

$^{12}\text{C}(^{36}\text{Ar}, 2n\gamma)$ 2007Ga03

Type	History		
	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	20-Feb-2010

2007Ga03 (also 2001Ga53): E=105 MeV. Measured E_γ , I_γ , $\gamma\gamma$, $\gamma(\theta)$ using GAMMASPHERE array consisting of 101 HPGe detectors. The Z value of the products was determined with an ionization chamber located at the focal plane of the Fragment Mass Analyzer (FMA). Shell-model calculations. Comparisons with level structure in ^{46}Ti and ^{46}V . All data are from 2007Ga03. 2001Ga53 presented the yrast band only.

 ^{46}Cr Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$E(\text{level})^\dagger$	$J^\pi^\ddagger$
0.0 [#]	0 ⁺	3494.9 9		4236 3		5346 [@] 4	(7 ⁻)
892.5 [#] 5	2 ⁺	3594.2 [@] 9	(4 ⁻)	4306.0 13		6180.1 [#] 13	10 ⁺
1987.8 [#] 7	4 ⁺	3682.8 17		4435.0 12		8163.2? [#] 16	(12 ⁺)
3197.0 [@] 8	(3 ⁻)	3716.3 10		4818.0 [#] 10	8 ⁺		
3227.6 [#] 8	6 ⁺	3778.6 13		4830 [@] 4	(6 ⁻)		
3297 3		3987.3 [@] 9	(5 ⁻)	5117 4			

[†] From least-squares fit to E_γ 's.

[‡] As proposed in 2007Ga03 based on $\gamma(\theta)$ data for selected transitions and mirror analogy with ^{46}Ti and ^{46}V .

[#] Band(A): Yrast (T=1) band. Structure is similar to T=1 states in mirror nuclide ^{46}Ti and ^{46}V .

[@] Band(B): $\Delta J=1$ band based on (3⁻).

 $\gamma(^{46}\text{Cr})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.
393.0 15	0.28 16	3987.3	(5 ⁻)	3594.2 (4 ⁻)		
397.4 6	3.2 4	3594.2	(4 ⁻)	3197.0 (3 ⁻)		D [†]
492.3 7	1.37 24	3987.3	(5 ⁻)	3494.9		
519.3 6	2.5 4	3716.3		3197.0 (3 ⁻)		
581.7 11	0.5 3	3778.6		3197.0 (3 ⁻)		
711.8 9	1.1 3	4306.0		3594.2 (4 ⁻)		
760.3 10	1.0 3	3987.3	(5 ⁻)	3227.6 6 ⁺		
790.1 8	2.3 5	3987.3	(5 ⁻)	3197.0 (3 ⁻)		Q [†]
841.0 22	0.5 3	4435.0		3594.2 (4 ⁻)		
892.5 5	100.0 10	892.5	2 ⁺	0.0 0 ⁺		
1095.2 5	61 4	1987.8	4 ⁺	892.5 2 ⁺		
1207.4 9	2.3 4	4435.0		3227.6 6 ⁺		
1236 3	1.5 5	4830	(6 ⁻)	3594.2 (4 ⁻)		
1239.9 5	23.7 16	3227.6	6 ⁺	1987.8 4 ⁺		Q [†]
1359 3	1.7 6	5346	(7 ⁻)	3987.3 (5 ⁻)		
1362.1 7	3.0 5	6180.1	10 ⁺	4818.0 8 ⁺		
1401 3	0.3 3	5117		3716.3		
1506.9 8	3.9 6	3494.9		1987.8 4 ⁺		
1590.4 6	9.3 8	4818.0	8 ⁺	3227.6 6 ⁺		
1605.3 15	2.4 6	3594.2	(4 ⁻)	1987.8 4 ⁺		
1695.0 15	2.3 6	3682.8		1987.8 4 ⁺		
1790 3	1.0 6	3778.6		1987.8 4 ⁺		
1983.0 [‡] 10	1.0 5	8163.2?	(12 ⁺)	6180.1 10 ⁺		
2248 3	1.6 7	4236		1987.8 4 ⁺		

Continued on next page (footnotes at end of table)

$^{12}\text{C}(^{36}\text{Ar},2\text{n}\gamma)$ **2007Ga03 (continued)**

$\gamma(^{46}\text{Cr})$ (continued)

<u>E_γ</u>	<u>I_γ</u>	<u>$E_i(\text{level})$</u>	<u>J^π_i</u>	<u>E_f</u>	<u>J^π_f</u>	<u>Mult.</u>
2304.6 7	11.1 14	3197.0	(3 ⁻)	892.5	2 ⁺	D [†]
2404 3	2.1 10	3297		892.5	2 ⁺	

[†] The $\gamma(\theta)$ measurement shown by 2007Ga03. The patterns are consistent with $\Delta J=2$, quadrupole for 1240 γ and 790 γ ; and $\Delta J=1$ for 2305 γ and 397 γ .
[‡] Placement of transition in the level scheme is uncertain.

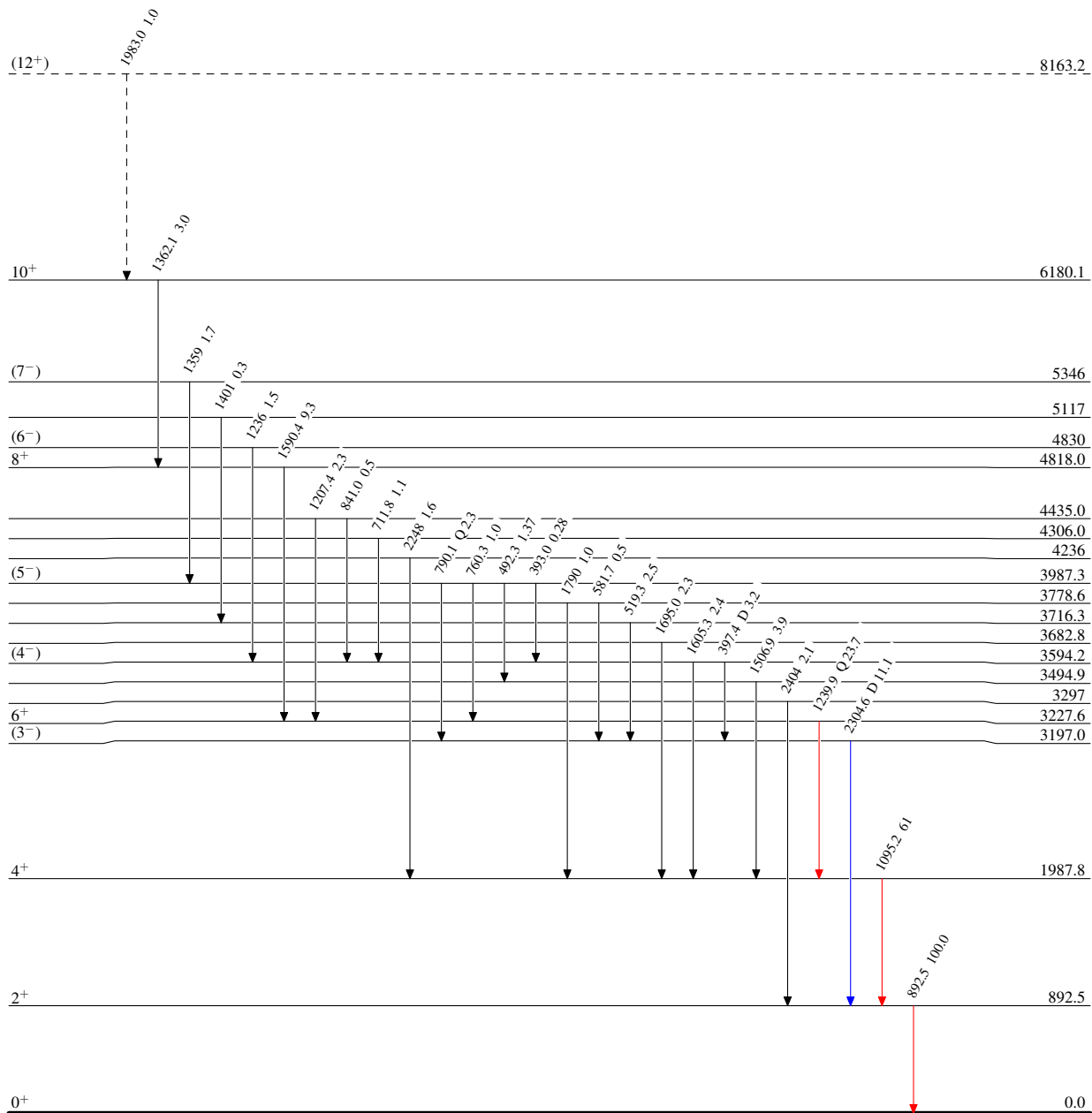
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Level Scheme

Intensities: Relative I_γ

Legend

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

 $^{46}_{24}\text{Cr}_{22}$

