		Туре	Author	Hist	ory Citation	Literature Cutoff Date
		Full Evaluation	Jean Blachot	NDS 1	11,1471 (2010)	1-May-2009
$Q(\beta^{-}) = -1037.$ Note: Current α : Additional	6 <i>17</i> ; S(n)=94 evaluation has information 1.	46 5; S(p)=6079.0 used the following	<i>10</i> ; $Q(\alpha) = -3070$ Q record -1036).9 <i>16</i> 5.6 2794	2012Wa38 145 5 6080 1	1 –3074 2 2003Au03,2009AuZZ.
				¹¹³ In I	Levels	
			Cross R	Reference	e (XREF) Flags	
	A B C D E F G	¹¹³ Cd β^- decay ¹¹³ Cd β^- decay ¹¹³ In IT decay (¹¹³ Sn ε decay (¹¹³ Sn ε decay (¹¹⁰ Pd(⁷ Li,4n γ)) ¹¹⁰ Pd(⁶ Li,3n γ)	(8.04×10 ¹⁵ y) (14.1 y) (99.476 min) 115.09 d) 21.4 min)	H I I I K I L I N C	¹² Cd(³ He,d) ¹² Cd(α ,t) ¹³ Cd(p ,n γ) ¹³ In(γ , γ') ¹³ In(d , d') ¹³ In(α , α') Coulomb excitation	0 114 Sn(d, ³ He) P 115 In(p,t) Q 116 Sn(p, α) R 112 Cd(p,p) IAR S 100 Mo(18 O,p4n γ)
E(level)@	$J^{\pi \dagger}$	T _{1/2}	XREF			Comments
<u>0.0</u> 391.699 <i>3</i>	9/2 ⁺ 1/2 ⁻	99.476 min 23	CD GHIJK N	10PQ S	Q=+0.799 (198 μ : μ =+5.5289 (Q: atomic bean J ^{π} : atomic bean ^{π} : atomic bean ^{π} : atomic bean ^{π} : Atomic bean J ^{π} : atomic bean J ^{π} : atomic bean J ^{π} : atomic bean J ^{π} : atomic bean (12) From wei 99.2 min 6 (min 8 (1970I (1971Ha18), (1971Ha18), (1971Ha18), (1971Ha18), (1971Ha18), (1971Ha18), (1971Ha18), (1984Iw06), Relative Stati 1970Go48 va its relative w the results ar 0.022 and the consistent, th give the same min 2 (1940I (1965Ca13), (1997We13)	(1989Ra17) (1989Ra17) , NMR. h. Value includes pol correction. n (1976Fu06), L(³ He,d)=4. (1989Ra17) h capture <0.0036% (1970De22). h. n (1976Fu06), M4 γ to 9/2 ⁺ . Ighted average of 99.3 min 2 (1967Ok02), 1969Va04), 99.48 min 3 (1970Go48), 99.48 Le07), 99.8 min 2 (1970Ro29), 99.47 min 7 99.2 min 6 (1971Oo01), 99.78 (18) 102 min 2 (1975Bu24), 99.21 min 13 99.49 min 6 (1982RuZV), 99.45 min 7 and 99.6 min 3 (1987Ne01). In the Limited istical Weight method, the uncertainty for the lulue is increased from 0.03 to 0.0316 to reduce eight from 53% to 50%. For either weighting, e the same, with the internal uncertainty of e reduced- χ^2 =1.07. Since these data are e Rajeval and Normalized Residual methods e result. Others: 105 min 10 (1939Ba03), 104 La07), 102 min 2 (1958Gi06), 114 min 102.4 min (1975Ku10), and 99.8 min 7
646.830 7 1024.28 5 1029.65 5	3/2 ⁻ 5/2 ⁺ 1/2 ⁺ ,3/2 ⁺	3.6 ps <i>3</i> 0.33 ns <i>3</i>	D GHIJ GHIJK M D J	0 Q 1 P	J^{π} : L(³ He,d)=1 J^{π} : L(³ He,d)=2 J^{π} : 638 γ is E1, $T_{1/2}$: from ¹¹³ C	, $\gamma(\theta)$ of 255 γ in (p,n γ). , level excited in Coul. ex., E2 γ to 9/2 ⁺ . 1/2 ⁺ preferred from syst. Cd(p,n γ).
1063.93 6	3/2+	0.58 ns 3	HIJ		J ^{π} : L(³ He,d)=2 T _{1/2} : from ¹¹³ C	, E1 γ to 1/2 ⁻ . Cd(p,n γ).
1106.46 7 1131.48 5	3/2 ⁻ ,5/2 ⁻ 5/2 ⁺	0.97 ps 7	J F HIJKL N	N P	J^{π} : M1,E2 γ to J^{π} : L(³ He,d)=2 $T_{1/2}$: from ¹¹³ I	$1/2^-$, $\gamma(\theta)$ of 714 γ in (p,n γ). , level excited in Coul. ex., E2 γ to $9/2^+$. n Coul. ex.

Continued on next page (footnotes at end of table)

¹¹³In Levels (continued)

E(level) [@]	J^{π}^{\dagger}	T _{1/2}	XREF	Comments
1173.06 9	11/2+	60 fs 6	FG JK MN P S	J^{π} : $\gamma(\theta)$ of 1173 γ and 171 γ in Coul. ex., L(p,t)=2 from 9/2 ⁺
				$T_{1/2}$: from ¹¹³ In(γ, γ').
1191.12 ^{&} 9	7/2+		FGHIJ L S	J^{π} : L(³ He,d)=4, M1 γ 's to 5/2 ⁺ .
1344.89 10	$13/2^{+}$	0.33 ps <i>3</i>	FG J N PQ S	J^{π} : $\gamma(\theta)$ of E2 1344 γ .
1351 01 20			лтм	$T_{1/2}$: from ¹¹³ In Coul. ex.
1380.79 6	1/2-,3/2-,5/2-		J	J^{π} : E1 γ to $1/2^+, 3/2^+$ level.
1453.0 <i>3</i>	, , , , ,		J	
1471.93 8	3/2-,5/2-,7/2-		GJ	J ^{π} : M1,E2 γ to 3/2 ⁻ , $\gamma(\theta)$ of 825 γ in (p,n γ).
1504.0.5			л Л	
1509.01 15	7/2+,9/2+	≤0.2 ps	GJLNP	J ^{π} : $\gamma(\theta)$ of 1509 γ in Coul. ex., L(p,t)=2, 7/2 ⁺
				preferred in analogy with ¹¹⁵ In.
1525.06.0	1/2-2/2-5/2-		C 1	$T_{1/2}$: from ¹¹³ In Coul. ex.
1552.0 4	1/2 ,5/2 ,5/2		G J I M O	\mathbf{J} : EI γ to $3/2$.
1567.05 9	7/2+,9/2+	0.24 ps 10	GHIJ NO	XREF: H(1571)I(1571)O(1569).
				J^{π} : $\gamma(\theta)$ of 1567 γ in Coul. ex., 9/2 ⁺ preferred in
				analogy with ¹¹³ In, $L({}^{3}\text{He,d})=4$.
1569.58 7	_		GJ	$J_{1/2}^{\pi}$: M1,E2 γ to $3/2^{-}$.
1618.95 8			J	
1630.57 9	$(7/2^+, 9/2^+)$		G JK N Q	J^{π} : γ 's to $5/2^+$, $11/2^+$.
1034 5			HI L U	J^{π} : L(n,t)=(3) from 9/2 ⁺ .
1675.49 7			J	
1684.17 8			J	
1688.62 ^{&} 22	$\frac{11}{2^+}$		FG J S	J^{π} : E2 γ to 7/2 ⁺ .
1700 5	1/2		н	$E(\text{Pre}, \alpha) = 0.$ E(level): probably not the same as 1706.99 level, since
				E(levels) from $({}^{3}$ He,d) in the range 393 to 1567
1505 20 0	+		_	appear to be about 1-4 keV too high.
1707.38 8 ≈1758	9/2+		J	J [*] : M1,E2 γ to 5/2 ⁺ . E(level): from (n t)
1100	7/2			J^{π} : L(p,t)=0+2 from 9/2 ⁺ .
1760.27 13			J	
1768.07 8	3/2, 5/2		HIJ L	XREF: $H(17/4)I(17/4)$. $I^{\pi}: I({}^{3}He d) = 2$ at 1774.8
1802.32 8			J	J : L(110,0) - 2 at 177 + 0.
1822.55 10	‡		J	
1835.72 18	$1/2^{+}$		GH J	XREF: H(1831).
1865 36 21	_		1	J^{π} : L(³ He,d)=0 at 1831. I^{π} : M1 E2 α to $3/2^{-}$ $5/2^{-}$ level
1914.13 9]	\mathbf{J} . WI1, $\mathbf{L}\mathbf{Z}$ y to $\mathbf{J}_1\mathbf{Z}$, $\mathbf{J}_1\mathbf{Z}$ revel.
1920.81 9			J	
1937.94 9			J Q	
1947.04 9			L	
1999.15 12			J	
2032.76 21			J	
2039.72 13	$7/2^+, 9/2^+$		HI	J^{π} : L(³ He,d)=4.
2051.44 8			J	· //

Continued on next page (footnotes at end of table)

¹¹³In Levels (continued)

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	E(level) [@]	$J^{\pi \dagger}$	XREF	Comments
2070.14 3^{2} 7^{2} PQ E(level): from (p,l), possibly same as 2104 level. $L(p,l)=(3)$. 2045.41 7^{2} L^{2} P^{2} E(level): from (p,l), possibly same as 2104 level. 2120 level (d.d') could also correspond to 2104 or 2116 level. $L(p,l)=(3)$. 2118.35 R^{2} I^{2} : L^{3} I^{2} : L^{3} I^{2} : L^{3} 2118.35 R^{2} I^{2} I^{2} I^{2} I^{2} 2144.56 I^{2} I^{2} I^{2} I^{2} I^{2} 2153.70 I^{2} I^{2} I^{2} I^{2} I^{2} I^{2} 2180.8 I^{2} I^{2} I^{2} I^{2} I^{2} I^{2} I^{2} 2180.8 I^{2} I^{2} I^{2} I^{2} I^{2} I^{2} I^{2} I^{2} 2233.48 I^{2} I^{2	2064.04 21		J	
209694'PQEldevel): from (p,t), possibly same as 2104 level. L(p,t)=(3).209541 709(2^-,11/2^-12116111*: L(α_1)=5, 11/2^- preferred from shell-model syst.21180.35 18112144.45 711121451 701/2^+H2153 101/2^+H2164 9 10GL2170.32 13112180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412180.8412281.08 1712281.08 1712281.08 1712285.29 1312285.29 1312285.29 1312285.40 103/2*,5/2*H1*: L(³)2383.61 512383.61 512384.103/2*,5/2*H12384.103/2*,5/2*H1*: L(³)2384.103/2*,5/2*H12385.1112385.1612385.1612385.1612385.1612385.1612385.1612385.1612385.1612385.161 <td>2070.14 13</td> <td></td> <td>J</td> <td></td>	2070.14 13		J	
2005.11 7 $2104 \ loo \ 22^{-1}, 1/2^{-1}$ I $P^{+}: L(\alpha, 1) = 5, 11/2^{-1} \text{ preferred from shell-model syst.}$ 2118.35 /8 1 1 1 2138.35 /0 1/2^{+} H $P^{+}: L^{3}He, d) = 0.$ 214.45 01 /12^{+} H $P^{+}: L^{3}He, d) = 0.$ 2106 level, $L(p,t) = (3).$ 2170.32 /13 1 $P^{+}: L^{3}He, d) = 0.$ 2100 level, $L(p,t) = (3).$ 2180.8 /4 1 1 $P^{+}: L^{3}He, d) = 0.$ 2100 level, $L(p,t) = (3).$ 2180.8 /4 1 1 $P^{+}: L^{3}He, d) = 2.$ 2238 level with L=3 observed in (α, α') at 2170 which gives parity=(-). 2180.8 /4 1 1 $P^{+}: L^{3}He, d) = 2.$ 2238 level webset set set set set set set set set set	≈2094?		PQ	E(level): from (p,t), possibly same as 2104 level. $L(p,t)=(3)$.
2104 10 9/2 ⁻ ,11/2 ⁻ I J ² : $[(\alpha_i)-5, 11/2^-]$ preferred from shell-model syst. 21163 1 1 2118.35 18 1 1 2118.45 01 1 1 2118.45 01 1 1 2118.45 01 1 1 2118.05 18 1 1 213.10 1/2 ⁺ H F: L(³ He,d)=0. 2100.10 G LN P 2180.8 4 1 1 2180.8 4 1 1 2180.8 4 1 1 2180.8 4 1 1 2283.5 40 G L P 2284.8 10 G L P 2283.6 43 1 1 1 2284.8 10 32 ⁺ /2 ⁺ /2 ⁺ H 1 ⁺ 2284.8 10 32 ⁺ /2 ⁺ /2 ⁺ H 1 ⁺ 2284.10 32 ⁺ /2 ⁺ /2 ⁺ H 1 ⁺ 2285.2 1.3 1 1 1 2284.10 32 ⁺ /2 ⁺ /2 ⁺ H 1 ⁺ <	2095.41 7		J	
\mathbb{P} Eldevel): ron (p,l), possibly same as 2108 level, 2120 level (d,d') could 2118.35 /8 J 2143.56 /I J 2153 /0 1/2* 2163 /10 G 2170.32 /3 J 2183.26 /0 J 2180.8 /4 J 2183.26 /0 J 2183.26 /0 J 2183.26 /0 J 2233.46 /3 (15/2-) 2233.46 /3 (15/2-) 2235.44 /3 J 2283.54 /3 172* PQ Eldevel): 2283 level seems different from 2298 level because γ to 13/2* 1mits J [#] to 9/2*. J 2285.27 /3 J 2285 /0 3/2* 5/2* H J*: L(3 He,d)=2. 2371.66 /1 J 2375 /1 /3 J 2383.86 /15 J	2104 10	9/2-,11/2-	I	J^{π} : L(α ,t)=5, 11/2 ⁻ preferred from shell-model syst.
2118.35 1836 1836 1836 1836 1116	≈2116?		L P	E(level): from (p,t), possibly same as 2104 level, 2120 level (d,d') could also assume that 2104 or 2116 level $L(r,t)$ (2)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2118 35 18		1	also correspond to 2104 of 2110 level, $L(p,t)=(5)$.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2144.56 11		j	
2164.9 10 G LM P E(level): a level with L=3 observed in (α, α') at 2170 which gives parity=(-). 2170.32 13 J J J J J 2180.26 10 J J J J J 2180.26 10 J J J J J 2183.26 10 G L P S J*: L(³ He,d)=2. 2234.8 10 G L P S J*: L(³ He,d)=2. 2235.4 4 J J PQ J Z 2283.5 3 17/2* FG L E(level): 2283 level seems different from 2298 level because γ to 13/2* 2298.10 J/2*,5/2* H J*: L(³ He,d)=2. Z 2331.48 17 J J J*: L(³ He,d)=2. Z 2340.00 J2*,5/2* H J*: L(³ He,d)=2. Z 2371.68 17 J J J Z 2380.00* 4 15/2* F J*: L(³ He,d)=2. Z 2380.00* 4 15/2* F L Q 2380.00* 4 15/2* F S	2153 10	$1/2^{+}$	Н	J^{π} : L(³ He.d)=0.
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2164.9 10	-/-	G LM P	E(level): a level with L=3 observed in (α, α') at 2170 which gives
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				parity=(-).
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2170.32 13		J	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2180.8 4		J	
190 10 $3/2$, $3/2$ $3/2$ $3/2$ $3/2$ $3/2$ 2224.8 10 G L P J^{r} : (E1) γ to $13/2^{+}$ and systematics. 2253.4 4 J PQ J^{r} : (E1) γ to $13/2^{+}$ and systematics. 2253.4 3 $17/2^{+}$ FG L $E(evel)$: 2283 level seems different from 2298 level because γ to $13/2^{+}$ 2285.0 3 $17/2^{+}$ FG L $E(evel)$: 2283 level seems different from 2298 level because γ to $13/2^{+}$ 2295.29 13 J J J J J 2395.16 J J J J J 2346 (D) $3/2^{+}$, $5/2^{+}$ H J^{r} : $L(3^{+}He, d)=2$. J 2371.68 11 J J J J J 2378,22 14 J J J J J J 2383.86 15 J J J J J J J J 2383.86 15 J	2183.26 10	210+510+	J	π , μ (311-4) 2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2190 10	5/2, 5/2	н	$J^{*}: L(^{*}He, d) = 2.$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2233.6^{a} 3	$(15/2^{-})$	F S	I^{π} : (E1) γ to $13/2^+$ and systematics.
2281.08 17 J 2283.5 3 17/2* FG L E(level): 2283 level seems different from 2298 level because γ to 13/2* 2295.29 13 J J Imits J ^π to 9/2*. 2298.10 3/2*,5/2* H J*: L(³ He,d)=2. 233.28 21 J J 233.951 16 J J 2346 10 3/2*,5/2* H J*: L(³ He,d)=2. 2371.68 11 J O J ^π : L(³ He,d)=2. 2378.20 14 J J T: L(³ He,d)=2. 2378.21 14 J J Z380.01 kd (J') could be 2376, 2391, or 2396 level. 2389.01 ⁶ 4 15/2 ⁺ F Z380.01 kd (J') could be 2376, 2391, or 2396 level. 2389.01 ⁶ 4 15/2 ⁺ F Z 2396.94 ⁴ (17/2 ⁻) F S 2447.53 20 G J J 2550.61 7 J J J 2550.66 12 J J J 2560.64 22 J J Z 2783.88 10 J Z Z 2783.88 10 J Z Z<	2253.44 9	(10/2)	J PQ	
2285.5 3 $17/2^+$ FG L E(level): 2283 level seems different from 2298 level because γ to $13/2^+$ 2295.29 13 J J J 2295.29 13 J J 2331.28 21 J J 2346 10 $3/2^+,5/2^+$ H J*: L(^3He,d)=2. 2371.68 11 J J J 2376 10 $9/2^-,11/2^-$ I J*: L(^3He,d)=2. 2378.61 /r J J J 2389.076 4 J J J*: L(^3He,d)=2. 2378.22 14 J J J*: L(a,t)=5, 11/2^- preferred from shell-model syst. 2378.076 4 J J J*: L(^3He,d)=2. 2378.076 4 J/2+ F E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 2389.076 4 J J S E(level): Possible decays to 2395, 2232 and 1688 levels. 2396.976 4 J J S E(level): Possible decays to 2395, 2232 and 1688 levels. 2390.976 /r J J J S 2340.475 F L Q E(level): from (p,\alpha). 2557.06 17	2281.08 17		J	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2283.5 <i>3</i>	17/2+	FG L	E(level): 2283 level seems different from 2298 level because γ to $13/2^+$
2298.10 $3/2^{+},5/2^{+}$ H $J^{+}: L(^{3}He,d)=2.$ 2331.28 21 J 2335.116 J 2346 10 $3/2^{+},5/2^{+}$ H $J^{-}: L(^{3}He,d)=2.$ 2371.68 11 J 2376.70 $9/2^{-},11/2^{-}$ I $J^{+}: L(\alpha,t)=5, 11/2^{-}$ preferred from shell-model syst. E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level.2378.22 14 J 2383.86 15 J 2389.07.42 4 $15/2^{+}$ Z^{+} 2391? 10 $3/2^{+},5/2^{+}$ Z^{+} 2391? $7^{+}: L(^{3}He,d)=2.$ Z^{+} 2396.15'C $15/2^{-}$ Z^{+} 2396.15'C S 2442.4.5 F L Z^{+} 2396.16'C $15/2^{-}$ Z^{+} 2396.15'C S 2442.4.5 F L Z^{+} 2357.06 17 Z^{+} 2357.06 17 Z^{+} 2557.06 $I7$ Z^{+} 2365.5 Q Z^{+} 203.5'C I Z^{+} 236.5'C Q Z^{+} 244.2 Z^{+} $Z^$	2205 20 12		1	limits J^{π} to $9/2^+$.
229 10 32 2, 3/2 i j 2331 28 21 j j 2335 11 6 j 2371.68 11 j 2376 10 9/2 ⁺ ,1/2 ⁻⁺ I 2378.22 14 j 2389.07 & 4 15/2 ⁺ 23912 10 3/2 ⁺ ,5/2 ⁺ X+2396.15 ^C (15/2 ⁻) S E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 2389.07 & 4 15/2 ⁺ X+2396.15 ^C (15/2 ⁻) S E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 23912 10 3/2 ⁺ ,5/2 ⁺ H y J [*] : L(a,t)=5, 11/2 ⁻ preferred from shell-model syst. 2360.9 ⁴ (17/2 ⁻) F S E(level): from (p,a). 2540 15 J 2559 10 9/2 ⁻ ,11/2 ⁻ J J [*] : L(a,t)=5, 11/2 ⁻ preferred from shell-model syst. 2560.64 22 J 2783.88 10 J 2783.88 10 J	2295.29 15	2/2+ 5/2+	J	$\pi_{1} I(^{3}H_{2}d) - 2$
2339.51 <i>I6</i> J 2339.51 <i>I6</i> J 2346 <i>I0</i> $3/2^+, 5/2^+$ H J [#] : L(³ He,d)=2. 2371.68 <i>I1</i> J 0 2376 <i>I0</i> $9/2^-, 11/2^-$ I J [#] : L(α, t)=5, 11/2 ⁻ preferred from shell-model syst. 2378.22 <i>I4</i> J J 2383.86 <i>I5</i> J 2383.86 <i>I5</i> J J Z 2389.0? ^{&} 4 15/2 ⁺ F E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 2383.86 <i>I5</i> J Z Z Z 2390.9 ^{&} 4 15/2 ⁺ F E(level): Possible decays to 2395, 2232 and 1688 levels. 2396.9 ^a 4 (17/2 ⁻) F S E(level): Possible decays to 2395, 2232 and 1688 levels. 2395.10 9/2 ⁻ , 11/2 ⁻ F L Q 2550.617 J J J [#] : L(α, t)=5, 11/2 ⁻ preferred from shell-model syst. 2560.64 22 J J Z Z 2586 5 Q E(level): from (p, α). E 2669.6 [*] 3 17/2 ⁺ F Z 2788.8 <i>I0</i> J J J<	2298 10	5/2 ,5/2	п 1	J^{*} . L(He,u)=2.
2346 10 $3/2^+, 5/2^+$ H J [#] : L(³ He,d)=2. 2371.68 11 J 0 2376 10 $9/2^-, 11/2^-$ I J [#] : L(α, t)=5, $11/2^-$ preferred from shell-model syst. 2378.22 14 J Elevel): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 2378.22 14 J J 2388.36 15 J J 2389.0% 4 15/2 ⁺ F 2390.9% 4 15/2 ⁺ F 2396.9% 4 (17/2 ⁻) F S 2442.4 5 F L Q 2475.33 20 G J J [#] : L(α, t)=5, 11/2 ⁻ preferred from shell-model syst. 2550.64 22 J J J [#] : L(α, t)=5, 11/2 ⁻ preferred from shell-model syst. 2560.64 22 J V E(level): from (p, α). 2564.14 FG G 2664.7 ^m 4 (19/2 ⁻) FG 2664.7 ^m 4 J J 2785.8 4 FG G 2783.8 10 J J 2783.8 10 J J 2785.4 4 FG S	2339.51 16		1	
2371.68 1110 $J^{\pi}: L(\alpha,t) = 5, 11/2^{-}$ preferred from shell-model syst. E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level.2378.22 14J2383.86 15J2383.86 15J2389.07% 415/2+FF23917 103/2+ 5/2+HX+2396.15°(15/2-)SE(level): Possible decays to 2395, 2232 and 1688 levels.2396.9"42475.33 20GGJ2557.06 17J2559 109/2-,11/2-IJ ^{\pi} : L(α,t)=5, 11/2 ⁻ preferred from shell-model syst.2560.64 22J2559 109/2-,11/2-IJ ^{\pi} : L(α,t)=5, 11/2 ⁻ preferred from shell-model syst.2560.64 22J2669.6" 317/2+FS2783.8 10J2783.8 10J2783.8 4FG2880.9 5F2880.9 5F280.9 5'J280.9 5'J2904.85 25'J	2346 10	$3/2^+.5/2^+$	Н	J^{π} : L(³ He.d)=2.
2376 10 9/2 ⁻ ,11/2 ⁻ I J [#] : L(α ,t)=5, 11/2 ⁻ preferred from shell-model syst. E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 2378,22 14 J 2383,86 15 J 2389,07 ^{& 4} 15/2 ⁺ F 2391,10 3/2 ⁺ ,5/2 ⁺ H J [#] : L(³ He,d)=2. x+2396,15 ^C (15/2 ⁻) F S 2396,9 ^d 4 (17/2 ⁻) F S 2442,4 5 F L Q 2475,33 20 G J H J [#] : L(α ,t)=5, 11/2 ⁻ preferred from shell-model syst. 2550,10 7 J J J J 2559,10 9/2 ⁻ ,11/2 ⁻ J J [#] : L(α ,t)=5, 11/2 ⁻ preferred from shell-model syst. 2560,64 22 J J J J 2586 5 Q E(level): from (p, α). E(level): from (p, α). 2665,0 4 J J J 2783,88 10 J J J 2783,84 FG S S 2880,9 5 F S S 2880,9 5 F S </td <td>2371.68 11</td> <td>-1)-1</td> <td>JO</td> <td></td>	2371.68 11	-1)-1	JO	
E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level. 2378, 22 14 J 2383, 86 15 J 2389, 07 ^{& 4} 4 15/2 ⁺ F 23917 10 3/2 ⁺ , 5/2 ⁺ H J ^{π} : L(³ He,d)=2. x+2396, 5 ^G (15/2 ⁻) F S 2442, 4 5 F L Q 2475, 33 20 G J M 2540 15 L 2557, 06 17 J 2557, 06 17 J 2557, 06 17 J 2558 5 Q E(level): from (p, α). 2568, 64 22 J 2586 5 Q E(level): from (p, α). 2664, 1 ^G 4 (19/2 ⁻) FG 2665, 0 ⁴ J 2669, 6 ^G 3 17/2 ⁺ F 2778, 84 PG 2785, 84 FG 2880, 95 F S 2400, 15 F S 2800, 95 F S 2800, 95 F S 2904, 85 25 J	2376 10	9/2-,11/2-	I	J^{π} : L(α ,t)=5, 11/2 ⁻ preferred from shell-model syst.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0078 00 14			E(level): a 2380 level (d,d') could be 2376, 2391, or 2396 level.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	23/8.22 14		J	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2385.8015	15/2+	J F	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2309.01 4	$\frac{13/2}{3/2+5/2+}$	r u	I^{π} : I (³ He d)-2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$x + 2396 15^{\circ}$	$(15/2^{-})$	n S	F(level): Possible decays to 2395 2232 and 1688 levels
2442.45 F L Q 2475.3320 G J M 2515.63 J L 2557.0617 J J 255910 $9/2^-, 11/2^-$ I J ^{π} : L(α ,t)=5, 11/2 ⁻ preferred from shell-model syst. 2560.6422 J Z E(level): from (p, α). 2654.14 FG E(level): from (p, α). 2664.7^44 ($19/2^-$) FG $2666.6^{e}3$ $17/2^+$ F 2783.8810 J J 2785.84 FG S 2880.95 F S 2880.95 F S 2904.8525 J S	2396.9 ^{<i>a</i>} 4	$(17/2^{-})$	F S	<i>E</i> (10701). Possible decays to 2000, 2202 and 1000 fereis.
2475.33 20 G J 2515.6 3 J 2540 15 L 2557.06 17 J 2559 10 9/2 ⁻ ,11/2 ⁻ I 2560.64 22 J 2586 5 Q 2664.14 FG 2665.04 J 2665.04 J 2665.04 J 2665.04 J 2783.88 10 J 2783.84 FG 2880.9 5 F 2880.9 5 F 2904.85 25 J	2442.4 5	(FLQ	
2515.6 3 J 2540 15 L 2557.06 17 J 2559 10 9/2 ⁻ ,11/2 ⁻ I 2560.64 22 J 2586 5 Q 2664.1 4 FG 2665.0 4 J 2665.0 4 J 2669.6 ^e 3 17/2 ⁺ F Z728.04 22 J J 2785.8 4 FG 2880.9 5 F x+2903.9 ^c 11 (19/2 ⁻) S 2904.85 25	2475.33 20		GJM	
2540 15L2557.06 17J2559 10 $9/2^-, 11/2^-$ I $2560.64 22$ J2586 5Q2654.1 4FG2665.0 4J2679.6 ⁶ 3 $17/2^+$ 2728.04 22J2785.8 4FG2785.8 4FG2809.9 5Fx+2903.9 ^c 11 $(19/2^-)$ 2904.85 25J	2515.6 3		J	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2540 15		L	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2557.00 17	$0/2^{-}$ 11/2 ⁻	J	I^{π} : I (α t) = 5. 11/2 ⁻ preferred from shall model sust
25865 Q E(level): from (p, α). 2654.14 FG 2664.7^{a} (19/2 ⁻) 2665.04 J 2669.6^{e} 3 2783.810 J 2785.84 FG 2880.95 F $x+2903.9^{c}$ I 2904.8525 J	2559 10	9/2 ,11/2	1	J . $\mathbf{L}(a,t)=\mathbf{J}, 11/2$ preferred from shell-model syst.
2654.14 FG $2664.7^{a} 4$ $(19/2^{-})$ 2665.04 J $2669.6^{e} 3$ $17/2^{+}$ $2783.88 10$ J $2785.8 4$ FG $2854.4^{a} 4$ $(21/2^{-})$ FG S $2880.9 5$ F $x + 2903.9^{c} 11$ $(19/2^{-})$ $2904.85 25$ J	2586 5		Q	E(level): from (p,α) .
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2654.1 4		FG	
$2665.0 4$ J $2669.6^e 3$ $17/2^+$ F $2728.04 22$ J $2783.88 10$ J $2785.8 4$ FG $2854.4^a 4$ (21/2 ⁻) F F $2880.9 5$ F $x+2903.9^c 11$ (19/2 ⁻) $2904.85 25$ J	2664.7 ^{<i>a</i>} 4	(19/2 ⁻)	FG	
$2669.6^{\circ}.3$ $1//2^{\circ}$ F $2728.04.22$ J $2783.88.10$ J $2785.8.4$ FG $2854.4^{\circ}.4$ ($21/2^{\circ}$) FG S $2880.9.5$ F $x+2903.9^{\circ}.11$ ($19/2^{\circ}$) $2904.85.25$ J	2665.0 4	15/0+	J	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2669.6° 3	$17/2^{+}$	F	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2720.04 22		J 1	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2785.8 4		FG	
2880.9 5 F x+2903.9 ^c 11 (19/2 ⁻) 2904.85 25 J	2854.4 ^{<i>a</i>} 4	$(21/2^{-})$	FG S	
x+2903.9 ^c 11 (19/2 ⁻) S 2904.85 25 J	2880.9 5	· · /	F	
2904.85 25 J	x+2903.9 ^c 11	(19/2-)	S	
	2904.85 25		J	

¹¹³In Levels (continued)

E(level) [@]	$J^{\pi \dagger}$	XREF		Comments
3023.9 ^{<i>a</i>} 5 3051.1 5	(23/2 ⁻)	FG F	S	
3071.5 ^b 3	$(19/2^+)$	F	S	
3120.1 <mark>b</mark> 10	$(21/2^+)$		S	
3192.2 ^{&} 5	19/2+	F		
3211.9 <mark>b</mark> 11	$(23/2^+)$	F	S	
3250.2 5		F		
3280.7 ^{<i>a</i>} 6	$(25/2^{-})$	F	S	
3305.8 5		F		
3330.8 J	(25/2+)	r		
3393.2° 11 x+3476.0 [°] 15	$(23/2^{-})$ $(23/2^{-})$	F	5 5	
3599.0 5	(23/2)	F	5	
3786.0 ^b 11	$(27/2^{+})$	F	S	
3867.4 6	(=//=)	F		
3965.1 <mark>&</mark> 6	$23/2^{+}$	F	S	
3973.0 ^a 6	$(27/2^{-})$	F	S	
x+4172.0 [°] 18	$(27/2^{-})$		S	
4375.4 ^b 11	$(29/2^+)$	F	S	
4430.7 6	$(27/2^{-})$	F		
4432.20	27/2+	F		
$4602.9^{\circ\circ}$ 0 4715.4° 6	$\frac{21}{2}$	r F	5	
4799.3 6	(29/2)	F	5	
x+4990.0 ^c 20	$(31/2^{-})$		S	
5060.1 ^b 11	$(31/2^+)$	F	S	
5125.3 6	-	F		J^{π} : M1+E2 γ to (29/2 ⁻).
5310.9 ^{&} 12	$(31/2^+)$		S	
5392.3 ^{<i>a</i>} 6	$(31/2^{-})$	F	S	
5447.07		1		
5788 3 ^b 12	$(33/2^{+})$	r F	c	
$x+5918.0^{\circ}23$	$(35/2^{-})$	F	S	
6226.9 ^{&} 16	$(35/2^+)$		S	
6346.3 ^b 15	$35/2^{(+)}$		S	
x+6946.7 ^c 21	$(39/2^{-})$	F	S	
7287.9 ^{&} 18	$(39/2^+)$		S	
x+8068 ^c 3	$(43/2^{-})$		S	
8434.9 21	$(43/2^+)$		S	
x+9280 ^c 3	$(47/2^{-})$		S	
$x + 105/4^{\circ} 3$ $x + 11060^{\circ} 3$	(51/2)		5	
12883	(33/2)		R	IAS of $1/2^{+113}$ Cd g s.
13190			R	IAS of 299-keV, $(3/2^+)$ ¹¹³ Cd excitation.
13427			R	IAS of 584-keV, $5/2^{+113}$ Cd excitation.
13541			R	IAS of 681-keV, $(3/2^+)^{113}$ Cd excitation.
13748			R	IAS of 884-keV, $1/2^+$ ¹¹³ Cd excitation.
13867			R	IAS of 988-keV, $1/2^{+113}$ Cd excitation.
14074			R	

$^{113}_{49}\mathrm{In}_{64}\text{-}5$

Adopted Levels, Gammas (continued)

E(level) [@]	XREF	E(level) [@]	XREF	E(level) [@]	XREF
14389	R	15639	R	16344?	R
14488	R	15684?	R	16503?	R
14683?	R	15758	R	16597	R
15043	R	15801?	R	y ^{#d}	S
15096?	R	15880?	R	y+474 d	S
15141	R	15934?	R	y+814 d	S
15335?	R	15971?	R	y+1193 d	S
15476	R	16038	R	y+1555 ^d	S
15518	R	16146	R		
15610?	R	16236	R		

¹¹³In Levels (continued)

[†] J for levels greater than 13738 were not adopted because most of these levels are questionable, see ${}^{112}Cd(p,p)$ IAR. J^{π} without comments are tentative and based on γ multipolarities and band consideration.

[±] $J^{\pi} = 1/2^+$ from L(³He,d)=0 for E=1831 5.

[#] From level scheme of figure 1 in 2005Na37, $y \approx 6$ MeV.

[@] From least-squares fit to γ energies.

[&] Band(A): $\Delta J=2$ intruder rotational band. Configuration= $\pi(g_{7/2}, d_{5/2}) \otimes \pi g_{9/2}^{-2} \otimes v h_{11/2}^2$.

^{*a*} Band(B): Dipole magnetic-rotational band 1.

^b Band(C): Dipole magnetic-rotational band 2.

^c Band(D): $\Delta J=2$ intruder rotational band. Configuration= $\pi h_{11/2} \otimes \pi g_{9/2}^{-2} \otimes \nu h_{11/2}^2$, at higher frequencies small alignment due to $g_{9/2}$ protons may be involved.

^d Band(E): γ sequence.

^e Band(F): γ sequence.

					Adopt	ed Levels, Gan	nmas (conti	inued)	
						γ (¹¹³ I	n)		
E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	\mathbf{E}_{f}	\mathbf{J}_f^{π}	Mult. [#]	δ	α	Comments
391.699	1/2-	391.698 <i>3</i>	100	0.0	9/2+	M4		0.551	$\begin{aligned} &\alpha(K) = 0.444 \ 7; \ \alpha(L) = 0.0862 \ 12; \ \alpha(M) = 0.01750 \ 25; \\ &\alpha(N) = 0.00316 \ 5; \ \alpha(O) = 0.000194 \ 3 \\ &\alpha(N+) = 0.00335 \ 5 \\ &B(M4)(W.u.) = 8.31 \ 9 \\ &Mult., E_{\gamma}: \ from \ ^{113}In \ IT \ decay. \ A \ weak \ E5 \\ &admixture \ could \ not \ be \ excluded \ from \ \alpha(K) exp \end{aligned}$
646.830	3/2-	255.134 10	100 3	391.699	1/2-	M1+E2	0.7 6	0.046 6	(1985HaZA), not adopted. $\alpha(K)=0.039 5; \alpha(L)=0.0054 11; \alpha(M)=0.00105 22;$ $\alpha(N)=0.00019 4; \alpha(O)=1.27\times10^{-5} 14$ $\alpha(N+)=0.00020 4$ Mult.,E _y : from ¹¹³ In IT decay. δ : from ¹¹³ Sn ε decay (115.09 d).
1024.28	5/2+	646.830 <i>10</i> 377.59 <i>10</i>	0.00018 9 10.3 5	0.0 646.830	9/2+ 3/2-	[E3] [E1]		0.00865 <i>13</i> 0.00449 <i>7</i>	Mult., E_{γ} : from ¹¹³ Sn IT decay. B(E1)(W.u.)=0.000139 <i>14</i>
1029.65	1/2+,3/2+	1024.30 <i>10</i> 382.90 <i>8</i> 638.03 <i>8</i>	100.0 7 6.7 3 100 3	0.0 646.830 391.699	9/2+ 3/2 ⁻ 1/2 ⁻	E2 ^{cc} [E1] E1 [@]		0.00433 6	B(E2)(W.u.)= $3.9.4$ B(E1)(W.u.)= $9.8 \times 10^{-7} 11$ B(E1)(W.u.)= $3.2 \times 10^{-6} 4$ Mult.: from ¹¹³ Cd(p,n γ).
1063.93	3/2+	416.9 <i>1</i>	2.0 5	646.830	3/2-	@			E_{γ} : from \cdots Sn 11 decay.
	- 1	672.4 2	100 5	391.699	1/2-	E1 [@]			$B(E1)(W.u.)=1.61\times10^{-6}$ 14
1106.46	3/2-,5/2-	459.8 2	11.0 10	646.830	3/2-	M1,E2 [@]		0.00893 13	
1131.48	5/2+	714.9 2 107.21 20	100 5 1.32 20	391.699 1024.28	1/2 ⁻ 5/2 ⁺	M1,E2 [@] [M1,E2]		0.00289 22 0.8 4	α (K)=0.6 3; α (L)=0.14 10; α (M)=0.029 20; α (N)=0.005 4; α (O)=0.00022 10; α (N+)=0.005 4
		484.90 10	16.5 <i>3</i>	646.830	3/2-	E1(+M2) ^{&}	-0.03 5	0.00245 14	B(E1)(W.u.)=(0.00037 3); B(M2)(W.u.)=(6 +22-6) δ : from B(E2) (see Coul. ex.) and T _{1/2 1/2} .
		1131.5 <i>I</i>	100.0 6	0.0	9/2+	E2 ^{&}			B(E2)(W.u.)=8.2 6
1173.06	11/2+	1173.1 <i>1</i>	100	0.0	9/2+	M1+E2 [@]	0.47 5		B(E2)(W.u.)=24 5; B(M1)(W.u.)=0.186 20 δ : from B(E2) (see Coul. ex.) and T _{1/2 1/2} .
1191.12	7/2+	167.1 3	2.2 4	1024.28	5/2+	M1(+E2)@	<0.89	0.15 3	$\alpha(K)=0.128$ 22; $\alpha(L)=0.019$ 6; $\alpha(M)=0.0037$ 12; $\alpha(N)=0.00067$ 20; $\alpha(O)=4.2\times10^{-5}$ 7 $\alpha(N+)=0.00071$ 21 δ : from Coul. ex.
		1191.1 <i>1</i>	100 4	0.0	9/2+	M1,E2 [@]		0.00091 8	
1344.89	13/2+	171.4 7	2.14 10	1173.06	11/2+	M1+E2 ^{&}	+0.03 3	0.1147 21	α (K)=0.0994 <i>18</i> ; α (L)=0.01243 <i>24</i> ; α (M)=0.00241 5; α (N)=0.000442 <i>9</i> ; α (O)=3.27×10 ⁻⁵ <i>6</i>

From ENSDF

 $^{113}_{49}\mathrm{In}_{64}\text{-}6$

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						,		<u> </u>
						$\gamma(^{113}\text{In})$ (con	tinued)	
E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	J_f^π	Mult. [#]	α	Comments
								α (N+)=0.000475 9 B(E2)(W,u,)=7 +14-7; B(M1)(W,u,)=0.28 3
1344.89 1351.01	13/2+	1344.89 <i>10</i> 1351.0 2	100 <i>2</i> 100	$\begin{array}{c} 0.0\\ 0.0\end{array}$	9/2 ⁺ 9/2 ⁺	E2 ^{&}		B(E2)(W.u.)=11.7 <i>12</i>
1380.79	1/2 ⁻ ,3/2 ⁻ ,5/2 ⁻	316.7 <i>I</i> 351.4 <i>I</i> 734.1 2 989.0 <i>I</i>	77 4 100 5 12.3 18 36.8 18	1063.93 1029.65 646.830 391.699	3/2 ⁺ 1/2 ⁺ ,3/2 ⁺ 3/2 ⁻ 1/2 ⁻ 0/2 ⁺	E1 [@]	0.00539 8	
1453.0 1471.93 1496.39	3/2 ⁻ ,5/2 ⁻ ,7/2 ⁻	1453.0 3 825.01 10 1080.1 2 472.1 1	$ \begin{array}{r} 100 \\ 100 \\ 45 \\ 45 \\ 4 \\ 100 \\ 5 \\ 10 \\ 0 \\ 25 \\ \end{array} $	0.0 646.830 391.699 1024.28	$3/2^{-}$ $1/2^{-}$ $5/2^{+}$ $0/2^{+}$	M1,E2 [@]	0.00206 18	
1504.0 1509.01	7/2+,9/2+	1496.4 <i>1</i> 1504.0 <i>5</i> 377.8 <i>10</i> 1509.04 <i>19</i>	10.0 25 100 7 3 100 3	0.0 0.0 1131.48 0.0	9/2 ⁺ 9/2 ⁺ 5/2 ⁺ 9/2 ⁺			
1535.96	1/2 ⁻ ,3/2 ⁻ ,5/2 ⁻	345.0 <i>3</i> 429.5 <i>2</i> 472.1 <i>1</i>	15.0 25 15.0 25 100 5	1191.12 1106.46 1063.93	7/2 ⁺ 3/2 ⁻ ,5/2 ⁻ 3/2 ⁺	E1 [@]	0.00259 4	
		889.3 <i>10</i> 1144.5 <i>4</i>	17.5 25	646.830 391.699	3/2 ⁻ 1/2 ⁻	M1,E2 [@]	0.00099 9	
1552.0 1567.05	7/2+,9/2+	1552.0 <i>4</i> 394.0 <i>5</i> 1567 0 <i>1</i>	100 14.2 <i>10</i> 100 <i>1</i>	0.0 1173.06 0.0	9/2+ 11/2+ 9/2+	[M1,E2] [M1 E2]	0.0137 7	
1569.58	-	922.71 <i>10</i>	100 6	646.830 301.600	$3/2^{-}$ $1/2^{-}$	M1,E2 [@]	0.00159 14	
1618.95		972.1 <i>I</i> 1619.0 2	22 2 100 10	646.830 0.0	$3/2^{-}$ $9/2^{+}$			
1630.57	(7/2 ⁺ ,9/2 ⁺)	457.7 2 606.4 3 1630.5 1	35 6 76 5 100 4	1173.06 1024.28 0.0	11/2 ⁺ 5/2 ⁺ 9/2 ⁺			
1675.49		544.0 <i>1</i> 651.1 <i>3</i> 1675.5 <i>1</i>	30.1 <i>14</i> 8.2 <i>14</i> 100 <i>6</i>	1131.48 1024.28 0.0	5/2 ⁺ 5/2 ⁺ 9/2 ⁺			
1684.17		1037.6 1	100	646.830	3/2-	@		
1688.62 1707.38	11/2+ +	497.5 2 576.0 1	100 81 6	1191.12 1131.48	$7/2^+$ $5/2^+$ $1/2^+$ $2/2^+$	E2 [@] M1,E2 [@]	0.00712 <i>10</i> 0.00494 <i>24</i>	
		0/1.5 J 683 2 2	44 <i>3</i> 100 6	1029.65	1/2 ⁺ ,3/2 ⁺	_ м1 ер@	0.00202.22	

From ENSDF

 $^{113}_{49} \mathrm{In}_{64}$ -7

$\gamma(^{113}$ In) (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	\mathbf{E}_{f}	\mathbf{J}_{f}^{π}	Mult. [#]	α
1707.38	+	1060.4 10		646.830	3/2-		
		1315.3 2	25 <i>3</i>	391.699	$1/2^{-}$		
1760.27		587.2 1	100	1173.06	$11/2^+$		
1768.07	$3/2^+, 5/2^+$	738.4 1	19.6 <i>18</i>	1029.65	$1/2^+, 3/2^+$		
	1 7 1	743.8 <i>1</i>	100 5	1024.28	5/2+		
1802.32		266.8 2	15.4 19	1535.96	1/2-,3/2-,5/2-		
		330.2 2	3.8 19	1471.93	3/2-,5/2-,7/2-		
		696.0 2	30.8 19	1106.46	3/2-,5/2-		
		1155.5 4	5.8 19	646.830	3/2-		
		1802.2 <i>1</i>	100 6	0.0	9/2+		
1822.55		792.9 <i>1</i>	100 4	1029.65	$1/2^+, 3/2^+$		
		1430.8 2	6.7 22	391.699	$1/2^{-}$		
1835.72	$1/2^{+}$	160.3 4	17 4	1675.49			
		326.7 1	100 4	1509.01	7/2+,9/2+		
1865.36	-	758.9 2	100	1106.46	3/2-,5/2-	M1,E2 [@]	0.00251 20
1914.13		347.0 <i>3</i>	2.9 19	1567.05	$7/2^+, 9/2^+$		
		782.9 2	8.6 10	1131.48	$5/2^{+}$		
		889.8 <i>1</i>	100 5	1024.28	5/2+		
1920.81		789.3 2	21.7 22	1131.48	5/2+		
		856.6 2	34.8 22	1063.93	3/2+		
		896.6 <i>1</i>	100 4	1024.28	5/2+		
1937.94		831.3 8	3.1 15	1106.46	3/2-,5/2-		
		1291.1 <i>1</i>	100 6	646.830	3/2-		
		1546.3 <i>3</i>	12.3 15	391.699	1/2-		
1947.64		841.2 5	33 4	1106.46	3/2-,5/2-		
		1300.8 <i>1</i>	100 7	646.830	3/2-		
		1555.9 <i>3</i>	15 4	391.699	1/2-		
1999.15		291.8 <i>1</i>	100 7	1707.38	+		
		808.0 <i>3</i>	36 7	1191.12	7/2+		
		1352.0 4	29 7	646.830	3/2-		
2032.76		1003.1 2	100	1029.65	$1/2^+, 3/2^+$		
2039.72		848.6 <i>1</i>	100	1191.12	7/2+		
2051.44		945.0 <i>1</i>	100 8	1106.46	3/2-,5/2-		
		2051.4 1	33 8	0.0	9/2+		
2064.04		1000.1 2	100	1063.93	3/2+		
2070.14		598.1 2	100 5	1471.93	3/2-,5/2-,7/2-		
		689.5 2	18.9 <i>13</i>	1380.79	1/2-,3/2-,5/2-		
		1040.5 5	6.8 14	1029.65	$1/2^+, 3/2^+$		
		1423.2 3	8.1 14	646.830	3/2-		
2095.41		388.1 3	83	1707.38	Ŧ		
		411.5 <i>1</i>	39 <i>3</i>	1684.17			

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 $^{113}_{49}\mathrm{In}_{64}\text{-}8$

$\gamma(^{113}$ In) (continued)

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E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	\mathbf{E}_{f}	\mathbf{J}_f^{π}	Mult. [#]	α
2095.41		528.1 3	14 3	1567.05	7/2+,9/2+		
		963.7 2	42 6	1131.48	5/2+		
		2095.2 1	100 6	0.0	$9/2^+$		
2118.35		548.7 2	9.5 16	1569.58	_		
		609.5 <i>3</i>	100 6	1509.01	$7/2^+, 9/2^+$		
2144.56		1114.9 <i>1</i>	100	1029.65	$1/2^+, 3/2^+$		
2164.9		991.8	100	1173.06	$11/2^{+}$		
2170.32		979.2 1	100	1191.12	$7/2^+$		
2180.8		835.9 4	100	1344.89	$13/2^+$		
2183.26		613.3 2	24 6	1569.58	_ ′		
		711.0 3	18 6	1471.93	3/2-,5/2-,7/2-		
		1052.1 2	100 6	1131.48	5/2+		
		1076.5 <i>3</i>	47 6	1106.46	3/2-,5/2-		
		1159.5 2	53 6	1024.28	5/2+		
		1536.0 <i>3</i>	88 6	646.830	3/2-		
2224.8		1051.7	100	1173.06	$11/2^+$		
2233.6	$(15/2^{-})$	888.7 <i>3</i>	100	1344.89	$13/2^{+}$	(E1)	
2253.44		1147.1 <i>4</i>	17 4	1106.46	$3/2^{-}, 5/2^{-}$		
		1606.6 <i>1</i>	91 4	646.830	3/2-		
		1861.7 2	100 9	391.699	$1/2^{-}$		
2281.08		1149.8 <i>3</i>	199	1131.48	5/2+		
		1256.7 2	100 6	1024.28	5/2+		
2283.5	$17/2^{+}$	938.7 <i>3</i>	100	1344.89	$13/2^+$	E2	
2295.29	,	1164.3 <i>3</i>	60 10	1131.48	$5/2^+$		
		1648.6 2	100 10	646.830	3/2-		
		1903.2 2	90 10	391.699	$1/2^{-}$		
2331.28		1307.0 2	100	1024.28	5/2+		
2339.51		1233.1 2	100 5	1106.46	3/2-,5/2-		
		1692.6 <i>3</i>	36 5	646.830	3/2-		
		1947.6 5	18 5	391.699	$1/2^{-}$		
2371.68		1347.4 <i>1</i>	100	1024.28	5/2+		
2378.22		759.3 2	100 12	1618.95			
		1271.9 2	56 4	1106.46	$3/2^{-}, 5/2^{-}$		
		1731.0 <i>3</i>	32 4	646.830	3/2-		
2383.86		1359.6 2	42 7	1024.28	5/2+		
		1737.0 <i>3</i>	14 7	646.830	3/2-		
		1992.1 <i>3</i>	100 7	391.699	$1/2^{-}$		
2389.0?	$15/2^{+}$	700.4 <i>3</i>	100	1688.62	$11/2^{+}$	E2	0.00282 4
2396.9	$(17/2^{-})$	163.3 <i>3</i>	100	2233.6	$(15/2^{-})$		
2442.4	/	1097.9	100	1344.89	$13/2^{+}$		
2475.33		1451.0 2	100 8	1024.28	5/2+		
		2476.3 10		0.0	9/2+		

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¹¹³₄₉In₆₄-9

γ (¹¹³In) (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	J_f^π	Mult. [#]	α	Comments
2515.6		1409.1.3	100	1106.46	3/25/2-			
2557.06		1532.8.3	100 77	1024.28	5/2+			
		1910.2 2	56 11	646.830	3/2-			
2560.64		646.5 2	100	1914.13	-/-			
2654.1		211.7^{a} 3	40.5	2442.4				
		420.4 3	100 70	2233.6	$(15/2^{-})$			
2664.7	$(19/2^{-})$	267.7 3	100	2396.9	$(17/2^{-})$			
2665.0		1034.4 4	100	1630.57	$(7/2^+, 9/2^+)$			
2669.6	$17/2^{+}$	1324.6.3	100	1344.89	$13/2^+$	E2		
2728.04	, =	813.9 2	100	1914.13				
2783.88		1759.6 1	100 6	1024.28	$5/2^{+}$			
		2137.0 2	22 3	646.830	3/2-			
2785.8		131.8.3	52.4 16	2654.1	- 1			
		388.9 3	100 3	2396.9	$(17/2^{-})$			
2854.4	$(21/2^{-})$	68.6 <i>3</i>	100	2785.8				
		189.7 <i>3</i>	100	2664.7	$(19/2^{-})$	(M1.E2)	0.12 4	$\alpha(K)=0.10 3$; $\alpha(L)=0.017 8$; $\alpha(M)=0.0033 15$; $\alpha(N)=0.00058 25$;
						())		$\alpha(\Omega) = 3.4 \times 10^{-5} \ 9$
								$\alpha(N+)=0.0006$ 3
2880.9		483.9.3	100	2396.9	$(17/2^{-})$			
x + 2903.9	$(19/2^{-})$	507		2396.9	$(17/2^{-})$			
2904.85	(1)]=)	1136.5.5	67 17	1768.07	$3/2^+.5/2^+$			
_,		1274.4.4	100.17	1630.57	$(7/2^+, 9/2^+)$			
		1773.4 4	83 17	1131.48	5/2+			
3023.9	$(23/2^{-})$	169.5 3	100	2854.4	$(21/2^{-})$	(M1.E2)	0.18 6	$\alpha(K)=0.15$ 5; $\alpha(L)=0.025$ 12; $\alpha(M)=0.0049$ 24; $\alpha(N)=0.0009$ 5;
	< - I)							$\alpha(O)=4.8 \times 10^{-5} I5$ $\alpha(N+)=0.0009 5$
3051.1		170.2 3	100	2880.9				
		386.5 3	100	2664.7	$(19/2^{-})$			
3071.5	$(19/2^+)$	401.8 <i>3</i>	56 2	2669.6	17/2+	(M1,E2)	0.0129 6	$\alpha(K)=0.0111 4; \alpha(L)=0.00145 14; \alpha(M)=0.00028 3;$
					,			$\alpha(N) = 5.1 \times 10^{-5} 5; \alpha(O) = 3.57 \times 10^{-6} 9$
								$\alpha(N+) = 5 \times 10^{-5} 5$
		788 2 3	100.3	2283 5	$17/2^{+}$	(M1 E2)	0 00229 19	
3120.1	$(21/2^+)$	839 1	100.5	2281.08	17/2	(1111,122)	0.00229 19	
3192.2	$19/2^+$	803 2 3	100	2389.02	$15/2^{+}$	E2	0.00201.3	
3211.9	$(23/2^+)$	91.8.3	100	3120.1	$(21/2^+)$	(M1 E2)	148	$\alpha(K) = 1.0.5; \alpha(L) = 0.27.21; \alpha(M) = 0.05.4; \alpha(N) = 0.009.7;$
02110	()	1100	100	012011	(==/=)	(111,22)		$\alpha(\Omega) = 0.00038$ /9: $\alpha(N+1) = 0.010$ 8
3250.2		199.1.3	100	3051.1				
0200.2		395.8.3	100	2854.4	$(21/2^{-})$			
3280.7	$(25/2^{-})$	256.9.3	100	3023.9	$(23/2^{-})$	(M1.E2)	0.048.9	$\alpha(K)=0.041$ 7; $\alpha(L)=0.0058$ 17; $\alpha(M)=0.0011$ 4; $\alpha(N)=0.00021$ 6:
5200.7	(20/2)	200.70	100	202017	()	($\alpha(O) = 1.31 \times 10^{-5} 21$ $\alpha(N+) = 0.00022 6$

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From ENSDF

L

γ (¹¹³In) (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	$E_f = J_j^{\pi}$	f Mult. [#]	α	Comments
3305.8		641.1 <i>3</i>	100	2664.7 (19/2	2-)		
3350.8		686.1 <i>3</i>	100	2664.7 (19/2	2-)		
3395.2	(25/2+)	183.3 <i>3</i>	100	3211.9 (23/	2 ⁺) (M1,E2)	0.14 5	α (K)=0.12 4; α (L)=0.019 9; α (M)=0.0037 17; α (N)=0.0007 3; α (O)=3.8×10 ⁻⁵ 11 α (N+)=0.0007 3
x+3476.0	$(23/2^{-})$	572		x+2903.9 (19/2	2-)		
3599.0		744.6 <i>3</i>	100	2854.4 (21/2	2-)		
3786.0	(27/2 ⁺)	390.9 <i>3</i>	100	3395.2 (25/2	2 ⁺) (M1,E2)	0.0140 7	$\alpha(K)=0.0120 \ 5; \ \alpha(L)=0.00158 \ 17; \ \alpha(M)=0.00031 \ 4; \ \alpha(N)=5.6\times10^{-5} \ 6; \\ \alpha(O)=3.85\times10^{-6} \ 12 \\ \alpha(N+)=6.0\times10^{-5} \ 6$
3867.4		617.2 <i>3</i>	100	3250.2			
3965.1	$23/2^{+}$	772.9 3	100	3192.2 19/2	+ E2	0.00221 4	
3973.0	$(27/2^{-})$	692.6 <i>3</i>	100	3280.7 (25/2	(M1,E2)	0.00312 23	
x+4172.0	$(27/2^{-})$	696 <i>1</i>		x+3476.0 (23/2	2-)		
4375.4	(29/2+)	589.4 <i>3</i> 980.2 <i>3</i>	100 <i>3</i> <14	3786.0 (27/2 3395.2 (25/2	(M1,E2) (E2)	0.00466 24	
4430.7	$(27/2^{-})$	1406.7 3	100	3023.9 (23/	2 ⁻) E2		
4432.2		564.8 <i>3</i>		3867.4	/		
4602.9	$27/2^{+}$	637.8 <i>3</i>	100	3965.1 23/2	+ (E2)	0.00360 5	
4715.4	$(29/2^{-})$	284.5 3	100	4430.7 (27/2	2^{-}) (M1,E2)	0.035 6	
		742.40 3	78 6	3973.0 (27/	2^{-1} (M1.E2)	0.00264 21	
		1434.9 <i>3</i>	100 9	3280.7 (25/2	2 ⁻) E2		
4799.3		826.30 <i>3</i>	<71	3973.0 (27/2	2-)		
		1518.3 <i>3</i>	100 21	3280.7 (25/2	2-)		
x+4990.0	$(31/2^{-})$	818		x+4172.0 (27/2	2^{-1}		
5060.1	$(31/2^+)$	684.6 <i>3</i>	100	4375.4 (29/2	(M1,E2)	0.00321 23	
		1274.2 <i>3</i>	<10	3786.0 (27/2	2+)		
5125.3	-	326.2 <i>3</i>	<40	4799.3			
		409.7 <i>3</i>	100 8	4715.4 (29/	2 ⁻) (M1,E2)	0.0123 5	
5310.9	$(31/2^+)$	708 1	100	4602.9 27/2	+		
5392.3	$(31/2^{-})$	677.7 <i>3</i>	100 12	4715.4 (29/2	2 ⁻) (M1,E2)	0.00329 23	
		1418.6 <i>3</i>	82 17	3973.0 (27/2	2 ⁻) (E2)		
5447.0		731.6 <i>3</i>	100	4715.4 (29/	2-)		
5730.0		1014.6 <i>3</i>	100	4715.4 (29/2	2-)		
5788.3	$(33/2^+)$	728.2 <i>3</i>	100	5060.1 (31/2	(M1,E2)	0.00277 21	
x+5918.0	$(35/2^{-})$	928.4 <i>3</i>	100	x+4990.0 (31/2	2 ⁻) (E2)		
6226.9	$(35/2^+)$	916 <i>1</i>	100	5310.9 (31/2	2+)		
6346.3	$35/2^{(+)}$	558		5788.3 (33/2	2+)		
x+6946.7	$(39/2^{-})$	1028.3 6	100	x+5918.0 (35/2	2 ⁻) (E2)		
7287.9	$(39/2^+)$	1061 <i>1</i>	100	6226.9 (35/	2+)		
x+8068	$(43/2^{-})$	1122		x+6946.7 (39/	2-)		

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$^{113}_{49}\mathrm{In}_{64}\text{--}11$

From ENSDF

$\gamma(^{113}$ In) (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}	E_f	${ m J}_f^\pi$	E _i (level)	E_{γ}^{\dagger}	E_f
8434.9	$(43/2^+)$	1147 <i>1</i>	100	7287.9	$(39/2^+)$	y+474	474	У
x+9280	$(47/2^{-})$	1212		x+8068	$(43/2^{-})$	y+814	340	y+474
x+10574	$(51/2^{-})$	1294		x+9280	$(47/2^{-})$	y+1193	379	y+814
x+11960	$(55/2^{-})$	1386		x+10574	$(51/2^{-})$	y+1555	362	y+1193

[†] From ¹¹³Cd(p,n γ), except as noted and when possible.

⁺ From ⁻ Cu(p,iry), except as noted and when possible. ⁺ Relative branchings are given. [#] From DCO ratios in ¹¹⁰Pd(⁷Li,4n). [@] From $\alpha(K)$ exp in ¹¹³Cd(p,n γ). [&] Mult and δ from ¹¹³In Coul. ex. ^a Placement of transition in the level scheme is uncertain.

Level Scheme





¹¹³₄₉In₆₄

Level Scheme (continued)



Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

 $--- \rightarrow \gamma$ Decay (Uncertain)



Level Scheme (continued)



¹¹³₄₉In₆₄

Level Scheme (continued)



¹¹³₄₉In₆₄

Level Scheme (continued)



 $^{113}_{\ 49} In_{64}$

Level Scheme (continued)



¹¹³₄₉In₆₄





 $^{113}_{49} \mathrm{In}_{64}$



¹¹³₄₉In₆₄