## $^{131}$Ce ε decay (5.4 min) 1983ViZU,1998Fo01

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Yu. Khazov, I. Mitropolsky, A. Rodionov | NDS 107, 2715 (2006) | 17-Jul-2006 |

Parent: $^{131}$Ce: E=63.09 *9*; $J^\pi$=(1/2$^+$); $T_{1/2}$=5.4 min *10*; Q(ε)=4.05×10$^3$ *4*; %ε+%$β^+$ decay=100.0
1983ViZU, 1983AkZZ: $^{131}$Ce ε decay [from Ta(p,X), 1000 MeV]; measured γ, γγ, $T_{1/2}$. Mass separation.
1998Fo01: $^{131}$Ce ε decay from $^{115}$In($^{20}$Ne,xpynγ), E=95 MeV; measured γ, γγ, xγ. Pulsed beam.
Others: 1966No05, 1973De25, 1996Ge12.

### $^{131}$La Levels

The partial level scheme of $^{131}$La populated from 5.0-min $^{131}$Ce isomer is that of 1983ViZU and 1998Fo01.

| E(level) | $J^\pi$ | $T_{1/2}$ † | Comments |
|---|---|---|---|
| 0.0 | 3/2$^+$ | 59 min *2* | |
| 26.18 *5* | 5/2$^+$ | 0.85 ns *10* | |
| 230.43 *5* | (1/2$^+$) | ≤30 ns | $J^\pi$: from systematics in odd-A La isotopes (1979Br05,1998Fo01) and decay pattern.<br>$T_{1/2}$: from γ(t) (1983ViZU). |
| 463.00 *11* | (3/2,1/2) | ≤30 ns | $T_{1/2}$: from γ(t) (1983ViZU). |
| 595.11 *10* | (3/2,1/2) | ≤30 ns | $T_{1/2}$: from γ(t) (1983ViZU). |

† For all levels, except as noted $T_{1/2}$≤30 ns (1983ViZU).

### γ($^{131}$La)

Iγ normalization: Normalization can not be derived since the $^{131}$Ce source fed the $^{131}$La levels partly also from the 10.3 min g.s.

| $E_\gamma$ † | $I_\gamma$ † | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult. | δ | Comments |
|---|---|---|---|---|---|---|---|---|
| 26.20 *5* | 45 *5* | 26.18 | 5/2$^+$ | 0.0 | 3/2$^+$ | M1(+E2) | <0.05 | $E_\gamma$: from 10.3-min ε decay (1996Ge12).<br>Mult.,δ: from 10.3-min ε decay (1973De25). |
| 204.3 *2* | 4 *2* | 230.43 | (1/2$^+$) | 26.18 | 5/2$^+$ | (E2) | | Mult.: D,(E2) from comparison to RUL.<br>Δ=2, Δ$J^\pi$=no from level scheme.<br>$E_\gamma$: E=203.6 keV in 1998Fo01. |
| 230.43 *5* | 331 *16* | 230.43 | (1/2$^+$) | 0.0 | 3/2$^+$ | (M1,E2) | | Mult.: D,(E2) from comparison to RUL.<br>Δπ=no from level scheme.<br>$E_\gamma$: E=230.3 keV in 1998Fo01. |
| x317.0 *3* | 7.4 *15* | | | | | | | |
| 436.85 *12* | 24 *2* | 463.00 | (3/2,1/2) | 26.18 | 5/2$^+$ | | | |
| 462.9 *2* | 23 *3* | 463.00 | (3/2,1/2) | 0.0 | 3/2$^+$ | | | |
| x479.00 *16* | 11.1 *12* | | | | | | | |
| 568.95 *10* | 15.6 *15* | 595.11 | (3/2,1/2) | 26.18 | 5/2$^+$ | | | |
| x577.25 *15* | 8.3 *10* | | | | | | | |
| 595.0 *2* | 5.4 *9* | 595.11 | (3/2,1/2) | 0.0 | 3/2$^+$ | | | |
| x652.8 *2* | 4.2 *8* | | | | | | | |
| x728.2 *2* | 5.3 *12* | | | | | | | |
| x742.20 *24* | 2.8 *8* | | | | | | | $I_\gamma$: part of intensity relates to 10.3-min $^{131}$Ce decay (1983ViZU). |
| x814.8 *2* | 8.5 *6* | | | | | | | |
| x880.6 *2* | 2.3 *7* | | | | | | | |
| x904.0 *3* | 4.0 *8* | | | | | | | |
| x999.8 *2* | 10.9 *12* | | | | | | | |
| x1407.6 *5* | 2.5 *5* | | | | | | | |
| x1413.5 *3* | 3.7 *6* | | | | | | | |

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## $^{131}$Ce ε decay (5.4 min) 1983ViZU,1998Fo01 (continued)

### γ($^{131}$La) (continued)

† Mainly from Iγ(t) of 5.0-min $^{131}$Ce decay (1983ViZU), except as noted.
x γ ray not placed in level scheme.

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### Decay Scheme

Intensities: Relative $I_\gamma$