

$^{75}\text{As}(\text{n},\text{n}'\gamma)$ 1978Ab06

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

E(n)=1300-2800 keV. Measured γ , $\gamma(\theta)$, excitation functions; pulsed beam; statistical theory used to interpret $\gamma(\theta)$ and excitation function data.

Others:

1974Mc10: (n,n' γ), E=300-2200 keV; measured G. (n,n'), E=1050-1350 keV; measured n captures by tof method.

1971Wi22: (n,n' γ), E=800-2200 keV; measured σ .

1984Ko32, 1980Ko17 (same group): measured neutron scattering length and σ .

Isomer T_{1/2}: 1972Br53, 1966Me02, 1959Gl56.

Others: 1958Bo80, 1956Cr31.

Additional information 1.

Level	Angle integrated cross sections (mb)			
	En=1.5 MeV	En=2.0 MeV	En=2.5 MeV	En=2.8 MeV
198.3	464 16	449 15		402 6
264.7	426 9	409 9	405 16	384 4
279.3	405 8	452 8	450 14	455 4
313.5		13 5	9 3	9.6 15
352.7	11.4 11	6.9 8	7.2 19	4.6 8
400.4	17.8 7	25 3	21 4	17.3 9
418.8	58 3	56 3	47 3	46.0 11
459.4	11.4 23	10.0 16	4.3 11	5.3 6
468.5	59.8 3	46.9 25	42 3	35.6 15
541.9		7.2 6	6.9 5	7.4 6
572.1	122 4	116 3	109 3	114.1 14
600.1		6.3 11		6.4 8
606.3	38 4	27 2	18.4 18	19.5 10
617.4	24 4	22.5 25		15.2 8
642.9	16 2	25.6 23	23.1 20	30 1
739.6		15.6 21		10.9 6
784.4	16.5 21	11.4 15	16.2 19	11.2 6
815.3	12.7 21	14.3 18	18 3	20.5 10
821.3	52 3	56 2	58 2	58 1
859.9	9.7 15	7.6 20	6.5 34	5.9 10
864.1	58 3	67 3	61.6 25	58.1 11
892.6			5.6 14	5.9 8
947.9			5.5 15	6.1 8
1005.7			3.4 8	8.4 10
1020.3	8.6 20	29.7 20	18.6 20	22.2 9
1044.2	2.9 8	14.0 19	11.0 15	14.0 8
1063.1				2.0 5
1074.7	24.4 25	21.3 23	14.5 16	17.0 9
1082.6			4.9 14	6.9 10
1101.0		7.2 18	4.3 14	5.9 8
1127.8	7.6 21	11.1 19	5.7 13	5.6 5
1142.0		11.0 20	10.0 18	11.0 6
1203.5	12.0 18	13.0 15	12.6 18	13.6 8
1309.0		6.5 11	9.0 19	6.0 8
1349.3	4.6 10	14.1 18	14.0 21	10.9 8
1370.7		9.9 16	11.8 24	11.0 9
1420.0			3.7 14	4.3 8
1423.4				1.9 7
1430.3			4.1 14	3.8 5
1517.9				2.5 6
1605.5		9.2 23	13 3	10.2 9
1629.5				2.7 8
1654.0				2.2 6

1872.3		1.2 4
1899.2	2.9 10	4.4 6
1999.9		6.5 6
2009.4		2.3 6
2022.0		1.2 6
2159.8		2.0 5
2175.8		3.5 8
2228.5		1.9 6
2239.1		4.8 8
2258.6		4.6 10

 ^{75}As Levels

E(level) [‡]	J^{π} [†]	$T_{1/2}$	Comments
0.0	3/2 ⁻ #		
198.3 6	1/2 ⁻ #		
264.6 5	3/2 ⁻ #		
279.3 5	5/2 ⁻ #		
303.8 6	9/2 ⁺ #	17.53 ms 8	E(level): from 1974Mc10 . $T_{1/2}$: from $\gamma(t)$ (1972Br53). Others: 1976Ga33 (17.0 ms 3), 1966Me02 (17.5 ms 10).
400.4 5	5/2 ⁺ #		
468.5 5	1/2 ⁻ , 3/2 ⁻ #		
572.1 5	5/2 ⁻ #		
617.4 6	1/2 ⁻ , 3/2 ⁻ #		
821.3 6	7/2 ⁻ #		
859.9 6	1/2 ⁺ #		
864.1 7			
886.0 15			
1041.8 19	7/2		
1063.1 5	3/2 ⁻		
1074.7 6	3/2		
1080.4 23	(5/2 ⁺)		
1095.5 17	(7/2 ⁻)		J^{π} : from Adopted Levels. 1/2, 3/2, 5/2 from (n,n' γ) is inconsistent with decay pattern.
1101.0 5	(5/2 ⁺ , 7/2 ⁻)		J^{π} : from Adopted Levels. (1/2) from (n,n' γ) is inconsistent with decay pattern.
1127.7 6	(1/2 ⁺)		
1171.6 18	(1/2 ⁻ to 7/2 ⁻)		J^{π} : from Adopted Levels. (11/2) from (n,n' γ) is inconsistent with decay pattern.
1203.5 6	(3/2 ⁻)		
1301.2 19	(5/2 ⁺)		
1309.0 6	(5/2)		
1349.3 7	(3/2 ⁻)		
1370.6 6	(3/2 ⁻)		
1419.8 7	(5/2 ⁻)		
1430.3 7	3/2 ⁽⁺⁾		
1503.1 8	3/2 ⁽⁺⁾		
1580.7 8	1/2 ⁻		
1605.5 8	3/2 ⁻		
1653.9 6	3/2 ⁽⁺⁾		
1684.7 6	(3/2 ⁻)		
1687.9 7	1/2 ⁽⁻⁾		
1872.6 6	3/2 ⁻ #		
1899.3 9	(5/2 ⁺)		J^{π} : from Adopted Levels. (3/2, 5/2 ⁺) from (n,n' γ); but 3/2 is inconsistent with decay pattern.
1909.1 15	1/2 ⁺ #		
1987.8 13	1/2		
1999.9 11	5/2		

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$^{75}\text{As}(n,n'\gamma)$ 1978Ab06 (continued) ^{75}As Levels (continued)

E(level) [‡]	J^π [†]	Comments
2009.3 11	(5/2)	J^π : from Adopted Levels. $1/2^-, 3/2^+$ from $(n,n'\gamma)$ is inconsistent with decay pattern.
2021.4 9	($1/2^-, 3/2^+$)	
2067.6 15	(5/2 ⁺)	J^π : from Adopted Levels. $1/2^-, 3/2^+$ from $(n,n'\gamma)$ is inconsistent with decay pattern.
2103.9 9	$1/2^{(+)}$	
2110.1 13	$3/2^-$ #	
2147.3 14		
2159.8 14	$1/2^+$	
2175.7 15	$1/2$	
2228.5 9	$1/2^-, 3/2$	
2239.1 13	$3/2$	
2258.6 14	$1/2$	
2303.3 11		
2326.6? 16		
2358.2? 18		
2379.4 7	$3/2^-$ #	
2419.0? 20		
2503.4 20		
2507.6 20		
2570.6 20		
2608.9? 20		

[†] From comparison of measured yield and $\gamma(\theta)$ with Hauser-Feshbach calculations, unless stated otherwise.

[‡] From 1978Ab06 where the decay scheme is deduced from excitation functions and energy sums.

From Adopted Levels.

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

$E_i(\text{level})$	J_i^π	E_γ	I_γ [†]	E_f	J_f^π	Mult.
198.3	$1/2^-$	198.30	100	0.0	$3/2^-$	
264.6	$3/2^-$	264.65	100	0.0	$3/2^-$	
279.3	$5/2^-$	279.32	100	0.0	$3/2^-$	
303.8	$9/2^+$	303.8 [‡]	100 [‡]	0.0	$3/2^-$	E3
400.4	$5/2^+$	120.8 [‡]	19 [‡]	279.3	$5/2^-$	
		136.0 [‡]	65 [‡]	264.6	$3/2^-$	
		400.39	16 [‡]	0.0	$3/2^-$	
468.5	$1/2^-, 3/2^-$	468.49	100	0.0	$3/2^-$	
572.1	$5/2^-$	572.12	100	0.0	$3/2^-$	
617.4	$1/2^-, 3/2^-$	338.4	4	279.3	$5/2^-$	
		352.66	9	264.6	$3/2^-$	
		418.83	65	198.3	$1/2^-$	
		617.39	22	0.0	$3/2^-$	
821.3	$7/2^-$	541.90	14	279.3	$5/2^-$	
		821.26	86	0.0	$3/2^-$	
859.9	$1/2^+$	459.44	39	400.4	$5/2^+$	
		582.3	15	279.3	$5/2^-$	
		661.5	14	198.3	$1/2^-$	
		859.93	32	0.0	$3/2^-$	
864.1		292.0	3	572.1	$5/2^-$	
		564.4	4	303.8	$9/2^+$	
		585.6	4	279.3	$5/2^-$	

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$^{75}\text{As}(n,n'\gamma)$ 1978Ab06 (continued)								
$\gamma(^{75}\text{As})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π	Mult.	δ	Comments
864.1		667.4	6	198.3	1/2 ⁻			
		864.12	83	0.0	3/2 ⁻			
886.0		313.51	23	572.1	5/2 ⁻			
		606.32	60	279.3	5/2 ⁻			
		621.3	17	264.6	3/2 ⁻			
1041.8	7/2	642.89	71	400.4	5/2 ⁺			
		739.62	29	303.8	9/2 ⁺			
1063.1	3/2 ⁻	491.9	10	572.1	5/2 ⁻	D+Q	+0.81	Mult., δ : from 1978Ab06 .
		784.38	53	279.3	5/2 ⁻	D+Q	-0.67	Mult., δ : from 1978Ab06 .
		798.3	32	264.6	3/2 ⁻			
		1063.12	5	0.0	3/2 ⁻	D+Q	-1.25	Mult., δ : from 1978Ab06 .
1074.7	3/2	875.6	6	198.3	1/2 ⁻			
		1074.72	94	0.0	3/2 ⁻			Mult., δ : the authors give $\delta=+0.38$ for M1+E2 if the parity of 1075 level is negative.
1080.4	(5/2 ⁺)	195.3	45	886.0				
		815.33 [#]	55	264.6	3/2 ⁻			E_γ : if it is placed from the 1080 level, J(1080) is consistent with 5/2. Mult., δ : the authors give $\delta=+1.07$ for E1+M2 if J^π of 1080 level is 5/2 ⁺ .
1095.5	(7/2 ⁻)	815.33 [#]	100	279.3	5/2 ⁻			
1101.0	(5/2 ⁺ , 7/2 ⁻)	795.6	65	303.8	9/2 ⁺			
		1101.04	35	0.0	3/2 ⁻			
1127.7	(1/2 ⁺)	1127.77	100	0.0	3/2 ⁻			
1171.6	(1/2 ⁻ to 7/2 ⁻)	600.10	53	572.1	5/2 ⁻			
		892.57	47	279.3	5/2 ⁻			
1203.5	(3/2 ⁻)	734.7	22	468.5	1/2 ⁻ , 3/2 ⁻			
		924.2	8	279.3	5/2 ⁻			
		1203.51	70	0.0	3/2 ⁻			
1301.2	(5/2 ⁺)	260.8	24	1041.8	7/2			
		1020.34	76	279.3	5/2 ⁻			
1309.0	(5/2)	445.1	6	864.1				
		736.9	13	572.1	5/2 ⁻			
		908.9	8	400.4	5/2 ⁺			
		1005.65	13	303.8	9/2 ⁺			
		1044.22	41	264.6	3/2 ⁻			
		1308.97	19	0.0	3/2 ⁻			
1349.3	(3/2 ⁻)	881.2	14	468.5	1/2 ⁻ , 3/2 ⁻			
		947.86	19	400.4	5/2 ⁺			
		1349.28	67	0.0	3/2 ⁻			
1370.6	(3/2 ⁻)	241.7	39	1127.7	(1/2 ⁺)			
		549.5	14	821.3	7/2 ⁻			
		1370.65	47	0.0	3/2 ⁻			
1419.8	(5/2 ⁻)	248.9	35	1171.6	(1/2 ⁻ to 7/2 ⁻)			
		1142.02	44	279.3	5/2 ⁻			
		1156.4	8	264.6	3/2 ⁻			
		1420.04	13	0.0	3/2 ⁻			
1430.3	3/2 ⁽⁺⁾	303.6	29	1127.7	(1/2 ⁺)			
		1030.1	21	400.4	5/2 ⁺			
		1232.0	7	198.3	1/2 ⁻			
		1430.30	43	0.0	3/2 ⁻			
1503.1	3/2 ⁽⁺⁾	403.3	16	1101.0	(5/2 ⁺ , 7/2 ⁻)			
		682.0	9	821.3	7/2 ⁻			
		1105.7	9	400.4	5/2 ⁺			
		1302.8	57	198.3	1/2 ⁻			

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$^{75}\text{As}(\text{n},\text{n}'\gamma)$ **1978Ab06** (continued) $\gamma(^{75}\text{As})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π	Mult.
1503.1	$3/2^{(+)}$	1503.1	9	0.0	$3/2^-$	
1580.7	$1/2^-$	1299.5	89	279.3	$5/2^-$	
		1580.6	11	0.0	$3/2^-$	
1605.5	$3/2^-$	988.6	9	617.4	$1/2^-, 3/2^-$	
		1137.9	14	468.5	$1/2^-, 3/2^-$	
		1408.3	18	198.3	$1/2^-$	
		1605.52	59	0.0	$3/2^-$	
1653.9	$3/2^{(+)}$	1037.1	23	617.4	$1/2^-, 3/2^-$	
		1082.60	43	572.1	$5/2^-$	
		1653.99	34	0.0	$3/2^-$	
1684.7	$(3/2^-)$	557.4	12	1127.7	$(1/2^+)$	
		825.0	12	859.9	$1/2^+$	
		1066.1	22	617.4	$1/2^-, 3/2^-$	
		1281.5	15	400.4	$5/2^+$	
		1405.7	19	279.3	$5/2^-$	
		1684.7	20	0.0	$3/2^-$	
1687.9	$1/2^{(-)}$	1070.6	15	617.4	$1/2^-, 3/2^-$	
		1423.41	21	264.6	$3/2^-$	
		1688.0	64	0.0	$3/2^-$	
1872.6	$3/2^-$	1052.1	6	821.3	$7/2^-$	
		1568.8	17	303.8	$9/2^+$	[E3]
		1593.5	33	279.3	$5/2^-$	
		1675.1	30	198.3	$1/2^-$	
		1872.30	14	0.0	$3/2^-$	
1899.3	$(5/2^+)$	1599.0	31	303.8	$9/2^+$	
		1620.8	30	279.3	$5/2^-$	
		1899.24	39	0.0	$3/2^-$	
1909.1	$1/2^+$	1629.48	40	279.3	$5/2^-$	
		1644.7	60	264.6	$3/2^-$	
1987.8	$1/2$	300.5	11	1687.9	$1/2^{(-)}$	
		1517.90	49	468.5	$1/2^-, 3/2^-$	
		1723.6	17	264.6	$3/2^-$	
		1987.8	23	0.0	$3/2^-$	
1999.9	$5/2$	938.6	10	1063.1	$3/2^-$	
		1112.5	11	886.0		
		1178.6	8	821.3	$7/2^-$	
		1602.1	9	400.4	$5/2^+$	
		1737.4	18	264.6	$3/2^-$	
		1999.89	44	0.0	$3/2^-$	
2009.3	$(5/2)$	912.9	8	1095.5	$(7/2^-)$	
		1543.2	26	468.5	$1/2^-, 3/2^-$	
		1704.5	30	303.8	$9/2^+$	
		2009.40	36	0.0	$3/2^-$	
2021.4	$(1/2^-, 3/2^+)$	895.8	25	1127.7	$(1/2^+)$	
		1753.2	45	264.6	$3/2^-$	
		2022.00	30	0.0	$3/2^-$	
2067.6	$(5/2^+)$	757.4	28	1309.0	$(5/2)$	
		763.9	26	1301.2	$(5/2^+)$	
		1762.8	24	303.8	$9/2^+$	
		2067.6	22	0.0	$3/2^-$	
2103.9	$1/2^{(+)}$	1245.0	57	859.9	$1/2^+$	
		2102.8	43	0.0	$3/2^-$	
2110.1	$3/2^-$	1537.6	25	572.1	$5/2^-$	
		1710.4	28	400.4	$5/2^+$	
		1914.3	38	198.3	$1/2^-$	

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$^{75}\text{As}(\text{n},\text{n}'\gamma)$ **1978Ab06** (continued) $\gamma(^{75}\text{As})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π
2110.1	3/2 ⁻	2110.3	9	0.0	3/2 ⁻	2379.4	3/2 ⁻	356.8	14	2021.4	(1/2 ⁻ , 3/2 ⁺)
2147.3		1885.7	34	264.6	3/2 ⁻			1559.4	38	821.3	7/2 ⁻
		2147.3	66	0.0	3/2 ⁻			2379.5	48	0.0	3/2 ⁻
2159.8	1/2 ⁺	2159.81	100	0.0	3/2 ⁻	2419.0?		2419.4 [@]	100	0.0	3/2 ⁻
2175.7	1/2	2175.80	100	0.0	3/2 ⁻	2503.4		1001.1	21	1503.1	3/2 ⁽⁺⁾
2228.5	1/2 ⁻ , 3/2	1962.5	50	264.6	3/2 ⁻			1616.8	40	886.0	
		2228.49	50	0.0	3/2 ⁻			1931.2	12	572.1	5/2 ⁻
2239.1	3/2	364.3	17	1872.6	3/2 ⁻			2502.4	27	0.0	3/2 ⁻
		1376.7	22	864.1		2507.6		361.3	17	2147.3	
		2239.09	61	0.0	3/2 ⁻			1379.5	22	1127.7	(1/2 ⁺)
2258.6	1/2	2258.60	100	0.0	3/2 ⁻			2203.1	27	303.8	9/2 ⁺
2303.3		1206.1	18	1095.5	(7/2 ⁻)			2507.6	34	0.0	3/2 ⁻
		1444.3	28	859.9	1/2 ⁺	2570.6		1153.2	25	1419.8	(5/2 ⁻)
		1481.9	39	821.3	7/2 ⁻			1526.0	22	1041.8	7/2
		2302.5	15	0.0	3/2 ⁻			2266.0	17	303.8	9/2 ⁺
2326.6?		717.5 [@]	31	1605.5	3/2 ⁻			2570.6	36	0.0	3/2 ⁻
		2326.5 [@]	69	0.0	3/2 ⁻	2608.9?		2608.9 [@]	100	0.0	3/2 ⁻
2358.2?		2358.2 [@]	100	0.0	3/2 ⁻						

[†] Photon branching ratios.[‡] From **1974Mc10**.

Multiply placed.

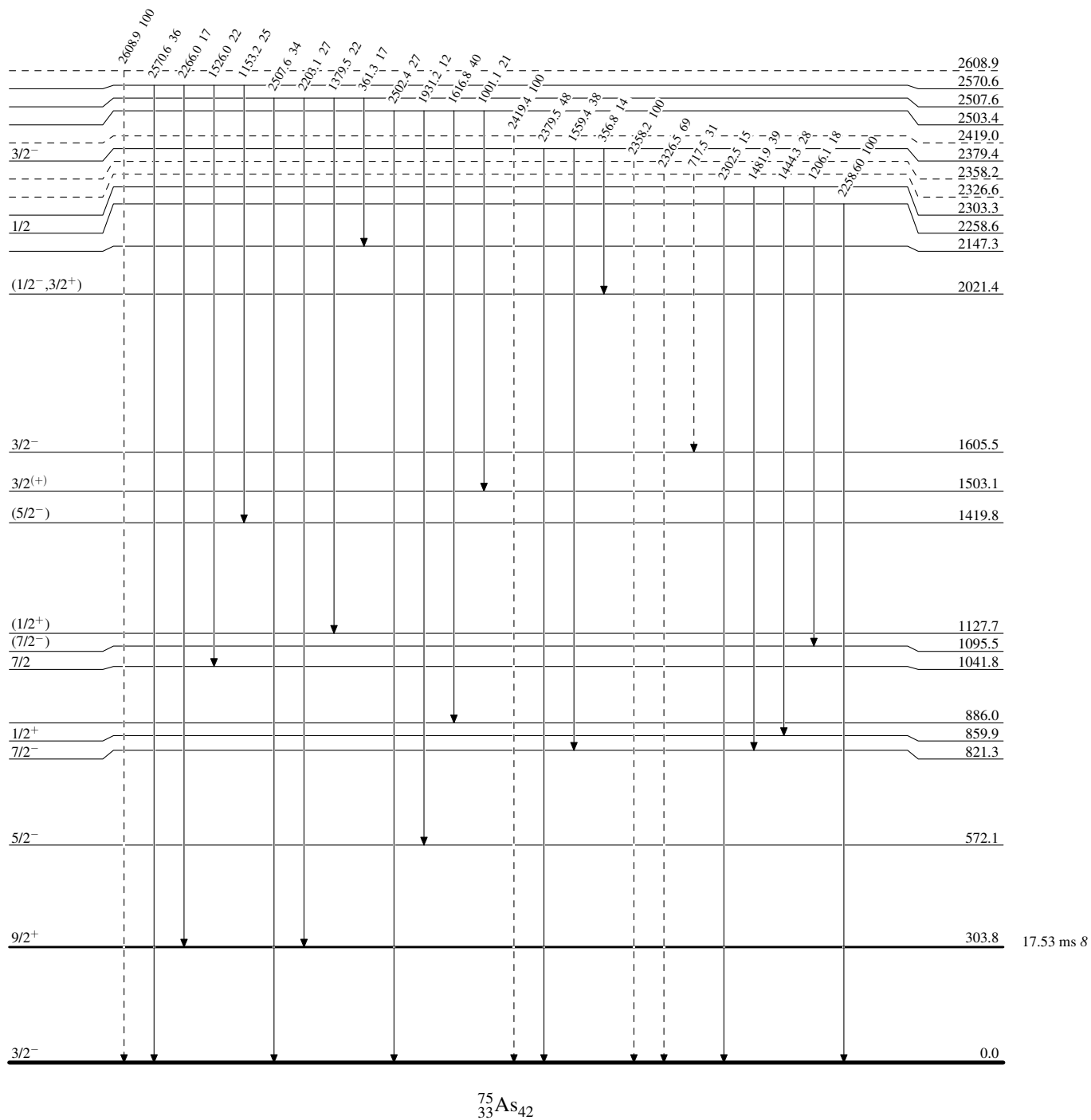
[@] Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme

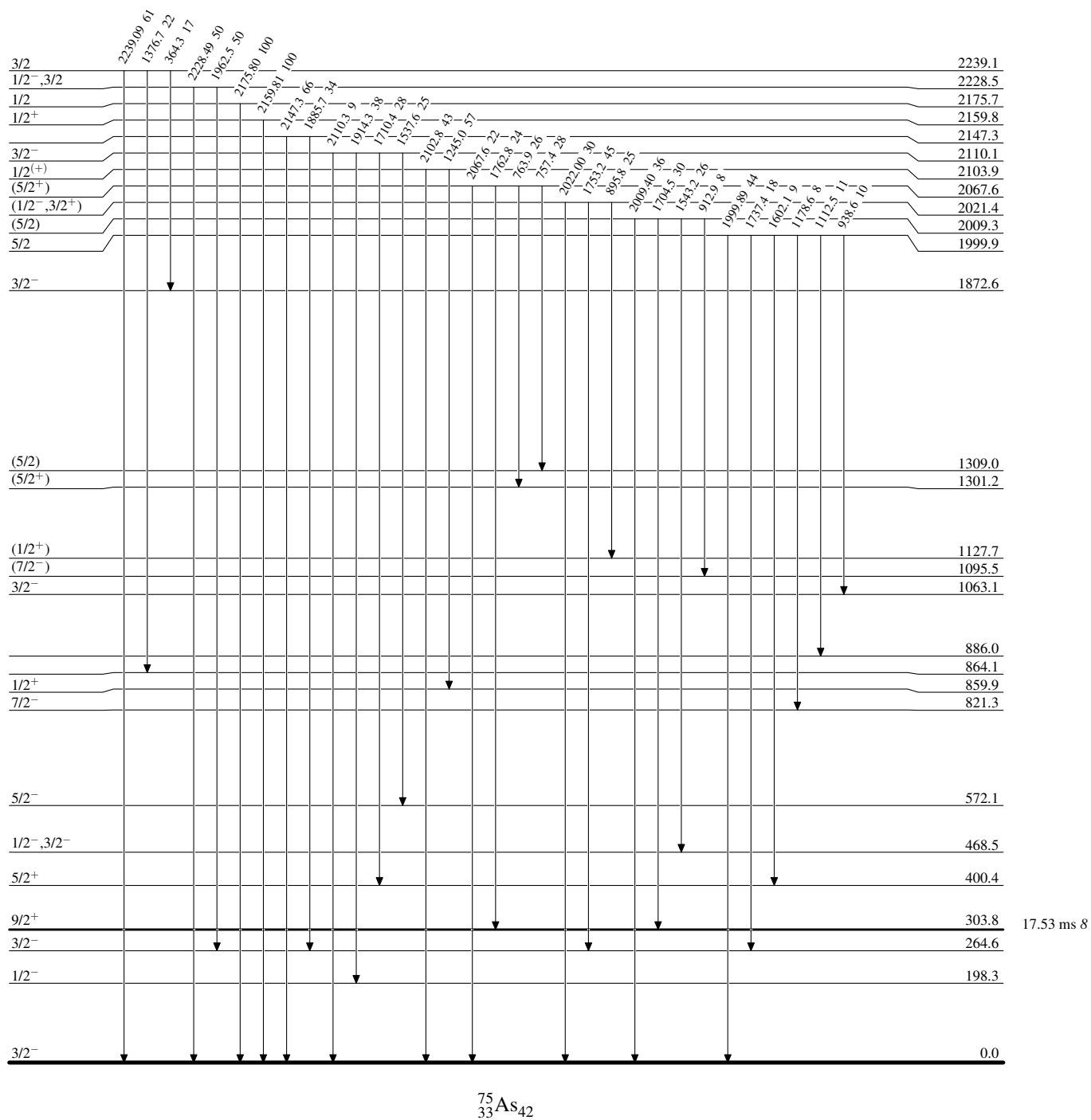
Intensities: % photon branching from each level

-----► γ Decay (Uncertain)

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Level Scheme (continued)

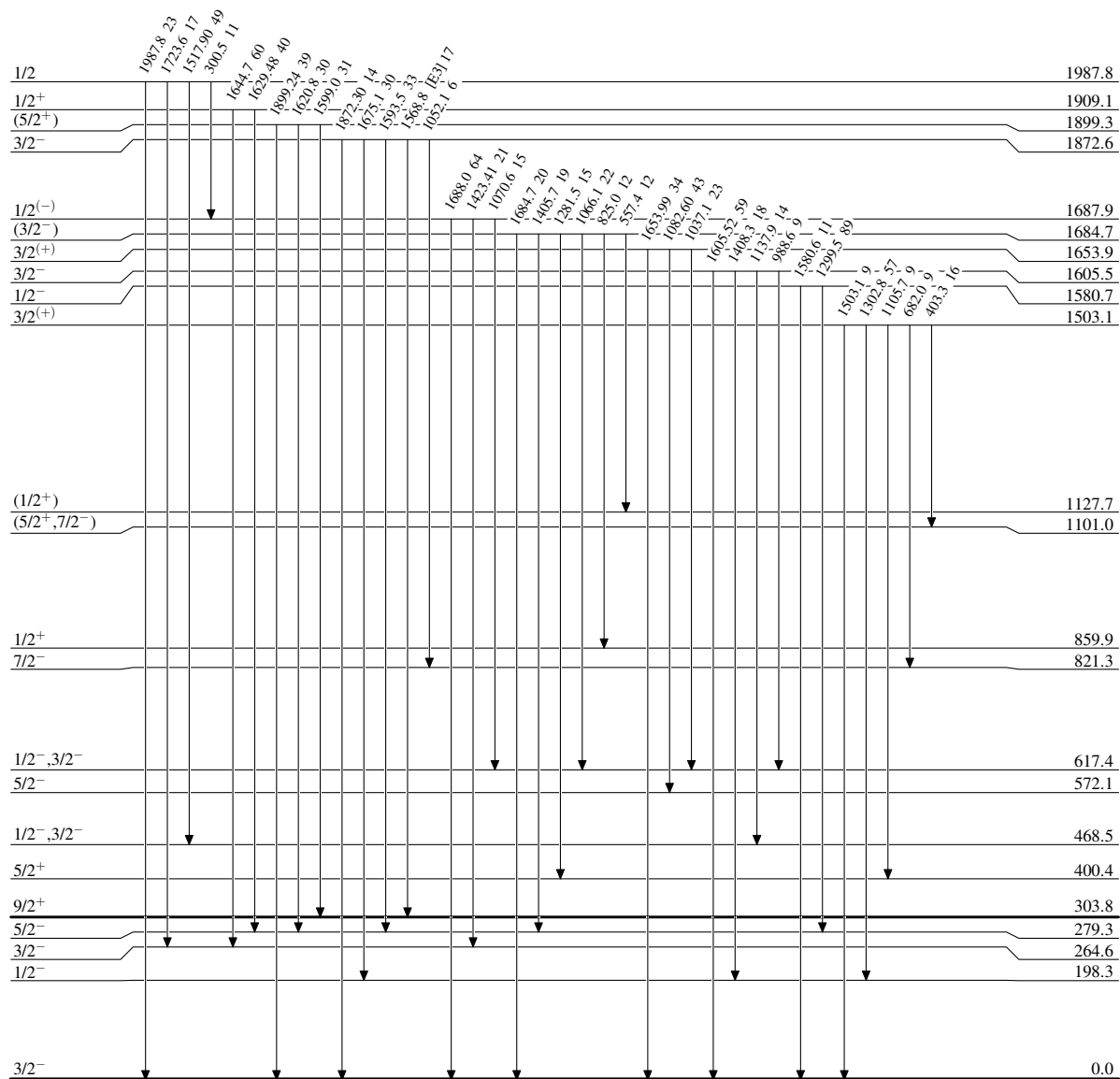
Intensities: % photon branching from each level



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Level Scheme (continued)

Intensities: % photon branching from each level



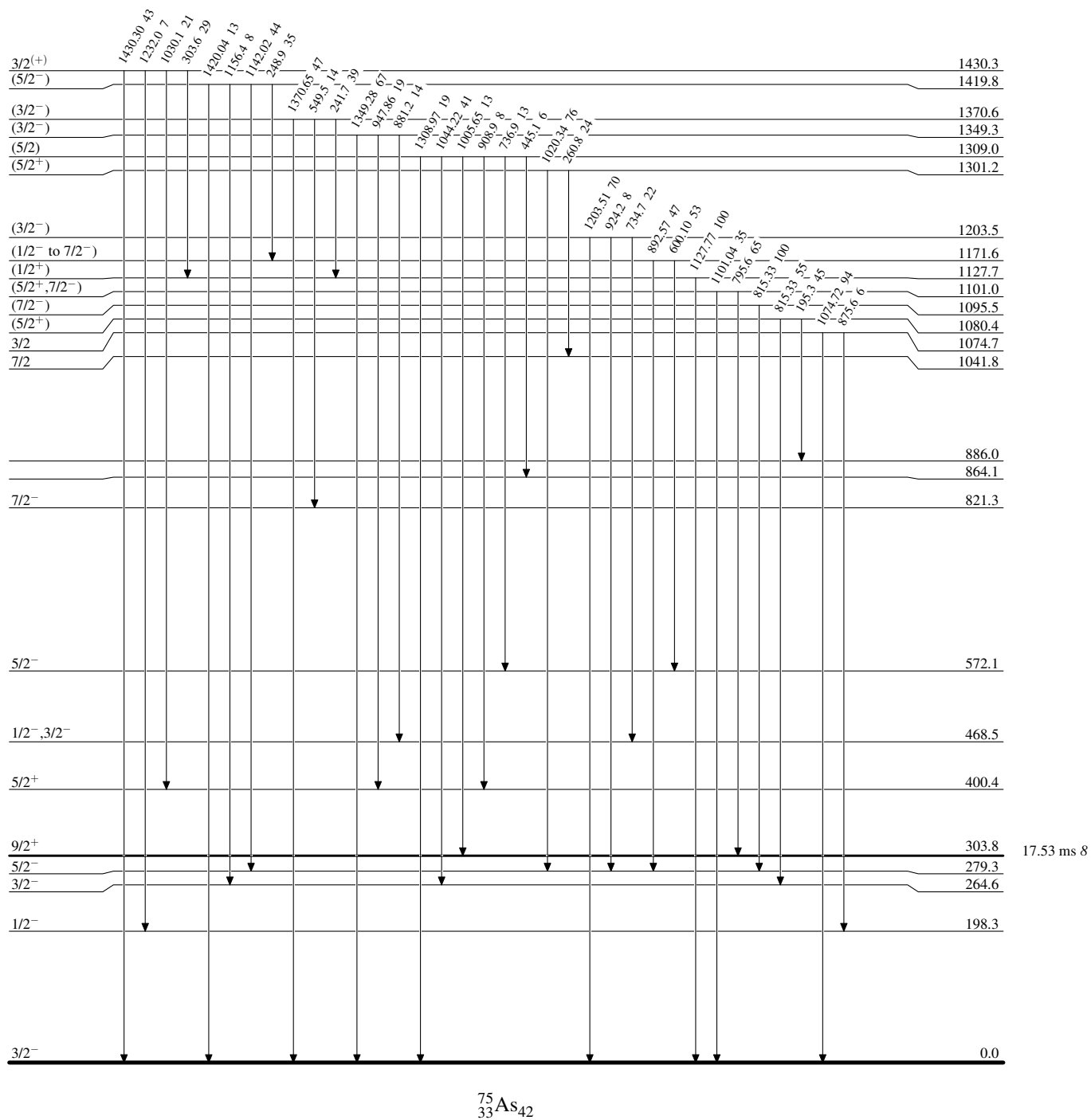
17.53 ms 8

 $^{75}_{33}\text{As}_{42}$

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Level Scheme (continued)

Intensities: % photon branching from each level



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Level Scheme (continued)

Intensities: % photon branching from each level

