^{76}Ge(^{6}Li,3nγ) 1988NaZP

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 135, 193 (2016)	31-May-2016

E=20-30 MeV. Measured γ, $\gamma\gamma$, $\gamma(\theta)$ using enriched target. Excitation function data obtained from E(^{6}Li)=20-25 MeV, $\gamma\gamma$ data at 24 and 30 MeV and $\gamma(\theta)$ data at 24 MeV.

^{79}Br Levels

E(level)	J$^{\pi}$[†]	T$_{1/2}$[†]	Comments
0.0	3/2$^-$		
207.4 *3*	9/2$^+$	4.85 s *4*	%IT=100
217.5 *2*	5/2$^-$		
261.7 *4*	3/2$^-$		
307.1 *4*	1/2$^-$,3/2$^-$		
381.8 *3*	5/2$^+$		
523.4 *3*	5/2$^-$		
761.6 *3*	7/2$^-$		
793.6 *4*	(3/2$^-$,5/2)		
796.7 *4*	13/2$^+$		
906.3 *4*	(7/2)$^-$		
940.5 *11*	(3/2)		
954.5 *4*	(7/2$^-$)		
1069.2 *3*	9/2$^-$		
1177.7 *5*	(5/2$^+$)		J$^{\pi}$: 3/2$^+$ (1988NaZP).
1181.0 *5*	11/2$^+$		
1189.9 *6*	(3/2$^-$,5/2$^-$,7/2$^-$)		J$^{\pi}$: 7/2$^-$ (1988NaZP).
1221.7 *6*	5/2$^-$,7/2$^-$		J$^{\pi}$: 1988NaZP suggest 9/2$^+$.
1256.8 *5*	(7/2)		J$^{\pi}$: 5/2$^+$ (1988NaZP).
1313.9 *6*	(3/2$^-$,5/2,7/2$^-$)		J$^{\pi}$: 9/2$^-$ (1988NaZP).
1333.8 *4*	(9/2$^-$)		J$^{\pi}$: 7/2$^-$ (1988NaZP).
1390.4 *5*	(9/2)$^+$		
1491.6 *6*			J$^{\pi}$: 13/2$^+$ (1988NaZP).
1572.5 *7*	(5/2)$^+$		J$^{\pi}$: 3/2$^+$ (1988NaZP).
1621.3 *7*			J$^{\pi}$: 11/2$^+$ (1988NaZP).
1683.2 *6*	13/2$^+$		
1713.9 *4*	11/2$^-$		
1732.9 *6*	17/2$^+$		
1742.2 *6*			J$^{\pi}$: 15/2$^+$ (1988NaZP).
1780.9 *5*	(11/2$^-$)		E(level): 1988NaZP propose two levels near this energy but all three γ-rays can be fitted assuming only one level.
1792.8 *8*			J$^{\pi}$: 11/2$^+$ (1988NaZP).
1949.2 *4*	13/2$^-$		
1957.0 *6*	15/2$^+$		
2049.3 *7*			J$^{\pi}$: 13/2$^+$ (1988NaZP).
2279.0 *7*			J$^{\pi}$: 9/2$^-$ (1988NaZP).
2356.1 *6*	(15/2$^+$)		
2393.6 *4*	13/2$^-$		
2422.5 *6*	17/2$^+$		J$^{\pi}$: 15/2$^+$ (1988NaZP).
2469.0 *6*	15/2$^-$		
2482.3 *7*	(13/2$^-$)		
2507.0? *12*			
2575.7 *8*			J$^{\pi}$: 13/2$^+$ (1988NaZP).
2581.5 *5*	15/2$^-$		
2726.8 *6*	17/2$^-$		
2775.6 *5*	17/2$^-$		
2803.0 *12*			

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^{76}Ge(^{6}Li,3nγ) 1988NaZP (continued)

^{79}Br Levels (continued)

E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†
2867.2 *8*	21/2+	3090.1 *6*	(19/2)−	3537.7 *7*	(21/2)−
2903.7 *8*	19/2+	3170.3 *8*	19/2−	3561.9 *7*	21/2(−)
				4117.6 *9*	25/2+

† From Adopted Levels. The J^{π} values suggested by 1988NaZP from their $\gamma(\theta)$ and excitation function data are given under comments.

γ(^{79}Br)

E_{γ}†	I_{γ}	E_i(level)	J_i^{π}	E_f	J_f^{π}	Mult.	δ	Comments
187.8 *5*	3.4	2581.5	15/2−	2393.6	13/2−			A_2=−0.20 *4*; A_4=−0.02 *5*
194.1 *3*	11.6	2775.6	17/2−	2581.5	15/2−			A_2=−0.22 *4*; A_4=−0.04 *5*
207.5 *3*		207.4	9/2+	0.0	3/2−	E3		Mult.: From Adopted Gammas.
217.5 *3*	63	217.5	5/2−	0.0	3/2−			A_2=−0.07 *4*; A_4=−0.07 *5*
238.6 *5*	4.1	761.6	7/2−	523.4	5/2−			A_2=−0.15 *4*; A_4=−0.03 *5*
261.7 *5*	8.0	261.7	3/2−	0.0	3/2−			A_2=+0.02 *5*
271.3 *5*	3.9	1177.7	(5/2+)	906.3	(7/2)−			A_2=+0.02 *4*
307.4‡ *5*	2.2	307.1	1/2−,3/2−	0.0	3/2−			
308.2‡ *5*	7.2	1069.2	9/2−	761.6	7/2−			A_2=−0.12 *4*; A_4=+0.03 *5*
314.7 *5*	8.0	3090.1	(19/2)−	2775.6	17/2−	D+Q		A_2=−0.43 *4*; A_4=+0.03 *5*
363.5‡		3090.1	(19/2)−	2726.8	17/2−			
381.8 *3*	15	381.8	5/2+	0.0	3/2−			A_2=−0.13 *4*; A_4=−0.03 *5*
384.3 *5*	1.7	1181.0	11/2+	796.7	13/2+	D+Q	−2.1 *8*	A_2=−0.50 *5*; A_4=+0.16 *6*
444.8 *5*	2.4	2393.6	13/2−	1949.2	13/2−			A_2=+0.20 *4*; A_4=+0.03 *5*
446.8‡@		1780.9	(11/2−)	1333.8	(9/2−)			
447.6‡ *5*	4.5	3537.7	(21/2)−	3090.1	(19/2)−			A_2=−0.38 *4*; A_4=−0.02 *5*
465.4‡ *5*	1.1	2422.5	17/2+	1957.0	15/2+			
471.9 *5*	2.8	3561.9	21/2(−)	3090.1	(19/2)−	D+Q	−2.5 *+10−19*	A_2=−0.57 *4*; A_4=+0.12 *5*
484.1 *5*	1.1	1390.4	(9/2)+	906.3	(7/2)−	D+Q		Mult.: from A_2=−0.51 *4*$ A_4=−0.18 *5*.
486.9 *5*	1.2	793.6	(3/2−,5/2)	307.1	1/2−,3/2−			A_2=−0.32 *4*; A_4=−0.06 *5*
502.3 *5*	5.5	1683.2	13/2+	1181.0	11/2+	D+Q		A_2=−0.57 *4*; A_4=+0.04 *5*
523.2 *3*	11	523.4	5/2−	0.0	3/2−			A_2=−0.06 *4*; A_4=−0.00 *5*
524.4‡		906.3	(7/2)−	381.8	5/2+			
531.9‡ *5*	3.0	793.6	(3/2−,5/2)	261.7	3/2−			A_2=−0.04 *4*; A_4=+0.01 *5*
533.1‡@ *5*	4.1	2482.3	(13/2−)	1949.2	13/2−			A_2=+0.08 *4*; A_4=−0.09 *5*
544.5 *3*	19	761.6	7/2−	217.5	5/2−			A_2=−0.02 *4*; A_4=+0.01 *5*
558.7		940.5	(3/2)	381.8	5/2+			
565.1 *5*	2.2	2279.0		1713.9	11/2−			A_2=−0.08 *5*; A_4=+0.02 *6*
571.1‡ *5*	5.1	1792.8		1221.7	5/2−,7/2−			A_2=−0.21 *6*; A_4=+0.01 *7*
572.9‡ *5*	8.7	1333.8	(9/2−)	761.6	7/2−			A_2=+0.12 *4*; A_4=+0.00 *6*
575.8 *5*	4.5	793.6	(3/2−,5/2)	217.5	5/2−			A_2=+0.10 *4*; A_4=+0.04 *5*
589.3 *3*	100	796.7	13/2+	207.4	9/2+	(Q)		A_2=+0.24 *4*; A_4=−0.04 *5*
623.0 *5*	1.3	2356.1	(15/2+)	1732.9	17/2+			A_2=−0.10 *4*; A_4=−0.05 *5*
632.6 *5*	2.1	2581.5	15/2−	1949.2	13/2−			A_2=−0.36 *4*; A_4=+0.16 *5*
644.4 *5*	2.4	1713.9	11/2−	1069.2	9/2−			A_2=−0.36 *4*; A_4=0.00 *5*
666.2 *5*	7.6	1572.5	(5/2)+	906.3	(7/2)−			A_2=+0.02 *4*
688.3 *5*	4.4	2469.0	15/2−	1780.9	(11/2−)			A_2=+0.19 *4*; A_4=+0.04 *5*
692.8 *3*	12.3	954.5	(7/2−)	261.7	3/2−			A_2=−0.03 *4*; A_4=+0.05 *5*
694.9 *5*	4.3	1491.6		796.7	13/2+			A_2=+0.19 *4*; A_4=+0.04 *5*

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^{76}Ge(^{6}Li,3nγ) 1988NaZP (continued)

$\gamma(^{79}Br)$ (continued)

E_γ [†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	Comments
698.9 *5*	4.1	906.3	$(7/2)^-$	207.4	$9/2^+$	D(+Q)	−0.3 *3*	A_2=−0.29 *4*; A_4=+0.11 *5*
701.2 *5*	2.0	3170.3	$19/2^-$	2469.0	$15/2^-$	Q		A_2=+0.36 *4*; A_4=−0.14 *6*
715.0‡ *5*	7.3	1621.3		906.3	$(7/2)^-$			A_2=+0.10 *4*; A_4=−0.07 *6*
737.1‡ *5*	4.2	954.5	$(7/2^-)$	217.5	$5/2^-$	D+Q	+1.3 *5*	A_2=−0.44 *4*; A_4=+0.06 *5*
739.3‡ *5*	4.1	2422.5	$17/2^+$	1683.2	$13/2^+$			A_2=−0.25 *5*; A_4=−0.01 *6*
755.1 *5*	6.5	2469.0	$15/2^-$	1713.9	$11/2^-$			A_2=+0.17 *4*; A_4=−0.02 *5*
761.6 *5*	9.6	761.6	$7/2^-$	0.0	$3/2^-$			A_2=+0.14 *6*; A_4=−0.01 *7*
777.5 *5*	6.9	2726.8	$17/2^-$	1949.2	$13/2^-$			A_2=+0.24 *4*; A_4=−0.03 *5*
790.5 *5*	2.2	1313.9	$(3/2^-,5/2,7/2^-)$	523.4	$5/2^-$			A_2=+0.19 *5*; A_4=+0.08 *6*
795.9‡ *5*	7.1	1177.7	$(5/2^+)$	381.8	$5/2^+$			A_2=−0.11 *4*
809.7‡ *5*	3.1	1333.8	$(9/2^-)$	523.4	$5/2^-$			
810.9		3537.7	$(21/2)^-$	2726.8	$17/2^-$			
826.3# *5*	6.2#	1780.9	$(11/2^-)$	954.5	$(7/2^-)$			
826.3#‡ *5*	6.2#	2775.6	$17/2^-$	1949.2	$13/2^-$	Q		A_2=+0.20 *4*; A_4=−0.12 *5*
834.9 *5*	5.8	3561.9	$21/2^{(-)}$	2726.8	$17/2^-$	Q		A_2=+0.24 *3*; A_4=−0.38 *5*
839.9 *5*	5.6	1221.7	$5/2^-,7/2^-$	381.8	$5/2^+$			A_2=+0.11 *5*; A_4=−0.04 *6*
842.8 *5*	5.2	2575.7		1732.9	$17/2^+$			A_2=+0.22 *4*; A_4=+0.05 *5*
851.4 *3*	31	1069.2	$9/2^-$	217.5	$5/2^-$			A_2=+0.19 *4*; A_4=−0.02 *5*
868.2 *5*	3.4	2049.3		1181.0	$11/2^+$			A_2=−0.26 *4*; A_4=+0.10 *5*
875.0 *5*	4.5	1256.8	(7/2)	381.8	$5/2^+$			A_2=−0.38 *4*; A_4=+0.06 *5*
880.1 *3*	22	1949.2	$13/2^-$	1069.2	$9/2^-$			A_2=+0.24 *5*; A_4=+0.02 *6*
886.1@ *5*	2.0	1683.2	$13/2^+$	796.7	$13/2^+$			A_2=−0.39 *5*; A_4=+0.20 *6* γ ray given by 1988NaZP in the table only as a $11/2^+$ to $13/2^+$ transition. The assignment here is based on level energy difference.
935.9 *5*	43	1732.9	$17/2^+$	796.7	$13/2^+$			A_2=+0.21 *4*; A_4=−0.05 *6*
945.5 *5*	3.0	1742.2		796.7	$13/2^+$			A_2=−0.38 *5*; A_4=+0.04 *6*
952.5 *5*	8.2	1713.9	$11/2^-$	761.6	$7/2^-$			A_2=+0.13 *5*; A_4=−0.03 *6*
972.4‡ *5*	4.5	1189.9	$(3/2^-,5/2^-,7/2^-)$	217.5	$5/2^-$	D+Q	−1.0 *+6−11*	A_2=−0.61 *6*; A_4=+0.05 *7*
973.7‡ *5*	18	1181.0	$11/2^+$	207.4	$9/2^+$	D+Q		A_2=−0.76 *6*; A_4=+0.02 *7*
1008.5 *5*	3.4	1390.4	$(9/2)^+$	381.8	$5/2^+$	Q		A_2=+0.26 *4*; A_4=−0.08 *5*
1019.7 *5*	5.3	1780.9	$(11/2^-)$	761.6	$7/2^-$			A_2=+0.03 *4*; A_4=−0.10 *5*
1070.1		2803.0		1732.9	$17/2^+$			
1134.3 *5*	8.0	2867.2	$21/2^+$	1732.9	$17/2^+$	Q		A_2=+0.30 *5*; A_4=−0.08 *6*
1160.1 *5*	7.3	1957.0	$15/2^+$	796.7	$13/2^+$	D+Q	−0.9 *5*	A_2=−0.88 *5*; A_4=+0.10 *6*
1170.8 *5*	2.1	2903.7	$19/2^+$	1732.9	$17/2^+$	D+Q		A_2=−0.68 *5*; A_4=+0.03 *6*
1250.4 *5*	1.3	4117.6	$25/2^+$	2867.2	$21/2^+$			A_2=+0.24 *5*; A_4=−0.04 *6*
1256.6@		1256.8	(7/2)	0.0	$3/2^-$			
1285.3@		2507.0?		1221.7	$5/2^-,7/2^-$			
1323.8 *5*	1.8	2393.6	$13/2^-$	1069.2	$9/2^-$			
1559.6 *5*	<1.0	2356.1	$(15/2^+)$	796.7	$13/2^+$			
1597.0 *5*	1.8	2393.6	$13/2^-$	796.7	$13/2^+$			
1784.7		2581.5	$15/2^-$	796.7	$13/2^+$			

† Uncertainty of 0.3 (for Iγ>10) and 0.5 (for Iγ<10) assigned by the evaluator. No uncertainty is assigned when Iγ is not available. Eγ values above 1020 are from author's level scheme.

‡ Doublet.

Multiply placed with undivided intensity.

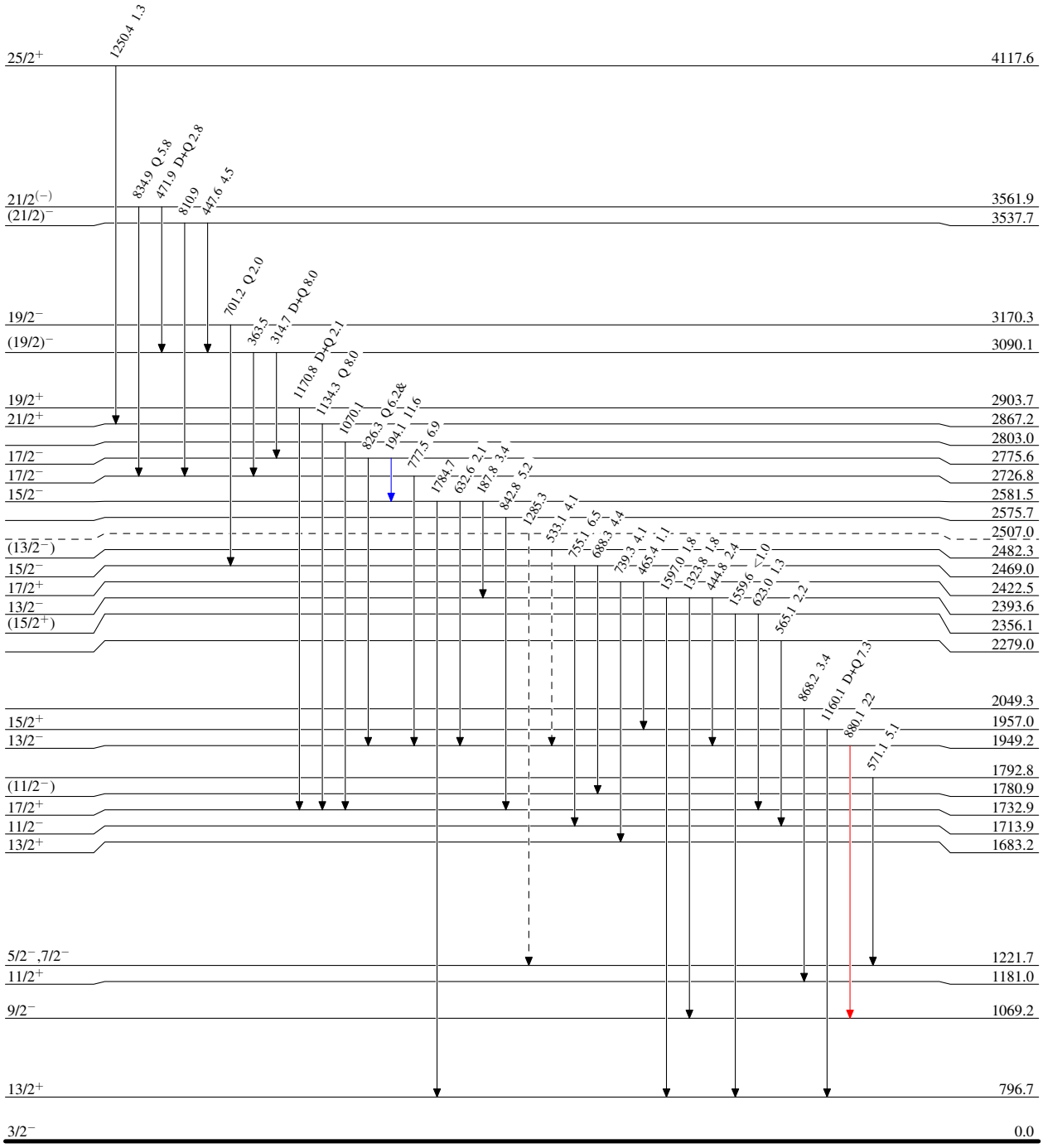
@ Placement of transition in the level scheme is uncertain.

^{76}Ge(^{6}Li,3nγ) 1988NaZP

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)



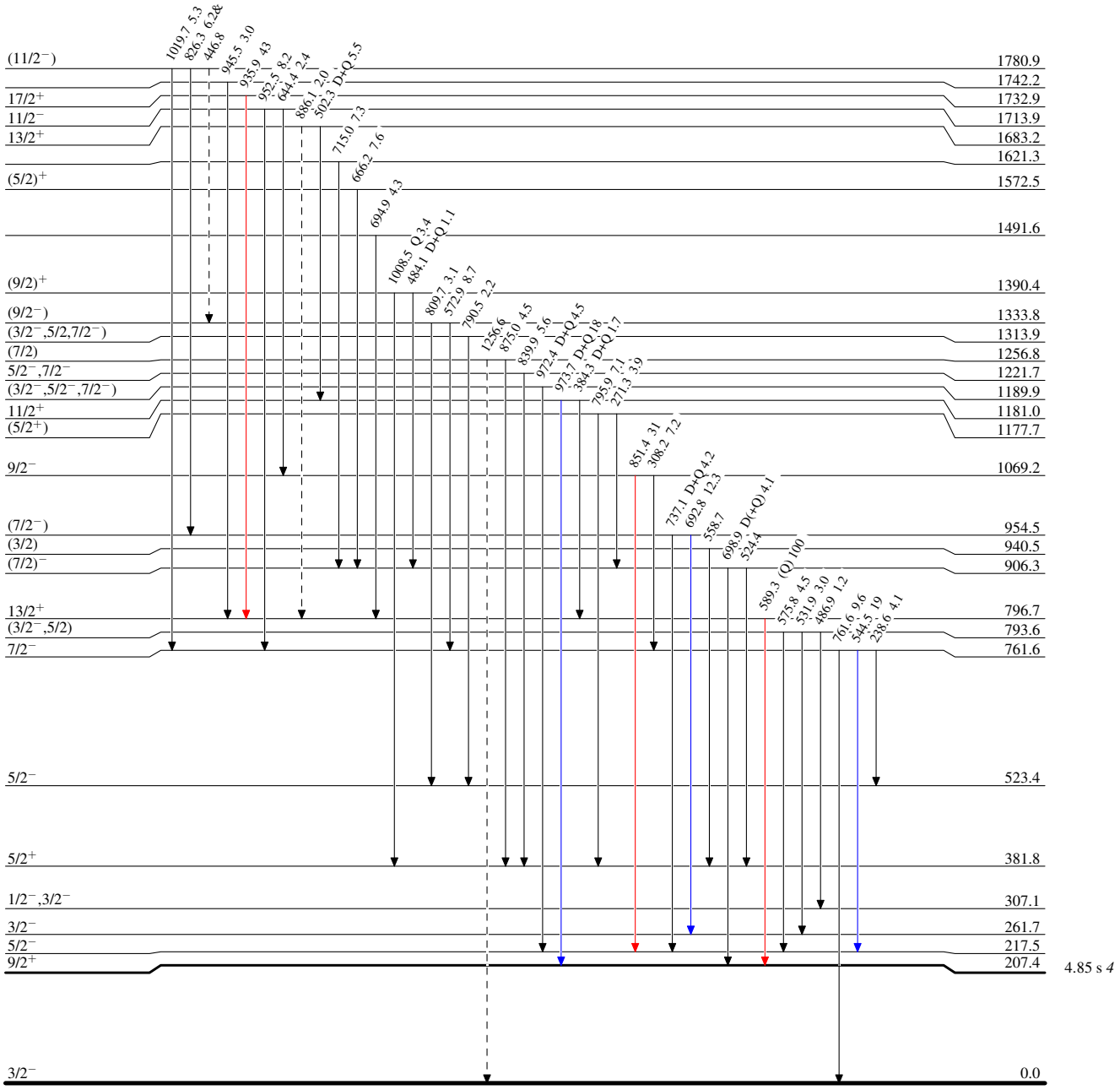
$^{79}_{35}Br_{44}$

^{76}Ge(^{6}Li,3nγ) 1988NaZP

Level Scheme (continued)

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)



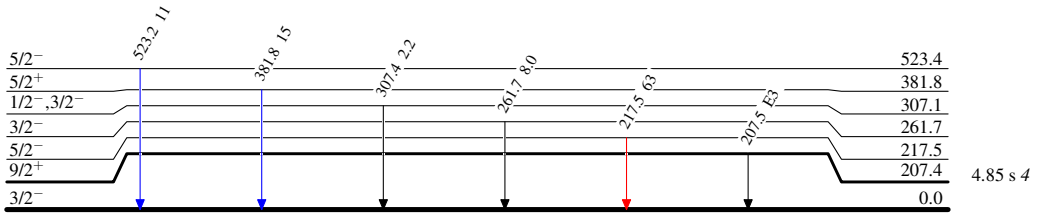
$^{79}_{35}Br_{44}$

^{76}Ge(^{6}Li,3nγ) 1988NaZP

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{79}_{35}Br_{44}$