# The Uranium 235 Dating Method <br> By Paul Nethercott <br> August 2013 

How reliable is radiometric dating? We are repeatedly told that it proves the Earth to be billions of years old. If radiometric dating is reliable than it should not contradict the evolutionary model. According to the Big Bang theory the age of the Universe is 10 to 15 billion years. ${ }^{1}$ Standard evolutionist publications give the age of the universe as 13.75 Billion years. ${ }^{2,3}$

Standard evolutionist geology views the Earth as being 4.5 billion years old. Here are some quotes from popular text: "The age of the Earth is $4.54 \pm 0.05$ billion years." "The Solar System, formed between 4.53 and 4.58 billion years ago." "The age of 4.54 billion years found for the Solar System and Earth." "A valid age for the Earth of 4.55 billion years." ${ }^{5,6}$

If we run the isotopic ratios give in standard geology magazines through the computer program Isoplot ${ }^{7}$ we find that the Uranium/Thorium/Lead isotopic ratios in the rocks disagree radically with the Rubidium/Strontium ages. The $\mathrm{U} / \mathrm{Th} / \mathrm{Pb}$ ratios give ages older than the evolutionist age of the Earth, Solar System, Galaxy and Universe. How can Earth rocks be dated as being older than the Big Bang?

If we use isotopic formulas ${ }^{8-11}$ given in standard geology text we can arrive at ages from the $\mathrm{Rb} / \mathrm{Sr}$ and $\mathrm{Nd} / \mathrm{Sm}$ ratios. The formula for $\mathrm{Rb} / \mathrm{Sr}$ age is given as:
$t=\frac{2.303}{\lambda} \log \left(\frac{(87 S r / 86 S r)-(87 S r / 86 S r)_{0}}{(87 R b / 86 S r)}+1\right)$

Where t equals the age in years. $\lambda$ equals the decay constant. ( $87 \mathrm{Sr} / 86 \mathrm{Sr}$ ) $=$ the current isotopic ratio. $(87 \mathrm{Sr} / 86 \mathrm{Sr})_{0}=$ the initial isotopic ratio. $(87 \mathrm{Rb} / 86 \mathrm{Sr})=$ the current isotopic ratio. The same is true for the formula below.
$t=\frac{2.303}{\lambda} \log \left(\frac{(143 N d / 144 N d)-(143 N d / 144 N d)_{0}}{(147 S m / 144 N d)}+1\right)$
Here are examples of isotopic ratios taken from several articles in major geology magazines which give absolutely absurd dates.

## Petrogenesis of the Flood Basalts

According to the article ${ }^{12}$ this basalt form the Northern Kerguelen Archipelago was dated in 1998 by scientists from the Massachusetts Institute Of Technology, University of Brussels, Belgium and the San Diego State University. According to the essay: "The dominance of this isotopic signature in archipelago lavas for 30 my and its presence in $\sim 40 \mathrm{Ma}$ gabbros is consistent with the previous interpretation that these are isotopic characteristics of the Kerguelen Plume." ${ }^{12}$ Various tables ${ }^{13}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at strong disagreement with each other. There is a spread of dates of over a 44 billion year range! None of the Uranium/Lead based dating methods even come vaguely close to the so called true age.

| Mount Bureau | Age | Age | Age | Age |
| :---: | :---: | :---: | :---: | :---: |
| Summary | $\mathbf{2 0 7 P b} / 206 \mathrm{~Pb}$ | $\mathbf{2 0 6 P b} / \mathbf{2 3 8 U}$ | $\mathbf{2 0 7 P b} / 235 \mathrm{U}$ | $\mathbf{2 0 8 P b} / 232 \mathbf{T h}$ |
| Average | $\mathbf{5 , 0 0 6}$ | $\mathbf{5 , 9 2 4}$ | $\mathbf{5 , 1 6 1}$ | $\mathbf{8 , 4 1 0}$ |
| Maximum | $\mathbf{5 , 0 2 0}$ | $\mathbf{2 3 , 3 6 6}$ | $\mathbf{8 , 4 9 6}$ | $\mathbf{4 4 , 3 7 8}$ |
| Minimum | $\mathbf{4 , 9 9 4}$ | $\mathbf{3 , 3 3 5}$ | $\mathbf{4 , 4 5 4}$ | $\mathbf{2 , 6 5 0}$ |
| Difference | $\mathbf{2 6}$ | $\mathbf{2 0 , 0 3 1}$ | $\mathbf{4 , 0 4 2}$ | $\mathbf{4 1 , 7 2 8}$ |


| Mt. Rabouillere | Age | Age | Age | Age |
| :---: | :---: | :---: | :---: | :---: |
| Summary | $\mathbf{2 0 7 P b} / 206 \mathrm{~Pb}$ | $\mathbf{2 0 6 P b} / \mathbf{2 3 8 U}$ | $\mathbf{2 0 7 P b} / \mathbf{2 3 5 U}$ | $\mathbf{2 0 8 P b} / \mathbf{2 3 2 T h}$ |
| Average | $\mathbf{5 , 0 0 8}$ | $\mathbf{4 , 9 0 3}$ | $\mathbf{4 , 9 7 5}$ | $\mathbf{6 , 1 4 2}$ |
| Maximum | $\mathbf{5 , 0 1 9}$ | $\mathbf{5 , 3 5 5}$ | $\mathbf{5 , 1 0 0}$ | $\mathbf{7 , 7 8 8}$ |
| Minimum | $\mathbf{5 , 0 0 0}$ | $\mathbf{4 , 3 0 5}$ | $\mathbf{4 , 7 9 3}$ | $\mathbf{2 , 7 9 9}$ |
| Difference | $\mathbf{2 0}$ | $\mathbf{1 , 0 5 0}$ | $\mathbf{3 0 7}$ | $\mathbf{4 , 9 8 9}$ |

## Nature of the Source Regions

According to the article ${ }^{14}$ this lava from southern Tibet was dated in 2004 by scientists from the Open University in Milton Keynes, the University of Bristol and Cardiff University. According to the essay: "Most samples are Miocene in age, ranging from 10 to 25 Ma in the south and 19 Ma to the present day in northern Tibet." ${ }^{15}$ Various tables ${ }^{16}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at strong disagreement with each other. There is a spread of dates of over an 88 billion year range! None of the Uranium/Lead based dating methods even come vaguely close to the so called true age.

| 207Pb/235U Age | Model Age | Ratio | Percentage |
| :---: | :---: | :---: | :---: |
| 5,136 | 0.5 | 10,273 | $10,272,962$ |
| 5,138 | 0.5 | 10,275 | $10,275,154$ |
| 5,135 | 13 | 395 | 395,000 |
| 5,140 | 18.5 | 278 | 277,839 |
| 7,470 | 13 | 575 | 574,597 |
| 7,471 | 12.5 | 598 | 597,649 |


| 207Pb/235U Age | Model Age | Ratio | Percentage |
| :---: | :---: | :---: | :---: |
| 313 | 24.0 | 13 | 13,026 |
| 946 | 13.8 | 69 | 68,534 |
| 266 | 13.8 | 19 | 19,267 |
| 238 | 13.8 | 17 | 17,265 |
| 294 | 13.3 | 22 | 22,095 |
| 447 | 18.8 | 24 | 23,757 |
| 482 | 17.3 | 28 | 27,878 |

## Generation of Palaeocene Adakitic Andesites

According to the article ${ }^{17}$ this rock formation from North Eastern China was dated in 2007 by scientists from China and Japan. According to the essay the true age is: "Palaeocene (c. $55-58 \mathrm{Ma}$ ) adakitic andesites from the Yanji area." ${ }^{17}$ Numerous table and charts affirm this as the true age. ${ }^{18} \mathrm{~A}$ table ${ }^{19}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at radical disagreement with each other. There is a spread of dates of over 10 billion years! None of the Uranium/Lead based dating methods even come vaguely close to the so called true age.

| 207Pb/206Pb | 208Pb/232Th | 206Pb/238U | 207Pb/235U |
| :---: | :---: | :---: | :---: |
| Age | Age | Age | Age |
| $\mathbf{5 , 0 2 4}$ | $\mathbf{1 0 , 5 1 8}$ | $\mathbf{9 , 6 6 9}$ | $\mathbf{6 , 0 5 2}$ |
| $\mathbf{5 , 0 2 3}$ | $\mathbf{1 0 , 2 7 7}$ | $\mathbf{9 , 5 5 2}$ | $\mathbf{6 , 0 5 1}$ |
| $\mathbf{5 , 0 2 3}$ | $\mathbf{8 , 5 2 9}$ | $\mathbf{9 , 5 2 6}$ | $\mathbf{6 , 0 5 1}$ |
| 5,023 | $\mathbf{8 , 3 6 0}$ | $\mathbf{8 , 4 4 3}$ | $\mathbf{5 , 8 2 8}$ |
| 5,021 | $\mathbf{8 , 1 6 5}$ | $\mathbf{7 , 9 2 9}$ | $\mathbf{5 , 8 2 6}$ |
| $\mathbf{5 , 0 2 0}$ | $\mathbf{7 , 8 0 0}$ | $\mathbf{7 , 4 0 3}$ | $\mathbf{5 , 6 4 1}$ |

## Ivisaartoq Greenstone Belt

According to the article ${ }^{20}$ this rock formation from southern West Greenland was dated in 2007 by scientists from Canada, Denmark, USA and Austria. According to the essay the true age is: "The Mesoarchean (ca. 3075 Ma ) Ivisaartoq greenstone belt in southern West Greenland." ${ }^{20} \mathrm{~A}$ table ${ }^{21}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at radical disagreement with each other. There is a spread of dates of over 3 billion years!

| 207Pb/235U | 208Pb/232Th | $206 \mathrm{~Pb} / 238 \mathrm{U}$ | $207 \mathrm{~Pb} / 206 \mathrm{~Pb}$ |
| :---: | :---: | :---: | :---: |
| Age | Age | Age | Age |
| $\mathbf{5 , 2 8 8}$ | $\mathbf{2 , 6 7 1}$ | $\mathbf{2 8 7 6}$ | $\mathbf{3 0 8 2}$ |
| $\mathbf{5 , 1 6 2}$ | $\mathbf{2 , 8 6 0}$ | $\mathbf{2 7 1 2}$ | $\mathbf{2 9 9 8}$ |
| $\mathbf{5 , 2 9 9}$ | $\mathbf{2 , 5 8 6}$ | $\mathbf{2 9 5 5}$ | $\mathbf{3 0 4 6}$ |
| $\mathbf{5 , 4 0 7}$ | $\mathbf{2 , 3 0 5}$ | $\mathbf{3 1 9 5}$ | $\mathbf{3 0 5 9}$ |
| $\mathbf{5 , 3 0 2}$ | $\mathbf{2 , 7 2 6}$ | $\mathbf{2 9 3 0}$ | $\mathbf{3 0 6 7}$ |

## Geophysical Systems

According to the article ${ }^{22}$ this rock formation was dated in 2003. A table ${ }^{23}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at radical disagreement with each other. There is a spread of dates of over 82 billion years!

| Dating | 206Pb/238U | 207Pb/235U | 207Pb/206Pb | 208Pb/232Th | 87Rb/86Sr | 147Sm/144Nd |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Summary | Age | Age | Age | Age | Age | Age |
| Average | $\mathbf{1 5 , 3 4 5}$ | $\mathbf{7 , 0 1 9}$ | $\mathbf{4 , 9 3 6}$ | $\mathbf{3 9 , 0 6 8}$ | $\mathbf{1 0 2}$ | $\mathbf{1 0 2}$ |
| Maximum | $\mathbf{3 8 , 3 4 0}$ | $\mathbf{1 0 , 8 7 2}$ | $\mathbf{5 , 0 4 3}$ | $\mathbf{8 2 , 8 6 5}$ | $\mathbf{1 4 0}$ | $\mathbf{1 4 0}$ |
| Minimum | $\mathbf{3 , 1 2 5}$ | $\mathbf{4 , 3 8 5}$ | $\mathbf{4 , 7 6 0}$ | 5,577 | $\mathbf{7 0}$ | $\mathbf{6 8}$ |
| Std Deviation | $\mathbf{9 , 6 5 7}$ | $\mathbf{1 , 7 5 0}$ | $\mathbf{6 3}$ | $\mathbf{2 7 , 3 9 0}$ | $\mathbf{1 6}$ | $\mathbf{1 7}$ |

## History Of The Pasamonte Achondrite

According to the article this meteorite specimen was dated in 1977 by scientists from the United States Geological Survey, Colorado and the Department of Chemistry and Geochemistry, Colorado School of Mines. ${ }^{24}$ The article states that Rubidium/Strontium dating affirms that this material is 4.5 billion years old. ${ }^{25}$ If we run the various isotope ratios ${ }^{25}$ from two different tables in the article through Microsoft Excel we get the following values respectively:

| Summary | $206 \mathrm{~Pb} / 238 \mathrm{U}$ | $\mathbf{2 0 7 P b} / 235 \mathrm{U}$ | $\mathbf{2 0 7 P b} / 206 \mathrm{~Pb}$ | $\mathbf{2 0 8 P b} / 232 \mathrm{Th}$ |
| :---: | :---: | :---: | :---: | :---: |
| Average | $\mathbf{3 , 0 8 8}$ | $\mathbf{3 , 6 6 6}$ | $\mathbf{4 , 5 6 6}$ | $\mathbf{2 , 2 6 3}$ |
| Maximum | $\mathbf{5 , 6 9 4}$ | $\mathbf{5 , 0 3 2}$ | $\mathbf{4 , 9 6 3}$ | $\mathbf{1 4 , 8 0 0}$ |
| Minimum | $\mathbf{1 0 3}$ | $\mathbf{8 6 5}$ | $\mathbf{4 , 4 4 0}$ | $\mathbf{- 1 0 , 7 0 0}$ |
| Difference | $\mathbf{5 , 5 9 1}$ | $\mathbf{4 , 1 6 7}$ | $\mathbf{5 2 3}$ | $\mathbf{2 5 , 5 0 0}$ |

If we run the $87 \mathrm{Rb} / 86 \mathrm{Sr}$ isotope ratios ${ }^{25}$ from the article through Microsoft Excel we get the following values:

| Rb/Sr Age Dating Summary |  |
| :---: | :---: |
| Average | $\mathbf{4 , 4 0 3}$ |
| Maximum | $\mathbf{6 , 6 7 4}$ |
| Minimum | $\mathbf{2 , 4 1 2}$ |
| Difference | $\mathbf{4 , 2 6 2}$ |

Table 18
The Thorium/Lead dates are up to twelve billion years older. The so called true age is just a guess.

## An Extremely Low U/Pb Source

According to the article ${ }^{26}$ this specimen [lunar meteorite] was dated in 1993 by scientists from the United States Geological Survey, Colorado, the United States Geological Survey, California and The National Institute of Polar Research, Tokyo. According to the article: "The $\mathrm{Pb}-\mathrm{Pb}$ internal isochron obtained for acid leached residues of separated mineral fractions yields an age of $3940 \pm 28 \mathrm{Ma}$, which is similar to the $\mathrm{U}-\mathrm{Pb}(3850 \pm 150$ $\mathrm{Ma})$ and $\mathrm{Th}-\mathrm{Pb}(3820 \pm 290 \mathrm{Ma})$ internal isochron ages. The $\mathrm{Sm}-\mathrm{Nd}$ data for the mineral separates yield an internal isochron age of $3871 \pm 57 \mathrm{Ma}$ and an initial $143 \mathrm{Nd} / \mathrm{I} 44 \mathrm{Nd}$ value of $0.50797 \pm 10$. The $\mathrm{Rb}-\mathrm{Sr}$ data yield an internal isochron age of $3840 \pm 32 \mathrm{Ma} .{ }^{26}$

| Rb/Sr Age Dating Summary |  |
| :---: | :---: |
| Average | $\mathbf{3 , 6 1 9}$ |
| Maximum | $\mathbf{5 , 3 8 5}$ |
| Minimum | $\mathbf{7 2 1}$ |
| Difference | $\mathbf{4 , 6 6 4}$ |

Table 47
Uranium Age Dating Summary

| Table | 207Pb/206Pb | $\mathbf{2 0 6 P b} / 238 \mathrm{U}$ | $\mathbf{2 0 8 P b} / 232 \mathrm{Th}$ | $\mathbf{2 0 7 P b} / \mathbf{2 3 5 U}$ |
| :---: | :---: | :---: | :---: | :---: |
| Summaries | Age | Age | Age | Age |
| Average | $\mathbf{4 , 6 7 3}$ | $\mathbf{8 , 0 3 5}$ | $\mathbf{1 0 , 1 4 8}$ | $\mathbf{4 , 5 4 6}$ |
| Maximum | $\mathbf{5 , 0 1 8}$ | $\mathbf{5 6 , 9 2 3}$ | $\mathbf{6 5 , 2 8 6}$ | $\mathbf{8 , 1 2 8}$ |
| Minimum | $\mathbf{3 , 9 6 1}$ | $\mathbf{1 , 4 7 7}$ | $\mathbf{2 , 5 4 2}$ | $\mathbf{2 , 7 8 4}$ |
| Difference | $\mathbf{1 , 0 5 7}$ | $\mathbf{5 5 , 4 4 5}$ | $\mathbf{6 2 , 7 4 4}$ | $\mathbf{5 , 3 4 4}$ |

## Table 48

The article claims that the $\mathrm{Rb} / \mathrm{Sr}$ age is 3.8 billion years for this meteorite. If that is the true age why are all the Uranium/Thorium/Lead dates ${ }^{27}$ so stupid? Or are they right and the $\mathrm{Rb} / \mathrm{Sr}^{28}$ is wrong?
208Pb/232Th, Maximum Ages

| Age | Age | Age | Age |
| :---: | :---: | :---: | :---: |
| $\mathbf{6 5 , 2 8 6}$ | $\mathbf{1 4 , 4 3 0}$ | $\mathbf{9 , 0 9 4}$ | $\mathbf{5 , 4 0 1}$ |
| $\mathbf{3 3 , 8 9 8}$ | $\mathbf{1 4 , 4 1 0}$ | $\mathbf{6 , 5 2 0}$ | $\mathbf{5 , 3 9 6}$ |
| $\mathbf{2 5 , 0 1 3}$ | $\mathbf{1 3 , 1 0 7}$ | $\mathbf{6 , 1 6 6}$ | $\mathbf{5 , 3 6 5}$ |
| $\mathbf{2 2 , 1 7 8}$ | $\mathbf{1 2 , 7 3 8}$ | $\mathbf{6 , 1 2 1}$ | $\mathbf{5 , 0 9 8}$ |
| $\mathbf{2 1 , 2 0 4}$ | $\mathbf{1 1 , 6 4 1}$ | $\mathbf{5 , 6 7 1}$ | $\mathbf{5 , 0 3 5}$ |
| $\mathbf{1 7 , 6 1 1}$ | $\mathbf{1 1 , 1 7 4}$ | $\mathbf{5 , 4 0 8}$ | $\mathbf{4 , 6 7 8}$ |
| Table 49 |  |  |  |

206Pb/238U, Maximum Ages

| Age | Age | Age | Age |
| :---: | :---: | :---: | :---: |
| $\mathbf{5 6 , 9 2 3}$ | $\mathbf{1 0 , 8 9 5}$ | $\mathbf{6 , 7 6 4}$ | $\mathbf{5 , 7 7 7}$ |
| 27,313 | $\mathbf{1 0 , 2 7 8}$ | $\mathbf{6 , 6 7 0}$ | $\mathbf{5 , 6 2 5}$ |
| 17,873 | $\mathbf{9 , 6 5 3}$ | $\mathbf{6 , 4 4 9}$ | $\mathbf{5 , 6 0 2}$ |
| 13,680 | $\mathbf{8 , 0 0 9}$ | $\mathbf{6 , 4 3 6}$ | $\mathbf{5 , 2 7 8}$ |
| 13,623 | $\mathbf{7 , 3 9 5}$ | $\mathbf{6 , 0 7 0}$ | $\mathbf{5 , 1 4 7}$ |

Table 50

## Petrogenesis and Origins of Mid-Cretaceous

According to the article ${ }^{-29}$ this specimen from the Intraplate Volcanism in Marlborough, New Zealand was dated in 2010 by scientists from New Zealand. According to the essay: "the intraplate basalts in New Zealand that have been erupted intermittently over the last c. 100 Myr." ${ }^{30}$ Various tables ${ }^{31}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at strong disagreement with each other. There is a spread of dates over a 10 billion year range. None of the Lead based dating methods even come vaguely close to a Cretaceous age.

| Table | 207Pb/206Pb | 207Pb/235U | 87Rb/86Sr | 208Pb/232Th | 206Pb/238U |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Summaries | Age | Age | Age | Age | Age |
| Average | $\mathbf{4 , 8 7 6}$ | $\mathbf{4 , 4 1 6}$ | 59 | $\mathbf{6 , 3 3 3}$ | $\mathbf{3 , 5 1 5}$ |
| Maximum | $\mathbf{4 , 9 4 5}$ | $\mathbf{5 , 1 5 9}$ | $\mathbf{8 5}$ | $\mathbf{1 0 , 7 1 6}$ | $\mathbf{5 , 7 1 7}$ |
| Minimum | $\mathbf{4 , 8 3 6}$ | $\mathbf{4 , 0 8 8}$ | $\mathbf{1 5}$ | $\mathbf{4 , 7 8 5}$ | $\mathbf{2 , 7 1 2}$ |
| Difference | $\mathbf{1 0 9}$ | $\mathbf{1 , 0 7 1}$ | $\mathbf{7 0}$ | $\mathbf{5 , 9 3 1}$ | $\mathbf{3 , 0 0 5}$ |

## U-Th-Pb Dating Of Secondary Minerals

According to the article ${ }^{32}$ this rock formation Yucca Mountain, Nevada was dated in 2008 by scientists from United States Geological Survey, Geological Survey of Canada, and the Australian National University. According to the essay the true age is unknown: "The $\mathrm{U}-\mathrm{Pb}$ system in opal and chalcedony allows dating in the age range from 50 ka to millions of years and older (Ludwig et al., 1980; Neymark et al., 2000, 2002). Recently, the reliability of $\mathrm{U}-\mathrm{Pb}$ dating of opal was questioned." ${ }^{33}$ Other authors have affirmed the same problem. ${ }^{33}$ Two tables ${ }^{34}$ in the essay have isotopic ratios which can be calculated. As we can see below they are all at radical disagreement with each other. There is a spread of dates of almost 353 billion years! None of the Uranium/Lead based dating methods even come vaguely close to the so called true age. The oldest date is 350,000 times older than the youngest date.

| Age Dating Summary |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Dating | 207Pb/206Pb | 206Pb/238U | 208Pb/232Th | 87Rb/86Sr |  |
| Summary | Age | Age | Age | Age |  |
| Average | $\mathbf{3 , 4 5 9}$ | $\mathbf{4 , 8 9 1}$ | $\mathbf{9 , 9 8 4}$ | $\mathbf{1 2}$ |  |
| Maximum | $\mathbf{8 , 1 2 6}$ | 31,193 | $\mathbf{3 5 2 , 9 6 2}$ | $\mathbf{1 3}$ |  |
| Minimum | -445 | 1 | 2 | 11 |  |
| Difference | $\mathbf{8 , 5 7 1}$ | $\mathbf{3 1 , 1 9 2}$ | $\mathbf{3 5 2 , 9 6 0}$ | 2 |  |
| Table 78 |  |  |  |  |  |

Another table ${ }^{35}$ in the essay has a list of calculated dates As we can see below they are all at radical disagreement with each other. There is a spread of dates of 82 billion years! None of the Uranium/Lead based dating methods even come vaguely close to the so called true age. The oldest date is 82,000 times older than the youngest date.

| Age Dating Summary |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Dating | 206Pb/238U | 207Pb/235U | 208Pb/232Th | 87Rb/86Sr |  |
| Summary | Age | Age | Age | Age |  |
| Average | $\mathbf{1 , 5 4 0}$ | 46 | 7,687 | $\mathbf{1 2}$ |  |
| Maximum | 20,209 | 486 | 82,030 | 13 |  |
| Minimum | 1 | 0 | 3 | 11 |  |
| Difference | $\mathbf{2 0 , 2 0 8}$ | 486 | 82,027 | 2 |  |
| Table 79 |  |  |  |  |  |

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