		Туре		Author	History Citation	Literature Cutoff Date
		Full Evalua	tion Co	oral M. Baglin	NDS 109, 2033 (2008)	15-Jun-2008
$Q(\beta^{-}) = -3.37 \times 10^{-3}$ Note: Current e $Q(\beta^{-}) = -3360^{-2}$ For isotope shif	10^3 3; S(n) evaluation h 28; S(n)=90 it data see,	=9.09×10 ³ 4; has used the fo 080 50; S(p)=3 e.g., 1998Ge12	S(p)=379 llowing Q 3792 <i>3</i> ; Q 3.	2 3; $Q(\alpha)=2420$) record. (α)=2434 5	0 <i>4</i> 2012Wa38 2003Au03 ¹⁶⁹ Lu Levels	
				Cross Re	eference (XREF) Flags	
		A B C	¹⁶⁹ Lu ¹⁶⁹ Hi ¹⁶⁸ Yi	1 IT decay (160 f ε decay b(p,p) IAR) s) D 169 Tm(α ,4n γ), E 154 Sm(19 F,4n γ	¹⁷¹ Yb(p,3nγ)
E(level) [†]	$J^{\pi \ddagger}$	T _{1/2}	XREF		C	omments
0.0 [@] 29.0 ^{&} 5	7/2+	34.06 h 5 160 s <i>10</i>	AB DE	%ε+%β ⁺ =10 μ=2.295 4 (19 Δ <r<sup>2>(170,16 μ: From collin nuclei (199 Q: From colli nuclei (199 Q: From collin nuclei (199 <r<sup>2>^{1/2} (CHA J^π: atomic be: value for 7/ T_{1/2}: from 19 1959Dz01, %IT=100 μ=0.538 7 (19 Δ<r<sup>2>(170,16) μ: From collin J^π: E3 γ to 7/ E(p)=12 M expected fo T_{1/2}: from ¹⁶⁰</r<sup></r<sup></r<sup>	0 998Ge13); Q=3.480 25 (19 998Ge13); Q=3.480 25 (19 59)=-0.078 8 (1998Ge13). near laser spectroscopy. Ot 6Ko26). RGE)=5.329 4 (2004An14 am (1976Fu06); parity from /2[404] orbital. 70Ka23. Others: 1955Ne0 1960Dz02, 1961Me05, 19 998Ge13) 59)=+0.130 13 (1998Ge13) near laser spectroscopy. /2 ⁺ ; large cross section for eV) for production of isom or 1/2[541] orbital. ⁹ Lu IT decay (160 s) (196	298Ge13) ther μ : 2.297 <i>13</i> from NMR on oriented ther μ : 3.42 <i>12</i> from NMR on oriented). n comparison between μ and theoretical 03, 1957Go40, 1957Go72, 1957Mi67, 64Dz02, 1964Dz06, 1971DzZO.). (p,2n) on J=0 target (≈ 20 mb at her rules out $13/2^-$; μ =0.54 cf. 0.70 5Bi01).
43.1 ^{&} 6	(5/2-)		B DE	1 _{1/2} . nom	Eu 11 decuy (100 3) (170.	5 5 5017.
97.4 ^b 5	$(1/2^+)$ $(3/2^+)$		B D B DE	J^{π} : (E1) γ to	$1/2^-$; $1/2^+$ consistent with	band assignment.
$123.45^{\#} 9$	$(3/2)^+$		B DE B DE	J ^π : M1,E2 γ 1	to 7/2 ⁺ g.s.; 9/2 ⁺ consisten	t with band assignment.
140.8 ^{&} 6	$(9/2^{-})$ $(3/2^{-})$		DE			
185.8 ^d 8	$(5/2^+)$ $(5/2^+)$		B DE			
225.1^{b} 6	$(5/2^+)$ $(7/2^+)$		DE			
270.60° 13	$(1/2^{+})$ $(11/2^{+})$		DE			
288.1 ^e 8 328.4? ^a 6	$(7/2^+)$ $(7/2^-)$		DE D			
$330.4^{\&}$ 7 414.3 ^d 8	$(13/2^{-})$ $(9/2^{+})$		DE DE			
	., ,					

¹⁶⁹Lu Levels (continued)

E(level) [†]	$J^{\pi \ddagger}$	XREF	Comments
439.09 ^{<i>f</i>} 16	$(9/2^{-})$	DE	
439 69 [#] 14	$(13/2^+)$	DE	
449.02^{b} 7	$(9/2^+)$	DF	
492.88.9	(2/2)	R	I^{π} . F1 γ to $7/2^+$: allowed unbindered a decay (log $ft < 4.5$) from ¹⁶⁹ Hf supports assignment of
472.00 7	1/2	Ъ	v 5/2[523] Nilsson orbital to ¹⁶⁹ Hf(g.s.) and π 7/2[523] to ¹⁶⁹ Lu(492.9 level); consistent with systematics of 97-neutron nuclei.
508.4 [°] 6	$(11/2^+)$	DE	
546.08 ⁸ 16	$(11/2^{-})$	DE	
568.4° 8	$(11/2^{+})$	DE	
5/0.12 0	(11/2)	D	
610.8~ /	(1/2)	DE	
628.89 <i>18</i>	$(15/2^{+})$	DE	
683.31 ^J 18	(13/2)	DE	
$733.1^{a} 8$	$(13/2^{+})$	DE	
/63.1° /	$(13/2^{+})$	DE	
836.38" 20 842.2 C 7	$(1/2^{+})$ $(15/2^{+})$	DE	
842.2° / 844 678 20	(15/2) $(15/2^{-})$	DE	
896.2^{a} 7	$(15/2^{-})$	DE	
937.3 ^e 9	$(15/2^+)$	DE	
977.6 <mark>&</mark> 8	$(21/2^{-})$	DE	
1031.58 ^f 24	$(17/2^{-})$	DE	
1060.4 [@] 3	$(19/2^+)$	DE	
1116.5 ^d 8	$(17/2^+)$	Е	
1151.3 ^b 8	$(17/2^+)$	DE	
1235.0 <mark>8</mark> 3	$(19/2^{-})$	DE	
1244.0 [°] 7	$(19/2^+)$	DE	
1288.6 ^{<i>a</i>} 7	$(19/2^{-})$	DE	
1298.5# 3	$(21/2^+)$	DE	
1423.2 ° 8	$(25/2^{-})$	DE	
1462.0 3	$(21/2^{-})$	DE	
1549.3 ^{^w} 3	$(23/2^+)$	DE	
1550.4 ^{<i>a</i>} 9	$(21/2^+)$	E	
1697.28 4	$(23/2^{-})$	DE	
1698.2° / 1747.2° 8	$(23/2^{-})$ $(23/2^{-})$		
$1747.2 \ 0$ 1810 2 [#] 4	$(25/2^+)$	DE	
1010.2 + 1035.8 % 0	$(29/2^{-})$	DE	
1955.0^{f} 4	$(25/2^{-})$	DE	
$2027 3^{d} 10$	$(25/2^+)$	F	
$2080.9^{@}4$	$(23/2^{+})$	DE	
2196.6 ^c 8	$(27/2^+)$	DE	
2214.9 ⁸ 8	(27/2-)	Е	
2259.5? ^a 9	$(27/2^{-})$	D	
2357.5 [#] 6	$(29/2^+)$	DE	
2495.8 ^f 9	$(29/2^{-})$	Е	
2505.8 ^{&} 10	$(33/2^{-})$	DE	

¹⁶⁹Lu Levels (continued)

E(level) [†]	$J^{\pi \ddagger}$	T _{1/2}	XREF	Comments
2541.9 ^d 10	$(29/2^+)$		Е	
2644.4 [@] 8	$(31/2^+)$		Е	
2739.5 [°] 10	$(31/2^+)$		E	
2772.2 ^g 10	$(31/2^{-})$		E	
2931.3 [#] 9	$(33/2^+)$		E	
3065.6 [†] 11	$(33/2^{-})$		E	
3090.8 ^d 11	$(33/2^+)$		E	
3124.1 <mark>&</mark> <i>13</i>	$(37/2^{-})$		E	
3231.5 [@] 10	$(35/2^+)$		E	
3328.4 [°] 11	$(35/2^+)$		E	
3352.48 12	$(35/2^{-})$		E	
3528.5 " 11	$(37/2^+)$		E	
3647.9 ^J 13	$(37/2^{-})$		E	
3672.5 ^{<i>a</i>} 15	$(37/2^+)$		E	
3788.6 ^{x} 15	$(41/2^{-})$		E	
3843.8 ^{⁽⁰⁾} 12	$(39/2^+)$		E	
3937.28 13	$(39/2^{-})$		E	
$3903.1^{-}13$	$(39/2^+)$		E	
$4157.5^{n}15$	$(41/2^{-})$		E	
4240.75 14	(41/2)		E	
4292.64 18	$(41/2^+)$		E	
4495.8 16	$(43/2^{+})$		E	
4502.1° 16	(45/2)		E	
4643.3 [°] 15	$(43/2^{+})$ $(43/2^{+})$		E	
4836 8 [#] 18	$(45/2^+)$		F	
4879.6^{f} 16	$(45/2^{-})$		F	
$4962.6^{d}21$	$(15/2^+)$ $(45/2^+)$		F	
$5203.8^{@}.19$	$(13/2^{+})$ $(47/2^{+})$		F	
5203.0 15 5204.4 ⁸ 16	$(47/2^{-})$		Ē	
5269.0 ^{&} 19	$(49/2^{-})$		Е	
5369.9 ^c 16	$(47/2^+)$		Е	
5578.8 [#] 21	$(49/2^+)$		Е	
5688.6? ^d 23	$(49/2^+)$		Е	
5975.8 [@] 21	$(51/2^+)$		Е	
6090.7 <mark>&</mark> 22	$(53/2^{-})$		Е	
6127.0? ^c 19	$(51/2^+)$		Е	
6382.8 [#] <i>23</i>	$(53/2^+)$		Е	
6902.7? ^C 22	$(55/2^+)$		E	
6962.8 ^{&} 24	$(57/2^{-})$		E	
14065 20	$1/2^{-}$	53 keV	С	E(level): from ¹⁶⁸ Yb(p,p) IAR. $\Gamma_p=5.9$ keV, $\Gamma=53$ keV.
				J^{π} : Analog of $1/2^{-}$ 24.2 level in ¹⁶⁹ Yb.

[†] From least-squares fit to adopted E γ , assigning 1 keV uncertainty to data for which the authors did not state uncertainty and excluding the 188.80 γ and 433.23 γ whose energies are At least 5 σ from the least-squares adjusted values. exceptions are noted.

¹⁶⁹Lu Levels (continued)

- [‡] Values given without comment are from 154 Sm(19 F,4n γ), based on deduced band structure, analogy to neighboring nuclides and alignment gains, band crossing frequencies and B(M1)/B(E2) ratios for intraband transitions, when available.
- [#] Band(A): 7/2[404] $\alpha = +1/2$ band (1993Og01). First band crossing At $\hbar\omega \approx 0.28$ MeV, alignment gain $\approx 6.2\hbar$. Band assignment supported by observed B(M1)/B(E2) ratios for intraband transitions.
- [@] Band(a): 7/2[404] $\alpha = -1/2$ band (1993Og01). See comment on signature partner band.
- & Band(B): 1/2[541] α=+1/2 band (1993Og01). (α=9.7, a=3.2 (1/2, 3/2, 5/2, 7/2, 9/2 levels)). First band crossing At ħω≈0.32 MeV, alignment gain≈3.5ħ. Average Q(transition)=7.5 b 10 for J=33/2 through 57/2 band members (1993Og01).
- ^{*a*} Band(b): $1/2[541] \alpha = -1/2$ band (1973Fo03).
- ^b Band(C): $1/2[411] \alpha = +1/2$ band (1993Og01). Band parameters: $\alpha = 13.3$, a = -0.59 (1/2, 3/2, 5/2, 7/2, 9/2 levels). Strongly mixed with $5/2[402] \alpha = +1/2$ band.

^c Band(c): $1/2[411] \alpha = -1/2$ band (1993Og01). First band crossing At $\hbar \omega \approx 0.28$ MeV, alignment gain $\geq 7.9\hbar$.

- ^d Band(D): 5/2[402] α =+1/2 band (1993Og01). Band parameters: α =14.8, β =-13.9 (5/2, 7/2, 9/2, 11/2 levels). Strongly mixed with 1/2[411] α =+1/2 band. First band crossing At $\hbar\omega\approx$ 0.26 MeV, alignment gain≈6.1 \hbar .
- ^{*e*} Band(d): $5/2[402] \alpha = -1/2$ band (1993Og01).
- ^{*f*} Band(E): 9/2[514] α=+1/2 band (1993Og01). First band crossing At $\hbar \omega \approx 0.27$ MeV, alignment gain≥6.2 \hbar . Band parameters: α=8.8, β=18.2 (9/2, 11/2, 13/2, 15/2 levels).
- ^g Band(e): $9/2[514] \alpha = -1/2$ band (1993Og01). See comment on signature partner band.

γ ⁽¹⁶⁹Lu)</sup>

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	\mathbf{E}_{f}	\mathbf{J}_f^{π}	Mult. [†]	α^{c}	Comments
29.0	1/2-	29.0 5	100	0.0	7/2+	E3	9.4×10 ⁴ 11	B(E3)(W.u.)=0.0028 5 E _{γ} ,Mult.: from ¹⁶⁹ Lu IT decay (160
43.1 97.4 113.8	$(5/2^{-})$ $(1/2^{+})$ $(3/2^{+})$	(14.1 8) 68.4 1 (16.4 8) 70.9b&f 2 84.8b&f 2	100 100	29.0 29.0 97.4 43.1 29.0	1/2 ⁻ 1/2 ⁻ (1/2 ⁺) (5/2 ⁻) 1/2 ⁻	(E1) ^{&} [E1] [E1]	0.931 0.851 <i>14</i> 0.538 <i>9</i>	E_{γ} : from level energy difference. E_{γ} : from level energy difference.
123.45 140.8 157.5?	$(9/2)^+$ $(9/2^-)$ $(3/2^-)$ $(5/2^+)$	123.5 <i>I</i> 97.7 ^{&} <i>I</i> 114.4 ^{&} <i>f</i> 2 72.9 ^b & 2	100 100 100	0.0 43.1 43.1	$7/2^+$ (5/2 ⁻) (5/2 ⁻) (2/2 ⁺)	M1,E2 [@]	1.8 ^{<i>a</i>} 3	
225.1	$(5/2^+)$ $(5/2^+)$	$72.9^{b} \& 2$ $111.5^{\&} 2$ $181.9^{b} \& 2$ $120.9^{b} \& 2$	100	113.8 113.8 43.1	$(3/2^+)$ $(3/2^+)$ $(5/2^-)$ $(0/2^-)$	[MII,E2]	10.0 13	
260.6	(7/2.)	$120.0^{\circ} \text{ cm}^{\circ} 2$ $146.8^{\&} 2$ $217.3^{\&} 3$	100 7 ≤6.3	140.8 113.8 43.1	(9/2) $(3/2^+)$ $(5/2^-)$			
270.60	(11/2 ⁺)	147.2 ^{&} 2 270.5 ^{&} 2	85 <i>5</i> 100 <i>5</i>	123.45 0.0	(9/2) ⁺ 7/2 ⁺			
288.1 328.4?	$(7/2^+)$ $(7/2^-)$	$ \begin{array}{c} 102.3^{\&} I \\ 170.8^{\&} f 3 \\ 188.8^{\&} f 2 \\ 285.6^{e\&} 3 \end{array} $	100 е	185.8 157.5? 140.8 43.1	$(5/2^+)$ $(3/2^-)$ $(9/2^-)$ $(5/2^-)$			
330.4 414.3	(13/2 ⁻) (9/2 ⁺)	189.0 126.1 ^{&} <i>I</i> 153.8 228.5 ^{&} 2	100 100 <i>13</i> 13 <i>4</i> ≤24	140.8 288.1 260.6 185.8	$(9/2^{-})$ $(9/2^{-})$ $(7/2^{+})$ $(7/2^{+})$ $(5/2^{+})$			Other I γ : 79 in (α ,4n γ), (p,3n γ).

γ ⁽¹⁶⁹Lu) (continued)</sup>

E _i (level)	J_i^π	E_{γ}^{\dagger}	I _γ ‡	E_f	${ m J}_f^\pi$	Mult. [†]	α^{c}	Comments
439.09	(9/2 ⁻)	315.7 <mark>&</mark> 2	100 4	123.45	$(9/2)^+$			
		439.0 ^{&} 3	42.8 15	0.0	7/2+			
439.69	$(13/2^+)$	169.1 ^{&} 1	56.9 27	270.60	$(11/2^+)$			
		316.2 ^{&} 2	100 3	123.45	$(9/2)^+$			
449.0?	$(9/2^+)$	188.7	90 14	260.6	$(7/2^+)$			
		224.0	100 14	225.1 185.8	$(5/2^+)$ $(5/2^+)$			
102.88	7/2-	205.5 360 5 [@] 2	$11.6^{(0)}$ 10	105.0	$(0/2)^+$	[E1]	0.01253	
492.00	1/2	$309.3 \ 2$	100@	125.45	(9/2) $7/2^+$	E_1^{0}	0.01255	
508 /	$(11/2^{+})$	492.80 I0	<21	414.2	$(0/2^+)$	LI	0.00051	
308.4	(11/2)	95.1^{-9}	≤ 2.1	414.5	(9/2)			
		247.6^{10}	100 5	200.0	$(1/2^{+})$			
546.00	(11/2-)	307.5^{-1} 2	1008	140.8	(9/2)			E_{γ} : for multiply-placed G.
546.08	(11/2)	$107.0^{6} \approx 2$	<190	439.09	(9/2)			
		$2/5.0^{5} \times 3$	<150	270.60	$(11/2^{+})$			
5 (0) ((11/2+)	422.8 3	≈100 [∞]	123.45	(9/2) ⁺			
568.4	$(11/2^{+})$	154.0°° 2	100 23	414.3	(9/2+)			
		$280.6^{\circ} 2$	36 9	288.1	$(7/2^+)$			
576.1?	$(11/2^{-})$	$245.30 \times J_{3}$	70 °	330.4	$(13/2^{-})$			
		247.8^{a}	P-	328.4?	$(7/2^{-})$			
		433.2#00 3	100	140.8	$(9/2^{-})$			
610.8	$(17/2^{-})$	280.6 ^{ex} 2	100 ^e	330.4	$(13/2^{-})$			
628.89	$(15/2^+)$	189.2 2	41.7 26	439.69	$(13/2^+)$			I_{γ} : other I_{γ} : ≈ 29 from (α ,4n γ).
		358.3 2	100 2 5	270.60	$(11/2^+)$			
683.31	$(13/2^{-})$	137.2 ^{&} 1	100 5	546.08	$(11/2^{-})$			
		243.6 ^{&} 4	79 11	439.69	$(13/2^+)$			
		244.1		439.09	(9/2 ⁻)			
		413.1 ^{<i>a</i>} 4	36 <i>3</i>	270.60	$(11/2^+)$			
733.1	$(13/2^+)$	164.7 ^{x} <i>1</i>	100 7	568.4	$(11/2^+)$			
		224.8	2/3	508.4	$(11/2^{+})$ $(0/2^{+})$			
		20+.5 3185 3	12 J 55 3	414.3	$(9/2^{+})$			
763 1	$(13/2^{+})$	254.6° 3	10 G	508.4	(9/2)			
705.1	(13/2)	$234.0 \ 3$	100.0	140 02	(11/2) $(0/2^+)$			
		349.2	31.6	414.3	$(9/2^+)$			
836.38	$(17/2^{+})$	$207.4^{\&}$ 2	34.5.24	628.89	$(15/2^+)$			
000100	(1)/=)	396 7 ^{&} 2	100.0.21	439.69	$(13/2^+)$			
842.2	$(15/2^+)$	333.7 ^{&} 3	100.0.22	508.4	$(13/2^+)$ $(11/2^+)$	(E2)	0.0558	
0.2.2	(15/2)	512.5	8.3 18	330.4	$(13/2^{-})$	(112)	0.0220	
844.67	$(15/2^{-})$	161.3 ^{&} 2	100.0 24	683.31	$(13/2^{-})$			
		215.7		628.89	(15/2+)			
		298.6 ^{&} 2	33.1 21	546.08	$(11/2^{-})$			
		405.4	24 3	439.69	$(13/2^+)$			
896.2	$(15/2^{-})$	$285.6^{e^{-1}}$ 3	<12 ^{e&}	610.8	$(17/2^{-})$			
		319.9 ^{0&} 3	100	576.1?	$(11/2^{-})$			
005.0	(4.5.0)	565.6 ^{&} 4	100 5	330.4	$(13/2^{-})$			
937.3	$(15/2^{+})$	203.8 369.0	100.6	/33.1 568 /	$(13/2^{+})$ $(11/2^{+})$			
		509.0	95 5	500.4	(11/2)			

γ ⁽¹⁶⁹Lu) (continued)</sup>

E _i (level)	\mathbf{J}_i^π	E_{γ}^{\dagger}	I_{γ} ‡	\mathbf{E}_{f}	J_f^π	Mult. [†]	α^{c}	Comments
977.6	$(21/2^{-})$	367.6	100	610.8	$(17/2^{-})$	(E2)	0.0423	
1031.58	$(17/2^{-})$	186.9 <mark>&</mark> 2	100 3	844.67	$(15/2^{-})$			
		197.0		836.38	$(17/2^+)$			
		348.3 [°] 3	44 5	683.31	$(13/2^{-})$			Other I γ : 134 in (α ,4n γ), (p,3n γ).
1060.4	$(19/2^{+})$	403.0 224.1	18.4 <i>23</i> 26.6 <i>14</i>	628.89 836.38	$(15/2^{+})$ $(17/2^{+})$			other I_{λ} : >44 In (α 4n λ)
1000.1	(1)/2)	431.7 ^{&} 3	100.0 23	628.89	$(17/2^+)$			
1116.5	$(17/2^+)$	179.0	34 3	937.3	$(15/2^+)$			
		274.3	37 3	842.2	$(15/2^+)$			
		353.3 383 3	36 3 100 6	763.1 733.1	$(13/2^+)$ $(13/2^+)$			
1151 3	$(17/2^+)$	388 2 4	100 0	763.1	$(13/2^+)$ $(13/2^+)$			
1235.0	$(19/2^{-})$	175.0^{f}	100	1060.4	$(19/2^+)$			
120010	(1)/=)	203.2	100.0 20	1031.58	$(17/2^{-})$			
		390.3 ^{&} <i>3</i>	62 4	844.67	$(15/2^{-})$			
		397.0	6.5 15	836.38	$(17/2^+)$			10
1244.0	$(19/2^+)$	401.7 ^{C} 3	100 3	842.2	$(15/2^+)$	Q		Mult.: from $({}^{19}F,4n\gamma)$.
1200 6	$(10/2^{-})$	~210 ^{&}	20 4	010.8	(1/2) (21/2)			
1200.0	(19/2)	≈ 310 307 7 $\& \Lambda$		977.0 806.2	(21/2) $(15/2^{-})$			
		$677.6^{\&}.5$		610.8	$(15/2^{-})$ $(17/2^{-})$			
1298.5	$(21/2^+)$	238.3 ^{&} 3	21.7.12	1060.4	$(19/2^+)$			
/	(/-)	462.0 ^{&} 2	100 5	836.38	$(17/2^+)$			
1423.2	$(25/2^{-})$	445.6 ^{&} 2	100	977.6	$(21/2^{-})$			
1462.0	$(21/2^{-})$	226.9 ^{&} 2	100 7	1235.0	$(19/2^{-})$			
		430.6 ^{&} 3	74.6 21	1031.58	$(17/2^{-})$			
1549.3	$(23/2^+)$	250.8 ^{&} 3	19.6 6	1298.5	$(21/2^+)$			
		488.9 2	100 3	1060.4	$(19/2^+)$			
1550.4	$(21/2^{+})$	306.7	28.8 25	1244.0	$(19/2^+)$ $(17/2^+)$			
1697.2	$(23/2^{-})$	235.0°	100 5	1462.0	$(17/2^{-})$ $(21/2^{-})$			
10)7.2	(23/2)	462.5	83 6	1235.0	$(19/2^{-})$			
1698.2	$(23/2^+)$	454.2 ^{&} 3	100 5	1244.0	$(19/2^+)$	(E2)		
		720.8	18.5 25	977.6	$(21/2^{-})$			
1747.2	$(23/2^{-})$	324.0 ^{<i>ab x</i>} 5		1423.2	$(25/2^{-})$			
1010 0	(25/2+)	458.5 3	100	1288.6	$(19/2^{-})$			
1810.2	$(25/2^+)$	261.0° 3	20.5 18	1549.3	$(23/2^+)$ $(21/2^+)$			
1935.8	$(29/2^{-})$	513.4	100 /	1423.2	$(25/2^{-})$			
1955.9	$(25/2^{-})$	258.7 ^{&} 3	98 8	1697.2	$(23/2^{-})$			
		494.0 ^{&} 4	100 5	1462.0	$(21/2^{-})$			
2027.3	$(25/2^+)$	329.4	17.8 17	1698.2	$(23/2^+)$			
2080.9	$(27/2^+)$	470.8	16.7 14	1550.4	$(21/2^+)$ $(25/2^+)$			
	(=.,=)	531.6 ^{&} 3	100.0 24	1549.3	$(23/2^+)$			
2196.6	$(27/2^+)$	498.5 ^{&} 3	100 6	1698.2	$(23/2^+)$			
2214.0	(07/2-)	773.1	31 4	1423.2	$(25/2^{-})$			
2214.9	(27/2)	258.9 517.7	85 9 100 <i>10</i>	1955.9 1697.2	(25/2) $(23/2^{-})$			

Continued on next page (footnotes at end of table)

γ ⁽¹⁶⁹Lu) (continued)</sup>

229.5? (27)2° 324.0 ⁴⁶ 193.8 (23)2° 237.5 (27)2° 216.4 16.6 12 (23)2° 249.8 (27)2° 281.0 79 11 (2149)2 (22)2° 254.9 (29)2° 34.3 12.2 12 (2149)2 (22)2° 254.19 (29)2° 34.3 12.2 22 (2140)2 (27)2° 254.4 (31)2° 36.5 (22)2° 214.6 (27)2° 254.4 (31)2° 36.5 (22,7)2 214.5 (27)2° 254.4 (31)2° 266.9 227,15 237.5 (29)2° 277.5 (31,2)2° 27,5 100,6 2014.9 (27)2° 277.2 (31,2)2° 27,5 100,3 271.4 (31,2)2° 277.5 100,3 271.4 214.9 (27)2° 277.2 (31,2)2° 235.5 (10,1)3 271.4 (31,2)2° 277.5 593.8 100.13 271.4 (31,2)2° 306.6 (32,2)2° 300.0 15.3 239.3 (33,2)2° 312.4 (37,2) 301.0 244.9 (31,2)2° 323.1 (00,7) 244.9 (31,2)2° 324.1 (57)2° <th>E_i(level)</th> <th>\mathbf{J}_i^{π}</th> <th>E_{γ}^{\dagger}</th> <th>I_{γ}^{\ddagger}</th> <th>E_f</th> <th>J_f^π</th> <th>Mult.[†]</th> <th>Comments</th>	E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	J_f^π	Mult. [†]	Comments
527.5 (29)2' 276.4 16 6.1 2 20809 (27) 2495.8 (29)2' 210.0 70 /1 214.9 (27)2 D+Q Mult: from (¹⁹ F,4ny). 2605.8 (33)2' 509.9 ⁶ 100.0 1955.9 (25)2' 53.9 102.0 1955.9 (25)2' 2605.8 (31)2' 260.9 ⁶ 100.0 1955.9 (25)2' 54.3 100.0 1955.9 (25)2' 54.3 100.0 206.0 (27)2' 54.3 100.0 206.0 (27)2' 54.3 100.0 2196.6 (27)2' 57.2 100.3 214.9 (27)2' 57.2 100.3 214.9 (27)2' 57.2 100.3 214.9 (27)2' 57.2 100.3 214.9 (27)2' 57.2 100.3 214.9 (27)2' 57.2 100.3 214.9 (27)2' 57.2 100.3 214.9 (27)2' 57.4 100.0 237.5 (29)2' D+Q Mult: from (¹⁹ F,4ny). 303.13 (33,2') 35.1	2259.5?	(27/2 ⁻)	324.0 ^{<i>d</i>&<i>f</i>} 5		1935.8 ((29/2-)		
237.5 (29)2' 276.4 16.6 /2 208.09 (27)2' 2495.8 (29)2' 281.0 79 /1 214.9 (27)2' b+Q Mult:: from (¹⁹ F,4ny). 2505.8 (3)2'' 56.9 * 4 100 1955.9 (25)2' 2505.8 (3)2'' 56.9 * 4 100 1955.9 (25)2' 2541.9 (29)2'' 345.3 112.2 22 2106.6 (27)2' 563.2 100 67 2007.3 (35)2' 563.2 100 67 273.9 (31/2') 563.2 100 67 2006.0 (27)2' 277.2 (31/2') 756.5 79.5 2905.8 (29)2'' 374.1 100.07 2045.8 (29)2'' 374.1 100.07 2045.8 (29)2'' 300.8 (3)2'' 31.2 17.5 273.95 (31/2') 312.4 (37)2'' 300.6 253.5 (30/2') 312.4.1 (37)2'' 286.4 80.4 (31/2') 321.5 (35)2'' 300.0 15.4 201.5 322.4 (35/2'') 200.0 15.3 201.2' 323.5 (35)2'' 300.6 (33/2'') 324.4 </td <td></td> <td></td> <td>512.0^{d&f} 5</td> <td></td> <td>1747.2 (</td> <td>$(23/2^{-})$</td> <td></td> <td></td>			512.0 ^{d&f} 5		1747.2 ($(23/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2357.5	$(29/2^+)$	276.4	16.6 12	2080.9 ($(27/2^+)$		
2495.8 (2)2 281.0 79 11 2214.9 (2)2'' Mult: from (¹⁹ F,4ny). 539.8 (3)2'' 569.9 ⁶ .4 100 1955.9 (2)2'' 54.3 100 11 2023.3 (2)2'' 54.3 100 11 2023.3 (2)2'' 54.3 100 11 2023.3 (2)2'' 55.2 100 6 2080.9 (2)2'' 55.2 100 7 216.6 (2)2'' 55.2 100 7 216.6 (2)2'' 55.2 100 7 216.6 (2)2'' 55.2 100 3 2214.9 (2)2'' 55.2 100 3 2214.9 (2)2'' 55.2 100 3 2214.9 (2)2'' 55.2 100 3 2214.9 (2)2'' 55.2 100 3 2214.9 (2)2'' 56.6 (3)2'' 57.1 100 13 272.2 (3)2'' 56.8 57.5 59.9 29.9 56.8 (3)2'' 57.5 57.5 59.9 29.9 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 57.5 <td></td> <td></td> <td>547.4^{&} 4</td> <td>100 5</td> <td>1810.2 (</td> <td>$(25/2^+)$</td> <td></td> <td></td>			547.4 ^{&} 4	100 5	1810.2 ($(25/2^+)$		
353.8 100 100 1955.8 (32)2 2541.9 (29)2') 343.3 12.2 22 196.6 (27)2') 2644.4 (31/2) 286.9 22.7 15 2575.5 (27)2') 2739.5 (31/2) 343.2 100 0 2080.9 (27)2') 2772.2 (31/2) 343.2 100 7 2196.6 (27)2') 2771.2 (31/2) 75.5 109.3 2914.9 (27)2') 2931.3 (32)2') 286.5 14.3 2644.4 (31/2') 3065.6 (31/2') 351.1 100.0 16 2357.5 (31/2') 3060.8 (31/2') 351.1 100.0 17 2541.9 (27)2' 3000.8 (31/2') 361.1 100 250.8 (32/2') 312.1 (77)2' 618.4 100 250.8 (32/2') 3224.4 (57)2' 286.8 89.4 3056.6 (32/2') 3232.4 (52)2' 286.8 89	2495.8	$(29/2^{-})$	281.0	79 11	2214.9 ($(27/2^{-})$	D+Q	Mult.: from $({}^{19}F,4n\gamma)$.
250.5.(3)2")569.9%4100193.5.(2)2")541.9(2)2")345.312.2.2210.6.(2)2")54.8100 112027.3.(2)2")53.2100.62080.9.(2)72")53.2100.7219.6.(2)2")77.2(3)2")26.579.5(3)2")931.3(3)2")26.579.5249.5.8(2)2")57.2100.3214.9.(2)2")57.4100.0.62357.5(2)2")56.6(3)2")293.5.100.13277.2"306.5.6(3)2")293.5.100.13277.2"309.8(3)2")351.217.52739.53124.1(3)7")54.1100265.8321.1(3)7")58.9.1100.6244.4323.4(3)2")59.9.1100.4250.5.8323.4(3)2")59.9.1100.6249.5.8323.4(3)2")59.9100.8273.9.5323.4(3)2")29.1.3(3)2")352.4(3)2")29.1.3(3)2")364.7(3)7")29.440.55.637.259.2100.6291.337.4(3)2")15.3367.937.559.2100.7321.537.639.7324.433.2"36.759.2100.7324.137.8(4)12")64.710037.1100.7321.537.259.2100.7<			539.8	100 10	1955.9 ($(25/2^{-})$		
	2505.8	$(33/2^{-})$	569.9 ^{x} 4	100	1935.8 ($(29/2^{-})$		
14.8 100 11 202/13 $(23/2)$ 2644.4 (31/2) 263.2 100 6 2080.9 $(27/2)$ 275.5 (31/2) 53.2 107 2195.6 $(27/2)$ 303.2 27.5 1935.8 $(29/2)$ D+Q Mult: from (¹⁹ F.4ny). 2931.3 (31/2) 285.5 14.3 2644.4 $(12/2)$ 3065.6 (33/2) 285.1 107.3 275.5 (29/2) 3008.8 (32/2) 285.1 107.7 279.9 (29/2) 3124.1 (3727) 618.4 100 255.8 (32/2) 3124.1 (3727) 618.4 100 2505.8 (32/2) 323.4 (35/2) 580.2 100.6 2414.4 (31/2) 323.4 (35/2) 280.8 89.4 0365.6 (31/2) 323.4 (35/2) 280.8 3324.4 231.5 (31/2) 324.4 (35/2) 297.2 100.7 323.13 (33/2)	2541.9	$(29/2^+)$	345.3	12.2 22	2196.6 ($(27/2^+)$		
	2644 4	$(21/2^{+})$	514.8	100 11	2027.3 ($(25/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2044.4	$(31/2^{+})$	280.9	22.7 IS	2337.3 ($(29/2^+)$		
	2739 5	$(31/2^+)$	543.2	100 0	2196.6 ($(27/2^+)$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2109.0	(31/2)	803.2	27.5	1935.8 ($(29/2^{-})$		
	2772.2	$(31/2^{-})$	276.5	79.5	2495.8 ($(29/2^{-})$	D+O	Mult.: from $({}^{19}\text{E.4ny})$.
		(=-,=)	557.2	100 3	2214.9 ($(27/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2931.3	$(33/2^+)$	286.5	14 <i>3</i>	2644.4 ($(31/2^+)$		
			574.1	100.0 16	2357.5 ($(29/2^+)$		
	3065.6	$(33/2^{-})$	293.5	100 13	2772.2 ($(31/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2000.0	$(22/2^{\pm})$	569.8	97 9	2495.8 ($(29/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3090.8	$(33/2^{+})$	351.2 540.1	1/3	2/39.5 ($(31/2^{+})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3124.1	$(37/2^{-})$	549.1 618.4	100 17	2505.8 ($(29/2^{+})$ $(33/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3231 5	$(37/2^+)$	300.0	15 3	2931.3 ($(33/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0201.0	(35/2)	587.3	100 6	2644.4 ($(31/2^+)$		
822.416 42505.8 $(33/2^-)$ 3352.4 $(35/2^-)$ 286.889 4 3065.6 $(33/2^-)$ D+QMult: from ($^{19}F,4ny$).580.2100 52772.2 $(31/2^-)$ 597.2 100 6 2931.3 $(33/2^+)$ 3647.9 $(37/2^-)$ 295.588 8 3352.4 $(35/2^-)$ 3672.5 $(37/2^+)$ 581.71003008.8 $(33/2^+)$ 3788.6 $(41/2^-)$ 664.71003192.41 $(37/2^-)$ 3843.8 $(39/2^+)$ 15.3 3528.5 $(37/2^+)$ 3937.2 $(39/2^-)$ 289.380 8 3647.9 $(37/2^-)$ 584.8100 173323.4 $(35/2^+)$ 3963.1 $(39/2^+)$ 634.7 100 18 3328.4 $(35/2^+)$ 3963.1 $(39/2^+)$ 634.7 100 18 3328.4 $(35/2^+)$ 240.7 $(41/2^-)$ 634.7 100 18 3328.4 $(35/2^+)$ 4175.5 $(41/2^+)$ 634.7 100 170 3937.2 $(39/2^-)$ 584.8100 110 3937.2 $(39/2^-)$ 592.793 15 3647.9 $(37/2^+)$ 4495.8 $(43/2^+)$ 652.0 100 3483.8 $(39/2^+)$ 652.0 100 3483.8 $(39/2^+)$ 855.0 255 378.6 $(41/2^-)$ 638.6 100 16 3963.1 $(39/2^+)$ 855.0 255 378.6 $(45/2^-)$ 37.0 98 4942.7 $(43/2^-)$ $67.9.3$ 100<	3328.4	$(35/2^+)$	589.0	100 8	2739.5 ($(31/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			822.4	16 4	2505.8 ($(33/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3352.4	$(35/2^{-})$	286.8	89 4	3065.6 ($(33/2^{-})$	D+Q	Mult.: from $({}^{19}F,4n\gamma)$.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			580.2	100 5	2772.2 ($(31/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3528.5	$(37/2^+)$	297.0	14 4	3231.5 ($(35/2^+)$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2647.0	$(27/2^{-})$	597.2 205.5	100 0	2931.3 ($(33/2^{+})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5047.9	(37/2)	293.3 582 3	00 0 100 7	3065.6 ($(33/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3672.5	$(37/2^+)$	581.7	100 /	3090.8 ($(33/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3788.6	$(41/2^{-})$	664.7	100	3124.1 ($(37/2^{-})$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3843.8	$(39/2^+)$	315.3		3528.5 ((37/2+)		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			612.3	100 7	3231.5 ($(35/2^+)$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3937.2	$(39/2^{-})$	289.3	80 8	3647.9 ($(37/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20(2.1	$(20/2^{\pm})$	584.8	100 11	3352.4 ($(35/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3963.1	(39/21)	634.7	100 18	3528.4 ($(35/2^{+})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4157 5	$(41/2^+)$	629.0 629.0	23 8	3528.5 ($(37/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4240.7	$(41/2^{-})$	303.5	100 10	3937.2 ($(39/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1210.7	(11/2)	592.7	93 15	3647.9 ($(37/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4292.6	$(41/2^+)$	620.1	100	3672.5 ($(37/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4495.8	$(43/2^+)$	652.0	100	3843.8 ($(39/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4502.1	$(45/2^{-})$	713.4	100	3788.6 ($(41/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4542.7	$(43/2^{-})$	302.0	71 14	4240.7 ($(41/2^{-})$		
4043.5 $(43/2)$ 080.0 $100\ 10$ $3905.1\ (39/2)$ 855.0 $25\ 5$ $3788.6\ (41/2^-)$ 4836.8 $(45/2^+)$ 679.3 100 $4157.5\ (41/2^+)$ 4879.6 $(45/2^-)$ 337.0 $98\ 49$ $4542.7\ (43/2^-)$ 638.8 $100\ 37$ $4240.7\ (41/2^-)$ 4962.6 $(45/2^+)\ 670.0$ 100 $4292.6\ (41/2^+)$ 5203.8 $(47/2^+)\ 708.0$ 100 $4495.8\ (43/2^+)$	1612 2	$(12/2^{+})$	005.7	100 14	3937.2 ((39/2)		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4043.3	(43/21)	855.0	25 5	3788.6	$(39/2^{+})$ $(41/2^{-})$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4836.8	$(45/2^+)$	679.3	100	4157 5 ($(41/2^+)$		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4879.6	$(45/2^{-})$	337.0	98 49	4542.7 ($(43/2^{-})$		
4962.6 $(45/2^+)$ 670.01004292.6 $(41/2^+)$ 5203.8 $(47/2^+)$ 708.01004495.8 $(43/2^+)$		(-,=)	638.8	100 37	4240.7 ((41/2-)		
$5203.8 (47/2^+) 708.0 \qquad 100 \qquad 4495.8 (43/2^+)$	4962.6	$(45/2^+)$	670.0	100	4292.6 ($(41/2^+)$		
	5203.8	$(47/2^+)$	708.0	100	4495.8 ($(43/2^+)$		

Continued on next page (footnotes at end of table)

$\gamma(^{169}Lu)$ (continued)

E _i (level)	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	J_f^π	$E_i(level)$	\mathbf{J}_i^{π}	E_{γ}^{\dagger}	I_{γ}^{\ddagger}	E_f	\mathbf{J}_f^π
5204.4	(47/2 ⁻)	325.0 661.6	75 45 100 <i>3</i> 4	4879.6 4542.7	(45/2 ⁻) (43/2 ⁻)	5975.8 6090.7	(51/2 ⁺) (53/2 ⁻)	772.0 821.7	100 100	5203.8 5269.0	(47/2 ⁺) (49/2 ⁻)
5269.0 5369.9	$(49/2^{-})$ $(47/2^{+})$	766.9 726.7	100 100 <i>24</i>	4502.1 4643.3	$(45/2^{-})$ $(43/2^{+})$	6127.0? 6382.8	$(51/2^+)$ $(53/2^+)$	757.1 ^f 804.0	100 100	5369.9 5578.8	$(47/2^+)$ $(49/2^+)$
5578.8	(49/2+)	867.6 742.0	≤18 100	4502.1 4836.8	(45/2 ⁻) (45/2 ⁺)	6902.7? 6962.8	(55/2 ⁺) (57/2 ⁻)	775.7 <i>∫</i> 872.0	100 100	6127.0? 6090.7	(51/2 ⁺) (53/2 ⁻)
5688.6?	$(49/2^+)$	726.0 ^J	100	4962.6	$(45/2^+)$						

[†] From ¹⁵⁴Sm(¹⁹F,4n γ), except where noted. Multipolarities are based on DCO ratio measurements, assigning $\Delta \pi$ =(No) to intraband transitions, except As noted.

[‡] Relative photon branching from each level; values are from 154 Sm(19 F,4n γ), except as noted.

[#] Energy differs from least-squares adjusted value by At least 5σ ; datum excluded from least-squares fit.

[@] From ¹⁶⁹Hf ε decay. [&] From ¹⁶⁹Tm(α ,4n γ), ¹⁷¹Yb(p,3n γ).

^a Value and uncertainty cover combined range for M1 and E2.

^b Assignment to ¹⁶⁹Lu uncertain.

^c Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^d Multiply placed.

^e Multiply placed with undivided intensity.

^{*f*} Placement of transition in the level scheme is uncertain.



0.0 34.06 h 5

¹⁶⁹₇₁Lu₉₈

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

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



¹⁶⁹₇₁Lu₉₈

Legend

Level Scheme (continued) Intensities: Relative photon branching from each level γ Decay (Uncertain) ► _ _ _ _ 1 4940 1 5/3.4 100 (25/2-) 1955.9 $\frac{(29/2^{-})}{(29/2^{-})}$ 1935.8 $\frac{1}{2^{\delta_{l,3}}} \frac{s_{l,3}}{s_{0,0}} + \frac{1}{2^{\delta_{l,0}}} + \frac{1}$ $|\frac{2}{3}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|_{1,2}^{2}|$ $(25/2^+)$ 1810.2 Ś 338.5 | ⁴⁰² (6) 1747.2 $(23/2^{-})$ $(23/2^+)$ 1698.2 $(23/2^{-})$ 1697.2 ^{433,6} 100 306,> 100 89,6 - 28,8 250.8 100 250.8 100 $\frac{(21/2^+)}{(23/2^+)}$ 1550.4 1549.3 ⁴³0,6 230,0 24,6 20,0 100 + 485 + (21/2⁻) 1462.0 $(25/2^{-})$ 1423.2 ∐ ⁴€2*0* 100 ∐ 23_{8,3} 21,> $\frac{(21/2^+)}{(19/2^-)}$ 1298.5 1288.6 $(19/2^+)$ 1244.0 ¥ ¥ (19/2-) 1 901 - 398- 1 1235.0 10 33 33 10 10 33 33 10 10 33 33 10 $(17/2^+)$ 1151.3 100 26.6 $(17/2^+)$ 1116.5 $(19/2^+)$ 1060.4 (17/2-) 1031.58 $(21/2^{-})$ 977.6 $(15/2^+)$ 937.3 $(15/2^{-})$ 896.2 $\frac{\overline{(15/2^-)}}{(15/2^+)}$ 844.67 ¥ 842.2 $(17/2^+)$ 836.38 $(13/2^+)$ 763.1 $(13/2^+)$ 733.1 $\frac{(15/2^+)}{(17/2^-)}$ 628.89 610.8 0.0 34.06 h 5 7/2+

¹⁶⁹₇₁Lu₉₈

Level Scheme (continued)

Intensities: Relative photon branching from each level & Multiply placed: undivided intensity given

Legend

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



¹⁶⁹₇₁Lu₉₈

|--|

Intensities: Relative photon branching from each level & Multiply placed: undivided intensity given

Legend

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



¹⁶⁹₇₁Lu₉₈



¹⁶⁹₇₁Lu₉₈

Adopted Levels, Gammas (continued)



¹⁶⁹₇₁Lu₉₈



 $^{169}_{71}Lu_{98}$