^{75}As(α,2nγ) E=28 MeV 1974De51

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Sep-2020

1974De51 (also 1974De54): ^{75}As(α,2nγ) E=28 MeV. Measured γ, $\gamma\gamma$, $\gamma(\theta)$.
Other:
1973EbZQ: ^{75}As(α,2nγ) E=22.5 MeV. Measured γ, $\gamma\gamma$, $\gamma(\theta)$. Comparison with data from 1989NaZZ and 1974De51 suggests that while γ-ray energies agree well, the photon intensities generally disagree.

^{77}Br Levels

A level at 1788 deexciting by a 307γ (1974De51) has been omitted. The 307.7γ is now placed with 947 level (1989NaZZ,1993Do14).

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0.0[#]	3/2$^-$		
105.6[&] *8*	9/2$^+$	4.28 min *10*	%IT=100 $T_{1/2}$: from the Adopted Levels.
129.6 *8*	5/2$^+$		
161.8[@] *8*	5/2$^-$		
276.1 *13*	(3/2)$^+$		
575.3[#] *8*	7/2$^-$		
638.9[&] *11*	(13/2)$^+$		
782.0[a] *10*	(9/2)$^+$		
790.0[@] *11*	(9/2)$^-$		
945.9 *15*	(11/2$^+$)		
1273.2[#] *11*	(11/2)$^-$		
1302.9[a] *11*	(13/2)$^+$		
1480.7[&] *15*	(17/2)$^+$		
1537.5[@] *15*	(13/2$^-$)		
2020.7[#] *15*	(15/2$^-$)		
2044.2[a] *15*	(17/2)$^+$		
2337.4[@] *18*	(17/2$^-$)		
2548.3[&] *18*	(21/2)$^+$		

[†] From least-squares fit to Eγ data.
[‡] From the Adopted Levels.
[#] Band(A): g.s. band,α=−1/2.
[@] Band(a): g.s. band,α=+1/2.
[&] Band(B): $\nu g_{9/2}$,α=+1/2.
[a] Band(C): Band based on (9/2)$^+$,α=+1/2.

$\gamma(^{77}Br)$

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α[†]	Comments
(24.2)		129.6	5/2$^+$	105.6	9/2$^+$	(E2)	145.7	α(K)=82.2 *12*; α(L)=54.3 *8*; α(M)=8.60 *12*; α(N)=0.590 *9* E$_\gamma$,Mult.: from Adopted Gammas.
105.5		105.6	9/2$^+$	0.0	3/2$^-$	E3		Mult.: from the Adopted dataset.
129.7	4.9 *4*	129.6	5/2$^+$	0.0	3/2$^-$	D		A_2=−0.12 *11*

Continued on next page (footnotes at end of table)

^{75}As(α,2nγ) E=28 MeV 1974De51 (continued)

$\gamma(^{77}Br)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
146.5		276.1	$(3/2)^+$	129.6	$5/2^+$		
161.9	23.0 *10*	161.8	$5/2^-$	0.0	$3/2^-$	D+Q	A_2=−0.43 *7*
264.6#		1537.5	$(13/2^-)$	1273.2	$(11/2)^-$		
307.0	2.6 *3*	945.9	$(11/2^+)$	638.9	$(13/2)^+$		A_2=−0.44 *18* Placement is from (^{6}Li,3nγ). Placement from a 1788 level in (α,2nγ) is not confirmed in any other study.
317#		2337.4	$(17/2^-)$	2020.7	$(15/2^-)$		
413.4	2.3 *3*	575.3	$7/2^-$	161.8	$5/2^-$		A_2=−0.11 *30*
483.3‡#	‡	1273.2	$(11/2)^-$	790.0	$(9/2)^-$		
483.3‡#	‡	2020.7	$(15/2^-)$	1537.5	$(13/2^-)$		This transition is not supported from other in-beam studies.
520.9	3.1 *4*	1302.9	$(13/2)^+$	782.0	$(9/2)^+$		A_2=+0.05 *20*; A_2=+0.07 *6* (1973EbZQ)
533.5	36 *2*	638.9	$(13/2)^+$	105.6	$9/2^+$		A_2=+0.25 *5*
575.2	6.3 *6*	575.3	$7/2^-$	0.0	$3/2^-$		A_2=+0.12 *14*
628.2	10.6 *8*	790.0	$(9/2)^-$	161.8	$5/2^-$		A_2=+0.18 *10*
652.5	1.4 *3*	782.0	$(9/2)^+$	129.6	$5/2^+$		A_2=+0.15 *35*
664.1	2.9 *4*	1302.9	$(13/2)^+$	638.9	$(13/2)^+$		A_2=+0.16 *16*
676.1	4.2 *6*	782.0	$(9/2)^+$	105.6	$9/2^+$		A_2=+0.07 *20*
697.9	6.0 *6*	1273.2	$(11/2)^-$	575.3	$7/2^-$		A_2=+0.03 *14*
741.3	5.4 *5*	2044.2	$(17/2)^+$	1302.9	$(13/2)^+$		A_2=+0.12 *15*
747.5‡	11.6‡ *10*	1537.5	$(13/2^-)$	790.0	$(9/2)^-$		A_2=+0.16 *11*
747.5‡	11.6‡ *10*	2020.7	$(15/2^-)$	1273.2	$(11/2)^-$		A_2=+0.16 *11*
799.9	6.3 *7*	2337.4	$(17/2^-)$	1537.5	$(13/2^-)$		A_2=+0.15 *11*
841.8	16.5 *10*	1480.7	$(17/2)^+$	638.9	$(13/2)^+$		A_2=+0.13 *6*
1067.6	5.5 *9*	2548.3	$(21/2)^+$	1480.7	$(17/2)^+$		A_2=+0.27 *13*
1199		1302.9	$(13/2)^+$	105.6	$9/2^+$		E_γ: from 1973EbZQ.

† Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

‡ Multiply placed with undivided intensity.

Placement of transition in the level scheme is uncertain.

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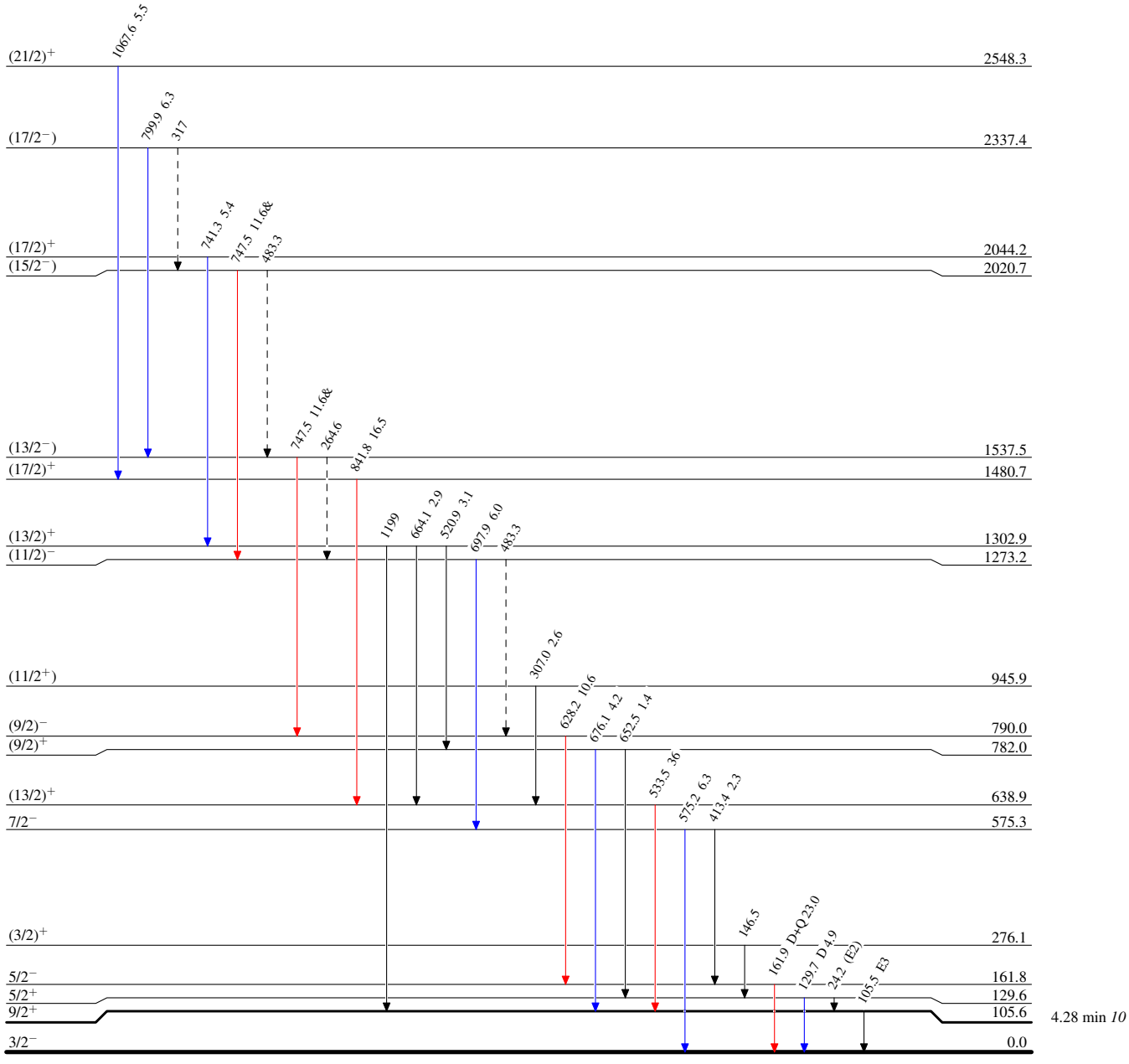
Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{77}_{35}Br_{42}$

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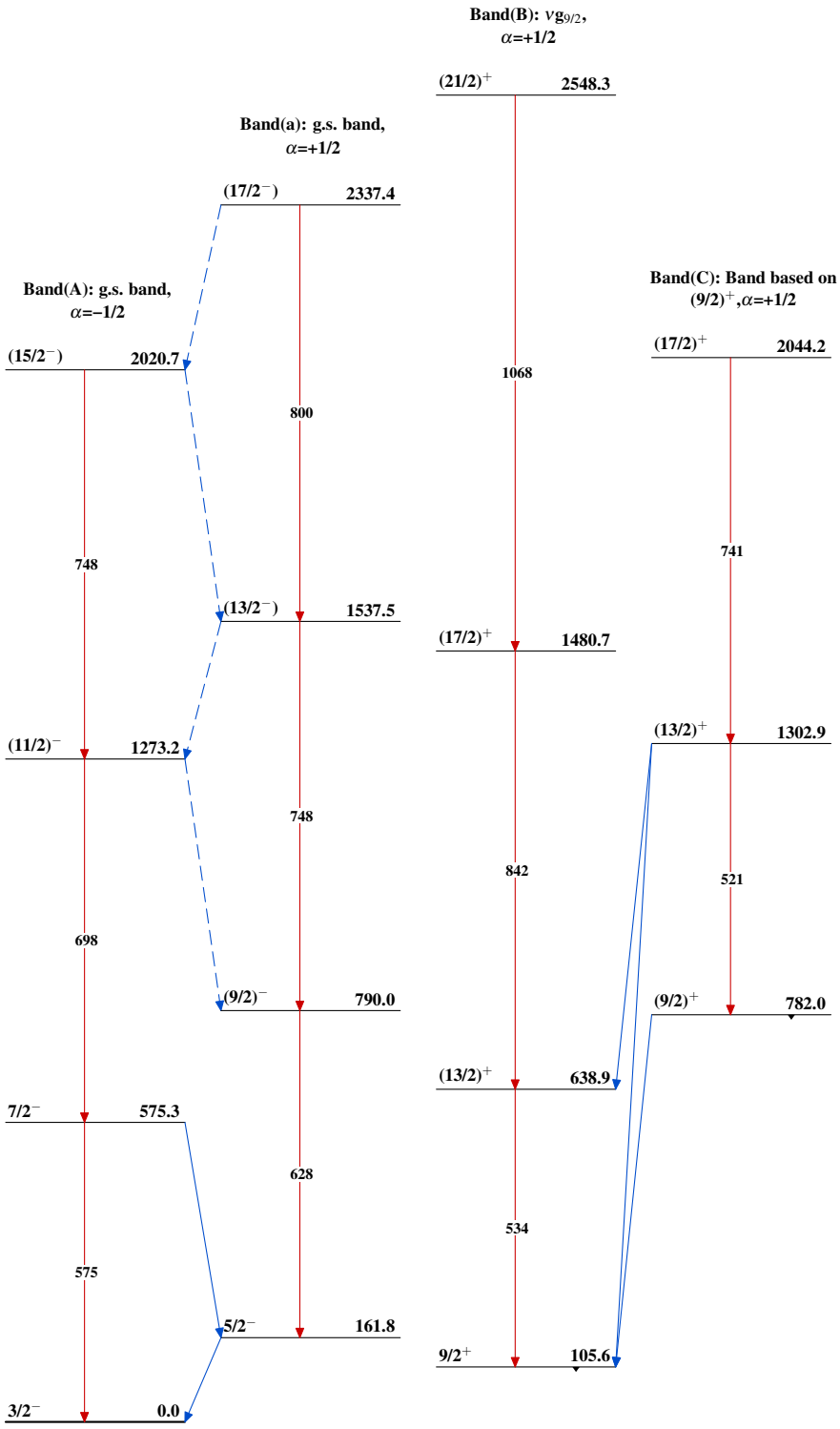

$^{77}_{35}Br_{42}$