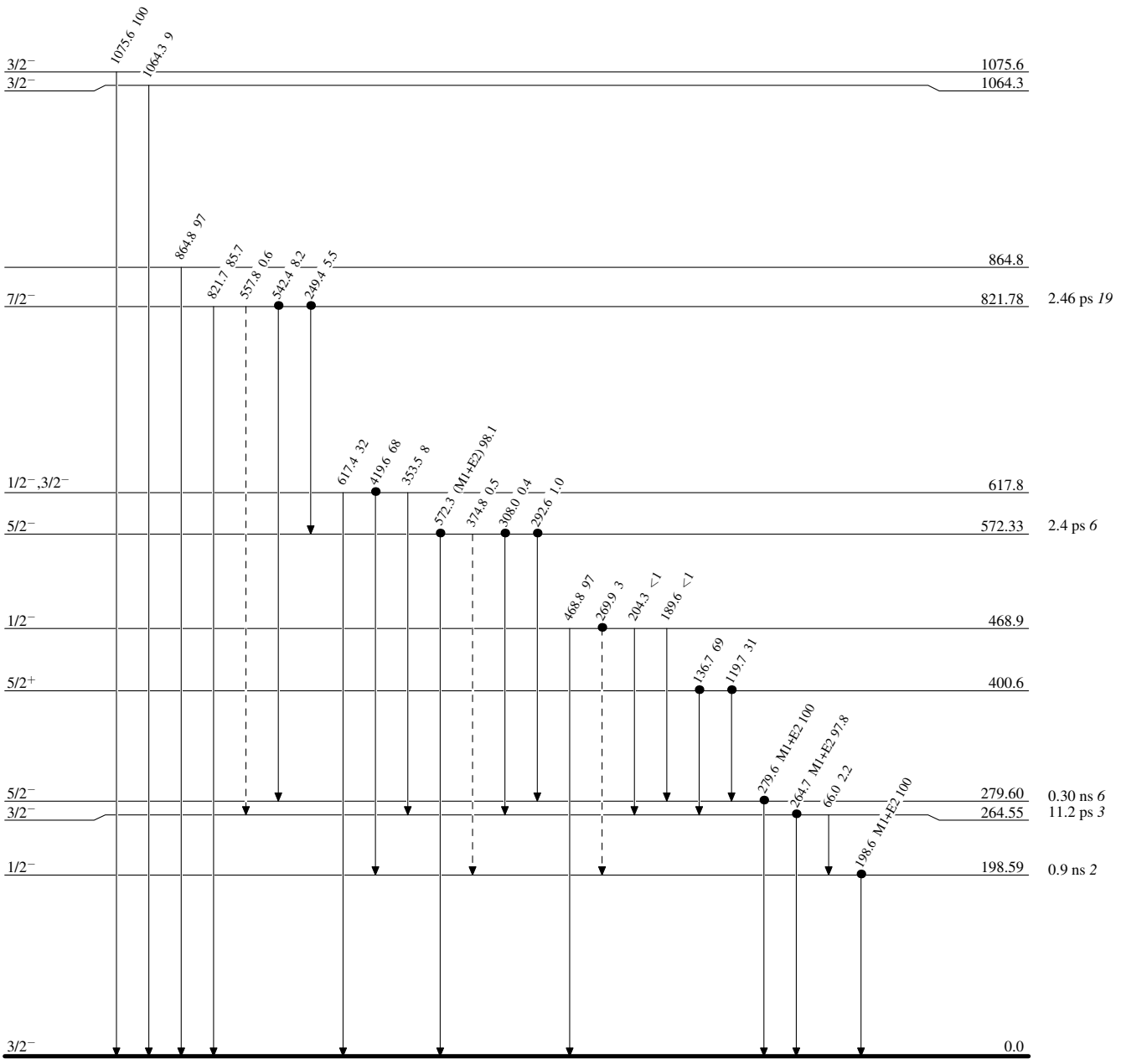
Legend

Level Scheme

Intensities: % photon branching from each level

γ Decay (Uncertain)

Coincidence



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