

Energy levels and branching ratios [02Ba93].

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	L	C^2S	σ (τ, d)	σ (α, t)	$2J, 2K[Nn_z\Lambda]$	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}	
0.0	7^+	4	0.78*	12	18	7,7+[404]	8.24(3) d	73Gr23
71.13(8)	1^-	1	0.27**	54	13	1,1-[541]	79(2) s	73Gr23
73.01(9)	5^-	3	0.79**	incl	incl	5,1-[541]		73Gr23
122.06(3)	9^+							
159.37(10)	9^-	5	1.8	16	14	9,1-[541]		73Gr23
206.44(12)	$\langle 3 \rangle^-$	1	0.18***	38	4.6	3,1-[541]		73Gr23
208.15(9)	$\langle 1 \rangle^+$	0	0.18***	incl	incl	1,1+[411]	29.7(11) ns	73Gr23
220.71(9)	$\langle 3 \rangle^+$	2	0.20	18	6.6	3,1+[411]		73Gr23
269.13(4)	11^+							
295.58(4)	5^+	2	0.85	87	27	5,5+[402]	826(30) ps	73Gr23
333.80(10)	$\langle 5 \rangle^+$	2	0.14	14	4.8	5,1+[411]		73Gr23
336.60(10)	13^-							
364.98(9)	$\langle 7 \rangle^+$							
379.45(10)	7^-	3	0.14	12	2.9	7,1-[541]		73Gr23
394.72(5)	7^+	2	0.03	3.7	0.8	7,5+[402]		73Gr23
440.15(6)	13^+							
469.21(5)	9^-	5	0.08	0.8	1.1	9,9-[514]	≤ 0.2 ns	73Gr23
519.32(8)	9^+	4	0.07	1.6	0.7	9,5+[402]		73Gr23
558.88(12)	$\langle 9 \rangle^+$							
593.74(11)	11^-	5	2.4	26	19	11,9-[514]		73Gr23
606.96(11)	$\langle 17 \rangle^-$							
612.35(11)	$\langle 11 \rangle^+$							
620.00(11)	11^-	5	0.19	3.8	1.8	11,1-[541]		73Gr23
634.06(9)	15^+							
662.24(7)	$\langle 7 \rangle^-$							
670.82(10)	11^+							
742.78(14)	13^-							
788.50(9)	$\langle 9 \rangle^-$							
801(2)	$\langle 3^+, 5^+ \rangle$	2		12	1.6			73Gr23
842.20(17)	$\langle 13^+ \rangle$							
849.72(9)	17^+							
875.08(16)	$\langle 13^+ \rangle$							
910.09(18)	$\langle 5 \rangle^+$							
915.09(14)	$\langle 15^- \rangle$							
933.70(15)	$\langle 15^- \rangle$							
942.71(14)	$\langle 7 \rangle^+$							
951.92(13)	$\langle 15^+ \rangle$							
968(2)	$\langle 5^- \rangle$	3	0.15	13	1.2	5,3-[532]		73Gr23
968.90(14)	$\langle 21^- \rangle$							
1042.98(17)	$\langle 15^+ \rangle$							
1047(2)	$\langle 3^+ \rangle$	2	0.19	21	1.6	3,3+[402]		73Gr23
1085.88(17)	19^+							
1089(2)	$\langle 5^-, 7^- \rangle$	3		7	≈ 1			73Gr23
1111(4)	$\langle 3^- \rangle$	1	0.30	93	2.4	3,1-[530]		73Gr23
1111.28(16)	$\langle 17^- \rangle$							

(continued)

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	L	C^2S	σ (τ, d)	σ (α, t)	$2J, 2K[Nn_z\Lambda]$	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}	
1139(2)	$\langle 1^+ \rangle$	0	0.18	55	≈ 1			73Gr23
1156(2)	$\langle 1^+ \rangle$	0	0.04	11	incl			73Gr23
1162.28(6)	9^+							
1182(4)	$\langle 9^- \rangle$	5	0.29	3	2.2	9.3-[532]		73Gr23
1193.83(6)	$7^+, 9^+$							
1204.42(21)	$\langle 11^+ \rangle$							
1221(3)	$\langle 7^- \rangle$	3	0.31	32	3.1	7,1-[530]		73Gr23
1241.55(24)	$\langle 15^- \rangle$							
1248.05(18)	$\langle 17^+ \rangle$							
1256(3)				25	2.5			73Gr23
1270.0(10)	$\langle 13^+ \rangle$	6	0.46	incl	incl			73Gr23
1275.84(19)	$\langle 17^+ \rangle$							
1321.39(17)	$\langle 19^- \rangle$							
1321.84(8)	$\langle 11 \rangle^+$							
1329.17(16)	$\langle 19^- \rangle$							
1341.13(19)	21^+							
1354.2	$\langle 15^+ \rangle$							
1367.76(18)	$\langle 19^+ \rangle$							
1382.17(10)	$\langle 5, 7 \rangle^+$							
1382.4	$\langle 17^- \rangle$							
1418.3(3)	$\langle 25^- \rangle$							
1455.7	$\langle 17^+ \rangle$							
1499.83(24)	$\langle 19^+ \rangle$							
1505.55(16)	$\langle 7^+, 9, 11^+ \rangle$							
1534.25(13)	$\langle 7 \rangle^+$							
1542.6	$\langle 19^- \rangle$			14	1.2			73Gr23
1546(4)								
1558.12(17)								
1565.76(23)	$\langle 21^- \rangle$							
1569(4)	$\langle 13^+ \rangle$			2.9	8.5			73Gr23
1577.9	$\langle 19^+ \rangle$							
1589(6)				31	1.0			73Gr23
1600.35(17)	$\langle 5^+, 7, 9^+ \rangle$			84	1.9			73Gr23
1606(3)								
1614.2(3)	23^+							
1620.94(14)	$\langle 7, 9 \rangle^+$							
1701.96(22)	$\langle 21^+ \rangle$							
1719.1	$\langle 21^+ \rangle$							
1721.9	$\langle 21^- \rangle$							
1761.7(3)	$\langle 21^+ \rangle$							
1762.5(3)	$\langle 7^-, 9, 11^+ \rangle$							
1770.86(16)	$\langle 9, 11, 13^- \rangle$							
1787.83(21)	$\langle 23^- \rangle$							
1819.3	$\langle 23^- \rangle$							
1838.5(3)	$\langle 23^+ \rangle$							

(continued)

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	L	C^2S	σ (τ, d)	σ (α, t)	$2J, 2K[Nn_z\Lambda]$	$T_{1/2}$ or Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}
1841.41(16)	$\langle 9^+, 11^+ \rangle$						
1845.0	$\langle 21^- \rangle$						
1876.0	$\langle 23^+ \rangle$						
1902.7(4)	25^+						
1919.7	$\langle 23^- \rangle$						
1948.8(4)	$\langle 29^- \rangle$						
2018.32(12)	$\langle 9, 11^+ \rangle$						
2022.63(22)	$\langle 7^+, 9, 11^+ \rangle$						
2029.2							
2044.9	$\langle 25^+ \rangle$						
2048.2	$\langle 23^- \rangle$						
2093.3	$\langle 25^- \rangle$						
2136.0	$\langle 25^- \rangle$						
2153.2							
2204.4	$\langle 25^+ \rangle$						
2204.7	$\langle 27^+ \rangle$						
2248.6	$\langle 27^+ \rangle$						
2269.4	$\langle 25^- \rangle$						
2322.6	$\langle 27^- \rangle$						
2346.6	$\langle 27^+ \rangle$						
2370.3	$\langle 27^- \rangle$						
2374.9	$\langle 27^- \rangle$						
2449.0	$\langle 29^+ \rangle$						
2510.3	$\langle 27^- \rangle$						
2515.9	$\langle 29^+ \rangle$						
2550.9	$\langle 33^- \rangle$						
2622.3	$\langle 29^- \rangle$						
2626.2	$\langle 27^+ \rangle$						
2646.2							
2676.4	$\langle 29^- \rangle$						
2696.5	$\langle 31^+ \rangle$						
2724.7							
2732.7	$\langle 29^+ \rangle$						
2767.7	$\langle 29^- \rangle$						
2831.4	$\langle 31^+ \rangle$						
2854.1							
2887.2	$\langle 31^+ \rangle$						
2891.8	$\langle 31^- \rangle$						
2914.5	$\langle 31^- \rangle$						
2926.8	$\langle 33^+ \rangle$						
2973.5	$\langle 31^- \rangle$						
3029.3	$\langle 33^- \rangle$						
3043.2	$\langle 31^- \rangle$						
3098.5	$\langle 31^+ \rangle$						
3137.9	$\langle 33^+ \rangle$						

(continued)

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E^*	$2J^\pi$	L	C^2S	σ (τ, d)	σ (α, t)	$2J, 2K[Nn_z\Lambda]$	$T_{1/2}$ or Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}
3177.5	$\langle 33^- \rangle$						
3208.3	$\langle 37^- \rangle$						
3219.4	$\langle 35^+ \rangle$						
3286.6	$\langle 33^- \rangle$						
3301.8	$\langle 33^+ \rangle$						
3329.2	$\langle 33^- \rangle$						
3390.1							
3441.5	$\langle 35^+ \rangle$						
3474.2	$\langle 35^+ \rangle$						
3477.0	$\langle 37^+ \rangle$						
3479.6	$\langle 35^- \rangle$						
3540.4	$\langle 35^- \rangle$						
3582.7	$\langle 37^- \rangle$						
3583.3	$\langle 35^- \rangle$						
3621.3	$\langle 35^- \rangle$						
3642.5	$\langle 35^+ \rangle$						
3730.4	$\langle 37^+ \rangle$						
3796.8	$\langle 37^- \rangle$						
3814.7	$\langle 39^+ \rangle$						
3881.8	$\langle 37^- \rangle$						
3891.2							
3895.1	$\langle 41^- \rangle$						
3914.4	$\langle 37^- \rangle$						
3919.4	$\langle 37^+ \rangle$						
4034.9	$\langle 39^+ \rangle$						
4059.0							
4099.6	$\langle 41^+ \rangle$						
4119.4	$\langle 39^+ \rangle$						
4128.7	$\langle 39^- \rangle$						
4180.1	$\langle 39^- \rangle$						
4184.5	$\langle 39^- \rangle$						
4218.0	$\langle 39^- \rangle$						
4244.1	$\langle 41^- \rangle$						
4257.3	$\langle 39^+ \rangle$						
4336.5	$\langle 41^+ \rangle$						
4459.5	$\langle 41^- \rangle$						
4478.8	$\langle 41^- \rangle$						
4478.9	$\langle 43^+ \rangle$						
4587.6	$\langle 41^+ \rangle$						
4600.2	$\langle 45^- \rangle$						
4664.8	$\langle 43^+ \rangle$						
4793.5	$\langle 45^+ \rangle$						
4828.5	$\langle 43^+ \rangle$						
4836.6	$\langle 43^- \rangle$						
4995.3	$\langle 45^+ \rangle$						

(continued)

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E^*	$2J^\pi$	L	C^2S	σ (τ, d)	σ (α, t)	$2J, 2K[Nn_z\Lambda]$	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}	
5208.1	$\langle 47^+ \rangle$							
5214.3	$\langle 45^- \rangle$							
5341.7	$\langle 49^- \rangle$							
5353.3	$\langle 47^+ \rangle$							
5557.6	$\langle 49^+ \rangle$							
5717.9	$\langle 49^+ \rangle$							
5991	$\langle 49^- \rangle$							
5997.7	$\langle 51^+ \rangle$							
6105.4	$\langle 51^+ \rangle$							
6134.3	$\langle 53^- \rangle$							
6390.6	$\langle 53^+ \rangle$							
6505.7	$\langle 53^+ \rangle$							
6845	$\langle 55^+ \rangle$							
6982.4	$\langle 57^- \rangle$							
7292	$\langle 57^+ \rangle$							
7750	$\langle 59^+ \rangle$							
7886	$\langle 61^- \rangle$							
8257	$\langle 61^+ \rangle$							
8841	$\langle 65^- \rangle$							
9848	$\langle 69^- \rangle$							
10907	$\langle 73^- \rangle$							
14792(14)							120(30) keV	
15757(20)							130(30) keV	
		73Gr23	73Gr23	73Gr23	73Gr23			Ref.

* $C^2S = d\sigma/d\Omega_{\text{exp}}/2N \times d\sigma/d\Omega_{DWBA} = U^2C^2$ for the (τ, d) reaction at 38° [73Gr23]; σ of the (α, t) reaction were measured at 90° [73Gr23, 02Ba87]; see 7 band assignments in [02Ba87].

** Complex; values $C^2S=0.27$ if entire cross section is for the level at 71 keV.

*** Complex; values $C^2S=0.18$ if entire cross section is for either 206 level or 208 level [02Ba87].

Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [02Ba93]. Part 2

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*:$ $2J_f^\pi:$	0.0 7 ⁺	71.1 1 ⁻	73.0 5 ⁻	122 9 ⁺	159 9 ⁻	206 $\langle 3 \rangle^-$	208 $\langle 1 \rangle^+$	220.71 $\langle 3 \rangle^+$	269.13 11 ⁺	295.58 5 ⁺
71.13(8)	1 ⁻		100									
73.01(9)	5 ⁻			x								
122.06(3)	9 ⁺		100									
159.37(10)	9 ⁻				100							
206.44(12)	$\langle 3 \rangle^-$			29(9)	71(21)							
208.15(9)	$\langle 1 \rangle^+$			100								
220.71(9)	$\langle 3 \rangle^+$			38(11)	62(19)				x			

(continued)

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E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	0.0 7 ⁺	71.1 1 ⁻	73.0 5 ⁻	122 9 ⁺	159 9 ⁻	206 3 ⁻	208 1 ⁺	220.71 3 ⁺	269.13 11 ⁺	295.58 5 ⁺
269.13(4)	11 ⁺		48(2)			52(2)						
295.58(4)	5 ⁺		96(21)			0.9(6)				3.3		
333.80(10)	5 ⁺								9	91(23)		
336.60(10)	13 ⁻						100					
364.98(9)	7 ⁺				22(3)					78(9)		
379.45(10)	7 ⁻				47		42(9)	10(5)				
394.72(5)	7 ⁺		35(9)									65(5)
440.15(6)	13 ⁺					68(3)					31.7(12)	
469.21(5)	9 ⁻		34(4)			59(3)					6.9(7)	
519.32(8)	9 ⁺		10(10)			23(2)						8.5(13)
593.74(11)	11 ⁻					7(7)					18.6(16)	
612.35(11)	11 ⁺						12.7(23)					
620.00(11)	11 ⁻						49(8)					
634.06(9)	15 ⁺										78(2)	
662.24(7)	7 ⁻		83(9)			10.7(12)						
670.82(10)	11 ⁺										31(2)	
788.50(9)	9 ⁻		29(3)			53(16)					12(5)	
910.09(18)	5 ⁺				16(8)			57(11)				
942.71(14)	7 ⁺				61		39(12)					
1162.28(6)	9 ⁺		41(5)			13(4)					15(3)	
1193.83(6)	7 ⁺ , 9 ⁺		6.2(7)			69(7)					3.4(10)	
1321.84(8)	11 ⁺		5.6(11)			9.0(11)						
1382.17(10)	5, 7 ⁺				29(10)							
1505.55(16)	7 ⁺ , 9, 11 ⁺		61(7)			16(3)					23(6)	
1534.25(13)	7 ⁺		6(2)									
1558.12(17)			78(10)			22(6)						
1600.35(17)	5 ⁺ , 7, 9 ⁺											18(9)
1620.94(14)	7, 9 ⁺		9(2)			9(4)						7(2)
1762.5(3)	7 ⁻ , 9, 11 ⁺		10(4)									
1841.41(16)	9 ⁺ , 11 ⁺		30(9)			4(2)					6(3)	
2018.32(12)	9, 11 ⁺		4(1)			20(3)					39(4)	
2022.63(22)	7 ⁺ , 9, 11 ⁺		76(10)								24(7)	

Energy levels and branching ratios [02Ba93]. Part 3

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	333.80 5 ⁺	336.60 13 ⁻	364.98 7 ⁺	379.45 7 ⁻	394.72 7 ⁺	440.15 13 ⁺	469.21 9 ⁻	519.32 9 ⁺	558.88 9 ⁺	593.74 11 ⁻
364.98(9)	7 ⁺	x										
519.32(8)	9 ⁺						58(4)					
558.88(12)	9 ⁺		41(6)		59(7)							
593.74(11)	11 ⁻								74(4)			

(continued)

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	333.80 $\langle 5 \rangle^+$	336.60 13^-	364.98 $\langle 7 \rangle^+$	379.45 7^-	394.72 7^+	440.15 13^+	469.21 9^-	519.32 9^+	558.88 $\langle 9 \rangle^+$	593.74 11^-
606.96(11)	$\langle 17^- \rangle$			100								
612.35(11)	$\langle 11 \rangle^+$				87(5)							
620.00(11)	11^-			27(4)		25(3)						
634.06(9)	15^+							22.1(8)				
662.24(7)	$\langle 7 \rangle^-$								≈ 7			
670.82(10)	11^+						18(2)			52(3)		
742.78(14)	13^-								9.9(15)			90(4)
788.50(9)	$\langle 9 \rangle^-$											x
842.20(17)	$\langle 13^+ \rangle$									33(2)		
849.72(9)	17^+							83(3)				
875.08(16)	$\langle 13^+ \rangle$										64(4)	
910.09(18)	$\langle 5 \rangle^+$		16(8)			11(5)						
915.09(14)	$\langle 15^- \rangle$											29.3(18)
933.70(15)	$\langle 15^- \rangle$			48(4)								
951.92(13)	$\langle 15^+ \rangle$			18.8(18)								
1162.28(6)	9^+							≈ 10	14(2)			7(2)
1193.83(6)	$7^+, 9^+$						8.5(10)		6.6(10)	6.0(10)		
1204.42(21)	$\langle 11^+ \rangle$								20(7)			34(7)
1241.55(24)	$\langle 15^- \rangle$							59(4)				
1321.84(8)	$\langle 11 \rangle^+$							7(2)	57(7)	2.2(11)		
1354.2	$\langle 15^+ \rangle$			49(7)								
1382.17(10)	$\langle 5, 7 \rangle^+$				10(2)	13(4)						
1600.35(17)	$\langle 5^+, 7, 9^+ \rangle$		9(3)				30(15)			43(18)		
1620.94(14)	$\langle 7, 9 \rangle^+$		16(5)			17(5)	9(4)				28(7)	
1762.5(3)	$\langle 7^-, 9, 11^+ \rangle$								77(15)			13(5)
1770.86(16)	$\langle 9, 11, 13^- \rangle$								79(11)			11(4)
1841.41(16)	$\langle 9^+, 11^+ \rangle$							12(6)	48(6)			
2018.32(12)	$\langle 9, 11^+ \rangle$								9(4)			

Energy levels and branching ratios [02Ba93]. Part 4

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	606.96 $\langle 17^- \rangle$	612.35 $\langle 11 \rangle^+$	620.00 11^-	634.06 15^+	662.24 $\langle 7 \rangle^-$	670.82 11^+	742.78 13^-	788.50 $\langle 9 \rangle^-$	842.20 $\langle 13^+ \rangle$	849.72 17^+
788.50(9)	$\langle 9 \rangle^-$						6					
842.20(17)	$\langle 13^+ \rangle$			2.3(9)					64(3)			
849.72(9)	17^+					17.0(7)						
875.08(16)	$\langle 13^+ \rangle$			36(3)								
915.09(14)	$\langle 15^- \rangle$									71(4)		
933.70(15)	$\langle 15^- \rangle$		14(2)		38(2)							
951.92(13)	$\langle 15^+ \rangle$			80(4)								
968.90(14)	$\langle 21^- \rangle$		100									

(continued)

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	606.96 $\langle 17^- \rangle$	612.35 $\langle 11 \rangle^+$	620.00 11^-	634.06 15^+	662.24 $\langle 7 \rangle^-$	670.82 11^+	742.78 13^-	788.50 $\langle 9 \rangle^-$	842.20 $\langle 13^+ \rangle$	849.72 17^+
1042.98(17)	$\langle 15^+ \rangle$							53(3)			47(3)	
1085.88(17)	19^+					87(3)						12.9(6)
1111.28(16)	$\langle 17^- \rangle$								35(2)			
1204.42(21)	$\langle 11^+ \rangle$								≈ 45			
1241.55(24)	$\langle 15^- \rangle$					23(2)						18.5(13)
1248.05(18)	$\langle 17^+ \rangle$										43(2)	
1275.84(19)	$\langle 17^+ \rangle$										21(7)	
1321.39(17)	$\langle 19^- \rangle$		23(2)									
1321.84(8)	$\langle 11 \rangle^+$							3.5(11)				
1329.17(16)	$\langle 19^- \rangle$		17(1)									
1341.13(19)	21^+											89(3)
1367.76(18)	$\langle 19^+ \rangle$		33(2)									
1382.4	$\langle 17^- \rangle$					56(3)						
1542.6	$\langle 19^- \rangle$											33(2)
1577.9	$\langle 19^+ \rangle$		13(3)									
1620.94(14)	$\langle 7,9 \rangle^+$						5(2)					
2018.32(12)	$\langle 9,11^+ \rangle$				6(3)		4(2)			18(4)		

Energy levels and branching ratios [02Ba93]. Part 5

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	875.08 $\langle 13^+ \rangle$	910.09 $\langle 5 \rangle^+$	915.09 $\langle 15^- \rangle$	933.70 $\langle 15^- \rangle$	942.71 $\langle 7 \rangle^+$	951.92 $\langle 15^+ \rangle$	968 $\langle 5^- \rangle$	968.90 $\langle 21^- \rangle$	1042.98 $\langle 15^+ \rangle$	1085.88 19^+
951.92(13)	$\langle 15^+ \rangle$		1.7									
1111.28(16)	$\langle 17^- \rangle$				65(3)							
1248.05(18)	$\langle 17^+ \rangle$		14(4)					17(1)			27(1)	
1275.84(19)	$\langle 17^+ \rangle$		43(3)					17(2)			18(2)	
1321.39(17)	$\langle 19^- \rangle$				19(1)	34(2)				14(1)		
1329.17(16)	$\langle 19^- \rangle$				27(1)	21(1)						
1341.13(19)	21^+											11.3(5)
1367.76(18)	$\langle 19^+ \rangle$							67(3)				
1382.17(10)	$\langle 5,7 \rangle^+$			8(5)			<5					
1418.3(3)	$\langle 25^- \rangle$									100		
1499.83(24)	$\langle 19^+ \rangle$										68(6)	
1534.25(13)	$\langle 7 \rangle^+$			27(9)			45(6)					
1614.2(3)	23^+											90(3)
1787.83(21)	$\langle 23^- \rangle$									32(2)		
1838.5(3)	$\langle 23^+ \rangle$									44(3)		
1845.0	$\langle 21^- \rangle$											100
1876.0	$\langle 23^+ \rangle$								7.5(7)			

Energy levels and branching ratios [02Ba93]. Part 6

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1111.28 $\langle 17^- \rangle$	1162.28 9^+	1193.83 $7^+, 9^+$	1204.42 $\langle 11^+ \rangle$	1241.55 $\langle 15^- \rangle$	1248.05 $\langle 17^+ \rangle$	1270.0 $\langle 13^+ \rangle$	1275.84 $\langle 17^+ \rangle$	1321.39 $\langle 19^- \rangle$	1321.84 $\langle 11 \rangle^+$
1193.83(6)	$7^+, 9^+$			x								
1321.39(17)	$\langle 19^- \rangle$		9.7(7)									
1321.84(8)	$\langle 11 \rangle^+$				15(6)							
1329.17(16)	$\langle 19^- \rangle$		34(1)									
1354.2	$\langle 15^+ \rangle$								51(9)			
1382.17(10)	$\langle 5, 7 \rangle^+$				40(5)							
1382.4	$\langle 17^- \rangle$						44(3)					
1455.7	$\langle 17^+ \rangle$								31(17)			
1499.83(24)	$\langle 19^+ \rangle$							32(3)				
1534.25(13)	$\langle 7 \rangle^+$				12(5)							9(5)
1542.6	$\langle 19^- \rangle$						37(2)					
1565.76(23)	$\langle 21^- \rangle$		58(3)									
1701.96(22)	$\langle 21^+ \rangle$							59(2)		11.8(11)		
1719.1	$\langle 21^+ \rangle$							59(2)		10.8(9)		
1761.7(3)	$\langle 21^+ \rangle$									57(6)		
1762.5(3)	$\langle 7^-, 9, 11^+ \rangle$											<14
1770.86(16)	$\langle 9, 11, 13^- \rangle$											10(4)
1787.83(21)	$\langle 23^- \rangle$										56(3)	
1819.3	$\langle 23^- \rangle$										12.1(11)	

Energy levels and branching ratios [02Ba93]. Part 7

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1329.17 $\langle 19^- \rangle$	1341.13 21^+	1354.2 $\langle 15^+ \rangle$	1367.76 $\langle 19^+ \rangle$	1382.4 $\langle 17^- \rangle$	1418.3 $\langle 25^- \rangle$	1455.7 $\langle 17^+ \rangle$	1499.83 $\langle 19^+ \rangle$	1542.6 $\langle 19^- \rangle$	1565.76 $\langle 21^- \rangle$
1455.7	$\langle 17^+ \rangle$				69(36)							
1542.6	$\langle 19^- \rangle$					30(1)						
1565.76(23)	$\langle 21^- \rangle$	42(2)										
1577.9	$\langle 19^+ \rangle$				39(8)				49(9)			
1614.2(3)	23^+			9.8(5)								
1701.96(22)	$\langle 21^+ \rangle$					23.6(11)				1.8(7)		
1719.1	$\langle 21^+ \rangle$					15.5(9)			9.0(9)			
1721.9	$\langle 21^- \rangle$						72(4)				27.7(14)	
1761.7(3)	$\langle 21^+ \rangle$					9(5)				34(4)		
1787.83(21)	$\langle 23^- \rangle$	7(2)						4.6(10)				
1819.3	$\langle 23^- \rangle$	52(3)										36(2)
1838.5(3)	$\langle 23^+ \rangle$					56(4)						
1876.0	$\langle 23^+ \rangle$					12.0(10)						
1902.7(4)	25^+			89(3)								
1919.7	$\langle 23^- \rangle$										84(4)	
1948.8(4)	$\langle 29^- \rangle$							100				
2029.2								100				

(continued)

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage									
[keV]	$E_f^*:$ $2J_f^\pi:$	1329.17 $\langle 19^- \rangle$	1341.13 21^+	1354.2 $\langle 15^+ \rangle$	1367.76 $\langle 19^+ \rangle$	1382.4 $\langle 17^- \rangle$	1418.3 $\langle 25^- \rangle$	1455.7 $\langle 17^+ \rangle$	1499.83 $\langle 19^+ \rangle$	1542.6 $\langle 19^- \rangle$	1565.76 $\langle 21^- \rangle$
2048.2	$\langle 23^- \rangle$		100								
2093.3	$\langle 25^- \rangle$										57(3)
2153.2							100				
2322.6	$\langle 27^- \rangle$						26(2)				
2346.6	$\langle 27^+ \rangle$						55(3)				
2626.2	$\langle 27^+ \rangle$						100				
2646.2							100				
2854.1							100				

Energy levels and branching ratios [02Ba93]. Part 8

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1577.9 $\langle 19^+ \rangle$	1614.2 23^+	1620.94 $\langle 7,9 \rangle^+$	1701.96 $\langle 21^+ \rangle$	1719.1 $\langle 21^+ \rangle$	1721.9 $\langle 21^- \rangle$	1761.7 $\langle 21^+ \rangle$	1787.83 $\langle 23^- \rangle$	1819.3 $\langle 23^- \rangle$	1838.5 $\langle 23^+ \rangle$
1701.96(22)	$\langle 21^+ \rangle$		4.3(7)									
1719.1	$\langle 21^+ \rangle$		5.9(6)									
1876.0	$\langle 23^+ \rangle$		56(3)			10.0(7)	14.2(7)					
1902.7(4)	25^+			11.3(6)								
1919.7	$\langle 23^- \rangle$							16.2(11)				
2018.32(12)	$\langle 9,11^+ \rangle$				<6							
2044.9	$\langle 25^+ \rangle$					34(1)	44(2)					
2093.3	$\langle 25^- \rangle$										43(2)	
2136.0	$\langle 25^- \rangle$							86(3)				
2204.4	$\langle 25^+ \rangle$					54(4)	22(4)		6(2)			17(2)
2204.7	$\langle 27^+ \rangle$			89(4)								
2248.6	$\langle 27^+ \rangle$			15.0(9)								
2269.4	$\langle 25^- \rangle$			69(5)								
2322.6	$\langle 27^- \rangle$									74(4)		
2346.6	$\langle 27^+ \rangle$											45(3)
2374.9	$\langle 27^- \rangle$										60(3)	

Energy levels and branching ratios [02Ba93]. Part 9

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^* :	1845.0	1876.0	1902.7	1919.7	1948.8	2044.9	2048.2	2093.3	2136.0	2204.4
[keV]		$2J_f^\pi$:	$\langle 21^- \rangle$	$\langle 23^+ \rangle$	25^+	$\langle 23^- \rangle$	$\langle 29^- \rangle$	$\langle 25^+ \rangle$	$\langle 23^- \rangle$	$\langle 25^- \rangle$	$\langle 25^- \rangle$	$\langle 25^+ \rangle$
2044.9	$\langle 25^+ \rangle$			21.5(8)								
2136.0	$\langle 25^- \rangle$					13.9(10)						
2204.7	$\langle 27^+ \rangle$				11.2(8)							

(continued)

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1845.0 $\langle 21^- \rangle$	1876.0 $\langle 23^+ \rangle$	1902.7 25^+	1919.7 $\langle 23^- \rangle$	1948.8 $\langle 29^- \rangle$	2044.9 $\langle 25^+ \rangle$	2048.2 $\langle 23^- \rangle$	2093.3 $\langle 25^- \rangle$	2136.0 $\langle 25^- \rangle$	2204.4 $\langle 25^+ \rangle$
2248.6	$\langle 27^+ \rangle$			69(3)				16.3(9)				
2269.4	$\langle 25^- \rangle$		31(3)									
2370.3	$\langle 27^- \rangle$					86(6)					13.8(16)	
2374.9	$\langle 27^- \rangle$									40(2)		
2449.0	$\langle 29^+ \rangle$							86(3)				
2510.3	$\langle 27^- \rangle$				52(4)				48(3)			
2515.9	$\langle 29^+ \rangle$				92(3)							
2550.9	$\langle 33^- \rangle$						100					
2622.3	$\langle 29^- \rangle$										89(4)	
2676.4	$\langle 29^- \rangle$									65(3)		
2724.7							100					
2831.4	$\langle 31^+ \rangle$											89(4)
2887.2	$\langle 31^+ \rangle$						61(4)					
2914.5	$\langle 31^- \rangle$						18.0(20)					
3029.3	$\langle 33^- \rangle$						100					

Energy levels and branching ratios [02Ba93]. Part 10

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*:$ $2J_f^\pi:$	2204.7 $\langle 27^+ \rangle$	2248.6 $\langle 27^+ \rangle$	2269.4 $\langle 25^- \rangle$	2322.6 $\langle 27^- \rangle$	2346.6 $\langle 27^+ \rangle$	2370.3 $\langle 27^- \rangle$	2374.9 $\langle 27^- \rangle$	2449.0 $\langle 29^+ \rangle$	2510.3 $\langle 27^- \rangle$	2515.9 $\langle 29^+ \rangle$
2449.0	$\langle 29^+ \rangle$			13.6(8)								
2515.9	$\langle 29^+ \rangle$		7.8(6)									
2622.3	$\langle 29^- \rangle$							11.4(12)				
2676.4	$\langle 29^- \rangle$								35(2)			
2696.5	$\langle 31^+ \rangle$			83(3)						16.6(12)		
2732.7	$\langle 29^+ \rangle$		82(8)				18(2)					
2767.7	$\langle 29^- \rangle$				100							
2831.4	$\langle 31^+ \rangle$											10.8(9)
2887.2	$\langle 31^+ \rangle$						39(4)					
2891.8	$\langle 31^- \rangle$							100				
2914.5	$\langle 31^- \rangle$					82(4)						
2926.8	$\langle 33^+ \rangle$									93(3)		
2973.5	$\langle 31^- \rangle$								74(4)			
3043.2	$\langle 31^- \rangle$										80(4)	20(3)
3137.9	$\langle 33^+ \rangle$											90(4)
3390.1												100

Energy levels and branching ratios [02Ba93]. Part 11

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	2550.9 $\langle 33^- \rangle$	2622.3 $\langle 29^- \rangle$	2626.2 $\langle 27^+ \rangle$	2676.4 $\langle 29^- \rangle$	2696.5 $\langle 31^+ \rangle$	2732.7 $\langle 29^+ \rangle$	2767.7 $\langle 29^- \rangle$	2831.4 $\langle 31^+ \rangle$	2887.2 $\langle 31^+ \rangle$	2891.8 $\langle 31^- \rangle$
2926.8	$\langle 33^+ \rangle$						7.1(6)					
2973.5	$\langle 31^- \rangle$					26(4)						
3098.5	$\langle 31^+ \rangle$				100							
3137.9	$\langle 33^+ \rangle$									9.8(8)		
3177.5	$\langle 33^- \rangle$			100								
3208.3	$\langle 37^- \rangle$	100										
3219.4	$\langle 35^+ \rangle$						90(4)					
3286.6	$\langle 33^- \rangle$					68(6)						
3301.8	$\langle 33^+ \rangle$							88(5)			12(3)	
3329.2	$\langle 33^- \rangle$								100			
3441.5	$\langle 35^+ \rangle$									87(3)		
3474.2	$\langle 35^+ \rangle$		40(4)								60(4)	
3479.6	$\langle 35^- \rangle$											100
3540.4	$\langle 35^- \rangle$		11.5(15)									
3582.7	$\langle 37^- \rangle$		72(4)									

Energy levels and branching ratios [02Ba93]. Part 12

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	2914.5 $\langle 31^- \rangle$	2926.8 $\langle 33^+ \rangle$	2973.5 $\langle 31^- \rangle$	3029.3 $\langle 33^- \rangle$	3043.2 $\langle 31^- \rangle$	3098.5 $\langle 31^+ \rangle$	3137.9 $\langle 33^+ \rangle$	3177.5 $\langle 33^- \rangle$	3208.3 $\langle 37^- \rangle$	3219.4 $\langle 35^+ \rangle$
3219.4	$\langle 35^+ \rangle$			10.2(10)								
3286.6	$\langle 33^- \rangle$				32(2)							
3441.5	$\langle 35^+ \rangle$								12.9(13)			
3477.0	$\langle 37^+ \rangle$			94(3)								5.7(6)
3540.4	$\langle 35^- \rangle$	88(4)										
3582.7	$\langle 37^- \rangle$					28(3)						
3583.3	$\langle 35^- \rangle$				62(7)							
3621.3	$\langle 35^- \rangle$						100					
3642.5	$\langle 35^+ \rangle$							100				
3730.4	$\langle 37^+ \rangle$								100			
3796.8	$\langle 37^- \rangle$									100		
3814.7	$\langle 39^+ \rangle$											100
3891.2											100	
3895.1	$\langle 41^- \rangle$										100	
4059.0											100	
4119.4	$\langle 39^+ \rangle$										35(4)	
4244.1	$\langle 41^- \rangle$										24(3)	

Energy levels and branching ratios [02Ba93]. Part 13

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	3286.6 $\langle 33^- \rangle$	3301.8 $\langle 33^+ \rangle$	3329.2 $\langle 33^- \rangle$	3441.5 $\langle 35^+ \rangle$	3474.2 $\langle 35^+ \rangle$	3477.0 $\langle 37^+ \rangle$	3479.6 $\langle 35^- \rangle$	3540.4 $\langle 35^- \rangle$	3582.7 $\langle 37^- \rangle$	3583.3 $\langle 35^- \rangle$
3583.3	$\langle 35^- \rangle$		38(5)									
3881.8	$\langle 37^- \rangle$		59(4)									41(2)
3914.4	$\langle 37^- \rangle$				100							
3919.4	$\langle 37^+ \rangle$			100								
4034.9	$\langle 39^+ \rangle$					100						
4099.6	$\langle 41^+ \rangle$							100				
4119.4	$\langle 39^+ \rangle$						65(5)					
4128.7	$\langle 39^- \rangle$								100			
4180.1	$\langle 39^- \rangle$									100		
4184.5	$\langle 39^- \rangle$									100		
4244.1	$\langle 41^- \rangle$										76(5)	

Energy levels and branching ratios [02Ba93]. Part 14

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	3621.3 $\langle 35^- \rangle$	3642.5 $\langle 35^+ \rangle$	3730.4 $\langle 37^+ \rangle$	3796.8 $\langle 37^- \rangle$	3814.7 $\langle 39^+ \rangle$	3881.8 $\langle 37^- \rangle$	3895.1 $\langle 41^- \rangle$	3919.4 $\langle 37^+ \rangle$	4034.9 $\langle 39^+ \rangle$	4099.6 $\langle 41^+ \rangle$
4218.0	$\langle 39^- \rangle$		100									
4257.3	$\langle 39^+ \rangle$			100								
4336.5	$\langle 41^+ \rangle$				100							
4459.5	$\langle 41^- \rangle$							100				
4478.8	$\langle 41^- \rangle$					100						
4478.9	$\langle 43^+ \rangle$						100					
4587.6	$\langle 41^+ \rangle$									100		
4600.2	$\langle 45^- \rangle$								100			
4664.8	$\langle 43^+ \rangle$										100	
4793.5	$\langle 45^+ \rangle$											100

Energy levels and branching ratios [02Ba93]. Part 15

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	4119.4 $\langle 39^+ \rangle$	4128.7 $\langle 39^- \rangle$	4336.5 $\langle 41^+ \rangle$	4478.8 $\langle 41^- \rangle$	4478.9 $\langle 43^+ \rangle$	4600.2 $\langle 45^- \rangle$	4664.8 $\langle 43^+ \rangle$	4793.5 $\langle 45^+ \rangle$	4995.3 $\langle 45^+ \rangle$	5208.1 $\langle 47^+ \rangle$
4828.5	$\langle 43^+ \rangle$		100									
4836.6	$\langle 43^- \rangle$			100								
4995.3	$\langle 45^+ \rangle$				100							
5208.1	$\langle 47^+ \rangle$						100					
5214.3	$\langle 45^- \rangle$					100						
5341.7	$\langle 49^- \rangle$								100			

(continued)

 $^{171}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	4119.4 $\langle 39^+ \rangle$	4128.7 $\langle 39^- \rangle$	4336.5 $\langle 41^+ \rangle$	4478.8 $\langle 41^- \rangle$	4478.9 $\langle 43^+ \rangle$	4600.2 $\langle 45^- \rangle$	4664.8 $\langle 43^+ \rangle$	4793.5 $\langle 45^+ \rangle$	4995.3 $\langle 45^+ \rangle$	5208.1 $\langle 47^+ \rangle$
5353.3	$\langle 47^+ \rangle$								100			
5557.6	$\langle 49^+ \rangle$									100		
5717.9	$\langle 49^+ \rangle$										100	
5997.7	$\langle 51^+ \rangle$											100

Energy levels and branching ratios [02Ba93]. Part 16

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	5214.3 $\langle 45^- \rangle$	5341.7 $\langle 49^- \rangle$	5353.3 $\langle 47^+ \rangle$	5557.6 $\langle 49^+ \rangle$	5717.9 $\langle 49^+ \rangle$	5997.7 $\langle 51^+ \rangle$	6134.3 $\langle 53^- \rangle$	6390.6 $\langle 53^+ \rangle$	6845 $\langle 55^+ \rangle$
5991	$\langle 49^- \rangle$		100								
6105.4	$\langle 51^+ \rangle$				100						
6134.3	$\langle 53^- \rangle$			100							
6390.6	$\langle 53^+ \rangle$					100					
6505.7	$\langle 53^+ \rangle$						100				
6845	$\langle 55^+ \rangle$							100			
6982.4	$\langle 57^- \rangle$								100		
7292	$\langle 57^+ \rangle$									100	
7750	$\langle 59^+ \rangle$										100

Energy levels and branching ratios [02Ba93]. Part 17

 $^{171}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage					
		E_f^* : $2J_f^\pi$:	6982.4 $\langle 57^- \rangle$	7292 $\langle 57^+ \rangle$	7886 $\langle 61^- \rangle$	8841 $\langle 65^- \rangle$	9848 $\langle 69^- \rangle$
7886	$\langle 61^- \rangle$		100				
8257	$\langle 61^+ \rangle$			100			
8841	$\langle 65^- \rangle$				100		
9848	$\langle 69^- \rangle$					100	
10907	$\langle 73^- \rangle$						100

Energy levels and branching ratios [95Si16].

 $^{172}_{71}\text{Lu}$

E^*	J^π	σ (τ, d)	σ (α, t)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$	Γ_{cm}		E_f^* : J_f^π :	0.0 4 $^-$	41.9 1 $^-$	65.8 $\langle 1 \rangle^+$	68 $\langle 3^- \rangle$	109.4 $\langle 1 \rangle^+$
0.0	4 $^-$	5.7(4)	18.3(7)	6.70(3) d	76El11						
41.86(4)	1 $^-$			3.7(5) m			100				
65.79(4)	$\langle 1 \rangle^+$			0.332(20) μs				100			
68(3)	$\langle 3^- \rangle$	21.0(8)	27.2(9)		76El11						
68(3)	$\langle 3^+ \rangle$	incl	incl		76El11						
109.41(10)	$\langle 1 \rangle^+$			440(12) μs				100			
109.85(4)	$\langle 2 \rangle^+$			2.30(12) ns				68(7)	32(5)		
111.13(17)	$\langle 5^- \rangle$						100				
132(3)	$\langle 2^+ \rangle$	9.9(8)	9.1(5)		76El11						
148(3)	$\langle 5^+ \rangle$	2.9(3)	19.3(7)		76El11						
168(3)	$\langle 4^- \rangle$									100	
179.85(4)	$\langle 1 \rangle^+$								75(8)		
191.60(4)	$\langle 1 \rangle^+$	5.5(4)	2.8(3)	≤ 0.5 ns	76El11				71(4)		
196.58(11)	$\langle 0, 1, 2 \rangle^-$							100			
204.00(21)	$\langle 0^+ - 2^+ \rangle$										
210(3)	$\langle 4^+ \rangle$	6.2(4)	12.6(6)		76El11						
213.57(17)	$\langle 6^- \rangle$			150 ns			62(6)				
232.33(10)	$\langle 1 \rangle^+$										81(8)
237(5)	$\langle 0^+ \rangle$	5.0(4)	3.9(3)		76El11						
237.32(14)	$\langle 0^-, 1^- \rangle$	incl	incl		76El11						100
244.7(3)	$\langle 6^- \rangle$										
252.2(3)	$\langle 0^+, 1^+ \rangle$										
290(3)	$\langle 5^- \rangle$										
296(3)		8.3(5)	3.8(3)		76El11						
314(5)	$\langle 2^+ \rangle$	3.8(3)	3.4(3)		76El11						
355(5)	$\langle 3^+ \rangle$	3.1(3)	4.0(3)		76El11						
399.3(4)	$\langle 7^- \rangle$										
406(3)	$\langle 2^- \rangle$	25.6(9)	19.8(7)		76El11						
434(3)	$\langle 6^- \rangle$										
437(5)		4.4(4)	2.8(3)		76El11						
466(3)	$\langle 3^- \rangle$	25.6(9)	15.7(7)		76El11						
513(3)	$\langle 3^- \rangle$	15.0(7)	11.1(6)		76El11						
576.8(4)	$\langle 8^- \rangle$										
581(3)	$\langle 5^+ \rangle$	4.4(4)	9.1(5)		76El11						
602(3)	$\langle 7^- \rangle$										
614(5)	$\langle 5^+ \rangle$	2.0(2)	3.3(3)		76El11						
640(3)	$\langle 5^+ \rangle$	5.0(4)	11.7(6)		76El11						
663(5)		2.4(3)	1.4(2)		76El11						
685(3)	$\langle 6^+ \rangle$	5.2(4)	9.8(5)		76El11						
720(3)	$\langle 6^+ \rangle$	4.8(4)	10.4(5)		76El11						
		76El11	76El11		Ref.						

 σ (τ, d) and σ (α, t) were measured at 60°, data for 30° can be found in [76El11].

Energy levels and branching ratios [95Si16]. Part 2

 $^{172}_{71}\text{Lu}$

E^*	J^π	Branching ratios in percentage										
[keV]		E^*_f : J^π_f :	109.8 $\langle 2 \rangle^+$	111.13 $\langle 5^- \rangle$	168 $\langle 4^- \rangle$	179.85 $\langle 1 \rangle^+$	191.60 $\langle 1 \rangle^+$	204.00	244.7 $\langle 6^- \rangle$	290 $\langle 5^- \rangle$	399.3 $\langle 7^- \rangle$	434 $\langle 6^- \rangle$
179.85(4)	$\langle 1 \rangle^+$		25(3)									
191.60(4)	$\langle 1 \rangle^+$		29(1)			0.2(1)						
204.00(21)	$\langle 0^+-2^+ \rangle$						100					
213.57(17)	$\langle 6^- \rangle$			38(4)								
232.33(10)	$\langle 1 \rangle^+$						19(2)					
244.7(3)	$\langle 6^- \rangle$			100								
252.2(3)	$\langle 0^+, 1^+ \rangle$						≈ 93	≈ 7				
290(3)	$\langle 5^- \rangle$				100							
399.3(4)	$\langle 7^- \rangle$								100			
434(3)	$\langle 6^- \rangle$									100		
576.8(4)	$\langle 8^- \rangle$										100	
602(3)	$\langle 7^- \rangle$											100

Energy levels and branching ratios [95Sh21, 03Ve09].

 $^{173}_{71}\text{Lu}$

E^*	$2J^\pi$	L	C^2S	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(τ, d)	$\mu\text{b/sr}$	Γ_{cm}		$\begin{smallmatrix} E^*_f: \\ 2J^\pi_f: \end{smallmatrix}$	$\begin{smallmatrix} 0.0 \\ 7^+ \end{smallmatrix}$	$\begin{smallmatrix} 117 \\ \langle 9^+ \rangle \end{smallmatrix}$	$\begin{smallmatrix} 124 \\ 5^- \end{smallmatrix}$	$\begin{smallmatrix} 128 \\ 1^- \end{smallmatrix}$	$\begin{smallmatrix} 198 \\ \langle 9 \rangle^- \end{smallmatrix}$
0.0	7^+	4	1.53	14.5	1.37(1) yr	71On02						
117.181(13)	$\langle 9^+ \rangle$							100				
123.672(13)	5^-	3	1.34*	49	74.2(10) μs	71On02		100				
128.343(15)	1^-	1	0.46*	incl	5.2(5) ns	71On02				100		
198.47(7)	9^-	5	2.18	11		71On02				100		
258.56(7)	$\langle 11^+ \rangle$						x	x				
263.306(15)	3^-	1	0.26	29	≤ 0.16 ns	71On02				73(2)	27.2(7)	
356.996(15)	5^+	2	1.66	100	383(19) ps	71On02		99(4)	1.2(5)			
358.70(10)	$\langle 13^- \rangle$											100
423.62(9)	$\langle 13^+ \rangle$								60(12)			
425.317(16)	1^+	0	0.22**	24	0.84(20) ns	71On02					84(2)	
428.10(7)	7^-					03Ve09				31(4)		32(4)
434.912(15)	3^+	2	0.46**	incl	0.38(10) ns	71On02				61.8(12)	36.9(8)	
448.98(8)	$\langle 9^- \rangle$				0.58(12) ns			64(13)	30(6)			
451.10(8)	$\langle 7^+ \rangle$							39(8)				
552.093(18)	$\langle 5 \rangle^+$	2	0.12***	8		71On02				11.6(15)		
570.80(11)	$\langle 9^+ \rangle$											
576.32(9)	$\langle 7^+ \rangle$	4	0.72***	incl		71On02				[69(8)]		[31(6)]
580.08(10)	$\langle 11 \rangle^-$	5	2.70	22		71On02			17(3)			
606.69(13)	$\langle 17^- \rangle$											
611.40(10)	$\langle 15^+ \rangle$											
654.36(10)	$\langle 11^- \rangle$			≈ 2.4		71On02						49(10)
715.30(13)	$\langle 11^+ \rangle$											
721.54(8)	$\langle 1^+ \rangle$			≈ 2.7		71On02					66(17)	

(continued)

 $^{173}_{71}\text{Lu}$

E^*	$2J^\pi$	L	C^2S	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(τ, d)	$\mu\text{b/sr}$	Γ_{cm}		$\begin{smallmatrix} E_{\text{f}}^*: \\ 2J_{\text{f}}^\pi: \end{smallmatrix}$	$\begin{smallmatrix} 0.0 \\ 7^+ \end{smallmatrix}$	$\begin{smallmatrix} 117 \\ \langle 9^+ \rangle \end{smallmatrix}$	$\begin{smallmatrix} 124 \\ 5^- \end{smallmatrix}$	$\begin{smallmatrix} 128 \\ 1^- \end{smallmatrix}$	$\begin{smallmatrix} 198 \\ \langle 9 \rangle^- \end{smallmatrix}$
734.64(11)	$\langle 13^- \rangle$											
734.71(6)	$\langle 7^- \rangle$							86(14)				
777.90(12)	$\langle 9^+ \rangle$											
820.13(11)	$\langle 11^+ \rangle$											34(7)
820.97(15)	$\langle 17^+ \rangle$											
883.52(18)	$\langle 13^+ \rangle$											
889.23(2)	$\langle 3 \rangle^-$	1	0.03	≈ 6		71On02				13.4(7)	60(2)	
912.03(13)	$\langle 15^- \rangle$											
941.69(20)	$\langle 21^- \rangle$											
948.92(13)	$\langle 15^- \rangle$					03Ve09						
957.77(9)	$\langle 5^- \rangle$	$\langle 3 \rangle$	0.36	16		71On02				x		
975.150(17)	3^+											
981.807(17)	1^+										48(2)	
1003.398(16)	3^+									57(2)	33.5(12)	
1047				6		71On02						
1051.49(13)	$\langle 19^+ \rangle$											
1074.71(20)	$\langle 15^+ \rangle$											
1092.45(17)	$\langle 13^+ \rangle$											
1097.40(5)	$\langle 1, 3 \rangle$										x	
1111.87(16)	$\langle 17^- \rangle$											
1129.66(3)	$\langle 1^-, 3 \rangle$									63(4)	35(4)	
1151(2)	$\langle 9 \rangle^-$			144		71On02						
1154.6(2)	$\langle 15^+ \rangle$			incl		71On02						
1162.43(2)	3^-	1	0.92	incl		71On02				18.7(7)	24.3(10)	
1192.67(6)	$\langle 1^- \rangle$	1	incl			71On02					50(8)	
1246.52(2)	1^+										47(3)	
1275(2)	$\langle 7 \rangle^-$	3	1.08	65		71On02						
1287.29(24)	$\langle 17^+ \rangle$											
1296(2)				20		71On02						
1302.08(21)	$\langle 21^+ \rangle$											
1316.24(20)	$\langle 19^- \rangle$					03Ve09						
1332.87(20)	$\langle 19^- \rangle$											
1334.047(18)	3^-									18.0(7)	60(2)	
1359.26(4)	$\langle 3^+ \rangle$									2(1)	10(2)	
1361.2(4)	$\langle 25^- \rangle$											
1375				19		71On02						
1408.8(1)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.42	62		71On02					1.6(8)	
1475.2(2)	$\langle 17^+ \rangle$											
1516				12		71On02						
1520.9(3)	$\langle 19^+ \rangle$											
1573.89(24)	$\langle 23^+ \rangle$											
1574.7(3)	$\langle 21^- \rangle$											
1579.1(6)	$\langle 1^+ \rangle$										[42]	
1714(2)				36		71On02						
1744(2)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.42	70		71On02						

(continued)

¹⁷³Lu
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E^*	$2J^\pi$	L	C^2S	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(τ, d)	$\mu\text{b/sr}$	Γ_{cm}		E_f^* : $2J_f^\pi$:	0.0 7 ⁺	117 9 ⁺	124 5 ⁻	128 1 ⁻	198 9 ⁻
1762(2)	23 ⁻					03Ve09						
1768				14		71On02						
1787				8		71On02						
1836.9(4)	23 ⁻											
1862(2)	29 ⁻			21		71On02						
1940				≈9		71On02						
1982				≈10		71On02						
2024(2)				≈20		71On02						
2053				≈16		71On02						
2092				≈10		71On02						
2140				≈9		71On02						
2218(2)				43		71On02						
2248				13		71On02						
2279(2)	27 ⁻					03Ve09						
2439(2)	33 ⁻					03Ve09						
2868(2)	31 ⁻					03Ve09						
3088(2)	37 ⁻					03Ve09						
3523(2)	35 ⁻					03Ve09						
3806(2)	41 ⁻					03Ve09						
4589(2)	45 ⁻					03Ve09						
5434(2)	49 ⁻					03Ve09						
6336(2)	53 ⁻					03Ve09						
11664(15)												
			71On02	71On02		Ref.						

Additional data on this isotope can be found in [03Ve09].

 $C^2S=d\sigma/d\Omega_{\text{exp}}/2N\times d\sigma/d\Omega_{\text{theor}}$ for the (τ, d) reaction at 40° [71On02]; data for the (α, t) reaction at 45° can be found in [71On02, 95Sh21]; see 4 band assignments in [95Sh21].* Complex; values $C^2S=1.34$ if entire cross section is for 123.7 level and 0.46 if entire cross section is for 128.3 level.** Complex; values $C^2S=0.22$ if entire cross section is for 425 level and 0.46 if – for 435 level.*** Complex; values $C^2S=0.12$ if entire cross section is for 552 level and 0.72 if – for 576 level.Cross section for the (τ, d) reaction was measured at 40° [71On02].

Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [95Sh21, 03Ve09]. Part 2

¹⁷³Lu
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E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	258 11 ⁺	263 3 ⁻	357 5 ⁺	358.70 13 ⁻	423.62 13 ⁺	425.317 1 ⁺	428.10 7 ⁻	434.912 3 ⁺	448.98 9 ⁻	451.10 7 ⁺
423.62(9)	13 ⁺		40(8)									
425.317(16)	1 ⁺			16.0(4)								
428.10(7)	7 ⁻			38(6)								

(continued)

 $^{173}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	258 $\langle 11^+ \rangle$	263 3^-	357 5^+	358.70 $\langle 13^- \rangle$	423.62 $\langle 13^+ \rangle$	425.317 1^+	428.10 $\langle 7^- \rangle$	434.912 3^+	448.98 $\langle 9^- \rangle$	451.10 $\langle 7^+ \rangle$
434.912(15)	3^+			0.98(5)	0.302(9)			x				
448.98(8)	$\langle 9^- \rangle$		5.8(12)									
451.10(8)	$\langle 7^+ \rangle$				61(13)							
552.093(18)	$\langle 5 \rangle^+$			27(2)				2.5(5)		59(12)		
570.80(11)	$\langle 9^+ \rangle$				13(3)							87(17)
580.08(10)	$\langle 11 \rangle^-$										83(17)	
606.69(13)	$\langle 17^- \rangle$					100						
611.40(10)	$\langle 15^+ \rangle$		76(9)				24(3)					
654.36(10)	$\langle 11^- \rangle$					34(4)			17(2)			
715.30(13)	$\langle 11^+ \rangle$											24(3)
721.54(8)	$\langle 1^+ \rangle$			34(17)								
734.64(11)	$\langle 13^- \rangle$		4.4(10)								20(3)	
734.71(6)	$\langle 7^- \rangle$				≈ 14							
777.90(12)	$\langle 9^+ \rangle$								25(5)			
820.13(11)	$\langle 11^+ \rangle$					27(5)	10(2)					
820.97(15)	$\langle 17^+ \rangle$						80(14)					
889.23(2)	$\langle 3 \rangle^-$			26.7(11)								
948.92(13)	$\langle 15^- \rangle$					60(13)						
957.77(9)	$\langle 5^- \rangle$			x								
975.150(17)	3^+				2.7(1)			49(1)		41.3(11)		
981.807(17)	1^+			44(1)				2.6(4)		4.6(2)		
1003.398(16)	3^+			3.4(4)				3.5(2)		1.8(2)		
1097.40(5)	$\langle 1,3 \rangle$			x								
1129.66(3)	$\langle 1^-, 3 \rangle$			3(1)								
1154.6(2)	$\langle 15^+ \rangle$					68(14)						
1162.43(2)	3^-			57(2)								
1192.67(6)	$\langle 1^- \rangle$			50(6)								
1246.52(2)	1^+			8(1)	7(1)			8(1)		31(3)		
1334.047(18)	3^-			16.0(7)	2.0(2)					2.2(5)		
1359.26(4)	$\langle 3^+ \rangle$			17(8)				17(8)				
1408.8(1)	$\langle 1^+ \rangle$			1.6(8)								
1579.1(6)	$\langle 1^+ \rangle$			[58(17)]								

Energy levels and branching ratios [95Sh21, 03Ve09]. Part 3

 $^{173}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*:$ $2J_f^\pi:$	552.093 $\langle 5 \rangle^+$	570.80 $\langle 9^+ \rangle$	576.32 $\langle 7^+ \rangle$	580.08 $\langle 11 \rangle^-$	606.69 $\langle 17^- \rangle$	611.40 $\langle 15^+ \rangle$	654.36 $\langle 11^- \rangle$	715.30 $\langle 11^+ \rangle$	734.64 $\langle 13^- \rangle$	777.90 $\langle 9^+ \rangle$
715.30(13)	$\langle 11^+ \rangle$			76(9)								
734.64(11)	$\langle 13^- \rangle$					76(9)						
777.90(12)	$\langle 9^+ \rangle$		23(5)		52(10)							
820.13(11)	$\langle 11^+ \rangle$				29(6)							

(continued)

 $^{173}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	552.093 $\langle 5 \rangle^+$	570.80 $\langle 9^+ \rangle$	576.32 $\langle 7^+ \rangle$	580.08 $\langle 11 \rangle^-$	606.69 $\langle 17^- \rangle$	611.40 $\langle 15^+ \rangle$	654.36 $\langle 11^- \rangle$	715.30 $\langle 11^+ \rangle$	734.64 $\langle 13^- \rangle$	777.90 $\langle 9^+ \rangle$
820.97(15)	$\langle 17^+ \rangle$							20(4)				
883.52(18)	$\langle 13^+ \rangle$			38(8)						62(12)		
912.03(13)	$\langle 15^- \rangle$					30(6)					70(14)	
941.69(20)	$\langle 21^- \rangle$						100					
948.92(13)	$\langle 15^- \rangle$						20(4)		19(4)			
975.150(17)	3^+		7.0(3)									
981.807(17)	1^+		1.3(3)									
1003.398(16)	3^+		1.3(2)									
1051.49(13)	$\langle 19^+ \rangle$							88(18)				
1074.71(20)	$\langle 15^+ \rangle$									38(8)		
1092.45(17)	$\langle 13^+ \rangle$								15(4)			51(10)
1111.87(16)	$\langle 17^- \rangle$										37(8)	
1246.52(2)	1^+		<23									
1316.24(20)	$\langle 19^- \rangle$						35(7)					
1334.047(18)	3^-		0.84(15)									
1359.26(4)	$\langle 3^+ \rangle$		17(8)									

Energy levels and branching ratios [95Sh21, 03Ve09]. Part 4

 $^{173}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E^*_f : $2J^*_f$:	820.13 $\langle 11^+ \rangle$	820.97 $\langle 17^+ \rangle$	883.52 $\langle 13^+ \rangle$	889.225 $\langle 3 \rangle^-$	912.03 $\langle 15^- \rangle$	941.69 $\langle 21^- \rangle$	948.92 $\langle 15^- \rangle$	981.807 1^+	1051.49 $\langle 19^+ \rangle$	1074.71 $\langle 15^+ \rangle$
1051.49(13)	$\langle 19^+ \rangle$			12(3)								
1074.71(20)	$\langle 15^+ \rangle$				62(12)							
1092.45(17)	$\langle 13^+ \rangle$		≈ 34									
1111.87(16)	$\langle 17^- \rangle$						63(13)					
1154.6(2)	$\langle 15^+ \rangle$		32(6)									
1287.29(24)	$\langle 17^+ \rangle$				47(9)							53(11)
1302.08(21)	$\langle 21^+ \rangle$			93(19)							6.9(14)	
1316.24(20)	$\langle 19^- \rangle$							≈ 26	39(8)			
1332.87(20)	$\langle 19^- \rangle$						46(9)					
1334.047(18)	3^-					0.8(2)						
1361.2(4)	$\langle 25^- \rangle$							100				
1408.8(1)	$\langle 1^+ \rangle$									97(16)		
1520.9(3)	$\langle 19^+ \rangle$											67(13)
1573.89(24)	$\langle 23^+ \rangle$										100	

Energy levels and branching ratios [95Sh21, 03Ve09]. Part 5

 $^{173}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage							
		$E_f^*:$ $2J_f^\pi:$	1092.45 $\langle 13^+ \rangle$	1111.87 $\langle 17^- \rangle$	1129.66 $\langle 1^-, 3 \rangle$	1154.55 $\langle 15^+ \rangle$	1287.29 $\langle 17^+ \rangle$	1332.87 $\langle 19^- \rangle$	1574.7 $\langle 21^- \rangle$
1332.87(20)	$\langle 19^- \rangle$			54(10)					
1359.26(4)	$\langle 3^+ \rangle$				35(11)				
1475.2(2)	$\langle 17^+ \rangle$		40(8)			60(12)			
1520.9(3)	$\langle 19^+ \rangle$						33(7)		
1574.7(3)	$\langle 21^- \rangle$			81(16)				19(4)	
1836.9(4)	$\langle 23^- \rangle$								100

Energy levels and branching ratios [99Br24].

 $^{174}_{71}\text{Lu}$

E^*	J^π	L	σ (τ ,d)	σ (α ,t)	Ratio	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(α, t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}		E_{f}^* : J_{f}^π :	0.0 $\langle 1 \rangle^-$	44.7 $\langle 2 \rangle^-$	112 $\langle 3 \rangle^-$	171 $\langle 6 \rangle^-$	200 $\langle 4^- \rangle$
0.0	$\langle 1 \rangle^-$	$\langle 4 \rangle$	2.7(17)	7.6(6)	0.35	3.31(5) yr	72On02						
44.6966(20)	$\langle 2 \rangle^-$	$\langle 4 \rangle$	2.5(5)	6.8(5)	0.37		72On02	100					
111.753(3)	$\langle 3 \rangle^-$	$\langle 4 \rangle$	1.3(3)	4.1(3)	0.31		72On02	4.6(4)	95(11)				
170.83(5)	$\langle 6 \rangle^-$	$\langle 4 \rangle$	10.0(6)	19.9(30)	0.5	142(2) d	72On02		35(25)	65(3)			
200.297(5)	$\langle 4^- \rangle$		1.6(3)	3.0(8)	0.53		72On02		7.2(19)	93(4)			
240.818(4)	$\langle 3^+ \rangle$		17.3(14)	9.7(6)	1.8	395(15) ns	72On02		24.8(3)	75.2(9)			
259.534(10)	$\langle 4^+ \rangle$		16.7(13)	14.5(7)	1.15		72On02						
281.168(18)	$\langle 0^+ \rangle$		15.4(11)	4.8(5)	3.2		72On02	100					
302.45(8)	$\langle 5^+ \rangle$		11.9(12)	16.7(8)	0.71		72On02						
311.205(9)	$\langle 5^- \rangle$		≈ 2	2.1(4)	0.95		72On02				20.9(12)		79(3)
320.111(8)	$\langle 2^+ \rangle$		incl	incl				21(3)		79.4(14)			
320.29(6)	7^-		incl	incl							100		
365.183(6)	$\langle 4^- \rangle$		4.8(4)	10.5(16)	0.46	145(3) ns	72On02			61.5(12)			20.2(4)
367.55(8)	$\langle 6^+ \rangle$		incl	incl									
382.875(23)	$\langle 1^+ \rangle$								32(5)				
414.370(12)	$\langle 3^+ \rangle$		16.1(16)	4.0(4)	3.2		72On02						
420.664(9)	$\langle 4^+ \rangle$									68.8(13)			
431.41(6)	$\langle 7^+ \rangle$			1.3(3)	incl		72On02					69.1(12)	
432.88(20)	$\langle 3^- \rangle$												
442.015(15)	$\langle 6^- \rangle$												22(2)
445.431(21)	$\langle 3^+ \rangle$												
453.82(9)	$\langle 7^+ \rangle$												
456.5(5)	$\langle 5^- \rangle$	$\langle 2 \rangle$	61.2(21)	38.7(12)	1.57		72On02					100	
481.003(14)	$\langle 5^- \rangle$												
491.35(6)	$\langle 8^- \rangle$											67(9)	
506			11.6(36)	5.0(16)	2.3		72On02						
507.75(7)			incl	incl									
516			20.7(29)	7.7(22)	1.5								
522.42(5)	$\langle 1^- \rangle$	$\langle 2 \rangle$	incl				72On02	100					
523	7^-		incl	6.5(21)	incl		72On02						

(continued)

 $^{174}_{71}\text{Lu}$

E^*	J^π	L	σ (τ, d)	σ (α, t)	Ratio	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(α, t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}		E_{f}^* : J_{f}^π :	0.0 (1) [−]	44.7 (2) [−]	112 (3) [−]	171 (6) [−]	200 (4) [−]
527													
531.12(6)	(4 [−])		incl										
531.3(5)	(7 ⁺)											58(4)	
537.41(6)	(8 ⁺)												
553	[0 [−]]	(2)	11.7(7)	4.3(14)	1.8		72On02						
561.21(9)	(8 ⁺)		incl	2.0(12)	incl		72On02						
568													
575.662(13)	(5 ⁺)		4.0(4)				72On02						
591.3(5)	(6 [−])			1.4(3)			72On02					68(9)	
594.244(17)	(6 ⁺)												
595.567(17)	(7 [−])												
602													
619.167(19)	(6 [−])												
620	(3 [−])	(2)	28.7(17)	8.2(20)	1.82		72On02						
621.08(6)	(2 [−])		incl										
630.12(3)	(1 ⁺)		incl										
635.4(5)*	(2 ⁺)		incl	7.6(17)	incl		72On02		51(7)	49(3)			
640		(2)	7.6(20)				72On02						
652.32(3)	(2−4)												
654.43(6)	(5 [−])		10.0(10)	14.1(7)	0.71		72On02						
659.1(3)	(8 ⁺)	(5)	incl	incl			72On02						
672.04(6)	(4 ⁺)												
676.73(6)	(9 ⁺)												
683.47(6)	(9 [−])												
689.05(5)*	(3 ⁺)	5	11.6(7)	9.1(5)	1.3		72On02						
689.18(9)	(9 ⁺)		incl	incl									
715			5.5(6)		7.0		72On02						
723				0.8(2)	incl		72On02						
735													
747.6(5)	(7 [−])		10.4(25)	3.0(3)	3.5		72On02						
755.3(2)	(5 ⁺)												
766.366(20)	(8 [−])												
771.98(7)	(8)		8.2(22)	9.4(6)	0.87		72On02						
773.89(5)*	(4 ⁺)	5	incl	incl			72On02						
779.11(4)	(7 [−])												
782.30(3)	(7 ⁺)												
800.57(7)	(6 [−])												
805.6(5)	(9 ⁺)		4.9(13)	0.6(2)	8.0		72On02						
838.03(10)	(10 ⁺)		5.2(5)	1.9(3)	2.7		72On02						
842.79(13)	(8 ⁺)												
843.12(19)	(10 ⁺)												
859.9(2)	(6 ⁺)												
868.97(7)	(9)												
877.4(5)	(7 [−])		5.5(8)	8.6(9)	0.64		72On02					20(5)	
878.2(3)*	(5 ⁺)	5	incl	incl			72On02						

(continued)

 $^{174}_{71}\text{Lu}$

E^*	J^π	L	σ (τ, d)	σ (α, t)	Ratio	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(α, t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}		$E_{\text{f}}^*:$ $J_{\text{f}}^\pi:$	0.0 $\langle 1 \rangle^-$	44.7 $\langle 2 \rangle^-$	112 $\langle 3 \rangle^-$	171 $\langle 6 \rangle^-$	200 $\langle 4 \rangle^-$
895.2(4)	$\langle 10^- \rangle$												
906			5.7(6)	1.0(2)	5.7		72On02						
926.9(5)	$\langle 8^- \rangle$		3.3(6)				72On02						
953			6.2(6)	1.2(3)	5.2		72On02						
960.56(11)	$\langle 8^- \rangle$												
961.16(9)	$\langle 9^- \rangle$												
970(4)	$\langle 7^- \rangle$												
979.6(2)	$\langle 7^+ \rangle$												
997.9(3)													
1005.4(5)*	$\langle 6^+ \rangle$		6.6(6)	2.3(5)	2.9		72On02						
1007.0(1)	11^+		incl	incl									
1012(3)													
1012.6(2)	$\langle 10 \rangle$												
1028			5.1(5)	2.7(4)	1.9		72On02						
1033.7(2)	11^+												
1063.5(1)	$\langle 9^+ \rangle$			0.8(2)			72On02						
1071(1)	$\langle 5 \rangle^-$												
1085(5)													
1112			8.3(6)	1.6(8)	5.2		72On02						
1126.1(2)	11^-		4.5(4)	3.0(3)	1.5		72On02						
1140													
1156(1)													
1166			4.0(4)	1.4(2)	2.8		72On02						
1169.5(1)	10^-		incl	incl									
1179(2)	$\langle 7 \rangle$												
1186.3(2)	$\langle 11 \rangle$												
1196.7(1)	12^+												
1204(3)													
1219													
1240				2.1(3)			72On02						
1245(4)													
1247.2(2)	12^+												
1261			55	7.7(5)	7.1		72On02						
1275													
1286				4.6(5)	3.9		72On02						
1293			27	incl			72On02						
1294			incl	incl									
1301				2.3(4)	incl		72On02						
1305(3)													
1328													
1331(3)													
1353(1)													
1363			19	2.3(4)	8.3		72On02						
1370.5(5)	12^-												
1379			9.4(11)	2.5(4)	3.8		72On02						

(continued)

 $^{174}_{71}\text{Lu}$

E^*	J^π	L	σ (τ ,d)	σ (α ,t)	Ratio	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(α ,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}		E_f^* : J_f^π :	0.0 $\langle 1 \rangle^-$	44.7 $\langle 2 \rangle^-$	112 $\langle 3 \rangle^-$	171 $\langle 6 \rangle^-$	200 $\langle 4^- \rangle$
1391			3.8(6)				72On02						
1403.8(1)	11^-												
1405.7(2)	13^+												
1406													
1421			29	11	2.77		72On02						
1429(1)													
1438(3)	$\langle 5^- \rangle$		8.3	2.5(10)	3.3		72On02						
1455(3)													
1460				1.6(4)			72On02						
1476			14.9(9)	2.5(5)	6.0		72On02						
1481.7(5)	13^+												
1484(4)													
1498			4.4(6)	1.1(2)	4.0		72On02						
1516													
1535			18.6	2.1(6)	8.9		72On02						
1549													
1557(5)			9.5(14)	4.1(12)	2.3		72On02						
1564													
1576													
1589			3.4(8)				72On02						
1596			incl										
1609			3.9(9)				72On02						
1617													
1628(2)													
1635.0(2)	14^+												
1640			5.7(6)				72On02						
1651													
1662			6.8(7)				72On02						
1681													
1689			5.7(6)				72On02						
1716			8.7(20)				72On02						
1735			9.4(12)				72On02						
1753			23.0	3.7(3)	6.2		72On02						
1771			7.2(6)				72On02						
1801			26.6	2.5(2)	11.6		72On02						
1829			8.5(8)				72On02						
1843			9.1(9)	3.0(9)	3.0		72On02						
1868			5.3(7)				72On02						
1882.8(3)	15^+												
1903			13.1				72On02						
1927			16.9				72On02						
1940			14.3				72On02						
1979			13.7				72On02						
2012			8.6(7)				72On02						
2041													

(continued)

¹⁷⁴₇₁Lu

E^*	J^π	L	$\sigma\ (\tau,\text{d})$	$\sigma\ (\alpha,\text{t})$	Ratio	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(α,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$		Γ_{cm}		E_{f}^* : J_{f}^π :	0.0 $\langle 1 \rangle^-$	44.7 $\langle 2 \rangle^-$	112 $\langle 3 \rangle^-$	171 $\langle 6 \rangle^-$	200 $\langle 4^- \rangle$
2082													
2096			8.0(6)				72On02						
2120			8.8(11)				72On02						
2155			8.1(10)				72On02						
		99Br24	72On02	72On02	72On02		Ref.						

Additional data on this isotope can be found in [90Dr05].

* Members of the band based on 2^+ state [90Dr05].Application of the Ratio= $\sigma(\tau, d)/\sigma(\alpha, t)$ and Nilsson-model assignments can be found in [72On02].Uncertainties in E^* , $T_{1/2}$, parameters and branching ratios are given in Supplement.

Energy levels and branching ratios [99Br24]. Part 2

¹⁷⁴₇₁Lu

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* : J_f^π :	240.818 $\langle 3^+ \rangle$	259.534 $\langle 4^+ \rangle$	281.168 $\langle 0^+ \rangle$	302.45 $\langle 5^+ \rangle$	311.205 $\langle 5^- \rangle$	320.111 $\langle 2^+ \rangle$	320.29 7^-	365.183 $\langle 4^- \rangle$	367.55 $\langle 6^+ \rangle$	382.875 $\langle 1^+ \rangle$
259.534(10)	$\langle 4^+ \rangle$	x										
302.45(8)	$\langle 5^+ \rangle$			100								
365.183(6)	$\langle 4^- \rangle$	11.5(8)	6.8(4)									
367.55(8)	$\langle 6^+ \rangle$				100							
382.875(23)	$\langle 1^+ \rangle$				68(5)							
414.370(12)	$\langle 3^+ \rangle$	≤ 62	100									
420.664(9)	$\langle 4^+ \rangle$					14.6(6)	16.6(13)					
431.41(6)	$\langle 7^+ \rangle$							30.9(12)				
432.88(20)	$\langle 3^- \rangle$								100			
442.015(15)	$\langle 6^- \rangle$					78(3)						
445.431(21)	$\langle 3^+ \rangle$						100					
453.82(9)	$\langle 7^+ \rangle$				49(6)						51(5)	
481.003(14)	$\langle 5^- \rangle$								100			
491.35(6)	$\langle 8^- \rangle$							33(5)				
531.3(5)	$\langle 7^+ \rangle$						42(4)					
561.21(9)	$\langle 8^+ \rangle$										39(4)	
594.244(17)	$\langle 6^+ \rangle$					26(2)						
595.567(17)	$\langle 7^- \rangle$					37(4)						
619.167(19)	$\langle 6^- \rangle$								x			
630.12(3)	$\langle 1^+ \rangle$						57.7(14)					42.3(14)
652.32(3)	$\langle 2-4 \rangle$	65(4)										
672.04(6)	$\langle 4^+ \rangle$	100										
683.47(6)	$\langle 9^- \rangle$							68(5)				
747.6(5)	$\langle 7^- \rangle$							16(2)				
773.89(5)*	$\langle 4^+ \rangle$					17(5)						
877.4(5)	$\langle 7^- \rangle$						17(5)					

Energy levels and branching ratios [99Br24]. Part 3

 $^{174}_{71}\text{Lu}$

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* : J_f^π :	414.370 $\langle 3^+ \rangle$	420.664 $\langle 4^+ \rangle$	431.41 $\langle 7^+ \rangle$	442.015 $\langle 6^- \rangle$	453.82 $\langle 7^+ \rangle$	456.5 $\langle 5^- \rangle$	481.003 $\langle 5^- \rangle$	491.35 $\langle 8^- \rangle$	507.75	522.42 $\langle 1^- \rangle$
507.75(7)					100							
531.12(6)	$\langle 4^- \rangle$				100							
537.41(6)	$\langle 8^+ \rangle$				100							
561.21(9)	$\langle 8^+ \rangle$						61(5)					
575.662(13)	$\langle 5^+ \rangle$			100								
591.3(5)	$\langle 6^- \rangle$							32(3)				
594.244(17)	$\langle 6^+ \rangle$			74(2)								
595.567(17)	$\langle 7^- \rangle$				63(2)							
619.167(19)	$\langle 6^- \rangle$								100			
621.08(6)	$\langle 2^- \rangle$											100
652.32(3)	$\langle 2-4 \rangle$	34.6(13)										
654.43(6)	$\langle 5^- \rangle$				41(3)							
659.1(3)	$\langle 8^+ \rangle$									17(2)	46(2)	
676.73(6)	$\langle 9^+ \rangle$				48(3)							
683.47(6)	$\langle 9^- \rangle$									32(3)		
689.18(9)	$\langle 9^+ \rangle$						50(6)					
747.6(5)	$\langle 7^- \rangle$							45(5)				
766.366(20)	$\langle 8^- \rangle$				56(6)							
771.98(7)	$\langle 8 \rangle$				43(2)						29(2)	
779.11(4)	$\langle 7^- \rangle$								x			
877.4(5)	$\langle 7^- \rangle$				32(5)					32(7)		
895.2(4)	$\langle 10^- \rangle$									100		
926.9(5)	$\langle 8^- \rangle$									30(5)		

Energy levels and branching ratios [99Br24]. Part 4

 $^{174}_{71}\text{Lu}$

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* : J_f^π :	531.12 $\langle 4^- \rangle$	537.41 $\langle 8^+ \rangle$	561.21 $\langle 8^+ \rangle$	591.3 $\langle 6^- \rangle$	594.244 $\langle 6^+ \rangle$	595.567 $\langle 7^- \rangle$	619.167 $\langle 6^- \rangle$	635.4 $\langle 2^+ \rangle$	659.1 $\langle 8^+ \rangle$	672.04 $\langle 4^+ \rangle$
654.43(6)	$\langle 5^- \rangle$		59(3)									
659.1(3)	$\langle 8^+ \rangle$		17(3)	20(3)								
676.73(6)	$\langle 9^+ \rangle$			52(7)								
689.05(5)*	$\langle 3^+ \rangle$									100		
689.18(9)	$\langle 9^+ \rangle$				50(7)							
747.6(5)	$\langle 7^- \rangle$					39(5)						
755.3(2)	$\langle 5^+ \rangle$											100
766.366(20)	$\langle 8^- \rangle$							44(17)				
771.98(7)	$\langle 8 \rangle$										28(2)	
773.89(5)*	$\langle 4^+ \rangle$									29(3)		
779.11(4)	$\langle 7^- \rangle$								100			
782.30(3)	$\langle 7^+ \rangle$						100					
800.57(7)	$\langle 6^- \rangle$		100									

(continued)

 $^{174}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	531.12 $\langle 4^- \rangle$	537.41 $\langle 8^+ \rangle$	561.21 $\langle 8^+ \rangle$	591.3 $\langle 6^- \rangle$	594.244 $\langle 6^+ \rangle$	595.567 $\langle 7^- \rangle$	619.167 $\langle 6^- \rangle$	635.4 $\langle 2^+ \rangle$	659.1 $\langle 8^+ \rangle$	672.04 $\langle 4^+ \rangle$
805.6(5)	$\langle 9^+ \rangle$										100	
838.03(10)	$\langle 10^+ \rangle$				63(7)							
843.12(19)	$\langle 10^+ \rangle$			x								
926.9(5)	$\langle 8^- \rangle$					35(5)						
961.16(9)	$\langle 9^- \rangle$							68(5)				

Energy levels and branching ratios [99Br24]. Part 5

 $^{174}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	676.73 $\langle 9^+ \rangle$	683.47 $\langle 9^- \rangle$	689.05 $\langle 3^+ \rangle$	689.18 $\langle 9^+ \rangle$	747.6 $\langle 7^- \rangle$	755.3 $\langle 5^+ \rangle$	766.366 $\langle 8^- \rangle$	771.98 $\langle 8 \rangle$	773.89 $\langle 4^+ \rangle$	779.11 $\langle 7^- \rangle$
773.89(5)*	$\langle 4^+ \rangle$				53(2)							
838.03(10)	$\langle 10^+ \rangle$					37(6)						
843.12(19)	$\langle 10^+ \rangle$		100									
859.9(2)	$\langle 6^+ \rangle$							100				
868.97(7)	$\langle 9 \rangle$									100		
878.2(3)*	$\langle 5^+ \rangle$										100	
895.2(4)	$\langle 10^- \rangle$			x								
926.9(5)	$\langle 8^- \rangle$						35(5)					
960.56(11)	$\langle 8^- \rangle$											100
961.16(9)	$\langle 9^- \rangle$								32(5)			
997.9(3)											30(7)	
1005.4(5)*	$\langle 6^+ \rangle$										66(3)	
1007.0(1)	11^+					68(10)						
1033.7(2)	11^+		88(4)									
1126.1(2)	11^-			100								
1169.5(1)	10^-								x			

Energy levels and branching ratios [99Br24]. Part 6

 $^{174}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	782.30 $\langle 7^+ \rangle$	838.03 $\langle 10^+ \rangle$	842.79 $\langle 8^+ \rangle$	843.12 $\langle 10^+ \rangle$	859.9 $\langle 6^+ \rangle$	868.97 $\langle 9 \rangle$	878.2 $\langle 5^+ \rangle$	895.2 $\langle 10^- \rangle$	961.16 $\langle 9^- \rangle$	1007.03 $\langle 11^+ \rangle$
842.79(13)	$\langle 8^+ \rangle$		x									
979.6(2)	$\langle 7^+ \rangle$						100					
997.9(3)									70(10)			
1005.4(5)*	$\langle 6^+ \rangle$								34(3)			
1007.0(1)	11^+			32(5)								
1012.6(2)	$\langle 10 \rangle$							100				

(continued)

 $^{174}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		$E_f^*:$ $J_f^\pi:$	782.30 $\langle 7^+ \rangle$	838.03 $\langle 10^+ \rangle$	842.79 $\langle 8^+ \rangle$	843.12 $\langle 10^+ \rangle$	859.9 $\langle 6^+ \rangle$	868.97 $\langle 9 \rangle$	878.2 $\langle 5^+ \rangle$	895.2 $\langle 10^- \rangle$	961.16 $\langle 9^- \rangle$	1007.03 $\langle 11^+ \rangle$
1033.7(2)	11^+				12.0(4)							
1063.5(1)	$\langle 9^+ \rangle$					[100]						
1169.5(1)	10^-										100	
1196.7(1)	12^+			100								x
1370.5(5)	12^-									100		
1403.8(1)	11^-										100	
1405.7(2)	13^+											100

Energy levels and branching ratios [99Br24]. Part 7

 $^{174}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage					
		$E_f^*:$ $J_f^\pi:$	1012.64 $\langle 10 \rangle$	1033.73 $\langle 11^+ \rangle$	1169.47 $\langle 10^- \rangle$	1196.72 $\langle 12^+ \rangle$	1405.73 $\langle 13^+ \rangle$
1186.3(2)	$\langle 11 \rangle$		100				
1403.8(1)	11^-				x		
1405.7(2)	13^+					x	
1481.7(5)	13^+			100			
1635.0(2)	14^+					100	
1882.8(3)	15^+						100

Energy levels and branching ratios [04Ba89].

 $^{175}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	L	S_N	$d\sigma/d\Omega$ (τ, d) $\mu\text{b/sr}$	S_N	$d\sigma/d\Omega$ (α, t) $\mu\text{b/sr}$	σ (d,t) $\mu\text{b/sr}$	$I_{s,0}$ [eVb]	Γ_o^{red} [meV']	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	7^+	4	0.78	13	0.77	61	18			Stable	71On02
113.80(1)	9^+	4			0.05	4.8	10			99(3) ps	71On02
251.46(1)	11^+						13			32(2) ps	71Mi01
343.41(8)	5^+	2	1.2	137	1.1**	157				0.28(1) ns	71On02
353.3(2)	5^-	3	1.5	incl	0.9**	incl	0.23			1.49(7) μs	71On02
370.89(13)	$\langle 1^- \rangle$	1	0.7	incl	0.9**	incl	0.03				71On02
396.33(1)	9^-	5	1.14							3.28(6) ns	71On02
412.49(10)	13^+						8			12.7(4) ps	71Mi01
415.08(15)	$\langle 9^- \rangle$	5			1.06						71On02
432.8(1)	7^+									<0.1 ns	
514.76(11)	3^-	1	0.17								71On02
529.22(14)	$\langle 11^- \rangle$	5	2.6								71On02
546.4(3)	$\langle 9^+ \rangle$										
562.4(4)	$\langle 13^- \rangle$										

(continued)

¹⁷⁵Lu
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E^*	$2J^\pi$	L	S_N	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	σ (d,t)	$I_{s,0}$	I_o^{red}	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$	(α, t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV']	Γ_{cm}	
595.42(11)	15^+						≈ 1			7.6(1) ps	71Mi01
626.63(13)	$\langle 1^+ \rangle$									10.6(5) ns	
632.84(10)	$\langle 3^+ \rangle$										
672.94(12)	$\langle 7^- \rangle$										
684.3(3)	$\langle 11^+ \rangle$										
685.28(17)	$\langle 13^- \rangle$										
757.44(12)	$\langle 5^+ \rangle$										
773.54(12)	$\langle 7^+ \rangle$										
798.0(11)	$\langle 17^- \rangle$										
800.09(11)	17^+									4.05(14) ps	
863.3(6)	$\langle 15^- \rangle$										
≈ 866											
886.4(3)	$\langle 11^- \rangle$										
≈ 960											
990.25(13)	$\langle 9^+ \rangle$										
999.0(3)	$\langle 3^- \rangle$	1	0.02								71On02
1019.69(16)	$\langle 11^+ \rangle$										
1024.5(1)	19^+									2.25(17) ps	
1063.4(3)	$\langle 5^- \rangle$	3	0.14		0.05						71On02
1063.4(3)	$\langle 17^- \rangle$										
1150.8(3)	$\langle 3^+ \rangle$										
1167.1(15)	$\langle 15^- \rangle$										
1167.1(15)	$\langle 7^- \rangle$	3	0.006		0.01						71On02
1219.1(3)	$\langle 5^+ \rangle$										
1268.81(14)	21^+									1.52(12) ps	
1270	$\langle 9^- \rangle$	5	0.42		0.35						71On02
1285.1(9)	$\langle 19^- \rangle$										
1315	12^+										
1317	$\langle 3^- \rangle$	1	0.45		0.11						71On02
1346	$\langle 3^+ \rangle$	$\langle 2 \rangle$	0.32		0.19						71On02
1401(2)							250				71Mi01
1415	$\langle 7^- \rangle$	3	0.57		0.42					450(100) ns	71On02
≈ 1437											
1511(3)							100				71Mi01
1530.93(14)	23^+									1.05(9) ps	
1545*								19.2(8)	4.0(2)		97He16
1566											
1590(2)*							250	3.2(4)	0.53(6)		71Mi01
1609*								2.1(4)	1.09(25)		97He16
1622(2)							60				71Mi01
1638	11^-	$\langle 5 \rangle$	0.32		0.08						71On02
1644(2)							60				71Mi01
1689*								1.9(3)	0.29(5)		97He16
1693*								1.9(3)	0.29(5)		97He16
1704	$\langle 9^- \rangle$	$\langle 5 \rangle$			0.11						71On02

(continued)

¹⁷⁵Lu
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E^*	$2J^\pi$	L	S_N	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	σ (d,t)	$I_{s,0}$	Γ_o^{red}	$T_{1/2}$ or	Ref.
[keV]			(τ ,d)	$\mu\text{b/sr}$	(α ,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV']	Γ_{cm}	
1715*								1.4(3)	0.21(5)		97He16
1725*								1.1(3)	0.17(5)		97He16
1732(2)							250				71Mi01
≈ 1752											
1785(2)							190				71Mi01
1799(5)							≈ 30				71Mi01
1810.9(2)	$\langle 25^+ \rangle$									0.72(9) ps	
1818(4)*							30	1.0(3)	0.15(5)		71Mi01
1827*								1.9(3)	0.28(5)		97He16
1870(5)*							≈ 8	5.0(4)	0.69(5)		71Mi01
1899							15				71Mi01
1931*								1.0(3)	0.14(3)		97He16
1945*								3.0(3)	0.51(7)		97He16
1949*								6.3(4)	0.84(5)		97He16
1977											
1981(3)							28				71Mi01
1992*								2.1(3)	0.28(4)		97He16
2012*								1.8(3)	0.36(7)		97He16
2089*								3.4(3)	0.42(4)		97He16
2106.0(2)	$\langle 27^+ \rangle$										
2123*								2.3(3)	0.28(4)		97He16
2207(3)							33				71Mi01
2286*								5.0(4)	0.81(8)		97He16
2297*								2.2(3)	0.25(4)		97He16
2320*								2.5(4)	0.28(4)		97He16
2335*								9.9(5)	1.10(6)		97He16
2379*								4.7(4)	0.79(8)		97He16
2386*								0.9(3)	0.10(3)		97He16
2394*								0.9(3)	0.10(3)		97He16
2410*								7.2(4)	0.78(6)		97He16
2419*								6.1(4)	0.66(5)		97He16
2442*								2.4(4)	0.52(10)		97He16
2497*								3.1(5)	0.32(5)		97He16
2527(4)							76				71Mi01
2548*								2.5(4)	0.26(4)		97He16
2707*								21(1)	2.0(1)		97He16
2713*								4.0(9)	0.38(9)		97He16
2742*								12(1)	1.12(8)		97He16
2760*								6.0(9)	0.56(8)		97He16
2833*								7.2(7)	0.66(7)		97He16
2865*								4.5(7)	0.41(7)		97He16
2890*								4.9(8)	0.44(7)		97He16
2897*								3.1(7)	0.28(6)		97He16
2843*								6.1(8)	0.54(7)		97He16
2952*								3.7(7)	0.32(6)		97He16

(continued)

 $^{175}_{71}\text{Lu}$

E^*	$2J^\pi$	L	S_N	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	σ (d,t)	$I_{s,0}$	I_{\circ}^{red}	$T_{1/2}$ or	Ref.
[keV]			(τ ,d)	$\mu\text{b/sr}$	(α ,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV']	Γ_{cm}	
2998*								4.7(12)	0.40(10)		97He16
3002*								6.5(13)	0.56(11)		97He16
3011*								8.5(20)	0.74(17)		97He16
3022*								2.1(9)	0.18(8)		97He16
3029*								3.0(10)	0.26(9)		97He16
3066*								4.9(10)	0.41(8)		97He16
3172*								3.6(8)	0.29(7)		97He16
3238*								3.6(7)	0.29(6)		97He16
3243*								4.5(7)	0.36(6)		97He16
3267*								6.9(11)	0.55(8)		97He16
3286*								5.3(8)	0.42(6)		97He16
3293*								4.4(8)	0.34(6)		97He16
3300*								4.0(8)	0.31(6)		97He16
3329*								8.8(10)	0.69(7)		97He16
3333*								11(1)	0.82(8)		97He16
3343*								5.9(10)	0.46(7)		97He16
3347*								6.0(10)	0.47(7)		97He16
3398*								5.0(8)	0.38(6)		97He16
3404*								1.9(6)	0.15(5)		97He16
3524*								7.2(12)	0.53(9)		97He16
			71On02		71On02	71On02	71Mi01	97He16	97He16		Ref.
				71On02							Ref.

Additional data on this isotope can be found in [04Ga04, 91De24].

Abundance: 97.41(2) %.* Cross section $I_{s,0}$ and the reduced ground state transition width I_{\circ}^{red} are from (γ, γ).** S_N if the entire cross section of the multiplet is assumed to be of the assigned L .

Cross section of the (d,t) reaction was measured at 75° [71Mi01].

Cross sections for the (τ ,d) and (α ,t) reactions were measured at 40° and 45° [71On02]. $S_N = d\sigma_{\text{exp}}/2d\sigma_{DWBA}$ for (τ ,d) reaction is normalized to the theoretical value for 5/2⁺ state.

11 bands are assigned to low-lying levels in [04Ga04].

Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [04Ba89]. Part 2

 $^{175}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^* :	0.0	114	251	343	353	370.89	396.327	412.49	415.08	432.8
[keV]		$2J_f^\pi$:	7 ⁺	9 ⁺	11 ⁺	5 ⁺	5 ⁻	$\langle 1^- \rangle$	9 ⁻	13 ⁺	$\langle 9 \rangle^-$	7 ⁺
113.80(1)	9 ⁺		100									
251.46(1)	11 ⁺		43.5(4)	56.5(4)								
343.41(8)	5 ⁺		99	0.81(2)								
353.3(2)	5 ⁻		100									
396.33(1)	9 ⁻		66(1)	30.9(5)	3.4(1)							

(continued)

 $^{175}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E^*_f:$ $2J^\pi_f:$	0.0 7 ⁺	114 9 ⁺	251 11 ⁺	343 5 ⁺	353 5 ⁻	370.89 1 ⁻	396.327 9 ⁻	412.49 13 ⁺	415.08 9 ⁻	432.8 7 ⁺
412.49(10)	13 ⁺			66.3(6)	33.7(3)							
432.8(1)	7 ⁺		36(1)	4(10)		60.2(4)						
514.76(11)	3 ⁻						85	15(3)				
529.22(14)	11 ⁻								100			
546.4(3)	9 ⁺					x						x
562.4(4)	13 ⁻										100	
595.42(11)	15 ⁺				72.8(7)					27.2(4)		
626.63(13)	1 ⁺							90				
632.84(10)	3 ⁺					68	22(5)	10(2)				
672.94(12)	7 ⁻						50				50	
684.3(3)	11 ⁺											x
773.54(12)	7 ⁺						x					
800.09(11)	17 ⁺									80.9(11)		
886.4(3)	11 ⁻										49	
999.0(3)	3 ⁻							x				
1063.4(3)	5 ⁻						x					

Energy levels and branching ratios [04Ba89]. Part 3

 $^{175}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E^*_f:$ $2J^\pi_f:$	514.76 3 ⁻	529.22 11 ⁻	546.4 9 ⁺	562.4 13 ⁻	595.42 15 ⁺	626.63 1 ⁺	632.84 3 ⁺	672.94 7 ⁻	684.3 11 ⁺	685.28 13 ⁻
626.63(13)	1 ⁺		9.7(23)									
672.94(12)	7 ⁻		x									
684.3(3)	11 ⁺				x							
685.28(17)	13 ⁻			100								
757.44(12)	5 ⁺							21(4)	79			
773.54(12)	7 ⁺								100			
798.0(11)	17 ⁻					100						
800.09(11)	17 ⁺						19.1(6)					
863.3(6)	15 ⁻			x								100
886.4(3)	11 ⁻					42(7)				9(2)		
999.0(3)	3 ⁻		x									
1024.5(1)	19 ⁺						82.6					
1063.4(3)	5 ⁻		x								x	
1150.8(3)	3 ⁺							x	x			
1219.1(3)	5 ⁺								x			

Energy levels and branching ratios [04Ba89]. Part 4

 **^{175}Lu
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E^*	$2J^\pi$	Branching ratios in percentage									
[keV]		$E_f^*:$ $2J_f^\pi:$	757.44 $\langle 5^+ \rangle$	773.54 $\langle 7^+ \rangle$	798.0 $\langle 17^- \rangle$	800.09 17^+	863.3 $\langle 15^- \rangle$	1024.55 19^+	1063.4 $\langle 17^- \rangle$	1268.81 21^+	1530.93 23^+
990.25(13)	$\langle 9^+ \rangle$		33	67							
1019.69(16)	$\langle 11^+ \rangle$			100							
1024.5(1)	19^+					17(2)					
1063.4(3)	$\langle 5^- \rangle$						100				
1167.1(15)	$\langle 15^- \rangle$				100						
1219.1(3)	$\langle 5^+ \rangle$		x								
1268.81(14)	21^+					100		x			
1285.1(9)	$\langle 19^- \rangle$						x		100		
1530.93(14)	23^+							100		x	
1810.9(2)	$\langle 25^+ \rangle$									x	x
2106.0(2)	$\langle 27^+ \rangle$										x

Energy levels and branching ratios [98Br13, 06Ba16].

 **^{176}Lu
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E^* [keV]	J^π	L	σ (t, α) $\mu\text{b/sr}$	$B(GT)$ (τ, t)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage					
							$E_f^*:$ 0.0 $J_f^\pi:$ 7^-	123 1^-	184 8^-	194 1^+	233 2^+	236 3^-
0.0	7^-	4	30.6		$4.0(2) \cdot 10^{10}$ yr							
122.845(4)	1^-		9.9		$3.664(19)$ h							
184.130(10)	8^-		0.4		$19.7(9)$ ps		100					
194.358(4)	1^+		<0.1	$0.20(4)$	$35.0(10)$ ns	00Fu15		100				
233.100(1)	2^+		0.3							100		
235.767(4)	3^-		9.6					100				
236.908(4)	0^-		incl					100				
299.349(4)	3^+		<6							19(2)	81(10)	
305.260(4)	2^-		≈ 13					90(9)				9.7(22)
338.844(4)	1^+			$0.11(1)$		00Fu15		8.6(13)		67(7)	24(4)	
372.492(4)	4^+									61(7)		
381.342(4)	2^+		4.1					2.6(6)		71(7)	20(2)	
386.571(4)	1^-		10.6					26(2)		53(5)	20(2)	0.75(12)
388.877(4)	9^-				$13.2(10)$ ps		29(4)		71(8)			
424.891(2)	$\langle 8^+ \rangle$						31(4)		69(6)			
433.037(4)	2^-		11.8					58(5)		9.2(10)	2.2(2)	9.4(10)
437.324(4)	5^-						1.41(25)					99(11)
450.108(4)	3^+		4.9								63(6)	25(3)
463.763(4)	4^-											97(10)
487.635(4)	5^+											
487.840(11)	8^+	5	8.5				100					
504.861(4)	3^-		6.9					10.3(11)			20(2)	3.2(7)
533.085(4)	4^+		2.3									
563.928(3)	$\langle 6^- \rangle$	2	32.4				100					
≈ 578												

(continued)

 $^{176}_{71}\text{Lu}$

E^*	J^π	L	σ (t, α)	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		(t, α)	$\mu\text{b/sr}$	(τ ,t)	Γ_{cm}		E_{f}^* : J_{f}^π :	0.0 7 ⁻	123 1 ⁻	184 8 ⁻	194 1 ⁺	233 2 ⁺	236 3 ⁻
591.773(4)	6 ⁺												
595.745(4)	4 ⁻		2.8										50(5)
613.45(6)	10 ⁻		2.4							65(6)			
615.1(5)	9 ⁺												
635.196(4)	4 ⁺				7.8(4) ns							≈ 0.7	
637.760(4)	1 ⁻												
650.175(4)	5 ⁺		5.9										
657.130(4)	5 ⁺				<0.5 ns								
658.434(4)	3 ⁻				6.3(3) ns							6.5(7)	4.2(5)
682.6(5)	9 ⁺	5	13.2										
687.854(4)	2 ⁻												7.8(9)
688.2(17)	3,4												
693.794(4)	$\langle 5 \rangle^+$												
695.7(10)													
709.226(11)	$\langle 7 \rangle^+$							69(10)					
709.5(8)	6 ⁺					06Ba16							
710.060(5)	6 ⁻												
714.9(6)	3,4												
715.419(4)	5 ⁻												
722.901(4)	4 ⁻	2	73		3.0(7) ns								6.8(10)
724.689(6)	7 ⁻	4	6.7										
725.206(5)	$\langle 7 \rangle^-$												
734.033(4)	$\langle 7^+ \rangle$												
734.358(4)	3 ⁺												
751.878(4)	4 ⁻												
757(4)	$\langle 7 \rangle^-$												
758.389(6)	7 ⁺												
763.626(4)	3 ⁻												
765.671(5)	$\langle 6 \rangle^-$						75(7)			11(2)			
772.051(5)	$\langle 6 \rangle^+$												
780.177(24)	0 ⁻								100				
786.251(4)	4 ⁺		2										
787.4(7)	7 ⁺		incl			06Ba16							
788.213(4)	4 ⁻		incl										
792.227(6)	$\langle 2 \rangle^+$								10(2)		22(3)	18(2)	
796.632(8)	1 ⁻								32(8)				
827.0(5)	10 ⁺												
832.394(6)	2 ⁻								53(6)				29(4)
833.7(3)	3,4												
834.800(4)	$\langle 5 \rangle^-$						87(9)						
838.624(3)	5 ⁻				<0.3 ns		83.5(74)						
843.407(4)	3 ⁻	2	71.6										
848.228(6)	6 ⁻												
851.219(5)	5 ⁺												
854.661(6)	$\langle 7 \rangle^+$						83(7)						

(continued)

 $^{176}_{71}\text{Lu}$

E^*	J^π	L	σ (t, α)	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		(t, α)	$\mu\text{b/sr}$	(τ ,t)	Γ_{cm}		E^*_f : J^π_f :	0.0 7 ⁻	123 1 ⁻	184 8 ⁻	194 1 ⁺	233 2 ⁺	236 3 ⁻
857.1(6)	11 ⁻					06Ba16							
860.544(4)	4 ⁻												34(4)
866.356(4)	2 ⁺										15(2)	17(2)	
868.090(4)	5 ⁻	2	36				≈ 23						
869.996(6)	(5) ⁻						93(9)						
871.260(4)	(4) ⁺												
883.460(5)	3 ⁻												
888.6(8)	8 ⁺		<1.9			06Ba16							
897.9(5)	10 ⁺												
903.4(10)													
908.237(4)	(4) ⁻												
909.64(5)	(2 ⁻)		16.4						30(9)				48(12)
921.464(5)	(5) ⁻				<0.2 ns		77(8)						
928.5(10)	5 ⁺ , (2 ⁺)												
930.756(5)	3 ⁺										9(3)	6(2)	
938.396(7)	(7) ⁺						36(7)						
941.065(6)	(7) ⁻												
945.012(4)	4 ⁻	2	41.1										
957.732(8)	4 ⁻											10.8(14)	60(6)
957.879(4)	3 ⁻												
959.2(10)													
960.180(4)	(3) ⁻				0.7(2) ns							28(4)	
962.873(16)	(6 ⁻)		9.4										
972.506(7)	(6) ⁻							85(15)					
973.750(5)	(5) ⁺												
985.555(4)	4 ⁺				1.2(3) ns								
988.147(6)	5 ⁻												
990.4(10)	(3 ⁺)												
1000.85(2)	(6) ⁻							≈ 30		70(9)			
1002.74(1)	(6 ⁻)		41					≈ 27		38(7)			
1013.4(9)	9 ⁺					06Ba16							
1015.34(1)	4 ⁺												
1018.1(3)	(3 ⁺ , 4 ⁺)												
1019.938(4)	(4 ⁺)												
1029.661(6)	(2) ⁻								≈ 11				
1031.0(3)	(3 ⁻ , 4 ⁻)												
1032.369(7)	(5) ⁻		6					54(7)					
1042.52(1)	5 ⁻												
1046.3(10)													
1054.3(2)	(3, 4)												
1057(8)	[0 ⁺]		≈ 13			06Ba16							
1060.5(6)	11 ⁺												
1061.1(16)	(2 ⁻ , 5 ⁻)												
1067.411(6)	4 ⁻												
1068.975(6)	(5 ⁻)												

(continued)

 $^{176}_{71}\text{Lu}$

E^*	J^π	L	σ (t, α)	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		(t, α)	$\mu\text{b/sr}$	(τ ,t)	Γ_{cm}		E_{f}^* : J_{f}^π :	0.0 7 ⁻	123 1 ⁻	184 8 ⁻	194 1 ⁺	233 2 ⁺	236 3 ⁻
1071.7(3)	$\langle 5^-, 2^- \rangle$		≈ 13			06Ba16							
1079.9(3)													
1100.40(2)													
1104.5(7)			1.7										
1118.8(6)	12 ⁻												
1120.3(7)													
1129.7(16)													
1131.8(6)	11 ⁺												
1142.5(10)													
1159.7(8)	10 ⁺					06Ba16							
1164.1(10)			7										
1167.0(17)	$\langle 3, 4 \rangle$												
1182(5)			9.9										
1227.9(10)			≈ 11										
1237.4(10)			≈ 19										
1241.1(10)													
1274.5(10)	$\langle 7^+ \rangle$	5	41.4										
1277.8(10)													
1294(2)	$\langle 4^+ \rangle$		24.4										
1301.4(10)													
1314.0(7)	12 ⁺					06Ba16							
1326(3)			5.9										
1329.2(14)	11 ⁺					06Ba16							
1349(5)			5.2										
1351.7(4)	$\langle 10^+ \rangle$												
1370.7(10)													
1395.0(14)	$\langle 5 \rangle^-$	2	62.5										
1398.6(9)	13 ⁻					06Ba16							
1426.0(1)			1.5										
1462.0(14)	$\langle 8 \rangle^+$	5	55.6										
1490(6)			≈ 1			06Ba16							
1510(2)	$\langle 3^+ \rangle$		31.4										
1514.5(5)	12 ⁺												
1518.6(13)	12 ⁺												
1533(2)	$\langle 6 \rangle^-$	2	36.4										
1569(5)			8.2										
1587.5(11)	$\langle 14^+ \rangle$					06Ba16							
1588.7(9)	13 ⁺		5.8			06Ba16							
1617(5)			12										
1655(2)	$\langle 9 \rangle^+$	5	25.8										
1679(10)			9.1										
1689(7)	$\langle 7^- \rangle$		10.9										
1693.5(12)	14 ⁻					06Ba16							
1730(7)	$\langle 5^+ \rangle$		10.9										
1730.3(17)	13 ⁺					06Ba16							

(continued)

 $^{176}_{71}\text{Lu}$

E^*	J^π	L	σ (t, α)	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		(t, α)	$\mu\text{b/sr}$	(τ ,t)	T_{cm}		E^*_f :	0.0	123	184	194	233	236
							J^π_f :	7 ⁻	1 ⁻	8 ⁻	1 ⁺	2 ⁺	3 ⁻
1960.7(17)	14 ⁺					06Ba16							
2005.3(14)	15 ⁻					06Ba16							
2329.4(16)	16 ⁻					06Ba16							
2671.3(17)	$\langle 17^- \rangle$					06Ba16							
3021.3(19)	$\langle 18^- \rangle$					06Ba16							
3070	1 ⁺			0.62(8)		00Fu15							
16026(6)*	0 ⁺			36		00Fu15							

Additional data on this isotope can be found in [03Gr02, 00Fu15, 00Mc03, 93Be39, 91Kl02, 91Kl03, 91Le28].

Abundance: 2.59(2) %.

* IAS (Isobar Analog State) [00Fu15].

σ (t, α)= $d\sigma/d\Omega$ was measured at 40° [81De28].

Comparison of the recent $T_{1/2}$ =4.08(3)·10¹⁰ years with other data can be found in [03Gr02].

35 bands of levels and different nucleon configurations were considered in the evaluation [06Ba16].

Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [98Br13, 06Ba16]. Part 2

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	237 0 ⁻	299 3 ⁺	305.277 2 ⁻	338.856 1 ⁺	372.500 4 ⁺	381.358 2 ⁺	386.584 1 ⁻	388.90 9 ⁻	424.891 $\langle 8^+ \rangle$	433.042 2 ⁻
372.492(4)	4 ⁺			39(4)								
381.342(4)	2 ⁺			7(2)								
386.571(4)	1 ⁻				0.4(2)							
433.037(4)	2 ⁻			3.7(4)					18(4)			
450.108(4)	3 ⁺			7.6(9)		4.4(11)						
463.763(4)	4 ⁻				2.6(6)							
487.635(4)	5 ⁺			76(8)		24(3)						
504.861(4)	3 ⁻			5.5(7)		3.2(13)		3.2(7)				55(8)
533.085(4)	4 ⁺			95(9)		5.2(6)						
591.773(4)	6 ⁺					100						
595.745(4)	4 ⁻			4.3(5)								4.9(6)
613.45(6)	10 ⁻									35(10)		
635.196(4)	4 ⁺			82(9)			1.7(2)					
637.760(4)	1 ⁻								83(8)			17.2(20)
650.175(4)	5 ⁺					100						
657.130(4)	5 ⁺					91(9)						
658.434(4)	3 ⁻			3.0(3)	0.65(8)	0.43(7)		6.1(7)				76(8)
687.854(4)	2 ⁻							55(5)				17(2)
695.7(10)												x
715.419(4)	5 ⁻					12.4(16)						
734.033(4)	$\langle 7^+ \rangle$										100	

(continued)

 $^{176}_{71}\text{Lu}$

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* : J_f^π :	237 0 ⁻	299 3 ⁺	305.277 2 ⁻	338.856 1 ⁺	372.500 4 ⁺	381.358 2 ⁺	386.584 1 ⁻	388.90 9 ⁻	424.891 {8 ⁺ }	433.042 2 ⁻
734.358(4)	3 ⁺			9(3)								
763.626(4)	3 ⁻											74(7)
772.051(5)	{6} ⁺						≈7					
792.227(6)	{2} ⁺							24(3)				
796.632(8)	1 ⁻		34(4)		34(4)							
832.394(6)	2 ⁻		5.8(8)		12(2)							
843.407(4)	3 ⁻											15(2)
854.661(6)	{7} ⁺										17(2)	
860.544(4)	4 ⁻			9(1)								
866.356(4)	2 ⁺			13(2)		32(4)		3.5(3)	3.8(4)			10(1)
883.460(5)	3 ⁻				69(8)							
909.64(5)	{2} ⁻		21(4)									
930.756(5)	3 ⁺			16(2)			11(1)	28(3)				
957.732(8)	4 ⁻			9.2(11)	≈8							
960.180(4)	{3} ⁻			21(2)					5.6(7)			12(2)
990.4(10)	{3 ⁺ }			x			x					
1015.34(1)	4 ⁺						38(6)					
1029.661(6)	{2} ⁻		≈8	10(1)					22(3)			32(4)
1100.40(2)	{3} ⁻											77(7)
1274.5(10)	{7 ⁺ }						x					

Energy levels and branching ratios [98Br13, 06Ba16]. Part 3

 $^{176}_{71}\text{Lu}$

E^*	J^π	Branching ratios in percentage										
[keV]		E^*_f : J^π_f :	437.34 5 ⁻	450.12 3 ⁺	463.77 4 ⁻	487.64 5 ⁺	487.84 ⟨8⟩ ⁺	504.89 3 ⁻	533.10 4 ⁺	563.94 ⟨6⟩ ⁻	591.78 6 ⁺	595.75 4 ⁻
595.745(4)	4 ⁻		≈3		2.5(9)			35(4)				
635.196(4)	4 ⁺			2.1(4)		13.3(16)						
657.130(4)	5 ⁺			1.9(4)		3.1(4)					3.5(13)	
658.434(4)	3 ⁻				≈0.3			3.0(3)				
687.854(4)	2 ⁻							20(2)				
709.226(11)	⟨7⟩ ⁺						31(3)					
710.060(5)	6 ⁻		79(7)		21(2)							
715.419(4)	5 ⁻							18(2)				69(7)
722.901(4)	4 ⁻		15(2)		11(1)			22(2)				
724.689(6)	7 ⁻		100									
725.206(5)	⟨7⟩ ⁻									100		
751.878(4)	4 ⁻							12(4)				
758.389(6)	7 ⁺					85(10)					15(7)	
763.626(4)	3 ⁻							8.0(10)				≈18
765.671(5)	⟨6⟩ ⁻									14.3(16)		
772.051(5)	⟨6⟩ ⁺					93(10)						

(continued)

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	437.34 5 ⁻	450.12 3 ⁺	463.77 4 ⁻	487.64 5 ⁺	487.84 (8) ⁺	504.89 3 ⁻	533.10 4 ⁺	563.94 (6) ⁻	591.78 6 ⁺	595.75 4 ⁻
792.227(6)	(2) ⁺			8(2)					16(2)			
834.800(4)	(5) ⁻									12.5(13)		
838.624(3)	5 ⁻									10.81(98)		0.491(147)
843.407(4)	3 ⁻											10(1)
848.228(6)	6 ⁻	43(5)										22(6)
860.544(4)	4 ⁻	9(1)						43(4)				
866.356(4)	2 ⁺							4.1(4)				
869.996(6)	(5) ⁻									6.6(7)		
871.260(4)	(4) ⁺			≈3								
883.460(5)	3 ⁻				31(3)							
921.464(5)	(5) ⁻									8.8(10)		
930.756(5)	3 ⁺			4.2(5)				11(1)	≈2			5.7(6)
938.396(7)	(7) ⁺										64(6)	
945.012(4)	4 ⁻									8.5(11)		
957.732(8)	4 ⁻	12.4(15)										
957.879(4)	3 ⁻							9(1)				
962.873(16)	(6) ⁻									31(5)		
985.555(4)	4 ⁺					≈4						
988.147(6)	5 ⁻											97(10)
1015.34(1)	4 ⁺			54(6)								
1029.661(6)	(2) ⁻							13(2)				
1032.369(7)	(5) ⁻									9(2)		
1042.52(1)	5 ⁻				83(10)							
1067.411(6)	4 ⁻							25(3)				11(2)
1068.975(6)	(5) ⁻											≈9
1100.40(2)	(3) ⁻							18(2)				
1120.3(7)									x			

Energy levels and branching ratios [98Br13, 06Ba16]. Part 4

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	635.21 4 ⁺	637.79 1 ⁻	650.18 5 ⁺	657.14 (5) ⁺	658.44 3 ⁻	687.87 2 ⁻	710.07 6 ⁻	715.43 5 ⁻	722.92 4 ⁻	734.37 3 ⁺
693.794(4)	(5) ⁺	100										
722.901(4)	4 ⁻						46(6)					
734.358(4)	3 ⁺	91(11)										
751.878(4)	4 ⁻						88(10)					
786.251(4)	4 ⁺											100
788.213(4)	4 ⁻						100					
838.624(3)	5 ⁻					2.948(344)					2.211(344)	
843.407(4)	3 ⁻						35(4)				40(4)	
848.228(6)	6 ⁻									≈35		

(continued)

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	635.21 4 ⁺	637.79 1 ⁻	650.18 5 ⁺	657.14 $\langle 5 \rangle^+$	658.44 3 ⁻	687.87 2 ⁻	710.07 6 ⁻	715.43 5 ⁻	722.92 4 ⁻	734.37 3 ⁺
851.219(5)	5 ⁺		32(5)									
860.544(4)	4 ⁻									≈5		
866.356(4)	2 ⁺			0.9(2)								1.3(4)
868.090(4)	5 ⁻										17(4)	
871.260(4)	$\langle 4 \rangle^+$		22(3)			72(7)						3.4(6)
908.237(4)	$\langle 4 \rangle^-$										82(8)	
930.756(5)	3 ⁺											≈2
945.012(4)	4 ⁻						3.4(13)				88(9)	
957.879(4)	3 ⁻						41(4)	7(1)			9(1)	
960.180(4)	$\langle 3 \rangle^-$					2.8(6)	11(1)					
962.873(16)	$\langle 6 \rangle^-$										38(18)	
973.750(5)	$\langle 5 \rangle^+$		74(7)			17(2)						≈9
985.555(4)	4 ⁺		29(3)			9.7(10)	3.5(6)					50(5)
1019.938(4)	$\langle 4 \rangle^+$		15(2)			47(6)						20(2)
1029.661(6)	$\langle 2 \rangle^-$			≈5								
1032.369(7)	$\langle 5 \rangle^-$										21(3)	
1042.52(1)	5 ⁻								17(2)			
1067.411(6)	4 ⁻						17(3)				22(2)	
1068.975(6)	$\langle 5 \rangle^-$										16(3)	
1120.3(7)					x							
1227.9(10)												x
1301.4(10)												x
1370.7(10)			x									

Energy levels and branching ratios [98Br13, 06Ba16]. Part 5

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	751.89 4 ⁻	763.63 3 ⁻	765.68 $\langle 6 \rangle^-$	786.27 4 ⁺	788.22 $\langle 4 \rangle^-$	834.81 $\langle 5 \rangle^-$	838.62 $\langle 6 \rangle^+$	838.64 5 ⁻	843.42 3 ⁻	848.25 6 ⁻
851.219(5)	5 ⁺					68(21)						
868.090(4)	5 ⁻		60(7)									
903.4(10)										x		
908.237(4)	$\langle 4 \rangle^-$		18(2)									
921.464(5)	$\langle 5 \rangle^-$		10(4)				3.7(9)					
941.065(6)	$\langle 7 \rangle^-$				100							
957.879(4)	3 ⁻			4(2)			30(3)					
960.180(4)	$\langle 3 \rangle^-$						12(1)	4(1)			4(1)	
962.873(16)	$\langle 6 \rangle^-$											≈31
972.506(7)	$\langle 6 \rangle^-$							15(5)				
985.555(4)	4 ⁺										≈4	
1002.74(1)	$\langle 6 \rangle^-$									15(4)		
1019.938(4)	$\langle 4 \rangle^+$								11(2)			

(continued)

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	751.89 4 ⁻	763.63 3 ⁻	765.68 (6) ⁻	786.27 4 ⁺	788.22 (4) ⁻	834.81 (5) ⁻	838.62 (6) ⁺	838.64 5 ⁻	843.42 3 ⁻	848.25 6 ⁻
1032.369(7)	(5) ⁻						7(3)	9(2)				
1046.3(10)									x			
1067.411(6)	4 ⁻			11(2)								
1068.975(6)	(5) ⁻		14(2)									
1164.1(10)											x	
1241.1(10)									x			
1277.8(10)									x			

Energy levels and branching ratios [98Br13, 06Ba16]. Part 6

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	851.24 5 ⁺	860.56 4 ⁻	866.37 2 ⁺	868.10 5 ⁻	870.00 (5) ⁻	871.27 (4) ⁺	921.47 (5) ⁻	945.03 4 ⁻	957.89 (3) ⁻	960.19 (3) ⁻
930.756(5)	3 ⁺				5(2)							
959.2(10)						x						
988.147(6)	5 ⁻						3(3)					
990.4(10)	(3) ⁺				x							
1002.74(1)	(6) ⁻					19(5)						
1015.34(1)	4 ⁺		8(2)									
1019.938(4)	(4) ⁺							7(2)				
1067.411(6)	4 ⁻										14(3)	
1068.975(6)	(5) ⁻								61(16)			
1100.40(2)	(3) ⁻			5(2)								
1104.5(7)												x
1237.4(10)										x		

Energy levels and branching ratios [98Br13, 06Ba16]. Part 7

 $^{176}_{71}\text{Lu}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :							985.57 (4) ⁺			1029.69 (2) ⁻
1104.5(7)									x			
1142.5(10)												x

Energy levels and branching ratios [03Ko33].

¹⁷⁷Lu
71

E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ ,d)	$\mu\text{b/sr}$	(α ,t)	$\mu\text{b/sr}$	Γ_{cm}		E_{f}^* :	0.0	122	150	269	289
										$2J_{\text{f}}^\pi$:	7 ⁺	9 ⁺	9 ⁻	11 ⁺	11 ⁻
0.0	7 ⁺		$\approx 4^*$	0.86	12**	0.91	77**	6.647(4) d	71Mi01						
121.621(1)	9 ⁺		≈ 5	0.06	1	0.07	7.3	0.117(4) ns	71On02	100					
150.397(1)	9 ⁻			0.12	incl	0.08	5.5	130(3) ns	71On02	100					
268.785(1)	11 ⁺									49	51				
289.011(1)	11 ⁻			1.2	16	1.03	107		71On02				100		
440.642(1)	13 ⁺		≈ 3						71Mi01		68			31.5	
451.512(1)	13 ⁻												10.4		90
457.981(2)	5 ⁺			0.88	73	0.91	161	≤ 0.45 ns	71On02	98	1.90				
552.098(1)	7 ⁺						≈ 6		71On02	41	3.3	1.0		0.12	
569.707(2)	1 ⁺			0.04	6.7	0.10	15	155(7) μs	71On02	2.1					
573.642(2)	3 ⁺			0.09	incl	0.10	incl	3.5(10) ns	71On02	x					
636.203(1)	15 ⁺		≈ 1						71Mi01					79	
637.110(2)	15 ⁻		incl												18.6
671.948(1)	9 ⁺									9.1	27			1.1	0.6
709.453(2)	5 ⁺														
720.820(2)	7 ⁺														
760.81(5)	3 ⁺									100					
761.700(2)	5 ⁻			0.49	32	0.25	48	32.8(24) ns	71On02	72					
795.240(4)	$\langle 1^- \rangle$				15		≤ 9		71On02						
811.452(2)	9 ⁻			≈ 1.4	≈ 15	1.33	92	1.0(1) ns	71On02	17	58			19	
816.704(2)	11 ⁺										10			17	1.3
821.95(5)	5 ⁺								71On02	100					
832							21		71On02						
844.908(2)	17 ⁻														
854.307(1)	17 ⁺														
906.74(5)	7 ⁺									21.8	4.3				
956.53(3)	3 ⁻			0.09	17	0.04	26		71On02						
956.694(2)	9 ⁺														
957.326(3)	13 ⁻		[11]						71Mi01					3.3	
970.175(2)	23 ⁻							160.44(6) d							
980.209(2)	11 ⁺														
985.309(2)	13 ⁺													13	
1019.87(2)	$\langle 9^+ \rangle$									85					
1049.2(6)	$\langle 7^- \rangle$												100		
1049.46(1)	$\langle 9^- \rangle$									2.0	6.3	82			10
1063.2															
1073(3)	3 ⁺		≈ 3						71Mi01						
1073.64(1)	19 ⁻														
1088.62(1)	7 ⁻														
1093.70(1)	$\langle 19^+ \rangle$														
1098	$\langle 3^+, 5^+ \rangle$														
1126	$\langle 3^+, 5^+ \rangle$				25		31		71On02						
1133(3)	5 ⁺														
1149.97(14)	$\langle 7^+ \rangle$									51	49			<0.17	
1150.77(2)	$\langle 11^+ \rangle$										51				

(continued)

 $^{177}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	L (d,p)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	S_N (τ ,d)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	S_N (α ,t)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage					
										E_f^* :	0.0	122	150	269	289
										$2J_f^\pi$:	7 ⁺	9 ⁺	9 ⁻	11 ⁺	11 ⁻
1165.56(14)	9 ⁻ -13 ⁻												25		60
1176.81(1)	15 ⁺													33	
1183.8(8)															
1187.91(1)	$\langle 11^- \rangle$				5		≤ 5		71On02		x				91
1201.66(1)	17 ⁻														
1227(5)	$\langle 7^+ \rangle$														
1230.60(2)	11 ⁺							60(15) ps			19	2.3	65	0.21	12.0
1236.36(13)	7 ⁺ -11 ⁺										52	5		43	
1241.50(21)	$\langle 7^+ \rangle$	12						20(8) ps	71Mi01		86	14.4		<0.06	
1242.78(20)	$\langle 25^- \rangle$														
1286.95(1)	11 ⁻														
1296					28		20		71On02						
1303.08(1)	13 ⁺				incl		incl		71On02						
1305.81(2)	11 ⁺	105							71Mi01		55	20		18	
1318.64(2)	$\langle 13^+ \rangle$											44		35	
1322.1(4)	$\langle 3^- \rangle$														
1322.20(1)	$\langle 21^- \rangle$														
1328(5)	11 ⁻				≈ 16		≈ 10		71On02						
1336.85(4)	7 ⁺										35	65			
1344.36(5)	$\langle 11^+ \rangle$										25	26		15	
1344.82(1)	15 ⁺														
1348.5(3)	$\langle 13^- \rangle$													x	
1352.3(2)	$\langle 21^+ \rangle$														
1356.88(1)	15 ⁺	305						11.1(10) ns	71Mi01				≤ 4	71	8
1388.0(10)	$\langle 13^+ \rangle$														100
1389.68(1)	17 ⁺														
1394.67(7)	5 ⁻			0.10	8	0.05	7.5		71On02						
1428.8(12)					≈ 5		9		71On02						
1437.9(3)	$\langle 17^- \rangle$							<13 ns							
1443.73(15)	9 ⁺										25	32		43	
1454.41(1)	$\langle 13^+ \rangle$	53							71Mi01			20		35	
1464.6(5)															
1471.012	13 ⁺														57
1472.09(4)	$\langle 11^+ \rangle$	41							71Mi01		x	45		55	
1475(2)		incl							71Mi01						
1480.2(7)					21				71On02						
1487.23(6)	$\langle 15^+ \rangle$											43		28	
1502.76(1)	13 ⁺	287							71Mi01			39		18	
1505.96(11)	$\langle 13^+ \rangle$													22	
1513					22		19		71On02						
1536.8(3)	$\langle 27^- \rangle$														
1541		138			≈ 8		incl		71Mi01						
1542.8(5)	$\langle 21^- \rangle$	incl							71Mi01						
1544.33(1)	17 ⁺							0.8(+2-1) ns							
1555(5)															

(continued)

 $^{177}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	L (d,p)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	S_N (τ ,d)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	S_N (α ,t)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage					
										E_f^* : $2J_f^\pi$:	0.0 7 ⁺	122 9 ⁺	150 9 ⁻	269 11 ⁺	289 11 ⁻
1564.11(1)	15 ⁻														
1566.22(12)	$\langle 15^+ \rangle$													53	47
1573.52(4)	$\langle 7^- \rangle$														
1573.7(6)	$\langle 11^+ \rangle$											21		57	
1589.2(3)	$\langle 23^- \rangle$														
1601					≈ 13		≈ 7								
1607.39(2)	$\langle 15^+ \rangle$		21						71Mi01						
1620.9(7)	$\langle 9^+ \rangle$				≈ 26		54		71On02						
1623.26(1)	19 ⁺														
1628.33(1)	9 ⁻														
1629.5(3)	$\langle 23^+ \rangle$														
1632.84(1)	15 ⁺		62						71Mi01						
1635.73(2)	$\langle 13^+ \rangle$											x		87	
1640(2)															
1640.30(6)	$\langle 3^- \rangle$														
1650.1(9)					63		≈ 21		71On02						
1661.471	15 ⁺														
≈ 1668					≈ 19		≈ 7		71On02						
1670.9(3)	$\langle 19^- \rangle$														
1677.27(1)	15 ⁺		107						71Mi01					20	
1678.8(3)			incl						71Mi01						
1689.5(5)															
1693.03(2)	$\langle 15^+ \rangle$													18	
1705.6(3)															
1714.5(10)	$\langle 7^+ \rangle$		≈ 5						71Mi01						
1728.91(1)	13 ⁺														
1733	7 ⁻				26		41		71On02						
1739(2)															
1745.54(1)	$\langle 17^+ \rangle$														
1746.57(1)	19 ⁺		37						71Mi01						
1748.5(4)			incl						71Mi01						
1752.9(3)															
1755.0(7)	$\langle 11^+ \rangle$														
1756.78(1)	$\langle 7^- \rangle$				16		22		71On02						
1760	$\langle 3^+, 5^+ \rangle$				incl		incl		71On02						
1766(5)															
1772.9(3)															
1776(2)															
1786.41(4)	$\langle 17^+ \rangle$		≈ 6						71Mi01						
1804.1(4)	$\langle 19^+ \rangle$														
1804.4(3)															
1812.37(2)	$\langle 17^+ \rangle$		19						71Mi01						
1820.83(3)	$\langle 15^+ \rangle$														
1824.4(10)	$\langle 9^+ \rangle$														
1826.3(7)															

(continued)

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ ,d)	$\mu\text{b/sr}$	(α ,t)	$\mu\text{b/sr}$	Γ_{cm}		E^*_f :	0.0	122	150	269	289
										$2J^\pi_f$:	7 ⁺	9 ⁺	9 ⁻	11 ⁺	11 ⁻
1827.80(6)	$\langle 5^- \rangle$														
1829.27(1)	$\langle 19^+ \rangle$														
1841.9(11)			11						71Mi01						
1851.8(3)	$\langle 29^- \rangle$														
1852.0(10)					4.5		20		71On02						
1859.2(4)	$\langle 9^- \rangle$		7		incl		incl		71Mi01						
1862.1(13)															
1872.6(3)	$\langle 25^- \rangle$														
1873.41(11)	17 ⁺														
1881.89(2)	11 ⁺		≈ 40				7		71Mi01						
1885(3)							incl		71On02						
1894.0(10)															
1901.6(5)			11						71Mi01						
1907.1(4)															
1909.8(7)	$\langle 13^+ \rangle$														
1918.4(6)															
1921.8	$\langle 25^+ \rangle$														
1925.3(3)	$\langle 21^- \rangle$														
1925.31(3)	15 ⁺														
1927.5(9)															
1935(4)			25						71Mi01						
1942(2)															
1947.6(12)															
1957.19(2)	$\langle 11^- \rangle$														
1957.6(10)	$\langle 11^+ \rangle$														
1959.7(3)															
1966(2)					10				71On02						
1974(3)			278						71Mi01						
1976.8(5)	$\langle 25^- \rangle$														
1982.1(6)															
1990.4(7)															
1997.0(10)					≈ 1				71On02						
2006(2)															
2012(2)															
2019.1(13)			30						71Mi01						
2032.8(8)			10						71Mi01						
2048.9(4)					17		18		71On02						
2053.11(1)	13 ⁺		≈ 8						71Mi01						
2055.9(5)			incl						71Mi01						
2077(5)															
2085(3)															
2087.1(7)	$\langle 15^+ \rangle$		52						71Mi01						
2088.1(6)															
2106.7(8)			25						71Mi01						
2110.5	$\langle 13^+ \rangle$		incl						71Mi01						

(continued)

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	S_N	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ, d)	$\mu\text{b/sr}$	(α, t)	$\mu\text{b/sr}$	Γ_{cm}		E_f^* :	0.0	122	150	269	289
										$2J_f^\pi$:	7^+	9^+	9^-	11^+	11^-
2116.3(9)															
2133.8(9)															
2142(3)			95						71Mi01						
2154.90(1)	17^+														
2158(5)															
2164					20		7.5		71On02						
2174.2(4)	$\langle 27^- \rangle$														
2185(3)			100		≈ 10		incl		71Mi01						
2200.1(4)	$\langle 23^- \rangle$														
2205.5(6)			30						71Mi01						
2230(5)															
2241(3)			310						71Mi01						
2247.00(1)	15^+														
2278			37						71Mi01						
2294(5)															
2345.1(5)	$\langle 23^+ \rangle$														
2373(3)			90						71Mi01						
2417(4)			43						71Mi01						
2427					9				71On02						
2497.8(5)	$\langle 29^- \rangle$														
2605(3)			620						71Mi01						
2637(4)			180						71Mi01						
2668(3)			436						71Mi01						
>2700	$\langle 39^- \rangle$							6(+3-2) m							
			71Mi01		71On02		71On02		Ref.						

Additional data on this isotope can be found in [04Al04, 02AlZY, 98Kh05, 96Pe05, 92Bu12].

* Differential cross section for proton group observed in the (d,p) reaction at 60° [71Mi01].** Differential cross section for the (τ, d) and (α, t) reactions at 40° and 45° [71On02].

Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [03Ko33]. Part 2

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^* :	441	451	458	552.099	569.707	573.642	636.203	637.110	671.949	709.453
[keV]		$2J_f^\pi$:	13^+	13^-	5^+	7^+	1^+	3^+	15^+	15^-	9^+	5^+
552.098(1)	7^+				55(6)							
569.707(2)	1^+				98(10)							
573.642(2)	3^+				100							
636.203(1)	15^+		21.2(9)									
637.110(2)	15^-			81(8)								
671.948(1)	9^+		0.32(10)		6.9(8)	55(6)						
709.453(2)	5^+				3.1	0.5(5)	9.3(16)	87(9)				

(continued)

 $^{177}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	441 13 ⁺	451 13 ⁻	458 5 ⁺	552.099 7 ⁺	569.707 1 ⁺	573.642 3 ⁺	636.203 15 ⁺	637.110 15 ⁻	671.949 9 ⁺	709.453 5 ⁺
720.820(2)	7 ⁺				0.20(10)	0.46(16)		99(10)				
761.700(2)	5 ⁻				0.39(12)	7.2(7)		20(2)				0.33
795.240(4)	$\langle 1^- \rangle$						26(10)	74(18)				
816.704(2)	11 ⁺					16(2)					55(7)	
844.908(2)	17 ⁻			28(3)						72(7)		
854.307(1)	17 ⁺		84(2)						15.9(6)			
956.694(2)	9 ⁺											32(3)
957.326(3)	13 ⁻		5.7(7)						1.42(17)			
985.309(2)	13 ⁺		11(2)								24(3)	
1073.64(1)	19 ⁻									37(5)		
1093.70(1)	$\langle 19^+ \rangle$							81(11)				
1149.97(14)	$\langle 7^+ \rangle$				0.3(2)							
1165.56(14)	9 ⁻ -13 ⁻			15(5)								
1176.81(1)	15 ⁺		6(1)	2.4(5)					5(1)			
1187.91(1)	$\langle 11^- \rangle$		x	x							9(1)	
1230.60(2)	11 ⁺			1.2(1)								
1241.50(21)	$\langle 7^+ \rangle$				0.06(3)							
1305.81(2)	11 ⁺		7(2)									
1344.36(5)	$\langle 11^+ \rangle$		35(3)									
1348.5(3)	$\langle 13^- \rangle$		x									
1356.88(1)	15 ⁺		12(3)						8.2(14)			
1389.68(1)	17 ⁺								12(2)			
1454.41(1)	$\langle 13^+ \rangle$		41(5)									
1471.012	13 ⁺		18(3)						22(3)			
1487.23(6)	$\langle 15^+ \rangle$		13(2)									
1502.76(1)	13 ⁺		40(6)									
1505.96(11)	$\langle 13^+ \rangle$		78(9)									
1544.33(1)	17 ⁺								16(2)	x		
1566.22(12)	$\langle 15^+ \rangle$		x									
1573.7(6)	$\langle 11^+ \rangle$		21(7)									
1607.39(2)	$\langle 15^+ \rangle$		58(8)						16(3)			
1623.26(1)	19 ⁺								21(3)			
1632.84(1)	15 ⁺								53(9)			
1635.73(2)	$\langle 13^+ \rangle$								11(3)			
1661.471	15 ⁺		66(9)						34(4)			
1677.27(1)	15 ⁺		27(4)							9(3)		
1693.03(2)	$\langle 15^+ \rangle$		21(3)						43(7)			
1714.5(10)	$\langle 7^+ \rangle$							100				
1728.91(1)	13 ⁺										20(3)	
1746.57(1)	19 ⁺									x		
1786.41(4)	$\langle 17^+ \rangle$								95(15)			
1812.37(2)	$\langle 17^+ \rangle$								28(7)			
1820.83(3)	$\langle 15^+ \rangle$								66(14)			
1873.41(11)	17 ⁺		x						83(13)			
2053.11(1)	13 ⁺										20(6)	

Energy levels and branching ratios [03Ko33]. Part 3

 $^{177}_{71}\text{Lu}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	720.820 7 ⁺	760.81 3 ⁺	761.700 5 ⁻	795.240 ⟨1 ⁻ ⟩	811.452 9 ⁻	816.704 11 ⁺	821.95 5 ⁺	844.908 17 ⁻	854.307 17 ⁺	906.74 7 ⁺
811.452(2)	9 ⁻		0.6(3)		4.8(2)							
906.74(5)	7 ⁺			74(8)					0.1			
956.53(3)	3 ⁻				70(16)	30.4						
956.694(2)	9 ⁺		68(7)									
957.326(3)	13 ⁻						90(10)					
970.175(2)	23 ⁻										100	
980.209(2)	11 ⁺		99(10)					0.6(3)				
985.309(2)	13 ⁺							52(5)				
1019.87(2)	⟨9 ⁺ ⟩								14.9			
1073.64(1)	19 ⁻									63(7)		
1088.62(1)	7 ⁻				23(5)		77(14)					
1093.70(1)	⟨19 ⁺ ⟩										19(2)	
1150.77(2)	⟨11 ⁺ ⟩											47
1176.81(1)	15 ⁺							20(2)				
1286.95(1)	11 ⁻						68(7)					
1322.1(4)	⟨3 ⁻ ⟩					100						
1322.20(1)	⟨21 ⁻ ⟩									63(26)		
1352.3(2)	⟨21 ⁺ ⟩										78(5)	
1356.88(1)	15 ⁺										0.6(4)	
1389.68(1)	17 ⁺										6(1)	
1394.67(7)	5 ⁻				100							
1544.33(1)	17 ⁺										12.6(5)	
1564.11(1)	15 ⁻										19(4)	
1573.52(4)	⟨7 ⁻ ⟩				95(9)							
1607.39(2)	⟨15 ⁺ ⟩										26(2)	
1620.9(7)	⟨9 ⁺ ⟩		100									
1623.26(1)	19 ⁺										x	
1628.33(1)	9 ⁻						81(13)					
1640.30(6)	⟨3 ⁻ ⟩					70(6)						
1677.27(1)	15 ⁺										30(4)	
1693.03(2)	⟨15 ⁺ ⟩										18(1)	
1728.91(1)	13 ⁺							x				
1746.57(1)	19 ⁺										42(17)	
1755.0(7)	⟨11 ⁺ ⟩		93(40)									
1756.78(1)	⟨7 ⁻ ⟩				26(5)		58(16)					
1812.37(2)	⟨17 ⁺ ⟩										67(9)	
1820.83(3)	⟨15 ⁺ ⟩										34(5)	
1827.80(6)	⟨5 ⁻ ⟩				94(9)							
1873.41(11)	17 ⁺										x	
1881.89(2)	11 ⁺							100				
1925.31(3)	15 ⁺							x				
1957.19(2)	⟨11 ⁻ ⟩						39(7)					
2053.11(1)	13 ⁺							13(2)				
2247.00(1)	15 ⁺							24(9)				

Energy levels and branching ratios [03Ko33]. Part 4

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	956.53 3 ⁻	956.694 9 ⁺	957.326 13 ⁻	970.175 23 ⁻	980.210 11 ⁺	985.310 13 ⁺	1019.87 ⟨9 ⁺ ⟩	1073.64 19 ⁻	1093.70 ⟨19 ⁺ ⟩	1150.77 ⟨11 ⁺ ⟩
1150.77(2)	⟨11 ⁺ ⟩								2.5(4)			
1176.81(1)	15 ⁺							34(4)				
1201.66(1)	17 ⁻				100							
1242.78(20)	⟨25 ⁻ ⟩					100						
1286.95(1)	11 ⁻				30(3)			2.2(10)				
1303.08(1)	13 ⁺			51(5)			47(5)	2.1(3)				
1318.64(2)	⟨13 ⁺ ⟩								2.9(4)			18(2)
1322.20(1)	⟨21 ⁻ ⟩									37(12)		
1344.82(1)	15 ⁺						100					
1352.3(2)	⟨21 ⁺ ⟩										22(9)	
1389.68(1)	17 ⁺							37(4)				
1487.23(6)	⟨15 ⁺ ⟩											16.1
1564.11(1)	15 ⁻				54(6)			2.8(13)				
1589.2(3)	⟨23 ⁻ ⟩									22(11)		
1629.5(3)	⟨23 ⁺ ⟩										100	
1640.30(6)	⟨3 ⁻ ⟩		30(6)									
1728.91(1)	13 ⁺							7(3)				
1746.57(1)	19 ⁺										27(10)	
1881.89(2)	11 ⁺							x				
1925.31(3)	15 ⁺							60(5)				
1957.19(2)	⟨11 ⁻ ⟩			61(10)								
2154.90(1)	17 ⁺							34(13)				
2247.00(1)	15 ⁺							33(20)				

Energy levels and branching ratios [03Ko33]. Part 5

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1176.81 15 ⁺	1201.66 17 ⁻	1242.78 ⟨25 ⁻ ⟩	1286.95 11 ⁻	1303.08 13 ⁺	1305.82 11 ⁺	1322.20 ⟨21 ⁻ ⟩	1344.82 15 ⁺	1352.33 ⟨21 ⁺ ⟩	1356.88 15 ⁺
1389.68(1)	17 ⁺		45(6)									
1437.9(3)	⟨17 ⁻ ⟩											100
1454.41(1)	⟨13 ⁺ ⟩											4.4(9)
1471.012	13 ⁺							3.7(4)				
1502.76(1)	13 ⁺		2.5(2)									
1536.8(3)	⟨27 ⁻ ⟩				100							
1542.8(5)	⟨21 ⁻ ⟩			100								
1544.33(1)	17 ⁺		70(8)									1.5
1564.11(1)	15 ⁻			15(2)		10(2)						
1589.2(3)	⟨23 ⁻ ⟩								78(16)			
1623.26(1)	19 ⁺		52(16)									
1628.33(1)	9 ⁻					19(2)						
1632.84(1)	15 ⁺							x				≈29

(continued)

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E^*_f :	1176.81	1201.66	1242.78	1286.95	1303.08	1305.82	1322.20	1344.82	1352.33	1356.88
		$2J^\pi_f$:	15 ⁺	17 ⁻	$\langle 25^- \rangle$	11 ⁻	13 ⁺	11 ⁺	$\langle 21^- \rangle$	15 ⁺	$\langle 21^+ \rangle$	15 ⁺
<hr/>												
1678.8(3)					100							
1728.91(1)	13 ⁺		73(7)									
1745.54(1)	$\langle 17^+ \rangle$						69(10)			10(10)		
1746.57(1)	19 ⁺											x
1772.9(3)					100							
1804.1(4)	$\langle 19^+ \rangle$									100		
1829.27(1)	$\langle 19^+ \rangle$		76(10)							19(5)		
1851.8(3)	$\langle 29^- \rangle$				100							
1872.6(3)	$\langle 25^- \rangle$								100			
1921.8	$\langle 25^+ \rangle$										100	
1925.31(3)	15 ⁺		18(10)									
2053.11(1)	13 ⁺		63(7)									
2154.90(1)	17 ⁺		47(6)									

Energy levels and branching ratios [03Ko33]. Part 6

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E^*_f : $2J^\pi_f$:	1389.68 17 ⁺	1394.67 5 [−]	1437.87 ⟨17 [−] ⟩	1454.41 ⟨13 ⁺ ⟩	1471.01 13 ⁺	1472.09 ⟨11 ⁺ ⟩	1502.76 13 ⁺	1542.8 ⟨21 [−] ⟩	1544.33 17 ⁺	1573.52 ⟨7 [−] ⟩
<hr/>												
1544.33(1)	17 ⁺		0.08(8)									
1573.52(4)	⟨7 [−] ⟩			5								
1607.39(2)	⟨15 ⁺ ⟩					x						
1623.26(1)	19 ⁺		27(7)									
1632.84(1)	15 ⁺						x			18(3)		
1635.73(2)	⟨13 ⁺ ⟩							1.8(5)				
1670.9(3)	⟨19 [−] ⟩				100							
1677.27(1)	15 ⁺									14(1)		
1745.54(1)	⟨17 ⁺ ⟩		21(10)									
1746.57(1)	19 ⁺										31(4)	
1756.78(1)	⟨7 [−] ⟩											5(2)
1925.3(3)	⟨21 [−] ⟩				≤36							
1925.31(3)	15 ⁺		16(10)									
1976.8(5)	⟨25 [−] ⟩									100		
2247.00(1)	15 ⁺		39(6)									

Energy levels and branching ratios [03Ko33]. Part 7

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1589.2 $\langle 23^- \rangle$	1607.39 $\langle 15^+ \rangle$	1620.9 $\langle 9^+ \rangle$	1623.26 19^+	1628.33 9^-	1632.84 15^+	1640.30 $\langle 3^- \rangle$	1670.9 $\langle 19^- \rangle$	1677.27 15^+	1714.5 $\langle 7^+ \rangle$
1755.0(7)	$\langle 11^+ \rangle$				7(3)							
1756.78(1)	$\langle 7^- \rangle$						11(2)					
1786.41(4)	$\langle 17^+ \rangle$			5								
1812.37(2)	$\langle 17^+ \rangle$								5(2)			
1824.4(10)	$\langle 9^+ \rangle$											100
1827.80(6)	$\langle 5^- \rangle$								5.8(8)			
1829.27(1)	$\langle 19^+ \rangle$					5(2)						
1872.6(3)	$\langle 25^- \rangle$		≤ 46									
1873.41(11)	17^+										17(2)	
1909.8(7)	$\langle 13^+ \rangle$				54(7)							
1925.3(3)	$\langle 21^- \rangle$									100		
1957.6(10)	$\langle 11^+ \rangle$											71
2174.2(4)	$\langle 27^- \rangle$		100									
2200.1(4)	$\langle 23^- \rangle$									< 45		

Energy levels and branching ratios [03Ko33]. Part 8

 $^{177}_{71}\text{Lu}$

E^*	$2J^\pi$	Branching ratios in percentage											
		E_f^* :	1728.91	1752.9	1755.0	1804.1	1824.4	1881.89	1909.8	1925.31	1957.20	1976.8	2053.11
[keV]		$2J_f^\pi$:	13^+		$\langle 11^+ \rangle$	$\langle 19^+ \rangle$	$\langle 9^+ \rangle$	11^+	$\langle 13^+ \rangle$	15^+	$\langle 11^- \rangle$	$\langle 25^- \rangle$	13^+

1909.8(7)	$\langle 13^+ \rangle$			46									
1925.31(3)	15^+		6.2(10)										
1957.6(10)	$\langle 11^+ \rangle$						29(8)						
2053.11(1)	13^+							3.0(6)					
2087.1(7)	$\langle 15^+ \rangle$				61(7)				39(16)				
2110.5	$\langle 13^+ \rangle$										100		
2154.90(1)	17^+		15(4)							4			
2200.1(4)	$\langle 23^- \rangle$									100			
2247.00(1)	15^+												4(1)
2345.1(5)	$\langle 23^+ \rangle$					100							
2497.8(5)	$\langle 29^- \rangle$											100	

Energy levels and branching ratios [94Br18].

 $^{178}_{71}\text{Lu}$

E^*	J^π	L	$d\sigma/d\Omega$	σ (t, α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage		
[keV]		(t,p)		$\mu\text{b/sr}$	Γ_{cm}		E_{f}^* :	0	41
							J_{f}^π :	$1^{\langle + \rangle}$	$\langle 2^+ \rangle$
0	$1^{\langle + \rangle}$			12	28.4(2) m	93Bu02			
41(1)	$\langle 2^+ \rangle$			15		93Bu02		100	

(continued)

 $^{178}_{71}\text{Lu}$

E^*	J^π	L	$d\sigma/d\Omega$	σ (t, α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage		
[keV]		(t,p)		$\mu\text{b/sr}$	Γ_{cm}		E^*_f :	0	41
							J^π_f :	$1^{(+)}$	$\langle 2^+ \rangle$
96(4)	$\langle 3^+ \rangle$	0		≈ 11	23.1(3) m	93Bu02		61	39
120(3)	$\langle 9^- \rangle$			33		81Gi01			
136(5)	7^-								
187(1)	$\langle 8^+ \rangle$			44		93Bu02			
215(3)				18		93Bu02			
300(4)	$\langle 5^+ \rangle$			5		93Bu02			
334(2)	$\langle 10^- \rangle$			33		93Bu02			
335(5)	$\langle 8^- \rangle$			incl		93Bu02			
366(3)				15		93Bu02			
390.8	$\langle 1^+ \rangle$								
406(5)		0						61	39
475(4)				8		93Bu02			
499(2)				16		93Bu02			
556(5)	$\langle 9^- \rangle$								
656(2)	$\langle 4^+ \rangle$			106		93Bu02			
756(2)	$\langle 5^+ \rangle$			112		93Bu02			
824(5)	$\langle 10^- \rangle$								
834(2)	$\langle 5^+ \rangle$			86		93Bu02			
878(2)	$\langle 6^+ \rangle$			34		93Bu02			
906(3)				15		93Bu02			
974(2)	$\langle 6^+ \rangle$			50		93Bu02			
1033(3)				18		93Bu02			
1068(2)				46		93Bu02			
1133(2)				33		93Bu02			
1167(3)				≈ 50		93Bu02			
≈ 1186				≈ 25		93Bu02			
1201(5)									
1215(3)									
1255(2)									
1290(3)									
1341(2)									
1367(5)	7^-					81Gi01			
1454(7)									
1515(7)									
1674(7)									
1695(7)									
1729(7)									
1857(7)									
1889(7)									
1961(7)									

Cross section of the (t, α) reaction was measured at 25° [93Bu02].

Energy levels and branching ratios [94Ba52, 92Bu12].

 $^{179}_{71}\text{Lu}$

E^*	$2J^\pi$	L	C^2S	$T_{1/2}$ or	Ref.	Branching ratios in percentage							
[keV]		(t, α)	(t, α)	Γ_{cm}		E_{f}^* : $2J_{\text{f}}^\pi$:	0.0 7 ⁽⁺⁾	592 1 ⁽⁺⁾	593 $\langle 3 \rangle^+$	653 $\langle 5^+ \rangle$	917	1064 $\langle 1^+, 3 \rangle$	1205 $\langle \text{X}^- \rangle$
0.0	7 ⁽⁺⁾	$\langle 4 \rangle$	0.60	4.59(6) h									
35(5)	$\langle 9^- \rangle$	$\langle 5 \rangle$	0.11										
123(2)	$\langle 9^+ \rangle$	$\langle 4 \rangle$	0.05										
186(1)	$\langle 11 \rangle^-$	5	0.78										
273(2)	$\langle 11^+ \rangle$												
357(2)	$\langle 13^- \rangle$												
592.4(4)	1 ⁽⁺⁾	0	0.82	3.1(9) ms			100						
593(2)	$\langle 3 \rangle^+$	2	incl										
653.4(4)	$\langle 5^+ \rangle$	$\langle 2 \rangle$	0.19				100						
735(2)	$\langle 5 \rangle^+, \langle 7^+ \rangle$	2	0.40										
872(3)	$\langle 9^+ \rangle$		0.03										
916.7(4)	$\langle 1, 3, 5^+ \rangle$							100					
987(2)	$\langle 9^+ \rangle$	$\langle 4 \rangle$	0.12										
1064.1(4)	$\langle 1^+, 3 \rangle$								21(6)	52(6)	27(3)		
1099(4)													
1126(2)	$\langle 3^+ \rangle$	$\langle 2 \rangle$	0.16										
1189(2)	$\langle 5 \rangle^+$	2	0.40										
1204.8(4)	$\langle 1^-, 3^- \rangle$							91(5)				9(1)	
1262(3)													
1292(3)	[7 ⁺]		0.11										
1354(3)													
1412(4)													
1473(2)	$\langle 11 \rangle^-$	5	1,4										
1556.5(5)	$\langle 1^-, 3^- \rangle$												100
1586.2(4)	$\langle 1^-, 3^- \rangle$							20(5)				14(5)	66(5)
1599(3)	9 ⁻ , 11 ⁻	5											
1679(4)													
1771(4)													
1820(4)													
2048(4)													
2115(5)													
2136(5)													
2216(3)													
2239(4)													
2336(3)													

${}^{180}_{71}\text{Lu}$ [illegible] ${}^{180}_{71}\text{Lu}$

E^*	J^π	Branching ratios in percentage				
[keV]		$E^*_f:$ $J^\pi_f:$	442.27 3^+	453.2 2^+	496.0 $\langle 8^+ \rangle$	562.0 1^+
562.0(3)	1^+		17(2)	8(2)		
624.0(5)	$\langle 9^- \rangle$				x	
947.8(4)	$\langle 1^+ \rangle$					100
981.6(4)	1^+					100