

$^{159}\text{Tb}(^{18}\text{O},5n\gamma), ^{162}\text{Dy}(^{14}\text{N},4n\gamma)$ **1988Kr19**

Type	History		
	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	08-Dec-2015

1988Kr19: $^{159}\text{Tb}(^{18}\text{O},5n\gamma)$ E=80-96 MeV. Measured E_γ , I_γ , $\gamma\gamma$, excitation functions, $\gamma\gamma(\theta)$, $\gamma(\theta)$. $^{162}\text{Dy}(^{14}\text{N},4n\gamma)$, E=71.5 MeV. Measured E_γ , ce.

See also $^{159}\text{Tb}(^{18}\text{O},5n\gamma)$, $^{165}\text{Ho}(^{12}\text{C},5n\gamma)$ dataset from the same group (**2000Ho16**).

 ^{172}Ta Levels

E(level) [†]	J ^π #	E(level) [†]	J ^π #	E(level) [†]	J ^π #	E(level) [†]	J ^π #
0.0 [@]	(3 ⁺)	4785.7 [@] 10	(25 ⁺)	2155.5+x ^{&}	(16 ⁺)	868.5+y ^b	(10 ⁻)
91.3 [@] 3	(5 ⁺)	0.0+x ^{‡&}	(6 ⁺)	2469.5+x ^a	(17 ⁺)	1051.4+y ^c	(11 ⁻)
264.8 [@] 5	(7 ⁺)	113.5+x ^a	(7 ⁺)	2798.4+x ^{&}	(18 ⁺)	1331.8+y ^b	(12 ⁻)
519.8 [@] 6	(9 ⁺)	252.4+x ^{&}	(8 ⁺)	3133.8+x ^a	(19 ⁺)	1549.3+y ^c	(13 ⁻)
850.6 [@] 6	(11 ⁺)	415.2+x ^a	(9 ⁺)	3470.7+x ^{&}	(20 ⁺)	1876.8+y ^b	(14 ⁻)
1248.4 [@] 7	(13 ⁺)	603.6+x ^{&}	(10 ⁺)	0.0+y ^{‡b}	(4 ⁻)	2133.3+y ^c	(15 ⁻)
1704.2 [@] 8	(15 ⁺)	814.6+x ^a	(11 ⁺)	86.7+y ^c	(5 ⁻)	2496.8+y ^b	(16 ⁻)
2212.4 [@] 8	(17 ⁺)	1045.6+x ^{&}	(12 ⁺)	203.7+y ^b	(6 ⁻)	2797.8+y ^c	(17 ⁻)
2771.9 [@] 9	(19 ⁺)	1297.6+x ^a	(13 ⁺)	322.2+y ^c	(7 ⁻)	3186.8+y ^b	(18 ⁻)
3386.2 [@] 9	(21 ⁺)	1568.0+x ^{&}	(14 ⁺)	491.8+y ^b	(8 ⁻)	3537.3+y ^c	(19 ⁻)
4057.7 [@] 10	(23 ⁺)	1853.0+x ^a	(15 ⁺)	642.3+y ^c	(9 ⁻)		

[†] From E_γ data, uncertainty on E_γ is assigned as 0.3 keV (evaluator).

[‡] x,y<40 keV (**1988Kr19**).

From **1988Kr19**. The basis of these assignments is probably $\gamma(\theta)$ and $\gamma\gamma(\theta)$, but details of these data are not available.

@ Band(A): $\pi 1/2[541] \otimes \nu 1/2[521], \alpha=1$.

& Band(B): $\pi 5/2[402] \otimes \nu 7/2[633], \alpha=0$. The spins are one unit less than in **2000Ho16**.

^a Band(b): $\pi 5/2[402] \otimes \nu 7/2[633], \alpha=1$. The spins are one unit less than in **2000Ho16**.

^b Band(C): $\pi 1/2[541] \otimes \nu 7/2[633], \alpha=0$. The spins are three units less than in **2000Ho16**.

^c Band(c): $\pi 1/2[541] \otimes \nu 7/2[633], \alpha=1$. The spins are three units less than in **2000Ho16**.

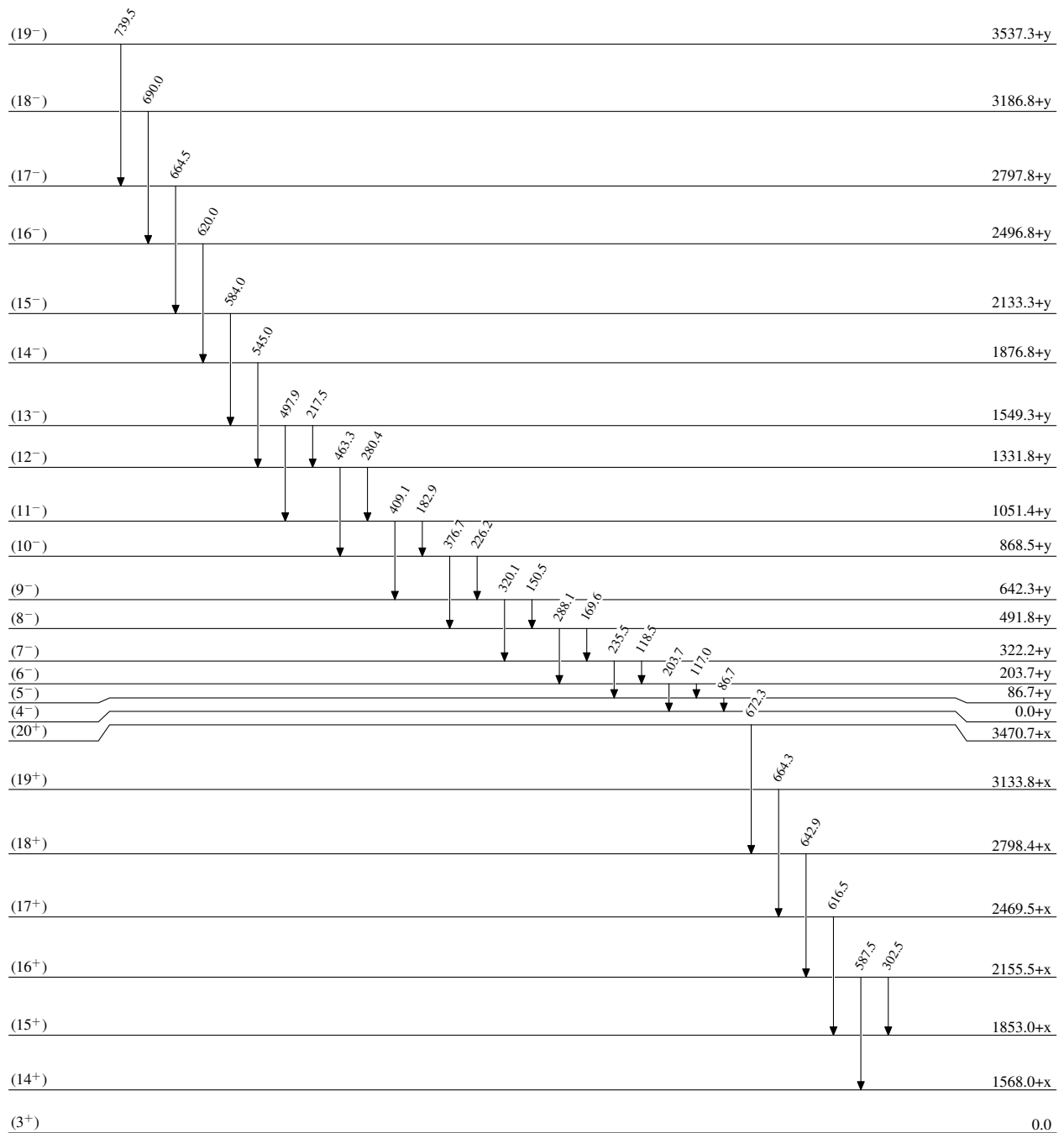
 $\gamma(^{172}\text{Ta})$

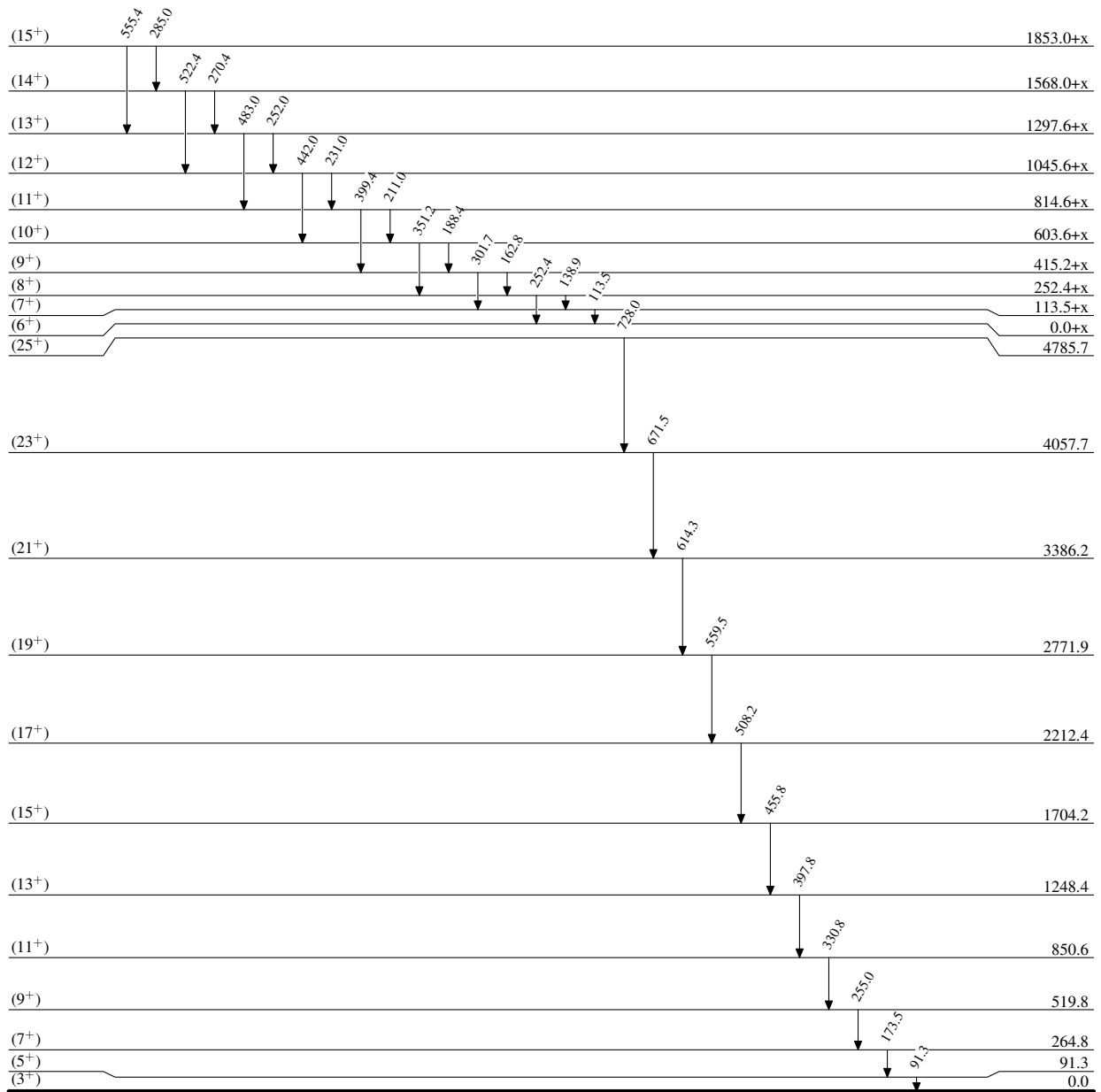
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
86.7	86.7+y	(5 ⁻)	0.0+y	(4 ⁻)	226.2	868.5+y	(10 ⁻)	642.3+y	(9 ⁻)
91.3	91.3	(5 ⁺)	0.0	(3 ⁺)	231.0	1045.6+x	(12 ⁺)	814.6+x	(11 ⁺)
113.5	113.5+x	(7 ⁺)	0.0+x	(6 ⁺)	235.5	322.2+y	(7 ⁻)	86.7+y	(5 ⁻)
117.0	203.7+y	(6 ⁻)	86.7+y	(5 ⁻)	252.0	1297.6+x	(13 ⁺)	1045.6+x	(12 ⁺)
118.5	322.2+y	(7 ⁻)	203.7+y	(6 ⁻)	252.4	252.4+x	(8 ⁺)	0.0+x	(6 ⁺)
138.9	252.4+x	(8 ⁺)	113.5+x	(7 ⁺)	255.0	519.8	(9 ⁺)	264.8	(7 ⁺)
150.5	642.3+y	(9 ⁻)	491.8+y	(8 ⁻)	270.4	1568.0+x	(14 ⁺)	1297.6+x	(13 ⁺)
162.8	415.2+x	(9 ⁺)	252.4+x	(8 ⁺)	280.4	1331.8+y	(12 ⁻)	1051.4+y	(11 ⁻)
169.6	491.8+y	(8 ⁻)	322.2+y	(7 ⁻)	285.0	1853.0+x	(15 ⁺)	1568.0+x	(14 ⁺)
173.5	264.8	(7 ⁺)	91.3	(5 ⁺)	288.1	491.8+y	(8 ⁻)	203.7+y	(6 ⁻)
182.9	1051.4+y	(11 ⁻)	868.5+y	(10 ⁻)	301.7	415.2+x	(9 ⁺)	113.5+x	(7 ⁺)
188.4	603.6+x	(10 ⁺)	415.2+x	(9 ⁺)	302.5	2155.5+x	(16 ⁺)	1853.0+x	(15 ⁺)
203.7	203.7+y	(6 ⁻)	0.0+y	(4 ⁻)	320.1	642.3+y	(9 ⁻)	322.2+y	(7 ⁻)
211.0	814.6+x	(11 ⁺)	603.6+x	(10 ⁺)	330.8	850.6	(11 ⁺)	519.8	(9 ⁺)
217.5	1549.3+y	(13 ⁻)	1331.8+y	(12 ⁻)	351.2	603.6+x	(10 ⁺)	252.4+x	(8 ⁺)

Continued on next page (footnotes at end of table)

$^{159}\text{Tb}(^{18}\text{O},5\text{n}\gamma), ^{162}\text{Dy}(^{14}\text{N},4\text{n}\gamma)$ **1988Kr19** (continued) $\gamma(^{172}\text{Ta})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
376.7	868.5+y	(10 ⁻)	491.8+y	(8 ⁻)	584.0	2133.3+y	(15 ⁻)	1549.3+y	(13 ⁻)
397.8	1248.4	(13 ⁺)	850.6	(11 ⁺)	587.5	2155.5+x	(16 ⁺)	1568.0+x	(14 ⁺)
399.4	814.6+x	(11 ⁺)	415.2+x	(9 ⁺)	614.3	3386.2	(21 ⁺)	2771.9	(19 ⁺)
409.1	1051.4+y	(11 ⁻)	642.3+y	(9 ⁻)	616.5	2469.5+x	(17 ⁺)	1853.0+x	(15 ⁺)
442.0	1045.6+x	(12 ⁺)	603.6+x	(10 ⁺)	620.0	2496.8+y	(16 ⁻)	1876.8+y	(14 ⁻)
455.8	1704.2	(15 ⁺)	1248.4	(13 ⁺)	642.9	2798.4+x	(18 ⁺)	2155.5+x	(16 ⁺)
463.3	1331.8+y	(12 ⁻)	868.5+y	(10 ⁻)	664.3	3133.8+x	(19 ⁺)	2469.5+x	(17 ⁺)
483.0	1297.6+x	(13 ⁺)	814.6+x	(11 ⁺)	664.5	2797.8+y	(17 ⁻)	2133.3+y	(15 ⁻)
497.9	1549.3+y	(13 ⁻)	1051.4+y	(11 ⁻)	671.5	4057.7	(23 ⁺)	3386.2	(21 ⁺)
508.2	2212.4	(17 ⁺)	1704.2	(15 ⁺)	672.3	3470.7+x	(20 ⁺)	2798.4+x	(18 ⁺)
522.4	1568.0+x	(14 ⁺)	1045.6+x	(12 ⁺)	690.0	3186.8+y	(18 ⁻)	2496.8+y	(16 ⁻)
545.0	1876.8+y	(14 ⁻)	1331.8+y	(12 ⁻)	728.0	4785.7	(25 ⁺)	4057.7	(23 ⁺)
555.4	1853.0+x	(15 ⁺)	1297.6+x	(13 ⁺)	739.5	3537.3+y	(19 ⁻)	2797.8+y	(17 ⁻)
559.5	2771.9	(19 ⁺)	2212.4	(17 ⁺)					

$^{159}\text{Tb}(^{18}\text{O},5\text{n}\gamma), ^{162}\text{Dy}(^{14}\text{N},4\text{n}\gamma) \quad 1988\text{Kr19}$ Level Scheme $^{172}_{73}\text{Ta}_{99}$

$^{159}\text{Tb}(^{18}\text{O},5n\gamma), ^{162}\text{Dy}(^{14}\text{N},4n\gamma) \quad 1988\text{Kr19}$ Level Scheme (continued) $^{172}_{73}\text{Ta}_{99}$

$^{159}\text{Tb}(^{18}\text{O},5\text{n}\gamma), ^{162}\text{Dy}(^{14}\text{N},4\text{n}\gamma) \quad 1988\text{Kr19}$ 