^{100}Mo(^{36}S,p4nγ) 2000Wa28,2001Pa25

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, I. Mitropolsky, A. Rodionov	NDS 107, 2715 (2006)	17-Jul-2006

2000Wa28: ^{100}Mo(^{36}S,p4nγ), E=160 MeV. Measured Eγ and $\gamma\gamma$ using EUROBALL IV spectrometer containing a 161-element inner BGO ball.
Evaluators used data from 2000Wa28 and corresponding XUNDL file.
2001Pa25: ^{100}Mo(^{37}Cl,α2nγ), E=155 MeV. Measured Eγ, $\gamma\gamma(\theta)$, $\gamma\gamma$, Doppler shifts, deduced J^{π}, transition quadrupole moments. EUROGAM II spectrometer with 54 HPGe detector including 24 "clover" detectors, DSA method.
2003Gr32 (also 2004Gr06): ^{122}Sn(^{14}N,5nγ), E=70MeV; measured $T_{1/2}$ by DSA method, deduced B(E2) for transitions of the $\pi h_{11/2}$ band. OSIRIS-II multidetector array.

^{131}La Levels

The level scheme is from 2000Wa28 and 2001Pa25 on the basis of $\gamma\gamma$ coincidence data; spin-parity assignments are from angular correlation analysis.

E(level)[†]	J^{π}	Comments
0.0[‡]	$3/2^+$	
26.21[‡] *4*	$5/2^+$	Additional information 1.
195.65[‡] *4*	$7/2^+$	Additional information 2.
304.6[#] *3*	$11/2^-$	
640.6[#] *6*	$15/2^-$	
1173.6[#] *8*	$19/2^-$	
1844.5[#] *9*	$23/2^-$	
2234.6[@] *9*	$19/2^+$	
2636.7[#] *10*	$27/2^-$	
2677.7[@] *9*	$23/2^+$	
3143.9[&] *10*	$25/2^+$	
3265.9[@] *10*	$27/2^+$	
3536.7[#] *11*	$31/2^-$	
3686.6[&] *10*	$29/2^+$	
3971.4[@] *10*	$31/2^+$	
4374.3[&] *11*	$33/2^+$	
4520.7[#] *12*	$35/2^-$	
4772.9[@] *11*	$35/2^+$	
5208.3[&] *12*	$37/2^+$	
5573.7[#] *13*	$39/2^-$	
5650.9[@] *12*	$39/2^+$	
6137.3[&] *13*	$41/2^+$	
6597.9[@] *13*	$43/2^+$	
6663.7[#] *14*	$43/2^-$	
7146.3[&] *14*	$(45/2^+)$	
7613.9[@] *14*	$(47/2^+)$	
7730.7[#] *15*	$(47/2^-)$	
8248.3[&] *15*	$(49/2^+)$	
8701.9[@] *15*	$(51/2^+)$	
8859.7[#] *16*	$(51/2^-)$	

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^{100}Mo(^{36}S,p4nγ) 2000Wa28,2001Pa25 (continued)

^{131}La Levels (continued)

E(level)†	Jπ	E(level)†	Jπ	E(level)†	Jπ	E(level)†	Jπ
9434.3& *16*	(53/2$^+$)	11138.9@ *17*	(59/2$^+$)	13457.3& *18*	(65/2$^+$)	15558.9@ *19*	(71/2$^+$)
9872.9@ *16*	(55/2$^+$)	12028.3& *17*	(61/2$^+$)	13979.9@ *18*	(67/2$^+$)	17247.9@ *19*	(75/2$^+$)
10694.3& *16*	(57/2$^+$)	12507.9@ *17*	(63/2$^+$)	14999.3& *19*	(69/2$^+$)		

† From least-squares fit to Eγ′s, assuming Δ(Eγ)=0.5 keV for all γ′s (by evaluator), except as noted.
‡ From ^{131}Ce ε decay (10.3 min).
# Band(A): band based on Configuration=(π h$_{11/2}$), (α=−1/2).
@ Band(B): Band based on configuration=(πg$_{7/2}$)(πh$_{11/2}$)^2, (α=−1/2), Q$_t$≈2.3 eb, β$_2$≈0.14.
& Band(C): Band based on configuration=(πg$_{7/2}$)(πh$_{11/2}$)^2, (α=+1/2).

γ(^{131}La)

B(E2): values are copied by evaluators from fig.2 of 2003Gr32.

Eγ†	Ei(level)	Jiπ	Ef	Jfπ	Comments
26.20‡ *5*	26.21	5/2$^+$	0.0	3/2$^+$	
108.9 *3*	304.6	11/2$^-$	195.65	7/2$^+$	Eγ: from ^{131}La IT decay (170 μs).
169.42‡ *5*	195.65	7/2$^+$	26.21	5/2$^+$	
195.60‡ *6*	195.65	7/2$^+$	0.0	3/2$^+$	
285.0	3971.4	31/2$^+$	3686.6	29/2$^+$	
336.0	640.6	15/2$^-$	304.6	11/2$^-$	
399.0	4772.9	35/2$^+$	4374.3	33/2$^+$	
403.0	4374.3	33/2$^+$	3971.4	31/2$^+$	
421.0	3686.6	29/2$^+$	3265.9	27/2$^+$	
443.0	2677.7	23/2$^+$	2234.6	19/2$^+$	
466.0	3143.9	25/2$^+$	2677.7	23/2$^+$	
533.0	1173.6	19/2$^-$	640.6	15/2$^-$	
543.0	3686.6	29/2$^+$	3143.9	25/2$^+$	
588.0	3265.9	27/2$^+$	2677.7	23/2$^+$	
629.0	3265.9	27/2$^+$	2636.7	27/2$^-$	
671.0	1844.5	23/2$^-$	1173.6	19/2$^-$	B(E2)↓=0.41 *+10−7*
688.0	4374.3	33/2$^+$	3686.6	29/2$^+$	
705.0	3971.4	31/2$^+$	3265.9	27/2$^+$	
792.0	2636.7	27/2$^-$	1844.5	23/2$^-$	B(E2)↓=0.35 *+90−7*
801.0	4772.9	35/2$^+$	3971.4	31/2$^+$	
833.0	2677.7	23/2$^+$	1844.5	23/2$^-$	
834.0	5208.3	37/2$^+$	4374.3	33/2$^+$	
878.0	5650.9	39/2$^+$	4772.9	35/2$^+$	
900.0	3536.7	31/2$^-$	2636.7	27/2$^-$	B(E2)↓=0.26 *+7−4*
929.0	6137.3	41/2$^+$	5208.3	37/2$^+$	
947.0	6597.9	43/2$^+$	5650.9	39/2$^+$	
984.0	4520.7	35/2$^-$	3536.7	31/2$^-$	B(E2)↓=0.190 *+34−20*
1009.0	7146.3	(45/2$^+$)	6137.3	41/2$^+$	
1016.0	7613.9	(47/2$^+$)	6597.9	43/2$^+$	
1053.0	5573.7	39/2$^-$	4520.7	35/2$^-$	B(E2)↓=0.133 *+24−20*
1061.0	2234.6	19/2$^+$	1173.6	19/2$^-$	
1067.0	7730.7	(47/2$^-$)	6663.7	43/2$^-$	
1088.0	8701.9	(51/2$^+$)	7613.9	(47/2$^+$)	

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^{100}Mo(^{36}S,p4nγ) 2000Wa28,2001Pa25 (continued)

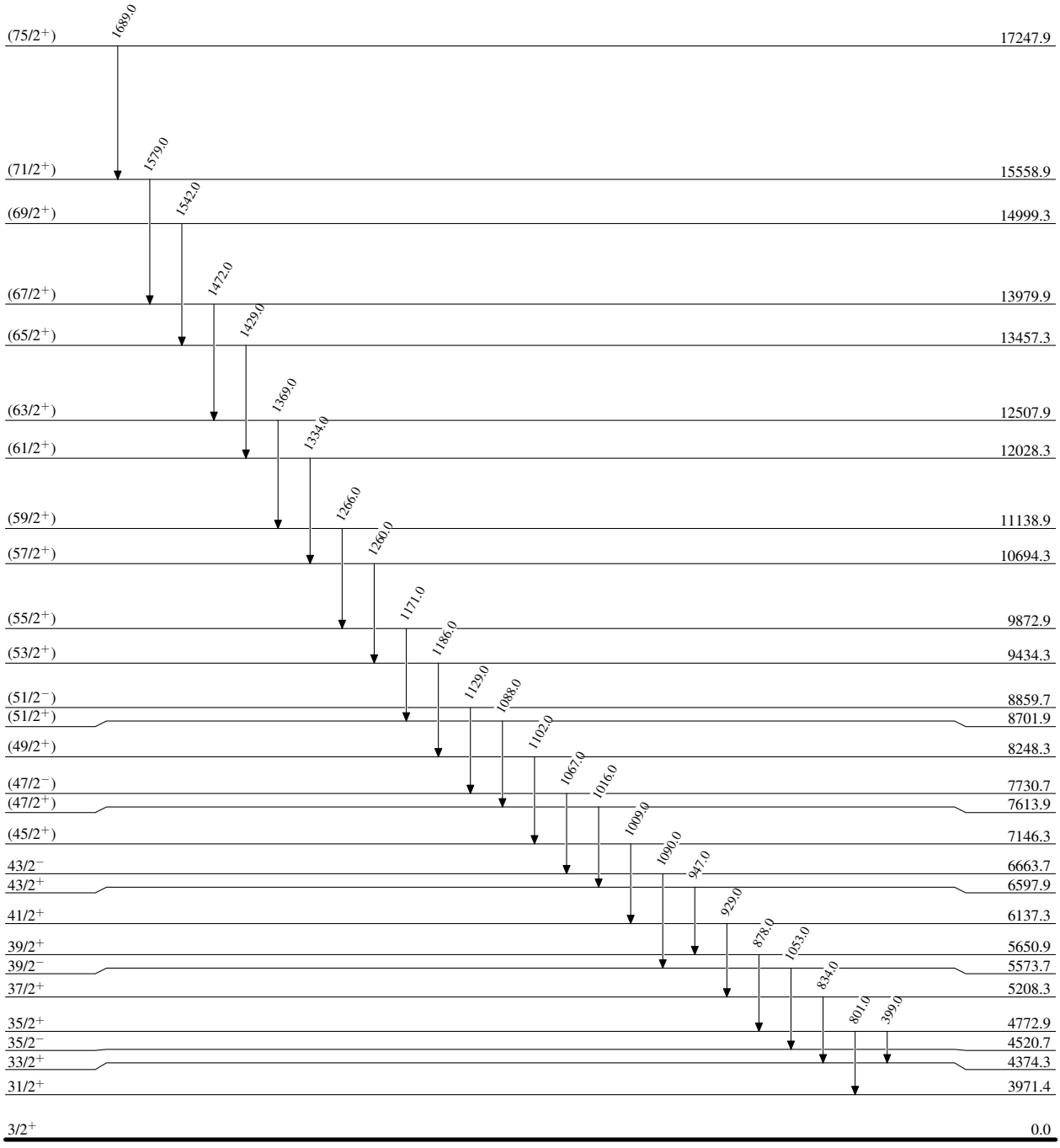
$\gamma(^{131}La)$ (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π
1090.0	6663.7	$43/2^-$	5573.7	$39/2^-$	1334.0	12028.3	$(61/2^+)$	10694.3	$(57/2^+)$
1102.0	8248.3	$(49/2^+)$	7146.3	$(45/2^+)$	1369.0	12507.9	$(63/2^+)$	11138.9	$(59/2^+)$
1129.0	8859.7	$(51/2^-)$	7730.7	$(47/2^-)$	1429.0	13457.3	$(65/2^+)$	12028.3	$(61/2^+)$
1171.0	9872.9	$(55/2^+)$	8701.9	$(51/2^+)$	1472.0	13979.9	$(67/2^+)$	12507.9	$(63/2^+)$
1186.0	9434.3	$(53/2^+)$	8248.3	$(49/2^+)$	1542.0	14999.3	$(69/2^+)$	13457.3	$(65/2^+)$
1260.0	10694.3	$(57/2^+)$	9434.3	$(53/2^+)$	1579.0	15558.9	$(71/2^+)$	13979.9	$(67/2^+)$
1266.0	11138.9	$(59/2^+)$	9872.9	$(55/2^+)$	1689.0	17247.9	$(75/2^+)$	15558.9	$(71/2^+)$
1300.0	3143.9	$25/2^+$	1844.5	$23/2^-$					

[†] From 2000Wa28 (Eγ's of 2001Pa25 have the same values), except as noted.
[‡] From ^{131}Ce ε decay (10.3 min).

^{100}Mo(^{36}S,p4nγ) 2000Wa28,2001Pa25

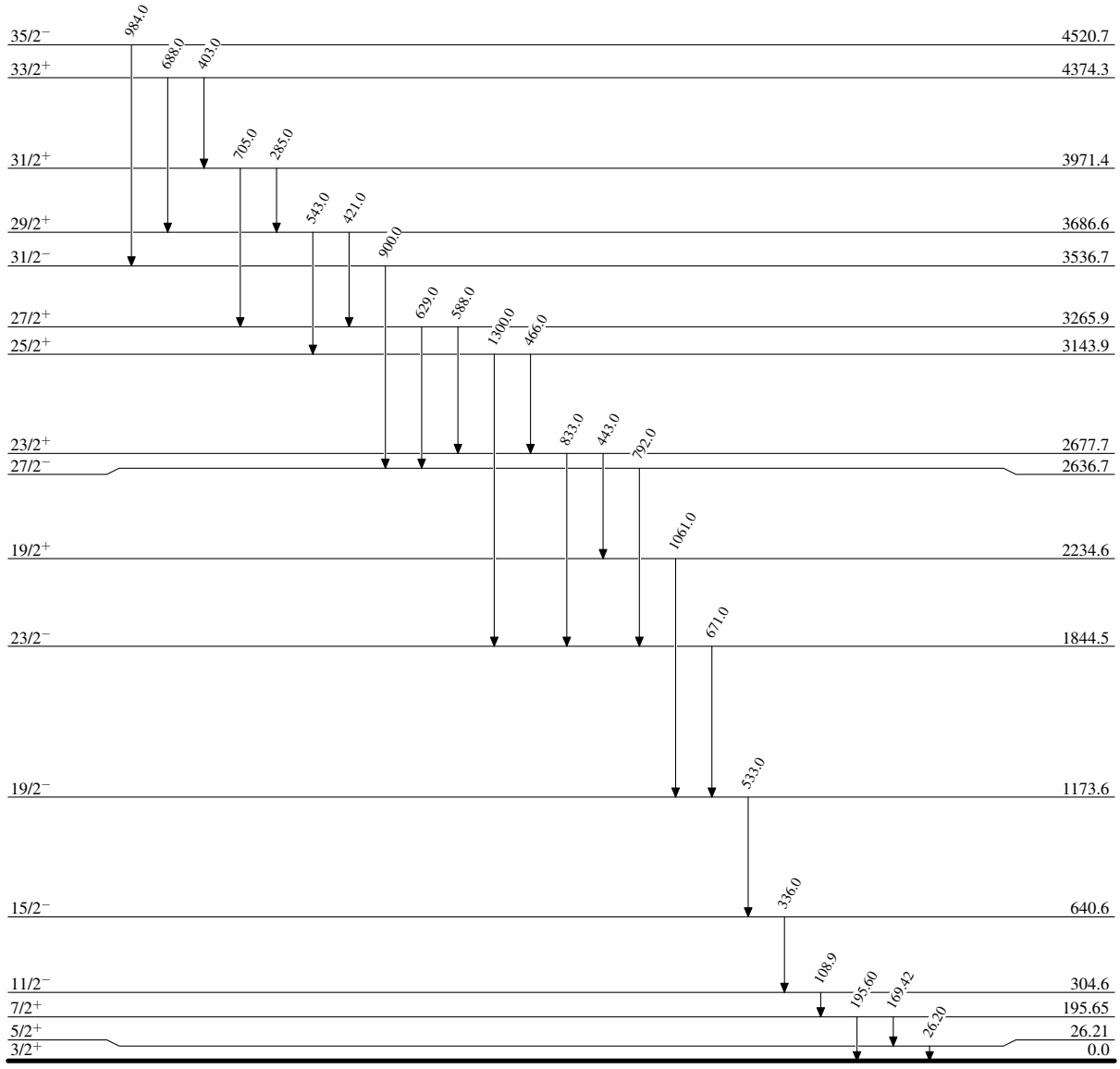
Level Scheme



$^{131}_{57}La_{74}$

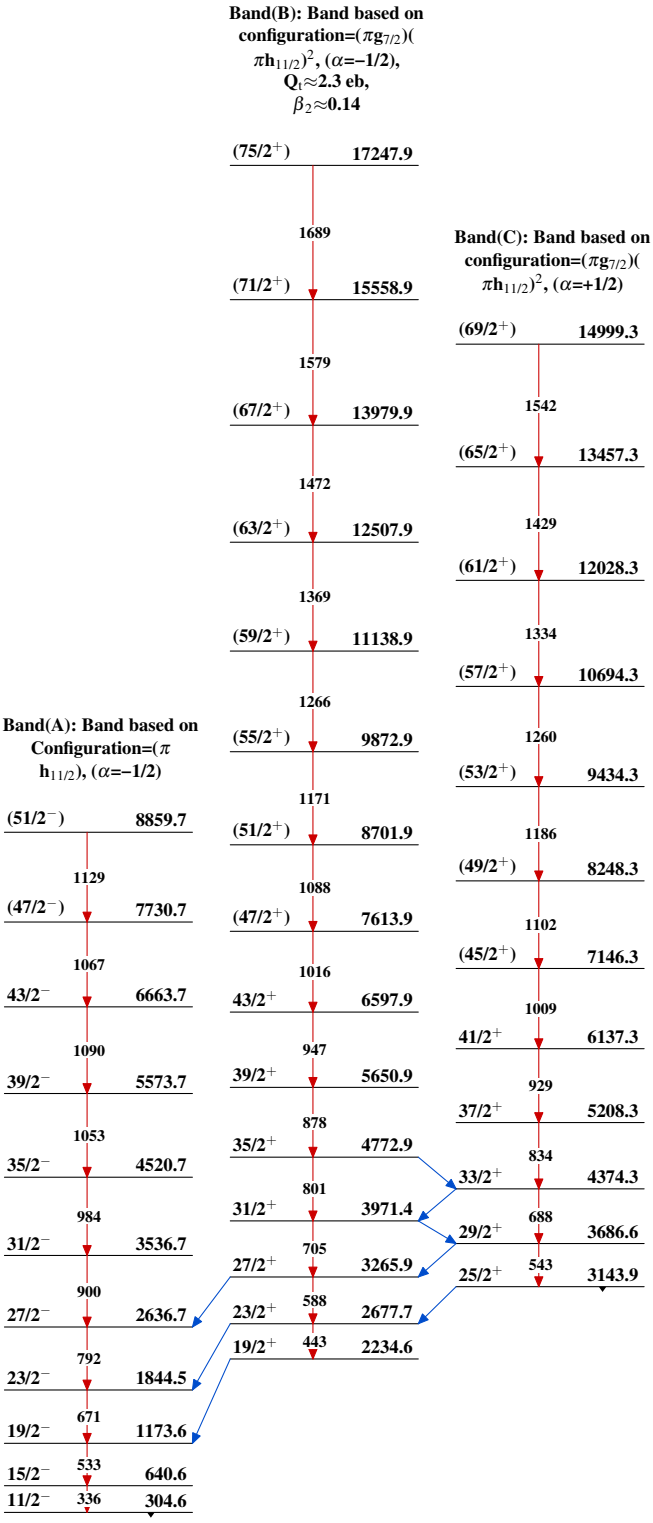
^{100}Mo(^{36}S,p4nγ) 2000Wa28,2001Pa25

Level Scheme (continued)



$^{131}_{57}La_{74}$

^{100}Mo(^{36}S,p4nγ) 2000Wa28,2001Pa25



$^{131}_{57}La_{74}$