Radiometric Dating of Historic Volcanic Eruptions

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Abstract

If evolutionary radiometric dating methods are true then historic volcanic eruptions should be a good test. Since people actually saw the eruption happening we can know its true age to the very year. When we look at dating (K/Ar, Ar/Ar) done by secular geology we find dates that are 500 thousand times in error. If we use isotope the ratio tables ($^{207}Pb/^{207}Pb$) in journal articles that have no dates beside them and run them through Isoplot **(Ludwig, 2010)** we get dates that are between 12 million to 30 billion times in error.

Introduction

Evolutionists have long claimed that radiometric dating supports an old age of the Earth and the first appearance of life on Earth. Creationists contend that such methods are wrong and that the earth is only six thousand years old. Jesus stated (Matthew 19:4-6) that the age of the Earth is the age of mankind. The Bible says (Genesis 1:9-13) says that dry land was created 6,000 years ago so such dry air eruptions as opposed to underwater pillow lava cannot be millions of years old. Many fossil deposits are deposited underneath lava flows which means that if the lava flow was millions of years ago then so was death and suffering. The Bible says (Genesis 1:1-31) that life was only created 6,000 years ago. Scientists have used a variety of methods to examine the isotopic composition of lava such as Potassium/Argon, Argon/Argon, Lead/Lead and others. If these methods that have human eye witness to test their validity are millions or billions of times in error with historic flows how can they be trusted with lava flows that have no human eye witnesses? This is a good way to test the accuracy of such dating methods against an absolute standard.

The author has compiled a list of 1003 dates form 68 volcanoes and 273 eruptions (1600 AD – 2010 AD) which were analysed between 2 and 406 years after the eruption happened. These were dated by a variety of methods: $^{207}Pb/^{206}Pb$, $^{230}Th/^{238}U$, K/Ar, Ar/Ar Dates) The dates that are calculated from $^{207}Pb/^{207}Pb$ isotope ratios using Isoplot (www.bgc.org) vary between 1 million times to 30 billion times in error. The complete failure of the Uranium/Lead dating system to even come close to the true age reassures creationists that such a system offers meaningless numbers rather than real ages.

Aleutian Islands Volcanic Chain

The Aleutian Islands are a chain of 69 volcanic islands belonging to both the United States and Russia. They form part of the Aleutian Arc in the Northern Pacific Ocean, occupying an area of 17,666 km^2 and extending about 1,900 km westward from the Alaska Peninsula toward the Kamchatka Peninsula in Russia. Scientists from the University Of Wisconsin–Madison analysed these samples in 2003. Isotope ratios of Aleutian island arc lavas from Kanaga, Roundhead, Seguam, and Shishaldin volcanoes have been subjected to $^{40}Ar/^{39}Ar$ dating and returned dates of two to seven hundred thousand years old **(Jicha, 2004, P. 1852-1855)**. Two of the eruptions (Kanaga 1906 AD, and Seguam 1977 AD) are historic as well. If we examine the $^{207}Pb/^{206}Pb$ ratios **(Jicha, 2004, P. 1852-1855)** for all the eruptions and run them through Isoplot we get dates between 4,974 million years and 4,962 million years old with only 12 million years difference (99.76% accuracy). The percentage accuracy is defined by the formula below.

$$a = 1 - \left(\frac{Max - Min}{Average} \right) \quad \textbf{(1)}$$

The error ratio for $^{40}Ar/^{39}Ar$ ages versus $^{207}Pb/^{206}Pb$ isotope ages varies between 7 million to 2,485 million times in error. The error ratio for historic real ages versus imaginary isotope ages varies between 50 million to 183 million times in error. The MSWD **(Jicha, 2004, P. 1857-1858)** tables give values between 0.04 and 2.77 which shows that the $^{40}Ar/^{39}Ar$ ages for Kanaga, Seguam, and Shishaldin are supposed to be very accurate. The Seguam dates vary from 28 to 133 thousand years. The Kanaga dates vary from 112 to 386 thousand years. The Shishaldin dates vary from 10 to 711 thousand years. All dates use a weighted mean plateau and combined isochrons.

Table I. Aleutian Island Volcanoes.

Volcano	Historic Eruption	Ar/Ar Age (ka)	Pb/Pb Age (Ma)	Error Ratio (10^6)
Kanaga	**1906 AD**	**0.098**	**4,970**	**50,711**
		198	**4,971**	**25**
		384	**4,973**	**13**
		352	**4,971**	**14**
		199	**4,971**	**25**
Roundhead		**131**	**4,974**	**38**
Seguam	**1977 AD**	**0.027**	**4,963**	**183,815**
		49.2	**4,962**	**101**
		48.9	**4,963**	**101**
		93.1	**4,962**	**53**
		33.3	**4,962**	**149**
Shishaldin		**2**	**4,970**	**2,485**
		28	**4,969**	**177**
		30	**4,972**	**166**
		713	**4,966**	**7**

Isoplot has four different **(Ludwig, 2012)** Uranium/Lead dating formulas for Microsoft Excel.

^{207}Pb/^{206}Pb Age (Ma)

$$a = Pb76\left(\frac{^{207}Pb}{^{206}Pb}\right) \quad \textbf{(2)}$$

^{206}Pb/^{238}U Age (Ma)

$$a = Pb6U8\left(\frac{^{206}Pb}{^{238}U}\right) \quad \textbf{(3)}$$

^{207}Pb/^{235}U Age (Ma)

$$a = Pb7U5\left(\frac{^{207}Pb}{^{235}U}\right) \quad \textbf{(4)}$$

^{208}Pb/^{232}Th Age (Ma)

$$a = Pb8Th2\left(\frac{^{208}Pb}{^{232}Th}\right) \quad \textbf{(5)}$$

^{230}Th/^{238}U Age (Ka)

$$a = Th230Age\left(\frac{^{230}Th}{^{238}U}, \frac{^{234}U}{^{238}U}\right) \quad \textbf{(6)}$$

Anatahan Volcano

Anatahan is an island in the Northern Mariana Islands in the Pacific Ocean, and has one of the most active volcanoes of the archipelago. The first historical eruption of Anatahan Volcano began suddenly on the evening of May 10, 2003. Anatahan Volcano is a small volcanic island located 120 kilometres north of Saipan Island and 320 kilometres north of Guam. The island is about 9 kilometres long and 3 kilometres wide. Anatahan is a stratovolcano that contains the largest known caldera in the Northern Mariana Islands. In 1990, when geologists from the USGS Hawaiian Volcano Observatory and the University of Hawaii examined the rock layers of Anatahan, they discovered abundant evidence of ancient explosive eruptions that sent fast-moving flows of hot ash and rocks across the island. **(HVO, 2003)**

In 2005 scientists from nine universities analysed mineral samples from the 2003 volcanic eruption. Samples of tephra from early in the eruption were analyzed for major and trace elements, and Sr, Nd, Pb, Hf, and O isotopic compositions. **(Wade, 2005, P. 139)** If take isotope data from three tables (Wade, 2005, P. 149, 150, 165) in the article and run them through Isoplot we get the ages listed below.

Table II. Anatahan Volcano (2003 AD)

Pb Age (Ma)	Pb Age (Ma)	Pb Age (Ma)
4,975	4,971	4,971
4,973	4,971	4,971
4,973	4,971	4,970
4,972	4,971	4,970
4,971	4,971	4,970
4,971	4,971	4,970
4,971	4,971	4,970

We get twenty three dates with an average age of 4,970 million years old and an accuracy of 99.94%. The minimum age is 4,969 million and the maximum age is 4,975 million years old. Since the lava was only two years old when dated the dates are 2,485 million times in error. As a distance comparison, that is one millimetres versus 2,485 kilometres (1,544 miles). That is the same distance as Denver to New York City or Sydney to Townsville. Such a fantastic error ratio shows that when the same dating technique is used to date non historic eruptions the same error ratio will be just as enormous.

Earthquake Swarm of Loihi Seamount

The Lōihi Seamount is an active submarine volcano located about 35 km off the southeast coast of the island of Hawaii. "$^{210}Po/^{210}Pb$ dating of two fresh lava blocks from this breccia indicates that they were erupted during the first half of 1996, making this the first documented historical eruption of Loihi." **(Garcia, 1998, P. 577)** This research was done eighteen months after the eruption by scientists from the University of Hawaii. Within two months of the eruption **(Garcia, 1998, P. 584)** glass samples were recovered and dates with the $^{210}Po/^{210}Pb$ method. According to this method the samples were 57 days old **(Garcia, 1998, P. 586)**. If we calculate dates from the from the two $^{207}Pb/^{207}Pb$ isotope ratios **(Garcia, 1998, P. 585)** we get two dates of 4,997 million years old. Other researchers **(Dixon, 2001, P. 634, 635, 646)** have found identical $^{207}Pb/^{207}Pb$ isotope ratios from Lōihi Seamount glass samples. Since the two glass samples Garcia found were only two months old (1/6 of a year) both dates were 30 billion times in error.

Table III. Loihi Seamount Ages

Pb Age (Ma)	4,997	4,997
Historic Age	0.1666	0.1666
Age Ratio (10^6)	29,992	29,994

Excess Argon In Melt Inclusions

Mount Erebus is the second highest volcano in Antarctica (after Mount Sidley) and the southern most active volcano on earth. It overlooks the McMurdo research station on Ross Island. The 3,794 metre high Erebus is the largest of three major volcanoes forming the crudely triangular Ross Island. The summit of the dominantly phonolitic volcano has been modified by one or two generations of caldera formation. A summit plateau at about 3200 m elevation marks the rim of the youngest caldera. Two scientists from the New Mexico Bureau of Mines and Mineral Resources, analysed "Historically erupted (1984) anorthoclase phenocrysts from Mt. Erebus yield K/Ar and $^{40}Ar/^{39}Ar$ apparent ages as old as 700 thousand years indicating the presence of excess argon" **(Esser, 1997, P. 3789)**. Since the material was only thirteen years old when dated there is a major discrepancy. The article has a table with 180 dates varying from 9.419 million ago to -19.111 million years in the future. **(Esser, 1997, P. 3789)** That is a 28.53 million year range for a rock formation that is only thirteen years old. The range is 2.149 million times the age of the rock. Thirty three dates are negative or future ages.

Table IV. Excess Argon In Mount Erebus Melt Inclusions (1984 Eruption)

S.1316	Ratio	S.1317	Ratio	S.1330	Ratio	S.1331	Ratio	S. 1332	Ratio
Age Ka		Age Ka		Age Ka		Age Ka		Age Ka	
273	21,000	374	28,769	4,371	336,231	5,867	451,308	-999	-76,846
97	7,462	227	17,462	507	39,000	4,716	362,769	-999	-76,846
38	2,923	275	21,154	86	6,615	1,801	138,538	-86	-6,615
28	2,154	281	21,615	166	12,769	1,120	86,154	43	3,308
25	1,923	246	18,923	41	3,154	984	75,692	23	1,769
28	2,154	240	18,462	33	2,538	1,010	77,692	33	2,538
19	1,462	263	20,231	21	1,615	950	73,077	35	2,692
10	769	225	17,308	16	1,231	834	64,154	246	18,923
12	923	209	16,077	9	692	824	63,385	64	4,923
16	1,231	78	6,000	10	769	1,278	98,308	82	6,308
33	2,538	96	7,385	5	385	628	48,308	104	8,000
38	2,923	11	846	28	2,154	732	56,308	126	9,692
111	8,538	41	3,154	15	1,154	1	77	126	9,692
77	5,923	15	1,154	142	10,923	109	8,385	153	11,769
139	10,692	78	6,000	86	6,615	-24	-1,846	168	12,923
61	4,692	48	3,692	149	11,462	154	11,846	172	13,231
139	10,692	57	4,385	82	6,308	84	6,462	263	20,231
66	5,077	128	9,846	72	5,538	90	6,923	337	25,923
		-894	-68,769	88	6,769	56	4,308	9,419	724,538
				88	6,769	71	5,462	650	50,000
				129	9,923	248	19,077		
				671	51,615				

Alkaline Magmas from Erebus Volcano

This set of fifty three mineral samples were analysed in 2008 by nine scientists from seven institutions. Thirty samples **(Sims, 2008, P. 607-608)** were taken from eruptions that happened between 1972 and 2005. Twenty three samples were taken from non-historical eruptions supposed to be between 1 thousand and 1,311 thousand years old. Erebus is an active composite volcano and is the largest of four volcanic centres forming Ross Island: Mt. Erebus (3,794 metres elevation, 2170 km^3), Mt. Terror (3,262 metres, 1700 km^3), Mt. Bird (1,800 metres, 470 km^3), and Hut Point Peninsula (100 km^3). If we calculate dates from the from the fifty three $^{207}Pb/^{207}Pb$ isotope ratios we get 53 dates between 4,875 million and 4,935 million years old with an accuracy of 98.77%.

The author claims that the samples cover an age range supposed to be between 3 years and 1,311 thousand years old. "The samples cover the entire compositional range from basanite to phonolite and trachyte, and represent all three phases of the volcanic evolution from 1.3 Ma to the present. Isotopic analyses of 7 samples from Mt. Morning and the Dry Valley Drilling Project (DVDP) are given for comparison." **(Sims, 2008, P. 606)** The $^{207}Pb/^{207}Pb$ dates calculated from the historical (1972-2005) eruptions are between 136 million and 1,224 million times in error. The $^{207}Pb/^{207}Pb$ dates calculated from the non-historical eruptions are between 0.0037 and 4.8 million times in error.

Table V. Alkaline magmas from Erebus volcano

Eruption	True Age	Pb Age (Ma)	Age Ratio 10^6
1972	36	4,894	136
1974	34	4,894	144
1974	34	4,894	144
1974	34	4,894	144
1975	33	4,894	148
1977	31	4,894	158
1977	31	4,894	158
1979	29	4,894	169
1980	28	4,894	175
1981	27	4,894	181
1982	26	4,894	188
1983	25	4,894	196
1984	24	4,896	204
1984	24	4,898	204
1984	24	4,895	204
1985	23	4,894	213
1986	22	4,894	222
1989	19	4,894	258
1991	17	4,894	288
1992	16	4,894	306
1992	16	4,895	306
1993	15	4,894	326
1993	15	4,894	326
1993	15	4,894	326
1996	12	4,894	408
1997	11	4,894	445
1997	11	4,894	445
1999	9	4,894	544
1999	9	4,894	544
1999	9	4,894	544
2000	8	4,894	612
2001	7	4,896	699
2004	4	4,894	1,224

Comparison of Th, Sr, Nd and Pb isotopes

These seventeen lava samples were examined in 2005 by two scientists from Woods Hole Oceanographic Institution in Massachusetts. Thirteen were from Samoa and the other four from historic eruptions at Mount Erebus **(Sims, 2006, P. 745)**. If we calculate dates from the from the seventeen $^{207}Pb/^{207}Pb$ isotope ratios we get 17 dates between 4,894 million and 4,976 million years old with an accuracy of 99%. The author claims that the ^{230}Th dates show the Samoan samples are young: "Note that the new Mt. Erebus samples are historic, and the new Samoan samples are demonstrably young based upon historical constraints, or measurement of ^{230}Th–^{226}Ra–^{210}Pb and ^{210}Po disequilibria." **(Sims, 2006, P. 744)**

According to $^{40}Ar/^{39}Ar$ dating the Samoan Islands are only five million years old: "Three different volcanic samples from dredge ALIA-115, on the deepest portion of the SW flank of Savai'i Island, give indistinguishable ages (2σ confidence level) ranging from 4.99 to 5.21 Ma. In addition, a sample from dredge ALIA-128, on the NE flank of Savai'i, gives an age of 4.74 Ma." **(Koppers, 2006)** The $^{207}Pb/^{207}Pb$ dates are a hundred million times older than the $^{40}Ar/^{39}Ar$ dates.

Table VI. Comparison of Th, Sr, Nd and Pb isotopes (historic eruptions)

Samoa	Samoa	Samoa	Mt. Erebus
Pb Age (Ma)	Pb Age (Ma)	Pb Age (Ma)	Pb Age (Ma)
4,935	4,935	4,944	4,894
4,935	4,932	4,937	4,896
4,932	4,944	4,937	4,894
4,932	4,935	4,945	4,894

Mount Hualalai

Mount Hualālai is a dormant volcano on the island of Hawaii in the Hawaiian Islands. It is the third-youngest and the third most active of the five shield volcanoes that form the island of Hawaii, following Kilauea and the much larger Mauna Loa, and also the westernmost. Its peak is 2,521 metres above sea level. Hualālai is estimated by evolutionists to have risen above sea level about 300,000 years ago. Funkhouser and Naughton **(Funkhouser, 1968, P. 4602-4603)** dated samples from the 1800 volcanic eruption using the K/Ar method in 1967 and obtained ages between 160 and 2,960 million years old. Since the samples were only 167 years old when dated, the ages are between million 950 thousand and 17 million times in error.

Evolutionists frequently claim the creationists misquote Funkhouser and Naughton. Five scientists from three universities **(Blichert-Toft, 2002, P. 30-33)** collected samples from Mauna Loa (27 samples) and Mauna Kea (104 samples) volcanoes. If we calculate $^{207}Pb/^{207}Pb$ dates from the from the 27 Mauna Loa samples we get dates between 5,003 million and 5,018 million years old with an accuracy of 99.69%. If we calculate $^{207}Pb/^{207}Pb$ dates from the from the 104 Mauna Kea samples we get dates between 4,974 million and 6,474 million years old with an accuracy of 70%. The tables also list the samples depth (metres below sea level). If the dating is accurate the deeper you go the older the sample. There is however no relationship between age and depth. The dates are all meaningless.

Table VII. Mount Hualalai (1800 AD)

K-Ar	K-Ar	Helium	Helium
Min Age	Max Age	Min Age	Max Age
1,030	1,030	140	350
2,480	2,480	670	670
2,040			
960			
1,500			
1,580			
791			
160			
2,470			
2,960			

Figure 1. Mauna Loa Ages (Ma) Versus Depth below Sea level

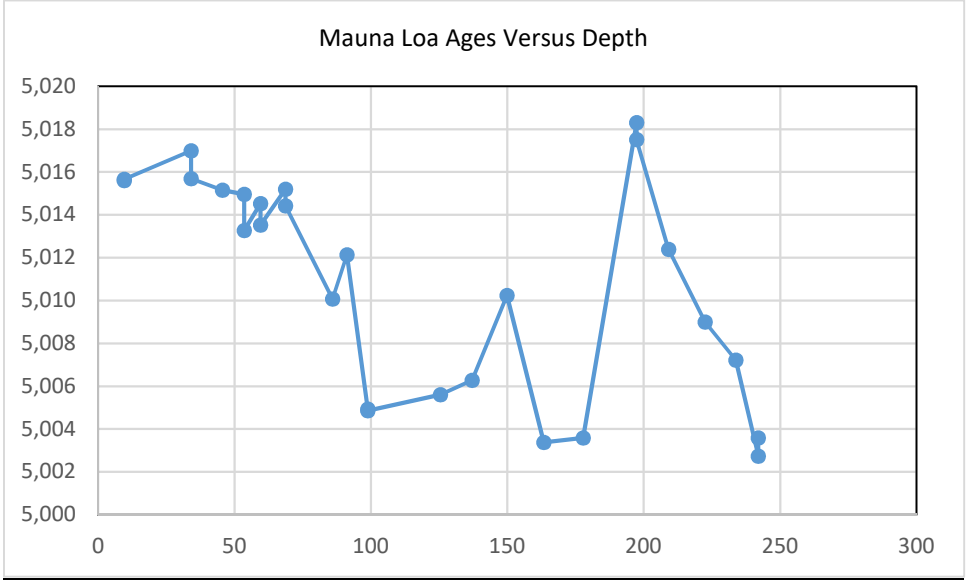
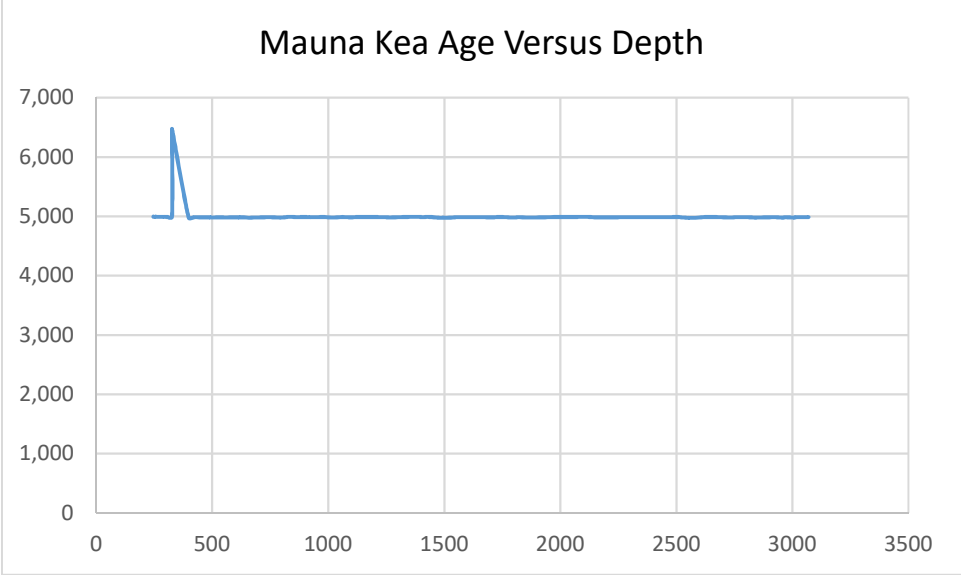


Figure 2. Mauna Kea Ages (Ma) Versus Depth below Sea level



Tres Vírgenes (three virgins) is a complex of volcanoes located Mulegé Municipality in the state of Baja California Sur, on the Baja California Peninsula in north western Mexico. It is composed of three volcanoes, aligned northeast-southwest, with El Viejo, to the northeast, El Azufre in the middle, and El Virgen, to the southwest. **(Wikipedia, 2015)** "U–Pb zircon analysis of ignimbrites erupted from the adjacent Early Pleistocene La Reforma and El Aguajito calderas yielded ages of 1.38±0.03 Ma and 1.17±0.07 Ma respectively. No evidence for these ages is found among La Vírgen zircons, whereas pre-Quaternary zircon xenocrysts are common. The La Vírgen magma, therefore, evolved unrelated to Early Pleistocene magmatism in adjacent calderas, but assimilated local basement rocks." **(Schmitt, 2006, P. 281)**

The articles has two tables **(Schmitt, 2006, P. 285, 286)** with $^{230}Th/^{238}U$ ages between 25 thousand and 233 thousand years old. The articles has a third table **(Schmitt, 2006, P. 288-289)** with $^{230}Th/^{238}U$ ages between 40 thousand and 255 million years old. If we place the $^{206}Pb/^{238}U$, $^{207}Pb/^{235}U$ and $^{207}Pb/^{206}Pb$ ratios from third table into Iosplot we get 105 dates between 315 million and 24 billion years old. Ten dates are over 4.6 billion years old and six are over 5 billion years old. Three dates are over fifteen billion years old which makes the Funkhouser and Naughton article very miniscule. If we assume that the $^{230}Th/^{238}U$ dates the author calculated are the true age then the other three isotope ratios are between 9 and 14,400 times in error.

Table VII. Crystallization ages of Las Tres Vírgenes

Volcano's Name	Statistical Data	206Pb/238U Age (Ma)	207Pb/235U Age (Ma)	207Pb/206Pb Age (Ma)	230Th/238U Age (Ma)
La Reforma	Average	2,473	3,180	3,708	1.45
	Maximum	4,195	4,623	4,841	2.05
	Minimum	1,170	1,281	1,467	0.63
	Difference	3,025	3,342	3,374	1.42
Aguajito	Average	3,323	4,090	4,553	1.15
	Maximum	5,855	5,088	4,810	2.59
	Minimum	1,541	2,802	3,905	0.64
	Difference	4,314	2,285	905	1.95
La Vírgen	Average	15,991	4,476	1,148	127.04
	Maximum	24,048	5,867	4,799	255.00
	Minimum	315	1,831	195	0.13
	Difference	23,734	4,035	4,604	254.87

Smyth **(Smyth, 2011, P. 206)** has a similar table ($^{206}Pb/^{238}U$, $^{207}Pb/^{235}U$ and $^{207}Pb/^{206}Pb$ ratios) which he claims supports an age of 20 million years for a Miocene eruption in Indonesia "Here we report an Early Miocene major eruption, the Semilir eruption, in south Java, the main phase of which occurred at 20.7±0.02 Ma." **(Smyth, 2011, P. 198)** If using isotope ratios and getting dates from those ratios by using Isoplot is true then the dates I have calculated for various eruptions must be equally true. The method is faultless by evolutionary standards and used in many geology journal articles.

The West Maui Mountains or West Maui Volcano, known to the Hawaiians as Maui Komohana and to geologists as Mauna Kahalawai, forms a much eroded shield volcano that constitutes the western one-quarter of the Hawaiian Island of Maui. Evolutionists believe that its last eruption was approximately 320,000 years ago. Tatsumoto says the K/Ar ages for the samples are very accurate at 1.16 million years old. "K-Ar ages by McDougall (1964) are 1.20± 0.02 Ma for olivine basalt from the upper part of the Wailuku Basalt, 1.16±0.01 Ma for mugearite and trachyte of the Honolua Volcanics, and 0.44-0.86 Ma for alkalic rocks of the Kula Volcanics of Haleakala. Therefore, the isotopic data obtained from these samples require no age correction." **(Tatsumoto, 1987, P. 725)** The article has two tables **(Tatsumoto, 1987, P. 726, 728)** that we can join together to get three sets ($^{206}Pb/^{238}U$, $^{208}Pb/^{232}Th$ and $^{207}Pb/^{206}Pb$) of isotopic ratios. We need to use the formulas below to rearrange the isotope ratios into a format Isoplot can use.

$$\frac{^{232}Th}{^{204}Pb} = \frac{^{232}Th}{^{238}U} \div \left(1 \div \frac{^{238}U}{^{204}Pb}\right) \qquad \textbf{(6)}$$

$$\frac{^{208}Pb}{^{232}Th} = \frac{^{208}Pb}{^{204}Pb} \div \left[\frac{^{232}Th}{^{238}U} \div \left(1 \div \frac{^{238}U}{^{204}Pb}\right)\right] \qquad \textbf{(7)}$$

We then get sixty six dates are between 3.1 billion and 26.7 billion years old. Fifty four dates over 4.9 billion years old. Thirty four dates over 5 billion years old. Ten dates over 10 billion years old. Since the supposed true age is just one million years old the $^{206}Pb/^{238}U$, $^{208}Pb/^{232}Th$ and $^{207}Pb/^{206}Pb$ dates are between 3,100 and 26,700 times in error.

Table IX. West Maui volcanic rocks

West Maui	206Pb/238U	208Pb/232Th	207Pb/206Pb
Rock Formation	Age (Ma)	Age (Ma)	Age (Ma)
Lahaina Volcanics	4,553	10,582	5,009
	3,147	7,319	5,008
Honolua Volcanics	7,250	11,953	4,986
	4,952	9,494	4,993
	4,541	9,238	4,992
	4,442	8,819	4,987
	3,653	8,473	4,986
	3,604	7,837	4,986
	3,493	7,472	4,986
	3,476	6,065	4,986
Wailuku Basalt	9,924	26,473	5,003
	8,129	15,405	5,002
	6,028	12,662	5,000
	5,961	12,453	4,998
	5,837	11,269	4,996
	5,275	11,139	4,995
	4,583	10,063	4,992
	4,354	9,293	4,992
Hana Volcanics	3,694	7,621	
Kula Volcanics	3,363	7,215	
Honmanu Basalt	6,104	16,457	

Recent Andesite Flows at Mount Ngauruhoe

Mount Ngauruhoe is an active stratovolcano or composite cone in New Zealand, made from layers of lava and tephra. It is the youngest vent in the Tongariro volcanic complex on the Central Plateau of the North Island, and first erupted about 2,500 years ago. Although seen by most as a volcano in its own right, it is technically a secondary cone of Mount Tongariro. Ngauruhoe erupted 45 times in the 20th century, most recently in 1974. In 1997 Dr R. A. Armstrong from the Australian National University **(Snelling, 2003, P. 8)** analysed samples and obtained $^{207}Pb/^{206}Pb$ ratios. Since the samples were from recent historic eruptions (1949, 1954 and 1975) they were only between 22 to 48 years old. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot are between 4,974 million and 4,977 million years old with an accuracy of 99.94%. That means the $^{207}Pb/^{206}Pb$ dates are between 104 million to 226 million times to old.

Table X. Recent Andesite Flows at Mt. Ngauruhoe

Eruption Year	True Age	Pb Age (Ma)	Age Ratio 10^6
1949	48	4,974	104
	48	4,976	104
1954	43	4,975	116
	43	4,974	116
	43	4,974	116
	43	4,975	116
	43	4,977	116
	43	4,974	116
1975	22	4,974	226
	22	4,975	226

Kılauea's Puu Oo eruption (1983–2010)

Kilauea is a currently active shield volcano in the Hawaiian Islands, and the most active of the five volcanoes that together form the island of Hawaii. Located along the southern shore of the island, evolutionary science states that the volcano is between 300,000 and 600,000 years old and emerged above sea level about 100,000 years ago. There were sixty episodes in the eruptive sequence that began in January 1983 and ended in June 2011. Sixty four samples with $^{207}Pb/^{206}Pb$ ratios were collected in 2013 **(Greene, 2013, P. 4856)** from eruptions that took place between 1983 and 2010. The true age of the samples was between three and thirty years old. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot are between 4,984 million and 4,994 million years old with an accuracy of 99.80%. That means the $^{207}Pb/^{206}Pb$ dates are between 166 million to 1,664 million times to old.

Table XI. Kılauea's Puu Oo eruption (1983–2010 AD)

Eruption Year	True Age	Pb Age (Ma)	Error Ratio (10^6)
1983	30	4,984	166
1984	29	4,988	172
1985	28	4,990	178
1986	27	4,992	185
1987	26	4,992	192
1988	25	4,993	200
1989	24	4,993	208
1990	23	4,994	217
1991	22	4,993	227
1992	21	4,992	238
1993	20	4,992	250
1994	19	4,992	263
1995	18	4,992	277
1996	17	4,992	294
1997	16	4,993	312
1998	15	4,993	333
1999	14	4,993	357
2000	13	4,992	384
2001	12	4,992	416
2002	11	4,991	454
2003	10	4,991	499
2004	9	4,991	555
2005	8	4,991	624
2006	7	4,992	713
2007	6	4,992	832
2008	5	4,992	998
2009	4	4,992	1,248
2010	3	4,993	1,664

Kilauea's Puu Oo Eruption

The Puu Oo eruption is the longest sustained (25 years) and most voluminous (3 km^3 erupted lava) historical eruption of Kilauea volcano. Jared Marske from the University Of Hawaii **(Marske, 2008, P. 1308)** collected fourteen samples in 2008 from eruptions that took place between September 1998 and August 2005. The samples were only between three and ten years old. The $^{207}Pb/^{206}Pb$ dates I calculated are between 4,991 million and 4,993 million years old with an accuracy of 99.96%. That means the $^{207}Pb/^{206}Pb$ dates are between 499 million to 1,664 million times to old.

Table XII. Kilauea's Puu Oo Eruption

Eruption Year	True Age	Pb Age (Ma)	Error Ratio (10^6)
1998	10	4,992	499
1999	9	4,992	555
1999	9	4,993	555
2000	8	4,992	624
2000	8	4,992	624
2001	7	4,992	713
2001	7	4,992	713
2002	6	4,991	832
2002	6	4,991	832
2003	5	4,991	998
2004	4	4,991	1,248
2004	4	4,991	1,248
2005	3	4,991	1,664
2005	3	4,992	1,664

Melting History of Kilauea Volcano

Eighteen samples from fifteen historic eruptions that took place over a 192 year period (1790-1982) were analysed in 1999 by two scientists from the University of Hawaii **(Pietruszka, 1999, P. 1329)**. The historical ages varied from 17 to 209 years old. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot are between 4,974 million and 4,992 million years old with an accuracy of 99.64%. That means the $^{207}Pb/^{206}Pb$ dates are between 24 million to 293 million times to old.

Table XIII. Melting History of Kilauea Volcano

Eruption Year	True Age	Pb Ages (Ma)	Error Ratio (10^6)
1790	209	4,992	24
1820	179	4,992	28
1832	167	4,990	30
1866	133	4,981	37
1885	114	4,983	44
1894	105	4,981	47
1895	104	4,979	48
1917	82	4,975	61
1919	80	4,974	62
1929	70	4,981	71
1931	68	4,981	73
1954	45	4,981	111
1961	38	4,982	131
1971	28	4,985	178
1982	17	4,987	293

1991 Eruption Products of Mount Pinatubo

The second-largest volcanic eruption of the 20th century, and by far the largest eruption to affect a densely populated area, occurred at Mount Pinatubo in the Philippines on June 15, 1991. The eruption produced high-speed avalanches of hot ash and gas, giant mudflows, and a cloud of volcanic ash hundreds of miles across. Mount Pinatubo is an active stratovolcano in the Cabusilan Mountains on the Philippine island of Luzon. Ten scientists from seven different universities (Bernard, 1999, Castillo, 1999) examined volcanic ejecta and obtained several $^{207}Pb/^{206}Pb$ isotope ratios. This laboratory work was done in 1999 so the samples

were only eight years old. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot are between 5,000 million and 5,009 million years old with an accuracy of 99%. That means the $^{207}Pb/^{206}Pb$ dates are all 625 million times to old.

Table XIV. 1991 Eruption Products of Mount Pinatubo

Eruption	True Age	Pb Age (Ma)	Age Ratio 10^6
1991	8	5,002	625
1991	8	5,002	625
1991	8	5,001	625
1991	8	5,001	625
1991	8	5,000	625
1991	8	5,009	626
1991	8	5,001	625
1991	8	5,000	625
1991	8	5,001	625
1991	8	5,001	625

Bicol and Bataan arcs, Philippines

The Philippine island of Luzon is bounded by the Manila Trench to the west and the Philippine Trench to the east, both of which are associated with subduction of oceanic lithosphere. In contrast, the Bicol arc is associated with westward subduction of the Philippine Sea Plate with thin to modest amounts of pelagic sediments. **(DuFrane, 2006, P. 3403)** Pinatubo erupted in 1991 and 4000 years ago. Taal has been active since the early 1600's; and Mayon has erupted every 15–20 years since the late 19th century to the present Tables **(DuFrane, 2006, P. 3406-3409)**.

The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot for the 1991 Pinatubo eruption are between 4,987 million and 5,007 million years old with an accuracy of 99.60%. That means the $^{207}Pb/^{206}Pb$ dates are all 333 million times to old. Mayon Volcano's longest uninterrupted eruption occurred on June 23, 1897, which lasted for seven days of raining fire. Lava once again flowed down to civilization. Eleven kilometres eastward, the village of Bacacay was buried 15 metres beneath the lava. In Libon 100 people were killed by steam and falling debris or hot rocks. Other villages like San Roque, Misericordia and Santo Niño became death traps. Ash was carried in black clouds as far as 160 kilometres from the catastrophic event, which killed more than 400 people. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot for the 1897 Mayon eruption are between 4,984 million and 4,987 million years old with an accuracy of 99.94%. That means the $^{207}Pb/^{206}Pb$ dates are all 46 million times to old.

There have been 33 recorded eruptions at Taal since 1572. Eruptions have also been recorded in 1634, 1635, 1641, 1645, 1790, 1825, 1842, 1873, 1885, 1903, 1966, 1967, 1968, 1969, 1970, 1976 and 1977. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot for the 1634 Taal eruption are between 4,992 million and 4,988 million years old with an accuracy of 99.92%. That means the $^{207}Pb/^{206}Pb$ dates are all 13 million times to old. As we look at the $^{207}Pb/^{206}Pb$ dates in table 16 keep in mind how recent the eruptions really were. (Mayon 1800 AD, Bulusan 4000 BC, Taal 1600 AD, Pinatubo 1991 AD)

Table XV. Bicol and Bataan arcs Pb ages, Ma

Taal	Mayon	Bulusan	Iriga	Pinatubo
1600 AD	1800 AD	4000 BC	???	1991 AD
4,992	4,986	4,990	4,980	4,987
4,989	4,986	4,991	4,979	4,999
4,988	4,986	4,991	4,985	5,007
4,989	4,986		4,982	4,994
4,991	4,986			5,000
4,988	4,986			4,999
4,989	4,984			4,997
4,991	4,986			4,999
4,992	4,985			
4,991	4,987			
4,990				
4,992				

Table XVI. Bicol and Bataan arcs $^{230}Th/^{238}U$ ages, Ka

Taal	Mayon	Bulusan	Iriga	Pinatubo
1600 AD	1800 AD	4000 BC	???	1991 AD
276.07	0.00	332.33	281.40	505.82
287.10	0.00	345.87	184.70	298.70
286.46	0.00	470.18	204.80	324.87
251.25	0.00		187.06	0.00
278.83	0.00			323.54
177.77	0.00			293.25
275.48	0.00			326.37
310.11	0.00			278.27
317.39	0.00			
281.99				
315.43				
301.06				

Stromboli Volcano Glass-bearing Crustal Xenoliths

Stromboli is a small island in the Tyrrhenian Sea, off the north coast of Sicily, containing one of the three active volcanoes in Italy. In 2005 five scientists form Italy and Denmark examined samples from recent eruptions. “Three xenoliths erupted as ejecta during recent violent explosion of Stromboli volcano (Aeolian Islands) were investigated in this paper.” **(Salvioli-Mariani, 2005, P. 255**) He goes on further and explains that the five samples were form the 1944 eruption 61 years old**.** “The three studied samples of buchite are irregularly coated with juvenile basaltic rinds; they have been sampled at the Rina Grande slope, SW of Pizzo Sopra la Fossa (RG1 and RG2), among the ejecta erupted during the recent to present-day activity, and at the bottom of Le Schicciole slope (PST107), where products of the 1944 paroxysmal eruption accumulated.” **(Salvioli-Mariani, 2005, P. 260)**

The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from an isotope table **(Salvioli-Mariani, 2005, P. 267)** are between 4,962 million and 4,965 million years old. That means the $^{207}Pb/^{206}Pb$ dates are all 81 million times to old.

Table XVII. Stromboli Volcano 1944 eruption

Historic Age	Pb Age (Ma)	Age Ratio (10^6)
61	4,965	81.39
61	4,962	81.34
61	4,965	81.39
61	4,964	81.38
61	4,963	81.36

Study of Stromboli Volcano

This research was done in 2007 by four scientists from Germany and Italy. The supposed true age varied from 85,000 years old **(Tommasini, 2007, P. 2414)** to historical or recent. Those dates were determined by $^{230}Th/^{232}Th$ dating. "U/Th disequilibria constrain the timing of the first metasomatism (Stage I) at 435 ka, whereas the second event (Stage II) occurred at 100 ka. Moreover, the ($^{230}Th/^{232}Th$) and ^{238}U and ^{230}Th excesses in the Stromboli samples provide evidence for the occurrence of dynamic melting of the metasomatized mantle wedge" **(Tommasini, 2007, P. 2426**) If we run the 29 samples through we get $^{207}Pb/^{206}Pb$ dates between 4,951 and 4,956 million years old with a 99.71% accuracy.

Table XVIII. Study of Stromboli Volcano (Pb Ages Ma)

Palaeo I (85 ka)	Palaeo II (60 ka)	Palaeo III (35 ka)	Vancori (26–12 ka)	Neo (10 ka)	S. Bartolo (2 ka)	Recent (0 ka)
4,964	4,962	4,957	4,960	4,960	4,966	4,952
4,966	4,963	4,957	4,957	4,951	4,965	4,961
4,966	4,965	4,957	4,960	4,960		4,962
			4,955	4,960		4,960
				4,960		4,960
				4,960		
				4,952		
				4,958		
				4,963		

Mount Vesuvius

Mount Vesuvius is a stratovolcano in the Gulf of Naples, Italy, about 9 kilometres east of Naples and a short distance from the shore. It is one of several volcanoes which form the Campanian volcanic arc. Mount Vesuvius is best known for its eruption in AD 79 that led to the burying and destruction of the Roman cities of Pompeii and Herculaneum

Eight scientists form the USA and Italy examined "Sanidine from pumice collected at Casti Amanti in Pompeii and Villa Poppea in Oplontis yielded a weighted-mean $^{40}Ar/^{39}Ar$ age of 1925±66 years in 2004 (1σ uncertainty) from incremental-heating experiments of eight aliquants of sanidine. This is the calendar age of the eruption. Our results together with the work of Renne and Min demonstrate the validity of the $^{40}Ar/^{39}Ar$ method to reconstruct the recent eruptive history of young, active volcanoes." **(Lanphere, 2007, P. 259)** If the $^{40}Ar/^{39}Ar$ is so accurate to text the dating method then the $^{207}Pb/^{206}Pb$ dates can be a test that method as completely wrong. The $^{40}Ar/^{39}Ar$ was used to date Mount Erebus rocks that were only thirteen years old and were over one million times in error. The author ends the article by saying that these dates are a sure test of its accuracy: "These results show that the $^{40}Ar/^{39}Ar$ method can be used to reconstruct the recent eruptive history of young volcanoes." **(Lanphere, 2007, P. 262)**

Table XIX. Mount Vesuvius 39Ar/40Ar Age

Sample	Historical Age	39Ar/40Ar Age	Accuracy
CA-1	1,928	2,061	93.55%
CA-2	1,928	1,707	88.54%
CA-4	1,928	2,099	91.85%
CA-5	1,928	1,821	94.45%
CA-6	1,928	1,938	99.48%
CA-7	1,928	2,181	88.40%
CA-8	1,928	1,667	86.46%
VP-2	1,928	1,867	96.84%

Six scientists from Germany, Italy and the USA analysed fourteen mineral samples **(Gilg, 2001, P. 166)** from two different eruption episodes (1550 BC and 79 AD). "The exact sampling site and thus eruption time of these ejecta are not known. But they most probably come from the Plinian eruptions of 'Avellino' (3550 years ago) and 'Pompeii' (79 AD), which have brought the largest amount of skarn ejecta to the surface." **(Gilg, 2001, P. 147)** The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,949 million and 4,982 million years old with an accuracy of 99.34%. That means the $^{207}Pb/^{206}Pb$ dates are all 2 million times to old.

Table XX. Skarns from Vesuvius

Pb Age (Ma)	Pb Age (Ma)
4,982	4,960
4,982	4,960
4,969	4,960
4,967	4,959
4,962	4,955
4,962	4,951
4,961	4,949

Four scientists from Italy and the USA analysed fifty two mineral samples **(Somma, 2001, P. 133-134)** from three different Vesuvius eruption episodes (1550 BC to 79 AD, 79 AD to 472 AD and 472 AD to 1139 AD) **(Somma, 2001, P. 125)** The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,959 million and 4,967 million years old with an accuracy of 99.84%. That means the $^{207}Pb/^{206}Pb$ dates are all 2 million times to old.

Table XXI. Pb dates of Vesuvius interplinian magmas

472 AD to 1139 AD	79 AD to 472 AD	1550 BC to 79 AD
4,963	4,960	4,967
4,965	4,959	4,965
4,963	4,960	4,966
4,965	4,960	4,966
4,964	4,959	4,965
4,964	4,959	4,965
4,964	4,960	4,966
4,963	4,959	4,966
4,964	4,960	4,966
4,964	4,961	4,966
4,963	4,960	4,967
4,963	4,960	4,966
4,962		4,966
4,961		4,966
4,963		4,965
4,964		4,967
4,964		4,967
4,959		4,967
		4,966
		4,966
		4,966

Sangeang Api Eruptions

Sangeang Api (Gunung Api or Gunung Sangeang) is an active complex volcano on the island of Sangeang in Indonesia. It consists of two volcanic cones, 1,949 metres Doro Api and 1,795 metres Doro Mantoi. Sangeang Api is one of the most active volcanoes in the Lesser Sunda Islands. Between its first recorded eruption in 1512 and 1989 it erupted 17 times. It erupted again during December 2012 and May 2014. It is an active alkaline volcano lying within an older caldera and has a known history of eruptions spanning 1512-2014. There were continuous eruptions from 1953-1958, 1964-1966, 985-1988 and finally 2012-2014. **(Turner, 2003, P. 492)** We have one sample from the 1953 eruption **(Turner, 2003, P. 495, 496)** and seven samples from the 1985 eruption. Seven scientists examined them in 2001 **(Turner, 2003, P. 491).** The eight $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table were all over 4,962 million years old. Since the oldest sample was only 48 years old when examined, The eight $^{207}Pb/^{206}Pb$ dates I calculated were between 103 to 311 million times to old.

Table XXII. ^{207}Pb and ^{230}Th Ages of Sangeang Api

Eruption	Pb Age (Ma)	Age Ratio (10^6)	Th Ages (Ka)	Age Ratio (10^3)
1953	4,963	103	0	
1985	4,967	310	408.59	26
1985	4,968	311	0	
1985	4,970	311	0	
1985	4,969	311	247.1	15
1985	4,970	311	-	
1985	4,966	310	210.3	13
1985	4,967	310	243.73	15

The Augustine Island Volcano

Augustine Volcano is a central lava dome and lava flow complex, surrounded by pyroclastic debris. It forms Augustine Island in southwestern Cook Inlet in the Kenai Peninsula Borough of southcentral coastal Alaska, 280 kilometres southwest of Anchorage. Augustine Island has a land area of 83 square kilometres. Four scientists examined seventeen mineral samples from the volcano in 1996. These samples were taken from historic eruptions (1812-1986) and were between ten and 184 years old when examined. **(Johnson, 1996, P. 105)** The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,959 million and 5,076 million years old. The dates were between 27 million and 507 million times too old.

Table XXIII. $^{207}Pb/^{206}Pb$ Ages of Augustine Volcano

Eruption	True Age	Pb Age (Ma)	Age Ratio 10^6
1812	184	4,974	27
	184	4,973	27
	184	4,984	27
	184	4,974	27
	184	5,076	28
1883	113	4,975	44
	113	4,980	44
1935	61	4,972	82
1964	32	4,969	155
	32	4,976	156
	32	4,983	156
1976	20	4,972	249
	20	4,972	249
1986	10	4,969	497
	10	5,067	507
	10	4,969	497
	10	5,067	507

Table XXIV. $^{207}Pb/^{206}Pb$ Ages of Augustine Volcano Region

Volcano Location	Lower Value Pb Age (Ma)	Upper Value Pb Age (Ma)
Mount Spurr	4,964	4,976
Augustine	4,969	4,981
Okmok	4,959	4,977
Akutan	4,977	4,968
Seguam	4,966	4,966
Sediments	4,965	4,964

The Novarupta-Katmai Eruption of 1912

The explosive outburst at Novarupta (Alaska) in June 1912 was the 20th century's most voluminous volcanic eruption. During the 60-hour eruptive sequence of 6–8 June 1912, 13.5 cubic kilometres of rhyolite, dacite, and andesite magma was released at a new vent, later named Novarupta. Withdrawal of magma from beneath Mount Katmai, 10 km east of Novarupta, caused syne eruptive collapse of the 4-km-wide, kilometre-deep caldera, which has subsequently filled with a lake now 200 metres deep. The eruption occurred on the Alaska Peninsula (in Alaska), only 170 km from Kodiak and 440 km from Anchorage. If we look at isotope samples taken from the eruption **(Hildreth, 2012, P. 195)** we get $^{207}Pb/^{206}Pb$ dates of 4,966 million years old.

Table XXV. The Novarupta-Katmai Eruption of 1912

Pb Age (Ma)
4,967
4,965
4,966

Rhyolite in North American Continental Arcs

Table XXVI. Rhyolite Pb Ages (Ma)

Location	Sample	True Age	Pb Age (Ma)	Error Ratio 10^6
Medicine Lake	1545m	91	4,959	54
	1139ma	91	4,960	55
	1543m	91	4,959	54
	1331m	91	4,967	55
	733m	91	4,966	55
Novaraupta	K90Rhy	91	4,967	55
	K90Dac	91	4,965	55
Crater Lake	1533	91	4,964	55
	1532	91	4,966	55
	1534	91	4,970	55

Table XXVII. Rhyolite ^{230}Th Ages (Ka)

Location	True Age	Th Age (Ka)	Error Ratio
Novarupta	91	814	8,949
	91	350	3,843
	91	795	8,741
	91	481	5,283
	91	343	3,764
	91	319	3,502
	91	390	4,290
	91	427	4,687
Crater Lake	91	285	3,130
	91	331	3,634
	91	318	3,494
	91	273	2,998
	91	471	5,171
	91	458	5,033
Medicine Lake	91	380	4,175
	91	359	3,947
	91	333	3,663
	91	406	4,466
	91	528	5,806
	91	676	7,429
	91	562	6,178
	91	662	7,277

The 1912 Katmai-Novarupta Eruption

Five scientists form Australia, USA and UK examined chemical composition of materials **(Turner, 2010, P. 1)** that range from basalt through basaltic andesite, andesite, dacite, and rhyolite. The twenty six $^{230Th}/^{238}U$ dates I calculated with Isoplot from the isotope table **(Turner, 2010, P. 6, 7)** are between 362 thousand and 610 thousand years old. Since the samples were only 98 years old when analysed the dates are between 4,000 and 6,000 times in error.

Table XXVIII. The 1912 Katmai-Novarupta Eruption

$^{230}Th/^{238}U$ Age	Historic Age	Ratio
10^3 Years	Years	Ratio
492	98	5,020
505	98	5,154
610	98	6,225
442	98	4,512
398	98	4,065
488	98	4,981
560	98	5,713
362	98	3,695
427	98	4,355
427	98	4,355
553	98	5,640
440	98	4,494
426	98	4,347
436	98	4,454
366	98	3,733
382	98	3,893
594	98	6,063
534	98	5,445
412	98	4,202
451	98	4,602
362	98	3,692
489	98	4,990
515	98	5,255
382	98	3,893
513	98	5,233
474	98	4,841

Jurassic Oceanic Crust beneath Grand Canaria

Gran Canaria is the second most populous island of the Canary Islands. Gran Canaria is located southeast of Tenerife and west of Fuerteventura. The island is of volcanic origin, mostly made of fissure vents. Gran Canaria's surface area is 1,560 km² and its maximum elevation is 1,949 meters (Pico de Las Nieves). It has a round shape, with a diameter of approximately 50 kilometres.

Three major volcanic structures form the 60 kilometre wide island, which has been modified by caldera collapse, gravitational edifice failure, and extensive erosion. Scoria cones and lava flows are found in the northern and eastern parts of the massive shield volcano, which is cut by a major NW-SE-trending rift zone that extends across the island and fed flows primarily to the NE. Very young basaltic cones and lava flows are situated within a NW-trending zone from Berrazales to Bandama and at Las Isletas, a peninsula on the NE coast. One cinder cone was radiocarbon dated at about 3,000 years old, and other cones and flows may be less than 1,000 years old.

If we use isotopic formulas given in standard geology text we can arrive at ages from the Rubidium/Strontium (**Attendon, 1997, P. 73)** and Neodymium/Samarium (**Attendon, 1997, P. 305)** ratios. The formula for Rb/Sr age is given as:

$$t = \frac{2.303}{\lambda}\log\left(\frac{(^{87}Sr/^{86}Sr) - (^{87}Sr/^{86}Sr)_0}{(^{87}Rb/^{86}Sr)} + 1\right) \quad \textbf{(8)}$$

Where t equals the age in years. □ equals the decay constant. ($^{87}Rb/^{86}Sr$) = the current isotopic ratio. ($^{87}Rb/^{86}Sr)_0$ = the initial isotopic ratio. ($^{87}Rb/^{86}Sr$) = the current isotopic ratio. The same is true for the formula below.

$$t = \frac{2.303}{\lambda}\log\left(\frac{(^{143}Nd/^{144}Nd) - (^{143}Nd/^{144}Nd)_0}{(^{147}Sm/^{144}Nd)} + 1\right) \quad \textbf{(9)}$$

Table XIX. Jurassic Oceanic Crust beneath Grand Canary

Sample	$^{207}Pb/^{206}Pb$	$^{147}Sm/^{144}Nd$	$^{87}Rb/^{86}Sr$	$^{207}Pb/^{206}Pb$	$^{147}Sm/^{144}Nd$	$^{87}Rb/^{86}Sr$
Number	Age (Ma)	Age (Ma)	Age (Ma)	Age Ratio 10^6	Age Ratio 10^6	Age Ratio 10^6
917c	4,963	172	170	101	4	3
91249	4,974	174	170	102	4	3
DSDP397-60-4	4,971	174	170	101	4	3
DSDP397-101-1	4,975	167	171	102	3	3
DSDP397-30-1	4,972	172	170	101	4	3
DSDP397-40-2	4,972	168	166	101	3	3
DSDP397-49-1	4,971	177	165	101	4	3
303905	5,024	170	151	103	3	3
303906	5,005	172	168	102	4	3
B9117.1	5,001	166	225	102	3	5
B9117.1	4,999		204	102		4
B9117.2	4,938	173	151	101	4	3
B9117.3	4,845	174	253	99	4	5
303903	5,017	168		102	3	
B913	4,956	170	172	101	3	4
B914	4,988	166	178	102	3	4
B914	4,991	162	274	102	3	6
RNB60	4,952	153	151	101	3	3
RN1249	4,956			101		
241921B			151			3

In 1998 volcanic samples from the 1949 eruption were analysed: "Sr–Nd–Pb isotope data are presented in Table 2 for ocean crust samples from Gran Canaria and a tholeiitic gabbro xenolith in the 1949 eruption on La Palma." **(Hoernle, 1998, P. 863)** If we run the three types of ratios ($^{87}Rb/^{86}Sr$, $^{147}Sm/^{144}Nd$, $^{207}Pb/^{206}Pb$) found in table 2 in his article **(Hoernle, 1998, P. 867, 868)** through Microsoft Excel we get dates between 151 and 5,024 million years old. The dates are between 3 million and 103 million times too old.

Evolution of La Palma (Canary Islands)

The island of La Palma rises to 2,426 metres above sea level and is the westernmost and volcanically most active of the Canary Islands. "It can be divided into three major units: (1) the older basal complex (ca. 4.0 to 3.0 Ma) comprised of a Pliocene seamount complex exposed in the Caldera de Taburiente, and a plutonic complex, uplifted and tiled by intrusions coeval with the later subaerial activity, (2) the older volcanic series (1.7 to 0.4 Ma) which include the Garafia volcano, the Taburiente shield volcano, the Bejenado edifice, and the Cumbre Nueva series, and (3) the recent Cumbre Vieja series (125 ka to present) which is confined to the southern half of the island." **(Galipp, 2005, P. 11)** Galipp has an isotope table in his article **(Galipp, 2005, P. 102, 103)** that has twelve $^{40}Ar/^{39}Ar$ dates (20 Ma - 834 Ma) and twelve $^{207}Pb/^{206}Pb$ ratios with no dates beside them. If we run the $^{207}Pb/^{206}Pb$ ratios through Isoplot we get twelve dates between 4,892 and 4,920 million years old. The twelve $^{207}Pb/^{206}Pb$ dates between six and 245 times older than the $^{40}Ar/^{39}Ar$ dates.

Table XXX. Ar/Ar Versus Pb/Pb Ages of La Palma Volcanoes

Volcano	$^{40}Ar/^{39}Ar$	$^{207}Pb/^{206}Pb$	Age Ratio
La Palma Island	Age (Ma)	Age (Ma)	
Taburiente	533	4,904	9.20
	410	4,907	11.97
	563	4,908	8.72
	585	4,902	8.38
	560	4,892	8.74
	833	4,903	5.89
Cumbre Nueva	647	4,911	7.59
	834	4,916	5.89
Cumbre Vieja	123	4,911	39.93
	90	4,917	54.63
	120	4,920	41.00
	20	4,917	245.85

The same table has sixteen $^{207}Pb/^{206}Pb$ ratios for six (1480 – 1971) historic volcanic eruptions. If we run the $^{207}Pb/^{206}Pb$ ratios through Isoplot we get sixteen dates between 4,906 and 4,932 million years old. The twelve $^{207}Pb/^{206}Pb$ dates between 9 million and 145 million times to old.

Table XXI. Pb ages of La Palma eruptions

Eruption Year	True Age	Pb Age (Ma)	Error Ratio 10^6
1480	525	4,911	9
	525	4,906	9
	525	4,911	9
1585	420	4,910	12
	420	4,910	12
	420	4,910	12
	420	4,910	12
1646	359	4,911	14
	359	4,910	14
1677	328	4,911	15
	328	4,910	15
1949	56	4,932	88
	56	4,920	88
	56	4,917	88
1971	34	4,914	145
	34	4,909	144

Volcanic rocks from Merapi Volcano

Mount Merapi, is an active stratovolcano located on the border between Central Java and Yogyakarta, Indonesia. It is the most active volcano in Indonesia and has erupted regularly since 1548. It is located approximately 28 kilometres north of the large Yogyakarta city. Merapi is the youngest in a group of volcanoes in southern Java. It is situated at a subduction zone, where the Indo-Australian Plate is subducting under the Sunda Plate. It is one of at least 129 active volcanoes in Indonesia, part of the volcano is located in the south eastern part of the Pacific Ring of Fire. Typically, small eruptions occur every two to three years, and larger ones every 10–15 years or so. Notable eruptions, often causing many deaths, have occurred in 1006, 1786, 1822, 1872, and 1930. Thirteen villages were destroyed in the later one, and 1400 people killed by pyroclastic flows. “The sample that forms the basis of this study is representative of the younger eruptive stages of Merapi. It includes (1) the lava sequences of the somma rim, (2) pyroclastic flow and tephra fall deposits of overlapping Holocene Pyroclastic Series and (3) eruptive products of selected effusive

(dome forming) and pyroclastic flow forming eruptions of the recent and historical activity of Merapi, which can be traced back to the late 18th century." **(Gertisser, 2003, P. 461)**

Two Lead samples **(Gertisser, 2003, P. 467)** from two eruptions (1822, 1872) were put through Isoplot and both returned ages of 4,986 million years old. That means that the dates were 27 million and 38 million times in error respectively.

Table XXII. Volcanic rocks from Merapi Volcano

Pb Age (Ma)	Pb Age (Ma)
Holocene	19th Century Eruption
4,984	4,986
4,985	4,986

The two Réunion Island volcanoes

The island is 63 kilometres long and 45 kilometres wide; and covers 2,512 square kilometres. It is located above a hotspot in the Earth's crust. The Piton de la Fournaise, a shield volcano on the eastern end of Réunion Island, rises more than 2,631 metres above sea level and is sometimes called a sister to Hawaiian volcanoes because of the similarity of climate and volcanic nature. It has erupted more than 100 times since 1640 and is under constant monitoring, most recently erupting on 31 July 2015. During another eruption in April 2007, the lava flow was estimated at 3,000,000 cubic metres per day.

Twenty one samples **(Bosch, 2008, P. 752)** from twelve historic eruptions between 1700 and 1953 were analysed. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,962 million and 4,972 million years old with 99.80% accuracy. The twenty one dates were between 16 million and 90 million times too old.

Table XXXIII. The two Réunion Island Volcanoes

Eruption	Age (Years)	Pb Age (Ma)	Age Ratio (10^6)
1700	308	4,964	16
1802	206	4,966	24
1905	103	4,964	48
1915	93	4,962	53
1927	81	4,968	61
	81	4,963	61
	81	4,966	61
	81	4,966	61
1931	77	4,971	65
1934	74	4,963	67
1939	69	4,966	72
1943	65	4,965	76
	65	4,967	76
1945	63	4,972	79
	63	4,963	79
	63	4,966	79
	63	4,965	79
	63	4,968	79
1949	59	4,964	84
1953	55	4,966	90
	55	4,966	90

The Kluchevskoy volcano, Central Kamchatka

The Kamchatka Peninsula is a 1,250-kilometre-long peninsula in the Russian Far East, with an area of about 270,000 square kilometres. It lies between the Pacific Ocean to the east and the Sea of Okhotsk to the west. The volcanoes of Kamchatka are a large group of volcanoes situated on the Kamchatka Peninsula. The Kamchatka River and the surrounding central side valley are flanked by large volcanic belts containing around 160 volcanoes, 29 of them still active. Nine samples from two eruptions (1932, 1953) were analysed **(Dorendorf, 2000, P. 75)** in 2000 by three scientists. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the

isotope table are between 5,002 million and 5,005 million years old with 99.95% accuracy. Since the samples were only 47 and 68 years old the age ratio was 106 and 73 million times to old respectively.

Table XXXIV. The Kluchevskoy Volcano

Eruption	Historic Age	Pb Age (Ma)	Age Ratio 10^6
1932	68	5,002	73.56
1932	68	5,004	73.59
1932	68	5,004	73.59
1932	68	5,003	73.57
1932	68	5,005	73.60
1932	68	5,005	73.60
1932	68	5,004	73.58
1932	68	5,002	73.56
1953	47	5,004	106.46

In 2013 five scientists from the USA and Switzerland **(Kayzar, 2014, P. 168)** obtained sixty three samples from the Bezymianny, Klyuchevskoy, Shiveluch and Karymsky volcanoes. Theses samples were from twenty four historic eruptions (1939-2010) that were between 4 and 75 years old when analysed. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,996 million and 5,011 million years old with 99.69% accuracy. Since the samples were only between 4 and 75 years old the age ratio was between 67 and 1,253 million times too old respectively.

Table XXXV. Bezymianny and Klyuchevskoy Pb Ages

Volcano	Eruption	Age (Years)	Pb Age (Ma)	Age Ratio (10^6)
Bezymianny	1956	58	5,004	86
	1956	58	5,004	86
	1997	17	5,004	294
	2006	8	5,004	626
	2007	7	5,004	715
	2008	6	5,003	834
	2009	5	5,004	1,001
	2010	4	5,004	1,251
Klyuchevskoy	1939	75	5,002	67
	1945	69	5,002	72
	1946	68	5,002	74
	2007	7	5,001	714
Shiveluch	1964	50	4,997	100
	1980	34	4,996	147
	1993	21	4,996	238
	2001	13	4,996	384
	2007	7	4,997	714
Karymsky	1964	50	4,997	100
	1971	43	4,997	116
	1996	18	4,997	278
	1998	16	4,997	312
	2003	11	4,997	454
	2004	10	4,997	500
	2007	7	4,998	714
	2008	6	4,997	833

Element Variations in Sunda arc Lavas

This research was done in 2001 by two scientists from England and Australia **(Turner, 2001, P. 43)**. Nineteen samples from nine volcanoes and eleven historic eruptions **(Turner, 2001, P. 46, 47)** were analysed for $^{230}Th/^{238}U$ and $^{207}Pb/^{206}Pb$ ratios. The nineteen $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,967 million and 5,001 million years old with 99.32% accuracy. The nineteen dates were between 67 thousand and 311 million times too old. The nine $^{230}Th/^{238}U$ dates I calculated with Isoplot from the isotope table are between 160 thousand and 661 thousand years old. The nine $^{230}Th/^{238}U$ dates were between 4 and 9,600 times too old.

Table XXXVI. Sunda arc Lavas Pb/Pb Ages

Volcano	Eruption	Age (Years)	Pb Age (Ma)	Age Ratio (10^6)
Krakatau	1883	118	4,991	42
	1883	118	5,001	42
Galunggung	1982	19	4,983	262
	1982	19	4,981	262
	1982	19	4,982	262
	1918	83	4,984	60
Merapi	1006	995	4,984	5
	1006	995	4,984	5
	1006	995	4,984	5
	1006	995	4,983	5
Rindjani	1900	101	4,990	49
	1900	101	4,985	49
Tambora	1815	186	4,967	27
Sangeang Api	1985	16	4,970	311
Ayi Flores	1900	101	4,975	49

Table XXXVII. Sunda arc Lavas ^{230}Th Ages

Volcano	Eruption Year	Age (Years)	^{230}Th Age (Ka)	Age Ratio
Toba	-72,000	74,000	314.44	4.25
Sorikmarapi	-10,000	12,000	404.10	33.68
Krakatau	1883	118	661.98	5610.00
	1883	118	510.89	4329.58
Galunggung	1982	19	182.40	9600.00
	1918	83	271.89	3275.78
	-2200	2,400	265.73	110.72
Merapi	1006	995	269.13	270.48
	1006	995	160.17	160.97

(Negative dates = BC, positive = AD)

Contributions to Lesser Antilles magmas

The Lesser Antilles is the name given to a group of islands in the Caribbean Sea. Most form a long, partly volcanic island arc between the Greater Antilles to the north-west and the continent of South America. The islands form the eastern boundary of the Caribbean Sea with the Atlantic Ocean. In 2009 (DuFrane, 2009, P. 274) scientists collected nine samples from four different islands. Four of the samples were from historic eruptions (1530, 1995 and 1998). The nine $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,943 million and 5,008 million years old. The four $^{230}Th/^{238}U$ dates I calculated with Isoplot from the isotope table are between 300 thousand and 400 thousand years old. The dates are all between 30 thousand and 450 million times too old.

Table XXXVIII. Contributions to Lesser Antilles magmas

Island	Eruption Year	Pb Age (Ma)	Age Ratio (10^6)	Th Age (Ka)	Age Ratio
Grenada	-8,000	4,943	0.4943		
	-8,000	5,008	0.5008		
Guadeloupe	1,530	4,962	10	401.17	838
	-500,000	4,953	0.01	299.86	0.597
Montserrat	1,995	4,979	356		
	1,998	4,968	452	373.56	33,960
	1,998	4,962	451	333.79	30,345
Saba	-8,000	4,983	0.4983		
	-8,000	4,968	0.4968		

(Negative dates = BC, positive = AD)

Piton de la Fournaise historical lavas

Piton de la Fournaise is a shield volcano on the eastern side of Réunion Island in the Indian Ocean. It is currently one of the most active volcanoes in the world, along with Kīlauea in the Hawaiian Islands (Pacific Ocean), Stromboli, Etna (Italy) and Mount Erebus in Antarctica. A previous eruption began in August 2006 and ended in January 2007. The volcano erupted again in February 2007, on 21 September 2008 and on 9 December 2010, which lasted for two days. The most recent eruption began on 1 August 2015. The volcano is located within Réunion National Park, a World Heritage site.

In 2008 eight scientists from France **(Vlastélic, 2009, P. 66-68)** analysed isotopes ratios from 112 volcanic eruptions between 1927 and 2007. The one hundred and thirty one samples cover and eighty year time span. The 131 $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,963 million and 4,981 million years old. The dates are between 61 million and 2,482 million times too old.

Table XXXIX. Piton de la Fournaise historical lavas

Eruption	Age (Years)	Age (Ma)	Age Ratio (10^6)
1927	82	4,966	61
1931	78	4,965	64
1938	71	4,965	70
1943	66	4,964	75
1945	64	4,965	78
1948	61	4,966	81
1953	56	4,966	89
1961	48	4,965	103
1977	32	4,963	155
1957	52	4,965	95
1966	43	4,964	115
1972	37	4,965	134
1973	36	4,965	138
1975	34	4,965	146
1976	33	4,964	150
1979	30	4,964	165
1981	28	4,964	177
1983	26	4,963	191
1984	25	4,963	199
1985	24	4,963	207
1986	23	4,964	216
1987	22	4,965	226
1988	21	4,966	236
1990	19	4,965	261
1991	18	4,966	276
1992	17	4,966	292
2001	8	4,967	621
2006	3	4,965	1,655
2007	2	4,965	2,483

Two Volcanoes in the Alaska-Aleutian Arc

The Aleutian Islands are a chain of 14 large volcanic islands and 55 smaller ones belonging to both the United States and Russia. They form part of the Aleutian Arc in the Northern Pacific Ocean, occupying an area of 17,666 square kilometres and extending about 1,900 kilometres westward from the Alaska Peninsula toward the Kamchatka Peninsula in Russia, and mark a dividing line between the Bering Sea to the north and the Pacific Ocean to the south.

In 2002 seven scientists from England and the USA examined fifteen samples from Aniakchak volcano **(George, 2004, P. 207, 208)** and twelve samples Akutan volcano **(George, 2004, P. 210)**. These samples represent five historic eruptions (1931, 1870, 1910, 1929 and 1978) that were only 24 to 71 years old when studied. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,960 million and 4,972 million years old. Since the samples were only 24 to 71 years old when studied the age ratio was between 37 million and 191 million times too old respectively.

Table XL. Two Volcanoes in the Alaska-Aleutian Arc

Volcano	Eruption	Age	Pb Age (Ma)	Age Ratio (10^6)
Aniakchak	1931	73	4,972	68
	1931	73	4,966	68
	1931	73	4,967	68
	1931	73	4,966	68
	1931	73	4,965	68
	1931	73	4,966	68
	1931	73	4,967	68
	1931	73	4,965	68
Akutan	1870	134	4,960	37
	1910	94	4,960	53
	1910	94	4,961	53
	1929	75	4,961	66
	1978	26	4,962	191
	1978	26	4,961	191
	1978	26	4,960	191

Puu Oo Eruption of Kilauea Volcano

Kilauea is a currently active shield volcano in the Hawaiian Islands, and the most active of the five volcanoes that together form the island of Hawaii. Located along the southern shore of the island, evolutionary science states that the volcano is between 300,000 and 600,000 years old and emerged above sea level about 100,000 years ago. There were sixty episodes in the eruptive sequence that began in January 1983 and ended in June 2011. Two scientists from the USA examined five samples in 1999 **(Garcia, 2000, P. 967)** that were between one to seven years old. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table **(Garcia, 2000, P. 984)** are between 4,992 million and 4,993 million years old with 99% accuracy. Since the samples were only between one and seven years old the age ratio was between 624 million and 2.5 billion times too old respectively.

Table XLI. Puu Oo Eruption of Kilauea Volcano

Eruption	Pb Age (Ma)	Age Ratio (10^6)
29/12/1992	4,992	624
25/04/1994	4,992	832
27/04/1995	4,992	998
10/01/1997	4,992	1,664
10/01/1998	4,993	2,497

Transport rates along the Alaska-Aleutians

The Aleutian Islands are a chain of 14 large volcanic islands and 55 smaller ones belonging to both the United States and Russia. They form part of the Aleutian Arc in the Northern Pacific Ocean, occupying an area of 17,666 square kilometres and extending about 1,900 kilometres westward from the Alaska Peninsula toward the Kamchatka Peninsula in Russia, and mark a dividing line between the Bering Sea to the north and the Pacific Ocean to the south.

In 2003 seven scientists **(George, 2003, P. 65-67)** from the USA and England examined thirty one samples from 22 volcanoes and 24 historic eruptions (1500 BC-1999 AD). The historical ages varied between 4 to 3,503 years old. The $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table are between 4,949 million and 5,007 million years old. Since the samples were only 3,503 to 4 years old when studied the age ratio was between 1 million and 1,243 million times too old respectively.

Table XLII. Transport rates along the Alaska-Aleutians

Volcano	Eruption	Age	Pb Age (Ma)	Age Ratio (10^6)
Akutan	1850	153	4,960	32
	1978	25	4,961	198
Aniakchak	-1500	3,503	4,966	1
	-1500	3,503	4,967	1
	-1500	3,503	4,966	1
Augustine	-500	2,503	4,967	2
Bogoslof	1796	207	4,968	24
Buzzard Creek	-1000	3,003	4,949	2
Kanaga	1850	153	4,970	32
	1900	103	4,970	48
Kasatochi	1899	104	4,965	48
Katmai	1912	91	4,966	55
Kiska	1962	41	4,970	121
	Historic		5,007	
Little Sitkin	1900	103	4,994	48
Makushin	Historic		4,967	
Okmok	1946	57	4,967	87
Pavlof	1996	7	4,965	709
Redoubt	1989	14	4,972	355
	1989	14	4,973	355
Seguam	Historic		4,965	
Segula	Historic		4,979	
Shishaldin	1999	4	4,972	1,243
Spurr	1953	50	4,969	99
	1992	11	4,972	452
Trident	1953	50	4,967	99
	1953	50	4,967	99
Ukinrek	1977	26	4,973	191
Umnak	1946	57	4,974	87
Westdahl	1991	12	4,966	414
	Active		4,966	

(Negative dates = BC, positive = AD)

2010 Eyjafjallajökull explosive eruption

The 2010 eruptions of Eyjafjallajökull were volcanic events at Eyjafjallajökull in Iceland which, although relatively small for volcanic eruptions, caused enormous disruption to air travel across western and northern Europe over an initial period of six days in April 2010. Additional localised disruption continued into May 2010. The eruption was declared officially over in October 2010, when snow on the glacier did not melt. From 14–20 April, ash covered large areas of northern Europe when the volcano erupted. Two years after the eruption four scientists form France, Russia, Indonesia and Iceland **(Borisova, 2012, P. 1)** examined six samples. The six $^{207}Pb/^{206}Pb$ dates I calculated with Isoplot from the isotope table **(Borisova, 2012, P. 10)** are between 4,942 million and 4,944 million years old. Since all the samples were only 2 years old when studied the age ratio was 2.47 billion times too old.

Table XLIII. 2010 Eyjafjallajökull Pb ages

Pb Age (Ma)	Historic Age	Age Ratio 10^6
4,942	2	2,471
4,943	2	2,472
4,943	2	2,472
4,943	2	2,472
4,942	2	2,471
4,944	2	2,472

Disequilibria at Volcano Llaima, Chile

The Llaima Volcano is one of the largest and most active volcanoes in Chile. It is situated 82 km northeast of Temuco and 663 km southeast of Santiago, within the borders of Conguillío National Park. Llaima is one of Chile's most active volcanoes and has frequent but moderate eruptions. Llaima's activity has been documented since the 17th century, and consists of several separate episodes of moderate explosive eruptions with occasional lava flows. The last major eruption occurred in 1994.

An eruption on January 1, 2008 forced the evacuation of hundreds of people from nearby villages. A column of smoke approximately 3000 m high was observed. An amateur caught the early eruption phase on video. The volcanic ash expelled by Llaima travelled east over the Andes into Argentina.

In 2007 seven scientists from Switzerland, USA and Chile **(Reubi, 2011, P. 37)** analysed mineral samples for isotopic composition. Sixteen samples from seven (1640-2008) historic eruptions were analysed **(Reubi, 2011, P. 43)** and returned accurate $^{230}Th/^{238}U$ ratios. The sixteen $^{230}Th/^{238}U$ dates I calculated with Isoplot from the isotope table are between 174 thousand and 257 thousand years old. Since the samples were between 3 and 371 years old when dated the dates are all between 0.5 thousand and 60 thousand times too old.

Table XLIV. Disequilibria at Volcano Llaima, Chile

Eruption	$^{230}Th/^{238}U$	Historic Age	Age Ratio
Year	Age 10^3 Years	Years	10^3
2008	178.35	3	59.45
1957	201.26	54	3.73
1957	177.23	54	3.28
1780	211.51	231	0.92
1780	190.13	231	0.82
1780	183.52	231	0.79
1780	174.54	231	0.76
1751	186.49	260	0.72
1903	257.33	108	2.38
1640	213.10	371	0.57
1640	220.89	371	0.60
1640	181.19	371	0.49
1903	228.18	108	2.11
1852	185.29	159	1.17
1852	242.77	159	1.53
1852	185.89	159	1.17

Izu arc Volcanoes

The Izu-Bonin-Mariana (IBM) arc system is a tectonic-plate convergent boundary. IBM extends over 2800 kilometres south from Tokyo, Japan, to beyond Guam, and includes the Izu Islands, Bonin Islands, and Mariana Islands; much more of the IBM arc system is submerged below sea level. The IBM arc system lies along the eastern margin of the Philippine Sea Plate in the Western Pacific Ocean. It is most famous for being the site of the deepest gash in Earth's solid surface, the Challenger Deep in the Mariana Trench.

In 2011 three scientists from Japan **(Kurihara, 2011, P. 335)** examined sixteen samples from two volcanoes. These samples represent eleven historic (800 AD - 1950 AD) eruptions **(Kurihara, 2011, P. 336)**. The sixteen $^{230}Th/^{238}U$ dates I calculated

with Isoplot from the isotope table are between 108 thousand and 320 thousand years old. Since the samples were between 61 and 1211 years old when dated the dates are all between 150 and 1700 times too old.

Table XLV. Izu arc volcanoes, Japan

Volcano	230Th Age 10^3	Eruption AD	True Age	Age Ratio
Fuji	191.61	800	1,211	158.22
	227.87	864	1,147	198.66
	192.43	864	1,147	167.77
	213.72	864	1,147	186.33
	193.96	864	1,147	169.10
	222.23	864	1,147	193.75
	290.82	937	1,074	270.78
	319.15	1033	978	326.33
Izu-Oshima	155.10	800	1,211	128.08
	183.97	1338	673	273.36
	151.13	1421	590	256.16
	134.08	1552	459	292.10
	119.68	1684	327	366.00
	220.25	1777	234	941.23
	240.36	1777	234	1,027.20
	108.36	1950	61	1,776.47

Volcanic Products from Izu arc volcanoes

In 2007 three scientists from Japan **(Kurihara, 2007, P. 795)** examined thirty three samples from five volcanoes. These samples represent fifteen historic (800 AD - 1986 AD) eruptions **(Kurihara, 2007, P. 800-802)**. The thirty three $^{230}Th/^{238}U$ dates I calculated with Isoplot from the isotope table are between 80 thousand and 600 thousand years old. Since the samples were between 20 and 1200 years old when dated the dates are all between 100 and 6,000 times too old.

Table XLVI. Volcanic Products from Izu arc volcanoes

Volcano	Eruption	True Age	230Th Age 10^3	Age Ratio
Younger Fuji	1707	300	164.04	547
	1707	300	150.76	503
	1707	300	164.66	549
	1707	300	142.94	476
	1707	300	164.66	549
	1707	300	164.66	549
	1707	300	164.96	550
	1707	300	142.94	476
	1707	300	169.48	565
	1707	300	150.76	503
	1707	300	164.36	548
Isu-Oshima	800	1207	155.62	129
	1338	669	186.49	279
	1421	586	151.23	258
	1552	455	134.62	296
	1684	323	118.08	366
	1777	230	222.67	968
	1950	57	108.94	1,911
	1986	21	82.11	3,910
	1986	21	125.32	5,968
	1986	21	102.40	4,876
	1986	21	105.23	5,011
	1874	133	186.51	1,402
Miyake-Jima	1940	67	213.82	3,191
	1962	45	123.92	2,754
	1983	24	147.01	6,125
Nijima	886	1121	116.46	104
	886	1121	447.11	399

Northern Izu arc Volcanoes

In 2008 seven scientists from Japan **(Fukuda, 2008, P. 461)** examined fifteen samples from four volcanoes. These samples represent thirteen historic (864 AD - 2000 AD) eruptions **(Fukuda, 2008, P. 463-465)**. The fifteen $^{230}Th/^{238}U$ dates I calculated with Isoplot from the isotope table are between 100 thousand and 400 thousand years old. Since the samples were between 8 and 1100 years old when dated the dates are all between 230 and 19,000 times too old.

Table XLVII. Northern Izu arc Volcanoes

Volcano	Eruption AD	True Age	230Th Age (Ka)	Age Ratio
Fuji	864	1,144	319.05	279
	1033	975	398.93	409
	1707	301	271	900
Miyakejima	1469	539	167.88	311
	1643	365	154.41	423
	1874	134	157.21	1,173
	1962	46	164.08	3,567
	1983	25	154.81	6,192
	2000	8	142.66	17,833

	2000	8	152.66	19,083
	2000	8	157.68	19,710
Oshima	1950	58	111.53	1,923
	1550	458	106.6	233
	1778	230	134.91	587
Teishi Knoll	1989	19	262.95	13,839

The Great Tambora Eruption in 1815

In 2010 six scientists form Australia, England and the USA **(Gertisser, 2012, P. 271)** examined volcanic material that was 195 years old. The cataclysmic eruption of Tambora volcano (Sumbawa, Indonesia) in 1815 has long been recognized as one of the largest explosive eruptions in historical time. The eight $^{230}Th/^{238}U$ dates I calculated with Isoplot from the isotope table **(Gertisser, 2012, P. 277)** are between 220 thousand and 520 thousand years old. Since the samples were all 203 years old when dated the dates are all between 1000 and 2600 times too old.

Table XLVIII. The Great Tambora Eruption in 1815

Erupted	True Age	230Th Age 10^3	Age Ratio
1815	203	451.58	2,225
1815	203	301.81	1,487
1815	203	504.04	2,483
1815	203	219.64	1,082
1815	203	233.17	1,149
1815	203	336.91	1,660
1815	203	528.61	2,604
1815	203	230.08	1,133

1585 Eruption on La Palma, Canary Islands

Table XLIX. 1585 eruption on La Palma, Canary Islands

Pb Age (Ma)	Eruption	True Age	Age Ratio 10^6
4,910	1585	420	11.69
4,910	1585	420	11.69
4,910	1585	420	11.69
4,910	1585	420	11.69

Active Caldera, Rabaul, Papua New Guinea

Table L. Active Caldera, Rabaul, Papua New Guinea

Eruption	Historic Age	$^{230}Th/^{238}U$ Age	Age Ratio
Year AD	Years	Thousand Years	
640	1369	311	227
1250	759	315	415
	759	0	759
1850	159	297	1,865
1878	131	261	1,993
1937	72	173	2,402
1994	15	278	18,511
	15	319	21,293
	15	315	21,030
1996	13	289	22,213
	13	312	24,023
	13	343	26,382
1997	12	286	23,844
	12	333	27,760
	12	272	22,641
	12	274	22,847
1998	11	349	31,723
	11	444	40,348
	11	295	26,805
	11	325	29,518
	11	315	28,612
1999	10	297	29,656
2000	9	169	18,799
2001	8	309	38,660

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