

<sup>159</sup>Tb(<sup>20</sup>Ne,5n $\gamma$ ) 1988ChZQ,1989McZT

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, Huo Junde		NDS 87, 15 (1999)	1-Nov-1998

Additional information 1.

1988ChZQ: E=114 MeV, measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$  coin. Detectors: Compton-suppressed Ge.

1989McZT: E not given. Including: <sup>139</sup>La(<sup>40</sup>Ar,5n $\gamma$ ), <sup>165</sup>Ho(<sup>16</sup>O,7n $\gamma$ ), measured  $\gamma\gamma$  coin. Detectors: Compton-suppressed Ge detectors plus multiplicity filters.

Other: 1991RiZX.

<sup>174</sup>Re Levels

Additional information 2.

E(level)	J $\pi^{\dagger}$	T <sub>1/2</sub>	Comments
0.0		2.40 min 4	T <sub>1/2</sub> : from Adopted Levels.
x+0 <sup>b</sup>	(4 <sup>-</sup> )		<a href="#">Additional information 3.</a>
y+0 <sup>@</sup>			<a href="#">Additional information 4.</a>
z+0 <sup>&amp;</sup>			<a href="#">Additional information 5.</a>
u+0 <sup>‡</sup>	(5 <sup>+</sup> )		<a href="#">Additional information 6.</a>
v+0 <sup>a</sup>			<a href="#">Additional information 7.</a>
x+91.9 <sup>b</sup> 10	(5 <sup>-</sup> )		
y+177.5 <sup>@</sup> 10			
u+196.9 <sup>‡</sup> 10	(7 <sup>+</sup> )		
x+206.1 <sup>b</sup> 15	(6 <sup>-</sup> )		
z+332.0 <sup>&amp;</sup> 10			
x+343.6 <sup>#</sup> 18	(6 <sup>+</sup> )	23 ns	
y+481.1 <sup>@</sup> 15			
x+502.9 <sup>#</sup> 20	(7 <sup>+</sup> )		
u+513.2 <sup>‡</sup> 15	(9 <sup>+</sup> )		
x+677.9 <sup>#</sup> 23	(8 <sup>+</sup> )		
z+722.0 <sup>&amp;</sup> 15			
v+723.0 <sup>a</sup> 10			
x+868.4 <sup>#</sup> 25	(9 <sup>+</sup> )		
y+889.1 <sup>@</sup> 18			
u+934.8 <sup>‡</sup> 18	(11 <sup>+</sup> )		
x+1079 <sup>#</sup> 3	(10 <sup>+</sup> )		
z+1169.0 <sup>&amp;</sup> 18			
x+1311 <sup>#</sup> 3	(11 <sup>+</sup> )		
u+1444.8 <sup>‡</sup> 20	(13 <sup>+</sup> )		
x+1556 <sup>#</sup> 3	(12 <sup>+</sup> )		
v+1584.0 <sup>a</sup> 15			
z+1667.0 <sup>&amp;</sup> 20			
x+1817 <sup>#</sup> 4	(13 <sup>+</sup> )		
u+2030.2 <sup>‡</sup> 23	(15 <sup>+</sup> )		
u+2663.4 <sup>‡</sup> 25	(17 <sup>+</sup> )		
u+3296 <sup>‡</sup> 3	(19 <sup>+</sup> )		
u+3923 <sup>‡</sup> 3	(21 <sup>+</sup> )		

Continued on next page (footnotes at end of table)

$^{159}\text{Tb}(^{20}\text{Ne},5n\gamma)$  **1988ChZQ,1989McZT (continued)**

$^{174}\text{Re}$  Levels (continued)

<u>E(level)</u>	<u><math>J^\pi</math></u>
u+4600 <sup>‡</sup> 3	(23 <sup>+</sup> )
u+5303 <sup>‡</sup> 4	(25 <sup>+</sup> )
u+6042 <sup>‡</sup> 4	(27 <sup>+</sup> )

†  $J^\pi$  assignments are tentative, based on rotational structure, and on the energy systematics of decoupled bands in other odd-odd Re and Ir isotopes.

‡ Band(A): Configuration= $(\pi 1/2(541))+(\nu 1/2(510))$ , from 1989McZT. 1988ChZQ Report same levels up to 17<sup>+</sup>, but give E(19<sup>+</sup>)-E(17<sup>+</sup>)=677.2.

# Band(B): rotational band 1, from 1988ChZQ.

@ Band(C): rotational band 2, from 1988ChZQ.

& Band(D): rotational band 3, from 1988ChZQ.

<sup>a</sup> Band(E): rotational band 4, from 1988ChZQ.

<sup>b</sup> Band(F): rotational band 5, from 1988ChZQ.

$\gamma(^{174}\text{Re})$

<u><math>E_\gamma</math></u>	<u><math>E_i(\text{level})</math></u>	<u><math>J^\pi_i</math></u>	<u><math>E_f</math></u>	<u><math>J^\pi_f</math></u>	<u><math>E_\gamma</math></u>	<u><math>E_i(\text{level})</math></u>	<u><math>J^\pi_i</math></u>	<u><math>E_f</math></u>	<u><math>J^\pi_f</math></u>
91.9	x+91.9	(5 <sup>-</sup> )	x+0	(4 <sup>-</sup> )	390	z+722.0		z+332.0	
114.2	x+206.1	(6 <sup>-</sup> )	x+91.9	(5 <sup>-</sup> )	408	y+889.1		y+481.1	
137.5	x+343.6	(6 <sup>+</sup> )	x+206.1	(6 <sup>-</sup> )	421.6	u+934.8	(11 <sup>+</sup> )	u+513.2	(9 <sup>+</sup> )
159.3	x+502.9	(7 <sup>+</sup> )	x+343.6	(6 <sup>+</sup> )	447	z+1169.0		z+722.0	
175	x+677.9	(8 <sup>+</sup> )	x+502.9	(7 <sup>+</sup> )	498	z+1667.0		z+1169.0	
177.5	y+177.5		y+0		510 <sup>#</sup>	u+1444.8	(13 <sup>+</sup> )	u+934.8	(11 <sup>+</sup> )
190.5	x+868.4	(9 <sup>+</sup> )	x+677.9	(8 <sup>+</sup> )	585.4	u+2030.2	(15 <sup>+</sup> )	u+1444.8	(13 <sup>+</sup> )
196.9	u+196.9	(7 <sup>+</sup> )	u+0	(5 <sup>+</sup> )	627 <sup>‡</sup>	u+3923	(21 <sup>+</sup> )	u+3296	(19 <sup>+</sup> )
211.0	x+1079	(10 <sup>+</sup> )	x+868.4	(9 <sup>+</sup> )	633 <sup>‡</sup>	u+3296	(19 <sup>+</sup> )	u+2663.4	(17 <sup>+</sup> )
231.2	x+1311	(11 <sup>+</sup> )	x+1079	(10 <sup>+</sup> )	633.2	u+2663.4	(17 <sup>+</sup> )	u+2030.2	(15 <sup>+</sup> )
245	x+1556	(12 <sup>+</sup> )	x+1311	(11 <sup>+</sup> )	677 <sup>‡</sup>	u+4600	(23 <sup>+</sup> )	u+3923	(21 <sup>+</sup> )
261	x+1817	(13 <sup>+</sup> )	x+1556	(12 <sup>+</sup> )	703 <sup>‡</sup>	u+5303	(25 <sup>+</sup> )	u+4600	(23 <sup>+</sup> )
303.6	y+481.1		y+177.5		723	v+723.0		v+0	
316.3	u+513.2	(9 <sup>+</sup> )	u+196.9	(7 <sup>+</sup> )	739 <sup>‡</sup>	u+6042	(27 <sup>+</sup> )	u+5303	(25 <sup>+</sup> )
332	z+332.0		z+0		861	v+1584.0		v+723.0	

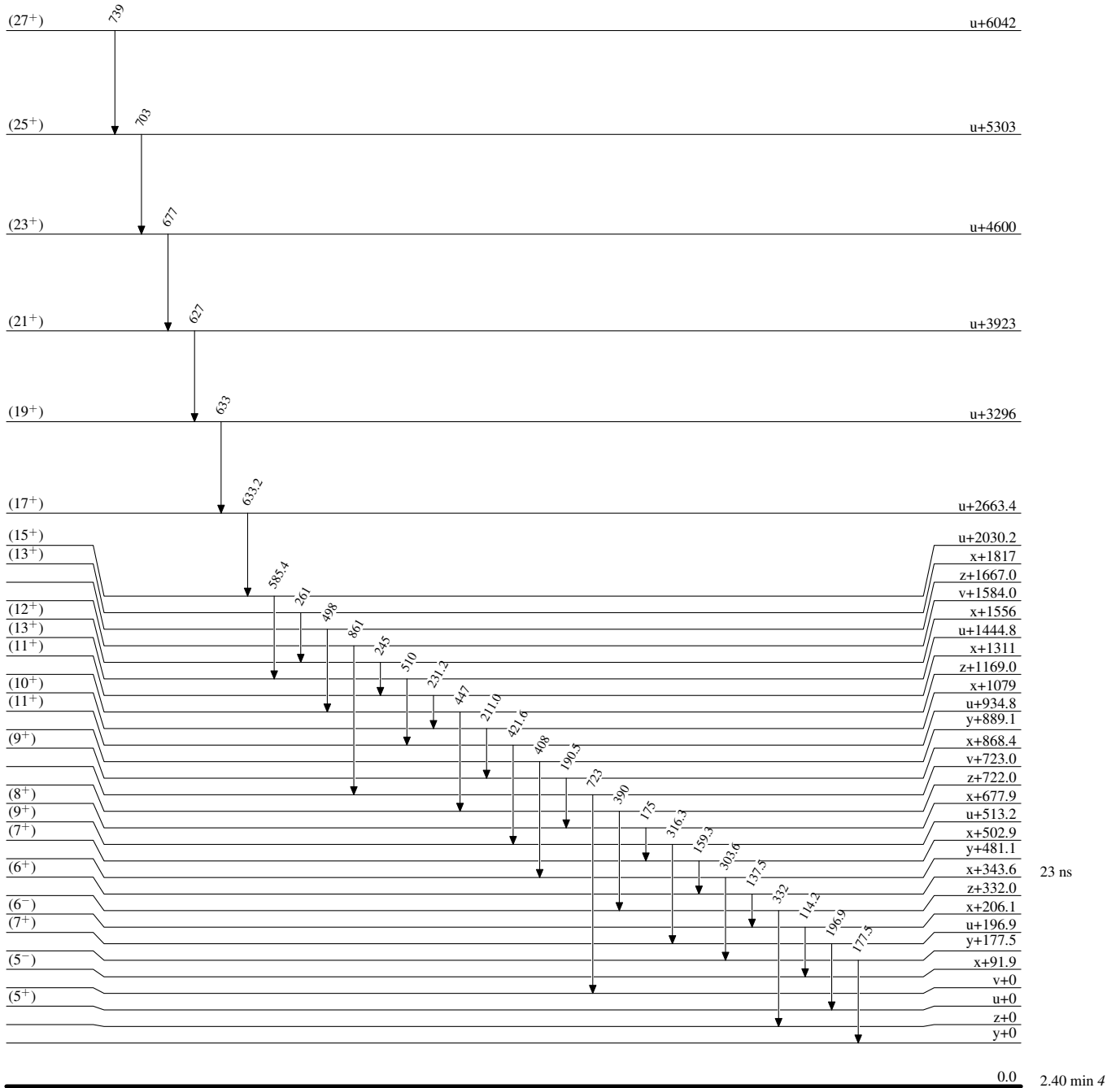
† From 1988ChZQ, except as noted.

‡ From 1989McZT.

# 1989McZT report 511 keV.

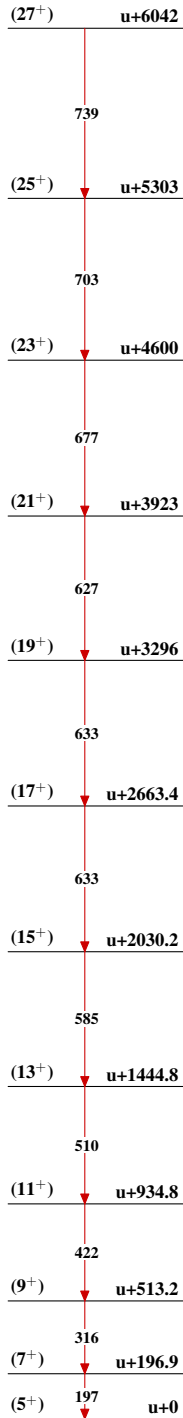
$^{159}\text{Tb}(^{20}\text{Ne},5n\gamma)$  1988ChZQ,1989McZT

Level Scheme

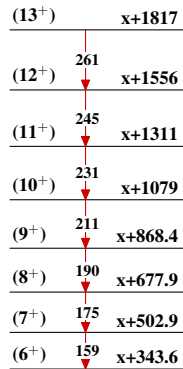


$^{159}\text{Tb}(^{20}\text{Ne},5n\gamma)$  1988ChZQ,1989McZT

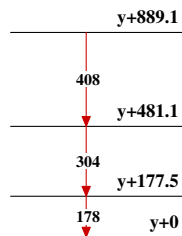
Band(A): Configuration= $(\pi$   
 $1/2(541))+(v\ 1/2(510))$ ,  
 from 1989McZT



Band(B): Rotational band  
 1, from 1988ChZQ



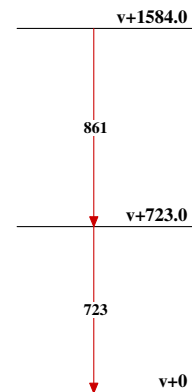
Band(C): Rotational band  
 2, from 1988ChZQ



Band(D): Rotational band  
 3, from 1988ChZQ



Band(E): Rotational band  
 4, from 1988ChZQ



Band(F): Rotational band  
 5, from 1988ChZQ

