^{168}Er(^{30}Si,Xγ) 2007La03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh	NDS 164, 1 (2020)	15-Feb-2020

2007La03: E(^{30}Si)=142 MeV. Target was 1.15 mg/cm^2 ^{168}Er on a 9 mg/cm^2 Au backing. γ rays were detected with the EUROBALL-III array of 30 single HPGe detectors, 26 Clover and 15 Cluster Compton-shielded detectors. Measured Eγ, Iγ, γγ-coin, γγγ-coin. Deduced levels. Comparison with predictions of soft-octupole vibration model.

^{98}Mo Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0#	0^+	2678.1 *7*	(6^+)	3656.3& *7*	(9^-)	4993.2a *11*	(12,13)
787.3# *4*	2^+	2737.9a *8*	(6,7)	3768.2@ *8*	(9^-)	5046.7# *9*	(12^+)
1509.8# *6*	4^+	2854.1 *7*	(8^+)	4148.9# *8*	(10^+)	5313.8@ *11*	(13^-)
2017.4@ *4*	3^-	3095.9@ *7*	(7^-)	4189.8a *9*	(10,11)	5314.9& *10*	(13^-)
2343.4# *6*	(6^+)	3271.2# *7*	(8^+)	4423.4& *9*	(11^-)	5924.7# *11*	(14^+)
2620.4@ *6*	(5^-)	3527.1a *8*	(8,9)	4537.1@ *10*	(11^-)	6132.6& *11*	(15^-)

† From least-squares fit to Eγ data.
‡ As given by 2007La03, based on previous assignments, and associations with level sequences in the present work.
# Seq.(A): Yrast structure.
@ Seq.(B): γ cascade based on 3^-. Possible octupole structure.
& Seq.(C): γ cascade based on (9^-).
a Seq.(D): γ cascade based on (6,7).

γ(^{98}Mo)

Eγ	Iγ	Ei(level)	J_i^π	Ef	J_f^π	Comments
334.5 *5*	5 *2*	2678.1	(6^+)	2343.4	(6^+)	
385.1 *5*	6.4 *13*	3656.3	(9^-)	3271.2	(8^+)	
394.2 *5*	9 *4*	2737.9	(6,7)	2343.4	(6^+)	
416.8 *5*	2.8 *4*	3271.2	(8^+)	2854.1	(8^+)	
431.5 *5*	6.9 *11*	3527.1	(8,9)	3095.9	(7^-)	
475.3 *5*	16.4 *20*	3095.9	(7^-)	2620.4	(5^-)	
510.7 *5*	24 *3*	2854.1	(8^+)	2343.4	(6^+)	
560.2 *5*	9.3 *11*	3656.3	(9^-)	3095.9	(7^-)	
603.1 *5*	7.8 *16*	2620.4	(5^-)	2017.4	3^-	
662.7 *5*	8.3 *10*	4189.8	(10,11)	3527.1	(8,9)	
672.3 *5*	9.7 *13*	3768.2	(9^-)	3095.9	(7^-)	
722.4 *5*	100	1509.8	4^+	787.3	2^+	
752.7 *5*	6.9 *8*	3095.9	(7^-)	2343.4	(6^+)	
767.1 *5*	10.0 *9*	4423.4	(11^-)	3656.3	(9^-)	
768.9 *5*	6.0 *8*	4537.1	(11^-)	3768.2	(9^-)	
776.7 *5*	3.7 *4*	5313.8	(13^-)	4537.1	(11^-)	
787.4 *5*		787.3	2^+	0.0	0^+	I_γ: no intensity is available since this γ was used as a gating transition.
788.9 *5*	11.5 *5*	3527.1	(8,9)	2737.9	(6,7)	
802.6 *5*	2.8 *5*	3656.3	(9^-)	2854.1	(8^+)	
803.4 *5*	4.0 *5*	4993.2	(12,13)	4189.8	(10,11)	
817.7 *5*	5.5 *5*	6132.6	(15^-)	5314.9	(13^-)	
833.6 *5*	75 *4*	2343.4	(6^+)	1509.8	4^+	
877.6 *5*	12.0 *15*	4148.9	(10^+)	3271.2	(8^+)	

Continued on next page (footnotes at end of table)

^{168}Er(^{30}Si,Xγ) 2007La03 (continued)

$\gamma(^{98}Mo)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.
878.0 *5*		5924.7	(14^+)	5046.7	(12^+)	
891.4 *5*	4.6 *5*	5314.9	(13^-)	4423.4	(11^-)	
897.8 *5*	5.5 *5*	5046.7	(12^+)	4148.9	(10^+)	
927.9 *5*	21.2 *15*	3271.2	(8^+)	2343.4	(6^+)	
1110.3 *5*	14.3 *13*	2620.4	(5^-)	1509.8	4^+	
1168.5 *5*	2.8 *6*	2678.1	(6^+)	1509.8	4^+	
1230.3 *5*	6.4 *14*	2017.4	3^-	787.3	2^+	
1294.9 *5*	2.8 *4*	4148.9	(10^+)	2854.1	(8^+)	
2017.3 *5*	3.7 *9*	2017.4	3^-	0.0	0^+	[E3]

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Level Scheme

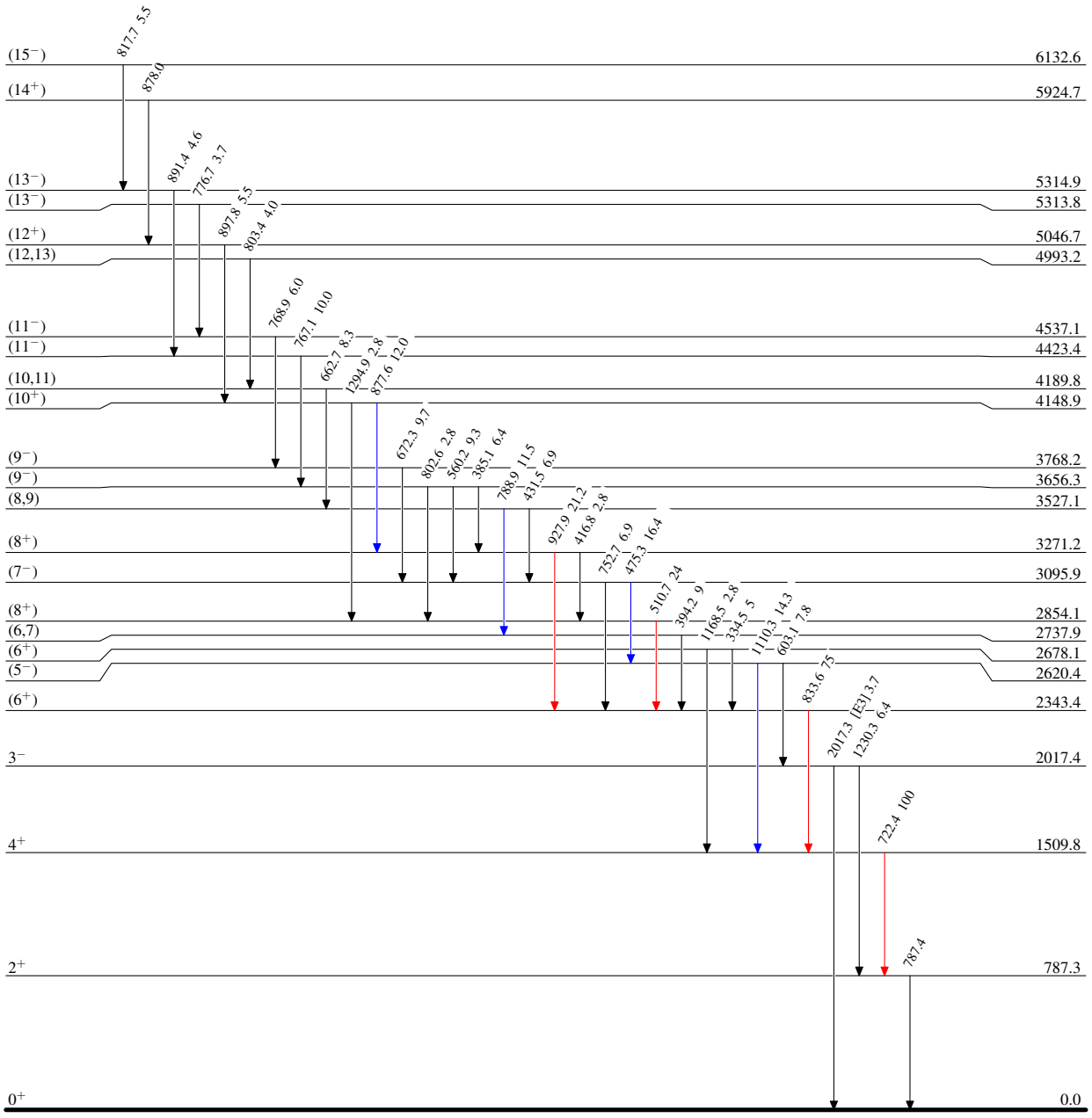
Intensities: Relative I_γ

Legend

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

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

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



$^{98}_{42}Mo_{56}$

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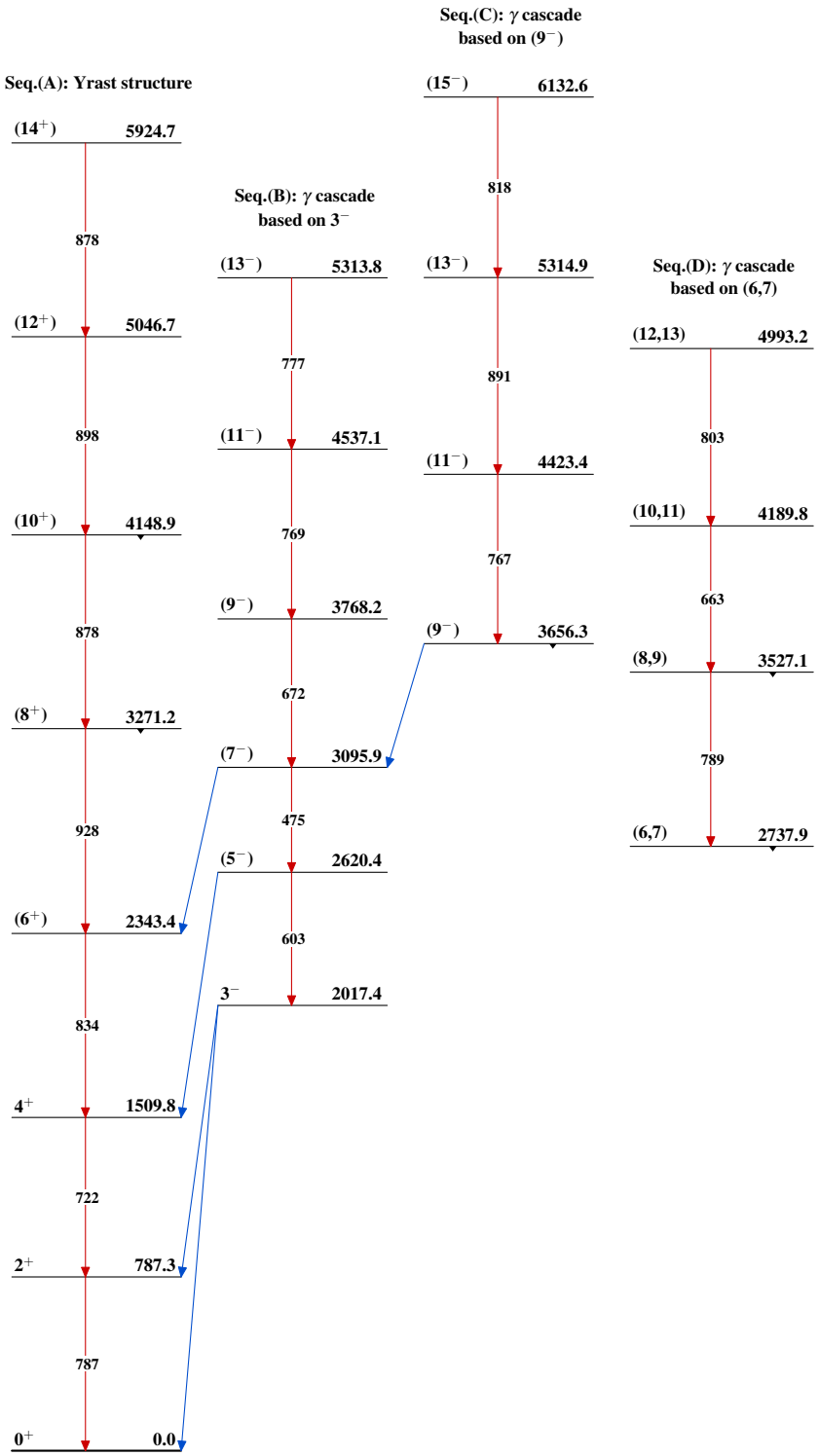

$^{98}_{42}Mo_{56}$