

$^{136}\text{Xe}(^{48}\text{Ca},3n\gamma)$  1992YeZW

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 367 (2005)	31-Aug-2005

1992YeZW: E=55 MeV. Measured  $E\gamma$ ,  $\gamma\gamma$  and lifetimes using TESSA3 array.

 $^{181}\text{W}$  Levels

E(level)	$J^{\pi\dagger}$	$T_{1/2}$	Comments
0.0 $\ddagger$ @	9/2+&		
113 $\ddagger$ @	11/2+&		
251 $\ddagger$ @	13/2+&		
414 $\ddagger$ @	15/2+&		
600 $\ddagger$ @	17/2+&		
814 $\ddagger$ @	19/2+&		
1039 $\ddagger$ @	21/2+&		
1560 $\ddagger$ @	25/2+&		
1653	21/2	$\approx 100^a$ ns	
1745#	23/2		
1995#	25/2		
2156 $\ddagger$	29/2+		
2271#	27/2		
2570#	29/2		
2824 $\ddagger$	33/2+		
2891#	31/2		
3232#	33/2		
3565 $\ddagger$	37/2+		
3593#	35/2		
3944	37/2	$\approx 20^a$ ns	
4374 $\ddagger$	41/2+		
5240 $\ddagger$	45/2+		
6140 $\ddagger$	49/2+		
7069 $\ddagger$	53/2+		
8021 $\ddagger$	57/2+		
8041	57/2	<3 ns	$T_{1/2}$ : From $\gamma\gamma$ -coin. gated on the 614 transition above the level, no significant shift in the centroid of the $\gamma$ -peaks, therefore set an upper limit for the half-life.
8655			

$\dagger$  From  $\gamma\gamma$ -BGO coincidence information and band structures, unless otherwise as noted.

$\ddagger$  Band(A): 9/2[624] g.s. band.

# Band(B): Band based on 23/2.

@ 1992YeZW established the level structure based on the already known ground state band up to the 1560 level, the evaluator has taken the energies from the Adopted Levels, round to the nearest keV.

& From Adopted Levels.

<sup>a</sup> From 1992YeZW, method not stated.

$^{136}\text{Xe}(^{48}\text{Ca},3n\gamma)$  **1992YeZW (continued)** $\gamma(^{181}\text{W})$ 

$E_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. <sup>‡</sup>	$\alpha^\#$	Comments
(20)	8041	57/2	8021	57/2 <sup>+</sup>			
92	1745	23/2	1653	21/2			
250	1995	25/2	1745	23/2			
276	2271	27/2	1995	25/2			
299	2570	29/2	2271	27/2			
321	2891	31/2	2570	29/2			
341	3232	33/2	2891	31/2			
351	3944	37/2	3593	35/2			
361	3593	35/2	3232	33/2			
526 <sup>†</sup>	2271	27/2	1745	23/2	E2	0.0188	$\alpha(\text{K})=0.0144$ 5; $\alpha(\text{L})=0.00329$ 10
575 <sup>†</sup>	2570	29/2	1995	25/2	E2	0.0151	$\alpha(\text{K})=0.0118$ 4; $\alpha(\text{L})=0.00254$ 8
596	2156	29/2 <sup>+</sup>	1560	25/2 <sup>+</sup>	E2	0.0139	$\alpha(\text{K})=0.0109$ 4; $\alpha(\text{L})=0.00229$ 7
614	8655		8041	57/2			
620 <sup>†</sup>	2891	31/2	2271	27/2	E2	0.0127	$\alpha(\text{K})=0.0100$ 3; $\alpha(\text{L})=0.00206$ 7
662 <sup>†</sup>	3232	33/2	2570	29/2	E2	0.0109	$\alpha(\text{K})=0.0086$ 3; $\alpha(\text{L})=0.00172$ 6
668	2824	33/2 <sup>+</sup>	2156	29/2 <sup>+</sup>	E2	0.0107	$\alpha(\text{K})=0.0085$ 3; $\alpha(\text{L})=0.00168$ 5
702 <sup>†</sup>	3593	35/2	2891	31/2	E2	0.0096	$\alpha=0.0096$ ; $\alpha(\text{K})=0.00762$ 23; $\alpha(\text{L})=0.00147$ 5
712	3944	37/2	3232	33/2			
741	3565	37/2 <sup>+</sup>	2824	33/2 <sup>+</sup>	E2	0.0085	$\alpha=0.0085$ ; $\alpha(\text{K})=0.00680$ 21; $\alpha(\text{L})=0.00128$ 4
809	4374	41/2 <sup>+</sup>	3565	37/2 <sup>+</sup>	E2	0.00704	$\alpha=0.00704$ ; $\alpha(\text{K})=0.00567$ 17; $\alpha(\text{L})=0.00103$ 3
866	5240	45/2 <sup>+</sup>	4374	41/2 <sup>+</sup>	E2	0.00610	$\alpha=0.00610$ ; $\alpha(\text{K})=0.00494$ 15; $\alpha(\text{L})=0.00087$ 3
900	6140	49/2 <sup>+</sup>	5240	45/2 <sup>+</sup>	E2	0.00563	$\alpha=0.00563$ ; $\alpha(\text{K})=0.00457$ 14; $\alpha(\text{L})=0.00080$ 2
929	7069	53/2 <sup>+</sup>	6140	49/2 <sup>+</sup>	E2	0.00528	$\alpha=0.00528$ ; $\alpha(\text{K})=0.00429$ 13; $\alpha(\text{L})=0.00074$ 2
952	8021	57/2 <sup>+</sup>	7069	53/2 <sup>+</sup>	E2	0.00502	$\alpha=0.00502$ ; $\alpha(\text{K})=0.00409$ 13; $\alpha(\text{L})=0.00070$ 2
972	8041	57/2	7069	53/2 <sup>+</sup>			

<sup>†</sup> From level energy difference.

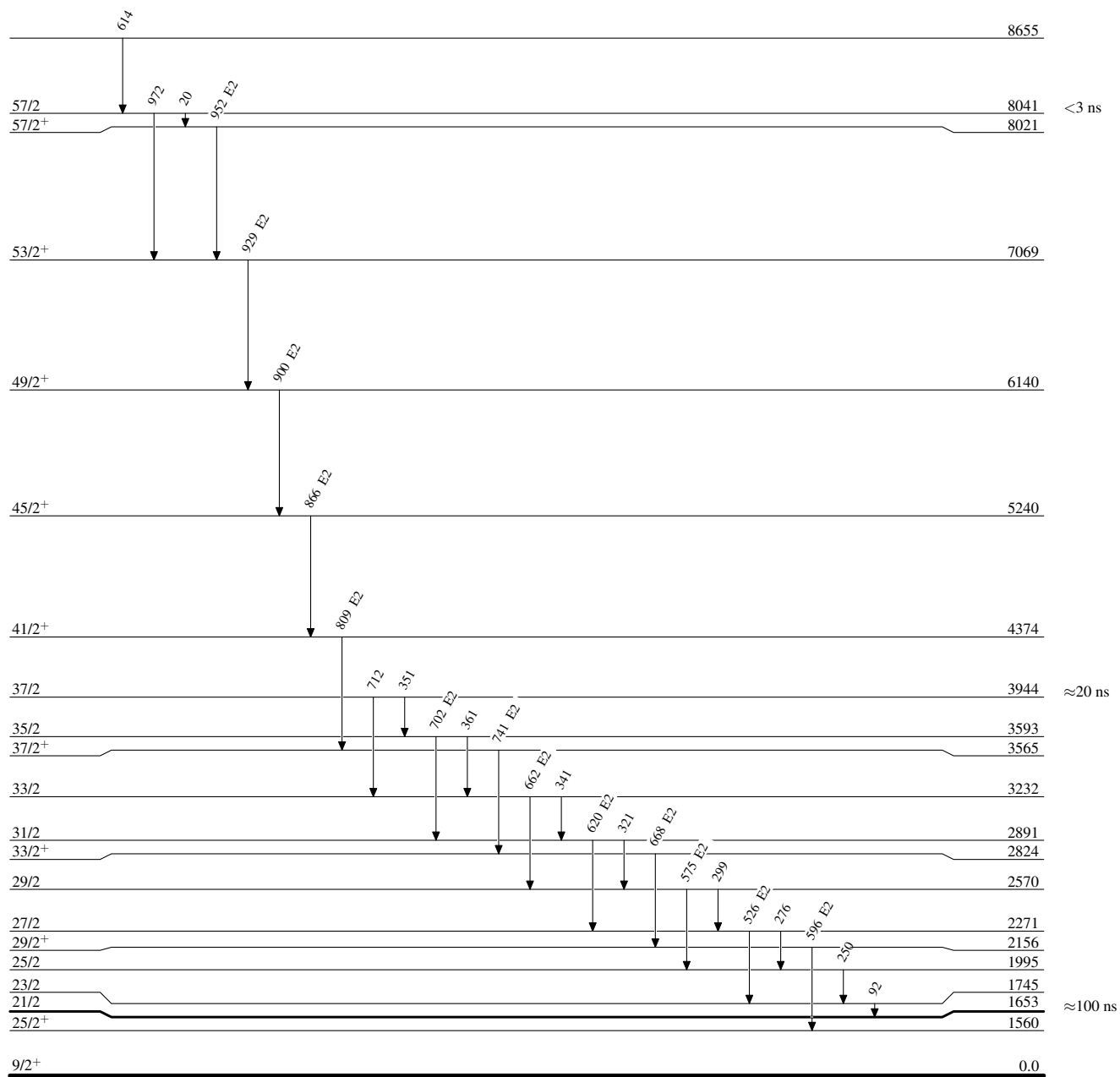
<sup>‡</sup> Stretched quadrupole transition connecting  $\Delta J=2$  states in the rotational band.

<sup>#</sup> Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on  $\gamma$ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Legend

## Level Scheme

-----▶  $\gamma$  Decay (Uncertain) $^{181}_{74}\text{W}_{107}$

$^{136}\text{Xe}(^{48}\text{Ca},3n\gamma)$  **1992YeZW****Band(A): 9/2[624] g.s.  
band**57/2<sup>+</sup> 8021

952

53/2<sup>+</sup> 7069

929

49/2<sup>+</sup> 6140

900

45/2<sup>+</sup> 5240

866

41/2<sup>+</sup> 4374

809

37/2<sup>+</sup> 3565

741

33/2<sup>+</sup> 2824

668

29/2<sup>+</sup> 2156

596

25/2<sup>+</sup> 156021/2<sup>+</sup> 103919/2<sup>+</sup> 81417/2<sup>+</sup> 60015/2<sup>+</sup> 41413/2<sup>+</sup> 25111/2<sup>+</sup> 1139/2<sup>+</sup> 0.0**Band(B): Band based on 23/2**35/2 3593

361

33/2 3232

341

31/2 2891

662

29/2 2570

321

27/2 2271

575

25/2 1995

299

276

23/2 1745

526

250