

$^{235}\text{U}(\text{n},\gamma)$  E=thermal [1975OtZX,1975WeZA](#)

| Type            | Author      | History<br>Citation | Literature Cutoff Date |
|-----------------|-------------|---------------------|------------------------|
| Full Evaluation | Shaofei Zhu | NDS 182, 2 (2022).  | 1-Apr-2022             |

[1975OtZX,1975WeZA](#): Measured  $E\gamma$ ,  $I\gamma$  for primary and secondary  $\gamma$  rays. Detectors: Ge(Li), fission-neutron anticoincidence spectrometer.

Others: [1969BaZW](#), [1972MaYR](#), [1973Gr20](#), [1969We06](#), [1970Ka22](#), [1979McZP](#).

$\alpha$ : [Additional information 1](#).

 $^{236}\text{U}$  Levels

| E(level) <sup>†</sup> | J $\pi$ <sup>‡</sup>              | T <sub>1/2</sub> | Comments                                                                                                                          |
|-----------------------|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 0                     | 0 <sup>+</sup>                    |                  |                                                                                                                                   |
| 45.2431 20            | 2 <sup>+</sup>                    |                  |                                                                                                                                   |
| 149.480 5             | 4 <sup>+</sup>                    |                  |                                                                                                                                   |
| 309.788 6             | 6 <sup>+</sup>                    |                  |                                                                                                                                   |
| 687.55 4              | 1 <sup>-</sup>                    |                  |                                                                                                                                   |
| 744.2 5               | 3 <sup>-</sup>                    |                  |                                                                                                                                   |
| 848.3 8               | 5 <sup>-</sup>                    |                  |                                                                                                                                   |
| 918.9 3               | 0 <sup>+</sup>                    |                  |                                                                                                                                   |
| 957.7 3               | 2 <sup>+</sup>                    |                  |                                                                                                                                   |
| 960.06 19             | (2 <sup>+</sup> )                 |                  |                                                                                                                                   |
| 966.66 19             | (1 <sup>-</sup> )                 |                  |                                                                                                                                   |
| 987.7 3               | 2 <sup>-</sup>                    |                  |                                                                                                                                   |
| 1001.32 24            | (3 <sup>+</sup> )                 |                  |                                                                                                                                   |
| 1035.6 7              | 3 <sup>-</sup>                    |                  |                                                                                                                                   |
| 1050.81 15            | (4 <sup>+</sup> )                 |                  |                                                                                                                                   |
| 1052.94 20            | 4 <sup>-</sup>                    | 97 ns 6          | T <sub>1/2</sub> : from <a href="#">1979McZP</a> .                                                                                |
| 1058.8 3              | (4 <sup>+</sup> )                 |                  |                                                                                                                                   |
| 1070.0 10             | (4 <sup>-</sup> )                 |                  |                                                                                                                                   |
| 1110.1 6              | (2 <sup>-</sup> )                 |                  |                                                                                                                                   |
| 1127.38 20            | (5 <sup>+</sup> )                 |                  |                                                                                                                                   |
| 1149.4 11             | (3 <sup>-</sup> )                 |                  |                                                                                                                                   |
| 1171.7 20             |                                   |                  |                                                                                                                                   |
| 1221.4 6              | (2 <sup>+</sup> ,5 <sup>+</sup> ) |                  |                                                                                                                                   |
| 1331.5?               |                                   |                  |                                                                                                                                   |
| 1347.9 5              | (3 <sup>+</sup> ,4 <sup>+</sup> ) |                  |                                                                                                                                   |
| 1571.4 7              |                                   |                  |                                                                                                                                   |
| 1642.4 19             |                                   |                  |                                                                                                                                   |
| 1661.3?               | (1,2 <sup>+</sup> )               |                  |                                                                                                                                   |
| 1898.0 7              |                                   |                  |                                                                                                                                   |
| (6545.13 17)          | (3 <sup>-</sup> ,4 <sup>-</sup> ) |                  | E(level): other: 6545.5 3 ( <a href="#">2021Wa16</a> ).<br>J $\pi$ : L=0 neutrons captured on $^{235}\text{U}(J^{\pi}=7/2^{-})$ . |

<sup>†</sup> Deduced by the evaluators from a least-squares fit to  $\gamma$ -ray energies.

<sup>‡</sup> From Adopted Levels.

I $\gamma$  normalization: measured by rejecting prompt-fission  $\gamma$  rays using  $4\pi$  detection of prompt neutrons (1975WeZA).

| $E_\gamma$              | I $\gamma$ @ | $E_i(\text{level})$ | $J_i^\pi$         | $E_f$   | $J_f^\pi$         | Mult. | $\delta$ | $\alpha$ | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|--------------|---------------------|-------------------|---------|-------------------|-------|----------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 45.243 $^{\ddagger}$ 2  |              | 45.2431             | 2 <sup>+</sup>    | 0       | 0 <sup>+</sup>    |       |          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 56.6 $^{\ddagger}$ 8    |              | 744.2               | 3 <sup>-</sup>    | 687.55  | 1 <sup>-</sup>    | [E2]  |          | 0.558 23 | $\alpha(\text{L})=0.420$ 17; $\alpha(\text{M})=0.104$ 4; $\alpha(\text{N})=0.0275$ 11; $\alpha(\text{O})=0.00628$ 25;<br>$\alpha(\text{P})=0.00103$ 4<br>$\alpha(\text{Q})=3.99\times 10^{-5}$ 13<br>$E_\gamma$ : not observed in 1979McZP.                                                                                                                                                                                                                                                                                                                                                                               |
| 65                      |              | 1052.94             | 4 <sup>-</sup>    | 987.7   | 2 <sup>-</sup>    |       |          |          | $E_\gamma$ : not observed in 1979McZP, placement is questionable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 86 $\&$                 |              | 1052.94             | 4 <sup>-</sup>    | 966.66  | (1 <sup>-</sup> ) |       |          |          | $E_\gamma$ : from 1979McZP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 104                     |              | 848.3               | 5 <sup>-</sup>    | 744.2   | 3 <sup>-</sup>    |       |          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 104.237 $^{\ddagger}$ 4 |              | 149.480             | 4 <sup>+</sup>    | 45.2431 | 2 <sup>+</sup>    | E2    |          | 10.99 15 | $\alpha(\text{L})=8.00$ 11; $\alpha(\text{M})=2.220$ 31; $\alpha(\text{N})=0.603$ 8; $\alpha(\text{O})=0.1385$ 19;<br>$\alpha(\text{P})=0.02268$ 32<br>$\alpha(\text{Q})=9.41\times 10^{-5}$ 13<br>Mult.: $\alpha(\text{M})_{\text{exp}}=7$ 3, $\alpha(\text{N}+\text{L}+\dots)_{\text{exp}}=2$ 1 (1979McZP).<br>Delayed I $\gamma$ (104 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.11 3 (1979McZP).                                                                                                                                                                                                                         |
| 160.308 $^{\ddagger}$ 3 |              | 309.788             | 6 <sup>+</sup>    | 149.480 | 4 <sup>+</sup>    |       |          |          | Delayed I $\gamma$ (160 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.15 3 (1979McZP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 204.6 10                | 6.5          | 1052.94             | 4 <sup>-</sup>    | 848.3   | 5 <sup>-</sup>    | (E2)  |          | 1.8 11   | $\alpha(\text{K})=1.2$ 11; $\alpha(\text{L})=0.421$ 30; $\alpha(\text{M})=0.1084$ 25; $\alpha(\text{N})=0.0293$ 7;<br>$\alpha(\text{O})=0.00695$ 23<br>$\alpha(\text{P})=0.00125$ 12; $\alpha(\text{Q})=6\text{E}-5$ 5<br>$E_\gamma$ : from 1979McZP.<br>Mult.: from $\alpha(\text{M})_{\text{exp}}=0.10$ 5 (1979McZP).<br>I $\gamma$ : from delayed I $\gamma$ (308 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.41 6 and<br>I $\gamma$ (903 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.17 3 (1979McZP) using I $\gamma$ (903 $\gamma$ )=2.7.                                                                                    |
| 243.4 10                | 5.7 15       | 987.7               | 2 <sup>-</sup>    | 744.2   | 3 <sup>-</sup>    | M1+E2 | 1.5 4    | 1.1 7    | $\alpha(\text{K})=0.8$ 7; $\alpha(\text{L})=0.23$ 4; $\alpha(\text{M})=0.059$ 7; $\alpha(\text{N})=0.0161$ 19;<br>$\alpha(\text{O})=0.0038$ 6; $\alpha(\text{P})=0.00070$ 15<br>$\alpha(\text{Q})=3.7\times 10^{-5}$ 30<br>$E_\gamma$ : from 1979McZP, other: 243.8 (1975OtZX).<br>Mult., $\delta$ : from $\alpha(\text{K})_{\text{exp}}=0.49$ 21 and $\alpha(\text{L})_{\text{exp}}=0.26$ 12 (1979McZP).<br>I $\gamma$ : from delayed I $\gamma$ (243 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.18 3 and<br>I $\gamma$ (942 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.44 6 (1979McZP) using I $\gamma$ (942 $\gamma$ )=14 2. |
| 258.4 $\#$              |              | 1001.32             | (3 <sup>+</sup> ) | 744.2   | 3 <sup>-</sup>    |       |          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 279.2 10                | 8.7 23       | 966.66              | (1 <sup>-</sup> ) | 687.55  | 1 <sup>-</sup>    |       |          |          | $E_\gamma$ : from 1979McZP, other: 279.2 (1975OtZX).<br>Delayed I $\gamma$ (279 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.15 4 (1979McZP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 300.0 10                | 3.2 9        | 987.7               | 2 <sup>-</sup>    | 687.55  | 1 <sup>-</sup>    |       |          |          | $E_\gamma$ : from 1979McZP, other: 301.0 (1975OtZX).<br>I $\gamma$ : from delayed I $\gamma$ (300 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.10 2 and<br>I $\gamma$ (942 $\gamma$ )/I $\gamma$ (642 $\gamma$ )=0.44 6 (1979McZP) using I $\gamma$ (942 $\gamma$ )=14 2.                                                                                                                                                                                                                                                                                                                                                      |
| 307.9 10                | 5.9          | 1052.94             | 4 <sup>-</sup>    | 744.2   | 3 <sup>-</sup>    | M1+E2 | 1.3 5    | 0.6 4    | $\alpha(\text{K})=0.41$ 34; $\alpha(\text{L})=0.109$ 34; $\alpha(\text{M})=0.027$ 7; $\alpha(\text{N})=0.0074$ 19;<br>$\alpha(\text{O})=0.0018$ 5<br>$\alpha(\text{P})=3.3\times 10^{-4}$ 11; $\alpha(\text{Q})=2.0\times 10^{-5}$ 15<br>$E_\gamma$ : from 1979McZP; others: 308.1 (1975OtZX).<br>Mult., $\delta$ : from $\alpha(\text{K})_{\text{exp}}=0.33$ 17 (1979McZP).                                                                                                                                                                                                                                              |

γ(<sup>236</sup>U) (continued)

| E <sub>γ</sub>                      | I <sub>γ</sub> <sup>@</sup> | E <sub>i</sub> (level) | J <sub>i</sub> <sup>π</sup> | E <sub>f</sub> | J <sub>f</sub> <sup>π</sup> | Mult.      | α          | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------|-----------------------------|------------------------|-----------------------------|----------------|-----------------------------|------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     |                             |                        |                             |                |                             |            |            | I <sub>γ</sub> : from delayed I <sub>γ</sub> (308γ)/I <sub>γ</sub> (642γ)=0.37 6 and I <sub>γ</sub> (903γ)/I <sub>γ</sub> (642γ)=0.17 3 (1979McZP) using I <sub>γ</sub> (903γ)=2.7.                                                                                                                                                                                                                                                           |
| 365.5 <sup>#</sup>                  |                             | 1110.1                 | (2 <sup>-</sup> )           | 744.2          | 3 <sup>-</sup>              |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 405.2 <sup>#</sup>                  |                             | 1149.4                 | (3 <sup>-</sup> )           | 744.2          | 3 <sup>-</sup>              |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 423.1 <sup>#</sup>                  |                             | 1110.1                 | (2 <sup>-</sup> )           | 687.55         | 1 <sup>-</sup>              |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 538.09 <sup>‡</sup> 7               | 0.66 5                      | 687.55                 | 1 <sup>-</sup>              | 149.480        | 4 <sup>+</sup>              | E3         | 0.20 8     | α(K)exp=0.11 5<br>Mult.,α: from Adopted Gammas.<br>I <sub>γ</sub> : deduced from Adopted I <sub>γ</sub> (538)/I <sub>γ</sub> (642)=1.14 8.                                                                                                                                                                                                                                                                                                    |
| 642.23 <sup>‡</sup> 7               | 58 2                        | 687.55                 | 1 <sup>-</sup>              | 45.2431        | 2 <sup>+</sup>              | E1(+M2+E3) | 0.15 2     | α(K)exp=0.111 10; α(L)exp=0.031 9<br>Mult.,α: from Adopted Gammas; others: K/L=3.8 3 (1969BaZW);<br>K/L=3.9 13 (1979McZP).<br>E <sub>γ</sub> : others: 642.06 keV 17 (1969BaZW), 642.2 keV 1 (1973Gr20), and 641.8 keV 1 (1972MaYR).<br>I <sub>γ</sub> : from 1972MaYR; others: 65 10 4 (1969We06) and 58 (1975OtZX).<br>I <sub>γ</sub> : from 1972MaYR; ce(K)/ce(K)(642γ)=0.058 9 (1969BaZW).<br>E <sub>γ</sub> : other: 655.6 4 (1972MaYR). |
| <sup>x</sup> 655.82 <sup>†</sup> 17 | 6 1                         |                        |                             |                |                             |            |            | α(K)exp=0.219 14; α(L)exp=0.069 9<br>Mult.,α: from Adopted Gammas; others: K/L=3.6 4 (1969BaZW);<br>αK(exp)=0.16 6, αL(exp)=0.07 4, K/L=2.3 10 (1979McZP).<br>E <sub>γ</sub> : others: 687.39 17 (1969BaZW), 687.5 1 (1973Gr20), and 687.5 10 (1972MaYR).<br>I <sub>γ</sub> : weighted average of 19 5 (1972MaYR) and 18 4 (1969We06). others: 18 (1975OtZX).                                                                                 |
| 687.59 <sup>‡</sup> 6               | 18 3                        | 687.55                 | 1 <sup>-</sup>              | 0              | 0 <sup>+</sup>              | E1         | 0.31 2     | ce(K)/ce(K)(642γ)=0.041 12 (1969BaZW).<br>ce(K)/ce(K)(642γ)=0.042 10 (1969BaZW).                                                                                                                                                                                                                                                                                                                                                              |
| <sup>x</sup> 698.82 <sup>†</sup> 17 | 6 1                         |                        |                             |                |                             |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <sup>x</sup> 790.2 <sup>†</sup> 2   |                             |                        |                             |                |                             |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 810.9 <sup>#</sup>                  | 2.7 <sup>#</sup>            | 960.06                 | (2 <sup>+</sup> )           | 149.480        | 4 <sup>+</sup>              |            |            | ce(K)/ce(K)(642γ)=0.045 10 (1969BaZW).                                                                                                                                                                                                                                                                                                                                                                                                        |
| <sup>x</sup> 838.9 <sup>†</sup> 2   |                             |                        |                             |                |                             |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 852.2 <sup>#</sup>                  | 1.3 <sup>#</sup>            | 1001.32                | (3 <sup>+</sup> )           | 149.480        | 4 <sup>+</sup>              |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 873.98 <sup>‡</sup> 12              |                             | 918.9                  | 0 <sup>+</sup>              | 45.2431        | 2 <sup>+</sup>              | [E2]       | 0.01439 20 | α(K)=0.01060 15; α(L)=0.00283 4; α(M)=0.000711 10; α(N)=0.0001917 27<br>α(O)=4.58×10 <sup>-5</sup> 6; α(P)=8.47×10 <sup>-6</sup> 12; α(Q)=4.86×10 <sup>-7</sup> 7                                                                                                                                                                                                                                                                             |
| 886.2 <sup>#</sup>                  | 1.7 <sup>#</sup>            | 1035.6                 | 3 <sup>-</sup>              | 149.480        | 4 <sup>+</sup>              |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 901.25 <sup>†</sup> 17              |                             | 1050.81                | (4 <sup>+</sup> )           | 149.480        | 4 <sup>+</sup>              | (E0+E2)    |            | Mult.: no γ observed with strong ce(K)≈50 using ce(K)/ce(K)(642γ)=0.094 10 (1969BaZW), α(K)exp(642γ)=0.111 10 and I <sub>γ</sub> (642γ)=58 2.                                                                                                                                                                                                                                                                                                 |
| 903.6 4                             | 2.7                         | 1052.94                | 4 <sup>-</sup>              | 149.480        | 4 <sup>+</sup>              | (E1)       |            | E <sub>γ</sub> : weighted average of 903.2 10 (1979McZP) and 903.7 4 (1973Gr20); others: 903.4 (1975OtZX), 903.5 (1970Ka22).<br>I <sub>γ</sub> : from 1975OtZX.<br>Mult.: suggested inconclusively as E1 based on no ce data observed (1979McZP).                                                                                                                                                                                             |

γ(<sup>236</sup>U) (continued)

| <u>E<sub>γ</sub></u> | <u>I<sub>γ</sub><sup>@</sup></u> | <u>E<sub>i</sub>(level)</u> | <u>J<sub>i</sub><sup>π</sup></u> | <u>E<sub>f</sub></u> | <u>J<sub>f</sub><sup>π</sup></u> | <u>Mult.</u> | <u>α</u>   | <u>Comments</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------|----------------------------------|-----------------------------|----------------------------------|----------------------|----------------------------------|--------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 909.3 3              | 11 1                             | 1058.8                      | (4 <sup>+</sup> )                | 149.480              | 4 <sup>+</sup>                   | M1           | 0.0505 7   | α(K)=0.0404 6; α(L)=0.00760 11; α(M)=0.001830 26; α(N)=0.000493 7<br>α(O)=0.0001198 17; α(P)=2.313×10 <sup>-5</sup> 32; α(Q)=1.852×10 <sup>-6</sup> 26<br>E <sub>γ</sub> : weighted average of 909.1 2 (1969BaZW), 909.0 2 (1973Gr20), and 910.2 3 (1972MaYR), other: 909 (1969We06), 909.7 (1970Ka22) and 910.0 (1975OtZX).<br>I <sub>γ</sub> : weighted average of 11.5 40 (1969We06) and 11 1 (1972MaYR); other: 7.6 (1975OtZX).<br>Mult.: from α(K)exp=0.029 6 deduced using ce(K)/ce(K)(642γ)=0.050 8 (1969BaZW), α(K)exp(642γ)=0.111 10, I <sub>γ</sub> (642γ)=58 2 and I <sub>γ</sub> (909γ)=11 1, ce(K)=5.0 8 (1969BaZW). |
| 912.4 3              | 3.2                              | 957.7                       | 2 <sup>+</sup>                   | 45.2431              | 2 <sup>+</sup>                   | M1           | 0.0500 7   | α(K)=0.0400 6; α(L)=0.00753 11; α(M)=0.001814 25; α(N)=0.000488 7<br>α(O)=0.0001188 17; α(P)=2.292×10 <sup>-5</sup> 32; α(Q)=1.835×10 <sup>-6</sup> 26<br>E <sub>γ</sub> : from 1969BaZW; other: 912.7 (1975OtZX).<br>Mult.: from α(K)exp=0.08 3 deduced using ce(K)/ce(K)(642γ)=0.042 13 (1969BaZW), α(K)exp(642γ)=0.111 10, I <sub>γ</sub> (642γ)=58 2 and I <sub>γ</sub> (912γ)=3.2.<br>I <sub>γ</sub> : from 1975OtZX.                                                                                                                                                                                                        |
| 914.8 2              | 4.0                              | 960.06                      | (2 <sup>+</sup> )                | 45.2431              | 2 <sup>+</sup>                   | (E0+M1)      | 0.01316 18 | α(K)=0.00978 14; α(L)=0.002531 35; α(M)=0.000633 9; α(N)=0.0001707 24<br>α(O)=4.08×10 <sup>-5</sup> 6; α(P)=7.57×10 <sup>-6</sup> 11; α(Q)=4.45×10 <sup>-7</sup> 6<br>E <sub>γ</sub> : weighted average of 915.10 25 (1969BaZW) and 914.6 2 (1973Gr20), other: 915.4 (1970Ka22).<br>Mult.: from α(K)exp=0.19 1 deduced using ce(K)/ce(K)(642γ)=0.117 12 (1969BaZW), α(K)exp(642γ)=0.111 10, I <sub>γ</sub> (642γ)=58 2 and I <sub>γ</sub> (915γ)=4.0 and ce(L)/ce(K)(642γ)<2.3 (1969BaZW).<br>I <sub>γ</sub> : from 1975OtZX.                                                                                                     |
| 918.9 <sup>†</sup> 3 |                                  | 918.9                       | 0 <sup>+</sup>                   | 0                    | 0 <sup>+</sup>                   | [E0]         |            | ce(K)/ce(K)(642γ)=0.036 7 (1969BaZW).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 920.5 <sup>#</sup>   | 2.4 <sup>#</sup>                 | 1070.0                      | (4 <sup>-</sup> )                | 149.480              | 4 <sup>+</sup>                   |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 921.1 5              | 6 1                              | 966.66                      | (1 <sup>-</sup> )                | 45.2431              | 2 <sup>+</sup>                   | (E1)         |            | E <sub>γ</sub> : from 1972MaYR, others: 921.9 (1970Ka22), 922.1 (1975OtZX) and 921.3 10 (1979McZP).<br>I <sub>γ</sub> : from 1972MaYR, other: 5.4 (1975OtZX).<br>Mult.: suggested inconclusively as E1 based on no ce data observed (1979McZP).<br>Delayed I <sub>γ</sub> (921γ)/I <sub>γ</sub> (642γ)=0.08 3 (1979McZP).                                                                                                                                                                                                                                                                                                         |
| 942.5 3              | 14 2                             | 987.7                       | 2 <sup>-</sup>                   | 45.2431              | 2 <sup>+</sup>                   | (E1)         |            | E <sub>γ</sub> : from 1972MaYR; others: 941 (1969We06), 942.6 10 (1979McZP), 943.0 (1975OtZX) and 943.0 (1970Ka22).<br>I <sub>γ</sub> : weighted average of 11 4 (1969We06) and 15 2 (1972MaYR); others: 9.4 (1975OtZX).<br>Mult.: suggested inconclusively as E1 based on no ce data observed (1979McZP).<br>Delayed I <sub>γ</sub> (943γ)/I <sub>γ</sub> (642γ)=0.44 6 (1979McZP).                                                                                                                                                                                                                                              |
| 956.3 3              | 15.4 18                          | 1001.32                     | (3 <sup>+</sup> )                | 45.2431              | 2 <sup>+</sup>                   |              |            | E <sub>γ</sub> : weighted average of 956.52 (1972MaYR) and 955.9 3 (1973Gr20); others: 955 (1969We06), 956.2 (1970Ka22) and 956.6 (1975OtZX).<br>I <sub>γ</sub> : weighted average of 17.5 45 (1969We06) and 15 2 (1972MaYR); other: 10.3 (1975OtZX).                                                                                                                                                                                                                                                                                                                                                                             |
| 958.3 <sup>#</sup>   | 4.5 <sup>#</sup>                 | 957.7                       | 2 <sup>+</sup>                   | 0                    | 0 <sup>+</sup>                   |              |            | E <sub>γ</sub> : others: 955.9 3 (1973Gr20) and 956.2 (1970Ka22).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 959.9 <sup>#</sup>   | 3.2 <sup>#</sup>                 | 960.06                      | (2 <sup>+</sup> )                | 0                    | 0 <sup>+</sup>                   |              |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

γ(<sup>236</sup>U) (continued)

| E <sub>γ</sub>                       | I <sub>γ</sub> <sup>@</sup> | E <sub>i</sub> (level) | J <sub>i</sub> <sup>π</sup>       | E <sub>f</sub> | J <sub>f</sub> <sup>π</sup>       | Mult. | α         | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------|------------------------|-----------------------------------|----------------|-----------------------------------|-------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <sup>x</sup> 965.80 <sup>†</sup> 2   |                             |                        |                                   |                |                                   |       |           | Suggested as M1 from deduced α(K)exp=0.034 11 using ce(K)/ce(K)(642γ)=0.042 13 (1969BaZW), α(K)exp=0.111 10, I <sub>γ</sub> (642γ)=58 2 if assuming I <sub>γ</sub> (966γ)=8 1 as 967-keV (1 <sup>-</sup> ) level to 0 <sup>+</sup> transition, which should be E1.                                                                                                                                                                                                                                                                                                                                                                                           |
| 966.7 2                              | 8 1                         | 966.66                 | (1 <sup>-</sup> )                 | 0              | 0 <sup>+</sup>                    | (E1)  | 0.00397 6 | α(K)=0.00325 5; α(L)=0.000549 8; α(M)=0.0001304 18; α(N)=3.49×10 <sup>-5</sup> 5; α(O)=8.45×10 <sup>-6</sup> 12<br>α(P)=1.612×10 <sup>-6</sup> 23; α(Q)=1.240×10 <sup>-7</sup> 17<br>E <sub>γ</sub> : weighted average of 966.9 4 (1973Gr20), 966.7 3 (1972MaYR) and 965.8 10 (1979McZP); other: 967.2 (1975OtZX).<br>I <sub>γ</sub> : from 1972MaYR, other: 6.6 (1975OtZX).<br>Mult.: suggested inconclusively as E1 based on no ce data observed (1979McZP).<br>Delayed I <sub>γ</sub> (966γ)/I <sub>γ</sub> (642γ)=0.15 3 (1979McZP).<br>E <sub>γ</sub> : from 1973Gr20, other: 977.4 (1970Ka22) and 976.5 (1975OtZX).<br>I <sub>γ</sub> : From 1975OtZX. |
| 977.9 2                              | 5.9                         | 1127.38                | (5 <sup>+</sup> )                 | 149.480        | 4 <sup>+</sup>                    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 990.2 <sup>#</sup>                   | 1.5 <sup>#</sup>            | 1035.6                 | 3 <sup>-</sup>                    | 45.2431        | 2 <sup>+</sup>                    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <sup>x</sup> 994.94 <sup>†</sup> 25  |                             |                        |                                   |                |                                   |       |           | ce(K)/ce(K)(642γ)=0.078 11 (1969BaZW).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1005.7 3                             | 5 1                         | 1050.81                | (4 <sup>+</sup> )                 | 45.2431        | 2 <sup>+</sup>                    |       |           | E <sub>γ</sub> : from 1972MaYR; others: 1005.9 (1970Ka22) and 1006.2 (1975OtZX).<br>I <sub>γ</sub> : from 1972MaYR; other: 4.4 (1975OtZX).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1014.1 <sup>#</sup>                  | 7.6 <sup>#</sup>            | 1058.8                 | (4 <sup>+</sup> )                 | 45.2431        | 2 <sup>+</sup>                    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <sup>x</sup> 1022.33 <sup>†</sup> 25 | 5 1                         |                        |                                   |                |                                   |       |           | I <sub>γ</sub> : from 1972MaYR; ce(K)/ce(K)(642γ)=0.046 15 (1969BaZW).<br>E <sub>γ</sub> : other: 1023.7 5 (1972MaYR).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1064.7 <sup>#</sup>                  | 1.2 <sup>#</sup>            | 1110.1                 | (2 <sup>-</sup> )                 | 45.2431        | 2 <sup>+</sup>                    |       |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <sup>x</sup> 1100.06 <sup>†</sup> 25 |                             |                        |                                   |                |                                   |       |           | ce(K)/ce(K)(642γ)=0.023 8 (1969BaZW).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4647.1 6                             | 0.4 2                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1898.0         |                                   |       |           | E <sub>γ</sub> : weighted average of 4648.3 6 (1972MaYR, 1975WeZA), and 4646.8 3 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 7.0 (1970JuZZ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4885.5 <sup>&amp;</sup> 6            | 0.9 2                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1661.3?        | (1,2 <sup>+</sup> )               |       |           | E <sub>γ</sub> : weighted average of 4883.9 10 (1972MaYR, 1975WeZA), and 4885.7 4 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 4.0 (1970JuZZ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 4902.7 19                            | 0.4 2                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1642.4         |                                   |       |           | E <sub>γ</sub> ,I <sub>γ</sub> : from 1972MaYR and 1975WeZA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 4973.7 6                             | 0.9 2                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1571.4         |                                   |       |           | E <sub>γ</sub> : weighted average of 4973.0 5 (1972MaYR,1975WeZA), and 4974.2 4 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 3.0 (1970JuZZ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5197.2 4                             | 0.3 1                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1347.9         | (3 <sup>+</sup> ,4 <sup>+</sup> ) |       |           | E <sub>γ</sub> : weighted average of 5196.8 25 (1972MaYR,1975WeZA), and 5197.2 4 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 2.0 (1970JuZZ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5212.8 <sup>&amp;</sup> 6            | 0.5 2                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1331.5?        |                                   |       |           | E <sub>γ</sub> : weighted average of 5213.7 10 (1972MaYR,1975WeZA) and 5212.4 7 (1970JuZZ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5323.7 5                             | 0.5 2                       | (6545.13)              | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1221.4         | (2 <sup>+</sup> ,5 <sup>+</sup> ) |       |           | I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 1.0 (1970JuZZ).<br>E <sub>γ</sub> : weighted average of 5323.2 18 (1972MaYR), 5323.2 18 (1975WeZA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

<sup>235</sup>U(n,γ) E=thermal 1975OtZX,1975WeZA (continued)

γ(<sup>236</sup>U) (continued)

| <u>E<sub>γ</sub></u> | <u>I<sub>γ</sub><sup>@</sup></u> | <u>E<sub>i</sub>(level)</u> | <u>J<sub>i</sub><sup>π</sup></u>  | <u>E<sub>f</sub></u> | <u>J<sub>f</sub><sup>π</sup></u> | <u>Comments</u>                                                                                                                                                                                                                |
|----------------------|----------------------------------|-----------------------------|-----------------------------------|----------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |                                  |                             |                                   |                      |                                  | and 5323.8 5 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 0.8 (1970JuZZ).<br>E <sub>γ</sub> , I <sub>γ</sub> : from 1972MaYR and 1975WeZA.                                                               |
| 5373.4 20            | 0.4 2                            | (6545.13)                   | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1171.7               |                                  | E <sub>γ</sub> : weighted average of 5493.4 10 (1972MaYR), 5494.8 25 (1975WeZA) and 5494 2 (1970Ka22).                                                                                                                         |
| 5493.5 8             | 0.2 1                            | (6545.13)                   | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1050.81              | (4 <sup>+</sup> )                | I <sub>γ</sub> : from 1972MaYR and 1975WeZA.                                                                                                                                                                                   |
| 5544.4 4             | 0.4 2                            | (6545.13)                   | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 1001.32              | (3 <sup>+</sup> )                | E <sub>γ</sub> : weighted average of 5544.1 7 (1975WeZA), 5546 2 (1973Gr20), 5544.6 13 (1972MaYR), 5544 2 (1970Ka22) and 5544.6 keV 7 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 0.7 (1970JuZZ).       |
| 5584.9 6             | 0.2 1                            | (6545.13)                   | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 960.06               | (2 <sup>+</sup> )                | E <sub>γ</sub> : weighted average of 5584.1 7 (1975WeZA), 5588 keV 2 (1973Gr20), 5585 2 (1970Ka22), and 5585.5 9 (1970JuZZ).                                                                                                   |
| 6395.5 2             | 3.2 6                            | (6545.13)                   | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 149.480              | 4 <sup>+</sup>                   | I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 0.3 (1970JuZZ).<br>E <sub>γ</sub> : weighted average of 6395 2 (1970Ka22), 6395.7 4 (1975WeZA), 6396 2 (1973Gr20), 6395.5 3 (1972MaYR), and 6395.4 3 (1970JuZZ).           |
| 6499.5 5             | 0.2 1                            | (6545.13)                   | (3 <sup>-</sup> ,4 <sup>-</sup> ) | 45.2431              | 2 <sup>+</sup>                   | I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 4 (1970JuZZ).<br>E <sub>γ</sub> : weighted average of 6500.0 7 (1975WeZA), and 6498.9 8 (1970JuZZ).<br>I <sub>γ</sub> : from 1972MaYR and 1975WeZA, other: 0.2 (1970JuZZ). |

<sup>†</sup> From 1969BaZW.

<sup>‡</sup> From Adopted Gammas.

<sup>#</sup> From 1975OtZX.

<sup>@</sup> For intensity per 100 neutron captures, multiply by 0.10 5.

<sup>&</sup> Placement of transition in the level scheme is uncertain.

<sup>x</sup> γ ray not placed in level scheme.

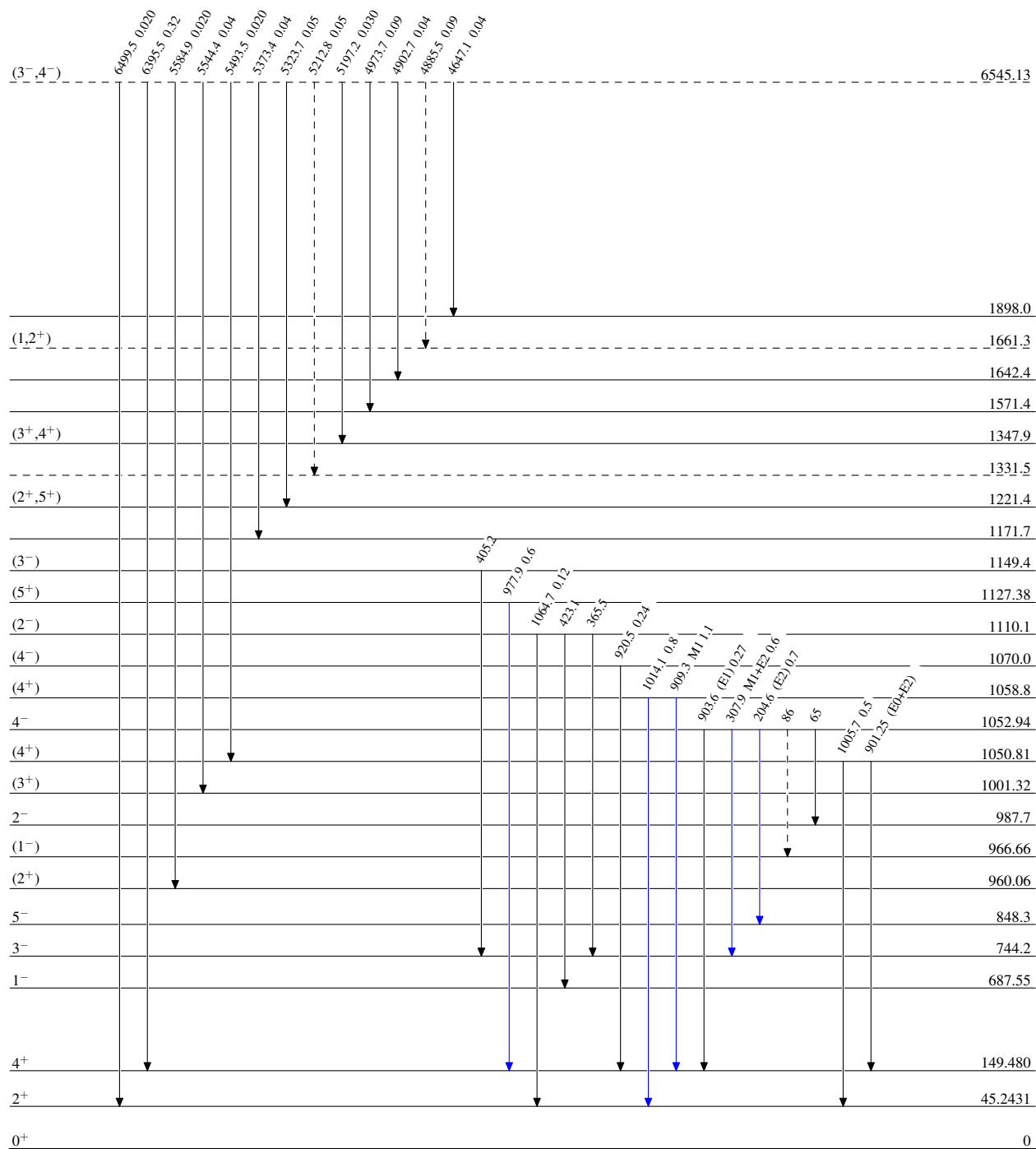
$^{235}\text{U}(\text{n},\gamma) \text{E=thermal}$  1975OtZX,1975WeZA

Legend

## Level Scheme

Intensities:  $I_\gamma$  per 100 neutron captures

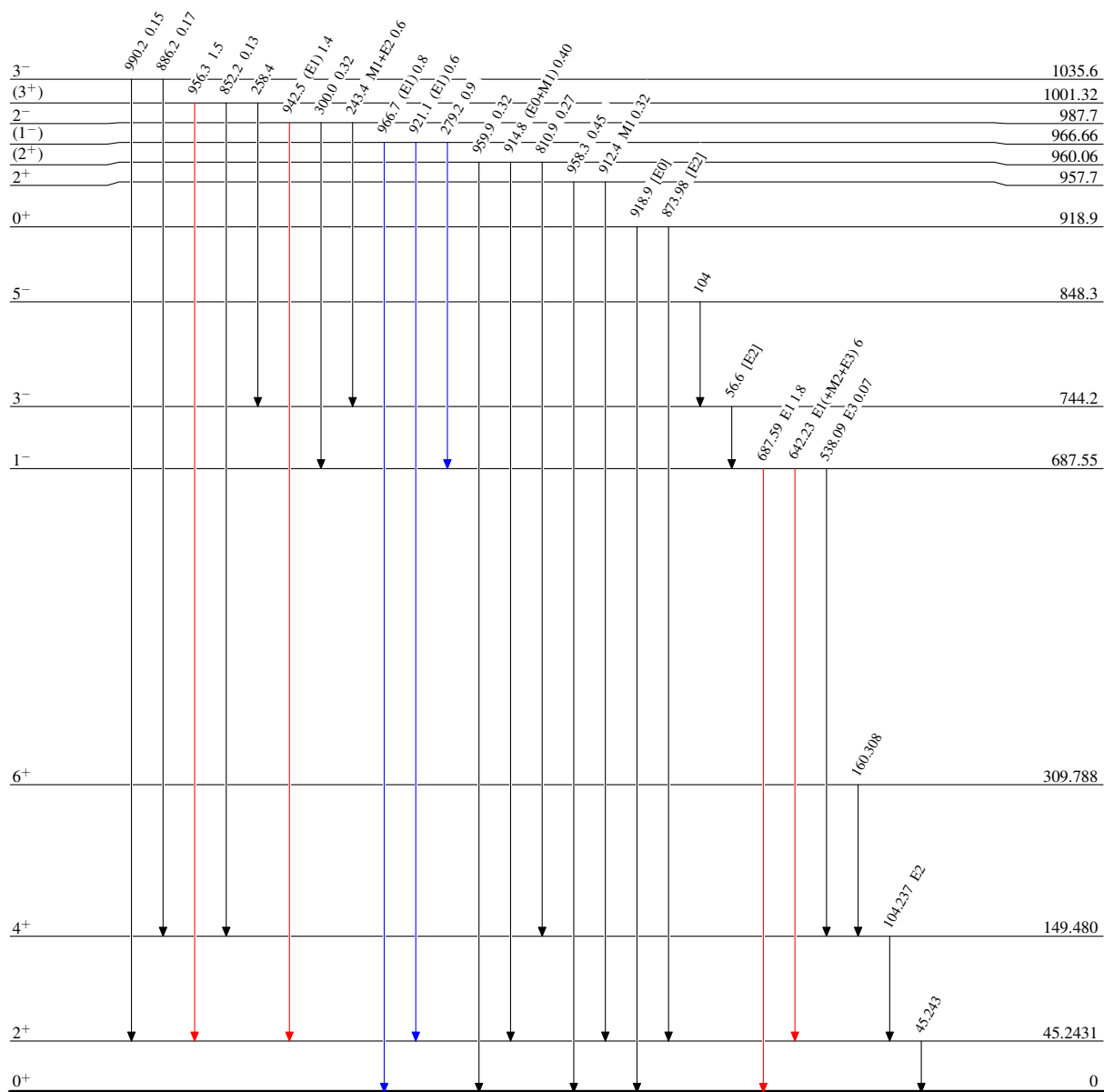
- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$   
 —→  $I_\gamma < 10\% \times I_\gamma^{\text{max}}$   
 —→  $I_\gamma > 10\% \times I_\gamma^{\text{max}}$   
 - - - - -→  $\gamma$  Decay (Uncertain)



Legend

  $I_\gamma < 2\% \times I_\gamma^{\max}$   
  $I_\gamma < 10\% \times I_\gamma^{\max}$   
  $I_\gamma > 10\% \times I_\gamma^{\max}$

Intensities:  $I_\gamma$  per 100 neutron captures


$${}_{92}^{236}\text{U}_{144}$$