^{176}Yb(^{28}Si,5nγ) 1994JiZZ

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	01-Dec-2015

1994JiZZ (also 1993JiZX): E=135-145 MeV; measured γ, $\gamma\gamma$, excit; $\gamma(\theta)$, $\gamma\gamma(\theta)$(DCO) using 12 Compton-suppressed Ge detectors with 50 element BGO ball.

The results reported in this unpublished report agree well for most levels and transitions with those from 1994La35. However, there are some differences in some of the J^π assignments. Only few of the results from this study have been included in 'Adopted Levels'.

^{199}Po Levels

E(level)[†]	J$^\pi$[‡]	Comments
310 *2*	13/2$^+$	E(level),J$^\pi$: from Adopted Levels.
909.3 *2*	17/2$^+$	
1024.8 *2*	15/2$^+$	
1471.8 *2*	21/2$^+$	
1601.8 *2*	19/2$^+$	
1870.7 *3*	25/2$^+$	
1891.5 *2*	21/2$^{(+)}$	
2104.5 *3*	25/2$^+$	
2177.1 *3*	23/2$^-$	J$^\pi$: (23/2) in Adopted Levels.
2271.2 *3*	27/2$^+$	J$^\pi$: (27/2) in Adopted Levels.
2297.7 *3*	25/2$^{(+)}$	
2353.0 *3*	27/2$^-$	J$^\pi$: (27/2) in Adopted Levels.
2698.7? *6*		
2720.7 *4*	29/2$^+$	
2721.6 *3*	(27/2$^+$)	
2762.5 *3*	29/2$^+$	
2978.5 *4*	29/2$^-$	J$^\pi$: (31/2$^+$,29/2$^-$) in Adopted Levels.
3008.6 *4*	(31/2$^-$)	
3146.2 *4*	33/2$^+$	
3152.6[#] *6*		
3233.6[#] *6*		
3319.7?[#] *6*		
3409.1 *4*	33/2$^+$	
3557.5 *4*	(33/2$^-$)	J$^\pi$: (35/2$^+$,33/2$^-$) in Adopted Levels.
3647.4 *4*		
3686.7 *4*	37/2$^+$	
3919.1?[#] *6*		
3931.6 *5*		
3965.1[#] *5*		

[†] From least-squares fit to Eγ data.

[‡] From 1994JiZZ, based on γ multipolarities, excitation functions and quasi-band structures. The assignments are the same in Adopted Levels , except that parentheses have been added there for most of the assignments since strong arguments are generally lacking. Exceptions are noted.

[#] Level not included in Adopted Levels.

^{176}Yb(^{28}Si,5nγ) 1994JiZZ (continued)

$\gamma(^{199}Po)$

R(35°/90°)=angular asymmetry ratio.

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	Comments
144.0[‡] *5*	<2	3152.6		3008.6	(31/2$^-$)		
176.0 *2*	9.2 *3*	2353.0	27/2$^-$	2177.1	23/2$^-$	Q	R(35°/90°)=1.36 *6*.
278.4[‡] *2*	<3	3965.1		3686.7	37/2$^+$		
285.5 *2*	4.3 *2*	2177.1	23/2$^-$	1891.5	21/2$^{(+)}$	(D)	DCO=0.95 *29* R(35°/90°)=0.81 *25*.
289.7 *2*	12.3 *3*	1891.5	21/2$^{(+)}$	1601.8	19/2$^+$	(D+Q)	DCO=0.86 *16* R(35°/90°)=0.84 *7*.
374.1 *2*	2.8 *3*	3931.6		3557.5	(33/2$^-$)		
383.7 *2*	6.7 *3*	3146.2	33/2$^+$	2762.5	29/2$^+$	Q	DCO=1.2 *3* R(35°/90°)=1.46 *22*.
399.0 *2*	49.1 *6*	1870.7	25/2$^+$	1471.8	21/2$^+$	Q	DCO=0.99 *8* R(35°/90°)=1.66 *8*.
400.6 *2*	17.1 *5*	2271.2	27/2$^+$	1870.7	25/2$^+$	D+Q	DCO=0.63 *11* R(35°/90°)=0.75 *7*.
401.0[&] *5*	<3	2698.7?		2297.7	25/2$^{(+)}$		
406.2 *2*	6.0 *3*	2297.7	25/2$^{(+)}$	1891.5	21/2$^{(+)}$	Q	R(35°/90°)=1.8 *3*.
419.7 *2*	5.2 *5*	1891.5	21/2$^{(+)}$	1471.8	21/2$^+$	(D+Q)	DCO=1.5 *4* R(35°/90°)=1.11 *9*.
425.5 *2*	6.8 *3*	3146.2	33/2$^+$	2720.7	29/2$^+$	Q	DCO=1.4 *6* R(35°/90°)=1.44 *21*.
449.4 *2*	4.6 *5*	2720.7	29/2$^+$	2271.2	27/2$^+$	(D+Q)	R(35°/90°)=1.12 *17*.
450.7 *2*	3.3 *4*	2721.6	(27/2$^+$)	2271.2	27/2$^+$	(D+Q)	R(35°/90°)=0.85 *15*.
482.3 *2*	17.1 *7*	2353.0	27/2$^-$	1870.7	25/2$^+$	D	DCO=0.72 *9* R(35°/90°)=0.88 *6*.
491.2 *2*	5.1 *3*	2762.5	29/2$^+$	2271.2	27/2$^+$	D+Q	DCO=0.68 *18* R(35°/90°)=1.02 *10*.
510.0[‡&] *5*	<3	3919.1?		3409.1	33/2$^+$		
512.0[‡] *5*	<5	3233.6		2721.6	(27/2$^+$)		
540.5 *2*	8.3 *5*	3686.7	37/2$^+$	3146.2	33/2$^+$	Q	DCO=1.1 *3* R(35°/90°)=1.67 *16*.
562.4 *2*	77.3 *9*	1471.8	21/2$^+$	909.3	17/2$^+$	Q	DCO=1.22 *10* R(35°/90°)=1.49 *5*.
577.1 *2*	3.0 *4*	1601.8	19/2$^+$	1024.8	15/2$^+$		
579.0 *2*	3.3 *4*	3557.5	(33/2$^-$)	2978.5	29/2$^-$	(Q)	DCO=1.0 *3*
599.0[‡&] *5*		3319.7?		2720.7	29/2$^+$		
599.3 *2*	100.0 *10*	909.3	17/2$^+$	310	13/2$^+$	Q	DCO=1.40 *12*
616.8 *2*	<3	2721.6	(27/2$^+$)	2104.5	25/2$^+$		E_γ: placed from 2720.7 level in Adopted Gammas, as in 1994La35.
625.5 *2*	10.9 *4*	2978.5	29/2$^-$	2353.0	27/2$^-$	D+Q	DCO=0.75 *17*
632.7 *2*	9.9 *4*	2104.5	25/2$^+$	1471.8	21/2$^+$	Q	DCO=1.17 *19* R(35°/90°)=1.9 *3*.
646.8 *2*	6.3 *4*	3409.1	33/2$^+$	2762.5	29/2$^+$	Q	R(35°/90°)=1.9 *5*.
655.6 *2*	4.7 *4*	3008.6	(31/2$^-$)	2353.0	27/2$^-$	(Q)	R(35°/90°)=2.1 *8*.
658.1 *2*	9.7 *8*	2762.5	29/2$^+$	2104.5	25/2$^+$	Q	DCO=1.14 *25* R(35°/90°)=1.9 *4*.
668.9 *2*	4.3 *3*	3647.4		2978.5	29/2$^-$		
688.2[‡] *2*	<3	3409.1	33/2$^+$	2720.7	29/2$^+$		
692.5 *2*	12.9 *15*	1601.8	19/2$^+$	909.3	17/2$^+$	D+Q	DCO=0.44 *10* R(35°/90°)=0.46 *5*.
705.4 *2*	6.5 *8*	2177.1	23/2$^-$	1471.8	21/2$^+$	D	R(35°/90°)=0.89 *14*.

Continued on next page (footnotes at end of table)

^{176}Yb(^{28}Si,5nγ) 1994JiZZ (continued)

$\gamma(^{199}Po)$ (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	Comments
714.8 *2*	5.2 *4*	1024.8	$15/2^+$	310	$13/2^+$	D+Q	R(35°/90°)=0.44 *9*.
850.0[#] *5*	1.8 *4*	2720.7	$29/2^+$	1870.7	$25/2^+$	(Q)	R(35°/90°)=1.21 *8*.
851.0[#] *5*	2.5 *4*	2721.6	$(27/2^+)$	1870.7	$25/2^+$		

[†] At E(^{28}Si)=137.5 MeV.
[‡] γ not reported by 1994La35.
[#] Single line at 850.5 reported in 1994La35.
[@] From DCO and Iγ(35°)/Iγ(90°) ratios. The mult=Q corresponds to ΔJ=2, quadrupole (given as E2 in 1994JiZZ); mult=D+Q to ΔJ=1, dipole+quadrupole (given as M1+E2 in 1994JiZZ); and mult=D to ΔJ=1, dipole (given as E1 in 1994JiZZ).
[&] Placement of transition in the level scheme is uncertain.

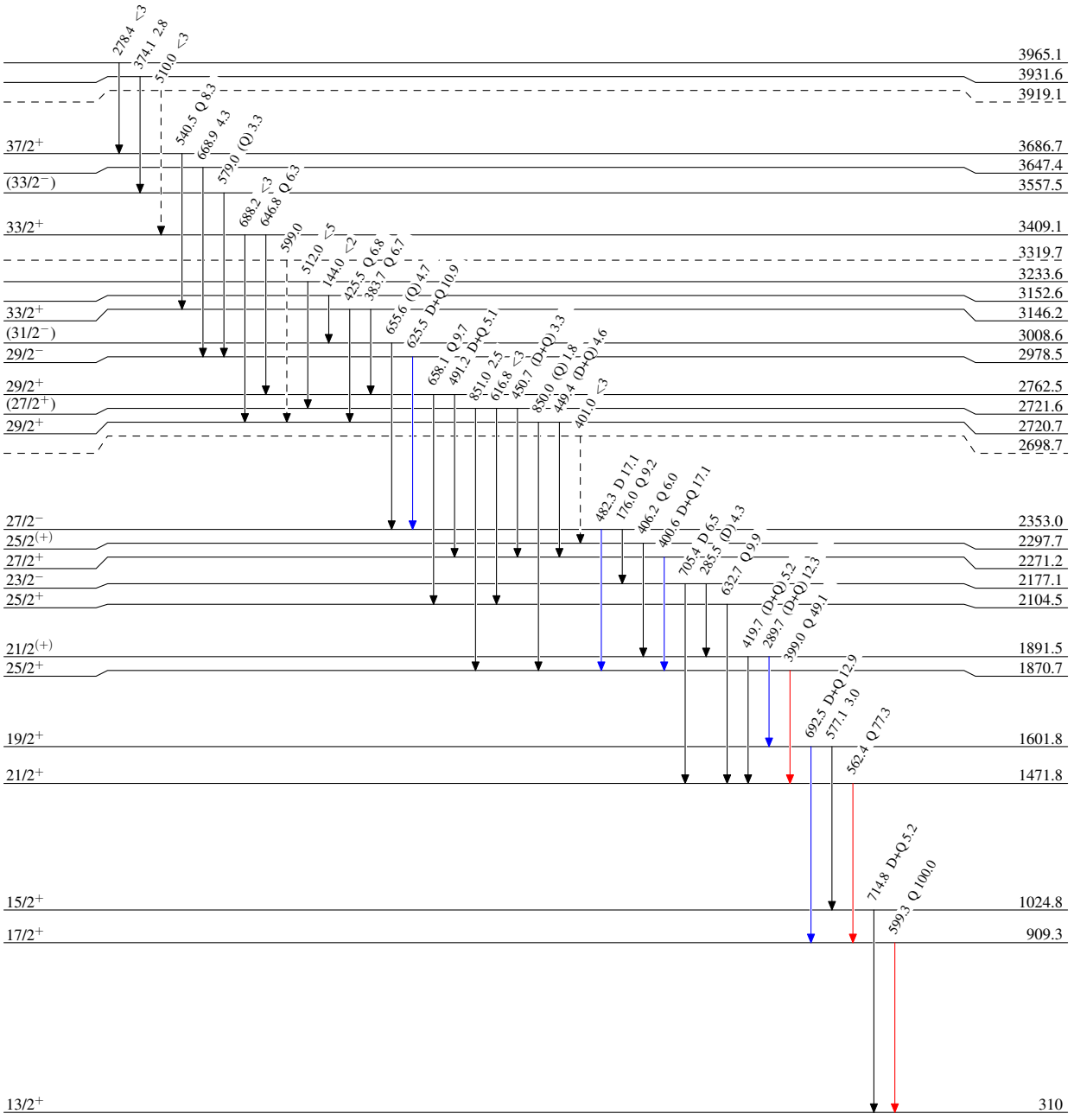
$^{176}Yb(^{28}Si,5n\gamma)$ **1994JiZZ**

Level Scheme

Intensities: Relative I_γ

Legend

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



$^{199}_{84}Po_{115}$